

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

VOL II

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

Smithsonian Astrophysical Observatory  
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The Smithsonian Astrophysical Observatory  
is a member of the  
Harvard-Smithsonian Center for Astrophysics

LIFE HISTORY

EVENT	DATE	TEST DOCUMENT NUMBER	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)			STAMP OR INITIAL
				START	STOP	TOTAL TIME	
213	Shutter Focus	080	i080 0118 started Q1 2 exposure done	0118	0136	00:18	May
			Centroid u = 2617.575 v = 2778.760				
214	Shutter Focus	080	start i0800147 Q3 exposure Continued u = 2607.690, v = 2778.700	0141		00:29	May
			Centroid u = 2610.760, v = 2786.321				
215	Shutter fac Q4	080	start i0800202 Q4 exposure	0202		00:00	May
			Centroid u = 2610.760, v = 2786.321				
216	080	T. Gromes	created new initialization files	0232		00:00	May
			pwrup T. and init S. and initializations unit tests				
			init S. and unit tests				
			have trigger to 2928 h				
			separate set sand bias to 2 black				
217	new grid bal.	080	CHANGED GRID BAL FROM 2620h TO 2b1ch (single)	0223		00:00	May

## LIFE HISTORY

		SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)			PAGE OF PAGES	
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218	Confusing test	080	G-IHI - 1CF-1.005	0230				MWJ
219	Check flux	080	BND Flux FPCS - 150Hz/s	0238				MWJ
220	Knife focus/open	080	All Open collect i08000240	0240				
			1000s exposure					
			U = 7908.4941	V = 8044.351				
221	TLM loss	080	Lost <del>the</del> telemetry	0308				MWJ
			CTE E down					
			restarted link					
			last file can appears to be					
			due to quadit. and <del>script</del>					
			load					
			retired after some edits					
			file did not have copy					
			a echo DONE at the end					
222	Edits	080	all quadit. and edited	0338				MWJ
223	HV on	080	HV INTMOOC. and	0330				

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No.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL			
224		080		May 10 500. and	0340			May 1	3	
				May 11 000. and	0341			May 1		
				May 11 200. and	0342			May 1		
				May 11 1300. and				May 1		
				shutter. and				May 1		
				shutter. and				May 1		
225	quadri	080	quadri. and	0346	0350			May 1		
								May 1		
226	quadri	080	start a collect	0800351	0351			May 1		
				do not see any events				May 1		
				we will use relative couplers				May 1		
				to move shutters				May 1		
227	pytousel	080	+Y shutter towards home 16 steps	0359	0400			May 1		
			-Y shutter 16 steps to home					May 1		
228	pytousel	080	+Y shutter 16 steps to home					May 1		
			-Y shutter 16 step to home					May 1		
229	uniforum	080	-Y shutter 16 step to home	0400				May 1		
230	"	"	" "	"				May 1		
231	pytousel		+Y Shutter 16 steps to home	0401				May 1		

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL	
232	Pytox	080	+ Y shutter	16 steps to house		0402			
233	Nylton	080	- Y shutter	16 steps to house		0402			
234	Pytox	080	- Y shutter	16 steps to house		0403			
235	Nylton	080	- Y shutter	16 steps to house		0407			
236	Karl Focu	080	1080 0410 collection Q1			0410			
237	Nylton	080	- Y shutter	16 steps to house		0410			
238	quad12	080	moved shutters to Quad 2 using			0420			
239	Karl Focu	080	1080 0431 collection Q2			0431			
240	quad13	080	moved shutters to Quad 3 using			0430			
241	Karl Focu	080	1080 0451 collection Q3 1000s			0451			
242	quad14	080	moved shutters to Quad 4 using			0510			
243	Karl Focu	080	1080 0511 collection Q4 1000s			0511			

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244	no	shutters	80	i0800545	500 sec run	v = 7775 v = 7920	2m = 16	05:45	ACR
245	quadri 1	80	i0800660	500 sec run about run		06:00			ACR
246	quadri 2	80	i0800605	restart 500 sec run		06:05			ACR
247	quadri 3	80	i0800626	500 sec run (HURSI = 42 → 33°C)		06:16			ACR
248	quadri 4	80	i0800636	500 sec run		06:36			ACR
249	count rate	80	move to best focus			06:48			ACR
250	cr-2.001		i0800639	change flux	≈ 0.2 ev/sec	06:59			
			v = 1122	v = 1346	2m = 32	00800718	07:18		ACR
					1000 sec run	some scattering observed			
251	gate	80	500 seconds - no events observed in run			07:52			ACR
				i0800748	= fine				
252	increase	80	500 second run →	i0800811		≈ 1.0 ev/sec	08:11		ACR
					498ev/500 sec	scattered = 80/500 = 0.16 ev/sec			
253	increase	80	250 sec run	i0800822	456/250 ≈ 1.82 ev/sec	08:29			ACR
				82/250 = 0.328	scattered events/sec				
254	increase	80	12.5 sec run	i0800844	411/12.5 = 3.28	08:44			ACR
				42-2.007	sector 67/125 = 0.536 ev/sec				
255	EA	+20	80	600 sec run	i0800858 FAM yaw + 20°	09:10			ACR
256	EA	-20	80	i0800910	i0800927 FAM yaw - 20°	09:27			ACR

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			START	STOP	TOTAL TIME	CUM. TOTAL		STAMP OR INITIAL	
257	5/8/0	080	10800946	600 sec run	02:46			AGR	
258	3/0/37	080	10801003	500 sec run	10:03			AGR	
259	3/0/85	080	10801018	500 sec run	10:18			AGR	
260	4/0/52	080	10801035	500 sec run	10:35			AGR	
261	4/0/28	080	10801050	500 Sec run	10:50			AGR	
262	4/0/30	080	10801106	650 Sec run	11:06	11:18		AGR	
263	5/0/55	080	10801123	550 Sec run	11:23			AGR	
264	3/0/87	080	10801142	500 Sec run	11:42			AGR	
265	3/0/39	080	10801154	500 Sec run	11:56			AGR	
266	3/0/35	080	10801210	550 Sec run	12:10			AGR	
267	3/0/83	080	10801224	650 Sec run	12:24			AGR	
268	3/0/85 cont rate linearity	080	10801232	450 Sec run	12:			AGR	
			GTR-CR-99-058	v=0.8012.53	200 250 sec run	12:53			
			U = 1/22	V = 1/344	2m 32				
					check on scattering in yg.				
			627/400 = 1.567	90/400 = 0.225					
				scat of main image = 90/627 = 0.1435					
269	3/0/85	080	10801319	600 Standard		13:19		AGR	
270	080		Broke telemetry to reboot			1542	1543	MZ	MZ

