AXAF COMMAND ACTION PROCEDURE

CAP #614:
DATE: 9 June 2000

ORIGINATOR: Plucinsky
COMMANDS CHECKED BY: Ford, Buehler, LaMarr, Grant
Time of CAP Execution (GMT): 2000:161:21:50

DESCRIPTION/RATIONALE

This CAP executes the fifth test of the new "Squeegy" mode on the S0 CCD. The plan is for two separate science runs and a third is included as a contingency:

- S0 16 row Squeegy, 24 row exclude window, initial frame flushes, on-chip summing, parallel transfer time of 320μs (8$\times$ slower than normal)
- S0 NO Squeegy control run, 24 row exclude window

The contingency run loads a different PB with lower video offsets since we are not certain what the correct level is with on-chip summing. This Squeegy run contains the initial frame flushes to remove the bias instability.

This test will be attempted during the 10ks period overlapping a CTI measurement on the in bound leg of the orbit. The FOT MPers have removed the commands to execute the normal ACIS CTI measurement from the load except for the OBSID update to 62030 at 2000:161:22:51 and the stopScience command at 2000:162:02:30.

The exact start time of the first science run depends on the focal plane temperature and the radiation environment. We expect AOS at 161:22:50. We would like to start the ACIS activities immediately at the beginning of the pass since ACIS will have stopped a science run just before AOS. Once the ACIS science run has been started, there will be a long period ($\sim$ 2 hr) with no ACIS commanding. This should be a convenient time for other spacecraft activities.

Steps 42–44 were added to load an ACIS 2D window block which the stored command load is expecting to be loaded into ACIS for OBSID 700.

RESTRICTIONS/WARNINGS/NOTES/SCHEDULE REQT:

This commanding will be interleaved upon the daily load. There should be no potential conflicts except with ACIS (see discussion above), but the operators should be cognizant and stolid nevertheless. The ACIS commanding should begin as soon as possible if the focal plane temperature and radiation environment permit. The second science run (normal CTI on S0 alone) will be stopped by a stopScience from the daily load.

STEP	INSTRUCTIONS (Command/Script)	RESPONSE (TLM Verifier)
1	Uplink Loads:	
	1A_WS007_164.CLD	7021872
	1A_WS041_252.CLD	50391DC
	1A_XB000_250.CLD	417494C
	1A_XB001_251.CLD	A0E1874
	1A_WB00C_134.CLD	E5B0858
	1A_WB009_133.CLD	7F9FFE4

	1A_WB00F_135.CLD	C19EF78
	1A_WB010_136.CLD	8110648
	1A_WT055_137.CLD	3C6FF63
	1A_WT056_138.CLD	21E556C
	1A_W200C_159.CLD	3510A00
	1A_XT000_190.CLD	C421014
	1A_RS000_207.CLD	4022412
	1A_RH000_151.CLD	601EE12
	1A_AA000_191.CLD	502066E
	1A_RYFS0_211.CLD	F423E81
	1A_RZFS0_217.CLD	4424581
	1A_WT04F_139.CLD	50E019C
2	ACIS informs OC when FP temperature and EPHIN rates are appropriate to start the first run ($\sim 161:23:00$).	
3	ACIS and OC confirm OBSID to 62030	
4	Enable and Activate SCS 164	WSVIDALLDN (cmdId = 1541)
5	Enable and Activate SCS 252	WSPOW0103F (cmdId = 2163)
6	Enable and Activate SCS 250	executeBep, XB1SLOMO02 (cmd ID = 2166)
7	Enable and Activate SCS 251	executeBep, XB1SLOMO03 (cmd ID = 2160)
8	Enable and Activate SCS 134	writeBep, WB00SQUEG3 (cmdId = 2967)
9	Enable and Activate SCS 133	writeBep, WB00SQUEG2 (cmdId = 2892)
10	Enable and Activate SCS 135	writeBep, WBTSTSQG10 (cmdId = 2998)
11	Enable and Activate SCS 136	writeBep, WBTSTSQG11 (cmdId = 3001)
12	Enable and Activate SCS 137	loadTeBlock, WT00352014 (cmdId = 2990)
13	Enable and Activate SCS 159	load2dBlock, W200041014 (cmdId = 2989)
14	Enable and Activate SCS 190	startScience (cmdId = 58)
15	If execution fails (immediate *scienceReport* with abnormal *terminationCode*), skip to step 28.	
16	Enable and Activate SCS 207	bepReadReply/Config (cmdId = 66)
17	Enable and Activate SCS 151	bepReadReply/Huffman (cmdId = 68)
18	ACIS confirms receipt of bias and data	dataTeBiasMap (cmdId = *any*)
19	ACIS confirms *fepTimestamp* increment of 0x374f8 (226552 decimal) per exposure	exposureTeFaint (cmdId = *any*)
20	ACIS confirms that delta overclocks are reasonable	
21	*If not*, Enable and Activate SCS 191	stopScience (cmdId = 1539)
22	*If not*, Enable and Activate SCS 138	WT0035A014 (cmdId = 3015)
23	*If not*, Activate SCS 190	startScience (cmdId = 58)
24	collect data for $\sim$ 8.0ks	
25	On bad data, skip to step 26	
26	Enable and Activate SCS 191 $\sim 162:01:45$	stopScience (cmdId = 1539)
27	ACIS confirms normal completion of science run	
28	Enable and Activate SCS 211	readPram (cmdId = 1613)
29	ACIS confirms receipt of PRAM dump	
30	Enable and Activate SCS 217	readSram (cmdId = 1602)
31	ACIS confirms receipt of SRAM dump	
32	Change OBSID to 62881	
33	*If necessary* Activate SCS 164	WSVIDALLDN (cmdId = 1541)
34	*If necessary* Activate SCS 252	WSPOW0103F (cmdId = 2163)
35	Enable and Activate SCS 139	loadTeBlock,WT0032C014 (cmdId = 2866)

36	Activate SCS 190	startScience (cmdId = 58)
37	Activate SCS 207	bepReadReply/Config (cmdId = 66)
38	Activate SCS 151	bepReadReply/Huffman (cmdId = 68)
39	ACIS confirms normal science run	
40	Clear and Disable SCSs 164, 252, 250, 251, 134, 133, 135, 136, 137, 138, 159, 190, 207, 151, 191, 211, 217, 139	
41	collect data for $\sim$ 1.0ks	
42	Uplink load: 1A_W200E_159.cld	C17FE76
43	Enable and Activate SCS 159	load2dBlock, W20003B014 (cmdId = 2652)
44	Clear and Disable SCS 159	

Approved:

Subsystem Engineer:
TST Manager/Lead:
SOT Lead:

Flight Director:
Program Manager: