UCN, Page 1 of 1

Start date:	Sat Jan 1 00:00:00 2011
End date:	Mon Jul 1 01:00:00 2013

ID	Date	Author
25595	Mon May 6 16:44:01 2013	MFMakela

Runninfg over night source test. SCS empty and warming, pumping on it.

25594	Tue Apr 30 14:23:40 2013	MFMakela

14:25 starting to cool the ucn source. attempting to cool the source without 1630 running without LN2.

25593	Thu Apr 18 14:23:12 2013	EIC

Cooling source to distill gas

25592	Mon Apr 15 15:44:31 2013	MFMakela

Scroll pump upstairs pumping on 1000 gallon helium tank. Noisy

25591	Mon Apr 15 14:03:54 2013	MFMakela

D2 tank valved off - Orange valve closed, CC2 closed (top of tank) disconnecting line from check valve bypass to Orange valve, and capping it. Connecting 1000 gallon tank to replace D2 tank, Biulding 10 and 1410 valved off.

25589	Fri Mar 29 18:53:39 2013	LJB

Run 736: Moved Sn source in + 0.50" Now channel 1 is hot, channel 2 is about x3 less So we can map out pixels: Looking behind detector, facing into SCS 5 0 6 4 3 1 2 So sources are hanging fairly low Run 737: Moved Sn + 0.75" Only see on channel 1 Run 738: Moved Sn + 1.0" Don't see anything! sources are nicely spaced out Run 739: Moved Sn + 1.25" Only channel 2 sees anything, source must be quite low 3 peaks: Amp Mean Sigma Peak 1: 330 128.5 7.8 fit to gaus + pol1 Peak 2: 2430 210.89 8.80 Peak 3: 382 263.3 8.5 Using scaling from 113Sn source (ADC channel * 0.63 = keV), peak 1 is 81 keV, peak 2 is 133 keV, and peak 3 is 166 keV. Peak 2 and 3 are reasonably consistent with 139Ce peaks at 127 keV and 159 keV. Again we see a low energy peak that we don't understand at about 60-70% of big peak.

Attachment 1: l2_0.gif

l2_0.gif

25590	Fri Mar 29 18:52:21 2013	LJB

Run 740: moved in 1.5". channel 1 is very hot, channel 2 is less so. I guess we just blew past channel 3. Run 741: moved in 1.75" only channel 1 shows the Ce peaks, but now channel 3 is starting to see a bit of something... maybe Bi? Run 742: moved in 2.0" channel 3 must be showing Bi peaks now. Also seeing somewhat on channel 0, 2, and 4. We see peaks at 100 (just above noise), 500?, 740, 860, 1075, 1500, 1625 Run 743: moved in 2.25" Channels 2 and 3 lit up nearly the same, also see somewhat less on 0, 2, and 4. Peak at 100 only seen on channels 0 and 3, odd. Amp Mean Sigma Peak 1: 1392 88.0 19.6 (gaus + pol0, but should be gaus + expo, really) Peak 2: 72 496.5 11.3 (gaus + pol0 for rest) Peak 3: 515 738.6 9.3 Peak 4: 139 854.0 12.7 Peak 5: 81 1079.7 13.7 Peak 6: 764 1504.90 8.61 Peak 7: 152 1615.8 10.7 (see plot) Peak 1 could be the 56.7 keV peak (3%), Peak 2 would be ~315 keV, so probably a ghost peak, Peak 3 is probably the 481 keV peak (1.8%), Peak 4 might be the 554 keV (0.4%) + 565 peaks (0.1%), Peak 5 is at ~700 keV, so another ghost peak, Peak 6 is the 975 keV peak, and Peak 7 is the 1048 keV peak. Ghost peak 5 is 70% of Peak 6, and ghost peak 2 is 67% energy of peak 3. Since this is % shift, I wonder if this is some kind of electronics effect, like ringing. Maybe we'll get a hint by looking at the timestamps of those events. Run 744: moved in 2.5" seeing stuff on 1,

2, 3 and 4; 3 is a bit less Run 745: Moving back to 2.25" and doing a long run

Attachment 1: l3.gif

l3.gif

25588	Fri Mar 29 17:14:09 2013	LJB

UCNB: SCS at 1 T, detection system at 0 kV Run 730: Bi + Ce + Sn are in See peaks at (channel 1) 1600, 1475, 850, 725, 500, 75? Run 731: all sources out noise threshold at ~60 pulser at ~10 all other peaks gone Run 732: slowly moving load lock in to try to guess orientation of pixels ch 2 is very hot, ch 3 is also hot, so those are probably closest to load lock Run 733: moved back a bit, Sn should barely be in channel 3 is actually the hotter one, channel 2 is about an order of magnitude less Run 734: Moved in +0.25" channel 2 is very hot, channel 3 about 100 times less, channel 1 starting to see some we see 3 peaks: 380, 575, 625 can we see lowest energy peak on channel 1? try to run longer Run 735: Longer run definitely see all 3 peaks on channel one Let's fit them: Amp Mean Sigma Peak 1: 332 387.4 15.0 fit to gaus + pol0 Peak 2: 2570 577.70 8.62 fit to gaus + gaus (2 + 3) Peak 3: 618 615.75 8.12 We expect from 113Sn: 364 keV (28.8%), 387 keV (5.6%), and 390 keV (1.1%) If we expect that Peak 2 is the 364 keV peak, that puts us with a resolution of 5.4 keV Linear scaling puts peak 3 at 387.5 keV, consistent with the 387 + 390 peaks. amplitudes would be 28.8% and 6.9% ~= 5.6% + 1.1%. good! But what is coming in at 244 keV, with the much worse resolution?

Attachment 1: l2.gif

l2.gif

25587	Wed Mar 27 20:19:30 2013	LJB

UCNS distance between plates ~ 1.65" collimated 148Gd source through 0.2" dia hole in 0.13" thick beam poly. Positioning hole at 0.8" above ground plate (so about halfway), resting outside of parallel plates, facing in. source is approx 4" from center. 50mbar -> 11cm range 100 -> 5.5cm 200 -> 2.8cm 400 -> 1.4cm 800 -> 0.7cm Run 365: 100 mbar, 1.0 kV hmm pretty square Run 366: 150 mbar, 1.25 kV Run 367: 200 mbar, 1.5 kV Run 368: 250 mbar, 1.5 kV Run 369: 400 mbar, 1.5 kV Run 370: 600 mbar, 1.5 kV pretty close to the edge of the plates now Run 371: 800 mbar, 1.5 kV Run 372: 100 mbar, 1.0 kV Run 373: 75 mbar, 1.0 kV looks a lot like 100 mbar Run 374: 75 mbar, 1.0 kV, 2us->3us shaping Run 375: 75 mbar, 1.0 kV, 6us shaping Run 376: 250 mbar, 1.5 kV, 2us shaping extra feature at low energy? Run 377: 250 mbar, 1.5 kV, 3us shaping Run 378: 250 mbar, 1.5 kV, 6us shaping Run 379: 250 mbar, 1.5 kV, 2us shaping again positioned source about 0.15" above ground plate Run 381: 50 mbar, 0.75 kV 2us shaping Run 382: 50 mbar, 0.75 kV, 6us shaping Run 383: 75 mbar, 1.0 kV, 2us shaping Run 384: 100 mbar, 1.0 kV Run 385: 150 mbar, 1.25 kV Run 386: 200 mbar, 1.5 kV Run 387: 250 mbar, 1.5 kV Run 389: 400 mbar, 1.5 kV Run 390: 600 mbar, 1.5 kV Run 391: 800 mbar, 1.5 kV collimated source attached to biased plate facing down Run 392: 50 mbar, 0.75 kV compare to run 353, looks cleaner! Run 393: 75 mbar, 1.0 kV at low pressures, alphas are passing through, so collimated alphas deposit less energy than sideways alphas Run 395: 100 mbar, 1.0 kV Run 396: 125 mbar, 1.0 kV run 356->low energy tail now after alphas are fully stopped, collimated alphas have higher energy than sideways alphas. doesnt sound like columnar recombination. Run 397: 150 mbar, 1.25 kV Run 398: 175 mbar, 1.25 kV Run 399: 200 mbar, 1.5 kV Run 400: 300 mbar, 1.5 kV Run 401: 800 mbar, 1.5 kV So we have a peak the whole time, and as pressure increases the energy decreases, which is probably recombination. Not sure why collimated alphas have typically higher energies.

25586	Mon Mar 25 11:46:05 2013	LJB

UCNS Run 336: 100 mbar, 1.0 kV, checking noise: still pretty bad Grounding to the pumping station seems to be the source, just need to disconnect the line for each run reducing thresholds Run 340: 100 mbar, 1.0 kV noise looks great! Run 341: 125 mbar, 1.0 kV raising threshold a hair Run 343: 150 mbar, 1.25 kV Run 344: 175 mbar, 1.25 kV Run 345: 200 mbar, 1.5 kV lines up nicely on run 315 Run 346: 300 mbar, 1.5 kV Run 347: 400 mbar, 1.5 kV Run 348: 800 mbar, 1.5 kV Checking at lower pressures Run 349: 125 mbar, 1.0 kV check gain, ok Run 351: 75 mbar, 1.0 kV Run 352: 50 mbar, 0.75 kV Removing washer between ground plate and Al window Run 353: 50 mbar, 0.75 kV shape changes Run 354: 75 mbar, 1.0 kV Run 355: 100 mbar, 1.0 kV Run 356: 125 mbar, 1.0 kV Run 357: 150 mbar, 1.25 kV starts to turn around Run 358: 175 mbar, 1.25 kV Run 359: 200 mbar, 1.5 kV Run 360: 300 mbar, 1.5 kV Run 361: 400 mbar, 1.5 kV Run 362: 800 mbar, 1.5 kV Run 363: 800 mbar, 2.0 kV Run 364: 100 mbar, 1.0 kV check gain

25585	Sat Mar 23 06:24:27 2013	MFMakela

LHe system is shutdown for breaker testing

25584	Fri Mar 22 19:27:50 2013	LJB

UCNS: Step between ground plate and window still installed. 148Gd source installed next to

241Am, about 1" off center. Going to take spectra together to set possible gain differences. Run 255: 100 mbar, 1.0 kV, 2us shaping is that noise or 148Gd? Run 256: 150 mbar, 1.25 kV okay it's noise, raising thresholds Run 262: 150 mbar, 1.25 kV Run 263: 200 mbar, 1.5 kV Run 264: 225 mbar, 1.5 kV Run 265: 250 mbar, 1.5 kV nice one for comparison (see run 121) Run 266: 275 mbar, 1.5 kV Run 267: 300 mbar, 1.5 kV Run 268: 400 mbar, 1.5 kV Run 269: 500 mbar, 1.5 kV Run 270: 600 mbar, 1.5 kV Run 271: 800 mbar, 1.5 kV Run 272: 800 mbar, 2.0 kV small change Run 273: 1000 mbar, 2.0 kV Run 274: 400 mbar, 2.0 kV checking stability of gain Run 275: 400 mbar, 1.5 kV looks like there is a small change from 268 Run 276: 250 mbar, 1.5 kV wow, big change from 265 pump down and refill to 250 Run 278: 250 mbar, 1.5 kV different from 276 and 265 Run 279: 250 mbar, 1.5 kV slightly different from 278 wait 5 minutes with HV on Run 280: 250 mbar, 1.5 kV drifted a bit more turn off HV for a few minutes, turn on and take a run Run 281: 250 mbar, 1.5 kV drifted even more Okay so gain doesnt care about how long the HV was on. removing step between ground plate and window to cross check that data. oring was unseated, probably had small air leak during those runs Run 282: 100 mbar, 1.0 kV Run 283: 150 mbar, 1.25 kV raising thresholds Run 286: 150 mbar, 1.25 kV Run 287: 200 mbar, 1.25 kV Run 288: 200 mbar, 1.5 kV raising thresholds a bit more Run 291: 225 mbar, 1.5 kV Run 292: 250 mbar, 1.5 kV Run 293: 275 mbar, 1.5 kV Run 294: 300 mbar, 1.5 kV Run 295: 350 mbar, 1.5 kV Run 296: 400 mbar, 1.5 kV Run 297: 600 mbar, 1.5 kV Run 298: 800 mbar, 1.5 kV Run 299: 1000 mbar, 1.5 kV Run 300: 400 mbar, 1.5 kV Run 301: 250 mbar, 1.5 kV small shift Replace washer between ground plate and window, move 241Am to window. 148Gd still 1" from center. Run 302: 100 mbar, 1.0 kV Run 303: 150 mbar, 1.0 kV Run 304: 150 mbar, 1.25 kV increasing thresholds again Run 306: 200 mbar, 1.25 kV Run 307: 200 mbar, 1.5 kV Run 308: 300 mbar, 1.5 kV Run 309: 350 mbar, 1.5 kV Run 310: 400 mbar, 1.5 kV Run 311: 600 mbar, 1.5 kV Scratch all that, didn't tighten flange Run 312: 150 mbar, 1.0 kV lowering thresholds Run 313: 150 mbar, 1.0 kV Run 314: 200 mbar, 1.0 kV Run 315: 200 mbar, 1.5 kV Run 316: 300 mbar, 1.5 kV Run 317: 350 mbar, 1.5 kV Run 318: 400 mbar, 1.5 kV Run 319: 800 mbar, 1.5 kV Run 320: 200 mbar, 1.5 kV Moving 148Gd source to center, keeping 241Am on ground plate as reference Run 321: 150 mbar, 1.0 kV raising threshold, noise very high Run 324: 200 mbar, 1.5 kV Run 325: 300 mbar, 1.5 kV not much change Removing 241Am source, now only 148Gd attached to biased plate, with step between ground plate and Al window Run 326: 100 mbar, 1.0 kV lowering threshold Run 327: 100 mbar, 1.0 kV Run 328: 125 mbar, 1.0 kV Run 329: 150 mbar, 1.0 kV probably turns around about here Run 330: 175 mbar, 1.0 kV Run 331: 200 mbar, 1.0 kV Run 332: 200 mbar, 1.5 kV same Run 333: 400 mbar, 1.5 kV pretty much lost in noise Run 334: 800 mbar, 1.5 kV too noisy going back down Run 335: 150 mbar, 1.5 kV noise is worse than before Need to fix noise to get useful info out of this

25583	Fri Mar 22 14:39:31 2013	LJB

UCNS: Notes from when logbook was down a couple days ago. Temporary Logbook: March 19, 11:45am Using new gas cylinder only CF4, probably old cylinder had some impurities. Repeat scan Run 180: 100 mbar, 1.0 kV Run 181: 150 mbar, 1.25 kV adjusting thresholds a bit Run 184: 200 mbar, 1.5 kV Run 185: 300 mbar, 1.5 kV Run 186: 400 mbar, 1.5 kV Run 187: 600 mbar, 1.5 kV Run 188: 800 mbar, 1.5 kV Run 189: 1000 mbar, 1.5 kV Run 190: 1000 mbar, 2.0 kV very small change due to bias zooming in on turning point Run 191: 350 mbar, 1.5 kV Run 192: 275 mbar, 1.5 kV Run 193: 250 mbar, 1.5 kV Run 194: 240 mbar, 1.5 kV Run 195: 230 mbar, 1.5 kV Next remove washer between ground plate and aluminum window to see effect of step, may be causing double peak. Run 196: 100 mbar, 1.0 kV lowering threshold again Run 197: 100 mbar, 1.0 kV Run 198: 150 mbar, 1.25 kV Definitely looks like we lost double peak, but shape is different Run 199: 200 mbar, 1.5 kV Run 200: 220 mbar, 1.5 kV Run 201: 240 mbar, 1.5 kV Run 202: 230 mbar, 1.5 kV Run 203: 250 mbar, 1.5 kV Run 204: 275 mbar, 1.5 kV Run 205: 300 mbar, 1.5 kV Run 206: 350 mbar, 1.5 kV Run 207: 325 mbar, 1.5 kV turns around about here Run 208: 310 mbar, 1.5 kV Run 209: 400 mbar, 1.5 kV shape is same, gain slightly different Run 210: 600 mbar, 1.5 kV Run 211: 800 mbar, 1.5 kV Run 212: 1000 mbar, 1.5 kV Run 213: 1000 mbar, 2.0 kV Run 214: 1000 mbar, 2.0 kV, 2us -> 1us shaping Run 215: 1000 mbar, 2.0 kV, 0.5us shaping looks same? Run 216: 1000 mbar, 2.0 kV, 3us shaping Run 217: 1000 mbar, 2.0 kV, 6us shaping Run 218: 1000 mbar, 1.5 kV, 6us shaping same as 2kV Run 219: 1000 mbar, 1.5 kV, 1us shaping same as 2kV Run 220: 1000 mbar, 1.5 kV, 0.5us shaping same as 2kV Run 221: 600 mbar, 1.5 kV, 0.5us shaping Run 222: 600 mbar, 2.0 kV, 0.5us shaping very small shift from 1.5kV Run 223: 600 mbar, 2.0 kV, 1us shaping Run 224: 600 mbar, 1.5 kV, 1us shaping Run 225: 600 mbar, 2.0 kV, 2us shaping Run 226: 600 mbar, 1.5 kV, 2us shaping doesnt match run 210? Run 227: 400 mbar, 1.5 kV, 2us shaping doesnt match run 209, what is going on? Run 228: 400 mbar, 2.0 kV, 2us shaping Run 229: 400 mbar, 2.0 kV, 3us shaping matches 209? did I have it on 3us shaping before? spot check Run 231: 600 mbar, 2.0 kV, 3us shaping closer to 210 but not quite Run 232: 600 mbar, 1.5 kV, 3us shaping also run 213 and 216 don't match, but 214 and 215 did, maybe knob is loose? Actually, 232 matches 187 check 0.5us and 1us again Run 233: 600 mbar, 1.5 kV, 1us shaping Run 234: 600 mbar, 1.5 kV, 0.5us shaping The spectra are identical, but waveforms on scope definitely change Run 235: 1000 mbar, 1.5 kV, 2us shaping -- matches run 212 Run 236: 1000 mbar, 2.0 kV, 2us shaping -- matches run 213 Run 237: 1000 mbar, 2.0 kV, 3us shaping -- matches run 216 (and 190) Run 238: 800 mbar, 1.5 kV, 2us shaping -- doesnt match 211 or 188 Run 239: 800 mbar, 1.5 kV, 3us shaping matches run 188 is it a coincidence that the runs at 3us match those with the step in the window? turn voltage off and back up, move shaping around then back Run 240: repeat 800 mbar, 1.5 kV, 3us shaping -- slightly higher gain than 239 Run 241: slightly adjust voltage, matches 240 Run 242-4: adjust shaping time then back to 3us; still matches 240 Run 245: 800 mbar, 1.5 kV, 2us shaping -- slightly higher gain than 238 perhaps there is a time

(temperature?) dependent gain shift accounting for those changes of up to 10%? Run 246: 400 mbar, 1.5 kV, 2us shaping matches 227 but not 209 March 20 Run 247: same thing next day, almost 10% increase in gain. since it is noticeably warmer I'm going to attribute it to temperature evacuate and refill to 400 mbar Run 248: matches run 246! might be a chamber leak then? doesn't explain previous differences. let's see if gain of turn-around point has changed, or just pressure of point Run 249: 350 mbar, 1.5 kV, 2us shaping Run 250: 325 mbar, 1.5 kV, 2us shaping Run 251: 310 mbar, 1.5 kV, 2us shaping Run 252: 300 mbar, 1.5 kV, 2us shaping Definitely a 5% jump in gain from runs 205-208, also noticeable in noise, may be why I had to adjust thresholds So, compare runs: run 116 (400 mbar, old CF4) vs run 186 (400 mbar, new CF4): noise threshold is up, but gain is down, probably a real difference run 127 (max E observed, 250mbar old CF4) vs run 193 (max E observed, 250mbar new CF4) noise threshold is higher though gain is lower in run 193, but max E is at very nearly same pressure. bottles must have been the same, I'm just seeing a weird gain + noise combo difference. run 193 (with step between ground plate and window) vs run 203 (without step) noise threshold and gain both appear lower in 203, it could be same max energy; hard to say with very different shapes Maybe check for sure, do with/without step at 250mbar in shorter window of time Run 252: 250 mbar, 1.5 kV, 2us shaping, no step Run 253: 250 mbar, 1.5 kV, 2us shaping, with step So difference in max energy is real

25582	Fri Mar 22 09:30:56 2013	MFMakela

1630 is running without LN2 precooling. .17 inches per hour has been held through a SCS fill. ~.17*70 ~12 liters/hr

Attachment 1: oLN2.png

oLN2.png

25581	Thu Mar 21 22:36:14 2013	LJB

UCNB: SCS is up and slowly biasing up the UCNB detector until we zapped something (preamp?) at about -21kV. Noise is crap so we're going to call it. Plotting the centroid of largest peak vs voltage, it comes down nice and linearly as we increase the bias.

Attachment 1: age.gif

age.gif

25580	Wed Mar 20 22:37:41 2013	LJB

UCNB: SO. Run 656: The sources are in there. Run 658: Now they are 180 degrees over. Run 660: push in 0.25in Run 661: back to center, then push out 0.25in Run 662: push out another 0.25 in

25579	Mon Mar 18 19:33:20 2013	LJB

Acquired new bottle of CF4. Grabbing rest from bottle on pumping station, about 650 mbar left. Going back down to 600 mbar to check spectrum against Run 118. Run 174: oops not at 2us Run 175: good, matches Connected new bottle of CF4, going up to 800 mbar. Pressure tested regulator okay, valve okay. No leaking pressure after several minutes at 30psi. Run 176: doesn't match run 119? sanity check, pump down to 600 mbar again. Run 177: looks different from 175 and 118 Try pumping out completely and coming back up to 600mbar, maybe leak? Double checking integrity of lines, closed off cylinder (very hard to open and close), pumped out, closed valve after regulator 6:52 -6.00 mbar 6:56 no change open valve after regulator, regulator closed 7:00 -6.03 mbar 7:08 no change valve open, regulator open, looking all the way to closed gas cylinder 7:10 -6.00 mbar 7:19 -5.96 mbar small change gas cylinder open, regulator closed 7:24 -6.03 mbar still no change okay fill chamber to 600 mbar Run 179: even lower gain than 177 why would 600 mbar of new bottle CF4 not look like 600 mbar of old bottle CF4? Different impurities?

25578	Fri Mar 15 17:12:18 2013	LJB

Repeating scan with Argon since we are out of CF4 for a cross check. Run 141: 800 mbar Ar, 1.0 kV Run 142: 800 mbar Ar, 1.25 kV Run 143: 800 mbar Ar, 1.4 kV Run 144: 800 mbar Ar, 1.4 kV, shaping time 2->3us Run 145: 800 mbar Ar, 0.5 kV, shaping time 2 us real effect on gain this time Run 146: 1000 mbar Ar, 0.5 kV Run 147: 1000 mbar Ar, 1.0 kV Run 148: 1000 mbar Ar, 1.4 kV Run 149: 600 mbar Ar, 1.0 kV Run 150: 600 mbar Ar, 0.75 kV Run 151: 600 mbar Ar, 0.5 kV Run 152: 100 mbar Ar, 0.25 kV Run 153: 100 mbar Ar, 0.25 kV Run 154: x50-x200 gain Run 155: x50 gain, 200 mbar Ar, 0.25 kV Run 156: 200 mbar Ar, 0.5 kV Run 157: 400 mbar Ar, 0.5 kV Run 158: 400 mbar Ar, 0.75 kV Not sure how useful this is if I can't saturate the voltage. Trying maximum shaping time 10us Run 159: 400 mbar Ar, 0.75 kV, 10us shaping time Run 160: 400 mbar Ar, 0.5 kV, 10us Run 161: 800 mbar Ar, 0.5 kV, 10us Run 162: 800 mbar Ar, 1.0 kV, 10us Run 163: 800 mbar Ar, 1.25 kV, 10 us Seems to almost remove dependence on gain Run 164: 1000 mbar Ar, 1.5 kV, 10us Run 165: 1000 mbar Ar, 1.25 kV, 10us Run 166: 600 mbar Ar, 1.0 kV, 10us Run

167: same Run 168: 700 mbar Ar, 1.0 kV, 10us Run 169: 900 mbar Ar, 1.25 kV, 10us Run 170: 750 mbar Ar, 1.25 kV, 10us Run 171: 725 mbar Ar, 1.25 kV, 10us Run 173: 650 mbar AR, 1.0 kV, 10us

25577	Thu Mar 14 15:08:58 2013	LJB

241Am source taped to biased plate, facing down. Pumped down, purged with argon, pumped down. Run 112: 150 mbar CF4, 1.25 kV Run 113: 200 mbar CF4, 1.5 kV Run 114: 300 mbar CF4, 1.5 kV Run 115: 350 mbar CF4, 1.5 kV Run 116: 400 mbar CF4, 1.5 kV Run 117: 400 mbar CF4, 2.0 kV Run 118: 600 mbar CF4, 1.5 kV Run 119: 800 mbar CF4, 1.5 kV Run 120: 875 mbar CF4, 1.5 kV -- CF4 bottle is out! Looking at more at lower pressures since I'm out of CF4 Run 121: 250 mbar CF4, 1.5 kV Run 122: 275 mbar CF4, 1.5 kV Run 123: 270 mbar CF4, 1.5 kV Run 124: 265 mbar CF4, 1.5 kV Run 125: 260 mbar CF4, 1.5 kV Run 126: 255 mbar CF4, 1.5 kV Run 127: 250 mbar CF4, 1.5 kV (repeat) Run 128: 245 mbar CF4, 1.5 kV Run 129: 240 mbar CF4, 1.5 kV peaks are turning back around Run 130: 220 mbar CF4, 1.5 kV Run 131: 175 mbar CF4, 1.5 kV Run 132: 175 mbar CF4, 1.25 kV Run 133: 125 mbar CF4, 1.25 kV Run 135: 100 mbar CF4, 1.0 kV Run 136: 75 mbar CF4, 0.75 kV Run 137: 25 mbar CF4, 0.5 kV Run 138: 25 mbar CF4, 0.5 kV, x50 -> x200 gain Run 139: 50 mbar CF4, 0.75 kV, x50 gain Run 140: 50 mbar CF4, 0.75 kV x200 gain Am I resolving the separate alpha peaks or is something funny going on? pumping out chamber, filling with argon

25576	Wed Mar 13 16:49:53 2013	LJB

Let's repeat this with the source attached to the biased plate. We should see the mirror image effect. Pumping down chamber and filling with argon to move source.

25575	Wed Mar 13 16:48:23 2013	LJB

We're seeing the range of the 241Am alphas in the chamber. Lower energies is lowest pressure (farthest range) and higher energies is highest pressure (short range). Pressures (in mbar) 150,200,300,350,400,600,800,1000

Attachment 1:

25574	Wed Mar 13 16:40:03 2013	LJB

241Am source resting on aluminum window (same configuration as before) Run 94: 200 mbar CF4; 0.5 kV bias Run 95: 200 mbar CF4; 1.0 kV bias Run 96: 200 mbar CF4; 1.5 kV bias change bias -> looks same Run 99: 400 mbar CF4; 0.5 kV bias Run 100: 400 mbar CF4; 1.0 kV bias Run 101: 400 mbar CF4; 1.5 kV bias Run 102: 400 mbar CF4; 2.0 kV bias change pressure -> shape changes change bias -> small shift in gain Run 103: 300 mbar CF4; 0.5 kV bias Run 104: 300 mbar CF4; 1.5 kV bias Progession of change in spectrum is kind of interesting Run 105: 350 mbar CF4; 1.5 kV bias Run 106: 600 mbar CF4; 1.5 kV bias Run 108: 800 mbar CF4; 1.5 kV bias Run 109: 800 mbar CF4; 2.0 kV bias Run 110: 1000 mbar CF4; 1.5 kV bias Run 111: 150 mbar CF4; 1.25 kV bias

25573	Tue Mar 12 20:42:38 2013	LJB

Replacing 238U foil with plain 20 mil aluminum to see effect of moving around sources. Disassembled fission chamber. We now have the 10" CF nipple, blanked off, with pumpout port as before. Coupler window holder + aluminum window + clamp + 7" dia ground plate placed in chamber, just resting on bottom flange. A second 7" dia solid plate is stood off ~1.5" above ground plate using nylon screws. Ground plate is surrounded by small squares of beam poly to prevent edges of biased plate from touching chamber walls. "Leak check" Pumped down then valved off pump. -5.2 mbar at 7pm. -5.0 mbar at 7:10pm. Pumping/purging to 100 mbar argon a few times. Filling to 800 mbar CF4 for no fission foil background run. Run 88: 0.5 kV Run 89: 1.0 kV Run 90: 1.5 kV Run 93: 2.0 kV

25562	Tue Mar 12 12:29:41 2013	LJB

Wedding cake assembly: External: 10" CF blankoff - 10" nipple with 1 1/3" miniCF pumpout port (6" long) - 10" to 8" CF adapter (5.5" long) - 8" to 6" CF adapter (5" long) - 6" ceramic break (5.25" long) - 6" to UCN guide adapter (0.75" long) - guide clamp + washer (0.75") -> 4.5" long guide (exposed) - guide clamp + washer (0.625" long) - guide coupler (4" long) - guide assembly with VCR pumpout port (3.5" long) - guide coupler (4" long) - guide clamp (0.5" long) - 90deg elbow guide (~11" to PPM axis) Internal: 7" dia biased foil - ~1.5" nylon screws - 7" dia grounding plate with 3" ID - 0.5" guide clamp - 10 mil aluminum UCN window - sitting on (1.5" long externally) guide coupler window mount (1/8" long lip exposed) - (4" long externally) guide reducer (within 0.25" of coupler lip exposed) - 26" long guide - 8.25" guide inside guide pumpout region - 90deg elbow guide (x" vertical)

25572	Tue Mar 12 11:38:08 2013	LJB

UCNS Removed 238U foil. Aluminum window has small puncture in middle.

25571	Tue Mar 12 10:36:11 2013	MFMakela

RGA scans of what was distilled from the source D2. Air....

Attachment 1:

25570	Mon Mar 11 09:25:40 2013	LJB

Run 81: repeat 241Am source in 800 mbar CF4 Run 83: 600 mbar CF4 Run 85: 400 mbar CF4 Unseated the aluminum window when trying to go to 1000 mbar

25569	Sun Mar 10 12:49:35 2013	MFMakela

Distilling the UCN source - Mark KNF pump on I'll be back later to finish it

25568	Sun Mar 10 11:35:21 2013	MFMakela

UCNB vacuum 3/9 1:20 pm 5.8e-6 torr Opening cold cryo to the vacuum 3/9 1:30 pm 2.2-6 torr (the cryo is pumping) 3/10 11:30 9.3e-7 torr

25567	Fri Mar 8 14:11:41 2013	LJB

Run 66: Biased to 1.7kV. Signals don't look great on scope. Run 67: Biased to 1kV Run 68: 500V Run 69: 200V Can't resolve the 241Am peaks. Not sure what fixed it, but signals on scope look much more reasonable now, still have undershoot. Run 74: Bias 1.7kV, gain x50, shaping time 0.5us Run 75: shaping time 2us Run 76: shaping time 6us Run 77: Bias 2kV shaping time 2us. scope seems ok... nope. dropping bias back down.

25566	Fri Mar 8 11:10:16 2013	LJB

Installed 241Am source, taped facing down on aluminum window. Pumping and purging with argon a few times. Filling with 800mbar CF4.

25565	Tue Mar 5 13:54:34 2013	LJB

UCNS: Pumped out CF4 in fission chamber, put in 800mbar argon.

25564	Mon Mar 4 11:17:33 2013	LJB

UCNS Took a long background just to see if there were any interesting features. With accelerator off we can reduce threshold. Run 52: 3000s. Run 53: Reduced course gain on amp x50 -> x20. 3050s Run 56: Course gain x20 -> x100

25560	Sun Mar 3 11:59:20 2013	bz

UCNB Update After getting everything in place, we were able to see signals without the magnetic field on. We then biased to 20kV safely, and everything was organized so that we could ramp the magnet and begin to take neutron data. After the ramp, however, we were unable to see a signal from the detector. We are also unsure if UCN are reaching the decay trap because the HV supply for the SCS drop detector is missing. Attempts to use another supply met with failure. We ramped down and looked for the problem (which was behind the plastic shield). EDIT: Actually, we did not look for it. Sky and Hasan were clearly at a point of exhaustion, so we called it. We will troubleshoot and perfect the system during the beam off.

25563	Sat Mar 2 15:49:37 2013	LJB

Results

Attachment 1:

25561	Sat Mar 2 15:15:53 2013	LJB

UCNS: Wedding cake installed just downstream of PPM. Did not need to scavenge UCNTau for couplers. U238 foil biased to +2kV. 500 mbar Ar, 300 mbarr CF4. Bottom of cake about 51" below center of PPM guide. Using Chris' DAQ to take data. Reading fission chamber on "C MCA" and UCN GV monitor on "A MCA". Files saved to C:\UCN2012\UCNS\UCNS### (C MCA) and GVMon-A1-run### (A MCA) Run 4: Gate valve open, 904s Run 6: Gate valve closed, 902s Run 7: Gate valve closed, 1300s, clean background without anyone nearby (modulo Chris Morris poking around) Evacuating chamber. Argon causes too much neutron scattering. Filling to 800 mbarr CF4. Biased foil to +2kV. Added capacitor before amp to block microphonics. Increased gain. Run 12: Gate valve

open, 602s Run 13: Gate valve closed, 601s Added 20 mbarr He3. Did some jiggering to get the noise way down (aluminum foil ftw), increased gain again. Pump bellows is clamped to lead brick to damp possible vibration. Run 17: Gate valve open, 403s Run 19: Gate valve open, valve off and power off guide pump to reduce noise further (DAQ froze/reset at 350s) Run 32: Gate valve closed, guide pump still off, 402s Cleaned up noise a fair bit more with more grounding. Pumping again. Run 34: Gate valve open, 603s Run 35: Gate valve closed, 273s Evacuating chamber, putting back in 800 mbarr CF4 to compare spectra with same gain. Run 36: Gate valve open, 627s Run 37: Gate valve closed, 1096s It doesn't look like the He3 made a difference. We're going to pump down the chamber again and try adding more. 800mbar CF4 + 100 mbar He3 + 15 mbar CF4. Theory is that we didn't push the He3 into the chamber. Run 38: Gate valve open. HUGE peak now. We made a UCN detector. 603s Run 39: Gate valve closed. 242s We still have an hour so we're going to try to vary the amount of He3. Pumping down chamber. Adding 2.1? mbarr (just by the relative increase on the mensor, from -1.5mbar to 0.5mbar) of He3. Adding 800 mbarr CF4. Run 40: Gate valve open. He3 peak is about half. 630s. Dilute by order of magnitude. Pump down system to 80mbar, then refill with CF4 to 800 mbar. Run 44: Gate valve open. Run 45: Gate valve closed. Poof! Run 46: Beam off background!

25559	Fri Mar 1 18:06:47 2013	LJB

Foil is installed in the wedding cake. We're leak tight and ready to detector-ize.

25558	Thu Feb 28 23:19:23 2013	CYLiu

Looped storage run at 200 seconds, going to switch to 2000 seconds soon. run storage 307 200 s, 6 cycles 308 meant to be a 2000 s storage loop run. only one run looped, then daq crashed. trying again. 309 2000 s storage loop, 2 runs at 2000 s, final at 200 (only recorded one 2000 run) 310 entered invalid value in daq. junk run 311 1 run at 200 s, one run at 2000 s. 12:10am Mark is ready for beam. Vent the system. This is the end of this beam cycle for us.

25557	Thu Feb 28 18:58:27 2013	CYLiu

Most likely this is the last night of beam time. Today, UCNB successfully biased to -30kV and will need UCN in ~ 12 hours. Goal tonight: -> get high statistics with storage time of 200s and 2000s Need to turn off 20Hz beam (before RF modules) during beam inhibit. Try to use the loop function in the slow control program. -> Need to give the beam inhibit signal to CCR, so that they can manually turn off the 20Hz when we don't need beam run # storage T (s) # cycles notes

25556	Thu Feb 28 06:46:39 2013	CYLiu

During the day: -> More borated plastic added to the drift tubes. -> tried to pump & cycle the ball valve & tighten the nut, but still have air leaks. Starting pressure of the vacuum chamber: 1.8e-5 torr Goal tonight: -> Lifetime measurement using dump & fill -> Use V as a cleaner at different height, measure lifetime Fill time: 150 s shutter close: 30 s after the gate valve open cleaner: 30 s AFP on, 2Vpp, AFP BO +4.460A, coil after PPM off trap door position: 0V during fill run # storage T(s) note 270 200 BG run, gate valve does not open all the way, air leaking from the solenoid 271 200 BG run, gate valve still does not quite open. unplug & cycle a few times. 272 200 BG run, ball valve was closed. The ball valve was closed, the guide was not fully pumped down. After turning the ball valve in the open position, the power on the turbo pump increases to full power & temperature is approaching 60 degree C limit. Need to fill the gate valve region with Ar in order to proceed with trouble shooting. Cycled ball valve, left in open position by valving off exhaust on solenoid. Spinning up turbo again. Ball valve is set to open, with air line pressurized. Ball valve drifted to half-closed position, reopen the ball valve & let all the air pressure out of the exhaust line. Chamber pressure: 4.1e-5 torr. GV monitor rate ~ 120 Hz (GV open) Boron detector rate during fill: 600/200 Hz (shutter open/closed) run # storage T(s) note 275 200 276 200 277 200 AFP power increased to 5Vpp, then dialed back to 2Vpp after the run 278 1770 279 500 280 2000 -> Pressure: 2.2e-5 torr 281 UCNTau Command failed, restart 282 1500 scs ramped up 283 1000 lost beam? 284 1000 285 -- run aborted 286 2000 287 100 288 2000 289 1500 lost beam 290 300 lost beam 291 junk 292 junk 293 300 lost beam after ~40s 294 300 295 1500 296 gate valve failed to open, run aborted 297 1500 298 800 ->gate valve not responding for 299,300,301. reset UCNTau.py 302 2000 303 1200 304 gate valve failed to open, run aborted 305 2000 beam fluctuation during fill

25552	Wed Feb 27 08:44:46 2013	LJB

UCNS: UCN Seaborg? Filled Ortec Ge detector. Takes about 1 jug after filling 7pm last night.

25551	Wed Feb 27 05:01:21 2013	CYLiu

Goal today: 1. V activation, change the threshold on beta singles to optimize S/N 2. Optimize UCN into the trap by changing the "close" trap door position 3. Vary V activation time & height, record V beta rate & B detector (for redisual UCN drained out of the trap). 4. Use V as a cleaner at different height, measure lifetime (with B detector) for different spectral

group. FD: fill & dump Vact: V activation AFP on, 400 kHz, 1 Vpp, AFP B0 current 4.460A, coil after PPM on Holding field current: 300 A Helmholz coil current: 0 A Trap door open: 0V Still only 2 NaI detectors. GV monitor rate: 100 Hz (GV open), a bit too low? Pressure (chamber): 1.3e-5 torr (measured with 300 A holding field current) run # Mode fill(s) store(s) Note 234 FD test, Boron detector HV bias turned on after the run starts 235 V 100 0 beta threshold -50 mV, V exposed during the whole fill time 236 V 100 0 beta threshold -25 mV 237 V 100 0 beta threshold -75 mV 238 V 100 0 beta threshold -25 mV, one detector? 239 V 100 0 beta threshold -150 mV, one detector? 240 V 100 0 beta threshold -50 mV, only changed on detector 241 V 100 0 beam off background 242 FD 150 100 trap door open: 5V, closes: 8.5V, dump: 0V, piston power plugged in after the run starts 243 FD 150 100 trap door open: 5V 244 FD 150 100 trap door open: 6V, retunning the proton beam right after the run 245 FD 150 100 trap door open: 3.5V 246 FD 150 100 trap door open: 7.0V 247 FD 150 100 trap door open: 5.0V, AFP off, Helmholz coil off 248 FD 150 100 trap door oepn: 5.0V, AFP off, Helmholz coil on, holding field current 300A 249 FD 150 100 trap door open: 5.0V, AFP off, Helmholz coil on, Holding field current 150A 250 FD 150 100 trap door open: 6.0V. AFP on, Helmholz coil on, Holding field current 300A 251 FD junk 252 FD 250 100 piston 6.0V 253 FD 250 100 piston 6.0V 254 FD 350 100 piston 6.0V 255 FD 450 100 piston 6.0V 256 FD 100 100 trap door open: 3.5V 257 FD 100 100 trap door open: 3.5V, coil after PPM off, AFP 2Vpp 258 FD 200 100 trap door open: 3.5V, coil after PPM off, AFP 2Vpp 259 FD 200 100 trap door open: 3.5V, coil after PPM off, AFP 2Vpp, reverse AFP B0 (+4.460A) 260 V 150 10 V dagger fully down (V exposed 20s for all that follow) 261 V 150 50 262 V 150 80 263 V 150 120 264 V 150 10 V dagger down 80% 265 V 150 50 266 V 150 80 267 V 150 10 V dagger down 90% 268 V 150 50 269 V 150 80 V dagger reset to 100% down (700000 steps) after this run Note: the GV monitor rate is ~ 0.5 as on 2/24, the source needs melt & refreeze

25547	Tue Feb 26 18:19:13 2013	DJS

Fe foil tuning results: contrast same as before. Slightly increased contrast with new coil after PPM turned on. Contrast roughly 220/150. Moved birdcage further upstream & downstream, reduced contrast, placed back into original location. Tune: 400 kHz, 1V pp, RF power ~ 1W, 4.460 Amps, No field zeros found with gauss meter. Proceeding with afp on/afp off storage measurement. Using GV monitor as normalization, since Fe foil efficiency depends on afp state. run storage time AFP state helmholz pancake current 203 100 on 10 204 200 on 10 205 200 off 10 206 200 off 20 207 200 off 0 208 200 off 0 209 200 on 0 210 200 on 0 run plan for rest of night: hunt for field zeros (optional) change piston open position to ~3.5V. Perform filling optimization. Store neutrons for fixed time, comparing open position of 3.5V to 0.0V. take fixed filling/storage time measurement, with vanadium detection. Look at signal and noise for different threshhold settings (currently at -0.05V for each det. change to, say, -0.03 for each, and then -0.1 for each). Vent system when beam off.

25548	Tue Feb 26 05:01:15 2013	E.R.Adamek

We will be varying the open position for the piston to optimize storage density. Piston default height set to 3.5V, fill time will be varied for a 100s storage time (F&D) run type fill(s) comments 212 FD 200 213 FD 100 coils off, run not considered 214 FD 50 coils off, run not considered 215 FD 50 216 FD 100 217 FD 200 218 FD 50 219 FD 100 220 FD 150 -> Piston open position moved to 0V 221 FD 200 222 FD 250 CCR retuned beam during dump 223 FD 50 224 FD 150 225 FD 50 226 FD 100 227 FD 200 228 FD 100 229 FD 250 -> Piston open position moved back to 3.5V 230 FD 250 231 FD 200 -> Not enough time to try a different piston setting. We will repeat some measurements with the AFP off at piston open position 3.5V. 232 FD 150 AFP off 233 FD 100 AFP off, beam time ended during end of fill

25550	Tue Feb 26 03:38:17 2013	CCW

CCR reported a beam spill that tripped the target 2 blue room and requested 5 minutes to study the issue. Switched over to UCNA beam enable during the storage of run 222, and they ran a few nA while the gate valve was closed. Failed to switch back to tau beam enable before they returned to 5/5, so we may want to discard the end of that run.

25549	Tue Feb 26 03:14:43 2013	CCW

CCR reported a beam spill that tripped the target 2 blue room and requested 5 minutes to study the issue. Switched over to UCNA beam enable during the storage of run 222, and they ran a few nA while the gate valve was closed. Failed to switch back to tau beam enable before they returned to 5/5, so we may want to discard the end of that run.

25546	Mon Feb 25 23:38:51 2013	DJS

Upon reconnecting Fe foil, amplifier settings left the same as they were for the 10B detector. The gain is therefore lower, but it doesn't seem to affect the counting rate.

25545	Mon Feb 25 20:56:58 2013	DJS

Beam on, tuned Earlier this evening, replaced 10B detector with Fe foil monitor, pumped down. Vacuum at 1.2e-5. for GV/PPM foil volume: scroll pump on, turbo spun down. Opened SV4 and SV5,

pumped. Spun up turbo. Closed SV4, spun down turbo. Connected GV air, opened air valve, and connected 24V power. GV opened, UCN source pressure stable. GV monitor rate nominal. Currently looking at Fe foil contrast versus holding field current, AFP state, and guide holding coil current: coil on first guide coupler after PPM, as well as pancake coils on rectangular vacuum extension near trap door. Will report findings of study.

25544	Mon Feb 25 14:51:04 2013	DJS

Diagnosis of low GV monitor count rates last night: quadrupole tripped in the accelerator, beam recovered, but GV rate was ~30 Hz. Had CCR retune, but GV rate was still 20-30 Hz. Ostensibly the problem was that the flapper had missed a trigger, and was flapping closed during the beam pulses, and open otherwise. To fix, close flapper in program while it is open between pulses.

25543	Mon Feb 25 04:48:41 2013	DJS

Abandoning VA storage time run. Data are somewhat spoiled by high BG. Will consult C. Morris, and perhaps test coincidences with 137Cs source while venting tomorrow. Vacuum currently at 7e-6 torr. Run plan for night: boron detector fill and dump storage time scan, with no cleaning Time permitting, brief storage time study, fill and dump, holding field off run storage time 169 200 170 500 171 50 172 100 173 10 174 80 175 40 176 200 beam trip 177 25 flapper did not resume flapping during run. 178 25 started flapping again -- beam still recovering 179 25 next several runs with no valves actuating, beam on for tuning 184 100 storage measurement with cleaner, no holding field. Tune did not recover previous UCN rate -- GV mon only ~30Hz 185 100 repeat run. shutter timing settings were incorrect. During tuning runs and run 184, was adjusting threshholds on beta/gamma hardware coincidence, so disregard strange changes in rate. LL/UL set to 0.1/4 Volts on beta/gamma hardware coincidence. Threshhold window was found to be set too high. 186 100 187 50 188 50 189 200 190 200 191 500 192 25 193 25 194 500

25542	Mon Feb 25 03:47:00 2013	DJS

plan for tomorrow after beam off: -vent between GV and PPM foil -vent lifetime system -replace 10B detector with Fe foil monitor -pump down things that could be done while venting/vented: -test beta/gamma coincidence signals with 137Cs source -acquire accelerometer from steven/young jin, place onto array -field mapping around guides -find drift tubes to make veto layer

25541	Sun Feb 24 22:00:57 2013	DJS

Here is the manual for the MPA3 software that is used for the fast daq. http://www.fastcomtec.com/ftp/manuals/mpa3doc.zip Here is the manual for the TADC modules. http://www.fastcomtec.com/ftp/manuals/7072tdoc.zip

25540	Sun Feb 24 21:41:51 2013	ATH

UCNtau: -> Starting V activation scans... VA => V activation EO => exposure time optimization BG => background (same as run but with GV closed) -> afp B0 coil at -4.460A Pancake coil on at 10A Coupler coil at 3.5A Run# Type hold[s] spin flipper holding coil[A] Comments ---------- ---------- - 153 EO 100 on 150 timing bad 154 EO 100 on 150 timing bad 155 EO 100 on 150 timing bad 156 EO 100 on 150 40s exposure 157 EO 100 on 150 20s exposure 158 EO 100 on 150 10s exposure -> V dagger exposure time set to 20s -> We will count V for 500s --- BG 100 on 150 DAQ autorestart (yet again!)... run terminated 159 BG 100 on 150 array CC Gauge: 8.4e-6 Torr @ 6:38pm 160 VA 100 on 150 161 BG 1000 on 150 162 VA 1000 on 150 163 VA 500 on 150 164 BG 500 on 150 165 BG 200 on 150 166 VA 200 on 150 167 BG 40 on 150 168 VA 40 on 150

25538	Sun Feb 24 15:24:10 2013	ATH

UCNtau: Beginning storage time scans... Run Timing: 0s GVopen, CLEANdown, SHUTopen 30s SHUTclose 230s TRAPup, SHUTopen 260s CLEANup 260s + hold TRAPdown Run# Type hold[s] spin flipper holding coil[A] Comments ---------- ---------- 106 FD 200 on 300 Holding field cleaning not done prior to this run 107 FD 1000 on 300 Holding field cleaning not done prior to this run 108 FD 40 on 300 Holding field cleaning not done prior to this run 109 FD 1500 on 300 Computer restarted automatically (again, just like last night!)... lost data :(109 FD 1500 on 300 Holding field not on. canceled run, restarted 110 FD 1500 on 300 111 FD 80 on 300 112 FD 2000 on 300 113 FD 10 on 300 114 FD 1500 on 300 115 FD 200 on 300 116 FD 2000 on 300 117 FD 2000 on 300 Run control plotter crashed, run aborted 118 FD 2000 on 300 Re-enabled channel 2B (hardware coincidence). was disabled upon reboot. 119 FD 1000 on 300 holding field PS failed at some point during run due to battery failure. Replaced with DC power supply. Working nominally. Run discarded for storage time, but still useful. 120 FD 1000 on 300 121 FD 500 on 300 122 FD 2000 on 300 123 FD 100 on 300 124 FD 800 on 300 125 FD 2000 on 300 126 FD 25 on 300 127 FD 1500 on 300 holding field off for first ~1200s, measurement consistent with background 128 FD 1500 on 300 desynchronization between software, run aborted 129 FD 1500 on 300 130 BG -

-- on 300 Started at ~8:40 am 131 BG 100 off 300 132 FD 100 off 300 133 FD 200 off 300 134 FD 1000 off 300 135 FD 200 on 300 reversed afp B0 field (-4.5A) 136 FD 200 off 300 reversed afp B0 field (-4.5A) 137 FD 200 on 150 afp B0 field not reversed (+4.5A), 1Vpp (redurced from 2Vpp) 138 FD 200 off 150 afp B0 field not reversed (+4.5A), 1Vpp (redurced from 2Vpp) -> afp B0 field current set to 4.460A after having drifted down to 4.5A 139 FD 200 on 150 afp B0 field not reversed (+4.46A), 1Vpp (reduced from 2Vpp) 140 FD 200 off 150 afp B0 field not reversed (+4.46A), 1Vpp (reduced from 2Vpp) 141 FD 200 on 150 afp B0 field reversed (-4.46A), 1Vpp 142 FD 200 off 150 afp B0 field reversed (-4.46A), 1Vpp -> Holding coil current reversed 143 FD 200 off 150 afp B0 field reversed (-4.46A), 1Vpp 144 FD 200 off 150 afp B0 field not reversed (+4.46A), 1Vpp... holding field off during run -> Improved shielding around B detector 145 FD 200 off 150 test run, holding field indeterminate, afp B0 field not reversed (+4.46A) 146 FD 200 off 150 afp B0 field not reversed (+4.46A) 147 FD 200 on 150 afp B0 field not reversed (+4.46A) -> Added a coil underneath the coupler between PPM and afp B0 coil to fix a double field zero in that region. The PPM field, afp B0 field, and field produced at guides by holding coils are in alignment. 150 FD 200 on 150 afp B0 field reversed (-4.46A) 151 FD 200 on 150 afp B0 field reversed (-4.46A) 152 FD 200 off 150 afp B0 field reversed (-4.46A)

25539	Sun Feb 24 14:50:41 2013	DJS

performing vanadium saturation time test during field zero hunting. fill for 200 s, close trap door and dump into vanadium for varying vanadium times. run 148 garbage -- incorrect piston timing entered. 149 20 s vanadium dumping time

25536	Sun Feb 24 12:32:36 2013	ATH

UCNtau: -> Beam back up, continuing data-taking... -> DAQ: Ch1 [1A]: NaI ADC Ch2 [1B]: NaI coincident with beta Ch3 [1C]: beta anti-coincidence TTL Ch4 [1D]: beta coincident with NaI Ch5 [2A]: CN tubes Ch6 [2B]: beta anti-coincidence coincident with NaI Ch7 [2C]: GVmon Ch8 [2D]: Bmon -> GV and beam enable under UCNtau control -> Spin Flipper: 400kHz, 4.468A, 2V pk2pk input -> Pancake coils: 10A General Run Timing: 0s GVopen 60s SHUTclose 200s TRAPup, SHUTopen 230s CLEANup 200s + hold DAGGERdown 200 + hold + 40s DAGGER up, TRAPdown Run Types: FD => Fill and Dump (no dagger activation so no 40s interval in run) VA => Vanadium Activation LO => Load optimization (shutter closed at start, variable load time) Run# Type hold[s] spin flipper holding coil[A] Comments ---------- 101 FD 200 on 300 CN tubes bias off, beam not disabled 102 VA 200 on 300 hold accidentally set to zero, beam not disabled 103 VA 200 on 300 104 LO 200 on 300 load for 100s -> Changed CN ADC threshold to 0.78V 105 LO 200 on 300 load for 200s -> Now filling for 30s with shutter open and then 200s with shutter closed 106 FD 200 on 300 -> Holding coils not shut off between these runs 107 FD 1000 on 300

25537	Sun Feb 24 07:05:03 2013	ATH

UCNtau: -> Current runplan... List of storage times: 10, 25, 40, 80, 100, 200, 500, 800, 1000 (two runs), 1500 (three runs), 2000 (five runs), background (1) Flipper on FD runs (don't go in order and don't do repeat runs back to back; select holding times from the list randomly) (2) Flipper off FD runs (don't go in order and don't do repeat runs back to back; select holding times from the list randomly) -> Turn off holding coils for 60s between each run -> Drain for 200s after each dump (3) Repeat (1) with VA runs if we can improve signal-to-noise (4) Repeat (1) with 150A and 0A holding coil currents (4) Repeat short holding time measurements without cleaning

25535	Sun Feb 24 01:43:30 2013	DJS

making a gui applet to bump up and down the vanadium actuator in case it fails during a vanadium activation run. For the record, the actuator block (the block threaded through the actuator threads) is 0.374" from the very top, which corresponds to 9308 steps on the stepper motor. For V activation runs, dagger starts at the above position, and goes down 700000 steps, and back up 700000 steps. 896000 steps corresponds to the full 36" travel. The vanadium bumper GUI is used by pressing the connect button to connect over serial, entering the number of steps to move, and pressing the "up" or "down" buttons. The file is VanadiumBumper.py.

25534	Sat Feb 23 15:49:25 2013	DJS

Coincidence between beta XOR signal and NaI sum put into MPA3 channel 2B. In NIM modules, put NaI sum into SCA with 1 V to 4 V LL/UL. took barred gate output of XOR beta signal, used to veto the NaI SCA count. Looks good on the scope, inputted into DAQ. BG of about 1 Hz.

25528	Sat Feb 23 15:23:15 2013	ATH

UCNtau: -> Continuing data-taking... Run# hold[s] spin flipper Comments 92 -- -- Beam-off background prior to installing lead bricks 93 -- -- Beam-off background after installing lead on E side -> beta PMTs showing anomalous rate... problem fixed. 98 -- -- 60Co source 99 -- -- Beam-off background -> Beam still down

25533	Sat Feb 23 14:30:10 2013	DJS

Here is the manual for the MPA3 software that is used for the fast daq. http://www.fastcomtec.com/ftp/manuals/mpa3doc.zip Here is the manual for the TADC modules. http://www.fastcomtec.com/ftp/manuals/7072tdoc.zip

25532	Sat Feb 23 14:22:18 2013	DJS

runtest098 is with 60Co source on top of vacuum extension. 1.17 and 1.33 MeV gamma lines clearly visible. Gamma line for 52V is 1.43 MeV. runtest099 is without 60Co, all other settings equal.

25531	Sat Feb 23 13:15:01 2013	DJS

Upon performing fast daq runs to test V detectors, we started seeing abnormally large rates in the beta PMTs. It turns out that the aluminum foil covering the PMT bases had come loose, and was not grounding to the BNC connections. Chris M. clipped foil onto bnc connections to maintain good contact. Problem solved, background rates have returned to their previous values.

25530	Sat Feb 23 12:28:21 2013	ASaunders

test entry

25527	Sat Feb 23 02:17:35 2013	ATH

UCNtau: -> DAQ: Ch1 [1A]: NaI ADC Ch2 [1B]: NaI coincident with beta Ch3 [1C]: beta anti-coincidence TTL Ch4 [1D]: beta coincident with NaI Ch5 [2A]: CN tubes Ch6 [2B]: unused Ch7 [2C]: GVmon Ch8 [2D]: Bmon -> Holding Coils @ 150A -> GV and beam enable under UCNtau control -> Spin Flipper: 400kHz, 4.475A, 2V pk2pk input General Run Timing: 0s GVopen 60s SHUTclose 200s TRAPup, SHUTopen 230s CLEANup 200s + hold DAGGERdown 200 + hold + 40s DAGGER up, TRAPdown Run# hold[s] spin flipper Comments 90 200 off hold and dump (i.e. no dagger). Flipper may have been on for part of load 91 200 on hold and dump. Beam down... so a beam-off background [Looking at dumping on Chris' slow daq shows that we can now see a flipper on/flipper off difference in unloaded counts!] -> Beam down... current estimate for beam is noon -> Filling holding coil cooling water system -> 300A test... PASSED! -> GV closed, air off

25524	Fri Feb 22 21:39:04 2013	ATH

UCNA/UCNtau: -> We are using the FeFoil electronics to read out a B detector for UCNtau, which requires changing some of the electronics parameters. Here are the current FeFoil Mon parameters: Coarse Gain: 1000 Fine Gain: 1.4 Shaping Time: 2 us HV: 800 Settings we are using for the B detector are: Coarse Gain: 1000 Fine Gain: 1.5 Shaping Time: 2 us HV: 800

25526	Fri Feb 22 21:00:57 2013	ATH

UCNtau: -> Installed pancake coils on either side of cross assembly, transverse to beam direction in order to cancel field zero as UCN enter trap. We will run these coils at ~10A. -> Preparing to take beam: Array pressre 2e-5 Torr. Pumped out GV to PPM window volume Transfer GV and beam enable control to UCNtau

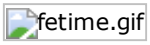
25525	Fri Feb 22 18:27:15 2013	DJS

for vanadium detectors each beta pmt (A and B) anode out to discriminators, into logic unit to perform XOR between pulses: send A,B to OR, output delayed. This provides a summed singles pulse that is delayed by 32 ns. Also send A,B to coincidence chan. 1. Output that barred to coincidence chan. 2 with the delayed sum, so that the coincidences veto the summed singles. More succinctly, output is (A or B) and ~(A and B). Outputted to gate generator, and TTL out to channel 1C on DAQ. disc. threshholds set to -0.05 V Bias for PMT A: -1623V, PMT B: -1601 Biases for NaI A and B are +0.93 and +1.7. XOR rejects ~10 Hz on beta detectors, but BG with XOR is still ~20 Hz. That is with beam off. May perform hardware coincidence with NaI using an SCA on NaI sum later.

25523	Fri Feb 22 17:00:48 2013	CLMorris

I put a neutron source on the clod neutron detectors and found the the gain was set too low. I have raised the bias voltage from 1600 to 1800 V and can now see the source. Attached first lifetime measurement lifetime (thanks to Chen-Yu and Adam)!

Attachment 1: fetime.gif



25522	Fri Feb 22 06:00:22 2013	ATH

UCNtau: -> Beam cut off promptly at 6am :(-> GVclosed, air off -> Pressurizing GV2PPM window in case UCNtau needs venting: SV4 CLOSED CC5 pressure to 668 Torr via vent 2 UCNtau cold cathode gauge OFF

25521	Fri Feb 22 05:11:37 2013	ATH

UCNtau: -> Holding Coils @ 150A -> GV and beam enable under UCNtau control -> Spin Flipper: 400kHz, 4.475A, 1V pk2pk input -> Trapdoor closed voltage: 8.5V General Run Timing: 0s GVopen 30s SHUTclose 200s TRAPup 230s CLEANup 200s + hold DAGGERdown 200 + hold + 40s DAGGER up, TRAPdown, SHUTopen Run# hold [s] Comments 52 200 53 200 Vfoil not lowered, i.e. 'load and dump' -> Retune spin flipper: 400kHz, 4.460 A, 1V pk2pk input Changed direction of afp B0 field, no obvious change in contrast; however, afp B0 field approx. in opposition to holding coil field so we leave afp B0 field in original direction. 54 500 load and dump 55 100 load and dump 56 800 load and dump 57 200 load and dump 58 100 load and dump 59 1000 load and dump 60 1500 load and dump 61 100 load and dump, spin-flipper off, beam out during run 62 100 load and dump, spin-flipper off 63 200 load and dump, spin-flipper off, beam out whole run 64 200 load and dump, spin-flipper off -> Shutter timing changed such that shutter opens when trapdoor closes, rather than when trapdoor opens 65 100 load and dump, spin-flipper off 66 500 load and dump, spin-flipper off 67 1000 load and dump, spin-flipper off -> Holding field coils turned off 68 200 load and dump, spin-flipper off 69 200 load and dump, spin flipper on -> Holding coils on at 150A 70 30 load and dump, spin flipper on .... junk -> Current shunt reading coded into daq, but will not actually log real data until wired up later tonight or tomorrow. 71 200 Vactivation... counting too short 72 200 Vactivation

25520	Thu Feb 21 19:21:11 2013	ATH

UCNtau: -> Holding field affects cold cathode gauge in current location 150A => +0.5e-5 Torr

25519	Thu Feb 21 18:17:13 2013	ATH

data for ucntau stored in c:\ucntau on chris's MPA3 daq computer. runtest040 is a run with no UCN, and a 60Co source on top of the jacket. We'll take another run with the holding field coils on, to see how things are behaving. For this and previous runs, we have that, for the fast daq: channel | detector 1A | NaI summed singles 1B | NaI coincidence 1C | beta singles 1D | beta coincidence 2A | cold neutron tubes 2B | unused 2C | GV monitor 2D | Fe Foil monitor (on elephant trunk after cross assembly) for all previous runs, gate valve was done by hand. gate valve relay has been plugged into control. Will use for future runs.

25518	Thu Feb 21 12:41:52 2013	DJS

For the record to UCNA/UCNB folk: in order to integrate the timing/automation into UCNTau, we have to remove the UCNA connections to: 1) the beam inhibit 2) gate valve The cables to connect these for UCNA have not been removed. We would like to get a logic unit in order to split the signals, so we can leave UCNA connections to these plugged in. Either that, or we'll make a patch panel.

25517	Thu Feb 21 11:05:31 2013	ATH

UCNtau: -> Adjusted input pressure valves on shutter air cylinder so that now the usual klunk confirming movement of the shutter can be felt in both directions of travel. Settings provide for a relatively slow (~1.5s) cycle time.

25516	Thu Feb 21 01:32:21 2013	ATH

UCNtau: Holding Coils @ 150 A Spin Flipper ON No shielding added to PMTs Holding coils power shunt: 100mV @ 500A System vacuum: 2e-5 Torr Times from start of run in seconds Initial state: GVclosed, SHUTopen, TRAPdown, DAGGERup, CLEANERdown Run Timing: 0s GVopen 60s SHUTclose 200s TRAPup 220s CLEANup 200s + hold DAGGERdown 200 + hold + 40s DAGGER up Run# hold [s] Comment 36 100 37 -- V Activation test 38 -- Cleaner test (down for 150s, up for 150s, GVopen, TRAPdown) 39 -- V Activation test, holding coils off

25515	Thu Feb 21 00:31:56 2013	ATH

UCNtau: -> Initial spin flipper tuning: Holding coils on FeFoil monitor (usual ucna vertical guide) on macaroni elbow attached to downstream side of cross Trap door closed, shutter open (or at least partially open) freq: 387 kHz Hall Probe: 126 G Coil Current: 4.275 A Contrast is approximately 20% Looks like resonator is approximately 4 G long 20 mA change in coil current corresponds to ~1 G change in Hall probe reading After several hours, afp coil temperature is 51 degC Contrast appears to be about 10% with trap holding field off No obvious changes upon reversal of afp holding field

25514	Sun Feb 17 00:31:47 2013	DJS

For UCNTau: Leaks: -- PMT housings removed, resealed. Leak tight now. -- Leak persists on

sealed bolt on southwest side. May have to use fomblin or even torrseal to get better seal. Discuss tomorrow. -- leak on bottom rectangular o-ring seal of vacuum extension -- leak in o-rings on piston rod (i.e. the differential volume). may need turbo for that volume Will have Todd remove vacuum extension to check seal on rectangular o-ring. Need to find eye bolts to put on corners of vacuum extension, attach craning straps. Guides: Cu guides cut, unistrut constructed. Will bring over AFP coil tomorrow, lift with Todd's help. Scones: we need them.

25513	Sat Feb 16 14:29:22 2013	KPH

SCS is ramped down and venting. Should be done around 10am. At 250 torr I turned the PMT HVs back on (the backing and muon veto on too) I unplugged the 465nm LED so that only the 405nm was ramping up with no fixed pulse in between. Fast DAQ run #23592 an on until the break of dawn. ...through run #23604

25512	Mon Feb 11 16:42:01 2013	MFMakela

manual for MVE LN2 dewar

Attachment 1: CylOpMnl12-00.pdf

25511	Sun Feb 10 07:34:42 2013	DAQ On-line

02/10 08:34 Start Run 13748 UCN0030 2011 UCN

25510	Mon Feb 4 06:57:53 2013	Erik

Continuing B -> A octet 00:04 23151 A2: Beta(off) E=8.943 W=9.472 Fe/GV=0.4730 SCS/GV=0.3472 Beta/GV=1.4078 00:59 23152 A3: D+ W/R=2/87 01:07 23153 A4: Bkg(on) E=1.107 W=1.083 GV=20.3 01:19 23154 A5: Beta(on) E=6.902 W=6.242 Fe/GV=0.1169 SCS/GV=0.2664 Beta/GV=1.0209 02:15 23155 A6: D+ W/R=10/15 02:22 23156 A7: Beta(on) E=6.423 W=5.925 Fe/GV=0.1195 SCS/GV=0.2629 Beta/GV=1.0322 03:18 23157 A8: D+ W/R=7/19 03:25 23158 A9: Bkg(on) E=1.095 W=1.040 GV=18.0 03:38 23159 A10:Beta(off) E=7.911 W=8.464 Fe/GV=0.4699 SCS/GV=0.3470 Beta/GV=1.4424 04:33 23160 A11:D- W/R=5/68 04:41 23161 A12:Bkg(off) E=1.127 W=1.079 GV=17.8 Quartet 04:55 23162 B1: Bkg(on) E=1.129 W=1.058 GV=18.1 05:02 23163 B2: Beta(on) E=6.107 W=5.600 Fe/GV=0.1248 SCS/GV=0.2668 Beta/GV=1.0375 05:32 23164 B3: D+ W/R=6/20 05:39 23165 B4: Bkg(off) E=1.154 W=1.082 GV=16.8 05:47 23166 B5: Beta(off) E=7.930 W=8.283 Fe/GV=0.4737 SCS/GV=0.3424 Beta/GV=1.4139 06:17 23167 B6: D- W/R=2/75 06:24 23168 B7: Beta(off) E=7.877 W=8.393 Fe/GV=0.4647 SCS/GV=0.3367 Beta/GV=1.4263 06:53 23169 B8: D- W/R=3/62 07:01 23170 B9: Bkg(off) E=1.138 W=1.119 GV=17.0 07:08 23171 B10:Beta(on) E=5.747 W=5.206 Fe/GV=0.1234 SCS/GV=0.2664 Beta/GV=1.0544 07:39 23172 B11:D+ W/R=6/22 07:46 23173 B12:Bkg(on) E=1.092 W=0.995 GV=18.2

25509	Mon Feb 4 04:51:19 2013	Erik

UCNA Shift Change Checklist Date: 2/4/13, 01:51 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.2 psia Heater C pressure 13.9 psia Tungsten supply press. 285 psig Compressor 1 On Yes (On) Tungsten Cool supp. 280.4 psia Tungsten Cool Diff. 279.6 psia Tungsten Cool ret. 65.9 psia 1630 eng. 2 temp. 13.19 K 1630 JT temp. 7.30 K 1630 outlet temp. 272.0 K 1630 engine speed 122 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 52 psig 1410 engine speed 119 rpm 1410 TE-A 16.3 K 1410 TE-B 7.1 K 1410 TE-E 92.8 K 1410 supply press. 245 psig 1410 JT press. 182 psig 1410 return press. 3.5 psig 1K dewar pressure 6.8 psig 4K dewar pressure 300 mmHg 4K dewar level 13.42 inHe 1K dewar level 15.80 inHe 4K main flow control 6.0 V LHe temp. 1 5.54 K Heat exch. temp. 3 155.9 K Poly temp. 2 196.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 24 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart run 1420 Switcher status thru AFP temperature 10.0 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 8/8 SCS LHe level 95.1 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.7 torr Source pressure 1E-5 torr Spectrometer pressure 1.1E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.1 % PPM LN2 level 74.7 % AFP LHe level 85.9 % AFP LN2 level 80.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.9 F West MWPC Temperature 80.4 F MWPC Pressure 100 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.4 slpm

West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] ch12 2200 V ch 15 2150 East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3176 Hz West muon veto rate 5237 Hz Timing Reset H-GX DAQ data_raw disk usage 84% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 13.4 "Beamplot" Capture 80%

25508	Sun Feb 3 23:43:53 2013	ebdees

UCNA Shift Change Checklist Date: 2/3/13, 16:30 Shift Persons: Eric, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.14 psia Heater C pressure 13.72 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 280.4 psia Tungsten Cool Diff. 278.8 psia Tungsten Cool ret. 66.4 psia 1630 eng. 2 temp. 12.77 K 1630 JT temp. 7.44 K 1630 outlet temp. 273.6 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.8 K 1410 TE-E 95.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 12.16 inHe 1K dewar level 27.9 inHe 4K main flow control 6.0 V LHe temp. 1 5.5 K Heat exch. temp. 3 151.92 K Poly temp. 2 153.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart no @0830 Switcher status thru AFP temperature 10.1 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 8/8 SCS LHe level 86.5 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.7 torr Source pressure 7.1E-6 torr Spectrometer pressure 1.1E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.3 % PPM LN2 level 77.8 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.4 F West MWPC Temperature 80.1 F MWPC Pressure 100 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. 0.270 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] ch12 2200 V ch 15 2150 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2950 Hz West muon veto rate 4951 Hz Timing Reset H-GX DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 14. "Beamplot" Capture 81%

25507	Sun Feb 3 23:39:44 2013	Rpattie

---------- Afternoon-Evening Shift summary: ---------- Eric and Robby's Super Awesome Superbowl shift: ---------- Time MIDAS# Type Notes ---------- 1651 23133 A8:Depol(on->off) W=6/20=0.30(47) 1656 23134 A9:Bkg(on) E=1.165 W=0.976 GV=22.0 1711 23135 A10:Beta(off) E=9.4889 W=10.049 Fe/GV = 0.4704 SCS/GV=1.3903 1806 23136 A11:Depol(off->on)W/R = 2/88 = 0.02(72) 1814 23137 A12:Bkg(off) E=1.098 W=0.989 GV=21.7 ---------- Starting another B->A ---------- 1849 23138 B1:Bkg(on) E=1.028 W=0.964 GV=21.7 1902 23139 B2:Beta(on) E=6.994 W=6.204 Fe/GV=0.1195 SCS/GV=0.2682 E+W/GV=1.01 1958 23140 B3:Depol(on->off) W/R = 1/18 = 0.06(13) 2005 23141 B4:Bkg(off) E=1.130 W=1.055 GV=20.8 2017 23142 B5:Beta(off) E=9.271 W=9.607 Fe/Gv=0.4691 SCS/GV=0.3372 E+W/GV=1.4015 2113 23143 B6:Depol(off->on) W/R=2/75=0.03(72) 2120 23144 B7:Beta(off) E=9.087 W=9.607 Fe/GV=0.4653 SCS/GV=0.3468 E+W/Gv=1.4073 2216 23145 B8:Depol(off->on) W/R=0/76 2223 23146 B9:Bkg(off) E=1.153 W=1.042 Gv=20.6 2236 23147 B10:Beta(on) E=6.376 W=5.777 Fe/GV=0.1178 SCS/GV=0.2672 E+W/GV=1.0305 2331 23148 B11:Depol(on->off)W/R=1/22=0.04(1.00) 2339 23149 B12:Bkg(on) E=1.081 W=1.064 GV=20.4 2351 23150 A1:Bkg(off) E=1.091 W=1.077 GV=20.4 ----------

25506	Sun Feb 3 14:49:08 2013	Hasan

Shift Summary: Did an AFP fill from 1k. Beam went off during run number number 23121, last few minutes, need to reload UCN for 5 minutes before depol once beam is back on

25505	Sun Feb 3 14:42:15 2013	Hasan

B->A octet(beta=55min, bkg=12 min) contd... 0738 23119 B7:Beta(off) E=9.857 W=10.353 Fe/GV=0.4679 SCS/GV=0.3472 E+W/GV=1.396 0833 23120 B8:D- W/R = 3/126 0841 23121 B9:Bkg(off) E=1.145 W=1.002 GV=22.4 0853 23122 B10:Beta(on) E=7.443 W=6.660 Fe/GV=0.1201 SCS/GV=0.2688 E+W/GV=1.0107 0949 23123 B11:D+ W/R = 10/62 0956 23124 B12:Bkg(on) E=1.124 W=1.037 GV=21.5 1009 23125 A1:Bkg(off) E=1.135 W=0.988 GV=22.2 1021 23126 A2:Beta(off) E=9.713 W=10.178 Fe/GV=0.4708 SCS/GV=0.3469 E+W/GV=1.3959 1117 23127 A3: D- W/R=5/127 1124 23128 A4: Bkg(on) E=1.091 W=0.984 GV=22.0 1137 23129 A5: Beta(on) E=7.467 W=6.678 Fe/GV=0.1189 SCS/GV=0.2686 Beta/GV=1.0204 1232 23130 A6: D+ W/R=8/58 1240 23131 A7: Beta(on) E=6.726 W=6.158 Fe/GV=0.1226 SCS/GV=0.2755 Beta/GV=1.0404 beam went off during last few minutes, need to reload UCN for 5 minutes for depol once beam is back on 1335 23132 A8: D+ beam off

25504	Sun Feb 3 14:40:41 2013	Sky

Beam died near the end of beta ON run# 23131, should be back on around 17:00...

25503	Sun Feb 3 12:23:16 2013	Sky

UCNA Shift Change Checklist Date: 2/3/13, 09:00 Shift Persons: Sky, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.14 psia Heater C pressure 13.87 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 280.9 psia Tungsten Cool Diff. 280.1 psia Tungsten Cool ret. 66.1 psia 1630 eng. 2 temp. 13.26 K 1630 JT temp. 7.35 K 1630 outlet temp. 272.5 K 1630 engine speed 120 rpm 1630 supply press. 246 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 89.8 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.2 psig 4K dewar pressure 290 mmHg 4K dewar level 11.0 inHe 1K dewar level 27.9 inHe 4K main flow control 6.0 V LHe temp. 1 5.5 K Heat exch. temp. 3 161 K Poly temp. 2 202 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes @0830 Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 90.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr Source pressure 1.1E-5 torr Spectrometer pressure 1.2E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.3 % PPM LN2 level 80.1 % AFP LHe level 94.3 % AFP LN2 level 90.5 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.8 F West MWPC Temperature 78.7 F MWPC Pressure 100 torr N2 - MWPC Differential -6.3 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 12.5 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] ch12 2200 V ch 15 2150 East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3019 Hz West muon veto rate 5148 Hz Timing Reset H-GX DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 14. "Beamplot" Capture 81%

25501	Sun Feb 3 06:52:09 2013	Erik

Night Shift Summary: Erik and Bryan presiding. Took over during a B->A octet at A3 23:55 23103 A3: D- W/R=6/14 00:02 23104 A4: Bkg(on) E=1.100 W=1.085 GV=22.0 00:15 23105 A5: Beta(on) E=7.532 W=6.958 Fe/GV=0.1204 SCS/GV=0.2785 Beta/GV=1.0457 01:10 23106 A6: D+ W/R=6/14 01:18 23107 A7: Beta(on) E=7.505 W=6.829 Fe/GV=0.1190 SCS/GV=0.2763 Beta/GV=1.0315 02:13 23108 A8: D+ W/R=2/18 02:21 23109 A9: Bkg(on) E=1.079 W=1.074 GV=21.9 02:33 23110 A10:Beta(off) E=9.636 W=10.301 Fe/GV=0.4713 SCS/GV=0.3547 Beta/GV=1.4190 03:28 23111 A11:D- W/R=2/85 03:36 23112 A12:Bkg(off) E=1.106 W=1.052 GV=21.8 Melt and Refreeze New B->A Octet (55 min betas, 12 min bkgs) 05:07 23113 B1: Bkg(on) E=1.005 W=1.028 GV=25.2 05:19 23114 B2: Beta(on) E=8.103 W=7.250 Fe/GV=0.1201 SCS/GV=0.2715 Beta/GV=1.0179 06:15 23115 B3: D+ W/R=2/22 06:22 23116 B4: Bkg(off) E=1.129 W=1.018 GV=23.2 06:35 23117 B5: Beta(off) E=10.081 W=10.618 Fe/GV=0.4725 SCS/GV=0.3529 Beta/GV=1.4233 07:30 23118 B6: D- W/R=8/81

25502	Sun Feb 3 06:32:04 2013	bz

Shift Event Log When we came in, the flapper computer had experienced a problem that resulted

in a blue screen. This did not affect the rate, because the controller still had the program and was correctly controlling the motion of the flapper, so the flapper never stopped flapping. I rebooted, and reconnected to the controller. It is operating normally. We filled the AFP, and the AFP LN2 Dewar. The rate was low enough that we attempted a melt and refreeze. Immediately afterwards, the rate was increased from 220 Hz to 260 Hz with the gate valve closed. However, within the span of the pulse pair, the rate dropped back to 230 Hz. Therefore, we do not recommend another melt and refreeze this weekend.

25500	Sun Feb 3 04:18:52 2013	bz

Little b valve closed for 1 hr from approximately 4 AM to 5 AM to perform melt and refreeze.

25499	Sun Feb 3 04:16:45 2013	Erik

UCNA Shift Change Checklist Date: 2/3/13, 01:00 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.48 psia Heater C pressure 13.83 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282.3 psia Tungsten Cool Diff. 280.4 psia Tungsten Cool ret. 67.5 psia 1630 eng. 2 temp. 13.20 K 1630 JT temp. 7.31 K 1630 outlet temp. 272.2 K 1630 engine speed 115 rpm 1630 supply press. 247 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 45 psig 1410 engine speed 105 rpm 1410 TE-A 15.9 K 1410 TE-B 6.9 K 1410 TE-E 95.4 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.4 psig 4K dewar pressure 310 mmHg 4K dewar level 9.49 inHe 1K dewar level 28.09 inHe 4K main flow control 6.0 V LHe temp. 1 5.509 K Heat exch. temp. 3 155.48 K Poly temp. 2 196.11 K flapper heater cur 0.18 A Flapper Status: probably flapping, but computer Hardware Malfunction Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes new run 1418 Switcher status thru AFP temperature 10.0 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 1/4 SCS LHe level 97.3 % SCS current 119.11 A Hall Probe vi Running. Required restart - not obvious on looking at script LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr Source pressure 7.0e-6 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.4 % PPM LN2 level 82.7 % AFP LHe level 88.8 % AFP LN2 level 83.5 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.7 F West MWPC Temperature 80.4 F MWPC Pressure 100 torr N2 - MWPC Differential -6.4 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] ch12 2200 V ch 15 2150 East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3087 Hz West muon veto rate 5254 Hz Timing Reset H-GX DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 14.7 "Beamplot" Capture 79%

25498	Sat Feb 2 23:13:25 2013	Rpattie

Afternoon-Evening Shift Summary: Eric and Robby presiding. Took over for Andy during a B->A octet at A10 Time Midas# Type Notes ---------- 1627 23086 A10:Beta(on) E=10.346 W=10.969 Fe/GV = 0.4712 SCS/GV= 0.3572 E+W/GV=1.4268 1722 23087 A11:Depol(on->off) W/R = 7/76 = 0.09(40) 1729 23088 A12:Bkg(on) E=1.082 W=1.060 GV=23.0 ---------- And so ends the B->A octet. By coin flip we're starting another B->A octet. ---------- 1746 23089 B1:Bkg(on) E=1.117 W=1.000 GV=23.4 1759 23090 B2:Beta(on) E=7.806 W=7.097 Fe/Gv=0.1201 SCS/GV=0.2786 E+W/GV=1.0302 1854 23091 B3:Depol(on->off) W/R = 8/22 = 0.36(40) 1902 23092 B4:Bkg(off) E=1.047 W=1.024 GV=22.6 1914 23093 B5:Beta(off) E=9.845 W=10.427 Fe/GV=0.4782 SCS/GV=0.3510 E+W/GV=1.42 2009 23094 B6:Depol(off->on) W/R = 3/76= 0.04(59) 2017 23095 B7:Beta(off) E=10.006 W=10.516 Fe/GV=0.4696 SCS/GV=0.3504 E+W/GV=1.4175 2112 23096 B8:Depol(off->on) W/R = 5/72=0.07(46) 2119 23097 B9:Bkg(off) E=1.078 W=0.981 GV=22.4 2132 23098 B10:Beta(on) E=7.746 W=6.875 Fe/GV=0.1181 SCS/GV=0.2708 E+W/GV=1.021 2227 23099 B11:Depol(on->off) W/R = 6/25 = 0.24(45) 2235 23100 B12:Bkg(on) E=1.160 W=1.037 GV=22.1 2247 23101 A1:Bkg(off) E=1.106 W=1.072 GV=22.3 2300 23102 A2:Beta(off) E=bn

25497	Sat Feb 2 21:29:18 2013	ebdees

UCNA Shift Change Checklist Date: 2/2/13, 1630 Shift Persons: Eric, Robbie
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.59 psia Heater C pressure 14.02 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 284.6 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 68.8 psia 1630 eng. 2 temp. 13.12 K 1630 JT temp. 7.31 K 1630 outlet temp. 272.7 K 1630 engine speed 115 rpm 1630 supply press. 235 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 55 psig 1410 engine speed 105 rpm 1410 TE-A 15.8 K 1410 TE-B 7.8 K 1410 TE-E 82.8 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 290 mmHg 4K dewar level 15.16 inHe 1K dewar level 26.06 inHe 4K main flow control 6.0 V LHe temp. 1 5.435 K Heat exch. temp. 3 150.45 K Poly temp. 2 158.13 K flapper heater cur 0.18 A Flapper Status: flap Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 33 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 86.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure 7.3e-6 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.4 % PPM LN2 level 85.7 % AFP LHe level 87.0 % AFP LN2 level 77.6 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.5 F West MWPC Temperature 79.7 F MWPC Pressure 100 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] ch12 2200 V ch 15 2150 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 3096 Hz West muon veto rate 4953 Hz Timing Reset H-GX DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 14.7 "Beamplot" Capture 79%

25496	Sat Feb 2 15:34:53 2013	ASaunders

shift summary: Continuing B->A octet throughout shift. No magnet fills. Beam off for ~2 hours this morning, then again for 15 minutes in the afternoon. Depol analysis appears to be broken; just says "run already exists" or words to that effect. Midas crashed at very end of shift. 0753 23067 B9 bjg off E=1.12 W=0.97 GV=21.6 0805 23068 B10 beta on E=7.8 W=7.0 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.02 0901 23069 B11 depol on->off W/R=8/19 0908 23070 B12 bkg on E=1.10 W=1.01 GV=22.7 0921 23071 A1 bkg off E=1.086 W=1.002 GV=23.0 0934 23072 A2 beta off E=6.865 W=7.150 Fe/GV=0.4723 SCS/GV=0.3651 beta/GV=1.5067 Stopped after 1/2 hour due to beam off 1203 23073 A2 beta off E=10.510 W=11.045 Fe/GV=0.4759 SCS/GV=0.3468 beta/GV=1.4213 1248 23074 A3 depol off->on (analysis broken) 1256 23075 A4 bkg on E=1.138 W=0.966 GV=21.9 1308 23076 A5 beta on E=7.992 W=7.231 Fe/GV=0.1201 SCS/GV=0.2741 beta/GV=1.0283 1404 23077 A6 depol on-> off (analysis broken) 1411 23078 A7 beta on E=7.71 W=6.89 Fe/GV=0.12 SCS/GV=0.28 beta/GV=1.04 Beam off for last few minutes of this run 1520 23081 A8 depol on->off (Analysis broken) loaded decay trap in beta on config for ~5 min before this run 1528 23082 A9 bkg on E=1.07 W=0.96 GV=23.4 1627 23086 A10 beta off

25495	Sat Feb 2 07:38:52 2013	ASaunders

UCNA Shift Change Checklist Date: 2/2/13, 0800 Shift Persons: AS
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.4 psia Heater C pressure 14.1 psia Tungsten supply press. 287 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282 psia Tungsten Cool Diff. 280 psia Tungsten Cool ret. 67.0 psia 1630 eng. 2 temp. 13.4 K 1630 JT temp. 7.5 K 1630 outlet temp. 271.6 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 37 psig 1410 engine speed 105 rpm 1410 TE-A 16.0 K 1410 TE-B 7.0 K 1410 TE-E 96.0 K 1410 supply press. 245 psig 1410 JT press. 194 psig 1410 return press. 3.2 psig 1K dewar pressure 6.2 psig 4K dewar pressure 300 mmHg 4K dewar level 13.8 inHe 1K dewar level 22.7 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 147.7 K Poly temp. 2 159.3 K flapper heater cur 0.18 A Flapper Status: flap Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds
********** DOWNSTAIRS

********** N2 Tanker Volume 34.2 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.9 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 90.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr Source pressure 8.2e-6 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.5 % PPM LN2 level 88.1 % AFP LHe level 97.5 % AFP LN2 level 92.9 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.8 F West MWPC Temperature 77.4 F MWPC Pressure 100 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 12.9 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12 East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 4082 Hz West muon veto rate 6147 Hz Timing Reset H-GX DAQ data_raw disk usage 82% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 TBCM001I03 14.3 "Beamplot" Capture 79%

25494	Sat Feb 2 06:45:43 2013	bz

Shift Summary Came on shift, finished DE runs. Started beta octet, noticed rates were very low, determined that flapper had failed. Had to unplug, replug flapper controller, then reload control program and run setup and auto flapper has worked since with no difficulties. No reasons found for failure. No sooner got flapper working again than extended beam outage due to Module 4 failure. Took a few hours, Module 4 repaired and beam restored. Running Octets now. May want/need to do a melt and refreeze.

25493	Sat Feb 2 06:03:17 2013	Erik

New B->A Octet (55 min betas, 12 min bkgs) 04:20 23059 B1 Bkg(on) E=1.065 W=0.988 GV=23.6 04:32 23060 B2 Beta(on) E=7.861 W=7.102 Fe/GV=0.1217 SCS/GV=0.2777 Beta/GV=1.0328 05:28 23061 B3 D+ W/R = 5/18 05:35 23062 B4 Bkg(off) E=1.034 W=0.944 GV=23.4 05:48 23063 B5 Beta(off) E=10.469 W=11.072 Fe/GV=0.4865 SCS/GV=0.3640 Beta/GV=1.4508 06:43 23064 B6 D- W/R = 1/94 06:50 23065 B7 Beta(off)

25492	Sat Feb 2 04:48:09 2013	bz

UCNA Shift Change Checklist Date: 2/2/13, 00:30 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.3 psia Heater C pressure 14.0 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282.7 psia Tungsten Cool Diff. 279.8 psia Tungsten Cool ret. 68.1 psia 1630 eng. 2 temp. 13.44 K 1630 JT temp. 7.34 K 1630 outlet temp. 272.9 K 1630 engine speed 120 rpm 1630 supply press. 246 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 38 psig 1410 engine speed 105 rpm 1410 TE-A 15.8 K 1410 TE-B 6.3 K 1410 TE-E 83.2 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.2 psig 4K dewar pressure 272 mmHg 4K dewar level 12.8 inHe 1K dewar level 23.7 inHe 4K main flow control 6.0 V LHe temp. 1 5.45 K Heat exch. temp. 3 146.6 K Poly temp. 2 117.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes new run 1415 Switcher status down AFP temperature 10.0 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 4/8 SCS LHe level 95.9 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr Source pressure 8.6e-6 torr Spectrometer pressure 1.0e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.5 % PPM LN2 level 92.1 % AFP LHe level 89.9 % AFP LN2 level 84.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.7 F West MWPC Temperature 78.9 F MWPC Pressure 100 torr N2 - MWPC Differential -6.3 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate

(Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2867 Hz West muon veto rate 4684 Hz Timing Reset T0 DAQ data_raw disk usage 82% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.5 mA "Beamplot" Capture 79%

25491	Fri Feb 1 17:47:15 2013	ebdees

UCNA Shift Change Checklist Date: 2/1/13, 16:00 Shift Persons: Eric, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 0 slpm D2 melt Heater B pressure 12.22 psia Heater C pressure 13.97 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.0 psia Tungsten Cool Diff. 281.3 psia Tungsten Cool ret. 70.3 psia 1630 eng. 2 temp. 15.78 K 1630 JT temp. 7.79 K 1630 outlet temp. 275.3 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. .2 psig D2 melt 1630 med. press. stor. 20 psig D2 melt, going to try to increase pressure during fills 1410 engine speed 105 rpm 1410 TE-A 15.5 K 1410 TE-B 6.6 K 1410 TE-E 83.0 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 245 mmHg D2 melt 4K dewar level 18.08 inHe 1K dewar level 23.93 inHe 4K main flow control 3.8 V D2 melt LHe temp. 1 8.146 K D2 melt Heat exch. temp. 3 181.0 K Poly temp. 2 82.3 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 38 gallon/100 Gate valve status closed D2 Pump port status open melted D2 MCS Program restart yes Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 4/8 SCS LHe level 84.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure off torr D2 melt Spectrometer pressure 1.1e-5 torr D2 melt Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.5 % PPM LN2 level 97.0 % AFP LHe level 80.9 % filling AFP LN2 level 79.4 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.7 F West MWPC Temperature 78.6 F MWPC Pressure 100 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2907 Hz West muon veto rate 4365 Hz Timing Reset H-GX DAQ data_raw disk usage 81% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.8 mA "Beamplot" Capture 78%

25490	Fri Feb 1 02:31:48 2013	Erik

UCNA Shift Change Checklist Date: 2/01/13, 01:21 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.89 psia Heater C pressure 13.82 psia Tungsten supply press. 285 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.5 psia Tungsten Cool Diff. 281.8 psia Tungsten Cool ret. 70.6 psia 1630 eng. 2 temp. 11.91 K 1630 JT temp. 6.58 K 1630 outlet temp. 271.6 K 1630 engine speed 120 rpm 1630 supply press. 247 psig 1630 JT press. 205 psig 1630 return press. 2.0 psig 1630 med. press. stor. 37 psig 1410 engine speed 114 rpm 1410 TE-A 16.4 K 1410 TE-B 6.9 K 1410 TE-E 95.1 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.4 psig 4K dewar pressure 290 mmHg 4K dewar level 15.12 inHe 1K dewar level 17.68 inHe 4K main flow control 6.5 V LHe temp. 1 5.447 K Heat exch. temp. 3 148.67 K Poly temp. 2 153.17 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 24.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart new run 1412 Switcher status thru AFP temperature 9.9 C AFP frequency 28.49500 MHz AFP forward power 41 W AFP N2 dewar level 5/8 SCS LHe level 96.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure 9.6e-6 torr Spectrometer pressure 1.0E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.5 % PPM LN2 level 53.2 % AFP LHe level 89.8 % AFP LN2 level 84.3 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ==========

East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.3 F West MWPC Temperature 77.2 F MWPC Pressure 100 torr N2 - MWPC Differential -6.2 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2200 V on (2200 is dial reading, actual voltage 2595) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2951 Hz West muon veto rate 4690 Hz Timing Reset H-GX DAQ data_raw disk usage 81% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 305 ns TBCM001I03 13.78 mA "Beamplot" Capture 78% beam ready time: 20:00

25489	Thu Jan 31 19:19:54 2013	Hasan

UCNA Shift Change Checklist Date: 1/31/13, 16:00 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 0 slpm see Mark's elog entry above Heater B pressure 14.00 psia Heater C pressure 13.96 psia Tungsten supply press. 300 psig Compressor 1 On Yes (On) Tungsten Cool supp. 287.1 psia Tungsten Cool Diff. 281.7 psia Tungsten Cool ret. 71.0 psia 1630 eng. 2 temp. 14.66 K 1630 JT temp. 7.15 K 1630 outlet temp. 275.6 K 1630 engine speed 130 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. .6 psig afp fill in progress 1630 med. press. stor. 35 psig 1410 engine speed 114 rpm 1410 TE-A 15.6 K 1410 TE-B 7.2 K 1410 TE-E 95.3 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.0 psig 1K dewar pressure 6.5 psig 4K dewar pressure 320 mmHg 4K dewar level 13.72 inHe 1K dewar level 28.61 inHe 4K main flow control 3.7 V LHe temp. 1 6.61 K Heat exch. temp. 3 175.22 K Poly temp. 2 78.22 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27.5 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart no Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 89.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure --- torr (source pressure takes a while to 10^-4 -> 10^-5, when voltage is turned up 3.6V -> 6.0V) Spectrometer pressure 1.0E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.5 % PPM LN2 level 56.1 % AFP LHe level 80.5 % fill in progress AFP LN2 level 79.4 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2708 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.7 F West MWPC Temperature 76.6 F MWPC Pressure 100 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2595 V on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2903 Hz West muon veto rate 4488 Hz Timing Reset H-GX DAQ data_raw disk usage 81% Proton beam status burst Proton burst spacing 20hz Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 290 ns TBCM001I03 14.4 mA "Beamplot" Capture 77% beam ready time: 20:00

25488	Thu Jan 31 11:38:21 2013	MFMakela

Warming up the ucn source. Heat exchanger to closed. SV3, b-box, ucn gatevalve closed. Source volatage6->5->4.5->4->3.7VDC

25487	Thu Jan 31 11:04:36 2013	MFMakela

After warming up the trap there was noticable gas in it. 10.2-3.7=6.5 mbar So the D2 may be a little dirty.

25486	Thu Jan 31 04:53:18 2013	bz

W/R values for Depol significantly changed - new depol analyzer in use B->A Octet (29 min betas, 6 min bkgs) 01-31-13 Time MIDAS Type E W Fe/GV SCS/GV E+W/GV GV W/R 00:14 22994 B1 Bkg ON 1.123 5.679 23.1 00:21 22995 B2 Beta ON 5.740 10.037 0.1161 0.1974 1.0841 00:50 22996 B3 D+ 4/2 00:58 22997 B4 Bkg OFF 1.168 5.571 22.8 01:04 22998 B5 Beta OFF 6.983 11.675 0.4574 0.2330 1.2652 01:34 22999 B6 D- 0/4 01:41 23900 B7 Beta OFF 6.708 11.928 0.4548 0.2324 1.2678 02:11

23001 B8 D- 5/2 02:18 23002 B9 Bkg OFF 1.140 4.794 22.2 02:25 23003 B10 Beta ON 5.841 8.998 0.1136 0.1971 1.0180 02:54 23004 B11 D+ 1/2 03:01 23005 B12 Bkg ON 1.081 3.908 22.4 03:08 23006 A1 Bkg OFF 1.019 4.534 22.9 03:15 23007 A2 Beta OFF 6.726 10.350 0.4666 0.2265 1.1747 03:44 23008 A3 D- 1/7 03:52 23009 A4 Bkg ON 1.116 4.334 22.4 03:58 23010 A5 Beta ON 5.748 8.773 0.1156 0.1978 1.0005 04:28 23011 A6 D+ 2/1 04:35 23012 A7 Beta ON 5.654 8.651 0.1155 0.1999 0.9986 05:05 23013 A8 D+ 2/4 05:12 23014 A9 Bkg ON 1.207 4.867 22.1

25485	Thu Jan 31 00:39:06 2013	ebdees

UCNA Shift Change Checklist Date: 1/31/13, 00:00 Shift Persons: Eric, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.80 psia Heater C pressure 13.98 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 288.0 psia Tungsten Cool Diff. 282.7 psia Tungsten Cool ret. 71.5 psia 1630 eng. 2 temp. 13.00 K 1630 JT temp. 7.02 K 1630 outlet temp. 271.5 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. .9 psig 1630 med. press. stor. 30 psig 1410 engine speed 114 rpm 1410 TE-A 15.7 K 1410 TE-B 6.9 K 1410 TE-E 96.2 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 260 mmHg 4K dewar level 15.90 inHe 1K dewar level 22.88 inHe 4K main flow control 6.0 V LHe temp. 1 5.31 K Heat exch. temp. 3 160.17 K Poly temp. 2 166.27 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart no Switcher status thru AFP temperature 9.8 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 87.5 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure 1.7E-5 torr Spectrometer pressure 1.0E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.6 % PPM LN2 level 60.6 % AFP LHe level 89.9 % AFP LN2 level 88.1 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 81.5 F West MWPC Temperature 73.2 F MWPC Pressure 100 torr N2 - MWPC Differential -6.2 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3016 Hz West muon veto rate 5981 Hz Timing Reset H-GX DAQ data_raw disk usage 81% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 290 ns TBCM001I03 14.3 mA "Beamplot" Capture 78%

25482	Wed Jan 30 19:46:40 2013	ebdees

UCNA Shift Change Checklist Date: 1/30/13, 16:00 Shift Persons: Eric, Robbie, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.16 psia Heater C pressure 13.86 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.7 psia Tungsten Cool Diff. 281.8 psia Tungsten Cool ret. 70.7 psia 1630 eng. 2 temp. 11.65 K 1630 JT temp. 6.92 K 1630 outlet temp. 271.1 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 25 psig D2 melt, going to try to increase pressure during fills 1410 engine speed 114 rpm 1410 TE-A 15.9 K 1410 TE-B 6.8 K 1410 TE-E 91.6 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 295 mmHg 4K dewar level 14.50 inHe 1K dewar level 29.63 inHe 4K main flow control 6.0 V LHe temp. 1 5.321 K Heat exch. temp. 3 181.3 K Poly temp. 2 77.45 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31 gallon/100 Gate valve status closed D2 Pump port status open melted D2 MCS Program restart no Switcher status thru AFP temperature 9.1 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 89.6 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.7 torr CM5 pressure 2.7 torr Source pressure off torr Xe run Spectrometer pressure off torr Xe run Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.6 % PPM LN2 level 63.2 % AFP LHe level 87.8 % AFP LN2 level 82.1 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ==========

East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 81.8 F West MWPC Temperature 71.9 F MWPC Pressure 100 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2806 Hz West muon veto rate 4595 Hz Timing Reset T0 DAQ data_raw disk usage 80% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 290 ns TBCM001I03 14.2 mA "Beamplot" Capture 77%

25484	Wed Jan 30 19:45:37 2013	Rpattie

Source only producing 120Hz at mon1 with GV closed. Something very wrong. Will melt and refreeze.

25483	Wed Jan 30 17:34:57 2013	CLMorris

Littleb is running. b valve is open. b tubo valve is closed. Interlock enabled. Thick scintiallor is installed. 12 1 hour runs starting at run 7002 . no window

25481	Wed Jan 30 13:27:05 2013	MFMakela

Biulding new source: SV3, MV5, MV6 ,MV2 SV5 UCN gatevavle b-box - closed pumping port open 1088 mbar in tank flowing thought the cold trap (orange valve, CT1, CT2. GC2, GC5 to the source) heat exchanger at 50 Flapper closed Source control - 6VDC returning cold via V389 4k - 280 mbar return 1.2 psi

25480	Wed Jan 30 07:57:28 2013	bz

Polarimetry MCS Run 1411 Time CMS Time MIDAS Type Cycles 01-29-13 18:18 285 22947-22948 PE- (25s) 10 19:35 4850 22949-22950 PE+ (25s) 10 20:57 9791 22951-22952 PE- (50s) 10 22:11 14239 22953-22954 PE+ (50s) 10 23:30 18984 22955-22956 PE- (75s) 10 1-30-13 00:52 23886 22957-22958 PE+ (75s) 10 02:10 28540 22959-22960 DE+ (45s) 10

25479	Wed Jan 30 03:01:42 2013	bz

Melting out source for Xenon Opened D2 pumpout port Checked that orange valve was open Opened Check Valve Bypass Opened Heat Exchanger to full Left Poly Pump on Closed cold return on 1630 Source Flow Voltage to 0.0V closed 1630 JT by 3 thousandths

25478	Tue Jan 29 23:26:55 2013	ebdees

UCNA Shift Change Checklist Date: 1/30/13, 00:00 Shift Persons: Eric, Brian ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.18 psia Heater C pressure 13.97 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 288.2 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 72.4 psia 1630 eng. 2 temp. 12.86 K 1630 JT temp. 6.93 K 1630 outlet temp. 271.4 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 55 psig 1410 engine speed 114 rpm 1410 TE-A 15.9 K 1410 TE-B 6.8 K 1410 TE-E 97.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 295 mmHg 4K dewar level 9.14 inHe 1K dewar level 25.28 inHe 4K main flow control 6.0 V LHe temp. 1 5.608 K Heat exch. temp. 3 143.7 K Poly temp. 2 105.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart no Switcher status down AFP temperature 9.6 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 2/8 SCS LHe level 99.9 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr Source pressure 5.5e-6 torr Spectrometer pressure 1.0e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 78.8 % PPM LN2 level 68.0 % AFP LHe level 9.8 % AFP LN2 level 88.6 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 83.1 F West MWPC Temperature 71.6 F MWPC Pressure 100 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West

Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.1 torr Neopentane Flow Rate 12.5 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.36 kV West muon veto HV 2.35 kV East muon veto rate 2955 Hz West muon veto rate 6443 Hz Timing Reset T0 DAQ data_raw disk usage 79% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 285 ns TBCM001I03 13.64 mA "Beamplot" Capture 78%

25477	Tue Jan 29 17:15:35 2013	ebdees

UCNA Shift Change Checklist Date: 1/29/13, 16:00 Shift Persons: Eric, Robbie, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.87 psia Heater C pressure 14.00 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 291.7 psia Tungsten Cool Diff. 282.4 psia Tungsten Cool ret. 75.3 psia 1630 eng. 2 temp. 12.81 K 1630 JT temp. 6.94 K 1630 outlet temp. 272.8 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 36 psig 1410 engine speed 114 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 83.2 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.6 psig 1K dewar pressure 6.5 psig 4K dewar pressure 290 mmHg 4K dewar level 15.1 inHe 1K dewar level 25.1 inHe 4K main flow control 6.0 V LHe temp. 1 5.50 K Heat exch. temp. 3 142.3 K Poly temp. 2 75.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 38 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart no Switcher status thru AFP temperature 9.2 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 86.2 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.7 torr Source pressure 5.1e-6 torr Spectrometer pressure 9.0e-6 torr Hall Probe Y .171 kG Hall Probe Z -.361 kG PPM LHe level 78.9 % PPM LN2 level 70.7 % AFP LHe level 87.2 % AFP LN2 level 73.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.0 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.8 F West MWPC Temperature 75.6 F MWPC Pressure 100 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2855 Hz West muon veto rate 4932 Hz Timing Reset T0 DAQ data_raw disk usage 79% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 285 ns TBCM001I03 14.4 mA "Beamplot" Capture 78%

25476	Tue Jan 29 09:35:51 2013	CLMorris

Xenon? 6He run? thanks Chris

25475	Tue Jan 29 05:04:53 2013	bz

Polarimetry MCS Run 1410 Time CMS Time MIDAS Type Cycles 01-28-13 18:28 100-10500 22932-22934 SLD- 20 21:24 10651-25700 22935-22939 SLD+ 20 1-29-13 01:40 26000-33750 22940-22942 P+ 15 03:50 33805-41600 22943-22945 P- 15

25474	Tue Jan 29 00:43:31 2013	ebdees

UCNA Shift Change Checklist Date: 1/29/13, 00:40 Shift Persons: Eric, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.18 psia Heater C pressure 13.93 psia Tungsten supply press. 285 psig Compressor 1 On Yes (On) Tungsten Cool supp. 278.0 psia Tungsten Cool Diff. 278.1 psia Tungsten Cool ret. 64.7 psia 1630 eng. 2 temp. 12.75 K 1630 JT temp. 7.11 K 1630 outlet temp. 274.0 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 55 psig 1410 engine speed 114 rpm 1410 TE-A 15.5 K 1410 TE-B 6.6 K 1410 TE-E 96.0 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 12.04 inHe 1K dewar level 18.74 inHe 4K main flow control 6.0

V LHe temp. 1 5.57 K Heat exch. temp. 3 155.4 K Poly temp. 2 127.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status down AFP temperature 10 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 4/8 SCS LHe level 95.5 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.5 torr Source pressure 5.8e-6 torr Just after AFP fill Spectrometer pressure 1.2e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.1 % PPM LN2 level 76.0 % AFP LHe level 99.8 % AFP LN2 level 94.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.1 F West MWPC Temperature 78.8 F MWPC Pressure 100 torr N2 - MWPC Differential -6.3 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] Ch12 2200 V ch 15 2150 East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2942 Hz West muon veto rate 5480 Hz Timing Reset T0 DAQ data_raw disk usage 79% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.3 mA "Beamplot" Capture 78%

25473	Mon Jan 28 17:24:03 2013	Hasan

UCNA Shift Change Checklist Date: 1/28/13, 16:30 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 0 slpm see Mark's elog post Heater B pressure 13.22 psia Heater C pressure 13.95 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 279.1 psia Tungsten Cool Diff. 278.8 psia Tungsten Cool ret. 65.7 psia 1630 eng. 2 temp. 15.45 K 1630 JT temp. 8.06 K 1630 outlet temp. 278.8 K 1630 engine speed 120 rpm 1630 supply press. 225 psig 1630 JT press. 185 psig 1630 return press. 0.8 psig 1630 med. press. stor. 65 psig 1410 engine speed 114 rpm 1410 TE-A 16.2 K 1410 TE-B 6.8 K 1410 TE-E 96.5 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 270 mmHg 4K dewar level 13.74 inHe 1K dewar level 18.35 inHe 4K main flow control 4.0 V LHe temp. 1 7.39 K Heat exch. temp. 3 194.8 K Poly temp. 2 85.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes, run# 1409 Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 96.6 % fill in progress SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 4.6 torr CM5 pressure 3.2 torr Source pressure 1.0e-5 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.2 % PPM LN2 level 78.7 % AFP LHe level 995.2 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2708 ON V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.6 F West MWPC Temperature 79.4 F MWPC Pressure 100 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2595 V on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2815 Hz West muon veto rate 4685 Hz Timing Reset H-GX DAQ data_raw disk usage 78% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 288 ns TBCM001I03 14.4 mA "Beamplot" Capture 79% Beam Ready Time: 18:20, Closed GV rate=310

25472	Mon Jan 28 10:00:44 2013	MFMakela

Warming the UCN source for the day. Attempting to get a few mbar on d2 Mensor guage. The heat exchanger flow is closed - switch to control before starting tonight

25471	Sun Jan 27 23:59:11 2013	ebdees

UCNA Shift Change Checklist Date: 1/28/13, 00:40 Shift Persons: Eric, Brian

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.31 psia Heater C pressure 13.74 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 283.2 psia Tungsten Cool Diff. 280.4 psia Tungsten Cool ret. 68.2 psia 1630 eng. 2 temp. 13.13 K 1630 JT temp. 7.22 K 1630 outlet temp. 275.2 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 129 rpm 1410 TE-A 15.6 K 1410 TE-B 6.8 K 1410 TE-E 86.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 14.33 inHe 1K dewar level 10.99 inHe 4K main flow control 6.0 V LHe temp. 1 5.58 K Heat exch. temp. 3 158.02 K Poly temp. 2 190.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 23 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 6/8 SCS LHe level 90.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.4 torr Source pressure 1.0e-5 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.4 % PPM LN2 level 84.0 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5. gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 ON V MWPC Trip Hold Status Trip Hold East MWPC Temperature 90.8 F West MWPC Temperature 82.4 F MWPC Pressure 100 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] CH12 2200 V CH15 2150 East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3180 Hz West muon veto rate 4991 Hz Timing Reset H-GX DAQ data_raw disk usage 78% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 288 ns TBCM001I03 14.4 mA "Beamplot" Capture 79%

25470	Sun Jan 27 16:15:16 2013	Hasan

UCNA Shift Change Checklist Date: 1/27/13, 16:00 Shift Persons: Robby, Hasan
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.21 psia Heater C pressure 13.66 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 284.5 psia Tungsten Cool Diff. 279.9 psia Tungsten Cool ret. 69.9 psia 1630 eng. 2 temp. 12.50 K 1630 JT temp. 6.82 K 1630 outlet temp. 274.0 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 92.8 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 320 mmHg 4K dewar level 12.94 inHe 1K dewar level 11.38 inHe 4K main flow control 6.0 V LHe temp. 1 5.56 K Heat exch. temp. 3 155.7 K Poly temp. 2 181.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 25 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 10.2 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 96.5 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.3 torr Source pressure 8.4e-6 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .169 kG Hall Probe Z -.361 kG PPM LHe level 79.4 % PPM LN2 level 86.6 % AFP LHe level 96.2 % AFP LN2 level 92.9 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10. gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV ON V MWPC Trip Hold Status Trip Hold East MWPC Temperature 90.8 F West MWPC Temperature 82.0 F MWPC Pressure 100 torr N2 - MWPC Differential -7.1 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.0 torr Neopentane Flow Rate 11.9 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3511 Hz West muon veto rate 6015 Hz

Timing Reset H-GX DAQ data_raw disk usage 77% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 288 ns TBCM001I03 14.3 mA "Beamplot" Capture 78%

25469	Sun Jan 27 14:43:49 2013	ASaunders

shift summary AS and ED beam off at start of shift due to tune lurch ~half current for about an hour after beam returned. Filled AFP from 4K and SCS from 1K Set 1410 to 120 RPM to make more liquid and also set 1410 JT valve to manual mode at 38.6% to reduce oscillations in 1410. 0803 22864 B3 depol on->off W/R=4/58=0.069(36) Preceded by several minutes of beta on geometry 0810 22865 B4 Bkg off E=1.12 W=1.06 GV=17.3 0821 22866 B5 beta off E=9.2 W=9.8 Fe/GV=0.47 SCS/GV=0.34 beta/GV=1.40 0916 22867 B6 depol off->on W/R=2/114=0.018(13) 0923 22868 B7 beta off E=10.8 W=11.5 Fe/GV=0.47 SCS/GV=0.35 beta/GV=1.38 1018 22869 B8 depol off->on W/R=8/127=0.063(23) 1026 22870 B9 bkg on E=1.10 W=1.06 GV=24.7 1036 22871 B10 beta on E=8.14 W=7.44 Fe/GV=0.12 SCS/GV=0.26 beta/GV=0.99 1131 22872 B10 beta on E=10.39 W=4.99 Fe/GV=0.18 SCS/GV=0.33 beta/GV=0.93 note only 2.4 seconds long 1132 22873 B11 depol on ->off W/R=4/66=0.061(31) 1139 22874 B12 bkg on E=1.17 W=1.12 GV=23.7 New octet B->A 1158 22875 B1 bkg on E=1.20 W=1.04 GV=24.0 1209 22876 B2 beta on E=7.63 W=6.92 Fe/GV=0.11 SCS/GV=0.26 beta/GV=0.99 1304 22877 B3 depol on->off W/R=7/60=0.117(47) 1312 22878 B4 bkg off E=1.09 W=1.04 GV=22.6 1322 22879 B5 beta off E=10.0 W=10.7 Fe/GV=0.48 SCS/GV=0.34 beta/GV=1.38 1418 22880 B6 depol off->on W/R=8/125=0.064(23) 1425 22881 B7 beta off E=10.2 W=10.8 Fe/GV=0.47 SCS/GV=0.34 beta/GV=1.40 1520 22882 B8 depol off->on W/R=6/140=0.043(18) 1527 22883 B9 bkg off E=1.25 W=1.14 GV=24.1 1538 22884 B10 beta on

25468	Sun Jan 27 13:54:25 2013	CLMorris

Little b valve opened Stating FDAC run 6268 -l 10 -b 3600 Thick walled uncuated box installed no window Look for 6He betadecay

25466	Sun Jan 27 07:30:13 2013	bz

Time MIDAS Type 01-26-13 1501 22840 A5 beta on E=7.959 W=7.153 Fe/GV=0.117 SCS/GV=0.269 beta/GV=1.01 1556 22841 A6 depol on->off W/R=0/42=0(0) 23:10 22844 A7 Beta ON E= 9.067 W= 8.087 Fe/GV=0.1171 SCS/GV=0.2645 E+W/GV=0.9976 01-27-13 00:05 22845 A8 D+ W/R=9/62 00:12 22846 A9 Bkg ON E= 1.116 W= 1.081 GV=26.9 00:23 22847 A10 Beta OFF E=10.745 W=11.561 Fe/GV=0.4736 SCS/GV=0.3386 E+W/GV=1.3795 01:18 22848 A11 D- W/R=3/138 01:25 22849 A12 Bkg OFF E= 1.099 W= 1.165 GV=24.7 New A -> B Octet 01:42 22850 A1 Bkg OFF E= 1.123 W= 1.118 GV=24.6 01:55 22851 A2 Beta OFF E=10.525 W=11.166 Fe/GV=0.4665 SCS/GV=0.3378 E+W/GV=1.375 02:47 22852 A3 D- W/R=4/141 02:55 22853 A4 Bkg ON E= 1.141 W= 1.115 GV=24.3 03:05 22854 A5 Beta ON E= 8.122 W= 7.292 Fe/GV=0.1149 SCS/GV=0.2659 E+W/GV=0.9812 04:01 22855 A6 D+ W/R=8/70 04:08 22856 A7 Beta ON E= 8.088 W= 7.336 Fe/GV=0.1140 SCS/GV=0.2638 E+W/GV=0.9850 05:04 22857 A8 D+ W/R=8/61 05:11 22858 A9 Bkg ON E= 1.181 W= 1.090 GV=24.2 05:22 22859 A10 Beta OFF E= 9.701 W=10.366 Fe/GV=0.4707 SCS/GV=0.3390 E+W/GV=1.3958 06:17 22860 A11 D- W/R=4/150 06:24 22861 A12 Bkg OFF E= 1.144 W= 1.066 GV=24.1 06:35 22862 B1 Bkg ON E= 1.062 W= 1.079 GV=24.1 06:45 22863 B2 Beta ON E= 3.373 W= 3.118 Fe/GV=0.1250 SCS/GV=0.2629 E+W/GV=1.3245

25467	Sun Jan 27 07:21:14 2013	ebdees

UCNA Shift Change Checklist Date: 1/27/13, 08:10 Shift Persons: Eric, Andy ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.7 psia Heater C pressure 13.65 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282.7 psia Tungsten Cool Diff. 279.5 psia Tungsten Cool ret. 68.4 psia 1630 eng. 2 temp. 12.29 K 1630 JT temp. 6.73 K 1630 outlet temp. 273.8 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 45 psig 1410 engine speed 110 rpm 1410 TE-A 15.6 K 1410 TE-B 6.6 K 1410 TE-E 89.1 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 305 mmHg 4K dewar level 14.07 inHe 1K dewar level 26.27 inHe 4K main flow control 6.0 V LHe temp. 1 5.50 K Heat exch. temp. 3 150.7 K Poly temp. 2 155.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27 gallon/100 Gate valve status closed (depol) D2 Pump port status closed MCS Program restart yes Switcher status down (depol) AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 83.7 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.3 torr Source pressure 1.1e-5 torr Spectrometer pressure 9.5e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.6 % PPM LN2 level 90.0 % AFP LHe level 89.8 % AFP LN2 level 85.6 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10. gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold

Status Trip Hold East MWPC Temperature 89.4 F West MWPC Temperature 79.8 F MWPC Pressure 100 torr N2 - MWPC Differential -6.5 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.5 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2836 Hz West muon veto rate 4971 Hz Timing Reset H-GX DAQ data_raw disk usage 77% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 200 ns booooo! TBCM001I03 14.2 mA "Beamplot" Capture 78%

25465	Sun Jan 27 00:54:18 2013	Erik

UCNA Shift Change Checklist Date: 1/26/13, 00:30 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 14.21 psia Heater C pressure 13.88 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 285.1 psia Tungsten Cool Diff. 281.0 psia Tungsten Cool ret. 69.3 psia 1630 eng. 2 temp. 14.42 K JUST ENDED A FILL 1630 JT temp. 8.3 K 1630 outlet temp. 274.9 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.2 psig 1630 med. press. stor. 55 psig 1410 engine speed 110 rpm 1410 TE-A 16.2 K 1410 TE-B 7.1 K 1410 TE-E 95.0 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 1K dewar pressure 6.3 psig 4K dewar pressure 295 mmHg 4K dewar level 12.79 inHe 1K dewar level 20.89 inHe 4K main flow control 6.0 V LHe temp. 1 5.57 K Heat exch. temp. 3 148.9 K Poly temp. 2 141.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart run 1405 Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 90.4 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.4 torr Source pressure 1.1e-5 torr Just after AFP fill Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.8 % PPM LN2 level 94.5 % AFP LHe level 99.8 % AFP LN2 level 84.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 90.4 F West MWPC Temperature 81.5 F MWPC Pressure 100 torr N2 - MWPC Differential -6.4 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3022 Hz West muon veto rate 5013 Hz Timing Reset H-GX DAQ data_raw disk usage 77% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.2 mA "Beamplot" Capture 79%

25464	Sat Jan 26 22:06:21 2013	ASaunders

Shift summary AS and ED Arrived to find OCE network completely down. Started B->A octet in manual control. Filled AFP. Sped up 1410 from 100 to 110 RPM. 0826 22821 B1 Bkg on E=1.07 W=1.07 GV=24.7 0838 22822 B2 Beta on E=8.3 W=7.5 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 0934 22823 B2 Beta on E=8.3 W=7.4 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 0942 22824 B3 depol on->off W/R=6/50=0.120(51) 0950 22825 B4 Bkg off E=1.11 W=1.08 GV=24.1 1000 22826 B5 beta off E=10.7 W=11.3 Fe/GV=0.47 SCS/GV=0.35 beta/GV=1.39 1103 22829 B6 depol off-> on W/R=4/126=0/032(16) 1111 22830 B7 beta off E=10.3 W=11.1 Fe/GV=0.47 SCS/GV=0.35 beta/GV=1.39 1206 22831 B8 depol off->on W/R=3/153=0.020(11) 1213 22832 B9 Bkg off E=1.1 W=1.2 GV=24.0 1224 22833 B10 beta on E=8.0 W=7.1 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 1319 22834 B11 depol on->off W/R=6/70=0.086(36) 1327 22835 B12 bkg on E=1.14 W=1.05 GV=24.0 1337 22836 A1 bkg off E=1.11 W=1.12 GV=24.0 1348 22837 A2 beta off E=10.6 W=11.1 Fe/GV=0.47 SCS/GV=0.34 beta/GV=1.39 1443 22838 A3 depol off->on W/R=6/142=0.042(18) 1450 22839 A4 bkg on E=1.12 W=1.18 GV=23.8

25463	Sat Jan 26 20:30:48 2013	EIC

UCNA Shift Change Checklist Date: 1/25/13, 09:56 Shift Persons: Eric, Marie, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower

on Heat exchanger flow 50 slpm Heater B pressure 13.14 psia Heater C pressure 13.87 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 284.3 psia Tungsten Cool Diff. 279.6 psia Tungsten Cool ret. 69.8 psia 1630 eng. 2 temp. 12.26 K 1630 JT temp. 6.46 K 1630 outlet temp. 273.3 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 110 rpm 1410 TE-A 15.3 K 1410 TE-B 6.7 K 1410 TE-E 96.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 15.14 inHe 1K dewar level 21.79 inHe 4K main flow control 6.0 V LHe temp. 1 5.499 K Heat exch. temp. 3 168.68 K Poly temp. 2 156.5 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 84.4 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.3 torr Source pressure 1.3e-5 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 79.9 % PPM LN2 level 97.2 % AFP LHe level 89.2 % AFP LN2 level 78.6 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 91 F West MWPC Temperature 82.2 F MWPC Pressure 100 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2150 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2963 Hz West muon veto rate 4796 Hz Timing Reset H-GX DAQ data_raw disk usage 76% Proton beam status Beam Fire. No neutrons. Proton burst spacing Proton pulses/burst Proton countdown Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture 78%

25462	Sat Jan 26 17:26:36 2013	Marie_Blatnik

The Polarimetry Panel (from helloUCNDigitalGateCtrl.vi) now contains a "big red help button," per the request of Robert Pattie. It is beautiful and should be a symbol of hope for Andy Saunders, who was surprised at Robbie's optimism. It is only an active button while the program is running. When you click it, it opens the "PolarimetryInterfaceDocumentation.pdf" for you, located on the desktop of the ucncontrol computer, which outlines the new features of the labview vi and how to run each (and any) type of polarimetry run. Attached is a copy of this PolarimetryInterfaceDocumentation.pdf

Attachment 1: erfaceDocumentation.pdf

25461	Sat Jan 26 16:30:23 2013	Rpattie

Beam is down due to a fire in the capacitor room so we are doing a melt and refreeze. CC1 &2 off SV3-5 close Gate Valve closed and Disabled Pump out port openned D2 tank closed Check valve bypass openned poly pump off Source flow to 1.0V 1630 return switched to warm side. At 220mbar Source Flow to 3.5V (rose to about 250mbar) Let the pressure drop to 168 then turn flow to 1.0V At 220mbar flow to 3.5V pressure to 169 source to 1.5 V going to attempt holding the pressure at ~230mbar for last melt held at 330 ish for about 6 minute source t 3.5 V until about 35mbar then to 6.0V Check valve closed D2 tank openned poly pump on 1630 to cold return will reenable the gate valve.

25460	Sat Jan 26 15:10:38 2013	ASaunders

Shift summary AS and ED Arrived to find OCE network completely down. Started B->A octet in manual control. Filled AFP. Sped up 1410 from 100 to 110 RPM. 0826 22821 B1 Bkg on E=1.07 W=1.07 GV=24.7 0838 22822 B2 Beta on E=8.3 W=7.5 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 0934 22823 B2 Beta on E=8.3 W=7.4 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 0942 22824 B3 depol on->off W/R=6/50=0.120(51) 0950 22825 B4 Bkg off E=1.11 W=1.08 GV=24.1 1000 22826 B5 beta off E=10.7 W=11.3 Fe/GV=0.47 SCS/GV=0.35 beta/GV=1.39 1103 22829 B6 depol off-> on W/R=4/126=0/032(16) 1111 22830 B7 beta off E=10.3 W=11.1 Fe/GV=0.47 SCS/GV=0.35 beta/GV=1.39 1206 22831 B8 depol off->on W/R=3/153=0.020(11) 1213 22832 B9 Bkg off E=1.1 W=1.2 GV=24.0 1224 22833 B10 beta on E=8.0 W=7.1 Fe/GV=0.12 SCS/GV=0.27 beta/GV=1.01 1319 22834 B11 depol on->off W/R=6/70=0.086(36) 1327 22835 B12 bkg on E=1.14 W=1.05 GV=24.0 1337 22836 A1 bkg off E=1.11 W=1.12 GV=24.0 1348 22837 A2 beta off E=10.6 W=11.1 Fe/GV=0.47 SCS/GV=0.34 beta/GV=1.39 1443 22838 A3 depol off->on W/R=6/142=0.042(18) 1450 22839 A4 bkg on E=1.12 W=1.18 GV=23.8

25459	Sat Jan 26 09:26:55 2013	ebdees

UCNA Shift Change Checklist Date: 1/25/13, 09:56 Shift Persons: Eric, Andy

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.20 psia Heater C pressure 14.12 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 287.0 psia Tungsten Cool Diff. 282.1 psia Tungsten Cool ret. 70.9 psia 1630 eng. 2 temp. 12.32 K 1630 JT temp. 6.61 K 1630 outlet temp. 273.9 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 60 psig 1410 engine speed 100 rpm 1410 TE-A 15.0 K 1410 TE-B 6.5 K 1410 TE-E 82.9 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 13.09 inHe 1K dewar level 21.25 inHe 4K main flow control 6.0 V LHe temp. 1 5.49 K Heat exch. temp. 3 173.5 K Poly temp. 2 183.08 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS
********** N2 Tanker Volume 38.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 10.1 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 8/8 SCS LHe level 90.2 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 2.2e-5 torr Spectrometer pressure 6.6e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.1 % PPM LN2 level 98.9 % AFP LHe level 87.0 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 20 psig AFP chiller flow rate 10. gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 90.9 F West MWPC Temperature 82.0 F MWPC Pressure 100 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2150 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 5442 Hz West muon veto rate 8614 Hz Timing Reset H-GX DAQ data_raw disk usage 76% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.2 mA "Beamplot" Capture 78%

25456	Sat Jan 26 06:22:36 2013	Rpattie

Evening shifters: Marie and Robby | ----------+---------- Run summary as follows ---------- Time MIDAS# Type Run Info ---------- 2005 22794 A1:bkg(off) E = 1.984 W = 1.422 GV = 23.3 2015 22795 A2:beta(off) E = 11.461 W = 11.682 Fe/Gv = 0.476 SCS/GV =0.3440 E+W/GV = 1.556 2110 22796 A3:Depol(off->on) w/r = 3/117 = 0.026(15) 2118 22797 A4:Bkg(on) E = 1.958 W =1.395 GV = 22.7 2128 22798 A5:Beta(on) E = 8.929 W = 7.599 Fe/GV = 0.1158 SCS/GV = 0.2659 E+W/GV = 1.1344 2224 22799 A6:Depol(on->off) w/r = 7/76 = 0.092(36) 2231 22800 A7:Beta(on) E = 8.840 W = 7.496 FE/GV = 0.1185 SCS/GV = 0.2592 E+W/Gv = 1.1351 2327 22801 A8:Depol(on->off) W/R=4/52 = 0.077(40) 2334 22802 A9:Bkg(on) E = 1.831 W = 1.395 GV = 22.3 2345 22803 A10:Beta(off) E = 11.075 W = 11.303 Fe/GV = 0.4714 SCS/GV = 0.3444 E+W/GV = 1.535 0040 22804 A11:Depol(off->on) W/R=5/116=0.043(20) All the runs before this T0 was in instead of H-GX 0047 22805 A12:Bkg(off) E = 1.096 W = 1.089 GV = 22.1 0058 22806 B1:Bkg(on) E = 1.042 W = 1.020 GV = 22.2 0108 22807 B2:Beta(on) E = 7.475 W = 6.885 FE/GV = 0.1185 SCS/GV = 0.2653 E+W/GV = 1.0103 0204 22808 B3:Depol(off->on) W/R = 7/68 = 0.103(41) 0211 22809 B4:Bkg(off) E = 1.088 W = 1.085 GV = 21.9 0222 22810 B5:Beta(off) E = 9.693 W = 10.246 Fe/GV = 0.4750 SCS/GV = 0.3446 E+W/GV = 1.4005 0317 22811 B6:Depol(off->on) W/R = 5/122 = 0.041(19) 0324 22812 B7:Beta(off) E = 9.552 W = 10.206 Fe/GV = 0.4767 SCS/GV = 0.2651 E+W/GV = 1.390 0419 22813 B8:Depol(off->on) W/R = 1/122 = 0.008(8) 0427 22814 B9:Bkg(off) E = 1.161 W = 1.083 GV = 21.6 0437 22815 B10:Beta(on) E = 7.288 W = 6.204 Fe/GV = 0.1204 SCS/GV = 0.2651 E+W/GV = 1.0058 0533 22816 B11:Depol(on->off) W/R = 3/61 = 0.049(29) 0540 22817 B12:Bkg(on) E = 1.131 W = 1.004 GV = 21.5 ----------

25458	Sat Jan 26 05:50:06 2013	bz

6 AM Melt and Refreeze flapper set to noflap, open SV3, SV4 verified closed cc1 off d2 pumpout port open gate valve 24V BNC unplugged 1630 return moved to warm return booster pump off heat exchanger closed orange valve closed check valve bypass open source voltage to 1.3V 06:11 reached 220mBar, source voltage to 4.0V 06:17 reached 160mBar, source voltage to 1.3V (long triple point) 06:24 reached 220mBar, source voltage to 4.0V 06:29 reached 160mBar, source voltage to 1.3V 06:37 reached 220mBar, source voltage to 4.0V 06:49 reached 35mBar, source voltage to 6.0V

25457	Fri Jan 25 23:40:48 2013	Erik

UCNA Shift Change Checklist Date: 1/25/13, 00:38 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.44 psia Heater C pressure 14.06 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 288.0 psia Tungsten Cool Diff. 282.1 psia Tungsten Cool ret. 71.9 psia 1630 eng. 2 temp. 12.47 K 1630 JT temp. 6.88 K 1630 outlet temp. 273.9 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 70 psig 1410 engine speed 100 rpm 1410 TE-A 14.9 K 1410 TE-B 6.3 K 1410 TE-E 99.0 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 320 mmHg 4K dewar level 11.29 inHe 1K dewar level 15.97 inHe 4K main flow control 6.0 V LHe temp. 1 5.493 K Heat exch. temp. 3 147.15 K Poly temp. 2 169.15 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 38.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart not yet Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 6/8 SCS LHe level 97.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.6 torr Source pressure 6.7e-6 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.360 kG PPM LHe level 80.3 % PPM LN2 level 51 % AFP LHe level 95.2 % AFP LN2 level 91.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 91.0 F West MWPC Temperature 82.6 F MWPC Pressure 100 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.0 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2783 Hz West muon veto rate 4718 Hz Timing Reset T0 DAQ data_raw disk usage 76% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.2 mA "Beamplot" Capture 78%

25455	Fri Jan 25 22:08:16 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/25/13, 17:30 Shift Persons: Marie Blatnik, Robbie Pattie, Eric Dees ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.39 psia Heater C pressure 14.02 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 287.5 psia Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 71.4 psia 1630 eng. 2 temp. 13.31 K 1630 JT temp. 7.57 K 1630 outlet temp. 275.5 K 1630 engine speed 120 rpm 1630 supply press. 225 psig 1630 JT press. 185 psig 1630 return press. 1.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 101 rpm 1410 TE-A 16.4 K 1410 TE-B 6.3 K 1410 TE-E 93.1 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 250 mmHg 4K dewar level 14.14 inHe 1K dewar level 16.81 inHe 4K main flow control 6.0 V LHe temp. 1 5.37 K Heat exch. temp. 3 139.2 K Poly temp. 2 77.49 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 38.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart not yet Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 6/8 SCS LHe level 97.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.6 torr Source pressure 6.7e-6 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.360 kG PPM LHe level 80.3 % PPM LN2 level 51 % AFP LHe level 95.2 % AFP LN2 level 91.8 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 91.0 F West MWPC Temperature 82.6 F MWPC Pressure 100 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.0 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top

Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2783 Hz West muon veto rate 4718 Hz Timing Reset T0 DAQ data_raw disk usage 76% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 280 ns TBCM001I03 14.2 mA "Beamplot" Capture 78%

25454	Fri Jan 25 10:48:49 2013	bz

Source Runs Bi/Ce/Sn Paddle, serials facing west Time MIDAS 06:42 22767 Fully Inserted 06:51 22768 0.5 in Retracted 07:03 22769 1.0 in Retracted 07:11 22770 1.5 in Retracted 07:19 22771 2.0 in Retracted 07:28 22772 2.5 in Retracted 07:37 22773 3.0 in Retracted 07:46 22774 3.5 in Retracted 07:54 22775 4.0 in Retracted ** Analyzer crashed before end of run, restarted DAQ 08:03 22776 4.0 in Retracted 08:12 22777 4.5 in Retracted 08:19 22778 5.0 in Retracted 08:28 22779 5.5 in Retracted 08:39 22780 6.0 in Retracted Cd/Cs/In Paddle Time MIDAS Facing 09:08 22781 Fully Inserted East 09:17 22782 0.5 in Retracted West 09:26 22783 1.0 in Retracted East 09:35 22784 1.5 in Retracted West 09:44 22785 2.0 in Retracted East 09:53 22786 2.5 in Retracted West ** Says East in Runlog 10:09 22787 3.0 in Retracted East 10:19 22788 3.5 in Retracted West 10:27 22789 4.0 in Retracted East 10:38 22790 4.5 in Retracted West 10:48 22791 5.0 in Retracted East 10:57 22792 5.5 in Retracted West 11:07 22793 6.0 in Retracted East

25453	Fri Jan 25 10:00:36 2013	bz

Polarimetry Runs for the night of 1-24-13 to 1-25-13 Time MIDAS MCSTime/Run# Type Cycles 19:40 22747 0/1401 GFT-(5s) 8 20:27 22748 2761/1401 GFT+(5s) 8 20:50 22749 4050/1401 GFT-(10s) 8 21:17 22750 5690/1401 GFT+(10s) 8 21:39 22751 7057/1401 GFT-(15s) 8 22:06 22752 8620/1401 GFT+(15s) 8 22:30 22753 10080/1401 GFT-(25s) 8 23:05 22754 12200/1401 GFT+(25s) 8 23:33 22755 13878/1401 GFT-(40s) 8 00:04 22756 15750/1401 GFT+(40s) 8 00:31 22757 17345/1401 GFT+(50s) 8 01:04 22758 25/1402 GFT-(50s) 8 01:33 22759 1742/1402 GFT-(60s) 8 02:03 22760 3548/1402 GFT+(60s) 8 02:34 22761-2 5410/1402 SFT+ 10 03:42 22763-4 9510/1402 SFT- 10 04:53 22765-6 13740/1402 DE-(45s) 8

25452	Fri Jan 25 05:07:02 2013	carr

UCNA Shift Change Checklist Date: 1/25/13, 01:30 Shift Persons: Brian, Bob C. ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 126 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.30 psia Heater C pressure 13.93 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 289.2 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 73.6 psia 1630 eng. 2 temp. 11.04 K 1630 JT temp. 6.28 K 1630 outlet temp. 270.6 K 1630 engine speed 103 rpm 1630 supply press. 215 psig 1630 JT press. 177 psig 1630 return press. 1.0 psig 1630 med. press. stor. 65 psig 1410 engine speed 100 rpm 1410 TE-A 15.6 K 1410 TE-B 7.4 K 1410 TE-E 84.8 K 1410 supply press. 246 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 290 mmHg 4K dewar level 13.76 inHe 1K dewar level 16.67 inHe 4K main flow control 6.0 V LHe temp. 1 5.41 K Heat exch. temp. 3 143.5 K Poly temp. 2 116.1 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart new run 1402 Switcher status down POLARIMETRY AFP temperature 9.6 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 93.2 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 9.2e-6 torr Spectrometer pressure 2.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.4 % PPM LN2 level 55.9 % AFP LHe level 80.5 % AFP LN2 level 78.1 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 91.3 F West MWPC Temperature 82.7 F MWPC Pressure 100 torr N2 - MWPC Differential -6.3 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.3 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2957 Hz West muon veto rate 5501 Hz Timing Reset T0 DAQ data_raw disk usage 75% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 290 ns TBCM001I03 14.1 mA "Beamplot" Capture 79%

25451	Thu Jan 24 19:17:21 2013	ebdees

UCNA Shift Change Checklist Date: 1/24/13, 00:30 Shift Persons: Eric, Marie, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.30 psia Heater C pressure 13.99 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 291.4 psia Tungsten Cool Diff. 282.8 psia Tungsten Cool ret. 74.5 psia 1630 eng. 2 temp. 11.58 K 1630 JT temp. 6.02 K 1630 outlet temp. 272.6 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 101 rpm 1410 TE-A 17.4 K 1410 TE-B 6.9 K 1410 TE-E 94.7 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 320 mmHg 4K dewar level 12.09 inHe 1K dewar level 12.56 inHe 4K main flow control 6.0 V LHe temp. 1 5.44 K Heat exch. temp. 3 159.2 K Poly temp. 2 76.1 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status thru POLARIMETRY AFP temperature 9.6 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 97.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.8 torr Source pressure 9.2e-6 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.5 % PPM LN2 level 58.3 % AFP LHe level 95.7 % AFP LN2 level 92.6 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 91.1 F West MWPC Temperature 82.7 F MWPC Pressure 100 torr N2 - MWPC Differential -6.8 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2710 Hz West muon veto rate 4694 Hz Timing Reset T0 DAQ data_raw disk usage 75% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 295 ns TBCM001I03 14.0 mA "Beamplot" Capture 79%

25446	Thu Jan 24 18:48:32 2013	DAQ On-line

01/23 18:30 Start Run 13747 UCN0030 2011 UCN Tuning Beam
01/23 18:41 Run Suspended
01/23 18:41 Run Resumed

25450	Thu Jan 24 15:27:07 2013	Rpattie

After a slow (.5 hr) increase to 220mbar source flow to -> 3.5V Source spent about 6min at the triple point

25449	Thu Jan 24 14:53:24 2013	Rpattie

Starting a melt and refreeze of the source. GV-disabled. Pump out open. D2 tank close check valve bypass open source flow to 1.5 V switch return side of 1630 to the warm side. will increase pressure to 220mbar before returning to 3.5 V

25448	Thu Jan 24 04:51:22 2013	bz

Time MIDAS MCS Time/Run Type Cycles 19:36 22733-5 0/1399 P- 15 21:52 22736-8 8200/1399 P+ 15 00:04 22739-41 16060/1399 SLD+ 20 Started new MCS Run 02:52 22742-4 9219/1400 SLD- 20

25447	Thu Jan 24 04:33:38 2013	bz

UCNA Shift Change Checklist Date: 1/24/13, 00:30 Shift Persons: Bryan, Bob C. ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 127 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.35 psia Heater C pressure 13.85 psia Tungsten supply press. 285 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282.1 psia Tungsten Cool Diff. 279.3 psia Tungsten Cool ret. 67.9 psia 1630 eng. 2 temp. 12.43 K 1630 JT temp. 6.82 K 1630 outlet temp. 273.3 K 1630 engine speed 121 rpm 1630 supply press. 249 psig 1630 JT press. 201 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 110 rpm 1410 TE-A 15.2 K 1410 TE-B 7.0 K 1410 TE-E 91.5 K 1410 supply press. 245 psig

1410 JT press. 191 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 320 mmHg 4K dewar level 8.90 inHe 1K dewar level 32.09 inHe 4K main flow control 6.0 V LHe temp. 1 5.437 K Heat exch. temp. 3 141.59 K Poly temp. 2 112.04 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart new run 1400 Switcher status down POLARIMETRY AFP temperature 9.9 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 1/8 SCS LHe level 95.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 6.0e-6 torr Spectrometer pressure 1.2e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.7 % PPM LN2 level 63.9 % AFP LHe level 86.9 % AFP LN2 level 80.0 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 89.7 F West MWPC Temperature 81.3 F MWPC Pressure 100 torr N2 - MWPC Differential -6.5 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2989 Hz West muon veto rate 5895 Hz Timing Reset T0 DAQ data_raw disk usage 74% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 300 ns TBCM001I03 13.96 mA "Beamplot" Capture 79%

25445	Wed Jan 23 19:10:10 2013	ebdees

UCNA Shift Change Checklist Date: 1/23/13, 04:00 Shift Persons: Eric, Marie, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.84 psia Heater C pressure 14.11 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 284.1 psia Tungsten Cool Diff. 280.3 psia Tungsten Cool ret. 68.9 psia 1630 eng. 2 temp. 14.77 K During a FILL 1630 JT temp. 8.66 K 1630 outlet temp. 278.8 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 2 psig 1630 med. press. stor. 70 psig 1410 engine speed 109 rpm 1410 TE-A 15.2 K 1410 TE-B 6.5 K 1410 TE-E 83.7 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 250 mmHg 4K dewar level 7.94 inHe 1K dewar level 26.5 inHe 4K main flow control 6.0 V LHe temp. 1 5.45 K Heat exch. temp. 3 138.75 K Poly temp. 2 58.8 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart stopped NO BEAM Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 1/8 SCS LHe level 99.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 5e-6 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.8 % PPM LN2 level 66.4 % AFP LHe level 99.8 % AFP LN2 level 97.2 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 89.5 F West MWPC Temperature 80.3 F MWPC Pressure 100 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2913 Hz West muon veto rate 4716 Hz Timing Reset H-GX DAQ data_raw disk usage 74% Proton beam status burst Proton burst spacing 5 Proton pulses/burst 5 Proton countdown 1 Proton Pattern width 200 ns TBCM001I03 13.96 mA "Beamplot" Capture 79%

25444	Wed Jan 23 17:30:49 2013	DAQ On-line

01/23 17:30 Start Run 13746 UCN0030 2011 UCN Tuning Beam
01/23 18:30 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13746	0	323.	153.	153.	153.	153.00	0.00
13746	1	0.	0.	0.	0.	0.00	0.00
13746	2	0.	0.	0.	0.	0.00	0.00
13746	3	0.	0.	0.	0.	0.00	0.00
13746	10	0.	0.	0.	0.	0.00	0.00

25443 | Wed Jan 23 16:30:45 2013 | DAQ On-line

01/23 16:30 Start Run 13745 UCN0030 2011 UCN Tuning Beam
01/23 17:30 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13745	0	170.	170.	170.	170.	170.00	0.00
13745	1	0.	0.	0.	0.	0.00	0.00
13745	2	0.	0.	0.	0.	0.00	0.00
13745	3	0.	0.	0.	0.	0.00	0.00
13745	10	0.	0.	0.	0.	0.00	0.00

25442 | Wed Jan 23 05:30:28 2013 | bz

UCNA Shift Change Checklist Date: 1/23/13, 04:00 Shift Persons: Bryan, Bob C. ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 127 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.31 psia Heater C pressure 13.91 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 282.3 psia Tungsten Cool Diff. 279.2 psia Tungsten Cool ret. 68.0 psia 1630 eng. 2 temp. 11.86 K During a FILL 1630 JT temp. 6.66 K 1630 outlet temp. 270.7 K 1630 engine speed 108 rpm 1630 supply press. 224 psig 1630 JT press. 184 psig 1630 return press. 0.8 psig 1630 med. press. stor. 68 psig 1410 engine speed 110 rpm 1410 TE-A 15.7 K 1410 TE-B 8.4 K 1410 TE-E 94.0 K 1410 supply press. 246 psig 1410 JT press. 204 psig 1410 return press. 3.2 psig 1K dewar pressure 5.9 psig 4K dewar pressure 288 mmHg 4K dewar level 12.31 inHe 1K dewar level 24.19 inHe 4K main flow control 6.0 V LHe temp. 1 5.348 K Heat exch. temp. 3 141.26 K Poly temp. 2 65.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart stopped NO BEAM Switcher status thru AFP temperature 9.3 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 91.7 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 5.5e-6 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 80.9 % PPM LN2 level 70.7 % AFP LHe level 91.8 % AFP LN2 level 76.5 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88.2 F West MWPC Temperature 79.1 F MWPC Pressure 100 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2841 Hz West muon veto rate 4633 Hz Timing Reset H-GX DAQ data_raw disk usage 74% Proton beam status Broken Proton burst spacing infinity Proton pulses/burst 0 Proton countdown 0 Proton Pattern width infinity TBCM001I03 0 "Beamplot" Capture 0%

25441 | Tue Jan 22 16:18:44 2013 | Marie_Blatnik

UCNA Shift Change Checklist Date: 1/22/13, 16:35 Shift Persons: Marie, Eric, Roberto ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 14.25 psia Heater C pressure 14.12 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 285.4 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 69.9 psia 1630 eng. 2 temp. 12.81 K 1630 JT temp. 7.24 K 1630 outlet temp. 276.7 K 1630 engine speed 120 rpm 1630 supply press. 246 psig 1630 JT press. 200 psig 1630 return press. 2.4 psig 1630 med. press. stor. 60 psig 1410 engine speed 110 rpm 1410 TE-A 14.8 K 1410 TE-B 7.6 K 1410 TE-E 80.6 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 5.5 psig 4K dewar pressure 320 mmHg 4K dewar level 15.53 inHe 1K dewar level 21.82 inHe 4K main flow control 6.0 V LHe temp. 1 5.50 K Heat exch. temp. 3 145.7 K Poly temp. 2 78.64 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 39.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart 1398 (at time 4:29) Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 7/16 SCS LHe level 86.7 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 6.3e-6 torr Spectrometer pressure 1.0e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.0 % PPM LN2 level 74.7 % AFP LHe level 99.5 % AFP LN2 level 80.3 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 88 F West MWPC Temperature 79 F MWPC Pressure 100 torr N2 - MWPC Differential -6.8 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] 2200 V ch 12, 2150 V ch 15 East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2787 Hz West muon veto rate 4826 Hz Timing Reset H-GX DAQ data_raw disk usage 74% Proton beam status Broken Proton burst spacing infinity Proton pulses/burst 0 Proton countdown 0 Proton Pattern width infinity TBCM001I03 0 "Beamplot" Capture 0%

25440	Tue Jan 22 15:11:00 2013	DAQ On-line

01/22 16:10 Start Run 13744 UCN0030 2011 UCN
01/22 16:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 2	0	0.00000E+00	0	0.00000E+00
Run 13744	0	0.00000E+00	0	0.00000E+00
Batch started at 13744	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13744	0	0.	0.	0.	0.	0.00	0.00
13744	1	0.	0.	0.	0.	0.00	0.00
13744	2	0.	0.	0.	0.	0.00	0.00
13744	3	0.	0.	0.	0.	0.00	0.00
13744	10	12.	12.	1.	7.	4.00	3.00

25439	Tue Jan 22 14:57:00 2013	DAQ On-line

01/22 15:56 Start Run 13743 UCN0030 2011 UCN

01/22 15:56 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 2	0	0.00000E+00	1	3.53280E-04
Run 13743	0	0.00000E+00	2	7.04000E-04
Batch started at 13743	0	0.00000E+00	2	7.04000E-04

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13743	0	0.	0.	0.	0.	0.00	0.00
13743	1	0.	0.	0.	0.	0.00	0.00
13743	2	0.	0.	0.	0.	0.00	0.00
13743	3	0.	0.	0.	0.	0.00	0.00
13743	10	16.	16.	1.	10.	5.33	4.51

25438 | Tue Jan 22 14:56:04 2013 | DAQ On-line

01/22 15:54 Start Run 13742 UCN0030 2011 UCN
01/22 15:56 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 6	0	0.00000E+00	1	3.58400E-04
Run 13742	0	0.00000E+00	6	2.12736E-03
Batch started at 13742	0	0.00000E+00	6	2.12736E-03

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13742	0	1.	1.	0.	1.	0.14	0.38
13742	1	0.	0.	0.	0.	0.00	0.00
13742	2	0.	0.	0.	0.	0.00	0.00
13742	3	0.	0.	0.	0.	0.00	0.00
13742	10	73.	73.	2.	22.	10.43	7.09

25437 | Mon Jan 21 23:20:40 2013 | mmendenhall

UCNA Shift Change Checklist Date: 1/22/13, 00:05 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.15 psia Heater C pressure 13.96 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.4 psia Tungsten Cool Diff. 281.7 psia Tungsten Cool ret. 70.4 psia 1630 eng. 2 temp. 11.95 K 1630 JT temp. 6.43 K 1630 outlet temp. 268.7 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 55 psig 1410 engine speed 109 rpm 1410 TE-A 15.5 K 1410 TE-B 6.8 K 1410 TE-E 95.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 315 mmHg 4K dewar level 15.48 inHe 1K dewar level 20.18 inHe 4K main flow control 6.0 V LHe temp. 1 5.363 K Heat exch. temp. 3 177.84 K Poly temp. 2 194.13 K flapper heater cur

0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 2/3 SCS LHe level 94.9 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 1.8e-5 torr Spectrometer pressure 1.0e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.2 % PPM LN2 level 79.6 % AFP LHe level 91.9 % AFP LN2 level 88.3 % PPM current 72 (6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.0 F West MWPC Temperature 78.2 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3035 Hz West muon veto rate 6130 Hz Timing Reset H-GX DAQ data_raw disk usage 74% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.0 mA "Beamplot" Capture 78 %

25436	Mon Jan 21 22:41:39 2013	Rpattie

Evening shifters: Marie and Robby | ----------+---------- Took over for Bryan and Eric during a B->A octet starting at run 22683 Run summary as follows ---------- Time MIDAS# Type Run Info ---------- 1615 22690 B8 Depol(off->on) W/R = 4/136 = 0.029(15) 1622 22691 B9 Bkg(off) E = 1.015 W = 1.448 GV = 23.1 1633 22692 B10 Beta(on) E= 8.351 W=7.673 Fe/GV = .1158 SCS/GV=.2648, (E+W)/GV=.9901 1728 22693 B11 Depol(on->off) W/R = 10/61 = 0.163(55) 1731 22694 B12 Bkg (on) E=1.067 W=1.156 1741 22695 A1 Bkg (off) E=1.173 W=1.081 1752 22696 A2 Beta (off) E=10.984 W=11.822 Fe/GV=.4755 SCS/GV=.3443 (E+W)/GV=1.3835 1842 22697 A3 Depol(off->on) W/R = 5/137 = 0.036(17) 1850 22698 A4 Bkg(on) E = 1.104 W = 1.209 GV = 24.8 1900 22699 A5 Beta(on) E = 8.070 W = 7.446 Fe/GV=0.1162 SCS/GV=0.2659 (E+W)/GV = 0.991 1951 22700 A6 Depol(on->off) W/R = 5/64 = 0.078(36) 1958 22701 A7 Beta(on) E = 7.937 W = 74.85 Fe/GV=0.1164 SCS/GV=0.2614 (E+W)/GV = 0.9999 2049 22702 A8 Depol(on->off) W/R = 5/63 = 0.079(37) 2056 22703 A9 Bkg(on) E =1.125 W = 1.061 GV = 24.2 2107 22704 A10 Beta(off) E = 10.555 W = 11.296 Fe/GV = 0.4725 SCS/GV = 0.3386 (E+W)/GV = 1.3851 2157 22705 A11 Depol(off->on) W/R = 4/125 = 0.032(16) 2204 22706 A12 Bkg(off) E = 1.073 W = 1.210 GV = 24.1 ---------- Started B->A Octet after melt and refreeze of source ---------- 2329 22708 B1 Bkg(on) E = 1.120 W = 1.061 GV = 26.9 2337 22709 B2 Beta(on) and the shift ends.....

25435	Mon Jan 21 21:55:29 2013	Rpattie

Final warm up at 150 mbar V->1.5V

25434	Mon Jan 21 21:49:49 2013	Rpattie

Started 2nd cool down at 230 mbar. V=3.5

25433	Mon Jan 21 21:41:09 2013	Rpattie

After passing through the triple point we turned the voltage to 1.5V. pressure was 135.0 mbar at minimum

25432	Mon Jan 21 21:35:37 2013	Rpattie

allowed the source pressure to increase to 220 mbar before turning the flow to 3.5 V

25431	Mon Jan 21 21:29:32 2013	Rpattie

Starting melt and refreeze of the source after a B->A octet. Poly blower turned off d2 tank closed bypass valve openned source flow brought down to 1.5 V Switched sides of the 1630 and had to open the green valve to stop pushing off

25430	Mon Jan 21 15:31:06 2013	ebdees

UCNA Shift Change Checklist Date: 1/21/13, 00:15 Shift Persons: Eric, Robbie, Marie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.14 psia Heater C pressure 13.95 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 288.6 psia Tungsten Cool Diff. 282.5 psia Tungsten Cool ret. 72.1 psia 1630 eng. 2 temp. 12.75 K 1630 JT temp. 6.85 K 1630 outlet temp. 274.1 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 109 rpm 1410 TE-A 16.4 K 1410 TE-B 6.5 K 1410 TE-E 99.7 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 17.29 inHe 1K dewar level 19.84 inHe 4K main flow control 6.0 V LHe temp. 1 5.36 K Heat exch. temp. 3 173.98 K Poly temp. 2 192.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.4 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 86.2 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 7.4e-6 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.2 % PPM LN2 level 82.3 % AFP LHe level 90.0 % AFP LN2 level 88.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.8 F West MWPC Temperature 77.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3069 Hz West muon veto rate 5175 Hz Timing Reset H-GX DAQ data_raw disk usage 74% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.1 mA "Beamplot" Capture 78 %

25429	Mon Jan 21 14:30:52 2013	bz

Time MIDAS Type E W Fe/GV SCS/GV E+W/GV GV W/R 08:40 22673 B3 D+ 6/57 08:47 22674 B4 Bkg OFF 1.116 1.245 25.4 08:57 22675 B5 Beta OFF 11.263 12.014 0.4752 0.3415 1.3993 09:48 22676 B6 D- 8/129 09:55 22677 B7 Beta OFF 11.093 12.161 0.4736 0.3457 1.4071 10:46 22678 B8 D- 5/122 10:53 22679 B9 Bkg OFF 1.118 1.214 25.3 11:04 22680 B10 Beta ON 8.521 7.770 0.1183 0.2737 1.0034 11:54 22681 B11 D+ 8/58 12:01 22682 B12 Bkg ON 1.178 1.167 25.3 New B->A Octet (50 min betas, 10 min bkgs) 13:08 22683 B1 Bkg ON 0.961 1.532 29.4 13:18 22684 B2 Beta ON 0.1147 0.2721 1.0222 14:09 22685 B3 D+ 6/69 14:16 22686 B4 Bkg OFF 1.113 1.652 26.8 14:27 22687 B5 Beta OFF 11.478 12.487 0.4678 0.3474 1.3854 15:17 22688 B6 D- 7/122

25428	Mon Jan 21 12:28:21 2013	bz

Two things: Apparently, something in the flapper heater failed overnight, and we found the current at .57 A this morning. We reduced the voltage to return the current to .18 A. Just performed a melt and refreeze, following Michael's instructions. At the very beginning, there was an unsettling temperature and pressure spike. Checked the insulating vacuum pump - it was on. Spike did not reoccur on either of the following passes. Something was misformed inside source?

25427	Mon Jan 21 07:48:42 2013	ebdees

Michael noticed DAQ was no longer accepting events correctly, and the analyzer was unable to perform its ONLY JOB (stupid analyzer) on the events. After some quick thinking and a bagel, Brian reloaded the ODB backup from November, 2012. Everything appears to have recovered after this quick fix, as per DAQ instructions found in fastDAQ.pdf on PCUCN18.

25426	Mon Jan 21 07:23:25 2013	EIC

UCNA Shift Change Checklist Date: 1/21/13, 00:15 Shift Persons: Eric, Brian ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.18 psia Heater C pressure 14.02 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.1 psia

Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 70.3 psia 1630 eng. 2 temp. 12.8 K 1630 JT temp. 6.97 K 1630 outlet temp. 273.0 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 40 psig 1410 engine speed 100 rpm 1410 TE-A 15.0 K 1410 TE-B 6.1 K 1410 TE-E 96.6 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 16.07 inHe 1K dewar level 20.67 inHe 4K main flow control 6.0 V LHe temp. 1 5.35 K Heat exch. temp. 3 166.1 K Poly temp. 2 183.8 K flapper heater cur 0.57 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 22 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.2 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 90.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.9 torr Source pressure 1.2e-5 torr Spectrometer pressure 8.5e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.3 % PPM LN2 level 84.6 % AFP LHe level 83.7 % AFP LN2 level 77.8 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.2 F West MWPC Temperature 75.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3074 Hz West muon veto rate 5189 Hz Timing Reset H-GX DAQ data_raw disk usage 73% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.1 mA "Beamplot" Capture 78 %

25425	Mon Jan 21 06:46:18 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/21/13, 00:15 Shift Persons: Bob C., Michael M ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 127 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.69 psia Heater C pressure 14.03 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 288.4 psia Tungsten Cool Diff. 282.0 psia Tungsten Cool ret. 72.2 psia 1630 eng. 2 temp. 12.63 K 1630 JT temp. 6.83 K 1630 outlet temp. 273.0 K 1630 engine speed 120 rpm 1630 supply press. 247 psig 1630 JT press. 203 psig 1630 return press. 1.7 psig 1630 med. press. stor. 51 psig 1410 engine speed 100 rpm 1410 TE-A 15.9 K 1410 TE-B 6.3 K 1410 TE-E 87.7 K 1410 supply press. 246 psig 1410 JT press. 202 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 325 mmHg 4K dewar level 14.72 inHe 1K dewar level 15.65 inHe 4K main flow control 6.0 V LHe temp. 1 5.38 K Heat exch. temp. 3 161.3 K Poly temp. 2 182.1 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.3 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 97.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 9.2e-6 torr Spectrometer pressure 9.6e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.4 % PPM LN2 level 87.2 % AFP LHe level 97.5 % AFP LN2 level 94.0 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.6 F West MWPC Temperature 77.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.5 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 5512 Hz West muon veto rate 9107 Hz Timing Reset H-GX DAQ data_raw disk usage 73% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.1 mA "Beamplot" Capture 78 %

25424	Sun Jan 20 22:35:58 2013	Rpattie

Evening shifters: Hasan and Robby The shift was uneventful. We finished up the A->B octet (runs 22607-22630) started by the Day shift and started another A->B octet (starting at run 22631). Run summary as follows Time MIDAS# Type Run Info ---------- 1527 22619 B1-Bkg(on) E = 1.33 W = 1.043 GV = 28.3 1537 22620 B2-Beta(on) E = 9.49 W = 8.54 Fe/Gv = 0.1204 SCS/GV = 0.2759 E+W/GV = 0.995 1628 22621 B3-Depol(on->off) W/R = 8/59 = 0.136(51) 1635 22622 B4-Bkg(off) E = 1.099 W = 1.114 GV = 28.2 1646 22623 B5-Beta(off) E = 12.31 W = 13.25 Fe/Gv = 0.4684 SCS/GV = 0.3507 E+W/GV = 1.3895 1736 22624 B6-Depol(off->on) W/R = 5/130 = 0.038(18) 1744 22625 B7-Beta(off) E = 12.212 W = 13.169 Fe/Gv = 0.4661 SCS/GV = 0.3498 E+W/GV = 1.3958 1834 22626 B8-Depol(off->on) W/R = 2/160 = 0.013(9) 1843 22627 B9-Bkg(off) E = 1.082 W = 1.048 GV = 28.0 1852 22628 B10-Beta(on) E = 9.33 W = 8.44 Fe/GV = 0.1202 SCS/GV = 0.2734 E+W/GV = 1.0021 1943 22629 B11-Depol(on->off) W/R = 13/78 = 0.167(50) 1950 22630 B12-Bkg(on) E = 1.117 W = 1.119 GV = 27.4 ---------- Starting a new A->B octet ---------- 2007 22631 A1-Bkg(off) E = 1.007 W = 1.040 GV = 27.6 2018 22632 A2-Beta(off) E = 11.990 W = 12.876 Fe/GV = 0.4688 SCS = 0.3505 E+W/GV = 1.3913 2108 22633 A3-Depol(off->on) W/R = 1/149 = 0.0067(67) 2116 22634 A4-Bkg(on) E = 1.113 W = 1.070 GV = 27.2 2126 22635 A5-Beta(on) E = 9.312 W = 8.349 Fe/GV = 0.1162 SCS/GV = 0.2738 E+W/GV = 1.0055 2217 22636 A6-Depol(on->off) W/R = 7/73 = 0.096(38) 2224 22637 A7-Beta(on) E = 9.161 W = 8.355 Fe/GV = 0.1189 SCS/GV = 0.2688 E+W/GV = 1.0019 2315 22638 A8-Depol(on->off) W/R = 6/67 = 0.090(38) 2322 22639 A9-Bkg(on) E = 1.075 W = 1.067 GV = 27.3 2332 22640 A10-Beta(off) .....So ends the shift...

25423	Sun Jan 20 15:34:31 2013	ebdees

UCNA Shift Change Checklist Date: 1/20/13, 09:30 Shift Persons: Eric, Robbie, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.24 psia Heater C pressure 13.97 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 290.9 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 73.8 psia 1630 eng. 2 temp. 12.65 K 1630 JT temp. 6.86 K 1630 outlet temp. 273.5 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.3 psig 1630 med. press. stor. 35 psig 1410 engine speed 100 rpm 1410 TE-A 15.6 K 1410 TE-B 6.4 K 1410 TE-E 89.4 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 13.6 inHe 1K dewar level 32.25 inHe 4K main flow control 6.0 V LHe temp. 1 5.33 K Heat exch. temp. 3 158.7 K Poly temp. 2 183.3 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26.0 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.9 C AFP frequency 28.49500 MHz AFP forward power 39 W AFP N2 dewar level 7/8 SCS LHe level 87.4 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 1.0e-5 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.5 % PPM LN2 level 91.1 % AFP LHe level 91.0 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.4 F West MWPC Temperature 76.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3253 Hz West muon veto rate 6182 Hz Timing Reset H-GX DAQ data_raw disk usage 72% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.2 mA "Beamplot" Capture 78 %

25422	Sun Jan 20 14:31:47 2013	bz

Octets B->A Octet 01-17-2013 17:43 22511 B1 Bkg ON E= 1.048 W= 1.023 GV=24.4 17:52 22512 B2 Beta ON E= 8.033 W= 7.439 Fe/GV=0.1157 SCS/GV=0.2665 E+W/GV=0.9822 18:32 22513 B3 D+ W/R=0.206(63) 18:40 22514 B4 Bkg OFF E= 1.055 W= 1.174 GV=24.7 18:48 22515 B5 Beta OFF E=10.348 W=10.985 Fe/GV=0.4806 SCS/GV=0.3400 E+W/GV=1.36 19:29 22516 B6 D- W/R=0.038(18) 19:36 22517 B7 Beta OFF E=10.268 W=10.985 Fe/GV=0.4811 SCS/GV=0.3450 E+W/GV=1.37 20:17 22518 B8 D- W/R=0.000(00) 20:24 22519 B9 Bkg OFF E= 1.058 W= 1.100 GV=24.0 20:32 22520 B10 Beta ON E= 7.821 W= 7.025 Fe/GV=0.1158 SCS/GV=0.2707 E+W/GV=0.9810 (FILE OVERWRITTEN, DOES NOT EXIST) 21:23 22520 B11 D+ W/R=0.121(48) 21:31 22521 B12 Bkg ON E= 1.139 W= 1.054 GV=23.7 21:39 22522 A1 Bkg OFF E= 1.125 W= 1.121 GV=23.8 21:48 22523 A2 Beta OFF E=10.10 W=10.78 Fe/GV=0.48

SCS/GV=0.3447 E+W/GV=1.27 22:28 22524 A3 D- W/R=0.033(18) 22:36 22525 A4 Bkg ON E= 1.064 W= 1.102 GV=23.5 22:44 22526 A5 Beta ON E= 7.681 W= 7.039 Fe/GV=0.118 SCS/GV=0.264 E+W/GV=0.983 23:25 22527 A6 D+ W/R=0.098(42) 23:32 22528 A7 Beta ON E= 7.50 W= 6.96 Fe/GV=0.1158 SCS/GV=0.2660 E+W/GV=0.9904 01/18/2013 00:13 22529 A8 D+ W/R=0.065(33) 00:20 22530 A9 Bkg ON E= 1.10 W= 1.09 GV=26.9 00:28 22531 A10 Beta OFF E=11.72 W=12.77 Fe/GV=0.4838 SCS/GV=0.3517 E+W/GV=1.3733 01:09 22532 A11 D- W/R=0.018(11) 01:16 22533 A12 Bkg OFF E= 1.00 W= 1.01 GV=27.4 A->B Octet (35 min beta, 5 min bkg) 01:27 22534 A1 Bkg OFF E= 1.125 W= 1.07 GV=27.6 01:33 22535 A2 Beta OFF E=11.43 W=12.115 Fe/GV=0.4726 SCS/GV=0.3449 E+W/GV=1.3660 02:08 22536 A3 D- W/R=0.037(17) 02:16 22537 A4 Bkg ON E= 1.226 W= 1.123 GV=27.3 02:21 22538 A5 Beta ON E= 9.054 W= 8.223 Fe/GV=0.1172 SCS/GV=0.2693 E+W/GV=.9849 02:57 22539 A6 D+ W/R=0.082(38) 03:04 22540 A7 Beta ON E= 9.005 W= 8.181 Fe/GV=0.1177 SCS/GV=0.2728 E+W/GV=.9850 03:40 22541 A8 D+ W/R=0.153(52) 03:47 22542 A9 Bkg ON E= 0.908 W= 1.093 GV=27.0 03:53 22543 A10 Beta OFF E=11.598 W=12.364 Fe/GV=0.4806 SCS/GV=0.3460 E+W/GV=1.3641 04:28 22544 A11 D- W/R=0.038(16) 04:35 22545 A12 Bkg OFF E= 1.039 W= 1.036 GV=27.0 04:41 22546 B1 Bkg ON E= 1.12 W= 1.13 GV=27.3 04:47 22547 B2 Beta ON E= 8.88 W= 8.16 Fe/GV=0.1181 SCS/GV=0.2677 E+W/GV=0.9802 05:22 22548 B3 D+ W/R=0.150(53) 05:29 22549 B4 Bkg OFF E= 0.94 W= 1.12 GV=26.9 05:35 22550 B5 Beta OFF E=11.66 W=12.49 Fe/GV=0.4775 SCS/GV=0.3473 E+W/GV=1.3725 06:11 22551 B6 D- W/R=0.039(16) 06:18 22552 B7 Beta OFF E=11.68 W=12.40 Fe/GV=0.4744 SCS/GV=0.3412 E+W/GV=1.3693 06:53 22553 B8 D- W/R=0.035(16) 07:01 22554 B9 Bkg OFF E= 1.027 W= 1.161 GV=26.8 07:06 22555 B10 Beta ON E= 6.144 W= 5.703 Fe/GV=0.1204 SCS/GV=0.2670 E+W/GV=1.0492 07:42 22556 B11 D+ W/R=0.074(34) 07:49 22557 B12 Bkg ON E= 1.073 W= 1.105 GV=23.5 01/19/2013 B->A Octet(50 min betas, 10 min bkgs) 14:51 22558 B1 Bkg ON E= 1.047 W= 1.030 GV=26.4 15:01 22559 B2 Beta ON E= 7.504 W= 6.856 Fe/GV=0.1139 SCS/GV=0.2600 E+W/GV=0.970 15:52 22560 B3 D+ W/R=0.065(33) 15:59 22561 B4 Bkg OFF E= 1.073 W= 1.113 GV=22.4 16:10 22562 B5 Beta OFF E= 9.277 W=10.010 Fe/GV=0.4767 SCS/GV=0.3363 E+W/GV=1.3599 17:00 22563 B6 D- W/R=0.037(17) 17:08 22564 B7 Beta OFF E= 9.101 W= 9.789 Fe/GV=0.4807 SCS/GV=0.3350 E+W/GV=1.3508 17:58 22565 B8 D- W/R=0.035(17) 18:05 22566 B9 Bkg OFF E= 1.053 W= 1.023 GV=21.5 18:16 22567 B10 Beta ON E= 6.992 W= 6.404 Fe/GV=0.1115 SCS/GV=0.2577 E+W/GV=0.9819 19:07 22568 B11 D+ W/R=0.085(40) 19:14 22569 B12 Bkg ON E= 0.984 W= 1.099 GV=21.1 19:24 22570 A1 Bkg OFF E= 1.041 W= 1.030 GV=21.2 19:35 22571 A2 Beta OFF E= 8.738 W= 9.395 Fe/GV=0.4820 SCS/GV=0.3348 E+W/GV=1.3727 20:26 22572 A3 D- W/R=0.036(18) 20:33 22573 A4 Bkg ON E= 1.073 W= 1.047 GV=20.8 20:43 22574 A5 Beta ON E= 6.812 W= 6.179 Fe/GV=0.1164 SCS/GV=0.2566 E+W/GV=0.9835 21:34 22575 A6 D+ W/R=0.078(36) 21:41 22576 A7 Beta ON E= 6.857 W= 6.216 Fe/GV=0.1162 SCS/GV=0.2571 E+W/GV=0.9877 22:32 22577 A8 D+ W/R=0.143(54) 22:39 22578 A9 Bkg ON E= 1.066 W= 1.083 GV=20.9 22:50 22579 A10 Beta OFF E= 8.950 W= 9.444 Fe/GV=0.4817 SCS/GV=0.3347 E+W/GV=1.3776 23:40 22580 A11 D- W/R=0.018(13) 23:48 22581 A12 Bkg OFF E= 1.113 W= 1.088 GV=20.6 01/20/2013 B->A Octet(50 min betas, 10 min bkgs) 01:35 22583 B1 Bkg ON E= 1.08 W= 1.03 GV=30.9 01:46 22584 B2 Beta ON E=10.209 W= 9.368 Fe/GV=0.1196 SCS/GV=0.2755 E+W/GV=0.9922 02:36 22585 B3 D+ W/R=0.094(40) 02:43 22586 B4 Bkg OFF E= 1.074 W= 1.030 GV=30.0 02:54 22587 B5 Beta OFF E=13.03 W=14.05 Fe/GV=0.4688 SCS/GV=0.3522 E+W/GV=1.3877 03:45 22588 B6 D- W/R=0.017(10) 03:52 22589 B7 Beta OFF E=12.71 W=13.80 Fe/GV=0.4697 SCS/GV=0.3499 E+W/GV=1.3770 04:42 22590 B8 D- W/R=0.040(16) 04:50 22591 B9 Bkg OFF E= 1.146 W= 1.053 GV=29.3 05:00 22592 B10 Beta ON E= 9.824 W= 8.950 Fe/GV=0.1194 SCS/GV=0.2742 E+W/GV=0.9965 05:51 22593 B11 D+ W/R=0.157(50) 05:58 22594 B12 Bkg ON E= 1.092 W= 1.035 GV=27.0 06:09 22595 A1 Bkg OFF E= 1.072 W= 1.036 GV=29.6 06:19 22596 A2 Beta OFF E=12.961 W=13.720 Fe/GV=0.4707 SCS/GV=0.3526 E+W/GV=1.3891 07:10 22597 A3 D- W/R=0.056(20) 07:17 22598 A4 Bkg ON E= 1.15 W= 1.10 GV=29.4 07:28 22599 A5 Beta ON E= 9.838 W= 8.987 Fe/GV=0.1189 SCS/GV=0.2720 E+W/GV=0.9954 08:18 22600 A6 D+ W/R=8/72=0.111(41) 08:26 22601 A7 Beta ON E= 9.786 W= 8.768 Fe/GV=0.1202 SCS/GV=0.2764 E+W/GV=1.0015 09:16 22602 A8 D+ W/R=3/78=0.038(23) 09:23 22603 A9 Bkg ON E= 1.105 W= 1.061 GV=29.2 09:34 22604 A10 Beta OFF E=12.813 W=13.557 Fe/GV=0.4718 SCS/GV=0.353 E+W/GV=1.3829 10:25 22605 A11 D- W/R=4/166=0.024(12) 10:32 22606 A12 Bkg OFF E= 1.098 W= 1.072 GV=29.1 A->B Octet (50 min betas, 10 min bkgs) 10:53 22607 A1 Bkg OFF E= 1.123 W= 1.033 GV=29.1 11:04 22608 A2 Beta OFF E=12.751 W=13.591 Fe/GV=0.471 SCS/GV=0.3512 E+W/GV=1.3888 11:54 22609 A3 D- W/R=5/143=0.035(16) 12:02 22610 A4 Bkg ON E= 1.093 W= 1,147 GV=28.9 12:12 22611 A5 Beta ON E= 9.773 W= 7.734 Fe/GV=0.1213 SCS/GV=0.2741 E+W/GV=0.9995 13:03 22612 A6 D+ W/R=4/72=0.056(29) 13:10 22613 A7 Beta ON E= 9.593 W= 8.746 Fe/GV=0.1203 SCS/GV=0.275 E+W/GV=0.9977 14:01 22614 A8 D+ W/R=4/63=0.063(33) 14:08 22615 A9 Bkg ON E= 1.192 W= 1.129 GV=28.5 14:18 22616 A10 Beta OFF E=12.440 W=13.361 Fe/GV=0.4709 SCS/GV=0.3545 E+W/GV=1.3918 15:09 22617 A11 D- W/R=12/174=0.069(21) 15:16 22618 A12 Bkg OFF E= 1.070 W= 1.127 GV=28.1

25421	Sun Jan 20 08:43:38 2013	bz

UCNA Shift Change Checklist Date: 1/20/13, 09:30 Shift Persons: Bryan, Erik Shaw ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.44 psia Heater C pressure 13.83 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 287.1 psia Tungsten Cool Diff. 282.8 psia Tungsten Cool ret. 70.4 psia 1630 eng. 2 temp. 13.38 K 1630 JT temp. 7.39 K 1630 outlet temp. 273.8 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.4 psig 1630 med. press. stor. 45 psig 1410 engine speed 100 rpm 1410 TE-A 15.9 K 1410 TE-B 6.8 K 1410 TE-E 78.5 K 1410 supply press. 244 psig

1410 JT press. 190 psig 1410 return press. 3.0 psig 1K dewar pressure 6.1 psig 4K dewar pressure 295 mmHg 4K dewar level 12.62 inHe 1K dewar level 27.67 inHe 4K main flow control 6.0 V LHe temp. 1 5.3 K Heat exch. temp. 3 156.3 K Poly temp. 2 181.3 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart #1396 Switcher status thru AFP temperature 9.8 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 1 SCS LHe level 91.6 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 1.0e-5 torr Spectrometer pressure 8.5e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.5 % PPM LN2 level 95.0 % AFP LHe level 99.8 % AFP LN2 level 87.3 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.0 F West MWPC Temperature 74.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1265 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3019 Hz West muon veto rate 5291 Hz Timing Reset H-GX DAQ data_raw disk usage 72% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.1 mA "Beamplot" Capture 78 %

25420	Sun Jan 20 01:29:04 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/20/13, 02:00 Shift Persons: Bob C., Michael M. ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 126 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.23 psia Heater C pressure 13.72 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 273.0 psia Tungsten Cool Diff. 276.1 psia Tungsten Cool ret. 61.3 psia 1630 eng. 2 temp. 14.40 K 1630 JT temp. 6.27 K 1630 outlet temp. 275.4 K 1630 engine speed 130 rpm 1630 supply press. 246 psig 1630 JT press. 202 psig 1630 return press. 1.2 psig 1630 med. press. stor. 54 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 83.3 K 1410 supply press. 244 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.2 psig 4K dewar pressure 298 mmHg 4K dewar level 10.47 inHe 1K dewar level 26.66 inHe 4K main flow control 1.3 V * starting melt & refreeze LHe temp. 1 23.83 K Heat exch. temp. 3 182.3 K Poly temp. 2 162.6 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.8 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart #1395 Switcher status thru AFP temperature 9.8 C AFP frequency 28.49500 MHz AFP forward power 39 W AFP N2 dewar level 1 SCS LHe level 96.4 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 1.3e-5 torr Spectrometer pressure 9.7e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.6 % PPM LN2 level 97.7 % AFP LHe level 94.9 % AFP LN2 level 94.0 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 86.3 F West MWPC Temperature 76.7 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3012 Hz West muon veto rate 6293 Hz Timing Reset H-GX DAQ data_raw disk usage 72% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 13.8 mA "Beamplot" Capture 78 %

25419	Sun Jan 20 00:48:19 2013	mmendenhall

Melt and Refreeze between octets: - Beam off, GV closed - Opened D2 pumpout port - *** Closed Orange Valve *** - opened CV Bypass - 4K control @ 1.5V (00:15am) - Switched return to warm side of 1630 - turned off poly blower - 4K @ 1.3V (00:21) - Flapper open 00:29 P=220mBar, 4K -> 4.0V freeze in 00:36 P=160mBar, 4K -> 1.4V warm up 00:43 P=220mBar, 4K -> 4.0V freeze in 00:49 P=160mBar, 4K -> 1.5V warm up 00:57 P=220mBar, 4K -> 2.5V level off and sit for a while

01:02 P=241mBar, 4K -> 3.5V start freezing back in, a bit more slowly 01:14 P=100mBar, 4K -> 4.0V finish freezing in 01:22 P=10mBar; close CV bypass and ***open Orange Valve*** 01:23 4K -> 4.5V -> 5.0V -> 5.5V -> 6.0V - Poly blower on - 1630 return back to cold side - flapper on - D2 pumpout port closed note: very well defined triple point plateaus on all 3 passes (usually these get less distinct each melt); don't know reason. GV rate before melt & refreeze: 206 Hz after: 309 Hz

Attachment 1: .gif

.gif

25418	Sat Jan 19 15:39:20 2013	ebdees

UCNA Shift Change Checklist Date: 1/18/13, 08:25 Shift Persons: Eric, Robbie, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.0 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.20 psia Heater C pressure 13.75 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 275.5 psia Tungsten Cool Diff. 277.3 psia Tungsten Cool ret. 62.8 psia 1630 eng. 2 temp. 12.31 K 1630 JT temp. 6.55 K 1630 outlet temp. 273.1 K 1630 engine speed 120 rpm 1630 supply press. 249 psig 1630 JT press. 200 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 16.5 K 1410 TE-B 6.0 K 1410 TE-E 90.4 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.1 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 14.53 inHe 1K dewar level 26.19 inHe 4K main flow control 6.0 V LHe temp. 1 5.25 K Heat exch. temp. 3 167.7 K Poly temp. 2 126.0 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.3 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 2/8 SCS LHe level 88.4 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 1.8e-5 torr Spectrometer pressure 1e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.6 % PPM LN2 level 99.0 % AFP LHe level 94.2 % AFP LN2 level 91.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.8 F West MWPC Temperature 76.0 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 5289 Hz West muon veto rate 7672 Hz Timing Reset H-GX DAQ data_raw disk usage 71% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 13.86 mA "Beamplot" Capture 78%

25417	Sat Jan 19 07:43:34 2013	Erik

UCNA Shift Change Checklist Date: 1/18/13, 08:25 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.03 psia Heater C pressure 13.81 psia Tungsten supply press. 270 psig Compressor 1 On Yes (On) Tungsten Cool supp. 271.3 psia Tungsten Cool Diff. 275.8 psia Tungsten Cool ret. 60.0 psia 1630 eng. 2 temp. 12.81 K 1630 JT temp. 6.87 K 1630 outlet temp. 273.6 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 195 avg psig 1630 return press. 1.0 psig 1630 med. press. stor. 25 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 87.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 16.73 inHe 1K dewar level 25.75 inHe 4K main flow control 6.0 V LHe temp. 1 5.225 K Heat exch. temp. 3 142.53 K Poly temp. 2 67.913 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes - new run 1393 Switcher status thru AFP temperature 9.1 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 92.6 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed

SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.8 torr Source pressure 6.5e-6 torr Spectrometer pressure 8.1e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.7 % PPM LN2 level 41.7 % AFP LHe level 87.8 % AFP LN2 level 92.4 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 84.0 F West MWPC Temperature 73.3 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2772 Hz West muon veto rate 4841 Hz Timing Reset H-GX DAQ data_raw disk usage 71% Proton beam status Proton burst spacing sec Proton pulses/burst count Proton countdown count Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture %

25416	Fri Jan 18 15:34:21 2013	ebdees

UCNA Shift Change Checklist Date: 1/18/13, 00:10 Shift Persons: Robbie, Hasan, Eric ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.24 psia Heater C pressure 13.71 psia Tungsten supply press. 270 psig Compressor 1 On Yes (On) Tungsten Cool supp. 275.4 psia Tungsten Cool Diff. 277.4 psia Tungsten Cool ret. 62.5 psia 1630 eng. 2 temp. 12.86 K 1630 JT temp. 6.9 K 1630 outlet temp. 274.8 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 200 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 35 psig 1410 engine speed 119 rpm 1410 TE-A 15.3 K 1410 TE-B 6.7 K 1410 TE-E 83.6 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 18.61 inHe 1K dewar level 18.26 inHe 4K main flow control 6.0 V LHe temp. 1 5.244 K Heat exch. temp. 3 148.23 K Poly temp. 2 77.251 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 39 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 2/4 SCS LHe level 89.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.7 torr Source pressure 9.1e-6 torr source slightly warm @ 5.3V 4KD control Spectrometer pressure 1.3e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.8 % PPM LN2 level 47.6 % AFP LHe level 99.8 % AFP LN2 level 99.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.3 F West MWPC Temperature 75.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.2 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2767 Hz West muon veto rate 4843 Hz Timing Reset H-GX DAQ data_raw disk usage 71% Proton beam status Proton burst spacing sec Proton pulses/burst count Proton countdown count Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture %

25415	Fri Jan 18 01:52:39 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/18/13, 00:10 Shift Persons: Bob C., Michael M ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 126 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 14.23 psia Heater C pressure 13.83 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 276.4 psia Tungsten Cool Diff. 278.4 psia Tungsten Cool ret. 63.0 psia 1630 eng. 2 temp. 14.75 K 1630 JT temp. 7.96 K 1630 outlet temp. 275.5 K 1630 engine speed 130 rpm 1630 supply press. 246 psig 1630 JT press. 207 avg psig 1630 return press. 2.0 psig 1630 med. press. stor. 41 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 7.1 K 1410 TE-E 82.8 K 1410 supply press. 244 psig 1410 JT press. 192 psig 1410 return press. 3.2 psig 1K dewar pressure 6.1 psig 4K dewar

pressure 312 mmHg 4K dewar level 15.32 inHe 1K dewar level 18.76 inHe 4K main flow control 5.3 V LHe temp. 1 5.29 K Heat exch. temp. 3 158.51 K Poly temp. 2 170.29 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.7 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 99.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 1.2e-4 torr source slightly warm @ 5.3V 4KD control Spectrometer pressure 8.3e-6 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 81.5 % PPM LN2 level 52.2 % AFP LHe level 85.0 % AFP LN2 level 78.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 84.3 F West MWPC Temperature 74.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3073 Hz West muon veto rate 7151 Hz Timing Reset H-GX DAQ data_raw disk usage 71% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 13.8 mA "Beamplot" Capture 79 %

25414	Thu Jan 17 18:22:50 2013	ebdees

UCNA Shift Change Checklist Date: 1/15/13, 16:43 Shift Persons: Eric, Marie, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.30 psia Heater C pressure 13.78 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 276.2 psia Tungsten Cool Diff. 278.1 psia Tungsten Cool ret. 62.9 psia 1630 eng. 2 temp. 13.52 K 1630 JT temp. 7.05 K 1630 outlet temp. 274.9 K 1630 engine speed 130 rpm 1630 supply press. 247 psig 1630 JT press. 205 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 6.5 K 1410 TE-E 91.0 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.1 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 13.54 inHe 1K dewar level 28.97 inHe 4K main flow control 5.3 V LHe temp. 1 5.196 K Heat exch. temp. 3 143.85 K Poly temp. 2 72.600 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Between the pol runs; see the notebook. Switcher status thru AFP temperature 9.2 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 6/8 (At 22:40, it is full). SCS LHe level 88.6 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 6.6e-6 torr Spectrometer pressure 8.3e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 81.9 % PPM LN2 level 54.9 % AFP LHe level 98.5 % AFP LN2 level 95.1 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.7 F West MWPC Temperature 72.1 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.4 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2562 Hz West muon veto rate 4910 Hz Timing Reset T0 (Changed to H-GX) DAQ data_raw disk usage 70% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.9 mA "Beamplot" Capture 78 %

25413	Thu Jan 17 00:46:55 2013	carr

UCNA Shift Change Checklist Date: 1/17/13, 01:00 Shift Persons: MAB, RWP, EBD ********** UPSTAIRS ********** Name Value Comment (Req'd

for out of good range) ---------- ---------- ---------- Water Line pressure 126 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.82 psia Heater C pressure 13.83 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 276 psia Tungsten Cool Diff. 277 psia Tungsten Cool ret. 63.0 psia 1630 eng. 2 temp. 13.0 K 1630 JT temp. 6.9 K 1630 outlet temp. 272 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 203 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 37 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 98.7 K 1410 supply press. 245 psig 1410 JT press. 183 psig 1410 return press. 3.2 psig 1K dewar pressure 6.2 psig 4K dewar pressure 288 mmHg 4K dewar level 15.7 inHe 1K dewar level 26.84 inHe 4K main flow control 6.0 V LHe temp. 1 5.19 K Heat exch. temp. 3 148.9 K Poly temp. 2 109.6 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart 16:17 (1390) Switcher status thru AFP temperature 9.0 C AFP frequency 28.49500 MHz AFP forward power 0 W (off) AFP N2 dewar level 90% SCS LHe level 87.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 6.2 e -6 torr Spectrometer pressure 7.8 e-6 torr Hall Probe Y .171 kG Hall Probe Z -.362 kG PPM LHe level 82.0 % PPM LN2 level 59.2 % AFP LHe level 85.0 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10.0 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 80.3 F West MWPC Temperature 68.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2832 Hz West muon veto rate 5275 Hz Timing Reset T0 DAQ data_raw disk usage 70% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1count Proton Pattern width 270 ns TBCM001I03 14.0 mA "Beamplot" Capture 78

25412	Wed Jan 16 16:16:16 2013	ebdees

UCNA Shift Change Checklist Date: 1/16/13, 16:45:00 Shift Persons: MAB, RWP, EBD ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.43 psia Heater C pressure 13.89 psia Tungsten supply press. 270 psig Compressor 1 On Yes (On) Tungsten Cool supp. 274.2 psia Tungsten Cool Diff. 276.6 psia Tungsten Cool ret. 67.0 psia 1630 eng. 2 temp. 12.94 K 1630 JT temp. 6.98 K 1630 outlet temp. 271.5 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 avg psig 1630 return press. 1.4 psig 1630 med. press. stor. 61 psig 1410 engine speed 118 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 84.5 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 295 mmHg 4K dewar level 14.45 inHe 1K dewar level 20.17 inHe 4K main flow control 6.0 V LHe temp. 1 5.195 K Heat exch. temp. 3 144.8 K Poly temp. 2 73.3 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32.3 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart 16:17 (1390) Switcher status thru AFP temperature 8.9 C It's fine. AFP frequency 28.49500 MHz AFP forward power 0 W (off) AFP N2 dewar level 7/8 SCS LHe level 90.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 6.2 e -6 torr Spectrometer pressure 7.8 e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 82.1 % PPM LN2 level 61.4 % AFP LHe level 98.9 % AFP LN2 level 99.1 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10.0 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 78.4 F West MWPC Temperature 65.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.6 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 13.1 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.4 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.36 kV East muon veto rate 3015 Hz West muon veto rate 5603 Hz Timing Reset H-GX DAQ data_raw disk usage 70% Proton beam status off

Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture -

25409	Wed Jan 16 05:03:45 2013	mmendenhall

Flapper flapping lifetime (MIDAS 22497, 15 cycles): 38.8(2.2) s

Attachment 1: .gif

.gif

25408	Wed Jan 16 04:52:46 2013	mmendenhall

Finished Depol 'DC' runs. Doing miscellaneous source tests until beam goes off: GV closed, regular beam Flapper flapping (MIDAS 22490): GV = 271 Hz Flapper open (MIDAS 22491): GV = 93 Hz Flapper closed (MIDAS 22492): GV = 13 Hz Source lifetime, switching to 5-pulse beam burst once every 60 seconds Flapper open (MIDAS 22496), 15 bursts: lifetime = 9.9(5)s

Attachment 1: .gif

.gif

25407	Wed Jan 16 02:32:57 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/16/2013 oo:15 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.56 psia Heater C pressure 13.83 psia Tungsten supply press. 270 psig Compressor 1 On Yes (On) Tungsten Cool supp. 278.6 psia Tungsten Cool Diff. 279.1 psia Tungsten Cool ret. 64.5 psia 1630 eng. 2 temp. 12.77 K 1630 JT temp. 6.56 K 1630 outlet temp. 271.4 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 200 avg psig 1630 return press. 1.6 psig 1630 med. press. stor. 70 psig 1410 engine speed 118 rpm 1410 TE-A 15.9 K 1410 TE-B 6.1 K 1410 TE-E 99.5 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.2 psig 1K dewar pressure 6.4 psig 4K dewar pressure 300 mmHg 4K dewar level 11.47 inHe 1K dewar level 18.41 inHe 4K main flow control 6.0 V LHe temp. 1 5.212 K Heat exch. temp. 3 148.36 K Poly temp. 2 127.78 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status down AFP temperature 9.3 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 99.9 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 6.5e-6 torr Spectrometer pressure 7.9e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 82.2 % PPM LN2 level 66.7 % AFP LHe level 86.0 % AFP LN2 level 97.2 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 78.8 F West MWPC Temperature 65.1 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.8 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 1.25 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.9 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.36 kV East muon veto rate 2909 Hz West muon veto rate 5735 Hz Timing Reset T0 DAQ data_raw disk usage 70% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.5 mA "Beamplot" Capture 79 %

25406	Wed Jan 16 00:21:18 2013	mmendenhall

Here is a python script for generating the DC- polarimetry "programs".

Attachment 1: le.py

```
#!/usr/bin/python

from string import *

def tabline(s):
        return [join(s,"\t"),]
```

```
def gen_DC(n):
        fOff = tabline("10011001")
        fOn = tabline("10011101")
        s = tabline("10111001")*10

        ncyc = 1
        while ncyc*n*50+10 < 20000:
                s += fOff*(ncyc*n*50-len(s))
                s += fOn*10
                ncyc += 1

        s += fOff*(20000-len(s))
        s += tabline("00011001")*(20100-len(s))
        s += tabline("00010010")*(22500-len(s))
        s += tabline("00010110")*(23000-len(s))
        s += tabline("10010110")*(33000-len(s))
        s += tabline("10010010")*(56000-len(s))
        s += tabline("10011000")*(56301-len(s))

        return join(s,"\n");


if __name__ == "__main__":
        for n in [50,25,8,4,2]:
                open("DC-_%is.txt"%n,"w").write(gen_DC(n))
```

25405	Wed Jan 16 00:14:22 2013	mmendenhall

Here is the UCN Digital Gate Control VI "program" for DC- 2s.

Attachment 1: le.py

```
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       1       1       1       0       0       1
1       0       0       1       1       0       0       1
1       0       0       1       1       0       0       1
1       0       0
```

1	0	0	1	1	0	0	1

1	0	0	1	1	0	0	1

1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
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1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
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1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
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1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
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1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1

... 56001 more lines ...

25402	Tue Jan 15 22:17:03 2013	Marie_Blatnik

Hey, guys, helloUCNDigitalGateCtrl.vi is in the [test vi's] folder on the desktop of ucncontrol. Eric and I (Marie) modified the UCN digital gate control vi (the Labview program

that controls Polarimetry runs). One no longer has to type in that annoying matrix for every run; there is a drop-down menu that one can choose the type of run--the D-, SLD-, and P- are already programmed into the program. As for the DE-, GFT-, and PE- gates, I still need to finish figuring out how to deal with the deltas. There is also an extremely useful option called "ReadFile," which reads in a binary file (where all the numbers are separated by tabs). You can generate an ascii file (with that format) and read it into the program. The format is as follows: Each 0 or 1 is separated by a tab. The number of times that a specific binary string is repeated is collapsed into the timing sequence; so when you write your binary file, repeat the string for each .01 second (so I suggest generating your code with your favorite friendly programming language). Erik suggests recursive copy-pasting (in bunches). Cheers, and happy polarimetry-ing! :)

25404	Tue Jan 15 21:57:01 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/15/13, 16:43 Shift Persons: Marie, Eric, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.34 psia Heater C pressure 13.81 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 280.6 psia Tungsten Cool Diff. 278.7 psia Tungsten Cool ret. 66.8 psia 1630 eng. 2 temp. 12.92 K 1630 JT temp. 6.8 K 1630 outlet temp. 273.0 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 210 avg psig 1630 return press. 1.4 psig 1630 med. press. stor. 65 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 84.7 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.1 psig 4K dewar pressure 270 mmHg 4K dewar level 17.35 inHe 1K dewar level 11.98 inHe 4K main flow control 6.0 V LHe temp. 1 5.164 K Heat exch. temp. 3 145.4 K Poly temp. 2 72.95 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 39 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Between the pol runs; see the notebook. Switcher status thru AFP temperature 8.8 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 1/8 (At 22:40, it is full). SCS LHe level 87.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 6.2e-6 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 82.3 % PPM LN2 level 69 % AFP LHe level 98.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 80.6 F West MWPC Temperature 67.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.35 kV East muon veto rate 2852 Hz West muon veto rate 5353 Hz Timing Reset T0 DAQ data_raw disk usage 70% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.3 mA "Beamplot" Capture 79 %

25403	Tue Jan 15 21:56:16 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/15/13, 16:43 Shift Persons: Marie, Eric, Robbie ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.34 psia Heater C pressure 13.81 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 280.6 psia Tungsten Cool Diff. 278.7 psia Tungsten Cool ret. 66.8 psia 1630 eng. 2 temp. 12.92 K 1630 JT temp. 6.8 K 1630 outlet temp. 273.0 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 210 avg psig 1630 return press. 1.4 psig 1630 med. press. stor. 65 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 84.7 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.1 psig 4K dewar pressure 270 mmHg 4K dewar level 17.35 inHe 1K dewar level 11.98 inHe 4K main flow control 6.0 V LHe temp. 1 5.164 K Heat exch. temp. 3 145.4 K Poly temp. 2 72.95 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 39 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Between the pol runs; see the notebook. Switcher status thru AFP temperature 8.8 C AFP frequency 28.49500 MHz AFP forward power 0 W

AFP N2 dewar level 1/8 (At 22:40, it is full). SCS LHe level 87.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 6.2e-6 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 82.3 % PPM LN2 level 69 % AFP LHe level 98.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 80.6 F West MWPC Temperature 67.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.28 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.35 kV East muon veto rate 2852 Hz West muon veto rate 5353 Hz Timing Reset T0 DAQ data_raw disk usage 70% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.3 mA "Beamplot" Capture 79 %

25401	Tue Jan 15 00:21:39 2013	Erik

UCNA Shift Change Checklist Date: 1/15/13, 00:15 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.46 psia Heater C pressure 13.73 psia Tungsten supply press. 280 psig Compressor 1 On Yes (On) Tungsten Cool supp. 284.4 psia Tungsten Cool Diff. 279.4 psia Tungsten Cool ret. 70.5 psia 1630 eng. 2 temp. 11.25 K 1630 JT temp. 5.97 K 1630 outlet temp. 270.9 K 1630 engine speed 100 rpm 1630 supply press. 220 psig 1630 JT press. 180 avg psig 1630 return press. 0.7 psig 1630 med. press. stor. 75 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 85.4 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 14.07 inHe 1K dewar level 11.15 inHe 4K main flow control 6.0 V LHe temp. 1 5.077 K Heat exch. temp. 3 151.28 K Poly temp. 2 136.16 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status down AFP temperature 9.0 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 1/3 SCS LHe level 97.7 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 7.6e-6 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .172 kG Hall Probe Z -.362 kG PPM LHe level 82.4 % PPM LN2 level 74.5 % AFP LHe level 79.3 % fill in progress AFP LN2 level 93.5 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 81.8 F West MWPC Temperature 69.1 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.35 kV East muon veto rate 3152 Hz West muon veto rate 5753 Hz Timing Reset T0 DAQ data_raw disk usage 69% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.6 mA "Beamplot" Capture 79 %

25400	Mon Jan 14 15:58:46 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/14/13, 16:00:00 Shift Persons: MAB, RWP, EBD ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.08 psia Heater C pressure 13.91 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 286.0 psia Tungsten Cool Diff. 280.0 psia Tungsten Cool ret. 71.3 psia 1630 eng. 2 temp. 12.92 K 1630 JT temp. 6.80 K 1630 outlet temp. 271.2 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 55 psig 1410

engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 93.0 K 1410 supply press. 245 psig 1410 JT press. 182 psig 1410 return press. 3.5 psig 1K dewar pressure 6.8 psig 4K dewar pressure 275 mmHg 4K dewar level 12.76 inHe 1K dewar level 31.13 inHe 4K main flow control 6.0 V LHe temp. 1 5.123 K Heat exch. temp. 3 149.32 K Poly temp. 2 80.162 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 18.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart 16:17 (1390) Switcher status thru AFP temperature 8.9 C It's fine. AFP frequency 28.49500 MHz AFP forward power 0 W (off) AFP N2 dewar level 3/8 SCS LHe level 84.1 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 7.8 e -6 torr Spectrometer pressure 1.1 e-5 torr Hall Probe Y .171 kG Hall Probe Z -.362 kG PPM LHe level 82.4 % PPM LN2 level 77.0 % AFP LHe level 97.5 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10.3 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.0 F West MWPC Temperature 69.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.0 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.27 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2972 Hz West muon veto rate 5320 Hz Timing Reset H-GX DAQ data_raw disk usage 69% Proton beam status off Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture -

25399	Mon Jan 14 02:00:53 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/13/13, 16:20:00 Shift Persons: MAB, RWP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.28 psia Heater C pressure 13.75 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 291.0 psia Tungsten Cool Diff. 282.2 psia Tungsten Cool ret. 74.5 psia 1630 eng. 2 temp. 13.06 K 1630 JT temp. 6.79 K 1630 outlet temp. 261.5 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.5 psig 1630 med. press. stor. 80 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 85.9 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 12.95 inHe 1K dewar level 22.40 inHe 4K main flow control 6.0 V LHe temp. 1 5.107 K Heat exch. temp. 3 159.75 K Poly temp. 2 166.45 K Takes a few days for it to cool down. flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.8 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart At like 5:15-ish (1400) Switcher status thru AFP temperature 9.6 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 5/8 SCS LHe level 81.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.9 torr Source pressure 9.9 e -6 torr Spectrometer pressure 7.7 e-6 torr Hall Probe Y .170 kG Hall Probe Z -.362 kG PPM LHe level 82.6 % PPM LN2 level 84.3 % AFP LHe level 95.7 % AFP LN2 level 93.2 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.4 F West MWPC Temperature 70.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 5351 Hz West muon veto rate 9571 Hz Timing Reset H-GX DAQ data_raw disk usage 67% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.7 mA "Beamplot" Capture 79% (he said 78 or 79)

25398	Sun Jan 13 23:50:06 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/14/13, 00:10 Shift Persons: Erik, Michael

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.25 psia Heater C pressure 13.86 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 289.3 psia Tungsten Cool Diff. 281.7 psia Tungsten Cool ret. 73.3 psia 1630 eng. 2 temp. 12.67 K 1630 JT temp. 6.75 K 1630 outlet temp. 274.8 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.2 K 1410 TE-E 83.8 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.6 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 7.59 inHe 1K dewar level 29.27 inHe 4K main flow control 6.0 V LHe temp. 1 5.15 K Heat exch. temp. 3 167 K Poly temp. 2 188 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.0 gallon/100 ` Gate valve status open D2 Pump port status closed MCS Program restart run 1401 Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 5/8 SCS LHe level 92.7 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 3.0 torr Source pressure 1.3e-5 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .171 kG Hall Probe Z -.362 kG PPM LHe level 82.6 % PPM LN2 level 81.8 % AFP LHe level 82.7 % AFP LN2 level 77.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.6 F West MWPC Temperature 70.6 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.8 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 5474 Hz West muon veto rate 10211 Hz Not sure what's the problem Timing Reset H-GX DAQ data_raw disk usage 68% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 10 mA "Beamplot" Capture 79% (he said 78 or 79)

25397	Sun Jan 13 16:44:54 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/13/13, 16:20:00 Shift Persons: MAB, RWP
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.28 psia Heater C pressure 13.75 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 291.0 psia Tungsten Cool Diff. 282.2 psia Tungsten Cool ret. 74.5 psia 1630 eng. 2 temp. 13.06 K 1630 JT temp. 6.79 K 1630 outlet temp. 261.5 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.5 psig 1630 med. press. stor. 80 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 85.9 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 12.95 inHe 1K dewar level 22.40 inHe 4K main flow control 6.0 V LHe temp. 1 5.107 K Heat exch. temp. 3 159.75 K Poly temp. 2 166.45 K Takes a few days for it to cool down. flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.8 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart At like 5:15-ish (1400) Switcher status thru AFP temperature 9.6 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 5/8 SCS LHe level 81.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.9 torr Source pressure 9.9 e -6 torr Spectrometer pressure 7.7 e-6 torr Hall Probe Y .170 kG Hall Probe Z -.362 kG PPM LHe level 82.6 % PPM LN2 level 84.3 % AFP LHe level 95.7 % AFP LN2 level 93.2 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.4 F West MWPC Temperature 70.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 24 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate)

2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 5351 Hz West muon veto rate 9571 Hz Timing Reset H-GX DAQ data_raw disk usage 67% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.7 mA "Beamplot" Capture 79% (he said 78 or 79)

25393	Sun Jan 13 15:51:38 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/12/13 Shift Persons: MAB, RWP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 95 psia Andy says we'll fix on Monday. Water line return 35 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.70 psia Heater C pressure 13.67 psia Tungsten supply press. 295 psig Compressor 1 On Yes (On) Tungsten Cool supp. 292.4 psia Tungsten Cool Diff. 282.4 psia Tungsten Cool ret. 76.2 psia 1630 eng. 2 temp. 13.37 K 1630 JT temp. 6.37 K 1630 outlet temp. 275.3 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.9 psig 1630 med. press. stor. 107 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 6.2 K 1410 TE-E 90.4 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg low because of slow engine speed of 1410. 4K dewar level 7.96 inHe 1K dewar level 15.38 inHe 4K main flow control 6.0 V LHe temp. 1 5.089 K Heat exch. temp. 3 155.09 K Poly temp. 2 142.06 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart It's in the middle of running, so let's let it keep going. Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 95.5 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.9 torr Source pressure 1.2e-5 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .170 kGauss Hall Probe Z -.361 kGauss PPM LHe level 82.8 % PPM LN2 level 94.7 % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 83.1 F West MWPC Temperature 70.6 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.8 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 4089 Hz West muon veto rate 9491 Hz Note: really close to limit. Timing Reset H-GX DAQ data_raw disk usage 67% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 300 ns TBCM001I03 13.8 mA "Beamplot" Capture 78%

25396	Sun Jan 13 08:27:18 2013	CCW

UCNA Shift Change Checklist Date: 1/13/13, 08:15 Shift Persons: Sky, Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.5 psia Heater C pressure 13.8 psia Tungsten supply press. 295 psig Compressor 1 On On Tungsten Cool supp. 288.9 psia Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 72.9 psia 1630 eng. 2 temp. 13.33 K 1630 JT temp. 6.83 K 1630 outlet temp. 273.3 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.6 psig 1630 med. press. stor. 80 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 99 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg low because of slow engine speed of 1410. 4K dewar level 11.3 inHe 1K dewar level 21.5 inHe 4K main flow control 6.0 V LHe temp. 1 5.09 K Heat exch. temp. 3 156.2 K Poly temp. 2 131.4 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart new run 1339 Switcher status thru AFP temperature 9.0 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 11/16 SCS LHe level 86.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.9 torr Source pressure 1.0e-5 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .171 kGauss Hall Probe Z -.362 kGauss PPM LHe level 82.7 % PPM LN2 level 86.3 % AFP LHe level 87.5 % AFP LN2 level 82.7 % PPM current 72 (6)

A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 81.6 F West MWPC Temperature 68.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.7 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2/3 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.26 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.36 kV West muon veto HV 2.35 kV East muon veto rate 3496 Hz West muon veto rate 9774 Hz Timing Reset H-GX DAQ data_raw disk usage 67% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.76 mA "Beamplot" Capture 79%

25395	Sun Jan 13 07:58:21 2013	Erik

Instructions to restart apache server: $ssh slowctrl@pcucn18 (passwd: UCNBetAs. I think I should migrate this to pcucn19) $su (You need to know the root password. Call Andy.) #/etc/init.d/httpd restart

25394	Sun Jan 13 06:29:42 2013	Erik

UCNA Shift Change Checklist Date: 1/13/13, 00:51 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.67 psia Heater C pressure 13.81 psia Tungsten supply press. 290 psig Compressor 1 On On Tungsten Cool supp. 291.2 psia Tungsten Cool Diff. 282.1 psia Tungsten Cool ret. 74.9 psia 1630 eng. 2 temp. 13.32 K 1630 JT temp. 6.97 K 1630 outlet temp. 273.6 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.9 psig 1630 med. press. stor. 100 psig 1410 engine speed 119 rpm 1410 TE-A 16.4 K 1410 TE-B 6.8 K 1410 TE-E 88.6 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 295 mmHg low because of slow engine speed of 1410. 4K dewar level 9.69 inHe 1K dewar level 14.80 inHe 4K main flow control 6.0 V LHe temp. 1 5.095 K Heat exch. temp. 3 157.50 K Poly temp. 2 170.94 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart It's in the middle of running, so let's let it keep going. Switcher status thru AFP temperature 9.0 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 90.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 3.0 torr Source pressure 1.1e-5 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .170 kGauss Hall Probe Z -.361 kGauss PPM LHe level 82.8 % PPM LN2 level 90.0 % AFP LHe level 99.5 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 82.8 F West MWPC Temperature 70.7 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.7 torr Neopentane Flow Rate 26 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1/2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 3106 Hz West muon veto rate 5644 Hz Timing Reset H-GX DAQ data_raw disk usage 67% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 304 ns TBCM001I03 13.8 mA "Beamplot" Capture 78%

25392	Sat Jan 12 09:19:44 2013	bz

MIDAS troubles - the data_analyzed directory filled up and now the replay analyzer doesn't seem to be working We have tried replay_bunch_of_runs.pl but it has trouble finding the .rz file (it can't make it?) Also, MIDAS has stopped automatically analyzing files after they begin.

25390	Sat Jan 12 08:08:06 2013	Erik

00:10 22311 B1 Bkgd On E=1.7 W=1.6 GV=285 00:17 22312 B2 Beta On E=9.1 W=8.1 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=1.00 01:07 22313 B3 Depol On->Off W/R=0.158(57) 01:15 22314 B4 Bkgd Off

E=1.1 W=1.2 GV=284 01:21 22315 B5 Beta Off E=12.6 W=13.4 Fe/GV=0.47 SCS/GV=0.35 Beta/GV=1.39 02:12 22316 B6 Depol Off->On W/R=0.049(19) 02:19 22317 B7 Beta Off E=12.5 W=13.4 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.39 03:10 22318 B8 Depol Off->On W/R=0.036(15) 03:17 22319 B9 Bkgd Off E=1.2 W=1.0 GV=285 03:23 22320 B10 Beta On E=9.7 W=8.8 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=1.00 04:14 22321 B11 Depol On->Off W/R=0.082(38) 04:21 22322 B12 Bkgd On E=1.2 W=1.1 GV=260 04:28 22323 A1 Bkgd Off E=1.2 W=1.1 GV=244 04:34 22324 A2 Beta Off E=12.1 W=12.7 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.00 05:25 22325 A3 Depol Off->On W/R=0.032(15) 05:32 22326 A4 Bkgd On E=1.1 W=1.2 GV=281 05:39 22327 A5 Beta On E=9.6 W=8.6 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=1.00 06:29 22328 A6 Depol On->Off W/R=0.161(58) 06:37 22329 A7 Beta On E=9.4 W=8.6 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 07:27 22330 A8 Depol On->Off W/R=0.121(48) 04:34 22331 A9 Bkgd On E=1.0 W=1.0 GV=27.4 7:41 AM 22332 A10: Beta Run (off) 8:32 AM 22333 A11: Depol (off to on) 8:39 AM 22334 A12: Background (off)

25391	Sat Jan 12 07:30:07 2013	ASaunders

UCNA Shift Change Checklist Date: 1/12/13, 0815 Shift Persons: Andy, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 100 psia Water line return 36 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.3 psia Heater C pressure 14.4 psia Tungsten supply press. 290 psig Compressor 1 On Yes (On) Tungsten Cool supp. 294 psia Tungsten Cool Diff. 282 psia Tungsten Cool ret. 77 psia 1630 eng. 2 temp. 12.7 K 1630 JT temp. 6.4 K 1630 outlet temp. 269 K 1630 engine speed 100 rpm 1630 supply press. 245 psig 1630 JT press. 220 avg psig 1630 return press. 1.8 psig 1630 med. press. stor. 88 psig 1410 engine speed 79 rpm 1410 TE-A 12.8 K 1410 TE-B 5.8 K 1410 TE-E 91.3 K 1410 supply press. 246 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg low because of slow engine speed of 1410. 4K dewar level 12.8 inHe 1K dewar level 14.6 inHe 4K main flow control 6.0 V LHe temp. 1 5.0 K Heat exch. temp. 3 163 K Poly temp. 2 187 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart new run 1398 Switcher status thru AFP temperature 9.1 C AFP frequency 28.49500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 85.0 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 1.5e-5 torr Spectrometer pressure 7.5e-6 torr Hall Probe Y .170 kGauss Hall Probe Z -.361 kGauss PPM LHe level 82.9 % PPM LN2 level 97.7 % AFP LHe level 97.3 % AFP LN2 level 94.3 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 83.1 F West MWPC Temperature 70.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.8 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 3055 Hz West muon veto rate 5906 Hz Timing Reset H-GX DAQ data_raw disk usage 66% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 300 ns TBCM001I03 13.8 mA "Beamplot" Capture 78%

25389	Fri Jan 11 23:28:05 2013	Erik

UCNA Shift Change Checklist Date: 1/12/13, 00:15 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 105 psia Water line return 36 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.11 psia Heater C pressure 14.24 psia Tungsten supply press. 300 psig Compressor 1 On Yes (On) Tungsten Cool supp. 296.2 psia Tungsten Cool Diff. 283.3 psia Tungsten Cool ret. 78.9 psia 1630 eng. 2 temp. 16.98 K 1630 JT temp. 7.93 K 1630 outlet temp. 256.2 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 220 avg psig 1630 return press. 1.4 psig 1630 med. press. stor. 45 psig 1410 engine speed 79 rpm Trying to make less liquid. 1410 TE-A 18.8 K 1410 TE-B 7.4 K 1410 TE-E 92.8 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.5 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg low because of slow engine speed of 1410. 4K dewar level 18.06 inHe 1K dewar level 15.78 inHe 4K main flow control 6.0 V LHe temp. 1 4.907 K Heat exch. temp. 3 201.55 K Poly temp. 2 179.09 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35 gallon/100 Gate valve status

open D2 Pump port status closed MCS Program restart Switcher status thru AFP temperature 9.5 C AFP frequency 28.49500 MHz AFP forward power 40 W AFP N2 dewar level 100% SCS LHe level 90.1 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.9 torr Source pressure 2.2e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y .170 kGauss Hall Probe Z -.361 kGauss PPM LHe level 82.9 % PPM LN2 level 98.6 % AFP LHe level 89.4 % AFP LN2 level 85.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 9 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 84.7 F West MWPC Temperature 72.3 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.7 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3015 Hz West muon veto rate 8569 Hz Timing Reset H-GX DAQ data_raw disk usage 66% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 300 ns TBCM001I03 13.7 mA "Beamplot" Capture 79%

25387	Fri Jan 11 22:49:36 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/11/13, 5:20:00 Shift Persons: MAB, RWP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 98 psia Water line return 36 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.67 psia Heater C pressure 13.63 psia Tungsten supply press. 300 psig Compressor 1 On Yes (On) Tungsten Cool supp. 296.1 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 79.4 psia 1630 eng. 2 temp. 17.02 K 1630 JT temp. 7.98 K 1630 outlet temp. 270.7 K 1630 engine speed 110 rpm 1630 supply press. 246 psig 1630 JT press. 220 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 53 psig 1410 engine speed 79 rpm Trying to make less liquid. 1410 TE-A 13.5 K 1410 TE-B 6.2 K 1410 TE-E 84.6 K 1410 supply press. 245 psig 1410 JT press. 175 psig 1410 return press. 3.3 psig 1K dewar pressure 6.1 psig 4K dewar pressure 210 mmHg low because of slow engine speed of 1410. 4K dewar level 21.79 inHe 1K dewar level 12.33 inHe 4K main flow control 6.0 V LHe temp. 1 6.809 K Heat exch. temp. 3 271.65 K Really high because source was taken out of system--needed to cool down. Poly temp. 2 262.94 K flapper heater cur 0.22 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37 gallon/100 Gate valve status closed D2 Pump port status open will be making a source. MCS Program restart ---------******** Switcher status thru AFP temperature 9.2 C AFP frequency 28.49500 MHz AFP forward power off AFP N2 dewar level 100% SCS LHe level 90.9 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 387.0 torr Source is gaseous currently. CM5 pressure 2.9 torr Source pressure HIGH (sensor is off) Spectrometer pressure 1.5e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 83.0 % PPM LN2 level 37.6 % AFP LHe level 97.3 % AFP LN2 level 99.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 8.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 85.6 F West MWPC Temperature 73.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 25 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2683 Hz West muon veto rate 5102 Hz Timing Reset H-GX DAQ data_raw disk usage 66% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 300 ns TBCM001I03 13.7 mA "Beamplot" Capture 79%

25388	Fri Jan 11 22:07:06 2013	ARYoung

RCTs surveyed the mezzanine by the source and saw neutrons rates almost double previously posted values. They put up signage to make the area near where the cable runs out of the shield stack around the source are located into a high radiation area. Personnel are not to enter this area when the beam is on. Neutron dose levels are very low and we are still permitted to work near the gas handling cart.

25386	Fri Jan 11 16:32:29 2013	bz

Flapper done broke **UPDATE @ 17:32** Flapper done got fixed (encoder replaced)

25385	Thu Jan 10 23:23:43 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/11/13, 00:00 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower off warming source Heat exchanger flow 50 slpm Heater B pressure 12.69 psia Heater C pressure 14.27 psia Tungsten supply press. 305 psig Compressor 1 On Yes (On) Tungsten Cool supp. 299.5 psia Tungsten Cool Diff. 283.9 psia Tungsten Cool ret. 81.8 psia 1630 eng. 2 temp. 13.2 K 1630 JT temp. 5.72 K 1630 outlet temp. 278.9 K 1630 engine speed 105 rpm 1630 supply press. 247 psig 1630 JT press. 210 avg psig 1630 return press. 1.1 psig 1630 med. press. stor. 40 psig 1410 engine speed 80 rpm Trying to make less liquid. 1410 TE-A 16.2 K 1410 TE-B 6.2 K 1410 TE-E 86.0 K 1410 supply press. 250 psig 1410 JT press. 215 psig 1410 return press. 3.5 psig 1K dewar pressure 6.0 psig 4K dewar pressure 405 mmHg high because of low source flow; opened V311 to bring it down. 4K dewar level 12.59 inHe 1K dewar level 29.44 inHe 4K main flow control 1.0 V Warming source for distillation LHe temp. 1 23.5 K Heat exch. temp. 3 161 K Poly temp. 2 94 K flapper heater cur 0.22 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart ---------******** Switcher status thru AFP temperature 9.4 C AFP frequency 28.495 MHz AFP forward power off AFP N2 dewar level 1/4 SCS LHe level 95.6 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 187.4 torr CM5 pressure 2.8 torr Source pressure 7.6e-6 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y .170 kG Hall Probe Z .361 kG PPM LHe level 83.3 % PPM LN2 level 42.4 % AFP LHe level 90.2 % AFP LN2 level 84.8 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 8.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.6 F West MWPC Temperature 76.6 F MWPC Pressure 100.0 torr N2 - MWPC Differential -7.1 torr Neopentane Flow Rate 18.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2953 Hz West muon veto rate 4982 Hz Timing Reset H-GX DAQ data_raw disk usage 66% Proton beam status Proton burst spacing sec Proton pulses/burst count Proton countdown Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture %

25384	Thu Jan 10 18:18:38 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/10/13, 00:00 Shift Persons: MAB, RWP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37.5 +/- .5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.16 psia Heater C pressure 14.29 psia Tungsten supply press. 305 psig Compressor 1 On Yes (On) Tungsten Cool supp. 300.8 psia Tungsten Cool Diff. 284.9 psia Tungsten Cool ret. 82.5 psia 1630 eng. 2 temp. 8.78 K These low numbers are due to all of our filling 1630 JT temp. 5.51 K and the way we've been running it right now. 1630 outlet temp. 267.6 K 1630 engine speed 85 rpm 1630 supply press. 207 psig 1630 JT press. 177 avg psig 1630 return press. 0.9 psig 1630 med. press. stor. 60 psig 1410 engine speed 80 rpm Trying to make less liquid. 1410 TE-A 14.6 K 1410 TE-B 7.2 K 1410 TE-E 83.2 K 1410 supply press. 245 psig 1410 JT press. 215 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 330 mmHg 4K dewar level 17.97 inHe 1K dewar level 26.73 inHe 4K main flow control 6.0 V LHe temp. 1 4.920 K Heat exch. temp. 3 161.60 K Poly temp. 2 58.499 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27 gallon/100 Gate valve status closed D2 Pump port status open We were melting and refreezing the source--minimal path of impedance. MCS Program restart ---------******** Switcher status down AFP temperature 9.5 C AFP frequency 28.495 MHz AFP forward power off AFP N2 dewar level 1/4 SCS LHe level 85.7.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 7.6e-6 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y .170 kG Hall Probe Z .361 kG PPM LHe level 83.4 % PPM LN2 level 45.2 % AFP LHe level 99.6 % AFP LN2 level 80.0 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 8.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV **** OFF *(did it trip?!?) set to 2.7 kV OFF!!! MWPC Trip Hold Status Trip Hold East MWPC Temperature 87.3 F West MWPC Temperature 76.2

F MWPC Pressure 100.0 torr N2 - MWPC Differential -7.2 torr Neopentane Flow Rate 18.3 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 (ch 12), 2150 (ch 15) [On] V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2843 Hz West muon veto rate 5053 Hz Timing Reset T0 DAQ data_raw disk usage 66% Proton beam status Proton burst spacing sec Proton pulses/burst count Proton countdown Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture %

25383	Wed Jan 9 23:18:38 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/10/13, 00:00 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.15 psia Heater C pressure 13.79 psia Tungsten supply press. 315 psig Compressor 1 On Yes (On) Tungsten Cool supp. 303.8 psia Tungsten Cool Diff. 284.4 psia Tungsten Cool ret. 84.7 psia 1630 eng. 2 temp. 12.37 K 1630 JT temp. 6.57 K 1630 outlet temp. 275.3 K 1630 engine speed 110 rpm 1630 supply press. 240 psig 1630 JT press. 210 avg psig 1630 return press. 1.3 psig 1630 med. press. stor. 40 psig 1410 engine speed 79 rpm Trying to make less liquid. 1410 TE-A 16.7 K 1410 TE-B 5.9 K 1410 TE-E 84.6 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 14.98 inHe 1K dewar level 26.08 inHe 4K main flow control 6.0 V LHe temp. 1 5.009 K Heat exch. temp. 3 145.08 K Poly temp. 2 99.975 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart Switcher status down AFP temperature 9.9 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 1/3 SCS LHe level 95.3 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.8 torr Source pressure 1.3e-5 torr Spectrometer pressure 8.4e-6 torr attached CC2 to flaky CC near switcher Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 83.6 % PPM LN2 level 50.2 % AFP LHe level 88.5 % AFP LN2 level 81.3 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 9 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2.7 kV ON MWPC Trip Hold Status Trip Hold East MWPC Temperature 84.0 F West MWPC Temperature 76.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.8 torr Neopentane Flow Rate 18.9 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on (really 2600V) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) [On] V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) [On] V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2915 Hz West muon veto rate 5091 Hz Timing Reset T0 DAQ data_raw disk usage 65% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 Proton Pattern width 306 ns TBCM001I03 12. mA "Beamplot" Capture 79 %

25382	Tue Jan 8 23:42:51 2013	mmendenhall

UCNA Shift Change Checklist Date: 1/1/13, 19:17 Shift Persons: Bryan, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.35 psia Heater C pressure 14.19 psia Tungsten supply press. 310 psig Compressor 1 On Yes (On) Tungsten Cool supp. 309.2 psia Tungsten Cool Diff. 286.8 psia Tungsten Cool ret. 89.6 psia 1630 eng. 2 temp. 12.31 K 1630 JT temp. 6.40 K 1630 outlet temp. 272.4 K 1630 engine speed 135 rpm 1630 supply press. 247 psig 1630 JT press. 200 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 52 psig 1410 engine speed 90 rpm Trying to make less liquid. 1410 TE-A 14.5 K 1410 TE-B 5.8 K 1410 TE-E 88.0 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.2 psig 1K dewar pressure 5.8 psig 4K dewar pressure 315 mmHg 4K dewar level 15.09 inHe 1K dewar level 20.13 inHe 4K main flow control 5.5 V LHe temp. 1 4.99 K Heat exch. temp. 3 159.6 K Poly temp. 2 124.2 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart Switcher status Thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power OFF W AFP N2 dewar level 2/3 SCS LHe level 96.3 %

SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.8 torr Source pressure 5.7e-5 torr Spectrometer pressure 9e-6 torr attached CC2 to flaky CC near switcher Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 83.8 % PPM LN2 level 57.9 % AFP LHe level 87.9 % AFP LN2 level 57.6 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 9 gph AFP chiller set point 7 degC AFP chiller level light off
========== East Detector Cart
========== MWPC HV 2.7 kV ON MWPC Trip Hold Status Trip Hold East MWPC Temperature 84.1 F West MWPC Temperature 73.0 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 18.7 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on (really 2600V) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 12.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200, 2150 V (channel 0, 2) East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3025 Hz West muon veto rate 5347 Hz Timing Reset T0 DAQ data_raw disk usage 65% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 Proton Pattern width 300 ns TBCM001I03 12.2 mA "Beamplot" Capture 80 %

25381	Tue Jan 8 23:27:13 2013	Marie_Blatnik

UCNA Shift Change Checklist Date: 1/1/13, 19:17 Shift Persons: MAB, RWP
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 125 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.12 psia Heater C pressure 14.05 psia Tungsten supply press. 310 psig Compressor 1 On Yes (On) Tungsten Cool supp. 306.7 psia Tungsten Cool Diff. 286.0 psia Tungsten Cool ret. 88.0 psia 1630 eng. 2 temp. 14.34 K under repair. short to case, melted wire. wire to resistor bank needs to be replaced. conduit to be replaced? 1630 JT temp. 6.74 K 1630 outlet temp. 278.2 K 1630 engine speed 160 rpm Pressure was low in return due to melt/refreeze. 1630 supply press. 245 psig 1630 JT press. 205 avg psig 1630 return press. 1.2 psig 1630 med. press. stor. 53 psig 1410 engine speed 90 rpm Trying to make less liquid. 1410 TE-A 14.7 K 1410 TE-B 6.2 K 1410 TE-E 95.7 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.3 psig 1K dewar pressure 6 psig 4K dewar pressure 327 mmHg 4K dewar level 15.38 inHe 1K dewar level 17.81 inHe 4K main flow control 3.5 V at 8:30pm, 5.5 V at 9pm ... used for melt/refreeze. LHe temp. 1 6.808 K Heat exch. temp. 3 168.6 K Poly temp. 2 94.38 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: .30000 seconds Flapper Time C: 4.8000 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 37.3 gallon/100 Gate valve status closed Pumped out downstream section. D2 Pump port status closed MCS Program restart Run 1392 Switcher status Thru AFP temperature 9.2 C AFP frequency OFF MHz AFP forward power OFF W AFP N2 dewar level 65% SCS LHe level 97.8 % SCS current 119.11 A Hall Probe vi Running. LED vi Running. SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.9 torr Source pressure 2.1e-5 torr Spectrometer pressure 1.8e-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 83.8 % PPM LN2 level 58.5 % AFP LHe level 92.9 % AFP LN2 level 64.1 % PPM current 72 (6) A(T) AFP current 93.647 (7) A(T) AFP chiller sup. pres. 15 psig AFP chiller flow rate 8.2 gph AFP chiller set point 7 degC AFP chiller level light off
========== East Detector Cart
========== MWPC HV 2.7 kV ON MWPC Trip Hold Status Trip Hold East MWPC Temperature 83.9 F West MWPC Temperature 72.8 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.7 torr Neopentane Flow Rate 19.1 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2.2kV on MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200, 2150 V (channel 0, 2) East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2799 Hz West muon veto rate 5593 Hz Timing Reset T0; no beta decay tonight. DAQ data_raw disk usage 65% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 300 ns TBCM001I03 12.2 mA "Beamplot" Capture 77 %

25380	Tue Jan 8 23:02:43 2013	Rpattie

Results of the afp tuning for the night ---------- Frq. Cnt # ---------- 0 632 28.470 477 28.475 323 28.480 267 28.485 276 28.490 243 28.495 231 <--- Selected this frequency as optimum.... 28.500 268 28.505 339 28.510 576 Flapper was stuck earlier in the evening. Did a quick melt to 450 mbar and ran the AUTO program to find limits at higher pressure. This seemed to work. Unfortunately the gate valve close rate was about 250 Hz.