LIFE HISTORY

LIFE HISTORY				PAGE OF PAGES
EVENT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS		STAMP OR INITIAL
		NO.	SUBJECT	
271	CR / Invert			
	Test 080	G - IHI-SF - 2.003a	i 0801844	2.17 05-1
		- 2.005b	i 0801905	4.19
		- 2.003a	i 0801918	6.66
272	Tm	080	Telmetry froze TH report	1.918 2015
273	PSF test	080	G - IHI - PI - 2.012	20.44
274	ECSA test	080	G - IHI - EA - 4057	2137
275	PSF test	080	G - IHI - PI - 2.023	2203
276	GTHI-EA	080	<del>G</del> Measurement G - IHI - EA - 3.091	2225
			0802225 250s collect	

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			START	STOP	TOTAL TIME		
281	Eff Area 080	G-IHT-EA - 3.0413	2240		2245		
		i 080 2240 250s					
282	Eff Area 080	G-IHT-EA - 3.187	2257		2301		
		i 080 2257 200s					
283	Eff Area 080	G-IHT-EA - 3.187	2314		2319		
		i 080 2314 300s					
284	Bosertel 080	G-ray's updated egscrnd s/w	2323		2328		
		i 080 2323 500s					
285	Eff Area 080	G-IHT-EA - 3.187	2338		2347		
		i 080 2338 500s					
286	Eff Area 080	G-IHT-EA - 3.141	0000		0007		
		i 080 0000 350s					
287	Eff Area 081	G-IHT-EA - 3.045	0020		0025		
		i 081 0020 250s					

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285	East Area	081	G - I H I - EA - 3.093	0041				
		i 081 0041	200S		0044			
286	East Area	081	G - I H I - EA - 4.060	0102				
		i 081 0102	350S		0109			
287	East Area	081	G - I H I - EA - 4.034	0121				
		i 081 0121	250S		0124			
288	East Area	081	G - I H I - EA - 4.036	0138				
		i 081 038	500S		0146			
289	East Area	081	G - I H I - EA - 4.059	0157				
		i 081 0157	350S		0204			
290	East Area	081	G - I H I - EA - 3.095	0220				
		i 081 0220	200S		0224			
291	East Area	081	G - I H I - EA - 3.047	0243				
		i 081 0243	250S		0247			

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NO.	SUBJECT	START	STOP	TOTAL TIME
CUM. TOTAL.				
292	EA Area	081	G - IHT - EA - 3.1413 i0810301	0301
			3505	0307
293	EA Area	081	G - IHT - EA - 3.191 i0810317	0317
			5005	0325
294	EA Area	081	G - IHT - EA - 1.115 i0810337	0337
			3005	0343
295	EA Area	081	G - IHT - EA - 1.117 i0810358	0358
			5505	0408
296	EA Area	081	G - IHT - EA - 15.001 i0810425	0425
			6005	0435
297	EA Area	081	G - IHT - EA - 15.002 i0810445	0445
			6005	0455
298	EA	081	G - IHT - EA - 15.003 i0810308	0455
			6005	0508
				0518

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL		
299	EA	08/	G-IHII-EA-15.004	0529	0529		sys		
			i0810529	600 s	0540				
300	EA	08/	G-IHII-EA-15.005	0552	0552		sys		
			i0810552	600 s	0602				
301	Gratings	08/	G-IHII-EA-7.048	0621	0621		sys		
	EA		i0810621	1850s	1500s				
302	Gratings	08/	G-IHII-EA-7.047	0657	0657		sys		
	EA		i0810657	1100 s	0715				
303	Gratings	08/	G-IHII-EA-7.046	0725	0725		sys		
	EA		i0810725	500 s	0738				
304	Gratings	08/	G-IHII-7.045	0756	0756		sys		
	EA	Aborted	i0810756	250 s	-				
305	Gratings	08/	G-IHII-7.045-1	0804	0804		sys		
	EA		i0810804	250 s	0820				

LIFE HISTORY

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SUMMARY OF CHRONOLOGICAL EVENTS			
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306	Gratings EA	081	G-14HII-EA-7.044 i 0810831
306	Gratings EA	081	G-14HII-EA-7.044 i 0810831
307	Gratings EA	081	G-14HII-EA-7.043 i 0810855
308	Gratings EA	081	G-14HII-EA-7.042 i 0810916
309	Gratings EA	081	G-14HII-EA-7.041 i 0810934
310	Gratings EA	081	G-14HII-EA-7.040 i 0810950
311	Gratings EA	081	G-14HII-EA-7.039 i 0811005
312	Gratings EA	081	G-14HII-EA-7.038 i 0811019

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL		/3
313	Gatings EA	081		G-HH I-EA - 7.037	4.8 kev					agk	
				i081/037	+250nm	10:37					
					650 s						
314	Gatings EA	081		G-HH I-EA - 7.036	4.5999 kev					agk	
				i081/054	+25mm	10:54					
					700 s						
315	Gatings EA	081		G-HH I-EA - 7.035	4.51 kev					agk	
				i081/114	+25mm	11:06					
					700 s						
316	Gatings EA	081		G-HH I-EA - 7.034	4.0 kev					agk	
				i081/1132	+25mm	11:14					
					950 s						
317	Gatings EA	081		G-HH I-EA - 7.033	3.5kev					agk	
				i081/1155	+25mm	11:32					
					1800 s						
318	Gatings EA	081		G-HH I-EA - 7.032	2.29 kev					agk	
				i081/2238	+25mm	12:38					
					3feet 6in	2250 s					
319	Gatings EA	081		99 D59 Ref = 70 s-1	BND 57 c5-1					1327	
					360 seconds						
	+25mm			G-HH I-EA - 99.040 R=44	BND 60 c5-1					1342	
					240 s						
				- 99.061	BND 74 c5-1					1347	
					180 s					1356	
					1400						

