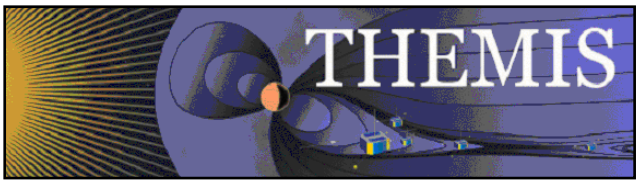

Problem/Failure Report
THM_PFR_220

PFR-220 Title: One instance of Probe 5 ESA Energy Table not written correctly during TV

Assembly : ESA	**SubAssembly :** ETC
Component :	**Units Affected:** – – – – x – **Units fixed:** – – – – x –
Originator: Ellen Taylor	
Organization: UCB	**Date:** 8/8/06 (date found)
Phone: (510) 643-4054	**Email :** ertaylor@ssl.berkeley.edu

Failure Occurred During (Check one √)

√ Functional test □ Qualification test □ S/C Integration □ Launch operations □ Other (Flight Assy)

Environment when failure occurred:

□ Ambient	□ Vibration	□ Shock	□ Acoustic
□ Thermal	□ Vacuum	√ Thermal-Vacuum	□ EMI/EMC

Problem Description

On Aug 8 320-340 UT, the esa_leo proc was run. It appears that one of the ETC table loads did not work correctly and some electron ESA full data was incorrectly directed to the ion ESA full registrars in the ETC. The same proc was run again at 15:11-15:31 UT and the same error was not observed.

Analyses Performed to Determine Cause

Further investigation (J.McFadden 8/9/06) showed that several words were wrong resulting in some electron ESA data being written to the wrong ETC registrars. The incorrect words are in different table loads. (Closer look at the burst data showed the error was appearing in all ESA packets).

Corrective Action/ Resolution

Additional investigation into all TV data showed there was only one instance of this problem throughout the thermal vacuum test. An additional test was run on the last full thermal cycle to ensure the ETC memory was not getting corrupted during the temperature transition. The ESA was initialized at the hot extreme and not re-initialized (x6600 command commented out of ESA and SST init scripts) until after the ESA functional w/ test pulser was run at the cold extreme. Data analysis from this last test did not show this problem and confirms that the temperature transition did not affect the ETC RAM.

[Update: 13/OCT/06: A review of the command log showed that the during the configuration of the ESA in the ESA_ETC_INIT script there were commanding problems with the probe. This caused the script to be halted and then a portion of the script was run again. This is likely the cause of the data problems observed, if the script was not executed correctly and the ETC not configured as required. No other instance of this has been seen at probe level, although during testing at instrument level it was noted that that if the script was interrupted during loading, the ETC would not be configured correctly and the script would need to be re-run. This PFR is closed. MML]

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____