Run comment: ^{26}Mg
Run #: 1112
Start: 20h34 Current: 1.4 nA
Stop: 21h04 CI Range: 6
Target: ^{26}Mg Collimator: #3
Target angle: -118.0
Trigger rate: 237 Hz
Data rate: 90 kB/s
Trigger evts: 276228
Scaler evts: 1734
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1
U1
X2
U2

Run comment: 1113, MT Check
Run #: 1113
Start: 21:07 Current: 1.2 nA
Stop: 21:18 CI Range: 6nA
Target: MT Collimator: #3
Target angle: -118
Trigger rate: 47 Hz
Data rate: 20 kB/s
Trigger evts: 31789
Scaler evts: 625
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1
U1
X2
U2

Run comment: ^{90}Zr
Run #: 1114
Start: 21h20 Current: 0.9 nA
Stop: 21:51 CI Range: 6
Target: ^{90}Zr Collimator: #3
Target angle: -118
Trigger rate: 154 Hz
Data rate: 60 kB/s
Trigger evts: 256054
Scaler evts: 1761
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1 94
U1 94
X2 87
U2 95.

Lots of interlocks fell in during this run. When the beam came back I could see no events. Stopping the run.

21:55 → RF problems. Ops trying to fix.

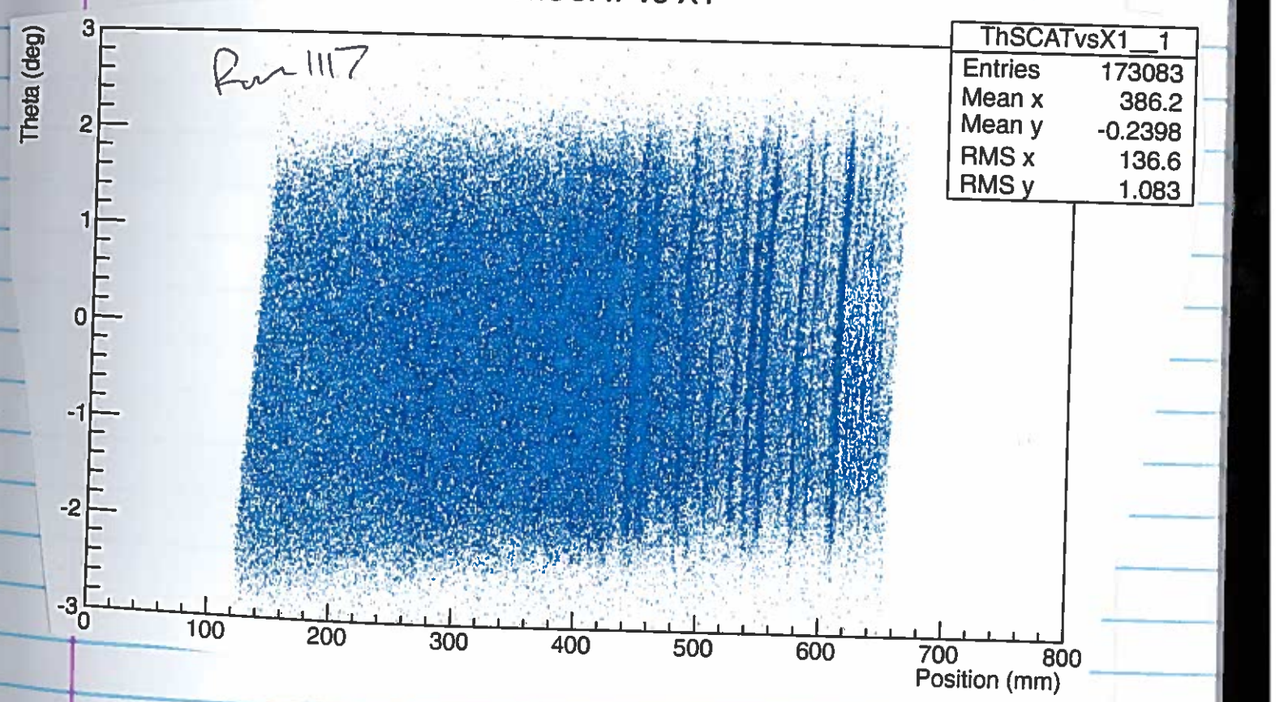
Run 1115 → No event rate. Bollocks. Reboot K600 vme 1.

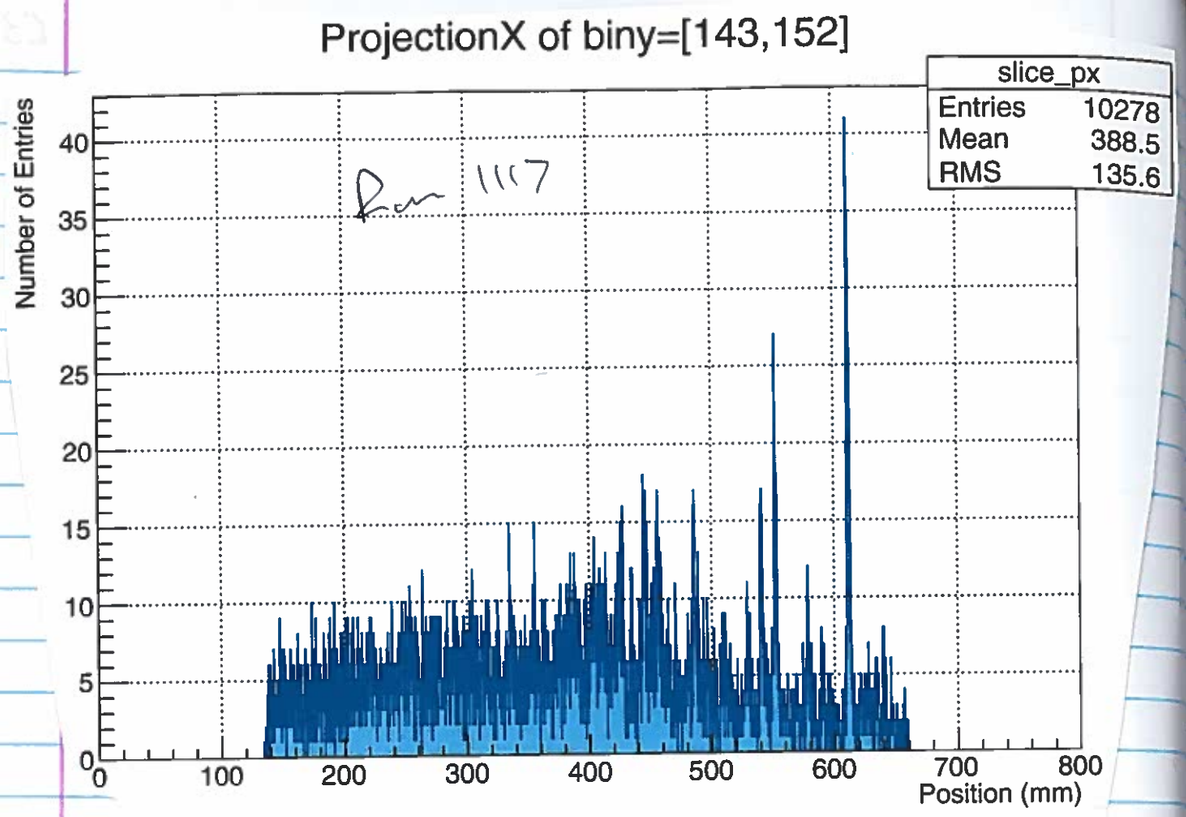
Run comment: ^{90}Zr data
Run #: 1116
Start: 22:02 Current: 1-2 nA
Stop: 22:42 CI Range: 6n
Target: #4 ^{90}Zr Collimator: #3
Target angle: -118
Trigger rate: 150 Hz
Data rate: 60 kB/s
Trigger evts: 368909
Scaler evts: 2313
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1 94
U1 95
X2 87
U2 95

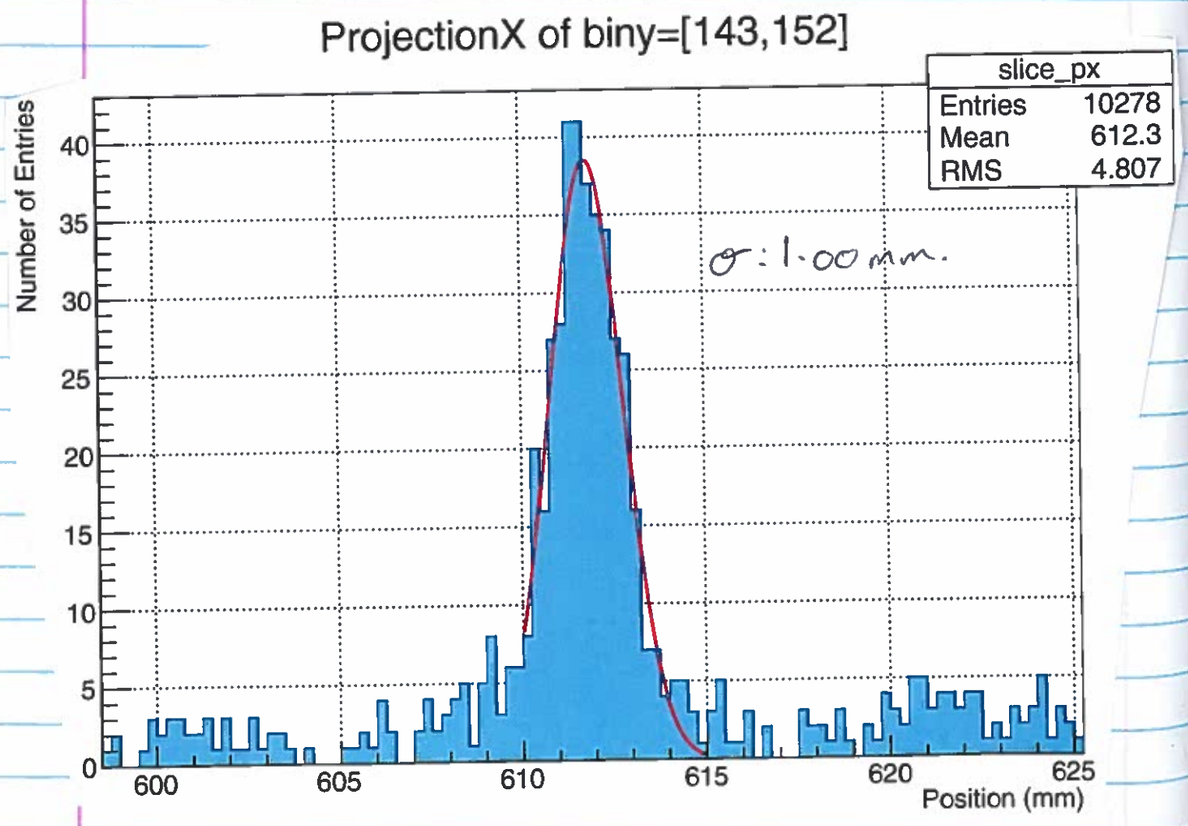
Check ^{26}Mg after RF problems (last page).

