

# PRELIMINARY REPORT OF 060128

last update on Sat Jan 28 16:50:28 GMT 2006

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## 1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA\_WVS\_1P), global monitoring products (ASA\_GM1\_1P), which are the available few hours after the acquisition, on the browse (BP) products and on the Module Stepping (MS) product.

## 2 - Summary

### 2.1 - Instrument Unavailability

No unavailabilities during the reported period.

### 2.2 - Auxiliary files

Summary of the auxiliary files used from 2006-01-27 00:00:00 to 2006-01-28 16:50:28

|                |     |     |     |     |     |
|----------------|-----|-----|-----|-----|-----|
| PDHS-K         |     |     |     |     |     |
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |

|   |    |   |    |   |    |
|---|----|---|----|---|----|
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 47 | 0 | 11 | 0 | 27 |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 47 | 0 | 11 | 0 | 27 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 47 | 0 | 11 | 0 | 27 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 47 | 0 | 11 | 0 | 27 |

| PDHS-E  |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE  | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 45  | 45  | 32  | 14  | 40  |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 45  | 45  | 32  | 14  | 40  |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 45  | 45  | 32  | 14  | 40  |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 45  | 45  | 32  | 14  | 40  |

## 2.3 - Browse Visual Inspection

## 2.4 - Data Analysis

- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

## 3 - Module Stepping Mode

No anomalies observed on available MS products:

| Polarisation | Start Time      |
|--------------|-----------------|
| V            | 20060127 063518 |
| H            | 20060128 060341 |

### MSM in V/V polarisation

| Pre-launch Reference | DDS-B (2003-06-12) reference |
|----------------------|------------------------------|
| ☒                    | ☒                            |
| ☒                    | ☒                            |
| ☒                    | ☒                            |
| ☒                    | ☒                            |

### MSM in H/H polarisation

| Pre-launch Reference     | DDS-B (2003-06-12) reference |
|--------------------------|------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/>     |
| <input type="checkbox"/> | <input type="checkbox"/>     |
| <input type="checkbox"/> | <input type="checkbox"/>     |
| <input type="checkbox"/> | <input type="checkbox"/>     |

## 4 - Internal calibration Results

No anomalies observed.

### 4.1 - Daily statistics

#### 4.1.1 - Evolution for WVS

| Evolution of cal pulses for WVS |
|---------------------------------|
| <input type="checkbox"/>        |
| <input type="checkbox"/>        |

#### 4.1.2 - Evolution for GM1

| Evolution of cal pulses for GM1 |
|---------------------------------|
| <input type="checkbox"/>        |
| <input type="checkbox"/>        |

### 4.2 - Cyclic statistics

#### 4.2.1 - Evolution for WVS

| Evolution of cal pulses for WVS |
|---------------------------------|
| <input type="checkbox"/>        |

**P1a Cyclic statistics**

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
|-----|-------|-----------|------------|-----------------|

**P1 Cyclic statistics**

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P1    | -4.033903  | 0.007381   | 0.057104        |
| 7   | P1    | -3.002957  | 0.013989   | -0.036850       |
| 11  | P1    | -4.101160  | 0.022565   | -0.007671       |
| 15  | P1    | -6.064559  | 0.017251   | -0.005026       |
| 19  | P1    | -3.249899  | 0.006059   | -0.037365       |
| 22  | P1    | -4.485588  | 0.019935   | 0.001686        |
| 26  | P1    | -4.209534  | 0.012884   | 0.036802        |
| 30  | P1    | -5.773881  | 0.009839   | -0.021003       |
| 3   | P1    | -16.934710 | 0.266973   | 0.242683        |
| 7   | P1    | -16.612913 | 0.125576   | -0.120841       |
| 11  | P1    | -16.607662 | 0.304770   | -0.049138       |
| 15  | P1    | -13.236016 | 0.116422   | 0.066962        |
| 19  | P1    | -13.887604 | 0.076065   | -0.052647       |
| 22  | P1    | -15.900738 | 0.568013   | 0.096543        |
| 26  | P1    | -15.763537 | 0.257023   | 0.031107        |
| 30  | P1    | -16.605017 | 0.336017   | -0.053075       |

**P2 Cyclic statistics**

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -21.608742 | 0.094009   | 0.109263        |
| 7   | P2    | -22.474222 | 0.097436   | 0.096028        |
| 11  | P2    | -16.302841 | 0.103380   | 0.091923        |
| 15  | P2    | -7.218101  | 0.103422   | 0.030024        |
| 19  | P2    | -9.175506  | 0.098201   | 0.016958        |
| 22  | P2    | -17.943121 | 0.094503   | -0.037207       |
| 26  | P2    | -16.223251 | 0.100418   | -0.008986       |
| 30  | P2    | -19.655910 | 0.084095   | 0.024741        |

**P3 Cyclic statistics**

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.214783 | 0.007322   | 0.010365        |
| 7   | P3    | -8.214783 | 0.007322   | 0.010365        |
| 11  | P3    | -8.214783 | 0.007322   | 0.010365        |
| 15  | P3    | -8.214783 | 0.007322   | 0.010365        |
| 19  | P3    | -8.214783 | 0.007322   | 0.010365        |
| 22  | P3    | -8.214783 | 0.007322   | 0.010365        |
| 26  | P3    | -8.214783 | 0.007322   | 0.010365        |
| 30  | P3    | -8.214783 | 0.007322   | 0.010365        |

#### 4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1



#### P1a Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
|-----|-------|-----------|------------|-----------------|

#### P1 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P1    | -3.724646  | 0.010931   | -0.011247       |
| 7   | P1    | -2.750817  | 0.007645   | 0.042414        |
| 11  | P1    | -2.868446  | 0.011203   | -0.001167       |
| 15  | P1    | -3.463435  | 0.018675   | -0.050060       |
| 19  | P1    | -3.379079  | 0.012948   | -0.004831       |
| 22  | P1    | -5.124555  | 0.021675   | -0.013372       |
| 26  | P1    | -5.855159  | 0.015388   | -0.011611       |
| 30  | P1    | -5.246745  | 0.029781   | 0.013997        |
| 3   | P1    | -11.522176 | 0.039142   | -0.029018       |
| 7   | P1    | -9.924695  | 0.050494   | 0.026723        |
| 11  | P1    | -10.082574 | 0.050779   | -0.057560       |
| 15  | P1    | -10.626286 | 0.085261   | -0.041190       |
| 19  | P1    | -15.474257 | 0.060706   | 0.012881        |
| 22  | P1    | -20.617640 | 1.196980   | 0.304062        |
| 26  | P1    | -16.816353 | 0.335815   | 0.340140        |
| 30  | P1    | -18.155838 | 0.318967   | -0.036649       |

### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -17.426212 | 0.031674   | 0.188149        |
| 7   | P2    | -22.867588 | 0.059084   | 0.178183        |
| 11  | P2    | -11.433618 | 0.019300   | 0.115357        |
| 15  | P2    | -4.920704  | 0.024198   | 0.058946        |
| 19  | P2    | -6.921534  | 0.022266   | 0.042434        |
| 22  | P2    | -8.195307  | 0.022389   | 0.004662        |
| 26  | P2    | -23.975222 | 0.024398   | 0.039801        |
| 30  | P2    | -22.099148 | 0.017714   | 0.027450        |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.054825 | 0.002426   | 0.028535        |
| 7   | P3    | -8.054805 | 0.002421   | 0.028523        |
| 11  | P3    | -8.054883 | 0.002427   | 0.029123        |
| 15  | P3    | -8.054813 | 0.002443   | 0.028814        |
| 19  | P3    | -8.054910 | 0.002429   | 0.028582        |
| 22  | P3    | -8.054842 | 0.002424   | 0.028063        |
| 26  | P3    | -8.054808 | 0.002419   | 0.027758        |
| 30  | P3    | -8.054899 | 0.002434   | 0.028683        |

## 4.3 - cal pulses monitoring (all rows)

### 4.3.1 - Evolution for WVS



### 4.3.2 - Evolution for GM1



## 5 - RAW data statistics

No anomalies observed.

### 5.1 - Input mean I/Q

| channel | stat  | DSS-B       |
|---------|-------|-------------|
| MEAN I  | mean  | 0.000560401 |
|         | stdev | 1.69143e-07 |
| MEAN Q  | mean  | 0.000520111 |
|         | stdev | 2.14738e-07 |



### 5.2 - Input stdev I/Q

| channel | stat  | DSS-B      |
|---------|-------|------------|
| STDEV I | mean  | 0.139346   |
|         | stdev | 0.00119651 |
| STDEV Q | mean  | 0.139709   |
|         | stdev | 0.00121619 |



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006012[678]

The assumption is taken that the SQADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

| Filename  | num_gaps | num_missing_lines |
|---|----------|-------------------|
| ASA_IMM_1PNPDE20060126_200857_00000502044_00343_20437_1212.N1 | 0        | 11                |
| ASA_IMM_1PNPDK20060126_125400_00001222044_00339_20433_0406.N1 | 1        | 0                 |
| ASA_WSM_1PNPDE20060126_142816_00000672044_00340_20434_2512.N1 | 0        | 67                |
| ASA_WSM_1PNPDE20060127_171318_00002322044_00356_20450_2675.N1 | 0        | 3                 |







## 7 - Doppler Analysis

Preliminary report. The data is not yet controlled



### 7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

|   |
|---|
|  |
| Acsending   |
|  |
| Descending  |

### 7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

|   |
|---|
|  |
| Acsending   |
|  |
| Descending  |


### 7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

|   |
|---|
|  |
|---|

### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

|   |
|---|
|  |
| Acsending   |



|                          |
|--------------------------|
| <input type="checkbox"/> |
| Descending               |

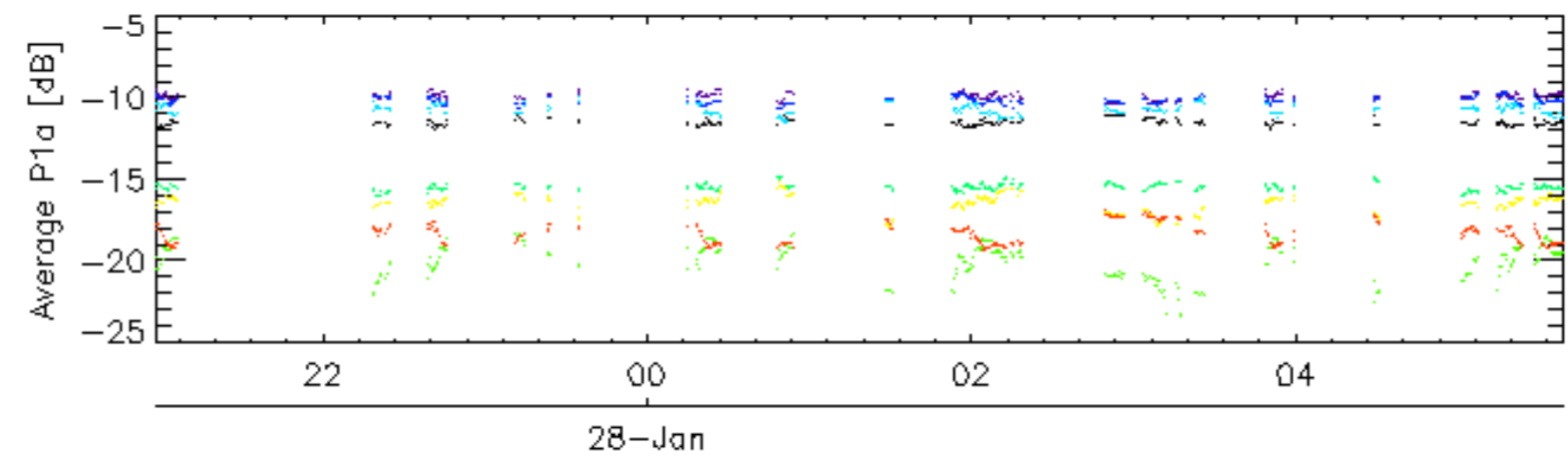
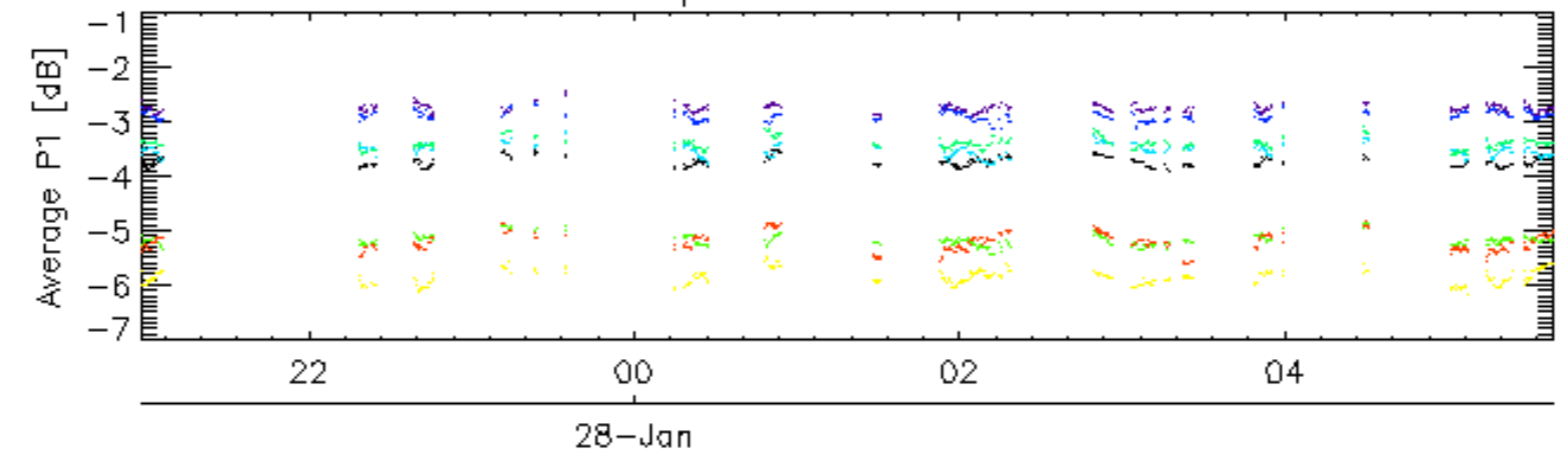
### 7.5 - Absolute Doppler for GM1

|                                      |
|--------------------------------------|
| <b>Evolution of Absolute Doppler</b> |
| <input type="checkbox"/>             |
| Ascending                            |
| <input type="checkbox"/>             |
| Descending                           |

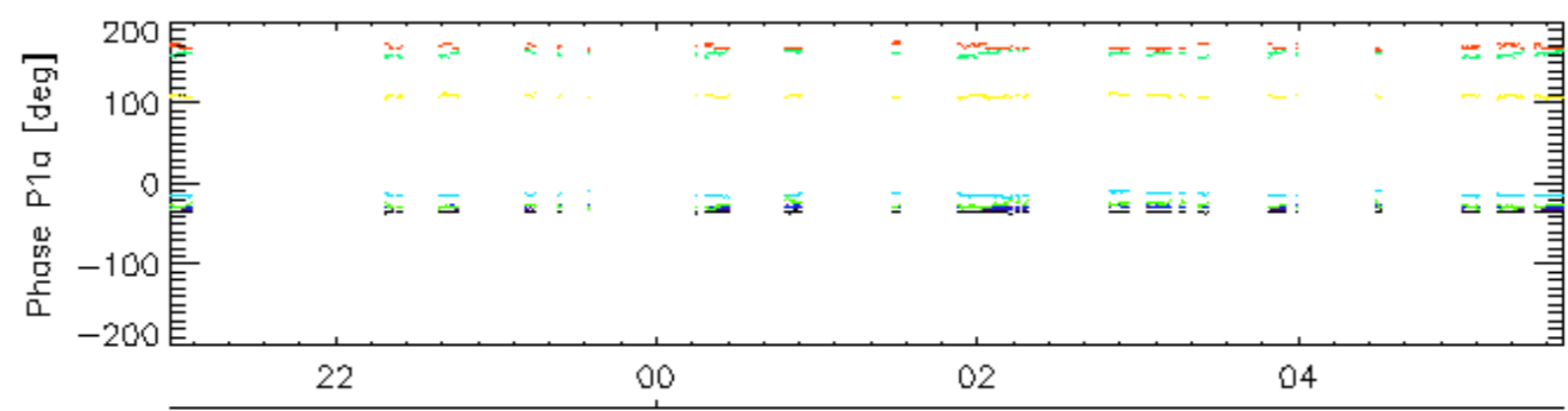
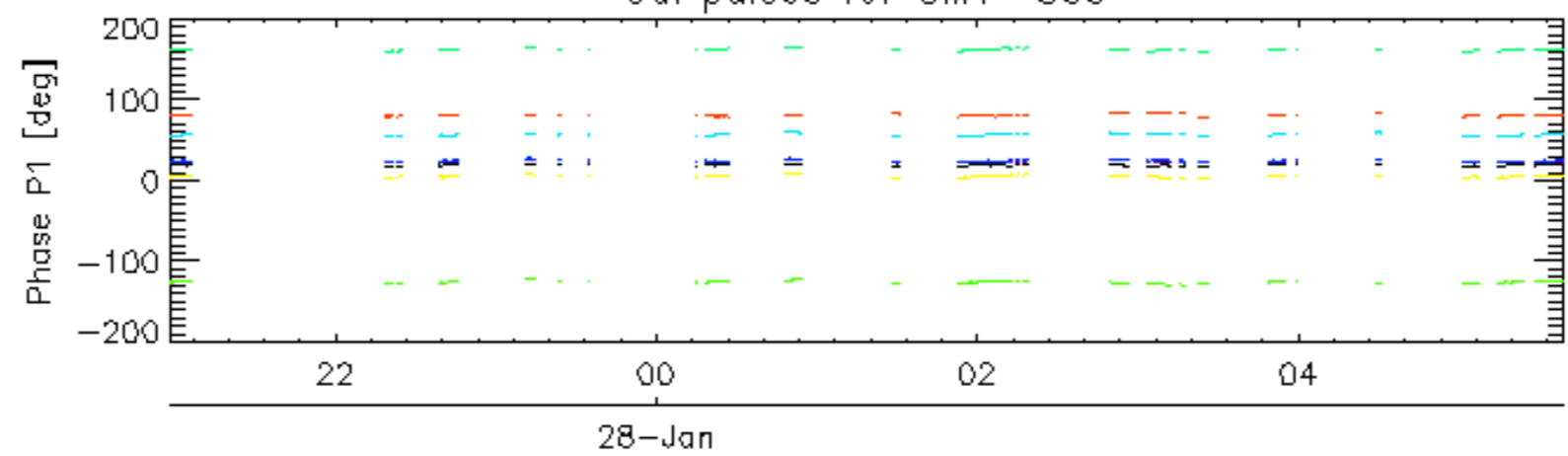
### 7.6 - Doppler evolution versus ANX for GM1

|   |
|---|
| <b>Evolution Doppler error versus ANX</b> |
| <input type="checkbox"/>                  |