25379	Tue Jan 8 20:03:16 2013	Rpattie

Started a melt and refreeze after the CCR tune: Close the D2 tank Openned the check valve bypass 1630 already returning to the warm side so nothing was alter on it reduced the source flow to 1.0V at 220 mbar increased to 3.5 V after passing through the triple point flow back to 1.0V pressure increased to 220mbar and voltage->3.5 V and then melt a final time setting the flow to 1.0V cool the source at 3.5 V to about 10mbar then close the check valve bypass and opened the d2 tank source flow to 5.5 V

25378	Tue Jan 8 15:57:08 2013	MFMakela

LDRD proposal

Attachment 1: 043DR-1.pdf

25377	Mon Jan 7 15:32:35 2013	bz

Called CCR - they are finishing up the repair on Module 4. Even after the repair, it will take 8-12 hours to condition before beam can be delivered. I have asked them to keep us apprised, so that we can make preparations to run if they can deliver beam tonight. However, as the projections are best case, we aren't yet ramping.

25376	Sun Jan 6 17:49:59 2013	bz

Got told by CCR that we should not expect beam before tomorrow Closed check valve bypass, opened flapper. Turned on Chris's daq to monitor UCN created if CCR tunes. Started fill of AFP to lower 1k Dewar level. Tomorrow we ramp and run

25375	Sun Jan 6 08:39:36 2013	MFMakela

D2 is in the source, check valve bypass still open. waiting for beam....

25374	Sat Jan 5 20:22:59 2013	MFMakela

Starting source build 1120 bar in tank.

25373	Sat Jan 5 16:23:46 2013	bz

Turned the 1410 down to 120 RPM to conserve MPS

25372	Sat Jan 5 09:47:08 2013	mmendenhall

The N2 cylinder for the wirechambers was empty. I replaced it with a full one.

25371	Fri Jan 4 16:17:38 2013	MFMakela

Tungsten target flow - 800 SCFH Supply - 300 psi Return 82 psi

25370	Tue Jan 1 18:25:45 2013	CCW

UCNA Shift Change Checklist Date: 1/1/13, 19:17 Shift Persons: DJS, CCW
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 98 psia Water line return 33 psia Main return flow closed He blower off Heat exchanger flow 0 slpm Heater B pressure 13.44 psia Heater C pressure 12.48 psia Tungsten supply press. - psig Compressor 1 On - Tungsten Cool supp. - psia Tungsten Cool Diff. - psia Tungsten Cool ret. - psia 1630 eng. 2 temp. - K under repair. short to case, melted wire. wire to resistor bank needs to be replaced. conduit to be replaced? 1630 JT temp. - K 1630 outlet temp. - K 1630 engine speed - rpm 1630 supply press. - psig 1630 JT press. - psig 1630 return press. 1.4 psig 1630 med. press. stor. 100 psig 1410 engine speed 149 rpm 1410 TE-A 16.3 K 1410 TE-B 5.3 K 1410 TE-E 90.4 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 185 mmHg 4K dewar level 22.27 inHe 1K dewar level 10.32 inHe 4K main flow control off V LHe temp. 1 over K Heat exch. temp. 3 312.0 K Poly temp. 2 over K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: - seconds Flapper Time C: - seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 14 gallon/100 Gate valve status closed D2 Pump port status - MCS Program restart - Switcher status - AFP temperature 25.0 C AFP frequency - MHz AFP forward power - W AFP N2 dewar level 7/8 SCS LHe level 48.8 % SCS current - A Hall Probe vi - LED vi - SV3 closed SV4 closed CM1 pressure 85.5 torr CM5 pressure 2.7 torr Source pressure E09 torr Spectrometer pressure 3.9e-6 torr Hall Probe Y - kG Hall Probe Z - kG PPM LHe level 85.5 % PPM LN2 level 58.3 % AFP LHe level 92.8 % AFP LN2 level 87.3 % PPM current 72 (6) A(T) AFP current 0 A(T) AFP chiller sup. pres. - psig AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light -

========== East Detector Cart ========== MWPC HV - V ON MWPC Trip Hold Status - East MWPC Temperature 65.4 F West MWPC Temperature 65.0 F MWPC Pressure 99.5 torr N2 - MWPC Differential -7.4 torr Neopentane Flow Rate 17.1 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV - V on MWPC Trip Hold Status - MWPC Pressure 99.4 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Top-Veto and GMS Crate (Top Crate) - V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) - V East muon veto HV - kV West muon veto HV - kV East muon veto rate - Hz West muon veto rate - Hz Timing Reset - DAQ data_raw disk usage 65% Proton beam status Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture - %

25369	Sat Dec 29 12:01:18 2012	bz

UCNA Shift Change Checklist Date: 12/29/12, 12:57 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 140 psia Water line return 34 psia Main return flow closed He blower off Heat exchanger flow 0 slpm Heater B pressure 13.59 psia Heater C pressure 12.08 psia Tungsten supply press. - psig Compressor 1 On - Tungsten Cool supp. - psia Tungsten Cool Diff. - psia Tungsten Cool ret. - psia 1630 eng. 2 temp. - K under repair. short to case, melted wire. wire to resistor bank needs to be replaced. conduit to be replaced? 1630 JT temp. - K 1630 outlet temp. - K 1630 engine speed - rpm 1630 supply press. - psig 1630 JT press. - psig 1630 return press. 1.0 psig 1630 med. press. stor. 108 psig 1410 engine speed 149 rpm 1410 TE-A 15.2 K 1410 TE-B 7.2 K 1410 TE-E 88.9 K 1410 supply press. 240 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 220 mmHg 4K dewar level 22.69 inHe 1K dewar level 23.15 inHe 4K main flow control off V LHe temp. 1 over K Heat exch. temp. 3 311.2 K Poly temp. 2 over K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: - seconds Flapper Time C: - seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status closed D2 Pump port status - MCS Program restart - Switcher status - AFP temperature 24.9 C AFP frequency - MHz AFP forward power - W AFP N2 dewar level 1.2 SCS LHe level 42.8 % SCS current - A Hall Probe vi - LED vi - SV3 closed SV4 closed CM1 pressure 85.6 torr CM5 pressure 2.8 torr Source pressure - torr Spectrometer pressure 7.1e-6 torr Hall Probe Y - kG Hall Probe Z - kG PPM LHe level 86.2 % PPM LN2 level 40.1 % AFP LHe level 33.0 % AFP LN2 level 82.7 % PPM current 72 (6) A(T) AFP current 0 A(T) AFP chiller sup. pres. - psig AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - ========== East Detector Cart ========== MWPC HV - V ON MWPC Trip Hold Status - East MWPC Temperature 64.1 F West MWPC Temperature 63.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -7.0 torr Neopentane Flow Rate 16.2 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV - V on MWPC Trip Hold Status - MWPC Pressure 99.4 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Top-Veto and GMS Crate (Top Crate) - V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) - V East muon veto HV - kV West muon veto HV - kV East muon veto rate - Hz West muon veto rate - Hz Timing Reset - DAQ data_raw disk usage 65% Proton beam status Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture - %

25368	Fri Dec 28 10:10:03 2012	DJS

UCNA Shift Change Checklist Date: 12/28/12, 10:53 Shift Persons: Dan, Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 140 psia Water line return 34 psia Main return flow closed He blower off Heat exchanger flow 0 slpm Heater B pressure 13.44 psia Heater C pressure 12.5 psia Tungsten supply press. - psig Compressor 1 On - Tungsten Cool supp. - psia Tungsten Cool Diff. - psia Tungsten Cool ret. - psia 1630 eng. 2 temp. - K under repair. short to case, melted wire. wire to resistor bank needs to be replaced. conduit to be replaced? 1630 JT temp. - K 1630 outlet temp. - K 1630 engine speed - rpm 1630 supply press. - psig 1630 JT press. - psig 1630 return press. - psig 1630 med. press. stor. 93 psig 1410 engine speed 149 rpm 1410 TE-A 14.9 K 1410 TE-B 5.8 K 1410 TE-E 91.5 K 1410 supply press. 235 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 250 mmHg 4K dewar level 22.81 inHe 1K dewar level 27.79 inHe 4K main flow control off V LHe temp. 1 over K Heat exch. temp. 3 303 K Poly temp. 2 over K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: - seconds Flapper Time C: - seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status closed D2 Pump port status - MCS Program restart - Switcher status - AFP

temperature - C AFP frequency - MHz AFP forward power - W AFP N2 dewar level 5/8 SCS LHe level 34.1 % SCS current - A Hall Probe vi - LED vi - SV3 closed SV4 closed CM1 pressure 85.2 torr CM5 pressure 2.7 torr Source pressure - torr Spectrometer pressure 1e-5 torr Hall Probe Y - kG Hall Probe Z - kG PPM LHe level 86.4 % PPM LN2 level 48.4 % AFP LHe level 42.8 % AFP LN2 level 78.1 % PPM current 0 (0) A(T) AFP current 0 A(T) AFP chiller sup. pres. - psig AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - ========== East Detector Cart ========== MWPC HV - V ON MWPC Trip Hold Status - East MWPC Temperature 65.8 F West MWPC Temperature 65.5 F MWPC Pressure 99.9 torr N2 - MWPC Differential -7.2 torr Neopentane Flow Rate 16.1 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV - V on MWPC Trip Hold Status - MWPC Pressure 99.4 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 13.6 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Top-Veto and GMS Crate (Top Crate) - V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) - V East muon veto HV - kV West muon veto HV - kV East muon veto rate - Hz West muon veto rate - Hz Timing Reset - DAQ data_raw disk usage 65% Proton beam status Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture - %

25367	Thu Dec 27 12:37:03 2012	MFMakela

source melted 1051 mbar in the guide. KNF pump on KNF off 1125 n\mabr in tank 112 mbar in source orange valve closed.

25366	Mon Dec 24 09:37:05 2012	bz

UCNA Shift Change Checklist Date: 12/24/12, 10:33 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 85 psia Water line return 35 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.53 psia Heater C pressure 12.15 psia Tungsten supply press. - psig Compressor 1 On - Tungsten Cool supp. - psia Tungsten Cool Diff. - psia Tungsten Cool ret. - psia 1630 eng. 2 temp. 13.66 K 1630 JT temp. 7.80 K 1630 outlet temp. 279.7 K 1630 engine speed 130 rpm 1630 supply press. 230 psig 1630 JT press. 185 psig 1630 return press. 1.3 psig 1630 med. press. stor. 67 psig 1410 engine speed - rpm 1410 TE-A - K 1410 TE-B - K 1410 TE-E - K 1410 supply press. - psig 1410 JT press. - psig 1410 return press. - psig 1K dewar pressure 3.5 psig 4K dewar pressure 265 mmHg 4K dewar level 23.77 inHe 1K dewar level 25.51 inHe 4K main flow control 6.0 V LHe temp. 1 5.231 K Heat exch. temp. 3 138.7 K Poly temp. 2 48.6 K flapper heater cur 0.21 A Flapper Status: closed Flapper Time A: - seconds Flapper Time C: - seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26 gallon/100 Gate valve status closed D2 Pump port status - MCS Program restart - Switcher status - AFP temperature 25.3 C AFP frequency - MHz AFP forward power - W AFP N2 dewar level 3/8 SCS LHe level 65.7 % SCS current - A Hall Probe vi - LED vi - SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 6.5e-6 torr Spectrometer pressure 7.7e-6 torr Hall Probe Y - kG Hall Probe Z - kG PPM LHe level 87.8 % PPM LN2 level 39.4 % AFP LHe level 31.5 % AFP LN2 level 60.1 % PPM current 72 (6) A(T) AFP current 0 A(T) AFP chiller sup. pres. - psig AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - ========== East Detector Cart ========== MWPC HV - V ON MWPC Trip Hold Status - East MWPC Temperature 69.1 F West MWPC Temperature 68.8 F MWPC Pressure 100.0 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 15.9 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV - V on MWPC Trip Hold Status - MWPC Pressure 99.4 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Top-Veto and GMS Crate (Top Crate) - V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) - V East muon veto HV - kV West muon veto HV - kV East muon veto rate - Hz West muon veto rate - Hz Timing Reset - DAQ data_raw disk usage 65% Proton beam status Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture - %

25365	Sat Dec 22 09:20:51 2012	DJS

UCNA Shift Change Checklist Date: 12/22/12, 10:11 Shift Persons: Dan, Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 95 psia Water line return 35 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.20 psia Heater C pressure 12.25 psia Tungsten supply press. - psig Compressor 1 On - Tungsten Cool supp. - psia Tungsten Cool Diff. - psia Tungsten Cool ret. - psia 1630 eng. 2 temp. 13.18 K 1630 JT temp. 7.20 K 1630 outlet temp. 296.7 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.4 psig 1630 med. press. stor. 70 psig 1410 engine speed - rpm 1410 TE-A -

K 1410 TE-B - K 1410 TE-E - K 1410 supply press. - psig 1410 JT press. - psig 1410 return press. - psig 1K dewar pressure 4 psig 4K dewar pressure 295 mmHg 4K dewar level 14.09 inHe 1K dewar level 26.40 inHe 4K main flow control 6.0 V LHe temp. 1 5.26 K Heat exch. temp. 3 139.8 K Poly temp. 2 51.9 K flapper heater cur 0.21 A Flapper Status: closed Flapper Time A: - seconds Flapper Time C: - seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status closed D2 Pump port status - MCS Program restart - Switcher status - AFP temperature - C AFP frequency - MHz AFP forward power - W AFP N2 dewar level 3/4 SCS LHe level 88.8 % SCS current - A Hall Probe vi - LED vi - SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 5.2e-6 torr Spectrometer pressure 1.0e-5 torr Hall Probe Y - kG Hall Probe Z - kG PPM LHe level 88.2 % PPM LN2 level 54.9 % AFP LHe level 65.2 % AFP LN2 level 54.1 % PPM current 72 (6) A(T) AFP current 0 A(T) AFP chiller sup. pres. - psig AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - ========== East Detector Cart ========== MWPC HV - V ON MWPC Trip Hold Status - East MWPC Temperature 65.2 F West MWPC Temperature 65.0 F MWPC Pressure 100.1 torr N2 - MWPC Differential -7.1 torr Neopentane Flow Rate 16.4 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV - V on MWPC Trip Hold Status - MWPC Pressure 99.4 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Top-Veto and GMS Crate (Top Crate) - V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) - V East muon veto HV - kV West muon veto HV - kV East muon veto rate - Hz West muon veto rate - Hz Timing Reset - DAQ data_raw disk usage 65% Proton beam status Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture - %

25364	Fri Dec 21 14:32:31 2012	bz

Found that the E MWPC had fallen to 93 Torr, increased isobutane flow and pressure seems to be recovering. Please keep an eye on these.

25363	Wed Dec 19 16:26:34 2012	JOrtiz3

Germanium Detector Running Parameters Optimization: The goal was to find the best voltage and rise-time to run the ORTEC GEM100P4-ST at. Shown below are the test results with voltage (e.g. 4000v) and rise time (e.g. 10us). *attached* It appears that 4000 volts and 6 us rise time on the amplifier are the best running parameters.

Attachment 1: ls

25362	Wed Dec 19 10:33:17 2012	MFMakela

11:30 LN2 @ 2000

25361	Wed Dec 19 09:03:51 2012	KPH

Checked out the MWPCs this morning and everything still looks good and stable. Flow is about 15 slpm on both sides.

25360	Wed Dec 19 09:03:03 2012	KPH

MWPC status: -> HV off -> preamp 6V off -> PMT HV off -> disconnected neopentane. -> connected isobutane. -> pumped out flow line -> started flow of isobutane little b status: -> valve air disconnected -> valve electricity disconnected -> bypass open -> box vacuum pumping -> PMT HV off Over the break: -> check MWPC gas values just like on a shift-change checklist every few days - ensure MWPC pressure is > 98 torr and < 102 torr - ensure differential pressure is < -0.5 torr and > -10 torr - ensure flow is >10 slpm and < 50 slpm -> check isobutane bottle if the flow begins to drop -> increase flow (needle valve) if necessary if flow drops but isobutane is fine

25359	Tue Dec 18 21:25:36 2012	Ding

So since we are done for the year! We ramped down the SCS and the AFP. Turned off the spin flipper and running warm water through it. Kevin is currently getting the detectors in a safe state. Stopped the little b box. Gate Valve is disconnected. Things not done- the source and whatever we might have forgotten. Also the H-GX light is still flashing at us in the counting house...

25356	Tue Dec 18 21:21:40 2012	Ding

UCNA Shift Change Checklist Date: 12/18/12, 00:00 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

---- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.01 psia Heater C pressure 14.04 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 286.4 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 70.5 psia 1630 eng. 2 temp. 13.17 K 1630 JT temp. 7.07 K 1630 outlet temp. 276.5 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 100 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 101.3 K 1410 supply press. 250 psig 1410 JT press. 205 psig 1410 return press. 3.8 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 11.93 inHe 1K dewar level 32.40 inHe 4K main flow control 6.0 V LHe temp. 1 5.23 K Heat exch. temp. 3 151.26 K Poly temp. 2 79.46 K flapper heater cur 0.21 A Flapper Status: close Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 28.5 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 92.6 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.4 torr Source pressure 1.0e-5 torr Spectrometer pressure 1.8e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 88.9 % PPM LN2 level 83.2 % AFP LHe level 86.5 % AFP LN2 level 81.9 % PPM current 72 A(T) AFP current 93 A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.6 F West MWPC Temperature 76.1 F MWPC Pressure 99.9 torr N2 - MWPC Differential -8 torr Neopentane Flow Rate 18.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2300 V on MWPC Trip Hold Status trip hold MWPC Pressure 99 torr N2 - MWPC Differential -1.8 torr Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2821 Hz West muon veto rate 4958 Hz Timing Reset H-GX DAQ data_raw disk usage 65% Proton beam status Proton burst spacing sec Proton pulses/burst count Proton countdown count Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture %

25358	Tue Dec 18 17:24:06 2012	Erik

The beam is down for today. Apparently, there was some misunderstanding.

25355	Tue Dec 18 16:56:28 2012	Erik

Midas Runs 22243-22254 are test runs in order to test how a program for little b works.

25357	Tue Dec 18 16:00:01 2012	Erik

Well, for some reason my program stopped last night after one run, so there is one run (run 6254) that looks good in Chris's analysis program. Other runs that have data, but that will need to be analyzed differently. run 6245 run 6248 through 6253 I have done some testing and we should be able to take good data throughout all the beta runs tonight.

25354	Tue Dec 18 14:54:57 2012	BMV

Source Calibrations Bi/Ce/Sn paddle serials facing West 10:41 22215 Fully Inserted 10:50 22216 0.5 in retracted 10:58 22217 1.0 in retracted 11:06 22218 1.5 in retracted 11:15 22219 2.0 in retracted 11:33 22220 2.5 in retracted 11:41 22221 3.0 in retracted 11:42 22222 3.5 in retracted 11:57 22223 4.0 in retracted 12:04 22224 4.5 in retracted 12:16 22225 5.0 in retracted 12:23 22226 5.5 in retracted 12:34 22227 6.0 in retracted Cd/Cs/In paddle Facing 13:07 22228 Fully Inserted East 13:16 22229 0.5 in retracted West 13:29 22230 1.0 in retracted East 13:37 22231 1.5 in retracted West 13:46 22232 2.0 in retracted East 13:54 22233 2.5 in retracted West 14:03 22234 3.0 in retracted East 14:11 22235 3.5 in retracted West 14:20 22236 4.0 in retracted East 14:27 22237 4.5 in retracted West 14:35 22238 5.0 in retracted East 14:43 22239 5.5 in retracted West 14:51 22240 6.0 in retracted East 15:08 22241 background

25353	Tue Dec 18 00:51:51 2012	Erik

So, I stayed to check if runs made with manually set run times would output good data. Kevin and I accidentally did our math wrong, so now there will only be 7 runs with data that doesn't run into bkg and depol runs. In addition, I figured out that my program has been killing the process that I wanted it to, but for whatever reason that doesn't stop it from taking data. The only reliable way I found to cut off the data was to kill my python script. So, I'll have to try writing a bash script that starts up the python script after it terminates.

25352	Mon Dec 17 23:24:03 2012	Hasan

UCNA Shift Change Checklist Date: 12/18/12, 00:00 Shift Persons: Robby, Hasan

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.10 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 288 psia Tungsten Cool Diff. 282 psia Tungsten Cool ret. 72 psia 1630 eng. 2 temp. 13.30 K 1630 JT temp. 7.08 K 1630 outlet temp. 276.0 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 40 psig 1410 engine speed 124 rpm 1410 TE-A 15.3 K 1410 TE-B 6.3 K 1410 TE-E 72.9 K 1410 supply press. 240 psig 1410 JT press. 180 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 270 mmHg 4K dewar level 15.4 inHe 1K dewar level 25.9 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 158 K Poly temp. 2 154 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 34.5 gallon/100 Gate valve status flapping D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.7 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 5/8 SCS LHe level 86.1 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 1.9e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.1 % PPM LN2 level 88.8 % AFP LHe level 93.2 % AFP LN2 level 90.0 % PPM current 72 A(T) AFP current 93.647 A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 85.6 F West MWPC Temperature 74.8 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 18.8 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2350 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.6 torr Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3041 Hz West muon veto rate 7946 Hz Timing Reset H-GX DAQ data_raw disk usage 64% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width ns TBCM001I03 12.9 mA "Beamplot" Capture 71%

25351	Mon Dec 17 23:12:47 2012	KPH

New octet B->A time run type f E W GV Fe/GV SCS/GV B/GV W/R ---------- 09:55 22164 B1 bkg on 1.064 0.964 236 10:05 22165 B2 beta on 6.538 5.806 0.1185 0.2587 0.9508 10:56 22166 B3 D+ 0.109(47) 11:03 22167 B4 bkg off 1.019 0.968 197 11:14 22168 B5 beta off 8.229 8.683 0.4875 0.3341 1.3238 12:42 22170 B6 D- 0.034(17) 12:42 22170 B7 beta off 7.805 8.183 0.4875 0.3372 1.361 15:19 22171 B8 D- 0.034(17) 15:26 22172 B9 bkg off 0.981 0.920 196 18:17 22174 B10 beta on 6.676 5.895 0.1166 0.2595 0.9644 19:08 22174 B11 D+ 0.0625(37) 19:15 22176 B12 bkg on 1.024 1.027 193 19:25 22177 A1 bkg off 1.055 1.032 199 19:36 22178 A2 beta off 8.581 8.893 0.494 0.3325 1.337 20:27 22179 A3 D- 0.016(11) 20:34 22180 A4 bkg on 1.198 1.040 201 20:44 22181 A5 beta on 6.538 5.851 0.1156 0.2579 0.962 21:35 22182 A6 D+ 0.0690(35) 21:42 22183 A7 beta on 6.381 5.789 0.1126 0.2581 0.9633 22:33 22184 A8 D+ 0.123(49) 22:40 22185 A9 bkg on 1.073 1.000 197 22:51 22186 A10beta off 8.407 8.261 0.4924 0.3377 1.3557 23:41 22187 A11 D- 0.046(21) 23:48 22188 A12 bkg off 1.026 0.941 194

25350	Mon Dec 17 17:38:07 2012	KPH

UCNA Shift Change Checklist Date: 12/17/12, 16:00-00:00 Shift Persons: Kevin, Erik
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.98 psia Heater C pressure 13.08 psia Tungsten supply press. 295 psig Compressor 1 On On Tungsten Cool supp. 288 psia Tungsten Cool Diff. 282 psia Tungsten Cool ret. 72 psia 1630 eng. 2 temp. 13.1 K 1630 JT temp. 6.9 K 1630 outlet temp. 277 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig 1630 med. press. stor. 55 psig 1410 engine speed 175 rpm 1410 TE-A 15.4 K 1410 TE-B 6.7 K 1410 TE-E 74.9 K 1410 supply press. 225 psig 1410 JT press. 110 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 260 mmHg 4K dewar level 13.8 inHe 1K dewar level 23.9 inHe 4K main flow control 6.0 V LHe temp. 1 5.1 K Heat exch. temp. 3 158 K Poly temp. 2 110 K flapper heater cur 0.21 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 35 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 90.0

% SCS current 119.9 A Hall Probe V1 running LED V1 running SV3 closed SV4 closed CM1 pressure 0 torr CM5 pressure 0 torr Source pressure 1.3e-5 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.2 % PPM LN2 level 93.2 % AFP LHe level 85.9 % AFP LN2 level 72.4 % PPM current 72 A(T) AFP current 93.647 A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 84.3 F West MWPC Temperature 75.2 F MWPC Pressure 100 torr N2 - MWPC Differential -6.8 torr Neopentane Flow Rate 19.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV ? V on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.8 torr Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2858 Hz West muon veto rate 4989 Hz Timing Reset H-GX DAQ data_raw disk usage 64% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width ns TBCM001I03 mA "Beamplot" Capture 81%

25348	Mon Dec 17 07:16:49 2012	BPlaster

05:39 22149 B1 Bkgd On E=1.1 W=1.0 GV=187 05:44 22150 B2 Beta On E=6.5 W=5.7 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 06:10 22151 B3 Depol On->Off W/R=0.121(48) 06:17 22152 B4 Bkgd Off E=1.1 W=1.0 GV=193 06:23 22153 B5 Beta Off E=8.5 W=8.7 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.37 06:48 22154 B6 Depol Off->On W/R=0.075(28) 06:55 22155 B7 Beta Off E=8.4 W=8.8 Fe/GV=0.49 SCS/GV=0.35 Beta/GV=1.38 07:21 22156 B8 Depol Off->On W/R=0.040(20) 07:28 22157 B9 Bkgd Off E=1.0 W=0.8 GV=193 07:34 22158 B10 Beta On E=6.2 W=5.7 Fe/GV=0.12 SCS/GV=0.26 Beta/GV=0.99 07:59 22159 B11 Depol On->Off W/R=0.082(38) 08:07 22160 B12 Bkgd On E=1.1 W=1.1 GV=189 Over the weekend, the GV rate decreased steadily from ~280 on Friday night to ~190 now on Monday morning.

25349	Mon Dec 17 07:16:23 2012	BPlaster

Turned beam over to CCR for low-current tuning exercise.

25347	Mon Dec 17 04:46:43 2012	BPlaster

02:50 22136 A1 Bkgd Off E=1.1 W=1.0 GV=196 02:55 22137 A2 Beta Off E=8.5 W=8.9 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.37 03:21 22138 A3 Depol Off->On W/R=0.052(22) 03:28 22139 A4 Bkgd On E=1.1 W=1.0 GV=196 03:34 22140 A5 Beta On E=6.8 W=6.0 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=1.02 03:59 22141 A6 Depol On->Off W/R=0.105(45) 04:06 22142 A7 Beta On E=6.5 W=5.9 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 04:32 22143 A8 Depol On->Off W/R=0.059(35) 04:39 22144 A9 Bkgd Off E=1.1 W=1.0 GV=194 04:45 22145 A10 Beta Off *** JUNK, BEAM OFF *** 05:00 22146 A10 Beta Off E=8.5 W=8.9 Fe/GV=0.49 SCS/GV=0.35 Beta/GV=1.39 05:26 22147 A11 Depol Off->On W/R=0.017(12) 05:33 22148 A12 Bkgd Off E=1.2 W=1.0 GV=168

25346	Mon Dec 17 02:26:36 2012	BPlaster

GV rate during background runs has steadily dropped from ~230 Hz to ~200 Hz. This is despite source temperature, pressure, etc. looking to be nominal. Maybe not much we can do about it at this point in the weekend ... Guess the source is getting tired after the weekend ...

25345	Mon Dec 17 02:20:12 2012	BPlaster

00:17 22129 B6 Depol Off->On W/R=0.016(12) 00:25 22130 B7 Beta Off E=10.1 W=10.5 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.36 01:15 22131 B8 Depol Off->On W/R=0.029(15) 01:22 22132 B9 Bkgd Off E=1.1 W=1.1 GV=183 01:34 22133 B10 Beta On E=6.5 W=5.8 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=1.01 02:25 22134 B11 Depol On->Off W/R=0.123(49) 02:32 22135 B12 Bkgd On E=1.1 W=1.1 GV=196 Per instruction, we have started a new A->B octet with a finishing time of ~8:00 a.m., in the event that we actually get beam until then.

25344	Mon Dec 17 01:37:32 2012	BPlaster

UCNA Shift Change Checklist Date: 12/17/12, 00:00-08:00 Shift Persons: Hasan, BradP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.1 psia Heater C pressure 13.4 psia Tungsten supply press. 285 psig Compressor 1 On On Tungsten Cool supp. 276.0 psia Tungsten Cool Diff. 278.7 psia Tungsten Cool ret. 62.5 psia 1630 eng. 2 temp. 12.6 K 1630 JT temp. 7.0 K 1630 outlet temp. 276.2 K 1630 engine speed 135 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.3 psig 1630 med. press. stor. 50 psig 1410 engine speed 174 rpm 1410 TE-A 15.4 K 1410 TE-B 6.3 K 1410 TE-E 119.5 K 1410 supply press. 245 psig 1410 JT

press. 175 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 295 mmHg 4K dewar level 15.4 inHe 1K dewar level 19.3 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 162.3 K Poly temp. 2 186.0 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.1 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 87.8 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure 1.4e-5 torr Spectrometer pressure 1.3e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.4 % PPM LN2 level 98.2 % AFP LHe level 92.9 % AFP LN2 level 90.2 % PPM current 72 A(T) AFP current 93.647 A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 84.5 F West MWPC Temperature 75.5 F MWPC Pressure 100 torr N2 - MWPC Differential -6.8 torr Neopentane Flow Rate 19.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2610 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3023 Hz West muon veto rate 5171 Hz Timing Reset H-GX DAQ data_raw disk usage 63% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 10.5 mA "Beamplot" Capture 81%

25343	Sun Dec 16 23:28:34 2012	KPH

New Octet (B->A) set to run out at 3am. (well need a new octet to run until 8am after this) The spin flipper seems to be working correctly now. 22:06 22124 B1 Bkg on E=1.05 W=1.036 GV=235 22:17 22125 B2 beta on E=7.9 W=6.9 F/GV=.12 SCS/GV=.28 B/GV=.99 23:08 22126 B3 Depol(on to off) W/R = 0.129(45) 23:15 22127 B4 BackG(off) E=1.1 W=1.0 GV=235 23:27 22128 B5 Beta(off) E=10.1 W=10.6 Fe/GV=0.49 SCS/GV=0.35 B/GV=1.37

25341	Sun Dec 16 21:51:25 2012	Erik

New Octet A->B 11:17 22098 A1 Bkg Off E=1.1 W=1.0 GV=248 11:30 22099 A2 Beta Off E=10.6 W=11.1 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.38 12:25 22100 A3 D- W/R=0.015(11) 12:32 22101 A4 Bkg On E=1.1 W=1.0 GV=247 12:45 22102 A5 Beta On E=8.2 W=7.3 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 13:41 22103 A6 D+ W/R=0.059(30) 13:48 22104 A7 Beta On E=7.88 W=7.06 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=0.99 14:43 22105 A8 D+ W/R=0.059(30) 14:51 22106 A9 Bkg On E=1.1 W=1.0 GV=244 15:03 22106 A10 beta on E=10.6 W=11.2 Fe/GV=15.8 F/GV=0.4899 SCS/GV=0.35 B/GV=1.38 15:59 22108 A11 D- W/R=0.039(16) 16:06 22109 A12 Bkg off E=1.1 W=1.0 GV=242 New shift (Kevin and Jose) ... continuing with the A->B 16:19 22110 B1 Bkg on E=1.1 W=1.0 GV=243 16:31 22111 B2 Beta on E=8.1 W=7.2 F/GV=0.12 SCS/GV=0.27 B/GV=1.00 17:27 22112 B3 D+ W/R=0.066(34) 17:34 22113 B4 Bkg off E=1.1 W=1.0 GV=241 17:47 22114 B5 Beta off E=10.26 W=10.90 F/GV=0.48 SCS/GV=0.35 B/GV=1.38 18:42 22115 B6 D- W/R=9.1(1.0) <---------- What is THIS!? 18:49 22116 B7 Beta off E=10.47 W=10.77 F/GV=0.488 SCS/GV=0.35 B/GV=1.37 ?:? 22117 B8 D- W/R=10.4(1.2) <---------- again this is bad. We checked the spin flipper and it was not turning on. Jose made the observation that wiggling the loose wires in the back turned it on. Since we did not miss any flipper on beta runs from when this problem started we simply decided to keep on going, though those depol runs are now corrupted. 20:05 22118 B9 bkg off E=1.088 W=0.980 GV=236 20:13 22120 B10 beta on E=7.9 W=7.0 F/GV=0.12 SCS/GV=0.28 B/GV=1.00 21:?? 22121 B11 D+ W/R=0.072(33) 21:28 22122 B12 Bkg off E=1.134 W=0.95 GV=236

25342	Sun Dec 16 15:48:27 2012	KPH

UCNA Shift Change Checklist Date: 12/16/12, 16:00 - 00:00 Shift Persons: Kevin, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 131 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.17 psia Heater C pressure 13.17 psia Tungsten supply press. 285 psig Compressor 1 On On Tungsten Cool supp. 277.7 psia Tungsten Cool Diff. 279.0 psia Tungsten Cool ret. 63.7 psia 1630 eng. 2 temp. 12.55 K 1630 JT temp. 6.63 K 1630 outlet temp. 275.5 K 1630 engine speed 132 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.3 psig 1630 med. press. stor. 60 psig 1410 engine speed 175 rpm 1410 TE-A 15.9 K 1410 TE-B 6.8 K 1410 TE-E 120.8 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 330 mmHg 4K dewar level 19.26 inHe 1K dewar level 13.55 inHe 4K main flow control 6.0 V LHe temp. 1 5.16 K Heat exch. temp. 3 160 K Poly temp. 2 167 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

********** DOWNSTAIRS
********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted Switcher status thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power off W AFP N2 dewar level 1 SCS LHe level 92.6 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0 torr CM5 pressure 0 torr Source pressure 1.2e-5 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.4 % PPM LN2 level 33.3 % AFP LHe level 86.7 % AFP LN2 level 85.1 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV ON MWPC Trip Hold Status trip hold East MWPC Temperature 85.7 F West MWPC Temperature 76.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -7.4 torr Neopentane Flow Rate 18.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.6 torr Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 5583 Hz West muon veto rate 9796 Hz why are these so high? Timing Reset H-GX DAQ data_raw disk usage 63% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.84 mA "Beamplot" Capture 82%

25336	Sun Dec 16 12:21:43 2012	BPlaster

04:57 *22083 B10 Beta On E=7.9 W=7.1 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=1.01 05:53 *22084 B11 Depol On->Off W/R= 06:00 *22085 B12 Bkgd On E=1.0 W=1.0 GV=107 06:12 *22086 A1 Bkgd Off E=1.1 W=1.1 GV=194 * = beam tripping on/off during these runs, sometimes for extended periods 06:25 22087 A2 Beta Off E=10.4 W=10.8 Fe/GV=0.49 SCS/GV=0.35 Beta/GV=1.37 07:21 22088 A3 Depol Off->On W/R=0.016(11) 07:28 22089 A4 Bkgd On E=1.1 W=1.0 GV=235 07:40 22090 A5 Beta On E=7.7 W=6.9 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=1.00 08:36 22091 A6 D+ W/R=0.077(36) 08:43 22091 A7 Beta On E=7.9 W=7.1 Fe/GV=0.12 SCS/GV=0.28 Beta/GV 1.00 09:39 22092 A8 D+ W/R=0.17(6) 09:46 22093 A9 Bkg On E=1.1 W=1.1 GV=248 09:59 22094 A10 Beta Off E=10.8 W=11.2 Fe/GV=0.49 SCS/GV=0.35 Beta/GV=1.37 10:54 22095 A11 D- W/R=0.035(16) 11:01 22096 A12 Bkg Off E=1.2 W=1.0 GV=247

25340	Sun Dec 16 12:06:55 2012	BWFilippone

Andy called LN2 people They are here now refilling our LN2. Mark is also here tweaking the liquifiers Hopefully LHe production will improve soon

25339	Sun Dec 16 11:52:20 2012	MFMakela

36 mbar in LN2 trap from last cleaning of D2.

25338	Sun Dec 16 07:57:14 2012	Erik

UCNA Shift Change Checklist Date: 12/16/12, 00:00-08:00 Shift Persons: Erik, BradF
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.31 psia Heater C pressure 13.19 psia Tungsten supply press. 265 psig Compressor 1 On On Tungsten Cool supp. 277.2 psia Tungsten Cool Diff. 279.3 psia Tungsten Cool ret. 63.4 psia 1630 eng. 2 temp. 12.24 K 1630 JT temp. 6.25 K 1630 outlet temp. 273.8 K 1630 engine speed 135 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.5 psig 1630 med. press. stor. 60 psig 1410 engine speed 174 rpm 1410 TE-A 16.8 K 1410 TE-B 6.6 K 1410 TE-E 165.3 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 285 mmHg 4K dewar level 13.27 inHe 1K dewar level 15.71 inHe 4K main flow control 6.6 V LHe temp. 1 5.145 K Heat exch. temp. 3 156.11 K Poly temp. 2 154.22 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume <1 gallon/100 too low! Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.7 C AFP frequency 28.495 MHz AFP forward power 41 W AFP N2 dewar level 1 SCS LHe level 99.1 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr Source pressure 1.1e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.6 % PPM LN2 level 35.3 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 85 F West MWPC Temperature 76 F MWPC Pressure 99.9 torr N2 - MWPC Differential -7.4 torr Neopentane Flow Rate 18.4 slpm East PMT Buck. Curr 0.14 A East Back.

Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2610 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3045 Hz West muon veto rate 7156 Hz Timing Reset H-GX DAQ data_raw disk usage 62% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 13.7 mA "Beamplot" Capture 81%

25337	Sun Dec 16 06:56:12 2012	BPlaster

It looks like we are going to be in a really tight LHe inventory situation. Since the LN2 tanker is empty, it might be (and it maybe looks like) the liquefiers' productions is steadily decreasing. An assessment will need to be made on how long the AFP/SCS can be kept energized, keeping in mind that if either magnet needs to be ramped down, the right people will need to be on-site.

25335	Sun Dec 16 03:46:33 2012	BPlaster

Beam has been down since ~23:00 due to a Module 4 trip. The B10 run will need to be repeated when beam is back. Beam back at ~04:40 !

25333	Sun Dec 16 01:48:42 2012	Ding

18:55 22071 B1 Bkg on E=1.403 W= 1.020 GV=241 19:07 22072 B2 Beta on E=8.49 W=7.51 Fe/Gv=0.12 SCS/GV=0.27 Beta/Gv=0.99 20:03 22073 B3 D- W/R=0.072(33) 20:10 22074 B4 Bkg off E=1.06 W=1.03 GV=257 20:23 22075 B5 Beta off E=10.78 W=11.45 Fe/GV=0.475 sCS/GV=0.355 Beta/GV=1.37 21:18 22076 B6 D+ W/R=0.072(33) 21:26 22077 B7 Beta off E=10.72 W=11.27 Fe/Gv=0.48 SCS/GV=0.35 Beta/GV=1.38 22:21 22078 B8 D+ W/R=0.0064(64) 22:28 22079 B9 Bkg off E=1.16 W=1.03 GV=240 22:41 22080 B10 Beta On *** BEAM WENT OFF, NEED TO REPEAT THIS RUN ***

25334	Sat Dec 15 23:35:25 2012	BPlaster

UCNA Shift Change Checklist Date: 12/16/12, 00:00-08:00 Shift Persons: Hasan, BradP ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.1 psia Heater C pressure 13.1 psia Tungsten supply press. 290 psig Compressor 1 On On Tungsten Cool supp. 277.5 psia Tungsten Cool Diff. 278.1 psia Tungsten Cool ret. 64.3 psia 1630 eng. 2 temp. 11.9 K 1630 JT temp. 6.6 K 1630 outlet temp. 274.4 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.3 psig 1630 med. press. stor. 45 psig 1410 engine speed 175 rpm 1410 TE-A 14.8 K 1410 TE-B 5.8 K 1410 TE-E 85.4 K 1410 supply press. 235 psig 1410 JT press. 160 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 19.0 inHe 1K dewar level 13.8 inHe 4K main flow control 6.6 V LHe temp. 1 5.1 K Heat exch. temp. 3 159.4 K Poly temp. 2 133.6 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 4 gallon/100 too low! Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.8 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 1/4 SCS LHe level 85.8 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 1.6e-5 torr Spectrometer pressure 1.1e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 89.7 % PPM LN2 level 38.3 % AFP LHe level 98.3 % AFP LN2 level 98.3 % PPM current 72 A(T) AFP current 93.647 A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.7 F West MWPC Temperature 76.5 F MWPC Pressure 100 torr N2 - MWPC Differential -7.0 torr Neopentane Flow Rate 18.4 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2610 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 13.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2839 Hz West muon veto rate 6373 Hz Timing Reset H-GX DAQ data_raw disk usage 62% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 10.5 mA "Beamplot" Capture 81%

25331	Sat Dec 15 18:13:56 2012	EIC

08:38 22047 A1 Bkg Off E=1.052 W=0.970 GV=271 08:50 22048 A2 Beta Off E=10.618 W=11.148 Fe/GV=0.4763 SCS/GV=0.3576 Beta/GV=1.3845 09:46 22049 A3 D- W/R=0.029(14) 09:53 22050 A4 Bkg On E=1.0 W=1.0 GV=267 10:06 22051 A5 Beta On E=8.664 W=7.778 Fe/GV=0.1192 SCS/GV=0.2771 Beta/GV=1.0049 11:01 22052 A6 D+ W/R=0.149(51) 11:08 22053 A7 Beta On E=8.9 W=7.9 Fe/GV=0.119 SCS/GV=0.28 Beta/GV=0.99 12:04 22054 A8 D+ W/R=0.061(3) 12:11 22055 A9 Bkg On E=1.1 W=1.1 GV=265 12:24 22056 A10 Beta Off E=11.7 W=12.0 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.38 13:19 22057 A11 D- W/R=0.034(15) 12:27 22058 A12 Bkg Off E=1.1 W=1.1 GV=263 13:39 22059 B1 Bkg On E=1.033 W=1.092 GV=265 13:52 22060 B2 Beta On E=8.868 W=7.764 Fe/GV=0.1195 SCS/GV=0.273 Beta/GV=0.997 14:47 22061 B3 D+ W/R=0.114(43) 14:55 22062 B4 Bkg off E=1.071 W=1.031 GV=265 15:07 22063 B5 Beta off E=11.3 W=12.0 Fe/GV=0.47 SCS/GV=0.35 Beta/Gv=1.38 16:03 22064 B6 D- W/R=0.062(24) 16:10 22065 B7 Beta off E=11.294 W=11.832 Fe/GV=0.48 SCS/Gv=0.35 Beta/Gv=1.4 17:06 22066 B8 D- W/R=0.036(16) 17:13 22067 B9 Bkg off E=1.14 W=1.13 GV=259 17:25 22068 B10 Beta on E=8.6 W=7.8 Fe/Gv=0.118 SCS/GV=0.275 Beta/Gv=0.992 22069 B11 D+ W/R=0.18(58) 18:40 22070 B12 Bkg on E=1.089 W=1.076 GV=257

25332	Sat Dec 15 15:59:29 2012	Ding

UCNA Shift Change Checklist Date: 12/15/12 10:00 Shift Persons: Kevin,Ding ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.20 psia Heater C pressure 13.14 psia Tungsten supply press. 290 psig Compressor 1 On On Tungsten Cool supp. 280.9 psia Tungsten Cool Diff. 279.7 psia Tungsten Cool ret. 65.7 psia 1630 eng. 2 temp. 11.91 K 1630 JT temp. 6.55 K 1630 outlet temp. 274.8 K 1630 engine speed 130 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 45 psig 1410 engine speed 175 rpm 1410 TE-A 14.9 K 1410 TE-B 6.5 K 1410 TE-E 96.2 K 1410 supply press. 240 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 300 mmHg 4K dewar level 18.15 inHe 1K dewar level 13.33 inHe 4K main flow control 6.6 V LHe temp. 1 5.1 K Heat exch. temp. 3 160.49 K Poly temp. 2 159.60 K flapper heater cur 0.27 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 600 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 48.2 MHz AFP forward power 0 W AFP N2 dewar level 1/3 SCS LHe level 89.8 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 1.3e-5 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.36 kG PPM LHe level 89.9 % PPM LN2 level 40.7 % AFP LHe level 91.0 % AFP LN2 level 89.1 % PPM current 72 A(T) AFP current 93.64 A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.1 F West MWPC Temperature 77.5 F MWPC Pressure 99.9 torr N2 - MWPC Differential -7.7 torr Neopentane Flow Rate 18.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2610 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 13.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3099 Hz West muon veto rate 5186 Hz Timing Reset H-GX DAQ data_raw disk usage 62% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 13.9 mA "Beamplot" Capture 81%

25330	Sat Dec 15 14:23:56 2012	BPlaster

03:35 22035 A1 Bkgd Off E=1.0 W=1.0 GV=263 03:48 22036 A2 Beta Off E=11.7 W=12.3 Fe/GV=0.48 SCS/GV=0.36 Beta/GV=1.38 04:43 22037 A3 Depol Off->On W/R=0.034(16) 04:50 22038 A4 Bkgd On E=1.1 W=1.1 GV=267 05:03 22039 A5 Beta On E=7.3 W=6.5 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=1.02 05:59 22040 A6 Depol On->Off W/R=0.071(33) 06:06 22041 A7 Beta On E=9.1 W=8.1 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 07:01 22042 A8 Depol On->Off W/R=0.141(50) 07:09 22043 A9 Bkgd On E=1.1 W=1.0 GV=270 07:21 22044 A10 Beta Off E=11.8 W=12.4 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.37 08:17 22045 A11 D- W/R=0.014(10) 08:23 22046 A12 Bkg Off E=1.1 W=1.0 GV=270

25329	Sat Dec 15 10:46:11 2012	BWFilippone

BWF + Erik filled the AFP from the 1K - down to 9.2" Hopefully it will rise again (like the south).

25328	Sat Dec 15 10:33:27 2012	BWFilippone

UCNA Shift Change Checklist Date: 12/15/12 10:00 Shift Persons: BradF, Erik ********** UPSTAIRS

********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.48 psia Heater C pressure 13.19 psia Tungsten supply press. 270 psig Compressor 1 On On Tungsten Cool supp. 280.9 psia Tungsten Cool Diff. 279.2 psia Tungsten Cool ret. 66.3 psia 1630 eng. 2 temp. 12.15 K 1630 JT temp. 6.6 K 1630 outlet temp. 273.9 K 1630 engine speed 115 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 47 psig 1410 engine speed 175 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 99.0 K 1410 supply press. 235 psig 1410 JT press. 165 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 360 mmHg 4K dewar level 17.2 inHe 1K dewar level 14.27 inHe 4K main flow control 6.6 V LHe temp. 1 5.1 K Heat exch. temp. 3 160.9 K Poly temp. 2 156.0 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 4 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 95.2 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.6 torr Source pressure 1.3e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.399 kG PPM LHe level 90.0 % PPM LN2 level 43.0 % AFP LHe level 84.7 % AFP LN2 level 80.3 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.3 F West MWPC Temperature 77.3 F MWPC Pressure 100.0 torr N2 - MWPC Differential -7.4 torr Neopentane Flow Rate 18.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2610 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.6 torr Neopentane Flow Rate 14 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 4300 Hz West muon veto rate 6500 Hz Timing Reset H-GX DAQ data_raw disk usage 62% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 13.9 mA "Beamplot" Capture 82%

25327	Sat Dec 15 10:09:44 2012	BPlaster

03:35 22035 A1 Bkgd Off E=1.0 W=1.0 GV=263 03:48 22036 A2 Beta Off E=11.7 W=12.3 Fe/GV=0.48 SCS/GV=0.36 Beta/GV=1.38 04:43 22037 A3 Depol Off->On W/R=0.034(16) 04:50 22038 A4 Bkgd On E=1.1 W=1.1 GV=267 05:03 22039 A5 Beta On E=7.3 W=6.5 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=1.02 05:59 22040 A6 Depol On->Off W/R=0.071(33) 06:06 22041 A7 Beta On E=9.1 W=8.1 Fe/GV=0.12 SCS/GV=0.27 Beta/GV=0.99 07:01 22042 A8 Depol On->Off W/R=0.141(50) 07:09 22043 A9 Bkgd On E=1.1 W=1.0 GV=270 07:21 22044 A10 Beta Off E=11.744 W=12.397 Fe/GV=0.4826 SCS/GV=0.3528 Beta/GV=1.3702 08:17 22045 A11 Depol Off->On W/R=0.014(10) 08:23 22046 A12 Bkgd Off E=1.061 W=1.046 GV=270

25326	Sat Dec 15 06:16:52 2012	BPlaster

After we filled the SCS from the 1k (as directed by previous shift), the 1410 didn't make any liquid at all for 2.5 hours. Hasan then tweaked the 1410, and got it to start making some liquid, but the rate is noticeably down from some ~24 hours ago, even though all of the operating parameters appear to be nominal, and are consistent with their values over the last several days. The production rate appeared to drop about ~12 hours ago or so. Unless the production rate increases, not sure we will be able to make it through the weekend...

25325	Sat Dec 15 02:39:52 2012	BPlaster

23:42 22025 B3 Depol On->Off W/R=0.125(44) 23:49 22026 B4 Bkgd Off E=1.1 W=1.1 GV=280 00:01 22027 B5 Beta Off E=11.8 W=12.4 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.38 00:57 22028 B6 Depol Off->On W/R=0.035(16) 01:04 22029 B7 Beta Off E=11.6 W=12.2 Fe/GV=0.48 SCS/GV=0.35 Beta/GV=1.36 02:00 22030 B8 Depol Off->On W/R=0.048(19) 02:07 22031 B9 Bkgd Off E=1.1 W=1.0 GV=267 02:20 22032 B10 Beta On E=9.1 W=8.1 Fe/GV=0.12 SCS/GV=0.28 Beta/GV=0.99 03:15 22033 B11 Depol On->Off W/R=0.152(51) 03:22 22034 B12 Bkgd On E=1.0 W=1.0 GV=269

25324	Sat Dec 15 02:26:09 2012	BPlaster

The nitrogen bottle which supplies the "nitrogen pressure" (i.e., for the N2-MWPC pressure differential) was completely empty (i.e., not a good situation!). So I moved the regulator to a new bottle. Now I'm fighting with the East Fairchild valve to stabilize the East NW-MWPC pressure differential. Update at 03:15: The East N2-MWPC pressure differential now appears to be stabilized.

25323	Fri Dec 14 23:27:00 2012	Hasan

UCNA Shift Change Checklist Date: 12/14/12 16:00 Shift Persons: BradP, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 35 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.60 psia Heater C pressure 13.50 psia Tungsten supply press. 290 psig Compressor 1 On On Tungsten Cool supp. 281.9 psia Tungsten Cool Diff. 281.0 psia Tungsten Cool ret. 66.5 psia 1630 eng. 2 temp. 12.4 K 1630 JT temp. 6.7 K 1630 outlet temp. 271.7 K 1630 engine speed 110 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 35 psig 1410 engine speed 114 rpm 1410 TE-A 16.3 K 1410 TE-B 6.3 K 1410 TE-E 92.1 K 1410 supply press. 240 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 280 mmHg 4K dewar level 16.6 inHe 1K dewar level 25.5 inHe 4K main flow control 6.6 V LHe temp. 1 5.0 K Heat exch. temp. 3 170.9 K Poly temp. 2 138.8 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart yes Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 85.1 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 1.6e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 90.1 % PPM LN2 level 46.0 % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.3 F West MWPC Temperature 77.3 F MWPC Pressure 100.0 torr N2 - MWPC Differential -8.9 torr Neopentane Flow Rate 14.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2918 Hz West muon veto rate 4976 Hz Timing Reset H-GX DAQ data_raw disk usage 61% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 292 ns TBCM001I03 13.9 mA "Beamplot" Capture 75%

25322	Fri Dec 14 22:59:19 2012	KPH

Performed a triple melt and refreeze Finished up Polarimetry runs: 17:15 22016-22017 P- 15 cycles GV not plugged in on first cycle 19:30 22018 P- 1 cycles 19:40 22019-22020 P+ 15 cycles Started B->A run beta=55mins bkg=12mins 21:50 22021 Bkg ON BAD!!! T0 was in for both 22021 and 22022 Restarted, Chris Daq timing 21580 Time Midas Run GV East West Fe/GV SCS/GV beta/GV 22:33 22023 B1 bkg On 284 0.991 1.091 22:46 22024 B2 beta on 9.052 7.979 0.1218 0.2751 0.9928

25321	Fri Dec 14 16:06:44 2012	KPH

UCNA Shift Change Checklist Date: 12/14/12 16:00 Shift Persons: Brittney & Kevin ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 0 slpm melt and refreeze Heater B pressure 12.74 psia Heater C pressure 13.60 psia Tungsten supply press. 290 psig Compressor 1 On On Tungsten Cool supp. 283.7 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 68.0 psia 1630 eng. 2 temp. 17.2 K 1630 JT temp. 8.3 K 1630 outlet temp. 276.6 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 1.0 psig 1630 med. press. stor. 30 psig we may need to deal with this 1410 engine speed 114 rpm 1410 TE-A 15.5 K 1410 TE-B 6.2 K 1410 TE-E 86.2 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 360 mmHg 4K dewar level 15.7 inHe 1K dewar level 26.7 inHe 4K main flow control 5.0 V LHe temp. 1 5.5 K Heat exch. temp. 3 238.7 K Poly temp. 2 153.3 K flapper heater cur 0.22 A Flapper Status: closed melt and refreeze, Bryan style... Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restart Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 87.7 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 26.5 torr CM5 pressure ~2 torr Source pressure off torr Spectrometer pressure 2.2e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 90.4 % PPM LN2 level 48.4 % AFP LHe level 97.1 % AFP LN2 level 83.5 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East

Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.9 F West MWPC Temperature 80.2 F MWPC Pressure 100.2 torr N2 - MWPC Differential -9.4 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2797 Hz West muon veto rate 4702 Hz Timing Reset T0 DAQ data_raw disk usage 61% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 14.1 mA "Beamplot" Capture 76%

25320	Thu Dec 13 23:52:04 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/14/12 00:01 Shift Persons: Dave & Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.41 psia Heater C pressure 13.34 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 287.3 psia Tungsten Cool Diff. 282.1 psia Tungsten Cool ret. 70.7 psia 1630 eng. 2 temp. 12.00 K 1630 JT temp. 6.55 K 1630 outlet temp. 272.0 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 40 psig 1410 engine speed 129 rpm 1410 TE-A 14.6 K 1410 TE-B 6.1 K 1410 TE-E 91.3 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.7 psig 4K dewar pressure 275 mmHg 4K dewar level 15.03 inHe 1K dewar level 26.68 inHe 4K main flow control 6.5 V LHe temp. 1 5.00 K Heat exch. temp. 3 157.34 K Poly temp. 2 103.82 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.6 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 86.9 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.7 torr Source pressure 1.7e-5 torr Spectrometer pressure 1.8e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 90.9 % PPM LN2 level 53.7 % AFP LHe level 86.4 % AFP LN2 level 82.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.8 F West MWPC Temperature 81.1 F MWPC Pressure 99.8 torr N2 - MWPC Differential -8.9 torr Neopentane Flow Rate 14.1 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2749 Hz West muon veto rate 4744 Hz Timing Reset T0 DAQ data_raw disk usage 60% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 14.3 mA "Beamplot" Capture 75%

25319	Thu Dec 13 20:34:25 2012	BMV

Adventures of the 4-midnight shift. Jose and I filled the AFP magnet around 2:30pm. Kevin and Ding arrived. They did the shift change checklist. Stopped Xenon run, Andy helped pump it out. Decided to do a melt and refreeze since source pressure was in the 10^-5 Torr. This is when the fun begins. Being the shift supervisor I asked Andy to help with the melt and refreeze since it has been a while and boy was I glad about that... We got everything set up. Then we started warming the source and it shot up soooo quickly it just kept going up and up! 600mBar, AH! We raised the source voltage and it finally went down, so we thought it might be how the return flow valves on the back of the 1630 were set up. So Andy played with that and we attempted a second time and it went crazy again... so we raised source voltage to 6.5ish and it slowly turned around and went down... OK so twice in a row and so we leave the 1630 in a state that we thought was helping our situation instead of hurting it. We were wrong... attempt number 3 and it skyrockets again. Andy I believe says it was about 15-30mBar/second. SO we once again attempted to cool back down the source. We knew it was not the 1630 valve. Andy went all over the place looking to see where the problem was. He talked to Mark, Mark suggested to check the transfer line vacuum. Turns out that was the problem. So we attempted a fourth time, this time it shot up but not as quickly but still pretty fast, it actually took some time to rise from 4mBar but once it got past 15ish it shot up, but we caught it. And was able to turn it around 300mBar. Andy recommends that tomorrow we warm up the source back in

the tank. Then we pump the junk out of the lines and source vacuum. Finally the CCR was able to tune, they were having problems today so PRad was not able to do their study. So they will be working tomorrow. We go inside and find out that we got a short spurt of beam and it was gone... turns out there were two problems. One was easy to fix the other was not. Turns out that water was spilling out of the LXQT01. They had to call in a maitnence worker. Does not look good for beam for 4-midnight shift. We will see. 21:25pm CCR called, they are calling in a third engineer to fix the leak. Does not look good. The problem is there is a small leak in near the coils which is hard to reach by hand and tools... they hope we will be operational by midnight. if not.... we might be down a couple days...we will see.

25318	Thu Dec 13 18:51:14 2012	BMV

Thu Dec 13 21966 07:32:36 08:07:37 1623.8k start of xenon run 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13 21967 08:07:40 08:14:52 924.1k start of xenon run 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13 21968 08:15:38 08:28:46 1623.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13 21969 08:28:48 08:42:01 1631.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21970 08:42:03 08:55:11 1624.0k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21971 08:55:13 09:08:41 1631.1k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21972 09:08:43 09:22:12 1624.3k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21973 09:22:14 09:35:43 1631.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21974 09:35:46 09:49:22 1626.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21975 09:49:25 10:03:07 1628.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21976 10:03:10 10:16:53 1623.5k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21977 10:16:56 10:30:49 1631.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21978 10:30:53 10:44:42 1623.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21979 10:44:44 10:58:56 1629.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21980 10:58:58 11:13:05 1631.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21981 11:13:08 11:27:15 1624.1k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21982 11:27:17 11:41:36 1629.2k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21983 11:41:38 11:56:05 1624.1k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21984 11:56:08 12:10:45 1623.6k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21985 12:10:47 12:25:26 1623.8k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21986 12:25:28 12:40:13 1623.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21987 12:40:15 12:55:16 1631.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21988 12:55:18 13:10:14 1625.9k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21989 13:10:17 13:25:28 1623.6k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21990 13:25:30 13:40:43 1630.1k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21991 13:40:46 13:56:05 1626.4k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21992 13:56:07 14:11:39 1632.6k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21993 14:11:41 14:27:16 1623.6k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21994 14:27:18 14:42:59 1627.0k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21995 14:43:01 14:58:45 1625.3k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21996 14:58:47 15:14:42 1623.5k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21997 15:14:44 15:30:51 1623.0k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21998 15:30:53 15:47:05 1631.5k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
21999 15:47:08 16:03:30 1631.6k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
22000 16:03:33 16:20:03 1631.4k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
22001 16:20:05 16:36:41 1623.7k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
22002 16:36:43 16:53:28 1631.5k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T Thu Dec 13
22003 16:53:31 17:06:15 1232.0k xenon run 1000 hz 0 0 0 xenon 1.00T 7.00T 6.00T

25317	Thu Dec 13 15:44:19 2012	KPH

UCNA Shift Change Checklist Date: 12/12/12 1600 Shift Persons: Kevin and Brittney (and Ding) ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 0 slpm source building Heater B pressure 13.06 psia Heater C pressure 13.47 psia Tungsten supply press. 295 psig Compressor 1 On On Tungsten Cool supp. 288.7 psia Tungsten Cool Diff. 282.8 psia Tungsten Cool ret. 71.6 psia 1630 eng. 2 temp. 13.33 K 1630 JT temp. 7.60 K 1630 outlet temp. 266.6 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 55 psig 1410 engine speed 129 rpm 1410 TE-A 14.2 K 1410 TE-B 6.0 K 1410 TE-E 295.6 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 350 mmHg Mark wanted high pressure for building the source 4K dewar level 13.79 inHe 1K dewar level 21.39 inHe 4K main flow control 5.4 V LHe temp. 1 4.95 K Heat exch. temp. 3 204.78 K warm source Poly temp. 2 189.42 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status open building source MCS Program restart restarted Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level

3/4 SCS LHe level 91.2 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 26.3 torr CM5 pressure ~0 torr Source pressure off building source Spectrometer pressure off Xe run Hall Probe Y 0.17 kG Hall Probe Z -0.36 kG PPM LHe level 91.0 % PPM LN2 level 56.4 % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.2 F West MWPC Temperature 81.1 F MWPC Pressure 100.2 torr N2 - MWPC Differential -9.1 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1.0 ========== West Detector Cart ========== MWPC HV on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2791 Hz West muon veto rate 4489 Hz Timing Reset T0 switched for tonight's depol DAQ data_raw disk usage 60% Proton beam status - beam off Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA "Beamplot" Capture -

25316	Thu Dec 13 03:58:04 2012	MFMakela

1132 mbar in tank activating xenon

25315	Thu Dec 13 02:11:25 2012	Rpattie

Confirmed orange valve was open. Open the check valve bypass. Turned the source flow to 0.0V. Then closed the cold return on the back of the liquifier.

25314	Thu Dec 13 02:06:37 2012	DGPhillipsII

Beta: 47 mins Bkg: 8 mins 22:50 21954 A1 Bkg Off E=1.04 W=1.06 GVMon=243Hz 22:59 21955 A2 Beta Off E=10.344 W=10.836 Fe/GV=0.487 SCS/GV=0.339 Beta/GV=1.355 23:46 21956 A3 Depol Off->On W/R=0.029 +/- 0.015 23:53 21957 A4 Bkg On E=1.131 W=0.989 GVMon=239Hz 00:02 21958 A5 Beta On E=7.538 W=6.703 Fe/GV=0.115 SCS/GV=0.2993 Beta/GV=0.961 00:50 21959 A6 Depol On->Off W/R=0.123 +/- 0.049 00:57 21960 A7 Beta On E=7.961 W=6.886 Fe/GV=0.1136 SCS/GV=0.2703 Beta/GV=0.9712 01:44 21961 A8 Depol On->Off W/R=0.106 +/- 0.042 01:52 21962 A9 Bkg On E=1.070 W=1.005 GVMon=232Hz 02:00 21963 A10 Beta Off E=9.674 W=10.220 Fe/GV=0.4847 SCS/GV=0.3412 Beta/GV=1.3583 02:48 21964 A11 Depol Off->On W/R=0.016 +/-0.011 02:55 21965 A12 Bkg Off E=1.154 W=1.054 GVMon=224Hz

25313	Wed Dec 12 23:41:19 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/13/12 00:10 Shift Persons: Dave & Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.83 psia Heater C pressure 13.41 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 288.9 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 72.0 psia 1630 eng. 2 temp. 13.19 K 1630 JT temp. 6.85 K 1630 outlet temp. 273.6 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 65 psig 1410 engine speed 129 rpm 1410 TE-A 14.6 K 1410 TE-B 6.3 K 1410 TE-E 84.3 K 1410 supply press. 244 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.7 psig 4K dewar pressure 300 mmHg 4K dewar level 13.68 inHe 1K dewar level 21.84 inHe 4K main flow control 6.0 V LHe temp. 1 5.24 K Heat exch. temp. 3 149.95 K Poly temp. 2 139.86 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.8 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 87.2 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 1.2e-5 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.360 kG PPM LHe level 91.2 % PPM LN2 level 61.1 % AFP LHe level 89.8 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.1 F West MWPC Temperature 79.6 F MWPC Pressure 100.3 torr N2 - MWPC Differential -9.2 torr Neopentane Flow Rate 14.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2320 V ON MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.8

torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 5095 Hz West muon veto rate 8381 Hz Timing Reset H-GX DAQ data_raw disk usage 58% Proton beam status burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 14.0 mA "Beamplot" Capture 75 %

25310	Wed Dec 12 22:41:25 2012	bz

New B->A Octet (47 min betas, 8 min bkgs) Time MIDAS Type E W Fe/GV SCS/GV (E+W)/GV W/R GV 18:36 21942 B1 Bkg ON 1.101 0.915 254 18:45 21943 B2 Beta ON 7.838 6.948 0.1148 0.2659 0.9682 19:33 21944 B3 D+ 0.089(42) 19:40 21945 B4 Bkg OFF 1.060 1.003 244 19:48 21946 B5 Beta OFF 10.474 11.038 0.4842 0.3397 1.3473 20:36 21947 B6 D- 0.032(16) 20:43 21948 B7 beta OFF 8.207 8.626 0.4798 0.3416 1.3751 21:31 21949 B8 D- 0.038(17) 21:38 21950 B9 bkg OFF 1.075 1.018 218 21:47 21951 B10 beta on 7.797 6.958 0.1171 0.2687 0.9623 22:34 21952 B11 D+ 0.109(44) 22:41 21953 B12 bkg ON 1.014 1.018 245

25312	Wed Dec 12 21:16:20 2012	KPH

25311	Wed Dec 12 20:15:38 2012	bz

Source runs on 12-12-12 Bi/Ce/Sn Paddle Time MIDAS Location Facing 12:48 21914 Fully Inserted West 12:59 21915 0.5 in. retracted West 13:07 21916 1.0 in. retracted West 13:16 21917 1.5 in. retracted West 13:25 21918 2.0 in. retracted West 13:34 21919 2.5 in. retracted West 13:43 21920 3.0 in. retracted West 13:51 21921 3.5 in. retracted West 14:02 21922 4.0 in. retracted West 14:11 21923 4.5 in. retracted West 14:21 21924 5.0 in. retracted West 14:30 21925 5.5 in. retracted West 14:39 21926 6.0 in. retracted West Paddle of Cd/Cs/In 15:04 21927 Fully Inserted West 15:14 21928 0.5 in. retracted East 15:23 21929 1.0 in. retracted West 15:31 21930 1.5 in. retracted East 15:41 21931 2.0 in. retracted West 15:51 21932 2.5 in. retracted East 15:59 21933 3.0 in. retracted West 16:09 21934 3.5 in. retracted East 16:21 21935 4.0 in. retracted West 16:31 21936 4.5 in. retracted East 16:41 21937 5.0 in. retracted West 16:52 21938 5.5 in. retracted East 17:01 21939 6.0 in. retracted West 17:11 21940 Extended Background

25309	Wed Dec 12 16:22:03 2012	KPH

UCNA Shift Change Checklist Date: 12/12/12 1600 Shift Persons: Bryan and Kevin ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.6 psia Heater C pressure 13.6 psia Tungsten supply press. 100 psig Did I read this wrong? Compressor 1 On On Tungsten Cool supp. 288.6 psia Tungsten Cool Diff. 282.6 psia Tungsten Cool ret. 71.7 psia 1630 eng. 2 temp. 13.33 K 1630 JT temp. 6.85 K 1630 outlet temp. - K knob out of contact I am told 1630 engine speed 120 rpm 1630 supply press. 230 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig 1630 med. press. stor. 85 psig 1410 engine speed 129 rpm 1410 TE-A 17.0 K 1410 TE-B 7.8 K 1410 TE-E 95.1 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 290 mmHg 4K dewar level 11.9 inHe 1K dewar level 20.75 inHe 4K main flow control 6.0 V LHe temp. 1 5.1 K Heat exch. temp. 3 143.5 K Poly temp. 2 72.4 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: - seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 1/5 were going to fill it SCS LHe level 91.9 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure ~0 torr CM5 pressure ~0 torr Source pressure 9.1e-6 torr Spectrometer pressure 2.6e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.36 kG PPM LHe level 91.3 % PPM LN2 level 63.8 % AFP LHe level 82.1 % AFP LN2 level 80.7 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.1 F West MWPC Temperature 78.8 F MWPC Pressure 99.9 torr N2 - MWPC Differential -9.3 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1.0 ========== West Detector Cart ========== MWPC HV on MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2832 Hz West muon veto rate 4576 Hz Timing Reset H-GX DAQ data_raw disk usage 58% Proton beam status - Proton burst spacing - sec Proton pulses/burst - count Proton countdown - count Proton Pattern width - ns TBCM001I03 - mA

"Beamplot" Capture 80 %

25308	Wed Dec 12 05:15:07 2012	DGPhillipsII

New A->B Octet Beta: 30 min Bkg: 6 min 00:03 21890 A1:Bkg Off E=1.745 W=1.940 GVMon=264Hz 00:10 21891 A2:Beta Off E=11.14 W=11.81 Fe/GV=0.4831 SCS/GV=0.3454 Beta/GV=1.3287 00:40 21892 A3:Depol Off->On W/R=0.048 +/- 0.018 00:48 21893 A4:Bkg On E=1.042 W=1.050 GVMon=258Hz 00:54 21894 A5:Beta On E=8.637 W=7.762 Fe/GV=0.1201 SCS/GV=0.2717 Beta/GV=0.9693 01:25 21895 A6:Depol On->Off W/R=0.102 +/- 0.044 01:32 21896 A7:Beta On E=8.640 W=7.659 Fe/GV=0.1185 SCS/GV=0.2708 Beta/GV=0.9762 02:03 21897 A8:Depol On->Off W/R=0.075 +/- 0.039 02:10 21898 A9:Bkg On E=0.999 W=0.938 GVMon=255Hz 02:16 21899 A10:Beta Off E=9.269 W=9.735 Fe/GV=0.4836 SCS/GV=0.3435 Beta/GV=1.3547 02:47 21900 A11:Depol Off->On W/R=0.046 +/- 0.021 02:54 21901 A12:Bkg Off E=1.079 W=0.978 GVMon=242Hz 03:01 21902 B1:Bkg On E=0.991 W=0.940 GVMon=242Hz 03:07 21903 B2:Beta On E=7.867 W=7.047 Fe/GV=0.1178 SCS/GV=0.2678 Beta/GV=0.9595 03:38 21904 B3:Depol On->Off W/R=0.019 +/- 0.019 03:45 21905 B4:Bkg Off E=0.978 W=1.072 GVMon=246Hz 03:52 21906 B5:Beta Off E=9.417 W=9.961 Fe/GV=0.4946 SCS/GV=0.3444 Beta/GV=1.3469 04:22 21907 B6:Depol Off->On W/R=0.046 +/- 0.019 04:30 21908 B7:Beta Off E=9.769 W=10.183 Fe/GV=0.4891 SCS/GV=0.3473 Beta/GV=1.3369 05:00 21909 B8:Depol Off->On W/R=0.030 +/- 0.015 05:07 21910 B9:Bkg Off E=1.068 W=1.046 GVMon=175Hz 05:14 21911 B10:Beta On E=8.020 W=7.230 Fe/GV=0.1162 SCS/GV=0.2656 Beta/GV=0.9663 05:45 21912 B11:Depol On->Off W/R=0.074 +/- 0.034 05:52 21913 B12:Bkg On E=1.161 W=0.995 GVMon=240Hz

25307	Wed Dec 12 00:09:15 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/12/12 00:30 Shift Persons: Dave & Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.94 psia Heater C pressure 13.44 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 289.4 psia Tungsten Cool Diff. 283.4 psia Tungsten Cool ret. 72.5 psia 1630 eng. 2 temp. 13.33 K 1630 JT temp. 6.85 K 1630 outlet temp. 271.8 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.15 psig 1630 med. press. stor. 60 psig 1410 engine speed 119 rpm 1410 TE-A 15.7 K 1410 TE-B 5.8 K 1410 TE-E 96.5 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.2 psig 4K dewar pressure 310 mmHg 4K dewar level 14.46 inHe 1K dewar level 18.00 inHe 4K main flow control 6.0 V LHe temp. 1 5.21 K Heat exch. temp. 3 146.88 K Poly temp. 2 120.44 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status down AFP temperature 9.2 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 87.4 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 1.2e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 91.5 % PPM LN2 level 68.4 % AFP LHe level 88.0 % AFP LN2 level 77.6 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 84.9 F West MWPC Temperature 76.8 F MWPC Pressure 100.3 torr N2 - MWPC Differential -9.0 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2320 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 14.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2811 Hz West muon veto rate 6619 Hz Timing Reset H-GX DAQ data_raw disk usage 57% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 13.8 mA "Beamplot" Capture 80 %

25306	Tue Dec 11 23:03:26 2012	bz

More Depol: 12-11-12 Slodaq Run 1379 Time MIDAS Runs DAQ Time Depol Cycles 17:11 21878 2734 PE+(25 s) 9 Oops, only needed 4 18:16 21879-21880 6618 PE+(50 s) 10 19:29 21881-21882 11040 PE-(50 s) 10 20:43 21883-21884 15465 PE-(75 s) 8 Last 2 cycles beam out 22:01 21885 20150 PE-(75 s) 2 22:18 21886-21887 21142 PE+(75 s) 10

25305	Tue Dec 11 20:33:55 2012	bz

UCNA Shift Change Checklist Date: 12/11/12 21:26 Shift Persons: Bryan & Brittney

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.63 psia Heater C pressure 14.71 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 291.2 psia Tungsten Cool Diff. 283.5 psia Tungsten Cool ret. 73.8 psia 1630 eng. 2 temp. 12.59 K 1630 JT temp. 6.81 K 1630 outlet temp. 271.2 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 85 psig 1410 engine speed 119 rpm 1410 TE-A 18.2 K 1410 TE-B 8.5 K 1410 TE-E 85.0 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 4.1 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 12.98 inHe 1K dewar level 13.19 inHe 4K main flow control 6.0 V LHe temp. 1 5.182 K Heat exch. temp. 3 142.41 K Poly temp. 2 72.587 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 37.25 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running new run 1379 Switcher status thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 92.5 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 9.5e-6 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 91.6 % PPM LN2 level 71.4 % AFP LHe level 99.8 % AFP LN2 level 95.3 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 85.0 F West MWPC Temperature 76.5 F MWPC Pressure 99.9 torr N2 - MWPC Differential -8.8 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2320 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr The gauge is up and to the left of the MKS unit. N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 14.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2832 Hz West muon veto rate 5187 Hz Timing Reset T0 DAQ data_raw disk usage 95% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.4 mA "Beamplot" Capture 74 %

25304	Tue Dec 11 20:26:04 2012	bz

Deleted everything in /home/data_raw/2011 that started with run16 or run17 including the .mid.gz and .odb. All of these files should be backed up in multiple locations (Andy's RAID, NCSU, Caltech)

25303	Tue Dec 11 16:35:54 2012	bz

Noticed that MPS was trending up, so sped up the 1630, also opened JT by 1 thousandth and opened 311 slightly to compensate. We should make more liquid in the 4k. Also, slightly increased the 1410 to 120 RPM (and slightly opened the JT as well).

25302	Tue Dec 11 04:36:06 2012	DGPhillipsII

Depol Runs Performed Tonight: Time MIDAS Runs DAQ Time Depol Cycles 01:49 21872-21873 34450 DE+(90 s) 15 04:10 21874-21875 42900 PE-(25 s) 10 05:22 21876 47120 PE+(25 s) 6

25301	Tue Dec 11 00:03:38 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/11/12 00:30 Shift Persons: Dave & Robby
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.89 psia Heater C pressure 13.59 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 293.4 psia Tungsten Cool Diff. 284.1 psia Tungsten Cool ret. 75.6 psia 1630 eng. 2 temp. 12.61 K 1630 JT temp. 6.55 K 1630 outlet temp. 271.1 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.2 psig 1630 med. press. stor. 50 psig 1410 engine speed 109 rpm 1410 TE-A 15.2 K 1410 TE-B 6.2 K 1410 TE-E 96.8 K 1410 supply press. 244 psig 1410 JT press. 200 psig 1410 return press. 3.4 psig 1K dewar pressure 6.2 psig 4K dewar pressure 320 mmHg 4K dewar level 16.64 inHe 1K dewar level 14.71 inHe 4K main flow control 6.0 V LHe temp. 1 5.17 K Heat exch. temp. 3 147.12 K Poly temp. 2 88.86 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 13 gallon/100 Gate valve status

closed D2 Pump port status closed MCS Program restart running Switcher status down AFP temperature 9.2 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 87.3 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 1.4e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 91.8 % PPM LN2 level 76.5 % AFP LHe level 89.8 % AFP LN2 level 85.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 83.8 F West MWPC Temperature 75.3 F MWPC Pressure 99.8 torr N2 - MWPC Differential -8.5 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2320 MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2834 Hz West muon veto rate 5072 Hz Timing Reset H-GX DAQ data_raw disk usage 95% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 13.3 mA "Beamplot" Capture 80 %

25300	Mon Dec 10 23:43:24 2012	Rpattie

Run Summary for the evening of the 10th: Time Midas# CMSTIME Run Type # cycles notes --------- ---------- 2015 21865 14360 DE-(45s) 5 2057 21866 16890 DE+(45s) 5 2158 21867 19985 DE+(65s) 5 2240 21868 23100 DE-(65s) 5 2325 21869- 25778 DE-(90s) 15* *- Final run overlapped the evening and night shift.

25299	Mon Dec 10 20:12:44 2012	BMV

UCNA Shift Change Checklist Date: 12/10/12 16:20 Shift Persons: BMV and Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.47 psia Heater C pressure 13.75 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 294.8 psia Tungsten Cool Diff. 284.4 psia Tungsten Cool ret. 76.9 psia 1630 eng. 2 temp. 13.25 K 1630 JT temp. 6.81 K 1630 outlet temp. 271.7 K 1630 engine speed 110 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 65 psig 1410 engine speed 109 rpm 1410 TE-A 14.8 K 1410 TE-B 5.6 K 1410 TE-E 84.6 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 320 mmHg 4K dewar level 15.38 inHe 1K dewar level 15.99 inHe 4K main flow control 6.0 V LHe temp. 1 5.1 K Heat exch. temp. 3 148.54 K Poly temp. 2 76.107 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running 1378 Switcher status thru AFP temperature 9.2 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 91.8 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.7 torr Source pressure 9.5e-6 torr Spectrometer pressure 1.8e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 91.9 % PPM LN2 level 78.9 % AFP LHe level 78.8 % AFP LN2 level 78.6 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 83.3 F West MWPC Temperature 74.4 F MWPC Pressure 99.8 torr N2 - MWPC Differential -8.5 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2300 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2827 Hz West muon veto rate 5181 Hz Timing Reset H-GX DAQ data_raw disk usage 95% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 280 ns TBCM001I03 14.1 mA "Beamplot" Capture 75 %

25297	Mon Dec 10 09:20:28 2012	DGPhillipsII

Beta Runs: A->B Beta: 55 mins Bkg: 8 mins 23:58 21838 B11:Depol On->Off W/R=0.111 +/- 0.048 00:06 21839 B12:Bkg On E=0.976 W=1.090 GVMon=269Hz New Octet (B->A) Beta: 40 mins Bkg: 8 mins 00:37 21840 B1:Bkg On E=1.105 W=0.987 GVMon=270Hz 00:46 21841 B2:Beta On E=8.942 W=8.006 Fe/GV=0.1191 SCS/GV=0.2701 Beta/GV=0.9641 01:26 21842 B3:Depol On->Off W/R=0.074 +/- 0.034

01:33 21843 B4:Bkg Off E=1.013 W=1.034 GVMon=246Hz 01:42 21844 B5:Beta Off E=11.165 W=11.834 Fe/GV=0.4843 SCS/GV=0.3543 Beta/GV=1.3752 02:22 21845 B6:Depol Off->On W/R=0.034 +/- 0.016 02:30 21846 B7:Beta Off E=11.702 W=12.373 Fe/GV=0.4830 SCS/GV=0.3471 Beta/GV=1.3498 03:10 21847 B8:Depol Off->On W/R=0.047 +/- 0.018 03:18 21848 B9:Bkg Off E=1.075 W=0.995 GVMon=279Hz 03:26 21849 B10:Beta On E=9.071 W=8.111 Fe/GV=0.1195 SCS/GV=0.2774 Beta/GV=0.9756 04:07 21850 B11:Depol On->Off W/R=0.197 +/- 0.062 04:14 21851 B12:Bkg On E=1.037 W=1.047 GVMon=278Hz 04:22 21852 A1:Bkg Off E=1.037 W=1.050 GVMon=281Hz 04:31 21853 A2:Beta Off E=11.748 W=12.453 Fe/GV=0.4854 SCS/GV=0.3513 Beta/GV=1.3539 05:12 21854 A3:Depol Off->On W/R=0.026 +/-0.013 05:19 21855 A4:Bkg On E=1.026 W=1.050 GVMon=281Hz 05:27 21856 A5:Beta On E=9.362 W=8.389 Fe/GV=0.1193 SCS/GV=0.2727 Beta/GV=0.9720 06:08 21857 A6:Depol On->Off W/R=0.092 +/- 0.039 06:15 21858 A7:Beta On E=9.188 W=7.990 Fe/GV=0.1153 SCS/GV=0.2768 Beta/GV=0.9779 06:56 21859 A8:Depol On->Off W/R=0.109 +/- 0.044 07:03 21860 A9:Bkg On E=1.003 W=1.074 GVMon=283Hz 07:12 21861 A10:Beta Off E=12.154 W=12.774 Fe/GV=0.4856 SCS/GV=0.3539 Beta/GV=1.3533 07:52 21862 A11:Depol Off->On W/R=0.029 +/- 0.014 07:59 21863 A12:Bkg Off E=1.012 W=1.018 GVMon=280Hz

25298	Mon Dec 10 03:40:34 2012	Rpattie

I closed the ball valve to the b-box gate valve and unplugged the power supply.

25295	Mon Dec 10 00:02:01 2012	BMV

Time Midas Run E W Fe/GV SCS/GV E+W/GV W/R GVrate 3:41 PM 21822 A7: Beta Run (on) 9.3 8.3 0.1169 0.2789 0.9802 4:36 PM 21823 A8: Depol (on to off) 0.119 4:44 PM 21824 A9: Background (on) 1.035 0.975 275 4:52 PM 21825 A10: Beta Run (off) 12.164 12.73 0.4824 0.3506 1.3697 5:48 PM 21826 A11: Depol (off to on) 0.028369 5:55 PM 21827 A12: Background (off) 0.999 0.918 278 6:04 PM 21828 B1: Background (on) 1.041 1.051 278 6:12 PM 21829 B2: Beta Run (on) 8.903 7.901 0.1187 0.2781 0.9858 7:08 PM 21830 B3: Depol (on to off) 0.085714 7:15 PM 21831 B4: Background (off) 1.033 1.010 272 7:24 PM 21832 B5: Beta Run (off) 11.974 12.485 0.4877 0.3532 1.3712 8:19 PM 21833 B6: Depol (off to on) 0.034014 8:26 PM 21834 B7: Beta Run (off) Beam down for about an hour due to source vacuum (of the beam)... ran GV open for about 5mins before depol run 10:47 PM 21835 B8: Depol (off to on) 0.020408 10:54 PM 21836 B9: Background (off) 0.975 0.957 269 11:03 PM 21837 B10: Beta Run (on) 9.101 8.041 0.1197 0.2754 0.9843

25296	Sun Dec 9 23:53:36 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/10/12 00:20 Shift Persons: Dave & Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.25 psia Heater C pressure 13.83 psia Tungsten supply press. 310 psig Compressor 1 On On Tungsten Cool supp. 298.0 psia Tungsten Cool Diff. 285.4 psia Tungsten Cool ret. 79.4 psia 1630 eng. 2 temp. 13.04 K 1630 JT temp. 6.31 K 1630 outlet temp. 271.0 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.3 psig 1630 med. press. stor. 40 psig 1410 engine speed 109 rpm 1410 TE-A 15.8 K 1410 TE-B 5.9 K 1410 TE-E 85.7 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.4 psig 1K dewar pressure 6.2 psig 4K dewar pressure 310 mmHg 4K dewar level 19.01 inHe 1K dewar level 12.22 inHe 4K main flow control 6.0 V LHe temp. 1 5.16 K Heat exch. temp. 3 157.88 K Poly temp. 2 155.01 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.6 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 87.6 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.6 torr Source pressure 4.7e-6 torr Spectrometer pressure 1.4e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.2 % PPM LN2 level 83.4 % AFP LHe level 89.4 % AFP LN2 level 81.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 85.0 F West MWPC Temperature 68.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -8.2 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 14.2 slpm West PMT Buck. Curr. 0.26 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2877 Hz West muon veto rate 7927 Hz Timing Reset H-GX DAQ data_raw disk usage 94% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.24 mA "Beamplot" Capture 80 %

25291	Sun Dec 9 22:54:34 2012	DGPhillipsII

Beta Runs: A->B Beta: 55 mins Bkg: 8 mins 23:59 21782 B3:Depol On->Off W/R=0.125 +/- 0.044 00:06 21783 B4:Bkg Off E=1.067 W=0.992 GVMon=286Hz 00:15 21784 B5:Beta Off E=12.674 W=13.487 Fe/GV=0.4857 SCS/GV=0.3585 Beta/GV=1.3914 01:10 21785 B6:Depol Off->On W/R=0.035 +/- 0.015 01:18 21786 B7:Beta Off E=10.378 W=10.741 Fe/GV=0.4853 SCS/GV=0.3597 Beta/GV=1.4021 ***B7 lost beam from ~minute 16 to ~minute 26*** 02:13 21787 B8:Depol Off->On W/R=0.047 +/- 0.019 02:20 21788 B9:Bkg Off E=1.005 W=1.013 GVMon=279Hz 02:29 21789 B10:Beta On E=9.38 W=8.31 Fe/GV=0.119 SCS/GV=0.2797 Beta/GV=0.98 03:25 21790 B11:Depol On->Off W/R=0.072 +/- 0.033 03:32 21791 B12:Bkg On E=0.97 W=1.00 GVMon=271Hz New Octet (B->A) Beta: 55 mins Bkg: 8 mins 03:45 21792 B1:Bkg On E=1.203 W=1.013 GVMon=274Hz 03:53 21793 B2:Beta On E=9.367 W=8.263 Fe/Gv=0.1189 SCS/GV=0.2758 Beta/GV=0.9974 04:49 21794 B3:Depol On->Off W/R=0.155 +/- 0.050 04:56 21795 B4:Bkg Off E=1.030 W=1.019 GVMon=270Hz 05:05 21796 B5:Beta Off E=12.076 W=12.775 Fe/GV=0.4864 SCS/GV=0.3560 Beta/GV=1.3789 06:00 21797 B6:Depol Off->On W/R=0.033 +/- 0.015 06:08 21798 B7:Beta Off E=12.383 W=12.946 Fe/GV=0.4890 SCS/GV=0.3551 Beta/GV=1.3744 07:03 21799 B8:Depol Off->On W/R=0.044 +/- 0.017 07:10 21800 B9:Bkg Off E=1.022 W=1.038 GVMon=281Hz

25294	Sun Dec 9 16:12:27 2012	DJS

UCNA Shift Change Checklist Date: 12/09/12 17:00 Shift Persons: Dan, Brittney ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 35 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.18 psia Heater C pressure 13.76 psia Tungsten supply press. 310 psig Compressor 1 On On Tungsten Cool supp. 302.2 psia Tungsten Cool Diff. 286.3 psia Tungsten Cool ret. 82.9 psia 1630 eng. 2 temp. 13.24 K 1630 JT temp. 6.96 K 1630 outlet temp. 286.2 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.15 psig 1630 med. press. stor. 55 psig 1410 engine speed 109 rpm 1410 TE-A 16.1 K 1410 TE-B 5.9 K 1410 TE-E 97.6 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.5 psig 1K dewar pressure 6.1 psig 4K dewar pressure 300 mmHg 4K dewar level 17.6 inHe 1K dewar level 8.02 inHe 4K main flow control 6.0 V LHe temp. 1 5.125 K Heat exch. temp. 3 159.31 K Poly temp. 2 171.54 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running 1377 Switcher status thru AFP temperature 9.6 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 91.6 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 4.5e-6 torr Spectrometer pressure 1.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.1 % PPM LN2 level 86.1 % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87 F West MWPC Temperature 71.5 F MWPC Pressure 100 torr N2 - MWPC Differential -8.7 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 14.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3006 Hz West muon veto rate 6395 Hz Timing Reset H-GX DAQ data_raw disk usage 94% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.2 mA "Beamplot" Capture 76 % Lujan not in production

25293	Sun Dec 9 14:52:17 2012	Erik

Beta Runs: A->B Beta: 55 mins Bkg: 8 mins 01:18 21816 A1:Bkg Off E=1.024 W=1.030 GV=288 01:27 21817 A2:Beta Off E=12.255 W=13.003 Fe/GV=0.4800 SCS/GV=0.3547 Beta/GV=1.3607 02:22 21818 A3:D- W/R=0.034(15) 02:29 21819 A4:Bkg On E=1.050 W=0.987 GV=288 02:38 21820 A5:Beta On E=9.433 W=8.316 Fe/GV=0.1183 SCS/GV=0.2766 Beta/GV=0.9694 03:34 21821 A6:D+ W/R=0.169(55)

25292	Sun Dec 9 07:59:15 2012	EIC

UCNA Shift Change Checklist Date: 12/09/12 8:00 Shift Persons: Erik and Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.10 psia Heater C pressure 13.76 psia

Tungsten supply press. 320 psig Compressor 1 On On Tungsten Cool supp. 303.2 psia Tungsten Cool Diff. 286.3 psia Tungsten Cool ret. 83.9 psia 1630 eng. 2 temp. 12.72 K 1630 JT temp. 6.62 K 1630 outlet temp. 271.7 K 1630 engine speed 115 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.3 psig 1630 med. press. stor. 55 psig 1410 engine speed 100 rpm 1410 TE-A 14.6 K 1410 TE-B 5.7 K 1410 TE-E 86.1 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 310 mmHg 4K dewar level 15.98 inHe 1K dewar level 0.30 inHe 4K main flow control 6.0 V LHe temp. 1 5.116 K Heat exch. temp. 3 157.53 K Poly temp. 2 167.08 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running 1376 Switcher status thru AFP temperature 9.4 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 97.4 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 6.5e-6 torr Spectrometer pressure 1.7e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.2 % PPM LN2 level 89.4 % AFP LHe level 96.9 % AFP LN2 level 92.4 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 88.5 F West MWPC Temperature 75.5 F MWPC Pressure 100 torr N2 - MWPC Differential -8.9 torr Neopentane Flow Rate 14.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3097 Hz West muon veto rate 5382 Hz Timing Reset H-GX DAQ data_raw disk usage 93% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.2 mA "Beamplot" Capture 76 % Lujan not in production

25290	Sun Dec 9 00:20:21 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/09/12 00:20 Shift Persons: Dave & Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.05 psia Heater C pressure 13.96 psia Tungsten supply press. 320 psig Compressor 1 On On Tungsten Cool supp. 305.6 psia Tungsten Cool Diff. 286.9 psia Tungsten Cool ret. 85.7 psia 1630 eng. 2 temp. 12.94 K 1630 JT temp. 6.58 K 1630 outlet temp. 272.9 K 1630 engine speed 115 rpm 1630 supply press. 248 psig 1630 JT press. 207 psig 1630 return press. 1.1 psig 1630 med. press. stor. 35 psig 1410 engine speed 100 rpm 1410 TE-A 14.6 K 1410 TE-B 5.9 K 1410 TE-E 86.1 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.4 psig 1K dewar pressure 6.1 psig 4K dewar pressure 310 mmHg 4K dewar level 21.18 inHe 1K dewar level 10.17 inHe 4K main flow control 6.0 V LHe temp. 1 5.09 K Heat exch. temp. 3 156.64 K Poly temp. 2 176.56 K flapper heater cur 0.21 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.5 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 86.3 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 6.0e-6 torr Spectrometer pressure 1.9e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.3 % PPM LN2 level 94.1 % AFP LHe level 91.4 % AFP LN2 level 87.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 89.3 F West MWPC Temperature 79.8 F MWPC Pressure 99.9 torr N2 - MWPC Differential -9.0 torr Neopentane Flow Rate 14.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2320 MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 14.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3011 Hz West muon veto rate 5084 Hz Timing Reset H-GX DAQ data_raw disk usage 93% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 13.28 mA "Beamplot" Capture 79 %

25289	Sat Dec 8 23:27:07 2012	CCW

Time MIDAS Type E W Fe/GV SCS/GV (E+W)/GV W/R GV comment 3:45 PM 21761 A7 Beta(on) 10.214 9.006 0.1190 0.2786 0.9821 4:41 PM 21762 A8 D+ 0.0754+/-0.031746 4:48 PM 21763 A9 Bkg(on) 1.038 1.022 308 4:57 PM 21764 A10 Beta(off) 13.432 14.231 0.49 0.3588 1.3727 5:52 PM 21765 A11 D- 0.011905+/-0.008468 6:00 PM 21766 A12 Bkg(off) 1.035 0.973 274 Beam spotty halfway through run 6:09 PM 21768 A1 Bkg(off) 1.012 0.930 300 6:18 PM 21769 A2 Beta(off) 13.078 13.720 0.4860 0.3570 1.3860 7:13 PM 21770 A3 D- 0.034884+/-0.014487 7:21 PM 21771 A4 Bkg(on) 0.996 1.032 295 7:29 PM 21772 A5 Beta(on) 9.856 8.794 0.1157 0.2823 0.9935 8:25 PM 21773 A6 D+ 0.65789+/-0.030374 8:32 PM 21774 A7 Beta(on) 9.559 8.477 0.1166 0.2786 0.9833 9:28 PM 21775 A8 D+ 0.138+/-0.046871 9:35 PM 21776 A9 Bkg(on) 1.014 1.040 291 9:43 PM 21777 A10 Beta(off) 12.934 13.555 0.4908 0.3573 1.3847 10:39PM 21778 A11 D- 7/159=.044025+/-0.017002 10:46PM 21779 A12 Bkg(off) 1.079 1.027 289 10:55PM 21780 B1 Bkg(on) 1.087 0.972 260 Beam Problems 11:03PM 21781 B2 Beta(on) 9.667 8.654 0.1173 0.2809 0.9825

25288	Sat Dec 8 17:18:21 2012	CLMorris

Little B is running. The ball valve to the box is cycling with a 200 sec period. 100 sec open, 100 sec closed. If the CC1 vacuum should go above the 10^-5 range or if the UCN production starts going down please disable the automatic control of the ball valve by closing off the air and unplugging the power supply that controls the relay valve. Should this happen call me- 6622435. thanks Chris

25287	Sat Dec 8 15:45:47 2012	CCW

UCNA Shift Change Checklist Date: 12/08/12 16:00 Shift Persons: Brittney and Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.93 psia Heater C pressure 13.61 psia Tungsten supply press. 315 psig Compressor 1 On On Tungsten Cool supp. 307.8 psia Tungsten Cool Diff. 287.5 psia Tungsten Cool ret. 87.4 psia 1630 eng. 2 temp. 12.89 K 1630 JT temp. 6.64 K 1630 outlet temp. 272.9 K 1630 engine speed 115 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.2 psig 1630 med. press. stor. 40 psig 1410 engine speed 100 rpm 1410 TE-A 14.3 K 1410 TE-B 6.0 K 1410 TE-E 97.5 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6 psig 4K dewar pressure 310 mmHg 4K dewar level 19.64 inHe 1K dewar level 12.14 inHe 4K main flow control 6.0 V LHe temp. 1 5.041 K Heat exch. temp. 3 143.97 K Poly temp. 2 172.92 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running 1375 Switcher status thru AFP temperature 10.0 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 1 SCS LHe level 90.4 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.4 torr Source pressure 7.1e-6 torr Spectrometer pressure 2.0e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 92.3 % PPM LN2 level 97.8 % AFP LHe level 85.3 % AFP LN2 level 79.7 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 88.9 F West MWPC Temperature 75.9 F MWPC Pressure 100.2 torr N2 - MWPC Differential -9.6 torr Neopentane Flow Rate 14.6 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2300 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.1 torr Neopentane Flow Rate 14.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3116 Hz West muon veto rate 5625 Hz Timing Reset H-GX DAQ data_raw disk usage 93% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.1 mA "Beamplot" Capture 76 % Lujan not in production

25284	Sat Dec 8 14:55:25 2012	bz

Time MIDAS Type E W Fe/GV SCS/GV (E+W)/GV W/R GV 07:22 21740 A10 Beta OFF 13.781 14.471 0.4851 0.3564 1.3624 08:18 21741 A11 D- 0.017(10) 08:25 21742 A12 Bkg OFF 1.098 1.003 201 Beam out during run NEW B->A Octet 08:37 21743 B1 Bkg ON 0.928 1.044 315 08:46 21744 B2 Beta ON 10.279 9.171 0.1191 0.2836 0.9794 09:41 21745 B3 D+ 0.052(27) 09:49 21746 B4 Bkg OFF 1.120 0.986 312 09:57 21747 B5 Beta OFF 13.493 14.176 0.4866 0.3598 1.3696 10:53 21748 B6 D- 0.034(15) 11:00 21749 B7 Beta OFF 13.602 13.342 0.4887 0.3548 1.3706 11:56 21750 B8 D- 0.067(22) 12:03 21751 B9 Bkg OFF 1.072 0.926 307 12:11 21752 B10 Beta ON 10.382 9.249 0.1172 0.2785 0.9888 01:07 21753 B11 D+ 0.104(39) 01:14 21754 B12 Bkg ON 1.111 0.990 311 01:23 21755 A1 Bkg ON 1.071 1.012 313 01:31 21756 A2 Beta OFF 13.787 14.617 0.4793 0.3641 1.3710 02:27 21757 A3 D-

0.043(17) 02:34 21758 A4 Bkg ON 1.174 0.989 314 02:43 21759 A5 Beta ON 10.573 9.408 0.1184 0.2822 0.9823 03:38 21760 A6 D+ 0.101(38)

25286	Sat Dec 8 13:37:25 2012	bz

At about 2PM, noticed that MIDAS was producing a lot of errors: Sat Dec 8 13:48:44 2012 [mhttpd,ERROR] [odb.c:4534:db_get_data,ERROR] invalid key handle Sat Dec 8 13:48:44 2012 [mhttpd,ERROR] [odb.c:2081:db_find_key,ERROR] key has no subkeys Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:4659:db_set_data,ERROR] invalid key handle Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:4534:db_get_data,ERROR] invalid key handle Sat Dec 8 13:49:44 2012 [mhttpd,ERROR] [odb.c:2081:db_find_key,ERROR] key has no subkeys Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:4659:db_set_data,ERROR] invalid key handle Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:4534:db_get_data,ERROR] invalid key handle Sat Dec 8 13:50:44 2012 [mhttpd,ERROR] [odb.c:2081:db_find_key,ERROR] key has no subkeys Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:1785:db_create_key,ERROR] key used with value and as parent key Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:4659:db_set_data,ERROR] invalid key handle Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:4534:db_get_data,ERROR] invalid key handle Sat Dec 8 13:51:44 2012 [mhttpd,ERROR] [odb.c:2081:db_find_key,ERROR] key has no subkeys This does not appear to be causing any problems with our data taking, everything seems to be analyzing correctly. Still, we will be restarting the DAQ at the end of this pulse pair. We may replace the ODB SHM files, if errors continue. **EDIT at 14:36** Symptoms stopped on their own, no restart required, so no restart done.

25285	Sat Dec 8 10:54:59 2012	bz

So the source seems not to be degrading. This is new behavior. Attached is a plot. Yesterday, there was a triple melt and refreeze in the morning and source was idled during the day. At the end, just before beam, the source was cooled quickly, and the flow was left high.

Attachment 1: ation.png

ation.png

25283	Sat Dec 8 07:34:43 2012	EIC

UCNA Shift Change Checklist Date: 12/07/12 16:00 Shift Persons: Erik and Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.22 psia Heater C pressure 13.75 psia Tungsten supply press. 310 psig Compressor 1 On On Tungsten Cool supp. 305.8 psia Tungsten Cool Diff. 287.3 psia Tungsten Cool ret. 85.8 psia 1630 eng. 2 temp. 12.92 K 1630 JT temp. 6.7 K 1630 outlet temp. 272.1 K 1630 engine speed 115 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.4 psig 1630 med. press. stor. 47 psig 1410 engine speed 100 rpm 1410 TE-A 16.1 K 1410 TE-B 5.7 K 1410 TE-E 84.8 K 1410 supply press. 245 psig 1410 JT press. 202 psig 1410 return press. 3.3 psig 1K dewar pressure 6.1 psig 4K dewar pressure 315 mmHg 4K dewar level 17.90 inHe 1K dewar level 8.03 inHe 4K main flow control 6.0 V LHe temp. 1 5.05 K Heat exch. temp. 3 148.1 K Poly temp. 2 161.1 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running 1374 Switcher status thru AFP temperature 9.2 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 96.7 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.4 torr Source pressure 9.8e-6 torr Spectrometer pressure 1.7e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.4 % PPM LN2 level 98.7 % AFP LHe level 99.5 % AFP LN2 level 96.1 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.7 F West MWPC Temperature 71.8 F MWPC Pressure 100 torr N2 - MWPC Differential -9.0 torr Neopentane Flow Rate 14.6 slpm East PMT Buck. Curr 0.14 A East

Back. Veto Buck. off A H2O Chiller on Chiller Water level 2 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3103 Hz West muon veto rate 5434 Hz Timing Reset H-GX DAQ data_raw disk usage 92% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.3 mA "Beamplot" Capture 75 % Lujan not in production

25282	Sat Dec 8 06:28:33 2012	DGPhillipsII

Beta Runs B->A Beta 55mins Bkg 10mins 00:00 ***BEAM OFF AT BEGINNING OF SHIFT*** 00:57 ***BEAM BACK ON*** 01:09 21724 B6:Depol Off->On W/R=0.04 +/- 0.02 01:15 21725 B7:Beta Off E=13.905 W=14.492 Fe/GV=0.4889 SCS/GV=0.3613 Beta/GV=1.367 02:11 21726 B8:Depol Off->On W/R=0.03 +/- 0.01 02:18 21727 B9:Bkgd Off E=1.119 W=0.980 GVMon=313Hz 02:29 21728 B10:Beta On E=10.316 W=9.122 Fe/GV=0.119, SCS/GV=0.2805 Beta/GV=0.9825 03:24 21729 B11:Depol On->Off W/R=0.20 +/- 0.06 03:31 21730 B12:Bkgd On E=1.006 W=0.954 GVMon=307Hz 03:42 21731 A1:Bkgd Off E=1.062 W=0.995 GVMon=307Hz 03:53 21732 A2:Beta Off E=13.370 W=14.029 Fe/GV=0.4915 SCS/GV=0.3585 Beta/GV=1.3735 04:48 21733 A3:Depol Off->On W/R=0.03 +/- 0.01 04:55 21734 A4:Bkgd On E=1.064 W=1.055 GVMon=307Hz 05:06 21735 A5:Beta On E=10.270 W=9.122 Fe/GV=0.464 SCS/GV=0.2805 Beta/GV=0.9706 06:02 21736 A6:Depol On->Off W/R=0.184 +/- 0.058 06:09 21737 A7:Beta On E=10.486 W=9.318 Fe/GV=0.1186 SCS/GV=0.2829 Beta/GV=0.9751 07:04 21738 A8:Depol On->Off W/R=0.132 +/- 0.044 07:12 21739 A9:Bkgd On E=1.045 W=1.034 GVMon=313Hz

25280	Sat Dec 8 04:27:26 2012	BMV

Source Runs: Be/Ce/Sn paddle in serial numbers facing west Time Midas Run 1353 21679 Fully inserted 1403 21680 0.5" retracted 1411 21681 1.0" retracted 1420 21682 1.5" retracted 1428 21683 2.0" retracted 1436 21684 2.5" retracted 1444 21685 3.0" retracted 1452 21686 3.5" retracted 1500 21687 4.0" retracted 1508 21688 4.5" retracted 1516 21689 5.0" retracted 1524 21690 5.5" retracted 1532 21691 6.0" retracted 1548 21692 background source calibration Cd/Cs/In paddle Time Midas Run Serial/Paddle Facing 1620 21693 Fully inserted West 1628 21694 Fully inserted East 1637 21695 0.5" retracted East 1645 21696 0.5" retracted West 1655 21697 1.0" retracted West 1703 21698 1.0" retracted East 1711 21699 1.5" retracted East 1720 21700 1.5" retracted West 1728 21701 2.0" retracted West 1738 21702 2.0" retracted East 1747 21703 2.5" retracted East fans turned on before run 1755 21704 2.5" retracted West 1804 21705 3.0" retracted West 1813 21706 3.0" retracted East 1820 21707 3.5" retracted East 1828 21708 3.5" retracted West 1837 21709 4.0" retracted West 1845 21710 4.0" retracted East 1853 21711 4.5" retracted East 1901 21712 4.5" retracted West 1909 21713 5.0" retracted West -forgot to stop run, first 6 minutes were good 1918 21714 5.0" retracted East 1929 21715 5.5" retracted East 1937 21716 5.5" retracted West 1945 21717 6.0" retracted West 1953 21718 6.0" retracted East Beta Runs B->A Beta 55mins Bkg 10mins 2029 21719 B1:Bkg On E=1.034 W=1.012 GVMon 316Hz 2039 21720 B2:Beta On E=10.75 W=9.414 Fe/GV=0.11789 SCS/GV=0.2795 Beta/GV=0.984 2135 21721 B3:Depol On->Off W/R=0.13 +/- 0.05 2142 21722 B4:Bkg Off E=1.063 W=1.044 GVMon 307Hz 2153 21723 B5:Beta Off Beam cut out 22:40 due to kicker failure E=12.248 W=12.860 Fe/GV=0.4837 SCS/GV=0.3624 beta/GV=1.4039

25281	Sat Dec 8 01:07:19 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/08/12 00:30 Shift Persons: Dave & Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.61 psia Heater C pressure 13.68 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 305.1 psia Tungsten Cool Diff. 286.6 psia Tungsten Cool ret. 85.5 psia 1630 eng. 2 temp. 12.49 K 1630 JT temp. 6.50 K 1630 outlet temp. 272.3 K 1630 engine speed 115 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.0 psig 1630 med. press. stor. 20 psig The last crew noticed that this was 30 psig on their checklist and did not start a fill. We have started an SCS fill immediately. 1410 engine speed 100 rpm 1410 TE-A 15.3 K 1410 TE-B 6.3 K 1410 TE-E 94.5 K 1410 supply press. 245 psig 1410 JT press. 202 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 16.65 inHe 1K dewar level 29.37 inHe 4K main flow control 6.0 V LHe temp. 1 4.98 K Heat exch. temp. 3 140.45 K Poly temp. 2 95.65 K flapper heater cur 0.215 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.3 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 85.1 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.3 torr Source pressure 1.8e-5 torr Spectrometer

pressure 8.9e-6 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.5 % PPM LN2 level 29.2 % AFP LHe level 90.7 % AFP LN2 level 85.4 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.8 F West MWPC Temperature 79.2 F MWPC Pressure 100 torr N2 - MWPC Differential -8.4 torr Neopentane Flow Rate 14.9 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2944 Hz West muon veto rate 5119 Hz Timing Reset H-GX DAQ data_raw disk usage 92% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 13.3 mA "Beamplot" Capture 75 %

25279	Fri Dec 7 20:56:31 2012	BMV

UCNA Shift Change Checklist Date: 12/07/12 16:00 Shift Persons: Erik and BMV ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.82 psia Heater C pressure 13.91 psia Tungsten supply press. 270 psig Compressor 1 On On Tungsten Cool supp. 228.7 psia Tungsten Cool Diff. 279.0 psia Tungsten Cool ret. 64.7 psia 1630 eng. 2 temp. 15.79 K 1630 JT temp. 7.38 K 1630 outlet temp. 276.7 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.0 psig 1630 med. press. stor. 30 psig 1410 engine speed 100 rpm 1410 TE-A 15.2 K 1410 TE-B 5.6 K 1410 TE-E 82.8 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 260 mmHg 4K dewar level 14.84 inHe 1K dewar level 30.80 inHe 4K main flow control 3.5 V LHe temp. 1 8.026 K Heat exch. temp. 3 156.91 K Poly temp. 2 58.848 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36.5 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running 1373 Switcher status thru AFP temperature 9.1 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 88.5 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.3 torr Source pressure 1.8e-5 torr Spectrometer pressure 1.9e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.7 % PPM LN2 level 31.9 % AFP LHe level 86.2 % AFP LN2 level 80.8 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 85.7 F West MWPC Temperature 76.7 F MWPC Pressure 100 torr N2 - MWPC Differential -8.4 torr Neopentane Flow Rate 14.7 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. off A H2O Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 14.6 slpm West PMT Buck. Curr. 0.26 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2885 Hz West muon veto rate 5188 Hz Timing Reset T_{0} DAQ data_raw disk usage 92% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 295 ns TBCM001I03 13.3 mA "Beamplot" Capture 75 % Lujan not in production

25278	Fri Dec 7 18:34:32 2012	MFMakela

Turning down source voltage to "stew the source". Turn source voltage back up to start running and set the heat exchanger to 50.

25277	Fri Dec 7 09:56:14 2012	MFMakela

Turning down source voltage back to "stew the source". Turn source voltage back up to start running and set the heat exchanger to 50. Also close pumpout port, set flapper to flap, turn on CC1

25276	Fri Dec 7 09:34:07 2012	MFMakela

Doing a melt and f\refreeze 1 psi return, 250 mmHg 4000 .6 VDC melt at 130 - 5VDC refreeze, @ 165 .6 VDC melt, repeat Heat excahnger @ 50

25275	Fri Dec 7 08:57:08 2012	MFMakela

Turning down source voltage to "stew the source". Turn source voltage back up to start running and set the heat exchanger to 50. Also close pumpout port, set flapper to flap, turn on CC1

25274	Fri Dec 7 05:26:39 2012	DGPhillipsII

time midas # cm-daq time type cycles Notes 00:09 21671 94.59 GFT- 60s 00:42 21672 2044 GFT+ 60s 01:21 21673 4409 SFT- 10 02:29 21674 8495 SFT+ 10 03:40 21675 12810 DE- 45s 6 04:35 21676 16070 DE+ 45s 6 05:29 21677 19307 DE+ 65s 4 Stopped due to anticipated beam outage 06:09 21678 21668 DE+ 65s 2 Gave us beam until 6:30am

25273	Fri Dec 7 01:16:49 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/07/12 01:40 Shift Persons: Dave, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 131 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.89 psia Heater C pressure 13.68 psia Tungsten supply press. 300 psig Compressor 1 On On Tungsten Cool supp. 281.4 psia Tungsten Cool Diff. 279.4 psia Tungsten Cool ret. 66.9 psia 1630 eng. 2 temp. 13.79 K 1630 JT temp. 6.95 K 1630 outlet temp. 274.4 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.1 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.9 K 1410 TE-B 5.8 K 1410 TE-E 90.2 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 245 mmHg 4K dewar level 14.73 inHe 1K dewar level 25.82 inHe 4K main flow control 6.0 V LHe temp. 1 4.97 K Heat exch. temp. 3 153.79 K Poly temp. 2 95.35 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status down AFP temperature 9.6 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 1/2 SCS LHe level 86.5 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.4 torr Source pressure 1.7e-5 torr Spectrometer pressure 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 92.9 % PPM LN2 level 36.0 % AFP LHe level 89.5 % AFP LN2 level 85.1 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 87.3 F West MWPC Temperature 75.8 F MWPC Pressure 100.4 torr N2 - MWPC Differential -8.2 torr Neopentane Flow Rate 15.1 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 14.7 slpm West PMT Buck. Curr. 0.26 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 3029 Hz West muon veto rate 6631 Hz Timing Reset T_{0} DAQ data_raw disk usage 91% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.3 mA "Beamplot" Capture 80 %

25272	Fri Dec 7 00:10:33 2012	Rpattie

4k Production was very slow, so we increased the speed of the 1630 to 140 rpm.

25271	Thu Dec 6 23:11:21 2012	BMV

We had problems with the Beam Tuning program. Had to use PCUCN19 instead of 18 webpage. Performed a melt and refreeze since rate was about 220Hz. increased it to about 300 Hz. Time Midas Chris Time Type Notes 21:27 21662 18210 Flapper closed ~10Hz GV 21663 18405 Flapper open ~90Hz GV 21:33 21664 18495 Flapping ~290Hz GV 21665 0 SLD+ 8 Cycles 23:07 21668 848 GFT+ 50s 8 Cycles 23:36 21669 33 GFT- 50s 8 Cycles

25269	Thu Dec 6 20:34:48 2012	BMV

Something weird happend with the source. Chris took some data with Vanadium at the 150 Hz we were getting. After talking to Mark before we did a Melt and Refreeze he wanted us to do a flapper open, close and flapping. So we started to do that. We started with closed got 11HZ. Then we did Open and we saw something strange. The rate started to go up but then it started crashing. We thought there was a problem with the flapper but that wasn't it. The D2 pressure was going up but LHe#1 and #3 stabile but LHe#4,5 was going up to... so then we decided to

close the Flapper... then the pressure started going down and LHe#4,5 went down slightly then stabilized. Then after it stabilized and D2 got back to 3mBar I was curious what the rate would be... and to my surprise it was 220Hz. I do not know what happened, but maybe we melted a chunk near the top. The LHe#4,5 never returned to it's temperature. We decided to go ahead with Melt and Refreeze. Side point. We also noticed that the CC1 pressure went up when Chris was taking his data... maybe this is linked with opening little b box??? Melt Refreeze: Mark's blast mode. Changed valve state on 1630 Beam Off Flapper closed Closed D2Tank Open Check Valve Bypass Source Voltage 1 D2 went to 190 Source Voltage 5 (went upto around 220ish) D2 going down 125 Source voltage 1 D2 goind up to 225 Source Voltage 5 Nice Long Tripple point Source Voltage 1 D2 ~200mBar Source Voltage at 5 Bottom out gauge Source Voltage 6V Closed Check Valve bypass open D2 Tank

Attachment 1: 12.gif

12.gif

25270	Thu Dec 6 20:34:36 2012	BMV

Melt And Refreeze

Attachment 1: 0612.gif

0612.gif

25268	Thu Dec 6 16:13:15 2012	CCW

UCNA Shift Change Checklist Date: 12/06/12 16:00 Shift Persons: BMV, CCW ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 0 slpm Heater B pressure 13.21 psia Heater C pressure 13.66 psia Tungsten supply press. 275 psig Compressor 1 On light? Tungsten Cool supp. 283.7 psia Tungsten Cool Diff. 280.2 psia Tungsten Cool ret. 68.7 psia 1630 eng. 2 temp. 13.85 K 1630 JT temp. 6.99 K 1630 outlet temp. 274.4 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 1.3 psig 1630 med. press. stor. 55 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 5.7 K 1410 TE-E 84.0 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 250 mmHg 4K dewar level 12.34 inHe 1K dewar level 25.97 inHe 4K main flow control 6.5 V LHe temp. 1 4.975 K Heat exch. temp. 3 196.60 K Poly temp. 2 60.57 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 24.5 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart run#1367 Switcher status thru AFP temperature 9.9 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 2/3 SCS LHe level 92.5 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.4 torr Source pressure E09 torr Spectrometer pressure 1.9e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 93.1 % PPM LN2 level 39.4 % AFP LHe level 86.5 % AFP LN2 level 83.2 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 88.4 F West MWPC Temperature 80.5 F MWPC Pressure 100.3 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 15.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure E0 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2939 Hz West muon veto rate 6102 Hz Timing Reset T_{0} DAQ data_raw disk usage 91% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.3 mA "Beamplot" Capture 79 %

25267	Thu Dec 6 15:58:07 2012	BMV

Closed the Check Valve bypass around 6mBar. Turning heat exchanger to control closing d2 port

25266	Thu Dec 6 10:54:29 2012	MFMakela

Melted out source 1055 mbar in the system Freezing source back in Flapper closed Heat exchanger closed Startting cooling Freezig out the gas in the gude system with check valve

bypass closed to capture contamination int he bottom? That is about a 1/10 of the gas. Freezing back in very cold - 6.5 VDC, 280 mmHg,4000 1.6 psi return V389 open

25265	Thu Dec 6 04:12:21 2012	DGPhillipsII

Depol runs tonight. Had to stop running at 5am to give beam to Chris. time midas # cm-daq time type cycles 00:29 21648 - 21650 27561 SLD- 20 03:19 21651 - 21652 37753 SLD+ 12

25264	Thu Dec 6 04:08:06 2012	Hasan

UCNA Shift Change Checklist Date: 12/06/12 00:00 Shift Persons: Dave, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.34 psia Heater C pressure 13.51 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 285.3 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 69.4 psia 1630 eng. 2 temp. 12.10 K 1630 JT temp. 6.18 K 1630 outlet temp. 272.2 K 1630 engine speed 110 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.6 psig 1630 med. press. stor. 55 psig 1410 engine speed 119 rpm 1410 TE-A 15.3 K 1410 TE-B 6.1 K 1410 TE-E 86.2 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 350 mmHg 4K dewar level 14.50 inHe 1K dewar level 18.93 inHe 4K main flow control 6.0 V LHe temp. 1 5.02 K Heat exch. temp. 3 152.7 K Poly temp. 2 100.89 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart run#1366 Switcher status thru AFP temperature 9.6 C AFP frequency 28.495 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 86.3 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 2.7e-5 torr Spectrometer pressure 2.1e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 93.5 % PPM LN2 level 44.3 % AFP LHe level 99.8 % AFP LN2 level 98.3 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.3 F West MWPC Temperature 73.0 F MWPC Pressure 100.3 torr N2 - MWPC Differential -8.9 torr Neopentane Flow Rate 14.9 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 14.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 3273 Hz West muon veto rate 7280 Hz Timing Reset T_{0} DAQ data_raw disk usage 91% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 299 ns TBCM001I03 13.3 mA "Beamplot" Capture 79 %

25263	Wed Dec 5 20:05:24 2012	bz

After long stew and freeze in of rest of the tank, we get a rate of ~300 UCN/s w/ GV closed, flapping Going to move straight into taking Depol data

25262	Wed Dec 5 17:29:09 2012	bz

UCNA Shift Change Checklist Date: 12/05/12 18:23 (a little late) Shift Persons: Bryan, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.38 psia Heater C pressure 13.67 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 285.7 psia Tungsten Cool Diff. 281.1 psia Tungsten Cool ret. 70.1 psia 1630 eng. 2 temp. 14.12 K 1630 JT temp. 6.21 K 1630 outlet temp. 274.5 K 1630 engine speed 140 rpm 1630 supply press. 247 psig 1630 JT press. 205 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 119 rpm 1410 TE-A 14.9 K 1410 TE-B 5.5 K 1410 TE-E 85.3 K 1410 supply press. 243 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 1K dewar pressure 6.2 psig 4K dewar pressure 333 mmHg 4K dewar level 12.97 inHe 1K dewar level 20.00 inHe 4K main flow control 3.5 V performing refreeze LHe temp. 1 7.22 K Heat exch. temp. 3 187.4 K Poly temp. 2 64.63 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running new run 1366 Switcher

status thru AFP temperature 9.1 C AFP frequency 28.495 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 90.8 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure >1 e-3 torr performing refreeze Spectrometer pressure 3.3e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 93.6 % PPM LN2 level 46.8 % AFP LHe level 91.3 % AFP LN2 level 89.4 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.6 F West MWPC Temperature 73.2 F MWPC Pressure 100.1 torr N2 - MWPC Differential -9.1 torr Neopentane Flow Rate 15.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2320 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.7 torr Neopentane Flow Rate 14.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2852 Hz West muon veto rate 4951 Hz Timing Reset T_{0} DAQ data_raw disk usage 90% NO BEAM YET

25261	Wed Dec 5 05:05:47 2012	Rpattie

Data taking summary for the night shift: time midas # cm-daq time type cycles 0037 21633-21634 6500 P- 15 0246 21635-21636 14588 P+ 15 0458 21637 22470 GFT- 5s 8 0520 21638 23868 GFT+ 5s 8 0543 21639 25180 GFT+ 10s 8

25260	Wed Dec 5 00:28:21 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/05/2012 00:02 Shift Persons: Dave, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 49 slpm Heater B pressure 13.55 psia Heater C pressure 13.75 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 289.0 psia Tungsten Cool Diff. 282.4 psia Tungsten Cool ret. 72.8 psia 1630 eng. 2 temp. 14.14 K 1630 JT temp. 7.51 K 1630 outlet temp. 275.3 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 100 rpm 1410 TE-A 14.9 K 1410 TE-B 6.1 K 1410 TE-E 85.3 K 1410 supply press. 245 psig 1410 JT press. 205 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 250 mmHg 4K dewar level 15.63 inHe 1K dewar level 16.06 inHe 4K main flow control 6.5 V LHe temp. 1 4.94 K Heat exch. temp. 3 144.84 K Poly temp. 2 141.73 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33.5 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running Switcher status thru AFP temperature 9.2 C AFP frequency 28.475 MHz AFP forward power 5 W AFP N2 dewar level 1 SCS LHe level 89.3 % Filling SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.4 torr Source pressure 9.4e-6 torr Spectrometer Vacuum 2.1e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 94.3 % PPM LN2 level 51.6 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 86.1 F West MWPC Temperature 74.9 F MWPC Pressure 99.8 torr N2 - MWPC Differential -8.3 torr Neopentane Flow Rate 15.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 15.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 5122 Hz West muon veto rate 7730 Hz Timing Reset T_{0} DAQ data_raw disk usage 90% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 13.0 mA "Beamplot" Capture 79 %

25259	Wed Dec 5 00:10:39 2012	BMV

UCNA Shift Change Checklist Date: 12/04 16:02 Shift Persons: BMV, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 49 slpm Heater B pressure psia Heater C pressure psia Tungsten supply press. 295 psig Compressor 1 On on Tungsten Cool supp. 288.7 psia Tungsten Cool Diff. 282.2 psia Tungsten Cool ret. 72.4 psia 1630 eng. 2 temp. 13.27 K 1630 JT temp. 6.87 K 1630 outlet temp. 273.4 K 1630 engine speed 110 rpm 1630 supply press. 247 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 48 psig 1410 engine speed 99 rpm 1410 TE-A 14.9 K 1410 TE-B 5.3 K 1410 TE-E 102.2 K 1410 supply press. 245 psig 1410 JT press. 207 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 16.99 inHe 1K dewar level 17.99 inHe 4K main flow control 6.5 V LHe temp. 1 4.96 K Heat exch. temp. 3 138.47 K Poly temp. 2 57.3 K flapper heater cur 0.22 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running Switcher status thru AFP temperature 9.2 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 85.7 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.5 torr Source pressure 3.4e-6 torr Spectrometer Vacuum 3.6e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 94.5 % PPM LN2 level 54.3 % AFP LHe level 92.8 % AFP LN2 level 88.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 84.7 F West MWPC Temperature 76.4 F MWPC Pressure 100.0 torr N2 - MWPC Differential -8.4 torr Neopentane Flow Rate 15.3 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2300 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 15.2 slpm West PMT Buck. Curr. 0.26 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2801 Hz West muon veto rate 4764 Hz Timing Reset T_{0} DAQ data_raw disk usage 90% Proton beam status Burst Proton burst spacing 5 sec Proton pulses/burst 5 count Proton countdown 1 count Proton Pattern width 290 ns TBCM001I03 13.1 mA "Beamplot" Capture 79 %

25258	Tue Dec 4 23:51:38 2012	BMV

8:15pm received beam Chris ran his Vanadium test Run some flapper tests during and after Chris's Vanadium experiment 20:15 GVMon...1362 Flapping Mean=239 21:12 GVMon...1363 Open Mean= 72 21:22 GVMon...1362 Close Mean= Just realized the beam was down part of the last two runs... will and when it came back on the temperature was lower... (Lost pressure in the Beam's source) So we will see if there is improvement. No improvement... Redid runs did it all under GVMon 1362 Flapping: 220 (avg) Close: 12 (avg) Open: 81 (avg) 21:40 started filling AFP and pressurizing SCS 22:30 Ran into problems with the SpinFlipper... 5V input appears to not work... 23:43 Spin flipper appears to work ... fuse was blown, and the naked transistor board's white wire causes failure when grounded. Spin Flipper Tune, 5W FWD, plot is MHz vs UCN counts MHz UCN counts 28.5000 257 28.5050 257 28.5100 510 28.5150 620 28.5000 244 28.4950 236 28.4900 240 28.4850 255 28.4800 285 28.4750 309 28.4700 494

Attachment 1: 05_2012.gif

05_2012.gif

25257	Tue Dec 4 19:00:47 2012	Erik

Somebody asked me to look into why the displayed values on the graphs in the UCNA Web Utilities are wrong sometimes. So I've been trying to figure out when that happens and noticed that this only happens when the time values are not set to the default range, 2 hours. I haven't fixed it yet, but I thought it would good to get this out there.

25256	Mon Dec 3 23:21:38 2012	DGPhillipsII

UCNA Shift Change Checklist Date: 12/04 00:02 Shift Persons: Dave, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 49 slpm Heater B pressure 13.45 psia Heater C pressure 13.80 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.5 psia Tungsten Cool Diff. 282.3 psia Tungsten Cool ret. 74.0 psia 1630 eng. 2 temp. 13.54 K 1630 JT temp. 6.87 K 1630 outlet temp. 275.9 K 1630 engine speed 125 rpm 1630 supply press. 248 psig 1630 JT press. 205 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 100 rpm 1410 TE-A 14.6 K 1410 TE-B 5.2 K 1410 TE-E 73.4 K 1410 supply press. 245 psig 1410 JT

press. 200 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 300 mmHg 4K dewar level 13.46 inHe 1K dewar level 12.89 inHe 4K main flow control 6.0 V LHe temp. 1 4.97 K Heat exch. temp. 3 136.59 K Poly temp. 2 62.85 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 13.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running Switcher status thru AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 94.9 % SCS current 119.90 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 1.7e-8 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 94.7 % PPM LN2 level 59.7 % AFP LHe level 99.3 % AFP LN2 level 95.8 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 89.6 F West MWPC Temperature 82.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 15.1 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 3200 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 15.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2799 Hz West muon veto rate 4948 Hz Spectrometer vacuum 3.2e-6 Torr Timing Reset T_{0} DAQ data_raw disk usage 85% NO BEAM

25255	Mon Dec 3 15:19:05 2012	Erik

UCNA Shift Change Checklist Date: 12/03 16:00 Shift Persons: Erik, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 49 slpm Heater B pressure 13.34 psia Heater C pressure 14.18 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 293.6 psia Tungsten Cool Diff. 283.5 psia Tungsten Cool ret. 75.5 psia 1630 eng. 2 temp. 14.19 K 1630 JT temp. 6.53 K 1630 outlet temp. 277.9 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.1 psig 1630 med. press. stor. 70 psig 1410 engine speed 90 rpm 1410 TE-A 14.0 K 1410 TE-B 7.2 K 1410 TE-E 73.9 K 1410 supply press. 245 psig 1410 JT press. 220 psig 1410 return press. 3.4 psig 1K dewar pressure 5.5 psig 4K dewar pressure 305 mmHg 4K dewar level 11.67 inHe 1K dewar level 13.98 inHe 4K main flow control 3.5 V LHe temp. 1 7.149 K Heat exch. temp. 3 151.73 K Poly temp. 2 63.212 K flapper heater cur 0.22 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.7 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 93.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr CC1 pressure 2.2e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.8 % PPM LN2 level 82.9 % AFP LHe level 87.4 % AFP LN2 level 82.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 90.9 F West MWPC Temperature 69.6 F MWPC Pressure 100.4 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 11.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2867 Hz West muon veto rate 5497 Hz Spectrometer vacuum 1.5e-5 Torr Timing Reset H-GX DAQ data_raw disk usage 85% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 15.3 mA "Beamplot" Capture ~.75

25254	Mon Dec 3 10:25:02 2012	MFMakela

After a bit of work on the D2 last night there is 116 mbar in the tank.

25253	Mon Dec 3 09:25:50 2012	MFMakela

Starting to cool the UCN source and freeze out D2 Starting tank presure 1158 mmbar

25235	Sun Dec 2 19:45:21 2012	mmendenhall

12am-8am Shift (Robbie, Michael) Switching to beta decay, A->B, 50min beta + 8min bkg Time Run # Type 00:30 21477 A1 Bkg Off 12:30 AM 21477 A1: Background (off) 12:39 AM 21478 A2: Beta Run (off) 1:29 AM 21479 A3: Depol (off to on) 1:36 AM 21480 A4: Background (on) 1:44 AM 21481 A5: Beta Run (on) 2:35 AM 21482 A6: Depol (on to off) 2:42 AM 21483 A7: Beta Run (on) 3:32 AM 21484 A8: Depol (on to off) 3:39 AM 21485 A9: Background (on) 3:47 AM 21486 A10: Beta Run (off) 4:38 AM 21487 A11: Depol (off to on) 05:50 Raymond's program crashed after A11. Restart with A12.

25252	Fri Nov 30 10:05:43 2012	JOrtiz3

I have installed a red cable between the Multigage (CC1, CC2) and the "Highspeed Wattcher" in the AFP RF rack. Before running the spin-flipper, to set a fail-safe pressure: Activate the cold cathode gauge that reads the SCS pressure and is located above the switcher by going to the multigauge, by selecting the appropriate channel with "chan" and pressing "emis". After verifying that the pressure shown is ~<3E-5 torr, set a setpoint value for this channel by pressing "st pnt" until the channel's number is shown. Using the keypad, set the value of this setpoint for that channel to something like 5.00 E-5. Then press "st pnt" until the screen returns to normal. Now go to the AFP RF rack, and look at the red cable going into it that turns into two brown cables that connect to the back of the "highspeed wattcher." One brown cable is connected by a crimp connector, the other is BNC. Connect the BNC connectors to connect the Wattcher to the Multigauge. When the pressure is higher than the set-point, or when the gauge is off, the Wattcher will detect that screw #3 (or 4 if changed) is grounded by connection to screw #7 and sound an alarm. When the pressure is below the setpoint, the setpoint card opens the circuit and thus disconnects #3 (or 4) from ground, signalling to the Wattcher that the pressure is right for RF generation.

25251	Tue Nov 27 08:15:38 2012	ASaunders

AFP and SCS magnets are ramped down.

25250	Mon Nov 26 11:53:12 2012	MFMakela

SCS quenched - field - ? SCS has still activated xenon in it @ 1pm

25248	Mon Nov 26 11:44:49 2012	MFMakela

Putting ~100 liter LHe into the system. Precool SCS line from dewar Precool SCS line with 4 k dewar Transfer to 4 k dewar Did not work... to much precool

25249	Mon Nov 26 11:40:25 2012	MFMakela

Quenched SCS while precooling SCS fill line to get gas into medium pressure storage. Ran to long and got liquid into return? Causing back pressure into SCS via LN2 vent line. #!!#!!^^!#@!

25247	Mon Nov 26 05:30:36 2012	MFMakela

110 mbar in LN2 trap from last filling of the source.

25246	Mon Nov 26 05:23:54 2012	MFMakela

Activating Xenon 1123 mbar xenon in tube and vcr system source pumped out 2e-5 torr green valve closed, orange valve clos3d cm1 2-5 torr with xenon (3 torr) source cold, xenon froze out

25245	Mon Nov 26 04:54:53 2012	MFMakela

D2 back in tank - 1154 mbar, 132 mbar in guide Orange valve closed KNF off pumping out source

25244	Mon Nov 26 04:06:57 2012	ASaunders

Continuation of octet from last night 11:28 PM 21576 A5: Beta Run (on) E=7.9 W=7.0 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=1.01 11:55 PM 21577 A6: Depol (on to off) W/R=6/68=0.088(38) 12:03 AM 21578 A7: Beta Run (on) E=7.8 W=6.9 Fe/GV=0.12 SCS/GV=0.27 E+W/GV=1.00 12:30 AM 21579 A8: Depol (on to off) W/R=5/71=0.070(32) 12:37 AM 21580 A9: Background (on)E=1.04 W=0.95 GV=22.3 12:43 AM 21581 A10: Beta Run (off)E=10.1 W=10.5 Fe/GV=0.50 SCS/GV=0.35 E+W/GV=1.38 1:11 AM 21582 A11: Depol (off to on)W/R=2/125=0.016(11) 1:18 AM 21583 A12: Background (off)E=1.03 W=0.92 GV=22.0 1:23 AM 21584 B1: Background (on)E=1.03 W=0.95 GV=22.2 1:29 AM 21585 B2: Beta Run (on)E=7.5 W=6.8 Fe/GV=0.11 SCS/GV=0.27 E+W/GV=0.98 1:57 AM 21586 B3: Depol (on to off)W/R=5/58=0.086(40) 2:04 AM 21587 B4: Background (off)E=0.96 W=0.93 GV=19.4 2:09 AM 21588 B5: Beta Run (off)E=9.7 W=10.5 Fe/Gv=0.49 SCS/GV=0.35 E+W/GV=1.40 2:37 AM 21589 B6: Depol (off to on)W/R=0/120=0(0)

2:44 AM 21590 B7: Beta Run (off)E=9.9 W=10.4 Fe/GV=0.30 SCS/GV=0.35 E+W/GV=1.39 3:12 AM 21591 B8: Depol (off to on)W/R=9/129=0.070(24) 3:19 AM 21592 B9: Background (off)E=1.05 W=1.00 GV=21.6 3:25 AM 21593 B10: Beta Run (on)E=7.4 W=6.5 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=0.99 3:52 AM 21594 B11: Depol (on to off)W/R=8/68=0.117(44) 3:59 AM 21595 B12: Background (on)E=1.12 W=1.02 GV=21.0

25243	Sun Nov 25 23:24:44 2012	mmendenhall

UCNA Night 12-8 Shift Change Checklist Date: 11-26-2012 Shift Persons: Andy, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 12.55 psia Heater C pressure 13.47 psia Tungsten supply press. 315 psig Compressor 1 On on Tungsten Cool supp. 311.9 psia Tungsten Cool Diff. 288.1 psia Tungsten Cool ret. 91.3 psia 1630 eng. 2 temp. 13.2 K 1630 JT temp. 6.9 K 1630 outlet temp. 273.2 K 1630 engine speed 121 rpm 1630 supply press. 249 psig 1630 JT press. 205 psig 1630 return press. 0.8 psig 1630 med. press. stor. 25 psig 1410 engine speed 119 rpm 1410 TE-A 15.8 K 1410 TE-B 6.5 K 1410 TE-E 87.2 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 265 mmHg 4K dewar level 17.2 inHe 1K dewar level 9.71 inHe 4K main flow control 6.0 V LHe temp. 1 5.48 K Heat exch. temp. 3 125.0 K Poly temp. 2 148.0 K flapper heater cur 0.22 A Flapper Status: flap Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart restarted, run#1360 Switcher status thru AFP temperature 10.0 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 8/8 SCS LHe level 83.8 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.6 torr Source pressure 1.7e-5 torr spectrometer vacuum 2.2e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 98.4 % PPM LN2 level 62.3 % AFP LHe level 93.4 % AFP LN2 level 90.8 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 20 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 92.4 F West MWPC Temperature 75.5 F MWPC Pressure 99.6 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H2O Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2886 Hz West muon veto rate 5211 Hz Timing Reset H-GX (beta decay) DAQ data_raw disk usage 88% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 16.72 mA "Beamplot" Capture ~.83 (can't actually run this with Lujan beam turned off)

25242	Sun Nov 25 23:14:21 2012	mmendenhall

4pm-12am shift (Chris, Michael) Plan: finish Depol runs: 6 cycles DE+/- each for delta = 45s, 65s, 90s Switch to beta octet, needs to finish at 3:30am for Xe activation Time Midas# Slow Time Run type 16:52 21565 1359:2311s DE- 45s 6 cycles 17:45 21566 1359:5508s DE+ 45s 6 cycles 18:40 21567 1359:8790s DE- 65s 6 cycles 19:33 21568 1359:12005s DE+ 65s 6 cycles 20:31 21569 1359:15435s DE- 90s 6 cycles 21:26 21570 1359:18730s DE+ 90s 6 cycles Connected H-GX trigger Starting beta decay (27min beta, 5min bkg) 10:23 PM 21571 A1: Background (off) 10:29 PM 21572 A2: Beta Run (off) 10:56 PM 21573 A3: Depol (off to on) 11:04 PM 21574 A4: Background (on) noticed run replay was not working.

25241	Sun Nov 25 15:24:17 2012	mmendenhall

UCNA Shift Change Checklist Date: 11-26-2012 Shift Persons: Chris, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 12.60 psia Heater C pressure 13.64 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 315.7 psia Tungsten Cool Diff. 288.7 psia Tungsten Cool ret. 94.2 psia 1630 eng. 2 temp. 13.2 K 1630 JT temp. 6.9 K 1630 outlet temp. 273.1 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 0.8 psig 1630 med. press. stor. 35 psig 1410 engine speed 119 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 97.6 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 2.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 260

mmHg 4K dewar level 15.6 inHe 1K dewar level 11.4 inHe 4K main flow control 6.0 V LHe temp. 1 5.45 K Heat exch. temp. 3 127.8 K Poly temp. 2 147.2 K flapper heater cur 0.22 A Flapper Status: flap Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 22 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted, run#1359 Switcher status down AFP temperature 9.9 C AFP frequency 28.500 MHz AFP forward power 39 W AFP N2 dewar level 1 SCS LHe level 87.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.5 torr Source pressure 1.0e-5 torr spectrometer vacuum 2.0e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 98.7 % PPM LN2 level 65.1 % AFP LHe level 88.1 % AFP LN2 level 83.5 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 91.8 F West MWPC Temperature 74.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.32 kV West muon veto HV 2.35 kV East muon veto rate 3025 Hz West muon veto rate 4834 Hz Timing Reset T0 (taking Depol data) DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.64 mA "Beamplot" Capture ~.75-.80 (can't actually run this with Lujan beam turned off)

25240	Sun Nov 25 07:59:27 2012	bz

UCNA Shift Change Checklist Date: 11/25 08:46 Shift Persons: Bryan, Mark ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 12.8 psia Heater C pressure 13.6 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 316 psia Tungsten Cool Diff. 289 psia Tungsten Cool ret. 94 psia Bryan recharged from 1630 1630 eng. 2 temp. 13.5 K 1630 JT temp. 7 K 1630 outlet temp. 273 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. .8 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 16 K 1410 TE-B 6.8 K 1410 TE-E 95 K 1410 supply press. 245 psig 1410 JT press. 178 psig 1410 return press. 3.3 psig 1K dewar pressure 6.7 psig 4K dewar pressure 270 mmHg 4K dewar level 13.6 inHe 1K dewar level 7.3 inHe 4K main flow control 5.7 V LHe temp. 1 5.4 K Heat exch. temp. 3 68 K Poly temp. 2 177 K flapper heater cur 0.2 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running new run 1358 Switcher status thru AFP temperature 9.2 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 92.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.5 torr source pressure 2.3e-5 torr Spectrometer vacuum 1.5e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.0 % PPM LN2 level 67.3 % AFP LHe level 99.6 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 90.4 F West MWPC Temperature 69.6 F MWPC Pressure 100.5 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 13.5 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.9 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2930 Hz West muon veto rate 5137 Hz Timing Reset H-GX DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.6 mA "Beamplot" Capture ~.75

25239	Sun Nov 25 06:40:40 2012	ASaunders

overnight octet 1:06 AM 21536 A1: Background (off) E=0.986 W=0.996 GV=21.0 1:15 AM 21537 A2: Beta Run (off) E=9.1 W=9.6 Fe/GV=0.49 SCS/GV=0.35 E+W/GV=1.37 2:06 AM 21538 A3: Depol (off to

on) W/R=7/125=0.057(22) 2:13 AM 21539 A4: Background (on) E=0.998 W=1.018 GV=20.4 2:21 AM 21540 A5: Beta Run (on) E=7.0 W=6.3 Fe/GV=0.12 SCS/GV=0.27 E+W/GV=1.00 3:12 AM 21541 A6: Depol (on to off) W/R=7/61=0.115(46) 3:19 AM 21542 A7: Beta Run (on) E=6.9 W=6.2 Fe?GV=0.12 SCS/GV=0.27 E+W/GV=0.99 4:10 AM 21543 A8: Depol (on to off) W/R=5/54=0.093(43) 4:17 AM 21544 A9: Background (on) E=1.07 W=0.98 GV=20.2 4:26 AM 21545 A10: Beta Run (off) E=8.9 W=9.5 Fe/GV=0.49 SCS/GV=0.35 E+W/GV=1.38 5:16 AM 21546 A11: Depol (off to on) W/R=2/111=0.018(12) 5:23 AM 21547 A12: Background (off) E=0.93 W=1.06 GV=20.0 5:32 AM 21548 B1: Background (on) E=1.03 W=0.99 GV=20.0 5:40 AM 21549 B2: Beta Run (on) E=6.8 W=6.1 Fe/GV=0.12 SCS/GV=0.27 E+W/GV=0.99 6:31 AM 21550 B3: Depol (on to off) W/R=2/55=0.036(26) 6:38 AM 21551 B4: Background (off) E=0.99 W=1.05 GV=19.4 6:47 AM 21552 B5: Beta Run (off)

25238	Sun Nov 25 00:08:49 2012	mmendenhall

4pm-12am shift (Evan, Michael) B->A Beta Decay octet, 50min beta + 8min bkg: 10:49 AM 21501 B1: Background (on) 10:57 AM 21502 B2: Beta Run (on) 11:48 AM 21503 B3: Depol (on to off) 11:55 AM 21504 B4: Background (off) 12:04 PM 21505 B5: Beta Run (off) 12:54 PM 21506 B6: Depol (off to on) 1:02 PM 21507 B7: Beta Run (off) 1:52 PM 21508 B8: Depol (off to on) 1:59 PM 21509 B9: Background (off) 2:08 PM 21510 B10: Beta Run (on) 2:59 PM 21511 B11: Depol (on to off) 3:06 PM 21512 B12: Background (on) 3:14 PM 21513 A1: Background (off) 3:23 PM 21514 A2: Beta Run (off) 4:13 PM 21515 A3: Depol (off to on) 4:21 PM 21516 A4: Background (on) 4:29 PM 21517 A5: Beta Run (on) 5:20 PM 21518 A6: Depol (on to off) 5:27 PM 21519 A7: Beta Run (on) 6:18 PM 21520 A8: Depol (on to off) 6:25 PM 21521 A9: Background (on) 6:33 PM 21522 A10: Beta Run (off) 7:24 PM 21523 A11: Depol (off to on) 7:31 PM 21524 A12: Background (off) Continuing Depol measurements run plan: 8 GFT+/- each for delta=10s, 25s 9 PE+/- each for delta=25s, 50s, 75s 6 additional DE+/- each for delta = 45s, 65s, 90s Connected T0 reset 19:50 GFT- 10s 8 cycles: #21526, 1357: 11860s 20:12 GFT+ 10s 8 cycles: #21527, 1357: 13220s 20:37 GFT- 25s 8 cycles: #21528, 1357: 14710s 21:08 GFT+ 25s 8 cycles: #21529, 1357: 16550s 21:36 PE- 25s 9 cycles: #21530, 1357: 18222s 22:44 PE+ 25s 9 cycles: #21532, 1357: 22330s 23:48 PE- 50s 9 cycles: #21534, 1357: 26160s Return to Beta Decay (unattended); H-GX trigger; 50min beta + 8 bkg 01:06 21536 A1 Bkg Off ...

25237	Sat Nov 24 15:41:37 2012	E.R.Adamek

UCNA Shift Change Checklist Date: November 24, 2012 04:00 Shift Persons: Michael, Evan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 12.8 psia Heater C pressure 13.8 psia Tungsten supply press. 330 psig Compressor 1 On on Tungsten Cool supp. 322.4 psia Tungsten Cool Diff. 290.8 psia Tungsten Cool ret. 99.8 psia 1630 eng. 2 temp. 13.27 K 1630 JT temp. 6.93 K 1630 outlet temp. 271.0 K 1630 engine speed 120 rpm 1630 supply press. 249 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 30 psig 1410 engine speed 100 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 85.5 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6.2 psig 4K dewar pressure 273 mmHg 4K dewar level 15.3 inHe 1K dewar level 12.23 inHe 4K main flow control 5.7 V LHe temp. 1 5.44 K Heat exch. temp. 3 66.4 K low Poly temp. 2 183 K high flapper heater cur 0.215 A Flapper Status: flappy Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart 1357 Switcher status down AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 88.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.4 torr Source pressure 1.7e-5 torr Spectrometer pressure 1.8e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 99.5 % PPM LN2 level 73.0 % AFP LHe level 89.3 % AFP LN2 level 85.1 % PPM current 72 (6) A(T) AFP current 93.647(6.8962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 91.2 F West MWPC Temperature 75.5 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 5159 Hz West muon veto rate 7831 Hz Timing Reset H-GX DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.8 mA "Beamplot" Capture ~75%

25236	Sat Nov 24 07:38:07 2012	ASaunders

UCNA Shift Change Checklist Date: November 23, 2012 08:00 Shift Persons: Andy B2 ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 13.1 psia Heater C pressure 13.4 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 321 psia Tungsten Cool Diff. 290 psia Tungsten Cool ret. 98.8 psia 1630 eng. 2 temp. 14.43 K cold 1630 JT temp. 7.7 K 1630 outlet temp. 274 K 1630 engine speed 129 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 0.8 psig 1630 med. press. stor. 40 psig 1410 engine speed 100 rpm 1410 TE-A 16.3 K 1410 TE-B 6.1 K 1410 TE-E 86.9 K 1410 supply press. 242 psig 1410 JT press. 185 psig 1410 return press. 3.2 psig 1K dewar pressure 6.9 psig 4K dewar pressure 252 mmHg 4K dewar level 13.5 inHe 1K dewar level 8.4 inHe 4K main flow control 5.7 V LHe temp. 1 5.4 K Heat exch. temp. 3 67.8 K Poly temp. 2 176 K flapper heater cur 0.22 A Flapper Status: flappy Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31.75 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart not running COMPUTER PCPRTN010 UPDATING Switcher status thru AFP temperature 9.2 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 95.0 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr Source pressure 1.8e-5 torr Spectrometer pressure 1.4e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.6 % PPM LN2 level 75.4 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 89.4 F West MWPC Temperature 68.6 F MWPC Pressure 99.5 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 14.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.9 torr Neopentane Flow Rate 11.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2672 Hz West muon veto rate 5064 Hz DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.8 mA "Beamplot" Capture ~75

25233	Fri Nov 23 23:33:34 2012	mmendenhall

4pm-12am Shift (Andy, Michael) Continuing Depol measurements program: 20 P+/- (completed this shift) 8 GFT+/- each for delta = 5s*, 10s, 15s*, 25s, 40s*, 50s*, 60s* (* = completed this shift) 9 PE+/- each for delta=25s, 50s, 75s 6 additional DE+/- each for delta = 45s, 65s, 90s The T0 reset was not connected at the start of the shift; we're completing the remaining cycles of P- in this state. 17:05 Connecting T0 reset. Starting 20 cycles of P+ (FastDaq 21464...21466) 20:01 GFT- Delta = 5s [paper logbook p. 167], 8 cycles; FastDaq 21467; MCS 1355: 12660s 20:23 GFT+ Delta = 5s, 8 cycles, 21468; MCS 1355: 13968s 20:46 GFT- Delta = 15s, 8 cycles, 21469; MCS 1355: 15392s 21:14 GFT+ Delta = 15s, 8 cycles, 21470; MCS 1355: 17023s 21:48 GFT- Delta = 40s, 8 cycles, 21471; MCS 1355: 18465s 22:04 GFT+ Delta = 40s, 8 cycles, 21472; MCS 1355: 20037s 22:34 GFT- Delta = 60s, 8 cycles, 21473; MCS 1355: 21852s 23:04 GFT+ Delta = 60s, 8 cycles, 21474; MCS 1355: 23619s 23:33 GFT- Delta = 50s, 8 cycles, 21475; MCS 1355: 25375s 00:01 GFT+ Delta = 50s, 8 cycles, 21476; MCS 1355: 27090s

25234	Fri Nov 23 23:27:17 2012	Rpattie

UCNA Shift Change Checklist Date: 11-24-2012 Shift Persons: Robby, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 135 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 12.73 psia Heater C pressure 13.14 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 321.5 psia Tungsten Cool Diff. 290.2 psia Tungsten Cool ret. 99.1 psia 1630 eng. 2 temp. 14.4 K 1630 JT temp. 6.98 K 1630 outlet temp. 272.9 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.0 psig 1630 med. press. stor. 20 psig 1410 engine speed 149 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 89.1 K 1410 supply press. 240 psig 1410 JT press. 165 psig 1410 return press. 3.1 psig 1K dewar pressure 7.0 psig 4K dewar pressure 270 mmHg 4K dewar level 13.99 inHe 1K dewar level 21.69 inHe 4K main flow control 6.0 V starting a melt & refreeze LHe temp. 1 5.4 K Heat exch. temp. 3 57.6 K Poly temp. 2 122 K flapper heater cur 0.22 A Flapper Status: flap Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart restarted, run#1353 Switcher status

down AFP temperature 9.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 84.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.4 torr Source pressure 2.6e-5 torr spectrometer vacuum 1.8e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.8 % PPM LN2 level 77.9 % AFP LHe level 95.5 % AFP LN2 level 94.5 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 90.8 F West MWPC Temperature 71.3 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.9 torr Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2972 Hz West muon veto rate 5062 Hz Timing Reset T0 (taking Depol data) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 16.93 mA "Beamplot" Capture ~.83

25232	Fri Nov 23 15:35:12 2012	mmendenhall

UCNA Shift Change Checklist Date: 11/23 16:15 Shift Persons: Andy, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 13.2 psia Heater C pressure 13.1 psia Tungsten supply press. 340 psig Compressor 1 On on Tungsten Cool supp. 327.1 psia Tungsten Cool Diff. 291.5 psia Tungsten Cool ret. 104.1 psia Bryan recharged from 1630 1630 eng. 2 temp. 13.21 K 1630 JT temp. 6.77 K 1630 outlet temp. 273.5 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.1 psig 1630 med. press. stor. 32 psig 1410 engine speed 149 rpm 1410 TE-A 14.3 K 1410 TE-B 6.6 K 1410 TE-E 80.3 K 1410 supply press. 235 psig 1410 JT press. 165 psig 1410 return press. 3.1 psig 1K dewar pressure 6.8 psig 4K dewar pressure 255 mmHg 4K dewar level 12.22 inHe 1K dewar level 21.63 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 109 K Poly temp. 2 133 K flapper heater cur 0.22 A turned up by Chris Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 38 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 88.3 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.4 torr Source CC pressure 1.7e-5 torr Decay Trap CC pressure 1.9e-5 Torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 99.8 % PPM LN2 level 80.7 % AFP LHe level 90.6 % AFP LN2 level 90.0 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 20 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 91.0 F West MWPC Temperature 73.3 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 13.0 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.1 torr Neopentane Flow Rate 10.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2736 Hz West muon veto rate 4853 Hz Timing Reset H-GX ********** Not good for depol! ********** DAQ data_raw disk usage 85% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.6 mA "Beamplot" Capture ~.75

25231	Fri Nov 23 15:21:57 2012	bz

Shift overview: Charged W cooling to keep from losing beam, went a little too far but it's ok Currently, Return at ~105 PSI Did a melt and refreeze and got a boost of ~1/3? During that, Chris increased the flapper heater current to .22 A.

25229	Fri Nov 23 14:50:08 2012	bz

Per Chris, trying another melt and refreeze with the idea that we'll try to keep the source at a constant pressure above the triple point for a while and melt the entire source completely. 13:50 Closed GV, disabled by disconnecting air. Vetoed Beam opened D2 pumpout port changed to

warm return on 1630 (4K pressure 280 mmHg) closed orange valve, opened check valve bypass dropped source voltage to 1.3 V closed heat exchanger flapper OPEN 13:53 pressure, temperature spike at beginning, calmed now and increasing slowly 13:57 opened V311 slightly to try to keep the 4k dewar pressure constant 14:09 incrementally increased the source flow looking for a point at which the pressure stopped rising and remained stable 14:11 found that at about 2.4 V and ~280mm Hg 4k dewar pressure that the pressure in the source was largely stable, going to stay in this state for ~30 mins 14:27 pressure in 4k has drifted to ~265mm Hg, closing V311 to correct 14:42 increasing flow voltage to 2.8V to freeze back in 14:47 increasing voltage to 2.9V to speed freeze, want to stay somewhat warm 15:00 Past triple point, increasing voltage to 3.5 to freeze out faster 15:09 only 20 mBar left, cranked source to 6.0V 15:15 closed check valve bypass, opened orange valve reenabled GV closed D2 pumpout port changed back to cold return on 1630 put heat exchanger back in "OPEN" Pre melt/refreeze; 200 Hz w/GV closed Post melt/refreeze; 267 Hz w/GV closed better, not great

Attachment 1: 23_15.49.44.gif

23_15.49.44.gif

25230	Fri Nov 23 14:46:54 2012	CCW

UCNA Shift Change Checklist Date: 11/23 08:20 Shift Persons: Bryan, Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 13.3 psia Heater C pressure 13.2 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 275.6 psia Tungsten Cool Diff. 277.8 psia Tungsten Cool ret. 62.6 psia Bryan recharged from 1630 1630 eng. 2 temp. 14.14 K 1630 JT temp. 7.2 K 1630 outlet temp. 273.6 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 38 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 7.0 K 1410 TE-E 84.2 K 1410 supply press. 240 psig 1410 JT press. 165 psig 1410 return press. 2.6 psig 1K dewar pressure 7.0 psig 4K dewar pressure 280 mmHg 4K dewar level 9.9 inHe 1K dewar level 21.4 inHe 4K main flow control 5.5 V LHe temp. 1 5.4 K Heat exch. temp. 3 67.3 K Poly temp. 2 178.5 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.7 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 93.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr CC1 pressure 2.2e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.8 % PPM LN2 level 82.9 % AFP LHe level 87.4 % AFP LN2 level 82.9 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 90.9 F West MWPC Temperature 69.6 F MWPC Pressure 100.4 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -1.7 torr Neopentane Flow Rate 11.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2867 Hz West muon veto rate 5497 Hz Spectrometer vacuum 1.5e-5 Torr Timing Reset H-GX DAQ data_raw disk usage 85% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 15.3 mA "Beamplot" Capture ~.75

25196	Fri Nov 23 11:27:43 2012	bz

EDITED BY BZ 12:30 11-23 The polarimetry runs still required are: [DONE] 11 SLD -/12 SLD+ [DOING] 20 P+/- 8 GFT+/- each for delta=5s, 10s, 15s, 25s, 40s, 50s, 60s 9 PE+/- each for delta=25s, 50s, 75s 6 additional DE+/- each for delta = 45s, 65s, 90s

25228	Fri Nov 23 06:50:43 2012	ASaunders

Raymond's program crashed at about 5:00 AM, at the end of the A12

25227	Thu Nov 22 22:40:52 2012	bz

Shift Overview: We came in, and Andy wanted us to try a melt and refreeze. We did, and got no improvement. Then we settled in to take depol data. We got 11 cycles of SLD+, before the power strip which the CAMAC crate containing the 1 MHz clock threw its breaker. This appeared to us

as a total lack of new data coming into the daq. After some investigation, we found it, reset the breaker, and the system began to work normally again. Just before we finished with the CAMAC crate, there was a water leak in the source, and the beam was down for several hours. At the end, when the beam came up, Hasan called in sick. Therefore, we set up an octet to run overnight and we filled the magnets so that we could take data with no one on shift. The magnet fills will go until after midnight by a couple hours, but Michael will stay on shift with Robby to finish.

25225	Thu Nov 22 17:20:17 2012	mmendenhall

UCNA Shift Change Checklist Date: Happy Thanksgiving! 16:15 Shift Persons: Bryan, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 124 slpm Heater B pressure 13.4 psia Heater C pressure 13.3 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 280.5 psia Tungsten Cool Diff. 279.2 psia Tungsten Cool ret. 66.3 psia 1630 eng. 2 temp. 14.8 K 1630 JT temp. 7.8 K 1630 outlet temp. 273.6 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 150 rpm 1410 TE-A 16.1 K 1410 TE-B 7.3 K 1410 TE-E 104.3 K 1410 supply press. 245 psig 1410 JT press. 175 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 280 mmHg 4K dewar level 11.15 inHe 1K dewar level 15.54 inHe 4K main flow control 3.5 V starting a melt & refreeze LHe temp. 1 5.3 K Heat exch. temp. 3 97.6 K Poly temp. 2 159 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted, run#1353 Switcher status down AFP temperature 10.0 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 87.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.4 torr CC1 pressure 2.5e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 99.8 % PPM LN2 level 88.2 % AFP LHe level 98.6 % AFP LN2 level 95.6 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V ON MWPC Trip Hold Status trip hold East MWPC Temperature 93.8 F West MWPC Temperature 79.0 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 8.9 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) ON MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2200 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2915 Hz West muon veto rate 5143 Hz Spectrometer vacuum 3e-5 Torr Timing Reset T0 (taking Depol data) DAQ data_raw disk usage 84% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 14.9 mA "Beamplot" Capture ~.74

25226	Thu Nov 22 17:12:29 2012	bz

Logging a second melt/refreeze vetoed beam closed flapper opened pumpout port disabled gate valve switched from cold return to warm return on 1630 closed orange valve opened check valve bypass closed heat exchanger Reduced Flow Voltage to 3.5V to start, trying a gentle melt (pressure in 4k 280mmHg) 16:23 LHe#3 went to ~10K, reduced to 3.0V 16:26 LHe#3 went to 15.4K, reduced to 2.7V 16:27 Temperature and pressure spike (3 K and 2 Torr) - something melting off of sides? 16:29 LHe#3 went to 19.1K, reduced to 2.4V 16:32 LHe#3 went to 21.5K, reduced to 2.1V 16:34 LHe#3 went to 23.3K, reduced to 1.8V 16:36 LHe#3 went to 26K, LHe#1 at ~18K, Almost there, reduced to 1.6V 16:42 Pretty slow, only up to ~50mBar, reduced to 1.4V 16:46 Still pretty slow (9 mBar/min) reduced to 1.3V 16:56 Settled on 1.3V for thaw (at 280mmHg 4k dewar pressure), passing triple point 16:58 pressure rose faster after triple point 16:59 Reached 210 mBar, increased to 3.2V 17:05 Passing back through triple point, pressure bounced, LHe#1 at 11.4K 17:06 Reached 150 mBar, reduced to 1.3V 17:15 Reached 200 mBar, increased to 2.8V (for at least through triple point) - 4k dewar has dropped to 260 mmHg - less pronounced triple point on this transit up 17:23 Back down through the triple point, slightly less pronounced this time - only bounced up by .4 mBar, quicker return to pressure dropping 17:24 At 150 mBar, increased flow to 3.5V 17:27 Down to 100 mBar 17:31 Down to 30 mBar, raised flow to 6.0V 17:34 Closed check valve bypass; re-opened orange valve 17:35 Changed return back to cold on 1630, opened Heat Exchanger to OPEN Closed Pumpout port, reconnected Gate Valve Basically no improvement in GV closed rate.

Attachment 1:

25224	Thu Nov 22 14:56:18 2012	ASaunders

Melt and refreeze. Double dip. No improvement.

25223	Thu Nov 22 14:55:18 2012	ASaunders

Octet that started in the night 0350 21391 A1 Bkg off E=1.052 W=1.017 GV=29.7 0401 21392 A2 Beta off E=12.3 W=13.08 Fe/GV=0.48 SCS/GV=0.36 E+W/GV=1.38 0501 21393 A3 Depol off->on W/R=0.037(15) 0508 21394 A4 Bkg on E=1.04 W=0.994 GV=28.7 0518 21395 A5 beta on E=9.73 W=8.67 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=1.00 0618 21396 A6 depol on->off W/R=0.081(37) 0625 21397 A7 beta on E=9.78 W=8.7 Fe/GV=0.123 SCS/GV=0.2819 E+W/GV=1.01 0725 21398 A8 depol on->off W/R=0.098(37) 0732 21399 A9 Bkg on E=1.02 W=0.996 GV=27.9 0743 21400 A10 beta off E=12.5 W=13.3 Fe/GV=0.48 SCS/GV=0.36 E+W/GV=1.39 0843 21401 A11 depol off->on W/R=2/161=0.012(9) 0850 21402 A12 Bkg off E=1.01 W=0.99 GV=28.1 0910 21403 B1 Bkg on E=1.04 W=0.98 GV=28.1 0921 21404 B2 beta on E=9.5 W=8.5 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=1.01 1021 21405 B3 depol on->off W/R=8/66=0.121(45) 1028 21406 B4 Bkg off E=1.09 W=0.88 GV=27.4 1038 21407 B5 beta off E=12.2 W=12.7 Fe/GV=0.48 SCS/GV=0.36 E+W/GV=1.39 1138 21408 B6 depol off->on W/R=5/160=0.031(14) 1150 21409 B7 beta off E=12.1 W=12.7 Fe/GV=0.48 SCS/GV=0.36 E+W/GV=1.40 1251 21410 B8 depol off->on W/R=3/155=0.019(11) 1258 21411 B9 Bkg off E=1.01 W=1.02 GV=26.5 1308 21412 B10 Beta on E=9.3 W=8.2 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=1.00 1408 21413 B11 depol on->off W/R=7/78=0.090(35) 1416 21414 B12 Bkg on E=1.07 W=1.01 GV=26.8

25213	Thu Nov 22 14:37:42 2012	Rpattie

Data From the night shift: time run description 0100 21333 B1: Bkg(on) E = 0.972 W = 0.985 0111 21334 B2: Beta(on) E = 9.66 W = 8.67 F/GV = 0.12 SCS/GV 0.28 B/GV = 1.0027 0211 21335 B3: Depol(on->off) W/R = 0.096(38) 0218 21336 B4: Bkg(off) E = 1.029 W = 1.019 GV = 27.7 0229 21337 B5: Beta(off) E = 11.95 W = 12.53 Fe/GV = 0.48 SCS/GV=0.36 B/GV = 1.3844 0329 21338 B6: Depol(off->on) W/R = 0.027(14) 0336 21339 B7: Beta(off) E = 12.05 W = 12.8 Fe/GV = 0.49 SCS/GV=0.36 B/GV = 1.3865 0437 21340 B8: Depol(off->on) W/R = 0.032(14) 0444 21341 B9: Bkg(off) E = 0.951 W = 0.994 GV = 27.0 0454 21342 B10:Beta(on) E = 8.59 W = 7.65 Fe/Gv = 0.12 SCS/GV=0.27 B/GV = 0.9997 0555 21343 B11:Depol(on->off) W/R = 0.056(29) 0602 21344 B12:Bkg(on) E = 0.956 W = 0.993 GV = 26.9 0612 21345 A1 :Bkg(off) E = 1.049 W = 0.987 GV = 25.3 0623 21346 A2 :Beta(off) E = 11.06 W = 11.67 Fe/GV = 0.48 SCS/GV=0.35 B/GV = 1.377 0723 21347 A3 :Depol(off->on) W/R = 0.046(18) 0730 21348 A4 :Bkg(on) E = 1.012 W = 0.919 GV=

25222	Thu Nov 22 08:32:57 2012	ASaunders

UCNA Shift Change Checklist Date: November 22, 2012 09:00 Shift Persons: Andy Sky ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 13.3 psia Heater C pressure 13.6 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 279.9 psia Tungsten Cool Diff. 279.9 psia Tungsten Cool ret. 65.1 psia 1630 eng. 2 temp. 13.6 K cold 1630 JT temp. 7.0 K 1630 outlet temp. 273.2 K 1630 engine speed 120 rpm 1630 supply press. 248 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 50 psig 1410 engine speed 119 rpm 1410 TE-A 15.6 K 1410 TE-B 6.8 K 1410 TE-E 97.1 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.8 psig 4K dewar pressure 280 mmHg 4K dewar level 9.6 inHe 1K dewar level 17.4 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 62.6 K Poly temp. 2 173.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted, run#1352 Switcher status thru AFP temperature 9.2 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 93.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.5 torr CC1 pressure 1.7e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 99.8 % PPM LN2 level 92.9 % AFP LHe level 93.6 % AFP LN2 level 91.3 % PPM current 72 (6) A(T) AFP current 93.647(~7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 92.4 F West MWPC Temperature 74.7 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 9.4 slpm East PMT Buck. Curr 0.14 A East Back. Veto Buck. 0. A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2350 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-

Veto Crate (Bottom Crate) on,1160 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 3029 Hz West muon veto rate 5171 Hz Spectrometer vacuum 1.5e-5 Torr DAQ data_raw disk usage 84% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 304 ns TBCM001I03 15.4 mA "Beamplot" Capture ~75

25221	Thu Nov 22 03:12:16 2012	Hasan

Melt & Refreeze, Closed GV Rate: 300 Hz

25220	Thu Nov 22 00:13:54 2012	Hasan

UCNA Shift Change Checklist Date: November 22, 2012 00:30 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 128 slpm Heater B pressure 13.21 psia Heater C pressure 13.39 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 282.1 psia Tungsten Cool Diff. 280.3 psia Tungsten Cool ret. 67.30 psia 1630 eng. 2 temp. 13.49 K cold 1630 JT temp. 7.03 K 1630 outlet temp. 273.6 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 50 psig 1410 engine speed 119 rpm 1410 TE-A 15.7 K 1410 TE-B 6.6 K 1410 TE-E 96.5 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 280 mmHg 4K dewar level 7.52 inHe 1K dewar level 19.02 inHe 4K main flow control 6.0 V LHe temp. 1 5.38 K Heat exch. temp. 3 73.15 K Poly temp. 2 191.18 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.0 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 88.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr (source freezing in) CM5 pressure 2.5 torr CC1 pressure 2.6e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 78.8 % PPM LN2 level 57.6 % AFP LHe level 97.6 % AFP LN2 level 97.8 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.9 F West MWPC Temperature 84.0 F MWPC Pressure 100 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 9.4 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0.14 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.1 torr Neopentane Flow Rate 11.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1160 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2995 Hz West muon veto rate 5792 Hz Spectrometer vacuum 6.1e-5 Torr DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 17.5 mA "Beamplot" Capture 82

25218	Wed Nov 21 18:51:26 2012	mmendenhall

Shift Change Checklist 16:00 Bryan, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 10 slpm Running low per Andy Heater B pressure 12.94 psia Heater C pressure 13.5 psia Tungsten supply press. 295 psig Compressor 1 On on Tungsten Cool supp. 286.0 psia Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 69.9 psia 1630 eng. 2 temp. 13.37 K cold 1630 JT temp. 7.0 K 1630 outlet temp. 274.3 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 1.0 psig 1630 med. press. stor. 40 psig 1410 engine speed 119 rpm 1410 TE-A 16.1 K 1410 TE-B 7.0 K 1410 TE-E 85.6 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.6 psig 4K dewar pressure 250 mmHg 4K dewar level 14.11 inHe 1K dewar level 14.3 inHe 4K main flow control 7.0 V LHe temp. 1 5.3 K Heat exch. temp. 3 178.7 K Poly temp. 2 177.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34.7 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart restarted, run#1351 Switcher status thru AFP temperature 9.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 86.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr CM5 pressure 2.4 torr CC1 pressure 6.4e-5 torr Hall Probe Y

0.169 kG Hall Probe 2 -0.359 kG PPM LHe level 99.8 % PPM LN2 level 99.1 % AFP LHe level 99.7 % AFP LN2 level 100.0 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 95.5 F West MWPC Temperature 81.5 F MWPC Pressure 100.4 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 8.9 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0.14 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 10.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2150 V East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2767 Hz West muon veto rate 5191 Hz Spectrometer vacuum 2.5e-5 Torr CC2 DAQ data_raw disk usage 84% Proton beam status Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.5 mA "Beamplot" Capture 78% (Keith's estimate)

25219	Wed Nov 21 17:15:16 2012	MFMakela

UCNb box pressure test - 750.12 torr 6:00, 747 torr 6:10 not so good looking for a leak

25217	Wed Nov 21 14:59:17 2012	Erik

B->A Octet ran overnight, stopping at ~11 AM 01:00 AM 21333 B1: Background (on) E=0.972 W=0.985 GV=28.6 01:11 AM 21334 B2: Beta Run (on) E=9.66 W=8.67 Fe/GV=0.12 SCS/GV=0.280 E+W/GV=1.0027 02:11 AM 21335 B3: Depol (on to off) W/R=0.096+/-0.038 02:18 AM 21336 B4: Background (off) E=1.029 W=1.019 GV=27.7 02:29 AM 21337 B5: Beta Run (off) E=11.95 W=12.53 Fe/GV=0.48 SCS/GV=0.36 E+W/GV=1.3844 03:29 AM 21338 B6: Depol (off to on) W/R=0.027+/-0.014 03:36 AM 21339 B7: Beta Run (off) E=12.05 W=12.8 Fe/GV=0.49 SCS/GV=0.36 E+W/GV=1.3865 04:37 AM 21340 B8: Depol (off to on) W/R=0.032+/-0.014 04:44 AM 21341 B9: Background (off) E=0.951 W=0.994 GV=27.0 04:54 AM 21342 B10: Beta Run (on) E=8.59 W=7.65 Fe/GV=0.12 SCS/GV=0.27 E+W/GV=0.9997 05:55 AM 21343 B11: Depol (on to off) W/R=0.056+/-0.029 06:02 AM 21344 B12: Background (on) E=0.956 W=0.993 GV=26.9 06:12 AM 21345 A1: Background (off) E=1.049 W=0.987 GV=25.3 06:23 AM 21346 A2: Beta Run (off) E=11.062 W=11.676 Fe/GV=0.48 SCS/GV=0.349 E+W/GV=1.377 07:23 AM 21347 A3: Depol (off to on) W/R=0.046+/-0.018 07:30 AM 21348 A4: Background (on) E=1.012 W=0.919 GV=25.7 07:41 AM 21349 A5: Beta Run (on) E=4.191 W=3.753 Fe/GV=0.1561 SCS/GV=0.3057 E+W/GV=1.2270 08:42 AM 21351 A6: Depol (on to off) W/R=0.052+/-0.031 08:49 AM 21352 A7: Beta Run (on) E=4.035 W=3.705 Fe/GV=0.1559 SCS/GV=0.3047 E+W/GV=1.2536 09:49 AM 21353 A8: Depol (on to off) W/R=0.064+/-0.030 09:56 AM 21354 A9: Background (on) E=1.099 W=0.982 GV=25.6 10:07 AM 21355 A10: Beta Run (off) E=10.708 W=11.486 Fe/GV=0.4803 SCS/GV=0.3558 E+W/GV=1.4051 11:07 AM 21356 A11: Depol (off to on) W/R=0.025+/-0.013 11:14 AM 21357 A12: Background (off) E=0.992 W=0.987 GV=25.1

25216	Wed Nov 21 12:25:02 2012	ASaunders

1:00 AM 21333 B1: Background (on) 1:11 AM 21334 B2: Beta Run (on) 2:11 AM 21335 B3: Depol (on to off) 2:18 AM 21336 B4: Background (off) 2:29 AM 21337 B5: Beta Run (off) 3:29 AM 21338 B6: Depol (off to on) 3:36 AM 21339 B7: Beta Run (off) 4:37 AM 21340 B8: Depol (off to on) 4:44 AM 21341 B9: Background (off) 4:54 AM 21342 B10: Beta Run (on) 5:55 AM 21343 B11: Depol (on to off) 6:02 AM 21344 B12: Background (on) 6:12 AM 21345 A1: Background (off) 6:23 AM 21346 A2: Beta Run (off) 7:23 AM 21347 A3: Depol (off to on) 7:30 AM 21348 A4: Background (on) 7:41 AM 21349 A5: Beta Run (on) 8:42 AM 21351 A6: Depol (on to off) 8:49 AM 21352 A7: Beta Run (on) 9:49 AM 21353 A8: Depol (on to off) 9:56 AM 21354 A9: Background (on) 10:07 AM 21355 A10: Beta Run (off) 11:07 AM 21356 A11: Depol (off to on) 11:14 AM 21357 A12: Background (off)

25215	Wed Nov 21 10:43:32 2012	ASaunders

melt and refreeze

25204	Wed Nov 21 07:38:24 2012	Erik

UCNA Shift Change Checklist Date: November 20, 2012 16:30 Shift Persons: Erik, Michael ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 0 slpm Heater B pressure 12.65 psia Heater C pressure 13.43 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 286.4 psia Tungsten Cool Diff. 281.1 psia Tungsten Cool ret. 70.6 psia 1630 eng. 2 temp. 17.92 K cold 1630 JT temp. 8.77 K 1630 outlet temp. 270.1 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 218 psig 1630 return press. 0.8 psig 1630 med. press. stor. 25 psig 1410 engine speed 119 rpm 1410 TE-A 15.4 K 1410 TE-B 6.2 K 1410 TE-E 93.2 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar

pressure 280 mmHg 4K dewar level 13.85 inHe 1K dewar level 21.10 inHe 4K main flow control 5.0 V LHe temp. 1 6.5 K Heat exch. temp. 3 170 K Poly temp. 2 114 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restarted, run#1350 Switcher status thru AFP temperature 9.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 86.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 365.4 torr (source freezing in) CM5 pressure 2.4 torr CC1 pressure 1.9e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 79.0 % PPM LN2 level 63.0 % AFP LHe level 93.6 % AFP LN2 level 91.3 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 95.8 F West MWPC Temperature 83.7 F MWPC Pressure 100.4 torr N2 - MWPC Differential -5.6 torr Neopentane Flow Rate 8.7 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0.15 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 10.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2150 V East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2768 Hz West muon veto rate 4596 Hz Spectrometer vacuum 2.0e-5 Torr DAQ data_raw disk usage 98% Proton beam status currently off Proton burst spacing - s Proton pulses/burst - Proton countdown - count Proton pattern width -- ns TBCM001I03 --.- mA "Beamplot" Capture -

25214	Wed Nov 21 07:37:51 2012	Rpattie

UCNA Shift Change Checklist Date: November 21, 2012 08:00 Shift Persons: Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.5 psia Heater C pressure 13.6 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 285 psia Tungsten Cool Diff. 281 psia Tungsten Cool ret. 69.2 psia 1630 eng. 2 temp. 13.2 K cold 1630 JT temp. 6.8 K 1630 outlet temp. 272.5 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 215 psig 1630 return press. 0.5 psig 1630 med. press. stor. 30 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 7.1 K 1410 TE-E 97.6 K 1410 supply press. 245 psig 1410 JT press. 215 psig 1410 return press. 3.3 psig 1K dewar pressure 6.7 psig 4K dewar pressure 250 mmHg 4K dewar level 12.8 inHe 1K dewar level 14.5 inHe 4K main flow control 6.0 V LHe temp. 1 5.3 K Heat exch. temp. 3 163 K Poly temp. 2 174 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.0 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 88.4 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.1 torr (source freezing in) CM5 pressure 2.5 torr CC1 pressure 2.6e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 78.8 % PPM LN2 level 57.6 % AFP LHe level 97.6 % AFP LN2 level 97.8 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.9 F West MWPC Temperature 84.0 F MWPC Pressure 100 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 9.4 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0.14 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.1 torr Neopentane Flow Rate 11.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1160 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2995 Hz West muon veto rate 5792 Hz Spectrometer vacuum 6.1e-5 Torr DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 17.5 mA "Beamplot" Capture 82

25212	Wed Nov 21 01:36:44 2012	Hasan

UCNA Shift Change Checklist Date: November 21, 2012 00:25 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd

for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.0 psia Main return flow closed He blower on Heat exchanger flow 051 slpm Heater B pressure 12.38 psia Heater C pressure 13.66 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 284.9 psia Tungsten Cool Diff. 280.6 psia Tungsten Cool ret. 69.7 psia 1630 eng. 2 temp. 16.96 K 1630 JT temp. 7.99 K 1630 outlet temp. 276.9 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 0.4 psig 1630 med. press. stor. 35 psig 1410 engine speed 119 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 100.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 11.31 inHe 1K dewar level 19.76 inHe 4K main flow control 3.5 V Melt & Refreeze LHe temp. 1 8.59 K Melt & Refreeze Heat exch. temp. 3 195.12 K Melt & Refreeze Poly temp. 2 135.66 K Melt & Refreeze flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status closed D2 Pump port status open Melt & Refreeze MCS Program restart running, run#1350 Switcher status thru AFP temperature 9.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 92.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 130.4 torr Melt & Refreeze CM5 pressure 2.5 torr CC1 pressure over torr Melt & Refreeze Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 78.9 % PPM LN2 level 60.0 % AFP LHe level 99.8 % AFP LN2 level 97.2 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 96.1 F West MWPC Temperature 83.9 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 8.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 11.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1160 V (ch 01) East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2684 Hz West muon veto rate 4666 Hz Spectrometer vacuum 2.0e-5 Torr DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.7 mA "Beamplot" Capture 51 much lower than expected 0.85

25211	Wed Nov 21 00:34:27 2012	MFMakela

The source vacumm seems a little high: Is the pumping port closed? Is the heat exchanger flow at 50? Is the flapper giving any errors? If the vacuum starts to increase for no reason let me know.

25210	Wed Nov 21 00:24:37 2012	MFMakela

CC1 is now monitoring the source, CC2 needs to be turned on to check UCNA vacuum for checklist. Please pass this down, thank. Night

25209	Wed Nov 21 00:17:08 2012	Hasan

UCNA Shift Change Checklist Date: November 21, 2012 00:25 Shift Persons: Robby, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.0 psia Main return flow closed He blower on Heat exchanger flow 051 slpm Heater B pressure 12.38 psia Heater C pressure 13.66 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 284.9 psia Tungsten Cool Diff. 280.6 psia Tungsten Cool ret. 69.7 psia 1630 eng. 2 temp. 16.96 K 1630 JT temp. 7.99 K 1630 outlet temp. 276.9 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 0.4 psig 1630 med. press. stor. 35 psig 1410 engine speed 119 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 100.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 11.31 inHe 1K dewar level 19.76 inHe 4K main flow control 3.5 V Melt & Refreeze LHe temp. 1 8.59 K Melt & Refreeze Heat exch. temp. 3 195.12 K Melt & Refreeze Poly temp. 2 135.66 K Melt & Refreeze flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status closed D2 Pump port status open Melt & Refreeze MCS Program restart running, run#1350 Switcher status thru AFP temperature 9.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 92.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 130.4 torr Melt & Refreeze CM5 pressure 2.5 torr CC1 pressure over torr Melt & Refreeze Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe

level 78.9 % PPM LN2 level 60.0 % AFP LHe level 99.8 % AFP LN2 level 97.2 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 96.1 F West MWPC Temperature 83.9 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 8.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2340 V on knob (not actual output; check with DMM when setting) MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 11.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1160 V (ch 01) East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2684 Hz West muon veto rate 4666 Hz Spectrometer vacuum 2.0e-5 Torr DAQ data_raw disk usage 83% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.7 mA "Beamplot" Capture 51 much lower than expected 0.85

25208	Wed Nov 21 00:05:40 2012	MFMakela

Looks much better. Andy concurs that you should start depol. We will work on it more in the morning. Please move the source vacuum guage back to CC1, so I can watch for problems. Mark

25207	Wed Nov 21 00:05:01 2012	Hasan

UCN closed GV rate is now 290 Hz.

25206	Tue Nov 20 23:03:01 2012	mmendenhall

CCR has finished tuning the beam. GV closed GV Mon rate is ~160Hz :(Doing a melt-and-refreeze...

25205	Tue Nov 20 20:56:57 2012	MFMakela

~80 mbar left in the tank. To stop filling and freezeout -close CT1 and CT2. Then switch the heat exchanger flow conrtol to control from closed. If production is bad give me a call - 412-0956. To do a melt and refreeze V389 needs to close and V387 needs to open. This should be done quickly - (call me if you have not doen this before)

25203	Tue Nov 20 13:42:44 2012	MFMakela

D2 in tank 1187 mbar

25201	Tue Nov 20 09:50:08 2012	ASaunders

An octet ran overnight. Here are the stats: 12:14 AM 21248 B1: Background (on) E=0.972 W=0.937 GV=26.8 12:21 AM 21249 B2: Beta Run (on) E=8.64 W=7.63 Fe/GV=0.122 SCS/GV=0.270 E+W/GV=0.956 12:51 AM 21250 B3: Depol (on to off) W/R=3/75=0.040+/-0.024 12:58 AM 21251 B4: Background (off) E=1.03 W=0.93 GV=25.1 1:05 AM 21252 B5: Beta Run (off) E=10.7 W=11.3 Fe/GV=0.492 SCS/GV=0.34 E+W/GV=1.34 1:36 AM 21253 B6: Depol (off to on) W/R=3/132=0.023+/-0.013 1:43 AM 21254 B7: Beta Run (off) E=10.9 W=11.5 Fe/GV=0.49 SCS/GV=0.34 E+W/GV=1.34 2:13 AM 21255 B8: Depol (off to on) W/R=8/146=0.055+/-0.020 2:21 AM 21256 B9: Background (off) E=0.97 W=0.93 GV=24.8 2:27 AM 21257 B10: Beta Run (on) E=8.03 W=7.20 Fe/GV=0.11 SCS/GV=0.26 E+W/GV=0.94 2:58 AM 21258 B11: Depol (on to off) W/R=6/70=0.085+/-0.036 3:05 AM 21259 B12: Background (on) E=1.00 W=1.01 GV=24.3 3:11 AM 21260 A1: Background (off) E=1.01 W=1.05 GV=24.7 3:18 AM 21261 A2: Beta Run (off) E=10.5 W=11.0 Fe/GV=0.49 SCS/GV=0.34 E+W/GV=1.33 3:49 AM 21262 A3: Depol (off to on) W/R=6/137=0.044+/-0.018 3:56 AM 21263 A4: Background (on) E=1.02 W=0.99 GV=24.0 4:02 AM 21264 A5: Beta Run (on) E=8.02 W=7.03 Fe/GV=0.12 SCS/GV=0.27 E+W/GV=0.96 4:33 AM 21265 A6: Depol (on to off) W/R=2/72=0.028+/-0.020 4:40 AM 21266 A7: Beta Run (on) E=7.89 W=7.12 Fe/GV=0.11 SCS/GV=0.26 E+W/GV=0.96 5:11 AM 21267 A8: Depol (on to off) W/R=6/74=0.081+/-0.034 5:18 AM 21268 A9: Background (on) E=0.98 W=1.00 GV=23.7 5:25 AM 21269 A10: Beta Run (off) E=10.5 W=10.9 Fe/GV=0.49 SCS/GV=0.34 E+W/GV=1.36 5:55 AM 21270 A11: Depol (off to on) W/R=4/148=0.027+/-0.014 6:02 AM 21271 A12: Background (off) E=0.94 W=0.95 GV=23.4 Insert In, Cs, and Cd sources, writing facing west, back 2.5 inches from fully in. Start long calibration run Midas 21274-

25202	Tue Nov 20 06:14:53 2012	ASaunders

start source distillation at 1.5 V source control

25200	Mon Nov 19 23:15:29 2012	bz

Only got one depol run in: Time MIDAS Type Cycles 22:40 21246 SLD- 11

25199	Mon Nov 19 21:58:25 2012	mmendenhall

New PMT HV Settings (maximizing gain without pushing Bi pulser peak off-scale): PMT HV Chan Voltage ---------- E1 0 1265 E2 1 1160 E3 2 1080 E4 3 1075 W1 24 1550 W2 20 1150 W3 26 1270 W4 27 1275

25198	Mon Nov 19 21:33:49 2012	mmendenhall

Flapper open source lifetime: 8.9(0.8) s

Attachment 1: .gif

.gif

25195	Mon Nov 19 21:27:05 2012	MFMakela

Pressure looks a little high, but not enough - if this stays high try pumping on it Please consider checking rate as a function of flapper position if there is no improvement Looks better, but not great, I may have to distill in the morning.

25197	Mon Nov 19 21:23:35 2012	mmendenhall

Flapper flapping source lifetime: 30.5(1.7)s

Attachment 1: .gif

.gif

25194	Mon Nov 19 21:10:31 2012	bz

Source production is lousy. Going to investigate: Vacuum above source - vacuum appears fine, mensor gauge is bottomed out and CC shows 3e-5 torr above source flapper rates for closed, open, flapping flapping:190 open:71 closed:8 - if normal, do a melt/refreeze, melt and refreeze performed, went through triple point twice, always 1.1V warming, 3.0V cooling 4k Dewar pressure ~7 to 7.5 psi due to SCS Fill (V311 was slightly closed to pressurize 4k) closed:9 open:95 flapping:291 much better, still not great - if still bad, try some lifetimes open/flapping going to do lifetimes now, 5 pulses/60sec flapping and open

25193	Mon Nov 19 20:56:17 2012	MFMakela

Melting the source SOurce melted Starting to remake source No distillation ~1200 mbar in D2 tank Making new source - flapper closed, heat exchanger off

25192	Mon Nov 19 07:38:55 2012	ASaunders

B->A Octet ran overnight, stopping at ~6 AM 12:06 AM 21214 B1: Background (on) E=1.30 W=1.19 GV=17.9 12:17 AM 21215 B2: Beta Run (on) E=6.4 W=5.7 Fe/GV=0.124 SCS/GV=0.279 E+W/GV=1.06 12:42 AM 21216 B3: Depol (on to off) W/R=6/73=0.082+/-0.034 12:49 AM 21217 B4: Background (off) E=1.23 W=1.23 GV=17.9 1:00 AM 21218 B5: Beta Run (off) E=7.63 W=7.91 Fe/GV=0.487 SCS/GV=0.346 E+W/GV=1.48 1:26 AM 21219 B6: Depol (off to on) W/R=2/116=0.017+/-0.012 1:33 AM 21220 B7: Beta Run (off) E=8.23 W=8.44 Fe/GV=0.497 SCS/GV=0.348 E+W/GV=1.43 1:58 AM 21221 B8: Depol (off to on) W/R=3/119=0.025+/-0.015 2:06 AM 21222 B9: Background (off) E=1.35 W=1.22 GV=17.9 2:16 AM 21223 B10: Beta Run (on) E=6.31 W=5.63 Fe/GV=0.131 SCS/GV=0.274 E+W/GV=1.05 2:42 AM 21224 B11: Depol (on to off) W/R=3/78=0.038+/-0.023 2:49 AM 21225 B12: Background (on) E=1.25 W=1.22 GV=17.8 2:59 AM 21226 A1: Background (off) E=1.31 W=1.20 GV=17.8 3:10 AM 21227 A2: Beta Run (off) E=8.14 W=8.45 Fe/GV=0.493 SCS/GV=0.350 E+W/GV=1.44 3:36 AM 21228 A3: Depol (off to on) W/R=5/113=0.044+/-0.020 3:43 AM 21229 A4: Background (on) E=1.31 W=1.18 GV=18.0 3:53 AM 21230 A5: Beta Run (on) E=6.36 W=5.65 Fe/GV=0.124 SCS/GV=0.279 E+W/GV=1.05 4:19 AM 21231 A6: Depol (on to off) W/R=7/77=0.091+/-0.035 4:26 AM 21232 A7: Beta Run (on) E=6.04 W=5.38 Fe/GV=0.126 SCS/GV=0.270 E+W/GV=1.07 4:52 AM 21233 A8: Depol (on to off) W/R=6/68=0.088+/-0.037 4:59 AM 21234 A9: Background (on) E=1.28 W=1.20 GV=17.6 5:09 AM 21235 A10: Beta Run (off) E=7.90 W=8.23 Fe/GV=0.490 SCS/GV=0.355 E+W/GV=1.41 5:35 AM 21236 A11: Depol (off to on) W/R=0/114=0+/-0 5:42 AM 21237 A12: Background (off) E=1.28 W=1.20

25191	Sun Nov 18 23:27:25 2012	bz

Everything went pretty well tonight. AFP needs to be filled in the morning. Since only Hasan on midnight shift, told him to stay home and filled AFP at end of shift and started octet that will end at 6. Octet is a B->A Octet so that the final state is gate valve closed, AFP off. We may have beam during the day? If so, we need to make sure that we use this time effectively. Total Counts this weekend: 1.5M Total Counts on year: 4.5M

Attachment 1: .gif

25190	Sun Nov 18 23:19:11 2012	bz

New A->B Octet Time MIDAS Run Type East West Fe/GV SCS/GV (E+W)/GV ---------- 16:06 21190 A1 Bkg OFF 1.234 1.239 16:19 21191 A2 Beta OFF 8.542 8.870 0.4938 0.3569 1.4599 17:19 21192 A3 D- W/R=0.044(20) 17:26 21193 A4 Bkg ON 1.326 1.290 17:39 21194 A5 Beta ON 6.583 5.994 0.1227 0.2758 1.0693 18:39 21195 A6 D+ W/R=0.052(31) 18:47 21196 A7 Beta ON 6.458 5.700 0.1258 0.2740 1.0689 19:47 21197 A8 D+ W/R=0.083(35) 19:54 21198 A9 Bkg ON 1.285 1.229 20:07 21199 A10 Beta OFF 8.130 8.492 0.4945 0.3544 1.4520 21:08 21200 A11 D- W/R=0.043(20) 21:15 21201 A12 Bkg OFF 1.331 1.170 Beta runs shortened to 20 minutes, Bkg to 10 minutes, so that octet is done by change of shift. Will run 5 or 6 hour octet overnight. 21:32 21202 B1 Bkg ON 1.276 1.207 21:43 21203 B2 Beta ON 6.481 5.804 0.1276 0.2723 1.0514 22:03 21204 B3 D+ W/R=0.078(36) 22:10 21205 B4 Bkg OFF 1.360 1.215 22:21 21206 B5 Beta OFF 8.329 5.575 0.4913 0.3473 1.4439 22:41 21207 B6 D- W/R=0.023(13) 22:49 21208 B7 Beta OFF 8.146 8.709 0.4944 0.3977 1.4353 23:04 21209 B8 D- W/R=0.026(15) 23:16 21210 B9 Bkg OFF 1.327 1.216 23:27 21211 B10 Beta ON 6.478 5.787 0.1215 0.2690 1.0500 23:48 21212 B11 D+ W/R=0.051(26) 23:55 21213 B12 Bkg ON 1.349 1.193

25185	Sun Nov 18 18:08:42 2012	KPH

The W4 Bi pulse peak is missing! Did it fall off!? Is the gain too high? EDIT BY BRYAN: This is a known issue (it has been missing for some time). We are using the LEDs to compensate.

25189	Sun Nov 18 15:39:19 2012	DJS

UCNA Shift Change Checklist Date: November 18, 2012 16:30 Shift Persons: Dan, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 26 slpm Heater B pressure 12.7 psia Heater C pressure 13.2 psia Tungsten supply press. 300 psig over range, but not sure why, IS THIS OK? Compressor 1 On on Tungsten Cool supp. 291 psia Tungsten Cool Diff. 28 psia Tungsten Cool ret. 74 psia 1630 eng. 2 temp. 11.5 K cold 1630 JT temp. 6.9 K 1630 outlet temp. 274 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 40 psig 1410 engine speed 149 rpm 1410 TE-A 14.8 K 1410 TE-B 6.4 K 1410 TE-E 98.3 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 300 mmHg 4K dewar level 14.56 inHe 1K dewar level 14.63 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 198 K Poly temp. 2 151 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 18.75 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart restarted, run#1348 Switcher status thru AFP temperature 9.7 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 86.3 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.3 torr CC1 pressure 1.2e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 79.3 % PPM LN2 level 79.3 % AFP LHe level 97.8 % AFP LN2 level 95.1 % PPM current 72 A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2640 V MWPC Trip Hold Status trip hold East MWPC Temperature 95.8 F West MWPC Temperature 83.7 F MWPC Pressure 99.9 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 8.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2340 V Kevin said that this voltage was actually 2650 MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr faulty gauge N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 10.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,2150 V East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2886 Hz West muon veto rate 4298 Hz Spectrometer vacuum 2.2e-5 Torr DAQ data_raw disk usage 97% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.4 mA "Beamplot" Capture -

25188	Sun Nov 18 15:29:30 2012	Sky

UCNA Shift Change Checklist Date: November 18, 2012 00:00 Shift Persons: Sky, Erik Shaw ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 26 slpm Heater B pressure 12.9 psia Heater C pressure 13.2 psia Tungsten supply press. 300 psig over range, but not sure why, IS THIS OK? Compressor 1 On on Tungsten Cool supp. 293.0 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 76 psia 1630 eng. 2 temp. 12.84 K cold 1630 JT temp. 6.4 K 1630 outlet temp. 275.6 K 1630 engine speed 130 rpm 1630 supply press. 248 psig 1630 JT press. 200 psig 1630 return press. 0.9 psig 1630 med.

press. stor. 45 psig 1410 engine speed 150 rpm 1410 TE-A 14.9 K 1410 TE-B 6.6 K 1410 TE-E 99.8 K 1410 supply press. 242 psig 1410 JT press. 172 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 330 mmHg 4K dewar level 12.5 inHe 1K dewar level 14.1 inHe 4K main flow control 6.0 V LHe temp. 1 5.29 K Heat exch. temp. 3 194.2 K Poly temp. 2 174.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running, run#1346 Switcher status thru AFP temperature 9.9 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 1/4 SCS LHe level 96.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr CC1 pressure 4.0e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 79.5 % PPM LN2 level 81.7 % AFP LHe level 91.9 % AFP LN2 level 88.3 % PPM current 72(6) A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.4 F West MWPC Temperature 82.7 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 8.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V Kevin said that this voltage was actually 2650 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr faulty gauge N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1275 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 5011 Hz West muon veto rate 6748 Hz Spectrometer vacuum 2.1e-5 Torr DAQ data_raw disk usage 96% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.3 mA "Beamplot" Capture 0.75

25187	Sun Nov 18 15:08:21 2012	Erik

So, an updated version of the UCNA Web Utilities is now working at the address http://pcucn18.lanl.gov:8000. I guess I will change the shortcuts to UCNA Web Utilities on computers in the area to this new web page. If there seems to be a problem with the database run ./LaunchDaemons.sh on pcucn19 If it looks like the server crashed on pcucn18 run the following commands: ssh slowctrl@pcucn18 (passwd: UCNBetAs) su (You need to know the root passwd) /etc/init.d/httpd restart

25184	Sun Nov 18 15:05:08 2012	KPH

Time MIDAS Run Type East West Fe/GV SCS/GV (E+W)/GV ---------- 22:42 21152 B1 (bkg,on) 1.32 1.18 0.0131 0.0056 0.1125 22:55 21153 B2 (beta,on) 7.70 6.80 0.1216 0.2741 1.0162 23:55 21154 B3 (D+) [W/R = 5/61 = 0.082(38)] 00:02 21155 B4 (bkg,off) 1.295 1.132 0.0122 0.0068 0.1106 00:15 21156 B5 (beta,off) 9.56 9.89 0.4851 0.3437 1.4140 01:16 21157 B6 (D-) [W/R = 2/117 = 0.017(12)] 01:23 21158 B7 (beta,off) 9.538 9.929 0.4935 0.3466 1.417 02:23 21159 B8 (D-) [W/R = 4/147 = 0.027(14)] 02:31 21160 B9 (bkg,off) 1.349 1.184 0.0127 0.0066 0.1142 02:43 21162 B10 (beta,on) 7.638 6.814 0.1192 9.2704 1.0171 03:44 21162 B11 (D+) [W/R = 7/63 = 0.111(44)] 03:51 21163 B12 (bkg,on) 1.267 1.193 0.0140 0.0073 0.1129 Starting new octet A->B, started slow daq #1346 04:07 21164 A1 (bkg,off) 1.213 1.183 0.018 0.0055 0.1106 04:19 21165 A2 (beta,off) 9.736 10.263 0.4941 0.3478 1.4127 05:20 21166 A3 (D-) [W/R = 2/130 = 0.015(11)] 05:27 21167 A4 (bkg,on) 1.309 1.178 0.0143 0.0070 0.1156 05:40 21168 A5 (beta,on) 7.301 6.443 0.1222 0.2691 1.0207 06:40 21169 A6 (D+) [W/R = 5/57 = 0.088(41)] 06:47 21170 A7 (beta,on) 7.269 6.538 0.1200 0.2670 1.0195 07:48 21171 A8 (D+) [W/R = 0.172(56)] 07:55 21172 A9 (bkg,on) 1.308 1.271 0.0134 0.0058 0.1221 08:08 21173 A10(beta,off) 9.382 9.668 0.4994 0.3497 1.4095 09:08 21174 A11(D-) [W/R = 6/132 = 0.043] 09:16 21175 A12(bkg,off) 1.334 1.183 6.6667 3.0 205.0 09:28 21176 B1 (bkg,on) 1.325 1.253 5.0 2.5556 209.9 09:41 21177 B2 (beta,on) 5.207 4.651 0.124 0.271 1.113 10:41 21178 B3 (D+) [W/R = 5/117 = 0.043(73)] 10:48 21179 B4 (bkg,off) 1.325 1.161 0.014 0.007 0.128 11:01 21180 B5 (beta,off) 9.079 9.375 0.495 0.348 1.42 12:02 21181 B6 (D-) [W/R = 5/117 = 0.043(20)] 12:09 21182 B7 (beta,off) 9.661 9.123 0.4991 0.3541 1.4498 01:09 21183 B8 (D-) [W/R = 1/138 = 0.0072(73)] 01:17 21184 B9 (bkg,off) 1.362 1.198 0.0147 0.0054 0.1334 01:29 21185 B10(beta,off) 6.836 6.089 0.1294 0.2787 1.0544 02:30 21186 B11(D+) [W/R = 4/62 = 0.065(33)] 02:37 21187 B12(bkg,on) 1.247 1.230 0.0128 0.0072 0.1305

25186	Sun Nov 18 07:19:55 2012	Sky

UCNA Shift Change Checklist Date: November 18, 2012 00:00 Shift Persons: Sky, Erik Shaw ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 26 slpm Heater B pressure 12.9 psia Heater C pressure 13.2 psia Tungsten supply press. 300 psig over range, but not sure why, IS THIS OK? Compressor 1 On on

Tungsten Cool supp. 293.0 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 76 psia 1630 eng. 2 temp. 12.84 K cold 1630 JT temp. 6.4 K 1630 outlet temp. 275.6 K 1630 engine speed 130 rpm 1630 supply press. 248 psig 1630 JT press. 200 psig 1630 return press. 0.9 psig 1630 med. press. stor. 45 psig 1410 engine speed 150 rpm 1410 TE-A 14.9 K 1410 TE-B 6.6 K 1410 TE-E 99.8 K 1410 supply press. 242 psig 1410 JT press. 172 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 330 mmHg 4K dewar level 12.5 inHe 1K dewar level 14.1 inHe 4K main flow control 6.0 V LHe temp. 1 5.29 K Heat exch. temp. 3 194.2 K Poly temp. 2 174.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running, run#1346 Switcher status thru AFP temperature 9.9 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 1/4 SCS LHe level 96.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.5 torr CC1 pressure 4.0e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 79.5 % PPM LN2 level 81.7 % AFP LHe level 91.9 % AFP LN2 level 88.3 % PPM current 72(6) A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.4 F West MWPC Temperature 82.7 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 8.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V Kevin said that this voltage was actually 2650 MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr faulty gauge N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1275 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 5011 Hz West muon veto rate 6748 Hz Spectrometer vacuum 2.1e-5 Torr DAQ data_raw disk usage 96% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.3 mA "Beamplot" Capture 0.75

25183	Sun Nov 18 00:19:00 2012	KPH

UCNA Shift Change Checklist Date: November 18, 2012 00:00 Shift Persons: Kevin, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 26 slpm Heater B pressure 12.85 psia Heater C pressure 13.46 psia Tungsten supply press. 300 psig over range, but not sure why, IS THIS OK? Compressor 1 On on Tungsten Cool supp. 294.0 psia Tungsten Cool Diff. 283.0 psia Tungsten Cool ret. 77.1 psia 1630 eng. 2 temp. 13 K cold 1630 JT temp. 6.5 K 1630 outlet temp. 275.0 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 0.9 psig 1630 med. press. stor. 50 psig 1410 engine speed 150 rpm 1410 TE-A 15.5 K 1410 TE-B 6.4 K 1410 TE-E 86.9 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 310 mmHg 4K dewar level 12.8 inHe 1K dewar level 8.1 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 186.4 K Poly temp. 2 168.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: - seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running, run#1345 Switcher status thru AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 96.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.3 torr CC1 pressure 3.7e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 79.58 % PPM LN2 level 84.1 % AFP LHe level 85.6 % AFP LN2 level 81.9 % PPM current 72(6) A(T) AFP current 93.647(6.7962) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.5 F West MWPC Temperature 82.6 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 8.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr faulty gauge N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1275 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2952 Hz West muon veto rate 4411 Hz Spectrometer vacuum 2.1e-5 Torr DAQ data_raw disk usage 96% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 12.2 mA "Beamplot" Capture 0.74

25182	Sat Nov 17 23:27:04 2012	KPH

using the multimeter, the actual voltage on the west MWPC is 2650V. This solves the mystery of why the gain was so high when the dial read "2600V"

25181	Sat Nov 17 23:07:15 2012	bz

New A->B Octet Time MIDAS Run Type 17:21 21140 A1 Bkg OFF E= 1.369 W= 1.177 17:34 21141 A2 Beta OFF E=10.825 W=11.335 Fe/GV=0.4934 SCS/GV=0.3545 (E+W)/GV=1.3944 18:34 21142 A3 D- W/R=0.028(14) 18:41 21143 A4 Bkg ON E= 1.299 W= 1.120 18:54 21144 A5 Beta ON E= 7.966 W= 7.042 Fe/GV=0.1199 SCS/GV=0.2702 (E+W)/GV=1.0126 19:54 21145 A6 D+ W/R=0.096(38) 20.01 21146 A7 Beta ON E=7.912 W=6.957 Fe/GV=0.1201 SCS/GV=0.2734 (E+W)/GV=1.0102 21:02 21147 A8 D+ W/R=0.083(39) 21:09 21148 A9 Bkg ON E=1.287 W=1.156 21:22 21149 A10 Beta OFF E=9.800 W=10.097 Fe/GV=0.4926 SCS/GV=0.3445 (E+W)/GV=1.4028 22:22 21150 A11 D- W/R=0.022(13) 22:30 21151 A12 Bkg OFF E=1.302 W=1.196

25180	Sat Nov 17 17:04:57 2012	CCW

It looks like the east anode HV tripped sometime shortly after 07:00. Consequently, the east rate has been zero all day. Any of the following would have been sufficient to catch this: -Noting that the HV light was off while doing the checklist -Keeping an eye on the PAW plots rather than getting busy with miscellaneous tasks around the area -Having a functioning HV trip alarm on the rack in the counting house Morris has seen to the trip alarm issue, replacing the previous system with a much simpler one. One side of the buzzer is now connected to a TTL generator, and the other to the trip output on the HV supply, which is a short to ground after a trip. This frees up a couple of NIM modules, and the gate generator can be replaced with a battery (4-28V) to free up another.

25179	Sat Nov 17 16:54:28 2012	E.R.Adamek

UCNA Shift Change Checklist Date: November 17, 2012 5:30 pm Shift Persons: Bryan, Evan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.05 psia Heater C pressure 13.25 psia Tungsten supply press. 300 psig over range, but still not sure why Compressor 1 On on Tungsten Cool supp. 294.8 psia Tungsten Cool Diff. 283.9 psia Tungsten Cool ret. 77.3 psia 1630 eng. 2 temp. 12.65 K too cold 1630 JT temp. 6.73 K 1630 outlet temp. 275.5 K 1630 engine speed 130 rpm 1630 supply press. 247 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 42 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.6 K 1410 TE-E 88.7 K 1410 supply press. 243 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 300 mmHg 4K dewar level 11.3 inHe 1K dewar level 24.7 inHe 4K main flow control 6.5 V too high LHe temp. 1 5.3 K Heat exch. temp. 3 145.2 K Poly temp. 2 154.3 K too high flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28 gallon/100 (Lots of ice on N2 gas line going into area) Gate valve status closed D2 Pump port status open MCS Program restart restarted (new run during melt and refreeze) Switcher status thru AFP temperature 9.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 84.1 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure ~180 torr Melting/Refreezing CM5 pressure 2.4 torr CC1 pressure off Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 79.8 % PPM LN2 level 86.6 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.6(63.79) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2630 V MWPC Trip Hold Status trip hold East MWPC Temperature 93.9 F West MWPC Temperature 81.7 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 8.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A still ok? H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status trip hold MWPC Pressure E0 torr faulty gauge N2 - MWPC Differential -2.0 torr Neopentane Flow Rate 10.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1275 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 2827 Hz West muon veto rate 4136 Hz Spectrometer vacuum 2.0e-5 Torr DAQ data_raw disk usage 96% (!) Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.1 mA "Beamplot" Capture 0.64

25176	Sat Nov 17 14:40:10 2012	MFMakela

UCNb box pressure test 12:00 750.60 torr ..... 12:43 750.82 torr OK

25177	Sat Nov 17 13:03:51 2012	CCW

UCNA Shift Change Checklist Date: November 17, 2012 10am Shift Persons: Mark, Chris C ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 13.17 psia Heater C pressure 12.95 psia Tungsten supply press. 300 psig over range, but not sure why Compressor 1 On on Tungsten Cool supp. 295.0 psia Tungsten Cool Diff. 284.0 psia Tungsten Cool ret. 78.0 psia 1630 eng. 2 temp. 16.5 K cold 1630 JT temp. 6 K 1630 outlet temp. 270 K 1630 engine speed 110 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 45 psig 1410 engine speed 150 rpm 1410 TE-A 15.7 K 1410 TE-B 6.6 K 1410 TE-E 89 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 300 mmHg 4K dewar level 09.8 inHe 1K dewar level 25.4 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 176 K Poly temp. 2 125 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 (Lots of ice on N2 gas line going into area) Gate valve status open D2 Pump port status closed MCS Program restart restarted (new run as of 12:50) Switcher status thru AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 1/2 SCS LHe level 86.9 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.4 torr CC1 pressure 1e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 79.8 % PPM LN2 level 89.2 % AFP LHe level 92.8 % AFP LN2 level 92.4 % PPM current 72(6) A(T) AFP current 93.6 A AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.1 F West MWPC Temperature 74.5 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 10.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A still ok? H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status trip hold MWPC Pressure E0 torr faulty gauge N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on,2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on,1275 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 4118 Hz West muon veto rate 5717 Hz Spectrometer vacuum 2.1e-5 Torr DAQ data_raw disk usage 96% (!) Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 15.2 mA "Beamplot" Capture 0.66

25178	Sat Nov 17 12:24:55 2012	ASaunders

Is the time in then previous shift change checklist entry correct? Andy

25171	Sat Nov 17 10:09:40 2012	KPH

Copying from previous log entry for B->A... 21:41 21100 B1 (BG,on) 1.2 1.2 0.0084 0.0040 0.0733 21:53 21101 B2 (beta,on) 11.4 10.2 0.1206 0.2907 1.025 22:54 21102 B3 (D+) [ws/rs = 0.111] 23:01 21103 B4 (BG,off) 1.3 1.3 0.0081 0.0800 0.0800 23:13 21104 B5 (beta,off) 13.3 14.0 0.4840 0.3675 1.4413 00:14 21105 B6 (D-) [ws/rs = 0.0314] 00:21 21106 B7 (beta,off) 14.6 15.3 0.4776 0.3673 1.4223 01:21 21107 B8 (D-) [ws/rs = 0.0486] 01:28 21108 B9 (BG,off) 1.3 1.2 0.0091 0.0038 0.0796 01:41 21109 B10(beta,off) 10.9 9.8 0.1229 0.2897 1.0240 02:41 21110 B11(D+) [ws/rs = 0.0722] 02:48 21111 B12(BG,on) 1.3 1.2 0.0093 0.0045 0.0793 03:01 21112 A1 (BG,off) 1.3 1.2 0.0094 0.0050 0.1673 03:13 21113 A2 (beta,off) 3.9 4.0 0.4815 0.3521 1.8427 (Beam mostly off) 04:14 21114 A3 (D-) [ws/rs = 0.0171] 04:21 21115 A4 (BG,on) 1.3 1.2 0.0095 0.0048 0.0879 04:34 21116 A5 (beta,on) 10.8 9.6 0.1220 0.2921 1.0248 05:34 21118 A6 (D+) [ws/rs = 0.1316] 05:41 21119 A7 (beta,on) 10.7 9.5 0.1238 0.2877 1.0192 06:42 21121 A8 (D+) [ws/rs = 0.0759] 06:49 21122 A9 (BG,on) 1.3 1.1 0.0100 0.038 0.0823 07:02 21123 A10 (beta,off) 3.24 14.34 0.4833 0.3702 0.8898 08:02 21124 A11 (D-) [ws/rs = 0.0314] 08:09 21125 A12 (BG,off) 0.0 1.2 0.0090 0.0051 0.0431

25173	Sat Nov 17 10:06:33 2012	ASaunders

What happened with run 21113 (A2 beta off, very tiny decay rate)? CCW: I gather there was a protracted beam outage, but the DAQ was left running. The gate valve monitor rate was ~4Hz.

25175	Sat Nov 17 08:56:39 2012	ASaunders

In Adam's log entry from 6:49 PM last night, what does "Vented load lock" mean? Andy

25174	Sat Nov 17 08:54:59 2012	ASaunders

Please log the number of wrong/right counts for depol runs in addition to the ratio. Andy

25170	Sat Nov 17 02:37:24 2012	KPH

25172	Sat Nov 17 01:22:26 2012	KPH

25169	Sat Nov 17 01:12:06 2012	KPH

UCNA Shift Change Checklist Date: November 17, 2012 0am Shift Persons: Erik, Kevin ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.10 psia Heater C pressure 13.18 psia Tungsten supply press. 300 psig over range, but not sure why Compressor 1 On on Tungsten Cool supp. 296.9 psia Tungsten Cool Diff. 283.7 psia Tungsten Cool ret. 79.3 psia 1630 eng. 2 temp. 12.77 K cold 1630 JT temp. 6.48 K 1630 outlet temp. 274.9 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 1.2 psig 1630 med. press. stor. 35 psig 1410 engine speed 150 rpm 1410 TE-A 15.6 K 1410 TE-B 6.6 K 1410 TE-E 85.3 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 275 mmHg 4K dewar level 13.41 inHe 1K dewar level 22.54 inHe 4K main flow control 6.5 V LHe temp. 1 5.218 K Heat exch. temp. 3 167.59 K Poly temp. 2 120.66 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted Switcher status down AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 83.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure ~0 torr melt and refreeze in progress CM5 pressure ~0 torr CC1 pressure -- torr melt and refreeze in progress Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 80.0 % PPM LN2 level 95.0 % AFP LHe level 90.4 % AFP LN2 level 87.5 % PPM current 72(6) A(T) AFP current 93.6 A AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.9 F West MWPC Temperature 76.4 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 11.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A ok H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) on Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2850 Hz West muon veto rate 4339 Hz Spectrometer vacuum 2.2e-5 Torr DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 305 ns TBCM001I03 15.5 mA "Beamplot" Capture - unavailable

25168	Fri Nov 16 22:30:29 2012	ATH

Beta Decay: -> All seems ok now, beginning beta decay with a calibration run. (Source paddle inserted so that source serial numbers are facing West.) -> Beam off. Time fdaq run# Type Erate Wrate FeFoil/GV SCSmon/GV Comments/beta2Gv ---------- 18:43 21087 Cal. fully inserted 18:56 21088 Cal. (fully inserted) - 0.5in. 19:08 21089 Cal. (fully inserted) - 1.0in. 19:20 21090 Cal. (fully inserted) - 1.5in. 19:32 21091 Cal. (fully inserted) - 2.0in. 19:44 21092 Cal. (fully inserted) - 2.5in. 19:56 21093 Cal. (fully inserted) - 3.0in. 20:07 21094 Cal. (fully inserted) - 3.5in. 20:19 21095 Cal. (fully inserted) - 4.0in. 20:30 21096 Cal. (fully inserted) - 4.5in. 20:42 21097 Cal. (fully inserted) - 5.0in. 20:55 21098 Cal. (fully inserted) - 5.5in. 21:09 21099 Cal. (fully inserted) - 6.0in. -> Vented load lock during run# 21099 (no sources visible) -> Beam on -> Restarted Chris daq, now on run# 1342 -> Starting a B -> A Octet, BG run length set to 12min. 21:41 21100 B1 (BG,on) 1.2 1.2 0.0084 0.0040 0.0733 21:53 21101 B2 (beta,on) 11.4 10.2 0.1206 0.2907 1.025 22:54 21102 B3 (D+) [ws/rs = 0.111] 23:01 21103 B4 (BG,off) 1.3 1.3 0.0081 0.0800 0.0800 23:13 21104 B5 (beta,off)

25165	Fri Nov 16 17:44:41 2012	ATH

Beta Detectors: -> West Cathode sum spectrum not visible; reduced West MWPC voltage from 2600V to 2340V. -> East Cathode sum pedestal not well separated from signal, increased voltage to 2650V. (P.S. MWPC HV alarm not working.)

25167	Fri Nov 16 17:40:38 2012	JOrtiz3

Attachment 1: .gif

.gif

25166	Fri Nov 16 17:38:54 2012	JOrtiz3

Melt and Refreeze: 340hz

Attachment 1: if

if

25164	Fri Nov 16 16:07:28 2012	ATH

UCNA Shift Change Checklist Date: November 16, 2012 4pm Shift Persons: Adam, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 0 slpm Heater B pressure 12.94 psia Heater C pressure 13.20 psia Tungsten supply press. 310 psig over range, but not sure why Compressor 1 On on Tungsten Cool supp. 297.3 psia Tungsten Cool Diff. 283.8 psia Tungsten Cool ret. 79.8 psia 1630 eng. 2 temp. 16.63 K cold 1630 JT temp. 8.07 K 1630 outlet temp. 282.4 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 1.0 psig 1630 med. press. stor. 43 psig 1410 engine speed 150 rpm 1410 TE-A 16.2 K 1410 TE-B 6.8 K 1410 TE-E 94.0 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 320 mmHg 4K dewar level 11.64 inHe 1K dewar level 22.15 inHe 4K main flow control 2.1 V melt and refreeze in progress LHe temp. 1 16.15 K melt and refreeze in progress Heat exch. temp. 3 191 K Poly temp. 2 112 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restarted Switcher status through AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 6/8 SCS LHe level 86.7 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 305.9 torr melt and refreeze in progress CM5 pressure 2.4 torr CC1 pressure -- torr melt and refreeze in progress Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 80.1 % PPM LN2 level 98.3 % AFP LHe level 84.1 % AFP LN2 level 68.7 % PPM current 72(6) A(T) AFP current 93.647 A AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.9 F West MWPC Temperature 79.0 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 10.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.38 A Top-Veto and GMS Crate (Top Crate) on Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.31 kV West muon veto HV 2.32 kV East muon veto rate 2731 Hz West muon veto rate 4213 Hz Spectrometer vacuum 2.1e-5 Torr DAQ data_raw disk usage 97% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 15.3 mA "Beamplot" Capture 75

25162	Fri Nov 16 14:54:56 2012	ATH

Beta Decay: -> Prad doesn't need the beam, so we have commenced beta decay running: *Confirmed that H-Gx is providing the T0 pulse. *Wy = 59.02 doesn't have a clean pedestal. In the process of diagnosing the problem. -> A->B Octet started at 10:38am with fdaq run# 21071... this octet was terminated. -> New A->B Octet started at 12:03pm with fdaq run# 21076 Time fdaq run# Type Erate Wrate FeFoil/Gv ---------- 12:03 21075 B1,on (BG) 12:16 21076 B2,on (beta) 12:39 beam down -> Found West Horz 1 pedestal offset at 58mV. Could only increase to 78mV, but did so. We'll see if this affects Wy problem. Michael, however, says that since the problematic wire is on end we can run as is. 13:00 Gvmon rate low, CCR retuning ... diagnosing various issues uncovered during attempted source calibration set.

25163	Fri Nov 16 13:04:18 2012	ASaunders

If the beam is off for an hour or more, please take source calibration data. Andy

25159	Fri Nov 16 05:36:39 2012	KPH

Time Run# sdaq Time Type Cycles Comments ----------

---------- 01:44 21060 29785 DE-(45s) 5 02:28 21061 32388 DE+(45s) 5 03:17 21062 35328 DE-(65s) 5 needed to add one more cycle 04:01 21063 38003 DE-(65s) 1 added cycle 04:24 21064 39372 DE+(65s) 5 needed to add one more cycle 05:09 21065 42064 DE+(65s) 1 added cycle 05:30 21066 43273 DE-(90s) 7 06:35 21067 47209 DE+(90s) ?

25161	Fri Nov 16 05:23:49 2012	Hasan

Filled PPM LN2. AFP filled twice, next fill should be done before 2pm.

25160	Fri Nov 16 04:30:37 2012	KPH

Schematic from early 2012

Attachment 1: cs-schematic.pdf

25158	Fri Nov 16 04:28:51 2012	KPH

Taking UCNb data with Spectralon only at atmosphere on tubes 0 and 2 - Starting at fADC run 6062 Tube or base 1 can't hold voltage past 350 V.

25157	Fri Nov 16 02:13:32 2012	KPH

UCNA Shift Change Checklist Date: November 16, 2012 0am Shift Persons: Kevin, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.06 psia Heater C pressure 13.48 psia Tungsten supply press. 310 psig over range, but not sure why Compressor 1 On on Tungsten Cool supp. 299.3 psia Tungsten Cool Diff. 284.6 psia Tungsten Cool ret. 81.1 psia 1630 eng. 2 temp. 11.7 K cold 1630 JT temp. 6.29 K 1630 outlet temp. 274.6 K 1630 engine speed 120 rpm 1630 supply press. 255 psig 1630 JT press. 210 psig 1630 return press. 0.8 psig 1630 med. press. stor. 50 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.2 K 1410 TE-E 87.2 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.1 psig 1K dewar pressure 6.5 psig 4K dewar pressure 295 mmHg 4K dewar level 9.16 inHe 1K dewar level 20.71 inHe 4K main flow control 6.5 V LHe temp. 1 5.17 K Heat exch. temp. 3 166.8 K Poly temp. 2 72.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status down AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 97.5 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.0 torr CM5 pressure 2.4 torr CC1 pressure 1e-4 torr a bit high Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 80.2 % PPM LN2 level 37.1 % AFP LHe level 81.4 % AFP LN2 level 80.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.3 F West MWPC Temperature 80.9 F MWPC Pressure 100 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 11.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 13.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2678 Hz West muon veto rate 4182 Hz Spectrometer vacuum 2.2e-5 Torr DAQ data_raw disk usage 96% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 14.5 mA "Beamplot" Capture 75

25155	Thu Nov 15 23:01:01 2012	ATH

Data-Taking: -> CCR has finished tuning (~7:15pm): PW = 300 CD = 1 One burst every 5s, 5 pulses per burst at 20Hz TBCM1 = 14.9 Cap. Frac. = 75% GV closed Mon = 270 Hz We'll do a quick melt and refreeze... GV closed Mon = about the same; oh well -> Begin polarimetry data-taking: [Chris DAQ Run# for this data is 1340] Note: To all ex situ polarimetry runs we have added a 3s piece at the end during which the proton beam is turned on and the switcher is reset. We are running without the "external trigger" in keeping with the procedure so far this year. In other words, the next cycle is no longer started on a beam pulse. This additional 3s interval allows the "cycle limited" feature of Raymond's program to be used and still retain the switcher transition at the end of a run. So, runs are stopped by waiting for Raymond's program to stop and then stopping the fdaq. Time Run# sdaq Time Type Cycles Comments ---------- ---------- 20:18 21054 10160 D- 5 Stopped on cycle six 21:03 21055 12926 D+ 2 21:24 21056 14111 D+ 5 22:27 21057 17915 P- 5 23:11 21058 20555 P- 5 23:58 21059 23409 P+ 10

25156	Thu Nov 15 21:27:55 2012	bz

Turned down the 1410 to 120 RPM, as we appear to be caught up in LHe production Please take care that the Medium Pressure Storage doesn't go too low

25154	Thu Nov 15 18:12:29 2012	JOrtiz3

Melt and Refreeze: Leaked through check valve, held at 2ish volts until tank was 180mbar and source was 300mbar, 1.5 hrs. Meanwhile, heat exchanger flow was turned off. Held source at 350mbar with tank closed for 30 min. Slowly refroze at 50-70 mbar/hr with tank open, increasing voltage 0.1 per 20 min. Heat exchanger was 15slpm. Closed tank at 25mbar on mensor, which turned out to be 10mbar in source. after freeze-out, increased voltage at 0.1volts per minute until 5.8 volts, 50slpm heat exchanger. Analysis: This was not so good (290hz GV). Perhaps the twenty or so minutes cooling at low pressure (20 to 8 mbar in source) with input from tank left snow on top. Perhaps in general the problem was letting too much gas out of the source, leading to refreezing complications once the liquid was solid.

