

SAO-HRC-LOG-97-277  
DR# SCM10  
Data Type: 3

VOL 1

HRC-500

HIGH RESOLUTION CAMERA (HRC)

LOG BOOK

Prepared in accordance with DR# SCM10

Prepared for:  
George C. Marshall Space Flight Center  
National Aeronautics and Space Administration  
Marshall Space Flight Center, AL 35812  
  
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The Smithsonian Astrophysical Observatory  
is a member of the  
Harvard-Smithsonian Center for Astrophysics

## LIFE HISTORY

EVENT		SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES	
NO.	SUBJECT	DATE	TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.	START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
1		2/8/97	The Detector housing Assy. with Batt. 5:12 pm for 114 assembled detector was on Board was inserted into test tube white tank for Pump down & terminal test. The door was opened seeing it was - PLIGHT yesterday final flight electronics. The detector was visible thru it port in tube chamber and appear in excellent condition. Pump down began at approx 5:08 pm.					
002	PRESSURE	BFNS97	CC: $3.5 \times 10^{-5}$ BA: $3.0 \times 10^{-5}$			2118		GWA
		09097	CC: $1.2 \times 10^{-5}$ BA: $1.1 \times 10^{-5}$					
			(BA on test pipe $1.6 \times 10^{-7}$ )					
			OPEN MAIN VALVE					
			WHITE TANK CC: $2 \times 10^{-6}$					
			" " BA: $8.2 \times 10^{-6}$					
			MAIN PIPE BA: $1.8 \times 10^{-6}$					0920
			WHITE TANK CC: $7.6 \times 10^{-6}$					GWA
			BA: $5.8 \times 10^{-6}$					
			MAIN PIPE BA: $4.1 \times 10^{-6}$					

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL
003	21.11.97	Turned LAMP TURNED ON IN AND OFF TO 11.11.97 TURN OUT OF HYDROGEN MONOXIDE Pressure meter reads $2.1 \times 10^{-5}$ on CC gauge (was read about $7.5 \times 10^{-6}$ when reading was first turned on) Pressure $9.1 \times 10^{-6}$ WHITE TUBE CC : $7.7 \times 10^{-6}$ II II $6.5 \times 10^{-6}$	1400			
004	11 Feb 97	$P = 5.0 \times 10^{-6}$ UV LAMP OFF CC: $4.3 \times 10^{-6}$ CC: $4.3 \times 10^{-6}$ CC: $4.7 \times 10^{-6}$ CC: $4.1 \times 10^{-6}$ - $\textcircled{12 Feb 97}$ CC: $3.7 \times 10^{-6}$ CC: $3.5 \times 10^{-6}$	06:00	1350	1435	1720
005	21.11.97	checked R & S plates through top channler feed through			2030	06:00
					0932	1100

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cntd	HRC-T	RTOP = 85 m.s	RBOT = 66 m.s						
			bottom electrode is reflector array to be switched						
	HRC-S	RTOP = 27.8 m.s							
		RBI = 144 m.s							
		R32 = 144 m.s							
		R33 = 142 m.s							
		No shorts, center electrode ok							
		Always							
006	1/Feb 97	Starting reflexes							
		Cladfest cables <del>connected</del> installed							
		Started pump down							
		Tested <del>reflector</del> reflector chamber for reverse							
		Signal cables (were wrong)							
		Started pump down							
	CC	7.1x10 <sup>-5</sup> if 7.6x10 <sup>-5</sup>							
	CC	4.6x10 <sup>-5</sup> if 3.8x10 <sup>-5</sup>							
		Open GDI Valve #3							
		1630							
		1600							
		1500							
		1410							
		1310							
		1300							
		1150							
		11/2							

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	
007		12/09/97	CC: $4.4 \times 10^{-6}$				
			Fuse blown on power strip ~ Temp went off line				
			pressure increased to $5.6 \times 10^{-6}$ . GV closed to				
			isolate temp. Pump restarted (GM, AK, JHC)				
008			System cabled for startup		10:30		
			$P = 3.6 \times 10^{-6}$ bar				
			Connector layout: Top of white tank				
			1 UNION OL				
			2 TOP OF TOP OL				
			3 BOT OF TOP OL				
			4 TOP OF BAT OL				
			5 BOT OF BAT OL				
			6 REF OL				

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
12 Feb 91		J - AXIS	OUTPUTS	CHAMBER CAV 3 was TO	1115					
		P 131/132	ON LAB	MOVEMENTS - V Axis						
		CONNECTED TO P 133/134.		GND BIAS ADDED						
		TO J141,	J142 GROUNDED							
		WTS	Grounded file	P197021da 3600s						
		ion gauge	3.4x10^-4	cold cathode $3.8 \times 10^{-6}$	1120					
002	14V power	10.4V	furn on	200 V per plate	1135					
		100	V range turned off							
		multimeter connected to back-half of								
		bioerror - measures proceeded event[]		67,50M/0						
		500 V per plate	R = 83.55M	1132						
		800 V per plate	R = 83.62 M	1136						
		1000 V per plate	R = 83.63 M	1140						
		HYP5 HV current								
1		0	0.000 mA							
2		2350	0.012							
3		1350	0.121							
4		1300	0.016							
5		900	0.348							
6		100	0.002							

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NO.	SUBJECT	START	STOP	TOTAL TIME	CUM. TOTAL
<b>SUMMARY OF CHRONOLOGICAL EVENTS</b>					
	TEST DOCUMENT NUMBER TEST DESCRIPTION/NATURE & DESCRIPTION OF MAJOR FUNCTIONS/SERIAL NUMBER OF REMOVED OR MAINTENANCE/REPAIRS/REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.				
12-10	② 1000V Top Resistance: 83.1 MΩ				
12 Feb 97	Bolt Resistance 62.4 MΩ				
	1200 V per plate $R = 80.1 \text{ M}\Omega$	1220			
	Cold cathode $3.6 \times 10^{-6}$	1223			
	New file started P1970212b	1230			
	1400 V per plate $R = 82.4 \text{ M}\Omega$	1230			
	Starting to see events $< 1 \text{ sec}^{-1}$				
	1500 V per plate $\sim 5 \text{ sec}^{-1}$ $R = 83.3 \text{ M}\Omega$	1240			
	1525 V per plate $\sim 6 \text{ sec}^{-1}$ $R = 84.8 \text{ M}\Omega$	1245			
	New S/Ic switcher P1970212b 3600 sec (3600 sec background 6 cm)	1247			
	X-rays on 4KV 16μA Al anode "002 Al	1358			
	300 second run P1970212d				
	cc $3.4 \times 10^{-6} \text{ sec}^{-1}$	350			
	1500 second run P1970212e 51μA $\sim 1200 \text{ sec}^{-1}$	1404			
	X-ray shutter closed total counts $2.05 \times 10^6$	1430			
	beam finder focused P1970212f 300 sec	1434			
	closed gate valve				
	Raised beam finder				
	X-ray on; 1 KV C anode; 33.3 μA poly				
	300 sec P1970212g	1444			

