

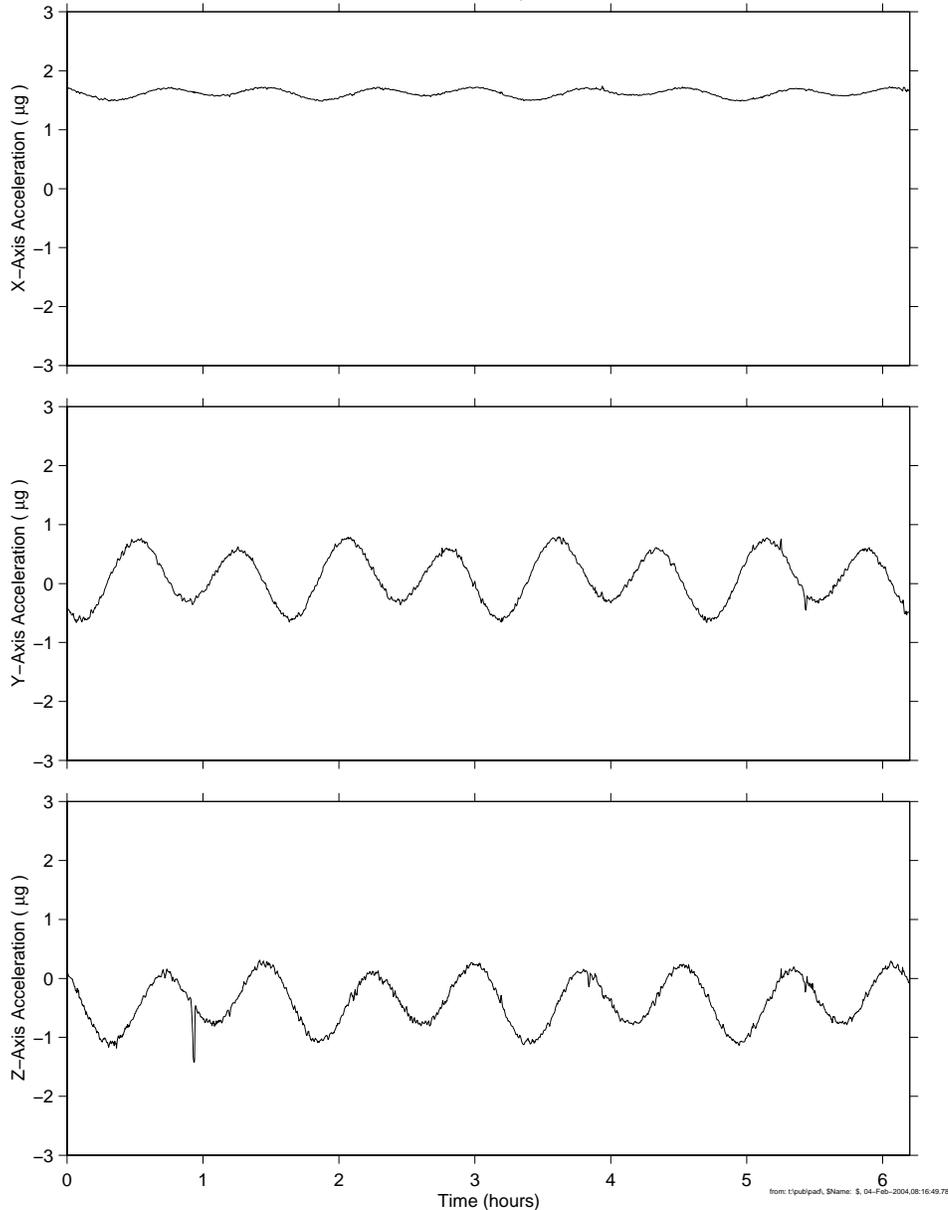
X-axis Perpendicular to the Orbital Plane (XPOP) Attitude

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

Increment: 7, Flight: 6S
SSAnalysis[0.0 0.0 0.0]

XPOP Attitude, Crew Asleep

Start GMT 20-June-2003, 171/01:00:10.933



Description

Sensor	MAMS,ossbtmf 0.0625 sa/sec (0.01 Hz)
Location	LAB1O2, ER1, Lockers 3,4
Orientation	Space Station Analysis (SSA)
Inc/Flight	Increment: 7, Flight: 6S
Plot Type	Time Series

NOTES:

- The 1.62 µg offset in the X-axis is primarily gravity gradient effect, due to the sensor's distance from the ISS center of mass.
- Y and Z-axes show cyclical variation as they are alternately subjected to varying drag and gravity gradient vectors. These two components vary due to the stations rotation **with respect to the Local Vertical Local Horizontal (LVLH) frame of reference.**
- The time period covered in this plot is during a crew sleep period. See Crew Active, Crew Asleep for comparison.
- The means and RMS values per axis are tabulated below.