Run comment: 26Mg check
Run #: 1117
Start: 22:44 Current: 1 nA
Stop: 23:13 CI Range: 6n
Target: ^{26}Mg Collimator: #3
Target angle: -118
Trigger rate: 190 Hz
Data rate: 80 kB/s
Trigger evts:
Scaler evts:
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1
U1
X2
U2

Run comment: Data (^{58}Ni)
Run #: 1118
Start: 23:14 Current: 1 nA
Stop: 00:14 CI Range: 6n
Target: #5 ^{58}Ni Collimator: #3
Target angle: -118
Trigger rate: 120 Hz
Data rate: 50 kB/s
Trigger evts: 453002
Scaler evts: 3485
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: M A
D2: E A
K: A
VDC efficiency
X1 94.0
U1 95.5
X2 87.5
U2 95.0







VDC2 tripped @ 12:16. No measurement on!

Run comment: MT | K600 angle: 0 deg | K600 field: | Q: 5 A | VDC efficiency
Run #: 1119 | Start: 00:17 | Stop: 00:29 | Target: Empty | Target angle: −118 | Current: 0.8 nA | CI Range: 6 | Collimator: #3 | Trigger rate: 47 Hz | Data rate: 47 kB/s | Trigger evts: 26981 | Scaler evts: 534 | D1: A A | H: M A | D2: E A | K: A | X1 94 | U1 95 | X2 88.5 | U2 94

Run comment: Data ^{90}Zr | K600 angle: 0 deg | K600 field: | Q: 5 A | VDC efficiency
Run #: 1120 | Start: 00:29 | Stop: 01:29 | Target: ^{90}Zr | Target angle: −118 | Current: 0.7 nA | CI Range: 6 nA | Collimator: #3 | Trigger rate: 156 Hz | Data rate: 156 kB/s | Trigger evts: 582896 | Scaler evts: 3497 | D1: A A | H: M A | D2: E A | K: A | X1 94 | U1 94 | X2 87 | U2 95

Run comment: Data (^{58}Ni) | K600 angle: 0 deg | K600 field: | Q: 5 A | VDC efficiency
Run #: 1121 | Start: 01:31 | Stop: 02:31 | Target: ^{58}Ni | Target angle: −118 | Current: 1 nA | CI Range: 6 nA | Collimator: #3 | Trigger rate: 1078 Hz | Data rate: 103 kB/s | Trigger evts: 517970 | Scaler evts: 3499 | D1: A A | H: M A | D2: E A | K: A | X1 94 | U1 95 | X2 87 | U2 95

Run 1122 is not useful. It was for ~ only 5 seconds.

Run comment: Calibration (^{26}Mg) | K600 angle: 0 deg | K600 field: | Q: 5 A | VDC efficiency
Run #: 1123 | Start: 02:33 | Stop: 63:04 | Target: ^{26}Mg | Target angle: −118 | Current: 1 nA | CI Range: 6 | Collimator: #3 | Trigger rate: 94 Hz | Data rate: 59 kB/s | Trigger evts: 373802 | Scaler evts: 1775 | D1: A A | H: M A | D2: E A | K: A | X1 94 | U1 94 | X2 87 | U2 95

Run comment: MT | K600 angle: 0 deg | K600 field: | Q: 5 A | VDC efficiency
Run #: 1124 | Start: 03:05 | Stop: 03:15 | Target: MT | Target angle: −118 | Current: 1.2 nA | CI Range: 6 nA | Collimator: #3 | Trigger rate: 61 Hz | Data rate: 61 kB/s | Trigger evts: 29720 | Scaler evts: 597 | D1: A A | H: M A | D2: E A | K: A | X1 / | U1 / | X2 / | U2 /

Run 1125 not counted for ~5 seconds

Run comment: DATA ^{90}Zr K600 angle: 0 deg

Run #: 1126 | K600 field: Q: 5 A, D1: A A, H: M A, D2: E A, K: A

Start: 03:18 | Current: 1.0 nA | Trigger rate: 138 Hz | VDC efficiency X1: 94

Stop: 04:16 | CI Range: 6nA | Data rate: 58 kB/s | U1: 94

Target: ^{90}Zr | Collimator: #3 | Trigger evts: 598715 | X2: 87

Target angle: −118 | Scaler evts: 3508 | U2: 95

Run comment: Data ^{58}Ni K600 angle: 0 deg

Run #: 1127 | K600 field: Q: 5 A, D1: A A, H: M A, D2: E A, K: A

Start: 04:19 | Current: 1.2 nA | Trigger rate: 125 Hz | VDC efficiency X1: 94

Stop: | CI Range: 6nA | Data rate: 54 kB/s | U1: 94

Target: ^{58}Ni | Collimator: #3 | Trigger evts: 460847 | X2: 88

Target angle: −118 | Scaler evts: 3773 | U2: 95

Run comment: Calibration K600 angle: 0 deg

Run #: 1128 | K600 field: Q: 5 A, D1: A A, H: M A, D2: E A, K: A

Start: 05:26 | Current: 1.2 nA | Trigger rate: 198 Hz | VDC efficiency X1: 94

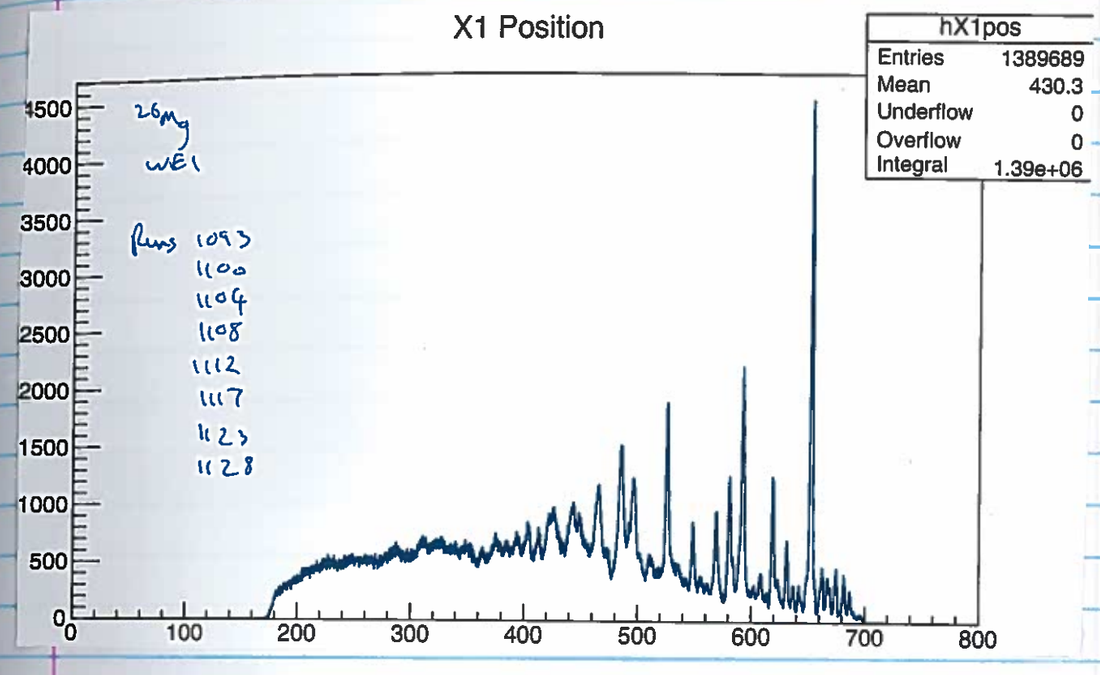
Stop: 05:57 | CI Range: 6nA | Data rate: 81 kB/s | U1: 94

