

# PRELIMINARY REPORT OF 060817

last update on Thu Aug 17 16:33:11 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 2006-08-16 00:00:00 to 2006-08-17 16:33:11

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

|   |    |    |   |   |   |
|---|----|----|---|---|---|
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 41 | 72 | 6 | 5 | 0 |
| ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 41 | 72 | 6 | 5 | 0 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 41 | 72 | 6 | 5 | 0 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 41 | 72 | 6 | 5 | 0 |

| PDHS-E  |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE  | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 43  | 61  | 38  | 25  | 70  |
| ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000 | 43  | 61  | 38  | 25  | 70  |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 43  | 61  | 38  | 25  | 70  |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 43  | 61  | 38  | 25  | 70  |

## 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**

**MSM in V/V polarisation**

**MSM in H/H polarisation**

## 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    | -3.942603 | 0.010111   | -0.007347       |

|    |    |            |          |           |
|----|----|------------|----------|-----------|
| 7  | P1 | -3.105393  | 0.048927 | -0.004341 |
| 11 | P1 | -4.097545  | 0.062109 | -0.036653 |
| 15 | P1 | -6.197585  | 0.092630 | -0.075168 |
| 19 | P1 | -3.435970  | 0.009982 | -0.071570 |
| 22 | P1 | -4.564189  | 0.010036 | -0.021478 |
| 26 | P1 | -3.921539  | 0.020126 | 0.000685  |
| 30 | P1 | -5.763886  | 0.009848 | -0.006272 |
| 3  | P1 | -16.533657 | 0.253013 | -0.018378 |
| 7  | P1 | -17.158686 | 0.155959 | 0.159437  |
| 11 | P1 | -16.918163 | 0.281294 | 0.172412  |
| 15 | P1 | -13.028834 | 0.168194 | 0.193198  |
| 19 | P1 | -14.498160 | 0.053977 | -0.054836 |
| 22 | P1 | -15.960587 | 0.453782 | 0.194558  |
| 26 | P1 | -15.124112 | 0.225695 | -0.064708 |
| 30 | P1 | -17.075924 | 0.330804 | 0.112364  |

### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -20.910486 | 0.085488   | 0.100870        |
| 7   | P2    | -21.873070 | 0.102664   | 0.071566        |
| 11  | P2    | -15.766892 | 0.118933   | 0.044293        |
| 15  | P2    | -7.115125  | 0.097998   | 0.024852        |
| 19  | P2    | -9.122204  | 0.091298   | 0.024040        |
| 22  | P2    | -18.145018 | 0.086363   | 0.016466        |
| 26  | P2    | -16.400217 | 0.091985   | 0.006244        |
| 30  | P2    | -19.497332 | 0.091938   | 0.050816        |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.172848 | 0.003296   | 0.002765        |
| 7   | P3    | -8.172848 | 0.003296   | 0.002765        |
| 11  | P3    | -8.172848 | 0.003296   | 0.002765        |
| 15  | P3    | -8.172848 | 0.003296   | 0.002765        |
| 19  | P3    | -8.172848 | 0.003296   | 0.002765        |
| 22  | P3    | -8.172848 | 0.003296   | 0.002765        |
| 26  | P3    | -8.172906 | 0.003294   | 0.002526        |
| 30  | P3    | -8.172906 | 0.003294   | 0.002526        |

#### 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    | -3.829126  | 0.021731   | -0.015169       |
| 7   | P1    | -2.591141  | 0.218862   | -0.103067       |
| 11  | P1    | -2.892581  | 0.136881   | -0.135427       |
| 15  | P1    | -3.627676  | 0.149428   | -0.168280       |
| 19  | P1    | -3.427535  | 0.025807   | -0.003031       |
| 22  | P1    | -5.084576  | 0.020507   | -0.012794       |
| 26  | P1    | -5.866658  | 0.022920   | -0.011568       |
| 30  | P1    | -5.194516  | 0.040178   | 0.010578        |
| 3   | P1    | -11.622834 | 0.066847   | -0.009973       |
| 7   | P1    | -9.978094  | 0.151723   | -0.074192       |
| 11  | P1    | -10.274094 | 0.081380   | -0.107362       |
| 15  | P1    | -10.779439 | 0.173847   | -0.134641       |
| 19  | P1    | -15.553993 | 0.525506   | 0.062992        |
| 22  | P1    | -20.926512 | 1.319672   | -0.110134       |
| 26  | P1    | -16.185698 | 0.400275   | 0.206307        |
| 30  | P1    | -17.980915 | 0.429544   | -0.102310       |

#### P2 Cyclic statistics

| row | pulse | mean (dB)  | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3   | P2    | -16.518047 | 0.086787   | 0.164353        |
| 7   | P2    | -22.313347 | 0.212072   | 0.171998        |
| 11  | P2    | -10.993623 | 0.055565   | 0.132592        |
| 15  | P2    | -4.893153  | 0.044194   | 0.025519        |
| 19  | P2    | -6.861344  | 0.040768   | 0.010391        |
| 22  | P2    | -8.190632  | 0.062764   | 0.001802        |

|    |    |            |          |          |
|----|----|------------|----------|----------|
| 26 | P2 | -24.168301 | 0.129504 | 0.027037 |
| 30 | P2 | -21.984709 | 0.079419 | 0.051671 |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3   | P3    | -8.011529 | 0.003715   | -0.004966       |
| 7   | P3    | -8.011468 | 0.003718   | -0.004816       |
| 11  | P3    | -8.011504 | 0.003724   | -0.004719       |
| 15  | P3    | -8.011619 | 0.003721   | -0.004678       |
| 19  | P3    | -8.011454 | 0.003729   | -0.004977       |
| 22  | P3    | -8.011630 | 0.003707   | -0.004845       |
| 26  | P3    | -8.011513 | 0.003704   | -0.004185       |
| 30  | P3    | -8.011514 | 0.003719   | -0.004484       |

## 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  | 0.000561835 |
|         | stdev | 1.71849e-07 |
| MEAN Q  | mean  | 0.000534766 |
|         | stdev | 2.14054e-07 |



## 5.2 - Input stdev I/Q

| channel | stat  | DSS-B      |
|---------|-------|------------|
| STDEV I | mean  | 0.137547   |
|         | stdev | 0.00107560 |
| STDEV Q | mean  | 0.137904   |
|         | stdev | 0.00109247 |



## 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006081[567]

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_1PNPDE20060815_003718_000001342050_00202_23302_3468.N1 | 1        | 0                 |
| ASA_WSM_1PNPDE20060815_112846_000001522050_00209_23309_7957.N1 | 0        | 63                |
| ASA_WSM_1PNPDE20060816_005609_000000852050_00217_23317_8045.N1 | 0        | 36                |
| ASA_WSM_1PNPDE20060817_020406_000002322050_00232_23332_8255.N1 | 0        | 40                |



## 7 - Doppler Analysis

Preliminary report. The data is not yet controled

### 7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

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

## 7.2 - Absolute Doppler for WVS

### Evolution of Absolute Doppler

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

## 7.3 - Doppler evolution versus ANX for WVS

### Evolution Doppler error versus ANX

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

## 7.4 - Unbiased Doppler Error for GM1

### Evolution of unbiased Doppler error (Real - Expected)

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

## 7.5 - Absolute Doppler for GM1

### Evolution of Absolute Doppler

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



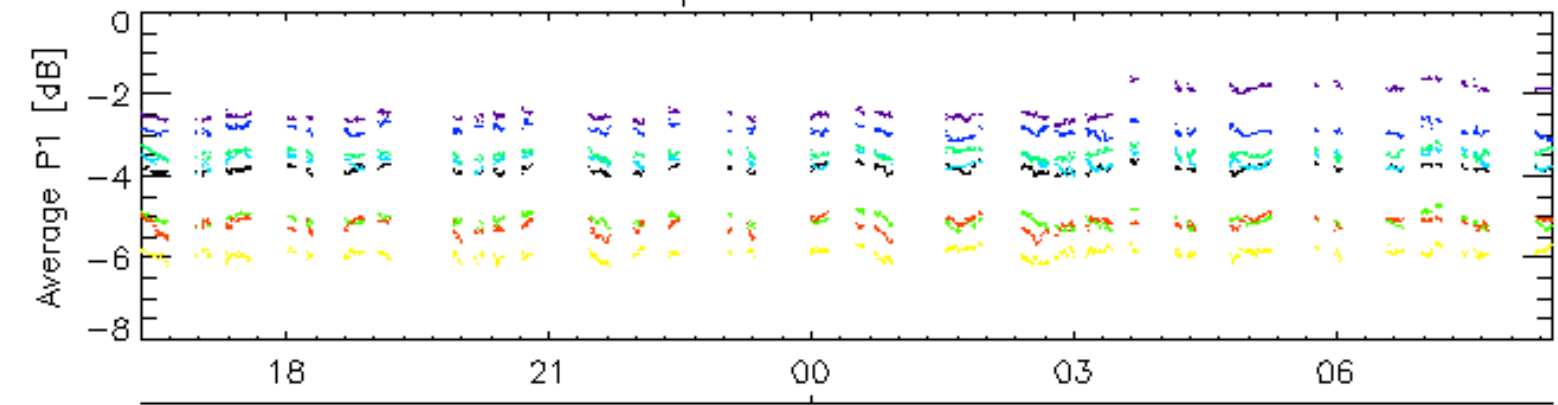
|                          |
|--------------------------|
| <input type="checkbox"/> |
| Descending               |

## 7.6 - Doppler evolution versus ANX for GM1

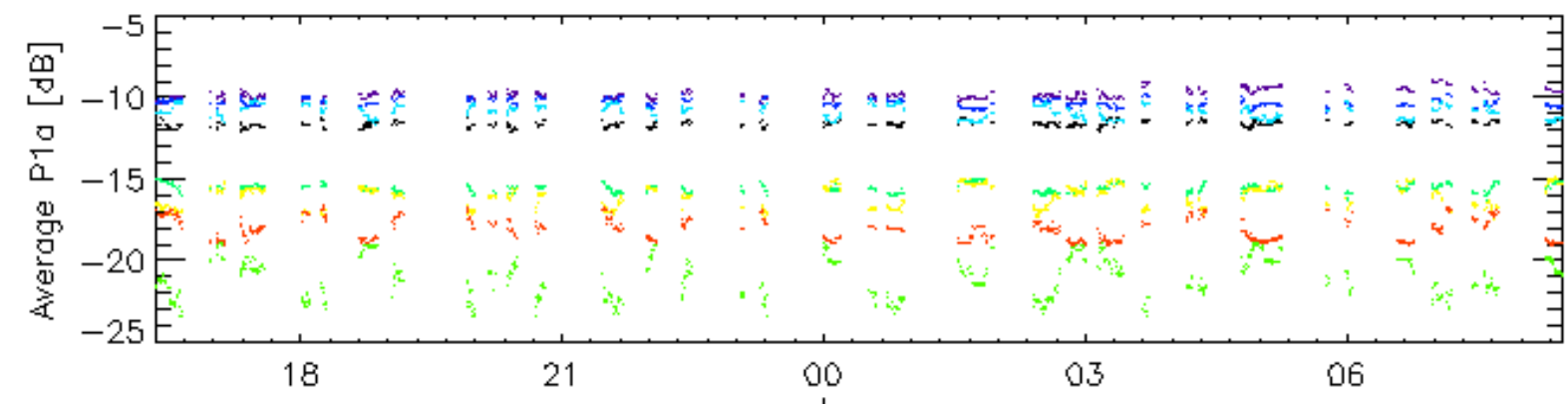
Evolution Doppler error versus ANX

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

Cal pulses for GM1 SS3

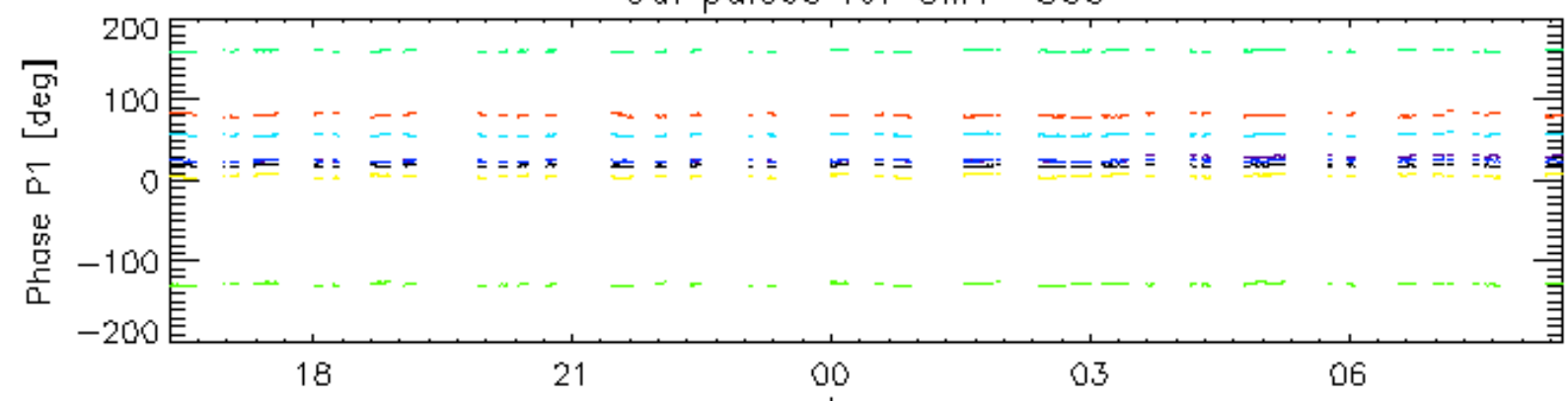


17-Aug

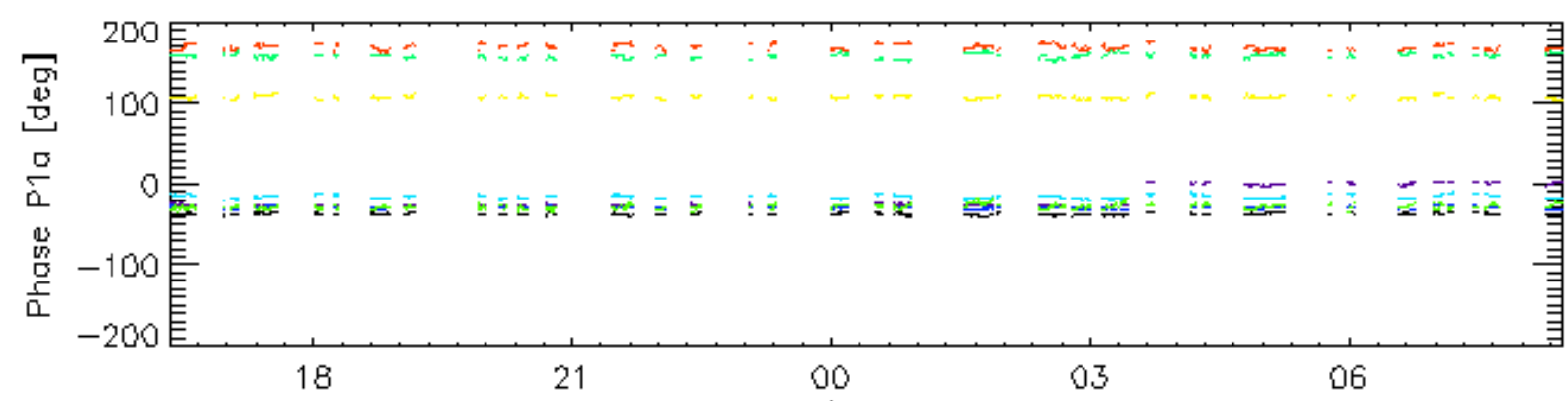


17-Aug

Cal pulses for GM1 SS3

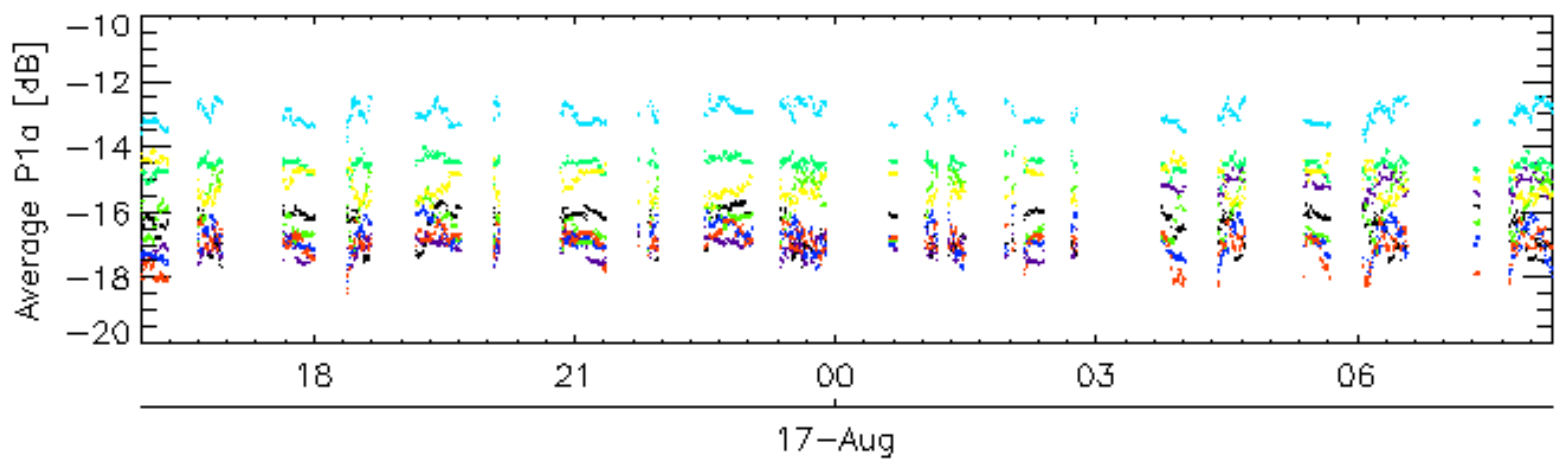
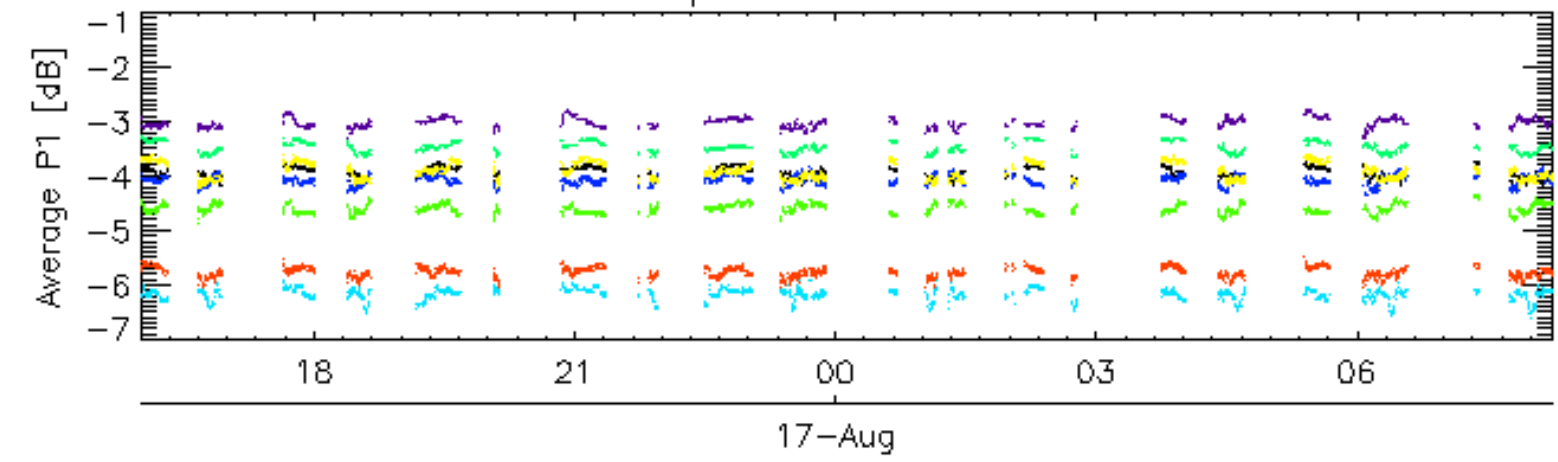


