Progress Reboost 39P
Qualify

Sensor
121f03
142 sa/sec (6 Hz)

Location
LAB1O1, ER2, Z-Panel

Plot Type
spectrogram

Notes:
- See more details and a comprehensive look at Progress reboost(s) in the handbook entry labeled simply “Progress Reboost” under the Quasi-Steady, Vehicle section of the web page where this entry was posted.
- In the vibratory regime, the primary impact of a Progress reboost is brief, heightened excitation of vehicle structural modes around 1 Hz. On a spectrogram, these show up as the nearly continuous yellow, horizontal streaks that tend toward orange/red when excited.
- As indicated by the arrow at the left (but better seen on the following pages), the reboost event takes place during the time span shown in this table:

<table>
<thead>
<tr>
<th>GMT hh:mm:ss</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:04:17</td>
<td>reboost starts</td>
</tr>
<tr>
<td>09:13:23</td>
<td>reboost ends</td>
</tr>
</tbody>
</table>

Regime: Vibratory
Category: Vehicle
Source: Reboost 39P

Acceleration Measurements Program
Glenn Research Center

PIMS ISS Acceleration Handbook
Date last modified 2012-03-09
Description

Sensor: OSS (raw) 10 sa/sec (1 Hz)
Location: LAB1O2, ER1
Plot Type: g vs. t

NOTES:
- All coordinate references are with respect to the Space Station Analysis (SSA) coordinate system.
- Primary impact is on the X-axis as the reboost is intended to increase the velocity of the vehicle in that direction thus spiraling out/away from the Earth to boost the vehicle’s altitude that otherwise continually decays over time.
- Secondary impact is the brief transient (impulsive) accelerations that occur and as shown here are on the order of a few milli-g.
- Transients from the thruster firings serve to: (1) keep the vehicle pointed in the desired direction, and (2) provide the necessary impetus for increasing its velocity.
**Progress Reboost 39P**

**Quantify**

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**Description**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>OSS (TMF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0625 sa/sec</td>
<td>(0.01 Hz)</td>
</tr>
</tbody>
</table>

**Location**

Scan Testbed doi

**Plot Type**

filtered & mapped g vs. t

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**NOTES:**

- These data have been “trimmed-mean filtered” (TMF) and mathematically mapped to the Scan Testbed datum of interest location.
- Note again that the primary impact is a brief step up in the X-axis acceleration level during the reboost event of just over 200 ug on that axis for about 10 minutes.