

# PRELIMINARY REPORT OF 060223

last update on Thu Feb 23 16:49:49 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 2006-02-22 00:00:00 to 2006-02-23 16:49:49

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

|   |    |    |    |   |    |
|---|----|----|----|---|----|
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 46 | 72 | 10 | 0 | 12 |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 46 | 72 | 10 | 0 | 12 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 46 | 72 | 10 | 0 | 12 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 46 | 72 | 10 | 0 | 12 |

| PDHS-E  |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE  | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 47  | 43  | 40  | 12  | 46  |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 47  | 43  | 40  | 12  | 46  |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 47  | 43  | 40  | 12  | 46  |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 47  | 43  | 40  | 12  | 46  |

### 2.3 - Browse Visual Inspection

No anomalies observed on available browse products

### 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            | 20060222 043729 |
| H            | 20060221 050906 |

### MSM in V/V 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"/>     |

### 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    | -4.005124  | 0.009070   | 0.018885        |
| 7   | P1    | -3.001940  | 0.011454   | 0.023209        |
| 11  | P1    | -4.085341  | 0.022305   | 0.036389        |
| 15  | P1    | -6.062435  | 0.020089   | 0.002271        |
| 19  | P1    | -3.266852  | 0.006660   | -0.028803       |
| 22  | P1    | -4.465787  | 0.016821   | 0.043965        |
| 26  | P1    | -4.217056  | 0.102052   | -0.152649       |
| 30  | P1    | -5.772223  | 0.010334   | 0.005463        |
| 3   | P1    | -16.929054 | 0.261184   | -0.190154       |
| 7   | P1    | -16.668823 | 0.114802   | -0.025551       |
| 11  | P1    | -16.572607 | 0.329715   | 0.120095        |
| 15  | P1    | -13.123601 | 0.110015   | 0.238983        |
| 19  | P1    | -13.899014 | 0.064015   | -0.004262       |
| 22  | P1    | -15.700468 | 0.525452   | 0.447150        |
| 26  | P1    | -15.734218 | 0.321333   | 0.102659        |
| 30  | P1    | -16.541189 | 0.283843   | 0.207170        |

**P2 Cyclic statistics**

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -21.495531 | 0.090541   | 0.205003        |
| 7   | P2    | -22.415823 | 0.094379   | 0.051313        |
| 11  | P2    | -16.252705 | 0.099721   | 0.039757        |
| 15  | P2    | -7.181341  | 0.100968   | 0.058647        |
| 19  | P2    | -9.149133  | 0.094453   | 0.053935        |
| 22  | P2    | -17.936905 | 0.091699   | 0.046857        |
| 26  | P2    | -16.210579 | 0.097707   | 0.027852        |
| 30  | P2    | -19.638096 | 0.084430   | 0.019681        |

**P3 Cyclic statistics**

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.197443 | 0.007025   | 0.023322        |
| 7   | P3    | -8.197443 | 0.007025   | 0.023322        |
| 11  | P3    | -8.197443 | 0.007025   | 0.023322        |
| 15  | P3    | -8.197443 | 0.007025   | 0.023322        |
| 19  | P3    | -8.197443 | 0.007025   | 0.023322        |
| 22  | P3    | -8.197443 | 0.007025   | 0.023322        |
| 26  | P3    | -8.197443 | 0.007025   | 0.023322        |
| 30  | P3    | -8.197443 | 0.007025   | 0.023322        |

**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    | -3.872316  | 4.700036   | -0.612706       |
| 7   | P1    | -2.883317  | 4.925831   | -0.652291       |
| 11  | P1    | -3.047822  | 4.956979   | -0.728882       |
| 15  | P1    | -3.682963  | 4.914613   | -0.819781       |
| 19  | P1    | -3.507692  | 4.769377   | -0.558725       |
| 22  | P1    | -5.283526  | 4.376451   | -0.614217       |
| 26  | P1    | -6.047883  | 4.629055   | -0.900389       |
| 30  | P1    | -5.335559  | 4.334846   | -0.486508       |
| 3   | P1    | -11.663748 | 3.080621   | -0.550961       |
| 7   | P1    | -10.053625 | 3.401777   | -0.570174       |
| 11  | P1    | -10.295717 | 3.395941   | -0.681503       |
| 15  | P1    | -10.840252 | 3.378531   | -0.741862       |
| 19  | P1    | -15.509698 | 2.476058   | -0.217378       |
| 22  | P1    | -20.408106 | 2.990506   | 0.019965        |

|    |    |            |          |           |
|----|----|------------|----------|-----------|
| 26 | P1 | -16.478321 | 3.120457 | 0.480626  |
| 30 | P1 | -18.317793 | 2.212234 | -0.453538 |

### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -17.238647 | 3.200312   | 0.323496        |
| 7   | P2    | -22.624863 | 3.683793   | 0.567782        |
| 11  | P2    | -11.372351 | 3.498538   | -0.054566       |
| 15  | P2    | -4.980483  | 4.567457   | -0.445474       |
| 19  | P2    | -6.985880  | 4.110197   | -0.413563       |
| 22  | P2    | -8.261123  | 3.857249   | -0.343063       |
| 26  | P2    | -23.867455 | 3.768644   | 0.409881        |
| 30  | P2    | -22.022602 | 3.575054   | 0.300906        |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.031102 | 0.002965   | 0.023463        |
| 7   | P3    | -8.031068 | 0.002964   | 0.023531        |
| 11  | P3    | -8.031061 | 0.002963   | 0.023597        |
| 15  | P3    | -8.031104 | 0.002963   | 0.023426        |
| 19  | P3    | -8.031136 | 0.002967   | 0.023670        |
| 22  | P3    | -8.031089 | 0.002969   | 0.023853        |
| 26  | P3    | -8.031241 | 0.002967   | 0.023659        |
| 30  | P3    | -8.031041 | 0.002972   | 0.023307        |

## 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  | 0.000556188 |
|         | stdev | 1.72118e-07 |
| MEAN Q  | mean  | 0.000521829 |
|         | stdev | 2.15195e-07 |



### 5.2 - Input stdev I/Q

| channel | stat  | DSS-B      |
|---------|-------|------------|
| STDEV I | mean  | 0.138503   |
|         | stdev | 0.00115174 |
| STDEV Q | mean  | 0.138855   |
|         | stdev | 0.00117001 |



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006022[123]

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_IMM_1PNPDE20060221_003709_000001342045_00202_20797_3819.N1 | 1        | 0                 |
| ASA_GM1_1PNPDK20060221_115852_000004282045_00209_20804_2149.N1 | 0        | 30                |
| ASA_GM1_1PNPDK20060222_084957_000006702045_00222_20817_2189.N1 | 0        | 15                |
| ASA_WSM_1PNPDE20060221_112842_000001842045_00209_20804_5812.N1 | 0        | 30                |
| ASA_WSM_1PNPDE20060223_020555_000001282045_00232_20827_6045.N1 | 0        | 49                |



## 7 - Doppler Analysis

Preliminary report. The data is not yet controlled

### 7.1 - Unbiased Doppler Error for WVS

|  |
|--|
| <b>Evolution of unbiased Doppler error (Real - Expected)</b> |
|--|

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

Ascending

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

Descending

### 7.2 - Absolute Doppler for WVS

|                                      |
|--------------------------------------|
| <b>Evolution of Absolute Doppler</b> |
|--------------------------------------|

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

Ascending

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

Descending

### 7.3 - Doppler evolution versus ANX for WVS

|   |
|---|
| <b>Evolution Doppler error versus ANX</b> |
|---|

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

#### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

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

#### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

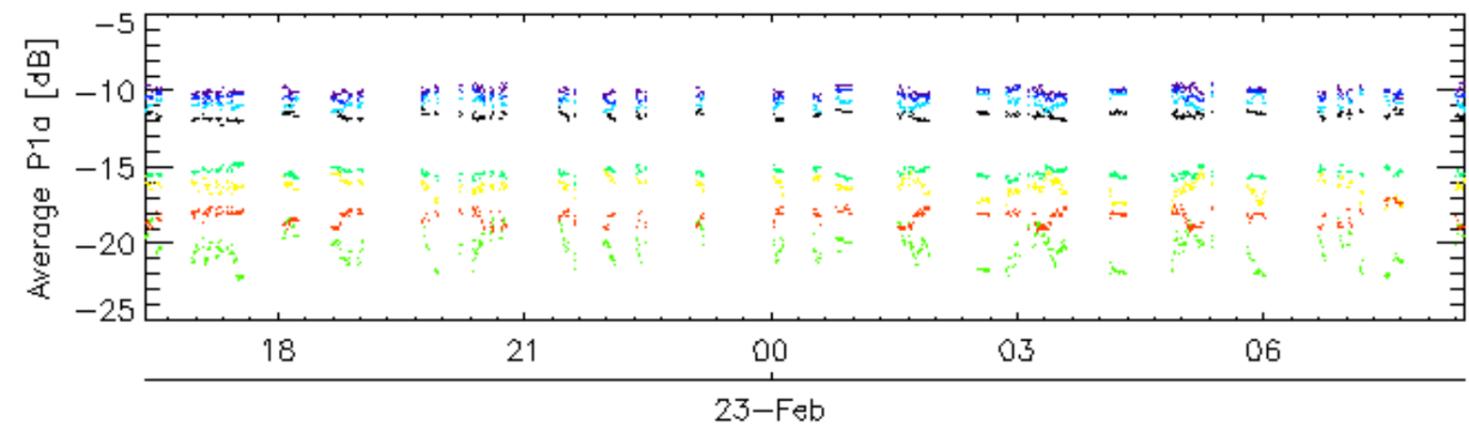
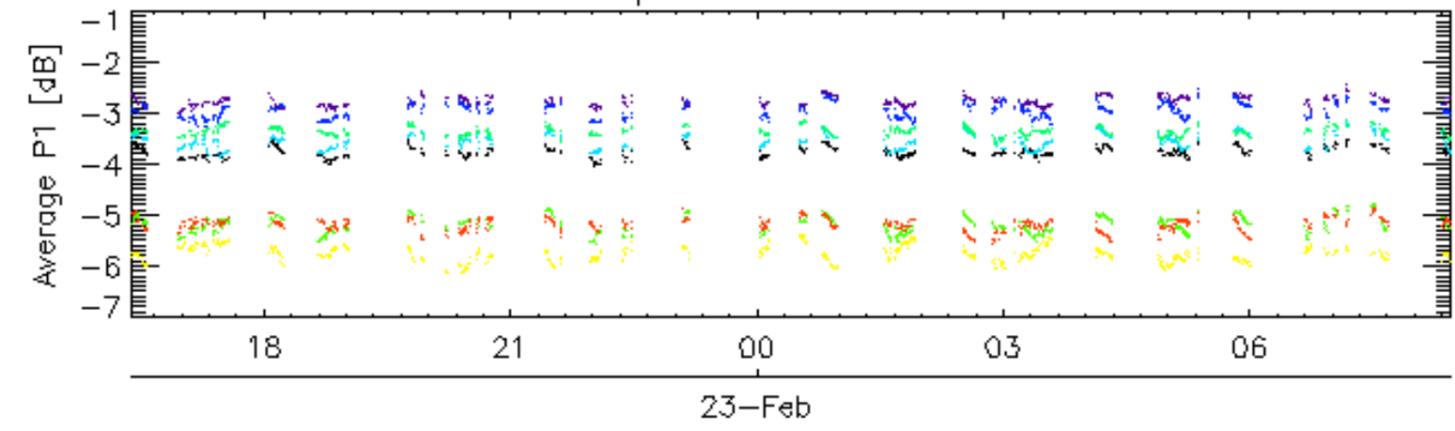
|                          |            |
|--------------------------|------------|
| <input type="checkbox"/> |            |
|                          | Ascending  |
| <input type="checkbox"/> |            |
|                          | Descending |

#### 7.6 - Doppler evolution versus ANX for GM1

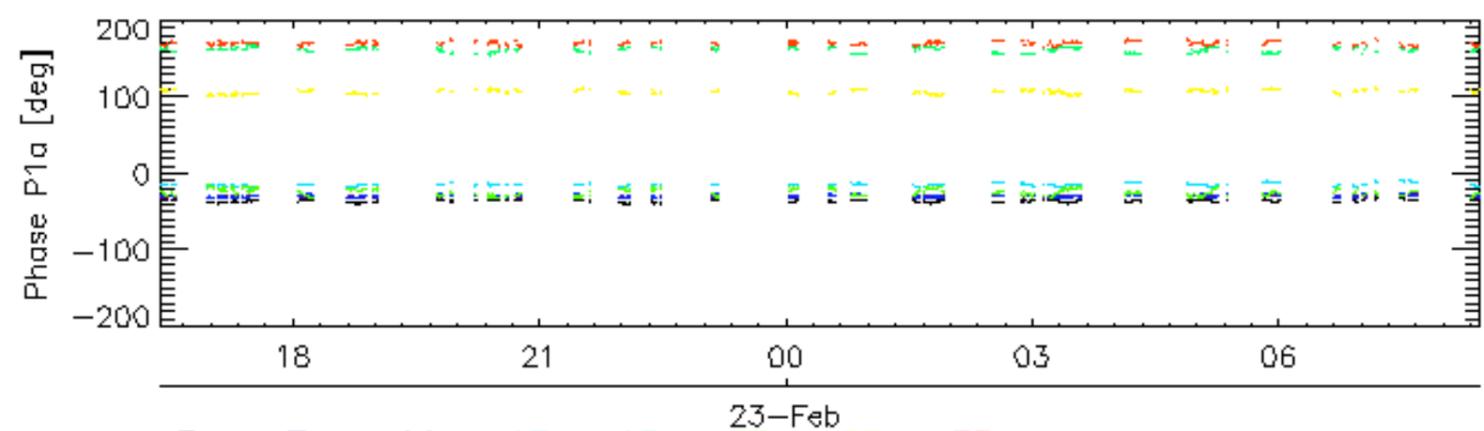
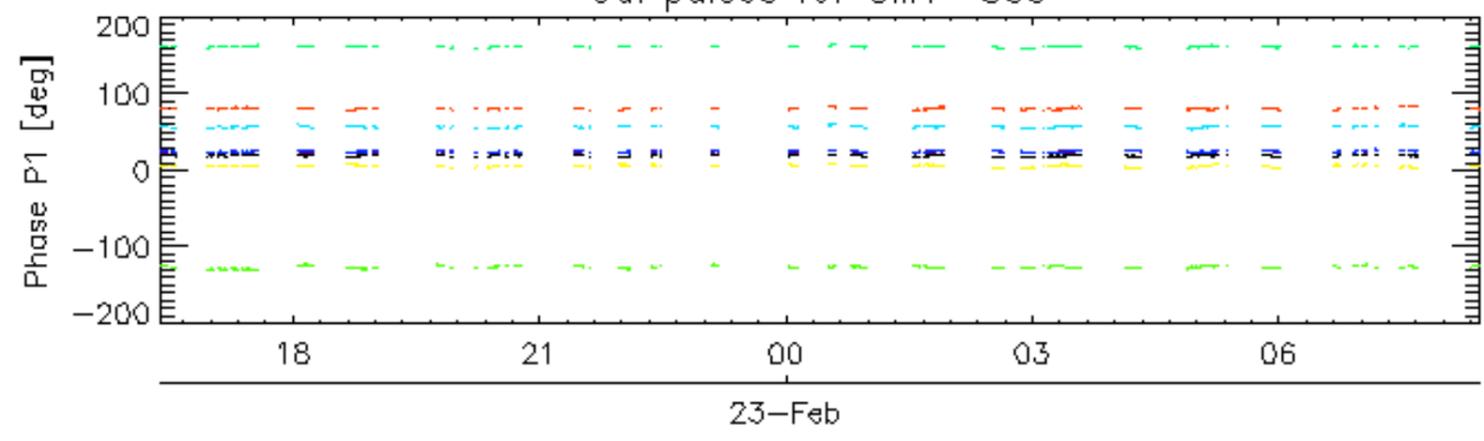
Evolution Doppler error versus ANX

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

Cal pulses for GM1 SS3

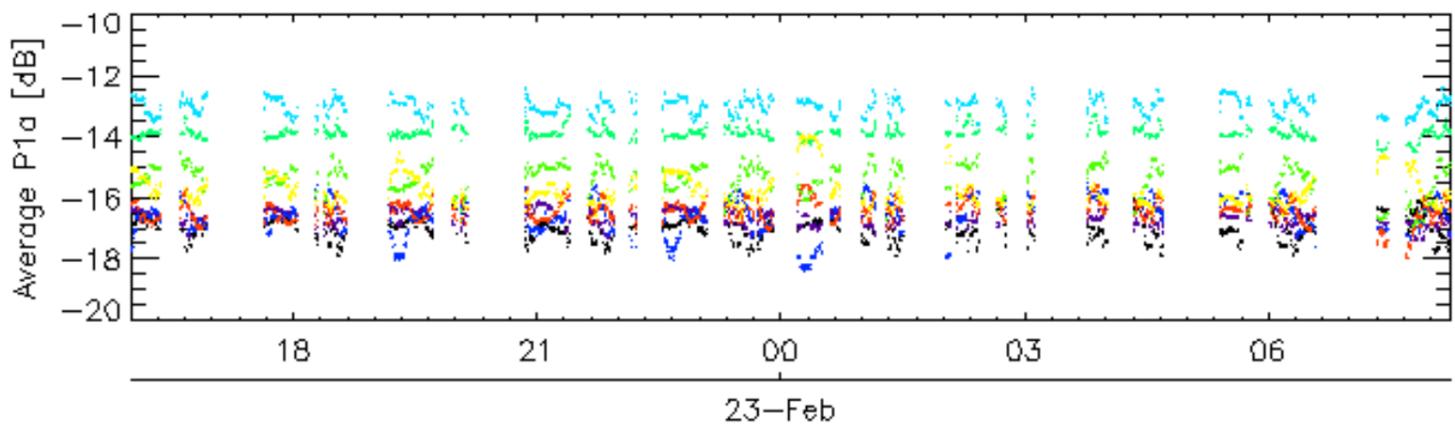
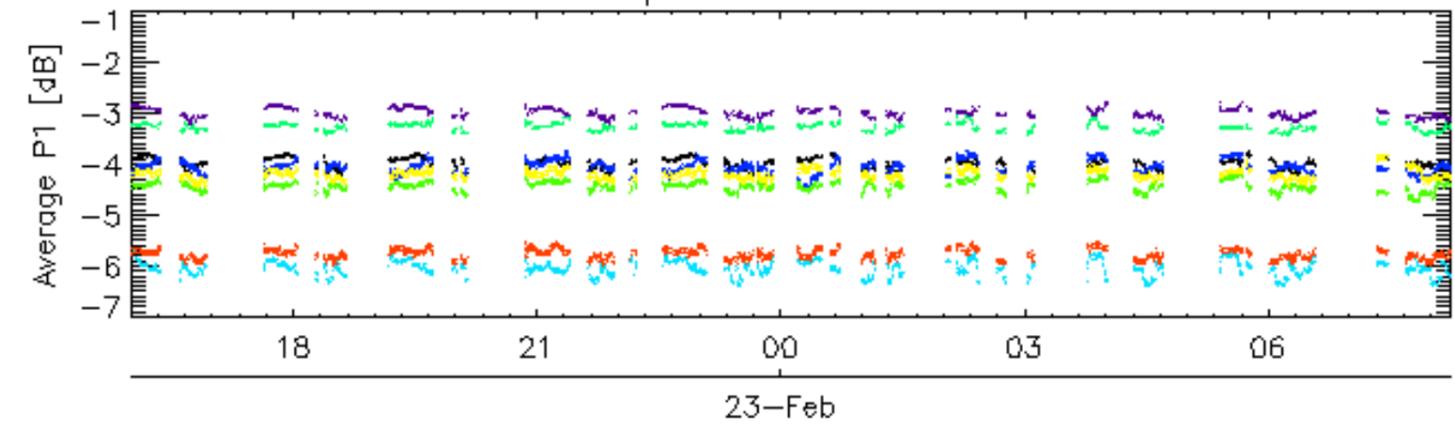