25153	Thu Nov 15 17:14:44 2012	ATH

Runplan: -> Shutter trapped lifetimes from last night look like flipper off = 41.4 +/- 1.5 s flipper on = 32.7 +/- 1.6 s These are between the best we've seen this year (~49s off, 40s on) and the worst. Total beta decay rates observed during these runs were ~12Hz flipper off and ~8Hz flipper on. The GVclosed rate at the beginning of the evening was about 330 Hz. It has been decided to forge ahead with polarimetry tonight and then beta decay Friday night and throughout the weekend. -> Polarimetry runplan for tonight: D- 5 cycles D+ 5 cycles P- 10 cycles P+ 10 cycles DE-(45s) 5 cycles DE+(45s) 5 cycles DE-(65s) 6 cycles DE+(65s) 6 cycles DE-(90s) 7 cycles DE+(90s) 7 cycles SFT- 10 cycles SFT+ 10 cycles

25152	Thu Nov 15 16:57:04 2012	ATH

UCNA Shift Change Checklist Date: November 15, 2012 4pm Shift Persons: Adam, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 15 slpm Heater B pressure 13.07 psia Heater C pressure 13.18 psia Tungsten supply press. 315 psig over range, but not sure why Compressor 1 On on Tungsten Cool supp. 303.4 psia Tungsten Cool Diff. 286.4 psia Tungsten Cool ret. 84.0 psia 1630 eng. 2 temp. 15.86 K 1630 JT temp. 7.11 K 1630 outlet temp. 278.7 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.0 psig 1630 med. press. stor. 40 psig 1410 engine speed 150 rpm 1410 TE-A 15.6 K 1410 TE-B 6.7 K 1410 TE-E 93.2 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 6.0 psig 4K dewar pressure 290 mmHg 4K dewar level 14.76 inHe 1K dewar level 15.45 inHe 4K main flow control na V source development underway LHe temp. 1 na K source development underway Heat exch. temp. 3 189.7 K Poly temp. 2 64.3 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restarted Switcher status thru AFP temperature 9.4 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 85.6 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 52.9 torr source development work underway CM5 pressure 2.5 torr CC1 pressure -- torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 80.3 % PPM LN2 level 39.4 % AFP LHe level 97.1 % AFP LN2 level 97.8 % PPM current 72(6) A(T) AFP current 93.647 A AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.4 F West MWPC Temperature 81.4 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 10.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 12.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.38 A Top-Veto and GMS Crate (Top Crate) on Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 2732 Hz West muon veto rate 4026 Hz Spectrometer vacuum 2.3e-5 Torr DAQ data_raw disk usage 95% Proton beam status -- Proton burst spacing -- Hz Proton pulses/burst -- Proton countdown -- count Proton pattern width -- ns TBCM001I03 -- mA "Beamplot" Capture --

25151	Thu Nov 15 14:24:45 2012	Erik

Tried to turn on the high voltage on UCNb and Channel 1 went to zero prematurely while ramping

up.

25150	Thu Nov 15 13:38:34 2012	ATH

AFP Magnet: -> Filling...

25149	Thu Nov 15 11:37:00 2012	ATH

Source: -> Set source flow to 4.0V, flapper closed.

25148	Thu Nov 15 05:08:15 2012	Hasan

Polarimetry runs: time FastDAQ SlowDAQ realtime run cycles 03:32 21051 44437 SLD- 9 04:50 21052 49108 SLD+ 9 cycle 9 incomplete, beam shut off

25147	Thu Nov 15 03:16:16 2012	Hasan

UCNA Shift Change Checklist Date: November 15, 2012 00:00 Shift Persons: Kevin, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.26 psia Heater C pressure 13.17 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 304.3 psia Tungsten Cool Diff. 286.0 psia Tungsten Cool ret. 84.9 psia 1630 eng. 2 temp. 13.28 K 1630 JT temp. 6.57 K 1630 outlet temp. 271.9 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 70 psig 1410 engine speed 150 rpm 1410 TE-A 15.6 K 1410 TE-B 6.4 K 1410 TE-E 95.7 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 8.0 psig 4K dewar pressure 250 mmHg 4K dewar level 9.60 inHe 1K dewar level 12.72 inHe 4K main flow control 6.5 V LHe temp. 1 5.17 K Heat exch. temp. 3 155.67 K Poly temp. 2 53.25 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.20 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 98.8 % SCS current 119.18 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 2.40 torr CC1 pressure -- torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.5 % PPM LN2 level 45.1 % AFP LHe level 86.0 % AFP LN2 level 75.9 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 93.2 F West MWPC Temperature 77.0 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 10.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold MWPC Pressure 99.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 13.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2657 Hz West muon veto rate 4013 Hz Spectrometer vacuum 2.7e-5 Torr DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 15.3 mA "Beamplot" Capture 75

25145	Thu Nov 15 02:12:57 2012	ATH

Flipper Tuning: -> GV open, switcher through, shutter open in preparation for flipper tune. -> Performed a "quick" tune in order to leave time for measuring the shutter trapped lifetime: Freq[MHz] FeFoil Counts in 100s FWD[W] RFL[W] ---------- off 903 0 0 28.482 442 5 0.1 28.487 384 5 0 28.492 354 5 0 28.497 367 5 0 28.502 324 5 0 28.507 461 5 0 28.512 688 5 0 28.517 885 5 0 28.477 580 5 0.1 28.472 706 5 0.8 28.467 789 5 0.2 28.497 224 40 0.1 28.502 212 40 0.2 28.507 228 40 0.4 28.492 217 40 0.1 28.487 226 40 0.1 28.482 235 40 0.2 28.477 327 40 0.4 -> Tune frequency selected 28.500 MHz producing ~0.1 W reflected power at 40W input power.

25146	Thu Nov 15 02:11:53 2012	KPH

Test beta run: FastDAQ Run #21049 changed gain on west MWPC from 2650V -> 2600V est beta run: FastDAQ Run #21050

25142	Thu Nov 15 00:27:43 2012	ATH

Runplan: -> Once the SCS fill is completed, the plan is: (1) Ramp up SCS -> Andy's recipe for

minimal field drip is. Ramp directly up to 119.9A. Then, ramp down and stop immediately after the first micro quench. (2) Quick tune of the spin flipper (3) ~30min. of flipper off beta decay data with UCNs to shake down detectors. (4) four cycles D-/four cycles D+ (5) SLD- and SLD+ runs until 6am. -> Things to not forget before we open the gate valve: (1) Pump out GV to Window volume... done Note: CM5 has a +2.4 Torr offset (1a) Close SV4 and turn off turbo before opening GV... done (2) Put air back on switcher... done (3) Turn on currents to bucking coils... done E PMT = 0.15A E Back = 0A W PMT = 0.25A W Back = 0.39A (4) Decay trap plug in... done

25144	Thu Nov 15 00:11:30 2012	KPH

ramping SCS... ramped to 119.18 a

25143	Wed Nov 14 22:14:40 2012	ATH

SCS Ramping: -> Closed LN2 return to begin cooling vapor cooled leads.

25141	Wed Nov 14 20:25:01 2012	ATH

Source: -> Cooling source from stewing... 3.5V -> 5.5V. -> Once stable, 5.5V -> 6.5V -> Pumpout port CLOSED -> T3 peak ~400, Tune Quality ~25 -> Taking GVclosed Data: Flapper Flapping: Chris DAQ Real Time start 19997 (fdaq run# 21045) Flapper Closed: Chris DAQ Real Time start 20696 (fdaq run# 21046) Flapper Open: Chris DAQ Real Time Start 21414(fdaq run# 21047) -> Beam off, flapper closed

25140	Wed Nov 14 19:25:07 2012	ATH

Proton Beam: -> CCR has completed tuning: CD = 1 PW = 300 One burst per 5s, 5 pulses per burst at 20Hz Cap. frac. = 78% We have accepted "production" beam. Beam off.

25139	Wed Nov 14 17:58:15 2012	ATH

SCS: -> 4K dewar level now 15in. so we will commene SCS fill in preparation for ramping up.

25138	Wed Nov 14 17:32:24 2012	ATH

AFP Magnet: -> Put magnetic field warning barriers back up, performed metal sweep. -> Filling AFP magnet in preparation for ramp. -> AFP ramped to 93.647A. Shims set and cycled three times.

25137	Wed Nov 14 14:33:57 2012	Geltenbort

UCNA Shift Change Checklist Date: November 14, 2012 15:10 Shift Persons: Adam, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.12 psia Heater C pressure 13.26 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 305.8 psia Tungsten Cool Diff. 286.9 psia Tungsten Cool ret. 85.6 psia 1630 eng. 2 temp. 14.58 K 1630 JT temp. 7.35 K 1630 outlet temp. 278.2 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 60 psig 1410 engine speed 150 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 93.0 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 14.24 inHe 1K dewar level 12.21 inHe 4K main flow control 3.5 V LHe temp. 1 9.44 K Heat exch. temp. 3 169.76 K Poly temp. 2 72.84 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.0 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restarted Switcher status air off pumping down AFP temperature 25.7 C chiller in vented mode AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 8/8 SCS LHe level 84.9 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.5 torr source idling CM5 pressure 633.9 torr pumping down CC1 pressure -- torr source warmish Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.6 % PPM LN2 level 48.4 % AFP LHe level 80.4 % AFP LN2 level 96.4 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 9 gph AFP chiller set point 24 degC chiller set for vented status AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 92.6 F West MWPC Temperature 78.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 10.3 slpm East PMT Buck. Curr 0 A need to be turned on East Back. Veto Buck. 0 A need to be turned on H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2675 V MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.5

torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0 A need to be turned on West Back. Veto Buck. 0 A need to be turned on Top-Veto and GMS Crate (Top Crate) on V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2671 Hz West muon veto rate 4100 Hz Spectrometer vacuum 2.9e-5 Torr DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns TBCM001I03 na mA "Beamplot" Capture na

25136	Wed Nov 14 05:04:36 2012	Hasan

Filled AFP and partially SCS from 1k. In the process 1k level accidentally went down to 6.1 in. Increased 1410 speed to 150 RPM, JT valve to 36% open and TE-A is around 15.7 in an effort to recover 1k level...next person in, please keep an eye on these parameters...

25135	Wed Nov 14 04:43:23 2012	KPH

Found that west preamp 6V supply was unplugged. Now background events show up. See test run 21043.

25134	Wed Nov 14 03:44:54 2012	KPH

Summary: Both detectors are filled and powered on. Flow is good. PMTs are on. LED is on. The east side looks good. East side does seem to be running a bit warm (93 F) The west side has two problems: 1. It appears to leak into the spectrometer (see previous post) 2. At 2650V there are no background events Other issues: 1. 6V supply was found in the 'on' state. That can't be good. 2. CCR tells us beam will likely be down until 6am at the earliest.

25132	Wed Nov 14 03:16:58 2012	Hasan

UCNA Shift Change Checklist Date: November 14, 2012 00:10 Shift Persons: Kevin, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.29 psia Heater C pressure 13.84 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 305.3 psia Tungsten Cool Diff. 286.6 psia Tungsten Cool ret. 85.6 psia 1630 eng. 2 temp. 13.46 K 1630 JT temp. 6.77 K 1630 outlet temp. 276.0 K 1630 engine speed 110 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 50 psig 1410 engine speed 100 rpm 1410 TE-A 15.8 K 1410 TE-B 6.2 K 1410 TE-E 84.4 K 1410 supply press. 240 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 250 mmHg 4K dewar level 11.63 inHe 1K dewar level 27.60 inHe 4K main flow control 6.5 V LHe temp. 1 5.15 K Heat exch. temp. 3 151.52 K Poly temp. 2 69.12 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33.50 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart running Switcher status air off AFP temperature 25.5 C chiller in vented mode AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 78.7 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 630.9 torr CC1 pressure 1.1e-5 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.7 % PPM LN2 level 52.7 % AFP LHe level 81.7 % AFP LN2 level 75.9 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC chiller set for vented status AFP chiller level light off ========== East Detector Cart (filled by 12:50 am) ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold East MWPC Temperature 94.5 F West MWPC Temperature 76.1 F MWPC Pressure 100 torr N2 - MWPC Differential -2.5 torr Neopentane Flow Rate 13.0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 0 ========== West Detector Cart (filled by 01:15 am, but there's a leak) ========== MWPC HV 2600 V MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 14.3 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1276 V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2572 Hz West muon veto rate 4044 Hz Spectrometer vacuum 4e-5 Torr DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns TBCM001I03 na mA "Beamplot" Capture

25133	Wed Nov 14 01:15:47 2012	KPH

Filled East side detector. Went smooth. Filled West side at 1am. Leak detected of about 5x10^-6 torr. See attached plot.

Attachment 1: cs-schematic.pdf

cs-schematic.pdf

25131	Tue Nov 13 22:44:05 2012	ATH

Shift Summary: -> Disconnected beta detectors from spectrometer vacuum and continued guide pumpdown with SCS turbos. -> Cooled source in preparation for more source studies but beam went down and hasn't yet returned. -> Compared old and new Switcher cold cathode heads and found that the pressure excursions seen previously appear to have been an artifact of the old CC head. ---------- Notes for next shift: -> If it is possible after filling the beta detectors, Mark would like to check the GV closed GVmon rate with the source in its current configuration. (10min. flapper flapping, 10min. flapper closed, 10min. flapper open. No need for fdaq runs since Mark will look at Chris' daq.) Remember not to leave the beam on when measurement is done. -> It will probably be necessary to fill the AFP at some point during the 12am - 8am shift since it looks like the 1k dewar will reach 30in. in the next several hours.

25130	Tue Nov 13 22:35:34 2012	ATH

Comparison of Old and New Cold Cathodes: -> At ~9:55pm switched CC1 to the old cold cathode head. Got E03 first several times, then began reading. -> At ~ 11:15pm switched CC1 back to the new cold cathode head. -> Looks like the pressure spikes were indeed an artifact of the old head, as the attached plot shows. (First zero region is when the switch from new to old CC was made, and second brief zero region indicates change back to the new CC head.)

Attachment 1: cs-schematic.pdf

cs-schematic.pdf

25129	Tue Nov 13 22:31:46 2012	ATH

Source Tests: -> Mark "stewed" the source for a few hours (starting at ~3:45pm, LHe#1 ~9.7K and flow control at 3.5V with flapper closed). -> At 7:08pm adjust flow control to 5.5V, LHe#1 to 5.2K (very quick freezeout this time). -> At 7:11pm adjust flow control to 6.5V, LHe#1 unchanged. -> Beam down, projected one hour until back. Leaving source as is. -> Beam now projected to return at 1am... we'll leave the source cool for next shift to at least do flapping, open, close GV closed rate for the current source.

25128	Tue Nov 13 18:46:31 2012	ATH

Pumpout: -> Transitioned to the "big" SCS pump vlave (DTV7) with SCS decay trap pressure at ~0 Torr. (SCS decay trap CM gauge lower limit is ~ -4.6 Torr) -> Started coupler/switcher differential pumping. -> N2 and neopentane volumes isolated from decay trap volume. SCS turbos started at ~6:15pm when SCS decay trap pressure was at -3.0 Torr. NB: Modifications to Feb. 9, 2012 "UCNA Detector Turn On Instructions" (1) Pumpdown rate 0.1 Torr in 8s. (2) Step 3a moved to be between step 3d and 3e since now both N2 and neopentane volumes pumped by the same pump. (3) Order of valves reversed in step 3a, i.e. first open GPMV3 and GPMV12 then close GPMV5. These modifications were noted on the procedures document. -> CC reader on vacuum cart now set as follows: CC1 = new cold cathode on switcher CC2 = source cold cathode gauge

25120	Tue Nov 13 18:20:02 2012	ATH

Source Tests: -> At ~7:10pm LHe#1 at 8.5K with flow control at 3.5V. Flow control increased to 4.0V. -> LHe#1 to 6.5K. Increase flow control to 4.5V, -> LHe#1 to 5.5K. Increase flow control to 5.0V. -> LHe#1 to 5.2K. Increase flow control to 5.5V. -> LHe#1 still 5.2K. Increase flow to 6.0V. -> LHe#1 still 5.2K. Increase flow to 6.5V. -> Beam on: PW: 285 pulses per burst: 5 one burst every 5s tune quality: ~30 peak T3: ~500 -> Data sets (Chris DAQ run# 1337) Chris DAQ Real Time 36515 start flapper flapping (fdaq run# 21030) Chris DAQ Real Time 37154 start flapper closed (fdaq run# 21031) Chris DAQ Real Time 37800 start flapper open (fdaq run# 21032) -> Beam OFF -> Melt and refreeze: * GVclosed, air off * D2 pumpout port OPEN * SV3, SV4, SV5, MV5, MV6 confirmed CLOSED. * Green Valve confirmed OPEN * CC1 turned OFF * Flapper OPEN * GC5 confirmed OPEN * Orange Valve CLOSED... Peter is pressure watch : will open for Mensor > 450mbar * GC1 OPEN, Check-valve bypass OPEN * V389 (cold input) closed, V387 (warm input) open * Max source pressure ~215mbar * V389 (cold input) open, V387 (warm input) closed * GC1 and check valve bypass CLOSED * Orange valve OPEN * D2 pumpout port CLOSED -> Beam on -> Data sets (Chris DAQ run# 1337) Chris DAQ Real Time 43186 start flapper flapping (fdaq run# 21033) Chris DAQ Real Time 43875 start flapper closed (fdaq run# 21034) Chris DAQ Real Time 44620 start flapper open (fdaq run# 21035) Chris DAQ Real Time 45260 start flapper flapping (fdaq run# 21036) -> Beam off -> Fast Melt and refreeze (1.0V to 300mbar to 6.5V) -> Beam on -> Data sets (Chris DAQ run# 1337) Chris DAQ Real Time 48030 start flapper flapping (fdaq run# 21037) Chris DAQ Real Time 48695 start flapper closed (fdaq run# 21038) Chris DAQ Real Time 49343 start flapper open (fdaq run# 21039) -> Beam off

25127	Tue Nov 13 15:20:19 2012	Geltenbort

UCNA Shift Change Checklist Date: November 13, 2012 16:00 Shift Persons: Adam, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.18 psia Heater C pressure 13.87 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 307.4 psia Tungsten Cool Diff. 287.3 psia Tungsten Cool ret. 87.1 psia 1630 eng. 2 temp. 16.47 K 1630 JT temp. 7.39 K 1630 outlet temp. 279.3 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 1.2 psig 1630 med. press. stor. 70 psig 1410 engine speed 100 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 87.7 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.2 psig 1K dewar pressure 6.5 psig 4K dewar pressure 278 mmHg 4K dewar level 9.18 inHe 1K dewar level 23.41 inHe 4K main flow control 3.0 V LHe temp. 1 11.20 K Mark started partial melt at 15:48 Heat exch. temp. 3 167.82 K Poly temp. 2 67.71 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35.75 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status air off pumping down AFP temperature 25.7 C chiller in vented mode AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 83.0 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 19.3 torr source warmish CM5 pressure 632.1 torr pumping down CC1 pressure -- torr source warmish Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.8 % PPM LN2 level 55.6 % AFP LHe level 96.1 % AFP LN2 level 94.8 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 9 gph AFP chiller set point 24 degC chiller set for vented status AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 95.4 F West MWPC Temperature 76.1 F MWPC Pressure 5.1 torr pumping down N2 - MWPC Differential 0 torr pumping down Neopentane Flow Rate 0 slpm pumping down East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 3.5 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure 5.1 torr pumping down N2 - MWPC Differential -0.9 torr pumping down Neopentane Flow Rate 0.7 slpm pumping down West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) off V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 0.0 kV West muon veto HV 0.0 kV East muon veto rate na Hz West muon veto rate na Hz Spectrometer vacuum -- Torr pumping down DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns TBCM001I03 na mA "Beamplot" Capture

25126	Tue Nov 13 11:17:15 2012	ATH

Pumpdown: -> Switched over to "coarse" needle valve control

25125	Tue Nov 13 09:50:27 2012	ATH

Pumpdown: -> Pumpdown rate was too low so increased fine needle valve. Cryogenics: -> 1K dewar at 29in. so filling the AFP

25124	Tue Nov 13 04:36:17 2012	KPH

Shift summary: - Finished SCS fill until the Dewar ran out down to 7 inch. - Babysat the pump down, opening slightly DTV9 every 2 hours or so aiming for -35 torr/hour. real average has been about -30 torr/hour Should be finished around noon assuming day people keep up the valve fixing.

25123	Mon Nov 12 23:37:53 2012	KPH

UCNA Shift Change Checklist Date: November 13, 2012 00:00 Shift Persons: Kevin H, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.28 psia Heater C pressure 13.70 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 306 psia Tungsten Cool Diff. 286 psia Tungsten Cool ret. 86 psia 1630 eng. 2 temp. 13.31 K 1630 JT temp. 6.84 K 1630 outlet temp. 294.3 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 0.8 psig 1630 med. press. stor. 66 psig 1410 engine speed 99 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 97.4 K 1410 supply press. 240 psig 1410 JT press. 200 psig 1410 return press. 3.3 psig 1K dewar pressure 6 psig 4K dewar pressure 240 mmHg 4K dewar level 16.75 inHe 1K dewar level 24.19 inHe 4K main flow control 6.5 V LHe temp. 1 5.1 K Heat exch. temp. 3 162.9 K Poly temp. 2 57.9 K flapper heater cur 0.18 A Flapper Status: Flapper

Time A: 0.3 seconds Flapper Time C: 4.8 seconds
DOWNSTAIRS ********** N2 Tanker Volume 13.00 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status air off AFP temperature 25.4 C chiller in vented mode AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 66.0 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 627 torr pumping down decay trap CC1 pressure 1.1e-5 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.9 % PPM LN2 level 60.2 % AFP LHe level 89.2 % AFP LN2 level 63.3 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC chiller set for vented status AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.8 F West MWPC Temperature 68.9 F MWPC Pressure --- torr pumping down decay trap N2 - MWPC Differential 0 torr pumping down decay trap Neopentane Flow Rate --- slpm pumping down decay trap East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 3 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure --- torr pumping down N2 - MWPC Differential --- torr pumping down Neopentane Flow Rate --- slpm pumping down West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) off V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 0.0 kV West muon veto HV 0.0 kV East muon veto rate na Hz West muon veto rate na Hz Spectrometer vacuum --- Torr pumping down DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns TBCM001I03 na mA "Beamplot" Capture

25122	Mon Nov 12 23:13:42 2012	ATH

Cryogenics: -> SCS fill started... will continue during next shift ***Do not allow 4K dewar to go below 8in.

25121	Mon Nov 12 22:26:30 2012	ATH

Pumpdown: -> Rate of pumpdown decreased, so opened fine needle valve to bring rate to ~0.1 Torr per 8s.

25118	Mon Nov 12 18:00:42 2012	Geltenbort

UCNA Shift Change Checklist Date: November 12, 2012 18:00 Shift Persons: Adam, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.09 psia Heater C pressure 13.73 psia Tungsten supply press. 315 psig Compressor 1 On on Tungsten Cool supp. 305.7 psia Tungsten Cool Diff. 286.3 psia Tungsten Cool ret. 86.4 psia 1630 eng. 2 temp. 16.47 K 1630 JT temp. 7.73 K 1630 outlet temp. 277.3 K 1630 engine speed 110 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 1.0 psig 1630 med. press. stor. 40 psig 1410 engine speed 100 rpm 1410 TE-A 15.9 K 1410 TE-B 5.9 K 1410 TE-E 83.2 K 1410 supply press. 245 psig 1410 JT press. 195 psig 1410 return press. 3.2 psig 1K dewar pressure 6.5 psig 4K dewar pressure 295 mmHg 4K dewar level 17.05 inHe 1K dewar level 21.11 inHe 4K main flow control 3.5 V LHe temp. 1 8.60 K source warmish Heat exch. temp. 3 172.64 K Poly temp. 2 58.50 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 14.75 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status air off AFP temperature 25.3 C chiller in vented mode AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 7/8 refilled SCS LHe level 68.4 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 2.7 torr source warmish CM5 pressure 626 torr pumping down CC1 pressure -- torr source warmish Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 80.9 % PPM LN2 level 62.1 % AFP LHe level 89.2 % AFP LN2 level 76.5 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 9 gph AFP chiller set point 24 degC chiller set for vented status AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.8 F West MWPC Temperature 68.9 F MWPC Pressure 570 torr pumping down N2 - MWPC Differential 0 torr pumping down Neopentane Flow Rate 0.2 slpm pumping down East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 3 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure 577.5 torr pumping down N2 - MWPC Differential -0.92 torr pumping down Neopentane Flow Rate 0.8 slpm pumping down West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) off V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 0.0 kV West muon veto HV 0.0 kV East muon veto rate na Hz West muon veto rate na Hz Spectrometer vacuum

769 Torr pumping down DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns TBCM001I03 na mA "Beamplot" Capture

25119	Mon Nov 12 17:45:02 2012	ATH

Pre-Shift Activity Summary: -> During the day we helped Tito reinstall the broken anode plane and reassemble the E detector. -> With Andy's help we installed the E detector in the SCS, which went smoothly once we got the detector cart "support pin" (south side) to seat correctly. -> We are currently pumping down at ~35 Torr/hour.

25117	Mon Nov 12 09:54:30 2012	KPH

Filled AFP to raise MPS

25116	Mon Nov 12 07:55:57 2012	KPH

Shift summary: East detector awaiting repair. Filling AFP magnet to build up MPS.

25115	Sun Nov 11 23:20:06 2012	KPH

Shift summary: East detector awaiting repair. Filling AFP magnet to build up MPS.

25113	Sun Nov 11 18:43:17 2012	ATH

Cryogenics: -> Med. Pres. Storage getting low, 1K dewar getting full... filling AFP

25114	Sun Nov 11 18:28:04 2012	ATH

General Plan: -> East detector to be reassembled and reinstalled starting tomorrow morning if anode plane fix this evening is successful. -> Next steps are to pump down (~20 hours now, right?) then fill and energize detectors. ... are there other things we need to do before installing the E detector or prior to pumping (e.g. visual inspection of decay trap foil(s))?

25112	Sun Nov 11 16:16:33 2012	Geltenbort

UCNA Shift Change Checklist Date: November 11, 2012 16:20 Shift Persons: Adam, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.41 psia Heater C pressure 14.03 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 300.0 psia Tungsten Cool Diff. 285.2 psia Tungsten Cool ret. 81.7 psia 1630 eng. 2 temp. 13.45 K 1630 JT temp. 6.94 K 1630 outlet temp. 270.6 K 1630 engine speed 100 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 37 psig 1410 engine speed 99 rpm 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 93.6 K 1410 supply press. 244 psig 1410 JT press. 197 psig 1410 return press. 3.5 psig 1K dewar pressure 6.2 psig 4K dewar pressure 260 mmHg 4K dewar level 13.89 inHe 1K dewar level 24.85 inHe 4K main flow control 6.5 V LHe temp. 1 5.13 K Heat exch. temp. 3 142.01 K Poly temp. 2 60.03 K flapper heater cur 0.18 A Flapper Status: ? ucnems password unknown Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart ? ucnems password unknown Switcher status air off AFP temperature 15.9 C chiller off AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 1/4 refilled SCS LHe level 80.8 % SCS current 0 A Hall Probe vi ? ucnems password unknown LED vi ? ucnems password unknown SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 620 torr guides vented CC1 pressure 8.6e-6 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 81.0 % PPM LN2 level 70.1 % AFP LHe level 79.0 % AFP LN2 level 88.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 0 psig chilller off AFP chiller flow rate 0 gph chilller off AFP chiller set point na degC chilller off AFP chiller level light na chilller off ========== East Detector Cart.....E detector window assembly removed for repair ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature na F West MWPC Temperature na F MWPC Pressure na torr N2 - MWPC Differential na torr Neopentane Flow Rate na slpm East PMT Buck. Curr na A East Back. Veto Buck. na A H20 Chiller off Chiller water level 2.5 ========== West Detector Cart..... Detector off ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure na torr N2 - MWPC Differential na torr Neopentane Flow Rate na slpm West PMT Buck. Curr. na A West Back. Veto Buck. na A Top-Veto and GMS Crate (Top Crate) off V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 0.0 kV West muon veto HV 0.0 kV East muon veto rate na Hz West muon veto rate na Hz Spectrometer vacuum 748 Torr guides vented DAQ data_raw disk usage 95% Proton beam status na Proton burst spacing na seconds Proton pulses/burst na Proton countdown na count Proton pattern width na ns

TBCM001I03 na mA "Beamplot" Capture

25111	Sun Nov 11 07:54:52 2012	Erik

UCNA Shift Change Checklist Date: November 9, 2012 00:55 Shift Persons: Erik, Ruediger ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.37 psia Heater C pressure 13.98 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 299.5 psia Tungsten Cool Diff. 285.0 psia Tungsten Cool ret. 81.3 psia 1630 eng. 2 temp. 13.49 K 1630 JT temp. 6.97 K 1630 outlet temp. 269.4 K 1630 engine speed 100 rpm 1630 supply press. 242 psig 1630 JT press. 210 psig 1630 return press. 1.5 psig 1630 med. press. stor. 45 psig 1410 engine speed 99 rpm 1410 TE-A 14.8 K 1410 TE-B 6.1 K 1410 TE-E 81.2 K 1410 supply press. 240 psig 1410 JT press. 195 psig 1410 return press. 3.5 psig 1K dewar pressure 6.5 psig 4K dewar pressure 260 mmHg 4K dewar level 12.98 inHe 1K dewar level 20.45 inHe 4K main flow control 6.5 V LHe temp. 1 5.132 K Heat exch. temp. 3 145.14 K Poly temp. 2 61.756 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status between down and thru AFP temperature 17.7 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 84.8 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 619.6 torr CC1 pressure 9.6e-6 torr Hall Probe Y 0.003 kG Hall Probe Z 0.002 kG PPM LHe level 81.1 % PPM LN2 level 72.7 % AFP LHe level 91.7 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 76.9 F West MWPC Temperature 72.1 F MWPC Pressure --- torr lower than normal N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm Too low, running out of Neopentane East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller off Chiller water level 3 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm Too low, running out of Neopentane West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing --- seconds Proton pulses/burst --- Proton countdown --- count Proton pattern width --- ns TBCM001I03 --- mA "Beamplot" Capture

25110	Sun Nov 11 00:26:53 2012	DGPhillipsII

- MultiscanPlotter seems to be down. ./Launchdaemons.sh didn't work. Have to read gauges the old-fashioned way. - 4k level too low to do SCS fill now (12.3 in)...SCS level should be at 82% by 8am, so will leave SCS fill to morning crew. - Filling AFP from 1k (med. press. storage currently at ~40). - After AFP fill, med. press. storage levels off at 50, so it should be good until 8am.

25109	Sat Nov 10 16:52:06 2012	MFMakela

UCNb box leak checked with RGA - passed Vacuum still poor, may need to leak check again with a second person. Mark

25108	Fri Nov 9 19:25:33 2012	bz

Slowed down both liquifiers to ~100 RPM. left green arrow valve slightly open on 1630. Source to 7.0V If we are getting ready to run again, speed up the liquifiers, turn down the source, and close the green valve. You may need to run the 1630 and 1410 a little higher for a while to catch up. Please keep the LHe situation in mind when preparing to run.

25107	Fri Nov 9 00:29:30 2012	Hasan

UCNA Shift Change Checklist Date: November 9, 2012 00:55 Shift Persons: Dave, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.95 psia Heater C pressure 13.50 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 309.6 psia Tungsten Cool Diff. 287.0 psia Tungsten Cool ret. 89.6 psia 1630 eng. 2 temp. 13.46 K 1630 JT temp. 6.82 K 1630 outlet temp. 275.0 K 1630 engine speed 120 rpm 1630 supply press. 246 psig 1630 JT

press. 205 psig 1630 return press. 1.1 psig 1630 med. press. stor. 32 psig 1410 engine speed 119 rpm 1410 TE-A 15.4 K 1410 TE-B 6.2 K 1410 TE-E 87.3 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 270 mmHg 4K dewar level 17.27 inHe 1K dewar level 13.49 inHe 4K main flow control 6.0 V LHe temp. 1 5.11 K Heat exch. temp. 3 157.54 K Poly temp. 2 54.48 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 25.2 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 86.2 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 624 torr CC1 pressure 2.7e-5 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 81.7 % PPM LN2 level 91.3 % AFP LHe level 87.1 % AFP LN2 level 87.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 76.9 F West MWPC Temperature 72.1 F MWPC Pressure --- torr lower than normal N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm Too low, running out of Neopentane East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm Too low, running out of Neopentane West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2505 Hz West muon veto rate 3943 Hz Spectrometer vacuum venting torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing --- seconds Proton pulses/burst --- Proton countdown --- count Proton pattern width --- ns TBCM001I03 --- mA "Beamplot" Capture

25106	Thu Nov 8 21:36:58 2012	RanHong

UCNA Shift Change Checklist Date: November 7, 2012 00:05 Shift Persons: Brad, Ran ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.91 psia Heater C pressure 13.70 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 321.1 psia low Tungsten Cool Diff. 288.0 psia low Tungsten Cool ret. 91.6 psia low 1630 eng. 2 temp. 15.64 K 1630 JT temp. 7.43 K 1630 outlet temp. 276.8 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.0 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.4 K 1410 TE-B 5.8 K 1410 TE-E 93.3 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.2 psig 1K dewar pressure 6.5 psig 4K dewar pressure 320 mmHg 4K dewar level 14.84 inHe 1K dewar level 13.56 inHe 4K main flow control 3.7 V LHe temp. 1 7.74 K Heat exch. temp. 3 164.22 K Poly temp. 2 72.35 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.0 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 91.2 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 6.7 torr CM5 pressure 2.2 torr CC1 pressure 2.4e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 81.8 % PPM LN2 level 96.3 % AFP LHe level 85.0 % AFP LN2 level 86.3 % PPM current 72(6) A(T) AFP current 93.649(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 80.3 F West MWPC Temperature 66.5 F MWPC Pressure 100 torr lower than normal N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 20.4 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure 99.6 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 16.3 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.4 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2667 Hz West muon veto rate 4120 Hz Spectrometer vacuum 5e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 295 ns TBCM001I03 14.5 mA "Beamplot" Capture beam ready time: 21:00

25104	Thu Nov 8 13:31:33 2012	MFMakela

Heat exchanger flow changed to - closed source flow reduced to 4 VDC 2.50 lowered to 3.7 VDC

25105	Thu Nov 8 13:22:00 2012	MFMakela

Added Helium to target cooling system, return pressure raised from 63 to 88 psi

25103	Thu Nov 8 05:12:27 2012	bz

More Polarimetry, Slowdaq 1335 Time Slowdaq Time MIDAS Type Cycles Notes 22:26 1665 21019 P- 16 May be bad? Had trouble with MIDAS 00:54 10573 21020 P+ 16 MIDAS problems fixed (rebooted PCUCN17) 03:13 18885 21021 GFT+ (60s) 9 03:47 20885 21022 GFT- (60s) 3 04:01 21770 21023 P- 14

25102	Thu Nov 8 02:59:29 2012	rpicker

Now, a big burp up to 2e-4 torr happened. Going to stop GFT runs and only do P- with AFP off to be on the safe side... no correlation with any state change of the system was seen so far.

25101	Thu Nov 8 02:15:00 2012	rpicker

While doing P- and then P+ runs, we were still experiencing pressure burps up to 1e-4 torr from time to time, so we thought about only doing runs with AFP off. But for the last 45 min, the pressure stayed below 2e-5 torr, despite the fact that nothing was changed in the system. Now we continue with GFT runs until the burps come back.

25100	Thu Nov 8 00:12:17 2012	rpicker

UCNA Shift Change Checklist Date: November 7, 2012 00:05 Shift Persons: Hasan, Ran ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 13.12 psia Heater C pressure 13.56 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 276.2 psia low Tungsten Cool Diff. 277.1 psia low Tungsten Cool ret. 63.8 psia low 1630 eng. 2 temp. 13.14 K 1630 JT temp. 6.78 K 1630 outlet temp. 276.5 K 1630 engine speed 125 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.1 psig 1630 med. press. stor. 40 psig 1410 engine speed 119 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 95.5 K 1410 supply press. 250 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 260 mmHg 4K dewar level 11.93 inHe 1K dewar level 24.87 inHe 4K main flow control 6.5 V LHe temp. 1 5.1 K Heat exch. temp. 3 125 K Poly temp. 2 69.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status down AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 87.2 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.3 torr CC1 pressure 3e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 81.9 % PPM LN2 level 99.2 % AFP LHe level 91.9 % AFP LN2 level 78.4 % PPM current 72(6) A(T) AFP current 93.649(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 81.2 F West MWPC Temperature 70.9 F MWPC Pressure 76 torr lower than normal N2 - MWPC Differential -5.5 torr Neopentane Flow Rate 1.3 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure 99.4 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate -0.63 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.4 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2690 Hz West muon veto rate 4405 Hz Spectrometer vacuum 5e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 295 ns TBCM001I03 14.5 mA "Beamplot" Capture 72 % beam ready time: 22:00

25099	Wed Nov 7 21:29:49 2012	RanHong

UCNA Shift Change Checklist Date: November 7, 2012 00:05 Shift Persons: Hasan, Ran ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 97 slpm Heater B pressure 12.97 psia Heater C pressure 13.64 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 278.8 psia low Tungsten

Cool Diff. 278.2 psia low Tungsten Cool ret. 65.1 psia low 1630 eng. 2 temp. 16.25 K 1630 JT temp. 7.57 K 1630 outlet temp. 279.8 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.0 psig 1630 med. press. stor. 50 psig 1410 engine speed 119 rpm 1410 TE-A 15.5 K 1410 TE-B 6.0 K 1410 TE-E 94.0 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 10.04 inHe 1K dewar level 25.82 inHe 4K main flow control 6.1 V LHe temp. 1 5.12 K Heat exch. temp. 3 137.98 K Poly temp. 2 69.50 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.1 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 92.5 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.2 torr CC1 pressure 3.4e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 81.5 % PPM LN2 level 13.6 % AFP LHe level 83.5 % AFP LN2 level 78.4 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 80.8 F West MWPC Temperature 69.0 F MWPC Pressure 78 torr lower than normal N2 - MWPC Differential -5.5 torr Neopentane Flow Rate 1.51 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure E0 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 0.45 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 10 V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 2576 Hz West muon veto rate 4199 Hz Spectrometer vacuum 3.3e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 16.57 mA "Beamplot" Capture 79 % beam ready time: 22:00

25098	Wed Nov 7 16:17:25 2012	JOrtiz3

Melt+Refreze: Jose, Ran 16:20 starting melt and refreeze, voltage 1.3v, v389 closed v387 open d2 open GV closed+disconn 16:26 Pressure, Lhe 1,3,4,5 responding normally, from billy says 48.8, lhe2 is not changing (says 2.3) 16:31 lhe1 24.1, pressure 141.8 16:34 triple point pressure 170 16:43 voltage increased to 4.0v, turn around at pressure 280 16:52 5 minutes at 170 at 4.0v, then pressure started dropping. 16:53 increase voltage to 5.5v pressure 150 16:55 pressure 35 17:00 pressure 0.1, releasing tank --> 14 mbar 17:06 pressure 0, closed bypass, opened tank, switch 1630 back to v389, switched d2 to closed gv to close+connect, voltage 6.1

25097	Wed Nov 7 05:19:48 2012	bz

For tomorrow: we need P+ and P-, the rest of GFT + and - and as much of the DE and PE as you can get through. Please refer to Adam's Polarimetry document. Slowdaq Run #1334 Time slodaq MIDAS Type Cycles Notes 20:13 8333 21002 SFT- 11 21:31 13019 21003 SFT+ 18 23:36 20512 21004 SFT- 3 23:58 21870 21005 GFT- (5s) 8 00:21 23240 21006 GFT+ (5s) 8 00:45 24660 21007 GFT+ (10s) 10 01:14 26395 21008 GFT- (10s) 10 01:42 28054 21009 GFT- (15s) 8 02:05 29480 21010 GFT+ (15s) 9 02:31 31020 21011 GFT+ (25s) 8 02:55 32480 21012 GFT- (25s) 8 03:19 33925 21013 GFT- (40s) 8 03:46 35525 21014 GFT+ (40s) 15 liquifier emergency 04:34 38420 21015 GFT+ (50s) 9 low UCN rate due to warm source 05:06 40300 21016 GFT- (50s) 10 05:40 42345 21017 GFT- (60s) 6

25096	Wed Nov 7 00:21:39 2012	DGPhillipsII

UCNA Shift Change Checklist Date: November 7, 2012 00:05 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 13.34 psia Heater C pressure 13.60 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 278.8 psia Tungsten Cool Diff. 277.7 psia Tungsten Cool ret. 65.8 psia 1630 eng. 2 temp. 13.76 K 1630 JT temp. 6.87 K 1630 outlet temp. 270.9 K 1630 engine speed 120 rpm 1630 supply press. 248 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 42 psig 1410 engine speed 119 rpm 1410 TE-A 15.4 K 1410 TE-B 5.8 K 1410 TE-E 91.6 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.4 psig 4K dewar pressure 250 mmHg 4K dewar level 13.95 inHe 1K dewar level 20.68 inHe 4K main flow control 6.5 V LHe temp. 1 5.12 K Heat exch. temp. 3 125.92 K Poly temp. 2 88.32 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS

LHe level 82.1 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.2 torr CC1 pressure 3.4e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 82.1 % PPM LN2 level 19.6 % AFP LHe level 90.6 % AFP LN2 level 85.9 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 83.3 F West MWPC Temperature 78.2 F MWPC Pressure 80 torr lower than normal N2 - MWPC Differential -5.8 torr Neopentane Flow Rate 2.14 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure E0 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 0.15 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 10 V (Ch12) East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 2613 Hz West muon veto rate 3872 Hz Spectrometer vacuum 2.6e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 16.57 mA "Beamplot" Capture 79 %

25095	Tue Nov 6 21:58:11 2012	Hasan

UCNA Shift Change Checklist Date: November 6, 2012 17:54 Shift Persons: Hasan, Ran ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.40 psia Heater C pressure 13.64 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 280.5 psia Tungsten Cool Diff. 278.2 psia Tungsten Cool ret. 68.8 psia 1630 eng. 2 temp. 14.09 K 1630 JT temp. 7.19 K 1630 outlet temp. 266.1 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 1.4 psig 1630 med. press. stor. 55 psig 1410 engine speed 119 rpm 1410 TE-A 16.0 K 1410 TE-B 6.0 K 1410 TE-E 89.3 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 250 mmHg 4K dewar level 12.58 inHe 1K dewar level 16.48 inHe 4K main flow control 6.5 V LHe temp. 1 5.12 K Heat exch. temp. 3 123.79 K Poly temp. 2 70.85 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 5/16 SCS LHe level 89.8 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.3 torr CC1 pressure 3.8e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 82.2 % PPM LN2 level 22.1 % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 0 V detector off MWPC Trip Hold Status off East MWPC Temperature 83.7 F West MWPC Temperature 75.7 F MWPC Pressure 82 torr lower than normal N2 - MWPC Differential -6.1 torr Neopentane Flow Rate 2.5 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 0.5 Refilled ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status off MWPC Pressure E0 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 0.47 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (Ch12) East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2765 Hz West muon veto rate 3781 Hz Spectrometer vacuum 1.3e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 14.6 mA "Beamplot" Capture 74% Beam Ready Time: 20:00

25094	Tue Nov 6 12:00:53 2012	MFMakela

UCNb box pressure test 753 torr - ok

25093	Tue Nov 6 08:59:48 2012	MFMakela

Plot showing vacuum burps and periodic changes due to shutter. Cold cathode data

Attachment 1: cs-schematic.pdf

cs-schematic.pdf

25092	Tue Nov 6 05:04:57 2012	bz

Started Depol data because CC1 showed low e-5 torr pressure, some small burps but nothing as large as has been seen. Started with Adam's weekly program, first step is 20 cycles of SLD + and - The slow daq run number is 1333 Time Slodaq time MIDAS Type Cycles Notes 00:40 1110 20994 SLD- 7 One bad cycle 01:40 4708 20995 SLD+ 7 02:39 8298 20996 SLD+ 7 Title in MIDAS is SLD-, forgot to change AFP state 03:40 11960 20998 SLD- 8 first cycle bad, second maybe? 04:49 16066 20999 SLD- 4 05:25 18238 21000 SLD+ 4

25091	Tue Nov 6 00:08:36 2012	E.R.Adamek

UCNA Shift Change Checklist Date: November 6, 2012 00:54 Shift Persons: Dave, Evan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.28 psia Heater C pressure 13.51 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 283.3 psia Tungsten Cool Diff. 280.0 psia Tungsten Cool ret. 68.5 psia 1630 eng. 2 temp. 13.49 K 1630 JT temp. 6.85 K 1630 outlet temp. 271.4 K 1630 engine speed 120 rpm 1630 supply press. 249 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 11.5 K 1410 TE-B 6.1 K 1410 TE-E 93.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 270 mmHg 4K dewar level 14.90 inHe 1K dewar level 15.58 inHe 4K main flow control 6.5 V LHe temp. 1 5.114 K Heat exch. temp. 3 127.25 K Poly temp. 2 74.30 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 8.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart not running Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 87.7 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.2 torr CC1 pressure 5.1e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 82.2 % PPM LN2 level 28.6 % AFP LHe level 89.7 % AFP LN2 level 87.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 84.9 F West MWPC Temperature 77.5 F MWPC Pressure 90 torr N2 - MWPC Differential -6.6 torr Neopentane Flow Rate 4.3 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 2.1 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 11 V (Ch12) East muon veto HV 2.32 kVToo low, running out of Neopentane West muon veto HV 2.32 kV East muon veto rate 31505 Hz TOO HIGH!! West muon veto rate 3890 Hz Spectrometer vacuum 1.4e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 13.5 mA "Beamplot" Capture not known

25090	Mon Nov 5 19:44:16 2012	RanHong

UCNA Shift Change Checklist Date: November 5, 2012 19:44 Shift Persons: Ran, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.41 psia Heater C pressure 13.61 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 283.0 psia Tungsten Cool Diff. 279.1 psia Tungsten Cool ret. 68.9 psia 1630 eng. 2 temp. 13.80 K 1630 JT temp. 7.04 K 1630 outlet temp. 272.7 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 60 psig Just after an AFP fill 1410 engine speed 119 rpm 1410 TE-A 16.3 K 1410 TE-B 6.8 K 1410 TE-E 95.3 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 245 mmHg lower than range 4K dewar level 13.74 inHe 1K dewar level 11.36 inHe 4K main flow control 6.5 V LHe temp. 1 5.098 K Heat exch. temp. 3 126.16 K Poly temp. 2 72.65 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 17 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart restarted Switcher status thru AFP temperature 9.1 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS

LHe level 92.9 % SCS current 119.19 A Hall Probe VT running LLD VT running SV5 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.3 torr CC1 pressure 3.3e-5 torr Hall Probe Y 0.171 kG Hall Probe Z -0.361 kG PPM LHe level 82.3 % PPM LN2 level 30.9 % AFP LHe level 80.6 % AFP LN2 level 73.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 82.8 F West MWPC Temperature 75.5 F MWPC Pressure 97 torr N2 - MWPC Differential -6.9 torr Neopentane Flow Rate 5.7 slpm Too low, running out of Neopentane East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -9.7 torr Neopentane Flow Rate 3.3 slpm Too low, running out of Neopentane West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (Ch12) East muon veto HV 2.34 kVToo low, running out of Neopentane West muon veto HV 2.33 kV East muon veto rate 32733 Hz TOO HIGH!! West muon veto rate 3646 Hz Spectrometer vacuum 1.3e-5 torr (CC2) DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 300 ns TBCM001I03 16.15 mA "Beamplot" Capture 0.78

25089	Mon Nov 5 16:52:15 2012	DGPhillipsII

at 1:30pm: turned off HV on the Lecroy HV4032P unit. This is the beta backing veto HV.

25088	Mon Nov 5 11:54:35 2012	ASaunders

tested all oxygen sensors. all OK

25087	Mon Nov 5 11:54:09 2012	ASaunders

tested all oxygen alamrs. look good.

25086	Mon Nov 5 11:53:29 2012	ASaunders

tested oxygen alarms. ALl good

25085	Mon Nov 5 11:52:59 2012	ASaunders

tested oxygen alarms. All OK

25084	Mon Nov 5 11:52:18 2012	ASaunders

tested all oxygen alarms all Good

25083	Mon Nov 5 11:04:54 2012	ASaunders

tested oxygen alarm system. All working

25082	Mon Nov 5 11:01:55 2012	ASaunders

tested oxygen alarms. ALl OK.

25081	Mon Nov 5 10:46:54 2012	ASaunders

TEsted O2 monitors. All OK.

25080	Mon Nov 5 10:45:09 2012	EIC

test

25079	Mon Nov 5 03:50:50 2012	bz

Saw Chris's email, took that to mean we couldn't take data, told CCR to direct to pRad. Filled AFP and SCS, didn't ramp down AFP because received no instruction to do so.

25078	Mon Nov 5 00:12:04 2012	DGPhillipsII

UCNA Shift Change Checklist Date: November 5, 2012 00:30 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 12.79 psia Heater C pressure 13.62 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 283.0 psia Tungsten Cool Diff. 278.9 psia Tungsten Cool ret. 69.2 psia 1630 eng. 2 temp. 13.41 K 1630 JT temp.

0.78 K 1630 outlet temp. 270.4 K 1630 engine speed 120 rpm 1630 supply press. 248 psig 1630 JT press. 208 psig 1630 return press. 1.0 psig 1630 med. press. stor. 35 psig 1410 engine speed 119 rpm 1410 TE-A 15.8 K 1410 TE-B 6.0 K 1410 TE-E 90.3 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 1K dewar pressure 6.3 psig 4K dewar pressure 260 mmHg 4K dewar level 18.10 inHe 1K dewar level 10.68 inHe 4K main flow control 6.5 V LHe temp. 1 5.09 K Heat exch. temp. 3 141.20 K Poly temp. 2 155.63 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 85.8 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.3 torr CC1 pressure 3.6e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 82.4 % PPM LN2 level 35.9 % AFP LHe level 99.4 % AFP LN2 level 96.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 85.3 F West MWPC Temperature 76.5 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 9.2 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (Ch12) East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 4920 Hz West muon veto rate 3726 Hz Spectrometer vacuum 3.0e-5 torr (CC2) DAQ data_raw disk usage 95% ***NO BEAM***

25077	Sun Nov 4 18:37:36 2012	Hasan

Did a leak check: Switcher kf clamps: 1.7e-8 mbar*l/s -> 9e-8 mbar*l/s E detector flange: 5e-8 -> 1.5e-7 W detector flange: 5e-8 -> 1.5e-7 SCS vacuum(torr): fluctuating b/w 2e-5 <-> 2e-4

25076	Sun Nov 4 16:39:55 2012	RanHong

UCNA Shift Change Checklist Date: November 4, 2012 16:25 Shift Persons: Ran, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.21 psia Heater C pressure 13.58 psia Tungsten supply press. 300 psig higher than range Compressor 1 On on Tungsten Cool supp. 287.1 psia lower than range Tungsten Cool Diff. 281.1 psia Tungsten Cool ret. 74.1 psia lower than range 1630 eng. 2 temp. 13.57 K 1630 JT temp. 6.87 K 1630 outlet temp. 272.0 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.3 psig 1630 med. press. stor. 45 psig 1410 engine speed 119 rpm 1410 TE-A 15.4 K 1410 TE-B 5.9 K 1410 TE-E 84.0 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 270 mmHg 4K dewar level 16.59 inHe 1K dewar level 11.30 inHe 4K main flow control 6.5 V lower than range, but same as last shift LHe temp. 1 5.086 K Heat exch. temp. 3 140.10 K Poly temp. 2 162.32 K higher than ranger flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 24 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 89.8 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.2 torr CC1 pressure tripped torr Hall Probe Y 0.169 kG Hall Probe Z -0.360 kG PPM LHe level 82.5 % PPM LN2 level 38.9 % AFP LHe level 90.8 % AFP LN2 level 73.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 85.0 F West MWPC Temperature 77.4 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 17.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 99.5 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate 15.0 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (Ch12) East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 5461 Hz West muon veto rate 3968 Hz Spectrometer vacuum 8.4e-5 torr (CC2) DAQ data_raw disk usage 94% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 290 ns TBCM001I03 14.5 mA "Beamplot" Capture 0.75

25075	Sun Nov 4 08:23:09 2012	bz

Started an octet, should make it to 4PM shift. Filled the AFP. If you come in at 4, immediately run the quick analyzer and depol checker over all runs collected today and verify that the daq is still working correctly. Spin Flipper Tune from last night freq Frwrd pwr Refl pwr cts/100s --- 0 0 782 28.502 5 0 675 28.507 5 0 755 28.497 5 0 632 28.492 5 0 454 28.487 5 0 264,211 28.485 5 0.05 263 28.482 5 0.05 235,202 28.480 5 0.1 263 28.477 5 0.1 230 28.472 5 0.15 287 28.467 5 0.2 327 28.462 5 0.25 423 28.457 5 0.3 520 28.452 5 0.35 581 28.447 5 0.4 683 Chose 28.482 based on consistent low counts - but there are some strange features. Might be a good idea to do a fastdaq scan over the whole range in increments of 2 kHz.

25074	Sun Nov 4 00:46:08 2012	Erik

UCNA Shift Change Checklist Date: November 4, 2012 0:00 Shift Persons: Erik, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.17 psia Heater C pressure 13.67 psia Tungsten supply press. 280 psig higher than range Compressor 1 On on Tungsten Cool supp. 283.5 psia Tungsten Cool Diff. 278.9 psia Tungsten Cool ret. 69.5 psia 1630 eng. 2 temp. 13.59 K 1630 JT temp. 6.86 K 1630 outlet temp. 271.2 K 1630 engine speed 115 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 28 psig 1410 engine speed 100 rpm 1410 TE-A 16.5 K 1410 TE-B 6.2 K 1410 TE-E 85.5 K 1410 supply press. 245 psig 1410 JT press. 210 psig 1410 return press. 3.3 psig 1K dewar pressure 6.0 psig 4K dewar pressure 265 mmHg 4K dewar level 13.87 inHe 1K dewar level 25.29 inHe 4K main flow control 6.5 V LHe temp. 1 5.017 K Heat exch. temp. 3 127.85 K Poly temp. 2 58.837 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 28 gallon/100 Gate valve status closed D2 Pump port status open MCS Program restart restarted Switcher status thru AFP temperature 9.6 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 88.8 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.1 torr CC1 pressure 3.2e-5 torr Hall Probe Y -0.016 kG Hall Probe Z +0.005 kG PPM LHe level 82.6 % PPM LN2 level 44.1 % AFP LHe level 83.2 % AFP LN2 level 79.4 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 85.5 F West MWPC Temperature 74.9 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 16.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 99.5 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 14.2 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (Ch12) East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 5352 Hz higher than usual West muon veto rate 3682 Hz Spectrometer vacuum 1.0e-5 torr (CC2) pressure spikes started around 13:00 and zero spikes before that... DAQ data_raw disk usage 94% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 290 ns TBCM001I03 14.5 mA "Beamplot" Capture 0.84

25073	Sat Nov 3 19:13:50 2012	Sky

Since we are not taking data, no fills are imminent and medium pressure storage is fine, we are leaving. We took beam on target for a couple of hours. The GV mon was at 300 with GV closed. The beta rates and background rates for some short runs we took were normal, but the QADC sum plots were still funny. The SIS and SCALER rates stayed within 1% for a couple of hours. Now we're stopping the beam since neither Hasan nor I are going to ramp the AFP.

25072	Sat Nov 3 18:11:09 2012	Hasan

UCNA Shift Change Checklist Date: November 3, 2012 17:00 Shift Persons: Sky, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 13.26 psia Heater C pressure 13.82 psia Tungsten supply press. 300 psig higher than range Compressor 1 On on Tungsten Cool supp. 286 psia Tungsten Cool Diff. 280.2 psia Tungsten Cool ret. 71.2 psia 1630 eng. 2 temp. 13.59 K 1630 JT temp. 6.88 K 1630 outlet temp. 272.6 K 1630 engine speed 110 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.2 psig 1630 med. press. stor. 48 psig 1410 engine speed 100 rpm 1410 TE-A 16.1 K 1410 TE-B 5.8 K 1410 TE-E 85.5 K 1410 supply press. 250 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K

dewar pressure 200 mmHg 4K dewar level 12.05 inHe 1K dewar level 20.91 inHe 4K main flow control 6.5 V LHe temp. 1 5.02 K Heat exch. temp. 3 131.84 K Poly temp. 2 94.70 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.1 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 93.1 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.1 torr CC1 pressure --- torr Hall Probe Y -0.016 kG Hall Probe Z -0.005 kG PPM LHe level 82.7 % PPM LN2 level 46.7 % AFP LHe level 95.9 % AFP LN2 level 96.1 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 85.1 F West MWPC Temperature 78.0 F MWPC Pressure 100 torr N2 - MWPC Differential -7.8 torr Neopentane Flow Rate 17.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 99.5 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 14.3 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.31 kV East muon veto rate 5398 Hz higher than usual West muon veto rate 3723 Hz Spectrometer vacuum 1.4e-4 torr (CC2) pressure spikes started around 13:00 and zero spikes before that... DAQ data_raw disk usage 95% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 290 ns TBCM001I03 14.6 mA "Beamplot" Capture 0.76 DAQ still struggling, not taking data

25071	Sat Nov 3 15:36:44 2012	DJS

DAQ still not working. FIFO overflow problem persists. Is it time to start removing inputs? In the meantime, we are to leave the beam off. AFP is ramped down. Continue to do shift change checklists, but taking a whole shift not necessary (save being here for tests and diagnostics). Extrapolate medium pressure storage and magnet levels to end of shift to see if fill will be necessary.

25070	Sat Nov 3 09:59:45 2012	DJS

UCNA Shift Change Checklist Date: November 3, 2012 08:50 Shift Persons: Dan, Chris C ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 13.3 psia Heater C pressure 13.8 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 285 psia Tungsten Cool Diff. 280 psia Tungsten Cool ret. 70 psia 1630 eng. 2 temp. 13.6 K 1630 JT temp. 7 K 1630 outlet temp. 270 K 1630 engine speed 110 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 40 psig 1410 engine speed 99 rpm 1410 TE-A 16.6 K 1410 TE-B 5.8 K 1410 TE-E 100 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.4 psig 1K dewar pressure 6 psig 4K dewar pressure 200 mmHg 4K dewar level 11.2 inHe 1K dewar level 22/7 inHe 4K main flow control 6.5 V LHe temp. 1 5 K Heat exch. temp. 3 135 K Poly temp. 2 178 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.1 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 99.9 % SCS current 119.13 A Hall Probe vi not running, restarting LED vi not running, restarting SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.2 torr CC1 pressure 9.6e-6 torr Hall Probe Y 0.171 kG Hall Probe Z -0.362 kG (Change in last digit) PPM LHe level 82.8 % PPM LN2 level 48.7 % AFP LHe level 90.3 % AFP LN2 level 85.1 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 81.1 F West MWPC Temperature 69.2 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 16.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.4 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3756 Hz West muon veto rate 4113 Hz Spectrometer vacuum 9.6e-6 torr (CC2) DAQ data_raw disk usage 95% too high!

Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 290 ns TBCM001I03 14.6 mA "Beamplot" Capture 0.76 DAQ still struggling, not taking data.

25069	Sat Nov 3 01:25:11 2012	bz

Came in tonight to find the Medium Pressure Storage at 10 PSI! Did an AFP Fill first, because you can immediately start to run LHe through the lines. Let it go through bypass for ~half an hour. Slowed the 1410 to 80 RPM, and 1630 to 100 RPM. Increased flow to source to 6.5V

25068	Sat Nov 3 01:05:57 2012	DGPhillipsII

UCNA Shift Change Checklist Date: November 3, 2012 00:15 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.90 psia Heater C pressure 13.27 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 284.9 psia Tungsten Cool Diff. 280.2 psia Tungsten Cool ret. 70.2 psia 1630 eng. 2 temp. 13.55 K 1630 JT temp. 6.74 K 1630 outlet temp. 270.9 K 1630 engine speed 120 rpm 1630 supply press. 235 psig 1630 JT press. 195 psig 1630 return press. 0.4 psig performing a fill now... 1630 med. press. stor. 20 psig way too low...we will fix this now 1410 engine speed 129 rpm 1410 TE-A 15.9 K 1410 TE-B 5.9 K 1410 TE-E 82.6 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 280 mmHg 4K dewar level 16.42 inHe 1K dewar level 25.66 inHe 4K main flow control 6.5 V LHe temp. 1 4.92 K Heat exch. temp. 3 130.11 K Poly temp. 2 153.58 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.3 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 87.7 % SCS current 119.13 A Hall Probe vi running LED vi not running DAQ acting up...turned off to trouble-shoot SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.2 torr CC1 pressure 2.6*10^-5 torr Hall Probe Y 0.171 kG Hall Probe Z -0.361 kG PPM LHe level 82.8 % PPM LN2 level 51.4 % AFP LHe level 85.4 % AFP LN2 level 87.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 81.6 F West MWPC Temperature 68.1 F MWPC Pressure 100 torr N2 - MWPC Differential -7.7 torr Neopentane Flow Rate 16.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3555 Hz West muon veto rate 3955 Hz Spectrometer vacuum 9.1e-6 torr (CC2) DAQ data_raw disk usage 95% too high! Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 count Proton pattern width 290 ns TBCM001I03 14.3 mA "Beamplot" Capture 0.84 20 Hz

25067	Fri Nov 2 18:04:37 2012	ASaunders

source calibration runs Bi, Ce, Sn; runs 20 minutes long 20901 sources all the way in 20902 back 0.5 inch 20903 back 1.0 inch 20904 back 1.5 inch 20905 back 2.0 inch 20906 back 2.5 inch 20907 back 3.0 inch 20908 back 3.5 inch 20909 back 4.0 inch 20910 back 4.5 inch 20911 back 5.0 inch 20913 back 2.5 inch long run probably will extend into later runs online histos were not updating during run 20913 and following; the data may still be OK 20917 back 2.5 inch long run; probably will extend into later runs

25066	Fri Nov 2 17:23:58 2012	Hasan

UCNA Shift Change Checklist Date: November 2, 2012 16:15 Shift Persons: Hasan, Ran ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 101 slpm Heater B pressure 12.86 psia Heater C pressure 13.32 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 285.2 psia Tungsten Cool Diff. 280.0 psia Tungsten Cool ret. 70.5 psia 1630 eng. 2 temp. 13.66 K 1630 JT temp. 6.81 K 1630 outlet temp. 271.7 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 25 psig 1410 engine speed 129 rpm Too high, so we turned it down to ~120 1410 TE-A 15.9 K 1410 TE-B 5.8 K 1410 TE-E 102.0 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.2 psig 1K

dewar pressure 7.0 psig 4K dewar pressure 280 mmHg 4K dewar level 14.25 inHe 1K dewar level 24.97 inHe 4K main flow control 5.5 V LHe temp. 1 4.93 K Heat exch. temp. 3 120.55 K Poly temp. 2 62.48 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.2 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 92.5 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.3 torr CC1 pressure 3.6*10^-5 torr Hall Probe Y 0.171 kG Hall Probe Z -0.362 kG PPM LHe level 82.9 % PPM LN2 level 53.9 % AFP LHe level 85.4 % AFP LN2 level 80.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 80.9 F West MWPC Temperature 66.0 F MWPC Pressure 100 torr N2 - MWPC Differential -7.2 torr Neopentane Flow Rate 16.35 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1.25 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 3731 Hz West muon veto rate 3774 Hz Spectrometer vacuum 7.6e-6 torr (CC2) DAQ data_raw disk usage 94%

25064	Fri Nov 2 05:39:33 2012	DGPhillipsII

--FastDAQ still having issues. 01:30am: noticed that we couldn't print out a shift change checklist or download any files to pcucn18. 02:00am: found reason behind the printing and download problems. Noticed that disk on pcucn was completely full. 02:30am: under /var/MultiscanDB we noticed a 4.5GB log file, "MultiscanDB.log.py". We deleted this to free disk space and rebooted pcucn18. But now we noticed that the Multiscan Plotter is no longer functioning...might be a mySQL issue. 04:17am: Found that changing the /var/lib/mysql and all subdirectories to being owned by user mysql solved all issues with the MultiscanDB grapher not working. All datastreams have recovered. 05:00am: rebooted the computer controlling the LED pulser and restarted the LED labview program - not based on an observation on an oscilloscope but just in order to be thorough. This appears to have resolved the FastDAQ issue - the Difference between the SIS and SCLR now remains (mostly) below 1% (usually between 0 and 0.2%, with occasional pulses to 2%, mostly on the E2/4). The rates are mostly higher(!) than before, with only the SCLR values remaining the same. If this problem recurs, then restarting the computer running the LED pulser vi is probably the first thing to do, although whether this was the source of the problem is still not known. Additionally, the West Anode now no longer overlaps with 0 so much, and the other graphs all appear to be normal (for a background run). 05:30am: FastDAQ seems to be running fine for the past half-hour.

25065	Fri Nov 2 04:21:02 2012	bz

Please be aware that we are making more liquid than we have medium pressure storage to handle we have slowed the 1410 and the 1630, and increased the source flow voltage to 6.0 V, we may need to slow them down even more, in order to prevent us from draining the MPS.

25063	Fri Nov 2 03:08:09 2012	DGPhillipsII

UCNA Shift Change Checklist Date: November 2, 2012 02:30 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.70 psia Heater C pressure 13.06 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 283.9 psia Tungsten Cool Diff. 279.6 psia Tungsten Cool ret. 69.4 psia 1630 eng. 2 temp. 13.71 K 1630 JT temp. 6.70 K 1630 outlet temp. 271.7 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 207 psig 1630 return press. 0.8 psig 1630 med. press. stor. 25 psig 1410 engine speed 159 rpm Too high, so we turned it down to ~120 1410 TE-A 14.9 K 1410 TE-B 6.1 K 1410 TE-E 93.3 K 1410 supply press. 230 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 275 mmHg 4K dewar level 17.25 inHe 1K dewar level 18.11 inHe 4K main flow control 5.0 V LHe temp. 1 4.89 K Heat exch. temp. 3 123.10 K Poly temp. 2 65.75 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.4 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 86.0 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.3 torr CC1 pressure 2.9e-5 torr Hall Probe Y 0.171

kG Hall Probe Z -0.361 kG PPM LHe level 85.0 % PPM LN2 level 58.4 % AFP LHe level 94.7 % AFP LN2 level 93.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 81.7 F West MWPC Temperature 71.8 F MWPC Pressure 100 torr N2 - MWPC Differential -7.0 torr Neopentane Flow Rate 16.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. Off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 13.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.34 kV West muon veto HV 2.33 kV East muon veto rate 3696 Hz West muon veto rate 3769 Hz Spectrometer vacuum 9.3e-6 torr (CC2) DAQ data_raw disk usage 94%

25062	Thu Nov 1 16:43:05 2012	RanHong

UCNA Shift Change Checklist Date: November 1, 2012 00:30 Shift Persons: Ran, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 19 slpm Heater B pressure 12.74 psia Heater C pressure 11.94 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 286.3 psia Tungsten Cool Diff. 280.1 psia Tungsten Cool ret. 71.2 psia 1630 eng. 2 temp. 14.54 K Has gone down significantly since yesterday... 1630 JT temp. 6.95 K 1630 outlet temp. 273.9 K 1630 engine speed 130 rpm Engine speed appears low... 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1 psig 1630 med. press. stor. 50 psig 1410 engine speed 119 rpm 1410 TE-A 12.4 K 1410 TE-B 5.7 K 1410 TE-E 80.7 K 1410 supply press. 240 psig 1410 JT press. 180 psig 1410 return press. 3.2 psig 1K dewar pressure 10 psig 4K dewar pressure 300 mmHg 4K dewar level 14.15 inHe 1K dewar level 14.65 inHe 4K main flow control 4.0 V LHe temp. 1 6.254 K Heat exch. temp. 3 154.78 K Poly temp. 2 69.683 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program restart --- Switcher status thru AFP temperature 9.3 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 92.0 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.2 torr CC1 pressure 5.8e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.36 kG PPM LHe level 83.1 % PPM LN2 level 61.6 % AFP LHe level 90.3 % AFP LN2 level 91.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 81.9 F West MWPC Temperature 70.2 F MWPC Pressure 100 torr N2 - MWPC Differential -7.4 torr Neopentane Flow Rate 16.3 slpm East PMT Buck. Curr Off A East Back. Veto Buck. 0.15 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 99.5 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 4052 Hz West muon veto rate 3804 Hz Spectrometer vacuum 1.5e-5 torr (CC2) DAQ data_raw disk usage 94%

25061	Thu Nov 1 01:15:41 2012	DGPhillipsII

UCNA Shift Change Checklist Date: November 1, 2012 00:30 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.61 psia Heater C pressure 13.52 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 286.5 psia Tungsten Cool Diff. 279.6 psia Tungsten Cool ret. 72.0 psia 1630 eng. 2 temp. 10.32 K Has gone down significantly since yesterday... 1630 JT temp. 6.03 K 1630 outlet temp. 267.5 K 1630 engine speed 110 rpm Engine speed appears low... 1630 supply press. 248 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 35 psig 1410 engine speed 121 rpm 1410 TE-A 16.9 K 1410 TE-B 5.8 K 1410 TE-E 96.3 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 315 mmHg 4K dewar level 18.05 inHe 1K dewar level 21.56 inHe 4K main flow control 6.5 V LHe temp. 1 4.96 K Heat exch. temp. 3 129.09 K Poly temp. 2 70.37 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25 gallon/100 Gate valve status

closed D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 9.6 C AFP frequency 28.502 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 86/1 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.2 torr CC1 pressure 3.8e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.36 kG PPM LHe level 83.2 % PPM LN2 level 66.8 % AFP LHe level 99.8 % AFP LN2 level 99.4 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 85.3 F West MWPC Temperature 74.9 F MWPC Pressure 100 torr N2 - MWPC Differential -7.6 torr Neopentane Flow Rate 17.3 slpm East PMT Buck. Curr Off A East Back. Veto Buck. 0.15 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -5.5 torr Neopentane Flow Rate 14.4 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V (Ch12) East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 3755 Hz West muon veto rate 3780 Hz Spectrometer vacuum 1.1e-5 torr (CC2) DAQ data_raw disk usage 94% ***NO BEAM***

25060	Thu Nov 1 00:44:33 2012	bz

Forgot to put in entry last night on the matter of the daq the daq is experiencing some issues preventing us from taking data, specifically, the daq is having some of the SIS FIFOs fill and this is expressed in a difference between the SIS 2/4 triggers and the SCLR 2/4 triggers. We have not been able to diagnose the issue.

25059	Thu Nov 1 00:35:28 2012	MFMakela

Made a fill of the AFP in order to be ready to stop 1410 to replace Black Max. During fill the afp lHe line temp started at 297 - ok, but when it was cooled it sat at 8K not 19K. It was also slow to warm up so I reseated the DB25 connector and things look better.

25058	Wed Oct 31 12:45:58 2012	MFMakela

Made a fill of the AFP in order to be ready to stop 1410 to replace Black Max. During fill the afp lHe line temp started at 297 - ok, but when it was cooled it sat at 8K not 19K. It was also slow to warm up so I reseated the DB25 connector and things look better.

25057	Wed Oct 31 03:55:55 2012	DGPhillipsII

Dave & Bryan 1:55am: Performed AFP fill (med. press. storage was 33 PSI). 3:45am: Performed SCS fill.

25056	Wed Oct 31 01:34:13 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 31, 2012 00:10 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.65 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 289.8 psia Tungsten Cool Diff. 281.9 psia Tungsten Cool ret. 73.8 psia 1630 eng. 2 temp. 12.43 K 1630 JT temp. 6.48 K 1630 outlet temp. 270.1 K 1630 engine speed 140 rpm 1630 supply press. 248 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 35 psig 1410 engine speed 151 rpm 1410 TE-A 16.8 K 1410 TE-B 6.1 K 1410 TE-E 90.5 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 320 mmHg 4K dewar level 14.00 inHe 1K dewar level 23.19 inHe 4K main flow control 6.0 V LHe temp. 1 4.93 K Heat exch. temp. 3 130.34 K Poly temp. 2 144.47 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31 gallon/100 Gate valve status open D2 Pump port status closed MCS Program restart running Switcher status thru AFP temperature 10.2 C AFP frequency 28.502 MHz AFP forward power 34 W AFP N2 dewar level 1/2 SCS LHe level 87.2 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.1 torr CC1 pressure 3.6e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 83.5 % PPM LN2 level 75.2 % AFP LHe level 93.0 % AFP LN2 level 88.9 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 87.2 F West MWPC Temperature 80.1 F MWPC Pressure 100 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 17.4 slpm East PMT Buck. Curr 0.15 A East Back.

Veto Buck. Off A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 14.7 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1140 V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3744 Hz West muon veto rate 4133 Hz Spectrometer vacuum 1.1e-5 torr (CC2) DAQ data_raw disk usage 94% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 14.4 mA "Beamplot" Capture 0.80 20 Hz

25055	Wed Oct 31 00:05:29 2012	RanHong

UCNA Shift Change Checklist Date: October 30, 2012 17:00 Shift Persons: Ran, Sky, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.87 psia Heater C pressure 13.25 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 289.3 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 73.9 psia 1630 eng. 2 temp. 12.25 K 1630 JT temp. 6.46 K 1630 outlet temp. 272.2 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 50 psig 1410 engine speed 151 rpm 1410 TE-A 17.0 K 1410 TE-B 6.3 K 1410 TE-E 84.2 K 1410 supply press. 250 psig 1410 JT press. 160 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 320 mmHg 4K dewar level 12.26 inHe 1K dewar level 21.09 inHe 4K main flow control 6.0 V LHe temp. 1 4.93 K Heat exch. temp. 3 126.3 K Poly temp. 2 172.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 92.5 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.1 torr CC1 pressure 1.1e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.360 kG PPM LHe level 83.6 % PPM LN2 level 77.8 % AFP LHe level 87.7 % AFP LN2 level 83.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....ON ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 86.3 F West MWPC Temperature 72.4 F MWPC Pressure 101 torr N2 - MWPC Differential -0.4 torr Neopentane Flow Rate 17.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 (99.5) torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 15.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1140 V (Ch12) East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3762 Hz West muon veto rate 3750 Hz Spectrometer vacuum 1.3e-5 torr (CC2) DAQ data_raw disk usage 94% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 285 ns TBCM001I03 14.1 mA "Beamplot" Capture 0.82 20 Hz

25054	Tue Oct 30 08:03:33 2012	bz

5W Flipper Tune from last night attached. Indicates a long broad valley in the region over which we scanned. Decided to tune spin flipper to 28.502 MHz

Attachment 1: 01012.pdf

25053	Tue Oct 30 00:51:18 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 30, 2012 00:01 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 100 slpm Heater B pressure 12.87 psia Heater C pressure 13.51 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.4 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 74.7 psia 1630 eng. 2 temp. 13.41 K 1630 JT temp. 6.96 K 1630 outlet temp. 274.0 K 1630 engine speed 140 rpm 1630 supply press. 248 psig 1630 JT press. 205 psig 1630 return press. 1.1 psig 1630 med. press. stor. 70 psig 1410 engine speed 151 rpm 1410 TE-A 16.9 K 1410 TE-B 6.0 K 1410 TE-E 86.9 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 290 mmHg 4K dewar level 8.87 inHe 1K dewar level 20.25 inHe 4K main flow control 6.0 V LHe temp. 1 4.93 K Heat exch. temp. 3 155.58 K Poly temp. 2 151.60 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

DOWNSTAIRS
********** N2 Tanker Volume 19 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 90.7 % SCS current 119.13 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.1 torr CC1 pressure 3.2e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 83.7 % PPM LN2 level 83.0 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off
========== East Detector Cart.....ON
========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 92.0 F West MWPC Temperature 80.5 F MWPC Pressure 100 torr N2 - MWPC Differential -0.9 torr Neopentane Flow Rate 18.5 slpm East PMT Buck. Curr off A East Back. Veto Buck. 0.15 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure E0 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 15.2 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1140 V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 4144 Hz West muon veto rate 4037 Hz Spectrometer vacuum 1.3e-5 torr (CC2) DAQ data_raw disk usage 94% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 285 ns TBCM001I03 14.1 mA "Beamplot" Capture 0.82 20 Hz

25052	Tue Oct 30 00:03:02 2012	Erik

UCNA Shift Change Checklist Date: October 29, 2012 16:00 Shift Persons: Erik, Ran
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.21 psia Heater C pressure 12.17 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.5 psia Tungsten Cool Diff. 281.9 psia Tungsten Cool ret. 74.4 psia 1630 eng. 2 temp. 12.57 K 1630 JT temp. 6.42 K 1630 outlet temp. 280.7 K 1630 engine speed 135 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 70 psig 1410 engine speed 151 rpm 1410 TE-A 10.8 K 1410 TE-B 4.7 K 1410 TE-E 68.7 K 1410 supply press. 110 psig 1410 JT press. 60 psig 1410 return press. 0 psig Both of the liquifiers were out of whack. Andy managed to get them under control. 1K dewar pressure 0 psig 4K dewar pressure 440 mmHg 4K dewar level 5.84 inHe 1K dewar level 17.80 inHe 4K main flow control 5.0 V LHe temp. 1 4.915 K Heat exch. temp. 3 175.72 K Poly temp. 2 62.213 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 21 gallon/100 Gate valve status closed D2 Pump port status open Switcher status thru AFP temperature 9.9 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 99.8 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 5.0 torr CM5 pressure 1.9 torr CC1 pressure error torr making source Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 83.8 % PPM LN2 level 85.9 % AFP LHe level 99.7 % AFP LN2 level 98.3 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off
========== East Detector Cart.....OFF
========== MWPC HV 0FF V MWPC Trip Hold Status OFF East MWPC Temperature 111.0 F West MWPC Temperature 83.0 F MWPC Pressure 100 torr N2 - MWPC Differential -1.8 torr Neopentane Flow Rate 16.5 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 99.5 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1140 V (Ch12) East muon veto HV 4140 kV West muon veto HV 3844 kV East muon veto rate 2.32 Hz West muon veto rate 2.32 Hz Spectrometer vacuum 8e-5 torr (CC2) DAQ data_raw disk usage 93% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 13.5 mA "Beamplot" Capture undetermined

25051	Mon Oct 29 23:50:17 2012	Erik

Source Calibration runs Time Midas Description 17:33 20818 Source all the way in 20 min. 17:57 20819 Source pulled out 0.5 inches 20 min. 18:21 20820 Source pulled out 1 inch 20 min. 18:45 20821 Source pulled out 1.5 inches 20 min. 19:08 20822 Source pulled out 2 inches 20 min. 19:30 20823 Source pulled out 2.5 inches 20 min. 19:55 20824 Source pulled out 3 inches 20 min. 20:35 20827 Source pulled out 3.5 inches 20 min. 20:58 20828 Source pulled out 4 inches 22 min. 21:22 20829 Source pulled out 4.5 inches 20 min. 21:45 20830 Source pulled out 5 inches 21 min. 22:15 20831 Source centered Source test GV closed Time MCS Real Time Midas Type 20:17 12458 20825 flapper open 5 min. 20:26 12965 20826 flapper closed 5 min. The rest of the

time when there was beam the flapper was flapping.

25050	Sun Oct 28 22:53:09 2012	DGPhillipsII

Dave and Ran H. Filled AFP LHe to 93.6%

25049	Sun Oct 28 18:46:01 2012	DGPhillipsII

Awhile ago Mark got the 1410 liquifier running again. We are now producing LHe in the 1k dewar. Filled SCS up to ~86%. Filled AFP LN2 a few hours ago.

25048	Sun Oct 28 14:15:09 2012	MFMakela

Source pumped out Cooled down filling with D2 source voltage 4 VDC flapper open beam - tuning heat exchanger flow - 20

25047	Sun Oct 28 13:07:16 2012	DGPhillipsII

Filling SCS now. Also filling AFP 160L dewar.

25046	Sun Oct 28 08:45:27 2012	MFMakela

Source is warming up to get out contaninates. 1410 is pumping - will start later today if all goes well.

25045	Sun Oct 28 08:15:23 2012	MFMakela

Source distilled 1166 mbar in tank, 107 mbar in source Closig orange valve and warming up

25044	Sat Oct 27 21:18:20 2012	MFMakela

UCN source distilling KNF pump on Source voltage 1.2 VDC

25043	Sat Oct 27 21:09:08 2012	MFMakela

All but ~1 mbar out of D2 tank and in source. Pumping the remainder out of the tank with a scroll. Source very cold pumping on frozen D2 to remove helium. D2 tank pumped down to 28 mTorr on stinger guage. Valved off.

25042	Sat Oct 27 08:31:04 2012	MFMakela

Magnets are returning through to the 1410 (which is off) and pushing off to MPS. 1630 is running the source

25041	Sat Oct 27 08:24:21 2012	MFMakela

Starting to fill the UCN source with D2 tank 1164 mbar

25040	Fri Oct 26 19:30:59 2012	MFMakela

1630 back online AFP filling Source cooling slowly 1410 pumping out - possible Saturday startup

25039	Thu Oct 25 09:36:40 2012	MFMakela

Pumping out UCN source Pumping on LHe transfer line closest to the source.

25038	Tue Oct 23 20:50:44 2012	MFMakela

1410 is off.

25036	Tue Oct 23 14:24:21 2012	MFMakela

Pumping D2 into storage tank with KNF pump 1194 mbar in tank 130 mbar in source

25037	Tue Oct 23 13:39:27 2012	ASaunders

ramped down afp and scs turned off high voltage to everything except UCN monitors Kept all cooling systems on. Please keep tungsten target cooling on at least until tomorrow for CCR's tuning purposes. Mark requests that we keep the D2 cold and in the source for now.

25035	Sun Oct 21 12:00:28 2012	MFMakela

1630 off 4k dewar on sample 1630 is disconnected from the return system (cannot be used to fill a magnet).

25034	Sun Oct 21 10:58:52 2012	MFMakela

Filling AFP from 1 k dewar

25033	Sun Oct 21 10:28:37 2012	MFMakela

Warming up ucn source 62 mbar in tank SOurce flow off Check valve bypass open

25032	Sat Oct 20 16:12:38 2012	ASaunders

ramped down afp and scs turned off high voltage to everything except UCN monitors Kept all cooling systems on. Please keep tungsten target cooling on at least until tomorrow for CCR's tuning purposes. Mark requests that we keep the D2 cold and in the source for now.

25031	Sat Oct 20 15:18:24 2012	Erik

The Magnets are ramping down. There will not be any beam after about 15:00.

25030	Sat Oct 20 15:06:22 2012	Erik

Depol runs ctd, according to ATH's plan Time MCS Real Time Midas run Type Cycles 09:51 2715 20808 P- 6 10:43 5850 20809 P+ 6 11:38 9113 20810 P- 5 12:22 11290 20811 P+ 6 13:15 14974 20812 P- 4 13:51 17143 20813 P+ 7 Source test runs GV closed 14:53 20817 20814 flapper flapping 14:55 20968 20815 open 14:57 21090 20816 closed

25024	Sat Oct 20 11:22:05 2012	ASaunders

This is an octet that was run overnight last night with no supervision 12:19 AM 20782 A1: Background (off) E=1.288 W=1.300 12:28 AM 20783 A2: Beta Run (off) E=11.6 W=12.2 Fe/GV=0.49 SCS/GV=0.36 E+W/GV=1.37 1:08 AM 20784 A3: Depol (off to on) W/R=0.035+/-0.015 1:15 AM 20785 A4: Background (on) E=1.304 W=1.226 1:24 AM 20786 A5: Beta Run (on) E=8.8 W=7.9 Fe/GV=0.122 SCS/GV=0.27 E+W/GV=0.98 2:04 AM 20787 A6: Depol (on to off) W/R=0.131+/-0.049 2:12 AM 20788 A7: Beta Run (on) E=8.0 W=7.3 Fe/GV=0.13 SCS/GV=0.27 E+W/GV=1.00 2:52 AM 20789 A8: Depol (on to off) W/R=0.046+/-0.027 2:59 AM 20790 A9: Background (on) E=1.38 W=1.25 3:08 AM 20791 A10: Beta Run (off) E=11.2 W=12.1 Fe/GV=0.49 SCS/GV=0.35 E+W/GV=1.38 3:49 AM 20792 A11: Depol (off to on) W/R=0.029+/-0.014 3:56 AM 20793 A12: Background (off) E=1.30 W=1.33 4:04 AM 20794 B1: Background (on) E=1.33 W=1.30 4:13 AM 20795 B2: Beta Run (on) E=8.6 W=7.8 Fe/GV=0.13 SCS/GV=0.27 E+W/GV=0.98 4:53 AM 20796 B3: Depol (on to off) W/R=0.123+/-0.049 5:01 AM 20797 B4: Background (off) E=1.33 W=1.28 5:09 AM 20798 B5: Beta Run (off) E=10.2 W=10.5 Fe/GV=0.50 SCS/GV=0.36 E+W/GV=1.40 5:50 AM 20799 B6: Depol (off to on) W/R=0.008+/-0.008 5:57 AM 20800 B7: Beta Run (off) E=9.9 W=10.8 Fe/GV=0.50 SCS/GV=0.35 E+W/GV=1.39 6:37 AM 20801 B8: Depol (off to on) W/R=0.041+/-0.017 6:45 AM 20802 B9: Background (off) E=1.31 W=1.26 6:53 AM 20803 B10: Beta Run (on) E=7.8 W=7.1 Fe/GV=0.12 SCS/GV=0.28 E+W/GV=1.00 7:34 AM 20804 B11: Depol (on to off) W/R=0.115 +/- 0.046 7:41 AM 20805 B12: Background (on) E=1.26 W=1.26

25029	Sat Oct 20 10:10:10 2012	Erik

UCNA Shift Change Checklist Date: October 20, 2012 08:00 Shift Persons: Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.41 psia Heater C pressure 13.59 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 301.1 psia Tungsten Cool Diff. 285.1 psia Tungsten Cool ret. 82.9 psia 1630 eng. 2 temp. 13.37 K 1630 JT temp. 6.99 K 1630 outlet temp. 275.9 K 1630 engine speed 120 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.6 psig 1630 med. press. stor. 72 psig 1410 engine speed 149 rpm 1410 TE-A 15.3 K 1410 TE-B 6.6 K 1410 TE-E 86.9 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 280 mmHg 4K dewar level 9.94 inHe 1K dewar level 23.20 inHe 4K main flow control 6.0 V LHe temp. 1 5.241 K Heat exch. temp. 3 186.65 K Poly temp. 2 120.01 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31.0 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru MC Program Restart: running with run number 1325 AFP temperature 10.0 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 5/8 SCS LHe level 93.0 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.0 torr CC1 pressure 9.1x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 86.0 % PPM LN2 level 58.4 % AFP LHe level 86.8 % AFP LN2 level 80.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 82.7 F West MWPC Temperature 75.5 F MWPC Pressure 100 torr N2 - MWPC Differential

-0.4 torr Neopentane Flow Rate 16.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.5 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 15.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 4613 Hz West muon veto rate 5524 Hz Spectrometer vacuum 2.2e-5 torr (CC1 these days) DAQ data_raw disk usage 92% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 305 ns TBCM001I03 14.9 mA "Beamplot" Capture 75 % less than usual 85%

25028	Sat Oct 20 09:50:12 2012	ASaunders

source production tests 09:45 flapping, gv closed Midas run 20807 MCS run 1325, real time 2417 beam drops out during run. forget source tests, we'll take depol data

25027	Sat Oct 20 09:46:04 2012	ASaunders

melt and refreeze

25026	Sat Oct 20 09:11:31 2012	ASaunders

source production tests 09:10 gate valve closed, flapper flapping: Midas run 20806 MCS run 1325, real time 211 very crappy, ~250 UCN/s at gate valve, so we will do melt and refreeze

25025	Sat Oct 20 09:05:34 2012	ASaunders

plug in T0 for depol running

25023	Fri Oct 19 23:55:07 2012	bz

CMS Run 1324 ********** time CMS Time MIDAS# Run type Cycles Notes: ---------- -- 18:13 ~6250 20770 GV closed, flapper closed Rate=9 18:16 ~6600 20771 GV closed, flapper open Rate=95 18:22 ~6900 20772 GV closed, flapper flapping Rate=295 18:27 7165 20773 DE+ (65s) 3 18:54 8770 20774 DE+ (45s) 2 19:12 9862 20775 DE- (45s) 1 19:22 10413 20776-8 DE- (90s) 15 21:38 18600 20779-81 DE+ (90s) 15

25022	Fri Oct 19 23:22:15 2012	Erik

UCNA Shift Change Checklist Date: October 19, 2012 17:13 Shift Persons: Bryan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.35 psia Heater C pressure 13.51 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 303.5 psia Tungsten Cool Diff. 285.7 psia Tungsten Cool ret. 84.5 psia 1630 eng. 2 temp. 13.18 K 1630 JT temp. 6.95 K 1630 outlet temp. 278.1 K 1630 engine speed 120 rpm 1630 supply press. 247 psig 1630 JT press. 205 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 150 rpm 1410 TE-A 15.5 K 1410 TE-B 6.7 K 1410 TE-E 88.5 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 6.93 inHe 1K dewar level 29.19 inHe 4K main flow control 6.0 V LHe temp. 1 5.191 K Heat exch. temp. 3 178.02 K Poly temp. 2 68.949 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36.0 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru MC Program Restart: running with run number 1323 AFP temperature 9.6 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 95.6 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.0 torr CC1 pressure 1.8x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 86.2 % PPM LN2 level 63.9 % AFP LHe level 86.8 % AFP LN2 level 90.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 83.7 F West MWPC Temperature 77.8 F MWPC Pressure 100 torr N2 - MWPC Differential -1.3 torr Neopentane Flow Rate 18.1 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.5 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3194 Hz West muon veto rate 3491 Hz Spectrometer vacuum 6.5e-5 torr (CC1

these days) DAQ data_raw disk usage 92% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 15.12 mA "Beamplot" Capture 75 % less than usual 85% Beam Ready Time: 17:10

25021	Fri Oct 19 06:25:55 2012	bz

********** time CMS Time MIDAS# Run type Cycles Notes: ---------- 00:00 23863 20759 GFT+ (60s) 9 00:35 25943 20760 DE+ (45s) 8 01:42 29993 20761-2 DE- (45s) 9 02:57 34505 20763-4 DE- (65s) 11 04:33 40238 20765-6 DE+ (65s) 7 05:46 ~44600 20767 GV closed, flapper flapping Rate=289 05:50 ~44865 20768 GV closed, flapper open Rate=74 05:55 ~45150 20769 GV closed, flapper closed Rate=14

25020	Fri Oct 19 01:19:45 2012	bz

UCNA Shift Change Checklist Date: October 19, 2012 01:12 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.4 psia Heater C pressure 13.4 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 304.1 psia Tungsten Cool Diff. 285.1 psia Tungsten Cool ret. 85.8 psia 1630 eng. 2 temp. 12.46 K 1630 JT temp. 6.58 K 1630 outlet temp. 275.5 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.6 psig 1630 med. press. stor. 58 psig 1410 engine speed 150 rpm 1410 TE-A 15.3 K 1410 TE-B 6.7 K 1410 TE-E 90.2 K 1410 supply press. 242 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 260 mmHg 4K dewar level 13.7 inHe 1K dewar level 19.7 inHe 4K main flow control 7.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 182.6 K Poly temp. 2 76.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21.25 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status down MC Program Restart: running with run number 1322 AFP temperature 10.3 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 7/8 SCS LHe level 86.7 % SCS fill in progress SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.9 torr CC1 pressure 1.5x10^-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.361 kG PPM LHe level 86.3 % PPM LN2 level 69.0 % AFP LHe level 93.0 % AFP LN2 level 90.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 84.8 F West MWPC Temperature 77.5 F MWPC Pressure 100 torr N2 - MWPC Differential -.5 torr Neopentane Flow Rate 18.1 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.5 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 15.7 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3298 Hz West muon veto rate 3805 Hz Spectrometer vacuum 1.2e-5 torr (CC1 these days) DAQ data_raw disk usage 92% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 14.4 mA "Beamplot" Capture -- % less than usual 85% Beam Ready Time: 17:10

25019	Thu Oct 18 23:59:56 2012	Hasan

********** time CMS Time MIDAS# Run type Cycles Notes: ---------- 20:58 12936 20752 GFT- (40s) 1 21:08 13920 20753 GFT- (40s) 8 21:39 15404 20755 GFT+ (40s) 10 22:13 17452 20756 GFT+ (50s) 10 22:49 19609 20757 GFT- (50s) 10 23:26 21848 20758 GFT- (60s) 9

25018	Thu Oct 18 20:53:48 2012	Hasan

GV closed: 20:33 Midas 20749 Flapper flapping; UCN/s at GV monitor= 333 20:40 Midas 20750 Flapper open; UCN/s at GV monitor= 91 20:47 Midas 20751 Flapper closed; UCN/s at GV monitor= 14

25017	Thu Oct 18 20:45:24 2012	Hasan

********** time CMS Time MIDAS# Run type Cycles Notes: ---------- 18:21 3554 20746 GFT- (25s) 18 19:17 3554 20747 GFT+ (25s) 18

25016	Thu Oct 18 20:29:57 2012	Hasan

CNA Shift Change Checklist Date: October 18, 2012 16:00 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.13 psia Heater C pressure 13.58 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 306.2 psia Tungsten Cool Diff. 286.2 psia Tungsten Cool ret. 86.6 psia 1630 eng. 2 temp. 13.83 K 1630 JT temp. 6.82 K 1630 outlet temp. 273.2 K 1630 engine speed 180 rpm 1630 supply press. 250 psig 1630 JT press. 195 psig 1630 return press. 1.4 psig 1630 med. press. stor. 70 psig 1410 engine speed 150 rpm 1410 TE-A 15.2 K 1410 TE-B 6.5 K 1410 TE-E 98.2 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 270 mmHg 4K dewar level 12.86 inHe 1K dewar level 17.96 inHe 4K main flow control 5.0 V LHe temp. 1 6.666 K Heat exch. temp. 3 200.25 K Poly temp. 2 77.028 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status thru MC Program Restart: running with run number 1322 AFP temperature 9.60 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 91.6 % SCS fill in progress SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.9 torr CC1 pressure 3.8x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 86.4 % PPM LN2 level 72.1 % AFP LHe level 87.9 % AFP LN2 level 72.4 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 82.5 F West MWPC Temperature 74.9 F MWPC Pressure 99.9 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 18.23 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level <1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.5 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3219 Hz West muon veto rate 3535 Hz Spectrometer vacuum 1.1e-5 torr (CC2 these days) DAQ data_raw disk usage 92% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 286 ns TBCM001I03 14.8 mA "Beamplot" Capture 78 % less than usual 85% Beam Ready Time: 17:10

25015	Thu Oct 18 17:45:27 2012	ASaunders

source production tests; GV closed throughout 17:31 Midas 20742 Flapper flapping; production only about 350 UCN/s at GV monitor. 17:35 Midas 20744 MCS Run 1323 Real time 800 Flapper open; 17:44 Midas 20745 MCS run 1323 Real time 1350 Flapper closed

25014	Thu Oct 18 16:43:48 2012	ASaunders

melt and refreeze

25013	Thu Oct 18 07:17:23 2012	Rpattie

Summary of the nights octet A->B ---------- 2120 20718 A1 Bkg(off) E = 1.204 W = 1.253 2149 20719 A2 Beta(off) E = 16.837 W = 18.069 Fe/Gv = 0.4794 SCS/GV = 0.3753 E+W/GV = 1.3909 2234 20720 A3 Depol(off->on) W/R = 0.01376 2241 20721 A4 Bkg(on) E = 1.234 W = 1.252 2251 20722 A5 Beta(on) E= 12.722 W = 11.566 Fe/GV = 0.1282 SCS/GV = 0.2965 E+W/GV = 1.0024 2336 20723 A6 Depol(on->off) W/R = 0.16179 2343 20725 A7 Beta(on) E = 12.59 W = 11.45 Fe/GV = 0.13 SCS/GV = 0.29 E+W/GV = 1.00 0029 20726 A8 Depol(on->off) W/R = 0.145 0036 20727 A9 Bkg(on) E = 1.325 W = 1.257 0052 20728 A10 Beta(off) E = 16.16 W = 17.17 Fe/GV = 0.482 SCS/GV = 0.376 E+W/GV = 1.406 0137 20729 A11 Depol(off->on) W/R = 0.024(12) 0144 20730 A12 Bkg(off) E = 1.202 W = 1.258 0154 20731 B1 Bkg(on) E = 1.267 W = 1.283 0205 20732 B2 Beta(on) E = 12.30 W = 10.91 Fe/GV = 0.124 SCS/GV = 0.297 E+W/GV = 1.006 0250 20733 B3 Depol(on->off) W/R = 0.163(47) 0257 20734 B4 Bkg(off) E = 1.263 W = 1.301 0307 20735 B5 Beta(off) E = 14.935 W = 16.059 Fe/GV = 0.486 SCS/GV = 0.375 E+W/GV = 1.403 0353 20736 B6 Depol(off->on) W/R = 0.025(10) 0400 20737 B7 Beta(off) E = 14.896 W = 15.77 Fe/GV = 0.482 SCS/GV = 0.373 E+W/GV = 1.395 0445 20738 B8 Depol(off->on) W/R = 0.028(12) 0452 20739 B9 Bkg(off) E = 1.225 W = 1.278 0502 20740 B10 Beta(on) E = 11.36 W = 10.20 Fe/GV = 0.125 SCS/GV = 0.289 E+W/GV = 1.01 0547 20741 B11 Depol(on->off) W/R = 0.138(49) 0554 20742 B12 Bkg(on) E = 1.382 W = 1.324 ---------- As a note, we saw a reduction in the beta-decay rate of 1/7th over the course of the night.

25012	Thu Oct 18 01:30:10 2012	Rpattie

CNA Shift Change Checklist Date: October 18, 2012 00:45 Shift Persons: Bryan, Robby

********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.84 psia Heater C pressure 13.92 psia Tungsten supply press. 315 psig Compressor 1 On on Tungsten Cool supp. 308.4 psia Tungsten Cool Diff. 286.9 psia Tungsten Cool ret. 88.8 psia 1630 eng. 2 temp. 15.29 K 1630 JT temp. 7.52 K 1630 outlet temp. 273.5 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.1 psig 1630 med. press. stor. 60 psig 1410 engine speed 124 rpm 1410 TE-A 15.5 K 1410 TE-B 6.4 K 1410 TE-E 86.2 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.4 psig 1K dewar pressure 6.6 psig 4K dewar pressure 225 mmHg 4K dewar level 13.40 inHe 1K dewar level 20.78 inHe 4K main flow control 5.5 V LHe temp. 1 5.1 K Heat exch. temp. 3 184.0 K Poly temp. 2 150.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 30.5 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status thru MC Program Restart: restarted at 18:18 run number 1322 AFP temperature 9.50 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 91.4 % SCS fill in progress SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.0 torr CC1 pressure 3.8x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.360 kG PPM LHe level 86.6 % PPM LN2 level 79.9 % AFP LHe level 86.2 % AFP LN2 level 79.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 83.7 F West MWPC Temperature 77.7 F MWPC Pressure 100 torr N2 - MWPC Differential -0.6 torr Neopentane Flow Rate 18.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H2O Chiller on Chiller water level <1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.5 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 16.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 5365 Hz West muon veto rate 6569 Hz Spectrometer vacuum 1.6e-5 torr (CC2 these days) DAQ data_raw disk usage 91% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 286 ns TBCM001I03 14.8 mA "Beamplot" Capture 78 % less than usual 85%

25011	Thu Oct 18 00:09:33 2012	Hasan

New Octet A->B 21:20 20718 A1: Background (off) E=1.204 W=1.253 21:49 20719 A2: Beta Run (off) E=16.837 W=18.069 Fe/GV=0.4794 SCS/GV= 0.3753 (E+W)/GV=1.3909 22:34 20720 A3: Depol (off to on) W/R=0.013761 22:41 20721 A4: Background (on) E=1.234 W=1.252 22:51 20722 A5: Beta Run (on) E=12.772 W=11.566 Fe/GV=0.1282 SCS/GV=0.2965 (E+W)/GV=1.0024 23:36 20723 A6: Depol (on to off) W/R=0.164179 23:43 20724 A7: Beta (on) E= W= Fe/GV= SCS/GV= (E+W)/GV=

25009	Wed Oct 17 21:14:43 2012	Hasan

CNA Shift Change Checklist Date: October 17, 2012 16:15 Shift Persons: Hasan, Jose
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.78 psia Heater C pressure 13.85 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 308.8 psia Tungsten Cool Diff. 286.9 psia Tungsten Cool ret. 88.7 psia 1630 eng. 2 temp. 15.14 K 1630 JT temp. 7.31 K 1630 outlet temp. 277.2 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 1.0 psig 1630 med. press. stor. 65 psig 1410 engine speed 125 rpm 1410 TE-A 15.3 K 1410 TE-B 6.5 K 1410 TE-E 91.5 K 1410 supply press. 240 psig 1410 JT press. 180 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 240 mmHg 4K dewar level 13.16 inHe 1K dewar level 20.33 inHe 4K main flow control 4.8 V LHe temp. 1 5.5 K Heat exch. temp. 3 181.38 K Poly temp. 2 71.04 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 31.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru MC Program Restart: restarted at 18:18 run number 1322 AFP temperature 9.70 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 91.4 % SCS fill in progress SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.9 torr CC1 pressure 2.2x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.359 kG PPM LHe level 86.6 % PPM LN2 level 79.9 % AFP LHe level 86.2 % AFP LN2 level 79.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold

Status TH East MWPC Temperature 81.9 F West MWPC Temperature 70.0 F MWPC Pressure 100 torr N2 - MWPC Differential -1.3 torr Neopentane Flow Rate 18.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 15.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3129 Hz West muon veto rate 3515 Hz Spectrometer vacuum 1.3e-5 torr (CC2 these days) DAQ data_raw disk usage 91% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 286 ns TBCM001I03 14.9 mA "Beamplot" Capture 75 % less than usual 85% Beam Ready Time 21:00

25010	Wed Oct 17 21:13:14 2012	Hasan

Beam ready at 9:00 PM. Closed GV rate ~ 380 Hz

25008	Wed Oct 17 13:53:42 2012	MFMakela

~35 mbar in ~50 cc volume of cold trap - gas unknown. awaiting RGA analysis

25006	Wed Oct 17 06:43:26 2012	Hasan

Time Slow_DAQ_real_time Fast_DAQ GV Flapper Proton_Pules/burst UCN_rate(Hz) 20:11 7083 20698 closed open 5\5s 120 20:21 7659 20699 closed flapping 5\5s 425 20:21 8104 20700 closed closed 5\5s bad run, beam went out 20:40 8808 20701 closed closed 5\5s 12 ********** time CMS Time MIDAS# Run type Cycles Notes: ---------- 20:51 9495 20702- SLD- bad run, GV was closed 21:28 11697 20703-4 SLD- 10 23:03 17378 20705-6 SLD+ 11 beam went off end of cycle#2 and beginning of cycle#3 for a while 00:37 23043 20707-8 SFT+ 10 01:45 27122 20709-10 SFT- 10 02:54 31273 20711 GFT- (5s) 8 03:16 32584 20712 GFT+ (5s) 8 03:38 33862 20713 GFT+ (10s) 17 beam bad in middle of run, look to end for stable cycles 04:24 36674 20714 GFT- (10s) 8 04:46 37992 20715 GFT- (15s) 9 05:13 39591 20716 GFT+ (15s) 18 AFP Fill during cycles, UCN rate may be bad on later cycles

25007	Wed Oct 17 00:26:08 2012	Rpattie

CNA Shift Change Checklist Date: October 17, 2012 00:17 Shift Persons: Bryan,Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.14 psia Heater C pressure 13.73 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 311.8 psia Tungsten Cool Diff. 287.9 psia Tungsten Cool ret. 91.7 psia 1630 eng. 2 temp. 16.62 K 1630 JT temp. 7.32 K 1630 outlet temp. 267.3 K 1630 engine speed 120 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 1.0 psig 1630 med. press. stor. 35 psig 1410 engine speed 100 rpm 1410 TE-A 16.8 K 1410 TE-B 6.8 K 1410 TE-E 89.8 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.6 psig 1K dewar pressure 7.0 psig 4K dewar pressure 250 mmHg 4K dewar level 19.64 inHe 1K dewar level 13.31 inHe 4K main flow control 5.5 V LHe temp. 1 5.0 K Heat exch. temp. 3 198.6 K Poly temp. 2 106.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34.75 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru MC Program Restart: restarted at 18:07...run number 1321 AFP temperature 10.2 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 1/2 SCS LHe level 84.4 % SCS fill in progress SCS current 100 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.7 torr CC1 pressure 5x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.360 kG PPM LHe level 86.9 % PPM LN2 level 85.0 % AFP LHe level 95.0 % AFP LN2 level 77.6 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 86.2 F West MWPC Temperature 81.2 F MWPC Pressure 100 torr N2 - MWPC Differential -1.4 torr Neopentane Flow Rate 18.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 15.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 3399 Hz West muon veto rate 4134 Hz Spectrometer vacuum 1.5e-5 torr (CC2 these days) DAQ data_raw disk usage 91% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 14.8 mA "Beamplot" Capture 75 %

25005	Tue Oct 16 23:33:29 2012	Hasan

UCN closed GV rate, in excess of 450 Hz

25004	Tue Oct 16 18:50:41 2012	Hasan

UCNA Shift Change Checklist Date: October 16, 2012 16:00 Shift Persons: Hasan, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 133 psia Water line return 37 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.59 psia Heater C pressure 14.18 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 315.2 psia Tungsten Cool Diff. 288.2 psia Tungsten Cool ret. 94.4 psia 1630 eng. 2 temp. 16.26 K 1630 JT temp. 7.70 K 1630 outlet temp. 273.8 K 1630 engine speed 125 rpm 1630 supply press. 252 psig 1630 JT press. 210.2 psig 1630 return press. 0.8 psig 1630 med. press. stor. 23 psig 1410 engine speed 101 rpm 1410 TE-A 17.4 K 1410 TE-B 6.8 K 1410 TE-E 88.1 K 1410 supply press. 247 psig 1410 JT press. 180 psig 1410 return press. 3.4 psig 1K dewar pressure 6.5 psig 4K dewar pressure 240 mmHg 4K dewar level 21.07 inHe 1K dewar level 14.54 inHe 4K main flow control 5.0 V LHe temp. 1 6.148 K Heat exch. temp. 3 235.3 K Poly temp. 2 155.1 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37 gallon/100 Gate valve status closed D2 Pump port status open Switcher status thru MC Program Restart: --- AFP temperature 10.0 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 88.7 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 212.6 torr CM5 pressure 1.6 torr CC1 pressure --- torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 87.0 % PPM LN2 level 88.1 % AFP LHe level 86.1 % AFP LN2 level 97.2 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 88.0 F West MWPC Temperature 83.1 F MWPC Pressure 100 torr N2 - MWPC Differential -2.4 torr Neopentane Flow Rate 18.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 3.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 15.7 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.30 kV West muon veto HV 2.31 kV East muon veto rate 2965 Hz West muon veto rate 3615 Hz Spectrometer vacuum --- torr (CC2 these days) DAQ data_raw disk usage 91% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width --- ns TBCM001I03 --- mA "Beamplot" Capture --- %

25003	Tue Oct 16 18:33:28 2012	MFMakela

Filling source: SV3,4,5 -closed MV5,6 - closed Pumping port open Flowing D2 through cold trap 1218 mbar start (must have gotten warm in here) Flapper is closed Heat exchanger at 50 5 VDC 62.5 mbar left i tD2 tank. Freezing out the source

25002	Tue Oct 16 13:37:36 2012	MFMakela

Source pumped out to 3e-6 torr Closed SV3 - rate of rise - reasonable. Cooling UCN source Main closed Heat exchanger full open Poly pump on 2 VDC start CC1 on source

25000	Tue Oct 16 13:15:19 2012	MFMakela

Changing solid stainless steel line in the D2 cart cold trap to a 1/4 VCR bellows line. The pressure relief on the trap is 50 psi. base leak rate before disconecting the SS line - 2.2e-6 mbar l/s The old ss tube was 7 turns, 3.5" diameter - ~ 80 inches THe new system is 48"+36" SS VCR bellow to get more surface area. Passed He leak test at 1.60e-6 mbar l/s Presure test 38 psi, N2 from tanker. Passed 15 minute pressure test. Only slight rise in pressure over time Cooled to LN2 Releak checked - ok -1.35e-6 mbar l/s

25001	Tue Oct 16 12:01:21 2012	GEHogan

EMS down for two weeks. Restarted.

24998	Tue Oct 16 10:37:01 2012	MFMakela

D2 Source Melted Pumping into D2 tank with KNF pump 10:30, stopping KNF pump Source pressure 140 mbar D2 tank pressure 1205 mbar Stopping flow to the source

24999	Tue Oct 16 10:23:58 2012	MFMakela

Hey all, Here is a slightly revised polarimetry runs protocol. The only change is that I've added a few more holding times for the GFT runs which I inadvertently left off previously. I have directly communicated the need for these holding times to folks taking the data this year, but they should be officially included in the polarimetry document too. Thanks, Adam

Attachment 1: metry_8-24-2011.pdf

24997	Tue Oct 16 04:57:03 2012	Rpattie

Summary of the runs for the 0000-0800 Shift: time CMS Time MIDAS# Run type Cycles Notes: ----- ---------- 2332 16871 20689-90 P+ 10 0059 20691 Test of the beta decay rate : 22 cps E+W 0106 22530 20692-3 P- 15 0318 30436 20694 P+ 5 0402 33071 20695 SLD+ Lost beam at roughly 415 due to the beam permit failing. Return pressure to the target was <60psi.

24996	Tue Oct 16 01:03:17 2012	bz

UCNA Shift Change Checklist Date: October 16, 2012 00:52 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.78 psia Heater C pressure 13.60 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 272.7 psia Tungsten Cool Diff. 275.6 psia Tungsten Cool ret. 61.3 psia 1630 eng. 2 temp. 14.78 K 1630 JT temp. 7.57 K 1630 outlet temp. 274.1 K 1630 engine speed 200 rpm 1630 supply press. 247 psig 1630 JT press. 195 psig 1630 return press. 1.1 psig 1630 med. press. stor. 42 psig 1410 engine speed 150 rpm 1410 TE-A 15.6 K 1410 TE-B 6.5 K 1410 TE-E 86.8 K 1410 supply press. 245 psig 1410 JT press. 167 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 260 mmHg 4K dewar level 15.24 inHe 1K dewar level 23.70 inHe 4K main flow control 5.6 V LHe temp. 1 5.34 K Heat exch. temp. 3 183.5 K Poly temp. 2 97.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 10 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status thru MC Program Restart: running AFP temperature 10.5 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/4 SCS LHe level 84.6 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 1.5 torr CC1 pressure 4.5e-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 87.2 % PPM LN2 level 96.4 % AFP LHe level 91.4 % AFP LN2 level 86.2 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 87.3 F West MWPC Temperature 81.2 F MWPC Pressure 100 torr N2 - MWPC Differential -1.2 torr Neopentane Flow Rate 18.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.75 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 15.9 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 2887 Hz West muon veto rate 3676 Hz Spectrometer vacuum 5.8e-5 torr (CC2 these days) DAQ data_raw disk usage 91% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 15.6 mA "Beamplot" Capture 75 %

24995	Tue Oct 16 00:09:31 2012	Erik

Time Slow DAQ Real Time MIDAS Run Type Cycles Notes 19:56 3935 20685 SLD- 5 described as SLD+ in Midas, but it is SLD- 20:57 7572 20686 SLD- 5 Last few minutes in Midas are test runs. 21:51 10839 20688 SLD+ 10

24991	Tue Oct 16 00:08:49 2012	Hasan

second half of Octet A->B 14:55 20649 B1: Background (on) E=1.280 W=1.201 15:05 20650 B2: Beta Run (on) E=7.057 W=6.233 Fe/GV=0.1216 SCS/GV=0.2723 (E+W)/GV=1.004 16:05 20651 B3: Depol (on to off) W/R=0.117647(51) 16:16 20652 B4: Background (off) E=1.224, W=1.255 16:23 20653 B5: Beta Run (off) E=8.679 W=9.053 Fe/GV=0.5069 SCS/GV=0.3577 (E+W)/GV=1.4.98 17:23 20654 B6: Depol (off to on) W/R=0.020(11) 18:04 20655 B7: Beta Run (off) E=8.227 W=8.541 Fe/GV=0.503 SCS/GV=0.3559 (E+W)/GV=1.419 19:05 20656 B8: Depol (off to on) W/R=0.043(20) 19:12 20657 B9: Background (off) E=1.294, W=1.194 19:22 20658 B10:Beta Run (on) E=5.799 W=5.160 Fe/GV=0.1265 SCS/GV=0.2689 (E+W)/GV=1.0316 20:22 20659 B11:Depol (on to off) W/R=0.148(53) 20:29 20660 B12: Background (on) E=1.209, W=1.181

24994	Tue Oct 16 00:05:45 2012	Hasan

UCNA Shift Change Checklist Date: October 15, 2012 00:50 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.87 psia Heater C pressure 13.56 psia Tungsten supply press. 260 psig Compressor 1 On on Tungsten Cool supp. 274.4 psia Tungsten Cool Diff. 276.3 psia Tungsten Cool ret. 62.3 psia 1630 eng. 2 temp. 14.31 K 1630 JT temp. 7.34 K 1630 outlet temp. 279.0 K 1630 engine speed 215 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig 1630 med. press. stor. 50 psig 1410 engine speed 150 rpm 1410 TE-A 15.3 K 1410 TE-B 6.5 K 1410 TE-E 87.6 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 250 mmHg 4K dewar level 14.63 inHe 1K dewar level 21.92 inHe 4K main flow control 4.5 V LHe temp. 1 6.875 K Heat exch. temp. 3 199.98 K Poly temp. 2 74.75 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 11.5 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status down MC Program Restart: running AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 89.4 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.9 torr CM5 pressure 1.4 torr CC1 pressure --- torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 87.5 % PPM LN2 level 98.4 % AFP LHe level 86.2 % AFP LN2 level 81.6 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 86.9 F West MWPC Temperature 80.6 F MWPC Pressure 99.5 torr N2 - MWPC Differential -1.3 torr Neopentane Flow Rate 18.5 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 16.13 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3055 Hz West muon veto rate 3552 Hz Spectrometer vacuum 1.6e-5 torr (CC2 these days) DAQ data_raw disk usage 90% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 299 ns TBCM001I03 12.38 mA "Beamplot" Capture 75 %

24993	Mon Oct 15 07:07:15 2012	bz

21:00 20661 A1: Background (off) E= 1.208 W= 1.216 21:10 20662 A2: Beta Run (off) E= 8.294 W= 8.815 Fe/GV=0.5080 SCS/GV=0.3555 (E+W)/GV=1/4058 22:10 20663 A3: Depol (off to on) W/R=0.040(18) 22:17 20664 A4: Background (on) E= 1.275 W= 1.131 22:28 20665 A5: Beta Run (on) E= 6.431 W= 5.750 Fe/GV=0.1239 SCS/GV=0.2686 (E+W)/GV=1.0287 23:28 20666 A6: Depol (on to off) W/R=0.078(36) 23:35 20667 A7: Beta Run (on) E= 5.854 W= 5.226 Fe/GV=0.1287 SCS/GV=0.2729 (E+W)/GV=1.0511 00:35 20668 A8: Depol (on to off) W/R=0.074(38) 00:42 20669 A9: Background (on) E= 1.312 W= 1.152 00:53 20670 A10:Beta Run (off) E= 8.01 W= 8.4 Fe/GV=0.494 SCS/GV=0.355 (E+W)/GV=1.41 01:53 20671 A11:Depol (off to on) W/R=0.0402(182) 02:01 20672 A12:Background (off) E= 1.240 W= 1.151 02:11 20673 B1: Background (on) E= 1.289 W= 1.149 02:21 20674 B2: Beta Run (on) E= 6.374 W= 5.773 Fe/GV=0.122 SCS/GV=0.272 (E+W)/GV=1.003 02:57 20675 B3: Depol (on to off) W/R=0.080(42) 03:04 20676 B4: Background (off) E= 1.201 W= 1.206 03:14 20677 B5: Beta Run (off) E= 5.889 W= 6.182 Fe/GV=0.527 SCS/GV=0.336 (E+W)/GV=1.446 03:49 20678 B6: Depol (off to on) W/R=0.0089(89) 03:56 20679 B7: Beta Run (off) E= 8.19 W= 8.74 Fe/GV=0.507 SCS/GV=0.358 (E+W)/GV=1.3995 04:32 20680 B8: Depol (off to on) W/R=0.05(2) 04:39 20681 B9: Background (off) E= 1.193 W= 1.254 04:49 20682 B10:Beta Run (on) E= 5.864 W= 5.260 Fe/GV=0.1249 SCS/GV=0.2755 (E+W)/GV=1.0498 05:24 20683 B11:Depol (on to off) W/R=0.022(22) 05:31 20684 B12:Background (on) E= 1.186 W= 1.184

24992	Mon Oct 15 00:57:28 2012	bz

UCNA Shift Change Checklist Date: October 15, 2012 00:50 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.70 psia Heater C pressure 13.55 psia Tungsten supply press. 285 psig Compressor 1 On on Tungsten Cool supp. 274.2 psia Tungsten Cool Diff. 276.0 psia Tungsten Cool ret. 62.5 psia 1630 eng. 2 temp. 14.72 K 1630 JT temp. 7.65 K 1630 outlet temp. 275.9 K 1630 engine speed 200 rpm 1630 supply press. 248 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 55 psig 1410 engine speed 150 rpm 1410 TE-A 15.1 K 1410 TE-B 6.4 K 1410 TE-E 84.8 K 1410 supply press. 243 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.8 psig 4K dewar pressure 250 mmHg 4K dewar level 11.23 inHe 1K dewar level 29.21 inHe 4K main flow control 5.2 V LHe temp.

1 9.4 K Heat exch. temp. 3 199.9 K Poly temp. 2 191.4 K Flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status down MC Program Restart: running AFP temperature 10.1 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level full SCS LHe level 85.7 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 1.3 torr CC1 pressure 1.5x10^-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 87.5 % PPM LN2 level 42.3 % AFP LHe level 94.0 % AFP LN2 level 90.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 87.3 F West MWPC Temperature 79.4 F MWPC Pressure 100 torr N2 - MWPC Differential -1.2 torr Neopentane Flow Rate 18.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 16.3 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3014 Hz West muon veto rate 3846 Hz Spectrometer vacuum 4.7e-5 torr (CC2 these days) DAQ data_raw disk usage 90% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 299 ns TBCM001I03 15.3 mA "Beamplot" Capture %

24990	Sun Oct 14 17:14:51 2012	Hasan

UCNA Shift Change Checklist Date: October 14, 2012 16:10 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.37 psia Heater C pressure 13.37 psia Tungsten supply press. 270 psig Compressor 1 On on Tungsten Cool supp. 276.4 psia Tungsten Cool Diff. 277.4 psia Tungsten Cool ret. 63.6 psia 1630 eng. 2 temp. 14.46 K 1630 JT temp. 7.03 K 1630 outlet temp. 275.5 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 65 psig 1410 engine speed 150 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 90.6 K 1410 supply press. 250 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 280 mmHg 4K dewar level 10.11 inHe 1K dewar level 26.42 inHe 4K main flow control 5.2 V LHe temp. 1 5.53 K Heat exch. temp. 3 193.93 K Poly temp. 2 136.79 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21.5 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru MC Program Restart: running AFP temperature 10.1 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 91.9 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 1.2 torr CC1 pressure 5x10^-5 torr Hall Probe Y 0.168 kG Hall Probe Z -0.359 kG PPM LHe level 87.5 % PPM LN2 level 45.3 % AFP LHe level 92.9 % AFP LN2 level 91.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 87.3 F West MWPC Temperature 81.6 F MWPC Pressure 100.4 torr N2 - MWPC Differential -1.6 torr Neopentane Flow Rate 18.15 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.6 torr Neopentane Flow Rate 15.93 slpm West PMT Buck. Curr. 0.29 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.31 kV West muon veto HV 2.31 kV East muon veto rate 3105 Hz West muon veto rate 3851 Hz Spectrometer vacuum 3e-5 torr (CC2 these days) DAQ data_raw disk usage 90% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width ns TBCM001I03 mA "Beamplot" Capture %

24988	Sun Oct 14 15:43:32 2012	bz

10/14/12 01:50 20623 B1: Background (on) E= 1.195 W= 1.201 01:59 20624 B2: Beta Run (on) E= 4.780 W= 4.279 Fe/GV=0.1361 SCS/GV=0.2729 (E+W)/GV=1.0841 02:59 20625 B3: Depol (on to off) W/R=0.136(59) 03:06 20626 B4: Background (off) E= 1.182 W= 1.153 03:14 20627 B5: Beta Run (off) E= 8.685 W= 9.057 Fe/GV=0.4971 SCS/GV=0.3588 (E+W)/GV=1.4182 04:15 20628 B6: Depol (off to on) W/R=0.058(25) 04:22 20629 B7: Beta Run (off) E= 8.322 W= 8.721 Fe/GV=0.5016

SCS/GV=0.3049 (E+W)/GV=1.4291 09:22 20630 B8: Depol (off to on) W/R=0.052(16) 09:29 20631 B9: Background (off) E= 1.132 W= 1.155 05:37 20632 B10:Beta Run (on) E= 6.470 W= 5.759 Fe/GV=0.1246 SCS/GV=0.2776 (E+W)/GV=1.0330 06:38 20633 B11:Depol (on to off) W/R=0.184(67) 06:45 20634 B12:Background (on) E= 1.118 W= 1.151 New A-B Octet 07:57 20635 A1: Background (off) E= 1.164 W= 1.175 08:07 20636 A2: Beta Run (off) E= 8.375 W= 8.812 Fe/GV=0.5038 SCS/GV=0.3578 (E+W)/GV=1.4115 09:07 20637 A3: Depol (off to on) W/R=0.018(13) 09:14 20638 A4: Background (on) E= 1.220 W= 1.154 09:24 20639 A5: Beta Run (on) E= 6.659 W= 5.972 Fe/GV=0.1261 SCS/GV=0.2731 (E+W)/GV=1.0127 10:25 20640 A6: Depol (on to off) W/R=0.073(38) 10:32 20641 A7: Beta Run (on) E= 6.120 W= 5.537 Fe/GV=0.1258 SCS/GV=0.2744 (E+W)/GV=1.0309 11:32 20642 A8: Depol (on to off) W/R=0.077(46) 11:39 20643 A9: Background (on) E= 1.258 W= 1.184 13:37 20646 A10:Beta Run (off) E= 8.896 W= 9.353 Fe/GV=0.5040 SCS/GV=0.3603 (E+W)/GV=1.4068 14:37 20647 A11:Depol (off to on) W/R=0.008(8) 15:05 20648 A12:Background (off) E= 1.209 W= 1.239

24989	Sun Oct 14 08:53:19 2012	DJS

UCNA Shift Change Checklist Date: October 14, 2012 08:53 Shift Persons: Dan, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.4 psia Heater C pressure 13.57 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 275.2 psia Tungsten Cool Diff. 276.1 psia Tungsten Cool ret. 62.6 psia 1630 eng. 2 temp. 14.3 K 1630 JT temp. 7.35 K 1630 outlet temp. 276.3 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 1.3 psig 1630 med. press. stor. 65 psig 1410 engine speed 150 rpm 1410 TE-A 15.1 K 1410 TE-B 6.4 K 1410 TE-E 98 K 1410 supply press. 246 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 260 mmHg 4K dewar level 8.91 inHe 1K dewar level 24.45 inHe 4K main flow control 5.2 V LHe temp. 1 6 K Heat exch. temp. 3 193 K Poly temp. 2 137 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 14.5 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru MC Program Restart: running AFP temperature 9.8 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/8 SCS LHe level 98.1 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 1.2 torr CC1 pressure 5x10^-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.359 kG PPM LHe level 87.6 % PPM LN2 level 97.9 % AFP LHe level 87.9 % AFP LN2 level 82.4 % PPM current 72(6) A(T) AFP current 93.647(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 87.3 F West MWPC Temperature 76.4 F MWPC Pressure 100 torr N2 - MWPC Differential -0.9 torr Neopentane Flow Rate 18.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 16 .1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.32 kV East muon veto rate 3091 Hz West muon veto rate 3580 Hz Spectrometer vacuum 1.6e-5 torr (CC2 these days) DAQ data_raw disk usage 89% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 300 ns TBCM001I03 15.4 mA "Beamplot" Capture 80 %

24987	Sat Oct 13 18:34:27 2012	ASaunders

Arrived to find a beta decay octet in progress. 12:02 PM 20592 B10: Beta Run (on) 1:02 PM 20593 B11: Depol (on to off) W/R=0.123 1:09 PM 20594 B12: Background (on) E=1.18 W=1.27 1:17 PM 20595 A1: Background (off) E=1.22 W=1.14 1:26 PM 20596 A2: Beta Run (off) E=9.99 W=10.60 Fe/GV=0.503 SCS/GV=0.359 E+W/GV=1.389 2:26 PM 20597 A3: Depol (off to on) W/R=0.033 2:33 PM 20598 A4: Background (on) E=1.32 W=1.19 2:41 PM 20599 A5: Beta Run (on) E=7.35 W=6.55 Fe/GV=0.127 SCS/GV=0.275 E+W/GV=1.01 3:41 PM 20600 A6: Depol (on to off) W/R=0.055 3:48 PM 20601 A7: Beta Run (on) E=7.1 W=6.3 Fe/GV=0.127 SCS/GV=0.275 E+W/GV=1.01 4:49 PM 20602 A8: Depol (on to off) W/R=0.067+/-0.034 4:56 PM 20603 A9: Background (on) E=1.23 W=1.11 5:04 PM 20604 A10: Beta Run (off) E=9.69 W=10.20 Fe/GV=0.496 SCS/GV=0.357 E+W/GV=1.38 6:04 PM 20605 A11: Depol (off to on) W/R=0.035 6:11 PM 20606 A12: Background (off) E=1.27 W= 1.15

24986	Sat Oct 13 16:23:42 2012	Sky

Jose and Sky are leaving. The East MWPC seems to be all right now. The current octet should be done at 6:15 PM; Andy will come to start a new octet. The AFP LHe is at 96%, SCS LHe is at 91% and everything seems to be running smoothly.

24985	Sat Oct 13 12:39:50 2012	Sky

AFP fill finished at 12:30.

24984	Sat Oct 13 12:05:08 2012	Sky

The East MWPC HV would not hold 2700, which was where we recorded it after the shift change. It tripped once at 2600 also, but appears to be holding voltage now. We have started the B10 run yet again; now the run number is 20592.

24983	Sat Oct 13 10:36:11 2012	Sky

The East MWPC HV tripped during run 20582. We became aware of it during run 20586. The cycle has been restarted where the detector tripped with a B10 beta decay run at run 20587. The alarm failed to sound in the counting house so we should regularly check the runs to be sure nothing is amiss.

24982	Sat Oct 13 09:33:46 2012	JOrtiz3

UCNA Shift Change Checklist Date: October 13, 2012 02:30 Shift Persons: Sky, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.40 psia Heater C pressure 13.57 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 275.2 psia Tungsten Cool Diff. 277.0 psia Tungsten Cool ret. 62.6 psia 1630 eng. 2 temp. 14.44 K 1630 JT temp. 7.42 K 1630 outlet temp. 275.4 K 1630 engine speed 210 rpm SCS Fill in progress 1630 supply press. 243 psig 1630 JT press. 185 psig 1630 return press. 1.5 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 15.1 K 1410 TE-B 6.3 K 1410 TE-E 88.0 K 1410 supply press. 243 psig 1410 JT press. 185 psig 1410 return press. 1.5 psig 1K dewar pressure 6.9 psig 4K dewar pressure 271 mmHg 4K dewar level 12.03 inHe 1K dewar level 15.35 inHe 4K main flow control 5.2 V LHe temp. 1 5.55 K Heat exch. temp. 3 190.7 K Poly temp. 2 147.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30.5 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru MC Program Restart: running AFP temperature 9.7 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 96.5 % SCS current 119.3 A Hall Probe vi running hall probes not calibrated LED vi running SV3 closed SV4 closed CM1 pressure 0.4 torr CM5 pressure 1.0 torr CC1 pressure 2.1x10^-5 torr Hall Probe Y no change kG Hall Probe Z no change kG PPM LHe level 87.8 % PPM LN2 level 55.4 % AFP LHe level 88.0 % AFP LN2 level 82.9 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.6 F West MWPC Temperature 77 F MWPC Pressure 100 torr N2 - MWPC Differential -0.6 torr Neopentane Flow Rate 18 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 16.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1275 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3061 Hz West muon veto rate 3763 Hz Spectrometer vacuum (CC1 these days) DAQ data_raw disk usage 88% Proton beam status burst Proton burst spacing 5 Hz Proton pulses/burst 5, 20hz Proton countdown 1 Proton pattern width 280 ns TBCM001I03 15.6 mA "Beamplot" Capture .80 % Beam started time: NA (this is to record when beam is tuned and ready in weekday afternoons)

24981	Sat Oct 13 09:12:53 2012	JOrtiz3

East MWPC HV supply "HV" led is not on, yet counts seem to be generating fine from the east side MWPC in run number 20582. Cable has increased current when wiggling.

24980	Sat Oct 13 02:52:11 2012	bz

UCNA Shift Change Checklist Date: October 13, 2012 02:30 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.45 psia Heater C pressure 13.65 psia Tungsten supply press. 285 psig Compressor 1 On on Tungsten Cool supp. 274.5 psia Tungsten Cool Diff. 276.2 psia Tungsten Cool ret. 62.7 psia 1630 eng. 2 temp. 14.77 K 1630 JT temp. 7.36 K 1630 outlet temp. 271.1 K 1630 engine speed 150 rpm SCS Fill in progress 1630 supply press. 210 psig 1630 JT press. 175 psig 1630 return press. 1.0 psig 1630 med. press. stor. 80

psig 1410 engine speed 149 rpm 1410 TE A 17.9 K 1410 TE B 7.7 K 1410 TE E 8.9 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.3 psig 1K dewar pressure 6.2 psig 4K dewar pressure 240 mmHg 4K dewar level 11.56 inHe 1K dewar level 25.87 inHe 4K main flow control 5.1 V LHe temp. 1 5.16 K Heat exch. temp. 3 189.9 K Poly temp. 2 135.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status down MC Program Restart: restarted at ??...run number 1303 AFP temperature 10.1 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 87.1 % SCS current 119.3 A Hall Probe vi running hall probes not calibrated LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 1.0 torr CC1 pressure 5x10^-4 torr Hall Probe Y 0.171 kG Hall Probe Z -0.361 kG PPM LHe level 87.9 % PPM LN2 level 57.2 % AFP LHe level 98.9 % AFP LN2 level 95.6 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.5 F West MWPC Temperature 70.6 F MWPC Pressure 100 torr N2 - MWPC Differential oscillating between -0.3 and -1.2 torr Neopentane Flow Rate oscillating between 18.4 and 19.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 16.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 5198 Hz West muon veto rate 6200 Hz Spectrometer vacuum 3.7e-5 torr (CC1 these days) DAQ data_raw disk usage 88% Proton beam status burst Proton burst spacing 5 Hz Proton pulses/burst 5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 17.86 mA "Beamplot" Capture .80 % Beam ready time: ?

24979	Fri Oct 12 23:57:01 2012	Rpattie

Prior to starting the octets for the evening I performed a AFP scan, results listed below: f FWD P RFL P CPS*100 --- --- --- 778 28.485 5 < 0.1 448 28.490 5 < 0.1 366 28.495 5 < 0.1 329 28.500 5 0 305 < ----- Using this frequency 28.505 5 0 333 28.510 5 0 403 28.515 5 <0.1 467 28.520 5 <0.1 675

24977	Fri Oct 12 22:51:36 2012	Hasan

Beam tune delayed due to problems with Line B Quads...came back on for few minutes, now off again... stable beam available at 8:30pm. Retracting the source and pluggin in decay trap plug...

24978	Fri Oct 12 22:14:09 2012	JOrtiz3

Helium leak tested load-lock after removing source and installing the plug. 3.7E-9 mbar*liter/sec across everything, very steady. Reattaching to SCS.

24975	Fri Oct 12 19:40:37 2012	Hasan

UCNA Shift Change Checklist Date: October 12, 2012 16:15 Shift Persons: Hasan, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.12 psia Heater C pressure 13.62 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 274.0 psia Tungsten Cool Diff. 276.2 psia Tungsten Cool ret. 62.3 psia 1630 eng. 2 temp. 14.42 K 1630 JT temp. 7.39 K 1630 outlet temp. 271.4 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 187 psig 1630 return press. 1.2 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 84.7 K 1410 supply press. 242 psig 1410 JT press. 166 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 263 mmHg 4K dewar level 9.86 inHe 1K dewar level 26.18 inHe 4K main flow control 4.5 V LHe temp. 1 6.19 K Heat exch. temp. 3 181.5 K Poly temp. 2 74.4 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 14.0 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru MC Program Restart: restarted at ??...run number ?? AFP temperature 9.6 C AFP frequency 28.50 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 87.6 % SCS current 0 A Hall Probe vi not running hall probes not calibrated LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.7 torr CC1 pressure 3.7x10^-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.361 kG PPM LHe level 88.0 % PPM LN2 level 60.2 % AFP LHe level 94.4 % AFP LN2 level 91.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East

Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.8 F West MWPC Temperature 73.5 F MWPC Pressure 100 torr N2 - MWPC Differential -0.8 torr Neopentane Flow Rate 18.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 16.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 2817 Hz West muon veto rate 3499 Hz Spectrometer vacuum 4.5e-5 torr (CC2 these days) DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing Hz Proton pulses/burst Proton countdown Proton pattern width ns TBCM001I03 mA "Beamplot" Capture % Beam ready time: ?

24976	Fri Oct 12 16:55:34 2012	ASaunders

melt and refreeze

24974	Fri Oct 12 16:45:53 2012	ASaunders

time run source status 11:58 20515 all the way in 12:27 20516 back 1/2 inch 12:53 20517 back 1 inch 13:22 20519 back 1.5 inch 13:47 20520 back 2 inch 14:16 20522 back 2.5 inch 14:42 20523 back 3 inch 15:06 20524 back 3.5 inch 15:30 20525 back 4 inch 15:53 20526 back 4.5 inch 16:16 20527 back 5 inch 16:43 20528- back 2.5 inches; long run for high stats

24973	Fri Oct 12 16:18:35 2012	ASaunders

doing source calibration runs inserted source holder with Bi, Ce, Sn sources all the way in to start writing on sources facing west

24972	Fri Oct 12 07:20:06 2012	Rpattie

Shift Summary - ---------- Runs - Description SCS-lifetime 20505-20506 SLD- with the SCS off 63(1) s 20507-20508 SLD+ with the SCS off 27(1) s 20509-20510 SLD- with the SCS on 47(s) s 20511-20512 SLD+ with the SCS on N/A run 20511 was corrupted and was somehow deleted?... Seeing the 47 second SCS lifetime with the field at 1T we spent 5 minutes measuring the beta-decay rate with the AFP on and off: 20513 - AFP On - Fe/GV = 0.1258 - SCS/GV = 0.2852 - E+W/GV = 1.0904 , E = 9.144 Hz W = 8.046 Hz 20514 - AFP Off - Fe/GV = 0.5032 - SCS/GV = 0.3789 - E+W/GV = 1.5945 , E = 9.254 Hz W = 9.454 Hz. Rates for 20514 may be misleading to do beaming dropping out. The E+W/GV during the last octet was 0.81 and 1.1 for AFP on and off, so ~50% increase.

24971	Fri Oct 12 00:49:20 2012	Rpattie

CNA Shift Change Checklist Date: October 12, 2012 00:35 Shift Persons: Bryan,Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.33 psia Heater C pressure 13.71 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 276.8 psia Tungsten Cool Diff. 276.9 psia Tungsten Cool ret. 64.5 psia 1630 eng. 2 temp. 15.45 K 1630 JT temp. 8.36 K 1630 outlet temp. 276.3 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.3 psig 1630 med. press. stor. 85 psig 1410 engine speed 149 rpm 1410 TE-A 16.2 K 1410 TE-B 6.7 K 1410 TE-E 85.3 K 1410 supply press. 242 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.8 psig 4K dewar pressure 253 mmHg 4K dewar level 4.68 inHe 1K dewar level 24.92 inHe 4K main flow control 5.0 V LHe temp. 1 5.8 K Heat exch. temp. 3 182.2 K Poly temp. 2 84.9 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19.0 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru MC Program Restart: restarted at 18:07...run number 1301 AFP temperature 10.2 C AFP frequency 28.50 MHz AFP forward power 40 W AFP N2 dewar level 1/2 SCS LHe level 94 % SCS fill in progress SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.3 torr CC1 pressure 3x10^-5 torr Hall Probe Y 0.188 kG Hall Probe Z -0.367 kG PPM LHe level 88.1 % PPM LN2 level 65.3 % AFP LHe level 99.8 % AFP LN2 level 99.6 % PPM current 72(6) A(T) AFP current 93.647(0) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.9 F West MWPC Temperature 73.2 F MWPC Pressure 100 torr N2 - MWPC Differential -1.6 torr Neopentane Flow Rate 18.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 1.25 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 16 slpm West PMT

Back. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3223 Hz West muon veto rate 4675 Hz Spectrometer vacuum 3.7e-5 torr (CC2 these days) DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 15.5 mA "Beamplot" Capture 82 %

24969	Thu Oct 11 20:19:35 2012	Hasan

UCNA Shift Change Checklist Date: October 11, 2012 16:25 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 131 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.06 psia Heater C pressure 13.59 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 277.8 psia Tungsten Cool Diff. 277.2 psia Tungsten Cool ret. 65.0 psia 1630 eng. 2 temp. 15.94 K 1630 JT temp. 8.34 K 1630 outlet temp. 277.2 K 1630 engine speed 175 rpm 1630 supply press. 230 psig 1630 JT press. 185 psig 1630 return press. 0.9 psig 1630 med. press. stor. 85 psig 1410 engine speed 149 rpm 1410 TE-A 15.4 K 1410 TE-B 6.4 K 1410 TE-E 103.9 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7.0 psig 4K dewar pressure 230 mmHg 4K dewar level 9.4 inHe SCS fill in progress 1K dewar level 22.79 inHe 4K main flow control 4.4 V LHe temp. 1 6.761 K Heat exch. temp. 3 196.49 K Poly temp. 2 73.31 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 21.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru MC Program Restart: restarted at 18:07...run number 1301 AFP temperature 9.8 C AFP frequency 28.50 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 95 % SCS fill in progress SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.4 torr CC1 pressure over limit torr Hall Probe Y 0.188 kG Hall Probe Z -0.367 kG PPM LHe level 88.2 % PPM LN2 level 67.2 % AFP LHe level 97.8 % AFP LN2 level 97.2 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 84.6 F West MWPC Temperature 71.1 F MWPC Pressure 100 torr N2 - MWPC Differential -1.5 torr Neopentane Flow Rate 17.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1015 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2871 Hz West muon veto rate 3475 Hz Spectrometer vacuum 2.7e-5 torr (CC2 these days) DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 15.5 mA "Beamplot" Capture 82 % Beam Ready Time: 19:20 beam was on and off...CCR was able to give us beam parameters at 20:15

24941	Thu Oct 11 19:09:09 2012	Hasan

Load Lock pumped and connected to the SCS, Baratron gauge, TC6 readings good. Decay trap plug inserted in to the decay trap.

24970	Thu Oct 11 18:45:02 2012	ASaunders

SCS quenched during the day today, so it is now ramped down I have made some fixes on the load lock system 1) The inner sliding o-ring was completely out of its groove. I reseated it and glued the retaining ring down on top of it to keep it in place. 2) The vent valve had a large leak when closed. I installed a second swagelock valve in series with the existing vent valve. We should use this valve instead of the existing vent valve. We should replace this kluged setup as soon as possible.

24968	Thu Oct 11 03:52:07 2012	bz

Source paddle inserted so that inscriptions are facing west when flags are up

24967	Thu Oct 11 03:46:54 2012	bz

On the AFP rack, there is a circuit board in a loop of wire. Some connection on that circuit board is loose, and so if the connection is not working, then the system won't turn on. We adjusted various wires for a while before finally getting lucky and turning the system on. Here are the results of our tune: freq.(MHz) Forward Power(W) Reflected Power(W) cts/100 ----- - - - 874 28.485 5 <0.1 416 28.490 5 0 338 28.495 5 0 302 28.500 5 0 295 28.505 5 0 306 28.510 5 0 339 28.515 5 0 426 28.520 5 <0.1 666 28.485 5 <0.1 453 28.480 5 0.1 621 We have decided to

go with a tune of 28.900 MHz.

24966	Thu Oct 11 03:38:08 2012	bz

UCNA Shift Change Checklist Date: October 11, 2012 00:20 Shift Persons: Bryan,Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.65 psia Heater C pressure 13.81 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 278.3 psia Tungsten Cool Diff. 277.6 psia Tungsten Cool ret. 65.4 psia 1630 eng. 2 temp. 15.6 K 1630 JT temp. 8.2 K 1630 outlet temp. 271.5 K 1630 engine speed 165 rpm 1630 supply press. 225 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig 1630 med. press. stor. 80 psig 1410 engine speed 149 rpm 1410 TE-A 17.0 K 1410 TE-B 7.6 K 1410 TE-E 88.9 K 1410 supply press. 245 psig 1410 JT press. 175 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 310 mmHg 4K dewar level 15.21 inHe 1K dewar level 15.05 inHe 4K main flow control 5.3 V LHe temp. 1 5.15 K Heat exch. temp. 3 180.8 K Poly temp. 2 95.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status b/w down and thru AFP temperature 9.6 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 87.3 % SCS current 119.07 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 1.4 torr CC1 pressure 2.0E-5 torr Hall Probe Y .170 kG Hall Probe Z -.361 kG PPM LHe level 88.3 % PPM LN2 level 73.2 % AFP LHe level 99.0 % AFP LN2 level 74.3 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 2600 V MWPC Trip Hold Status T-H East MWPC Temperature 82.7 F West MWPC Temperature 71.5 F MWPC Pressure 100 torr N2 - MWPC Differential -1.1 torr Neopentane Flow Rate 17.7 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2610 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .39 A Top-Veto and GMS Crate (Top Crate) 2350 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (Ch12) East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3586 Hz West muon veto rate 4331 Hz Spectrometer vacuum 4.7e-5 torr (CC1 these days) DAQ data_raw disk usage 87% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 285 ns TBCM001I03 17.59 "Beamplot" Capture .82 Beam Ready Time: 18:50

24965	Thu Oct 11 01:27:33 2012	Rpattie

to verify my lifetime calculation I reanalyzed the runs that Chris found a 55(1)s scs-lifetime. In the fastdaq these are runs 20479-20481. Both the previous runs and tonight's set are SLD-. The only difference is that the SCS was ramped down during the runs with the 55s lifetime. Also I analyzed the SLD+ runs (20482) which followed the 55s lifetime and found at lifetime of 25s. The SCS was ramped up for the for SLD+ runs. -- Update -- We measured the decay rate beta/GV = 1.26 which is an improvement over the 0.81 measured on 9/15/2012, but still down from the 1.91 from 2/2/2012. The total rate was 20 cps.

Attachment 1: omp.gif

omp.gif

24964	Wed Oct 10 23:55:17 2012	CLMorris

run data 1318

Attachment 1: .csv

```
[DISPLAY]
VER=244
TYPE=1
DATALEN=2
XPARAM=0
YPARAM=1
XRANGE=131071
YRANGE=0
NAME=C:\UCN2012\August\SCS-B2-run1318.csv
XTITLE=x
YTITLE=y

[DATA]
0 0 5
```

2 0 2
3 0 1
4 0 4
5 0 2
6 0 1
7 0 1
8 0 1
9 0 2
10 0 2
11 0 2
12 0 4
13 0 2
14 0 2
15 0 2
16 0 2
17 0 2
19 0 2
20 0 1
21 0 2
22 0 1
23 0 1
24 0 1
25 0 1
26 0 1
27 0 1
28 0 1
29 0 1
30 0 1
31 0 1
34 0 1
35 0 3
36 0 2
37 0 1
38 0 1
40 0 2
48 0 1
49 0 1
50 0 2
51 0 1
53 0 2
56 0 1
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59 0 1
60 0 1
62 0 1
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77 0 1
79 0 1
80 0 1
88 0 1
90 0 1
100 0 1
101 0 1
110 0 1
116 0 1
126 0 1
131 0 2
136 0 2
142 0 3
145 0 1
152 0 2
157 0 1
161 0 1
162 0 1
173 0 2
188 0 1
199 0 1
209 0 1
220 0 1
226 0 1
230 0 2
235 0 2
241 0 1
246 0 1
251 0 1
256 0 1
257 0 1
258 0 1
287 0 1
298 0 1
313 0 1
317 0 1
329 0 2

350 0 1
355 0 1
376 0 1
381 0 1
391 0 1
396 0 2
401 0 2
402 0 1
408 0 1
409 0 1
412 0 1
417 0 3
419 0 1
420 0 3
421 0 1
422 0 6
423 0 4
424 0 2
425 0 7
426 0 3
427 0 2
428 0 2
429 0 3
430 0 2
432 0 6
433 0 7
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475 0 8
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477 0 13
478 0 11
479 0 13
480 0 8
481 0 7
482 0 4
483 0 7
484 0 6
485 0 6
486 0 4
487 0 9
488 0 9
489 0 10
490 0 9
491 0 7
492 0 9

494 0 6
495 0 14
496 0 10
497 0 4
498 0 10
499 0 10
500 0 8
501 0 10
502 0 8
503 0 10
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522 0 5
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524 0 10
525 0 6
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527 0 9
528 0 10
529 0 9
530 0 12
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532 0 8
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549 0 12
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551 0 12
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553 0 8
554 0 10
555 0 11
556 0 6
557 0 11
558 0 14
559 0 10
560 0 7
561 0 9
562 0 8
563 0 6
564 0 8
565 0 7
566 0 9
567 0 6
568 0 8
569 0 6
570 0 9
571 0 12
572 0 14
573 0 10
574 0 9
575 0 10
576 0 8
577 0 9
578 0 9

