

# PRELIMINARY REPORT OF 060618

last update on Sun Jun 18 16:44:01 GMT 2006

1. [Introduction](#)
2. [Summary](#)
  - [Instrument Unavailability](#)
  - [Auxiliary files used](#)
  - [Browse Visual Inspection](#)
  - [Module Stepping Results](#)
  - [Data Analysis](#)
3. [Module Stepping](#)
4. [Internal Calibration pulses](#)
  - [Daily statistics](#)
  - [Cyclic statistics](#)
  - [cal pulses monitoring \(all rows\)](#)
5. [Raw Data Statistics](#)
  - [raw data mean I and Q](#)
  - [raw data stdev I and Q](#)
  - [raw gain imbalance](#)
6. [TLM analysis](#)
7. [Wave Doppler analysis](#)
  - [Unbiased Doppler Error for WVS](#)
  - [Absolute Doppler for WVS](#)
  - [Doppler evolution versus ANX for WVS](#)
  - [Unbiased Doppler Error for GM1](#)
  - [Absolute Doppler for GM1](#)
  - [Doppler evolution versus ANX for GM1](#)

## 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 2006-06-17 00:00:00 to 2006-06-18 16:44:01

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

|   |    |    |    |   |   |
|---|----|----|----|---|---|
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 44 | 82 | 22 | 0 | 0 |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 44 | 82 | 22 | 0 | 0 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 44 | 82 | 22 | 0 | 0 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 44 | 82 | 22 | 0 | 0 |

| PDHS-E  |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE  | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 31  | 46  | 72  | 15  | 25  |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 31  | 46  | 72  | 15  | 25  |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 31  | 46  | 72  | 15  | 25  |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 31  | 46  | 72  | 15  | 25  |

## 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            | 20060616 063527 |
| H            | 20060617 060350 |

### 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    | -3.936722  | 0.018512   | 0.046936        |
| 7   | P1    | -3.132248  | 0.015868   | -0.048617       |
| 11  | P1    | -4.107486  | 0.019348   | 0.011762        |
| 15  | P1    | -6.145723  | 0.020216   | -0.037500       |
| 19  | P1    | -3.345102  | 0.008537   | -0.065004       |
| 22  | P1    | -4.515522  | 0.011542   | -0.009092       |
| 26  | P1    | -3.972949  | 0.017018   | 0.011183        |
| 30  | P1    | -5.749384  | 0.008917   | -0.013486       |
| 3   | P1    | -16.513823 | 0.250007   | 0.084985        |
| 7   | P1    | -17.217453 | 0.150505   | -0.138630       |
| 11  | P1    | -16.948336 | 0.308295   | -0.051552       |
| 15  | P1    | -13.207389 | 0.216520   | 0.067701        |
| 19  | P1    | -14.321479 | 0.050843   | -0.137175       |
| 22  | P1    | -16.169748 | 0.369874   | 0.026021        |
| 26  | P1    | -15.228230 | 0.230440   | 0.087579        |
| 30  | P1    | -17.113064 | 0.405359   | -0.198980       |

**P2 Cyclic statistics**

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -21.151892 | 0.079393   | 0.120827        |
| 7   | P2    | -22.035723 | 0.095293   | 0.103894        |
| 11  | P2    | -15.881125 | 0.109094   | 0.122557        |
| 15  | P2    | -7.159798  | 0.092155   | 0.003409        |
| 19  | P2    | -9.172055  | 0.083661   | -0.016826       |
| 22  | P2    | -18.155897 | 0.081619   | -0.073159       |
| 26  | P2    | -16.397205 | 0.085367   | -0.062288       |
| 30  | P2    | -19.561020 | 0.085293   | 0.023077        |

**P3 Cyclic statistics**

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.184658 | 0.004045   | -0.006097       |
| 7   | P3    | -8.184658 | 0.004045   | -0.006097       |
| 11  | P3    | -8.184658 | 0.004045   | -0.006097       |
| 15  | P3    | -8.184658 | 0.004045   | -0.006097       |
| 19  | P3    | -8.184658 | 0.004045   | -0.006097       |
| 22  | P3    | -8.184658 | 0.004045   | -0.006097       |
| 26  | P3    | -8.184658 | 0.004045   | -0.006097       |
| 30  | P3    | -8.184658 | 0.004045   | -0.006097       |

#### 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    | -3.800670  | 0.051603   | 0.007130        |
| 7   | P1    | -2.592121  | 0.030785   | 0.042128        |
| 11  | P1    | -2.861231  | 0.023204   | 0.017104        |
| 15  | P1    | -3.507931  | 0.050739   | -0.027619       |
| 19  | P1    | -3.407282  | 0.014324   | -0.028829       |
| 22  | P1    | -5.080930  | 0.019564   | -0.002042       |
| 26  | P1    | -5.852384  | 0.015759   | -0.036149       |
| 30  | P1    | -5.192172  | 0.026798   | -0.015404       |
| 3   | P1    | -11.624854 | 0.053036   | 0.022276        |
| 7   | P1    | -9.966015  | 0.049018   | -0.062769       |
| 11  | P1    | -10.214473 | 0.087130   | -0.081362       |
| 15  | P1    | -10.648099 | 0.154765   | -0.113632       |
| 19  | P1    | -15.535001 | 0.075756   | -0.052490       |
| 22  | P1    | -20.932432 | 1.182632   | -0.135495       |
| 26  | P1    | -16.476219 | 0.331193   | 0.033096        |
| 30  | P1    | -17.924540 | 0.370860   | 0.187990        |

### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -16.840115 | 0.071529   | 0.150811        |
| 7   | P2    | -22.493313 | 0.129145   | 0.050563        |
| 11  | P2    | -11.156269 | 0.048374   | 0.075917        |
| 15  | P2    | -4.916872  | 0.048856   | -0.034254       |
| 19  | P2    | -6.881167  | 0.053269   | -0.014533       |
| 22  | P2    | -8.206644  | 0.043047   | -0.025839       |
| 26  | P2    | -24.132812 | 0.068507   | -0.095691       |
| 30  | P2    | -22.063007 | 0.056174   | 0.008208        |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.018926 | 0.004894   | -0.011117       |
| 7   | P3    | -8.018946 | 0.004872   | -0.011032       |
| 11  | P3    | -8.018900 | 0.004868   | -0.011095       |
| 15  | P3    | -8.018893 | 0.004879   | -0.011121       |
| 19  | P3    | -8.018897 | 0.004872   | -0.011069       |
| 22  | P3    | -8.019076 | 0.004868   | -0.011242       |
| 26  | P3    | -8.019028 | 0.004872   | -0.011003       |
| 30  | P3    | -8.019003 | 0.004870   | -0.011103       |

## 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  | 0.000543891 |
|         | stdev | 1.82336e-07 |
| MEAN Q  | mean  | 0.000514893 |
|         | stdev | 2.25170e-07 |



### 5.2 - Input stdev I/Q

| channel | stat  | DSS-B      |
|---------|-------|------------|
| STDEV I | mean  | 0.135550   |
|         | stdev | 0.00117752 |
| STDEV Q | mean  | 0.135897   |
|         | stdev | 0.00119483 |



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006061[678]

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_1PNPDE20060617_182649_000000352048_00371_22469_7779.N1 | 0        | 16                |
| ASA_WSM_1PNPDE20060616_011001_000000672048_00346_22444_4337.N1 | 0        | 58                |
| ASA_WSM_1PNPDE20060616_021252_000002692048_00347_22445_4352.N1 | 0        | 58                |
| ASA_APM_1PNPDE20060616_143704_000000872048_00354_22452_3436.N1 | 0        | 21                |
| ASA_APM_1PNPDE20060617_004226_000000562048_00360_22458_3444.N1 | 0        | 19                |







## 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

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



|           |
|-----------|
| Ascending |
|-----------|



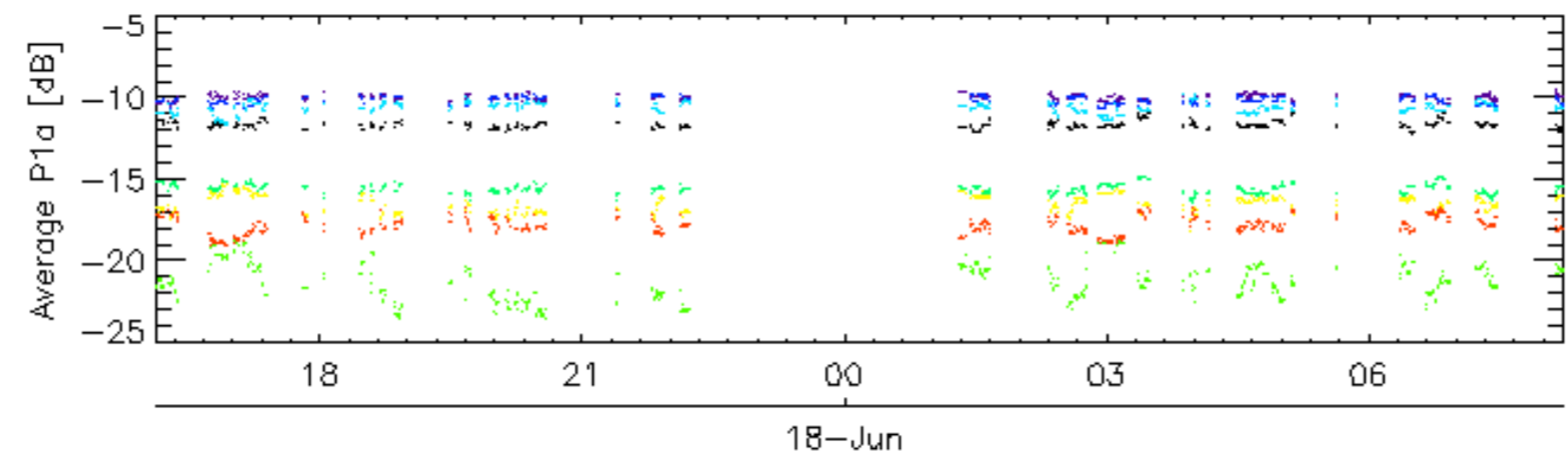
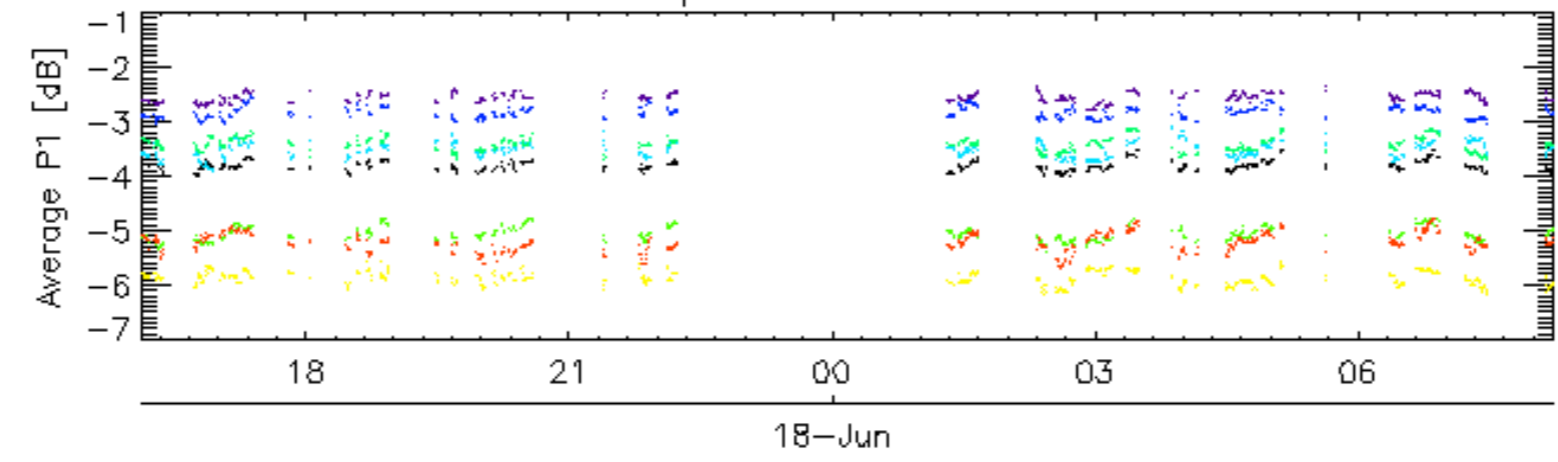
|            |
|------------|
| Descending |
|------------|

### 7.6 - Doppler evolution versus ANX for GM1

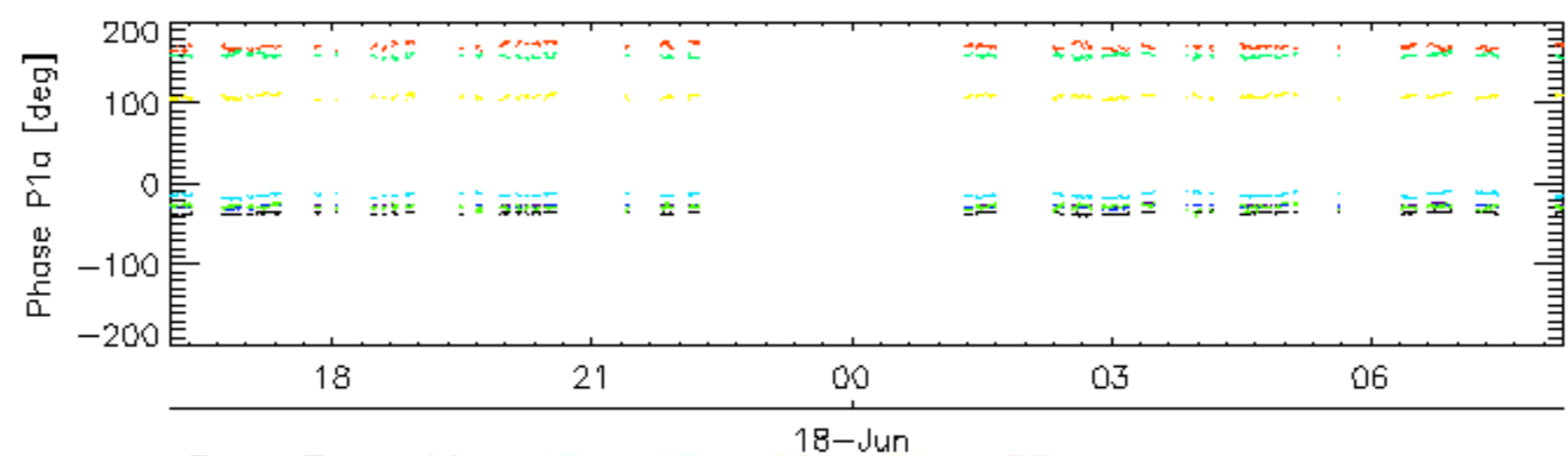
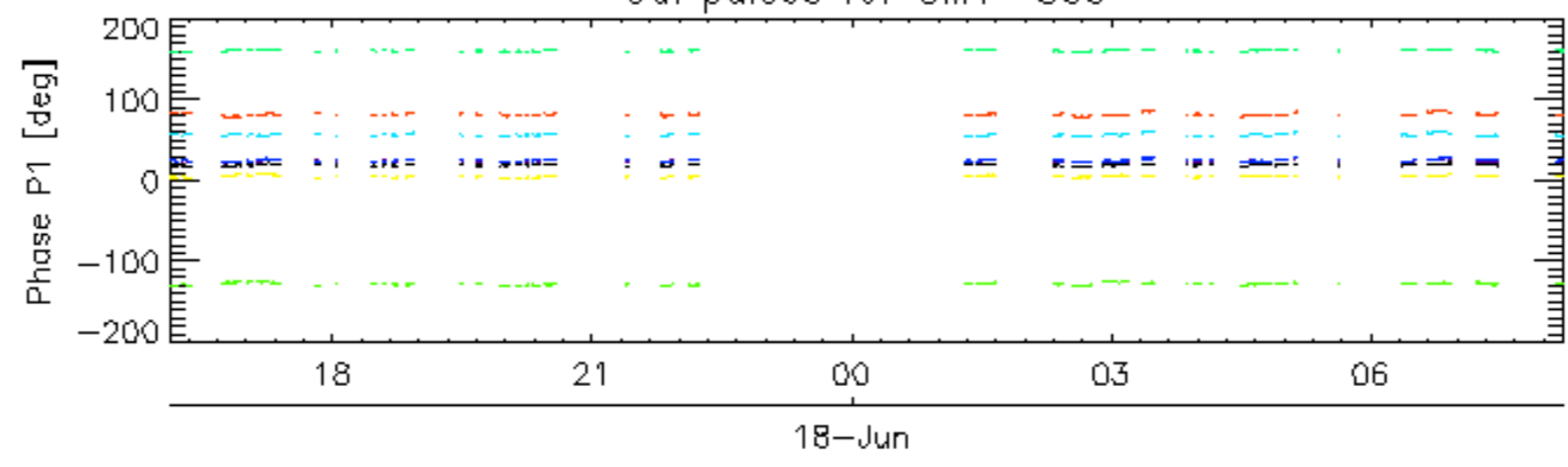
|   |
|---|
| <b>Evolution Doppler error versus ANX</b> |
|---|



