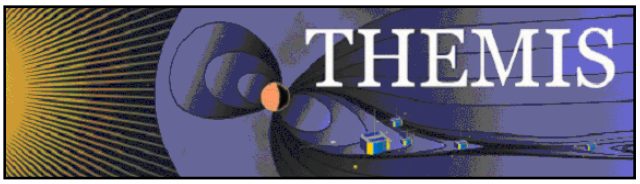

Problem/Failure Report
THM_PFR_210

PFR-210 Title: First Pulse of Sun Synchronous Manuevers not executed

Assembly : BAU	**SubAssembly : RCS**	
Component : FSW	**Units Affected:**	**Units fixed:**
Originator: Mark Lewis	o o o o o O	o o o o o o
Organization: SSL	**Date: 09 Oct 2006**	
Phone: 510-643-7148	**Email :markl@ssl.berkeley.edu**	

Failure Occurred During (Check one √)

■ Functional test □ Qualification test □ S/C Integration □ Launch operations □ Other

Environment when failure occurred:

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

Problem Description

(In this section it is important to document the specific symptoms of the problem. In the event we see it happen again, we would like to know as much as possible.)

The ACS CPT was run on THEMIS D, on July 29, 2006, during Thermal/Vac. Post analysis of the CPT data revealed that the first pulse of some Sun Synchronous maneuvers were not executed. This was the first time the ACS CPT was run under BAU FSW 3.19. The test had previously run successfully, not earlier versions of the BAU FSW.

Analyses Performed to Determine Cause

(How do we know how the failure happened? Was it a bad part, bad handling, what?)

The telemetry and log files were passes to Swales/Hammers for analysis. The problem was replicated on Flatsat East. Problem was traced to a FSW change put in place to deal with ITS 441 (zeros in Thrust History buffers). The result was a situation where a Sun Synchronous maneuver following a Continuous Trust maneuver would not execute the first pulse of the train.

Corrective Action/ Resolution

(How do we fix the unit? And how do we make sure it doesn't happen again?)

Sending a /csnscitstop command before each maneuver will guarantee the thruster buffers are empty and ready for use. The ACS CPT was modified with this workaround fix in place, and run on the Flatsat and the THEMIS A probe. The data from both CPTs were analyzed by Craig Woodruff, and determined to have been completed successfully. In addition, this workaround has become a flight rule, and has been incorporated into the ATS activities used to setup for all maneuvers. This process has been tested during numerous maneuver simulations, including MRT 611-620.

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____