Cal pulses for GM1 SS3

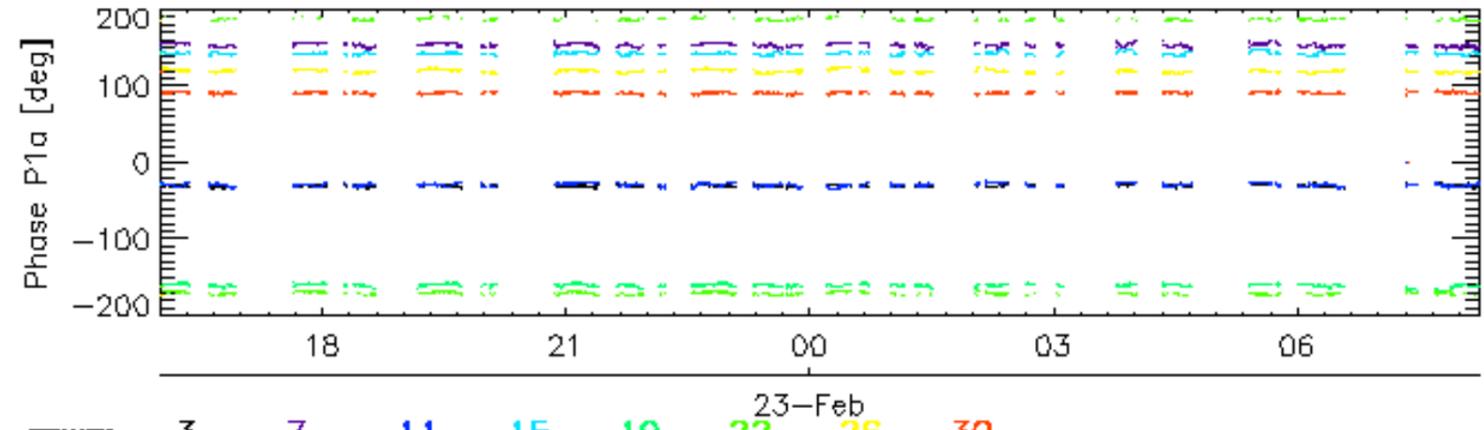
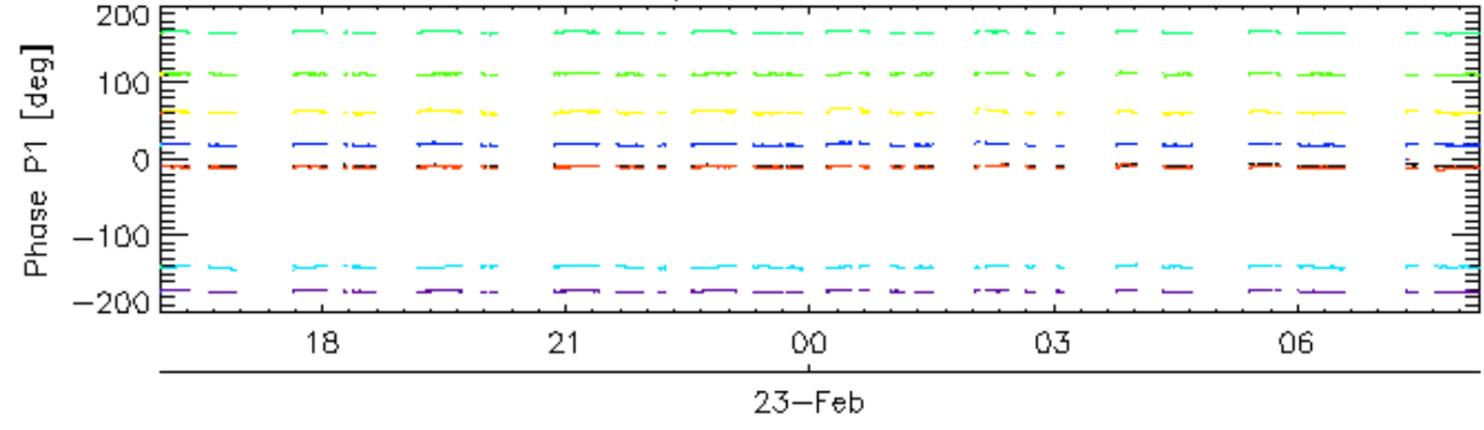


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

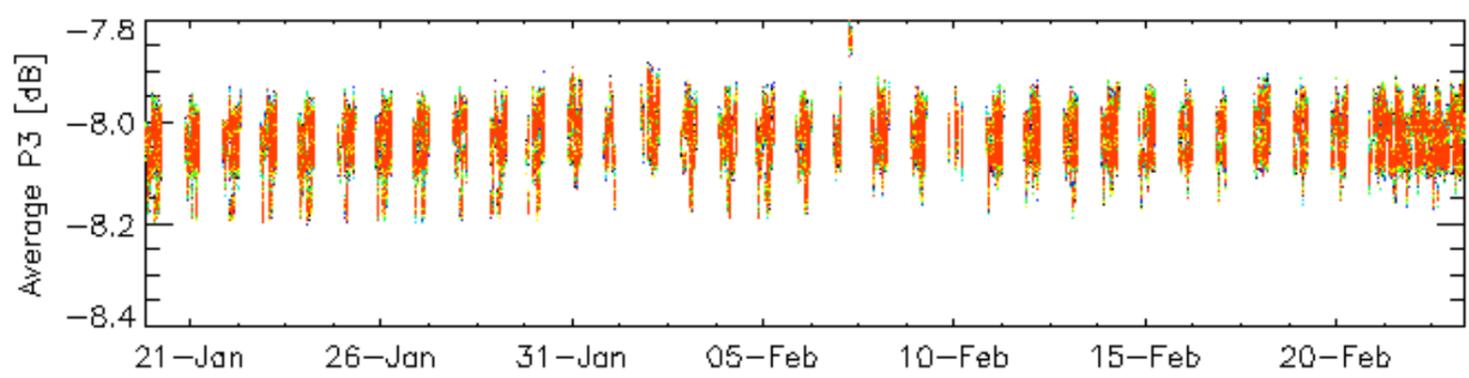
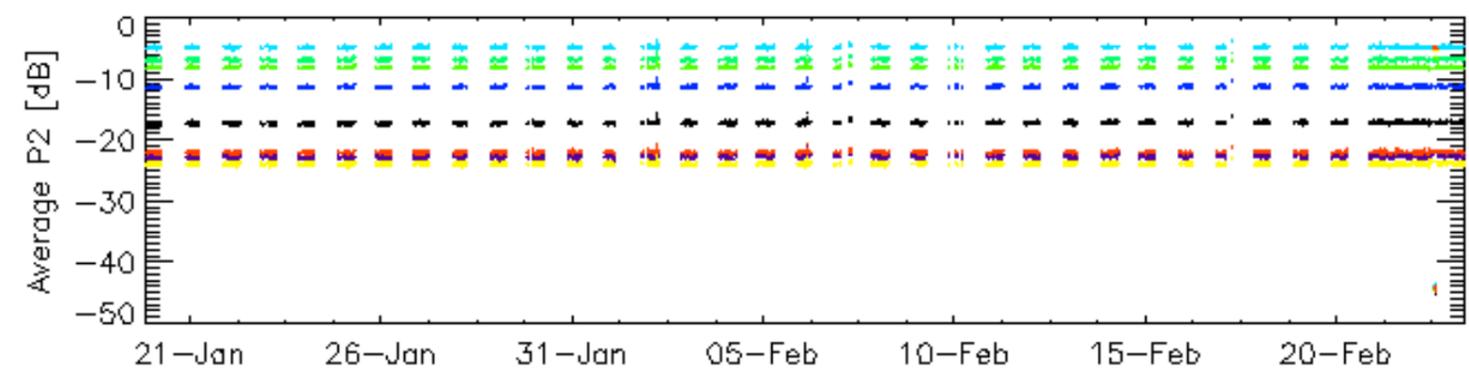
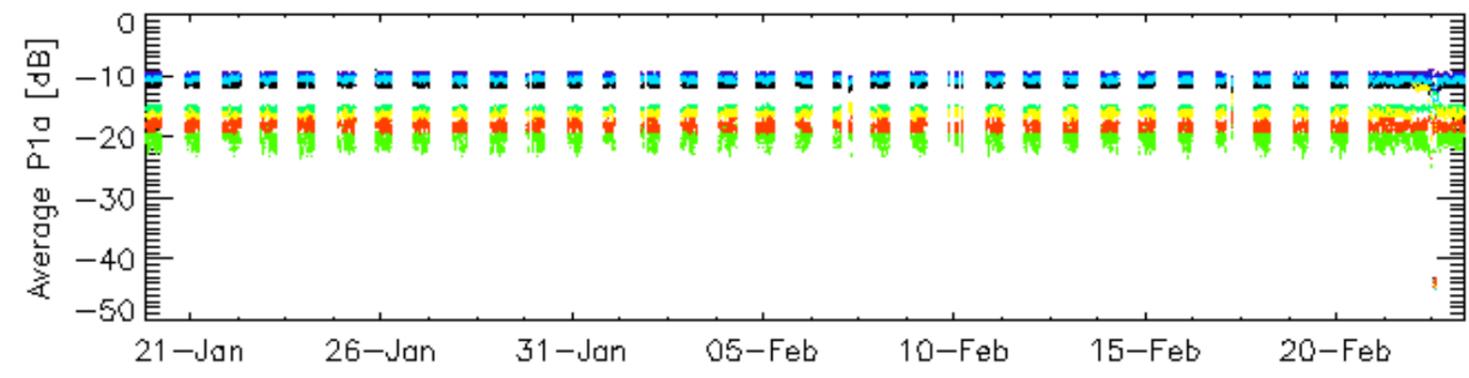
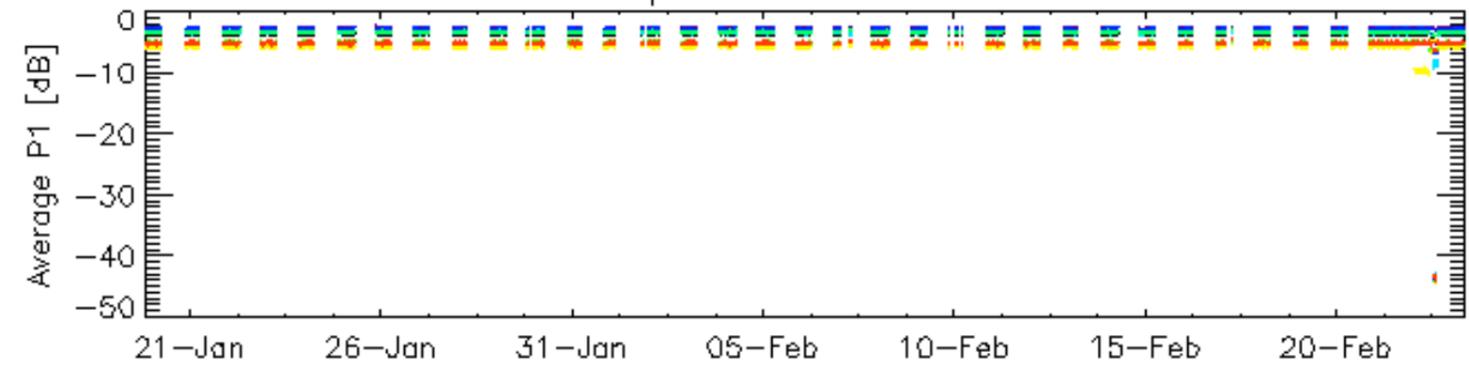


Cal pulses for WVS IS2



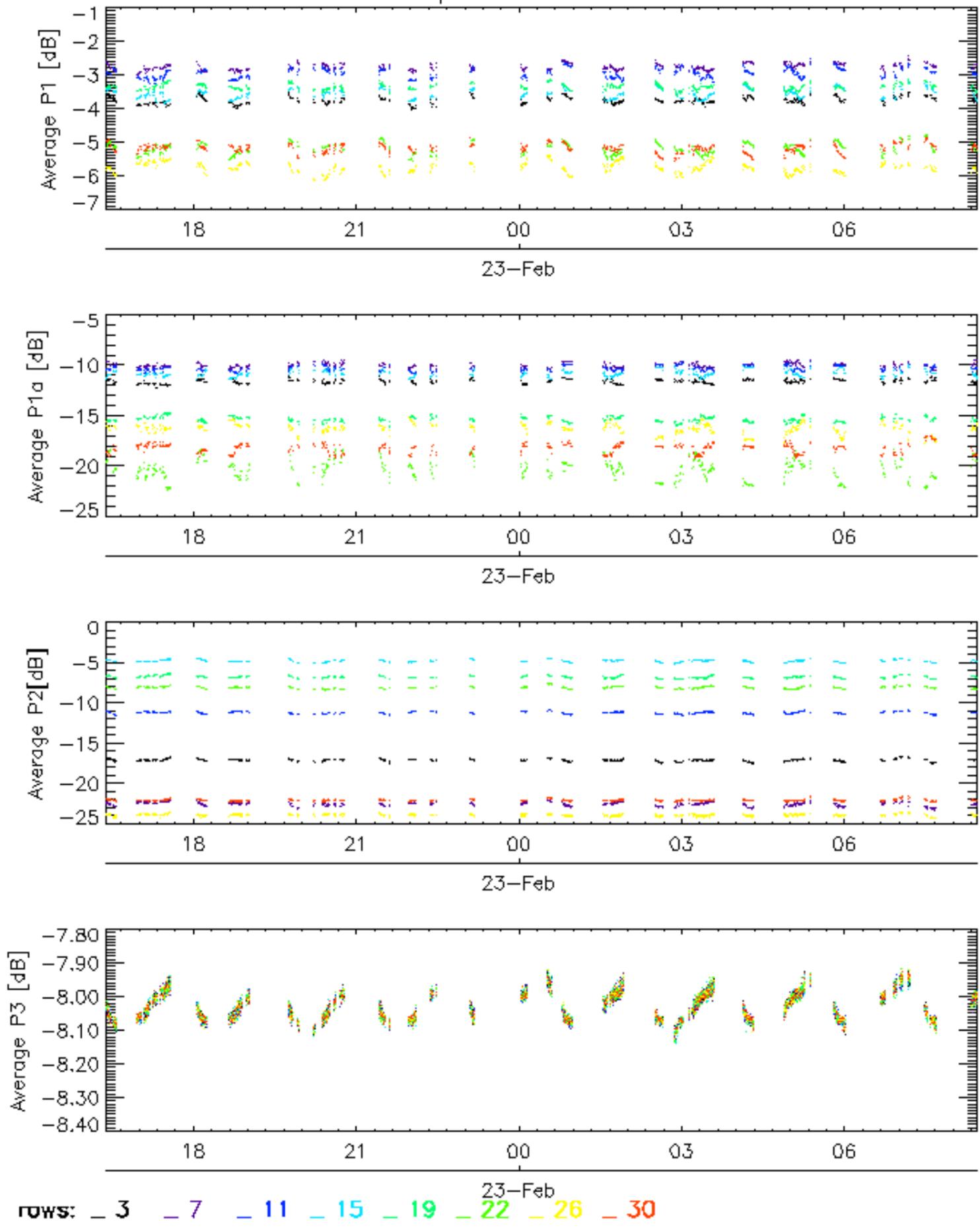
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

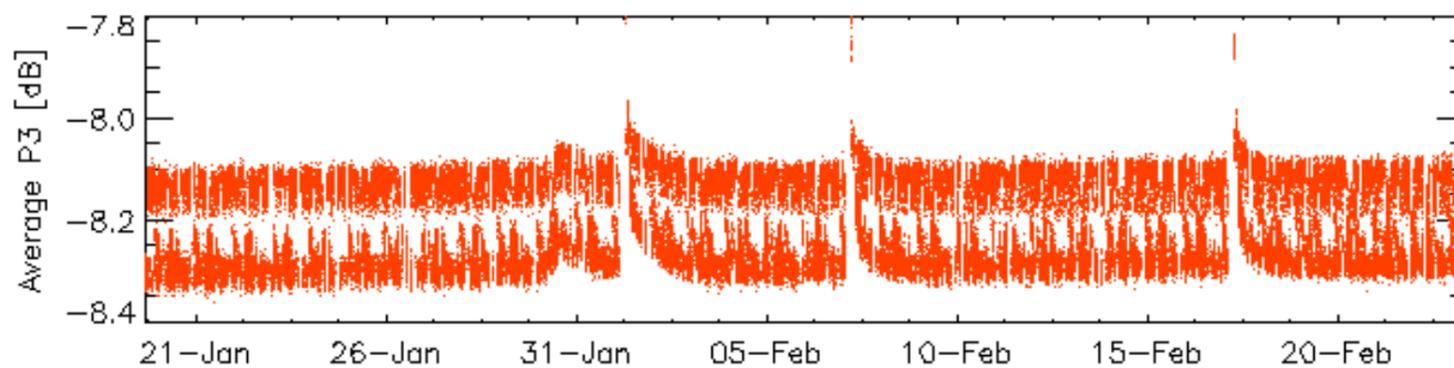
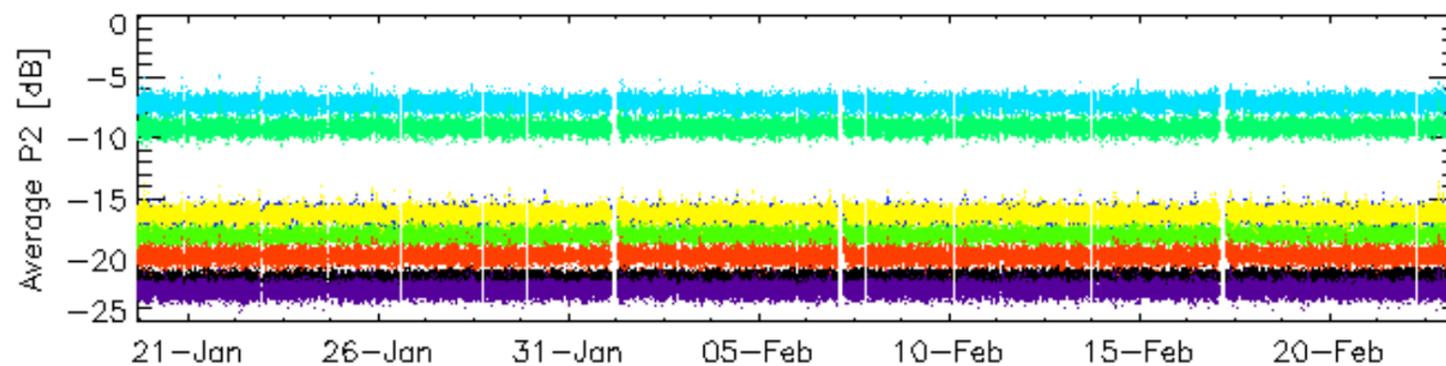
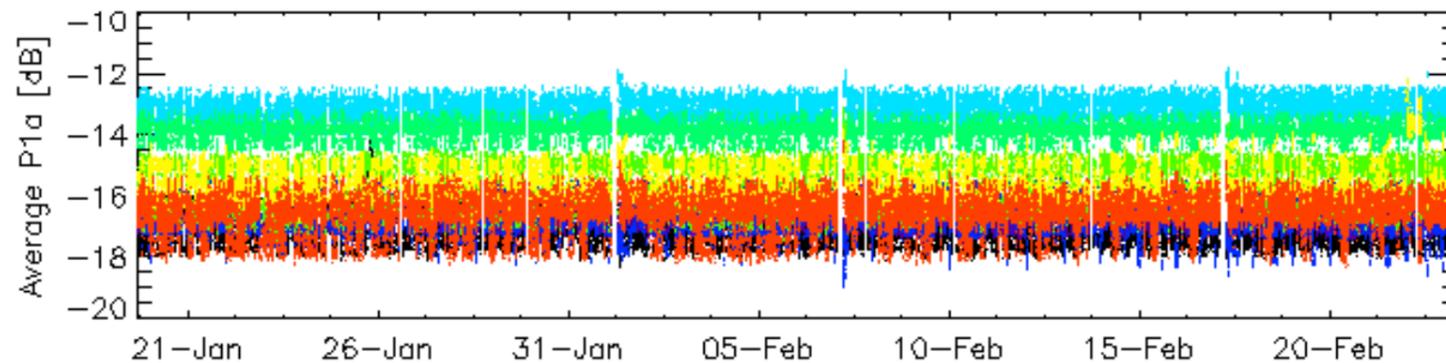
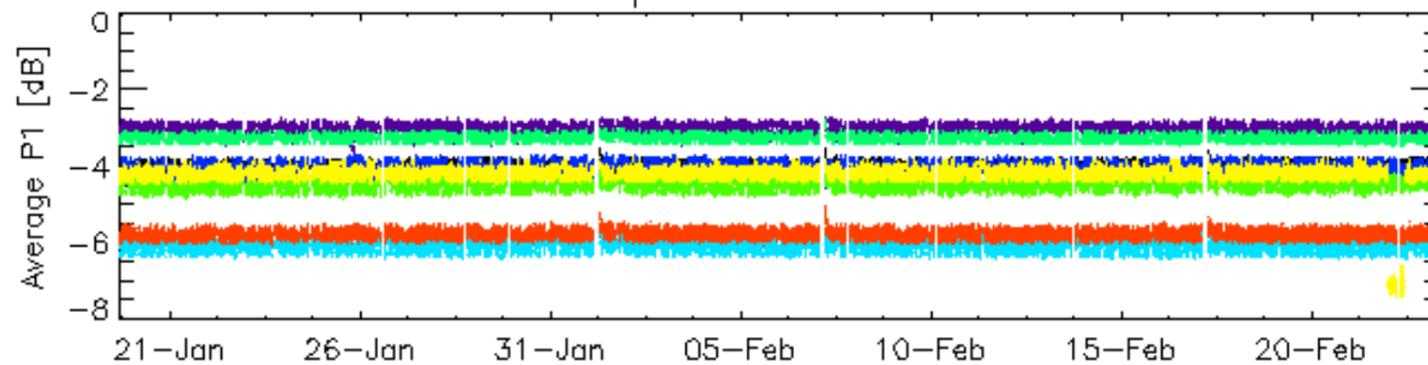


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

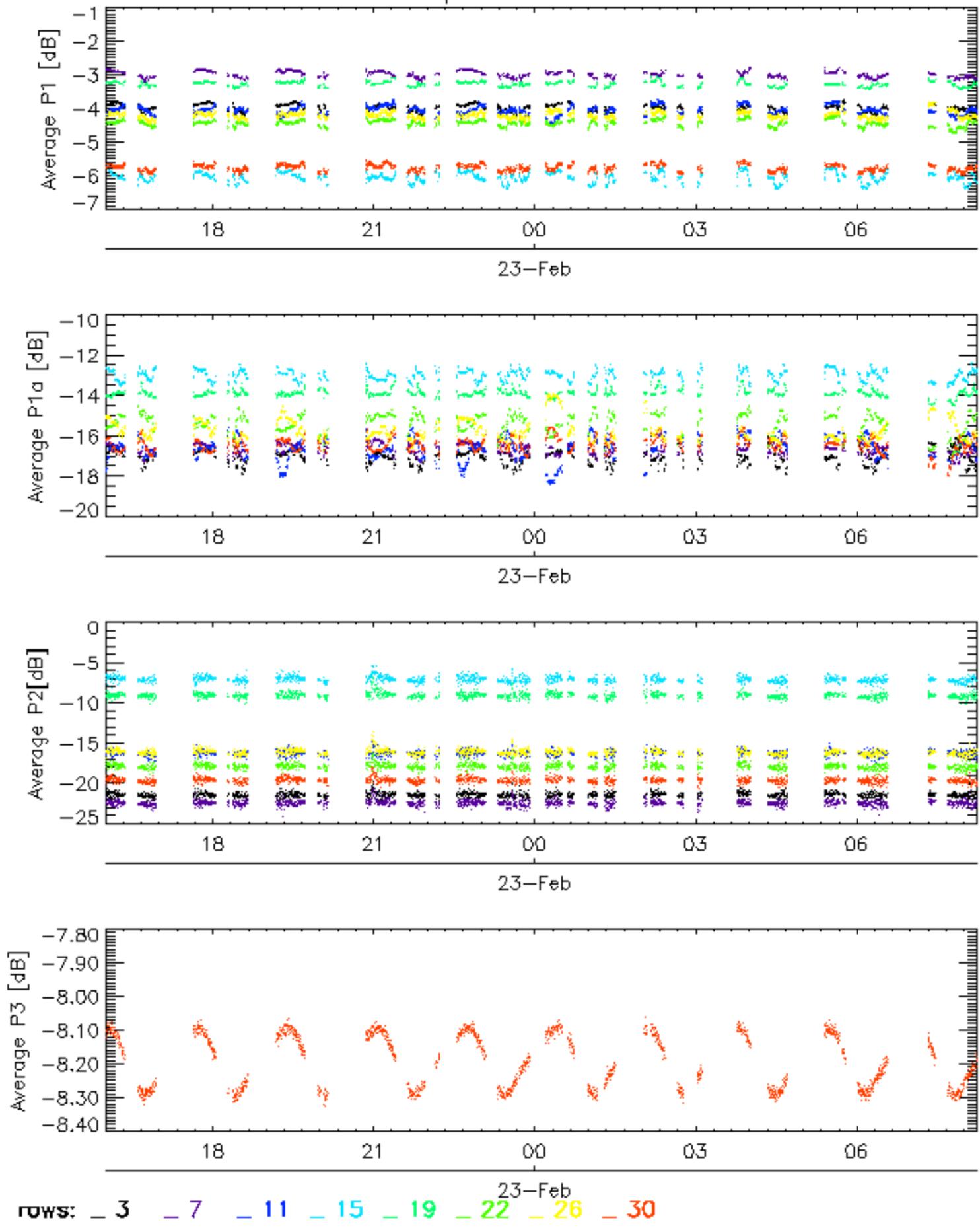


Cal pulses for WVS IS2



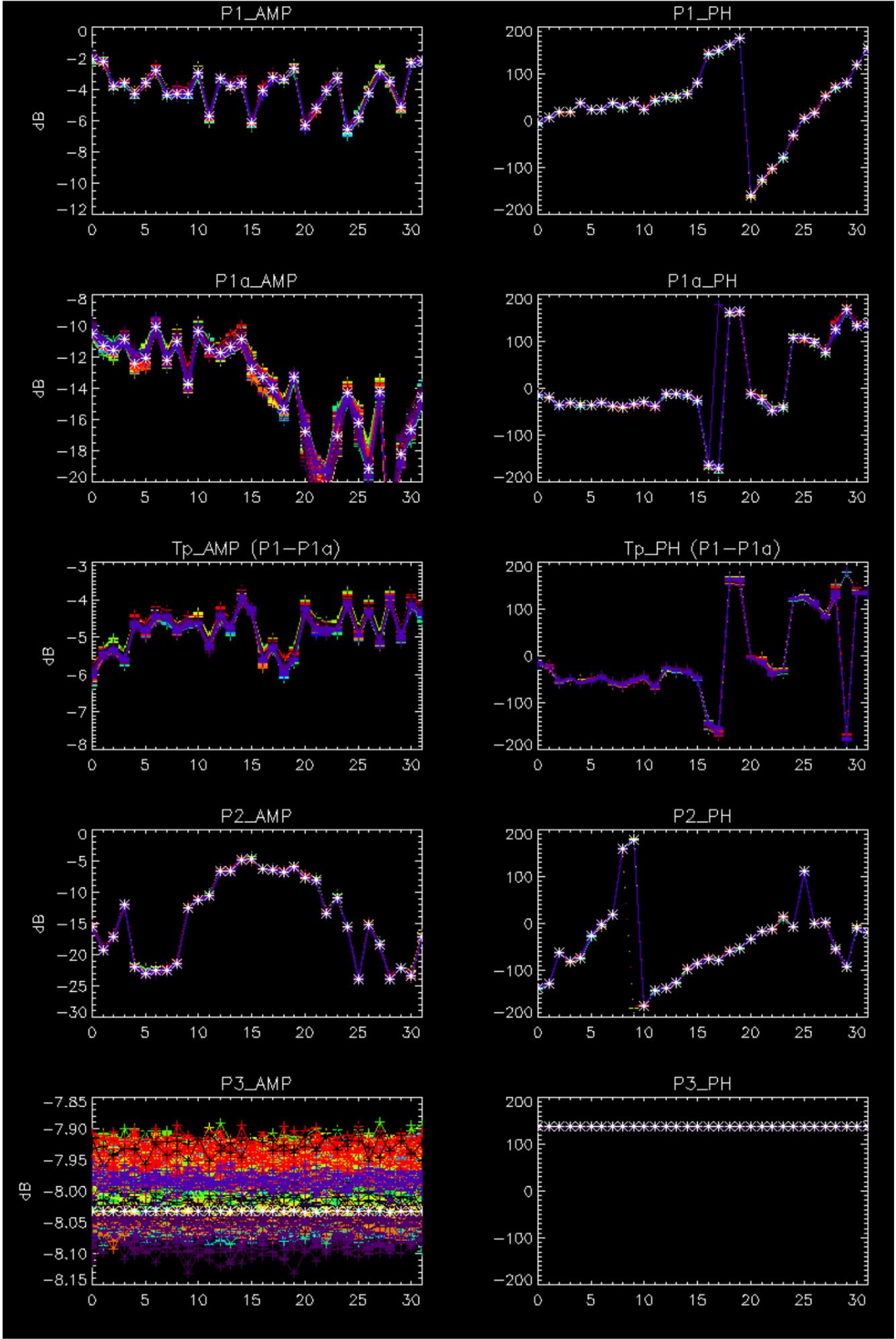
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

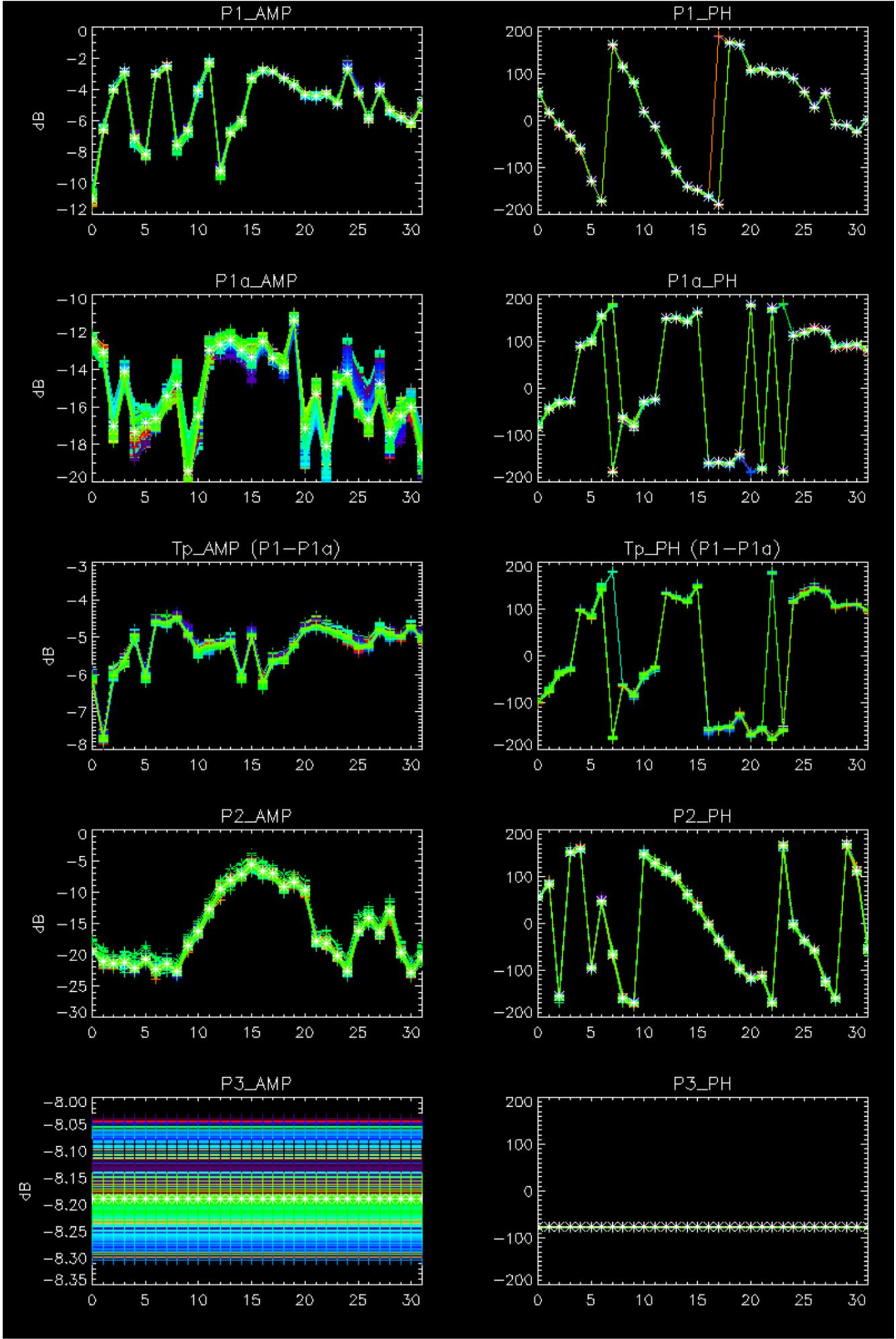
Cal pulses for WVS IS2



No anomalies observed on available browse products

No anomalies observed.