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
1	Feb 97	12:47	P1970212 h 1500 second run X-rays off X-ray shatter closed Total counts $4.24 \times 10^6$	1447			
2		12:48	P1970212 i 500 second background	1513			
3		12:51	$\sim 6 \text{ c}^{-1}$ R = 80.4 ; 61 Mr	1516			
4		12:54	MCP HV off	1530			
5		12:55	Total counts 4.24 x 10 <sup>6</sup>	1530			
6		12:56	CC 3.5 x 10 <sup>-6</sup>	1530			
7	Pressure	12 Feb 97	CC: $3.0 \times 10^{-6}$	2033			
8		13 Feb 97	CC: $2.4 \times 10^{-6}$ t	05:30			
9			Decal for HPG-S, center segment (2)				
10			Cut extra counter on LN distribution box				
11			Reset total event counter				

Jhe

GND

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
01/2	FIRCS TURN ON	13 Feb 97	Increasing HV → 500V MCP TOP 27.7 MΩ MCP BOT 45.4 MΩ	9:35			
			HV off - signal cables not connected -				
			Restart of HV → 500V SAME MCP RES. $\Phi = 2.6 \times 10^{-6} \text{ A} (\alpha)$	9:45			
			Increasing HV 500V → 800V TOP 28.5 MΩ BOT 47.0 MΩ	9:55			
01/3	HV UP	"	800 → 1000 V / plate	10:01			
			$D = 2.5 \times 10^{-6} \text{ T cm}$				
			$R_{top} = 27.7 \text{ mΩ}$				
			$R_{bot} = 47.6 \text{ mΩ}$				
			HV power supply data: TOP 2348 V 0.038 mA				
			Top cent 1350 0.097				
			Bot cent 1299 0.021				
			Bot 3000 0.342				
01/4	HV UP	"	1000V → 1200V	10:31			
			$R_t = 27.9$				
			$R_b = 47.9$				

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HV uD	2.13.17	1200 → 1400	$R_I = 27.5$ $R_B = 46.7$	10:35	
HV uP		1400 → 1600		10:47	
HV uD		1600 → 1825	$R_I = 27.6$ $R_B = 45.7$	10:49	
		HUPS currents	$R_I = 27.3$ 0.068 0.147		
970213b.	BKG RUN	T = 1000 sec			
		HV TRIP - cold cathode orange turned off by mech		10:55	
		Reheating HV & → 1500			

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NO.	SUBJECT		START      STOP      TOTAL TIME      CUM. TOTAL
045	BK6	13 Feb 97 INC Incp h/w - 1500 → 1825V/pulse Top of Incp: 0.067 ma - 2175      0.147 ma - 2125V      0.039 ma ( See #2) - 300V      0.324 ma TOTAL RATE ~ 30C/S	27.3 MΩ      46.8 MΩ 11:00
O/C X-RAYS		Switched to segment 1 < 1c/sec STARTED 1600 SEC BK6 Run: 970213c	11:18
		Switched to Segment 3 ~ 4 c/sec STARTED 1600 SEC BK6 Run: 970213d	12:35
		Switched to Segment 2 C target 1KV @ <del>152</del> 152 mA 33mm filter ~ 1200 c/sec Setup Run: 970213e	
		STARTER 1000 SEC X-RAY RUN: 970213f P = 2.2 X 10 <sup>-6</sup>	12:00

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
			Switched to Segment #3	12:20			
			Started Run: 970213g. Al anode 2m:1 Al filter 4kV 138mA	$P = 2.1 \times 10^6$ $\sim 300 \text{ Q/Sec}$			
			Started run: 970213h 1000s $\sim 300 \text{ C s}^{-1}$	1240			
			Switched to segment #2				
			Started run 970213c 1000s	1300			
			Al anode 2m:1 Al filter 4kV 138mA $\sim 900 \text{ C s}^{-1}$				
			$P = 2.2 \times 10^6$	1302			
			Run complete	1317			
			X-ray source off, X-ray shutter closed				
			Switched background run 970213j				
			$\sim 15 \text{ C f s}^{-1}$	7200 sec			
			2.13.97 Run Ended c				
			HV off	15:25			
			HV off for shutter does (partially)				
			VIS scale	15:26			
			32633388 counts				
0.17	HV on		HV $\rightarrow$ 1500 V/Plate	15:35			
			HV up	1500 $\rightarrow$ 1825			
				15:40			
				$R_{\text{gas}} = 2.7 \text{ m.s.r}$	$R_g = 4.6 \text{ m.s.r}$		

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		2/13/97		1000 second run; door partially closed 9702130; purpose: to look for "leakage" from door source ~7cts <sup>-1</sup>	1536				
				MCP HV off	1555				
				Door full open	1604				
018	FUNCTIONAL PERFORMANCE TEST	2/3/97		INITIAL FULL FUNCTIONAL TEST ON ENTIRE HRC SYSTEM. TEST PROCEDURE - JP-HRC-338 CONFIGURATION #1					
				TEST SEQUENCING C.1.2.8					
					C1.2.9				
					C1.2.10				
					C1.3.8				
					C1.3.9				
					C1.3.10				
				INTERRUPTED TEST TO MODIFY CALMOORE TEST FILE SOFTWARE -					
				RESUME AT C.1.3.11 (CALMOORE)					
				RE-RUN C1.2.8					
				SHUT DOWN FOR LUNCH					
				RESUME TESTING. C1.1 STEP 005					
				C.1.2 OTHER 1-25					

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		C 1.2.11	( B - 5125 ) HRC J					
		C 1.3	( B - 5125 ) HRC J					
		C 1.3.1	1.3.2 , 1.3.4 , 1.3.5					
		C 1.3.3						
		ANTIC 0	SHIELD TEST					
		Config	Side B Bus B, SPST					
		SHIELD 9						
		USING PH-HAC	→ 345					
		Anti-Coin Functioned but loose.						
		ANTI COIN TURN ON APPEARS OK						
		Receive Long Term Functional Test						
		Motor Function test C-3.1	930					
		C 3.2 -						
		B Side MASS TEST Suspended due to miswiring on motors.						
		2/00						
		2/00						
		J/3/97	Release Functionality test J.					
		0930						
		J/3/97	MOTOR FUNCTION TEST B-SIDE					
		0930						
		J/22/97	PLAN CALL SIDE FUNCTION TEST B-SIDE					
		0930						
		J/22/97	Completed One-side function tests for TO-HRC-338					
		0930						
		J/22/97	- Completed Two-side function tests for TO-HRC-338					
		0930						

