

# PRELIMINARY REPORT OF 061206

last update on Wed Dec 6 16:47:36 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 2006-12-05 00:00:00 to 2006-12-06 16:47:36

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

|   |    |    |   |   |   |
|---|----|----|---|---|---|
| ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000 | 41 | 57 | 7 | 5 | 2 |
| ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 41 | 57 | 7 | 5 | 2 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 41 | 57 | 7 | 5 | 2 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 41 | 57 | 7 | 5 | 2 |

| PDHS-E  |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE  | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000 | 42  | 53  | 50  | 17  | 33  |
| ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 42  | 53  | 50  | 17  | 33  |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 42  | 53  | 50  | 17  | 33  |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 42  | 53  | 50  | 17  | 33  |

## 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            | 20061206 073841 |
| H            | 20061205 081019 |

### 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 |
|----------------------|------------------------------|
| ☒                    | ☒                            |
| ☒                    | ☒                            |
| ☒                    | ☒                            |
| ☒                    | ☒                            |

**4 - Internal calibration Results**

No anomalies observed.

**4.1 - Daily statistics**

**4.1.1 - Evolution for WVS**

| Evolution of cal pulses for WVS |
|---------------------------------|
| ☒                               |
| ☒                               |

**4.1.2 - Evolution for GM1**

| Evolution of cal pulses for GM1 |
|---------------------------------|
| ☒                               |
| ☒                               |

**4.2 - Cyclic statistics**

**4.2.1 - Evolution for WVS**

| Evolution of cal pulses for WVS |
|---------------------------------|
| ☒                               |

**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    | -3.959100  | 0.008371   | -0.008468       |
| 7   | P1    | -3.151117  | 0.024096   | -0.005782       |
| 11  | P1    | -4.129461  | 0.025296   | 0.003541        |
| 15  | P1    | -6.302393  | 0.015030   | -0.047893       |
| 19  | P1    | -3.620756  | 0.006411   | -0.060937       |
| 22  | P1    | -4.649767  | 0.013032   | -0.020190       |
| 26  | P1    | -3.950230  | 0.010512   | -0.007829       |
| 30  | P1    | -5.873113  | 0.009588   | -0.050018       |
| 3   | P1    | -16.515596 | 0.237427   | -0.005077       |
| 7   | P1    | -17.288774 | 0.182033   | -0.054889       |
| 11  | P1    | -17.189413 | 0.454551   | -0.061870       |
| 15  | P1    | -13.062860 | 0.136835   | -0.028413       |
| 19  | P1    | -14.933046 | 0.091630   | -0.139789       |
| 22  | P1    | -15.854380 | 0.530813   | 0.003392        |
| 26  | P1    | -15.055363 | 0.196226   | -0.034133       |
| 30  | P1    | -17.490511 | 0.475355   | -0.116425       |

**P2 Cyclic statistics**

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -20.829910 | 0.092337   | 0.059213        |
| 7   | P2    | -21.732670 | 0.094762   | -0.003590       |
| 11  | P2    | -15.632890 | 0.103358   | 0.105431        |
| 15  | P2    | -7.120534  | 0.107946   | -0.001689       |
| 19  | P2    | -9.190027  | 0.105902   | -0.006277       |
| 22  | P2    | -18.233816 | 0.098225   | -0.019259       |
| 26  | P2    | -16.560680 | 0.113132   | -0.060910       |
| 30  | P2    | -19.468016 | 0.088981   | 0.025333        |

**P3 Cyclic statistics**

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.241541 | 0.008785   | -0.017967       |
| 7   | P3    | -8.241541 | 0.008785   | -0.017967       |
| 11  | P3    | -8.241541 | 0.008785   | -0.017967       |
| 15  | P3    | -8.241541 | 0.008785   | -0.017967       |
| 19  | P3    | -8.241541 | 0.008785   | -0.017967       |
| 22  | P3    | -8.241541 | 0.008785   | -0.017967       |
| 26  | P3    | -8.241480 | 0.008795   | -0.018362       |
| 30  | P3    | -8.241480 | 0.008795   | -0.018362       |

#### 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    | -3.909870  | 0.024518   | -0.011545       |
| 7   | P1    | -2.498528  | 0.115829   | 0.063594        |
| 11  | P1    | -2.855131  | 0.026995   | 0.022877        |
| 15  | P1    | -3.681930  | 0.039980   | 0.015046        |
| 19  | P1    | -3.527298  | 0.017660   | -0.037476       |
| 22  | P1    | -5.033734  | 0.022578   | 0.039746        |
| 26  | P1    | -6.005706  | 0.028253   | -0.057161       |
| 30  | P1    | -5.324389  | 0.039055   | -0.069036       |
| 3   | P1    | -11.725843 | 0.089678   | -0.038036       |
| 7   | P1    | -10.056908 | 0.194888   | 0.002826        |
| 11  | P1    | -10.327341 | 0.129096   | 0.009894        |
| 15  | P1    | -10.731628 | 0.155814   | 0.127205        |
| 19  | P1    | -15.699433 | 0.105579   | -0.092728       |
| 22  | P1    | -21.492716 | 1.442705   | -0.399396       |
| 26  | P1    | -16.057993 | 0.325889   | -0.091139       |
| 30  | P1    | -17.894627 | 0.386662   | 0.080047        |

### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -16.461605 | 0.104868   | -0.030884       |
| 7   | P2    | -22.227226 | 0.267309   | -0.034170       |
| 11  | P2    | -10.926675 | 0.120693   | 0.061108        |
| 15  | P2    | -4.972353  | 0.211085   | -0.053203       |
| 19  | P2    | -6.953207  | 0.240964   | -0.014099       |
| 22  | P2    | -8.253310  | 0.169632   | 0.006430        |
| 26  | P2    | -24.321133 | 0.186693   | 0.023843        |
| 30  | P2    | -21.951479 | 0.148241   | 0.003836        |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.087859 | 0.003867   | -0.012475       |
| 7   | P3    | -8.087797 | 0.003859   | -0.012436       |
| 11  | P3    | -8.087898 | 0.003863   | -0.012273       |
| 15  | P3    | -8.087770 | 0.003859   | -0.012483       |
| 19  | P3    | -8.087861 | 0.003865   | -0.012318       |
| 22  | P3    | -8.087786 | 0.003855   | -0.012828       |
| 26  | P3    | -8.087749 | 0.003868   | -0.012519       |
| 30  | P3    | -8.087819 | 0.003875   | -0.011841       |

## 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  | 0.000547687 |
|         | stdev | 1.78443e-07 |
| MEAN Q  | mean  | 0.000516467 |
|         | stdev | 2.20275e-07 |



### 5.2 - Input stdev I/Q

| channel | stat  | DSS-B      |
|---------|-------|------------|
| STDEV I | mean  | 0.137075   |
|         | stdev | 0.00115315 |
| STDEV Q | mean  | 0.137446   |
|         | stdev | 0.00117138 |



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006120[456]

The assumptions 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_GM1_1PNPDK20061204_093242_000007732053_00294_24897_9683.N1 | 0        | 7                 |
| ASA_GM1_1PNPDK20061204_174633_000006342053_00299_24902_9712.N1 | 0        | 26                |
| ASA_WSM_1PNPDE20061204_142150_000000852053_00297_24900_8594.N1 | 0        | 29                |
| ASA_WSM_1PNPDE20061205_143228_000004462053_00311_24914_0242.N1 | 0        | 28                |
| ASA_WSM_1PNPDE20061206_003703_000002612053_00317_24920_0976.N1 | 0        | 34                |







## 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)

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



Ascending

Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

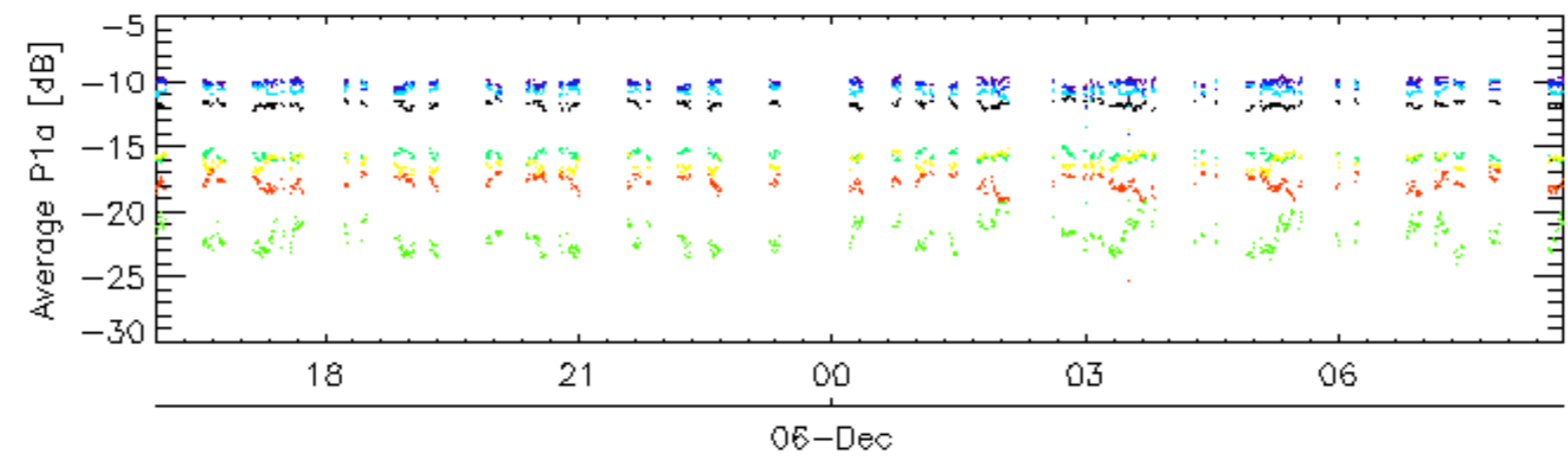
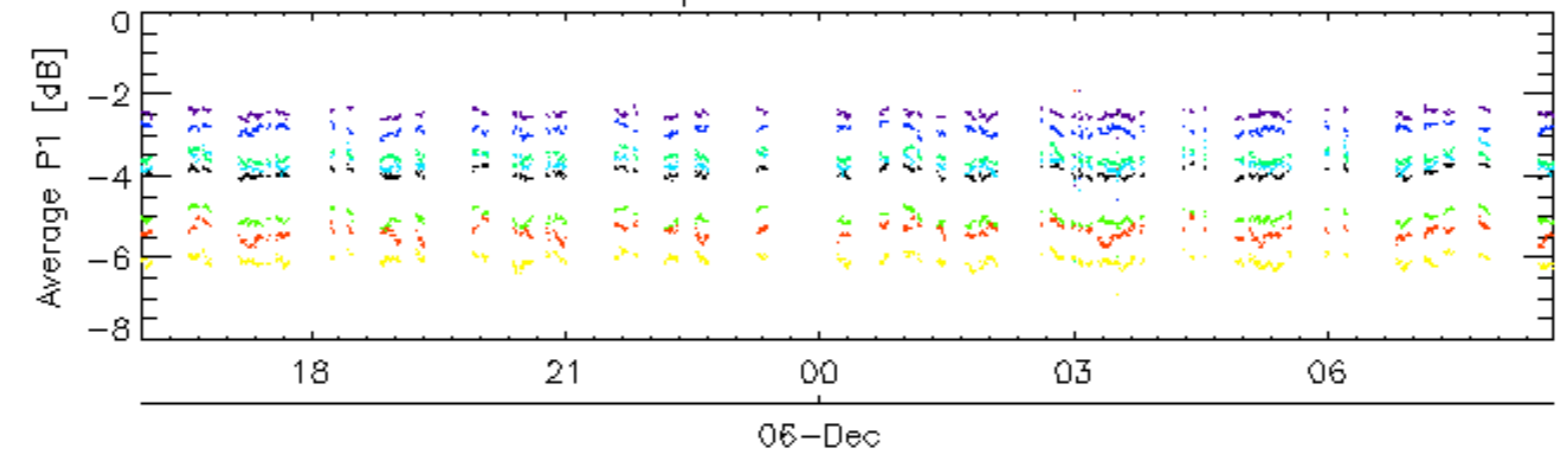
Ascending

Descending

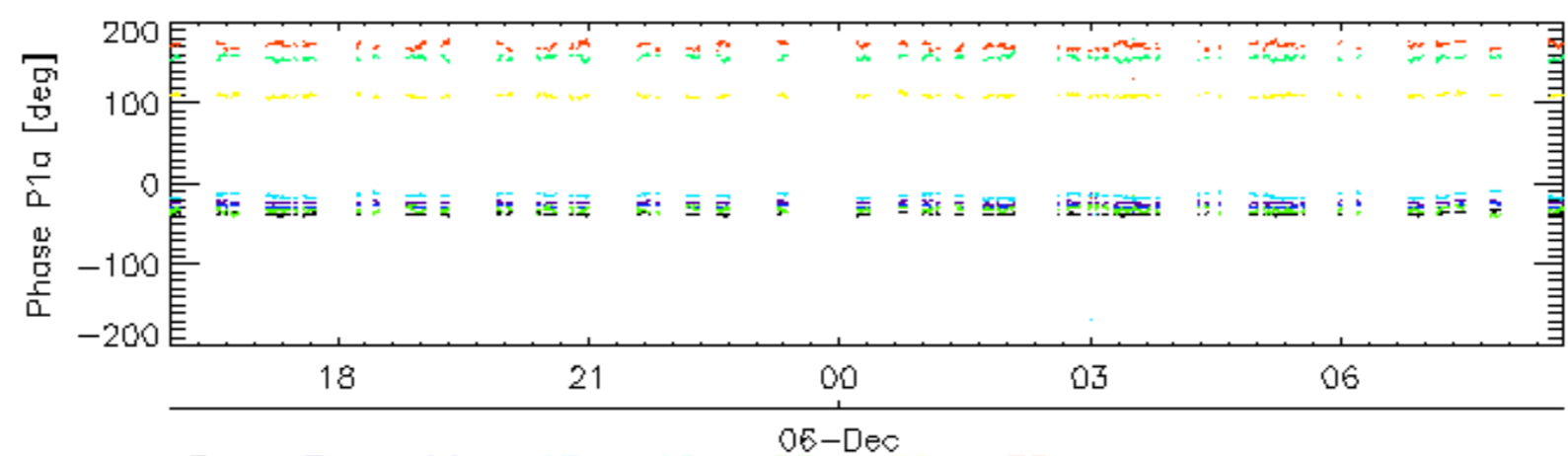
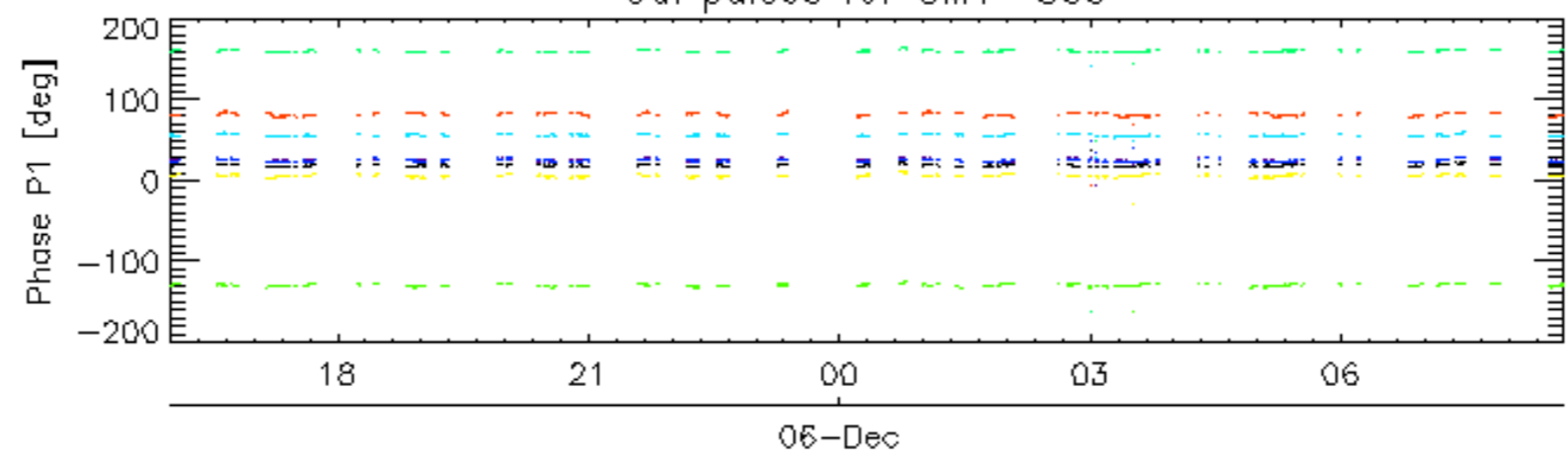
### 7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

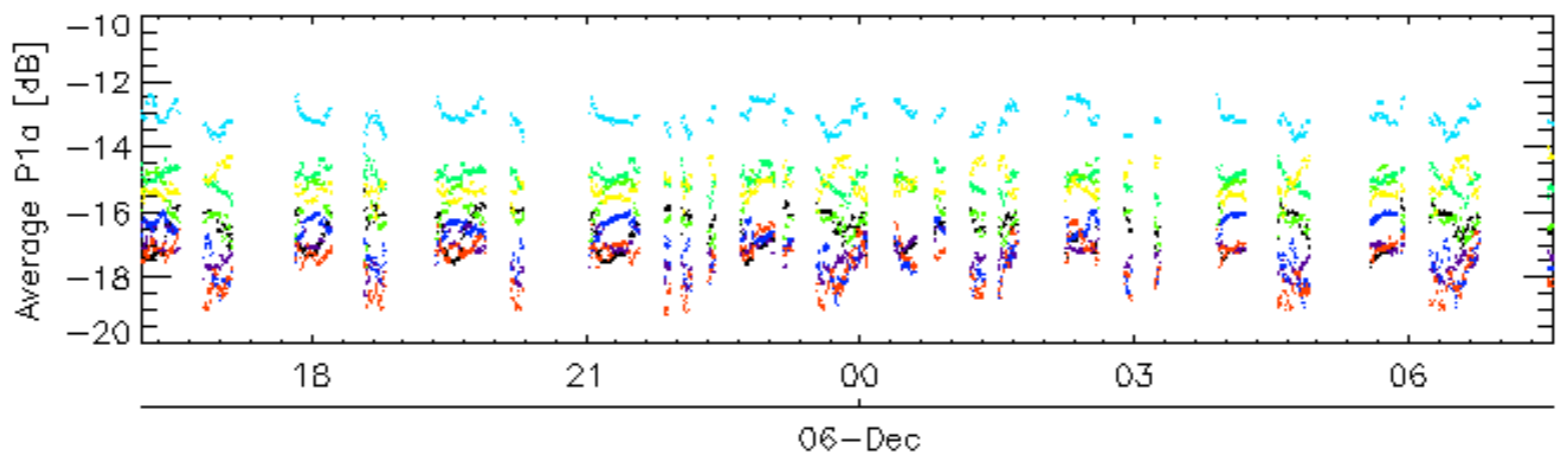
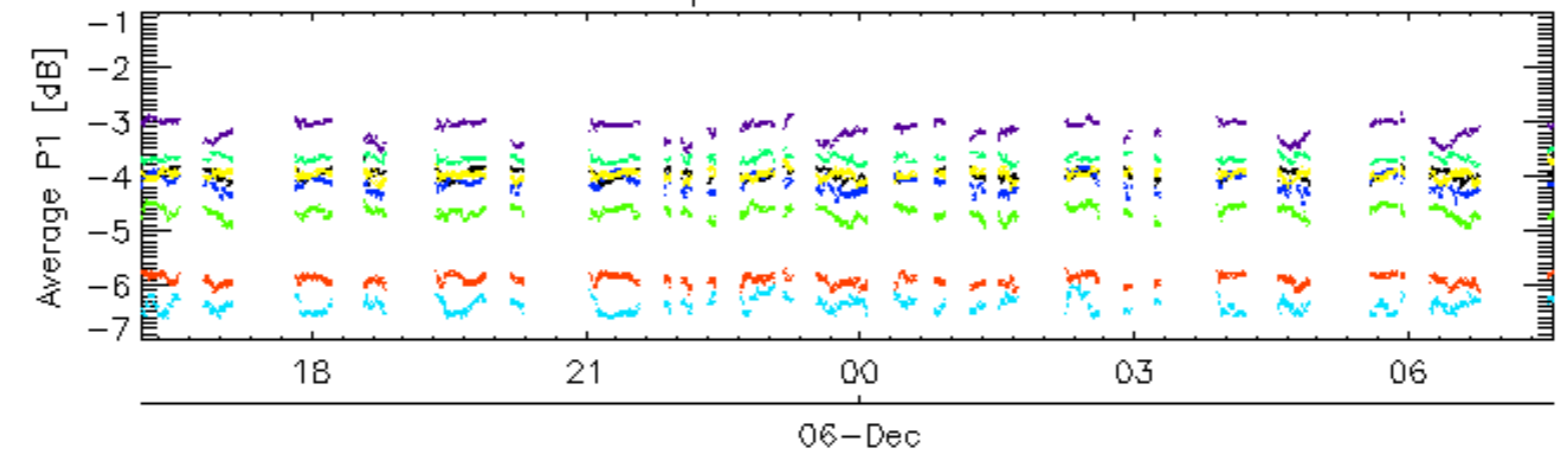