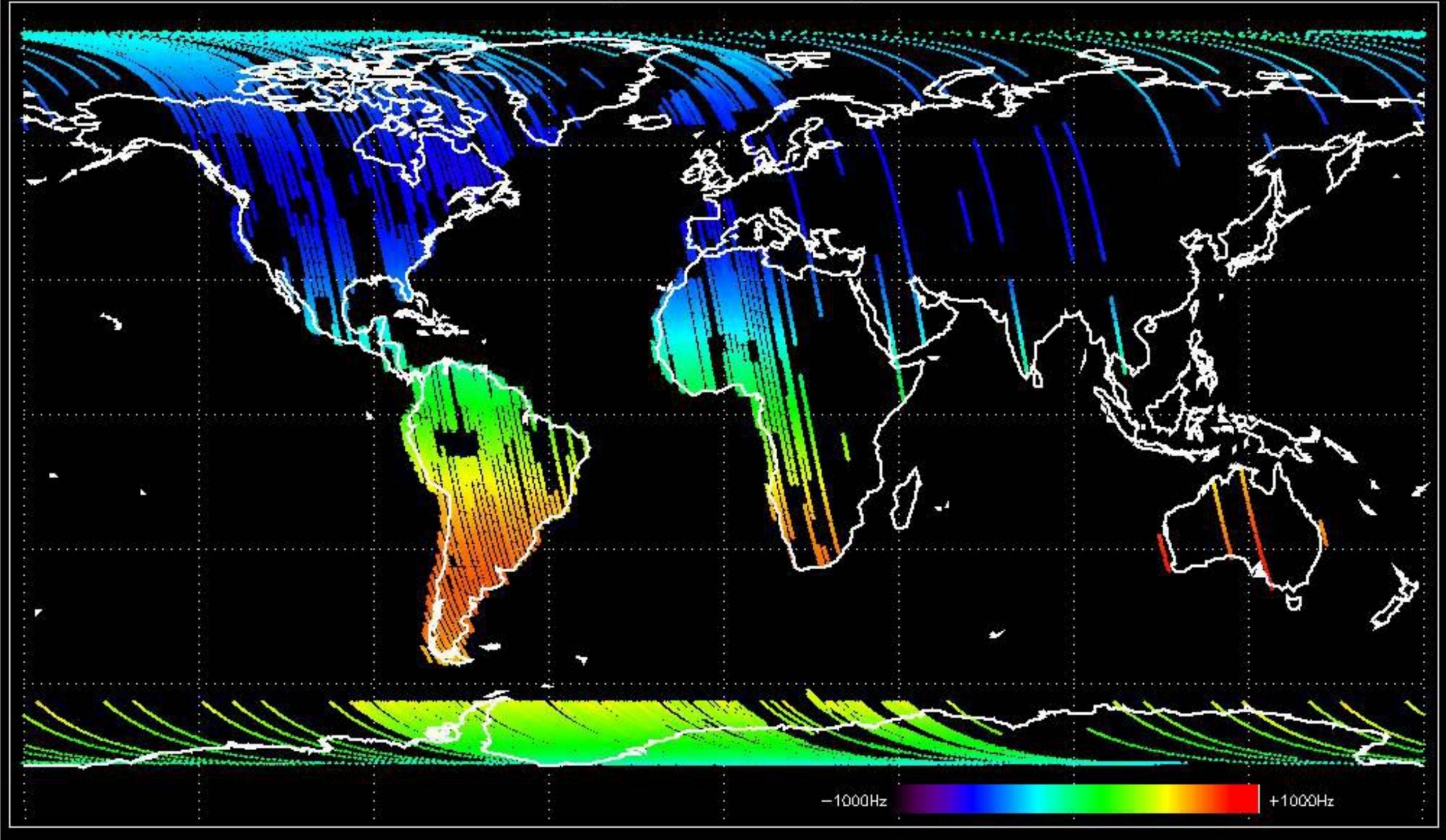




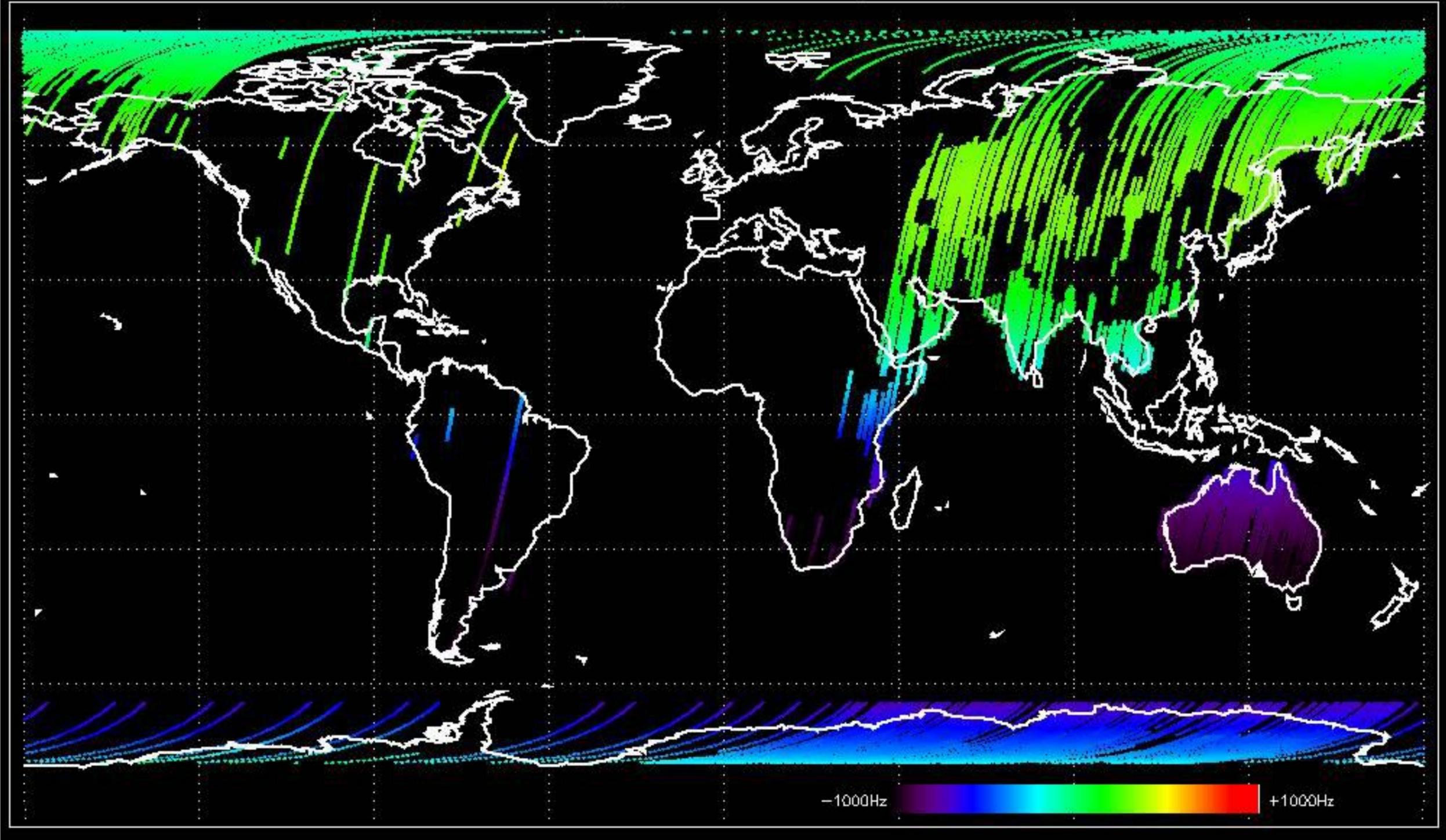
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



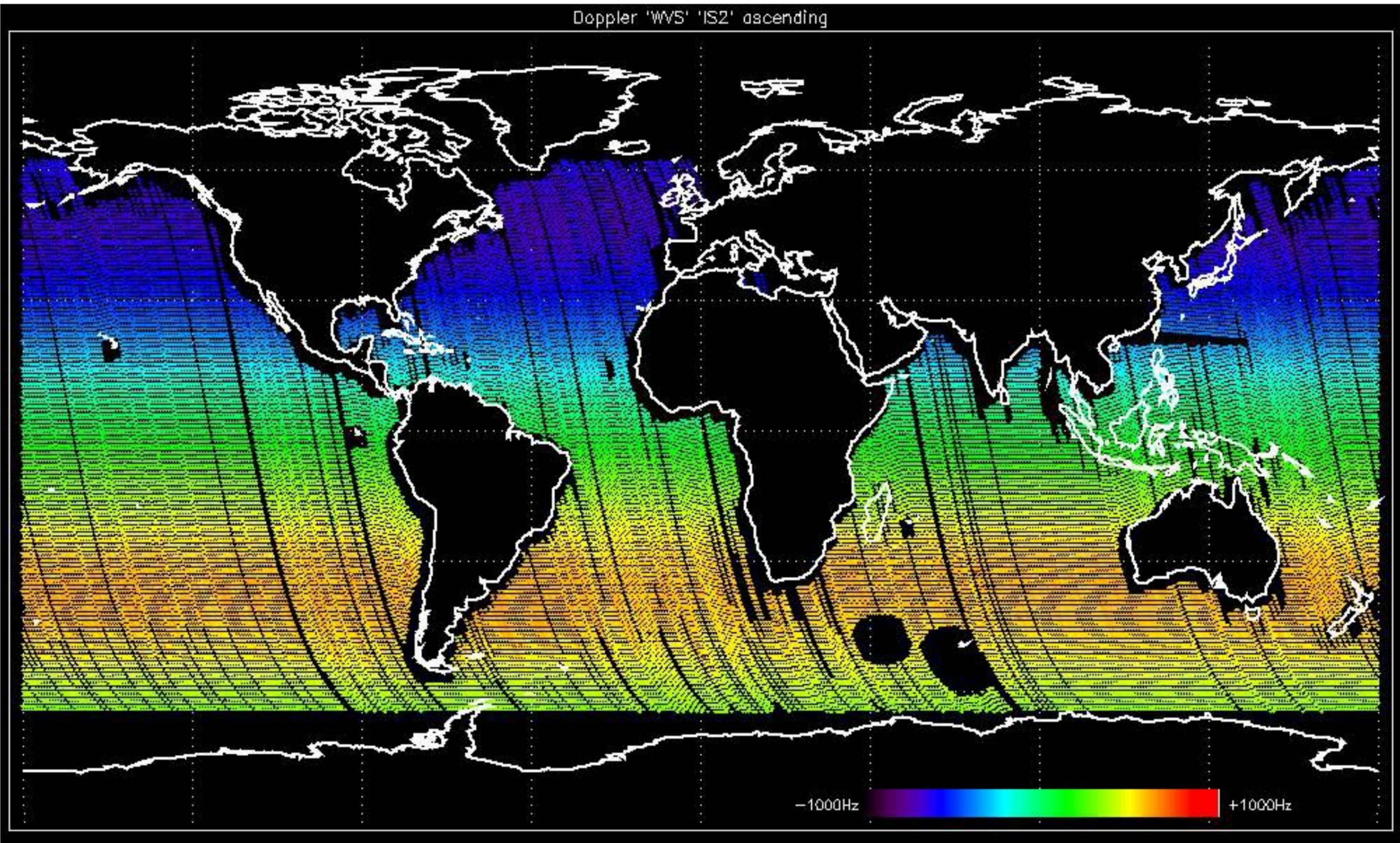
Doppler 'GM1' 'SS1' ascending



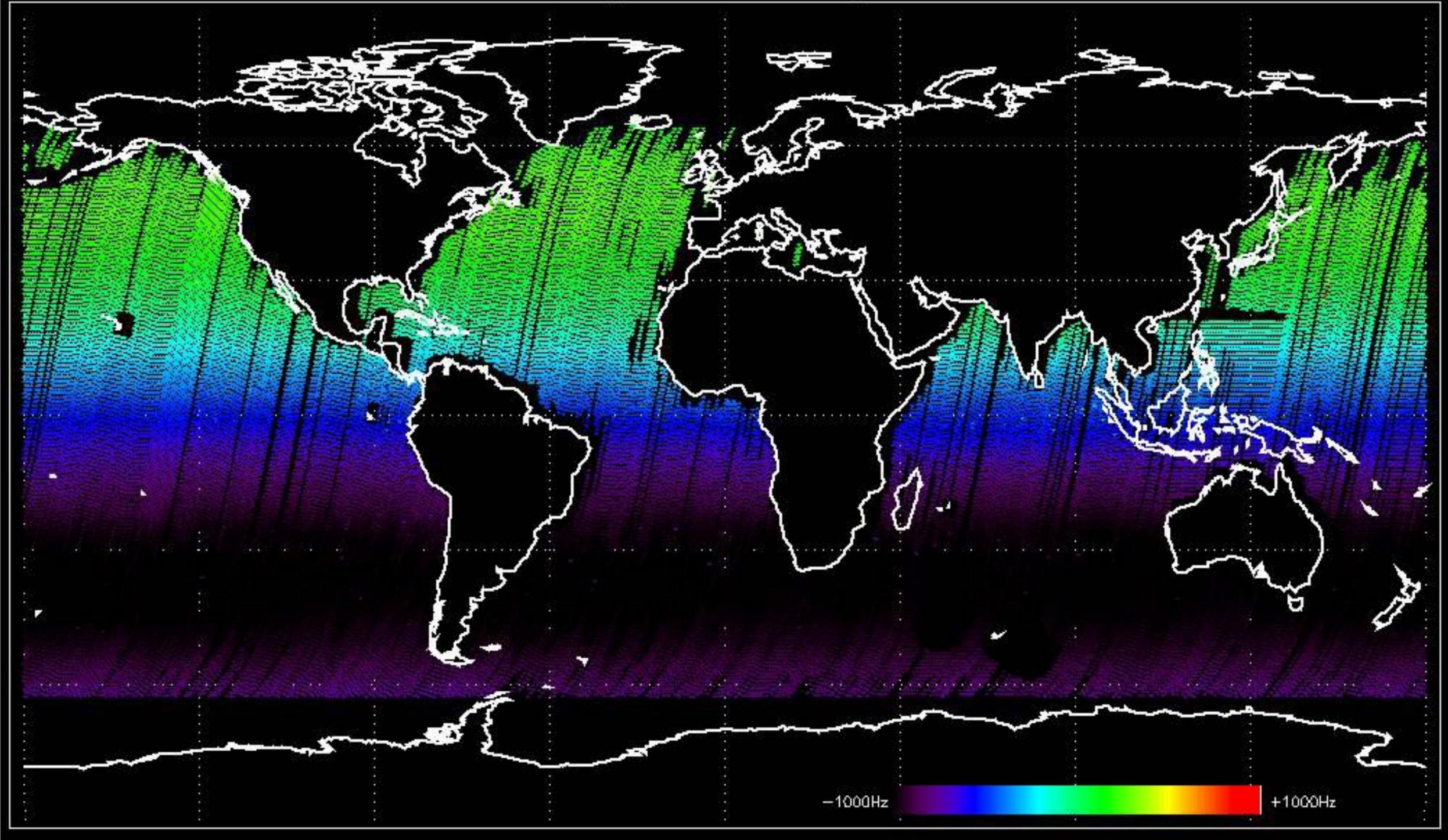
Doppler 'GM1' 'SS1' descending



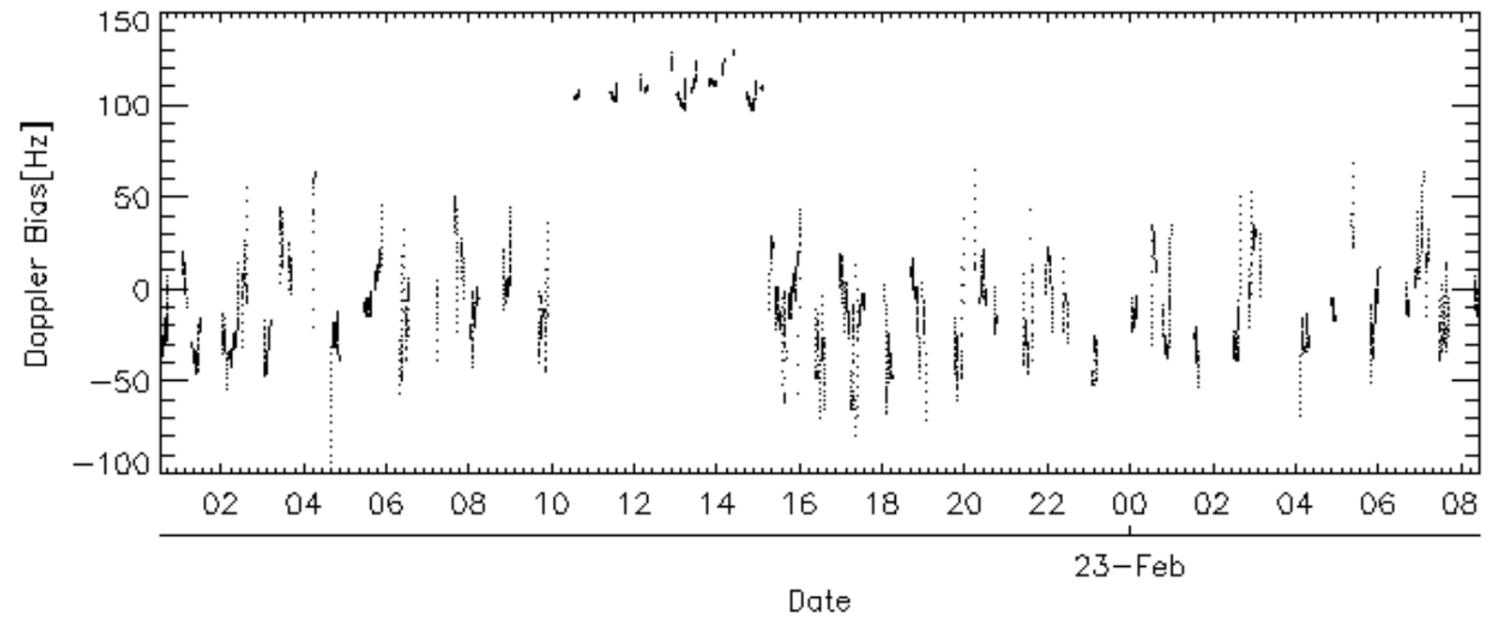
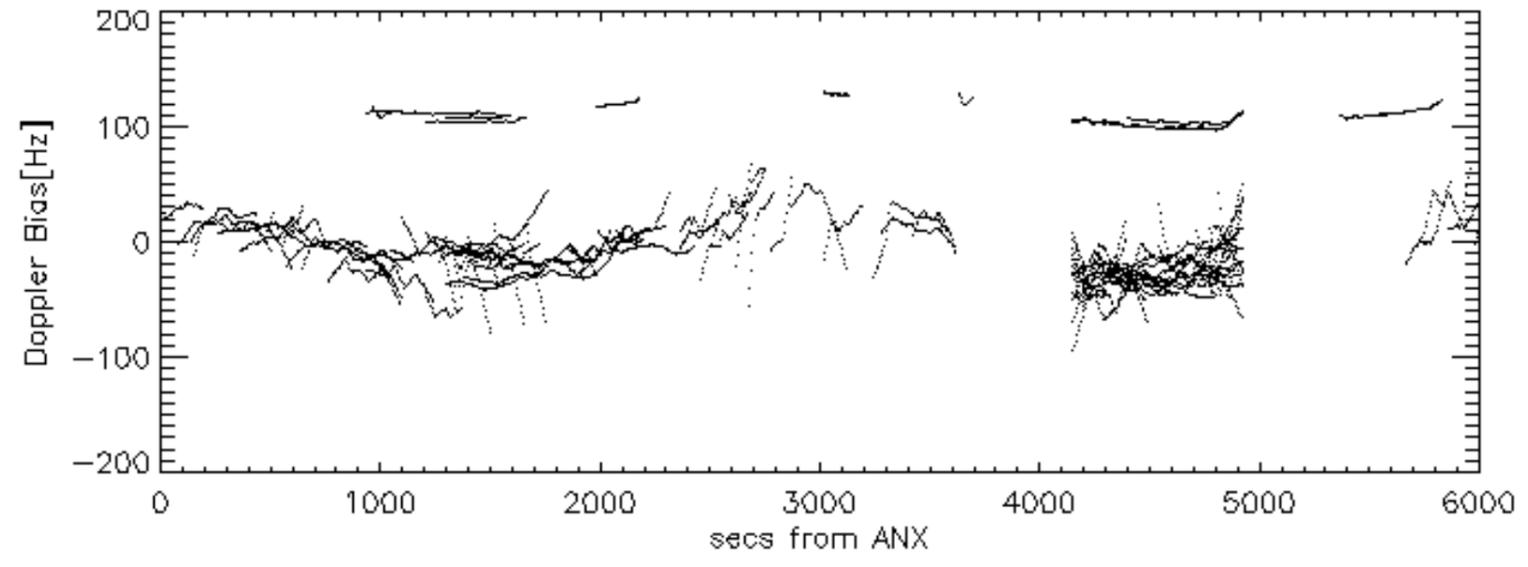
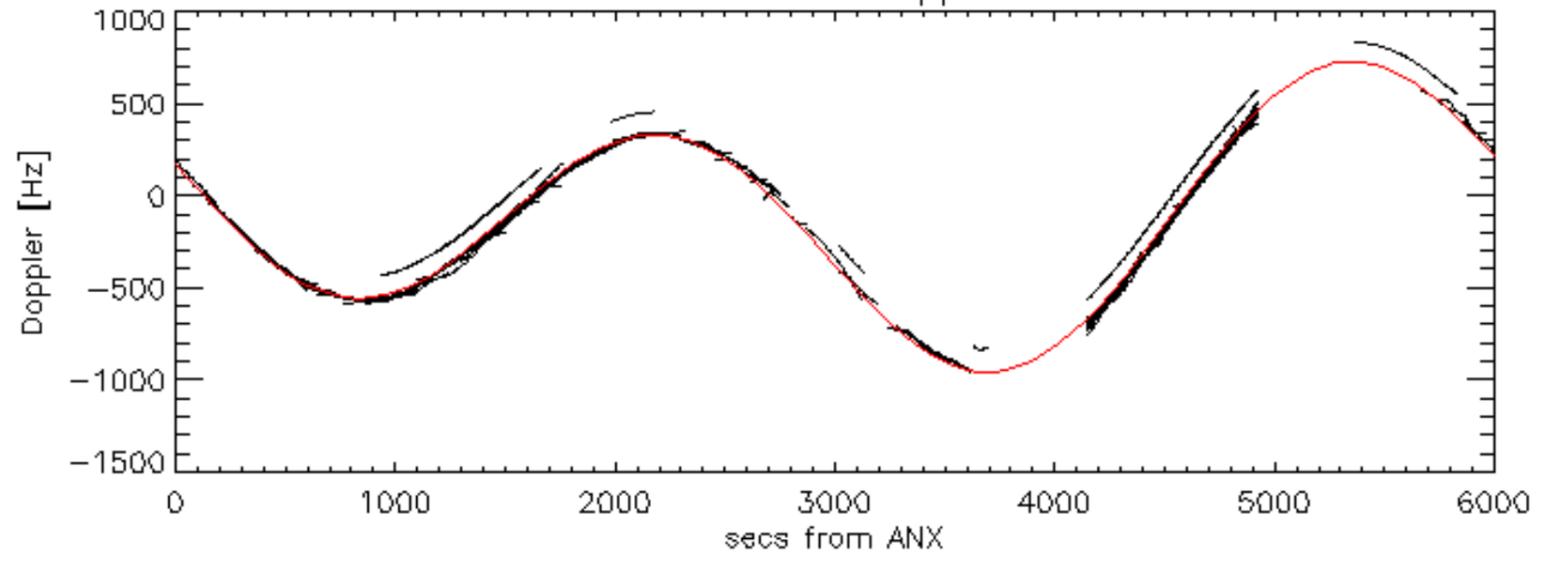
Doppler 'WVS' 'IS2' ascending

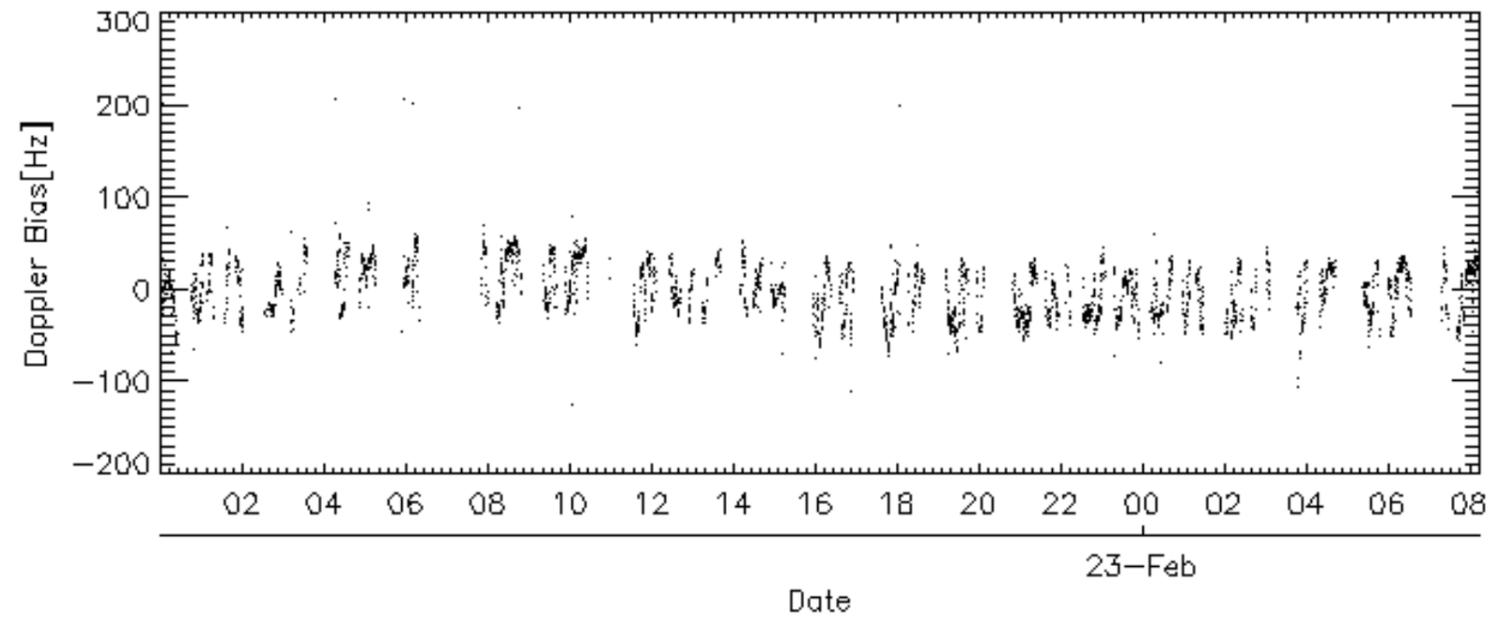
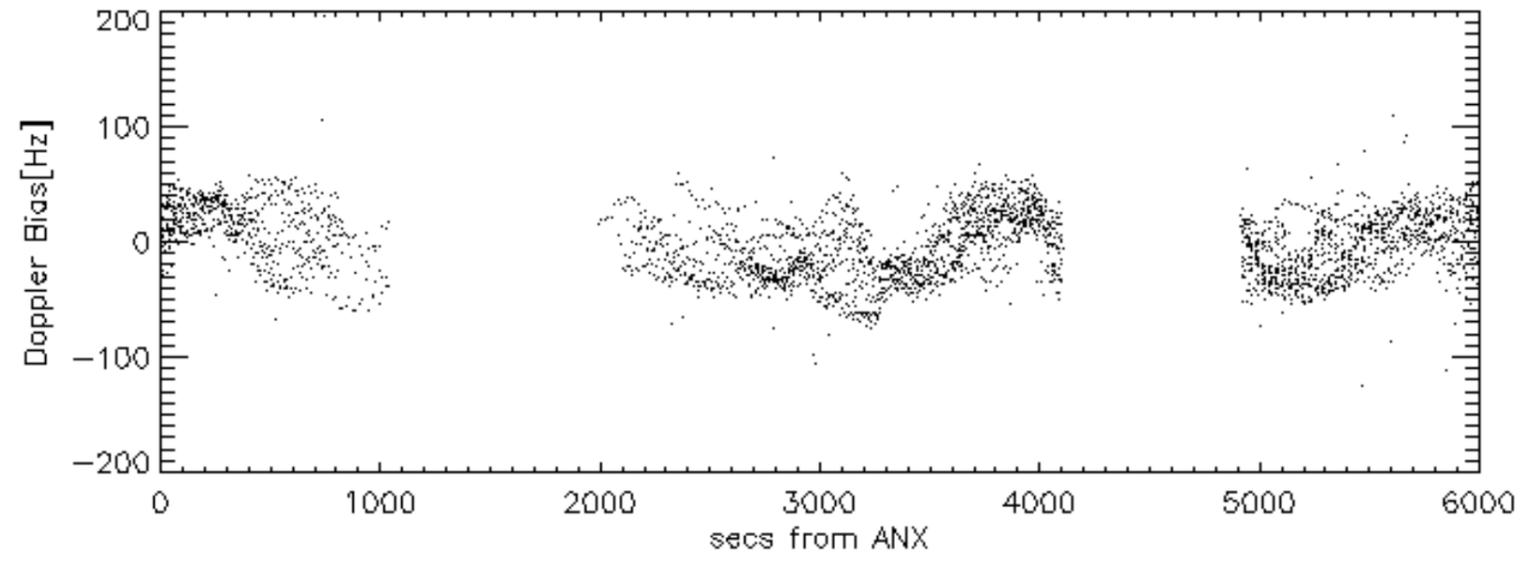
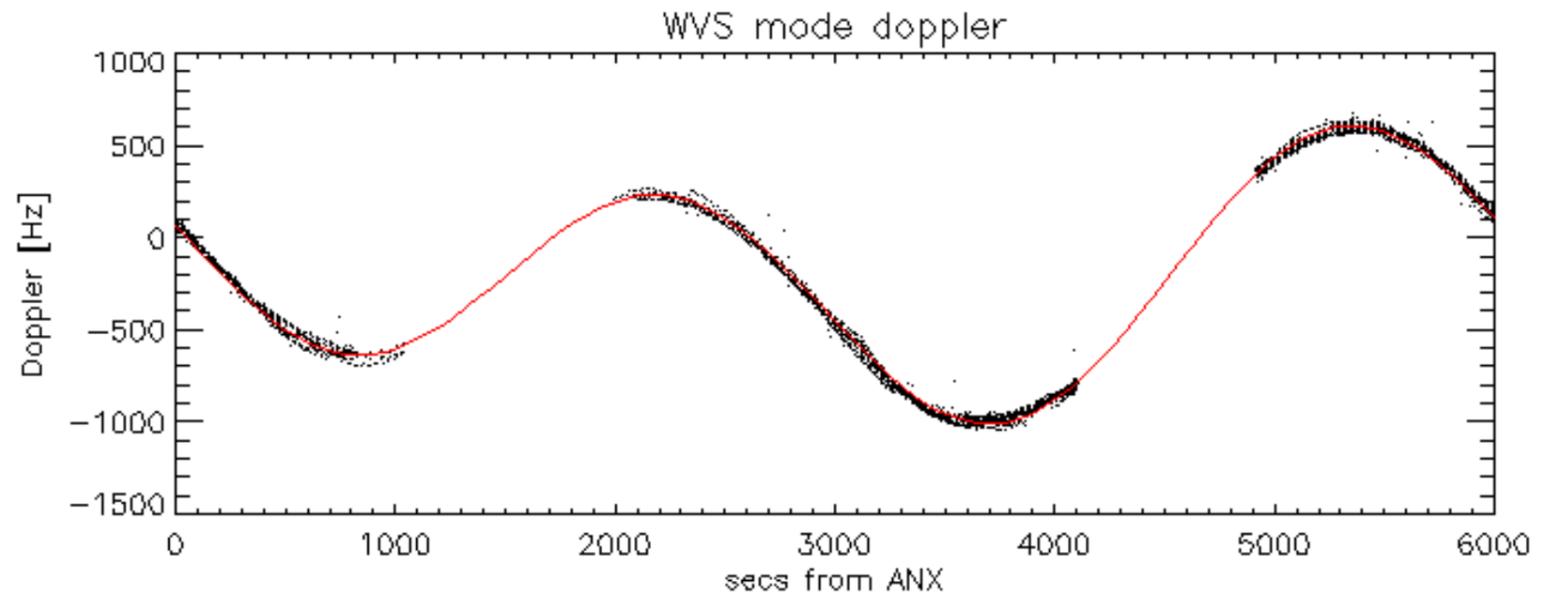


