These are the steps used to gather the information intended to serve as a MAMS catalog of International Space Station (ISS) attitudes:

1. The Grand Unified As-Flown Timeline (GUATL) from the ISS Motion Control Systems Flight Info web site was first downloaded. This GUATL provides a useful history of ISS attitude control activities over last 10+ years.

2. The GUATL was converted to a spreadsheet format, which made it more amenable to analysis. Extra columns were added to help track the preponderance of documented attitudes.

3. A pivot table was computed from the formatted GUATL to summarize the number of times a given attitude showed up in the GUATL since 2010. It is well known that the primary attitude is the +XVV +ZLV Torque Equilibrium Attitude (TEA), however, this pivot table showed other non-typical attitudes that are used as needed (e.g. for visiting vehicle dockings). Here are the results, which show the 5 predominant attitudes in the shaded rows:

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Count in GUATL</th>
</tr>
</thead>
<tbody>
<tr>
<td>+XVV +ZLV</td>
<td>259</td>
</tr>
<tr>
<td>+XVV +ZLV TEA</td>
<td>1666</td>
</tr>
<tr>
<td>+YVV +ZLV</td>
<td>2</td>
</tr>
<tr>
<td>+YVV +ZLV TEA</td>
<td>6</td>
</tr>
<tr>
<td>+ZVV -XLV</td>
<td>99</td>
</tr>
<tr>
<td>unknown</td>
<td>6</td>
</tr>
<tr>
<td>-XVV +ZLV</td>
<td>36</td>
</tr>
<tr>
<td>-XVV +ZLV TEA</td>
<td>271</td>
</tr>
<tr>
<td>-YVV +ZLV</td>
<td>1</td>
</tr>
<tr>
<td>-ZVV -XLV</td>
<td>39</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2385</td>
</tr>
</tbody>
</table>

4. Multiple pivot tables were next computed from the formatted GUATL to summarize the orientation in terms of yaw, pitch, and roll for each of the 5 predominant attitudes so identified. These pivot tables are presented on the next page and show a clear pattern of flight controllers orienting the space station consistently with only minor deviations, where the deviations were mainly in the pitch axis.

5. The MAMS OARE Sensor Subsystem (OSS) data were analyzed for a number of each of the 5 predominant attitudes identified from the GUATL. The results of that analysis are documented after the next page, which shows the set of tables from #4.
Microgravity Acceleration Measurement System (MAMS) Attitude Catalog

The set of tables below show the clear pattern of flight controllers orienting the space station consistently with only minor deviations:

<table>
<thead>
<tr>
<th>Index</th>
<th>Attitude</th>
<th>Yaw Average (deg.)</th>
<th>Pitch Average (deg.)</th>
<th>Roll Average (deg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+XVV +ZLV TEA</td>
<td>355.3</td>
<td>357.4</td>
<td>0.6</td>
</tr>
<tr>
<td>2</td>
<td>+XVV +ZLV TEA</td>
<td>354.0</td>
<td>357.0</td>
<td>0.6</td>
</tr>
<tr>
<td>3</td>
<td>+XVV +ZLV TEA</td>
<td>356.0</td>
<td>357.8</td>
<td>0.6</td>
</tr>
<tr>
<td>4</td>
<td>+XVV +ZLV TEA</td>
<td>356.0</td>
<td>358.3</td>
<td>0.6</td>
</tr>
<tr>
<td>5</td>
<td>+XVV +ZLV TEA</td>
<td>356.0</td>
<td>357.3</td>
<td>0.6</td>
</tr>
<tr>
<td>6</td>
<td>+XVV +ZLV TEA</td>
<td>356.0</td>
<td>357.8</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Average</strong></td>
<td><strong>355.5</strong></td>
<td><strong>357.6</strong></td>
<td><strong>0.6</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Index</th>
<th>Attitude</th>
<th>Yaw Average (deg.)</th>
<th>Pitch Average (deg.)</th>
<th>Roll Average (deg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-XVV +ZLV TEA</td>
<td>175.0</td>
<td>357.9</td>
<td>0.6</td>
</tr>
<tr>
<td>2</td>
<td>-XVV +ZLV TEA</td>
<td>177.0</td>
<td>359.0</td>
<td>0.6</td>
</tr>
<tr>
<td>3</td>
<td>-XVV +ZLV TEA</td>
<td>177.0</td>
<td>357.7</td>
<td>0.6</td>
</tr>
<tr>
<td>4</td>
<td>-XVV +ZLV TEA</td>
<td>177.0</td>
<td>119.6</td>
<td>0.6</td>
</tr>
<tr>
<td>5</td>
<td>-XVV +ZLV TEA</td>
<td>177.0</td>
<td>359.0</td>
<td>0.6</td>
</tr>
<tr>
<td>6</td>
<td>-XVV +ZLV TEA</td>
<td>177.0</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Average</strong></td>
<td><strong>176.7</strong></td>
<td><strong>245.3</strong></td>
<td><strong>0.6</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Index</th>
<th>Attitude</th>
<th>Yaw Average (deg.)</th>
<th>Pitch Average (deg.)</th>
<th>Roll Average (deg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>6</td>
<td>-ZVV -XLV</td>
<td>180.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Average</strong></td>
<td><strong>180.0</strong></td>
<td><strong>90.0</strong></td>
<td><strong>0.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Index</th>
<th>Attitude</th>
<th>Yaw Average (deg.)</th>
<th>Pitch Average (deg.)</th>
<th>Roll Average (deg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ZVV -XLV</td>
<td>0.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>+ZVV -XLV</td>
<td>0.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3</td>
<td>+ZVV -XLV</td>
<td>0.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td>4</td>
<td>+ZVV -XLV</td>
<td>0.0</td>
<td>90.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Average</strong></td>
<td><strong>0.0</strong></td>
<td><strong>90.0</strong></td>
<td><strong>0.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Index</th>
<th>Attitude</th>
<th>Yaw Average (deg.)</th>
<th>Pitch Average (deg.)</th>
<th>Roll Average (deg.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+YVV +ZLV TEA</td>
<td>266.0</td>
<td>357.6</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Average</strong></td>
<td><strong>266.0</strong></td>
<td><strong>357.6</strong></td>
<td><strong>1.2</strong></td>
</tr>
</tbody>
</table>
The MAMS OARE Sensor Subsystem (OSS) data were analyzed for a number of each of the 5 predominant attitudes identified from the GUATL. The results of that analysis are shown here:

<table>
<thead>
<tr>
<th>Count</th>
<th>Attitude</th>
<th>Average YPR (deg)</th>
<th>Average OSS (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yaw Pitch Roll</td>
<td>X-Axis Y-Axis Z-Axis</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>+XVV +ZLV TEA</td>
<td>355.6 357.6 0.6</td>
<td>-0.0389 -0.1825 -0.1472</td>
</tr>
<tr>
<td>6</td>
<td>-XVV +ZLV TEA</td>
<td>176.7 318.9 0.6</td>
<td>0.0322 -0.1169 -0.0965</td>
</tr>
<tr>
<td>6</td>
<td>-ZVV -XLV</td>
<td>180.0 90.0 0.0</td>
<td>-0.5889 -0.0934 -0.0544</td>
</tr>
<tr>
<td>4</td>
<td>+ZVV -XLV</td>
<td>0.0 90.0 0.0</td>
<td>-0.8058 -0.1143 -0.1043</td>
</tr>
<tr>
<td>1</td>
<td>+YVV +ZLV</td>
<td>266.0 357.6 1.2</td>
<td>0.3078 -0.3975 -0.3280</td>
</tr>
</tbody>
</table>

In addition, the rates and angles data from vehicle telemetry were analyzed similar to what was done for MAMS OSS above, and those results are shown here (note that these rates and angles only account for rotational and gravity gradient effects):