Cal pulses for GM1 SS3

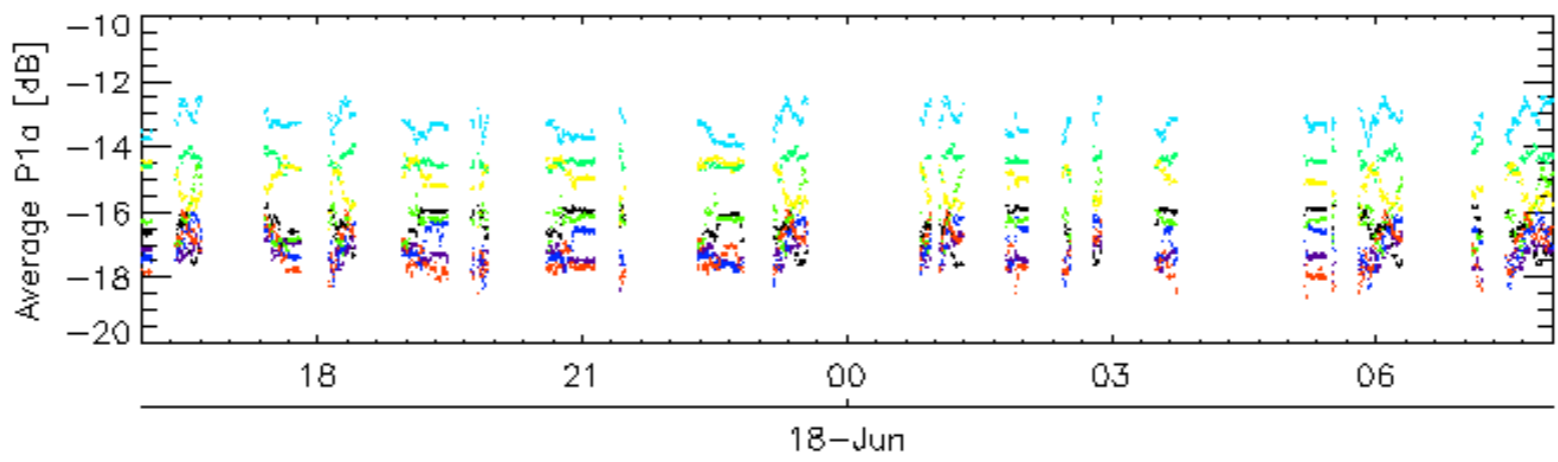
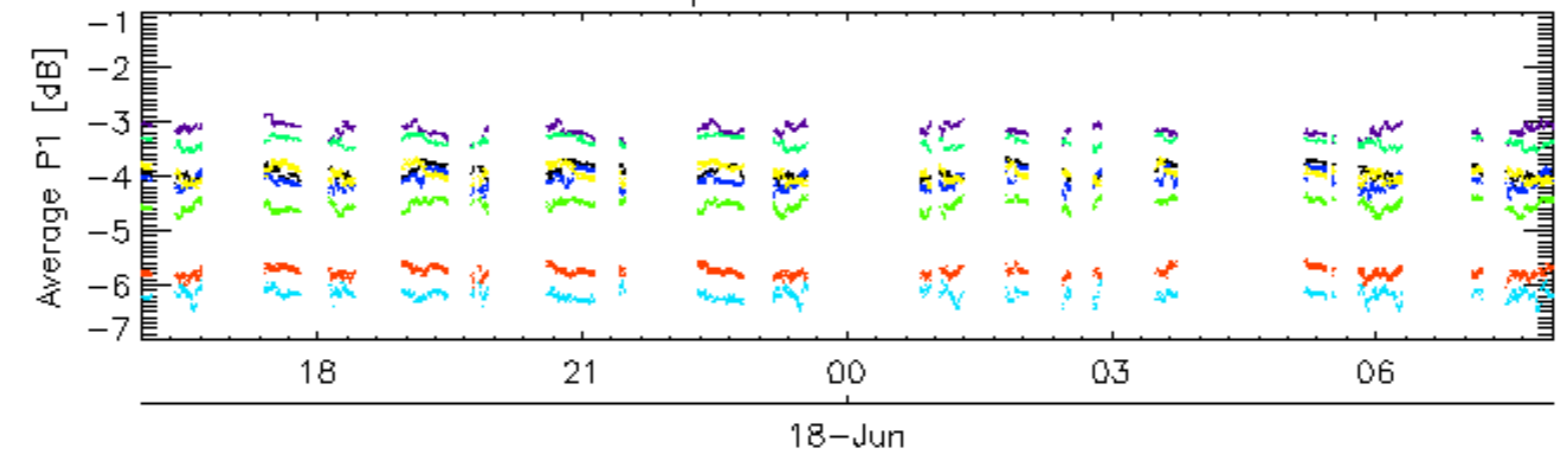


Cal pulses for GM1 SS3

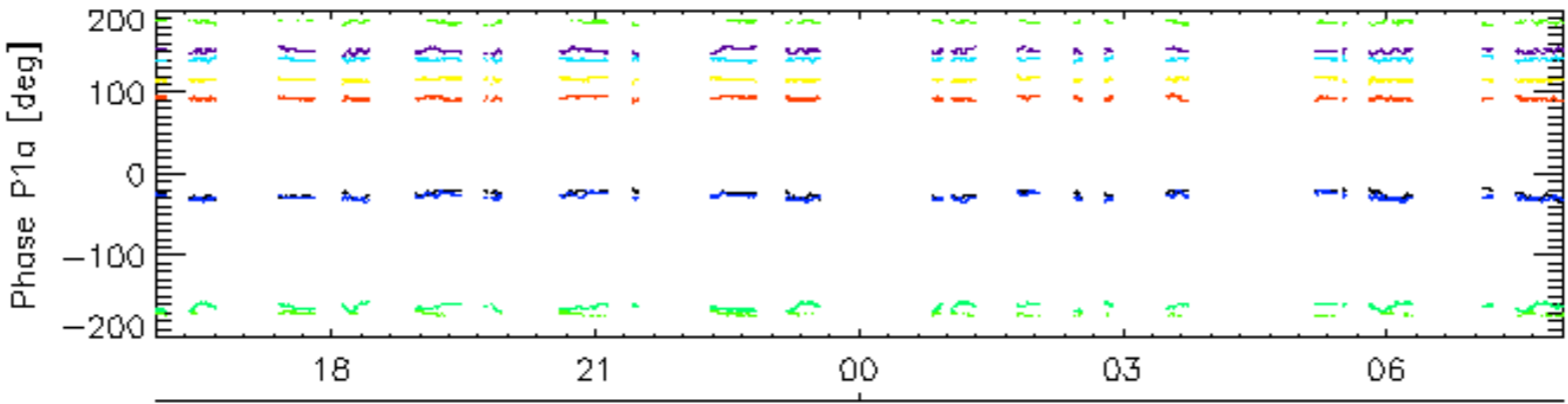
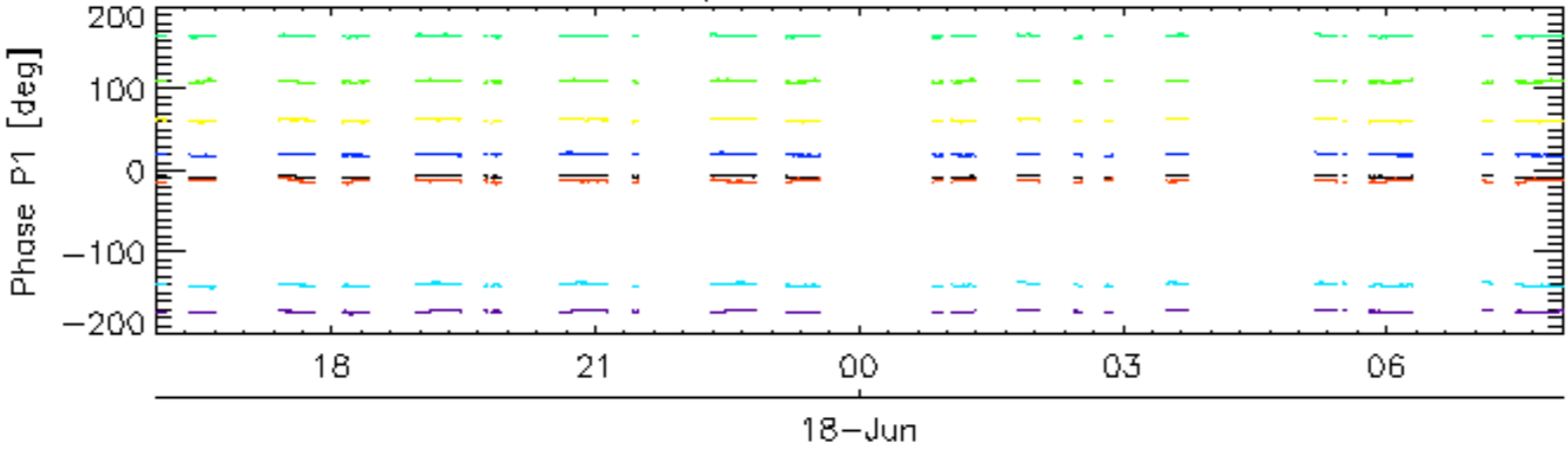


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

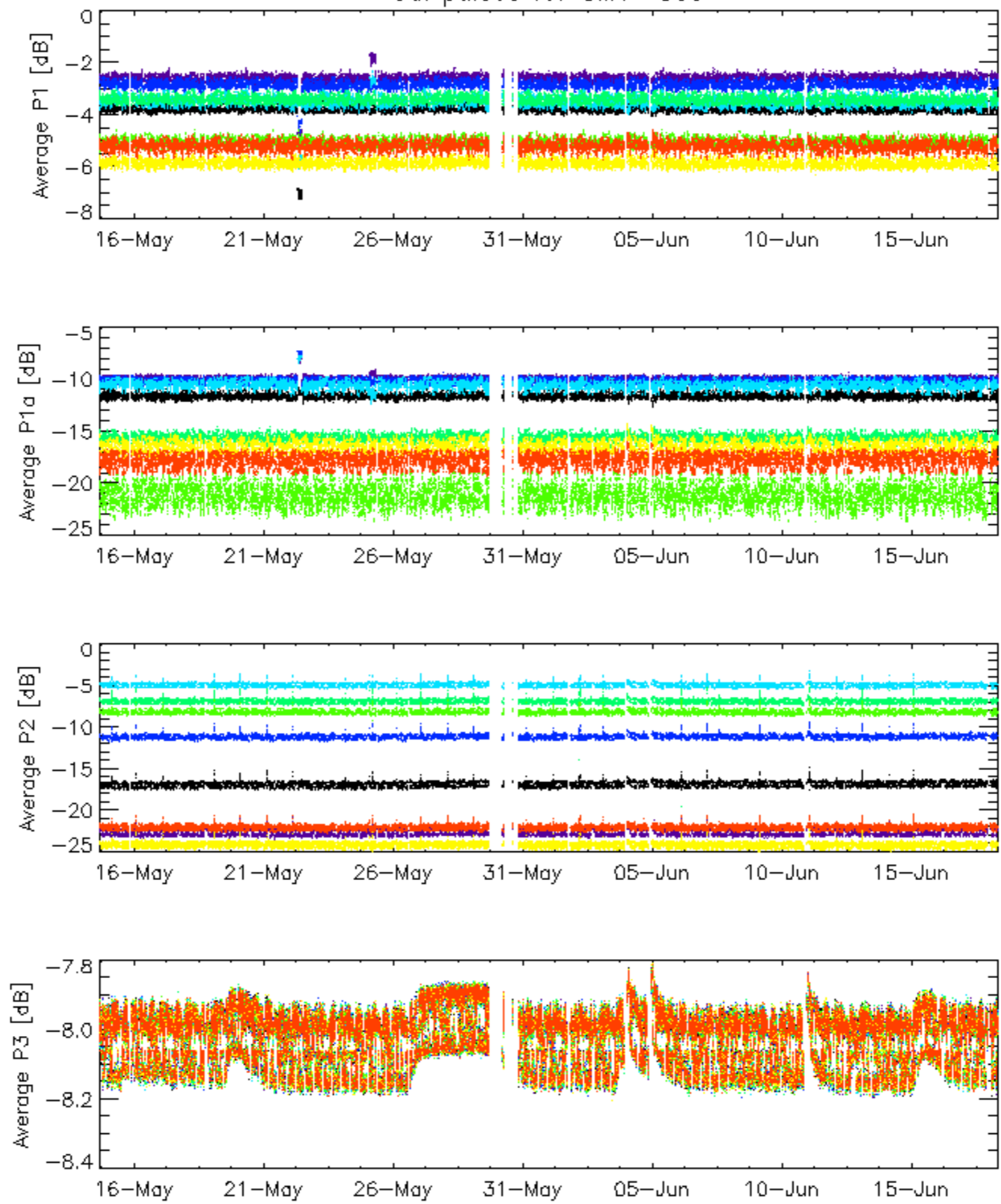


Cal pulses for WVS IS2



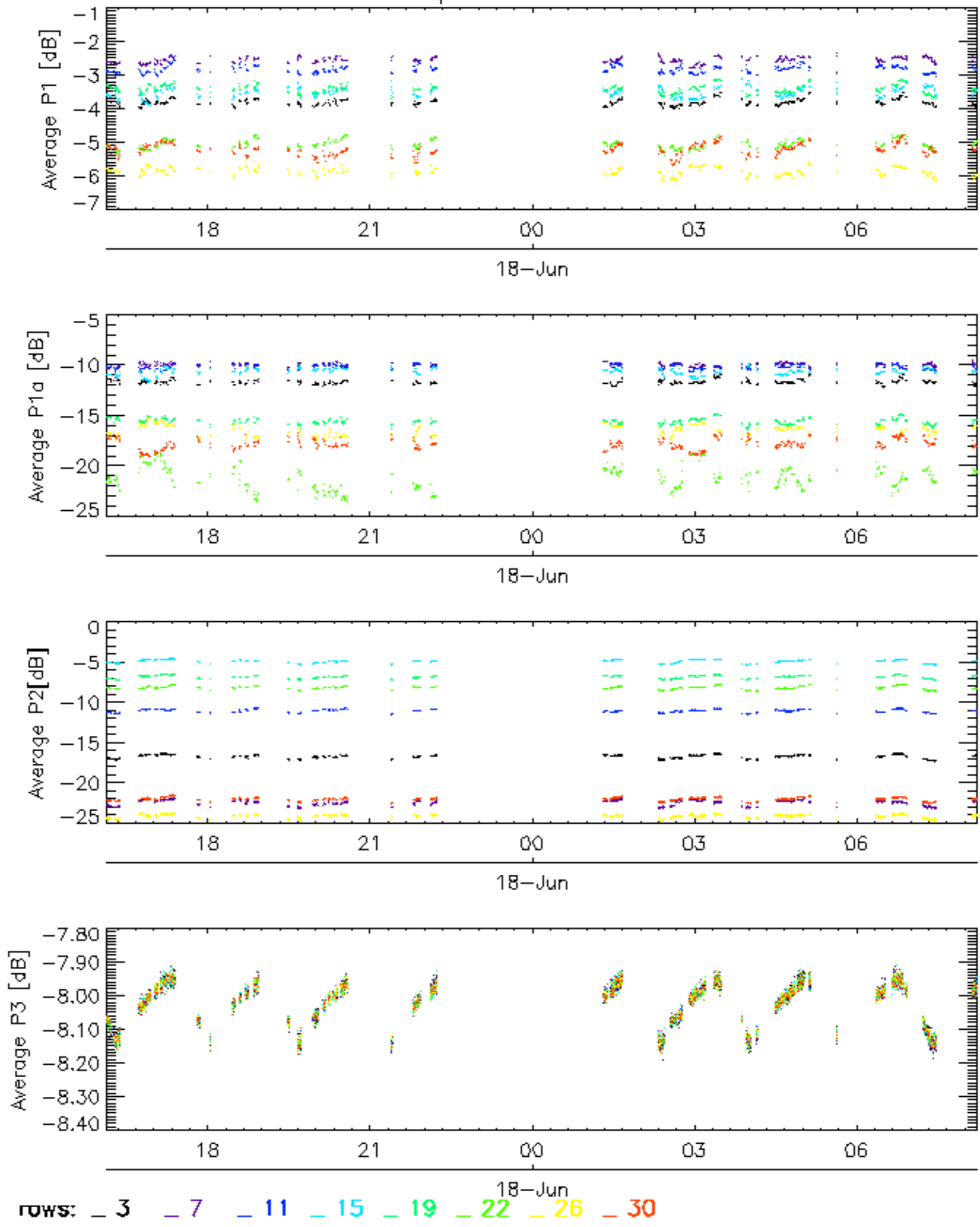
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