17-Aug

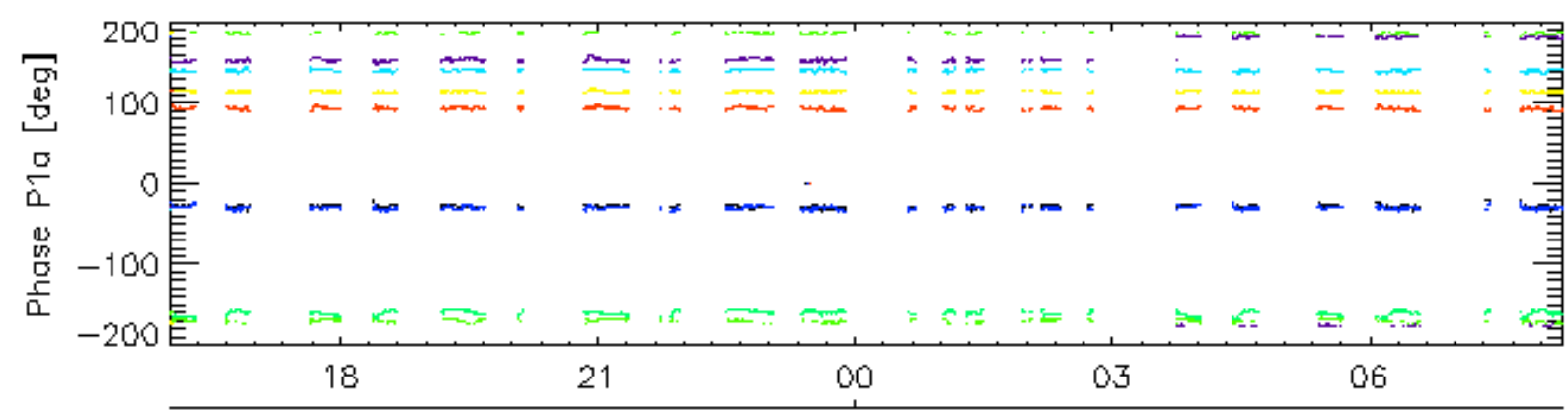
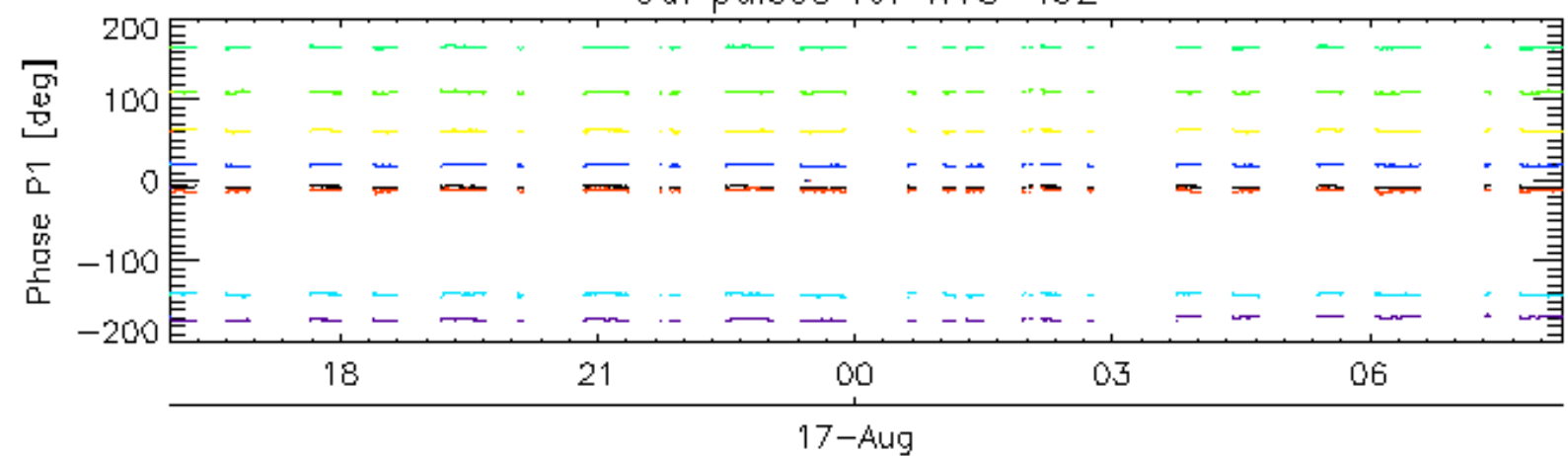


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

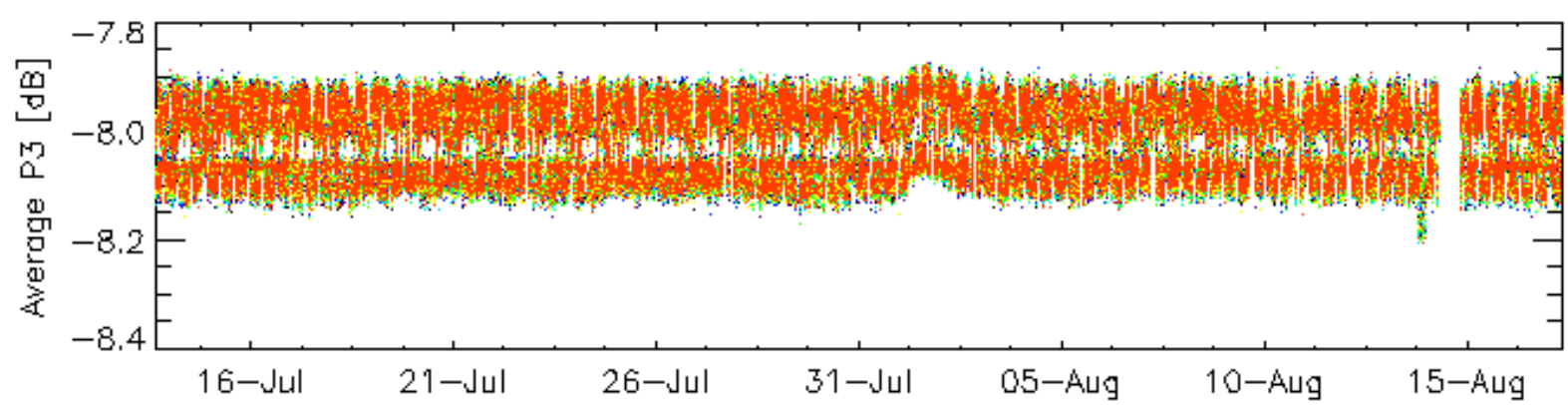
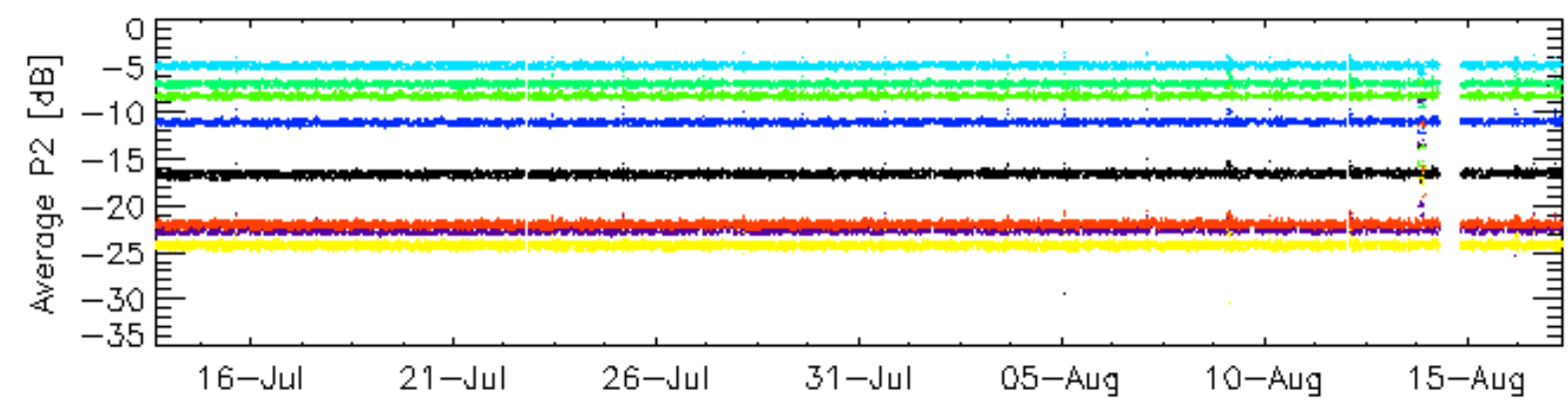
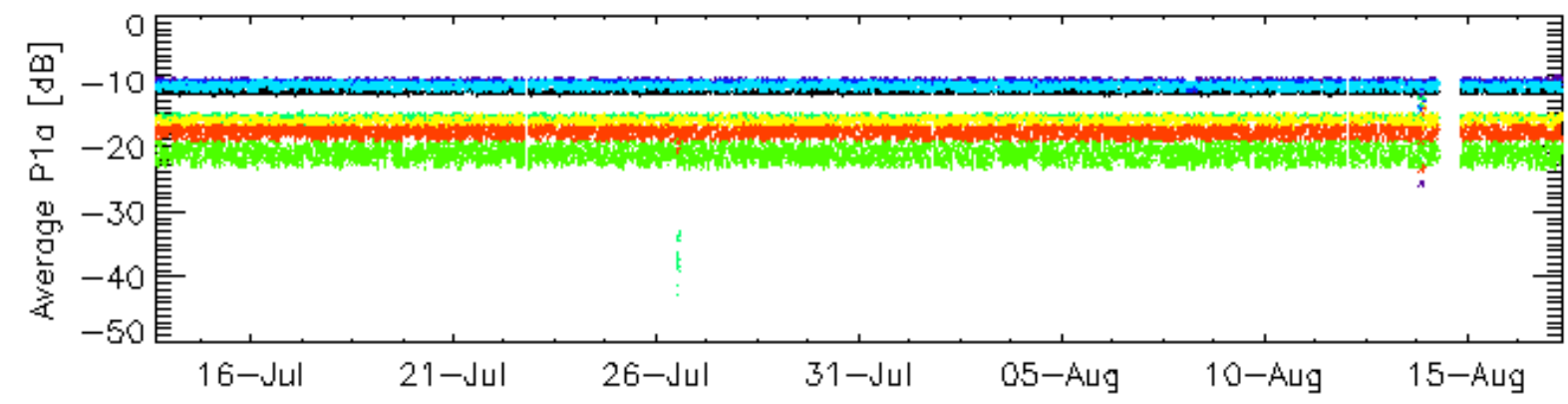
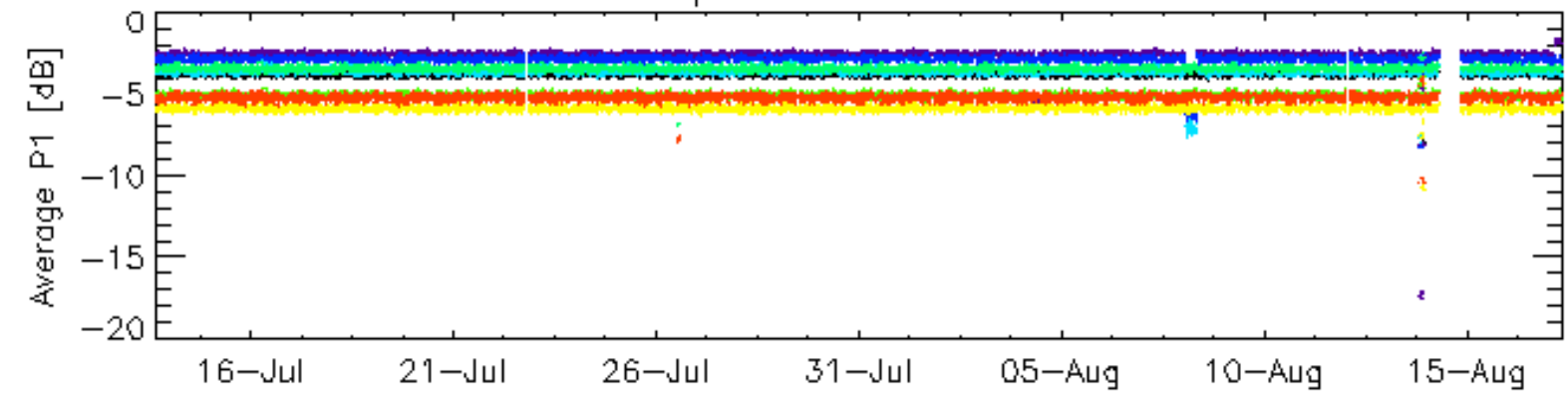


Cal pulses for WVS IS2



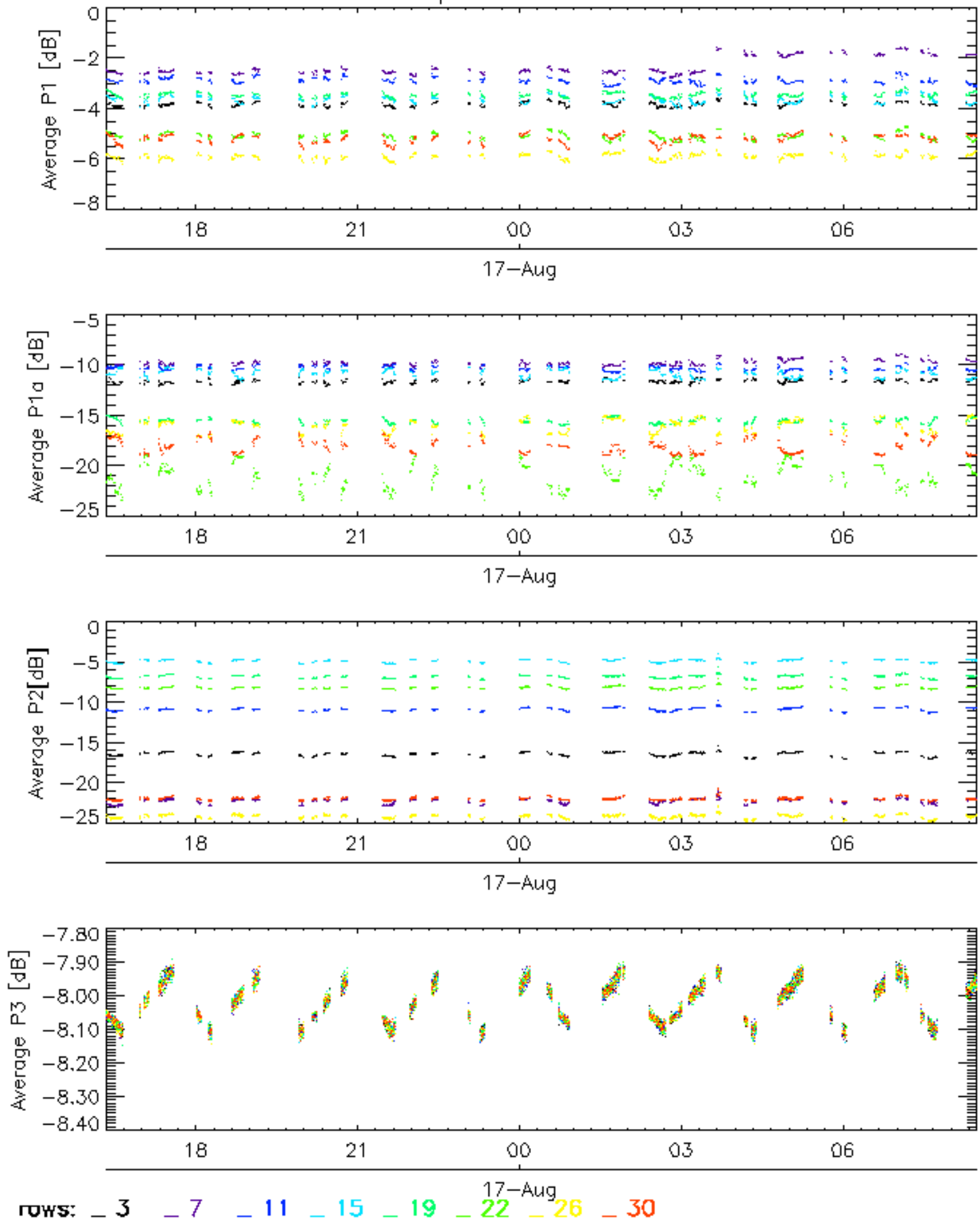
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