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				START	STOP	TOTAL TIME	
325	hvsd1680	082	Charge speed hr + 0 1680 v/plate 87,78 an/s = 82,75	0650		0705	ayz
326	Scans	082	2005 bkgd 50820650				
327	Shutter focus	082	G-IHS - EP - 1.120 50820727 +400 1000 2000 5 run spans sent after 600 S	0727		0751	ayc
328	Shutter	082	G-IHS - SF - 4.007-Q1 2.56 Kev SF820803 p = -2 mm				
		Q1	U=7502 V=880	0803		0820	
329	Shutter	082	G-IHS - SF - 4.007-Q2 50820827 Power glitch (rebooted ncc)	0827		0855	ayc
330	Foces	082	SF820840 H=-2 1000 sec run	0838		0902	ayc
331	Shutter	082	G-IHS - SF - 4.007-Q3 50820902 1000 sec run	0902		0929	
		Q3					
332	Foces	082	G-IHS - SF - 4.007-Q4 50820923 Q4	0923		0940	ayc
333	Shutter	082	G-IHS - SF - 4.007-Q5 50820945 Q5	0945		0957	ayc
		Q5	600 sec run				

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL			16
332	Shutter focus	082	Q4 +2	G-IHS-SF - 4.008-Q4	open +2 mm	10.05				agrc		
				SD821045	600 Sec run							
333	Shutter focus	082	Q4 +2	G-IHS-SF - 4.008-Q4	+2 mm					10.15		
				SD821020	600 Sec run	10.20				agrc		
334	Shutter focus	082	Q2 +2	G-IHS-SF - 4.008-Q2	+2 mm	10.34				agrc		
				SD821034	600 Sec run							
335	Shutter focus	082	Q3 +2	G-IHS-SF - 4.008-Q3	+2 mm					10.45		
				SD821050	600 Sec run					agrc		
336	Shutter focus	082	Q4 +2	G-IHS-SF - 4.008-Q4	+2 mm					10.50		
				SD821104	600 Sec run	11.04				agrc		
337	Bkgnd Ring	082	SD821125	1377 Sec						11.50		
				SD821125	7.00					agrc		
338	W OFF	082		Crop sensor problem - Issued Bulkoff						11.51		
339	SD820000	082	HVR ON Street	SD820000 HVS20000 00,00	127,127					1214		
				SD820500	28,32 113,106					1215		
				HVS21000	53,64 100,93					1217		
				HVS21300	68,79 22,85					1219		
				HVS21500	78,82 87,80					1220		
				HVS21600	83,94 84,77					1222		
				HVS21680	87,98 82,75					1223		

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340	Ring Fidus	082	G-IHS-REF-7.001	2.56 keV						age
			Note:	Sh1 Hu 00, stepped to step 12		12:32				
				082/12.33	v = 1500	v = 9073	300 sec	12 33	1240	
				move FAM + 0.8 mm + 2 directions.						
341	Ring Fidus	082	G-IHS-REF-7.001	5.682/12.42		12:42				age
				500 Sec Run inner ring now visible						
				Drake flat accounts other 3 rings.						
342	Ring Fidus	082	G-IHS-REF-7.002	2.56 keV						
				5.682/12.58	500 sec run					
342	KF	082	file S082/141510	was taken @ UT Time 082 1510						RR
343	KF	082	(24 hrn Questionable,	checked Quads 54 cm - seemed ok						RR
344	3/24	083	AC3 30	Did short runs - Standard Quads + Garbage						EJ
			SYSTEM CRASHED IN	GENERAL PROTECTION FAULT ON C1702.						
			CUTE of check thy ALL ok NO QUADS SENT							
			TO HEC. RECONNECT TO NCC & ENTERPRISE							
			RESUME TEST FROM CRASH POINT.							
345	EA	083	G-IHS-EA-2.230	3.5keV	50830454	4005	04:54	0501		Age
346	EA	083	G-IHS-EA-3.088	3.5keV	50830507	4005	05:07	0514		Age
347	EA	083	G-IHS-EA-3.040	3.5keV	50830517	4005	05:17	0526		Age
348	EA	083	G-IHS-EA-3.136	3.5keV	50830527	5005	0527	0536		Age
349	EA	083	G-IHS-EA-3.184	3.5keV	50830539	about	5505	0539	0541	Age

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500	EA	083	move source up <del>5mm</del> on S3 -17 to -52 in y	0545								AGR	
501	EA	083	G-IHS-EA-3.184-3 3.0kev 50830830545 5505	0555									
502	EA	083	G-IHS-EA-1.078 4.51kev 50830608	1205	0608	0611						AGR	
503	EA	083	G-IHS-EA-1.080 4.6kev 50830618	1405	0618	0621						AGR	
504	EA	083	G-IHS-EA-1.082 4.8kev 50830630	1255	0630	0632						AGR	
505	EA	083	G-IHS-EA-1.084 4.9kev 50830638	1205	0638	0641						AGR	
506	EA	083	G-IHS-EA-3.186 4.96kev 50830709	2005	0709	0713						AGR	
507	EA	083	G-IHS-EA-3.042 4.96kev 50830726	2005	0718	0722						AGR	
508	EA	083	G-IHS-EA-3.090 4.96kev 50830737	1205	0737	0740						AGR	
509	EA	083	G-IHS-EA-2.090 4.96kev 50830747	1205	0747	0750						AGR	
510	EA	083	G-IHS-EA-2.138 4.96kev 50830753	1205	0753	0756						AGR	
511	EA	083	G-IHS-EA-2.188 4.96kev 50830803	1205	0803	0806						AGR	
512	EA	083	G-IHS-EA-2.042 4.96kev 50830809	1205	0809	0812						AGR	
513	EA	083	G-IHS-EA-2.092 4.96kev 50830821	1205	0821	0823						AGR	
514	EA	083	G-IHS-EA-2.044 4.96kev 50830828	1205	0828	0831						AGR	
515	EA	083	G-IHS-EA-1.086 4.96kev 50830834	1205	0834	0837						AGR	
516	EA	083	G-IHS-EA-2.284 4.96kev 50830841	1205	0841	0843						AGR	
517	EA	083	G-IHS-EA-2.236 4.96kev 50830847	1205	0847	0849						AGR	
518	EA	083	G-IHS-EA-2.282 4.96kev 50830855	1205	0855	0856						AGR	
519	EA	083	G-IHS-EA-2.146 4.96kev 50830901	1205	0901	0903						AGR	