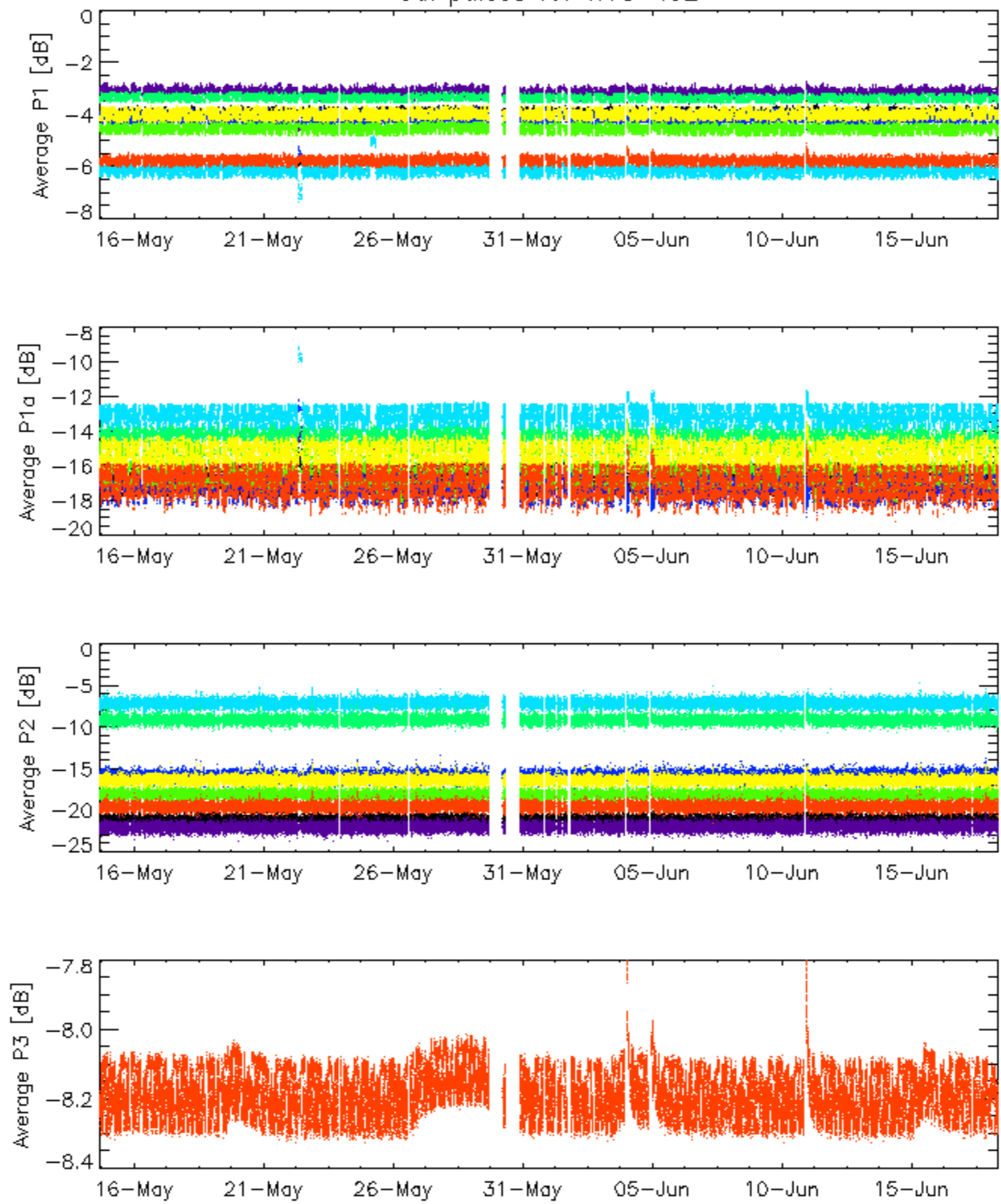


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

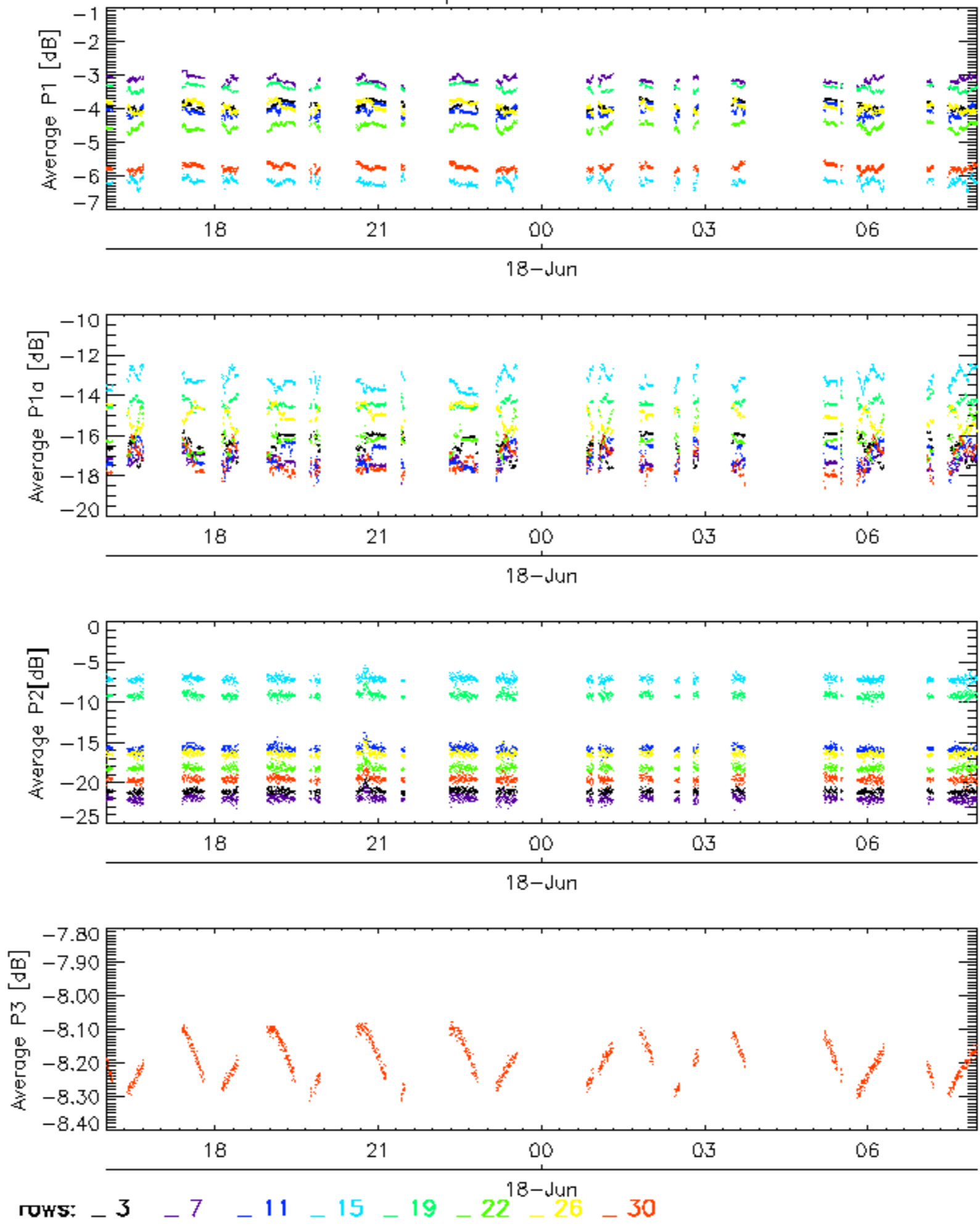


Cal pulses for WVS IS2



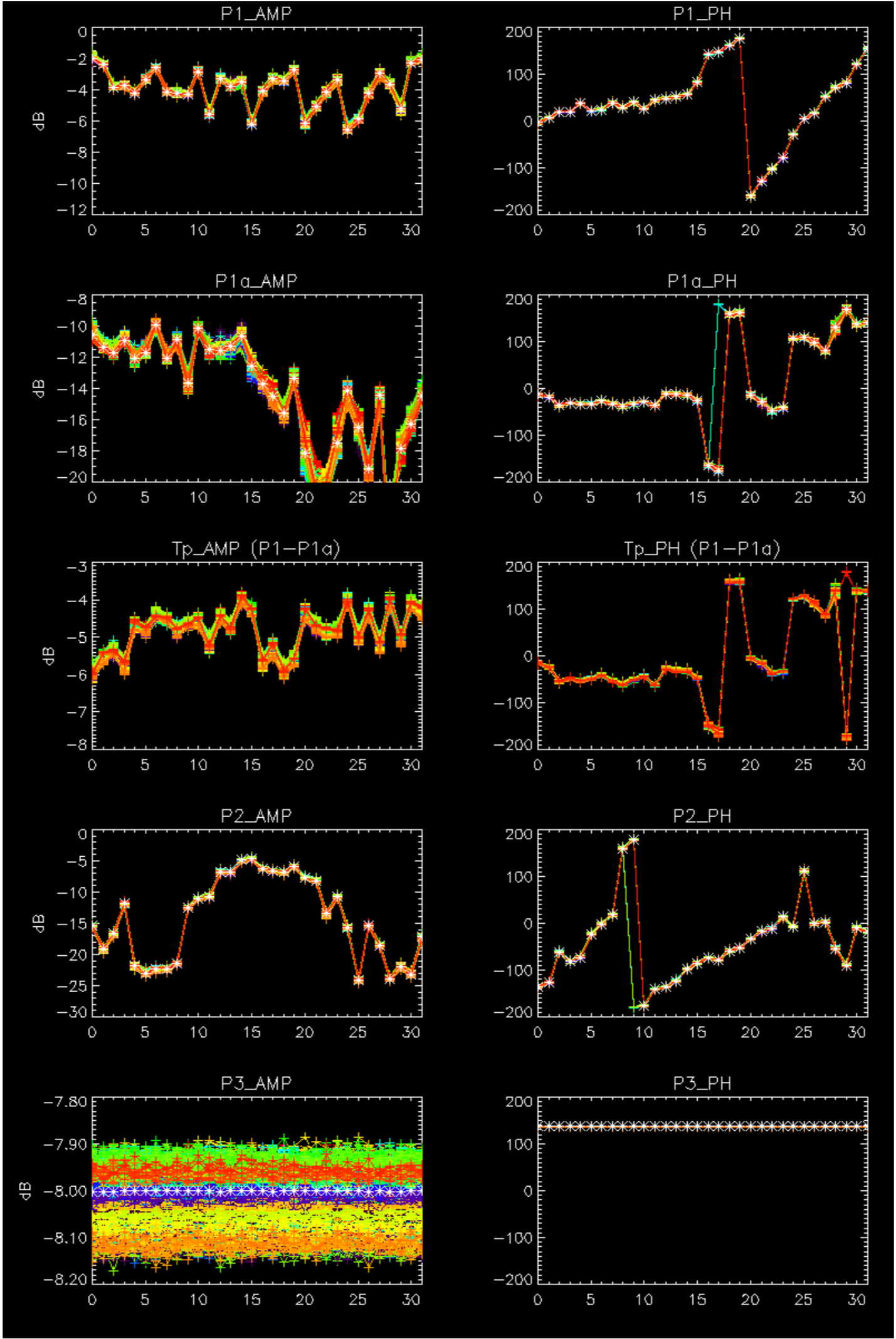
rows: [\\_ 3](#) [\\_ 7](#) [\\_ 11](#) [\\_ 15](#) [\\_ 19](#) [\\_ 22](#) [\\_ 26](#) [\\_ 30](#)

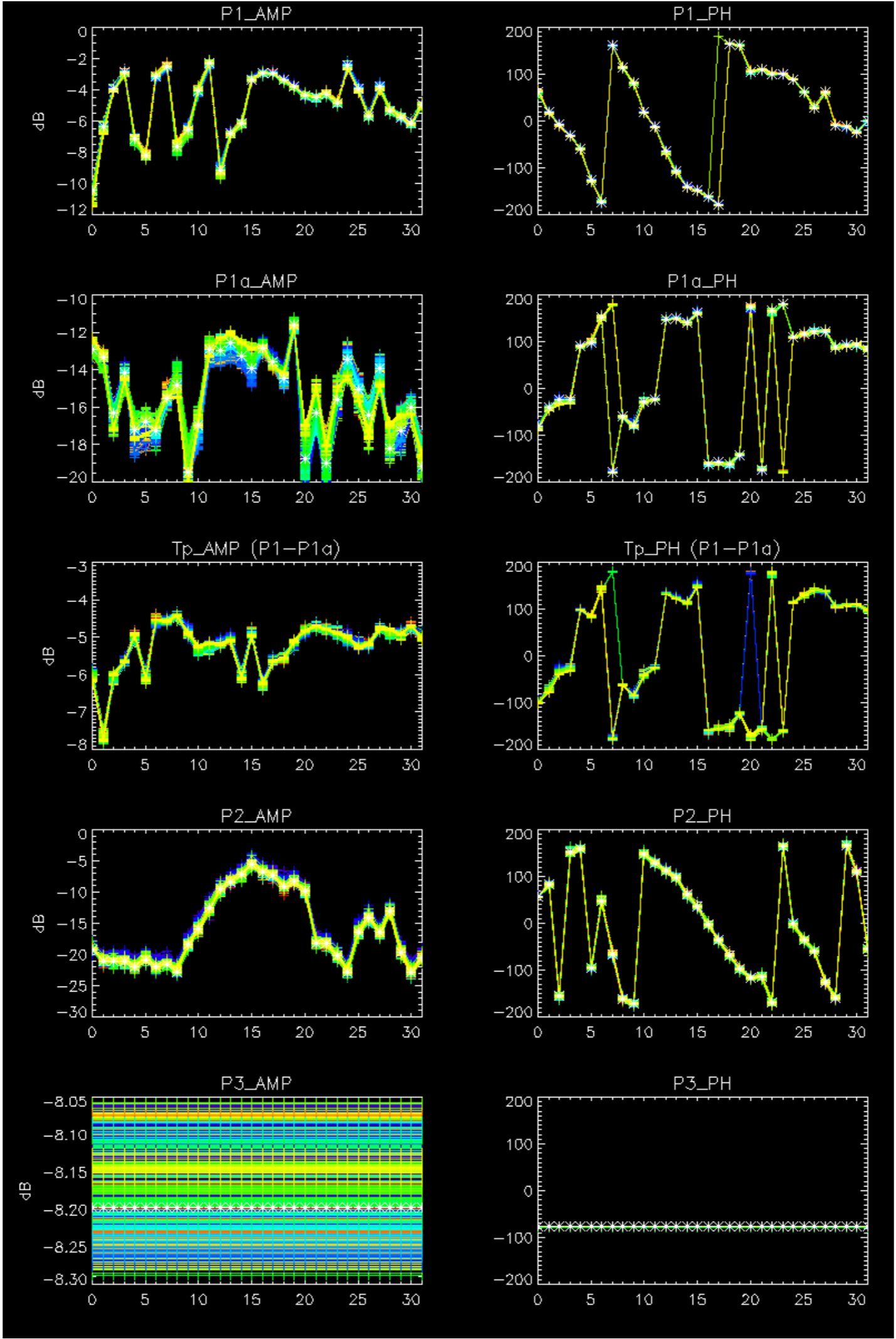
Cal pulses for WVS IS2



No anomalies observed.



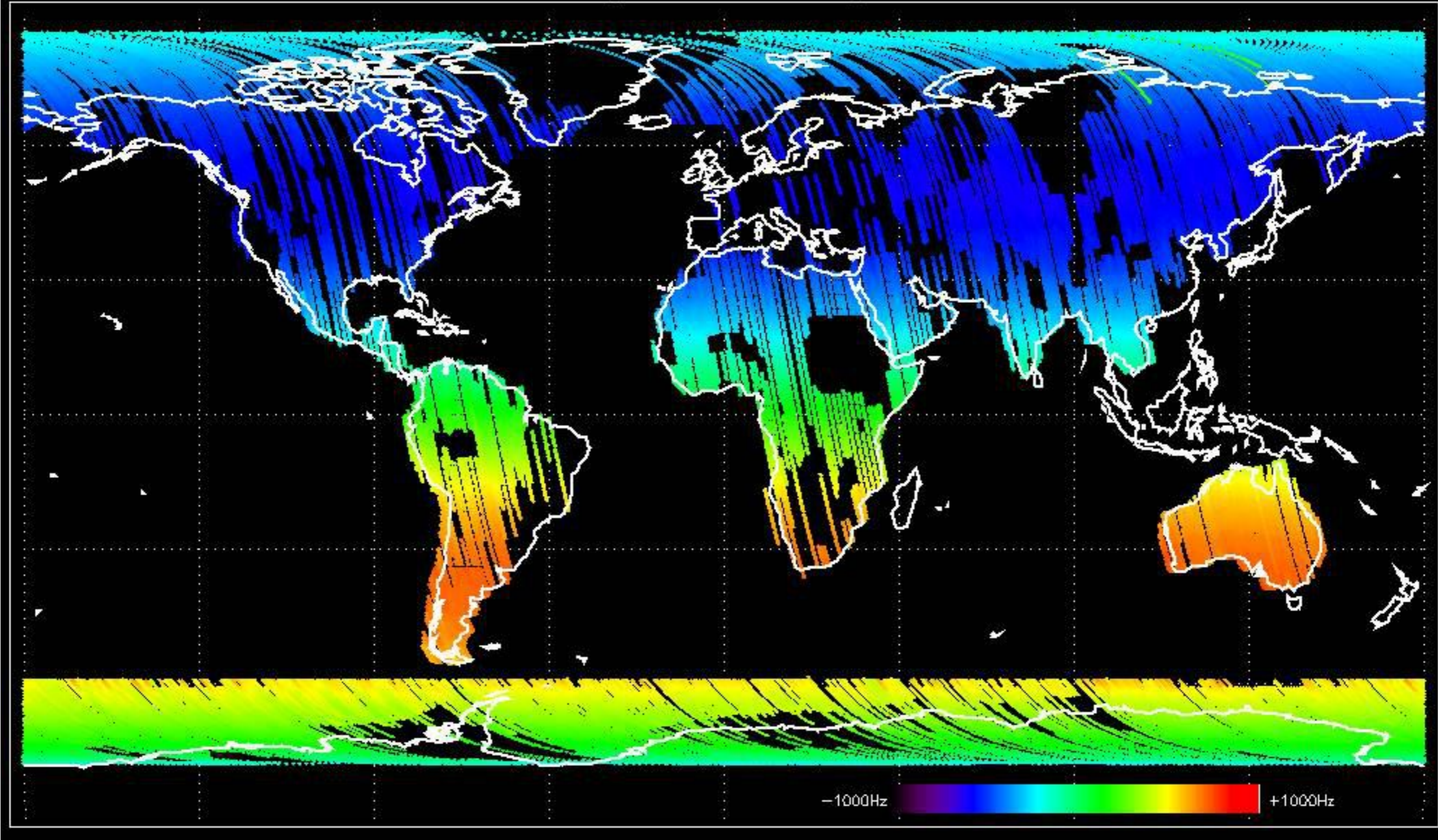




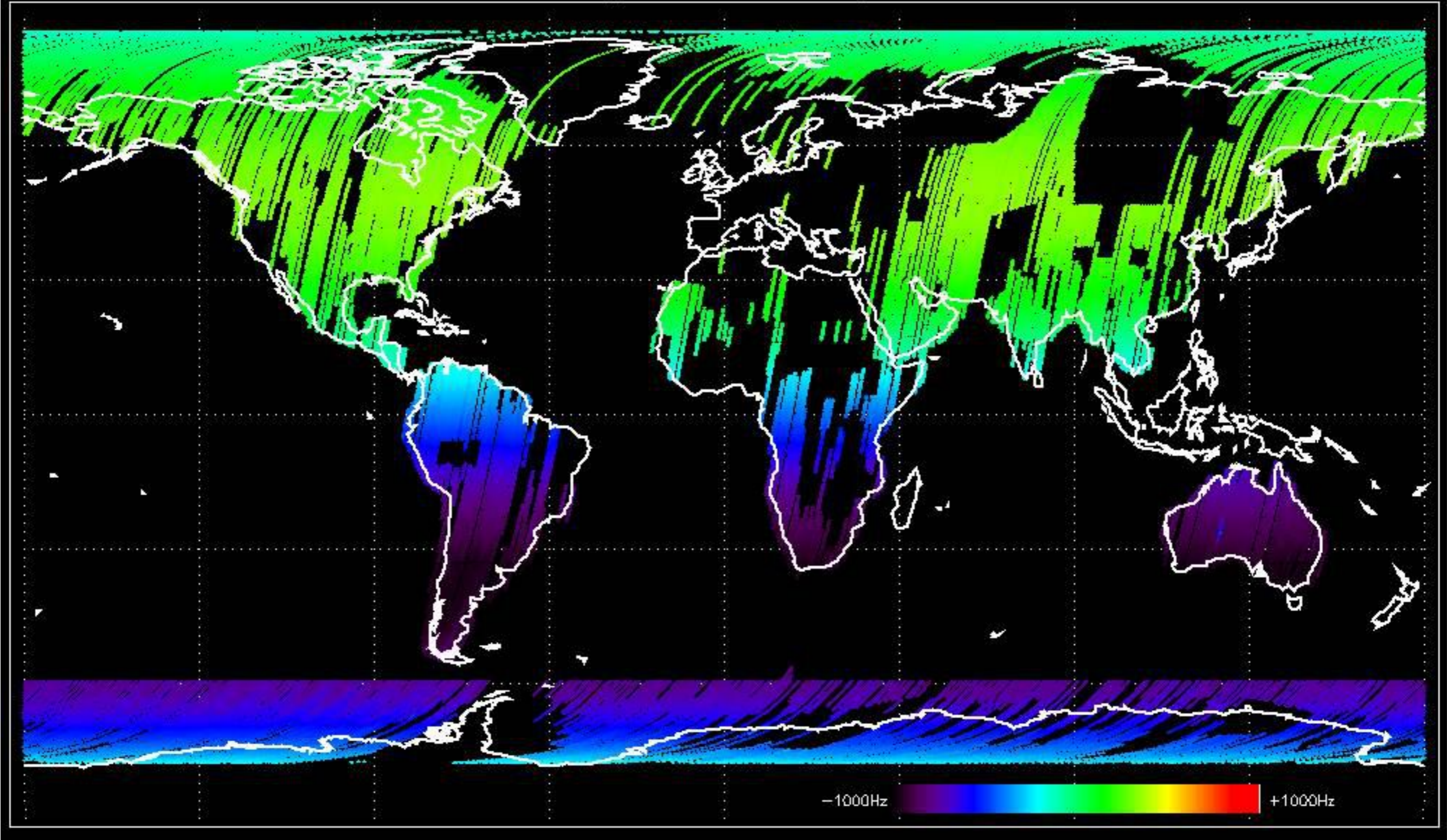
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