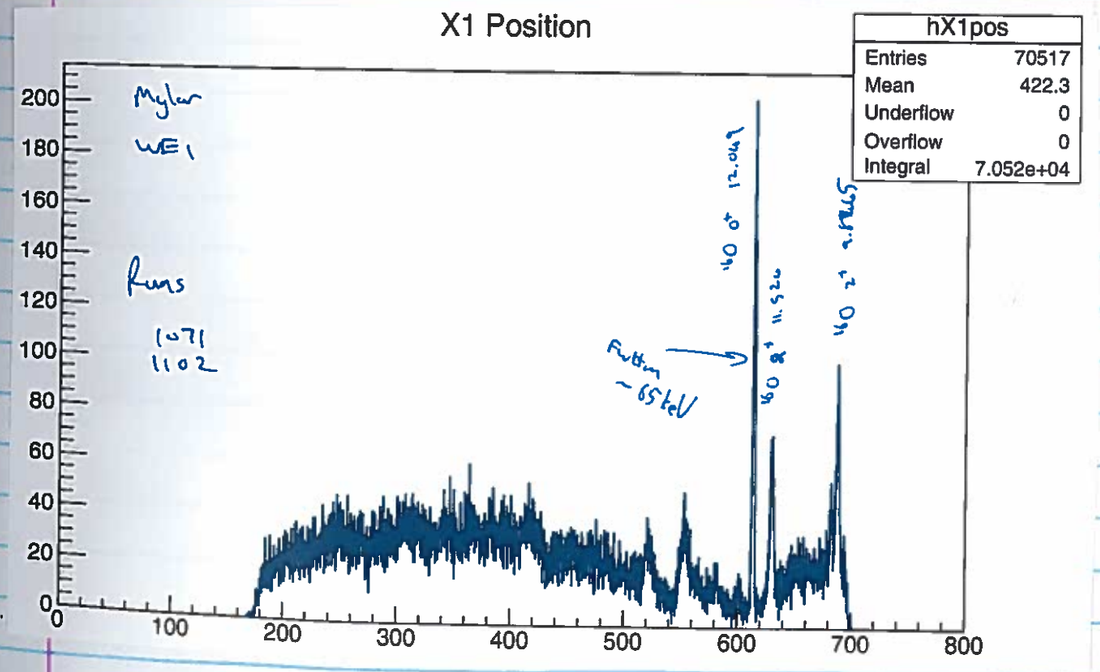
Target: 26 Mg | Collimator: #3 | Trigger evts: 355401 | X2: 88

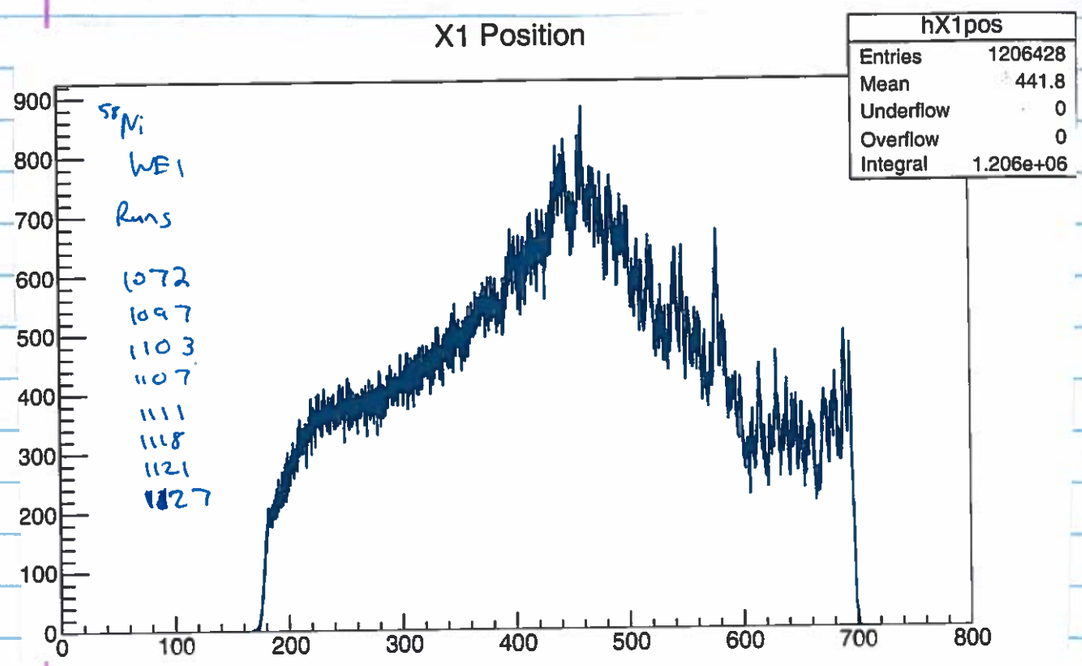
Target angle: −118 | Scaler evts: 1823 | U2: 95

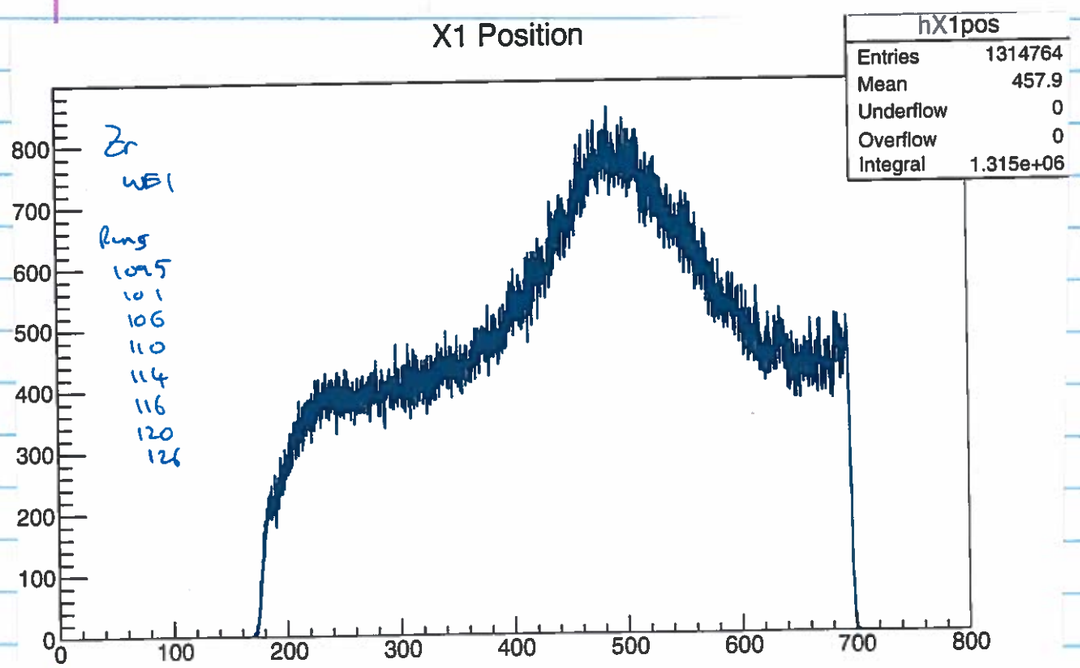
Beam taken at 6:00 AM 23/3/2015

Q	−454.175
D1	412.800
H	−2.833
D2	271.008
K	2.833









From: Iyabo Usman <Iyabo.Usman@wits.ac.za>
To: neveling@tlabs.ac.za <neveling@tlabs.ac.za>
Subject: RE: prelim results
Date: Wed, 25 Mar 2015 11:11:22 +0000 *(13:11 SAST)*

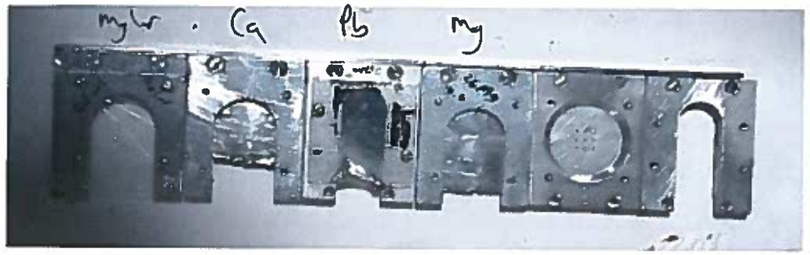
Hi Retief,

The statistics for both Zr and Ni will provide good analysis result as indicated with more than 1000 counts in the ISGMR region.

If both Pb and Ca targets are available for this weekend, then we can replace Zr and Ni on the target ladder. If one target is available, then we can take more data on Zr.

Regards,

Iyabo.



Targets of WE2

Targets of WE1
taken out on 27/03

Date	27/03/2015
Weekend #	2

Targets	#	Material	Thickness	Thickness measurement method
thinner than WE1 →	1	EMPTY		
	2	VIEWER		
	3	^{26}Mg	0.6 mg/cm^2	
	4	^{208}Pb		still to be determined
	5	^{40}Ca	~ 1mg/cm^2	
	6	MYLAR	200μm/cm^2	
Target perpendicular to beam [°]			−118°	
Target perpendicular to camera [°]			−138°	

Additional Notes:

Beam	Energy [MeV]	200	
	Pulse selection (yes/no)	no	
	Injector (SPC1 or SPC2)	SPC2	
	SSC Transmission	FC 19J	
		FC 1X	
		FC 11X	
		FC 4P	
		FC 4S	
		FC Target	

Additional Notes:

Scattering chamber beamstop	In beam position	2051
	Out of beam position	2500

Additional Notes:

Detector Setup	Order of detectors	Detectors	Sketch
↓	VDC 1	X	
		U	
	VDC 2	X	
		U	
	Paddle 1	1/4" new	
	Paddle 2	1/2" new	
Focal Plane (HD or MD)		HD	
Kapton window (HD or MD)		HD without angle (see p.9)	

Additional Notes:

Collimator Carousel	#	In perspex	In beam
	1	49Φ 11 mm	NOTHING
	2	63 Φ	PEPPERPOT
	3	SOLID	49 Φ 11 mm
	4	42 Φ 8 mm Td	63 Φ
	5	NOTHING	SOLID
	6	PEPPERPOT	42Φ 8 mm Td
		Configuration (not 0 deg/ =0 deg)	= 0 deg