Cal pulses for GM1 SS3

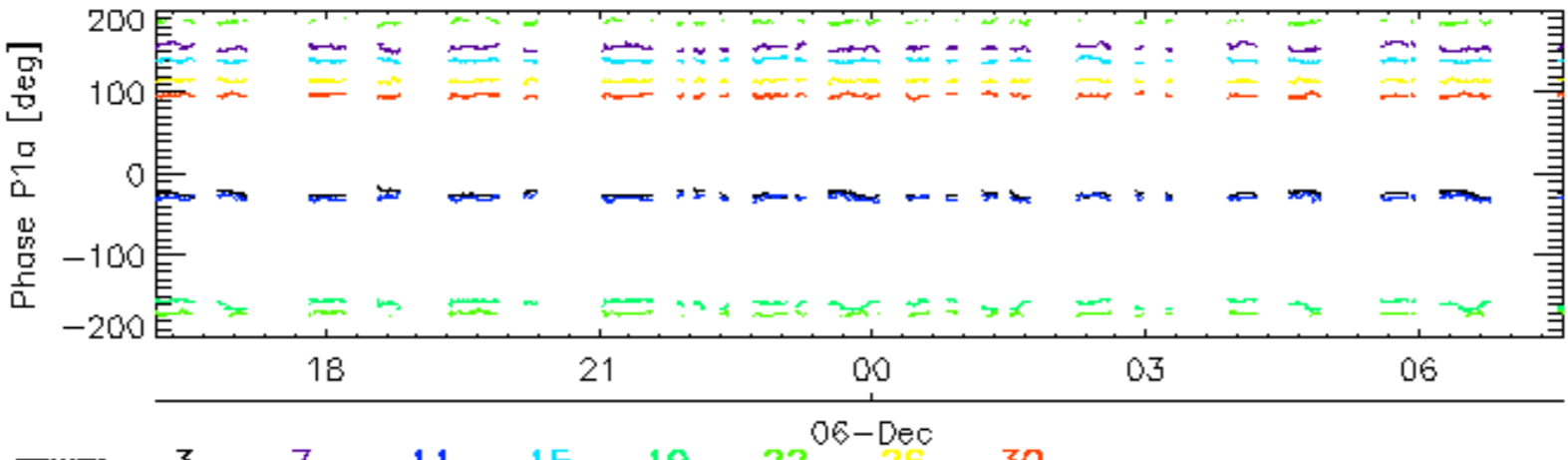
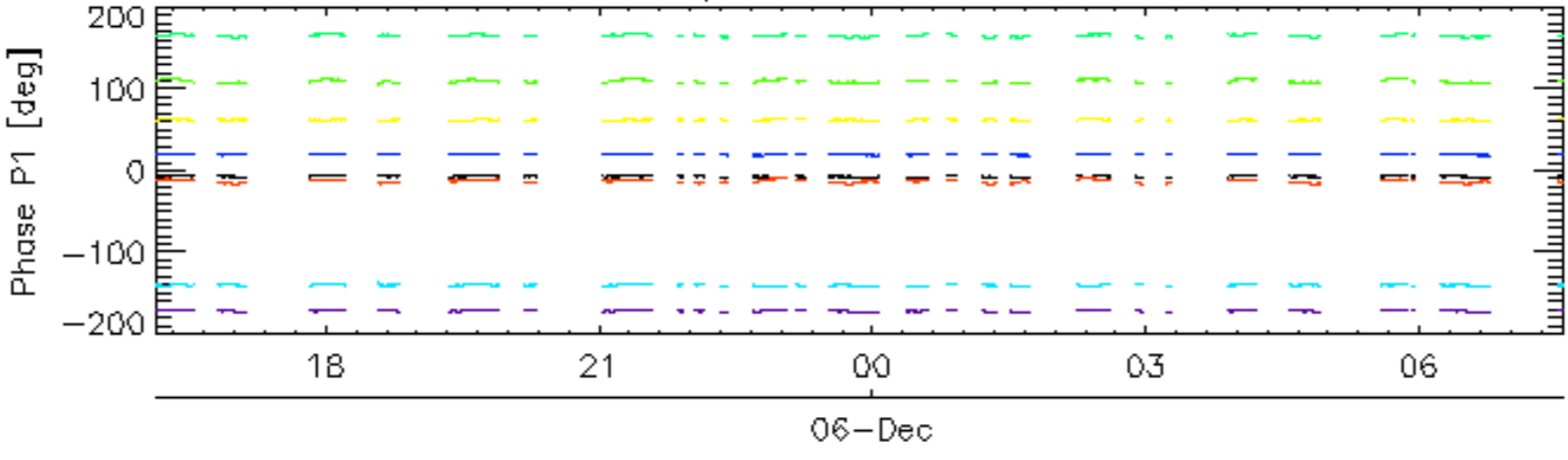


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

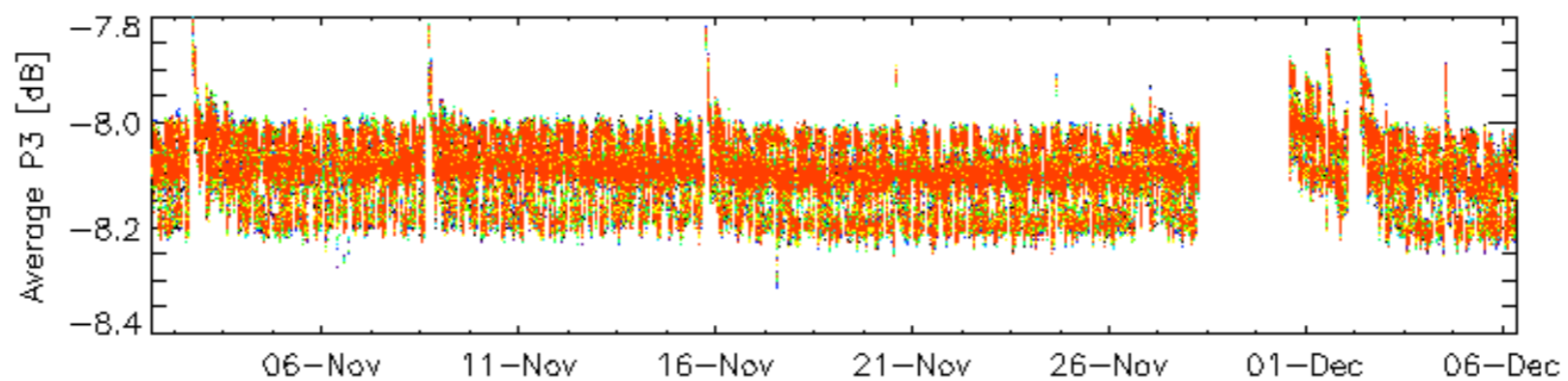
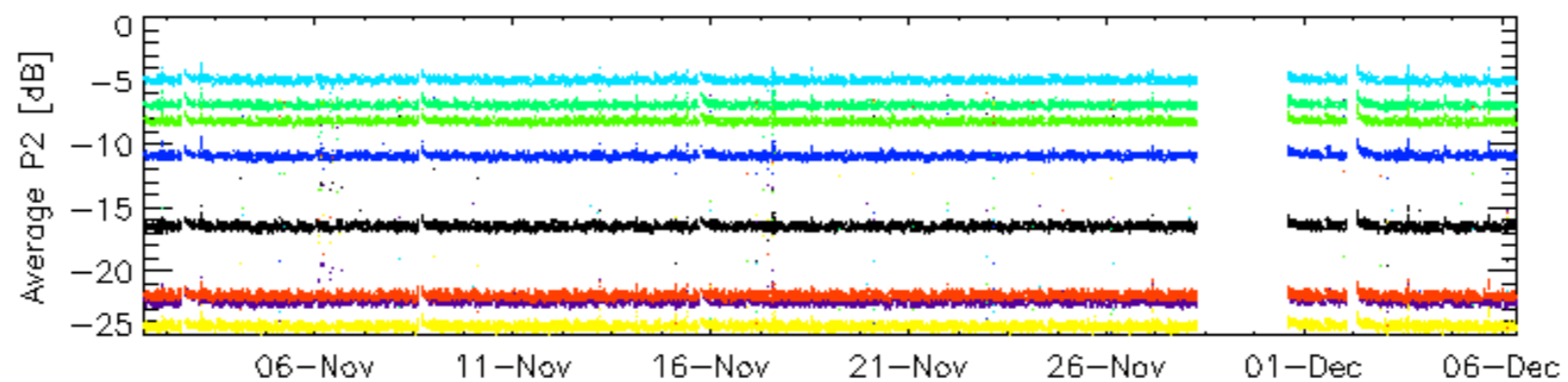
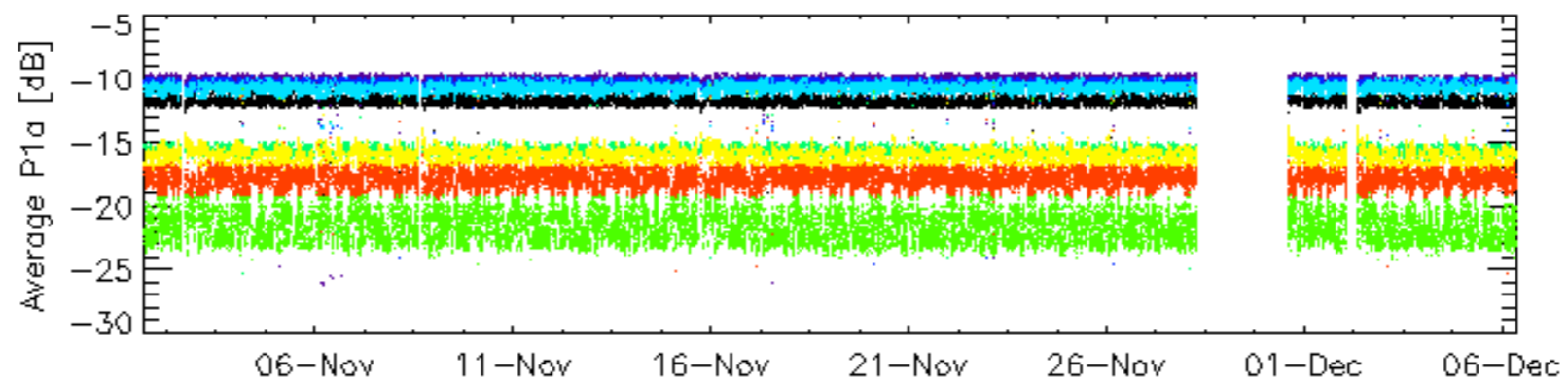
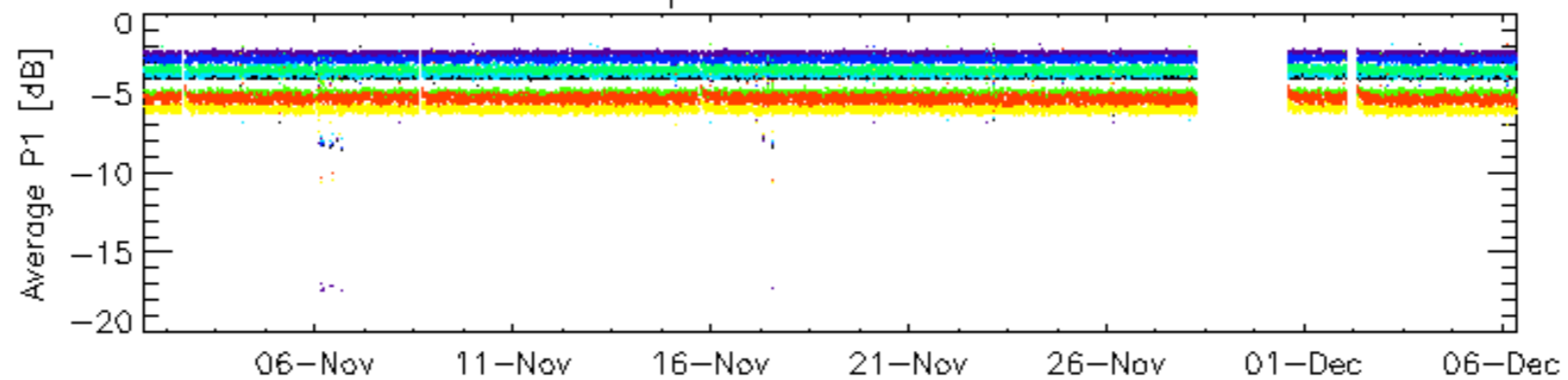