<table>
<thead>
<tr>
<th>Count</th>
<th>Attitude</th>
<th>Average YPR (deg)</th>
<th>Average Rates/Angles (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yaw Pitch Roll</td>
<td>X-Axis Y-Axis Z-Axis</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>+XVV +ZLV TEA</td>
<td>355.6 357.6 0.6</td>
<td>-0.0039 -0.0284 -0.1506</td>
</tr>
<tr>
<td>6</td>
<td>-XVV +ZLV TEA</td>
<td>176.7 318.9 0.6</td>
<td>-0.0024 -0.0089 -0.1005</td>
</tr>
<tr>
<td>6</td>
<td>-ZVV -XLV</td>
<td>180.0 90.0 0.0</td>
<td>-0.6102 -0.0043 -0.0620</td>
</tr>
<tr>
<td>4</td>
<td>+ZVV -XLV</td>
<td>0.0 90.0 0.0</td>
<td>-0.7334 0.0005 -0.0404</td>
</tr>
<tr>
<td>1</td>
<td>+YVV +ZLV</td>
<td>266.0 357.6 1.2</td>
<td>0.3624 -0.0091 -0.1936</td>
</tr>
</tbody>
</table>

The next several pages are representative plots of acceleration data for each of the 5 predominant attitudes identified above.

The table after the next several pages gives a comprehensive accounting of the attitudes selected to serve as representative examples.
**Regime:** Quasi-Steady  
**Category:** Vehicle  
**Source:** Attitude Catalog

### Description

- **Sensor:** MAMS OSS 0.0625 sa/sec, 1.0 Hz  
- **Location:** LAB1O2, ER1  
- **Plot Type:** Acceleration vs. Time

### Attitude
- **Attitude:** +XVV +ZLV TEA  

### Plot Details
- Start GMT 29-March-2012, 08/16:00:00.214
- **RED LINE IS GSE RATES & ANGLES DATA**
- **DELTAS (osbtmf - radgse): X = -0.0616, Y = -0.2830, Z = 0.0067 (µg)**
- **Mean for Rates & Angles Data: X = 0.0000, Y = -0.0586, Z = -0.1594 (µg)**

### Graphs
- X-Axis Acceleration (µg)
- Y-Axis Acceleration (µg)
- Z-Axis Acceleration (µg)

### Dates
- Date last modified: 2014-11-19

---

**PIMS ISS Acceleration Handbook**

Date last modified 2014-11-19  
Glenn Research Center
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

**Sensor**
MAMS OSS
0.0625 sa/sec, 1.0 Hz

**Location**
LAB1O2, ER1

**Plot Type**
Acceleration vs. Time

**Attitude:**
- +XVV +ZLV TEA

**Description**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>MAMS OSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>LAB1O2, ER1</td>
</tr>
<tr>
<td>Plot Type</td>
<td>Acceleration vs. Time</td>
</tr>
</tbody>
</table>

**Regime:** Quasi-Steady

**Category:** Vehicle

**Source:** Attitude Catalog

Start GMT 28-April-2012, 11:16:00.855
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Glenn Research Center

Attitude Catalog

Qualify

Description

<table>
<thead>
<tr>
<th>Sensor</th>
<th>MAMS OSS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.0625 sa/sec, 1.0 Hz</td>
</tr>
</tbody>
</table>

Location

LAB1O2, ER1

Plot Type

Acceleration vs. Time

Attitude:

- +XVV +ZLV TEA

---

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf - radgse): X = -0.0364, Y = -0.2228, Z = -0.0813 (µg)
Mean for Rates & Angles Data: X = -0.0068, Y = -0.0183, Z = -0.1514 (µg)

SSAnalysis [ 0.0  0.0  0.0 ]

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

GMT 21-December-2012, 356/16:00:14.867

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Glenn Research Center
**Regime:** Quasi-Steady  
**Category:** Vehicle  
**Source:** Attitude Catalog

**Description**

**Sensor:** MAMS OSS  
**Location:** LAB1O2, ER1  
**Plot Type:** Acceleration vs. Time

**Attitude:**  
- +XVV +ZLV TEA

---

**Start GMT 29-April-2014, 119/08:00:11.183**  
**RED LINE IS GSE RATES & ANGLES DATA**

DELTA (ossbtmf – radgse): X = -0.0222, Y = -0.0471, Z = -0.0283 (µg)  
Mean for Rates & Angles Data: X = -0.0003, Y = -0.0160, Z = -0.0994 (µg)
### Attitude Catalog