## LIFE HISTORY

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	
520	EA	083	G-IHS-EA-20184	4.96 ker	50830907	1205	0207	0209		AGR
521	EA	083	G-IHS-EA-2.234	4.96 ker	50830914	1205	0914	0916		AGR
522	EA	083	G-IHS-EA-3.092	4.96 ker	50830922	1305	0922	0925		AGR
523	EA	083	G-IHS-EA-3.044	4.96 ker	50830928	1505	0928	0931		AGR
524	EA	083	G-IHS-EA-3.140	4.96 ker	50830935	2005	0935	0939		AGR
525	EA	083	G-IHS-EA-3.188	4.96 ker	50830937	2055	0949			AGR
			Run abuted - mage on the junction of 524 53							
			Repositis to -52.8 secas -							
EA		083	G-IHS-EA-3.188-1	4.96 ker	50831002	2505	1002	1007		AGR
PSF	core	083	G-IHS- <del>PI</del> -1.006	4.96ker	50831020	22005	1020	1057		AGR
526			G-IHS-PI-1.006-1 coordinates U=8431 V=8944							
			Zm = 32							
527	EA	083	G-IHS-EA-1.088	5.06ker	50831109	1205	1109	1112		AGR
528	EA	083	G-IHS-EA-1.090	5.13ker	50831120	1505	1120	1123		AGR
529	EA	083	G-IHS-EA-1.092	5.25ker	50831128	1505	1128	1131		AGR
530	EA	083	G-IHS-EA-1.094	5.32ker	50831137	1505	1137	1140		AGR
531	EA	083	G-IHS-EA-1.096	5.48ker	50831146	1505	1146	1149		AGR
532	EA	083	G-IHS-EA-1.098	5.66ker	50831154	2005	1154	1158		AGR
533	EA	083	G-IHS-EA-1.100	5.76ker	50831203	1605	1203	1206		AGR
534	EA	083	G-IHS-EA-1.102	6.30ker	50831213	2005	1213	1217		AGR
535	EA	083	G-IHS-EA-3.190	7.0 ker	50831224	3255	1224	1230		AGR

## LIFE HISTORY

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL		
536	EA	083	G-IHS-EA-3.142	7.0kev	50831235235 sec	1235	ACR	
537	EA	083	G-IHS-EA-3.046	7.0kev	50831244220 3	1244	ACR	
538	EA	083	G-IHS-EA-3.094	7.0kev	50831254170 5	1254	ACR	
539	EA	083	G-IHS-EA-2.094	7.0kev	50831304150 5	1304	ACR	
540	EA	083	G-IHS-EA-2.142	7.0kev	508313141314	1314	GC	
541	EA	083	G+IHS-EA-2.192	7.0kev	50831322400	1322	AONT	
542	EA	083	G-IHS-EA-2.192	7.0kev	50831324124	1324	GC	
543	EA	083	G-IHS-EA-2.044	7.0kev	508313321332	1332	GC	
544	EA	083	G-IHS-EA-2.096	7.0kev	508313401340	1340	GC	
545	EA	083	G-IHS-EA-2.048	..	50831347 8/7:175→150	1347	GC	
546	EA	083	G-IHS-EA-1.104	..	508313551355	1355	GC	
547	EA	083	G-IHS-EA-2.288	..	508314021402	1402	GC	
548	EA	083	G-IHS-EA-2.240	..	508314081408	1408	GC	
549	EA	083	G-IHS-EA-2.286	..	508314171417	1417	GC	
550	EA	083	G-IHS-EA-2.144	..	508314251425	1425	GC	
551	EA	083	G-IHS-EA-2.190	..	508314321432	1432	GC	
552	EA	083	G-IHS-EA-2.238	..	508314411441	1441	GC	
553	EA	083	G-IHS-EA-3.096	..	50831449 1449	1449	GC	
554	EA	083	G-IHS-EA-3.048	..	50831459 1459	1459	GC	
555	EA	083	G-IHS-EA-3.144	..	50831510 1510	1510	GC	
556	EA	083	G-IHS-EA-3.192	..	50831522 1522	1522	GC	

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		RUNNING TIME/OTHER (HOURS AND MINUTES)	
EVENT	DATE	START	STOP
NO.	SUBJECT	TEST DOCUMENT NUMBER/TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/MODIFICATIONS/ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/ENVIRONMENT/ETC.	TIME
557	EA	083	G-IHS-EA-1.116 8 keV 50831540 net: 325 → 350
558	EA	083	G-IHS-EA-1.118 9 keV 50831605 net: 325 → 500
559	EA	083	G-IHS-EA-7.029 Grating in 7.0 keV
560	Lastim	084	ITHE /tm lost Try to reconfigure unable to see housekeeping tm, suspect 28V - Batt power supply broke (Wing) short speech cmd (twice + Anomaly get good tm) had to restart HRC format & on CTUE.
			0152
			1000 sec
561	EA	084	G-LHS-SEA-7.005 1.98 keV 50840529
562	EA	084	G-LHS-SEA-7.004 1.95 keV 50840553
563	EA	084	G-LHS-SEA-7.003 1.9 keV 50840619
564	EA	084	G-LHS-SEA-7.002 1.8 keV 50840650
565	EA	084	G-LHS-SEA-7.001 1.7 keV 50840705
566	EA	084	G-LHS-SEA-10.001 1.54 keV 50840821
567	EA	084	G-LHS-SEA-10.002 1.54 keV 50840921
568	EA	084	G-IHS-SEA-1.110 1.4 keV 50840921
569	EA	084	G-IHS-SEA-1.112 1.53 keV 50840932
570	EA	084	G-IHS-SEA-1.114 1.57 keV 50840946
571	Initai	084	20840954 20840954