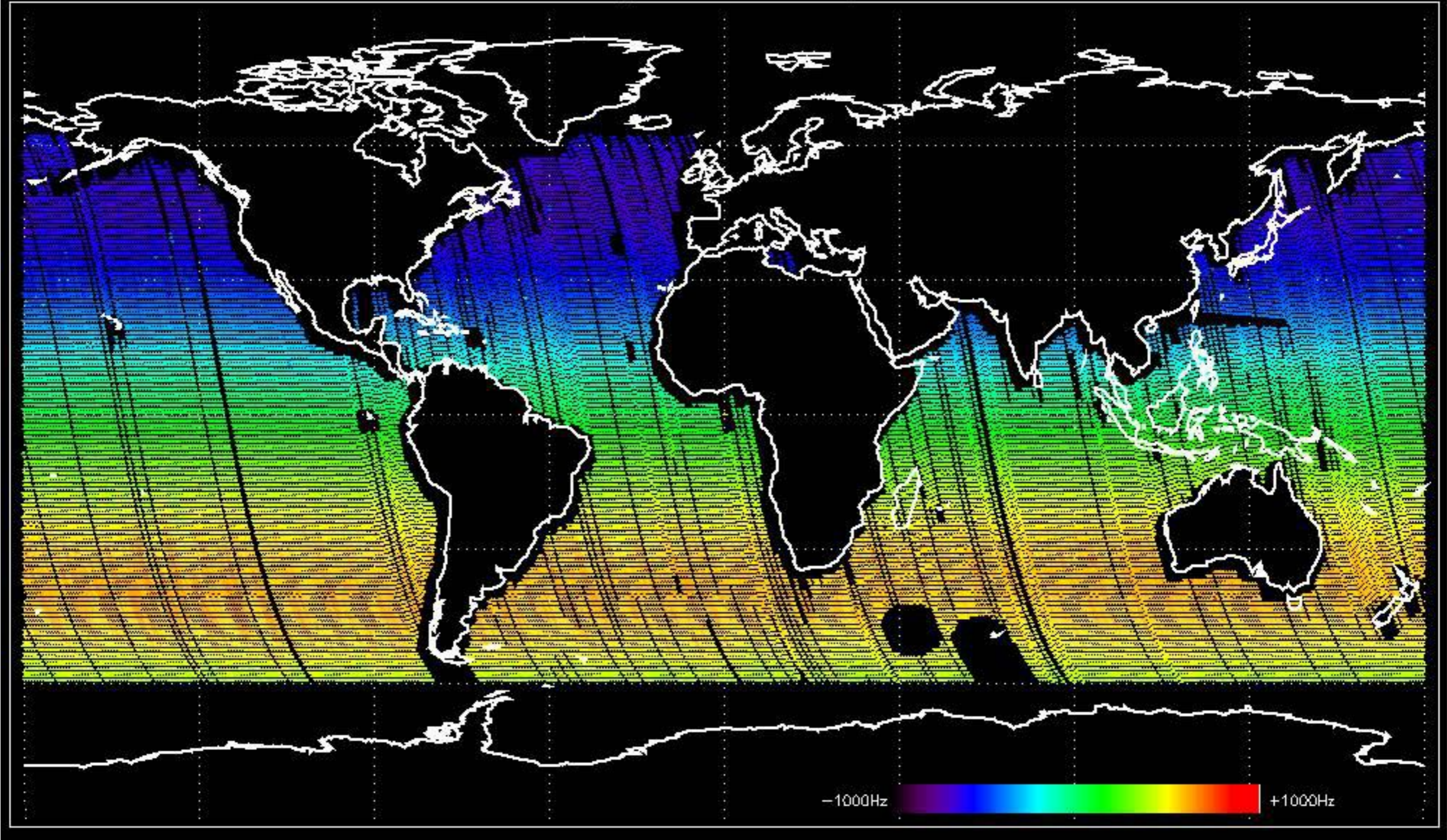
Doppler 'GM1' 'SS1' ascending



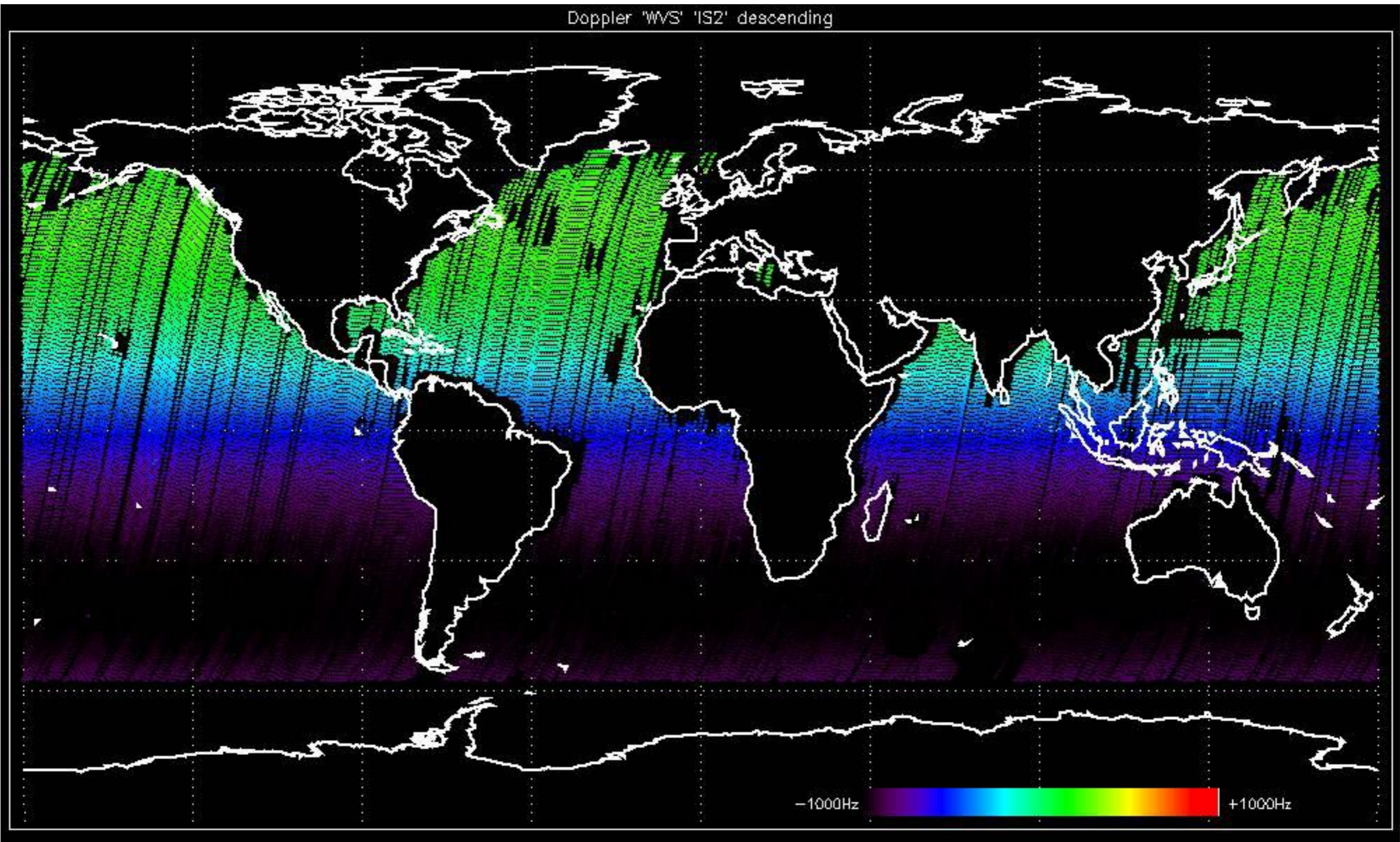
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS2' ascending

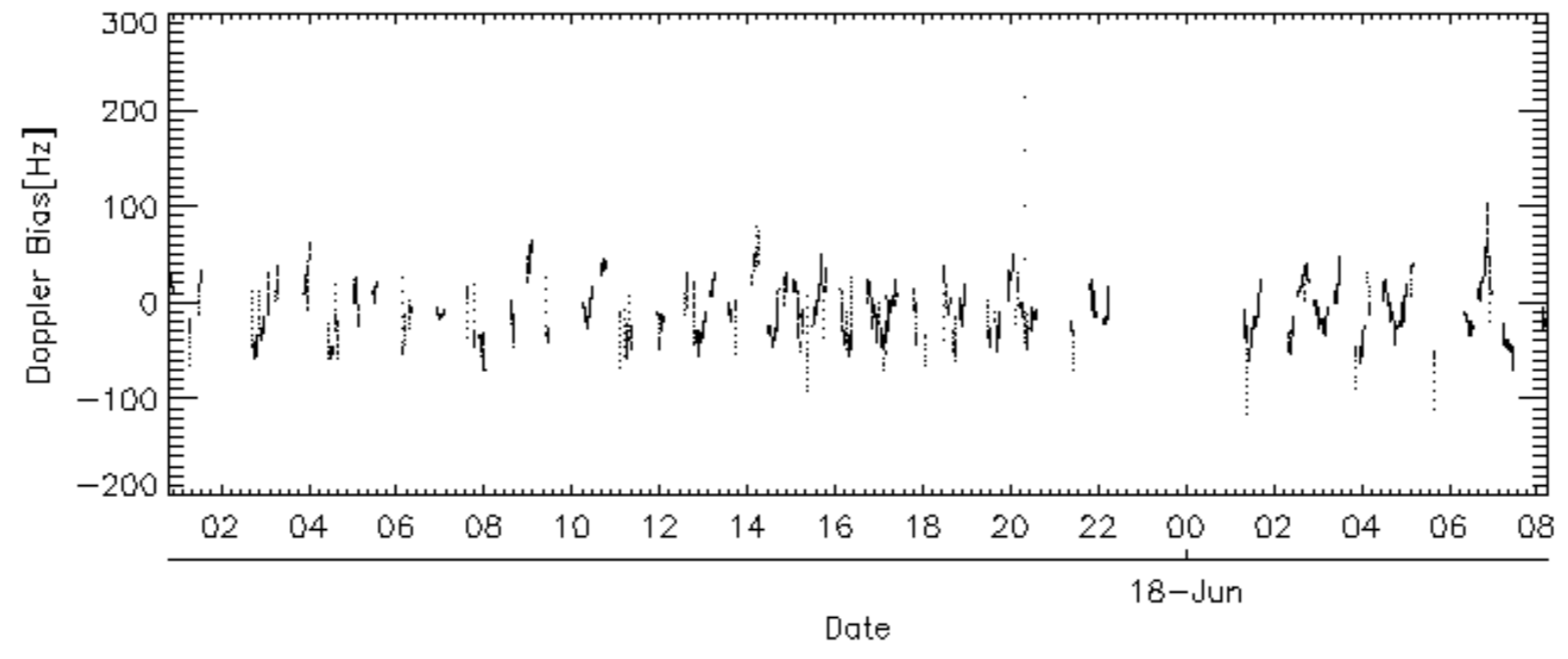
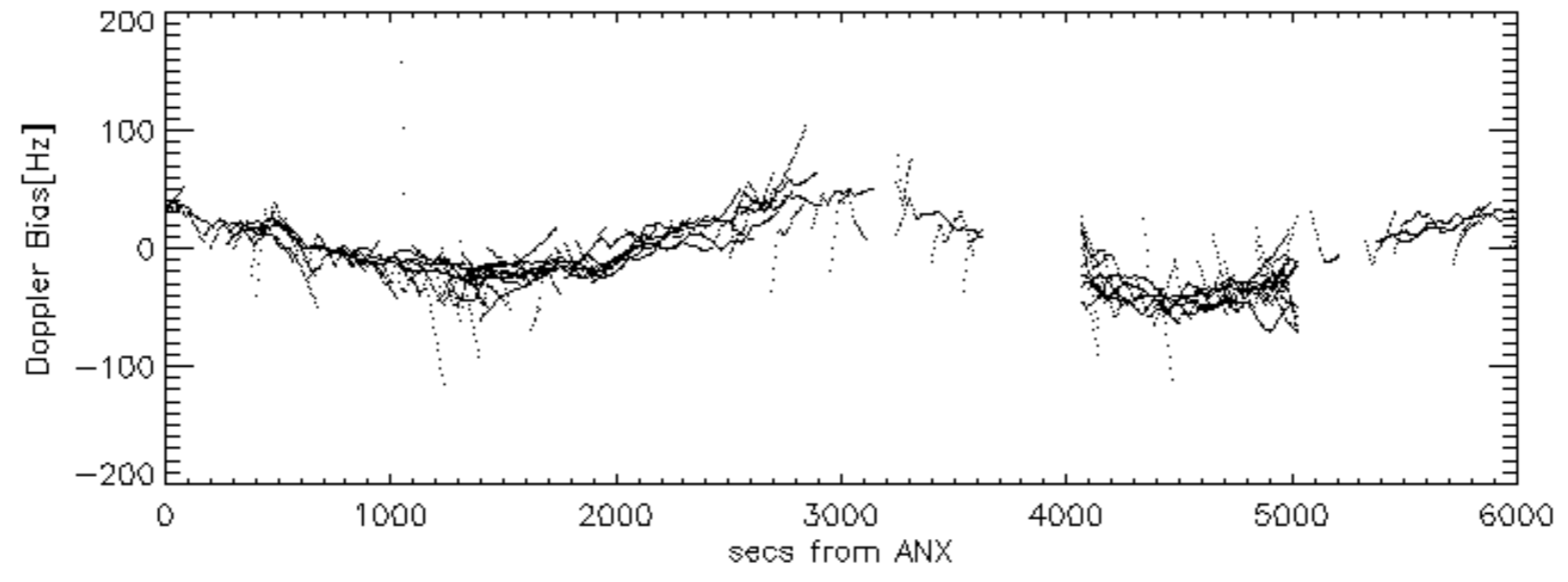
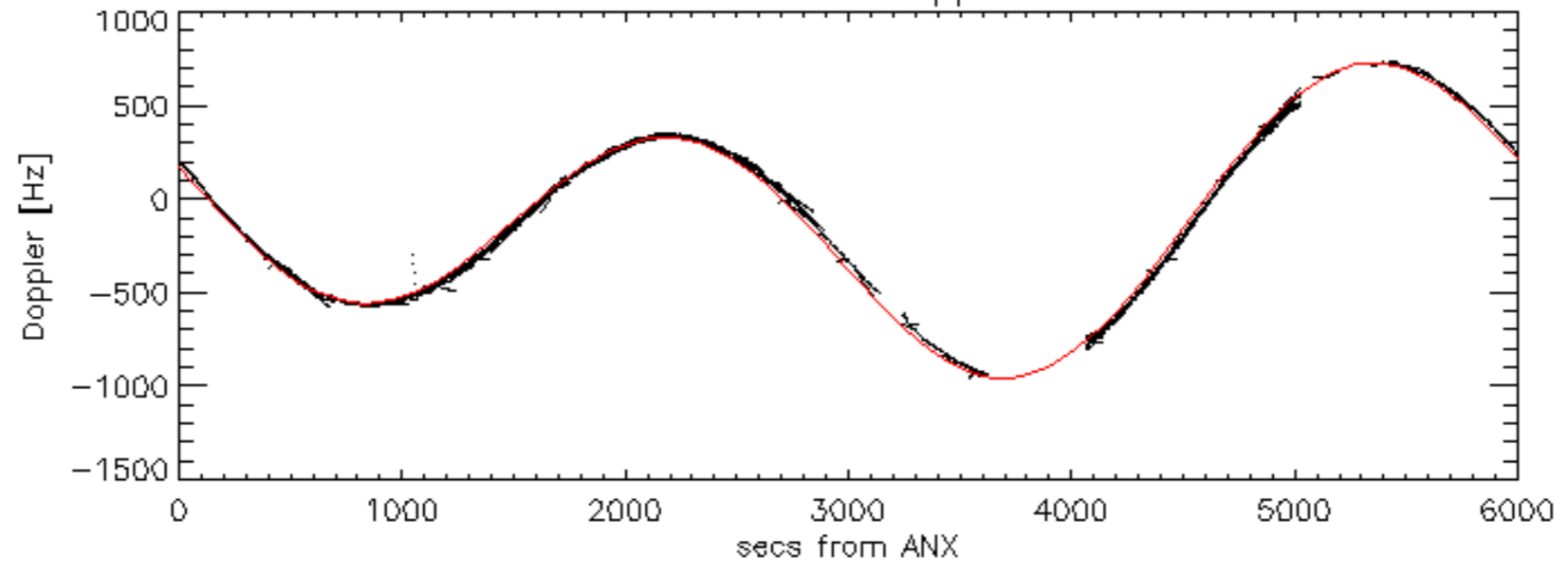


