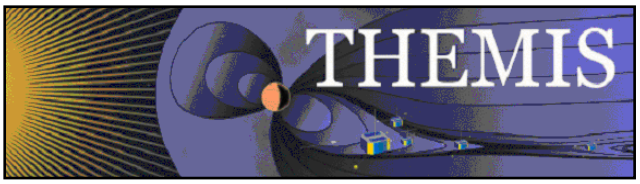

PFR-084 Title:ESA cover release mechanism nut plate design flaw

Assembly : ESA release plate assembly	**SubAssembly :**	
Component : micro-switch nut plate	**Units Affected:**	**Units fixed:**
Originator: C. W. Carlson	X X X X X X	0 0 0 0 0 0
Organization: UCB/SSL	**Date: 7/12/05**	
Phone: 510-642-1378	**Email : cwc@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

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

During a test deployment of the aperture release the aperture cover failed to open and seat properly.

Analyses Performed to Determine Cause

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

Visual inspection showed that the top hat assembly was not seated correctly in the deployed position. The ESA analyzer was disassembled to expose the release plate, which revealed that the nut plate mounting the monitor micro-switch was interfering with the deployed top cap assembly. The interference is small and apparently was not apparent in the previous aperture opening tests. This mechanical interference was confirmed by inspection of the mechanical design assembly drawing.

Corrective Action/ Resolution

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

The nut plates will be modified to provide the necessary clearance and the corrected release plates will be tested for reliable operation using the SMA test box.

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____