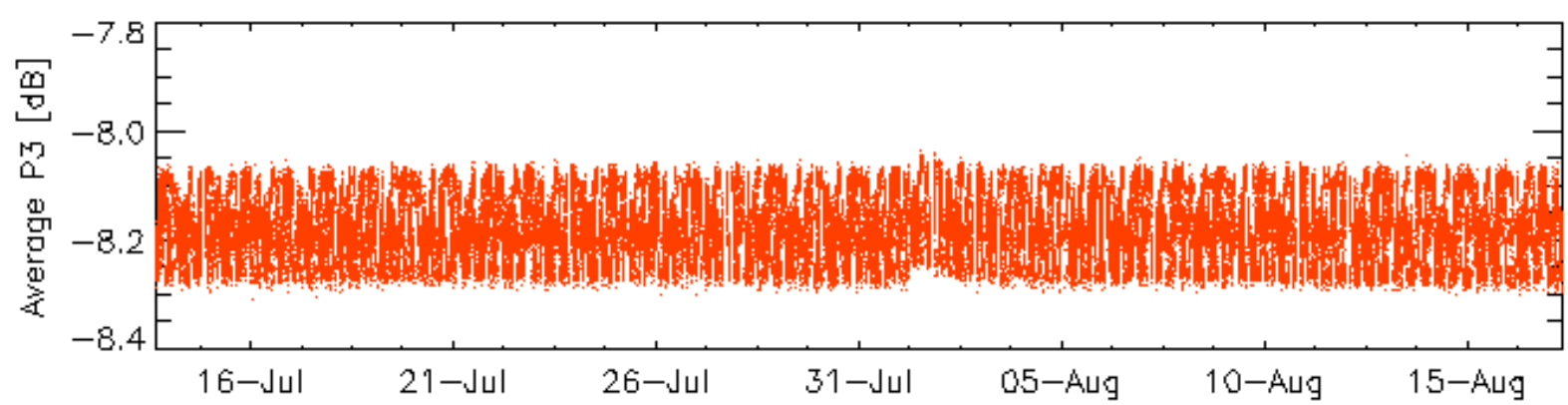
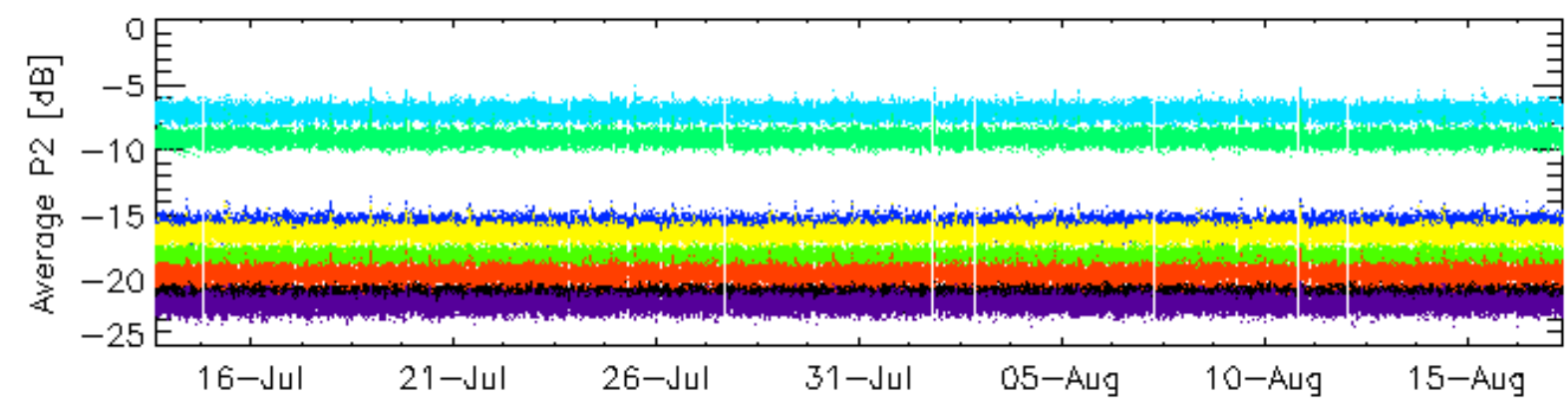
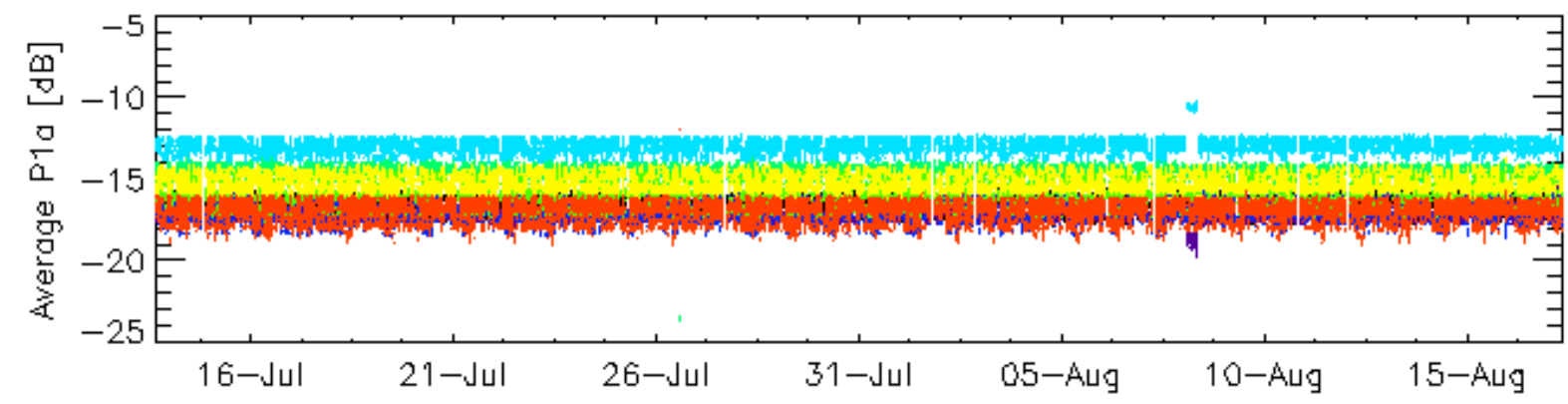
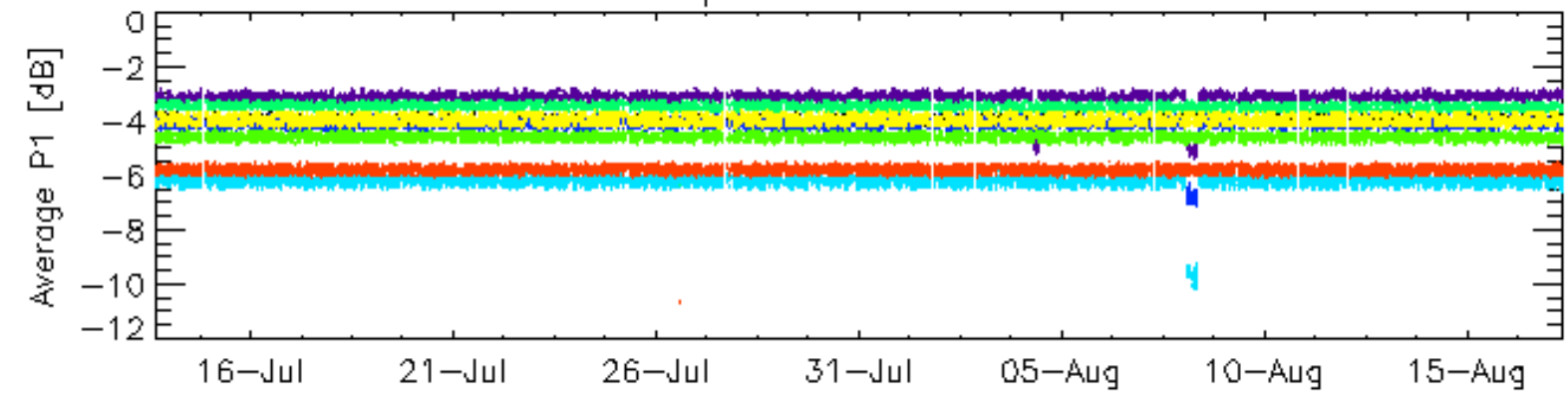


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

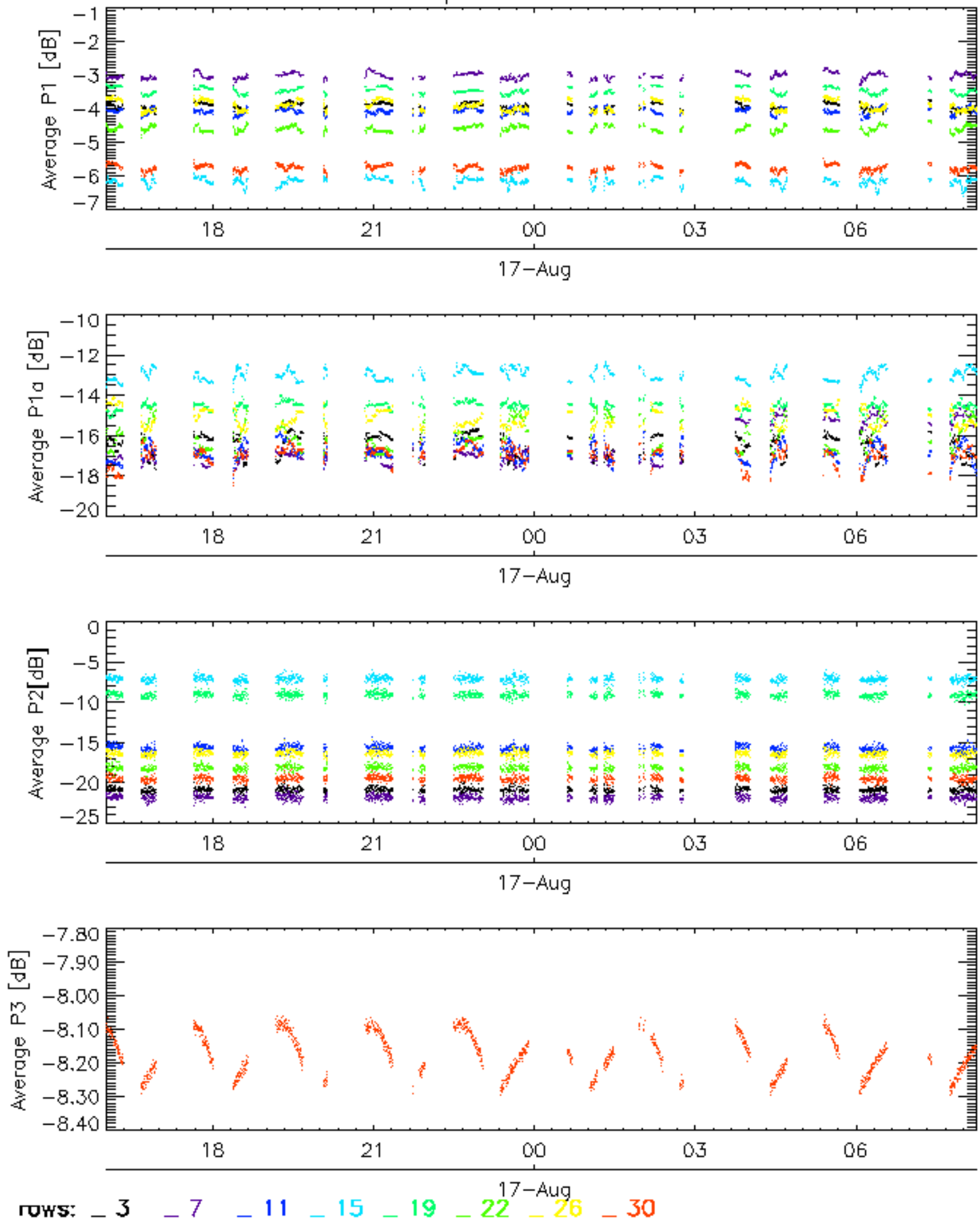


Cal pulses for WVS IS2



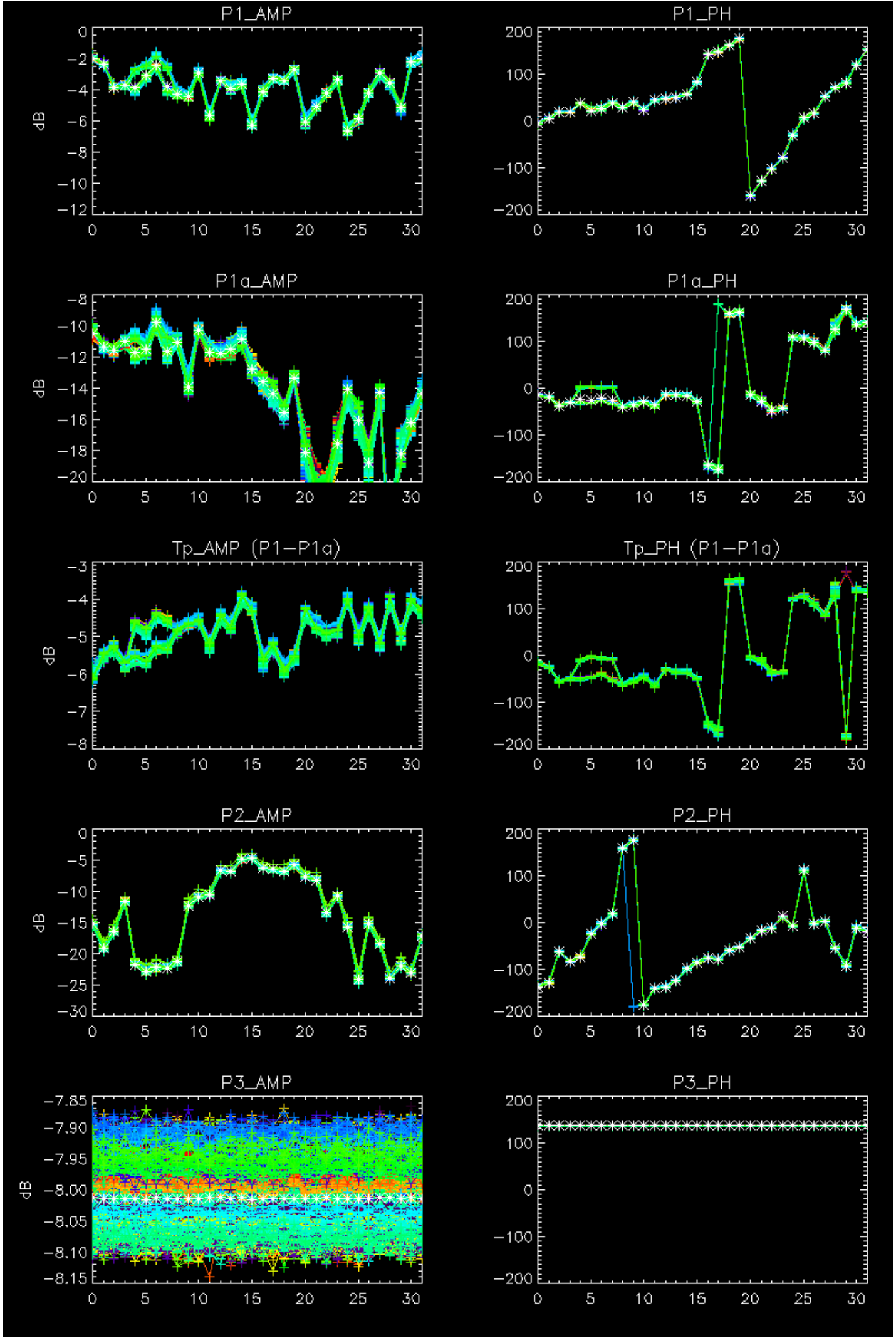
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

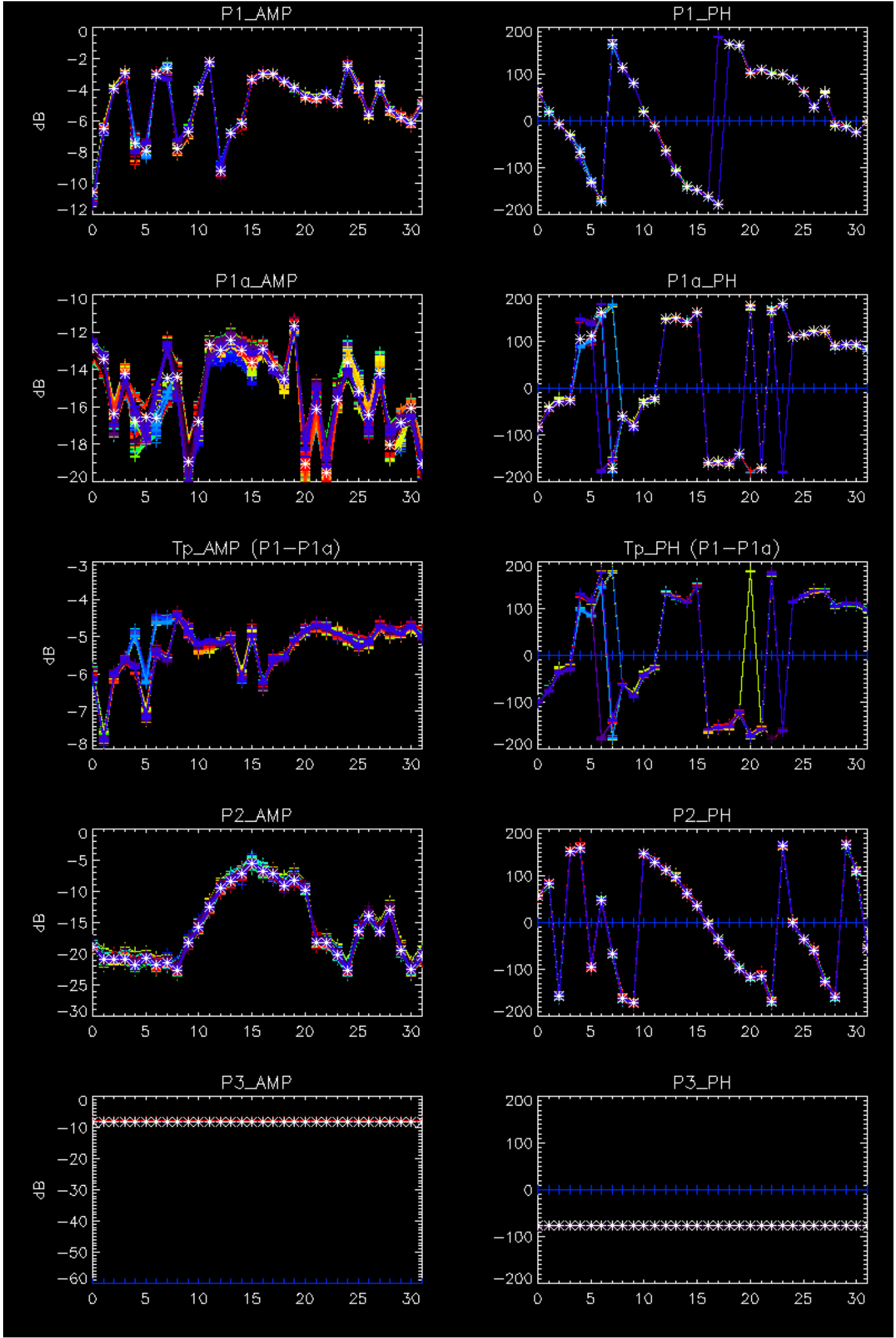
Cal pulses for WVS IS2



No anomalies observed.