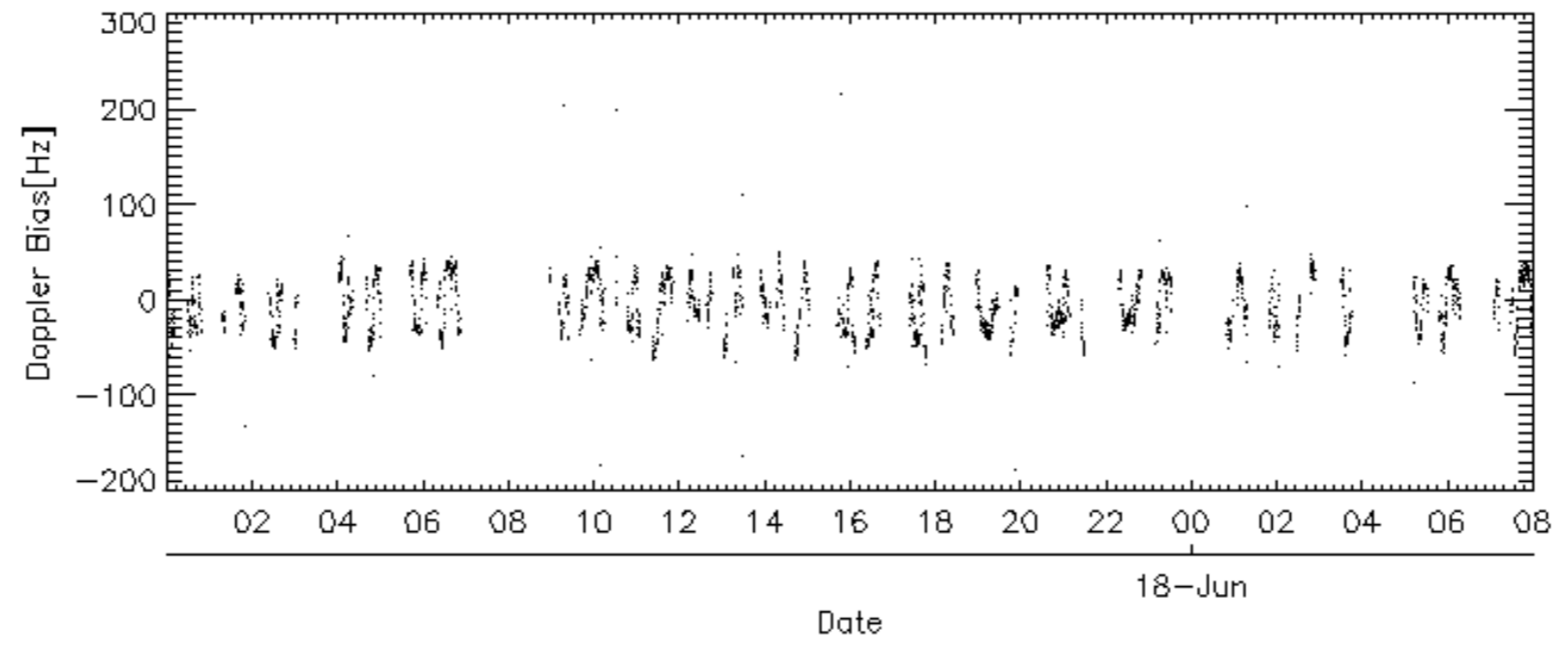
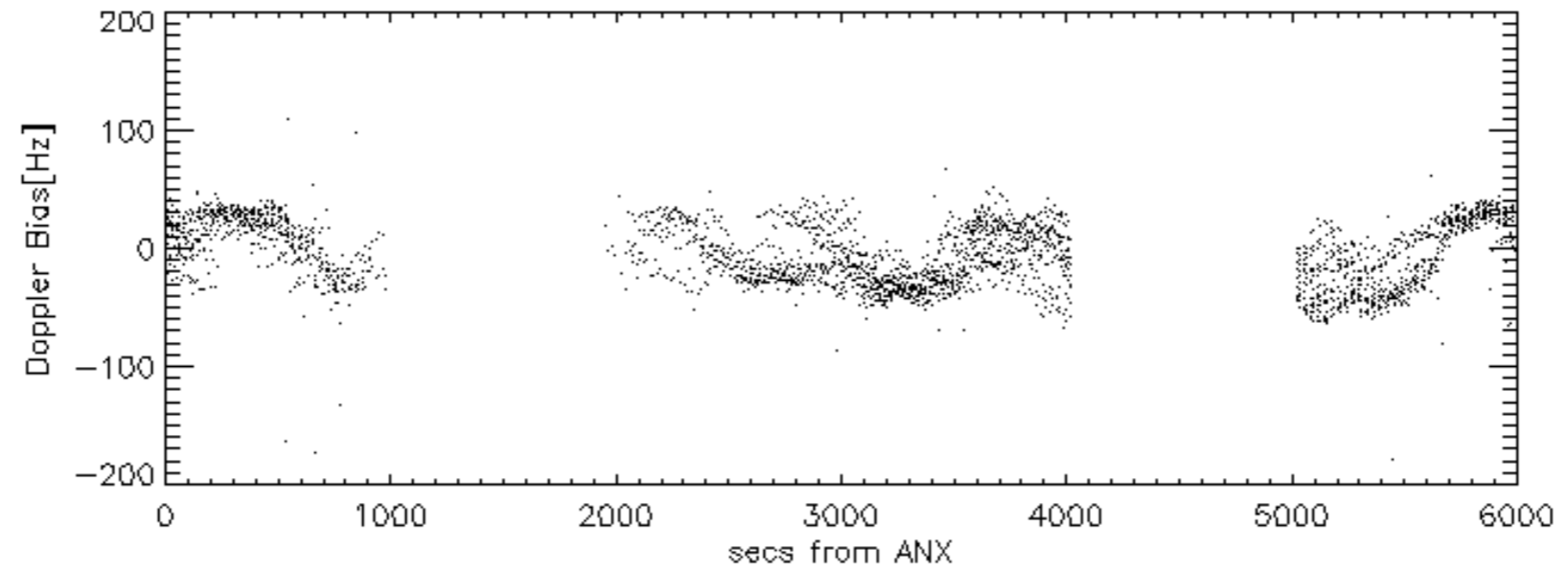
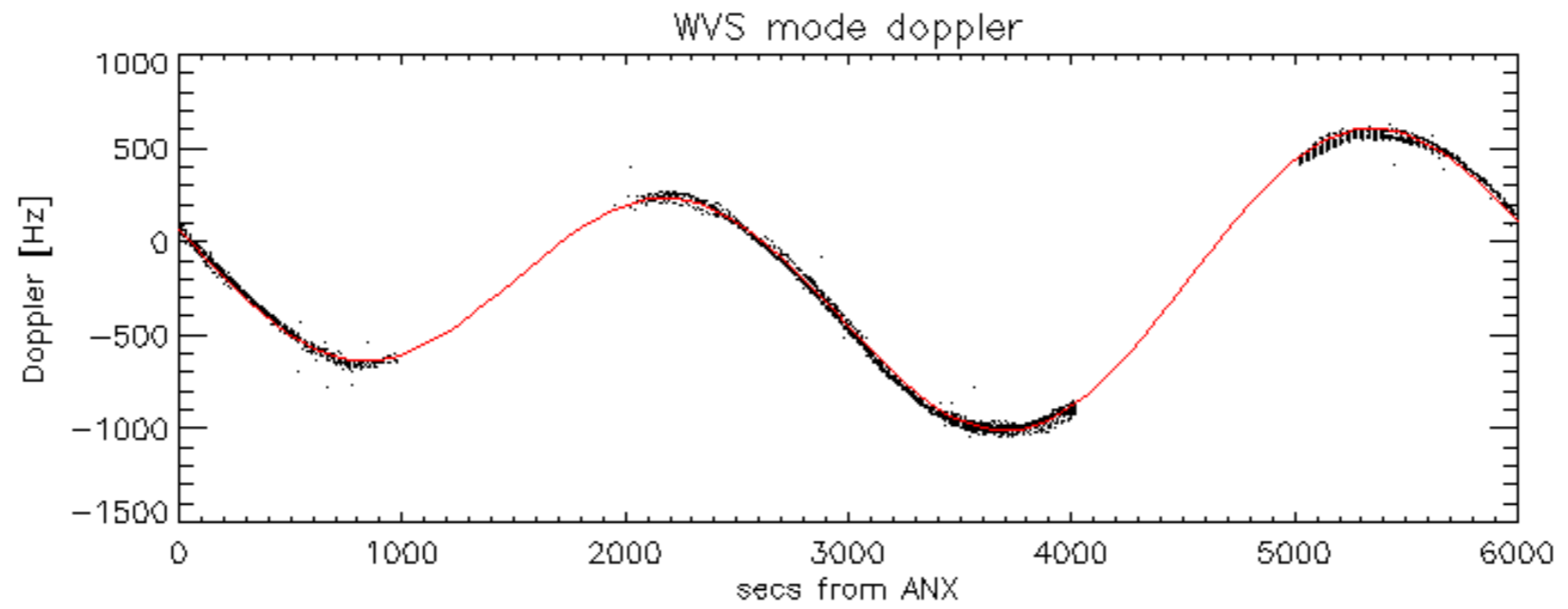
Doppler 'WVS' 'IS2' descending