Cal pulses for GM1 SS3

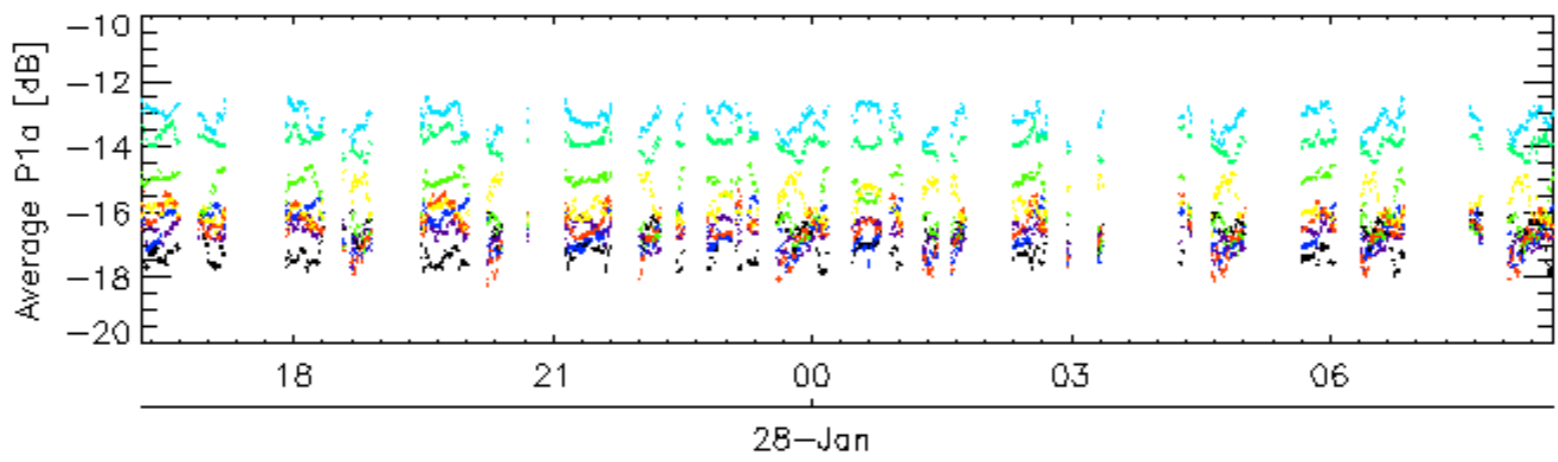
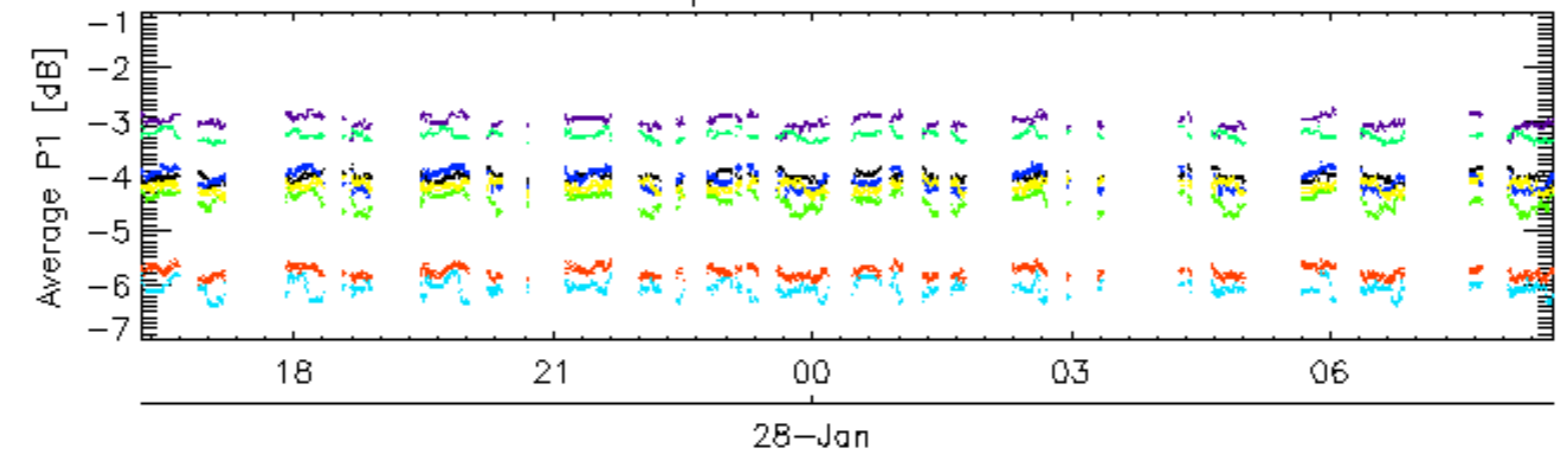


Cal pulses for GM1 SS3

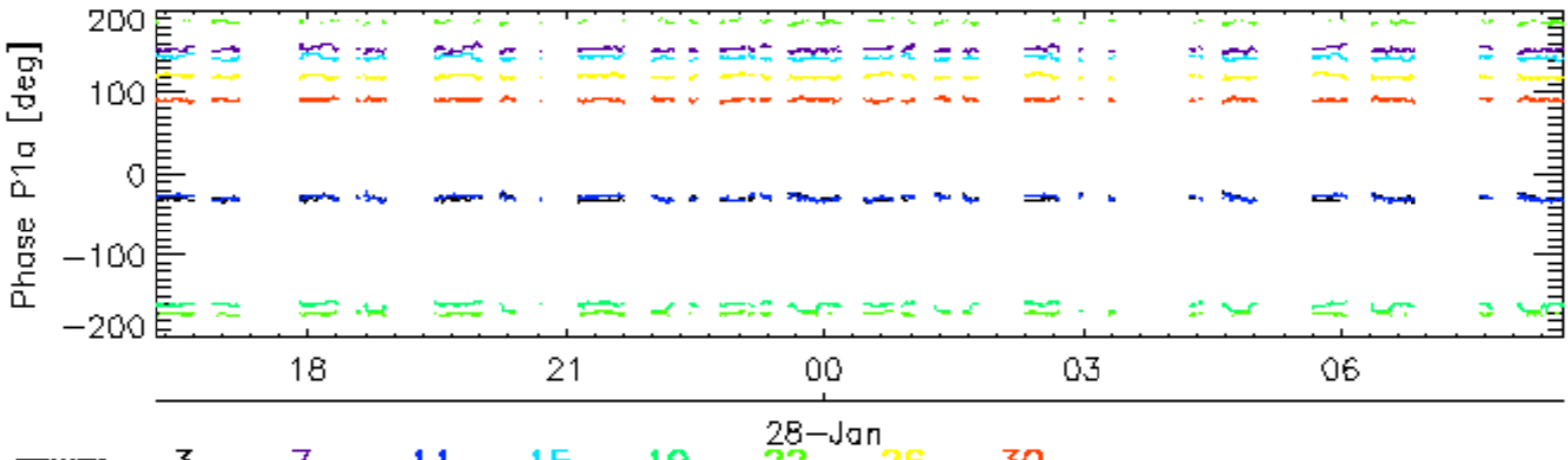
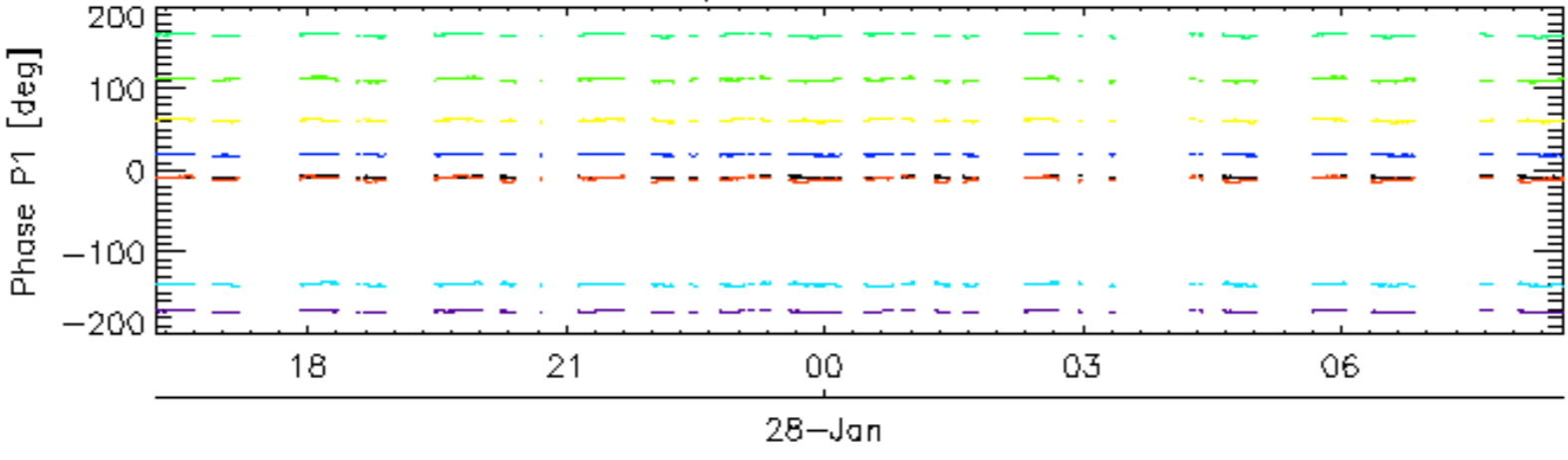


rows: \_ 3 \_ 7 \_ 11 \_ 15 <sup>28-Jan</sup> \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

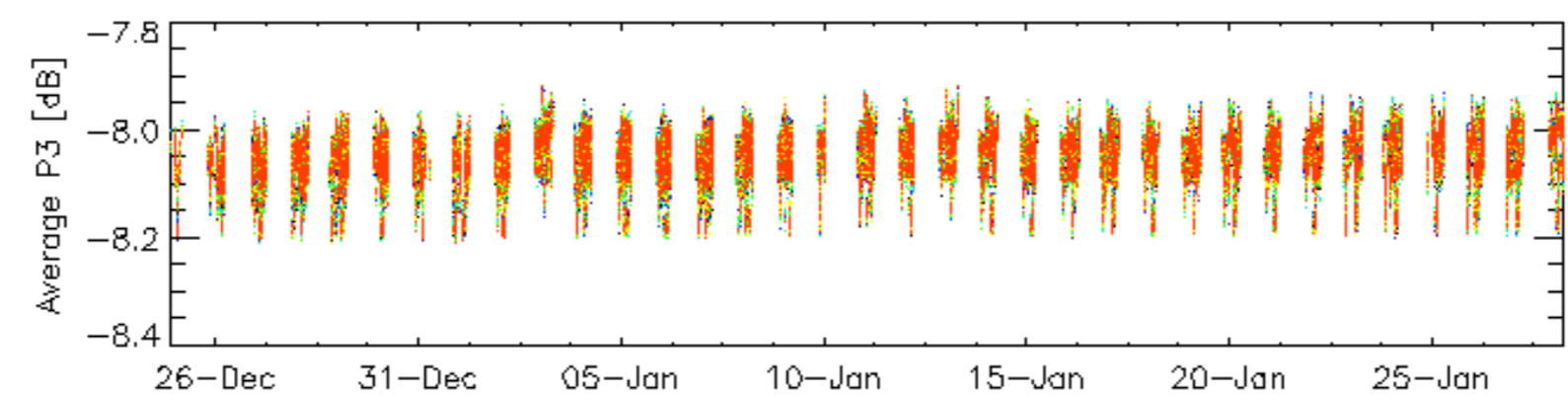
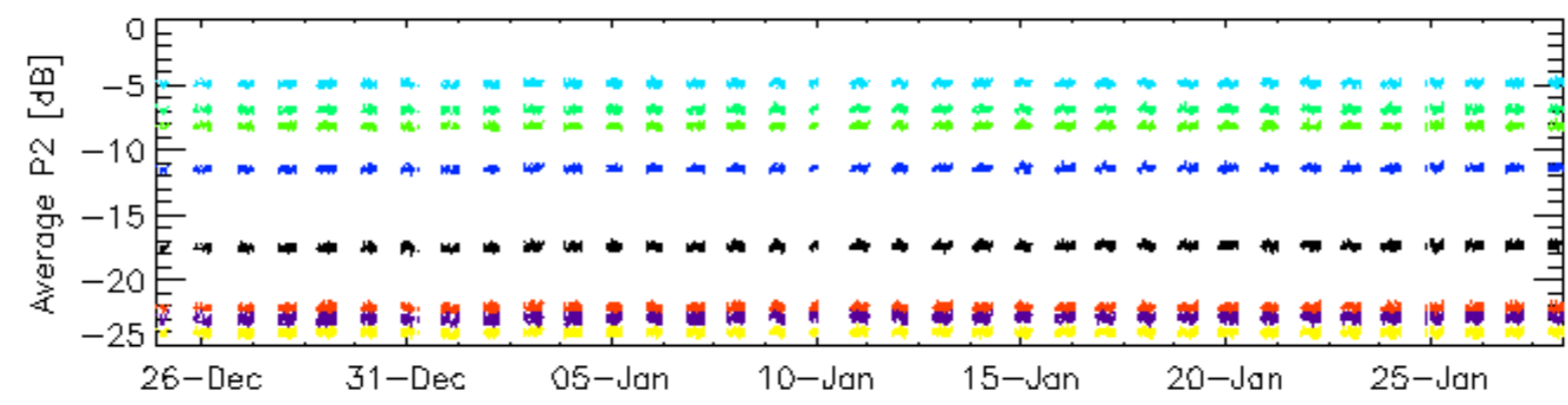
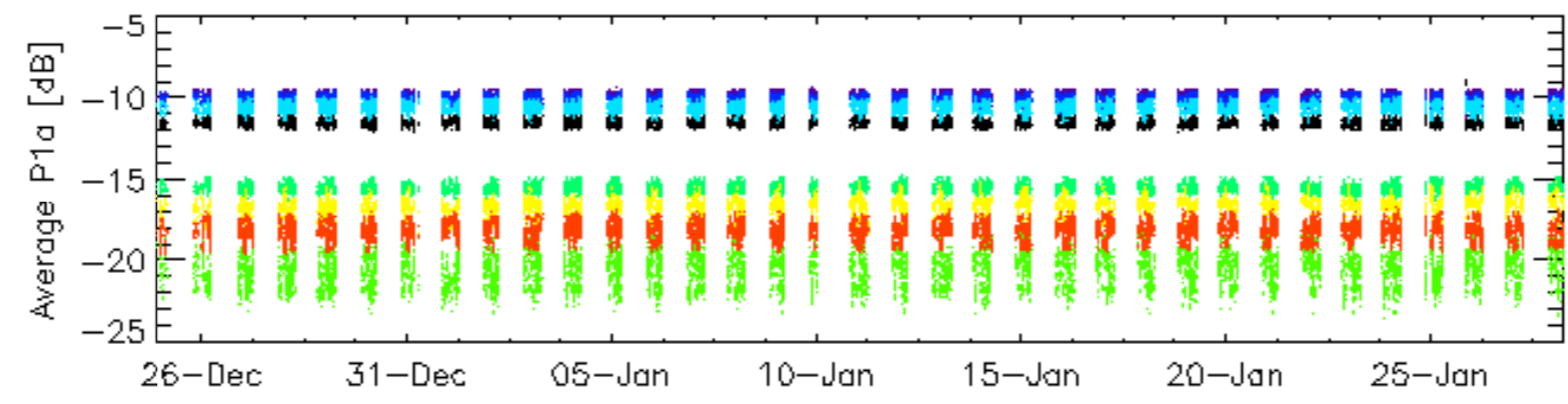
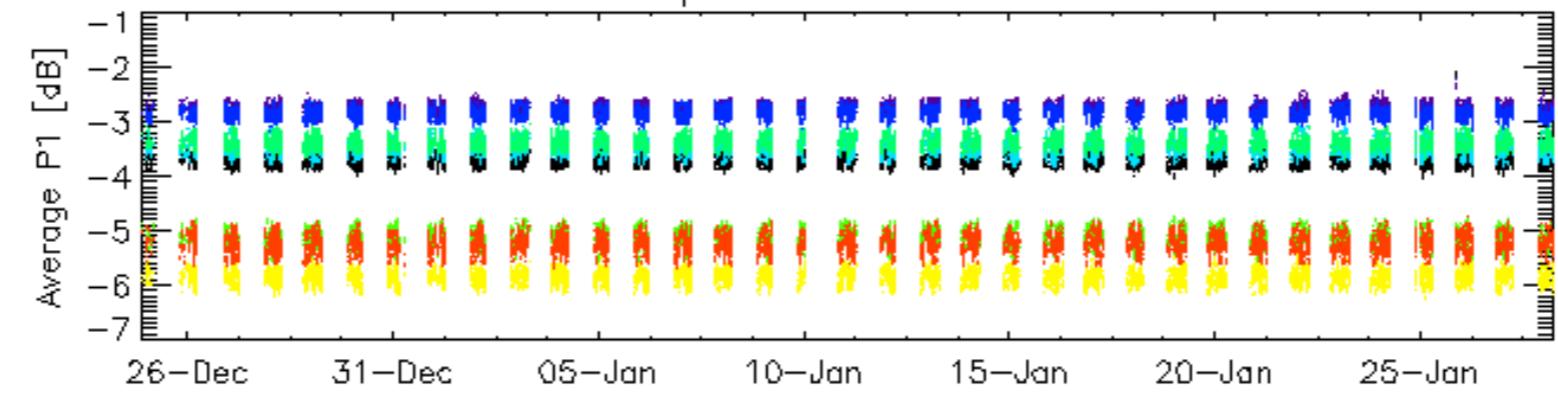


