Progress 49P Undocking
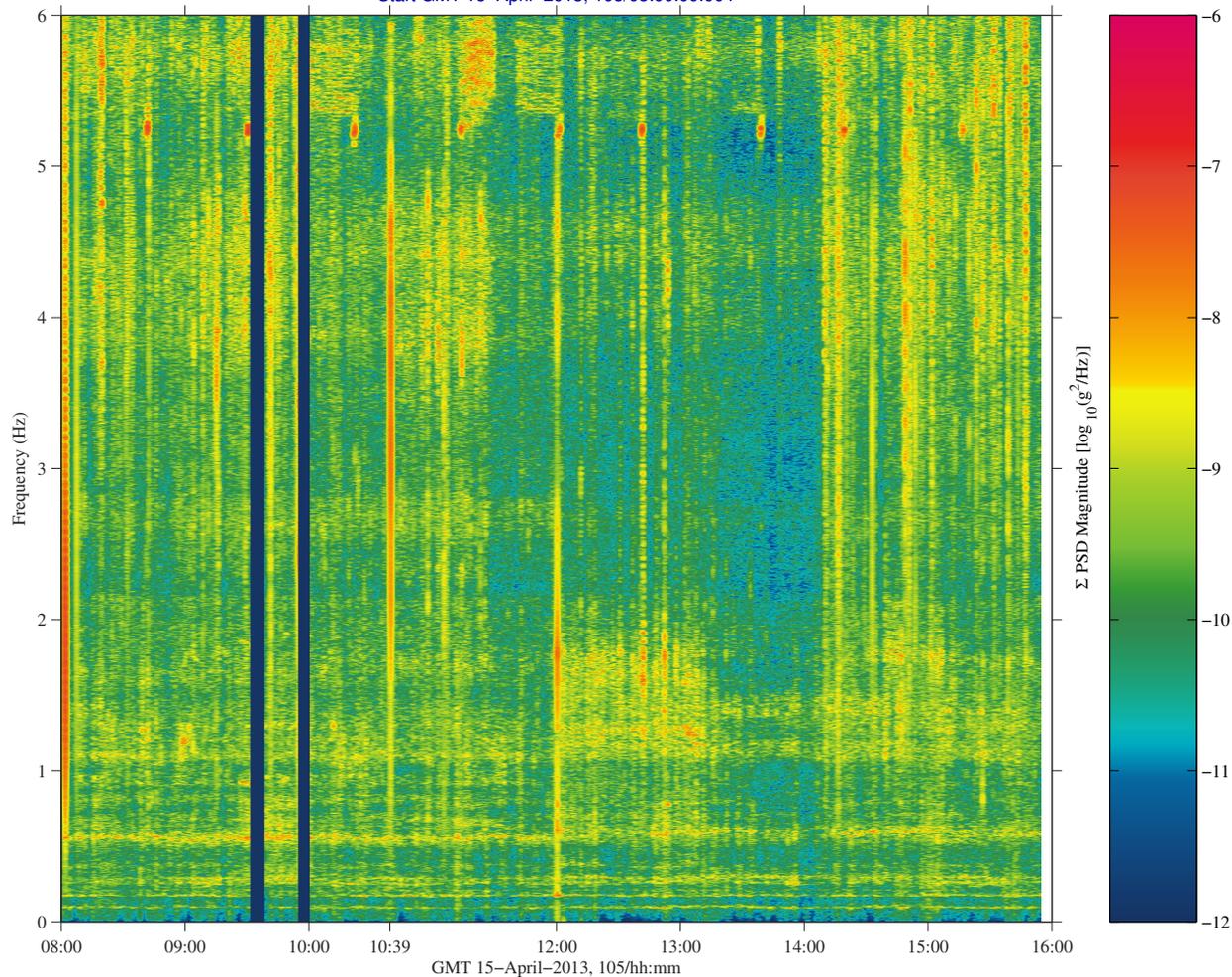## Qualify

mams, hirap006 at LAB1O2, ER1, Lockers 3,4:[138.68 −16.18 142.35]
198.0000 sa/sec (6.00 Hz)
Δf = 0.003 Hz, Nfft = 65536
Temp. Res. = 27.960 sec, No = 60000

Progress 49P Undocking
Start GMT 15−April−2013, 105/08:00:00.004

Sum
Hanning, k = 1019
Span = 474.38 minutes

Frequency (Hz)

Σ PSD Magnitude [log $_{10}$(g^2/Hz)]

GMT 15−April−2013, 105/hh:mm

from: /misc/yoda/pub/pad/, hrovat, 23−Apr−2013,11:11:35.923

Description	
Sensor	HiRAP (low-pass filtered) 198 sa/sec (6 Hz)
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	spectrogram (Σ); f < 6 Hz

Notes:

- The Progress 49P vehicle undocked from the ISS on GMT 15-Apri1-2013 just after 12:00.
- This spectrogram shows the transient impact of the separation event as a orange-to-red vertical streak just after 12:00. Note the elevated, albeit brief, structural mode excitation primarily at about 0.19 Hz, 0.62 Hz, and 1.79 Hz.