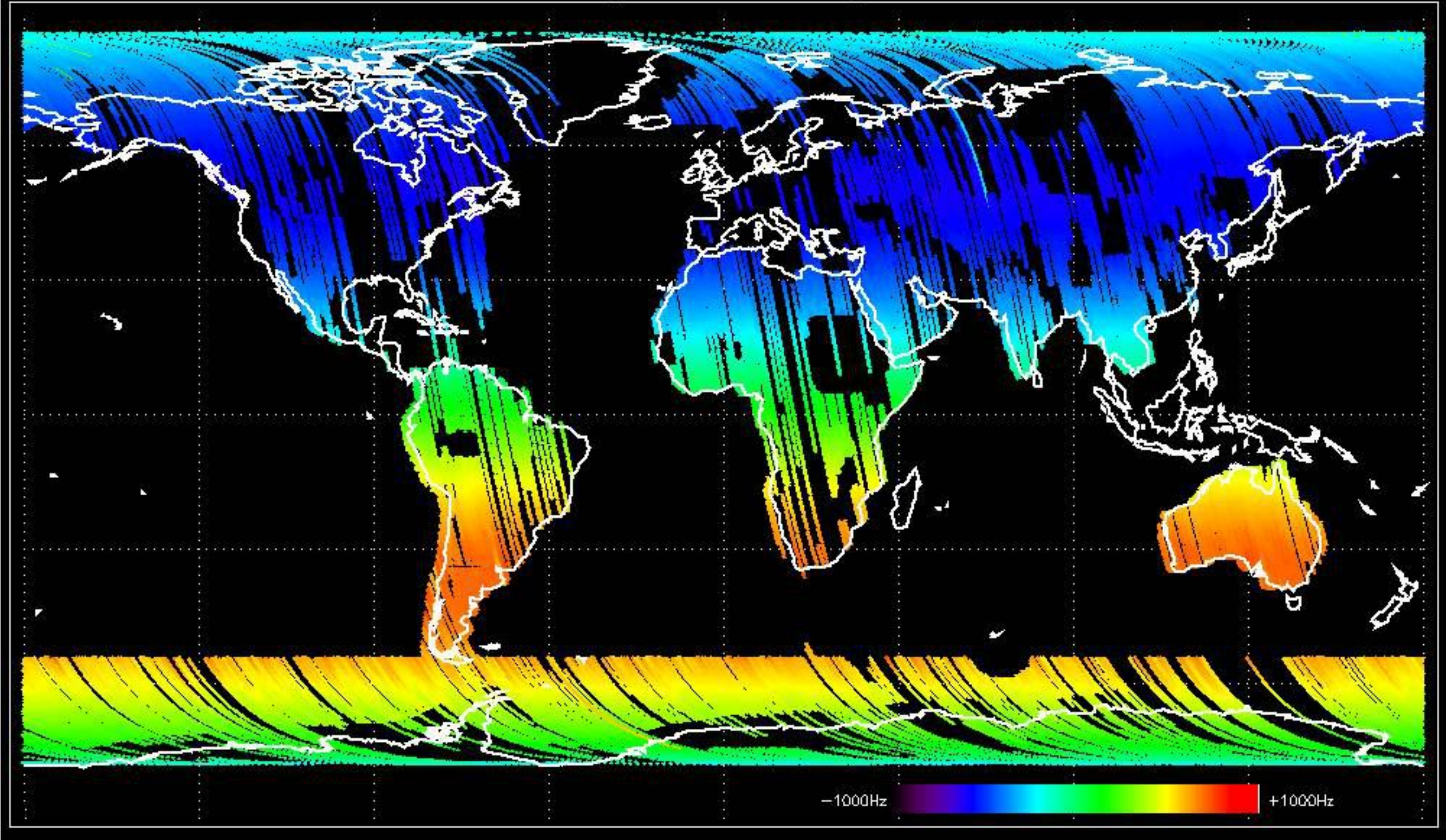


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



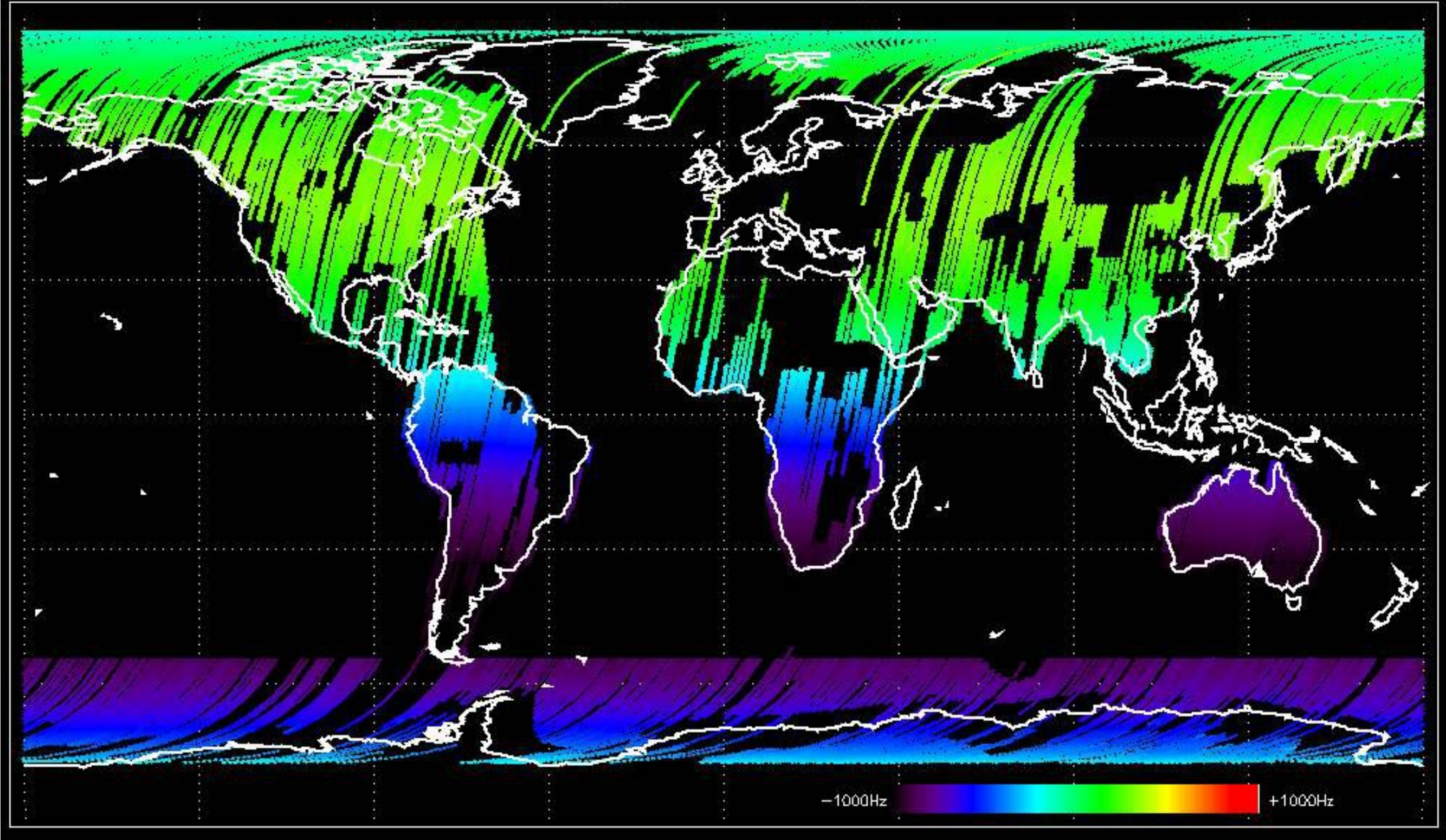


Doppler 'GM1' 'SS1' ascending



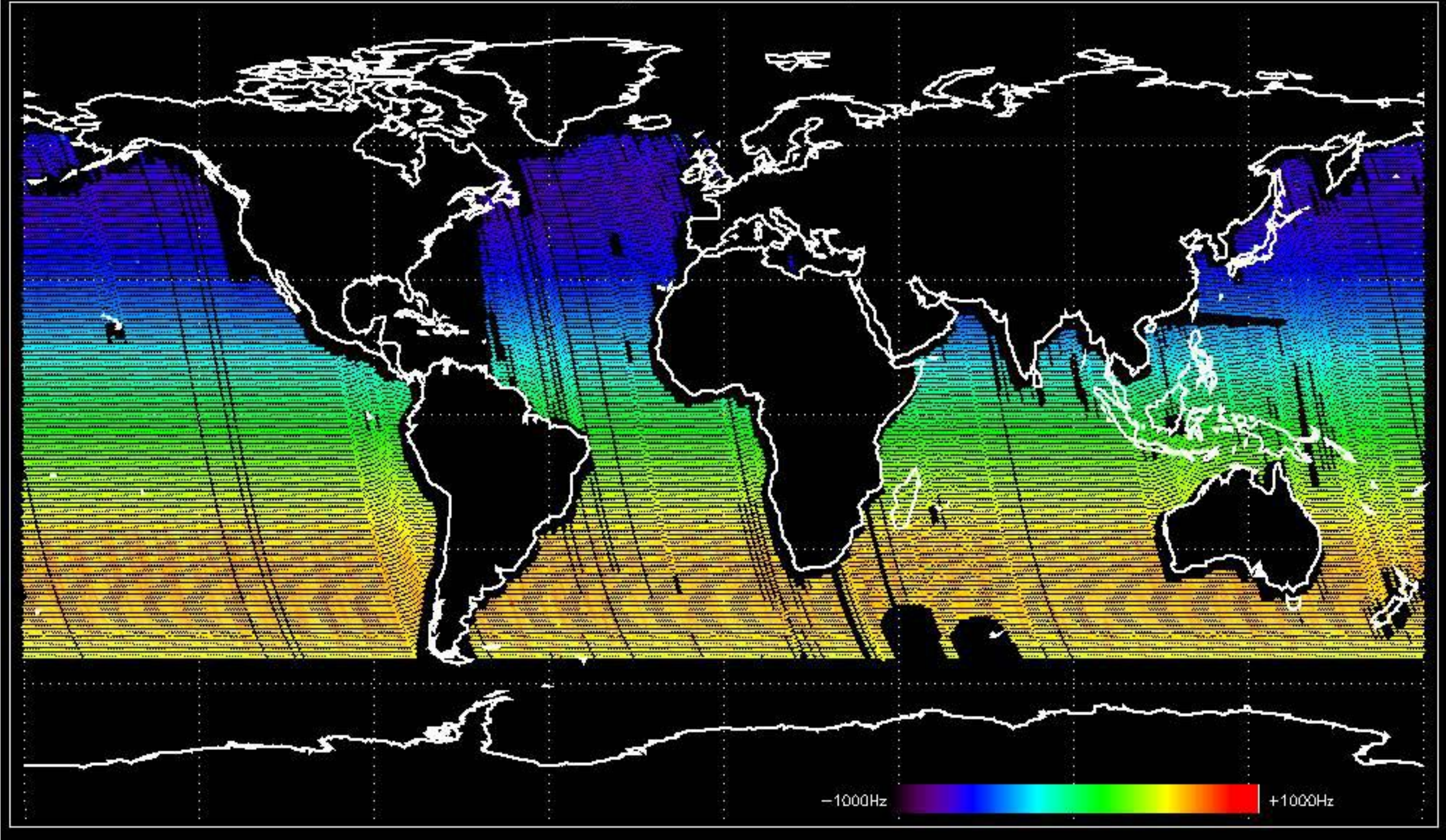


Doppler 'GM1' 'SS1' descending



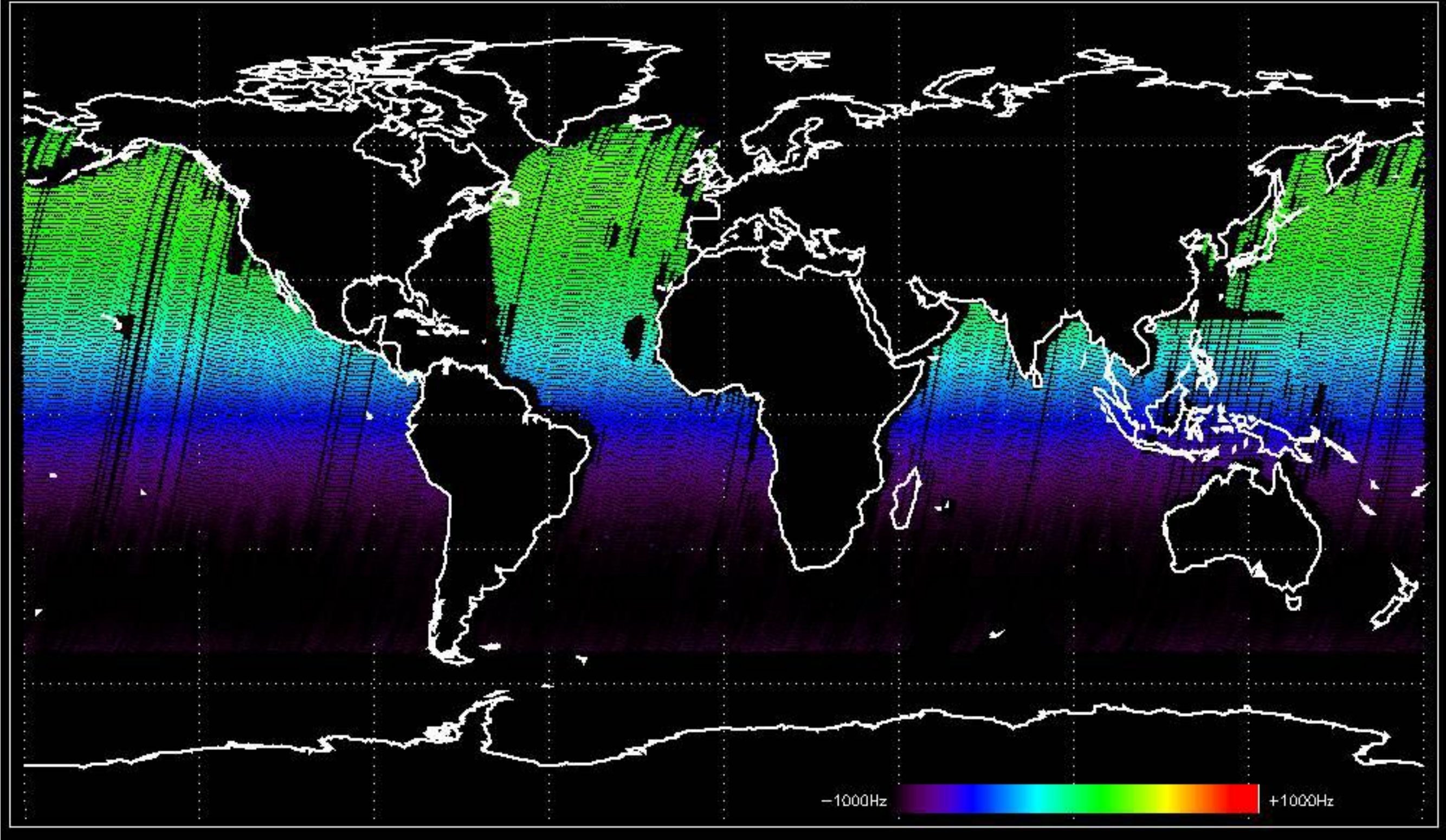