**Qualify**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sensor</strong></td>
</tr>
<tr>
<td><strong>Location</strong></td>
</tr>
<tr>
<td><strong>Plot Type</strong></td>
</tr>
</tbody>
</table>

**Attitude:**
- +XVV +ZLV TEA

---

### Data:

- **Start GMT:** 09-June-2014, 16:00:04.035
- **SSAnalysis:** 0.00 0.0 0.0

**Data from mams, ossbtmf at LAB1O2, ER1, Lockers 3,4:**

<table>
<thead>
<tr>
<th>Time</th>
<th>X-axis</th>
<th>Y-axis</th>
<th>Z-axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:00</td>
<td>-0.0241</td>
<td>-0.0709</td>
<td>-0.0654</td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mean for Rates & Angles Data:**
- X = -0.0060, Y = -0.0096, Z = -0.1505 (µg)

---

**Note:**
- RED LINE IS GSE RATES & ANGLES DATA
- DELTAS (ossbtmf – radgse): X = -0.0241, Y = -0.0709, Z = -0.0654 (µg)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog

Qualify

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor: MAMS OSS 0.0625 sa/sec, 1.0 Hz</td>
</tr>
<tr>
<td>Location: LAB1O2, ER1</td>
</tr>
<tr>
<td>Plot Type: Acceleration vs. Time</td>
</tr>
</tbody>
</table>

Attitude:
- \( +XVV +ZLV \) TEA

---

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf – radgse): \( X = 0.0062, Y = -0.0213, Z = 0.1041 \) (µg)
Mean for Rates & Angles Data: \( X = -0.0044, Y = -0.0093, Z = -0.1312 \) (µg)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog
Qualify

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Plot Type</td>
</tr>
</tbody>
</table>

Attitude:
• -XVV +ZLV TEA

Start GMT 17-May-2012, 138/08:00:10.011

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf - radgse): X = 0.0335, Y = -0.2334, Z = 0.0946 (µg)
Mean for Rates & Angles Data: X = -0.0023, Y = -0.0405, Z = -0.1447 (µg)

SSAnalysis[ 0.0  0.0  0.0]

0.0625 sa/sec (0.01 Hz)
mams, ossbtmf at LAB1O2, ER1, Lockers 3,4:

Observation: 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00

Y−Axis Acceleration (µg)
X−Axis Acceleration (µg)
Z−Axis Acceleration (µg)

GMT 17−May−2012, 138/hh:mm
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

Description:
- Sensor: MAMS OSS
  0.0625 sa/sec, 1.0 Hz
- Location: LAB1O2, ER1
- Plot Type: Acceleration vs. Time

Attitude:
- -XVV +ZLV TEA

Mean for Rates & Angles Data: X = -0.0018, Y = -0.0005, Z = -0.0841 (µg)
DELTA (ossbtmf − radgse): X = 0.0801, Y = −0.1234, Z = −0.0801 (µg)
Regime: Quasi-Steady  
Category: Vehicle  
Source: Attitude Catalog

**Description**

- **Sensor**: MAMS OSS 0.0625 sa/sec, 1.0 Hz
- **Location**: LAB1O2, ER1
- **Plot Type**: Acceleration vs. Time

**Attitude:**
- \(-XVV +ZLV TEA\)

**Attitude Catalog**

**Qualify**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor: MAMS OSS 0.0625 sa/sec, 1.0 Hz</td>
</tr>
<tr>
<td>Location: LAB1O2, ER1</td>
</tr>
<tr>
<td>Plot Type: Acceleration vs. Time</td>
</tr>
</tbody>
</table>

**Attitude:**
- \(-XVV +ZLV TEA\)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified: 2014-11-19

**Sensor:** MAMS OSS
0.0625 sa/sec, 1.0 Hz

**Location:** LAB1O2, ER1

**Plot Type:** Acceleration vs. Time

**Attitude:**
- -XVV +ZLV TEA

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf - radgse): X = 0.0548, Y = -0.0429, Z = 0.0292 (µg)
Mean for Rates & Angles Data: X = -0.0008, Y = -0.0000, Z = -0.0542 (µg)

SSAnalysis [ 0.0  0.0  0.0].