Axis	Mean (µg)	RMS (µg)
X	1.62	1.62
Y	0.10	0.43
Z	-0.39	0.56
RSS	1.76	1.77



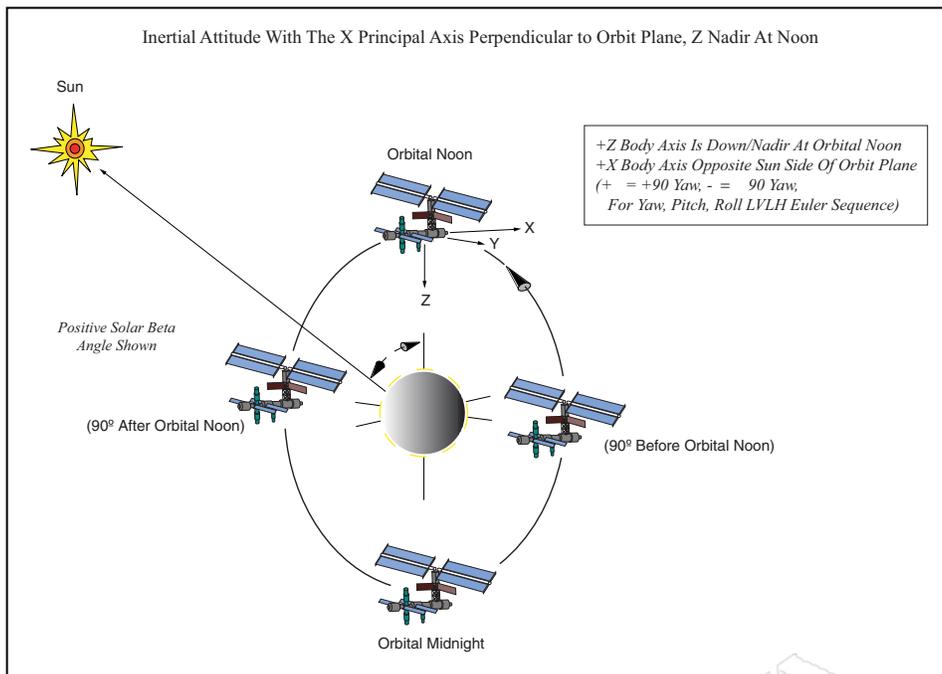
Microgravity Science Division



Glenn Research Center

Regime:	Quasi-steady
Category:	Vehicle
Source:	Attitude, XPOP

X-axis Perpendicular to the Orbital Plane (XPOP) Attitude

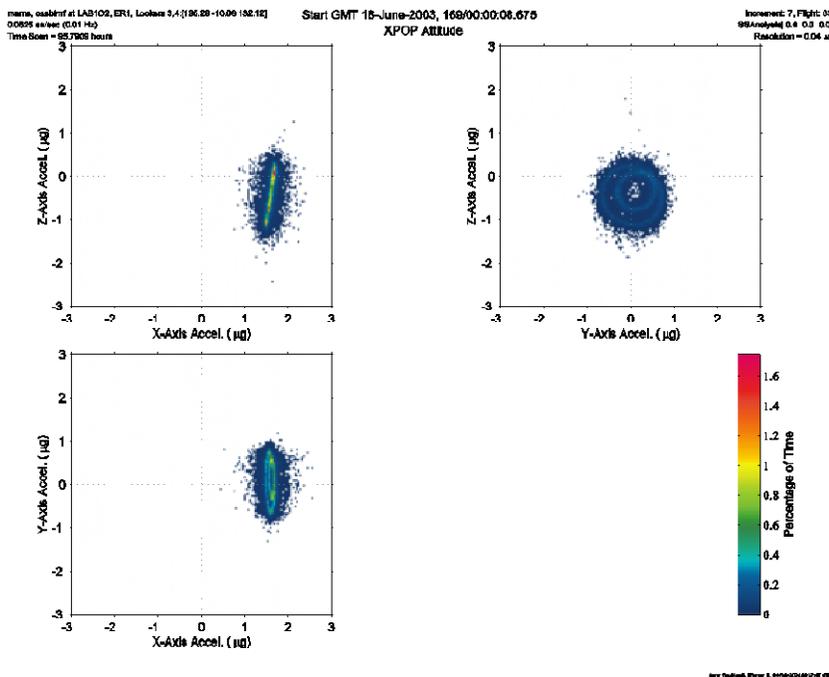


Description	
Sensor	MAMS, ossbtmf 0.0625 sa/sec (0.01 Hz)
Location	LAB102, ER1, Lockers 3,4
Orientation	Space Station Analysis (SSA)
Inc/Flight	Increment: 7, Flight: 6S
Plot Type	Quasi-steady Three Dimensional Histogram

NOTES:

- XPOP is a quasi-inertial attitude flown to provide solar array sun tracking for power generation purposes. This attitude was flown before ISS Flight 12A.1, at which point ISS began two axes Sun tracking, and XPOP became unnecessary.
- In XPOP, the ISS is maintained relative to inertial space, with X-axis perpendicular to the orbital plane, while the Y and Z-axes lie in the orbital plane.
- Plot is 96 consecutive hours beginning GMT 18-Jun-2003, 169/00:00. For the time period shown, the centroid is calculated as an estimate of the means for each axis. The results are tabulated below.

Axis	Centroid (μg)
X	1.62
Y	0.09
Z	-0.41
Magnitude	1.67



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Regime:	Quasi-steady
Category:	Vehicle
Source:	Attitude, XPOP