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580 0 5
581 0 7
582 0 8
583 0 7
584 0 10
585 0 12
586 0 12
587 0 6
588 0 4
589 0 4
590 0 10
591 0 10
592 0 12
593 0 6
594 0 11
595 0 7
596 0 10
597 0 8
598 0 11
599 0 9
600 0 8
601 0 12
602 0 10
603 0 3
604 0 6
605 0 8
606 0 12
```

... 28818 more lines ...

24963	Wed Oct 10 22:57:29 2012	Rpattie

First pass analysis of the SLD- Run 20482: ---------- Since I hope I'm doing this wrong I'll post my procedure: 1. Draw the S8200/1e6 leaf with the cut Sis00 == 2052 - This should select the timing relative to the T0 of the scs-monitor. 2. Fit to a exponential + c1 from 150s to 500 s. 3. Post results So the lifetime I get is about 27(2)s see attached plot. Hopefully someone will tell me that I've made a mistake.

Attachment 1: un_20482.gif

un_20482.gif

24962	Wed Oct 10 19:58:07 2012	Hasan

UCNA Shift Change Checklist Date: October 10, 2012 16:15 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.49 psia Heater C pressure 13.38 psia Tungsten supply press. 270 psig Compressor 1 On on Tungsten Cool supp. 279.5 psia Tungsten Cool Diff. 277.9 psia Tungsten Cool ret. 66.2 psia 1630 eng. 2 temp. 14.99 K 1630 JT temp. 7.47 K 1630 outlet temp. 275.3 K 1630 engine speed 185 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 0.7 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 15.3 K 1410 TE-B 6.2 K 1410 TE-E 90.0 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.5 psig 1K dewar pressure 7.0 psig 4K dewar pressure 300 mmHg 4K dewar level 15.41 inHe 1K dewar level 10.63 inHe 4K main flow control 4.6 V LHe temp. 1 5.361 K Heat exch. temp. 3 182.02 K Poly temp. 2 71.49 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status b/w down and thru AFP temperature 9.8 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 93.3 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 1.4 torr CC1 pressure 1.7E-5 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 88.4 % PPM LN2 level 76.1 % AFP LHe level 97.2 % AFP LN2 level 91.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 73.7 F West MWPC Temperature 73.6 F MWPC Pressure 96 torr N2 - MWPC Differential -7.2 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H2O Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2400 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -5.5 torr Neopentane Flow Rate 14.4 slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West

86% Proton beam status burst Proton burst spacing --- Hz Proton pulses/burst --- Proton countdown --- Proton pattern width --- TBCM001I03 --- "Beamplot" Capture --- Beam Ready Time: 18:50

24961	Wed Oct 10 00:34:51 2012	Rpattie

UCNA Shift Change Checklist Date: October 10, 2012 00:00 Shift Persons: Bryan, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.58 psia Heater C pressure 13.45 psia Tungsten supply press. 270 psig Compressor 1 On on Tungsten Cool supp. 280.1 psia Tungsten Cool Diff. 278.1 psia Tungsten Cool ret. 67.1 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.50 K 1630 outlet temp. 265.8 K 1630 engine speed 180 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 0.8 psig 1630 med. press. stor. 40 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 91.1 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 17.68 inHe 1K dewar level 16.40 inHe 4K main flow control 6.0 V LHe temp. 1 5.1 K Heat exch. temp. 3 184.3 K Poly temp. 2 148.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart running Switcher status between down and thru AFP temperature 25.3 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level empty SCS LHe level 92.7 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 618.1 torr CC1 pressure 3.1e-5 torr (CC1 cable in CC2 slot) source pressure Hall Probe Y 0.00 kG Hall Probe Z 0.00 kG PPM LHe level 88.5 % PPM LN2 level 81.0 % AFP LHe level 92.2 % AFP LN2 level 81.9 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off Spectrometer Vaccuum 302.6 torr pumping ========== East Detector Cart.....OFF ========== ========== West Detector Cart (OFF) ========== DAQ data_raw disk usage 86%

24957	Tue Oct 9 19:27:51 2012	Erik

UCNA Shift Change Checklist Date: October 8, 2012 16:00 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.0 psia Heater C pressure 13.5 psia Tungsten supply press. 285 psig Compressor 1 On on Tungsten Cool supp. 280.0 psia Tungsten Cool Diff. 278.2 psia Tungsten Cool ret. 66.7 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 15.34 K 1630 JT temp. 7.83 K 1630 outlet temp. 276.1 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig 1630 med. press. stor. 75 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 16.2 K 1410 TE-B 6.7 K 1410 TE-E 84.2 K 1410 supply press. 244 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 297 mmHg 4K dewar level 16.3 inHe 1K dewar level 5.7 inHe 4K main flow control 4.0 V LHe temp. 1 6.6 K Heat exch. temp. 3 213.8 K Poly temp. 2 155.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 11.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart not running Switcher status between down and thru AFP temperature 25.4 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 81.6 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 618.5 torr CC1 pressure off torr (CC1 cable in CC2 slot) Hall Probe Y 0.00 kG Hall Probe Z 0.00 kG PPM LHe level 88.8 % PPM LN2 level 93.1 % AFP LHe level 88.6 % AFP LN2 level 42.2 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== ========== West Detector Cart (OFF) ========== DAQ data_raw disk usage 86% Beam ready time 19:15

24960	Tue Oct 9 18:13:25 2012	Erik

UCNA Shift Change Checklist Date: October 9, 2012 16:00 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

Water Line pressure 132 psia Water line return 38.9 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.51 psia Heater C pressure 13.71 psia Tungsten supply press. 270 psig Compressor 1 On on Tungsten Cool supp. 280.3 psia Tungsten Cool Diff. 277.7 psia Tungsten Cool ret. 67.3 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 14.92 K 1630 JT temp. 7.54 K 1630 outlet temp. 274.3 K 1630 engine speed 200 rpm 1630 supply press. 247 psig 1630 JT press. 195 psig 1630 return press. 0.7 psig 1630 med. press. stor. 45 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 16.2 K 1410 TE-B 6.5 K 1410 TE-E 91.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 310 mmHg 4K dewar level 16.76 inHe 1K dewar level 15.39 inHe 4K main flow control 4.5 V LHe temp. 1 5.345 K Heat exch. temp. 3 187.18 K Poly temp. 2 72.696 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 35 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart not running Switcher status between down and thru AFP temperature 25.4 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level empty SCS LHe level 97.3 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.8 torr CM5 pressure 620.5 torr CC1 pressure 2.4e-5 torr (CC1 cable in CC2 slot) source pressure Hall Probe Y 0.00 kG Hall Probe Z 0.00 kG PPM LHe level 88.6 % PPM LN2 level 83.5 % AFP LHe level 87.9 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off Spectrometer Vaccuum 566.1 torr pumping ========== East Detector Cart.....OFF ========== ========== West Detector Cart (OFF) ========== DAQ data_raw disk usage 86%

24959	Tue Oct 9 07:58:39 2012	DGPhillipsII

Filled AFP

24958	Tue Oct 9 01:12:28 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 9, 2012 00:50 Shift Persons: Dave, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.78 psia Heater C pressure 13.59 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 281.2 psia Tungsten Cool Diff. 278.8 psia Tungsten Cool ret. 67.6 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 15.85 K 1630 JT temp. 8.13 K 1630 outlet temp. 276.8 K 1630 engine speed 175 rpm 1630 supply press. 235 psig 1630 JT press. 192 psig 1630 return press. 0.4 psig 1630 med. press. stor. 65 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 15.5 K 1410 TE-B 6.4 K 1410 TE-E 101.2 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 240 mmHg 4K dewar level 16.3 inHe 1K dewar level 15.7 inHe 4K main flow control 4.0 V LHe temp. 1 7.47 K Heat exch. temp. 3 213.41 K Poly temp. 2 164.50 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 13.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart not running Switcher status between down and thru AFP temperature 25.3 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/8 SCS LHe level 95.2 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 3.2 torr CM5 pressure 618.8 torr CC1 pressure off torr (CC1 cable in CC2 slot) Hall Probe Y 0.00 kG Hall Probe Z 0.00 kG PPM LHe level 88.7 % PPM LN2 level 88.6 % AFP LHe level 95.4 % AFP LN2 level 84.8 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== ========== West Detector Cart (OFF) ========== DAQ data_raw disk usage 86%

24956	Mon Oct 8 12:14:13 2012	CCW

UCNA Shift Change Checklist Date: October 8, 2012 09:00 Shift Persons: Chris, Andy ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.0 psia Heater C pressure 13.5 psia Tungsten supply press. 285 psig Compressor 1 On on Tungsten Cool supp. 280.0 psia Tungsten Cool Diff. 278.2 psia Tungsten Cool ret. 66.7 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 15.34 K 1630 JT temp. 7.83 K 1630 outlet temp. 276.1 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.1 psig

1410 TE-B 6.7 K 1410 TE-E 84.2 K 1410 supply press. 244 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 297 mmHg 4K dewar level 16.3 inHe 1K dewar level 5.7 inHe 4K main flow control 4.0 V LHe temp. 1 6.6 K Heat exch. temp. 3 213.8 K Poly temp. 2 155.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 11.0 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart running Switcher status between AFP temperature 24 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/3 SCS LHe level 86.9 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 612.9 torr CC1 pressure off torr (CC1 cable in CC2 slot) Hall Probe Y 0.003 kG Hall Probe Z 0.001 kG PPM LHe level 88.9 % PPM LN2 level 96.7 % AFP LHe level 99.8 % AFP LN2 level 60.3 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 9 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== ========== West Detector Cart (OFF) ========== DAQ data_raw disk usage 86% Notes: Detectors are off and being vented in preparation for replacement of W detector window. Source idled

24955	Mon Oct 8 00:45:10 2012	Rpattie

UCNA Shift Change Checklist Date: October 8, 2012 00:30 Shift Persons: Dave, Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 133 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.74 psia Heater C pressure 13.42 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 281.9 psia Tungsten Cool Diff. 279.0 psia Tungsten Cool ret. 68.0 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 14.78 K 1630 JT temp. 7.48 K 1630 outlet temp. 272.0 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 0.8 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 15.7 K 1410 TE-B 5.9 K 1410 TE-E 93.9 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 290 mmHg 4K dewar level 16.08 inHe 1K dewar level 13.6 inHe 4K main flow control 5.1 V LHe temp. 1 5.2 K Heat exch. temp. 3 190.6 K Poly temp. 2 160.6 K flapper heater cur. 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19.5 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart off Switcher status between down and thru AFP temperature 25.1 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 91.0 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 616.2 torr CC1 pressure 1.9E-5 torr (CC1 cable in CC2 slot) Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 89.0 % PPM LN2 level 98.5 % AFP LHe level 72.9 % AFP LN2 level 81.1 % Found auto-fill on. Turned it off. PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 69.8 F West MWPC Temperature 71.1 F MWPC Pressure 0.2 torr N2 - MWPC Differential 0.1 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller OFF Chiller water level 1 ========== West Detector Cart (OFF) ========== MWPC HV 0 V MWPC Trip Hold Status 0 MWPC Pressure -0.2 torr N2 - MWPC Differential 1.3 torr Neopentane Flow Rate -0.9 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 (OFF) V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 (OFF) V (Ch12) East muon veto HV 0 (OFF) kV West muon veto HV 0 (OFF) kV East muon veto rate 0 (OFF) Hz West muon veto rate 0 (OFF) Hz Spectrometer vacuum E09 torr (Venting) DAQ data_raw disk usage 86% Proton beam status Proton burst spacing Proton pulses/burst Proton countdown Proton pattern width TBCM001I03 "Beamplot" Capture

24954	Sun Oct 7 17:27:12 2012	Erik

UCNA Shift Change Checklist Date: October 7, 2012 16:00 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.02 psia Heater C pressure 13.79 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 283.1 psia Tungsten Cool Diff. 280.0 psia Tungsten Cool ret. 68.4 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 14.99 K 1630 JT temp. 7.91 K 1630 outlet temp. 271.6 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 170 psig 1630 return

press. 2.1 psig 1090 med. press. stor. 0.7 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 16.8 K 1410 TE-B 7.2 K 1410 TE-E 83.9 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 15.31 inHe 1K dewar level 16.54 inHe 4K main flow control 5.1 V LHe temp. 1 5.019 K Heat exch. temp. 3 191.92 K Poly temp. 2 137.66 K flapper heater cur. 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 22 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart off Switcher status between down and thru AFP temperature 25.3 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 99.9 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 615.2 torr CC1 pressure 2.1E-5 torr (CC1 cable in CC2 slot) Hall Probe Y 0.003 kG Hall Probe Z 0.001 kG PPM LHe level 89.1 % PPM LN2 level 99.4 % AFP LHe level 83.9 % AFP LN2 level 98.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 16 psig AFP chiller flow rate 9.5 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 69.8 F West MWPC Temperature 71.1 F MWPC Pressure 0.2 torr N2 - MWPC Differential 0.1 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller OFF Chiller water level 1 ========== West Detector Cart (OFF) ========== MWPC HV 0 V MWPC Trip Hold Status 0 MWPC Pressure -0.2 torr N2 - MWPC Differential 1.3 torr Neopentane Flow Rate -0.9 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 (OFF) V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 (OFF) V (Ch12) East muon veto HV 0 (OFF) kV West muon veto HV 0 (OFF) kV East muon veto rate 0 (OFF) Hz West muon veto rate 0 (OFF) Hz Spectrometer vacuum 67 torr (Venting) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 Proton pattern width 285 ns TBCM001I03 14.8 mA "Beamplot" Capture 75%

24953	Sun Oct 7 15:16:30 2012	ASaunders

started venting decay trap 1) removed decay trap plug according to procedure. Noticed decay trap plug was not fully inserted, but was rotated 90 degrees from the correct orientation and then pushed in as far as it would go. (That is, the ears were vertical, not horizontal.) So it was probably about 1/8 inch back from the correct position for last night's data. The decay trap plug is now fully retracted and the load lock is full of air. The plug is in the load lock. 2) closed GV1 and disabled by removing air line 3) vented section between GV1 and PPM window with argon to 615 Torr 4) Confirmed AFP chiller was on and set to 24 C (see entry from earlier today). AFP RF is disabled. 5) Confirmed both gas carts in safe state: all MV valves closed except MV5 and MV7, which are open. 6) Valved off differential pump on switcher and upstream couplers 7) Turned off air supply to switcher, removed air lines, and moved switcher to halfway between thru and down positions. 8) Confirmed shutter is open. 9) Turned off CC2 (which was plugged into CC1) 10) Turned off turbo pumps on decay trap. 11) After turbos spun down, started venting through needle valve at 0.1 Torr/8 seconds with argon.

24952	Sun Oct 7 15:05:20 2012	ASaunders

tested east detector window by filling detector to 100 torr according to procedure. east windows look great: no change in decay trap pressure (~1.5e-5) when MWPC full at 100 Torr.

24951	Sun Oct 7 14:57:19 2012	ASaunders

both magnets are off

24950	Sun Oct 7 14:40:50 2012	CLMorris

The decay trap lifetime is now good-55+/-1 s.

Attachment 1: if

if

24949	Sun Oct 7 13:42:46 2012	ASaunders

since we will soon vent the system, I disabled the AFP RF (pulled out 5V from RF relay and turned off amplifier). I then set the AFP chiller to 24 C.

24948	Sun Oct 7 13:41:51 2012	ASaunders

ramping down AFP.

24947	Sun Oct 7 13:41:29 2012	ASaunders

tried to fill detectors west detector has large leak in front window; decay trap vacuum went

up to a few e-4 as soon as we started filling, went right back down to 2e9 as soon as we pumped out detector again.

24946	Sun Oct 7 09:43:28 2012	CCW

UCNA Shift Change Checklist Date: October 7, 2012 09:00 Shift Persons: Chris ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.77 psia Heater C pressure 13.60 psia Tungsten supply press. 285 psig Compressor 1 On on Tungsten Cool supp. 208.8 psia Tungsten Cool Diff. 278.7 psia Tungsten Cool ret. 67.3 psia Pressures have been drifting downward, ask Andy 1630 eng. 2 temp. 14.66 K 1630 JT temp. 7.43 K 1630 outlet temp. 272.3 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.8 psig 1630 med. press. stor. 57.5 psig 1410 engine speed 149 rpm Range out of date 1410 TE-A 15.5 K 1410 TE-B 6.3 K 1410 TE-E 103.5 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 320 mmHg 4K dewar level 14.6 inHe 1K dewar level 22.36 inHe 4K main flow control 5.1 V LHe temp. 1 5.1 K Heat exch. temp. 3 183.70 K Poly temp. 2 81.40 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 24.5 gallon/100 Gate valve status closed/flapping D2 Pump port status closed MCS Program Restart running Switcher status down AFP temperature 10.2 C AFP frequency 28.485 MHz AFP forward power 40 W AFP N2 dewar level 7/16 SCS LHe level 82.5 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.2 torr CC1 pressure 2.3E-5 torr (CC1 cable in CC2 slot) Hall Probe Y 0.188 kG Hall Probe Z -0.367 kG PPM LHe level 89.2 % PPM LN2 level 57.8 % AFP LHe level 99.8 % AFP LN2 level 98.6 % PPM current 72(6) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 70.8 F West MWPC Temperature 69.0 F MWPC Pressure 0.2 torr N2 - MWPC Differential 0.1 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller OFF Chiller water level 0.5 ========== West Detector Cart (OFF) ========== MWPC HV 0 V MWPC Trip Hold Status 0 MWPC Pressure -0.2 torr N2 - MWPC Differential 1.3 torr Neopentane Flow Rate -0.9 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 (OFF) V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 (OFF) V (Ch12) East muon veto HV 0 (OFF) kV West muon veto HV 0 (OFF) kV East muon veto rate 0 (OFF) Hz West muon veto rate 0 (OFF) Hz Spectrometer vacuum 4.0e-5 torr(CC2 cable in CC1 slot) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 s Proton pulses/burst 5 Proton countdown 1 Proton pattern width 285 ns TBCM001I03 14.8 mA "Beamplot" Capture 75% Notes: Bryan was concerned about the temperature in Area B, so we turned off the fans.Should turn them back on if we can verify that the heater is working. Tungsten return pressure dropping slowly.

24945	Sun Oct 7 06:22:22 2012	DGPhillipsII

Dave & Bryan Filled AFP.

24944	Sun Oct 7 06:00:35 2012	bz

Shift overview: Took a whole lot of SLD- runs. After fixing the flapper, the runs should be have plenty of UCN to make a measurement. About 4:30, stopped taking SLD- in order to determine where the small pulses of pressure in the decay trap were coming from - best guess is that they are accompanying the activation of the switcher. This explains why the pulses are so short (the gas is entering at the switcher and quickly diffusing throughout the system). In order to come to this conclusion I actuated the switcher independently of everything else and saw the spikes in a repeatable fashion. In addition, there appear to be vacuum burps similar to those we have previously witnessed. After (about 5:30), tested the AFP to make sure it was still roughly tuned. Started taking a bunch of SLD+ runs on the basis that 1, the decay trap pressure was staying at 8 e-5 torr or lower and 2, the kinetic energy of the flipped neutrons should be 120 neV higher, so we may should see a shorter lifetime based on easier penetration of the walls and more bounces/sec.

24943	Sun Oct 7 01:13:09 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 7, 2012 01:00 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.10 psia Heater C pressure 13.62 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 280.1 psia Tungsten

7.57 K 1630 outlet temp. 272.0 K 1630 engine speed 195 rpm 1630 supply press. 245 psig 1630 JT press. 192 psig 1630 return press. 1.25 psig 1630 med. press. stor. 65 psig 1410 engine speed 149 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 96.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 14.37 inHe 1K dewar level 19.71 inHe 4K main flow control 5.1 V LHe temp. 1 5.01 K Heat exch. temp. 3 187.80 K Poly temp. 2 81.20 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program Restart running Switcher status thru AFP temperature 18.7 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 84.5 % SCS current 0 A Hall Probe vi yes LED vi yes SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.2 torr CC1 pressure 2.4E-5 torr (CC1 cable in CC2 slot) Hall Probe Y 0.188 kG Hall Probe Z -0.367 kG PPM LHe level 89.3 % PPM LN2 level 59.9 % AFP LHe level 95.3 % AFP LN2 level 89.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 16 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 72.9 F West MWPC Temperature 75.6 F MWPC Pressure --- torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H2O Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 9.1e-5 torr (CC2 cable in CC1 slot) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 15.04 mA "Beamplot" Capture 82% Beam Ready Time: 16:00

24942	Sat Oct 6 21:29:24 2012	Hasan

UCN count (open GV) has reduced by 50% (187hz->85hz) in the past 40 min or so... asked CCR to see if anything changed on their end, they said nothing changed. checked the flapper program...its giving error: nest level too deep... don't know how to fix it...continuing with SLD- runs with lower UCN rate...

24939	Sat Oct 6 20:34:22 2012	Erik

UCNA Shift Change Checklist Date: October 6, 2012 16:00 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.05 psia Heater C pressure 13.49 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 286.2 psia Tungsten Cool Diff. 280.9 psia Tungsten Cool ret. 71.0 psia 1630 eng. 2 temp. 14.73 K 1630 JT temp. 7.38 K 1630 outlet temp. 272.1 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.65 psig 1630 med. press. stor. 75 psig 1410 engine speed 149 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 88.6 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 2.7 psig 1K dewar pressure 7 psig 4K dewar pressure 315 mmHg 4K dewar level 13.79 inHe 1K dewar level 17.48 inHe 4K main flow control 5.1 V LHe temp. 1 5.015 K Heat exch. temp. 3 191.0 K Poly temp. 2 147.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.5 gallon/100 Gate valve status open D2 Pump port status closed MCS Program Restart new run 1317 Switcher status thru AFP temperature 25.7 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 89.5 % SCS current 0 A Hall Probe vi No LED vi No SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 1.7 torr CC1 pressure 2.4E-5 torr (actually CC2) Hall Probe Y 0.188 kG Hall Probe Z -0.37 kG PPM LHe level 89.4 % PPM LN2 level 63.2 % AFP LHe level 87.7 % AFP LN2 level 86.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig Chiller OFF while AFP vented AFP chiller flow rate 10 gph AFP chiller set point 24 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 72.9 F West MWPC Temperature 75.6 F MWPC Pressure --- torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H2O Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum

spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 280 ns TBCM001I03 15.3 mA "Beamplot" Capture 85% Beam Ready Time: 16:00

24940	Sat Oct 6 16:42:39 2012	ASaunders

The Decay trap plug is out, but still mounted in load lock. Load lock is full of air.

24938	Sat Oct 6 15:28:17 2012	ASaunders

when preparing to take lifetime data, we found the system: 1) with 600 Torr of Ar between the GV and PPM window 2) With the air line connected to the GV 3) But the air valve turned off THIS IS A VERY BAD STATE! All it would take would be someone commanding the GV to open t to dump that argon into the source. Please disconnect the air line from the GV when venting the section between the GV and PPM.

24937	Sat Oct 6 15:20:31 2012	ASaunders

while leak checking the decay trap, we noticed that the AFP chiller had been turned off. According to the shift change checklists, it appears this happened Thursday evening between 16:00 and 24:00. Whoever turned it off hooked up the dry nitrogen gas flow to keep the chiller warm, but forgot to open up a vent line to let the N2 gas out. So there was no warming flow through the AFP for about two days. This is a very bad idea, since it can damage the AFP and also can condense water inside the AFP guides. Therefore, from now on, when venting the system for a short period of time, DO NOT TURN OFF THE AFP CHILLER but instead disable the AFP RF power and set the AFP chiller temperature to about room temperature, or about 24 C. This is the state the chiller was in when someone turned it off.

24936	Sat Oct 6 15:15:48 2012	ASaunders

completed pump down of decay trap. Detctor N2 amd MWPC volume srae now separated from Decay trap volume, being pumpoed on separately.

24935	Sat Oct 6 09:25:50 2012	DJS

UCNA Shift Change Checklist Date: October 6, 2012 9:17 Shift Persons: Dan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.80 psia Heater C pressure 13.63 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 283 psia Tungsten Cool Diff. 279 psia Tungsten Cool ret. 69 psia -- Problematic? Will consult AS. 1630 eng. 2 temp. 15.6 K 1630 JT temp. 7.75 K 1630 outlet temp. 272.6 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.0 psig 1630 med. press. stor. 80 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 88.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 326 mmHg 4K dewar level 13.26 inHe 1K dewar level 9.7 inHe 4K main flow control 5.1 V LHe temp. 1 5.1 K Heat exch. temp. 3 187.3 K Poly temp. 2 146.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 31 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart new run 1317 Switcher status thru AFP temperature 19.9 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 95.8 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 1.4 torr CC1 pressure 2.3E-5 torr (actually CC2) Hall Probe Y 0.188 kG Hall Probe Z -0.37 kG PPM LHe level 89.6 % PPM LN2 level 65.2 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. - psig Chiller OFF while AFP vented AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 73.8 F West MWPC Temperature 71.8 F MWPC Pressure 5.8e2 torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 589.2 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 105 torr (pumping down) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 280 TBCM001I03 15.1 "Beamplot" Capture .75 Beam Ready Time: 20:15

24934	Sat Oct 6 08:03:46 2012	DGPhillipsII

Dave & Bryan Filled SCS & AFP.

24933	Sat Oct 6 00:55:47 2012	ASaunders

since the hall probes for the decay trap are broken, we decided to install the detectors and start taking data. When we removed the east end cap from the scs bore, we found that the east end cap Be window was completely broken. Some of the window was lying in the center decay trap section. So we cleaned out the shards, removed the broken window, and installed one of the 180 nm Be windows. So now there is a 180 nm window on the east end and a 130 nm window on the west end, I believe. We checked both windows visually just before we installed the detectors. We installed both detctor stacks and started pumping down. Because we keep breaking windows and don't know why, we decide to pump down at a rate of 0.1 Torr every 5 seconds, , or about 60 Torr per hour. Thus, the pump down should be completed overnight. We must try to figure out why the windows keep breaking, and whatever it is we are doing to break them, stop doing it. In this case, I have two suspicions: one is that we overpressurized the windows when starting the nitrogen gas flow through the guides, and the other is that we are not gentle enough wen we install or remove the end caps from the SCS bore. So I recommend that we install a needle valve for the nitrogen vent line and that we try to be EXTREMELY gentle with the SCS bore vacuum end caps when we install or remove them.

24932	Sat Oct 6 00:47:03 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 6, 2012 00:30 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.75 psia Heater C pressure 13.44 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 285.8 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 70.8 psia 1630 eng. 2 temp. 14.75 K 1630 JT temp. 7.38 K 1630 outlet temp. 272.1 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.1 psig 1630 med. press. stor. 50 psig 1410 engine speed 149 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 84.9 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 15.25 inHe 1K dewar level 32.01 inHe 4K main flow control 5.3 V LHe temp. 1 4.95 K Heat exch. temp. 3 179.52 K Poly temp. 2 141.01 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart running (EDM) Switcher status thru AFP temperature 23.2 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 73.0 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.8 torr CM5 pressure 610.5 torr CC1 pressure 2.6e-5 torr CC2 Hall Probe Y 0.188 kG Hall Probe Z -0.365 kG PPM LHe level 89.7 % PPM LN2 level 68.2 % AFP LHe level 97.6 % AFP LN2 level 94.3 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. - psig Chiller OFF while AFP vented AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 73.9 F West MWPC Temperature 73.9 F MWPC Pressure 5.8e2 torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 589.2 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum E03 microtorr (CC1 these days) vented DAQ data_raw disk usage 86% Proton beam status Proton burst spacing Proton pulses/burst Proton countdown Proton pattern width TBCM001I03 "Beamplot" Capture Beam Ready Time:

24931	Fri Oct 5 18:48:58 2012	Erik

UCNA Shift Change Checklist Date: October 5, 2012 16:00 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.20 psia Heater C pressure 13.56 psia Tungsten supply press. 280 psig Compressor 1 On on Tungsten Cool supp. 285.3 psia Tungsten Cool Diff. 280.2 psia Tungsten Cool ret. 70.0 psia 1630 eng. 2 temp. 14.62 K 1630 JT temp. 7.39 K 1630 outlet temp. 273.7 K 1630 engine speed 200 rpm 1630 supply press. 250 psig 1630 JT press. 195 psig 1630 return press. 2.2 psig 1630 med. press. stor. 45 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 87.5 K 1410 supply press. 245 psig 1410 JT

mmHg 4K dewar level 16.00 inHe 1K dewar level 29.70 inHe 4K main flow control 5.3 V LHe temp. 1 5.039 K Heat exch. temp. 3 171.9 K Poly temp. 2 63.35 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart running (EDM) Switcher status thru AFP temperature 22.7 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 78.5 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 611.9 torr CC1 pressure 603.7 torr Hall Probe Y 0.187 kG Hall Probe Z -0.365 kG PPM LHe level 87.8 % PPM LN2 level 71.3 % AFP LHe level 92.8 % AFP LN2 level 91.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. - psig Chiller OFF while AFP vented AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 73.9 F West MWPC Temperature 73.9 F MWPC Pressure 5.8e2 torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 589.2 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 22 microtorr (CC2 these days) vented DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 260 TBCM001I03 15.7 "Beamplot" Capture .75 Beam Ready Time: 18:40

24930	Fri Oct 5 14:02:56 2012	MFMakela

Venting section between UCN gatevalve and PPM foil. SOurce vacuum 2.1e-5 torr Venting No change in source vacuum. Vented to 610 torr CM5 with argon Pressure holding Closing Ar bottle pressure holding in vented section Venting section from PPM window to nEDM switcher

24929	Fri Oct 5 11:18:36 2012	ASaunders

filled afp removed hall probes in preparation for repair

24928	Fri Oct 5 00:41:23 2012	bz

UCNA Shift Change Checklist Date: October 5, 2012 00:38 Shift Persons: David, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.40 psia Heater C pressure 13.66 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 286.4 psia Tungsten Cool Diff. 280.2 psia Tungsten Cool ret. 71.2 psia 1630 eng. 2 temp. 14.67 K 1630 JT temp. 7.35 K 1630 outlet temp. 272.4 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.6 psig 1630 med. press. stor. 63 psig 1410 engine speed 150 rpm 1410 TE-A 15.7 K 1410 TE-B 6.3 K 1410 TE-E 85.4 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.8 psig 4K dewar pressure 300 mmHg 4K dewar level 15.24 inHe 1K dewar level 18.75 inHe 4K main flow control 5.3 V LHe temp. 1 4.960 K Heat exch. temp. 3 187.6 K Poly temp. 2 84.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status closed D2 Pump port status closed MCS Program Restart running (EDM) Switcher status thru AFP temperature 24.3 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 84.6 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.7 torr CM5 pressure 1.4 torr CC1 pressure 3.5E-5 torr Hall Probe Y 0.188 kG Hall Probe Z -0.365 kG PPM LHe level 90.1 % PPM LN2 level 76.5 % AFP LHe level 99.5 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. - psig Chiller OFF while AFP vented AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 71.6 F West MWPC Temperature 70.9 F MWPC Pressure 5.8e2 torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 589.2 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 610.9 torr (CC2 these days) vented DAQ data_raw disk usage 86% Proton beam

pattern width 260 TBCM001I03 15.7 "Beamplot" Capture .75 Beam Ready Time: 20:15

24927	Thu Oct 4 23:57:22 2012	JOrtiz3

melt and refreeze, Mark Hasan Jose 22:04 down to 1.0v 22:06 temp rising #1 22:28 450 mbar 3.0 volts now, turning around 22:47 3.5 volt cooling, pressure dropping, 0 in twenty min 23:05 near-zero pressure, Lhe 1,2,3,4,5 and source control all thermally coupled well 23:05 source control set at 5.3, closed work.

24926	Thu Oct 4 20:24:28 2012	Hasan

UCNA Shift Change Checklist Date: October 4, 2012 16:00 am Shift Persons: Hasan, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.89 psia Heater C pressure 13.57 psia Tungsten supply press. 295 psig Compressor 1 On on Tungsten Cool supp. 286.8 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 71.5 psia 1630 eng. 2 temp. 14.77 K 1630 JT temp. 7.40 K 1630 outlet temp. 275.8 K 1630 engine speed 200 rpm 1630 supply press. 247 psig 1630 JT press. 195 psig 1630 return press. 1.2 psig 1630 med. press. stor. 72 psig 1410 engine speed 150 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 91.5 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.8 psig 4K dewar pressure 216 mmHg 4K dewar level 14.49 inHe 1K dewar level 16.87 inHe 4K main flow control 4.8 V LHe temp. 1 5.960 K Heat exch. temp. 3 186.0 K Poly temp. 2 63.9 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 22 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/8 SCS LHe level 87.3 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 651.1 torr CC1 pressure 5.7E-5 torr Hall Probe Y 0.187 kG Hall Probe Z -0.364 kG PPM LHe level 90.2 % PPM LN2 level 79.5 % AFP LHe level 95.6 % AFP LN2 level 90.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 23 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum --- torr (CC2 these days) vented DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 260 TBCM001I03 16.1 "Beamplot" Capture 80 Beam Ready Time: 20:15

24925	Thu Oct 4 17:34:05 2012	ASaunders

melt and refreeze

24924	Thu Oct 4 14:20:18 2012	Sky

Stopped venting the SCS/decay trap/guides with the gauge reading 608 Torr.

24923	Thu Oct 4 12:26:29 2012	CLMorris

Finished ramp down of SCS. Closed vapor coolded leads. open He return from SCS LN2 volume

24922	Thu Oct 4 11:36:15 2012	CLMorris

Sky and I have fitted the decay trap lifetime runs from last night. We got 36.9+/-2.3 for flipper off and 41.2+/-3.0 for flipper on loading from run 1292. This compares to 32.0+/-2.3 sec for flipper off from run 1286, a 13%improvement. The SCS/GV shows an improvement of ~27% Sep-31 1286 off 0.029 4-Oct 1292 off 0.037 4-Oct 1292 on 0.029 Or changes have improved things. We know we have a gap on the east end foil. If we estimate the open area of the gap, assuming it is 0.5 mm half we around the perimeter of the guid we get an area of 2 cm^2 and a lifetime of 150 sec. This would explain the current life of ~35 sec of the "perfetct lifetime" was 50 sec.

24921	Thu Oct 4 11:26:39 2012	ASaunders

ramping down SCS venting decay trap decay trap plug _in_ AFP amplifier off AFP relay unplugged AFP chiller set to 23 C filled AFP magnet from 4 K dewar

24920	Thu Oct 4 08:01:32 2012	DGPhillipsII

Bryan & Dave Filled SCS from 1k.

24919	Thu Oct 4 07:13:23 2012	bz

Noticed a strange shift in the baseline vacuum in the SCS at about 5:20 - we also closed the SCS LN2 return at that time. The vacuum actually improved by a factor of 2. We will see if this is correlation or causation at the end of the fill. EDIT (07:13):The shift in the baseline appears to be real and uncorrelated to the status of the SCS. I have no idea what caused it.

24918	Thu Oct 4 06:19:10 2012	DGPhillipsII

Bryan & Dave Time Fast DAQ Slow DAQ Real Time Run Type Cycles Notes 23:47 20461 27350 GFT+ (10s) 8 BAD timing scheme in LabView New Run 1293 00:10 20462 11 GFT+ (15s) BAD timing scheme in LabView 00:32 20463 1341 GFT+ (10s) 8 00:55 20464 2685 GFT+ (15s) 8 01:18 20465 4095 GFT- (15s) 8 01:41 20466 5480 GFT- (25s) 8 02:06 20467 6938 GFT+ (25s) 8 02:30 20468 8420 GFT+ (40s) 8 02:57 20469 10001 GFT- (40s) 8 03:23 20470 11590 GFT- (50s) 8 03:51 20471 13259 GFT+ (50s) 8 04:19 20472 14974 GFT+ (60s) 8 04:49 20473 16725 GFT- (60s) 8 05:19 20474 18539 SFT+ 3 05:39 20475 19771 SFT- 3

24917	Thu Oct 4 00:51:28 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 4, 2012 00:30 am Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.43 psia Heater C pressure 13.60 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 287.4 psia Tungsten Cool Diff. 280.8 psia Tungsten Cool ret. 71.9 psia 1630 eng. 2 temp. 14.96 K 1630 JT temp. 7.44 K 1630 outlet temp. 272.2 K 1630 engine speed 200 rpm 1630 supply press. 248 psig 1630 JT press. 197 psig 1630 return press. 1.6 psig 1630 med. press. stor. 75 psig 1410 engine speed 150 rpm 1410 TE-A 16.0 K 1410 TE-B 6.2 K 1410 TE-E 89.1 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 6.9 psig 4K dewar pressure 310 mmHg 4K dewar level 14.12 inHe 1K dewar level 16.36 inHe 4K main flow control 5.5 V LHe temp. 1 4.953 K Heat exch. temp. 3 180.0 K Poly temp. 2 85.9 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status down AFP temperature 9.8 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 86.6 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.2 torr CC1 pressure 2.4E-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.359 kG PPM LHe level 90.5 % PPM LN2 level 84.4 % AFP LHe level 99.8 % AFP LN2 level 86.2 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 3.2E-5 torr (CC2 these days) DAQ data_raw disk usage 86% Proton beam status Proton burst spacing Proton pulses/burst Proton countdown Proton pattern width TBCM001I03 "Beamplot" Capture Beam Ready Time: 19:20

24916	Wed Oct 3 23:50:30 2012	Hasan

Time Fast DAQ Slow DAQ Real Time Run Type Cycles Notes 20:08 20455 14201 SDT- 10 described as SDT+ in MIDAS log by mistake. 20:45 20456 16453 SDT+ 10 no beam for 5 min at the end 21:30 20457 19110 GFT+(5sec) 3 last two cycles bad, beam went off 21:30-22:20 22:23 20458 22329 GFT+ (5sec) 10 22:51 20459 24003 GFT-(5sec) 10 23:19 20460 25674 GFT-(10sec) 10

24915	Wed Oct 3 23:37:38 2012	Hasan

19:23 20452 11528 5 min UCN source run, open 19:36 20453 11529 UCN transmission*, AFP ON 19:47 20454 12945 UCN transmission*, AFP OFF * settings for UCN transmission: GV open, Switcher through, Shutter open, AFP ON/OFF

24909	Wed Oct 3 19:52:15 2012	Geltenbort

UCNA Shift Change Checklist Date: October 3, 2012 04:05 am Shift Persons: Hasan, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.76 psia Heater C pressure 13.53 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 288.6 psia Tungsten Cool Diff. 280.7 psia Tungsten Cool ret. 73.0 psia 1630 eng. 2 temp. 14.73 K 1630 JT temp. 7.29 K 1630 outlet temp. 275.0 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 197 psig 1630 return press. 2.0 psig 1630 med. press. stor. 78 psig 1410 engine speed 150 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 85.8 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 330 mmHg 4K dewar level 14.25 inHe 1K dewar level 13.77 inHe 4K main flow control 5.0 V LHe temp. 1 4.97 K Heat exch. temp. 3 176.46 K Poly temp. 2 74.17 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 93.4 % SCS current 119.9 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 677.9 torr CC1 pressure 3.7E-5 torr Hall Probe Y 0.169 kG Hall Probe Z -0.359 kG PPM LHe level 90.7 % PPM LN2 level 86.9 % AFP LHe level 94.2 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 1.7E-5 torr (CC1 these days) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 20 Hz Proton pulses/burst 5/5 Proton countdown 1 Proton pattern width 262 TBCM001I03 16 "Beamplot" Capture 80 Beam Ready Time: 19:20

24914	Wed Oct 3 19:16:31 2012	Geltenbort

CCR reports that they are done with the beam tune for UCNA (i.e. about 2 hours since prad has finished).

24913	Wed Oct 3 17:37:26 2012	ASaunders

melt and refreeze

24911	Wed Oct 3 17:12:40 2012	ASaunders

ramped up SCS this morning. Since hall probes are busted, just ramp to 119.9 and don't try to eliminate field dip

24912	Wed Oct 3 17:12:05 2012	ASaunders

sadly, the hall probes are not working again. The symptoms are the same as in September: one appears to be shorted, and it is stopping the rest of the chain from working. We must fix them next time we vent.

24910	Wed Oct 3 17:09:56 2012	ASaunders

prad reports they are done with beam for the day

24908	Wed Oct 3 03:58:10 2012	DGPhillipsII

Dave & Bryan Filled SCS from 4k and 1k dewars.

24907	Wed Oct 3 00:43:18 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 3, 2012 00:30 pm Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.25 psia Heater C pressure 13.69 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 289.2 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 73.3 psia 1630 eng. 2 temp. 15.10 K 1630 JT temp. 7.45 K 1630 outlet temp. 272.0 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.8 psig 1630 med. press. stor. 55 psig 1410 engine speed 149 rpm 1410 TE-A 15.8 K 1410 TE-B 6.2 K 1410 TE-E 92.4 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 320 mmHg 4K dewar level 17.30 inHe 1K dewar level 22.70 inHe 4K main flow control 5.5 V LHe temp. 1 4.93 K Heat exch. temp. 3 181.87 K Poly temp. 2 115.04 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33.75 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 23.5 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 77.6 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 674.8 torr CC1 pressure 8*10^-5 torr Hall Probe Y 0.188 kG Hall Probe Z -0.366 kG PPM LHe level 91.0 % PPM LN2 level 95.6 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 3e10^-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 13.2 mA "Beamplot" Capture .82 Beam Ready Time: ---

24906	Tue Oct 2 22:28:03 2012	Erik

Erik and Peter - Source tests (similar to those conducted on 10/1/12) SlowDAQ run number: 1291 Time Fast DAQ Slow DAQ Real Time Run Type Cycles Notes 20:21 20444 1660 5bursts/5s, flapping 10 min 20:32 20445 2320 5/5, open 10 min 20:43 20446 3102 5/5, closed 12 min 21:18 20447 5040 5/120, flapping 10 21:39 20448 6338 5/120, open 10 22:01 20449 7670 5/120, closed 10 First two cycles flapper still flapping 22:20 none 8900 5/5, flapping for slow DAQ only

24905	Tue Oct 2 21:29:01 2012	Geltenbort

Network down quite a while and Sky's entry got lost Around 5pm melt and refreeze with Sky 5.5V source voltage reduced to 1.0V and at 250mbar increased to 6.5V turning at 268mbar After refreeze source voltage reduced to 5.5V 6:50pm with Chris turbos of decay trap started, Baratron reading was -5.8 torr Beam on source since around 6:45pm Source test started when network up again

24904	Tue Oct 2 16:27:51 2012	Erik

UCNA Shift Change Checklist Date: October 2, 2012 04:00 pm Shift Persons: Erik, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.38 psia Heater C pressure 13.43 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 288.3 psia Tungsten Cool Diff. 280.8 psia Tungsten Cool ret. 72.9 psia 1630 eng. 2 temp. 14.47 K 1630 JT temp. 7.30 K 1630 outlet temp. 273.6 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 65 psig 1410 engine speed 150 rpm 1410 TE-A 15.5 K 1410 TE-B 6.2 K 1410 TE-E 96.8 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 1K dewar pressure 6.8 psig 4K dewar pressure 350 mmHg 4K dewar level 17.40 inHe 1K dewar level 19.34 inHe 4K main flow control 5.0 V LHe temp. 1 4.912 K Heat exch. temp. 3 176.97 K Poly temp. 2 75.382 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS

N2 Tanker Volume 90 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 21.0 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 5/8 SCS LHe level 80.2 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 674.3 torr CC1 pressure 2.9*10^-5 torr Hall Probe Y 0.187 kG Hall Probe Z -0.366 kG PPM LHe level 91.2 % PPM LN2 level 98.1 % AFP LHe level 97.2 % AFP LN2 level 94.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. --- psig AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 129.6 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5, 20hz Proton countdown 1 Proton pattern width 285 ns TBCM001I03 13.5 mA "Beamplot" Capture .82 Beam Ready Time: 6:50PM

24903	Tue Oct 2 12:42:51 2012	CLMorris

We vented the SCS and examined the foils. On the west end there was a hole ~4 mm^2 and the foil was detached aound the edge. In the East end there eas just a small small crack . Sky and I both thought there was likely to have been a gap around the edge. We have mounted two new foils (west foil#148 174 nm; east foil 140 128 nm). we moved the clamp a few mm up the guide and have tension holding the foil against the guide. The is still a ~.5 mm gap on half of the foil guid seal on the east end because of the glue dab that keeps the foil from peeling up. The west end didn't seem to have the same problem.

24882	Tue Oct 2 12:30:06 2012	CLMorris

Last night the noise level in the iron foil monitor detector rose to very high levels. Brian got the detector working by lowering the gain. The source of the noise as the standard Area B gremlins. Fast oscillating bursts of nosie associcated with gounding. I have reduced this considerablably with aluminum foil grounded to the detector body and to the preamp output (Ortec has only a restive gound between these two points.) I have returnd the gain so that the neutron output is 2.5 V.

24901	Tue Oct 2 02:06:43 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 1, 2012 00:15 am Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.95 psia Heater C pressure 13.24 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 289.2 psia Tungsten Cool Diff. 281.3 psia Tungsten Cool ret. 73.7 psia 1630 eng. 2 temp. 15.06 K 1630 JT temp. 7.32 K 1630 outlet temp. 272.6 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.8 psig 1630 med. press. stor. 74 psig 1410 engine speed 149 rpm 1410 TE-A 12.4 K 1410 TE-B 5.6 K 1410 TE-E 90.0 K 1410 supply press. 240 psig 1410 JT press. 175 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 300 mmHg 4K dewar level 15.52 inHe 1K dewar level 13.84 inHe 4K main flow control 5.0 V LHe temp. 1 5.02 K Heat exch. temp. 3 179.73 K Poly temp. 2 145.26 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 14.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.2 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 89.0 % SCS current 0 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 672.0 torr CC1 pressure E09 torr Hall Probe Y 0.188 kG Hall Probe Z -0.366 kG PPM LHe level 91.4 % PPM LN2 level 48.2 % AFP LHe level 85.9 % Finished filling AFP at 2am AFP LN2 level 80.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure ---

torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 3.2e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status Proton burst spacing Proton pulses/burst Proton countdown Proton pattern width TBCM001I03 "Beamplot" Capture Beam Ready Time:

24902	Tue Oct 2 01:28:54 2012	bz

Notes on running the helium system: For now, it is important that at the end of fills, the B-LPM 12 remains OPEN and the B-LPM 3 remains CLOSED. This is counter to the instructions on the fill checklists (which I don't know how to edit). This is because we want to keep the low pressure side of the AFP separate from the low pressure side of the SCS in order to avoid a chain quench. When the 1410 is running, it is suggested that you keep the running speed to 150 or less. 180 RPM burns through nitrogen in my limited experience and does not produce much more liquid helium for it. When you change the RPM you must also change the JT valve as well. Tonight, I found the JT valve at ~33% and the RPM at 180, and the TE-A (Engine temperature) was at 10 K, which is extremely cold. It means that the 1410 is not making liquid very efficiently. I dropped the 1410 to 150 RPM and increased the JT to 46% open and TE-A recovered to the target 15.7K and the liquid production in the 1k went from .67 in/hr to 1.1 in/hr. It is important to adjust the JT valve after you adjust the speed, otherwise you may be wasting liquid nitrogen and not producing very much liquid helium. As always, defer to Mark or Scott if they inform you otherwise, but these are things that, if observed, will help us save money and run more efficiently.

24899	Mon Oct 1 23:40:51 2012	Geltenbort

Spectrometer vented. Baratron reads 610.3 torr. Needle valve and valve upstream closed, Ar closed and venting line disconnected and tapped. Baratron reading now 609.5 torr ... and 2 hours later 601.6 torr!

24900	Mon Oct 1 22:03:52 2012	Geltenbort

Jose and Peter - Source tests (similar to those conducted on 9/18/12) SlowDAQ run number: 1289 Time Fast DAQ Slow DAQ Real Time Run Type Cycles Notes 19:12 20437 889 5bursts/5s, flapping 10 min 19:27 20438 1863 5/5, open 10 min 19:38 20439 2510 5/5, closed 12 min 20:06 20440 4195 5/60, flapping 10 20:23 20441 5194 5/60, open 10 20:37 20442 6057 5/90, flapping 10 lost beam after second cycle, recovered the next cycle 20:57 20433 7237 5/90, open 5 21:13 none 8160 5/5, flapping for slow DAQ only

24896	Mon Oct 1 18:53:11 2012	Geltenbort

UCNA Shift Change Checklist Date: October 1, 2012 03:55 pm Shift Persons: Jose, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.89 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 288.1 psia Tungsten Cool Diff. 281.0 psia Tungsten Cool ret. 72.8 psia 1630 eng. 2 temp. 15.08 K 1630 JT temp. 7.35 K 1630 outlet temp. 277.2 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.7 psig 1630 med. press. stor. 87 psig 1410 engine speed 180 rpm 1410 TE-A 9.2 K 1410 TE-B 5.5 K 1410 TE-E 71.9 K 1410 supply press. 190 psig 1410 JT press. 125 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 14.60 inHe 1K dewar level 8.51 inHe 4K main flow control 4.3 V LHe temp. 1 5.77 K Heat exch. temp. 3 190.48 K Poly temp. 2 25.14 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 18.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 95.6 % SCS current 115.61 A ramping down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 0.8 torr CC1 pressure 5.5*10^-5 torr Hall Probe Y 0.173 kG Hall Probe Z -0.361 kG PPM LHe level 91.6 % PPM LN2 level 50.7 % AFP LHe level 99.1 % AFP LN2 level 98.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator

--- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 1.5e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5, 20hz Proton countdown 1 Proton pattern width 285 ns TBCM001I03 13.5 mA "Beamplot" Capture .82 Beam Ready Time: 6:50PM

24897	Mon Oct 1 18:34:54 2012	Geltenbort

24898	Mon Oct 1 18:34:23 2012	Geltenbort

W/ Chris and Sky SCS magnet ramped down Intermediate volume GV - PPM foil pressurized with Ar at ~680 torr start venting spectrometer with Ar when beam tuning started source flow voltage increased from 4.3 V to 5.5 V

24895	Mon Oct 1 15:12:47 2012	Geltenbort

Together with Chris AFP filled Didn't have to touch green or black arrow valves at all nor 1630 speed!

24894	Mon Oct 1 10:36:00 2012	Sky

The LN2 trailer is full but the pressure-building valve was left closed so there was no LN2 pressure. The valve is open now.

24893	Mon Oct 1 06:02:32 2012	DGPhillipsII

Bryan and Dave - Performed AFP (3am) and SCS (5am) fills. - LN2 tanker volume down to 150 gallons (at 5:30am). Needs to be filled asap!!! Time Fast DAQ Slow DAQ Real Time Run Type Cycles Notes 00:12 20426 18100 SFT+ 11 One bad cycle in there 01:30 20427 22780 GFT- (10s) 5 01:44 20428 23616 GFT- (15s) 8 02:07 20429 25018 GFT+ (15s) 14 02:47 20430 27414 GFT+ (25s) 11 03:21 20431 29424 GFT- (25s) 8 03:45 20432 30866 GFT- (40s) 9 04:14 20433 32644 GFT+ (40s) 8 04:40 20434 34205 GFT+ (50s) 9 05:15 20435 36486 GFT- (50s) 8 05:46 20436 38125 GFT- (60s) 4 BEAM OFF

24892	Mon Oct 1 00:46:20 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 1, 2012 00:20 am Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.53 psia Heater C pressure 13.16 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.1 psia Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 74.4 psia 1630 eng. 2 temp. 14.99 K 1630 JT temp. 7.30 K 1630 outlet temp. 274.5 K 1630 engine speed 195 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 0.7 psig 1630 med. press. stor. 80 psig 1410 engine speed 180 rpm 1410 TE-A 14.5 K 1410 TE-B 5.9 K 1410 TE-E 96.7 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 245 mmHg 4K dewar level 11.65 inHe 1K dewar level 22.78 inHe 4K main flow control 5.0 V LHe temp. 1 4.85 K Heat exch. temp. 3 209.33 K Poly temp. 2 171.41 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

24891	Mon Oct 1 00:32:52 2012	DGPhillipsII

UCNA Shift Change Checklist Date: October 1, 2012 00:20 am Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.53 psia Heater C pressure 13.16 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.1 psia Tungsten Cool Diff. 281.6 psia Tungsten Cool ret. 74.4 psia 1630 eng. 2 temp. 14.99 K 1630 JT temp. 7.30 K 1630 outlet temp. 274.5 K 1630 engine speed 195 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 0.7 psig 1630 med. press. stor. 80 psig 1410 engine speed 180 rpm 1410 TE-A 14.5 K 1410 TE-B 5.9 K 1410 TE-E 96.7 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 245 mmHg 4K dewar level 11.65 inHe 1K dewar level 22.78 inHe 4K main flow control 5.0 V LHe temp. 1 4.85 K Heat exch. temp. 3 209.33 K Poly temp. 2 171.41 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 6 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status down AFP temperature 9.6 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1 SCS LHe level 87.3 % SCS current 119.31

pressure 0.8 torr CC1 pressure 2.3*10^-5 torr making source Hall Probe Y 0.17 kG Hall Probe Z -0.361 kG PPM LHe level 91.6 % PPM LN2 level 55.9 % AFP LHe level 88.2 % AFP LN2 level 86.7 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2.2e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 13.5 mA "Beamplot" Capture undetermined

24890	Sun Sep 30 23:39:30 2012	Hasan

Time Fast_DAQ Slow_DAQ_real_time Run_Type Cycles Comments 2106 20421 6950 GFT-(5s) 8 2130 20422 8367 GFT+(5s) 8 2157 20423 10021 SFT- 3 only first cycle is good, beam went off during cycle 2 and 3. After it came back on, beam quality was relatively bad, so asked CCR to do a minor tune, after which it improved, but not as good. UCN~330 Hz 2317 20425 14795 SFT- contd. to next shift...

24889	Sun Sep 30 21:50:04 2012	Hasan

gate values for Decay Trap Lifetime run Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 5000 0 0 1 1 1 0 0 1 5010 0 0 0 1 1 0 0 1 20000 1 0 0 1 1 0 0 1 Time Fast_DAQ Slow_DAQ_real_time Run_Type Cycles 1934 20419 1443 Decay Trap Lifetime(Flipper OFF) 10 2010 20420 3797 Decay Trap Lifetime(Flipper ON) 11 beam tripped for 200 sec during cycle #7 of run 20420

24888	Sun Sep 30 21:27:00 2012	Geltenbort

LHe temp.1 around 4.8 K 4K main flow control reduced from 5.5 V to 5.0 V

24887	Sun Sep 30 19:24:46 2012	Geltenbort

Together with Chris M. new source made. Stopped flow into source at 76.9mbar. 115.9 mbar in tank. Source voltage from 6.5V down to 5.5V Volume between GV and window pumped down, then all valves closed ~350 UCN/s in monitor with GV closed ~250 UCN/s with GV open

24886	Sun Sep 30 17:49:18 2012	Sky

Scott has finished balancing the 1630. Currently the source is returning into V387, the return pressure is 2 psi, the Engine 2 temp is just below 15K and the refrigerator is running near 200 RPM. The LN2 pressure is now above 30 psi after adjustment; it was too low. The new brake alternator motor appears to be working well.

24885	Sun Sep 30 17:32:59 2012	Geltenbort

UCNA Shift Change Checklist Date: September 30, 2012 04:00 pm Shift Persons: Hasan, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 13.67 psia Heater C pressure 13.09 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.5 psia Tungsten Cool Diff. 288.2 psia Tungsten Cool ret. 74.5 psia 1630 eng. 2 temp. 15.53 K 1630 JT temp. 7.88 K 1630 outlet temp. 277.4 K 1630 engine speed 230 rpm 1630 recovery Scott C., Sky 1630 supply press. 240 psig 1630 JT press. 155 psig 1630 return press. 1.8 psig 1630 med. press. stor. 90 psig 1410 engine speed 180 rpm 1410 TE-A 13.3 K 1410 TE-B 5.8 K 1410 TE-E 76.6 K 1410 supply press. 225 psig 1410 JT press. 152 psig 1410 return press. 3.2 psig 1K dewar pressure 7 psig 4K dewar pressure 280 mmHg 4K dewar level 10.97 inHe 1K dewar level 19.15 inHe 4K main flow control 6.0 V LHe temp. 1 19.45 K source making Heat exch. temp. 3 230.18 K Poly temp. 2 241.58 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 9.5 gallon/100 Gate valve status closed D2 Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 94.4 % SCS current 119.31 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 838.6

torr CM5 pressure 0.7 torr CC1 pressure torr Making Source Hall Probe Y 0.17 kG Hall Probe Z -0.361 kG PPM LHe level 91.9 % PPM LN2 level 58.5 % AFP LHe level 83.6 % AFP LN2 level 80.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 12 psig OFF AFP chiller flow rate 8 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 1.2e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 290 ns TBCM001I03 13.7 mA "Beamplot" Capture undetermined

24884	Sun Sep 30 13:18:53 2012	CLMorris

Orange vave closed-Deuterium in tank. We are going to turbo pump the remaing 150 mb from the source.

24883	Sun Sep 30 13:16:08 2012	Sky

The brake motor had failed on the 1630 so Scott Currie helped us and replaced it. The 1630 has been restarted and we are waiting until it produces LHe. We retured the D2 to the bottle, final pressure 1217 mbar.

24881	Sun Sep 30 09:18:04 2012	Sky

UCNA Shift Change Checklist Date: September 30, 2012 01:00 Shift Persons: Sky, Chris Cude ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.2 psia Heater C pressure 13.4 psia Tungsten supply press. 295 psig Compressor 1 On on Tungsten Cool supp. 289 psia Tungsten Cool Diff. 281 psia Tungsten Cool ret. 73.5 psia 1630 eng. 2 temp. 15.90 K 1630 JT temp. 7.25 K 1630 outlet temp. 266.6 K 1630 engine speed 115 rpm Fluctuating rapidly 1630 supply press. 240 psig 1630 JT press. 205 psig 1630 return press. 0.4 psig 1630 med. press. stor. 107 psig 1410 engine speed 180 rpm 1410 TE-A 17.2 K 1410 TE-B 7.8 K 1410 TE-E 85.2 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.2 psig 1K dewar pressure 6.4 psig 4K dewar pressure 245 mmHg 4K dewar level 11.2 inHe 1K dewar level 13.04 inHe 4K main flow control 5.5 V LHe temp. 1 4.9 K Heat exch. temp. 3 180.8 K Poly temp. 2 76.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 12 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.485 MHz AFP forward power 40 W AFP N2 dewar level 1/8 SCS LHe level 99.9 % SCS current 119.31 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure -0.1 torr CM5 pressure 0.5 torr CC1 pressure 1.6e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.361 kG PPM LHe level 92.0 % PPM LN2 level 60.5 % AFP LHe level 95.8 % AFP LN2 level 94.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 12 psig OFF AFP chiller flow rate 7.5 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2.0e-5 torr (CC2) DAQ data_raw disk usage 86%

24880	Sun Sep 30 07:53:19 2012	DGPhillipsII

Bryan & Dave 1630 engine speed is fluctuating noticeably fast. We have to take shifts to ensure that the engine speed remains in an acceptable operating range (advice of Andy). We will call Todd in the morning to shut off the 1630 for repairs. Taking depolarization data: Time Fast DAQ Slow DAQ Real Time Run Type Cycles 00:51 20408 32164 SLD+ 10 02:22 20409 37647 D- 10 (estimated using MIDAS runlog) 03:55 20410 (Run 1287) 0 D- 10 (estimated using MIDAS

cts/sec)...don't know how long it's been like this...restarting D+ run. 06:45 20413 4737 D+ 7 07:51 20414 8736 D+

24878	Sun Sep 30 02:32:09 2012	Hasan

Polarimetry runs: GFT- Time Shutter b T0 Flapper Beam AFP Switcher GV 0 0 0 1 1 1 0 0 1 10 0 0 0 1 1 0 0 1 5000 0 0 0 1 0 0 1 0 5100 0 0 0 1 0 1 1 0 5600 0 0 0 1 0 0 1 0 15600 0 0 0 1 0 0 1 0 GFT+ Time Shutter b T0 Flapper Beam AFP Switcher GV 0 0 0 1 1 1 1 0 1 10 0 0 0 1 1 1 0 1 5000 0 0 0 1 0 1 1 0 5100 0 0 0 1 0 0 1 0 5600 0 0 0 1 0 1 1 0 15600 0 0 0 1 0 1 1 0 SFT- Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 10000 1 0 0 1 0 0 1 0 10300 1 0 0 1 0 1 1 0 40000 1 0 0 1 0 1 1 0 SFT+ Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 1 0 1 10 1 0 0 1 1 1 0 1 10000 1 0 0 1 0 1 1 0 10300 1 0 0 1 0 0 1 0 40000 1 0 0 1 0 0 1 0 SLD- Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 15000 0 0 0 1 0 0 1 0 50000 0 0 0 1 0 0 1 0 SLD+ Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 1 0 1 10 1 0 0 1 1 1 0 1 15000 0 0 0 1 0 1 1 0 50000 0 0 0 1 0 1 1 0 D- Program: Time Shutter b T0 Flapper Beam AFP Switcher GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 15000 0 0 0 1 1 0 0 1 15100 0 0 0 1 0 0 1 0 17500 0 0 0 1 0 1 1 0 18000 1 0 0 1 0 1 1 0 28000 1 0 0 1 0 0 1 0 51000 1 0 0 1 0 0 1 0 Time Fast_DAQ Slow_DAQ_real_time Run_Type Cycles Comments 1756 20397 7272 GFT-(5s) 10 1825 20398 9012 GFT+(5s) 3 runs 20399 through 20401 are bad. 1841 20402 9973 GFT+(5s) 5 1911 20403 11769 SFT- 10 2020 20404 15968 SFT+

24879	Sun Sep 30 01:08:13 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 30, 2012 01:00 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.58 psia Heater C pressure 13.16 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 290.4 psia Tungsten Cool Diff. 280.9 psia Tungsten Cool ret. 75.0 psia 1630 eng. 2 temp. 15.90 K 1630 JT temp. 7.7 K 1630 outlet temp. 272.5 K 1630 engine speed 180 rpm Fluctuating rapidly 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 180 rpm 1410 TE-A 15.1 K 1410 TE-B 6.0 K 1410 TE-E 83.6 K 1410 supply press. 233 psig 1410 JT press. 155 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 260 mmHg 4K dewar level 11.41 inHe 1K dewar level 24.04 inHe 4K main flow control 5.5 V LHe temp. 1 5.01 K Heat exch. temp. 3 188.70 K Poly temp. 2 75.48 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 14 gallon/100 Gate valve status flapping D2 Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.485 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 88.1 % SCS current 119.31 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure -0.1 torr CM5 pressure 0.5 torr CC1 pressure 1.7e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.361 kG PPM LHe level 92.2 % PPM LN2 level 63.1 % AFP LHe level 90.4 % AFP LN2 level 84.8 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 12 psig OFF AFP chiller flow rate 8 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2.0e-5 torr (CC2) DAQ data_raw disk usage 86%

24877	Sat Sep 29 17:09:21 2012	Erik

UCNA Shift Change Checklist Date: September 29, 2012 16:00 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.10 psia Heater C pressure 13.23 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 293.6 psia Tungsten Cool Diff. 282.7 psia Tungsten Cool ret. 76.9 psia 1630 eng. 2 temp. 14.86 K 1630 JT temp. 6.76 K 1630 outlet temp. 272.5 K 1630 engine speed 170 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 85 psig 1410 engine speed 180 rpm 1410 TE-A 14.3 K 1410 TE-B 5.8 K 1410 TE-E 90.4 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 1K dewar pressure 7 psig 4K dewar pressure 295

1 5.06 K Heat exch. temp. 3 194.04 K Poly temp. 2 121.23 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.485 MHz AFP forward power 40 W AFP N2 dewar level 3/8 SCS LHe level 95.1 % SCS current 119.31 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 0.4 torr CC1 pressure 4.9e-5 torr Hall Probe Y 0.17 kG Hall Probe Z -0.361 kG PPM LHe level 92.2 % PPM LN2 level 66.1 % AFP LHe level 85.2 % AFP LN2 level 85.0 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 12 psig OFF AFP chiller flow rate 8 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) --- V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V (Ch12) East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2.5e-5 torr (CC2) DAQ data_raw disk usage 86%

24876	Sat Sep 29 16:12:15 2012	DJS

W/ Chris, Fe foil monitor preamplifier changed to an ortec. Boron-loaded plastic wrapped around Fe foil monitor. Taking flow through data into decay trap with flipper on and off for 5 mins each. Will take decay trap lifetime data, 50s shutter open, 150s shutter closed, 10 cycles flipper on, 10 cycle flipper off. 0 -- 1010 1001 10 -- 1000 1001 5000 -- 0010 1001 5010 -- 0000 1001 20000 -- 1000 1001

24875	Sat Sep 29 15:06:01 2012	ASaunders

finished AFP tune. New best frequency is 28.485 MHz. All runs were 100 s long, using visual scaler on Fe foil monitor. Flipper off: 750 cts 5 W frequency scan freq refl. power cts/100 s 28.500 <0.1 W 533 28.510 <0.1 W 712 772 28.520 <0.1 769 28.530 0.1 734 28.490 <0.1 329 28.480 <0.1 339 28.470 0.2 452 28.460 0.22 684 28.485 <0.1 319 flipper off 809 40 W frequency scan freq refl power cts/100 s 28.485 <0.1 213 flipper off 753 28.495 <0.1 247 28.505 0.2 497 28.490 <0.1 188 28.480 0.2 178 28.500 0.1 348 28.485 0.1 218 flipper off 723

24874	Sat Sep 29 13:26:57 2012	ASaunders

tuning AFP

24873	Sat Sep 29 13:26:46 2012	ASaunders

delivered UCNs to SCS with flipper off GV closed: MCS run 1279, Midas run 20387 GV rate = ~286 GV open: MCS run 1281, midas 20288 SCS/GV ratio = ~.025, Fe/GV=~.05 About the same in both cases as last week to 1 sig fig.

24872	Sat Sep 29 13:24:38 2012	EIC

24871	Sat Sep 29 11:55:18 2012	ASaunders

melt and refreeze

24870	Sat Sep 29 11:55:06 2012	ASaunders

stop d2 flow to source 114 mbar emains in d2 tank

24869	Sat Sep 29 10:31:39 2012	ASaunders

afp chiller turned on at 9 gph flow rate, 7 C temperature setting

24868	Sat Sep 29 10:31:15 2012	ASaunders

ramping up afp and scs magnets

24867	Sat Sep 29 10:29:58 2012	ASaunders

filling d2 into source. Initial tank pressure is 300 mbar

UCNA Shift Change Checklist Date: September 29, 2012 08:05 Shift Persons: Dan, Peter ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.80 psia Heater C pressure 13.26 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 292.1 psia Tungsten Cool Diff. 282.1 psia Tungsten Cool ret. 75.7 psia 1630 eng. 2 temp. 15.27 K 1630 JT temp. 7.66 K 1630 outlet temp. 273.5 K 1630 engine speed 170 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.8 psig 1630 med. press. stor. 75 psig 1410 engine speed 180 rpm 1410 TE-A 14.7 K 1410 TE-B 6.0 K 1410 TE-E 84.0 K 1410 supply press. 235 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 265 mmHg 4K dewar level 11.80 inHe 1K dewar level 23.06 inHe 4K main flow control 5.6 V LHe temp. 1 4.98 K Heat exch. temp. 3 199.4 K Poly temp. 2 131.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 20 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 19.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 90.7 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 619.6 torr CC1 pressure 2.7E-5 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.3 % PPM LN2 level 68.3 % AFP LHe level 99.9 % magnet ramped down AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H2O Chiller off Chiller water level 1 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 4.3e-3 torr (CC2) DAQ data_raw disk usage 86% Proton beam status: ON Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 280 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: --- %

24866	Sat Sep 29 09:10:10 2012	ASaunders

decay trap plug inserted section between PPM window sand GV pumped out; no effect om decay trap vacuum (thus there is no pinhole leak in the PPM window)

24863	Sat Sep 29 08:33:02 2012	DGPhillipsII

Pumped down to ~3e-5 torr (see attachment). The small bump occurred when we closed the shutter. AFP magnet was filled. Order of magnitude (10e-7) leak found at compression fitting of source feedthrough on load lock system (but diff pump not turned on). Another order of magnitude leak found at west endcap. No other leaks found.

Attachment 1: g

24864	Sat Sep 29 08:05:17 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 28, 2012 01:20 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.51 psia Heater C pressure 13.20 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 292.7 psia Tungsten Cool Diff. 282.5 psia Tungsten Cool ret. 76.3 psia 1630 eng. 2 temp. 15.04 K 1630 JT temp. 7.38 K 1630 outlet temp. 274.8 K 1630 engine speed 170 rpm 1630 supply press. 248 psig 1630 JT press. 192 psig 1630 return press. 1.6 psig 1630 med. press. stor. 83 psig 1410 engine speed 180 rpm 1410 TE-A 14.6 K 1410 TE-B 5.9 K 1410 TE-E 84.4 K 1410 supply press. 235 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 260 mmHg 4K dewar level 10.65 inHe 1K dewar level 21.61 inHe 4K main flow control 5 V LHe temp. 1 5.61 K Heat exch. temp. 3 196.67 K Poly temp. 2 124.97 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 19.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 94.5 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 621.7 torr CC1 pressure E03 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.4 % PPM LN2 level 70.8 % AFP LHe level 84.9 % magnet ramped down AFP LN2 level 80.5 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 4.3e-3 torr (CC2) DAQ data_raw disk usage 86%

24859	Sat Sep 29 07:01:27 2012	Erik

UCNA Shift Change Checklist Date: September 28, 2012 16:30 Shift Persons: Erik, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 132 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 15.19 psia Heater C pressure 13.47 psia Tungsten supply press. 290 psig Compressor 1 On on Tungsten Cool supp. 291.4 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 75.7 psia 1630 eng. 2 temp. 14.75 K 1630 JT temp. 7.19 K 1630 outlet temp. 273.5 K 1630 engine speed 150 rpm 1630 supply press. 215 psig 1630 JT press. 175 psig 1630 return press. 1.2 psig 1630 med. press. stor. 125 psig 1410 engine speed 180 rpm 1410 TE-A 15.9 K 1410 TE-B 6.7 K 1410 TE-E 87.7 K 1410 supply press. 240 psig 1410 JT press. 165 psig 1410 return press. 2.65 psig 1K dewar pressure 6.9 psig 4K dewar pressure 250 mmHg 4K dewar level 8.8 inHe 1K dewar level 12.15 inHe 4K main flow control 5 V LHe temp. 1 5.3 K Heat exch. temp. 3 185.7 K Poly temp. 2 59.26 K flapper heater cur 0.18 A Flapper Status: closed BEAM OFF Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.5 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 19.9 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 99.9 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 624.1 torr CC1 pressure 1.3e-4 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.4 % PPM LN2 level 74.0 % AFP LHe level 99.8 % magnet ramped down AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum --- torr (CC2) Pumping in progress. DAQ data_raw disk usage 86%

24861	Sat Sep 29 01:45:54 2012	Hasan

We did a leak check : There was one major one along the rod leading to the Load Lock area: ratio ~ 10^3 (reading 3.7x10^-5 mbar/sec) Minor Leak on West end flange, KF clamps on differential pumping valve, kf clamps in switcher area all around 10^1 Base line reading was 5x10^-8 mbar/sec Vacume stablized around 5.5e-5 torr going to start venting...

24862	Sat Sep 29 01:30:23 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 28, 2012 01:20 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.51 psia Heater C pressure 13.20 psia

Tungsten supply press. 66 psig compressor flow on Tungsten Cool supply temp. psia Tungsten Cool Diff. 282.5 psia Tungsten Cool ret. 76.3 psia 1630 eng. 2 temp. 15.04 K 1630 JT temp. 7.38 K 1630 outlet temp. 274.8 K 1630 engine speed 170 rpm 1630 supply press. 248 psig 1630 JT press. 192 psig 1630 return press. 1.6 psig 1630 med. press. stor. 83 psig 1410 engine speed 180 rpm 1410 TE-A 14.6 K 1410 TE-B 5.9 K 1410 TE-E 84.4 K 1410 supply press. 235 psig 1410 JT press. 160 psig 1410 return press. 3.3 psig 1K dewar pressure 7 psig 4K dewar pressure 260 mmHg 4K dewar level 10.65 inHe 1K dewar level 21.61 inHe 4K main flow control 5 V LHe temp. 1 5.61 K Heat exch. temp. 3 196.67 K Poly temp. 2 124.97 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 19.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/2 SCS LHe level 94.5 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 621.7 torr CC1 pressure E03 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.4 % PPM LN2 level 70.8 % AFP LHe level 84.9 % magnet ramped down AFP LN2 level 80.5 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 4.3e-3 torr (CC2) DAQ data_raw disk usage 86%

24860	Fri Sep 28 17:20:50 2012	ASaunders

we attempted to fix the leak in east end cap flange (installed new o-ring and generally cleaned things up) and have pumped the system down again. We are now waiting for the CC to bottom out. I have reversed the CC1 and CC2 leads again (so CC1 is plugged into CC2 and v. v.) AS

24857	Fri Sep 28 08:03:20 2012	bz

Events: Made some adjustments to 1630 (opened JT valve, opened 311 valve, slightly increased speed) and to 1410 (increased speed to 100 RPM). in order to make more liquid. Right now, not keeping up with source. Pumped out decay trap, pumped down pretty well, switcher showed 9e-5 torr with shutter open, 1.4e-4 torr with shutter closed. This demonstrated the presence of a leak. EDIT: 08:00 CC1 and CC2 have been returned to the correct orientation. During the leak test, a large leak was found at the east detector endcap (similar to past results). Also, smaller leaks were found on the KF40 part of the east endcap and on the west endcap (approximately 200 times smaller than main leak). No leaks were found on the 2 3/4" conflats or on the elbow. So we are venting, with the intention that someone will fix the endcaps during the day.

24858	Fri Sep 28 07:53:19 2012	DGPhillipsII

Bryan and I performed leak test of east endcap, west endcap and elbow. West endcap and elbow looked fine, but the east endcap demonstrated a leak rate increase of 3 orders of magnitude. This problem needs to be addressed by the next crew.

24856	Fri Sep 28 07:44:33 2012	DGPhillipsII

Mark recommended to ramp down AFP magnet due to leak...so we're ramping down AFP magnet now. 07:20 - AFP magnet ramped down.

24855	Fri Sep 28 06:05:29 2012	DGPhillipsII

AFP magnet ramping complete. CCR has also just informed us that pRad will not be taking data today, so we have the beam for the whole day today (and the whole weekend). AFP Field = 6.796 T AFP Current = 93.65 A 05:15: Bryan and I closed the shutter. CC1 went from 9.0e-5 torr to 1.5e-4 torr...note that CC2 and CC1 were switched for this test.

24854	Fri Sep 28 04:26:17 2012	DGPhillipsII

During middle of AFP magnet ramping the decay trap pressure was observed to have gone up by roughly an order of magnitude from ~1.0e-4 to ~1.0e-3.

24853	Fri Sep 28 03:41:29 2012	DGPhillipsII

AFP LHe and LN2 fill complete. Magnet ramping procedure beginning now.

24852	Fri Sep 28 02:38:29 2012	DGPhillipsII

Decay trap pump down successful. Beginning AFP fill.

24851	Fri Sep 28 00:52:34 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 28, 2012 00:35 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.96 psia Heater C pressure 14.38 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 291.8 psia Tungsten Cool Diff. 281.5 psia Tungsten Cool ret. 75.8 psia 1630 eng. 2 temp. 14.28 K 1630 JT temp. 7.44 K 1630 outlet temp. 274.8 K 1630 engine speed 175 rpm 1630 supply press. 247 psig 1630 JT press. 195 psig 1630 return press. 1.2 psig 1630 med. press. stor. 100 psig 1410 engine speed 77 rpm 1410 TE-A 16.2 K 1410 TE-B 5.3 K 1410 TE-E 79.5 K 1410 supply press. 248 psig 1410 JT press. 210 psig 1410 return press. 3.2 psig 1K dewar pressure 6 psig 4K dewar pressure 330 mmHg 4K dewar level 5.0 inHe 1K dewar level 25.3 inHe 4K main flow control 4.5 V LHe temp. 1 5.15 K Heat exch. temp. 3 188.60 K Poly temp. 2 57.73 K flapper heater cur 0.18 A Flapper Status: open BEAM OFF Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 29 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 20.6 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 93.1 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 611.4 torr CC1 pressure 1.0e-4 torr Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.6 % PPM LN2 level 79.0 % AFP LHe level 90.0 % magnet ramped down AFP LN2 level 69.5 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level .5 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 1.2E-3 torr (CC2) DAQ data_raw disk usage 86%

24850	Thu Sep 27 23:58:32 2012	bz

Runlog Time Slodaq MIDAS Type Notes 01:22 1261 20365 Flapper open 5/5s 79 cts/s 01:27 1262 20366 Flapper flapping 5/5s 204 cts/s 01:33 1263 20367 Flapper closed 5/5s 9 cts/s 01:40 1264 20368 Flapper open 5/90s 01:50 1265 20369 Flapper flapping 5/90s Removed 100 mBar from source - tank at 240 mBar 03:23 1266 20371 Flapper open 5/90s 03:31 1267 20372 Flapper flapping 5/90s 03:42 1268 20373 Flapper open 5/5s 69 cts/s 03:47 1269 20374 Flapper flapping 5/5s 249 cts/s 03:52 1270 20375 Flapper closed 5/5s 14 cts/s Removed 100 mBar from source - tank at 340 mBar 05:10 1271 20376 Flapper open 5/5s 64 cts/s 05:16 1272 20377 Flapper flapping 5/5s 216 cts/s 05:21 1273 20378 Flapper closed 5/5s 12 cts/s 05:27 1274 20379 Flapper open 5/90s Possible reason for early drop in rate: arcdown in source led to reduced current early on Other developments: May have figured out how to replay missing runs. Doing so now, but it will take a long time. It may be necessary to run ncsu backup script after to send files to diablo for analysis by Adam.

24848	Thu Sep 27 21:10:56 2012	Erik

Here is a spreadsheet of beta run data starting from last January (sheet1) and graphs of the data (sheet2). It should be clear from the data, but the x-axes of all the graphs are the run numbers and the y-axes are the data. Something interesting started happening to the values around run 20130.

Attachment 1: s

24849	Thu Sep 27 20:36:11 2012	Erik

UCNA Shift Change Checklist Date: September 27, 2012 20:00 Shift Persons: Hasan, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

on Heat exchanger flow 51 slpm Heater B pressure 12.9 psia Heater C pressure 14.25 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 294.9 psia Tungsten Cool Diff. 283.1 psia Tungsten Cool ret. 77.9 psia 1630 eng. 2 temp. 14.29 K 1630 JT temp. 7.36 K 1630 outlet temp. 273.1 K 1630 engine speed 165 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1 psig 1630 med. press. stor. 110 psig 1410 engine speed 77 rpm 1410 TE-A 15.9 K 1410 TE-B 5.5 K 1410 TE-E 85.3 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.2 psig 1K dewar pressure 6 psig 4K dewar pressure 290 mmHg 4K dewar level 4.73 inHe 1K dewar level 22.1 inHe 4K main flow control 5 V LHe temp. 1 4.29 K Heat exch. temp. 3 187.25 K Poly temp. 2 105.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 30 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 20.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 97.5 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 613 torr CC1 pressure ? torr neither cold cathode will read source vacuum Hall Probe Y 0 kG Hall Probe Z 0 kG PPM LHe level 92.7 % PPM LN2 level 80.5 % AFP LHe level 98.0 % magnet ramped down AFP LN2 level 80.5 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H2O Chiller off Chiller water level .5 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) --- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV --- kV West muon veto HV --- kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2E-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status burst Proton burst spacing 5 seconds Proton pulses/burst 5 Proton countdown 1 Proton pattern width 270 ns TBCM001I03 14 mA "Beamplot" Capture .74

24840	Thu Sep 27 13:38:34 2012	ASaunders

prad is done with beam for the day

24839	Thu Sep 27 01:18:08 2012	DGPhillipsII

Kicker failed at 01:10. Beam turned off until further notice. Beam back on at 01:15.

24838	Thu Sep 27 01:15:48 2012	bz

UCNA Shift Change Checklist Date: September 27, 2012 00:33 Shift Persons: Dave, Bryan
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.27 psia Heater C pressure 14.46 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 294.4 psia Tungsten Cool Diff. 282.7 psia Tungsten Cool ret. 77.5 psia 1630 eng. 2 temp. 14.07 K 1630 JT temp. 6.76 K 1630 outlet temp. 268.4 K 1630 engine speed 145 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 77 rpm 1410 TE-A 16.3 K 1410 TE-B 5.5 K 1410 TE-E 82.2 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.2 psig 1K dewar pressure 5.6 psig 4K dewar pressure 310 mmHg 4K dewar level 13.27 inHe 1K dewar level 20.28 inHe 4K main flow control 5.2 V LHe temp. 1 4.9 K Heat exch. temp. 3 193.9 K Poly temp. 2 116.8 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 34.75 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 18.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 90.7 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 725.7 torr CC1 pressure ? torr neither cold cathode will read source vacuum Hall Probe Y 0.003 kG Hall Probe Z 0.003 kG PPM LHe level 92.9 % PPM LN2 level 86.1 % AFP LHe level 75.9 % magnet ramped down AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off
========== East Detector Cart.....OFF
========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 72.3 F West MWPC Temperature 68.7 F MWPC Pressure 5.1*10^2 torr N2 - MWPC Differential .3 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H2O Chiller off Chiller water level .5 ========== West Detector

OFF MWPC Pressure 513.6 torr N2 - MWPC Differential .6 torr Neopentane Flow Rate -1 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0014 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0013 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2839 Hz West muon veto rate 3907 Hz Spectrometer vacuum 525.2 torr (CC2) DAQ data_raw disk usage 86%

24837	Thu Sep 27 01:14:50 2012	DGPhillipsII

Kicker failed at 01:10. Beam turned off until further notice.

24836	Thu Sep 27 01:13:27 2012	JOrtiz3

Beam was turned on at 9:15 PM this evening, Wednesday Sept 26th 2012.

24835	Thu Sep 27 00:40:54 2012	bz

UCNA Shift Change Checklist Date: September 27, 2012 00:33 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.27 psia Heater C pressure 14.46 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 294.4 psia Tungsten Cool Diff. 282.7 psia Tungsten Cool ret. 77.5 psia 1630 eng. 2 temp. 14.07 K 1630 JT temp. 6.76 K 1630 outlet temp. 268.4 K 1630 engine speed 145 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 77 rpm 1410 TE-A 16.3 K 1410 TE-B 5.5 K 1410 TE-E 82.2 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.2 psig 1K dewar pressure 5.6 psig 4K dewar pressure 310 mmHg 4K dewar level 13.27 inHe 1K dewar level 20.28 inHe 4K main flow control 5.2 V LHe temp. 1 4.9 K Heat exch. temp. 3 193.9 K Poly temp. 2 116.8 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 34.75 gallon/100 Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 18.3 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 7/8 SCS LHe level 90.7 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 725.7 torr CC1 pressure ? torr neither cold cathode will read source vacuum Hall Probe Y 0.003 kG Hall Probe Z 0.003 kG PPM LHe level 92.9 % PPM LN2 level 86.1 % AFP LHe level 75.9 % magnet ramped down AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 72.3 F West MWPC Temperature 68.7 F MWPC Pressure 5.1*10^2 torr N2 - MWPC Differential .3 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level .5 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 513.6 torr N2 - MWPC Differential .6 torr Neopentane Flow Rate -1 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0014 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0013 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2839 Hz West muon veto rate 3907 Hz Spectrometer vacuum 525.2 torr (CC2) DAQ data_raw disk usage 86%

24834	Thu Sep 27 00:29:02 2012	JOrtiz3

Beam was turned on at 9:15 PM this evening, Wednesday Sept 26th 2012.

24833	Wed Sep 26 21:16:20 2012	ASaunders

sequence of events: 18:00 vacuum looks good; both mwpcs are valved off from scs vacuum 18:25 vacuum burp, no human involved 18:40 start filling west detector stack 19:25 finish filling w end; start filling east end 20:25 start pumping out west end; east end still filling 20:30 finish west pumpout. mwpc valved off from SCS 20:40 east fill complete 21:00 start pumping east end 21:15 spinning down turbos in prep for venting system

24832	Wed Sep 26 21:15:46 2012	JOrtiz3

Beam was turned on at 9:15 PM this evening, Wednesday Sept 26th 2012.

24831	Wed Sep 26 21:12:23 2012	ASaunders

filled both detector stacks, one at a time. See attached plot. Conclusion: both detector

system in preparation for pulling out both detectors to replace front windows.

Attachment 1: plot_0.bmp

24830	Wed Sep 26 19:34:20 2012	GEHogan

Yesterday's fix to Multiscan was not complete. Card in first module was not plugged in fully. Went back to orginal MS module and this time Andy pushed the card in fully. First card is now reading completely.

24828	Wed Sep 26 18:55:02 2012	EIC

more testing of wire chambers fill See attached plot.

Attachment 1: d_Cathode_(I1)_-_Mozilla_Firefox.bmp

24827	Wed Sep 26 17:42:33 2012	ASaunders

fun with the leaky detectors here's a plot of CC2 during this afternoon "Before": before I started filling detectors, the vacuum was about 2e-5 "Both": during this period, both detectors were filling or full. "West only": I first pumped out the east detectors; during this period the west detector only was full "Both empty": I then pumped out the west detector. This whole exercise was complicated by the fact that CC2 kept tripping off, then giving bogus readings when turned back on. SO at the end of this plot, I switched to using CC1 instead.

Attachment 1: plot.bmp

24826	Wed Sep 26 16:38:49 2012	Hasan

UCNA Shift Change Checklist Date: September 26, 2012 16:00 Shift Persons: Hasan, Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.82 psia Heater C pressure 14.46 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 293.8 psia Tungsten Cool Diff. 282.2 psia Tungsten Cool ret. 77.2 psia 1630 eng. 2 temp. 13.98 K 1630 JT temp. 6.78 K 1630 outlet temp. 270.5 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 80 psig 1410 engine speed 77 rpm 1410 TE-A 16.3 K 1410 TE-B 5.7 K 1410 TE-E 81.0 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.4 psig 1K dewar pressure 5.5 psig 4K dewar pressure 330 mmHg 4K dewar level 13.82 inHe 1K dewar level 14.47 inHe 4K main flow control 5.2 V LHe temp. 1 14.90 K Heat exch. temp. 3 173.2 K Poly temp. 2 66.83 K flapper heater cur 0.18 A Flapper Status: --- can't log in to flapper computer Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37.5 gallon/100 Gate valve status closed D2 Pump port status open (washer) Switcher status thru AFP temperature 20.0 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level Empty SCS LHe level 97.3 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.4 torr CM5 pressure 1.0 torr CC1 pressure 7.2e-6 torr Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 92.9 % PPM LN2 level 90.0 % AFP LHe level 87.9 % AFP LN2 level 93.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) magnet ramped down AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 73.0 F West MWPC Temperature 75.6 F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr OFF A East Back. Veto Buck. OFF A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure 99.6 torr N2 - MWPC Differential 2.2 torr Neopentane Flow Rate 14.3 slpm West PMT Buck. Curr. OFF A West Back. Veto Buck. OFF A Top-Veto and GMS Crate (Top Crate) 0014 V (Ch04) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0013 V (Ch12) East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 2580 Hz West muon veto rate 3474 Hz Spectrometer vacuum 7.4e-4 torr (CC2) DAQ data_raw disk usage 86%

24825	Wed Sep 26 06:16:47 2012	bz

Shift Summary DID NOT FILL THE MWPC - too worried about breaking it, left it for Tito and Mark Fixed the Multiscan python script so that the correct graphs are displayed on the target steering plotter and so that the tune quality and X and Y graphs work correctly COULD NOT FIX the problems with 0 and missing data related to card 1 in the multiscan Performed a source lifetime suite with the full source, then did it again with 100 tank mBar removed Filled the AFP Runlog Time Slodaq MIDAS Type Notes 01:27 1249 20354 Flapper flapping 5/5s 270 cts/s 01:43 1250 20355 Flapper open 5/5s 95 cts/s 02:08 1251 20356 Flapper closed 5/5s 10 cts/s 02:22 1252

04:56 1254 20359 Flapper open 5/5s 70 cts/s 05:01 1255 20360 Flapper flapping 5/5s 170 cts/s 05:07 1256 20361 Flapper closed 5/5s 8 cts/s 05:12 1257 20362 Flapper open 5/90s 05:26 1258 20363 Flapper flapping 5/90s Probably froze D2 back in too quickly Also, D2 pumpout port open for all runs

24824	Wed Sep 26 04:27:13 2012	bz

Started partial volume scan. Opened check valve bypass, 44.4 mBar in tank Going to go until 144.4 mBar, then close orange valve and cool down

24823	Wed Sep 26 01:25:44 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 26, 2012 01:15 Shift Persons: Dave, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.37 psia Heater C pressure 14.29 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 294.4 psia Tungsten Cool Diff. 282.8 psia Tungsten Cool ret. 77.8 psia 1630 eng. 2 temp. 14.48 K 1630 JT temp. 6.82 K 1630 outlet temp. 268.7 K 1630 engine speed 135 rpm 1630 supply press. 248 psig 1630 JT press. 210 psig 1630 return press. 1.6 psig 1630 med. press. stor. 47 psig 1410 engine speed 77 rpm 1410 TE-A 14.7 K 1410 TE-B 5.2 K 1410 TE-E 74.0 K 1410 supply press. 248 psig 1410 JT press. 210 psig 1410 return press. 3.3 psig 1K dewar pressure 5.8 psig 4K dewar pressure 320 mmHg 4K dewar level 15.19 inHe 1K dewar level 26.12 inHe 4K main flow control 5.0 V LHe temp. 1 5.0 K Heat exch. temp. 3 183.5 K Poly temp. 2 127.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 16.5 gallon/100 Gate valve status closed D2 Pump port status open (washer) Switcher status thru AFP temperature 20.0 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level Empty SCS LHe level 90.7 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 725.7 torr CC1 pressure 3.1e-5 torr Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 93.2 % PPM LN2 level 97.4 % AFP LHe level 78.5 % magnet ramped down AFP LN2 level 93.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF East MWPC Temperature 77.9 F West MWPC Temperature 76.7 F MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 4 ========== West Detector Cart.....OFF ========== MWPC HV OFF V MWPC Trip Hold Status OFF MWPC Pressure OFF torr N2 - MWPC Differential OFF torr Neopentane Flow Rate OFF slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 0014 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0013 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 3072 Hz West muon veto rate 4456 Hz Spectrometer vacuum 1.6e-8 torr (CC2) DAQ data_raw disk usage 86%

24822	Tue Sep 25 17:24:56 2012	MFMakela

Pressure test of PPM window started 5:24 - 726.5 torr CM5

24821	Tue Sep 25 16:26:32 2012	Hasan

UCNA Shift Change Checklist Date: September 25, 2012 15:30 Shift Persons: Sky, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.00 psia Heater C pressure 14.37 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 293.0 psia Tungsten Cool Diff. 282.4 psia Tungsten Cool ret. 76.5 psia 1630 eng. 2 temp. 14.67 K 1630 JT temp. 6.90 K 1630 outlet temp. 276.4 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 215 psig 1630 return press. 1.2 psig 1630 med. press. stor. 60 psig 1410 engine speed 77 rpm 1410 TE-A 14.3 K 1410 TE-B 5.2 K 1410 TE-E 73.8 K 1410 supply press. 250 psig 1410 JT press. 210 psig 1410 return press. 3.2 psig 1K dewar pressure 5.5 psig 4K dewar pressure 310 mmHg 4K dewar level 15.34 inHe 1K dewar level 18.65 inHe 4K main flow control 3.3 V LHe temp. 1 8.06 K Heat exch. temp. 3 194.94 K Poly temp. 2 65.32 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 19.0 gallon/100 Gate valve status closed D2 Pump port status open (washer) Switcher status thru AFP temperature 16.50 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 93.2 % SCS

pressure 0.5 torr CM5 pressure 611.1 torr CC1 pressure --- torr out of range Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 93.3 % PPM LN2 level 98.8 % AFP LHe level 92.5 % magnet ramped down AFP LN2 level 54.7 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. --- psig OFF AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off ========== East Detector Cart.....OFF ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 85.2 F West MWPC Temperature 76.7 F MWPC Pressure -0.075 torr N2 - MWPC Differential 0.1 torr Neopentane Flow Rate -0.07 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller on Chiller water level 4 ========== West Detector Cart.....OFF ========== MWPC HV 00 V MWPC Trip Hold Status TH MWPC Pressure 5.86 torr N2 - MWPC Differential 0.8 torr Neopentane Flow Rate -0.86 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 0014 V Ch04 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V Ch12 East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2728 Hz West muon veto rate 3631 Hz Spectrometer vacuum 603.8 torr (CC2) vented DAQ data_raw disk usage 86%

24820	Tue Sep 25 12:15:19 2012	GEHogan

Problem with Multiscan traced to overwritten setup script. Replaced script with last known good version. Write protected script. As part of trouble shooting, replaced main MS unit with backup.

24819	Tue Sep 25 07:57:56 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 25, 2012 00:40 Shift Persons: Dave, Evan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.21 psia Heater C pressure 13.58 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 294.6 psia Tungsten Cool Diff. 282.5 psia Tungsten Cool ret. 78.0 psia 1630 eng. 2 temp. 13.15 K 1630 JT temp. 6.56 K 1630 outlet temp. 271.7 K 1630 engine speed 180 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.3 psig 1630 med. press. stor. 62 psig 1410 engine speed 154 rpm 1410 TE-A 15.6 K 1410 TE-B 5.9 K 1410 TE-E 99.0 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 290 mmHg 4K dewar level 13.5 inHe 1K dewar level 23.6 inHe 4K main flow control 5.0 V LHe temp. 1 5.3 K Heat exch. temp. 3 192.1 K Poly temp. 2 119.5 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS (performed at 02:00) ********** N2 Tanker Volume 23.0 gallon/100 Gate valve status closed D2 Pump port status closed (washer) Switcher status thru AFP temperature 9.0 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 94.4 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 1.2 torr CC1 pressure 6.5e-5 torr (was OFF, turned on temporarily to read pressure) Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 93.7 % PPM LN2 level 50.6 % AFP LHe level 78.8 % magnet ramped down AFP LN2 level 84.6 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 17 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart (performed at 02:45) ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 96.7 F West MWPC Temperature 71.3 F MWPC Pressure 100 torr N2 - MWPC Differential -8.0 torr Neopentane Flow Rate 21.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller Chiller water level ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure off torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate Off slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.36 kV West muon veto HV 2.36 kV East muon veto rate 3566 Hz West muon veto rate 3874 Hz Spectrometer vacuum 1.9e-5 torr (CC2) DAQ data_raw disk usage 86%

24818	Mon Sep 24 16:50:09 2012	Hasan

UCNA Shift Change Checklist Date: September 24, 2012 16:15 Shift Persons: Hasan, Jose, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.20 psia Heater C pressure 13.48 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 296.5 psia Tungsten Cool Diff. 283.4 psia Tungsten Cool ret. 79.2 psia 1630 eng. 2 temp. 13.05 K 1630 JT temp. 6.52 K 1630 outlet temp. 274.5 K 1630 engine speed 185 rpm 1630 supply press. 247 psig 1630 JT

155 rpm 1410 TE-A 15.5 K 1410 TE-B 5.8 K 1410 TE-E 100.4 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.1 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 12.35 inHe 1K dewar level 13.52 inHe 4K main flow control 4.5 V LHe temp. 1 5.466 K Mark is doing a Source freeze Heat exch. temp. 3 219.2 K Poly temp. 2 54.5 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 26.0 gallon/100 Gate valve status closed D2 Pump port status open source freeze in progress... Switcher status thru AFP temperature 9.5 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 99.8 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 13.5 torr source freezing... CM5 pressure 1.5 torr CC1 pressure OFF torr Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 94.1 % PPM LN2 level 54.2 % AFP LHe level 98.0 % magnet ramped down AFP LN2 level 67.30 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 89.7 F West MWPC Temperature 81.7 F MWPC Pressure 100 torr N2 - MWPC Differential -9.0 torr Neopentane Flow Rate 21.25 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller On Chiller water level 4 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 16.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 3270 Hz West muon veto rate 3554 Hz Spectrometer vacuum 1.7e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status: OFF Proton burst spacing: --- s Proton pulses/burst: --- count Proton countdown: --- count Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- %

24817	Mon Sep 24 15:15:43 2012	MFMakela

Filling source through cold trap: Closed MV5,6 SV3,4,5 Turbo off CC1 - off Orange valve open - check valve no leak Green valve - open UCN gatevalve - closed Pumping port - open

24815	Mon Sep 24 09:46:56 2012	MFMakela

Filling source through cold trap: Closed MV5,6 SV3,4,5 Turbo off CC1 - off Orange valve open - check valve no leak Green valve - open UCN gatevalve - closed Pumping port - open Starting flow, regulating through GC2

24816	Mon Sep 24 09:45:54 2012	MFMakela

LN2 tanker 27.75 @ 9 am

24814	Mon Sep 24 03:11:10 2012	EIC

1 k dewar - 6.8 inches 4k dewar - 28.8 inches

24813	Mon Sep 24 03:10:15 2012	MFMakela

AFP 77 % LN2 tanker - 29.5 @ 3 am

24812	Mon Sep 24 01:50:05 2012	MFMakela

Starting UCN source flow.

24811	Mon Sep 24 01:49:43 2012	MFMakela

1630 and 1410 - running MPS - 45 psi 4k -28 inches 1k -13.8 inches

24810	Thu Sep 20 03:11:18 2012	MFMakela

1630 - off 1410- off LN2 lin3 - off

24809	Thu Sep 20 03:10:42 2012	MFMakela

Pumping on O/P cell Turned off O/P cold head

24808	Thu Sep 20 02:46:38 2012	MFMakela

Source distilled 1237 mbar in tank Pumping on source via SV3 MV5,6 Orange valv open Source warming CC1 on

24807	Wed Sep 19 18:36:55 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 19, 2012 18:30 Shift Persons: Dave, Jose, Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 125 slpm Heater B pressure 13.36 psia Heater C pressure 12.05 psia Tungsten supply press. 305 psig Compressor 1 On on Tungsten Cool supp. 301.5 psia Tungsten Cool Diff. 285.4 psia Tungsten Cool ret. 82.6 psia 1630 eng. 2 temp. 15.8 K 1630 JT temp. 8.2 K 1630 outlet temp. 282.0 K 1630 engine speed 175 rpm 1630 supply press. 245 psig 1630 JT press. 175 psig 1630 return press. 1.0 psig 1630 med. press. stor. 70 psig 1410 engine speed 0 rpm LIQUIFIER OFF FOR SERVICE 1410 TE-A 219.1 K 1410 TE-B 256.0 K 1410 TE-E 201.6 K 1410 supply press. 10 psig 1410 JT press. 15 psig 1410 return press. 4.0 psig 1K dewar pressure 2.0 psig DEWAR OPEN TO PREVENT OVERPRESSURE 4K dewar pressure 280 mmHg 4K dewar level 21.2 inHe 1K dewar level 21.6 inHe 4K main flow control 1.1 V LHe temp. 1 32.4 K Mark is doing a melt then refreeze Heat exch. temp. 3 119.1 K Poly temp. 2 86.5 K flapper heater cur 0.18 A Flapper Status: --- Beam not on, so did not check. Flapper Time A: --- seconds Flapper Time C: --- seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 23.0 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed washer in line Switcher status thru AFP temperature 9.6 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level empty Jose and Erik will fill tonight. SCS LHe level 74.5 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 825.8 torr strange high reading CM5 pressure 1.1 torr CC1 pressure OFF torr Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 96.5 % PPM LN2 level 97.0 % AFP LHe level 62.1 % magnet ramped down AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off O2 level 20.9% DAQ data_raw disk usage 86%

24806	Wed Sep 19 10:34:03 2012	MFMakela

Melting source with hpes of a ditillation. Source voltage at 1 VDC.

24805	Wed Sep 19 10:33:31 2012	MFMakela

Checked out leaking valve/check valve. I found GC2 and P1 open and it caused a small leak signal, not sure how long this was going on? Closed valves and recooled the source. Did not see a leak anymore.

24804	Wed Sep 19 07:06:30 2012	bz

Time SlowDAQ# MIDAS# Desc. Notes 01:39 1220 20331 flapping 5/5s 01:45 1221 20332 closed 5/5s Some UCN left over from previous run 01:51 1222 20333 closed 5/5s 01:57 1223 20334 open 5/5s Beam dip during run 02:05 1224 20335 open 5/90s 5 cycles 02:14 1225 20336 flapping 5/90s 5 cycles Source started at 16.8 mA, there was an event sometime previous that dropped current 12 mA (over-Cesiation of source) as of 2:20 current back up to 15.2 mA Melt+ refreeze 03:07 1226 20337 open 5/90s 6 cycles 03:16 1227 20338 flapping 5/90s 8 cycles, beam out for 2 Source is back to full current @ 03:21 03:32 1228 20339 open 5/5s 03:46 1229 20340 closed 5/5s still UCN from previous 03:53 1230 20341 flapping 5/5s started low, got to equilibrium Tried to put 100 mBar in tank. When I did so, must have accidentally triggered check valve? Could not get check valve closed again no matter what we tried. Tried closing orange valve and opening check valve bypass to see if we could pull pressure to 0, it worked. So not a leak, but instead something in the area of the check valve/check valve bypass that no longer seals. Mark said to leave it leaking into source, so we shall. Sorry.

24803	Wed Sep 19 03:06:40 2012	bz

Melt and refreeze Also, noticed that the enforced update was set for 5 AM to 5:30 AM on all our computers, started it during melt and refreeze hoping to save time, do it in a controlled fashion Only one computer required a restart, unfortunately that was ucncontrol.

24802	Wed Sep 19 02:08:50 2012	Hasan

UCNA Shift Change Checklist Date: September 19, 2012 00:10 Shift Persons: Bryan, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.04 psia Heater C pressure 12.2 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 301.3 psia Tungsten Cool Diff. 285.0 psia Tungsten Cool ret. 82.8 psia 1630 eng. 2 temp. 13.96 K 1630 JT temp. 7.68 K 1630 outlet temp. 274.6 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 175 psig 1630 return press. 1.2 psig 1630 med. press. stor. 75 psig 1410 engine speed 0 rpm LIQUIFIER OFF FOR SERVICE 1410 TE-A 211.0 K 1410 TE-B 200.0 K 1410 TE-E 162.3 K 1410

psig DEWAR OPEN TO PREVENT OVERPRESSURE 4K dewar pressure 280 mmHg 4K dewar level 15.28 inHe 1K dewar level 23.34 inHe 4K main flow control 5.5 V LHe temp. 1 5.44 K Heat exch. temp. 3 92.7 K Poly temp. 2 113.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37.0 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed Switcher status thru AFP temperature 9.2 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/8 SCS LHe level 83.2 % SCS current 0 A magnet ramped down Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 1.1 torr CC1 pressure 5.5e-5 torr Hall Probe Y 0.0 kG Hall Probe Z 0.0 kG PPM LHe level 96.6 % PPM LN2 level 99.0 % AFP LHe level 70.0 % magnet ramped down AFP LN2 level 61.4 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 76.2 F West MWPC Temperature 73.4 F MWPC Pressure 100 torr N2 - MWPC Differential -8.1 torr Neopentane Flow Rate 22.94 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -3.3 torr Neopentane Flow Rate 17.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3115 Hz West muon veto rate 3717 Hz Spectrometer vacuum 2.6e-5 torr (CC2) DAQ data_raw disk usage 86% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: ~74 %

24801	Tue Sep 18 23:54:56 2012	Erik

9/18/12 Source tests GV closed throughout Slow DAQ Midas RunType 2104 1204? 20316 Flapping production 5pulses/5s 2108 1205? 20317 Open production 5pulses/5s Strange shape of UCN rate in this run due to pressure pulse in guide when flapper opened PW = 290 Ion source current = 14.74 mA CD=1 20Hz 5pulses/5s Line X capture=74% 2112 1206? 20318 Open production 5pulses/5s Pressure in guide dropping during this run. 2119 1207? 20319 Open production 5pulses/5s Pressure low and stable for this run. 2122 1209 20320 closed production 5pulses/5s Flapper leakage = ~10 Hz Beam on at 5pulses/60s @ 20 Hz Flapper delay A = 0.3s C = 59.8s 2134 1210 20321 Lifetime flapping 5pulses/60s 5 cycles 2142 1211 20322 Lifetime open 5pulses/60s 5 cycles Beam on at 5pulses/90s @ 20Hz Flapper delay C = 89.8s 2152 1212 20323 Lifetime flapping 5pulses/90s 5 cycles Melt and refreeze 2255 Pump on source thru SV3 for 10 minutes to remove residual He gas. 2300 1213 20324 Lifetime flapping 5pulses/90s 5 cycles 2309 1214 20325 Lifetime open 5pulses/90s 5 cycles 2320 1215 20326 production flapper open 5pulses/5s 2326 1216 20327 production closed 5 pulses/5s Still ~10 Hz leakage after melt and refreeze. 2331 1218 20328 production flapping 5pulses/5s Now we will run the beam for 2-3 hours then repeat the entire above sequence. 2335 1219 20330 production flapping while beam cooks D2

24800	Tue Sep 18 06:11:37 2012	bz

Depol runs from last night Time Run# Type #Cycles Notes 21:31 20304 DE- (65s) 4 22:36 20306 DE+ (65s) 4 23:14 20307 DE- (90s) 4 23:52 20308 DE+ (90s) 4 00:39 20309 DE+ (90s) 6 01:34 20310 DE- (90s) 6 02:29 20311 DE- (65s) 6 Timing Bad - AFP turned off 40 seconds early 03:23 20312 DE+ (65s) 7 First cycle, almost no beam, Timing bad as in previous run 04:28 20313 DE+ (45s) 6 05:19 20314 DE- (45s) 5 Beam off at 6 AM Only noticed the timing was bad after the DE+ run. I had to change value, but changed it by subtracting from previous, so either typo, or previous runs had bad timing. Need to check.

24799	Tue Sep 18 00:46:47 2012	Hasan

UCNA Shift Change Checklist Date: September 17, 2012 00:20 Shift Persons: Bryan, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.36 psia Heater C pressure 13.18 psia Tungsten supply press. 300 psig Compressor 1 On on Tungsten Cool supp. 300.5 psia Tungsten Cool Diff. 284.4 psia Tungsten Cool ret. 82.7 psia 1630 eng. 2 temp. 12.38 K 1630 JT temp. 6.78 K 1630 outlet temp. 265.2 K 1630 engine speed 150 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 1.2 psig 1630 med. press. stor. 78 psig 1410 engine speed 180 rpm 1410 TE-A 15.5 K 1410 TE-B 6.3 K 1410 TE-E 95.5 K 1410 supply press. 240 psig 1410 JT press. 150 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 370 mmHg 4K dewar level 8.63 inHe 1K dewar level 20.98 inHe 4K main flow control 5.5 V LHe temp. 1 5.44 K Heat exch. temp. 3 74.22 K Poly temp. 2 93.74 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 17.0 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed Switcher status down AFP temperature

% SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 1.0 torr CC1 pressure 2.2e-5 torr Hall Probe Y 0.170 kG Hall Probe Z -0.360 kG PPM LHe level 96.6 % PPM LN2 level 55.8 % AFP LHe level 95.0 % AFP LN2 level 93.2 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 78.8 F West MWPC Temperature 78.9 F MWPC Pressure 100 torr N2 - MWPC Differential -8.0 torr Neopentane Flow Rate 22.75 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller On Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2670 V MWPC Trip Hold Status TH MWPC Pressure 99.6 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 17.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.33 kV East muon veto rate 2977 Hz West muon veto rate 4575 Hz Spectrometer vacuum 3e-5 torr (CC2) DAQ data_raw disk usage 85% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H-source current): 14.6 mA "Beamplot" Capture: ~76 %

24798	Mon Sep 17 05:29:58 2012	bz

After we got here at midnight, we continued the depol measurement program. Pattern for GFT- (5s) 0 0011 1001 10 0001 1001 5000 0001 0010 5100 0001 0110 5600 0001 0010 15600 0001 0010 This is for a delta of 5 seconds, if longer deltas are needed, change the timestamps in the bottom 2 rows: for instance, for delta of 10 seconds, make bottom 2 6100 and 16100 respectively, for delta of 15 seconds, make bottom 2 6600 and 16600 respectively. Pattern for DE- (45s) 0 1011 1001 10 1001 1001 15000 0001 1001 15100 0001 0010 19100 0001 0110 19600 1001 0110 26600 1001 0010 49600 1001 0010 For 65s or 90s, add 2000 or 4500 respectively to the last 4 timestamps. Time Run# Type # Cycles Notes 00:38 20291 GFT- (5s) 8 00:59 20292 GFT+ (5s) 8 01:21 20293 GFT+ (10s) 8 01:43 20294 GFT- (10s) 8 02:05 20295 GFT- (15s) 8 02:27 20296 GFT+ (15s) 8 02:50 20297 GFT+ (25s) 8 03:14 20298 GFT- (25s) 8 03:39 20299 GFT- (40s) 11 Cycles 4,5,6 all 0 because beam out 04:15 20300 GFT+ (40s) 8 Pause between cycle 3 and 4 04:44 20301 DE- (45s) 4 05:18 20302 DE+ (45s) 4

24796	Mon Sep 17 05:21:35 2012	ASaunders

Now starting a set of SFT- and SFT+ cycles, alternating within the same run. Pattern: Time SH b T0 FL Be AFP SW GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 10000 1 0 0 1 0 0 1 0 10300 1 0 0 1 0 1 1 0 40000 1 0 1 1 1 1 0 1 40010 1 0 0 1 1 1 0 1 50000 1 0 0 1 0 1 1 0 50300 1 0 0 1 0 0 1 0 80000 1 0 0 1 1 0 0 1 20:06 20288-> 20290 SFT- and SFT+ cycles alternating; 20 cycles of each

24797	Mon Sep 17 01:12:40 2012	Hasan

UCNA Shift Change Checklist Date: September 17, 2012 00:10 Shift Persons: Bryan, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.40 psia Heater C pressure 13.05 psia Tungsten supply press. --- psig Compressor 1 On --- Tungsten Cool supp. 303.8 psia Tungsten Cool Diff. 285.5 psia Tungsten Cool ret. 85.0 psia 1630 eng. 2 temp. 11.93 K 1630 JT temp. 6.84 K 1630 outlet temp. 272.6 K 1630 engine speed 130 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 1.4 psig 1630 med. press. stor. 100 psig 1410 engine speed 180 rpm 1410 TE-A 15.4 K 1410 TE-B 6.3 K 1410 TE-E 83.0 K 1410 supply press. 240 psig 1410 JT press. 160 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 370 mmHg 4K dewar level 11.76 inHe 1K dewar level 15.53 inHe 4K main flow control 5.5 V LHe temp. 1 5.35 K Heat exch. temp. 3 74.74 K Poly temp. 2 72.95 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 25.0 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed Switcher status down AFP temperature 10.1 C AFP frequency 28.500 MHz AFP forward power 0 W AFP N2 dewar level 3/4 SCS LHe level 93.4 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 0.9 torr CC1 pressure 2.5e-5 torr Hall Probe Y 0.077 kG Hall Probe Z 0.408 kG PPM LHe level 96.8 % PPM LN2 level 64.1 % AFP LHe level 82.3 % magnet fill in progress... AFP LN2 level 77.3 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.7 F West MWPC Temperature 88.2 F MWPC Pressure 100 torr N2 - MWPC Differential -7.9 torr Neopentane Flow Rate 23 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status

West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.30 kV West muon veto HV 2.31 kV East muon veto rate 2911 Hz West muon veto rate 3511 Hz Spectrometer vacuum 4.5e-5 torr (CC2) DAQ data_raw disk usage 85% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.2 mA "Beamplot" Capture: ~80 %

24795	Sun Sep 16 20:15:11 2012	ASaunders

Continuing Depol measurements from previous shift. The run currently in progress is a set of P- and P+ cycles alternating in the same run. The timing pattern is Time SH b T0 FL Be AFP SW GV 0 1 0 1 1 1 0 0 1 10 1 0 0 1 1 0 0 1 15000 0 0 0 1 1 0 0 1 15100 0 0 0 1 0 0 1 0 18000 1 0 0 1 0 0 1 0 51000 1 0 1 1 1 1 0 1 51010 1 0 0 1 1 1 0 1 66000 0 0 0 1 1 1 0 1 66100 0 0 0 1 0 1 1 0 69000 1 0 0 1 0 1 1 0 102000 1 0 0 1 1 0 0 1 15:39 20285->20287 P- and P+ alternating; 15 cycles of each

24786	Sun Sep 16 16:34:28 2012	ASaunders

depol measurements thus far: time run type cycles 01:48 20273 D+ 10 03:14 20274 D- 10 04:40 20275 D+ 10 06:06 20276 D- 10 07:32 20277 D+ 5 08:45 20279-20280 SLD+ 10 10:27 20281 SLD- 10 11:51 20282 SLD+ 10 13:18 20283 SLD- 10 14:43 20284 SLD+ 5

24794	Sun Sep 16 16:33:29 2012	ASaunders

while doing shift change checklist, found LED/Hall Probe computer continuously rebooting. It seemed to be losing power intermittently, so I spread the prongs on the plug and tried again. It seems to be OK for the moment.

24793	Sun Sep 16 16:32:17 2012	ASaunders

UCNA Shift Change Checklist Date: September 16, 2012 16:00 Shift Persons: Saunders ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.78 psia Heater C pressure 13.10 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 306 psia Tungsten Cool Diff. 286 psia Tungsten Cool ret. 87.5 psia 1630 eng. 2 temp. 12.68 K 1630 JT temp. 7.23 K 1630 outlet temp. 274.3 K 1630 engine speed 155 rpm 1630 supply press. 250 psig 1630 JT press. 182 psig 1630 return press. 1.0 psig 1630 med. press. stor. 95 psig 1410 engine speed 180 rpm 1410 TE-A 14.8 K 1410 TE-B 6.0 K 1410 TE-E 90.7 K 1410 supply press. 235 psig 1410 JT press. 154 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 371 mmHg 4K dewar level 10.6 inHe 1K dewar level 25.4 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 77.4 K Poly temp. 2 229.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 27.0 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed Switcher status down AFP temperature 10.7 C AFP frequency 28.500 MHz AFP forward power 40 W AFP N2 dewar level 6/8 SCS LHe level 85.6 % SCS current 119.3 A Hall Probe vi not running see logbook entry LED vi not running SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.6 torr CC1 pressure 2.6e-5 torr Hall Probe Y 0.169 kG Hall Probe Z 0.359 kG PPM LHe level 96.9 % PPM LN2 level 67.4 % AFP LHe level 97.6 % AFP LN2 level 97.2 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 83.1 F West MWPC Temperature 88.2 F MWPC Pressure 100 torr N2 - MWPC Differential -8.1 torr Neopentane Flow Rate 21 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller On Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 15.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.30 kV West muon veto HV 2.31 kV East muon veto rate 2873 Hz West muon veto rate 3505 Hz Spectrometer vacuum E07 torr (CC2) DAQ data_raw disk usage 84% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: ~70 % estimated

24792	Sun Sep 16 11:38:03 2012	ASaunders

steering scan spreadsheet with figures

Attachment 1: ing_scan_2012-09-11.ods

Attachment 1: ing_scan_2012-09-11.ods

24790	Sun Sep 16 11:36:26 2012	ASaunders

Attachment 1: ing_scan_2012-09-11.ods

24789	Sun Sep 16 11:36:05 2012	ASaunders

Attachment 1: ing_scan_2012-09-11.ods

24788	Sun Sep 16 11:35:48 2012	ASaunders

I plotted up the steering scan from the other night. Conclusion: we need to study other possible reasons beyond the beam tune for lack of UCN production.

Attachment 1: ing_scan_2012-09-11.ods

24787	Sun Sep 16 10:02:43 2012	DAQ On-line

09/16 10:02 Start Run 13741 UCN0030 2011 UCN
09/16 10:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 5	1	2.73842E+13	0	0.00000E+00
Run 13737	5	1.36742E+14	0	0.00000E+00
Batch started at 13737	5	1.36742E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13741	0	3402.	3402.	404.	1318.	850.50	374.19
13741	1	0.	0.	0.	0.	0.00	0.00
13741	2	0.	0.	0.	0.	0.00	0.00
13741	3	0.	0.	0.	0.	0.00	0.00
13741	10	15.	15.	0.	6.	3.75	2.63

24785	Sun Sep 16 08:56:02 2012	ASaunders

UCNA Shift Change Checklist Date: September 16, 2012 08:00 Shift Persons: Saunders
********** UPSTAIRS
********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 12.9 psia Heater C pressure 13.2 psia Tungsten supply press. 305 psig Compressor 1 On on Tungsten Cool supp. 302 psia Tungsten Cool Diff. 285 psia Tungsten Cool ret. 84.0 psia 1630 eng. 2 temp. 12.7 K 1630 JT temp. 7.2 K 1630 outlet temp. 273 K 1630 engine speed 150 rpm 1630 supply press. 247 psig 1630 JT press. 182 psig 1630 return press. 1.1 psig 1630 med. press. stor. 90 psig 1410 engine speed 180 rpm 1410 TE-A 15.0 K 1410 TE-B 6.0 K 1410 TE-E 94.0 K 1410 supply press. 237 psig 1410 JT press. 159 psig 1410 return press. 3.2 psig 1K dewar pressure 6.9 psig 4K dewar pressure 370 mmHg 4K dewar level 9.4 inHe 1K dewar level 24.7 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 81.9 K Poly temp. 2 227.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds
********** DOWNSTAIRS
********** N2 Tanker Volume 27.7 gallon/100 Gate valve status closed (polarimetry) D2 Pump port status closed Switcher status down AFP temperature 10.5 C AFP frequency 28.500 MHz AFP forward power 39 W AFP N2 dewar level 8/8 SCS LHe level 89.6 % SCS current 119.3 A Hall Probe vi running LED vi running SV3 closed SV4 closed CM1 pressure -0.1 torr CM5 pressure 0.4 torr CC1 pressure 2.2e-5 torr Hall Probe Y 0.170 kG Hall Probe Z 0.359 kG PPM LHe level 97.0 % PPM LN2 level 69.5 % AFP LHe level 90.3 % AFP LN2 level

chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 78.0 F West MWPC Temperature 79.5 F MWPC Pressure 100 torr N2 - MWPC Differential -8.0 torr Neopentane Flow Rate 22 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller On Chiller water level 1.3 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 16.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 2915 Hz West muon veto rate 3822 Hz Spectrometer vacuum 4.3e-5 torr (CC2) DAQ data_raw disk usage 84% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.6 mA "Beamplot" Capture: ~70 % estimated

24784	Sun Sep 16 01:12:43 2012	Hasan

UCNA Shift Change Checklist Date: September 16, 2012 00:15 Shift Persons: Bryan, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 40.0 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 14.0 psia Heater C pressure 13.3 psia Tungsten supply press. --- psig Compressor 1 On on Tungsten Cool supp. 303.2 psia Tungsten Cool Diff. 284.6 psia Tungsten Cool ret. 85.0 psia 1630 eng. 2 temp. 13.13 K 1630 JT temp. 7.30 K 1630 outlet temp. 272.4 K 1630 engine speed 120 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.4 psig 1630 med. press. stor. 100 psig 1410 engine speed 180 rpm 1410 TE-A 13.6 K 1410 TE-B 5.6 K 1410 TE-E 87.0 K 1410 supply press. 240 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 345 mmHg 4K dewar level 8.35 inHe 1K dewar level 21.95 inHe 4K main flow control 6.0 V LHe temp. 1 5.41 K Heat exch. temp. 3 77.35 K Poly temp. 2 113.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 30.0 gallon/100 Gate valve status open D2 Pump port status closed Switcher status down AFP temperature 9.9 C AFP frequency 28.50 MHz AFP forward power 40 W AFP N2 dewar level full SCS LHe level 97.6 % SCS current 119.3 A SV3 closed SV4 closed CM1 pressure -0.3 torr CM5 pressure 0.5 torr CC1 pressure 2.0e-5 torr Hall Probe Y 0.077 kG Hall Probe Z 0.4.8 kG PPM LHe level 97.1 % PPM LN2 level 71.8 % AFP LHe level 85.1 % AFP LN2 level 79.4 % PPM current 72(6) A(T) AFP current 93.64(7) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 74.9 F West MWPC Temperature 76.6 F MWPC Pressure 100 torr N2 - MWPC Differential -8.1 torr Neopentane Flow Rate 23 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.8 torr N2 - MWPC Differential -3.3 torr Neopentane Flow Rate 16.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2308 Hz West muon veto rate 4616 Hz Spectrometer vacuum 7.3e-5 torr (CC2) DAQ data_raw disk usage 84% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: ~-- % estimated

24783	Sat Sep 15 22:44:18 2012	Rpattie

Shift Summary: ---------- - Completed the A->B octet from runs 20240 - 20264.. - Initial background rates in the west detector were x5 normal, the anode cut was increased to 175 due to the double peaked pedestal of the anode and normality was restored. - The speed of the 1410 was increased to 180 rpm. - Andy wants a 24 hour set of depol measurement, so we've started with 10 cycles of D-.

24782	Sat Sep 15 20:39:01 2012	Rpattie

UCNA Shift Change Checklist Date: September 15, 2012 16:00 Shift Persons: Robby ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.54 psia Heater C pressure 13.8 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 306.6 psia Tungsten Cool Diff. 286.3 psia Tungsten Cool ret. 87.2 psia 1630 eng. 2 temp. 12.77 K 1630 JT temp. 7.06 K 1630 outlet temp. 272.9 K 1630 engine speed 135 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.4 psig 1630 med. press. stor. 90 psig 1410 engine speed

press. 195 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 340 mmHg 4K dewar level 14.89 inHe 1K dewar level 16.67 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 112.5 K Poly temp. 2 148 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 32.5 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.50 MHz AFP forward power 40 W AFP N2 dewar level full SCS LHe level 83.9 % SCS current 119.3 A SV3 closed SV4 closed CM1 pressure -0.3 torr CM5 pressure 0.4 torr CC1 pressure 2.9e-5 torr Hall Probe Y 0.17 kG Hall Probe Z 0.36 kG PPM LHe level 97.2 % PPM LN2 level 74.6 % AFP LHe level 88.8 % AFP LN2 level 94.5 % PPM current 72(6) A(T) AFP current 93.64(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 75.2 F West MWPC Temperature 76.6 F MWPC Pressure 100 torr N2 - MWPC Differential -8.2 torr Neopentane Flow Rate 22 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 16.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 5368 Hz West muon veto rate 7842 Hz Spectrometer vacuum 4.2e-5 torr (CC2) DAQ data_raw disk usage 84% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 13.78 mA "Beamplot" Capture: ~77 % estimated

24781	Sat Sep 15 20:22:29 2012	MFMakela

Testing system vacuum: If someone feels like doing this it might be helpful, or I will try it Sunday. To test the system vacuum I would like to watch the rate of rise. To do this, with the AFP off only, have cc2 on and the convectron under the switcher. Close off gatevalves above turbos. Note if the convectron guage starts to read and how long this took. CC2 should be recorded in the DAQ. Reopen turbo gatevalves after a couple of minutes. Put the plot of CC2 into the log book. Thanks

24780	Sat Sep 15 16:36:13 2012	ASaunders

pause octet at end of A half to melt and refreeze UCN source also pump on residual gas above d2 for about 10 minutes

24779	Sat Sep 15 14:36:05 2012	ASaunders

Robby fixed the west rate problem by adjusting the west anode cut range from 100 to 175.

24778	Sat Sep 15 14:33:44 2012	ASaunders

hall probe on AFP magnet is now working on two channels. The third channel was only reading about 13 Gauss, so is negligible compared to the hundreds of Gauss on the remaining channels. REMINDER: This hall probe is only useful if we NEVER MOVE IT AT ALL. Please try very hard not to touch it while it is in place.

24777	Sat Sep 15 11:26:02 2012	ASaunders

west background rate seems excessively high: 5.436 in run 20240.

24776	Sat Sep 15 11:12:02 2012	ASaunders

now I will start a real octet whose main purpose is to allow us to debug any remaining detector issues

24775	Sat Sep 15 11:11:01 2012	ASaunders

depol test octet mixed results, for sure 9:43 AM 20216 B1: Background (on) 9:44 AM 20217 B2: Beta Run (on) 9:46 AM 20218 B3: Depol (on to off) w/r=0.323+/-0.117 9:53 AM 20219 B4: Background (off) 9:54 AM 20220 B5: Beta Run (off) 9:57 AM 20221 B6: Depol (off to on) w/r=0.0377+/-0.027 10:04 AM 20222 B7: Beta Run (off) 10:06 AM 20223 B8: Depol (off to on) w/r=0.130+/- 0.057 10:13 AM 20224 B9: Background (off) 10:14 AM 20225 B10: Beta Run (on) 10:17 AM 20226 B11: Depol (on to off) w/r=0.033+/-0.033 10:24 AM 20227 B12: Background (on) 10:25 AM 20228 A1: Background (off) 10:26 AM 20229 A2: Beta Run (off) 10:29 AM 20230 A3: Depol (off to on) w/r=0.095+/-0.050 10:36 AM 20231 A4: Background (on) 10:37 AM 20232 A5: Beta Run (on) 10:39 AM 20233 A6: Depol (on to off) w/r=0.029+/-0.029 10:46 AM 20234 A7: Beta Run (on) 10:48 AM 20235 A8: Depol (on to off) w/r=0.0212+/-0.088 10:55 AM 20236 A9: Background (on) 10:57 AM 20237 A10: Beta Run (off) 10:59 AM 20238 A11: Depol (off to on) w/r=0.071+/- 0.036 11:06 AM

24773	Sat Sep 15 10:07:10 2012	ASaunders

data from spin flipper tuning scan: AFP magnet at 93.647 A flipper off: 777 cts/100 s 5 W scan: f rev power cts/100 s 28.520 <0.1 321 28.530 0.1 621 28.540 0.2 694 28.510 <0.1 294 28.500 <0.1 309 28.490 <0.1 459 28.480 0.1 661 28.470 0.2 703 40 W forward power scan f rev power cts/100 s 28.500 <0.1 194 28.510 0.4 204 28.490 0.1 234 28.480 0.3 486 so 28.500 looks good

24774	Sat Sep 15 09:58:25 2012	ASaunders

high count rates in east muon veto corrected by insulating wire chamber tubes from SCS frame with piece of plastic.

24772	Sat Sep 15 09:53:58 2012	ASaunders

new spin flipper scan completed. Looks fine, so I will do a depol test by running an octet with 2 minute beta and 1 minute background runs.

24771	Sat Sep 15 08:29:24 2012	ASaunders

continuing retune of spin flipper from last shift

24770	Sat Sep 15 08:28:57 2012	ASaunders

UCNA Shift Change Checklist Date: September 15, 2012 08:00 Shift Persons: Andy ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39.0 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.5 psia Heater C pressure 13.9 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 304 psia Tungsten Cool Diff. 286 psia Tungsten Cool ret. 85 psia 1630 eng. 2 temp. 13.1 K 1630 JT temp. 7.2 K 1630 outlet temp. 272.2 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.5 psig 1630 med. press. stor. 83 psig 1410 engine speed 112 rpm 1410 TE-A 15.8 K 1410 TE-B 5.7 K 1410 TE-E 95.1 K 1410 supply press. 245 psig 1410 JT press. 192 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 340 mmHg 4K dewar level 13.8 inHe 1K dewar level 16.4 inHe 4K main flow control 6.0 V LHe temp. 1 5.4 K Heat exch. temp. 3 78.3 K Poly temp. 2 145.9 K flapper heater cur 0.18 A Flapper Status: flap Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 33.00 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.530 MHz Tuning AFP forward power 5 W AFP N2 dewar level 8/8 SCS LHe level 88.3 % SCS current 119.3 A SV3 closed SV4 closed CM1 pressure -0.3 torr CM5 pressure 0.4 torr CC1 pressure 2.1e-5 torr Hall Probe Y --- kG Hall Probe Z --- kG PPM LHe level 97.3 % PPM LN2 level 77.2 % AFP LHe level 91.8 % AFP LN2 level 90.5 % PPM current 72(6) A(T) AFP current 93.647(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 74.6 F West MWPC Temperature 73.6 F MWPC Pressure 100 torr N2 - MWPC Differential -7.5 torr Neopentane Flow Rate 22 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 1.2 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 17.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.34 kV East muon veto rate 13000 Hz West muon veto rate 4114 Hz Spectrometer vacuum 4.5e-5 torr (CC2) DAQ data_raw disk usage 83% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.3 mA "Beamplot" Capture: ~77 % estimated

24769	Sat Sep 15 06:26:55 2012	bz

E Muon Veto is getting counts above 15000, need to call in someone to deal with it. In check_beta decay. East Side Veto TAC doesn't look right, also, the west side cathode has spikes in it spikes caused by low threshold somewhere, which is making the thing get non-events. Depol is huge, at least in first pass, but tuning went well? Data from tune attached

Attachment 1: ing_scan_2012-09-11.ods

24768	Sat Sep 15 01:55:56 2012	Hasan

UCNA Shift Change Checklist Date: September 15, 2012 00:07 Shift Persons: Bryan and Hasan

********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 133 psia Water line return 38.0 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.46 psia Heater C pressure 13.77 psia Tungsten supply press. 310 psig Compressor 1 On on Tungsten Cool supp. 304.5 psia Tungsten Cool Diff. 285.7 psia Tungsten Cool ret. 85.9 psia 1630 eng. 2 temp. 13.02 K 1630 JT temp. 7.16 K 1630 outlet temp. 272.8 K 1630 engine speed 135 rpm 1630 supply press. 245 psig 1630 JT press. 187 psig 1630 return press. 1.45 psig 1630 med. press. stor. 85 psig 1410 engine speed 112 rpm 1410 TE-A 12.1 K 1410 TE-B 5.4 K 1410 TE-E 84.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 1K dewar pressure 6.0 psig 4K dewar pressure 335 mmHg 4K dewar level 13.05 inHe 1K dewar level 16.35 inHe 4K main flow control 6.0 V LHe temp. 1 5.38 K Heat exch. temp. 3 88.9 K Poly temp. 2 132 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 36.00 gallon/100 Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.520 MHz AFP forward power 5 W AFP N2 dewar level 1/8 SCS LHe level 92.9 % SCS current 119.3 A SV3 closed SV4 closed CM1 pressure -0.4 torr CM5 pressure 0.3 torr CC1 pressure 2.1e-5 torr Hall Probe Y --- kG Hall Probe Z --- kG PPM LHe level 97.4 % PPM LN2 level 79.7 % AFP LHe level 84.2 % AFP LN2 level 78.6 % PPM current 72(6) A(T) AFP current 93.64(7) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status TH East MWPC Temperature 75.2 F West MWPC Temperature 76.6 F MWPC Pressure 100 torr N2 - MWPC Differential -8.1 torr Neopentane Flow Rate 22 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.51 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 16.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 13139 Hz West muon veto rate 3853 Hz Spectrometer vacuum 6.3e-5 torr (CC1) DAQ data_raw disk usage 83% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 290 ns TBCM001I03 (H- source current): 13.78 mA "Beamplot" Capture: ~77 % estimated

24767	Sat Sep 15 00:48:44 2012	Rpattie

We measured the storage time in the SCS before and after inserting the load lock plug. Results are summarized in the attached plot.

Attachment 1: ith_plug.gif

ith_plug.gif

24766	Fri Sep 14 22:04:59 2012	ASaunders

melt and refreeze

24765	Fri Sep 14 21:52:21 2012	Rpattie

UCNA Shift Change Checklist Date: September 14, 2012 16:00 Shift Persons: Robby and Erik ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39.0 psia Main return flow closed He blower on Heat exchanger flow 50 slpm Heater B pressure 13.4 psia Heater C pressure 13.77 psia Tungsten supply press. 300 psig Compressor 1 On off Tungsten Cool supp. 304.4 psia Tungsten Cool Diff. 285.8 psia Tungsten Cool ret. 85.3 psia 1630 eng. 2 temp. 13.17 K 1630 JT temp. 7.29 K 1630 outlet temp. 274.0 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 100 psig 1410 engine speed 112 rpm 1410 TE-A 12.2 K 1410 TE-B 5.4 K 1410 TE-E 109.3 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.2 psig 1K dewar pressure 6. psig 4K dewar pressure 330 mmHg 4K dewar level 12.1 inHe 1K dewar level 15.78 inHe 4K main flow control 6. V LHe temp. 1 5.36 K Heat exch. temp. 3 71.3 K Poly temp. 2 73.9 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** N2 Tanker Volume 37.50 gallon/100 Gate valve status closed D2 Pump port status open Switcher status thru AFP temperature 20.0 C AFP frequency 28.4820 MHz AFP forward power 0 W AFP N2 dewar level 4/4 SCS LHe level 97.9 % SCS current 119.3 A SV3 closed SV4 closed CM1 pressure -0.4 torr CM5 pressure 0.3 torr CC1 pressure 3.8e-6 torr Hall Probe Y recalibrating kG Hall Probe Z recalibrating kG PPM LHe level 97.4 % PPM LN2 level 81.9 % AFP LHe level 97.8 % AFP LN2 level 96.7 % PPM current 72(6) A(T)

chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 73.1 F West MWPC Temperature 71.8 F MWPC Pressure 580.8 torr N2 - MWPC Differential -.6 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0.00 A East Back. Veto Buck. 0.00 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TReset MWPC Pressure 580.2 torr N2 - MWPC Differential -.83 torr Neopentane Flow Rate -.87 slpm West PMT Buck. Curr. 0.00 A West Back. Veto Buck. 0.00 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 2.32 kV West muon veto HV 0 kV East muon veto rate 0 Hz West muon veto rate 2524 Hz fixed switched inputs Spectrometer vacuum off torr (CC1) DAQ data_raw disk usage 83% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 306 ns TBCM001I03 (H- source current): 13.68 mA "Beamplot" Capture: ~80 % estimated

24764	Fri Sep 14 20:40:03 2012	DAQ On-line

09/14 20:38 Start Run 13740 UCN0030 2011 UCN
09/14 20:40 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 5	1	2.73842E+13	0	0.00000E+00
Run 13737	5	1.36742E+14	0	0.00000E+00
Batch started at 13737	5	1.36742E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13740	0	8.	8.	0.	5.	1.60	2.30
13740	1	0.	0.	0.	0.	0.00	0.00
13740	2	0.	0.	0.	0.	0.00	0.00
13740	3	0.	0.	0.	0.	0.00	0.00
13740	10	4.	4.	0.	1.	0.80	0.45

24763	Fri Sep 14 11:14:48 2012	MFMakela

Tito has filled the UCNA detectors. Vacuum before: convectron - 0.0 0 torr Cold Cathode - 5-7e-4 torr Vacuum After: convectron - 0.0 0 torr Cold Cathode - 5-7e-4 torr No change Vacuum now moving downward Cold cathode off - the pressure is a little high.

24762	Fri Sep 14 07:01:00 2012	bz

State of the system: Decay Trap is at (not very good) vacuum. Found that the detector had not been reinstalled properly, was able to tighten the flange to the SCS a lot and found that turbo power dropped considerably. Still may not be well seated, may want to perform leak check on system. Turbos are using a lot of power due to leaks in the gas carts which are currently connected to the spectrometer vacuum. When the detectors are isolated from the spectrometer, the turbos should use considerably less power. If the turbos continue to use 20-30 W of power after the detectors are isolated, there is a leak Filled the AFP from the 1k dewar, still lots of liquid in the 1k.

24761	Wed Sep 12 22:16:44 2012	MFMakela

nEDM storage cell is being cooled with liquid from the 4k dewar via the fill dewars line. The return is throught he fill dewars return and heater skid B. Please do not fill magnets tonight as thsi will disturb temps in the nEDM cell. I there are problems give me a call 412-0956 or 661-8572. Thanks

24760	Wed Sep 12 05:26:05 2012	bz

Reduced speed on 1410 to 80 Reduced speed on 1630 to 120 Increased source voltage to 7.0 Medium Pressure Storage is being used at a diminished rate but is still going down It should

24759	Tue Sep 11 19:27:20 2012	JOrtiz3

UCNA Shift Change Checklist Date: September 9, 2012 16:00 Shift Persons: Jose ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 38.5 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.52 psia Heater C pressure 13.66 psia Tungsten supply press. 330 psig Compressor 1 On on Tungsten Cool supp. 308.9 psia Tungsten Cool Diff. 286.5 psia Tungsten Cool ret. 89.5 psia 1630 eng. 2 temp. 13.44 K 1630 JT temp. 7.30 K 1630 outlet temp. 277.6 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 177 psig 1630 return press. 0.8 psig 1630 med. press. stor. 48 psig 1410 engine speed 120 rpm 1410 TE-A 15.9 K 1410 TE-B 6.0 K 1410 TE-E 79.6 K 1410 supply press. 246 psig 1410 JT press. 188 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 312 mmHg 4K dewar level 13.54 inHe 1K dewar level 15.78 inHe 4K main flow control 4.8 V LHe temp. 1 5.38 K Heat exch. temp. 3 61.0 K Poly temp. 2 77.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 22.9 C AFP frequency 28.5000 MHz AFP forward power 0 W AFP N2 dewar level 4/4 SCS LHe level 94.2 % SCS current 119.0 A SV3 closed SV4 closed CM1 pressure -0.1 torr CM5 pressure 617.9 torr CC1 pressure 3.8e-5 torr Hall Probe Y recalibrating kG Hall Probe Z recalibrating kG PPM LHe level 88.1 % PPM LN2 level 74.8 % AFP LHe level 82.7 % AFP LN2 level 77.8 % PPM current 36(3) A(T) AFP current 0(7) A(T) AFP chiller sup. pres. 0 psig AFP chiller flow rate 0 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 73.1 F West MWPC Temperature 71.8 F MWPC Pressure 580.8 torr N2 - MWPC Differential -.6 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0.00 A East Back. Veto Buck. 0.00 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TReset MWPC Pressure 580.2 torr N2 - MWPC Differential -.83 torr Neopentane Flow Rate -.87 slpm West PMT Buck. Curr. 0.00 A West Back. Veto Buck. 0.00 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 2.32 kV West muon veto HV 0 kV East muon veto rate 0 Hz West muon veto rate 2524 Hz fixed switched inputs Spectrometer vacuum off torr (CC1) DAQ data_raw disk usage 83% Proton beam status: burst 20hz Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 306 ns TBCM001I03 (H-source current): 13.68 mA "Beamplot" Capture: ~80 % estimated

24749	Tue Sep 11 17:55:57 2012	mmendenhall

Decay trap lifetime by shutter trapping Running a series of runs with program: 4 0 0 1001 1001 # fill system 12000 0000 0000 # shut UCN in trap; lower switcher and cut off UCN production 15000 1000 1010 # 30s later, open shutter to count remains in switcher. Toggle beam for timing signal 15010 1000 0010 # un-toggle beam 60000 0000 0010 # arbitrary wait for counts in switcher (end run before this) with various different timings for shutter closed: Run # Hold time 20175 25s 20176 30s 20177 40s 20178 50s 20179 60s 20180 35s 20181 45s 20182 55s Resulting lifetime: 20.3 +/- 2.7s Consistent with Adam's report of a short lifetime from the depol runs but not with the measurement made in my previous logbook post using the SCS monitor (before the detectors were installed). I will now repeat the fill/trap cycles measurement that previously gave the 42s lifetime.

Attachment 1: e.gif

e.gif

24758	Tue Sep 11 06:08:23 2012	bz

Performed a steering scan. The results are in the attached file. Numerous module 3 faults and chopper problems prevented me from getting many data points. The beam looks long in y and narrow in x. Here is the most scientific method I could come up with - you may want to follow this if we do more steering scans: In a browser at CCR, open a target scan and a multiscan with ucnmon1 only and an x range of .1 (any smaller is impossible) - do not turn on autorefresh for the ucnmon1 tab. Make a change to a steering magnet. Immediately after you finish, start a stopwatch. When the stopwatch reaches approximately 3 minutes 30 seconds, go to the ucnmon1 tab, hit refresh. When it refreshes (check the time on the graph), go down to average, select ucnmon1, leave the x range at 0.05 to 0, and click go. The ucnmon1 value you want will be at the top of the page. Go to the target scan tab, and write down the values of the tungsten targets. The last value is fine, because the actual variance in the temperatures is quite small. Make another change to a magnet, and start the stopwatch again. We can even record errors in our ucnmon1, they are given at the top of the page after an average.

24756	Tue Sep 11 05:44:33 2012	bz

Emergency Nitrogen Truck Fill went very poorly - truck left at basically 0 psi. Liquifiers stopped working as efficiently. Per Mark's instruction, I opened the valve with the red hose and pressurized the tanker to 30 psi. EDIT: Actually, I didn't realize that it would kind of run on me - it actually pressurized up to 38 psi - you have to stop the process early and it will come to a stop later EDIT2: 05:44 Had to repressurize at about 5:30, it was down to 18 psi or so. This time much better aim, currently about 31 psi

24757	Tue Sep 11 03:57:20 2012	bz

Opened the JT valve on the 1630 to 7 and turned the speed down to 180 in order to get the liquifier in a better place it appears to be making liquid in excess of the source flow.

24755	Mon Sep 10 07:23:14 2012	ASaunders

blew water out of AFP spin flipper cooling; venting with N2 gas

24754	Mon Sep 10 07:18:19 2012	ASaunders

ramping down AFP and SCS

24753	Mon Sep 10 04:49:00 2012	bz

Wanted to do a steering scan, but the XD kicker failed. In the CCRLOG it appears as: UCN off due to XDKI1. Although it is on, there is no current output or cap voltage. Investigating locally. The estimated recovery time is beyond 6 AM, and as of ~5 AM we have heard no improvement. We will not be able to do a steering scan tonight.

24747	Mon Sep 10 03:27:12 2012	JOrtiz3

UCNA Shift Change Checklist Date: September 9, 2012 16:00 Shift Persons: Michael, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.75 psia Heater C pressure 13.92 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 311.8 psia Tungsten Cool Diff. 286.8 psia Tungsten Cool ret. 91.7 psia 1630 eng. 2 temp. 15.12 K 1630 JT temp. 7.7 K 1630 outlet temp. 269.0 K 1630 engine speed 150 rpm * - reduce LHe production 1630 supply press. 248 psig 1630 JT press. 200 psig 1630 return press. 1 psig 1630 med. press. stor. 48 psig 1410 engine speed 121 rpm * - reduce LHe production 1410 TE-A 17.7 K 1410 TE-B 5.7 K 1410 TE-E 93.5 K 1410 supply press. 248 psig 1410 JT press. 183 psig 1410 return press. 3.2 psig 1K dewar pressure 6.3 psig 4K dewar pressure 308 mmHg 4K dewar level 14.3 inHe 1K dewar level 18.9 inHe 4K main flow control 4.9 V LHe temp. 1 5.147 K Heat exch. temp. 3 118.1 K Poly temp. 2 117.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 17.3 C AFP frequency 28.5000 MHz AFP forward power 0 W AFP N2 dewar level 1/4 SCS LHe level 83.6 % SCS current 119.0 A SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 614.7 torr CC1 pressure 5.6e-5 torr Hall Probe Y .078 kG Hall Probe Z -.409 kG PPM LHe level 88.6 % PPM LN2 level 87.5 % AFP LHe level 97.1 % AFP LN2 level 92.1 % PPM current 36(3) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 0 psig AFP chiller flow rate 0 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TH East MWPC Temperature 75.0 F West MWPC Temperature 74.9 F MWPC Pressure 577.2 torr N2 - MWPC Differential -.2 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0.00 A East Back. Veto Buck. 0.00 A H20 Chiller On Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status TH MWPC Pressure 580.2 torr N2 - MWPC Differential -.5 torr Neopentane Flow Rate -.87 slpm West PMT Buck. Curr. 0.00 A West Back. Veto Buck. 0.00 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 2.32 kV West muon veto HV 2.32 kV East muon veto rate 3610 Hz West muon veto rate 2822 Hz Spectrometer vacuum 599.4 torr (CC1) DAQ data_raw disk usage 83% Proton beam status: burst Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 295 ns TBCM001I03 (H-source current): 14 mA "Beamplot" Capture: 84 %

24752	Sun Sep 9 23:08:18 2012	mmendenhall

On Mark's suggestion, testing detector rates with the decay trap plug in and out. (~20min AFP Off beta runs) 20184 (plug in): E=4.84(6)Hz W=5.12(7)Hz SCS/GV=.1950 Beta/GV=.8930 20185 (plug out): E=4.81(6)Hz W=5.04(6)Hz SCS/GV=.1930 Beta/GV=.8307 Having retracted the decay plug rod, I vented the load lock to check the decay plug. The decay trap plug (and thumb screw) is

the end of the load lock rod. I have powered off the detectors and am venting the system.

24751	Sun Sep 9 21:09:55 2012	mmendenhall

Trap lifetime measurement using SCS monitor, repeating measurement made before installing detectors: (Run 20183, 10 cycles of 120s load + 120s trap) Lifetime = 15.1 +- 1.4 s (compare to previous 42s) so the decay trap foils appear not to have survived the installation of the detectors.

Attachment 1: _0.gif

_0.gif

24750	Sun Sep 9 21:09:13 2012	mmendenhall

... duplicate logbook entry ...

Attachment 1: .gif

.gif

24748	Sun Sep 9 18:17:01 2012	MFMakela

1630 LHe production has dropped from .27 in/hr to .17 in/hr over the weekend. Was something done on purpose to make this happen? Please log changes to the liquifier, thanks

24746	Sun Sep 9 13:58:53 2012	CLMorris

I found a potential problem with the SCS monitor. The delay amplifier seemed prone to ringing. I moved the attenuator going to the fastdac from the GV patch panel to the SCS patch panel (closer to the amp). I also noticed a significant background in all of the monitors when the beam was on. I wrapped the SCS, Iron foil and Switcher monitors in boated foam. This seems to have helped. I straightened out the signals and labels in the slow dac. I would like for people to stop and start runs once per shift.

24745	Sun Sep 9 11:40:46 2012	bz

Chris is messing around with the SCS UCN Monitor, so it may not be useful for any diagnostics until he has completed his work.

24741	Sun Sep 9 10:14:14 2012	ASaunders

UCNA Shift Change Checklist Date: September 9, 2012 08:00 Shift Persons: AS, BZ ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.5 psia Heater C pressure 13.8 psia Tungsten supply press. 320 psig Compressor 1 On on Tungsten Cool supp. 313 psia Tungsten Cool Diff. 288 psia Tungsten Cool ret. 93 psia 1630 eng. 2 temp. 13.3 K 1630 JT temp. 7.0 K 1630 outlet temp. 271.0 K 1630 engine speed 130 rpm * - reduce LHe production 1630 supply press. 247 psig 1630 JT press. 200 psig 1630 return press. 0.6 psig 1630 med. press. stor. 50 psig 1410 engine speed 120 rpm * - reduce LHe production 1410 TE-A 17.5 K 1410 TE-B 6.1 K 1410 TE-E 85.2 K 1410 supply press. 246 psig 1410 JT press. 178 psig 1410 return press. 3.2 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 12.8 inHe 1K dewar level 17.9 inHe 4K main flow control 5.5 V LHe temp. 1 5.2 K Heat exch. temp. 3 87.1 K Poly temp. 2 152 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.5000 MHz AFP forward power 40 W AFP N2 dewar level 1/2 SCS LHe level 92.5 % SCS current 119.0 A SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 0.7 torr CC1 pressure 3.6e-5 torr Hall Probe Y .079 kG Hall Probe Z -.410 kG PPM LHe level 88.8 % PPM LN2 level 96.4 % AFP LHe level 83.9 % AFP LN2 level 74.6 % PPM current 36(3) A(T) AFP current 93.647(7)A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 77.1 F West MWPC Temperature 79.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -7.1 torr Neopentane Flow Rate 18.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller On Chiller water level .5 ========== West Detector Cart ========== MWPC HV 2660 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate 14.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.33 kV

DAQ data_raw disk usage 82% Proton beam status: burst Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 295 ns TBCM001I03 (H- source current): 13.9 mA "Beamplot" Capture: 75 % * low because beam not being sent to Lujan. Initially measured 48% using 1pulse/5s; more accurate measurement with 1Hz beam

24744	Sun Sep 9 10:12:01 2012	ASaunders

new octet starts now, B->A

24743	Sun Sep 9 09:38:22 2012	ASaunders

CCR tuned for 1/2 hour, with no improvement. Back to 5 pulses per five s , will now do melt and refreeze.

24742	Sun Sep 9 08:47:44 2012	ASaunders

will do a little beam tuning and then melt and refreeze

24740	Sun Sep 9 08:47:04 2012	ASaunders

last night's octet (I stopped analyzing it after it appeared that the quick_analyzer is not quite working): 12:24 AM 20121 A1: Background (off) 12:32 AM 20122 A2: Beta Run (off) 1:17 AM 20123 A3: Depol (off to on) 1:24 AM 20124 A4: Background (on) 1:33 AM 20125 A5: Beta Run (on) 2:18 AM 20126 A6: Depol (on to off) 2:25 AM 20127 A7: Beta Run (on) 3:10 AM 20128 A8: Depol (on to off) 3:17 AM 20129 A9: Background (on) 3:25 AM 20130 A10: Beta Run (off) 4:11 AM 20131 A11: Depol (off to on) 4:18 AM 20132 A12: Background (off) 4:26 AM 20133 B1: Background (on) 4:34 AM 20134 B2: Beta Run (on) 5:20 AM 20135 B3: Depol (on to off) 5:27 AM 20136 B4: Background (off) 5:35 AM 20137 B5: Beta Run (off) 6:20 AM 20138 B6: Depol (off to on) 6:27 AM 20139 B7: Beta Run (off) 7:13 AM 20140 B8: Depol (off to on) 7:20 AM 20141 B9: Background (off) 7:28 AM 20142 B10: Beta Run (on) 8:13 AM 20143 B11: Depol (on to off) 8:20 AM 20144 B12: Background (on)

24739	Sun Sep 9 06:57:50 2012	ASaunders

scs monitor ADC in Midas shows two peaks. Is adjustment necessary?

24738	Sun Sep 9 06:57:16 2012	ASaunders

I started analyzing last night's octet, but there appears to be something wrong with the quick_analyzer. The SCS/GV ratio and Fe/GV ratio are slightly higher than last year, but the beta decays/GV ratio is much much lower. Thus, I suspect that some cuts in the quick_analyzer script need to be adjusted.

24737	Sun Sep 9 00:26:58 2012	mmendenhall

Quick depol runs test (in-situ with extra short octet): Run Type Wrong/Right 20098 D- (Off->On) .034(35) 20101 D+ (On->Off) .094(56) 20103 D+ .067(49) 20106 D- .033(34) 20110 D+ .031(32) 20113 D- .094(57) 20115 D- .030(31) 20118 D+ .086(51) Started an octet before going home; A->B starting at run 20121

24736	Sat Sep 8 18:44:29 2012	mmendenhall

UCNA Shift Change Checklist Date: September 8, 2012 18:00 Shift Persons: Michael, ... ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 47 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.25 psia Heater C pressure 13.88 psia Tungsten supply press. 330 psig Compressor 1 On on Tungsten Cool supp. 315.6 psia Tungsten Cool Diff. 288.7 psia Tungsten Cool ret. 94.2 psia 1630 eng. 2 temp. 13.12 K 1630 JT temp. 6.88 K 1630 outlet temp. 272 K 1630 engine speed 130 rpm * - reduce LHe production 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 0.6 psig 1630 med. press. stor. 45 psig 1410 engine speed 120 rpm * - reduce LHe production 1410 TE-A 17.5 K 1410 TE-B 5.8 K 1410 TE-E 84.3 K 1410 supply press. 250 psig 1410 JT press. 180 psig 1410 return press. 3.2 psig 1K dewar pressure 6.5 psig 4K dewar pressure 300 mmHg 4K dewar level 10.6 inHe 1K dewar level 31.2 inHe 4K main flow control 5.5 V LHe temp. 1 5.1 K Heat exch. temp. 3 79 K Poly temp. 2 144 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.5000 MHz AFP forward power 0 W AFP N2 dewar level 2/3 SCS LHe level 84.2 % SCS current 199.0 A SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.7 torr CC1 pressure 7.5e-5 torr Hall Probe Y .078 kG Hall Probe Z .409 kG PPM LHe level 88.8 % PPM LN2 level 99.0 % AFP LHe level 89.4 % AFP LN2 level

chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TH East MWPC Temperature 77.2 F West MWPC Temperature 78.3 F MWPC Pressure 97.9 torr N2 - MWPC Differential 9.1 torr Neopentane Flow Rate 18.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller On Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2680 V MWPC Trip Hold Status TH MWPC Pressure 99.7 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 14.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.39 A Top-Veto and GMS Crate (Top Crate) (on) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) (on) East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 3800 Hz West muon veto rate 2941 Hz Spectrometer vacuum 7.5e-5 torr (CC1) DAQ data_raw disk usage 82% Proton beam status: burst Proton burst spacing: 5 s Proton pulses/burst: 5 count Proton countdown: 1 count Proton pattern width: 295 ns TBCM001I03 (H-source current): 14.2 mA "Beamplot" Capture: 79 % * low because beam not being sent to Lujan. Initially measured 48% using 1pulse/5s; more accurate measurement with 1Hz beam

24735	Sat Sep 8 15:12:58 2012	CLMorris

Attached is an adc spectrum from each of the monitor detectors. All look healthy. The neutron peak is set to 2.5 V in each detector.

Attachment 1: e.gif

e.gif

24733	Sat Sep 8 14:56:41 2012	ASaunders

SCS and AFP are ramped up AFP tune: started at AFP current = 93.647 A and frequency = 28.506 flipper off: 1022 counts/100 s 40 W, 28.506 MHz: 386 counts/ 100 s; reflected power = 0.2 W 5 W frequency scan: f forward reverse counts/100 s 28.506 0 0 991 28.506 5 <0.1 510 28.516 5 0.1 810 28.526 5 0.1 801 28.536 5 0.2 935 28.496 5 <0.1 389 28.486 5 0.1 422 28.476 5 0.1 488 28.466 5 0.1 642 28.456 5 0.3 866 28.446 5 0.4 874 40 W frequency scan 28.490 40 <0.1 264 28.500 40 0.1 225 28.510 40 0.4 435 28.480 40 0.4 296 28.490 40 <0.1 341 28.500 40 0.1 270 28.500 0 0 913 Looks like best frequency is now 28.500, not so different from previous best of 28.506 MHz.

24734	Sat Sep 8 14:56:08 2012	ASaunders

after melt and refreeze and four hours of no beam, GV closed rate went up to 300 per s.

24732	Sat Sep 8 08:43:50 2012	ASaunders

melt and refreeze complete, but nw beam is off so no comparison possible orange valve open, check valve byass closed

24731	Sat Sep 8 08:12:38 2012	EIC

starting melt and refreeze; GV monitor rate = 175 before start

24730	Sat Sep 8 03:18:17 2012	Hasan

We fiddled with the source voltage, volve 311 on 1630, did an AFP fill in an attempt to keep the source running while having 4K dewar pressure and medium pressure stable... Next person in charge, please check these pressures, thanks...

24729	Sat Sep 8 01:59:59 2012	mmendenhall

Detector turn-on test successful! Both detectors have been installed, and the system pumped down. Using the leak detector, the East (and West) detector flanges are well sealed (unlike with the East blankoff plate). The detectors filled normally, with no sign of leaks. Wirechambers ramped to HV rather easily (no trips or long conditioning period). PMTs (beta and backing) turned on with last year's voltage settings. A few issues to work out later when I am not so tired: - N2 bottle for MWPCs is just about empty. I will leave the system in a state where it is ready to be replaced, should anyone want to do that before I get to it. Because of this, I will not leave the detectors running when I leave (don't want N2 running out when I am gone). - PMT E3 and W3 show singles trigger rates in the DAQ when HV on, but spectrum in DAQ is just pedestal (probably a trivial DAQ wiring problem, not a PMT fault) - E & W anode spectrum all pedestals in DAQ, but cathodes fine (need to check wiring) - Adjust cathode box offsets, PMT gains (after magnet ramped and bucking coils turned on)

24728	Fri Sep 7 18:24:10 2012	CLMorris

I have refilled all the UCN monitor detectors with 2 mbar of 3He and 1 bar of CF4. The preamp

checked. The switcher detector pressure seemed low when I was pumping it out. If its gain is too low the voltage may need to be raised.

24727	Fri Sep 7 16:50:12 2012	Hasan

UCNA Shift Change Checklist Date: September 7, 2012 16:00 Shift Persons: Michael, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 12.37 psia Heater C pressure 13.56 psia Tungsten supply press. 313.5 psig Compressor 1 On on Tungsten Cool supp. 313.5 psia Tungsten Cool Diff. 288.2 psia Tungsten Cool ret. 92.8 psia 1630 eng. 2 temp. 12.86 K 1630 JT temp. 6.86 K 1630 outlet temp. 271.2 K 1630 engine speed 130 rpm * - turned down, too much liquid 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 0.5 psig 1630 med. press. stor. 40 psig 1410 engine speed 120 rpm * - turned down, too much liquid 1410 TE-A 15.9 K 1410 TE-B 5.6 K 1410 TE-E 73.5 K 1410 supply press. 250 psig 1410 JT press. 180 psig 1410 return press. 3.2 psig 1K dewar pressure 7.0 psig 4K dewar pressure 345 mmHg 4K dewar level 11.33 inHe 1K dewar level 27.85 inHe 4K main flow control 5.5 V LHe temp. 1 5.07 K Heat exch. temp. 3 71.98 K Poly temp. 2 77.57 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status closed D2 Pump port status closed Switcher status down AFP temperature 9.9 C AFP frequency 28.506 MHz AFP forward power 0 W AFP N2 dewar level full SCS LHe level 88.1 % SCS current 0.0 A SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 624.6 torr guides vented CC1 pressure --- torr out of range Hall Probe Y --- kG Hall Probe Z --- kG PPM LHe level 89.0 % PPM LN2 level 44.8 % AFP LHe level 79.7 % AFP LN2 level 84.3 % PPM current 36(3) A(T) AFP current 0 (0) A(T) AFP chiller sup. pres. 20 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off ========== East Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level --- ========== West Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) ---- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) ---- V East muon veto HV ---- kV West muon veto HV ---- kV East muon veto rate ---- Hz West muon veto rate ---- Hz Spectrometer vacuum ---- torr vented DAQ data_raw disk usage 81% Proton beam status: Proton burst spacing: s Proton pulses/burst: count Proton countdown: count Proton pattern width: ns TBCM001I03 (H- source current): mA "Beamplot" Capture: %

24726	Fri Sep 7 09:30:17 2012	ASaunders

Decay trap is vented

24725	Fri Sep 7 08:05:05 2012	EIC

Bryan reports that four of the Hall probes in the decay trap are broken

24724	Fri Sep 7 07:37:01 2012	ASaunders

AFP is ramped down SCS is ramped down Decay trap is venting with argon

24723	Fri Sep 7 06:11:21 2012	bz

D- Program: 0 1011 1001 10 1001 1001 15000 0001 1001 15100 0001 0010 17500 0001 0110 18000 1001 0110 28000 1001 0010 51000 1001 0010 SLD - Program: 0 1011 1001 10 1001 1001 15000 0001 0010 51000 0001 0010 The following runs of polarimetry data were taken last night: Run # Type # Cycles Notes 20076 D- 10 20077 D+ 10 Forgot to stop run after stopping cycles 20078 SLD- 5 One cycle is poor, and one is basically missing 20079 SLD+ 5

24722	Fri Sep 7 04:28:30 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 6, 2012 04:00 Shift Persons: David, Bryan ********** DOWNSTAIRS ********** Gate valve status flapping (switching from open to closed) D2 Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.5 MHz AFP forward power 40 W SCS LHe level 97.6 % SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 0.2 torr CM5 pressure 0.8 torr CC1 pressure 2.5e-5 torr Hall Probe Y 0.079 kG Hall Probe Z -0.41 kG PPM LHe level 89.2 % PPM LN2 level 48.5 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 36(6) A(T) AFP current 93.647(6.79) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton beam status: Proton burst spacing: s Proton

current): mA "Beamplot" Capture: % ========== East Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level --- ========== West Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) ---- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) ---- V East muon veto HV ---- kV West muon veto HV ---- kV East muon veto rate ---- Hz West muon veto rate ---- Hz Spectrometer vacuum 3.4e-5 torr DAQ data_raw disk usage 82%

24721	Fri Sep 7 01:29:18 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 7, 2012 00:35 Shift Persons: David, Bryan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 13.17 psia Heater C pressure 13.19 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 315.7 psia Tungsten Cool Diff. 288.2 psia Tungsten Cool ret. 94.8 psia 1630 eng. 2 temp. 14.18 K 1630 JT temp. 7.96 K 1630 outlet temp. 273.5 K 1630 engine speed 130 rpm * - turned down, too much liquid 1630 supply press. 222 psig 1630 JT press. 180 psig 1630 return press. 1.0 psig 1630 med. press. stor. 70 psig 1410 engine speed 170 rpm * - turned down, too much liquid 1410 TE-A 15.6 K 1410 TE-B 5.7 K 1410 TE-E 84.5 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 1K dewar pressure 7.0 psig 4K dewar pressure 228 mmHg 4K dewar level 12.21 inHe 1K dewar level 18.25 inHe 4K main flow control 5.7 V LHe temp. 1 5.04 K Heat exch. temp. 3 84.8 K Poly temp. 2 104.0 K flapper heater cur 0.18 A Flapper Status: open, flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

24720	Fri Sep 7 00:56:28 2012	mmendenhall

Depol runs for quick polarization check Tonight's Run plan with help from Adam: 30min each cycling P+, P- runs 2/3 remaining time: ex-situ D+/- runs 1/3 remaining time: SLD+/- runs Starting with a few "fake in-situ" D+/- runs (to check everything basically OK) using the Depol.vi timing after manually filling trap for a few minutes. Note: the sub-vi in Depol.vi that starts the run on an H-GX trigger is not working, so we've bypassed it (depol cycle starts at arbitrary time relative to beam); Adam thinks it's OK. Run # Type Wrong/Right (`check_depol.L' script) 20043 D- (Off->On) .042(.043) 20046 D+ (On->Off) .130(.080) --- starting "condensed" A->B Octet with 90s beta, 30s BG to automate depol runs --- 20049 D- .034(.035) 20052 D+ .095(.070) 20054 D+ --- analyzer fail; 0 wrong-spin counts --- 20057 D- .074(.054) 20061 D+ .083(.061) 20064 D- .085(.052) 20066 D- .065(.047) 20069 D+ .038(.039) ... appears basically normal, aside from bad statistics from low counts from source ... P- program (I think): t/10ms 4 0 ShbTF BASG 0 1011 1001 10 1001 1001 15000 0001 1001 15100 0001 0010 18000 1001 0010 51000 1001 0010 ... Set up for P- depol runs; switch to T0 reset --- 20073 P- 2 cycles 20074 P- 2 cycles --- switch to P+ --- 20075 P+ 4 cycles

24718	Thu Sep 6 17:56:20 2012	Hasan

UCNA Shift Change Checklist Date: September 6, 2012 16:27 Shift Persons: Michael, Hasan ********** DOWNSTAIRS ********** Gate valve status closed D2 Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.506 MHz AFP forward power 0 W SCS LHe level 85.6 % SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 0.4 torr CM5 pressure 0.8 torr CC1 pressure 4.9e-5 torr Hall Probe Y 0.077 kG Hall Probe Z 0.408 kG PPM LHe level 89.3 % PPM LN2 level 52.3 % AFP LHe level 99.7 % AFP LN2 level 86.7 % PPM current 36(6) A(T) AFP current 93.647(6.79) A(T) AFP chiller sup. pres. 19 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton beam status: Proton burst spacing: s Proton pulses/burst: count Proton countdown: count Proton pattern width: ns TBCM001I03 (H- source current): mA "Beamplot" Capture: % ========== East Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level --- ========== West Detector Cart OFF ========== MWPC HV --- V MWPC Trip Hold Status --- MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) ---- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) ---- V East muon veto HV ---- kV West muon veto HV ---- kV East muon veto rate ---- Hz West muon veto rate ---- Hz Spectrometer vacuum 2.0e-5 torr DAQ data_raw disk usage 81%

24719	Thu Sep 6 17:50:02 2012	mmendenhall

problems with the NI TTL output box controlled by Raymond's Labview programs. The TTL outputs have now been replaced by a new system: A new digital output box is now in place (right hand side of the lower right NIM bin above the Chris DAQ / control computers). The box is based around a 24V USB-controlled NI relay, and provides 8 channels of output. For each channel there is both a 24V (suitable for controlling the pneumatic actuators on the GV, switcher, etc.) and a TTL (5V high, 500ohm pulldown low) output. This eliminates the need for the separate TTL-to-24V converter box, which has been removed from the system. The GateValve.vi program is superseded by DigitalOut24V.vi, which is similarly functional and talks to the new output box. Unlike GateValve.vi, which continues to run in a repeated loop until explicitly stopped, DigitalOut24V.vi can either only run once or in continuous loop mode. The other LabView programs for controlling sequences of actions are being updated to use DigitalOut24V.vi as a sub-VI, to provide a uniform output interface. I have verified that the new box is correctly wired in to both control each device and send the proper "Flip0" bits to the fast daq (for recording the experiment state in the data). The old TTL I/O box is still needed for a different purpose: providing the H-GX trigger timing input to LabView. This setup remains the same as before.

24717	Thu Sep 6 17:13:19 2012	mmendenhall

Note: slightly updated checklist based on Bryan's suggestions UCNA Shift Change Checklist Date: September 6, 2012 16:27 Shift Persons: Michael, Hasan ********** UPSTAIRS ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Water Line pressure 130 psia Water line return 39 psia Main return flow closed He blower on Heat exchanger flow 51 slpm Heater B pressure 14.20 psia Heater C pressure 13.35 psia Tungsten supply press. 325 psig Compressor 1 On on Tungsten Cool supp. 316.2 psia Tungsten Cool Diff. 288.4 psia Tungsten Cool ret. 95.2 psia 1630 eng. 2 temp. 13.16 K 1630 JT temp. 6.94 K 1630 outlet temp. 272 K 1630 engine speed 110 rpm * AFP fill in progress 1630 supply press. 200 psig 1630 JT press. 170 psig 1630 return press. 1.2 psig 1630 med. press. stor. 85 psig 1410 engine speed 170 rpm 1410 TE-A 17.3 K 1410 TE-B 7.2 K 1410 TE-E 83.9 K 1410 supply press. 247 psig 1410 JT press. 177 psig 1410 return press. 3.3 psig 1K dewar pressure 6.5 psig 4K dewar pressure 245 mmHg 4K dewar level 15.53 inHe 1K dewar level 11.67 inHe 4K main flow control 5.7 V LHe temp. 1 5.04 K Heat exch. temp. 3 78.2 K Poly temp. 2 78.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds

24716	Thu Sep 6 12:31:32 2012	mmendenhall

Trap lifetime from last night's run (fast daq 20039): 41.8(1.4)s based on SCS monitor counts trapped in decay trap with shutter 10 cycles of 3min fill + 3min trapped

Attachment 1: .gif

.gif

24712	Thu Sep 6 09:33:25 2012	ASaunders

Sequence of events for AFP tune last night: 1) I noted that the last tune from last February yielded a current in the AFP magnet of 93.581 A and a best frequency of the spin flipper of 28.476. 2) I ramped the magnet to 93.581 A (this step could have happened later) and cycled the shims to the nominal values 4 times. 3) I performed a frequency scan, looking at the amount of reflected power with a forward power of 40 W. There was no need for the magnet to be raped up for this scan, I think, but it was. Here is the data from that scan: Reflected power scan Frequency Forward Power Reverse Power Ratio 28.496 40 0.1 400 28.506 40 0.2 200 28.516 30 0.4 75 28.526 20 0.4 50 28.536 6 0.4 15 28.486 40 0.2 200 28.476 16 0.4 40 28.466 8 0.4 20 The first entry after this one has a plot of the above ratios. The conclusion was that last year's frequency, 28.476 MHz, would not work now. 28.496 appeared to be the best starting frequency for this year. 4) So I calculated a new magnetic field to correspond to the new target frquency. f=28.496/28.476*93.581=93.647 MHz I then dumped the shim coils, then ramped the main coil to 93.647 A and again cycled the shims to their nominal values 4 times (keeping the main coil in non-persistence mode while ccyling the shims). Finally, I put the main coil in persistence mode. 5) Then I performed a 5 W iron foil scan with the magnet at the new current setting and the shims cycled. The central value of the scan was 28.496 MHz. The data are shown below and plotted in the second entry after this one. The scan was performed by setting the frequency, setting the foward power to 5 W, then counting the number of foil monitor counts for 100 s. 5 W Iron foil scan Frequency Forward Power Reverse Power Fe Mon/100 s 28.496 0 0 292 28.496 5 0.1 102 28.506 5 0.1 137 28.516 5 0.1 127 28.526 5 0.1 221 28.536 5 0.15 256 28.486 5 0.1 204 28.476 5 0.1 264 28.466 5 0.2 281 28.496 5 0.1 135 6) Since the 5 W scan looked good, I finally performed a frequency scan at 40 W, using the same technique as at 5 W. The data are shown below and plotted in a following entry. 40 W Iron foil scan 28.496 40 0.1 73 28.506 40 0.4 75 28.516 40 0.8 77 28.486 40 0.15 94 28.506 40 0.2 70 28.506 0 0 313 At each of 5 and 40 W, I also took one measurement with the flipper off. A spreadsheet with all the

28.506 MHz and the best AFP current is 93.647 A. Andy

Attachment 1: s_9-6-2012.xlsx

24708	Thu Sep 6 09:30:41 2012	ASaunders

last AFP frequency last year was 28.476 MHz and last AFP current was 93.581 MHz.

24715	Thu Sep 6 09:29:37 2012	ASaunders

Attachment 1: .bmp

24714	Thu Sep 6 09:29:26 2012	ASaunders

Attachment 1: bmp

24713	Thu Sep 6 09:29:13 2012	ASaunders

Attachment 1: p

24711	Thu Sep 6 08:17:44 2012	ASaunders

I tuned the spin flipper yesterday evening. The new best current is 93.647 A (changed from last year's 93.581 A) and the new best frequency is 28.506 MHz (changed from last year's 28.476 MHz). The tuning scans (5 W and 40 W) were done using the iron foil monitor and visual scaler only. The curves look quite clean. I will plot them up today and post.

24710	Thu Sep 6 08:12:11 2012	bz

I made a simple run program last night to test the lifetime in the decay trap. The data is stored in Run 20039 in MIDAS. During this run, I looked at a chart of the pressure measured by the switcher Cold Cathode gauge and determined that every time the gate valve closed, the shutter closed and the switched went to down, there was a leap of about 2 e-5 torr in the measured pressure. I did some further testing and found that the pressure stayed 2 e-5 torr above normal as long as the shutter was closed. I \ performed a leak check and found NO leak at the shutter. I assume that when the shutter closes the ability of the pumps to clean out the guides is significantly hampered, and so the switcher sees a higher pressure because the pumping is less efficient. I am willing to be proven wrong, however. Additionally, I did a shift change checklist and a fill of the AFP with David, and found the following issues with the shift change checklist and AFP fill checklist: Shift Change page 1: Should add an entry for the pressure gauge on the water line, so that when the filter needs to be cleaned we are aware. Main Return Flow good range is no longer applicable due to running 1630 off of return from source. Heat Exchanger flow good range is incorrect Graphite supply pressure and compressor 2 on should be removed. Tungsten Cool Ret. and Diff. should switch places, as they are reversed on the display. Tungsten Cooling good ranges are all very wrong Shift Change page 2: AFP LN2 dewar level should go before the SCS levels SCS field should be removed Before SV3, should have an entry for three axis magnetic field probe on AFP. We should move the beam parameters to the end of the checklist Should we keep asking for beamplot capture? Shift Change page 3: We should move the bucking current and backing veto current to just under the High Voltage because those are close together on the floor. The spectrometer vacuum is currently being measured with CC1, not a gauge on the SCS rack. I haven't changed these on the shift change checklist because they deserve a discussion and because I'm not sure how to edit that document. AFP Fill Page 1: Transfer Line Temperature is not on the mezzanine near the control switches LN2 return is missing from all switch diagrams AFP Fill Light no longer operational AFP Fill Page 2: Transfer Line temperature probably good at 19.8 or so, instead of 19.3 probably should say temperature is stable rather than temperature is below a certain point FLO3 no longer exists Also we need a binder for checklists

24709	Thu Sep 6 01:35:02 2012	DGPhillipsII

UCNA Shift Change Checklist Date: September 6, 2012 01:00 Shift Persons: David, Bryan ********** UPSTAIRS (comments: Add pressure gauge on water line to checklist) ********** Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed Not true. He blower on Heat exchanger flow 51 slpm Heater B pressure 12.21 psia Heater C pressure 13.15 psia Tungsten supply press. 325 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 318.8 psia Tungsten Cool ret. 97.4 psia Tungsten Cool Diff 289.3 psia 1630 eng. 2 temp. 14.18 K 1630 JT temp. 7.28 K 1630 outlet temp. 277.2 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 195 psig 1630 return press. 0.4 psig 1630 med. press. stor. 90 psig 1410 engine speed 170 rpm 1410 TE-A 15.7 K 1410 TE-B 5.7 K 1410 TE-E 107.0 K 1410 supply press. 242 psig 1410 JT press. 167 psig 1410 return press. 3.3 psig 4K dewar pressure 230 mmHg 1K dewar

LHe temp. 1 5.05 K Heat exch. temp. 3 89.9 K Poly temp. 2 149.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 seconds Flapper Time C: 4.8 seconds ********** DOWNSTAIRS ********** Gate valve status open D2 Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.506 MHz AFP forward power 0 W SCS LHe level 92.5 % SCS field --- kG SCS current 119.0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 1.0 torr CC1 pressure 2.4e-5 torr PPM LHe level 89.6 % PPM LN2 level 57.5 % AFP LHe level 89.9 % AFP LN2 level 88.3 % PPM current 36(6) A(T) AFP current 93.647(6.79) A(T) AFP chiller sup. pres. 18 psig AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on chiller refilled Proton beam status: burst Proton burst spacing: 5 s Proton pulses/burst: 1 count Proton countdown: 1 count Proton pattern width: 296 ns TBCM001I03 (H- source current):14.1 mA "Beamplot" Capture: 75 % CCR reported problem w/program ========== East Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status --- East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level --- ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status --- MWPC Pressure 588.9 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) ---- V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) ---- V East muon veto HV ---- kV West muon veto HV ---- kV East muon veto rate ---- Hz West muon veto rate ---- Hz Spectrometer vacuum 3.2e-5 torr DAQ data_raw disk usage 81%

24707	Wed Sep 5 20:42:56 2012	ASaunders

we are pumping on the guide section between the GV1 and PPM window thru SV4

24706	Wed Sep 5 20:42:29 2012	ASaunders

PPM is at 36 A (~2.9 T)

24705	Wed Sep 5 20:41:53 2012	ASaunders

the last AFP field for last year was 93.581 A (~6.79 T), so that is where we will start the AFP tuning this year.

24704	Wed Sep 5 20:32:19 2012	ASaunders

AFP and SCS are full and ramping up

24703	Wed Sep 5 20:32:00 2012	ASaunders

decay trap plug is inserted

24702	Wed Sep 5 20:11:54 2012	ASaunders

mpm has fixed Raymond's progream so it seems to be working now

24701	Wed Sep 5 20:11:38 2012	ASaunders

switcher is hooked up to Raymond's program

24700	Wed Sep 5 20:11:19 2012	EIC

AFP spin flipper is cooled down

24699	Wed Sep 5 20:11:03 2012	EIC

thin Be foils are installed in SCS. The west one has a hole perhaps 1.5 cm x 3 mm in it detectors are not installed

24698	Mon Sep 3 12:58:34 2012	ASaunders

Chandra has left for the day, so I will set the flapper to "open" after all.

24697	Mon Sep 3 12:57:10 2012	ASaunders

Found the flapper closed, but Chandra wanted to look at the UCN production. When I told the flapper to flap, it did not get any triggers. I found the DG535 in a hung state. Cycling the power on the DG535 solved the problem, and the flapper is now flapping.

24696	Thu Aug 30 00:12:31 2012	bz

inside is outgassing HARD or there is a small leak, probably the latter We'll perform a leak check using helium tomorrow in an attempt to isolate the leak, and then after the square guide clamp has been machined and can be attached, we will build out to the elbow. After the leak check and square guide clamp, it will take approximately 3 hours to build out to the elbow.

24695	Sun Aug 19 21:16:32 2012	MFMakela

Filling SCS to raise MPS.

24694	Sun Aug 19 20:53:19 2012	MFMakela

Adding d2 to source Tank pressure 1069 mbar End rpessure 486 mbar Adding more D2 to the source 6.5 mbar in tank

24693	Sat Aug 18 10:07:44 2012	MFMakela

New D2 in source from bottle. Melt and refroze Waiting for UCN.

24692	Wed Aug 15 09:59:27 2012	ASaunders

start d2 flow to source from bottle through o/p converter at 20 K. Monitor pressure of o/p converter through valve GC4

24691	Wed Aug 15 09:09:30 2012	ASaunders

initial pressure in d2 bottle is ~450 psi

24690	Wed Aug 15 08:26:55 2012	ASaunders

attempting to flow d2 into target thru o/p converter. Found o/p converter at 75K this morning. The problem was the valve between the turbo pump and the insulating vacuum was closed. I opened this up and the temperature has started dropping to the desired 20K.

24689	Wed Aug 15 01:14:14 2012	BMV

Cleaned and made the Decay trap holders. Aligned the holders, it appears they look good... unfortunately lost a screw (the head broke off.) so the center holder will need to be punched again and taped. Bryan and I removed the unfortunate ring and rod that has the headless screw and is ready to be machined. Hope to see you all at DNP or in December if able! Best of luck with getting everything installed!

24688	Wed Aug 15 00:14:53 2012	bz

Pumping on the insulating vacuums on the AFP Pumped on the large KF40 to the main insulating vacuum for a day. Should be good Pumped on the outlet KF40 (the valve with the vise grips) for several hours. It also should be good. Started pumping on the long transfer line at midnight, will pump overnight

24687	Tue Aug 14 16:01:34 2012	ASaunders

I found the O/P converter being pumped on by the D2 cart scroll pump, but cold, at 13 K (the heater was off). Therefore, it may have cryo pumped air into the O/P cell. I thus decided to bake the O/P cell again. I have started heating it up to 400K. Meanwhile, the source remains idled, but with the orange valve open and the GV1 and SV3 closed.

24686	Tue Aug 14 15:59:01 2012	ASaunders

closed SV3 opened Orange valve gate valve is closed

24685	Mon Aug 13 18:07:37 2012	MFMakela

Distilled source 1070 bar in D2 tank 147 mbar in guide Source warming up, turbo on.

24684	Mon Aug 13 16:26:13 2012	GEHogan

Getting EMS back up. 1) Had to fiddle with firewall on pcprad48(Lakeshore) 2) Added back in the magnet readout.

24683	Mon Aug 13 09:15:52 2012	CLMorris

When the data from last night a plotted is apparent there is a significant gain (X2) from longer pulse delays at constant current.

Attachment 1: p

p

24681	Sun Aug 12 19:39:14 2012	BMV

Lifetime measurement, 5pulses, 20Hz, 60s Chris's Daq Flapper tau+-dtau 1100 closed have not calculated nor subtracted 1101 Open 8.836+-1.670 8.755+-1.525 1102 Flapping 37.99+-3.92 31.35+-3.65 29.55+-4.19 I decided I wanted to save pictures so I got a couple estimates for the lifetime.

Attachment 1: p

24682	Sun Aug 12 19:33:37 2012	bz

Did some tests on rate and various configuration of the system First we changed the burst delay (i.e. normally, we have one burst of five pulses every five seconds, where the five seconds is the burst delay). The run numbers refer to runs on Chris's DAQ. Run Burst Delay Average UCN Rate 1103 2.5 s 96.7(6) 1104 5 s 87.4(6) 1105 10 s 60.9(5) 1106 15 s 46.8(4) 1107 20 s 37.5(4) 1108 25 s 31.9(3) 1109 30 s 27.0(3) The only important note is that the pattern width was 200 for 1103, and the pattern width was 220 for every other run. Then we tested opening the GV and the pump out port to determine the changes in rate that would occur. The GV had a clean steel blankoff behind it with a very small volume between the blankoff and the gate valve. Run 1110 before 500 seconds - GV Closed, Pumpout Port closed 24163 counts in 277 seconds, 87.2(6) after 520 seconds - GV Open, Pumpout Port closed 21714 counts in 266 seconds, 81.6(6) about 1000 seconds - GV Open, Pumpout Port open 17462 counts in 232 seconds, 75.3(6) about 1315 seconds - GV Closed, Pumpout Port open 20621 counts in 258 seconds, 79.9(6) about 1650 seconds - GV Closed, Pumpout Port closed 27292 counts in 316 seconds, 86.4(5) The pumpout port appears to have an effect about the same as opening the GV in terms of reducing the rate.

24680	Sat Aug 11 18:44:51 2012	BMV

We decided to do a rough beam tune. We did not have midas running. Basically the beam is 5 pulses every 5 seconds, flapper flapping, gate valve closed and beam running low current between 2.4-3uA. Procedure: I first performed a y scan, unfortunately the multiscan was down so only had CCR's temperature as a guide. This was using LBSM401(?) Chandra did the first tune up Y=0.5 and X=-0.82 After doing a couple points, then went to Chris's computer and calculate the average UCN for each time section. This is a rough calculations. I gave each point 2 minutes roughly. GVMon-A1-run1097 Y-magnet Time Chris Daq range UCNavg 1.75 14:17 1137-1257 93.38 1.5 14:19 1257-1377 93.57 1.25 14:21 1377-1497 92.04 1.00 14:23 1497-1617 93.9 0.75 14:25 1617-1737 95.18 0.5 14:27 1737-1857 94.41 0.25 14:29 1857-1977 94.88 0 14:31 1977-2097 93.46 -0.25 14:33 2097-2217 91.82 -0.5 14.35 2217-2337 91.45 -.75 14:37 2337-2457 94.12 -1 14:39 2457-2577 91.15 Returned to 0.5 at 14:41 Stopped Chris's Daq at 14:50 3117.43 Looking at this I saw two peaks at 0.25 and 0.75... I decided to leave the beam at 0.5. Then I started to do the X scan. GVMon...1098, initial X=-0.82, 7729~17:10:30ish X-magnet Time Chris Daq range UCNavg -1 15:54 3139-3259 94.13 -1.25 15:56 3259-3439 94.53 -1.5 15:59 3439-3559 95.99 -1.75 16:01 3559-3679 96.13 -2 16:03 3679-3799 94.58 -1.75 16:05 3799-3919 98.24 -1.5 16:07 3919-4039 93.42 -1.25 16:09 4039-4219 94.7 -1.0 16:12 4219-4339 94.79 -0.75 16:14 4339-4459 92.12 -0.5 16:16 4459-4579 90.65 -0.25 16.18 4579-4699 82.38 0 16:20 4699-4819 78.9 0.25 16:22 4819-4939 74.2 -0.84 16:24 4939-? 91.10 It appears there is a peak at -1.75 for X Will tell CCR to set center at -1.75, 0.5 Will let the beam run overnight to warm up the target. Call it a day

24679	Sat Aug 11 00:36:12 2012	MFMakela

Getting ready to put D2 into source SV3,4,5 closed MV5,6 closed Green valve open. 1090 mbar in D2 tank. Opening check valve bypass 8 mbar left in D2 tank

24678	Fri Aug 10 13:48:37 2012	BMV

It was asked for me to upload this document. Ortho/Para document written by Raymond and Albert.

Attachment 1: 10.pdf

24677	Thu Aug 9 21:26:11 2012	MFMakela

Pressure testing downstream side of UCN gate valve to SV4. UCN gatevalve blnked off. 764.3 torr 2:51 764.3 torr 3:12 Looks good passed leak test

24674	Thu Aug 9 14:50:15 2012	MFMakela

UCN gatevalve mounted passed leaktest at 4.69e-7 mbar l/s pressure test 11:35 - 726 torr Passed leak test at 1.33e-7 mbar l/s

24676	Thu Aug 9 04:59:02 2012	bz

exhaust to heater skid closed and relief open stinger on dewar is open, so that relief valve on 500 L dewar can relieve helium line. 1630 working, perhaps not at maximum efficiency, system seems stable

24675	Wed Aug 8 19:18:26 2012	BMV

We used up one 500L dewar to cool down the PPM...Afterwards we started an SCS fill because it was at 2.9%... by the time the fill commenced it was about 0%. We are filling from the 4K dewar. While waiting for the SCS to fill, I unpackaged two of the decay trap guides. The Center Decay trap looks ok, no delamination. I unpackaged one of the ends, DTE1, and with the change of pressure the wrapping around the guide sucked some of the wrapper in along the 2 mm of inside edge. This caused some delamination along the edge about 2mm. Have not opened the 3rd tube yet.

24669	Tue Aug 7 10:29:35 2012	MFMakela

Pumping on MS2 - tee from 4k dewar to milking station. ~60 mTorr start Pumping on MS3 - tee from 1k dewar to milking station. ~20 mTorr start Pumping on MS4 - small section between 1k dewar and MS3 Atmosphere start - MS4 had a cut o-ring. O-ring replaced and pumping started from atmosphere Pumping on MS5 - stinger into 1k dewar ~20 mTorr start - Need to verify that vacuum holds in the morning - pulling the seal was difficult, may have cut o-ring - O-ring appeared to be intact, pressure was good at test Pumping on 1KS - transfer from 1410 liquifier to 1k ~150 mTorr start Pumping on UR1 - small segment on return from source to 1630 ~20 mTorr start Pumping on UR2 - return from source, closest to source ~300 mTorr start Pumping on UR3 - return from source, 2nd closest to source ~35 mTorr start Pumping on UR4 - return from source, just after tee near U3 ~95 mTorr start Pumping on MSM1 - Milking station to AFP at Milking Station ~30 mTorr start - accidentally pulled out plug during disengage, start over from atmosphere - did it again :/ Pumping on US1 - line between 4k and source, nearest to source ~135 mTorr start Pumping on US2 - line between 4k and source, nearest to 4k ~5 mTorr start - still exposed to LHe Pumping on US3 - line between 4k and source, 2nd nearest to 4k ~5 mTorr start Pumping on US4 - line between 4k and source, 3rd nearest to 4k ~60 mTorr start Pumping on UR5 - return from source, large valve, lower one near LHe switches ~1 Torr start Pumping on UR6 - return from source, large valve, upper one near LHe switches ~235 mTorr start Pumping on UR7 - return from source, large valve, near top of 4k dewar ~8 mTorr start (mostly clean) Pumping on MS6 - 1630 to milking station, large valve, close to tee ~167 mTorr start Pumping on UR8 - return from source, large valve, closest to 1630 ~85 mTorr start Pumping on MS7 - 1630 to milking station, large valve, closest to 1630 ~85mTorr start Pumping on UR9 - return from source, medium valve, next to 1630 ~85 mTorr start Pumping on MSM2 - milking station to magnet, unplugged hose next to milking station ~15 mTorr start Pumping on MSM3 - milking station to magnet, hose to SCS ~75 mTorr start Pumping on FD1 - Fill Dewars 1, on the stinger itself ~25 mTorr start Pumping on FD2 - Fill Dewars 2, on the hose leading up to the milking station ~85 mTorr start Pumping on 1k Dewar Vacuum - ~35 mTorr start, took a long time to pump, stopped early to pump milking station Pumping on Milking Station Vacuum - large gold valved under 1k ~ 5.62 Torr ! start Pumping on MS8 - long hose draped from dewar platform, small valve next to 1k dewar ~7.70 Torr ! start Pumping on SW1 - Medium Valve at shield wall, outer valve ~400 mTorr start

24671	Sun Aug 5 16:41:14 2012	bz

Starting to pump on lines between milking station and source info moved to general transfer line pumping log

24673	Thu Aug 2 18:33:00 2012	MFMakela

Pumping on O/p with scroll Pumping on O/P insulating vacumm with turbo Mr "H" is on.

24672	Thu Aug 2 18:32:14 2012	MFMakela

UCN gate \valve installed puming out source

24670	Thu Aug 2 10:21:00 2012	bz

Started pumping on Source Insulating Vacuum, found that Source Insulating Vacuum had a low pressure of something that the SuperBee read as over pressure. Know it was low pressure because bellows did not relax/expand. Probably Helium. Pumping with Minuteman until Mark thinks it's good. Will move to Source Transfer Line Insulating Vacuum next. Pressure gauge reads 15.4 mTorr at 15:11. Continuing to pump. Pressure gauge reads 10.8 mTorr at 16:04. Continuing to pump. Pressure gauge reads 10.4 mTorr at 16:24. Continuing, will probably switch to transfer line vacuum overnight Closed valve at 16:30, pressure bounced up to ~50 mTorr, continuing to rise slowly. Will switch to transfer line for overnight pumping Switched at 17:00, pressure immediately to ~13 mTorr. Will update in morning. Source transfer line pressure was 7.9 mTorr at 10:00, closed pump off, pressure did not rise for one minute Went back to pumping on source - Source had approximately 1 Torr of pressure

24668	Wed Aug 1 13:10:45 2012	MFMakela
SCS insulating vacuum at 9.5 mTorr - valved off 8.4 mTorr pumping 8.2 mTorr pump only SCS vacuum pressure ~ 1 mTorr Contunueing to pump		
24667	Tue Jul 31 15:32:47 2012	MFMakela
Pumping on SCS vacuum 48 mTorr - valved off 17 mtorr - pumping		
24666	Fri Jul 27 17:25:53 2012	MFMakela
The three lines out of the 4K dewar have been pumped. Now pumping on 1630 cold box.		
24665	Fri Jul 27 14:33:06 2012	DFellers
Leak check of UCN gate valve. Cycled helium leak check 100 times Leak rate about 2e-8 mbar l/s While cycling 1e-8 change in leak rate-no evidence of helium.		
24664	Thu Jul 5 16:57:55 2012	EIC
Restart EMS again.		
24663	Fri Jun 29 13:01:59 2012	GEHogan
Lakeshore crashed 6/18. Restarted.		
24662	Tue Jun 19 13:18:27 2012	MFMakela
Compressors 2 and 3 offline (water is shutoff). Compressor 1 running without booster pump. Inlet temp 66 out let 92 deg F. Inlet pressure ~85 psi		
24661	Fri Jun 8 15:27:19 2012	GEHogan
EMS crashed. Varian is turned off. Restart EMS without Varian.		
24660	Thu May 31 13:12:26 2012	MFMakela
PPM magnet filled with LN2 ~97% During filling the LN2 relief was venting in addition to the normal exit. this may have been true in other fills?		
24659	Fri May 25 13:07:13 2012	MFMakela
All compressors in the UCN hall are off until late next week. The valve to MPS on the 1000 gallon tankin area B is closed.		
24658	Mon May 21 16:00:10 2012	GEHogan
Restart EMS was off 5/9 to 5/21		
24657	Mon May 14 11:53:06 2012	MFMakela
Check List - off period 2012 Booster pump pressure (psi) - 115 MPS(1630)(psi) - 37 1630 return (psi) - .65 4K dewar (inches) - 36.21 1630 status - off 1410 status - off Compressor 1 status - on Compressor 1 exit temp (deg. F) - 88 Compressor 1 oil level - small air bubble Compressor 2 status - off Compressor 2 exit temp - Compressor 2 oil level - Compressor 3 Status - off Compressor 3 exit temp - Compressor 3 oil level -		
24656	Tue May 8 08:24:59 2012	MFMakela
Check List - off period 2012 Booster pump pressure (psi) - 117 MPS(1630)(psi) - 30 1630 return (psi) - .5 4K dewar (inches) - 36.94 1630 status - off 1410 status - off Compressor 1 status - on Compressor 1 exit temp (deg. F) - 88 Compressor 1 oil level - small air bubble Compressor 2 status - off Compressor 2 exit temp - Compressor 2 oil level - Compressor 3 Status - off Compressor 3 exit temp - Compressor 3 oil level -		
24655	Tue May 1 15:02:02 2012	MFMakela
UCN source vented UCN gatevalve removed line to D2 cart valved off, full of argon. Plastic cover over end of UCn guide UCN gatevalve needs to be serviced and reinstalled.		
24654	Wed Mar 28 21:35:19 2012	GEHogan
Restart Lakeshore		

Restarted EMS

24652	Sun Mar 25 13:34:01 2012	MFMakela

Pushing 1k INTO 4k dewar. 1410 - on

24651	Thu Mar 22 13:23:16 2012	GEHogan

Restart EMS which stopped last week.

24650	Thu Mar 15 18:43:38 2012	MFMakela

Starting the 1410 liquifier

24649	Wed Mar 14 09:44:34 2012	MFMakela

booster pump on compressor cooling system is leaking again. It was rebiult yeterday, but started leaking by late evening.

24648	Tue Mar 13 00:08:32 2012	ARYoung

Pressure relief from the 1K dewar does not seem to be working. Bryan and Mark suggest: (1) Close LN2 return from SCS (2) crack CLPM-12 (3) let pressure bleed down and gradually open CLPM-12 (4) after the pressure in heater skid C and B are same, reopen LN2 return from SCS I did this. At the start, the 1K dewar pressure was 11 Psi and heater skid C was at about 20 Psi. I bled things down and left the manifolds coupled with the 1K dewar at about 9 Psi and the heater skids both around 14 Psi.

24647	Mon Mar 12 22:15:32 2012	ARYoung

Summary of activity with APD calibration detector: Sunday -- Transferred source mounting adapter to APD mount (APD detector uses the same clamp and adapter to mount to the source rod as is used by our standard source holders, so we transferred one over) Inspected APD cables -- two of the solid conductor HV signal cables were broken Removed source mounting rod and differential pumping assembly Monday -- Met with RCT and Andy, transferred source to load-lock. (no activity found on any of the swipes) Mounted 6" flange with feedthrus on load-lock system, opposite to load-lock door. Snaked cables through 2.75" flange ports Repaired cables (ground and +6V lines were broken) Attached cable connectors to feedthrus Tested power supplies to ensure proper voltages (+- 6V and ground to integral preamp, + 12V to external preamp) were correct. Found Ge detector HV supply, converted to positive polarity and disabled HV reset Operated APD at up to +320V bias voltage, saw relatively high rate, noise up to about 50 mV (about 2x what was expected)... Jeff Wang prepared a coincidence trigger for the fADC acquisition Tomorrow: Backfill load-lock with dry nitrogen or Ar until system ready for APD Work on shielding cables and grounding to reduce noise

24646	Mon Mar 12 10:27:35 2012	MFMakela

Warming up o/p converter Pumping on O/P

24645	Fri Mar 9 12:56:11 2012	GEHogan

Lakeshore crashed this morning. Restarted EMS and did backup.

24644	Fri Mar 9 10:32:45 2012	MFMakela

HV test of UCNB detector Vacuum at switcher - 2.6e-5 toor (cold cathode) SCS - off

24643	Mon Mar 5 17:06:13 2012	bz

SCS is pumped down, turbos are on and consuming very little power however, CC2 says that the vacuum is still 10^-4 torr, may just need some time pumping - no dry nitrogen was blowing this time.

24187	Mon Mar 5 09:27:55 2012	KPH

CCR unlocked the 202 area and we changed the trigger to channel 4 instead of ch3 and adjusted the trigger levels. When we turned the beam back on, we saw pulse from the toroid. We ran the slow DAQ for two whopping pulses and got an integral of 1.8e13 protons which (if I did my maths right) a current of ~1.4 uA. CCR did not have us at full beam for this test. More to come...

24642	Sun Mar 4 22:59:02 2012	bz

performed partial fill of the SCS to empty the 1K dewar a little at first tried to use the 1410, but then pressure in SCS was above 5 so relief valve blew. I opened BLPM12 and then started compressor 1 and then closed BLPM3. I used the bypass on the 1630 to drop the pressure then hit the relief valve a little with the heat gun. It appears to be sealed. After the fill, I closed BLPM12 and opened BLPM3 and stopped compressor 1 I also closed the bypass on the 1630. Except for the relief valve the fill was ok.

24641	Fri Mar 2 14:13:19 2012	MFMakela

Cleaned compressor water filter

24640	Fri Mar 2 13:33:34 2012	MFMakela

1410 was off - VFD fault restarted 1410 filling SCS SCS relief valve leaked due to 1410 shutdown relief valve warmed and resealed, should check for bubbles later.

24639	Thu Mar 1 15:40:58 2012	GEHogan

EMS restarted. Problem was Access database for EMS (not regular) logbook file had gotten erased or smashed. Restored for 12/2011 version. Nothing of real value lost.

24638	Wed Feb 29 15:40:06 2012	MFMakela

W-target flow test 800 scfh @ 275 psi Compressor turned off

24637	Wed Feb 29 15:34:26 2012	MFMakela

Slow SCS fill test Initial fill - normal 1K dewar valve at ~10 1:55 moved down to 4 - 87.9% full - no real change in fill Closed is ~2 2:25 Moved to ~3 from 4 92.4% full Closed SCS cold return (LN2 return open) 4:30 opened to ~3.5 - S was lossing level SCS -.82%/hr, 1K dewar +.72 inch/hr

24635	Wed Feb 29 10:32:26 2012	KPH

I placed a Cs137 source outside the box but inside the lead shield. sudo ./autorun -r 6050 -t 600 --loop 1 --type Cs137 Starting Cs137 run 6050... date="Wed Feb 29 01:00:39 UTC 2012" run=6050 runtime=600 sleep=0 type=Cs137 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6050.fat 600 Read out 533312472 (509M) of data for run 6050 Removed Cs137. Turned on LED. Starting led run 6051... date="Wed Feb 29 01:17:40 UTC 2012" run=6051 runtime=120 sleep=0 type=led fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6051.fat 120 Read out 61117032 (59M) of data for run 6051 > sudo ./autorun -r 6045 -t 300 --loop 1 --type led Starting led run 6052... date="Wed Feb 29 01:20:07 UTC 2012" run=6052 runtime=300 sleep=0 type=led fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6052.fat 300 Read out 153085676 (146M) of data for run 6052 Performing LED scans for the rest of the night: > sudo ./autorun -r 6045 -t 3600 --loop 4 --type ledscan Starting ledscan run 6054... date="Wed Feb 29 01:32:34 UTC 2012" run=6054 runtime=3600 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6054.fat 3600 Read out 527593908 (504M) of data for run 6054 Done. Starting ledscan run 6055... date="Wed Feb 29 02:32:35 UTC 2012" run=6055 runtime=3600 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6055.fat 3600 Read out 377246634 (360M) of data for run 6055 Done. Starting ledscan run 6056... date="Wed Feb 29 03:32:35 UTC 2012" run=6056 runtime=3600 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6056.fat 3600 Read out 391984828 (374M) of data for run 6056 Done. Starting ledscan run 6057... date="Wed Feb 29 04:32:35 UTC 2012" run=6057 runtime=3600 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6057.fat 3600 Read out 443973142 (424M) of data for run 6057 Done.

24636	Wed Feb 29 04:48:39 2012	JCHoagland

afp has reached 0 in liquid helium, have put a turbo on its vaccum jacket

24633	Tue Feb 28 16:57:49 2012	KPH

Performing a half hour LED scan: > sudo ./autorun -r 6047 -t 1800 --loop 1 --type ledscan Starting ledscan run 6047... date="Tue Feb 28 20:53:44 UTC 2012" run=6047 runtime=1800 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6047.fat 1800 > sudo ./autorun -r 6047 -t 1800 --loop 1 --type ledscan Starting ledscan run 6047... date="Tue Feb 28 20:53:44 UTC 2012" run=6047 runtime=1800 sleep=0 type=ledscan fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6047.fat 1800 Read out 307272590 (294M) of data for run 6047 Done. Inserted Bi207 source. Ran for half an hour: > sudo ./autorun -r 6048 -t 1800 --loop 1 --type Bi207 Starting Bi207 run 6048... date="Tue Feb 28 21:36:47 UTC 2012" run=6048 runtime=1800 sleep=0 type=Bi207 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6048.fat 1800 Read out 1086311606 (1.1G) of data for run 6048 Vented with Ar. Removed some lead bricks from the top. Removed Bi207 source from insert bellows. I attached the Sn113 source to the fiber and

the box. Started a run for Sn113. sudo ./autorun -r 6049 -t 1800 --loop 1 --type Sn113 Starting Sn113 run 6049... date="Wed Feb 29 00:26:35 UTC 2012" run=6049 runtime=1800 sleep=0 type=Sn113 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6049.fat 1800 Read out 567256944 (541M) of data for run 6049

24634	Tue Feb 28 15:16:14 2012	MFMakela

Source distilled into the tank 1070 mbar in the tank Pumping out the source and cooling it back down for 1630 test Orange valve open Check valve sealed - ok

24631	Tue Feb 28 07:17:23 2012	TIto

UCNb box vacuum 2E-5 Start a series of regular run ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 6017 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 File for run 6017 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 6018... date="Tue Feb 28 14:08:17 UTC 2012" run=6018 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6018.fat 120 Stopped data taking at 8am at run 6043 Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 6043... date="Tue Feb 28 14:59:07 UTC 2012" run=6043 runtime=120 sleep=1 type=background fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6043.fat 120 ^C ucnbdaq@ucnbdaq:~/Code/hardware$ Do a Bi 207 calibration run (the monitor PMT connected) ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 6043 -t 300 --loop 1 --type Bi207 [sudo] password for ucnbdaq: Sorry, try again. [sudo] password for ucnbdaq: File for run 6043 exists: skipping... Starting Bi207 run 6044... date="Tue Feb 28 15:04:37 UTC 2012" run=6044 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6044.fat 300 Source extracted, PMT off, LED on Starting led run 6046... date="Tue Feb 28 15:13:57 UTC 2012" run=6046 runtime=120 sleep=0 type=led fADC ./configUCNb8 /media/UCNb2012/Data/raw/run6046.fat 120

24632	Tue Feb 28 06:28:47 2012	bz

Ran alternating beta and background runs until nitrogen in dewar ran out dewar connection to detector was not a normal connection, so it could not be transferred to a new dewar and so the old dewar had to be refilled during the refill, the amps were powered down and the batteries were removed from the detector unfortunately, the pressure in the dewar after the fill was too low and cooling could not be reestablished. Therefore the data stops at 6 AM due to the nitrogen running out.

24630	Tue Feb 28 06:08:30 2012	TIto

Stopped the CF4 40 torr run at run # 6017 Pump out CF4

24628	Tue Feb 28 05:14:12 2012	KPH

Filled the box up above the PE window with 1 torr Ar. Left volume between the window and the b valve pumped out. Opened the b vavle with: > sudo ./autorun -r 5887 -t 120 --background 120 --loop 600 --valve --teensy --type ucn+Ar --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn+Ar run 5887... date="Tue Feb 28 08:11:51 UTC 2012" run=5887 runtime=120 sleep=1 type=ucn+Ar fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5887.fat 120 Oops... left LED on. Interrupted run 5888. sudo ./autorun -r 5887 -t 120 --background 120 --loop 600 --valve --teensy --type ucn+Ar --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn+Ar run 5889... date="Tue Feb 28 08:15:30 UTC 2012" run=5889 runtime=120 sleep=1 type=ucn+Ar fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5889.fat 120 ... (looping) Interrupted run 5908. Pumping out Ar with UCNb turbo. Filled with 1.13 torr of CF4. > sudo ./autorun -r 5909 -t 120 --background 120 --loop 600 --valve --teensy --type ucn+CF4 --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn+CF4 run 5909... date="Tue Feb 28 09:11:04 UTC 2012" run=5909 runtime=120 sleep=1 type=ucn+CF4 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5909.fat 120 Read out 12330246 (12M) of data for run 5909 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5910... date="Tue Feb 28 09:13:07 UTC 2012" run=5910 runtime=120 sleep=1 type=background fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5910.fat 120 Read out 10821116 (11M) of data for run 5910 Done. ... (looping) Pumping out the CF4 at 2:40 am. Started run with vacuum purged by CF4. > sudo ./autorun -r 5923 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5923... date="Tue Feb 28 09:54:43 UTC 2012" run=5923 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5923.fat 120 ... (looping) Interrupted run 5936. Added 15.0 torr of Xe to the b box. > sudo ./autorun -r 5937 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5937... date="Tue Feb 28 10:29:58 UTC 2012" run=5937 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5937.fat 120 ... (looping) Interrupted run 5950. Pumped down to 10.5(1) torr of pressure of Xe. > sudo ./autorun -r 5951 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5951... date="Tue Feb 28 10:59:38 UTC 2012" run=5951 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5951.fat 120 ... (looping)

120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5972... date="Tue Feb 28 11:47:12 UTC 2012" run=5972 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5972.fat 120 Interrupted run 5981. Pumping out Xe to 1.0(1) torr. > sudo ./autorun -r 5981 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 File for run 5981 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5982... date="Tue Feb 28 12:10:21 UTC 2012" run=5982 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5982.fat 120 Interrupted run 5981. Pumped out all the Xe. Filled with 10.0(1) torr CF4. > sudo ./autorun -r 5989 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5989... date="Tue Feb 28 12:45:37 UTC 2012" run=5989 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5989.fat 120 Now at 40 torr of CF4. Not seeing much quenching of UCN generated signal. Very puzzling. sudo ./autorun -r 5997 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 File for run 5997 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5998... date="Tue Feb 28 13:09:01 UTC 2012" run=5998 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5998.fat 120 sh: ppoff.exe: not found Read out 12640384 (13M) of data for run 5998 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5999... date="Tue Feb 28 13:11:03 UTC 2012" run=5999 runtime=120 sleep=1 type=background fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5999.fat 120

24629	Tue Feb 28 04:18:23 2012	TIto

estimate of the effect of gas put in the little b box Ar: scattering xs ~ abs xs ~ 0.5 b @ 2200 m/s At 1 torr, # density = 3.5E16/cm3 At 1 torr, mean free path lambda ~ 1.0E5 cm -> tau = lambda/v = 280 s Ar should have very small effects Xe: abs xs ~ 24 b @ 2200 m/s At 15 torr, the number desnity = 5E17/cm3 At 15 torr, mean free path = 1.5E2 cm -> tau = lambda/v = 0.4 s CF4: scattering xs for C ~ scattering xs for F ~ 5b @ 2200 m/s

24627	Mon Feb 27 22:57:44 2012	KPH

Starting new UCN run. > sudo ./autorun -r 5792 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5828... date="Tue Feb 28 04:52:20 UTC 2012" run=5828 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5828.fat 120 Read out 13004068 (13M) of data for run 5828 Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5829... date="Tue Feb 28 04:54:22 UTC 2012" run=5829 runtime=120 sleep=1 type=background fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5829.fat 120 ... (looping) Interrupted run 5883 Inserted Bi207 source. Plugged in PMT cable. > sudo ./autorun -r 5826 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5884... date="Tue Feb 28 06:46:19 UTC 2012" run=5884 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5884.fat 300 Read out 185550800 (177M) of data for run 5884 Retracted source, unplugged PMT cable. Turned on LED. > sudo ./autorun -r 5885 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5885... date="Tue Feb 28 06:52:55 UTC 2012" run=5885 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5885.fat 300 ^C Interrupted because this was a mistake!! > sudo ./autorun -r 5827 -t 120 --loop 1 --type led Starting led run 5886... date="Tue Feb 28 06:55:14 UTC 2012" run=5886 runtime=120 sleep=0 type=led fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5886.fat 120 Read out 30537966 (30M) of data for run 5886

24626	Mon Feb 27 20:54:28 2012	KPH

Taking UCN data: > sudo ./autorun -r 5792 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5794... date="Tue Feb 28 03:32:09 UTC 2012" run=5794 runtime=120 sleep=1 type=ucn fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5794.fat 120 ... (looping) Inserted Bi207 source. Attached BNC cable to source PMT. > sudo ./autorun -r 5826 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5826... date="Tue Feb 28 04:38:28 UTC 2012" run=5826 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5826.fat 300 Read out 182498976 (175M) of data for run 5826 Disconnected cable from fADC. Retracted source. > sudo ./autorun -r 5827 -t 120 --loop 1 --type led Starting led run 5827... date="Tue Feb 28 04:48:10 UTC 2012" run=5827 runtime=120 sleep=0 type=led fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5827.fat 120 Read out 31955460 (31M) of data for run 5827

24623	Mon Feb 27 20:45:11 2012	Andreas Knecht

UCNA Shift Change Checklist Date: February 27, 2012 17:15 Shift Persons: Andreas, Hasan Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow A-LPM12 open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.08 psia Heater C pressure 13.43 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 282.4 psia Tungsten Cool ret. 67.9 psia Tungsten Cool Diff 279.4 psia 1630 eng. 2 temp. 14.55 K 1630 JT temp. 7.47 K 1630 outlet temp. 277.5 K 1630 engine speed 210 rpm 1630 supply press.

1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.7 K 1410 TE-E 88.1 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 3.0 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.0 inHe 1K dewar level 25.6 inHe 4K main flow control 4.0 V LHe temp. 1 6.2 K Heat exch. temp. 7 195.9 K Poly temp. 3 69.2 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature --- C AFP frequency --- MHz AFP forward power --- W SCS LHe level 86.1 % SCS field 9.65 kG SCS current 119 A AFP N2 dewar level -- SV3 closed SV4 open CM1 pressure 1.7 torr CM5 pressure 2.7 torr CC1 pressure 1.1e-5 torr PPM LHe level 99.5 % PPM LN2 level 100 % (level meter broken) AFP LHe level 49.9 % AFP LN2 level 30.8 % PPM current 72(6) A(T) AFP current 0 A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: beam off s Proton countdown: Proton pattern width: ns TBCM001I03 (H-source current): mA "Beamplot" Capture: % ========== East Detector Cart----------OFF ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure vented torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart----------OFF ========== MWPC HV 0 V (knob knewly aligned actual HV now a little higher) MWPC Trip Hold Status Trip Hold MWPC Pressure vented torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 2.9e-4 torr DAQ data_raw disk usage 80%

24624	Mon Feb 27 20:44:29 2012	KPH

Connected the source insert to a PMT through a 1mm fiber. The PMT output goes through a 64 ns delay and then into channel 5 of the fADC. Here are the config file parameters for this new setup 64 0 trigger_mask 1 # PMT 0 64 1 trigger_mask 1 # PMT 1 64 2 trigger_mask 1 # PMT 2 64 3 trigger_mask 1 # PMT 3 64 4 trigger_mask 0 # unused 64 5 trigger_mask 1 # source fiber PMT 64 6 trigger_mask 0 # unused 64 7 trigger_mask 1 # UCN GV mon / 10 64 0 upper_threshold 276 64 1 upper_threshold 324 64 2 upper_threshold 287 64 3 upper_threshold 298 64 4 upper_threshold 298 64 5 upper_threshold 350 64 6 upper_threshold 278 64 7 upper_threshold 285 I had to adjust the upper threshold of the source PMT on channel 5 to prevent too many events. There is no analog coincidence of the source PMT with the other channels. But because of the high rate, maybe there should be. We may also want to unplug the channel when the source is retracted. I did a test run of the fiber with the source inserted. > sudo ./autorun -r 5781 -t 120 --loop 1 --type test Starting test run 5787... date="Tue Feb 28 02:03:13 UTC 2012" run=5787 runtime=120 sleep=0 type=test fADC ./configUCNb8 /media/UCNb2012/Data/raw/run5787.fat 120 Read out 73117336 (70M) of data for run 5787 Done.

24625	Mon Feb 27 19:33:15 2012	KPH

Connected PD to a Timing Filter Amplifier. Connected to Channel 6 on the fADC. The new config file entries in "configUCNb8" are: 64 0 trigger_mask 1 # PMT 0 64 1 trigger_mask 1 # PMT 1 64 2 trigger_mask 1 # PMT 2 64 3 trigger_mask 1 # PMT 3 64 4 trigger_mask 0 # unused 64 5 trigger_mask 1 # source fiber PMT 64 6 trigger_mask 1 # LED PD 64 7 trigger_mask 1 # UCN GV mon / 10 64 0 upper_threshold 265 64 1 upper_threshold 322 64 2 upper_threshold 285 64 3 upper_threshold 295 64 4 upper_threshold 295 64 5 upper_threshold 350 64 6 upper_threshold 300 64 7 upper_threshold 300

24622	Mon Feb 27 09:38:08 2012	bz

Information about running Fred Gray's daq to take data for the UCNB detector: To run the daq, use the following commands: cd /home/boron10/FADC/AcquireSetting sudo ./autorun --loop 1 --run 100 -t 20 -s 0 autorun is a script (Kevin uses the same script on his UCNb daq), and the inputs are as follows the number after loop indicates the number of times you want the daq to run consecutively the number after run indicates the run number - if the run number exists the script will automatically skip that number until it finds a run number that hasn't been used yet the number after t is the number of seconds that you want the run to go. To my knowledge there's no problem with long runs except that you will get large files the number after s is the number of seconds that you want the daq to sleep between runs on Kevin's daq, there is a problem with leaving the sleep at 0 if the loop is greater than 1, so it's a good idea to change the sleep to 1 if you increase the loop number On Kevin's daq, a sleep of 0 will lock the machine and force a power cycle, so please try to avoid it After you have taken a run, it will produce a run file in /home/boron10/UCNB/data/raw with a name run%d.fat where %d is the run number. The daq script outputs the runfile name after the run is complete so you do not have to guess. To see the spectrum, you can run the analyzer with the following commands: cd /home/boron10/FADC/Analysis analysisUCNb run%d.fat where %d needs to be replaced with the actual run number It will produce a root file named run%dD.root where %d is the run number and D is an actual D. You can look at this root file in a TBrowser by running root with the following command root -l run%dD.root this will attach the rootfile so that you can perform certain commands with it TBrowser a if you type this in at the root prompt and hit enter it

data using the Draw command: t->Draw("what graph you want","cuts on the data"); t is the name of the tree and you have to enter it with an arrow for ROOT to understand "what graph you want" is the name of the leaves you want to graph, with "y axis:x axis" for a graph and "leaf" for a hist of a single variable. You must put the variable name(s) in quotes "cuts on the data" is the cuts you want to make on the data So if you want a graph of the Max Sample for Channel 7, you can use: t->Draw("maxSample","channel==23"); and it will draw a histogram of the Max Sample for every event from Channel 7 If there are any questions, you can contact bazeck@ncsu.edu or zwang@lanl.gov

24621	Mon Feb 27 05:11:07 2012	RRios

Interrupted run 5779 Source inserted >sudo ./autorun -r 5780 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5780... date="Mon Feb 27 12:52:52 UTC 2012" run=5780 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5780.fat 300 source extracted, LED on >sudo ./autorun -r 5781 -t 120 --loop 1 --type led Starting led run 5781... date="Mon Feb 27 13:01:52 UTC 2012" run=5781 runtime=120 sleep=0 type=led fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5781.fat 120 Read out 28361374 (28M) of data for run 5781 LED off. Power disconnected to GV Air unplugged

24620	Mon Feb 27 03:55:54 2012	RRios

Starting new loop of ucn runs. Led off, Bi207 retracted. > sudo ./autorun -r 5714 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5714... date="Mon Feb 27 10:23:29 UTC 2012" run=5714 runtime=120 sleep=1 type=ucn fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5714.fat 120 ... interrupted cycles at run 5747 Source inserted, >sudo ./autorun -r 5748 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5748... date="Mon Feb 27 11:35:40 UTC 2012" run=5748 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5748.fat 300 Read out 178190350 (170M) of data for run 5748 Done. Source extracted, LED on >sudo ./autorun -r 5749 -t 120 --loop 1 --type led Starting led run 5749... date="Mon Feb 27 11:47:10 UTC 2012" run=5749 runtime=120 sleep=0 type=led fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5749.fat 120 Read out 29277306 (28M) of data for run 5749 Done. LED off >sudo ./autorun -r 5750 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5750... date="Mon Feb 27 11:51:50 UTC 2012" run=5750 runtime=120 sleep=1 type=ucn fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5750.fat 120 Read out 14738270 (15M) of data for run 5750

24619	Mon Feb 27 02:24:27 2012	RRios

Starting new loop of ucn runs. Led off, Bi207 retracted. sudo ./autorun -r 5709 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5709... date="Mon Feb 27 10:09:49 UTC 2012" run=5709 runtime=120 sleep=1 type=ucn fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5709.fat 120 ... 5712 run interrupted Turned LED on, Start LED run >sudo ./autorun -r 5713 -t 120 --loop 1 --type led Starting led run 5713... date="Mon Feb 27 10:18:11 UTC 2012" run=5713 runtime=120 sleep=0 type=led fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5713.fat 120 Read out 25413246 (25M) of data for run 5713 Done.

24618	Mon Feb 27 02:16:59 2012	RRios

Starting new loop of ucn runs. Led off, Bi207 retracted. >sudo ./autorun -r 5650 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5650... date="Mon Feb 27 07:50:22 UTC 2012" run=5650 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5650.fat 120 ... Interrupted run 5706. >sudo ./autorun -r 5707 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5707... date="Mon Feb 27 09:50:34 UTC 2012" run=5707 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5707.fat 300 Read out 177374014 (170M) of data for run 5707 Done. Retracted source. Turned on LED. (Edit: wrong toggle switch, LED not on) > sudo ./autorun -r 5708 -t 120 --loop 1 --type led Starting led run 5708... date="Mon Feb 27 09:58:52 UTC 2012" run=5708 runtime=120 sleep=0 type=led fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5708.fat 120 Read out 12054138 (12M) of data for run 5708 Done. Turned off LED

24616	Mon Feb 27 00:02:50 2012	KPH

Started new UCN runs. > sudo ./autorun -r 5650 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5650... date="Mon Feb 27 07:50:22 UTC 2012" run=5650 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5650.fat 120 Read out 11492920 (11M) of data for run 5650 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5651... date="Mon Feb 27 07:52:24 UTC 2012" run=5651 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5651.fat 120 ... (looping) oops interrupted early on

24613	Mon Feb 27 00:01:44 2012	KPH

date="Mon Feb 27 05:05:00 UTC 2012" run=5585 runtime=300 sleep=0 type=threshold fADC ./configThreshold /media/UCNb2012/Data/raw/run5585.fat 300 sh: ppoff.exe: not found Read out 1768200 (1.7M) of data for run 5585 # use upper threshold for NEGITIVE pulses # at the same time, set lower threshold to ZERO 64 0 upper_threshold 276 64 1 upper_threshold 324 64 2 upper_threshold 287 64 3 upper_threshold 298 64 4 upper_threshold 298 64 5 upper_threshold 310 64 6 upper_threshold 278 64 7 upper_threshold 285 UPDATE!! These are NOT the values used in the runs until run 5653. Real thresholds for the following runs are: 64 0 upper_threshold 325 64 1 upper_threshold 350 64 2 upper_threshold 340 64 3 upper_threshold 315 64 4 upper_threshold 350 64 5 upper_threshold 100 64 6 upper_threshold 100 64 7 upper_threshold 400 Ran UCN data with LED off: Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5586... date="Mon Feb 27 05:19:12 UTC 2012" run=5586 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5586.fat 120 sh: ppoff.exe: not found Read out 15955870 (16M) of data for run 5586 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5587... date="Mon Feb 27 05:21:14 UTC 2012" run=5587 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5587.fat 120 sh: ppoff.exe: not found Read out 13914004 (14M) of data for run 5587 Done. Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5588... date="Mon Feb 27 05:23:16 UTC 2012" run=5588 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5588.fat 120 sh: ppoff.exe: not found Read out 16096596 (16M) of data for run 5588 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5589... date="Mon Feb 27 05:25:18 UTC 2012" run=5589 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5589.fat 120

24617	Sun Feb 26 23:59:50 2012	KPH

Was using old config file "configUCNb6" not with the new thresholds. New values are in configUCNb7 64 0 upper_threshold 276 64 1 upper_threshold 324 64 2 upper_threshold 287 64 3 upper_threshold 298 64 4 upper_threshold 298 64 5 upper_threshold 310 64 6 upper_threshold 278 64 7 upper_threshold 285 > sudo ./autorun -r 5653 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5653... date="Mon Feb 27 07:58:02 UTC 2012" run=5653 runtime=120 sleep=1 type=ucn fADC ./configUCNb7 /media/UCNb2012/Data/raw/run5653.fat 120 (looping)

24615	Sun Feb 26 23:52:25 2012	KPH

Starting new loop of ucn runs. Led off, Bi207 retracted. > sudo ./autorun -r 5618 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5618... date="Mon Feb 27 06:34:14 UTC 2012" run=5618 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5618.fat 120 ... Interrupted run 5647. sudo ./autorun -r 5648 -t 300 --loop 1 --type Bi207 Stopped on background run. Inserted Bi207 source. Starting Bi207 run 5648... date="Mon Feb 27 07:35:54 UTC 2012" run=5648 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5648.fat 300 Read out 157629290 (151M) of data for run 5648 Done. Retracted source. Turned on LED. > sudo ./autorun -r 5649 -t 120 --loop 1 --type led Starting led run 5649... date="Mon Feb 27 07:46:55 UTC 2012" run=5649 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5649.fat 120 Read out 9622100 (9.2M) of data for run 5649 Done. Turned off LED

24603	Sun Feb 26 23:17:45 2012	CLMorris

about 3:00 PM we found the pump to the little b box was off and the vacuum was ~1 Torr. We turned on the pump.

24607	Sun Feb 26 23:17:36 2012	KPH

We set the flapper to closed to kill the UCN. We are looking for what ever gas might be causing a low energy tail to the UCN open/closed spectrum. This starts with run 5547 > sudo ./autorun -r 5547 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 sudo ./autorun -r 5546 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 [sudo] password for ucnbdaq: File for run 5546 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5547... date="Sun Feb 26 23:52:29 UTC 2012" run=5547 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5547.fat 120 sh: ppoff.exe: not found Read out 8070656 (7.7M) of data for run 5547 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5548... date="Sun Feb 26 23:54:31 UTC 2012" run=5548 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5548.fat 120 sh: ppoff.exe: not found Read out 7922946 (7.6M) of data for run 5548 Done. Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5549... date="Sun Feb 26 23:56:33 UTC 2012" run=5549 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5549.fat 120 sh: ppoff.exe: not found Read out 7555780 (7.3M) of data for run 5549 Done. Closing valve with

UTC 2012" run=5550 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5550.fat 120 sh: ppoff.exe: not found Read out 8010222 (7.7M) of data for run 5550 Done. Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5551... date="Mon Feb 27 00:00:37 UTC 2012" run=5551 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5551.fat 120 sh: ppoff.exe: not found Read out 8108462 (7.8M) of data for run 5551 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5552... date="Mon Feb 27 00:02:39 UTC 2012" run=5552 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5552.fat 120 sh: ppoff.exe: not found Read out 7989212 (7.7M) of data for run 5552 Done. Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5553... date="Mon Feb 27 00:04:41 UTC 2012" run=5553 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5553.fat 120 ^C

24614	Sun Feb 26 22:33:22 2012	KPH

The LED is turned off, the thresholds are set. The electronics are cleaned up. Time to run and get stats. > sudo ./autorun -r 5590 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Sleeping for 1 seconds... Starting ucn run 5590... date="Mon Feb 27 05:29:42 UTC 2012" run=5590 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5590.fat 120 sh: ppoff.exe: not found Read out 11625054 (12M) of data for run 5590 Done. Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5591... date="Mon Feb 27 05:31:44 UTC 2012" run=5591 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5591.fat 120 ... Interrupted run 5615. Inserted Bi207 source. > sudo ./autorun -r 5616 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5616... date="Mon Feb 27 06:22:51 UTC 2012" run=5616 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5616.fat 300 Read out 153713260 (147M) of data for run 5616 Done. Retracted source. > sudo ./autorun -r 5577 -t 120 --loop 1 --type led Starting led run 5617... date="Mon Feb 27 06:30:36 UTC 2012" run=5617 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5617.fat 120 Read out 9308090 (8.9M) of data for run 5617 Done.

24612	Sun Feb 26 21:03:21 2012	KPH

Running the threshold script using: > sudo ./autorun -r 5353 -t 60 --type threshold Starting threshold run 5584... date="Mon Feb 27 05:01:26 UTC 2012" run=5584 runtime=60 sleep=0 type=threshold fADC ./configThreshold /media/UCNb2012/Data/raw/run5584.fat 60

24611	Sun Feb 26 20:45:46 2012	KPH

Inserted source. Bad run 5575 (source in and b valve open. Closed b valve. Starting Bi207 run 5576... date="Mon Feb 27 03:36:44 UTC 2012" run=5576 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5576.fat 300 Course gain was set wrong on Ch0. All above runs are not very good. Starting with an LED run. Changed the delay from 128 ns to 64 ns. > sudo ./autorun -r 5577 -t 120 --loop 1 --type led Starting led run 5578... date="Mon Feb 27 04:10:29 UTC 2012" run=5578 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5578.fat 120 Read out 29770228 (29M) of data for run 5578 Taking data with the led on but above the 1 MeV line form the Bi207 source.

24604	Sun Feb 26 20:36:21 2012	rpicker

Notes: Lifetime setup almost ready, UCNB has vacuum problems UCNA Shift Change Checklist Date: February 26, 2012 16:40 Shift Persons: Ruediger, Hasan Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow A-LPM12 open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.65 psia Heater C pressure 12.81 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 287 psia Tungsten Cool ret. 71 psia Tungsten Cool Diff 282 psia 1630 eng. 2 temp. 14.83 K 1630 JT temp. 7.7 K 1630 outlet temp. 279 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.5 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 14.5 K 1410 TE-B 6.6 K 1410 TE-E 95.7 K 1410 supply press. 240 psig 1410 JT press. 140 psig 1410 return press. 3.0 psig 4K dewar pressure 360 mmHg 1K dewar pressure 7.5 psig 4K dewar level 9.5 inHe 1K dewar level 19.6 inHe 4K main flow control 5.4 V LHe temp. 1 5 K Heat exch. temp. 7 212 K Poly temp. 3 176 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature --- C AFP frequency --- MHz AFP forward power --- W SCS LHe level 93.1 % SCS field 0 kG SCS current 0 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.7 torr CC1 pressure 2.1e-5 torr PPM LHe level 81.7 % PPM LN2 level 100 % (level meter broken) AFP LHe level 59.3 % AFP LN2 level 51 % PPM current 72(6) A(T) AFP current 0 A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current): 15 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure vented

East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob knewly aligned actual HV now a little higher) MWPC Trip Hold Status Trip Hold MWPC Pressure vented torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum vented torr DAQ data_raw disk usage 80%

24610	Sun Feb 26 19:14:05 2012	KPH

Chris and I fixed the noise on all the channels by moving from a Phillips Scientific 776 to four Ortec 474 Timing Filter Amplifiers. The settings on each are: Course gain: 4x Fine gain: 12.5 Intergrate: 20 nS Diff: out Non-inv The amps were not really the full problem. The NIM crate itself was noisy. The thresholds can now be lowered quite a bit. They are all now 10 mV but they may need to be adjusted because there is still some 20 mV noise, but not the same ringing as before. > sudo ./autorun -r 5353 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5558... date="Mon Feb 27 02:59:32 UTC 2012" run=5558 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5558.fat 120 Read out 12029712 (12M) of data for run 5558 Closing valve with Teensy... Sleeping for 1 seconds... Starting background run 5559... date="Mon Feb 27 03:01:35 UTC 2012" run=5559 runtime=120 sleep=1 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5559.fat 120 Read out 9799336 (9.4M) of data for run 5559 (repeat)

24609	Sun Feb 26 17:11:22 2012	KPH

Last year's timing filter amps settings for the Muon SCS vetos Course gain: x20 Fine Gain: 12.5 Integrate: 500 Diff: out Input: NON-INV

24602	Sun Feb 26 15:14:50 2012	KPH

Beam down on run 5413. Mark is doing a melt and refreeze. Going to run calibration runs while source is being rebuilt. Inserting Bi207 source. > sudo ./autorun -r 5269 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5414... date="Sun Feb 26 18:46:12 UTC 2012" run=5414 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5414.fat 300 sh: ppoff.exe: not found Read out 178702246 (171M) of data for run 5414 Done. > sudo ./autorun -r 5415 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5415... date="Sun Feb 26 18:56:29 UTC 2012" run=5415 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5415.fat 300 sudo ./autorun -r 5415 -t 300 --loop 10 --type Bi207 File for run 5415 exists: skipping... Starting Bi207 run 5416... date="Sun Feb 26 19:03:04 UTC 2012" run=5416 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5416.fat 300 sh: ppoff.exe: not found Read out 180614912 (173M) of data for run 5416 Done. Starting Bi207 run 5417... date="Sun Feb 26 19:08:04 UTC 2012" run=5417 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5417.fat 300 sh: ppoff.exe: not found Read out 179780460 (172M) of data for run 5417 Done. Starting Bi207 run 5418... date="Sun Feb 26 19:13:04 UTC 2012" run=5418 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5418.fat 300 sh: ppoff.exe: not found Read out 181150500 (173M) of data for run 5418 Done. Starting Bi207 run 5419... date="Sun Feb 26 19:18:04 UTC 2012" run=5419 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5419.fat 300 ^C Retracted Bi207 source. Plugged in LED. > sudo ./autorun -r 5420 -t 120 --loop 1 --type led Starting led run 5420... date="Sun Feb 26 19:30:41 UTC 2012" run=5420 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5420.fat 120 Read out 44413322 (43M) of data for run 5420 Unplugged LED. Restarting UCN runs after melt and refreeze. > sudo ./autorun -r 5421 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5421... date="Sun Feb 26 19:33:35 UTC 2012" run=5421 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5421.fat 120

24601	Sun Feb 26 08:43:46 2012	Andreas Knecht

Notes: Tungsten supply, return, and diff pressures high. heat exchange/poly temps high. UCNA Shift Change Checklist Date: February 26, 2012 09:20 Shift Persons: Dan, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 29 slpm Heater B pressure 13.68 psia Heater C pressure 12.84 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 286.1 psia Tungsten Cool ret. 281.8 psia Tungsten Cool Diff 70.0 psia 1630 eng. 2 temp. 14.84 K 1630 JT temp. 7.54 K 1630 outlet temp. 278 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.5 psig 1630 med. press. stor. 70 psig 1410 engine speed 200 rpm 1410 TE-A 14.6 K 1410 TE-B 6.6 K 1410 TE-E 96.2 K 1410 supply press. 236 psig 1410 JT press. 140 psig 1410 return press. 3.0 psig 4K dewar pressure 390 mmHg 1K dewar pressure 7.0 psig 4K dewar level 9.95 inHe 1K dewar level 31.18 inHe 4K main flow control 5.2

Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature --- C AFP frequency --- MHz AFP forward power --- W SCS LHe level 83.8 % SCS field 0 kG SCS current 0 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.7 torr CC1 pressure 3.5e-5 torr PPM LHe level 81.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 68.4 % AFP LN2 level 74.9 % PPM current 72(6) A(T) AFP current 0 A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current): 14.96 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure vented torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure vented torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24600	Sun Feb 26 08:13:13 2012	KPH

Stopped run. Inserted Bi207 source. > sudo ./autorun -r 5269 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5348... date="Sun Feb 26 16:00:00 UTC 2012" run=5348 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5348.fat 300 sh: ppoff.exe: not found Read out 169779922 (162M) of data for run 5348 Done. Retracted source. Plugged in LED. > sudo ./autorun -r 5349 -t 120 --loop 1 --type led Starting led run 5349... date="Sun Feb 26 16:07:47 UTC 2012" run=5349 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5349.fat 120 sh: ppoff.exe: not found Read out 30992348 (30M) of data for run 5349 Done. Unplugged LED. > sudo ./autorun -r 5349 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 File for run 5349 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5350... date="Sun Feb 26 16:11:00 UTC 2012" run=5350 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5350.fat 120 ...

24598	Sun Feb 26 08:06:26 2012	KPH

Shift summary for last night from Tito and Bryan. Time CC1 bCC GVr bV open bV closed UCNbr br/GVr 21:18 2.3e-5 1.8e-6 230 98(7) 75(6) 23(9) 0.10 22:14 2.3e-5 2.2e-6 226 93(7) 78(6) 15(9) 0.066 23:35 1.6e-6 2.4e-5 154 90(7) 76(6) 14(9) 0.091 00:36

24599	Sun Feb 26 07:57:36 2012	bz

24597	Sun Feb 26 06:51:12 2012	Andreas Knecht

UCNA Shift Change Checklist Date: February 25, 2012 10:30 Shift Persons: Dan, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.70 psia Heater C pressure 12.86 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 283.8 psia Tungsten Cool ret. 68.6 psia Tungsten Cool Diff 280.7 psia 1630 eng. 2 temp. 14.2 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.6 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2.3 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.9 K 1410 TE-E 86.6 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.7 inHe 1K dewar level 13.5 inHe 4K main flow control 5.05 V LHe temp. 1 5.05 K Heat exch. temp. 7 190.9 K Poly temp. 3 66.6 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.4760 MHz AFP forward power -- W SCS LHe level 86.8 % SCS field ramping down kG SCS current --- A AFP N2 dewar level 1/2 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 621.3 torr CC1 pressure 8.2e-6 torr PPM LHe level 82.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 86.3 % AFP LN2 level 76.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: no beam s Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.0 F West MWPC Temperature 70.1 F MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-

East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24596	Sun Feb 26 06:50:48 2012	Andreas Knecht

UCNA Shift Change Checklist Date: February 25, 2012 10:30 Shift Persons: Dan, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.70 psia Heater C pressure 12.86 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 283.8 psia Tungsten Cool ret. 68.6 psia Tungsten Cool Diff 280.7 psia 1630 eng. 2 temp. 14.2 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.6 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2.3 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.9 K 1410 TE-E 86.6 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.7 inHe 1K dewar level 13.5 inHe 4K main flow control 5.05 V LHe temp. 1 5.05 K Heat exch. temp. 7 190.9 K Poly temp. 3 66.6 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.4760 MHz AFP forward power -- W SCS LHe level 86.8 % SCS field ramping down kG SCS current --- A AFP N2 dewar level 1/2 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 621.3 torr CC1 pressure 8.2e-6 torr PPM LHe level 82.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 86.3 % AFP LN2 level 76.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: no beam s Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.0 F West MWPC Temperature 70.1 F MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24588	Sun Feb 26 06:32:57 2012	TIto

The DAQ computer is still running. The DAQ computer does not seem to like sleep time = 0 sec. Sleep time = 1 sec seems to be fine. Kevin: I don't blame it. I don't like zero sleep either!

24595	Sun Feb 26 05:25:11 2012	bz

Running source and LED runs: sudo ./autorun -r 5269 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5270... date="Sun Feb 26 13:14:59 UTC 2012" run=5270 runtime=300 sleep=0 type=Bi207 sudo ./autorun -r 5270 -t 120 --loop 1 --type led Starting led run 5271... date="Sun Feb 26 13:21:49 UTC 2012" run=5271 runtime=120 sleep=0 type=led sudo ./autorun -r 5272 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5272... date="Sun Feb 26 13:24:48 UTC 2012" run=5272 runtime=120 sleep=1 type=ucn

24594	Sun Feb 26 03:21:13 2012	bz

For Dan's tests, the run numbers were as follows: For the long run Dan left on, 1305 for the UCN counters and 1337 for the Ge Detector For the 1 hr decay run (GV closed at beginning), 1306 for the UCN counters and 1338 for the Ge For the remaining background run, 1307 for the UCN counters and 1339 for the Ge

24593	Sun Feb 26 02:31:30 2012	bz

Running source and led runs: sudo ./autorun -r 5187 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5188... date="Sun Feb 26 10:20:49 UTC 2012" run=5188 runtime=300 sleep=0 type=Bi207 sudo ./autorun -r 5188 -t 120 --loop 1 --type led Starting led run 5189... date="Sun Feb 26 10:27:58 UTC 2012" run=5189 runtime=120 sleep=0 type=led Going back to normal runs sudo ./autorun -r 5189 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 date="Sun Feb 26 10:31:13 UTC 2012" run=5190 runtime=120 sleep=1 type=ucn

24592	Sun Feb 26 01:45:29 2012	JCHoagland

UCNA Shift Change Checklist Date: February 26, 2012 00:00 Shift Persons: jeff, bryan Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

Heater B pressure 13.68 psia Heater C pressure 12.84 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 286.8 psia Tungsten Cool ret. 70.3 psia Tungsten Cool Diff 282.0 psia 1630 eng. 2 temp. 14.8 K 1630 JT temp. 7.5 K 1630 outlet temp. 278.4 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 83 psig 1410 engine speed 200 rpm 1410 TE-A 14.9 K 1410 TE-B 6.7 K 1410 TE-E 89.1 K 1410 supply press. 235 psig 1410 JT press. 140 psig 1410 return press. 3.0 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.2 psig 4K dewar level 8.7 inHe 1K dewar level 22.5 inHe 4K main flow control 5.2 V LHe temp. 1 5.1 K Heat exch. temp. 7 203.5 K Poly temp. 3 178.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status ---- AFP temperature --- C AFP frequency ----- MHz AFP forward power -- W SCS LHe level 88.6 % SCS field 0 kG SCS current --- A AFP N2 dewar level 1/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.7 torr CC1 pressure 2.5e-5 torr PPM LHe level 81.9 % PPM LN2 level 100 % (level meter broken) AFP LHe level 78.3 % AFP LN2 level 64.4 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point - degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 268 ns TBCM001I03 (H- source current): 14.9 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24591	Sat Feb 25 23:07:57 2012	TIto

Starting regular data taking starting at run 5098 ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 5097 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 File for run 5097 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5098... date="Sun Feb 26 07:07:00 UTC 2012" run=5098 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5098.fat 120

24590	Sat Feb 25 23:06:45 2012	TIto

LED run ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 5096 -t 120 --loop 1 --type led File for run 5096 exists: skipping... Starting led run 5097... date="Sun Feb 26 07:04:02 UTC 2012" run=5097 runtime=120 sleep=0 type=led fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5097.fat 120 sh: ppoff.exe: not found Read out 30508250 (30M) of data for run 5097 Done.

24589	Sat Feb 25 22:59:08 2012	TIto

Interrupted background run 5095 to do Bi-207 calibration run ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 5095 -t 300 --loop 1 --type Bi207 File for run 5095 exists: skipping... Starting Bi207 run 5096... date="Sun Feb 26 06:56:52 UTC 2012" run=5096 runtime=300 sleep=0 type=Bi207 fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5096.fat 300

24587	Sat Feb 25 22:28:11 2012	TIto

At Kevin's request, changed the sleep time from 5 seconds to 0 seconds starting at run 5065. Then soon after that, the DAQ computer screen froze. It seemed that the DAQ process continued to run. Power cycled the computer. Restarted data taking starting at run 5076 with sleep time = 0 sec. Again the DAQ computer froze. Restarted the DAQ computer. This time, restarted data taking with sleep time of 1 sec. The following command was issued to started the DAQ process: ucnbdaq@ucnbdaq:~/Code/hardware$ sudo ./autorun -r 5079 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 1 DAQ process started with run 5080 File for run 5079 exists: skipping... Opening valve with Teensy... Sleeping for 1 seconds... Starting ucn run 5080... date="Sun Feb 26 06:23:56 UTC 2012" run=5080 runtime=120 sleep=1 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5080.fat 120 sh: ppoff.exe: not found Read out 12693734 (13M) of data for run 5080 Done.

24586	Sat Feb 25 20:54:45 2012	KPH

Stopped run on background. Inserted source. sudo ./autorun -r 5044 -t 300 --loop 1 --type Bi207 Starting Bi207 run 5045... date="Sun Feb 26 04:40:46 UTC 2012" run=5045 runtime=300 sleep=0 type=Bi207 Read out 171091892 (164M) of data for run 5045 retracted source. Plugged in LED. Starting led run 5046... date="Sun Feb 26 04:47:34 UTC 2012" run=5046 runtime=120 sleep=0

Teensy... Sleeping for 5 seconds... Starting ucn run 5047... date="Sun Feb 26 04:50:53 UTC 2012" run=5047 runtime=120 sleep=5 type=ucn fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5047.fat 120 Read out 13499252 (13M) of data for run 5047 Done. sudo ./autorun -r 4902 -t 120 --background 120 --loop 600 --valve --teensy --type ucn --sleep 5 Starting background run 5048... date="Sun Feb 26 04:52:59 UTC 2012" run=5048 runtime=120 sleep=5 type=background fADC ./configUCNb6 /media/UCNb2012/Data/raw/run5048.fat 120 ...

24585	Sat Feb 25 20:13:05 2012	KPH

UCNb checklist: Time Source CC1 Check UCN rate UCNb Mensor gauge UCNb CC1 UCNb rate UCNb HV Ch0 - Ch3 (1200 V, 600 mA) UCNb fADC blinky lights Ch0-Ch3, Ch 7 UCNb DAQ computer UCNb valve is opening and closing Teensy LED

24583	Sat Feb 25 19:24:28 2012	KPH

Stacked lead bricks... Taking data starting with run 4939 sudo ./autorun -r 4902 -t 120 --background 120 --loop 60 --valve --teensy --type ucn --sleep 5 date="Sun Feb 26 00:50:57 UTC 2012" run=4939 length=120 sleep=5 type=ucn bytes=12525822 date="Sun Feb 26 00:53:03 UTC 2012" run=4940 length=120 sleep=5 type=background bytes=10746924 date="Sun Feb 26 00:55:09 UTC 2012" run=4941 length=120 sleep=5 type=ucn bytes=12405238 date="Sun Feb 26 00:57:15 UTC 2012" run=4942 length=120 sleep=5 type=background bytes=10537104 date="Sun Feb 26 00:59:21 UTC 2012" run=4943 length=120 sleep=5 type=ucn bytes=12624654 date="Sun Feb 26 01:01:27 UTC 2012" run=4944 length=120 sleep=5 type=background ...

24584	Sat Feb 25 18:41:37 2012	KPH

Stop runs to do a source calibration run. Inserted the Bi207 source and then ran: sudo ./autorun -r 4985 -t 300 --loop 1 --type Bi207 Starting Bi207 run 4985... date="Sun Feb 26 02:27:58 UTC 2012" run=4985 runtime=300 sleep=0 type=Bi207 Read out 171281154 (164M) of data for run 4985

24581	Sat Feb 25 17:37:13 2012	KPH

Back filled PMT base volumes to 50 torr with CF4. Ran for a while. Noticed the window was popped because we saw He6 again 300 Hz b valve open. 90 Hz b valve closed. Fixed. Rebackfilled. Started taking data @4:50 pm ish Black background, red ucn b valve open.

Attachment 1: 5_0.gif

5_0.gif

24582	Sat Feb 25 16:02:04 2012	rpicker

UCNA Shift Change Checklist Date: February 25, 2012 16:50 Shift Persons: Ruediger Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow 12: open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.70 psia Heater C pressure 12.83 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 288 psia Tungsten Cool ret. 71 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 14.6 K 1630 JT temp. 7.2 K 1630 outlet temp. 278 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 1.6 psig 1630 med. press. stor. 105 psig 1410 engine speed 200 rpm 1410 TE-A 14.4 K 1410 TE-B 6.5 K 1410 TE-E 89 K 1410 supply press. 230 psig 1410 JT press. 135 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.5 psig 4K dewar level 7.3 inHe 1K dewar level 14.75 inHe 4K main flow control 5.2 V LHe temp. 1 5.3 K Heat exch. temp. 7 196 K Poly temp. 3 153 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature off C AFP frequency off MHz AFP forward power -- W SCS LHe level 94.2 % SCS field 0 kG SCS current 0 A AFP N2 dewar level 1/2 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure venting torr CC1 pressure 2.1e-5 torr PPM LHe level 82.1 % PPM LN2 level 100 % (level meter broken) AFP LHe level 88.8 % AFP LN2 level 87 % PPM current 72(6) A(T) AFP current off A(T) AFP chiller sup. pres. off psi AFP chiller flow rate off gph AFP chiller set point off degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 264 ns TBCM001I03 (H- source current): 15 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== off and vented ========== West Detector Cart ========== off and vented Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24580	Sat Feb 25 13:12:19 2012	KPH

Gate valve prescalar test: Gate valve rate does not seem to be prescaled but does seem to

24579	Sat Feb 25 13:01:53 2012	rpicker

Status: - the UCNA detectors and the SCS are vented and off - the detectors are taken out and down - blind flanges are put on the detectors - all windows seemed to be still there... :-) - the decay trap west is covered up by a flange, not vacuum tight, though - the decay trap east is sealed with a blind flange - all valves in the gas panels except GPMV5 are closed - MV8 and 9 are closed => the detectors should be disconnected from the SCS now

24578	Sat Feb 25 09:55:23 2012	Andreas Knecht

UCNA Shift Change Checklist Date: February 25, 2012 10:30 Shift Persons: Dan, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.70 psia Heater C pressure 12.86 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 283.8 psia Tungsten Cool ret. 68.6 psia Tungsten Cool Diff 280.7 psia 1630 eng. 2 temp. 14.2 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.6 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2.3 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.9 K 1410 TE-E 86.6 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.7 inHe 1K dewar level 13.5 inHe 4K main flow control 5.05 V LHe temp. 1 5.05 K Heat exch. temp. 7 190.9 K Poly temp. 3 66.6 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.4760 MHz AFP forward power -- W SCS LHe level 86.8 % SCS field ramping down kG SCS current --- A AFP N2 dewar level 1/2 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 621.3 torr CC1 pressure 8.2e-6 torr PPM LHe level 82.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 86.3 % AFP LN2 level 76.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: no beam s Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.0 F West MWPC Temperature 70.1 F MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure venting torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum venting torr DAQ data_raw disk usage 80%

24577	Sat Feb 25 08:23:05 2012	RRios

24576	Sat Feb 25 04:01:40 2012	JCHoagland

CNA Shift Change Checklist Date: February 25, 2012 12:30 Shift Persons: Jeff, Raymond Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.69 psia Heater C pressure 12.86 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 284.7 psia Tungsten Cool ret. 68.8 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 14.5 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.9 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 2.3 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 7.0 K 1410 TE-E 86.7 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.0 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.4 inHe 1K dewar level 8.3 inHe 4K main flow control 5.2 V LHe temp. 1 5.3 K Heat exch. temp. 7 197.5 K Poly temp. 3 162.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.4760 MHz AFP forward power -- W SCS LHe level 93.3 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 2/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.7 torr CC1 pressure 2.8e-5 torr PPM LHe level 82.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 85.3 % AFP LN2 level 62.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 258 ns TBCM001I03 (H- source current):14.8 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.1 F West MWPC Temperature 71.8 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 0.5 ==========

Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 9.4 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2049 Hz West muon veto rate 3776 Hz Spectrometer vacuum 2.4e-5 torr DAQ data_raw disk usage 80%

24575	Sat Feb 25 00:30:26 2012	RRios

11:11 PM 19961 B1: Background (on) 11:18 PM 19962 B2: Beta Run (on) 12:14 AM 19963 B3: Depol (on to off) 12:21 AM 19964 B4: Background (off) 12:28 AM 19965 B5: Beta Run (off) beam went down

24573	Fri Feb 24 22:36:47 2012	bz

Fri Feb 24 19952 15:50:29 16:57:31 1400.9k Sn source 2.5" out ties down 0 0 0 closed 1.00T 7.00T 6.00T Fri Feb 24 19953 17:02:40 17:17:12 245.8k Sn source background 0 0 0 closed 1.00T 7.00T 6.00T Fri Feb 24 19954 17:19:48 18:35:58 1591.6k Sn source 2.5" out ties up 0 0 0 closed 1.00T 7.00T 6.00T Fri Feb 24 19955 18:39:15 18:56:56 303.5k Sn source background 0 0 0 closed 1.00T 7.00T 6.00T Fri Feb 24 19956 18:59:40 20:18:46 1856.4k Sn source 2.5" out ties down 0 0 0 flapping 1.00T 7.00T 6.00T Fri Feb 24 19957 20:28:09 20:43:18 292.8k Sn source background 0 0 0 flapping 1.00T 7.00T 6.00T Fri Feb 24 19958 20:47:14 21:40:36 1243.3k Sn source 2.5" out ties up 0 0 0 flapping 1.00T 7.00T 6.00T Fri Feb 24 19959 21:51:36 22:17:33 603.3k Sn source 2.5 0 0 0 flapping 1.00T 7.00T 6.00T Fri Feb 24 19960 22:21:07 22:38:05 326.6k Sn source background 0 0 0 flapping 1.00T 7.00T 6.00T Here's the Sn data. The picture is of the side of the Sn source that was facing the West detector when the ties were down. Run 19959 was ties up as well.

Attachment 1: 5_0.gif

5_0.gif

24574	Fri Feb 24 22:36:39 2012	KPH

Tube sparks at 3.8e-4 torr :(

24563	Fri Feb 24 22:32:41 2012	rpicker

Summary of Sn source runs during the day: 1:37 pm 19925 Sn source centered 60 min (cable ties up) 2:41 pm 19926 Sn source retracted 10 min 2:55 pm 19927 Sn source centered 60 min (cable ties down) 3:57 pm 19928 Sn source retracted 10 min 4:11 pm 19929 Sn source centered 60 min (cable ties up) 5:30 pm 19930 Sn source retracted 10 min

24572	Fri Feb 24 20:53:41 2012	bz

noticed that event counter error issues were above the alarm limit tried a kill and restart of the ucna daq no improvement

24567	Fri Feb 24 19:42:34 2012	KPH

Pumpo down procedure for UCNb box: Ensure MV2 is closed Close SV3 Open SV5 Ensure UCNb PE window bypass valve is open Ensure bMV5 and bMV6 are closed Ensure the UCNb turbo valve is closed bMV4 Close UCNb box valve bMV1 Open UCNb PMT backing volume bMV2 Open up the roughing pump valve bMV3 Pump down no more than -4 torr/sec At a few torr, open the UCNb turbo valve Turn on the cc gauge Close UCNb PE window bypass valve

24571	Fri Feb 24 19:32:49 2012	KPH

24565	Fri Feb 24 10:22:25 2012	KPH

Run Summary: Run 4754 - 4768 were UCNA depol runs. Started taking ucn data at 2:22 AM. Run 4772. PMT 1 pulled out again. Stopped at 4998. Venting.

24570	Fri Feb 24 10:22:01 2012	ASaunders

according to the paper log book, the depol runs last night were: time Midas Chris Type Cycles 19:24 19932 1086 P+ 3 19:53 19933 1293 P- 3 20:21 19934 1294 SLD+ 3 20:52 19935 1295 SLD- 5 21:38 19936 1296 SLD+ 4 22:13 19937 1297 SLD- 5 22:59 19938 1298 P- 3 23:26 19939 1299 P+ 3 23:54 19940 1300 SLD+ 5 00:38 19941 1301 SLD- 5

24569	Fri Feb 24 10:10:07 2012	KPH

Data taken with beam off in new MgF2 on PS box: date="Fri Feb 24 13:04:54 UTC 2012" run=4824