Cal pulses for WVS IS2



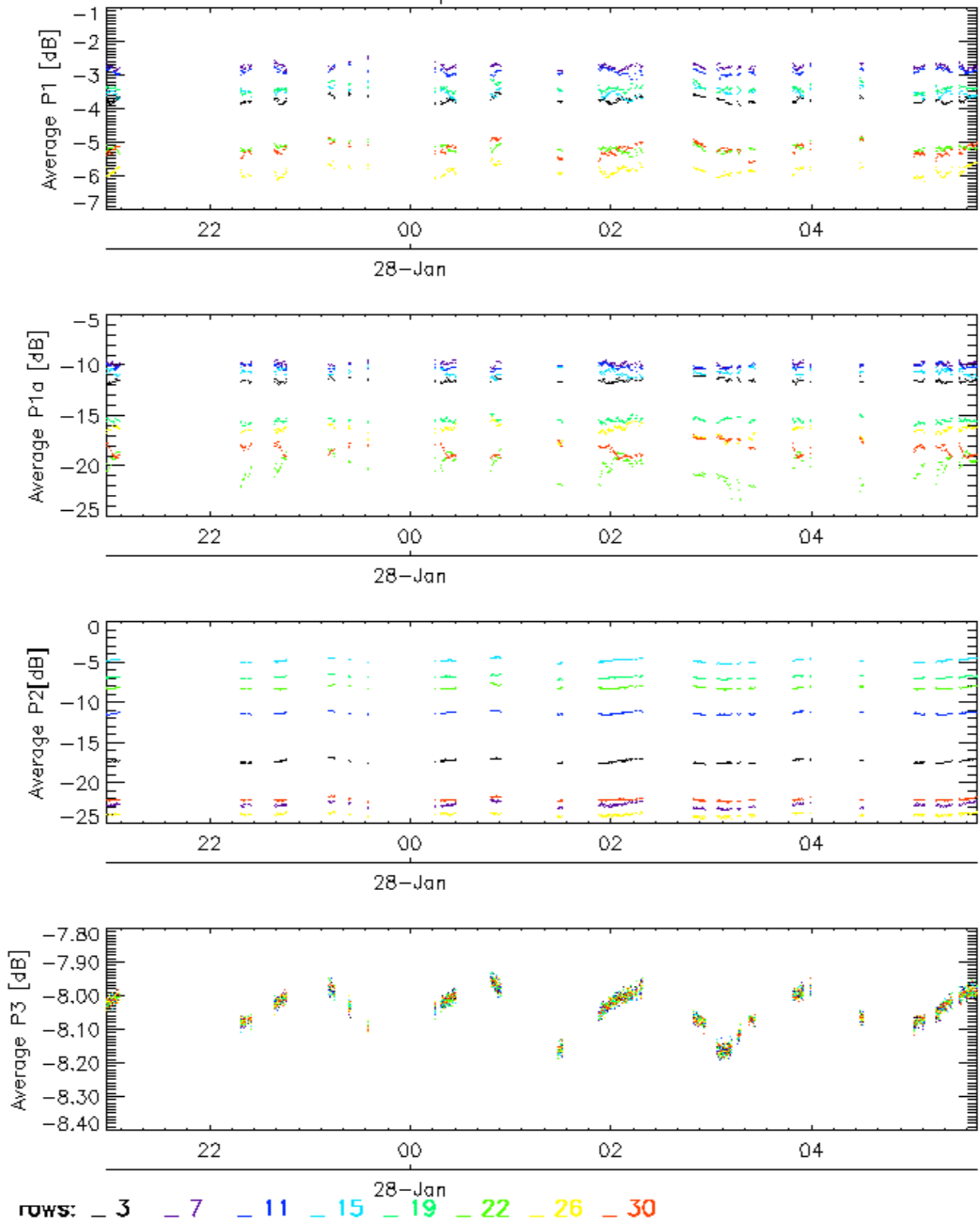
rows: 3 7 11 15 19 22 26 30

### Cal pulses for GM1 SS3

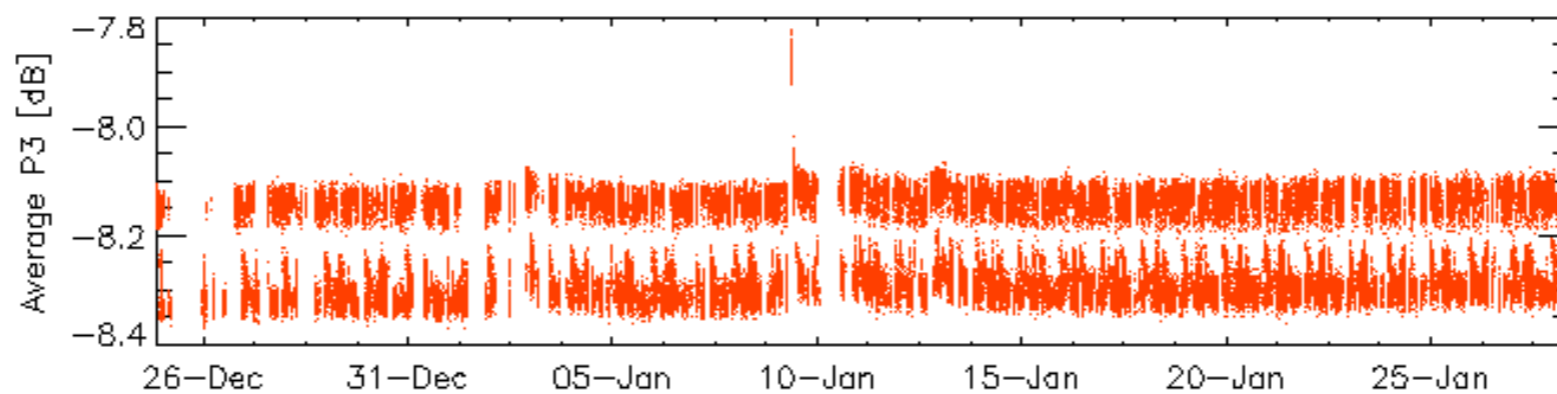
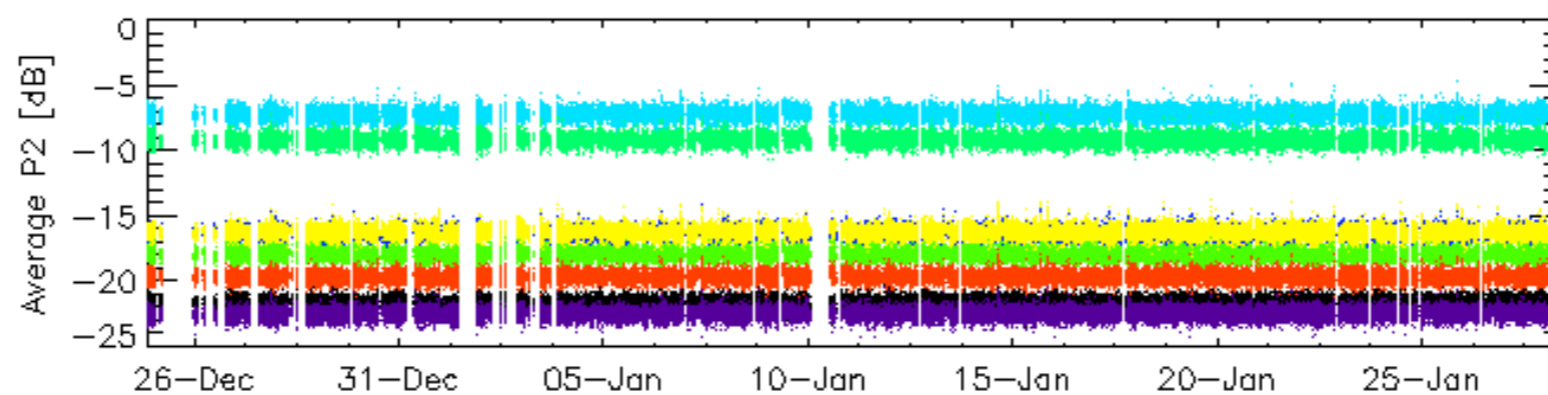
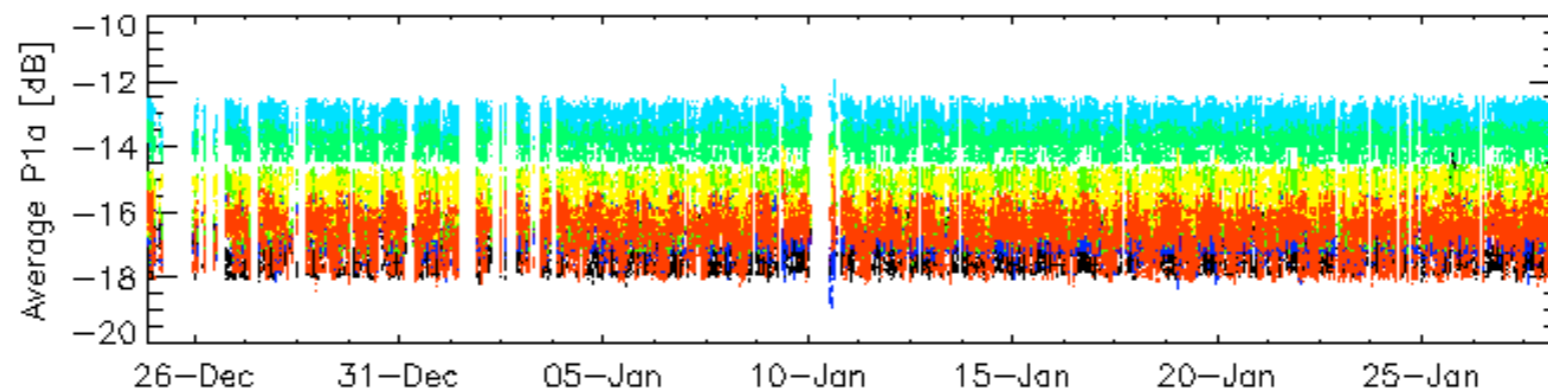
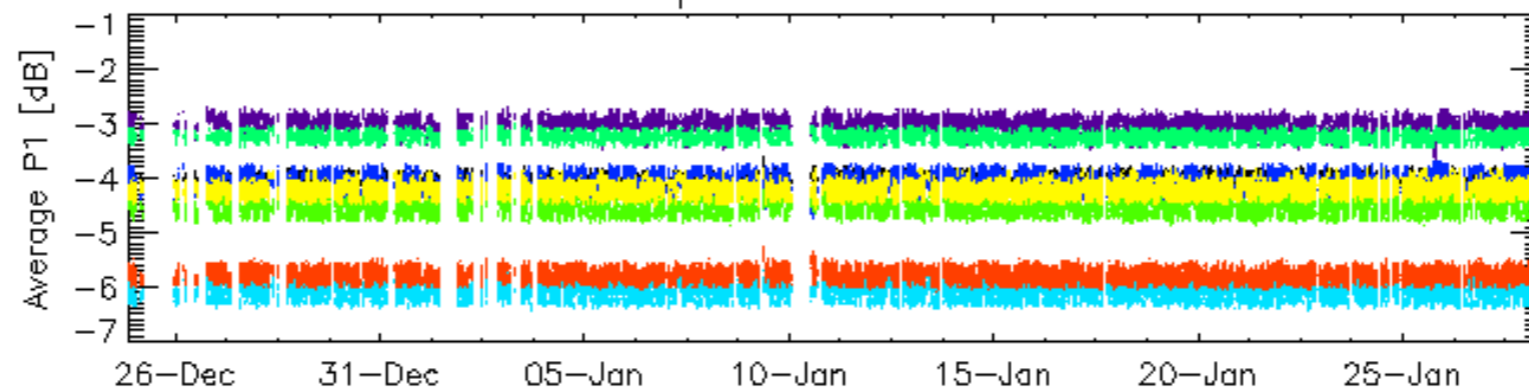


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

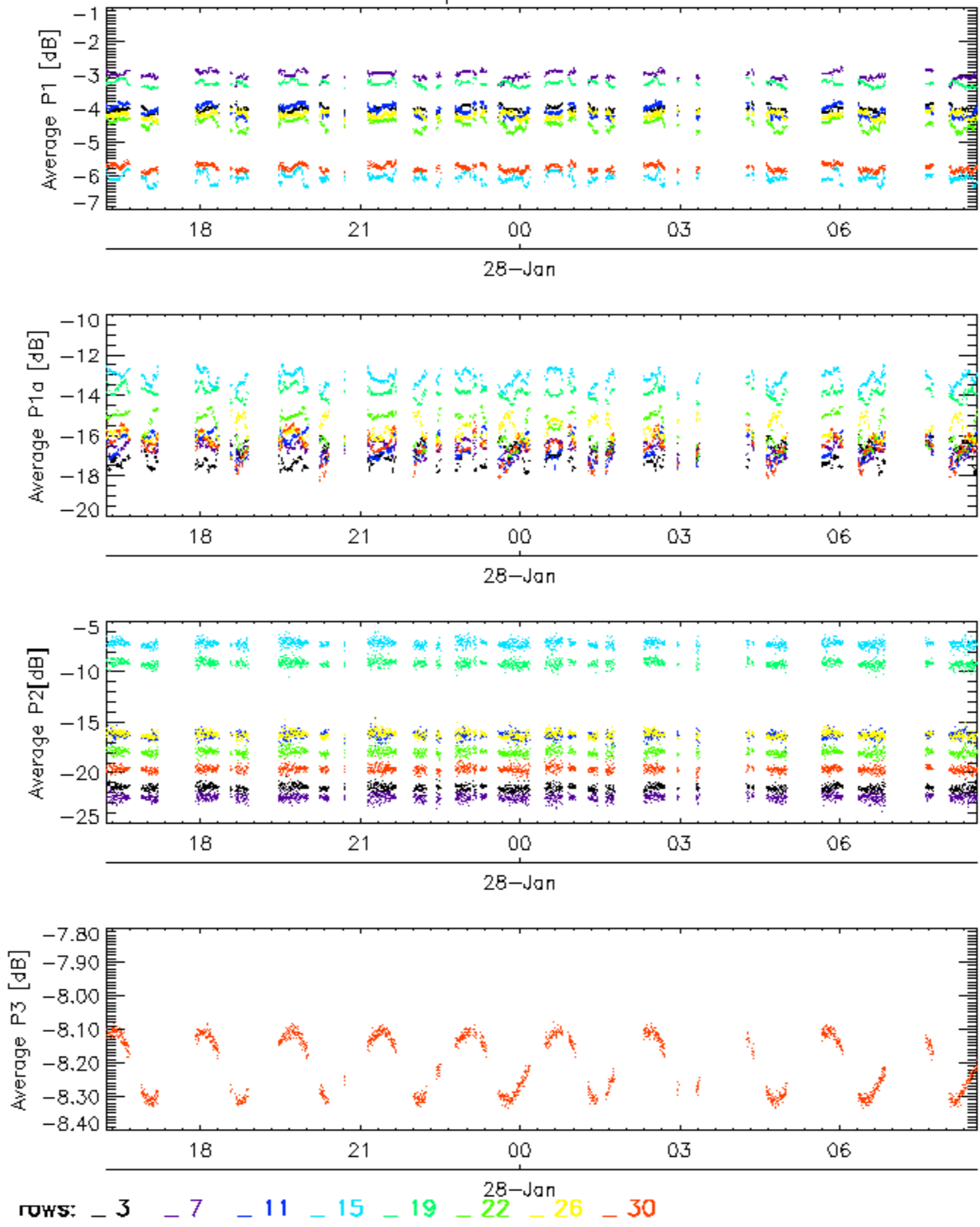


Cal pulses for WVS IS2



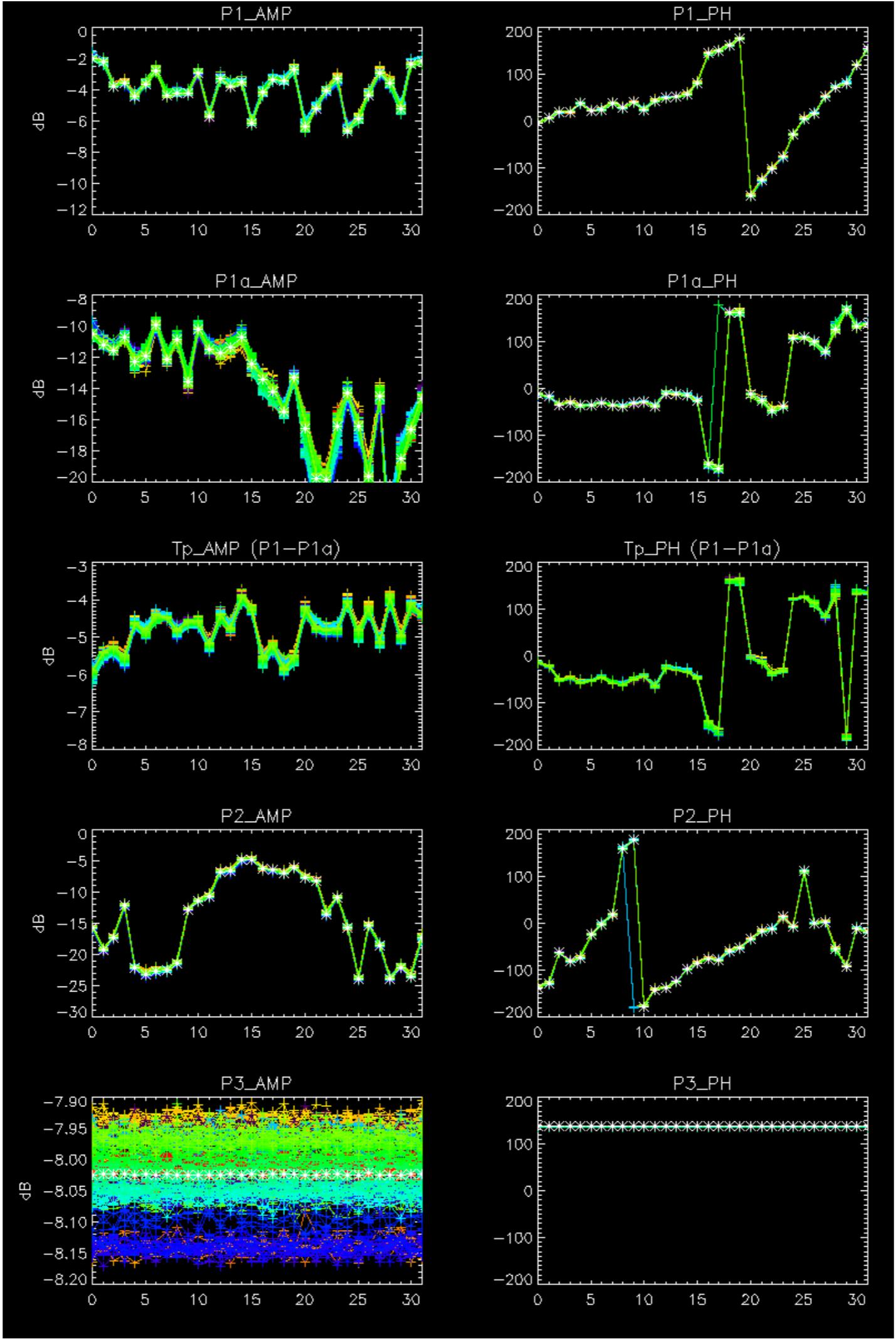
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

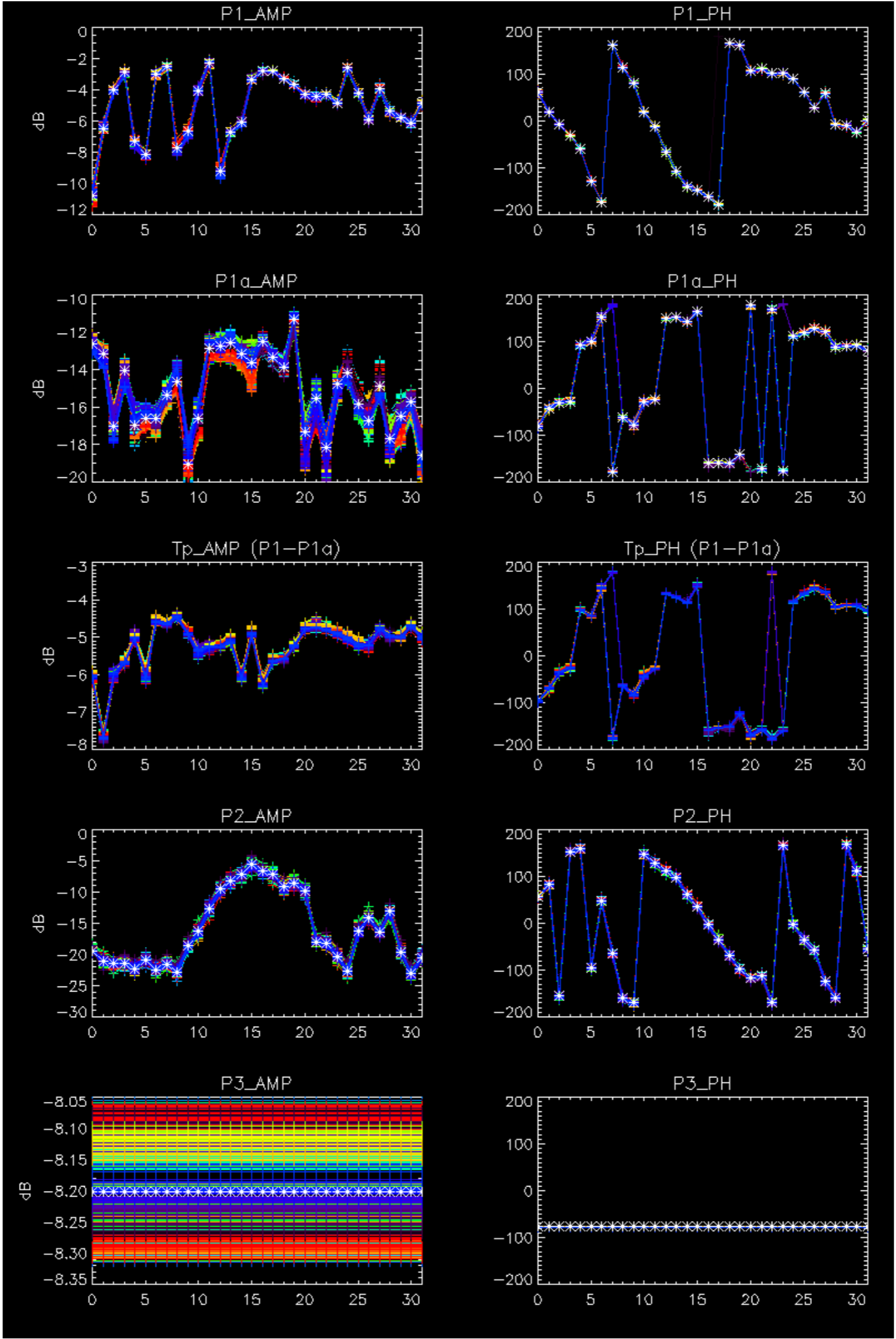
Cal pulses for WVS IS2



No anomalies observed.