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		START	STOP	TOTAL TIME	CUM. TOTAL	
019	2/22	Starte Packing for Shippin On HRC -340 Sec 40	110 pm			MM
020	2/23	Completed Packing		0115		MM
021	2/23	Shipped HRC - (Loaden Truck)	1030 A			MM
022	2/24	Truck Delivered S40	1405			MR
023		Truck Arrives M54C	1100			MM
		Unload Truck From -340 Section 5.5				
		Unpack	Run - 340 Sections 6.0			
		Complete Unpacking Run -340 Section 6				
		Weld up for Post-Tensile Functionnel -335				
		Starte Long Form Functionne Run - 330				
		Complete 100 FT				
		Longer 100' Standard Blockids				
		Installed HRC in Sp Chassis Car				MM
		50-HRC -5303 Nov 14				
		Car for: Setup Functionnel				
		Pass up A side				
		Car Single Dot Test, Yield + T				
		Shutter, Power down - /				
		Car up B side				
		Car dot test, cycle - /				
		Shutter, Power down				

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024	2/27	Adjuster Back out Pump down - Opened 4" NC door slightly to go Tor Stata Inc. Times (Clear off)						
025	2/28	Blow - normal 9x10"						
026	PRESS CLOSE DOOR	Blow - normal 5.6 x 10" pressure - close	1:00					
027	OPEN DOOR	Re-Open door -	1:50					
028	CLOSE DOOR BACKFILLED GN2	- Panel to close door & front of press Chamfer & replace gaskets -	1:57					
029	CLOSE DOOR VAC	Gasket replaced by D. Johnson - Illustrator changes door - Close "Mark door" to go Tor	1:58					
		Test port A	1:59					
		Shut down	1:59					
029	DOOR VAC 3/3/97	Power up on side A. Chamber pressure at $8.7 \times 10^{-7}$ Torr. Scan OELSB door to Limit SW B. (First PYLSA then PYLSA) 14:12	14:07					
		Im = 1.79 A Batt 73 at F1 when at limit						
		Pur off						14:22

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030	CLOSED DOOR DROP CHAMBERS TEMP	3/4/97	Fail 1 Safes and pure OK. SHUTTERS at home. Dresses T <sub>in</sub> = 1.8 A while moving - closed 1.792 true thermos at 39 decreasing = 45°C pure off on HEC	13:11			
031	CRACK DOOR	3/4/97	chamber was at 7.5 x 10 <sup>-7</sup> Torr (20,000 steps to close door - 3 min elapsed time)	13:14	13:17		
032	INITA 3/4/97		Scout cracked door - traps EEE & clea at 4,400 - started at 39 dec at ext 030. pure recovered from HEC at	14:28	14:35		
033	PRESSURE TEMP	3/5/97	CHANGED TRIGGER LEVEL IN FILE INITA.S FROM 290F TO 291D TO MATCH LEVELS LAST USED IN CAMBRIDGE. THIS WILL APPLY TO BOTH DETECTORS	14:35			
034	3/5/97 Vol/age		Pressure = 6 x 10 <sup>-6</sup> Torr Temp = in chamber at 24°C (cold plate) Recovered fluid line and the pressurized dryseed to 3 x 10 <sup>-7</sup> almost immediately HEC temps estimated between 20 and 25°C Start file P0970305-a for logging cmd's pure up.cmd 1.38 Amps @ 28Vdc spectra.cmd dots on screen - decreaseen. comb	8:00	8:03		

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034	OPEN CONT'D DOOR	3/5/97	moves + y shutter to limit switch (verify Date 73) - moves -y shutter to limit sw open door 1.082 Arms open sec 5 Date 73	8:36			
	intacap		10' for. cord disables door motor 1.38A new switch to imaging detector file = P0970305d 8:37				
035	img a. 500V	3/5/97	connected to side o verified (imager det) hvm 0500. cmd (bv to 500v)				
			bv not on - cable and resonant disabled current limit	5:57			
			enabled current limit bv is enabled	8:58			
			no events observed - Temp 136 C/deg 136 C/deg				
036	img a 1000V	3/5/97	start a new file P0970305c disable current limit	9:20			
			hvm 0500	9:22			
			hvm 1000 T10 = 1.401 Arms temp 115 s/w problems had to restart	9:23			
037	img a 1200V	3/5/97	hvm 1200 file = P0970305d disable current limit - 500, 1000, 1200 V	9:49			
			no events observed temp @ 115 C/deg	9:51			
038	img a 1300V	3/5/97	hvm 1300 file = P0970305e temp @ 115 C/deg	10:06			
				10:23			

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039	14520V	3/5/97	hvn 1400 no telemetry counts run abcted hv off - use internal pulser seat SAE. cmd - no event was observed	10:25				app
040	calmode	3/5/97	calmode. cmd reset discriim to 2981 (ref) getting 100 ve & ie from cal mode. issued normale.cmd - resets back from 10:39 cal mode - checked for noise by setting the threshold to 001 - 22000 per sec at step 002 no noise observed.	10:32				
041	14520V	3/5/97	hvn 1500 file = Pd970305g 2914 1'sc 0, 500, 1000, 1200, 1300, 1400, 1500 observed TE of 1 ec 2 e/s no VB's observed threshold set at 0e Lowering threshold to	10:50	10:52			app
042	Spectris	3/5/97	connect to spectra - switch to spec det. use pulser to verify chain. trig disc at $\phi\phi$ PIA 40-50 Threshold of triggering $\approx$ 20mV peak ouput input. 40mV peak $\approx$ 1/5 - 100 PHS	11:01				app

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			START	STOP	TOTAL TIME	
042 pulsar cont'd	3/5/01	at 40 mV peak - rates were 200 + c/sec				
043 0.1E=	3/5/01	Set. cmd Fair/safe read DIS par config A B AB AB initia.cmd 28V on 1.38A	12:07			ayr
image det on		1024a.cmd 2908 trig descr. revis. 12:11 Nun 050d, 1000, 1200, 1300, 1400, 1500 13:13				
cal source on		grid balance bias 64 dec 100H 11:16 ca/sb.cmd move cal source into view. 12:21				
		cal open.cmd sent initia in file turned off 12:24				
		HV back on 500 → 1500 cur limit on				
move door		drcl 3500, cmd closes door 3500 steps - 12:28				
toward close		drcl 3500, cmd → 8nFe.cmd HV off 12:31				
		open door Fully drlsq.cmd 12:32				
		initia.s was issued.				
cal source is off		cal source is closed - spec det on 12:45				
spec on		pulsar still running. Fair sEE 13:00				
		Note: reverse polarity pulses were sent to the				
		spec det to see if saturated pulses could be				
		generated were observed on the imager under				
		1500 V operation. This did not produce saturated				
		ays				

LIFE HISTORY

## LIFE HISTORY

EVENT		DATE	SUMMARY OF CHRONOLOGICAL EVENTS TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES
NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
044	check spect det	3/5/97	Par up For spect det — pur up. cmd 28v bus A 29nd. A B & B A B init. cmd 1. 3 & A F1/c = PΦ97φ3φ2i	16:40			cgr	
			spect. cmd Triggers were switched from 2 to 3 + 0 3 + 0 2 on DUC At trig ini character — 1 and 3 appear to be reversed. Scored 1 1 3 2 1					
045	spect HVR	3/5/97 run at 2500V	F1/c = PΦ97φ3φ5ij hv sp d5phi S/W problems F1/c = PΦ97φ3φ5if hv sp d5phi	17:03			cgr	
			20F. cmd — send Pcfg 2. cmd for spect det to bus A. A B B A init. cmd trig disc 2914 H cont 4 hv sp d5phi	17:16			cgr	
			increase HV 1 count to CV = 29 CL = 40 HV start 3/5/97 file = PΦ97φ3φ5k hv sp 1000.cmd no events	17:24			cgr	
046	HVR	3/5/97	no events	17:50			cgr	
047	spect 1300V	3/5/97	F1/c = PΦ97φ3φ5l hv sp 1300.cmd	18:10			cgr	
				17:14				

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NO.	SUBJECT	DATE		RUNNING TIME/OTHER (HOURS AND MINUTES)			STAMP OR INITIAL	
				START	STOP	TOTAL TIME	CUM. TOTAL	
048	spect /500	3/5/97	hrs 50' 15.00. cmd val. of events appear on screen	18:29				ayr
			< 1 ev/sec					
			Reset grid balance to 2.000 0V, $\bar{v}_1/e = P\phi 97 \phi 305m$					
049	1600 V	3/5/97	$P\phi 97 \phi 345m$ end balance to 3.2 H 1 or 2 ev/s lower trig disc to 8 then = no events in left side segment.	18:45				ayr
			events in mid & right side segment					
050	1700 V	3/5/97	$P\phi 97 \phi 3450$ no events in seg 1 (left) 900 seconds	19:00				ayr
				19:01				
				19:18				
051	1700 V source sourin	3/5/97	$P\phi 97 \phi 3450$ - HV no change cal/sb.cmd sd 7000.cmd move dec to 60° drc/3500.cmd to 30° drc/3500.cmd	19:19				
			(HV off) - meter to home					
			break door Bus current Bus 21.5					
			Power off					
052	Par on	3/6/97	par up.cmd 1.372 28V id dr/sb.cmd Depress chamber dr/sas.cmd Chamber at 760 torr.	20:00				ayr
	open door			8:52				ayr
	clos door			8:54				
	pur off			10:00				
				10:05				ayr

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				START	STOP	TOTAL TIME		
053	CHECK FOR TRIGGER CABLES MISSING	3/6/97	Inspect MCP Hypsis Far trigger connections. Imager Hypsis cable 127 connected to middle terminal.			10:10		
			Spectroscopy S1 connected to 128					
			S2 connected to 129					
			S3 connected to 130					
			Change cable routing at the cable tray.					
		"	connect S1 cable 127 to 130					
		"	S1 " 128 to 127					
		"	S2 " 129 to 128					
		"	S3 " 130 to 129					
			Install/change wiring to BNC feed thru port as follows:					
			FED THRU #1					
2	10	60	(128) Try S2 to 2					
0			(242) S1g spent to 4					
3	0	50	(248) S VA to 1					
0	10	247	(250) S VA to 3					
			(249) S UB to 5					
			INSIDE (250) S VB to 6					
			VIEW F.E.T					

## LIFE HISTORY

### SUMMARY OF CHRONOLOGICAL EVENTS

TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.

EVENT NO.	SUBJECT DATE	RUNNING TIME/OTHER (HOURS AND MINUTES)				PAGE OF PAGES 23	STAMP OR INITIAL
		START	STOP	TOTAL TIME	CUM. TOTAL		
054	PWRUP	3/6/97	Instrument rolled back into vac chamber for SFET	17:53			ayr
			Pwrup.cmd F/c = P0970306a	17:59			
			spectra.cmd trigger side A cargo to 29°E				
			pwdwn.cmd Rwdwn.cmd	18:08			
			pwrup.cmd for checking side B				
			init b.cmd spectb.cmd	18:12			
			pwdwn.cmd side B trig cargo to 29°E	18:20			
055	Pymbrn	3/6/97	start pump down.	7:00 Tarr	18:22		
			<del>pwrup.cmd pwrup.cmd</del>	18:38			
			100 Tarr	18:40			
			rotorr	18:47			
			crackdoor.cmd Rwdwn.cmd	18:48	18:50		
056	Pressure	3/7/97	10 Tarr	18:51			
			Pressure in chamber	<del>10</del> x 10 <sup>-7</sup> Tarr	18:52		
			pwrup.cmd				
			<del>closed</del> door open.cmd	<del>Slow</del>			
			System crash	8:43			
			Total 41 out of File caused crash.				
057	Sectar	3/7/97	do resear.cmd 1.846 Apps	9:04			
			spectra.cmd dot test ok dots off	2:11			
			Spec 0400 cc disa				
			0:01 spec HV on				