Cal pulses for WVS IS2



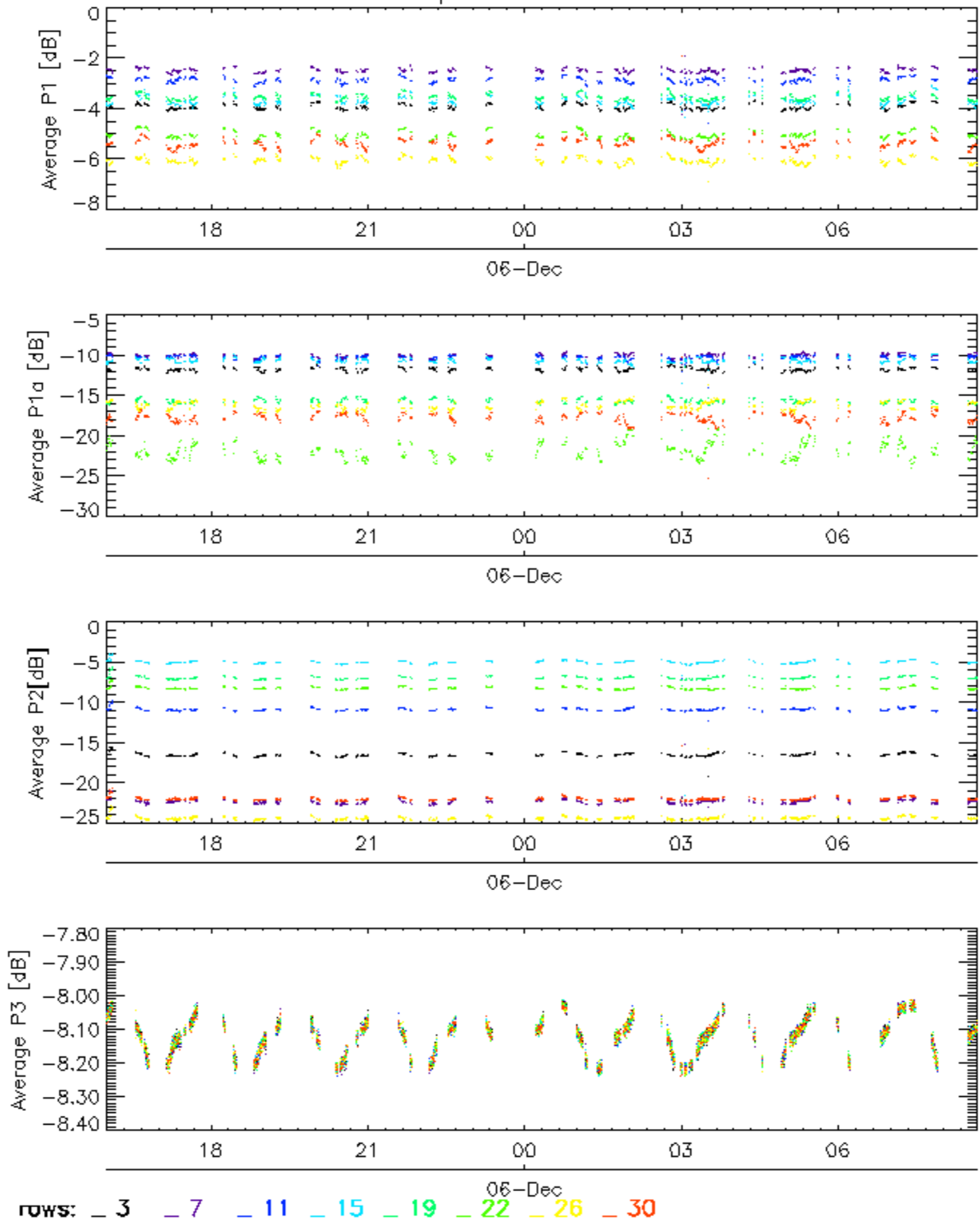
rows: 3 7 11 15 19 22 26 30

Cal pulses for GM1 SS3

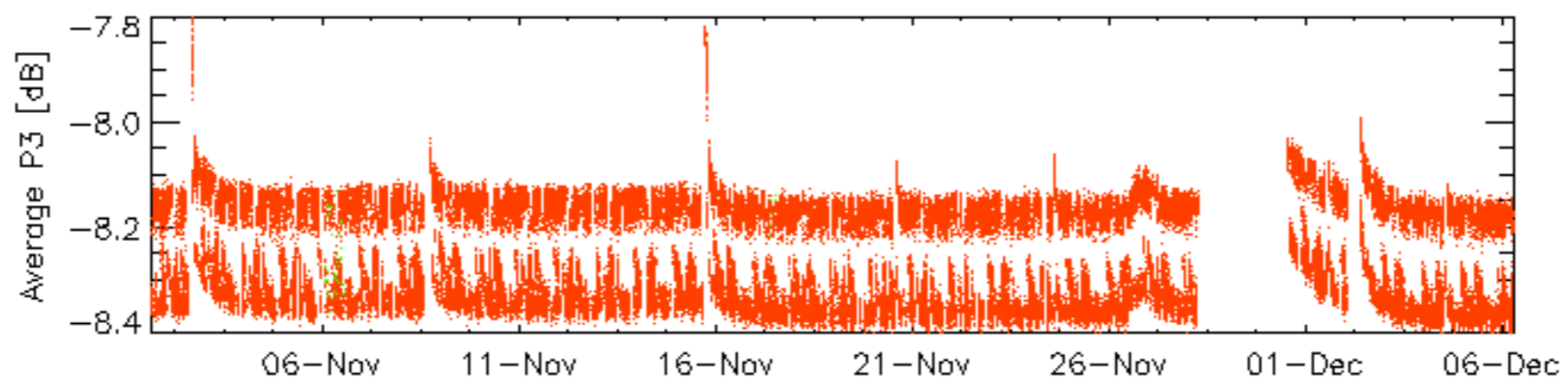
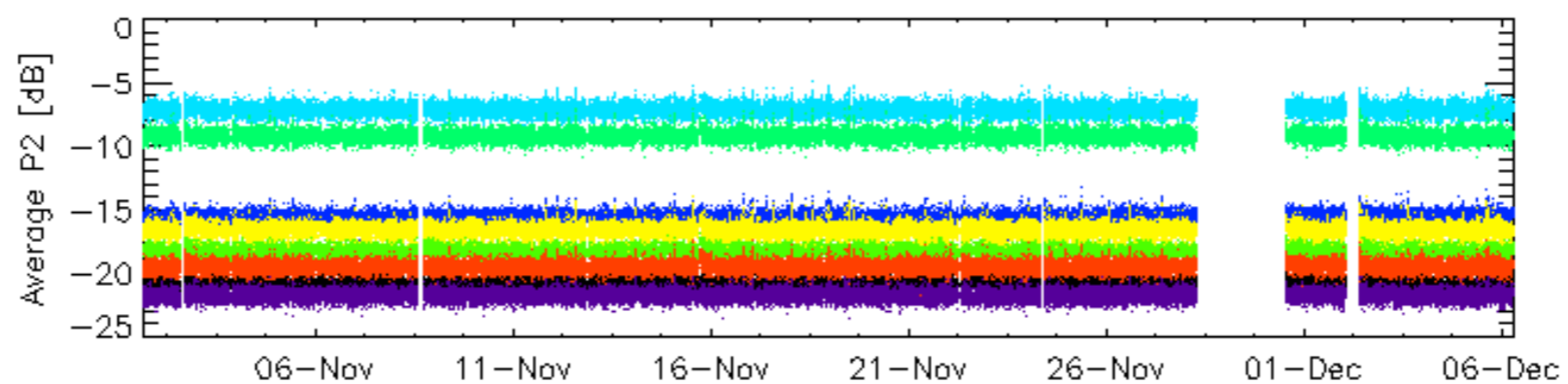
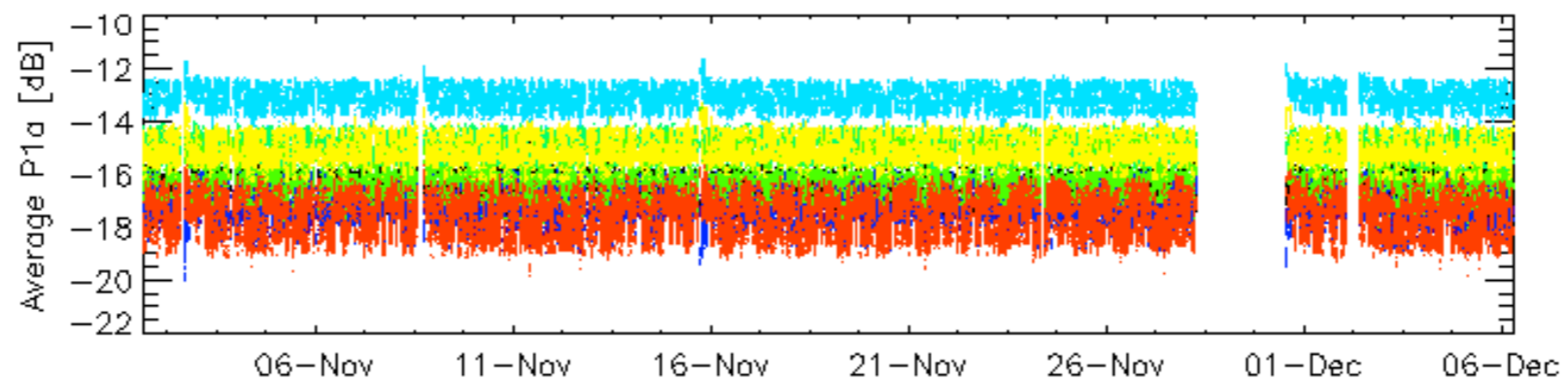
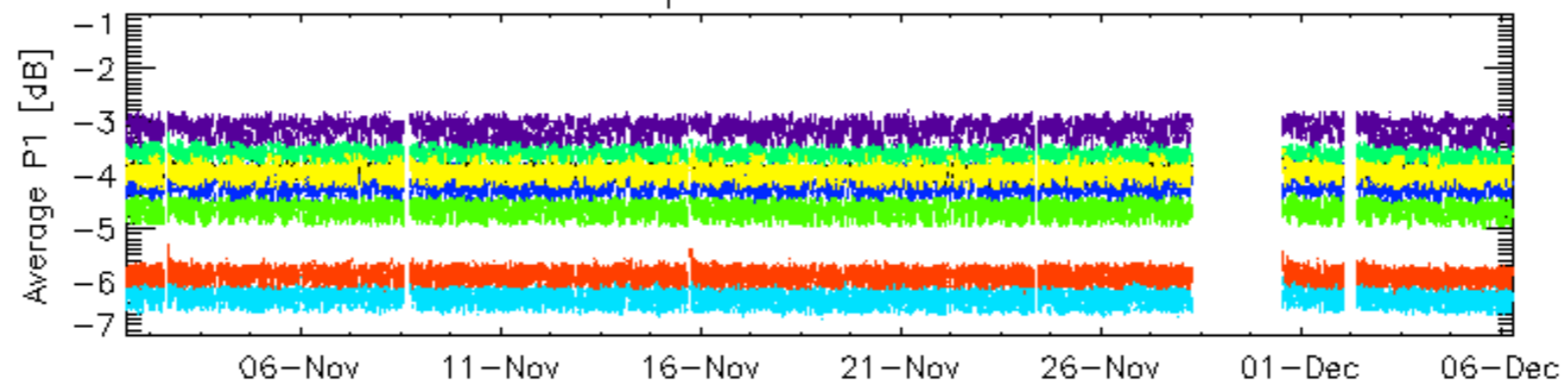


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

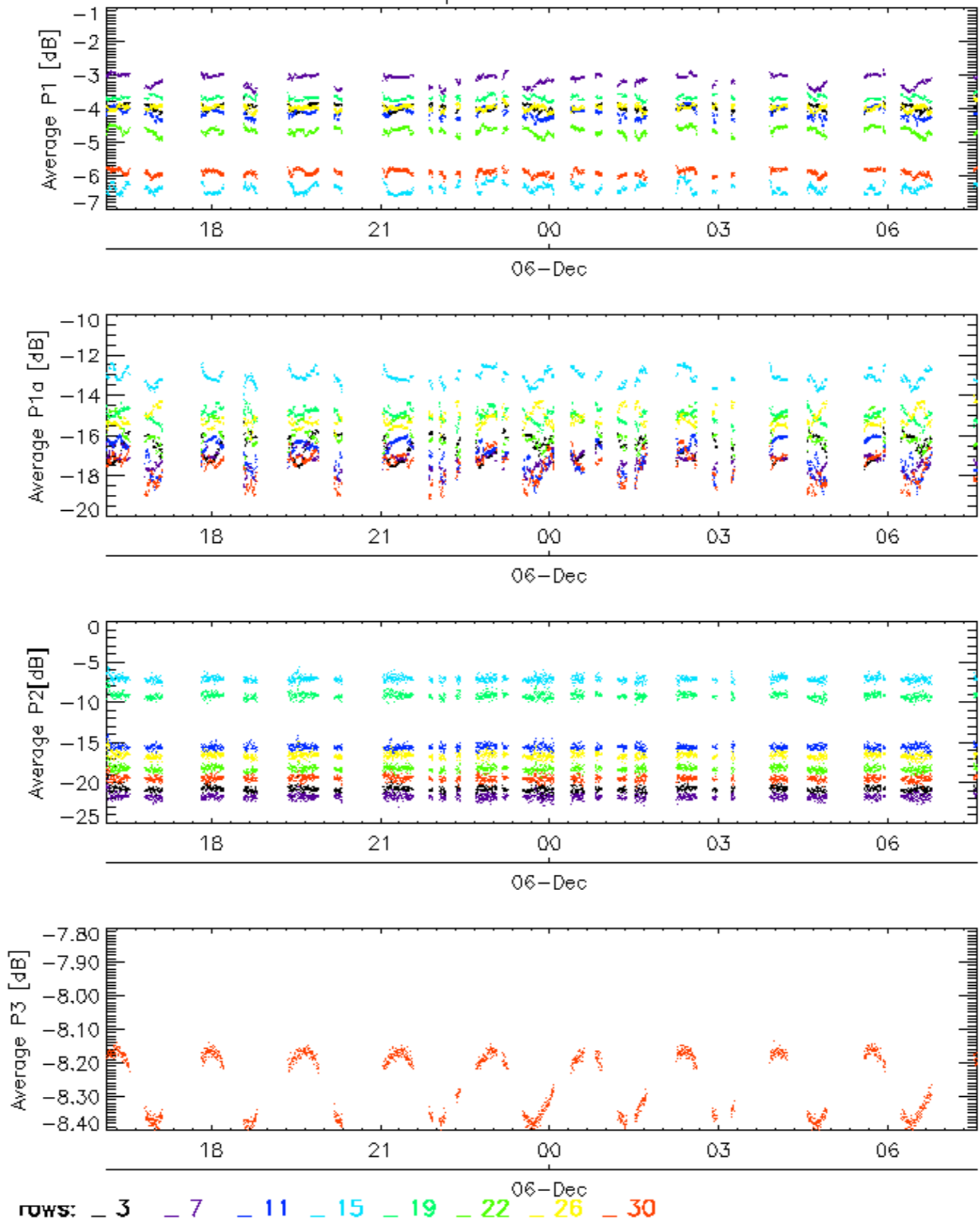


Cal pulses for WVS IS2



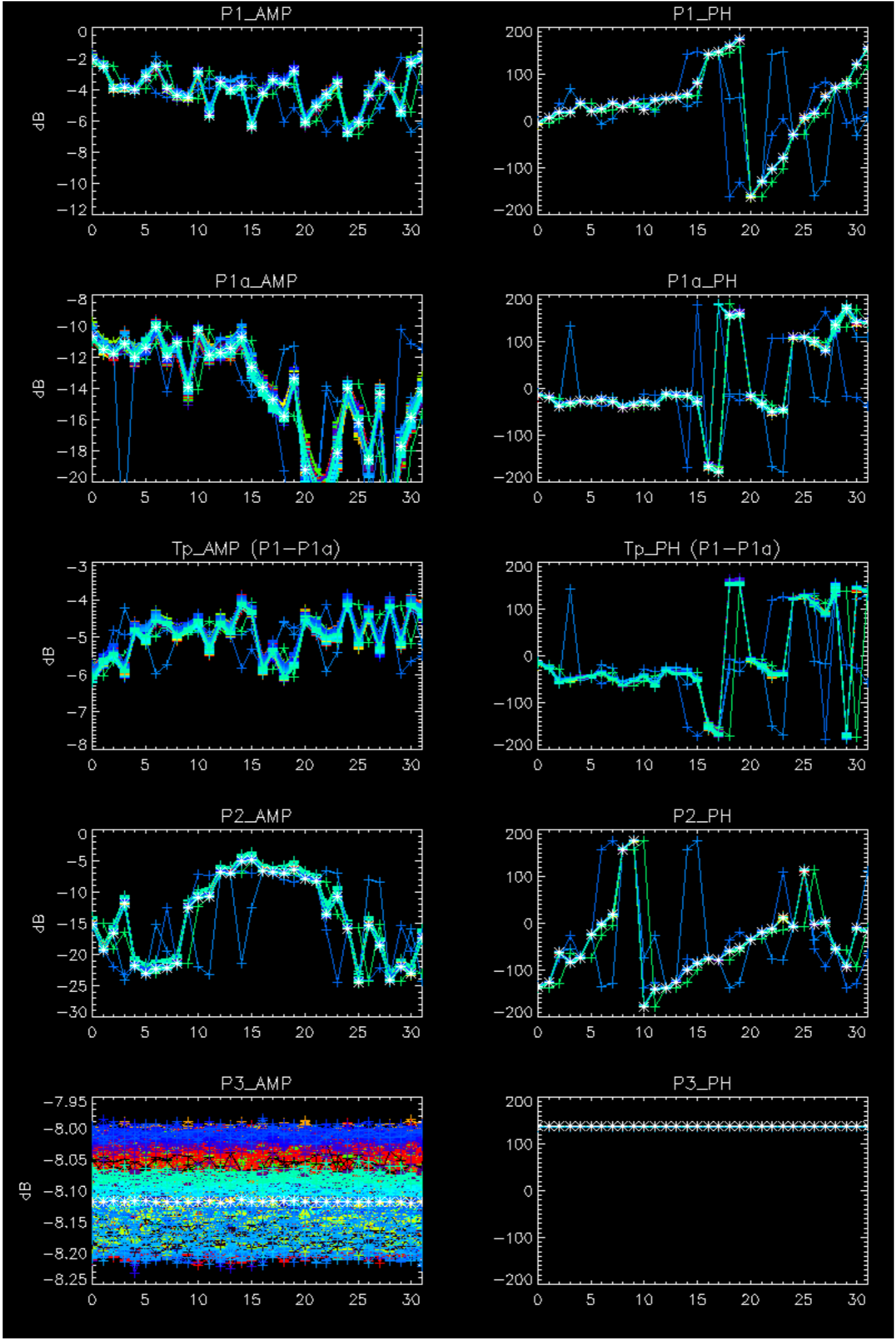
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

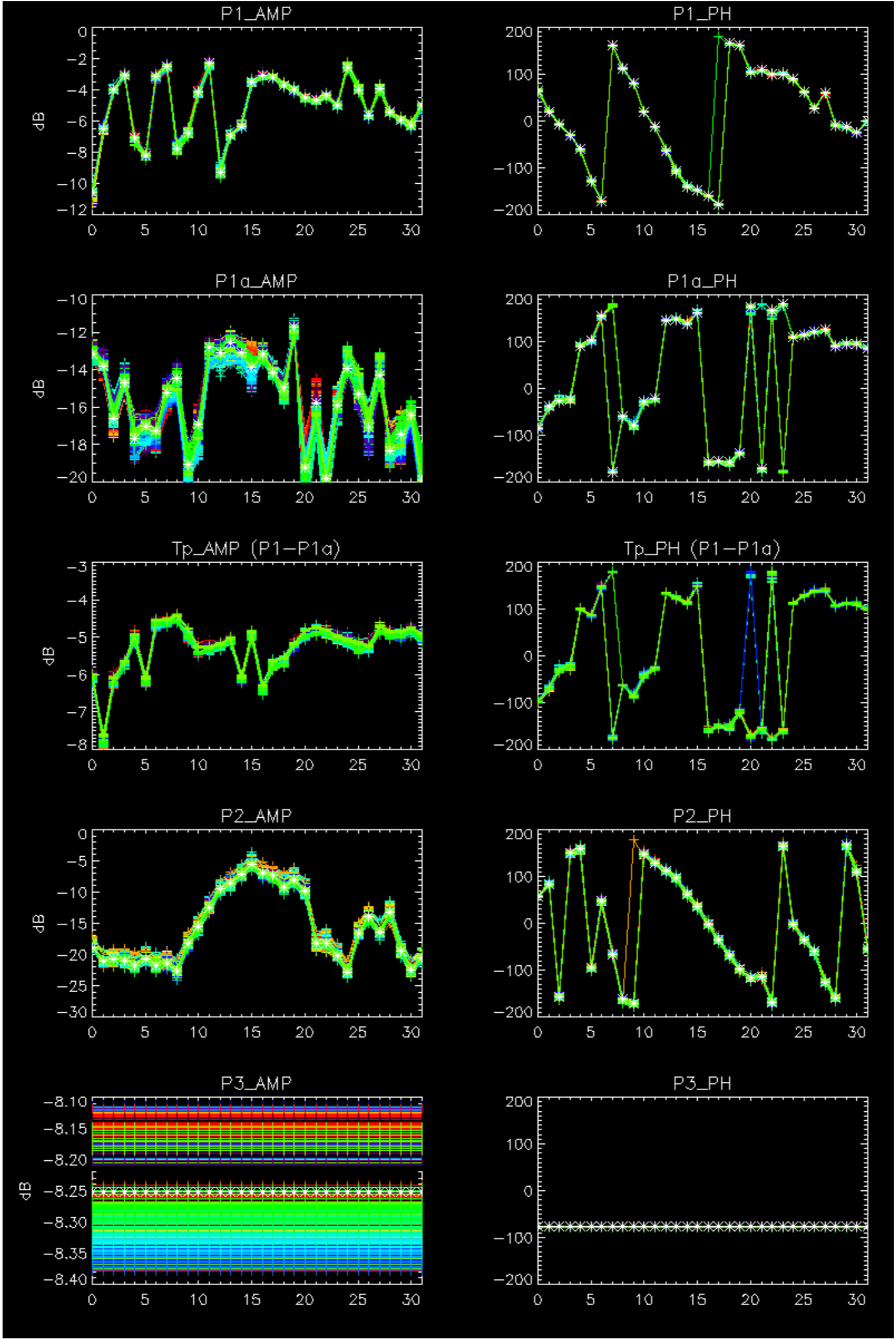
Cal pulses for WVS IS2



No anomalies observed.



