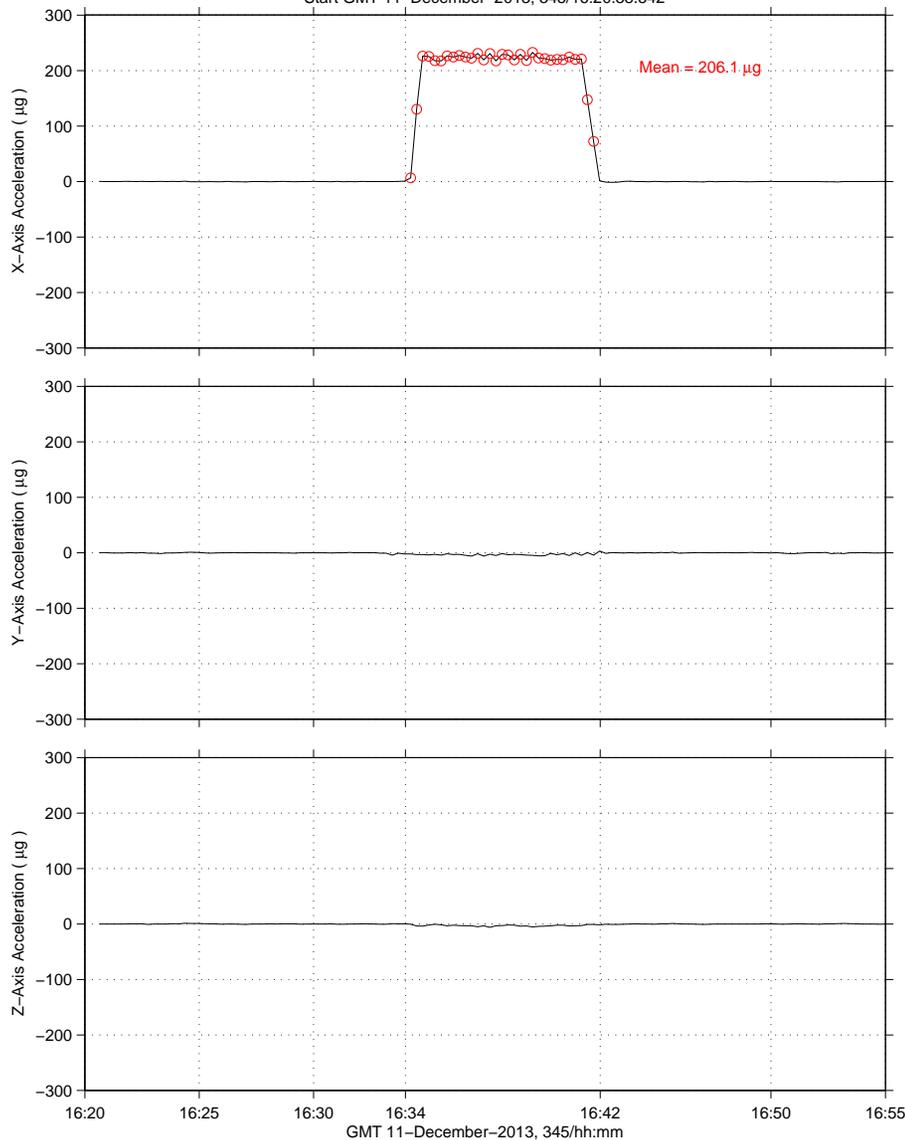# Progress 53P Reboosts
Quantify

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

mams_accel_ossbtmf, LAB1O2, ER1, Lockers 3,4, 0.0 Hz (0.1 s/sec)

SSAnalysis[0.0 0.0 0.0]

$\Delta V = ((206.1 \times 1e{-}6 \times 9.81) \times 8.27 \times 60) = 1.00$ m/s

Start GMT 11−December−2013, 345/16:20:38.542

Mean = 206.1 µg

GMT 11−December−2013, 345/hh:mm

Description	
Sensor	MAMS ossbtmf 0.0625 sa/sec, 0.01 Hz
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	Acceleration vs. Time

Notes:
- On GMT 11-Dec-2013, 345/16:34 the Progress 53P vehicle was used to reboost the space station. The first of two reboosts that occurred within a couple of days of each other. The next occurring on GMT 13-Dec-2013.
- This plot of MAMS acceleration versus time shows the primary impact on the X-axis with very little impact on the Y- or Z-axis.
- The X-axis exhibits a large offset (about 206 ug) during reboost. This acceleration imparts a net X-axis velocity change of about 1.00 m/s.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Progress 53P Reboosts