```
length=300 sleep=0 type=background bytes=306552 date="Fri Feb 24 13:14:55 UTC 2012" run=4826
length=300 sleep=0 type=background bytes=337722 date="Fri Feb 24 13:19:55 UTC 2012" run=4827
length=300 sleep=0 type=background bytes=311286 date="Fri Feb 24 13:24:55 UTC 2012" run=4828
length=300 sleep=0 type=background bytes=312992 date="Fri Feb 24 13:29:55 UTC 2012" run=4829
length=300 sleep=0 type=background bytes=307782 date="Fri Feb 24 13:34:55 UTC 2012" run=4830
length=300 sleep=0 type=background bytes=310394 date="Fri Feb 24 13:39:55 UTC 2012" run=4831
length=300 sleep=0 type=background bytes=307068 date="Fri Feb 24 13:44:55 UTC 2012" run=4832
length=300 sleep=0 type=background bytes=301384 date="Fri Feb 24 13:49:55 UTC 2012" run=4833
length=300 sleep=0 type=background bytes=325884 date="Fri Feb 24 13:54:55 UTC 2012" run=4834
length=300 sleep=0 type=background bytes=355048 date="Fri Feb 24 13:59:55 UTC 2012" run=4835
length=300 sleep=0 type=background bytes=336040 date="Fri Feb 24 14:04:55 UTC 2012" run=4836
length=300 sleep=0 type=background bytes=321072 date="Fri Feb 24 14:09:55 UTC 2012" run=4837
length=300 sleep=0 type=background bytes=314240 date="Fri Feb 24 14:14:55 UTC 2012" run=4838
length=300 sleep=0 type=background bytes=315174 date="Fri Feb 24 14:19:55 UTC 2012" run=4839
length=300 sleep=0 type=background bytes=325788 date="Fri Feb 24 14:24:55 UTC 2012" run=4840
length=300 sleep=0 type=background bytes=338626 date="Fri Feb 24 14:29:55 UTC 2012" run=4841
length=300 sleep=0 type=background bytes=334916 date="Fri Feb 24 14:34:55 UTC 2012" run=4842
length=300 sleep=0 type=background bytes=313092 date="Fri Feb 24 14:39:55 UTC 2012" run=4843
length=300 sleep=0 type=background bytes=330052 date="Fri Feb 24 14:44:55 UTC 2012" run=4844
length=300 sleep=0 type=background bytes=316072 date="Fri Feb 24 14:49:55 UTC 2012" run=4845
length=300 sleep=0 type=background bytes=362600 date="Fri Feb 24 14:54:55 UTC 2012" run=4846
length=300 sleep=0 type=background bytes=343562 date="Fri Feb 24 14:59:55 UTC 2012" run=4847
length=300 sleep=0 type=background bytes=312978 date="Fri Feb 24 15:04:55 UTC 2012" run=4848
length=300 sleep=0 type=background bytes=323554 date="Fri Feb 24 15:09:55 UTC 2012" run=4849
length=300 sleep=0 type=background bytes=333292 date="Fri Feb 24 15:14:55 UTC 2012" run=4850
length=300 sleep=0 type=background bytes=328158 date="Fri Feb 24 15:19:55 UTC 2012" run=4851
length=300 sleep=0 type=background bytes=660434 date="Fri Feb 24 15:24:55 UTC 2012" run=4852
length=300 sleep=0 type=background bytes=306390 date="Fri Feb 24 15:29:55 UTC 2012" run=4853
length=300 sleep=0 type=background bytes=328794 date="Fri Feb 24 15:34:55 UTC 2012" run=4854
length=300 sleep=0 type=background bytes=308066 date="Fri Feb 24 15:39:55 UTC 2012" run=4855
length=300 sleep=0 type=background bytes=341728 date="Fri Feb 24 15:44:55 UTC 2012" run=4856
length=300 sleep=0 type=background bytes=333204 date="Fri Feb 24 15:49:55 UTC 2012" run=4857
length=300 sleep=0 type=background bytes=293144 date="Fri Feb 24 15:54:55 UTC 2012" run=4858
length=300 sleep=0 type=background bytes=310916 date="Fri Feb 24 15:59:55 UTC 2012" run=4859
length=300 sleep=0 type=background bytes=309090 date="Fri Feb 24 16:04:55 UTC 2012" run=4860
length=300 sleep=0 type=background bytes=302442 date="Fri Feb 24 16:09:55 UTC 2012" run=4861
length=300 sleep=0 type=background bytes=313826 date="Fri Feb 24 16:14:55 UTC 2012" run=4862
length=300 sleep=0 type=background bytes=342946 date="Fri Feb 24 16:19:55 UTC 2012" run=4863
length=300 sleep=0 type=background bytes=317704 date="Fri Feb 24 16:24:55 UTC 2012" run=4864
length=300 sleep=0 type=background bytes=327112 date="Fri Feb 24 16:29:55 UTC 2012" run=4865
length=300 sleep=0 type=background bytes=316296 date="Fri Feb 24 16:34:55 UTC 2012" run=4866
length=300 sleep=0 type=background bytes=313732 date="Fri Feb 24 16:39:55 UTC 2012" run=4867
length=300 sleep=0 type=background bytes=314016 date="Fri Feb 24 16:44:55 UTC 2012" run=4868
length=300 sleep=0 type=background bytes=318412 date="Fri Feb 24 16:49:55 UTC 2012" run=4869
length=300 sleep=0 type=background bytes=313776 date="Fri Feb 24 16:54:55 UTC 2012" run=4870
length=300 sleep=0 type=background bytes=330780 date="Fri Feb 24 16:59:55 UTC 2012" run=4871
length=300 sleep=0 type=background bytes=327610 date="Fri Feb 24 17:04:55 UTC 2012" run=4872
length=300 sleep=0 type=background bytes=301420 date="Fri Feb 24 17:09:55 UTC 2012" run=4873
length=300 sleep=0 type=background bytes=338584 date="Fri Feb 24 17:14:55 UTC 2012" run=4874
length=300 sleep=0 type=background bytes=312248 date="Fri Feb 24 17:19:55 UTC 2012" run=4875
length=300 sleep=0 type=background bytes=327920 date="Fri Feb 24 17:24:55 UTC 2012" run=4876
length=300 sleep=0 type=background bytes=308186 date="Fri Feb 24 17:29:55 UTC 2012" run=4877
length=300 sleep=0 type=background bytes=320046 date="Fri Feb 24 17:34:55 UTC 2012" run=4878
length=300 sleep=0 type=background bytes=306126 date="Fri Feb 24 17:39:55 UTC 2012" run=4879
length=300 sleep=0 type=background bytes=307278 date="Fri Feb 24 17:44:55 UTC 2012" run=4880
length=300 sleep=0 type=background bytes=310122 date="Fri Feb 24 17:49:55 UTC 2012" run=4881
length=300 sleep=0 type=background bytes=333270 date="Fri Feb 24 17:54:55 UTC 2012" run=4882
length=300 sleep=0 type=background bytes=320688 date="Fri Feb 24 17:59:55 UTC 2012" run=4883
length=300 sleep=0 type=background bytes=337034
```

24568	Fri Feb 24 07:40:05 2012	ASaunders

according to the paper log book, the depol runs last night were: time Midas Chris Type Cycles 19:24 19932 1086 P+ 3 19:53 19933 1293 P- 3 20:21 19934 1294 SLD+ 3 20:52 19935 1295 SLD- 5 21:38 19936 1296 SLD+ 4 22:13 19937 1297 SLD- 5 22:59 19938 1298 P- 3 23:26 19939 1299 P+ 3 23:54 19940 1300 SLD+ 5 00:38 19941 1301 SLD- 5

24566	Fri Feb 24 05:03:02 2012	KPH

Starting UCNb run with new MgF2 box on run 4800. Two PMT are not working probably due to our HV open box accident. Run command: sudo ./autorun -r 4769 -t 120 --background 120 --loop 60 --valve --teensy --type ucn --sleep 5 Run until 4811. Realised source was inserted. Retracted. Restarting for the remaining 20 min. Restarting at run 4813. Beam off at 6:00 am. Last run

24564	Fri Feb 24 01:03:19 2012	Andreas Knecht

UCNA Shift Change Checklist Date: February 24, 2012 01:50 Shift Persons: Jeff, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.7 psia Heater C pressure 12.9 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 286.7 psia Tungsten Cool ret. 70.0 psia Tungsten Cool Diff 282.4 psia 1630 eng. 2 temp. 13.6 K 1630 JT temp. 6.8 K 1630 outlet temp. 278.0 K 1630 engine speed 170 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 60 psig 1410 engine speed 174 rpm 1410 TE-A 15.9 K 1410 TE-B 6.7 K 1410 TE-E 86.6 K 1410 supply press. 240 psig 1410 JT press. 145 psig 1410 return press. 3.0 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.3 inHe 1K dewar level 16.8 inHe 4K main flow control 5.4 V LHe temp. 1 4.9 K Heat exch. temp. 7 191.6 K Poly temp. 3 113.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 92.2 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 1/2 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.6 torr CC1 pressure 1.4e-5 torr PPM LHe level 82.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 87.8 % AFP LN2 level 75.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.7 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.8 F West MWPC Temperature 71.5 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2800 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 9.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 3580 Hz West muon veto rate 5605 Hz Spectrometer vacuum 2.1e-5 torr DAQ data_raw disk usage 79%

24562	Fri Feb 24 00:24:19 2012	bz

Polarimetry Time MIDAS Chris Type Cycles Notes 19:24 19932 1086 P+ 3 19:53 19933 1293 P- 3 20:21 19934 1294 SLD+ 3 20:52 19935 1295 SLD- 5 21:38 19936 1296 SLD+ 4 22:13 19937 1297 SLD- 5 22:59 19938 1298 P- 3 23:26 19939 1299 P+ 3 23:54 19940 1300 SLD+ 5 00:38 19941 1301 SLD- 5

24560	Thu Feb 23 23:08:13 2012	Hasan

UCNA Shift Change Checklist Date: February 23, 2012 17:30 Shift Persons: Bryan, Hasan Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 15.15 psia Heater C pressure 14.32 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 288.8 psia Tungsten Cool ret. 72.0 psia Tungsten Cool Diff 282.4 psia 1630 eng. 2 temp. 14.64 K 1630 JT temp. 7.25 K 1630 outlet temp. 265.7 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 225 psig 1630 return press. 2.0 psig 1630 med. press. stor. 65 psig 1410 engine speed 160 rpm 1410 TE-A 16.0 K 1410 TE-B 6.8 K 1410 TE-E 103.1 K 1410 supply press. 250 psig 1410 JT press. 180 psig 1410 return press. 3.4 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 15.02 inHe 1K dewar level 10.38 inHe 4K main flow control 5.4 V LHe temp. 1 4.856 K Heat exch. temp. 7 189.38 K Poly temp. 3 64.147 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 95.9 % SCS field 9.67 kG SCS current 119.0 A AFP N2 dewar level 3/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.7 torr CC1 pressure 7.8e-6 torr PPM LHe level 82.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 95.4 % AFP LN2 level 88.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.8 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.5 F West MWPC Temperature 72.8 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2780 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto

usage 79%

24561	Thu Feb 23 22:45:07 2012	bz

At 23:44, Changed type of run to depol.

24559	Thu Feb 23 17:15:31 2012	KPH

Stacked Pb bricks 3 layers tall on the UCNb platform on three sides. Taking data to look at the background with the beam off. date="Fri Feb 24 01:00:54 UTC 2012" run=4720 length=120 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4720.fat 120 Read out 17557192 (17M) of data for run 4720 Slight reduction in background compared to runs 4476 - 4503

24557	Thu Feb 23 16:07:23 2012	rpicker

Detectors are up and running again. Sn source is 2.5" in, started run 19924 at 12:43 pm but source was sucked in by vacuum. Adjusted position to 2.5" againd and tightened nut at seal. 1:37 pm 19925 Sn source centered

24558	Thu Feb 23 15:11:21 2012	rpicker

Summary of Sn source runs during the day: 1:37 pm 19925 Sn source centered 60 min (cable ties up) 2:41 pm 19926 Sn source retracted 10 min 2:55 pm 19927 Sn source centered 60 min (cable ties down) 3:57 pm 19928 Sn source retracted 10 min 4:11 pm 19929 Sn source centered 60 min (cable ties up)

24556	Thu Feb 23 09:54:26 2012	rpicker

Switcheroo: Starting up the detector again...

24555	Thu Feb 23 06:58:17 2012	rpicker

I am starting the detector shutdown and vent

24552	Thu Feb 23 05:44:19 2012	BMV

Brittney and Hasan 1600-midnight Depol runs Depol Evolution 20:27 19907 1279 DE(45s) + 6 21:19 19908 1280 DE(45s) - 6 22:13 19910 1282 DE(65s) - 6 23:16 19911 1283 DE(65s) + 5 The plan is to do SLD+- runs and P+- runs. If there is time then DE(90s)+- runs If we have 3 hours of beam or more then Beta Runs. Beam until 6am

24554	Thu Feb 23 05:43:59 2012	JCHoagland

time midas chris's type cycles 00:45 19913 1285 SLD+ 5 1:28 19914 1286 SLD- 5 2:11 19915 1287 SLD+ 5 3:08 19917 1289 P- 151s 5 3:52 19918 1290 P+ 151s 6 4:44 19919 1291 P- 151s 6

24553	Thu Feb 23 03:54:05 2012	JCHoagland

UCNA Shift Change Checklist Date: February 23, 2012 1:10 Shift Persons: Jeff, Andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.20 psia Heater C pressure 13.40 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 288.3 psia Tungsten Cool ret. 71.7 psia Tungsten Cool Diff 282.3 psia 1630 eng. 2 temp. 12.1 K 1630 JT temp. 5.8 K 1630 outlet temp. 276.1 K 1630 engine speed 130 rpm 1630 supply press. 235 psig 1630 JT press. 210 psig 1630 return press. 1.0 psig 1630 med. press. stor. 35 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 6.8 K 1410 TE-E 79.3 K 1410 supply press. 245 psig 1410 JT press. 150 psig 1410 return press. 3.1 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.4 inHe 1K dewar level 33.8 inHe 4K main flow control 5.4 V LHe temp. 1 4.7 K Heat exch. temp. 7 205.5 K Poly temp. 3 106.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 9.6 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 92.3 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 4/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.5 torr CC1 pressure 8.3e-6 torr PPM LHe level 82.7 % PPM LN2 level 100 % (level meter broken) AFP LHe level 81.3 % AFP LN2 level 67.5 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.9 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.8 F West MWPC Temperature 73.2 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr

West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 9.3 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1762 Hz West muon veto rate 3521 Hz Spectrometer vacuum 3.1e-5 torr DAQ data_raw disk usage 79%

24551	Wed Feb 22 19:02:01 2012	BMV

22.4mBara Melt and refreeze orange valve closed check valve bypass open 3V source voltage 2V Source voltage 1V Source voltage 198.8mBara 2V 252.7mBara 3V 297.7mBara 3.5V 283.3mBara 4V 125mBara 4.2V 62mBara 4.5V 15mBara closed check valve bypass open orange valve Checked tank pressure, 24mBara so we have most of it in the source.

24542	Wed Feb 22 18:19:19 2012	KPH

Starting Xe run 4547... date="Wed Feb 22 13:35:49 UTC 2012" run=4547 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4547.fat 60 sh: ppoff.exe: not found Read out 213576956 (204M) of data for run 4547 Done. Starting Xe run 4548... date="Wed Feb 22 13:36:49 UTC 2012" run=4548 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4548.fat 60 sh: ppoff.exe: not found Read out 213122022 (204M) of data for run 4548 Done. Starting Xe run 4549... date="Wed Feb 22 13:37:49 UTC 2012" run=4549 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4549.fat 60 sh: ppoff.exe: not found Read out 212054238 (203M) of data for run 4549 Done. Starting Xe run 4550... date="Wed Feb 22 13:38:49 UTC 2012" run=4550 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4550.fat 60 sh: ppoff.exe: not found Read out 213616464 (204M) of data for run 4550 Done. Starting Xe run 4551... date="Wed Feb 22 13:39:49 UTC 2012" run=4551 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4551.fat 60 sh: ppoff.exe: not found Read out 212504434 (203M) of data for run 4551 Done. Starting Xe run 4552... date="Wed Feb 22 13:40:49 UTC 2012" run=4552 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4552.fat 60 sh: ppoff.exe: not found Read out 214580302 (205M) of data for run 4552 Done. Starting Xe run 4553... date="Wed Feb 22 13:41:49 UTC 2012" run=4553 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4553.fat 60 sh: ppoff.exe: not found Read out 214847462 (205M) of data for run 4553 Done. Starting Xe run 4554... date="Wed Feb 22 13:42:49 UTC 2012" run=4554 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4554.fat 60 sh: ppoff.exe: not found Read out 212342294 (203M) of data for run 4554 Done. Starting Xe run 4555... date="Wed Feb 22 13:43:49 UTC 2012" run=4555 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4555.fat 60 sh: ppoff.exe: not found Read out 214346608 (205M) of data for run 4555 Done. Starting Xe run 4556... date="Wed Feb 22 13:44:49 UTC 2012" run=4556 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4556.fat 60 sh: ppoff.exe: not found Read out 214104510 (205M) of data for run 4556 Done. Starting Xe run 4557... date="Wed Feb 22 13:45:49 UTC 2012" run=4557 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4557.fat 60 sh: ppoff.exe: not found Read out 213930956 (205M) of data for run 4557 Done. Starting Xe run 4558... date="Wed Feb 22 13:46:49 UTC 2012" run=4558 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4558.fat 60 sh: ppoff.exe: not found Read out 213296562 (204M) of data for run 4558 Done. Starting Xe run 4559... date="Wed Feb 22 13:47:49 UTC 2012" run=4559 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4559.fat 60 sh: ppoff.exe: not found Read out 214945478 (205M) of data for run 4559 Done. Starting Xe run 4560... date="Wed Feb 22 13:48:49 UTC 2012" run=4560 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4560.fat 60 sh: ppoff.exe: not found Read out 213897192 (204M) of data for run 4560 Done. Starting Xe run 4561... date="Wed Feb 22 13:49:49 UTC 2012" run=4561 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4561.fat 60 sh: ppoff.exe: not found Read out 213699044 (204M) of data for run 4561 Done. Starting Xe run 4562... date="Wed Feb 22 13:50:49 UTC 2012" run=4562 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4562.fat 60 sh: ppoff.exe: not found Read out 214890808 (205M) of data for run 4562 Done. Starting Xe run 4563... date="Wed Feb 22 13:51:49 UTC 2012" run=4563 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4563.fat 60 sh: ppoff.exe: not found Read out 215357056 (206M) of data for run 4563 Done. Starting Xe run 4564... date="Wed Feb 22 13:52:49 UTC 2012" run=4564 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4564.fat 60 sh: ppoff.exe: not found Read out 215687316 (206M) of data for run 4564 Done. Starting Xe run 4565... date="Wed Feb 22 13:53:49 UTC 2012" run=4565 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4565.fat 60 sh: ppoff.exe: not found Read out 216301644 (207M) of data for run 4565 Done. Starting Xe run 4566... date="Wed Feb 22 13:54:49 UTC 2012" run=4566 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4566.fat 60 sh: ppoff.exe: not found Read out 214335892 (205M) of data for run 4566 Done. Starting Xe run 4567... date="Wed Feb 22 13:55:49 UTC 2012" run=4567 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4567.fat 60 sh: ppoff.exe: not found Read out 213987448 (205M) of data for run 4567 Done. Starting Xe run 4568... date="Wed Feb 22 13:56:49 UTC 2012" run=4568 length=60 sleep=0 type=Xe fADC

215722870 (206M) of data for run 4568 Done. Starting Xe run 4569... date="Wed Feb 22 13:57:49 UTC 2012" run=4569 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4569.fat 60 sh: ppoff.exe: not found Read out 214879654 (205M) of data for run 4569 Done. Starting Xe run 4570... date="Wed Feb 22 13:58:49 UTC 2012" run=4570 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4570.fat 60 sh: ppoff.exe: not found Read out 215403804 (206M) of data for run 4570 Done. Starting Xe run 4571... date="Wed Feb 22 13:59:49 UTC 2012" run=4571 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4571.fat 60 sh: ppoff.exe: not found Read out 215644326 (206M) of data for run 4571 Done. Starting Xe run 4572... date="Wed Feb 22 14:00:49 UTC 2012" run=4572 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4572.fat 60 sh: ppoff.exe: not found Read out 215715592 (206M) of data for run 4572 Done. Starting Xe run 4573... date="Wed Feb 22 14:01:49 UTC 2012" run=4573 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4573.fat 60 sh: ppoff.exe: not found Read out 214433900 (205M) of data for run 4573 Done. Starting Xe run 4574... date="Wed Feb 22 14:02:49 UTC 2012" run=4574 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4574.fat 60 sh: ppoff.exe: not found Read out 216599274 (207M) of data for run 4574 Done. Starting Xe run 4575... date="Wed Feb 22 14:03:49 UTC 2012" run=4575 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4575.fat 60 sh: ppoff.exe: not found Read out 215044712 (206M) of data for run 4575 Done. Starting Xe run 4576... date="Wed Feb 22 14:04:49 UTC 2012" run=4576 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4576.fat 60 sh: ppoff.exe: not found Read out 214877898 (205M) of data for run 4576 Done. Starting Xe run 4577... date="Wed Feb 22 14:05:49 UTC 2012" run=4577 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4577.fat 60 sh: ppoff.exe: not found Read out 211926498 (203M) of data for run 4577 Done. Starting Xe run 4578... date="Wed Feb 22 14:06:49 UTC 2012" run=4578 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4578.fat 60 sh: ppoff.exe: not found Read out 213870574 (204M) of data for run 4578 Done. Starting Xe run 4579... date="Wed Feb 22 14:07:49 UTC 2012" run=4579 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4579.fat 60 sh: ppoff.exe: not found Read out 213142390 (204M) of data for run 4579 Done. Starting Xe run 4580... date="Wed Feb 22 14:08:49 UTC 2012" run=4580 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4580.fat 60 sh: ppoff.exe: not found Read out 215615210 (206M) of data for run 4580 Done. Starting Xe run 4581... date="Wed Feb 22 14:09:49 UTC 2012" run=4581 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4581.fat 60 sh: ppoff.exe: not found Read out 216992178 (207M) of data for run 4581 Done. Starting Xe run 4582... date="Wed Feb 22 14:10:49 UTC 2012" run=4582 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4582.fat 60 sh: ppoff.exe: not found Read out 213126888 (204M) of data for run 4582 Done. Starting Xe run 4583... date="Wed Feb 22 14:11:49 UTC 2012" run=4583 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4583.fat 60 sh: ppoff.exe: not found Read out 214092926 (205M) of data for run 4583 Done. Starting Xe run 4584... date="Wed Feb 22 14:12:49 UTC 2012" run=4584 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4584.fat 60 sh: ppoff.exe: not found Read out 214680092 (205M) of data for run 4584 Done. Starting Xe run 4585... date="Wed Feb 22 14:13:49 UTC 2012" run=4585 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4585.fat 60 sh: ppoff.exe: not found Read out 207795068 (199M) of data for run 4585 Done. Starting Xe run 4586... date="Wed Feb 22 14:14:49 UTC 2012" run=4586 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4586.fat 60 sh: ppoff.exe: not found Read out 216214396 (207M) of data for run 4586 Done. Starting Xe run 4587... date="Wed Feb 22 14:15:49 UTC 2012" run=4587 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4587.fat 60 sh: ppoff.exe: not found Read out 202948962 (194M) of data for run 4587 Done. Starting Xe run 4588... date="Wed Feb 22 14:16:49 UTC 2012" run=4588 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4588.fat 60 sh: ppoff.exe: not found Read out 216241706 (207M) of data for run 4588 Done. Starting Xe run 4589... date="Wed Feb 22 14:17:49 UTC 2012" run=4589 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4589.fat 60 sh: ppoff.exe: not found Read out 216152488 (207M) of data for run 4589 Done. Starting Xe run 4590... date="Wed Feb 22 14:18:49 UTC 2012" run=4590 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4590.fat 60 sh: ppoff.exe: not found Read out 215630804 (206M) of data for run 4590 Done. Starting Xe run 4591... date="Wed Feb 22 14:19:49 UTC 2012" run=4591 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4591.fat 60 sh: ppoff.exe: not found Read out 196685864 (188M) of data for run 4591 Done. Starting Xe run 4592... date="Wed Feb 22 14:20:49 UTC 2012" run=4592 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4592.fat 60 sh: ppoff.exe: not found Read out 206452730 (197M) of data for run 4592 Done. Starting Xe run 4593... date="Wed Feb 22 14:21:49 UTC 2012" run=4593 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4593.fat 60 sh: ppoff.exe: not found Read out 201692690 (193M) of data for run 4593 Done. Starting Xe run 4594... date="Wed Feb 22 14:22:49 UTC 2012" run=4594 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4594.fat 60 sh: ppoff.exe: not found Read out 196539356 (188M) of data for run 4594 Done. Starting Xe run 4595... date="Wed Feb 22 14:23:49 UTC 2012" run=4595 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4595.fat 60 sh: ppoff.exe: not found Read out

UTC 2012" run=4596 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4596.fat 60 sh: ppoff.exe: not found Read out 201999636 (193M) of data for run 4596 Done. Starting Xe run 4597... date="Wed Feb 22 14:25:49 UTC 2012" run=4597 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4597.fat 60 sh: ppoff.exe: not found Read out 206496802 (197M) of data for run 4597 Done. Starting Xe run 4598... date="Wed Feb 22 14:26:49 UTC 2012" run=4598 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4598.fat 60 sh: ppoff.exe: not found Read out 202407500 (194M) of data for run 4598 Done. Starting Xe run 4599... date="Wed Feb 22 14:27:49 UTC 2012" run=4599 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4599.fat 60 sh: ppoff.exe: not found Read out 207970422 (199M) of data for run 4599 Done. Starting Xe run 4600... date="Wed Feb 22 14:28:49 UTC 2012" run=4600 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4600.fat 60 sh: ppoff.exe: not found Read out 203273954 (194M) of data for run 4600 Done. Starting Xe run 4601... date="Wed Feb 22 14:29:49 UTC 2012" run=4601 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4601.fat 60 sh: ppoff.exe: not found Read out 204431404 (195M) of data for run 4601 Done. Starting Xe run 4602... date="Wed Feb 22 14:30:49 UTC 2012" run=4602 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4602.fat 60 sh: ppoff.exe: not found Read out 202237866 (193M) of data for run 4602 Done. Starting Xe run 4603... date="Wed Feb 22 14:31:49 UTC 2012" run=4603 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4603.fat 60 sh: ppoff.exe: not found Read out 201456932 (193M) of data for run 4603 Done. Starting Xe run 4604... date="Wed Feb 22 14:32:49 UTC 2012" run=4604 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4604.fat 60 sh: ppoff.exe: not found Read out 215065508 (206M) of data for run 4604 Done. Starting Xe run 4605... date="Wed Feb 22 14:33:49 UTC 2012" run=4605 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4605.fat 60 sh: ppoff.exe: not found Read out 214966268 (206M) of data for run 4605 Done. Starting Xe run 4606... date="Wed Feb 22 14:34:49 UTC 2012" run=4606 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4606.fat 60 sh: ppoff.exe: not found Read out 215202904 (206M) of data for run 4606 Done. Starting Xe run 4607... date="Wed Feb 22 14:35:49 UTC 2012" run=4607 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4607.fat 60 sh: ppoff.exe: not found Read out 217130340 (208M) of data for run 4607 Done. Starting Xe run 4608... date="Wed Feb 22 14:36:49 UTC 2012" run=4608 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4608.fat 60 sh: ppoff.exe: not found Read out 216585324 (207M) of data for run 4608 Done. Starting Xe run 4609... date="Wed Feb 22 14:37:49 UTC 2012" run=4609 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4609.fat 60 sh: ppoff.exe: not found Read out 216670704 (207M) of data for run 4609 Done. Starting Xe run 4610... date="Wed Feb 22 14:38:49 UTC 2012" run=4610 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4610.fat 60 sh: ppoff.exe: not found Read out 216868546 (207M) of data for run 4610 Done. Starting Xe run 4611... date="Wed Feb 22 14:39:49 UTC 2012" run=4611 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4611.fat 60 sh: ppoff.exe: not found Read out 216707658 (207M) of data for run 4611 Done. Starting Xe run 4612... date="Wed Feb 22 14:40:49 UTC 2012" run=4612 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4612.fat 60 sh: ppoff.exe: not found Read out 216194430 (207M) of data for run 4612 Done. Starting Xe run 4613... date="Wed Feb 22 14:41:49 UTC 2012" run=4613 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4613.fat 60 sh: ppoff.exe: not found Read out 215977704 (206M) of data for run 4613 Done. Starting Xe run 4614... date="Wed Feb 22 14:42:49 UTC 2012" run=4614 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4614.fat 60 sh: ppoff.exe: not found Read out 215720756 (206M) of data for run 4614 Done. Starting Xe run 4615... date="Wed Feb 22 14:43:49 UTC 2012" run=4615 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4615.fat 60 sh: ppoff.exe: not found Read out 215152772 (206M) of data for run 4615 Done. Starting Xe run 4616... date="Wed Feb 22 14:44:49 UTC 2012" run=4616 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4616.fat 60 sh: ppoff.exe: not found Read out 214342270 (205M) of data for run 4616 Done. Starting Xe run 4617... date="Wed Feb 22 14:45:49 UTC 2012" run=4617 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4617.fat 60 sh: ppoff.exe: not found Read out 216846492 (207M) of data for run 4617 Done. Starting Xe run 4618... date="Wed Feb 22 14:46:49 UTC 2012" run=4618 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4618.fat 60 sh: ppoff.exe: not found Read out 216815852 (207M) of data for run 4618 Done. Starting Xe run 4619... date="Wed Feb 22 14:47:49 UTC 2012" run=4619 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4619.fat 60 sh: ppoff.exe: not found Read out 214804496 (205M) of data for run 4619 Done. Starting Xe run 4620... date="Wed Feb 22 14:48:49 UTC 2012" run=4620 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4620.fat 60 sh: ppoff.exe: not found Read out 216584680 (207M) of data for run 4620 Done. Starting Xe run 4621... date="Wed Feb 22 14:49:49 UTC 2012" run=4621 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4621.fat 60 sh: ppoff.exe: not found Read out 216130750 (207M) of data for run 4621 Done. Starting Xe run 4622... date="Wed Feb 22 14:50:49 UTC 2012" run=4622 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4622.fat 60 sh: ppoff.exe: not found Read out 216777390 (207M) of data for run 4622 Done. Starting Xe run 4623... date="Wed Feb 22 14:51:49

/media/UCNb2012/Data/raw/run4623.fat 60 sh: ppoff.exe: not found Read out 214424774 (205M) of data for run 4623 Done. Starting Xe run 4624... date="Wed Feb 22 14:52:49 UTC 2012" run=4624 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4624.fat 60 sh: ppoff.exe: not found Read out 217225702 (208M) of data for run 4624 Done. Starting Xe run 4625... date="Wed Feb 22 14:53:49 UTC 2012" run=4625 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4625.fat 60 sh: ppoff.exe: not found Read out 217087424 (208M) of data for run 4625 Done. Starting Xe run 4626... date="Wed Feb 22 14:54:49 UTC 2012" run=4626 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4626.fat 60 sh: ppoff.exe: not found Read out 214996790 (206M) of data for run 4626 Done. Starting Xe run 4627... date="Wed Feb 22 14:55:49 UTC 2012" run=4627 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4627.fat 60 sh: ppoff.exe: not found Read out 216895412 (207M) of data for run 4627 Done. Starting Xe run 4628... date="Wed Feb 22 14:56:49 UTC 2012" run=4628 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4628.fat 60 sh: ppoff.exe: not found Read out 217052416 (207M) of data for run 4628 Done. Starting Xe run 4629... date="Wed Feb 22 14:57:49 UTC 2012" run=4629 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4629.fat 60 sh: ppoff.exe: not found Read out 217139446 (208M) of data for run 4629 Done. Starting Xe run 4630... date="Wed Feb 22 14:58:49 UTC 2012" run=4630 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4630.fat 60 sh: ppoff.exe: not found Read out 216606224 (207M) of data for run 4630 Done. Starting Xe run 4631... date="Wed Feb 22 14:59:49 UTC 2012" run=4631 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4631.fat 60 ^C Changing to more intermittent data taking for Xe.

24550	Wed Feb 22 16:26:51 2012	EIC

midas run 19904 long sn cal run; source facing east

24549	Wed Feb 22 15:59:51 2012	ASaunders

midas run 19903 bg run to go with sn runs sn source pulled well back into cryostat wall

24548	Wed Feb 22 15:40:04 2012	BMV

Brittney VornDick and Hasan 1600 02/22/2012 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.8 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 9.8 kG SCS current 119.0 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 127.2 torr CM5 pressure 2.5 torr CC1 pressure --- torr PPM LHe level 82.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- s Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.1 F West MWPC Temperature 77.1 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 12.2 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 9.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1995 Hz West muon veto rate 3557 Hz Spectrometer vacuum 2.7e-5 torr DAQ data_raw disk usage 79 %

24546	Wed Feb 22 15:24:44 2012	Hasan

UCNA Shift Change Checklist Date: February 22, 2012 00:10 Shift Persons: Brittney, Hasan Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.62 psia Heater C pressure 13.83 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 293.5 psia Tungsten Cool ret. 75.4 psia Tungsten Cool Diff 284.3 psia 1630 eng. 2 temp. 14.35 K 1630 JT temp. 7.05 K 1630 outlet temp. 276.1 K 1630 engine speed 160 rpm 1630 supply press. 250 psig 1630 JT press. 225 psig 1630 return press. 2.2 psig 1630 med. press. stor. 40 psig 1410 engine speed 101 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 78.4 K 1410 supply press. 250 psig 1410 JT press. 200 psig 1410 return press. 3.0 psig 4K dewar pressure 260 mmHg 1K dewar pressure 6.0 psig 4K dewar level 25.48 inHe 1K dewar level 9.63 inHe 4K main flow control 4.5 V LHe temp. 1 6.272 K Heat exch. temp. 7 243.5 K Poly temp. 3 181.44 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8

24547	Wed Feb 22 15:15:23 2012	ASaunders

24544	Wed Feb 22 15:01:47 2012	ASaunders

starting a long run of the tin source only, facing west midas 19899 and following

24545	Wed Feb 22 15:01:20 2012	ASaunders

background run to go with tin runs midas run 19901

24543	Wed Feb 22 09:11:11 2012	KPH

Leak test command: ./autorun -r 4467 -t 10 --loop 1000 --type leaktest --valve --teensy --sleep 20 --test The bolts on the b vavle were all pretty loose. I tightened both the plate bolts and the valve handle bolt which was really loose. The valve did not leak when not moving as expexted but did when cycled so the leak test was performed with the above cycle command. After tightening all five bolts the there was no longer any decerable leak rate. I beleive the bolts loosened over time because there was no loctite. I will find some and apply. Runs 4640 - 4719 are junk

24541	Wed Feb 22 06:31:13 2012	MFMakela

D2 is in the tank Xenon is activated 1410 @ 100 rpm 1630 ~120 rpm may need to run AFP precool to make He for MPS

24540	Wed Feb 22 05:34:56 2012	KPH

Starting background run 4509... date="Wed Feb 22 12:58:13 UTC 2012" run=4509 length=60 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4509.fat 60 sh: ppoff.exe: not found Read out 7715914 (7.4M) of data for run 4509 Done. Starting background run 4510... date="Wed Feb 22 12:59:21 UTC 2012" run=4510 length=60 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4510.fat 60 sh: ppoff.exe: not found Read out 7622366 (7.3M) of data for run 4510 Done. Starting background run 4511... date="Wed Feb 22 13:00:21 UTC 2012" run=4511 length=60 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4511.fat 60 sh: ppoff.exe: not found Read out 7774712 (7.5M) of data for run 4511 Done. Starting background run 4512... date="Wed Feb 22 13:01:21 UTC 2012" run=4512 length=60 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4512.fat 60 sh: ppoff.exe: not found Read out 7772564 (7.5M) of data for run 4512 Done. Starting background run 4513... date="Wed Feb 22 13:02:21 UTC 2012" run=4513 length=60 sleep=0 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4513.fat 60 ^C Bad connection on PMT 1 (connected to scope) Starting Xe run 4523... date="Wed Feb 22 13:11:33 UTC 2012" run=4523 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4523.fat 60 sh: ppoff.exe: not found Read out 8229240 (7.9M) of data for run 4523 Done. Starting Xe run 4524... date="Wed Feb 22 13:12:33 UTC 2012" run=4524 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4524.fat 60 sh: ppoff.exe: not found Read out 8317706 (8.0M) of data for run 4524 Done. Starting Xe run 4525... date="Wed Feb 22 13:13:33 UTC 2012" run=4525 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4525.fat 60 sh: ppoff.exe: not found Read out 8107990 (7.8M) of data for run 4525 Done. Starting Xe run 4526... date="Wed Feb 22 13:14:33 UTC 2012" run=4526 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4526.fat 60 sh: ppoff.exe: not found Read out 8307388 (8.0M) of data for run 4526 Done. Starting Xe run 4527... date="Wed Feb 22 13:15:33 UTC 2012" run=4527 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4527.fat 60 sh: ppoff.exe: not found Read out 8300340 (8.0M) of data for run 4527 Done. Starting Xe run 4528... date="Wed Feb 22 13:16:33 UTC 2012" run=4528 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4528.fat 60 sh: ppoff.exe: not found Read out 7726284 (7.4M) of data for run 4528 Done. Starting Xe run 4529... date="Wed Feb 22 13:17:33 UTC 2012" run=4529 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4529.fat 60 sh: ppoff.exe: not found Read out 7901922 (7.6M) of data for run 4529 Done. Starting Xe run 4530... date="Wed Feb 22 13:18:33 UTC 2012" run=4530 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4530.fat 60 sh: ppoff.exe: not found Read out 7779692 (7.5M) of data for run 4530 Done. Starting Xe run 4531... date="Wed Feb 22 13:19:33 UTC 2012" run=4531 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4531.fat 60 ^C Beam off to send to PRAD Starting Xe run 4532... date="Wed Feb 22 13:20:14 UTC 2012" run=4532 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4532.fat 60 sh: ppoff.exe: not found Read out 7764758 (7.5M) of data for run 4532 Done. Starting Xe run 4533... date="Wed Feb 22 13:21:15 UTC 2012" run=4533 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4533.fat 60 sh: ppoff.exe: not found Read out 7811770 (7.5M) of data for run 4533 Done. Starting Xe run 4534... date="Wed Feb 22 13:22:15 UTC 2012" run=4534 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4534.fat 60 sh: ppoff.exe: not found Read out 7628074 (7.3M) of data for run 4534 Done. Starting Xe run 4535... date="Wed Feb 22 13:23:15 UTC 2012" run=4535 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4535.fat 60 sh:

4536... date="Wed Feb 22 13:24:15 UTC 2012" run=4536 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4536.fat 60 sh: ppoff.exe: not found Read out 7802724 (7.5M) of data for run 4536 Done. Starting Xe run 4537... date="Wed Feb 22 13:25:15 UTC 2012" run=4537 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4537.fat 60 sh: ppoff.exe: not found Read out 10627438 (11M) of data for run 4537 Done. Starting Xe run 4538... date="Wed Feb 22 13:26:15 UTC 2012" run=4538 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4538.fat 60 sh: ppoff.exe: not found Read out 52034094 (50M) of data for run 4538 Done. Starting Xe run 4539... date="Wed Feb 22 13:27:15 UTC 2012" run=4539 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4539.fat 60 sh: ppoff.exe: not found Read out 153281878 (147M) of data for run 4539 Done. Starting Xe run 4540... date="Wed Feb 22 13:28:15 UTC 2012" run=4540 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4540.fat 60 sh: ppoff.exe: not found Read out 212633904 (203M) of data for run 4540 Done. Starting Xe run 4541... date="Wed Feb 22 13:29:15 UTC 2012" run=4541 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4541.fat 60 sh: ppoff.exe: not found Read out 213392680 (204M) of data for run 4541 Done. Starting Xe run 4542... date="Wed Feb 22 13:30:15 UTC 2012" run=4542 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4542.fat 60 sh: ppoff.exe: not found Read out 213797312 (204M) of data for run 4542 Done. Starting Xe run 4543... date="Wed Feb 22 13:31:15 UTC 2012" run=4543 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4543.fat 60 sh: ppoff.exe: not found Read out 212888522 (204M) of data for run 4543 Done. Starting Xe run 4544... date="Wed Feb 22 13:32:15 UTC 2012" run=4544 length=60 sleep=0 type=Xe fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4544.fat 60 ^C Done filling Xe directly from the source. Closed b valve. Decay runs should begin now.

24539	Wed Feb 22 03:21:39 2012	JCHoagland

UCNA Shift Change Checklist Date: February 22, 2012 00:10 Shift Persons: jeff, and andreas Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.05 psia Heater C pressure 13.26 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 291.3 psia Tungsten Cool ret. 74.2 psia Tungsten Cool Diff 282.8 psia 1630 eng. 2 temp. 16.7 K 1630 JT temp. 8.0 K 1630 outlet temp. 279.4 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 2.2 psig 1630 med. press. stor. 50 psig 1410 engine speed 150 rpm 1410 TE-A 15.5 K 1410 TE-B 6.4 K 1410 TE-E 98.7 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 2.9 psig 4K dewar pressure 310 mmHg 1K dewar pressure 6.5 psig 4K dewar level 9.8 inHe 1K dewar level 20.5 inHe 4K main flow control 6.2 V LHe temp. 1 5.0 K Heat exch. temp. 7 196.6 K Poly temp. 3 121.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 95.9 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.6 torr CC1 pressure 1.6e-5 torr PPM LHe level 83.0 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 5 Proton pattern width: 260 ns TBCM001I03 (H- source current):15 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.1 F West MWPC Temperature 75.8 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 9.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1900 Hz West muon veto rate 3482 Hz Spectrometer vacuum 2.8e-5 torr DAQ data_raw disk usage 77 %

24538	Tue Feb 21 23:13:57 2012	BMV

The exciting shift full of wonderful people hosted by Peter and Brittney. Between 4pm and midnight on 02/21/2012 Today has been quite a busy day. It started out with an SCS fill performed by both Bryan and Hasan. They did a beautiful job of filling the SCS inefficiently so to get MPS up. Bryan froze in the source which we then decided to melt and Refreeze. Albert and Andreas learned how to use the load lock and installed the source calibration with Sn, Bi, and Ce. Data will follow. Around 4:30pm, Chris, Peter, Albert, and Andy had a meeting about ILL. During this time Brittney started the source calibration runs. Bryan then suggested that we should perform a melt and refreeze around 5:30pm. So Bryan, Brittney and Peter went up to do a melt and refreeze. As in previous run log. During this time Albert finished the source calibration runs. Raymond and Kevin were working on little b box. Jeff Wang and Dan Salvat chatted about Boron and other snippets of important discoveries waiting for them. Once the

2nd in Poker! We will be rooting for him tomorrow night. Bryan left to have delicious homemade dinner (jealous).Andy took the time to teach Brittney how to fully work the Load lock system instead of just being the reader. Thank you Andy, muchly appreciated. During this time pizza was discussed to Albert's disappointment he really wanted to have Blue Window's enchaladas. While munching on jalapeno and onion pizza, cheese sticks, and pepporoni and sausage pizza which Dan brought in, YAY Dan. Albert kicked Kevin out of his space so he can work on his timing source. So Raymond and Kevin moved into the Counting house. Health Physics showed up because of Albert's radioactive source timing, and so everyone was booted out of the Area (well except for the counting house.) But that is ok because we are taking Depol Evolution Data!, data is below. Chris, your computer keeps telling us that it wants to shutdown and reboot with a Symantec Endpoint Installation. Might happen tonight. Alright, alright, what you all been waiting for..... DATA! Source Calibration Sn, Bi, Ce moving source out 16:38 19853 0.0 16:47 19854 0.5 16:55 19855 1.0 17:04 19856 1.5 17:12 19857 2.0 17:22 19858 2.5 17:32 19859 3.0 17:44 19860 3.5 17:55 19861 4.0 18:10 19862 4.5 18:18 19863 5.0 Depol Evolution 20:18 19865 1271 DE(90s)- 6 21:15 19866 1272 DE(90s)- 6 22:12 19867 1273 DE(90s)+ 5 22:59 19868 1274 DE(90s)+ 6

24537	Tue Feb 21 17:28:46 2012	BMV

Melt and refreeze orange valve closed check valve bypass open 1V source voltage 209.8mBara uped source voltage to 2.6V solid line turning over, 3.4V increase in sourc voltage. 167 mBara nice triple point. increased to 4.5V stale mate at 3.7mBara uped to 5V. closed check valve bypass open orange valve

Attachment 1: 5_0.gif

5_0.gif

24536	Tue Feb 21 16:16:16 2012	BMV

UCNA Shift Change Checklist Date: February 21, 2012 15:50 Shift Persons: BMV, Peter Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.09 psia Heater C pressure 12.31 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 291.9 psia Tungsten Cool ret. 74.8 psia Tungsten Cool Diff 282.9 psia 1630 eng. 2 temp. 15.59 K 1630 JT temp. 7.89 K 1630 outlet temp. 279.1 K 1630 engine speed 165 rpm 1630 supply press. 220 psig 1630 JT press. 185 psig 1630 return press. 1.8 psig 1630 med. press. stor. 50 psig 1410 engine speed 150 rpm 1410 TE-A 15.8 K 1410 TE-B 6.5 K 1410 TE-E 86.2 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 2.2 psig 4K dewar pressure 278 mmHg 1K dewar pressure 6 psig 4K dewar level 16.4 inHe 1K dewar level 18.3 inHe 4K main flow control 4.0 V LHe temp. 1 7.09 K Heat exch. temp. 7 202.3 K Poly temp. 3 74.97 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.7 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 89.4 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 110.2 torr CM5 pressure 2.6 torr CC1 pressure off torr PPM LHe level 83.1 % PPM LN2 level 100 % (level meter broken) AFP LHe level 91.2 % AFP LN2 level 90.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.6 F West MWPC Temperature 75.3 F MWPC Pressure 100.1 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 9.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1747 Hz West muon veto rate 3298 Hz Spectrometer vacuum 2.7e-5 torr DAQ data_raw disk usage 76 %

24535	Tue Feb 21 12:04:36 2012	Andreas Knecht

Continued calibration runs First orientation: down Time Midas distance 11:11 19838 -6.0 Changed orientation: up 11:19 19839 -6.0 11:28 19840 -5.5 11:36 19841 -5.0 11:43 19842 -4.5 11:51 19843 -4.0 11:59 19844 -3.5 12:06 19845 -3.0 12:13 19846 -2.5 12:21 19847 -2.0 12:28 19848 -1.5 12:35 19849 -1.0 12:43 19850 -0.5 12:51 19851 -0.0

24534	Tue Feb 21 10:56:32 2012	Geltenbort

Source still solid and flow still at 8.2! Medium pressure storage approachign 25 psi Decided

24533	Tue Feb 21 10:07:52 2012	Geltenbort

Continued calibration runs First orientation: down Time Midas distance 10:22 19832 -3 10:30 19833 -3.5 10:40 19834 -4 10:47 19835 -4.5 10:54 19836 -5 11:03 19837 -5.5

24532	Tue Feb 21 07:31:41 2012	rpicker

Started Source Calibration Runs Sources holder: 113Cd 114In 109Cd First orientation: Time Midas distance other runs 07:45 19823 all in 0in 07:56 19824 -0.5" 08:04 19825 -1" 08:11 19826 -1.5" 08:18 19827 -2" 08:25 19828 -2.5" long run I really have to go to bed now, please continue from this point on...

24531	Tue Feb 21 05:52:26 2012	JCHoagland

continuing B->A octect chris's 1267 23:34 19807 B11 Depol on->off W/R=0.076923 23:41 19808 B12 Bkg on E=1.113 W=2.645 23:50 19809 A1 Bkg off E=1.173 W=2.757 23:58 19810 A2 Beta off E=13.441 W=15.586 Fe/GV=0.4681 SCS/GV=0.2457 B/GV=1.9985 00:58 19811 A3 Depol off->on W/R=0.038674 1:05 19812 A4 Bkg on E=1.150 W=2.652 1:14 19813 A5 Beta on E=10.731 W=11.242 Fe/GV=0.1185 SCS/GV=0.1829 B/GV=1.4330 2:14 19814 A6 Depol on->off W/R=0.111111 2:21 19815 A7 Beta on E=10.628 W=11.299 Fe/GV=0.1190 SCS/GV=0.1824 B/GV=1.4261 3:21 19816 A8 Depol on->off W/R=0.109375 3:28 19817 A9 Bkg on E=1.088 W=2.740 3:37 19818 A10 Beta off E=14.127 W=16.636 Fe/GV=0.4688 SCS/GV=0.2483 B/GV=1.9804 4:37 19819 A11 Depol off->on W/R=0.032787 4:44 19820 A12 Bkg off E=1.133 W=2.608 other runs time type midas chris's cycles comments 4:53 P+ 151s 19821 1286 4 5:31 P- 151s 19822 1289 1 beam died after one cycle

24530	Tue Feb 21 02:11:19 2012	JCHoagland

continuing B->A octect chris's 1267 23:34 19807 B11 Depol on->off W/R=0.076923 23:41 19808 B12 Bkg on E=1.113 W=2.645 23:50 19809 A1 Bkg off E=1.173 W=2.757 23:58 19810 A2 Beta off E=13.441 W=15.586 Fe/GV=0.4681 SCS/GV=0.2457 B/GV=1.9985 00:58 19811 A3 Depol off->on W/R=0.038674 1:05 19812 A4 Bkg on E=1.150 W=2.652 1:14 19813 A5 Beta on E=10.731 W=11.242 Fe/GV=0.1185 SCS/GV=0.1829 B/GV=1.4330 2:14 19814 A6 Depol on->off W/R=0.111111 2:21 19815 A7 Beta on

24529	Tue Feb 21 01:50:30 2012	BMV

Another day and a life of shifts at LANL this time your hosts are... Jeff W. and Brittney 1600-midnight 02/20/2012 Data B->A 60min beta 8min bkg Chris's daq 1267 1544 19796 B1 Bkg on E=1.191 W=2.41 1553 19797 B2 Beta on E=10.47 W=10.65 Fe/GV=0.117 SCS/GV=0.184 E+W/GV=1.396 1653 19798 B3 Depol on->off W/R=0.0735+-0.034 1758 19799 B4 Bkg Off E=1.191 W=2.489 2007 19801 B5 Beta off E=14.176 W=18.306 Fe/GV=0.4705 SCS/GV=0.2515 E+W/GV=2.089 2107 19802 B6 Depol off->on W/R=0.0278+-0.0126 2114 19803 B7 Beta off E=13.762 W=17.193 Fe/Gv=0.4685 SCS/GV=0.2499 E+W/GV=2.0535 2214 19804 B8 Depol off->on W/R=0.038674+-0.014897 2221 19805 B9 Bkg Off E=1.176 W=2.659 2234 19806 B10 Beta On E=9.435 W=9.964 Fe/GV=0.1168 SCS/GV=0.1821 E+W/GV=1.4634 So around 6:30pm we decided to fill the SCS because the medium pressure storage was at 26psi. So Jeff Wang and I started the fill procedure. I then saw that the 1630 pressure was at zero actually past zero. I then closed the green valve bypass because Friday and Saturday it was closed. Well it went up to 2psi. I checked on the source and the pressure was climbing. I turned up source and finally got it to stop going up. It reached 200mBar and temp was at 27K. EEKK. I also opened the green arrow. Of course the return pressure went back to below zero. Massive call to Mark, Raymond and Andy. Andy came in. Since I popped the check vavle and it did not close back. It was really nice to have Andy there, Thank you Andy. Before Andy got there I played with the needle valve to get the pressure up and when I got to 1.2psi the pressure in the source began to rise again. So then I backed down the source flow, by small steps to get it back to 8.2V the original flow. In hopes this help with increasing the return pressure. Then went to 1630 to play with the bypass valve again to try to get it up higher. Andy showed up YAY!! and just in time. The SCS pressure was at 4psi and we finished the fill together and he played with the return pressure. We also pressurized the 1410 return pressure because it was also at below zero and the 1K dewar was scarily low. Can we please have a better fill procedure or just fix the MPS... hopefully the MPS will fix it... but it was unnerving to have the 1630 return pressure at 1.2psi and the source started to rise. It even did it when Andy was here. So I talked to Jeff when he came in and he says that he thought we were running with the green valve open but I do not remember that. I do know that we started SCS fills before the midnight crew and the midnight crew thought the green valve was open because it was suppose to it. I remember with the SCS fills that I had to open both bypasses because I could not get the return pressure to stop pushing off. I think it is time to go to bed.

24519	Tue Feb 21 00:55:23 2012	JCHoagland

UCNA Shift Change Checklist Date: February 20, 2012 00:00 Shift Persons: jeff, ruediger Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 14.35 psia Heater C pressure 13.50 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 294.0 psia Tungsten Cool ret. 77.5 psia Tungsten Cool Diff 285.3 psia 1630 eng. 2 temp. 13.2 K 1630 JT temp. 7.0 K 1630 outlet temp. 271.9 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 2.0 psig 1630 med. press. stor. 45 psig 1410 engine speed 175 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 100.6 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.4 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.7 inHe 1K dewar level 18.7 inHe 4K main flow control 8.0 V LHe temp. 1 5.0 K Heat exch. temp. 7 209.3 K Poly temp. 3 182.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.3 torr CC1 pressure 1.6e-5 torr PPM LHe level 83.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 85.7 % AFP LN2 level 71.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 267 ns TBCM001I03 (H- source current):14.84 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.3 F West MWPC Temperature 74.8 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 12.3 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3816 Hz West muon veto rate 11078 Hz Spectrometer vacuum 2.7e-5 torr DAQ data_raw disk usage 75 %

24528	Tue Feb 21 00:54:53 2012	rpicker

UCNA Shift Change Checklist Date: February 21, 2012 1:00 Shift Persons: Jeff, Ruediger Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 14.26 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 292 psia Tungsten Cool ret. 75 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 13.9 K 1630 JT temp. 7.9 K 1630 outlet temp. 273 K 1630 engine speed 140 rpm 1630 supply press. 235 psig 1630 JT press. 190 psig 1630 return press. 2 psig 1630 med. press. stor. 50 psig 1410 engine speed 149 rpm 1410 TE-A 16.9 K 1410 TE-B 7.3 K 1410 TE-E 89.5 K 1410 supply press. 250 psig 1410 JT press. 175 psig 1410 return press. 3 psig 4K dewar pressure 280 mmHg 1K dewar pressure 6 psig 4K dewar level 15.4 inHe 1K dewar level 15.3 inHe 4K main flow control 8 V LHe temp. 1 5.1 K Heat exch. temp. 7 216 K Poly temp. 3 195 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 95.4 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.5 torr CC1 pressure 9.9e-6 torr PPM LHe level 83.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 88 % AFP LN2 level 65 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 263 ns TBCM001I03 (H- source current):14.8 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.3 F West MWPC Temperature 73.7 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2320 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 9.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1915 Hz West muon veto rate 3675 Hz Spectrometer vacuum 2.2e-5 torr DAQ data_raw disk usage 76 %

24527	Mon Feb 20 16:55:45 2012	ARYoung

UCNA Shift Change Checklist Date: February 20, 2012 16:00 Shift Persons: Brittney, Jeff, Albert Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.4 psia Heater C pressure 12.6 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 294.3 psia Tungsten Cool ret. 76.1 psia Tungsten Cool Diff 284.1 psia 1630 eng. 2 temp. 12.71 K 1630 JT temp. 6.72 K 1630 outlet

1630 return press. 0.8 psig 1630 med. press. stor. 30 psig 1410 engine speed 175 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 97.2 K 1410 supply press. 242 psig 1410 JT press. 145 psig 1410 return press. 2.7 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7 psig 4K dewar level 14.5 inHe 1K dewar level 25.5 inHe 4K main flow control 8.2 V LHe temp. 1 5.03 K Heat exch. temp. 7 208.7 K Poly temp. 3 191.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 85.8 % SCS field 9.5 kG SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.5 torr CC1 pressure 9.6e-6 torr PPM LHe level 83.1 % PPM LN2 level 100 % (level meter broken) AFP LHe level 96.5 % AFP LN2 level 93.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.94 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.5 F West MWPC Temperature 73.5 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 9.6 slpm West PMT Buck. Curr. .40 A West Back. Veto Buck. .25 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1980 Hz West muon veto rate 3761 Hz Spectrometer vacuum 2.2e-5 torr DAQ data_raw disk usage 75 %

24524	Mon Feb 20 15:04:31 2012	RRios

Asymmetry looks off on four of the runs

Attachment 1: 1_8.gif

1_8.gif

24526	Mon Feb 20 14:58:50 2012	RRios

Attachment 1: 3_8.gif

3_8.gif

24523	Mon Feb 20 14:55:34 2012	RRios

6:38 AM 19773 A5: Beta Run (on) E=10.564 W=11.102 Fe/GV=0.117 SCS/GV=0.182 E+W/GV=1.415 7:38 AM 19774 A6: Depol (on to off) W/R=0.1698 8:06 AM 19778 A7: Beta Run (on) E=10.682 W=11.581 Fe/GV=0.119 SCS/GV=0.184 E+W/GV=0.462 9:06 AM 19779 A8: Depol (on to off) W/R=0.1094 9:13 AM 19780 A9: Background (on) E=1.309 W=4.040 9:21 AM 19781 A10: Beta Run (off) E=14.401 W=18.389 Fe/GV=0.468 SCS/GV=0.248 E+W/GV=2.113 10:22AM 19782 A11: Depol (off to on) W/R=0.0513 10:29AM 19783 A12: Background (off) E=1.382 W=4.246 10:37AM 19784 B1: Background (on) E=1.382 W=4.349 10:46AM 19785 B2: Beta Run (on) E=10.719 W=12.128 Fe/GV=0.117 SCS/GV=0.184 E+W/GV=1.507 11:47AM 19786 B3: Depol (on to off) W/R=0.1467 11:54AM 19787 B4: Background (off) E=1.238 W=3.436 12:04PM 19788 B5: Beta Run (off) E=13.555 W=16.845 Fe/GV=0.476 SCS/GV=0.251 E+W/GV=2.038 01:04PM 19789 B6: Depol (off to on) W/R=0.0380 01:11PM 19790 B7: Beta Run (off) E=13.814 W=16.880 Fe/GV=0.469 SCS/GV=0.252 E+W/GV=2.027 02:12PM 19791 B8: Depol (off to on) W/R=0.02286 02:19PM 19792 B9: Background (off) E=1.227 W=2.398 02:27PM 19793 B10: Beta Run (on) E=10.394 W=10.557 Fe/GV=0.119 SCS/GV=0.180 E+W/GV=1.404 03:27PM 19794 B11: Depol (on to off) W/R=0.1231 03:34PM 19795 B12: Background (on) E=1.185 W=2.325

24525	Mon Feb 20 14:55:26 2012	RRios

Attachment 1: 2_7.gif

2_7.gif

24522	Mon Feb 20 11:39:31 2012	Geltenbort

UCNA Shift Change Checklist Date: February 20, 2012 08:00 Shift Persons: Raymond, Peter Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.66 psia Heater C pressure 12.90 psia Tungsten supply press. 100 psig Compressor 1 On on Graphite supply press. --- psig

Diff 282.6 psia 1630 eng. 2 temp. 13.35 K 1630 JT temp. 7.01 K 1630 outlet temp. 270.6 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.8 psig 1630 med. press. stor. 35 psig 1410 engine speed 174 rpm 1410 TE-A 15.6 K 1410 TE-B 6.6 K 1410 TE-E 92.1 K 1410 supply press. 240 psig 1410 JT press. 147 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.2 psig 4K dewar level 13.2 inHe 1K dewar level 22.4 inHe 4K main flow control 8.2 V LHe temp. 1 5.098 K Heat exch. temp. 7 207.2 K Poly temp. 3 186.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.4760 MHz AFP forward power 38 W SCS LHe level 92.2 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.5 torr CC1 pressure 9.7e-6 torr PPM LHe level 83.2 % PPM LN2 level 100 % (level meter broken) AFP LHe level 89.6 % AFP LN2 level 80.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 270 ns TBCM001I03 (H- source current):14.7 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.8 F West MWPC Temperature 72.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 12.4 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2046 Hz West muon veto rate 3873 Hz Spectrometer vacuum 2.5e-5 torr DAQ data_raw disk usage 76 %

24462	Mon Feb 20 10:42:53 2012	KPH

Things to do: > Assemble CaF2 box 5/6 done. > Get Arduio to trigger b valve done. - get Arduino to write TTL out done. - fix autorun script to write to Arduino done. > Assemble optics box half done. > Label cables done. > Connect up Photodiode electronics > Pull in gate valve monitor into fADC > Assemble MgF2 on PS box > Assemble lead walls and bricks > Assemble MgO on PS box (if there is time) Things to Measure: > Measure Bi207 and Sn113 coincidence > New plastic box - UCN/background - Comptons from Co60 and Cs137 - Hydrogen capture - Xe? > CaF2 - UCN/background - Comptons from Co60 and Cs137 - Xe? - DPS top - MgF2 on polystyrene top

24511	Mon Feb 20 10:29:08 2012	KPH

UCNb ball valve problems: The source pressure spikes when the ball valve CLOSES. My best guess for why this is happening is that the ball is pushing the valve plates open. This would let in outside air into the volume bleow the HDPE window and above the ball. The first puff is probably caused by trapped gas in ball itself. We should add a vent on the b box side to fix this problem.

Attachment 1: blem_1.GIF

blem_1.GIF

24521	Mon Feb 20 07:07:43 2012	JCHoagland

Attachment 1: s

24520	Mon Feb 20 05:46:50 2012	JCHoagland

finishing chris's 1265 12:11 19757 B1 Bkg on E=1.268 W=3.547 12:19 19758 B2 Beta on E=10.358 W=12.275 Fe/GV=0.1149 SCS/GV=0.1795 B/GV=1.4957 1:20 19759 B3 Depol on->off W/R=0.126984 1:27 19760 B4 Bkg off E=1.239 W=4.797 1:35 19761 B5 Beta off E=11.542 W=1.210 Fe/GV=0.4801 SCS/GV=0.2508 B/GV=2.2555 2:35 19762 B6 Depol off->on W/R=0.025641 2:42 19763 B7 Beta off E=13.948 W=19.109 Fe/GV=0.4713 SCS/GV=0.2496 B/GV=2.1569 3:42 19764 B8 Depol off->on W/R=0.010000 3:50 19765 B9 Bkg off E=1.177 W=5.335 3:58 19767 B10 Beta on E=10.555 W=14.453 Fe/GV=0.1170 SCS/GV=0.1860 B/GV=1.6568 4:58 19768 B11 Depol on->off W/R=0.136364 5:05 19768 B12 Bkg on E=1.168 W=6.404 A->B 60min beta 8min bkg chris's 1266 5:14 19769 A1 Bkg off E=1.190 W=3.033 5:22 19770 A2 Beta off E=13.901 W=16.537 Fe/Gv=0.4658 SCS/GV=0.2466 B/GV=1.9872 6:22 19771 A3 Depol off->on W/R=0.052023 6:29 19772 A4 Bkg on E=1.265 W=2.622

24515	Sun Feb 19 23:14:58 2012	Geltenbort

18:31 A->B octet 60 min beta; 8 min bkg; Chris'DAQ 1265 18:31 19744 A1 Bkg off E=1.18 W=2.26 18:39 19745 A2 Beta off E=11.3 W=13.2 Fe/GV=0.478 SCS/GV=0.246 E+W/GV=1.97 19:39 19746 A3 Depol off->on W/R=0.045 20:24 19748 A4 Bkg on E=1.18 W=2.42 20:32 19749 A5 Beta on E=11.1 W=11.4 Fe/GV=0.118 SCS/GV=0.183 E+W/GV=1.41 21:33 19750 A6 Depol on->off W/R=0.143 21:40 19751

W/R=0.169 22:47 19753 A9 Bkg on E=1.324 W=3.329 22:55 19754 A10 Beta on E=14.1 W=18.0 Fe/GV=0.47 SCS/GV=0.245 E+W/GV=1.44 23:56 19755 A11 Depol off->on W/R=0.031 24:03 19756 A12 Bkg off E=1.260 W=3.700

24518	Sun Feb 19 22:19:57 2012	ASaunders

Attachment 1: 3_7.gif

3_7.gif

24517	Sun Feb 19 22:19:39 2012	ASaunders

Attachment 1: 2_6.gif

2_6.gif

24516	Sun Feb 19 22:19:18 2012	ASaunders

asym summary plot

Attachment 1: 1_7.gif

1_7.gif

24514	Sun Feb 19 19:36:56 2012	ASaunders

the air leaks into the sopurce through the little b ball valve caused a drop in the uCN rate. here is a plot showing the drop, and the recovery caused by a quick melt and refreeze (presumably moving ther solid air from the d2 surface to the guide walls).

Attachment 1: p

24513	Sun Feb 19 18:19:46 2012	Geltenbort

run summary previous shift 08:01 19719 A1 Bkg off E=1.136 W=2.977 08:09 19720 A2 Beta off E=12.822 W=15.156 Fe/GV=0.475 SCS/GV=0.25 E+W/GV=2.04 09:09 19721 A3 Depol off->on 09:16 19722 A4 Bkg on E=1.164 W=1.253 09:24 19723 A5 Beta on E=10.584 W=9.621 Fe/GV=0.1189 SCS/GV=0.1848 E+W/GV=1.33 10:25 19724 A6 Depol on->off 10:32 19725 A7 Beta on E=10.594 W=9.624 Fe/GV=0.1189 SCS/GV=0.1837 E+W/GV=1.3406 11:32 17926 A8 Depol on->off 11:39 19727 A9 Bkg on E=1.261 W=1.161 11:50 19728 A10 Beta off E=13.943 W=14.695 Fe/GV=0.4641 SCS/GV=0.2511 E+W/GV=1.8864 12:50 19729 A11 Depol off->on 12:57 19730 A12 Bkg off E=1.304 W=1.129 13:05 19731 B1 Bkg on E=1.185 W=1.245 13:13 19732 B2 Beta on E=10.558 W=9.542 Fe/GV=0.1181 SCS/GV=0.1847 E+W/GV=1.3441 14:14 19733 B3 Depol on->off 14:21 19734 B4 Bkg off E=1.259 W=1.205 14:29 19735 B5 Beta off E=12.155 W=12.720 Fe/GV=0.4782 SCS/GV=0.2513 E+W/GV=1.92 15:39 19737 B6 Depol off->on W/R=0.02958 15:48 19738 B7 Beta off E=11.556 W=12.267 Fe/GV=0.4676 SCS/GV=0.2483 E+W/GV=1.8831 16:48 19739 B8 Depol off->on W/R=0.01923 16:55 19740 B9 Bkg off E=1.111 W=2.643 17:04 19741 B10 Beta on E=8.4 W=8.7 Fe/GV=0.114 SCS/GV=0.181 E+W/GV=1.42 18:04 19742 B11 Depol on->off W/R=0.040 18:11 19743 B12 Bkg on E=1.214 W=2.316

24512	Sun Feb 19 17:29:40 2012	EIC

Sun Feb 19 19728 11:50:04 12:50:16 1303.5k A10: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19729 12:50:24 12:57:16 124.7k A11: Depol (off to on) 0 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19730 12:57:22 13:05:33 158.6k A12: Background (off) 0 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19731 13:05:41 13:13:50 159.4k B1: Background (on) 1 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19732 13:13:59 14:14:10 1247.8k B2: Beta Run (on) 1 1 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19733 14:14:17 14:21:09 121.7k B3: Depol (on to off) 1 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19734 14:21:16 14:29:27 160.1k B4: Background (off) 0 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19735 14:29:35 15:29:44 1278.3k B5: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19736 15:29:53 15:35:10 93.2k B6: Depol (off to on) 0 0 0 Flapping 1.00T 7.00T 6.00T Sun Feb 19 19737 15:39:41 15:47:01 132.7k B6: Depol (off to on) 0 0 0 Flapping 1.00T 7.00T 6.00T

24509	Sun Feb 19 16:42:39 2012	ASaunders

UCNA Shift Change Checklist Date: February 19, 2012 16:00 Shift Persons: Saunders, Geltenbort Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 14.1 psia Heater C pressure 13.2 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297 psia Tungsten Cool ret. 79 psia Tungsten

engine speed 132 rpm 1630 supply press. 248 psig 1630 JT press. 210 psig 1630 return press. 2. psig 1630 med. press. stor. 35 psig 1410 engine speed 150 rpm 1410 TE-A 16.6 K 1410 TE-B 6.9 K 1410 TE-E 89.4 K 1410 supply press. 245 psig 1410 JT press. 144 psig 1410 return press. 3 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.2 psig 4K dewar level 10.7 inHe 1K dewar level 31.6 inHe 4K main flow control 8.1 V LHe temp. 1 5.0 K Heat exch. temp. 7 218 K Poly temp. 3 187 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 9.6 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 89.7 % SCS field 9.64 kG SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.4 torr CC1 pressure 2.2e-5 torr PPM LHe level 83.3 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 98.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.9 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.6 F West MWPC Temperature 75.8 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 12.1 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 9.4 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 3696 Hz West muon veto rate 5897 Hz Spectrometer vacuum 2.2e-5 torr DAQ data_raw disk usage 75 %

24510	Sun Feb 19 15:15:44 2012	KPH

run summary: Alternating every 120s + 5s Run log: date="Sun Feb 19 21:55:32 UTC 2012" run=4476 length=120 sleep=5 type=ucn bytes=21898394 date="Sun Feb 19 21:57:39 UTC 2012" run=4477 length=120 sleep=5 type=background bytes=20799782 date="Sun Feb 19 21:59:45 UTC 2012" run=4478 length=120 sleep=5 type=ucn bytes=21823568 date="Sun Feb 19 22:01:51 UTC 2012" run=4479 length=120 sleep=5 type=background bytes=20832394 date="Sun Feb 19 22:03:57 UTC 2012" run=4480 length=120 sleep=5 type=ucn bytes=21873184 date="Sun Feb 19 22:06:03 UTC 2012" run=4481 length=120 sleep=5 type=background bytes=20800930 date="Sun Feb 19 22:08:09 UTC 2012" run=4482 length=120 sleep=5 type=ucn bytes=21911034 date="Sun Feb 19 22:10:15 UTC 2012" run=4483 length=120 sleep=5 type=background bytes=20842630 date="Sun Feb 19 22:12:21 UTC 2012" run=4484 length=120 sleep=5 type=ucn bytes=22029978 date="Sun Feb 19 22:14:27 UTC 2012" run=4485 length=120 sleep=5 type=background bytes=21281258 date="Sun Feb 19 22:16:33 UTC 2012" run=4486 length=120 sleep=5 type=ucn bytes=22530270 date="Sun Feb 19 22:18:39 UTC 2012" run=4487 length=120 sleep=5 type=background bytes=21162226 date="Sun Feb 19 22:20:45 UTC 2012" run=4488 length=120 sleep=5 type=ucn bytes=22407642 date="Sun Feb 19 22:22:51 UTC 2012" run=4489 length=120 sleep=5 type=background bytes=20848810 date="Sun Feb 19 22:24:57 UTC 2012" run=4490 length=120 sleep=5 type=ucn bytes=20887924 date="Sun Feb 19 22:27:03 UTC 2012" run=4491 length=120 sleep=5 type=background bytes=21034518 date="Sun Feb 19 22:29:09 UTC 2012" run=4492 length=120 sleep=5 type=ucn bytes=21327266 date="Sun Feb 19 22:31:15 UTC 2012" run=4493 length=120 sleep=5 type=background bytes=19264186 date="Sun Feb 19 22:33:21 UTC 2012" run=4494 length=120 sleep=5 type=ucn bytes=18573718 date="Sun Feb 19 22:35:27 UTC 2012" run=4495 length=120 sleep=5 type=background bytes=18817576 date="Sun Feb 19 22:37:33 UTC 2012" run=4496 length=120 sleep=5 type=ucn bytes=20679822 date="Sun Feb 19 22:39:39 UTC 2012" run=4497 length=120 sleep=5 type=background bytes=19136824 date="Sun Feb 19 22:41:45 UTC 2012" run=4498 length=120 sleep=5 type=ucn bytes=17965738 date="Sun Feb 19 22:43:51 UTC 2012" run=4499 length=120 sleep=5 type=background bytes=17574342 date="Sun Feb 19 22:45:57 UTC 2012" run=4500 length=120 sleep=5 type=ucn bytes=18812474 date="Sun Feb 19 22:48:03 UTC 2012" run=4501 length=120 sleep=5 type=background bytes=18904870 date="Sun Feb 19 22:50:09 UTC 2012" run=4502 length=120 sleep=5 type=ucn bytes=20478742 date="Sun Feb 19 22:52:15 UTC 2012" run=4503 length=120 sleep=5 type=background bytes=19463498 date="Sun Feb 19 22:54:21 UTC 2012" run=4504 length=120 sleep=5 type=ucn bytes=20066910

24508	Sun Feb 19 13:57:05 2012	KPH

Run summary: Taking 120s runs and background during UCNA running for next 10 hrs.

24507	Sun Feb 19 13:56:56 2012	KPH

Run summary: Using autorun to open and close b valve while UCNA takes data. At the moment, can't tell if H-GX is on or if a depol or UCNA background run is running. Practice for next 10 hrs... Run log: date="Sun Feb 19 21:25:08 UTC 2012" run=4472 length=60 sleep=5 type=ucn bytes=10605870 date="Sun Feb 19 21:26:14 UTC 2012" run=4473 length=60 sleep=5 type=background bytes=9954234 date="Sun Feb 19 21:27:20 UTC 2012" run=4474 length=60 sleep=5 type=ucn bytes=10823320 date="Sun Feb 19 21:28:26 UTC 2012" run=4475 length=60 sleep=5 type=background bytes=9985242 Json summary: { "date":"Sun Feb 19 21:25:08 UTC 2012", "run":4472, "type":"ucn", "length":60, "sleep":5 }, { "date":"Sun Feb 19 21:26:14 UTC 2012", "run":4473,

"run":4474, "type":"ucn", "length":60, "sleep":5 }, { "date":"Sun Feb 19 21:28:26 UTC 2012", "run":4475, "type":"background", "length":60, "sleep":5 },

24506	Sun Feb 19 13:22:08 2012	KPH

Run summary: Opening valve with Teensy... Sleeping for 5 seconds... Starting ucn run 4468... date="Sun Feb 19 21:03:02 UTC 2012" run=4468 length=60 sleep=5 type=ucn fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4468.fat 60 sh: ppoff.exe: not found Read out 10709590 (11M) of data for run 4468 Done. Closing valve with Teensy... Sleeping for 5 seconds... Starting background run 4469... date="Sun Feb 19 21:04:08 UTC 2012" run=4469 length=60 sleep=5 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4469.fat 60 sh: ppoff.exe: not found Read out 10519916 (11M) of data for run 4469 Done. Opening valve with Teensy... Sleeping for 5 seconds... Starting ucn run 4470... date="Sun Feb 19 21:05:14 UTC 2012" run=4470 length=60 sleep=5 type=ucn fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4470.fat 60 sh: ppoff.exe: not found Read out 10865920 (11M) of data for run 4470 Done. Closing valve with Teensy... Sleeping for 5 seconds... Starting background run 4471... date="Sun Feb 19 21:06:20 UTC 2012" run=4471 length=60 sleep=5 type=background fADC ./configUCNb5 /media/UCNb2012/Data/raw/run4471.fat 60 sh: ppoff.exe: not found Read out 10395094 (10M) of data for run 4471 Done. Json summary: { "date":"Sun Feb 19 21:03:02 UTC 2012", "run":4468, "type":"ucn", "length":60, "sleep":5 }, { "date":"Sun Feb 19 21:04:08 UTC 2012", "run":4469, "type":"background", "length":60, "sleep":5 }, { "date":"Sun Feb 19 21:05:14 UTC 2012", "run":4470, "type":"ucn", "length":60, "sleep":5 }, { "date":"Sun Feb 19 21:06:20 UTC 2012", "run":4471, "type":"background", "length":60, "sleep":5 },

24505	Sun Feb 19 13:08:42 2012	KPH

Runs 4438 - 4467 are junk runs used for testing the autorun command. Yes!! UCNb valve is now controlled with the Teensy 2.0 Arduino! The Teensy outputs a TTL that opens the gates the 24V solenoid. The Script auto run now opens and closes the valve by sending "0" or "1" to the valve controller. Here is an example set of options to run the autorun script to activate the valve while recording foreground and background runs. The script also write both a run log, and a json file for loading into the offline analysis code. sudo ./autorun -r 4467 -t 60 --loop 4 --type ucn --valve --teensy --sleep 5

24504	Sun Feb 19 12:04:11 2012	SSeestrom

The other run that had an "off" asymmetry was from the pair 19692, 19694 and from the log book 19694(bkg run) had a west rate 2 * higher than the pervious bakground rate! So maybe the same weird thing with the west data

24503	Sun Feb 19 11:53:32 2012	SSeestrom

There is a weird asymmetry for the pair of runs 19716,19718 (the blue point with ~ 0 asymmetry in the attqached plot). In looking at the data - it appears the west count rate is very high in the beta run. Note also that the raw data plots for the NEXT beta run (19720 were oddd - large number of counts in the low channels for west anode (maybe associated with pedestal) and a regular series of peaks in the west anode position spectrum. We were not here for the run 19716 - but perhaps something shifted then, and was still off for 191716. Since that run the data have looked normal. Note there is an earlier off run that had a higher asymmetry (~+2 versus -4) = have not yet identified which exact run iot was....

Attachment 1: 1_6.gif

1_6.gif

24501	Sun Feb 19 11:28:49 2012	KPH

Yesterday Raymond and I replaced the HDPE window. The old one was indeed popped. Reattached and today leak checked with Susan. Now pressure testing at 719.4 torr @ 11:52. 718.8 @ 12:28.

24502	Sun Feb 19 11:08:19 2012	SSeestrom

When I ran analysis on run 19726 and got the followin error??? Analyzing run# 17926 flipper load state: ON Problem with Flip0 gate valve bit... analysis aborted.

24500	Sun Feb 19 07:47:58 2012	SSeestrom

CNA Shift Change Checklist Date: February 19, 2012 8:00 Shift Persons: Seestrom, Bryan Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 14.0 psia Heater C pressure 13.2 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295 psia Tungsten Cool ret. 78.1 psia Tungsten Cool

engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 2.2 psig 1630 med. press. stor. 40 psig 1410 engine speed 149 rpm 1410 TE-A 16.5 K 1410 TE-B 6.8 K 1410 TE-E 94.7 K 1410 supply press. 245 psig 1410 JT press. 142 psig 1410 return press. 3 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.5 psig 4K dewar level 9.12 inHe 1K dewar level 28.7 inHe 4K main flow control 7.7 V LHe temp. 1 5.05 K Heat exch. temp. 7 209.2 K Poly temp. 3 184.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 10 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 96.3 % SCS field 9.63 kG SCS current 119.0 A AFP N2 dewar level 3/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.5 torr CC1 pressure 1.2e-5 torr PPM LHe level 83.5 % PPM LN2 level 100 % (level meter broken) AFP LHe level 98.1 % AFP LN2 level 96.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):13 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.2 F West MWPC Temperature 74.9 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2049 Hz West muon veto rate 3848 Hz Spectrometer vacuum 2.2e-5 torr DAQ data_raw disk usage 74%

24498	Sun Feb 19 07:08:15 2012	JCHoagland

00:18 19700 A6 Depol on->off W/R=0.076923 00:25 19701 A7 Beta on E=9.289 W=10.417 Fe/GV=0.1195 SCS/GV=0.1781 B/GV=1.4836 1:26 19702 A8 Depol on->off W/R=0.142857 1:33 19703 A9 Bkg on E=1.262 W=3.299 1:41 19704 A10 Beta off E=13.887 W=16.510 Fe/GV=0.4693 SCS/GV=0.2494 B/GV=2.0043 2:41 19705 A11 Depol off->on W/R=0.035714 2:48 19706 A12 Bkg off E=1.245 W=3.103 2:57 19707 B1 Bkg on E=1.217 W=2.891 3:05 19708 B2 Beta on E=10.499 W=11.008 Fe/GV=0.1184 SCS/GV=0.1841 B/GV=1.4273 4:05 19709 B3 Depol on->off W/R=0.262295 4:12 19710 B4 Bkg off E=1.136 W=2.130 4:21 19711 B5 Beta off E=14.048 W=16.793 Fe/GV=0.4693 SCS/GV=0.2500 B/GV=2.0107 5:21 19712 B6 Depol off->on W/R=0.039326 5:28 19713 B7 Beta off E=12.518 W=15.398 Fe/GV=0.4671 SCS/GV=0.2502 B/GV=2.0489 6:28 19714 B8 Depol off->on W/R=0.016393 6:35 19715 B9 Bkg off E=1.216 W=3.109 6:44 19716 B10 Beta on E=10.689 W=12.417 Fe/GV=0.1180 SCS/GV=0.1848 B/GV=1.5182 7:44 19717 B11 Depol on->off W/R=0.109589 7:51 19718 B12 Bkg on E=1.204 W=2.998

24499	Sun Feb 19 07:06:39 2012	JCHoagland

Attachment 1: s

24490	Sun Feb 19 05:54:19 2012	BMV

Peter and Brittney's conquering the liquifiers shift between the hours of 1600 and midnight Decreased 1410 speed to 150RPM so it will be at 34in by tomorrow midnight, rough calculation. We decided to fill the AFP because the AFP is our friend it was hungry and you feed your friends right? During our fill the 1630 return valve kept getting high and then my needle valve was all the way open for the green valve, so I opened the black valve and started to mess with his needle valve. The return pressure finally settled at 1.5ish range, then the speed in the 1630 was incredibly low like 90 and wanting to go lower. So I increased the speed so it will stay around 115ish RPM range. Well at the end of the fill I closed the bypasses and of course the speed started increasing, so I kept on lowering it, and kept on lowering it... you get the picture Finally I am able to step back and check on the Source, and the pressure was at 12mBara and temp was at 15K, so I increased the flow. Next it was at 27mBara so I kept increasing the flow to 7.7V and then the pressure started go down... slowly but it went down. Finally it calmed itself down But unfortunately the A5 Beta run the last 5minutes is with this problem and the A6 Depol. I decided to redo the A6 run but forgot to run beta for 2mins beforehand. So I think A7 is just a lost cause or consider it an exsitu run instead. The beam also had a blip during the A7 beta run. Restarted Chris Daq 1262 15:21 19679 B10 Beta On E=10.675 W=9.548 Fe/GV=0.115 SCS/GV=0.1836 E+W/GV=1.3297 16:21 19680 B11 Depol on->off W/R=0.168831+-0.050624 16:28 19681 B12 Bkg On E=1.153 W=1.115 16:36 19682 A1 Bkg Off E=1.169 W=1.015 16:51 19683 A2 Beta off E=13.698 W=14.509 Fe/GV=0.4701 SCS/GV=0.2514 E+W/GV=1.8805 17:51 19684 A3 Depol off->on W/R=0.015228+-0.008859 17:58 19685 A4 Bkg On E=1.205 W=1.104 18:06 19686 A5 Beta On E=9.351 W=8.611 Fe/GV=0.1211 SCS/GV=0.1904 E+W/GV=1.381 Pressure spike in source increased source voltage to 7.7 volts and then back down to 7.5V, this is because of finishing a fill in AFP and balancing the 1630. 19:15 19688 A6 Depol on->off but no beta run before because of restarting it. Sorry. 19:22 19689 A7 Beta On E=10.863 W=10.504 Fe/GV=0.1176 SCS/GV=0.1820 E+W/GV=1.3802 20:22 19690 A8 Depol on->off W/R= 0.134328+-0.047689 20:29 19691 A9 Bkg on E=1.150 W=1.976 20:37 19692 A10 Beta off E=14.475 W=16.826 Fe/GV=0.4635

E=1.167 W=4.180 Started a new octet A->B* same as before 60min beta and 8min bkg Chris Daq1263 21:54 19695 A1 Bkg off E=1.224 W=2.179 22:02 19696 A2 Beta off E=14.505 W=16.017 Fe/GV=0.4654 SCS/GV=0.2500 E+W/GV=1.9288 23:03 19697 A3 Depol off->on W/R=0.044693 23:10 19698 A4 Bkg on E=1.220 W=1.953 23:18 19699 A5 Beta on E=10.292 W=10.475 Fe/GV=0.1203 SCS/GV=0.1838 E+E/GV=1.4017 We really need to improve our fill procedure of the SCS. As you notice as the SCS pressure goes up the AFP goes down... And it is kinda scary, I do not like seeing that and it also causes the lhe in the AFP to go down. I think we need to do something about this.

Attachment 1: m.gif

m.gif

24497	Sun Feb 19 01:07:21 2012	rpicker

CNA Shift Change Checklist Date: February 19, 2012 1:00 Shift Persons: Jeff, Ruediger Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.85 psia Heater C pressure 13.13 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296 psia Tungsten Cool ret. 75 psia Tungsten Cool Diff 284 psia 1630 eng. 2 temp. 14.58 K 1630 JT temp. 8 K 1630 outlet temp. 284 K 1630 engine speed 140 rpm 1630 supply press. 250 psig 1630 JT press. 145 psig 1630 return press. 3 psig 1630 med. press. stor. 55 psig 1410 engine speed 150 rpm 1410 TE-A 16.8 K 1410 TE-B 6.9 K 1410 TE-E 94.9 K 1410 supply press. 250 psig 1410 JT press. 145 psig 1410 return press. 3 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.5 psig 4K dewar level 10.74 inHe 1K dewar level 26.45 inHe 4K main flow control 7.7 V LHe temp. 1 5.2 K Heat exch. temp. 7 217 K Poly temp. 3 178 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10 C AFP frequency 28.4760 MHz AFP forward power -- W SCS LHe level 99.2 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 3/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.5 torr CC1 pressure 7.7e-5 torr PPM LHe level 83.6 % PPM LN2 level 100 % (level meter broken) AFP LHe level 89.2 % AFP LN2 level 83 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):14.8 mA "Beamplot" Capture: 61 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.8 F West MWPC Temperature 75.8 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 12.4 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2000 Hz West muon veto rate 3793 Hz Spectrometer vacuum 2.6e-5 torr DAQ data_raw disk usage 74%

24495	Sat Feb 18 23:40:38 2012	KPH

Runs 4438 - 4449 are junk used for testing the b valve controller.

24496	Sat Feb 18 23:40:27 2012	KPH

Something is wrong with the Xe pressure gauge. It reads ++++++.++

24494	Sat Feb 18 23:00:16 2012	BMV

Attachment 1: 16.gif

16.gif

24493	Sat Feb 18 22:57:27 2012	BMV

Attachment 1: 15.gif

15.gif

24492	Sat Feb 18 22:57:08 2012	BMV

14.gif

24491	Sat Feb 18 21:07:49 2012	KPH

run type length sleep comment 4436 Cs137 300 0 mostly for testing new electronics set up 4437 background 300 0

24489	Sat Feb 18 18:10:04 2012	KPH

From now on all channels will be marked using the new scheme: Old name New name Ch 16 PMT 0 Ch 17 PMT 1 Ch 18 PMT 2 Ch 19 PMT 3

24488	Sat Feb 18 18:08:02 2012	KPH

Chris came and fixed the electronics. He increased the thresholds and we found that PMT 1 (out of 0 - 3) was not working again, probably due to it pulling out of its socket again. Testing with background run 4435

Attachment 1: ound-test.gif

ound-test.gif

24474	Sat Feb 18 16:07:58 2012	Geltenbort

UCNA Shift Change Checklist Date: February 17, 2012 16:20 Shift Persons: BMV, Peter UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.69 psia Heater C pressure 12.93 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 294.2 psia Tungsten Cool ret. 77.3 psia Tungsten Cool Diff 283.3 psia 1630 eng. 2 temp. 13.95 K 1630 JT temp. 7.42 K 1630 outlet temp. 270.5 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.6 psig 1630 med. press. stor. 40 psig 1410 engine speed 174 rpm 1410 TE-A 16.2 K 1410 TE-B 6.7 K 1410 TE-E 88.1 K 1410 supply press. 244 psig 1410 JT press. 137 psig 1410 return press. 3.0 psig 4K dewar pressure 312 mmHg 1K dewar pressure 7.2 psig 4K dewar level 11.12 inHe 1K dewar level 32.95 inHe 4K main flow control 7.0 V LHe temp. 1 4.89 K Heat exch. temp. 7 202.5 K Poly temp. 3 68.67 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 86.8 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level ful SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 1.3e-5 torr PPM LHe level 84.0 % PPM LN2 level 100 % (level meter broken) AFP LHe level 86.5 % AFP LN2 level 71.8 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 268 ns TBCM001I03 (H- source current):14.8 mA "Beamplot" Capture: 65 %---- this is the H-GX beamplot capture, normally we get the LBEG (Long bunch enable gate) ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 67.7 F West MWPC Temperature 68.0 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 12.2 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.0 Neopentane Flow Rate 8.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 1833 Hz West muon veto rate 3304 Hz Spectrometer vacuum 2.6e-5 torr DAQ data_raw disk usage 73%

24484	Sat Feb 18 16:06:08 2012	Geltenbort

UCNA Shift Change Checklist Date: February 18, 2012 16:00 Shift Persons: BMV, Peter Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.60 psia Heater C pressure 12.84 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.1 psia Tungsten Cool ret. 80.1 psia Tungsten Cool Diff 284.4 psia 1630 eng. 2 temp. 13.76 K 1630 JT temp. 7.14 K 1630 outlet temp. 271.0 K 1630 engine speed 135 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 2.25 psig 1630 med. press. stor. 30 psig 1410 engine speed 150 rpm 1410 TE-A 16.0 K 1410 TE-B 6.5 K 1410 TE-E 94.7 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press.

dewar level 24.21 inHe 4K main flow control 7.0 V LHe temp. 1 5.031 K Heat exch. temp. 7 198.04 K Poly temp. 3 174.75 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.4760 MHz AFP forward power 38 W SCS LHe level 88.2 % SCS field 9.7 kG SCS current 119.0 A AFP N2 dewar level 3/4 (level meter scale shifted) SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.4 torr CC1 pressure 1.1e-5 torr PPM LHe level 83.7 % PPM LN2 level 100 % (level meter broken) AFP LHe level 87.0 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H-source current):14.8 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.4 F West MWPC Temperature 75.2 F MWPC Pressure 100.1 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 11.5 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 8.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1979 Hz West muon veto rate 3784 Hz Spectrometer vacuum 2.9e-5 torr DAQ data_raw disk usage 73%

24487	Sat Feb 18 15:41:00 2012	RRios

Attachment 1: 3_6.gif

3_6.gif

24486	Sat Feb 18 15:40:37 2012	RRios

Attachment 1: 2_5.gif

2_5.gif

24485	Sat Feb 18 15:40:08 2012	RRios

Attachment 1: 1_5.gif

1_5.gif

24482	Sat Feb 18 14:28:49 2012	bz

05:59 19659 B4 Bkg OFF E= 1.183 W= 2.867 07:43 19661 B5 Beta OFF E=14.951 W=18.385 Fe/GV=0.4638 SCS/GV=0.2487 (E+W)/GV=2.0350 08:43 19662 B6 Depol OFF->ON W/R=0.051(16) 08:50 19663 B7 Beta OFF E=14.533 W=16.270 Fe/GV=0.4706 SCS/GV=0.2527 (E+W)/GV=1.9660 09:58 19665 B8 Depol OFF->ON W/R=0.034(13) 10:05 19666 B9 Bkg OFF E= 1.116 W= 1.132 10:14 19667 B10 Beta ON E=11.203 W=10.071 Fe/GV=0.1162 SCS/GV=0.1874 (E+W)/GV=1.3250 11:14 19668 B11 Depol ON->OFF W/R=0.056(29) 11:21 19669 B12 Bkg ON E= 1.185 W= 1.140 New B->A Octet 11:34 19670 B1 Bkg ON E= 1.119 W= 1.132 11:42 19671 B2 Beta ON E=11.063 W=10.008 Fe/GV=0.1154 SCS/GV=0.1849 (E+W)/GV=1.3263 12:42 19672 B3 Depol ON->OFF W/R=0.184(54) 12:49 19673 B4 Bkg OFF E= 1.190 W= 1.109 12:58 19674 B5 Beta OFF E=14.759 W=15.659 Fe/GV=0.4651 SCS/GV=0.2479 (E+W)/GV=1.8809 13:58 19675 B6 Depol OFF->ON W/R=0.040(15) 14:05 19676 B7 Beta OFF E=14.483 W=15.428 Fe/GV=0.4645 SCS/GV=0.2547 (E+W)/GV=1.8878 15:05 19677 B8 Depol OFF->ON W/R=0.054(17) 15:12 19678 B9 Bkg OFF E= 1.120 W= 1.085

24483	Sat Feb 18 13:26:20 2012	RRios

Shift Summary

24477	Sat Feb 18 08:48:06 2012	Hasan

A->B octet: 23:28 19643 A1 bkg off E=1.197 W=1.814 23:37 19644 A2 beta off E=16.05 W=17.955 Fe/GV=0.4642 SCS/GV=0.2488 beta/GV=1.9524 00:37 19645 A3 depol off->on W/R=0.032787 00:44 19646 A4 bkg on E=1.158 W=2.955 00:52 19647 A5 beta on E=11.355 W=12.058 Fe/GV=0.1188 SCS/GV=0.1845 beta/GV=1.4350 19648 A6 depol on->off W/R=0.08333 02:12 19650 A7 beta on E=11.585 W=12.373 Fe/GV=0.1206 SCS/GV=0.1854 beta/GV=1.4382 03:13 19651 A8 depol on->off W/R=0.128205 03:20 19652 A9 bkg on E=1.115 W=2.960 03:28 19653 A10 beta off E=14.545 W=17.557 Fe/GV=0.4683 SCS/GV=0.2518 beta/GV=2.0268 04:28 19654 A11 depol off->on W/R=0.039604 04:35 19655 A12 bkg off E=1.114 W=3.367 04:44 19656 B1 bkg on E=1.261 W=3.000 04:52 19657 B2 beta on

W/R=0.180556 05:59 19659 B4 bkg off E=1.183 W=2.867 06:08 19660 ....beam went off..... 07:43 19661 B5 beta off 07:43 19661 B5: Beta Run (off) 08:43 19662 B6: Depol (off to on) 08:50 19663 B7: Beta Run (off)

24481	Sat Feb 18 08:20:24 2012	RRios

UCNA Shift Change Checklist Date: February 18, 2012 01:00 Shift Persons: Brain, Raymond Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 13.94 psia Heater C pressure 13.15 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295.6 psia Tungsten Cool ret. 78.0 psia Tungsten Cool Diff 284.0 psia 1630 eng. 2 temp. 14.10 K 1630 JT temp. 7.36 K 1630 outlet temp. 271.6 K 1630 engine speed 136 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 2.4 psig 1630 med. press. stor. 46 psig 1410 engine speed 175 rpm 1410 TE-A 15.9 K 1410 TE-B 6.6 K 1410 TE-E 91.8 K 1410 supply press. 243 psig 1410 JT press. 136 psig 1410 return press. 3.0 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.5 psig 4K dewar level 13.5 inHe 1K dewar level 15.4 inHe 4K main flow control 7.0 V LHe temp. 1 5.0 K Heat exch. temp. 7 199.3 K Poly temp. 3 149.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 95.0 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.4 torr CC1 pressure 1.1e-5 torr PPM LHe level 83.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):14.7 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.0 F West MWPC Temperature 73.1 F MWPC Pressure 100 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 100 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1968 Hz West muon veto rate 3665 Hz Spectrometer vacuum 2.1e-5 torr DAQ data_raw disk usage 73%

24480	Sat Feb 18 07:38:33 2012	Hasan

Attachment 1: b18.pdf

24479	Sat Feb 18 07:08:27 2012	rpicker

The beam came back on at 7:43, restarted the beta run at that point. We noticed two things about the AFP fill instructions: There are several versions lying on PCUCN18, it would be nice if the date would be on the sheet. And the lN2 return is not on the pictograms for the valve which is a little confusing... Have a nice day!

24478	Sat Feb 18 06:02:57 2012	rpicker

The beam was gone at 6:30 am, "Mod 4 RF problems". Should come back at around 8 am. The run number was 19660 B5: Beta (off) which started at 6:08. Please start up from there again.

Attachment 1: b18.pdf

b18.pdf

24476	Sat Feb 18 02:40:47 2012	Hasan

UCNA Shift Change Checklist Date: February 18, 2012 01:00 Shift Persons: Ruediger, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed (cold return to 1630, see logbook entry of Mark) He blower on Heat exchanger flow 30 slpm Heater B pressure 14.50 psia Heater C pressure 13.71 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.7 psia Tungsten Cool ret. 79.1 psia Tungsten Cool Diff 284.2 psia 1630 eng. 2 temp. 14.39 K 1630 JT temp. 7.39 K 1630 outlet temp. 271.5 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.8 psig 1630 med. press. stor. 50 psig 1410 engine speed 175 rpm 1410 TE-A 16.7 K 1410 TE-B 7.2 K 1410 TE-E 87.8 K 1410 supply press. 245 psig 1410 JT press. 145 psig 1410 return press. 3.4 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K

K Heat exch. temp. 7 188.46 K Poly temp. 3 149.27 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 9.6 kG SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.3 torr CC1 pressure 1.8e-5 torr PPM LHe level 83.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 84.8 % AFP LN2 level 83 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):15 mA "Beamplot" Capture: 65 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.9 F West MWPC Temperature 72.2 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3568 Hz West muon veto rate 5786 Hz Spectrometer vacuum 2.1e-5 torr DAQ data_raw disk usage 73%

24475	Fri Feb 17 22:49:42 2012	BMV

Peter and BMV's excitment tonight 02/17/2012 1600-midnight Unfortunately the vacuum in the accelerator broke and then PRAD wanted to hog the beam for a whole hour once they fixed it at 20:00. During that time we filled the AFP magnet. PRAD finally got the shot they needed (:-P) and they started tuning to us. Unfortunately we lost transport in the beam around 22:30 and it took some tweaking on their part to restore our beam, so Peter and I decided to be nice to the midnight crew and start the fill on the SCS. Although pressures were rather strange, AFP pressure started to go down at an equal rate as the SCS increased. Also the 1K dewar pressure was going down to 5.5psi so I increased the 1410 speed to 200RPM. Finally it stopped around 1.25psi and it is oscillating up to 1.5 and then now it is at 1.25 psi and flattening. Not amused by this but as long as it is not below 1psi I am not too sick to my stomach. Finally we started a beta run at 23:28, YAY!!! Because of a late start I do not think there is a point to show the run_summary chart as it will have only bkg data to show. Have fun midnight shift!

24473	Fri Feb 17 14:53:32 2012	MFMakela

changing cold return to 1630 cold port. Pleae do not melt and refreeze or make large change to the source flow without contacting - Mark V389 on the back of the 1630 is open, if a melt and refreeze is needed and I cannot be reached close V389 whlie opening the main return from heater skid A (normal source return path). The liquifier speed should work well below 150 rpm

24472	Fri Feb 17 14:38:44 2012	MFMakela

Starting a melt and refreeze High point 480 mbar 1 hour duration

24471	Fri Feb 17 05:51:55 2012	JCHoagland

finishing the A-> B octect 12:20 19623 A8 Depol on->off W/R=0.203(67) 12:27 19624 A9 BKG on E=1.143 W=2.637 12:33 19625 A10 Beta off E=12.971 W=15.141 Fe/GV=0.4744 SCS/GV=0.2514 B/GV=1.9782 01:21 19626 A11 Depol off->on W/R=0.034(14) 01:28 19627 A12 BKG off E=1.404 W=2.953 01:33 19628 B1 BKG on E=1.154 W=2.957 01:38 19629 B2 Beta on E=9.427 W=10.189 Fe/GV=0.1191 SCS/GV=0.1806 B/GV=1.2368 02:27 19630 B3 Depol on->off W/R=0.112903 02:34 19631 B4 BKG off E=1.166 W=2.754 02:39 19632 B5 Beta off E=12.528 W=15.080 Fe/GV=0.4765 SCS/GV=0.2430 B/GV=1.9901 03:27 19633 B6 Depol off->on W/R=0.052326 03:34 19634 B7 Beta off E=12.287 W=14.664 Fe/GV=0.4774 SCS/GV=0.2514 B/GV=1.9941 04:23 19635 B8 Depol off->on W/R=0.018293 04:36 19636 B9 BKG off E=1.190 W=2.879 04:41 19637 B10 Beta on E=9.146 W=10.180 Fe/GV=0.1186 SCS/GV=0.1819 B/GV=1.4715 05:29 19638 B11 Depol on->off W/R=0.303571 05:36 19639 B12 BKG on E=1.205 W=2.795

24469	Fri Feb 17 05:00:16 2012	Geltenbort

A->B starting at run 19616. Bkg = 5 min Beta = 48 min Chris's DAQ run # 1259. 21:31 19616 A1 Bkg OFF E=1.287 W=2.401 21:36 19617 A2 Beta OFF E=13.219 W=15.286 Fe/GV=0.4609 SCS/GV=0.2459 (E+W)/GV=1.9449 22:24 19618 A3 Depol OFF->ON W/R=0.3681 22:31 19619 A4 Bkg ON E=1.223 W=2.254 22:37 19620 A5 Beta ON E=9.912 W=10.147 Fe/GV=0.1140 SCS/GV=0.0.1777 (E+W)/GV=1.3980 22:25 19621 A6 Depol ON->OFF W/R=0.1148 23:32 19622 A7 Beta ON E=9.507 W=9.922 Fe/GV=0.1141 SCS/GV=0.1827 (E+W)/GV=1.4261

24470	Thu Feb 16 23:30:03 2012	Hasan

Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 13.71 psia Heater C pressure 12.95 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.1 psia Tungsten Cool ret. 79.6 psia Tungsten Cool Diff 284.0 psia 1630 eng. 2 temp. 15.6 K 1630 JT temp. 7.8 K 1630 outlet temp. 277.8 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.7 psig 1630 med. press. stor. 40 psig 1410 engine speed 174 rpm 1410 TE-A 15.9 K 1410 TE-B 6.7 K 1410 TE-E 93.5 K 1410 supply press. 240 psig 1410 JT press. 135 psig 1410 return press. 2.9 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.8 inHe 1K dewar level 22.4 inHe 4K main flow control 6.0 V LHe temp. 1 4.8 K Heat exch. temp. 7 204.8 K Poly temp. 3 158.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 85.4 % SCS field 9.8 kG SCS current 119.0 A (ramped up by Andy) AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.4 torr CC1 pressure 1.8e-5 torr PPM LHe level 84.3 % PPM LN2 level 100 % (level meter broken) AFP LHe level 90.0 % AFP LN2 level 76.5 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 280 ns TBCM001I03 (H- source current):14.5 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.5 F West MWPC Temperature 71.7 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 13.0 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.0 Neopentane Flow Rate 9.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.36 kV West muon veto HV 2.37 kV East muon veto rate 2068 Hz West muon veto rate 3997 Hz Spectrometer vacuum 2.5e-5 torr DAQ data_raw disk usage 72%

24467	Thu Feb 16 20:57:58 2012	TIto

UCN production rate was low. 120 Hz at the Gate Valve. Mark and Brian came in to do melt&refreeze. Now the rate is 240 Hz. We have just started an octet of A->B starting at run 19616. Backround = 5 min Beta = 48 min We also started Chris's DAQ. Run # 1259.

24468	Thu Feb 16 20:56:08 2012	TIto

MWPC anode histograms look like these. There are multiple peaks for the west anode pedestal.

Attachment 1: gif

gif

24461	Thu Feb 16 20:55:27 2012	Geltenbort

UCNA Shift Change Checklist Date: February 16, 2012 16:00 Shift Persons: Tito, Peter UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 13.66 psia Heater C pressure 12.91 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.8 psia Tungsten Cool ret. 81.3 psia Tungsten Cool Diff 285.1 psia 1630 eng. 2 temp. 16.35 K 1630 JT temp. 7.85 K 1630 outlet temp. 279.6 K 1630 engine speed 160 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 1.8 psig 1630 med. press. stor. 40 psig 1410 engine speed 175 rpm 1410 TE-A 15.9 K 1410 TE-B 6.6 K 1410 TE-E 98.4 K 1410 supply press. 245 psig 1410 JT press. 135 psig 1410 return press. 3.0 psig 4K dewar pressure 315 mmHg 1K dewar pressure 7.2 psig 4K dewar level 15.76 inHe 1K dewar level 19.16 inHe 4K main flow control 6.0 V LHe temp. 1 4.767 K (source making in progress) Heat exch. temp. 7 225.53 K Poly temp. 3 123.62 K flapper heater cur 0.18 A Flapper Status: flapping (occasional beam tuning) Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open (source making) Switcher status thru AFP temperature 9.7 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 89.9 % SCS field 9.64 kG SCS current 119.0 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 2.2 torr CM5 pressure 2.4 torr CC1 pressure off torr (source making) PPM LHe level 84.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 85.5 % AFP LN2 level 77.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 280 ns TBCM001I03 (H- source current):14.6 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.2 F West MWPC Temperature 74.3 F MWPC Pressure 100.1 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr .15 A East Back.

========== MWPC HV 2370 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.8 Neopentane Flow Rate 10.1 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1806 Hz West muon veto rate 3460 Hz Spectrometer vacuum Xenon DAQ data_raw disk usage 71%

24466	Thu Feb 16 19:19:09 2012	TIto

We had a problem synchronizing midas and the run control. After a couple of attemps, we finally started an octect going from A to B, starting at run 19613.

24464	Thu Feb 16 18:54:48 2012	Geltenbort

pumped out Xenon from SCS gate valve above turbo pump east blocked vacuum 3.8e-5 torr (was 2.2e-5 torr the day before) 7:29 start A->B octet (60 min beta; 8 min bkg)

24465	Thu Feb 16 18:49:39 2012	KPH

Pumped out ~1 torr of AXe. run type length sleep comment 4433 Xe 30 - Xe pumped out to about ~1 torr 4434 Xe 30 - pumped out another 1 torr of Xe

24463	Thu Feb 16 18:35:10 2012	KPH

Pumped out ~1 torr of Xe.

24457	Thu Feb 16 18:32:18 2012	KPH

run type length sleep comment 4131 Xe 1 10 Xe warming up, looping with `sudo ./autorun -r 4120 -t 1 --sleep 10 --loop 10` ... Xe 1 10 beam off at 7:57:30 [CCR], continuing to fill box directly from the source through the b valve, ... continuing to loop with above command 4277 Xe 1 10 closed b valve at 8:05, run 4278 `sudo ./autorun -r 4120 -t 5 --sleep 30 --loop 1000` 4282 Xe 5 30 looping with b vale closed ... ... 4314 Xe 20 120 looping with `sudo ./autorun -r 4120 -t 20 --sleep 120 --loop 1000`, b valve still closed ... 4323 junk 4324 Xe 30 300 looping with `sudo ./autorun -r 4320 -t 30 --sleep 300 --loop 1000`, bv closed, no beam, fixed amount of ~1.5 torr of Xe ~1.5 hrs old ...4432 ended at 7:30, beam on at ~6pm

24452	Thu Feb 16 17:07:01 2012	Geltenbort

UCNA Shift Change Checklist Date: February 15, 2012 16:00 Shift Persons: BMV, Peter UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 13.73 psia Heater C pressure 12.98 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.4 psia Tungsten Cool ret. 81.1 psia Tungsten Cool Diff 284.9 psia 1630 eng. 2 temp. 13.95 K 1630 JT temp. 6.7 K 1630 outlet temp. 278.7 K 1630 engine speed 160 rpm 1630 supply press. 250 psig 1630 JT press. 220 psig 1630 return press. 1.6 psig 1630 med. press. stor. 40 psig 1410 engine speed 175 rpm 1410 TE-A 16.0 K 1410 TE-B 6.6 K 1410 TE-E 91.2 K 1410 supply press. 242 psig 1410 JT press. 138 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.2 psig 4K dewar level 12.79 inHe 1K dewar level 26.51 inHe 4K main flow control 3.6 V LHe temp. 1 6.67 K Heat exch. temp. 7 185.04 K Poly temp. 3 83.6 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.4760 MHz AFP forward power 0 W SCS LHe level 90.6 % SCS field 9.6 kG SCS current 119.0 A (ramped up by Andy) AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.2 torr CC1 pressure 2.6e-5 torr PPM LHe level 84.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 87.2 % AFP LN2 level 78.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 272 ns TBCM001I03 (H- source current):14.28 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.7 F West MWPC Temperature 74.2 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.8 Neopentane Flow Rate 10.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1784 Hz West muon veto rate 3366 Hz Spectrometer vacuum 1.7e-4 torr DAQ data_raw disk usage 70%

24460	Thu Feb 16 16:01:21 2012	TIto

run. We fixed it by following the "Restart the DAQ Following an Improper Shutdown" procedure in the UCNA Fast DAQ instructions. Restarted the Xenon run again. The rate is higher than ususal, about 4KHz.

24459	Thu Feb 16 12:55:34 2012	MFMakela

D2 is freezing back into the source.

24458	Thu Feb 16 08:40:13 2012	KPH

Xe run 4324

Attachment 1: gif

gif

24456	Thu Feb 16 05:43:20 2012	MFMakela

source in D2 tank (1112 mbar) activating Xenon

24455	Thu Feb 16 04:14:00 2012	JCHoagland

UCNA Shift Change Checklist Date: February 16, 2012 00:50 Shift Persons: jeff, hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 36 slpm Heater B pressure 13.73 psia Heater C pressure 12.92 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.7 psia Tungsten Cool ret. 80.6 psia Tungsten Cool Diff 284.3 psia 1630 eng. 2 temp. 15.6 K 1630 JT temp. 7.8 K 1630 outlet temp. 279.4 K 1630 engine speed 200 rpm 1630 supply press. 250 psig 1630 JT press. 190 psig 1630 return press. 1.8 psig 1630 med. press. stor. 50 psig 1410 engine speed 175 rpm 1410 TE-A 16.0 K 1410 TE-B 6.6 K 1410 TE-E 96.2 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 11.1 inHe 1K dewar level 30.5 inHe 4K main flow control 6.5 V (...) LHe temp. 1 4.8 K Heat exch. temp. 7 189.1 K Poly temp. 3 125.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.4760 MHz AFP forward power 40 W SCS LHe level 84.9 % SCS field 9.8 kG SCS current 119.0 A (ramped up by Andy) AFP N2 dewar level 2/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 9.1e-6 torr PPM LHe level 84.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 91.2 % AFP LN2 level 84.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 272 ns TBCM001I03 (H- source current):14.2 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.8 F West MWPC Temperature 74.3 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 12.4 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 Neopentane Flow Rate 9.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1831 Hz West muon veto rate 3571 Hz Spectrometer vacuum 2.2e-5 torr DAQ data_raw disk usage 70%

24454	Wed Feb 15 22:47:34 2012	BMV

Shift Overview Peter and Brittney 2/15/2012 1600-0000 We performed a melt and refreeze with Mark. Got a rate of about 230Hz, not great but enough. We checked the spinflipper by having a small beta run. 30s bkg, 2min beta, and regular depol we did B->A. This is handy when you are also filling magnets because while you are distracted with magnet filling you are taking the necessary data points to know if you are tuned. We found the tune is similar to before. The depol runs were on->off 19554,19562,19570,19572 off->on 19557,19559,19566 Noticed the numbers in UCN control panel for depol runs were the old Polarized numbers not the new ones. previous P data may be incorrect. The previous P measurements this month was with the december settings not January settings. Time Midas Chris Description Cycles 20:02 19575 1248 SLD- 8 21:13 19576 1249 SLD- 8 22:24 19577 1250 SLD+ 8 23:34 19578 1251 SLD+

24453	Wed Feb 15 19:38:27 2012	KPH

Removed the non functional PMT and and took off the base and replaced it with one of last year's bases. It seemed like the PMT was loose. Perhaps the PMT was sucked in by the vacuum? Not sure. I tested the PMT/base by placing CaF2 over the PMT. First light from fluorite!

were still there. Is this glass scintillating? Confirmed. Base and PMT work fine but the PMT had been pulled from its socket. Putting back in. Testing with run 4121 Playing with thresholds on run 4122...

24451	Wed Feb 15 16:51:25 2012	MFMakela

source melted and refroze

24449	Wed Feb 15 15:49:59 2012	KPH

The PMT for channel 18 seems to be bad at the moment.

24450	Wed Feb 15 15:12:36 2012	KPH

run type length insert comment 4119 Bi207 600 100% fully inserted, channel 18 is down due to bad base or pmt 4120 Bi207 600 0% fully retracted for background

24448	Wed Feb 15 15:09:39 2012	KPH

Beam is not tuned yet so I am taking some low background of the insertable Bi207 source.

24441	Wed Feb 15 06:47:38 2012	BMV

Source Volume Scan Time Midas Chris Tank Source Run 18:36 19506 1209 1129.4 empty Flapping 5s 18:44 19507 1210 Open 5s 18:57 19508 1211 Open lifetime 19:03 19509 1212 Close lifetime 19:11 19510 1213 Flapping lifetime 19:45 19512 1214 1005.7 110 flapping 5s (really 124 but in paper logbook 110) 19:51 19513 1215 open 5s 20:02 19515 1216 open lifetime 20:09 19516 1217 close lifetime 20:15 19517 1218 flap lifetime 20:43 19519 1219 885.5 240 flapping 5s 20:50 19520 1220 open 5s 20:59 19521 1221 open lifetime 21:05 19522 1222 close lifetime 21:12 19523 1223 flapping lifetime 21:49 19524 1224 740.1 390 open 5s 21:55 19525 1225 flapping 5s 22:04 19526 1226 flap lifetime 22:12 19527 1227 close lifetime 22:18 19528 1228 open lifetime 23:02 19530 1229 528.8 600 open 5s 23:12 19531 1230 flapping 23:24 19532 1231 flap lifetime 23:30 19533 1232 closed lifetime 23:37 19534 1233 open lifetime 00:20 19539 1234 328.2 800 open 5s 00:28 19540 1235 flap 5s 00:41 19541 1236 flap lifetime 00:48 19542 1237 close lifetime 00:54 19543 1238 open lifetime 3:00 19545 1239 1100 open lifetime 3:13 19546 1240 flap lifetime 3:36 19547 1241 closed lifetime 3:55 19548 1242 77 open rate 4:05 19549 1243 253 flap rate

24447	Wed Feb 15 06:32:27 2012	Hasan

Run Type MCA Fast Daq AFP Cycles Notes P+ 1245 19550 On 4 P- 1246 19551 On 5

24446	Wed Feb 15 05:15:02 2012	JCHoagland

28.476 MHz is new frequency with 40W forward power has .2 reflective power also the decay trap plug has been reinsterted

24445	Wed Feb 15 01:54:18 2012	JCHoagland

24.3 mbars in D2 tank

24444	Wed Feb 15 00:29:07 2012	Hasan

UCNA Shift Change Checklist Date: February 15, 2012 00:30 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 13.78 psia Heater C pressure 13.02 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.5 psia Tungsten Cool ret. 79.9 psia Tungsten Cool Diff 283.8 psia 1630 eng. 2 temp. 14.21 K 1630 JT temp. 6.89 K 1630 outlet temp. 277.7 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.9 psig 1630 med. press. stor. 50 psig 1410 engine speed 174 rpm 1410 TE-A 16.0 K 1410 TE-B 6.6 K 1410 TE-E check K 1410 supply press. 240 psig 1410 JT press. 135 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.74 inHe 1K dewar level 33.25 inHe 4K main flow control 7.0 V (source volume scan in progress...) LHe temp. 1 4.803 K Heat exch. temp. 7 211.01 K Poly temp. 3 126.26 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.1 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 86.1 % SCS field 9.675 kG SCS current 119.0 A (ramped up by Andy) AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.2 torr CC1 pressure 4.1e-6 torr PPM LHe level 84.6 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.7 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):14.5 mA "Beamplot" Capture: 68 % ========== East Detector Cart

69.1 F West MWPC Temperature 69.3 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.1 Neopentane Flow Rate 9.1 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .41 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1921 Hz West muon veto rate 3559 Hz Spectrometer vacuum e-4 to e-5 Torr (CC2) (fluctuating...) DAQ data_raw disk usage 69%

24443	Wed Feb 15 00:08:48 2012	BMV

Source Calibration Time Midas distance other runs 18:30 19505 all in 0in 19:18 19511 +0.5" 19509,19510 19:50 19513 +1" 19514 20:09 19516 +1.5" 20:22 19518 +2" 20:50 19520 +2.5" 20:59 19521 +3" 21:12 19523 +3.5" 21:49 19524 +4" 19525 22:04 19526 +4.5" 22:18 19528 +5" flipped the source 22:27 19529 -5" 19530 23:24 19532 -4.5" 23:37 19534 -4" 23:47 19535 -3.5" 23:55 19536 -3" 00:03 19537 -2.5" 00:13 19538 -2" 00:28 19540 -1.5" 00:41 19541 -1" 00:54 19543 -0.5" 01:06 19544 All in Flipped

24442	Tue Feb 14 23:20:08 2012	JCHoagland

tank had 328.2 mbar init

24440	Tue Feb 14 22:06:33 2012	BMV

open orage valve GC5 closed, GC1 open 1129.4mBar in tank lhe1 4.834K 5.0V Source flow voltage 1008.2mBar in tank took measurements of lifetime 1005.7mBar in Tank open check valve bypass closed cv bypass 887mBar in Tank closed GC1, opened GC5 lifetime measurement 885.5mBar open checkvalve bypass closed cv bypass 740mBar closed gc1 and opened gc5 lifetime measurement increased source voltage to 5.3V again to 5.5V closed gc5 open gc1 740.1mBar opened checkvalve bypass Increased source voltage to 5.8V closed checkvalve bypass 528.8mBar closed gc1, open gc5 Increase source voltage 6V again to 6.3V lifetime measurements CC1 still some trouble going down increased to 6.5V (also filling AFP since 1K is about to over flow) CC1 is going up increased to 7V

24438	Tue Feb 14 19:15:22 2012	KPH

Installed insert-able Bi207 source. First run is a background to make sure everything is back up and running. run type length insert comment 4115 Bi207 30 0 fully retracted, channel 2 preamp bad 4116 Bi207 30 0 using new preamp channel. 4117 Bi207 30 100% fully inserted 4118 Bi207 300 100% fully inserted

24439	Tue Feb 14 19:01:26 2012	KPH

Installed insert-able Bi207 source. First run is a background to make sure everything is back up and running. run type length insert comment 4115 Bi207 30 0 fully retracted

24437	Tue Feb 14 18:54:32 2012	KPH

Accidentally over-pressured the b box with the window bypass closed. Popped the window.

24436	Tue Feb 14 17:09:39 2012	Geltenbort

UCNA Shift Change Checklist Date: February 14, 2012 01:15 Shift Persons: BMV, Peter UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 17 slpm Heater B pressure 14.6 psia Heater C pressure 13.8 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 301.9* psia Tungsten Cool ret. 83.0 psia Tungsten Cool Diff 285.5 psia 1630 eng. 2 temp. 15.62 K 1630 JT temp. 7.18 K 1630 outlet temp. 277.6 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 1.5 psig 1630 med. press. stor. 30 psig 1410 engine speed 100 rpm 1410 TE-A 17.4 K 1410 TE-B 6.9 K 1410 TE-E 77.8 K 1410 supply press. 250 psig 1410 JT press. 150 psig 1410 return press. 3.1 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.32 inHe 1K dewar level 34.9 inHe 4K main flow control 1.5 V (source volume scan in progress...) LHe temp. 1 30.84 K Heat exch. temp. 7 197.35 K Poly temp. 3 110.75 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 59.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 93.6 % SCS field 9.64 kG SCS current 119.0 A (ramped up by Andy) AFP N2 dewar level 1 SV3 open SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 1.5e-6 torr PPM LHe level 84.6 % PPM LN2 level 100 % (level meter broken) AFP LHe level 86.2 % AFP LN2 level 74.5 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst

mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.9 F West MWPC Temperature 74.2 F MWPC Pressure 100.1 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 12.2 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.7 Neopentane Flow Rate 9.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1861 Hz West muon veto rate 3373 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) DAQ data_raw disk usage 69%

24424	Tue Feb 14 16:44:59 2012	KPH

Connected Bi207 #2 1000 um fiber to PMT CA 0089 on base II inside of a light tight container. Took data on raw channel 4 with other PMTs off. This is fiber is no connected to the b box. Pulses at about 1 Hz - a lot less than the 500 cpm measured for this source. Run length 4111 600 4112 9200 interrupted to setup longer run 4113 36000 interrupted at 20:54 to restart 4114 60000 left to run all night

Attachment 1: n-own-bottle-4114.gif

n-own-bottle-4114.gif

24435	Tue Feb 14 15:54:25 2012	KPH

New keyed b box valve connector installed. Old one relied on set screws which wore their way into the ball vavle key. Upon removal, i could see that the b vavle was off by ~20-30 deg which explains the leak into the source the other night. The new keyed version does not have enough slop for this to happen. I partially vented the box and observed no change to the source vacuum. Also, the b box vacuum no longer drops.

24434	Tue Feb 14 15:49:34 2012	MFMakela

1134 mbar in D2 tank 127 mbar in source Closing Orange valve Pumping out source. (while warming to 165K) Cooling source (pumping)

24433	Tue Feb 14 10:54:53 2012	MFMakela

Melting out the source - distillation

24432	Tue Feb 14 05:53:41 2012	Hasan

UCNA Shift Change Checklist Date: February 14, 2012 01:15 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 17 slpm Heater B pressure 13.67 psia Heater C pressure 12.88 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.2 psia Tungsten Cool ret. 81.2 psia Tungsten Cool Diff 284.3 psia 1630 eng. 2 temp. 16.82 K 1630 JT temp. 7.71 K 1630 outlet temp. 275.8 K 1630 engine speed 140 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 20 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.8 K 1410 TE-E 80.6 K 1410 supply press. 250 psig 1410 JT press. 150 psig 1410 return press. 2.2 psig 4K dewar pressure 300 mmHg 1K dewar pressure 6.0 psig 4K dewar level 19.23 inHe 1K dewar level 25.69 inHe 4K main flow control 0.5 V (source volume scan in progress...) LHe temp. 1 25.49 K Heat exch. temp. 7 197.3 K Poly temp. 3 105.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.0 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 75.3 % (Post Quench state...) SCS field 0 kG SCS current 0 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 195.2 torr (source volume scan...) CM5 pressure 2.3 torr CC1 pressure --- torr (source volume scan...) PPM LHe level 85.4 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.9 % AFP LN2 level 98.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.5 F West MWPC Temperature 70.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.1 Neopentane Flow Rate 9.3 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .41 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-

veto HV 2.37 kV East muon veto rate 1856 Hz West muon veto rate 3284 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) DAQ data_raw disk usage 69%

24431	Tue Feb 14 05:36:16 2012	JCHoagland

time tank pressure chris's midas decription 2:05 299.4 1203 19498 GV rate measure 124 2:18 "" 1204 19499 flapping once a minute 2:33 "" 1205 19500 open 5 pulses a minute 2:47 "" 1206 19501 closed 5 pulses a minute 4:53 607.1 1207 19502 closed 5 pulses a minute 5:05 "" 1208 19503 open 5 pulses a minute only get 4 cycles before beam died

24430	Tue Feb 14 04:30:27 2012	JCHoagland

beam died at 5:11AM

24428	Tue Feb 14 03:45:19 2012	JCHoagland

have 299.4 mbars in D2 tank now have 607.1 mbars in D2 tank 4:50

24429	Tue Feb 14 02:41:37 2012	BMV

Quench- the med. press. storage was getting really close to the 20psi during the melt and refreeze. So I decided to run liquid in the lines to get MPS up. So I closed BLPM-3 and opened BLPM-12 Ensured SCS milking station open and afp milk station closed. Opened 1k dewar valve. Watched the 1630 return pressure.It started going up to 2.2 so I opened the bypass valve. I played around with the needle valve so stops dumping. Then I decided to check on the guys who were doing the source melt and refreeze. As I was walking by the monitor I checked the SCS pressure. It was at 3psi. I then went to the d2 tank see how it was going couple minutes later.... loud noise and white smoke. I stopped the 1K dewar flow called Mark and then Andy and then Kevin. Next time pressurize the SCs before bypassing it or just do the AFP.

24426	Tue Feb 14 01:14:07 2012	BMV

lifetime measurement was 5 pulses every 60s. gate valve measurement is regular flapping. 5pulses ever 5s. Time Tank Pres. (mBar) Chris Midas GV average Description 21:09 32.7 1194 19489 271.4 gate valve measurement 21:30 32.7 1195 19490 closed flapper lifetime measurement 21:44 32.7 1196 19491 open 22:00 32.7 1197 19492 flapping 23:23 102.7 1198 19493 flapping 23:37 102.7 1199 19494 Close 23:50 102.7 1200 19495 Open 00:14 102.7 1202 19497 149.5 gate valve measurement 02:05 299.4 1203 19498 gate valve measurement

24427	Mon Feb 13 22:21:35 2012	BMV

Volume scan procedure * turn off cc1 * open d2 pumpout port * turn off poly booster * source control flow to 2.5 in the end 1.3V to warm source and put more d2 in tank * close GC1, open GC5 until pressure reaches 200 * at 200, open GC1 and check valve bypass, at 106 * turn cooling flow up to 3.5V, wait for pressure to start decreasing * close check valve bypass and GC1 * turn on poly booster pump, wait for pressure to go down * at ~21mbar, turn cooling flow up to 4.4V; wait for pressure to finish dropping * close GC5, open GC1 (checks pressure left in tank) 102.7mBara *close GC1, open b to clear line, close b open GC5 * turn on CC1; close D2 pumpout port; confirm CC1 pressure OK (<~1e-4): 4e-5 * take data (fast daq + MCS) for >~10min

24425	Mon Feb 13 18:55:51 2012	BMV

Melt and Refreeze from yesterday, the mega one.... Source voltage appeared to go 5.3 3 2.5 2 1.5 1 1.2 2 2.5 3 5

Attachment 1: _10_11_12_13_Feb12_16.49.57.gif

_10_11_12_13_Feb12_16.49.57.gif

24423	Mon Feb 13 17:46:20 2012	BMV

UCNA Shift Change Checklist Date: February 13, 2012 16:30 Shift Persons: Peter, Brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 14.6 psia Heater C pressure 13.8 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302.7 psia Tungsten Cool ret. 84.0 psia Tungsten Cool Diff 285.3 psia 1630 eng. 2 temp. 16.75 K 1630 JT temp. 7.5 K 1630 outlet temp. 278.2 K 1630 engine speed 145 rpm 1630 supply press. 250 psig 1630 JT press. 215 psig 1630 return press. 1.6 psig 1630 med. press. stor. 20 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.8 K 1410 TE-E 79.2 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.0 psig 4K dewar pressure 260 mmHg 1K dewar pressure 6.8 psig 4K dewar level 18.3 inHe 1K dewar level 28.5 inHe 4K main flow

cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 89.4 % SCS field 9.575 kG SCS current 118.17 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 2.8x10-5 torr PPM LHe level 85.5 % PPM LN2 level 100 % (level meter broken) AFP LHe level 99.8 % Fill in progress AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.5 F West MWPC Temperature 75 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 12.3 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.8 Neopentane Flow Rate 9.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2014 Hz West muon veto rate 3609 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) DAQ data_raw disk usage 69%

24422	Mon Feb 13 17:02:25 2012	bz

At 37.9 tank mbar, stopped flowing into source. Closed CT1 and CT2 valves and GC1 valve, then opened GC5 so that D2 mensor was connected to source. Check valve bypass closed and orange valve open

24417	Mon Feb 13 06:58:11 2012	BMV

10:50AM 19445 A4:Bkg On E=1.162 W=0.933 10:58AM 19446 A5:Beta on E=9.903 W=8.949 Fe/GV=0.1145 SCS/GV=0.1790 E+W/GV=1.2810 11:58AM 19447 A6:Depol on->off W/R=0.167(57) 16:46 19452 A7:Beta On E=11.0 W=9.9 Fe/GV=0.1137 SCS/GV=.1745 E+W/GV=1.2675 17:46 19453 A8:Depol on->off W/R=0.083(39) 17:53 19454 A9:Bkg on E=1.26 W=0.95 18:04 19455 A10: Beta off E=14.3 W=15.3 Fe/GV=0.4799 SCS/GV=0.2451 E+W/GV=1.8301 19:07 19456 A11: Depol off->on W/R=0.022727(11492) 19:14 19457 A12: Bkg off E=1.167 W=1.097 8:54 PM 19462 B1: Background (on) E=1.185 W=1.013 9:01 PM 19463 B2: Beta Run (on) E=10.095 W=8.990 Fe/GV=0.1124 SCS/GV=0.1730 B/GV=-1.2504 9:51 PM 19464 B3: Depol (on to off) W/R=0.186441(61230) 9:58 PM 19465 B4: Background (off) E=1.145 W=1.079 10:06 PM 19466 B5: Beta Run (off) E=13.246 W=13.860 Fe/GV=0.4882 SCS/GV=0.2424 B/GV=1.8 10:56 PM 19467 B6: Depol (off to on) W/R=0.034014(15468) 11:03 PM 19468 B7: Beta Run (off) E=13.042 W=13.873 Fe/GV=0.4844 SCS/GV=0.2472 B/GV=1.82010 11:53 PM 19469 B8: Depol (off to on) W/R=0.039024(14064) 12:08 AM 19470 B9: Background (off) E=1.312 W=1.014 12:15 AM 19471 B10: Beta Run (on) E=8.494 W=7.664 Fe/GV=0.1101 SCS/GV=0.1710 B/GV=1.2701 01:06 AM 19472 B11: Depol (on to off) W/R=0.146(63) 01:13 AM 19473 B12: Background (on) E=1.166 W=1.107 01:20 AM 19474 A1: Background (off) E=1.226 W=1.092 01:27 AM 19475 A2: Beta Run (off) E=11.663 W=12.482 Fe/GV=0.4963 SCS/GV=0.2416 B/GV=1.8249 02:17 AM 19476 A3: Depol (off to on) W/R=0.013(09) 02:24 AM 19477 A4: Background (on) E=1.208 W=1.083 02:52 AM 19478 A5: Beta (on) E=8.365 W=7.571 Fe/GV=0.1103 SCS/GV=0.1742 B/GV=1.2629 03:43 AM 19479 A6: Depol (on to off) W/R=0.017(17) 03:50 AM 19480 A7: Beta (on) E=8.109 W=7.246 Fe/GV=0.1149 SCS/GV=0.1753 B/GV=1.2699 04:40 AM 19481 A8: Depol (on to off) W/R=0.092(39) 04:47 AM 19482 A9: Background (on) E=1.218 W=1.082 04:54 AM 19483 A10: Beta (off) E=10.273 W=11.094 Fe/GV=0.4956 SCS/GV=0.2379 B/GV=1.8427 05:45 AM 19484 A11: Depol (off to on) W/R=0.040(16) 05:52 AM 19485 A12: Background (off) E=1.222 W=1.057

Attachment 1: 9.ps

24421	Mon Feb 13 06:13:10 2012	ASaunders

proton current at end of weekend run ((5 * 1.36742E+14) * (1.61900 * (10^(-19)))) / (5.2 * 5) = 4.25740958 Ã– 10-6 ~4.3 uA Boooh!

24420	Mon Feb 13 06:05:31 2012	DAQ On-line

02/13 07:04 Start Run 13737 UCN0030 2011 UCN
02/13 07:05 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 5	1	2.73842E+13	0	0.00000E+00
Run 13737	5	1.36742E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13737	0	5337.	5337.	178.	1246.	889.50	382.63
13737	1	0.	0.	0.	0.	0.00	0.00
13737	2	0.	0.	0.	0.	0.00	0.00
13737	3	0.	0.	0.	0.	0.00	0.00
13737	10	50.	50.	1.	10.	8.33	3.61

24419 | Mon Feb 13 05:59:04 2012 | DAQ On-line

02/13 06:58 Start Run 13736 UCN0030 2011 UCN
02/13 06:59 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 5	0	0.00000E+00	0	0.00000E+00
Run 13736	0	0.00000E+00	0	0.00000E+00
Batch started at 13736	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13736	0	114.	114.	8.	36.	19.00	12.99
13736	1	0.	0.	0.	0.	0.00	0.00
13736	2	0.	0.	0.	0.	0.00	0.00
13736	3	0.	0.	0.	0.	0.00	0.00
13736	10	40.	40.	0.	10.	6.67	3.67

24418 | Mon Feb 13 00:12:05 2012 | Hasan

UCNA Shift Change Checklist Date: February 13, 2012 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.68 psia Heater C pressure 13.89 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302.2 psia Tungsten Cool ret. 84.1 psia Tungsten Cool Diff 285 psia 1630 eng. 2 temp. 13.74 K 1630 JT temp. 6.70 K 1630 outlet temp. 270.0 K 1630 engine speed 120 rpm 1630 supply press. 240 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.7 K 1410 TE-E 78.0 K 1410 supply press. 250 psig 1410 JT press. 150 psig 1410 return press. 3.0 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.69 inHe 1K dewar level 33.07 inHe 4K main flow control 7.0 V LHe temp. 1 4.9 K Heat exch. temp. 7 195.18 K Poly temp. 3 175.23 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.480 MHz AFP forward power 40 W SCS LHe level 99.9 % SCS field 9.580 kG SCS current 118.70 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.3 torr CC1 pressure 8.2e-05 torr PPM LHe level 85.6 % PPM LN2 level 100 % (level meter broken) AFP LHe level 88.7 % AFP LN2 level 76.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 258 ns TBCM001I03 (H- source current): 15.26 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.4 F West MWPC Temperature 70.3 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West

Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.0 Neopentane Flow Rate 11.2 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.36 kV West muon veto HV 2.37 kV East muon veto rate 3689 Hz West muon veto rate 6097 Hz Spectrometer vacuum 1.2e-5 Torr (CC2) DAQ data_raw disk usage 69%

24416	Sun Feb 12 19:53:20 2012	mmendenhall

Source lifetime, flapper flapping DG set to A=0.3 C=59.8; also need D=59.9>C to prevent closing early Lifetime = 34.2(1.2)s

Attachment 1: _0.gif

_0.gif

24415	Sun Feb 12 19:53:02 2012	mmendenhall

Source lifetime, flapper open Beam 5 pulses per burst, 1 burst every 60s Fast DAQ 19459 Decay time = 8.2(7)s

Attachment 1: _0.gif

_0.gif

24414	Sun Feb 12 16:44:03 2012	mmendenhall

UCNA Shift Change Checklist Date: February 12, 2012 16:30 Shift Persons: Michael, Brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 12.95 psia Heater C pressure 13.77 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 303 psia Tungsten Cool ret. 84.5 psia Tungsten Cool Diff 285 psia 1630 eng. 2 temp. 15.23 K 1630 JT temp. 7.42 K 1630 outlet temp. 271.2 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.2 psig 1630 med. press. stor. 32 psig 1410 engine speed 100 rpm 1410 TE-A 17.3 K 1410 TE-B 6.7 K 1410 TE-E 78.2 K 1410 supply press. 247 psig 1410 JT press. 150 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 6.5 psig 4K dewar level 31.5 inHe 1K dewar level 16.5 inHe 4K main flow control 7.0 V LHe temp. 1 4.9 K Heat exch. temp. 7 216 K Poly temp. 3 149 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.4 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 90.1 % SCS field 9.575 kG SCS current 118.17 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure --- torr PPM LHe level 85.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 78.7 % Fill in progress AFP LN2 level 65.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 15 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.7 F West MWPC Temperature 72.6 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.6 Neopentane Flow Rate 11.4 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1842 Hz West muon veto rate 3515 Hz Spectrometer vacuum 1.4e-5 Torr (CC2) DAQ data_raw disk usage 68%

24411	Sun Feb 12 16:29:58 2012	bz

Messages to the Morning Shift The beam will be ours until 7:30 AM on Monday When you leave, idle the source for a distillation. In order to do this, you MUST DO THE FOLLOWING: One of you must close the 389 valve on the back of the 1630, not super hard, just tight, and IMMEDIATELY AFTER THE 389 VALVE IS CLOSED you must open the A LPM 12. This takes TWO PEOPLE Then you can turn the source flow down as per normal

24413	Sun Feb 12 15:37:03 2012	MFMakela

Long melt and refreeze after Argon contamination... Source main return going into 1630 cold return. (A-LPM12 closed)

24412	Sun Feb 12 12:03:28 2012	KPH

~45 min 12:~40 Co60 on top of the b box. Couldn't open box due to leak into source.

24409	Sun Feb 12 10:24:41 2012	bz

07:03 19436 B7 Beta OFF E=12.720 W=13.515 Fe/GV=0.4776 SCS/GV=0.2408 (E+W)/GV=1.8342 08:03 19437 B8 Depol OFF->ON W/R=0.052(18) 08:10 19438 B9 Bkg OFF E= 1.218 W= 0.997 08:19 19439 B10 Beta ON E= 9.561 W= 8.598 Fe/GV=0.1138 SCS/GV=0.1781 (E+W)/GV=1.2722 09:19 19440 B11 Depol ON->OFF W/R=0.138(52) 09:26 19441 B12 Bkg ON E= 1.191 W= 1.013 09:34 19442 A1 Bkg OFF E= 1.078 W= 1.113 09:43 19443 A2 Beta OFF E=13.958 W=14.854 Fe/GV=0.4777 SCS/GV=0.2472 (E+W)/GV=1.8389 10:43 19444 A3 Depol OFF->ON W/R=0.042(15)

24410	Sun Feb 12 10:12:04 2012	KPH

Vented b box. Placed 3" vanadium foil centered over the UCN input hole on the inside of the scintilator. Pressure tested at 720 torr for 20 min. Pumped down again.

24408	Sun Feb 12 09:26:31 2012	KPH

From the toroid: (5 * (7.39430 * (10^14) C) * (1.61900 * (10^(-19)))) / ((5.2 s) * 26) = 4.42728243 Ã– 10-6 A Big picture: 4.4 uA

24407	Sun Feb 12 09:11:37 2012	DAQ On-line

02/12 10:07 Start Run 13735 UCN0030 2011 UCN
02/12 10:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 26	1	2.84092E+13	0	0.00000E+00
Run 13735	26	7.39430E+14	0	0.00000E+00
Batch started at 13735	26	7.39430E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13735	0	42224.	42224.	195.	1737.	1563.85	292.28
13735	1	0.	0.	0.	0.	0.00	0.00
13735	2	0.	0.	0.	0.	0.00	0.00
13735	3	0.	0.	0.	0.	0.00	0.00
13735	10	260.	260.	5.	10.	9.63	1.21

24406	Sun Feb 12 09:06:26 2012	DAQ On-line

02/12 10:05 Start Run 13734 UCN0030 2011 UCN
02/12 10:06 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13734	0	5496.	5496.	9.	794.	274.80	358.34
13734	1	0.	0.	0.	0.	0.00	0.00
13734	2	0.	0.	0.	0.	0.00	0.00
13734	3	0.	0.	0.	0.	0.00	0.00
13734	10	30.	30.	0.	2.	1.50	0.69

24405	Sun Feb 12 09:05:40 2012	DAQ On-line

02/12 10:05 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13733	0	78098.	78098.	2.	851.	274.03	364.36
13733	1	0.	0.	0.	0.	0.00	0.00
13733	2	0.	0.	0.	0.	0.00	0.00
13733	3	0.	0.	0.	0.	0.00	0.00
13733	10	480.	480.	0.	5.	1.68	0.55

24404 | Sun Feb 12 08:55:09 2012 | DAQ On-line

02/12 09:49 Start Run 13732 UCN0030 2011 UCN
02/12 09:55 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13732	0	49183.	49183.	0.	855.	289.31	364.42
13732	1	0.	0.	0.	0.	0.00	0.00
13732	2	0.	0.	0.	0.	0.00	0.00
13732	3	0.	0.	0.	0.	0.00	0.00
13732	10	305.	305.	0.	5.	1.79	0.78

24403 | Sun Feb 12 08:49:40 2012 | DAQ On-line

02/12 09:43 Start Run 13731 UCN0030 2011 UCN
02/12 09:49 End Run

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13731	0	59113.	59113.	5.	890.	276.23	363.66
13731	1	0.	0.	0.	0.	0.00	0.00
13731	2	0.	0.	0.	0.	0.00	0.00
13731	3	0.	0.	0.	0.	0.00	0.00
13731	10	360.	360.	0.	3.	1.68	0.51

24402 | Sun Feb 12 07:43:12 2012 | KPH

UCNA Shift Change Checklist Date: February 12, 2012 08:00 Shift Persons: Bryan, Kevin UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.62 psia Heater C pressure 13.81 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302.4 psia Tungsten Cool ret. 84.1 psia Tungsten Cool Diff 285.2 psia 1630 eng. 2 temp. 13.83 K 1630 JT temp. 7.01 K 1630 outlet temp. 269.9 K 1630 engine speed 125 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.5 psig 1630 med. press. stor. 45 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.8 K 1410 TE-E 78.9 K 1410 supply press. 248 psig 1410 JT press. 152 psig 1410 return press. 3.0 psig 4K dewar pressure 271 mmHg 1K dewar pressure 6.5 psig 4K dewar level 15.2 inHe 1K dewar level 24.02 inHe 4K main flow control 9.5 V LHe temp. 1 4.88 K Heat exch. temp. 7 197.7 K Poly temp. 3 175.0 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 96.7 % SCS field - kG SCS current 118.17 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure ~0 torr CM5 pressure ~0 torr CC1 pressure 1.1e-5 torr PPM LHe level 86.0 % PPM LN2 level 100 % (level meter broken) AFP LHe level 92.9 % AFP LN2 level 89.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T)

chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 268 ns TBCM001I03 (H- source current): 15.1 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.0 F West MWPC Temperature 71.4 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1/2 ========== West Detector Cart ========== MWPC HV 2350 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.4 Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 2072 Hz West muon veto rate 3724 Hz Spectrometer vacuum 1.3e-5 Torr (CC2)

24401	Sun Feb 12 03:42:50 2012	JCHoagland

beam came back on at 4:30

24400	Sun Feb 12 02:47:19 2012	JCHoagland

beam died at 3:30

24399	Sun Feb 12 02:12:39 2012	Hasan

UCNA Shift Change Checklist Date: February 12, 2012 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.66 psia Heater C pressure 13.86 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 303.8 psia Tungsten Cool ret. 84.9 psia Tungsten Cool Diff 285.9 psia 1630 eng. 2 temp. 14.58 K 1630 JT temp. 7.55 K 1630 outlet temp. 271.6 K 1630 engine speed 100 rpm 1630 supply press. 200 psig 1630 JT press. 175 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.8 K 1410 TE-E 78.3 K 1410 supply press. 250 psig 1410 JT press. 150 psig 1410 return press. 3.0 psig 4K dewar pressure 260 mmHg 1K dewar pressure 6.0 psig 4K dewar level 11.65 inHe 1K dewar level 31.85 inHe 4K main flow control 9.5 V LHe temp. 1 4.875 K Heat exch. temp. 7 197.71 K Poly temp. 3 186.55 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 9.58 kG SCS current 118.17 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.4 torr glitch during magnet fill CM5 pressure 2.4 torr CC1 pressure 1.7e-5 torr PPM LHe level 86.1 % PPM LN2 level 100 % (level meter broken) AFP LHe level 89 % AFP LN2 level 68.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 15.3 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.0 F West MWPC Temperature 72.4 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 11.6 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.4 Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2025 Hz West muon veto rate 3881 Hz Spectrometer vacuum 1.3e-5 Torr (CC2) disk usage daq account 68 %

24398	Sat Feb 11 20:33:52 2012	BMV

12:18 PM19405 A1:Background (off) E=1.123 W=1.022 12:27 PM19406 A2:Beta Run (off) E=13.814 W=14.783 Fe/GV=0.4788 SCS/GV=0.2462 E+W/GV=1.8458 1:27 PM 19407 A3:Depol (off to on) W/R= 0.038674+-0.014897 1:34 PM 19408 A4:Background (on) E=1.173 W=1.022 1:42 PM 19409 A5:Beta Run (on)<---------beam down 18:40 19410 A5:Beta Run (on) E=10.411 W=9.463 Fe/GV=0.1145 SCS/GV=0.1788 E+W/GV=1.2679 19:40 19411 A6:Depol on->off W/R=0.074074+-0.031341 19:47 19412 A7:Beta (on) E=10.717 W=9.587 Fe/GV=0.1145 SCS/GV=0.1740 E+W/GV=1.2705 20:47 19413 A8:Depol (on->off) W/R=0.106061+-0.042159 20:54 19414 A9:Bkg (on) E=1.227 W=0.940 21:03 19415 A10:Beta (off) E= W= Fe/GV= SCS/GV= E+W/GV=

24374	Sat Feb 11 17:33:31 2012	BMV

Time Run Chris Daq Midas Cycles Comments 23:21 DE(90)- 1182 19336 6 2/10/12 00:17 DE(90)+ 1183 19337 6 01:12 DE(90)+ 19338 4 forgot to restart Chris'sDaq but try to restart quickly.

Keith saved his tune for this evening it is called "Short Sweet and centered". Unfortunately we see 250 Hz GV closed. He has no spill problems and it looking at the temperatures and everything the beam looks nice. I think we need to fix our source. Beam tune from earlier today that was causing the Albatross alarm to go off was called, "It's not Scottish"

24396	Sat Feb 11 15:52:37 2012	mmendenhall

UCNA Shift Change Checklist Date: February 11, 2012 16:34 Shift Persons: Brittney, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 13.40 psia Heater C pressure 13.81 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 306.3 psia Tungsten Cool ret. 87.2 psia Tungsten Cool Diff 285.4 psia 1630 eng. 2 temp. 13.89 K 1630 JT temp. 7.41 K 1630 outlet temp. 271.6 K 1630 engine speed 130 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 2.7 psig 1630 med. press. stor. 50 psig 1410 engine speed 100 rpm 1410 TE-A 18.6 K 1410 TE-B 7.4 K 1410 TE-E 79.9 K 1410 supply press. 250 psig 1410 JT press. 160 psig 1410 return press. 2.9 psig 4K dewar pressure 295 mmHg 1K dewar pressure 6.2 psig 4K dewar level 18.0 inHe 1K dewar level 29.7 inHe 4K main flow control 8 V LHe temp. 1 4.83 K Heat exch. temp. 7 206 K Poly temp. 3 177 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.480 MHz AFP forward power OFF W SCS LHe level 89.1 % SCS field 9.57 kG SCS current 118.17 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 4.2 torr glitch during magnet fill CM5 pressure 2.3 torr CC1 pressure --- torr PPM LHe level 86.1 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 97.2 % AFP LN2 level 67.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s Tuning in progress... Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): ---mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.6 F West MWPC Temperature 74.7 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 13.0 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2370 V (knob misaligned; really 2600V -MPM) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.7 Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2319 Hz West muon veto rate 4261 Hz Spectrometer vacuum 2.3e-5 Torr (CC2) disk usage daq account 68 %

24394	Sat Feb 11 15:00:39 2012	RRios

The question I have is how can we have 9uA and still have a temperature of 400K on thermocouple 3? That should double TC3. Edit: Current not actually that high. That's just peak current that CCR brought up.

24395	Sat Feb 11 13:38:07 2012	RRios

CCR: Beam going to be down for hours +

24393	Sat Feb 11 12:59:06 2012	RRios

12:18 PM19405 A1:Background (off) 12:27 PM19406 A2:Beta Run (off) 1:27 PM 19407 A3:Depol (off to on) 1:34 PM 19408 A4:Background (on) 1:42 PM 19409 A5:Beta Run (on)<---------beam down

24392	Sat Feb 11 12:58:05 2012	RRios

Beam went down.

24391	Sat Feb 11 11:17:03 2012	RRios

Finished A->B Octet... Will continue with next octet. Flipped coin, next octet is B->A

24384	Sat Feb 11 11:15:10 2012	bz

new A->B Octet 01:54 19380 A1 Bkg OFF E= 1.228 W= 1.047 02:02 19381 A2 Beta OFF E=13.245 W=14.088 Fe/GV=0.4810 SCS/GV=0.2454 (E+W)/GV=1.8321 03:02 19382 A3 Depol OFF->ON W/R=0.048(17) 03:09 19383 A4 Bkg ON E= 1.235 W= 1.040 03:18 19384 A5 Beta ON E= 9.643 W= 8.751 Fe/GV=0.1143 SCS/GV=0.1738 (E+W)/GV=1.2563 04:18 19385 A6 Depol ON->OFF W/R=0.183099 04:25 19386 A7 Beta ON E= 9.663 W= 8.794 Fe/GV=0.1137 SCS/GV=0.1775 (E+W)/GV=1.2608 05:25 19387 A8 Depol ON->OFF W/R=0.034483 05:32 19388 A9 Bkg ON E= 1.081 W= 0.990 05:41 19389 A10 Beta OFF E=11.618 W=12.444 Fe/GV=0.4839 SCS/GV=0.2461 (E+W)/GV=1.8315 06:41 19390 A11 Depol OFF->ON

8:21 AM 19396 B4: Background (off) 8:29 AM 19397 B5: Beta Run (off) 9:30 AM 19398 B6: Depol (off to on) 9:37 AM 19399 B7: Beta Run (off) 10:37AM 19400 B8: Depol (off to on) 10:44AM 19401 B9: Background (off) 10:52AM 19402 B10: Beta Run (on) 11:53AM 19403 B11: Depol (on to off) 12:01PM 19404 B12: Background (on)

24390	Sat Feb 11 10:13:14 2012	RRios

CCR was not interested in tuning

24389	Sat Feb 11 10:06:45 2012	RRios

Increasing the source voltage did not slow the liquid level rate in the 4K will now turn down the 1630 speed to 130.

24388	Sat Feb 11 09:05:23 2012	MFMakela

Thanks for turning on CC1. Please increase the source LHe voltage to 7 VDC If this does not lower 4K dewar filling rate, slow the 1630, 10-20 rpm (should be 150 or under now).

24387	Sat Feb 11 08:48:17 2012	RRios

Attachment 1: mp

24386	Sat Feb 11 08:46:34 2012	zwang

UCNA Shift Change Checklist Date: February 11, 2012 03:21 Shift Persons: Raymod, Jeff w. UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.59 psia Heater C pressure 13.77 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 305.5 psia Tungsten Cool ret. 86.2 psia Tungsten Cool Diff 286.5 psia 1630 eng. 2 temp. 13.70 K 1630 JT temp. 6.99 K 1630 outlet temp. 270.9 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 41 psig 1410 engine speed 100 rpm 1410 TE-A 17.5 K 1410 TE-B 6.8 K 1410 TE-E 79.2 K 1410 supply press. 249 psig 1410 JT press. 150 psig 1410 return press. 3 psig 4K dewar pressure 280 mmHg 1K dewar pressure 6.2 psig 4K dewar level 16.36 inHe 1K dewar level 24.77 inHe 4K main flow control 6.8 V LHe temp. 1 4.84 K Heat exch. temp. 7 202.9 K Poly temp. 3 188.98 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.480 MHz AFP forward power OFF W SCS LHe level 95 % SCS field 9.57 kG SCS current 118.17 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 1.7x10-5 torr PPM LHe level 86.2 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 92.9 % AFP LN2 level 88.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 261 ns TBCM001I03 (H- source current): 15.3 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.7 F West MWPC Temperature 71.5 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.2 ========== West Detector Cart ========== MWPC HV 2360 V (it is really 2600V?) MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.5 Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2027 Hz West muon veto rate 4030 Hz Spectrometer vacuum 1.4e-5 Torr (CC2) disk usage daq account 67 %

24385	Sat Feb 11 06:56:02 2012	JCHoagland

when i was at ccr watching the tuning stuff, i noticed that the beam spillage at points leading into our beam line was at a rate of up to 46% spillage. I asked but they seemed to think that it was unimportant for our tune. also it should be noted that tonight even when we got the beam quality to above 30 with micheal's program reader the rate did not increase.

24383	Sat Feb 11 02:33:45 2012	bz

UCNA Shift Change Checklist Date: February 11, 2012 03:21 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.42 psia Heater C pressure 13.62 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 306.6 psia Tungsten Cool ret. 87.2 psia Tungsten Cool Diff 286.6 psia 1630 eng. 2 temp. 13.27 K 1630 JT temp. 6.84 K 1630 outlet temp. 271.2 K 1630 engine speed 150 rpm 1630 supply press.

1410 engine speed 124 rpm 1410 TE-A 17.6 K 1410 TE-B 6.7 K 1410 TE-E 86.3 K 1410 supply press. 245 psig 1410 JT press. 145 psig 1410 return press. 2.9 psig 4K dewar pressure 277 mmHg 1K dewar pressure 6.6 psig 4K dewar level 13.0 inHe 1K dewar level 34.5 inHe 4K main flow control 6.7 V LHe temp. 1 4.81 K Heat exch. temp. 7 191.6 K Poly temp. 3 178.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.2 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 9.575 kG SCS current 118.17 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.4 torr CC1 pressure 3.9x10-5 torr PPM LHe level 86.3 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 88.4 % AFP LN2 level 83.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 261 ns TBCM001I03 (H- source current): 15.4 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.7 F West MWPC Temperature 71.9 F MWPC Pressure 100.2 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 13.4 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.25 ========== West Detector Cart ========== MWPC HV 2370 V it is really 2600V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.2 Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1987 Hz West muon veto rate 3815 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 67 %

24382	Sat Feb 11 01:29:27 2012	bz

West PMT 4 is missing its Bi peak entirely, as far as I can tell

24381	Sat Feb 11 00:03:19 2012	BMV

So attached is part of our beam tune activity. The yellow is the tune quality and the dark blue is the target 3 temperature, and the brown is the UCN count. As you can see we got a max temp and a max tune quality near 33 but the UCN count if anything went down. We need to figure something else out... Could it be a source problem, both in the beam and our source? Is the OP converter working?

Attachment 1: 1_70_72_100_-3_Feb11_00.20.00.gif

1_70_72_100_-3_Feb11_00.20.00.gif

24380	Fri Feb 10 21:40:02 2012	MFMakela

The main return from the source ius valved off (this is ok). THe main return is now going into the liquifier at below 20K. If changes need to be made to the source flow please contact me if possible. To change back to normal flow V389 on the back of the liquifier must be closed and the normal return valve opened. Please do not attempt a melt and refreeze, this will mess up the liquifier. Since the source is running very cold melt refreeze should not be needed.

24379	Fri Feb 10 16:04:23 2012	Hasan

Mark and Hasan performed a double melt and refreeze. If one desires another one PLEASE CALL MARK!!! the liquifier system is different and a melt and refreeze can ruit it.

24378	Fri Feb 10 15:41:30 2012	BMV

UCNA Shift Change Checklist Date: February 10, 2012 16:15 Shift Persons: bmv,mpm UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 13.66 psia Heater C pressure 12.84 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 307.0 psia Tungsten Cool ret. 87.2 psia Tungsten Cool Diff 286.4 psia 1630 eng. 2 temp. 13.35 K 1630 JT temp. 6.86 K 1630 outlet temp. 273.0 K 1630 engine speed 145 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.3 psig 1630 med. press. stor. 30 psig 1410 engine speed 200 rpm 1410 TE-A 15.3 K 1410 TE-B 6.4 K 1410 TE-E 92.0 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 2.9 psig 4K dewar pressure 285 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.93 inHe 1K dewar level 29.48 inHe 4K main flow control 6.5 V LHe temp. 1 4.777 K Heat exch. temp. 7 191.03 K Poly temp. 3 58.190 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 84.5 % SCS field 9.575 kG SCS current 118.7 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.3 torr CC1 pressure 1.0x10-5 torr PPM LHe level 86.3 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 85.8 % AFP LN2 level 74.9 % PPM current 72(6) A(T) AFP current

point 7 degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 72.7 F West MWPC Temperature 74.8 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.3 ========== West Detector Cart ========== MWPC HV 2370 V it is really 2600V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.7 Neopentane Flow Rate 11.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) on V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1843 Hz West muon veto rate 3419 Hz Spectrometer vacuum 5e-5 Torr (CC2) disk usage daq account 67 %

24377	Fri Feb 10 13:59:58 2012	mmendenhall

Due to an unknown glitch (possibly a problem with the MySQL run info DB?), the DAQ computers stopped being able to convert the .mid files to .root starting at run number 19341. Rebooting the DAQ computers fixed the problem, and no actual data was lost (the .mid files were written to disk, and can now be replayed to .root).

24376	Fri Feb 10 05:43:06 2012	RRios

Midnight Shift Beam Tune is not good. 250 UCN/GVmon for 9uA beam Temperature hit barely 400 C. Thermocouples 2,3,4 are all very close to the same valvue. Finished up the last of the DE runs Chris's Daq Fast Daq Cylces 23:21 DE(90)- 1182 19336 6 00:17:47 DE(90)+ 1183 19337 6 01:12:42 DE(90)+ 19338 4 Went up tp help tune. While up there the beam went down for a good portion of the night Will still need to tune for tomorrow. While the spin flip tuning looked good the other night, we wanted to double check it. Attempted to take some measurements to double check spin flipper run: 19342 (Off -> On) run: 19345 (On->Off) Adam's depol analyzer unable to locate files. Midas not storing correctly? Gary's Proton ring program not running so we couldn't verify the current.

24375	Fri Feb 10 03:12:38 2012	JCHoagland

UCNA Shift Change Checklist Date: February 10, 2012 01:15 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 13.74 psia Heater C pressure 12.92 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 305.7 psia Tungsten Cool ret. 86.2 psia Tungsten Cool Diff 286.4 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.4 K 1630 outlet temp. 279.0 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.0 psig 1630 med. press. stor. 67 psig 1410 engine speed 200 rpm 1410 TE-A 15.3 K 1410 TE-B 6.4 K 1410 TE-E 86.0 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 2.9 psig 4K dewar pressure 285 mmHg 1K dewar pressure 7.0 psig 4K dewar level 15.4 inHe 1K dewar level 16.0 inHe 4K main flow control 5.5 V LHe temp. 1 4.7 K Heat exch. temp. 7 190.8 K Poly temp. 3 131.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.480 MHz AFP forward power 40 W SCS LHe level 95.1 % SCS field 9.5 kG SCS current 118.17 A AFP N2 dewar level 2/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.3 torr CC1 pressure 1.1x10-5 torr PPM LHe level 86.4 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 15.4 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.7 F West MWPC Temperature 71.5 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.4 Neopentane Flow Rate 11.3 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 East muon veto HV 2.35 kV West muon veto HV 2.35 kV East muon veto rate 1848 Hz West muon veto rate 3373 Hz Spectrometer vacuum 1.7e-5 Torr (CC2) disk usage daq account 66 %

24373	Thu Feb 9 15:33:32 2012	BMV

UCNA Shift Change Checklist Date: February 9, 2012 16:00 Shift Persons: mpm, bmv UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.71 psia Heater C pressure 12.89 psia Tungsten supply press. 310 psig

308.6 psia Tungsten Cool ret. 88.7 psia Tungsten Cool Diff 287.1 psia 1630 eng. 2 temp. 15.01 K 1630 JT temp. 7.27 K 1630 outlet temp. 279.8 K 1630 engine speed 190 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 1.3 psig 1630 med. press. stor. 50 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 91.5 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.0 psig 4K dewar pressure 275 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.34 inHe 1K dewar level 32.81 inHe 4K main flow control 3.3 V LHe temp. 1 7.521 K Heat exch. temp. 7 205.03 K Poly temp. 3 63.185 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.4800 MHz AFP forward power 0 W SCS LHe level 85.9 % SCS field 9.575 kG SCS current 118.17 A AFP N2 dewar level 1/3 SV3 closed SV4 closed CM1 pressure 3.1 torr CM5 pressure 2.3 torr CC1 pressure --- torr PPM LHe level 86.4 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 97.8 % AFP LN2 level 98.0 % PPM current 72(6) A(T) AFP current 93.581 A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s currently off Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.0 F West MWPC Temperature 75.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1857 Hz West muon veto rate 3452 Hz Spectrometer vacuum 2e-5 Torr (CC2) disk usage daq account 66 %

24372	Thu Feb 9 06:38:30 2012	bz

Time Type MCA MIDAS Cycles Notes 00:37 DE (45s) - 1177 19330 10 02:01 DE (45s) + 1178 19331 10 03:26 DE (65s) + 1179 19332 10 05:19 DE (65s) - 1180 19333 11 10th cycle bad 06:57 DE (90s) - 1181 19334 3

24371	Thu Feb 9 06:26:33 2012	bz

Timing Scheme for Depol Evolution (45s) OFF 0 0 1011 1001 10 0 1001 1001 15000 0 0001 1001 15100 0 0001 0010 ----- 19100 0 0001 0110 19600 0 1001 0110 26600 0 1001 0010 49600 0 1001 0001 In order to make an ON depol evolution, simply invert the AFP column, (1s become 0s and vice versa) In order to change timing, last 4 rows need to have time added for longer runs.

24370	Thu Feb 9 02:18:40 2012	JCHoagland

UCNA Shift Change Checklist Date: February 9, 2012 00:00 Shift Persons: jeff, bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 35 slpm Heater B pressure 13.73 psia Heater C pressure 12.91 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 310.7 psia Tungsten Cool ret. 90.0 psia Tungsten Cool Diff 288.3 psia 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.5 K 1630 outlet temp. 278.6 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 87 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 95.9 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.0 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 9.4 inHe 1K dewar level 24.2 inHe 4K main flow control 5.3 V LHe temp. 1 4.6 K Heat exch. temp. 7 208.8 K Poly temp. 3 146.0 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency tuning MHz AFP forward power tuning W SCS LHe level 98.7 % SCS field ---- kG SCS current 118.17 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.4 torr CC1 pressure 3.9x10-5 torr PPM LHe level 86.7 % PPM LN2 level ~~~ % (level meter broken) AFP LHe level 90.8 % AFP LN2 level 82.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 12 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.3 F West MWPC Temperature 72.6 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.3 Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2095 Hz West muon veto rate 3825 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 66 %

24367	Wed Feb 8 23:38:05 2012	BMV

Closed check valve bypass valve on tank at 14mBar

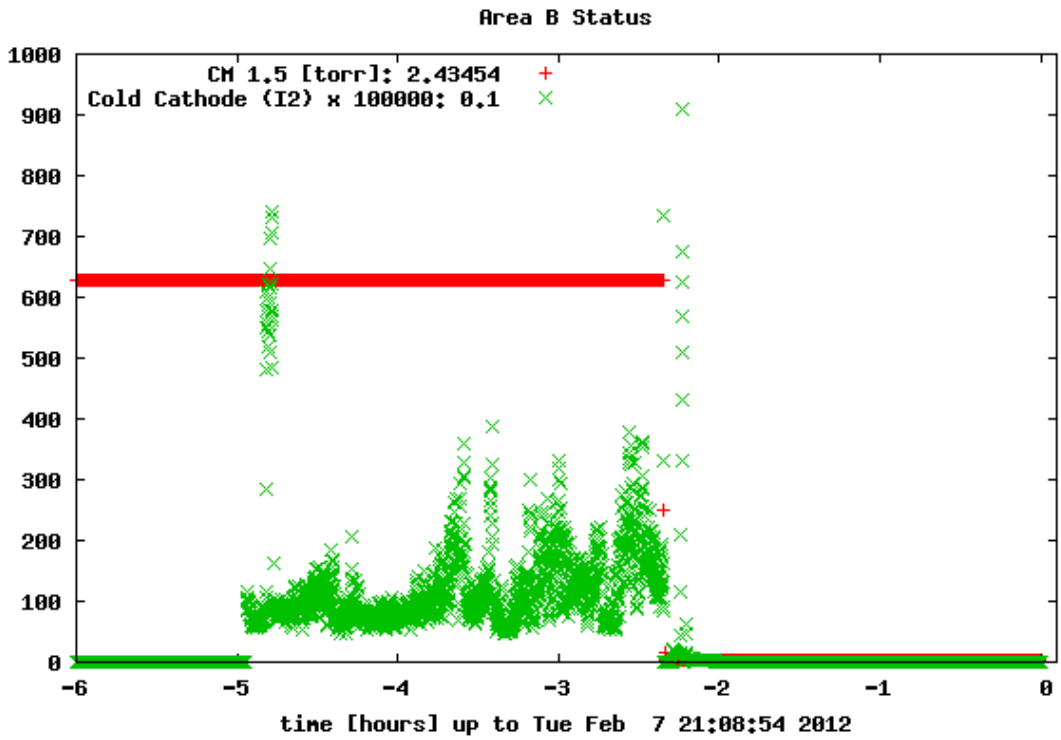
24369	Wed Feb 8 23:37:32 2012	BMV

2/8/12 23:50 Brittney, Michael Filled the AFP, Filled the SCS Decided the rate was poor about 150Hz so performed a melt and refreeze appears to help. Spin Flipper Tune Freq FWD REFL FeMon/30s 0 0 0 223,238 28.494 5 185,213 28.490 5 0.05 197,199 28.486 5 0.05 161,173 28.482 5 0.1 148,114,117 28.478 5 0.1 105,127,89,103 0 0 0 248,231,221 28.476 5 0.15 119,103 28.472 5 0.2 114,87 28.474 10 0.4 BAD 28.476 17 0.4 BAD 28.478 25 0.4 BAD 28.480 40 0.225 65,59 Bryan arrived and decided to do a test depol on->off test. He says that 28.480 appears to be in range... We will see.

24368	Wed Feb 8 18:51:29 2012	BMV

PPM FOIL- So word of warning that we need to fix. The reason we thought it was hooked up to the system is because CM 1.5 was reading atmosphere and CC2 was reading 10-3. Normally CC2 would not turn on when it is above 10-3.I have attached CC2 and CM5 picture. Can see our confusion

Attachment 1: Feb07_21.08.54.gif



24366	Wed Feb 8 15:36:29 2012	mmendenhall

UCNA Shift Change Checklist Date: February 8, 2012 16:00 Shift Persons: Brittney, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 35 slpm Heater B pressure 13.72 psia Heater C pressure 12.90 psia Tungsten supply press. 325 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 312 psia Tungsten Cool ret. 91 psia Tungsten Cool Diff 289 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.4 K 1630 outlet temp. 280 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.8 psig 1630 med. press. stor. 65 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 88.4 K 1410 supply press. 235 psig 1410 JT press. 125 psig 1410 return press. 3.0 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.9 inHe 1K dewar level 22.5 inHe 4K main flow control 5.0 V LHe temp. 1 5.4 K Heat exch. temp. 7 215 K Poly temp. 3 129 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.494 MHz AFP forward power --- W SCS LHe level 84.3 % SCS field 9.75 kG SCS current 118.17 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 247.1 torr building source CM5 pressure 2.4 torr CC1 pressure 8.5x10-3 torr PPM LHe level 86.8 % PPM LN2 level 100 % (level meter broken) AFP LHe level 85.4 % AFP LN2 level 74.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T)

chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.0 F West MWPC Temperature 75.4 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 12.3 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -5.0 Neopentane Flow Rate 12.1 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1733 Hz West muon veto rate 3291 Hz Spectrometer vacuum 3-5 Torr (CC2) disk usage daq account 66 %

24365	Wed Feb 8 14:00:14 2012	RRios

Started cooling the source: Started at 1161 mbar 2:50 LHe Temp at 25K Source Voltage:5V

24364	Wed Feb 8 12:46:09 2012	RRios

Checking Beam Enable: Labview Puts out correct voltage: 5V Check cable to wall: 5V VP 8908 at EB-40: 5V VP 8923 HRS at CCH-R8: ??? CCH?

24363	Wed Feb 8 12:41:18 2012	RRios

Source: Closed SV3 Closed MV2 Turned off Turbo Opened Green Check Valve bypass Opened Orange valve Pressure at 1161 mbar Source Voltage: 1V

24362	Wed Feb 8 08:52:26 2012	MFMakela

Source distiled 1260 mbar in tank 290 mbar in guide Pumping and warming source Orange valve closed

24361	Wed Feb 8 06:23:24 2012	bz

source idled to 1.0 V and check valve bypass opened for source distillation to be performed by Mark

24360	Wed Feb 8 06:22:32 2012	bz

THERE IS NOT A PINHOLE LEAK IN THE PPM FOIL the cc2 line was plugged into the actual cc2, meaning that it was measuring the pressure in the area between the gate valve and the foil, not the switcher volume when the line was changed to the switcher cc, the pressure was measured at ~2e-5 torr, so safe for AFP operation but not truly amazing

24359	Wed Feb 8 06:09:01 2012	bz

Can't get Gary's DAQ to work even after restarting computer. Someone needs to contact Gary Hogan so that we can get it running again

24358	Wed Feb 8 04:58:08 2012	bz

Not very much got done tonight, just barely managed to make source and start tuning spin flipper but them beam cut out. We thought it was on CCR's end but they told us that we are vetoing beam. Raymond's program Gate_Valve.vi has the Beam light lit, so no software veto, and cycling that button does nothing. Called Mark, but Mark also has no idea how we might be vetoing. Will look at Raymond's box to determine what circuit is sending signal. This also means we got nothing done in terms of depol data or tuning the spin flipper, so these must be done at the beginning of the next shift. Early results from our flipper tuning were not very encouraging - FeMon rates did not go to .2, but instead to .66 near the old tune

24356	Wed Feb 8 03:00:56 2012	BMV

Making source, pressure in the tank 1193.4 mbar at start Source voltage at 2.0 V AFP is ramped to 93.581 SCS is also ramped 152.6 mbarr after source is made

24357	Tue Feb 7 23:39:45 2012	JCHoagland

UCNA Shift Change Checklist Date: February 8, 2012 00:00 Shift Persons: Bryan, jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 22 slpm Heater B pressure 13.82 psia Heater C pressure 13.00 psia Tungsten supply press. 315 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 311.0 psia Tungsten Cool ret. 90.2 psia Tungsten Cool Diff 288.1 psia 1630 eng. 2 temp. 15.1 K

psig 1630 JT press. 200 psig 1630 return press. 1.7 psig 1630 med. press. stor. 120 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 95.4 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 2.9 psig 4K dewar pressure 330 mmHg 1K dewar pressure 7.0 psig 4K dewar level 8.5 inHe 1K dewar level 8.6 inHe 4K main flow control 2.6 V LHe temp. 1 15.8 K Heat exch. temp. 7 246.8 K Poly temp. 3 236.0 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 20.6 C AFP frequency 28.484 MHz AFP forward power --- W SCS LHe level 99.9 % SCS field 9.5 kG SCS current 118.17 A AFP N2 dewar level 6/8 SV3 closed SV4 open CM1 pressure 598.1 torr building source CM5 pressure 2.5 torr CC1 pressure --- torr PPM LHe level 87.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.7 F West MWPC Temperature 72.2 F MWPC Pressure 100.0 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -4.9 Neopentane Flow Rate 12.1 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1225 East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1786 Hz West muon veto rate 3194 Hz Spectrometer vacuum 8.9-7 Torr (CC2) disk usage daq account 66 %

24354	Tue Feb 7 22:35:08 2012	BMV

After AFP fill, 1410 started acting up, started dumping... turned speed to 200rpm and switched JT307 to automatic (that is what Bryan suggested). So far seems ok. JT307 is now on Manual at ~54.6%

24355	Tue Feb 7 18:14:30 2012	BMV

Appears to be a leak in the PPM foil, probably a pin hole. Pressure was going down really slow but when we turned on SV4 the pressure in the system dropped instantly. Then when we turned off SV4 it creeped up. So will have SV4 pumping until we start taking data. MUST WATCH SOURCE PRESSURE!!!!

24353	Tue Feb 7 16:39:53 2012	BMV

UCNA Shift Change Checklist Date: February 7, 2012 16:00 Shift Persons: Brittney, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 14.73 psia Heater C pressure 13.65 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 313.4 psia Tungsten Cool ret. 92.2 psia Tungsten Cool Diff 208.7 psia 1630 eng. 2 temp. 14.50 K 1630 JT temp. 7.18 K 1630 outlet temp. 279.3 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 95 psig 1410 engine speed 210 rpm 1410 TE-A 14.5 K 1410 TE-B 7.0 K 1410 TE-E 79.1 K 1410 supply press. 160 psig 1410 JT press. 95 psig 1410 return press. 2.9 psig 4K dewar pressure 310 mmHg 1K dewar pressure 5.5 psig 4K dewar level 20.55 inHe 1K dewar level 25.81 inHe 4K main flow control 0 V LHe temp. (channel 1) 216.0 K Heat exch. temp. (channel 7) 217.36 K Poly temp. (channel 3) 268.78 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 21.5 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 45.2 % SCS field 0 kG SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 903.6 torr CM5 pressure 626.8 torr CC1 pressure atm torr PPM LHe level 87.1 % PPM LN2 level 100.0 % AFP LHe level 62.0 % AFP LN2 level 90.9 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point 0 degC AFP chiller level light off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.4 F West MWPC Temperature 72.8 F MWPC Pressure 0.8 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 3 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Trip Hold MWPC Pressure 0.7 torr N2 - MWPC Differential 0 Neopentane Flow Rate 0 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A Top-Veto and GMS Crate (Top Crate) 0 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 on V East muon veto HV 0 kV West muon veto HV 0 kV East muon veto rate 0 Hz West muon veto rate 0 Hz Spectrometer vacuum 6e-3 Torr (CC2) disk usage daq account 66 %

24352	Tue Feb 7 09:52:13 2012	MFMakela

pressure up.

24351	Tue Feb 7 09:48:58 2012	MFMakela

Warming up the source to make more LHe for SCS fill

24350	Tue Feb 7 08:24:17 2012	MFMakela

Dumping more D2 into the source

24349	Tue Feb 7 08:23:36 2012	MFMakela

486 mbar in tank during last nights run ~800 mbar in source

24348	Mon Feb 6 23:28:03 2012	bz

During our upscatter measurements, there were numerous pressure spikes from an undetermined source. A picture of the pressure chart is attached, and the temperature charts look nearly identical. No other symptoms were detected, but the rate didn't drop precipitously after the source froze again. After the measurement, idled the source to 3.7 volts and stabilized the 1630 EDIT: There was at least one spike that occurred AFTER the beam was turned off.

Attachment 1: .png

.png

24347	Fri Feb 3 14:01:57 2012	CLMorris

I have replaced the inner shield and bucking coil on PMT 1W. When we get ready to come on, we should do a current scan on the bucking coil for PMT 1W with the SCS off and then with it on. This should verify the sign of current needed. If this doesn't fix the light pulser I'll keep looking.

24346	Tue Jan 31 10:50:17 2012	MFMakela

Warming up O/P and pumping out

24344	Tue Jan 31 10:47:43 2012	MFMakela

22 mbar in tank starting long source distilation source volatge 1.5 VDC Check valve bypass open 1280 mbar in tank 108 mbar in source Source flow off 10:06 LHe1 226k Closing orange valve

24345	Tue Jan 31 09:08:06 2012	BMV

Area between the gate valve and foil are vented!!!!!! Experiment downstream off PPM vented

24343	Mon Jan 30 03:15:34 2012	BMV

1/29/2012 10am- Vanadium lifetime experiment as shown in previous logbook entry, data soon to be entered in the logbook. Attached tube Saturday to have a blank-offed end, downstream of the PPM. Chris Morris placed a thin Vanadium sheet at the end of the beam line (between PPM and switcher.)Right up against it. We activated the V-51. V-52 has a half life of 3.7min. We activated it at seperate times for 5mins, 20mins, and ~30mins.Using germanium detector and Cesium Iodine detector. We recorded the gamma spectrum and lifetime of the Vanadium. 5pm- Mark arrived. Todd and Mark installed the Vanadium and polyethelene tube so that it sticks up vertically at the downstream side of the PPM. Then using the crane we hoisted the germanium detector along five points of the meter tube where the V and Polyethelene was placed inside. These were recorded in Bryan Zeck's log entry right before this one. 10pm- Start working on the UCNB baffle study. Got tubes,boron detector,tpx and Nickel for baffles. together to make the baffle system. 0.1mm Ni 0.5mm TPX We cut ~2.75" disks out of the Ni and TPX. We then punched a 1.5"out of the middle of each and then we punched ~1/8" hole at the bottom of the disk so the threaded rod will go through. We have 4 Nickel disks and 6 TPX disks. We then placed the disks on the threaded rod, tightening with nuts. The discs were spaced individually 2.75" apart with TPX on one downstream side and Nickel on the upstream side. The plan is to put Nickel baffle side facing upstream and the TPX is placed downstream. In the tube there is 12"piece of rolled up 0.25mm thick TPX for the side walls, 1/3 of the tpx is double wrapped (overlaped, 0.5mm) on bottom of tube. Then inserted the threaded rod with the disks, having TPX on the tpx wall side. Two different detectors: Boron closer to PPM, upstream. He3 detector downstream of baffles. Time Chris's Daq Description 3:10am 1160 Baffles: 4Ni, 6TPX 3:45am 1161 No baffles Chris Data Type GV bkg Boron bkg He3 bkg Gvopen Boron He3 3:10am 1160 baffles 255.8 0.755 0.801 170.7 89.9 5.83 3:45am 1161 no baffles 254.8 0.758 0.637 153.9 32.1 7095 Boron ratios: Baffles/None= 2.80E+00 He3 ratios: Baffles/None= 8.22E-04 Baffles: He3/Boron=

24342	Mon Jan 30 00:59:07 2012	bz

Time MCS Run Ge Run GV Status Livetime Notes 22:15 1150 1195 Open 1088.55 lowest mark 22:38 1151 1196 Open detector came off 22:53 1152 1197 Open detector came off again 23:02 1153 1198 Open 1029.46 2nd lowest mark 23:31 1154 1199 Open middle mark 00:06 1155 1200 Open 1454.65 2nd highest mark 00:39 1156 1201 Open 2081.28 highest mark 01:19 1157 1202 Open(~4min)-Closed lowest mark ~1:45 1158 1203 Closed 627.27 lowest mark Beam on background 01:59 1159 1204 Closed 174.00 lowest mark, Cs 137 and Co 60 sources next to detector lowest mark 14" above center of beamline

24341	Sun Jan 29 20:57:45 2012	BMV

Chris and Brittney taking Vanadium Lifetime data today. Placed the V in the UCN beam (upstream side of foil), to check and make sure everything works. Reactivated V-51 for 20mins (halflife V-52 is about 3.7mins). Everything is looking amazing! So we are reattempting the activation of V-51 for longer >2000sec. We encountered a problem with the gate valve at the beginning. Gate Valve did not open all the way. So the first two V runs was with a GV that I estimate is about 70% open. Mark called told a fixing technique. While GV is open turn off air flow. Close the GV, open the GV. turn on air flow and voila! (I think I got that correct. Just play with it with the air off)

24340	Fri Jan 27 23:52:43 2012	bz

Noticed that AFP was at about 25 percent, decided to fill. Since after SCS fill this morning, AFP LHe level has dropped very fast, about 50% in 12 hours, at normal rate should only have dropped 30% or less Plenty of nitrogen and nitrogen fill is on auto filling at 40% like normal for ramped down

24339	Fri Jan 27 02:15:58 2012	MFMakela

There were some source pressure excursions between 2:15 and 3:15 this morning. After 3:15 am the source was running colder than earlier in the night. Mark

24338	Fri Jan 27 00:56:07 2012	KPH

Reconnected b box pmts to fADC. Shutting off PMT HV. Leaving b box pumping (which bv closed)

24337	Fri Jan 27 00:51:14 2012	KPH

Running using the UCNA FDAQ instead of the fADC. Should match fADC runs 4103 - 4108. FDAQ run type led length comment 19301 bkg off 14:03 19302 ucn off 19:46 19303 Cs137 off 5:08 19304 Co60 off 6:09 mostly off scale. oops! 19305 led fixed 7:40

24333	Thu Jan 26 23:37:59 2012	KPH

The first experiment was to place a piece of standard BC404 scintillator in the box to try and measure hydrogen capture. Run log: run length type led comment 4092 300 background fixed beam off during run 4093 300 background off beam back on 4094 300 capture off ucn capturing on hydrogen 4095 300 background off 4096 300 capture off 4097 300 background off 4098 300 capture off 4099 300 background off 4100 300 capture off 4101 300 background off 4102 300 capture off Venting the box to install the Bi207 insertable source. Damn. The bellows of the insertable source still have puddles of water! This will have to get cleaned out before it is attached to the box vacuum. 4103 300 ucn off box vented and pumped out again 4104 300 background off 4105 300 ucn off 4106 300 background off 4107 300 ucn off 4108 300 background off

24336	Thu Jan 26 22:30:45 2012	KPH

And this is the hydrogen capture experiment from tonight. There is not much difference which implies that the box is not very different from a hydrogenated plastic.

Attachment 1: pture.full-energy.gif

pture.full-energy.gif

24335	Thu Jan 26 22:29:29 2012	KPH

This is the 4 channel sum from all the ucn runs from the previous night.

Attachment 1: n.full-energy.gif

n.full-energy.gif

To run the fADC say for 300 seconds: cd ~/Code/hardware sudo ./autorun -r 4080 -t 300 To process a run so that it can be read into root: cd ~/Code/analysis/fADC ./analysisUCNb /media/UCNb2012/Data/raw/run4xxx.fat /media/UCNb2012/Data/processed/run4xxx.root where 4xxx is the run number

24332	Thu Jan 26 16:59:40 2012	KPH

Opened b box and added 1"x3" peice of BC404 into the box without covering the UCN hole. Leak checked and pressure at 6pm is 710 torr.

24331	Thu Jan 26 07:45:40 2012	RRios

12:19 AM19275 B1: Background (on) E=1.274 W=0.910 12:24 AM19276 B2: Beta Run (on) E=13.026 W=11.464 Fe/GV=0.1145 SCS/GV=0.1745 B/GV=1.231 1:00 AM 19277 B3: Depol (on to off) W/R=0.141026 1:07 AM 19278 B4: Background (off) E=1.049 W=0.777 1:12 AM 19279 B5: Beta Run (off) E=17.43 W=18.697 Fe/GV=0.4838 SCS/GV=0.2405 B/GV=1.8178 1:47 AM 19280 B6: Depol (off to on) W/R=0.025316 1:54 AM 19281 B7: Beta Run (off) E=17.355 W=18.249 Fe/GV=0.4743 SCS/GV=0.2405 B/GV=1.7853 2:30 AM 19282 B8: Depol (off to on) W/R=0.026906 2:37 AM 19283 B9: Background (off) E=1.094 W=0.740 2:42 AM 19284 B10: Beta Run (on) E=12.382 W=11.132 Fe/GV=0.1113 SCS/GV=0.1747 B/GV=1.2375 3:17 AM 19285 B11: Depol (on to off) W/R=0.074074 3:24 AM 19286 B12: Background (on) E=1.190 W=0.721 3:29 AM 19287 A1: Background (off) E=1.084 W=0.859 3:35 AM 19288 A2: Beta Run (off) E=17.339 W=18.583 Fe/GV=0.4748 SCS/GV=0.2424 B/GV=1.7779 4:10 AM 19289 A3: Depol (off to on) W/R= 0.052885 4:17 AM 19290 A4: Background (on) E=1.156 W=0.825 4:22 AM 19291 A5: Beta Run (on) E=12.358 W=11.159 Fe/GV=0.1083 SCS/GV=0.1740 B/GV=1.2346 4:58 AM 19292 A6: Depol (on to off) W/R=0.154930 5:05 AM 19293 A7: Beta Run (on) E=12.320 W=11.061 Fe/GV=0.1103 SCS/GV=0.1718 B/GV=1.2215 5:40 AM 19294 A8: Depol (on to off) W/R=0.183099 5:47 AM 19295 A9: Background (on) E=1.046 W=0.754 5:52 AM 19296 A10: Beta Run (off) E=16.583 W=17.653 Fe/GV=0.4686 SCS/GV=0.2403 B/GV=1.7887 6:28 AM 19297 A11: Depol (off to on) W/R=0.036364 6:35 AM 19298 A12: Background (off) E=1.202 W=0.829

24327	Thu Jan 26 03:56:31 2012	JCHoagland

UCNA Shift Change Checklist Date: January 26, 2012 00:30 Shift Persons: jeff, hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 29 slpm Heater B pressure 13.80 psia Heater C pressure 14.40 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 286.9 psia Tungsten Cool ret. 71.5 psia Tungsten Cool Diff 281.0 psia 1630 eng. 2 temp. 15.2 K 1630 JT temp. 7.7 K 1630 outlet temp. 277.0 K 1630 engine speed 150 rpm 1630 supply press. 200 psig 1630 JT press. 170 psig 1630 return press. 1.2 psig 1630 med. press. stor. 115 psig 1410 engine speed 174 rpm 1410 TE-A 16.2 K 1410 TE-B 8.5 K 1410 TE-E 91.7 K 1410 supply press. 247 psig 1410 JT press. 195 psig 1410 return press. 4.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 15.8 inHe 1K dewar level 17.2 inHe 4K main flow control 6.9 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 195.3 K Poly temp. (channel 3) 79.0 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thur AFP temperature 10.2 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 93.4 % SCS field --- kG SCS current 118.45 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 8.5e-6 torr PPM LHe level 94.1 % PPM LN2 level -- % AFP LHe level 96.0 % AFP LN2 level 90.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 TBCM001I03 (H- source current):14.4 "Beamplot" Capture: 60 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 79.0 F West MWPC Temperature 75.0 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.3 torr Neopentane Flow Rate 13.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1927 Hz West muon veto rate 3689 Hz Spectrometer vacuum 1.5e-5 Torr (CC2) disk usage daq account 65 %

24321	Thu Jan 26 02:48:27 2012	KPH

Run summary: Chris rewired a circuit to check for coincidence using a PS 754 before the fADC. Right now the discriminators are set to about 30mV. The software thresholds are set to Run log: run length type led comment 4068 30 background off test with old setting of soft thresholds 4069 30 threshold off threshold test 4070 30 threshold off threshold test 4071 30 background off threshold test, file size 90 M 4072 30 background off threshold test up 5 chs, file size 8.5 M 4073 30 background off threshold test ch 3 up 5 chs, file size 7.6 M 4074 300

4078 300 Cs137 off 4079 300 background off During UCNA background, gv closed 4080 300 ucn off 4081 300 background off 4082 300 ucn off 4083 300 background off 4084 300 ucn off 4085 300 Co60 off During UCNA beta run 4086 300 background off 4087 300 ucn off 4088 300 background off 4089 300 ucn off 4090 300 background off 4091 300 led fixed Here is the json file for these runs "ucn-12-1-26.json": { "data": [{ "date": "", "run": 4074, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4075, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4076, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4077, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4078, "runtime": 300, "type": "Cs137", "led": "off" }, { "date": "", "run": 4080, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4081, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4082, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4083, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4084, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4085, "runtime": 300, "type": "Co60", "led": "off" }, { "date": "", "run": 4086, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4087, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4088, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4089, "runtime": 300, "type": "ucn", "led": "off" }, { "date": "", "run": 4090, "runtime": 300, "type": "background", "led": "off" }, { "date": "", "run": 4091, "runtime": 300, "type": "led", "led": "fixed" }] }

24326	Thu Jan 26 02:34:57 2012	KPH

I turned on the LED to 8V x 9ns. There is something wrong with background subtraction, so I will need to take a look at that. I also need to fit the peak but near the Compton edge of Cs137 (480 keV) roughly sig = 150/1500 = 0.1 so it has about ~200 pe / MeV.

Attachment 1: d.full-energy.gif

d.full-energy.gif

24325	Thu Jan 26 02:15:58 2012	BMV

Time Midas Run Info 00:19 19275 B1 Bkg On E=1.274 W=0.910 00:24 19276 B2 Beta on E=13.026 W=11.464 Fe/GV=0.1145 SCS/GV=0.1745 E+W/GV=1.2311 01:00 19277 B3 Depol on->Off W/R=0.141026+/-0.04542 01:07 19278 B4 Bkg off E=1.049 W=0.777 01:12 19279 B5 Beta off E=17.43 W=18.697 Fe/GV=0.4838 SCS/GV=0.2421 E+W/GV=1.8178 01:47 19280 B6 Depol off->on W/R0.025316+/-0.010465 01:54 19281 B7 Beta off E=17.355 W=18.249 Fe/GV=0.4743 SCS/GV=0.2405 E+W/GV=1.7853 02:30 19282 B8 Depol off->on W/R=0.026906+/-0.011131 02:37 19283 B9 Bkg off E=1.094 W=0.740

24324	Thu Jan 26 02:00:05 2012	KPH

Attachment 1: 60.full-energy.gif

60.full-energy.gif

24323	Thu Jan 26 01:57:41 2012	KPH

Here is the Compton peak of Cs137 with the new lower thresholds and new electronics. 4 channel sum and 4 ch coincidence.

Attachment 1: 137.full-energy.gif

137.full-energy.gif

24322	Thu Jan 26 00:21:50 2012	KPH

Configuration file for flash ADC board # syntax: [board_number] [channel_number] [property] [value] # -1 means all boards or all channels # # 64 -1 enabled 1 # # 64 -1 led_mode 4 # # #Trigger mask settings #bit 0 (value = 1): level trigger, OR of upper and lower thresholds #bit 1 (value = 2): integral/differential trigger, OR of positive- and negative-going #bit 2 (value = 4): periodic trigger 64 0 trigger_mask 1 64 1 trigger_mask 1 64 2 trigger_mask 1 64 3 trigger_mask 1 64 4 trigger_mask 0 64 5 trigger_mask 0 64 6 trigger_mask 0 64 7 trigger_mask 0 # #64 -1 trigger_mask 4 # # # "Lower" threshold is the level that the signal must be less than. # "Upper" is the amount by which the signal must increase from one sample. # to the next sample # 64 0 lower_threshold 330 64 1 lower_threshold 330 64 2 lower_threshold 330 64 3 lower_threshold 330 64 4 lower_threshold 330 64 5 lower_threshold 330 64 6 lower_threshold 330 64 7 lower_threshold 330 # 64 -1 lower_threshold 0 # # # use upper threshold for NEGITIVE pulses # at the same time, set lower threshold to ZERO 64 0 upper_threshold 325 64 1 upper_threshold 350 64 2 upper_threshold 340 64 3 upper_threshold 315 64 4 upper_threshold 100 64 5 upper_threshold 100 64 6 upper_threshold 100 64 7 upper_threshold 100 # #64 -1

how many samples (in bytes) after the trigger 64 -1 stretch_samples 100 # # 64 -1 pulser_period 20000000 # # # Clock adjustment settings # A value of either 0 or 1 gives 250 MSPS, # 2 gives 125 MSPS, 3 gives 83.33 MSPS, 4 gives 62.5 MSPS, and so on. # 64 -1 sd_factor 0

24320	Wed Jan 25 23:21:24 2012	BMV

TOF- 0|0 1011 1001 10|0 1001 1001 15000|0 0001 1001 15100|0 0001 0010 17500|0 0001 0110 18000|0 1001 0110 18500|0 1001 0010 18510|0 1001 0110 28000|0 1001 0010 28010|0 1001 0110 51000|0 1001 1000 TOF+ just switch the AFP Columns: EDM, SHutter, Little b, Trigger, Flapper, Beam, AFP, SWitcher, GateValve Time Midas Chris Run Cycle 18:44 19267 1126 D+ 75s 8 19:50 19268 1127 D- 75s 4 20:25 19269 1128 D- 50s 3 This one and all previous depol runs last two nights were without external trigger. 20:49 19270 1129 D+ 50s 3 21:14 19271 1130 D+ 25s 4 21:44 19272 1131 D- 25s 3 22:14 19273 1132 TOF- 9 23:32 19274 1133 TOF+ 5

24319	Wed Jan 25 15:23:21 2012	BMV

UCNA Shift Change Checklist Date: January 25, 2012 16:00 Shift Persons: Brittney, Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 15.42 psia Heater C pressure 14.62 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 287.7 psia Tungsten Cool ret. 72.0 psia Tungsten Cool Diff 281.1 psia 1630 eng. 2 temp. 14.31 K 1630 JT temp. 7.50 K 1630 outlet temp. 277.4 K 1630 engine speed 220 rpm 1630 supply press. 241 psig 1630 JT press. 190 psig 1630 return press. 1.3 psig 1630 med. press. stor. 60 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 92.1 K 1410 supply press. 250 psig 1410 JT press. 160 psig 1410 return press. 4.1 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8 psig 4K dewar level 17.9 inHe 1K dewar level 30.63 inHe 4K main flow control 3.2 V LHe temp. (channel 1) 8.803 K Heat exch. temp. (channel 7) 206.77 K Poly temp. (channel 3) 65.768 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.8 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 86.5 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 5.4 torr CM5 pressure 2.4 torr CC1 pressure 1.6e-4 torr (source still warm) PPM LHe level 94.2 % PPM LN2 level -- % AFP LHe level 100 % AFP LN2 level 87.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: tuning Proton pulses/burst: Proton countdown: Proton pattern width: TBCM001I03 (H- source current): "Beamplot" Capture: ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.5 F West MWPC Temperature 74.4 F MWPC Pressure 100 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 13.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1891 Hz West muon veto rate 3221 Hz Spectrometer vacuum 3.7e-5 Torr (CC2) disk usage daq account 65 %

24316	Wed Jan 25 05:49:12 2012	BMV

Time Midas Chris Run Cycles 21:07 19256 1116 P+ 7 22:09 19257 1117 P- 6 23:01 19258 1118 P+ 5 23:45 19259 1119 P- 6 01:05 19260 1120 D- 25s 7 01:57 19261 1121 D+ 25s 7 02:53 19262 1122 D- 50s 7 03:49 19263 1123 D+ 50s 7 04:43 19264 1124 D+ 75s 3 05:09 19265 1125 D- 75s 6 D- 25s 0|0 1011 1001 10|0 1001 1001 15000|0 0001 1001 15100|0 0001 0010 17500|0 0001 0110 18000|0 1001 0110 20500|0 1001 0010 43500|0 1001 1000 D- 50s 0|0 1011 1001 10|0 1001 1001 15000|0 0001 1001 15100|0 0001 0010 17500|0 0001 0110 18000|0 1001 0110 23000|0 1001 0010 46000|0 1001 1000 D- 75s 0|0 1011 1001 10|0 1001 1001 15000|0 0001 1001 15100|0 0001 0010 17500|0 0001 0110 18000|0 1001 0110 25500|0 1001 0010 48500|0 1001 1000 In the D+ runs you switch the AFP from 0->1 and 1->0. Columns: time(ms)|EDM, Shutter, b, Trigger, Flapper, Beam, AFP, Switcher, GateValve Time Midas Chris Run Cycles 01:05 19260 1120 D- 25s

24317	Wed Jan 25 05:48:18 2012	RRios

Went to CCR. We tried to get the settings as we had them on on our best night Dec 3 2010. That night we had 580 UCN at the gate valve. The best so far this run cycle was 390. We were unable to get the beam improved. If someone wants to continue working on it they can call up solution 17. At the final stage we had it centered but the quality factor was still very low -at 25 when the high for Dec 3 was 155. Last night the QF was ~30. The shape of the beam at LBTV04 was as seen below. Keith wanted to shape the beam long in the Y and short in the X. In spite of the settings from Dec 3, this is still qualitatively adjusted by eye. I asked about the rotation that I saw and keith said that rotating that to fix it would mess the beam upstream for other users. After having the beam best positioned in x and y, we attempted to adjust the

would change. No major changes were see before the beam would trip or cause too much spilling. We were on the last quad magnet LBQM04 when we stopped so that UCNA could take depol data. From my observation, it seems rather clear that the spot size on the target is still too large, as thermocouples 2,3,4 all have nearly the same temperature and the QF is low. LBTV04:

Attachment 1: 137.full-energy.gif

24318	Wed Jan 25 02:29:45 2012	JCHoagland

UCNA Shift Change Checklist Date: January 25, 2012 01:45 Shift Persons: Brittney, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 15.42 psia Heater C pressure 14.62 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 287.4 psia Tungsten Cool ret. 71.8 psia Tungsten Cool Diff 280.8 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.8 K 1630 outlet temp. 277.5 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.7 psig 1630 med. press. stor. 83 psig 1410 engine speed 149 rpm 1410 TE-A 16.1 K 1410 TE-B 6.5 K 1410 TE-E 85.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 4.1 psig 4K dewar pressure 297 mmHg 1K dewar pressure 8.0 psig 4K dewar level 14.4 inHe 1K dewar level 19.5 inHe 4K main flow control 5.5 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 184.3 K Poly temp. (channel 3) 94.1 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 98.5 % SCS field --- kG SCS current 118.45 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 6.5e-6 torr PPM LHe level 94.6 % PPM LN2 level -- % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 TBCM001I03 (H- source current):14.6 "Beamplot" Capture: 83 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 77.5 F West MWPC Temperature 73.6 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.2 torr Neopentane Flow Rate 13.1 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 1847 Hz West muon veto rate 3479 Hz Spectrometer vacuum 2.3e-5 Torr (CC2) disk usage daq account 65 %

24307	Tue Jan 24 21:19:34 2012	JCHoagland

runs and stuff time midas chris's type cycles comments 22.55 19244 1109 SLD- 8 not sure if it was SLD- or + 00:03 19245 1110 SLD+ 8 noted that it was a SLD- setup 01:12 19246-19247 1111 SLD+ 12 02:56 19248-19249 1112 SLD- 14 did AFP fill in middle 04:54 19250 1113 P- 4 05:28 19251 1114 P+ 4 -> I entered the SLD- setup as classified in Adam's Polarimetry Protocol

24315	Tue Jan 24 18:28:13 2012	KPH

Attachment 1: 137.full-energy.gif

137.full-energy.gif

24309	Tue Jan 24 18:24:51 2012	KPH

I am testing the LED pulser width using channel 2 on the CAEN pulser. Run log run length LED LED value type comment 4061 300 fixed 26 led 4062 300 fixed 128 led 4063 300 off - Co60 4064 300 off - background 4065 300 off - Co60 4066 300 off - background "led-12.1.24.json": { "data": [{ "date": "", "run": 4062, "runtime": 30, "type": "led", "LED": "fixed" }] }

Attachment 1: d.full-energy.gif

d.full-energy.gif

24313	Tue Jan 24 18:22:35 2012	KPH

contents of ucn-12.1.21.json: { "data": [{ "date": "", "run": 4051, "runtime": 300, "type": "background", "LED": "off" }, { "date": "", "run": 4052, "runtime": 300, "type": "ucn", "LED": "off" }, { "date": "", "run": 4053, "runtime": 300, "type": "background", "LED": "off" }, { "date": "", "run": 4054, "runtime": 300, "type": "ucn", "LED": "off" }, { "date": "", "run": 4055, "runtime": 300, "type": "background", "LED": "off" }, { "date": "", "run": 4056,

"type": "Cs137", "LED": "off" }, { "date": "", "run": 4058, "runtime": 300, "type": "background", "LED": "off" }, { "date": "", "run": 4059, "runtime": 300, "type": "ucn", "LED": "off" }, { "date": "", "run": 4060, "runtime": 30, "type": "Co60", "LED": "off" }] } Contents of the config file for this json file "ConfigUCNb5": # Configuration file for flash ADC board # syntax: [board_number] [channel_number] [property] [value] # -1 means all boards or all channels # # 64 -1 enabled 1 # # 64 -1 led_mode 4 # # #Trigger mask settings #bit 0 (value = 1): level trigger, OR of upper and lower thresholds #bit 1 (value = 2): integral/differential trigger, OR of positive- and negative-going #bit 2 (value = 4): periodic trigger 64 0 trigger_mask 1 64 1 trigger_mask 1 64 2 trigger_mask 1 64 3 trigger_mask 1 64 4 trigger_mask 0 64 5 trigger_mask 0 64 6 trigger_mask 0 64 7 trigger_mask 0 # #64 -1 trigger_mask 4 # # # "Lower" threshold is the level that the signal must be less than. # "Upper" is the amount by which the signal must increase from one sample. # to the next sample # 64 0 lower_threshold 330 64 1 lower_threshold 330 64 2 lower_threshold 330 64 3 lower_threshold 330 64 4 lower_threshold 330 64 5 lower_threshold 330 64 6 lower_threshold 330 64 7 lower_threshold 330 # 64 -1 lower_threshold 0 # # # use upper threshold for NEGITIVE pulses # at the same time, set lower threshold to ZERO 64 0 upper_threshold 320 64 1 upper_threshold 350 64 2 upper_threshold 330 64 3 upper_threshold 400 64 4 upper_threshold 100 64 5 upper_threshold 100 64 6 upper_threshold 100 64 7 upper_threshold 100 # 64 -1 upper_threshold 400 # # # how many sampeles (in bytes?) before the trigger 64 -1 presamples 10 # # # how many samples (in bytes) after the trigger 64 -1 stretch_samples 100 # # 64 -1 pulser_period 20000000 # # # Clock adjustment settings # A value of either 0 or 1 gives 250 MSPS, # 2 gives 125 MSPS, 3 gives 83.33 MSPS, 4 gives 62.5 MSPS, and so on. # 64 -1 sd_factor 0

Attachment 1: n.full-energy.gif

n.full-energy.gif

24314	Tue Jan 24 18:20:17 2012	KPH

file "cal-12.1.24.json" { "data": [{ "date": "", "run": 4063, "runtime": 300, "type": "Co60", "LED": "off" }, { "date": "", "run": 4064, "runtime": 300, "type": "background", "LED": "off" }, { "date": "", "run": 4065, "runtime": 300, "type": "Co60", "LED": "off" }, { "date": "", "run": 4066, "runtime": 300, "type": "background", "LED": "off" }] }

Attachment 1: 60.full-energy.gif

60.full-energy.gif

24312	Tue Jan 24 16:24:33 2012	RRios

I gave CCR the settings we had for the Dec 3, 2010. They checked and luckily they had the magnet settings saved for Dec 4, 2010. The solution is saved as number 15 KAS. Also we have the flapper open and CCR knows that so we'll see how well that works. Keith will be on at 6pm.

24244	Tue Jan 24 15:29:38 2012	KPH

run summary: Testing new fADC card. Beam on. Cs137 source on top of box. run log: 4008 30 "general test" 4009 30 "threshold test" 4010 30 "threshold test" 4011 30 "threshold test" 4012 30 "threshold test" 4013 30 "threshold test" 4014 30 "junk" 4015 30 "configUCNb5 test at new thresholds" 4016 30 "threshold test" 4017 30 "voltage adjusted, new config file throesholds, config test" 4018 300 "config run, Cs137" 4019 300 "config run, background" 4020 300 "changed number of stretch samples -> 20, background, does not process right" 4021 300 "changed number of stretch samples -> 100, background, now processes"

24311	Tue Jan 24 15:11:11 2012	BPlaster

UCNA Shift Change Checklist Date: January 23, 2012 16:00 Shift Persons: Brittney, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.14 psia Heater C pressure 12.83 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 288.4 psia Tungsten Cool ret. 72.7 psia Tungsten Cool Diff 280.9 psia 1630 eng. 2 temp. 15.29 K 1630 JT temp. 7.62 K 1630 outlet temp. 278.7 K 1630 engine speed 190 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 60 psig 1410 engine speed 134 rpm 1410 TE-A 15.8 K 1410 TE-B 6.2 K 1410 TE-E 88.1 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 2.6 psig 4K dewar pressure 300 mmHg 1K dewar pressure 6.5 psig 4K dewar level 15.56 inHe 1K dewar level 34.91 inHe 4K main flow control 4.7 V LHe temp. (channel 1) 5.026 K Heat exch. temp. (channel 7) 205.6 K Poly temp. (channel 3) 67.042 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 85.9 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1

level -- % AFP LHe level 95.2 % AFP LN2 level 92.5 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: beam off Proton pulses/burst: Proton countdown: Proton pattern width: TBCM001I03 (H- source current): "Beamplot" Capture: ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.5 F West MWPC Temperature 74.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1821 Hz West muon veto rate 3264 Hz Spectrometer vacuum 3.9e-5 Torr (CC2) disk usage daq account 64 %

24310	Tue Jan 24 13:02:51 2012	MFMakela

Melt and refreeze of source

24308	Tue Jan 24 08:00:10 2012	JCHoagland

the 1k dewar will be full around 11 so the magnets should be filled around that time starting with the afp thanks jeff

24306	Tue Jan 24 01:37:44 2012	JCHoagland

UCNA Shift Change Checklist Date: January 24, 2012 00:30 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 15.24 psia Heater C pressure 14.42 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 289.1 psia Tungsten Cool ret. 73.7 psia Tungsten Cool Diff 280.8 psia 1630 eng. 2 temp. 15.4 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.1 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.7 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 15.4 K 1410 TE-B 6.4 K 1410 TE-E 88.1 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 4.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8.0 psig 4K dewar level 12.4 inHe 1K dewar level 31.7 inHe 4K main flow control 5.0 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 201.6 K Poly temp. (channel 3) 126.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thur AFP temperature 10.2 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 99.8 % SCS field --- kG SCS current 118.45 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.0e-5 torr () PPM LHe level 95.3 % PPM LN2 level -- % AFP LHe level 88.4 % AFP LN2 level 74.5 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 TBCM001I03 (H- source current):15.1 "Beamplot" Capture: 84 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.0 F West MWPC Temperature 74.6 F MWPC Pressure 99.6 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 14.1 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1923 Hz West muon veto rate 3482 Hz Spectrometer vacuum 3.3e-5 Torr (CC2) disk usage daq account 64 %

24305	Mon Jan 23 23:21:11 2012	RRios

Went to tune the beam with Chandra. First tune: we adjusted the beam by looking at the spot size, shape and brightness at each of the phoshper screens in line X. Things looked promising as there were some changes made. Once when moving the beam spot the bightness went down. This suggest scraping which Chandra addressed. For tuning the beam with the phosper. Count Down: 200 Patternwidth: 60 When the beam was set to its normal settings the maximum ucn rate was 320-340 at the GVmon. No improvement There was a lot of time tunning but not successful in getting high rates

24304	Mon Jan 23 23:10:01 2012	BMV

On the end of a cycle you want the state to be same as previous line BUT reset the switcher and shutter (to what it will be at 0s) and turn on the beam. SLD- 0|0 1011 1001 10|0 1001 1001 15000|0 0001 0010 50000|0 1001 1000 SLD+ 0|0 1011 1101 10|0 1001 1101 15000|0 0001 0110

1001 1001 15000|0 0001 1001 15100|0 0001 0010 18000|0 1001 0010 51000|0 1000 1000 P+ 0|0 1011 1101 10|0 1001 1101 15000|0 0001 1101 15100|0 0001 0110 18000|0 1001 0110 51000|0 1000 1100 *column list is: EDM, Shutter, Little b, Trigger, Flapper, beam, AFP spin flipper, Switcher, Gate Valve. 01/23/2012 Time Midas Chris Run Cycles Comments 22:45 19243 1108 SLD- AHHH forgot the T0 less than one cycle done 22:55 19244 1109 SLD- 8 00:03 19245 1110 SLD+

24303	Mon Jan 23 17:54:41 2012	BPlaster

UCNA Shift Change Checklist Date: January 23, 2012 16:00 Shift Persons: Brittney, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 13.93 psia Heater C pressure 13.16 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 289.1 psia Tungsten Cool ret. 73.6 psia Tungsten Cool Diff 289.1 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.4 K 1630 engine speed 195 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.0 psig 1630 med. press. stor. 55 psig 1410 engine speed 174 rpm 1410 TE-A 16.3 K 1410 TE-B 6.7 K 1410 TE-E 93.3 K 1410 supply press. 245 psig 1410 JT press. 135 psig 1410 return press. 3.0 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.5 psig 4K dewar level 20.2 inHe 1K dewar level 24.2 inHe 4K main flow control 3.4 V LHe temp. (channel 1) 7.6 K Heat exch. temp. (channel 7) 211.5 K Poly temp. (channel 3) 68.5 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 83.8 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 1/1 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.6e-4 torr (source still warm) PPM LHe level 95.6 % PPM LN2 level -- % AFP LHe level 96.0 % AFP LN2 level 96.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: tuning Proton pulses/burst: Proton countdown: Proton pattern width: TBCM001I03 (H- source current): "Beamplot" Capture: ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 77.5 F West MWPC Temperature 74.2 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1892 Hz West muon veto rate 3440 Hz Spectrometer vacuum 3.0e-5 Torr (CC2) disk usage daq account 64 %

24302	Mon Jan 23 16:32:07 2012	BPlaster

Source Calibration Runs Cd/In/Cd: first source holder "polarity" 19203 all way in 19204 0.5" out 19205 1.0" 19206 1.5" 19207 2.0" 19208 2.5" 19209 3.0" 19210 3.5" 19211 4.0" 19212 4.5" 19213 5.0" 19214 5.5" 19215 6.0" (nothing) Cd/In/Cd: other source holder "polarity" 19216 0.25" 19217 0.75" 19218 1.25" 19219 1.75" 19220 2.25" 19221 2.75" 19222 3.25" 19223 3.75" 19224 4.25" 19225 4.75" 19226 5.25" 19227 5.75" Sn/Bi/Cd: 19228 all way in 19229 0.5" 19230 1.0" 19231 1.5" 19232 2.0" 19233 2.5" 19234 3.0" 19235 3.5" 19236 4.0" 19237 4.5" 19238 5.0" 19239 5.5"

24301	Mon Jan 23 10:57:20 2012	KPH

Attachment 1: 3_5.gif

3_5.gif

24300	Mon Jan 23 10:57:03 2012	KPH

Attachment 1: 2_4.gif

2_4.gif

24299	Mon Jan 23 10:56:46 2012	KPH

Attachment 1: 1_4.gif

1_4.gif

24298	Mon Jan 23 05:15:16 2012	JCHoagland

total beta decay 27.267 mHz around 3.9 million this weekend

Attachment 1: 8.ps

24296	Mon Jan 23 05:12:28 2012	BPlaster

15:41 19165 A1 Bkg Off E=1.153 W=0.806 15:50 19166 A2 Beta Off E=16.8 W=17.7 Fe/GV=0.4742 SCS/GV=0.2431 (E+W)/GV=1.7929 16:50 19167 A3 Depol Off->On W/R=0.042(14) 16:57 19168 A4 Bkg On E=1.152 W=0.853 17:05 19169 A5 Beta On E=12.9 W=11.5 Fe/GV=0.1106 SCS/GV=0.1746 (E+W)/GV=1.2363 18:06 19170 A6 Depol On->Off W/R=0.101(35) 18:13 19171 A7 Beta On E=12.7 W=11.3 Fe/GV=0.1134 SCS/GV=0.1793 (E+W)/GV=1.2330 19:13 19172 A8 Depol On->Off W/R=0.206(60) 19:20 19173 A9 Bkg On E=1.188 W=0.877 19:29 19174 A10 Beta Off E=15.2 W=16.1 Fe/GV=0.4701 SCS/GV=0.2418 (E+W)/GV=1.8031 20:29 19175 A11 Depol Off->On W/R=0.012(7) 20:36 19176 A12 Bkg Off E=1.199 W=0.890 Starting New A->B Octet [by flip of coin] 20:48 19177 A1 Bkg Off E=1.205 W=0.800 20:55 19178 A2 Beta Off E=14.5 W=15.3 Fe/GV=0.4730 SCS/GV=0.2443 (E+W)/GV=1.8177 21:46 19179 A3 Depol Off->On W/R=0.063(20) 21:53 19180 A4 Bkg On E=1.191 W=0.832 22:04 19181 A5 Beta On E=12.6 W=11.3 Fe/GV=0.1114 SCS/GV=0.1744 (E+W)/GV=1.2324 22:54 19182 A6 Depol On->Off W/R=0.149(51) 23:01 19183 A7 Beta On *** lost beam *** 23:37 19184 A7 Beta On E=12.882 W=11.487 Fe/GV=0.1110 SCS/GV=0.1741 (E+W)/GV=1.2428 00:27 19185 A8 Depol on->off W/R=0.089744 00:34 19186 A9 Bkg E=1.215 W=0.821 00:41 19187 A10 Beta off E=17.010 W=18.003 Fe/GV=0.4756 SCS/GV=0.2394 (E+W)/GV=1.7905 01:32 19188 A11 Depol off->on W/R=0.026667 01:39 19189 A12 Bkg off E=1.090 W=0.866 01:48 19190 B1 Bkg on E=1.081 W=0.818 01:55 19191 B2 Beta on E=11.296 W=9.959 Fe/GV=0.1126 SCS/GV=0.1760 (E+W)/GV=1.2334 02:43 19192 B3 Depol on->off W/R=0.200000 02:50 19193 B4 Bkg off E=1.148 W=0.767 02:58 19194 B5 Beta off E=17.052 W=18.256 Fe/GV=0.4755 SCS/GV=0.2446 (E+W)/GV=1.7903 03:46 19195 B6 Depol off->on W/R=0.023041 03:53 19196 B7 Beta off E=16.890 W=18.065 Fe/GV=0.4757 SCS/GV=0.2444 (E+W)/GV=1.7848 04:41 19197 B8 Depol off->on W/R=0.066986 04:48 19198 B9 Bkg off E=1.216 W=0.833 04:56 19199 B10 Beta on E=12.4 W=11.1 Fe/GV=0.11 SCS/GV=0.17 (E+W)/GV=1.23 05:44 19200 B11 Depol on->off W/R=0.155 05:51 19201 B12 Bkg on E=1.1 W=0.87

24297	Mon Jan 23 02:05:37 2012	JCHoagland

UCNA Shift Change Checklist Date: January 23, 2012 00:00 Shift Persons: Raymond, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 15.11 psia Heater C pressure 14.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 289.9 psia Tungsten Cool ret. 74.1 psia Tungsten Cool Diff 281.5 psia 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.7 K 1630 outlet temp. 278.0 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.6 psig 1630 med. press. stor. 80 psig 1410 engine speed 174 rpm 1410 TE-A 15.7 K 1410 TE-B 6.6 K 1410 TE-E 96.5 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 3.9 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8.0 psig 4K dewar level 16.3 inHe 1K dewar level 15.8 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 5.00 K Heat exch. temp. (channel 7) 213.9 K Poly temp. (channel 3) 153.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 10.1 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 99.8 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.2e-5 torr () PPM LHe level 95.8 % PPM LN2 level -- % AFP LHe level 85.4 % AFP LN2 level 69.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 235 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: 0.83 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.0 F West MWPC Temperature 72.7 F MWPC Pressure 100 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.1 torr Neopentane Flow Rate 13.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1956 Hz West muon veto rate 3593 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 64 %

24295	Sun Jan 22 15:20:20 2012	BPlaster

UCNA Shift Change Checklist Date: January 22, 2012 16:00 Shift Persons: Brittney, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 29 slpm Heater B pressure 13.60 psia Heater C pressure 12.78 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 291.2 psia Tungsten Cool ret. 75.2 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 14.88 K 1630 JT temp. 7.61 K 1630 outlet temp. 278.6 K 1630 engine speed 210 rpm 1630 supply

psig 1410 engine speed 174 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 97.9 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 2.8 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7 psig 4K dewar level 16.21 inHe 1K dewar level 25.91 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 5.25 K Heat exch. temp. (channel 7) 221.32 K Poly temp. (channel 3) 161.86 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.484 MHz AFP forward power 38 W SCS LHe level 86.1 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.0e-5 torr PPM LHe level 95.7 % PPM LN2 level --- % AFP LHe level 98.8 % AFP LN2 level 99.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 235 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.4 F West MWPC Temperature 72.1 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.3 Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2024 Hz West muon veto rate 3911 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 63 %

24294	Sun Jan 22 14:53:49 2012	bz

07:27 19145 A7 Beta ON E=12.608 W=11.205 Fe/GV=0.1139 SCS/GV=0.1738 (E+W)/GV=1.2400 08:28 19146 A8 Depol ON->OFF W/R=0.123(46) 08:35 19147 A9 Bkg ON E= 1.177 W= 0.950 08:43 19148 A10 Beta OFF E=16.502 W=17.593 Fe/GV=0.4801 SCS/GV=0.2443 (E+W)/GV=1.8031 09:43 19149 A11 Depol OFF->ON W/R=0.039(13) 09:50 19150 A12 Bkg OFF E= 1.131 W= 0.919 New B->A Octet 10:01 19151 B1 Bkg ON E= 1.097 W= 0.956 10:09 19152 B2 Beta ON E=12.570 W=11.160 Fe/GV=0.1101 SCS/GV=0.1736 (E+W)/GV=1.2309 11:10 19153 B3 Depol ON->OFF W/R=0.133(45) 11:55 19156 B4 Bkg OFF E= 1.173 W= 0.783 12:03 19157 B5 Beta OFF E=15.863 W=16.962 Fe/GV=0.4766 SCS/GV=0.2423 (E+W)/GV=1.7873 13:03 19158 B6 Depol OFF->ON W/R=0.033(13) 13:10 19159 B7 Beta OFF E=13.224 W=13.960 Fe/GV=0.4804 SCS/GV=0.2410 (E+W)/GV=1.8248 14:11 19160 B8 Depol OFF->ON W/R=0.061(17) 14:18 19161 B9 Bkg OFF E= 1.190 W= 0.837 14:26 19162 B10 Beta ON E=12.773 W=11.492 Fe/GV=0.1135 SCS/GV=0.1778 (E+W)/GV=1.2416 15:26 19163 B11 Depol ON->OFF W/R=0.211(60) 15:33 19164 B12 Bkg ON E= 1.118 W= 0.781

24293	Sun Jan 22 07:35:11 2012	bz

UCNA Shift Change Checklist Date: January 22, 2012 08:30 Shift Persons: Bryan, Kevin UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 14.16 psia Heater C pressure 13.40 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 289.9 psia Tungsten Cool ret. 74.3 psia Tungsten Cool Diff 281.6 psia 1630 eng. 2 temp. 14.91 K 1630 JT temp. 7.62 K 1630 outlet temp. 278.3 K 1630 engine speed 210 rpm 1630 supply press. 242 psig 1630 JT press. 190 psig 1630 return press. 1.7 psig 1630 med. press. stor. 72 psig 1410 engine speed 174 rpm 1410 TE-A 16.2 K 1410 TE-B 6.7 K 1410 TE-E 88.0 K 1410 supply press. 245 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7.8 psig 4K dewar level 16.3 inHe 1K dewar level 22.7 inHe 4K main flow control 4.9 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 207.2 K Poly temp. (channel 3) 158.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 92.4 % SCS field 9.595 kG SCS current 118.45 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.5 torr CC1 pressure 1.2e-5 torr PPM LHe level 95.8 % PPM LN2 level --- % AFP LHe level 90.5 % AFP LN2 level 81.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 21 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.3 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.5 F West MWPC Temperature 71.3 F MWPC Pressure 99.9 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.9 Neopentane Flow Rate 13.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2113 Hz West muon veto rate 4046 Hz Spectrometer vacuum 1.6e-5 Torr (CC2) disk usage daq account 63 %

24292	Sun Jan 22 06:35:15 2012	JCHoagland

Attachment 1: 7.ps

24291	Sun Jan 22 06:32:10 2012	BMV

New B->A Octet 23:54 19127 B1 Bkg ON E= 1.128 W= 0.866 00:02 19128 B2 Beta ON E=12.989 W=11.603 Fe/GV=0.1123 SCS/GV=0.1770 (E+W)/GV=1.2461 01:02 19129 B3 Depol ON->OFF W/R=0.1029+/-0.0386 01:09 19130 B4 Bkg Off E=1.214 W=0.807 01:17 19131 B5 Beta Off E=16.486 W=17.475 Fe/GV=0.4699 SCS/GV=0.2449 (E+W)/GV=1.8007 02:18 19132 B6 Depol off->on W/R=0.025926 02:25 19133 B7 Beta Off E=17.69 W=18.821 Fe/GV=0.4723 SCS/GV=0.2453 (E+W)/GV=1.7988 03:25 19134 B8 Depol Off->On W/R=0.029787 03:32 19135 B9 Bkg Off E=1.134 W=0.934 03:40 19136 B10 Beta On E=12.52 W=11.19 Fe/GV=0.1104 SCS/GV=0.1779 (E+W)/GV=1.2401 04:41 19137 B11 Depol On->Off W/R=0.1519+/-0.0471 04:48 19138 B12 Bkg On E=1.178 W=0.820 04:56 19139 A1 Bkg Off E=1.1318 W=0.871 05:04 19140 A2 Beta Off E=17.67 W=18.67 Fe/GV=0.4685 SCS/GV=0.2383 (E+W)/GV=1.7964 06:05 19141 A3 Depol Off->On W/R=0.0413+/-0.0133 06:12 19142 A4 Bkg On E=1.205 W=0.833 06:20 19143 A5 Beta On E=13.017 W=11.768 Fe/GV=0.1131 SCS/GV=0.1737 (E+W)/GV=1.2755 07:20 19144 A6 Depol on->off W/R=0.171053

24290	Sat Jan 21 23:03:08 2012	BMV

UCNA Shift Change Checklist Date: January 21, 2012 23:50 Shift Persons: jeff, bmv UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 14.27 psia Heater C pressure 13.40 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 291.2 psia Tungsten Cool ret. 75.9 psia Tungsten Cool Diff 280.6 psia 1630 eng. 2 temp. 15.02 K 1630 JT temp. 7.86 K 1630 outlet temp. 279.0 K 1630 engine speed 215 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 1.6 psig 1630 med. press. stor. 75 psig 1410 engine speed 174 rpm 1410 TE-A 16.1 K 1410 TE-B 6.6 K 1410 TE-E 86.4 K 1410 supply press. 245 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8 psig 4K dewar level 16.2 inHe 1K dewar level 18.44 inHe 4K main flow control 4.9 V LHe temp. (channel 1) 4.983 K Heat exch. temp. (channel 7) 213.41 K Poly temp. (channel 3) 156.07 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 1.1e-5 torr () PPM LHe level 96 % PPM LN2 level --- % AFP LHe level 87.1 % AFP LN2 level 75.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.2 mA "Beamplot" Capture: 64 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.6 F West MWPC Temperature 74.8 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1982 Hz West muon veto rate 3872 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 61 %

24289	Sat Jan 21 22:56:30 2012	BPlaster

15:03 19106 B4 Bkg Off E=1.181 W=0.847 15:12 19107 B5 Beta Off E=17.4 W=18.5 Fe/GV=0.4766 SCS/GV=0.2466 (E+W)/GV=1.8126 16:12 19108 B6 Depol Off->On W/R=0.023(10) 16:19 19109 B7 Beta Off E=16.8 W=17.8 Fe/GV=0.4762 SCS/GV=0.2451 (E+W)/GV=1.8239 17:19 19110 B8 Depol Off->On W/R=0.046(15) 17:26 19111 B9 Bkg Off E=1.243 W=0.895 17:35 19112 B10 Beta On E=12.0 W=10.6 Fe/GV=0.1113 SCS/GV=0.1767 (E+W)/GV=1.2575 18:35 19113 B11 Depon On->Off W/R=0.206(63) 18:42 19114 B12 Bkg On E=1.187 W=0.855 18:50 19115 A1 Bkg Off E=1.140 W=0.772 18:59 19116 A2 Beta Off E=17.5 W=18.4 Fe/GV=0.4747 SCS/GV=0.2427 (E+W)/GV=1.7977 19:59 19117 A3 Depol Off->On W/R=0.038(13) 20:06 19118 A4 Bkg On E=1.204 W=0.773 20:14 19119 A5 Beta On E=12.7 W=11.4 Fe/GV=0.1109 SCS/GV=0.1713 (E+W)/GV=1.2509 21:14 19120 A6 Depol On->Off W/R=0.122(43) 21:21 19121 A7 Beta On E=10.9 W=9.6 Fe/GV=0.1116 SCS/GV=0.1765 (E+W)/GV=1.2531 22:22 19122 A8 Depol On->Off W/R=0.147(53) 22:29 19123 A9 Bkg On E=1.124 W=0.803 22:37 19124 A10 Beta Off E=17.6 W=18.7 Fe/GV=0.4675 SCS/GV=0.2408 (E+W)/GV=1.8047 23:37 19125 A11 Depol Off->On W/R=0.046(15) 23:44 19126 A12 Bkg Off E=1.232 W=0.917 Fairly smooth running during shift. Cryogenics somewhat stabilized now. --> 25.2 M events now. [started weekend with 23.4 M events]

24286	Sat Jan 21 16:14:19 2012	KPH

Chris and I added a gated linear fan out between the PMT amps and the fADC. We also connected the discriminator / coincidence scaler output to Chris' slow DAQ scaler input. The gated fanout gates out most the beam background from the fADC. I also fixed ch 3(18) Pumped out behind window and then closed bypass. There was some residual gas between the bv and the window. Runlog: run type length comment 4051 bg 300 has all four channels working, gated off for beam pulse 4052 ucn 300 b valve open at 3:32pm 4053 bg 300 b valve closed at 3:42pm 4054 ucn 300 b valve open at 3:50pm 4055 bg 300 b valve closed at 3:57pm 4056 ucn 300 bv open 4057 Cs137 30 source placed on top 4058 bg 300 bv still closed 4059 ucn 300 bv opened at 4:48pm 4060 Co60 30 bv closed, source on top

24288	Sat Jan 21 15:44:57 2012	BPlaster

UCNA Shift Change Checklist Date: January 21, 2012 16:00 Shift Persons: BradP, Sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 14.05 psia Heater C pressure 13.25 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 293.7 psia Tungsten Cool ret. 77.2 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 14.82 K 1630 JT temp. 7.66 K 1630 outlet temp. 278.5 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 192 psig 1630 return press. 1.6 psig 1630 med. press. stor. 60 psig 1410 engine speed 174 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 88.2 K 1410 supply press. 245 psig 1410 JT press. 152 psig 1410 return press. 3.2 psig 4K dewar pressure 308 mmHg 1K dewar pressure 7.1 psig 4K dewar level 16.55 inHe 1K dewar level 29.76 inHe 4K main flow control 4.9 V LHe temp. (channel 1) 5.00 K Heat exch. temp. (channel 7) 208.45 K Poly temp. (channel 3) 145.82 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.482 MHz AFP forward power 0 [off] W SCS LHe level 87.5 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.4 torr CC1 pressure 5.7e-5 torr () PPM LHe level 96.6 % PPM LN2 level 100 % AFP LHe level 99.8 % AFP LN2 level 98.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 235 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: 0.85 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.9 F West MWPC Temperature 75.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 2066 Hz West muon veto rate 3916 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 62 %

24287	Sat Jan 21 14:59:53 2012	bz

11:13 19097 A7 Beta ON E=11.816 W=10.430 Fe/GV=0.1135 SCS/GV=0.1739 (E+W)/GV=1.2541 12:14 19098 A8 Depol ON->OFF W/R=0.141(47) 12:21 19099 A9 Bkg ON E= 1.126 W= 0.841 12:29 19100 A10 Beta OFF E=17.454 W=18.560 Fe/GV=0.4707 SCS/GV=0.2452 (E+W)/GV=1.7987 13:29 19101 A11 Depol OFF->ON W/R=0.037(13) 13:36 19102 A12 Bkg OFF E= 1.255 W= 0.863 New B->A Octet 13:48 19103 B1 Bkg ON E= 1.158 W= 0.895 13:56 19104 B2 Beta ON E=12.120 W=10.786 Fe/GV=0.1140 SCS/GV=0.1724 (E+W)/GV=1.2429 14:56 19105 B3 Depol ON->OFF W/R=0.179(56)

24285	Sat Jan 21 13:24:09 2012	Hasan

UCNA Shift Change Checklist Date: January 21, 2012 08:45 Shift Persons: Bryan, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 12.09 psia Heater C pressure <12.00 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 290.6 psia Tungsten Cool ret. 75.4 psia Tungsten Cool Diff 280.5 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.64 K 1630 outlet temp. 278.3 K 1630 engine speed 215 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.8 psig 1630 med. press. stor. 63 psig 1410 engine speed 124 rpm 1410 TE-A 17.0 K 1410 TE-B 6.2 K 1410 TE-E 92.2 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 0.9 psig 4K dewar pressure 310 mmHg 1K dewar pressure 5.0 psig 4K dewar level 16.24 inHe 1K dewar level 27.15 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 4.943 K Heat exch. temp. (channel 7) 202.1 K Poly temp. (channel 3) 100.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 88.8 % SCS field 9.5957 kG SCS current 118.45 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.1e-5 torr () PPM LHe level 96.7 % PPM LN2 level 100 % AFP LHe level 90.9 % AFP LN2 level 88.2 % PPM current 72(6) A(T)

chiller set point 7 degC AFP chiller level light off Proton burst spacing: --- s (beam off due to some problems on CCR end) Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 78.5 F West MWPC Temperature 74.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 4.4 slpm NEOPENTANE MAY BE EMPTY East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 2.9 slpm NEOPENTANE MAY BE EMPTY West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1837 Hz West muon veto rate 3556 Hz Spectrometer vacuum 2.4e-5 Torr (CC2) disk usage daq account 62 %

24284	Sat Jan 21 06:49:00 2012	JCHoagland

beam was down till about 1:20am and died again at 7:00am

Attachment 1: 6.ps

24283	Sat Jan 21 04:18:34 2012	JCHoagland

UCNA Shift Change Checklist Date: January 21, 2012 02:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 13.36 psia Heater C pressure 12.59 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 293.8 psia Tungsten Cool ret. 77.3 psia Tungsten Cool Diff 282.4 psia 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.5 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410 TE-E 86.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 2.3 psig 4K dewar pressure 290 mmHg 1K dewar pressure 6.0 psig 4K dewar level 15.5 inHe 1K dewar level 26.4 inHe 4K main flow control 4.5 V LHe temp. (channel 1) 5.3 K Heat exch. temp. (channel 7) 201.8 K Poly temp. (channel 3) 126.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 96.8 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 2.7e-5 torr () PPM LHe level 96.8 % PPM LN2 level --- % AFP LHe level 86.0 % AFP LN2 level 75.7 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.48 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 79.9 F West MWPC Temperature 76.1 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 5.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.5 Neopentane Flow Rate 4.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 2083 Hz West muon veto rate 3813 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 62 %

24282	Fri Jan 20 23:00:07 2012	BMV

BMV and Brad P 4pm-midnight 01/20/2012 1410 out of whack!! NEED TO EXPERT TO TWEAK!!! Return Manifold, SCS, and AFP pressure went started decreasing when the Source Flow was increased. This made people nervous because it was getting to 1psi and the AFP was boiling off quicker. We decided to start an AFP fill, both magnets were at 86%. So we started filling AFP, Bryan talked to Mark and he suggested that you crack open slightly the CLPM-12. The return pressure was getting low in the 1410 and the pressure going down in the 1K dewar... so during the cooling of the lines the CLPM-12 was cracked open. Then we closed CLPM-12 started the AFP fill, when the pressures stopped their change over spike, we cracked open the CLPM-12. Heater C stopped complaining and pressure appeared to be ok. Once the AFP was filled we stopped 1K dewar flow and closed magnet, open bypass, then closed CLPM-12, Not sure if I like that but that is what we did and so far no explosion... then finished the procedure. We then started pressurizing the SCS... SCS fill commenced (from 4K) and we still had problems with the pressures. The AFP pressure was getting very low to 0.5psi we did not want to open CLPN-12 when it was like that so we called Mark. Mark said to close all AFP out to heater skids (which means AFP-C was now closed), then opened CLPM-12, pressure rose very quickly in AFP 6psi in 2-

because the AFP pressure was less than the return pressure and we did not want back flow when opening CLPM-12. The AFP pressure equilibriated to return pressure, things were good. We closed CLPM-12 when SCS was at 100%, then filled Med. Pressure Storage to it's spike and then followed the end of SCS fill procedure. Beta Run 21:22 19076 B1 Bkg On E=1.145 W=0.816 21:32 19077 B2 Beta On E=13.5 W=12.0 Fe/GV=0.1119 SCS/GV 0.1736 Beta/GV= 1.2576 22:33 19078 B3 Depol On->Off W/R=0.1839+/-0.05 22:40 19079 B4 Bkg Off E=1.268 W=0.868 22:48 19080 B5 Beta Off E=17.7 W=18.8 Fe/GV=0.4685 SCS/GV=0.2454 Beta/GV=1.8409 *** Beam off right at end of B5 run. Redo B5 for ~5 mins to reload UCN into SCS before doing B6.

24281	Fri Jan 20 19:48:33 2012	BPlaster

UCNA Shift Change Checklist Date: January 20, 2012 16:00 Shift Persons: Brittney, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 12.98 psia Heater C pressure 12.18 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 294.5 psia Tungsten Cool ret. 78.2 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 15.21 K 1630 JT temp. 7.58 K 1630 outlet temp. 278.2 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 149 rpm 1410 TE-A 16.2 K 1410 TE-B 6.5 K 1410 TE-E 88.4 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 2 psig 4K dewar pressure 295 mmHg 1K dewar pressure 6.5 psig 4K dewar level 22.21 inHe 1K dewar level 21.82 inHe 4K main flow control 4.3 V LHe temp. (channel 1) 5.329 K Heat exch. temp. (channel 7) 204.31 K Poly temp. (channel 3) 68.139 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 85.8 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.4 torr CC1 pressure 2.0e-5 torr () PPM LHe level 96.8 % PPM LN2 level 100 % AFP LHe level 84.8 % AFP LN2 level 74.9 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- s (beam off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 80.7 F West MWPC Temperature 76.8 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 9.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.7 Neopentane Flow Rate 8.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1966 Hz West muon veto rate 3651 Hz Spectrometer vacuum 3.2e-5 Torr (CC2) disk usage daq account 61 %

24279	Fri Jan 20 04:57:36 2012	BMV

Michael and BMV 4pm-midnight 01/19/12 Filled AFP and SCS aroun 9pm 2138 19050 A1 BkG off E=1.249 W=0.849 2143 19051 A2 Beta Off E=16.278 W=17.307 Fe/GV=0.4741, SCS/GV=0.2449 B/GV=1.8330 2230 19052 A3 Depol Off->On W/R=0.036585 2237 19053 A4 Bkg On E=1.230 W=0.810 2243 19054 A5 Beta On E=12.549 W=11.244 Fe/GV=0.1121, SCS/GV=0.1735 B/GV=1.2465 2330 19055 A6 Depol On->Off W/R=0.074074 2337 19056 A7 Beta On E=12.701 W=11.293 Fe/GV=0.1140, SCS/GV=0.1932 B/GV=1.2386 0024 19057 A8 Depol on->off W/R=0.142857 0031 19058 A9 Bkg E=1.086 W=0.856 0037 19059 A10 beta off E=16.812 W=17.721 Fe/GV=0.4681 SCS/GV=0.2438 B/GV=1.8008 0124 19060 A11 depol off->on W/R=0.021097 0131 19061 A12 Bkg off E=1.148 W=0.856 0136 19062 B1 Bkg on E=1.138 W=0.773 0142 19063 B2 beta on E=12.634 W=11.125 Fe/GV=0.1110 SCS/GV=0.1759 B/GV=1.2538 0229 19064 B3 depol on->off W/R=0.205128 0236 19065 B4 Bkg off E=1.170 W=0.878 0241 19066 B5 beta off E=16.477 W=17.626 Fe/GV=0.4707 SCS/GV=0.2449 B/GV=1.8000 0329 19067 B6 depol off->on W/R=0.004831 0336 19068 B7 beta off E=16.314 W=17.218 Fe/GV=0.4707 SCS/GV=0.2416 B/GV=1.8069 0423 19069 B8 depol off->on W/R=0.047629 0430 19070 B9 Bkg off E=1.303 W=0.783 0435 19071 B10 beta on E=12.372 W=10.905 Fe/GV=0.1109 SCS/GV=0.1755 B/GV=1.2480 0523 19072 B11 depol on->off W/R=0.159420 0532 19073 B12 Bkg on E=1.238 W=0.790

Attachment 1: 2012.ps

24280	Fri Jan 20 02:23:25 2012	JCHoagland

UCNA Shift Change Checklist Date: January 20, 2012 00:30 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 14.13 psia Heater C pressure 13.32 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 295.1 psia Tungsten Cool ret. 79.1 psia Tungsten Cool Diff 282.0 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.5 K 1630 outlet temp. 279.3 K 1630 engine speed 210 rpm 1630 supply press. 245

engine speed 200 rpm 1410 TE-A 15.5 K 1410 TE-B 6.4 K 1410 TE-E 86.5 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.7 psig 4K dewar level 19.9 inHe 1K dewar level 8.1 inHe 4K main flow control 5.0 V LHe temp. (channel 1) 4.9 K Heat exch. temp. (channel 7) 208.0 K Poly temp. (channel 3) 141.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 99.8 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 1.2e-5 torr () PPM LHe level 97.1 % PPM LN2 level --- % AFP LHe level 99.8 % AFP LN2 level 98.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 235 ns TBCM001I03 (H- source current): 14.18 mA "Beamplot" Capture: 63 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 79.6 F West MWPC Temperature 75.8 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 13.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.6 Neopentane Flow Rate 12.3 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1981 Hz West muon veto rate 3892 Hz Spectrometer vacuum 2.0e-5 Torr (CC2) disk usage daq account 61 %

24278	Thu Jan 19 22:00:19 2012	KPH

Run summary: Opened the b valve at 9:53pm with bypass closed. Saw only vary small rise in CC1 but below 1e-4 torr. Threshold is 320. Ch 3(19) stopped working! LED is off. HV is 1200 kV. I placed a 10 uCi Cs137 source on top of the box to look for the 480 keV Compton edge. Below is a plot of ch 2(18) runs 4047 (black) and 4048 (red) showing ucn generated signal at about 10 Hz over a 100 Hz background. Also shown is the Cs137 calibration source showing 480 keV (blue) run log: run type length (s) 4045 ucn 30 4046 bg 30 changed threshold to 400. 4047 bg 300 4048 ucn 300 4049 Cs137 60 4050 Cs137 300

Attachment 1:

24277	Thu Jan 19 15:31:52 2012	BMV

UCNA Shift Change Checklist Date: January 19, 2012 16:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 13.84 psia Heater C pressure 13.05 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 295.2 psia Tungsten Cool ret. 78.5 psia Tungsten Cool Diff 282.6 psia 1630 eng. 2 temp. 14.93 K 1630 JT temp. 7.56 K 1630 outlet temp. 279.2 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.4 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 15.3 K 1410 TE-B 6.5 K 1410 TE-E 85.1 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.2 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.5 psig 4K dewar level 19.0 inHe 1K dewar level 25.91 inHe 4K main flow control 3.9 V LHe temp. (channel 1) 6.39 K Heat exch. temp. (channel 7) 211.41 K Poly temp. (channel 3) 69.716 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 85.9 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 1/3 SV3 closed SV4 closed CM1 pressure 5.4 torr CM5 pressure 2.4 torr CC1 pressure --- torr PPM LHe level 97.5 % PPM LN2 level 100.0 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): --.- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 79.8 F West MWPC Temperature 75.8 F MWPC Pressure 100.3 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.7 Neopentane Flow Rate 12.1 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1879 Hz West muon veto rate 3349 Hz Spectrometer vacuum 4.3e-5 Torr (CC2) disk usage daq account 61%

24276	Thu Jan 19 13:26:33 2012	KPH

UCN rate last night

Attachment 1: 012.png

012.png

24275	Thu Jan 19 05:04:19 2012	JCHoagland

note: the AFP will need to be filled by noon today

Attachment 1: 5.ps

24273	Thu Jan 19 04:52:09 2012	BMV

BMV and Michael 4pm-midnight shift Started SCS fill/pressurizing for fill 17:40. Ran into problems with Heater A and B maintaining pressure and 1K dewar was at 5psi and filling stopped, we opened the heaters and open CLPM12. filling started again, returned the system to where it needs to be. Started beta runs YAY! 19:59 19023 B1 bkg On E=1.17 W=0.73 20:06 19024 B2 Beta On E=14.62 W=12.95 Fe/GV=.1163 SCS/GV=0.1796 B/GV=1.2659 21:04 19025 B3 Depol On->Off W/R=.173 21:11 19026 B4 Bkg off E=1.14 W=0.80 21:18 19027 B5 Beta off E=18.49 W=19.77 Fe/GV=.4701 SCS/GV=.2437 B/GV=1.8184 22:15 19028 B6 Depol Off->On W/R=.043 22:22 19029 B7 Beta off E=18.02 W=19.21 Fe/GV=.4694 SCS/GV=.2456 B/GV=1.8204 23:20 19030 B8 Depol Off->On W/R=.032 23:27 19031 B9 Bkg. Off E=1.17 W=0.84 23:34 19032 B10 Beta On E=13.1 W=11.7 Fe/GV=0.11 SCS/GV=0.18 B/GV=1.25 00:31 19033 B11 Depol on->off W/R=0.102273 00:38 19034 B12 Bkg on E=1.16 W=0.8 00:47 19035 A1 Bkg off E=1.25 W=0.87 00:54 19036 A2 Beta off E=16.35 W=17.4 Fe/GV=0.47 SCS/GV=0.25 B/GV=1.83 1:51 19037 A3 Depol off->on W/R=0.025316 1:58 19038 A4 Bkg on E=1.16 W=0.88 2:06 19039 A5 Beta on E=13.466 W=12.026 Fe/GV=0.1123 SCS/GV=0.1743 B/GV=1.2431 3:03 19040 A6 Depol on->off W/R=0.189189 3:10 19041 A7 Beta on E=13.523 W=11.909 Fe/GV=0.1123 SCS/GV=0.1725 B/GV=1.2387 4:07 19042 A8 Depol on->off W/R=0.243243 4:14 19043 A9 Bkg on E=1.124 W=0.866 4:22 19044 A10 Beta off E=17.566 W=18.800 Fe/GV=0.4743 SCS/GV=0.2408 B/GV=1.8020 5:19 19045 A11 Depol off->on W/R=0.063063 5:26 19046 A12 Bkg off E=1.271 W=0.835

24274	Thu Jan 19 02:33:59 2012	JCHoagland

UCNA Shift Change Checklist Date: January 19, 2012 03:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 14.12 psia Heater C pressure 13.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 295.3 psia Tungsten Cool ret. 78.4 psia Tungsten Cool Diff 282.9 psia 1630 eng. 2 temp. 14.8 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.8 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.5 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 101.0 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.3 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.7 psig 4K dewar level 15.7 inHe 1K dewar level 16.7 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 5.1 K Heat exch. temp. (channel 7) 212.3 K Poly temp. (channel 3) 162.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 95.9 % SCS field --- kG SCS current 118.45 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 2.5 torr CC1 pressure 1.2e-5 torr () PPM LHe level 98.1 % PPM LN2 level 100 % AFP LHe level 99.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.88 mA "Beamplot" Capture: 62 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.8 F West MWPC Temperature 73.4 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.2 Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2004 Hz West muon veto rate 3754 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 61 %

24272	Wed Jan 18 18:45:27 2012	KPH

Run summary: We fixed the fADC config file. We must set the UPPER threshold for NEGATIVE pulses. At the same time, set lower threshold to ZERO. Run log: run length(s) type comment

raised voltage to 1200 V 4036 30 Cs137 looking for CE 4037 30 Co60 looking for double compton edge moved channel 2 (18) to channel 4 (20) 4038 30 Co60 testing why ch2(18) looks effed bad amp on ch 2(18). Swapped with a working one. 4040 30 Co60 testing new amp

24271	Wed Jan 18 15:40:36 2012	mmendenhall

UCNA Shift Change Checklist Date: January 18, 2012 16:00 Shift Persons: Brittney, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 14.10 psia Heater C pressure 13.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 295 psia Tungsten Cool ret. 78 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.55 K 1630 outlet temp. 279 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.4 K 1410 TE-E 91.1 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 272 mmHg 1K dewar pressure 7.5 psig 4K dewar level 14.9 inHe 1K dewar level 32.2 inHe 4K main flow control 3.5 V LHe temp. (channel 1) 7.3 K Heat exch. temp. (channel 7) 204 K Poly temp. (channel 3) 71 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 86.6 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 9.1 torr CM5 pressure 2.3 torr CC1 pressure E09 torr () PPM LHe level 98.5 % PPM LN2 level 100 % AFP LHe level 99.8 % AFP LN2 level 99.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- s (beam off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.5 F West MWPC Temperature 73.2 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.5 Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1886 Hz West muon veto rate 3288 Hz Spectrometer vacuum 2.1e-5 Torr (CC2) disk usage daq account 60 %

24270	Wed Jan 18 05:15:32 2012	KPH

b box run summary FDAQ rate comment 190012 -- background, bv closed, bv bypass closed, GV closed half way through 190013 250 bv open, gv closed, bypass closed 190014 255 bv open, gv closed, bypass open 190015 240 background, bv closed

24269	Wed Jan 18 05:03:41 2012	JCHoagland

run stuff type midas chris's cycles P+ 19005 1102 10 P- 19007 1103 10 SLD- 19009 1105 11 SLD+ 19010 1106 10 also when kevin opened his box, the cc1 went up by a bit and the rate dropped from 350 GV closed to 320 GV closed

24268	Wed Jan 18 02:27:47 2012	JCHoagland

UCNA Shift Change Checklist Date: January 18, 2012 00:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.10 psia Heater C pressure 13.31 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 294.5 psia Tungsten Cool ret. 78.4 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.1 K 1630 outlet temp. 278.7 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.1 psig 1630 med. press. stor. 100 psig 1410 engine speed 200 rpm 1410 TE-A 15.1 K 1410 TE-B 6.3 K 1410 TE-E 97.6 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.5 psig 4K dewar level 10.6 inHe 1K dewar level 23.4 inHe 4K main flow control 5.3 V LHe temp. (channel 1) 4.9 K Heat exch. temp. (channel 7) 194.5 K Poly temp. (channel 3) 134.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 10.0 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 99.9 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 1.1e-5 torr () PPM LHe level 98.9 % PPM LN2 level ---- % AFP LHe level 87.2 % AFP LN2 level 78.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s (beam off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source

========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.1 F West MWPC Temperature 72.1 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.3 Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1838 Hz West muon veto rate 3490 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 60 %

24267	Tue Jan 17 22:56:36 2012	Hasan

Run Type MCA Fast Daq AFP Cycles Notes P+ 1102 19006 On used the gate values from page 10 of logbook

24266	Tue Jan 17 22:31:49 2012	mmendenhall

4pm-12am Shift (Hasan, Michael) - Filled AFP - Filled SCS - Went to CCR to check how our current tuning plots respond to tuning - Initial tune tonight was already the best we have seen all year (reaching ~380Hz GV closed) - Setting X,Y=0 on the centroid plot currently works fairly well with 1Hz tuning beam, and the centroids respond sanely to changes in the X,Y steering magnet currents - Combine X,Y=0 with maximizing "Tune Quality" plot is a decent way to pre-tune before the UCN count is available - Experimented with taking tuning beam at 4Hz (and reduced pattern width) to smooth out the temperature aliasing. 4Hz tuning beam takes more pulses from IPF; CCR crew said this was OK to do for short ("10-20 minute") periods of tuning. 4Hz tuning beam does significantly smooth out the aliasing (none visible) even compared to usual 1Hz tuning beam, so this might sometimes be useful for Run plan: depol runs: 10 cycles each of P+,P-,SLD+,SLD-

24265	Tue Jan 17 16:08:04 2012	Hasan

UCNA Shift Change Checklist Date: January 17, 2012 16:00 Shift Persons: Michael, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 20 slpm Heater B pressure 15.52 psia Heater C pressure 13.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 294.1 psia Tungsten Cool ret. 78.0 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 15.06 K 1630 JT temp. 8.46 K 1630 outlet temp. 278.4 K 1630 engine speed 210 rpm 1630 supply press. 235 psig 1630 JT press. 175 psig 1630 return press. 3.0 psig 1630 med. press. stor. 100 psig 1410 engine speed 200 rpm 1410 TE-A 16.9 K 1410 TE-B 7.3 K 1410 TE-E 87.7 K 1410 supply press. 240 psig 1410 JT press. 145 psig 1410 return press. 3.4 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.90 inHe 1K dewar level 18.10 inHe 4K main flow control 3.3 V LHe temp. (channel 1) 9.155 K Heat exch. temp. (channel 7) 215.84 K Poly temp. (channel 3) 75.745 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 85.8 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 16.4 torr CM5 pressure 2.4 torr CC1 pressure --- torr (source melted) PPM LHe level 99.0 % PPM LN2 level 100 % AFP LHe level 88.8 % AFP LN2 level 65.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: --- s (beam off) Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H-source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.7 F West MWPC Temperature 72.9 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1862 Hz West muon veto rate 3295 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 60 %

24264	Tue Jan 17 11:33:12 2012	MFMakela

warming up ucn source partial melt 75 mbar in the tank check valve bypass closed need to check for leak after this source cooling check valve bypass open.

24263	Tue Jan 17 10:06:17 2012	Cristian

Testing(4ch PMT into East 1-4) Kevin's b-box using ucna DAQ. Run N Rate(Hz) Comments 18995 100

source on top of b-box 18998 1000 2-puffs of 5 day old Xe 18999 150 background 19000 800 Co60 source on top of b-box 19001 200 LED fixed

24262	Tue Jan 17 08:10:28 2012	KPH

Attachment 1: 3_4.gif

3_4.gif

24258	Tue Jan 17 06:22:39 2012	BWFilippone

testing

24261	Tue Jan 17 05:46:45 2012	KPH

Attachment 1: 3_3.gif

3_3.gif

24260	Tue Jan 17 05:46:28 2012	KPH

Attachment 1: 2_3.gif

2_3.gif

24259	Tue Jan 17 05:46:09 2012	KPH

Attachment 1: 1_3.gif

1_3.gif

24257	Tue Jan 17 05:03:14 2012	KPH

Run summary: Came in right before beam off to open b valve and see if the source would still clunk up. Current vacuum in the box is 1.9e-5. Source is 5.7e-6 Rate in b box before opening to UCN with b valve closed in 100s: 6350 = 63.5(8) Hz 4:52am: b bypass closed. b valve opened Rate in b box after opening b vavle, by pass closed in 100s: 7194 = 71.9(8) Hz 5:00am: Opening bypass. Rate in b box after opening b valve, by pass closed in 100s: 7265 = 72.7(8) Hz Rate in b box, b valve closed, bypass open in 100s: 6576 = 65.7(8) Hz 5:03am opened b valve, closed bypass. Rate in b box, b valve open, bypass closed: 7253 = 72.5(8) Hz 5:08 am: closed b valve. Rate in b box, b valve closed, bypass closed: 6380 = 63.8(8) Hz 5:12am: opened b valve. Rate in b box, b valve open, bypass closed: 7213 = 72.1(8) Hz 5:14 am: closed b valve. Rate in b box, b valve closed, bypass closed: 6613 = 66.1(8) Hz 5:23am: opened b valve. fADC run4024, 300s "b valve open, bypass closed. looking for He6 pulses, gate valve closed during run" fADC run4025, 300s "b valve open, bypass closed. looking for He6 pulses, gate valve opened" 5:36am: closed b valve. fADC run4026, 300s "b valve closed, bypass closed. background" 5:47am: opened b valve. fADC run4027, 300s "b valve open, bypass closed" 5:54am: started crude lifetime test fADC run4028, 300s "lifetime run, on/off every 10s"

24256	Mon Jan 16 23:13:21 2012	JCHoagland

UCNA Shift Change Checklist Date: January 17, 2012 0:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.00 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 296.0 psia Tungsten Cool ret. 80.0 psia Tungsten Cool Diff 282.0 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.5 K 1630 outlet temp. 277.0 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 1.5 psig 1630 med. press. stor. 100 psig 1410 engine speed 200 rpm 1410 TE-A 14.9 K 1410 TE-B 6.2 K 1410 TE-E 90.0 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.5 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 14.0 inHe 1K dewar level 21.2 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 206.0 K Poly temp. (channel 3) 147.0 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 86.2 % SCS field ----- kG SCS current 118.45 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 2.3 torr CC1 pressure 7.8e-6 torr PPM LHe level 99.0 % PPM LN2 level ---

A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 13.24 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.9 F West MWPC Temperature 73.0 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.34 kV East muon veto rate 3210 Hz West muon veto rate 5299 Hz Spectrometer vacuum 2.5e-5 Torr (CC2) disk usage daq account 60 %