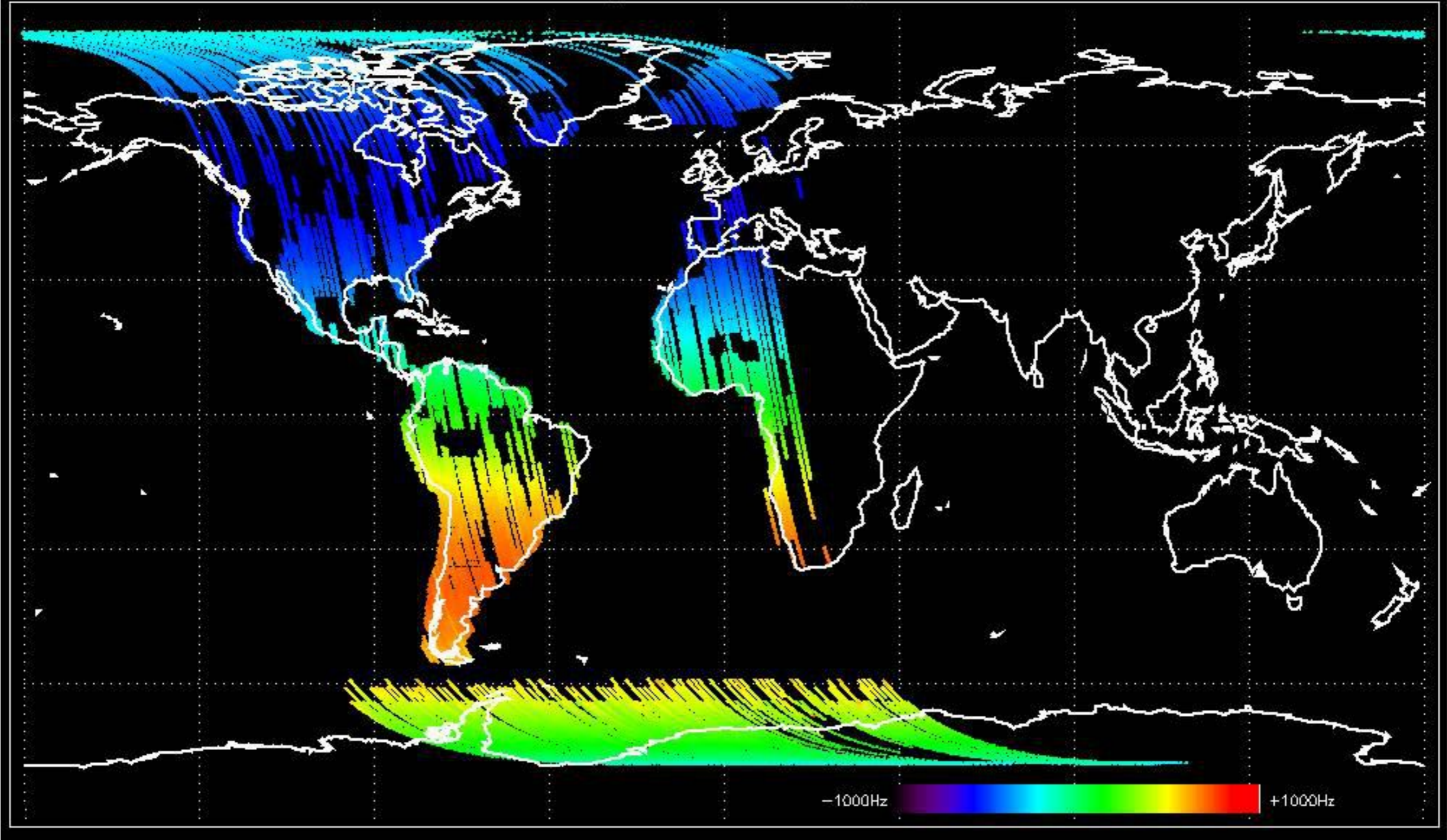




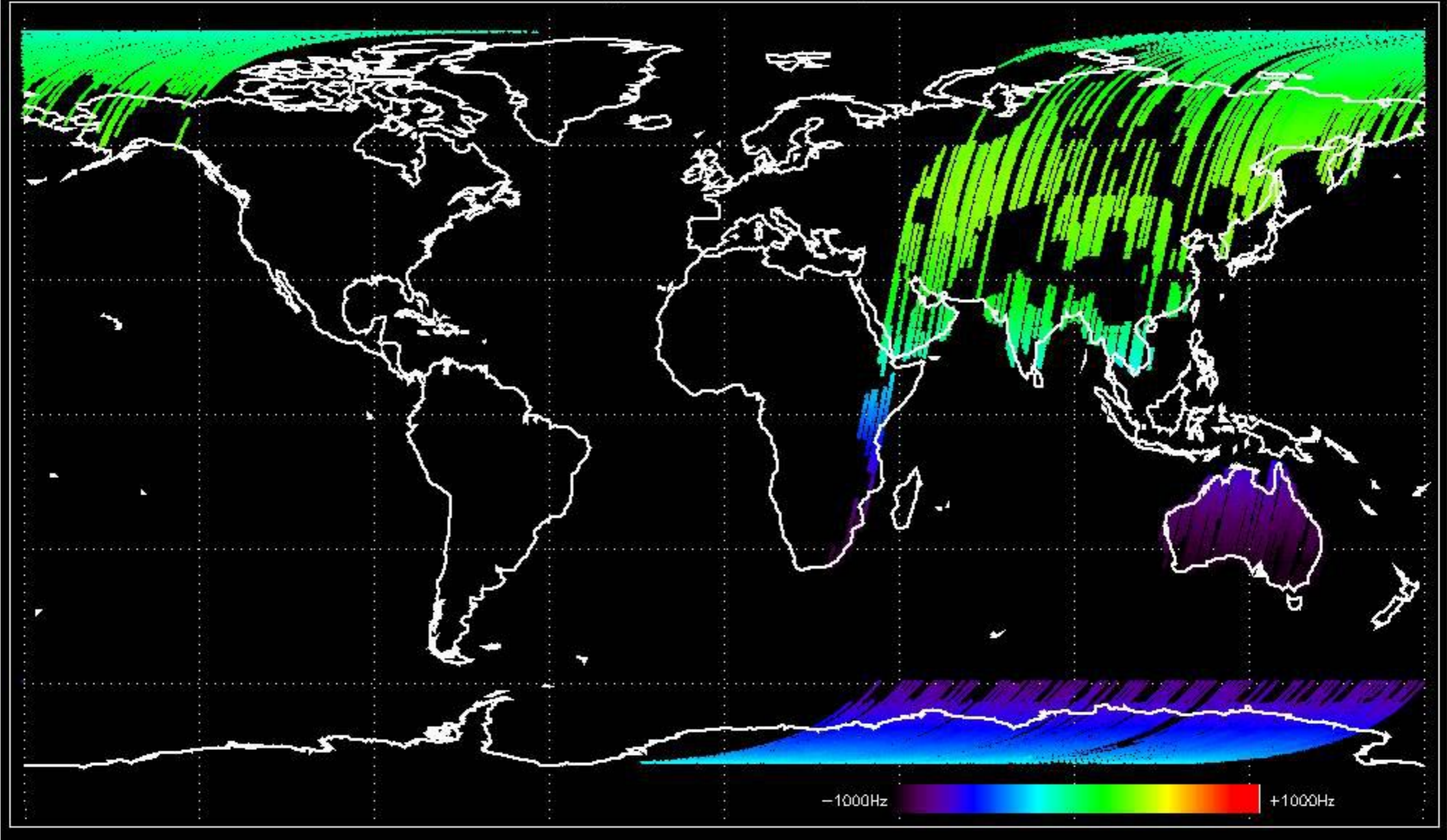
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



