

Line #	Spacecraft DATE/TIME	S/C Cmd #	HEX ID#	DEC ID #	GRS Mapping Activities Run Commands	Notes	Cumulative Seconds
1	03-024/16:21:44	cn0600	C1D	3101	c01grs_s01b_startup_htr_c_8.bfl	Executed at Orbit 933, Pixel 155	
2					Setup GRS for autonomous heater control:		
3		(GRS cmd id 2504)	C001	49153	c01grs_big_burst_detect_off.sasf		imm
4		(GRS cmd id 2508)	C002	49154	c01grs_sm_burst_detect_off.sasf		imm
5		(GRS cmd id 2358)	C003	49155	c01grs_os_temp_a_oor_a_ct_0.sasf	Requires no consecutive out-of-range values.	imm
6		(GRS cmd id 2056)	C004	49156	c01grs_os_temp_a_timer2.sasf	Switch to timer 2 (20-second intervals)	imm
7		(GRS cmd id tbd)	C005	49157	c01grs_os_temp_a_lo_n95_00c.sasf	-95°C 178°K Dn=2781 (0xADD)	imm
8		(GRS cmd id tbd)	C006	49158	c01grs_os_temp_a_up_n100_00c.sasf	-100°C 173°K Dn=2982 (0xBA6)	imm
9		(GRS cmd id 1145)	C007	49159	c01grs_activate_sequence_45b.sasf	Start OS heater control using OS-A sensor (turns heater off)	0 orb/1 pix
10		(GRS cmd id 2468)	C008	49160	c01grs_is_temp_b_oor_a_ct_3.sasf	Requires three consecutive out-of-range values.	0 orb/1 pix
11		(GRS cmd id tbd)	C009	49161	c01grs_is_temp_b_lo_n125c.sasf	-125°C 148°K Dn=3978 (0xF8A)	0 orb/1 pix
12		(GRS cmd id tbd)	C00A	49162	c01grs_is_temp_b_use_seq_03b.sasf	Increase the temperature setpoints for the OS heater to unlock stages	0 orb/1 pix
13		(GRS cmd id 2470)	C00B	49163	c01grs_is_temp_b_comp_less.sasf	Counterintuitive - compares Dn value (Dn decreases as T increases)	0 orb/1 pix
14		(GRS cmd id 1041)	C00C	49164	c01grs_activate_sequence_41a.sasf	Dumps fpga_a, fpga_b, analog, parameter, and data counts	0 orb/4 pix
15							
16	02-312/18:32:26	cn0528	C1D	3101	c01grs_s01b_startup_htr_c_7.bfl	Executed at Orbit xxxx, Pixel xxx	
17					Setup GRS for autonomous heater control:		
18		(GRS cmd id 2504)	C001	49153	c01grs_big_burst_detect_off.sasf		imm
19		(GRS cmd id 2508)	C002	49154	c01grs_sm_burst_detect_off.sasf		imm
20		(GRS cmd id 2358)	C003	49155	c01grs_os_temp_a_oor_a_ct_0.sasf	Requires no consecutive out-of-range values.	imm
21		(GRS cmd id 2056)	C004	49156	c01grs_os_temp_a_timer2.sasf	Switch to timer 2 (20-second intervals)	imm
22		(GRS cmd id 2755)	C005	49157	c01grs_os_temp_a_lo_n105_00c.sasf	-105°C 168°K Dn=3182 (0xC6E)	imm
23		(GRS cmd id 2756)	C006	49158	c01grs_os_temp_a_up_n110_00c.sasf	-110°C 163°K Dn=3381 (0xD35)	imm
24		(GRS cmd id 1145)	C007	49159	c01grs_activate_sequence_45b.sasf	Start OS heater control using OS-A sensor (turns heater off)	0 orb/1 pix
25		(GRS cmd id 1041)	C008	49160	c01grs_activate_sequence_41a.sasf	Dumps fpga_a, fpga_b, analog, parameter, and data counts	0 orb/4 pix
26							
27	02-156/16:22:38	cn0365	C1D	3101	c01grs_s01b_startup_htr_c_6.bfl	Executed at Orbit 1272, Pixel 327	
28					Setup GRS for autonomous heater control:		
29		(GRS cmd id 1325)	C001	49153	c01grs_op_heater_off.sasf		imm
30		(GRS cmd id 2504)	C002	49154	c01grs_big_burst_detect_off.sasf		imm
31		(GRS cmd id 2508)	C003	49155	c01grs_sm_burst_detect_off.sasf		imm
32		(GRS cmd id 1322)	C004	49156	c01grs_gpa_heater_3_on.sasf		imm
33		(GRS cmd id 2494)	C005	49157	c01grs_op_h_mr_a_low_n29c.sasf	-29°C 244°K Dn=7 (0x7)	imm
34		(GRS cmd id 2491)	C006	49158	c01grs_op_h_mr_a_up_n30c.sasf	-30°C 243°K Dn=50 (0x32)	imm
35		(GRS cmd id 2488)	C007	49159	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