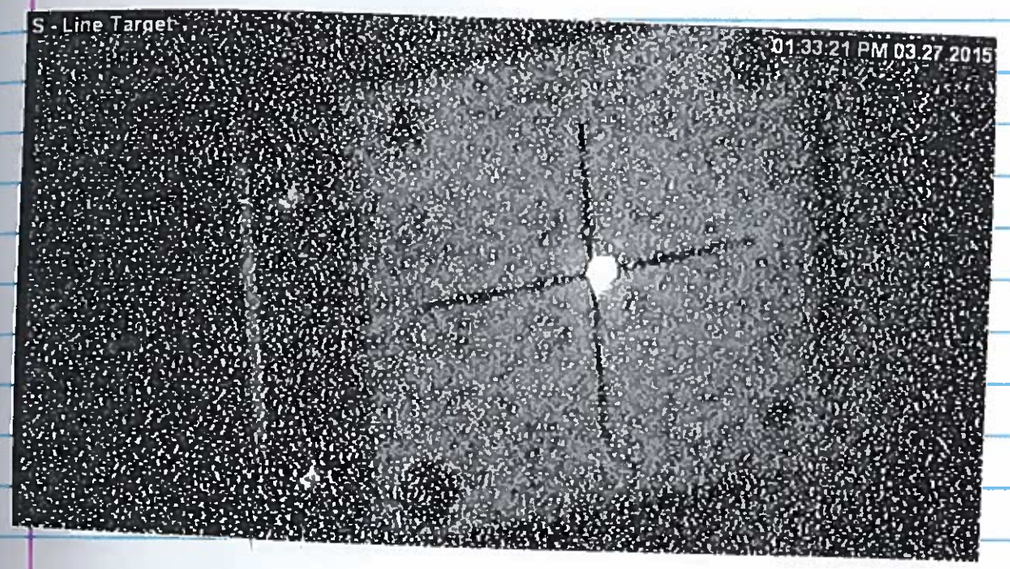
Additional Notes:

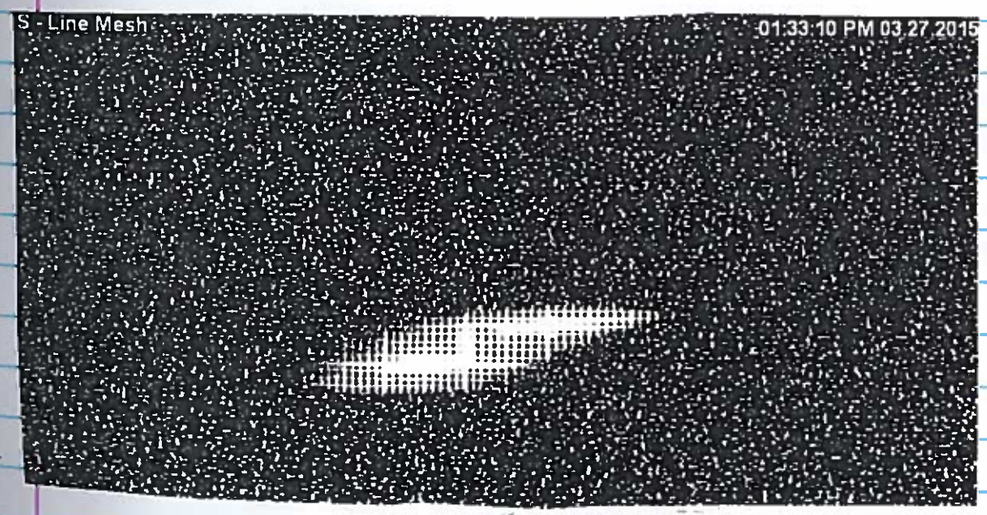
Spectrometer Parameters	Angle	+0.05°	
	Magnets settings	**Q**	-454.175
		D1	412.800
		H	-2.833
		D2	271.008
		K	2.833
	Superknob settings	**Dipole 1**	412.800
		D1/D2	1.5232
		D1/Q	-0.9089
		D1/K	145.612
		D1/H	-145.6912
	SP Interlock control (Enable/ Disable)		Int Enabled

Additional Notes:

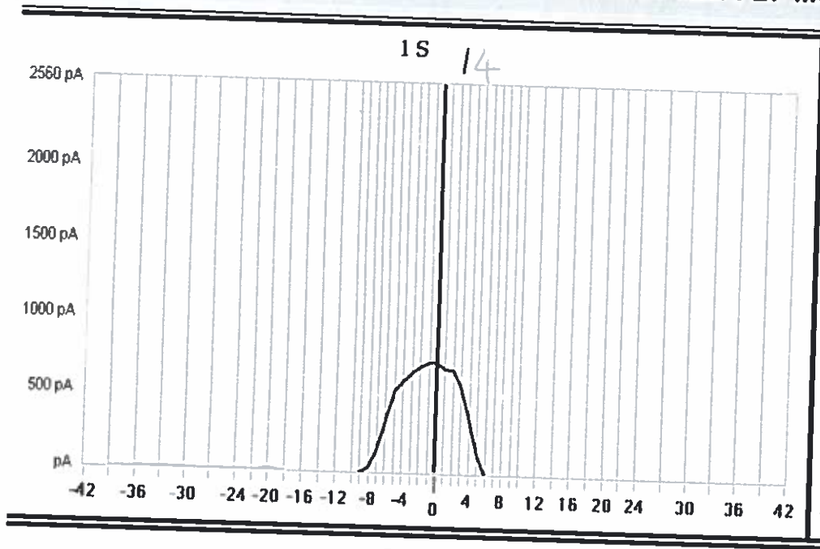
First beam on target : ~ 13:30
Friday 27 March 15

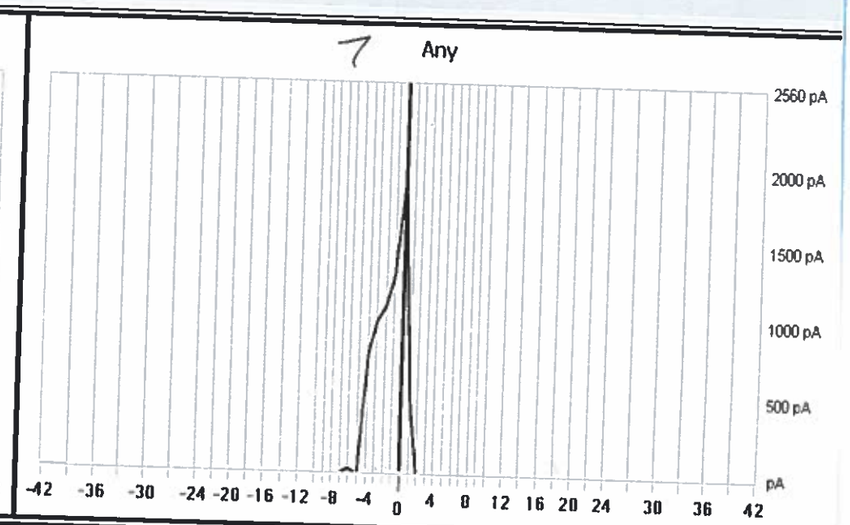
Commissioning was measured at 12:30, see next 2 pages.

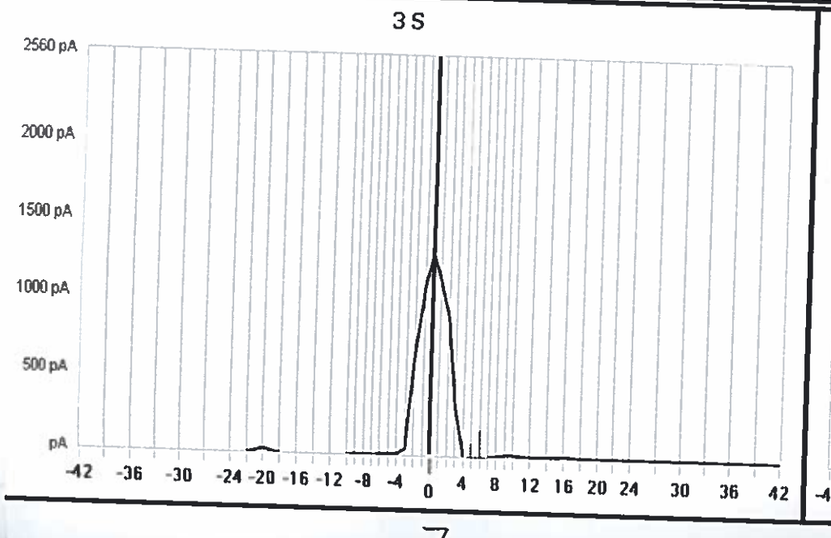




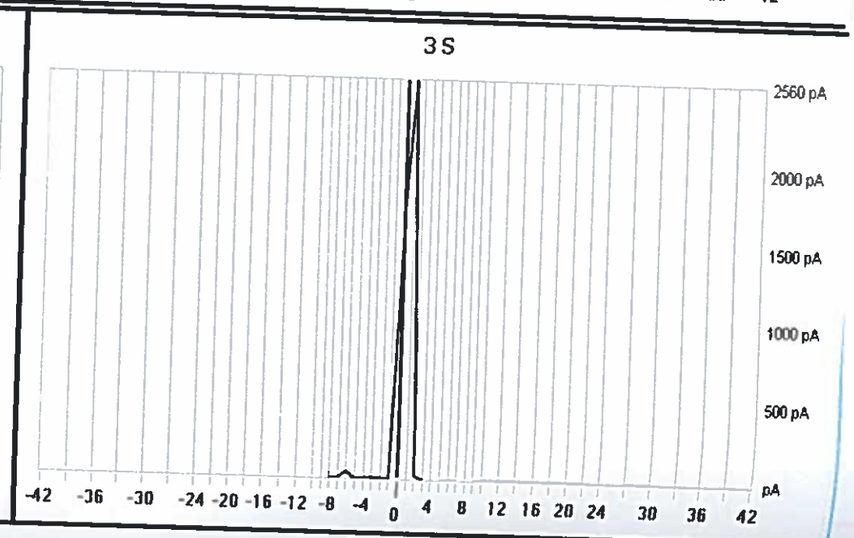
Profile Print : 27 March 2015 : 12:32:05