**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.

STAMP  
OR  
INITIAL

GG

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
528	change trig thrish fees run	084	sent cmdis Sd 29 27, 26, ... 20 i 084/1217 100 sec fassis run	12.12			ACR
529	Shutter Focus	084	G-IHI-RC-82.010 -5	12.17			
			Note: Imager now set for 1480 V/plat and trigger set to 29920 hex (143 hskip) using single command Sd 29 20	12.34			
			view in science display				
530		084	G-IHI-SF-4.001.010.277/kel i084 SF				
531		084	Aborted G-IHT-SL-1.0001 due to FAM				
532			ACTuator problem AT 2157 = 12675 seconds				
533	Loss of trans cues	085	HAD 3 Thruput Errors messages due to CTE TO GA was close AT 2157				
			Lost Telemetry & commands from the	12.24			
			CTUE - CTUE was busy up also.				
			CTUE could not command all off -				
			switched kill/ switch to "OFF"				JG/acc
			Prior to this there were other set				
			problems with the CTE and the				
			source bldg.				
			Reconnect to CTUE				
			13/13				ACR

## LIFE HISTORY

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
534	purpos	085		Issue Purpos 5. and file trace = S085 1331		1314				ACR
535	14 VSP2000			the turn on for the spect detector		1333				AG,2
	hvspecto			Issue "Abort" not verify after each						
	" 1000			hV setting except for 1680 V.						
	" 1300			Issue velocity after 1680 V is checked						
	" 1500			to enable the current overload.						
	" 1600			2 eV/sec						
	" 1680					1341				
	Subron			<del>Speaker</del> Shield 4V on rate & 1.5 Step off		1344				
	subv12			rate ≈ 20 Step off						
				rate ≈ 35 Step off						
				rate = 80 Step off		1345				
536		86		HRC-S trigger level may be too high for		0410				AG,2
				hV step 1680 V/plate. tried 2920 + got						
				many times, tried 2924 (145 Neutron) and						
				was about x2 Total Net to Valid rate. Was						
				initially 2926 (147) originally. No change in valid						
				rate noted. No change in the low signal rate						
				Decided to go back to 2926 set. S.						
				(Run S0860409 next time change)						0414
				TRN 40 5 - TMS-5M - 23.006e						

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SUMMARY OF CHRONOLOGICAL EVENTS				RUNNING TIME/OTHER (HOURS AND MINUTES)
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537	CMD FILE CHANGES	086	initials and changed trigger level for the imager from Sd 2928 to Sd 2920. Also removed hv SD 1700.cmd and hv IN 1500.cmd from the cmd file due to prevent their use by setting hv to these values inadvertently. The highest v/plate detectors are hv IM 1480.cmd and max hv plate hv SP 1680.cmd respectively.	0430 SSN Acr
538	Block of new cmd	086	block both mess shutters to block the zero order flux. Wait until verify to move shutters home after test. used with G-Lits-SM-30.002 file 5086	0639 SSN Acr
539	Change C86 imager detector	086	Autloff.cmd, hv EM 0000, 0500, 1000, 1017 1200, 1300, 1400, 1460, shv on, shv 12.cmd (Target HV on, shield HV on) trigger analog is 143 correspond to v Sd 2920 sing(e command.	1017 Acr
				1029

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL		
540	TLM OUT on ncc	087		The NEITSI machine went down and caused an intercept to ncc telemetry. NEITSI was rebooted. Cause was a twisted cable became disconnected on NEITSI on which it was reconnected NEITSI crashed.  Telemetry was restarted on ncc and commands restarted on ENTERPRISE.  File is 20870835 For G-IHI-EA-2.099-2	0830				AGR	
541	HRC-S switch to	087		issued spect.cmd start data acquisition S 0811535	1527	1529	1534			
				HV SP 0909. cmd HV SP 0500. cmd HV SP 1000. cmd HV SP 1300. cmd		1535				
				HV SP 1500. cmd HV SP 1600. cmd HV SP 1680. cmd SLVON. cmd		1538	1539			
				SLVON. cmd	1541					
					1542					
					1544					
					1546					
					1547					
					1549					

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LIFE HISTORY		PAGE OF PAGES			
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NO.	SUBJECT	START	STOP	TOTAL TIME	CUM. TOTAL
542	TM Loss 088	lost CTUE due to network problem	1314	1328	
		lost CTUE due to JC's EASE	1340		
		- Netci hangs up on the socket so failed to connect to mme TRM2 connects. Probably not the main problem. Firm had trouble re-connecting to DRS.			
543	TR16 088	TR16 came back	1807		
544	Loss-off 089	Turned off HRC-S HV (AN-HV OFF)	0642		
	Oct 10	start five 80890643			
		start Forwarding cards			
		image card			
		HVTM 8000 card			
		1 0500 "			
		" 1000 " "			
		" 1200 " "			
		" 1300 " "			
		" 1400 " "			
		" 1460 " "			
		54 hvron card			