## LIFE HISTORY

EVENT		DATE		TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES	
NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
058	SPECTOR	3/7/97		connected scope to SVA ① & VTA ③ on	2:45					copy 2
				BNC plate						
				step 1 HV on 500V P049743475 = File						
				1000V						copy
				step 2 1000V P049743470 = File hours 1000						copy
				thresh 2216 <del>H</del> < 1 ct/sec						
				thresh 29 14 15, 400 te cts not valid						
				step 3 1300V P04974347d = File						
				disc 4 to 23, 1B to lower thresholds						
				step 4 1600V P04974347e = File						
				1500V						copy
				disc 23, 20 H TE < 1/sec						
				valid events in all 3 segments						
				step 5 1600V P04974347f = File						
				disc thresh = 23, 22 H 2 4, 3 copy/sec						
				6rid balance to 2B, 32 H All 3 segments appear						
				to be in correct order S1, S2, S3						
				1700V						
				file = P04974347g						
				disc thresh = 23, 24 H 3 copy/sec						
		" "		= 22, 26 H TE = 6, 7 VTE = 3, 4						
				pres = $6.7 \times 10^{-7}$ Torr						
				4110EF						
				11:24						

## LIFE HISTORY

### SUMMARY OF CHRONOLOGICAL EVENTS

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EVENT NO.	DATE	SUBJECT	RUNNING TIME/OTHER (HOURS AND MINUTES)				PAGE OF PAGES
			START	STOP	TOTAL TIME	CUM. TOTAL	
059 HV TEST	3/7/97	switch image to simc.9.					25
		source of cond.					
		image. cond. <sup>HV TEST</sup> 500V	11:29				
		step 1	11:33				
		Pd 970307h. 100k/142 observed					
		on the V axis. 600mV ripple.					
		1000V	11:38				
		step 2 1000V file = Pd 970307i.					
		grid balance 2B, 32 H	11:53				
		trig disc 22, 1D H					
		ripple is 680mV on U, 240mV on V axis					
		21 kH 3					
		1200V					
		step 3 1200V F/c = Pd 970307j or k?	12:08				
		91648760mV p-p V axis					
		step 4 1300V file = Pd 970307l	12:25				
		870mV V axis					
		1300V					
		step 5 1300V F/c = 2nd 970307m					
		repeat					
		of step 4					
		or 9700t — only in 2nd decade of a frame.					
		cmd					
		Note: there was a file error noticed at the 1300V level - the codes for biasing the MCP's were reversed putting $\approx 1060\text{V}$ on the lower MCP and $1530\text{V}$ on the upper MCP.					

## LIFE HISTORY

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
1	400 V	3/7/97	step 5 1400 V file = 1000d307n		13:05		age
			V axis 1.4V V axis 60mV				
			VE = 2 mV/sec TE ≈ 3/sec				
			Difuse background visible - 3.5. M.				
1	500 V	3/7/97	step 6 1500 V file = 1000d3070		13:21		age
			V axis = 1.2V V axis = 240 mV				
			2 B24 grid balance trig 22, 144				
			VE & TE = 6.5 /sec				
			Low count at the upper 1/5 and right 1/5 of the screen.				
			Power off				
060	Powerup	3/7/97	Powerup. cond occd disable current limit 1 hr on the imager.		13:41		age
			run at 1500V				
			0901 14V on at step 6				
			HVTM 050d, HVTM 1000 system bombed				
			file = 1000d3070				
			function (pp) 1300, 1400, 1500 V				
			cur lim enable set +				
			200 sec to get up to voltage. 3600 sec				
061	Grid Balance	3/7/97	- Grids need balancing		15:46		
			High Voltage triggered off was inadvertantly changed by an operator command being sent				
			16:45				

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				RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES		
				START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
061	cont'n	3/7/97	while trying to change the grid balance. System <del>ACTUATE</del> was rebated to see if the upper and right edges of the display which showed bands with fewer events was related to the CTUE. HV reset to 1500V / MCP.	15:50				copy	
062	ca1 source	3/7/97	Grid balance set to 324 - good balance. File = P#27d3#7r 5.6x10^-7 Torr Move cold source to the open position File = P#27d3#7s 15 min run			17:04		copy	
063	door to 60°	3/7/97	ca1/5b: cmd door open, cal open. File = P#27d3#7t move door 3500 steps toward close.			17:28		copy	
064	door to 30°	3/7/97	dec(3500,cmd 1.8 A 20 ev/sec File = P#27d3#7u drcd 3500 and step motor 50 ev/sec			17:51			
	close crack door	3/7/97	File = P#27d3#7v close then crack door 1.5 minute run						

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL			
066	close car source	3/7/97	ca 1/clos.cmd	File = P#97030700	18:25		agz			
			5.4 cts/sec	as shadows - ion ranges are excluded from shining on the MCP's very uniform background - 1.5 min run						
067	crack door to 30°	3/7/97	Issue second crack door File = P#97030700	18:41			agz			
			1.5 minute run.	4.4 cts/sec						
068	more door to 60°	3/7/97	still very flat background - drop.3500.cmd	File = P#97030700	19:00		agz			
069	open door	3/7/97	decrease File = P#97030700	19:22						
			the hr on the lower plate was inadvertently turned to zero volts - will examine log card - save cmd was sent to safe system.							
070	close door	3/7/97	send closedoor.cmd	19:43			agz			
			send crackdoor.cmd							
			pur off	pur down.cmd	19:45		agz			
071	pur up	3/8/97	pur up p.cmd				WVZ			
072	door open		door open.cmd				WVB			
073	cmd check		drul 3500.cmd				WVR			
					9:42					

## LIFE HISTORY

EVENT		DATE		SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES	
NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	29
074	HV on	3/8/97		hvim 0000.cmd hvimos00.cmd OC01 door open	f/e: P0970308a HV stayed up hvim1000.cmd P0970308b hvim1200.cmd hvim1300.cmd hvim1400.cmd hvim1500.cmd OC01 new file P0970308C	09:48 09:51 09:54 09:56 10:03 10:04 10:05 10:06 10:09 10:15			M122	
					Chamber pressure 3.8x10 <sup>-7</sup> torr					
				door - 60°	d/r/l 3500.cmd P0970308d					
					dooropen.cmd HV stayed up	10:29				
					all HV off.cmd	10:32				
						10:36				
075	spec pickup			spect.cmd						
				HV on	hv sd0101	10:40				
					hvsp0500.cmd	10:52				
					hvsp0000.cmd	10:53				
					p = 3.9x10 <sup>-7</sup> Tc10 = 778	10:55				
					Tc09: 76.9	10:56				
					hisp1500.cmd	10:57				
					hisp1500.cmd	M122				