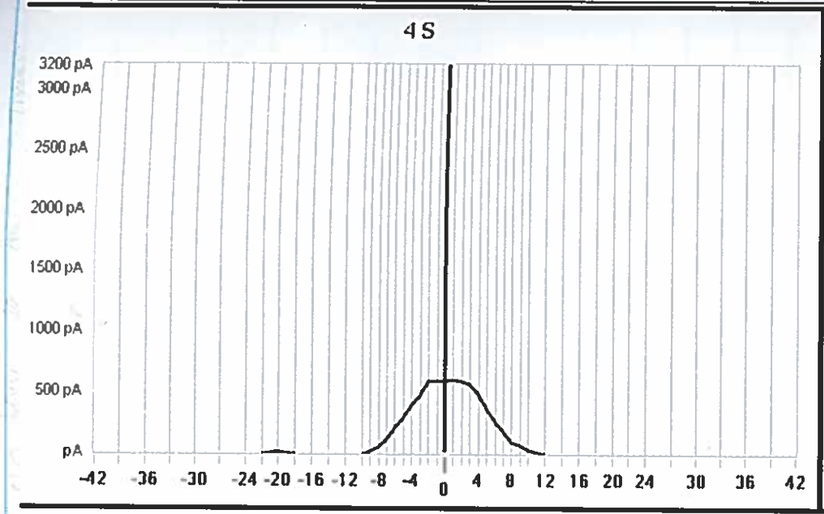


7

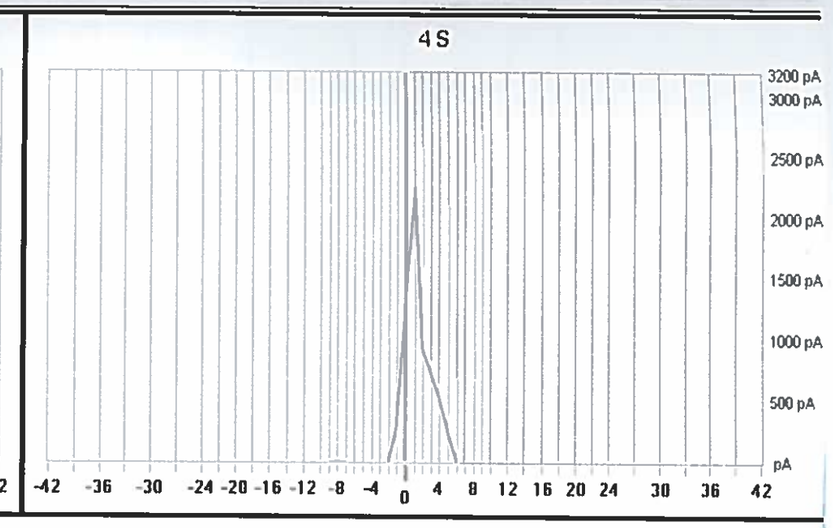


3

Profile Print : 27 March 2015 : 12:33:27



18



7

$\varepsilon_x = 6,68\ \pi$ mm mrad

$\varepsilon_y = 1,39\ \pi$ mm mrad.

Halo run 2001

0.7nA ~ 50 Hz

Very Good halo!

Now on to faint beam...

Current D1 = 412.8

Change to 437.24 as in plot

~~Faint Beam~~ ToF ∈ {4370, 4750} for faintbeam runs.

Run 2002, faint beam, ~1200 Hz countrate

Q6S = 35. σ = 0.74

Run 2003 Q6S = 36 σ = JUNK

WC 2 HV told to be "tuned" by Ricky.

Run 2004 Q6S = 36 σ = 0.912 mm

2005 = 35. σ = 0.65

2006 = 34.7 σ = 0.89.

2007 = 35.3 σ = 0.847

2008 = 35.6 σ = 0.54

2009 Q6S = 35.3

Q21P = 28.5 σ = 0.48

2010 Q21P = 28.3 σ = 0.47

2011 Q21P = 28.0 σ = 0.46

2012 = 28.7 σ = 0.468

2013 28.9 σ = 0.48

2014 29.2 σ = 0.49

2015 28.6 σ = 0.46

Change D1 back to 412.8 A

Looking at viewer.

Q5S -56.2 A Currently.

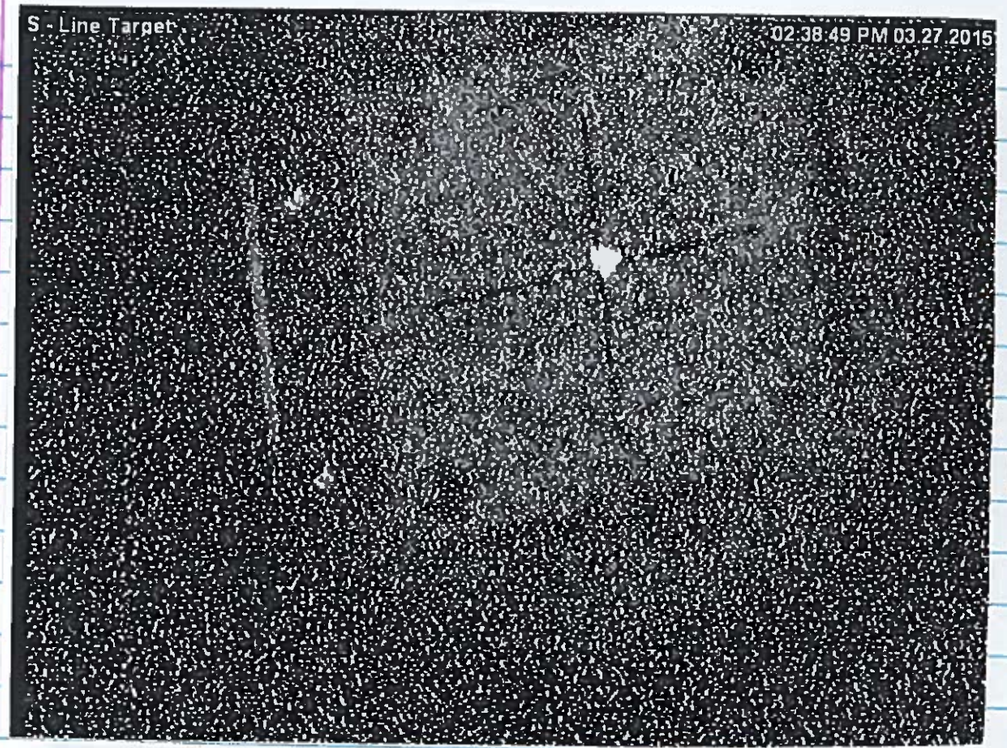
Q6S +35.3 A

Minimum at -56.6 A (Q5S).

Go is for -56.7 A on Q5S after some minor modifications on the steerers).

Look at effect of Q6S on vertical size.

Changing Q6S is changing horizontal width but not vertical. Q6S back to 35.3 A.



Q65 = 35.3
Q56 = -56.7

Back to faint beam: D1 = 437.24 A.

FE crashed. needed restart of kbouvet

Run		
2017	Q65 = 35.3	σ = 0.66
2018	Q65 = 35.6	σ = 0.5
2019	Q65 = 35.8	σ = 0.465
2020	Q65 = 36.0	σ = 0.53
2021	"	σ = 0.55
2022	Q65 = 35.8	σ = 0.47
	Q21P = 28.6	
2023	Q21P = 28.8	σ = 0.48
2024	Q21P = 28.4	σ = 0.45
2025	Q21P = 28.2	σ = 0.46
2026	Q21P = 28.4	σ = 0.45 mm ≡ 35 keV

Decide to take this and continue
Ok we wait. Lets put in some targets to look at the thickness.

Run 2027 Empty target ~ 800 Hz
Peak position: 324.404 mm
σ = 0.45 mm

Run 2028 ^{nat}Cq ~ 700 Hz
Peak ④ 321.756 mm
σ = 0.62 mm
Δpos from empty = 2.64 mm ≡ 87 keV

Run 2029 ^{208}Pb ~ 600 Hz
Peak ④ 322.507 mm
σ = 0.505 mm
Δpos from empty = 1.89 mm

Run 2030 ^{26}Mg ~ 550 Hz
Peak ④ 322.03 mm
σ = 0.526 mm

Run 2031 Mylar.
Peak ④ = 322.25 mm
σ = 0.497 mm

(*) (the first (2027) was shifted ⇒ we do an empty run again).
Run 2032 EMPTY peak pos. = 322.55 mm
σ = 0.481 mm

Run 2033 $^{40/nat}$Ca
peak p. = 321.23 mm
σ = 0.64 mm

Run 2034 EMPTY

Peak p. = 322.40 mm
σ = 0.481 mm

Run 2035 ^{208}Pb

peak p = 322.04 m
σ = 0.540 m
Δpos. = 0.36 mm = 12 keV

Run 2036 EMPTY

peak p. = 322.48 mm
σ = 0.497 mm

Run 2037 ^{26}Mg

peak p = 321.79 mm
σ = 0.545 mm
Δpos. = 0.68 mm = 23 keV

Run 2038 Empty

peak p = 322.39 mm
σ = 0.489 mm

Run 2039 Mylar

peak p = 322.13 mm
σ = 0.514 mm
Δpos. = 0.26 mm = 8.5 keV

↳ Thickness of the targets seem to be in accord with the ~~the~~ peak shift. ↓

From energy Loss calculator and the shift of peaks we have
for ^{208}Pb T ~ 0.5 - 0.6 mg/cm² ^{40}Ca T ~ 0.8 - 0.9 mg/cm²
^{26}Mg T ~ 0.5 - 0.6 mg/cm² Mylar T ~ 0.3 mg/cm²

16:04 Back to normal transmission mode.
(Normal beam)
P1 = 412.8

K600 Quad -454.175
focus mode

K600 Q = -465.092 $\frac{412.8}{449.042} = 0.9276648$

2% underfocus mode.