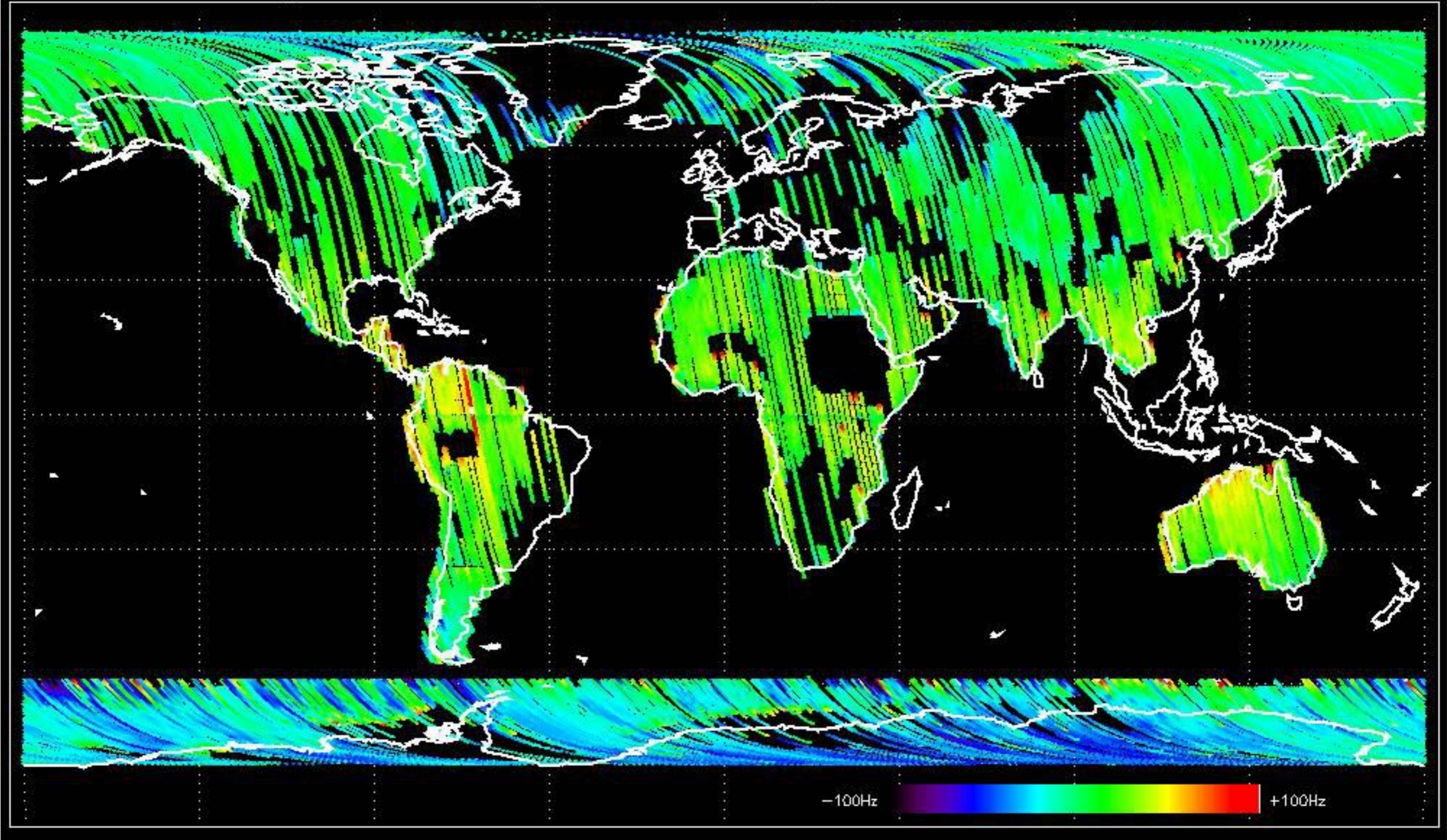


GM1 mode doppler

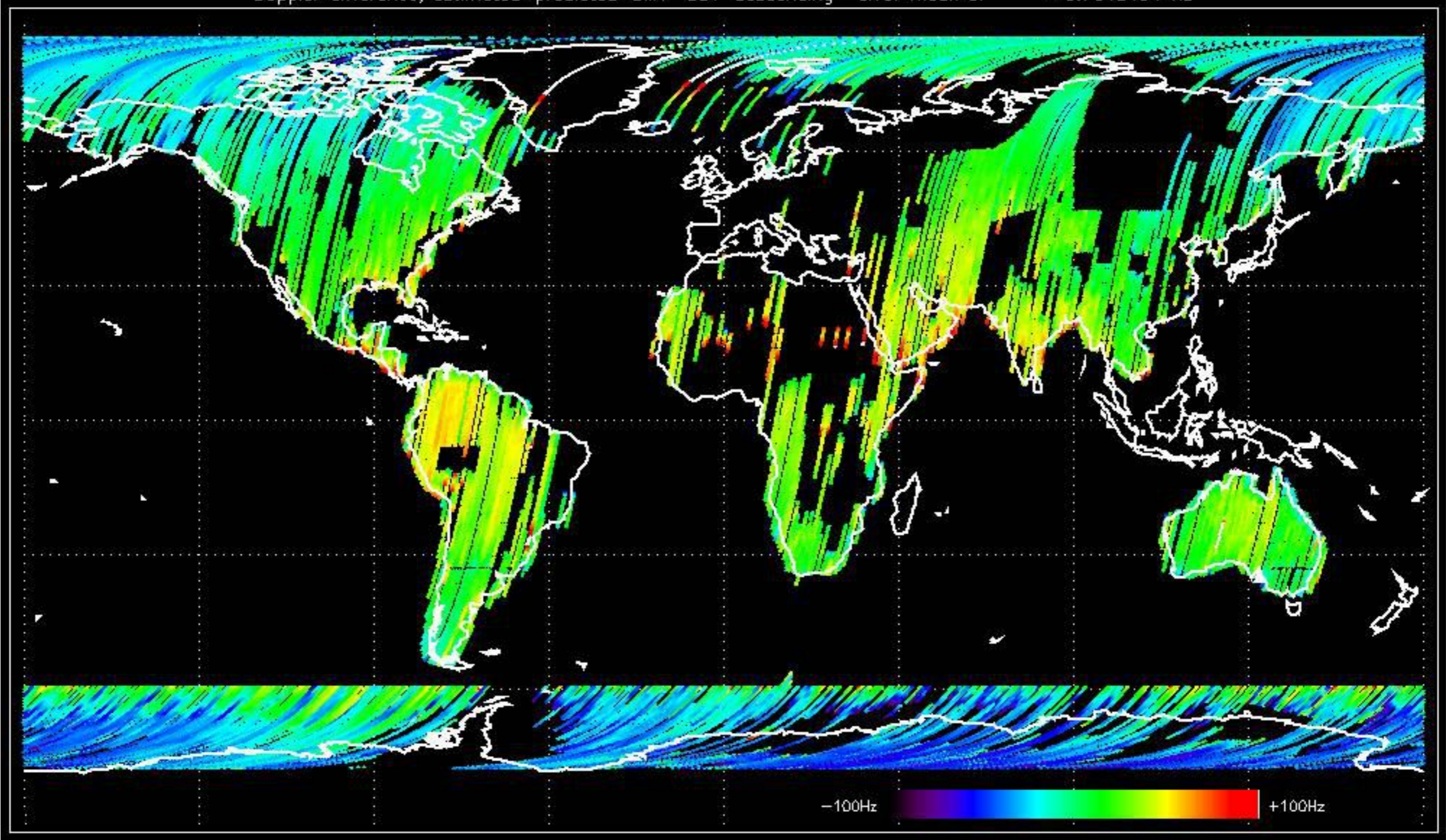




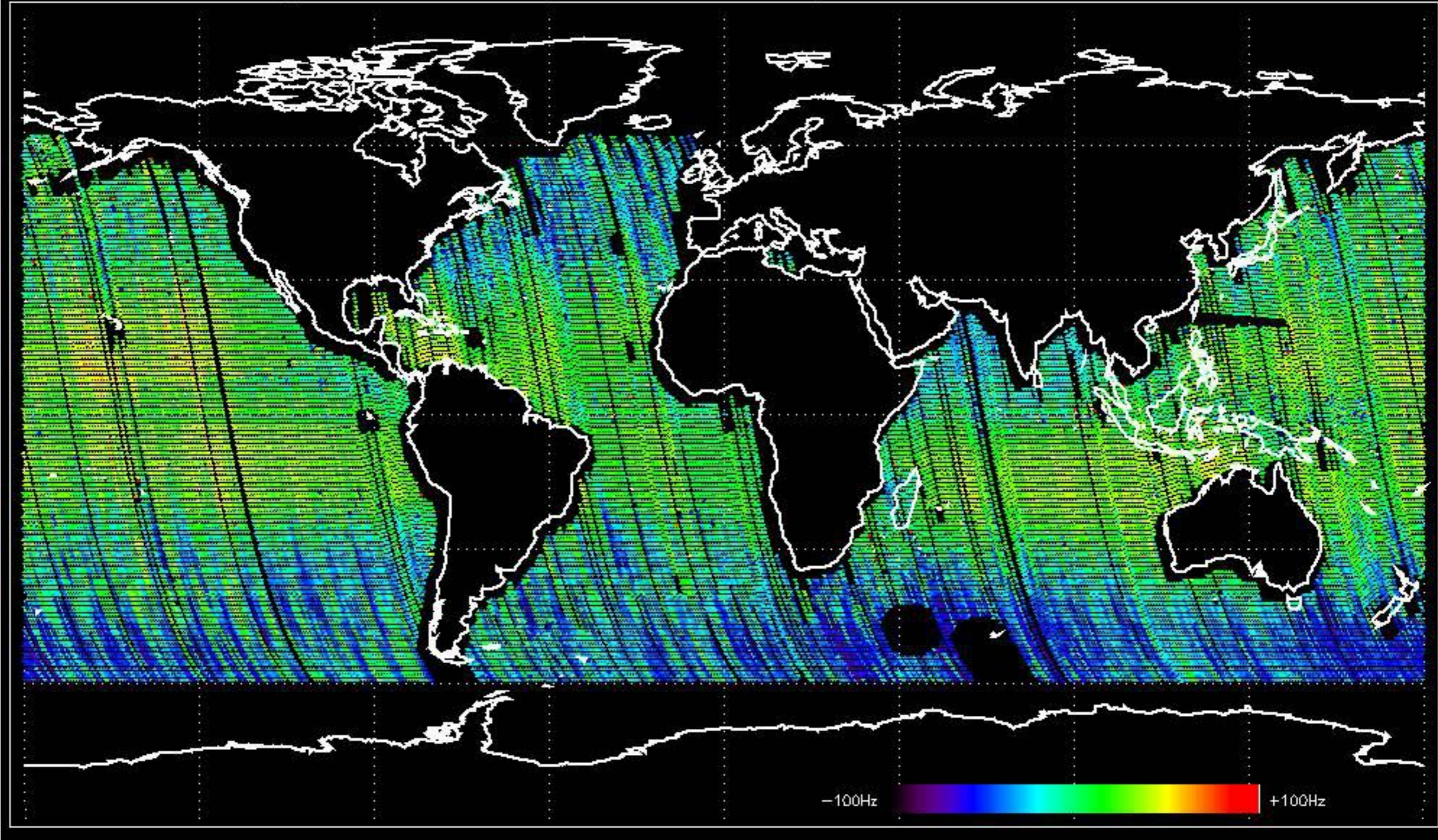
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -16.946700 Hz



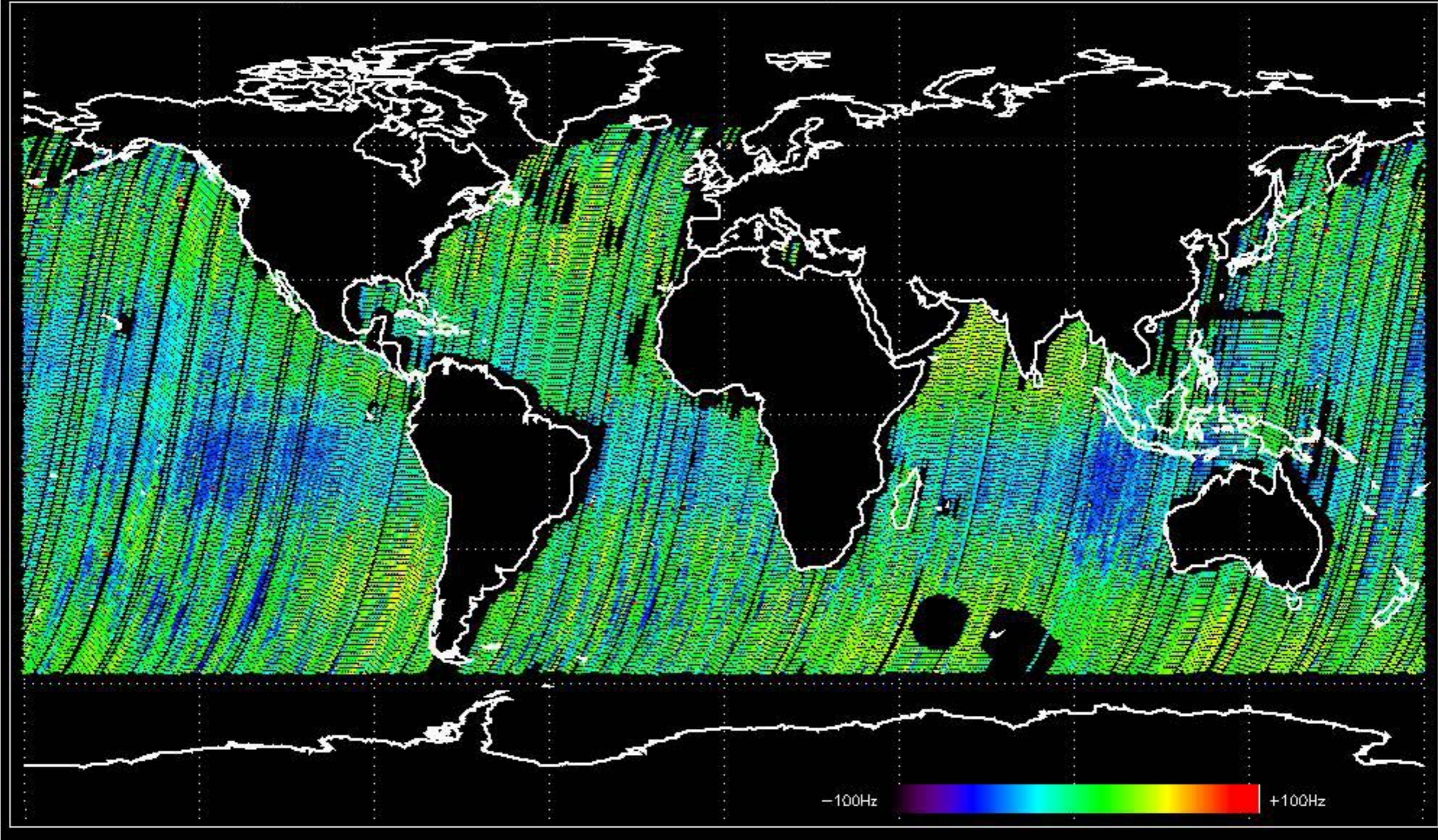
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -6.7045494 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -8.4607939 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -10.806856 Hz



No anomalies observed on available MS products:

No anomalies observed.











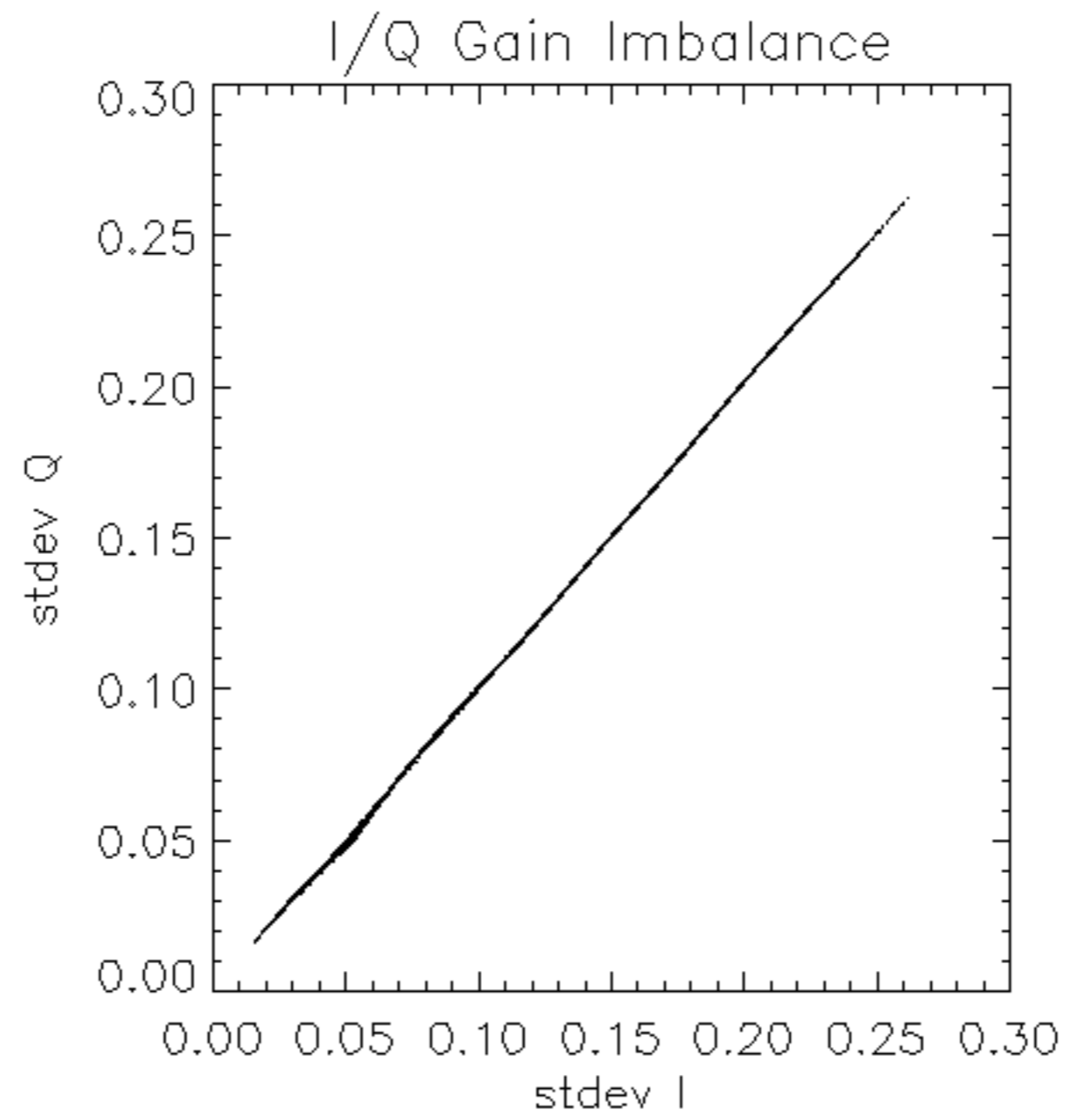


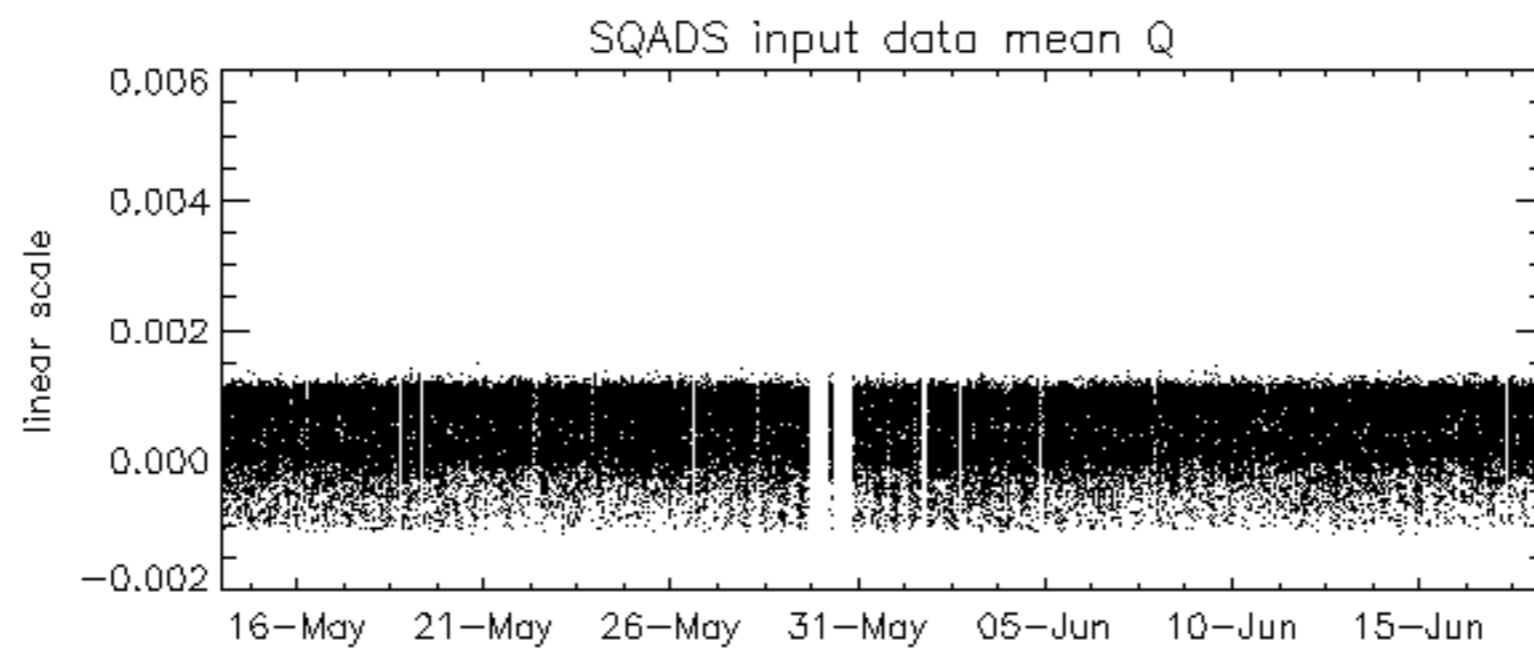
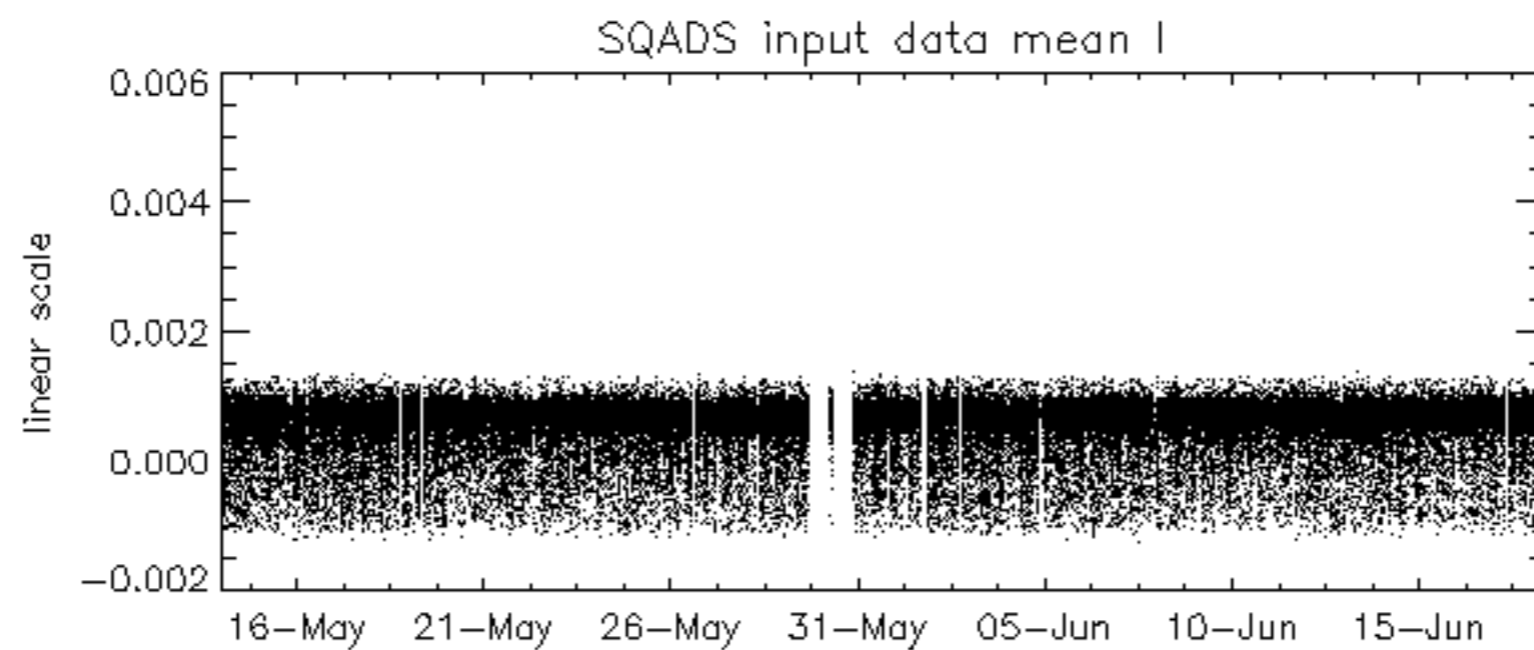
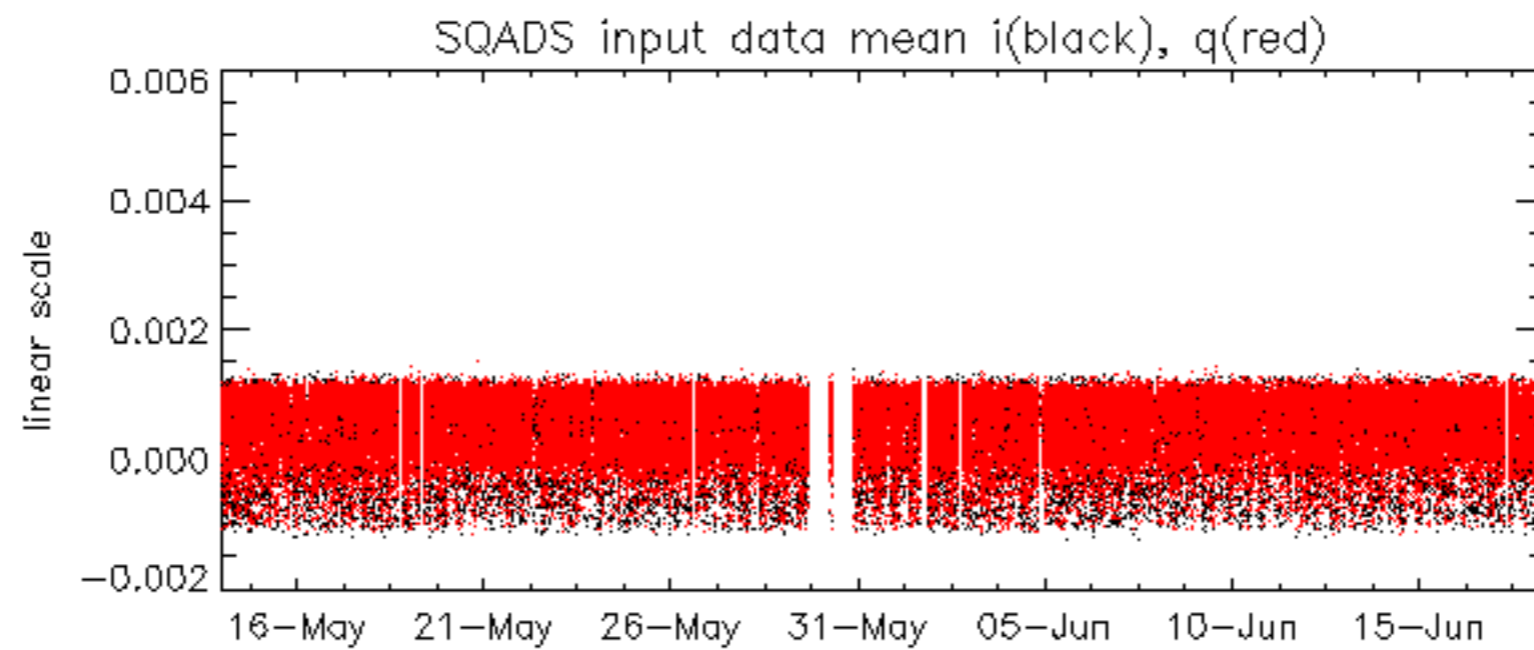