---

**Description**

<table>
<thead>
<tr>
<th><strong>Sensor</strong></th>
<th>MAMS OSS 0.0625 sa/sec, 1.0 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>LAB1O2, ER1</td>
</tr>
<tr>
<td><strong>Plot Type</strong></td>
<td>Acceleration vs. Time</td>
</tr>
</tbody>
</table>

**Attitude:**
- -XVV +ZLV TEA
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog

Qualify

Description

Sensor
MAMS OSS
0.0625 sa/sec, 1.0 Hz

Location
LAB1O2, ER1

Plot Type
Acceleration vs. Time

Attitude:
• -XVV +ZLV TEA

Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

Start GMT 23−July−2014, 204/16:00:15.003

RED LINE IS GSE RATES & ANGLES DATA
DELTA (ossbref − radgse): X = 0.0315, Y = −0.0060, Z = 0.0177 (µg)
Mean for Rates & Angles Data: X = -0.0001, Y = 0.0053, Z = −0.0537 (µg)

SSAnalysis [ 0.0  0.0  0.0]
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

**Description**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>MAMS OSS 0.0625 sa/sec, 1.0 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>LAB1O2, ER1</td>
</tr>
<tr>
<td>Plot Type</td>
<td>Acceleration vs. Time</td>
</tr>
</tbody>
</table>

**Attitude:**
- -ZVV -XLV

**Graph:**
- X-Axis Acceleration (µg)
- Y-Axis Acceleration (µg)
- Z-Axis Acceleration (µg)

**Start GMT 01–July–2012, 183/00:00:06.015**

**RED LINE IS GSE RATES & ANGLES DATA**

**DELTAS (ossbtmf – radgse): X = −0.1272, Y = −0.3159, Z = 0.1929 (µg)**

**Mean for Rates & Angles Data: X = −0.7765, Y = −0.0096, Z = −0.2826 (µg)**
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog

Qualify

Description

Sensor
MAMS OSS
0.0625 sa/sec, 1.0 Hz

Location
LAB1O2, ER1

Plot Type
Acceleration vs. Time

Attitude:
- -ZVV -XLV

Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

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**Attitude Catalog**

**Qualify**

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</table>

**Attitude:**
- -ZVV -XLV

---

**Input Data**

- **Sensor**: MAMS OSS
- **Frequency**: 0.0625 sa/sec, 1.0 Hz
- **Location**: LAB1O2, ER1
- **Plot Type**: Acceleration vs. Time

**Regime:** Quasi-Steady

**Category:** Vehicle

**Source:** Attitude Catalog

---

**Graphs**

- X-Axis Acceleration (µg)
- Y-Axis Acceleration (µg)
- Z-Axis Acceleration (µg)

- Start GMT 11–February–2013, 042/16:00:02.054
- Red line is GSE rates & angles data
- Delta (ossbtmf - radgse): X = 0.0315, Y = −0.0695, Z = −0.0704 (µg)
- Mean for rates & angles data: X = −0.9043, Y = 0.0006, Z = −0.0085 (µg)

---

**Additional Data**

- Mean for rates & angles data: X = −0.9043, Y = 0.0006, Z = −0.0085 (µg)
- Delta (ossbtmf - radgse): X = 0.0315, Y = −0.0695, Z = −0.0704 (µg)
- Mean for rates & angles data: X = −0.9043, Y = 0.0006, Z = −0.0085 (µg)

---

**Notes**

- SSAnalysis
- 0.0 0.0 0.0

---

**Footer**

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Glenn Research Center
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog

Qualify

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<td>Plot Type</td>
</tr>
</tbody>
</table>

Attitude:
- -ZVV -XLV

---

Start GMT 03-February-2014, 03:08:00:10.992

Debit (ossbtmf - radgse): X = 0.1287, Y = -0.0350, Z = 0.0277 (µg)

Mean for Rates & Angles Data: X = -0.3041, Y = -0.0100, Z = -0.0165 (µg)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog
Qualify

Description
Sensor: MAMS OSS
Location: LAB1O2, ER1
Plot Type: Acceleration vs. Time