24255	Mon Jan 16 23:04:12 2012	mmendenhall

4pm-12am Shift (Hasan, Michael) - Continuing B->A 16:28 18955 B10 Beta On E=13.63 W=12.16 Fe/GV=.1199 SCS/GV=.1858 Bt/GV=1.2981 17:28 18956 B11 Depol On->Off W/R=0.154(46) 17:35 18957 B12 Bkg On E=1.26 W=0.87 17:43 18958 A1 Bkg Off E=1.26 W=0.87 17:52 18959 A2 Beta Off E=17.41 W=18.55 Fe/GV=.4704 SCS/GV=.2504 Bt/GV=1.8671 18:52 18960 A3 Depol Off->On W/R=0.036(13) 18:58 18961 A4 Bkg On E=1.10 W=0.78 19:07 18962 A5 Beta On E=11.05 W=9.76 Fe/GV=.1190 SCS/GV=.1891 Bt/GV=1.3291 --- beam out ~15min; taking extra 15min A5 run --- 19:54 18963 A5 Beta On E=13.16 W=11.95 Fe/GV=.1179 SCS/GV=.1864 Bt/GV=1.3013 20:09 18964 A6 Depol On->Off W/R=0.200(53) 20:16 18965 A7 Beta On E=13.23 W=11.95 Fe/GV=.1173 SCS/GV=.1830 Bt/GV=1.3009 21:16 18966 A8 Depol On->Off W/R=0.090(38) 21:23 18967 A9 Bkg On E=1.15 W=0.83 21:41 18968 A10 Beta Off E=16.95 W=18.09 Fe/GV=.4719 SCS/GV=.2559 Bt/GV=1.8676 22:41 18969 A11 Depol Off->On W/R=0.0023(9) 22:48 18970 A12 Bkg Off E=1.16 W=0.77 - CCR says we are turning over beam to PRAD at usual time (6am) - Starting new A->B; 37min beta + 5min bkg to end before 6am 22:58 18971 A1 Bkg Off E=1.19 W=0.81 23:03 18972 A2 Beta Off E=16.721 W=17.864 Fe/GV=.4734 SCS/GV=.2501 Bt/GV=1.8364 23:40 18973 A3 Depol Off->On W/R=0.042(13) 23:47 18974 A4 Bkg On E=1.14 W=0.81 23:53 18975 A5 Beta On

24252	Mon Jan 16 15:36:22 2012	BWFilippone

Dayshift summary (BWF & CP) Finishing an A->B octet and starting a B->A octet Filled SCS from 1K at 8AM - should last till tomorrow AM Filled AFP from 1K at 2:30PM 7:37 AM 18934 B1 Bkg (on) E=1.16 W=0.85 7:46 AM 18935 B2: Beta (on) E=14.2 W=12.6 Fe/GV=0.12 SCS/GV=0.18 beta/GV=1.29 8:46 AM 18936 B3: Depol (on to off) W/R = 0.16 8:53 AM 18937 B4: Bkg (off) E=1.14 W-0.81 9:02 AM 18938 B5: Beta (off) E=18.8 W=19.9 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.85 10:02 AM 18939 B6: Depol (off to on) W/R=0.025 10:09 AM 18940 B7: Beta (off) E=18.3 W=19.4 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.85 11:09 AM 18941 B8: Depol (off to on) W/R=0.031 11:16 AM 18942 B9: Bkg (off) E=1.13 W=0.92 11:25 AM 18943 B10: Beta (on) E=13.0 W=11.7 Fe/GV=0.12 SCS/GV=0.18 beta/GV=1.30 12:25 PM 18944 B11: Depol (on to off) W/R=0.21 12:32 PM 18945 B12: Bkg. (on) E=1.14 W=0.75 New Octet B->A 12:41 PM 18946 B1: Bkg (on) E=1.25 W=0.78 12:49 PM 18947 B2: Beta (on) E=13.2 W=11.6 Fe/GV=0.12 SCS/GV=0.18 beta/GV=1.29 1:50 PM 18948 B3: Depol (on to off) W/R=0.14 1:57 PM 18949 B4: Bkg (off) E=1.21 W=0.87 2:05 PM 18950 B5: Beta (off) E=15.5 W=16.4 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.87 3:05 PM 18951 B6: Depol (off to on) W/R=0.035 3:12 PM 18952 B7: Beta (off) E=17.6 W=18.7 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.85 4:12 PM 18853 B8: Depol (off to on) W/R=0.039 4:19 PM 18854 B9: Bkg (off) E=1.14 W=0.87

24254	Mon Jan 16 15:27:31 2012	mmendenhall

UCNA Shift Change Checklist Date: January 16, 2012 16:00 Shift Persons: Hasan, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.11 psia Heater C pressure 13.31 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 297.4 psia Tungsten Cool ret. 81.2 psia Tungsten Cool Diff 282.3 psia 1630 eng. 2 temp. 14.80 K 1630 JT temp. 7.9 K 1630 outlet temp. 277.5 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 117 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 91.5 K 1410 supply press. 240 psig 1410 JT press. 132 psig 1410 return press. 3.5 psig 4K dewar pressure 275 mmHg 1K dewar pressure 7.5 psig 4K dewar level 13.7 inHe 1K dewar level 11.5 inHe 4K main flow control 4.8 V LHe temp. (channel 1) 5.0 K Heat exch. temp. (channel 7) 216 K Poly temp. (channel 3) 152 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status down AFP temperature 10.0 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 91.1 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 2.2 torr CC1 pressure 8.7e-6 torr PPM LHe level 99.1 % PPM LN2 level 100.0 % AFP LHe level 99.8 % AFP LN2 level 89.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source

========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.7 F West MWPC Temperature 72.9 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.6 Neopentane Flow Rate 11.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1999 Hz West muon veto rate 3667 Hz Spectrometer vacuum 2.4e-5 Torr (CC2) disk usage daq account 59 %

24253	Mon Jan 16 14:54:55 2012	BWFilippone

During AFP fill (15:00): the temp. sensor on the input line was FUBAR Called JeffH and he said he noticed it was flakey and didn't know how to fix it. Advised that we proceed with fill using icing of heater to confirm line was cold enough. We made sure that line was cold (ice on pipe) and started the fill. Then when we went down to the level meter and switched to HOLD - it read 97.5 (started fill at 86%). weird... but no quenching so "it's all good"

24251	Mon Jan 16 08:23:56 2012	Cristian

UCNA Shift Change Checklist Date: January 16, 2012 08:40 Shift Persons: Brad F, Cristian UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.13 psia Heater C pressure 13.23 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 296.9 psia Tungsten Cool ret. 81.0 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 14.97 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.9 K 1630 engine speed 180 rpm 1630 supply press. 225 psig 1630 JT press. 175 psig 1630 return press. 1.6 psig 1630 med. press. stor. 115 psig 1410 engine speed 200 rpm 1410 TE-A 17.2 K 1410 TE-B 7.9 K 1410 TE-E 86.1 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.45 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 13.6 inHe 1K dewar level 18.4 inHe 4K main flow control 4.7 V LHe temp. (channel 1) 5.18 K Heat exch. temp. (channel 7) 214.04 K Poly temp. (channel 3) 153.86 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 91.1 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 2.3 torr CC1 pressure 1.5e-5 torr PPM LHe level 99.7 % PPM LN2 level 100.0 % AFP LHe level 94.7 % AFP LN2 level 89.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.3 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.4 F West MWPC Temperature 72.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 11.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3724 Hz West muon veto rate 6135 Hz Spectrometer vacuum 2.0e-5 Torr (CC2) disk usage daq account 59 %

24250	Mon Jan 16 07:02:35 2012	bz

So the way to operate the kvm switch on the computer on the AFP rack is to hit the scroll lock key twice On a related note, do not close the seemingly empty window marked Varian Multiscan Readout. It hands the CC1 and CC2 values along to PCDAQ and closing this window both crashes the PCDAQ and also keeps us from being able to read the CC1 and CC2 values in the counting house TL;DR DO NOT CLOSE THE WINDOW MARKED VARIAN MULTISCAN READOUT ON THE AFP RACK COMPUTER

24249	Mon Jan 16 06:59:51 2012	bz

23:56 18915 B6 Depol OFF -> ON W/R=0.017(8) 00:03 18916 B7 Beta OFF E=18.713 W=19.851 Fe/GV=0.4695 SCS/GV=0.2503 (E+W)/GV=1.8619 01:03 18917 B8 Depol OFF -> ON W/R=0.032 01:10 18918 B9 Bkg OFF E= 1.1894 W= 0.851 01:18 18919 B10 Beta ON E=13.501 W=12.071 Fe/GV=0.1207 SCS/GV=0.1847 (E+W)/GV=1.2934 02:19 18920 B11 Depol ON -> OFF W/R=0.125(38) 02:26 18921 B12 Bkg ON E= 1.164 W= 0.798 New A->B Octet 02:35 18922 A1 Bkg OFF E= 1.149 W= 0.841 02:43 18923 A2 Beta OFF E=16.711 W=17.916 Fe/GV=0.4734 SCS/GV=0.2540 (E+W)/GV=1.8652 03:43 18924 A3 Depol OFF -> ON W/R=0.023(9) 03:50 18925 A4 Bkg ON E= 1.118 W= 0.858 03:59 18926 A5 Beta ON E=14.151 W=12.555 Fe/GV=0.1176 SCS/GV=0.1873 (E+W)/GV=1.2978 04:59 18927 A6 Depol ON -> OFF W/R=0.243902 05:06 18928 A7 Beta ON E=13.720 W=12.342 Fe/GV=0.1203 SCS/GV=0.1840 (E+W)/GV=1.2952 06:06 18929 A8 Depol ON -> OFF W/R=0.144330 06:13 18930 A9 Bkg ON E= 1.161 W=

07:22 18932 A11 Depol OFF -> ON W/R=0.048(14) 07:29 18933 A12 Bkg OFF E= 1.117 W= 0.851

24248	Mon Jan 16 04:59:02 2012	bz

So the way to operate the kvm switch on the computer on the AFP rack is to hit the scroll lock key twice On a related note, do not close the seemingly empty window marked Varian Multiscan Readout. It hands the CC1 and CC2 values along to PCDAQ and closing this window both crashes the PCDAQ and also keeps us from being able to read the CC1 and CC2 values in the counting house TL;DR DO NOT CLOSE THE WINDOW MARKED VARIAN MULTISCAN READOUT ON THE AFP RACK COMPUTER

24247	Mon Jan 16 00:49:49 2012	bz

UCNA Shift Change Checklist Date: January 16, 2012 00:00 Shift Persons: Jeff, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.09 psia Heater C pressure 13.29 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 297.4 psia Tungsten Cool ret. 81.8 psia Tungsten Cool Diff 281.5 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.4 K 1630 outlet temp. 276.8 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 105 psig 1410 engine speed 200 rpm 1410 TE-A 15.4 K 1410 TE-B 6.3 K 1410 TE-E 87.7 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.5 psig 4K dewar level 13.3 inHe 1K dewar level 17.4 inHe 4K main flow control 4.7 V LHe temp. (channel 1) 4.7 K Heat exch. temp. (channel 7) 214.8 K Poly temp. (channel 3) 152.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 87.4 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.4 torr CC1 pressure 1e-6 torr PPM LHe level 99.8 % PPM LN2 level 100.0 % AFP LHe level 88.6 % AFP LN2 level 86.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.38 mA "Beamplot" Capture: 85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.5 F West MWPC Temperature 73.9 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 12.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1992 Hz West muon veto rate 3871 Hz Spectrometer vacuum 2.2e-5 Torr (CC2) disk usage daq account 58 %

24245	Sun Jan 15 22:07:14 2012	mmendenhall

4pm-12am Shift (Hasan, Michael) - Filled AFP from 500L dewar - Starting new A->B octet Runs: 16:05 18898 A1 Bkg Off E=1.11 W=0.77 16:13 18899 A2 Beta Off E=17.81 W=19.05 Fe/GV=.4720 SCS/GV=.2497 Bt/GV=1.8653 17:13 18900 A3 Depol Off->On W/R=0.030(12) 17:20 18901 A4 Bkg On E=1.20 W=0.81 17:29 18902 A5 Beta On E=14.06 W=12.54 Fe/GV=.1159 SCS/GV=.1854 Bt/GV=1.3077 18:29 18903 A6 Depol On->Off W/R=0.155(46) 18:36 18904 A7 Beta On E=13.72 W=12.54 Fe/GV=.1191 SCS/GV=.1871 Bt/GV=1.2872 19:36 18905 A8 Depol On->Off W/R=0.161(45) 19:43 18906 A9 Bkg On E=1.20 W=0.90 19:51 18907 A10 Beta Off E=18.62 W=19.79 Fe/GV=.4697 SCS/GV=.2522 Bt/GV=1.8593 20:52 18908 A11 Depol Off->On W/R=0.016(8) 20:59 18909 A12 Bkg Off E=1.20 W=0.83 21:07 18910 B1 Bkg On E=1.19 W=0.80 21:40 18911 B2 Beta On E=13.52 W=11.88 Fe/GV=.1158 SCS/GV=.1864 Bt/GV=1.3018 22:40 18912 B3 Depol On->Off W/R=.198(52) 22:47 18913 B4 Bkg Off E=1.15 W=0.80 22:55 18914 B5 Beta Off E= W= Fe/GV= SCS/GV= Bt/GV= 23:55 B6 Depol Off->On W/R=

24246	Sun Jan 15 15:54:51 2012	Hasan

UCNA Shift Change Checklist Date: January 15, 2012 16:00 Shift Persons: Michael, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 31 slpm Heater B pressure 14.87 psia Heater C pressure 13.18 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 298.8 psia Tungsten Cool ret. 82.9 psia Tungsten Cool Diff 281.4 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.88 K 1630 outlet temp. 272.0 K 1630 engine speed 190 rpm 1630 supply press. 225 psig 1630 JT press. 175 psig 1630 return press. 1.8 psig 1630 med. press. stor. 130 psig 1410 engine speed 200 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 87.2 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.90 inHe 1K dewar level 7.78 inHe 4K main flow control 4.7 V LHe temp. (channel 1) 4.721 K Heat exch. temp. (channel 7) 217.81 K Poly temp.

Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 93.1 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 2.8 torr CM5 pressure 3.8 torr CC1 pressure 8.2e-6 torr PPM LHe level 99.8 % PPM LN2 level 100.0 % AFP LHe level 99.5 % AFP LN2 level 73.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.0 mA "Beamplot" Capture: 85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 76.4 F West MWPC Temperature 74.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.7 Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2071 Hz West muon veto rate 3895 Hz Spectrometer vacuum 2.3e-5 Torr (CC2) disk usage daq account 58 %

24242	Sun Jan 15 15:29:10 2012	BWFilippone

Dayshift Summary (BWF & CPH) Completed B->A octet started last shift Filled SCS with 1K (stopped after using 11") Mark has hooked up 500L dewar for next AFP fill Rates were realtively steady (37Hz off & 25Hz on) 7:10 AM 18877 B4: Bkg (off) E=1.15 W-0.85 7:18 AM 18878 B5: Beta (off) E=18.0 W=19.1 Fe/GV=0.47 SCS/GV=0.26 beta/GV=1.879 8:18 AM 18879 B6: Depol (off to on) W/R=0.032 8:25 AM 18880 B7: Beta (off) E=18.9 W=19.1 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.85 9:26 AM 18881 B8: Depol (off to on) W/R=0.027 9:32 AM 18882 B9: Bkg (off) E=1.11 W=0.80 9:41 AM 18883 B10: Beta (on) E=12.0 W=10.6 Fe/GV=0.12 SCS/GV=0.19 beta/GV=1.31 10:41 AM 18884 B11: Depol (on to off) W/R=0.19 10:48 AM 18885 B12: Bkg. (on) E=1.11 W=0.83 10:56 AM 18886 A1: Bkg (off) E=1.14 W=0.89 11:05 AM 18887 A2: Beta (off) E=18.4 W=19.6 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.86 12:05 PM 18888 A3: Depol (off to on) W/R=0.012 12:12 PM 18889 A4: Bkg (on) E=1.19 W=0.78 12:20 PM 18890 A5: Beta (on) E=12.5 W=11.1 Fe/GV=0.12 SCS/GV=0.19 beta/GV=1.31 1:21 PM 18891 A6: Depol (off to on) W/R=0.12 1:28 PM 18892 A7: Beta (on) E=13.8 W=12.1 Fe/GV=0.12 SCS/GV=0.19 beta/GV=1.29 2:28 PM 18893 A8: Depol (on to off) W/R=0.096 2:35 PM 18894 A9: Bkg (on) E=1.10 W=0.81 2:43 PM 18895 A10: Beta (off) E=18.6 W=19.8 Fe/GV=0.47 SCS/GV=0.25 beta/GV=1.87 3:43 PM 18896 A11: Depol (off to on) W/R=0.021 3:50 PM 18897 A12: Bkg (off) E=1.17 W=0.81

24240	Sun Jan 15 10:59:33 2012	bz

PCUCN52 experienced a blue screen of death. It may be the computer which monitors the scopes for the purposes of measuring proton beam current. I could not figure out what program needed to be run so it needs to be dealt with.

24243	Sun Jan 15 08:49:33 2012	Cristian

UCNA Shift Change Checklist Date: January 15, 2012 09:45 Shift Persons: Brad F, Cristian UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 14.30 psia Heater C pressure 13.50 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 296.3 psia Tungsten Cool ret. 81.4 psia Tungsten Cool Diff 280.3 psia 1630 eng. 2 temp. 14.4 K 1630 JT temp. 7.6 K 1630 outlet temp. 277.5 K 1630 engine speed 230 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 2.0 psig 1630 med. press. stor. 98 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 6.0 K 1410 TE-E 86.3 K 1410 supply press. 245 psig 1410 JT press. 167 psig 1410 return press. 3.4 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.91 inHe 1K dewar level 13.65 inHe 4K main flow control 5.1 V LHe temp. (channel 1) 4.737 K Heat exch. temp. (channel 7) 213.68 K Poly temp. (channel 3) 148.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.484 MHz AFP forward power 40 W SCS LHe level 88.4 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 2/5 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.6 torr CC1 pressure 7.6e-6 torr PPM LHe level 99.8 % PPM LN2 level 100.0 % AFP LHe level 99.7 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.0 mA "Beamplot" Capture: 85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.4 F West MWPC Temperature 72.0 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC

Rate 13.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1925 Hz West muon veto rate 3692 Hz Spectrometer vacuum 7.6e-6 Torr (CC2) disk usage daq account 58 %

24234	Sun Jan 15 08:41:04 2012	Cristian

UCNA Shift Change Checklist Date: January 14, 2012 14:30 Shift Persons: Brad F, Cristian UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.2 psia Heater C pressure 13.4 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 298 psia Tungsten Cool ret. 83.0 psia Tungsten Cool Diff 280.0 psia 1630 eng. 2 temp. 14.5 K 1630 JT temp. 6.4 K 1630 outlet temp. 278.0 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 2.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 6.0 K 1410 TE-E 88.0 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.7 inHe 1K dewar level 29.7 inHe 4K main flow control 5.1 V LHe temp. (channel 1) 4.7 K Heat exch. temp. (channel 7) 203.3 K Poly temp. (channel 3) 161.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.48 MHz AFP forward power 40 W SCS LHe level 87.4.0 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 3/5 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr CC1 pressure 9.6e-6 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 97.3 % AFP LN2 level 98.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.5 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.1 F West MWPC Temperature 72.1 F MWPC Pressure 100.4 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.3 Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3608 Hz West muon veto rate 6013 Hz Spectrometer vacuum 1.4e-4 Torr (CC2) disk usage daq account 57 %

24233	Sun Jan 15 06:48:15 2012	BWFilippone

Starting new Octet (A -> B) 8:42 AM 18825 A1: Background (off) E=1.16 W=0.78 8:50 AM 18826 A2: Beta Run (off) E=17.6 W=18.98 Fe/GV=0.468 SCS/GV=0.258 beta/GV=1.85 9:51 AM 18827 A3: Depol (off to on) W/R=0.028 9:57 AM 18828 A4: Bkg (on) E=1.14 W=0.885 10:06 AM 18829 A5: Beta run (on) E=13.2 W=11.9 Fe/GV=0.119 SCS/GV=0.185 beta/GV=1.28 11:06 AM 18830 A6: Depol (on to off) W/R=0.106 11:13 AM 18831 A7: Beta Run (on) E=12.4 W=11.2 Fe/GV=0.119 SCS/GV=0.185 beta/GV=1.21 12:13 PM 18832 A8: Depol (on to off) W/R=0.101 12:20 PM 18833 A9: Bkg (on) E=1.14 W=0.778 12.29 PM 18834 A10: Beta Run (off) E=17.4 W=18.6 Ge/GV=.471 SCS/GV=.249 beta/GV=1.85 1:29 PM 18835 A11: Depol (off to on) W/R=0.062 1:36 PM 18836 A12: Bkg (off) E=1.18 W=0.872 1:45 PM 18837 B1: Bkg (on) E=1.18 W=0.776 1:54 PM 18838 B2: Beta run (on) E=13.1 W=11.6 Fe/GV=.118 SCS/GV=.185 beta/GV=1.29 2:54 PM 18839 B3: Depol (on to off) W/R=0.153 3:03 PM 18840 B4: Bkg (off) E=1.18 W=0.83 3:11 PM 18841 B5: Beta Off E=17.18 W=18.29 Fe/GV=.118 SCS/GV=.185 Bt/GV=1.29 4:11 PM 18842 B6: Depol Off->On wrong/right=0.032 4:18 PM 18843 B7: Beta Off E=17.25 W=18.35 Fe/GV=.469 SCS/GV=.250 Bt/GV=1.84 5:18 PM 18844 B8: Depol Off->On wrong/right=0.043(13) 5:25 PM 18845 B9: Bkg Off E=1.17 W=0.83 5:34 PM 18846 B10: Beta On E=12.11 W=10.67 Fe/GV=.121 SCS/GV=.188 Bt/GV=1.29 6:34 PM 18847 B11: Depol On->Off wrong/right=.181(51) 6:41 PM 18848 B12: Bkg. On E=1.09 W=0.82 Dayshift summary (BWF+CPH) Filled AFP from 1K at 10AM Started SCS fill from 1K at 3:30PM Smooth running during shift with ~ 10% loss of beta rate over shift

24241	Sun Jan 15 06:34:14 2012	bz

23:52 18861 A1 Bkg OFF E= 1.174 W= 0.782 00:00 18862 A2 Beta OFF E=17.702 W=18.968 Fe/GV=0.4726 SCS/GV=0.2518 (E+W)/GV=1.8398 01:01 18863 A3 Depol OFF -> ON W/R=0.008264 01:08 18864 A4 Bkg ON E= 1.069 W= 0.826 01:19 18865 A5 Beta ON E=12.659 W=11.115 Fe/GV=0.1172 SCS/GV=0.1848 (E+W)/GV=1.2862 02:19 18866 A6 Depol ON -> OFF W/R=0.162791 02:26 18867 A7 Beta ON E=13.026 W=11.671 Fe/GV=0.1175 SCS/GV=0.1825 (E+W)/GV=1.2897 03:26 18868 A8 Depol ON -> OFF W/R=0.049(25) 03:33 18869 A9 Bkg ON E= 1.134 W= 0.869 03:42 18870 A10 Beta OFF E=16.803 W=17.797 Fe/GV=0.4691 SCS/GV=0.2500 (E+W)/GV=1.8397 04:42 18871 A11 Depol OFF -> ON W/R=0.047(15) 04:49 18872 A12 Bkg OFF E= 1.229 W= 0.906 New B->A Octet 05:54 18874 B1 Bkg ON E= 1.200 W= 0.761 06:02 18875 B2 Beta ON E=13.686 W=12.107 Fe/GV=0.1190 SCS/GV=0.1865 (E+W)/GV=1.3130 07:03 18876 B3 Depol ON -> OFF W/R=0.182(48)

24239	Sun Jan 15 04:58:41 2012	JCHoagland

did a quick warm up with a 40 minute controled recooling of the source new GV closed rate of 330Hz

24238	Sat Jan 14 23:31:41 2012	bz

UCNA Shift Change Checklist Date: January 15, 2012 00:26 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.27 psia Heater C pressure 13.46 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 297.7 psia Tungsten Cool ret. 82.6 psia Tungsten Cool Diff 280.5 psia 1630 eng. 2 temp. 14.3 K 1630 JT temp. 7.3 K 1630 outlet temp. 276.8 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 2.6 psig 1630 med. press. stor. 100 psig 1410 engine speed 149 rpm 1410 TE-A 15.8 K 1410 TE-B 6.0 K 1410 TE-E 86.6 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.5 inHe 1K dewar level 12.4 inHe 4K main flow control 5.5 V LHe temp. (channel 1) 4.9 K Heat exch. temp. (channel 7) 209.5 K Poly temp. (channel 3) 153.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 94.9 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.6 torr CC1 pressure 1.9e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 95.1 % AFP LN2 level 98.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: 85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.4 F West MWPC Temperature 72.9 F MWPC Pressure 99.6 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 14.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1915 Hz West muon veto rate 3833 Hz Spectrometer vacuum 2.6e-5 Torr (CC2) disk usage daq account 57 %

24237	Sat Jan 14 22:55:13 2012	mmendenhall

Shift Summary: 1/14/2012 4pm-12am (Hasan, Michael) - Filled SCS from 1kD (slightly early SCS fill since 1kD was near full) - Finished B6..B12 of A->B (see previous shift log entry) - Started new B->A, 60min Beta, 8min Bkg - Filled AFP from 1kD Runs: 18:50 18849 B1 Bkg On E=1.16 W=0.74 18:58 18850 B2 Beta On E=13.75 W=12.34 Fe/GV=.1183 SCS/GV=.1829 Beta/GV=1.2881 19:58 18851 B3 Depol On->Off wrong/right=0.152(42) 20:05 18852 B4 Bkg Off E=1.14 W=0.80 20:13 18853 B5 Beta Off E=17.47 W=18.63 Fe/GV=.4707 SCS/GV=.2546 Beta/GV=1.8510 21:14 18854 B6 Depol Off->On wrong/right=0.026(11) 21:21 18855 B7 Beta Off E=17.24 W=18.51 Fe/GV=.4743 SCS/GV=.2546 Beta/GV=1.8390 22:21 18856 B8 Depol Off->On wrong/right=0.045(14) 22:28 18857 B9 Bkg Off E=1.22 W=0.80 22:36 18858 B10 Beta On E=13.24 W=11.83 Fe/GV=.1191 SCS/GV=.1825 Beta/GV=1.2843 23:37 18859 B11 Depol On->Off wrong/right=.175(51) 23:44 18860 B12 Bkg On E=1.11 W=0.70

24236	Sat Jan 14 17:12:38 2012	Hasan

UCNA Shift Change Checklist Date: January 14, 2012 16:00 Shift Persons: Michael, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.52 psia Heater C pressure 13.44 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 298.3 psia Tungsten Cool ret. 83.6 psia Tungsten Cool Diff 280.5 psia 1630 eng. 2 temp. 14.47 K 1630 JT temp. 7.28 K 1630 outlet temp. 278.0 K 1630 engine speed 160 rpm 1630 supply press. 210 psig 1630 JT press. 170 psig 1630 return press. 2.0 psig 1630 med. press. stor. 100 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 7.7 K 1410 TE-E 87.2 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 4K dewar pressure 290 mmHg 1K dewar pressure 6.0 psig 4K dewar level 12.74 inHe 1K dewar level 28.75 inHe 4K main flow control 5.1 V LHe temp. (channel 1) 4.755 K Heat exch. temp. (channel 7) 204.47 K Poly temp. (channel 3) 161.08 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.484 MHz AFP forward power 0 W SCS LHe level 89.2 % SCS field 9.6025 kG SCS current 118.45 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.4 torr CM5 pressure 2.5 torr CC1 pressure 1.3e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 90.3 % AFP LN2 level 88.2 % PPM current 72(6) A(T) AFP current

point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.3 F West MWPC Temperature 73.0 F MWPC Pressure 99.6 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.6 Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2047 Hz West muon veto rate 3971 Hz Spectrometer vacuum 2.5e-5 Torr (CC2) disk usage daq account 57 %

24235	Sat Jan 14 15:15:05 2012	KPH

Having trouble with the daq, so Brad and I set up a discriminator, 4 of 4 coincidence scalar, gated off for beam pulses. Cs137 rate in b box: 13481 in 100s = 135 Hz background rate in b box: 3001 in 100s = 30 Hz Cs137 - bg rate = 105 Hz Put one puff of Xe in the box. 1 puff Xe rate in b box: 3189 in 100s = 32 Hz 2 puffs Xe rate in b box: 3354 in 100s = 34 Hz 3 puffs Xe rate in b box 3264 in 100s = 33 Hz oops... bottom valve was not open to b box. Opened up 4 puffs worth into box. 4 puffs (for real this time) in b box: 16858 in 100s = 169 Hz We lowered the thresholds 100 mV for each channel. Now 2 of 4 coin. 4 puffs 163303 in 100s = 1.63 kHz background 15751 in 100s = 158 Hz Cs137 28961 in 100s = 290 Hz

24219	Sat Jan 14 11:50:01 2012	KPH

Run summary: Leak checked system. Pressure tested system. Pumped down box to 5e-5 torr. Opened UCNb valve to source with window bypass open. Source pressure surged to e-3 torr. Closed valve and tried again. Source production was reduced from 330 to 290 Hz so something left the box and got in the source. Channel 0 (16 after processing) only channel. HV set to 1.1kV. Run log: run 4001, bv open, 60s // test run 4002, bv open, 300s // UCN rate measurement run 4003, bv closed, 300s // background

24232	Sat Jan 14 08:53:03 2012	RRios

10:32 PM 18801 A1: Background (off) E=1.18 W=0.842 10:40 PM 18802 A2: Beta Run (off) E=19.4 W=20.7 Fe/GV=0.468 SCS/GV=0.25 (E+W)/GV=1.86 11:41 PM 18803 A3: Depol (off to on) w/R= 0.037 11:48 PM 18804 A4: Background (on) E=1.17 W=0.74 11:56 PM 18805 A5: Beta Run (on) E=14.2 W=12.8 Fe/GV=0.12 SCS/GV=0.19 (E+W)/GV=1.3 12:56 AM 18806 A6: Depol (on to off) W/R= 0.10 1:03 AM 18807 A7: Beta Run (on) E=12.6 W=11.1 Fe/GV=0.12 SCS/GV=0.19 (E+W)/GV=1.3 2:04 AM 18808 A8: Depol (on to off) W/R= 0.13 2:11 AM 18809 A9: Background (on) E=1.1 W=0.78 2:19 AM 18810 A10: Beta Run (off) E=18.6 W=19.8 Fe/GV=0.47 SCS/GV=0.25 (E+W)/GV=1.85 3:19 AM 18811 A11: Depol (off to on) W/R=0.026 3:26 AM 18812 A12: Background (off) E=1.14 W=0.82 3:34 AM 18813 B1: Background (on) E=1.16 W=0.81 3:43 AM 18814 B2: Beta Run (on) E=13.8 W=12.4 Fe/GV=0.12 SCS/GV=0.19 (E+W)/GV=1.3 4:43 AM 18815 B3: Depol (on to off) W/R=0.219780 4:50 AM 18816 B4: Background (off) E=1.142 W=0.822 4:58 AM 18817 B5: Beta Run (off) E=17.945 W=19.045 Fe/GV=0.4714 SCS/GV=0.2542 (E+W)/GV=1.8506 5:59 AM 18818 B6: Depol (off to on) W/R=0.036913 6:06 AM 18819 B7: Beta Run (off) E=18.971 W=20.406 Fe/GV=0.4695 SCS/GV=0.2541 (E+W)/GV=1.8343 7:06 AM 18820 B8: Depol (off to on) W/R=0.037975 7:13 AM 18821 B9: Background (off) E=1.229 W=0.805 7:21 AM 18822 B10: Beta Run (on) E=14.2 W=12.6 Fe/GV=0.12 SCS/GV=0.188 (E+W)/GV=1.29 8:21 AM 18823 B11: Depol (on to off) W/R=0.076 8:29 AM 18824 B12: Background (on) E=1.09 W=0.84

24229	Sat Jan 14 05:06:11 2012	RRios

Spent some time with CCR. Went throught the phosphor screen images down line B. LXTV3 showed a circular beam that smears to the side. (right after bending magnets so I think this is unavoidable) LBTV1 not working LBTV2 showed a long vertical beam. (looks like it reaches out of the bounds of the accepted square.) LBTV3 not working LBTV4 showed a vertical beam. (vertical and to the right) We fixed the image seen on LBTV4 by changing LBQM3 and LBQM4. The beam looked circular on LBTV4. It was high and to the right. This is the last phospor screen before the last two steering magnets and the tungstun target. We fixed that by adjusting LBBM02 which moved it to the center on LBTV4 We brought the spot lower by moving LBCY1 down. After all this work we got the 340 UCN at the GV and the temperature at TC3 only reaches 350. We did a quick scan to center on the target so there might be more to gain by doing am more careful scan. While I think there was a net positive on going up there to steer the beam, I believe I caused some excess spilling in trying to get the beamspot circular. I would suggest for the engineers who may look at the beem to look at LBTV2 and see if the beam is suppose to look like that at that point. I had the operators adjust some magnets further downstream so that it looks right by LBTV4 but maybe we would get more beam if it's fixed by LBTV2. It would be useful to have LBTV3.

24231	Sat Jan 14 04:31:32 2012	JCHoagland

UCNA Shift Change Checklist Date: January 14, 2012 02:30 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.25 psia Heater C pressure 13.46 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 297.6 psia Tungsten Cool ret. 82.0 psia Tungsten Cool Diff 281.1 psia 1630 eng. 2 temp. 14.6 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.0 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.8 psig 1630 med. press. stor. 63 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.0 K 1410 TE-E 86.5 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 13.0 inHe 1K dewar level 26.5 inHe 4K main flow control 5.1 V LHe temp. 1 4.8 K Heat exch. temp. 7 200.1 K Poly temp. 3 141.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power --- W SCS LHe level 95.0 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.6 torr CC1 pressure 1.1e-5 torr PPM LHe level 99.8 % PPM LN2 level ---- % AFP LHe level 98.1 % AFP LN2 level 98.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 255 ns TBCM001I03 (H- source current): 13.28 mA "Beamplot" Capture: 85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.8 F West MWPC Temperature 71.6 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 15.0 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.3 Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2054 Hz West muon veto rate 3843 Hz Spectrometer vacuum 3.7e-4 Torr (CC2) disk usage daq account 56 %

24230	Sat Jan 14 02:46:47 2012	RRios

Beta decay rates and UCN GV rate were slipping down. Increased flow to the source to reduce heating effects from the beam. Seems to pull the rate back up, almost to where we started.

24228	Fri Jan 13 21:16:34 2012	DAQ On-line

01/13 22:05 Start Run 13723 UCN0030 2011 UCN
01/13 22:16 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 62	1	2.57947E+13	0	0.00000E+00
Run 13723	62	1.59269E+15	0	0.00000E+00
Batch started at 13723	62	1.59269E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13723	0	214593.	214593.	13.	3590.	3110.04	1002.49
13723	1	0.	0.	0.	0.	0.00	0.00
13723	2	0.	0.	0.	0.	0.00	0.00
13723	3	0.	0.	0.	0.	0.00	0.00
13723	10	620.	620.	1.	10.	8.99	2.72

24226	Fri Jan 13 19:10:42 2012	Ding

UCNA Shift Change Checklist Date: January 13, 2012 16:00 Shift Persons: bryan, ding UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm

supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 297.8 psia Tungsten Cool ret. 81.9 psia Tungsten Cool Diff 281.3 psia 1630 eng. 2 temp. 16.56 K 1630 JT temp. 8.05 K 1630 outlet temp. 278.1 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.9 psig 1630 med. press. stor. 70 psig 1410 engine speed 98 rpm 1410 TE-A 9.6 K 1410 TE-B 4.9 K 1410 TE-E 73.8 K 1410 supply press. 185 psig 1410 JT press. 140 psig 1410 return press. -3 psig 4K dewar pressure 300 mmHg 1K dewar pressure 2.5 psig 4K dewar level 19.00 inHe 1K dewar level 24.07 inHe 4K main flow control 5 V LHe temp. 1 6.38 K Heat exch. temp. 7 194.32 K Poly temp. 3 112.50 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.484 MHz AFP forward power --- W SCS LHe level 85.8 % SCS field 9.6 kG SCS current 118.45 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 469.1 torr Mark is doing the distillation CM5 pressure 2.6 torr CC1 pressure off torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 91.2 % AFP LN2 level 95.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: s currently off Proton pulses/burst: Proton countdown: Proton pattern width: ns TBCM001I03 (H- source current): mA "Beamplot" Capture: % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.3 F West MWPC Temperature 72.1 F MWPC Pressure 100.2 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.4 torr N2 - MWPC Differential -3.6 Neopentane Flow Rate 13.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1874 Hz West muon veto rate 3218 Hz Spectrometer vacuum 3.5e-5 Torr (CC2) disk usage daq account 56 %

24227	Fri Jan 13 19:02:05 2012	bz

1284 mbar in tank at start, closed bypass valve at 73.2 mbar source frozen, Raymond at CCR tuning with crew, hopefully good source.

24216	Fri Jan 13 17:04:30 2012	Ding

UCNA Shift Change Checklist Date: January 12, 2012 16:00 Shift Persons: byran, ding UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 14 slpm Heater B pressure 14.57 psia Heater C pressure 13.73 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 298.0 psia Tungsten Cool ret. 82.7 psia Tungsten Cool Diff 281.1 psia 1630 eng. 2 temp. 14.83 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.6 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.8 psig 1630 med. press. stor. 75 psig 1410 engine speed 159 rpm 1410 TE-A 16.1 K 1410 TE-B 6.0 K 1410 TE-E 91.5 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.8 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.0 psig 4K dewar level 13.87 inHe 1K dewar level 18.03 inHe 4K main flow control 4.8 V LHe temp. 1 4.6 K Heat exch. temp. 7 204.72 K Poly temp. 3 102.25 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.5 C AFP frequency 28.484 MHz AFP forward power --- W SCS LHe level 99.9 % SCS field 9.8 kG SCS current 118.45 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.6 torr CC1 pressure 4.7e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 95.0 % AFP LN2 level 86.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.18 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.5 F West MWPC Temperature 71.2 F MWPC Pressure 100.4 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 14.9 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1.3 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.5 Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1880 Hz West muon veto rate 3568 Hz Spectrometer vacuum 7.3e-5 Torr (CC2) disk usage daq account 56 %

24225	Fri Jan 13 14:59:18 2012	KPH

24224	Fri Jan 13 14:44:29 2012	MFMakela

Distilling the source 1290 in tank 203 in guide - pumping this away heating up source

24223	Fri Jan 13 04:55:56 2012	JCHoagland

run summary type midas mcdwin cycles P- 18787 1094 15 D+ 18789 1095 11 D- 18790 1096 11 SLD- 18792 1098 6 SLD+ 18793 1099 6

24222	Thu Jan 12 23:47:34 2012	MFMakela

12/2 and 12/3 2010 had high rates 1107 tank mbar -530 HZ 1220 tank mbar 580 hz The rate increased linearly with added D2 it appears the source was distilled both days the beam monitor temp sensors looked a lot different than now. we have ~1300 mbar in the source tonight and 300-350 hz

Attachment 1: 012.docx

24221	Thu Jan 12 23:42:31 2012	MFMakela

Is CC1 on?

24220	Thu Jan 12 23:38:38 2012	JCHoagland

UCNA Shift Change Checklist Date: January 13, 2012 00:00 Shift Persons: jeff, raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.14 psia Heater C pressure 13.36 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 296.5 psia Tungsten Cool ret. 81.8 psia Tungsten Cool Diff 279.9 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.5 K 1630 outlet temp. 276.9 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2.2 psig 1630 med. press. stor. 68 psig 1410 engine speed 159 rpm 1410 TE-A 15.8 K 1410 TE-B 65.8 K 1410 TE-E 87.6 K 1410 supply press. 243 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.1 inHe 1K dewar level 21.4 inHe 4K main flow control 5.4 V LHe temp. 1 4.6 K Heat exch. temp. 7 207.0 K Poly temp. 3 101.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.484 MHz AFP forward power --- W SCS LHe level 96.1 % SCS field ---- kG SCS current 118.45 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.6 torr CC1 pressure 9.9e-6 torr PPM LHe level 99.8 % PPM LN2 level ---- % AFP LHe level 87.6 % AFP LN2 level 75.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 220 ns ccr skimming the source TBCM001I03 (H- source current): 11.4 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 73.4 F West MWPC Temperature 71.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 15.1 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.3 Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1120 on V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1953 Hz West muon veto rate 3487 Hz Spectrometer vacuum 3.4e-5 Torr (CC2) disk usage daq account 56 %

24217	Thu Jan 12 22:32:38 2012	DAQ On-line

01/12 22:59 Start Run 13722 UCN0030 2011 UCN
01/12 23:32 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 195	0	0.00000E+00	0	0.00000E+00
Run 13722	190	5.14155E+15	0	0.00000E+00
Batch started at 13722	190	5.14155E+15	0	0.00000E+00

Scalers

13722	0	580310.	580310.	7.	3477.	2789.95	813.64
13722	1	0.	0.	0.	0.	0.00	0.00
13722	2	0.	0.	0.	0.	0.00	0.00
13722	3	0.	0.	0.	0.	0.00	0.00
13722	10	1930.	1930.	1.	12.	9.28	2.28

24218	Thu Jan 12 22:17:30 2012	bz

Did a melt and refreeze, initially thought it was terrible, Mark noticed that there was pressure in the source went from 300 Hz to approximately 330 Hz Then when we opened up to Kevin's little b box, sudden spike in source pressure and rate dropped, even after pressure returned to normal LONG STORY SHORT, probably contaminated the source slightly so a distillation is in order.

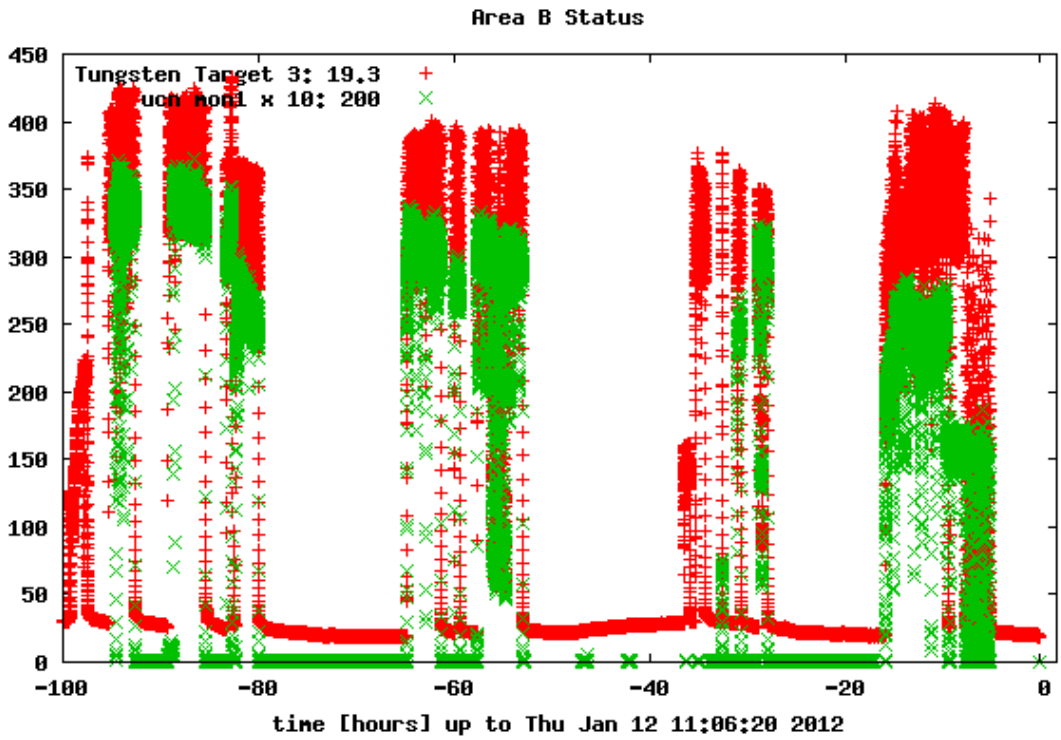
24215	Thu Jan 12 21:00:47 2012	KPH

Started pressure test on new UCNb gas cart connections while open to the box: 703.0 torr @ 9:42pm 702.0 torr @ 10:00pm I'll call that a "pass"

24214	Thu Jan 12 10:11:46 2012	MFMakela

UCN rate and TC3 plot showing large changes in UCN rate for similiar TC3 temps.... looks like last night source needed a melt and refreeze or something we need to check flapper open, closed and flapping lifetimes

Attachment 1: Jan12_11.06.20.gif



24213	Thu Jan 12 09:39:21 2012	MFMakela

O/P running D2 flowing into source bottle 2 ~400 psi start O/P 19K Heat exchange flow set to 14, increase for night running

24212	Thu Jan 12 09:18:36 2012	MFMakela

1284 mbar in tank - start 7 mbar in tank - last night lots of D2 in source last night, where da ucn?

24211	Thu Jan 12 05:04:58 2012	JCHoagland

after ccr tuned as best they could we started to tune the spin flipper. after the spin flipper was tuned we started to do P+ adam runs during these run I looked though the old log book posts about our source and the current and beam ccr was giving us.i have noticed the main difference between last years runs and this years according to our logs was the amount of D2 we put in to our source. last years had above 1300 mbarrs in the tank when starting, while this year in most i have seen in the tank before making a source has been around 1100. at 6 finished filling the afp and went home.

24210	Thu Jan 12 04:58:51 2012	JCHoagland

run summary fast daq chris daq run type cycles 18776 1090 P+ 17

24209	Wed Jan 11 23:42:42 2012	JCHoagland

UCNA Shift Change Checklist Date: January 12, 2012 00:00 Shift Persons: jeff, ding UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 46 slpm Heater B pressure 14.09 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300.0 psia Tungsten Cool ret. 84.6 psia Tungsten Cool Diff 281.4 psia 1630 eng. 2 temp. 14.8 K 1630 JT temp. 7.4 K 1630 outlet temp. 277.0 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.0 psig 1630 med. press. stor. 80 psig 1410 engine speed 166 rpm 1410 TE-A 15.8 K 1410 TE-B 5.8 K 1410 TE-E 87.7 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.5 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 15.4 inHe 1K dewar level 10.5 inHe 4K main flow control 5.0 V LHe temp. 1 4.6 K Heat exch. temp. 7 184.2 K Poly temp. 3 144.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.487 MHz AFP forward power --- W SCS LHe level 96.5 % SCS field ----- kG SCS current 118.45 A AFP N2 dewar level 0/16 started filling it SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.5 torr CC1 pressure 1.1e-5 torr PPM LHe level 99.8 % PPM LN2 level ~~~~ % AFP LHe level 91.8 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current 93.4581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 13.24 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.7 F West MWPC Temperature 72.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 15.0 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.4 Neopentane Flow Rate 14.0 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2083 Hz West muon veto rate 3930 Hz Spectrometer vacuum 4.1e-5 Torr (CC2) disk usage daq account 55 %

24208	Wed Jan 11 21:11:05 2012	RRios

I really don't know what's going on with tuning the beam today: I thought that we weren't going to need to tune again today because Prad wasn't going to be using the beam. CCR had the beam tuned to the wrong thermocouple and so we asked them to go and fix that. We are now back to the right thermocouple but the UCN production actually got a little worse. Before we were getting 270 UCN/s at the gate valve now with the correction we are getting 260 UCN/s. The temperature on Thermocouple 3 reaches to 400 C as it did last night but last night we were well into 300 UCN/s. The Proton beam current is 4.1 uA.

24207	Wed Jan 11 20:58:09 2012	DAQ On-line

01/11 21:56 Start Run 13721 UCN0030 2011 UCN
01/11 21:58 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 8	1	2.68183E+13	0	0.00000E+00
Run 13721	8	2.14255E+14	0	0.00000E+00
Batch started at 13721	8	2.14255E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13721	0	20740.	20740.	660.	3855.	2304.44	945.40
13721	1	0.	0.	0.	0.	0.00	0.00
13721	2	0.	0.	0.	0.	0.00	0.00
13721	3	0.	0.	0.	0.	0.00	0.00
13721	10	80.	80.	1.	15.	8.89	4.04

24206 | Wed Jan 11 19:30:17 2012 | DAQ On-line

01/11 20:26 Start Run 13720 UCN0030 2011 UCN
01/11 20:30 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 19	1	2.69100E+13	0	0.00000E+00
Run 13720	19	5.11986E+14	0	0.00000E+00
Batch started at 13720	19	5.11986E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13720	0	49761.	49761.	8.	2795.	2261.86	959.93
13720	1	0.	0.	0.	0.	0.00	0.00
13720	2	0.	0.	0.	0.	0.00	0.00
13720	3	0.	0.	0.	0.	0.00	0.00
13720	10	185.	185.	1.	10.	8.41	3.29

24205 | Wed Jan 11 15:41:12 2012 | bz

UCNA Shift Change Checklist Date: January 11, 2012 16:25 Shift Persons: Bryan, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 60 slpm Heater B pressure 14.20 psia Heater C pressure 13.44 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300.3 psia Tungsten Cool ret. 84.0 psia Tungsten Cool Diff 282.0 psia 1630 eng. 2 temp. 15.9 K 1630 JT temp. 7.44 K 1630 outlet temp. 276.4 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.9 psig 1630 med. press. stor. 63 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 5.9 K 1410 TE-E 94.7 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.5 psig 4K dewar pressure 275 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.54 inHe 1K dewar level 25.69 inHe 4K main flow control 5.2 V LHe temp. 1 4.61 K Heat exch. temp. 7 181.8 K Poly temp. 3 44.5 K flapper heater cur 0.18 A Flapper Status: flap Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 21.1 C AFP frequency 28.487 MHz AFP forward power --- W SCS LHe level 85.7 % SCS field 9.600 kG SCS current 118.45

CC1 pressure 6.1e-4 torr PPM LHe level 99.8 % PPM LN2 level ~~~~ % AFP LHe level 90.9 % AFP LN2 level 100.0 % PPM current 72(6) A(T) AFP current --- A(T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: - s currently off Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 75.6 F West MWPC Temperature 73.1 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 14.7 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -3.7 Neopentane Flow Rate 13.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1806 Hz West muon veto rate 3303 Hz Spectrometer vacuum 7e-5 Torr (CC2) disk usage daq account 55 %

24204	Wed Jan 11 14:11:45 2012	mmendenhall

PMT HV Settings (for correct Bi pulser gain) magnet magnet PMT Chan off on ---------- E1 0 1315 1225 E2 1 1090 1120 E3 2 1050 1060 E4 3 965 975 W1 24 1400 1440 W2 20 1100 1120 W3 26 1170 1180 W4 27 1090 1275 Note: bad Bi pulser gain with magnet on EBack 15 2200 2200 WBack 12 2200 2200 Bucking coils: EPMT=0.15A, EBack=0A, WPMT=0.25A, WBack=0.40A

24203	Wed Jan 11 12:38:33 2012	MFMakela

45 mbar left in tank Opening check valve bypass

24202	Wed Jan 11 07:10:06 2012	RRios

Here we see the normalized UCN rate as a function of D2 in the source. The last point on the right we had an increase in beam current, from 3.1uA to 3.9 uA .

Attachment 1: _in_Source.GIF

_in_Source.GIF

24201	Wed Jan 11 06:19:26 2012	RRios

Here is a graph showing the UCN rate at the GVmon detector as a function of the Proton beam current.

Attachment 1: oton_Current.GIF

oton_Current.GIF

24200	Wed Jan 11 05:57:04 2012	JCHoagland

relation of pattern width to current to ucn rate pattern width current we get current ccr gets UCN rate 240 3.9uA 4.1uA ~300 190 2.99uA 3.2 ~240 120 1.75uA 2.1 ~145 60 .75uA 1.0 ~65

24199	Wed Jan 11 05:39:07 2012	DAQ On-line

01/11 06:36 Start Run 13719 UCN0030 2011 UCN
01/11 06:39 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 12	1	4.90529E+12	0	0.00000E+00
Run 13719	12	5.87048E+13	0	0.00000E+00
Batch started at 13719	12	5.87048E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma

13719	1	0.	0.	0.	0.	0.00	0.00
13719	2	0.	0.	0.	0.	0.00	0.00
13719	3	0.	0.	0.	0.	0.00	0.00
13719	10	120.	120.	1.	11.	8.57	3.25

24198 | Wed Jan 11 05:34:45 2012 | DAQ On-line

01/11 06:31 Start Run 13718 UCN0030 2011 UCN
01/11 06:34 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 16	1	1.13828E+13	0	0.00000E+00
Run 13718	16	1.82050E+14	0	0.00000E+00
Batch started at 13718	16	1.82050E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13718	0	22874.	22874.	28.	1515.	1270.78	445.89
13718	1	0.	0.	0.	0.	0.00	0.00
13718	2	0.	0.	0.	0.	0.00	0.00
13718	3	0.	0.	0.	0.	0.00	0.00
13718	10	155.	155.	1.	10.	8.61	2.81

24197 | Wed Jan 11 05:28:36 2012 | DAQ On-line

01/11 06:26 Start Run 13717 UCN0030 2011 UCN
01/11 06:28 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 14	1	1.93809E+13	0	0.00000E+00
Run 13717	14	2.71728E+14	0	0.00000E+00
Batch started at 13717	14	2.71728E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13717	0	34147.	34147.	324.	2522.	2276.47	567.82
13717	1	0.	0.	0.	0.	0.00	0.00
13717	2	0.	0.	0.	0.	0.00	0.00
13717	3	0.	0.	0.	0.	0.00	0.00
13717	10	140.	140.	1.	10.	9.33	2.32

24196 | Wed Jan 11 05:23:15 2012 | DAQ On-line

01/11 06:19 Start Run 13716 UCN0030 2011 UCN
01/11 06:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 22	1	2.53293E+13	0	0.00000E+00
Run 13716	21	5.30514E+14	0	0.00000E+00
Batch started at 13716	21	5.30514E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13716	0	65834.	65834.	793.	3216.	2862.35	762.10
13716	1	0.	0.	0.	0.	0.00	0.00
13716	2	0.	0.	0.	0.	0.00	0.00
13716	3	0.	0.	0.	0.	0.00	0.00
13716	10	210.	210.	1.	10.	9.13	2.38

24192 | Wed Jan 11 05:22:30 2012 | JCHoagland

new source making tank pressure at: 1184.5 with tank pressure at 612.0mbarrs ucn GV closed rate:65-70 with current 3.2e-6 A with tank pressure at 233.9mbarrs ucn GV closed rate:240-250 with current 3.1e-6 A with tank pressure at 45.1mbarrs ucn GV closed rate:300-310 with current 3.9e-6 A total source 1184.5 - 45.1 = 1139.4mbarrs in source

24195 | Wed Jan 11 04:38:18 2012 | DAQ On-line

01/11 05:03 Start Run 13715 UCN0030 2011 UCN
01/11 05:38 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 135	1	2.57778E+13	0	0.00000E+00
Run 13714	133	3.19171E+15	0	0.00000E+00
Batch started at 13714	133	3.19171E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13715	0	322944.	71.	71.	71.	71.00	0.00
13715	1	0.	0.	0.	0.	0.00	0.00
13715	2	0.	0.	0.	0.	0.00	0.00
13715	3	0.	0.	0.	0.	0.00	0.00
13715	10	1325.	0.	0.	0.	0.00	0.00

24194 | Wed Jan 11 04:03:35 2012 | DAQ On-line

01/11 04:03 Start Run 13714 UCN0030 2011 UCN
01/11 05:03 End Run

Batch Protons

	Group 1		Group 21	

Trigger 135	1	2.57778E+13	0	0.00000E+00
Run 13714	133	3.19171E+15	0	0.00000E+00
Batch started at 13714	133	3.19171E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13714	0	322873.	322873.	6.	4102.	2257.85	654.53
13714	1	0.	0.	0.	0.	0.00	0.00
13714	2	0.	0.	0.	0.	0.00	0.00
13714	3	0.	0.	0.	0.	0.00	0.00
13714	10	1325.	1325.	1.	11.	9.27	2.25

24191	Wed Jan 11 03:20:35 2012	JCHoagland

24193	Wed Jan 11 01:33:01 2012	DAQ On-line

01/11 02:30 Start Run 13713 UCN0030 2011 UCN
01/11 02:32 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 14	1	2.57936E+13	0	0.00000E+00
Run 13713	14	3.59299E+14	0	0.00000E+00
Batch started at 13713	14	3.59299E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13713	0	9637.	9637.	2.	747.	566.88	254.50
13713	1	0.	0.	0.	0.	0.00	0.00
13713	2	0.	0.	0.	0.	0.00	0.00
13713	3	0.	0.	0.	0.	0.00	0.00
13713	10	140.	140.	0.	11.	8.24	3.65

24190	Tue Jan 10 23:51:43 2012	RRios

UCNA Shift Change Checklist Date: January 11, 2012 12:00 Shift Persons: Raymond, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 3 slpm Heater B pressure 14.3 psia Heater C pressure 13.5 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 305 psia Tungsten Cool ret. 87 psia Tungsten Cool Diff 284 psia 1630 eng. 2 temp. 16.3 K 1630 JT temp. 7.3 K 1630 outlet temp. 276 K 1630 engine speed 130 rpm 1630 supply press. 245 psig 1630 JT press. 210 psig 1630 return press. 1.6 psig 1630 med. press. stor. 45 psig 1410 engine speed 150 rpm 1410 TE-A 16.0 K 1410 TE-B 6.3 K 1410 TE-E 84.2 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.8 psig 4K dewar pressure 265 mmHg 1K dewar pressure 7.0 psig 4K dewar level 17.8 inHe 1K dewar level 17.5 inHe 4K main flow control 1.2 V D2 in tank LHe temp. 1 32 K Heat exch. temp. 7 227 K Poly temp. 3 179 K flapper heater cur 0.18 A Flapper Status: flap Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 21.5 C AFP frequency 28.487 MHz AFP forward power --- W SCS LHe level 99.9 % SCS field --- kG SCS current --- A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 621.0 torr CC1 pressure 6.1e-4 torr PPM LHe level 99.8 % PPM LN2 level ~~~~ % AFP LHe level 99.8 % AFP LN2 level 75.7 % PPM current 72(6 A(T) AFP current --- A(T) AFP chiller sup. pres. --- psi AFP

burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 230 ns TBCM001I03 (H- source current): 13.96 mA "Beamplot" Capture: 69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 70.8 F West MWPC Temperature 72.1 F MWPC Pressure 99.9 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr .15 A East Back. Veto Buck. --- A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -4.2 Neopentane Flow Rate 13.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1090 East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2288 Hz West muon veto rate 4233 Hz Spectrometer vacuum 8.3e-5 Torr (CC2) disk usage daq account 53 %

24189	Tue Jan 10 23:49:44 2012	DAQ On-line

01/11 00:31 Start Run 13712 UCN0030 2011 UCN
01/11 00:49 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 104	1	2.43925E+13	0	0.00000E+00
Run 13712	104	2.55036E+15	0	0.00000E+00
Batch started at 13712	104	2.55036E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13712	0	340.	340.	0.	11.	3.06	2.44
13712	1	0.	0.	0.	0.	0.00	0.00
13712	2	0.	0.	0.	0.	0.00	0.00
13712	3	0.	0.	0.	0.	0.00	0.00
13712	10	1040.	1040.	1.	11.	9.37	2.20

24188	Tue Jan 10 22:58:45 2012	DAQ On-line

01/10 23:45 Start Run 13711 UCN0030 2011 UCN
01/10 23:58 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 75	1	2.52648E+13	0	0.00000E+00
Run 13711	73	1.51272E+15	0	0.00000E+00
Batch started at 13711	73	1.51272E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13711	0	143.	143.	0.	7.	1.79	1.45
13711	1	0.	0.	0.	0.	0.00	0.00
13711	2	0.	0.	0.	0.	0.00	0.00
13711	3	0.	0.	0.	0.	0.00	0.00

24184	Tue Jan 10 22:46:49 2012	Hasan

UCNA Shift Change Checklist Date: January 10, 2012 17:45 Shift Persons: Bryan, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 001 slpm Heater B pressure 13.32 psia Heater C pressure 12.53 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302.7 psia Tungsten Cool ret. 85.8 psia Tungsten Cool Diff 282.9 psia 1630 eng. 2 temp. 15.52 K 1630 JT temp. 7.61 K 1630 outlet temp. 276.5 K 1630 engine speed 160 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 50 psig 1410 engine speed 166 rpm 1410 TE-A 15.5 K 1410 TE-B 5.7 K 1410 TE-E 88.1 K 1410 supply press. 230 psig 1410 JT press. 145 psig 1410 return press. 2.4 psig 4K dewar pressure 320 mmHg 1K dewar pressure 6.0 psig 4K dewar level 20.85 inHe 1K dewar level 16.98 inHe 4K main flow control 0 V D2 in tank LHe temp. 1 194.8 K doing melt and refreeze stuff Heat exch. temp. 7 203.74 K Poly temp. 3 129.44 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 20.7 C AFP frequency 28.487 MHz AFP forward power --- W SCS LHe level 80.8 % SCS field --- kG SCS current --- A AFP N2 dewar level 3/8 SV3 open SV4 closed CM1 pressure 1.5 torr CM5 pressure 622.7 torr CC1 pressure 9.2e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 99.8 % AFP LN2 level 96.8 % PPM current 72(6 A(T) AFP current --- A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status trip hold East MWPC Temperature 69.5 F West MWPC Temperature 70.3 F MWPC Pressure 197.2 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level 0 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Trip Hold MWPC Pressure 179 torr N2 - MWPC Differential --- Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) 1500 V (ch 33) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV off kV West muon veto HV off kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum --- Torr (CC2) disk usage daq account 53 %

24186	Tue Jan 10 22:12:00 2012	DAQ On-line

01/10 23:11 Start Run 13710 UCN0030 2011 UCN
01/10 23:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 2	1	9.00005E+12	0	0.00000E+00
Run 13710	2	1.81047E+13	0	0.00000E+00
Batch started at 13710	2	1.81047E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13710	0	0.	0.	0.	0.	0.00	0.00
13710	1	0.	0.	0.	0.	0.00	0.00
13710	2	0.	0.	0.	0.	0.00	0.00
13710	3	0.	0.	0.	0.	0.00	0.00
13710	10	15.	15.	1.	10.	5.00	4.58

24185	Tue Jan 10 22:11:30 2012	DAQ On-line

01/10 22:50 Start Run 13709 UCN0030 2011 UCN
01/10 23:11 End Run

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 158	1	9.07560E+12	0	0.00000E+00
Run 13709	10	9.03866E+13	0	0.00000E+00
Batch started at 13709	10	9.03866E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13709	0	176.	176.	0.	52.	1.08	4.11
13709	1	0.	0.	0.	0.	0.00	0.00
13709	2	0.	0.	0.	0.	0.00	0.00
13709	3	0.	0.	0.	0.	0.00	0.00
13709	10	1210.	1210.	1.	11.	7.42	2.80

24183 | Tue Jan 10 13:58:07 2012 | MFMakela

Melting out the source 54 mbar in tank D2 in tank 1284 mbar in tank

24179 | Tue Jan 10 05:39:20 2012 | RRios

The tungstun temperatures were slightly lower after doing a melt and refreeze. Spoke to CCR and they said they would "peak the source" what peaking the source means: Cesium is believed to have built up on the converter surface and will need to be burned off by making changes to the beam current and voltage procedure for the CCR crew watch for change in current as you increase voltage to max value (max value is a fixed value that CCR knows). Once you reach the max voltage, the current will still increase. After the current levels off, bring back down the voltage until the point when the current starts to drop. Raise the voltage to the point it was at just before the current dropped. During this process the Cesium is said to be burnt off. This process up brought TC 3 back up to 400 C. Melt and Refreeze Procedure: (Left Orange valve open because the mensor gauge was going to be kept below 50 mbarr) Helium pump left on Low Source voltage to the point that temperature 3 reaches 17 K Wait for the mensor gauge to level: level for 5-10 min Raise voltage up 0.1 V and wait for the mensor levels off then continue to repeat until mensor bottoms Before melt and refreeze UCN at GV: 280 After melt and refreeze UCN at GV: 320

24181 | Tue Jan 10 05:36:14 2012 | RRios

Data taken from tonight: Magnet target Scan Contains the temperatures from the 5 thermocouples and UCN counts at each setting TC temperatures can be used to check the positioning algorithm.

Attachment 1: 1012.xlsx

24182 | Tue Jan 10 05:34:32 2012 | RRios

Review of the night: Melt and Refreeze Mark: 300-330 UCN at GV Melt and Refreeze Brian: 260-280 UCN at GV Melt and Refreeze Jeff: 300-330 UCN at GV Target Steering Scan no position found that improved the production, Y scan looks a bit broad. "Peaked the source" Done four times as the TC temperatures sagged over the course of the night. The first time the was effective as it brought the TC temperatures back up to what they were five hours earlier but the later ones had less of an affect on the temperatures.

24180 | Tue Jan 10 05:04:10 2012 | RRios

Target Magnet Scan

Attachment 1: 1012.gif

1012.gif

24178 | Mon Jan 9 23:46:09 2012 | RRios

UCNA Shift Change Checklist Date: January 09, 2012 16:00 Shift Persons: Jeff, Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 24 slpm Heater B pressure 14.11 psia Heater C pressure 13.32 psia Tungsten supply press. 300 psig

301.3 psia Tungsten Cool ret. 85.5 psia Tungsten Cool Diff 281.3 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.4 K 1630 outlet temp. 274.1 K 1630 engine speed 200 rpm 1630 supply press. 235 psig 1630 JT press. 175 psig 1630 return press. 1.8 psig 1630 med. press. stor. 85 psig 1410 engine speed 166 rpm 1410 TE-A 15.9 K 1410 TE-B 5.8 K 1410 TE-E 87.5 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.4 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.6 inHe 1K dewar level 14.3 inHe 4K main flow control 2.7 V doing melt and refreeze stuff LHe temp. 1 9.3 K doing melt and refreeze stuff Heat exch. temp. 7 194.7 K Poly temp. 3 74.2 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 20.1 C AFP frequency --- MHz AFP forward power --- W SCS LHe level 94.9 % SCS field --- kG SCS current --- A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 3.6 torr melt and refreeze CM5 pressure 620.2 torr CC1 pressure --- torr PPM LHe level 81.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 96.2 % AFP LN2 level 72.6 % PPM current 72 A(T) AFP current --- A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status trip hold East MWPC Temperature 69.9 F West MWPC Temperature 69.1 F MWPC Pressure 582.6 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status Trip Hold MWPC Pressure 586.2 torr N2 - MWPC Differential --- Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1822 Hz West muon veto rate 3241 Hz Spectrometer vacuum 1.7-8 Torr (CC2) disk usage daq account 53 %

24177	Mon Jan 9 22:57:39 2012	Hasan

UCNA Shift Change Checklist Date: January 09, 2012 16:00 Shift Persons: Bryan, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 54 slpm Heater B pressure 12.7 psia Heater C pressure 14.08 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302.3 psia Tungsten Cool ret. 86.1 psia Tungsten Cool Diff 282.2 psia 1630 eng. 2 temp. 15.00 K 1630 JT temp. 7.52 K 1630 outlet temp. 278.0 K 1630 engine speed 180 rpm 1630 supply press. 220 psig 1630 JT press. 175 psig 1630 return press. 1.7 psig 1630 med. press. stor. 78 psig 1410 engine speed 179 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 87.6 K 1410 supply press. 225 psig 1410 JT press. 140 psig 1410 return press. 2.7 psig 4K dewar pressure 250 mmHg 1K dewar pressure 6.2 psig 4K dewar level 25.77 inHe 1K dewar level 8.17 inHe 4K main flow control 4.8 V LHe temp. 1 4.59 K Heat exch. temp. 7 189.0 K Poly temp. 3 53.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 19.9 C AFP frequency --- MHz AFP forward power --- W SCS LHe level 69.2 % SCS field --- kG SCS current --- A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 14.9 torr building source CM5 pressure 622.2 torr CC1 pressure --- torr PPM LHe level 81.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 59.4 % AFP LN2 level 97.6 % PPM current --- A(T) AFP current --- A(T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status trip hold East MWPC Temperature 69.9 F West MWPC Temperature 69.1 F MWPC Pressure 582.6 torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2350 V MWPC Trip Hold Status Trip Hold MWPC Pressure 586.2 torr N2 - MWPC Differential --- Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1822 Hz West muon veto rate 3241 Hz Spectrometer vacuum 1.7-8 Torr (CC2) disk usage daq account 53 %

24176	Sun Jan 8 09:28:32 2012	MFMakela

Beam tuned to UCN Target has been sitting at 9-10K (54 mbar) 54 mbar in tank

24175	Fri Jan 6 10:26:30 2012	MFMakela

Making new D2 O/P heated, pumped cooled O/P set to 20K Mr H at 324 and pumped out SV3, MV5, MV6 closed CC1 off Green valve open UCN gatevalve closed UCN pumpout open Orange valv open, check valve not leaking on TC guage. D2 bottle at ~700 psi Regulator outlet 40 psi O/P regulator set to ~110 mbar D2 flowing

24174	Thu Jan 5 08:14:25 2012	MFMakela

Source prestart: Fix main return leak make more D2 Transfer lines? ....

24173	Tue Jan 3 01:38:32 2012	MFMakela

1630 is pumping out Do not use for filling magnets

24172	Mon Dec 26 17:02:28 2011	MFMakela

LN2 trailer nearly empty 1410 LN2 feed - off Increased speed to 100 rpm from 60 AFP is warming up Turbo on insulating vacuum N2 blowing through afp water lines and jacket.

24171	Sat Dec 24 07:58:51 2011	MFMakela

LN2 trailer at 1100 gallons - 9 ma Saturday

24170	Sat Dec 24 07:52:20 2011	MFMakela

LN2 trailer is set to maintain 30 psi - so it continuously makes a little noise while it self pressurizes. If it is over pressuring close the valve with the read poly flow on it. Then contact me. This is needed to keep the transfer tot he liquifiers working. We are running with 2 compressors unloaded since the water booster pumps seems to be failing. This allows the compressors to run cooler in case the pump gets bad. Check the pump when you are in the area. It is dripping some water. We need to get a replacement ordered. I am trying to keep most of the LHe in the 4K dewar in case the 1410 has to turned off, we are low on LN2 due to bad weather. This will allow most of the magnet LHe to be caught by medium pressure storage. The ucn source main return has a leak near the heater skid. The source is valved off to limit losses (and warm). We need to replace a seal. PPM LN2 was filled today, should be good for a week plus. AFP is full AFP LN2 fill set point was set to 15 to lower LN2 consumption. It has a full dewar and another full one is near the roll up door. 1410 is set to 60 rpm and the JT is in auto Since the high and low pressure manifolds are connected the 1630 set points and V370 will help maintain the system at positive pressure while running at low MPS. The set points should be low -2 psi, high 4 psi.

24169	Sat Dec 24 06:41:13 2011	MFMakela

Starting fill of AFP AFP full Starting transfer from 1k to 4k

24168	Fri Dec 23 17:43:23 2011	MFMakela

Transfering LHe from 1k to 4k 1400 gallons in LN2 tanker AFP LN2 at 1/4 full set 1410 ln2 temp (E) to 100 from 90

24167	Thu Dec 22 21:39:16 2011	MFMakela

1630 rate .75 inches per hour before shut off. Shutting off 1630 1410 slowed to 100 rpm compressor 2 - off Compressor 1 - unloaded Booster pump is leaking, pressure is low. Compressor 3 temp 64 inlet, 105 outlet Compressor 1 temp inlet - 64, outlet 96 compressor 3 - unloaded 1800 gallons of LN2 @ 22:30 Dec 22

24166	Thu Dec 22 11:15:50 2011	MFMakela

D2 is in the tank orange valve closed

24165	Thu Dec 22 10:25:41 2011	KPH

We broke 16 million. Happy Holidays!

Attachment 1: 3_2.gif

3_2.gif

24164	Thu Dec 22 10:25:08 2011	KPH

Attachment 1: 2_2.gif

2_2.gif

24163	Thu Dec 22 10:24:51 2011	KPH

Attachment 1: 1_2.gif

1_2.gif

24162	Thu Dec 22 03:06:31 2011	JCHoagland

UCN0030 - Area B, 2011 - Summer 2011 UCNA Shift Change Checklist Date: December 22, 2011 00:00 Shift Persons: jeff hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 49 slpm Heater B pressure 14.05 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.7 psia Tungsten Cool ret. 83.7 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 15.06 K 1630 JT temp. 7.7 K 1630 outlet temp. 276.3 K 1630 engine speed 205 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.0 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.8 K 1410 TE-E 96.8 K 1410 supply press. 240 psig 1410 JT press. 120 psig 1410 return press. 3.5 psig 4K dewar pressure 285 mmHg 1K dewar pressure 8.0 psig 4K dewar level 13.4 inHe 1K dewar level 31.8 inHe 4K main flow control 5.4 V LHe temp. 1 4.7 K Heat exch. temp. 7 200.5 K Poly temp. 3 156.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.4 C AFP frequency 28.487 MHz AFP forward power 40 W SCS LHe level 81.6 % SCS field ---=- kG hall probe array computer SCS current 119.0 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 2.0 torr CC1 pressure 5.3e-5 torr PPM LHe level 86.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 84.8 % AFP LN2 level 71.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 14.84 mA "Beamplot" Capture: 69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.5 F West MWPC Temperature 61.6 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 12.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2119 Hz West muon veto rate 3966 Hz Spectrometer vacuum 2.2e-5 Torr (CC2) disk usage daq account 52 %

24161	Wed Dec 21 23:00:55 2011	RRios

9:15 PM 18658 A1: Background (off) E=1.2 W=1.01 9:34 PM 18661 A2: Beta Run (off) E=16.7 W=17.9 SCS/GV=0.25 Fe/GV=0.48 (E+W)/GV= 1.81 10:23 PM 18662 A3: Depol (off to on) W/R=0.042 10:30 PM 18663 A4: Background (on) E=1.2 W=0.97 10:36 PM 18664 A5: Beta Run (on) E=12.34 W=10.9 SCS/GV=0.11 Fe/GV=0.11 (E+W)/GV= 1.25 11:24 PM 18665 A6: Depol (on to off) 11:31 PM 18666 A7: Beta Run (on)

24160	Wed Dec 21 22:16:28 2011	KPH

UCNb pressure test: 983.0 @ 11:16pm

24159	Wed Dec 21 16:10:01 2011	MFMakela

Source is freezing in. Heat exchanger is closed, move switch to control position after the source is biult. Flow should be 50

24158	Wed Dec 21 15:37:02 2011	RRios

UCNA Shift Change Checklist Date: December 21, 2011 16:00 Shift Persons: Raymond, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow CLOSED Mark found a leak in the system, closed this He blower on Heat exchanger flow 140 slpm Mark is building the source Heater B pressure 13.31 psia Heater C pressure 14.07 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.3 psia Tungsten Cool ret. 83.1 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 14.93 K 1630 JT temp. 7.75 K 1630 outlet temp. 267.2 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 192 psig 1630 return press. 2.4 psig 1630 med. press. stor. 110 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.8 K 1410 TE-E 97.2 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8.0 psig 4K dewar level 13.4 inHe 1K dewar level 23.6 inHe 4K main flow control 5.5 V building source LHe temp. 1 5.07 K Heat exch. temp. 7 227 K Poly temp. 3 201 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.487 MHz AFP forward power -- W SCS LHe level 86.1 % SCS field 9.655 kG hall probe array computer SCS current 119.0 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1

86.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.3 % AFP LN2 level 96.0 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- s currently off Proton pulses/burst: -- Proton countdown: - Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.7 F West MWPC Temperature 61.7 F MWPC Pressure 100.1 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 11.1 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1888 Hz West muon veto rate 3434 Hz Spectrometer vacuum 3.3e-5 Torr (CC2) disk usage daq account 52 %

24157	Wed Dec 21 09:33:28 2011	MFMakela

D2 in tank Orange valve closed

24156	Wed Dec 21 08:22:52 2011	MFMakela

Pumping source into D2 tank with KNF

24155	Wed Dec 21 06:39:43 2011	Hasan

UCNA Shift Change Checklist Date: December 21, 2011 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow --- slpm (forgot to look at that time) Heater B pressure 14.58 psia Heater C pressure 13.84 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.5 psia Tungsten Cool ret. 82.2 psia Tungsten Cool Diff 280.7 psia 1630 eng. 2 temp. 14.94 K 1630 JT temp. 7.64 K 1630 outlet temp. 276.1 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.8 psig 1630 med. press. stor. 115 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 96.1 K 1410 supply press. 250 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.5 psig 4K dewar level 13.37 inHe 1K dewar level 20.66 inHe 4K main flow control 5.2 V source is idled LHe temp. 1 4.778 K Heat exch. temp. 7 191.06 K Poly temp. 3 93.72 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 10.4 C AFP frequency 28.487 MHz AFP forward power 40 W SCS LHe level 85.3 % SCS field 9.655 kG hall probe array computer SCS current 119.0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.5 torr source idled CM5 pressure 2.0 torr CC1 pressure 1.1e-5 torr PPM LHe level 86.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.0 % AFP LN2 level 73.8 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5/5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.38 mA "Beamplot" Capture: 69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.1 F West MWPC Temperature 60.9 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 11.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1872 Hz West muon veto rate 3343 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 52 %

24154	Wed Dec 21 05:59:36 2011	JCHoagland

the windows computers reset at around 6:50 so only got up to 8 cycles of the D+ 25 run for the run plan of depol stuff

24153	Tue Dec 20 20:51:10 2011	bz

Run Plan for tonight: WE HAVE BEAM UNTIL 7 AM! We will take depol data according to Adam's email from two weeks ago: (0) Fifteen cycles each of P(-) and P(+). (1) Twenty cycles each of SLD(-) and SLD(+) (2) Ten cycles each of D(25s)(-) and D(25s)(+) (3) Ten cycles each of D(50s)(-) and D(50s)(+) (4) Ten cycles each of D(75s)(-) and D(75s)(+) (5) Ten cycles each of TOF(-) and TOF(+) (6) Depol Evolution (DE) runs The descriptions of these runs is in Adam's November depol document, sent to the collaboration email. This is a lot of data. We will probably only

done tomorrow night. ADDITIONAL TO JEFF: I don't know if you did or not, but if you idle the source it's a good idea to close the green arrow valve so that we don't lose He to the MPS.

24152	Tue Dec 20 15:39:00 2011	bz

UCNA Shift Change Checklist Date: December 20, 2011 16:30 Shift Persons: Bryan, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 25 slpm Heater B pressure 14.60 psia Heater C pressure 13.85 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.3 psia Tungsten Cool ret. 82.6 psia Tungsten Cool Diff 280.3 psia 1630 eng. 2 temp. 14.77 K 1630 JT temp. 8.36 K 1630 outlet temp. 277.3 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.9 psig 1630 med. press. stor. 137 psig 1410 engine speed 149 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 96.3 K 1410 supply press. 245 psig 1410 JT press. 168 psig 1410 return press. 3.5 psig 4K dewar pressure 245 mmHg 1K dewar pressure 7.3 psig 4K dewar level 12.1 inHe 1K dewar level 13.5 inHe 4K main flow control 3.4 V source is idled LHe temp. 1 8.6 K Heat exch. temp. 7 210.7 K Poly temp. 3 68.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.487 MHz AFP forward power 0 W SCS LHe level 89.8 % SCS field 9.655 kG hall probe array computer SCS current 119.0 A AFP N2 dewar level 1597/1597 SV3 closed SV4 closed CM1 pressure 3.1 torr source idled CM5 pressure 2.0 torr CC1 pressure --- torr PPM LHe level 86.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 98.2 % AFP LN2 level 96.4 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s currently off Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): --.-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.0 F West MWPC Temperature 61.2 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.9 Neopentane Flow Rate 12.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1890 Hz West muon veto rate 3333 Hz Spectrometer vacuum 1.7e-5 Torr (CC2) disk usage daq account 51 %

24151	Tue Dec 20 12:58:55 2011	KPH

Attachment 1: 2_1.gif

2_1.gif

24150	Tue Dec 20 09:18:12 2011	KPH

Attachment 1: 3_1.gif

3_1.gif

24149	Tue Dec 20 09:17:53 2011	KPH

Attachment 1: 1_1.gif

1_1.gif

24148	Tue Dec 20 05:28:58 2011	JCHoagland

GV is closed and air and power are off to it. source is idled and 4k appears to be making liquid.

24147	Mon Dec 19 23:52:44 2011	JCHoagland

UCNA Shift Change Checklist Date: December 20, 2011 00:00 Shift Persons: jeff hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.57 psia Heater C pressure 13.84 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.9 psia Tungsten Cool ret. 83.4 psia Tungsten Cool Diff 281.4 psia 1630 eng. 2 temp. 14.4 K

psig 1630 JT press. 175 psig 1630 return press. 1.9 psig 1630 med. press. stor. 130 psig 1410 engine speed 149 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 96.8 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 4K dewar pressure 265 mmHg 1K dewar pressure 7.5 psig 4K dewar level 8.5 inHe 1K dewar level 31.9 inHe 4K main flow control 5.8 V LHe temp. 1 4.8 K Heat exch. temp. 7 192.5 K Poly temp. 3 158.7 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.8 C AFP frequency 28.487 MHz AFP forward power 0 W SCS LHe level 84.3 % SCS field ------- kG SCS current 119.0 A AFP N2 dewar level 1597/1597 SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 2.0 torr CC1 pressure 4.4e-5 torr PPM LHe level 86.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.8 % AFP LN2 level 77.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s currently off Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 14.2 mA "Beamplot" Capture: 67 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 68.0 F West MWPC Temperature 60.1 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 11.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 on East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1963 Hz West muon veto rate 3761 Hz Spectrometer vacuum 1.8e-5 Torr (CC2) disk usage daq account 51 %

24146	Mon Dec 19 18:54:30 2011	bz

Messages to MARK: Running the 1410 at 200 RPM pulls down the pressure in the SCS and causes it to boil off much faster The source we made on Friday does not appear to have been very good - we did a melt and refreeze on Monday and the UCN rate came up by 20% to the pre-quench levels

24145	Mon Dec 19 15:21:38 2011	mmendenhall

UCNA Shift Change Checklist Date: December 19, 2011 16:00 Shift Persons: Bryan, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.07 psia Heater C pressure 13.37 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298 psia Tungsten Cool ret. 83.3 psia Tungsten Cool Diff 280 psia 1630 eng. 2 temp. 14.95 K 1630 JT temp. 7.75 K 1630 outlet temp. 275 K 1630 engine speed 210 rpm 1630 supply press. 237 psig 1630 JT press. 175 psig 1630 return press. 2.0 psig 1630 med. press. stor. 135 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.8 K 1410 TE-E 97.5 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 272 mmHg 1K dewar pressure 8.0 psig 4K dewar level 9.8 inHe 1K dewar level 24.1 inHe 4K main flow control 1.5 V melt & refreeze in progress LHe temp. 1 15 K Heat exch. temp. 7 203 K Poly temp. 3 167 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.487 MHz AFP forward power 0 W SCS LHe level 88.0 % SCS field 9.6525 kG hall probe array computer SCS current 119.0 A AFP N2 dewar level 1597/1597 SV3 closed SV4 closed CM1 pressure 120 torr melt & refreeze CM5 pressure 1.9 torr CC1 pressure --- torr PPM LHe level 86.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.9 % AFP LN2 level 100. % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s currently off Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): --.-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 67.4 F West MWPC Temperature 59.7 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.5 torr Neopentane Flow Rate 11.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0 A slightly better gain when coils off --MPM H20 Chiller on Chiller water level 0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.6 Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1872 Hz West muon veto rate 3613 Hz Spectrometer vacuum 1.5e-5 Torr (CC2) disk usage daq account 50 %

24144	Mon Dec 19 09:17:54 2011	ASaunders

UCNA Shift Change Checklist Date: December 09, 2011 09:37 Shift Persons: Saunders UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.9 psia Heater C pressure 13.4 psia Tungsten supply press. 300 psig

psia Tungsten Cool ret. 82.9 psia Tungsten Cool Diff 282 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.7 K 1630 outlet temp. 272 K 1630 engine speed 202 rpm 1630 supply press. 235 psig 1630 JT press. 177 psig 1630 return press. 2.0 psig 1630 med. press. stor. 125 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.7 K 1410 TE-E 97.5 K 1410 supply press. 240 psig 1410 JT press. 131 psig 1410 return press. 3.5 psig 4K dewar pressure 268 mmHg 1K dewar pressure 8.0 psig 4K dewar level 10.9 inHe 1K dewar level 24.4 inHe 4K main flow control 6.0 V LHe temp. 1 4.8 K Heat exch. temp. 7 208 K Poly temp. 3 130 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed (tuning) Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.487 MHz AFP forward power 0 W (off) SCS LHe level 92.8 % SCS field ??? kG don't know how to read SCS current 119.0 A AFP N2 dewar level 2/8 SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 1.9 torr CC1 pressure 1.1e-4 torr (could use more cooling) PPM LHe level 86.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 89.0 % AFP LN2 level 85.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s 1 Hz mode, tuning now Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 245 ns TBCM001I03 (H- source current): 16.22 mA "Beamplot" Capture: 80 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 68.7 F West MWPC Temperature 60.9 F MWPC Pressure 100 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A ??????????? is this desired? H20 Chiller on Chiller water level 0.2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure ??? torr don't know how to read this N2 - MWPC Differential -2.6 Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2552 Hz West muon veto rate 4711 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 50 %

24143	Mon Dec 19 05:44:47 2011	JCHoagland

the data quality checker program quick_analyzer.pl does not seem to want to analyizer tme midas run 18557, no sure why but someone who knows the midas and analyzer stuff should look at it. Also Keith from CCR want the target temperatures from 1600 yesterday to this morning as well as the UCN rate so he can fight for us to get more current and beam power.

24142	Mon Dec 19 00:15:08 2011	Hasan

UCNA Shift Change Checklist Date: December 19, 2011 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 46 slpm Heater B pressure 13.31 psia Heater C pressure 13.64 psia Tungsten supply press. 300 psig Compressor 1 On on light off (broken?), Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300.3 psia Tungsten Cool ret. 84.5 psia Tungsten Cool Diff 282.3 psia 1630 eng. 2 temp. 14.29 K 1630 JT temp. 7.01 K 1630 outlet temp. 275.4 K 1630 engine speed 200 rpm 1630 supply press. 225 psig 1630 JT press. 175 psig 1630 return press. 1.4 psig 1630 med. press. stor. 100 psig 1410 engine speed 149 rpm 1410 TE-A 15.6 K 1410 TE-B 6.5 K 1410 TE-E 96.7 K 1410 supply press. 250 psig 1410 JT press. 170 psig 1410 return press. 3.4 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 17.67 inHe 1K dewar level 20.99 inHe 4K main flow control 4.8 V LHe temp. 1 4.856 K Heat exch. temp. 7 193.84 K Poly temp. 3 167.33 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 10.6 C AFP frequency 28.487 MHz AFP forward power 40 W SCS LHe level 84.1 % SCS field 9.65 kG [Hall probe array computer] SCS current 119.0 A AFP N2 dewar level 1/3 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 6.4e-5 torr PPM LHe level 87.1 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.4 % AFP LN2 level 72.2 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 20 s --- beam being tuned --- Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15 mA "Beamplot" Capture: 0.69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.4 F West MWPC Temperature 63.5 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 11.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.9 torr Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2132 Hz West muon veto rate 3978 Hz Spectrometer vacuum 2.3e-5 Torr (CC2) disk usage daq account 50 %

24141	Sun Dec 18 16:06:17 2011	mmendenhall

UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 14.52 psia Heater C pressure 13.74 psia Tungsten supply press. 305 psig Compressor 1 On on light off (broken?), Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 301.4 psia Tungsten Cool ret. 84.9 psia Tungsten Cool Diff 282.4 psia 1630 eng. 2 temp. 14.39 K 1630 JT temp. 7.54 K 1630 outlet temp. 277.5 K 1630 engine speed 205 rpm 1630 supply press. 235 psig 1630 JT press. 180 psig 1630 return press. 1.7 psig 1630 med. press. stor. 120 psig 1410 engine speed 200 rpm 1410 TE-A 15.6 K 1410 TE-B 7.1 K 1410 TE-E 97.0 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 3.5 psig 4K dewar pressure 287 mmHg 1K dewar pressure 7.5 psig 4K dewar level 17.2 inHe 1K dewar level 13.3 inHe 4K main flow control 5.3 V LHe temp. 1 4.7 K Heat exch. temp. 7 200.1 K Poly temp. 3 165.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.487 MHz AFP forward power 0 W SCS LHe level 88.2 % SCS field 9.65 kG [Hall probe array computer] SCS current 119.0 A AFP N2 dewar level 1/3 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 1.8e-5 torr PPM LHe level 88.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 99.1 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: - s --- beam being tuned --- Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): 16.22 mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 71.5 F West MWPC Temperature 64.0 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 11.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 12.7 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 2036 Hz West muon veto rate 3648 Hz Spectrometer vacuum 2.5e-5 Torr (CC2) disk usage daq account 50 %

24140	Sun Dec 18 14:04:26 2011	zwang

7:37 AM 18499 B5: Beta (off) E=14.45(6), W=15.5(6), Fe/GV=0.48, SCS/GV=0.248,Beta/GV=1.8 8:37 AM 18500 B6: Depol (off->on) W/R=0.06(2) 8:44 AM 18501 B7: Beta (on) E=14.46(6), W=15.50(7), Fe/GV=0.480, SCS/GV=0.25,Beta/GV=1.7 9:44 AM 18502 B8: Depol (off->on) W/R=0.072(2) 9:51 AM 18503 B9: Bkg (off) E=1.00(4) W=0.91(4) 10:00 AM 18504 B10: Beta (on) E=10.769(0.055), W=9.67(0.052), Fe/GV=0.1168, SCS/GV=0.1829,Beta/GV=1.2603 11:05 AM 18505 B11: Depol (on->off) W/R=0.222(0.087) 11:16 AM 18506 B12: Bkg (off) E=1.101(0.045) W=0.936(0.041)

24139	Sun Dec 18 12:41:52 2011	zwang

New A-->B (60 min Beta, 9 min Bkg) 1:03 AM 18483 A1: Bkg (off) E=1.07 W=0.93 1:12 AM 18484 A2: Beta (off) E=12.55, W=13.45, Fe/GV=0.4817, SCS/GV=0.2476,Beta/GV=1.8075 2:13 AM 18485 A3: Depol (off->on) W/R=0.052(18) 2:20 AM 18486 A4: Bkg (on) E=1.06 W=0.90 2:29 AM 18487 A5: Beta (on) E=10.28, W=9.35, Fe/GV=0.1128, SCS/GV=0.1813,Beta/GV=1.2556 3:29 AM 18488 A6: Depol (on->off) W/R=0.278(99) 3:36 AM 18489 A7: Beta (on) E=10.802, W=9.668, Fe/GV=0.1190, SCS/GV=0.1799,Beta/GV=1.2661 4:36 AM 18490 A8: Depol (on->off) W/R=0.200(00) 4:44 AM 18491 A9: Bkg (on) E=1.003 W=0.936 4:53 AM 18492 A10: Beta (off) E=14.338, W=15.336, Fe/GV=0.4888, SCS/GV=0.2492,Beta/GV=1.8096 5:53 AM 18493 A11: Depol (off->on) W/R=0.0254(78) 6:02 AM 18494 A12: Bkg (off) E=1.107 W=0.933 6:11 AM 18495 B1: Bkg (on) E=1.137 W=0.890 6:20 AM 18496 B2: Beta (on) E=10.756, W=9.707, Fe/GV=0.1146, SCS/GV=0.1815,Beta/GV=1.2602 7:20 AM 18497 B3: Depol (on->off) W/R=0.115385 7:27 AM 18498 B4: Bkg (off) E=1.198(47) W=0.895(41)

24138	Sun Dec 18 12:23:25 2011	zwang

16:10 PM 18464 A8: Depol (on->off) W/R=0.186(72) 16:17 PM 18465 A9: Bkg (on) E=1.15 W=0.94 16:26 PM 18466 A10: Beta (off) E=13.88, W=14.67, Fe/GV=0.4843, SCS/GV=0.2462,Beta/GV=1.8060 17:26 PM 18467 A11: Depol (off->on) W/R=0.048(16) 17:33 PM 18468 A12: Bkg (off) E=1.16 W=0.97 Continuing A--> B (60 min beta, 9 min bkg) 17:46 PM 18470 B1: Bkg (on) E=1.11 W=0.85 17:56 PM 18471 B2: Beta (on) E=9.98, W=9.00, Fe/GV=0.1149, SCS/GV=0.1789,Beta/GV=1.2502 18:56 PM 18472 B3: Depol (on->off) W/R=0.130(56) 19:03 PM 18473 B4: Bkg (off) E=1.01 W=0.90 19:12 PM 18474 B5: Beta (off) E=10.30, W=10.84, Fe/GV=0.4806, SCS/GV=0.2451,Beta/GV=1.8653 Beam outage (H-source problems) 22:22 PM 18476 B6: Depol (off->on) W/R=0.031(15) 22:29 PM 18477 B7: Beta (off) E=12.71, W=13.60, Fe/GV=0.4828, SCS/GV=0.2438,Beta/GV=1.8164 23:29 PM 18478 B8: Depol (off->on) W/R=0.065(21) 23:36 PM 18479 B9: Bkg (off) E=1.13 W=0.93 23:46 PM 18480 B10: Beta (on) E=9.78, W=8.89, Fe/GV=0.1156, SCS/GV=0.1797,Beta/GV=1.2617 0:46 AM (12/18/2011) 18481 B11: Depol (on->off) W/R=0.200(73) 0:53 AM 18482 B12: Bkg (on) E=1.11 W=0.96

24137	Sun Dec 18 10:37:50 2011	zwang

UCNA Shift Change Checklist Date: December 18, 2011 09:37 Shift Persons: Kevin, Jeff W.

---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.5 psia Heater C pressure 13.8 psia Tungsten supply press. 299 psig Compressor 1 On off? light off (broken?), Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299 psia Tungsten Cool ret. 282 psia Tungsten Cool Diff 82.9 psia 1630 eng. 2 temp. 14.3 K 1630 JT temp. 7.35 K 1630 outlet temp. 275.8 K 1630 engine speed 235 rpm 1630 supply press. 235 psig 1630 JT press. 175 psig 1630 return press. 1.6 psig 1630 med. press. stor. 105 psig 1410 engine speed 154 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 96.6 K 1410 supply press. 245 psig 1410 JT press. 164 psig 1410 return press. 3.3 psig 4K dewar pressure 278 mmHg 1K dewar pressure 7.3 psig 4K dewar level 13.15 inHe 1K dewar level 17.87 inHe 4K main flow control 5.3 V LHe temp. 1 4.7 K Heat exch. temp. 7 191.9 K Poly temp. 3 168.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: ? (do not know how to switch and display) DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down (temporarily)/thru AFP temperature 10.2 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 92.7 % SCS field 38 kG SCS current 119.0 A AFP N2 dewar level 3.5/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 1.8e-5 torr PPM LHe level 88.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 89.7 % AFP LN2 level 81.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s will check in a bit Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 245 ns TBCM001I03 (H- source current): 16.22 mA "Beamplot" Capture: 80 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 68.6 F West MWPC Temperature 61.1 F MWPC Pressure 100 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 13 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.34 kV West muon veto HV 2.38 kV East muon veto rate 3827 Hz West muon veto rate 5980 Hz Spectrometer vacuum 2.1e-5 Torr (CC2) disk usage daq account 49 %

24136	Sun Dec 18 06:30:09 2011	KPH

Attachment 1: 3_0.gif

3_0.gif

24135	Sun Dec 18 06:29:42 2011	KPH

Attachment 1: 2_0.gif

2_0.gif

24134	Sun Dec 18 06:28:58 2011	KPH

Attachment 1: 1_0.gif

1_0.gif

24133	Sat Dec 17 23:15:53 2011	JCHoagland

UCNA Shift Change Checklist Date: December 18, 2011 00:00 Shift Persons: jeff, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 15.07 psia Heater C pressure 14.27 psia Tungsten supply press. 300 psig Compressor 1 On on light off (broken?), but compressor sounds/feels on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.7 psia Tungsten Cool ret. 82.6 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.6 K 1630 outlet temp. 277.3 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 95 psig 1410 engine speed 154 rpm 1410 TE-A 15.7 K 1410 TE-B 6.9 K 1410 TE-E 98.8 K 1410 supply press. 245 psig 1410 JT press. 175 psig 1410 return press. 3.5 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.5 psig 4K dewar level 19.0 inHe 1K dewar level 11.4 inHe 4K main flow control 5.3 V LHe temp. 1 4.6 K Heat exch. temp. 7 188.7 K Poly temp. 3 144.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.4 C AFP frequency 28.487 MHz AFP forward power 40 W SCS LHe level 99.8 % SCS field SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure ~1.6 torr CM5 pressure ~2.1 torr CC1 pressure 4.4e-5 torr PPM LHe level 88.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 87.8 % AFP LN2 level 75.3 % PPM

Flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s will check in a bit Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 320 ns TBCM001I03 (H- source current): 10.88 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 69.6 F West MWPC Temperature 62.4 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.4 torr Neopentane Flow Rate 11.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.9 Neopentane Flow Rate 13.2 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2289 Hz West muon veto rate 4296 Hz Spectrometer vacuum 3.0e-5 Torr (CC2) disk usage daq account 49 %

24132	Sat Dec 17 15:45:45 2011	mmendenhall

UCNA Shift Change Checklist Date: December 17, 2011 16:02 Shift Persons: Sky, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 14.6 psia Heater C pressure 13.8 psia Tungsten supply press. 305 psig Compressor 1 On on light off (broken?), but compressor sounds/feels on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300 psia Tungsten Cool ret. 83 psia Tungsten Cool Diff 282 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 7.9 K 1630 outlet temp. 278 K 1630 engine speed 210 rpm 1630 supply press. 244 psig 1630 JT press. 190 psig 1630 return press. 1.7 psig 1630 med. press. stor. 75 psig 1410 engine speed 154 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 97.9 K 1410 supply press. 247 psig 1410 JT press. 170 psig 1410 return press. 3.2 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.0 psig 4K dewar level 19.3 inHe 1K dewar level 28.4 inHe 4K main flow control 5.3 V LHe temp. 1 4.7 K Heat exch. temp. 7 190 K Poly temp. 3 168 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.5 C AFP frequency 28.487 MHz AFP forward power 42 W SCS LHe level 85.3 % SCS field SCS current 119.0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure ~1.6 torr CM5 pressure ~2.0 torr CC1 pressure 1.7e-5 torr PPM LHe level 88.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.9 % AFP LN2 level 100. % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off/on/off/on/off Proton burst spacing: 5 s will check in a bit Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 255 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 68.7 F West MWPC Temperature 61.7 F MWPC Pressure 99.8 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 11.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -2.9 Neopentane Flow Rate 12.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2260 Hz West muon veto rate 4213 Hz Spectrometer vacuum 5.4e-6 Torr (CC2) disk usage daq account 49 %

24127	Sat Dec 17 15:18:37 2011	RRios

12:12 PM 18457 A1: Background (off) E=1.11 W=0.91 12:21 PM 18458 A2: Beta Run (off) E=13.55 W=14.4 Fe/GV=0.48 SCS/GV=0.24 (E+W)=1.8 1:21 PM 18459 A3: Depol (off to on) W/R=0.022 1:28 PM 18460 A4: Background (on) E=1.10 W=0.95 1:38 PM 18461 A5: Beta Run (on) E=10.28 W=9.21 Fe/Gv=0.12 SCS/GV=0.18 (E+W)/GV=1.25 2:38 PM 18462 A6: Depol (on to off) 3:10 PM 18463 A7: Beta Run (on)

24123	Sat Dec 17 15:14:37 2011	RRios

12:17 AM 18432 A1: Background (off) E=1.09 W=0.94 12:26 AM 18433 A2: Beta Run (off) E=14.7 W=15.7 Fe/GV=0.48 SCS/GV=0.24 (E+W)/1.8 1:26 AM 18434 A3: Depol (off to on) W/R=0.033 1:33 AM 18435 A4: Background (on)E=1.19 W=0.95 1:43 AM 18436 A5: Beta Run (on) E=11.0 W=9.9 Fe/GV=0.12 SCS/GV=0.18 (E+W)/1.24 2:43 AM 18437 A6: Depol (on to off) W/R=0.28 2:50 AM 18438 A7: Beta Run (on) E=10.7 W=9.6 Fe/GV=0.12 SCS/GV=0.18 (E+W)/1.25 3:50 AM 18439 A8: Depol (on to off) W/R=0.18 3:57 AM 18440 A9: Background (on) E=1.107 W=0.96 4:07 AM 18441 A10: Beta Run (off) E=14.1 W=15.2 Fe/GV=0.48 SCS/GV=0.24 (E+W)/1.8 5:07 AM 18442 A11: Depol (off to on) W/R = 0.042 5:14 AM 18443 A12: Background (off)E=1.2 W=0.9 5:23 AM 18444 B1: Background (on)E=1.2 W=0.9 5:33 AM 18445 B2: Beta Run (on) E=10.3 W=9.5 Fe/GV=0.12 SCS/GV=0.18 (E+W)/1.25 6:33 AM 18446 B3: Depol (on to off) W/R=0.13 6:40 AM 18447 B4: Background (off)E=1.15 W=0.97 6:49 AM 18448 B5: Beta Run (off) E=13.9 W=14.9 7:49 AM 18449 B6: Depol (off to on) W/R=0.046 W/R= 0.05 7:56 AM 18450 B7: Beta Run (off) E=13.4 W=14.5 Fe/GV=0.49 SCS/GV=0.25 (E+W)/GV=1.79 8:57 AM 18451 B8: Depol (off to on)W/R=0.06 9:04 AM 18452 B9: Background (off) E=1.0 W=1.0 9:13 AM

B11: Depol (on to off) W/R=0.18 10:20 AM 18455 B12: Background (on) E=1.16 W =0.85

24131	Sat Dec 17 14:50:33 2011	RRios

The AFP fill was bad because I went downstairs to make sure the AFP magnet valve was closed after filling. During that time the low pressure return must have pulled liquid out of the magnet. Perhaps we don't need to check to see if the valve is closed? or maybe we should put a camera on that valve so we can see that it's closed from upstairs.

24130	Sat Dec 17 14:23:30 2011	KPH

Attachment 1: 3.gif

3.gif

24129	Sat Dec 17 14:23:03 2011	KPH

Attachment 1: 2.gif

2.gif

24128	Sat Dec 17 14:22:46 2011	KPH

Attachment 1: 1.gif

1.gif

24125	Sat Dec 17 12:41:41 2011	RRios

We have restarted an A->B run. Keith will tune while we are doing beta decay. The He levels in both the SCS and AFP are hold up much better for some reason. The AFP looks like it will last for 13 hrs between fills while the SCS looks like it will last for 31 hrs

24126	Sat Dec 17 12:34:22 2011	KPH

There is something wrong with asym_summary_plots! Several entries are being ignored and it is not clear why. Run 18128 for example. .. never mind. It's just printing only the second half of eack pair.

24124	Sat Dec 17 10:20:42 2011	RRios

CCR: Kieth tuning the beam...

24122	Sat Dec 17 08:32:04 2011	RRios

UCNA Shift Change Checklist Date: December 17, 2011 09:12 Shift Persons: Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.5 psia Heater C pressure 13.8 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297 psia Tungsten Cool ret. 80 psia Tungsten Cool Diff 282 psia 1630 eng. 2 temp. 15.2 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.5 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 65 psig 1410 engine speed 154 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 97.2 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.2 psig 4K dewar pressure 285 mmHg 1K dewar pressure 7.0 psig 4K dewar level 19.7 inHe 1K dewar level 27.6 inHe 4K main flow control 5.3 V LHe temp. 1 4.6 K Heat exch. temp. 7 190 K Poly temp. 3 164 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 89.4 % SCS field 34 G !?? Checked hall probes. Magnet is *not* quenched. Where's the NMR probe!? SCS current 119.0 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure ~0 torr CM5 pressure ~0 torr CC1 pressure 2.4e-5 torr PPM LHe level 88.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 93.0 % AFP LN2 level 87.6 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s will check in a bit Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 14.64 mA "Beamplot" Capture: 69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature

Neopentane Flow Rate 11.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.5 Neopentane Flow Rate 12.9 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .41 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2045 Hz West muon veto rate 4241 Hz Spectrometer vacuum 1.1e-5 Torr (CC2) disk usage daq account 48 %

24119	Sat Dec 17 08:19:48 2011	David

Freq (kHz) Fwd Refl Fe Monitor/30 GV ratio to AFP off 0.000 0.000 0.000 253.667 17.000 0.983 28.482 5.000 0.100 75.000 17.000 0.291 28.492 5.000 0.000 86.000 17.000 0.333 28.502 5.000 0.000 163.667 17.000 0.634 28.512 5.000 0.000 249.333 17.000 0.966 28.482 5.000 0.100 91.667 16.500 0.355 28.472 5.000 0.200 134.333 16.500 0.520 28.462 5.000 0.300 199.333 16.500 0.772 28.477 5.000 0.150 95.600 16.500 0.370 28.487 5.000 0.050 73.000 16.500 0.283 28.484 5.000 0.050 78.750 16.500 0.305 28.489 5.000 0.025 73.250 16.500 0.284 28.487 5.000 0.050 72.000 16.750 0.279 0.000 0.000 0.000 262.667 16.750 1.017 Beamoff 0.000 0.000 2.333 0.000 0.009 28.487 40.000 0.050 67.000 17.000 0.260

Attachment 1: .jpg

.jpg

24121	Sat Dec 17 04:15:03 2011	JCHoagland

please note i have noticed a few thing that should be changed in the afp on fill procedure. since the afp magnet valve light no longer works, we might have to check that the magnet valve is closed on the afp before pre-cooling of the lines. the temperture reader now gets to under 16.6K when the line is cool enough to start fill. to get an effecient fill the needle valve on the return by pass should start off slightly open, so as no to make the return pressure drop to zero, which makes the magnets not fill, and should be slowly opened when the return pressure starts to go up until the point when the return line temperature is at 16.6K and heater B temperature is around 62 make sure the return pressure stabalizes under 2 psi before opening the magnet valve and closing the by-pass alway wait 15 minutes before opening the magnet valve for afp fills once magnet valve on afp is open, watch return pressure and make sure it goes back and stabalizes under 2 psi, the return pressure seems to spike everytime we open the magnet valve so, IF THE RETURN PRESSURE STAYS ABOVE THE RED LINE FOR MORE THAN 30 SECONDS, STOP THE FILL. These are things I have noticed about the afp fill that I believe should be changed for when the afp is energized. will send an email to the group as well seeing if other agree with these changes.

24120	Sat Dec 17 00:01:31 2011	JCHoagland

UCNA Shift Change Checklist Date: December 17, 2011 00:30 Shift Persons: jeff hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 14.53 psia Heater C pressure 13.79 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.1 psia Tungsten Cool ret. 80.7 psia Tungsten Cool Diff 283.7 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.5 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 60 psig 1410 engine speed 155 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 97.0 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.3 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 20.0 inHe 1K dewar level 25.5 inHe 4K main flow control 5.3 V LHe temp. 1 4.6 K Heat exch. temp. 7 190.6 K Poly temp. 3 159.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.487 MHz AFP forward power 0 W SCS LHe level 95.7 % SCS field 37.34 G SCS current 119.0 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.1 torr CC1 pressure 6e-5 torr PPM LHe level 88.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.7 % AFP LN2 level 86.3 % PPM current 72(6) A(T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi Chiller OFF AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s No Beam, system currently down Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 14.64 mA "Beamplot" Capture: 69 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 66.8 F West MWPC Temperature 62.0 F MWPC Pressure 100.1 torr N2 - MWPC Differential -3.2 torr Neopentane Flow Rate 11.5 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.0 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC

Curr. .25 A West Back. Veto Buck. .4 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 2200 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2231 Hz West muon veto rate 4478 Hz Spectrometer vacuum 2.7e-5 Torr (CC2) disk usage daq account 48 %

24118	Fri Dec 16 22:21:39 2011	bz

AFP temperature readout is now up by the fill switches on a small pedestal

24117	Fri Dec 16 16:23:08 2011	David

UCNA Shift Change Checklist Date: December 16, 2011 16:00 Shift Persons: Bryan, David UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm (source being warmed) Heater B pressure 13.62 psia Heater C pressure 12.83 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.6 psia Tungsten Cool ret. 80.6 psia Tungsten Cool Diff 284.7 psia 1630 eng. 2 temp. 16.51 K 1630 JT temp. 7.87 K 1630 outlet temp. 277.4 K 1630 engine speed 150 rpm Source warmup 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 1.8 psig 1630 med. press. stor. 60 psig 1410 engine speed 154 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 97.7 K 1410 supply press. 245 psig 1410 JT press. 170 psig 1410 return press. 2.3 psig 4K dewar pressure 290 mmHg 1K dewar pressure 6.5 psig 4K dewar level 25.64 inHe 1K dewar level 23.68 inHe 4K main flow control 5 V LHe temp. 1 4.618 K Heat exch. temp. 7 221.73 K Source cooling down Poly temp. 3 237 K flapper heater cur 0.18 A Flapper Status: not flapping (no beam) Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 19.1 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 3-5 G SCS current 0 A AFP N2 dewar level 7/8 SV3 closed SV4 open CM1 pressure 1.6 torr CM5 pressure 2 torr CC1 pressure - torr Source refreeze PPM LHe level 88.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 77.6 % Stinger cryovalve still broken AFP LN2 level 78.8 % PPM current 7.2(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status trip/hold East MWPC Temperature 66.3 F West MWPC Temperature 66.7 F MWPC Pressure 100 torr N2 - MWPC Differential -2.6 torr Neopentane Flow Rate 11.3 slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -3.5 Neopentane Flow Rate 12.4 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 1240 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1837 Hz West muon veto rate 3171 Hz Spectrometer vacuum 10^-5 Torr (CC2) disk usage daq account 48 %

24116	Fri Dec 16 14:43:51 2011	MFMakela

Doing test on AFP fill line cooling Fill valve open, vent line open AFP vent line closed - venting through fill line and bypass Back to normal

24115	Fri Dec 16 11:18:20 2011	MFMakela

Making source: SV3- Closed MV5 - Closed MV6 -Closed MV2 - Closed Turbo - off CC1 - Off Green valve - open Source pumped out - yes UCN gatevalve - closed pumpout port - open Source temp - 8.6 K 1166 mbar in tank check valve leaking - no check valve bypass - open flapper - closed source voltage - 5 VDC freeze in curve - looks good rate of D2 freeze out - 680 tank mbar/hr Source at 100 mbar - doing a slight melt and refreeze (Orange valve open)

24110	Fri Dec 16 08:03:39 2011	MFMakela

taking out the source 17.5 mbar ii tank SV3, Mv5, MV6, MV2, UCN gatevalve closed Pumping port open Orange valve open Check vavle bypass open Poly pump on source melted Pumping d2 into tank. D2 is in the tank, Orange valve closed 117 mbar in guide pumping out guide

24114	Fri Dec 16 04:34:11 2011	JCHoagland

afp cooled and filled all liquifier stuff is stabalized

24112	Thu Dec 15 23:45:24 2011	bz

Pressure test of ucnb valve commencing: 19:53 CM1 reads 723.4 torr, PPM upstream temperature is 20.4 C 20:03 CM1 reads 724.1 torr, PPM upstream temperature is 20.4 C 20:13 CM1 reads 725.1 torr, PPM upstream temperature is 20.4 C 20:23 CM1 reads 726.0 torr, PPM upstream temperature

temp, LHe 1-5 are all still increasing 20:46 CM1 reads 727.4 torr, PPM upstream temp is 20.5 C LHe 1-5 are now going down after turning off helium blower 21:00 CM1 reads 727.9 torr, PPM upstream temp is 20.2 C 21:17 CM1 reads 728.4 torr, PPM upstream temp is 20.2 C 21:36 CM1 reads 729.0 torr, PPM upstream temp is 20.2 C, LHe temps continue to fall a bit, have positive curve 21:56 CM1 reads 729.6 torr, PPM upstream temp is 20.1 C 22:23 CM1 reads 730.6 torr, PPM upstream temp is 19.9 C

24113	Thu Dec 15 23:44:38 2011	bz

pressure test was largely successful, pressure never dropped, slowly increased probably the source was slowly rising in temperature Leak test successful, blew a lot of helium at the valve and the connection, saw no signal.

24111	Thu Dec 15 16:07:52 2011	David

UCNA Shift Change Checklist Date: December 15, 2011 16:00 Shift Persons: Bryan, David UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow -23 slpm (source being warmed) Heater B pressure 12.36 psia Heater C pressure 13.49 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.7 psia Tungsten Cool ret. 79.7 psia Tungsten Cool Diff 283.5 psia 1630 eng. 2 temp. 16.65 K 1630 JT temp. 7.81 K 1630 outlet temp. 276.9 K 1630 engine speed 130 rpm Source warmup 1630 supply press. 230 psig 1630 JT press. 210 psig 1630 return press. 1.4 psig 1630 med. press. stor. 65 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 8.2 K 1410 TE-E 106 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 2 psig 4K dewar pressure 255 mmHg 1K dewar pressure 6 psig 4K dewar level 25.85 inHe 1K dewar level 18.47 inHe 4K main flow control 0 V Source warmup LHe temp. 1 269.78 K Source warmup Heat exch. temp. 7 183.82 K Poly temp. 3 142.06 K flapper heater cur 0.18 A Flapper Status: not flapping (no beam) Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 20.0 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 94 % SCS field 3-5 G SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 99.2 torr Source warmup CM5 pressure 626.5 torr CC1 pressure - torr PPM LHe level 88.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 7.2(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 67.9 F West MWPC Temperature 69.1 F MWPC Pressure 585.6 (off) torr N2 - MWPC Differential 0 (off) torr Neopentane Flow Rate 0.1 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 589.3 (off) torr N2 - MWPC Differential -0.86 Neopentane Flow Rate 0.0 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 6 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1749 Hz West muon veto rate 3237 Hz Spectrometer vacuum (off) 606 Torr (CC2) disk usage daq account 48 %

24108	Thu Dec 15 15:58:38 2011	David

UCNA Shift Change Checklist Date: December 14, 2011 17:20 Shift Persons: David, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.55 psia Heater C pressure 12.70 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.3 psia Tungsten Cool ret. 80.4 psia Tungsten Cool Diff 282.9 psia 1630 eng. 2 temp. 15.29 K 1630 JT temp. 7.86 K 1630 outlet temp. 282.9 K 1630 engine speed 210 rpm 1630 supply press. 238 psig 1630 JT press. 185 psig 1630 return press. 1.7 psig 1630 med. press. stor. 98 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.8 K 1410 TE-E 100.5 K 1410 supply press. 245 psig 1410 JT press. 150 psig 1410 return press. 2.9 psig 4K dewar pressure 242 mmHg 1K dewar pressure 7.3 psig 4K dewar level 21.9 inHe 1K dewar level 11.05 inHe 4K main flow control 5.5 V LHe temp. 1 4.6 K Heat exch. temp. 7 172.5 K Poly temp. 3 54.76 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 20.1 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99.0 % SCS field 4-6 G SCS current 0 A AFP N2 dewar level 1/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.8 torr CC1 pressure 6.9e-5 torr PPM LHe level 88.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 7.2(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern

========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 65.7 F West MWPC Temperature 63.0 F MWPC Pressure 582.7 (off) torr N2 - MWPC Differential ~0 (off) torr Neopentane Flow Rate 0.1 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 & 1/2 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 586.3 (off) torr N2 - MWPC Differential -0.83 Neopentane Flow Rate 0.7 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 7 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1871 Hz West muon veto rate 3383 Hz Spectrometer vacuum (off) 600 Torr (CC2) disk usage daq account 48 %

24109	Wed Dec 14 23:20:27 2011	JCHoagland

UCNA Shift Change Checklist Date: December 15, 2011 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 43 slpm Heater B pressure 13.29 psia Heater C pressure 12.45 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295.0 psia Tungsten Cool ret. 79.1 psia Tungsten Cool Diff 282.0 psia 1630 eng. 2 temp. 15.20 K 1630 JT temp. 7.69 K 1630 outlet temp. 276.3 K 1630 engine speed 200 rpm 1630 supply press. 235 psig 1630 JT press. 185 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 98.1 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 2.9 psig 4K dewar pressure 230 mmHg 1K dewar pressure 7.5 psig 4K dewar level 22.77 inHe 1K dewar level 18.50 inHe 4K main flow control 5.5 V LHe temp. 1 4.613 K Heat exch. temp. 7 173.65 K Poly temp. 3 53.646 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 19.7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 92.3 % SCS field 5.83 G SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 1.9 torr CC1 pressure 5.2e-5 torr PPM LHe level 88.1 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 66.3 F West MWPC Temperature 67.2 F MWPC Pressure 585.4 (off) torr N2 - MWPC Differential .2 (off) torr Neopentane Flow Rate 0.0 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 589.6 (off) torr N2 - MWPC Differential 0.8 Neopentane Flow Rate -0.87 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 6 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1810 Hz West muon veto rate 3258 Hz Spectrometer vacuum (off) Torr (CC2) disk usage daq account 48 %

24107	Tue Dec 13 23:12:34 2011	JCHoagland

UCNA Shift Change Checklist Date: December 14, 2011 00:00 Shift Persons: Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 49 slpm Heater B pressure 13.31 psia Heater C pressure 12.43 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.7 psia Tungsten Cool ret. 80.2 psia Tungsten Cool Diff 282.6 psia 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.8 K 1630 outlet temp. 282.6 K 1630 engine speed 210 rpm 1630 supply press. 235 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 98.3 K 1410 supply press. 240 psig 1410 JT press. 125 psig 1410 return press. 1.9 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7.5 psig 4K dewar level 21.7 inHe 1K dewar level 20.1 inHe 4K main flow control 5.9 V LHe temp. 1 4.6 K Heat exch. temp. 7 172.9 K Poly temp. 3 47.3 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 20.1 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 87.1 % SCS field 3.605 G SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.8 torr CC1 pressure 6.8e-6 torr PPM LHe level 87.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 58.9 F West MWPC Temperature 48.4 F MWPC Pressure 580.2 (off) torr N2 - MWPC Differential .1 (off) torr Neopentane Flow Rate 0.0 (off) slpm East

========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 583.7 (off) torr N2 - MWPC Differential 0.7 Neopentane Flow Rate -0.85 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 7 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1869 Hz West muon veto rate 3381 Hz Spectrometer vacuum (off) Torr (CC2) disk usage daq account 48 %

24106	Tue Dec 13 16:09:13 2011	David

UCNA Shift Change Checklist Date: December 13, 2011 17:06 Shift Persons: Bryan, David UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.42 psia Heater C pressure 12.53 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295.4 psia Tungsten Cool ret. 79.4 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 15.33 K 1630 JT temp. 7.84 K 1630 outlet temp. 278.2 K 1630 engine speed 205 rpm 1630 supply press. 235 psig 1630 JT press. 180 psig 1630 return press. 1.6 psig 1630 med. press. stor. 105 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.8 K 1410 TE-E 100.4 K 1410 supply press. 235 psig 1410 JT press. 148 psig 1410 return press. 2.7 psig 4K dewar pressure 248 mmHg 1K dewar pressure 7.0 psig 4K dewar level 21.25 inHe 1K dewar level 13.13 inHe 4K main flow control 5.9 V LHe temp. 1 4.6 K Heat exch. temp. 7 173.8 K Poly temp. 3 49.1 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 18.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 92.4 % SCS field 4-6 G SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.8 torr CC1 pressure 6e-5 torr PPM LHe level 87.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 7.2(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 57.8 F West MWPC Temperature 47.7 F MWPC Pressure 580 (off) torr N2 - MWPC Differential 0 (off) torr Neopentane Flow Rate 0.1 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 586.6 (off) torr N2 - MWPC Differential -0.8 Neopentane Flow Rate -0.7 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1927 Hz West muon veto rate 3235 Hz Spectrometer vacuum (off) Torr (CC2) disk usage daq account 48 %

24099	Tue Dec 13 15:28:26 2011	MFMakela

Connecting Fe monitor detector electronics to nEDM detector Fe Det: 800 VDC, SCA 1-5 VDC nEDM 800 VDC, SCA 2-3.5 VDC To change back - turn down and then off HV unplug preamp power disconnect signal and HV lines from pre amp move preamp back to Fe det. disconnect extension lead connect short leads to pre amp connect power to preamp turn on HV and ramp to 800 VDC Set SCA window to 1-5 VDC Changes to MCA inputs: Stop 2 to changes from SCS monitor to trigger out for valve control program SCS wire and trigger wire Velcroed together Call Mark for problems reconnecting Stop 2 on channel B was Slow NIM , 1 KOhm (Changed to Fast NIM, 50 Ohm)

24105	Tue Dec 13 13:55:13 2011	GEHogan

EMS seems to be taking data, but entries are not showing up in the EMS logboook. Restart EMS. Logbook entries are now showing up.

24104	Mon Dec 12 23:18:26 2011	JCHoagland

UCNA Shift Change Checklist Date: December 13, 2011 00:00 Shift Persons: Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 12.93 psia Heater C pressure 12.16 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.5 psia Tungsten Cool ret. 80.4 psia Tungsten Cool Diff 282.3 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.7 K 1630 outlet temp. 279.0 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 165 psig 1630 return press. 1.2 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 97.6 K 1410 supply press. 240 psig 1410 JT press. 165 psig 1410 return press. 1.9 psig 4K dewar pressure 245 mmHg 1K dewar pressure 6.0 psig 4K dewar level 22.7 inHe 1K dewar level 22.6 inHe 4K main flow control 6.2 V LHe temp. 1 4.58 K Heat exch. temp. 7 174.7 K Poly temp. 3 100.5 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

temperature 18.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 94.4 % SCS field 5.83 G SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.5 torr CM5 pressure 1.9 torr CC1 pressure 1.5e-5 torr PPM LHe level 87.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 72(6) A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: 5 s No Beam, system currently down Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.6 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status auto reset East MWPC Temperature 58.3 F West MWPC Temperature 47.8 F MWPC Pressure .1 (off) torr N2 - MWPC Differential .1 (off) torr Neopentane Flow Rate 0.0 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 586.6 (off) torr N2 - MWPC Differential 0.8 Neopentane Flow Rate -0.85 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 10 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1934 Hz West muon veto rate 3416 Hz Spectrometer vacuum (off) Torr (CC2) disk usage daq account 48 %

24103	Mon Dec 12 15:38:31 2011	David

UCNA Shift Change Checklist Date: December 12, 2011 4:36 p.m. Shift Persons: David, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.09 psia Heater C pressure 12.34 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.2 psia Tungsten Cool ret. 80.0 psia Tungsten Cool Diff 282.4 psia 1630 eng. 2 temp. 14.96 K 1630 JT temp. 7.7 K 1630 outlet temp. 279.3 K 1630 engine speed 215 rpm 1630 supply press. 235 psig 1630 JT press. 180 psig 1630 return press. 1.4 psig 1630 med. press. stor. 62 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 98.5 K 1410 supply press. 240 psig 1410 JT press. 128 psig 1410 return press. 2.5 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 23.4 inHe 1K dewar level 28.8 inHe 4K main flow control 6.2 V LHe temp. 1 4.6 K Heat exch. temp. 7 174.4 K Poly temp. 3 48.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature off C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 90.8 % SCS field 0 kG SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 8.5e-5 torr PPM LHe level 89.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 0 % PPM current 0 A(T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV off V MWPC Trip Hold Status off East MWPC Temperature 58.8 F West MWPC Temperature 48.2 F MWPC Pressure 582 (off) torr N2 - MWPC Differential ~0 (off) torr Neopentane Flow Rate 0.2 (off) slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status Trip Hold MWPC Pressure 585.9 (off) torr N2 - MWPC Differential -0.85 Neopentane Flow Rate 0.8 slpm West PMT Buck. Curr. off A West Back. Veto Buck. off A Top-Veto and GMS Crate (Top Crate) off V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 10 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1858 Hz West muon veto rate 3317 Hz Spectrometer vacuum 600 (off) Torr (CC2) disk usage daq account 47 %

24102	Mon Dec 12 02:10:58 2011	JCHoagland

everything looks stable and EDM is taking beam at this time

24101	Sun Dec 11 15:14:57 2011	BPlaster

UCNA Shift Change Checklist Date: December 11, 2011 4:00 p.m. Shift Persons: Bryan, BradP ***EDM is running*** UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.1 psia Heater C pressure 12.5 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.7 psia Tungsten Cool ret. 284.1 psia Tungsten Cool Diff 79.1 psia 1630 eng. 2 temp. 15.4 K 1630 JT temp. 7.7 K 1630 outlet temp. 278.8 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 98.9 K 1410 supply press. 245 psig 1410 JT press. 135 psig 1410 return press. 2.7 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 25.0 inHe 1K dewar level 24.8 inHe 4K main flow control 6.0 V LHe temp. 1 4.6 K Heat exch. temp. 7 189.7 K Poly temp. 3 127.5 K flapper heater cur 0.18 A Flapper Status: flapping

24100	Sun Dec 11 12:48:54 2011	rpicker

UCNA Shift Change Checklist Date: December 11, 2011 12:00 p.m. Shift Persons: Ruediger, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.22 psia Heater C pressure 12.5 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.4 psia Tungsten Cool ret. 79.7 psia Tungsten Cool Diff 284.2 psia 1630 eng. 2 temp. 15 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.7 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.5 psig 1630 med. press. stor. 65 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.5 K 1410 TE-E 98.9 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 2.8 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.5 psig 4K dewar level 22.2 inHe 1K dewar level 24.98 inHe 4K main flow control 6 V LHe temp. 1 4.6 K Heat exch. temp. 7 192.9 K Poly temp. 3 146 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: all is turned off

24098	Sun Dec 11 02:58:52 2011	JCHoagland

finished the source making there is 17.4 mbars left in the tank

24097	Sat Dec 10 23:36:42 2011	David

UCNA Shift Change Checklist Date: December 11, 2011 0:00 a.m. Shift Persons: David, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.5 psia Heater C pressure 11.64 psia Tungsten supply press. 300 psig Compressor 1 On off (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.7 psia Tungsten Cool ret. 284.1 psia Tungsten Cool Diff 81.2 psia 1630 eng. 2 temp. 16.96 K 1630 JT temp. 9.09 K 1630 outlet temp. 280.4 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 1.8 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 99.2 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 2.8 psig 4K dewar pressure 245 mmHg 1K dewar pressure 7.0 psig 4K dewar level 20.3 inHe 1K dewar level 31.78 inHe 4K main flow control 7 V LHe temp. 1 5.83 K Heat exch. temp. 7 234.86 K Source being heated (Xe run) Poly temp. 3 251.22 K Source being heated (Xe run) flapper heater cur 0.18 A Flapper Status: no flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open [D2 to tank for Xe run] Switcher status thru AFP temperature 18.8 C Chiller Off AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 38.5 kG SCS current 118.9 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 577.0 torr [D2 going back to tank] CM5 pressure 2.2 torr CC1 pressure off torr PPM LHe level 97.2 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 40.9 % PPM current 72(6) A (T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: 5 s No Beam, system currently down Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 14.2 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 62.8 F West MWPC Temperature 56.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -2.2 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -1.7 Neopentane Flow Rate 15.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Coils off because SCS ramped down Top-Veto and GMS Crate (Top Crate) 2350 V [turned back on] Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on 1250 V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2465 Hz West muon veto rate 4450 Hz Spectrometer vacuum - Torr(CC2 / source changeout Xe-D2) disk usage daq account 47%

24096	Sat Dec 10 17:42:26 2011	EIC

Taking D2 out of source: 25 mbar in tank 114 mbar left in guide - pumping it out

24095	Sat Dec 10 16:33:47 2011	BPlaster

UCNA Shift Change Checklist Date: December 10, 2011 4:00 p.m. Shift Persons: Sky, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow -29 slpm Heater B pressure 13.25 psia Heater C pressure 12.33 psia Tungsten supply press. ~30 psig Compressor 1 On off (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.6 psia Tungsten Cool ret. 80.9 psia Tungsten Cool Diff 283.9 psia 1630 eng. 2 temp. 15.53 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.1 K 1630 engine speed

med. press. stor. 70 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 98.9 K 1410 supply press. 240 psig 1410 JT press. 180 psig 1410 return press. 2.6 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 23.8 inHe 1K dewar level 24.8 inHe 4K main flow control off V LHe temp. 1 186.3 K Heat exch. temp. 7 152.3 K Poly temp. 3 80.5 K flapper heater cur 0.18 A Flapper Status: no flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open [D2 to tank for Xe run] Switcher status thru AFP temperature 21.0 C Chiller Off AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 86.3 % SCS field ramping up in progress kG SCS current 118.9 A [first ramping set point] AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 246.3 torr [D2 going back to tank] CM5 pressure 2.2 torr CC1 pressure off torr PPM LHe level 97.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 69.9 % PPM current 72(6) A (T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 59.9 F West MWPC Temperature 58.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 13.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. - MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.5 torr N2 - MWPC Differential -1.9 Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Coils off because SCS ramped down Top-Veto and GMS Crate (Top Crate) 2350 V [turned back on] Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1892 Hz West muon veto rate 3279 Hz Spectrometer vacuum 1.7e-5 Torr (CC2) disk usage daq account 46 %

24090	Sat Dec 10 14:37:07 2011	MFMakela

12/9 11:45 am AFP coil at 6.89 Ohms 12/9 1:35 pm AFP coil at 7.7 Ohms 12/9 4:35 pm AFP coil at 8.9 Ohms

24094	Sat Dec 10 11:10:29 2011	GEHogan

EMS stopped at 6am, which is network down time. Restarted.

24093	Sat Dec 10 08:34:53 2011	David

UCNA Shift Change Checklist Date: December 10, 2011 8:10am Shift Persons: David, Chris UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.27 psia Heater C pressure 12.39 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295.5 psia Tungsten Cool ret. 282.3 psia Tungsten Cool Diff 79.4 psia 1630 eng. 2 temp. 15.56 K 1630 JT temp. 7.80 K 1630 outlet temp. 278.2 K 1630 engine speed 190 rpm 1630 supply press. 235 psig 1630 JT press. 180 psig 1630 return press. 1.4 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.5 K 1410 TE-E 98.4 K 1410 supply press. 240 psig 1410 JT press. 125 psig 1410 return press. 2.6 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 23.77 inHe 1K dewar level 15.72 inHe 4K main flow control 6.0 V LHe temp. 1 4.76 K Heat exch. temp. 7 170.4 K Poly temp. 3 45.50 K flapper heater cur .18 A Flapper Status: no flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 18.5 C Chiller Off AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 91.1 % Ramped down SCS field 5.8 kG SCS current 0 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.2 torr CC1 pressure 9.3e-6 torr PPM LHe level 97.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 98.0 % PPM current 72(6) A (T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 57.3 F West MWPC Temperature 55.4 F MWPC Pressure 100.4 torr N2 - MWPC Differential -2.3 torr Neopentane Flow Rate 14.2 slpm East PMT Buck. Curr - A Current off because SCS ramped down East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -1.5 Neopentane Flow Rate 16.0 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Coils off because SCS ramped down Top-Veto and GMS Crate (Top Crate) 16 V Not running, so vetoes off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 9 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 1808 Hz West muon veto rate 3256 Hz Spectrometer vacuum 1.3e-5 Torr (CC2) disk usage daq account 46 %

AFP Fill once again unsuccessful Can't tell what the deal is - I tried to maximize the pressure differential between the 1k dewar and the return pressure and could only get a flow rate of about -2.8 in./hr from the 1k dewar. After several hours of waiting we did not see any LHe in the AFP. Therefore, we are once again giving up and we are going to fill the SCS instead. **EDIT** Filled the SCS with a combination of the 1k and 4k dewars. Left it to Chris to refill SCS in the morning for the ramp.

24091	Fri Dec 9 15:24:21 2011	Wrede

UCNA Shift Change Checklist Date: December 9, 2011 16:20 Shift Persons: Bryan, Chris UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 46 slpm Heater B pressure 13.13 psia Heater C pressure 12.34 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.8 psia Tungsten Cool ret. 81.2 psia Tungsten Cool Diff 283.8 psia 1630 eng. 2 temp. 15.05 K 1630 JT temp. 7.60 K 1630 outlet temp. 279.3 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.4 psig 1630 med. press. stor. 50 psig 1410 engine speed 200 rpm 1410 TE-A 15.6 K 1410 TE-B 6.3 K 1410 TE-E 99.1 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 2.6 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 28.70 inHe 1K dewar level 30.25 inHe 4K main flow control 5.0 V LHe temp. 1 4.75 K Heat exch. temp. 7 173.4 K Poly temp. 3 46.87 K flapper heater cur .18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 20.5 C Chiller Off AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 74.5 % SCS Ramped Down SCS field .03837 kG (NO LONGER MOUNTED ON THE SCS) SCS current 0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.2 torr CC1 pressure 4.2e-5 torr PPM LHe level 98.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 0 % Stinger cryovalve still broken AFP LN2 level 90.9 % PPM current 72(6) A (T) AFP current 0(0) A(T) AFP chiller sup. pres. - psi Chiller OFF AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light - Proton burst spacing: - s No Beam, system currently down Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 59.3 F West MWPC Temperature 57.4 F MWPC Pressure 100.2 torr N2 - MWPC Differential -3.0 torr Neopentane Flow Rate 13.8 slpm East PMT Buck. Curr - A Current off because SCS ramped down East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H2O Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -1.9 Neopentane Flow Rate 15.7 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A Coils off because SCS ramped down Top-Veto and GMS Crate (Top Crate) 16 V Not running, so vetoes off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 10 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1829 Hz West muon veto rate 3326 Hz Spectrometer vacuum 1.3e-5 Torr (CC2) disk usage daq account 46 %

24089	Fri Dec 9 00:43:10 2011	JCHoagland

also someone in the morning need to fix the RangeAlarm so that is stops texting me saying that the afp is at zero helium level

24088	Thu Dec 8 22:43:16 2011	JCHoagland

have turbo running on afp magnet vacumm, and confirmed that there is nitrogen flowing into the spin flipper

24087	Thu Dec 8 20:44:33 2011	bz

Tried to fill the AFP, using both the 1k dewar and 4k dewar - neither resulted in a measurement of liquid Helium in the AFP. After trying from the 4k, decided to give up for the night. Need to replace/fix stinger to continue. State of system: Source -> Heater A -> Compressors 1&2 -> 1630 AFP -> Heater B -> Compressors 1&2 -> 1630 SCS -> Heater C -> Compressor 3 -> 1410 Source flow @ 5.0 V, Pressure in 4k @ ~5.7 Medium Pressure Storage @ 102, falling at about 4 PSI/hr Might want to reduce source flow, lower 4k pressure according to your whim (DAVID) MESSAGE TO JEFF FROM MARK: Put a pump on the isolating vacuum in the AFP. There is a turbopump in a wooden box as you enter the area, to the left. Also, check if the spin flipper has been blown with dry N2 to get rid of the water. Give Mark a call if needed.

24086	Thu Dec 8 13:28:58 2011	RRios

AFP Water cooling set to 20 C

24084	Thu Dec 8 13:28:26 2011	RRios

valve.

24085	Thu Dec 8 13:18:29 2011	GEHogan

Doing UCN EMS backups. EMS restarted. Network glitch this morning? Logbook computer monitor not working.

24083	Wed Dec 7 17:50:31 2011	bz

UCNA Shift Change Checklist Date: December 7, 2011 18:00 Shift Persons: Bryan, Chris UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 12.03 psia Heater C pressure 13.22 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.4 psia Tungsten Cool ret. 80.6 psia Tungsten Cool Diff 282.8 psia 1630 eng. 2 temp. 15.01 K 1630 JT temp. 7.63 K 1630 outlet temp. 279.9 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 188 psig 1630 return press. 1.9 psig 1630 med. press. stor. 55 psig 1410 engine speed 200 rpm 1410 TE-A 16.3 K 1410 TE-B 6.6 K 1410 TE-E 91.2 K 1410 supply press. 240 psig 1410 JT press. 110 psig 1410 return press. 3.4 psig 4K dewar pressure 285 mmHg 1K dewar pressure 7.5 psig 4K dewar level 23.24 inHe 1K dewar level 29.83 inHe 4K main flow control 5.1 V LHe temp. 1 4.795 K Heat exch. temp. 7 191.9 K Poly temp. 3 55.5 K flapper heater cur .18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 89.4 % SCS field .03837 kG (NO LONGER MOUNTED ON THE SCS) SCS current 118.95 A AFP N2 dewar level 1/1 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.2 torr CC1 pressure 1.1e-3 torr (Possible He contamination of source?) PPM LHe level 99.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 34.5 % AFP LN2 level 83.5 % PPM current 72(6) A (T) AFP current 0(0) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.9 F West MWPC Temperature 60.4 F MWPC Pressure 99.9 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 14.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.5 Neopentane Flow Rate 15.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) V (ch 12) East muon veto HV 2.39 kV West muon veto HV 2.35 kV East muon veto rate 1868 Hz West muon veto rate 3498 Hz Spectrometer vacuum 1.9e-5 Torr (CC2) disk usage daq account 46 %

24082	Wed Dec 7 06:00:50 2011	Hasan

Run Type MCA Fast Daq AFP Cycles Notes P+ 1108 18347 On 15 P- 1109 18349 Off 15 SLD- 1110 18351 Off 14 SLD+ 1111 18353 On 13

24081	Wed Dec 7 02:48:56 2011	Hasan

UCNA Shift Change Checklist Date: December 7, 2011 00:10 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.95 psia Heater C pressure 11.64 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 294.6 psia Tungsten Cool ret. 79.2 psia Tungsten Cool Diff 281.2 psia 1630 eng. 2 temp. 14.00 K 1630 JT temp. 7.40 K 1630 outlet temp. 273.1 K 1630 engine speed 160 rpm 1630 supply press. 180 psig 1630 JT press. 145 psig 1630 return press. 0 psig 1630 med. press. stor. 50 psig 1410 engine speed 225 rpm 1410 TE-A 11.7 K 1410 TE-B 5.6 K 1410 TE-E 75.4 K 1410 supply press. 155 psig 1410 JT press. 60 psig 1410 return press. 0.6 psig 4K dewar pressure 240 mmHg 1K dewar pressure 4.5 psig 4K dewar level 26.6 inHe 1K dewar level 17.5 inHe 4K main flow control 5.1 V LHe temp. 1 4.6 K Heat exch. temp. 7 186.7 K Poly temp. 3 82.4 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 86.8 % SCS field 0.695 kG SCS current 118.95 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 8.7e-6 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 87.8 % AFP LN2 level 94.5 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: 5 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.6 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature

Neopentane Flow Rate 16.5 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H2O Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.3 Neopentane Flow Rate 18.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 1809 Hz West muon veto rate 3232 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 45 %

24080	Tue Dec 6 17:47:13 2011	bz

AFP FILL Closed light did not come on after fill. Raymond checked the valve, and it was in the closed position, so we are moving forward on the assumption that it is properly closed.

24079	Tue Dec 6 16:36:33 2011	bz

After discussing with Mark and Jeff, I tried reloading compressor 3 for 30 seconds. The supply pressure and JT pressure on the 1410 recovered immediately, as did the pressure in the 1k and the temperatures on the 1410. It appears the 1410 is working correctly once again.

24078	Tue Dec 6 16:03:14 2011	bz

UCNA Shift Change Checklist Date: December 6, 2011 16;52 Shift Persons: Bryan, Ruediger UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 23 slpm Heater B pressure 14.82 psia Heater C pressure 14.11 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 293.8 psia Tungsten Cool ret. 78.3 psia Tungsten Cool Diff 280.9 psia 1630 eng. 2 temp. 14.43 K 1630 JT temp. 7.31 K 1630 outlet temp. 278.8 K 1630 engine speed 225 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.3 psig 1630 med. press. stor. 55 psig 1410 engine speed 199 rpm 1410 TE-A 13.7 K 1410 TE-B 6.4 K 1410 TE-E 78.0 K 1410 supply press. 170 psig 1410 JT press. 80 psig 1410 return press. 3.3 psig 4K dewar pressure 260 mmHg 1K dewar pressure 6.5 psig 4K dewar level 26.0 inHe 1K dewar level 15.2 inHe 4K main flow control 3.7 V LHe temp. 1 6.5 K Heat exch. temp. 7 196.4 K Poly temp. 3 55.0 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 92.8 % SCS field 0.695 kG SCS current 118.95 A AFP N2 dewar level <2/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 1.6e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.6 % AFP LN2 level 95.6 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: - s NO BEAM YET Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 58.5 F West MWPC Temperature 54.8 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 14.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H2O Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.6 torr N2 - MWPC Differential -2.2 Neopentane Flow Rate 16.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 1858 Hz West muon veto rate 3354 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 45 %

24076	Tue Dec 6 06:44:14 2011	Hasan

Start of a new B->A octet: Time FastDaq Run Type AFP E(Hz) W(Hz) Fe/GV SCS/GV Beta/GV 23:48 18317 B1: Bkg (on) 1.081 1.07 23:52 18318 B2: Beta (on) 12.057 10.721 0.1224 0.1819 1.2817 00:12 18319 B3: Depol (on->off) 00:19 18320 B4: Bkg (off) 1.016 0.968 00:22 18321 B5: Beta (off) 15.574 16.857 0.4959 0.2604 1.8041 00:43 18322 B6: Depol (off->on) 00:50 18323 B7: Beta (off) 15.807 16.702 0.4829 0.2527 1.8215 01:10 18324 B8: Depol (off->on) 01:17 18325 B9: Bkg (off) 0.951 0.800 01:20 18326 B10: Beta (on) 11.730 10.713 0.1287 0.1878 1.2813 01:41 18327 B11: Depol (on->off) 01:48 18328 B12: Bkg (on) 1.129 0.950 01:51 18329 A1: Bkg (off) 1.012 0.991 01:54 18330 A2: Beta (off) 15.468 16.546 0.4914 0.2518 1.8168 02:14 18331 A3: Depol (off->on) 02:21 18332 A4: Bkg (on) 1.098 0.925 02:25 18333 A5: Beta (on) 11.695 10.493 0.1223 0.1843 1.2510 02:45 18334 A6: Depol (on->off) 02:52 18335 A7: Beta (on) 11.988 10.838 0.1255 0.1867 1.2526 03:12 18336 A8: Depol (on) 03:19 18337 A9: Bkg (on) 1.072 0.980 03:23 18338 A10: Beta (off) 16.424 17.183 0.4959b 0.2477 1.8143 03:43 18339 A11: Depol (off->on) 03:50 18340 A12: Bkg (off) 1.012 0.920 Some runs for Adam: Run Type MCA Fast Daq AFP Cycles Notes SLD- 1105 18342 Off 5 cycle 6 incomplete SLD+ 1106 18343 On 7 Po 1107 18344 Off 5 beam went off during cycle 6

i have opened the jt 307 on the 1410 all the way as this seems to be the only way to stabalize the system for a SCS fill from the 1k dewar. had no problem filling the afp from the 1k so will look into why the SCS had a problem tonight.

24075	Tue Dec 6 04:25:45 2011	Hasan

UCNA Shift Change Checklist Date: December 6, 2011 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.00 psia Heater C pressure 13.35 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 294.3 psia Tungsten Cool ret. 78.7 psia Tungsten Cool Diff 281.2 psia 1630 eng. 2 temp. 14.88 K 1630 JT temp. 7.50 K 1630 outlet temp. 276.4 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 50 psig 1410 engine speed 199 rpm 1410 TE-A 15.2 K 1410 TE-B 6.3 K 1410 TE-E 88.1 K 1410 supply press. 230 psig 1410 JT press. 120 psig 1410 return press. 3.4 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.5 psig 4K dewar level 22.43 inHe 1K dewar level 31.25 inHe 4K main flow control 5.2 V LHe temp. 1 5.05 K Heat exch. temp. 7 197.38 K Poly temp. 3 162.6 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 84.2 % SCS field 0.6964 kG SCS current 118.95 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.2 torr CC1 pressure 1.5e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.1 % AFP LN2 level 74.9 % PPM current 72(6) A (T) AFP current 93.581(6.79) A(T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.42 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 57.5 F West MWPC Temperature 54.1 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 14.6 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -1.9 Neopentane Flow Rate 16.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.37 kV West muon veto HV 2.38 kV East muon veto rate 3686 Hz West muon veto rate 6044 Hz Spectrometer vacuum 1.6e-5 Torr (CC2) disk usage daq account 44 %

24074	Mon Dec 5 22:54:19 2011	mmendenhall

Shift summary (4pm-12am; Wrede & Mendenhall): steadily cranking through beta decay runs. Finished A->B; just started very short B->A (20min beta, 3min bkg) to leave next shift time for depol runs (SLD+/-) before morning. ---------- 2011-12-05 17:36:16 18299 34304 30666 3245.3 on beta 2011-12-05 17:51:12 18301 530 446 484.7 on bkg ---------- 2011-12-05 18:46:40 18302 52119 56221 3245.3 off beta 2011-12-05 19:01:36 18304 513 477 493.7 off bkg ---------- 2011-12-05 19:12:16 18305 578 464 485.5 on bkg 2011-12-05 20:05:36 18306 39636 35364 3245.2 on beta ---------- 2011-12-05 20:20:32 18308 490 435 485.1 off bkg 2011-12-05 21:16:00 18309 52323 56081 3244.9 off beta ---------- 2011-12-05 22:15:44 18311 51776 55653 3244.7 off beta 2011-12-05 22:39:12 18313 904 805 868.8 off bkg ---------- 2011-12-05 23:32:32 18314 38790 35262 3245.1 on beta 2011-12-05 23:47:28 18316 517 455 484.3 on bkg ----------

24073	Mon Dec 5 16:53:57 2011	Wrede

Mendenhall & Wrede When stopping AFP fill, green light took 12 minutes to come on (i.e. more than 5 mins). Called Mark who called Andy who said that the light has been sticking. If needed climb on top of the magnet and verify that the valve is closed (arrow valve closest to fill tube on AFP).

24072	Mon Dec 5 15:23:55 2011	mmendenhall

UCNA Shift Change Checklist Date: December 5, 2011 16:00 Shift Persons: Wrede, Mendenhall UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 13.97 psia Heater C pressure 13.32 psia Tungsten supply press. 300 psig Compressor 1 On on but green light is off Graphite supply press. --- psig no longer in use Compressor 2 On --- Tungsten Cool supp. 295.4 psia Tungsten Cool ret. 79.8 psia Tungsten

1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.7 psig 1630 med. press. stor. 63 psig 1410 engine speed 200 rpm 1410 TE-A 15.1 K 1410 TE-B 6.3 K 1410 TE-E 90.3 K 1410 supply press. 230 psig 1410 JT press. 122 psig 1410 return press. 3.4 psig 4K dewar pressure 268 mmHg 1K dewar pressure 7.5 psig 4K dewar level 21.25 inHe 1K dewar level 27.57 inHe 4K main flow control 5.2 V LHe temp. 1 4.9 K Heat exch. temp. 7 195 K Poly temp. 3 161 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 88.7 % SCS field 0.6950 kG SCS current 118.95 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.1 torr CC1 pressure 1.3e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.2 % AFP LN2 level 99.5 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 65 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 59.0 F West MWPC Temperature 56.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 14.8 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.2 Neopentane Flow Rate 16.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.36 kV West muon veto HV 2.37 kV East muon veto rate 2144 Hz West muon veto rate 4318 Hz Spectrometer vacuum 1.4e-5 Torr disk usage daq account 44 %

24071	Mon Dec 5 07:50:04 2011	ASaunders

UCNA Shift Change Checklist Date: December 5, 2011 08:00 Shift Persons: Andy, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 14.02 psia Heater C pressure 13.31 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 295.0 psia Tungsten Cool ret. 79.1 psia Tungsten Cool Diff 281 psia 1630 eng. 2 temp. 15.04 K 1630 JT temp. 7.51 K 1630 outlet temp. 279.1 K 1630 engine speed 204 rpm 1630 supply press. 240 psig 1630 JT press. 192 psig 1630 return press. 1.85 psig 1630 med. press. stor. 80 psig 1410 engine speed 230 rpm 1410 TE-A 15.3 K 1410 TE-B 6.3 K 1410 TE-E 90.6 K 1410 supply press. 230 psig 1410 JT press. 124 psig 1410 return press. 3.5 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.5 psig 4K dewar level 20.1 inHe 1K dewar level 18.5 inHe 4K main flow control 5.2 V LHe temp. 1 4.8 K Heat exch. temp. 7 204 K Poly temp. 3 160 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 94.3 % SCS field 0.6950 kG SCS current 118.95 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.0 torr CC1 pressure 1.1e-5 torr PPM LHe level 99.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.6 % AFP LN2 level 100.0 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 60.0 F West MWPC Temperature 57.0 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 14.5 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.3 Neopentane Flow Rate 16.5 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.36 kV West muon veto HV 2.37 kV East muon veto rate 2227 Hz West muon veto rate 4318 Hz Spectrometer vacuum 1.5e-5 Torr disk usage daq account 44 %

24070	Mon Dec 5 05:08:40 2011	Hasan

The lab's closed today, so hopefully we'll have the beam to continue with our beta decay even after 6am. The magnets are almost full(SCS@ 96.5% and AFP@ 100%) and things appear to be running smoothly...

24069	Mon Dec 5 04:27:44 2011	JCHoagland

UCNA Shift Change Checklist Date: December 5, 2011 00:00 Shift Persons: jeff hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.49 psia Heater C pressure 12.69 psia Tungsten supply press. 295 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --

1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.8 K 1630 outlet temp. 279.5 K 1630 engine speed 190 rpm 1630 supply press. 225 psig 1630 JT press. 180 psig 1630 return press. 2.0 psig 1630 med. press. stor. 85 psig 1410 engine speed 200 rpm 1410 TE-A 16.8 K 1410 TE-B 7.4 K 1410 TE-E 87.9 K 1410 supply press. 235 psig 1410 JT press. 140 psig 1410 return press. 2.9 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 20.1 inHe 1K dewar level 28.2 inHe 4K main flow control 6.3 V LHe temp. 1 4.7 K Heat exch. temp. 7 202.7 K Poly temp. 3 158.6 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 89.7 % SCS field 0.6942 kG SCS current 118.95 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 1e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 88.0 % AFP LN2 level 82.0 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 07 degC AFP chiller level light off Proton burst spacing: 5 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.26 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 61.5 F West MWPC Temperature 59.0 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 14.4 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H20 Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.4 Neopentane Flow Rate 16.4 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.41 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2179 Hz West muon veto rate 4261 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 44 %

24068	Sun Dec 4 15:24:51 2011	mmendenhall

UCNA Shift Change Checklist Date: December 4, 2011 16:00 Shift Persons: Bryan, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 53 slpm Heater B pressure 13.98 psia Heater C pressure 13.28 psia Tungsten supply press. 305 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.7 psia Tungsten Cool ret. 82.4 psia Tungsten Cool Diff 281.6 psia 1630 eng. 2 temp. 14.62 K 1630 JT temp. 7.44 K 1630 outlet temp. 279.3 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 65 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.4 K 1410 TE-E 89.4 K 1410 supply press. 235 psig 1410 JT press. 125 psig 1410 return press. 3.5 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.7 psig 4K dewar level 20.0 inHe 1K dewar level 31.3 inHe 4K main flow control 5.4 V LHe temp. 1 4.66 K Heat exch. temp. 7 194.0 K Poly temp. 3 159.1 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 8.9 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 90.7 % SCS field 0.6928 kG SCS current 118.95 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 1.8e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.6 % AFP LN2 level 73.8 % PPM current 72(6) A (T) AFP current 93.581 A AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.9 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 62.5 F West MWPC Temperature 60.0 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A -- I think the gain is a bit better this way. -MPM H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 16.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2239 Hz West muon veto rate 4207 Hz Spectrometer vacuum 2.0e-5 Torr (CC2) disk usage daq account 43 %

24067	Sun Dec 4 15:12:39 2011	SSeestrom

Continued Measurement log (Wrede, Seestrom) 10:50 AM 18221 B1: Background (on) 10:58 AM 18222 B2: Beta Run (on) 11:49 AM 18223 B3: Depol (on to off) 11:56 AM 18224 B4: Background (off) 12:04 PM 18225 B5: Beta Run (off) 12:54 PM 18226 B6: Depol (off to on) 1:01 PM 18227 B7: Beta Run (off) 1:52 PM 18228 B8: Depol (off to on) 1:59 PM 18229 B9: Background (off) 2:07 PM 18230 B10: Beta Run (on) 2:57 PM 18231 B11: Depol (on to off) 3:04 PM 18232 B12: Background (on) 3:13 PM 18233 A1: Background (off) 3:21 PM 18234 A2: Beta Run (off) 4:11 PM 18235 A3: Depol (off to on) Smooth running thru the day shift. SJS out

Measurement Log: Seestrom & Wrede 6:23 AM 18209 B1: Background (on) 6:31 AM 18210 B2: Beta Run (on) 7:21 AM 18211 B3: Depol (on to off) 7:28 AM 18212 B4: Background (off) 7:37 AM 18213 B5: Beta Run (off) 8:27 AM 18214 B6: Depol (off to on) 8:34 AM 18215 B7: Beta Run (off) 9:24 AM 18216 B8: Depol (off to on) 9:31 AM 18217 B9: Background (off) 9:40 AM 18218 B10: Beta Run (on) 10:30 AM 18219 B11: Depol (on to off) 10:37 AM 18220 B12: Background (on) 10:50 AM 18221 B1: Background (on) 10:58 AM 18222 B2: Beta Run (on) 11:49 AM 18223 B3: Depol (on to off) 11:56 AM 18224 B4: Background (off) 12:04 PM 18225 B5: Beta Run (off) 12:54 PM 18226 B6: Depol (off to on) 1:01 PM 18227 B7: Beta Run (off)

24066	Sun Dec 4 09:42:25 2011	SSeestrom

Finshed SCS fill from the 1K dewar. AT the end restored 1410 engine speed to 200.

24064	Sun Dec 4 07:36:46 2011	Wrede

UCNA Shift Change Checklist Date: December 4, 2011 00:00 Shift Persons: Seestrom (upstairs), Wrede (downstairs) UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ----------- ---------- Main return flow open He blower on Heat exchanger flow 46 slpm Heater B pressure 14.9 psia Heater C pressure 14.3 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.1 psia Tungsten Cool ret. 80.6 psia Tungsten Cool Diff 281. psia 1630 eng. 2 temp. 14.94 K 1630 JT temp. 7.36 K 1630 outlet temp. 279 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.6 psig 1630 med. press. stor. 60 psig 1410 engine speed 98 rpm 1410 TE-A 17.7 K 1410 TE-B 6.7 K 1410 TE-E 81.2 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.5 psig 4K dewar pressure 305-310 mmHg 1K dewar pressure 7 psig 4K dewar level 19.2 inHe 1K dewar level 33.43 inHe 4K main flow control 5.1 V LHe temp. 1 4.67 K Heat exch. temp. 7 196.2 K Poly temp. 3 163.4 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 8.7 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 89.7 % SCS field 0.6950 kG SCS current 118.95 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 1.4e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 98.7 % AFP LN2 level 95.0 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 61.2 F West MWPC Temperature 58.8 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H20 Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.5 Neopentane Flow Rate 16.3 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 3529 Hz West muon veto rate 5858 Hz Spectrometer vacuum 2.9e-5 Torr (CC2) disk usage daq account 43 %

24063	Sun Dec 4 05:24:30 2011	JCHoagland

beam died at around 6:05, reason is not known at this time restarted the run at B1 for the A to B run

24062	Sat Dec 3 23:38:38 2011	JCHoagland

UCNA Shift Change Checklist Date: December 4, 2011 00:00 Shift Persons: Jeff Rudiger UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.03 psia Heater C pressure 13.29 psia Tungsten supply press. 295 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.7 psia Tungsten Cool ret. 81.4 psia Tungsten Cool Diff 281.2 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.5 K 1630 outlet temp. 282.7 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 1.9 psig 1630 med. press. stor. 70 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.2 K 1410 TE-E 84.2 K 1410 supply press. 225 psig 1410 JT press. 120 psig 1410 return press. 3.5 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.5 psig 4K dewar level 18.5 inHe 1K dewar level 29.2 inHe 4K main flow control 5.1 V LHe temp. 1 4.6 K Heat exch. temp. 7 193.3 K Poly temp. 3 163.1 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 8.9 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 95 % SCS field 0.6936 kG SCS current 118.95 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 1.2e-5 torr PPM LHe level 99.8 % PPM LN2 level

current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 5 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 245 ns TBCM001I03 (H- source current): 15.28 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 62.7 F West MWPC Temperature 60.4 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 14.3 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. ---- A H2O Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.6 Neopentane Flow Rate 16.2 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2250 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 3671 Hz West muon veto rate 6243 Hz Spectrometer vacuum 2.3e-5 Torr disk usage daq account 43 %

24061	Sat Dec 3 15:39:49 2011	bz

UCNA Shift Change Checklist Date: December 3, 2011 04:16 Shift Persons: Michael, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 54 slpm Heater B pressure 13.88 psia Heater C pressure 11.81 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.0 psia Tungsten Cool ret. 82.3 psia Tungsten Cool Diff 281.3 psia 1630 eng. 2 temp. 15.78 K 1630 JT temp. 8.48 K 1630 outlet temp. 282.7 K 1630 engine speed 220 rpm 1630 supply press. 235 psig 1630 JT press. 185 psig 1630 return press. 1.7 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 14.5 K 1410 TE-B 6.3 K 1410 TE-E 81.3 K 1410 supply press. 200 psig 1410 JT press. 105 psig 1410 return press. 2 psig 4K dewar pressure 290 mmHg 1K dewar pressure 5.5 psig 4K dewar level 20.2 inHe 1K dewar level 24.2 inHe 4K main flow control 5.1 V LHe temp. 1 4.612 K Heat exch. temp. 7 192.6 K Poly temp. 3 163.2 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 98.8 % SCS field 0.6920 kG SCS current 118.95 A AFP N2 dewar level 9/10 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure 1.8e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 89.4 % AFP LN2 level 86.3 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 20 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 0.81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.6 F West MWPC Temperature 61.4 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 14.0 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.5 A H2O Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 16.0 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.4 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2166 Hz West muon veto rate 4187 Hz Spectrometer vacuum 8e-5 Torr disk usage daq account 42 %

24059	Sat Dec 3 14:29:21 2011	JCHoagland

new A-> B octet 50 minute beta run with 8 minute background 6:32 AM 18143 A1: Background (off) E=1.140 W=0.951 6:40 AM 18144 A2: Beta Run (off) E=16.051 W=17.263 Fe/GV=0.4829 SCS/GV=0.2544 7:31 AM 18145 A3: Depol (off to on) 7:38 AM 18146 A4: Background (on) 7:46 AM 18147 A5: Beta Run (on) 8:36 AM 18148 A6: Depol (on to off) 8:43 AM 18149 A7: Beta Run (on) 9:34 AM 18150 A8: Depol (on to off) 9:41 AM 18151 A9: Background (on) 9:49 AM 18152 A10: Beta Run (off) 10:39 AM 18153 A11: Depol (off to on) 10:46 AM 18154 A12: Background (off) 11:02 AM 18155 B1: Background (on) 11:10 AM 18156 B2: Beta Run (on) 12:00 PM 18157 B3: Depol (on to off) 12:07 PM 18158 B4: Background (off) 12:17 PM 18159 B5: Beta Run (off) 1:07 PM 18160 B6: Depol (off to on) 1:14 PM 18161 B7: Beta Run (off) 2:04 PM 18162 B8: Depol (off to on) 2:11 PM 18163 B9: Background (off) 2:20 PM 18164 B10: Beta Run (on) 3:10 PM 18165 B11: Depol (on to off) 3:17 PM 18166 B12: Background (on)

24060	Sat Dec 3 10:04:26 2011	Wrede

UCNA Shift Change Checklist Date: December 3, 2011 09:00 Shift Persons: Wrede, Rios UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 43 slpm Heater B pressure 14.00 psia Heater C pressure 13.25 psia Tungsten supply press. 300 psig Compressor 1 On on (light off, but broken?) Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.0 psia Tungsten Cool ret. 81.8 psia Tungsten Cool Diff 279.6 psia

rpm 1630 supply press. 235 psig 1630 JT press. 190 psig 1630 return press. 1.7 psig 1630 med. press. stor. 56 psig 1410 engine speed 200 rpm 1410 TE-A 14.9 K 1410 TE-B 6.2 K 1410 TE-E 82.6 K 1410 supply press. 228 psig 1410 JT press. 122 psig 1410 return press. 3.6 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.5 psig 4K dewar level 25.08 inHe 1K dewar level 22.53 inHe 4K main flow control 5.1 V LHe temp. 1 4.7 K Heat exch. temp. 7 189.1 K Poly temp. 3 157.1 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 85.1 % SCS field 0.6928 kG SCS current 118.95 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.6 torr CM5 pressure 2.0 torr CC1 pressure torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 83.3 % AFP LN2 level 78.0 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 5 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.18 mA "Beamplot" Capture: 81 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.0 F West MWPC Temperature 60.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 13.9 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 15.9 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2169 Hz West muon veto rate 4258 Hz Spectrometer vacuum 1.3e-5 Torr disk usage daq account 43 %

24056	Sat Dec 3 05:36:38 2011	bz

New B->A Octet Time Run # Stage Type 21:38 18119 B1 Bkg ON E= 1.068 W= 0.959 21:48 18120 B2 Beta ON E=13.267 W=12.027 Fe/GV=0.1209 SCS/GV=0.1883 22:38 18121 B3 Depol ON->OFF 22:45 18122 B4 Bkg OFF E= 1.198 W= 0.938 22:53 18123 B5 Beta OFF E=17.215 W=18.640 Fe/GV=0.4800 SCS/GV=0.2576 23:44 18124 B6 Depol OFF->ON 23:51 18125 B7: Beta Run (off) E=17.501 W=18.706 Fe/GV=0.4828 SCS/GV=0.2532 00:41 18126 B8: Depol (off to on) 00:48 18127 B9: Background (off) E=1.096 W=0.940 00:56 18128 B10: Beta Run (on) E=13.096 W=11.747 Fe/GV=0.1207 SCS/GV=0.1854 01:47 18129 B11: Depol (on to off) 01:54 18130 B12: Background (on) E=1.143 W=0.993 02:02 18131 A1 Background (off) E=1.128 W=0.973 02:10 18132 A2 Beta (off) E=16.338 W=17.457 Fe/GV=0.4835 SCS/GV=0.2573 ----- 18133 A3 Depol (off to on) ----- 18134 A4 Background (on) E=1.196 W=0.976 03:22 18135 A5 Beta (on) E=12.524 W=11.285 Fe/GV=0.1214 SCS/GV=0.1862 04:13 18136 A6 Depol (on to off) 04:20 18137 A7 Beta (on) E=12.555 W=11.353 Fe/GV=0.1217 SCS/GV=0.1894 05:10 18138 A8 Depol (on to off) 05:17 18139 A9 Background (on) E=1.091 W=0.990 05:25 18140 A10: Beta Run (off) E=16.327 W=17.542 Fe/GV=0.4849 SCS/GV=0.2558 06:15 18141 A11: Depol (off to on) 06:22 18142 A12: Background (off) E=1.075 W=0.880

Attachment 1: 4.ps

24058	Sat Dec 3 00:59:03 2011	Hasan

UCNA Shift Change Checklist Date: December 3, 2011 00:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 14.02 psia Heater C pressure 13.25 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.5 psia Tungsten Cool ret. 81.7 psia Tungsten Cool Diff 281.5 psia 1630 eng. 2 temp. 15.1 K 1630 JT temp. 7.40 K 1630 outlet temp. 282.0 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.8 psig 1630 med. press. stor. 80 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.2 K 1410 TE-E 82.8 K 1410 supply press. 230 psig 1410 JT press. 120 psig 1410 return press. 3.5 psig 4K dewar pressure 280 mmHg 1K dewar pressure 7.5 psig 4K dewar level 23.5 inHe 1K dewar level 11.5 inHe 4K main flow control 5.1 V LHe temp. 1 4.6 K Heat exch. temp. 7 186.5 K Poly temp. 3 137.3 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 8.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 90 % SCS field 0.6928 kG SCS current 118.95 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.0 torr CC1 pressure 1.7e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.1 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(6.79) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 5 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.3 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.6 F West MWPC Temperature 61.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -2.8 torr Neopentane Flow Rate 15.8 slpm East PMT Buck. Curr 0.25 A East Back. Veto Buck. 0.4 A H20 Chiller on Chiller water level 2

Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 15.8 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A Top-Veto and GMS Crate (Top Crate) 2350 V (ch00) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2263 Hz West muon veto rate 4497 Hz Spectrometer vacuum 5e-5 Torr disk usage daq account 43 %

24057	Fri Dec 2 23:06:23 2011	bz

Shift Summary There's not much to report - everything went according to plan except that pRAD kept the beam for a couple of extra hours. West PMT 4 appears to be a little iffy - Michael knows about this. The Bi peak is merged with the signal in that PMT.

24055	Fri Dec 2 16:04:59 2011	Wrede

UCNA Shift Change Checklist Date: December 2, 2001 05:00pm Shift Persons: Bryan, Chris W UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 39 slpm Heater B pressure 14.34 psia Heater C pressure 13.10 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.0 psia Tungsten Cool ret. 80.1 psia Tungsten Cool Diff 281.5 psia 1630 eng. 2 temp. 15.11 K 1630 JT temp. 7.50 K 1630 outlet temp. 281.2 K 1630 engine speed 190 rpm 1630 supply press. 230 psig 1630 JT press. 180 psig 1630 return press. 1.8 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 16.5 K 1410 TE-B 7.2 K 1410 TE-E 86.1 K 1410 supply press. 235 psig 1410 JT press. 140 psig 1410 return press. 3.4 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 22.08 inHe 1K dewar level 26.01 inHe 4K main flow control 4.8 V LHe temp. 1 4.85 K Heat exch. temp. 7 182.9 K Poly temp. 3 46.3 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.0 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 84.6 % SCS field 0.6920 kG SCS current 118.95 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.7 torr CM5 pressure 2.1 torr CC1 pressure 2.7e-5 torr PPM LHe level 99.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 87.0 % AFP LN2 level 79.9 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 20 s NO BEAM YET Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 245 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.1 F West MWPC Temperature 61.0 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 13.7 slpm East PMT Buck. Curr 0.15 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 15.6 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.40 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0016 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1871 Hz West muon veto rate 3312 Hz Spectrometer vacuum 1.3e-5 Torr disk usage daq account 42 %

24054	Fri Dec 2 14:56:39 2011	mmendenhall

I did a bucking coil current scan (SCS, AFP on) to find the best bucking coil currents for each side. The position of the Bi pulser peak (ADC channels) was used to determine the gain for each PMT. Results (shown plotted in attached image) are: Run EBeta EBack WBeta WBack E PMTs Pulser W PMTs Pulser *18102 0.25 0.50 0.25 0.40 2700.9 2666.4 2945.7 2639.3 2566.7 2059.8 2477.8 1423.7 *18103 0.20 0.40 0.20 0.30 2628.5 2652.4 3087.5 2604.8 2568.6 2024.5 2509.7 1742.2 *18104 0.15 0.30 0.15 0.20 2610.2 2648.4 3101.5 2599.6 2558.5 1995.4 2529.1 2132.1 *18105 0.10 0.20 0.10 0.10 2606.9 2640.7 3108.6 2596.9 2574.2 1823.5 2539.9 2326.3 *18106 0.05 0.10 0.05 0.00 2600.1 2631.0 3292.5 2559.9 2527.9 0 2543.2 2580.0 *18107 0.00 0.00 0.00 0.00 2558.1 2580.2 3604.3 2536.0 2386.3 0 2548.9 2689.9 *18108 -0.05 -0.10 -0.05 -0.10 2060.5 2195.4 2813.2 2136.6 2388.6 0 2529.3 2281.6 *18109 -0.10 -0.20 -0.10 -0.20 0 0 0 0 2386.5 0 2480.6 1829.3 *18110 -0.15 -0.30 -0.15 -0.30 0 0 0 0 2403.5 0 2424.0 0 *18111 -0.20 -0.40 -0.20 -0.40 0 0 0 0 2405.5 0 2455.0 0 *18112 0.30 0.60 0.30 0.50 2833.2 2713.6 2499.8 2716.8 2613.6 2052.9 2465.5 0 *18113 0.35 0.70 0.35 0.60 2106.4 2736.6 1682.0 3275.1 2741.4 2061.0 2463.5 0 *18114 0.40 0.80 0.40 0.70 1668.7 1843.6 0 1750.4 2773.7 2109.3 2468.7 0 *18115 0.45 0.90 0.45 0.80 0 0 0 0 2008.9 2243.8 2479.7 0 *18116 0.50 1.00 0.50 0.90 0 0 0 0 0 2349.7 2492.3 0 Based on this, I would recommend a current of 0.15A on the East side, 0.25A on the West. I have disconnected the bucking coil on PMT W4, since it appears to prefer 0 bucking coil current.

Attachment 1: f

f

doing Do run of adams stuff midas:18098 chris daq:1098 cycles:13 doing D+ run of adams stuff midas:18099 chris daq:1099 cycles:11 doing Po run of adams stuff midas:18100 chris daq: 1100 cycles:8 doing P+ run of adams stuff midas:18101 chris daq: 1101 cycles:8

24051	Fri Dec 2 01:06:54 2011	Hasan

UCNA Shift Change Checklist Date: December 2, 2001 01:00 Shift Persons: Jeff, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 42 slpm Heater B pressure 14.00 psia Heater C pressure 13.24 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 296.5 psia Tungsten Cool ret. 80.6 psia Tungsten Cool Diff 281.6 psia 1630 eng. 2 temp. 14.83 K 1630 JT temp. 7.23 K 1630 outlet temp. 280.9 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2.0 psig 1630 med. press. stor. 105 psig 1410 engine speed 200 rpm 1410 TE-A 14.7 K 1410 TE-B 6.1 K 1410 TE-E 83.2 K 1410 supply press. 225 psig 1410 JT press. 120 psig 1410 return press. 3.4 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.76 inHe 1K dewar level 14.88 inHe 4K main flow control 4.8 V LHe temp. 1 5.113 K Heat exch. temp. 7 193.8 K Poly temp. 3 155.5 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 8.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 88.7 % SCS field 0.6942 kG SCS current 118.95 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 2.2 torr CC1 pressure 2.8e-5 torr PPM LHe level 99.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.3 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 06 degC AFP chiller level light off Proton burst spacing: 20 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 245 ns TBCM001I03 (H- source current): 15.2 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 62.3 F West MWPC Temperature 63.4 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 14.0 slpm East PMT Buck. Curr 0.25 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart 15 ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.8 Neopentane Flow Rate 15.7 slpm West PMT Buck. Curr. 0.25 A West Back. Veto Buck. 0.4 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0016 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2104 Hz West muon veto rate 4023 Hz Spectrometer vacuum 5.7e-5 Torr disk usage daq account 42 %

24052	Fri Dec 2 00:24:13 2011	JCHoagland

spin flipper tuning freq fwd(W) ref(W) Fe/30s ------ - -- 300 28.482 5 0.06 85,80 28.492 5 0.02 190,173 28.472 5 0.09 132, 121 tuning near 28.482 doing close scan from there 28.481 5 0.04 117, 137, 103, 103 28.483 5 0.02 122, 102, 103 28.480 5 0.04 113, 103, 99 28.284 5 0.02 97, 107 28.479 5 0.05 96, 103 28.485 5 0.02 106, 97 28.478 5 0.06 116, 97, 101 28.486 5 0.02 106, 106 28.477 5 0.06 104, 115, 103 28.487 5 0.02 111, 118 *high 28.476 5 0.08 122, 120 *low 28.482 5 0.04 115, 104, 98, 96 ** 28.482 40 0.1 66, 72 ---- -- --- 282, 295 set on frequency of 28.482 as the scan of lowest point

24050	Fri Dec 2 00:07:19 2011	Hasan

If the GV dosn't open completely, closing the (black) air valve and opening the GV seems to bring it back to normal working state. Open the air valve again and it should be ready.

24049	Thu Dec 1 16:29:37 2011	bz

UCNA Shift Change Checklist Date: December 1, 2001 17:15 Shift Persons: Chris, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 27 slpm Heater B pressure 14.01 psia Heater C pressure 13.21 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.8 psia Tungsten Cool ret. 82.0 psia Tungsten Cool Diff 281.8 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.34 K 1630 outlet temp. 283.3 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 192 psig 1630 return press. 2.0 psig 1630 med. press. stor. 135 psig 1410 engine speed 200 rpm 1410 TE-A 14.7 K 1410 TE-B 6.1 K 1410 TE-E 83.3 K 1410 supply press. 225 psig 1410 JT press. 120 psig 1410 return press. 3.5 psig 4K dewar pressure 292 mmHg 1K dewar pressure 7.2 psig 4K dewar level 16.4 inHe 1K dewar level 9.1 inHe 4K main flow control 3.6 V LHe temp. 1 6.7 K Heat exch. temp. 7 196 K Poly temp. 3 46 K flapper heater cur .18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 21.9 C AFP frequency 28.462 MHz AFP forward power 0 W SCS LHe level 96.0 % SCS field 0.006 kG SCS current 0 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.8 torr CM5 pressure 622.5 torr CC1

level 94.8 % AFP LN2 level 94.8 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 9 gph AFP chiller set point 20 degC AFP chiller level light off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Auto Reset East MWPC Temperature 62.9 F West MWPC Temperature 75.0 F MWPC Pressure 582.0 torr N2 - MWPC Differential .2 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr - A East Back. Veto Buck. - A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Auto Reset MWPC Pressure 585.8 torr N2 - MWPC Differential - Neopentane Flow Rate - slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0016 V Why is this off? Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0013 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1915 Hz West muon veto rate 3345 Hz Spectrometer vacuum 604.6 Torr disk usage daq account 41 %

24048	Thu Dec 1 06:05:39 2011	bz

With about 60 mbar left in tank, got a GV closed rate of about 330 Hz (or a little more). This is without a melt and refreeze and the tune may also not be the best (beamplot capture of 70%). Afterwards, Jeff closed the check valve bypass at 20 mbar and then idled the source to 3.9V

24047	Thu Dec 1 02:26:47 2011	bz

UCNA Shift Change Checklist Date: December 1, 2001 03:21 Shift Persons: Jeff, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.98 psia Heater C pressure 13.19 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300.1 psia Tungsten Cool ret. 83.3 psia Tungsten Cool Diff 283.1 psia 1630 eng. 2 temp. 15.2 K 1630 JT temp. 7.6 K 1630 outlet temp. 284.0 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.3 psig 1630 med. press. stor. 145 psig 1410 engine speed 200 rpm 1410 TE-A 15.0 K 1410 TE-B 6.1 K 1410 TE-E 83.9 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.5 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.0 inHe 1K dewar level 19.8 inHe 4K main flow control 4.5 V LHe temp. 1 9.8 K Heat exch. temp. 7 257.5 K Poly temp. 3 222.2 K flapper heater cur .18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 11.0 C AFP frequency 28.462 MHz AFP forward power 0 W SCS LHe level 90.7 % SCS field 0.6903 kG SCS current 118.7 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 637.0 torr CM5 pressure 2.1 torr CC1 pressure --- torr PPM LHe level 98.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 92.8 % AFP LN2 level 76.5 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.1 mA "Beamplot" Capture: 70 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.7 F West MWPC Temperature 56.3 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 14.7 slpm East PMT Buck. Curr .25 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 17.8 slpm West PMT Buck. Curr. .25 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0016 V Why is this off? Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1260 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1946 Hz West muon veto rate 3687 Hz Spectrometer vacuum - Torr disk usage daq account 41 %

24046	Thu Dec 1 02:18:58 2011	bz

Serious problem with vacuum - can't get vacuum in decay trap volume to drop below 4 e-4 Torr. CC2 and Ion Gauge under SCS agree. Acceptable range for Spin Flipper is e-5 range, so can't perform AFP tune until fixed. Jeff and I are going to put the rest of the source in so that we are prepared tomorrow to do tests. Decay trap plug is slightly out so that turbos can pump on inside of the guides effectively. It is urgent to figure out where the leak is and fix it.

24045	Wed Nov 30 22:41:56 2011	MFMakela

Several wires connected tothe omega multiscan are loose, so several channels int he DAQ are acting strange. AFP pressure went wild for a period then stabalized after I moved some wires. Control of SV3, SV4, SV5 has been moved to switches in the source vacuum rack.

24044	Wed Nov 30 22:29:55 2011	MFMakela

Starting source build: SV3,SV4, MV5, MV6 UCN gatevalve closed. CC1 off Cooling source Opening

24043	Wed Nov 30 21:20:33 2011	Hasan

UCNA Shift Change Checklist Date: November 16, 2011 17:00 Shift Persons: Wrede, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 50 slpm Heater B pressure 14.14 psia Heater C pressure 13.33 psia Tungsten supply press. 300 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 302 psia Tungsten Cool ret. 83.7 psia Tungsten Cool Diff 284.7 psia 1630 eng. 2 temp. 14.77 K 1630 JT temp. 7.04 K 1630 outlet temp. 280.1 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 192 psig 1630 return press. 2.0 psig 1630 med. press. stor. 160 psig 1410 engine speed 200 rpm 1410 TE-A 15.0 K 1410 TE-B 6.1 K 1410 TE-E 83.8 K 1410 supply press. 230 psig 1410 JT press. 125 psig 1410 return press. 3.4 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 8.85 inHe 1K dewar level 16.27 inHe 4K main flow control 1.0 V LHe temp. 1 124.8 K Heat exch. temp. 7 249 K Poly temp. 3 201 K flapper heater cur .18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 15.1 C AFP frequency 28.460 MHz AFP forward power off W SCS LHe level 95.1 % SCS field 0.6881 kG SCS current 118.2 A AFP N2 dewar level 7/8 SV3 open (Xenon irradiation and transport...) SV4 open CM1 pressure 1.8 torr CM5 pressure 2.1 torr CC1 pressure --- torr PPM LHe level 98.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 84.9 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 5 gph AFP chiller set point 11 degC AFP chiller level light off Proton burst spacing: 20 Proton pulses/burst: 5/5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 15.1 mA "Beamplot" Capture: 70 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.7 F West MWPC Temperature 59.3 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 14.7 slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2600 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.7 torr N2 - MWPC Differential -2.7 Neopentane Flow Rate 17.8 slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0016 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1260 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 4543 Hz West muon veto rate 8418 Hz Spectrometer vacuum 5.2e-4 Torr (fluctuating...) disk usage daq account 92 %

24042	Wed Nov 30 20:53:13 2011	ASaunders

ramp afp to 93.581 A set shims to nominal values and cycle three times put main coil into persistence mode turn off main power supply and controller; leave shim power supply on

24040	Wed Nov 30 20:15:16 2011	MFMakela

leaktest of ucngate valve and xenon system both pass. pressure test of ucn gatevalve to ppm window 711 torr pumping on xenon system to clean it out. Waiting for beam ucn gatevalve to ppm window passed pressure test

24041	Wed Nov 30 20:05:02 2011	ASaunders

beam on ramping AFP and SCS all magnets full

24039	Wed Nov 30 15:33:18 2011	MFMakela

pumping out source 1203 mbar in tank Orange valve closed

24038	Wed Nov 30 14:17:23 2011	bz

Turned down source flow voltage to 3.5 V. Tried to balance system as best I could. The 311 valve on the 1630 seems to be EXTREMELY touchy - in fact it can cause the source to quickly warm up and then cool. This probably requires some investigation.

24037	Wed Nov 30 14:16:55 2011	bz

Vanadium Foil Runs for Chris: Flapper GV Mon MCA Ge MCA Livetime (s) Flapping 1089 1103 1628 Closed 1090 1104 1563 Flapping 1091 1105 1917 Closed 1092 1106 ? Closed 1093 1107 1806 Cl->Fl->Cl 1094 1108 7915 The last run is supposed to be a flapper closed -> flapper flapping for 40 minutes -> flapper closed for another 40 minutes. However, beam dropouts and source problems meant that it took quite a while to get the flapper flapping continuously at full rate. Therefore, the end of the run is more pertinent than the rest.

24036	Tue Nov 29 19:52:40 2011	bz

East PMT HV PMT Channel HV E1 0 1260 W2 1 1090 W3 2 1030 W4 3 950 Attached is a picture of the

Attachment 1: f

f

24035	Tue Nov 29 19:44:33 2011	Sky

I closed the check valve bypass with the D2 gauge reading 513.8 mBar.

24034	Tue Nov 29 19:20:35 2011	bz

East PMT HV PMT Channel HV E1 0 1260 W2 1 1090 W3 2 1030 W4 3 950 Attached is a picture of the check_beta_decay plots for the PMTs. The Bi peaks can be clearly seen.

Attachment 1: f

f

24033	Tue Nov 29 19:19:04 2011	bz

West PMT HV PMT Channel HV W1 24 1420 W2 20 1090 W3 26 1180 W4 27 1100 Attached is a picture of the check_beta_decay plots for the PMTs. The Bi peaks can be clearly seen.

Attachment 1: f

f

24032	Tue Nov 29 19:16:13 2011	bz

the SCS is now pumped down. In order to get the vacuum in the SCS to a level suitable for UCN, I have closed valve 7 on both gas carts and I have opened Valves 9 and 10 on both gas carts, so the gas carts are now being pumped on with the neopentane pump. The west gas cart appears to have a new leak and that might warrant some investigation. With valve 7 closed and the valves to the neopentane pump open, the pressure in the west cart is hanging around 4 torr, which seems awfully high for what should be a sealed volume with a scroll pump pumping on it. DO NOT touch the gas carts unless you know what you are doing, but also please keep an eye on the pressure in the west gas cart and on the temperature of the turbos to make sure that everything is ok.

24031	Tue Nov 29 18:31:48 2011	MFMakela

1630 parameters: Return pressure 1.5- 2 psi Speed 200-220 rpm Eng 2 temp <16K Otherwise call me

24030	Tue Nov 29 18:29:02 2011	MFMakela

Making source: SV3, MV5, MV6 UCN gatevalve closed (leave gatevalve closed) Source cooling Orange valve open 1207 mbar in tank Source voltage 4.5 Check valve bypass - open Source freezing in.

24028	Tue Nov 29 17:56:10 2011	MFMakela

New source vacuum configuration testing: Passed leak test at 5.00e-6 mbar l/s with leak detector in parallel scroll pump. Pressure test 741 torr start 12:15, 15:30 pm , 742 torr - pass pumping source passed leak test at 6.0e-6 mbar l/s

24029	Tue Nov 29 16:47:53 2011	Hasan

UCNA Shift Change Checklist Date: November 29, 2011 17:00 Shift Persons: Sky, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow --- slpm Heater B pressure 13.96 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 287.7 psia Tungsten Cool ret. 71.8 psia Tungsten Cool Diff 282.1 psia 1630 eng. 2 temp. 17.07 K 1630 JT temp. 248.2 K 1630 outlet temp. 273.3 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 230 psig 1630 return press. 1.0 psig 1630 med. press. stor. 200 psig 1410 engine speed 200 rpm 1410 TE-A 16.8 K 1410 TE-B 7.2 K 1410 TE-E 87.4 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 17.99 inHe 1K dewar level 33.29 inHe 4K main flow control --- V LHe temp. 1 --- K (D2 in tank) Heat exch. temp. 7 304.23 K Poly temp. 3 --- K flapper heater cur --- A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8

1410 started MPS wil rise for a while longer, then .... Working on 1630 ...

24026	Fri Nov 25 13:18:18 2011	JCHoagland

filled the afp from the 500l dewar, after the dewar was emptied i set up the stinger so that the left over gas would still go into the system.

24025	Wed Nov 23 14:06:31 2011	CLMorris

I installed a 0.25mm thick 10 mm diameter vanadium disc through the little b port. The disk was lowered to the guide directly beneath the little b port with a vacuum chuck, and affixed to the guide with 3mm x 3mm of double sided tape. The instalation was verified with a small boroscope borrowed from Pete Paszuchanics at Jason suggestion. The disc weighs 0.118+/-0.001 g.

24024	Mon Nov 21 12:43:41 2011	MFMakela

Melting out source: Checking valves MV6. SV3, MV2, SV4 UCN gatevalve - closed Pumping poet - open Orange -open check valve bypass - open source voltage to zero.... blower - on 1205-10 mbar in tank 118 mbar in guide

24022	Mon Nov 21 08:31:05 2011	MFMakela

1630 to do: Check for helium shutdown purge with n2 during warm up. check for helium check for blow by I1 needs careful checks compressor switch cover JT pressure into daq? Fix starter motor replace cam follower bearings new pulley? pumpout grease 1410 warm tuesday check for He check valves pumpout Source: New valve control switches Move vacuum cart install V foil pumpout transfer lines inspect - MV6 and MV5 - repair as needed Other: SCS gatevalve controls Pumpout line from dewars to milking station Clean area

24023	Mon Nov 21 08:14:35 2011	MFMakela

Tungsten target heliu compressor turned off - Mark

24021	Sun Nov 20 13:30:47 2011	JCHoagland

put a little dry nitrogen in V335 on the 1410 at around 10 this morning

24020	Sat Nov 19 16:13:36 2011	MFMakela

1410 off (and valved off) use 1630 for everything. 1K dewar vent valve cracked open

24014	Fri Nov 18 15:46:10 2011	bz

Period of signal generated by new RF signal generator is ~35ns. There is some variation in the period measured by the oscilloscope, and the measured frequency of the signal produced by the signal generator varies from 27.9 to 28.7 MHz (which may be a fault of the oscilloscope and not the signal generator). The signal coil frequency varies from about 24.38 to 24.65 MHz. This would be a significant problem and cut into the efficiency of the spin flipper considerably, since the efficiency drops to almost 0 outside of a very narrow range of frequencies.

24017	Fri Nov 18 14:22:32 2011	bz

Shims cycled at 0 Frequency scan RF Fwd (W) Ref (W) Fe/30s 28.482 5 .1 290 off 0 0 293 28.492 5 ~0 275 28.502 5 ~0 291 28.512 5 ~0 273 28.522 5 .05 260 28.532 5 .13 270 28.542 5 .25 291 28.472 5 .2 286 28.462 5 .33 72 28.462 5 .33 99 off 0 0 279 28.466 8 .4 154 28.457 5 .4 147 28.459 5 .38 113 28.460 5 .38 105 28.461 5 .36 103 28.462 5 .35 65 28.463 5 .3 95 28.464 5 .28 89 Took a depol run, number of depol counts in secondary bump is down by half from previous run, please see MCA Run 1084 for the depol run. We tuned to 28.462 and pushed forward power to about 7 W for the quartet we took. Did not include counts in quartet in run_summary.dat as this run has a large depol fraction.

24018	Fri Nov 18 14:13:36 2011	bz

Our Badly Polarized Octet A* Started a bad octet (T0 still in), ignore 18002 to 18006 05:25 18007 A1 Bkg OFF E= 2.856 W= 2.779 05:29 18008 A2 Beta OFF E=17.188 W=18.619 Fe/GV=0.4762 SCS/GV=0.2631 05:50 18009 A3 Depol OFF->ON 05:57 18010 A4 Bkg ON E= 1.220 W= 1.041 06:01 18011 A5 Beta ON E=12.041 W=11.093 Fe/GV=0.1353 SCS/GV=0.1959 06:21 18012 A6 Depol ON->OFF 06:28 18013 A7 Beta ON E=12.182 W=11.144 Fe/GV=0.1385 SCS/GV=0.1925 06:48 18014 A8 Depol ON->OFF 06:55 18015 A9 Bkg ON E= 1.017 W= 0.959 07:01 18016 A10 Beta OFF E=16.718 W=18.078 Fe/GV=0.4687 SCS/GV=0.2634 07:21 18017 A11 Depol OFF->ON 07:28 18018 A12 Bkg OFF E= 1.126 W=

were on the whole time, and nothing was changed before they dropped to the correct rate. Therefore, I have no explanation for the anamolous rates. THESE ARE NOT IN RUN_SUMMARY.DAT - DO NOT ADD THEM TO RUN_SUMMARY.DAT AS THEY ARE NOT GOOD COUNTS

24010	Fri Nov 18 14:11:35 2011	bz

After noticing the central field in the AFP was down by a large amount, we looked at the history of the AFP. It appears that after the SCS fill early this morning, there was an anomalous pressure spike - maybe a miniquench? It's not clear when this changed, as we haven't had a chance to investigate yesterday's data.

Attachment 1: 3_Nov18_00.27.10.gif

3_Nov18_00.27.10.gif

24019	Fri Nov 18 11:43:16 2011	ASaunders

the AFP appears to be ramped down we vented the section between gate valve and PPM window

24016	Fri Nov 18 04:26:28 2011	JCHoagland

left T0 in noticed after first triplet of beta run so restarted run after taking it out

24015	Fri Nov 18 03:37:54 2011	JCHoagland

since deploarization was a problem we did a tune of the afp with all shims dumped 3 times and kept at zero current. with this set up we got a new tune of 28.462MHz but could only get the wattage up to to 7 W before reflexted power was at .4. so now we are doing a quartet of beta decay until the beam goes off with run starting at 18002 on midas.

24013	Fri Nov 18 02:11:54 2011	bz

UCNA Shift Change Checklist Date: November 18, 2011 02:08 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 14.00 psia Heater C pressure 13.23 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 398.9 psia Tungsten Cool ret. 82.0 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 14.47 K 1630 JT temp. 7.65 K 1630 outlet temp. 278.4 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 193 psig 1630 return press. 2.5 psig 1630 med. press. stor. 85 psig 1410 engine speed 200 rpm 1410 TE-A 15.6 K 1410 TE-B 6.7 K 1410 TE-E 88.4 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.4 psig 4K dewar pressure 330 mmHg 1K dewar pressure 7.8 psig 4K dewar level 18.9 inHe 1K dewar level 21.5 inHe 4K main flow control 4.5 V LHe temp. 1 4.8 K Heat exch. temp. 7 182.8 K Poly temp. 3 115.5 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status down AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 85.8 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 1.1e-5 torr PPM LHe level 81.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.0 % AFP LN2 level 87.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s (Beam Off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.8 F West MWPC Temperature 60.7 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.8 torr N2 - MWPC Differential -49 torr broken... Neopentane Flow Rate -1.70?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.38 A West Back. Veto Buck. 0.48 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1954 Hz West muon veto rate 3705 Hz Spectrometer vacuum 3e-5 Torr disk usage daq account 91%

24012	Fri Nov 18 01:05:23 2011	ARYoung

Checked the Raman laser setup. It will probably need to be realigned. There were no peaks in the spectrum we took last night (but plenty of D2 in cell, apparently...I guess we should double check that...).

Performed another D(-), larged depol. Since we've just reramped the field, try to retune flipper...

24009	Thu Nov 17 23:20:05 2011	ARYoung

It appears I was wrong: the central field in the AFP magnet appears to have been wrong. We have reset the current and are investigating how this might have happened...

24008	Thu Nov 17 23:17:59 2011	JCHoagland

was getting ready to try to cycle shims on afp again, when trying to match the current so as to turn the heater switch on. When i pressed the heater switch the current on the afp went down to 90.8 amps instead of staying matched at 93.581 that it was set to. after setting the heater to the new current i ramped the magnet back up to 93.581 amps and then proceded to cycle the shims.

24003	Thu Nov 17 23:11:08 2011	Hasan

Attachment 1: 3_Nov18_00.27.10.gif

3_Nov18_00.27.10.gif

24007	Thu Nov 17 23:02:12 2011	ARYoung

9:22 tried a normal D(-) run, but forgot to plug in spin flipper (ignore runs 1078/17998) 10:50 Try D(-) again (runs 1079/17999) -- huge depolarization seen Tried Depol Transfer line (keep shutter closed, load for 50 s, clean for 15s, change flipper state) -- Guides seem to drain continuously, with no change of flipper state (seems UCN are completely depolarized by flipper, so no separation of populations) Conclusion: must be the AFP gradient is bad. 11:00 start AFP fill 11:40 stopped fill Try to cycle shims!

24006	Thu Nov 17 23:01:46 2011	ARYoung

Frequency (MHz) forward P(W) reflected P(W) Iron Foil Cts Gate Valve Cts 28.478 4 0.125 235 210 28.472 4 0.250 203 210 28.467 4 0.250 209 202 28.462 4 0.3 262 204 28.457 4 0.4 278 205 28.452 4 0.45 299 204 28.447 4 0.55 270 202 28.482 4 0.125 235 203 28.487 4 0.125 253 207 28.492 4 0.125 233 204 28.497 4 0.0675 229 202 28.502 4 0.0675 253 200 28.507 4 0.0675 255 200 28.512 4 0.0675 266 206 28.517 4 0.0675 290 199 28.482 4 0.250 212 204 off 317 See posted file by Hasan 9:22 tried a normal D(-) run, but forgot to plug in spin flipper (ignore runs 1078/17998)

24005	Thu Nov 17 23:01:11 2011	ARYoung

9:22 Checked that the guide pressure was reasonable (1.3x10^-5) Checked that the decay trap plug was in (it was). Noticed that, when changing state, the spin flipper reflected power was overshooting 0.5W but then recovering to a value below 0.5W. Spin flipper forward power was 40 W. Spin flipper frequency was 28.482 MHz. Frequency generator power was 9.2dB Yellow, pickup coil voltage was 22V. 9:33 Started frequency scan (turn power down to 4W, change frequency, wait 60 s, read Iron Foil Monitor scalar for 30s count, read GV monitor for 60s average, record forward power and reflected power:

24004	Thu Nov 17 22:59:55 2011	ARYoung

Summary of 6 - 11 PM run: spin flipper problems 8:33 started with "SCS Depol" runs where we did runs similar to our normal D(-) runs, but we increased the holding time in the SCS to 90s (from 40s). We saw massive depolarization peaks and "right" spin signals after our depol measurement (which was 35 s) seemed to merge continuously with the depol signal. Assumed spin flipper tune had drifted

24002	Thu Nov 17 22:06:15 2011	RRios

Decay trap plug was seen to be still plugged in

24001	Thu Nov 17 19:38:10 2011	RRios

Time Run MCA Fast Daq H-Time Cycles Notes 20:33 SCS Depol 1076 17997 90

24000	Thu Nov 17 17:26:52 2011	Hasan

We'll have beam till 8am tomorrow morning.

UCNA Shift Change Checklist Date: November 17, 2011 16:15 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 19 slpm Heater B pressure 14.05 psia Heater C pressure 13.12 psia Tungsten supply press. 50 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.4 psia Tungsten Cool ret. 83.0 psia Tungsten Cool Diff 282.6 psia 1630 eng. 2 temp. 15.16 K 1630 JT temp. 7.99 K 1630 outlet temp. 278.2 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 2.4 psig 1630 med. press. stor. 85 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.6 K 1410 TE-E 98.5 K 1410 supply press. 230 psig 1410 JT press. 110 psig 1410 return press. 3.4 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.0 psig 4K dewar level 19.48 inHe 1K dewar level 21.27 inHe 4K main flow control 3.0 V LHe temp. 1 8.618 K (Source freezing in progress...) Heat exch. temp. 7 199.26 K Poly temp. 3 64.418 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8

23998	Thu Nov 17 15:39:11 2011	RRios

DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power -- W SCS LHe level 92.3 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 19.5 torr <------ Melt and refreeze CM5 pressure 1.7 torr CC1 pressure -- torr PPM LHe level 81.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 82.7 % AFP LN2 level 73.8 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: -- sec Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H-source current): -- mA "Beamplot" Capture: -- % MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.5 F West MWPC Temperature 63.4 F MWPC Pressure 100 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -4.8?? Neopentane Flow Rate -1.73?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1885 Hz West muon veto rate 3243 Hz Spectrometer vacuum 1.6e-5 Torr disk usage daq account 91 %

23992	Thu Nov 17 15:04:03 2011	RRios

SCS Depol Measurement Labview settings for 90s Holding Time Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 10000 0 0 0 0 1 1 0 0 1 10100 0 0 0 0 1 0 0 1 0 18500 0 0 0 0 1 0 1 1 0 19000 0 1 0 0 1 0 1 1 0 23000 0 1 0 0 1 0 1 1 0 33000 0 1 0 0 1 0 0 1 0 CORRECTION - according to Raymond, line 23000 should read 0 1 0 0 1 0 0 1 0

23997	Thu Nov 17 13:20:51 2011	MFMakela

Melt and refreeze against tank pressure (orage valve open): 185 mbar in the tank. MV6 SV3 MV2 UCN gatevalve Closed Pumping port open source drive voltage 4.6->1 VDC Opened to tank at 185 mbar Started cooling ~190 mbar cooling at 2.5 VDC (slow) Closed check valve bypass 2.7 VDC

23993	Thu Nov 17 04:03:17 2011	bz

More Depol Time Type MCA MIDAS Cycles Notes 00:23 D+(25) 1071 17991 10 01:42 D+(50) 1072 17992 10 03:00 D-(50) 1073 17993 10 04:19 SCS Depol 1074 17994 8 CCR took beam on last cycle, but cycle probably still good

23996	Thu Nov 17 00:32:53 2011	JCHoagland

UCNA Shift Change Checklist Date: November 17, 2011 00:00 Shift Persons: jeff, bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 38 slpm Heater B pressure 13.99 psia Heater C pressure 13.22 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.7 psia Tungsten Cool ret. 82.6 psia Tungsten Cool Diff 280.9 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.9 K 1630 outlet temp. 277.9 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 3.2 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.6 K 1410 TE-E 92.9 K 1410 supply press. 225 psig 1410 JT press. 110 psig 1410 return press. 3.3 psig 4K dewar pressure 350 mmHg 1K dewar pressure 7.5 psig 4K dewar level 19.7 inHe 1K dewar level 28.6 inHe 4K main flow control 4.6 V LHe temp. 1 4.8 K Heat exch. temp. 7 184.3 K Poly temp. 3 113.7 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 87.8 % SCS field 0.6889 kG SCS current 118.2 A AFP N2

1.1e-5 torr PPM LHe level 81.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 88.7 % AFP LN2 level 82.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5sec Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.56 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.7 F West MWPC Temperature 64.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -4.8??? Neopentane Flow Rate -1.73?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1854 Hz West muon veto rate 3626 Hz Spectrometer vacuum 7e-6 Torr disk usage daq account 91 %

23995	Thu Nov 17 00:25:54 2011	JCHoagland

UCNA Shift Change Checklist Date: November 17, 2011 00:00 Shift Persons: jeff, bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 38 slpm Heater B pressure 13.99 psia Heater C pressure 13.22 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 297.7 psia Tungsten Cool ret. 82.6 psia Tungsten Cool Diff 280.9 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 7.9 K 1630 outlet temp. 277.9 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 3.2 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 15.2 K 1410 TE-B 6.6 K 1410 TE-E 92.9 K 1410 supply press. 225 psig 1410 JT press. 110 psig 1410 return press. 3.3 psig 4K dewar pressure 350 mmHg 1K dewar pressure 7.5 psig 4K dewar level 19.7 inHe 1K dewar level 28.6 inHe 4K main flow control 4.6 V LHe temp. 1 4.8 K Heat exch. temp. 7 184.3 K Poly temp. 3 113.7 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 87.8 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.8 torr CC1 pressure 1.1e-5 torr PPM LHe level 81.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 88.7 % AFP LN2 level 82.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5sec Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.56 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.7 F West MWPC Temperature 64.2 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -4.8??? Neopentane Flow Rate -1.73?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1854 Hz West muon veto rate 3626 Hz Spectrometer vacuum 7e-6 Torr disk usage daq account 91 %

23994	Wed Nov 16 23:36:13 2011	RRios

Plan for tonight: Continue with Adam's measurements. Ex situ D+ and D- Then if there's time: do the timing SCS depol in log entry 23992

23989	Wed Nov 16 23:29:34 2011	RRios

SCS depolarization measurements. These measurements are used to determine the location of the depolarization, from either the upstream of the shutter or downstream by comparing the depolarization rates from two or more holding periods Labview settings for 30s Holding Time Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 10000 0 0 0 0 1 1 0 0 1 10100 0 0 0 0 1 0 0 1 0 12500 0 0 0 0 1 0 1 1 0 13000 0 1 0 0 1 0 1 1 0 23000 0 1 0 0 1 0 1 1 0 33000 0 1 0 0 1 0 0 1 0 Labview settings for 90s Holding Time Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 10000 0 0 0 0 1 1 0 0 1 10100 0 0 0 0 1 0 0 1 0 12500 0 0 0 0 1 0 1 1 0 19000 0 1 0 0 1 0 1 1 0 29000 0 1 0 0 1 0 1 1 0 39000 0 1 0 0 1 0 0 1 0 Edit: We are going to do a timing set up for tonight

23988	Wed Nov 16 23:28:33 2011	RRios

Depol Measurements Time Type MCA Midas AFP Cycles Notes ?? TOF- 1067 17984 on->off bad run, source was still in decay trap 19:12 TOF- 1068 17985-6 on->off 11 20:52 TOF+ 1069 17987-8 off->on 10 22:43 D-(25) 1070 17989 14

Adam's D+-(T) where T(sec)=25, 50, 75 D(T) measurement is a usual ex situ D run with the wrong-spin counting interval reduced from 100s to Ts. D-(25) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 0 0 0 1 1 0 0 1 15100 0 0 0 0 1 0 0 1 0 17500 0 0 0 0 1 0 1 1 0 18000 0 1 0 0 1 0 1 1 0 20500 0 1 0 0 1 0 0 1 0 43500 0 1 0 0 1 0 0 1 0 D-(50) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 0 0 0 1 1 0 0 1 15100 0 0 0 0 1 0 0 1 0 17500 0 0 0 0 1 0 1 1 0 18000 0 1 0 0 1 0 1 1 0 23000 0 1 0 0 1 0 0 1 0 46000 0 1 0 0 1 0 0 1 0 D-(75) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 0 0 0 1 1 0 0 1 15100 0 0 0 0 1 0 0 1 0 17500 0 0 0 0 1 0 1 1 0 18000 0 1 0 0 1 0 1 1 0 25500 0 1 0 0 1 0 0 1 0 48500 0 1 0 0 1 0 0 1 0 D+(25) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 0 0 0 1 1 1 0 1 15100 0 0 0 0 1 0 1 1 0 17500 0 0 0 0 1 0 0 1 0 18000 0 1 0 0 1 0 0 1 0 20500 0 1 0 0 1 0 1 1 0 43500 0 1 0 0 1 0 1 1 0 D+(50) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 0 0 0 1 1 1 0 1 15100 0 0 0 0 1 0 1 1 0 17500 0 0 0 0 1 0 0 1 0 18000 0 1 0 0 1 0 0 1 0 23000 0 1 0 0 1 0 1 1 0 46000 0 1 0 0 1 0 1 1 0 D+(75) Time EDM Shutter b Trig Flapper Beam AFP Switcher GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 0 0 0 1 1 1 0 1 15100 0 0 0 0 1 0 1 1 0 17500 0 0 0 0 1 0 0 1 0 18000 0 1 0 0 1 0 0 1 0 25500 0 1 0 0 1 0 1 1 0 48500 0 1 0 0 1 0 1 1 0

23990	Wed Nov 16 21:56:33 2011	RRios

Beam goes off at 5am!

23983	Wed Nov 16 16:39:18 2011	bz

All of the polarimetry runs from last night: Time Type MCA Fastdaq cycles Notes 22:46 SFT- 1056 17960-62 11 00:03 SFT+ 1057 17963-65 11 cycles 1 and 2 have a large gap between them due to software glitch 01:35 TOF- 1059 17967-70 13 03:30 TOF+ 1060 17971-74 16 some cycles bad due to liquifier issue **EDIT** After checking timestamps, the timestamp that should be 28010 was noticed to be 28100, so TOF runs are probably not useable.

23987	Wed Nov 16 16:29:24 2011	Hasan

UCNA Shift Change Checklist Date: November 16, 2011 17:00 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 13.3 psia Heater C pressure 14.1 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 301 psia Tungsten Cool ret. 84 psia Tungsten Cool Diff 284 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 8.5 K 1630 outlet temp. 279 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.9 K 1410 TE-E 92.0 K 1410 supply press. 235 psig 1410 JT press. 120 psig 1410 return press. 3.4 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7.5 psig 4K dewar level 20.4 inHe 1K dewar level 20.5 inHe 4K main flow control 4.6 V LHe temp. 1 5.0 K Heat exch. temp. 7 182 K Poly temp. 3 102 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 93.1 % SCS field 0.6881 kG SCS current 118.2 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 2.7e-5 torr PPM LHe level 81.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: 1\20 Proton pulses/burst: 5/5 Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current): 13.1 mA "Beamplot" Capture: 70 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.7 F West MWPC Temperature 67.5 F MWPC Pressure 100.1 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.2 Neopentane Flow Rate -1.69?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 2720 Hz West muon veto rate 5448 Hz Spectrometer vacuum 1.2e-5 Torr disk usage daq account 91 %

23986	Wed Nov 16 16:16:37 2011	RRios

UCNA Shift Change Checklist Date: November 15, 2011 17:35 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 13.3 psia Heater C pressure 14.1 psia Tungsten supply press. 310

supp. 301 psia Tungsten Cool ret. 84 psia Tungsten Cool Diff 284 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 8.3 K 1630 outlet temp. 279 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.9 K 1410 TE-E 92.0 K 1410 supply press. 237 psig 1410 JT press. 120 psig 1410 return press. 120 psig 4K dewar pressure 305 mmHg 1K dewar pressure 7.5 psig 4K dewar level 20.4 inHe 1K dewar level 20.5 inHe 4K main flow control 4.6 V LHe temp. 1 5.0 K Heat exch. temp. 7 182 K Poly temp. 3 103 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8

23982	Wed Nov 16 16:11:05 2011	bz

For some reason, at about 5:00 AM many of the windows machines started showing a dialog box informing us of a restart in 90 minutes. The option to forgo the restart was not offered, and I couldn't figure out a way to stop it, so at around 6:30, quite a few of our windows machines should spontaneously restart. If you are missing anything or find that all of the windows have disappeared, this is why.

23985	Wed Nov 16 07:11:45 2011	bz

A couple more polarimetry runs after we realized we still had beam: Time Type MCA Fastdaq cycles Notes 07:16 TOF+ 1061 17977 3 07:42 TOF- 1062 17978 3 cycle 3 bad because CCR took beam

23984	Wed Nov 16 05:08:23 2011	bz

Labview settings for TOF runs: TOF+ 0 0 1011 1101 10 0 1001 1101 15000 0 0001 1101 15100 0 0001 0110 17500 0 0001 0010 18000 0 1001 0010 18500 0 1001 0110 18510 0 1001 0010 28000 0 1001 0110 28010 0 1001 0010 51000 0 1001 0101 TOF- 0 0 1011 1001 10 0 1001 1001 15000 0 0001 1001 15100 0 0001 0010 17500 0 0001 0110 18000 0 1001 0110 18500 0 1001 0010 18510 0 1001 0110 28000 0 1001 0010 28010 0 1001 0110 51000 0 1001 0001

23981	Tue Nov 15 23:09:46 2011	Sky

Started taking SFT- and SFT+ polarimetry data. Time Run Slow DAQ Fast DAQ Cycles 2246 SFT- 1056 17960-17962 11 0003 Fast DAQ automatically started new runs because of file size.

23980	Tue Nov 15 17:11:50 2011	Hasan

UCNA Shift Change Checklist Date: November 14, 2011 17:35 Shift Persons: Sky, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 12.16 psia Heater C pressure 11.85 psia Tungsten supply press. 120 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 298.2 psia Tungsten Cool ret. 80.4 psia Tungsten Cool Diff 284.6 psia 1630 eng. 2 temp. 14.93 K 1630 JT temp. 8.23 K 1630 outlet temp. 279.3 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 1.9 psig 1630 med. press. stor. 45 psig 1410 engine speed 176 rpm 1410 TE-A 11.6 K 1410 TE-B 5.2 K 1410 TE-E 75.2 K 1410 supply press. 157 psig 1410 JT press. 85 psig 1410 return press. 0!! psig 4K dewar pressure 295 mmHg 1K dewar pressure 3.8 psig 4K dewar level 22.6 inHe 1K dewar level 27.5 inHe 4K main flow control 4.5 V LHe temp. 1 5.15 K Heat exch. temp. 7 258.6 K Poly temp. 3 304.7 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 87.2 % SCS field 0.6873 kG SCS current 118.2 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.7 torr CC1 pressure --- torr (source making in progress..) PPM LHe level 81.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 98.5 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: OFF (Beam Off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 66.0 F West MWPC Temperature 64.4 F MWPC Pressure 100.3 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate 13.0 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.4?? Neopentane Flow Rate -1.67?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1851 Hz West muon veto rate 3343 Hz Spectrometer vacuum 1.5e-5 Torr disk usage daq account 90 %

23979	Tue Nov 15 15:52:31 2011	RRios

Notes for late night shift: Fill SCS from 1K Dewar We will have beam "late into the morning"

23978	Tue Nov 15 11:07:16 2011	MFMakela

Starting to biuld source 1218 mbar in tank

23977	Tue Nov 15 09:15:39 2011	MFMakela

Pumping out the source: Pumped out D2 with scroll Added 120 torr Ar and pumped out to 4 torr three time (pumped with scroll) Pumping out source with turbo CC1 - on Pumping out front source transfer line (need to switch back to source before cooling. Cooling to start at 12 noon...

23976	Tue Nov 15 06:49:38 2011	bz

Runs from last night, which was otherwise very boring: 00:39 Hour long calibration run 17948,17949,17950 03:44 Hour long calibration run 17951,17952,17953 06:43 Hour long calibration run 17954,17955,17956 The third run in each is very small, and contains almost no data.

23975	Tue Nov 15 02:46:50 2011	bz

UCNA Shift Change Checklist Date: November 14, 2011 16:30 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.01 psia Heater C pressure 13.20 psia Tungsten supply press. 270 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 206.8 psia Tungsten Cool ret. 206.1 psia Tungsten Cool Diff -0.3 psia 1630 eng. 2 temp. 15.73 K 1630 JT temp. 9.3 K 1630 outlet temp. 280.2 K 1630 engine speed 190 rpm 1630 supply press. 220 psig 1630 JT press. 182 psig 1630 return press. .7 psig 1630 med. press. stor. 78 psig 1410 engine speed 200 rpm 1410 TE-A 14.4 K 1410 TE-B 6.3 K 1410 TE-E 88.3 K 1410 supply press. 225 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 237 mmHg 1K dewar pressure 7.6 psig 4K dewar level 17.06 inHe 1K dewar level 26.75 inHe 4K main flow control off V LHe temp. 1 over K Heat exch. temp. 7 309 K Poly temp. 3 over K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 99.9 % SCS field 0.6903 kG SCS current 118.2 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 94.7 torr CM5 pressure 1.6 torr CC1 pressure --- torr PPM LHe level 82.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 84.1 % AFP LN2 level 73.8 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: OFF (Beam Off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.0 F West MWPC Temperature 62.2 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.2?? Neopentane Flow Rate -1.69?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1946 Hz West muon veto rate 3336 Hz Spectrometer vacuum 1.4e-5 Torr disk usage daq account 89 %

23973	Mon Nov 14 21:46:09 2011	Hasan

hour long sealed source calibration runs with two hours gap...position settings unchanged from previous run... Start Time End Time Run Fast Daq Source Orientation/Position 18:37 19:37 Hour Long Source Calibration 17942+17943 Unchanged 21:37 22:37 Hour Long Source Calibration 17945+17946 Unchanged next run should be started around 00:37

23974	Mon Nov 14 17:57:02 2011	MFMakela

Please run hour long calibration runs every three hour though the night. Leave the sources in the same position. Please keep the magnets full. If things look stable you can leave between runs and filling. mark and andy

23972	Mon Nov 14 16:49:49 2011	Hasan

UCNA Shift Change Checklist Date: November 14, 2011 16:30 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open () He blower off Heat exchanger flow 0 slpm Heater B pressure 14.0 psia Heater C pressure 13.3 psia Tungsten supply press. 235

supp. 206 psia Tungsten Cool ret. 205 psia Tungsten Cool Diff 0.5 psia 1630 eng. 2 temp. 14.1 K 1630 JT temp. 7.3 K 1630 outlet temp. 277 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 1.0 psig 1630 med. press. stor. 100 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.3 K 1410 TE-E 88 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.5 psig 4K dewar level 19.4 inHe 1K dewar level 16.2 inHe 4K main flow control off V LHe temp. 1 324 K Heat exch. temp. 7 302 K Poly temp. 3 324 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 86.2 % SCS field 0.6895 kG SCS current 118.2 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 94.3 torr CM5 pressure 1.6 torr CC1 pressure --- torr PPM LHe level 82.1 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: OFF (Beam Off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.6 F West MWPC Temperature 65.1 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.2?? Neopentane Flow Rate -1.69?? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1918 Hz West muon veto rate 3383 Hz Spectrometer vacuum 1.5e-5 Torr disk usage daq account 89 %

23971	Mon Nov 14 07:51:06 2011	ASaunders

run 17928 is an hour-long source calibration run; writing on source facing east.

23969	Mon Nov 14 07:50:46 2011	ASaunders

run 17925 is an hour-long source calibration run; writing on source facing west. This run continues into runs 17926 and run 17927.

23970	Mon Nov 14 06:37:25 2011	bz

Filling out the sources scan: Leaving the sources in the same orientation as for Ruediger's final position, 17899 .25" 17900 .75" 17901 1.25" 17902 1.75" 17903 2.25" 17904 2.75" 17905 3.25" 17906 3.75" 17907 4.25" 17908 4.75" 17909 5.25" 17910 5.75" flipped orientation of sources 17911 5.75" 17912 5.25" 17913 4.75" 17914 4.25" 17915 3.75" 17916 3.25" 17917 2.75" 17918 2.25" 17919 1.75" 17920 1.25" 17921 .75" 17922 .25"

23968	Mon Nov 14 01:25:41 2011	JCHoagland

UCNA Shift Change Checklist Date: November 14, 2011 1:00 Shift Persons: jeff, bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open () He blower off Heat exchanger flow 0 slpm Heater B pressure 14.06 psia Heater C pressure 13.31 psia Tungsten supply press. 265 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 214.0 psia Tungsten Cool ret. 213.1 psia Tungsten Cool Diff -0.4 psia 1630 eng. 2 temp. 14.1 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.9 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.5 psig 1630 med. press. stor. 160 psig 1410 engine speed 200 rpm 1410 TE-A 14.6 K 1410 TE-B 6.2 K 1410 TE-E 87.1 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.5 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.8 psig 4K dewar level 10.5 inHe 1K dewar level 9.6 inHe 4K main flow control off V LHe temp. 1 250.4 K Heat exch. temp. 7 256.4 K Poly temp. 3 258.4 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 97.2 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 90.9 torr CM5 pressure 1.5 torr CC1 pressure --- torr PPM LHe level 82.2 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.9 % AFP LN2 level 74.5 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: OFF (Beam Off) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: --- ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 66.1 F West MWPC Temperature 64.7 F MWPC Pressure 100 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC

Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2201 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1835 Hz West muon veto rate 3359 Hz Spectrometer vacuum 2.0e-5 Torr disk usage daq account 88 %

23967	Sun Nov 13 19:45:52 2011	rpicker

more load lock source calibration runs the writing on the sources is facing east. working our way back in... run position facing of writing on sources 17885 first source in east 17886 in .5" east 17887 in 1" east 17888 in 1.5" east 17889 in 2" east 17890 in 2.5" east 17892 ! in 3.5" east 17893 in 4" east 17894 in 4.5" east 17895 in 5" east 17896 in 5.5" east 17897 in 6" east 17898 in 6.5" east done.

23965	Sun Nov 13 17:03:39 2011	rpicker

more load lock source calibration runs the writing on the sources is facing west. run position facing of writing on sources 17875 back 2" west 17876 back 2.5" west 17877 back 3" west 17878 back 3.5" west 17879 back 4" west 17880 back 4.5" west 17881 back 5" west 17882 back 5.5" west 17883 back 6" west 17884 back 6.5" west no sources visible in last run: we're done!

23966	Sun Nov 13 16:21:14 2011	MFMakela

KNF pump off Source in tank 1220 mbar 115 mbar in guide closing orange valve (source at 200K)

23964	Sun Nov 13 15:48:44 2011	rpicker

UCNA Shift Change Checklist Date: November 13, 2011 16:30 Shift Persons: Mark, Ruediger UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open (returning to 1630 instead) He blower off Heat exchanger flow 0 slpm Heater B pressure 14.40 psia Heater C pressure 13.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 299.8 psia Tungsten Cool ret. 82.9 psia Tungsten Cool Diff 284.2 psia 1630 eng. 2 temp. 13.95 K 1630 JT temp. 7.55 K 1630 outlet temp. 276.3 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1 psig 1630 med. press. stor. 175 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.2 K 1410 TE-E 88.1 K 1410 supply press. 240 psig 1410 JT press. 140 psig 1410 return press. 3.6 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.5 psig 4K dewar level 4.09 inHe 1K dewar level 21.8 inHe 4K main flow control off V LHe temp. 1 200 K Heat exch. temp. 7 179 K Poly temp. 3 139 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 84.6 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 117 torr CM5 pressure 1.6 torr CC1 pressure --- torr PPM LHe level 82.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. ~19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light off Proton burst spacing: OFF (Beam Off) did not check the rest Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 66.4 F West MWPC Temperature 64.8 F MWPC Pressure 7 torr N2 - MWPC Differential -5 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. .5 A H2O Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100 torr N2 - MWPC Differential -5.4 Neopentane Flow Rate -16.7 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 V Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 1962 Hz West muon veto rate 3389 Hz Spectrometer vacuum 1.2e-5 Torr disk usage daq account 87 %

23963	Sun Nov 13 15:05:07 2011	Sky

We managed to get one run with background and depolarization, AFP on. Here is the new summary.

Attachment 1: 1.pdf

23962	Sun Nov 13 14:40:39 2011	ASaunders

doing a set of load lock source calibration runs the writing on the sources is facing west. run position facing of writing on sources 17871 all the way in west 17872 back 0.5" west 17873 back 1" west 17874 back 1.5" west

23961	Sun Nov 13 13:34:35 2011	SSeestrom

dropping and pressure increasing. only got 1/2 way thru second beat run. Proceed to let target wqarm up and pump out the source.

23960	Sun Nov 13 11:46:44 2011	SSeestrom

When we came in melt/refreeze in progress when finished did not get to low pressure until we increased flow to target Mark cam in and fussed with 1630 - in the end iot does nto appear much better. Did another melta and refreeze - start a beta decauy series but LHe level in 4K is dropping fast - not sure how long it will last.

23959	Sun Nov 13 11:44:47 2011	SSeestrom

UCNA Shift Change Checklist Date: November 13, 2011 10:00 Shift Persons: Sky, Susan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 55 slpm Heater B pressure 14.42 psia Heater C pressure 13.65 psia Tungsten supply press. 150 psig Compressor 1 On on Graphite supply press. 306 psig Compressor 2 On --- Tungsten Cool supp. 300 psia Tungsten Cool ret. 82.9 psia Tungsten Cool Diff 284 psia 1630 eng. 2 temp. 15.5 K 1630 JT temp. 8.13 K 1630 outlet temp. 271.9 K 1630 engine speed 180 rpm 1630 supply press. 237 psig 1630 JT press. 185 psig 1630 return press. 2.5 psig 1630 med. press. stor. 160 psig 1410 engine speed 154 rpm 1410 TE-A 16.3 K 1410 TE-B 6.4 K 1410 TE-E 91.7 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.6 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.5 psig 4K dewar level 5.5 inHe 1K dewar level 20.8 inHe 4K main flow control 5 V LHe temp. 1 6.25 K Heat exch. temp. 7 203 K Poly temp. 3 142 K flapper heater cur .18 A Flapper Status: open (set to flap) Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 15! C AFP frequency 28.482 MHz AFP forward power 44 W SCS LHe level 89.2 % SCS field 0.68? kG SCS current 118.2 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 4.1 torr CM5 pressure 1.5 torr CC1 pressure highish torr PPM LHe level 82.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 92.9 % AFP LN2 level 90.5 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. ~19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light on Proton burst spacing: OFF (Beam Off) did not check the rest Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 66.0 F West MWPC Temperature 63.8 F MWPC Pressure 100 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr A East Back. Veto Buck. A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100 torr N2 - MWPC Differential -5.4 Neopentane Flow Rate -54 slpm West PMT Buck. Curr. 0.38 A West Back. Veto Buck. 0.48 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) Beta-Scintillator and Backing-Veto Crate (Bottom Crate) V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate ~1500 Hz West muon veto rate 3300 Hz Spectrometer vacuum 1.e-5 Torr disk usage daq account

23958	Sun Nov 13 07:03:30 2011	JCHoagland

doing a melt and refreeze

23957	Sun Nov 13 06:42:42 2011	bz

4k dewar level has been slowly decreasing overnight, 1630 appears not to be making much liquid Managed to fit in entire octet, called Mark at 07:30 Mark asked us to do a melt and refreeze, but other wise we are out of liquid to do beta decay in the 4k New tungsten compressor appears to be functioning nominally Otherwise quiet

Attachment 1: 3.ps

23955	Sun Nov 13 06:39:28 2011	bz

23:32 17839 B1 Bkg ON E= 1.223 W= 1.178 23:40 17840 B2 Beta ON E=11.675 W=10.542 Fe/GV=0.1167 SCS/GV=0.1775 00:25 17841 B3 Depol ON->OFF 00:32 17842 B4 Bkg OFF E= 1.188 W= 1.115 00:39 17843 B5 Beta OFF E=12.421 W=13.456 Fe/GV=0.4793 SCS/GV=0.2398 01:24 17844 B6 Depol OFF->ON 01:31 17845 B7 Beta OFF E=15.081 W=16.154 Fe/GV=0.4745 SCS/GV=0.2410 02:17 17846 B8 Depol OFF->ON 02:24 17847 B9 Bkg OFF E= 1.105 W= 1.059 02:31 17848 B10 Beta ON E=11.214 W=10.159 Fe/GV=0.1147 SCS/GV=0.1778 03:17 17849 B11 Depol ON->OFF 03:24 17850 B12 Bkg ON E= 1.181 W= 1.094 03:33 17851 A1 Bkg OFF E= 1.092 W= 1.030 03:40 17852 A2 Beta OFF E=15.154 W=16.399 Fe/GV=0.4785 SCS/GV=0.2407 04:25 17853 A3 Depol OFF->ON 04:32 17854 A4 Bkg ON E= 1.192 W= 1.083 04:40 17855 A5 Beta ON E=11.798 W=10.839 Fe/GV=0.1152 SCS/GV=0.1747 05:25 17856 A6 Depol ON->OFF 05:32 17857 A7 Beta ON E=11.604 W=10.451 Fe/GV=0.1183 SCS/GV=0.1794 06:17 17858 A8 Depol ON->OFF 06:24 17859 A9 Bkg ON E= 1.238 W= 1.052 06:32 17860 A10 Beta OFF E=14.660 W=15.835 Fe/GV=0.4726 SCS/GV=0.2400 07:17 17861 A11 Depol OFF->ON 07:24 17862 A12 Bkg OFF E= 1.119 W=1.025

Saw this error again in Raymond's program: Error 5 occurred at Read from Text File in MidasNumber.vi->UCNA_AUTO5.vi Possible reason(s): LabVIEW: File already open. ========== NI-488: Command requires GPIB Controller to be System Controller. C:\Documents and Settings\ucnems\Desktop\runlog.txt

23954	Sun Nov 13 03:12:03 2011	bz

UCNA Shift Change Checklist Date: November 13, 2011 03:00 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 55 slpm Heater B pressure 14.26 psia Heater C pressure 13.79 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 301.5 psia Tungsten Cool ret. 84.9 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 13.35 K 1630 JT temp. 8.33 K 1630 outlet temp. 267.6 K 1630 engine speed 200 rpm 1630 supply press. 220 psig 1630 JT press. 160 psig 1630 return press. 1.3 psig 1630 med. press. stor. 158 psig 1410 engine speed 154 rpm 1410 TE-A 15.4 K 1410 TE-B 6.1 K 1410 TE-E 84.6 K 1410 supply press. 245 psig 1410 JT press. 150 psig 1410 return press. 3.5 psig 4K dewar pressure 322 mmHg 1K dewar pressure 7.5 psig 4K dewar level 7 inHe 1K dewar level 19.6 inHe 4K main flow control 6.6 V LHe temp. 1 4.861 K Heat exch. temp. 7 195.5 K Poly temp. 3 160.5 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.482 MHz AFP forward power 43 W SCS LHe level 94.2 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.2 torr CC1 pressure 1.7e-5 torr PPM LHe level 82.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 83.7 % AFP LN2 level 76.5 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s (Beam Off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 13.6 mA "Beamplot" Capture: 0.82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.8 F West MWPC Temperature 63.7 F MWPC Pressure 100 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -49 torr broken... Neopentane Flow Rate -1.70?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.38 A West Back. Veto Buck. 0.48 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 2356 Hz West muon veto rate 4798 Hz Spectrometer vacuum 1.2e-5 Torr disk usage daq account 87%

23953	Sun Nov 13 02:25:12 2011	JCHoagland

the 1630 liquidifer seems to be dieing more and more as the night goes on

23952	Sat Nov 12 23:08:51 2011	RRios

9:19 PM 17832 B6: Depol (off to on) 9:26 PM 17833 B7: Beta Run (off) E=14.3 W=15.6 Fe/GV=0.48 SCS/GV=0.24 10:11 PM 17834 B8: Depol (off to on) 10:18 PM 17835 B9: Background (off) E=1.18 W=1.07 10:25 PM 17836 B10: Beta Run (on) E=11.6 W=10.6 Fe/GV=0.12SCS/GV=0.18 11:11 PM 17837 B11: Depol (on to off) 11:18 PM 17838 B12: Background (on) E=1.3 W=1.12

Attachment 1: 2.ps

23947	Sat Nov 12 23:01:00 2011	RRios

2:54 PM 17814 A1: Background (off) E=1.2 W= 0.98 3:01 PM 17815 A2: Beta Run (off) E=14.7 W=16.1 Fe/GV=0.48 SCS/GV=0.238 3:46 PM 17816 A3: Depol (off to on) 3:53 PM 17817 A4: Background (on) E=1.22 W= 1.12 4:01 PM 17818 A5: Beta Run (on) E=11.0 W= 9.86 Fe/GV=0.12 SCS/GV=0.18 4:46 PM 17819 A6: Depol (on to off) 4:53 PM 17820 A7: Beta Run (on) E=11.9 W= 10.8 Fe/GV=0.12 SCS/GV=0.18 5:38 PM 17821 A8: Depol (on to off) 6:01 PM 17822 A9: Background (on) E=1.15 W= 1.1 6:08 PM 17823 A10: Beta Run (off) E=14.2 W= 15.3 Fe/GV=0.48 SCS/GV=0.24 6:53 PM 17824 A11: Depol (off to on) 7:07 PM 17825 A12: Background (off) E=1.3 W= 1.1 7:14 PM 17826 B1: Background (on) E=1.2 W= 1.0 7:22 PM 17827 B2: Beta Run (on) E=9.5 W= 8.6 Fe/GV=0.12 SCS/GV=0.17 8:07 PM 17828 B3: Depol (on to off) 8:14 PM 17829 B4: Background (off) E=1.3 W= 1.2 8:21 PM 17830 B5: Beta Run (off) E=15.0 W= 16.2 Fe/GV=0.48 SCS/GV=0.24

23951	Sat Nov 12 20:48:23 2011	MFMakela

Good luck with the night, looks ok from here - Mark

23950	Sat Nov 12 20:45:09 2011	rpicker

error every 2 hours or so... after confirming the error it seems to work normally for a while.

23949	Sat Nov 12 20:21:28 2011	RRios

RSS trip. CCR attempted to give us more beam. Wednesday night when we had 400 UCN at the GV mon, the PW was 275. They tried to get the PW up to 270 but there were some random fluctuation in the beam that caused the RSS trip.

23948	Sat Nov 12 17:39:10 2011	RRios

Sped up the 1630 to 200

23946	Sat Nov 12 16:07:39 2011	rpicker

UCNA Shift Change Checklist Date: November 12, 2011 16:30 Shift Persons: Ruediger, Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 55 slpm Heater B pressure 14.75 psia Heater C pressure 13.52 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 300 psia Tungsten Cool ret. 85 psia Tungsten Cool Diff 283 psia 1630 eng. 2 temp. 16.15 K 1630 JT temp. 9.58 K 1630 outlet temp. 264 K 1630 engine speed 154 rpm 1630 supply press. 245 psig 1630 JT press. 155 psig 1630 return press. 3.5 psig 1630 med. press. stor. 150 psig 1410 engine speed 154 rpm 1410 TE-A 16.7 K 1410 TE-B 6.7 K 1410 TE-E 88.8 K 1410 supply press. 245 psig 1410 JT press. 160 psig 1410 return press. 3.4 psig 4K dewar pressure 315 mmHg 1K dewar pressure 7.0 psig 4K dewar level 8.70 inHe 1K dewar level 31.7 inHe 4K main flow control 6.0 V LHe temp. 1 5.0 K Heat exch. temp. 7 191 K Poly temp. 3 125 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 86.9 % SCS field 0.6911 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.3 torr CC1 pressure 5e-5 torr PPM LHe level 82.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 82.7 % AFP LN2 level 71.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s (Beam Off) Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 15.7 mA "Beamplot" Capture: 0.65 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.8 F West MWPC Temperature 62 F MWPC Pressure 100 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 13 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -49 torr broken... Neopentane Flow Rate -1.70?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.39 A West Back. Veto Buck. 0.48 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2250 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 2394 Hz West muon veto rate 4613 Hz Spectrometer vacuum 1.1e-5 Torr disk usage daq account 86%

23943	Sat Nov 12 14:56:41 2011	Hasan

Starting new A->B octet 14:54 17814 A1: BKG off E=1.250 W=0.982 15:01 17815 A2: beta off E=14.732 W=16.055 Fe/GV=0.4772 SCS/GV=0.2378

23944	Sat Nov 12 14:52:00 2011	MFMakela

Changes on 1630 (open I1 3/1000) Moved source return to V389 fro V387 (to colder port). Green bypass open to keep return <2 psi Speed (130-150) 4000l dewar (300-330 mmHg) >6 psi source voltage 6 VDC

23945	Sat Nov 12 14:35:50 2011	MFMakela

Tungsten compressor switched out. Flow ~800

23942	Sat Nov 12 07:53:29 2011	Hasan

UCNA Shift Change Checklist Date: November 12, 2011 08:15 Shift Persons: Chris, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 55 slpm Heater B pressure 14.31 psia Heater C pressure 13.54 psia Tungsten supply press. 200 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 190.9 psia Tungsten Cool ret. 190.4 psia Tungsten Cool Diff -0.3 psia 1630 eng. 2 temp. 15.15 K 1630 JT temp. 8.41 K 1630 outlet

1630 return press. 2.0 psig 1630 med. press. stor. 135 psig 1410 engine speed 154 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 90.3 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.4 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.71 inHe 1K dewar level 23.08 inHe 4K main flow control 7.9 V LHe temp. 1 5.226 K Heat exch. temp. 7 190.34 K Poly temp. 3 124.71 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 92.3 % SCS field 0.959 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.3 torr CC1 pressure 2e-5 torr PPM LHe level 82.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.1 % AFP LN2 level 96.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s (Beam Off) Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.9 F West MWPC Temperature 63.5 F MWPC Pressure 100 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate -1.70?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2250 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1978 Hz West muon veto rate 3490 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 86%

23938	Sat Nov 12 07:43:08 2011	bz

UCNA Shift Change Checklist Date: November 12, 2011 02:30 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 55 slpm Heater B pressure 14.32 psia Heater C pressure 13.53 psia Tungsten supply press. 260 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 270.8 psia Tungsten Cool ret. 70.0 psia Tungsten Cool Diff 263.2 psia 1630 eng. 2 temp. 15.2 K 1630 JT temp. 8.2 K 1630 outlet temp. 259.2 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 2.0 psig 1630 med. press. stor. 123 psig 1410 engine speed 154 rpm 1410 TE-A 15.6 K 1410 TE-B 6.1 K 1410 TE-E 84.6 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.5 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.5 psig 4K dewar level 12.1 inHe 1K dewar level 22.6 inHe 4K main flow control 7.8 V LHe temp. 1 4.8 K Heat exch. temp. 7 183.2 K Poly temp. 3 150.6 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 97.2 % SCS field 0.6873 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.3 torr CC1 pressure 4e-5 torr PPM LHe level 82.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.8 % AFP LN2 level 77.7 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):13.76 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.8 F West MWPC Temperature 61.6 F MWPC Pressure 100 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate -1.65?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2905 Hz West muon veto rate 4951 Hz Spectrometer vacuum 4e-6 Torr disk usage daq account 86%

23940	Sat Nov 12 06:49:10 2011	JCHoagland

after turning off the compressor during depol runs and finding that it did not make the compressor last any longer. went back to just restarting it when ever it went off. After completeing a beta decay octet we decided that it would be more practical to get some more P+ and P- data for Adam than to try for another beta decay run octet since they are planning to change the compressor during the day today and the P runs are shorter than an octet. the 1630 also started to not work as effeciently and i believe that the valves on the pistons need to be rechecked for proper tightness.

23941	Sat Nov 12 06:47:34 2011	bz

The following error came up on Kevin's LED Labview program: Error 85 occurred at Scan From String (arg 1) in Keithley 27XX.lvlib:String to Numeric Array.vi->Keithley_reader_mod2.vi Possible reason(s): LabVIEW: Scan failed. The input string does not contain data in the expected format. Noticed this about 7:47 AM

23939	Sat Nov 12 05:54:11 2011	bz

23:25 17791 B5: Beta Run (off) E=12.724 W=13.679 Fe/GV=0.4735 SCS/GV=0.2396 00:10 17792 B6: Depol (off to on) 00:17 17793 B7: Beta Run (off) E=14.541 W=15.610 Fe/GV=0.4835 SCS/GV=0.2384 01:03 17794 B8: Depol (off to on) 01:10 17795 B9: Background (off) E= 1.204 W= 1.096 01:17 17796 B10: Beta Run (on) E=11.410 W=10.388 Fe/GV=0.1209 SCS/GV=0.1799 02:02 17797 B11: Depol (on to off) 02:09 17798 B12: Background (on) E= 1.147 W= 1.133 02:16 17799 A1: Background (off) E= 1.216 W= 1.084 02:24 17800 A2: Beta Run (off) E=14.520 W=15.916 Fe/GV=0.4817 SCS/GV=0.2352 03:09 17801 A3: Depol (off to on) 03:16 17802 A4: Background (on) E= 1.175 W= 1.057 03:23 17803 A5: Beta Run (on) E=10.404 W= 9.539 Fe/GV=0.1194 SCS/GV=0.1778 04:09 17804 A6: Depol (on to off) 04:28 17805 A7: Beta Run (on) E= 9.472 W= 8.621 Fe/GV=0.1192 SCS/GV=0.1772 05:13 17806 A8: Depol (on to off) 05:20 17807 A9: Background (on) E= 1.258 W= 1.037 05:27 17808 A10: Beta Run (off) E=12.618 W=13.640 Fe/GV=0.4807 SCS/GV=0.2345 06:13 17809 A11: Depol (off to on) 06:20 17810 A12: Background (off) E= 1.244 W= 1.045

23937	Fri Nov 11 22:48:37 2011	ASaunders

Attachment 1: 14.gif

14.gif

23936	Fri Nov 11 22:48:23 2011	ASaunders

Attachment 1: 13.gif

13.gif

23935	Fri Nov 11 22:48:09 2011	ASaunders

Attachment 1: 14.gif

14.gif

23934	Fri Nov 11 22:46:46 2011	ASaunders

Continuing B->A octet from previous shift. Tungsten cooling compressor trips off, killing beam, about every 20 minutes or so, throughout this shift. 15:03 17767 B5: Beta (off) E=12.0 W=12.7 Fe/GV=0.491 SCS/GV=0.236 15:49 17768 B6: Depol off -> on 15:56 17769 B7: Beta off E=14.47 W=15.58 Fe/GV=0.478 SCS/GV=0.236 Started LED scanner during this run 16:41 17770 B8: depol off->on 16:52 17771 B9: Bkg off E=1.30 W=1.07 16:59 17772 B10: Beta on E=9.92 W=9.10 Fe/GV=0.114 SCS/GV=0.179 17:44 17773 B11: depol on-> off 17:51 17774 B12: BKG on E=1.18 W=1.06 18:17 17775 A1: BKG off E=1.21 W=1.04 18:24 17776 A2: beta off E=13.3 W=14.3 Fe/GV=0.477 SCS/GV=0.241 19:09 17777 A3: depol off -> on 19:16 17778 A4: BKG on E=1.21 W=1.02 19:24 17779 A5: beta on E=9.80 W=8.82 Fe/GV=0.120 SCS/GV=0.176 20:09 17780 A6: depol on-> off Rios program crashes at end; stopped Midas run manually 20:18 17781 A7: beta on E=9.66 W=8.88 Fe/GV=0.120 SCS/GV=0.177 21:03 17782 A8: depol on-> off 21:10 17783 A9: BKG on E=1.18 W=1.03 21:17 17784 A10: beta off E=12.31 W=13.28 Fe/GV=0.479 SCS/GV=0.239 22:02 17785 A11: depol off->on 22:07 17786 A12: BKG off E=1.21 W=1.10 Starting new B->A octet 22:18 17787 B1: BKG on E=1.17 W=1.04 22:26 17788 B2: beta on E=9.84 W=9.10 Fe/GV=0.120 SCS/GV=0.179 23:11 17789 B3: depol on->off 23:18 17790 B4: BKG off E=1.18 W=1.08 23:25 17791 B5: beta off

23933	Fri Nov 11 16:05:05 2011	ASaunders

LED scanner was OFF until midway through run 17769. I don't know when it was turned off.

23932	Fri Nov 11 15:57:53 2011	Hasan

11/11/11 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 90.0 % SCS field 0.6873 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.2 torr CC1 pressure 1.7e-5 torr PPM LHe level 82.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.1 % AFP LN2 level 83.5 % PPM current 72(6) A (T)

chiller set point 7 degC AFP chiller level light off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 265 ns 6225 TBCM001I03 (H- source current):13.62 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.6 F West MWPC Temperature 59.6 F 6225 MWPC Pressure 100 torr 6225 N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A 6225 H20 Chiller on Chiller water level 1 ==========6225 West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate -1.65?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2163 Hz West muon veto rate 4473 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 85%

23931	Fri Nov 11 15:34:58 2011	ASaunders

UCNA Shift Change Checklist Date: November 11, 2011 16:00 Shift Persons: Saudners, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed (returning to 1630 instead) He blower on Heat exchanger flow 54 slpm Heater B pressure 14.3 psia Heater C pressure 13.5 psia Tungsten supply press. 270 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 270 psia Tungsten Cool ret. 70.3 psia Tungsten Cool Diff 260.1 psia 1630 eng. 2 temp. 15.08 K 1630 JT temp. 7.9 K 1630 outlet temp. 263 K 1630 engine speed 216 rpm 1630 supply press. 243 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 95 psig 1410 engine speed 154 rpm 1410 TE-A 15.8 K 1410 TE-B 6.2 K 1410 TE-E 86.8 K 1410 supply press. 244 psig 1410 JT press. 152 psig 1410 return press. 3.4 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.4 psig 4K dewar level 13.8 inHe 1K dewar level 36.6 inHe 4K main flow control 7.8 V LHe temp. 1 4.7 K Heat exch. temp. 7 179.4 K Poly temp. 3 129.9 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23930	Fri Nov 11 15:25:42 2011	RRios

Finished a the A->B octet Started a B->A octet, but had left the setting in the A->B. What this means is that labview will stop after the B set. To fix, after B finishes, place the Octet setting to B->A and start from A1. AFP magnet will need to be filled near the beginning of the shift. Tungsten compressor keeps shutting down. Will need a constant watch.

Attachment 1: 0.ps

23929	Fri Nov 11 15:04:17 2011	rpicker

Basically wanted to do straight beta runs, but the compressor went off more than 5 times. A replacement has been found and is going to be installed.

23926	Fri Nov 11 14:51:28 2011	rpicker

1:57 PM 17763 B1: Background (on) E=1.234 W=0.996 2:04 PM 17764 B2: Beta Run (on) E=11.268 W=10.154 F/GV=0.1138 SCS/GV=0.174 (E+W)/GV=1.2187 2:49 PM 17765 B3: Depol (on to off) 2:56 PM 17766 B4: Background (off) E=1.184 W=1.021

23924	Fri Nov 11 14:48:43 2011	RRios

7:05 AM 17747 B1: Background (on) E=1.22 W=1.15 7:13 AM 17748 B2: Beta Run (on) E=12.8 W=11.6 Fe/Gv=0.117 SCS/GV=0.176 Beta/GV=1.196 7:58 AM 17749 B3: Depol (on to off) 8:05 AM 17750 B4: Background (off) E=1.32 W=1.03 8:12 AM 17751 B5: Beta Run (off) E=14.5 W=15.6 Fe/Gv=0.48 SCS/GV=0.24 Beta/GV=1.172 8:58 AM 17752 B6: Depol (off to on) 9:05 AM 17753 B7: Beta Run (off) E=5.9 W=6.3 Fe/Gv=0.48 SCS/GV=0.23 Beta/GV=1.87 9:50 AM 17754 B8: Depol (off to on) 9:57 AM 17755 B9: Background (off) E=1.12 W=1.09 10:04 AM 17756 B10: Beta Run (on) E=11.9 W=10.8 Fe/Gv=0.11 SCS/GV=0.18 Beta/GV=1.2 10:49 AM 17757 B11: Depol (on to off) 10:56 AM 17758 B12: Background (on) E=1.17 W=1.15

23928	Fri Nov 11 14:31:18 2011	RRios

Steering scan data from two nights ago.

Attachment 1: csv