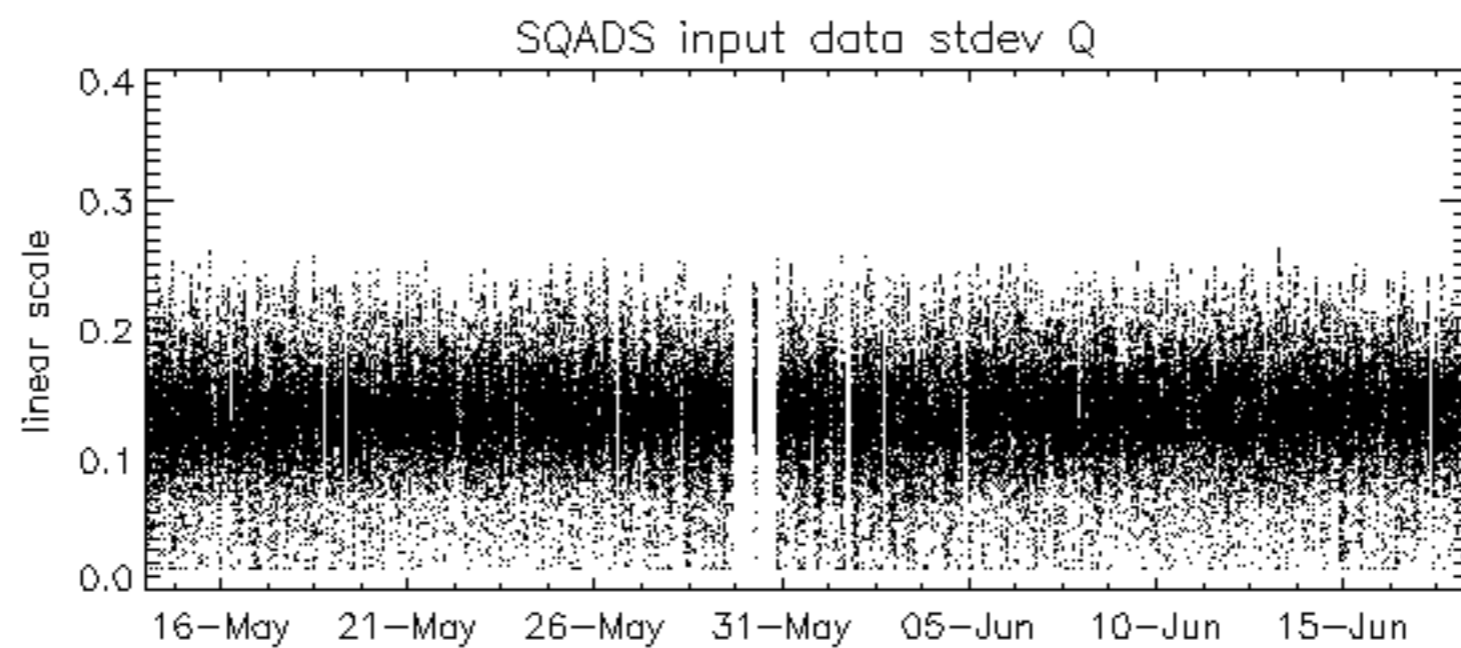
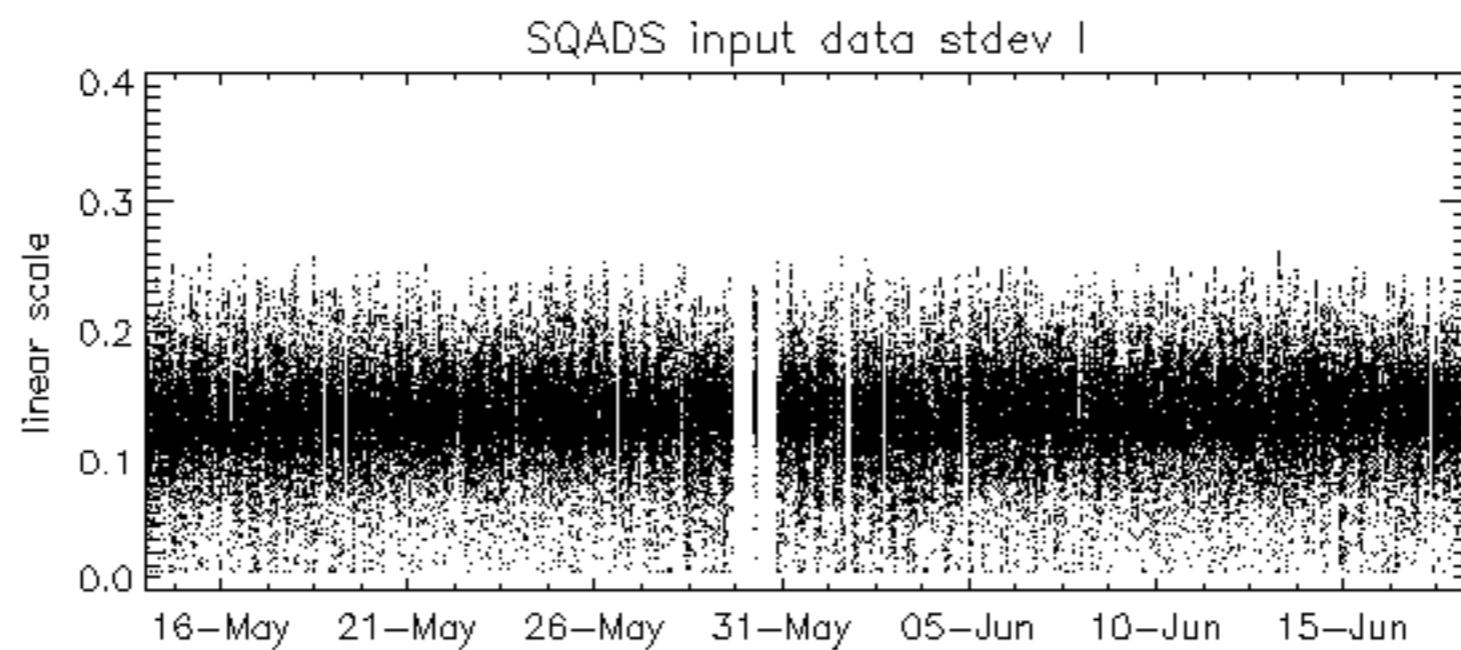
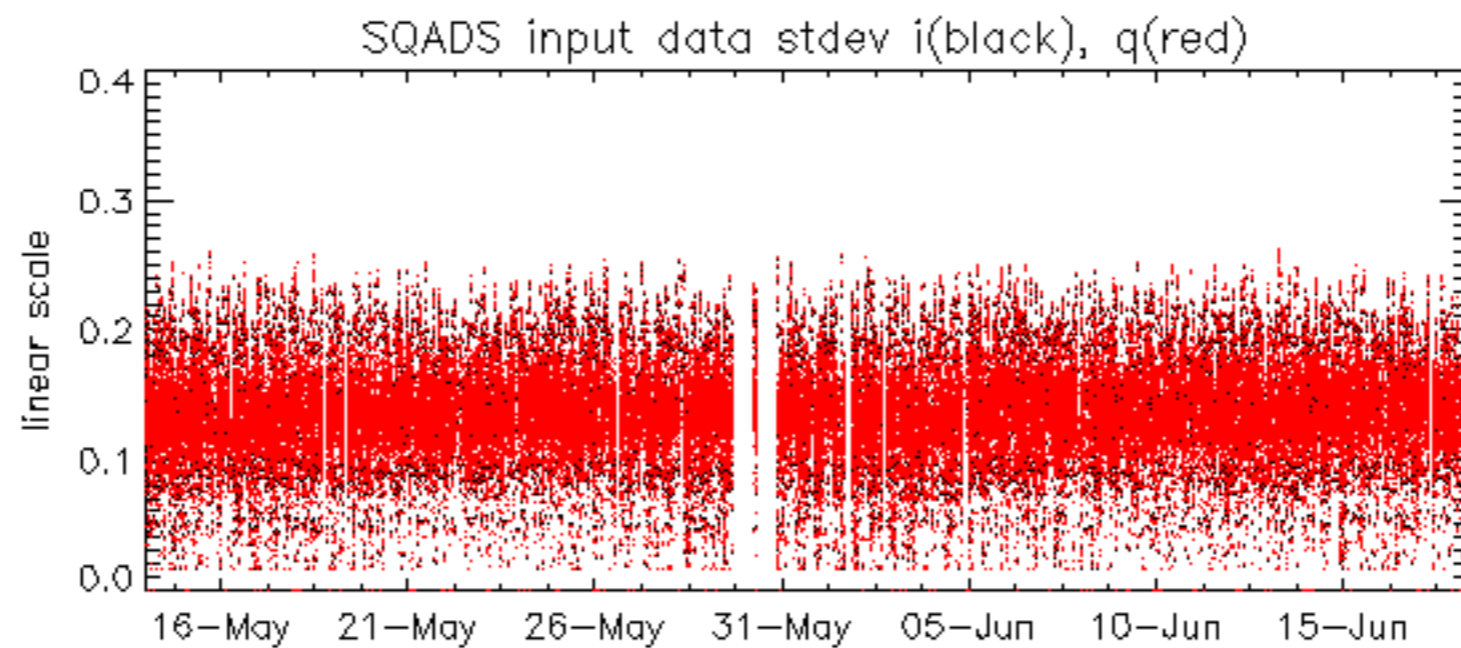




















Summary of analysis for the last 3 days 2006061[678]

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_1PNPDE20060617_182649_00000352048_00371_22469_7779.N1  | 0        | 16                |
| ASA_WSM_1PNPDE20060616_011001_00000672048_00346_22444_4337.N1  | 0        | 58                |
| ASA_WSM_1PNPDE20060616_021252_000002692048_00347_22445_4352.N1 | 0        | 58                |
| ASA_APM_1PNPDE20060616_143704_00000872048_00354_22452_3436.N1  | 0        | 21                |
| ASA_APM_1PNPDE20060617_004226_00000562048_00360_22458_3444.N1  | 0        | 19                |