## LIFE HISTORY

EVENT		DATE		TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MAI/FUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES
NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
		3/8/97		send sd/2926	00:59				
				hvsf 1600	10:03				
				hvsf 1700	10:04				
076	Bfnd			15 min background run P0970308f ~3.1 ct s^-1	10:08			MVR	
077	HV to 1725			TC: 120 114: 22.5°C 114: 30°C $\rho = 3.9 \times 10^{-7}$	11:21				
				hvsf/1725. and P0970308g ~4.3 ct s^-1 /hour	11:24				
				sd/2928 ~4.2 ct s^-1	11:27				
				0401 current limit enable	11:43				
078	Cal Src			cal open. and P0970308h 15 min run ~4.3cts	12:25				
079	door $\rightarrow$ 60°			drcl 3500. and P0970308i 15 min run ~8.0cts	12:42				
				(intermittent bright sun light)					
				TC 114: 34°C 120 121: 24°C	12:45				
080	door $\rightarrow$ 30°			drcl 3500. and P0970308j 15 min run 15.8 ct s^-1	12:58				
081	door $\rightarrow$ closed			door clos. and crack door. and P0970308k 19.7	13:14				
				TC 114: 35° 120 121: 24 °C	13:01				
082	shielded			P0970308l 1 hour run 20.8 ct s^-1	13:30				
				shld. and	13:40				
083	cal close 3/8/97			P0970308m - close cal source	14:32				
	open dia			open door	14:40				
	shld 1 on			shield 1 on to 1800V step 12 on CW	14:45				

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EVENT		DATE		SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)			STAMP OR INITIAL		PAGE OF PAGES
NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL		31
083	cont'd	3/8/97		15 minute run P0970308 am		14:18				agr	
084	SH2 to HV	3/8/97		SH1 rate ~110 - 144 VE rate ~ 5.9 c/s							
				Par down spect detector. & sh1 - All h off. cmd		15:16					
				ardown.cmd		15:18					
				cfg3.cmd ABBA DIS Far/safes		15:21					
				init1.cmd		15:22					
				sh2a.cmd		15:25					
				trig thresh 22,28		15:27					
085	HV on	0400		HVSP 0000.cmd P0970308n		15:30				MVZ	
				0101							
				HVSP0500							
				HVSP1000							
				HVSP1300							
				HVSP1500							
				HVSP1600							
				HVSP1700							
				HVSP1725 sd0401 current limit enable							
				sd0e04 P09703080							
086	shield 2 HV			140-165 CS-1		1550				MVZ	
				2.9							

LIFE HISTORY

## LIFE HISTORY

EVENT		DATE		TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.			RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES	
NO.	SUBJECT						START	STOP	TOTAL TIME	CUM. TOTAL	
090	HV off	3/8/97		All hv off			1700				UV7
091	pur down			pur down. cmd			1701				
092	pur up			pur up. cmd			1702				
093	open cabinet			cab open. cmd			1707				
094	close door			door clos. cmd	3 min to close		1708				
095	crack door			crack door. cmd			1712				
096	Side B			SEND PCFGΦ.CMD			1714				
097	PWR			" INITB.CMD			1715				
098	DISCK LN			SEND Z928			1717				
099	HITUNON			hv sp 0000.CMD			1719				
				hv sp 0500.cmd	P09703089		1721				
				hv sp / 000 .cmd			1722				
				hv sp / 300 .cmd			1723				
				hv sp / 500 .cmd			1723				
				hv sp / 600 .cmd			1723				
				hv sp / 700 .cmd			1725				
				O401			1725				
100	HV off			All hv off			1737				
101	pur down			pur down cmd							
102	pur up			pur up. cmd			1740				
103	rec-s			spec. cmd			1748				UV2

## LIFE HISTORY

EVENT NO.	SUBJECT	DATE	TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.	SUMMARY OF CHRONOLOGICAL EVENTS			PAGE OF PAGES
				START	STOP	TOTAL TIME	
104	discrim	3/8/97	2928 sent				34
	HV on		hvsp 0000. cmd	00970308s	1953		MVR
			hvsp 0500. cmd				
			hvsp 1000. cmd				
			hvsp 1300. cmd				
105	HV off		ALL HV OFF (BNC cables not connected properly)	1957			
106	HV on		hvsp 0000. cmd	1957			
			hvsp 0500. cmd	1958			
			hvsp 1000. cmd	1959			
			hvsp 1300. cmd	1960			
			hvsp 1500. cmd	1961			
			hvsp 1600. cmd	1962			
			hvsp 1700. cmd	1963			
			sd/0401 sent	1964			
			2928 sent	1965			
107	HV off		00970308s 15 min run with door source	1966			
108	cal close		all hv off	1967			
			cal clos.cmd	1968			
			sd/7000	1969			
				1970			
				1971			
				1972			
109	repress		Tc 114.35°C 121.122:26°C Tc09: 84.9 Tc10: 88.1	1973			
110	door open		Starting regress Door open, cmd @ 10 Torr	1974			MVR

## LIFE HISTORY

EVENT		DATE		TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES
NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
111	door close	3/8/97		door clos. cmd		1955		MVZ	
112	crack door			crack door. cmd @ 30 Torr		2034			
113	door open			door open cmd @ 0.5 Torr		2053			
114	power down			power down, cmd		2055		MVZ	
115	push up	3/12/97		FEA TC 35cts CRKA TR 36cts (TRW temps) 0750				MVZ	
				pushup T cmd normal no low voltage reading					
				<del>pressdown cmd</del> no mouse keeping display but <del>pressdown cmd</del> 3A on power supply					
				pressdown cmd		0756			
				pushup T cmd (energy thing OK)					
116	door close			door clos. cmd ~ 3 min to close from full open		0804			
117	crack door			crack door. cmd		0809			
118	<del>power down</del> open			door open cmd ~ 2 min to open		0820			
119	power down			power down cmd		0824			
				$\vartheta = 4 \times 10^{-7}$ Torr		0905			
120	Push up	3/12/97		Push up command :		1426	1435	CRW	
121	Door Close "			Door close cmd :		1436	1435	CRW	
122	Crack door			Crack door cmd :		1438	1440	CRW	
123	connect spect			... Spectra. cmd :		1451	1452	CRW	
124	left wrist to x			... send single Sd2908		1456	1456	CRW	
125	Door Open			Door open. cmd		1553	1557	CRW	