Doppler 'WVS' 'IS2' ascending



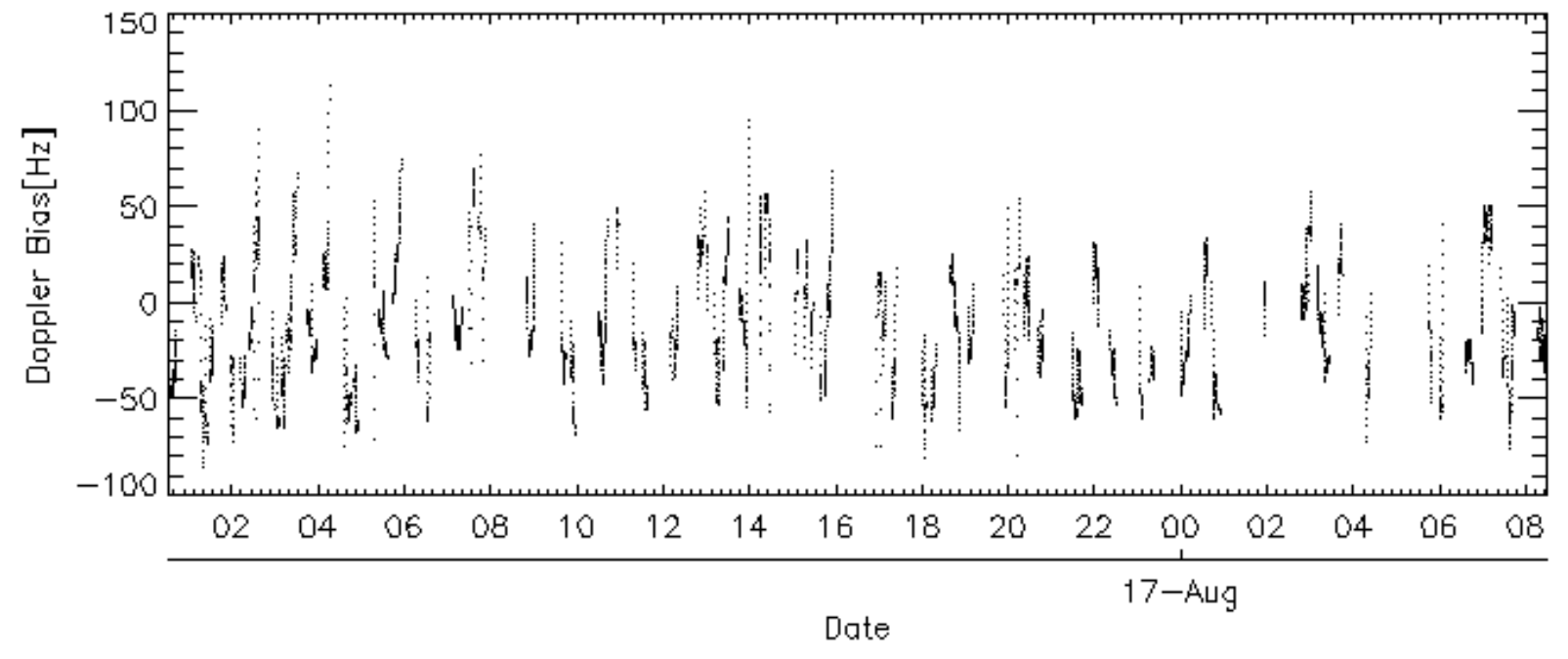
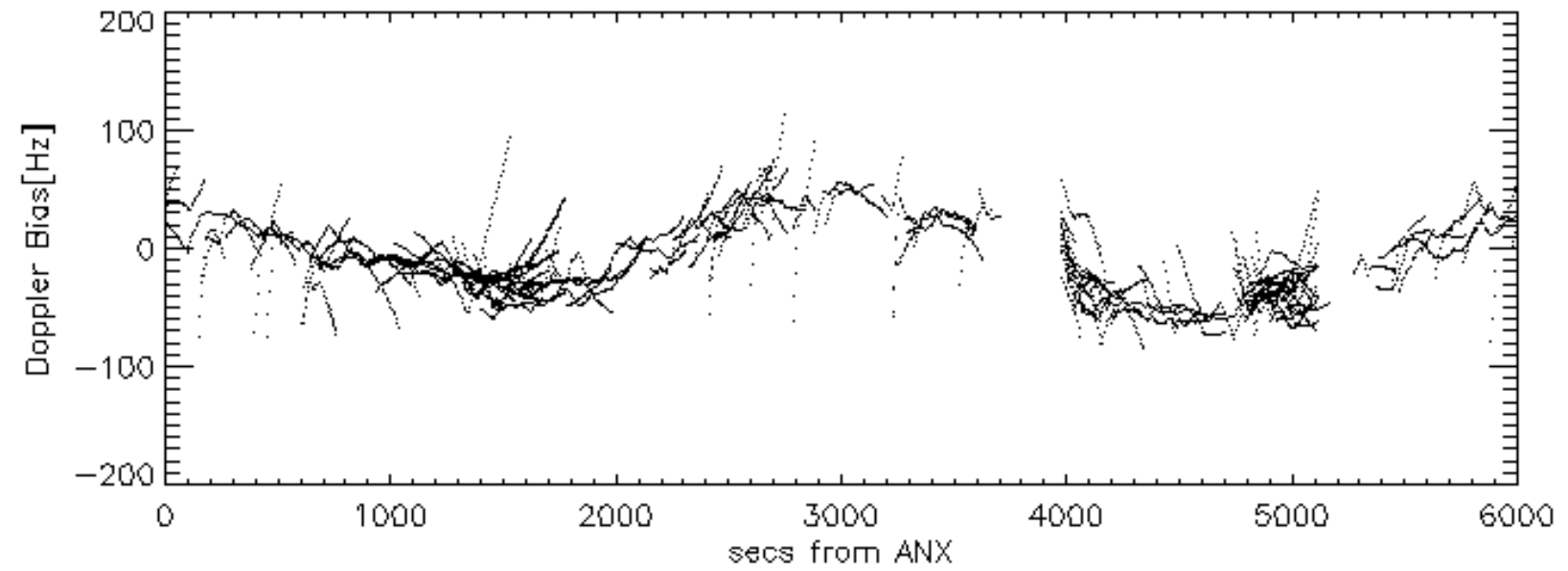
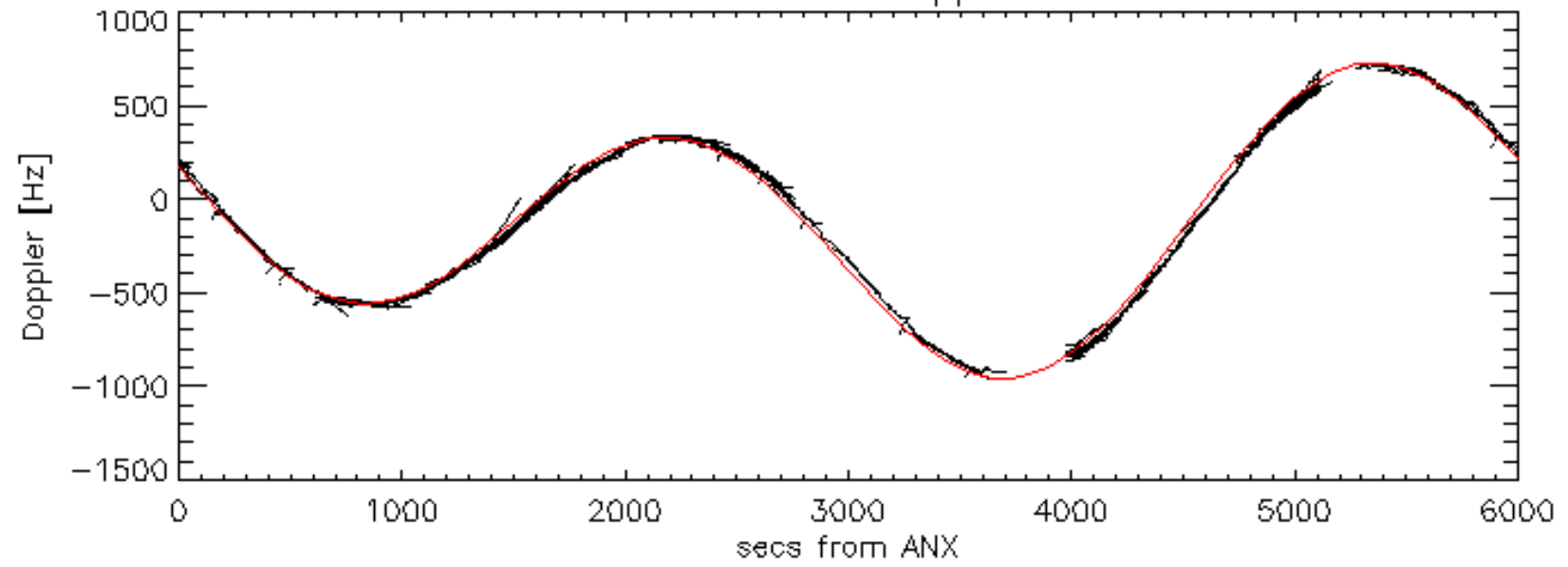


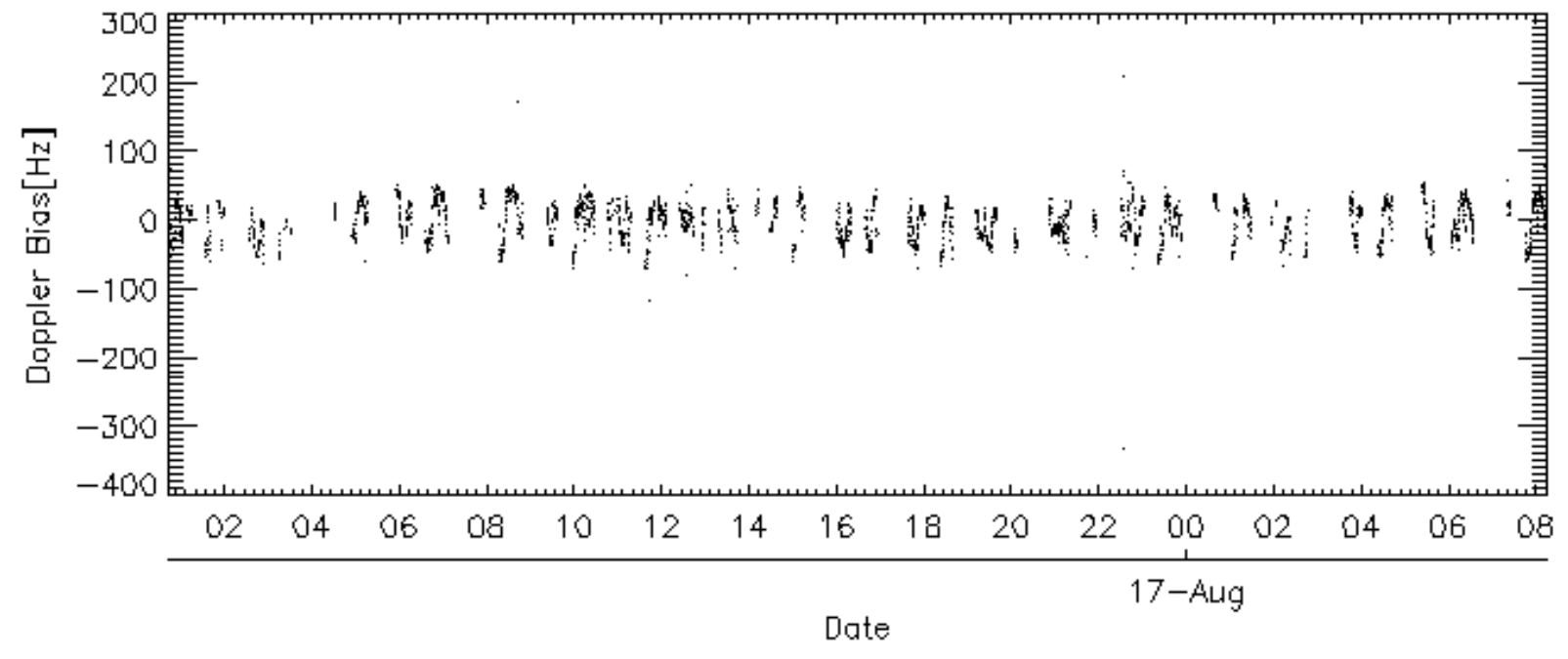
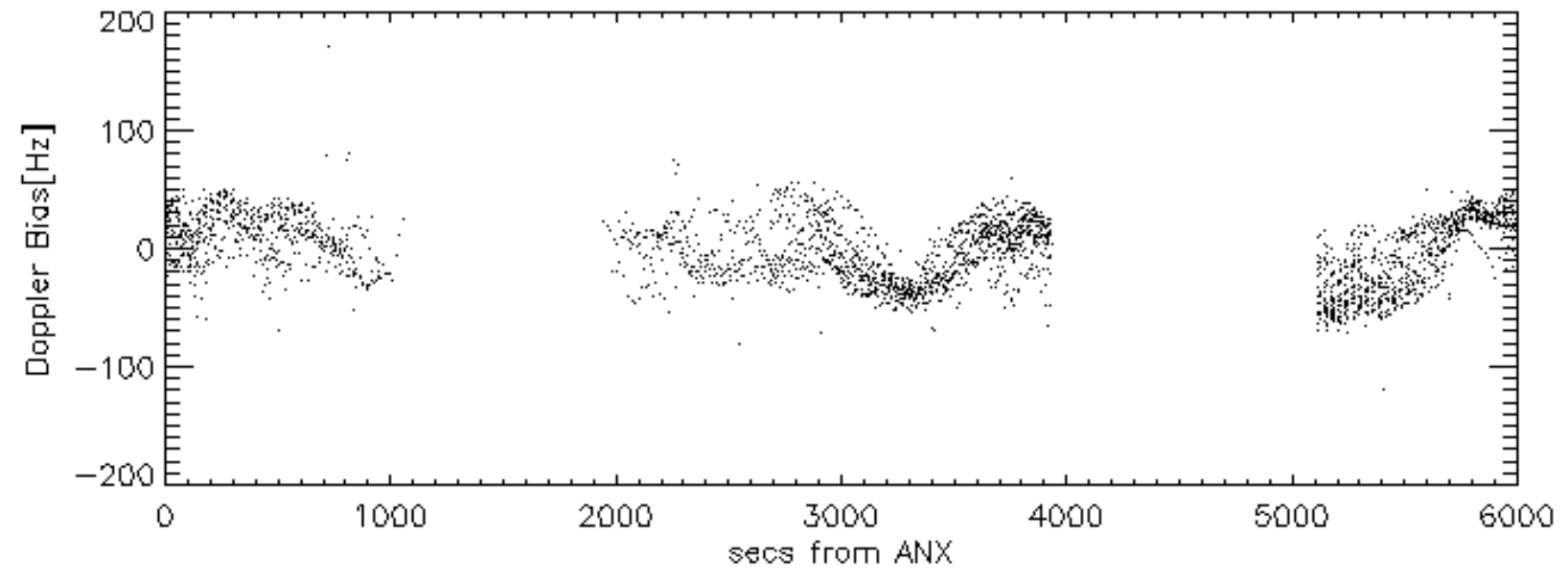
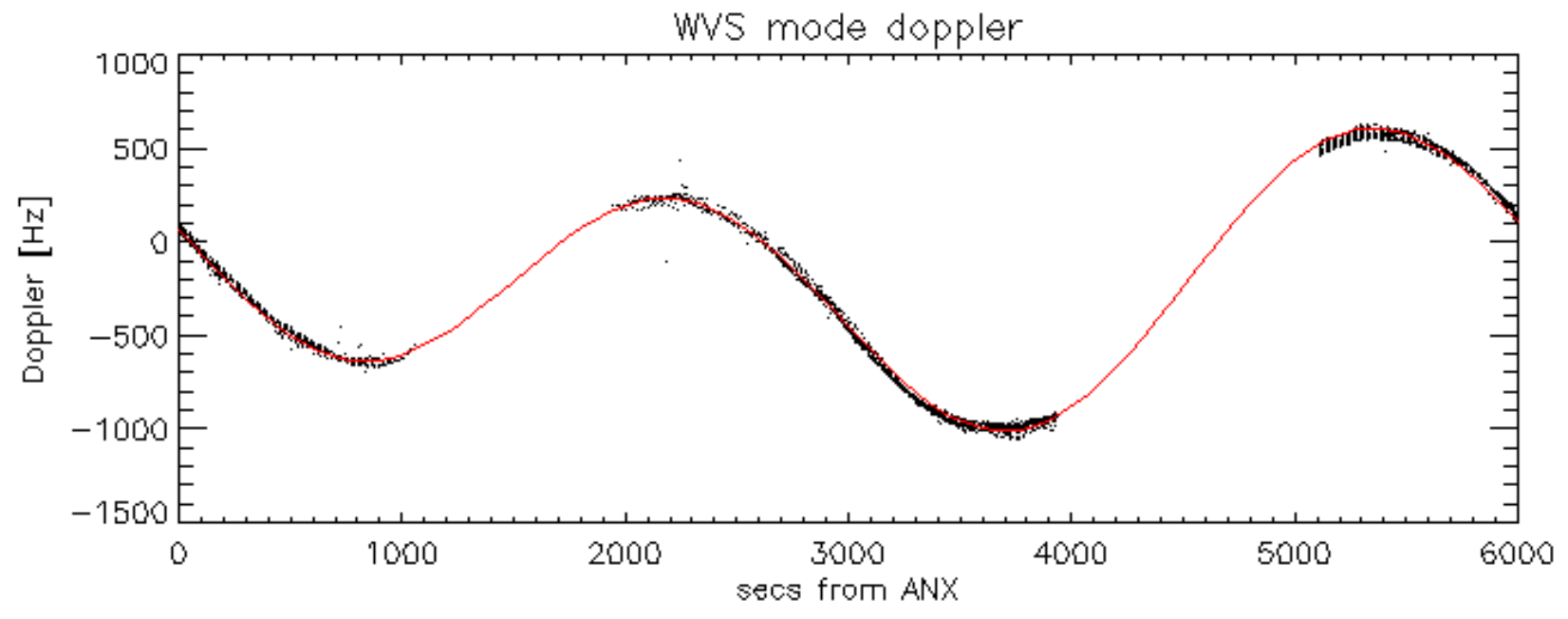
Doppler 'WVS' 'IS2' descending