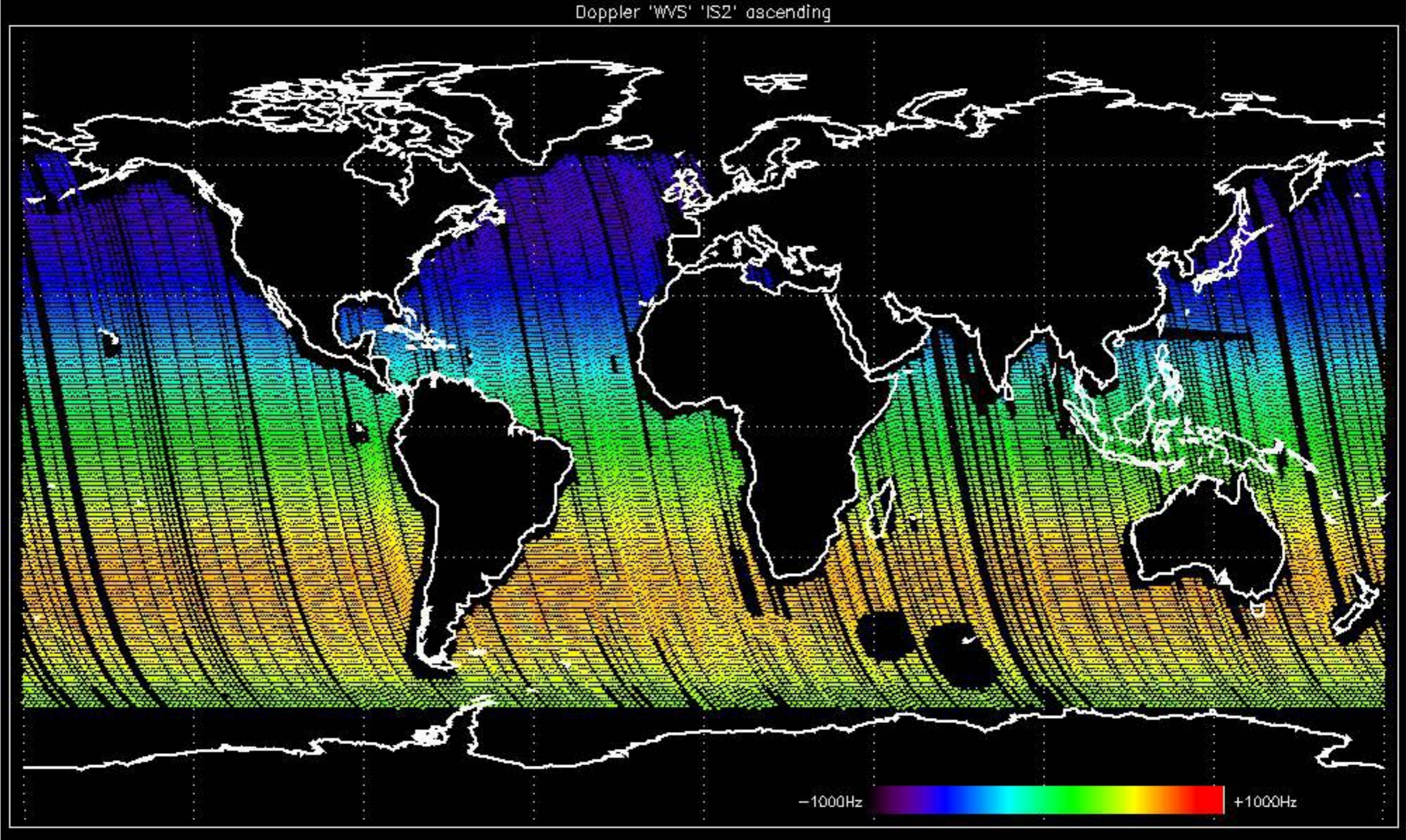
Doppler 'GM1' 'SS1' ascending



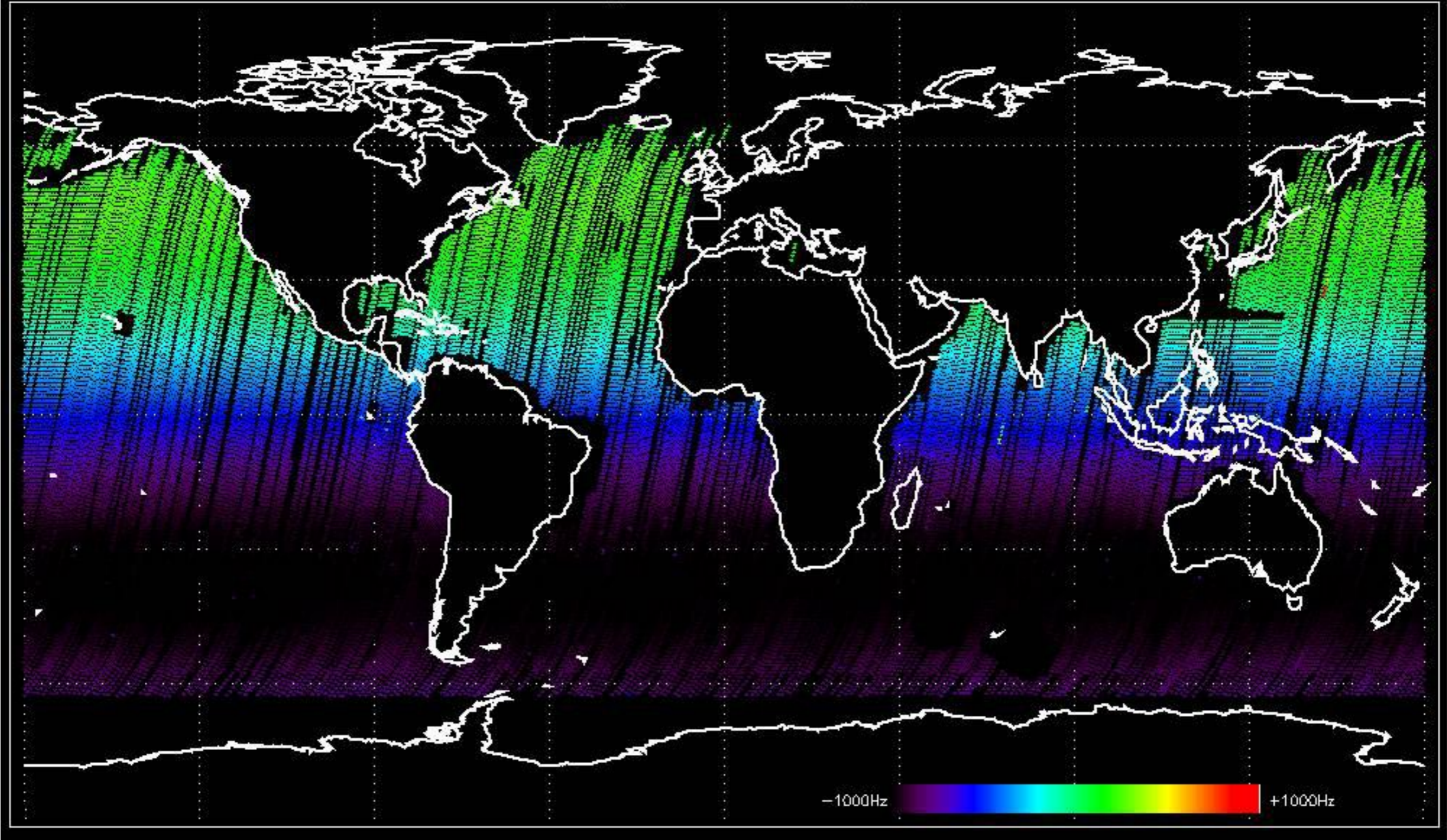
Doppler 'GM1' 'SS1' descending



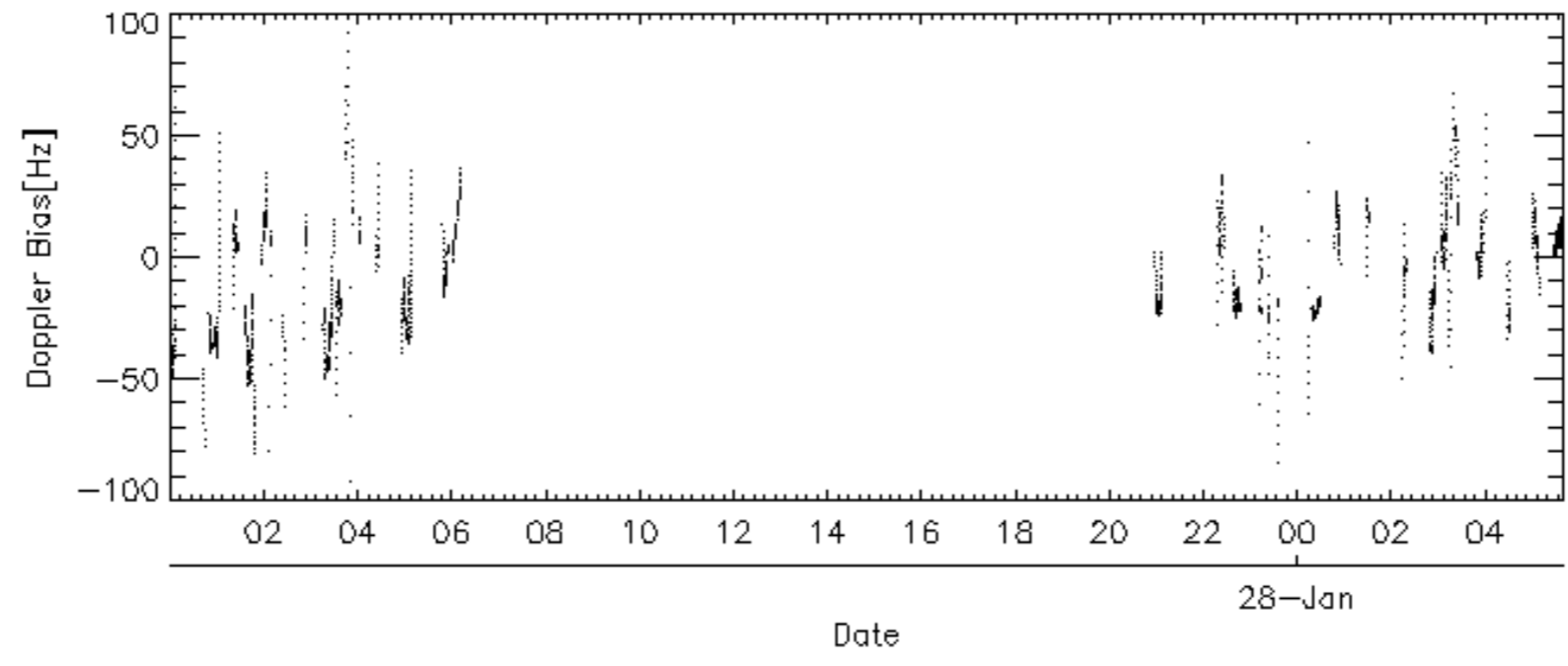
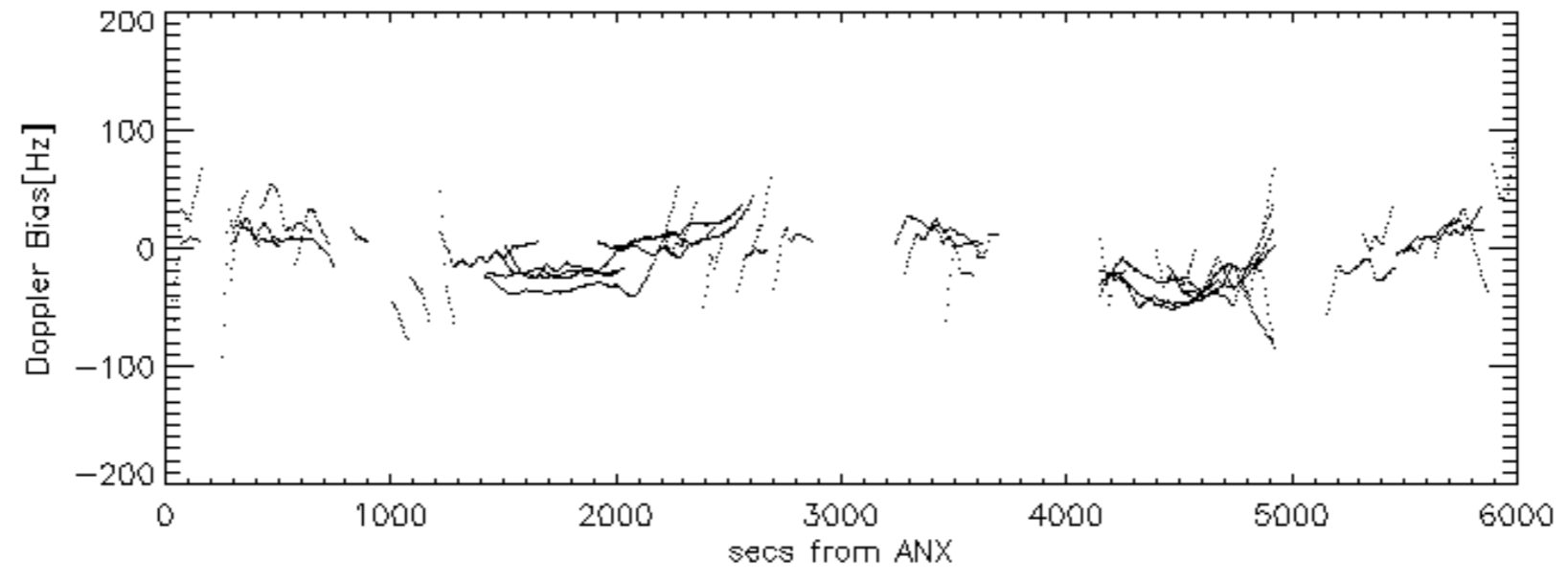
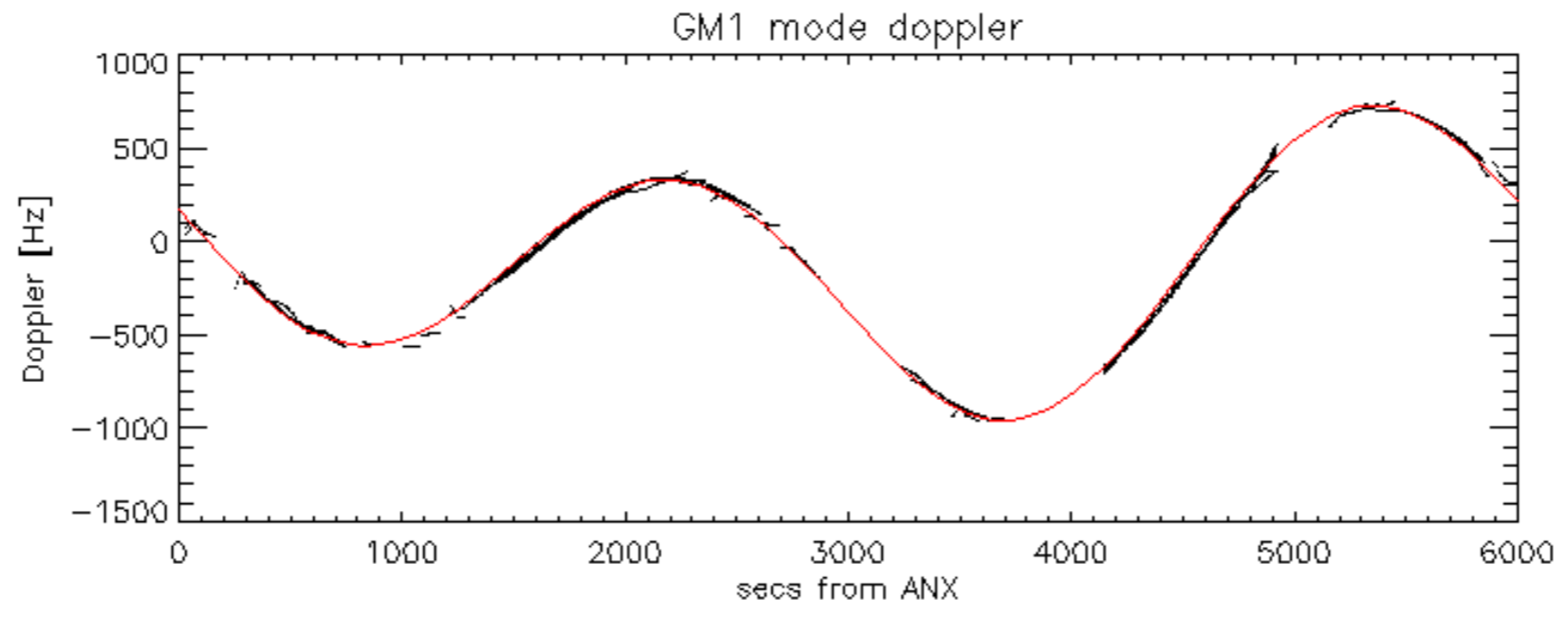
Doppler 'WVS' 'IS2' ascending

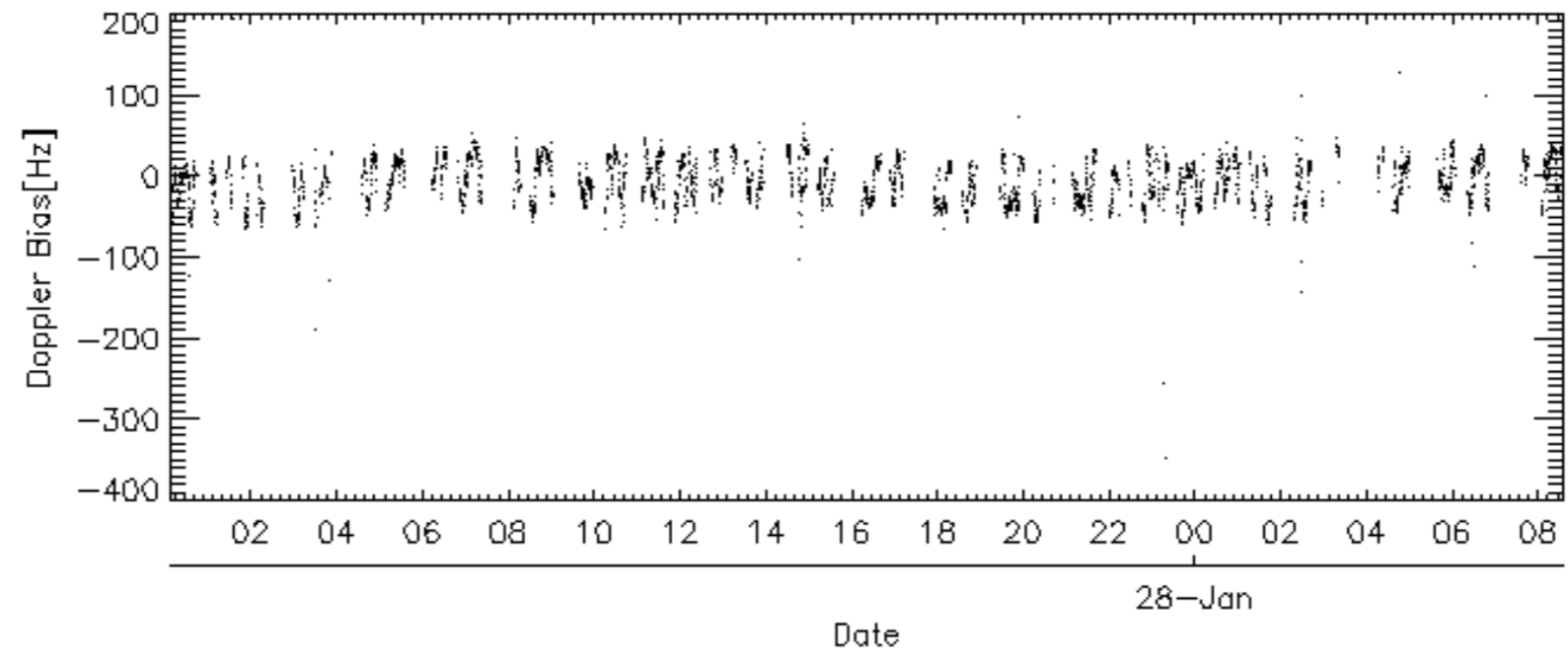
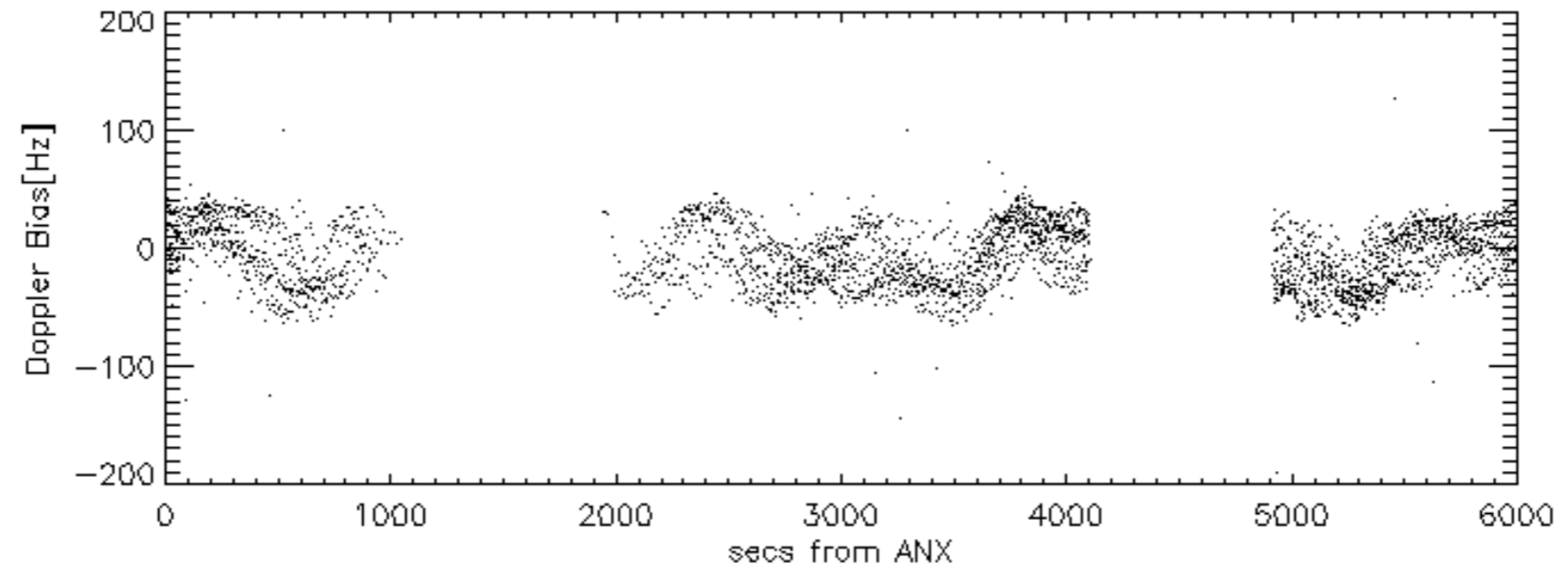
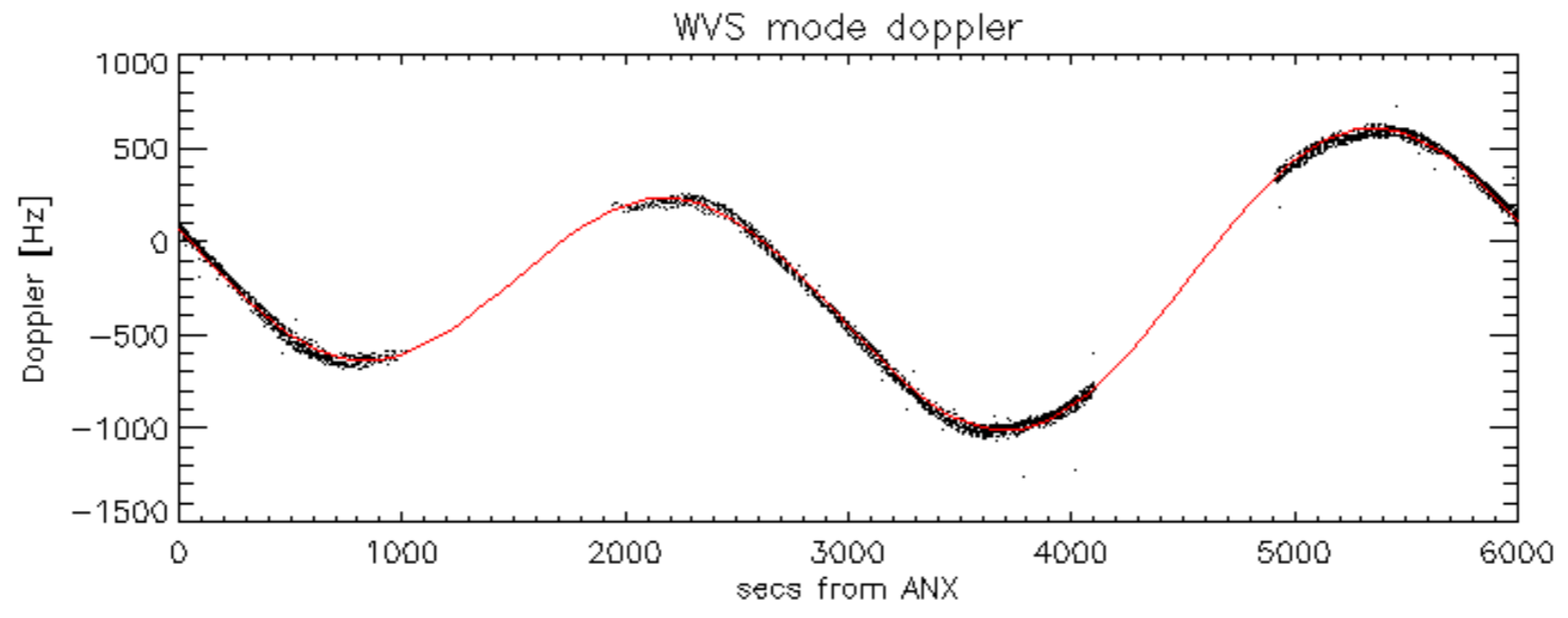