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
125	Door closer	3/2/97	Door closer - send	Take down 780+ take		1558		1640		
126	Purge lvl		Purge down - send			1600		1602		
127	Remove from V7		Premise unit from balance out chamber + place in			16100				Chm
			HRC cont.							
128			Bags & attach rotatable N, purge line			1730				
129		3/13/97	Premise Specans from Detachable boxes			800				
			Promote TC from HWPS							
130			Cable via Clean room "hatch" for full function			830				
			det. test							
131	START long term		CONFIG #1, Purge S. Cmd	FILE CHANGED TO SEND config, set before		945AM				
132	PURGE S		PURGE S. Cmd			954				
133	TRIG LVL		C-1.2.1.1 FAILED . COMMAND 1B WAS IN THE "00" STATE, NOT THE "01" STATE WHICH IS							
			IN THE INITIATE PROCEDURE.							
134	1801		SENT 1B01 MANUALLY, ALL SEGMENT OK.			1040				
135			PROCEEDING w/TEST PER FFT PROCEDURE,							
136	RANGE		CONFIG #1.							
			PROBLEM - TRIG LEVEL IS 142 ON AND 0							
			DISPLAY. POSSIBLY CMD DIDN'T TREE IN INITA.							
			INIT SENDS ID FOR TRIG LVL, WHILE PROC EXPRESSES							
			OF. SEND 290B MANUALLY. (290F DIDN'T TRIGGER)							
			COMPLETED SPOTTY, SIDE A.							
			1158							

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152	SIDE B PF7	3/13/97	PCFG 2. CMD 1.DOTS (1M) HSKPC PER PROCEDURE	1:56	-	2:16		JG
153		SPF. CMD (POWER OFF)			2:17			
154		RECONNECT FOR SPECT 2015, SIDE B PCFG 0. cmd (POWER B SIDE FOR SPOT)			2:35			
155		B BUS ON, PWR ON				2:36		
156		INITB. CMD, PLACED PEX LF TEST PROCEDURE.				2:37		
157		SDOTS, SIDE B				2:39		
158		COMPLETE APPENDIX C-1. <sup>(CHART)</sup> #3 WILL NOT BE DONE PER R.M.				3:31		
159	SHIELDS	USING SHIELD POSITION OF APP. D-1. SEND PCFG 2. CMD, VERIFIED				3:50		
160		SEND INITA. CMD USE SPF TO POWER DOWN				4:00		
161		PWR UPS. CMD						
162	SIDE 1	TURNED ON SHLD 1 TO STOP 12 USING SI HVON. CMD				4:30		
163	<del>POWER DOWN</del>	SI HV 12. CMD W/ SOURCE SDX# BULLDOZER, SPF. CMD				2:50 / SEC. 12000 / SEC - <del>435</del>		JG

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164	SHIELD 2 ON SIDE A	3/3/97	Pcfg 3. Cmd (spect, shield 2 on side A) bus sw to "A", 28V Quas, Init. cmd, Sh2a. cmd S24v on. Cmd 60/sec				JG
			S24v off 4. Cmd 250/sec.				
			w/ SOURCE 11300/sec.				
			All/Hoff. Cmd				
			Spt. cmd, Bus off.				
165	SHIELD 1 ON SIDE B	3/3/97	Pcfg 3. Cmd (img, shield 1 on side B) (███████████) bus sw to B, 28V Quas, Init.b. cmd, Sh1b. cmd S14v on ██████████ 20/sec				
			STEP -4 40/sec				
			STEP -8 70/sec				
			STEP -12 280/sec				
			w/source 12000/sec				
			All/Hoff. Cmd				
			Spt. cmd, Bus off.				
			Pcfg 0. Cmd (sp, sh2 on side A)				
			bus sw to B, 28V Quas, Init.b. cmd, Sh2b. cmd				
			S24v on 60/sec				
			S24v off 220/sec				
166	SHIELD 2 ON SIDE B						JG

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166	cont'd	3/3/97	w/ SOURCE est/kroff. cmd  Jsf. cmd  SER. URES2 AREA	11500 / sec.  5/6  5/7  5/8	JG  ↓

14/RC moved to X00C  
 note: next page DOY =  
 077=(3/18/97) Tuesday.

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			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL		
167	Power on	077	3/8 power up command issued - power not turning on	21:21 <sup>m</sup>			JG		
			initial and still no power - protective (corona) pressure switch was enabled. Switch shunted	21:33					
			tripped power supply after HRC power cutoff switched to Power On	21:40					
			HCTU power switched off and then on	21:42					
			We are on!	21:43					
			Pump down started	21:46					
168	clockdoor	077	< rackdoor cmd @ 50 Torr	23:11					
			door is cracked	23:12					
169	power down	077	pardown.cmd @ 40 Torr	23:22					
170	pressure in chamber	078	3/8x10 <sup>-6</sup> at 2:05 AT ber	08:05			AE/RE		
			3x10 <sup>-6</sup> at 2:45	08:45					
			2x10 <sup>-6</sup> at 3:00	09:00					
171	power II	078	power II command issued - kill switch is on and 28V is on for the facility.	09:03			ACR		
172	dooropen	078	Open door sent	09:12					
			Door open verified - Current was reported as 2.0Ams while door moving - now reads 1.8A.	09:27					

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				START	STOP	TOTAL TIME	
173	Powerdown	078	Power down command sent. Power Supply checked and reads $\approx$ 0.1 Amps. Current read accurately since 1st division is at 2.0 Amps. Stopped telemetring file	02:31	02:32		ACR
174	pressure chamber	078	i#780900 2x10^-6 Torr 4:05 CT 6x10^-7 Torr 4:51 CT 4x10^-7 Torr 6:32 CT	09:43			
175	Power up	078	Powerup I cmd when $\approx$ 15 volt he came on lost TM at 10:27 lost TM after 90s wait Run info, and powerdown cmd run info and powerdown cmd	10:05	10:51	01:46	ACR
176	Powerup	078	run info and powerdown cmd ACTU/HRC power supply reading 28V ~ lamp (D. Johnson) while looking at unit A display, send Milt A powerdown cmd filename: i078/1702 (the first number) Successful powerup following an initial cmd powerup I cmd	10:30	16:33	06:02	AK
			(CG101: 3X10^-7) CCG102: 4X10^-7			18:08	MZ
			Lost ACTUE TC absent knows why			19:31	
			TC reinitiated CTUE (files - caused by attempt to make a Telnet contact 19:15)			19:38	