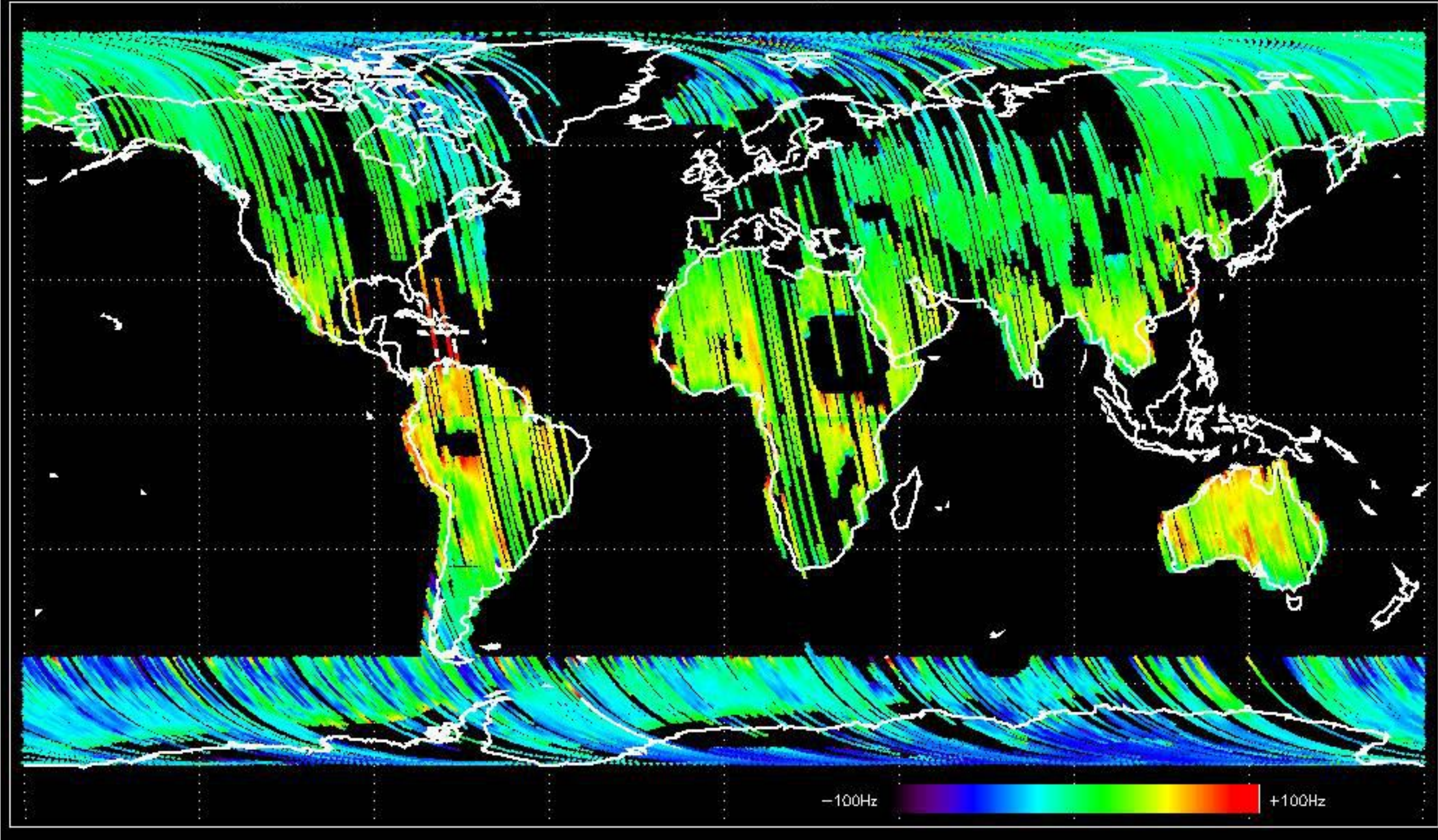
GM1 mode doppler





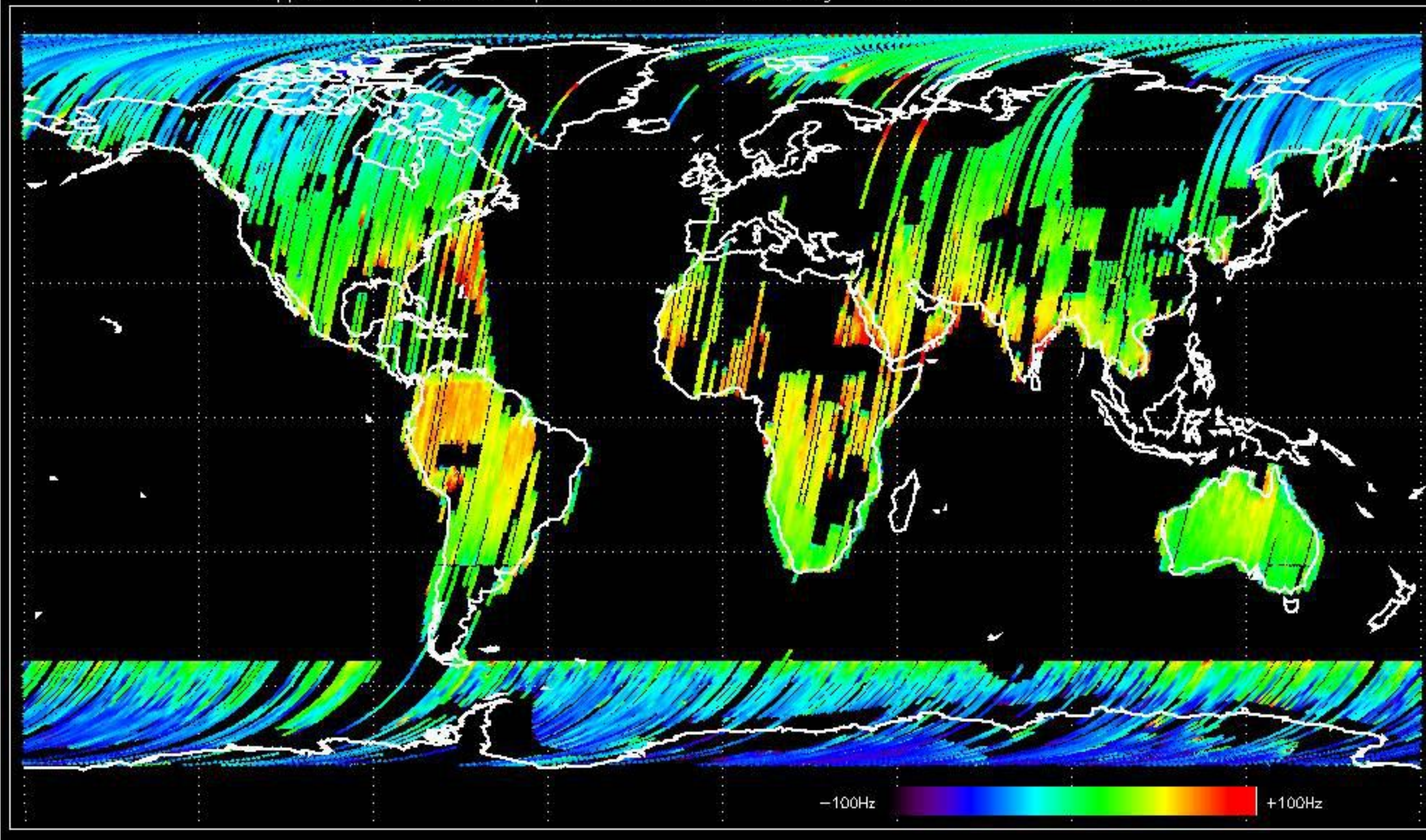


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.808395 Hz



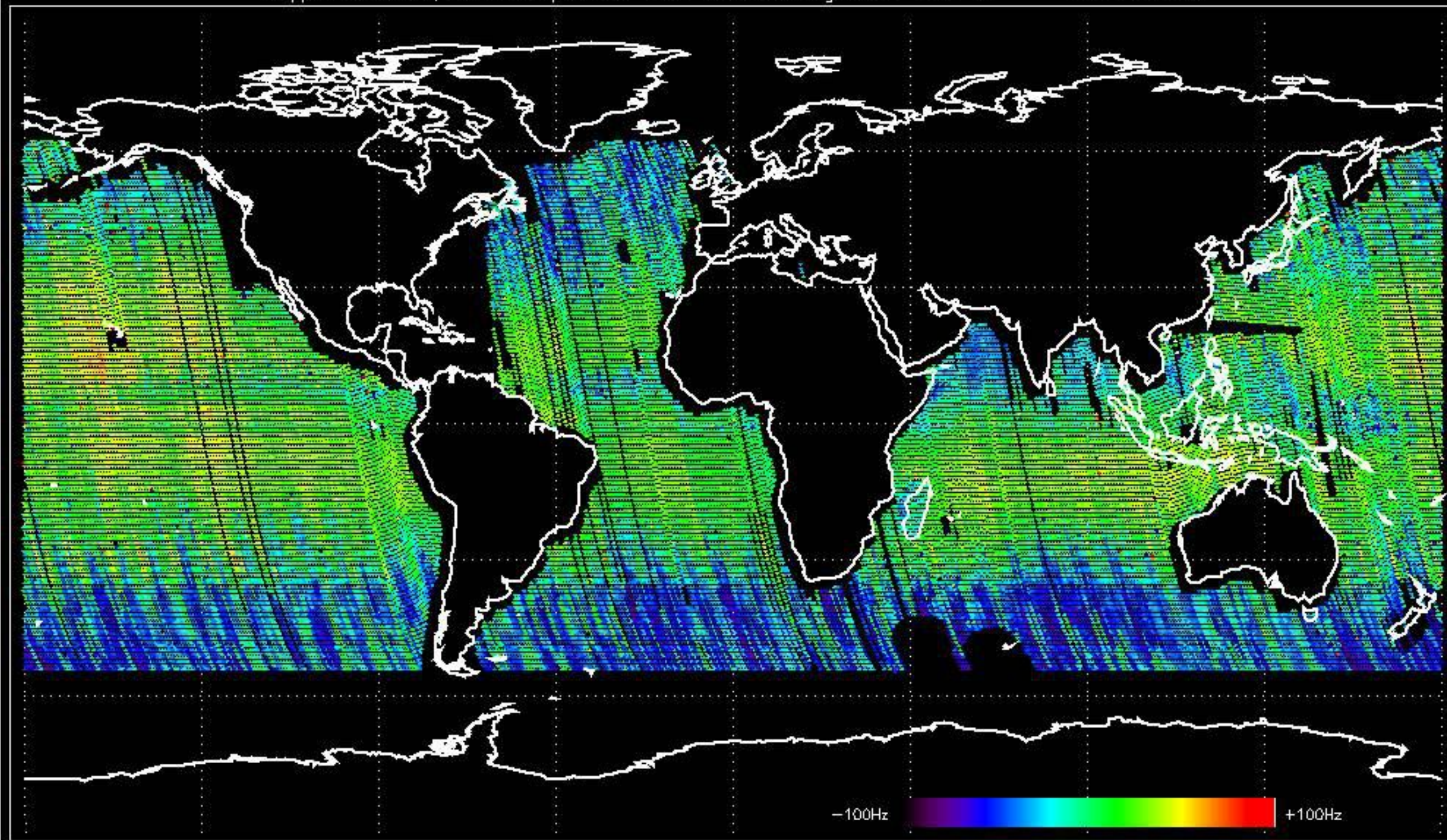


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -9.1063896 Hz



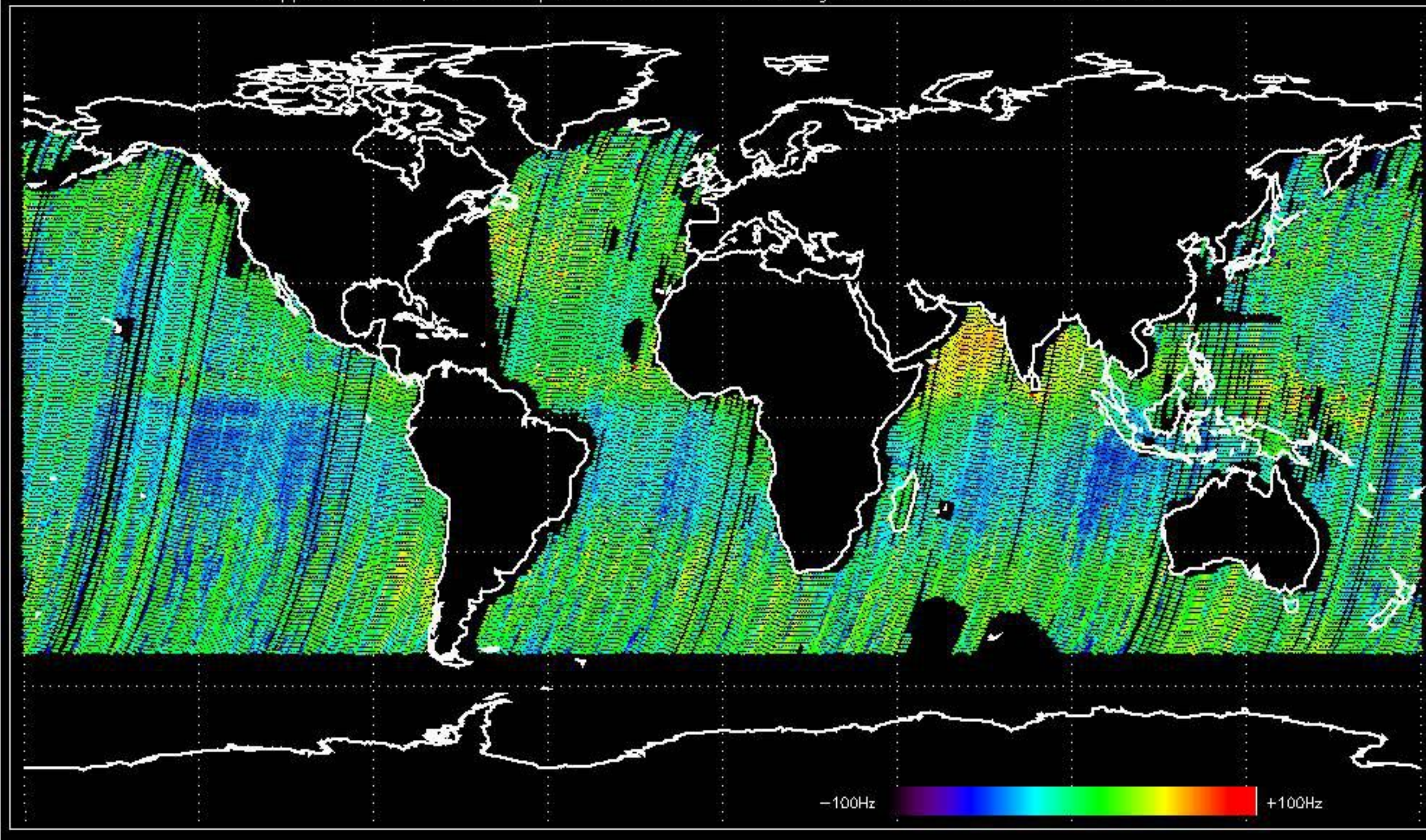


Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -2.5751265 Hz





Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -8.6052689 Hz

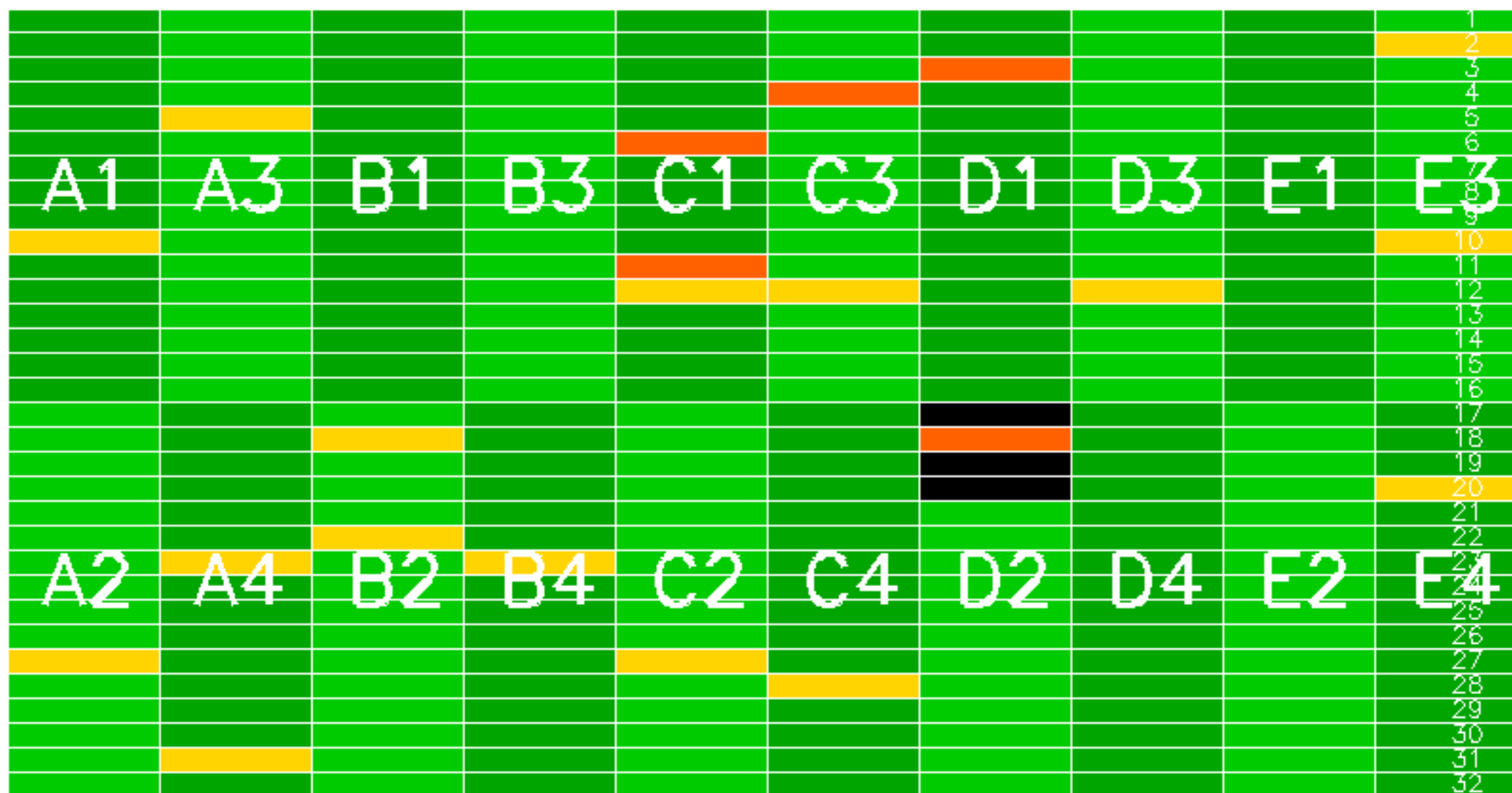


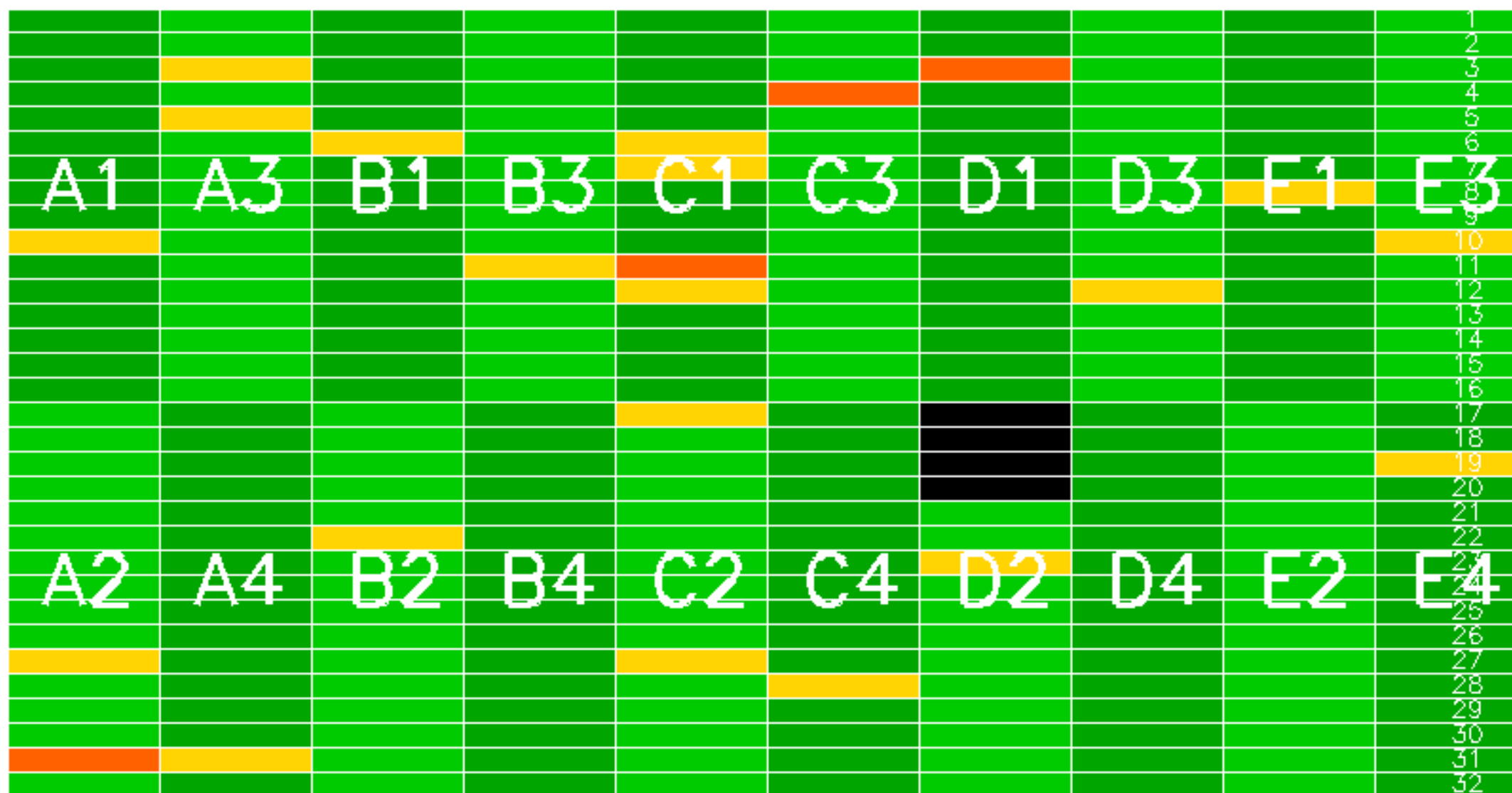


No anomalies observed on available MS products:

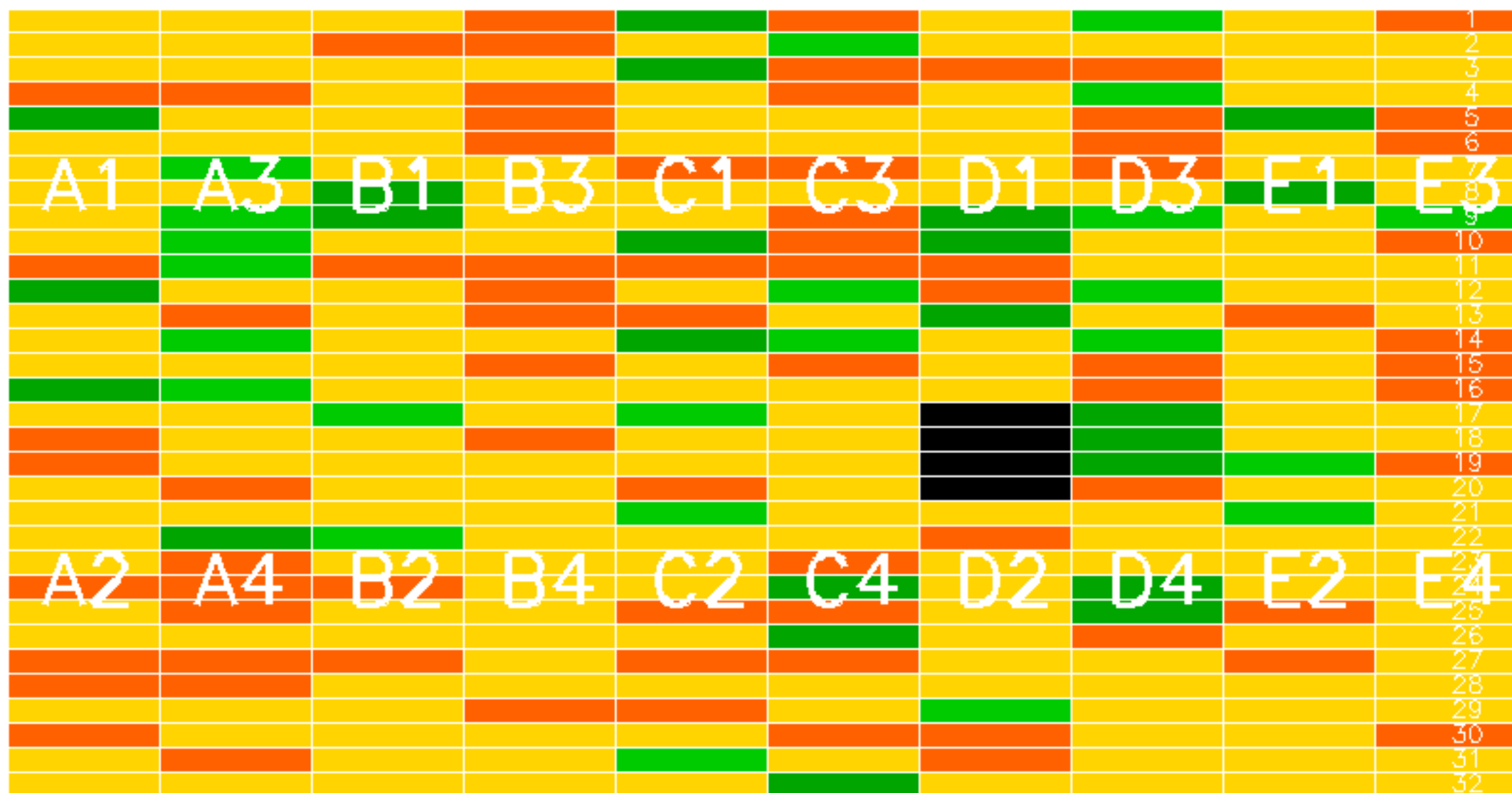
No anomalies observed.

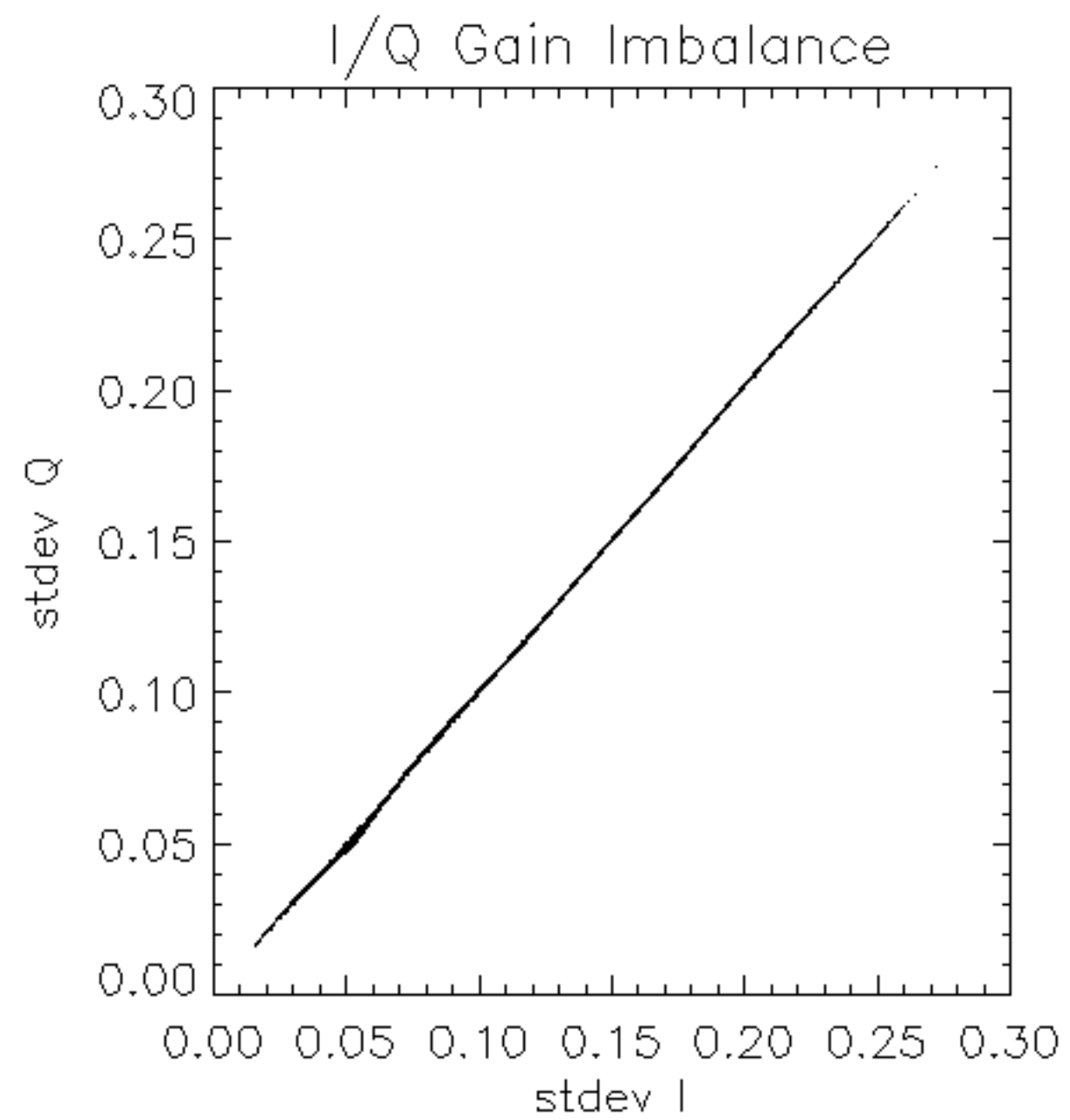


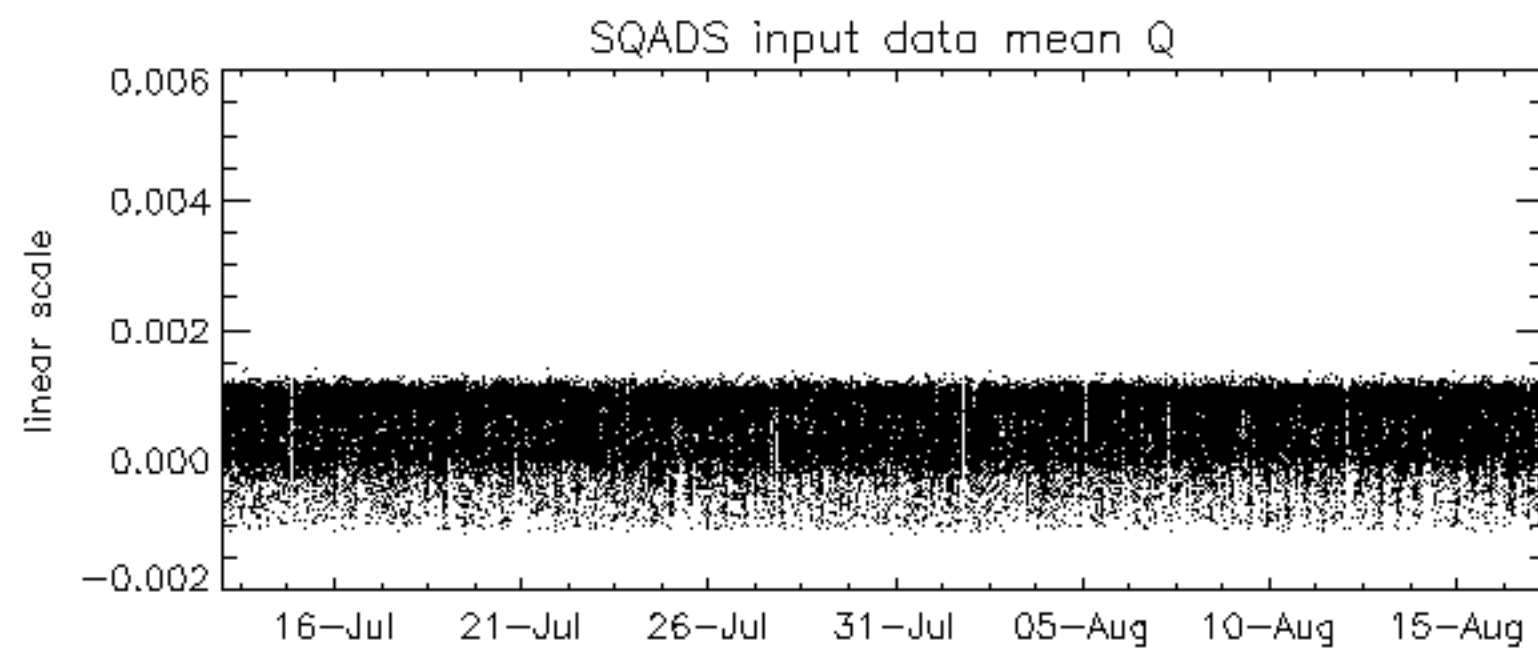
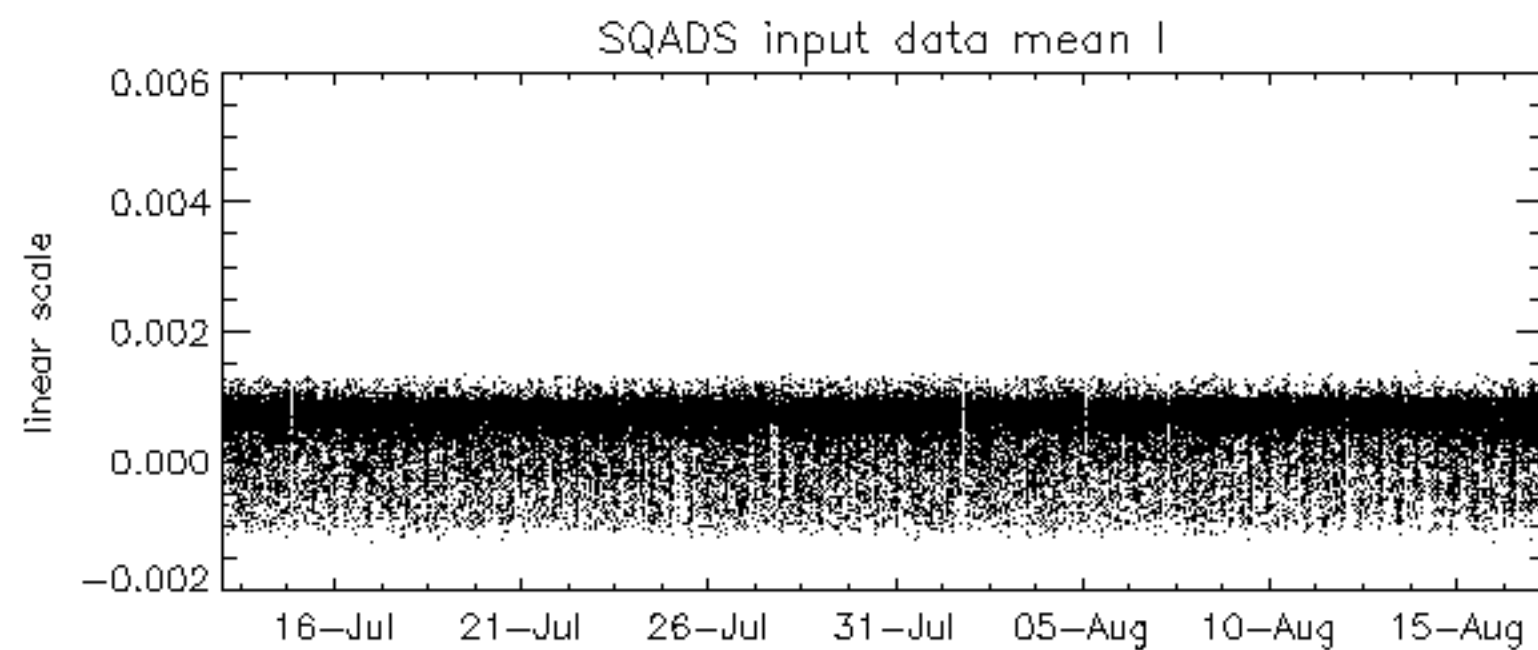
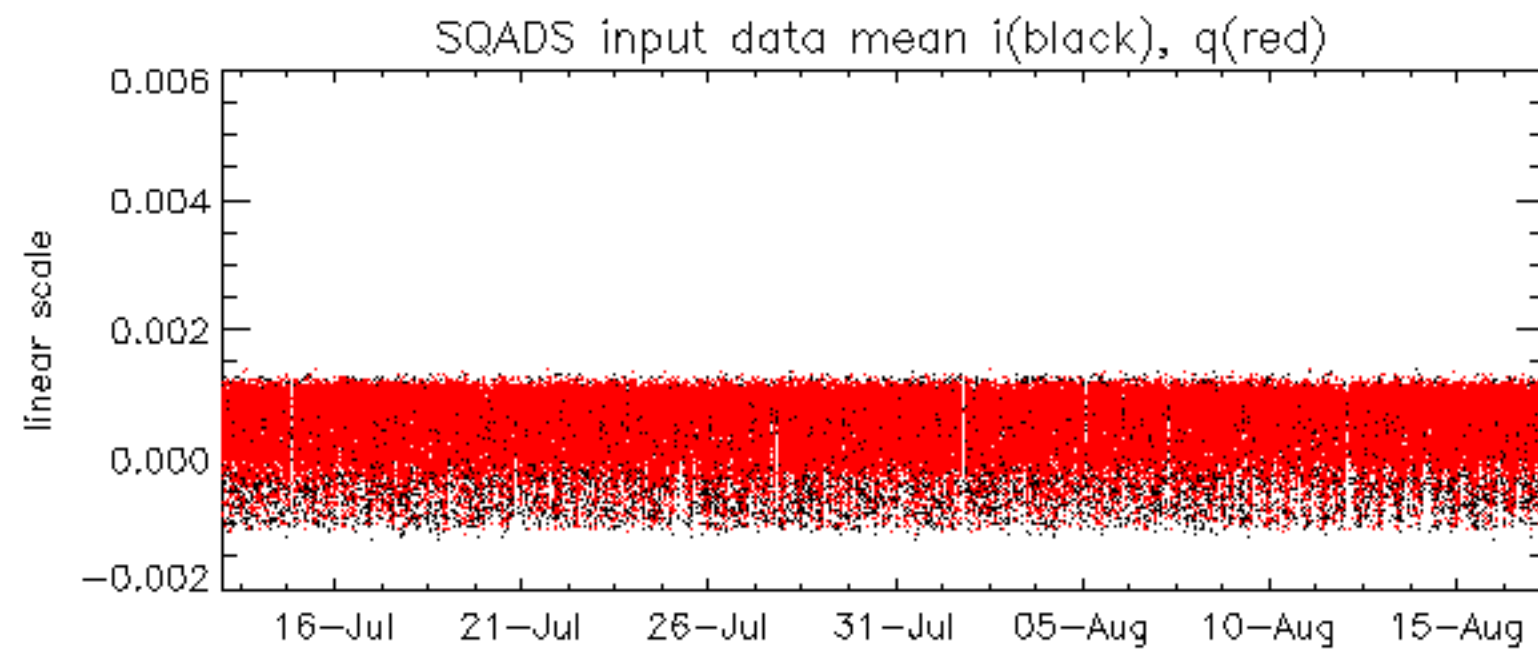