K600 Q = -472.342

4% underfocus.

Run 2040 Empty target

1.6 nA 160 Hz

Start: 16:25

Stop: 16:28

K600 Q = -465.092 2% underfocus mode

Run comment: 20mg 2% underfocus mode K600 angle: 0 deg K600 field:

Run #: 2041 Current: 1.1 nA Trigger rate: 160 Hz Q: -445.092A VDC efficiency

Start: 16:29 CI Range: 6 Data rate: 64 kB/s D1: 412.8 A X1 93.7

Stop: 16:71 Collimator: #3 Trigger evts: H: -2.833 A U1 93.8

Target: 20mg 49-11 Scaler evts D2: 271.008 A X2 86

Target angle: -11° K: 2.833 A U2 96.5

VDC1 -2.95 kV (in vault)

VDC2 -2.94 kV (in vault) Seen on camera

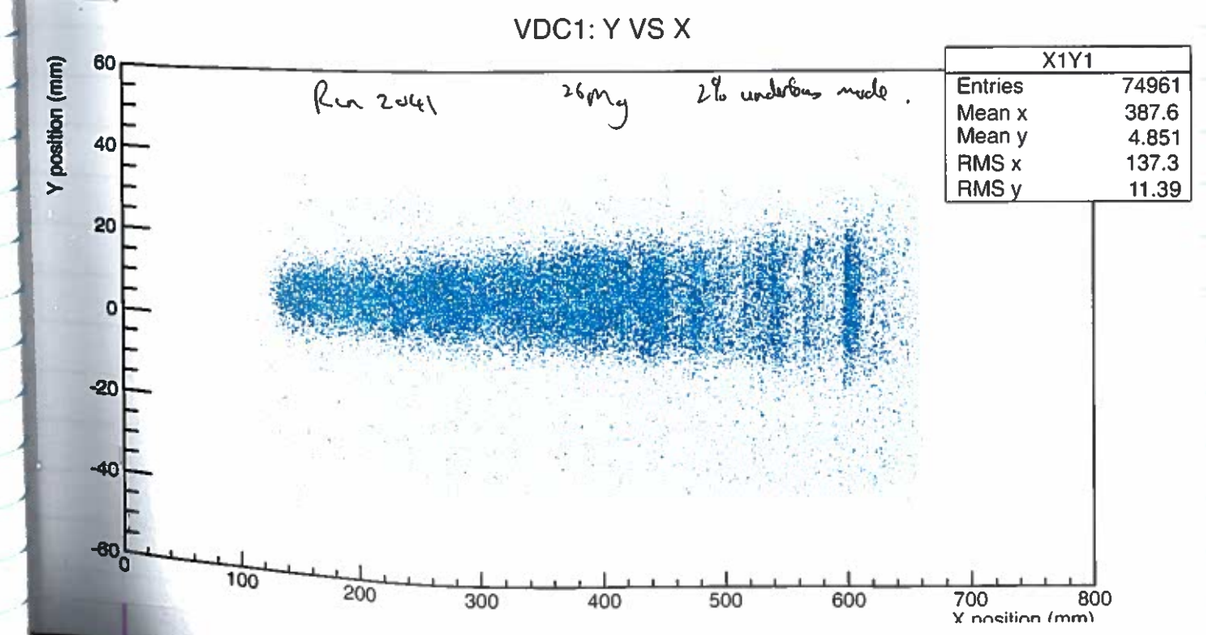
GV: -500 V on all 4

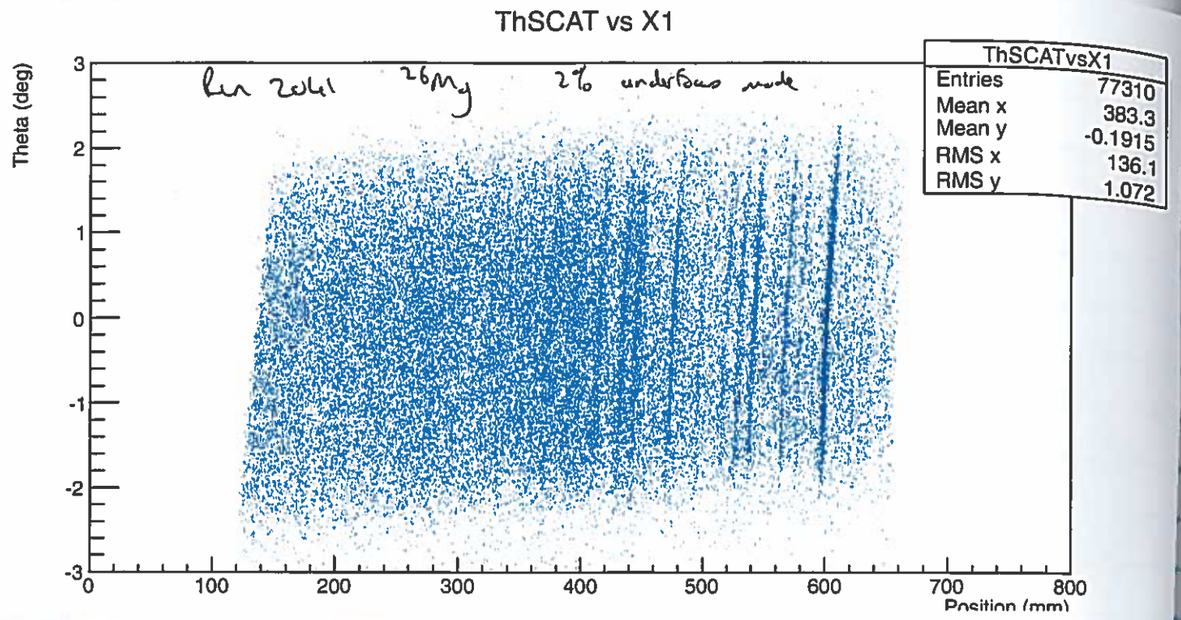
P1 hi -1300 V

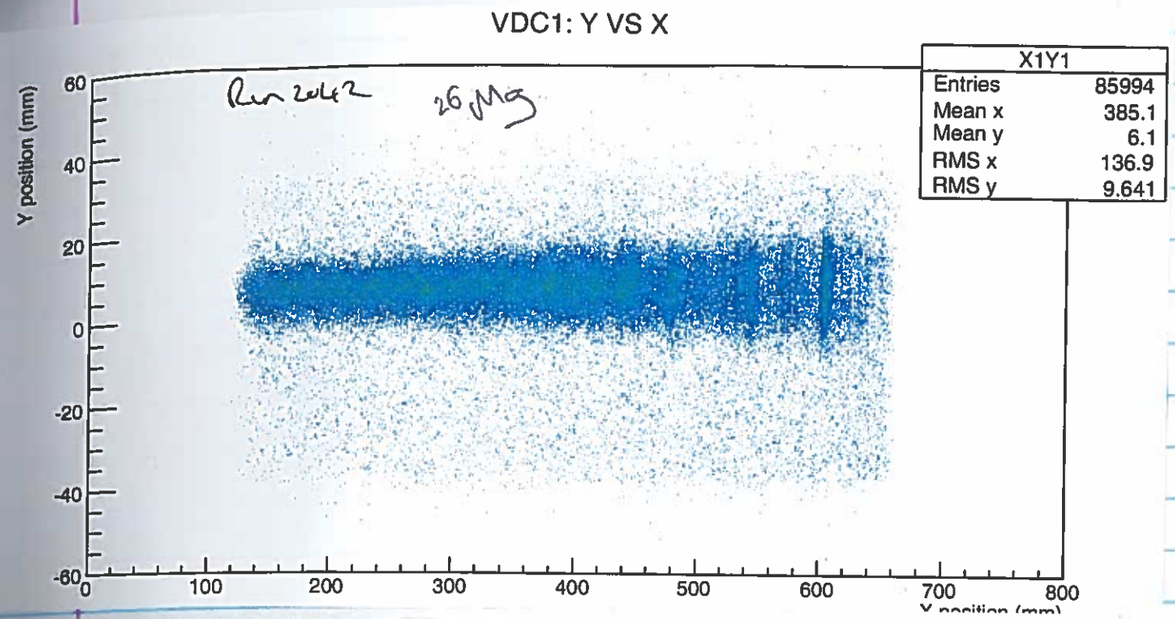
lo -1350 V

P2 hi -1200 V Thresholds: max on all 4

low -1600 V







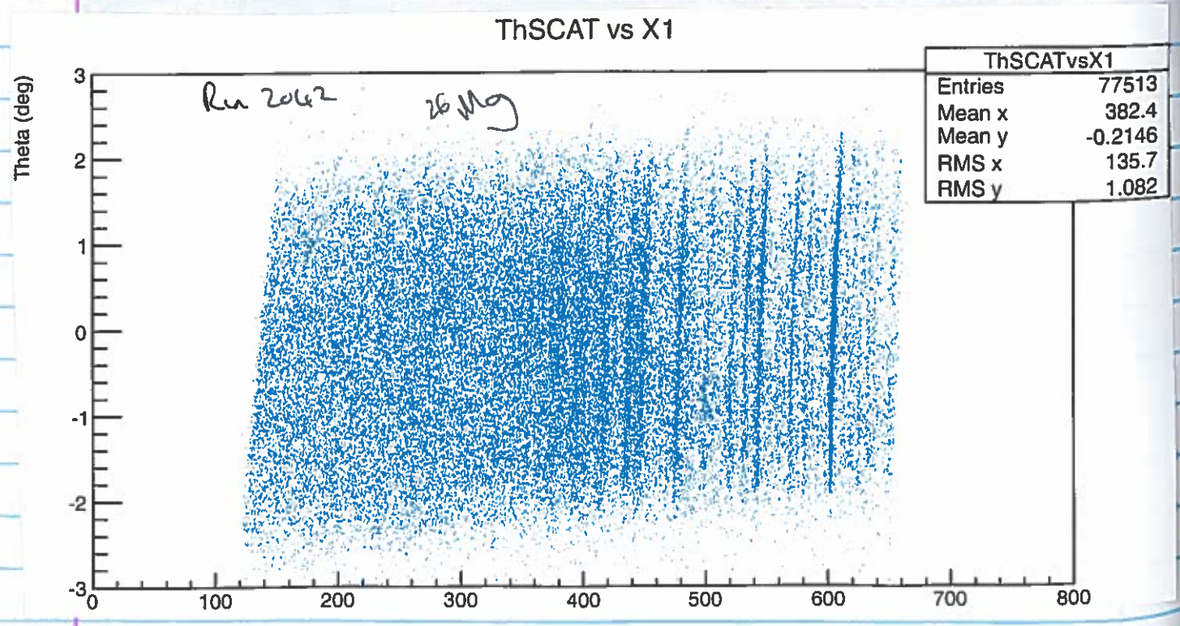
See with faintbeam effect of K600 quad focus mode.

Run comment: 26Mg Data four mode
Run #: 2042
Start: 16:52 Current: 1.3 nA Trigger rate: 130 Hz
Stop: 17:22 CI Range: 6 Data rate: 56 kB/s
Target: 26Mg #3 Collimator: 3 Trigger evts: 231664
Target angle: -118° Scaler evts:

K600 angle: 0 deg

K600 field:
Q: -454.175 A
D1: 412.8 A
H: -2.833 A
D2: 271.008 A
K: 2.833 A

VDC efficiency
X1 93.7
U1 94.1
X2 88
U2 96.6



D1 = 437.26 A

K600 Q = -481.065

Run: 2043 2kHz field still drifting

Run 2044 σ = 0.475 mm

Run 2045 QSP = -454.175 σ = 0.626

Run 2046 QSP = -445.092 σ = 0.743 (Q65 = 35.8)

Run 2047 Q65 = 35.5 σ = 0.557

Run 2048 Q65 = 35.3 σ = 0.468

Run 2049 Q65 = 35.1 σ = 0.436

Run 2050 Q65 = 34.9 σ = 0.523

Run 2051 Q65 = 35.2 σ = 0.439

NO! Quad not in correcte ratio!!

Run 2052 QSP = -471.464 ≈ 2% underfocus.
Q65 = 35.6 σ = 0.464 mm

Run 2053 Q65 = 35.4 σ = 0.475

2054 Q65 = 35.8 σ = 0.53

2055 Q65 = 35.55 σ = 0.44 mm

New superknob takes into account a 2% underfocus mode for the K600

New Q factor : -0.9274

Now that we are dispersion matched for the 2% underfocus mode we go back to Mg.

01 = 412.6 A

SSC transmission : FC 10J 520
12J 16
1X 10
11X 6.3
4P 1.4
6P 1.4
11P 1.3
1eS 1.4

pretty good transmission

Run comment: EMPTY
Run #: 2056
Start: 18:05
Stop: 18:33
Target: EMPTY #1
Target angle: -118
Current: 1.2 nA
CI Range: 6
Collimator: 3
Trigger rate: 80 Hz
Data rate: 33 kB/s
Trigger evts: 39691
Scaler evts: 677
K600 angle: 0 deg
K600 field:
Q: -445.115 A
D1: 412.800 A
H: -2.833 A
D2: 271.008 A
K: 2.833 A
VDC efficiency
X1
U1
X2
U2

Run comment: ^{26}Mg
Run #: 2057
