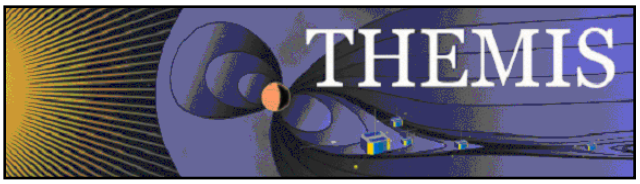

Problem/Failure Report
THM_PFR_146

PFR-146 Title: BAU found to have large Magnetic Moment

Assembly : BAU	**SubAssembly : Magnetics**	
Component :	**Units Affected:**	**Units fixed:**
Originator: Ellen Taylor	x x x x x x **GSE**	0 0 0 0 0 0
Organization: Swales/UCB	**Date:** 2/22/06 (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

The first flight BAU (SN101) was tested for magnetics after to being delivered to UCB, and prior to being installed on the F2 Probe. A magnetic moment of approximately 1000nT at 25cm (0.4nT at 2m) was found. The BAU is not supposed to contain any soft magnetic material and the relays are mounted anti-parallel, so this field is not expected. (In addition, with a handheld magnetometer at Swales, the BAU EDU measured <2000nT at 1cm compared to the flight BAU measurement >30000nT at 1cm).

Analyses Performed to Determine Cause

On 3/1/06, the flight BAU was removed from the F2 Probe and degaussed to determine if soft materials had been permed up. It remained magnetic: 0.57nT at 2m. The post deperm measurements were a little higher than the early tests which indicates either the deperm had the opposite effect or the measurements made were more stable and accurate. It is assumed that the later is correct as the deperm was tried multiple times with the same result.

The EDU BAU was also re-measured at Swales with the same result as the flight unit. The first measurement showing the BAU EDU was not magnetic was done on an integrated Probe were access was inhibited.

Corrective Action/ Resolution

The BAU will be used as is. A survey of the BAU parts indicate that the relays in the BAU are most likely creating the magnetic moment, even though they were mounted anti-parallel.

Acceptance:
MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____