

Solar Array Efficiency Test Qualify

| Description | |
|-------------|---------------------------------------|
| Sensor | 121f05 500 sa/sec (200 Hz) |
| Location | JPM1F5, ER4, Drawer 2 |
| Plot Type | spectrogram (Σ); $f < 10$ Hz |

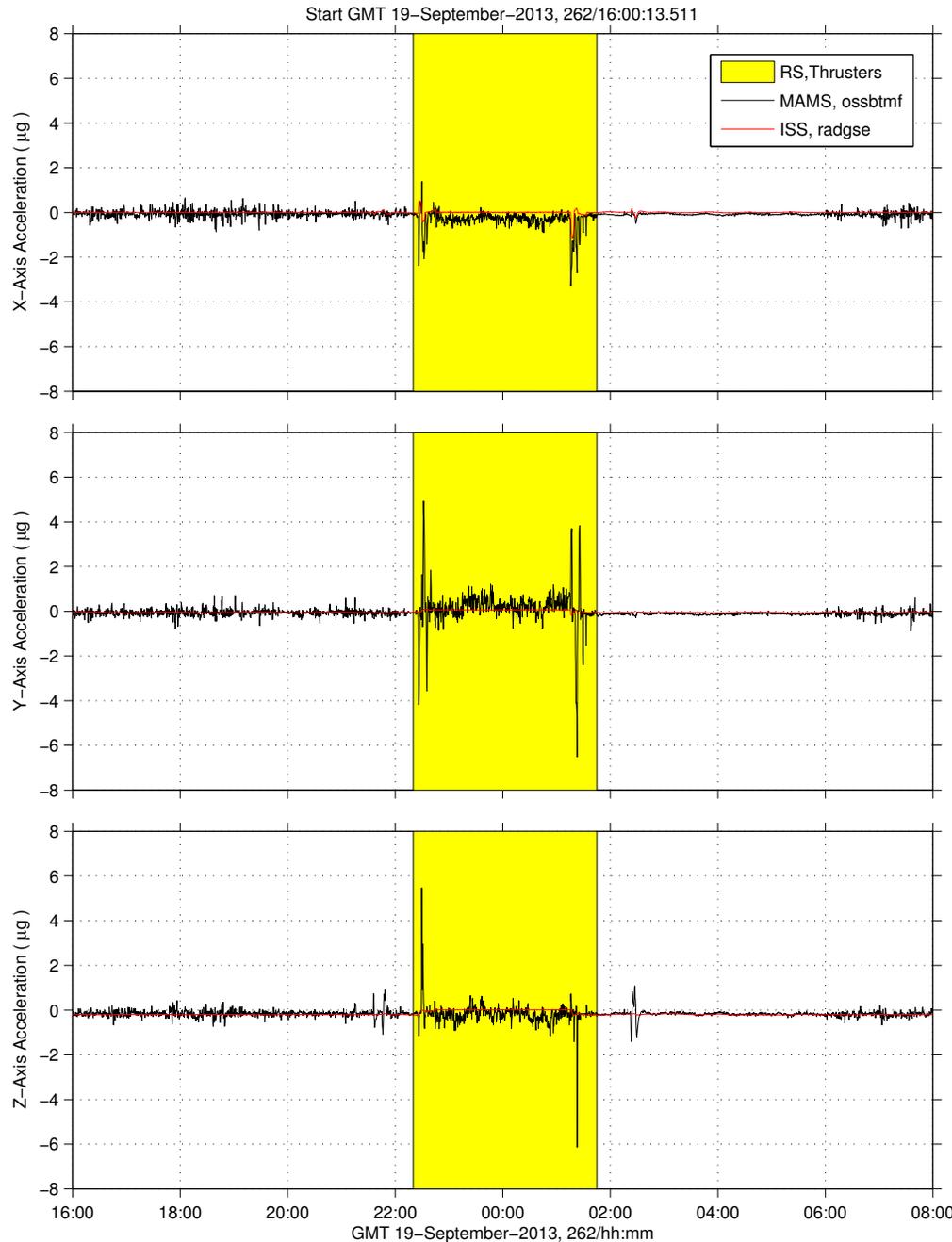
Notes:

- A solar array efficiency test was performed between about GMT 19-Sep-2013, 22:20 and GMT 20-Sep-2013, 01:45.
- This spectrogram shows a screenshot of a real-time display for the SAMS 121f05 sensor in the JEM. This plot spans over 18 hours and shows the structural mode regime impact of this test, primarily due to Russian Segment attitude control via thrusters.



| | |
|-----------|-----------------------------|
| Regime: | Vibratory |
| Category: | Vehicle |
| Source: | Solar Array Efficiency Test |

Solar Array Efficiency Test Quantify



| Description | |
|-------------|--|
| Sensor | MAMS, OSSBTMF 0.0625 sa/sec (0.01 Hz) |
| Location | LAB1O2, ER1, Lockers 3,4 |
| Plot Type | Acceleration versus time |

Notes:

- The as-flown time line (see last page) shows that the solar array efficiency test sequence was: (1) maneuver to test attitude, (2) efficiency test, and (3) maneuver back to nominal LVLH TEA attitude.
- During the test, the station attitude was maintained using Russian Segment (RS) thruster firings – the primary disturbance.
- This plot of quasi-steady acceleration data shows that attitude maneuvers near the beginning and end of the yellow-highlighted test period produced peak accelerations approaching 8 µg.
- MAMS quasi-steady measurements show mean vector magnitudes as seen in table below:

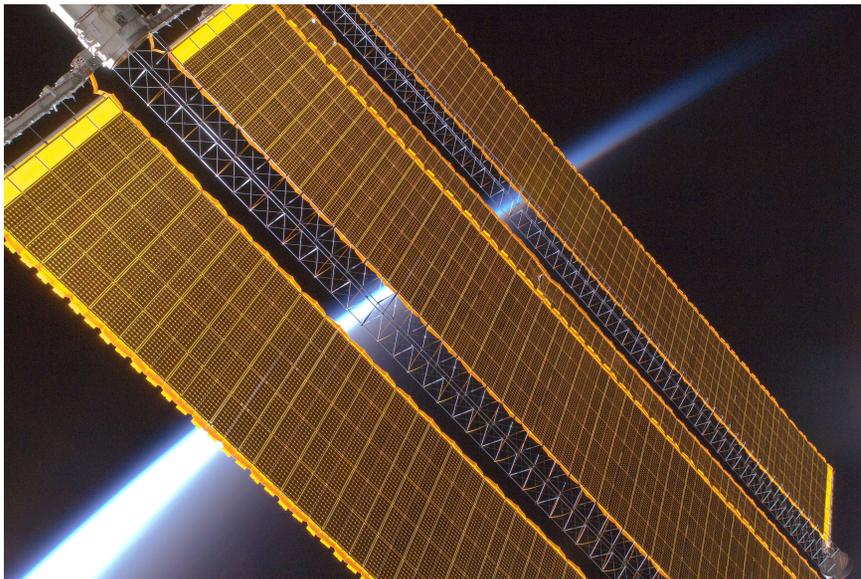
| 2-Hour Span GMT Start | Activity | Mean VecMag (µg) |
|--------------------------|------------------------|---------------------|
| 262/20:00 | Crew Wake, Non-Test | 0.27 |
| 262/23:00 | During Test | 0.58 |

| | |
|-----------|-----------------------------|
| Regime: | Quasi-Steady |
| Category: | Vehicle |
| Source: | Solar Array Efficiency Test |



Solar Array Efficiency Test Ancillary Information

| Start-Stop GMT | YPR | F/T Cfg. | Event | Remarks |
|-----------------|-----------------|------------|---|--------------------------------------|
| | | | Solar Array Efficiency Test (H13_263_A_06.UAF) | 9/19/2013 |
| 262/22:20 | 354, 356.8, 0.6 | MMT to THR | Handover US to RS | |
| 262/22:25-22:30 | 0, 0, 0 | THR | Maneuver to SAET Attitude | |
| 263/01:15-01:20 | 354, 356.8, 0.6 | THR | Maneuver to LVLH TEA | |
| 263/01:45 | 354, 356.8, 0.6 | THR to MMT | Handover RS to US | VV#3a N2neze, PSARJ Auto, SSARJ Auto |



The As-flown Time Line (ATL) information in the table above shows the time span for each of major activities during the Solar Array Efficiency Test (SAET). Russian Segment (RS) thrusters were used for attitude maintenance during the test, while Control Moment Gyros (CMGs) are used for attitude maintenance before and after the test.