```
LBSM4I1(X),LBSM4I2(Y),UCNMON1,TC1,TC2,TC3,TC4,TC5
3.5,-1.46,8,235,300,307,321,265
4,-1.46,6.5,195,249,257,257,225
4.5,-1.46,4.8,153,195,202,202,180
5,-1.46,3.6,117,145,150,150,138
5.5,-1.46,2.9,97,115,120,120,110
```

```
-,-,-,-,-,-,-,-
1.5,-1.46,12,331,411,457,418,350
1,-1.46,11.6,333,414,483,407,353
0.5,-1.46,11,327,399,473,382,347
0,-1.46,10,314,372,437,349,330
-1,-1.46,7.5,264,285,320,261,275
-2,-1.46,6,210,193,211,179,204
-3,-1.46,4,175,143,151,131,158
-4,-1.46,2.7,127,105,109,96.4,115
-5,-1.46,2,88.8,83.9,86,78.3,88.5
-6,-1.46,1.5,73.8,74,76.5,70.5,74.6
-,-,-,-,-,-,-,-
1.59,-1.46,11.5,350,422,475,434,367
1.59,-1,12,345,406,469,473,375
1.59,-0.5,11,327,381,435,490,376
1.59,0,11,313,361,407,476,377
1.59,1,8,252,290,322,373,333
1.59,2,4.2,158,188,219,252,256
1.59,3,2.6,94,112,125,135,141
1.59,4,2.4,83,96.2,103,106,111
1.59,5,2.3,77.2,86,92.2,94,98.9
1.59,-6,2.5,142,155,138,123,120
1.59,-5,6,274,303,252,223,204
1.59,-4,10.5,350,413,349,319,296
1.59,-3,12,355,485,396,359,328
1.59,-2.5,12,358,508,435,386,348
1.59,-2,12,340,448,442,396,346
1.59,-1.5,11.8,333,418,459,422,356
-,-,-,-,-,-,-,-
-2,-5,2.9,147,128,118,102,108
-1,-5,3.9,200,179,153,129,128
0,-5,4.8,263,254,214,182,176
1,-5,5.8,269,289,241,209,196
2,-5,6,254,296,247,221,202
3,-5,5,228,275,235,214,191
4,-5,3.6,163,200,174,161,144
1,-1,12,324,383,459,440,363
2,-1,11,309,373,415,436,344
2,-2,11,317,416,408,382,327
1,-2,11.5,332,443,452,381,341
0,-2,10.5,330,407,415,340,321
0,-1,10.5,299,348,421,372,340
0,0,9.5,270,305,357,381,358
1,0,9,279,321,372,442,355
2,0,9,275,324,361,435,339
3,0,8.5,235,284,309,360,291
3,-1,9,252,310,330,361,290
3,-2,9,262,334,332,330,279
3,-3,8.5,269,349,317,300,266
2,-3,10.5,318,434,370,340,307
1,-3,11,342,461,383,339,316
0,-3,10.5,336,411,351,304,294
-1,-3,7.5,299,309,276,238,239
-1,-2,8,273,300,308,251,255
-1,-1,8.2,247,269,318,272,284
-1,0,7.5,218,237,276,273,311
-1,1,6.3,178,194,223,232,195
0,1,8,214,235,271,298,330
1,1,8.5,221,250,287,329,317
2,1,8,211,244,276,320,284
3,1,6.5,183,218,244,280,242
4,1,4.4,143,174,191,216,188
4,0,5.9,181,217,238,269,223
4,-1,5.7,184,227,243,264,215
4,-2,5.6,188,237,237,244,205
4,-3,5.4,19,242,227,222,193
4,-4,5,189,232,211,199,178
3,-4,8,263,324,286,267,240
2,-4,9.5,303,373,322,296,272
1,-4,9.5,340,396,334,302,284
0,-4,8.7,327,350,299,266,258
-1,-4,6.3,282,266,234,204,206
-2,-4,4,220,179,164,142,149
-2,-3,4.8,243,195,183,158,169
-2,-2,5.3,226,200,205,174,194
-2,-1,5.3,194,188,209,183,218
-2,0,4.8,168,170,192,180,247
-2,1,4,140,142,162,159,241
-2,2,3,108,112,127,127,187
-1,2,3.6,122,129,152,162,220
0,2,3.8,142,154,185,205,252
1,2,3.6,142,159,192,219,240
2,2,3.6,137,159,186,216,213
3,2,3.1,123,144,164,186,174
4,2,2.7,102,117,130,143,131
```

A vanadium foil is mounted over the input guide in the guide testing fixture on the little b port. Mark has found a working pump and a cold cathode gauge. I have done a rate if rise test. In one minute the pressure went from 4e-5 to 2e-4 with the pumps closed off on the cold cathode gauge. I am hooking up the little be valve to are to do a vanadium exposure.

23925	Fri Nov 11 14:26:28 2011	RRios

Here is the steering grid from the other night. The graphs location represent the relative position of the thermocouples to each other. 5 4 3 1 2 You can see where the thermocouple location is within the plot. TC5 and TC1 are more difficult to determine but their general location can be seen. There is not much difference between left and right, they all look to be in the center of x. Is it possible the beam shape makes it look like the thermocouples are all in the x=1 position? (with exception to 4)

Attachment 1: 0911_0.gif

0911_0.gif

23922	Fri Nov 11 09:50:37 2011	RRios

UCNA Shift Change Checklist Date: November 11, 2011 08:30 Shift Persons: Raymond, Ruediger UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed C-LPM3 open instead He blower on Heat exchanger flow 55 slpm Heater B pressure 14.34 psia Heater C pressure 13.76 psia Tungsten supply press. 290 psig While beam off, letting compressor rest Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 283 psia Tungsten Cool ret. 267 psia Tungsten Cool Diff 78.5 psia 1630 eng. 2 temp. 15.28 K 1630 JT temp. 7.89 K 1630 outlet temp. 261.5 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 1.8 psig 1630 med. press. stor. 100 psig 1410 engine speed 154 rpm 1410 TE-A 16 K 1410 TE-B 6.2 K 1410 TE-E 87.7 K 1410 supply press. 245 psig 1410 JT press. 150 psig 1410 return press. 3.4 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.5 psig 4K dewar level 26.04 inHe 1K dewar level 13.8 inHe 4K main flow control 7.8 V LHe temp. 1 4.8 K Heat exch. temp. 7 177.0 K Poly temp. 3 149 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 97.2 % SCS field 0.6881 kG SCS current 118.2 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.3 torr CC1 pressure 2.2e-5 torr PPM LHe level 83.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.4 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):13.6 mA "Beamplot" Capture: 65 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 62.8 F West MWPC Temperature 62.9 F MWPC Pressure 100 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100 torr N2 - MWPC Differential -4.9??? torr Neopentane Flow Rate -1.7?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 3314 Hz West muon veto rate 6225 Hz Spectrometer vacuum Torr disk usage daq account 85%

23923	Fri Nov 11 08:23:47 2011	MFMakela

I am planning on coming in to try a couple of quick changes on the compressor

23921	Fri Nov 11 07:11:55 2011	bz

03:07 17735 A1: Background (off) E= 1.134 W= 1.141 03:14 17736 A2: Beta Run (off) E=18.332 W=19.848 Fe/GV=0.4796 SCS/GV=0.2359 04:00 17737 A3: Depol (off to on) 04:07 17738 A4: Background (on) E= 1.240 W= 0.994 04:14 17739 A5: Beta Run (on) E=13.651 W=12.562 Fe/GV=0.1144 SCS/GV=0.1751 04:59 17740 A6: Depol (on to off) 05:06 17741 A7: Beta Run (on) E=12.758 W=11.651 Fe/GV=0.1145 SCS/GV=0.1760 05:52 17742 A8: Depol (on to off) 05:59 17743 A9: Background (on) E= 1.139 W= 1.090 06:06 17744 A10: Beta Run (off) E=13.007 W=13.768 Fe/GV=0.4755 SCS/GV=0.2350 06:51 17745 A11: Depol (off to on) 06:58 17746 A12: Background (off) E= 1.225 W= 1.060

23920	Fri Nov 11 07:06:58 2011	bz

on SCS faulted off after gate valve above W turbo had its air hose pop out. Turned back on with no difficulty, achieved acceptable pressure.

Attachment 1: .ps

23919	Fri Nov 11 04:12:47 2011	bz

UCNA Shift Change Checklist Date: November 11, 2011 00:30 Shift Persons: Jeff,Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 55 slpm Heater B pressure 14.34 psia Heater C pressure 13.59 psia Tungsten supply press. 200 psig While beam off, letting compressor rest Compressor 1 On off Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 196.8 psia Tungsten Cool ret. 196.1 psia Tungsten Cool Diff -0.1 psia 1630 eng. 2 temp. 16.3 K 1630 JT temp. 7.9 K 1630 outlet temp. 263.0 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 154 rpm 1410 TE-A 16.0 K 1410 TE-B 6.2 K 1410 TE-E 88.4 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.3 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 21.6 inHe 1K dewar level 22.2 inHe 4K main flow control 6.0 V LHe temp. 1 4.6 K Heat exch. temp. 7 173.0 K Poly temp. 3 48.6 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 83.6 % SCS field 0.6881 kG SCS current 118.2 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.1 torr CC1 pressure 1.3e-5 torr PPM LHe level 83.2 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.4 % AFP LN2 level 76.9 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.2 F West MWPC Temperature 53.9 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 13.3 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -4.9??? torr Neopentane Flow Rate -1.7?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 54824 Hz West muon veto rate 3389 Hz Spectrometer vacuum over Torr turbos overheated disk usage daq account 85%

23918	Fri Nov 11 02:09:01 2011	bz

GV closed rate ~355Hz, no effort to tune beam. Started A->B Octet

23917	Fri Nov 11 00:03:20 2011	bz

Turbos on decay trap overheated, turned themselves off at about 22:40 or so. The gate valve above the west turbo had the air hose out and blowing into the area. I replaced the air hose into the gate valve, and restarted the turbos. They appear to be working correctly. I'm worried that the pressure in the decay trap may have been in a bad place during this time. I will continue to monitor the situation and for now I've deactivated the spin flipper until the pressure drops to a good place (<1e-4 torr).

Attachment 1: .png

.png

23916	Thu Nov 10 20:11:01 2011	Sky

The longest the W compressor has run at a time tonight is 45 minutes. But it does not matter at the moment since the Target Module 4 tripped and the beam is down.

23915	Thu Nov 10 17:08:10 2011	ASaunders

set tungsten cooling return pressure setpoint to 60 psi. opened restricting valve on return line all the way.

23914	Thu Nov 10 16:40:15 2011	ASaunders

reinserted decay trap plug

23913	Thu Nov 10 16:21:36 2011	Hasan

Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 55 slpm Heater B pressure 14.37 psia Heater C pressure 13.62 psia Tungsten supply press. 280 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 285.0 psia Tungsten Cool ret. 117.2 psia Tungsten Cool Diff 218.8 psia 158.4 1630 eng. 2 temp. 16.2 K 1630 JT temp. 7.8 K 1630 outlet temp. 264.5 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 85 psig 1410 engine speed 154 rpm 1410 TE-A 16.1 K 1410 TE-B 6.2 K 1410 TE-E 96.9 K 1410 supply press. 245 psig 1410 JT press. 152 psig 1410 return press. 3.25 psig 4K dewar pressure 246 mmHg 1K dewar pressure 7.0 psig 4K dewar level 21.6 inHe 1K dewar level 20.1 inHe 4K main flow control 6.0 V LHe temp. 1 4.815 K Heat exch. temp. 7 171.2 K Poly temp. 3 64.9 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 88.0 % SCS field 0.6867 kG SCS current 118.2 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 2.9e-5 torr PPM LHe level 83.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.6 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s (Beam OFF) Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.5 F West MWPC Temperature 54.2 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate -1.68 slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 56255 Hz West muon veto rate 3331 Hz Spectrometer vacuum over Torr XENON IN DECAY TRAP disk usage daq account 85%

23912	Thu Nov 10 12:58:07 2011	RRios

Here is part of the scan from last night. This only shows the UCN GV monitor values. The TC temperature values will be up later. Looks like Y is still a little broad. Center is about(2,-2)

Attachment 1: 0911.gif

0911.gif

23911	Thu Nov 10 05:45:49 2011	bz

Took a steering scan, 1 Amp increments in a grid around 1, -1. Will put in a csv file and send to Michael and Ramond asap. TUNGSTEN COMPRESSOR CONTINUOUSLY TURNED ITSELF OFF, and required continuous restarts by Jeff. Filled the SCS and AFP.

23910	Thu Nov 10 04:51:23 2011	JCHoagland

UCNA Shift Change Checklist Date: November 10, 2011 01:00 Shift Persons: Jeff,Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 55 slpm Heater B pressure 15.06 psia Heater C pressure 14.33 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 296.3 psia Tungsten Cool ret. 150.8 psia Tungsten Cool Diff 190.7 psia 1630 eng. 2 temp. 16.2 K 1630 JT temp. 8.0 K 1630 outlet temp. 272.4 K 1630 engine speed 160 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.5 psig 1630 med. press. stor. 55 psig 1410 engine speed 98 rpm 1410 TE-A 17.4 K 1410 TE-B 6.4 K 1410 TE-E 82.2 K 1410 supply press. 250 psig 1410 JT press. 165 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 6.5 psig 4K dewar level 23.5 inHe 1K dewar level 26.5 inHe 4K main flow control 7.9 V LHe temp. 1 4.6 K Heat exch. temp. 7 185.6 K Poly temp. 3 158.4 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 85.8 % SCS field 0.6889 kG SCS current 118.2 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 1.9e-5 torr PPM LHe level 83.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 95.2 % AFP LN2 level 96.6 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- stearting scan Proton pattern width: -- ns TBCM001I03

---------- MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 61.5 F West MWPC Temperature 52.9 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 13.7 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 99.9 torr N2 - MWPC Differential -4.8??? torr Neopentane Flow Rate -1.7?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 2704 Hz West muon veto rate 5200 Hz Spectrometer vacuum over Torr XENON IN DECAY TRAP disk usage daq account 83%

23909	Wed Nov 9 23:36:39 2011	RRios

Shift Summary: Nearly finished a steering scan. (using 1 hz beam) --- beam shape looks odd but it's giving good rates. Tungsten target went down several times over the night (5 or 6 times) Still taking Xenon data. UCN at GV monitor: 400 UCN/s with normal beam parameters (5 burst every 5 seconds) Next shift: Michael requested measurements with the beam individually centered on each thermocouple with some points radially way from these points. Watch the Tungsten Compressor. It will shut down every so often. medium storage is at 55 but it has been rising since the last AFP fill.

23908	Wed Nov 9 19:26:38 2011	RRios

Filling AFP magnet Target Ready went off because the Tungsten Compressor went down. Turned it back on using rod.

23907	Wed Nov 9 19:16:07 2011	RRios

Looks like Keith changed the shape of the beam and now we are getting 400 UCN/s in the GV monitor detector.

23906	Wed Nov 9 19:14:24 2011	rpicker

UCNA Shift Change Checklist Date: November 9, 2011 04:30PM Shift Persons: Raymond, Ruediger UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 33 slpm Heater B pressure 15.05 psia Heater C pressure 14.28 psia Tungsten supply press. 200 psig Compressor 1 On off Mark turned it on in the meantime Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 197 psia Tungsten Cool ret. 196.1 psia Tungsten Cool Diff 0 psia 1630 eng. 2 temp. 15.93 K 1630 JT temp. 7.8 K 1630 outlet temp. 269.1 K 1630 engine speed 180 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 1.6 psig 1630 med. press. stor. 50 psig 1410 engine speed 98 rpm 1410 TE-A 17.5 K 1410 TE-B 6.4 K 1410 TE-E 82.6 K 1410 supply press. 250 psig 1410 JT press. 165 psig 1410 return press. 3.2 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7 psig 4K dewar level 24.19 inHe 1K dewar level 25.08 inHe 4K main flow control 4.0 V LHe temp. 1 6.5 K Heat exch. temp. 7 204.6 K Poly temp. 3 63.2 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 92.2 % SCS field 0.6867 kG SCS current 118.2 A AFP N2 dewar level 65% SV3 closed SV4 closed CM1 pressure 6 torr CM5 pressure 1.7 torr CC1 pressure over torr PPM LHe level 83.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.5 % AFP LN2 level 98.8 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H-source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 61.5 F West MWPC Temperature 52.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 13.2 slpm East PMT Buck. Curr 0.5 A East Back. Veto Buck. 0.38 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure ??? torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate -17.0 slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.38 A West Back. Veto Buck. 0.49 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1837 Hz West muon veto rate 3226 Hz Spectrometer vacuum over Torr XENON IN DECAY TRAP disk usage daq account 80%

23896	Wed Nov 9 12:22:55 2011	rpicker

We raised the discriminator levels of the West PMTs 1 and 4 (disc_level_array [8] and [11]) from 10 to 15 to decrease background counts.

I wasn't able to take any useful data for the target steering scan, as the source took too long to freeze in. MIDAS was acting up and required multiple resets of the VME crate. Finally, I had to perform the recovery actions on the fastdaq procedure in the UCNA Procedures book. Xenon runs are only about 10 minutes before they reach the size limit on the file. The Tungsten cooling compressor failed at about 7 AM. Mark will come in and look at it.

23903	Wed Nov 9 05:34:14 2011	JCHoagland

1225-40.6= 1184.4 mbars in source

23904	Wed Nov 9 03:30:08 2011	bz

UCNA Shift Change Checklist Date: November 9, 2011 03:30 Shift Persons: Jeff,Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 0 slpm Heater B pressure 14.36 psia Heater C pressure 13.66 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 299.5 psia Tungsten Cool ret. 124.9 psia Tungsten Cool Diff 228.4 psia 1630 eng. 2 temp. 15.42 K 1630 JT temp. 7.76 K 1630 outlet temp. 272.0 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 193 psig 1630 return press. 1.6 psig 1630 med. press. stor. 65 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 84.9 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.3 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7 psig 4K dewar level 21.8 inHe 1K dewar level 17.8 inHe 4K main flow control 4.0 V LHe temp. 1 7.2 K Heat exch. temp. 7 225.8 K Poly temp. 3 68.7 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 8.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 0.6911 kG SCS current 118.2 A AFP N2 dewar level 6/8 SV3 closed SV4 closed CM1 pressure 38.6 torr CM5 pressure 1.6 torr CC1 pressure over torr PPM LHe level 83.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.1 % AFP LN2 level 96.2 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 58.6 F West MWPC Temperature 52.9 F MWPC Pressure 100 torr N2 - MWPC Differential -4.6 torr Neopentane Flow Rate 13.6 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -4.1??? torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.49 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 1809 Hz West muon veto rate 3340 Hz Spectrometer vacuum over Torr XENON IN DECAY TRAP disk usage daq account 77%

23902	Wed Nov 9 03:14:50 2011	bz

The constant autorestarts seem to take a toll on the connection between the VME crate and MIDAS. Twice tonight I've had to kill the fastdaq, restart the VME crate in the area, and restart the fastdaq. If the amount of data collected stops going up, you know you have to restart. The affected runs at this time are 17587 and 17588, both of which are probably bad.

23901	Tue Nov 8 21:59:57 2011	RRios

Looks like the laser for the OP scanner is badly misaligned. The looking the laser hits the cell off to one side rather than going straight through the center. I will continue with the scan but I'm not optimistic.

23900	Tue Nov 8 19:08:59 2011	MFMakela

Making new source 1225 mbar in tank

23899	Tue Nov 8 19:00:05 2011	mmendenhall

For calibration of the steering program, we need to scan around each TC to find it's "position" and maximum temperature for a fixed beam current. This requires doing X-Y scans to find the temperature peak for each individual TC; once you have the peak, make sure to also have an X and Y scan around that position (to map out the shape of the temperature peak). It is not necessary to have a UCN source for this part, though it wouldn't be bad either. The scans should be easier to do if you switch to "continuous" beam (e.g. ~1Hz, flapper open) instead of the 5-second-interval pulses we usually take. With a faster beam pulse rate, the

ascertain the temperature at each position more quickly and accurately. When you do have a UCN source, do a quick scan to find the approximate UCN peak rate. Once you are near the peak, do a 2D "grid" scan varying both X and Y over a grid in ~0.5A increments (as many points as you have time for; start close to the center, and work outwards as time permits; maybe do 1A steps first, then fill in the 0.5A steps later) to map out the response near the peak UCN production. Again, doing this with "continuous" beam should make this go easier. Be sure to record the results from all 5 TCs, along with the GV Mon rate, at each grid position.

23898	Tue Nov 8 17:43:45 2011	MFMakela

Activating Zenon

23897	Tue Nov 8 17:10:34 2011	rpicker

UCNA Shift Change Checklist Date: November 8, 2011 16:00 Shift Persons: Ricardo, Hasan, Ruediger observing :-) UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- --------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 32 slpm Heater B pressure 14.9 psia Heater C pressure 14.15 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 307 psia Tungsten Cool ret. 126 psia Tungsten Cool Diff 236 psia 1630 eng. 2 temp. 16.6 K 1630 JT temp. 7.6 K 1630 outlet temp. 270.2 K 1630 engine speed 130 rpm 1630 supply press. 240 psig 1630 JT press. 210 psig 1630 return press. 1.7 psig 1630 med. press. stor. 55 psig 1410 engine speed 110 rpm 1410 TE-A 16.9 K 1410 TE-B 6.3 K 1410 TE-E 82.4 K 1410 supply press. 250 psig 1410 JT press. 160 psig 1410 return press. 3.5 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7 psig 4K dewar level 19 inHe 1K dewar level 36 inHe 4K main flow control 1.5 V LHe temp. 1 19.2 K Heat exch. temp. 7 203 K Poly temp. 3 156 K flapper heater cur .18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.3 C AFP frequency 28.482 MHz AFP forward power off W SCS LHe level 91.5 % SCS field 0.687 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 open SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.4 torr CC1 pressure 1.2e-7 torr PPM LHe level 83.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 86.6 % AFP LN2 level 84.7 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.8 F West MWPC Temperature 66.3 F MWPC Pressure 100 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 13.3 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -50??? torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.4 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (ch 12) East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1890 Hz West muon veto rate 3325 Hz Spectrometer vacuum 2.8e-5 Torr disk usage daq account 76%

23895	Tue Nov 8 16:55:02 2011	rpicker

Notice:# If the MWPC ribbon cables are unplugged from the LEMO connector box. The signal shape gets screwed up. You have to power cycle the NIM crate afterwards. # Notice end

23889	Tue Nov 8 13:18:05 2011	MFMakela

Stating source distillation: Magnets ON Both magnet returning to 1410 Moving source return to Main from 1630 V389 SV3, MV6. MV2, UCN gatevalve - Closed, UCN pumping port - open Orange vavle open -verified 14 mbar in tank check valve bypass - open lowering source voltage to .7 VDC Poly pump - ON, Heat exchanger left set at 60 (reading -000), main return open Closed main return turned source voltage control to .5 VDC Opened main return Source boiling out - 1220-50 mbar target Source got a little hot, distillation was not optimal. 1238 mbar in tank, 218 in the guide warming up and pumping out

23894	Tue Nov 8 12:10:22 2011	RRios

Here are the graphs from the target steering scans from last night. Notice the difference in scans in the Y and X directions. The thermocouples do not distinguish position well along the x-direction.

Attachment 1: 11.gif

11.gif

CM1.1-CM1.5 are offline. wires pullked out while working on new valve control box. I will work on it in a few minutes

23892	Tue Nov 8 10:22:44 2011	RRios

Last night I did a target beam scan. This is what Bryan ment by source scan and the file that was sent to Michael.The data currently is with Bryan and Michael. We also did Source Calibration Runs inside the SCS.

23891	Tue Nov 8 09:55:37 2011	KPH

Correct settings for the LED looper

Attachment 1: eenshot_11.8.11.GIF

eenshot_11.8.11.GIF

23890	Tue Nov 8 09:25:52 2011	KPH

Here is a snap shot of the LED looper code.

Attachment 1: 1.vi

23888	Tue Nov 8 07:16:21 2011	KPH

Detector Summary: Last night W3 also began to have a high signles rate. What is going on?

23887	Tue Nov 8 07:14:07 2011	bz

Time Type MCA Fastdaq Cycles Notes 00:53 P+ 1042 17537 8 01:58 P+ 1043 17538 4 02:32 P- 1044 17539 8 03:37 P- 1045 17540 4 04:14 SLD- 1046 17541 7 Low UCN rate due to pressure in source 05:13 SLD+ 1047 17542 6 Raymond did a source scan, I've taken the data and put it in an csv file for Michael. Nothing much of note happened. Unrelated to UCN, please make sure the salt bins outside the counting house have their lids firmly in place - snow got in during yesterdays precipitation, and when that happens it's bad for the salt. Thank you.

23886	Tue Nov 8 03:37:39 2011	EIC

UCNA Shift Change Checklist Date: November 8, 2011 01:40 Shift Persons: Jeff, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 60 slpm Heater B pressure 13.00 psia Heater C pressure 13.22 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312.6 psia Tungsten Cool ret. 134.5 psia Tungsten Cool Diff 230.1 psia 1630 eng. 2 temp. 13.5 K 1630 JT temp. 7.2 K 1630 outlet temp. 266.8 K 1630 engine speed 180 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 1.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 171 rpm 1410 TE-A 15.6 K 1410 TE-B 5.9 K 1410 TE-E 87.5 K 1410 supply press. 240 psig 1410 JT press. 150 psig 1410 return press. 3.5 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.5 psig 4K dewar level 21.5 inHe 1K dewar level 23.8 inHe 4K main flow control 7.9 V LHe temp. 1 4.8 K Heat exch. temp. 3 177.6 K Poly temp. 2 140.0 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.482 MHz AFP forward power 40 W SCS LHe level 82.3 % SCS field 0.6859 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.6 torr CC1 pressure 8.0e-6 torr PPM LHe level 83.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 90.1 % AFP LN2 level 75.1 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current):12.9 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 67.5 F West MWPC Temperature 66.8 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2179 Hz West muon veto rate 4177 Hz Spectrometer vacuum 6e-6 Torr disk usage daq account 75%

23880	Mon Nov 7 18:52:10 2011	bz

and P- runs for Adam. I also figured out what's going on with the Raymond's program-MIDAS errors. Earlier, it was noted that runs following a beta run were getting the same label, i.e. Fri Nov 4 17388 23:45:23 23:57:32 291.3k A1: Background (off) 0 0 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17389 23:57:40 00:56:55 1527.5k A2: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17390 00:56:57 01:04:36 179.0k A2: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17391 01:04:44 01:16:53 301.8k A4: Background (on) 1 0 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17392 01:17:01 02:16:00 1527.2k A5: Beta Run (on) 1 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17393 02:16:03 02:23:58 181.9k A5: Beta Run (on) 1 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17394 02:24:06 03:23:16 1527.4k A7: Beta Run (on) 1 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17395 03:23:18 03:32:56 226.2k A7: Beta Run (on) 1 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17396 03:33:03 03:45:13 305.9k A9: Background (on) 1 0 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17397 03:45:21 04:42:26 1527.3k A10: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17398 04:42:28 04:52:17 238.0k A10: Beta Run (off) 0 1 0 Flapping 1.00T 7.00T 6.00T Sat Nov 5 17399 04:52:25 05:04:34 306.2k A12: Background (off) 0 0 0 Flapping 1.00T 7.00T 6.00T (from runlog.txt) The problem is that the mlogger file size is limited to about 1.5G. If you look at any of the beta runs, they are all about 1527M (the k is a mislabel). The mlogger is currently set to start a new run whenever it reaches the limit. This means that the next run has already started before Raymond's program tries to start a depol run. Therefore, I believe that the second Beta Run in each of these sets contains data from the end of the beta run and the entire depol run. This can be solved in one of two ways, either by reducing the length of the beta runs to 40 minutes or by increasing the mlogger file size limit. Increasing the file size limit may introduce problems with the offline analyzer which produces the full root files, but I'm not actually aware of what problems that might present to us. Currently, it looks like MIDAS produces about .5GB/20 minutes of beta decay, so it's very close to getting the full 60 minute run, but not quite.

Attachment 1: .ps

23884	Mon Nov 7 17:45:59 2011	Hasan

Time Run Type Fast Daq Notes 1655 Source Run 0.0" 17517 1713 Source Run 0.5" 17518 1728 Source Run 1.0" 17519 1747 Source Run 1.5" 17520 1753 Source Run 2.0" 17521 1801 Source Run 2.5" 17522 1810 Source Run 3.0" 17523 1817 Source Run 3.5" 17524 1824 Source Run 4.0" 17525 1832 Source Run 4.5" 17526 1839 Source Run 5.0" 17527

23885	Mon Nov 7 16:56:54 2011	RRios

DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 87.4 % SCS field 0.6850 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.6 torr CC1 pressure 1.9e-5 torr PPM LHe level 83.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 84.7 % AFP LN2 level 100.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: ns TBCM001I03 (H- source current):- mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 68.8 F West MWPC Temperature 70.0 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 12.6 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 56981 Hz <-----Huge!! West muon veto rate 4578 Hz Spectrometer vacuum 1.6e-5 Torr disk usage daq account 74%

23883	Mon Nov 7 16:35:43 2011	Hasan

UCNA Shift Change Checklist Date: November 7, 2011 16:45 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 60 slpm Heater B pressure 14.15 psia Heater C pressure 13.40 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312.1 psia Tungsten Cool ret. 133.2 psia Tungsten Cool Diff 233.5 psia 1630 eng. 2 temp. 13.65 K 1630 JT temp. 7.29 K 1630 outlet temp. 267.3 K 1630 engine speed 180 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.4 psig 1630 med. press. stor. 90 psig 1410 engine speed 171 rpm 1410 TE-A 15.7 K 1410 TE-B 6.1 K 1410 TE-E 88.1 K 1410 supply press. 245 psig 1410 JT press. 150 psig 1410 return press. 3.4 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 19.68 inHe 1K dewar level 19.56 inHe 4K main flow control 7.9 V LHe temp. 1 4.845 K Heat exch. temp. 3

0.3 Flapper Time C: 4.8

23882	Mon Nov 7 13:51:42 2011	KPH

Detector Status Update: 1. PMT West 1 and West 4 have very high singles rate. We investigated by placing black tarp over the west end with no effect. 2. Wx16 is still dead. I check the input to the bias box with a scope and it is dead on the input too.

23881	Mon Nov 7 07:09:22 2011	JCHoagland

the afp nitrogen reader was reading 100 for the entire shift time. fulled with nitrogen then recalibrated it once liquid was seen coming from the top. If the nitrogen reader read 100 when you finish an afp fill, set the nitrogen tank to open and fill till you see nitrogen coming out of the exost on the top of the magnet.

23879	Mon Nov 7 05:08:38 2011	bz

23:48 17502 B5 Beta OFF E=13.154 W=14.166 Fe/GV=0.4824 SCS/GV=0.2312 00:48 17503 B6 Depol OFF->ON 00:55 17504 B7 Beta OFF E=13.213 W=14.253 Fe/GV=0.4804 SCS/GV=0.2292 01:55 17505 B8 Depol OFF->ON 02:02 17506 B9 Bkg OFF E= 1.262 W= 1.118 02:12 17507 B10 Beta ON E= 9.704 W= 8.837 Fe/GV=0.1137 SCS/GV=0.1698 03:12 17508 B11 Depol ON->OFF 03:20 17509 B12 Bkg ON E= 1.261 W= 1.101 17510 BAD RUN, forgot to put in T0 Time Type MCA Fastdaq Cycles Notes 03:36 P+ 1039 17511,17512 9 MIDAS Restarted, Cycle 4 bad? 04:49 P- 1040 17513,17514 9 MIDAS Restarted, Cycle 6 bad?

23878	Mon Nov 7 02:31:27 2011	bz

Error message example from UCNA_AUTO5.vi: Error 5 occurred at Read from Text File in MidasNumber.vi->UCNA_AUTO5.vi Possible reason(s): LabVIEW: File already open. ========== NI-488: Command requires GPIB Controller to be System Controller. C:\Documents and Settings\ucnems\Desktop\runlog.txt

23877	Mon Nov 7 01:59:03 2011	bz

UCNA Shift Change Checklist Date: November 7, 2011 02:00 Shift Persons: Jeff, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 60 slpm Heater B pressure 15.55 psia Heater C pressure 14.79 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312.8 psia Tungsten Cool ret. 144.9 psia Tungsten Cool Diff 219.1 psia 1630 eng. 2 temp. 13.0 K 1630 JT temp. 7.0 K 1630 outlet temp. 265.2 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.4 psig 1630 med. press. stor. 83 psig 1410 engine speed 99 rpm 1410 TE-A 17.5 K 1410 TE-B 6.3 K 1410 TE-E 81.9 K 1410 supply press. 250 psig 1410 JT press. 165 psig 1410 return press. 3.8 psig 4K dewar pressure 340 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.7 inHe 1K dewar level 32.1 inHe 4K main flow control 7.9 V LHe temp. 1 4.8 K Heat exch. temp. 3 194.6 K Poly temp. 2 160.9 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 83.7 % SCS field 0.6850 kG SCS current 118.2 A AFP N2 dewar level 1/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 1.6e-5 torr PPM LHe level 83.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 94.2 % AFP LN2 level 100.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):13.26 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 68.7 F West MWPC Temperature 67.1 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.4 torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 2524 Hz West muon veto rate 4578 Hz Spectrometer vacuum 2e-5 Torr disk usage daq account 74%

23875	Sun Nov 6 23:06:11 2011	Sky

A->B Octet 16:10 17485 A1: Bkgd OFF E=1.216 W=1.316 Fe/GV=0.0143 SCS/GV=0.0153 16:21 17486 A2: Beta OFF E=11.072 W=11.990 Fe/GV=0.4827 SCS/GV=0.2283 17:21 17487 A3: Depol OFF->ON 17:28 17488 A4: Bkgd ON E=1.258 W=1.041 Fe/GV=0.0124 SCS/GV=0.0124 17:38 17489 A5: Beta ON E=8.354 W=7.598 Fe/GV=0.1157 SCS/GV=0.1712 18:38 17490 A6: Depol ON->OFF 18:45 17491 A7: Beta ON

ON E=1.222 W=1.097 20:02 17494 A10:Beta OFF E=9.615 W=10.237 Fe/GV=0.4835 SCS/GV=0.2398 21:01 17495 bad run(?) 21:24 17496 A11:Depol OFF->ON 21:31 17497 A12:Bkgd OFF E=1.194 W=1.109 ------ ---------- second half of the A->B octet: 22:18: 17498 B1: Bkgd ON E=1.204 W=1.081 22:28 17499 B2: Beta ON E=10.08 W=9.209 Fe/GV=0.118 SCS/GV=0.1703 23:28 17500 B3: Depol ON->OFF 23:35 17501 B4: Bkg OFF E=1.196 W=1.108

23876	Sun Nov 6 22:30:23 2011	Hasan

We wanted to do a melt and refreeze so I stopped at one minute before the end of run A11(extension of beta run or Depol?), thinking it was end of A12. So FastDaq 17495 is a bad run. So I loaded the SCS with UCN using the Gate Valve program(spin flipper off) for 5 minutes and then started the A11(Depol). Now FastDaq# 17496 is for A11(Depol)

23874	Sun Nov 6 17:41:49 2011	Sky

UCNA_AUTO5.vi does not seem to be working perfectly with MIDAS. Chris and Kevin were running B->A earlier and the octet failed at the end of the B runs. Hasan and I started an A->B to get the A runs and the comment was incorrect for the first depol run of the octet; in MIDAS the comment referred to a beta decay run. I edited the MIDAS run info and we are watching each run now. Maybe the MIDAS run info does not matter. I'm also not why Run 17484 ran longer than all the other background runs but it has the right kind of rate and it is labelled Bkgd ON in the MIDAS runlog.txt. The same thing happened again with Run 17490. MIDAS said beta for a depol run. Not sure why. I changed it.

23872	Sun Nov 6 16:59:33 2011	CLMorris

Not pretty but here are the last B sequence. The auto runner lost its connection to Midas. 17473 10:51 B1: Background (on) E=1.26 W=1.1 Fe/GV=0.0104 SCS/GV=0.0115 17474 11:01 B2: Beta Run (on) E=9.39 W=8.48 Fe/GV=0.1125 SCS/GV=0.1728 17475 12:01 B3: Depol ON->OFF 17476 12:08 B4: Background (off) *There is some funny business through this part. 17477 12:19 B5: Beta Run (off) *I believe Kevin and Chris stopped a run when the beam 17478 13:16 B5: Beta Run (off) *was down. 17479 13:26 B7: Beta Run (off) E=11.407 W=12.441 Fe/GV=0.4874 SCS/GV=0.22 17480 14:23 B8: Depol OFF->ON 17481 14:33 B9: Background (off) E=1.20 W=1.10 17482 14:43 B10: Beta Run (on) E=8.214 W=7.488 Fe/GV=0.1109 SCS/GV=0.1783 17483 15:43 B10: Depol ON->OFF 17484 15:50 B12: Background (on) E=1.245 W=1.061

23873	Sun Nov 6 15:54:02 2011	Hasan

UCNA Shift Change Checklist Date: November 6, 2011 16:15 Shift Persons: Sky, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow mostly closed He blower on Heat exchanger flow 35 slpm Heater B pressure 15.23 psia Heater C pressure 14.60 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 313.8 psia Tungsten Cool ret. 152.5 psia Tungsten Cool Diff 209.5 psia 1630 eng. 2 temp. 14.01 K 1630 JT temp. 7.39 K 1630 outlet temp. 267.8 K 1630 engine speed 150 rpm 1630 supply press. 241 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 80 psig 1410 engine speed 99 rpm 1410 TE-A 17.6 K 1410 TE-B 6.4 K 1410 TE-E 82.5 K 1410 supply press. 245 psig 1410 JT press. 165 psig 1410 return press. 3.6 psig 4K dewar pressure 335 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.1 inHe 1K dewar level 30.5 inHe 4K main flow control 7.9 V LHe temp. 1 4.93 K Heat exch. temp. 3 202.6 K Poly temp. 2 162.5 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 89.5 % SCS field 0.6845 kG SCS current 118.2 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.7 torr CC1 pressure 1.2e-4 torr PPM LHe level 83.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 87.3 % AFP LN2 level 75.3 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):13.38 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 68.7 F West MWPC Temperature 63.8 F MWPC Pressure 100 torr N2 - MWPC Differential -5.1 torr Neopentane Flow Rate 12.4 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.6 torr Neopentane Flow Rate 1.51 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 3800 Hz West muon veto rate 6780 Hz Spectrometer vacuum 1.7e-5 Torr disk usage daq account 74%

23871	Sun Nov 6 08:05:04 2011	KPH

Name value comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed we need to contact an expert (Mark) He blower on Heat exchanger flow 35 slpm Heater B pressure 15.03 psia Heater C pressure 14.45 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 311.3 psia Tungsten Cool ret. 133.8 psia Tungsten Cool Diff 232.0 psia 1630 eng. 2 temp. 13.5 K 1630 JT temp. 6.48 K 1630 outlet temp. 266.8 K 1630 engine speed 160 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 2.0 psig 1630 med. press. stor. 85 psig 1410 engine speed 99 rpm 1410 TE-A 17.6 K 1410 TE-B 6.3 K 1410 TE-E 83.0 K 1410 supply press. 250 psig 1410 JT press. 165 psig 1410 return press. 3.4 psig 4K dewar pressure 330 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.5 inHe 1K dewar level 23.9 inHe 4K main flow control 7.9 V LHe temp. 1 4.56 K Heat exch. temp. 3 210 K Poly temp. 2 129 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 93.9 % SCS field 0.686 kG SCS current 118.2 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure ~0 torr CM5 pressure ~0 torr CC1 pressure 1.0e-5 torr PPM LHe level 83.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 98.8 % AFP LN2 level 96.1 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):13.46 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.9 F West MWPC Temperature 61.0 F MWPC Pressure 99.8 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate ?? slpm (Flow meter bypassed: We don't know the flow rate) West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V (ch 12) East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1966 Hz West muon veto rate 3620 Hz Spectrometer vacuum ? Torr disk usage daq account 73%

23869	Sun Nov 6 07:12:05 2011	KPH

The west anode preamp seems to be broken. It is flat lined but with a -5V bias. Not sure if the current octet is usable. I think since it is almost over, we will keep taking data and chugging along to finish the octet. Meanwhile Chris and I will look at the situation and try and debug or swap out the preamp. We fixed bothe the 25 MHz problem and the -5V bias problem by moving the amp (and preamp power) to a new NIM crate so we could plug the preamp cable in direct without a extension cable. The anode seem to have lost its "double pedistal" now.

23870	Sun Nov 6 06:49:46 2011	bz

Shift Summary: Due to my own confusion, the west anode preamp died and I was unaware that it was a problem (instead of that it was eliminated on purpose). This means that the octet taken last night is missing anode data. This is not a deal breaker, as the data can still be used with a cathode sum cut instead, but it does confuse the data quality checker (i.e. the quick analyzer on PCUCN18). This means that for all the runs last night, the quick analyzer thinks that the West rate was 0 when it was not. Therefore, I have not included the data in the run_summary.dat file. There were a lot of counts last night but they are not in our sum at this moment. The high voltage on the West Anode plane never tripped off, and the cathode data looks just fine. My apologies for the confusion, and I will notify the proper individuals if this occurs in the future. Additionally, the beam died during A9 of the octet last night. A9 was partially affected, but it's a background run, so we should be fine. A10 through A12 were invalid and are being rerun currently, still without the Anode data. Fe/GV and SCS/GV rates are both looking fine.

23868	Sun Nov 6 06:42:08 2011	bz

23:41 17446 B7: Beta Run (off) E=12.808 W=12.381 Fe/GV=0.4819 SCS/GV=0.2319 00:41 17447 B8: Depol (off to on) ** WEST ANODE PREAMP DIED 00:48 17448 B9: Background (off) 00:58 17449 B10: Beta Run (on) Fe/GV=0.1165 SCS/GV=0.1733 01:58 17450 B11: Depol (on to off) 01:05 17451 B12: Background (on) 01:18 17452 A1: Background (off) 01:28 17453 A2: Beta Run (off) Fe/GV=0.4833 SCS/GV=0.2299 02:29 17454 A3: Depol (off to on) 02:36 17455 A4: Background (on) 02:47 17456 A5: Beta Run (on) Fe/GV=0.1153 SCS/GV=0.1731 03:47 17457 A6: Depol (on to off) 03:54 17458 A7: Beta Run (on) Fe/GV=0.1137 SCS/GV=0.1721 04:55 17459 A8: Depol (on to off) 05:02 17460 A9: Background (on) ** Beam died during A9 05:12 17461 A10: Beta Run (off) Beam Off 06:12 17462 A11: Depol (off to on)

23867	Sun Nov 6 04:12:21 2011	JCHoagland

23866	Sun Nov 6 01:15:31 2011	bz

UCNA Shift Change Checklist Date: November 6, 2011 01:10 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 14.3 psia Heater C pressure 13.78 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 311.7 psia Tungsten Cool ret. 152.2 psia Tungsten Cool Diff 208.7 psia 1630 eng. 2 temp. 14.3 K 1630 JT temp. 8.2 K 1630 outlet temp. 268.7 K 1630 engine speed 150 rpm 1630 supply press. 230 psig 1630 JT press. 195 psig 1630 return press. 2.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 6.3 K 1410 TE-E 85.6 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.4 psig 4K dewar pressure 330 mmHg 1K dewar pressure 7.0 psig 4K dewar level 17.5 inHe 1K dewar level 28.6 inHe 4K main flow control 7.9 V LHe temp. 1 4.8 K Heat exch. temp. 3 205.9 K Poly temp. 2 174.3 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 85.7 % SCS field 0.6859 kG SCS current 118.2 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.7 torr CC1 pressure 8.2e-6 torr PPM LHe level 83.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 92.8 % AFP LN2 level 83.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):13.46 mA "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 66.3 F West MWPC Temperature 62.2 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate -1.63 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1230 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2579 Hz West muon veto rate 4556 Hz Spectrometer vacuum 2e-5 Torr disk usage daq account 73%

23865	Sat Nov 5 23:49:29 2011	Hasan

second half of the B->A octet: 15:51 17427 A1: Bkg (off) E=1.286 W=1.379 16:01 17428 A2: Beta (off) E=12.946 W=14.234 Fe/GV=0.4900 SCS/GV=0.2317 17:01 17429 A3: Depol (off->on) 17:08 17430 A4: Bkg (on) E=1.239 W=1.373 17:19 17431 A5: Beta (on) E=9.335 W=8.912 Fe/GV=0.1144 SCS/GV=0.1722 18:19 17432 A6: Depol (on->off) 18:26 17433 A7: Beta (on) E=9.594 W=9.325 Fe/GV=0.1158 SCS/GV=0.1716 19:26 17434 A8: Depol (on->off) 19:33 17435 A9: Bkg (on) E=1.189 W=1.270 19:43 17436 A10: Beta (off) E=13.858 W=14.974 Fe/GV=0.4807 SCS/GV=0.2260 20:43 17437 A11: Depol (off->on) 20:50 17438 A12: Bkg (off) E=1.245 W=1.192 New B->A Octet 21:06 17440 B1: Bkg (on) E=1.263 W=1.101 21:16 17441 B2: Beta (on) E=10.37 W=9.31 Fe/GV=0.1128 SCS/GV=0.1719 22:16 17442 B3: Depol (on->off) 22:23 17443 B4: Bkg (off) E= 1.164 W=1.148 22:33 17444 B5: Beta (off) E=13.256 W=14.305 Fe/GV=0.4745 SCS/GV=0.2283 23:34 17445 B6: Depol (off->on) 23:41 17446 B7: Beta (off) E= W= Fe/GV= SCS/GV=

23863	Sat Nov 5 19:55:32 2011	Hasan

UCNA Shift Change Checklist Date: November 5, 2011 16:00 Shift Persons: Andy, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.48 psia Heater C pressure 13.73 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312.4 psia Tungsten Cool ret. 152.0 psia Tungsten Cool Diff 211.2 psia 1630 eng. 2 temp. 13.73 K 1630 JT temp. 7.27 K 1630 outlet temp. 267.3 K 1630 engine speed 160 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 1.8 psig 1630 med. press. stor. 55 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.0 K 1410 TE-E 85.7 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.6 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.0 psig 4K dewar level 17.9 inHe 1K dewar level 24.6 inHe 4K main flow control 7.9 V LHe temp. 1 4.788 K Heat exch. temp. 3 198.05 K Poly temp. 2 171.32 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23864	Sat Nov 5 16:22:14 2011	ASaunders

11/5/11 Saunders DOWNSTAIRS: Gate valve status closed (bkg run) Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 86.7 % SCS field 0.686 kG SCS current 118.2 A AFP N2 dewar level 4/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.6 torr CC1 pressure 7.0e-5 torr PPM LHe level 84.0

the nitrogen PPM current 72(6) A (1) AFP current 93.581(7) A (1) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 265 ns TBCM001I03 (H- source current):13.5 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.4 F West MWPC Temperature 62.2 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 12.4 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 0.8 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.5 torr Neopentane Flow Rate broken slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1230 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2400 Hz West muon veto rate 5195 Hz Spectrometer vacuum 1.7e-5 Torr from CC2 disk usage daq account 72%

23860	Sat Nov 5 16:11:36 2011	Sky

B->A Octet started at 10:42 AM. 10:42 17415 B1: Background (on) E=1.294 W=1.416 10:52 17416 B2: Beta Run (on) E=10.627 W=9.950 Fe/GV=0.1144 11:52 17417 B3: Depol (on to off) 11:59 17418 B4: Background (off) E=1.204 W=1.500 12:09 17419 B5: Beta Run (off) E=13.623 W=15.102 Fe/GV=0.4787 13:09 17420 B6: Depol (off to on) 13:16 17421 B7: Beta Run (off) E=13.569 W=15.006 Fe/GV=0.4833 14:16 17422 B8: Depol (off to on) 14:23 17423 B9: Background (off) E=1.224 W=1.547 14:34 17424 B10: Beta Run (on) E=10.163 W=9.699 Fe/GV=0.1127 15:34 17425 B11: Depol (on to off) 15:41 17426 B12: Background (on) E=1.218 W=1.516

23862	Sat Nov 5 16:09:24 2011	Sky

The beam was stable. Beta decay rates in the SCS varied from 20-29 Hz. Here is the ucna_summary plot.

Attachment 1: .11.2011.pdf

23861	Sat Nov 5 14:20:32 2011	KPH

Detector summary: Both detectors are up and running. Several problems have shown themselves, but proably do not pose a threat to taking beta decay, though may require more post processing. 1. The Bi207 pulser for W1 PMT seems to have fallen off. It pulses are not visable in a scope, and the LED shows that the problem is not simple a gain issue. This is probably solveable by campare ing the other tubes pulsers and normalizing the gain to the other tubes Bi207 stabilized LED signal. 2. Wire Wx16 is out. 3. There is some sort of 25 MHz clock noise on the west anode. A new preamp had been installed, now it is picking something up. It could be the MKS since that is the only thing near by that would have that type of clock. Chris and I tried moving the amp around and changing the Ortec preamp to a CoolFET but with no luck. We decided that we could run in this state though it will change the cuts on the anode. 4. The gains have change dramatically this year. I am not sure if this is a sign of base or tube degredation or not. 5. The background was anomolously high for some runs last night. It is still not clear if this is a detector problem. The new voltages are PMT LeCroy Ch Voltage E1 0 1230 V E2 1 1130 V E3 2 1160 V E4 3 980 V W1 24 1540 V W2 20 1110 V W3 26 1180 V W4 27 1230 V

23856	Sat Nov 5 11:26:21 2011	bz

23:45 17388 A1: Background (off) E= 1.140 W= 9.521 23:57 17389 A2: Beta Run (off) E=10.720 W=15.467 Fe/GV=0.4931 SCS/GV=0.2404 00:57 17390 A3: Depol (off to on) 01:04 17391 A4: Background (on) E= 1.188 W= 1.477 01:17 17392 A5: Beta Run (on) E= 9.762 W= 9.289 Fe/GV=0.1161 SCS/GV=0.1762 02:17 17393 A6: Depol (on to off) 02:24 17394 A7: Beta Run (on) E= 9.067 W= 8.706 Fe/GV=0.1164 SCS/GV=0.1737 03:24 17395 A8: Depol (on to off) 03:33 17396 A9: Background (on) E= 1.192 W= 1.371 03:45 17397 A10: Beta Run (off) E=11.115 W=12.480 Fe/GV=0.4960 SCS/GV=0.2349 04:45 17398 A11: Depol (off to on) 04:52 17399 A12: Background (off) E= 1.282 W= 1.454 05:04 17400 B1: Background (on) E= 1.279 W= 1.479 05:17 17401 B2: Beta Run (on) E=11.631 W=10.973 Fe/GV=0.1161 SCS/GV=0.1750 06:17 17402 B3: Depol (on to off) 06:24 17403 B4: Background (off) E= 1.163 W= 1.424 06:36 17404 B5: Beta Run (off) E=15.447 W=16.913 Fe/GV=0.4788 SCS/GV=0.2375 07:36 17405 B6: Depol (off to on) 07:43 17406 B7: Beta Run (off) E=14.928 W=16.505 Fe/GV=0.482 08:43 17407 B8: Depol (off to on) 08:50 17408 B9: Background (off) E=1.195 W=1.436 09:02 17409 B10: Beta Run (on) E=10.872 W=10.141 Fe/GV=0.1149 10:02 17410 B11: Depol (on to off) 10:09 17411 B12: Background (on) E=1.201 W=1.422

23859	Sat Nov 5 09:14:40 2011	RRios

UCNA Shift Change Checklist Date: November 4, 2011 08:30 Shift Persons: Raymond, Sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow mostly closed He blower on Heat exchanger flow 35 slpm Heater B pressure 14.47 psia Heater C pressure 13.73 psia Tungsten supply press. 315 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2

psia 1630 eng. 2 temp. 15.94 K 1630 JT temp. 7.26 K 1630 outlet temp. 267.8 K 1630 engine speed 180 rpm 1630 supply press. 242 psig 1630 JT press. 193 psig 1630 return press. 1.95 psig 1630 med. press. stor. 69 psig 1410 engine speed 149 rpm 1410 TE-A 15.9 K 1410 TE-B 6.0 K 1410 TE-E 87.5 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.85 psig 4K dewar pressure 322 mmHg 1K dewar pressure 7.2 psig 4K dewar level 16.5 inHe 1K dewar level 15.0 inHe 4K main flow control 7.9 V LHe temp. 1 4.76 K Heat exch. temp. 3 201.2 K Poly temp. 2 161.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.6 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 91.4 % SCS field 0.6859 kG SCS current 118.2 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.5 torr CC1 pressure 2.2e-5 torr PPM LHe level 84.1 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 99.6 % AFP LN2 level 96.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 267 ns TBCM001I03 (H- source current):13.5 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 65.1 F West MWPC Temperature 60.5 F MWPC Pressure 100.3 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 12.3 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -? torr Neopentane Flow Rate ? slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 2086 Hz West muon veto rate 3927 Hz Spectrometer vacuum 1e-5 Torr disk usage daq account 71%

23858	Sat Nov 5 08:06:09 2011	bz

End of Shift Summary: A1(17388) and A2(17389) runs are bad due to extremely high noise on W detector. Rest of octet looks good, especially after changes made to increase source flow by Jeff. Beta rate for last beta run looks to be roughly 32 Hz. West PMTs 1 and 4 may have issues with noise? Rate according to MIDAS is ~10k or so? There is either a broken wire or a missing wire in the west detector - the highest x value IT IS ESSENTIAL that we keep the source flow as high as possible. Do not close the green arrow, and do not adjust the associated needle valve. Try to keep the 4k dewar at 6.5 - 7 psi. Leave the voltage at around 8 V.

Attachment 1: .ps

23857	Sat Nov 5 03:23:26 2011	JCHoagland

UCNA Shift Change Checklist Date: November 5, 2011 00:30 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open barely open for source return He blower on Heat exchanger flow 24 slpm Heater B pressure 14.61 psia Heater C pressure 13.86 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 313.8 psia Tungsten Cool ret. 138.0 psia Tungsten Cool Diff 230.2 psia 1630 eng. 2 temp. 14.0 K 1630 JT temp. 7.3 K 1630 outlet temp. 267.0 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.3 psig 1630 med. press. stor. 70 psig 1410 engine speed 149 rpm 1410 TE-A 16.0 K 1410 TE-B 5.9 K 1410 TE-E 87.1 K 1410 supply press. 245 psig 1410 JT press. 155 psig 1410 return press. 3.6 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.5 psig 4K dewar level 15.0 inHe 1K dewar level 12.1 inHe 4K main flow control 7.5 V LHe temp. 1 4.7 K Heat exch. temp. 3 195.0 K Poly temp. 2 117.9 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.1 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 98.9 % SCS field 0.6881 kG SCS current 118.1 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.6 torr CC1 pressure 7.7e-5 torr PPM LHe level 84.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.2 % AFP LN2 level 30.0 % filled the nitrogen PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns beam parameters from 1:25am since beam TBCM001I03 (H- source current):13.9 mA was unstable at 12:30 "Beamplot" Capture: 83 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.5 F West MWPC Temperature 59.6 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 12.7 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 0.5 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate -1.7 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 980 V East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 2334 Hz West muon veto rate 4510 Hz Spectrometer

23855	Sat Nov 5 00:53:59 2011	JCHoagland

the TBCM001I03 was not stable when calling CCR for beam parameters so it may affect the beam performance alittle bit. also, when doing the check list found that the afp was left in update mode and that the nitrogen had not been refilled. this is the 3rd time this year i have found it this way. it needs to stop.

23854	Sat Nov 5 00:48:50 2011	bz

West PMT 1 appears to be missing the Bi peak

23853	Fri Nov 4 23:58:51 2011	RRios

Shift Review: Most of the this shift we waited for CCR to tune. Kieth did the best he could. He could not get the thermocouples up to the temperature they were last night. UCN at GV monitor det only reaches 200 UCN/s. While waiting for the tune we did source calibration runs. Attempted to put the plug back in but it doesn't feel like it set correctly. Started A->B Octet

23852	Fri Nov 4 22:28:27 2011	Hasan

Time Run Type Fast Daq Notes 1954 Source Run 2.5" 17368 2013 Source Run 1.0" 17369 2021 Source Run 2.0" 17370 2029 Source Run 3.0" 17371 2037 Source Run 4.0" 17372 2045 Source Run 5.0" 17373 2052 Source Run 4.5" 17374 2059 Source Run 3.5" 17375 2113 Source Run 1.5" 17376 2121 Source Run 0.5" 17377 2128 Source Run 0.25" 17378 2137 Source Run 0.75" 17379 2144 Source Run 1.25" 17380 2151 Source Run 1.75" 17381 2159 Source Run 2.25" 17382 2206 Source Run 2.75" 17383 2213 Source Run 3.25" 17384 2220 Source Run 3.75" 17385 2227 Source Run 4.25" 17386 2234 Source Run 4.75" 17387

23851	Fri Nov 4 17:43:38 2011	RRios

UCNA Shift Change Checklist Date: November 4, 2011 02:02 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 25 slpm Heater B pressure 14.8 psia Heater C pressure 14.1 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 315 psia Tungsten Cool ret. 126 psia Tungsten Cool Diff 249 psia 1630 eng. 2 temp. 14.3 K 1630 JT temp. 7.32 K 1630 outlet temp. 263 K 1630 engine speed 165 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 45 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 6.1 K 1410 TE-E 109.5 K 1410 supply press. 245 psig 1410 JT press. 145 psig 1410 return press. 4.0 psig 4K dewar pressure 310 mmHg 1K dewar pressure 8.0 psig 4K dewar level 13.6 inHe 1K dewar level 32.7 inHe 4K main flow control 7.0 V LHe temp. 1 4.7 K Heat exch. temp. 3 204.0 K Poly temp. 2 58 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.5 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 84.5 % SCS field 0.6859 kG SCS current 118.2 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.6 torr CC1 pressure 3.0e-5 torr PPM LHe level 84.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 85.4 % AFP LN2 level 68.3 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current):-- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 67.2 F West MWPC Temperature 62.5 F MWPC Pressure 100 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 12.5 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 16.3 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1853 Hz West muon veto rate 3429 Hz Spectrometer vacuum 3.2e-5 Torr disk usage daq account 71%

23850	Fri Nov 4 17:20:09 2011	MFMakela

Source re-made 14 mbar in tank melted and re-froze Source return though cold part of 1630, please do not melt and refreeze without contacting me. nEDM is returning gas to the 1410 system (small flow)

23849	Fri Nov 4 10:48:26 2011	MFMakela

system 1258 in the source total ~1255 tank mbar starting to cool the source we were running with ~ 1225 tank mbar

23848	Fri Nov 4 07:43:16 2011	bz

Took a bunch of Decay Trap Depol runs source appeared to work well all night, open gate valve rate ~170 or so, similar to previous nights may need to fill SCS with 1k

23843	Fri Nov 4 07:39:53 2011	Hasan

Time Run Type MCA Fast Daq H-time(s) AFP Cycles Notes Shutter Leakage 1024 17341,17342 off 25 Decay Trap Depol 1025 17343 30 off->on 12 1st cycle bad? 11-4-11 00:18 Decay Trap Depol 1026 17344 37.5 off->on 11 01:04 Decay Trap Depol 1027 17345 45 off->on 10 01:46 Decay Trap Depol 1028 17346 52.5 off->on 11 02:34 Decay Trap Depol 1029 17347 60 off->on 10 03:19 Decay Trap Depol 1030 17348 90 off->on 10 04:09 Decay Trap Depol 1031 17349 30 on->off 12 04:56 Decay Trap Depol 1032 17350 37.5 on->off 11

23847	Fri Nov 4 02:09:38 2011	bz

UCNA Shift Change Checklist Date: November 4, 2011 02:02 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 15.50 psia Heater C pressure 14.75 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312.8 psia Tungsten Cool ret. 146.1 psia Tungsten Cool Diff 215.9 psia 1630 eng. 2 temp. 13.7 K 1630 JT temp. 7.2 K 1630 outlet temp. 267.7 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 205 psig 1630 return press. 2.0 psig 1630 med. press. stor. 50 psig 1410 engine speed 48 rpm 1410 TE-A 19.3 K 1410 TE-B 6.4 K 1410 TE-E 78.2 K 1410 supply press. 250 psig 1410 JT press. 195 psig 1410 return press. 3.3 psig 4K dewar pressure 330 mmHg 1K dewar pressure 5.5 psig 4K dewar level 10.0 inHe 1K dewar level 26.7 inHe 4K main flow control 7.9 V LHe temp. 1 4.8 K Heat exch. temp. 3 172.0 K Poly temp. 2 69.2 K flapper heater cur .18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 97.2 % SCS field 0.6859 kG SCS current 118.2 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.6 torr CC1 pressure 1.9e-5 torr PPM LHe level 85.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.9 % AFP LN2 level 74.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 270 ns TBCM001I03 (H- source current):13.2 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 64.5 F West MWPC Temperature 58.8 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.9 torr Neopentane Flow Rate 12.3 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2450 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -5.9 torr Neopentane Flow Rate 16.3 slpm West PMT Buck. Curr. 0.48 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2200 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 2086 Hz West muon veto rate 3927 Hz Spectrometer vacuum 1e-5 Torr disk usage daq account 71%

23846	Fri Nov 4 00:12:20 2011	RRios

If we have time: This the same setup but we do AFP ON->OFF 30,37.5,45,52.5,60,90s Holding time 30 seconds Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 1 0 1 Fill decay trap Section for 100 Seconds 10 0 1 0 0 1 1 1 0 1 10000 0 0 0 0 1 1 1 0 1 Close shutter (Holding time:30s) 10100 0 0 0 0 1 0 1 1 0 Close GV, Drain Polarized UCN 12500 0 0 0 0 1 0 0 1 0 Spinflipper (off) 13000 0 1 0 0 1 0 0 1 0 Open Shutter, count depolarized UCN (100s) 23000 0 0 0 0 1 0 1 0 0

23845	Fri Nov 4 00:06:13 2011	MFMakela

Please try turning the 1410 to 50 rpm 1630 to 150 rpm closing the V311 on the 1630 1/2-1 face to raise pressure in 4000 l dewar ~300-310 mm Hg If you run LHe around one of the bypasses to put some pressure into the MPS be careful not to freeze the heater. It is better to do it a couple of time rather than get the heater colder than during a magnet fill. Thanks Mark Okay done- Raymond

23842	Thu Nov 3 23:29:31 2011	RRios

The beam is heating up the SD2 and causing vapor. We are getting 60 UCN/s in the monitor detector. I turned off the beam and the source solidified and the vacuum went down. When I

the source heated. the source is up to 0.2V that's the highest I've seen and it looks like it's still not enough. Will try a melt and refreeze.

23841	Thu Nov 3 23:26:56 2011	RRios

Decay Trap Depol Measurements: This measurement is to see how the depolared UCN density changes over time inside the decay trap. Holding times are 30,37.5,45,52.5,60,90 Example timings: Holding time 30 seconds Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 Fill decay trap Section for 100 Seconds 10 0 1 0 0 1 1 0 0 1 10000 0 0 0 0 1 1 0 0 1 Close shutter (Holding time:30s) 10100 0 0 0 0 1 0 0 1 0 Close GV, Drain Polarized UCN 12500 0 0 0 0 1 0 1 1 0 Spinflipper (on) 13000 0 1 0 0 1 0 1 1 0 Open Shutter, count depolarized UCN (100s) 23000 0 0 0 0 1 0 0 0 0 Holding time 60 seconds Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 Fill decay trap Section for 100 Seconds 10 0 1 0 0 1 1 0 0 1 10000 0 0 0 0 1 1 0 0 1 Close shutter (Holding time:60s) 10100 0 0 0 0 1 0 0 1 0 Close GV, Drain Polarized UCN 12500 0 0 0 0 1 0 1 1 0 Spinflipper (on) 16000 0 1 0 0 1 0 1 1 0 Open Shutter, count depolarized UCN (100s) 26000 0 0 0 0 1 0 0 0 0

23844	Thu Nov 3 22:41:32 2011	Hasan

UCNA Shift Change Checklist Date: November 3, 2011 16:50 Shift Persons: Raymond and Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 15.27 psia Heater C pressure 14.52 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 313.4 psia Tungsten Cool ret. 124.4 psia Tungsten Cool Diff 246.7 psia 1630 eng. 2 temp. 14.52 K 1630 JT temp. 7.27 K 1630 outlet temp. 268.5 K 1630 engine speed 160 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 2.0 psig 1630 med. press. stor. 75 psig 1410 engine speed 73 rpm 1410 TE-A 18.1 K 1410 TE-B 6.2 K 1410 TE-E 81.1 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 4K dewar pressure 280 mmHg 1K dewar pressure 6.0 psig 4K dewar level 7.43 inHe 1K dewar level 19.8 inHe 4K main flow control 7.9 V LHe temp. 1 5.3 K Heat exch. temp. 3 166.2 K Poly temp. 2 52.613 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99 % SCS field .6998 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.5 torr CC1 pressure 5.5x 10-3 torr PPM LHe level 85.0 % PPM LN2 level 0?? % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s (Beam Off) Proton pulses/burst: --- Proton countdown: --- tuning Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V () MWPC Trip Hold Status trip hold East MWPC Temperature 58.3 F West MWPC Temperature 62.9 F MWPC Pressure 95.4 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 9.0 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ....OFF ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1789 Hz West muon veto rate 3418 Hz Spectrometer vacuum 1.5e-5 Torr () disk usage daq account 70%

23840	Thu Nov 3 11:36:37 2011	KPH

The East detector is filled and the HV is up to 2700V. It has been vary stable all night.

23839	Thu Nov 3 07:45:21 2011	bz

Took a bunch of old-style Depol and Reload runs, and then did some Guide Flipper Trapped Lifetimes for holding times of 50 and 60 seconds as well. Heater in Area B was turned off. Called CCR in the morning and a gent came and turned the heater on Currently, warmer air is being blown in Area B, and the gent will return later to make sure it continues to work. Heater Skid A is tripping off (Hi-Limit light is coming on). Currently it's too cold in the area and whenever we reset it it trips off again in several seconds. Hopefully once we get the area warm enough, the heater skid A will stop continuously heating and tripping off. Did a couple of AFP fills to deal with low Medium Pressure Storage. Also, Jeff moved some liquid from the 1k to the 4k

23835	Thu Nov 3 07:10:15 2011	Hasan

Runs with same Drain time as last year... Run Type MCA Fast Daq H-Time (s) AFP Cycles Notes Reload (Shutter Open) 1010 17326 On->Off 10 Depol (Shutter Open) 1011 17327 On->Off 10 Reload (Shutter Open) 1013 17328 On->Off 10 Switcher MCA # fixed, same as rest Depol (Shutter Open)

23838	Thu Nov 3 03:31:47 2011	JCHoagland

UCNA Shift Change Checklist Date: November 3, 2011 02:00 Shift Persons: Bryan and jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 15.21 psia Heater C pressure 14.52 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 307.2 psia Tungsten Cool ret. 138.2 psia Tungsten Cool Diff 221.7 psia 1630 eng. 2 temp. 13.69 K 1630 JT temp. 7.55 K 1630 outlet temp. 268.1 K 1630 engine speed 170 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 1.7 psig 1630 med. press. stor. 52 psig 1410 engine speed 98 rpm 1410 TE-A 17.4 K 1410 TE-B 6.0 K 1410 TE-E 84.5 K 1410 supply press. 248 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 4K dewar pressure 300 mmHg 1K dewar pressure 6.0 psig 4K dewar level 12.67 inHe 1K dewar level 18.20 inHe 4K main flow control 7.6 V LHe temp. 1 4.762 K Heat exch. temp. 3 160.2 K Poly temp. 2 65.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.482 MHz AFP forward power 45 W SCS LHe level 95.5 % SCS field .6998 kG SCS current 118.2 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.5 torr CC1 pressure 1.1x 10-5 torr PPM LHe level 85.6 % PPM LN2 level 0?? % AFP LHe level 99.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 tuning Proton pattern width: 270 ns TBCM001I03 (H-source current): 13.7 mA "Beamplot" Capture: 84% ========== East Detector Cart ========== MWPC HV 2700 V () MWPC Trip Hold Status trip hold East MWPC Temperature 54.4 F West MWPC Temperature 54.5 F MWPC Pressure 100.1 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 9.4 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H2O Chiller on Chiller water level 1.75 ========== West Detector Cart ....OFF ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure .8 torr N2 - MWPC Differential .66 torr Neopentane Flow Rate -1.7 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.35 kV West muon veto HV 2.36 kV East muon veto rate 1987 Hz West muon veto rate 3764 Hz Spectrometer vacuum 8 e-6 Torr () disk usage daq account 70%

23837	Thu Nov 3 00:44:03 2011	bz

Notice: The heater Skid A HI-Limit light is now on. Jeff and I weren't sure what to make of it. Additionally, the LN2 pipe for the 1410 is now iced over, which may warrant some attention

23836	Wed Nov 2 22:56:15 2011	RRios

After the depol and reload (20 cycles each), Albert suggested measuring Shutter leakage. Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 0 0 1 1 1 0 0 1 Fill Guide Section for 100 Seconds 10 0 0 0 0 1 1 0 0 1 10000 0 0 0 0 1 0 0 1 0 Close GV, Drain Polarized UCN (15s) 13000 0 1 0 0 1 0 0 1 0 Open Shutter, count depolarized UCN (50s) 18000 0 0 0 0 1 0 0 0 0

23832	Wed Nov 2 21:52:22 2011	Hasan

Run Type MCA Fast Daq H-Time (s) AFP Cycles Notes Transfer Line Depol Run 1007 17323 30 off->on 10 Transfer Line Depol Run 1008 17324 30 on->off 10 Depol (Shutter Open) 1009 17325 On->Off 10

23834	Wed Nov 2 21:26:45 2011	RRios

Minor change to the runs: The drain time is shortened to match last year's drain time. Corrected timing: Depol Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 1 0 0 1 0 0 1 0 17500 0 1 0 0 1 0 1 1 0 44500 0 1 0 0 1 1 1 0 0 Depol On to Off Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 1 0 0 1 0 1 1 0 17500 0 1 0 0 1 0 0 1 0 44500 0 1 0 0 1 1 0 0 0 Reload Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 1 0 0 1 0 0 1 0 16250 0 1 0 0 1 0 1 1 0 16550 0 1 0 0 1 0 0 1 0 17500 0 1 0 0 1 0 1 1 0 44500 0 1 0 0 1 1 1 0 0 Reload Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 1 0 0 1 0 1 1 0 16250 0 1 0 0 1 0 0 1 0 16550 0 1 0 0 1 0 1 1 0 17500 0 1 0 0 1 0 0 1 0 44500 0 1 0 0 1 1 0 0 0

23833	Wed Nov 2 20:36:27 2011	RRios

Notes: The Switcher detector is saved one number higher than other detectors in the same run. The SCS LHe level monitor appears to be broken at 100%, I don't trust it. Started the night with some transfer line depolarization measurements- does not appear to be any trapped

23824	Wed Nov 2 19:35:41 2011	Hasan

Run Type MCA Fast Daq H-Time (s) AFP Cycles Notes Transfer Line Depol Run 998 17315 15 off->on 10

23831	Wed Nov 2 19:14:38 2011	Hasan

UCN rate(closed GV) at GV monitor is 226 Hz.

23830	Wed Nov 2 18:00:11 2011	Hasan

UCNA Shift Change Checklist Date: November 2, 2011 16:15 Shift Persons: Raymond and Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 15.04 psia Heater C pressure 14.33 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 308 psia Tungsten Cool ret. 123 psia Tungsten Cool Diff 242 psia 1630 eng. 2 temp. 13.05 K 1630 JT temp. 7.09 K 1630 outlet temp. 267.6 K 1630 engine speed 170 rpm 1630 supply press. 240 psig 1630 JT press. 190 psig 1630 return press. 2 psig 1630 med. press. stor. 70 psig 1410 engine speed 98 rpm 1410 TE-A 17.1 K 1410 TE-B 6.1 K 1410 TE-E 83.9 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. 3.2 psig 4K dewar pressure 320 mmHg 1K dewar pressure 6.0 psig 4K dewar level 10.61 inHe 1K dewar level 15.30 inHe 4K main flow control 7.7 V LHe temp. 1 4.755 K Heat exch. temp. 3 157.49 K Poly temp. 2 41.508 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.4 C AFP frequency 28.482 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field .6898 kG SCS current 118.2 A AFP N2 dewar level Full SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.6 torr CC1 pressure 1.3x 10-5 torr PPM LHe level 85.6 % PPM LN2 level 0?? % AFP LHe level 97.0 % AFP LN2 level 62.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s (Beam OFF) Proton pulses/burst: --- Proton countdown: --- tuning Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: ---% ========== East Detector Cart ========== MWPC HV 500 V (Kevin's ramping up voltage) MWPC Trip Hold Status trip hold East MWPC Temperature 57.0 F West MWPC Temperature 52.7 F MWPC Pressure 100.2 torr N2 - MWPC Differential -3.3 torr Neopentane Flow Rate 9.3 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ....OFF ========== MWPC HV 0 V MWPC Trip Hold Status trip hold MWPC Pressure .9 torr N2 - MWPC Differential .56 torr Neopentane Flow Rate -1.69 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1740 Hz West muon veto rate 3265 Hz Spectrometer vacuum 1.1 e-5 Torr (CC2 reading) disk usage daq account 70%

23179	Wed Nov 2 16:30:51 2011	KPH

Electronics: -> Moved entire electronics rack to up by the PPM. -> Adjusted thresholds -> Adjusted PD gain -> Ge voltage is 2.8kV -> PMTs HV set to 1.2kV Optics: -> Installed the new reflector from Labsphere -> Installed the new 600um SMA fiber feedthrough. -> Installed the variable attenuator between the LED/PD fiber coupler and the new feed-through Scintillator: -> painted each bevelled edge of each cube side and then painted each UCN surface with DPS and DT -> glued 5 faces together using DPS and DT. -> left the top piece open for disk source calibration. Ge detector: -> reinstalled Al Ge det window on top. Vacuum: -> the box was not fully dry and out gassed for about three hours under vacuum. -> I used a very small amount of vacuum grease around the 1in compression o-ring // -> GV=open(156s)/closed(156s) bV=open(260s)/closed(52s) Run 3580 LED unplugged to get a clear lifetime measurement. bV Run 3584 LED plugged back in Run 3585 background (same pattern but with bV gated off) // changed timings Run 3588 changed the timing to look for longer lifetime to bV=open(156s)/closed(156s) Run 3591 still bV=open(156s)/closed(156s) but w/o LED (except at the beginning) Run 3592 still bV=open(156s)/closed(156s) but w/o LED through Run 3597 is the same // stopping to get Ge det online... Run 3602 looking at Ge threshold of 50 Run 3605 has a threshold of 50 to - shows a big low energy peak. Can't tell if that's pedestal or what // now back to "beta" decay. Run 3617 HV went off // lifetime test with LED off Run 3625 GV=closed bV=open(52s)/closed(52s) runlength=1040s(10 cycles) // Changing PMT HV settings because the pulse height is really messed up. Why did't I catch this earlier!? // Changing to 1280V // also adjusting attenuator to height balance PMTs and PD // PMT voltage now 1.4kV

23829	Wed Nov 2 06:45:24 2011	JCHoagland

filled afp so as to keep medium pressure up set the source flow to 7.7 so that medium pressure would not go down too fast 1k and 4k are making liquid and both have enough to fill there magnets while charged.

23828	Wed Nov 2 06:29:25 2011	bz

Run Type MCA Fast Daq Cycles Notes Depol Off->On (Shutter Open) 999 17316 12 Beam Unstable, Shutter CLOSED Reload Off->On (Shutter Open) 1000 17317 10 Shutter CLOSED Depol Off->On (Shutter Open) 1001 17318 0 Shutter CLOSED ------All of the above runs bad because shutter was closed the entire time---------- Depol Off->On (Shutter Open) 1002 17319 5 Reload Off->On (Shutter Open) 1003 17320 5 Depol Off->On (Shutter Open) 1004 17321 7 Cycles 5,6 no beam Reload Off->On (Shutter Open) 1005 17322 5 Cycle 4 no beam? As it says above, the Shutter was actually closed for the first two sets of 10 cycles, so we wasted a lot of beam time by not having the correct automation. It is essential to verify that the system is working correctly before you let it run, and I am as much at fault as anyone for this. Otherwise, beam was stable and UCN rate was slightly better than before.

23827	Wed Nov 2 06:14:43 2011	MFMakela

Morning, it looks like the online plotter might be hung up. I saw a few graphs then no more. Please give it a kick. - Mark

23826	Wed Nov 2 02:24:57 2011	bz

UCNA Shift Change Checklist Date: November 2, 2011 00:30 Shift Persons: jeff and bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 75 slpm Heater B pressure 14.26 psia Heater C pressure 13.52 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 311.7 psia Tungsten Cool ret. 135.6 psia Tungsten Cool Diff 229.9 psia 1630 eng. 2 temp. 13.2 K 1630 JT temp. 7.1 K 1630 outlet temp. 268.8 K turned 806 closed 1/2 a number 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.7 psig 1630 med. press. stor. 60 psig 1410 engine speed 149 rpm 1410 TE-A 14.5 K 1410 TE-B 5.4 K 1410 TE-E 84.4 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.5 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.5 inHe 1K dewar level 12.0 inHe 4K main flow control 7.5 V LHe temp. 1 4.7 K Heat exch. temp. 3 172.6 K Poly temp. 2 77.1 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status down AFP temperature 10.4 C AFP frequency 28.482 MHz AFP forward power 42 W SCS LHe level 95.1 % SCS field .6859 kG SCS current 118.2 A AFP N2 dewar level 1/8 SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.5 torr CC1 pressure 1.9x 10-5 torr PPM LHe level 85.7 % PPM LN2 level 0?? % AFP LHe level 88.6 % AFP LN2 level 75.7 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 21 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 tuning Proton pattern width: 275 ns TBCM001I03 (H- source current): 13.58 mA "Beamplot" Capture: 82% ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status auto reset East MWPC Temperature 63.7 F West MWPC Temperature 61.0 F MWPC Pressure .8 torr N2 - MWPC Differential 0.0 torr Neopentane Flow Rate -4e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure .9 torr N2 - MWPC Differential .5torr Neopentane Flow Rate -1.5 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1898 Hz West muon veto rate 3601 Hz Spectrometer vacuum 2.9 e-5 Torr (CC2 reading) disk usage daq account 70%

23825	Tue Nov 1 23:46:31 2011	Sky

Here is a plot of the frequency scan we performed using the Fe Foil Monitor, just counting for 30 seconds after waiting for a few minutes between each frequency change. Based on the results, we moved the AFP frequency from 28.479 MHz to 28.482 MHz. This frequency should be fine but the middle of the flat region looks to be at a higher frequency.

Attachment 1: .ps

.ps

23823	Tue Nov 1 22:47:15 2011	Hasan

UCN rate after increasing flow to the source (V=7.0->7.5) and heat exch flow (50->75)(with GV closed) at GV Monitor is 252 Hz.

23822	Tue Nov 1 22:09:25 2011	MFMakela

Hey, would you guys turn on CC1 (make sure is is connected to the CC1 cable in the back.

interface) running? Thanks, Mark

23821	Tue Nov 1 20:23:49 2011	Hasan

UCN production rate(GV closed)=235 Hz

23820	Tue Nov 1 19:22:06 2011	Hasan

UCNA Shift Change Checklist Date: November 1, 2011 18:40 Shift Persons: Sky and Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 14.4 psia Heater C pressure 13.7 psia Tungsten supply press. 313.7 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 313.7 psia Tungsten Cool ret. 132.7 psia Tungsten Cool Diff 236.5 psia 1630 eng. 2 temp. 11.5 K 1630 JT temp. 6.1 K 1630 outlet temp. 265 K 1630 engine speed 180 rpm 1630 supply press. 242 psig 1630 JT press. 185 psig 1630 return press. 2.0 psig 1630 med. press. stor. 80 psig 1410 engine speed 149 rpm 1410 TE-A 15.3 K 1410 TE-B 6.0 K 1410 TE-E 83.9 K 1410 off 1410 supply press. 245 psig 1410 JT press. 184 psig 1410 return press. 3.4 psig 4K dewar pressure 360 mmHg 1K dewar pressure 6.5 psig 4K dewar level 12.59 inch 1K dewar level 5.54 inch 4K main flow control 7.0 V LHe temp. 1 4.76 K Heat exch. temp. 3 173.2 K Poly temp. 2 44.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 99.8% SCS field 3.0 G SCS current 0 A AFP N2 dewar level 1/8 SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.4 torr CC1 pressure 2.3e-5 torr PPM LHe level 85.8 % PPM LN2 level 0?? % AFP LHe level 90.2 % AFP LN2 level 95.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s (Beam OFF) Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 63.3 F West MWPC Temperature 58.4 F MWPC Pressure .9 torr N2 - MWPC Differential 0.0 torr Neopentane Flow Rate -2e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ...OFF ========== MWPC HV 0 V MWPC Trip Hold Status Trip Hold MWPC Pressure .9 torr N2 - MWPC Differential .49 torr Neopentane Flow Rate -1.5 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 2033 Hz West muon veto rate 3805 Hz Spectrometer vacuum 3.2e-5 Torr disk usage daq account 70%

23819	Tue Nov 1 17:50:04 2011	RRios

Depolarization in Transfer Line Measurements Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 0 0 1 1 1 0 0 1 Fill Guide Section for 50 Seconds 10 0 0 0 0 1 1 0 0 1 5000 0 0 0 0 1 0 0 1 0 Close GV, Drain Polarized UCN (15s) 6500 0 0 0 0 1 0 1 1 0 Change Spinflipper, count depolarized UCN (50s) 11500 0 0 0 0 1 0 0 0 0

23818	Tue Nov 1 14:46:21 2011	MFMakela

Source melt and refreeze completed - Mark and Raymond

23817	Tue Nov 1 13:02:34 2011	CLMorris

Switcher run numbers from last night are out of sequence by 1. Logged run 977 is saved run 978.

23815	Tue Nov 1 05:39:15 2011	RRios

Run Type MCA Fast Daq H-Time (s) AFP Cycles Notes GFT- 977 17300 5 off 11 GFT+ 978 17301 5 on 12 GFT+ 979 17302 10 on 10 GFT- 980 17303 10 off 10 GFT- 981 17304 15 off 11 GFT+ 982 17305 15 on 10 GFT+ 983 17306 25 on BAD RUN, mistake in configuration GFT+ 984 17307 25 on 10 GFT- 985 17308 25 off 10 GFT- 986 17309 40 off 10 GFT+ 987 17310 40 on 12 At least one cycle in middle had reduced rate due to fill 10 minute background runs Background (Beam Off) 988 17311 Background (Beam On) 989 17312

23816	Tue Nov 1 03:49:31 2011	JCHoagland

UCNA Shift Change Checklist Date: November 1, 2011 00:15 Shift Persons: jeff and bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower off Heat exchanger flow 75 slpm Heater B pressure 13.55 psia Heater C pressure 12.74 psia Tungsten supply press.

Compressor 2 on off Tungsten Cool supp. 312.0 psia Tungsten Cool ret. 192.9 psia Tungsten Cool Diff 206.1 psia 1630 eng. 2 temp. 12.9 K 1630 JT temp. 7.2 K 1630 outlet temp. 267.6 K turned 806 closed 1/2 a number 1630 engine speed 225 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.8 psig 1630 med. press. stor. 75 psig 1410 engine speed --- rpm 1410 TE-A ---- K 1410 TE-B --- K 1410 TE-E ---- K 1410 off 1410 supply press. --- psig 1410 JT press. --- psig 1410 return press. --- psig 4K dewar pressure 300 mmHg 1K dewar pressure 2.0 psig 4K dewar level 19.1 inHe 1K dewar level 3.9 inHe 4K main flow control 6.7 V LHe temp. 1 4.8 K Heat exch. temp. 3 169.4 K Poly temp. 2 152.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.479 MHz AFP forward power 40 W SCS LHe level 91.2 % SCS field 3.0 G SCS current 0 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 1.4 torr CC1 pressure 2.8x 10-5 torr PPM LHe level 86.0 % PPM LN2 level 0?? % AFP LHe level 89.7 % AFP LN2 level 85.3 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 21 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 tuning Proton pattern width: 310 ns TBCM001I03 (H- source current):10.3 mA "Beamplot" Capture: 81% ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status auto reset East MWPC Temperature 63.0 F West MWPC Temperature 57.9 F MWPC Pressure .8 torr N2 - MWPC Differential 0.0 torr Neopentane Flow Rate -4e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart OUT--- ========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure .9 torr N2 - MWPC Differential .5torr Neopentane Flow Rate -1.5 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1979 Hz West muon veto rate 3944 Hz Spectrometer vacuum 8e-6 Torr disk usage daq account 70%

23814	Tue Nov 1 00:08:59 2011	RRios

T0 from Labview is connected to Fast DAQ

23813	Tue Nov 1 00:05:31 2011	RRios

Here are the Labview settings: (GFT-) with 5s holding time Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 0 0 1 1 1 0 0 1 10 0 0 0 0 1 1 0 0 1 5000 0 0 0 0 1 0 0 1 0 5100 0 0 0 0 1 0 1 1 0 5600 0 0 0 0 1 0 0 1 0 15600 0 0 0 0 1 0 0 1 0 The last two rows change as we increase the holding time (10,15,25,40s). For GFT+ all 0<=>1 in the AFP column. (5s) Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 0 0 1 1 1 1 0 1 10 0 0 0 0 1 1 1 0 1 5000 0 0 0 0 1 0 1 1 0 5100 0 0 0 0 1 0 0 1 0 5600 0 0 0 0 1 0 1 1 0 15600 0 0 0 0 1 0 1 1 0 The last two rows change as we increase the holding time (10,15,25,40s). Depol Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 1 0 0 1 0 0 1 0 17500 0 1 0 0 1 0 1 1 0 47000 0 1 1 1 1 0 1 1 0 Depol On to Off Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 1 0 0 1 0 1 1 0 17500 0 1 0 0 1 0 0 1 0 47000 0 1 0 0 1 1 0 0 0 Reload Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 0 0 1 10 0 1 0 0 1 1 0 0 1 15000 0 1 0 0 1 0 0 1 0 16250 0 1 0 0 1 0 1 1 0 16550 0 1 0 0 1 0 0 1 0 17500 0 1 0 0 1 0 1 1 0 47000 0 1 0 0 1 1 1 0 0 Reload Off to ON Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 1 1 1 0 1 10 0 1 0 0 1 1 1 0 1 15000 0 1 0 0 1 0 1 1 0 16250 0 1 0 0 1 0 0 1 0 16550 0 1 0 0 1 0 1 1 0 17500 0 1 0 0 1 0 0 1 0 47000 0 1 0 0 1 1 0 0 0

23812	Mon Oct 31 23:55:48 2011	RRios

Counts in the Fe mon: 30 seconds AFP off: 285 AFP on : 109

23811	Mon Oct 31 21:43:41 2011	Hasan

UCNA Shift Change Checklist Date: October 31, 2011 21:00 Shift Persons: Raymond and Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 75 slpm Heater B pressure 13.6 psia Heater C pressure 12.7 psia Tungsten supply press. 310 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 312 psia Tungsten Cool ret. 126.0 psia Tungsten Cool Diff 243.0 psia 1630 eng. 2 temp. 12.86 K 1630 JT temp. 7.0 K 1630 outlet temp. 267 K 1630 engine speed 240 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 1.8 psig 1630 med. press. stor. 80 psig 1410 engine speed --- rpm (1410 is OFF) 1410 TE-A --- K 1410 TE-B --- K 1410 TE-E --- K 1410 supply press. --- psig 1410 JT press. --- psig 1410 return press. --- psig 4K dewar pressure 300 mmHg 1K dewar pressure 2.0 psig 4K dewar level 17.8 inHe 1K dewar level 4.2 inHe 4K main flow control 6.7 V LHe temp. 1 4.7 K Heat exch. temp. 3 176.0 K Poly temp. 2 177 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 93.9 % SCS field 0.003 kG SCS current 0 A AFP N2 dewar level 3/8 SV3 closed SV4 open

LN2 level 0.!! % [level meter broken] AFP LHe level 99.8 % AFP LN2 level 99.4 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: OFF Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 62.9 F West MWPC Temperature 57.5 F MWPC Pressure 0.9 torr N2 - MWPC Differential -0.1 torr Neopentane Flow Rate -5e-2 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Trip Hold MWPC Pressure 1.0 torr N2 - MWPC Differential 5.2 torr Neopentane Flow Rate -15 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1776 Hz West muon veto rate 3355 Hz Spectrometer vacuum 1.8e-5 Torr disk usage daq account 70%

23809	Mon Oct 31 13:50:34 2011	MFMakela

O/P cell work O/P cell at 20K D2 flowing @ 9:45 am 120 mbar on inlet Stopping flow of D2 into converter. D2 tank @ 700 psi start 800 psi? Warming O/P cell to 100K and pumping.

23810	Mon Oct 31 13:46:58 2011	MFMakela

Making a new source: D2 tank @ 1120.6 mbar new D2 in source from Bottles ~ 200 psi total (not sure of bottle volume)

23807	Sat Oct 29 16:51:57 2011	MFMakela

O/P cell: The D2 bottle is empty, I will look for another one. Warming the cell to 100K and pumping on it with the scroll pump. The new D2 is in the source A new bottle (800 psi) is connected to the system (pumped and purged) O/P cell is cooling back to 20K

23808	Sat Oct 29 16:04:29 2011	MFMakela

1410 Offline valved off. Pumping on all parts.

23806	Fri Oct 28 17:16:23 2011	MFMakela

Tungsten target cooling off Supply and return valves off

23804	Fri Oct 28 17:15:38 2011	MFMakela

O/P cell work. Stopping O/P cell heating. Stopping O/P cell pumping. 09:55 0 mTorr 400C 10:08 90 mTorr 395C 10:14 110 mTorr 394C Restarting vacuum pump Starting Cryopump 11:41 Stopping pump on cell 11:41 0 mTorr 260 C 12:58 60 mTorr 160 C Pumping on O/P again Pumping out Mr "H" O/P cell at 20K Mr "H" at 336 C D2 bottle ~100 psi, regulator set at 40 Starting flow through Mr "H" and O/P cell, 120 mbar going to the cell, Exit pressure on D2 tank mensor, 33 mbar

23805	Fri Oct 28 17:14:49 2011	MFMakela

Tungsten target cooling: 10/28/2011 Compressor Supply: 300 Compressor Return: 70 Interlock Supply: 297.6 Interlock Differential: 240.5 Interlock return: 113.5 Flow: 580 SCFH Full open - Compressor Supply: 295 Compressor Return: 67 Interlock Supply: 296 Interlock Differential: 288 Interlock return: 76 Flow: 600 SCFH

23802	Wed Oct 26 17:05:10 2011	MFMakela

O/P cell work Pumping on O/P cell with D2 cart scroll pump Pumping on O/P cryo head with D2 cart turbo 15:55 O/P pumped out, valving off pump to watch for leaks into the o/p cell 16:07 60 mtorr on D2 cart thermocouple 16:20 105 mTorr Looks like it could be O/P s\cell outgassing. Starting pumping again. Need to recheck after bake out. Starting bake out to 400 C Mr "H" is on

23803	Wed Oct 26 15:58:23 2011	MFMakela

Starting source flow to maintain MPS level Source vacuum turbo pumpin gon he source. The source did not warm up all the way.

23801	Wed Oct 26 15:22:40 2011	MFMakela

1410 is off both magnet returning to 1630 1 K dewar level meter is in sample/hold mode

23800	Wed Oct 26 14:44:02 2011	MFMakela

23799	Wed Oct 26 10:22:59 2011	CLMorris

Quick look at Albert's frequency scan. I have plotted the ratio of depolarized signal to the guide emptying signal.

Attachment 1:

23798	Wed Oct 26 09:34:48 2011	Sky

Summary: took an octet of data. Now the AFP and SCS are deenergized. Waiting for the source to warm.

23797	Wed Oct 26 07:50:21 2011	JCHoagland

2:32 AM 17274 B1: Background (on) 2:39 AM 17275 B2: Beta Run (on) 3:04 AM 17276 B3: Depol (on to off) 3:11 AM 17277 B4: Background (off) 3:17 AM 17278 B5: Beta Run (off) 3:42 AM 17279 B6: Depol (off to on) 3:49 AM 17280 B7: Beta Run (off) 4:15 AM 17281 B8: Depol (off to on) 4:22 AM 17282 B9: Background (off) 4:28 AM 17283 B10: Beta Run (on) 4:53 AM 17284 B11: Depol (on to off) 5:03 AM 17285 B12: Background (on) 5:09 AM 17286 A1: Background (off) 5:15 AM 17287 A2: Beta Run (off) 5:41 AM 17288 A3: Depol (off to on) 5:48 AM 17289 A4: Background (on) 5:54 AM 17290 A5: Beta Run (on) 6:19 AM 17291 A6: Depol (on to off) 6:26 AM 17292 A7: Beta Run (on) 6:51 AM 17293 A8: Depol (on to off) 6:58 AM 17294 A9: Background (on) 7:05 AM 17295 A10: Beta Run (off) 7:30 AM 17296 A11: Depol (off to on) 7:37 AM 17297 A12: Background (off)

23796	Wed Oct 26 03:26:08 2011	JCHoagland

finished the stf- and stf+ runs for depol measureing differnce of - and + is the afp bit is differnet of raymonds program started beta octet at around 2:30 doing 25 minutes of beta to 6 minutes back ground to finish at around 8:00am

23795	Wed Oct 26 00:37:52 2011	ARYoung

SFT- LabView Program Time 0 0 1011 1001 10 0 1001 1001 10000 0 1001 0010 10300 0 1001 0110 40000 0 1001 0010

23794	Wed Oct 26 00:28:01 2011	JCHoagland

UCNA Shift Change Checklist Date: October 26, 2011 00:00 Shift Persons: jeff and sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 44 slpm Heater B pressure 15.1 psia Heater C pressure 14.5 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 296.6 psia Tungsten Cool ret. 129.0 psia Tungsten Cool Diff 218.0 psia 1630 eng. 2 temp. 14.87 K 1630 JT temp. 7.4 K 1630 outlet temp. 278.2 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 192 psig 1630 return press. 2.4 psig 1630 med. press. stor. 87 psig 1410 engine speed 125 rpm 1410 TE-A 16.2 K 1410 TE-B 6.3 K 1410 TE-E 91.0 K 1410 supply press. 245 psig 1410 JT press. 200 psig 1410 return press. 3.6 psig 4K dewar pressure 262 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.0 inHe 1K dewar level 6.2 inHe 4K main flow control 5.5 V LHe temp. 1 4.88 K Heat exch. temp. 3 188.5 K Poly temp. 2 88.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 10.8 C AFP frequency 28.479 MHz AFP forward power 40 W SCS LHe level 99.8 % SCS field 0.6903 kG SCS current 118.7 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 1.3 torr CC1 pressure 4e-5 torr PPM LHe level 87.2 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 93.4 % AFP LN2 level 86.2 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): -14.5 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 70.2 F West MWPC Temperature 67.0 F MWPC Pressure 100.0 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 18.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 10 slpm West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1863 Hz West muon veto rate 3682 Hz Spectrometer vacuum 1.0e-5 Torr disk usage daq account 70%

23793	Wed Oct 26 00:00:08 2011	Hasan

freq. scan D+ runs... Time Midas MCS Type Cycles Freq.(MHz) Fwd.Power(W) Ref.Power(W) 1735 17265 962 D+ 5 24.479 40 0.21 1820 17266 963 D+ 8 24.474 20 0.5 19?? 17267 964 D+ 7 24.484 40 0.1 2040 17268 965 D+ 7 24.489 40 0.1 2142 17269 966 D+ 7 24.494 40 0.1 2249 17270 967 D+ 24.479 40 0.3

23792	Tue Oct 25 23:33:53 2011	Hasan

Gate Values in Raymond's program that Albert and I used for Adam's D+ runs for AFP freq. scan Time EDM Shut b Trig Flap Beam AFP Swth GV 0 0 1 0 1 0 1 1 0 1 10 0 1 0 0 0 1 1 0 1 15000 0 0 0 0 0 1 1 0 1 15100 0 0 0 0 0 0 1 1 0 17500 0 0 0 0 0 0 0 1 0 18000 0 1 0 0 0 0 0 1 0 28000 0 1 0 0 0 0 1 1 0 48000 0 1 0 0 0 1 1 0 1

23791	Tue Oct 25 22:42:27 2011	Hasan

UCNA Shift Change Checklist Date: October 25, 2011 16:00 Shift Persons: Albert, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 34 slpm Heater B pressure 14.85 psia Heater C pressure 14.26 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 297.3 psia Tungsten Cool ret. 133.1 psia Tungsten Cool Diff 214.8 psia 1630 eng. 2 temp. 13.94 K 1630 JT temp. 6.86 K 1630 outlet temp. 278.2 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 202 psig 1630 return press. 2.2 psig 1630 med. press. stor. 55 psig 1410 engine speed 124 rpm 1410 TE-A 15.5 K 1410 TE-B 6.0 K 1410 TE-E 90.9 K 1410 supply press. 245 psig 1410 JT press. 190 psig 1410 return press. 3.4 psig 4K dewar pressure 282 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.5 inHe 1K dewar level 36.4 inHe 4K main flow control 4.0 V LHe temp. 1 7.4 K Heat exch. temp. 3 201 K Poly temp. 2 73.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.6 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 84.1 % SCS field 0.6873 kG SCS current 118.7 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 31.7 torr [source melt and freez] CM5 pressure 1.4 torr CC1 pressure over torr [source melt and freez] PPM LHe level 87.3 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 86.1 % AFP LN2 level 68.9 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 1/20Hz s Tuned to PRAD Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): -14.5 mA "Beamplot" Capture: 84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 72.1 F West MWPC Temperature 68.0 F MWPC Pressure 99.6 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 18.4 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 10 slpm West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 2200 Hz West muon veto rate 4415 Hz Spectrometer vacuum 2.1e-5 Torr disk usage daq account 70%

23790	Tue Oct 25 20:33:08 2011	ARYoung

Earlier entry attached (end of AFP fill and flipper frequency change procedure)

Attachment 1: 10_25.txt

```
7:12 -- finished AFP fill (left LN2 dewar "closed" for now)
     -- completed initial steps for cooldown of SCS transfer lines (trying not to let milking station warmup)
     -- wait at least 15 minutes before proceeding with SCS fill checklist
7:20 turn off Raymond's acquisition program
     switch off both DAQs
     turn on "gate valve" program

     Adjust frequency of flipper:
0) Flipper operating at 28.474 MHz, 20 W forward power, 0.4 W reflected power (completed 8 cycles)
1) Turn down power by turning down gain of amplifier to 4W, 0.1 W reflected power
2) Increment frequency to +5 KHz from central value of 28.479 MHz to 28.484 MHz
3) Turn up power while watching reflected power-- 40 W with 0.1 W reflected power

7:35 turn off "gate valve" program
     start DAQs  (Midas 17267, MCS 964)
     turn on flipper on loading Scan (D+)