Doppler 'WVS' 'IS2' descending

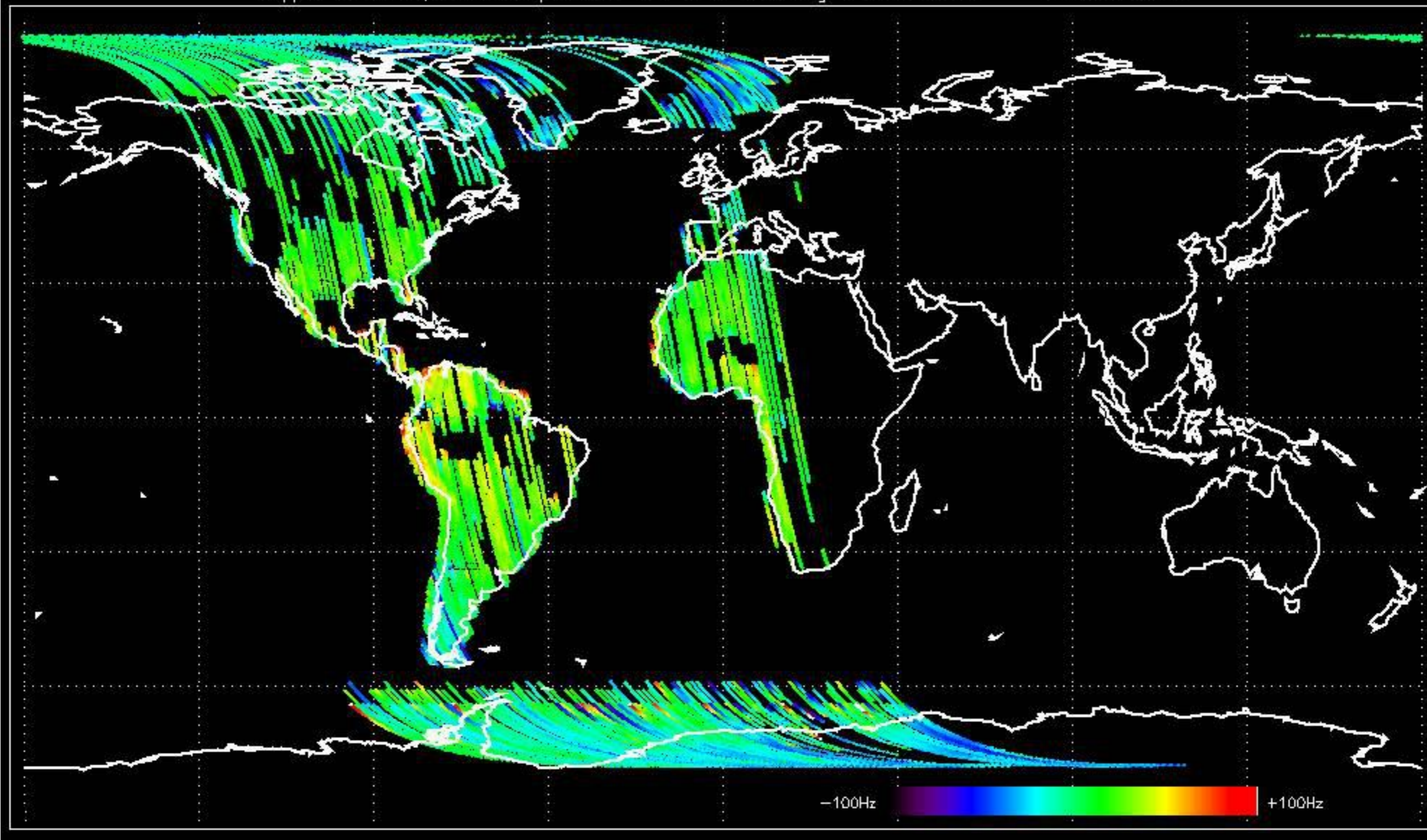




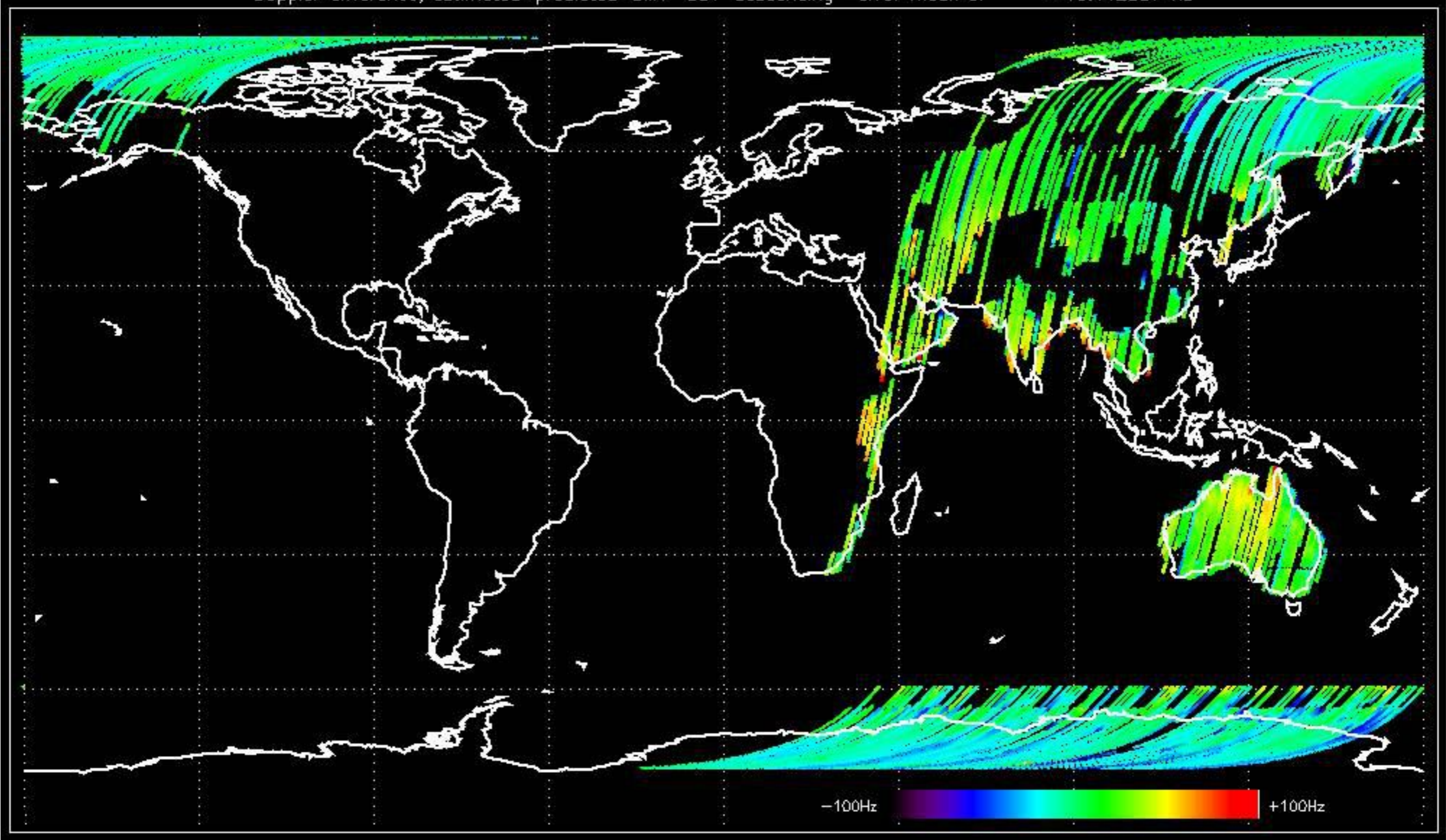




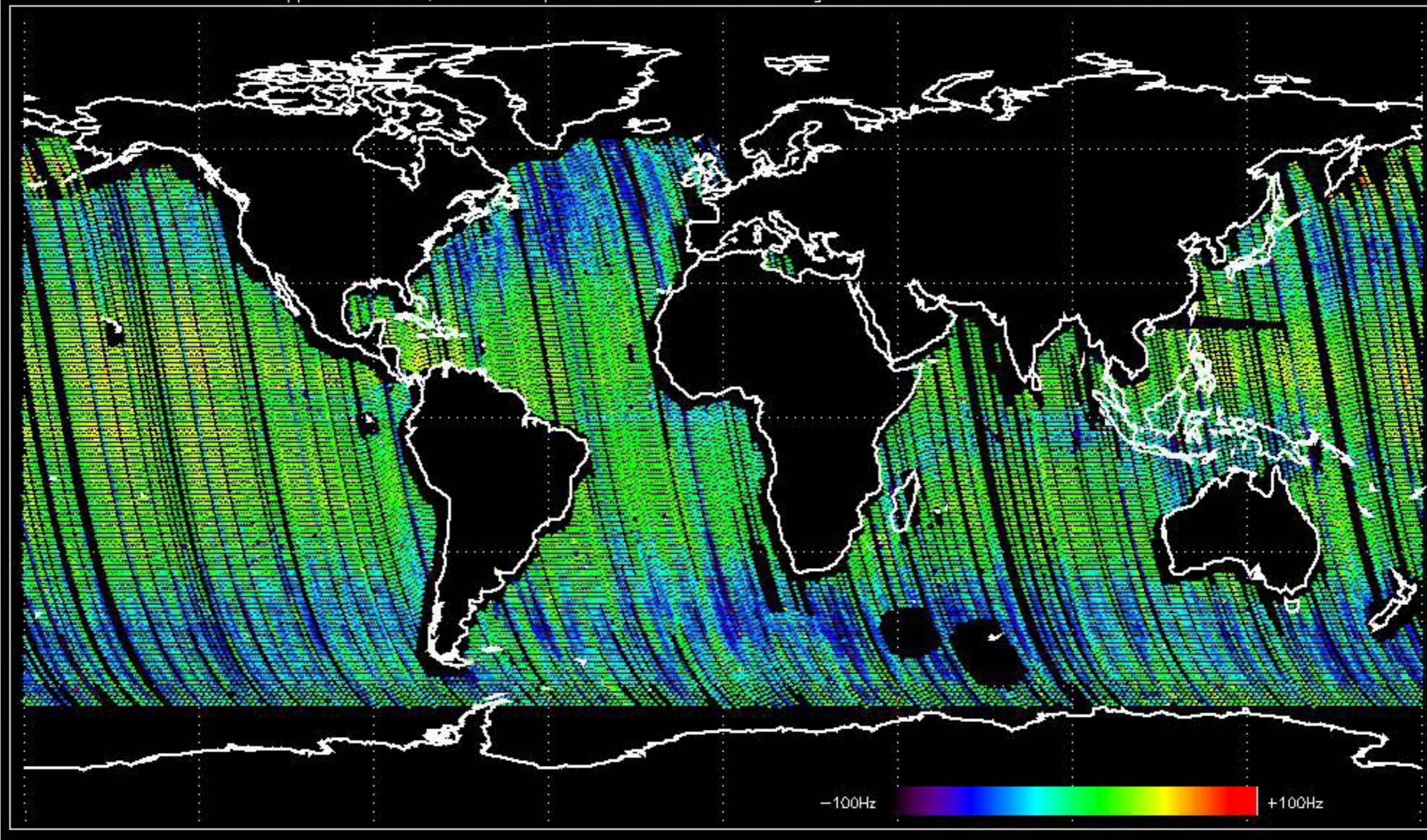
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -11.174899 Hz



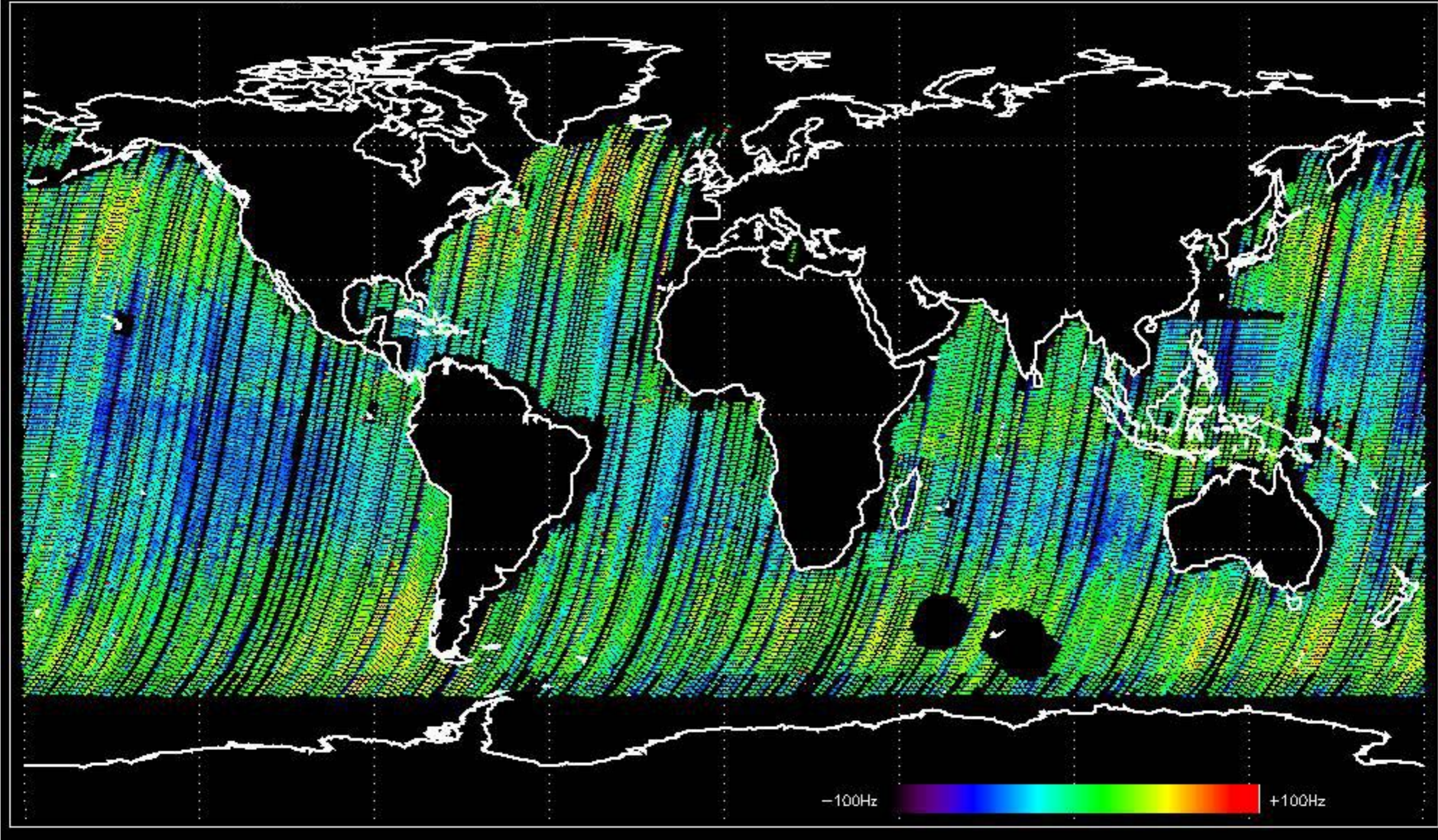
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.142507 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -8.5597522 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -10.208521 Hz



No anomalies observed on available MS products:

No anomalies observed.



