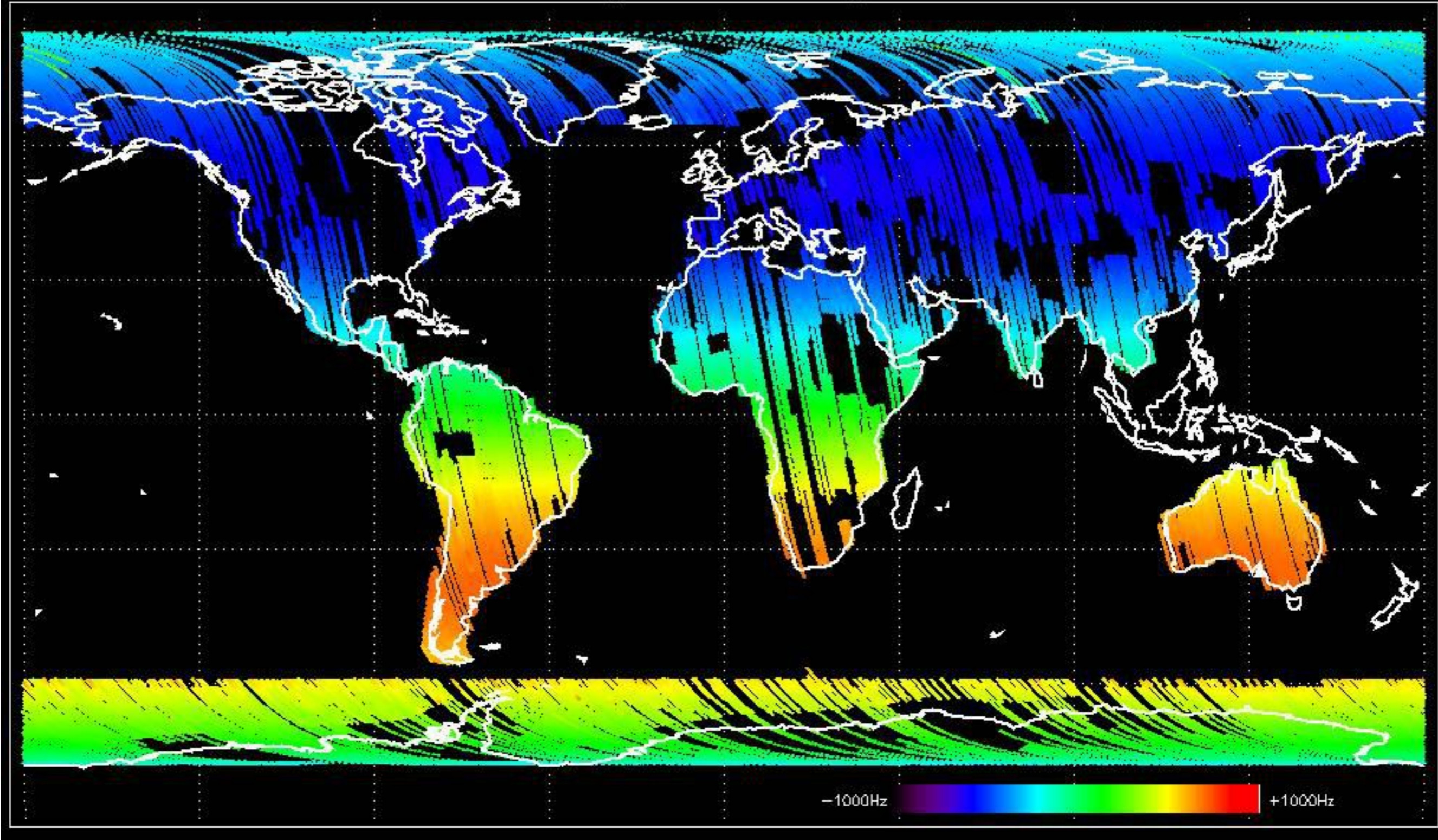




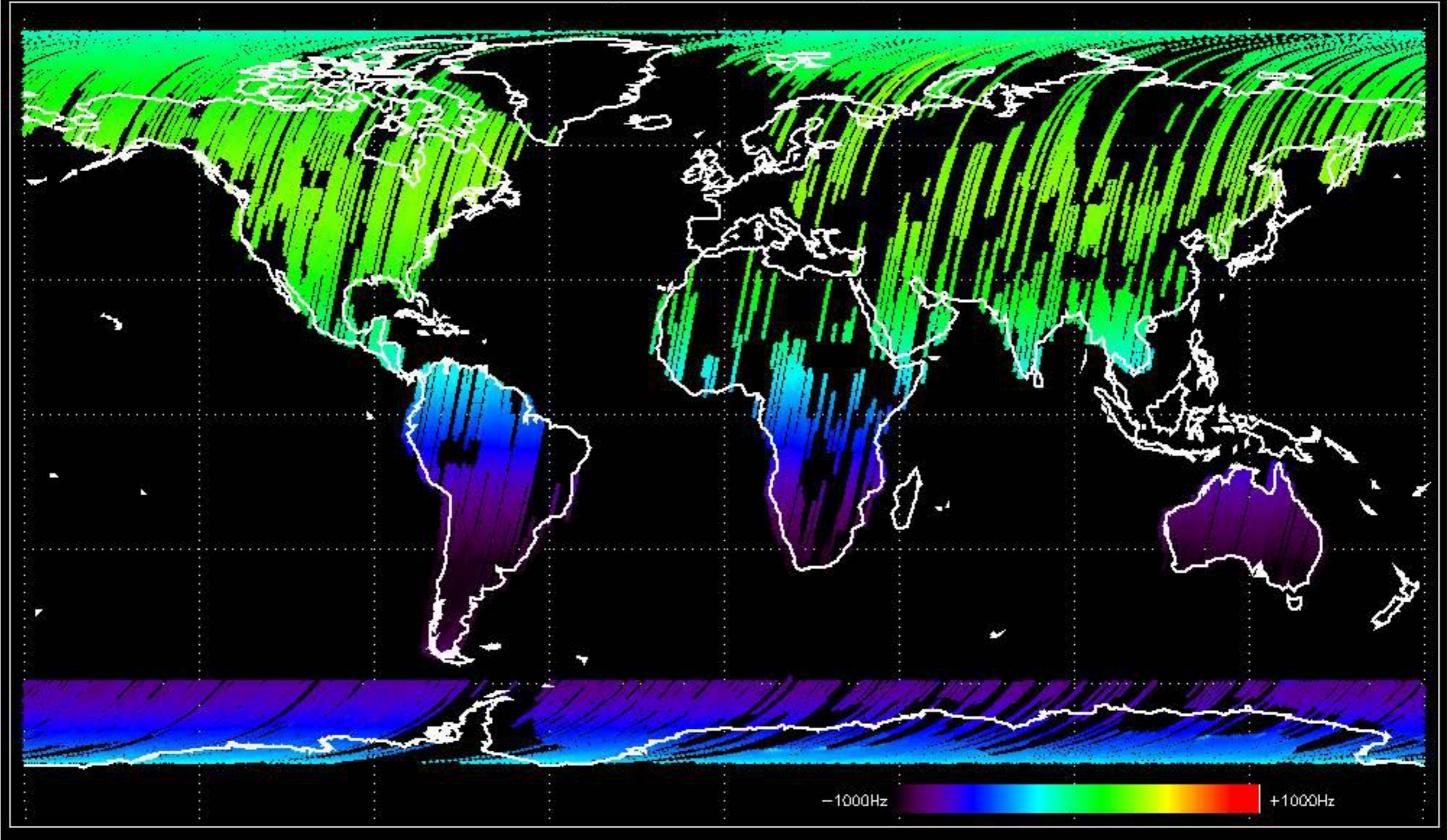
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



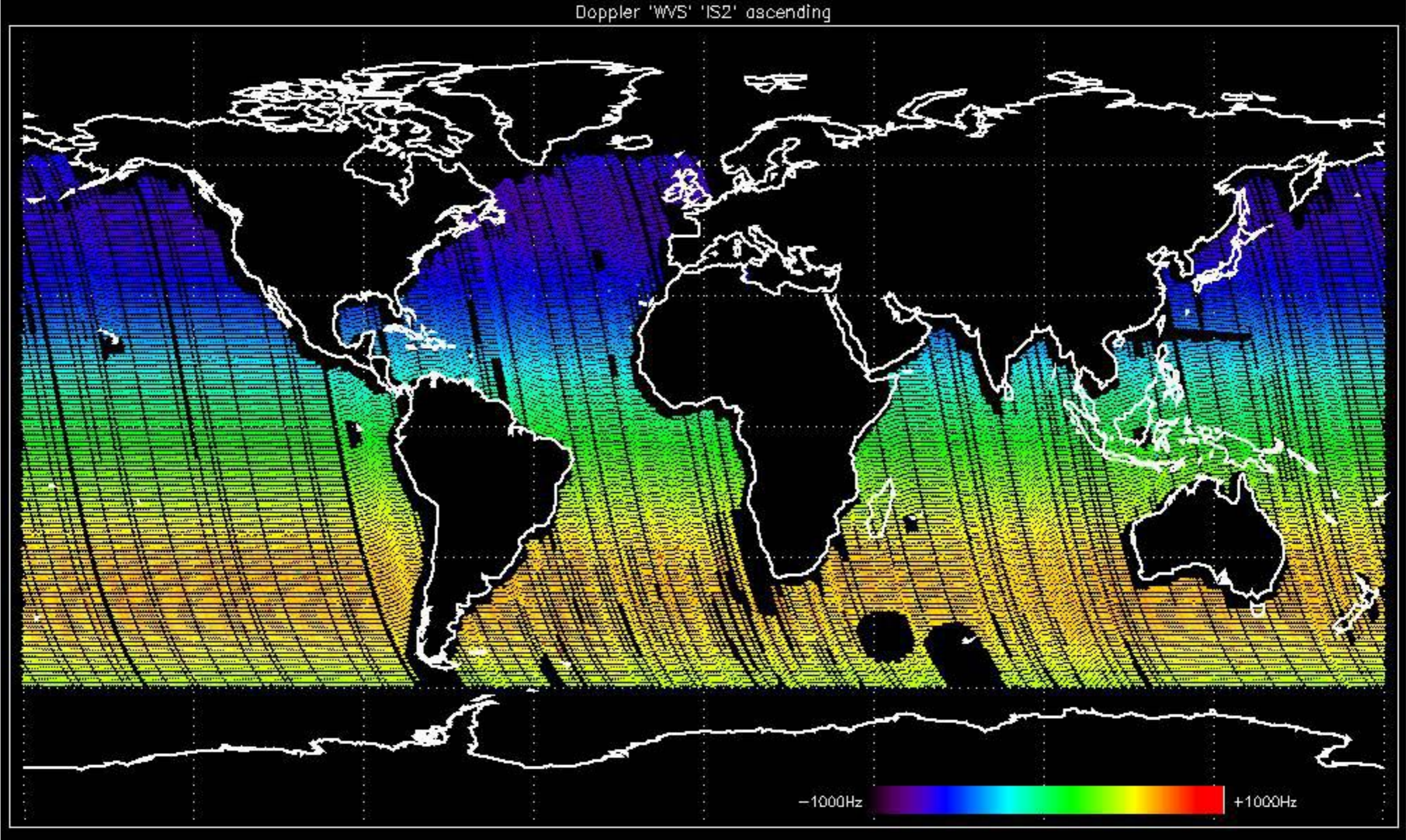
Doppler 'GM1' 'SS1' ascending



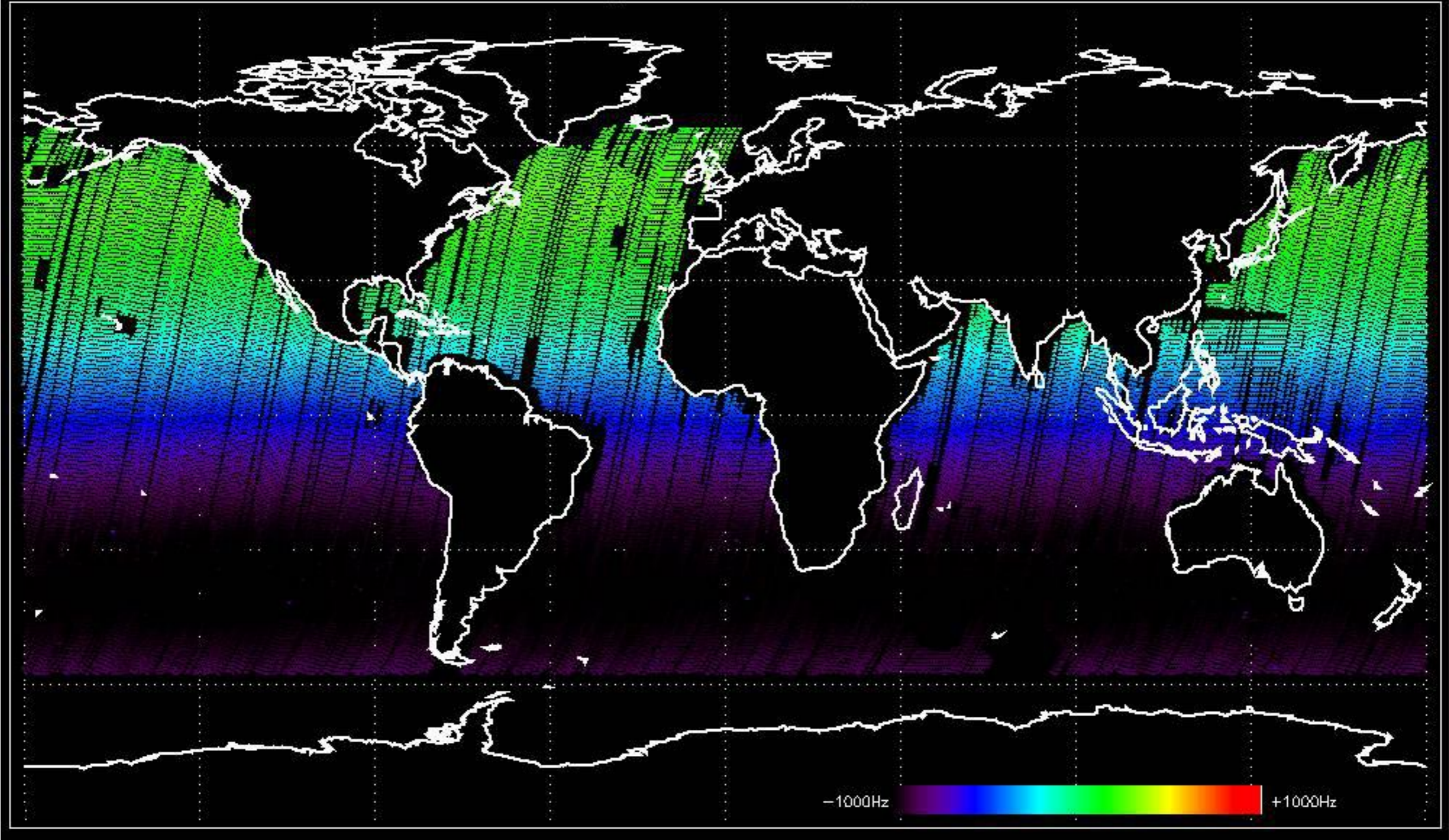
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS2' ascending

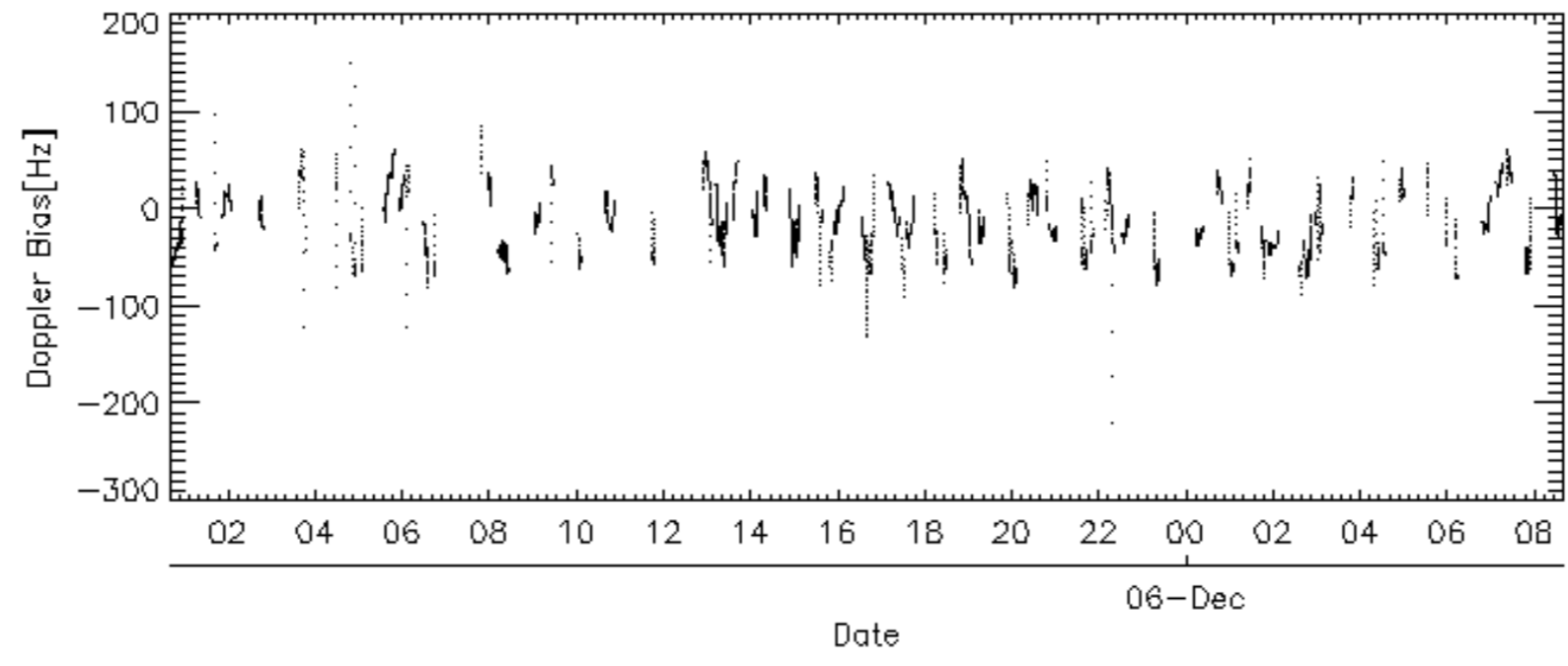
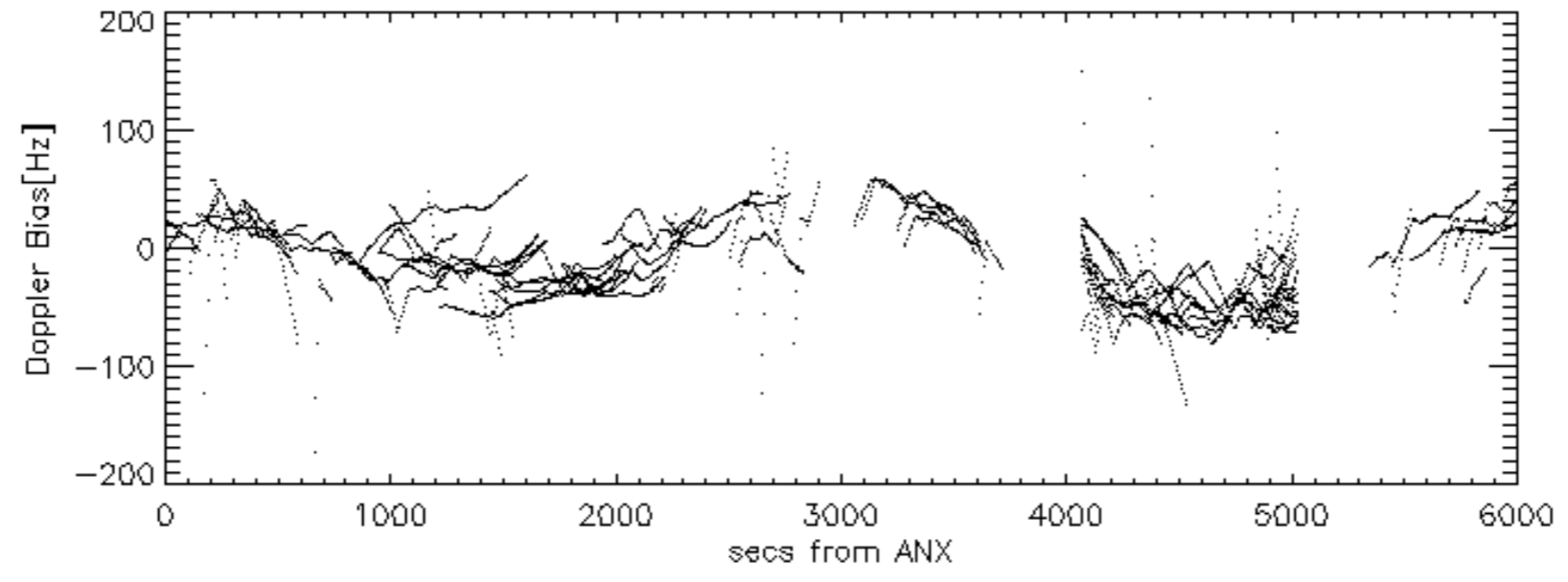
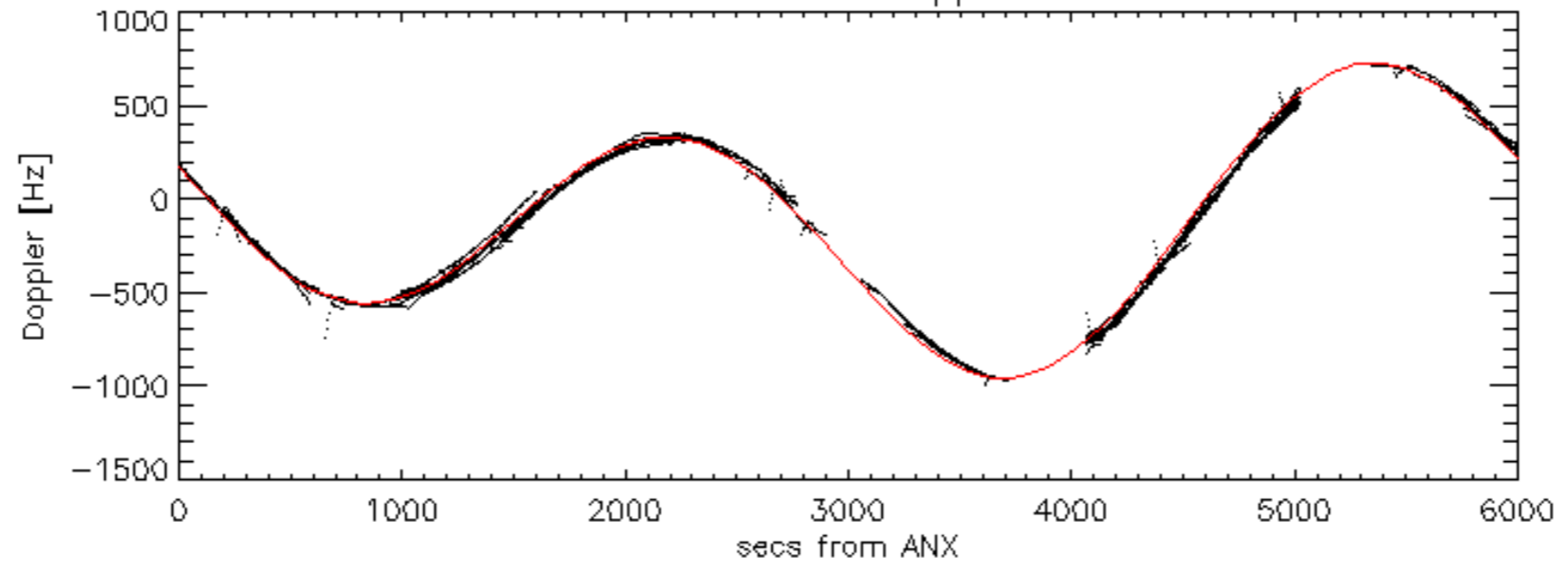