## LIFE HISTORY

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EVENT	DATE	SUMMARY OF CHRONOLOGICAL EVENTS		RUNNING TIME/OTHER (HOURS AND MINUTES)	STAMP OR INITIAL
		NO.	SUBJECT		
545	10/8/9	S1HVI2. cmd			
546	10/14/90	S05 T/H TO 143 WITH SINGING CND S/A 2970 BEGON MOTIS IS 2 - 2.5 CPS. STARTED A BIKE FINE S08890703 RAN 1594 SEC, 3686 CPS, 2.3 CPS ROTATED CARBONAR.0J		0700 0703 0730 0731	GIA GIA
547	10/8/90	INSTRUCTIONS HRC-T HV TO 1480 V/PURSE		1037	
548	10/14/90	HV +1480			
549	10/8/90	ISSUE SPECT. CND.			
550	10/8/90	START DATA ACQUISITION S0891604		1553	MZ
551	10/8/90	HVSPI0000.CND		1602	
552	10/8/90	HVSPI0500.CND		1607	
553	10/8/90	HVSPI1000.CND		1611	
554	10/8/90	HVSPI1300.CND		1612	
555	10/8/90	HVSPI1500.CND		1615	
556	10/8/90	HVSPI1600.CND		1618	
557	10/8/90	HVSPI1650.CND		1620	
558	10/8/90	HVSPI1700.CND		1622	
559	10/8/90	S1HVI2. CND			
560	10/8/90	S1HVI2. CND HRC-S TO 22CT S-1 SHIELD A 70 OCTS/1		1625'	1628
					1622



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NO.	SUBJECT			START	STOP	TIME	TOTAL	CUM.	STAMP OR INITIAL	
090		hvsP 1500. cmd		1353						
		hvsP 1600. cmd see valid event		1355						
		hvsP 1680 cmd	1-2 cyl s-1	1357						
		s1 hvron, cmd		1359						
		c1 hrv12 cmd	shift 16 safe ~60 c s-1	1401						
550	host Thy			1537	1533				11/2	
551	switch to image			2218					C	
		hvs 00200	dc							
		05000	dc							
		10000	dc							
		12000	dc							
		13000	dc							
		14000	dc							
		14500	77,88 ± 87,81						222)	
552	091	Switch to Spectroscopy								
552	091	SPECT. CMD							0040	
		STONT D010 Agarose for SK sec								
		hvsD00000. cmd								
		hvsD0500. cmd								
		hvsP1000. cmd								

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
582	contd	091	hvsd /300. cmd hvsd /500. cmd				32
			hvsd /600. cmd				
			hvsd /680. cmd				
			<del>hvsd</del> Shutter - cmd				
			Shutter /12. cmd				
			0059				
583	091	BLOCK & S CONFIGURATION & SHUTTER	0351				
		Moves + & - Y SHUTTERS INTO POSITION FOR					
		BLOCK & ORDER					
		NY50A - AUS - Y SHUTTER /0 TOWARD A					
		PYTHON - H + Y					
		PYTHON - R					
		2X PYTHON - R					
		BLOCK & S - cmd -					
584	091	SWITCHES FROM HCC-S TO HPC-I USING IMAGE,cmd & NEW HV TURN-ON MACRO	0706				
		"HVIM-up.cmd". ALSO HVSLON IS HVSLZ SYSTEM OPERATING AUTOMATICALLY,					
		NO TURN-ON IMAGE FILE WAS TAKEN	0735				

## LIFE HISTORY

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585	HRC-I → HRC-S	091	Swap HRC-S in to operation using spect.cmd * Note spect.cmd has typo errors * Followed checks in old procedure unit set voltages and monitor values	16:33	15:51		AC 6W/m²
586	Block Order	091	file 50911533.cmd is true see file blocked 0 orders w/ block OS.cmd	20:09	23:39		
587			OPEN RETURN SHUTTERS TO PRIMARY POSITION AFTER PUTTING DATA IN.			23:40	
588			G-LHS-EA - 99071 Effective Area TEST			092:00:00	92:00:49
589			BACK GROUND RUN			092:00:53	
590	TRIG		XDCS noticed TRIG problems 0920132 = the clock has shown uneven behavior				

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
591	Background	092	Add'l'ional Buckground data 10 G-IHS - BG - 83.001 a 5092 0200	02.06			MJ
592	IRIG	092	IRIG taken off to check signals 0237				
593	Switch	092	Switch to incease HREC				
593		092	G-IHT - EA - 99.072 i 0920305				
594		092	send Sd OA 4/E image trip to stop 78 Boat inc 88 i 0920312				
595		092	SEND , Sd <del>04d</del> IMAGE STOP ON STOP 77 Boat inc 89 s d p b59 10920320				
596		092	SEND Sd & a 4c IMAGE STOP NO STOP 76 sd p b58 10920328				

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				START	STOP	TOTAL TIME	CUM. TOTAL		STAMP OR INITIAL	
597		092	Send Sd 044d	Tmg top HV stop 77	0920336				JH	35
			Sd 0B57	To Bot " 87						
598		092	Send Sd 0B58	Tg. Top HV Stop 77	090344				JH	
			i092036	" Bot " 85						
599		092	Send Sd 0A4C	Tmg top HV stop 78	090353				JH	
			i0920353	" Bot " 86						
600		092	Send Sd 0A4D	Tmg top HV stop 77	090360				JH	
			Sd 0B59	" Bot " 87						
			i0920401							
601		092	Send Sd 0A4C	Tmg top HV Stop 76	090407				JH	
			Sd 0B58	" Bot " 88						
			i0920409							
602		092	Send Sd 0A4D	Tmg top HV stop 77	090416				JH	
			Sd 0B57	" Bot " 87						
			i0920416							
603		092	Send Sd 0A4D Sd 0A4C	Tmg top HV Stop 77	090425				JH	
			Sd 0B58 Sd 0B57	" Bot " 88						
			i0920425							

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604	092	SEND Sd&A 4d	SEND Dmgd + v Stop 788 " " Batt ..	0920 432			
		i 0920 432 - Batt DIED					
605	092	<del>SEND</del> Sd&A 4d still Active			0920 438		
		i 0920 : 438					
606	092	SEND Sd&A 4d Img top HU Stop 77	0922 447				
		SEND Sd&A 59 " Batt HU .. PQ					
		i 0920 447					
607	092	SEND Sd&A 4d	Tang top HU stop 76	0922 455			
		SEND Sd&A 58 " Batt .. - PQ					
		i 0920 455					
608	092	SEND Sd&A 4d	Tang top HU stop 77	0920 4502			
		SEND Sd&A 57 " Batt .. - 87					
		i 0920 4502					
609	093	SEND SP8CT, CM1, HVSPUP, CMD			0920 4505		JG