Start: 18:15
Stop: 18:42
Target: ^{26}Mg
Target angle: -118
Current: 1.5 nA
CI Range: 6
Collimator: 3
Trigger rate: 220 Hz
Data rate: kB/s
Trigger evts: 389248
Scaler evts: 1584
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: A
D2: M A
K: E A
VDC efficiency
X1 94
U1 96
X2 88
U2 94

Note: Compared to run 1019 the pulser is now (this pulse height (2700 → 2300)

Beam was very unstable. Operators were adjusting and towards the end halo must have come in. Do empty again 250@0.9nA. during run 2058

Run comment: Background Check
Run #: 2059
Start: 18h50
Stop: 18h57
Target: MT
Target angle: -118.00
Current: 0.8 nA
CI Range: 6
Collimator: #3
Trigger rate: 53 Hz
Data rate: 27 kB/s
Trigger evts:
Scaler evts:
K600 angle: 0 deg
K600 field:
Q: S A
D1: S A
H: A A
D2: M A
K: E A
VDC efficiency
X1
U1
X2
U2

Background went up again to 9000! Stop run. Ask for background to be fixed.

Run comment: Background run
Run #: 2060
Start: 19h10
Stop: 19h16
Target: MT
Target angle: -118.0
Current: 1.0 nA
CI Range: 6
Collimator: #3
Trigger rate: 66 Hz
Data rate: 24 kB/s
Trigger evts:
Scaler evts:
K600 angle: 0 deg
K600 field:
Q: S A
D1: A A
H: A A
D2: M A
K: E A
VDC efficiency
X1
U1
X2
U2

Beam still very unstable! 0.2 ↔ 1.2 nA.

Beam gone! Ben still tuning!
Try again

Run 2061 Still no good. Ben adjusts

Run comment: Background Check
Run #: 2062
Start: 20h01
Stop: 20h18
Target: MT
Target angle: -118.0
Current: 1.0 nA
CI Range: 6 nA
Collimator: #3
Trigger rate: 24 Hz
Data rate: 9 kB/s
Trigger evts: 19592
Scaler evts: 928
K600 angle: 0 deg
K600 field:
Q: S A
D1: S A
H: A A
D2: M A
K: E A
VDC efficiency
X1
U1
X2
U2

Slit 2P apparently used to get it low again.

Run comment: My

Run #: 2063

Start: 20:17 Current: 1 nA Trigger rate: 1.0K Hz

Stop: 20:46 CI Range: 6 Data rate: kB/s

Target: 26 My Collimator: #3 Trigger evts:

Target angle: -11.8 Scaler evts:

K600 angle: 0 deg

K600 field:

Q: 5 A

D1: SA A

H: My A

D2: My A

K: A

VDC efficiency

X1

U1

X2

U2

Energie_NMR.txt

** EnMet Ver5.7 Oct 2013 **

** BEREKENDE ENERGIE **** CALCULATED ENERGY ** 2015/03/27

Versnelde deeltjie Accelerated particle :

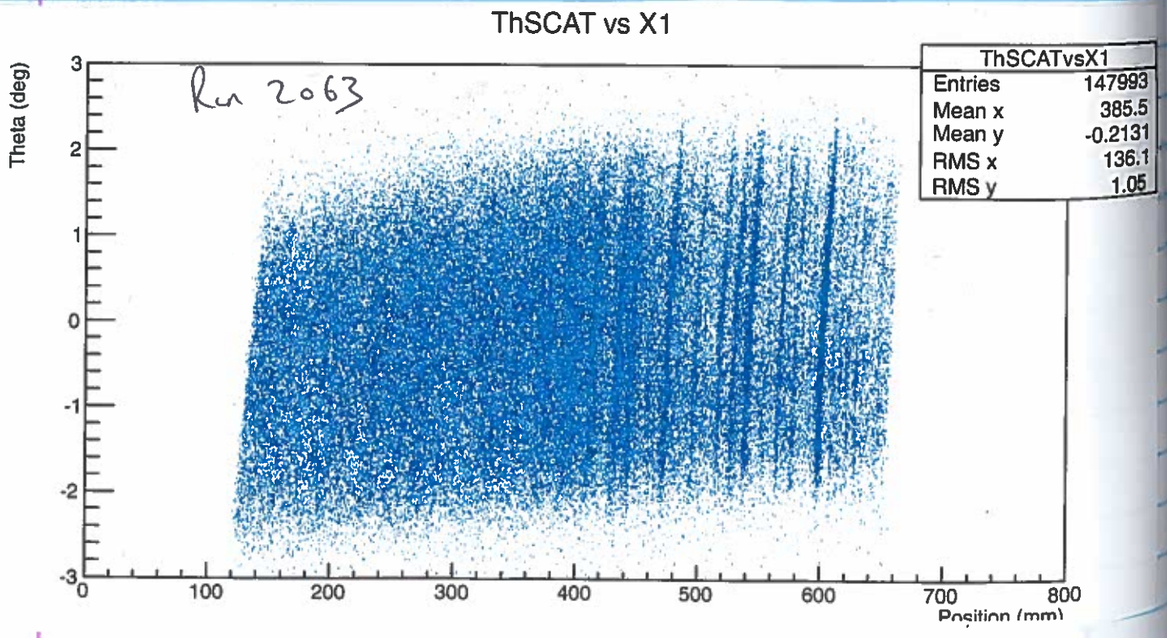
Element		= He
Atoomgetal	= Atomic Number	= 2
Massagetal	= Mass Number	= 4
Rel. Atoommassa	= Rel. Atomic Mass	= 4.0026
Natuurlike voorkoms	= Natural Abundance	= 100 %
Ladingsgetal Q	= Charge State Q	= 2

1 Tesla = 42.5759 MHz [Linear Relation]

BEAM ENERGY FROM NMR-READING/S (frequency) :