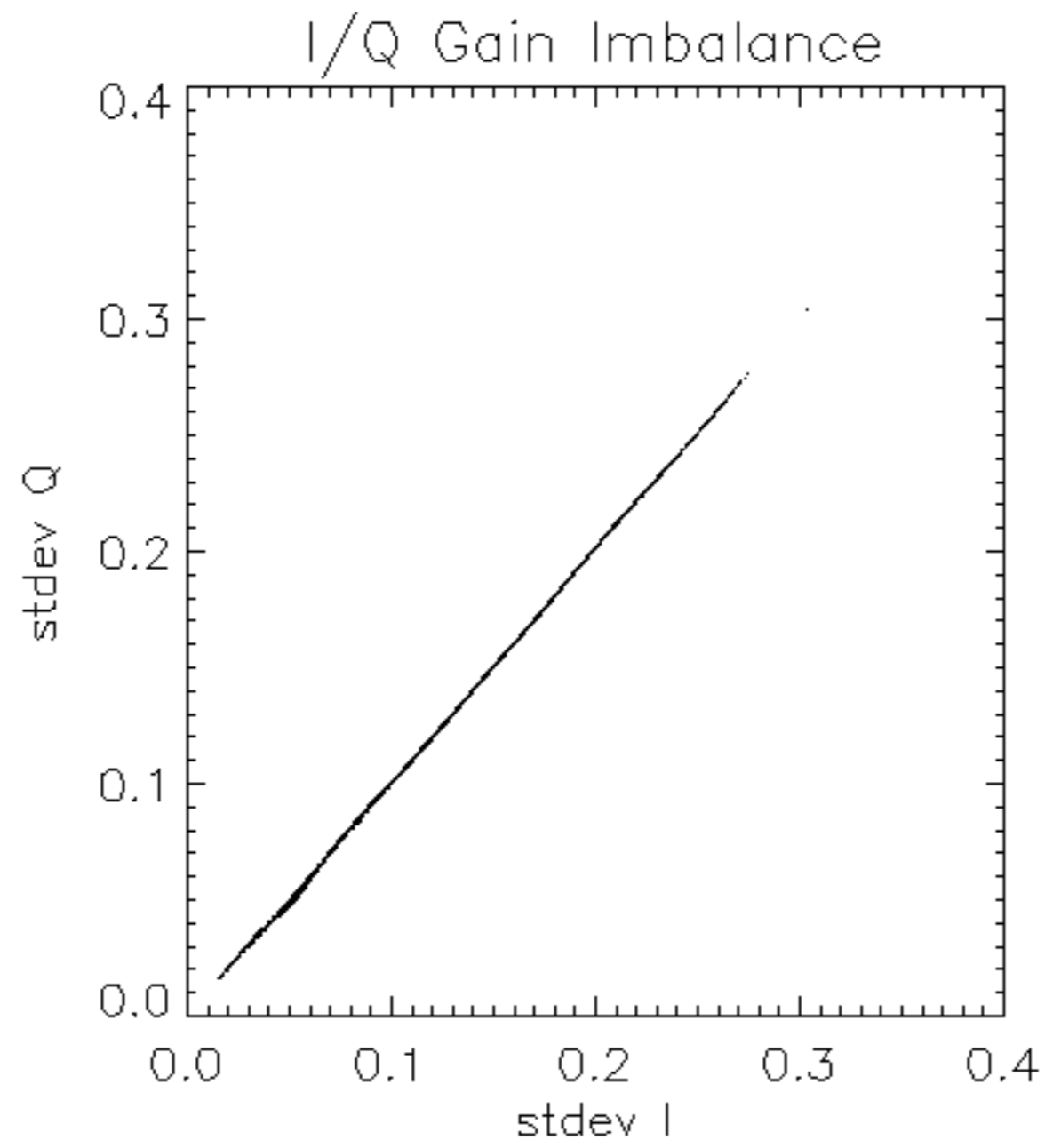


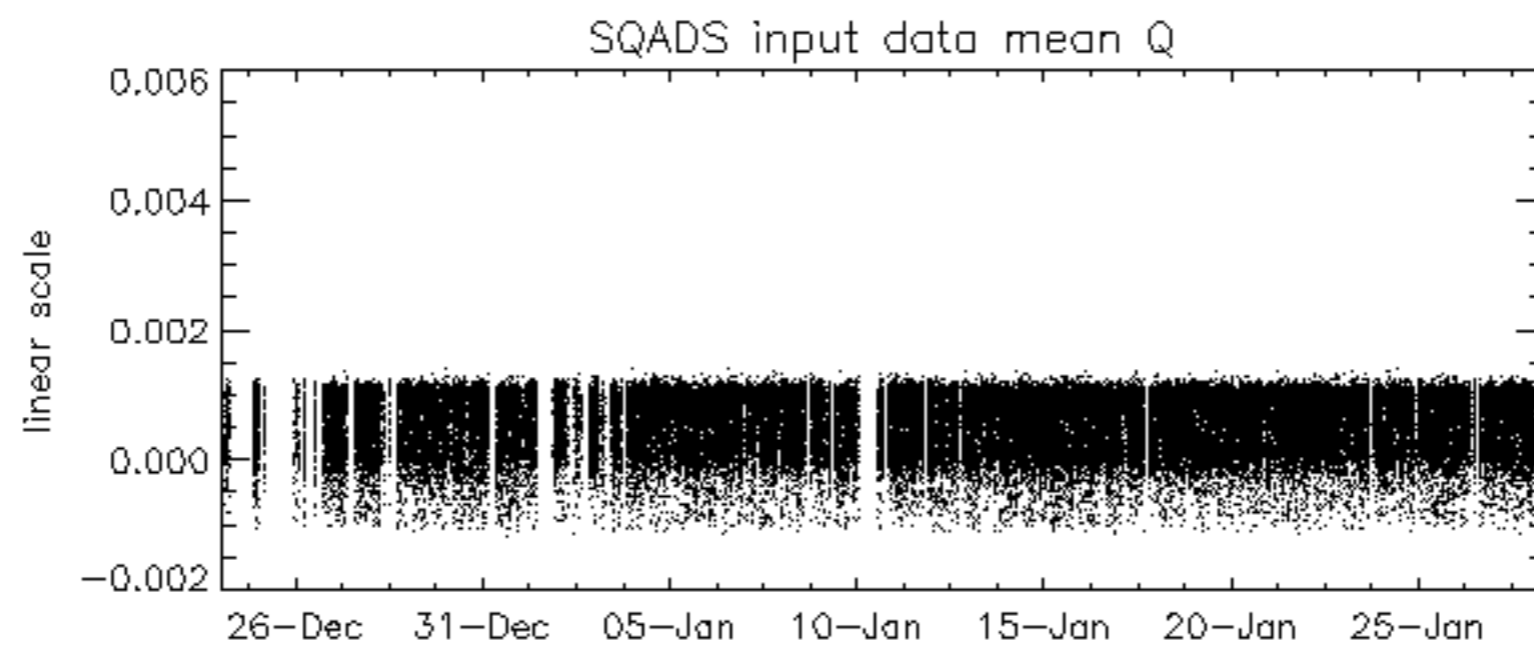
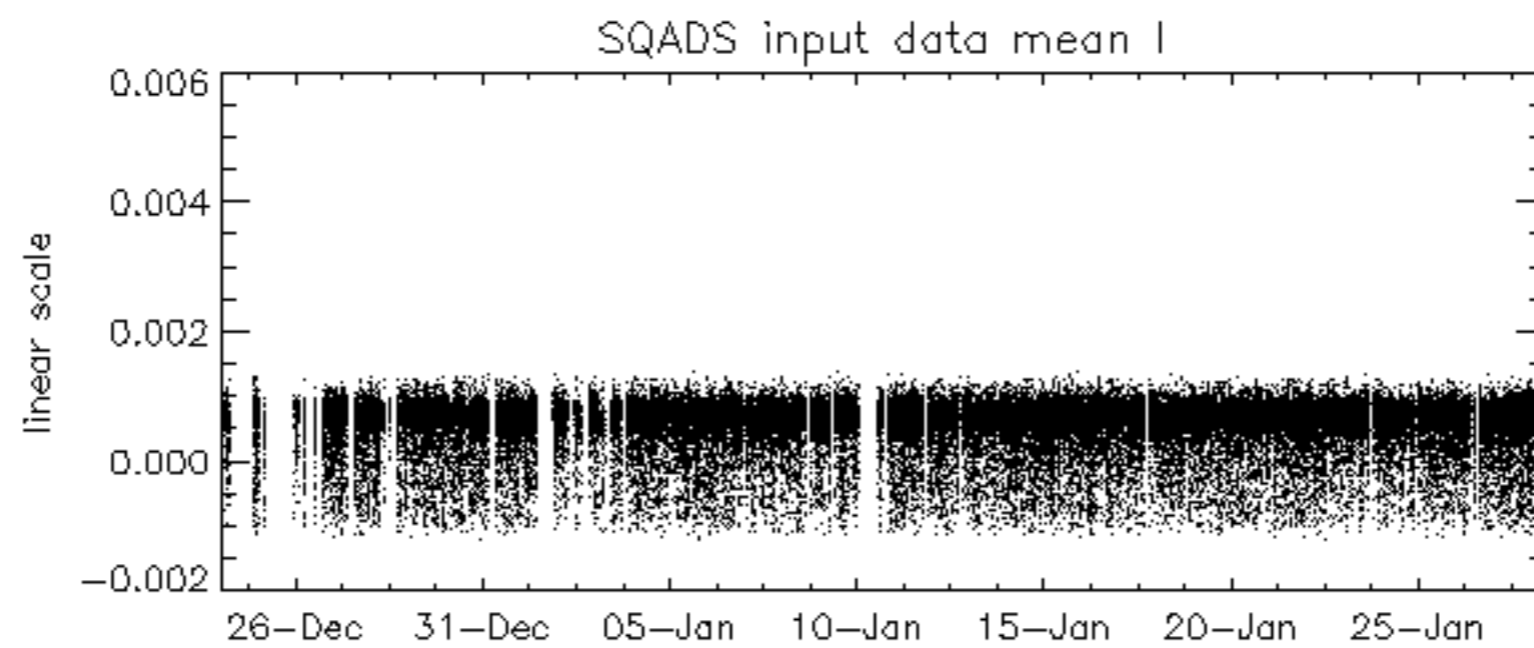
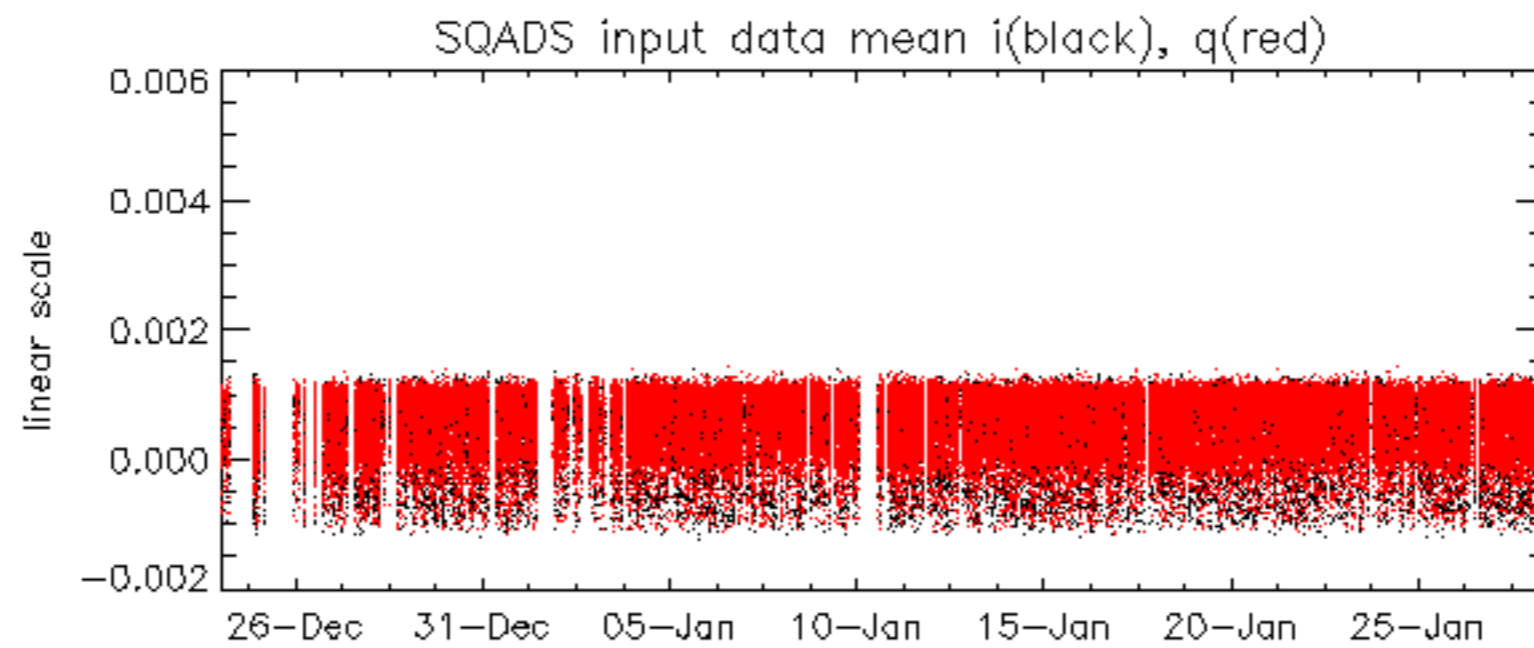


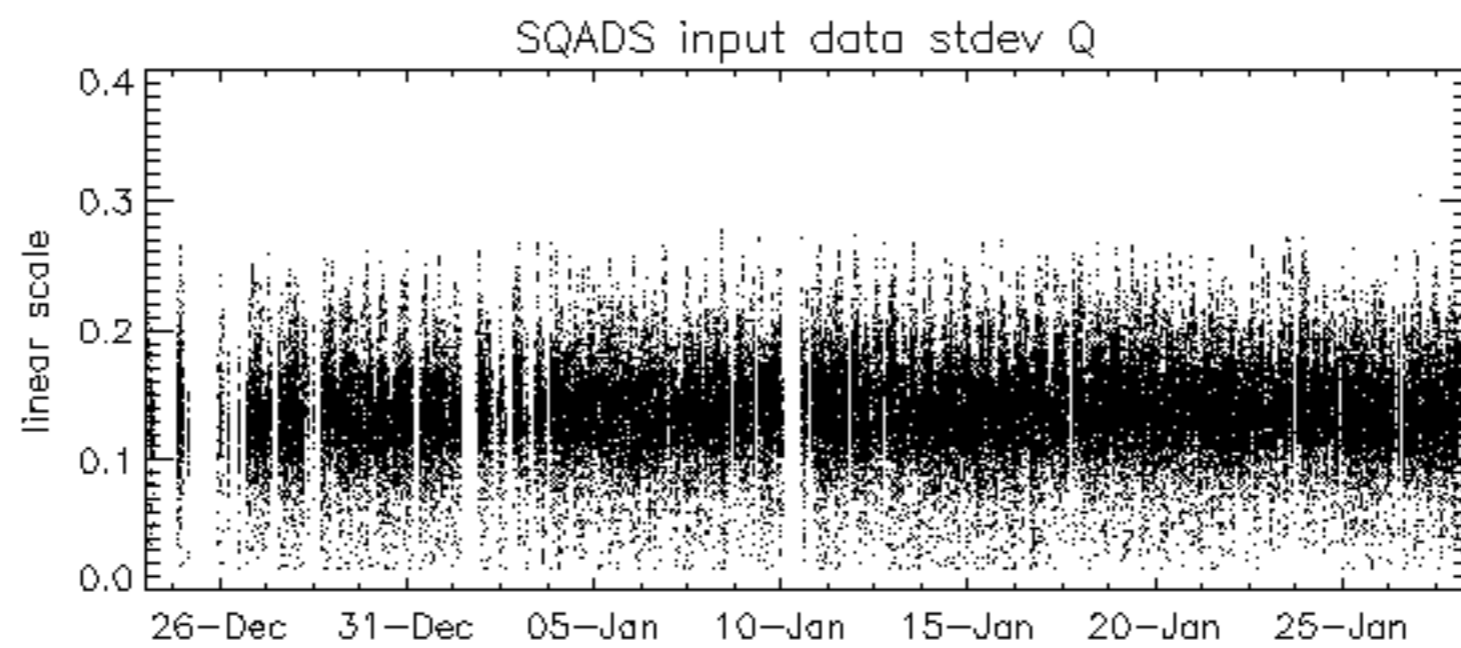
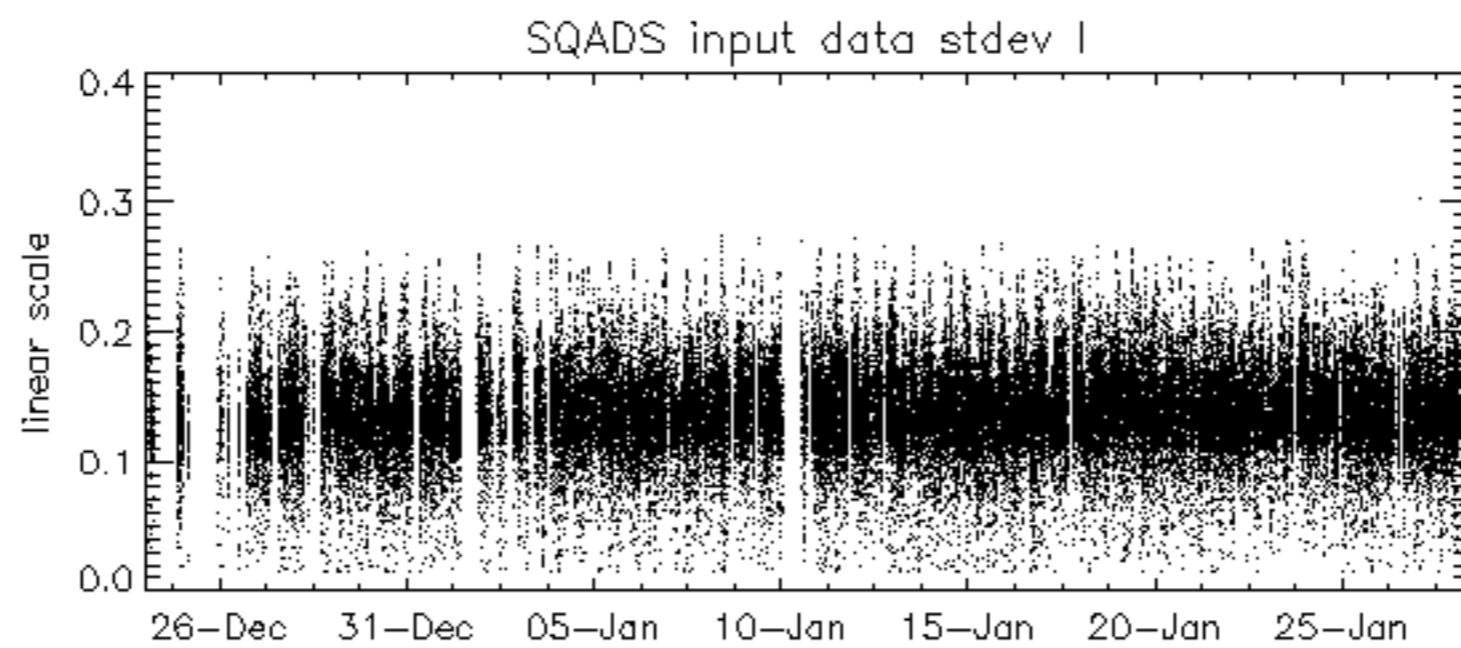
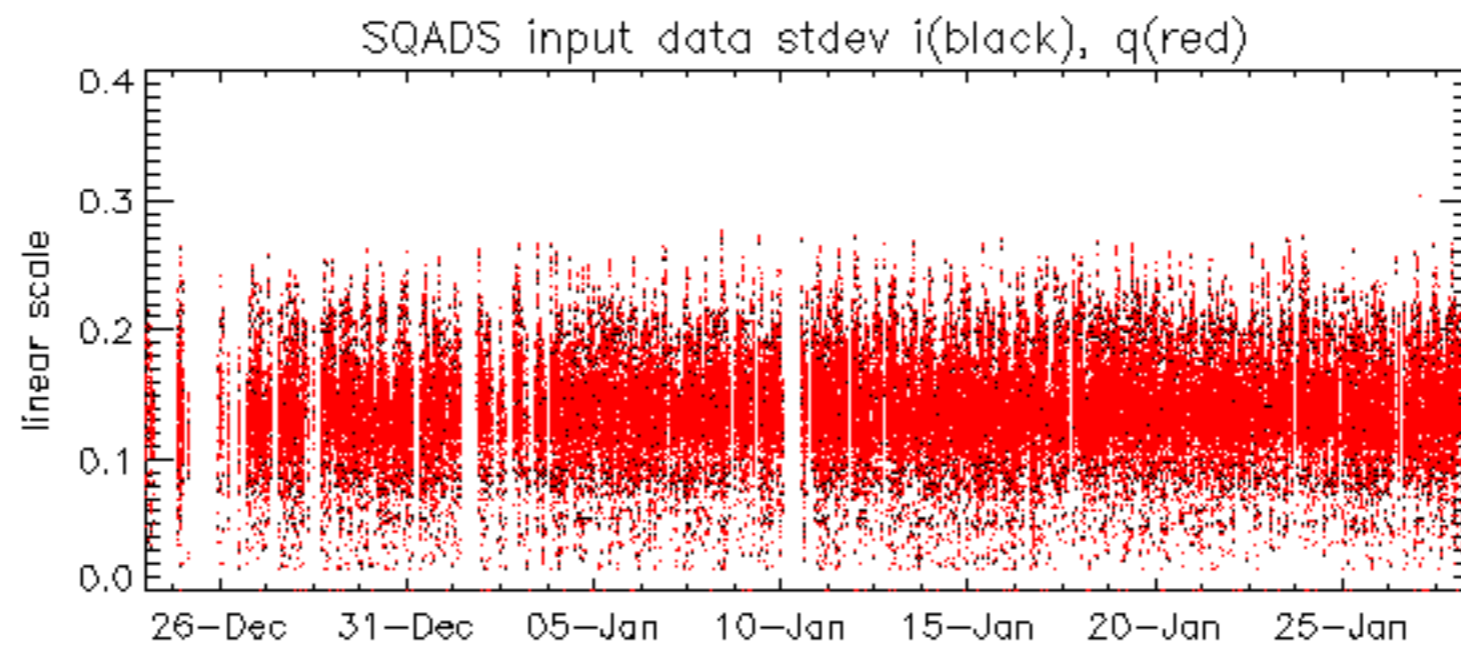


























Summary of analysis for the last 3 days 2006012[678]

The assumption is taken that the SQADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

| Filename   | num_gaps | num_missing_lines |
|--|----------|-------------------|
| ASA_IMM_1PNPDE20060126_200857_00000502044_00343_20437_1212.N1  | 0        | 11                |
| ASA_IMM_1PNPDK20060126_125400_000001222044_00339_20433_0406.N1 | 1        | 0                 |
| ASA_WSM_1PNPDE20060126_142816_000000672044_00340_20434_2512.N1 | 0        | 67                |
| ASA_WSM_1PNPDE20060127_171318_000002322044_00356_20450_2675.N1 | 0        | 3                 |