## LIFE HISTORY

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL
6/10		92	TM SYSTEM DOWN AT 06:55. DURING RECONFIGURATION OF DISPLAYS HV WAS RECONFIGURABLE. HV WAS STILL AT STEP 13. RECONFIGURED PROCT HV USING HVSPUP.CMD.	06:55	07:10		
6/11		92	TM SYSTEM DOWN AT 12:41 - HRC CONVENTION OK, RESTARTED TM \$ PROCESSED	12:40	12:43		
6/12	HRC OFF!	92	hit "power off" switch due to loss of connection to CTU. Problem due to IRIG signal		18:42		
6/13	HRC ON!	92	Bringing up HRC-S from total off state.		19:22	19:39	
6/14		892	Brought down communication lines w/ CTU E to allow CTUE Shw restart - wasn't reading IRIG after switch on line then re-established conn.			20:49	

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL		
615	test abort	0933		Aborted run off G-IHS-E4-99.074 file S0932120 after 850 sec		27:35		WTF		
616	EGSE pros	0941		EGSE display would not reset after collection break before connection did a good bye the re established the lines		00:42		WTF		
617	Signaller	0941		\$ Switched to laser vision image card did not see correct Det Sel Side A 01:21		00:15		WTF		
618				in Det/Shield script Aborted — script and restarted from the top				WTF		
619				at switchings ofamps we one again did not switch get switchy amplifier		01:26				
620				switching indication		01:31		WTF		

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				RUNNING TIME/OTHER (HOURS AND MINUTES)				
621	0941	Image	Rerun image, and waited 3 min 20 sec before trying switching	01:32				
622	0941		Aborted image and	01:42				
623	0941		Rerun w/ Cr. Austin listeners in over the phone	01:44				
			→ script did not abort but continued on even after we did not see her					
624	0941	HJ power	w/ TMR up, and	01:52				
625	0941	Sulfur	shutter, and	02:59				
626	0941	Shild HV	shild HV 12, and	02:00				
627	0951		During G - TH - PI - Z. 010 the FAM was not differing for the first n 760 sec - we caught this and closed the TOGA shutter - did not stop collection - reopened TOGA shutter after differing started up	02:00				

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628	switch from I → S	097	switch from HRC-I → HRC-S using spect cmd Everything OK	19:17	19:32			AK
629	TM drop 098		During G-CHS-EA-2254 we suddenly lost Tm - re connected but NEFSI is not up and running # Broken connection - reconnect to CTUE - reboot nefsi Back up w/ nefsi running w/ tm & fm 02:43			02:20		JG
630	TM Drop 099		Just prior to G-CHS-DF-3.006 TM was lost reconnected after fm restart All ok			0700		JG
631	BLOCK 099		Start block 099 to position SHUTTER 5 to block of offset area on spec. detector prior to running G-LHS-DF-3.006			0705		JG
632	SHUTTER OUT 100		INITIATED REMAINDEER OF BLOCK 099, CND TO MOVE SHUTTER 5 TO HOME POS.			0914		JG

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL
633	CHANGED DEBTOR	100		CHANGED FAVOR SPECT. TO IMAGE 6 DEBTOR FILES SENT : IMAGE CMD, HVIM - UP. COM D 52 HVON, CMD, SHVID, CMDO.		0524				JG
634	HV on	100		Turn off HV while ACTS - 2 chip was in to focus		14:00				AK
635	HV on	100		Turn on HV up w/ 2C on axis		15:00				AK
				* Noted that bias threshold is 2d 29 1d						
				on opposed to 2d 29 20						
				minutes = 143 $\pm$ (128 + $\frac{144}{2}$ )						
				but minutes is not necessary						
				w $127 + \frac{32}{2} = 143$						
				2d 29 20 is apparent setting in						
				initially around						

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636	Expose door Step	100	Expose door source w/ cal open and					
637	Close door 30°		close door by 30° values dec 3500, and HRC-II rate ~ 17 sec - 1					
638	Close door 30°		close door by another 30° with dec 3500, and HRC-II rate ~ 48 sec - 1					
639	Change hysteresis		SD 29 20 start					
640	Switch to specif	101	SD 29 05 TER + 2					
	Closed Door		SD 29 05 TER ≈ 11,000					
	Opened Door Slightly		large discrepancy in rates set to 0E					
641	Switch to specif		SD 29 05					
	Door clos.		Door clos. and					
	Creak door		creak door, and					

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640	101	26 Sept HV on	In SP-up card Shield <del>on</del> or auto to HV setting <del>on</del> shield card					
641	101	2nd	Twice Lvl Ridge TMR	14:00	14:12	04:12	04:12	JPM
		5d 29 27	14:17					
		5d 29 26	14:6					
		25	14:6					
		24	14:5					
		23	14:5 ~400					
		22	14:4 ~14:00					
642	101	SETTING RAISED TO 2923 FOR DOOR SEVERUS TEST - 4kg. Testigation						
643	101	DOOR TESTS COMPLETE						
		CAL SOURCE OUT - S2AID CAL C205. CMD						
		HIGH VOLTAGE OFF - ALL HV OFF. CMD						
		TRIGGER SOURCE BACK TO 2928.						
		1019 GWT						
	101	Power down on HRC, leaving door in "crakdoor position"						
		AC						

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EVENT	DATE	RUNNING TIME OTHER (HOURS AND MINUTES)	STAMP OR INITIAL
NO.	SUBJECT	TEST DOCUMENT NUMBER TEST DESCRIPTION/NATURE & DESCRIPTION OF MALFUNCTIONS/SERIAL NUMBER OF REMOVED OR REPLACED PARTS/RECEIVED/ENVIRONMENT/ETC. ADJUSTMENTS/REPAIRS/MAINTENANCE/SHIPPED/RECEIVED/PARTS/MODIFICATIONS/ETC.	START STOP TOTAL TIME CUM. TOTAL
644	CTUE drop	101 Discovered heat cage <del>logged off</del> heat break connection w/ CRTUE - re-established link - had to reboot refis!	18:15
645	Powerups	102 Turn on Power to HRC-S using Powerup turnup S. card by SP-up. card 102114 tm	12:01
646	Open door	102 open door	12:21 12:25
647	HV change	102 Change d HV up 1st step both plates <del>102</del> sd 0363 sd 0258 Step Top 88 Bot 89 Mon T 81 B 75	14:40
648	HV change	102 Changed HV up 1-step both plates HRC sd 0364 sd 0259 Step Top 87 Bot 100 Mon Tap 81 Bot 74	14:43