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				START	STOP	TOTAL TIME	
177	HV funmon	078	HV Step 0 HV im 0000. cmd	i 0782235	22 36		43
178			HV Step 1 = 500V/plate HV im 0500 .cmd i 0782237				
179			Verify Step 28,39 F Monitor 113, 107 i-hvstemp 58				
			HV Step 2 = 1000V/plate HV im 1000. cmd i 0782253	22 53			
180			Verify Step 53,64 , Monitor 100, 94				
			HV Step 3 = 1200V/plate HV im 1200. cmd i 0782309	23 09			
181			Verify steps 63, 74 , Monitor 95, 88 i-hvstemp 55				
182			HV Step 4 = 1300V/plate HV im 1300. cmd i 0782325	23 25			
			Verify step 68, 79 , Monitor 92, 86 i-hvstemp 54				
			HV Step 5 = 1400V/plate HV im 1400. cmd i 0782340	23 40			
183			Verify step 73, 84 , Monitor 89, 83 i-hvstemp 53				
			Event note 0.7/lsec				
			HV Step 6 = 1500V/plate HV im 1500. cmd i 0782355	23 55			
			Verify Step 78, 87 , Monitor 87, 80 i-hvstemp 52				
			Event rate = 2.6/lsec				
184			079 Cal Source Open, move down from 60° to 30°				
185			Cal Source + Down at 30° i 0790013				
186			15min Run . Rate ~ 4.2 ct/sec i-hvstemp 50	0016			
			Open door + Close Cal Source i 0790023	0033			

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187	BLSSD	079 HV at 1500V/plate C-IHS-B6-S.001 300 sec 60790037 26 Oct/2001	0037	0137			
188	I LIMIT	079 SENT FILE ILLIMenA.cmd and verified.	0109				
189	Anti-Lo	079 TURN ON Shield 1 Stop 0	0141				
190		11 Step 12 Auto ~80 others					0142
191	BLSSD	079 Bench and 1500V/plate until Shield off step 12					0143
192		1 hr. Run IJ-IHS-B6-S.001.a					0146
193	Low HV	079 SELECTED RUN FOR TC TO OPEN GATE VALUE	0216				
194	TESTING TLM INDICATOR	079 LOWER HV TO 1000/PLATE, CMD HRIM1000.CMD EMULATED CURRENT LIMITER. 53/64 STEPS, 109999 AUTOS	0217				
195		079 SENT SD 6800, BYTE 68, BIT 0 IS STILL A "1" 68 IS WHERE BYTE FOR RLO, SHD USE 67.					0234
196		079 HRIM1200.CMD 1200.cmd (+50) End lines on test	0250				
		1400.cmd (+80) (<1 ct/s) 1500.cmd (+120) (~2-3 ct/sec) 1000.cmd (+170)					
		All in 60790250					
		Commit to G-IHS-B6-S.001.b					

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
#7	Light test		1200 .cmd + 60      ATM lighter on 1300 .cmd + 50      all in 1400 .cmd + 75      1500 .cmd + 100      1600 .cmd + 150 Comment G-I4T-BG-S.001.C	0300	0304				
#8	HV 1500 to INTEGR	07.9	Integer TV raised from 1000v to 1500v Note: HSI KPG display has occasional errors - suspect a missing clock pulse → TE & VE shows large numbers in the 2nd value on the screen - also bytes 92 & above shifted by one byte.	04:32				Agre	
#9	spani	07.9	1300 sec run → Spani issued after 600 sec. 825 sec			06:14		Ach	
200	400 sec Integrat line #4	07.9	≈ 19 e/s Series of off screen 400 sec runs ≈ 16-18 e/s Problem noted in event 198 has disappeared since the TE & VE have increased.	07:01	07:09	06:42		Agre	
#7			≈ 16-25 e/s	07:17	07:24				
#8			≈ 17-22 e/s						
#9			≈ 18-20 e/s						
#10			≈ 18-21 e/s c						
			=						

Note: Facility coordinates ↑  +Z  
U→

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		PAGE OF PAGES							
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201	E19 m/s	079	Continuation of EA measurements  Green Lite on CTUE was observed to be off.  Do not know how long this situation was present - Noconds have been sent since the Spani service. TC clicked the cmd lamp back on.  Also have noticed 2nd value of TB/VIS rates was changing at times.						
202			System became inoperatio - Had lots of deflog.dat's on esectd. Cmd & Tim links were down.  Scht Safe cmd from escte.  Found CTUE was not communicating with either esectd or cmd.  10791012 = File for 4U turnaround.			09:39	10:23	AGR	
			Turned off kill switch to save the 14rc.  Tried to get system back on the air but had the 28V supply for the system & tec had tripped off. One problem that occurred was esectd log entries were filled with deflog.dat's						

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202 cont'd		07.9	<p>Seat goodbye's and deleted datalog.dat from the ncc computer. Brought the system back on line but could not receive telemetry. Found the Tlm Format type was had reverted to one of the lab types. Restored flight-telco and could now acquire telemetry.</p> <p>The 28V supply was turned back on and telemetry verified that the Failsafes were disabled and A/B/SAB config was ok.</p> <p>Turned the 28V supply off and the kill switch was reenabled. The 28V supply was turned back on and the system was up and running. High voltage was turned on (stepped up to 1500V) and telemetry VIB's were recorded in the stripchart but the DS display and the egsc screen showed no events. Set the trigger to 148 by issuing the sig/c command Sd 2228.</p> <p>Still no events on screen. Issued the commands Sd 4500 (sets 152=0) then Sd 4501 (F1/F2 ENABLE) — System now ok. Kill switch</p>				47

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208	BLIND UP SCREENS	079	RECONNECT SCREENS, CTRUE. HOLDING w/ HV's = 0 TROUBLE GETTING JTC COMPUTER WORKING.			2253	2253
209	BLIND UP HV	079	BROKE UP HV w/o JTC COMPUTER, RECORDING FILE ON ESSSE = PWRUP 079 2258			2257	2257
		079	IN, SC HV'S BACK UP, NORMAL RATES			2303	2303
		079	Shutter Focus Test G-THT-SF: 4,005 Focus best surviving				
			60292019. cent "Q2" U = 2612.594 V = 2780.591				
			60712101. cent "Q1" U = 2599.511 V = 2768.429				
			"Q2" U = 2601.574 V = 2793.290				
			60292203. cent "Q3" U = 2629.458 V = 2789.580				
			60292312. cent "Q4" U = 2629.465 V = 2768.407				
			60292338. cent "Q5" U = 2614.490 V = 2781.616				
		080	ADJUSTED GRID BACKUPS. DELETED VALUE WAS 2632h, ADJUSTED TO 2620h.			0003	0003
211	Shutter Focus 080	Start G-THT-SF-4,006	0025				
		60800025					
		old control	U = 2612.685				
			V = 2782.729				
212	Q1	080	U = 2615.757 V = 2785.428	0053			
			U = 2611.0053 -> "Q1"				

3/4