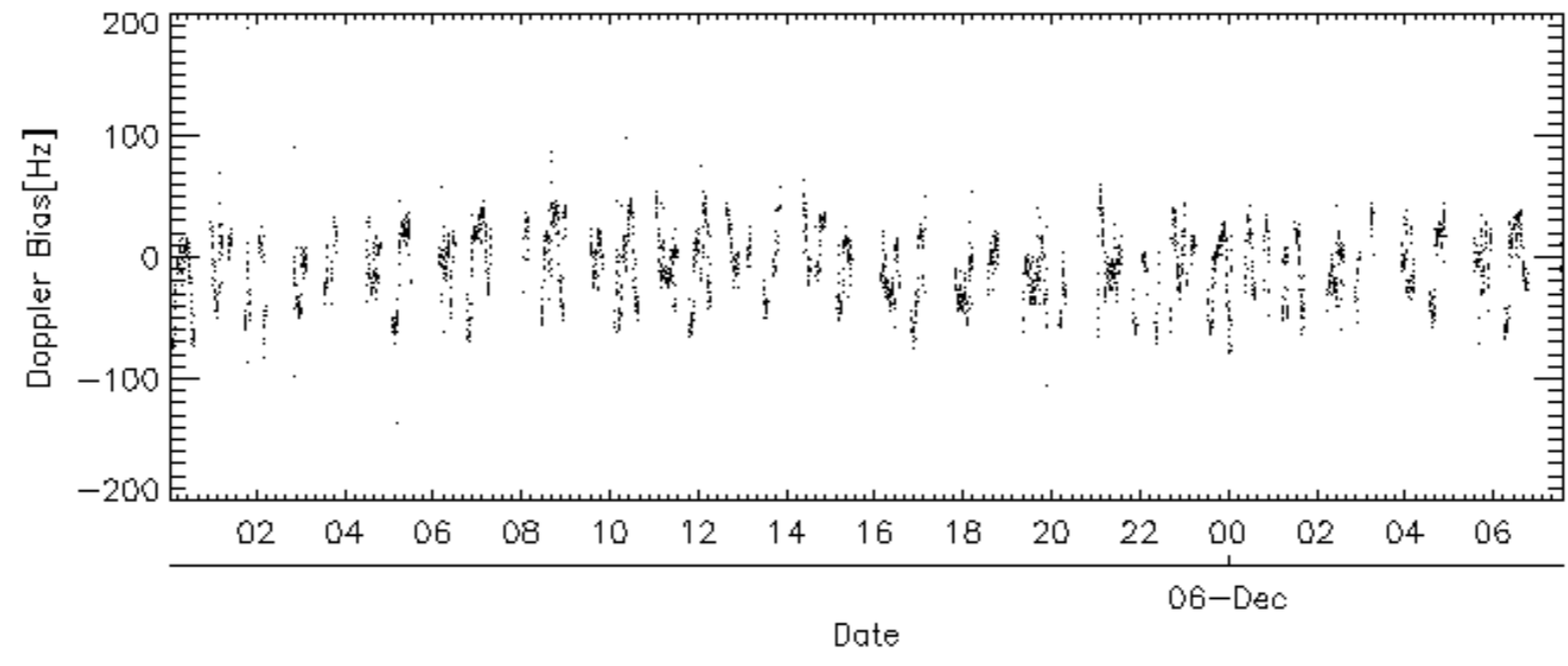
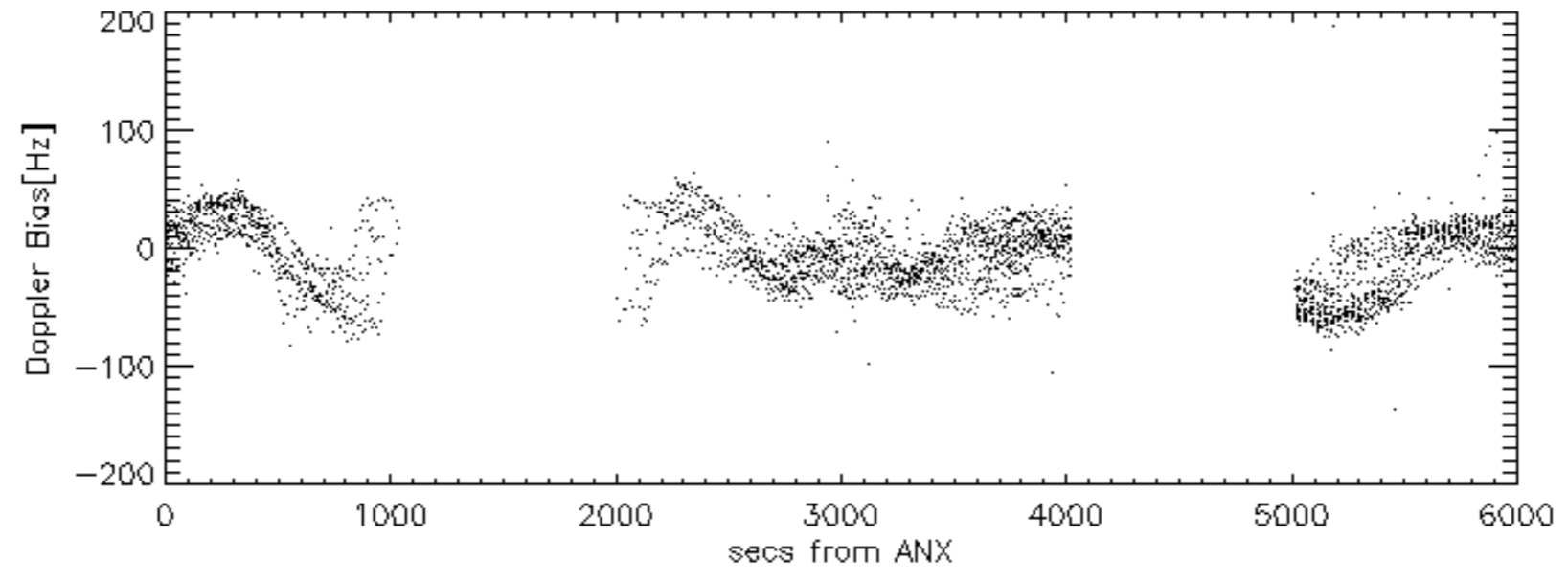
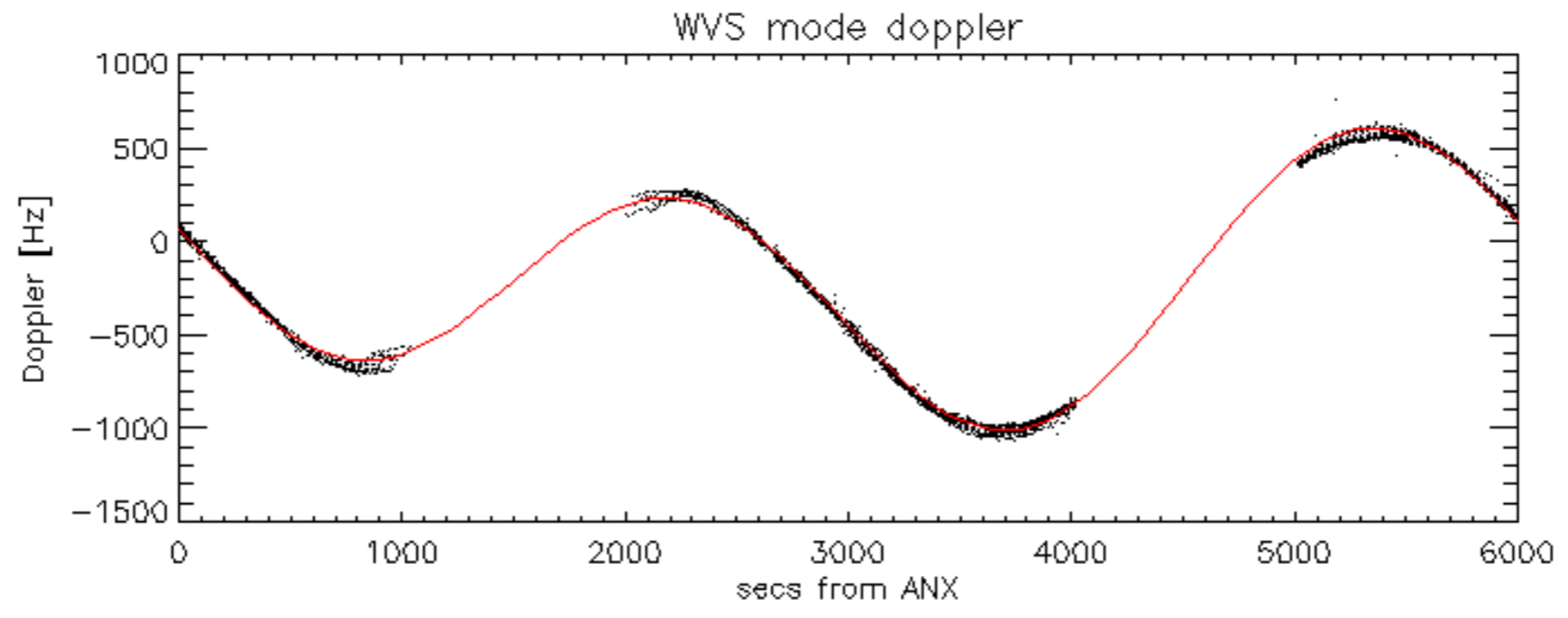
Doppler 'WVS' 'IS2' descending



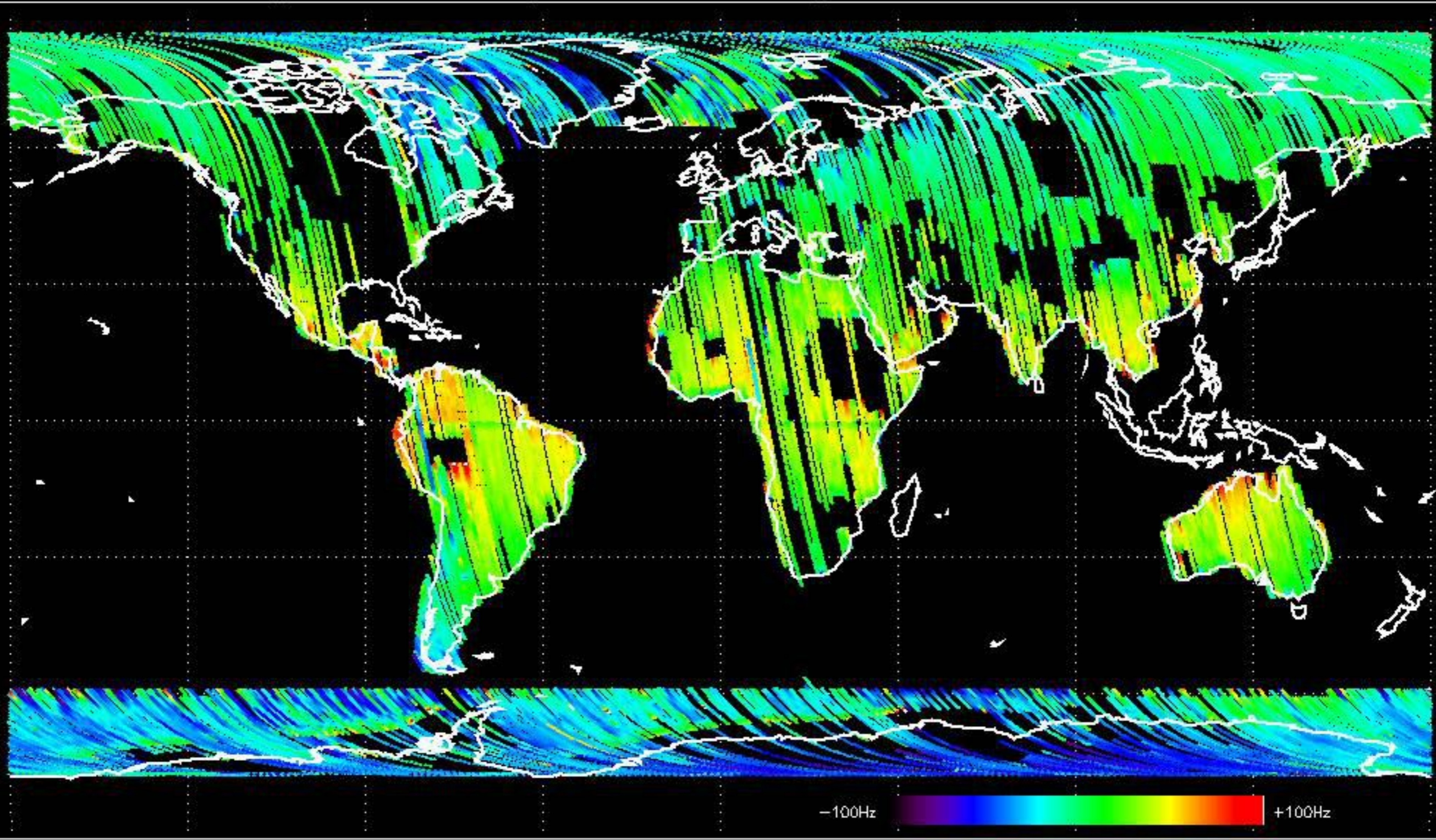


GM1 mode doppler

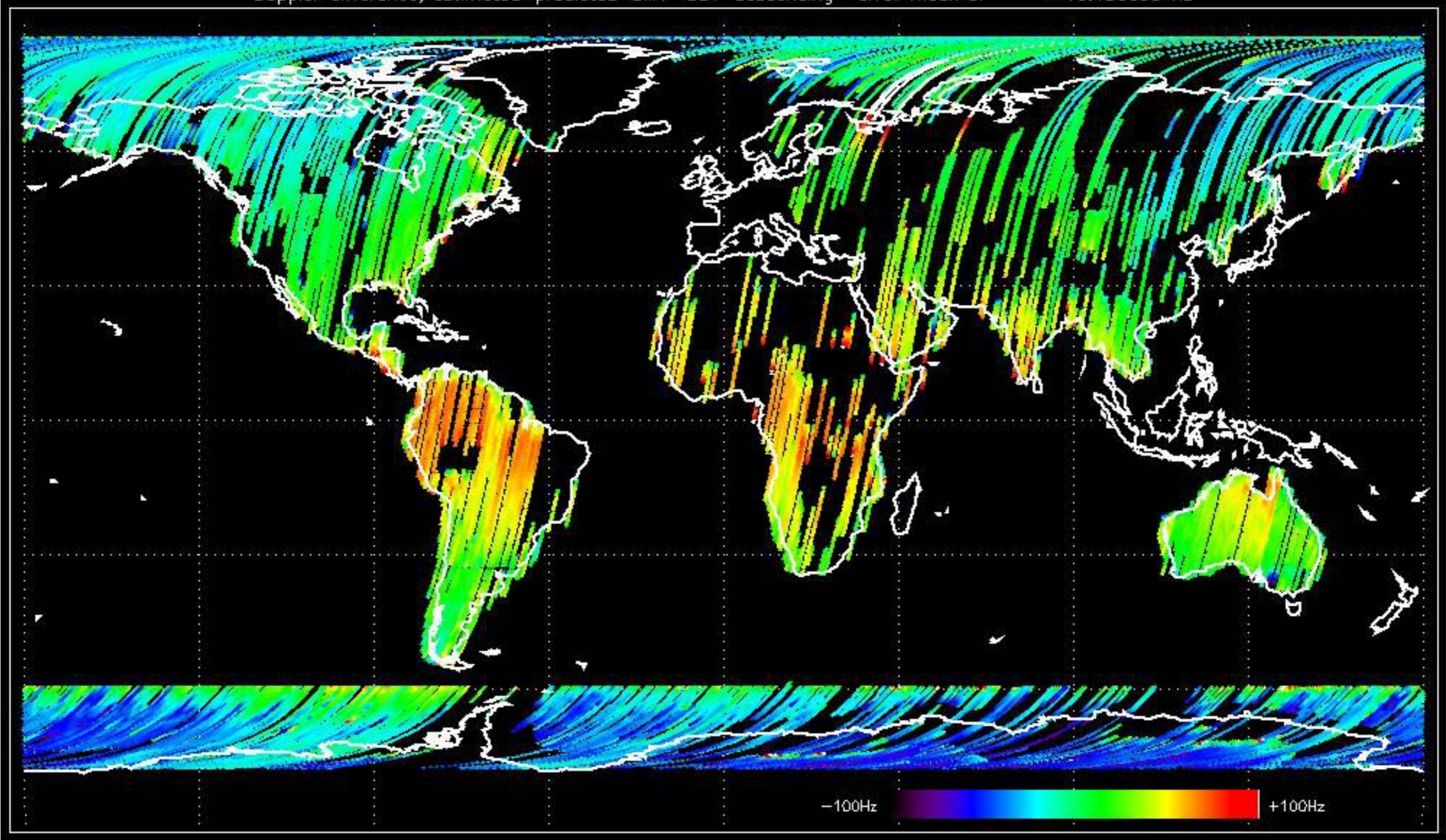




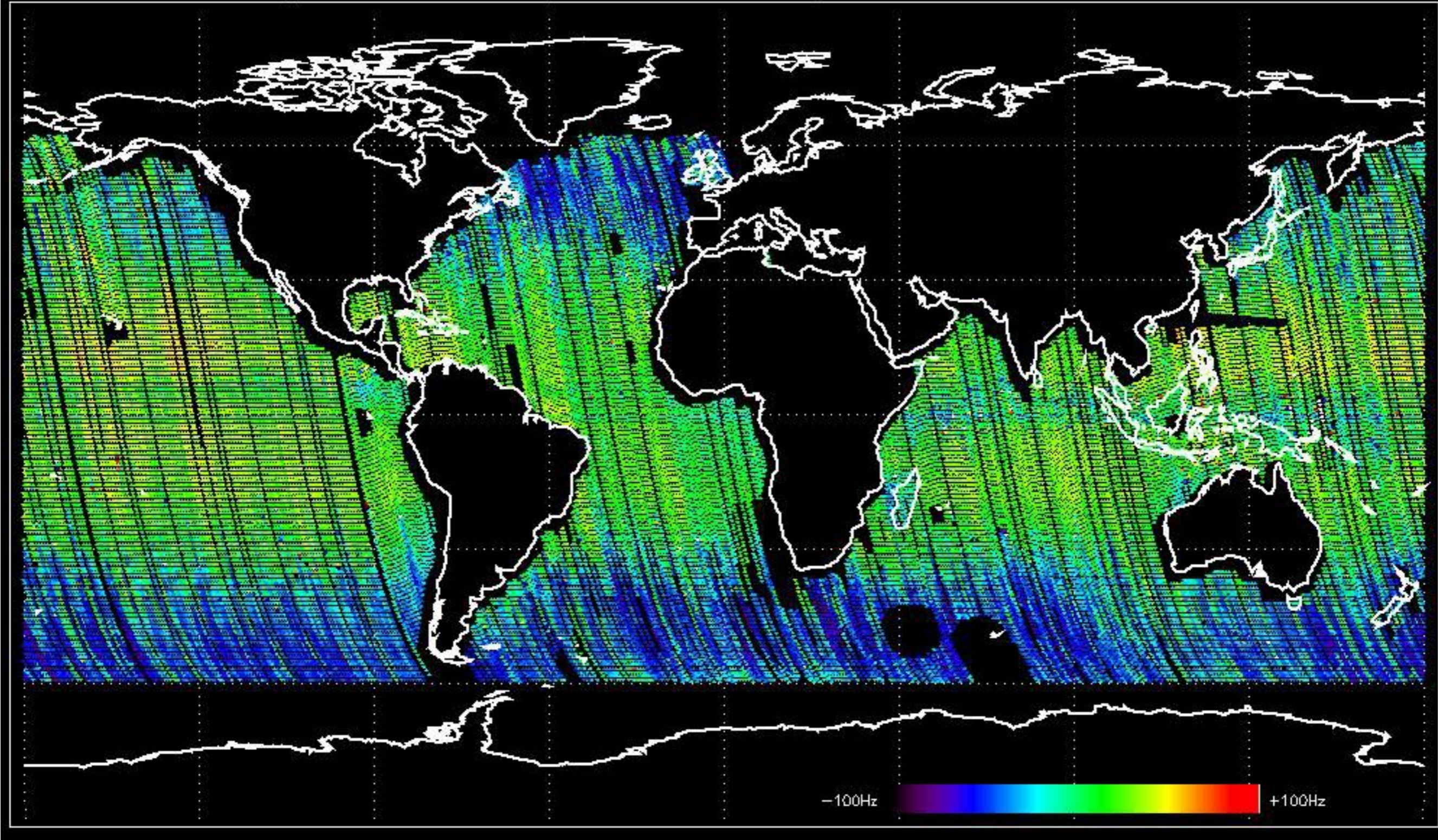
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.752129 Hz



