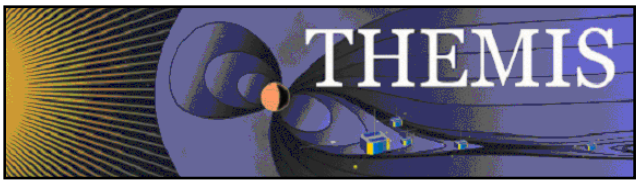

Problem/Failure Report
THM_PFR_192

PFR-192 Title: FM1 SST elevated noise levels on electron sensors when integrated on probe

Assembly : Instruments	**SubAssembly : SST**
Component : Sensor	**Units Affected:** x o o o o o **Units fixed:** x o o o o o
Originator: Michael Ludlam	
Organization: UCB	**Date: 13/June/06**
Phone: 510 642 7732	**Email : mludlam@ssl.berkeley.edu**

Failure Occurred During (Check one √)

□ Functional test □ Qualification test x S/C Integration □ Launch operations □ Other (_____)

Environment when failure occurred:

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

Problem Description

During the CPT test of the instruments on the probe F1 it was discovered that the noise in the data was higher than seen on the other probes.

Analyses Performed to Determine Cause

A comparison of the noise levels on the SST power lines was made between probe F1 and probe F3 and they were found to be ostensibly the same. Three of the four sensors on F1 showed elevated noise and so they were swapped to see if the noise followed the sensors or the position on the spacecraft. The noise followed the sensors. The SST 1 sensor (sn 1) was swapped out with the spare sensor (sn xx) and the functional test was run again. The noise levels were found to be much reduced with this different sensor. The SST 2 sensor is also noisy in one of the channels but the other spare sensor has a high leakage current. Further work is required to see if this sensor is suitable for flight. If it is it should replace the current SST 2 sensor on the F1 probe (sn 02).

Corrective Action/ Resolution

The spare sensor for SST1 is currently being calibrated and will require a workmanship vibration and then will be integrated onto the F1 probe, ideally prior to PCA vibration.
[Update: 8/18/06] The spare SST sensor was installed onto Probe F1 after undergoing the necessary calibration and environmental tests. It was integrated after PCA vibration, but before Probe 1 magnetics and thermal vacuum. This PFR is now closed.

Acceptance:
MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____