

STEREO IMPACT SWEA FM2 Vibration Report

Document # IMP-621-DOC

Revision: --

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Date: May 16, 2005

1. OVERVIEW

The STEREO SWEA vibration tests for the flight model 2 (FM2) unit were conducted April 13, 2005 at Quanta Laboratories in Santa Clara, California. Dave Curtis and Jeremy McCauley were in attendance for instrument handling, verification and test support. Quanta Laboratories provided Test Engineer Sun Lian.

Tests were conducted in the X-, Y-, and Z-axis, where the axes are defined as in the ICD (See Appendix). Test objectives, procedures and levels are defined and explained in IMP-583-DOC, STEREO SWEA Vibration Test Procedure, Revision A (Attached).

SWEA/STE-D thermal vacuum testing did show need for minor rework (PFR-1039, STE-D Door). The unit was diagnosed and the SWEA was returned for a retest to GEVS Minimum Workmanship levels 22 April 2005. Test objectives, procedures and levels are defined and explained in IMP-623-DOC-- SWEA FM2 Vibration Re-Test Procedure (Attached). Following that vibration, the system failed CPT. The problem was diagnosed (PFR-1040, SWEA LVPS Transformer staking), and once again the system was returned to workmanship vibration (per IMP-623-DOC-- SWEA FM2 Vibration Re-Test Procedure) on April 28.

All vibration runs were completed. No degradation to the SWEA mechanically, structurally, or functionally was shown by post-test CPTs and inspections other than that indicated above (PFR1040).

2. REFERENCE DOCUMENTS (Attached):

- Quanta Laboratories Report Number QL-05-280 – Vibration Report, April 13, 2005
- Quanta Laboratories Report Number QL-05-313 – Vibration Report, April 22, 2005
- Quanta Laboratories Report Number QL-05-334 – Vibration Report, April 28, 2005
- UCB Document IMP-583-DOC, STEREO SWEA Vibration Test Procedure, Revision –
- UCB Document IMP-623-DOC-- SWEA FM2 Vibration Re-Test Procedure

3. PASS/FAIL CRITERIA

Post-vibration CPT on April 14, 2005, and after the workmanship vibration on April 22, 2005, of the SWEA assembly verified functionality was not lost in testing. Post-vibration inspections found no notable degradation mechanically or structurally.

The SWEA was vibrated for the original three axis test with the survival heater powered on (launch configuration) and the current monitored. There was no change in the current to the heater circuit during vibration.

4. ACCELEROMETER PLACEMENT

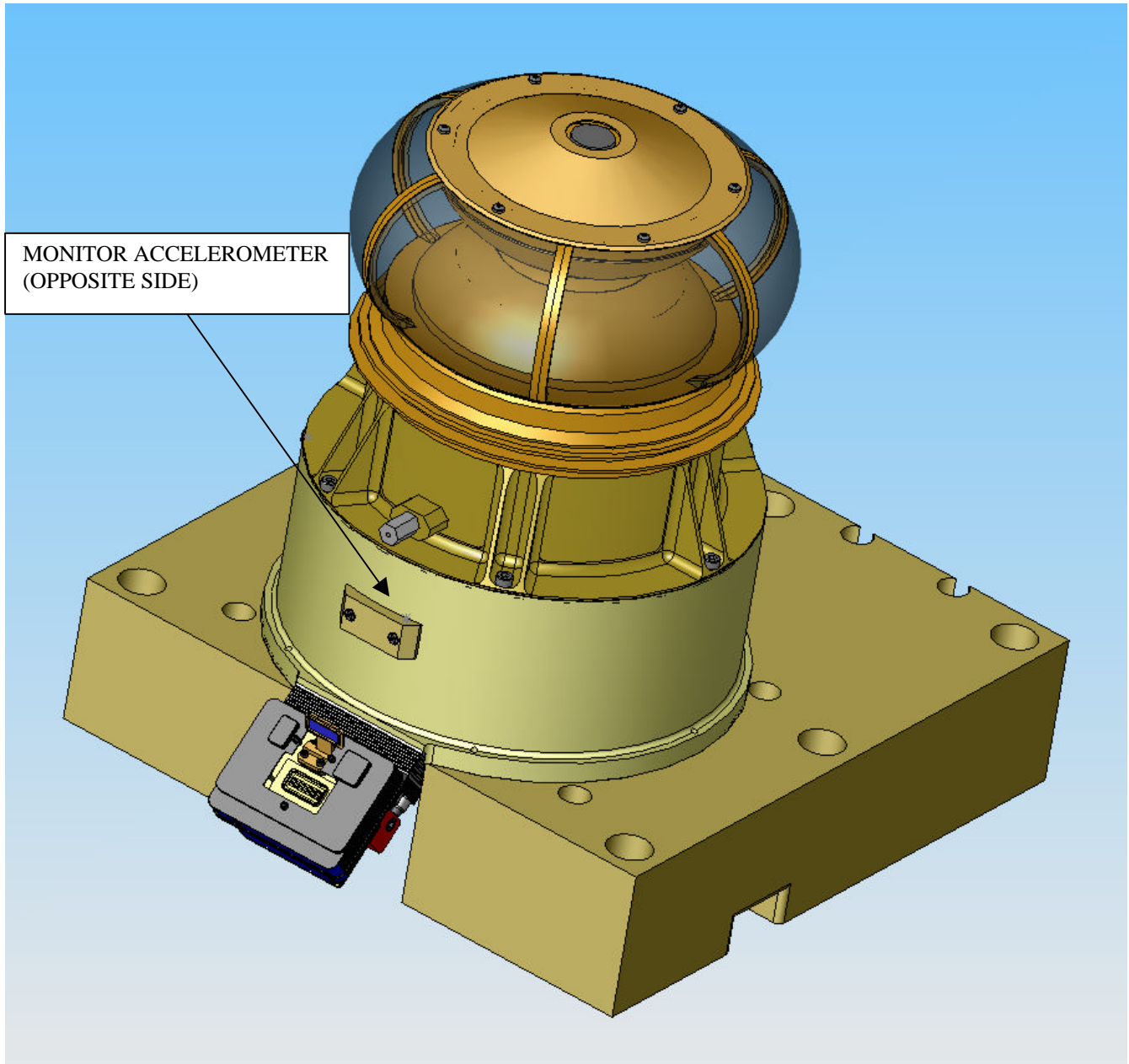


Figure 1: Control Accelerometer Placement

5. RELEVANT DATA

Full data is available for review upon request.