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NO.	SUBJECT		START	STOP	TOTAL TIME	CUM. TOTAL	STAMP OR INITIAL		
649	HV Change	102	Changed HV down	1-step HRC-S	14:54				
			Sd 0363	sdo 258					
			Step Top 88	Bot 99					
			Mon Top 81	Bot 75					
650	HV Change	102	Change HV down	1-step HRC-S	14:57				
			Sd 0362	sdo 257					
			Step Top 87	Bot 98					
			Mon Top 82	Bot 75					
651	HV Change	102	Change HV up	1-step HRC-S	15:05				
			Sd 0363	sdo 258					
			Step Top 88	Bot 99					
			Mon Top 81	Bot 75					
652	HV Change	102	Change HV up	1-step HRC-S	15:07				
			Sd 0364	sdo 259					
			Step Top 89	Bot 100					
			Mon Top 81	Bot 74					

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		NO.	SUBJECT	START	STOP	TOTAL TIME		
6533	HV Change	102	HV Change down	1-step	HRC-S	15:16		46
			sd 0363	sd 0258				
			Step Top	88	Bot	99		
			Mon Top	81	Bot	75		
6544	HV Change	102	HV Change down	1-step	HRC-S	15:19		
			sd 0362	sd 0257				
			Step Top	87	Bot	98		
			Mon Top	82	Bot	75		
6555	HV Change	102	HV Change up	1-step	HRC-S	15:27		
			sd 0363	sd 0258				
			Step Top	88	Bot	99		
			Mon Top	81	Bot	75		
6566	HV Change	102	HV Change up	1-step	HRC-S	15:29		
			sd 0364	sd 0259				
			Step Top	89	Bot	100		
			Mon Top	81	Bot	74		

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NO.	SUBJECT					START	STOP	TOTAL TIME	CUM. TOTAL		
657	HV Change	102		HV change down	1-step HRC-S			15:32		MJF	47
				sd 03c3	sd 0258						
				Step Top 88 Bot 99	/Mon Top 81 Bot 75						
658	HV Change	102		HV change down	1-step HRC-S			15:40		MJF	
				sd 03c2	sd 0257						
				Step Top 87 Bot 98	/Mon Top 82 Bot 75						
659	HV Change	102		HV change up	1-step HRC-S			15:48		MJF	
				sd 03c3	sd 0258						
				Step Top 88 Bot 99	/Mon Top 82 Bot 75						
660	HV Change	102		HV change up	1-step HRC-S			15:51		MJF	
				sd 03c4	sd 0259						
				Step Top 89 Bot 100	/Mon Top 81 Bot 74						
661	HV Change	102		HV change down	1-step HRC-S			15:58		MJF	
				sd 03c3	sd 0258						
				Step Top 88 Bot 99	/Mon Top 81 Bot 75						

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NO.	SUBJECT			START	STOP	TOTAL TIME	CUM. TOTAL			
6062	HV Change	10/2	HV Change down	1-step	HRC-S	16:01		M/J		
			sd 0362	sd 0257						
			Step Top 87 Bot 98	/Mon Top 82 Bot 75						
6063	HV Change	10/2	HV Change <del>down</del> up	1-step	HRC-S	16:09		M/J		
			sd 0363	sd 0258						
			Step Top 88 Bot 99	/Mon Top 81 Bot 75						
6064	HV Change	10/2	HV Change up	1-step	HRC-S	16:12		M/J		
			sd 0364	sd 0259						
			Step Top 89 Bot 100	/Mon Top 81 Bot 74						
6065	S → T	10/2	Sensitivity detector to HRC-T			16:17		M/J		
			Imager card							
			hv IPM - up, card							
			shutter on, card							
			s1 hvr 12, card							
6066	Shield 2	10/2	Shield 2 test				17:15	M/J		
			SVOCF, chkd							
			PC flag, card							

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666 cont.	Shield 2	102	initial record	17:16				49
			lunargate record					
			Sh 2a. cond					
			shallow. conc					
			scrappy. conc					
			wow = 85					
			shield rates 45-50					
			sd 0e05 → won = 85					
			shield rates ~60					
			sd 0e06 → won = 84					
			rates → ~85-90					
			sd 0e07 → won = 83					
			rates ~130					
			sd 0e08 → won = 83					
			rates ~175					
			image off					
			image. cond					
			sh 2a. cond					
			push up T record					
			Sh 2a. cond 59 hu 12 cond					
			perf. ~50					
667	Shield 2	102						

50

17:41

rates ~ 80

17:42

rates ~ 79

rates ~ 70

Sold out

102

Sold out → man = 78  
rates ~ 95

17:41 → man = 78  
rates ~ 95

all houses . and  
door clos . and  
crak door . and  
playdown . and

17:44

17:50

17:51

AK  
103 started powerup T . and  
mane @ 711 Ton  
started data run c1031755  
for thermal data

17:55

18:07

door close w/ door clos . and

103 power down w/ powerdown . and 18:10

GN2 pulse connection to NRC

55:20  
GKA

104

(50)

17:41

rates = 80  
rates ~ 60

→ 100 →  
Sd0606

17:42

→ 100 →  
Sd0606

→ 100 →

day 101

17:41

Sd0605 → 100 = 78  
rates ~ 95

Sd0605

17:45

All hyst. and  
door clos. and  
craek door and  
pneudown. and

17:46

door clos. and

17:50

craek door and  
pneudown. and

17:51

AK

17:55

Started Powerup T. and

Power @ 711 Ton  
Started data run (1031755)

for turned data  
door close w/ door clos. and

103

Power down w/ powerdown. and 18:10

103

GND power connects to HRC  
SS:20

103

699

END OF UNIVERSAL TIME

GND