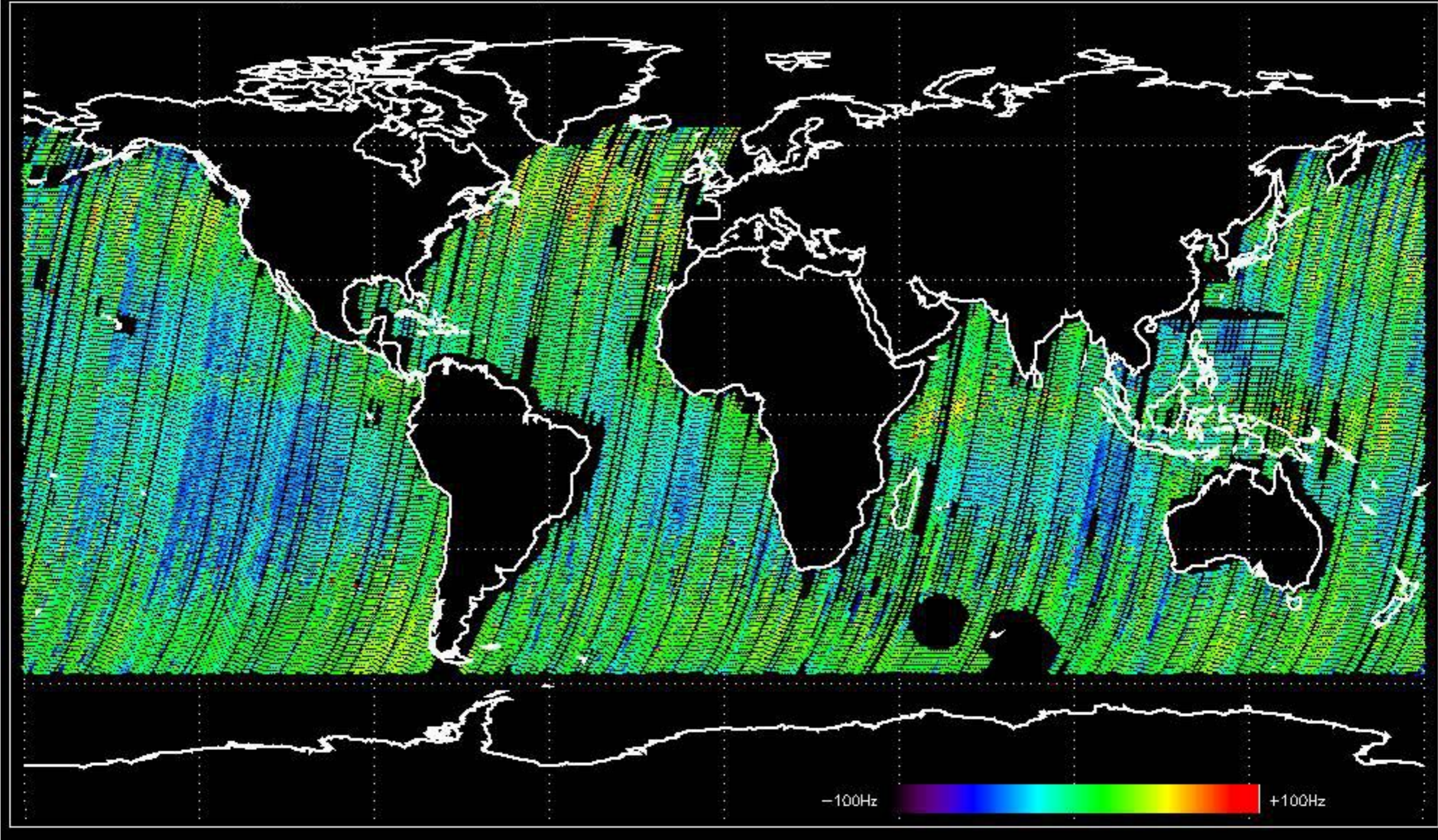
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -13.136699 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -8.8045180 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -8.0350660 Hz



No anomalies observed on available MS products:

No anomalies observed.







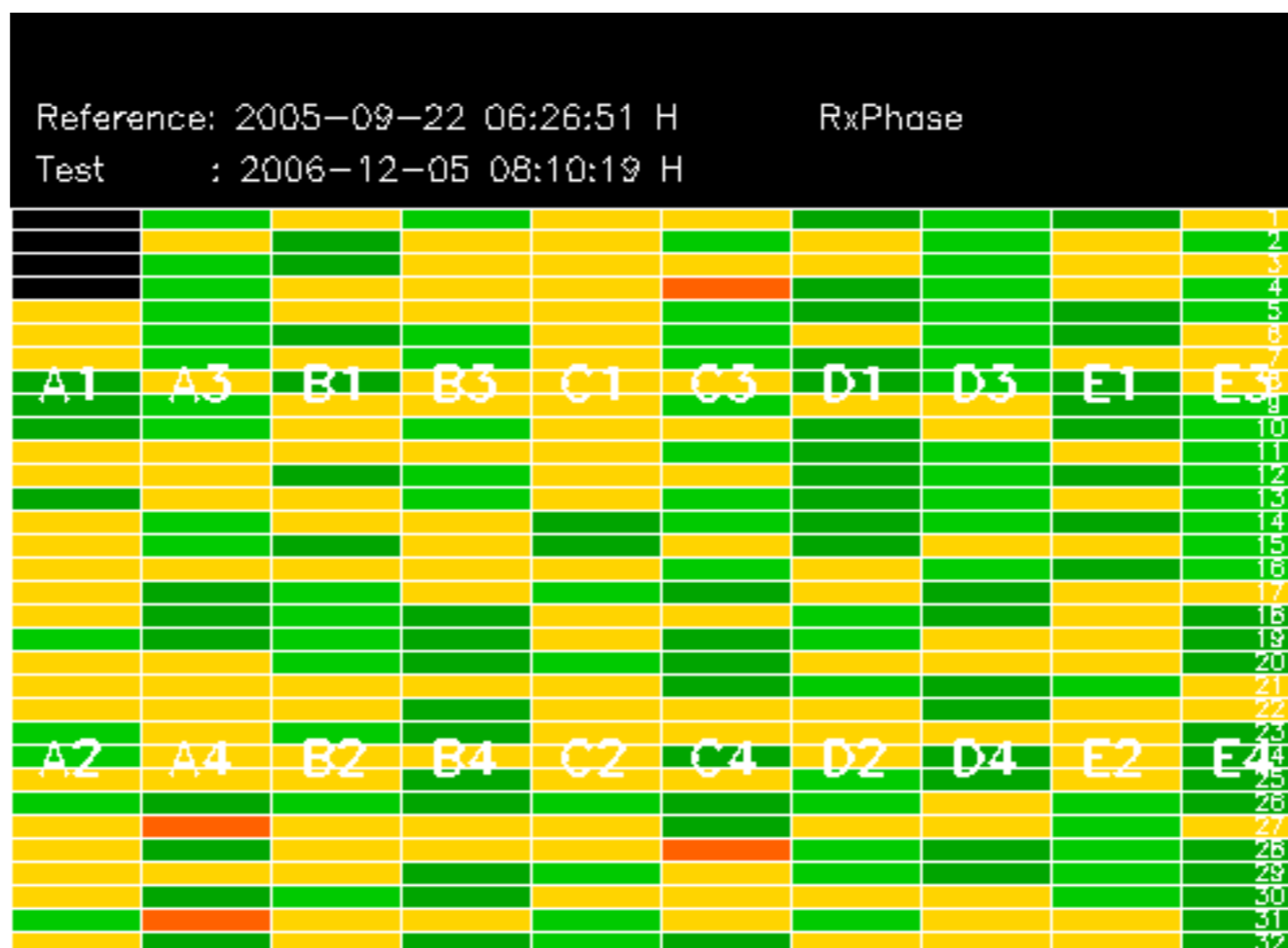












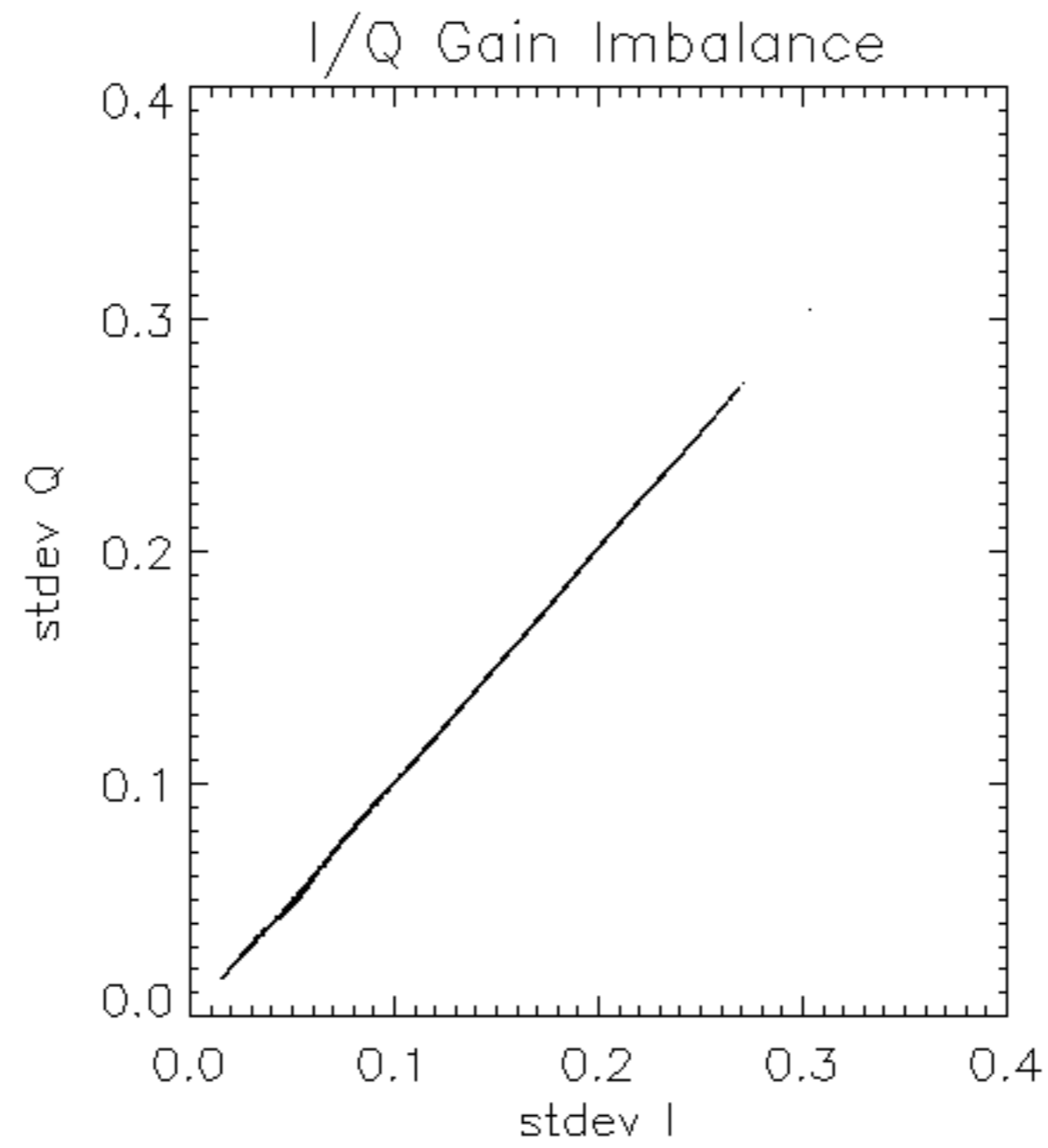


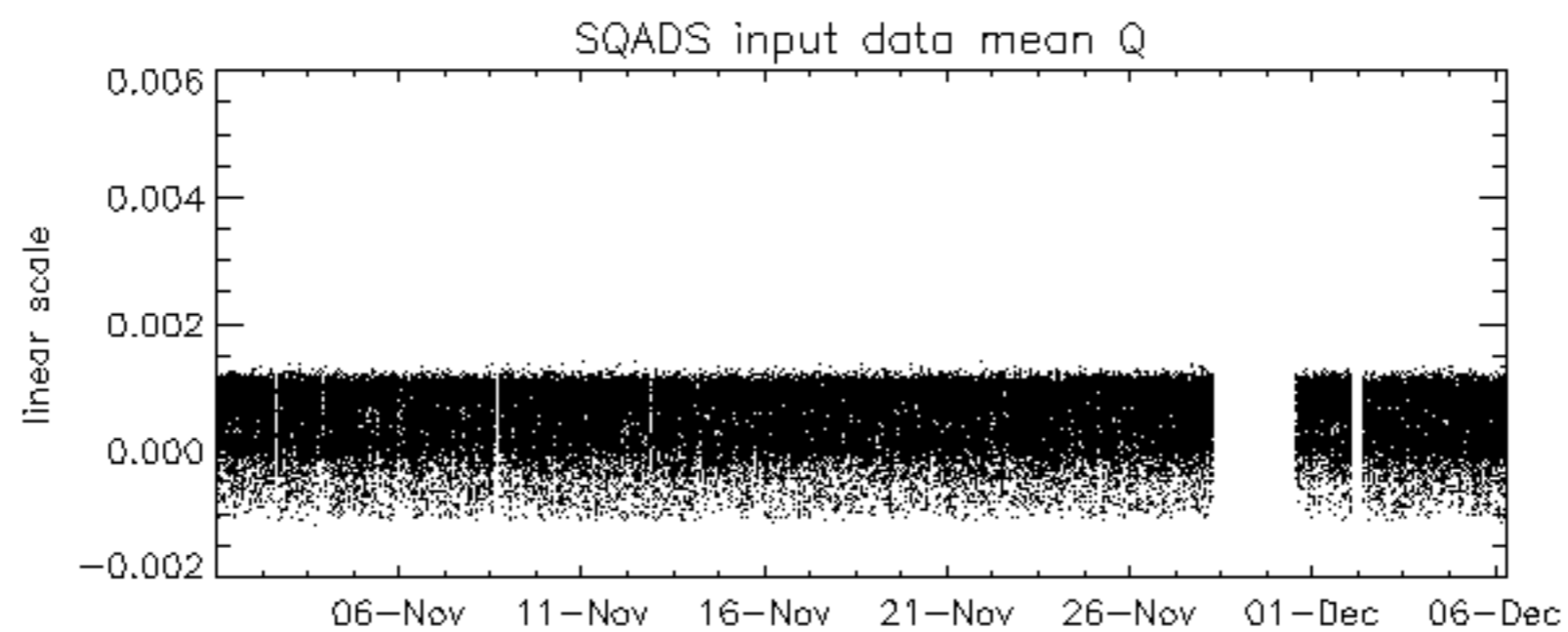
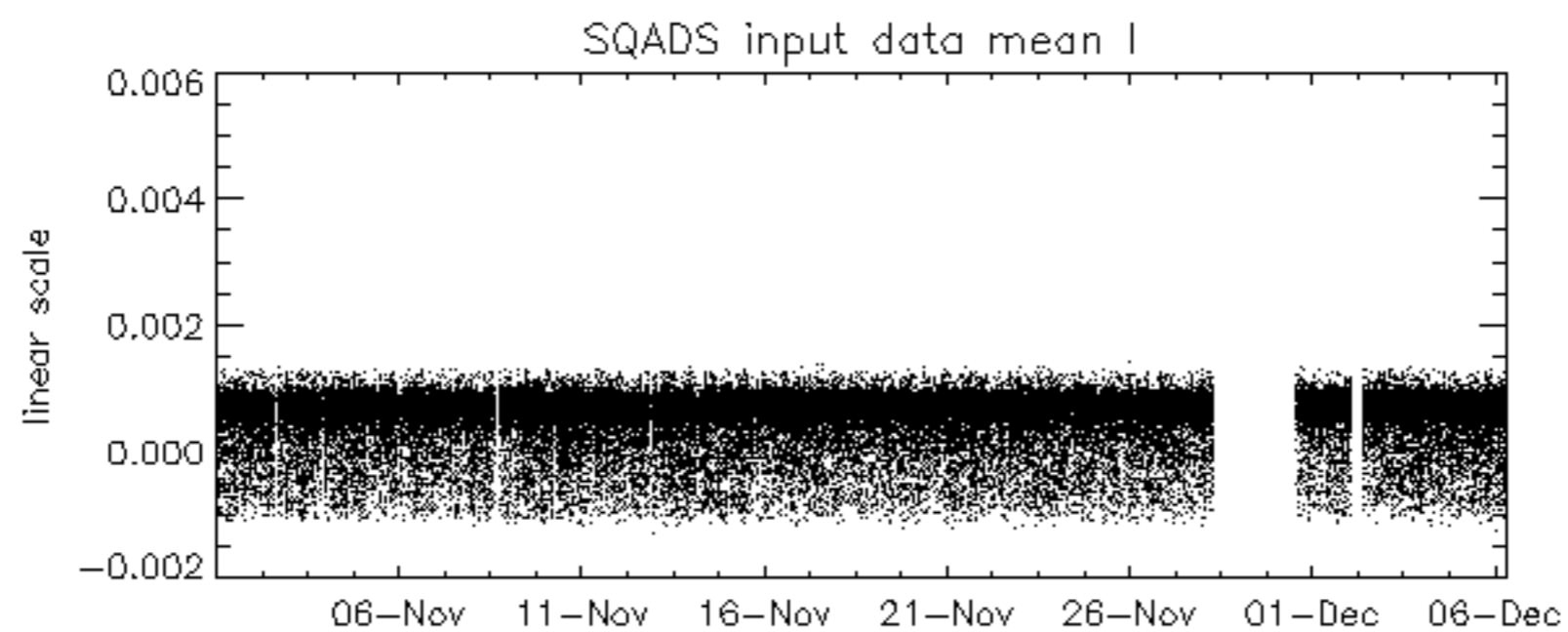
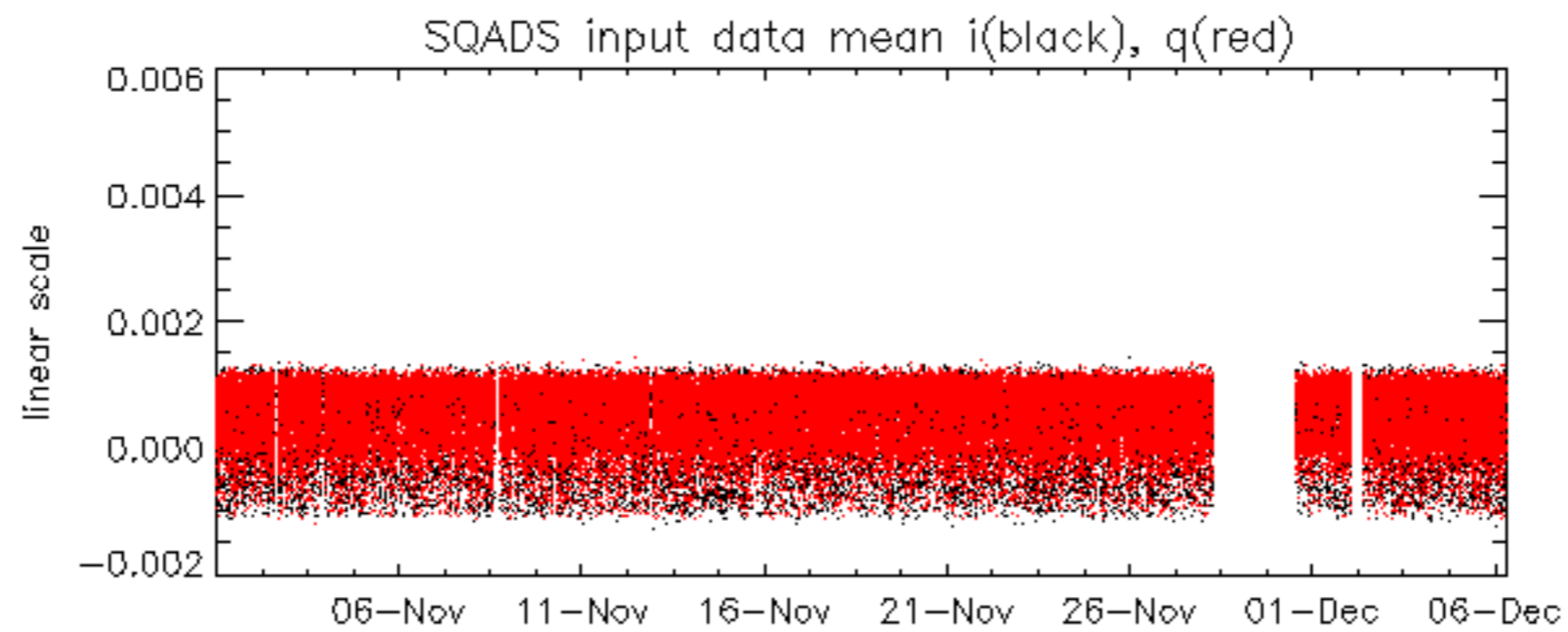