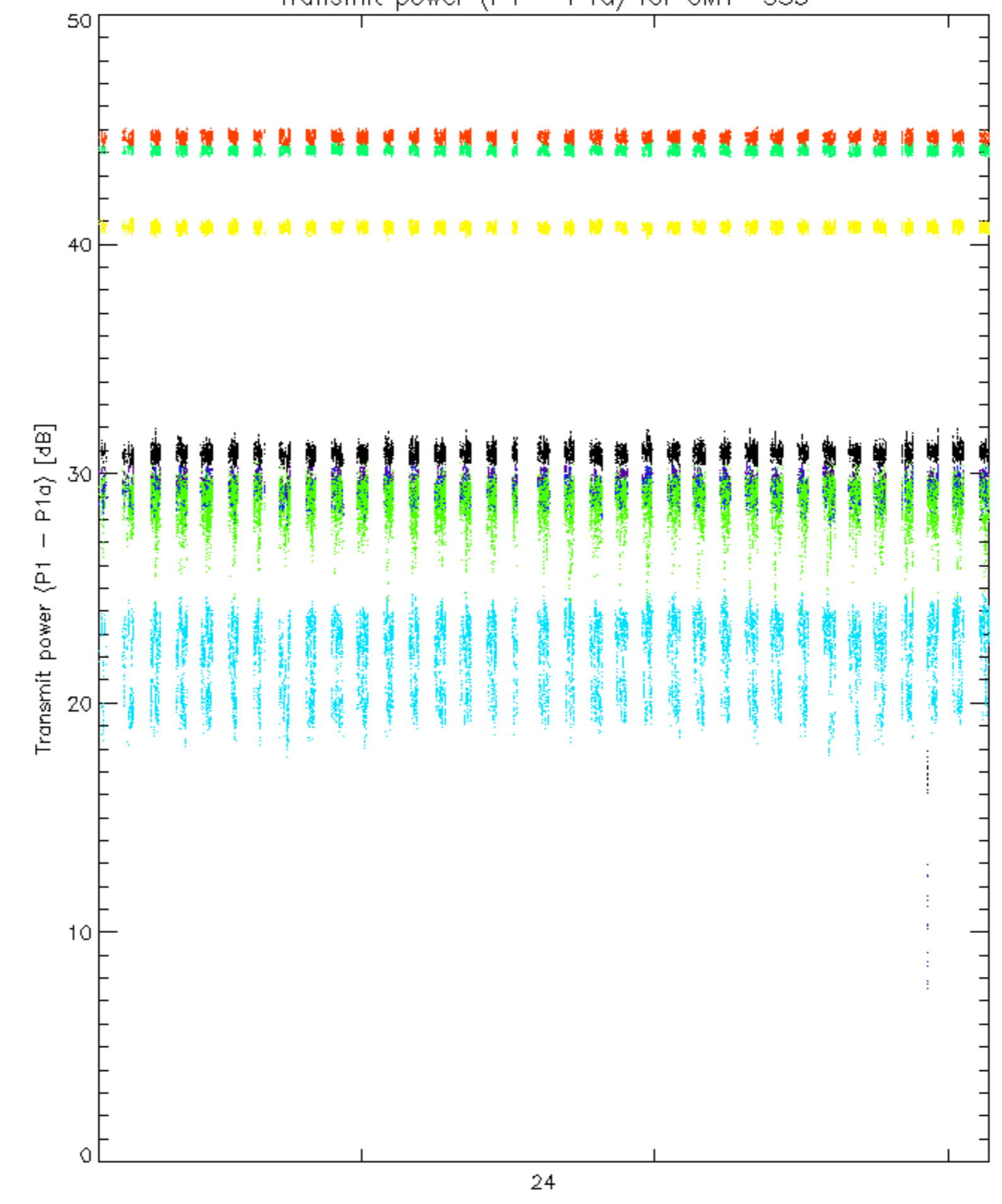




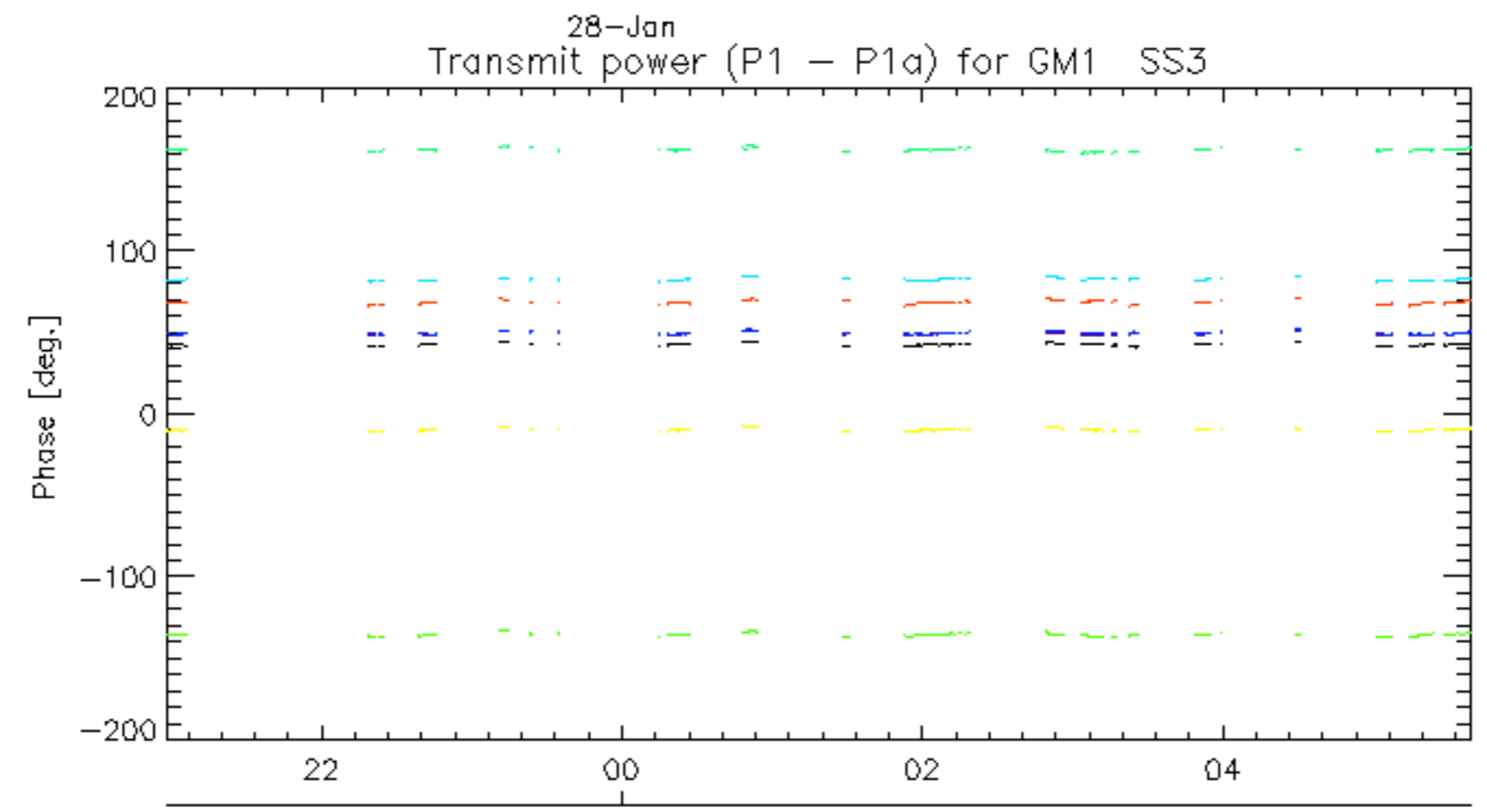
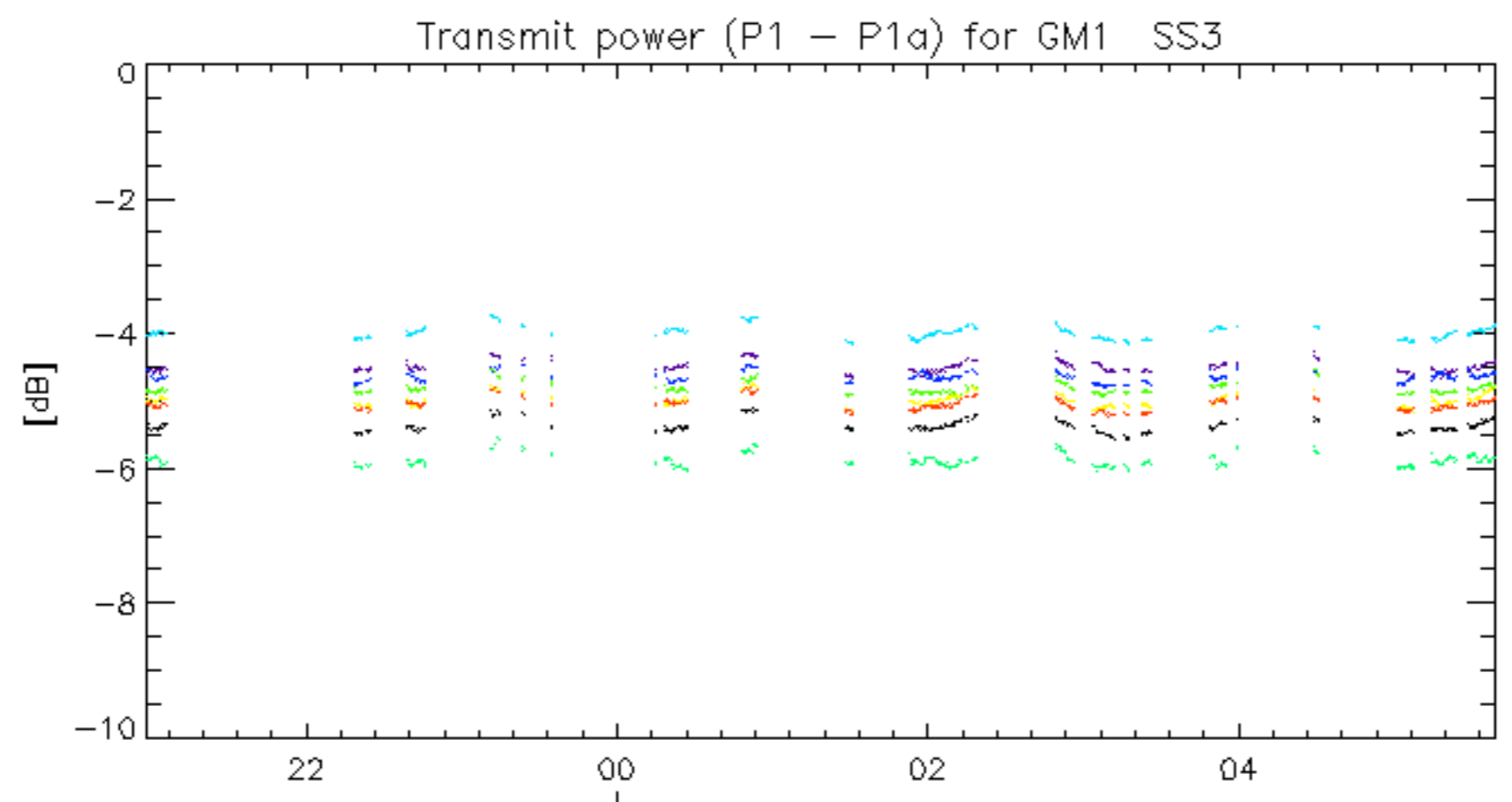




Transmit power (P1 - P1a) for GM1 SS3

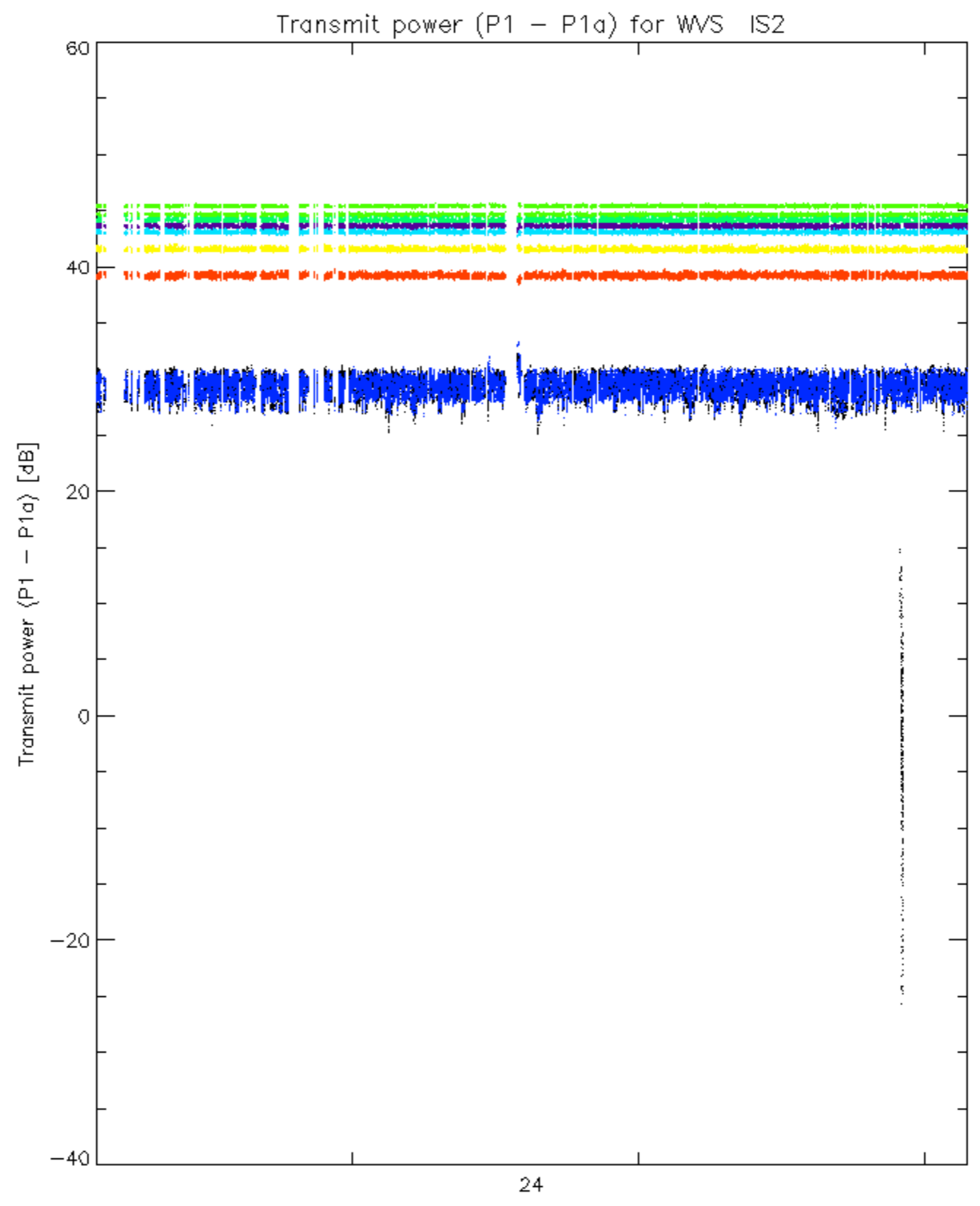


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

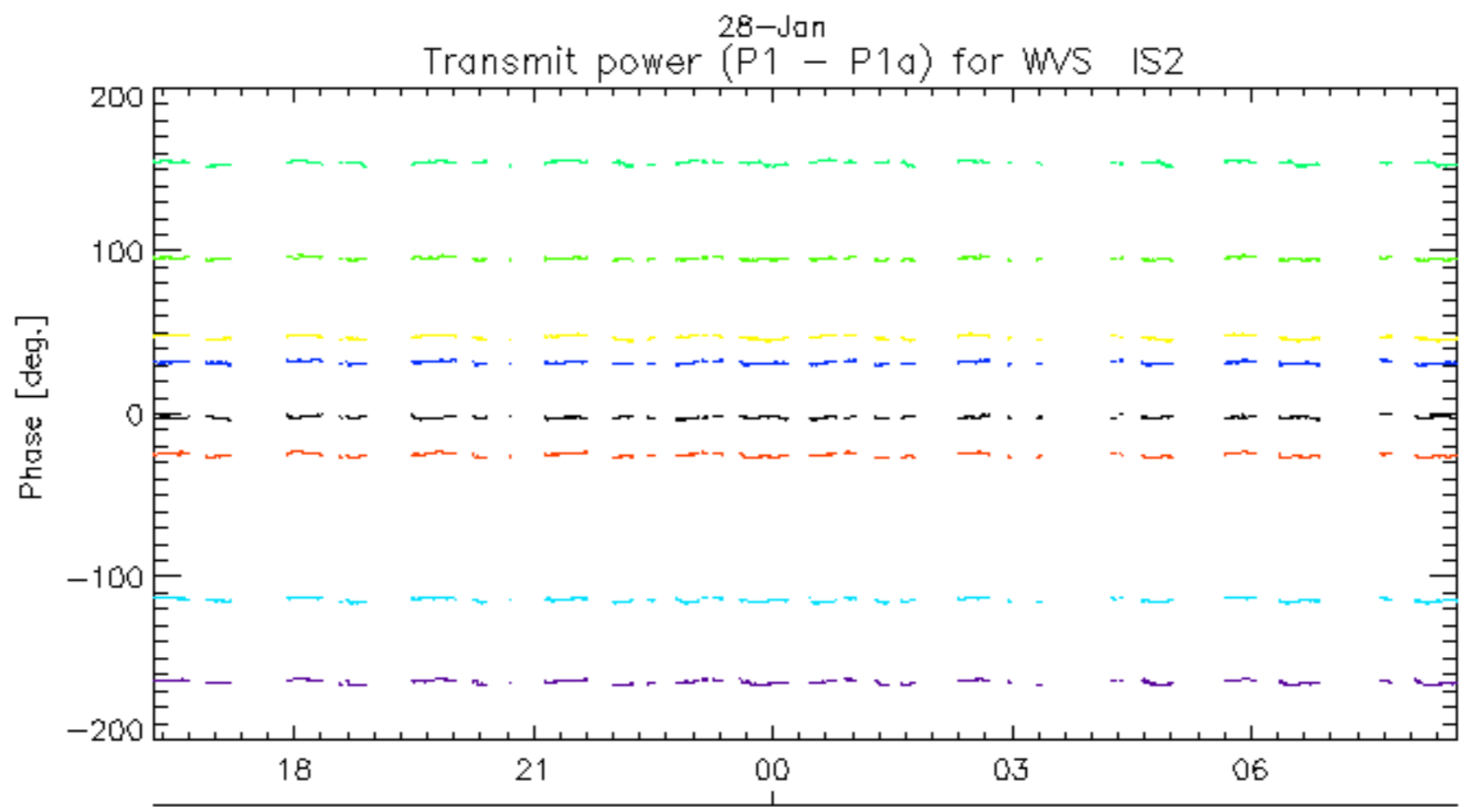
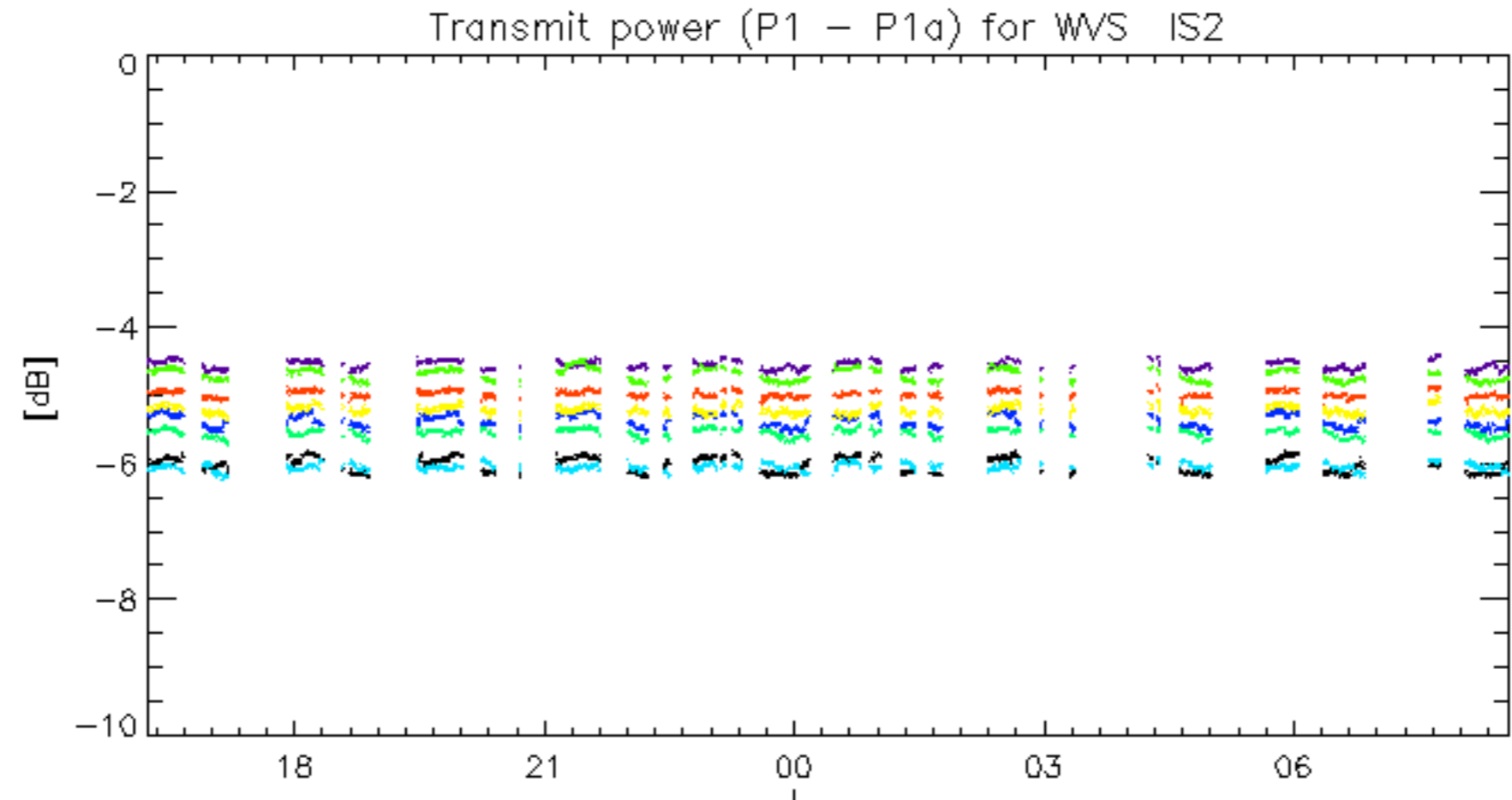


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30





rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

No unavailabilities during the reported period.