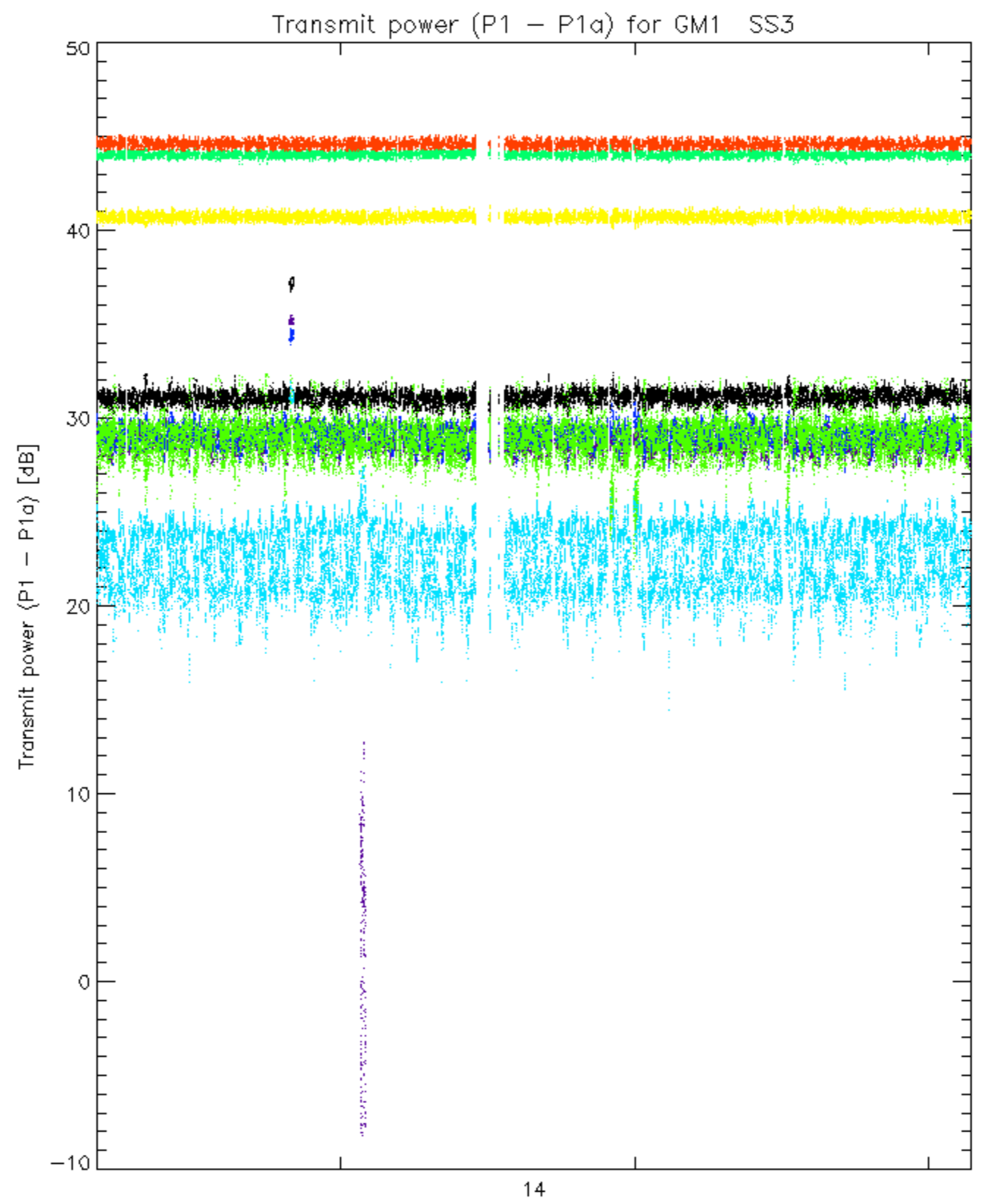




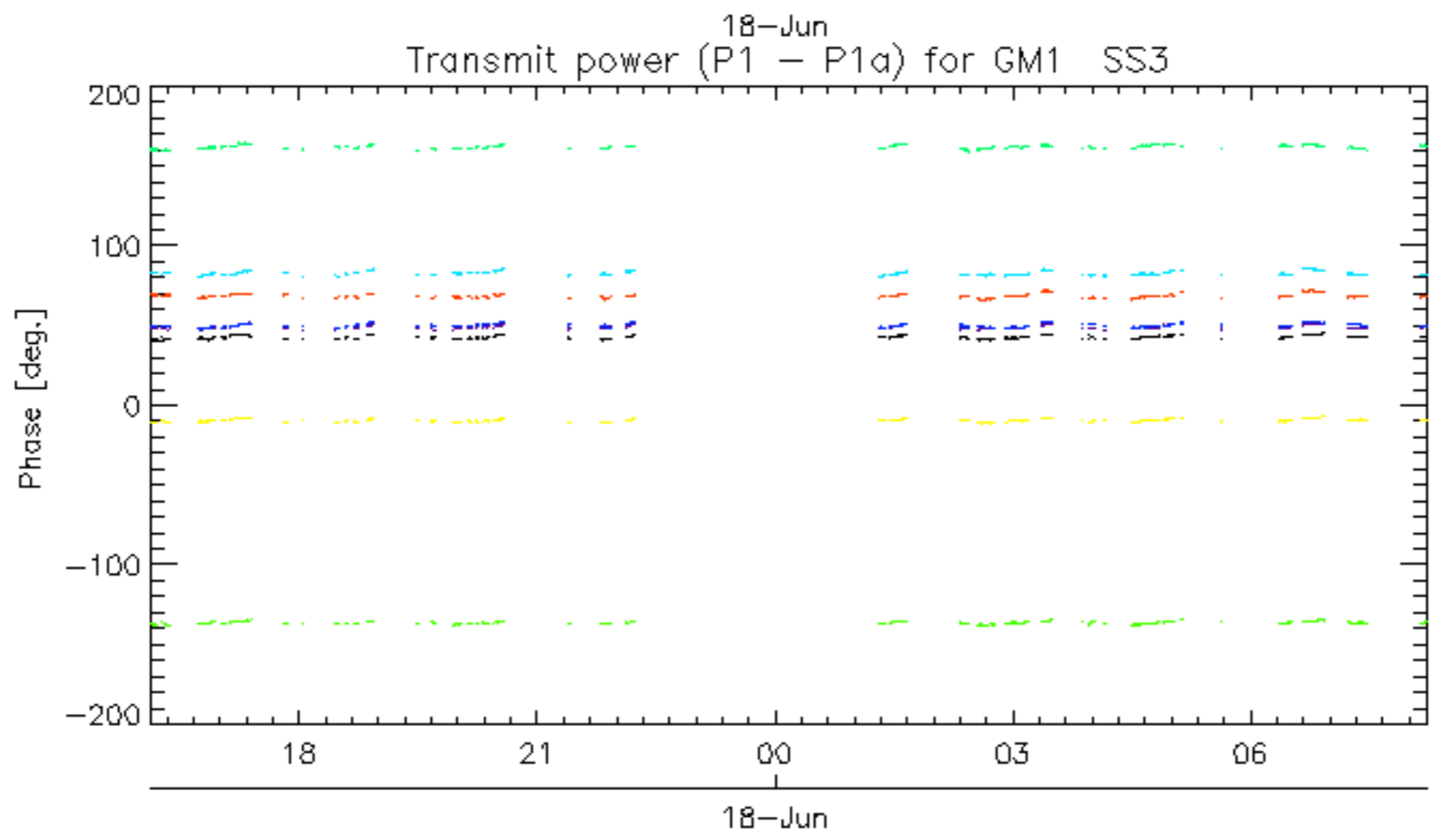
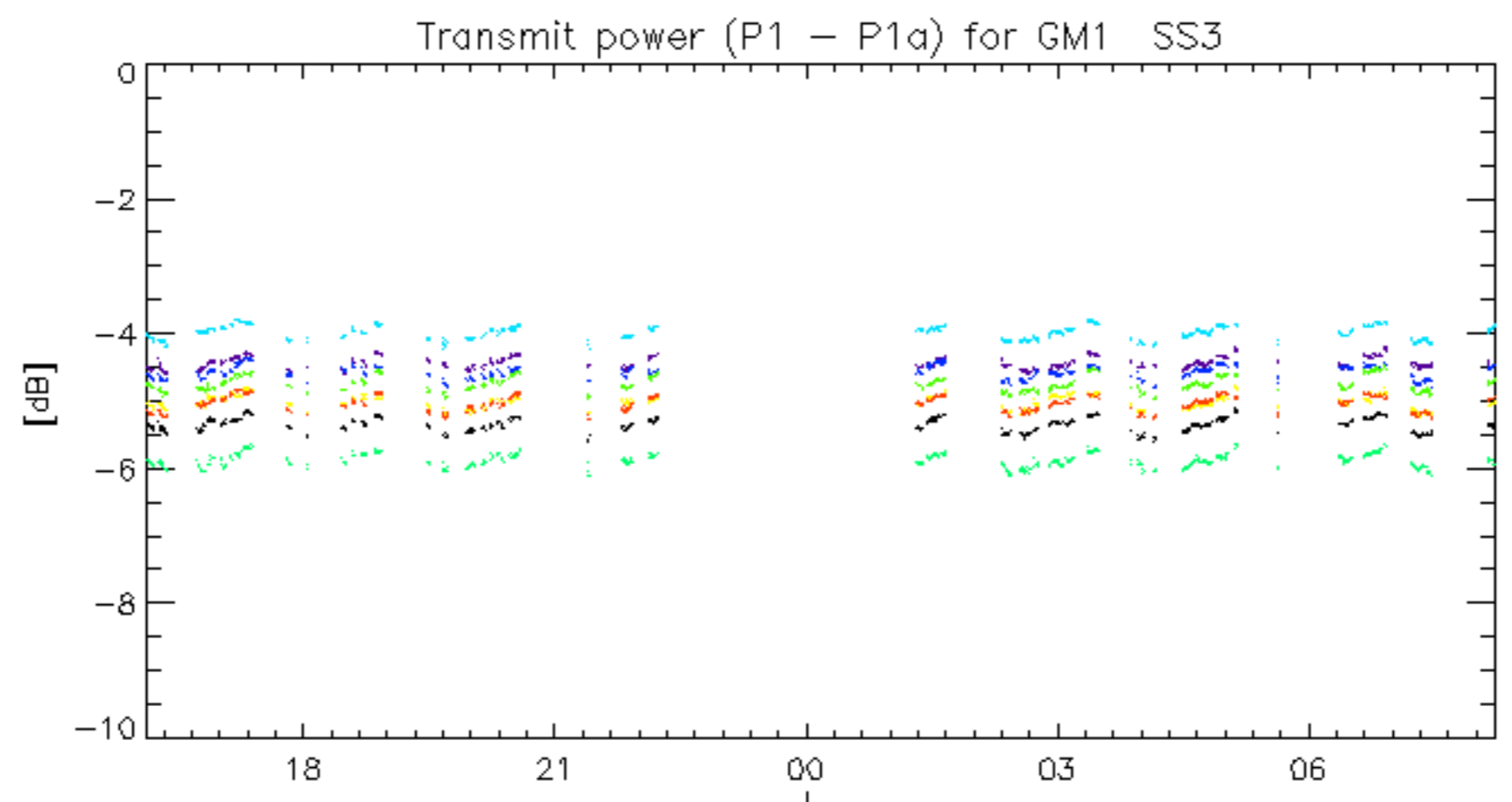






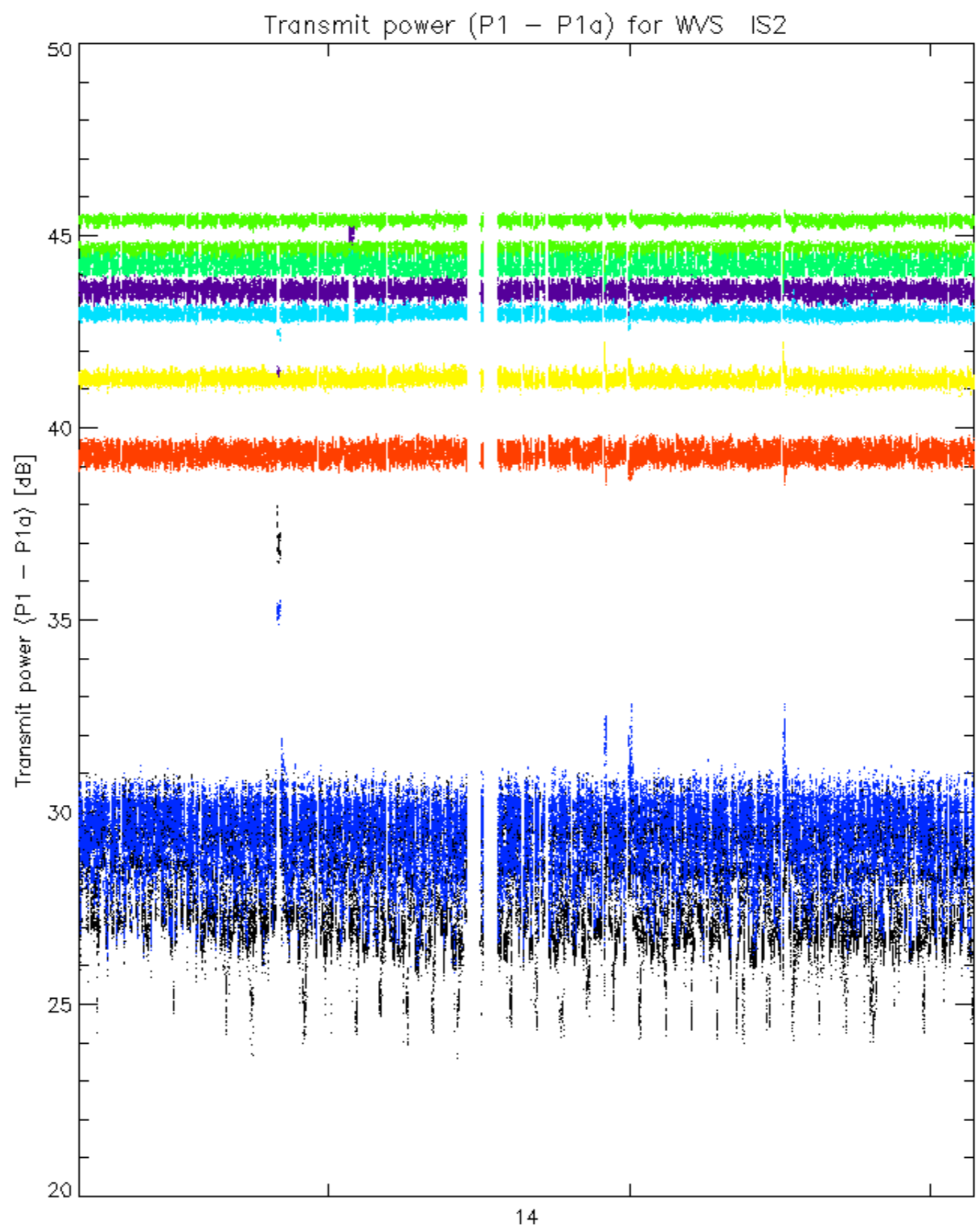


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

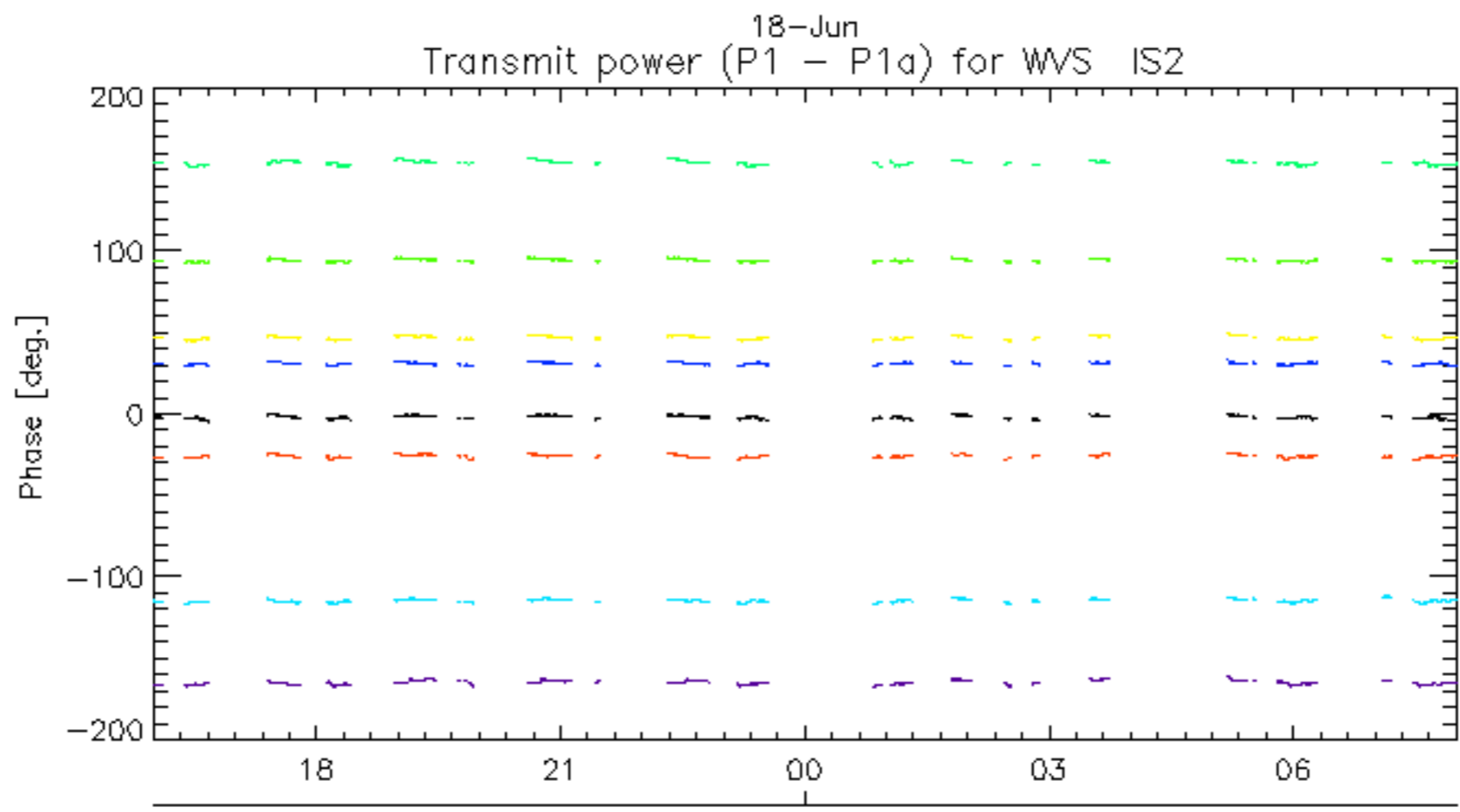
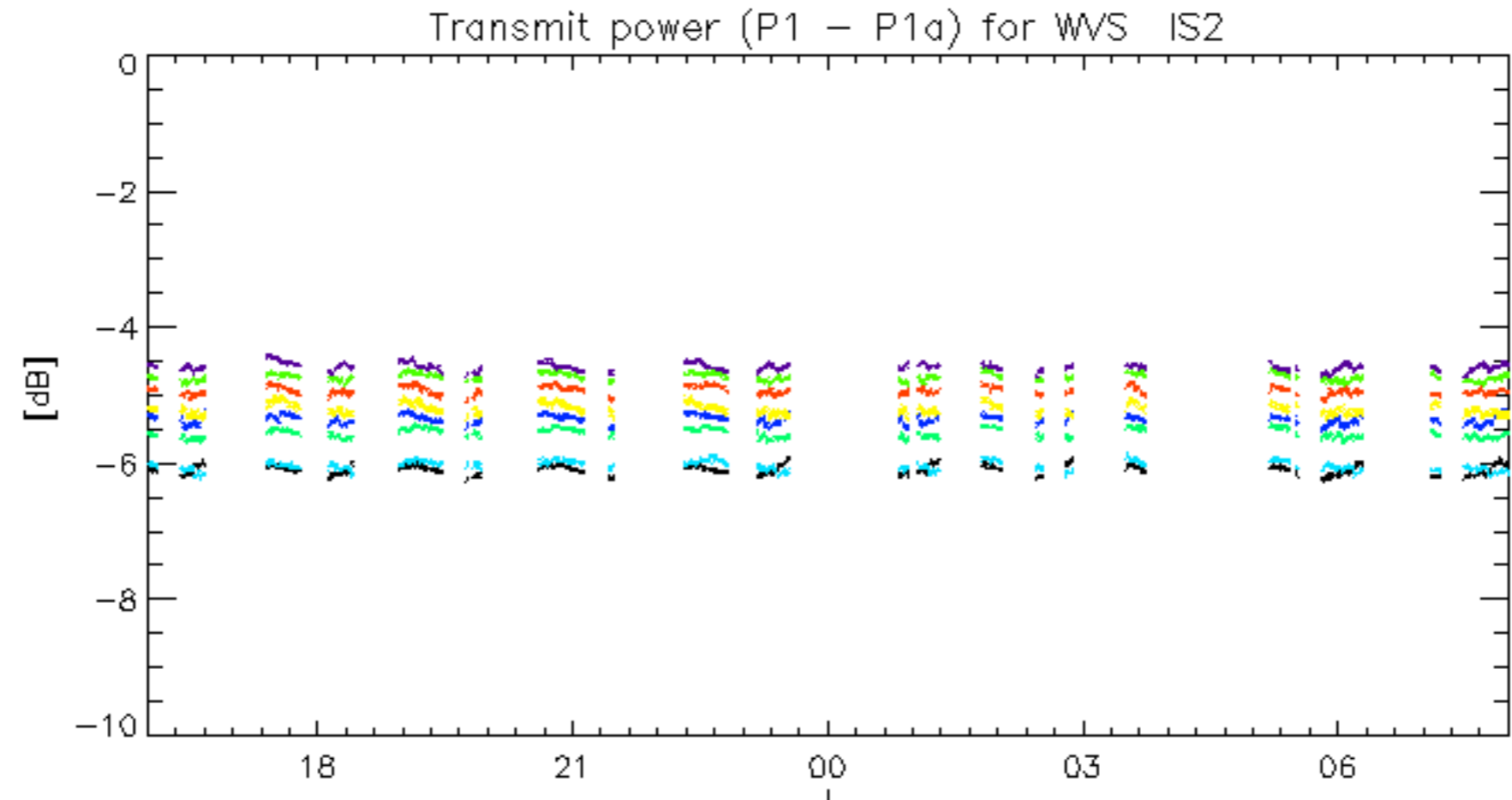


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30





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



rows: **3** **7** **11** **15** **19** **22** **26** **30**

No unavailabilities during the reported period.