36		(GRS cmd id 2489)	C008	49160	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
37		(GRS cmd id 1023)	C009	49161	c01grs_activate_sequence_23a.sasf	Start Op heater control using MR-A sensor (turns heater off)	0 orb/1 pix
38		(GRS cmd id 1041)	C00A	49162	c01grs_activate_sequence_41a.sasf	Dumps fpga_a, fpga_b, analog, parameter, and data counts	0 orb/4 pix
39							
40	02-123/16:04:06	cn0257	C1D	3101	c01grs_s01b_startup_htr_c_5.bfl	Executed at Orbit xxxx, Pixel xxx	imm
41					Setup GRS for autonomous heater control:		
42		(GRS cmd id 1325)	C001	49153	c01grs_op_heater_off.sasf		imm
43		(GRS cmd id 2504)	C002	49154	c01grs_big_burst_detect_off.sasf		imm
44		(GRS cmd id 2508)	C003	49155	c01grs_sm_burst_detect_off.sasf		imm
45		(GRS cmd id 2494)	C004	49156	c01grs_op_h_mr_a_low_n89c.sasf	-89°C 184°K Dn=2514 (0x9D2)	imm
46		(GRS cmd id 2491)	C005	49157	c01grs_op_h_mr_a_up_n90c.sasf	-90°C 183°K Dn=2554 (0x9FA)	imm
47		(GRS cmd id 2488)	C006	49158	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
48		(GRS cmd id 2489)	C007	49159	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
49		(GRS cmd id 1023)	C008	49160	c01grs_activate_sequence_23a.sasf	Start Op heater control using MR-A sensor (turns heater off)	0 orb/1 pix
50		(GRS cmd id 1041)	C009	49161	c01grs_activate_sequence_41a.sasf	Dumps fpga_a, fpga_b, analog, parameter, and data counts	0 orb/4 pix
51							
52	02-074/19:37:02	cn0154	C1D	3101	c01grs_s01b_startup_htr_c_4.bfl	Executed at Orbit 304, Pixel 153	imm
53					Setup GRS for autonomous heater control:		
54		(GRS cmd id 1325)	C001	49153	c01grs_op_heater_off.sasf		imm
55		(GRS cmd id 2504)	C002	49154	c01grs_big_burst_detect_off.sasf		imm

Line #	Spacecraft DATE/TIME	S/C Cmd #	HEX ID#	DEC ID #	GRS Mapping Activities Run Commands	Notes	Cumulative Seconds
56		(GRS cmd id 2508)	C003	49155	c01grs_sm_burst_detect_off.sasf		imm
57		(GRS cmd id 2494)	C004	49156	c01grs_op_h_mr_a_low_n89c.sasf	-89°C 184°K Dn=2514 (0x9D2)	imm
58		(GRS cmd id 2491)	C005	49157	c01grs_op_h_mr_a_up_n90c.sasf	-90°C 183°K Dn=2554 (0x9FA)	imm
59		(GRS cmd id 2488)	C006	49158	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
60		(GRS cmd id 2489)	C007	49159	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
61		(GRS cmd id 1115)	C008	49160	c01grs_activate_sequence_15b.sasf	Start heater control (turns heater off)	0 orb/1 pix
62		(GRS cmd id 1128)	C009	49161	c01grs_activate_sequence_28b.sasf	Dumps fpga_a, fpga_b, analog, parameter, and data counts	0 orb/4 pix
63							
64	02-043/03:16:04	cn0117	C1D	3101	c01grs_s01b_startup_htr_c_3.bfl	Executed at Orbit 4, Pixel 7956	imm
65					Setup GRS for autonomous heater control:		
66		(GRS cmd id tbd)	C001	49153	c01grs_op_heater_off.sasf		imm
67		(GRS cmd id tbd)	C002	49154	c01grs_op_h_mr_a_low_n85c.sasf	Dn=1652 (0x674) -68 °C	imm
68		(GRS cmd id tbd)	C003	49155	c01grs_op_h_mr_a_up_n70c.sasf	Dn=1735 (0x6C7) -70 °C	imm
69		(GRS cmd id tbd)	C004	49156	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
70		(GRS cmd id tbd)	C005	49157	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
71		(GRS cmd id tbd)	C006	49158	c01grs_activate_sequence_15b.sasf	Start heater control (turns heater off)	0 orb/1 pix
72		(GRS cmd id tbd)	C007	49159	c01grs_dump_fpga_a_regs.sasf		0 orb/4 pix
73		(GRS cmd id tbd)	C008	49160	c01grs_dump_fpga_b_regs.sasf		0 orb/7 pix
74		(GRS cmd id tbd)	C009	49161	c01grs_dump_analog_table.sasf		0 orb/10 pix