BEAM ENERGY FROM NMR-READING/S (field):

B3P Beam Energy = 196.30 MeV from NMR = 1.022 Tesla



87

Run comment: Act Cu

Run #: 2062

Start: 20:48 Current: 3 nA Trigger rate: 442 Hz

Stop: 20:58 CI Range: 6 Data rate: kB/s

Target: not Cu Collimator: #3 Trigger evts: 250271

Target angle Scaler evts: 627

K600 angle: 0 deg

K600 field:

Q: -465.115 A

D1: 442.8 A

H: -2.833 A

D2: 271.008 A

K: 2.833 A

VDC efficiency

X1 93.7

U1 96.1

X2 85.5

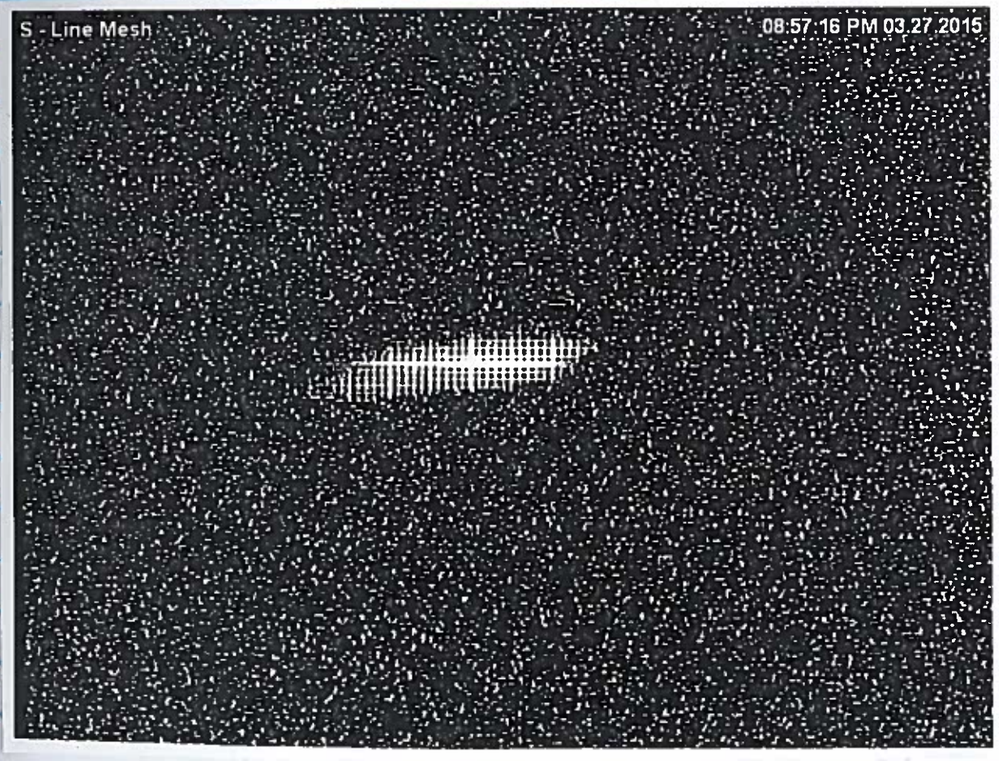
U2 94.6

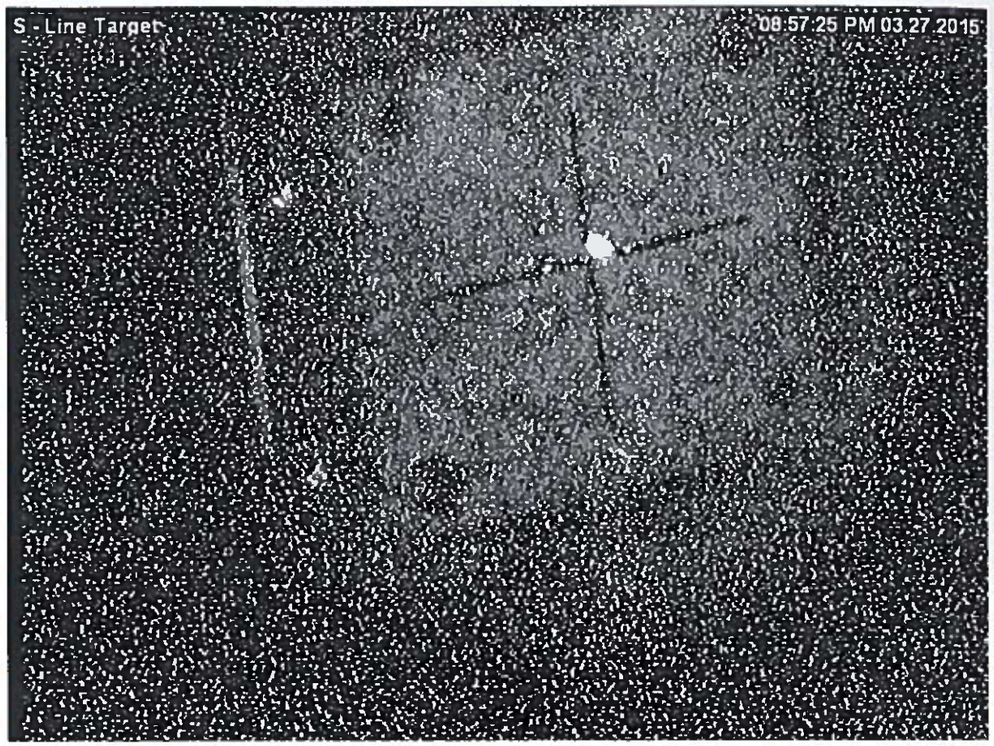
Offline analysis of run 2063 vs 2062 shows the energy resolution is now worse by ~ 25%

Have to return to faint beam.

First look at beam on viewers.

Beam was low on Heitanaka





Faint beam D1 = 437.24

Run 2065	Q65 = 35.55		
Run 2066	11		σ = 0.52 mm
Run 2067	Q65 = 35.4		σ = 0.47
Run 2068	35.2		σ = 0.48
Run 2069	35.4		σ = 0.68 mm
	Q21P = 28.4		
Run 2070	Q65 = 35.4	Q21P = 28.6	σ = 0.49
Run 2071		Q21P = 28.2	σ = .47
Run 2072		Q21P = 28.0	σ = 0.47
Run 2073	Q21P = 28.2	Q65 = 35.5	
Run 2074		Q65 = 35.3	σ = 0.46

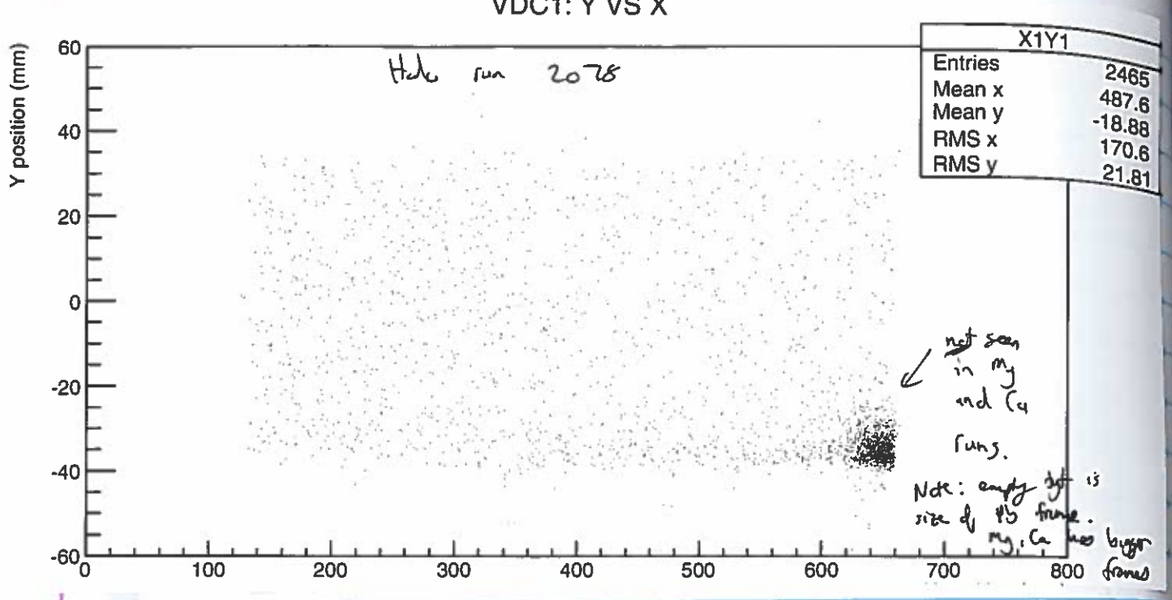
FC 19T 105 nA
FC 1X 80 nA
FC 11X 40 nA
FC 4P 2.5 nA

Back to transmission mode
D1 = 412.8

Hdbo run 2075, 2076
Try to get pulser higher. Go in vault and increase pulser PH.

Hdbo run 2077
Do not understand spectra

Hdbo run 2078, Pulser now @ 3700
60 Hz @ 2.3 nA



Run comment: Ca

Run #: 2079

Start: 21:51 Current: 2.2 nA

Stop: 22:48 CI Range: 6

Target: not Ca #5 Collimator: #3 (#4-11)

Target angle: -11°

Trigger rate: 390 Hz

Data rate: 181 kB/s

Trigger evts: 1.375 M

Scaler evts: 3326

K600 angle: 0 deg

K600 field:

Q: -445.115 A

D1: 417.800 A

H: -2.833 A

D2: 271.008 A

K: 2.833 A

VDC efficiency

X1 93.8

U1 96.2

X2 89.4

U2 94.6