PIMS ISS Acceleration Handbook
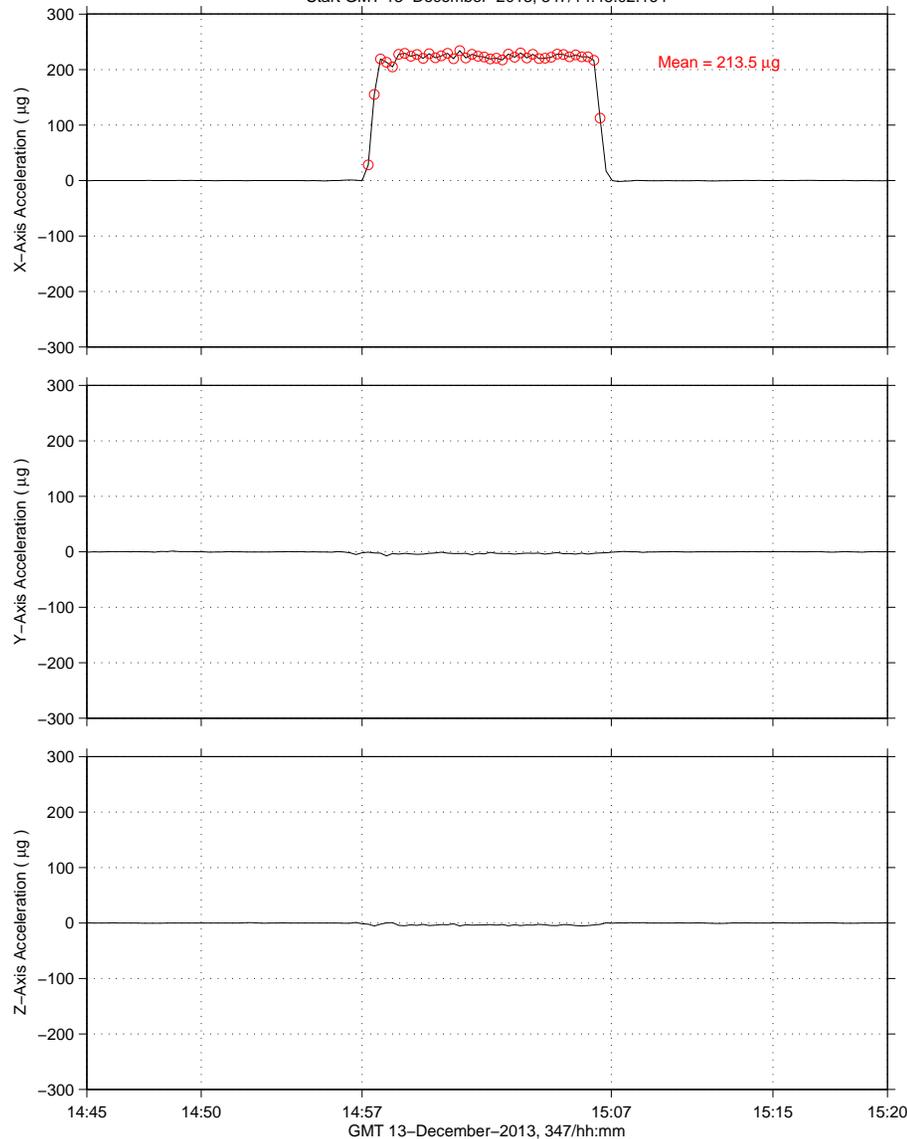Date last modified 2013-12-16

Glenn Research Center

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

mams_accel_ossbtmf, LAB1O2, ER1, Lockers 3,4, 0.0 Hz (0.1 s/sec)

SSAnalysis[0.0 0.0 0.0]

$\Delta V = ((213.5*1e{-}6*9.81)*10.40*60) = 1.31$ m/s

Start GMT 13−December−2013, 347/14:45:02.164

Mean = 213.5 µg

GMT 13−December−2013, 347/hh:mm

Progress 53P Reboosts
Quantify

Description	
Sensor	MAMS ossbtmf 0.0625 sa/sec, 0.01 Hz
Location	LAB1O2, ER1, Lockers 3,4
Plot Type	Acceleration vs. Time

Notes:
- On GMT 13-Dec-2013, 345/14:45 the Progress 53P vehicle was used again to reboost the space station. This is the 2nd of two reboosts that occurred within a couple of days of each other. The previous occurring on GMT 11-Dec-2013.
- This plot of MAMS acceleration versus time again shows the primary impact on the X-axis with very little impact on the Y- or Z-axis.
- The X-axis exhibits a larger offset (about 213.5 ug) during reboost compared to the one from GMT day 345. This acceleration imparted a larger net X-axis velocity change of about 1.31 m/s.

Regime:	Quasi-Steady
Category:	Vehicle
Source:	Progress 53P Reboosts

PIMS ISS Acceleration Handbook
Date last modified 2013-12-16

Glenn Research Center

  The Progress 53P cargo vehicle was launched with a load of almost three tons of food, fuel and supplies for the six Expedition 38 crew members aboard the ISS. This vehicle was intended to test an upgraded rendezvous system for docking to the ISS. Once the Progress reached its preliminary orbit, it conducted a series of automated engine burns to put it on track to fly within one mile of the station on Wednesday, allowing for the test of the lighter, more-efficient KURS automated rendezvous system hardware for upgraded Soyuz and Progress vehicles. The tests were all deemed successful. However, despite a good approach and fly-around, the KURS system suffered a failure at a distance of just 60 meters during final approach. The Progress immediately halted its approach, allowing for Oleg Kotov to take control of the vehicle via the manual TORU system. Using a joystick and a control panel on the ISS, the Expedition 38 commander guided the Progress into the docking port. The Progress 53P vehicle take up residence at the aft port of the Zvezda service module.