Doppler 'WVS' 'IS2' descending

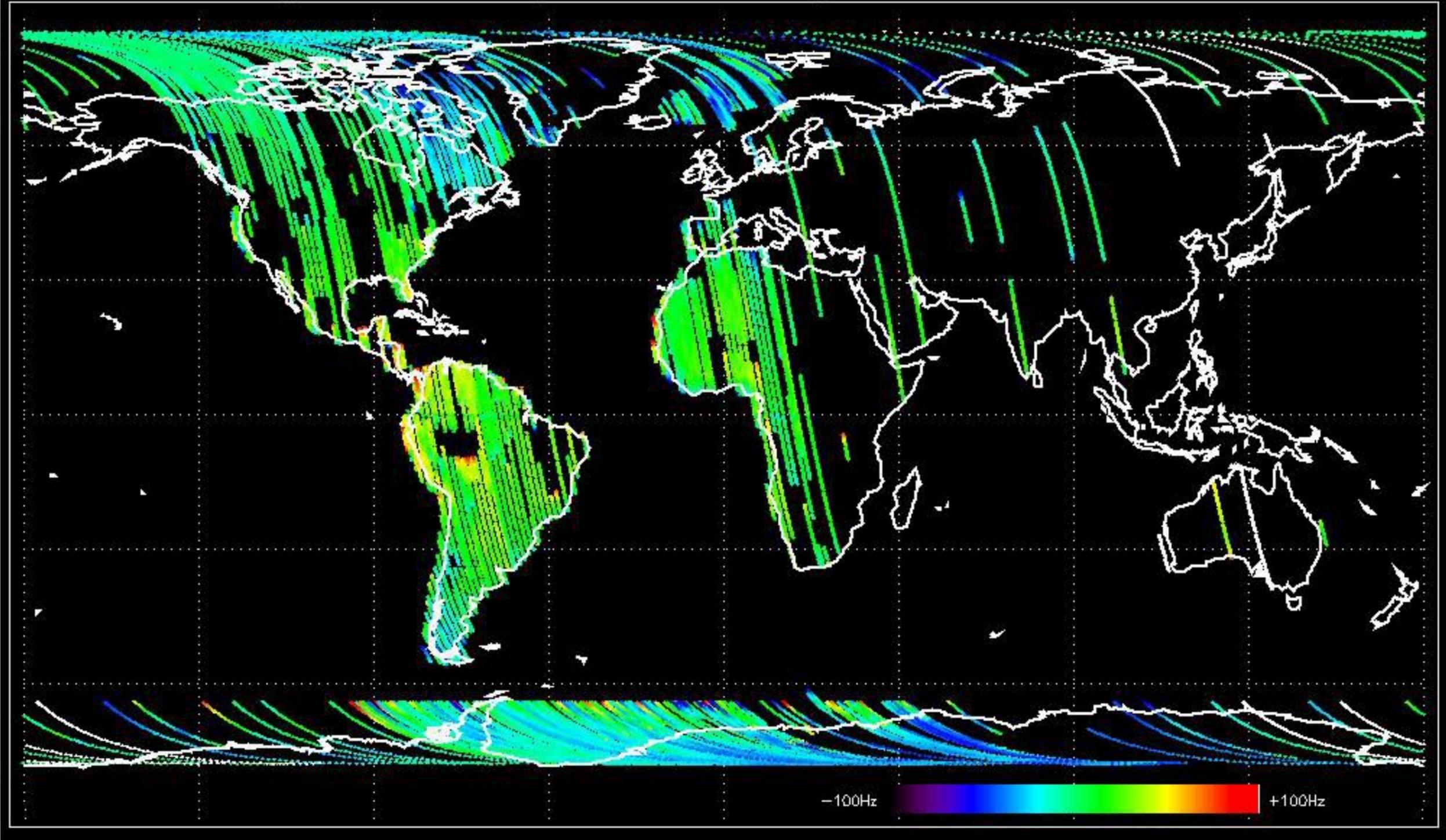


GM1 mode doppler

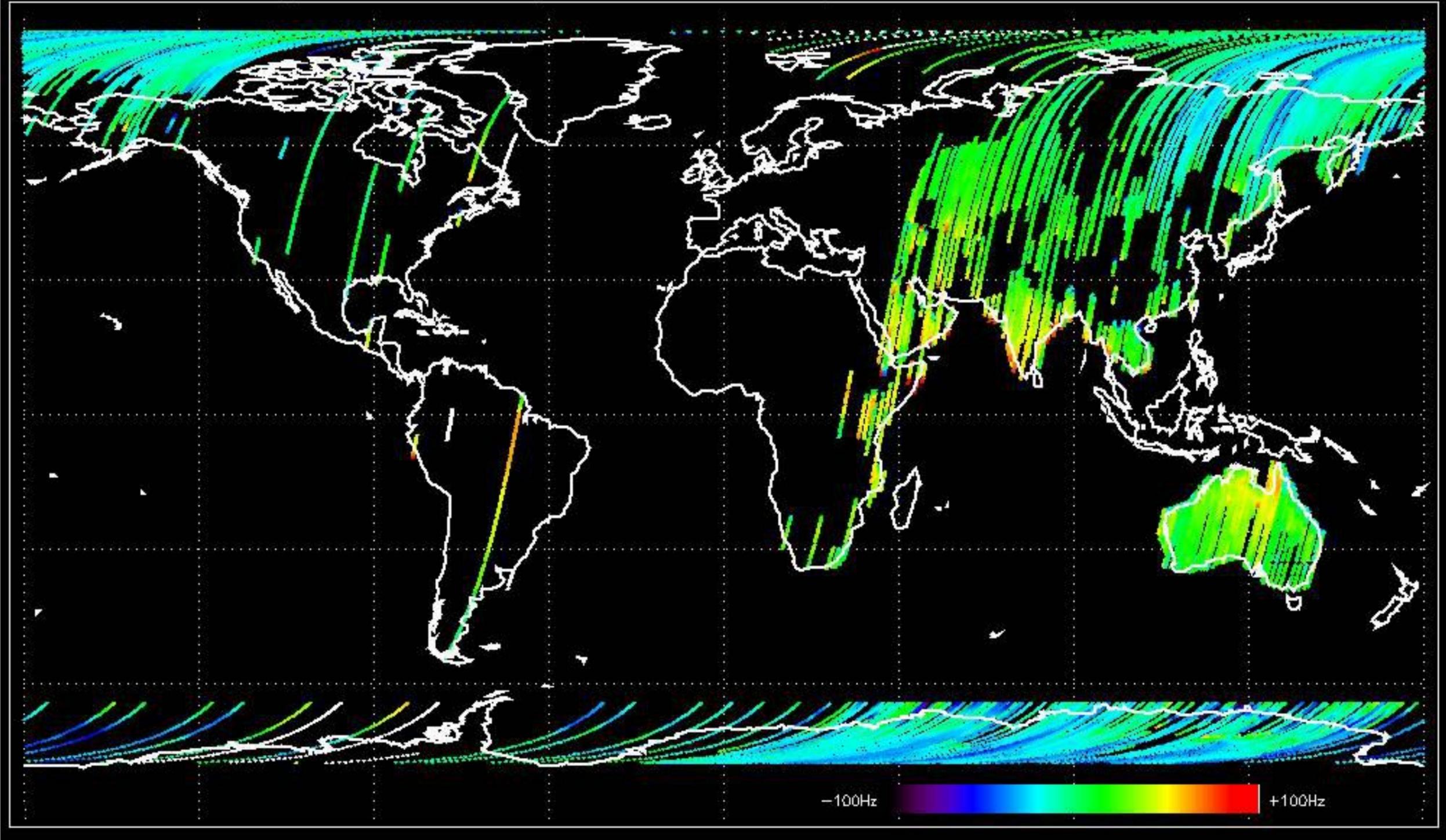




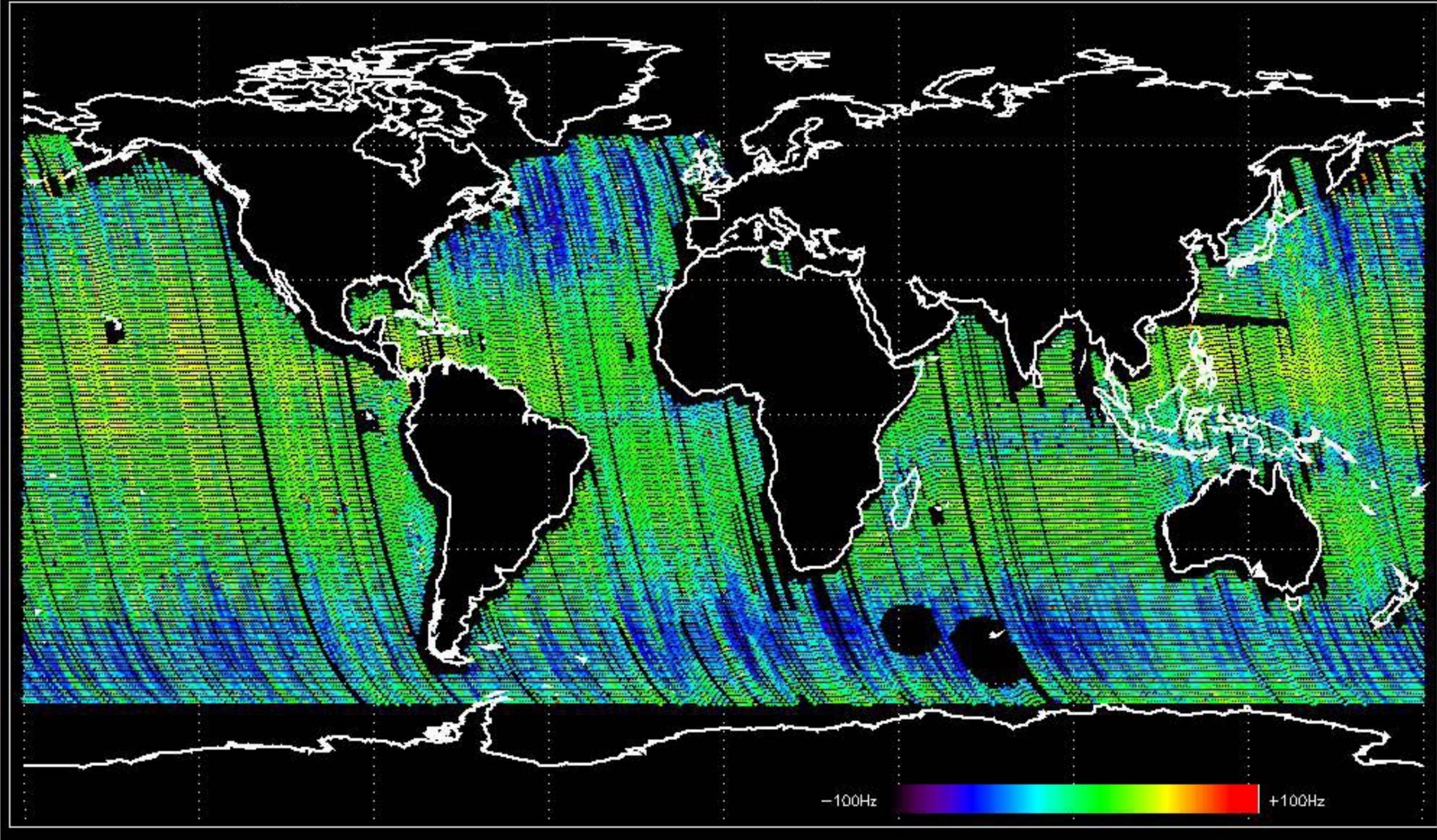
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -8.1345618 Hz



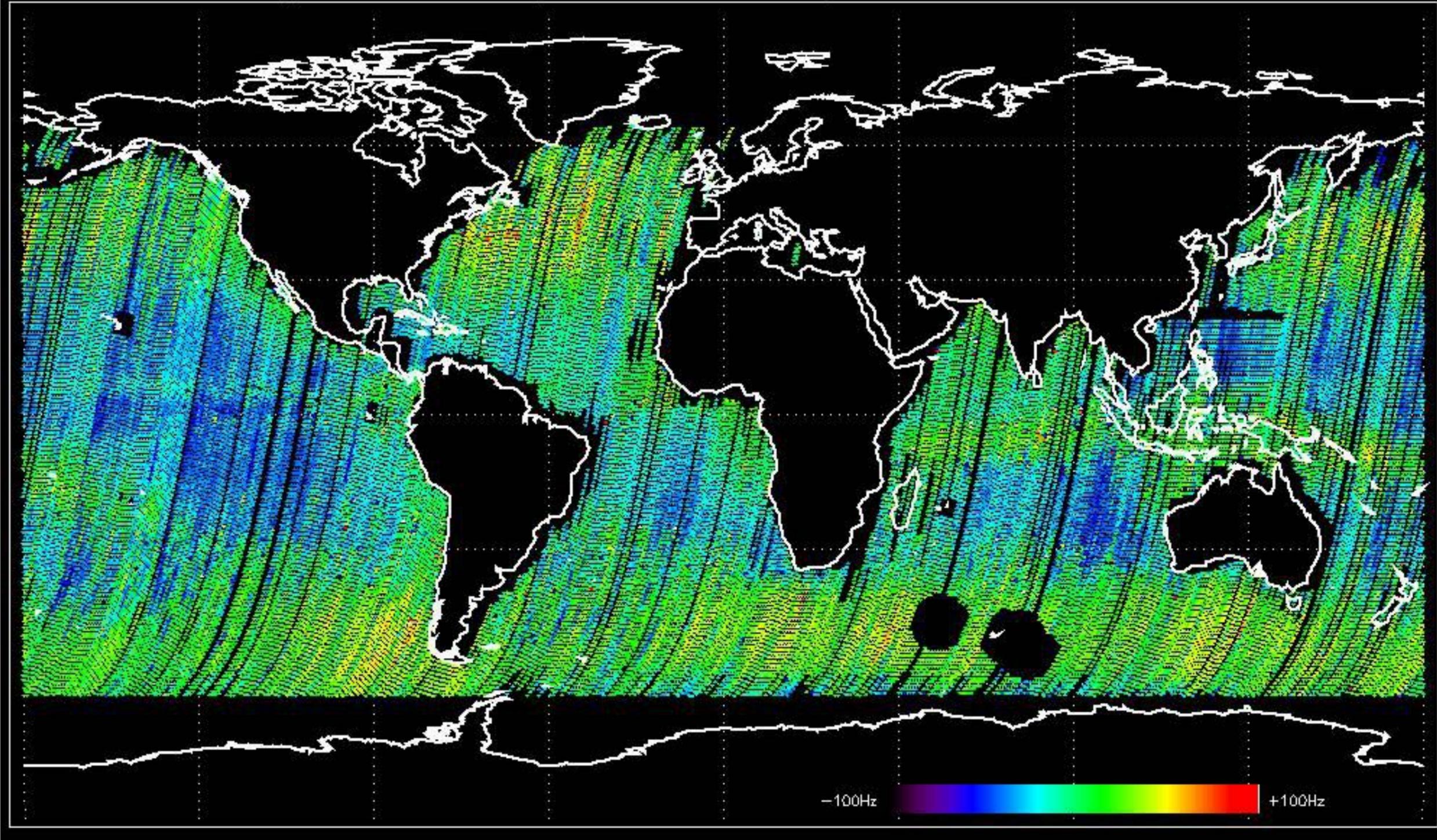
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -10.956585 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -6.5185606 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -7.7906554 Hz



No anomalies observed on available MS products:

No anomalies observed.







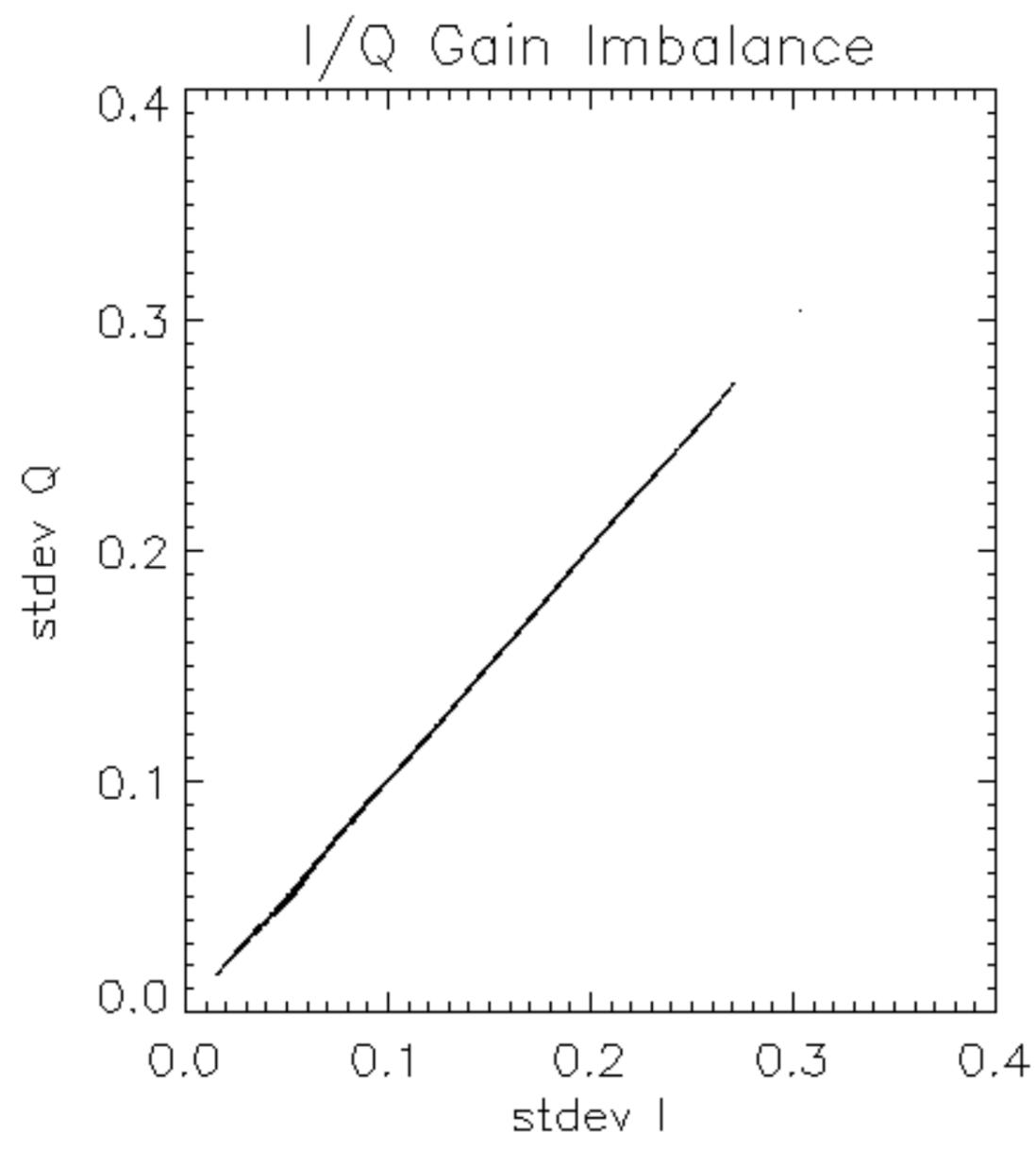


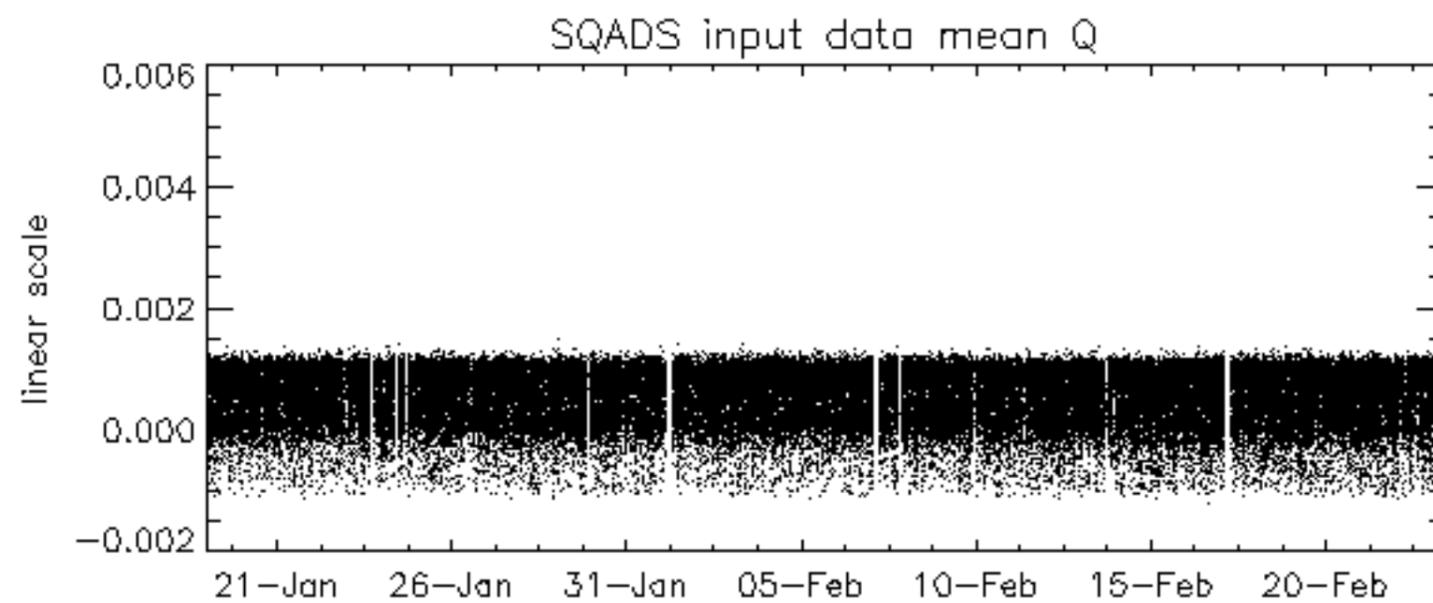
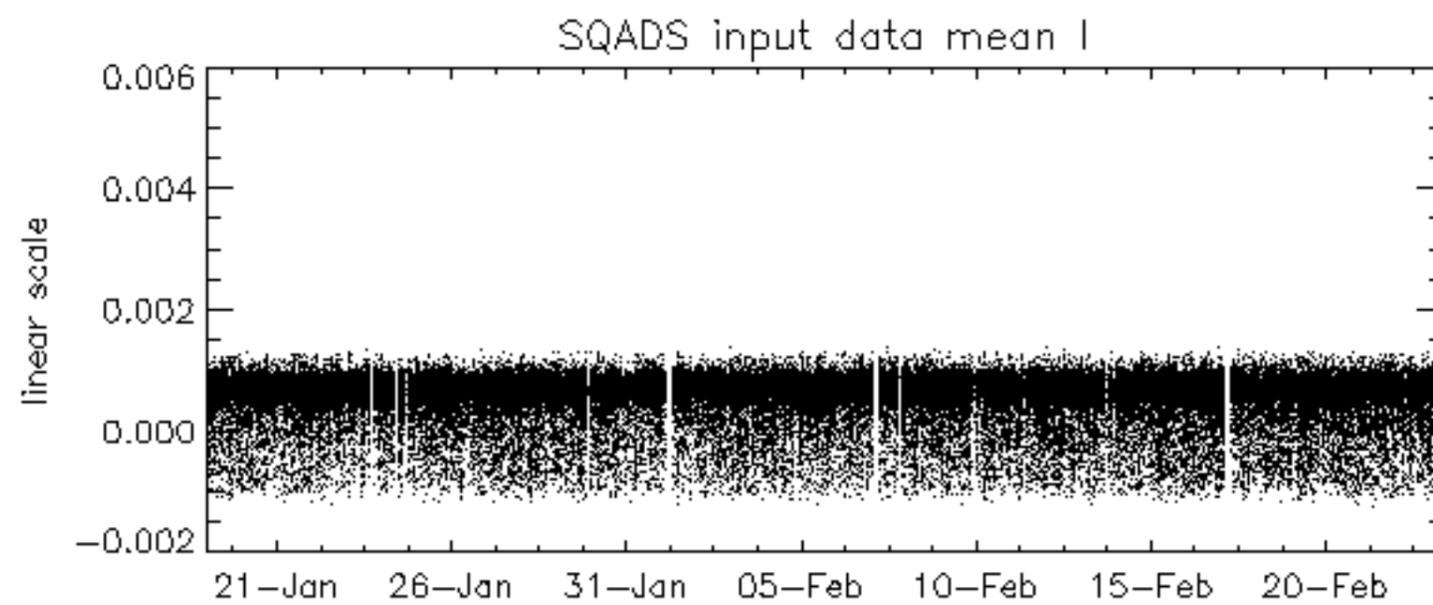
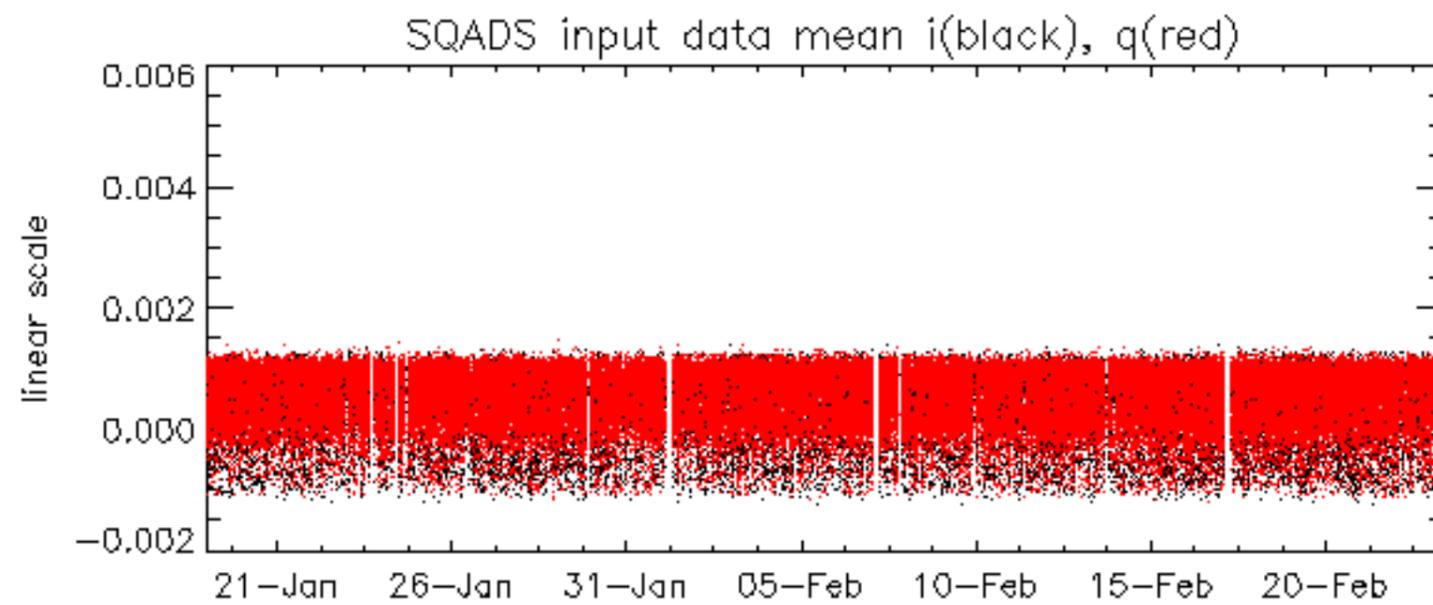