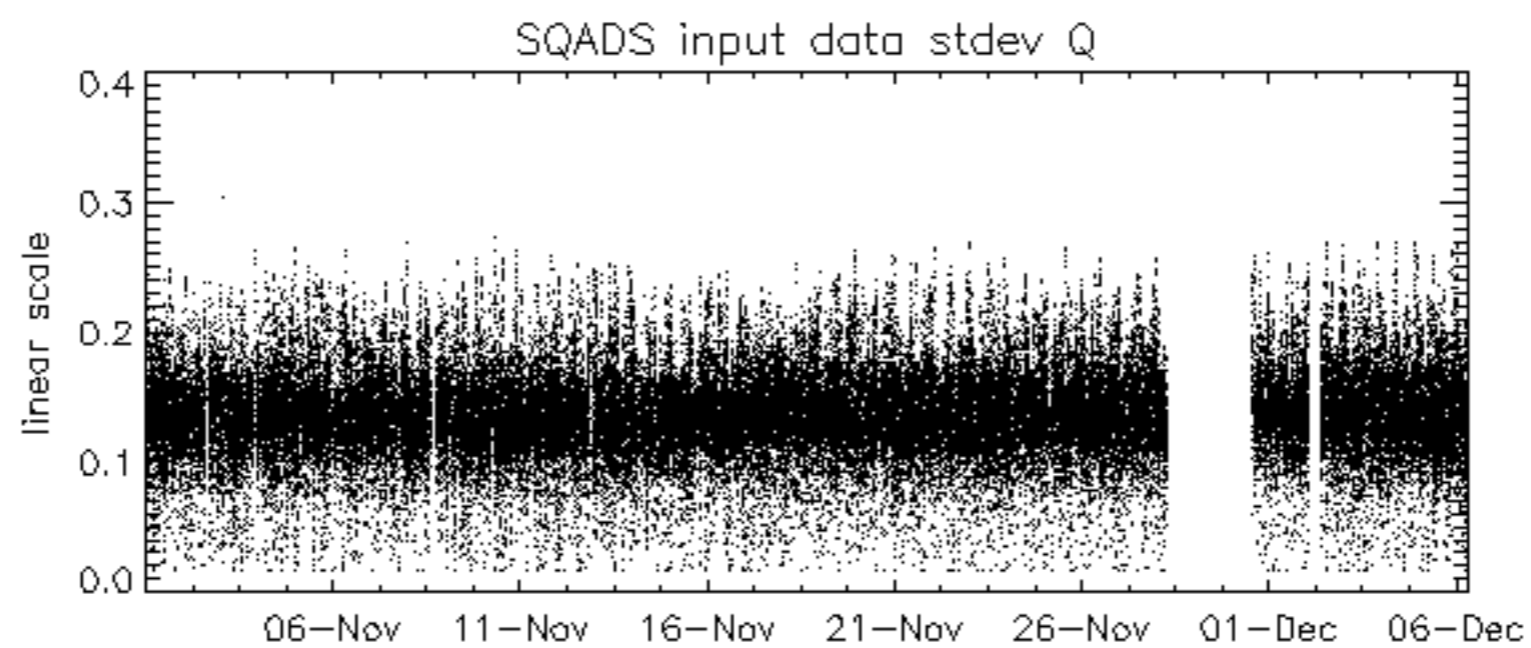
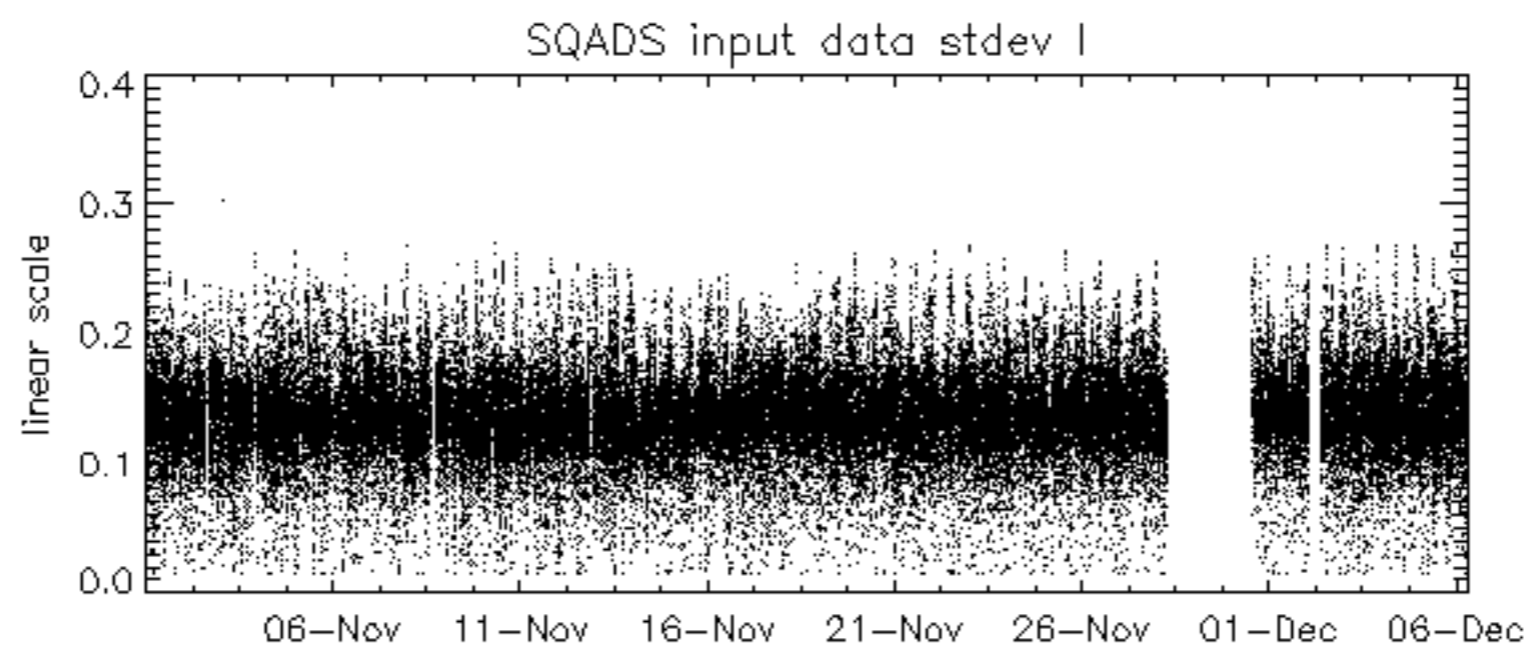
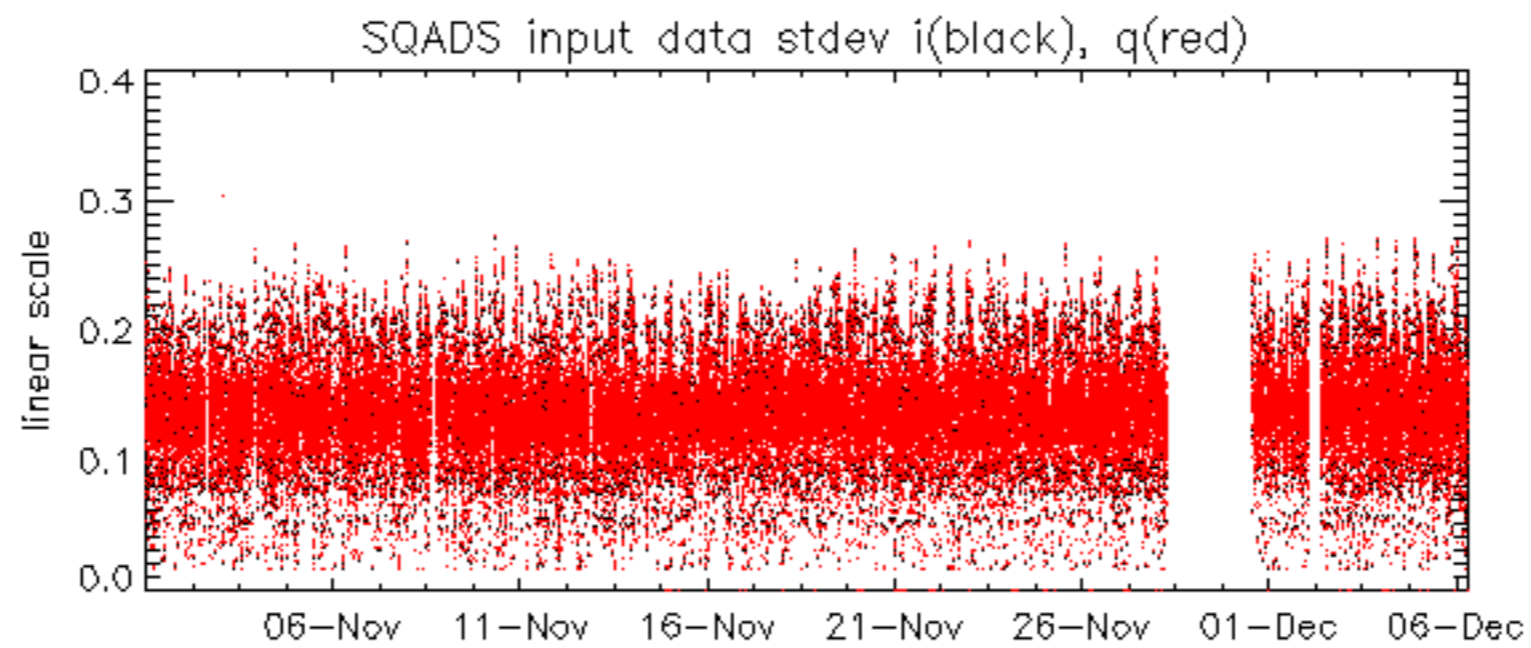






















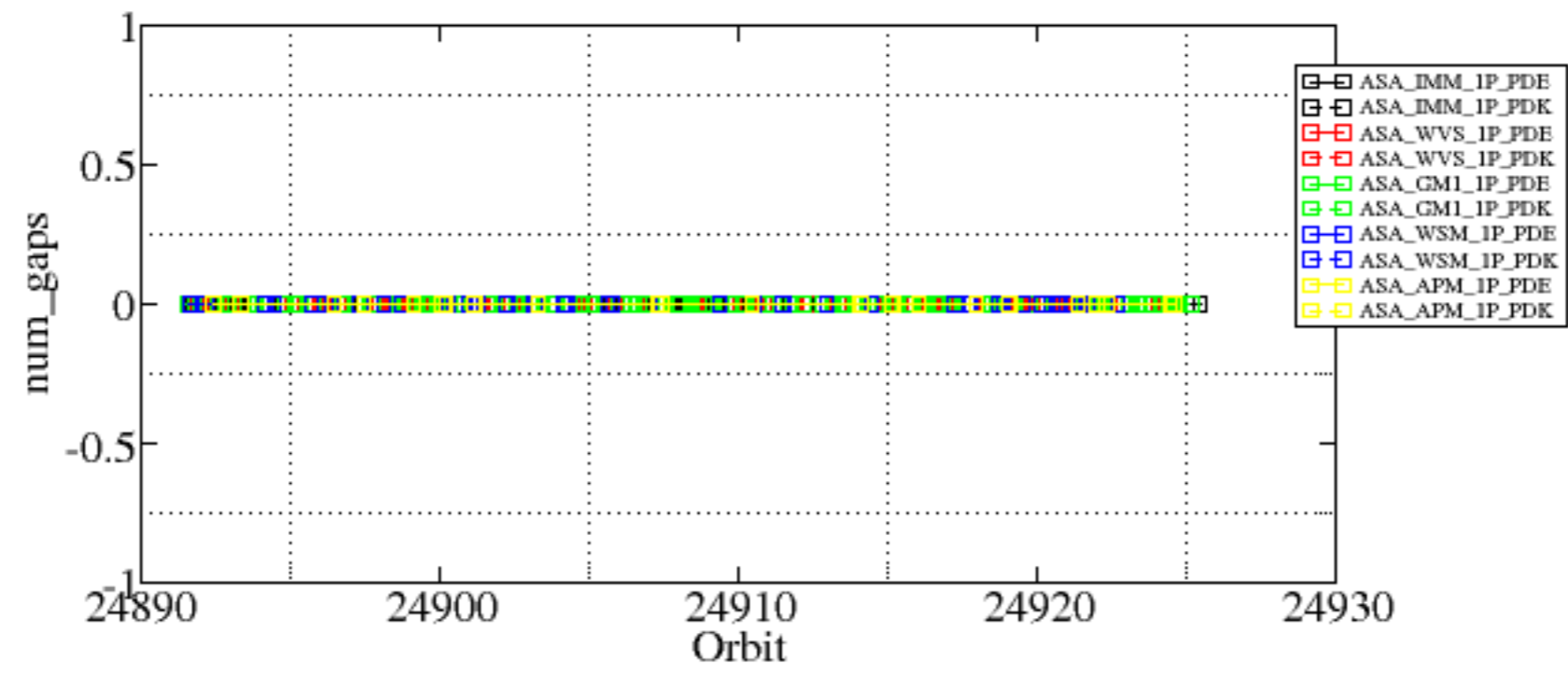




Summary of analysis for the last 3 days 2006120[456]

The assumptions 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_GM1_1PNPDK20061204_093242_000007732053_00294_24897_9683.N1 | 0        | 7                 |
| ASA_GM1_1PNPDK20061204_174633_000006342053_00299_24902_9712.N1 | 0        | 26                |
| ASA_WSM_1PNPDE20061204_142150_000000852053_00297_24900_8594.N1 | 0        | 29                |
| ASA_WSM_1PNPDE20061205_143228_000004462053_00311_24914_0242.N1 | 0        | 28                |
| ASA_WSM_1PNPDE20061206_003703_000002612053_00317_24920_0976.N1 | 0        | 34                |