75		(GRS cmd id tbd)	C00A	49162	c01grs_dump_parameter_table.sasf		0 orb/13 pix
76							
77	01-325/19:09:42	cn0102	C1D	3101	c01grs_s01b_startup_htr_c_2.bfl	Executed at Orbit 0, Pixel 22831	imm
78					Setup GRS for autonomous heater control:		
79		(GRS cmd id tbd)	C001	49153	c01grs_op_heater_off.sasf		imm
80		(GRS cmd id tbd)	C002	49154	c01grs_op_h_mr_a_low_n85c.sasf	Dn=2351 -85 °C	imm
81		(GRS cmd id tbd)	C003	49155	c01grs_op_h_mr_a_up_n90c.sasf	Dn=2554 -90 °C	imm
82		(GRS cmd id tbd)	C004	49156	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
83		(GRS cmd id tbd)	C005	49157	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
84		(GRS cmd id tbd)	C006	49158	c01grs_activate_sequence_15b.sasf	Start heater control (turns heater off)	0 orb/1 pix
85		(GRS cmd id tbd)	C007	49159	c01grs_dump_fpga_a_regs.sasf		0 orb/4 pix
86		(GRS cmd id tbd)	C008	49160	c01grs_dump_fpga_b_regs.sasf		0 orb/7 pix
87		(GRS cmd id tbd)	C009	49161	c01grs_dump_analog_table.sasf		0 orb/10 pix
88		(GRS cmd id tbd)	C00A	49162	c01grs_dump_parameter_table.sasf		0 orb/13 pix
89							
90	01-262/16:10:34	cn0084	C1D	3101	c01grs_s01b_startup_htr_ctrl.bfl	Executed at Orbit 1, Pixel 28714 (9/19 9:25 ERT -Tucson)	imm
91					Setup GRS for autonomous heater control:		
92		(GRS cmd id tbd)	C001	49153	c01grs_op_heater_off.sasf		imm
93		(GRS cmd id tbd)	C002	49154	c01grs_op_h_mr_a_low_n85c.sasf	Dn=2351 -85 °C	imm
94		(GRS cmd id tbd)	C003	49155	c01grs_op_h_mr_a_up_n90c.sasf	Dn=2554 -90 °C	imm
95		(GRS cmd id tbd)	C004	49156	c01grs_gpa3_temp_low_n25c.sasf	Dn=6347 -25 °C	imm
96		(GRS cmd id tbd)	C005	49157	c01grs_gpa3_temp_up_n30c.sasf	Dn=6499 -30 °C	imm
97		(GRS cmd id tbd)	C006	49158	c01grs_op_h_mr_a_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
98		(GRS cmd id tbd)	C007	49159	c01grs_gpa3_temp_oor_a_ct_2.sasf	Requires two consecutive out-of-range values	imm
99		(GRS cmd id tbd)	C008	49160	c01grs_op_h_mr_a_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
100		(GRS cmd id tbd)	C009	49161	c01grs_gpa3_temp_timer6.sasf	Switch to timer 6 (gamma pixel intervals)	imm
101		(GRS cmd id tbd)	C00A	49162	c01grs_activate_sequence_15b.sasf	Start heater control (turns heater off)	0 orb/1 pix
102		(GRS cmd id tbd)	C00B	49163	c01grs_activate_sequence_17b.sasf	Start heater control (turns heater off)	0 orb/1 pix
103		(GRS cmd id tbd)	C00C	49164	c01grs_dump_fpga_a_regs.sasf		0 orb/4 pix
104		(GRS cmd id tbd)	C00D	49165	c01grs_dump_fpga_b_regs.sasf		0 orb/7 pix
105		(GRS cmd id tbd)	C00E	49166	c01grs_dump_analog_table.sasf		0 orb/10 pix
106		(GRS cmd id tbd)	C00F	49167	c01grs_dump_parameter_table.sasf		0 orb/13 pix
107							
108	01-176/07:21:05	ci009601	C1D	3101	c02grs_seq_01_b_safemode_htr.bfl	Copy revised Sequence 1b IFL to GRS.	imm
109			C001	49153	c01grs_ann_pwr_override.sasf		imm
110			C002	49154	write to hardware register (0x100002 PCON, 0x100)	Turns MR secondary heater on	imm
111			C003	49155	c01grs_gpa_heater_3_on.sasf		imm

Line #	Spacecraft DATE/TIME	S/C Cmd #	HEX ID#	DEC ID #	GRS Mapping Activities Run Commands	Notes	Cumulative Seconds
112			C004	49156	c01grs_op_heater_on.sasf		imm
113							
114	01-150/14:45:24	i9264001	C1D	3101	c01grs_seq_01_b_safemode_htr.bfl	Create a 1b sequence for heater setup after reset	imm
115			550	1360	c01grs_dump_mem_param_b.sasf		imm
116			47F	1151	c01grs_dump_sequence_1b.sasf		60