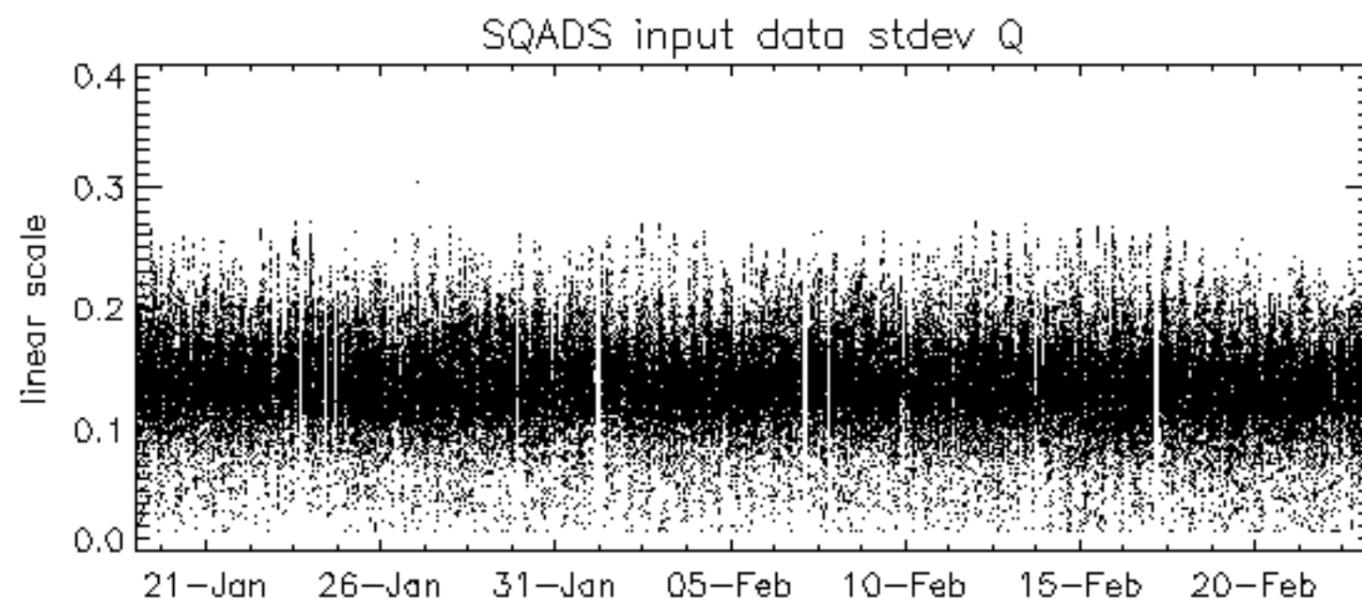
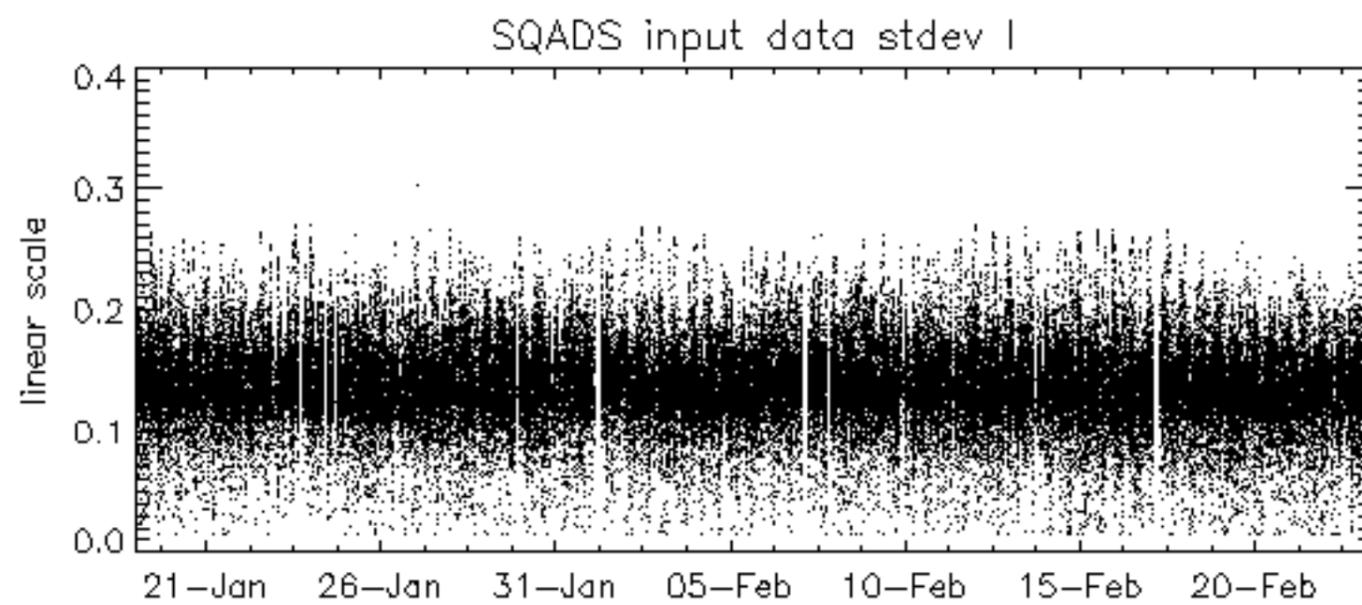
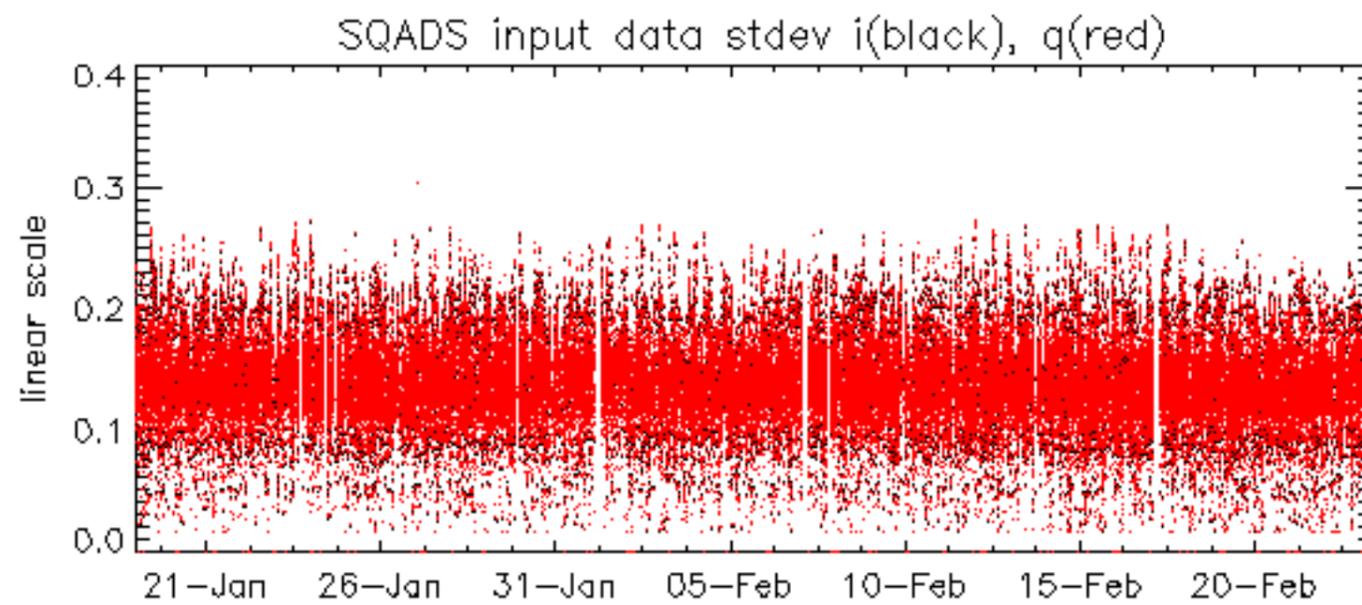


















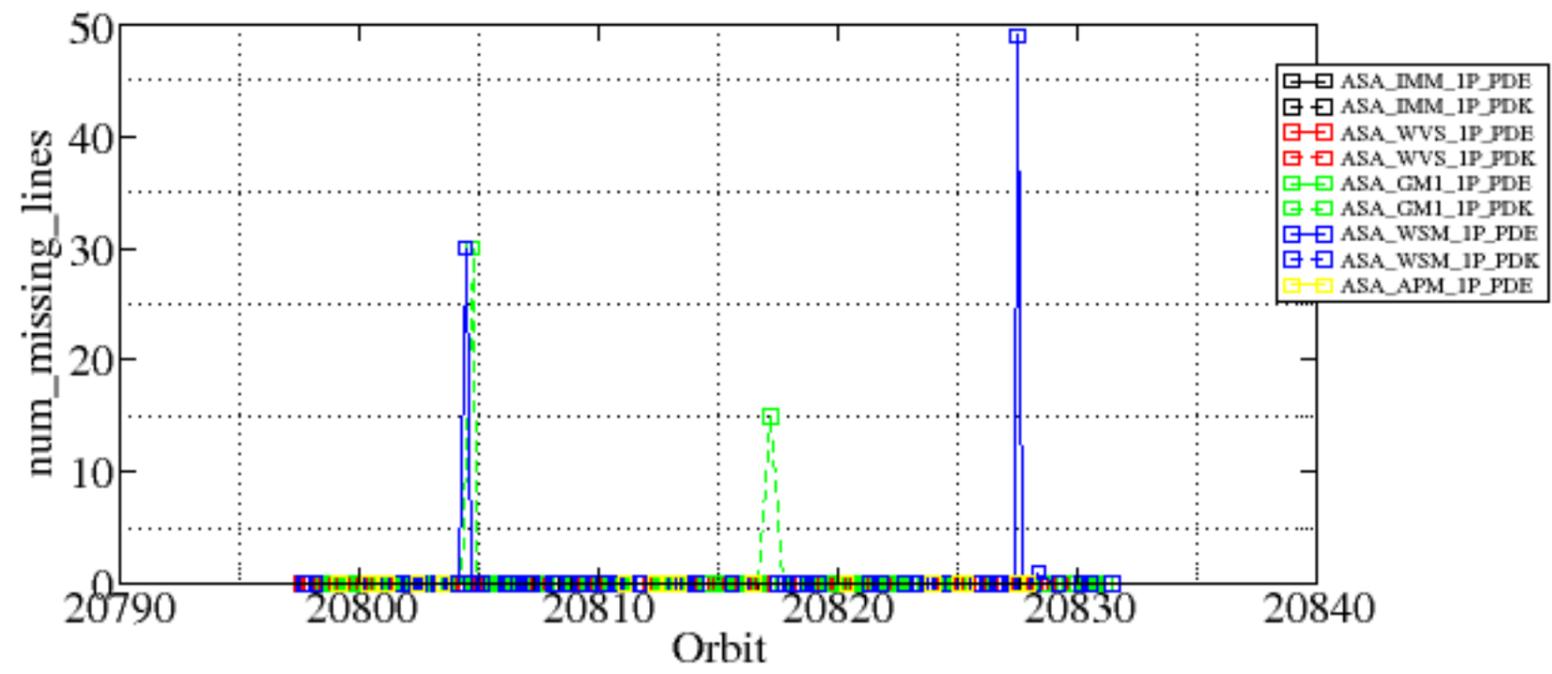


Summary of analysis for the last 3 days 2006022[123]

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

| Filename   | num_gaps | num_missing_lines |
|--|----------|-------------------|
| ASA_IMM_1PNPDE20060221_003709_000001342045_00202_20797_3819.N1 | 1        | 0                 |
| ASA_GM1_1PNPDK20060221_115852_000004282045_00209_20804_2149.N1 | 0        | 30                |
| ASA_GM1_1PNPDK20060222_084957_000006702045_00222_20817_2189.N1 | 0        | 15                |
| ASA_WSM_1PNPDE20060221_112842_000001842045_00209_20804_5812.N1 | 0        | 30                |
| ASA_WSM_1PNPDE20060223_020555_000001282045_00232_20827_6045.N1 | 0        | 49                |
| ASA_WSM_1PNPDE20060223_033632_000001462045_00233_20828_6056.N1 | 0        | 1                 |