Regime:	Vibratory
Category:	Vehicle
Source:	Progress 49P Undocking

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Date last modified 2013-04-23

PIMS
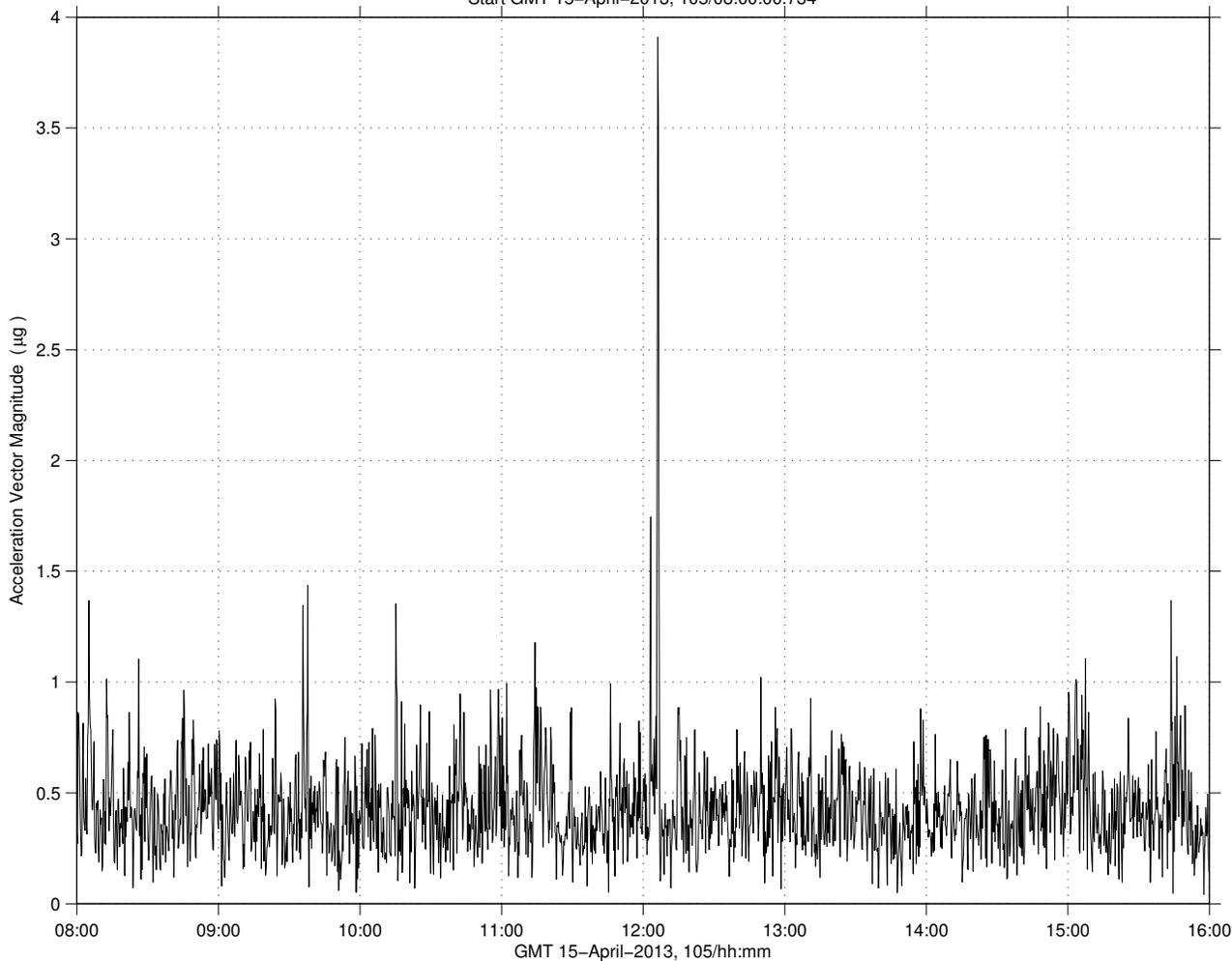PRINCIPAL INVESTIGATOR MICROGRAVITY SERVICES

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Progress 49P Undocking
Quantify

mams, ossbtmf at LAB1O2, ER1, Lockers 3,4:[135.28 −10.68 132.12]
0.0625 sa/sec (0.01 Hz)

Progress 49P Undocking

Vector Magnitude

Start GMT 15−April−2013, 105/08:00:00.734

GMT 15−April−2013, 105/hh:mm

from: /misc/yoda/pub/padi, hrovat, 23−Apr−2013,12:12:03.901

Description	
Sensor	OSS (best TMF) 0.0625 sa/sec (0.01 Hz)
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	Vector magnitude vs. time

Notes:
- The plot here shows a low-frequency view of the Progress 49P undocking event. This is a plot of MAMS OSS acceleration vector magnitude versus time for 8 hours centered on the vehicle separation event.
- Note the large, brief transient acceleration that occurs on GMT 15-April-2013 just after about 12:00.
- For investigators interested in true quasi-steady phenomena, this transient should not be of concern. However, for those who might be perturbed or disturbed by such an event, this plot gives them an indication of what to expect for future such events.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Progress 49P Undocking

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Progress 49P Undocking
Ancillary Info

The Progress 49P cargo vehicle undocked from the rear port of the Zvezda service module of the ISS at just after 12:00 on GMT 15-April-2013. The undocking event took place when the space station was over northern China. The Progress vehicle had been docked with the station for over 5 months.

The photo shown on this page was taken as the cargo ship was performing its automated departure, firing its thrusters to move a safe distance away from the space station. After several days that included more thruster firings to help calibrate Russian radar systems on the ground, the Progress 49P was slated to re-enter Earth's atmosphere on Sunday, April 21, 2013 and burn up over the Pacific Ocean. Progress cargo vehicles are not designed to be recovered, so they are filled with trash before departure.

The Progress 49P delivered about 3 tons of supplies for the space station crew when it docked about 6 hours after launch on October 31, 2012. Notably, this was the 2nd of 3 Progress launches in a row that used an abbreviated rendezvous schedule. This gets cargo to the station much quicker than the previous two-day flight profile to reach the ISS. Progress 49P's departure cleared the way for the arrival of the next Progress cargo ship.