7:43 Still wating for heater pressure to drop below 70 to start SCS fill
     P(SCS) = 4<P<5
```

7:52 Begin SCS fill

23789	Tue Oct 25 20:25:31 2011	ARYoung

Noticed source LHe flow controller a bit lower than yesterday, with T (LHe) = 5.2 K Decided to tweak flow control voltage from 5 V -> 5.5 V

23788	Tue Oct 25 09:37:59 2011	MFMakela

Changed source voltage from 5->4 VDC. - Mark Slowed 1410 to 125 RPM

23787	Tue Oct 25 07:08:48 2011	JCHoagland

time midas slowdaq type cycles 21:28 17251 952 SLD- 10 22:58 17253 953 SLD+ 13 00:53 17255 954 P+ 11 02:22 17257 955 P- 12 04:05 17258 956 SLD- 4 04:45 17260 957 SLD+ 4 05:14 17261 958 P+ 4 05:52 17262 959 P- 4 runs we did tonight

23786	Tue Oct 25 01:17:20 2011	EIC

UCNA Shift Change Checklist Date: October 25, 2011 00: Shift Persons: Raymond, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 14.01 psia Heater C pressure 13.27 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 298.0 psia Tungsten Cool ret. 141.6 psia Tungsten Cool Diff 200.5 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 7.4 K 1630 outlet temp. 279.1 K 1630 engine speed 215 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.1 psig 1630 med. press. stor. 83 psig 1410 engine speed 200 rpm 1410 TE-A 15.6 K 1410 TE-B 6.6 K 1410 TE-E 93.4 K 1410 supply press. 235 psig 1410 JT press. 135 psig 1410 return press. 3.5 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7.5 psig 4K dewar level 12.4 inHe 1K dewar level 28.8 inHe 4K main flow control 6.0 V LHe temp. 1 4.7 K Heat exch. temp. 3 187.3 K Poly temp. 2 93.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 11.2 C AFP frequency 28.479 MHz AFP forward power 40 W SCS LHe level 94.0 % SCS field 0.6864 kG SCS current 118.7 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.4 torr CC1 pressure 3.1e-5 torr PPM LHe level 87.6 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 92.8 % AFP LN2 level 86.2 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 72.1 F West MWPC Temperature 71.9 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 18.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 2.0 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 10.5 slpm West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 1943 Hz West muon veto rate 3745 Hz Spectrometer vacuum 1.0e-5 Torr disk usage daq account 69%

23785	Mon Oct 24 22:53:56 2011	bz

Shift Summary Michael was completing a source scan when we arrived. After he completed the scan, we finished a fill of the SCS, replaced the source holder with the decay trap plug and inserted it, and then filled the AFP. Then there was a lot of waiting as a beam permit failed for CCR and that took some time to fix. Finally, we began taking more SLD and P runs for Adam. We started with 10 cycles of SLD- in MIDAS run 17251 and moved to SLD+ During this time our shift ended.

23784	Mon Oct 24 16:50:27 2011	bz

UCNA Shift Change Checklist Date: October 24, 2011 16:43 Shift Persons: Bryan, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 28 slpm Heater B pressure 13.71 psia Heater C pressure 13.30 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 298.8 psia Tungsten Cool ret. 131.0 psia Tungsten Cool Diff 219.2 psia 1630 eng. 2 temp. 15.48 K 1630 JT temp. 7.84 K 1630 outlet temp. 276.9 K 1630 engine speed 190 rpm 1630 supply press. 225 psig 1630 JT press. 185 psig 1630 return press. 1.6 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 91.0 K 1410 supply press. 232 psig 1410 JT press. 135 psig 1410 return press. 3.4 psig 4K dewar

Line 4K main flow control 4.9 V LHe temp. 1 6.6 K Heat exch. temp. 3 209.2 K Poly temp. 2 64.6 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.6 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 83.6 % SCS field 0.6873 kG SCS current 118.7 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 1.4 torr CC1 pressure over torr PPM LHe level 87.8 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 86.1 % AFP LN2 level 99.5 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: - s Tuned to PRAD Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H-source current): - mA "Beamplot" Capture: - % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 70.7 F West MWPC Temperature 66.4 F MWPC Pressure 99.9 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 18.6 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1.75 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 10.6 slpm West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 1753 Hz West muon veto rate 3433 Hz Spectrometer vacuum 4.1e-5 Torr disk usage daq account 69%

23783	Mon Oct 24 16:14:47 2011	mmendenhall

We have put the new Ce, Sn sources (and last year's Bi) in the source holder. Source locations in holder with rod to left are: ====<(Ce)(Sn)(Bi)> Doing a source position scan, 0.5" increments, 5mins, runs 17233...17244 Also, testing flipping the source around 180 degrees: 17245 2.5", flipped 17246 2.75", flipped 17247 2.75", normal 17248 2.25", normal 17249 2.25", flipped leaving source holder retracted.

23782	Mon Oct 24 07:35:24 2011	bz

Shift Overview and Assymetry Plot: Shift was one octet A->B with 30 min beta runs and 6 min backgrounds Filled the AFP at end of shift (after octet) Removed power and air from Gate Valve after closing Didn't tune down source for Medium Pressure Storage and also as a test of whether leaving the crystal cold allows it to autoanneal (get better)

Attachment 1: 2411_0.pdf

23780	Mon Oct 24 07:27:39 2011	JCHoagland

12:02 AM 17196 A10: Beta Run (off) E=12.307 W=13.739 Fe/GV=0.4867 SCS/GV=0.2725 12:42 AM 17197 A11: Depolarization (off to on) 12:49 AM 17198 A12: Background (off) E=1.102 W=1.233 12:58 AM 17199 A1: Background (off) E=1.233 W=1.338 1:05 AM 17200 A2: Beta Run (off) E=12.071 W=13.527 Fe/GV=0.4835 SCS/GV=0.2697 1:35 AM 17201 A3: Depolarization (off to on) 1:42 AM 17202 A4: Background (on) E=1.086 W=1.362 1:48 AM 17203 A5: Beta Run (on) E=9.189 W=8.741 Fe/GV=0.1268 SCS/GV=0.2097 2:18 AM 17204 A6: Depolarization (on to off) 2:25 AM 17205 A7: Beta Run (on) E=8.824 W=8.384 Fe/GV=0.1265 SCS/GV=0.2052 2:56 AM 17206 A8: Reload Depol (on to off) 3:03 AM 17207 A9: Background (on) E=1.276 W=1.361 3:09 AM 17208 A10: Beta Run (off) E=11.987 W=13.114 Fe/GV=0.4856 SCS/GV=0.2659 3:39 AM 17209 A11: Reload Depol (off to on) 3:46 AM 17210 A12: Background (off) E=1.231 W=1.223 3:52 AM 17211 B1: Background (on) E=1.225 W=1.349 3:59 AM 17212 B2: Beta Run (on) E=8.899 W=8.546 Fe/GV=0.1266 SCS/GV=0.2031 4:29 AM 17213 B3: Reload Depol (on to off) 4:36 AM 17214 B4: Background (off) E=1.228 W=1.311 4:42 AM 17215 B5: Beta Run (off) E=11.794 W=13.182 Fe/GV=0.4907 SCS/GV=0.2687 5:13 AM 17216 B6: Reload Depol (off to on) 5:20 AM 17217 B7: Beta Run (off) E=11.577 W=12.993 Fe/GV=0.4934 SCS/GV=0.2697 5:50 AM 17218 B8: Depolarization (off to on) 5:57 AM 17219 B9: Background (off) E=1.245 W=1.171 6:03 AM 17220 B10: Beta Run (on) E=8.892 W=8.402 Fe/GV=0.1268 SCS/GV=0.1981 6:33 AM 17221 B11: Depolarization (on to off) 6:40 AM 17222 B12: Background (on) E=1.215 W=1.280

23781	Mon Oct 24 02:29:19 2011	bz

UCNA Shift Change Checklist Date: October 24, 2011 02:24 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 14.04 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 297.2 psia Tungsten Cool ret. 145.6 psia Tungsten Cool Diff 198.1 psia 1630 eng. 2 temp. 15.6 K 1630 JT temp. 7.6 K 1630 outlet temp. 278.4 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.1 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 6.6 K 1410 TE-E 88.8 K 1410 supply press. 240 psig 1410 JT press. 140 psig 1410 return press. 3.4 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7.5 psig 4K dewar level 14.1 inHe 1K dewar level 21.7 inHe 4K main flow control 6.0 V LHe temp. 1 5.2 K Heat exch. temp. 3 198.3 K Poly temp. 2 156.0 K

DOWNSTAIRS: Gate valve status Trapping Pump port status closed Switcher status thru AFP temperature 10.5 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 90.7 % SCS field 0.6873 kG SCS current 118.7 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.5 torr CC1 pressure 4.9e-5 torr PPM LHe level 88.0 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 91.3 % AFP LN2 level 84.9 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H-source current): 14.32 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 69.7 F West MWPC Temperature 65.6 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.7 torr Neopentane Flow Rate 19.0 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 10.5 slpm West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 2283 Hz West muon veto rate 4557 Hz Spectrometer vacuum 1.2e-5 Torr disk usage daq account 68%

23776	Mon Oct 24 00:39:51 2011	BMV

I know many of you only care about beta runs, but there are other runs just as important. Since no one cares to record the Depol runs, I will. I believe depols and reloads are the same now. 03:01 17127 A3 Depol Off->on 04:01 17130 A6 Depol on->off 04:48 17132 A8 Reload on->off 05:48 17135 A11 Reload Off->On 07:00 17139 B3 Reload On->Off 07:59 17142 B6 Reload Off->On 08:47 17144 B8 Depol Off->On 09:46 17147 B11 Depol On->Off 10:54 17151 A3 Depol Off->On 11:52 17154 A6 Depol On->Off 12:43 17157 A8 Reload On->Off 13:38 17160 A11 Reload Off->On 14:37 17164 B3 Reload On->Off 15:44 17168 B6 Reload Off->On 16:31 17170 B8 Depol Off->On 17:25 17173 B11 Depol On->Off 18:33 17177 B3 Depol On->Off 19:27 17180 B6 Depol Off->On 20:14 17182 B8 Depol Off->On 21:08 17185 B11 Depol On->Off 22:07 17189 A3 Depol Off->on 23:01 17192 A6 Depol On->Off 23:48 17194 A8 Depol On->Off

23775	Mon Oct 24 00:38:17 2011	BMV

Shift Overview Andy and Brittney Oct 24th 1600-0000 20:00 Filled the AFP. 2011-10-23 16:32:32 17169 30138 33583 2404.7 off beta E=12.533 W=13.965 Fe/GV=0.4912 SCS/GV=0.2696 Beta/GV= 1.9235 16:31 17170 off->on Depol 2011-10-23 16:45:20 17171 443 472 365.1 off bkg E=1.213 W=1.293 ---------- 2011-10-23 17:25:52 17172 22742 21642 2404.7 on beta E=9.457 W=9.00 Fe/GV=0.1241 SCS/GV=0.2021 Beta/GV= 1.3562 16:45 17173 on->off Depol 2011-10-23 17:38:40 17174 433 479 366.0 on bkg E=1.183 W=1.309 ---------- 2011-10-23 17:53:36 17175 446 445 365.6 on bkg E=1.22 W=1.22 2011-10-23 18:34:08 17176 22436 21016 2406.1 on beta E=9.3 W=8.7 Fe/GV=0.1235 SCS/GV=0.1998 18:33 17177 on->off depol ---------- 2011-10-23 18:46:56 17178 460 500 364.5 off bkg E=1.26 W=1.37 2011-10-23 19:27:28 17179 28551 31662 2405.1 off beta E=11.871 W=13.164 Fe/GV=0.4878 SCS/GV=0.2691 Beta/GV= 1.9370 19:27 17180 off->on Depol ---------- 2011-10-23 20:14:24 17181 30035 33055 2405.2 off beta E=12.488 W=13.743 Fe/GV=0.4867 SCS/GV=0.2701 Beta/GV= 1.9583 20:14 17182 off->on depol 2011-10-23 20:27:12 17183 449 449 364.8 off bkg E=1.231 W=1.231 ---------- 2011-10-23 21:07:44 17184 23240 21664 2404.9 on beta E=9.663 W=9.008 Fe/GV=0.1245 SCS/GV=0.2028 Beta/GV= 1.3546 21:08 17185 on->off depol 2011-10-23 21:20:32 17186 406 482 364.2 on bkg E=1.115 W=1.323 ---------- 2011-10-23 21:26:56 17187 427 491 365.9 off bkg E=1.167 W=1.342 2011-10-23 22:07:28 17188 30235 33690 2405.5 off beta E=12.569 W=14.005 Fe/GV=0.4796 SCS/GV=0.2685 Beta/GV= 1.9264 22:07 17189 off->on Depol ---------- 2011-10-23 22:20:16 17190 406 457 364.8 on bkg E=1.113 W=1.253 2011-10-23 23:00:48 17191 22763 21370 2405.1 on beta E=9.46 W=8.89 Fe/GV=0.124 SCS/GV=0.201 23:01 17192 on->off Depol ---------- 2011-10-23 23:47:44 17193 22276 20706 2404.0 on beta E=9.27 W=8.61 Fe/GV=0.124 SCS/GV=0.1985 23:48 17194 on->off Depol 2011-10-24 00:02:40 17195 462 462 375.4 on bkg E=1.231 W=1.231

23779	Mon Oct 24 00:06:24 2011	EIC

Attachment 1: 12.gif

12.gif

23778	Mon Oct 24 00:05:27 2011	EIC

12.gif

23777	Mon Oct 24 00:04:30 2011	EIC

asym summary plot

Attachment 1: 13.gif

13.gif

23774	Sun Oct 23 17:34:57 2011	BMV

UCNA Shift Change Checklist Date: October 23, 2011 16:00 Shift Persons: BMV, Andy UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 36 slpm Heater B pressure 14.27 psia Heater C pressure 13.58 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 299.3 psia Tungsten Cool ret. 135.5 psia Tungsten Cool Diff 213.5 psia 1630 eng. 2 temp. 15.2 K 1630 JT temp. 7.62 K 1630 outlet temp. 279.4 K 1630 engine speed 240 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 2 psig 1630 med. press. stor. 110 psig 1410 engine speed 200 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 92.8 K 1410 supply press. 235 psig 1410 JT press. 140 psig 1410 return press. 3.7 psig 4K dewar pressure 220 mmHg 1K dewar pressure 8 psig 4K dewar level 12.37 inHe 1K dewar level 20.92 inHe 4K main flow control 6.0 V LHe temp. 1 5.258 K Heat exch. temp. 3 196.61 K Poly temp. 2 156.41 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23773	Sun Oct 23 16:34:36 2011	ASaunders

Shift Change Checklist 4 pm; A. Saunders, B. Vorndick DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.5 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 0.686 kG SCS current 118.7 A AFP N2 dewar level 8/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.4 torr CC1 pressure 5.5e-5 torr PPM LHe level 88.1 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 87.2 % AFP LN2 level 79.5 % PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 67.4 F West MWPC Temperature 68.1 F E MWPC Pressure 99.7 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 18.8 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1.6 ========== West Detector Cart ========== W MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.2 torr N2 - MWPC Differential E12 torr ERROR ON MPC DEVICE Neopentane Flow Rate E12 slpm ERROR ON MPC DEVICE West PMT Buck. Curr. 0.23 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) On East muon veto HV 2.3 kV West muon veto HV 2.3 kV East muon veto rate 2163 Hz West muon veto rate 4361 Hz Spectrometer vacuum 2.2e-5 Torr disk usage daq account 68%

23772	Sun Oct 23 16:13:19 2011	mmendenhall

more summary plots:

Attachment 1: 12.gif

12.gif

23771	Sun Oct 23 16:12:58 2011	mmendenhall

more summary plots:

Attachment 1: 11.gif

11.gif

23770	Sun Oct 23 16:12:11 2011	mmendenhall

Shift Summary (8am-4pm, Brad P. & Michael) On our shift, we took beta decay data from runs 17142 to 17169 (completed one A->B; through B7 on a second A->B). Total beta event count is up to 0.716M; rates remained fairly steady ~28Hz Off, ~19Hz On We filled the SCS, which shouldn't

will need to be refilled a few hours into the next shift. Beta fans taken: 2011-10-23 08:00:32 17141 31060 34999 2405.8 off beta ---------- 2011-10-23 08:47:28 17143 30712 33902 2405.0 off beta 2011-10-23 09:06:40 17145 857 959 724.8 off bkg ---------- 2011-10-23 09:47:12 17146 24490 23377 2404.9 on beta 2011-10-23 10:06:24 17148 844 951 725.0 on bkg ---------- 2011-10-23 10:12:48 17149 433 478 365.0 off bkg 2011-10-23 10:53:20 17150 31475 35485 2405.1 off beta ---------- 2011-10-23 11:10:24 17152 726 740 596.4 on bkg 2011-10-23 11:50:56 17153 22918 21245 2404.8 on beta ---------- 2011-10-23 12:40:00 17155 24168 22712 2404.6 on beta 2011-10-23 12:57:04 17158 437 464 364.5 on bkg ---------- 2011-10-23 13:37:36 17159 31889 35160 2404.6 off beta 2011-10-23 13:50:24 17161 478 462 364.7 off bkg ---------- 2011-10-23 13:56:48 17162 426 447 364.7 on bkg 2011-10-23 14:37:20 17163 23444 21790 2405.1 on beta ---------- 2011-10-23 14:50:08 17165 461 478 364.8 off bkg 2011-10-23 15:11:28 17166 15418 16672 1224.6 off beta 2011-10-23 15:43:28 17167 19984 22364 1550.6 off beta ----------

Attachment 1: 11.gif

11.gif

23768	Sun Oct 23 08:23:54 2011	mmendenhall

Shift Change Checklist 8am; Brad P., Michael DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 84.0 % SCS field 0.6903 kG SCS current 118.7 A AFP N2 dewar level 1/4 (Jeff is going to refill it) SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.5 torr CC1 pressure 4.6e-5 torr PPM LHe level 88.2 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 99.5 % AFP LN2 level 65.7 % about to be refilled PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 62.5 F West MWPC Temperature 59.3 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 19.3 slpm East PMT Buck. Curr 0.34 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1.3 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.2 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 13.5 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) On East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 2260 Hz West muon veto rate 4383 Hz Spectrometer vacuum 2.7e-5 Torr disk usage daq account 68%

23769	Sun Oct 23 08:21:33 2011	mmendenhall

UCNA Shift Change Checklist Date: October 23, 2011 08:00 Shift Persons: Michael, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 14.51 psia Heater C pressure 13.56 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 295.3 psia Tungsten Cool ret. 137.8 psia Tungsten Cool Diff 206.9 psia 1630 eng. 2 temp. 16.2 K 1630 JT temp. 8.1 K 1630 outlet temp. 278.5 K 1630 engine speed 210 rpm 1630 supply press. 242 psig 1630 JT press. 185 psig 1630 return press. 2.1 psig 1630 med. press. stor. 85 psig 1410 engine speed 200 rpm 1410 TE-A 16.4 K 1410 TE-B 6.8 K 1410 TE-E 88.1 K 1410 supply press. 240 psig 1410 JT press. 140 psig 1410 return press. 3.4 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7.5 psig 4K dewar level 18.8 inHe 1K dewar level 13.3 inHe 4K main flow control 6.2 V LHe temp. 1 5.2 K Heat exch. temp. 3 204.0 K Poly temp. 2 147.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23767	Sun Oct 23 08:07:04 2011	bz

Shift Summary Started A->B Octet. Forgot to turn on fans in area until 04:15 (during A7). Fans now on. Beam a little shaky, with drops in the tungsten target temperature that recovered over time. Helium supply stable, AFP filled at end of shift, SCS needs to be filled soon.

Attachment 1: .ps

---------- 2011-10-23 02:21:20 17125 843 948 724.3 off bkg 2011-10-23 03:01:52 17126 33014 36744 2404.6 off beta ---------- 2011-10-23 03:21:04 17128 821 909 725.1 on bkg 2011-10-23 04:01:36 17129 24656 23277 2404.7 on beta ---------- 2011-10-23 04:48:32 17131 23859 22400 2405.4 on beta 2011-10-23 05:07:44 17133 933 889 724.7 on bkg ---------- 2011-10-23 05:48:16 17134 32402 35897 2404.7 off beta 2011-10-23 06:07:28 17136 862 886 724.6 off bkg ---------- 2011-10-23 06:20:16 17137 872 917 724.8 on bkg 2011-10-23 07:00:48 17138 22970 21914 2404.8 on beta ---------- 2011-10-23 07:20:00 17140 861 948 724.7 off bkg

23765	Sun Oct 23 04:03:25 2011	bz

Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.840 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.417E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.710E+08 Measured Beam Current Charge/Burst 23.913 uC uP/Chop 46.086 TBCM001I03 14.24 mA Average Current 4.783 uA H/Chop 1.710E+10 Capture 0.84 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 8.047E+04 Rep Rate 20 Hz H/Gate 2.985E+13 Gate Length 625 us Chopper Width 240 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.609E+06 Countdown Duration 357.76 ns Charge/uP 59.437 pC Burst Mode Charge/Chop 2.739E+03 pC Pulses per Burst 5 Charge/Gate 4.783 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23764	Sun Oct 23 02:40:15 2011	bz

UCNA Shift Change Checklist Date: October 23, 2011 02:34 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 14.03 psia Heater C pressure 13.33 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 296.2 psia Tungsten Cool ret. 121.0 psia Tungsten Cool Diff 228.9 psia 1630 eng. 2 temp. 15.47 K 1630 JT temp. 7.6 K 1630 outlet temp. 276.2 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 2.1 psig 1630 med. press. stor. 90 psig 1410 engine speed 200 rpm 1410 TE-A 15.5 K 1410 TE-B 6.5 K 1410 TE-E 91.4 K 1410 supply press. 235 psig 1410 JT press. 135 psig 1410 return press. 3.4 psig 4K dewar pressure 230 mmHg 1K dewar pressure 7.5 psig 4K dewar level 17.5 inHe 1K dewar level 13.1 inHe 4K main flow control 6.3 V LHe temp. 1 5.1 K Heat exch. temp. 3 202.6 K Poly temp. 2 97.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 87.1 % SCS field 0.6917 kG SCS current 118.7 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.5 torr CC1 pressure over torr PPM LHe level 88.3 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 92.9 % AFP LN2 level 85.8 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 240 ns TBCM001I03 (H-source current): 14.24 mA "Beamplot" Capture: 0.84 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 61.0 F West MWPC Temperature 58.6 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 19.7 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1.5 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 10.1 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 2140 Hz West muon veto rate 4024 Hz Spectrometer vacuum 1e-5 Torr disk usage daq account 67%

23762	Sun Oct 23 00:24:40 2011	BMV

Shift Overview: Brittney, Hasan 4pm-Midnight Oct. 22 Finished where Andy left off. He started depol runs, but it turns out that they are suppose to be polarization runs. Did not find out until talked to Adam. Basically... Filled out shift change checklist. Hasan kept tabs on the runs. Brittney copied information on previous guide tests from logbook to see information might include in DNP talk. During the last run that thought Adam needed, Brittney went to change the t0 to beam trigger. Turns out it was never changed when depol runs were started. Contacted Adam about the t0, he said it is ok. Then I told him which programs were done, and Adam's reaction, was D??!!??!?! Turns out it was P+,P- he wanted not D. So we talked through what the program is for 150s load time instead of the 80s. Then Hasan and I decided to go ahead and get it all done. Plugged in the t0. Typed up the program and started it. As I

soon, I looked at the LHe measurement and it was 81.8% Ahhh!! So I ran into the counting house printed out a AFP fill sheet and grabbed Hasan and we started cooling the lines. 20:15 we started filling the magnet. Which this works out because now we don't have to worry about AFP fill during a melt and refreeze. There have been a couple pressure spikes and the GV UCN count keeps decreasing so we though we should improve the source. 21:00 Randy calls needed to get into the gate. 21:49 Started melt-and-refreeze Finished the Melt and Refreeze, looked at our rate it is 10Hz. But the tune looks bad. So CCR is in the process of retuning...

23763	Sat Oct 22 23:41:20 2011	BMV

Beam off, flapper closed, GV closed and air line disconnected *** CLOSED orange valve ***, opened check-valve bypass Source voltage at 2V. ... melting ... 3V 3.5V --refreezing-- Don't like graph trying again 3.0V 2.5V 2.0V ...melted... 2.5V 2.7V 3.0V 3.2V 3.5V 3.8V 4.0V... 5V...6V refrozen Closed check valve bypass, *** Opened *** orange valve, restoring GV function

Attachment 1: png

23761	Sat Oct 22 21:21:22 2011	Hasan

Depol Runs 40W 28.479 MHz Time Midas MCS Type Cycles 1637 17117 942 D- 5 1719 17118 943 D+ 5 1804 17119 944 SLD- 5 1845 17120 945 SLD+ 5 1957 17121 946 P+ 5 2039 17122 947 P- 5

23760	Sat Oct 22 17:48:32 2011	EIC

UCN Calculator 10/22/2011 17:48:00 Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.850 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.404E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.744E+08 Measured Beam Current Charge/Burst 26.237 uC uP/Chop 50.111 TBCM001I03 14.20 mA Average Current 5.247 uA H/Chop 1.876E+10 Capture 0.85 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 8.749E+04 Rep Rate 20 Hz H/Gate 3.276E+13 Gate Length 625 us Chopper Width 260 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.750E+06 Countdown Duration 357.76 ns Charge/uP 59.975 pC Burst Mode Charge/Chop 3.005E+03 pC Pulses per Burst 5 Charge/Gate 5.247 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23759	Sat Oct 22 17:05:47 2011	ASaunders

all depol scans today were taken with the SCS shutter closed.

23758	Sat Oct 22 16:57:44 2011	Hasan

UCNA Shift Change Checklist Date: October 22, 2011 16:30 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 37 slpm Heater B pressure 14.05 psia Heater C pressure 13.30 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 296.8 psia Tungsten Cool ret. 134.7 psia Tungsten Cool Diff 211.6 psia 1630 eng. 2 temp. 15.34 K 1630 JT temp. 7.6 K 1630 outlet temp. 273.6 K 1630 engine speed 260 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 2.2 psig 1630 med. press. stor. 115 psig 1410 engine speed 200 rpm 1410 TE-A 15.7 K 1410 TE-B 6.6 K 1410 TE-E 95.6 K 1410 supply press. 235 psig 1410 JT press. 140 psig 1410 return press. 3.4 psig 4K dewar pressure 230 mmHg 1K dewar pressure 7 psig 4K dewar level 14.85 inHe 1K dewar level 11.49 inHe 4K main flow control 6.2 V LHe temp. 1 5.205 K Heat exch. temp. 3 218.05 K Poly temp. 2 180.16 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.479 MHz AFP forward power 0 W SCS LHe level 92.8 % SCS field 0.6917 kG SCS current 118.7 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.5 torr CC1 pressure 9e-5 torr PPM LHe level 88.4 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 86.8 % AFP LN2 level 85.3 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM Parameters: Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.2 mA "Beamplot" Capture: 0.85 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 60.6 F West MWPC Temperature 59.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 19.4 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.50 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 10.1 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1850 V PMTs off East

4251 Hz spectrometer vacuum 5.4e-5 Torr disk usage daq account 69%

23757	Sat Oct 22 16:46:32 2011	ASaunders

Completed AFP power scan at f=28.479 MHz Midas MCS 30 s Fe Power 17109 934 227 Off 17110 935 95 5 17112 937 54 10 17113 938 56 20 17114 939 59 40 17115 940 55 60 17116 941 53 80

23756	Sat Oct 22 16:04:16 2011	BPlaster

Shift Summary: Sky, BradP Approximate times and activities: 08:00 - 10:00: Waiting to top-up AFP/SCS with LHe 10:00 - 12:00: Magnets ramped 12:00 - 13:00: Beam Off (accelerator problem) 13:00 - 16:00: AFP Frequency Scan Adam's Power Scan in progress at end of shift...

23754	Sat Oct 22 15:56:35 2011	BPlaster

This is the result of the AFP frequency scan at a forward power of 5 Watts. The horizontal axis is 28.* MHz. The vertical axis is the Fe/GV ratio. At some frequencies there is more than one data point as we re-did some of the frequencies. Note: The shutter was closed during these runs, which Andy said should be fine.

Attachment 1: t_oct22.pdf

23755	Sat Oct 22 15:50:25 2011	BPlaster

These are the Fast DAQ runs from the 5 Watt frequency scan for the plot I just posted: Fast DAQ MHz MCS 17093 28.484 919 17095 28.494 920 17096 28.474 921 17097 28.464 922 17098 28.454 923 17099 28.504 924 17100 28.499 --- 17101 28.489 925 17102 28.479 926 17103 28.469 927 17104 28.459 928 17105 28.484 929 17106 28.4815 930 17107 28.479 931 17108 28.4765 932

23752	Sat Oct 22 10:35:43 2011	JCHoagland

followed procedures in procedures book for making source mensor at 1122.1mbars at 2:32 1122.1-102.5=1019.6mbars in source

23753	Sat Oct 22 08:43:42 2011	Sky

UCNA Shift Change Checklist Date: October 22, 2011 08:27 Shift Persons: Sky, BradP UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 35 slpm Heater B pressure 14.2 psia Heater C pressure 13.4 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 297.1 psia Tungsten Cool ret. 111.7 psia Tungsten Cool Diff 242.1 psia 1630 eng. 2 temp. 16.52 K 1630 JT temp. 8.47 K 1630 outlet temp. 280.6 K 1630 engine speed 210 rpm 1630 supply press. 230 psig 1630 JT press. 185 psig 1630 return press. 1.95 psig 1630 med. press. stor. 115 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 6.7 K 1410 TE-E 92.0 K 1410 supply press. 232 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 258 mmHg 1K dewar pressure 7.7 psig 4K dewar level 13.29 inHe 1K dewar level 16.02 inHe 4K main flow control 4.1 V LHe temp. 1 7.3 K Heat exch. temp. 3 260.3 K Poly temp. 2 214.8 K flapper heater cur 1.8 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed [making source] Pump port status open [making source] Switcher status thru AFP temperature 9.7 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 98.5 % SCS field 0 kG SCS current 0 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 184.1 torr [making source] CM5 pressure 604.3 torr [making source] CC1 pressure E09 torr [making source] PPM LHe level 88.5 % PPM LN2 level 0!!! % [level meter broken] AFP LHe level 44.9 % AFP LN2 level 74.8 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off NO BEAM Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 60.1 F West MWPC Temperature 58.3 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.2 torr Neopentane Flow Rate 19.8 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.0 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 10.8 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 V PMTs off East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1842 Hz West muon veto rate 3261 Hz Spectrometer vacuum 2e-5 Torr disk usage daq account 94%

23751	Sat Oct 22 02:27:05 2011	bz

UCNA Shift Change Checklist Date: October 22, 2011 02:10 Shift Persons: Bryan, Jeff UPSTAIRS

Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 14.07 psia Heater C pressure 13.31 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 298.6 psia Tungsten Cool ret. 113.9 psia Tungsten Cool Diff 241.1 psia 1630 eng. 2 temp. 14.9 K 1630 JT temp. 7.2 K 1630 outlet temp. 277.9 K 1630 engine speed 220 rpm 1630 supply press. 243 psig 1630 JT press. 190 psig 1630 return press. 1.9 psig 1630 med. press. stor. 118 psig 1410 engine speed 200 rpm 1410 TE-A 16.5 K 1410 TE-B 6.7 K 1410 TE-E 86.8 K 1410 supply press. 235 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7.5 psig 4K dewar level 15.4 inHe 1K dewar level 10.1 inHe 4K main flow control 0.0 V LHe temp. 1 Over K Heat exch. temp. 3 304.5 K Poly temp. 2 Over K flapper heater cur 0 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.9 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 86.6 % SCS field .005 kG SCS current 0 A AFP N2 dewar level 1/2 SV3 open SV4 closed CM1 pressure 1.0 torr CM5 pressure 607.5 torr CC1 pressure 2.5e-7 torr PPM LHe level 88.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 53.6 % AFP LN2 level 98.1 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 61.0 F West MWPC Temperature 59.8 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 19.8 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 10.6 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 9 V PMTs off East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1798 Hz West muon veto rate 3355 Hz Spectrometer vacuum 2e-5 Torr disk usage daq account 94%

23750	Fri Oct 21 18:26:31 2011	Hasan

UCNA Shift Change Checklist Date: October 21, 2011 17:30 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 14.80 psia Heater C pressure 13.28 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 292.0 psia Tungsten Cool ret. 109.4 psia Tungsten Cool Diff 238.1 psia 1630 eng. 2 temp. 16.04 K <-------- 1630 OFF 1630 JT temp. 7.97 K 1630 outlet temp. 279.0 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 195 psig 1630 return press. 2.2 psig 1630 med. press. stor. 155 psig 1410 engine speed 200 rpm 1410 TE-A 18.4 K 1410 TE-B 7.7 K 1410 TE-E 91.9 K 1410 supply press. 240 psig 1410 JT press. 145 psig 1410 return press. 3.4 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7 psig 4K dewar level 9.12 inHe 1K dewar level 26.31 inHe 4K main flow control 0.0 V LHe temp. 1 over K Heat exch. temp. 3 303.96 K Poly temp. 2 over K flapper heater cur -- A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 10.1 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 83.8 % SCS field 0.00538 kG SCS current 0 A AFP N2 dewar level 5/8 SV3 open SV4 closed CM1 pressure 1.0 torr CM5 pressure 610 torr CC1 pressure 2.6e-7 torr PPM LHe level 88.6 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 13.4 % AFP LN2 level 68.9 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 11 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 60.9 F West MWPC Temperature 58.6 F MWPC Pressure 100 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 19.4 slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.1 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 100 slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2300 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1051 V East muon veto HV 2.33 kV West muon veto HV 2.34 kV East muon veto rate 0 Hz West muon veto rate 0 Hz Spectrometer vacuum 4e-5 disk usage daq account 94%

23749	Fri Oct 21 07:09:22 2011	BMV

UCNA Shift Change Checklist Date: October 21, 2011 6:15 Shift Persons: Brittney, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.65 psia Heater C pressure 12.95 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On -

1630 eng. 2 temp. 241.7 K <-------- 1630 OFF 1630 JT temp. 295 K 1630 outlet temp. 294.5 K 1630 engine speed 0 rpm 1630 supply press. 0 psig 1630 JT press. 0 psig 1630 return press. 0 psig 1630 med. press. stor. 155 psig 1410 engine speed 200 rpm 1410 TE-A 16.2 K 1410 TE-B 6.6 K 1410 TE-E 90 K 1410 supply press. 245 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 150 mmHg 1K dewar pressure 8.0 psig 4K dewar level 9.68 inHe 1K dewar level 18.26 inHe 4K main flow control 0.0 V LHe temp. 1 323.93 K Heat exch. temp. 3 301.71 K Poly temp. 2 324.72 K flapper heater cur -- A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.8 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 88.2 % SCS field 0.6973 kG SCS current 119.1 A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 605.9 torr CC1 pressure Off torr PPM LHe level 88.7 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 27.7 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 58.6 F West MWPC Temperature 52.1 F MWPC Pressure 99.8 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 19.9 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status Trip Hold MWPC Pressure 1.001 torr N2 - MWPC Differential -35 torr Neopentane Flow Rate 102 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 9 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1859 Hz West muon veto rate 3441 Hz Spectrometer vacuum -5.2 Torr (Xenon in decay trap) disk usage daq account 93%

23748	Thu Oct 20 16:42:45 2011	RRios

UCNA Shift Change Checklist Date: October 20, 2011 16:15 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.70 psia Heater C pressure 13.00 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 293 psia Tungsten Cool ret. 114 psia Tungsten Cool Diff 233 psia 1630 eng. 2 temp. 291 K <-------- 1630 OFF 1630 JT temp. 290 K 1630 outlet temp. 294 K 1630 engine speed 0 rpm 1630 supply press. 250 psig 1630 JT press. 0 psig 1630 return press. 1.0 psig 1630 med. press. stor. 185 psig 1410 engine speed 200 rpm 1410 TE-A 18.2 K 1410 TE-B 8.2 K 1410 TE-E 90 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.2 psig 4K dewar pressure 180 mmHg 1K dewar pressure 7.0 psig 4K dewar level 9.8 inHe 1K dewar level 12.2 inHe 4K main flow control 0.0 V LHe temp. 1 316 K Heat exch. temp. 3 297 K Poly temp. 2 317 K flapper heater cur -- A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 97.6 % SCS field 0.695 kG SCS current 119.1 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 609.1 torr CC1 pressure Over torr PPM LHe level 88.8 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 45.3 % AFP LN2 level 2.2 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status Trip Hold East MWPC Temperature 59.5 F West MWPC Temperature 45.3 F MWPC Pressure 99.6 torr N2 - MWPC Differential -3.8 torr Neopentane Flow Rate 19.5 slpm East PMT Buck. Curr 0.35 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2400 V MWPC Trip Hold Status Trip Hold MWPC Pressure 1.002 torr N2 - MWPC Differential -3.9 torr Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. 0.24 A West Back. Veto Buck. 0.38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1909 Hz West muon veto rate 3425 Hz Spectrometer vacuum --- Torr (Xenon in decay trap) disk usage daq account 89%

23747	Thu Oct 20 04:47:52 2011	JCHoagland

UCNA Shift Change Checklist Date: October 20, 2011 01:20 Shift Persons: jeff, bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 14.30 psia Heater C pressure 13.53 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 290.0 psia Tungsten Cool ret. 114.6 psia Tungsten Cool Diff 228.8 psia 1630 eng. 2 temp. 283.3 K 1630 JT temp. 290.5 K 1630 outlet temp. 289.9 K 1630 engine speed 0 rpm 1630 supply press. 250 psig 1630 JT press. 5 psig 1630 return press. 2.3 psig 1630 med.

90.8 K 1410 supply press. 239 psig 1410 JT press. 199 psig 1410 return press. 3.6 psig 4K dewar pressure 220 mmHg 1K dewar pressure 7.5 psig 4K dewar level 9.9 inHe 1K dewar level 8.9 inHe 4K main flow control 0.0 V LHe temp. 1 243.1 K Heat exch. temp. 3 287.1 K Poly temp. 2 316.1 K flapper heater cur 0 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.8 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 95.2 % SCS field .6973 kG SCS current 119.1 A AFP N2 dewar level 4/4 SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 606.4 torr CC1 pressure eo9 torr PPM LHe level 89.0 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 64.3 % AFP LN2 level 57.5 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Trip Hold Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status trip hold East MWPC Temperature 63.0 F West MWPC Temperature 60.9 F MWPC Pressure 99.7 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 19.6 slpm East PMT Buck. Curr .35 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status trip hold MWPC Pressure 100.2 torr N2 - MWPC Differential -3.6 torr Neopentane Flow Rate 11.7 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A UCNA Shift Change Checklist Top-Veto and GMS HV 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1180 V East muon veto HV 2.34 kV West muon veto HV 2.35 kV East muon veto rate 1819 Hz West muon veto rate 3319 Hz Spectrometer vacuum -5.6 Torr disk usage daq account 87%

23746	Wed Oct 19 23:42:43 2011	RRios

Xenon activated. Sitting in gas bottle by the PPM. remaining Xenon in the source will be pumped out tomorrow by Mark Mark is turning off compressor 2 so that there are only two compressors running The activited Xenon is ready for calibrating the detectors once the beta detectors are all geared up.

23745	Wed Oct 19 22:56:32 2011	RRios

Shift Overview... Magnets: Filled the SCS with the 4K and part of 1K Dewars Started filling the AFP using remaining liquid in 1K Dewar. Stopped filling once 1K reached 8 inches SCS Ramping and Beta Detector Testing: SCS is ramped up. Michael is going over all of the detectors and electronics to make sure its working properly. Activating Xenon: Xenon is frozen in the source and is currently being activating.

23744	Wed Oct 19 16:55:58 2011	Hasan

UCNA Shift Change Checklist Date: October 19, 2011 16:15 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.88 psia Heater C pressure 13.14 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 291.7 psia Tungsten Cool ret. 114.5 psia Tungsten Cool Diff 230.9 psia 1630 eng. 2 temp. 275 K 1630 JT temp. 288.7 K 1630 outlet temp. 276.3 K 1630 engine speed 0 rpm 1630 supply press. 250 psig 1630 JT press. 0.5 psig 1630 return press. 1.4 psig 1630 med. press. stor. 125 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.5 K 1410 TE-E 91.4 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.41 inHe 1K dewar level 24.73 inHe 4K main flow control 0.0 V LHe temp. 1 over K Heat exch. temp. 3 303.85 K Poly temp. 2 over K flapper heater cur 0 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 7 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 75.4 % SCS field 0 kG SCS current 0 A AFP N2 dewar level full SV3 open SV4 closed CM1 pressure 0.8 torr CM5 pressure 607 torr CC1 pressure 2.8e-7 torr PPM LHe level 89.1 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 25.4 % AFP LN2 level 90.0 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Trip Hold Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 0 V MWPC Trip Hold Status --- East MWPC Temperature 69.4 F West MWPC Temperature 70 F MWPC Pressure 100.4 torr N2 - MWPC Differential -3.7 torr Neopentane Flow Rate 16.1 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status --- MWPC Pressure 100.2 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 11.6 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A UCNA Shift Change Checklist Top-Veto and GMS HV 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V PMTs off East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1852 Hz West muon veto rate 3277 Hz Spectrometer vacuum 3e-5 Torr disk usage daq account 86%

UCNA Shift Change Checklist Date: October 19, 2011 02:21 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.89 psia Heater C pressure 13.15 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 290.2 psia Tungsten Cool ret. 116.4 psia Tungsten Cool Diff 226.5 psia 1630 eng. 2 temp. 252.1 K 1630 JT temp. 280.4 K 1630 outlet temp. 274.1 K 1630 engine speed 0 rpm 1630 supply press. 250 psig 1630 JT press. 5 psig 1630 return press. 1.5 psig 1630 med. press. stor. 125 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 6.5 K 1410 TE-E 92.4 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.5 inHe 1K dewar level 10.1 inHe 4K main flow control 0.0 V LHe temp. 1 316.0 K Heat exch. temp. 3 298.4 K Poly temp. 2 313.8 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 83.9 % SCS field 0.007 kG SCS current 0 A AFP N2 dewar level 1 SV3 open SV4 closed CM1 pressure 0.9 torr CM5 pressure 605.2 torr CC1 pressure off torr PPM LHe level 89.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 44.5 % AFP LN2 level 83.0 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status Trip-Hold East MWPC Temperature 72.4 F West MWPC Temperature 71.1 F MWPC Pressure 100.4 torr N2 - MWPC Differential -4.1 torr Neopentane Flow Rate 16.8 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 2460 V MWPC Trip Hold Status Trip Hold MWPC Pressure 100.2 torr N2 - MWPC Differential -4.0 torr Neopentane Flow Rate 11.8 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 12 V PMTs off East muon veto HV 2.34 kV West muon veto HV 2.36 kV East muon veto rate 1807 Hz West muon veto rate 3191 Hz Spectrometer vacuum 2e-5 Torr disk usage daq account 86%

23742	Tue Oct 18 23:23:57 2011	BMV

Shift Overview: So we could not fill the SCS all the way so we could not do Xenon run. SCS was filled to 90%. 1K Dewar was down to 7 in. But after 1.5 hours the fill, the 1K dewar was not making liquid. Mark told me to put the JT307 on Manual. Sure enough after dinner I checked it, it is making liquid, kind of comparable as before. I called Mark he told me I can leave it there on Manual. Next crew keep an eye on the return pressure on 1630, has not been a problem since Raymond fixed it. But if it becomes a problem turn the brass should work well but if not then the V370 regulator. Supposedly it works- JEFF :-P... just did not turn it enough. (my bad too) Have a pleasant quiet night!

23741	Tue Oct 18 22:11:32 2011	Hasan

UCNA Shift Change Checklist Date: October 18, 2011 16:45 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.79 psia Heater C pressure 13.00 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 291.5 psia Tungsten Cool ret. 118.6 psia Tungsten Cool Diff 225.1 psia 1630 eng. 2 temp. 232.7 K 1630 JT temp. 276.4 K 1630 outlet temp. 261.2 K 1630 engine speed 0 rpm 1630 supply press. 250 psig 1630 JT press. 0 psig 1630 return press. 1.0 psig 1630 med. press. stor. 135 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 8.0 K 1410 TE-E 81.8 K 1410 supply press. 235 psig 1410 JT press. 175 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 6 psig 4K dewar level 16.52 inHe 1K dewar level 19.28 inHe 4K main flow control 0.0 V LHe temp. 1 308.27 K Heat exch. temp. 3 295.28 K Poly temp. 2 301.66 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.9 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 89.1 % SCS field 0.005 kG SCS current 0 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 608.4 torr CC1 pressure 1.5e-6 torr PPM LHe level 89.4 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 52.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 20 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status trip hold East MWPC Temperature 74.1 F West MWPC Temperature 73.9 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.2 torr Neopentane Flow Rate 16.2 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV

torr Neopentane Flow Rate 11.7 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 12 V PMTs off East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1871 Hz West muon veto rate 3283 Hz Spectrometer vacuum 1.9e-5 Torr disk usage daq account 86%

23740	Tue Oct 18 16:11:49 2011	MFMakela

Source warm Main turbo pumping on it via SV3

23739	Tue Oct 18 16:11:17 2011	MFMakela

1630 - off N2 purge on high pressure side.

23738	Tue Oct 18 06:26:22 2011	Hasan

UCNA Shift Change Checklist Date: October 17, 2011 16:45 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.80 psia Heater C pressure 13.14 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 291 psia Tungsten Cool ret. 122.3 psia Tungsten Cool Diff 219.5 psia 1630 eng. 2 temp. 15.29 K 1630 JT temp. 7.98 K 1630 outlet temp. 272.6 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 2.0 psig 1630 med. press. stor. 150 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 85.0 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.2 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.82 inHe 1K dewar level 14.84 inHe 4K main flow control 0.0 V LHe temp. 1 247.35 K Heat exch. temp. 3 252.95 K Poly temp. 2 199.15 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 77.7 % SCS field 0.005 kG SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 805.8 torr CM5 pressure 1.5 torr CC1 pressure Over torr PPM LHe level 89.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 82.5 % AFP LN2 level 65.2 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 78.8 F West MWPC Temperature 79.9 F MWPC Pressure .97 torr N2 - MWPC Differential -- torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 13 V PMTs off East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1760 Hz West muon veto rate 3372 Hz Spectrometer vacuum 1e-5 Torr disk usage daq account 86%

23737	Tue Oct 18 01:44:16 2011	bz

UCNA Shift Change Checklist Date: October 18, 2011 01:25 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.78 psia Heater C pressure 13.08 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 289.1 psia Tungsten Cool ret. 119.5 psia Tungsten Cool Diff 221.0 psia 1630 eng. 2 temp. 116.2 K 1630 JT temp. 122.6 K 1630 outlet temp. 245.7 K 1630 engine speed 0 rpm 1630 supply press. 248 psig 1630 JT press. 22 psig 1630 return press. 2.0 psig 1630 med. press. stor. 107 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 6.6 K 1410 TE-E 90.5 K 1410 supply press. 232 psig 1410 JT press. 134 psig 1410 return press. 3.2 psig 4K dewar pressure 380 mmHg 1K dewar pressure 7.2 psig 4K dewar level 16.67 inHe 1K dewar level 21.67 inHe 4K main flow control 0.0 V LHe temp. 1 269.2 K Heat exch. temp. 3 274.3 K Poly temp. 2 252.6 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 22.5 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 73.5 % SCS field 0.004 kG SCS current 0 A AFP N2 dewar level 1/8 SV3 closed SV4 closed CM1 pressure 78.2 torr CM5 pressure 614.0 torr CC1 pressure Over torr PPM LHe level 89.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 73.7 % AFP LN2 level 74.4 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 20 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA

---------- MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 78.8 F West MWPC Temperature 77.4 F MWPC Pressure 8.1 torr N2 - MWPC Differential .1 torr Neopentane Flow Rate 4e-2 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 13 V PMTs off East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1903 Hz West muon veto rate 3302 Hz Spectrometer vacuum 4.1 Torr disk usage daq account 86%

23736	Mon Oct 17 23:54:35 2011	Hasan

UCNA Shift Change Checklist Date: October 17, 2011 16:45 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.80 psia Heater C pressure 13.14 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 291 psia Tungsten Cool ret. 122.3 psia Tungsten Cool Diff 219.5 psia 1630 eng. 2 temp. 15.29 K 1630 JT temp. 7.98 K 1630 outlet temp. 272.6 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 2.0 psig 1630 med. press. stor. 150 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.4 K 1410 TE-E 85.0 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.2 psig 4K dewar pressure 240 mmHg 1K dewar pressure 7.0 psig 4K dewar level 14.82 inHe 1K dewar level 14.84 inHe 4K main flow control 0.0 V LHe temp. 1 247.35 K Heat exch. temp. 3 252.95 K Poly temp. 2 199.15 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.480 MHz AFP forward power 0 W SCS LHe level 77.7 % SCS field 0.005 kG SCS current 0 A AFP N2 dewar level 1/4 SV3 closed SV4 closed CM1 pressure 805.8 torr CM5 pressure 1.5 torr CC1 pressure Over torr PPM LHe level 89.5 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 82.5 % AFP LN2 level 65.2 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current):--- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 78.8 F West MWPC Temperature 79.9 F MWPC Pressure .97 torr N2 - MWPC Differential -- torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 13 V PMTs off East muon veto HV 2.32 kV West muon veto HV 2.33 kV East muon veto rate 1760 Hz West muon veto rate 3372 Hz Spectrometer vacuum 1e-5 Torr disk usage daq account 86%

23735	Mon Oct 17 23:26:25 2011	BMV

Vented system Mark came in showed Brittney and Hasan how to warm up the 1630, from what I gather, T3< 50K open V36 to reduce JT pressure, T3>70K open V312 to reduce the JT pressure. T3>80 flow a tiny bit of N so you reach 50 uHg into the vacuum seal to break the vacuum jacket. No more than 50 uHg, if you flow a tiny bit in and it goes back to zero instantly, STOP! Tell mark he will handle it in the morning. He also gave instructions for putting source back in the tank. Opened GC5 and GC2, turned on KNF, closed check valve bypass. Installed West detector Brittney went upstairs opened V36 because at 50K on 1630. She also followed Marks procedure of closing off the source, in previous log entry. Started pumping on the SCS and guide system. Michael and Brittney will work on typing the Pumping and Venting Procedure.

23734	Mon Oct 17 22:39:22 2011	BMV

Closed the GC2 valve. Stopped the KNF pump and powered off Closed Orange Valve I believe 105.4 mBar is left in the source, if my reasoning serves me correctly it is what is reading on the mensor gauge.

Attachment 1: png

23733	Mon Oct 17 16:57:52 2011	MFMakela

The 1630 will be shutoff this evening ~9pm. The goal is to have it up Thursday night. We can activate Xenon with it down.

shift overview 12:00 did shift change checklist 2:10 started scs fill 4:00 finished scs fill scs at 87% 06:02 Stopped taking Depol data, got a bunch of data for various forward power settings, leaving frequency the same 6:10 started the afp fill 06:16 Gate Valve closed, Gate Valve 24V disconnected and air unplugged Check Valve open, Source Voltage 0.0V 7:00 finished afp fill 7:15 startd ramping down the scs and the afp so as to conserve liquid for running later in the week for run data look at brittenys electronic post from earlier, we edited it to include our runs as well 08:30 SCS Ramped Down, AFP Ramped Down Vapor cooled leads closed, LN2 return open AFP exhaust valve open, vapor cooled leads closed Heat Exchanger Pump off >>>>>>> Please erase the field from the board.

23731	Mon Oct 17 16:15:13 2011	MFMakela

time | 4K dewar rate | 1K dewar rate | note 0900 .66 .82 initial value (8-9 am)~9:15 adjusted E1 -5/1000 11:45 .64 .89

23732	Mon Oct 17 11:41:20 2011	MFMakela

Flow in the target has increased. beam off measurement. 10/17/2011 Compressor Supply: 294 Compressor Return: 72 Interlock Supply: 292.9 Interlock Differential: 118.8 Interlock return: 125.3 Flow: 675 SCFH (return valve closed to make return guage read 125 psi.)

23722	Mon Oct 17 11:28:23 2011	Sky

This morning we completed a set of Adam's Guide Flipper Trapped Lifetime measurements with Delta = 15s, 25s and 40s. This afternoon, Andy and I started a high precision frequency scan of the AFP. These measurements will continue this evening. The 1630 continues to have trouble, possibly due to failure of its main bearing. Mark adjusted the return pressure and 4k pressure by opening the green bypass valve and adjusting the needle valve that is in series with it. Note that the green valve should either be fully open (parallel to the pipe) or fully closed (perpendicular) and adjustments in between fully open and closed should be made with the needle valve.

23724	Mon Oct 17 06:09:55 2011	BMV

Time Midas run MCS run Type Cycles Flipper frequency ---------- 16:04 16853 895 D- 5 28.500 16:40 16854 896 D+ 6 28.500 17:30 16855 897 D+ 5 28.505 18:08 16856 898 D- 5 28.505 18:46 16857 899 D- 5 28.495 19:23 16858 900 D+ 5 28.495 20:02 16859 901 D+ 6 28.485 20:46 16860 902 D- 5 28.485 Power Scan Freq=28.480MHz Time Midas run MCS run Type Cycles FWD PWR(W) REFL PWR (W) ---------- 21:26 16861 903 D- 5 8 0.125 22:03 16862 904 D+ 6 8 0.125 22:49 16863 905 D+ 5 25 0.225 23:25 16864 906 D- 5 25 0.225 00:09 16865 907 D- 5 12 0.19 00:52 16866 908 D+ 5 12 0.19 01:29 16867 909 D+ 5 4 0.08 02:05 16868 910 D- 5 4 0.08 02:43 16869 911 D- 5 17 0.2 03:18 16870 912 D+ 5 17 0.2 03:56 16871 913 D+ 6 30 0.24 BAD!!! 04:38 16872 914 D- 5 30 0.24 BAD!!! 05:14 16873 915 D- 3 30 0.24 05:36 16874 916 D+ 3 30 0.24 16871 and 16872 are BAD (!!!) because Bryan forgot to remove the 5V signal from the AFP before starting the run so the AFP was always on.

23729	Mon Oct 17 00:35:30 2011	bz

UCNA Shift Change Checklist Date: October 17, 2011 00:29 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 50 slpm Heater B pressure 13.76 psia Heater C pressure 13.07 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 293.5 psia Tungsten Cool ret. 131.2 psia Tungsten Cool Diff 212 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 8.1 K 1630 outlet temp. 273.9 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.3 psig 1630 med. press. stor. 150 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.6 K 1410 TE-E 90.4 K 1410 supply press. 225 psig 1410 JT press. 120 psig 1410 return press. 3.2 psig 4K dewar pressure 265 mmHg 1K dewar pressure 7.5 psig 4K dewar level 9.3 inHe 1K dewar level 15.0 inHe 4K main flow control 5.5 V LHe temp. 1 5.3 K Heat exch. temp. 3 182.2 K Poly temp. 2 83.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 10.8 C AFP frequency 28.480 MHz AFP forward power testing W SCS LHe level 83.8 % SCS field 0.6884 kG SCS current 118.5 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 1.1 torr CM5 pressure 1.4 torr CC1 pressure Over torr PPM LHe level 89.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 91.4 % AFP LN2 level 84.4 % PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):14.5 mA "Beamplot" Capture: 83 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 80.3 F

Flow Rate -- le 2 slpm East PMT Buck. Curr. 0 A East Back. Veto Buck. 0 A H2O Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 14 V PMTs off East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 1921 Hz West muon veto rate 3658 Hz Spectrometer vacuum 9e-6 Torr disk usage daq account 86%

23728	Sun Oct 16 23:06:46 2011	BMV

Shift Overview Andy and Sky were in the process of a frequency scan. I continued the scan. Basically took D- and D+ runs with different frequencies. The frequencies: 28.490 28.480 28.450 REF too high did not do 28.500 28.470 REF too high did not do 28.460 REF too high did not do 28.510 REF too high did not do 28.505 28.465 REF too high did not do 28.495 28.475 REF too high did not do 28.455 REF too high did not do 28.485 For me REF too high did not do, was when REF PWR was above the blue line. Filled AFP, 1630 would not go to the desired 2psi before opening the AFP magnet. Tried turning brass knobs. Called Mark. Mark said open the valves up and start filling the magnet. So opened the brass knobs all the way open, started the fill, and finally it dropped to 2psi. It was at 3.2psi. Been slowly closing the brass knobs ever since. The one near the green valve is not completely close but I think the 1630 is ok. The temperature is about 15, the return pressure is 2.3psi and the speed is about 220rpm. 4K dewar pressure is changing, right now going up it is about 5.4psi right now. Called Adam about 9pm, hehe 11pm EST ... I know Adam you love it!! j/k. So we talked about desired powers if we had to ramp down SCS tonight. His preference is: FWD PWR= 4, 8, 12, 25, 17 If we can take more that is great, although he is hesitant about the 100W and 150W... might break spin flipper. Big No No especially since we finally got it tuned! And the quartz guide installed... shish... 9:30pm saw Mark's post. Fiddled with the source control. Slowly turned it down to 5.6V. Now playing the longer waitng game than the 10min one I was doing before at 5.7V. Looks so far doing well, UCN counts seem to not change much. Temperature is now about 5.1K instead of 4.9K.May play with it again in a couple minutes 10:20pm Hasan walks outside... killing himself with cigarettes... he is trying to quit. GO!!!! HASAN!! Get rid of those cancerous devices. At least he took some tea with him... balances out. 10:45 had a discussion about poisonous animals, did not know that platypus and shrew were the most venemous mammals. Ok so a third grader could of told me that. But I just thought platypus were just funny looking animals. Don't mess with a platypus esp. males! 10:55pm lowered source voltage to 5.5V.

23727	Sun Oct 16 21:59:27 2011	BMV

I turned the source voltage down from 5.8 to 5.6... (0.1 each time) so far looks ok, with the depol runs we are not hitting it as often so it is hard to gauge if the UCN count is going down... we will see over time. It appears at 5.6 the temp stays around 5.1K instead of 4.9K which it was at 5.8V. I will sit on this for a while to make sure no gradual warmups. Or bad reduction in UCNs.

23715	Sun Oct 16 21:27:32 2011	BMV

Depolarization Measurements Time RUN FAST DAQ SLOW DAQ CYCLES 22:22 Depol Off-> On 16823 863 6 22:57 Depol On->Off 16824 864 4 23:28 Polarized ON 16825 866 5 00:13 Shutter Lifetime OFF 16826 867 4 00:50 Shutter Lifetime ON 16827 868 4 01:30 Depol Off -> On 16828 869 7 (First is Bad) 02:20 Depol On -> Off 16829 870 6 (First is Bad) 03:04 Polarized ON 16830 871 5 (First is Bad) 03:48 Shutter Lifetime OFF 16831 872 4 04:24 Shutter Lifetime ON 16832 873 4 05:00 Sys. Trap Lifetime OFF 16833 874 4 05:28 Sys. Trap Lifetime ON 16834 875 5 06:06 Guides Lifetime OFF 16835 876 5 06:21 Guides Lifetime ON 16836 877 6 06:40 Sys. Trap Lifetime OFF 16837 878 4 07:09 Sys. Trap Lifetime ON 16838 879 5 07:45 Guides Lifetime OFF 16839 880 4 07:58 Guides Lifetime ON 16840 881 4 08:12 Guides Lifetime OFF 16841 882 4 08:32 Guides Lifetime ON 16842 883 5 08:55 Guides Lifetime OFF 16843 884 5 09:10 Guides Lifetime ON 16844 885 5 09:26 Guides Lifetime OFF 16845 886 6 09:47 Guides Lifetime ON 16846 887 7 10:10 Guides Lifetime ON 16847 888 9 10:42 Guides Lifetime OFF 16848 889 9

23726	Sun Oct 16 20:21:23 2011	MFMakela

1630 production is still not low. We will probably need to warm it up this week and replace the main bearing. In preparation for this possibility please turn off the source after tonight's run. I will check the 1630 mid-morning and see if we need to shutdown. For now it looks like the source may be running colder than it needs to, you could try turning down the voltage .1 at a time. and see if the rate is changed.

23725	Sun Oct 16 17:52:28 2011	BMV

Online beta decay checker on PAW how to restart. PCUCN16 computer cd online paw PAW> exe check_beta_decay

UCNA Shift Change Checklist Date: October 16, 2011 16:00 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 53 slpm Heater B pressure 13.7 psia Heater C pressure 13.05 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 295.2 psia Tungsten Cool ret. 134.4 psia Tungsten Cool Diff 209.5 psia 1630 eng. 2 temp. 15.4 K 1630 JT temp. 8.13 K 1630 outlet temp. 274.7 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 185 psig 1630 return press. 2.0 psig 1630 med. press. stor. 150 psig 1410 engine speed 200 rpm 1410 TE-A 16 K 1410 TE-B 6.4 K 1410 TE-E 87.3 K 1410 supply press. 230 psig 1410 JT press. 135 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 10.35 inHe 1K dewar level 17.66 inHe 4K main flow control 5.8 V LHe temp. 1 5.64 K Heat exch. temp. 3 186.21 K Poly temp. 2 89.141 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status down AFP temperature 11.2 C AFP frequency 28.500 MHz AFP forward power 40 W SCS LHe level 88.4 % SCS field 0.688 kG SCS current 118.5 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 1.0 torr CM5 pressure 1.5 torr CC1 pressure 5.8e-5 torr PPM LHe level 90.2 % PPM LN2 level 0.0 % (level meter broken) AFP LHe level 85.6 % AFP LN2 level 74.4 % PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10.5 gph AFP chiller set point 7 degC AFP chiller level light On Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H-source current):14.5 mA "Beamplot" Capture: 83 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 79.6 F West MWPC Temperature 82.6 F MWPC Pressure 1.2 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 16 V East muon veto HV 2.29 kV West muon veto HV 2.32 kV East muon veto rate 1953 Hz West muon veto rate 3635 Hz Spectrometer vacuum 2.8e-5 Torr disk usage daq account 86%

23714	Sun Oct 16 16:49:45 2011	BMV

Spin Flipper Tuning Once again FWD (W) REF(W) FREQ(MHz) COUNTS(AVG)(UCN) Fast Daq Fe/GV 0 185 5 0.025 28.495 168 16812 0.43 5 0.05 28.485 98 16813 0.2276 5 0.125 28.475 94 16814 0.2228 5 0.2 28.465 106 16815 0.2438 5 0.375 28.455 135 16816 0.3653 5 0.025 28.495 169 16817 0.4364 5 0.025 28.505 200 16818 0.492 5 0.025 28.515 204 16819 0.4885 5 0.1 28.48 93 16820 0.1962 40 0.25 28.48 51 16821 0.1205

Attachment 1: e101511_1.xls

23721	Sun Oct 16 16:10:17 2011	ASaunders

Time Midas run MCS run Type Cycles Flipper frequency ---------- 13:36 16849 891 D- 5 28.480 14:12 16850 892 D+ 5 28.480 14:52 16851 893 D+ 5 28.490 15:27 16852 894 D- 5 28.490 16:04 16853 895 D- 28.500

23720	Sun Oct 16 13:51:21 2011	ASaunders

We will do Adam's Gigh Precision Frequency scan of the spin flipper. The idea is to do a set of D- and D+ runs for each spin flipper frequency setting. Here are the patterns we will use: (The first column is the time in 10 ms units; the bit pattern for the remaining columns is: EDM, Shutter, b, Trigger, Flapper, Beam, Flipper, Switcher, GV) D-: 0 010101001 10 010001001 8000 000001001 8100 000000010 10500 000000110 11000 010000110 21000 010000010 41000 010001001 D+ 0 010101101 10 010001101 8000 000001101 8100 000000110 10500 000000010 11000 010000010 21000 010000110 41000 010001101 Note that the spin flipper is in the SAME state between cycles as it is for loading, in these patterns. This is important, as otherwise the spin flipper poisons the trap with wrong spin UCNs between cycles.

23719	Sun Oct 16 09:52:07 2011	Sky

UCNA Shift Change Checklist Date: October 16, 2011 09:40 Shift Persons: Sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 13.8 psia Heater C pressure 13.1 psia Tungsten supply press. 285 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 292 psia Tungsten Cool ret. 129 psia Tungsten Cool Diff 214 psia 1630 eng. 2 temp. 15.6 K 1630 JT temp. 8.2 K 1630 outlet temp. 274.3 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 2.6 psig 1630 med. press. stor. 138 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.3 K 1410 TE-E 85.5 K 1410 supply press. 225 psig 1410 JT press. 125 psig 1410 return press. 3.2 psig 4K

98.9 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 19.8 C AFP frequency 28.495 MHz AFP forward power 40 W SCS LHe level 93.3 % SCS field 0.6876 kG SCS current 118.5 A AFP N2 dewar level 1/2 SV3 closed SV4 closed CM1 pressure 0.9 torr CM5 pressure 1.2 torr CC1 pressure 9.9e-5 torr PPM LHe level 90.3 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 97.0 % AFP LN2 level 94.4 % PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):14.52 mA "Beamplot" Capture: 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 79.2 F West MWPC Temperature 82.3 F MWPC Pressure 1.3 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V PMTs off East muon veto HV 2.29 kV West muon veto HV 2.31 kV East muon veto rate 2109 Hz West muon veto rate 4023 Hz Spectrometer vacuum 4e-5 Torr disk usage daq account 86%

23718	Sun Oct 16 02:47:30 2011	JCHoagland

UCNA Shift Change Checklist Date: October 16, 2011 02:30 Shift Persons: jeff and bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 38 slpm Heater B pressure 14.45 psia Heater C pressure 13.05 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 292.2 psia Tungsten Cool ret. 134.2 psia Tungsten Cool Diff 206.0 psia 1630 eng. 2 temp. 14.2 K 1630 JT temp. 7.9 K 1630 outlet temp. 268.8 K turned 806 closed 1/2 a number 1630 engine speed 210 rpm 1630 supply press. 205 psig 1630 JT press. 150 psig 1630 return press. 2.1 psig 1630 med. press. stor. 120 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 7.8 K 1410 TE-E 86.9 K 1410 supply press. 240 psig 1410 JT press. 175 psig 1410 return press. 3.2 psig 4K dewar pressure 230 mmHg filling scs from 1k dewar 1K dewar pressure 6.5 psig 4K dewar level 11.6 inHe 1K dewar level 25.8 inHe 4K main flow control 5.3 V LHe temp. 1 6.4 K Heat exch. temp. 3 196.4 K Poly temp. 2 113.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 11.0 C AFP frequency 28.48 MHz AFP forward power 40 W SCS LHe level 89.8 % SCS field .6862 kG SCS current 118.5 A AFP N2 dewar level 5/8 SV3 closed SV4 closed CM1 pressure 1.3 torr CM5 pressure 1.89 torr CC1 pressure 1.6x 10-4 torr PPM LHe level 90.6 % PPM LN2 level 0?? % AFP LHe level 87.7 % AFP LN2 level 73.0 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 21 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 tuning Proton pattern width: 260 ns TBCM001I03 (H- source current):14.48 mA "Beamplot" Capture: 84% ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status auto reset East MWPC Temperature 79.8 F West MWPC Temperature 82.2 F MWPC Pressure .9 torr N2 - MWPC Differential 0.1 torr Neopentane Flow Rate -4e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential --torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 15 V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 1980 Hz West muon veto rate 3601 Hz Spectrometer vacuum 9e-7 Torr disk usage daq account 86%

23717	Sun Oct 16 02:36:26 2011	JCHoagland

after checking and trying to make the return stabalize i think that the 370 regulator on the 1630 is not working, tighting and loosining the regulator has no effect on the return pressure only opening and closeing the black and green arrows on the bypass seems to have anyeffect on the return pressure. will get the return stable with the arrows and then talk to others in the morning.

23716	Sun Oct 16 02:27:42 2011	BMV

SHIFT OVERVIEW- BRITTNEY and MICHAEL 4pm-midnight Oct. 15th 4pm- arrived, talked to Raymond. Decided to do some runs for Raymond. 1630 was at 1psi, messed with it got it up to 2psi. 16:42 Michael ramps down the SCS to 1000G, 12A (or was it 5000G 60A). Decided to check tune of Spin Flipper Argh!!!!!! While SCS was at its new ramp state FWD(W) REF(W) Freq(MHz) Count(UCN) 0

89 16810 5 0.2 28.465 --- 16811 Raymond comes in and tells me that the data from friday morning was also bad and so was todays. YAY! j/k So we decided to ramp the SCS back to 1T, and tune the spin flipper. During this time we decided to fill the AFP because the 1K dewar was at 35in. 1630 started misbehaving during fill fixed during and after fill. Played with the 1630 some more. When I felt better about the state I started tuning the spinflipper. Michael started working on detector stuff. Look at previous post 23714 for flipper tune. Found a decent spot at 28.480 MHz, it shifted 15kHz with all the ramping. Talked to Adam. He seemed ok with the REF power (higher than I like but still well below the blue line) It is about 0.225W (last tune was about 0.075W if remember correctly.) (Blue line 0.4W) Started sample Depol runs. Sent some of the data to Adam so he can check. He says it looks good. So restarted Depol runs. Entry 23715 for my shift runs. ~00:00 Started writing out procedure with Run program. Located either at table closest to sink or out in the big room near Raymond's computer. 02:00 Started typing Shift summary. 02:26 Finished Shift Overview, now will eat some food and check my much neglected email and then go to sleep... 02:27 Brittney actually ends her shift overview log entry

23713	Sat Oct 15 16:31:55 2011	mmendenhall

UCNA Shift Change Checklist Date: October 15, 2011 16:00 Shift Persons: Brittney, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 51 slpm Heater B pressure 13.56 psia Heater C pressure 13.04 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On --- Tungsten Cool supp. 297.1 psia Tungsten Cool ret. 130.5 psia Tungsten Cool Diff 216.5 psia 1630 eng. 2 temp. 15.14 K 1630 JT temp. 8.01 K 1630 outlet temp. 271.5 K 1630 engine speed 200 rpm 1630 supply press. 235 psig 1630 JT press. 178 psig 1630 return press. 1.0 psig 1630 med. press. stor. 92 psig 1410 engine speed 200 rpm 1410 TE-A 16.4 K 1410 TE-B 6.6 K 1410 TE-E 90.8 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.2 psig 4K dewar pressure 222 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.54 inHe 1K dewar level 33.1 inHe 4K main flow control 5.2 V LHe temp. 1 5.7 K Heat exch. temp. 3 180 K Poly temp. 2 116 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status down AFP temperature 11.2 C AFP frequency 28.495 MHz AFP forward power 40 W SCS LHe level 88.2 % SCS field .6854 kG SCS current 118.5 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 0.4 torr CM5 pressure 1.2 torr CC1 pressure 1.2e-4 torr PPM LHe level 90.9 % PPM LN2 level 0!!! % (level meter broken) AFP LHe level 95.5 % AFP LN2 level 93.5 % PPM current 72(6) A (T) AFP current 93.581(7)A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current):14.52 mA "Beamplot" Capture: 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status A.R. East MWPC Temperature 79.2 F West MWPC Temperature 82.3 F MWPC Pressure 1.3 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure -- torr N2 - MWPC Differential -- torr Neopentane Flow Rate -- slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) --- V PMTs off East muon veto HV 2.29 kV West muon veto HV 2.31 kV East muon veto rate 2109 Hz West muon veto rate 4023 Hz Spectrometer vacuum 4e-5 Torr disk usage daq account 86%

23710	Sat Oct 15 16:22:54 2011	Hasan

Adam's Polarimetry Measurements Time Run MIDAS Type Flipper Cycles Comments 11:20 852 16796 SLD-(Lifetime) Off 4 11:57 853 16797 SLD+(Lifetime) On 4 12:57 854 16798 D- (Depol) Off->on 5 01:25 855 16799 P- (Pol) Off 4 02:05 856 16800 D+ (Depol) on->Off 1 duration of this cycle was 510 sec instead of 310... 02:05 857 16801 D+ (Depol) on->Off 4 02:38 858 16802 P+ (Pol) on 3 03:12 860 16804 SLD-(Lifetime) Off 4 03:48 861 16806 SLD+(Lifetime) On 4

23712	Sat Oct 15 15:15:10 2011	RRios

Talked to Mark about the 1630. When filling the Magnets for now we are just closing the black valve only. To fix the pressure in the 4K and keep the return pressure at 2 PSI, I closed off the brass valve below the green arrow completely. I then fully opened the green arrow and cracked open the brass valve until I could get it to stay at 2. 4K pressure stopped going up and the return pressure stopped pushing off.

23711	Sat Oct 15 14:19:28 2011	RRios

It looks like the 1630 has not been making any extra liquid into the 4K since the last SCS fill. It looks like it's just keeping up with cooling the source. Had some pressure changes in

pressure under 500 mmHg.

23709	Sat Oct 15 09:19:45 2011	RRios

Pumping out upstream side of ppm window closed off checkvalve bypass valve CCR retuning the beam.

23708	Sat Oct 15 09:17:14 2011	Hasan

UCNA Shift Change Checklist Date: October 15, 2011 00:30 Shift Persons: Hasan and Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 57 slpm Heater B pressure 13.79 psia Heater C pressure 12.06 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 294.2 psia Tungsten Cool ret. 123.8 psia Tungsten Cool Diff 224.4 psia 1630 eng. 2 temp. 15.14 K 1630 JT temp. 8.05 K 1630 outlet temp. 271.0 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 185 psig 1630 return press. 1.5 psig 1630 med. press. stor. 75 psig 1410 engine speed 200 rpm 1410 TE-A 16.4 K 1410 TE-B 6.6 K 1410 TE-E 95.8 K 1410 supply press. 200 psig 1410 JT press. 130 psig 1410 return press. 3.2 psig 4K dewar pressure 250 mmHg 1K dewar pressure 7.0 psig 4K dewar level 13.44 inHe 1K dewar level 32.8 inHe 4K main flow control 5.3 V LHe temp. 1 4.8 K Heat exch. temp. 3 200 K Poly temp. 2 144 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.4 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 93.7 % SCS field .68 kG SCS current 118.5 A AFP N2 dewar level 3/4 SV3 closed SV4 open pumping out upstream side of ppm window CM1 pressure 0.8 torr CM5 pressure 1.2 torr CC1 pressure 2.7x 10-4 torr PPM LHe level 91.1 % PPM LN2 level 0?? % AFP LHe level 92.8 % AFP LN2 level 86.2 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: Proton countdown: tuning Proton pattern width: ns TBCM001I03 (H- source current): mA "Beamplot" Capture: % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status triphold East MWPC Temperature 78.4 F West MWPC Temperature 80.8 F MWPC Pressure 258.6 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm West PMT Buck. Curr. A West Back. Veto Buck. A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 15 V East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 2138 Hz West muon veto rate 3914 Hz Spectrometer vacuum 3.9e-5 Torr disk usage daq account 86%

23706	Sat Oct 15 08:20:53 2011	BMV

Shift Overview- Brittney and Bryan 10/15/11 midnight-8am 0000- filled SCS and started pumping the system down 0200- ramped SCS, turned on water chiller for Spin Flipper 0330- Filled AFP, 1K was over 35in. while filling did one melt and refreeze. rate was around 70 got it up to 100HZ 0500- Requested CCR to retune beam to try and improve. To tune according to rate instead of temperature. 0630- Re-attempting a melt and refreeze 0700- Mark showed up looked at pressure in the tank turns out there was 400 mBar left in tank freezing some in.

23707	Sat Oct 15 07:07:36 2011	BMV

Doing a melt-and-refreeze last one did not improve as high as we would like Beam off, flapper closed, GV closed and air line disconnected *** CLOSED orange valve ***, opened check-valve bypass ... melting ... Closed check valve bypass, *** Opened *** orange valve, restoring GV function Mark showed up looked at pressure in the tank turns out there was 400 mBar left in tank freezing some in.

23705	Sat Oct 15 05:34:45 2011	BMV

UCNA Shift Change Checklist Date: October 15, 2011 00:30 Shift Persons: bryan and brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 44 slpm Heater B pressure 14.04 psia Heater C pressure 12.93 psia Tungsten supply press. 200 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 296 psia Tungsten Cool ret. 118.1 psia Tungsten Cool Diff 232.2 psia 1630 eng. 2 temp. 15.28 K 1630 JT temp. 8.01 K 1630 outlet temp. 270.4 K 1630 engine speed 170 rpm 1630 supply press. 230 psig 1630 JT press. 180 psig 1630 return press. 2.1 psig 1630 med. press. stor. 51 psig 1410 engine speed 200 rpm 1410 TE-A 16.5 K 1410 TE-B 6.5 K 1410 TE-E 88.8 K 1410 supply press. 225 psig 1410 JT press. 125 psig 1410 return press. 3.2 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 19.9 inHe 1K dewar level 31.6 inHe 4K main flow control 3.5 V LHe temp. 1 9.091 K Heat exch. temp. 3 194.5

Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 25.54 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field .063 kG SCS current ramping A AFP N2 dewar level 7/8 SV3 closed SV4 closed CM1 pressure 0.8 torr CM5 pressure 621.7 torr CC1 pressure 5x 10-4 torr PPM LHe level 91.2 % PPM LN2 level 0?? % AFP LHe level 85.5 % AFP LN2 level 70.7 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph was off now on AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: Proton countdown: tuning Proton pattern width: ns TBCM001I03 (H- source current): mA "Beamplot" Capture: % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status triphold East MWPC Temperature 78.4 F West MWPC Temperature 80.8 F MWPC Pressure 258.6 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm West PMT Buck. Curr. A West Back. Veto Buck. A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 15 V East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 1732 Hz West muon veto rate 3197 Hz Spectrometer vacuum pumping down Torr disk usage daq account 86%

23704	Sat Oct 15 04:47:20 2011	BMV

Doing a melt-and-refreeze while filling the AFP Beam off, flapper closed, GV closed and air line disconnected *** CLOSED orange valve ***, opened check-valve bypass ... melting ... Closed check valve bypass, *** Opened *** orange valve, restoring GV function

Attachment 1: png

png

23703	Fri Oct 14 18:38:11 2011	RRios

UCNA Shift Change Checklist Date: October 14, 2011 00:30 Shift Persons: Raymond and Sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 26 slpm Heater B pressure 13.7 psia Heater C pressure 13.1 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 295.0 psia Tungsten Cool ret. 220.2 psia Tungsten Cool Diff 230 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 8.0 K 1630 outlet temp. 273 K 1630 engine speed 220 rpm 1630 supply press. 245 psig 1630 JT press. 190 psig 1630 return press. 2.8 psig 1630 med. press. stor. 50 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 6.5 K 1410 TE-E 95 K 1410 supply press. 230 psig 1410 JT press. 150 psig 1410 return press. 3.3 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.3 inHe 1K dewar level 31.9 inHe 4K main flow control 2.1 V LHe temp. 1 17.5 K Heat exch. temp. 3 197 K Poly temp. 2 106 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 15.6 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 88.8 % SCS field Off kG SCS current --- A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 335.1 torr CM5 pressure 624.2 torr CC1 pressure --- torr PPM LHe level 91.5 % PPM LN2 level 100 % AFP LHe level 82.1 % AFP LN2 level 67 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point - degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: -- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status triphold East MWPC Temperature 74.9 F West MWPC Temperature 79.2 F MWPC Pressure 1.1 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm West PMT Buck. Curr. A West Back. Veto Buck. A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) ---- Beta-Scintillator and Backing-Veto Crate (Bottom Crate) -- V East muon veto HV ---- kV West muon veto HV --- kV East muon veto rate ---- Hz West muon veto rate ---- Hz Spectrometer vacuum vented Torr disk usage daq account 86%

23702	Fri Oct 14 10:48:49 2011	MFMakela

Working on the source: 168 mbar in tank. Doing slight melt Holding source near triple point (Orange valve is open) Poly pump is off.

23700	Fri Oct 14 07:25:31 2011	BMV

PAW down... tried to fix... can't look at graphs... grr... Adam's polarimetry measurements:

BAD MRDAS relaunched, bad timing 02:10 Polarized OFF 16782 845 2 BAD MRDAS died while trying to figure out PAW 02:54 Polarized OFF 16785 846 4 (called it Reload) 03:32 Depol On->Off 16786 847 4 03:55 Polarized ON 16787 848 5 AFP fill 04:42 Lifetime OFF BAD!! BEAM DOWN!!!! Sniff :-(04:00 Filling AFP Magnet 04:50 Roberto Blanco reports, water pump failed. Water spewing all over the equipment. It will be at least an hour before technician either gets here or will be able to fix. Told them to tune to PRAD. 05:20 Filling SCS Magnet 03:00- Now Jeff attempting to fill PPM LN since reads 0% He has already used up one dewar load into the PPM. Now trying second dewar full to put in there. Think measuring device is broken... 05:20ish Jeff Idled source. Do not plan to vent any part of the system because I do not want to break anymore wire chambers and windows.

23701	Fri Oct 14 05:33:15 2011	BMV

UCNA Shift Change Checklist Date: October 14, 2011 00:30 Shift Persons: jeff and brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 13.81 psia Heater C pressure 13.14 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 294.2 psia Tungsten Cool ret. 131.8 psia Tungsten Cool Diff 211.8 psia 1630 eng. 2 temp. 16.0 K 1630 JT temp. 8.1 K 1630 outlet temp. 274.6 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.5 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.0 K 1410 TE-E 84.7 K 1410 supply press. 225 psig 1410 JT press. 150 psig 1410 return press. 3.3 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.7 inHe 1K dewar level 23.7 inHe 4K main flow control 5.5 V LHe temp. 1 4.9 K Heat exch. temp. 3 189.5 K Poly temp. 2 128.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 17.6 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 91.0 % SCS field .37.58 kG SCS current 118.5 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.1 torr CC1 pressure 5.5x 10-5 torr PPM LHe level 91.9 % PPM LN2 level 100 % AFP LHe level 88.9 % AFP LN2 level 79.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 295 ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status triphold East MWPC Temperature 72 F West MWPC Temperature 79 F MWPC Pressure 1.1 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm West PMT Buck. Curr. A West Back. Veto Buck. A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 16 V East muon veto HV 2.31 kV West muon veto HV --- kV East muon veto rate 2176 Hz West muon veto rate ---- Hz Spectrometer vacuum 6x10-5 Torr disk usage daq account 86%

23699	Fri Oct 14 00:55:04 2011	BMV

UCNA Shift Change Checklist Date: October 14, 2011 00:30 Shift Persons: jeff and brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 45 slpm Heater B pressure 13.81 psia Heater C pressure 13.14 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 294.2 psia Tungsten Cool ret. 131.8 psia Tungsten Cool Diff 211.8 psia 1630 eng. 2 temp. 16.0 K 1630 JT temp. 8.1 K 1630 outlet temp. 274.6 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 195 psig 1630 return press. 2.5 psig 1630 med. press. stor. 60 psig 1410 engine speed 200 rpm 1410 TE-A 14.8 K 1410 TE-B 6.0 K 1410 TE-E 84.7 K 1410 supply press. 225 psig 1410 JT press. 150 psig 1410 return press. 3.3 psig 4K dewar pressure 260 mmHg 1K dewar pressure 7.0 psig 4K dewar level 18.7 inHe 1K dewar level 23.7 inHe 4K main flow control 5.5 V LHe temp. 1 4.9 K Heat exch. temp. 3 189.5 K Poly temp. 2 128.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 17.6 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 91.0 % SCS field .37.58 kG SCS current 118.5 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.6 torr CM5 pressure 1.1 torr CC1 pressure 5.5x 10-5 torr PPM LHe level 91.9 % PPM LN2 level 100 % AFP LHe level 88.9 % AFP LN2 level 79.4 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 295 ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status triphold East MWPC Temperature 72 F West MWPC Temperature 79 F MWPC Pressure 1.1 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller off Chiller water level 1 ========== West Detector Cart OUT--- OFF!!!!! :-(========== MWPC HV 0 V MWPC Trip Hold Status

Back. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 16 V East muon veto HV 2.31 kV West muon veto HV --- kV East muon veto rate 2176 Hz West muon veto rate ---- Hz Spectrometer vacuum 6x10-5 Torr disk usage daq account 86%

23698	Thu Oct 13 23:55:16 2011	RRios

Depolarization as a function of SCS field Field (Gauss) run midas AFP cycles 0 837 16775 off->on 1 0 838 16776 off 1 100 839 16777 off->on 1 100 840 16778 off 1 Data bad... sigh. The AFP spinflipper was off the entire time. It's been a long day. No time left. ramping up to 1 Tesla.

23697	Thu Oct 13 22:04:59 2011	RRios

Got in a hurry and focused on too many things at once. pumped out the GV to PPM section before the SCS got fully pumped down. SCS pressure about 80 Torr.

23696	Thu Oct 13 20:35:37 2011	ASaunders

ramp afp to 93.581 A. Cycle shims 4 times at nominal values.

23695	Thu Oct 13 17:01:32 2011	Hasan

UCNA Shift Change Checklist Date: October 13, 2011 16:00 Shift Persons: Raymond, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 19 slpm Heater B pressure 14.73 psia Heater C pressure 14.07 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 293.7 psia Tungsten Cool ret. 118.5 psia Tungsten Cool Diff 228.8 psia 1630 eng. 2 temp. 15.44 K 1630 JT temp. 8.04 K 1630 outlet temp. 274.8 K 1630 engine speed 260 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 2.2 psig 1630 med. press. stor. 40 psig 1410 engine speed 101 rpm 1410 TE-A 16.3 K 1410 TE-B 5.5 K 1410 TE-E 87.1 K 1410 supply press. 250 psig 1410 JT press. 215 psig 1410 return press. 3.2 psig 4K dewar pressure 280 mmHg 1K dewar pressure 6.0 psig 4K dewar level 19.54 inHe 1K dewar level 25.81 inHe 4K main flow control 3.0 V LHe temp. 1 9.864 K Heat exch. temp. 3 206.72 K Poly temp. 2 53.098 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 20.7 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 0.004 G SCS current 0 A AFP N2 dewar level 4/4 SV3 closed SV4 closed CM1 pressure 5.6 torr CM5 pressure 635.0 torr CC1 pressure out of range torr PPM LHe level 92.2 % PPM LN2 level 100 % AFP LHe level 77.5 % AFP LN2 level 63.4 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 0 V MWPC Trip Hold Status Auto Reset East MWPC Temperature 66.2 F West MWPC Temperature 86.4 F MWPC Pressure 580.2 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr 0 A East Back. Veto Buck. 0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status Auto Reset MWPC Pressure 0 torr N2 - MWPC Differential 0 torr Neopentane Flow Rate 0 slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 17 V East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 1785 Hz West muon veto rate 3290 Hz Spectrometer vacuum out of range Torr disk usage daq account 86%

23694	Thu Oct 13 16:20:53 2011	MFMakela

Tungsten target cooling: Scott added a flow meter that can be valved in and out of the W-target helium loop. The initial reading was 525 SCFH (full open) 500 SCFH (return valve closed to make return guage read 125 psi. 10/13/2011 Compressor Supply: 290- Compressor Return: 70 Interlock Supply: 288.9 Interlock Differential: 224.1 Interlock return: 117.3 Flow: 600 SCFH Full open - Compressor Supply: 295 Compressor Return: 75 Interlock Supply: 293 Interlock Differential: 284.7 Interlock return: 75 Flow: 675 SCFH

23693	Thu Oct 13 14:11:11 2011	RRios

A couple of Hall probe wires got caught onto the west Beta detector as the beta detector was being pulled out. Two wires were reading incorrectly. I pulled out the hall probes further out and moved around the wires. Problem went away though I don't know where exactly the two wires were connecting to ground.

23692	Thu Oct 13 07:52:00 2011	bz

Torr at 614.3 Torr started SCS vent at 05:02, approximately .1 Torr/sec (.06 according to Multiscan Plotter) Finished Vent @ 07:50, still needs to be matched to atmosphere.

23691	Thu Oct 13 01:21:47 2011	JCHoagland

UCNA Shift Change Checklist Date: October 13, 2011 00:30 Shift Persons: jeff and bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 44 slpm Heater B pressure 13.69 psia Heater C pressure 13.41 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 291.4 psia Tungsten Cool ret. 122.7 psia Tungsten Cool Diff 219.9 psia 1630 eng. 2 temp. 14.7 K 1630 JT temp. 6.9 K 1630 outlet temp. 270.6 K 1630 engine speed 150 rpm 1630 supply press. 215 psig 1630 JT press. 165 psig 1630 return press. 1.8 psig 1630 med. press. stor. 45 psig 1410 engine speed 149 rpm 1410 TE-A 16.1 K 1410 TE-B 6.1 K 1410 TE-E 95.3 K 1410 supply press. 245 psig 1410 JT press. 180 psig 1410 return press. 3.2 psig 4K dewar pressure 275 mmHg 1K dewar pressure 6.5 psig 4K dewar level 26.5 inHe 1K dewar level 20.6 inHe 4K main flow control 5.0 V LHe temp. 1 4.7 K Heat exch. temp. 3 220.8 K Poly temp. 2 140.3 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 9.9 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 87.3 % SCS field .6903 kG SCS current 118.5 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 1.1 torr CC1 pressure over torr PPM LHe level 93.7 % PPM LN2 level 100 % AFP LHe level 84.4 % AFP LN2 level 64.8 % PPM current 72(6) A (T) AFP current 93.581(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- BEAM OFF Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 00 V MWPC Trip Hold Status auto reset East MWPC Temperature 61.2 F West MWPC Temperature 57.2 F MWPC Pressure 0 torr N2 - MWPC Differential .1 torr Neopentane Flow Rate 7e-2 slpm East PMT Buck. Curr .00 A East Back. Veto Buck. .0 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status auto reset MWPC Pressure .1 torr N2 - MWPC Differential .6 torr Neopentane Flow Rate -.8 slpm West PMT Buck. Curr. .0 A West Back. Veto Buck. .0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 14 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 1800 Hz West muon veto rate 3246 Hz Spectrometer vacuum over Torr disk usage daq account 86%

23690	Thu Oct 13 00:34:03 2011	RRios

Adam's Depolarization/Polarimetry Studies: 1] ---------- Depolarization (Off to On) Flipper OFF Loading (Dô€€€) 0| 0 1010 1001 Trigger, (80s load time) 10| 0 1000 1001 8000| 0 0000 1001 Shutter Closes (Total Decay Trap holding time 30s) 8100| 0 0000 0010 Beam off, GV closes, Switcher down (polarized UCN clean time 24s) 10500| 0 0000 0110 AFP on (clean out depolarized UCN between SCS and AFP, 5s) 11000| 0 1000 0110 Shutter Opens (Drain time 100s) 21000| 0 1000 0010 AFP off (Cleaning time of 100s) 31000| 0 1000 1100 Beam back on, AFP on 2] ---------- Polarized Population Scaling (off) Flipper OFF Loading (Pô€€€) Same as above but AFP set to off(constant) 0| 0 1010 1001 Trigger, (80s load time) 10| 0 1000 1001 8000| 0 0000 1001 Shutter Closes (Total Decay Trap holding time 30s) 8100| 0 0000 0010 Beam off, GV closes, Switcher down (polarized UCN clean time 24s) 10500| 0 0000 0010 AFP off (clean out depolarized UCN between SCS and AFP, 5s) 11000| 0 1000 0010 Shutter Opens (Drain time 100s) 21000| 0 1000 0010 AFP off (Cleaning time of 100s) 51000| 0 1000 1000 Beam back on, 3] ---------- Depolarization (On to Off) Flipper ON Loading (D+) 0| 0 1010 1101 10| 0 1000 1101 8000| 0 0000 1101 8100| 0 0000 0110 10500| 0 0000 0010 11000| 0 1000 0010 21000| 0 1000 0110 31000| 0 1000 1000 4] ---------- Polarized Population Scaling (on) Flipper ON Loading (P+) Same as above but AFP on(constant) 0| 0 1010 1101 10| 0 1000 1101 8000| 0 0000 1101 8100| 0 0000 0110 10500| 0 0000 0110 11000| 0 1000 0110 21000| 0 1000 0110 51000| 0 1000 1100

23689	Wed Oct 12 21:29:58 2011	RRios

Beam is down and the team called in to fix it is still diagnosing the problem. No estimate. Because it has gotten late and we still need for CCR to tune the beam, we have decided to forgo the depolarization as a function of field measurements. The depolarization measurements would have increased the ramping time by a couple of hours. Michael will be coming in during the day tomorrow to work on the beta detectors. We are setting up to ramp the SCS and will hopefully be ready to do Adam's measurements by midnight.

23688	Wed Oct 12 21:22:57 2011	RRios

UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- -

psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 295 psia Tungsten Cool ret. 129.3 psia Tungsten Cool Diff 216.8 psia 1630 eng. 2 temp. 15.9 K 1630 JT temp. 8.4 K 1630 outlet temp. 273 K 1630 engine speed 240 rpm 1630 supply press. 245 psig 1630 JT press. 175 psig 1630 return press. 2.3 psig 1630 med. press. stor. 40 psig 1410 engine speed 149 rpm 1410 TE-A 15.5 K 1410 TE-B 5.7 K 1410 TE-E 88.6 K 1410 supply press. 245 psig 1410 JT press. 185 psig 1410 return press. 3.3 psig 4K dewar pressure 295 mmHg 1K dewar pressure 6.5 psig 4K dewar level 23.00 inHe 1K dewar level 20.2 inHe 4K main flow control 5.0 V LHe temp. 1 10.0 K Heat exch. temp. 3 294 K Poly temp. 2 303 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8

23687	Wed Oct 12 18:51:01 2011	ASaunders

ramp afp to 93.581 A. Cycle shims 4 times at nominal values.

23686	Wed Oct 12 18:07:01 2011	mmendenhall

DOWNSTAIRS: Gate valve status closed Pump port status open (making source) Switcher status thru AFP temperature 10.2 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 94.0 % SCS field .007 kG (SCS off) SCS current 0 A AFP N2 dewar level 1/3 SV3 closed SV4 closed CM1 pressure 623 torr (building source) CM5 pressure 1.1 torr CC1 pressure --- torr PPM LHe level 92.8 % PPM LN2 level 100 % AFP LHe level 79.8 % (ramped down; about to fill) AFP LN2 level 96.7 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): --.- mA "Beamplot" Capture: -- % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 60.2 F West MWPC Temperature 56.0 F MWPC Pressure 100.1 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 15.0 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .50 A H20 Chiller on Chiller water level 2.5 (filled) ========== West Detector Cart ========== MWPC HV ---- V (won't ramp; shorted) MWPC Trip Hold Status trip hold MWPC Pressure 99.1 torr N2 - MWPC Differential -0.8 torr Neopentane Flow Rate ??? slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1798 Hz West muon veto rate 3345 Hz Spectrometer vacuum 3.9e-5 Torr [CC2 by switcher] disk usage daq account 86%

23685	Tue Oct 11 20:39:11 2011	BMV

UCNA Shift Change Checklist Date: October 11, 2011 16:30 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.76 psia Heater C pressure 13.09 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 297.3 psia Tungsten Cool ret. 134.1 psia Tungsten Cool Diff 212.7 psia 1630 eng. 2 temp. 15.02 K 1630 JT temp. 7.82 K 1630 outlet temp. 275.6 K 1630 engine speed 230 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 2 psig 1630 med. press. stor. 45 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 6.3 K 1410 TE-E 93.9 K 1410 supply press. 235 psig 1410 JT press. 145 psig 1410 return press. 3.2 psig 4K dewar pressure 300 mmHg 1K dewar pressure 7.0 psig 4K dewar level 23.49 inHe 1K dewar level 35.30 inHe 4K main flow control 0.0 V LHe temp. 1 288.84 K Heat exch. temp. 3 283.93 K Poly temp. 2 277.96 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 10.4 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 66.3 % SCS field 0.005 G SCS current 0 A AFP N2 dewar level 2.5/4 SV3 closed SV4 closed CM1 pressure 810.4 torr CM5 pressure 0.8 torr CC1 pressure over torr PPM LHe level 93.1 % PPM LN2 level 100 % AFP LHe level 63.9 % AFP LN2 level 69.8 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 0 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 65.1 F West MWPC Temperature 61.5 F MWPC Pressure 69 torr N2 - MWPC Differential -1.9 torr Neopentane Flow Rate -6.0 slpm East PMT Buck. Curr 0.34 A East Back. Veto Buck. 0.5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 1480 V MWPC Trip Hold Status trip hold MWPC Pressure 17.4 torr N2 - MWPC Differential 0.5 torr Neopentane Flow Rate -.72 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 17 V East muon veto HV 2.30 kV West muon veto HV 2.32 kV East muon veto rate 1849 Hz West muon veto rate 3345 Hz Spectrometer vacuum 1.3 e-5 Torr disk usage daq account 86%

10/10 17:12 Start Run 13708 UCN0030 2011 UCN
10/11 03:49 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 290	0	0.00000E+00	0	0.00000E+00
Run 13708	1	2.22185E+11	0	0.00000E+00
Batch started at 13690	22	5.10152E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13708	0	9250289.	361970.	0.	2763.	26.63	209.13
13708	1	0.	0.	0.	0.	0.00	0.00
13708	2	0.	0.	0.	0.	0.00	0.00
13708	3	0.	0.	0.	0.	0.00	0.00
13708	10	57951.	3425.	0.	11.	0.25	1.47

23682 | Tue Oct 11 12:42:01 2011 | BMV

Spin Flipper Tuning 10/10/11 by Andy Saunders and Brittney VornDick AFP was ramped to 93.68A on Friday 10/07/11. Shim Coils were cycled 3 times, standard procedure. GV open rate was about 155Hz in the GV mon before the Tuning study. Bkg 30s count, 3 UCN in Fe Monitor. First scanned the region, we ran the 10/07 weekend with 28.494MHz, we ended up pretty close to this but had to change AFP current but I will get to that soon. So we went by factor of 1 kHz around 28.494 MHz. Setup the counter, counts in 30seconds in the FeMonitor. Always turned amplifier down and off in between changing frequency. In between a certain number of readings we would get a baseline again with no amplifier on. Good practice but also was filling the AFP so was uncertain if source was acting up. AFP 93.68A cycle 3 times FWD PWR (w) Frequency(MHz) Count in Fe Mon REF PWR(W) REF/FWD REF/FWD *1000 5.000 28.494 181.000 0.000 0 0 5.000 28.484 211.000 0.100 0.02 20 5.000 28.504 138.000 0.000 0 0 5.000 28.514 109.000 0.025 0.01 5 5.000 28.524 112.000 0.050 0.01 10 5.000 28.534 143.000 0.200 0.04 40 5.000 28.544 198.000 0.300 0.06 60 5.000 28.554 263.000 0.400 0.08 80 5.000 28.539 194.000 0.100 0.02 20 5.000 28.529 109.000 0.050 0.01 10 5.000 28.519 107.000 0.025 0.01 5 5.000 28.509 126.000 0.010 0 2 5.000 28.499 175.000 0.000 0 0 5.000 28.499 175.000 0.000 0 0 5.000 28.522 105.000 0.050 0.01 10 From this we decided 28.522 MHz looked good. Basically we took the two lowest points and averaged them roughly. Now the Ref/Fwd*1000 column was made so it would be easier to plot the two data sets together. Well we decided to try 28.522MHz at 40 W but as we approached 20W the Reflected Power was at the blue line, 0.4W. So we stopped there decided we need to scan the Fwd and Reflected power ratio to get an idea of range. AFP 93.68A cycle 3 times FWD PWR(W) Frequency(MHz) REF PWR(W) REF/FWD REF/FWDx1000 20.000 28.522 0.400 0.0200 20 14.000 28.532 0.400 0.0286 28.57 8.000 28.542 0.400 0.0500 50 35.000 28.512 0.400 0.0114 11.43 40.000 28.502 0.190 0.0048 4.75 40.000 28.492 0.050 0.0013 1.25 40.000 28.482 0.190 0.0048 4.75 14.000 28.472 0.400 0.0286 28.57 17.000 28.462 0.400 0.0235 23.53 5.000 28.452 0.400 0.0800 80 4.000 28.442 0.400 0.1000 100 From looking at these ratios we found the lowest Reflected power per forward power is for 28.492 MHz. (Note we have come closer to what we thought) So from here we took the ratio of the two frequencies and multiplied this to the old current in the AFP. This also agrees with Adams equation in Spin Tuning File: Inew=93.68+3.3(28.492-28.522)=93.581A So we ramped the AFP to 93.581A. We cycled the shims 3 times like normal. Then tested the range again. AFP 93.581 cycle 3 times FWD PWR(W) Frequency(MHz) Counts in Fe Mon REF PWR(W) REF/FWD 5 28.49 157 0 0 5 28.48 165 0.05 0.01 5 28.5 164 0.01 0 5 28.51 234 0.03 0.01 5 28.47 240 0.15 0.03 The counts appeared to be higher than desired so we decided to cycle the shims 2 more times. AFP 93.581 cycle2 more times, total 5 cycles AFP 93.581 cycle2 more times, total 5 cycles FWD PWR(W) Frequency(MHz) Counts in Fe Mon REF PWR(W) REF/FWD 5 28.49 171 0.01 0 5 28.5 171 0.01 0 5 28.49 167 0.05 0.01 5 28.48 205 0.1 0.02 5 28.48 222 0.15 0.03 5 28.47 220 0.18 0.04 5 28.5 174 0 0 5 28.51 212 0 0 5 28.51 200 0.03 0.01 5 28.52 246 0.03 0.01 5 28.52 290 0.08 0.02 5 28.5 171 0.01 0 40 28.5 93 0.08 0 No change but the spin flipper off is higher. From looking at the low points we roughly averaged together and decided to set the spin flipper at 28.495MHz. So we were close to the frequency unfortunately we did not change the AFP Current. (So closeâ€¦) Due to what was found today. We recommend keeping the Spin Flipper at 28.495MHz and the AFP ramp up to 93.581A. We then performed some short Depol runs before we

Attachment 1: ing_101011.xls

23684	Tue Oct 11 00:53:53 2011	bz

UCNA Shift Change Checklist Date: October 10, 2011 17:30 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 13.77 psia Heater C pressure 13.12 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 292.6 psia Tungsten Cool ret. 133.0 psia Tungsten Cool Diff 208.2 psia 1630 eng. 2 temp. 14.4 K 1630 JT temp. 7.50 K 1630 outlet temp. 275.4 K 1630 engine speed 230 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 1.5 psig 1630 med. press. stor. 130 psig 1410 engine speed 200 rpm 1410 TE-A 15.5 K 1410 TE-B 5.9 K 1410 TE-E 87.7 K 1410 supply press. 235 psig 1410 JT press. 145 psig 1410 return press. 3.2 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.8 inHe 1K dewar level 18.6 inHe 4K main flow control 0.0 V LHe temp. 1 175.8 K Heat exch. temp. 3 203.4 K Poly temp. 2 153.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 10.2 C AFP frequency 28.495 MHz AFP forward power 0 W SCS LHe level 76.8 % SCS field 5.744 G SCS current 0 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 799.0 torr CM5 pressure 0.8 torr CC1 pressure over torr PPM LHe level 93.4 % PPM LN2 level 100 % AFP LHe level 83.0 % AFP LN2 level 68.4 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 66.9 F West MWPC Temperature 64.4 F MWPC Pressure 99.8 torr N2 - MWPC Differential -5.5 torr Neopentane Flow Rate 6.4 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2580 V MWPC Trip Hold Status trip hold MWPC Pressure 99.5 torr N2 - MWPC Differential -.8 torr Neopentane Flow Rate -.72 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V East muon veto HV 2.32 kV West muon veto HV 2.34 kV East muon veto rate 1811 Hz West muon veto rate 3279 Hz Spectrometer vacuum 1.8 e-5 Torr disk usage daq account 86%

23683	Tue Oct 11 00:31:19 2011	BMV

PDF version of Spin Flipper Tuning

Attachment 1: uning_10_10_11.pdf

23681	Mon Oct 10 20:36:00 2011	RRios

Depolarization Studies: Depolarization (Off to On) Same as weekend timing except Drain time is reduced to 100s 0| 0 1010 1001 Trigger, (80s load time) 10| 0 1000 1001 8000| 0 0000 1001 Shutter Closes (Total Decay Trap holding time 25s) 8300| 0 0000 0010 Beam off, GV closes, Switcher down (polarized UCN clean time 17s) 10000| 0 0000 0110 AFP on (clean out depolarized UCN between SCS and AFP, 5s) 10500| 0 1000 0110 Shutter Opens (Drain time 100s) 20500| 0 1000 0010 AFP off (Cleaning time of 10s) 21500| 0 1000 1100 Beam back on, AFP on Depolarization (Off to On) Adjusted Timing 0| 0 1010 1001 Trigger, (80s load time) 10| 0 1000 1001 8000| 0 0000 1001 Shutter Closes (Total Decay Trap holding time 30s) 8300| 0 0000 0010 Beam off, GV closes, Switcher down (polarized UCN clean time 22s) 10500| 0 0000 0110 AFP on (clean out depolarized UCN between SCS and AFP, 5s) 11000| 0 1000 0110 Shutter Opens (Drain time 105s) Put 105 seconds by accident. 21500| 0 1000 0010 AFP off (Cleaning time of 20s) 23500| 0 1000 1100 Beam back on, AFP on Depolarization (On to Off) Same as above but the AFP settings are reversed 0| 0 1010 1101 10| 0 1000 1101 8000| 0 0000 1101 8300| 0 0000 0110 10500| 0 0000 0010 11000| 0 1000 0010 21500| 0 1000 0110 23500| 0 1000 1000 Reload (On to Off) 0| 0 1010 1101 10| 0 1000 1101 7000| 0 1000 1001 Introduce posioned UCN for 5 seconds 7500| 0 1000 1101 8000| 0 0000 1101 8300| 0 0000 0110 10500| 0 0000 0010 11000| 0 1000 0010 21500| 0 1000 0110 23500| 0 1000 1000

23678	Mon Oct 10 20:01:12 2011	RRios

SCS Depolarization Measurements run midas type load hold [shutter AFP remaining] unload clean cycles Comments 832 16755 off->on 80 25 3 17 5 100 10 3 833 16757 off->on 80 30 3 22 5 105 20 2 834 16759 on->off 80 30 3 22 5 105 20 4 835 16760 on->off 80 30 3 22 5 105 20 3 RELOAD 5s at time 70s

23680	Mon Oct 10 19:08:10 2011	Hasan

UCNA Shift Change Checklist Date: October 10, 2011 17:30 Shift Persons: Brittney, Hasan

44 slpm Heater B pressure 13.74 psia Heater C pressure 13.04 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 294.8 psia Tungsten Cool ret. 136.8 psia Tungsten Cool Diff 205.6 psia 1630 eng. 2 temp. 14.85 K 1630 JT temp. 7.70 K 1630 outlet temp. 277.0 K 1630 engine speed 230 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 3.2 psig 1630 med. press. stor. 170 psig 1410 engine speed 200 rpm 1410 TE-A 15.9 K 1410 TE-B 6.2 K 1410 TE-E 91.7 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 340 mmHg 1K dewar pressure 7.0 psig 4K dewar level 8.14 inHe 1K dewar level 12.69 inHe 4K main flow control 5.4 V LHe temp. 1 5.06 K Heat exch. temp. 3 194.99 K Poly temp. 2 134.19 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.9 C AFP frequency 28.495 MHz AFP forward power 40 W SCS LHe level 80.5 % SCS field .6847 kG SCS current 118.3 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.7 torr CC1 pressure 2e-5 torr PPM LHe level 93.7 % PPM LN2 level 100 % AFP LHe level 94.1 % AFP LN2 level 90.3 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 66.4 F West MWPC Temperature 63.9 F MWPC Pressure 100.0 torr N2 - MWPC Differential -6.2 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2560 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -1.1 torr Neopentane Flow Rate -.72 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .38 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 V East muon veto HV 2.31 kV West muon veto HV 2.33 kV East muon veto rate 1952 Hz West muon veto rate 3615 Hz Spectrometer vacuum 2.8 e-5 Torr disk usage daq account 86%

23679	Mon Oct 10 18:38:31 2011	BMV

Ramping AFP down Ramping SCS down Warm up the source

23676	Mon Oct 10 17:12:05 2011	DAQ On-line

10/10 16:12 Start Run 13707 UCN0030 2011 UCN
10/10 17:12 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 62	0	0.00000E+00	0	0.00000E+00
Run 13707	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	21	5.09929E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13707	0	8888319.	110383.	354.	3531.	1752.11	290.21
13707	1	0.	0.	0.	0.	0.00	0.00
13707	2	0.	0.	0.	0.	0.00	0.00
13707	3	0.	0.	0.	0.	0.00	0.00
13707	10	54526.	620.	1.	11.	9.84	1.15

23675	Mon Oct 10 16:12:00 2011	DAQ On-line

10/10 15:11 Start Run 13706 UCN0030 2011 UCN
10/10 16:11 End Run

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 350	0	0.00000E+00	0	0.00000E+00
Run 13706	5	1.37608E+14	0	0.00000E+00
Batch started at 13690	21	5.09929E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13706	0	8777936.	588556.	1.	1863.	1662.59	247.40
13706	1	0.	0.	0.	0.	0.00	0.00
13706	2	0.	0.	0.	0.	0.00	0.00
13706	3	0.	0.	0.	0.	0.00	0.00
13706	10	53906.	3434.	0.	11.	9.70	1.25

23674 | Mon Oct 10 15:11:56 2011 | DAQ On-line

10/10 14:11 Start Run 13705 UCN0030 2011 UCN
10/10 15:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 274	0	0.00000E+00	0	0.00000E+00
Run 13705	2	2.66406E+13	0	0.00000E+00
Batch started at 13690	16	3.72321E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13705	0	8189380.	370489.	0.	1795.	1304.54	486.63
13705	1	0.	0.	0.	0.	0.00	0.00
13705	2	0.	0.	0.	0.	0.00	0.00
13705	3	0.	0.	0.	0.	0.00	0.00
13705	10	50472.	2535.	0.	14.	8.93	2.15

23672 | Mon Oct 10 14:11:49 2011 | DAQ On-line

10/10 13:11 Start Run 13704 UCN0030 2011 UCN
10/10 14:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 6	0	0.00000E+00	0	0.00000E+00
Run 13704	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	14	3.45681E+14	0	0.00000E+00

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13704	0	7818891.	11411.	148.	3298.	1630.14	914.76
13704	1	0.	0.	0.	0.	0.00	0.00
13704	2	0.	0.	0.	0.	0.00	0.00
13704	3	0.	0.	0.	0.	0.00	0.00
13704	10	47937.	57.	2.	10.	8.14	3.08

23673 | Mon Oct 10 13:14:13 2011 | RRios

11:55 AM 16750 B3: Reload Depol (on to off) 12:03 PM 16751 B4: Background (off) 12:11 PM 16752 B5: Beta Run (off) 12:51 PM 16753 B6: Reload Depol (off to on) 12:56 PM 16754 B7: Beta Run (off) -beam off after 16 minutes

23671 | Mon Oct 10 13:11:44 2011 | DAQ On-line

10/10 12:11 Start Run 13703 UCN0030 2011 UCN
10/10 13:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 344	0	0.00000E+00	0	0.00000E+00
Run 13703	2	4.11509E+13	0	0.00000E+00
Batch started at 13690	14	3.45681E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13703	0	7807480.	514149.	0.	1756.	1477.44	449.51
13703	1	0.	0.	0.	0.	0.00	0.00
13703	2	0.	0.	0.	0.	0.00	0.00
13703	3	0.	0.	0.	0.	0.00	0.00
13703	10	47880.	3430.	0.	13.	9.86	1.16

23669 | Mon Oct 10 12:11:37 2011 | DAQ On-line

10/10 11:11 Start Run 13702 UCN0030 2011 UCN
10/10 12:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 345	0	0.00000E+00	0	0.00000E+00
Run 13702	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	12	3.04530E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13702	0	7293331.	449793.	0.	2686.	1285.12	1014.91
13702	1	0.	0.	0.	0.	0.00	0.00

13702	10	44450.	3442.	0.	11.	9.83	1.17

23670 | Mon Oct 10 11:34:26 2011 | ASaunders

since the peaks in the SCS and FE monitor PADC spectra appeared somewhat asymmetrical, perhaps cut off on the high end, we checked the pulse distribution with a scope and compared it to the TSCA window settings. For both monitors, the pulse height peak was within the SCA window. However, for the SCS monitor, the peak was uncomfortably close to the upper end of the window, which was set to 4 V. (The peak was centered at perhaps 3.0 V.) We therefore change the uppeer limit of the SCA window for the SCS UCN monitor from 4 V to 5 V. This had no discernable effect on thepeak shape in the DAQ's PADC spectrum.

23666 | Mon Oct 10 11:11:30 2011 | DAQ On-line

10/10 10:11 Start Run 13701 UCN0030 2011 UCN
10/10 11:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	0	0.00000E+00	0	0.00000E+00
Run 13701	2	4.67321E+13	0	0.00000E+00
Batch started at 13690	12	3.04530E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13701	0	6843538.	600290.	0.	2663.	1695.73	688.36
13701	1	0.	0.	0.	0.	0.00	0.00
13701	2	0.	0.	0.	0.	0.00	0.00
13701	3	0.	0.	0.	0.	0.00	0.00
13701	10	41008.	3435.	0.	14.	9.70	1.53

23668 | Mon Oct 10 11:05:14 2011 | RRios

A pattern width of 300 is okay. current PW is 290 UCN Calculator 10/10/2011 11:02:00 Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.840 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.497E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.778E+08 Measured Beam Current Charge/Burst 29.666 uC uP/Chop 56.149 TBCM001I03 14.50 mA Average Current 5.933 uA H/Chop 2.121E+10 Capture 0.84 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 9.804E+04 Rep Rate 20 Hz H/Gate 3.704E+13 Gate Length 625 us Chopper Width 290 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.961E+06 Countdown Duration 357.76 ns Charge/uP 60.522 pC Burst Mode Charge/Chop 3.398E+03 pC Pulses per Burst 5 Charge/Gate 5.933 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23667 | Mon Oct 10 10:39:44 2011 | RRios

6:59 AM 16734 A1: Background (off) 7:07 AM 16735 A2: Beta Run (off) 7:47 AM 16736 A3: Reload Depol (off to on) 7:52 AM 16737 A4: Background (on) 8:01 AM 16738 A5: Beta Run (on) 8:41 AM 16739 A6: Reload Depol (on to off) 8:46 AM 16740 A7: Beta Run (on) 9:26 AM 16741 A8: Depolarization (on to off) 9:32 AM 16742 A9: Background (on) 9:40 AM 16743 A10: Beta Run (off) 10:21 AM 16744 A11: Depolarization (off to on) 10:26 AM 16745 A12: Background (off)

23665 | Mon Oct 10 10:11:21 2011 | DAQ On-line

10/10 09:11 Start Run 13700 UCN0030 2011 UCN
10/10 10:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 345	0	0.00000E+00	0	0.00000E+00
Run 13700	1	1.26377E+14	0	0.00000E+00
Batch started at 13690	10	2.57798E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13700	0	6243248.	565077.	0.	2701.	1587.29	624.42
13700	1	0.	0.	0.	0.	0.00	0.00
13700	2	0.	0.	0.	0.	0.00	0.00
13700	3	0.	0.	0.	0.	0.00	0.00
13700	10	37573.	3435.	0.	11.	9.65	1.78

23663 | Mon Oct 10 09:11:26 2011 | Sky

UCNA Shift Change Checklist Date: October 10, 2011 00:15 Shift Persons: Sky, Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 42-50 slpm Heater B pressure 13.85 psia Heater C pressure 13.15 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 291.7 psia Tungsten Cool ret. 137.6 psia Tungsten Cool Diff 201.0 psia 1630 eng. 2 temp. 14.6 K 1630 JT temp. 7.9 K 1630 outlet temp. 275.8 K 1630 engine speed 240 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 3.2 psig 1630 med. press. stor. 155 psig 1410 engine speed 199 rpm 1410 TE-A 15.5 K 1410 TE-B 6.2 K 1410 TE-E 91.0 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 3.2 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7.0 psig 4K dewar level 8.4 inHe 1K dewar level 10.0 inHe 4K main flow control 5.4 V LHe temp. 1 5.3 K Heat exch. temp. 3 195.3 K Poly temp. 2 164.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23662 | Mon Oct 10 09:11:15 2011 | DAQ On-line

10/10 08:11 Start Run 13699 UCN0030 2011 UCN
10/10 09:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 349	0	0.00000E+00	0	0.00000E+00
Run 13699	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	9	1.31420E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13699	0	5678171.	525650.	0.	1768.	1448.07	518.97
13699	1	0.	0.	0.	0.	0.00	0.00
13699	2	0.	0.	0.	0.	0.00	0.00
13699	3	0.	0.	0.	0.	0.00	0.00
13699	10	34138.	3450.	0.	11.	9.50	1.98

23664 | Mon Oct 10 09:10:20 2011 | RRios

Switcher status thru AFP temperature 10.6 C AFP frequency 28.494 MHz AFP forward power 40 W SCS LHe level 85. % SCS field .686 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 0.7 torr CC1 pressure 5.5e-5 torr PPM LHe level 94.2 % PPM LN2 level 100 % AFP LHe level 93.5 % AFP LN2 level 92.0 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: - 84.0 % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 62.1 F West MWPC Temperature 60.0 F MWPC Pressure 100. torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2550 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.9 torr Neopentane Flow Rate -.73 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.32 kV West muon veto HV 2.35 kV East muon veto rate 2120 Hz West muon veto rate 4028 Hz Spectrometer vacuum 2.7 e-5 Torr disk usage daq account 85%

23660	Mon Oct 10 08:11:10 2011	DAQ On-line

10/10 07:11 Start Run 13698 UCN0030 2011 UCN
10/10 08:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 349	0	0.00000E+00	0	0.00000E+00
Run 13698	1	2.49080E+13	0	0.00000E+00
Batch started at 13690	9	1.31420E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13698	0	5152521.	578991.	0.	2696.	1595.02	639.24
13698	1	0.	0.	0.	0.	0.00	0.00
13698	2	0.	0.	0.	0.	0.00	0.00
13698	3	0.	0.	0.	0.	0.00	0.00
13698	10	30688.	3455.	0.	11.	9.52	1.96

23661	Mon Oct 10 07:24:59 2011	JCHoagland

Attachment 1: .ps

23659	Mon Oct 10 07:11:05 2011	DAQ On-line

10/10 06:11 Start Run 13697 UCN0030 2011 UCN
10/10 07:11 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 339	0	0.00000E+00	0	0.00000E+00
Run 13697	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	8	1.06512E+14	0	0.00000E+00

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13697	0	4573530.	642348.	0.	2721.	1856.50	685.49
13697	1	0.	0.	0.	0.	0.00	0.00
13697	2	0.	0.	0.	0.	0.00	0.00
13697	3	0.	0.	0.	0.	0.00	0.00
13697	10	27233.	3370.	0.	11.	9.74	1.43

23658 | Mon Oct 10 07:06:57 2011 | JCHoagland

B->A beta runs 11:44 PM 16710 B1: Background (on) E=1.081 W=0.788 Fe/GV=0.0078 SCS/GV=0.0154 11:53 PM 16711 B2: Beta Run (on) E=16.091 W=13.134 Fe/GV=0.3138 SCS/GV=0.2880 12:33 AM 16712 B3: Depolarization (on to off) 12:38 AM 16713 B4: Background (off) E=1.149 W=0.755 Fe/GV=0.0085 SCS/GV=0.0165 12:47 AM 16714 B5: Beta Run (off) E=11.255 W=9.966 Fe/GV=0.4997 SCS/GV=0.2738 1:27 AM 16715 B6: Depolarization (off to on) 1:32 AM 16716 B7: Beta Run (off) E=14.802 W=13.176 Fe/GV=0.4874 SCS/GV=0.2644 2:13 AM 16717 B8: Reload Depol (off to on) 2:18 AM 16718 B9: Background (off) E=1.121 W=0.0144 Fe/GV=0.0094 SCS/GV=0.0753 2:26 AM 16719 B10: Beta Run (on) E=11.187 W=9.154 Fe/GV=0.3220 SCS/GV=0.2865 3:06 AM 16720 B11: Reload Depol (on to off) 3:12 AM 16721 B12: Background (on) E=1.067 W=0.782 Fe/GV=0.0091 SCS/GV=0.0141 3:20 AM 16722 A1: Background (off) E=1.222 W=0.785 Fe/GV=0.0105 SCS/GV=0.0165 3:28 AM 16723 A2: Beta Run (off) E=14.109 W=12.707 Fe/GV=0.4889 SCS/GV=0.2658 4:09 AM 16724 A3: Reload Depol (off to on) 4:14 AM 16725 A4: Background (on) E=1.108 W=0.826 Fe/GV=0.0100 SCS/GV=0.0145 4:22 AM 16726 A5: Beta Run (on) E=13.734 W=11.208 Fe/GV=0.3122 SCS/GV=0.2909 5:02 AM 16727 A6: Reload Depol (on to off) 5:08 AM 16728 A7: Beta Run (on) E=15.316 W=12.587 Fe/GV=0.3121 SCS/GV=0.2820 5:48 AM 16729 A8: Depolarization (on to off) 5:53 AM 16730 A9: Background (on) E=1.128 W=0.699 Fe/GV=0.0095 SCS/GV=0.0163 6:02 AM 16731 A10: Beta Run (off)E=14.370 W=12.925 Fe/GV=0.4882 SCS/GV=0.2712 6:42 AM 16732 A11: Depolarization (off to on) 6:47 AM 16733 A12: Background (off) E=1.086 W=0.731 Fe/GV=0.0095 SCS/GV=0.0148

23657 | Mon Oct 10 06:11:00 2011 | DAQ On-line

10/10 05:10 Start Run 13696 UCN0030 2011 UCN
10/10 06:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	0	0.00000E+00	0	0.00000E+00
Run 13696	1	7.92380E+12	0	0.00000E+00
Batch started at 13690	8	1.06512E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13696	0	3931182.	582083.	0.	2729.	1648.96	624.87
13696	1	0.	0.	0.	0.	0.00	0.00
13696	2	0.	0.	0.	0.	0.00	0.00
13696	3	0.	0.	0.	0.	0.00	0.00
13696	10	23863.	3438.	0.	11.	9.74	1.39

23656 | Mon Oct 10 05:10:52 2011 | DAQ On-line

10/10 04:10 Start Run 13695 UCN0030 2011 UCN
10/10 05:10 End Run

Batch Protons

	N	Integral	N	Integral
Trigger 334	0	0.00000E+00	0	0.00000E+00
Run 13695	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	7	9.85887E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13695	0	3349099.	510460.	0.	2889.	1479.59	848.25
13695	1	0.	0.	0.	0.	0.00	0.00
13695	2	0.	0.	0.	0.	0.00	0.00
13695	3	0.	0.	0.	0.	0.00	0.00
13695	10	20425.	3335.	0.	11.	9.67	1.70

23653 | Mon Oct 10 04:10:46 2011 | DAQ On-line

10/10 03:10 Start Run 13694 UCN0030 2011 UCN
10/10 04:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 337	0	0.00000E+00	0	0.00000E+00
Run 13694	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	7	9.85887E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13694	0	2838639.	642659.	0.	2791.	1868.19	632.62
13694	1	0.	0.	0.	0.	0.00	0.00
13694	2	0.	0.	0.	0.	0.00	0.00
13694	3	0.	0.	0.	0.	0.00	0.00
13694	10	17090.	3350.	0.	11.	9.74	1.47

23645 | Mon Oct 10 03:59:34 2011 | BMV

A-B* continued 15:46 16682 B10: Beta Run (on) E=12.293 W=10.057 Foil/GV=0.3233 SCS/GV=0.3173 16:46 16683 B11: Depol (on->off) 16.52 16684 B12: Bkg (on) E=1.061 W=0.760 B->A* Beta runs 35 mins and Bkg run 5mins 5:27 PM 16686 B1: Background (on) E=1.123 W=0.782 5:32 PM 16687 B2: Beta Run (on) E=16.085 W=13.23 Foil/GV=0.3048 SCS/GV=0.3048 6:08 PM 16688 B3: Depolarization (on to off) 6:13 PM 16689 B4: Background (off) E=1.062 W=0.818 6:18 PM 16690 B5: Beta Run (off) E=16.123 W=14.667 Foil/GV=0.4869 SCS/GV=0.2891 6:54 PM 16691 B6: Depolarization (off to on) 6:59 PM 16692 B7: Beta Run (off) E=16.050 W=14.399 Foil/GV=0.4907 SCS/GV=0.2909 7:34 PM 16693 B8: Reload Depol (off to on) 7:40 PM 16694 B9: Background (off) E=1.040 W=0.679 7:45 PM 16695 B10: Beta Run (on) E=15.505 W=12.828 Foil/GV=0.3184 SCS/GV=0.3047 8:20 PM 16696 B11: Reload Depol (on to off) 8:25 PM 16697 B12: Background (on) E=1.097 W=0.773 8:31 PM 16698 A1: Background (off) E=1.030 W=0.742 8:36 PM 16699 A2: Beta Run (off) E=15.325 W=13.864 Foil/GV=0.4915 SCS/GV=0.2814 9:11 PM 16700 A3: Reload Depol (off to on) 9:17 PM 16701 A4: Background (on) E=1.073 W=0.735 9:22 PM 16702 A5: Beta Run (on) E=16.035 W=13.374 Foil/GV=0.3159 SCS/GV=0.3047 9:57 PM 16703 A6: Reload Depol (on to off) 10:02 PM 16704 A7: Beta Run (on) E=12.145 W=9.844 Foil/GV=0.3175 SCS/GV=0.2971 10:38 PM 16705 A8: Depolarization (on to off) 10:43 PM 16706 A9: Background (on) E=1.060 W=0.745 10:48 PM 16707 A10: Beta Run (off) E=15.292 W=13.542 Foil/GV=0.4863 SCS/GV=0.2661 11:24 PM 16708 A11: Depolarization (off to on) 11:29 PM 16709 A12: Background (off) E=1.097 W=0.844

23655 | Mon Oct 10 03:30:47 2011 | BMV

Attachment 1: 0_2011_0.xls

23651	Mon Oct 10 03:29:30 2011	BMV

Fe/GV Flipper Off Fe/GV Flipper On SCS/GV Flipper Off SCS/GV Flipper On Oct 8th 2011 weekend 0.5188 0.3236 0.2817 0.2949 Oct 2010 0.5828 0.1882 0.3201 0.2380 Nov7th-Dec 2010 0.1901 0.0550 0.2060 0.1280 So I went through the files online to record the 2010 ratios from beta runs and averaged them. The 2011 ratios were taken from this weekends paper logbook up til 11:45pm Sunday 9th. Attached is the excel files. S ome people did not like recording the SCS/GV ratios in 2010 (GRRR... I will not name names...). The paper logbook from last year is missing... please return him/her/it to the counting house. If want better measurements I would suggest actually running through the midas files and compare them.

Attachment 1: 0_2011.gif

0_2011.gif

23654	Mon Oct 10 03:24:46 2011	bz

Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.820 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.497E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.688E+08 Measured Beam Current Charge/Burst 28.960 uC uP/Chop 56.149 TBCM001I03 14.50 mA Average Current 5.792 uA H/Chop 2.071E+10 Capture 0.82 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 9.804E+04 Rep Rate 20 Hz H/Gate 3.615E+13 Gate Length 625 us Chopper Width 290 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.961E+06 Countdown Duration 357.76 ns Charge/uP 59.081 pC Burst Mode Charge/Chop 3.317E+03 pC Pulses per Burst 5 Charge/Gate 5.792 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23650	Mon Oct 10 03:10:42 2011	DAQ On-line

10/10 02:10 Start Run 13693 UCN0030 2011 UCN
10/10 03:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	0	0.00000E+00	0	0.00000E+00
Run 13693	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	7	9.85887E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13693	0	2195980.	447363.	0.	2817.	1232.40	850.10
13693	1	0.	0.	0.	0.	0.00	0.00
13693	2	0.	0.	0.	0.	0.00	0.00
13693	3	0.	0.	0.	0.	0.00	0.00
13693	10	13740.	3435.	0.	11.	9.46	2.02

23652	Mon Oct 10 03:07:25 2011	bz

UCNA Shift Change Checklist Date: October 10, 2011 00:15 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 43 slpm Heater B pressure 13.71 psia Heater C pressure 12.98 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 291.9 psia Tungsten Cool ret. 136.0 psia Tungsten Cool Diff 203.9 psia 1630 eng. 2 temp. 14.41 K 1630 JT temp. 7.69 K 1630 outlet temp. 275.4 K 1630 engine speed 240 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 2.2 psig 1630 med. press. stor. 133 psig 1410 engine speed 199 rpm 1410 TE-A 14.9 K 1410 TE-B 6.0 K 1410 TE-E

dewar pressure 209 mmHg 1K dewar pressure 7.0 psig 4K dewar level 9.0 mm 1K dewar level 29.9 inHe 4K main flow control 5.2 V LHe temp. 1 5.2 K Heat exch. temp. 3 201.7 K Poly temp. 2 164.6 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.6 C AFP frequency 28.494 MHz AFP forward power 40 W SCS LHe level 81.5 % SCS field .6869 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 0.6 torr CC1 pressure over torr PPM LHe level 94.5 % PPM LN2 level 100 % AFP LHe level 87.1 % AFP LN2 level 76.2 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: - 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 61.9 F West MWPC Temperature 60.1 F MWPC Pressure 100.0 torr N2 - MWPC Differential -5.3 torr Neopentane Flow Rate 15.7 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2.5 ========== West Detector Cart ========== MWPC HV 2560 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.9 torr Neopentane Flow Rate -.7 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.33 kV West muon veto HV 2.35 kV East muon veto rate 2200 Hz West muon veto rate 4224 Hz Spectrometer vacuum 7 e-6 Torr disk usage daq account 85%

23649	Mon Oct 10 02:10:37 2011	DAQ On-line

10/10 01:10 Start Run 13692 UCN0030 2011 UCN
10/10 02:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 349	0	0.00000E+00	0	0.00000E+00
Run 13692	5	6.51189E+13	0	0.00000E+00
Batch started at 13690	7	9.85887E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13692	0	1748617.	441360.	0.	1869.	1232.85	697.38
13692	1	0.	0.	0.	0.	0.00	0.00
13692	2	0.	0.	0.	0.	0.00	0.00
13692	3	0.	0.	0.	0.	0.00	0.00
13692	10	10305.	3435.	0.	11.	9.59	1.68

23648	Mon Oct 10 01:10:29 2011	DAQ On-line

10/10 00:10 Start Run 13691 UCN0030 2011 UCN
10/10 01:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 345	0	0.00000E+00	0	0.00000E+00
Run 13691	0	0.00000E+00	0	0.00000E+00
Batch started at 13690	2	3.34698E+13	0	0.00000E+00

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13691	0	1307257.	611548.	0.	2889.	1703.48	694.31
13691	1	0.	0.	0.	0.	0.00	0.00
13691	2	0.	0.	0.	0.	0.00	0.00
13691	3	0.	0.	0.	0.	0.00	0.00
13691	10	6870.	3440.	0.	11.	9.58	1.87

23647 | Mon Oct 10 00:10:21 2011 | DAQ On-line

10/09 23:10 Start Run 13690 UCN0030 2011 UCN
10/10 00:10 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 360	0	0.00000E+00	0	0.00000E+00
Run 13690	2	3.34698E+13	0	0.00000E+00
Batch started at 13690	2	3.34698E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13690	0	695709.	695709.	0.	2892.	1916.55	802.35
13690	1	0.	0.	0.	0.	0.00	0.00
13690	2	0.	0.	0.	0.	0.00	0.00
13690	3	0.	0.	0.	0.	0.00	0.00
13690	10	3430.	3430.	0.	12.	9.45	1.45

23646 | Mon Oct 10 00:08:45 2011 | BMV

Shift Overview: Brittney and Hasan 4pm-midnight Oct 9, 2011 LED analysis scan did not work. Will call Kevin... did not show graph. So Kevin says there might be problems with code, will need to fix. Started B->A* run but with beta run time 35min, bkg run time 5mins During 16704 Midas Run changed gain in the first 10minutes. Fe Monitor Gain: 1V-> 0.9V SCS Monitor Gain: 1.39V->1V

Attachment 1: .ps

23644 | Sun Oct 9 20:31:10 2011 | Hasan

UCNA Shift Change Checklist Date: October 9, 2011 18:00 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 30 slpm Heater B pressure 13.84 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 292.9 psia Tungsten Cool ret. 135.6 psia Tungsten Cool Diff 205.3 psia 1630 eng. 2 temp. 15.28 K 1630 JT temp. 8.43 K 1630 outlet temp. 272.9 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 180 psig 1630 return press. 3 psig 1630 med. press. stor. 145 psig 1410 engine speed 200 rpm 1410 TE-A 15.4 K 1410 TE-B 5.9 K 1410 TE-E 87.6 K 1410 supply press. 230 psig 1410 JT press. 135 psig 1410 return press. 3.2 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.0 psig 4K dewar level 9.65 inHe 1K dewar level 17.05 inHe 4K main flow control 5.6 V LHe temp. 1 5.27 K Heat exch. temp. 3 210.1 K Poly temp. 2 164.36 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.7 C AFP frequency 28.494 MHz AFP forward power 40 W SCS LHe level 85.7 % SCS field .686 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.5 torr CC1 pressure 3.9e-5 torr PPM LHe level 94.6 % PPM LN2 level 100 % AFP LHe level 97.8 % AFP LN2 level 96.3 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5

========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 59.6 F West MWPC Temperature 58.0 F MWPC Pressure 100.2 torr N2 - MWPC Differential -5.2 torr Neopentane Flow Rate 15.3 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2550 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -1.0 torr Neopentane Flow Rate -.7 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.32 kV West muon veto HV 2.35 kV East muon veto rate 2471 Hz West muon veto rate 4118 Hz Spectrometer vacuum 2.7 e-5 Torr disk usage daq account 85%

23643	Sun Oct 9 19:43:43 2011	BMV

UCN Calculator 10/09/2011 19:42:33 Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.825 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.535E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.741E+08 Measured Beam Current Charge/Burst 29.378 uC uP/Chop 56.149 TBCM001I03 14.62 mA Average Current 5.876 uA H/Chop 2.101E+10 Capture 0.83 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 9.804E+04 Rep Rate 20 Hz H/Gate 3.668E+13 Gate Length 625 us Chopper Width 290 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.961E+06 Countdown Duration 357.76 ns Charge/uP 59.933 pC Burst Mode Charge/Chop 3.365E+03 pC Pulses per Burst 5 Charge/Gate 5.876 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23642	Sun Oct 9 17:25:54 2011	MFMakela

Adjusted 1630 V370 to stop dumping. (lowered ~1.5 psi) Changed 1410 eng tmp set poin from 15.2 t0 15.6 (production .95 before) Lowering source voltage from 7.5 VDC. (UCN rate was over 300)

23641	Sun Oct 9 15:45:15 2011	ASaunders

after run 16679, adjusted switcher detector voltage to bring neutron peak into SCA window. Old voltage was 2.82 kV; new voltage is 2.60 kV. Unfortunately, this probably means all the depol data we took this weekend was BOGUS, since the neutrons were essentially completely out of the SCA window.

23640	Sun Oct 9 09:29:07 2011	ASaunders

A cyle complete UCN rate horrible at GV melt and refreeze to try to improve things

23639	Sun Oct 9 08:15:52 2011	mmendenhall

DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 91.9 % SCS field .6900 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.4 torr CM5 pressure 1.0 torr CC1 pressure --- torr PPM LHe level 94.9 % PPM LN2 level 100 % AFP LHe level 95.5 % AFP LN2 level 96.7 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.7 mA "Beamplot" Capture: 82 % ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 56.2 F West MWPC Temperature 56.5 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.5 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2560 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.7 torr Neopentane Flow Rate ---- slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2332 Hz West muon veto rate 4120 Hz Spectrometer vacuum 3.4e-5 Torr disk usage daq account 84%

23638	Sun Oct 9 08:13:46 2011	ASaunders

UCNA Shift Change Checklist Date: October 9, 2011 08:00 Shift Persons: Saunders Mendenhall UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 40 slpm Heater B pressure 13.9 psia Heater C pressure 13.4 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 292 psia Tungsten Cool ret. 140 psia Tungsten Cool Diff 206 psia 1630 eng. 2 temp. 15.3 K 1630 JT temp. 8.0 K 1630 outlet temp. 276 K 1630 engine speed 218 rpm 1630 supply press. 238 psig 1630 JT press. 179 psig 1630 return press. 2.9 psig 1630 med. press. stor. 125 psig 1410 engine speed 200 rpm 1410 TE-A 15.5 K 1410 TE-B 6.1 K 1410 TE-E

13.8 inHe 4K main flow control 5.8 V LHe temp. 1 5.5 K Heat exch. temp. 3 206 K Poly temp. 2 165 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23635	Sun Oct 9 06:51:30 2011	RRios

4:12 PM 16626 B6: Reload Depol (off to on) 4:17 PM 16627 B7: Beta Run (off) E=11.343 W=10.452 Fe/GV=0.5027 SCS/GV=0.2745 4:37 PM 16628 B8: Depolarization (off to on) 4:43 PM 16629 B9: Background (off) E=1.040 W=0.735 4:49 PM 16630 B10: Beta Run (on) E=9.807 W=8.461 Fe/GV=0.3214 SCS/GV=0.2814 5:09 PM 16631 B11: Depolarization (on to off) 5:15 PM 16632 B12: Background (on) E=1.077 W=0.774 5:36 PM 16634 B1: Background (on) E=1.101 W=0.804 5:48 PM 16635 B2: Beta Run (on) E=6.298 W=5.291 Fe/GV=0.3378 SCS/GV=0.2858 6:48 PM 16636 B3: Depolarization (on to off) 6:54 PM 16637 B4: Background (off) E=1.165 W=0.790 7:06 PM 16638 B5: Beta Run (off) E=10.306 W=9.497 Fe/GV=0.5057 SCS/GV=0.2735 8:06 PM 16639 B6: Depolarization (off to on) 8:11 PM 16640 B7: Beta Run (off) E=5.513 W=5.049 Fe/GV=.5513 SCS/GV=0.2839 9:12 PM 16641 B8: Reload Depol (off to on) 9:17 PM 16642 B9: Background (off) E=1.078 W=0.813 9:29 PM 16643 B10: Beta Run (on) E=4.661 W=3.906 Fe/Gv=0.3484 SCS/GV=0.3025 10:29 PM 16644 B11: Reload Depol (on to off) 10:34 PM 16645 B12: Background (on) E=1.091 W=0.738 10:47 PM 16646 A1: Background (off) E=1.133 W=0.815 10:59 PM 16647 A2: Beta Run (off) E=4.560 W=4.115 Fe/GV=0.5857 SCS/GV=0.2957 11:59 PM 16648 A3: Reload Depol (off to on) 12:04 AM 16649 A4: Background (on) 12:16 AM 16650 A5: Beta Run (on) 1:17 AM 16651 A6: Reload Depol (on to off) 1:22 AM 16652 A7: Beta Run (on) 2:22 AM 16653 A8: Depolarization (on to off) 2:27 AM 16654 A9: Background (on) 2:39 AM 16655 A10: Beta Run (off) 3:40 AM 16656 A11: Depolarization (off to on) 3:45 AM 16657 A12: Background (off) 3:58 AM 16658 A1: Background (off) 4:10 AM 16659 A2: Beta Run (off) 5:11 AM 16660 A3: Reload Depol (off to on) 5:16 AM 16661 A4: Background (on) 5:28 AM 16662 A5: Beta Run (on) 6:28 AM 16663 A6: Reload Depol (on to off) 6:33 AM 16664 A7: Beta Run (on)

23637	Sun Oct 9 00:27:35 2011	Hasan

UCNA Shift Change Checklist Date: October 9, 2011 00:22 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 37 slpm Heater B pressure 13.84 psia Heater C pressure 13.18 psia Tungsten supply press. 290 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 291.8 psia Tungsten Cool ret. 131.6 psia Tungsten Cool Diff 209.2 psia 1630 eng. 2 temp. 15.23 K 1630 JT temp. 8.05 K 1630 outlet temp. 274.9 K 1630 engine speed 220 rpm 1630 supply press. 235 psig 1630 JT press. 170 psig 1630 return press. 2.5 psig 1630 med. press. stor. 100 psig 1410 engine speed 199 rpm 1410 TE-A 15.5 K 1410 TE-B 5.9 K 1410 TE-E 89.9 K 1410 supply press. 234 psig 1410 JT press. 150 psig 1410 return press. 2.2 psig 4K dewar pressure 245 mmHg 1K dewar pressure 7.0 psig 4K dewar level 11.79 inHe 1K dewar level 30.52 inHe 4K main flow control 5.5 V LHe temp. 1 5.2 K Heat exch. temp. 3 206.8 K Poly temp. 2 160.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.1 C AFP frequency 28.494 MHz AFP forward power 40 W SCS LHe level 83.8 % SCS field .6892 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 1.2 torr CC1 pressure over range torr PPM LHe level 95.0 % PPM LN2 level 100 % AFP LHe level 90.5 % AFP LN2 level 86.2 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.52 mA "Beamplot" Capture: - 82 % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 57.0 F West MWPC Temperature 56.9 F MWPC Pressure 100 torr N2 - MWPC Differential -5.0 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2580 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.8 torr Neopentane Flow Rate -.77 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2340 Hz West muon veto rate 4408 Hz Spectrometer vacuum 5.5 e-5 Torr disk usage daq account 84%

23636	Sat Oct 8 20:08:50 2011	Hasan

UCNA Shift Change Checklist Date: October 8, 2011 16:00 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 39 slpm Heater B pressure 13.84 psia Heater C pressure 13.17 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 293.2 psia Tungsten Cool ret. 129.6 psia Tungsten Cool Diff 213.6 psia 1630 eng. 2 temp. 15.08 K 1630 JT temp. 8.07 K 1630 outlet temp. 274.6 K 1630 engine speed 230 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 2.6 psig

dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 11.65 inHe 1K dewar level 33.29 inHe 4K main flow control 5.5 V LHe temp. 1 5.425 K Heat exch. temp. 3 199.72 K Poly temp. 2 148.09 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.494 MHz AFP forward power 40 W SCS LHe level 87.4 % SCS field .6897 kG SCS current 118.3 A AFP N2 dewar level 1 SV3 closed SV4 closed CM1 pressure -0.2 torr CM5 pressure 0.6 torr CC1 pressure 1.7e-4 torr PPM LHe level 95.2 % PPM LN2 level 100 % AFP LHe level 83 % AFP LN2 level 72.5 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 19 psi Chiller Off AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Beam Down - Technical Difficulties Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 14.4 mA "Beamplot" Capture: - 83 % ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 57.4 F West MWPC Temperature 100.0 F MWPC Pressure 100 torr N2 - MWPC Differential -4.8 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2550 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.8 torr Neopentane Flow Rate -.77 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.35 kV West muon veto HV 2.37 kV East muon veto rate 2098 Hz West muon veto rate 3993 Hz Spectrometer vacuum e-5 Torr disk usage daq account 83%

23633	Sat Oct 8 17:34:46 2011	RRios

12:20 PM 16606 A1: Background (on) E:1.33 W:0.95 12:26 PM 16607 A2: Beta Run (on) E:9.56 W:8.57 Fe/GV:0.52 SCS/GV:0.27 12:46 PM 16608 A3: Reload Depol (on to off) 12:52 PM 16609 A4: Background (off) E:1.49 W:1.02 12:58 PM 16610 A5: Beta Run (off) E:10.9 W:9.1 Fe/GV:0.32 SCS/GV:0.29 13:18 PM 16611 A6: Depol (on->off) 13:24 PM 16612 A7: Beta Run (on) E:12.8 W:10.8 Fe/GV:0.32 SCS/GV:0.28 13:44 PM 16613 A8: Reload Depol (on to off) 13:49 PM 16614 A9: Background (off) E:1.49 W:1.02 13:55 PM 16615 A10: Beta Run (off) E:11.1 W:10.0 Fe/GV:0.51 SCS/GV:0.27 14:15 PM 16616 A11: Reload Depol (off to on) 14:41 PM 16618 A12: Background (off) E:1.43 W:1.09 14:47 PM 16619 B1: Background (on) E:1.49 W:1.09 14:53 PM 16620 B2: Beta Run (on) E:10.23 W:8.39 Fe/GV:0.31 SCS/GV:0.28 15:13 PM 16621 B3: Reload Depol (on to off) 15:19 PM 16622 B4: Background (off) E:1.61 W:1.10 15:25 PM 16623 B5: Beta Run (off) E:12.1 W:10.96 Fe/GV:0.50 SCS/GV:0.27

23634	Sat Oct 8 17:16:19 2011	RRios

Here are some things that we had to fix as we were starting doing these runs: ---------- The H-GX trigger was not put back into midas after the polarimetry measurements. Put back in just before run 16624 The Reload.vi was not closing the gate valve. Fixed the problem at time 16:12. There was a slight spike in pressure in the source during the night which reduced our UCN production. Problem went away on it's own. While Michael was backing up the data to the Caltech servers, labview had a new error that I had not encountered that had to do with accessing the runlog.txt on the linux computer. Will need to look into that but perhaps best to do backup when beam is down for now. 1630 has been barely keeping up with the source. Concerned about whether or not we will have enough for the SCS when it comes time to fill it. The flipper on vs flipper off E+W rate looks funny. Believe this is due to UCN production levels coming and going.

Attachment 1: 0811.ps

23629	Sat Oct 8 13:01:26 2011	BMV

Measured the spin flipper. ~9 Flipper off. ~5 Flipper On we felt that is good enough. 28.494 MHz Polarimetry Runs Runs Slow Daq Midas Cycles comments 1.1 Lifetime 10/08/11 03:15 Flipper Off 816 16586 4 NO GOOD!!! BAD!!! Left beam on constant 10/08/11 03:52 Flipper On 817 16587 1 NO GOOD !!! BAD Left beam on constant 10/08/11 03:58 Flipper On 818 16588 4 10/08/11 04:33 Flipper Off 819 16589 5 AFP Fill 2.1 Trapped Lifetime 10/08/11 05:18 Flipper Off 820 16590 5 AFP Fill 10/08/11 05:53 Flipper On 821 16591 4 AFP Fill 2.2 Polarized with 25s Cleaning 10/08/11 06:24 Flipper Off 822 16592 4 Beam probably went out, did not notice until anouncement while starting the next run 10/08/11 07:42 Flipper On 825 16595 6 10/08/11 08:40 Flipper Off 826 16596 4 2.3 Depolarization with 25s Cleaning 10/08/11 09:19 Flipper Off 827 16597 4 10/08/11 09:56 Flipper On 828 16598 4

23632	Sat Oct 8 08:32:21 2011	mmendenhall

Shift Change Checklist, 10/8/2011 Raymond, Michael DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.494 MHz AFP forward power 42 W SCS LHe level 93.0 % SCS field .6903 kG SCS current 118.3 A AFP N2 dewar

current 72(6) A (T) AFP current 93.68(7)A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 305 ns TBCM001I03 (H- source current): 14 mA "Beamplot" Capture: 0.83 ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 58.9 F West MWPC Temperature 57.3 F MWPC Pressure 99.3 torr N2 - MWPC Differential -4.4 torr Neopentane Flow Rate 15.5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2560 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.8 torr Neopentane Flow Rate ---- slpm flow meter bypassed West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.35 kV West muon veto HV 2.38 kV East muon veto rate 1993 Hz West muon veto rate 3773 Hz Spectrometer vacuum 1.7e-4 Torr (CC1) disk usage daq account 83% (/home/data_analyzed is full)

23631	Sat Oct 8 08:24:04 2011	RRios

UCNA Shift Change Checklist Date: October 8, 2011 08:00 Shift Persons: Raymond UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 37 slpm Heater B pressure 13.85 psia Heater C pressure 13.22 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there Compressor 2 On off Tungsten Cool supp. 290.8 psia Tungsten Cool ret. 124.5 psia Tungsten Cool Diff 217 psia 1630 eng. 2 temp. 15.08 K 1630 JT temp. 8.05 K 1630 outlet temp. 274 K 1630 engine speed 230 rpm 1630 supply press. 245 psig 1630 JT press. 175 psig 1630 return press. 2.3 psig 1630 med. press. stor. 100 psig 1410 engine speed 199 rpm 1410 off for maintenance 1410 TE-A 15.5 K 1410 TE-B 6.1 K 1410 TE-E 93.3 K 1410 supply press. 230. psig 1410 JT press. 145 psig 1410 return press. 3.25 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 11.49 inHe 1K dewar level 24.7 inHe 4K main flow control 5.5 V LHe temp. 1 4.8 K Heat exch. temp. 3 188 K Poly temp. 2 135 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23630	Sat Oct 8 07:22:49 2011	BMV

Brittney and Jeff midnight->8am Before Michael and Raymond left we ran into some interesting problems. The beam trigger was appearing to not signal to the daq, we found that the trigger signal was at 20mV and the discriminator was set to at the minimum see 30mV. So Michael thought to try and decrease the threshold of the discriminator but it did not work. So then we put the beam trigger into an amplifier which made the signal roughly 200mV, plugged the output into the discriminator, still had some trouble reading it but we lowered the threshold from -2V-> ~-0.7V. This problem needs to be resolved but Raymond could not find where the signal had been decreased.. T0 was not plugged in on Raymond side, EDM was using the signal. So Raymond fixed that. Jeff and I found out later that FeMonitor was not reading. Discovered a BNC cable was hooked up in the wrong place. Did a quick spin flipper test. ~9 Hz in FeFoilMon decreased to ~5Hz on average thought that was good enough. Started Polarimetry runs. Decided to do 4 cycles instead of the historic 8. Need to talk to Adam about the cleaning time which he wants done. How many cycles he really wants?? ~4am filled AFP Jeff playing with 1630 trying to make liquid happen... losing liquid slowly because had to run voltage high because we were having spikes in the CC1 which was affecting our UCN count. Appears he might have it balanced, time will tell. ~7am Beam went out some problem with a module.

23628	Sat Oct 8 00:22:38 2011	JCHoagland

UCNA Shift Change Checklist Date: October 8, 2011 00:00 Shift Persons: jeff, brittiany UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 58 slpm Heater B pressure 13.88 psia Heater C pressure 13.23 psia Tungsten supply press. 295 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 293.1 psia Tungsten Cool ret. 123.4 psia Tungsten Cool Diff 221.2 psia 1630 eng. 2 temp. 14.75 K 1630 JT temp. 8.00 K 1630 outlet temp. 275.9 K 1630 engine speed 220 rpm 1630 supply press. 235 psig 1630 JT press. 190 psig 1630 return press. 2.5 psig 1630 med. press. stor. 95 psig 1410 engine speed 199 rpm 1410 off for maintenance 1410 TE-A 15.1 K 1410 TE-B 5.9 K 1410 TE-E 92.3 K 1410 supply press. 235 psig 1410 JT press. 190 psig 1410 return press. 3.3 psig 4K dewar pressure 310 mmHg 1K dewar pressure 7.0 psig 4K dewar level 12.2 inHe 1K dewar level 22.3 inHe 4K main flow control 5.3 V LHe temp. 1 4.6 K Heat exch. temp. 3 205.8 K Poly temp. 2 158.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 9.5 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 99.7 % SCS field .6897 kG SCS current 118.3 A AFP N2 dewar level 3/8 SV3 closed SV4 closed CM1 pressure -0.3 torr CM5 pressure 0.3 torr CC1 pressure 4.9e-4 torr PPM LHe level 95.6 % PPM LN2 level 100 % AFP LHe level 90.5 % AFP LN2 level 84.4 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 20 psi Chiller Off AFP chiller

Proton pattern width: 305 ns TBCM001I03 (H- source current): 14 mA "Beamplot" Capture: - ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 58.6 F West MWPC Temperature 57.6 F MWPC Pressure 99.7 torr N2 - MWPC Differential -4.3 torr Neopentane Flow Rate 15.3 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 2 ========== West Detector Cart ========== MWPC HV 2550 V MWPC Trip Hold Status trip hold MWPC Pressure 100 torr N2 - MWPC Differential -0.9 torr Neopentane Flow Rate -.76 slpm West PMT Buck. Curr. .24 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 2350 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 1130 V East muon veto HV 2.35 kV West muon veto HV 2.38 kV East muon veto rate 2233.3 Hz West muon veto rate 4357.4 Hz Spectrometer vacuum 2.16e-2 Torr disk usage daq account 83%

23626	Fri Oct 7 23:44:31 2011	mmendenhall

Doing a melt-and-refreeze while Xe data running Beam off, flapper closed, GV closed and air line disconnected *** CLOSED orange valve ***, opened check-valve bypass ... melting ... Closed check valve bypass, *** Opened *** orange valve, restoring GV function Increased GV Mon rate (GV closed) from 161Hz before to 260Hz after

Attachment 1: e_20111007.gif

e_20111007.gif

23627	Fri Oct 7 23:31:32 2011	mmendenhall

Runs 16579, 16580: beta/background rate test; flipper off => 15.9Hz beta decay (+3.0Hz background) for GV closed GV Mon rate ~160Hz (taken before melt & refreeze) Run 16581, 16582 is a long Xenon run during melt-and-refreeze

23625	Fri Oct 7 22:17:25 2011	mmendenhall

I have set new PMT HV levels for this year to gain-match the Bi pulser peaks: E1 0 1250V E2 1 1150V E3 2 1180V E4 3 1000V W1 24 1440V W2 20 1250V W3 26 1190V W4 27 1130V

23624	Fri Oct 7 19:53:39 2011	BMV

Ramping AFP Think we should decrease rate from 0.04A/s to 0.0390A/s it likes to stay around 3.04V the whole ramp. AFP ramped to 93.68A

23623	Fri Oct 7 16:11:46 2011	mmendenhall

UCNA Shift Change Checklist Date: October 7, 2011 16:07 Shift Persons: Raymond, Michael UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 44 slpm Heater B pressure 14.89 psia Heater C pressure 13.52 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. Compressor Gone Compressor 2 On "" Tungsten Cool supp. 294.8 psia Tungsten Cool ret. 114.8 psia Tungsten Cool Diff 235.1 psia 1630 eng. 2 temp. 14.90 K 1630 JT temp. 8.18 K 1630 outlet temp. 275.8 K 1630 engine speed 195 rpm 1630 supply press. 225 psig 1630 JT press. 180 psig 1630 return press. 2.8 psig 1630 med. press. stor. 75 psig 1410 engine speed 199 rpm 1410 TE-A 15.0 K 1410 TE-B 5.9 K 1410 TE-E 86.5 K 1410 supply press. 222 psig 1410 JT press. 135 psig 1410 return press. 3.3 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7.0 psig 4K dewar level 21.88 inHe 1K dewar level 22.11 inHe 4K main flow control 5.0 V LHe temp. 1 5.7 K Heat exch. temp. 3 232 K Poly temp. 2 220 K flapper heater cur 0.18 A Flapper Status: flapping (closed, no beam) Flapper Time A: 0.3 Flapper Time C: 4.8

23622	Fri Oct 7 15:17:10 2011	GEHogan

Reset proton scope and pulse PCDAQ

23621	Fri Oct 7 15:16:31 2011	DAQ On-line

10/07 15:15 Start Run 13689 UCN0030 2011 UCN
10/07 15:16 End Run

Batch Protons

	Group 1		Group 21	

Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13689	0	0.00000E+00	0	0.00000E+00
Batch started at 13689	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13689	0	0.	0.	0.	0.	0.00	0.00
13689	1	0.	0.	0.	0.	0.00	0.00
13689	2	0.	0.	0.	0.	0.00	0.00
13689	3	0.	0.	0.	0.	0.00	0.00
13689	10	0.	0.	0.	0.	0.00	0.00

23620	Fri Oct 7 14:58:08 2011	GEHogan

Reset Lakeshore readout

23619	Fri Oct 7 13:32:13 2011	MFMakela

Starting to make source. 1127 mbar in the tank. Source at 4 VDC.

23618	Fri Oct 7 00:40:40 2011	MFMakela

Zenon run: 1866 mbar in Zenon tube. Zenon in source for ~ 30 minutes

23617	Thu Oct 6 18:46:11 2011	BMV

Raymond- Closed orange valve, pumping on source with scroll. Right now filling up with Argon to clean system.

23616	Thu Oct 6 18:22:54 2011	BMV

UCNA Shift Change Checklist Date: October 6, 2011 16:15 Shift Persons: Hasan, Brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow -21 slpm Heater B pressure 13.85 psia Heater C pressure 13.16 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 294.6 psia Tungsten Cool ret. 113 psia Tungsten Cool Diff 236.8 psia 1630 eng. 2 temp. 14.39 K 1630 JT temp. 7.99 K 1630 outlet temp. 273.7 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 175 psig 1630 return press. 2.8 psig 1630 med. press. stor. 95 psig 1410 engine speed 200 rpm 1410 TE-A 15.1 K 1410 TE-B 6.1 K 1410 TE-E 80.9 K 1410 supply press. 220 psig 1410 JT press. 130 psig 1410 return press. 3.4 psig 4K dewar pressure 270 mmHg 1K dewar pressure 7.0 psig 4K dewar level 17.4 inHe 1K dewar level 27.08 inHe 4K main flow control --- V LHe temp. 1 301.16 K Heat exch. temp. 3 274.8 K Poly temp. 2 297.9 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 18 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 72.2 % SCS field 0 G SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 137.7 torr CM5 pressure 625.5 torr CC1 pressure --- PPM LHe level 95.5 % PPM LN2 level 100.0 % AFP LHe level 69.2 % AFP LN2 level 57.5 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point -- degC AFP chiller level light Off Proton burst spacing: --- s Proton pulses/burst: --- Proton countdown: --- Proton pattern width: --- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: --- ========== East Detector Cart ========== MWPC HV --- V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 580 torr N2 - MWPC Differential 580 torr Neopentane Flow Rate -.77 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 5 East muon veto HV 2.33 kV West muon veto HV 0 kV East muon veto rate 1849 Hz West muon veto rate 0 Hz Spectrometer vacuum 597.7 Torr disk usage daq account 82%

23614	Thu Oct 6 11:34:06 2011	MFMakela

Pumping D2 back into tank, source at ~210K. KNF pump - on. 1130 mbar in tank. 176 mbar in guide.

UCN gatevalve to PPM window vented with Ar. 624 torr

23613	Thu Oct 6 01:41:02 2011	RRios

Finished EDM run: run 811 Holding in the EDM Cell: 80,500,150,700,30,300 seconds cell open, cell closed 4 cycles

23612	Thu Oct 6 01:20:07 2011	bz

UCNA Shift Change Checklist Date: October 6, 2011 01:15 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 58 slpm Heater B pressure 14.40 psia Heater C pressure 13.39 psia Tungsten supply press. 292.4 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 292.4 psia Tungsten Cool ret. 136.4 psia Tungsten Cool Diff 203.5 psia 1630 eng. 2 temp. 14.85 K 1630 JT temp. 8.07 K 1630 outlet temp. 275.4 K 1630 engine speed 220 rpm 1630 supply press. 237 psig 1630 JT press. 175 psig 1630 return press. 3.1 psig 1630 med. press. stor. 163 psig 1410 engine speed 200 rpm 1410 TE-A 16.0 K 1410 TE-B 5.9 K 1410 TE-E 87.7 K 1410 supply press. 232 psig 1410 JT press. 143 psig 1410 return press. 3.5 psig 4K dewar pressure 302 mmHg 1K dewar pressure 7.2 psig 4K dewar level 9.43 inHe 1K dewar level 10.56 inHe 4K main flow control 5.8 V LHe temp. 1 5.1 K Heat exch. temp. 3 161.0 K Poly temp. 2 156.4 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 18.6 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 80.3 % SCS field 4.9 G SCS current 0 A AFP N2 dewar level 3/4 SV3 closed SV4 closed CM1 pressure -0.3 torr CM5 pressure 0.2 torr CC1 pressure 1.5e-4 PPM LHe level 95.2 % PPM LN2 level 100.0 % AFP LHe level 89.0 % AFP LN2 level 54.3 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point -- degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 290 ns TBCM001I03 (H- source current): 13.9 mA "Beamplot" Capture: 1.00 ========== East Detector Cart ========== MWPC HV 2700 V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 68.8 F West MWPC Temperature 70.2 F MWPC Pressure 580.4 torr N2 - MWPC Differential -0.0 torr Neopentane Flow Rate -0.02 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level 2.25 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 583.3 torr N2 - MWPC Differential .5 torr Neopentane Flow Rate -.78 slpm West PMT Buck. Curr. - A West Back. Veto Buck. - A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 5 East muon veto HV 2.34 kV West muon veto HV 0 kV East muon veto rate 1921 Hz West muon veto rate 0 Hz Spectrometer vacuum 600.7 Torr disk usage daq account 82%

23611	Wed Oct 5 20:33:46 2011	BMV

AFP is filled, in process of filling SCS.

23610	Wed Oct 5 20:32:55 2011	mmendenhall

The West detector system is now (mostly) working. The wirechamber is assembled, and I tested the cathode preamps with the test pulser. After initially finding and fixing a broken wire on a +6V power supply connector, the cathodes worked fine. After a 500V wirechamber test at atmosphere (no unexpected current draw), I pumped out the detector for a test fill. The MFC on the West side is behaving strangely --- perhaps some settings on the MKS 146C that I don't know about: the MFC seems to read much higher flow rates than realistic based on the wirechamber fill rate and needle valve position, and also appears to be trying to actively throttle the flow (down to ~0). Because of this, I had to bypass the MFC on the gas cart; the neopentane flow rate is currently set by "guess" based on a reasonable fill rate and needle valve position. We will be unable to monitor the flow until the MFC can be made to not throttle back the flow to a trickle (and preferably to read the correct flow rate). Otherwise, the fill went very smoothly, and I saw no signs of the previous problems with neopentane/nitrogen leaks. Ramping up the West MWPC HV (using the new supply in the rack under the shutter) went very quickly and smoothly, better than I have seen before (I hope this is not just the power supply being overly lenient). Using a scope on the cathode channels showed nice cosmic ray signals. I turned on the PMT HV and took a quick fast daq run; the West PMTs and cathodes all had reasonable looking spectra. The one issue (the "mostly" in "mostly working") is the anode output, which appears extremely low (on the scope with the test pulser and cosmic rays, and also on the fast daq run), and the East anode is extremely noisy (very broad pedestal). While I had the West detector volume open during the pulser tests, I checked that all the connections into the West anode preamp box were correct and functioning. It is possible that the preamp board had been fried by HV incidents at some previous time (perhaps whatever caused the short in the wirechamber that Kevin found); in any case, fully diagnosing and repairing/replacing the anode board could be a lengthy task. From a data analysis

want to leave the anodes alone for now. I think it might be OK to remove the anode preamp box from the detector, and install/run the wirechamber without any anode readout, so we can diagnose the anode preamp "off-line" while still taking data.

23609	Wed Oct 5 18:24:51 2011	BMV

Scott has got the Compressor 1 (Tungsten) up and running. The settings as of 5 minutes ago. W Supply- 225 psia W Diff.- 139 psia W Return- 118 psia Current Flow meter setting: 400SCFH If both red valves are open (FULL OPEN) flow is: 500SCFH

23608	Wed Oct 5 17:44:48 2011	BMV

UCNA Shift Change Checklist Date: October 5, 2011 17:16 Shift Persons: Hasan, BMV UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 30 slpm Heater B pressure 13 psia Heater C pressure 13.35 psia Tungsten supply press. 350 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On --- Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 120.4 psia Tungsten Cool Diff 290.8 psia 1630 eng. 2 temp. 14.22 K 1630 JT temp. 6.63 K 1630 outlet temp. 267.2 K 1630 engine speed 180 rpm 1630 supply press. 227 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 102 psig 1410 engine speed 210 rpm 1410 TE-A 18.3 K 1410 TE-B 8.2 K 1410 TE-E 92.7 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.7 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.4 inHe 1K dewar level 38.5 inHe 4K main flow control 5.5 V LHe temp. 1 6.2 K Heat exch. temp. 3 206.97 K Poly temp. 2 11.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 18.3 C AFP frequency 28.49 MHz AFP forward power 0 W SCS LHe level 55 % SCS field 0.0005 T SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 0.3 torr CC1 pressure 1x10-3 torr PPM LHe level 95.1 % PPM LN2 level 100. % AFP LHe level 32 % AFP LN2 level 82.1 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point -- degC AFP chiller level light -- Proton burst spacing: -- nano s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current): -- mA "Beamplot" Capture: -- ========== East Detector Cart --- OFF--- ========== MWPC HV 0 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 69.7 F West MWPC Temperature 71.9 F MWPC Pressure 58.12 torr N2 - MWPC Differential 5.8e2 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr .5 A East Back. Veto Buck. .34 A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status TRIP HOLD MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 12 East muon veto HV 2.35 kV West muon veto HV off kV East muon veto rate 1849 Hz West muon veto rate 0 Hz Spectrometer vacuum 601.5 Torr disk usage daq account 82%

23607	Wed Oct 5 16:06:54 2011	Hasan

23604	Wed Oct 5 15:05:01 2011	MFMakela

Tungsten target evaluation plan: Set overnight valved off - target side held pressure for 10 hrs ~ 90 lbs. Start system as is, watch for loss of pressure. Pressure slowly dropping. Closed return valve and added gas to supply side. During this the leak stopped.

23606	Wed Oct 5 10:13:45 2011	EIC

Attachment 1: e_20111007.gif

e_20111007.gif

23605	Wed Oct 5 10:13:35 2011	EIC

Attachment 1: e_20111007.gif

e_20111007.gif

23603	Wed Oct 5 06:19:30 2011	bz

the Helium Blower appears to have died. Early this morning, it started making a "ratcheting"

23602	Wed Oct 5 00:53:02 2011	JCHoagland

UCNA Shift Change Checklist Date: October 5, 2011 12:20 Shift Persons: Bryan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 56 slpm Heater B pressure 14.07 psia Heater C pressure 13.41 psia Tungsten supply press. 85 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 89.7 psia Tungsten Cool ret. 88.8 psia Tungsten Cool Diff 0.0 psia 1630 eng. 2 temp. 14.67 K 1630 JT temp. 8.15 K 1630 outlet temp. 273.9 K 1630 engine speed 220 rpm 1630 supply press. 240 psig 1630 JT press. 170 psig 1630 return press. 3.0 psig 1630 med. press. stor. 133 psig 1410 engine speed 200 rpm 1410 TE-A 16.1 K 1410 TE-B 6.0 K 1410 TE-E 91.3 K 1410 supply press. 235 psig 1410 JT press. 153 psig 1410 return press. 3.2 psig 4K dewar pressure 297 mmHg 1K dewar pressure 7.0 psig 4K dewar level 16.0 inHe 1K dewar level 18.3 inHe 4K main flow control 5.0 V LHe temp. 1 4.9 K Heat exch. temp. 3 151.4 K Poly temp. 2 42.2 K flapper heater cur 0.18 A Flapper Status: closed Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 18.4 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 66.1 % SCS field 4.472 G SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure -0.2 torr CM5 pressure 0.2 torr CC1 pressure 9.6e-6 PPM LHe level 94.7 % PPM LN2 level 100.0 % AFP LHe level 49.6 % AFP LN2 level 77.6 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. -- psi AFP chiller flow rate -- gph AFP chiller set point -- degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: --- ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: .-- ========== East Detector Cart ========== MWPC HV 2700 V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 69.2 F West MWPC Temperature 70.0 F MWPC Pressure 584.4 torr N2 - MWPC Differential -0.0 torr Neopentane Flow Rate -0.0 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 587.4 torr N2 - MWPC Differential .4 torr Neopentane Flow Rate -.78 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 12 East muon veto HV 2.35 kV West muon veto HV 0 kV East muon veto rate 1841 Hz West muon veto rate 0 Hz Spectrometer vacuum 604.9 Torr disk usage daq account 82%

23601	Tue Oct 4 18:40:40 2011	Hasan

Tungston return pressure was lower than 110 psi. Mark fixed it.

23600	Tue Oct 4 17:50:50 2011	Hasan

UCNA Shift Change Checklist Date: October 4, 2011 05:34 Shift Persons: Brittney, Hasan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 41 slpm Heater B pressure 13.42 psia Heater C pressure 12.76 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 266.9 psia Tungsten Cool ret. 79.3 psia Tungsten Cool Diff 244.6 psia 1630 eng. 2 temp. 14.60 K 1630 JT temp. 8.20 K 1630 outlet temp. 274.1 K 1630 engine speed 220 rpm 1630 supply press. 230 psig 1630 JT press. 170 psig 1630 return press. 3.0 psig 1630 med. press. stor. 145 psig 1410 engine speed 200 rpm 1410 TE-A 15.8 K 1410 TE-B 6.0 K 1410 TE-E 92.1 K 1410 supply press. 230 psig 1410 JT press. 140 psig 1410 return press. 2.6 psig 4K dewar pressure 300 mmHg 1K dewar pressure 6 psig 4K dewar level 16.25 inHe 1K dewar level 9.42 inHe 4K main flow control 4.0 V LHe temp. 1 6.380 K Heat exch. temp. 3 172.25 K Poly temp. 2 44.632 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature 18.6 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 70.2 % SCS field 0.005 kG SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.3 torr CC1 pressure 7e-4 torr PPM LHe level 94.4 % PPM LN2 level 100 % AFP LHe level 85.9 % AFP LN2 level 44.2 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. - psi Chiller Off AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light Off Proton burst spacing: - s Beam Down - Technical Difficulties Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - ========== East Detector Cart --- OFF--- ========== MWPC HV --- V MWPC Trip Hold Status --- East MWPC Temperature --- F West MWPC Temperature --- F MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm East PMT Buck. Curr --- A East Back. Veto Buck. --- A H20 Chiller --- Chiller water level --- ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status --- MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. --- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) --- Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 11 V East muon veto HV 2.35 kV West muon veto HV --- kV East muon veto rate 0 Hz West muon veto rate 0 Hz Spectrometer vacuum 607.7 Torr disk usage

23599	Tue Oct 4 01:01:59 2011	bz

UCNA Shift Change Checklist Date: October 4, 2011 00:54 Shift Persons: APG, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 60 slpm Heater B pressure 15.02 psia Heater C pressure 14.36 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 320 psia Tungsten Cool ret. 108.5 psia Tungsten Cool Diff 272.6 psia 1630 eng. 2 temp. 15.15 K 1630 JT temp. 8.09 K 1630 outlet temp. 268.3 K 1630 engine speed 200 rpm 1630 supply press. 240 psig 1630 JT press. 178 psig 1630 return press. 3.3 psig 1630 med. press. stor. 127 psig 1410 engine speed 0 rpm 1410 off for maintenance 1410 TE-A 298.0 K 1410 TE-B 296.8 K 1410 TE-E 297.5 K 1410 supply press. 130 psig 1410 JT press. -20 psig 1410 return press. <0 psig 4K dewar pressure 315 mmHg 1K dewar pressure 4 psig 4K dewar level 16.67 inHe 1K dewar level 7.88 inHe 4K main flow control 6.0 V LHe temp. 1 5.193 K Heat exch. temp. 3 188.5 K Poly temp. 2 136.1 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 17.3 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 81.1 % SCS field 0 T SCS current 0 A AFP N2 dewar level low? SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 0.5 torr CC1 pressure 7e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 82.2 % AFP LN2 level 99.5 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. - psi Chiller Off AFP chiller flow rate - gph AFP chiller set point - degC AFP chiller level light Off Proton burst spacing: - s Beam Down - Technical Difficulties Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): - mA "Beamplot" Capture: - ========== East Detector Cart ---OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 69.7 F West MWPC Temperature 71.3 F MWPC Pressure 586.5 torr N2 - MWPC Differential 0.0 torr Neopentane Flow Rate -5.9e-2 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level 2 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO RESET MWPC Pressure 589.4 torr N2 - MWPC Differential .6 torr Neopentane Flow Rate -.77 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 11 V East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 1818 Hz West muon veto rate --- Hz Spectrometer vacuum 607.7 Torr disk usage daq account 82%

23598	Mon Oct 3 22:41:42 2011	RRios

Tonight EDM is running. Source voltage is 6V with GV closed GV mon: 220 The target is getting hit pretty hard right now so it appears that the beam is compensating for the poor SD2 source. The Flapper appears to be running smoothly.

23597	Mon Oct 3 22:37:40 2011	RRios

The RCT measured the radiation on the shielding stack. It looks like around the parameter it is ok, but on the top level there are some high areas ~30mRAM/Hr neutron radiation.

23596	Sat Oct 1 12:41:51 2011	GEHogan

Restarted EMS

23595	Mon Sep 26 09:40:47 2011	bz

One theory we have as to the concentration of Argon is that the state of the big door matters a lot to this background. The attached picture shows room temperature fluctuations which appear to show that the temperature in the room fluctuates in precisely the same manner as the argon rate. This would seem to indicate that when the room warms up because the door is closed, the argon being made is trapped and the rate rises considerably.

Attachment 1: .gif

.gif

23594	Fri Sep 23 12:20:39 2011	CLMorris

The other observation from last nights data may be more troubling. We see a gamma from the decay of 40Ar which varies slowly over the course of several hours. This may be a bigger problem than UCN generated background. A lot of the rate 1.29 MeV gamma rays is attaced.

Attachment 1: .gif

.gif

UCN background measurements in SCS: Ge detector inside SCS SCS and AFP magnets off AFP spinflipper off Beam on constant throughout run Shutter Open Switch through Run GV open GV closed Cycles Notes 800 20 min 20 min 20

23593	Fri Sep 23 12:16:01 2011	CLMorris

Last nights data (run 800) show a small UCN enhancement in the copper neutron capture line (10%) and in the iron capture line (5%). More quantitative analysis is in order. The attached plot compares gate valve open, gate valve closed and the difference.

Attachment 1: kground.gif

kground.gif

23592	Fri Sep 23 09:01:36 2011	JCHoagland

asked ccr to stop sending beam, closed gate valve, stopped flow to source, opened check valve bypass. reason for stop was medium pressure was above 190 and liquid in the 4k had reached 9.1 inches.

23591	Fri Sep 23 08:05:51 2011	JCHoagland

fast daq run 16529 is a continum of the background to gv open run

23590	Fri Sep 23 03:19:13 2011	JCHoagland

appear something in the mensor fell and raised the pressure a bit

23589	Fri Sep 23 02:46:33 2011	JCHoagland

beam died for about a minute

23588	Fri Sep 23 01:09:57 2011	Hasan

UCNA Shift Change Checklist Date: September 23, 2011 12:42 Shift Persons: Hasan, Jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 68 slpm Heater B pressure 13.41 psia Heater C pressure 12.73 psia Tungsten supply press. 350 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 117.1 psia Tungsten Cool Diff 294.6 psia 1630 eng. 2 temp. 244.0 K 1630 JT temp. 233.8 K 1630 outlet temp. 265.5 K 1630 engine speed 0 rpm 1630 supply press. 245 psig 1630 JT press. 45 psig 1630 return press. 1.6 psig 1630 med. press. stor. 165 psig 1410 engine speed 201 rpm 1410 TE-A 15.4 K 1410 TE-B 6.1 K 1410 TE-E 90.2 K 1410 supply press. 240 psig 1410 JT press. 150 psig 1410 return press. 3 psig 4K dewar pressure 320 mmHg 1K dewar pressure 7 psig 4K dewar level 13.76 inHe 1K dewar level 9.82 inHe 4K main flow control 5 V LHe temp. 1 5.36 K Heat exch. temp. 3 185.82 K Poly temp. 2 177.03 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status thru AFP temperature 9.7 C AFP frequency 28.494 MHz AFP forward power off W SCS LHe level 78.2 % SCS field 0 T SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 0.0 torr CM5 pressure 0.5 torr CC1 pressure 4.3e-5 PPM LHe level 81.4 % PPM LN2 level 48.4 % AFP LHe level 72.4 % AFP LN2 level 92.6 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 20 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 128 ns TBCM001I03 (H- source current): 8 mA "Beamplot" Capture: .82 ========== East Detector Cart ========== MWPC HV 2700 V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 68.2 F West MWPC Temperature 65.5 F MWPC Pressure 591.0 torr N2 - MWPC Differential -0.2 torr Neopentane Flow Rate -1.9e-2 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 590.0 torr N2 - MWPC Differential .5 torr Neopentane Flow Rate -.78 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 12 East muon veto HV 2.36 kV West muon veto HV 0 kV East muon veto rate 2559 Hz West muon veto rate 0 Hz Spectrometer vacuum 5.6e-6 Torr disk usage daq account 82%

23587	Thu Sep 22 19:43:55 2011	RRios

UCN production: Gate Valve closed Ave GV mon: 233 Gate Valve open Ave GV mon 154 Ave SCS mon 11 (SCS and AFP off) Ave Fe Foil 16 SCS/GV ratio: 0.07 Fe/GV ratio: 0.10

23585	Thu Sep 22 17:06:56 2011	bz

Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open He blower on Heat exchanger flow 48 slpm Heater B pressure 14.57 psia Heater C pressure 13.89 psia Tungsten supply press. 350 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 120.0 psia Tungsten Cool Diff 295.4 psia 1630 eng. 2 temp. 227.7 K 1630 JT temp. 231.2 K 1630 outlet temp. 245.1 K 1630 engine speed 0 rpm 1630 supply press. 245 psig 1630 JT press. 23 psig 1630 return press. 2.7 psig 1630 med. press. stor. 147 psig 1410 engine speed 234 rpm 1410 TE-A 16.2 K 1410 TE-B 7.2 K 1410 TE-E 86.0 K 1410 supply press. 242 psig 1410 JT press. 120 psig 1410 return press. 4.2 psig 4K dewar pressure 290 mmHg 1K dewar pressure 9 psig 4K dewar level 18.58 inHe 1K dewar level 1.63 inHe 4K main flow control 5 V LHe temp. 1 10.0 K Heat exch. temp. 3 255.1 K Poly temp. 2 222.0 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 0.1 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 84.8 % SCS field 0 T SCS current 0 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure 337.8 torr CM5 pressure 130.6 torr CC1 pressure out of range torr PPM LHe level 81.4 % PPM LN2 level 52.3 % AFP LHe level 82.9 % AFP LN2 level 67.1 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 19 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 270 ns TBCM001I03 (H- source current): 14.1 mA "Beamplot" Capture: .82 ========== East Detector Cart ========== MWPC HV 2700 V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 72.9 F West MWPC Temperature 71.4 F MWPC Pressure 586.8 torr N2 - MWPC Differential .1 torr Neopentane Flow Rate 0 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level 1 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 590.6 torr N2 - MWPC Differential .3 torr Neopentane Flow Rate -.74 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 13 East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 2934 Hz West muon veto rate --- Hz Spectrometer vacuum 6e-6 Torr disk usage daq account 82%

23584	Thu Sep 22 12:36:30 2011	CLMorris

The attached 2-d plot shows time (vertically) and Energy (horizontally) from last nights HPGE run. There are clearly a lot of beam associated gamma rays in the SCS bore. Unfortunately the data were taken with the beam off when the gate valve was closed so we can't say anything about UCN induce backgrounds. We will run again with the SCS off, the AFP off, and only the gate valve changing state! Leah wrote a flapper code for a broken encoder. A search on Leah and encode brings up the instructions.

Attachment 1: 1.gif

1.gif

23583	Thu Sep 22 07:22:58 2011	ASaunders

I determined the problem with the flapper is that the encoder is reading inconsistent;ly. I believe we have a spare encoder; if not, we must buy one and in either case install it during the maintenance period.

23582	Thu Sep 22 05:35:22 2011	JCHoagland

the afp and scs have both been ramped down at this time due to the fact that the 1630 is down for matinance.

23581	Thu Sep 22 01:51:24 2011	bz

Run 799 Slowdaq, Run 16505 Fastdaq is the only acceptable Ge data we were able to take. Rate was VERY low, only about 30 Hz at the Gate Valve (GV open), because of various problems with flapper, maintaining LHe flow to source, and beam not being very intense. 20 min turns were taken, otherwise same run plan as Raymond's Labview settings above (Beam on/off and Flipper on/off, 4 total)

23580	Wed Sep 21 21:03:48 2011	bz

Ge Detector doesn't work in the magnetic field. Ramping down SCS to try running Ge Detector out of field 144.5 mbar left in tank when I closed the check valve bypass

23579	Wed Sep 21 17:22:50 2011	bz

UCNA Shift Change Checklist Date: September 19, 2011 00:00 Shift Persons: hasan, jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ----------

Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 116.3 psia Tungsten Cool Diff 295.3 psia 1630 eng. 2 temp. 16.03 K 1630 JT temp. 9.03 K 1630 outlet temp. 295.3 K 1630 engine speed 210 rpm 1630 supply press. 243 psig 1630 JT press. 205 psig 1630 return press. 2.3 psig 1630 med. press. stor. 80 psig 1410 engine speed 210 rpm 1410 TE-A 16.3 K 1410 TE-B 6.6 K 1410 TE-E 85.1 K 1410 supply press. 238 psig 1410 JT press. 135 psig 1410 return press. 4 psig 4K dewar pressure 435 mmHg Let Pressure get too high during fill, going down 1K dewar pressure 8.3 psig 4K dewar level 16.84 inHe 1K dewar level 25.54 inHe 4K main flow control 3 V LHe temp. 1 15.4 K Heat exch. temp. 3 246.6 K Poly temp. 2 183.8 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 21.7 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 0 T SCS current 0 A AFP N2 dewar level full SV3 closed SV4 open CM1 pressure 485.9 torr CM5 pressure .3 torr CC1 pressure out of range torr PPM LHe level 81.6 % PPM LN2 level 61 % AFP LHe level 62.2 % AFP LN2 level 42 % PPM current 72(6) A (T) AFP current 0(0) A (T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: - s Proton pulses/burst: - Proton countdown: - Proton pattern width: - ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: --- ========== East Detector Cart ========== MWPC HV 0 V Detectors are out MWPC Trip Hold Status TRIP HOLD East MWPC Temperature - F West MWPC Temperature - F MWPC Pressure - torr N2 - MWPC Differential - torr Neopentane Flow Rate - slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller off Chiller water level <3 ========== West Detector Cart --off ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure - torr N2 - MWPC Differential - torr Neopentane Flow Rate - slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) 0 Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 0 East muon veto HV 2.33 kV West muon veto HV off kV East muon veto rate 1871 Hz West muon veto rate --- Hz Spectrometer vacuum 1.4e-5 Torr disk usage daq account 82%

23578	Wed Sep 21 16:38:09 2011	RRios

Ge Detector Background runs inside SCS: I am setting up labview for tonight's run. All magnets will be on. Labview 0 1001 1101 9000 1001 0100 18000 1001 1001 27000 1001 0000 36000 1001 0000 Phases: 1) 15 minutes, AFP on, GV opened 2) 15 minutes, AFP on, GV closed 3) 15 minutes, AFP off, GV opened 4) 15 minutes, AFP off. GV closed

23577	Wed Sep 21 12:35:01 2011	RRios

Beginning to cool the source Starting Pressure: 1078 Source Voltage: 6V Edit: Voltage now set at 3V

23576	Wed Sep 21 12:26:49 2011	bz

Attached are gamma spectra taken last night with the gate valve closed (I think). Blue is beam on and green is beam off. The is a highly visible high energy line is from neutron capture on iron. Now we need data with UCN in the SCS. I suggest a cycle of 15 minute long runs alternating between gate vale open and gate valve closed and also between afp flipper on and afp flipper off.

Attachment 1: gif

gif

23575	Wed Sep 21 00:05:52 2011	bz

Slowdaq Run 795 C: Ge Detector in bore, Co src, Gain x5 on spec amp Slowdaq Run 796 C: Ge Detector in bore, Co src, Gain x10 on spec amp (Mark's original setting) There is some weird ringing on the oscilloscope, so set up may not be optimal. Additionally, we see a strange shoulder and peak near 0 when running **EDIT** Slowdaq Run 797 C: Co Src removed, background run This spectrum doesn't look noticeably different than the Co src runs, but perhaps a background subtraction will reveal the Co peaks. There are features in the spectrum, however, including a few peaks. Maybe Chris can interpret them. We should work towards obtaining a confirmation that the Ge detector is functioning properly

23574	Tue Sep 20 18:50:48 2011	RRios

Decay Trap Lifetime: 48 seconds

Attachment 1: bmp

23567	Tue Sep 20 09:47:46 2011	MFMakela

23573	Tue Sep 20 06:51:51 2011	JCHoagland

shift overview after discussing with mark via brian, filled the afp then ramped it down at around 2 with brians half open flapper run not working, was set to open at 4 set the beam to 1Hz or 1 pulse every second at 6 ccr tuned to p-rad

23572	Tue Sep 20 02:27:43 2011	bz

Performed a simple flapper test, opening the flapper to different places with the beam off and looking for rises in source temperature or pressure. Found that fully open causes an immediate pressure and temperature rise, But that half or less open causes a temperature rise but no pressure rise Set open position to fully open + 550 in the program (half open), and let it flap noticed no pressure spike in the source (cc1 continued to read approximately 2 e-5 torr even with beam on) still, after about 24 minutes, flapper started stalling and there was a pressure spike in cc1 although a much lower spike best interpretation is that after stall, flapper started to touch source causing spike **EDIT** program wasn't stalling after all. Pressure spike in source didn't correspond to any other deviation in system 4k dewar pressure stable, source voltage stable, but LHe temp went up and pressure went up to tenth of torr range

23571	Mon Sep 19 23:49:05 2011	bz

LOAD LOCK GATE VALVE MAY NOT BE LEAK TIGHT during the vent, noticed that rate of vent was decreasing over time. went in to the area and closed the valve "Load Lock Diff. Pump Valve". Rate went back to normal, indicating that we were pumping on the scs through the load lock differential volume During vent, need to reexamine seating of Gate Valve and attempt to fix

23570	Mon Sep 19 22:52:07 2011	bz

Flapper behavior unchanged. Trying to lower speed or acceleration of flapper does not fix flapper. Evidence of thermal contact between flapper and source persists. We might need to do an extended melt and refreeze in order to solve flapper issues ADDITIONAL: We need to determine a run plan for the next few days and share this with the ucn mailing list.

23568	Mon Sep 19 16:02:18 2011	KPH

West wire chamber is shorting. Venting system...

23569	Mon Sep 19 16:01:49 2011	METeasdale

Source was melted and refroze, 380 mbar. 100 mbar in the tank

23566	Mon Sep 19 12:14:21 2011	Hasan

UCNA Shift Change Checklist Date: September 18, 2011 01:16 Shift Persons: Hasan, Jeff H UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 30 slpm Heater B pressure 13 psia Heater C pressure 13.35 psia Tungsten supply press. 350 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On --- Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 120.4 psia Tungsten Cool Diff 290.8 psia 1630 eng. 2 temp. 14.22 K 1630 JT temp. 6.63 K 1630 outlet temp. 267.2 K 1630 engine speed 180 rpm 1630 supply press. 227 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 102 psig 1410 engine speed 210 rpm 1410 TE-A 18.3 K 1410 TE-B 8.2 K 1410 TE-E 92.7 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.7 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.4 inHe 1K dewar level 38.5 inHe 4K main flow control 5.5 V LHe temp. 1 6.2 K Heat exch. temp. 3 206.97 K Poly temp. 2 11.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 0.6831 T SCS current 118.01 A AFP N2 dewar level not empty SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 0 torr CC1 pressure off torr PPM LHe level 82.4 % PPM LN2 level 98.5 % AFP LHe level 87.1 % AFP LN2 level 75.3 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 9.5 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 260 nano s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.0 mA "Beamplot" Capture: .82 ========== East Detector Cart --- OFF--- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 76.3 F West MWPC Temperature 73.6 F MWPC Pressure 100.2 torr N2 - MWPC Differential -10.6 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 1960 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 100 torr N2 - MWPC Differential .5 torr Neopentane Flow Rate 34 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack

East muon veto rate 3521.7 Hz West muon veto rate 0 Hz Spectrometer vacuum 1.37e-5 Torr disk usage daq account 80%

23548	Mon Sep 19 10:43:53 2011	KPH

Saturday daytime summary: > Wire chambers are up and in. Neopentane and N2 is flowing. PMT voltage is on. > West detector is in: - Neopentane and N2 is flowing. - MWPC is not working. - West diff. press. is slightly positive. - West voltage will trip above 1800V. > East detector is up and running: - Neopentane and N2 is flowing. - East PMT LeKroy voltage module is butsed. - We replaced them temperaraly with Ortec Monsters, but now two pairs must share a channel. - At leasst one wire is broken as seen in the picture - E2, E3, E4 Bi pulsers are not visable or are out of range.

Attachment 1: reenshot.png

reenshot.png

23565	Mon Sep 19 06:24:13 2011	JCHoagland

shift overview did not do anyruns for the fact that the source was acting funny the entire night. for some reason even when we were hitting it with over 6 volts on the flow meter, it would still not freeze out. at around 2:30am the flapper started gettting stuck on something so switched to open with beam at 1Hz with one pulse every second. after ccr started tuning to p-rad, i warmed up the sorce a bit and saw that the pressure rose fast even with the temperature in all the source readers below the freezing point of Duterium, from this and the fact that the flipper was getting jammed, i beleived that the duterium was somehow forming ice higher up in the source than we would like, going to try to let the source warm slightly for today to see if the duterium would melt and fall from the flipper into the main source area, if that does not work for tomorrows run, then i think we need to do a complete destroy and recreation of the source before the beam cycle ends.

23564	Mon Sep 19 02:23:37 2011	JCHoagland

flapper not working changing beam to one pulse every second

23563	Mon Sep 19 01:35:43 2011	JCHoagland

UCNA Shift Change Checklist Date: September 19, 2011 00:00 Shift Persons: hasan, jeff UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 60 slpm Heater B pressure 14.22 psia Heater C pressure 13.58 psia Tungsten supply press. 340 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 116.0 psia Tungsten Cool Diff 292.4 psia 1630 eng. 2 temp. 16.04 K 1630 JT temp. 8.31 K 1630 outlet temp. 270.6 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 2.2 psig 1630 med. press. stor. 105 psig 1410 engine speed 210 rpm 1410 TE-A 16.2 K 1410 TE-B 6.4 K 1410 TE-E 91.7 K 1410 supply press. 230 psig 1410 JT press. 130 psig 1410 return press. 3.8 psig 4K dewar pressure 320 mmHg 1K dewar pressure 8 psig 4K dewar level 9.82 inHe 1K dewar level 31.86 inHe 4K main flow control 5.5 V LHe temp. 1 5.25 K Heat exch. temp. 3 194.35 K Poly temp. 2 114.35 K flapper heater cur 0.18 A Flapper Status: working on it Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 99.9 % SCS field 1 T SCS current 118 A AFP N2 dewar level full SV3 closed SV4 closed CM1 pressure -.5 torr CM5 pressure .1 torr CC1 pressure 2.7e-5 torr PPM LHe level 82.2 % PPM LN2 level 85.2 % AFP LHe level 87.0 % (filling) AFP LN2 level 95.4 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): ---- mA "Beamplot" Capture: --- ========== East Detector Cart ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 64.4 F West MWPC Temperature 73.9 F MWPC Pressure 99.7 torr (working on it) N2 - MWPC Differential -1.9 torr Neopentane Flow Rate 10.9 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart --off ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 100 torr N2 - MWPC Differential -6.4 torr Neopentane Flow Rate out of range slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 960 East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 2025 Hz West muon veto rate --- Hz Spectrometer vacuum 2.0e-5 Torr disk usage daq account 81%

23562	Sun Sep 18 16:49:32 2011	APG

---------- Main return flow closed He blower on Heat exchanger flow 30 slpm Heater B pressure 14.1 psia Heater C pressure 13.4 psia Tungsten supply press. 120 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 331 psia Tungsten Cool ret. 120.9 psia Tungsten Cool Diff 293 psia 1630 eng. 2 temp. 14.76 K 1630 JT temp. 7.39 K 1630 outlet temp. 274.3 K 1630 engine speed 210 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.8 psig 1630 med. press. stor. 94 psig 1410 engine speed 210 rpm 1410 TE-A 15.6 K 1410 TE-B 6.4 K 1410 TE-E 89.8 K 1410 supply press. 225 psig 1410 JT press. 125 psig 1410 return press. 3.7 psig 4K dewar pressure 300 mmHg 1K dewar pressure 8 psig 4K dewar level 15.5 inHe 1K dewar level 30 inHe 4K main flow control 6.5 V LHe temp. 1 7.18 K Heat exch. temp. 3 202 K Poly temp. 2 131 K flapper heater cur 0.18 A Flapper Status: working on it Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.3 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 89.6 % SCS field 1 T SCS current 118 A AFP N2 dewar level empty SV3 closed SV4 closed CM1 pressure -.6 torr CM5 pressure 10 torr CC1 pressure out of range torr PPM LHe level 82.3 % PPM LN2 level 89.3 % AFP LHe level 79.6 % (filling) AFP LN2 level 67 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 250 ns TBCM001I03 (H- source current): 15.96 mA "Beamplot" Capture: .82 ========== East Detector Cart ========== MWPC HV 2650 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 66 F West MWPC Temperature 74.3 F MWPC Pressure 86.8 torr (working on it) N2 - MWPC Differential -10.3 torr Neopentane Flow Rate 5 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level <3 ========== West Detector Cart --off ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 4106 Hz West muon veto rate --- Hz Spectrometer vacuum 8.5e-6 Torr disk usage daq account 81%

23561	Sun Sep 18 13:45:15 2011	DAQ On-line

09/18 13:45 Start Run 13688 UCN0030 2011 UCN

23560	Sun Sep 18 12:47:49 2011	ASaunders

Slowdaq Run 792, Fastdaq Run 16483: Adam Polarimetry 2.1 Trapped Lifetime Labview Settings: 0 1001 1001 10000 1001 0010 10300 1001 0110 40000 1001 1101 50000 1001 0110 50300 1001 0010 80000 1001 1001

23559	Sun Sep 18 12:29:51 2011	ASaunders

we have run UCNs into the SCS and measured the rate in the east detectors only. For comparisomn, here are the rates from run 14901, which was a beta off data run from last November 7 (2010), just before the guide incident: Run 14901: East Rate = 19.208 +- 0.126 Hz West Rate = 20.446 +- 0.131 Hz GV monitor rate = 25.0 Hz, SCS monitor rate = 0.0 Hz, Foil monitor rate = 11.1 Hz Foil/GV ratio = 0.4423 SCS/GV ratio = 0.0000 (E+W)/GV ratio = 1.5851 Here are the results from the run we just completed: Run 16481: East Rate = 14.988 +- 0.152 Hz West Rate = 0.000 +- nan Hz GV monitor rate = 14.6 Hz, SCS monitor rate = 3.9 Hz, Foil monitor rate = 7.5 Hz Foil/GV ratio = 0.5093 SCS/GV ratio = 0.2692 (E+W)/GV ratio = 1.0242 So, it looks like the beta decay to gate valve ratio is ~34% higher than last year. (1.024* (1+20.446/19.208)/1.58=1.34 Note though that the muon vetos are turned off now.

23558	Sun Sep 18 10:28:54 2011	ASaunders

Slowdaq Run 791, Fastdaq Run None: Adam Polarimetry 2.1 Trapped Lifetime Labview Settings: 0 1001 1001 10000 1001 0010 10300 1001 0110 40000 1001 1101 50000 1001 0110 50300 1001 0010 80000 1001 1001 this run is junk due to no beam

23557	Sun Sep 18 09:15:24 2011	ASaunders

UCNA Shift Change Checklist Date: September 18, 2011 08:00 Shift Persons: Saunders, Hickerson UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed returning thru 1630? He blower on Heat exchanger flow 30 slpm Heater B pressure 14.2 psia Heater C pressure 13.6 psia Tungsten supply press. 340 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On --- Tungsten Cool supp. 332 psia Usual target pressure creep: pending disaster? Tungsten Cool ret. 114 psia Tungsten Cool Diff 293 psia 1630 eng. 2 temp. 15.0 K 1630 JT temp. 7.6 K 1630 outlet temp. 269.7 K very close to good range 1630 engine speed 205 rpm 1630 supply press. 240 psig 1630 JT press. 196 psig 1630 return press. 2.3 psig 1630 med. press. stor. 98 psig 1410 engine speed 210 rpm 1410 TE-A 15.7 K 1410 TE-B 6.2 K 1410

22.5 inHe 4K main flow control 6.5 V LHe temp. 1 5.2 K Heat exch. temp. 3 196 K Poly temp. 2 97 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8

23556	Sun Sep 18 08:46:24 2011	KPH

UCNA Shift Change Checklist Date: September 18, 2011 0800h Shift Persons: Hickerson, Saunders Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 95.4 % SCS field 0.6839 T SCS current 118.01 A AFP N2 dewar level not empty SV3 closed SV4 closed CM1 pressure 0 torr CM5 pressure 0 torr CC1 pressure 3.9E-5 torr PPM LHe level 82.4 % PPM LN2 level 93.2 % AFP LHe level 97.6 % AFP LN2 level 92.1 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off BEAM IS OFF. These are the most recent values from before beam outage. Proton burst spacing: 5.0 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.5 mA "Beamplot" Capture: .82 ========== East Detector Cart --- ON --- ========== MWPC HV 2700 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 70.0 F West MWPC Temperature 71.3 F MWPC Pressure 99.7 torr N2 - MWPC Differential -10.7 torr Too high!! I'm working on it. Not much luck. Will consult with Tito Neopentane Flow Rate 13.1 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H2O Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 1900 V Too low!! I'm workign on it. Voltage can go up after 2 days. MWPC Trip Hold Status TRIP HOLD MWPC Pressure 100.0 torr N2 - MWPC Differential .4 torr Neopentane Flow Rate 35 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) on East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 1936 Hz West muon veto rate 0 Hz Spectrometer vacuum 1.36e-5 Torr disk usage daq account 81%

23555	Sun Sep 18 07:07:59 2011	JCHoagland

ccr has to turn off the beam agian to do some work on the beam line so we will be with no beam for the next hour or so

23554	Sun Sep 18 04:17:39 2011	JCHoagland

run 790 on chris daq is bad cause the beam died during about the 2nd cycle

23553	Sun Sep 18 03:52:30 2011	JCHoagland

beam died at around 2:30am

23552	Sun Sep 18 02:10:27 2011	Hasan

Slowdaq Run 790, Fastdaq Run 16455: Adam Polarimetry 2.1 Trapped Lifetime Labview Settings: 0 1001 1001 10000 1001 0010 10300 1001 0110 40000 1001 1101 50000 1001 0110 50300 1001 0010 80000 1001 1001

23551	Sun Sep 18 01:37:40 2011	Hasan

UCNA Shift Change Checklist Date: September 18, 2011 01:16 Shift Persons: Hasan, Jeff H UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 30 slpm Heater B pressure 13 psia Heater C pressure 13.35 psia Tungsten supply press. 350 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On --- Tungsten Cool supp. 331.7 psia Tungsten Cool ret. 120.4 psia Tungsten Cool Diff 290.8 psia 1630 eng. 2 temp. 14.22 K 1630 JT temp. 6.63 K 1630 outlet temp. 267.2 K 1630 engine speed 180 rpm 1630 supply press. 227 psig 1630 JT press. 190 psig 1630 return press. 1.2 psig 1630 med. press. stor. 102 psig 1410 engine speed 210 rpm 1410 TE-A 18.3 K 1410 TE-B 8.2 K 1410 TE-E 92.7 K 1410 supply press. 240 psig 1410 JT press. 155 psig 1410 return press. 3.7 psig 4K dewar pressure 290 mmHg 1K dewar pressure 7.5 psig 4K dewar level 11.4 inHe 1K dewar level 38.5 inHe 4K main flow control 5.5 V LHe temp. 1 6.2 K Heat exch. temp. 3 206.97 K Poly temp. 2 11.8 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.0 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 99.8 % SCS field 0.6831 T SCS current 118.01 A AFP N2 dewar level not empty SV3 closed SV4 closed CM1 pressure 1.2 torr CM5 pressure 0 torr CC1 pressure off torr PPM LHe level 82.4 % PPM LN2 level 98.5 % AFP LHe level 87.1 % AFP LN2 level 75.3 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 9.5 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 260 nano s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 260 ns TBCM001I03 (H- source current): 14.0 mA "Beamplot"

Temperature 73.6 F MWPC Pressure 100.2 torr N2 - MWPC Differential -10.6 torr Neopentane Flow Rate 12.9 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level 1 ========== West Detector Cart ========== MWPC HV 1960 V MWPC Trip Hold Status TRIP HOLD MWPC Pressure 100 torr N2 - MWPC Differential .5 torr Neopentane Flow Rate 34 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) 2150 East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 3521.7 Hz West muon veto rate 0 Hz Spectrometer vacuum 1.37e-5 Torr disk usage daq account 80%

23550	Sun Sep 18 00:10:43 2011	bz

Slowdaq Run 789, Fastdaq Run 16453 Adam's Polarimetry Runs #1: Lifetime Labview Settings: 0 1001 1001 20000 0001 1010 50000 1001 1101 70000 0001 1110 100000 1001 1001 Load Time: 200 s, Drain Time 300 s. Beam off during drain. Alternating Flipper On and Flipper Off Some problems with source pressure getting to e-3 during the run. Source flow too low to maintain frozen source with 4k dewar <6.5 psi and source voltage < 6 V

23549	Sun Sep 18 00:06:40 2011	bz

UCNA Shift Change Checklist Date: September 17, 2011 16:00 Shift Persons: APG, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 30 slpm Heater B pressure 14.2 psia Heater C pressure 13.57 psia Tungsten supply press. 125 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 is not there? Compressor 2 On off Tungsten Cool supp. 331 psia Tungsten Cool ret. 120.9 psia Tungsten Cool Diff 293 psia 1630 eng. 2 temp. 14.86 K 1630 JT temp. 7.51 K 1630 outlet temp. 270.4 K 1630 engine speed 210 rpm 1630 supply press. 240 psig 1630 JT press. 200 psig 1630 return press. 2.4 psig 1630 med. press. stor. 75 psig 1410 engine speed 210 rpm 1410 TE-A 15.8 K 1410 TE-B 6.5 K 1410 TE-E 89.8 K 1410 supply press. 240 psig 1410 JT press. 130 psig 1410 return press. 3.8 psig 4K dewar pressure 340 mmHg 1K dewar pressure 8 psig 4K dewar level 16.98 inHe 1K dewar level 34.05 inHe 4K main flow control 5.7 V LHe temp. 1 5.7 K Heat exch. temp. 3 203 K Poly temp. 2 139 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature 10.2 C AFP frequency 28.494 MHz AFP forward power 0 W SCS LHe level 85.9 % SCS field 1 T SCS current 118 A AFP N2 dewar level not empty SV3 closed SV4 closed CM1 pressure 0 torr CM5 pressure 0 torr CC1 pressure out of range torr PPM LHe level 82.5 % PPM LN2 level 100 % AFP LHe level 93 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.68(7) A (T) AFP chiller sup. pres. 18 psi AFP chiller flow rate 10 gph AFP chiller set point 7 degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 270 ns TBCM001I03 (H- source current): 13.98 mA "Beamplot" Capture: .82 ========== East Detector Cart --- OFF--- ========== MWPC HV 2650 V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature 69 F West MWPC Temperature 72.6 F MWPC Pressure 97.8 torr N2 - MWPC Differential -13.8 torr Neopentane Flow Rate 13.6 slpm East PMT Buck. Curr .34 A East Back. Veto Buck. .5 A H20 Chiller on Chiller water level <3 ========== West Detector Cart ========== MWPC HV 0 V MWPC Trip Hold Status AUTO REST MWPC Pressure 100 torr N2 - MWPC Differential .4 torr Neopentane Flow Rate 3.7 slpm West PMT Buck. Curr. .23 A West Back. Veto Buck. .39 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV 2.34 kV West muon veto HV off kV East muon veto rate 5762 Hz West muon veto rate --- Hz Spectrometer vacuum 1.4e-5 Torr disk usage daq account 80%

23547	Sat Sep 17 16:12:06 2011	RRios

East Side PMTs: It looks like there are three bad power supply channels for PMTs on the east side.

23546	Sat Sep 17 14:59:21 2011	RRios

AFP LN fill valve was fixed. It got unplugged.

23545	Sat Sep 17 14:09:48 2011	ASaunders

melt and refreeze while CCR tunes upstream

23544	Sat Sep 17 13:39:25 2011	RRios

Bucking coils for both the backing veto and beta PMTs were completely disconnected from the power. Looks like some concerned lab employee came around unplugging things. The power supplies all had ESO stickers. West side muon veto det is arching. Turned off voltage.

AFP tune already looks good. The UCN in GV Mon is low but it is climbing. Looks to be beam related as the inclease occured when the beam changed, but the target steering didn't change and temperature didn't incease on the target. confusing. CCR said they were working on something way upstream.

Attachment 1: _Beam.bmp

23542	Sat Sep 17 12:28:19 2011	RRios

Will be doing AFP tuning with Andy. AFP is fine. No reflected power is a good thing.

23540	Sat Sep 17 12:26:44 2011	RRios

At the moment we are filling the AFP magnet because the 1K dewar level is reaching its maximum. Run 786 is continuing to run, will need to get back to figuring out the problem with the spin flipper and why the reflected power is off once filling is done. Kevin is continuing to work on starting up detectors.

23541	Sat Sep 17 12:26:17 2011	RRios

Filled the AFP. I attempted to get the reflected power back on by turning the AFP spinflipper off and on and wiggling some wires. Waiting to hear back from someone who can solve that problem. For the meantime, I will run another lifetime with longer holding time. Kevin has been working on the beta detectors. East looks like it's coming up well. Still will need to get West side up. There were various power cables and gas lines unplugged that were not in the start up procedures.

23538	Sat Sep 17 12:02:27 2011	RRios

Lifetime Measurements: AFP (on vs off) All magnets on The Beam is turned on only during load time. (The timing is triggered by H-GX) Run AFP Load(s) Hold(s) Unload(s) Cycles Notes 785 Off 80 80 30 17 Unload time is used to remove UCN in Decay trap. Open shutter and drain to switcher detector for 30s. 786 On 80 80 30 19 RF on spinflipper was off. 787 Off 80 160 30 8 Flipped on the AFP during last cycle.

23539	Sat Sep 17 10:07:10 2011	RRios

Upon starting run 786 lifetime with AFP on, I noticed that the reflected power on the spin flipper was off.

23537	Sat Sep 17 08:15:04 2011	KPH

Attempted to fill detectors. Miscalibration of West MKS showed overload on diff pressure. East end diff. pressure also had problems: crept up to 35torr. We stoped the fills. Connected volumes and repumped down. Should be safe in this state until tomorrow. SCS is ramped. AFP is ramped. Run plan for rest of the night: 1. Have CCR tune 2. insert decay plug. 3. test AFP 4. measure rates in SCS mon 5. measure lifetime with AFP on/off.

23536	Sat Sep 17 06:51:12 2011	JCHoagland

with the afp fully charged up it appears that the switch that determines the auto fill gets stuck open if it is ever open in the field, to fill the afp with nitrogen you must open the dewar then close the dewar to full untill we ramp down the afp

23535	Sat Sep 17 03:55:12 2011	bz

Run 784: Transmission and Background (Beam on) test 10 minutes of GV open/Shutter open followed by 10 minutes of both closed, beam always on, alternating spin flipper off and on Labview Settings: 0 1001 1001 60000 0001 1010 120000 1001 1101 180000 0001 1110 240000 1001 1001 Test background in SCS with spin flipper on and off and beam on so we can extract true rate

23534	Sat Sep 17 03:32:36 2011	bz

Load lock Gate Valve appeared to be reversed? Plugging in supply closed GV, while unplugging opened. Switched air hoses into gate valve, now gate valve appears to be functioning normally. Spin Flipper tested for lowest reflected power - 28.494 MHz appears to be the low. We have connected it to Labview so it can be controlled with any of Raymond's programs. Pressure in the system took a while to fall but now appears to be at acceptable levels The decay trap plug was DEFINITELY IN for tonight's runs. Early results are that the rates in the SCS aren't very nice with the magnets ramped Run 781: Flipper off lifetime Load Time 90s Drain Time 90s Labview Settings: 0 10011001 9000 00011010 18000 10011001 Run 783: Flipper on lifetime Load Time 90s Drain Time 90s Labview Settings: 0 10011101 9000 00011110 18000 10011101

Attempted to fill detectors. Miscalibration of West MKS showed overload on diff pressure. East end diff. pressure also had problems: crept up to 35torr. We stoped the fills. Connected volumes and repumped down. Should be safe in this state until tomorrow. SCS is ramped. AFP is ramped. Run plan for rest of the night: 1. Have CCR tune 2. insert decay plug. 3. test AFP 4. measure rates in SCS mon 5. measure lifetime with AFP on/off.

23532	Fri Sep 16 12:26:39 2011	KPH

Tested East and west wire chambers by applying 200V on the ground as we vent the SCS. Did not see any ohmic current indication that the planes are not touching or shorted.

23531	Fri Sep 16 09:46:02 2011	CLMorris

I have fit the lifetimes from the two runs above and get ~35 sec. I think that the 150 sec loading/150 sec counting run fit over estimates the background and gives too short a lifetime.

Attachment 1: time.gif

time.gif

23530	Fri Sep 16 01:49:14 2011	bz

Run 778: Transmission and Background Study Labview Settings: 0 1001 1001 60000 0001 1000 120000 1001 1001 2 cycles of 10 minutes on, 10 minutes off to establish continuous rates of UCN in SCS and Background with Beam on

23529	Fri Sep 16 01:47:14 2011	bz

Run 777: Lifetime Study Labview Settings 0 1001 1001 15000 0001 1000 30000 1001 1001 Load Time 150 s Drain Time 150 s Beam not off during drain, just GV closed and Shutter Closed 13 cycles because one or two corrupted by bad beam

23528	Thu Sep 15 22:50:03 2011	bz

Good News: System pumped down very quickly after turbos on (based on SCS ion gauge and Switcher Convectron). Load Lock Gate Valve system appears to be functioning nominally - pressure test passed, function test passed. Bad News: CC gauge on Switcher stopped working, so no good read on pressure in Switcher. Bleed Line appears to be blocked or extremely poor conductance. TC6 which monitors pressure in load lock appears to be very poorly calibrated and also works badly TC6 is easily replaceable - it's a varian thermocouple on a KF40 fitting and can be replaced at a vent CC gauge on switcher may not be the problem - instead, the control card on the Multigauge may be the problem Otherwise, vacuum system ready to go, vacuum nominal, load lock nominal

23527	Thu Sep 15 12:53:13 2011	RRios

The loadlock Gate Valve malfunctioned. A part of the o-ring which seals the GV plate closed came out of its secured o-ring slot. Looking into the GV chamber with Boriscope and at the circular entrance where the GV plate attaches shows no physical cause for the malfuntion. The Circular entrance is flat on all sides without any nicks.

23526	Wed Sep 14 10:47:08 2011	EIC

The SCS lifetime appears to be ~30 seconds from the data taken a couple nights ago (run 23). I think this means we either have a big gap somewhere or the SCS guides have gone bad.

Attachment 1: GIF

GIF

23525	Wed Sep 14 00:18:12 2011	bz

Shutter adjustment complete - shutter was not swinging to correct position at open, but roughly correct for closed. When open, approximately 1/5 or so of square guide obstructed Hopefully this increases our SCS rate

23524	Tue Sep 13 12:36:51 2011	MFMakela

Source main return coming back through the 1630 liquifier. Main return valve closed.

23523	Tue Sep 13 01:44:36 2011	RRios

cycles.?

23522	Tue Sep 13 01:09:11 2011	RRios

Raised up the Gas cylinder detector closer to the center. ~2-in short of center. 10 minutes beam on, Gate Valve open 10 minutes beam on, Gate Valve closed run 758

23521	Tue Sep 13 00:17:42 2011	RRios

Gas cylinder Neutron detector in the bore of the magnet run 757 Ran for 10 Cycles

23520	Mon Sep 12 20:44:40 2011	bz

September Run 757: 3He monitor and ucn monitors 10 minutes of beam on, GV open, Shutter open 10 minutes of beam on, GV closed, Shutter open cycling for an extended period

23519	Sun Sep 11 23:20:33 2011	bz

run 29 - beam on, GV and Shutter closed, DT plug out run 30 - beam on, GV and Shutter open, DT plug out run 31 - beam on, GV and Shutter open, DT plug in run 32 - beam off, GV and Shutter open, DT plug in last run may have problem because gate might only have been activated by H-GX, so no data rate was 0

23518	Sun Sep 11 19:04:01 2011	MFMakela

Setting up 3He detector to replace Ge (not working) in SCS. 1.8 mbar 3He in short tube, Ortec 142PC preamp, Ortec 672 Spec amp 2us shaping, 1000 VDC on tube. SCS_3He_D1-run025 is a Cf 252 calibration outside SCS run. Data should be in list mode. Beam is on. SCS_3He_D1-run026 is a Cf 252 calibration inside SCS run. Data should be in list mode. Beam is on, ucn gatevalve closed. SCS_3He_D1-run027 is a background run, beam on, GV closed. The ADC has not been gates for H-GX, testing gating now. SCS_3He_D1-run028 is a background run, beam on, GV closed. Gate? SCS_3He_D1-run029 : with a source, beam on, GV closed.

23517	Sun Sep 11 05:18:27 2011	bz

1630 stopped making liquid as efficiently around 2 AM, was pushing off excessively to Medium Pressure Storage tried opening green valve to stop it, didn't help, so decided to stop beam and back off source to preserve LHe levels Source at 4.7 V, beam off, 1630 making liquid, as is 1410. Gate Valve closed, air to gate valve unplugged, voltage to gate valve unplugged gate valve to PPM foil volume is NOT filled with argon, do not vent

23516	Sun Sep 11 03:03:39 2011	bz

Run #24: Approximately 10 minutes of Decay Trap plug in, followed by approximately 10 minutes of decay trap plug out GV Open, Shutter Open, Switcher Thru Testing whether decay trap plug out increases rate - preliminary results indicate that it actually lowers rate. ADDITIONAL IMPORTANT COMMENT: Adrian and I noticed that when you tap on the gauges of the high voltage supply for the SCS detector the rate drops to 0 and takes several seconds to recover.

23515	Sun Sep 11 00:55:03 2011	bz

SCS Storage - Switcher Drain: Labview Setting: 0 1001 1001 8000 0001 0010 9500 1001 0010 15500 1001 1001 23500 0001 0010 26500 1001 0010 34500 1001 1001 42500 0001 0010 47000 1001 0010 53000 1001 1001 61000 0001 0010 67000 1001 0010 73000 1001 1001 Run # 23 Load Time 80 s Shutter Drain Time 60 s SCS Holding Time cyclic in steps of 15s from 15s to 60 s

23514	Sun Sep 11 00:16:07 2011	MFMakela

Ge-Detector: 1) jacket on the dewar was cold and wet, the LN2 boiled out fast. We pumped out the insulating vacuum. 2) refilled and all seems normal 3) applied HV and looked at the spectrum, all looked good out of the field 4) stops working at 4000VDC, under this it is stable. 4) put it back in the SCS, took some data them stopped, signals come back after playing with the voltage but then stop. 5) moving electronics out of field and testing again..

23513	Sat Sep 10 23:28:32 2011	RRios

Decay traplife Lifetime: Labview Setting: 0|1001 1001 8000|0001 0010 16000|0001 0000 Run number load (s) Hold (s) Drain cycles 020 80 80 N/A

23512	Sat Sep 10 20:18:40 2011	MFMakela

Reset valves on engine 2 was loose, now a litle tight. Engine 1 tight.

since the 1630 does not apper to be keeping up with the source production and scs boil off, we have decied to not ramp up the afp at this time, instead we will test out the shutter ability to keep the life time in the ramped up scs with the shutter keeping the ucn in the scs as opposed to the spin flipper doing that. after this we will try to save up liquid so that we can tune the afp spin flipper so that we may do a lifetime run with just the spin flipper and then one more with both the spin flipper and the shutter working.

23510	Sat Sep 10 14:01:33 2011	MFMakela

Increased source flow to 4 VDC

23509	Sat Sep 10 05:59:52 2011	MFMakela

MPS low Raied sourceflow 4K dewar pressure low closed return some Precooled line for He to MPS, 1000l MPS still to low for 1410 Starting SCS fill from 4000l

23508	Fri Sep 9 11:40:44 2011	MFMakela

Both heaters (B and C) magnets are going into manifold 3 (1410 liqufier).

23507	Fri Sep 9 11:35:49 2011	MFMakela

AFP full (MPS spiked) 1000 liter at 9.7 inches Used about 550 liters to cool/fill <2 hrs

23505	Fri Sep 9 11:34:25 2011	MFMakela

AFP temp 1.73 Ohms Starting AFP fill Temp dropped to 1.56 Ohms ~27 inches in 1000 liter dewar (filling from this) Resetting 1630 for LHe production Source off until we have enough liquid for magnets

23506	Fri Sep 9 10:36:23 2011	MFMakela

1000 liter dewar level plot

Attachment 1: Level.jpg

Level.jpg

23504	Fri Sep 9 03:01:57 2011	MFMakela

The AFP is cooling with He gas, started around 5 pm.

23503	Wed Sep 7 23:59:49 2011	ARYoung

Pressures in source got quite high (burp), CC1 was E09, but now falling to 8x10^-5 and continuing to fall

23502	Wed Sep 7 23:58:50 2011	ARYoung

Transmission test: fast daq readout: SCS monitor was about 4, GV mon about 10 with shutter open into SCS decay trap plug is open Chris's daq readout: SCS monitor was about 8, GV mon about 100.

23501	Wed Sep 7 23:18:43 2011	ARYoung

Pump out region between gatevalve and PPM foil P on 10^-5 scale...but when SV4 closed, went up to 10^-3 torr in about 10s Apparently this is "normal" P=5.4x10^-5 open GV, P dropping rapidly to P=2.1x10^-5 close SV4 P rising to 1.3x10^-4 in about 10s, stabilized at about 1.4x10^-4 Try operating UCN detectors

23500	Wed Sep 7 17:21:19 2011	ARYoung

AFP pumpdown: pumpout AFP exhaust line vacuum jacket: 5:20 vacuum in line before opening actuator to vacuum jacket = 0.9 mtorr 5:21 open actuator to exhaust line vacuum P = 2.6 mtorr, pumping back out vacuum good in exhaust line vacuum jacket...

23499	Tue Sep 6 10:30:38 2011	MFMakela

Turned source down to 5 VDC, pulling mps down a little.

23498	Mon Sep 5 13:55:46 2011	bz

system is reassembled, pumping down via scroll pump. No torr sized leaks in the morning,

coupler is poor - misalignment in AFP bore? May need to realign Fe Foil Monitor guide P.S. currently, CC1 is the switcher gauge, CC2 is the source gauge

23497	Sun Sep 4 22:05:03 2011	GEHogan

Restarted Lakeshore readout

23496	Sun Sep 4 18:51:29 2011	JCHoagland

after source is made have 154.6 mbarr in tank so 1157.6-154.6=1003.0 mbarr in source right now getting a rate of around 220Hz with flapper going in the GV monitor fast daq run # 16428

23495	Sun Sep 4 16:18:03 2011	JCHoagland

opened valves to lead zepplin pressure at 23 psi

23494	Sun Sep 4 12:45:22 2011	JCHoagland

opening check valve by pass to create full source

23493	Sun Sep 4 12:43:23 2011	JCHoagland

pressure is returning after initially dropping so stabilization test is good (the sourse is not leaking out of the gas cart downstairs system) getting temperature back to all above 17K except for LHe1

23492	Sun Sep 4 12:37:22 2011	JCHoagland

flapper open LHe1 at 13.6K all others above 17K opening check valve bypass with a puff to check stability

23491	Sun Sep 4 12:28:00 2011	JCHoagland

starting source creation closed sv3 and mv6 confirmed green valve open confirmed sv4 closed and cc1 off and gv1 closed initial d2 in tank is 1157.6 mbarrs setting temperature so only LHe1 is below 17K

23490	Sat Sep 3 14:29:38 2011	JCHoagland

closed the valve going to the lead zepplin helium tank so that the pressure in it would not get above 30 psi, closed it at ~20 psi so that should be the tank pressure

23489	Fri Sep 2 20:25:57 2011	bz

tried to put a very small amount of vacuum grease on all four o-rings when pumped down again, pumped down slowly - may have poorly seated one of the o-rings If poor vacuum in morning, need to check o-ring seating on bellows

23488	Fri Sep 2 17:34:51 2011	MFMakela

SV3 and MV6 open, Turbo on. OK to cool source in this configuration Close valves before filling with D2.

23487	Fri Sep 2 16:36:27 2011	MFMakela

KNF off 166 mbar in source 1168 in source (last reading 1182 in tank) Pumping D2 out of source (down stairs) MV6 OPEN Main turbo - on Closing Orange valve and warming source. Closed SV3 and MV6, Added Ar gas to the source (warming up ~12 torr)

23486	Fri Sep 2 13:15:09 2011	MFMakela

KNF pump on - pumping D2 into the tank. Keeping source cool to distill it.

23485	Fri Sep 2 11:47:23 2011	CLMorris

Time spectrum of betas from a vanadium foil irradiated at the little b port last night.

Attachment 1: Level.jpg

Level.jpg

23484	Fri Sep 2 10:21:37 2011	bz

23483	Fri Sep 2 08:58:58 2011	MFMakela

Warming up source some to pull down medium pressure storage to fix patch leak.

23482	Wed Aug 31 17:04:27 2011	RRios

Voltage to source: 6V to keep medium pressure storage up.

23481	Wed Aug 31 09:09:08 2011	MFMakela

Shutting off the 1630 for several minutes to check the break. Dumping tomedium pressure storage.

23480	Tue Aug 30 18:39:07 2011	bz

AFP side seems to be leak free? Can't locate a potential leak on the AFP side anymore, but can't pull down to e-5 vacuum. Will pump overnight, and check in morning. Will also reconstruct shutter in morning, if vacuum in AFP is satisfactory, then will reassemble entire apparatus and pump down (perhaps multiple pumps and purges with Argon).

23479	Sun Aug 28 19:23:13 2011	bz

Finally lowered the Fe Foil Monitor vertical guide, discovered that the bellows corresponding to the compression fitting identified by Mark is damaged in a potentially leaky way. We are going to try to figure out how to replace the bellows without removing the AFP. **Edit 19:21** We have removed the damaged bellows by carefully feeding the rf cable through the bellows and slowly and carefully removing the bellows from the AFP cross.

23478	Thu Aug 25 18:52:31 2011	bz

SCS pumps down to low e-5 Torr range, according to ion gauge. AFP to PPM has a leak of some kind, which causes the system to gain about .01 Torr/sec approximately. One of the inner compression fittings was loose, got tightened, but system still leaky. Will perform a leak check in the morning, try to confirm if we'll need to pull out the spin flipper.

23477	Wed Aug 24 16:10:21 2011	ASaunders

We are very sure the decay trap plug was NOT inserted for last night's measurements.

23476	Wed Aug 24 10:16:01 2011	CLMorris

Some results from last PM. Detectors are working-rates seem reasonable-source needs work. SCS off GV off

Attachment 1: Level.jpg

Level.jpg

23475	Wed Aug 24 01:43:30 2011	bz

Decay Trap Lifetime run fill Drain Cycles 736 80s 80s 4 737 80s 160s 7 with long background afterwards 738 Background beam on, GV closed, All in Midas Run 16424

23474	Fri Aug 19 23:50:16 2011	bz

Switcher detector attached. New Gauge has wrong set of pins for ion gauge cables in use, so not installed. Attempted SCS pumpdown through needle valve, pumpdown unsuccessful. There is now a large leak in the system. The most probable source of the leak is the switcher detector. Leak is on the order of .1 torr per second. Also check the east end decay trap flange. Will return in the morning to give it another shot.

23473	Thu Aug 18 22:02:58 2011	bz

We've connected everything but the switcher detector and have pumped down the system. Right now, the system is at ~3 e-3 torr and (probably?) dropping, but we have no working cold cathode or ion gauge in the system, so we aren't able to tell exactly where we are. We are going to let the turbos run overnight in an effort to let the system outgas. In the morning, we'll reattach the switcher detector as well and put in a better gauge, and if that's successful, we can potentially put in the replacement beryllium foils tomorrow. In addition, we have the 1630 running, and so we will hopefully be able to run a source tomorrow for the initial transmission tests.

EMS stopped working after password changed. Did logoff/on on all EMS computers and got things working again.

23471	Wed Aug 17 16:23:09 2011	DAQ On-line

08/17 16:22 Start Run 13686 UCN0030 2011 UCN
08/17 16:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13686	0	0.00000E+00	0	0.00000E+00
Batch started at 13686	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13686	0	1.	1.	0.	1.	0.50	0.71
13686	1	0.	0.	0.	0.	0.00	0.00
13686	2	0.	0.	0.	0.	0.00	0.00
13686	3	0.	0.	0.	0.	0.00	0.00
13686	10	0.	0.	0.	0.	0.00	0.00

23470	Wed Aug 17 13:03:03 2011	KPH

Attachment 1: eenshot.bmp

23469	Wed Aug 10 14:50:43 2011	GEHogan

EMS Stopped this morning, presumably by accident. Restarted.

23468	Wed Aug 10 14:49:28 2011	bz

SCS Evacuation continued: Opened the VCR tree and found that there was a lot of contamination. Tried to clean it as best we could and reassemble, realized that the VCR part of the manifold did not cleanly couple to the KF part of the manifold. Attached bellows to VCR part, tried a leak check, found a sizable leak in the bottom of the VCR manifold closest to the KF Bellows. Need to completely take apart, reassemble VCR part, hopefully using new washers.

23467	Mon Aug 8 17:03:46 2011	DJS

UCNA Shift Change Checklist Date: August 8, 2011 4:56 pm Shift Persons: Daniel Salvat, Brian Zeck, Raymond Rios, Sky Sjue UPSTAIRS Name Value Comment (Req'd for out of good range) ------- --------- ---------- ---------- Main return flow open He blower off Heat exchanger flow 0 slpm Heater B pressure 6.95 psia Heater C pressure 12.45 psia Tungsten supply press. 100 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 104.7 psia Tungsten Cool ret. 103.8 psia Tungsten Cool Diff -0.3 psia 1630 eng. 2 temp. 12.2 K 1630 JT temp. 7.05 K 1630 outlet temp. 272.4 K 1630 engine speed 200 rpm 1630 supply press. 235 psig 1630 JT press. 195 psig 1630 return press. 2 psig 1630 med. press. stor. 45 psig 1410 engine speed 0 rpm 1410 TE-A 69.4 K 1410 TE-B 104.9 K 1410 TE-E 95.8 K 1410 supply press. 235 psig 1410 JT press. 115 psig 1410 return press. 3.8 psig 4K dewar pressure 290 mmHg 1K dewar pressure 4.5 psig 4K dewar level 25.45 inHe 1K dewar level 15.37 inHe 4K main flow control 0 V LHe temp. 1 over K Heat exch. temp. 3 306 K Poly temp. 2 over K flapper heater cur off A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature off C AFP frequency 25.516 MHz AFP forward power off W SCS LHe level off % SCS field off T SCS current off A AFP N2 dewar level empty SV3 closed SV4 closed CM1 pressure 845.1 torr CM5 pressure 606.7 torr CC1 pressure out of range torr PPM LHe level 95.3 % PPM LN2 level 100 % AFP LHe level off % AFP LN2 level 0 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point N/A degC AFP

- ========== East Detector Cart --- OFF--- ========== MWPC HV off V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature off F West MWPC Temperature off F MWPC Pressure off torr N2 - MWPC Differential off torr Neopentane Flow Rate off slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status reset MWPC Pressure off torr N2 - MWPC Differential off torr Neopentane Flow Rate off slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV off kV West muon veto HV off kV East muon veto rate 0 Hz West muon veto rate 0 Hz Spectrometer vacuum 530 Torr disk usage daq account 80%

23466	Mon Aug 8 10:14:27 2011	bz

In order to run a leak check, I need to vent the SCS. I'm performing a controlled vent with Argon currently. The reason I need to vent the SCS is because I can't figure out how to close the load lock gate valve. It appears to be receiving the correct 24V signal, but when I unplug the supply, the gate valve does not close. So current status: 1. SCS has major leaks of undetermined origin that prevent us from getting past the e-1 torr region. I have pulled the leak detector over by the load lock tree in an effort to begin leak checking, but need to vent the SCS in order to attach the leak checker at the tree. I am attaching the leak detector there because the main scroll pump doesn't appear to have an exhaust valve that would allow me to leak check through it. 2. The gate valve at the load lock system may be malfunctioning. It has 80 psi of air and it has a 24 volt supply attached (I've checked the signal, and it is 24 volts). However, turning off the signal appears to have no effect. It may be that the gate valve is jammed in the open position, or simply that I don't know how to operate it.

23464	Sun Aug 7 20:25:36 2011	bz

SCS Decay Trap volume is now being pumped on successfully. Pumping is going at .1 Torr/sec max as a matter of caution, and we are down to ~175 Torr. When the valves between the scroll pump and scs are closed, the pressure climbs at a rate of ~.02 Torr/sec, which is a sizable leak but then there are many seals to consider. We will finish roughing overnight and then turn on the turbos in the morning and see what pressure we can achieve. **EDIT 8-7-11 8:17 PM** Turned off turbos as they were running pretty hot and we were only able to pump to the e-1 torr range. Will turn them back on to run a leak check.

23465	Sun Aug 7 16:11:51 2011	DJS

UCNA Shift Change Checklist Date: August 7, 2011 4:00 pm Shift Persons: Daniel Salvat, Brian Zeck UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower off Heat exchanger flow 10 slpm Heater B pressure 13.20 psia Heater C pressure 15.1 psia Tungsten supply press. 100 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 105.4 psia has been rising lately Tungsten Cool ret. 104.4 psia Tungsten Cool Diff -0.3 psia 1630 eng. 2 temp. 284 K 1630 JT temp. 285 K 1630 outlet temp. 294 K 1630 engine speed 0 rpm 1630 supply press. 50 psig 1630 JT press. 0 psig 1630 return press. 0 psig 1630 med. press. stor. 140 psig 1410 engine speed 0 rpm 1410 TE-A 292 K 1410 TE-B 285 K 1410 TE-E 276 K 1410 supply press. 250 psig 1410 JT press. 0 psig 1410 return press. 2.1 psig 4K dewar pressure 230 mmHg 1K dewar pressure 3 psig 4K dewar level 25.7 inHe 1K dewar level 11.7 inHe 4K main flow control 0 V LHe temp. 1 over K Heat exch. temp. 3 306 K Poly temp. 2 over K flapper heater cur off A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status open Switcher status thru AFP temperature off C AFP frequency 25.516 MHz AFP forward power off W SCS LHe level off % SCS field off T SCS current off A AFP N2 dewar level empty SV3 closed SV4 closed CM1 pressure 845 torr CM5 pressure 609.2 torr CC1 pressure out of range torr PPM LHe level 95.8 % PPM LN2 level 25 % AFP LHe level off % AFP LN2 level 0 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. 0 psi AFP chiller flow rate 0 gph AFP chiller set point N/A degC AFP chiller level light Off Proton burst spacing: N/A s Proton pulses/burst: N/A Proton countdown: N/A Proton pattern width: N/A ns TBCM001I03 (H- source current): N/A mA "Beamplot" Capture: --- ========== East Detector Cart --- OFF--- ========== MWPC HV off V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature off F West MWPC Temperature off F MWPC Pressure off torr N2 - MWPC Differential off torr Neopentane Flow Rate off slpm East PMT Buck. Curr off A East Back. Veto Buck. off A H20 Chiller off Chiller water level 0 ========== West Detector Cart ========== MWPC HV off V MWPC Trip Hold Status reset MWPC Pressure off torr N2 - MWPC Differential off torr Neopentane Flow Rate off slpm West PMT Buck. Curr. 0 A West Back. Veto Buck. 0 A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV off kV West muon veto HV off kV East muon veto rate 0 Hz West muon veto rate 0 Hz Spectrometer vacuum 0.6 Torr disk usage daq account 80%

23463	Mon Aug 1 19:58:25 2011	bz

very close (the gaps are small) and the alignment looks good, if not perfect. I will post pictures tomorrow so that people can comment if they think the alignment is not good enough.

23462	Mon Aug 1 19:02:05 2011	bz

There is a really large leak in the roof directly above the switcher area that leaks when it rains.

23461	Mon Aug 1 18:43:09 2011	BPlaster

pcucn16 had been complaining with strange system error messages. Also the automatic replay creation of the root files had stopped running, because the autoanalyzer (which automatically creates the root files) output being written to /tmp/ on pcucn18 was 100% full. I rebooted pcucn16, which solved the system error message problems. I redirected the output of the autoanalyzer to /home/data_analyzed/2011/output by modifying /home/daq/daq_scripts/start_ana

23460	Sun Jul 31 20:27:13 2011	BMV

Measured the gap it is 10 1/16". The instructions for the shutter assembly says to leave a 1/4" to 1/2" gap then move the AFP. I do not like that... but If need be we cut guide to 10" remove the AFP to Switcher guide (upstream) move the AFP and them move back... Lets try this wilthout taking the guides apart and moving the AFP.

23459	Sun Jul 31 15:01:08 2011	EIC

Space between the Rectangular guide to the Fe Monitor guide is 33 3/8". The shutter plate between shutter guide and rectangular guide is about 1/4"then mm worth of space between. The shutter guide is 23 1/8", there is also a transition plate that is 1/8" thick. Therefore we need 33 3/8-1/4-1/8-23 1/8= 9 7/8" piece.

23458	Wed Jul 27 16:03:39 2011	mmendenhall

Albert wanted me to write up a plan for what calibrations data we need to take during the 2011-2012 beta decay run cycle. Below is a summary plan (also posted to the analysis eLog) for what I think we need to do to have a reliable set of calibrations for the upcoming year (suitable for a <~0.4% measurement) -Michael 2011 Calibrations Plan --- Source Calibrations: - At least weekly (e.g. on a Monday after each weekend): we should do a load-lock source position scan. This provides the basic check on gain calibration and linearity. Sources: Sn, Bi, Ce at minimum; as time or a larger source holder permits, other sources (Cd, In, Cs?...) can also be included Take 5-minute runs with the sources at 0.5" position increments across the acceptance (typically ~12 runs) Entire procedure including load-lock operation, will take 2 people about 2 hours, and can be done during the day with beam off. - At least monthly: we should try to get a more comprehensive set of source data Using all available source (Sn, Bi, Ce, Cd, Cs, In) at 0.25" position intervals, 5min runs This can supersede the weekly shorter source scan, or even be done during beam outages when no beta data can be taken. Procedure may take ~4 hours --- Xenon calibrations: - At least weekly, produce a fresh batch of Xe, preferably earlier in the week so there is non-beam time available to take Xe data. Take 30min data at >=1kHz event rate from each batch of freshly-activated Xe to get short-lived components. Take ~24 hours at ~1KHz event rate (two daytimes during beam off) of Xe data to get high-statistics position-sensitive data. This can be done while leaving the DAQ running un-attended, since the automatic-run-restart seems to work fine. for the longer-lived components (low peak, 915keV endpoint) which are important for checking the position dependence of the sensor Kevin may have additional input and preferences about the Xe production schedule, since I think he'll also use it for little-b. --- LED/Photodiode scanner: - The LED/photodiode system should be left continuously scanning as set up at the end of last year (Kevin will set this up again this year). At some point when I am out at LANL, I will work on adding an LED/photodiode plot to the online DAQ plots so people on shift have an easy way to check that this is running. --- Magnetic field probes: Chris' SCS magnetic field hall probe array should continue to be used as late last year, with a hall-probe scan taken and posted to the online logbook every shift (as part of the shift change checklist procedure). Additional scans should be posted, of course, whenever any other changes to the SCS field are made (e.g. after ramping). --- DAQ/electronics maintenance: - People on-shift should keep an eye on the Chris-pulser gain stabilization peak to make sure it stays at ~2700 channels on each PMT. Last year, this seemed to be fairly stable during steady running. Tweaks in PMT HV to change the Chris-pulser peak position should be accompanied by a new source calibration scan. - The wirechamber cathode pedestals should be tuned up approximately monthly. This can be done by one person in ~20 minutes during non-beam time, using a multimeter to check and adjust the baseline level on each of the cathode channels on the breakout box in the rack on each detector stand to 140-160mV. *** Any calibrations-related procedures (including all of the above items) should be copiously documented on the online and paper logbooks. We should add a "2011 Calibrations" category to the online logbook, and be sure to use it for related posts, so it will be easy to find all the source calibrations / Xe runs / DAQ electronics

23457	Tue Jul 26 19:30:14 2011	BMV

The guide system up to the AFP is under vacuum. High 10^-4, believe there is water in the system, plan to leave pumping over night. Chris and Brittney leak checked it. Jeff filled the AFP Scott is working on the Medium Pressure Storage. PLAN TOMORROW and week: Install the Shutter system Get hooked up to the Decay trap. Install Brittney's experiment because we all love Brittney and want her to graduate as soon as possible (wait wouldn't that mean the opposite.... ;-)) Based on the calculations from the two runs of the guides we have a 95% transmission up past the AFP, personally this sounds too good to be true so waiting for verification from Chris. Although looking at the data from Chris from previous entry based on Midas's Fe/GV monitor ratio we are up 50% from before the guide problem. I am hopeful! I think it is time I have a night off! (Let's get out of here and KARAOKE!)

Attachment 1: y_2011_9.xls

23456	Tue Jul 26 13:59:07 2011	bz

MIDAS is broken again and I don't want to fix it - it's corrupting the frontend configuration during runs and until we figure out why and fix it I don't want to keep correcting it everytime we run.

23455	Tue Jul 26 12:33:16 2011	CLMorris

Congratulations all (esp Brittany). It looks like the new transport is far better than even before the guide accident last year. 100 Hz here we come! Fe/GV Nov 2010 0.0192 December 2010 0.0170 July 201 0.0291

23454	Tue Jul 26 12:29:56 2011	bz

So with Chris's help, we managed to pump down enough to get some UCN through to the elephant trunk. Run 16404 in midas contains the data but MIDAS crashed when I tried to stop the run for unknown reasons. We witnessed a gate valve rate of ~140 Hz and an elephant trunk rate of around 1450 Hz, compared to the post PPM rates of ~200 Hz and ~3000 Hz respectively. These are approximate rates, but when scaled appear to indicate a ratio of about 2/3, which is respectable for getting around a corner according to Chris. We'll have better results soon.

23453	Tue Jul 26 11:06:06 2011	DAQ On-line

07/26 11:02 Start Run 13685 UCN0030 2011 UCN
07/26 11:06 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 113	1	2.71235E+13	0	0.00000E+00
Run 13682	78	1.87933E+15	0	0.00000E+00
Batch started at 13674	2555	6.34477E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13685	0	5164297.	11.	11.	11.	11.00	0.00
13685	1	0.	0.	0.	0.	0.00	0.00
13685	2	0.	0.	0.	0.	0.00	0.00
13685	3	0.	0.	0.	0.	0.00	0.00
13685	10	28204.	0.	0.	0.	0.00	0.00

23452	Tue Jul 26 11:02:57 2011	DAQ On-line

07/26 10:02 Start Run 13684 UCN0030 2011 UCN
07/26 11:02 End Run

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 113	1	2.71235E+13	0	0.00000E+00
Run 13682	78	1.87933E+15	0	0.00000E+00
Batch started at 13674	2555	6.34477E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13684	0	5164286.	201.	201.	201.	201.00	0.00
13684	1	0.	0.	0.	0.	0.00	0.00
13684	2	0.	0.	0.	0.	0.00	0.00
13684	3	0.	0.	0.	0.	0.00	0.00
13684	10	28204.	0.	0.	0.	0.00	0.00

23447	Tue Jul 26 10:38:32 2011	bz

Shift rundown connected all guides through the AFP. No problems at switcher - didn't do a very good inspection but all gaps appeared less than 1 mm. Jeff had to push switcher while I made the connection between switcher to AFP and AFP upstream guide, so I'm not sure what the gap is there but it should be small or nothing. During final install, depending on what happens, switcher should not present much of a problem. Can't move switcher by hand - opened switcher temporarily to check for seizing, gaps still small but no seizing evident, closed switcher without making adjustments. had trouble pumping down, found that a kf40 blankoff on switcher was not installed correctly, corrected it and pumped down without difficulty. Will finish pumping down and hopefully get some data on transmission through (ramped down) AFP. **edit 07:16** Even with turbo on, can only achieve 1.5 e-2 at pump. Need to perform a leak check but leak checker is in use? **edit 10:36** Chris dropped by and helped to check for leaks and orings, we finally broke the e-3 barrier, but may be faced with needing to pump for a long time through a long hose before we can take data - we may run out of time.

23451	Tue Jul 26 10:02:51 2011	DAQ On-line

07/26 09:02 Start Run 13683 UCN0030 2011 UCN
07/26 10:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 113	1	2.71235E+13	0	0.00000E+00
Run 13682	78	1.87933E+15	0	0.00000E+00
Batch started at 13674	2555	6.34477E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13683	0	5164085.	196.	196.	196.	196.00	0.00
13683	1	0.	0.	0.	0.	0.00	0.00
13683	2	0.	0.	0.	0.	0.00	0.00
13683	3	0.	0.	0.	0.	0.00	0.00
13683	10	28204.	0.	0.	0.	0.00	0.00

23450	Tue Jul 26 09:02:46 2011	DAQ On-line

07/26 08:02 Start Run 13682 UCN0030 2011 UCN

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 113	1	2.71235E+13	0	0.00000E+00
Run 13682	78	1.87933E+15	0	0.00000E+00
Batch started at 13674	2555	6.34477E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13682	0	5163889.	151723.	0.	5085.	1330.90	908.19
13682	1	0.	0.	0.	0.	0.00	0.00
13682	2	0.	0.	0.	0.	0.00	0.00
13682	3	0.	0.	0.	0.	0.00	0.00
13682	10	28204.	1130.	1.	10.	9.91	0.85

23448 | Tue Jul 26 08:02:41 2011 | DAQ On-line

07/26 07:02 Start Run 13681 UCN0030 2011 UCN
07/26 08:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 349	1	2.40908E+13	0	0.00000E+00
Run 13681	166	4.21716E+15	0	0.00000E+00
Batch started at 13674	2477	6.15684E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13681	0	5012166.	330159.	0.	2177.	943.31	987.00
13681	1	0.	0.	0.	0.	0.00	0.00
13681	2	0.	0.	0.	0.	0.00	0.00
13681	3	0.	0.	0.	0.	0.00	0.00
13681	10	27074.	3460.	1.	10.	9.89	0.75

23449 | Tue Jul 26 07:45:42 2011 | bz

/dev/sda2 is full - how can I free some space?

23446 | Tue Jul 26 07:02:35 2011 | DAQ On-line

07/26 06:02 Start Run 13680 UCN0030 2011 UCN
07/26 07:02 End Run

Batch Protons

	Group 1		Group 21	

Run 13680	326	8.20924E+15	0	0.00000E+00
Batch started at 13674	2311	5.73513E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13680	0	4682007.	652202.	0.	2131.	1879.54	446.35
13680	1	0.	0.	0.	0.	0.00	0.00
13680	2	0.	0.	0.	0.	0.00	0.00
13680	3	0.	0.	0.	0.	0.00	0.00
13680	10	23614.	3460.	1.	10.	9.97	0.49

23445 | Tue Jul 26 06:02:30 2011 | DAQ On-line

07/26 05:02 Start Run 13679 UCN0030 2011 UCN
07/26 06:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 321	1	2.52178E+13	0	0.00000E+00
Run 13679	294	7.28070E+15	0	0.00000E+00
Batch started at 13674	1985	4.91421E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13679	0	4029805.	585194.	0.	2119.	1817.37	529.31
13679	1	0.	0.	0.	0.	0.00	0.00
13679	2	0.	0.	0.	0.	0.00	0.00
13679	3	0.	0.	0.	0.	0.00	0.00
13679	10	20154.	3195.	1.	10.	9.92	0.64

23444 | Tue Jul 26 05:02:23 2011 | DAQ On-line

07/26 04:02 Start Run 13678 UCN0030 2011 UCN
07/26 05:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.52460E+13	0	0.00000E+00
Run 13678	346	8.71636E+15	0	0.00000E+00
Batch started at 13674	1691	4.18614E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma

13678	2	0.	0.	0.	0.	0.00	0.00
13678	3	0.	0.	0.	0.	0.00	0.00
13678	10	16959.	3460.	1.	10.	9.97	0.49

23443 | Tue Jul 26 04:02:18 2011 | DAQ On-line

07/26 03:02 Start Run 13677 UCN0030 2011 UCN
07/26 04:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.52418E+13	0	0.00000E+00
Run 13677	346	8.16734E+15	0	0.00000E+00
Batch started at 13674	1345	3.31450E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13677	0	2740567.	669866.	5.	2200.	1924.90	299.85
13677	1	0.	0.	0.	0.	0.00	0.00
13677	2	0.	0.	0.	0.	0.00	0.00
13677	3	0.	0.	0.	0.	0.00	0.00
13677	10	13499.	3460.	1.	12.	9.94	0.70

23442 | Tue Jul 26 03:02:14 2011 | DAQ On-line

07/26 02:02 Start Run 13676 UCN0030 2011 UCN
07/26 03:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	1	2.52961E+13	0	0.00000E+00
Run 13676	346	8.75598E+15	0	0.00000E+00
Batch started at 13674	999	2.49777E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13676	0	2070701.	731479.	151.	2268.	2101.95	148.23
13676	1	0.	0.	0.	0.	0.00	0.00
13676	2	0.	0.	0.	0.	0.00	0.00
13676	3	0.	0.	0.	0.	0.00	0.00
13676	10	10039.	3464.	4.	10.	9.95	0.50

23441 | Tue Jul 26 02:02:04 2011 | DAQ On-line

07/26 01:01 Start Run 13675 UCN0030 2011 UCN
07/26 02:02 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 344	1	2.59998E+13	0	0.00000E+00
Run 13675	343	8.26561E+15	0	0.00000E+00
Batch started at 13674	653	1.62217E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13675	0	1339222.	676262.	381.	3097.	1960.18	262.56
13675	1	0.	0.	0.	0.	0.00	0.00
13675	2	0.	0.	0.	0.	0.00	0.00
13675	3	0.	0.	0.	0.	0.00	0.00
13675	10	6575.	3430.	1.	11.	9.94	0.64

23440 | Tue Jul 26 01:01:58 2011 | DAQ On-line

07/26 00:01 Start Run 13674 UCN0030 2011 UCN
07/26 01:01 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 315	1	2.58813E+13	0	0.00000E+00
Run 13674	310	7.95609E+15	0	0.00000E+00
Batch started at 13674	310	7.95609E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13674	0	662960.	662960.	349.	2370.	2097.97	239.37
13674	1	0.	0.	0.	0.	0.00	0.00
13674	2	0.	0.	0.	0.	0.00	0.00
13674	3	0.	0.	0.	0.	0.00	0.00
13674	10	3145.	3145.	1.	10.	9.95	0.58

23439 | Mon Jul 25 14:18:27 2011 | DAQ On-line

07/25 14:17 Start Run 13673 UCN0030 2011 UCN
07/25 14:18 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 2	0	0.00000E+00	0	0.00000E+00
Run 13673	0	0.00000E+00	0	0.00000E+00
Batch started at 13673	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13673	0	1.	1.	0.	1.	0.33	0.58
13673	1	0.	0.	0.	0.	0.00	0.00
13673	2	0.	0.	0.	0.	0.00	0.00
13673	3	0.	0.	0.	0.	0.00	0.00
13673	10	1.	1.	0.	1.	0.33	0.58

23438	Mon Jul 25 13:36:49 2011	bz

Bad News: After building up through the switcher, the elephant trunk won't fit in between the AFP and the AFP to Switcher guide. There is a plate right at the location of the detector that prevents the fit. Alternative solutions are to increase the length of the elephant trunk (I don't know how feasable that is) or to tilt the detector a little (more per-bounce losses in the detector tube, possible change in detector performance) or to put in a shorter guide with roughly the same overall transmission and pretend it's the guide we'll use. Bad News II: PRad took our beam at 6 AM, and so we unable to take data. I don't know when we can have it back. Since we can't take data and I don't know what to do, I've wrapped some of the vacuum components so that they don't get dirty and everything needed for assembly is near to the switcher (with the possible exception of a KF 40 hose). Other stuff: Source is dialed back to 5.2 since no beam. Please be careful about accepting beam before increasing source flow.

23437	Sun Jul 24 19:17:59 2011	ATH

UCNA Geometry Build-Up: -> Detector after downstream PPM guide with no pinhole. (The lip ring insert which allows coupling 2.75in. guides to the 3" detector elbow is in place.) GV closed GVmon rate is approx. 266 Hz Foreground: Chris DAQ run# 713, GVmon rate approx. 163 Hz Main rate approx. 3210 Hz Background: Chris DAQ run# 715, GVmon rate approx. 272 Hz Main rate <1 Hz -> Moving detector to position downstream of switcher. (Detector will be hung from guide which goes between switcher and upstream AFP magnet guide.)

23436	Sun Jul 24 17:13:26 2011	mdunwell

UCNA Shift Change Checklist Date: July 24, 2011 4:30 pm Shift Persons: brittney vorndick, marco dunwell UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 13.50 psia Heater C pressure 12.67 psia Tungsten supply press. 325 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On --- Tungsten Cool supp. 323.4 psia has been rising lately Tungsten Cool ret. 123.6 psia Tungsten Cool Diff 260.6 psia 1630 eng. 2 temp. 16.19 K 1630 JT temp. 7.79 K 1630 outlet temp. 274.5 K 1630 engine speed 160 rpm 1630 supply press. 240 psig 1630 JT press. 210 psig 1630 return press. 2.2 psig 1630 med. press. stor. 85 psig 1410 engine speed 80 rpm 1410 TE-A 17.7 K 1410 TE-B 5.4 K 1410 TE-E 97.0 K 1410 supply press. 250 psig 1410 JT press. 220 psig 1410 return press. 0.5 psig 4K dewar pressure 290 mmHg 1K dewar pressure 4.5 psig 4K dewar level 11.37 inHe 1K dewar level 15.6 inHe 4K main flow control 6.0 V LHe temp. 1 5.5 K Heat exch. temp. 3 216 K Poly temp. 2 158 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.1 torr CM5 pressure 0.2 torr CC1 pressure 2.2e-5 torr PPM LHe level 99.8 % PPM LN2 level 61 % AFP LHe level 70.3 % AFP LN2 level 47 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 270 ns TBCM001I03 (H- source current): 11.5 mA "Beamplot" Capture: ---

23435	Sun Jul 24 16:13:58 2011	ATH

Source: -> Rate looks good without melt and re-freeze so we'll start taking data...

23431	Sun Jul 24 15:55:50 2011	ATH

Source: -> Flowing the remaining D2 into source Starting tank presure: 338 mbar SV3, SV4 closed GV closed, air off b-port closed Pumpout port open Check-valve bypass open 13.6 mbar remaining in tank

23434	Sun Jul 24 14:17:11 2011	BMV

After looking over the previous shift's guide test data, there is a big difference between the transmission of the Fe Monitor guide. Earlier it was 95%, now the estimate is 88%. The shutter

install guides. After testing the Fe Monitor guide. We plan to build out the beam line: 1st by normalizing at the PPM monitor (no guide) 2nd through the switcher 3rd through the AFP. All this without a pinhole. We now have beam until 2pm on Tuesday so we decided it is worth looking at the FeMonitor guide.

23430	Sun Jul 24 14:01:39 2011	bz

New Study With the ring, better installation SS EP 39 3/8" 2.75" SS guide retest closed 685,684 16385 57.99 0.1308 0.002255561 open 686, 685 16386 41.09 7.104 0.172888781 97.83233177 7/23/2011 none none none none direct to elephant closed 690 144.7 0.134 0.000926054 7/23/2011 11:04 PM none none none none direct to elephant open 689 16391 87.56 15.25 0.174166286 7/24/2011 12:52 AM direct to elephant open 691 101.63 17.96 0.176719473 7/24/2011 3:08 AM Cu DLC 39 3/32" 2.75" AU1 open 693 90.73 10 0.110217128 63.28269971 7/24/2011 Cu closed 694 #DIV/0! 7/24/2011 Cu DLC 39 3/32" 2.75" AU2 open 697 #DIV/0! 7/24/2011 closed 698 #DIV/0! 7/24/2011 Cu DLC 39 17/32" 2.75" FM1 open 696 #DIV/0! 7/24/2011 Cu DLC 39 17/32" 2.75" FM1 closed 695 #DIV/0! 7/24/2011 8:41 AM Cu EP 39 7/16" 2.75" EP CU Raymond open 699 7/24/2011 8:52 AM Cu EP 39 7/16" 2.75" EP CU Raymond closed 700 7/24/2011 10:10 AM Cu DLC 23" 2.75" SG-2 open 701 7/24/2011 10:41 AM Cu DLC 23" 2.75" SG-2 closed 702

Attachment 1: y_2011_8.xls

23433	Sun Jul 24 13:29:59 2011	GEHogan

Restart Lakeshore and EMS readouts

23432	Sun Jul 24 11:27:51 2011	ATH

Plan: -> Chris sugests that we not take the time to install and remove the pinhole as we build out to ensure that we are able to get through the AFP by the time beam goes away. So, we will: (0) Put in rest of D2 (1) Melt and refreeze (2) Get a no pinhole rate at end of downstream PPM guide (3) Get rate after switcher (no pinhole in system) (4) Get rate after AFP (no pinhole in system), AFP off

23429	Sun Jul 24 08:24:51 2011	JCHoagland

UCNA Shift Change Checklist Date: July 24, 2011 08:00 Shift Persons: jeffrey hoagland UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 13.64 psia Heater C pressure 12.84 psia Tungsten supply press. 325 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 320.5 psia Tungsten Cool ret. 122.6 psia Tungsten Cool Diff 259.0 psia 1630 eng. 2 temp. 16.67 K 1630 JT temp. 7.89 K 1630 outlet temp. 273.1 K 1630 engine speed 150 rpm 1630 supply press. 245 psig 1630 JT press. 213 psig 1630 return press. 2.2 psig 1630 med. press. stor. 87 psig 1410 engine speed 80 rpm 1410 TE-A 20.7 K 1410 TE-B 6.6 K 1410 TE-E 97.5 K 1410 supply press. 250 psig 1410 JT press. 193 psig 1410 return press. 0.6 psig 4K dewar pressure 325 mmHg 1K dewar pressure 5.0 psig 4K dewar level 19.95 inHe 1K dewar level 11.80 inHe 4K main flow control 5.5 V LHe temp. 1 5.5 K Heat exch. temp. 3 199.9 K Poly temp. 2 180.2 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status ---- AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 606.3 torr CC1 pressure 2.5e-5 torr PPM LHe level 99.8 % PPM LN2 level 64.3 % AFP LHe level 80.7 % AFP LN2 level 75.7 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 220 ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: ---

23428	Sun Jul 24 04:15:08 2011	ATH

Next steps... Here is a rough plan for Sunday/Monday... please post below commets below -> Rest of D2 into source -> Melt and re-freeze (will that stop source pressure spikes?) -> Contingent on results from transmission re-measurements we intend to begin building out... (1) We plan NOT to put detector after elbow but instead make first measurement with detector after switcher, pinhole upstream of elbow. (2) Cu guides into AFP, check vacuum after DLC guide installation, detector after AFP, pinhole after switcher. (3) Full UCNA geometry without the polarimetry shutter.

23427	Sun Jul 24 04:08:10 2011	bz

UCNA Shift Change Checklist Date: July 23, 2011 01:10 Shift Persons: Yelena, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10

off Tungsten Cool supp. 320.3 psia Tungsten Cool ret. 122.0 psia Tungsten Cool Diff 259.0 psia 1630 eng. 2 temp. 16.07 K 1630 JT temp. 7.86 K 1630 outlet temp. 259.0 K 1630 engine speed 175 rpm 1630 supply press. 250 psig 1630 JT press. 200 psig 1630 return press. 2 psig 1630 med. press. stor. 45 psig 1410 engine speed 80 rpm 1410 TE-A 20.5 K 1410 TE-B 6.7 K 1410 TE-E 98.5 K 1410 supply press. 250 psig 1410 JT press. 190 psig 1410 return press. .3 psig 4K dewar pressure 300 mmHg 1K dewar pressure 5 psig 4K dewar level 11.16 inHe 1K dewar level 31.3 inHe 4K main flow control 5.5 V LHe temp. 1 5 K Heat exch. temp. 3 194.9 K Poly temp. 2 182.3 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status --- switcher not attached AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level not empty SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure 0.5 torr CC1 pressure 1.8e-5 torr PPM LHe level 99.8 % PPM LN2 level 66 % AFP LHe level 34.5 % AFP LN2 level 95 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 216 ns TBCM001I03 (H- source current): 15 mA "Beamplot" Capture: .81 ========== East Detector Cart --- OFF--- ========== MWPC HV off V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature F West MWPC Temperature F MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm East PMT Buck. Curr --- A East Back. Veto Buck. ---- A H20 Chiller --- Chiller water level --- ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status TRIP HOLD MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. --- A West Back. Veto Buck. ---- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV .2 kV West muon veto HV .7 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 607.9 Torr disk usage daq account 79%

23426	Sun Jul 24 03:46:56 2011	BMV

After looking over the data of the night before it appears that the flapper faulting caused data aquisition problems. This gave a very low transitions for the guides. After further discussion with Adam we improved on our installation of the guides and installed a SS ring so that one knows when the guide is in contact with the elbow down to the detector. We continued using the one pinhole with .228" diameter hole off center. Polyethylene 1/8" thick with 5/8" diameter hole matching pinhole but included double sided tape to ensure no movement, ~10min GV closed, ~10min GV open. Yesterday morning (due to source problems there was delay in taking data.) Bryan and Yelena performed the lifetime on the appropriate SS guide that was the one tested in all the previous guide tests. They also performed the transmission test. I compared the Monitor to GVMonitor ratio between the guide and no guide. This led to a transmission percentage of ~87% two years ago the SS was in the high 90%. The rest of the new guides were in the mid 80% except for the AFP upstream guides, these were ~53% and ~67%. We new that we needed to check the normalization (no guide) data. We reperformed the test with the new way and found that the value was off. We are now getting SS guide at 97.8%. When using this value for the previous studies, the values read mid-90% transmission, the previous stainless steel guide test was comprable to the new test, 96.7%. Adam and I just finished retesting our horrible AFP upstream guide, and unfortunately that transmission is still low. With the new normalized values, the previous study is 60.8% transmission, and the new study is 62.4%, which are pretty close. It appears the better installation and the inclussion of the ring increases our rate by 1%. The next shift will continue the study, redoing some of the guides. But from what I can see we can expect a 1-2% increase in the transmission. Transmission Test GV avg Mon avg Mon/GV bad normalization transmission Improved normalization transmission Previous study 7/21/2011 9:07 PM Cu DLC 39 17/32" 2.75" FM1 closed 653 16357 199.35 0.12 0.000601956 7/21/2011 9:16 PM Cu DLC 39 17/32" 2.75" FM1 open 654 16358 143.59 24.14 0.168117557 84.85851038 95.13244605 7/22/2011 10:46 PM Cu DLC 23 2.75" SG-2 closed 657 16361 111.61 0.12 0.001075172 7/22/2011 10:56 PM Cu DLC 23 2.75" SG-2 open 658 16362 96.7 17.07 0.176525336 89.1023956 99.89014425 7/22/2011 12:24 AM none none none none direct to elephant closed 661 16365 143.92 1.09 0.007573652 7/22/2011 12:36 AM none none none none direct to elephant open 662 16366 48.81 9.67 0.19811514 7/22/2011 1:55 AM Cu DLC 39 3/32" 2.75" AU1 closed 663 16367 57.49 0.12 0.00208732 7/22/2011 2:18 AM Cu open 664 16368 44.5 4.78 0.10741573 54.21883969 60.78318861 7/22/2011 3:29 AM Cu DLC 39 3/32" 2.75" AU2 closed 665 16369 52.86 0.098 0.001853954 7/22/2011 3:48 AM open 666 16370 41.07 6.55 0.159483808 80.50056541 90.24687873 7/22/2011 6:45 PM SS EP 39 3/8" 2.75" SS guide closed 673 16376 262.72 0.123 0.000468179 7/22/2011 6:57 PM open 674 16377 179.7 30.74 0.171062883 86.34518406 96.79911335 7/22/2011 4:59 AM Cu EP 39 7/16" 2.75" EP CU Raymond closed 667 16371 44.9 0.112 0.002494432 7/22/2011 5:21 AM open 668 16372 44.9 5.18 0.115367483 58.2325425 65.2828359 7/22/2011 6:02 AM open 671 16374 44.02 5.28 0.119945479 60.54331795 67.87338009 New Study With the ring, better installation SS EP 39 3/8" 2.75" SS guide retest closed 685,684 16385 57.99 0.1308 0.002255561 open 686, 685 16386 41.09 7.104 0.172888781 97.83233177 7/23/2011 none none none none direct to elephant closed 690 144.7 0.134 0.000926054 7/23/2011 11:04 PM none none none none direct to elephant open 689 16391 87.56 15.25 0.174166286 7/24/2011 12:52 AM direct to elephant open 691 101.63 17.96 0.176719473 7/24/2011 3:08 AM Cu DLC 39 3/32" 2.75" AU1 open 693 90.73 10

Attachment 1: y_2011_5.xls

23425	Sun Jul 24 03:14:17 2011	BMV

There are a lot of CC1 spikes throughout the evening. Some were small but happened often and some were big. We are still trying to find the source of these spikes, it may mean we need to do a melt and refreeze because chunks of deuterium is falling off the sides or flapper or that the flapper is scraping the source. Some of these spikes take a while to heal. This is something I think we need further investigation especially since last night. Some contaminates got in our source and it needed to be distilled this morning. These puffs do not correlate with the beam.

Attachment 1: y_2011_5.xls

y_2011_5.xls

23424	Sat Jul 23 22:43:41 2011	DAQ On-line

07/23 22:43 Start Run 13672 UCN0030 2011 UCN

23422	Sat Jul 23 20:06:20 2011	ATH

DLC Quartz Guide: -> Beginning replacement operations... * Installation note... The spin flipper + guide assembly barely fits between the AFP and SCS. We found that loosening the guide clamp rings and sliding the guide downstream (after measuring guide position of course) when the assembly is just above the vertical plate welded onto the AFP platform allows for a much easier lowering. On the way up, we similarly left the guide un-clamped until we were above the vertical AFP stand plate and then set it to the correct position and fastened the clamp rings. After removal downstream quartz guide to edge of rf shield (not clamp ring) = 1.8825 in. Before re-installation downstream quartz guide edge to edge of rf shield (not clamp ring) = 1.8670 in. Downstream quartz guide edge to downstream cross flange distance still ~24 3/4 in. ... installation complete @ 7:55pm

23423	Sat Jul 23 17:59:56 2011	mdunwell

UCNA Shift Change Checklist Main return flow- closed (how scott put it) helium blower- on heat exchanger flow- 10 slpm heater b pressure- 13.3 psia heater c pressure 12.6 psia tungsten supp. press. 325 psig tungsten cooling supply- 323 psia tungsten cooling return- 260 psia tungsten cooling diff.- 124 psia 1630 eng. 2 temp- 15.6 K 1630 JT temp-8 K 1630 outlet temp- 273 K 1630 engine speed- 160 RPM 1630 supply press- 250 psig 1630 med press storage- 50 psig 1410 engine speed- 81 RPM 1410 TE-A- 20.6K 1410 TE-B- 6.7K 1410 TE-E- 98.3K 1410 supply press- 250 psig 1410 JT press- 180 psig 1410 return press- .2 psig 4K dewar press- 340 mmHg 1K dewar press- 4.9 psig 4K dewar level- 11.36 in 1K dewar level- 28.26 in 4K main flow control- 5.5V LHe temp 1- 5K heat exch temp 3- 194K poly temp 2- 152K flapper heater curr- .18A flapper status- flapping flapper time A- .3 s flapper time C- 4.8 s gate valve status- closed D2 pump port status- closed sv3- closed sv4- open CM1 press- .6 torr CM5 press- .5 torr CC1 press- 2.6*10^-5 torr ppm LHe level- 99.8% ppm LN2 level- 70% afp LHe level- 46.1% afp LN2 level- 60% ppm current- 72 A afp current- 0 A proton beam status- burst proton burst spacing- 20 Hz proton pulses/burst- 5 proton countdonw- 5 proton pattern width- 220 ns TBCM001I03- 15.54 mA "beamplot" capture- .77

23421	Sat Jul 23 14:51:47 2011	ATH

Source Distillation: Beginning source distillation... -> SV3,SV4,MV6 closed (MV5 stuck open) -> Green Valve confirmed OPEN -> D2 pump port OPEN -> GVclosed, air off -> CC1 OFF -> Flapper OPEN -> check-valve bypass OPEN -> LHe#1 to ~30K (source flow control to 1.5V) -> Source pressure ~constant -> KNF pump started -> check-valve bypass CLOSED -> Mensor pressure at 200 mbar -> GC2 and P1 CLOSED -> KNF pump OFF: source pressur@96.1mbar | tank pressure@1188.5mbar -> Orange valve CLOSED -> SV5 OPEN, MV5 and MV6 OPEN (equalize pressure above and below SV3) -> SV3 OPEN, MV6 CLOSED (MV5 stuck open) -> turbo ON -> CC1 ON -> Source flow control to 0V -> CC1 tripped off around 80K -> Leak checking GV... looks ok -> Re-making source... GV closed, SV3 closed, MV6 closed Check-valve bypass open, source folw voltage to 5.5V -> Stopped flow to source to check UCN production. Tank pressure 339.1 mbar. -> Source is working again!

23420	Sat Jul 23 08:55:13 2011	Sky

UCNA Shift Change Checklist Date: July 23, 2011 01:10 Shift Persons: Sky UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow open? A-LPM-12 closed, A-LPM-3 open? He blower on Heat exchanger flow 10 slpm Heater B pressure 13.62 psia Heater C pressure 13.01 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 318.8 psia Tungsten Cool ret. 122.8 psia Tungsten Cool Diff 255.8 psia

press. stor. 65 psig 1410 engine speed 80 rpm 1410 TE-A 20.7 K 1410 TE-B 6.7 K 1410 TE-E 97.5 K 1410 supply press. 250 psig 1410 JT press. 185 psig 1410 return press. 0.4 psig 4K dewar pressure 320 mmHg 1K dewar pressure 5. psig 4K dewar level 10.6 inHe 1K dewar level 24.45 inHe 4K main flow control 6.0 V LHe temp. 1 5.0 K Heat exch. temp. 3 202 K Poly temp. 2 157.7 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure -11.4 torr CC1 pressure 5e-5 torr PPM LHe level 99.9 % PPM LN2 level 74.5 % AFP LHe level 59.5 % AFP LN2 level 88.1 % PPM current 72(6) A (T) AFP current 0 A (T) Beam Parameters Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.760 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 4.702E+08 Chopper Fall Time 15.00 ns H/uP delivered 3.574E+08 Measured Beam Current Charge/Burst Err:522 uC uP/Chop 42.061 TBCM001I03 15.16 mA Average Current Err:522 uA H/Chop 1.503E+10 Capture 0.76 Pattern Acceptable ? Err:522 Chop/Gate 1.746E+03 Pattern Setup uP/Gate 7.344E+04 Rep Rate 20 Hz H/Gate 2.624E+13 Gate Length 625 us Chopper Width 220 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.469E+06 Countdown Duration 357.76 ns Charge/uP Err:522 Burst Mode Charge/Chop Err:522 Pulses per Burst 5 Charge/Gate Err:522 Delay Between Bursts 5 s Single Shot or Continuous Continuous Values in Red are user selected. Values in Green are constants. Values in Blue are calculated. Values in Italics are optional. uP = micropulse Chop = chopper pattern Version: 25 August 2008

23418	Sat Jul 23 08:20:33 2011	ATH

Source Problem: -> After ~hour of beam problems opened GV to take data and had a rapid pressure spike in the source which seemed to be correlated with opening the GV. CM5 and CM1 appear to have been nominal prior to opening GV. Following this GV closed GVmon count down by about 1/3. Suspect an intermittent leak in GV during cycling. -> Asked CCR for a re-tune and GVmon optimization to make sure not a beam problem. Rate still very low. -> Doing a melt a re-freeze to try and repair crystal in case it was damaged. No change. -> Pumping on frozen source. No change. -> Source pressure is proving hard to get down below 1e-4 Torr even with lots of cooling. Original pressure spike opened check valve which had to be "convinced" (gently!) to close again. Perhaps it is still leaking a tiny bit? -> So, it looks like we need to distill the source. Current shift hasn't had a chance to do that before so thay will take data until we return in the morning to replace DLC quartz guide at which time we can begin the distallation process.

Attachment 1: .png

.png

23419	Sat Jul 23 04:00:20 2011	ATH

Chris, could you start distilling the source if you arrive before we do? ... or perhaps see the problem that we missed?

23417	Sat Jul 23 01:24:10 2011	Yelena

UCNA Shift Change Checklist Date: July 23, 2011 01:10 Shift Persons: Yelena, Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 13.5 psia Heater C pressure 12.9 psia Tungsten supply press. 320 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 318.4 psia Tungsten Cool ret. 122.9 psia Tungsten Cool Diff 255.0 psia 1630 eng. 2 temp. 16.66 K 1630 JT temp. 7.84 K 1630 outlet temp. 272.0 K 1630 engine speed 150 rpm 1630 supply press. 247 psig 1630 JT press. 215 psig 1630 return press. 2.1 psig 1630 med. press. stor. 65 psig 1410 engine speed 80 rpm 1410 TE-A 20.6 K 1410 TE-B 6.8 K 1410 TE-E 97.2 K 1410 supply press. 250 psig 1410 JT press. 183 psig 1410 return press. .4 psig 4K dewar pressure 315 mmHg 1K dewar pressure 4.5 psig 4K dewar level 11.1 inHe 1K dewar level 21.41 inHe 4K main flow control 5.8 V LHe temp. 1 4.84 K Heat exch. temp. 3 202 K Poly temp. 2 136.5 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.3 torr CM5 pressure -11.4 torr CC1 pressure 5e-5 torr PPM LHe level 99.8 % PPM LN2 level 77.4 % AFP LHe level 68.8 % AFP LN2 level 42.3 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: -- s //RETUNING Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: ---

Source: -> Freezing out source... 7.0 mbar left in tank -> Melt and Re-freeze: Flapper OPEN GV closed, air off MV6 CLOSED SV3, SV4, CLOSED Green Valve OPEN Pumpout port OPEN GC5 confirmed OPEN Orange Valve CLOSED Check-Valve Bypass OPEN Source flow to 2.5V... Source flow to 2V Source flow to 4V around 200 mbar Source pressure < 10mbar Check-Valve Bypass CLOSED Orange Valve OPEN Pumpout port CLOSED Source flow to 5.5V

23415	Fri Jul 22 15:10:03 2011	ATH

Extracting the spin flipper: -> Detached RTD temperature sensor lead from reader: Unplugged Box Connections... Beside Alarm2, RTD connection lugs red wire in middle (resistor symbol) black wires on either side. -> Disconnected sensor loop lead. -> Disconnected LN2 line providing flow into body of spin flipper shield at point of connection to LN2 line, i.e. did not remove poly line from cross feedthrough. NB: Regulator turned off to stop flow... needs to be reset so that can just barely feel gas emerging from all other cross ports. -> Wrapped up water cooling lines with LN2 jacket flow line. -> Disconnected power leads, carefully coiling without rotating wires relative to feedthrough ports. Yellow and green cable ties correspond to Y and G labels on matching box. ... spin flipper disconnected -> Position: Recorded on side of AFP at time of last FeFoil guide installation... Downstream end of DLC guide 24 13/16" from AFP cross downstream flange. Prior to this removal: -> Distance between downstrem side of DLC guide and downstrem face of AFP cross is 24 3/4"

23414	Fri Jul 22 13:15:35 2011	ATH

Source: -> GV closed, air off -> D2 pumpiut port OPEN -> SV3 and SV4 CLOSED -> Flapper OPEN -> Check valve bypass OPEN .... freezing remaining D2 from tank into source. Start tank pressure: 120.7 mbar

23412	Fri Jul 22 08:19:55 2011	bz

Tried filling the AFP from the 1k dewar. I didn't understand some piece of the system, because the AFP was filling extremely slowly. Stopped fill after approximately 1.5 hrs. *Edit* Return pressure went negative on 1410 during fill, after I opened black arrow.

23413	Fri Jul 22 04:17:13 2011	BMV

Guide Tests: Two pin holes shiny sides facing one another on either side of the installed guide with .228" diameter hole off center, 156s load time, 156s drain time Lifetime Measurements cycle Gvcount Moncount Mon/GV lifetime 7/21/2011 5:25 PM SS EP 39 5/8" 2.75" SS guide 651 16356 lifetime 14 13.8 ethanol cleaned One pinhole with .228" diameter hole off center. Polyethylene 1/8" thick with 5/8" diameter hole matching pinhole. ~10min GV closed, ~10min GV open Transmission Test GV avg Mon avg Mon/GV 7/21/2011 9:07 PM Cu DLC 39 17/32" 2.75" FM1 closed 653 16357 199.35 0.12 0.000601956 7/21/2011 9:16 PM Cu DLC 39 17/32" 2.75" FM2 open 654 16358 143.59 24.14 0.168117557 7/22/2011 10:46 PM Cu DLC 23 2.75" SG-2 closed 657 16361 111.61 0.12 0.001075172 flapper is getting stucked open 7/22/2011 10:56 PM Cu DLC 23 2.75" SG-2 open 658 16362 96.7 17.07 0.176525336 flapper is getting stucked open 7/22/2011 12:24 AM none none none none direct to elephant closed 661 16365 143.92 1.09 0.007573652 the flapper not working runs were 659,16363 for closed and 660,16364 for open. Flapper problems appear to still be happening 7/22/2011 12:36 AM none none none none direct to elephant open 662 16366 48.81 9.67 0.19811514 flapper open, mini melt and refreeze, there is something stuck on the flapper 7/22/2011 1:55 AM Cu DLC 39 3/32" 2.75" AU1 closed 663 16367 57.49 0.12 0.00208732 flapper open 7/22/2011 2:18 AM Cu open 664 16368 44.5 4.78 0.10741573 installed poorly? 7/22/2011 3:29 AM Cu DLC 39 3/32" 2.75" AU2 closed 665 16369 52.86 0.098 0.001853954 7/22/2011 3:48 AM open 666 16370 41.07 6.55 0.159483808

Attachment 1: y_2011_4.xls

23411	Fri Jul 22 02:34:09 2011	bz

UCN Calculator 07/22/2011 02:31:24 Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.800 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 5.242E+08 Chopper Fall Time 15.00 ns H/uP delivered 4.194E+08 Measured Beam Current Charge/Burst 22.308 uC uP/Chop 38.036 TBCM001I03 16.90 mA Average Current 4.462 uA H/Chop 1.595E+10 Capture 0.80 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern Setup uP/Gate 6.641E+04 Rep Rate 20 Hz H/Gate 2.785E+13 Gate Length 625 us Chopper Width 200 ns Gate/sec 20.000 Pattern Clock 2.8 MHz Chop/sec 3.492E+04 Countdown 1 uP/sec 1.328E+06 Countdown Duration 357.76 ns Charge/uP 67.180 pC Burst Mode Charge/Chop 2.555E+03 pC Pulses per Burst 5 Charge/Gate 4.462 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23410	Fri Jul 22 02:27:53 2011	bz

Flapper is getting stuck a lot. We have decided to leave the flapper open tonight for lack of

23409	Fri Jul 22 01:16:39 2011	Yelena

UCNA Shift Change Checklist Date: July 22, 2011 12:50 Shift Persons: Yelena UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 13.3 psia Heater C pressure 12.5 psia Tungsten supply press. 300 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 307 psia Tungsten Cool ret. 121 psia Tungsten Cool Diff 243 psia 1630 eng. 2 temp. 16.92 K 1630 JT temp. 7.94 K 1630 outlet temp. 272.3 K 1630 engine speed 150 rpm 1630 supply press. 250 psig 1630 JT press. 210 psig 1630 return press. 2.0 psig 1630 med. press. stor. 35 psig 1410 engine speed 80 rpm 1410 TE-A 20.5 K 1410 TE-B 7 K 1410 TE-E 82.1 K 1410 supply press. 250 psig 1410 JT press. 160 psig 1410 return press. 3.0 psig 4K dewar pressure 350 mmHg 1K dewar pressure 5 psig 4K dewar level 11.4 inHe 1K dewar level 28.0 inHe 4K main flow control 5.2 V LHe temp. 1 4.7 K Heat exch. temp. 3 199.5 K Poly temp. 2 164.3 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status open Pump port status closed Switcher status thru AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.5 torr CM5 pressure 608.2 torr CC1 pressure ---- torr PPM LHe level 99.8 % PPM LN2 level 89.1 % AFP LHe level 93.7 % AFP LN2 level 74.4 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H- source current): --- mA "Beamplot" Capture: ---

23408	Fri Jul 22 00:55:11 2011	JCHoagland

the flapper appears to have ice on it so going to try a slight warming of the source to see if it gets unstuck

23407	Thu Jul 21 20:16:10 2011	BMV

UCNA Shift Change Checklist Date: July 21, 2011 18:10 Shift Persons: Sky, Brittney UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 12.47 psia Heater C pressure 9.38 psia Tungsten supply press. 305 psig Compressor 1 On on Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 303.7 psia Tungsten Cool ret. 122.3 psia Tungsten Cool Diff 236.9 psia 1630 eng. 2 temp. 15.79 K 1630 JT temp. 7.79 K 1630 outlet temp. 274.3 K 1630 engine speed 185 rpm 1630 supply press. 250 psig 1630 JT press. 205 psig 1630 return press. 1.5 psig 1630 med. press. stor. 35 psig 1410 engine speed 150 rpm 1410 TE-A 14.2 K 1410 TE-B 6.1 K 1410 TE-E 73.6 K 1410 supply press. 160 psig 1410 JT press. 95 psig 1410 return press. 0 psig 4K dewar pressure 340 mmHg 1K dewar pressure 2 psig 4K dewar level 12.01 inHe 1K dewar level 29.36 inHe 4K main flow control 5.0 V LHe temp. 1 4.962 K Heat exch. temp. 3 201.16 K Poly temp. 2 104.86 K flapper heater cur 0.18 A Flapper Status: flapping Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status flapping Pump port status closed Switcher status --- AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.8 torr CM5 pressure 1.1 torr CC1 pressure 4.7e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 78.4 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 0 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: 5 s Proton pulses/burst: 5 Proton countdown: 1 Proton pattern width: 200 ns TBCM001I03 (H- source current): 17.1 mA "Beamplot" Capture: .8 ========== East Detector Cart --- OFF--- ========== MWPC HV off V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature F West MWPC Temperature F MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm East PMT Buck. Curr --- A East Back. Veto Buck. ---- A H2O Chiller --- Chiller water level --- ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status TRIP HOLD MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. ---- A West Back. Veto Buck. ---- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV .5 kV West muon veto HV .9 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 603 Torr disk usage daq account 79%

23406	Thu Jul 21 18:19:57 2011	BMV

UCN Calculator 07/21/2011 18:18:57 Constants Current Calculations Miscellaneous Calculations Charge per particle 1.60E-19 C Max. Charge thru XL 31.000 uC 201 Period 4.969 ns Line X XL Current Limit 10.000 uA Net Transmission 0.800 Ring Orbit Period 0.358 us Chopper Rise Time 11.00 ns H/uP initial 5.304E+08 Chopper Fall Time 15.00 ns H/uP delivered 4.243E+08 Measured Beam Current Charge/Burst 22.572 uC uP/Chop 38.036 TBCM001I03 17.10 mA Average Current 4.514 uA H/Chop 1.614E+10 Capture 0.80 Pattern Acceptable ? PATTERN OK Chop/Gate 1.746E+03 Pattern

Countdown Duration 357.76 ns Charge/uP 67.975 pC Burst Mode Charge/Chop 2.586E+03 pC Pulses per Burst 5 Charge/Gate 4.514 uC Delay Between Bursts 5 s Single Shot or Continuous Continuous

23401	Thu Jul 21 07:36:33 2011	BMV

19:50 contacted CCR told them we are ready to receive beam, thought they had it tuned already because when I called them before they said they were ready to go. I thought that meant that the beam was tuned and was just waiting for the ok to run it. But looking at the the target steering that appears to not be the case... That's alright gives time to pump on the us window side... make sure it is good and ready.

23405	Thu Jul 21 07:20:26 2011	bz

NMR Mapping Done. File Attached.

Attachment 1: ly_2011_4.xls

23403	Thu Jul 21 04:54:43 2011	BMV

While taking data for Fe monitor guide 1, the beam went out during 8th cycle turns out around 10:30pmish LXPM01 power was hit by lightning and they smell smoke. Technician is coming in. 3am- no part to fix problem no beam til after 7am. Bryan and I cleaned the SS guide with ethanol and blew with Argon, it was filthy... unfortunately there is still spots in the guide on the end (not from the Ethanol) I think I remember these spots being there before last year... Decided to install the guide, at least it was better than before we cleaned it. SS lifetime ready to go whenever beam comes back. Jeff, Bryan, Yelena are working on the NMR scans. Data: Date Time Guide GV Slow Midas Measurement cycle Gvcount Moncount Mon/GV lifetime 7/20/11 9:50 PM FM1 649 16355 lifetime 8 331592 7107 0.021432965813409 28.09 beam went out during 8th cycle

Attachment 1: y_2011_3.xls

23402	Thu Jul 21 04:35:00 2011	BMV

NMR Study

Attachment 1: ly_2011_3.xls

23404	Thu Jul 21 02:00:22 2011	bz

UCNA Shift Change Checklist Date: July 21, 2011 01:30 Shift Persons: Bryan UPSTAIRS Name Value Comment (Req'd for out of good range) ---------- ---------- ---------- ---------- Main return flow closed He blower on Heat exchanger flow 10 slpm Heater B pressure 12.47 psia Heater C pressure 13.37 psia Tungsten supply press. 250 psig Compressor 1 On off Graphite supply press. --- psig Compressor 2 On off Tungsten Cool supp. 226.8 psia Tungsten Cool ret. 226 psia Tungsten Cool Diff -.5 psia 1630 eng. 2 temp. 15.15 K 1630 JT temp. 7.73 K 1630 outlet temp. 276.0 K 1630 engine speed 200 rpm 1630 supply press. 245 psig 1630 JT press. 200 psig 1630 return press. 1.6 psig 1630 med. press. stor. 70 psig 1410 engine speed 202 rpm 1410 TE-A 15.4 K 1410 TE-B 6.2 K 1410 TE-E 82.8 K 1410 supply press. 225 psig 1410 JT press. 130 psig 1410 return press. 2.3 psig 4K dewar pressure 295 mmHg 1K dewar pressure 7 psig 4K dewar level 10 inHe 1K dewar level 18.72 inHe 4K main flow control 4.8 V LHe temp. 1 5.45 K Heat exch. temp. 3 225 K Poly temp. 2 170.5 K flapper heater cur 0.18 A Flapper Status: open Flapper Time A: 0.3 Flapper Time C: 4.8 DOWNSTAIRS: Gate valve status closed Pump port status closed Switcher status thru AFP temperature --- C AFP frequency ---- MHz AFP forward power ------ W SCS LHe level 0 % SCS field --- T SCS current 0 A AFP N2 dewar level --- SV3 closed SV4 closed CM1 pressure 0.8 torr CM5 pressure 1.1 torr CC1 pressure 6.4e-5 torr PPM LHe level 99.8 % PPM LN2 level 100 % AFP LHe level 95.8 % AFP LN2 level 100 % PPM current 72(6) A (T) AFP current 93.76 A (T) AFP chiller sup. pres. --- psi AFP chiller flow rate --- gph AFP chiller set point --- degC AFP chiller level light Off Proton burst spacing: -- s Proton pulses/burst: -- Proton countdown: -- Proton pattern width: -- ns TBCM001I03 (H-source current): --- mA "Beamplot" Capture: --- ========== East Detector Cart --- OFF--- ========== MWPC HV off V MWPC Trip Hold Status TRIP HOLD East MWPC Temperature F West MWPC Temperature F MWPC Pressure torr N2 - MWPC Differential torr Neopentane Flow Rate slpm East PMT Buck. Curr --- A East Back. Veto Buck. ---- A H20 Chiller --- Chiller water level --- ========== West Detector Cart ========== MWPC HV --- V MWPC Trip Hold Status TRIP HOLD MWPC Pressure --- torr N2 - MWPC Differential --- torr Neopentane Flow Rate --- slpm West PMT Buck. Curr. ---- A West Back. Veto Buck. ---- A SCS Rack ========== Top-Veto and GMS Crate (Top Crate) off Beta-Scintillator and Backing-Veto Crate (Bottom Crate) off East muon veto HV .3 kV West muon veto HV .8 kV East muon veto rate --- Hz West muon veto rate --- Hz Spectrometer vacuum 605.9 Torr disk usage daq account 79%

23400	Wed Jul 20 18:50:04 2011	BMV

/home/slowctrl/mpmAnalyzer/MonitorUtils/ press enter then type: ./LaunchDaemons.sh press enter

23399	Wed Jul 20 09:19:55 2011	bz

We've got the NMR Probe working and we have begun mapping the ~1 Tesla region the AFP. We have finished a scan of the magnet with the shims at 0 current and we are ramping the shims to their normal values to obtain a map with shims ramped. To perform a magnet scan: 1. Make sure that the probe is plugged into the black 2031 Multiplexer. You will need to plug into both the channel and the RF output, making sure to choose the same letter for both. Turn on the teslameter, and change the monitor on the teslameter to the letter you've plugged the probe into. 2. Connect the probe to the rod and clip and push them through all the way to the other side so that the probe is just out of the green pipe. Make sure that the black line on the probe rod is 4 inches from the cross on the side of the probe. Push the probe into the pipe and attach rod A to the other end of the probe rod as firmly as possible. Push rod A forward until the black arrow on rod A lines up with about 40" on the tape measure. If you go too far, don't worry, but don't pull on rod A (it is only loosely attached to the probe). Instead, push the probe through using the probe wire. 3. Change the teslameter to manual mode, and adjust the setting using the knobs on the front until it is approximately .957 Tesla. Change the teslameter to auto mode, and then push rod A (again, don't pull even if you pass your target) in 1/16" increments until you get a lock. The first place where you get a lock is the first value you record. 4. Continue pushing rod A (don't pull etc.) in 1/16" increments and record values until you are no longer able to get a lock, which is around 20" on the tape measure. You can try to get a lock manually by changing to manual mode, but we found that the resolution is too low to get a reasonable measurement. 5. Congratulations, you have completed a map.

23398	Tue Jul 19 20:01:59 2011	BMV

Just performed a second hall probe scan for Shim 8 but with 4A... sadly it is a flat line. Jeff is right now working on NMR probe.

Attachment 1: ly_2011_0.xls

23397	Tue Jul 19 08:43:09 2011	BMV

AFP magnet scan Scanned Shim 7 Scanned Shim 8 (+0.993) but ran into some difficulties. Calibration fault since this was a weird run it is a positive current but yet negative peak and a small one at that. We re-dumped and cycled the shims several times to find the same peak -.13. Started a long scan but the hall probe disconnected and when reconnecting it we went back to 64.5in to find the field had shifted by .05 mT and when looking at the max location again it was showing -.19 instead of the -.13. Decided this one needs to be discussed further and most likely needs to be re done... We believe that Shim 8 is broken, We think we should do a all shims ramped without Shim 8 to see if there is a change Continued with Shim 9, 10. All Shims Because of the weird Shim 8 issue we performed a second all shim scan but without shim 8 to see if there was any change.

Attachment 1: ly_2011.xls

23396	Mon Jul 18 20:05:53 2011	GEHogan

Found proton scope off again. Turned it back on.

23395	Mon Jul 18 18:29:52 2011	bz

APC on linux boxes between pcucn 19 and pcucn 18 has been giving a replace battery signal we are venting the guide and foil area and putting in the iron foil monitor guide so that when we get beam again we will be able to take data almost immediately

23394	Sat Jul 16 18:32:45 2011	JCHoagland

nitrogen line to liquidfier broke, warming up source

23393	Sat Jul 16 18:31:19 2011	RRios

Liquifier is down. Warmed up the source

23392	Sat Jul 16 17:33:23 2011	GEHogan

While I can see the proton scope triggering, do not seem to be getting a good trace. Apparently, the beam is off.

23391	Sat Jul 16 17:19:35 2011	GEHogan

Pulse DAQ also died. The scope that reads out the proton intensity trace was once again

23390	Sat Jul 16 17:17:32 2011	GEHogan

EMS died, Network?

23389	Sat Jul 16 17:14:48 2011	DAQ On-line

07/16 17:12 Start Run 13671 UCN0030 2011 UCN
07/16 17:14 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 4	0	0.00000E+00	0	0.00000E+00
Run 13671	0	0.00000E+00	0	0.00000E+00
Batch started at 13671	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13671	0	4.	4.	0.	2.	0.80	0.84
13671	1	0.	0.	0.	0.	0.00	0.00
13671	2	0.	0.	0.	0.	0.00	0.00
13671	3	0.	0.	0.	0.	0.00	0.00
13671	10	17.	17.	0.	9.	3.40	3.36

23388	Sat Jul 16 12:54:00 2011	DAQ On-line

07/16 12:53 Start Run 13670 UCN0030 2011 UCN

23387	Sat Jul 16 12:53:57 2011	DAQ On-line

07/16 11:53 Start Run 13669 UCN0030 2011 UCN
07/16 12:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13669	0	7194442.	109.	109.	109.	109.00	0.00
13669	1	0.	0.	0.	0.	0.00	0.00
13669	2	0.	0.	0.	0.	0.00	0.00
13669	3	0.	0.	0.	0.	0.00	0.00
13669	10	38715.	0.	0.	0.	0.00	0.00

23386	Sat Jul 16 11:53:52 2011	DAQ On-line

07/16 11:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13668	0	7194333.	145.	145.	145.	145.00	0.00
13668	1	0.	0.	0.	0.	0.00	0.00
13668	2	0.	0.	0.	0.	0.00	0.00
13668	3	0.	0.	0.	0.	0.00	0.00
13668	10	38715.	0.	0.	0.	0.00	0.00

23385 | Sat Jul 16 10:53:47 2011 | DAQ On-line

07/16 09:53 Start Run 13667 UCN0030 2011 UCN
07/16 10:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13667	0	7194188.	120.	120.	120.	120.00	0.00
13667	1	0.	0.	0.	0.	0.00	0.00
13667	2	0.	0.	0.	0.	0.00	0.00
13667	3	0.	0.	0.	0.	0.00	0.00
13667	10	38715.	0.	0.	0.	0.00	0.00

23384 | Sat Jul 16 09:53:41 2011 | DAQ On-line

07/16 08:53 Start Run 13666 UCN0030 2011 UCN
07/16 09:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13666	0	7194068.	134.	134.	134.	134.00	0.00
13666	1	0.	0.	0.	0.	0.00	0.00
13666	2	0.	0.	0.	0.	0.00	0.00
13666	3	0.	0.	0.	0.	0.00	0.00
13666	10	38715.	0.	0.	0.	0.00	0.00

23383 | Sat Jul 16 08:53:36 2011 | DAQ On-line

07/16 07:53 Start Run 13665 UCN0030 2011 UCN
07/16 08:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13665	0	7193934.	129.	129.	129.	129.00	0.00
13665	1	0.	0.	0.	0.	0.00	0.00
13665	2	0.	0.	0.	0.	0.00	0.00
13665	3	0.	0.	0.	0.	0.00	0.00
13665	10	38715.	0.	0.	0.	0.00	0.00

23381 | Sat Jul 16 07:53:31 2011 | DAQ On-line

07/16 06:53 Start Run 13664 UCN0030 2011 UCN
07/16 07:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13664	0	7193805.	128.	128.	128.	128.00	0.00
13664	1	0.	0.	0.	0.	0.00	0.00

13664	10	38715.	0.	0.	0.	0.00	0.00

23382	Sat Jul 16 06:54:10 2011	BMV

Online multiscan is down again.

23379	Sat Jul 16 06:53:26 2011	DAQ On-line

07/16 05:53 Start Run 13663 UCN0030 2011 UCN
07/16 06:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 145	1	2.59014E+13	0	0.00000E+00
Run 13663	145	3.74408E+15	0	0.00000E+00
Batch started at 13652	3845	1.00284E+17	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13663	0	7193677.	255601.	421.	3313.	1750.69	303.12
13663	1	0.	0.	0.	0.	0.00	0.00
13663	2	0.	0.	0.	0.	0.00	0.00
13663	3	0.	0.	0.	0.	0.00	0.00
13663	10	38715.	1445.	1.	10.	9.90	0.89

23380	Sat Jul 16 06:31:41 2011	BMV

Turns out our liquid helium is running low and we need to stop cooling the source so we have enough to continue. So I only got thorough 2/3rds of the guides I planned to study. But good timing because it is also close to bed time. Hopefully by night time we will have a source again and enough to finish the lifetime measurements and hopefully continue the transmission. The next lifetime guides are Fe Monitor and SS guide, then we do transmission studies. NEXT SHIFT: We left both the us and ds side of the windows being pumped on. We did this because after our run when we closed the GV, the pressure us side of window (CC2) was at 10^-3. We decided that side need to get rid of it's outgassing, although once we turned on SV4 it quickly went down to 10^-6 w/o turbo full spin. But we will just pump on it. Please get the liquifiers up and the dewars full of liquid :-D. Enough for another night of running. Thanks! These last two nights were great with the dewars

23367	Sat Jul 16 06:11:14 2011	BMV

Guide test continued Date Time Guide GV Slow Midas Measurement GV avg Mon avg Mon/GV 7/15/2011 6:50 PM afp to scs closed 639 16343 transmission 192.13 0.1442 0.000750533 7/15/2011 7:22 PM afp to scs open 641 16344 transmission 128.31 2151.59 16.76868522 Two pin holes shiny sides facing one another on either side of the installed guide Lifetime Measurements Gvcount Moncount Mon/GV lifetime 7/15/2011 10:16 PM EP CU Raymond 643 16349 lifetime 11 581236 6742 0.011599419 20.08 7/16/2011 12:20 AM SG-2 645 16350 lifetime 12 632240 20617 0.032609452 23.74 7/16/2011 3:22 AM AU1 646 16351 lifetime 11 521940 12500 0.023949113 34 7/16/2011 5:13 AM AU2 647 16352 lifetime 494728 10276 0.02077101 30.33

Attachment 1: y_2011_2.xls

23378	Sat Jul 16 05:53:21 2011	DAQ On-line

07/16 04:53 Start Run 13662 UCN0030 2011 UCN
07/16 05:53 End Run

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.57532E+13	0	0.00000E+00
Run 13662	346	8.92027E+15	0	0.00000E+00
Batch started at 13652	3700	9.65397E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13662	0	6938076.	601324.	10.	2049.	1727.94	271.22
13662	1	0.	0.	0.	0.	0.00	0.00
13662	2	0.	0.	0.	0.	0.00	0.00
13662	3	0.	0.	0.	0.	0.00	0.00
13662	10	37270.	3460.	1.	10.	9.94	0.69

23377 | Sat Jul 16 04:53:15 2011 | DAQ On-line

07/16 03:53 Start Run 13661 UCN0030 2011 UCN
07/16 04:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	1	2.58006E+13	0	0.00000E+00
Run 13661	346	8.90518E+15	0	0.00000E+00
Batch started at 13652	3354	8.76193E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13661	0	6336752.	641630.	166.	2075.	1843.76	236.23
13661	1	0.	0.	0.	0.	0.00	0.00
13661	2	0.	0.	0.	0.	0.00	0.00
13661	3	0.	0.	0.	0.	0.00	0.00
13661	10	33810.	3465.	4.	13.	9.96	0.52

23375 | Sat Jul 16 03:53:04 2011 | DAQ On-line

07/16 02:53 Start Run 13660 UCN0030 2011 UCN
07/16 03:53 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.56652E+13	0	0.00000E+00
Run 13660	346	8.90963E+15	0	0.00000E+00
Batch started at 13652	3008	7.87141E+16	0	0.00000E+00

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13660	0	5695122.	618722.	6.	2070.	1772.84	276.44
13660	1	0.	0.	0.	0.	0.00	0.00
13660	2	0.	0.	0.	0.	0.00	0.00
13660	3	0.	0.	0.	0.	0.00	0.00
13660	10	30345.	3460.	1.	10.	9.91	0.84

23376	Sat Jul 16 03:14:03 2011	BMV

Bryan and I felt that after two lifetime runs we did not like the fact that we truly did not know the pressure in the guides, because the other gauge bottoms out around 10^-3 - 10^-4. After searching and searching for a cable to connect the cc gauge.... we decided to disconnect the CC2 cable and connect it to the ds turbopump system. Yay we are getting 10^-5 we feel a lot more comfortable about that. We are still having problems with the E07 (overheating) in CC2 we believe this is a card reading problem, not a gauge problem. Perhaps we should replace the card?

23374	Sat Jul 16 02:52:59 2011	DAQ On-line

07/16 01:52 Start Run 13659 UCN0030 2011 UCN
07/16 02:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.56929E+13	0	0.00000E+00
Run 13659	346	8.92409E+15	0	0.00000E+00
Batch started at 13652	2662	6.98044E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13659	0	5076400.	674457.	190.	2072.	1943.68	104.73
13659	1	0.	0.	0.	0.	0.00	0.00
13659	2	0.	0.	0.	0.	0.00	0.00
13659	3	0.	0.	0.	0.	0.00	0.00
13659	10	26885.	3460.	5.	10.	9.97	0.35

23373	Sat Jul 16 01:52:54 2011	DAQ On-line

07/16 00:52 Start Run 13658 UCN0030 2011 UCN
07/16 01:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.60072E+13	0	0.00000E+00
Run 13658	342	8.77052E+15	0	0.00000E+00
Batch started at 13652	2316	6.08803E+16	0	0.00000E+00

Scalers

13658	0	4401943.	650796.	247.	2141.	1817.86	274.62
13658	1	0.	0.	0.	0.	0.00	0.00
13658	2	0.	0.	0.	0.	0.00	0.00
13658	3	0.	0.	0.	0.	0.00	0.00
13658	10	23425.	3460.	1.	10.	9.97	0.49

23372 | Sat Jul 16 00:52:50 2011 | DAQ On-line

07/15 23:52 Start Run 13657 UCN0030 2011 UCN
07/16 00:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 290	1	2.63972E+13	0	0.00000E+00
Run 13657	288	7.57633E+15	0	0.00000E+00
Batch started at 13652	1974	5.21098E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13657	0	3771147.	530667.	6.	2159.	1811.15	319.62
13657	1	0.	0.	0.	0.	0.00	0.00
13657	2	0.	0.	0.	0.	0.00	0.00
13657	3	0.	0.	0.	0.	0.00	0.00
13657	10	19965.	2895.	1.	10.	9.88	0.96

23371 | Fri Jul 15 23:52:45 2011 | DAQ On-line

07/15 22:52 Start Run 13656 UCN0030 2011 UCN
07/15 23:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.63757E+13	0	0.00000E+00
Run 13656	346	9.11224E+15	0	0.00000E+00
Batch started at 13652	1686	4.45334E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13656	0	3240480.	687153.	835.	2209.	1980.27	195.20
13656	1	0.	0.	0.	0.	0.00	0.00
13656	2	0.	0.	0.	0.	0.00	0.00
13656	3	0.	0.	0.	0.	0.00	0.00
13656	10	17070.	3460.	1.	10.	9.97	0.49

23370 | Fri Jul 15 22:52:40 2011 | DAQ On-line

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	1	2.64015E+13	0	0.00000E+00
Run 13655	347	9.15054E+15	0	0.00000E+00
Batch started at 13652	1340	3.54212E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13655	0	2553327.	638142.	282.	2172.	1833.74	269.75
13655	1	0.	0.	0.	0.	0.00	0.00
13655	2	0.	0.	0.	0.	0.00	0.00
13655	3	0.	0.	0.	0.	0.00	0.00
13655	10	13610.	3465.	1.	10.	9.96	0.58

23369 | Fri Jul 15 21:52:29 2011 | DAQ On-line

07/15 20:52 Start Run 13654 UCN0030 2011 UCN
07/15 21:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.63581E+13	0	0.00000E+00
Run 13654	344	9.08881E+15	0	0.00000E+00
Batch started at 13652	993	2.62706E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13654	0	1915185.	679364.	3.	2102.	1935.51	233.46
13654	1	0.	0.	0.	0.	0.00	0.00
13654	2	0.	0.	0.	0.	0.00	0.00
13654	3	0.	0.	0.	0.	0.00	0.00
13654	10	10145.	3460.	1.	10.	9.86	1.07

23368 | Fri Jul 15 20:52:25 2011 | DAQ On-line

07/15 19:52 Start Run 13653 UCN0030 2011 UCN
07/15 20:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 324	1	2.63883E+13	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13653	0	1235821.	645687.	5.	3008.	1962.57	281.45
13653	1	0.	0.	0.	0.	0.00	0.00
13653	2	0.	0.	0.	0.	0.00	0.00
13653	3	0.	0.	0.	0.	0.00	0.00
13653	10	6685.	3225.	0.	10.	9.80	1.21

23366 | Fri Jul 15 19:52:20 2011 | DAQ On-line

07/15 18:52 Start Run 13652 UCN0030 2011 UCN
07/15 19:52 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 345	1	2.64429E+13	0	0.00000E+00
Run 13652	326	8.64810E+15	0	0.00000E+00
Batch started at 13652	326	8.64810E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13652	0	590134.	590134.	8.	3261.	1700.67	458.22
13652	1	0.	0.	0.	0.	0.00	0.00
13652	2	0.	0.	0.	0.	0.00	0.00
13652	3	0.	0.	0.	0.	0.00	0.00
13652	10	3460.	3460.	1.	20.	9.97	0.80

23365 | Fri Jul 15 18:46:29 2011 | DAQ On-line

07/15 18:44 Start Run 13651 UCN0030 2011 UCN
07/15 18:46 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13650	0	0.00000E+00	0	0.00000E+00
Batch started at 13650	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13651	0	19103.	19103.	465.	18638.	9551.50	12850.25
13651	1	0.	0.	0.	0.	0.00	0.00

13651	10	100.	100.	1.	99.	50.00	69.30

23364	Fri Jul 15 17:48:07 2011	JCHoagland

beam count down of one 200 length 5 pulses every 5 seconds at 20Hz

23363	Fri Jul 15 17:42:37 2011	JCHoagland

ccr gave us beam at 5:40pm

23361	Fri Jul 15 16:09:32 2011	BMV

Stopped Beam around 5:40am. Problems with the DB grapher. It stopped at 4am. Used to know how to rerun script but that has changed. Any advice? ANDY>>>> What is a DB grapher?

23362	Fri Jul 15 16:07:01 2011	ASaunders

CCR asked to line up beam to UCN

23360	Fri Jul 15 05:54:59 2011	BMV

While taking data and starting to analyze the data, I realized that the data is going into the June file, which to me would be ok except for the fact that the file number was inbetween the range of the file numbers in the folder. Which means the data aquisitions were overwriting the data in the June folder. (my files about 630, the max number file is in the 700s) This unnerved me so I saved as July folder, then checked with the two windows I was concerned with. The second window showed up going to the July folder. So I thought all the windows were going to the July folder. Later when looking over the folder I realized that all those windows were running but they weren't all saving in the July folder. I have since remedied this. But I am afraid that they have replaced some data in the June folder. I do not know why the program was set in the 600s when should of been in the 700s. But ~ten files before run number 633 are possibly been replaced.... I do not know how to fixed this but hopefully it is not replacing anything anymore...

23359	Fri Jul 15 05:42:47 2011	BMV

Day Time Guide Slow Daq Midas #Cycles GVcounts Mon Counts Measurement 7/14 22:35 SG2-bkg 627 16330 7/14 22:40 SG-2 628 16331 6 1036985 4076 lifetime program stopped after first cycle NOW switched to transission because not certain that I like the lifetime set up will have to think about that... so transmission Transmission Test Date Time Guide GV Slow Midas Measurement GV avg Mon avg Mon/GV 7/15/2011 1:44 AM SG-2 closed 630 16333 transmission 198.97 0.134 0.000673468 7/15/2011 1:55 AM SG-2 open 631 16334 transmission 127.65 2481.15 19.43713278 7/15/2011 3:36 AM direct closed 633 16337 transmission 196.55 0.1326 0.000674637 7/15/2011 3:50 AM direct open 634 16338-9 transmission 124.8 2862.08 22.93333333 7/15/2011 5:18 AM cu ep rios closed 637 16341 transmission 196 0.1197 0.000610714 7/15/2011 5:29 AM cu ep rios open 638 16342 transmission 128.357 1958.7 15.25978326

Attachment 1: y_2011.xls

23358	Thu Jul 14 19:41:30 2011	JCHoagland

ccr finished tuning at 19:41

23357	Thu Jul 14 17:52:15 2011	ASaunders

CCR asked to sweep Area C and start tuning to UCN at 17:55

23356	Thu Jul 14 02:31:54 2011	BMV

After several hours of messing with the gate valve air connection, source, and preamp for the detector, we finally get to take data. Shutter guide (SG2) installed (before fire) Slow daq: GV-A1-run628, Switcher-A2-run620. No midas, having problems with the midas. 156s load time and 156s drain time. Cu, DLC, 23". Started about 1:15am. pinholes installed, lifetime measurement. Cycles:14 GVcounts:669365 Mon Counts: 12641 Lifetime is yet to be determined, need sleep but unfortunately does not look good. I think this is due to 4 x 10-4 torr pressure, Do not think the guide is installed well... will need to investigate tomorrow. Improve setup.

23355	Wed Jul 13 23:41:21 2011	JCHoagland

the polyflow that connects the scs gate valves has a broken section. will try to fix

23354	Wed Jul 13 08:08:11 2011	GEHogan

23353	Tue Jul 12 14:57:11 2011	MFMakela

Starting to cool UCN source. 1128.6 mbar in hte system (tank and source).

23352	Mon Jul 11 17:50:54 2011	GEHogan

June Windows updates done with 1/2 day to spare before next Microsoft Tuesday. This maybe my last OS update for UCN! May God have mercy on the soul of my sucessor.

23351	Mon Jul 11 17:49:02 2011	DAQ On-line

07/11 17:48 Start Run 13650 UCN0030 2011 UCN
07/11 17:49 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13650	0	0.00000E+00	0	0.00000E+00
Batch started at 13650	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13650	0	3.	3.	1.	2.	1.50	0.71
13650	1	0.	0.	0.	0.	0.00	0.00
13650	2	0.	0.	0.	0.	0.00	0.00
13650	3	0.	0.	0.	0.	0.00	0.00
13650	10	0.	0.	0.	0.	0.00	0.00

23350	Mon Jul 11 11:06:02 2011	DAQ On-line

07/11 11:05 Start Run 13649 UCN0030 2011 UCN
07/11 11:06 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13649	0	0.00000E+00	0	0.00000E+00
Batch started at 13649	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13649	0	4.	4.	1.	3.	2.00	1.41
13649	1	0.	0.	0.	0.	0.00	0.00
13649	2	0.	0.	0.	0.	0.00	0.00
13649	3	0.	0.	0.	0.	0.00	0.00
13649	10	0.	0.	0.	0.	0.00	0.00

Lakeshore frooze up yesterday. Restarted.

23348	Wed Jul 6 09:07:33 2011	GEHogan

Fire plus electrical outage caused long computer outage over weekend. Readout restored Tues about noon. EMS stopped by network glitch? after a few hours. Restored.

23347	Thu Jun 30 11:04:23 2011	GEHogan

Restarted EMS. Looks like a network glitch about 23 hrs ago.

23346	Tue Jun 28 10:35:21 2011	GEHogan

Restarted EMS which had halted yesterday morning.

23344	Mon Jun 27 16:40:39 2011	BMV

We came in around 3 this afternoon ready to perform guide test. When the 100acre forest fire turned into a 400 acre forest fire coming into Alamo Canyon (Bandelier area). So they decided to place the accelerator on standby. And there is discussion of evacuating LANL and possibly Los Alamos town. Here are some pics.

Attachment 1: y_2011.xls

y_2011.xls

23345	Sun Jun 26 18:22:53 2011	BMV

Why we did not get any data today..

Attachment 1: y_2011.xls

y_2011.xls

23343	Wed Jun 22 12:55:21 2011	JCHoagland

9:30am after cooling the magnet with cold He gas all night started flowing liquid helium in to the magnet. Once liquid was flowing to the magnet stopped pumping on the insulating vaccum of the magnet 12:50pm finished filling the magnet, the fill only took 3.5 hours to fill as compared to 6.5 hours in the procedues book, we did bypass the milking station for this fill so that may have some thing to do with the faster time.

23342	Sun Jun 19 11:54:27 2011	DAQ On-line

06/19 11:42 Start Run 13648 UCN0030 2011 UCN
06/19 11:54 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 70	0	0.00000E+00	0	0.00000E+00
Run 13648	7	1.71926E+14	0	0.00000E+00
Batch started at 13648	7	1.71926E+14	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13648	0	84175.	84175.	1.	4143.	1122.33	557.31
13648	1	0.	0.	0.	0.	0.00	0.00
13648	2	0.	0.	0.	0.	0.00	0.00
13648	3	0.	0.	0.	0.	0.00	0.00
13648	10	710.	710.	1.	20.	9.47	2.57

06/18 18:40 Start Run 13647 UCN0030 2011 UCN
06/18 18:41 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 4	0	0.00000E+00	0	0.00000E+00
Run 13647	0	0.00000E+00	0	0.00000E+00
Batch started at 13647	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13647	0	3772.	3772.	245.	1231.	754.40	451.41
13647	1	0.	0.	0.	0.	0.00	0.00
13647	2	0.	0.	0.	0.	0.00	0.00
13647	3	0.	0.	0.	0.	0.00	0.00
13647	10	30.	30.	0.	10.	6.00	4.24

23340 | Mon Jun 13 08:16:17 2011 | DAQ On-line

06/13 00:52 Start Run 13646 UCN0030 2011 UCN
06/13 07:54 Run Suspended
06/13 07:54 Run Resumed
06/13 07:54 Run Suspended
06/13 07:54 Run Suspended

23339 | Mon Jun 13 00:51:59 2011 | DAQ On-line

06/12 23:51 Start Run 13645 UCN0030 2011 UCN
06/13 00:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 355	0	0.00000E+00	0	0.00000E+00
Run 13645	86	2.13336E+15	0	0.00000E+00
Batch started at 13626	4016	9.09541E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13645	0	6358685.	118252.	4.	1489.	332.17	421.83
13645	1	0.	0.	0.	0.	0.00	0.00
13645	2	0.	0.	0.	0.	0.00	0.00
13645	3	0.	0.	0.	0.	0.00	0.00
13645	10	109025.	3460.	1.	10.	9.72	1.01

23338 | Sun Jun 12 23:51:56 2011 | DAQ On-line

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 132	1	2.48061E+13	0	0.00000E+00
Run 13644	128	3.14536E+15	0	0.00000E+00
Batch started at 13626	3930	8.88208E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13644	0	6240433.	203441.	267.	1787.	1529.63	281.35
13644	1	0.	0.	0.	0.	0.00	0.00
13644	2	0.	0.	0.	0.	0.00	0.00
13644	3	0.	0.	0.	0.	0.00	0.00
13644	10	105565.	1320.	1.	10.	9.92	0.78

23337 | Sun Jun 12 22:51:52 2011 | DAQ On-line

06/12 21:51 Start Run 13643 UCN0030 2011 UCN
06/12 22:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 314	0	0.00000E+00	0	0.00000E+00
Run 13642	100	2.32171E+15	0	0.00000E+00
Batch started at 13626	3802	8.56755E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13643	0	6036992.	8828.	8828.	8828.	8828.00	0.00
13643	1	0.	0.	0.	0.	0.00	0.00
13643	2	0.	0.	0.	0.	0.00	0.00
13643	3	0.	0.	0.	0.	0.00	0.00
13643	10	104245.	0.	0.	0.	0.00	0.00

23336 | Sun Jun 12 21:51:49 2011 | DAQ On-line

06/12 20:51 Start Run 13642 UCN0030 2011 UCN
06/12 21:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 314	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13642	0	6028164.	110406.	0.	1105.	350.50	386.24
13642	1	0.	0.	0.	0.	0.00	0.00
13642	2	0.	0.	0.	0.	0.00	0.00
13642	3	0.	0.	0.	0.	0.00	0.00
13642	10	104245.	3100.	1.	10.	9.84	0.85

23335 | Sun Jun 12 20:51:46 2011 | DAQ On-line

06/12 19:51 Start Run 13641 UCN0030 2011 UCN
06/12 20:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 210	1	2.45062E+13	0	0.00000E+00
Run 13641	391	3.65267E+15	0	0.00000E+00
Batch started at 13626	3702	8.33538E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13641	0	5917758.	217473.	0.	3060.	1030.68	609.32
13641	1	0.	0.	0.	0.	0.00	0.00
13641	2	0.	0.	0.	0.	0.00	0.00
13641	3	0.	0.	0.	0.	0.00	0.00
13641	10	101145.	1950.	1.	10.	9.24	1.84

23334 | Sun Jun 12 19:51:42 2011 | DAQ On-line

06/12 18:51 Start Run 13640 UCN0030 2011 UCN
06/12 19:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 44	0	0.00000E+00	0	0.00000E+00
Run 13637	25	5.71863E+14	0	0.00000E+00
Batch started at 13626	3311	7.97011E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13640	0	5700285.	124.	124.	124.	124.00	0.00
13640	1	0.	0.	0.	0.	0.00	0.00

13640	10	99195.	0.	0.	0.	0.00	0.00

23333 | Sun Jun 12 18:51:39 2011 | DAQ On-line

06/12 17:51 Start Run 13639 UCN0030 2011 UCN
06/12 18:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 44	0	0.00000E+00	0	0.00000E+00
Run 13637	25	5.71863E+14	0	0.00000E+00
Batch started at 13626	3311	7.97011E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13639	0	5700161.	71680.	71680.	71680.	71680.00	0.00
13639	1	0.	0.	0.	0.	0.00	0.00
13639	2	0.	0.	0.	0.	0.00	0.00
13639	3	0.	0.	0.	0.	0.00	0.00
13639	10	99195.	0.	0.	0.	0.00	0.00

23332 | Sun Jun 12 17:51:35 2011 | DAQ On-line

06/12 16:51 Start Run 13638 UCN0030 2011 UCN
06/12 17:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 44	0	0.00000E+00	0	0.00000E+00
Run 13637	25	5.71863E+14	0	0.00000E+00
Batch started at 13626	3311	7.97011E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13638	0	5628481.	60137.	60137.	60137.	60137.00	4.12
13638	1	0.	0.	0.	0.	0.00	0.00
13638	2	0.	0.	0.	0.	0.00	0.00
13638	3	0.	0.	0.	0.	0.00	0.00
13638	10	99195.	0.	0.	0.	0.00	0.00

23331 | Sun Jun 12 16:51:32 2011 | DAQ On-line

06/12 15:51 Start Run 13637 UCN0030 2011 UCN
06/12 16:51 End Run

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 44	0	0.00000E+00	0	0.00000E+00
Run 13637	25	5.71863E+14	0	0.00000E+00
Batch started at 13626	3311	7.97011E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13637	0	5568344.	80701.	0.	55929.	1754.37	8170.42
13637	1	0.	0.	0.	0.	0.00	0.00
13637	2	0.	0.	0.	0.	0.00	0.00
13637	3	0.	0.	0.	0.	0.00	0.00
13637	10	99195.	430.	0.	10.	9.35	2.18

23330 | Sun Jun 12 15:51:29 2011 | DAQ On-line

06/12 14:51 Start Run 13636 UCN0030 2011 UCN
06/12 15:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.27953E+13	0	0.00000E+00
Run 13636	339	7.81808E+15	0	0.00000E+00
Batch started at 13626	3286	7.91292E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13636	0	5487643.	240439.	2.	852.	690.92	104.95
13636	1	0.	0.	0.	0.	0.00	0.00
13636	2	0.	0.	0.	0.	0.00	0.00
13636	3	0.	0.	0.	0.	0.00	0.00
13636	10	98765.	3450.	1.	10.	9.91	0.80

23329 | Sun Jun 12 14:51:22 2011 | DAQ On-line

06/12 13:51 Start Run 13635 UCN0030 2011 UCN
06/12 14:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 226	1	2.36759E+13	0	0.00000E+00
Run 13635	224	5.12494E+15	0	0.00000E+00
Batch started at 13626	2947	7.13112E+16	0	0.00000E+00

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13635	0	5247204.	126385.	1.	24009.	554.32	1565.13
13635	1	0.	0.	0.	0.	0.00	0.00
13635	2	0.	0.	0.	0.	0.00	0.00
13635	3	0.	0.	0.	0.	0.00	0.00
13635	10	95315.	2255.	1.	10.	9.89	0.91

23328 | Sun Jun 12 13:51:18 2011 | DAQ On-line

06/12 12:51 Start Run 13634 UCN0030 2011 UCN
06/12 13:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.33551E+13	0	0.00000E+00
Run 13634	344	8.10107E+15	0	0.00000E+00
Batch started at 13626	2723	6.61863E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13634	0	5120819.	195034.	299.	716.	562.06	82.80
13634	1	0.	0.	0.	0.	0.00	0.00
13634	2	0.	0.	0.	0.	0.00	0.00
13634	3	0.	0.	0.	0.	0.00	0.00
13634	10	93060.	3460.	1.	10.	9.97	0.49

23327 | Sun Jun 12 12:51:15 2011 | DAQ On-line

06/12 11:51 Start Run 13633 UCN0030 2011 UCN
06/12 12:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.41407E+13	0	0.00000E+00
Run 13633	343	7.74511E+15	0	0.00000E+00
Batch started at 13626	2379	5.80852E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13633	0	4925785.	196910.	2.	780.	564.21	93.95
13633	1	0.	0.	0.	0.	0.00	0.00
13633	2	0.	0.	0.	0.	0.00	0.00
13633	3	0.	0.	0.	0.	0.00	0.00
13633	10	89600.	3460.	1.	10.	9.91	0.78

06/12 10:51 Start Run 13632 UCN0030 2011 UCN
06/12 11:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.28215E+13	0	0.00000E+00
Run 13632	343	7.85001E+15	0	0.00000E+00
Batch started at 13626	2036	5.03401E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13632	0	4728875.	166522.	151.	555.	479.89	43.88
13632	1	0.	0.	0.	0.	0.00	0.00
13632	2	0.	0.	0.	0.	0.00	0.00
13632	3	0.	0.	0.	0.	0.00	0.00
13632	10	86140.	3460.	1.	10.	9.97	0.49

23325 | Sun Jun 12 10:51:06 2011 | DAQ On-line

06/11 15:23 Start Run 13631 UCN0030 2011 UCN
06/12 10:51 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 285	0	0.00000E+00	0	0.00000E+00
Run 13631	97	2.42395E+15	0	0.00000E+00
Batch started at 13626	1693	4.24902E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13631	0	4562353.	3784968.	69.	3578752.	13234.15	211573.70
13631	1	0.	0.	0.	0.	0.00	0.00
13631	2	0.	0.	0.	0.	0.00	0.00
13631	3	0.	0.	0.	0.	0.00	0.00
13631	10	82680.	66685.	3.	63934.	233.16	3779.93

23324 | Sat Jun 11 15:23:47 2011 | DAQ On-line

06/11 14:23 Start Run 13630 UCN0030 2011 UCN
06/11 15:23 End Run

Batch Protons

	Group 1		Group 21	

Run 13630	316	7.90080E+15	0	0.00000E+00
Batch started at 13626	1596	4.00662E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13630	0	777385.	226979.	34.	6680.	709.31	421.00
13630	1	0.	0.	0.	0.	0.00	0.00
13630	2	0.	0.	0.	0.	0.00	0.00
13630	3	0.	0.	0.	0.	0.00	0.00
13630	10	15995.	3185.	4.	10.	9.95	0.49

23323 | Sat Jun 11 14:23:39 2011 | DAQ On-line

06/11 13:23 Start Run 13629 UCN0030 2011 UCN
06/11 14:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 244	1	2.52334E+13	0	0.00000E+00
Run 13629	244	6.15262E+15	0	0.00000E+00
Batch started at 13626	1280	3.21655E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13629	0	550406.	120825.	0.	754.	489.17	90.47
13629	1	0.	0.	0.	0.	0.00	0.00
13629	2	0.	0.	0.	0.	0.00	0.00
13629	3	0.	0.	0.	0.	0.00	0.00
13629	10	12810.	2430.	1.	10.	9.84	1.05

23322 | Sat Jun 11 13:23:33 2011 | DAQ On-line

06/11 12:23 Start Run 13628 UCN0030 2011 UCN
06/11 13:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 347	1	2.51677E+13	0	0.00000E+00
Run 13628	345	8.65360E+15	0	0.00000E+00
Batch started at 13626	1036	2.60128E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma

13628	2	0.	0.	0.	0.	0.00	0.00
13628	3	0.	0.	0.	0.	0.00	0.00
13628	10	10380.	3460.	1.	10.	9.91	0.80

23321 | Sat Jun 11 12:23:30 2011 | DAQ On-line

06/11 11:23 Start Run 13627 UCN0030 2011 UCN
06/11 12:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 349	1	2.52409E+13	0	0.00000E+00
Run 13627	346	8.69902E+15	0	0.00000E+00
Batch started at 13626	691	1.73592E+16	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13627	0	297875.	140559.	2.	468.	399.32	50.11
13627	1	0.	0.	0.	0.	0.00	0.00
13627	2	0.	0.	0.	0.	0.00	0.00
13627	3	0.	0.	0.	0.	0.00	0.00
13627	10	6920.	3460.	1.	10.	9.83	1.07

23320 | Sat Jun 11 11:23:24 2011 | DAQ On-line

06/11 10:23 Start Run 13626 UCN0030 2011 UCN
06/11 11:23 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 346	1	2.52546E+13	0	0.00000E+00
Run 13626	345	8.66023E+15	0	0.00000E+00
Batch started at 13626	345	8.66023E+15	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13626	0	157316.	157316.	1.	574.	450.76	83.73
13626	1	0.	0.	0.	0.	0.00	0.00
13626	2	0.	0.	0.	0.	0.00	0.00
13626	3	0.	0.	0.	0.	0.00	0.00
13626	10	3460.	3460.	1.	10.	9.91	0.84

23319 | Fri Jun 10 17:05:59 2011 | DAQ On-line

06/10 17:05 Start Run 13625 UCN0030 2011 UCN
06/10 17:05 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13625	0	0.00000E+00	0	0.00000E+00
Batch started at 13625	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13625	0	1.	1.	0.	1.	0.50	0.71
13625	1	0.	0.	0.	0.	0.00	0.00
13625	2	0.	0.	0.	0.	0.00	0.00
13625	3	0.	0.	0.	0.	0.00	0.00
13625	10	0.	0.	0.	0.	0.00	0.00

23318	Fri Jun 10 10:52:49 2011	GEHogan

Renew SSL certificates on all UCN windows web sites.

23317	Fri Jun 10 02:39:16 2011	RRios

Beam: burst 5 every 5 seconds at 20 hz rep rate. CD: 1 PW: 135

23316	Thu Jun 9 17:28:54 2011	MFMakela

Did a double melt and refreeze: Closed heat exchanger return turned off poly pump. lower volatge to 2.5 VDC at 200 mbar opened flow to 5.7 VDC repeat opened orange valve closed check valve by pass heat exchanger to 10, poly pump on

23315	Thu Jun 9 16:40:26 2011	MFMakela

Starting to fill UCN source: Source cold for last 24 hours, returning through 1630 liquifier. UCN source vacuum cart: vacuum 7e-8 torr (SV3 open) UCN gatevalve closed MV5 not closing for sure MV6 closed SV4 closed Green valve open SV3 closed pumping port open vacuum ~1e-6 torr ucn gatevalve to window full of argon 632 torr the source has not be opened since last run so not pressure test or leak test and the vacuum is great. CC1 off D2 gas cart: Check valve bypass closed. All valve closed open orange valve and GC1 GC5 was no closed, but stuck full open so some gas went in to the source. D2 tank at 1181 mbar biulding the source - full open (GC1, GC5) MV2 closed (just in case) turbo spinning down Stopping fill of he source 23.6 mbar in tank starting melt and refreeze

23314	Mon Jun 6 13:48:58 2011	ARReid

Overlay of shutter plate with design document; delamination doesn't appear to be an issue.

Attachment 1: R03-3.PDF

23313	Thu Jun 2 16:42:11 2011	GEHogan

Rebuilt Pulse DAQ on PCPRAD34 with all the latest bells and whisles. Seems to readout the scopes okay.

23312	Thu Jun 2 16:40:26 2011	DAQ On-line

06/02 16:39 Start Run 13624 UCN0030 2011 UCN
06/02 16:40 End Run

Batch Protons

	Group 1		Group 21	

Run 13624	0	0.00000E+00	0	0.00000E+00
Batch started at 13624	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13624	0	0.	0.	0.	0.	0.00	0.00
13624	1	0.	0.	0.	0.	0.00	0.00
13624	2	0.	0.	0.	0.	0.00	0.00
13624	3	0.	0.	0.	0.	0.00	0.00
13624	10	0.	0.	0.	0.	0.00	0.00

23311 | Thu Jun 2 16:34:26 2011 | DAQ On-line

06/02 16:33 Start Run 13623 UCN0030 2011 UCN
06/02 16:34 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13623	0	0.00000E+00	0	0.00000E+00
Batch started at 13623	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13623	0	0.	0.	0.	0.	0.00	0.00
13623	1	0.	0.	0.	0.	0.00	0.00
13623	2	0.	0.	0.	0.	0.00	0.00
13623	3	0.	0.	0.	0.	0.00	0.00
13623	10	0.	0.	0.	0.	0.00	0.00

23310 | Thu Jun 2 16:28:41 2011 | DAQ On-line

06/02 16:26 Start Run 13622 UCN0030 2011 UCN
06/02 16:28 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13622	0	0.00000E+00	0	0.00000E+00
Batch started at 13622	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma

13622	2	0.	0.	0.	0.	0.00	0.00
13622	3	0.	0.	0.	0.	0.00	0.00
13622	10	0.	0.	0.	0.	0.00	0.00

23309	Thu Jun 2 14:47:20 2011	ARReid

Attachment 1: R03-3.PDF

R03-3.PDF

23308	Thu Jun 2 14:47:06 2011	ARReid

Attachment 1: R03-3.PDF

R03-3.PDF

23307	Thu Jun 2 14:46:53 2011	ARReid

Attachment 1: R03-3.PDF

R03-3.PDF

23306	Thu Jun 2 14:46:29 2011	ARReid

Attachment 1: R03-3.PDF

R03-3.PDF

23305	Wed Jun 1 15:45:14 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23304	Wed Jun 1 15:45:02 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23303	Wed Jun 1 15:44:44 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23302	Wed Jun 1 15:44:24 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23301	Wed Jun 1 15:44:09 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23300	Wed Jun 1 15:43:52 2011	JCHoagland

R03-3.PDF

23299	Wed Jun 1 15:43:36 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23298	Wed Jun 1 15:43:20 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23297	Wed Jun 1 15:42:58 2011	JCHoagland

Attachment 1: R03-3.PDF

R03-3.PDF

23296	Wed Jun 1 14:11:05 2011	JCHoagland

the code to get into the NCSU cabnet is DIAL

23295	Tue May 24 09:56:52 2011	GEHogan

OS updates done on EMS DAQ machines. EMS back up. Working on other machines

23294	Mon May 23 17:30:33 2011	mmendenhall

East Detector / DAQ test To make sure the detector and DAQ are running properly, I've filled the East MWPC (on floor) and turned on the East side MWPC and PMT voltages (W Side + muon vetos all off). The E MWPC filled and ramped up to 2700V very nicely. The DAQ is running and seeing events with a reasonable spectrum on the E side. Run 16317 is a run with this data.

23293	Mon May 23 09:16:49 2011	ASaunders

SD2 source IWD, 2011 version

Attachment 1: _3_2011_UCN_Source_FINAL.pdf

23292	Mon May 23 08:29:19 2011	ASaunders

2011 Magnet fields IWD

Attachment 1: _2_2011_UCN_Magnet_FINAL.pdf

23291	Thu May 19 14:57:15 2011	mmendenhall

I updated the daq/MIDAS to record runs in new data locations for 2011. Here are the steps taken to set up for the new year of data taking: -- On PCUCN18 -- su root mkdir /home/data_raw/2011 chown daq /home/data_analyzed/2011 mkdir /home/data_analyzed/2011 chown daq /home/data_analyzed/2011 mkdir /home/data_analyzed/2011/hbooks mkdir /home/data_analyzed/2011/rootfiles change all occurrences of "2010" to "2011" in: /home/daq/online/replay_bunch_of_runs.pl /home/daq/offline/quick_analyzer.pl -- On PCUCN16 --- launch fastdaq/MIDAS From the Midas webpage, click [ODB] -> Logger -> Data dir set Data dir to /home/data_raw/2011

23290	Thu May 19 12:33:19 2011	GEHogan

Apparently, about noon yesterday, the power to the computer rack upstairs was pulled. This crashed EMS. Laskshore and Mensor removed until power is restored.

23289	Thu May 19 12:32:26 2011	EIC

Activity Changed to UCN0030 [192]

23288	Thu May 19 11:30:39 2011	mmendenhall

volume for nitrogen and neopentane; in case there is any effect caused by a more slow fill with larger gas volumes as in the real wirechamber, we are repeating the gas cart test with larger volumes. The neopentane volume is a length of flex tubing, and the MWPC volume (with the nitrogen, neopentane, and spectrometer volumes all linked together) is serving as the nitrogen volume. Fill procedure is the same as for a regular wirechamber fill. Results: the fill went smoothly at a constant rate with no signs of leaking; filled volumes maintain pressure differential with normal (10sccm) neopentane flow rate. Here is a plot of what the test fill looked like:

Attachment 1: _2_2011_UCN_Magnet_FINAL.pdf

_2_2011_UCN_Magnet_FINAL.pdf

23287	Wed May 18 18:41:43 2011	mmendenhall

Bob Carr is here with me to troubleshoot/repair the West MWPC gas cart. The situation as of last December: the West wirechamber was unable to hold a significant neopentane/N2 differential pressure. With the N2 and neopentane volumes supposedly isolated from each other, pumping on the N2 side would also pump out the neopentane side. For a long time, we thought this was a leaky window problem; however, the windows were changed several times and the most recent change showed no holes in the window. Our best guess for the leak changed to a leaky solenoid on the gas cart between the N2 and neopentane segments of the manifold. Today's testing: We completely disconnected the wirechamber from the gas panel to protect the windows and isolate the problem. The panel neopentane inlet and outlet were connected together (creating a small fake wirechamber volume). All volumes were connected together and pumped out, then the volumes were isolated from each other using MV5 and MV7. The neopentane volume was filled with a few torr of air through the needle valve. Opening the pump on the nitrogen volume DID NOT pump out the neopentane (no sign of previous leak). We re-connected the wirechamber and (slowly, carefully) repeated the same procedure (connected to the actual wirechamber volumes/windows). There was still no sign of the leak seen last year; the problem appears to have resolved itself (a sticky valve properly re-seating?). Testing a full wirechamber fill (neopentane volume still connected to "spectrometer" volume), and the leak is back: fill rate s(at constant 50sccm flow) starts off reasonably fast and steady, but declines as pressure rises (with ~-6torr N2-Neopentane differential); once at 60torr, reducing flow to 15sccm causes pressure to start dropping. Fully disconnected again from wirechamber (as above) and repeated full fill test again: no signs of leaks; false neopentane volume fills and regulates to 100torr with -12torr N2-Neopentane differential, and maintains pressure even with incoming neopentane flow cut off. Conclusion so far: there is a leak somewhere in the wirechamber volume (not gas panel) between N2 and neopentane volumes that depends not only on the differential pressure, but also the absolute pressure; at low absolute pressures, the leak is not observable.

23286	Mon May 9 10:16:20 2011	GEHogan

Power Glitch at about 10:10

23285	Mon May 2 19:00:07 2011	GEHogan

April Updates done on DAQ machines.

23284	Fri Apr 22 16:48:57 2011	GEHogan

Yesterday, (Thursday), I stopped the EMS DAQ to fix problems with the Multiscan. Forgot to restart EMS. OOPS. Another OOPS, this time by the network folk, took down the OCE Friday afternoon. It is back up at UCN, coming back up elsewhere slowly (about 1-2 minutes per blue box, I am told.) EMS is back up.

23064	Tue Apr 12 10:37:54 2011	KPH

We can now read a pretty decent spectrum from the Ge detector in to the fADC using the new firmware upgrade that Fred sent us. This upgrade allows us to sample different channels at different rates. We show below a Co60 run and its background subtraction. The two prominent Co60 lines are very clear. NOTE: The plot shown is area, not pulse height.

Attachment 1: ectors_10.12.12.gif

ectors_10.12.12.gif

23283	Tue Mar 22 08:56:35 2011	GEHogan

Network glitch at 6:20 am?

Lakeshore needed to be restarted.

23281	Mon Mar 21 08:40:01 2011	GEHogan

Lakeshore needed to be restarted.

23280	Fri Mar 18 09:12:59 2011	GEHogan

EMS is up.

23279	Thu Mar 17 17:50:00 2011	GEHogan

Turn off stuff because of power outage tommorrow, Fri.

23278	Wed Mar 16 11:12:54 2011	GEHogan

Last night, Acrobat update was pushed down and everything rebooted. Logins are extremely slow. PCDAQ does not want to start in reasonable time on EMS computer.

23277	Wed Feb 16 10:46:06 2011	EIC

Network glitch at 10 AM

23276	Wed Feb 9 08:28:49 2011	GEHogan

Another 6 AM network glitch?

23275	Tue Feb 8 07:24:10 2011	GEHogan

Network blip about 6:30? Restart EMS

23274	Sun Feb 6 08:47:54 2011	GEHogan

UCN Meeting about to start in ABQ

23273	Fri Feb 4 10:50:37 2011	GEHogan

LANL on power conservation. Unneeded computers turned off.

23272	Thu Jan 27 13:52:07 2011	MFMakela

Reversing the flow has slightly increased the differential 136 to 145 psi.

Attachment 1: an27_13.27.45.gif

an27_13.27.45.gif

23271	Thu Jan 27 12:25:36 2011	MFMakela

Target flow scan, normal flow direction. First the supply valve was partially closed, then the return valve. Closing the supply valve increased the pressure read on the compressor as supply. Closing the return valve decreased the compressor return pressure, but did not increase the supply pressure.

Attachment 1: an27_11.49.48.gif

an27_11.49.48.gif

23270	Thu Jan 27 12:16:20 2011	MFMakela

W-target helium flow is reversed.

23269	Wed Jan 26 15:33:22 2011	MFMakela

Pressure on W-target system Supply 138.6 psi, Return 137.8 psi Compare to old entry: "Pressurized W-target supply to 139.7 psi this morning. Then valved off the target from the compressor. No pressure loss noted in ~6 hrs." No leak signal. Turned on W-compressor and added he gas: Supply 252.6 psi, Return 113.8 Psi, Diff 181.3 psi Running ~24 hour test

23268	Mon Jan 24 15:26:48 2011	MFMakela

Added pump to PPM insulating vacuum. PPM warming up.

1) UCN on-line DAQ, Jan. Updates applied 2) Lakeshore froze last Friday on constraints problem 3) There was a general network shutdown on Sat morning. EMS was restarted Sat aft.

23266	Tue Jan 11 10:21:14 2011	GEHogan

LANL wide network problem crashes EMS. Restarted after network came back up.

23265	Tue Jan 11 10:20:34 2011	MFMakela

Pressurized W-target supply to 139.7 psi this morning. Then valved off the target from the compressor. No pressure loss noted in ~6 hrs.

23261	Wed Jan 5 12:00:08 2011	MFMakela

Running 1630. Medium storage going down 5.81 psi per hour 4K dewar increasing at .82 inches per hour .14 inches per medium storage psi. current temp 28 F. 4k dewar 5 psi, 33 inches of liquid Zepplin volume 29835 gallons

23264	Mon Jan 3 13:04:02 2011	DAQ On-line

01/03 14:03 Start Run 13618 Dummy winter run
01/03 14:04 End Run

Batch Protons

	Group 1		Group 21	
	N	Integral	N	Integral
Trigger 1	0	0.00000E+00	0	0.00000E+00
Run 13618	0	0.00000E+00	0	0.00000E+00
Batch started at 13618	0	0.00000E+00	0	0.00000E+00

Scalers

Run	Scaler	Batch Sum	Run Sum	Run Min	Run Max	Run Average	Run Sigma
13618	0	0.	0.	0.	0.	0.00	0.00
13618	1	0.	0.	0.	0.	0.00	0.00
13618	2	0.	0.	0.	0.	0.00	0.00
13618	3	0.	0.	0.	0.	0.00	0.00
13618	10	0.	0.	0.	0.	0.00	0.00

23263	Sun Jan 2 19:05:01 2011	GEHogan

The EMS had stopped on network error? CHANGED THE ucnems password. Did Dec OS updates on active WIN DAQ machines.