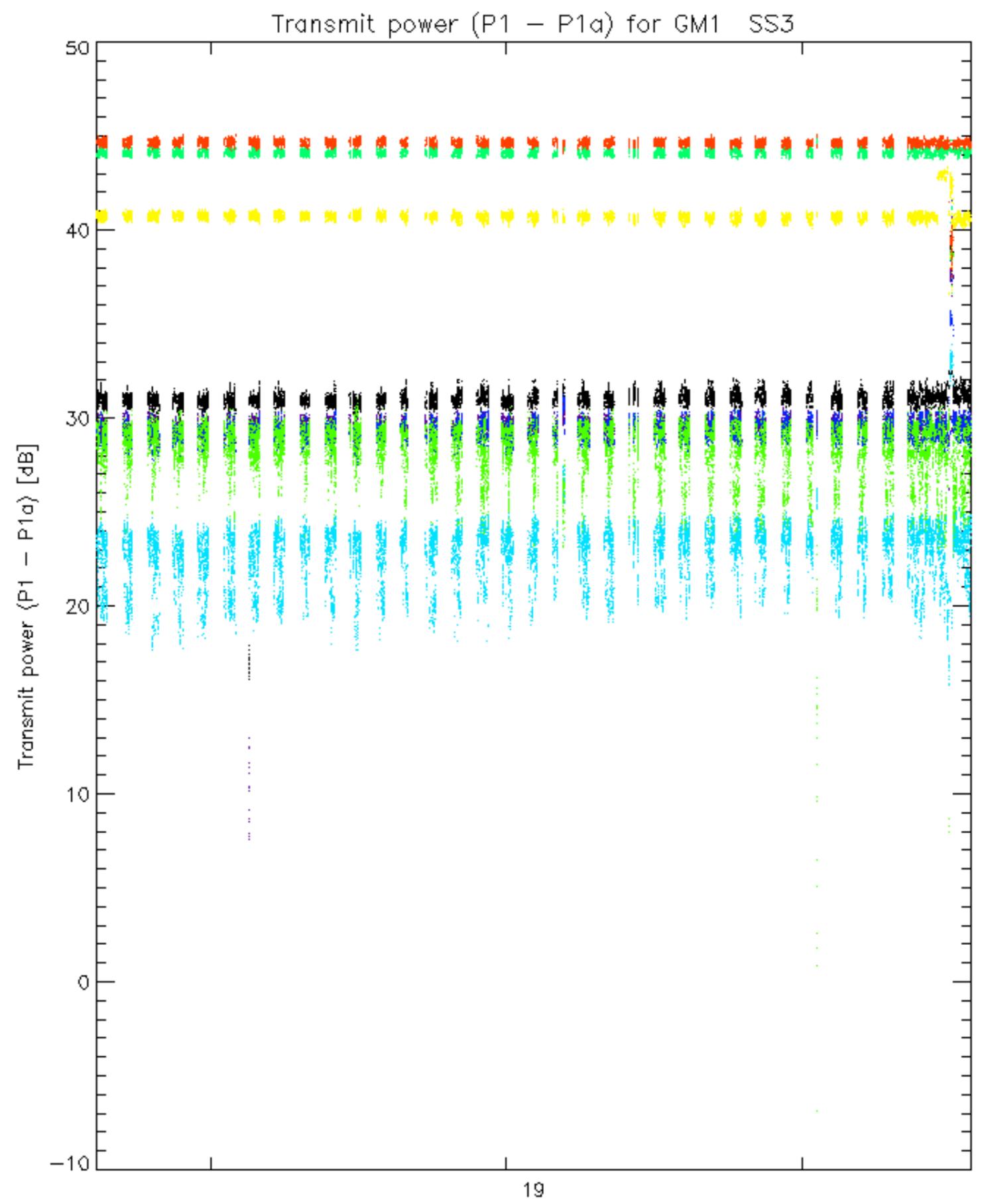


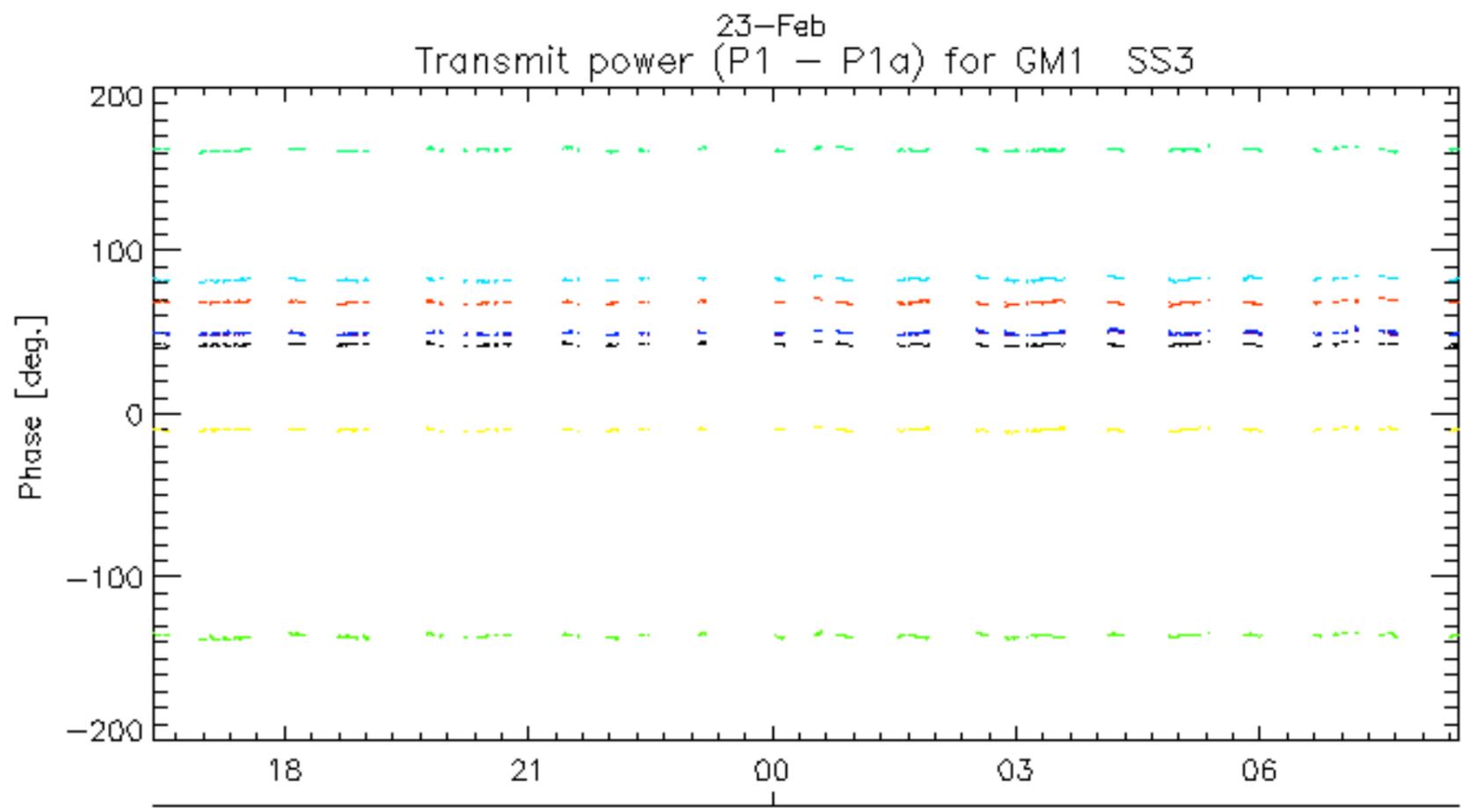
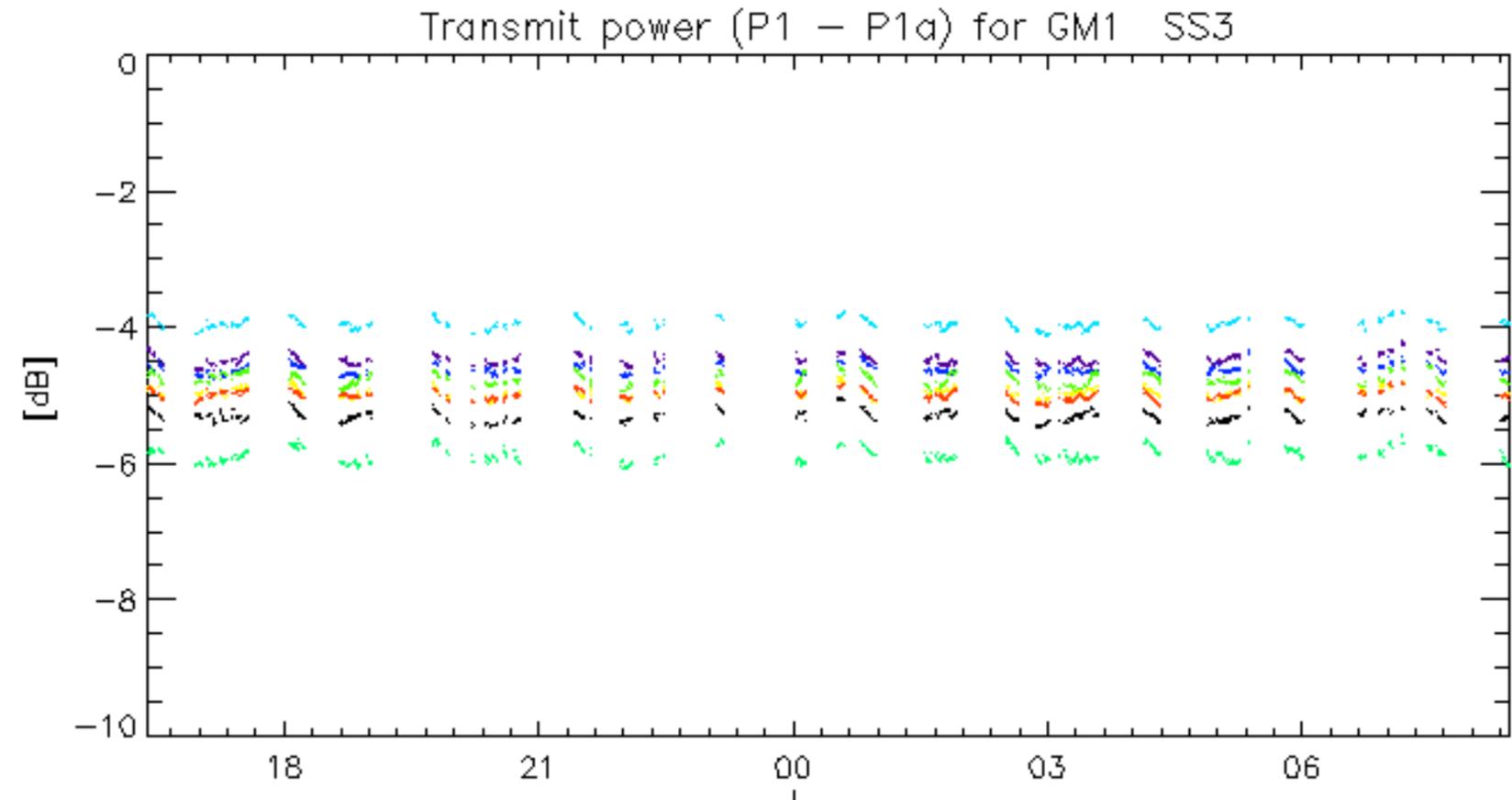




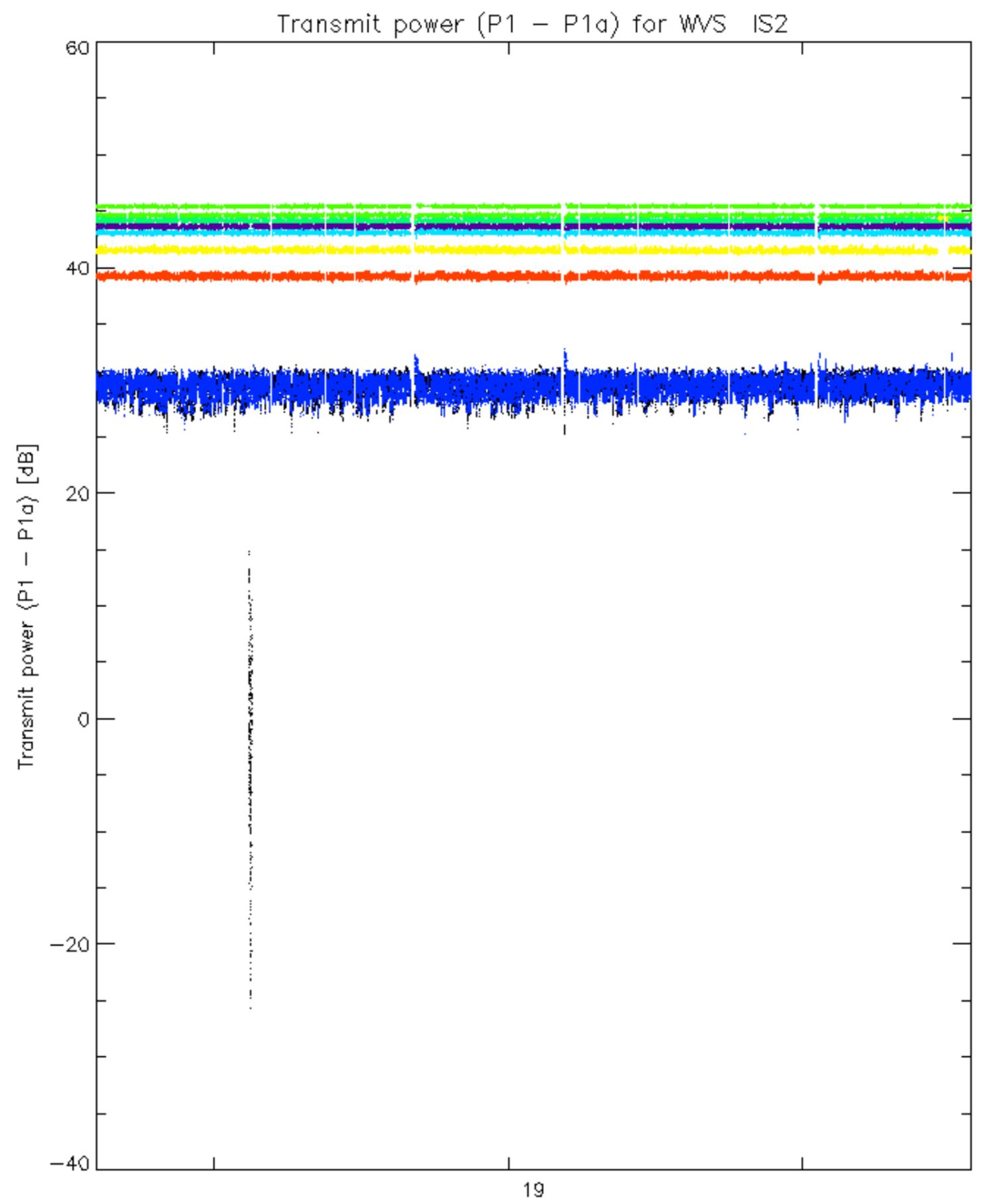




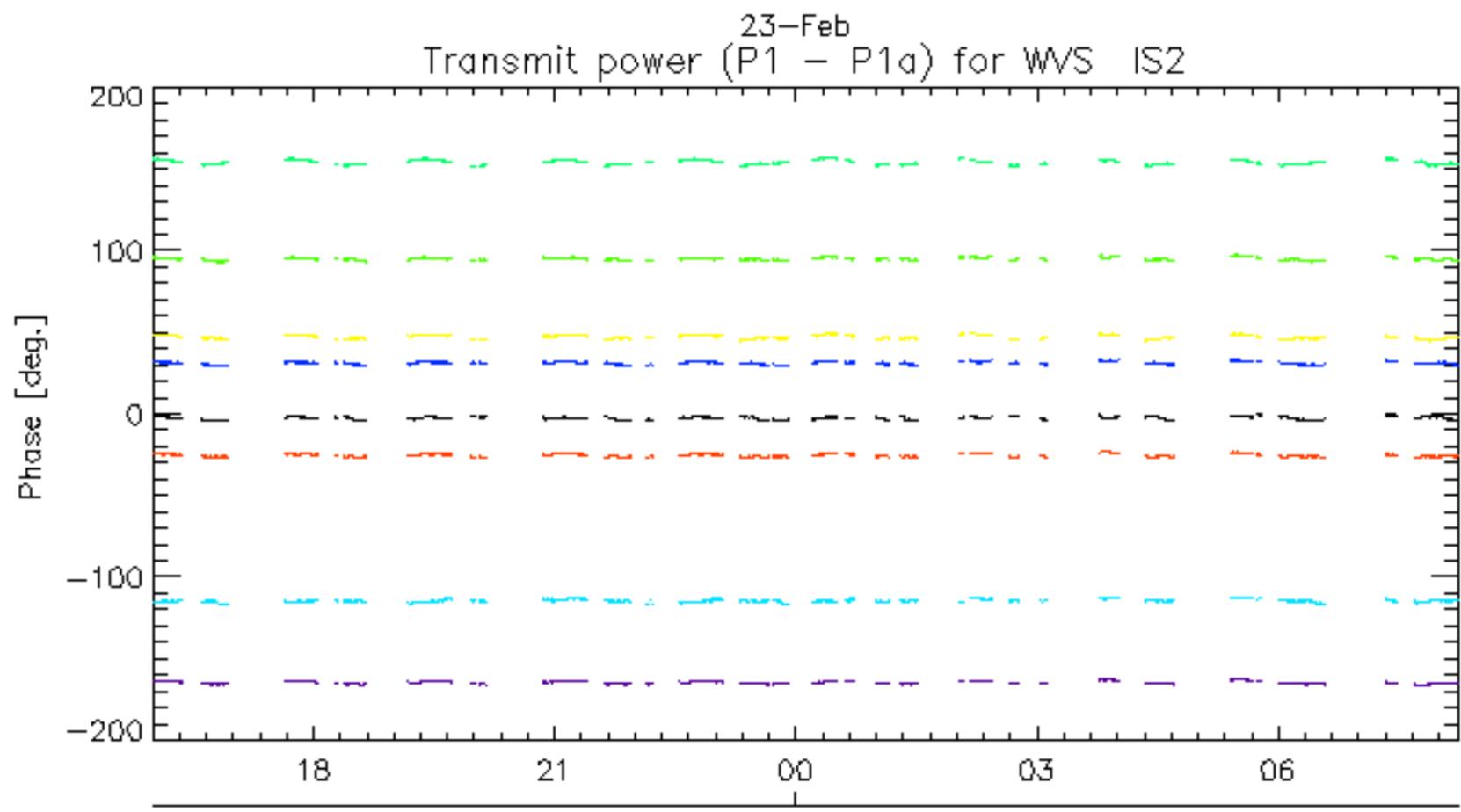
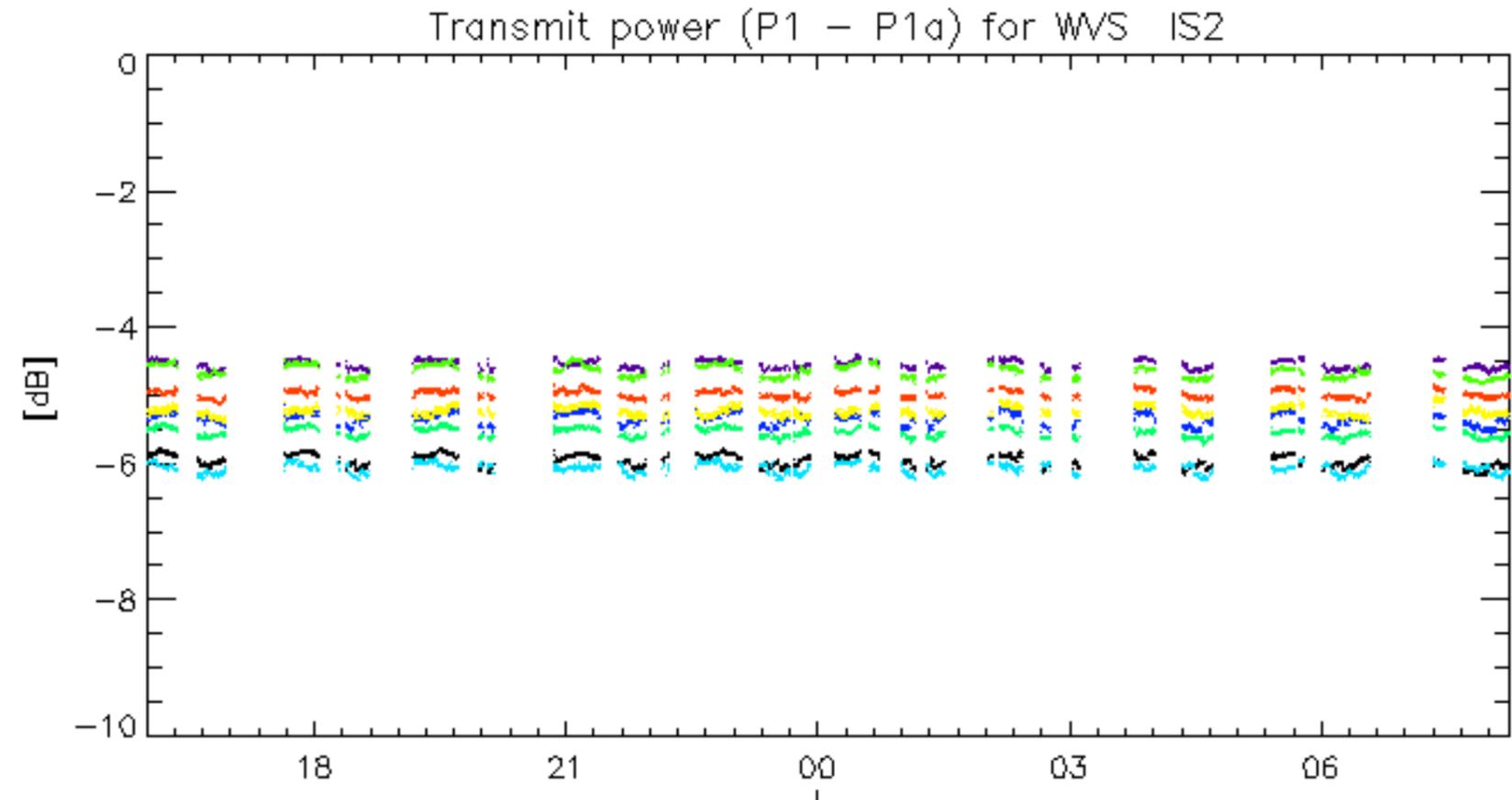




rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



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



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

No unavailabilities during the reported period.