Attitude:
- ZVV -XLV

Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog
Qualify

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<tr>
<td>Location</td>
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<tr>
<td>Plot Type</td>
</tr>
</tbody>
</table>

Attitude:
- -ZVV -XLV

DELTAS (ossbtmf − radgse): X = 0.0111, Y = −0.0206, Z = 0.0245 (µg)
Mean for Rates & Angles Data: X = −0.4213, Y = 0.0033, Z = −0.0207 (µg)

Start GMT 21−July−2014, 202/16:00:08.398
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog
PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog
Qualify

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<td>Location</td>
</tr>
<tr>
<td>Plot Type</td>
</tr>
</tbody>
</table>

Attitude:
- +ZVV -XLV

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf - radgse): X = −0.0486, Y = −0.1386, Z = 0.0058 (µg)
Mean for Rates & Angles Data: X = −1.0228, Y = 0.0177, Z = −0.0420 (µg)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Description

- **Sensor**: MAMS OSS
  - 0.0625 sa/sec, 1.0 Hz
- **Location**: LAB1O2, ER1
- **Plot Type**: Acceleration vs. Time

**Attitude:**
- +ZVV -XLV

**Mean for Rates & Angles Data:**
- X = −0.4353, Y = −0.0350, Z = −0.0492 (µg)

**DELTAS (ossbtmf − radgse):**
- X = −0.1323, Y = −0.1788, Z = −0.0332 (µg)

**Start GMT 25−July−2013, 206/16:00:02.960**
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19

Attitude Catalog

Qualify

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<tr>
<td>Plot Type</td>
</tr>
</tbody>
</table>

**Attitude:**
- +ZVV -XLV

RED LINE IS GSE RATES & ANGLES DATA
DELTAS (ossbtmf – radgse): X = −0.0747, Y = −0.1237, Z = −0.0445 (µg)
Mean for Rates & Angles Data: X = −0.9880, Y = 0.0205, Z = −0.0316 (µg)

SSAnalysis [0.0 0.0 0.0].

0.0625 sa/sec (0.01 Hz)
mams, ossbtmf at LAB1O2, ER1, Lockers 3,4:

---

**Y−Axis Acceleration (µg)**

---

**Z−Axis Acceleration (µg)**

---

**X−Axis Acceleration (µg)**

---

Start GMT 07−November−2013, 311/08:00:07.320

Mean for Rates & Angles Data: X = −0.9880, Y = 0.0205, Z = −0.0316 (µg)
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

Sensor: MAMS OSS
Location: LAB102, ER1
Plot Type: Acceleration vs. Time
Attitude: +ZVV -XLV

Start GMT 13-May-2014, 133/16:00:03.664

Mean for Rates & Angles Data: X = −0.4876, Y = −0.0012, Z = −0.0387 (µg)

DELTA (ossbtml - radgse): X = −0.0339, Y = −0.0181, Z = −0.1838 (µg)

Attitude Catalog
Qualify

<table>
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<table>
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<td>• +ZVV -XLV</td>
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</table>

Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

PIMS ISS Acceleration Handbook
Date last modified 2014-11-19
Regime: Quasi-Steady
Category: Vehicle
Source: Attitude Catalog

---

**Description**

- **Sensor**: MAMS OSS
  - 0.0625 sa/sec, 1.0 Hz
- **Location**: LAB1O2, ER1
- **Plot Type**: Acceleration vs. Time

**Attitude:**

- +YVV +ZLV

**Mean for Rates & Angles Data:**

- X = 0.3624 µg
- Y = -0.0091 µg
- Z = -0.1936 µg

**Delta:**

- X = -0.0546 µg
- Y = -0.3884 µg
- Z = -0.1344 µg

**SSAnalysis:**

- [0.0 0.0 0.0]
Microgravity Acceleration Measurement System (MAMS) Attitude Catalog

The following table gives a comprehensive accounting of the attitudes selected to serve as representative examples.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>GMT Start</th>
<th>Average OSS (ug)</th>
<th>Average Rates/Angles (ug)</th>
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<td>2012-04-28 16:00:00</td>
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