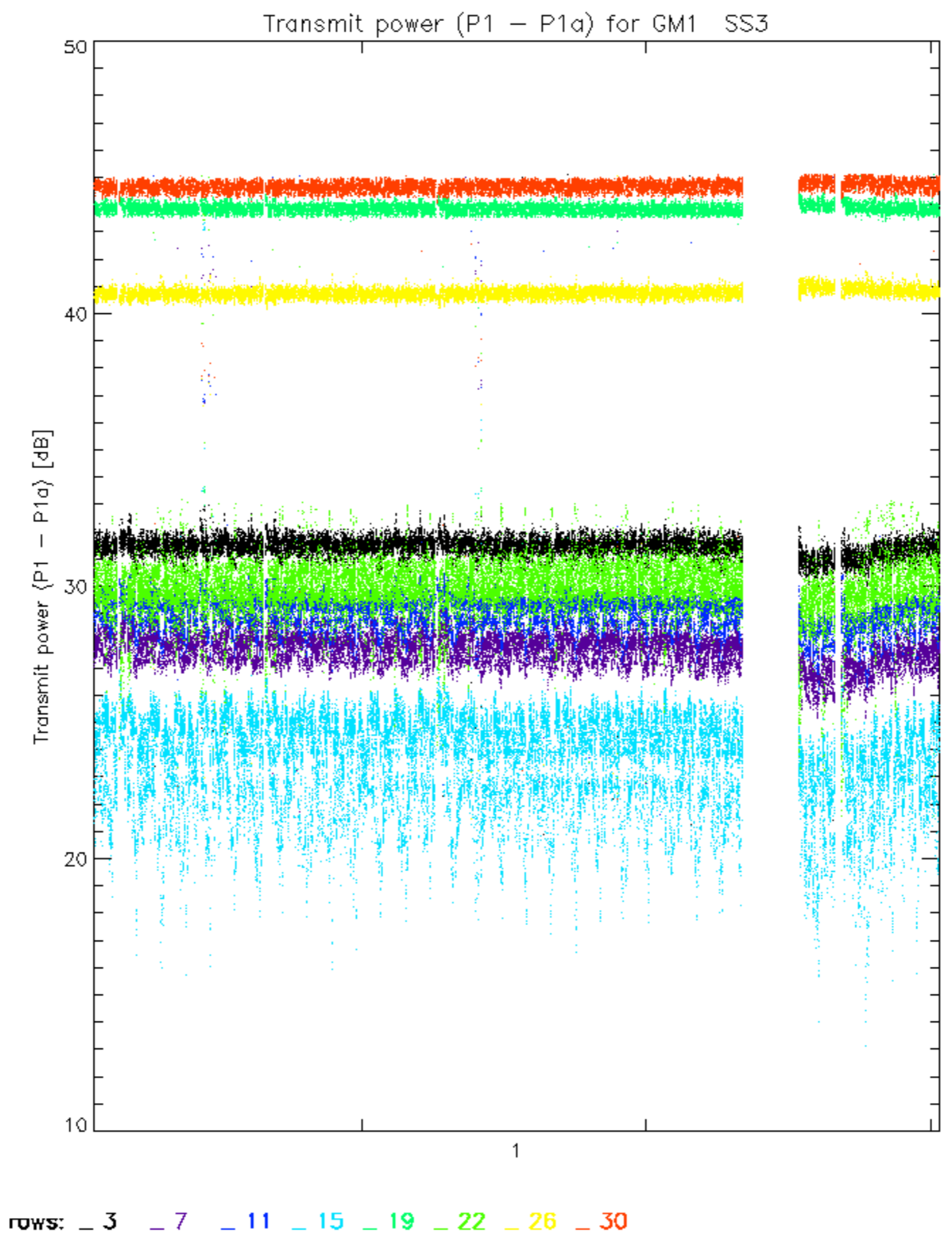


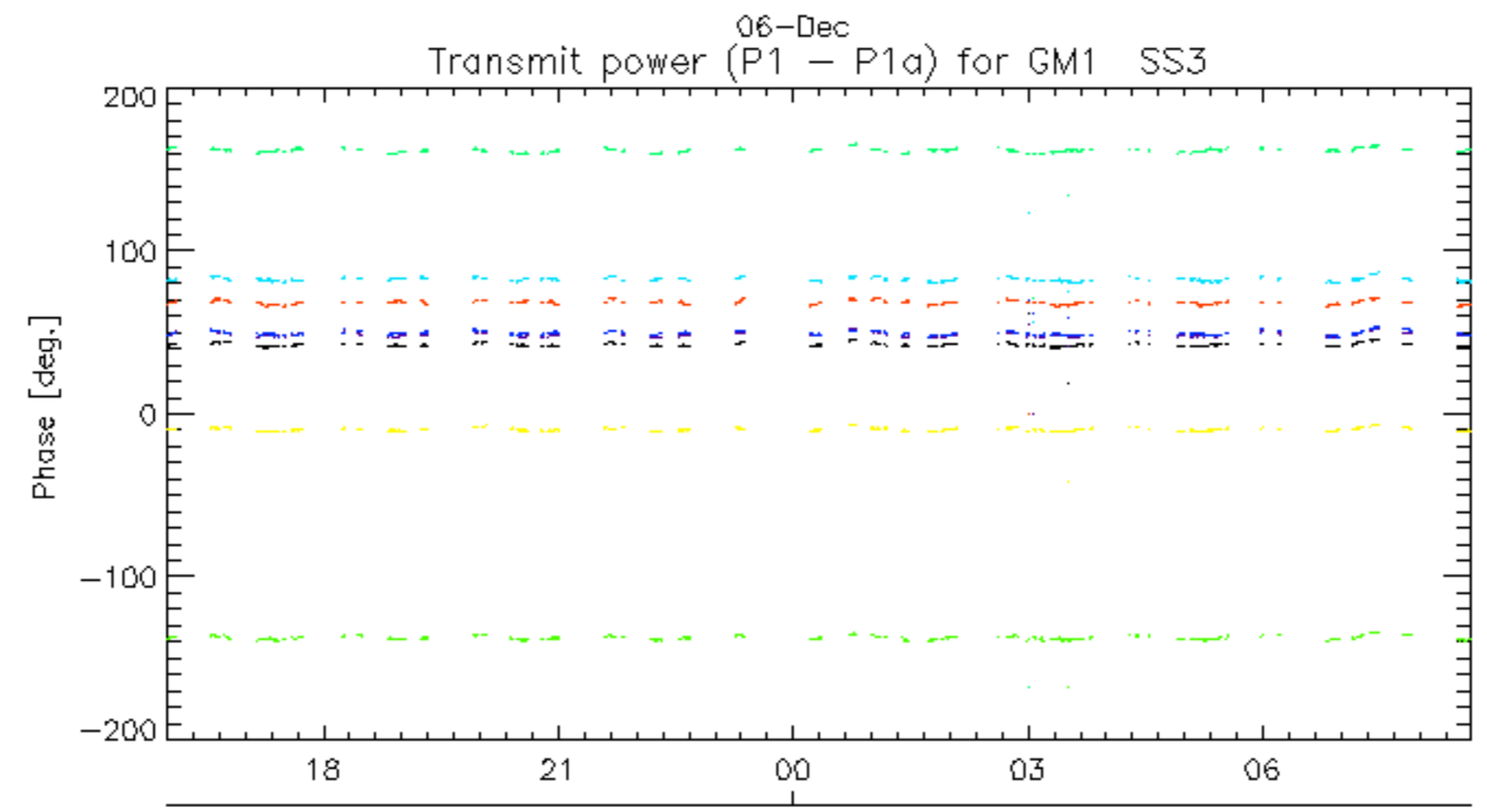
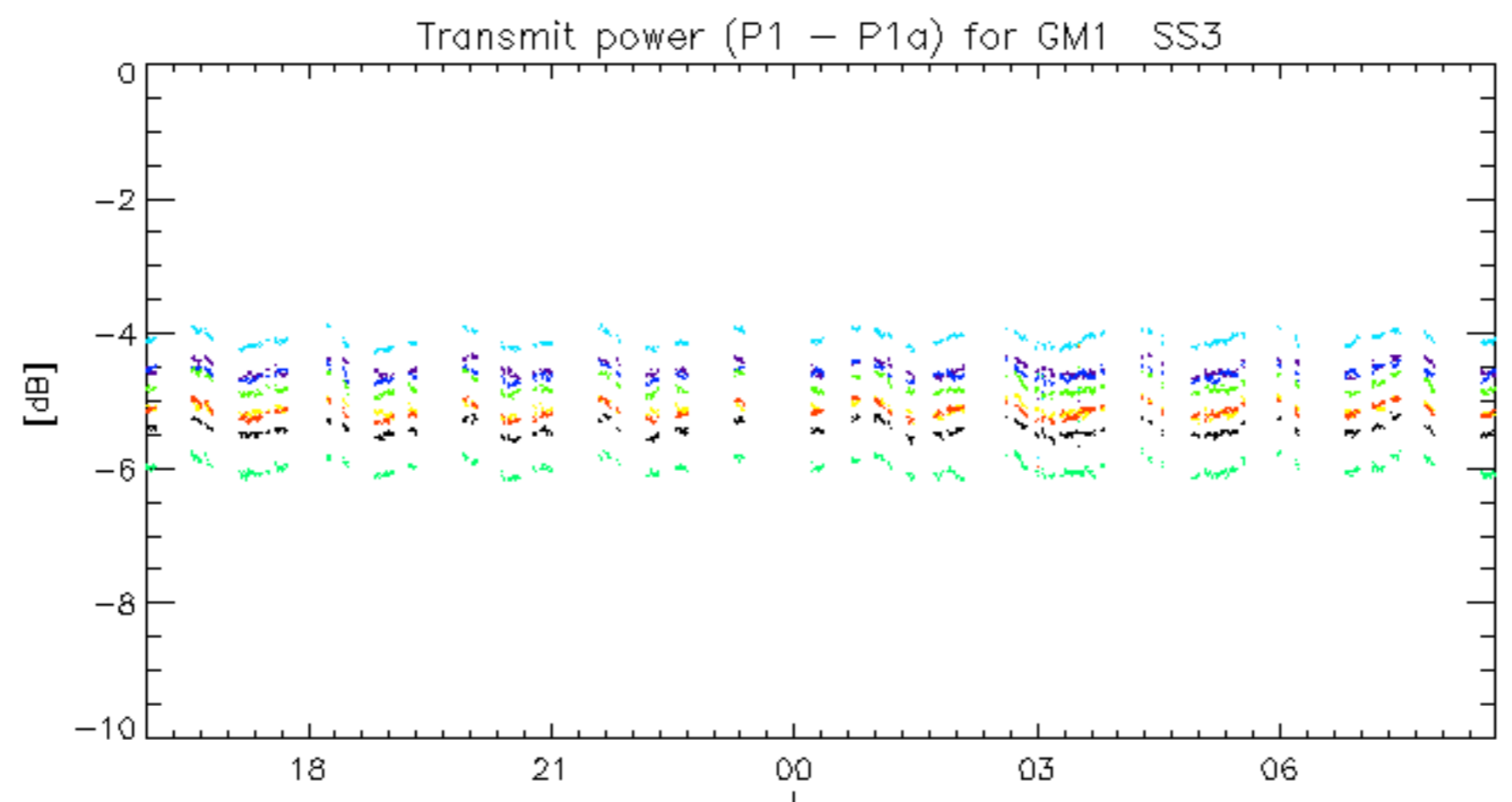






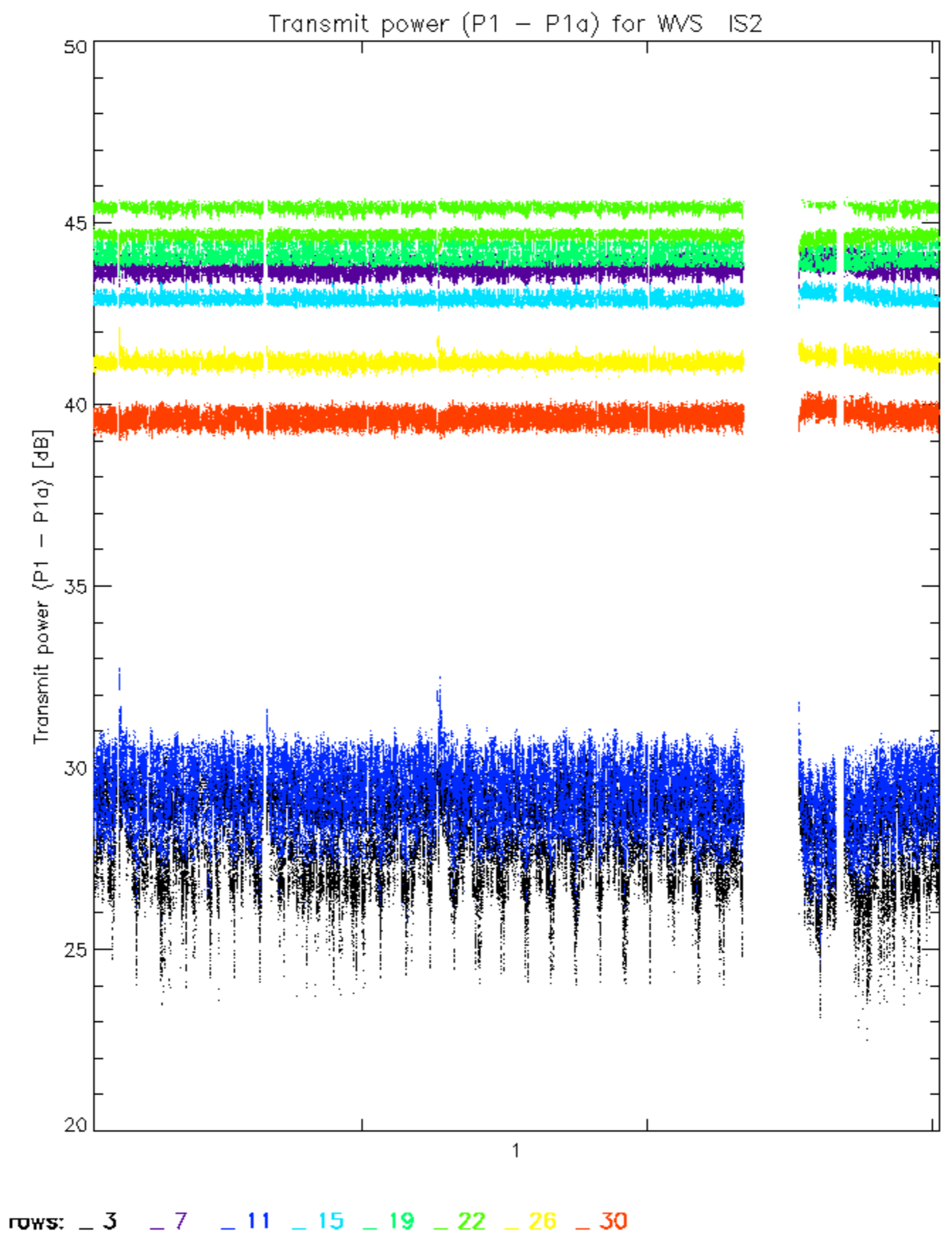


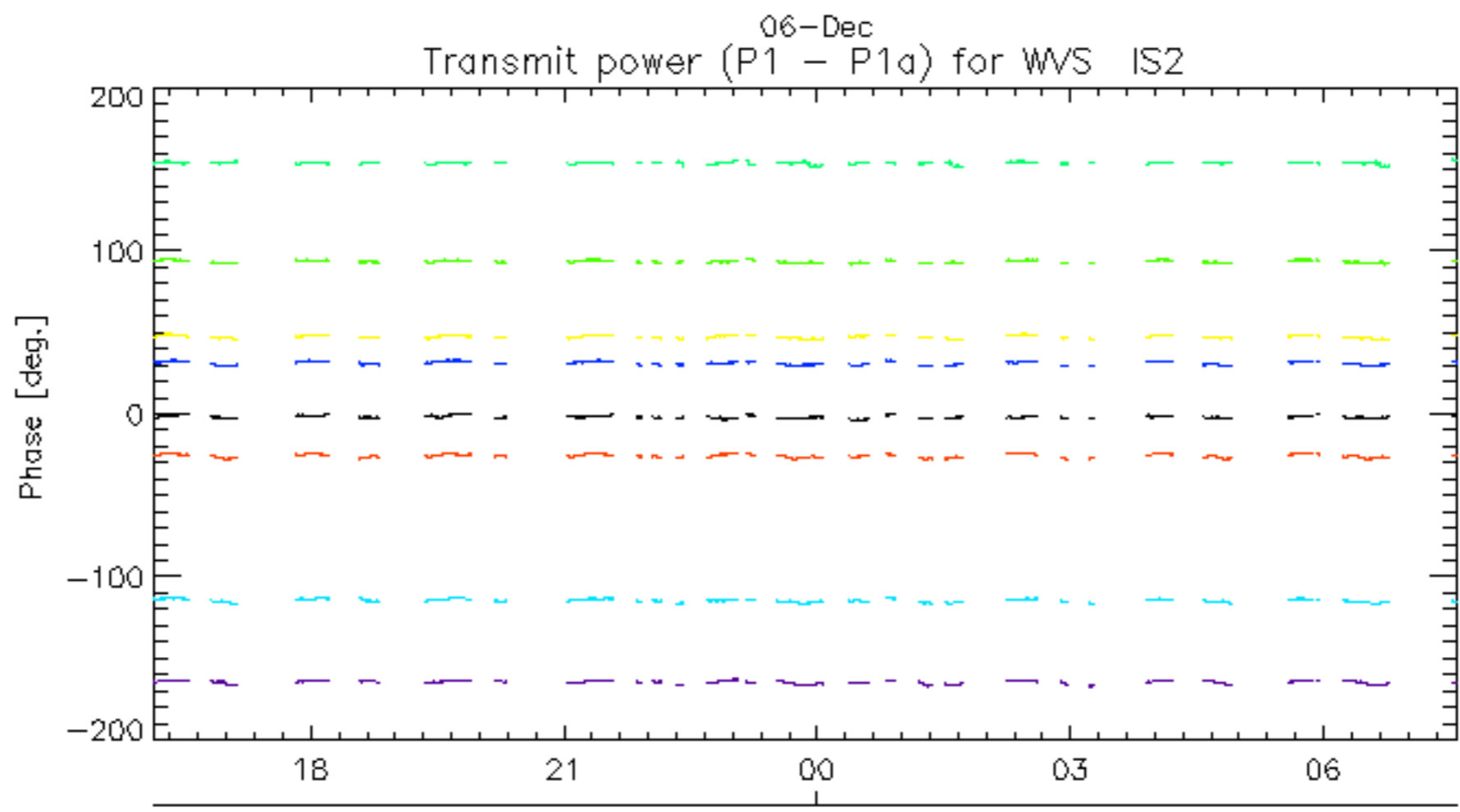
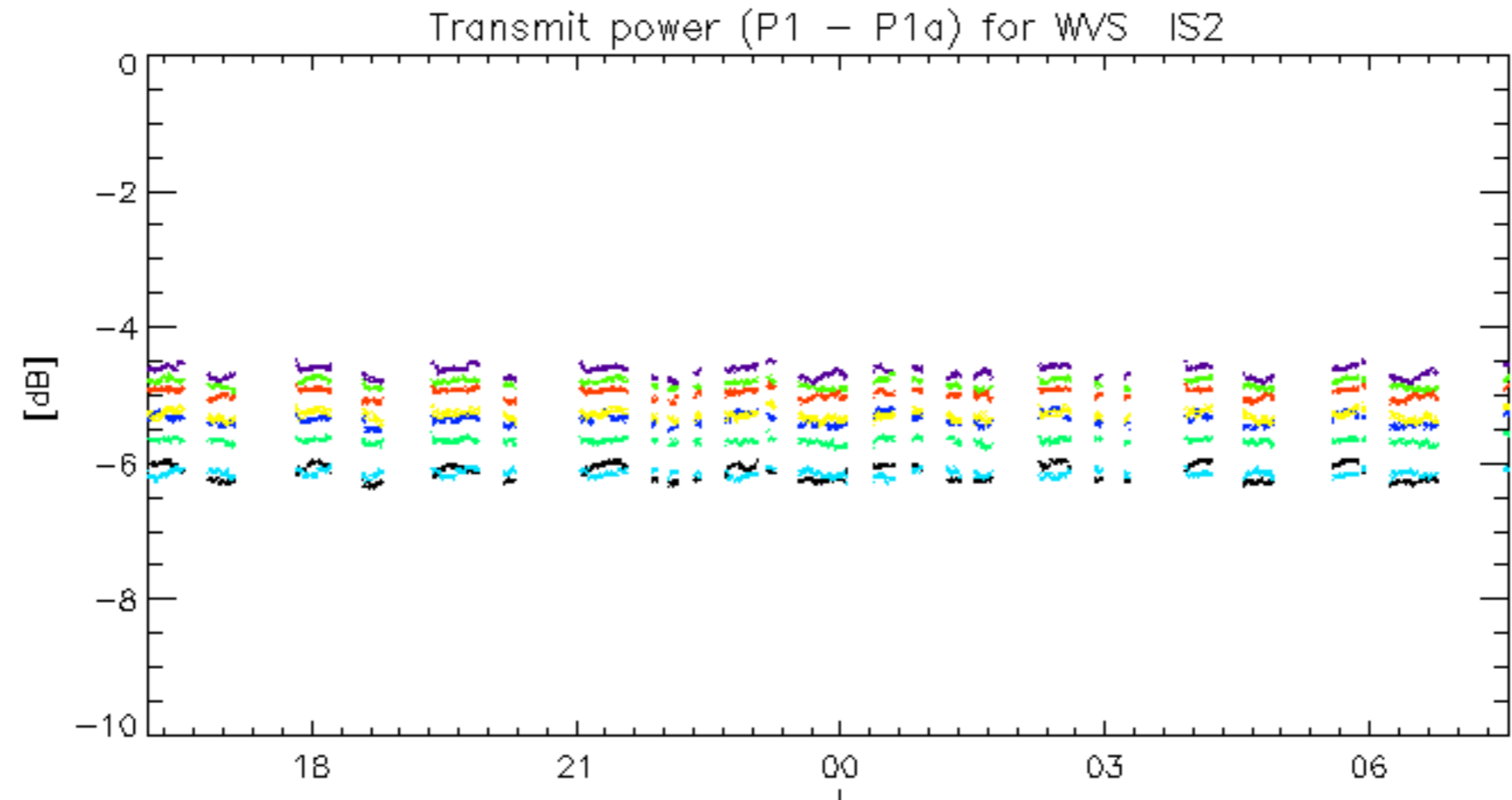




06-Dec  
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30







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

No unavailabilities during the reported period.