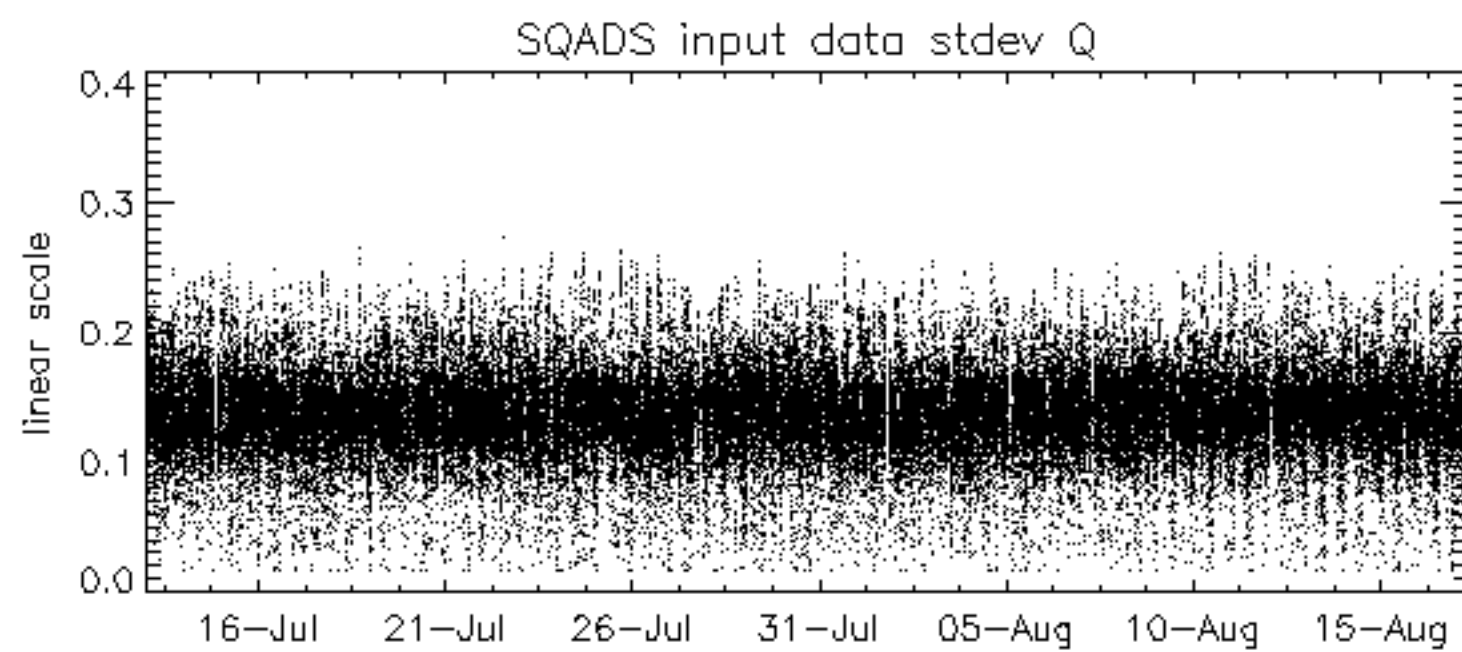
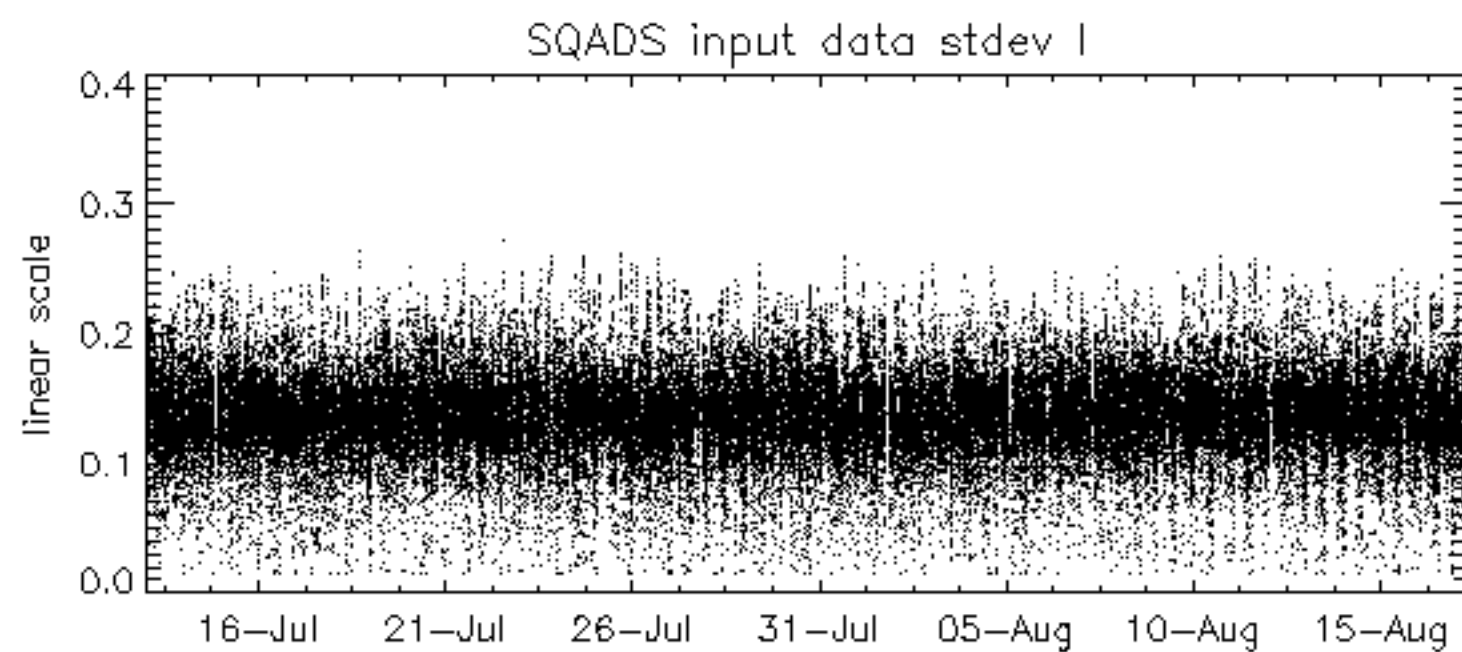
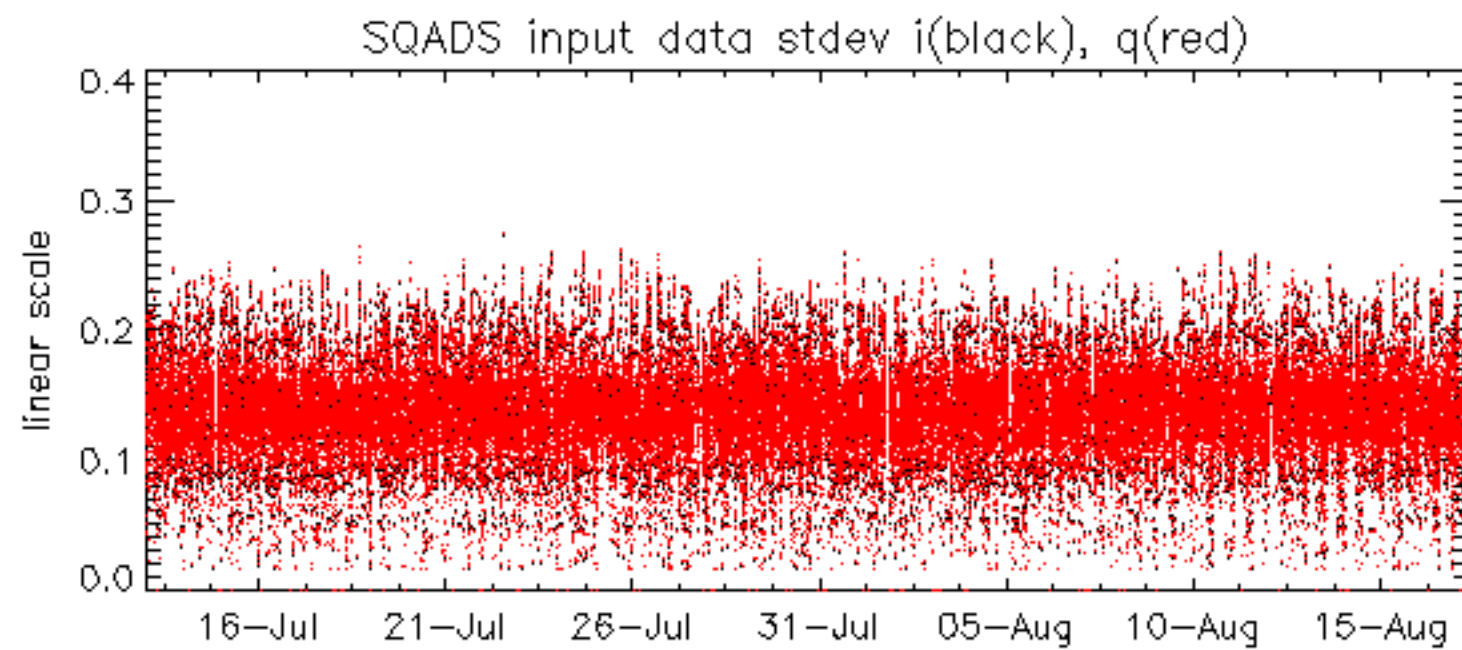


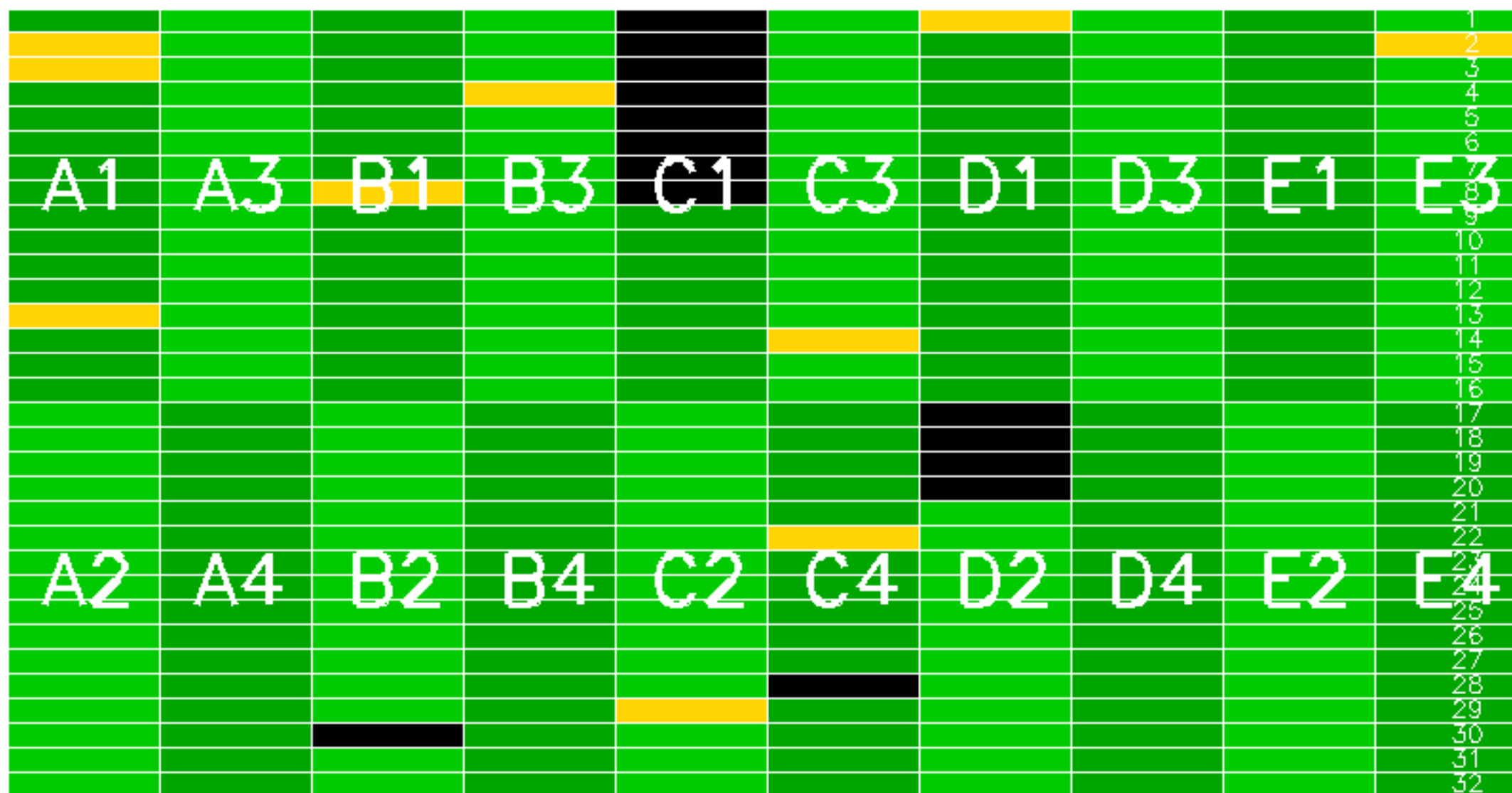














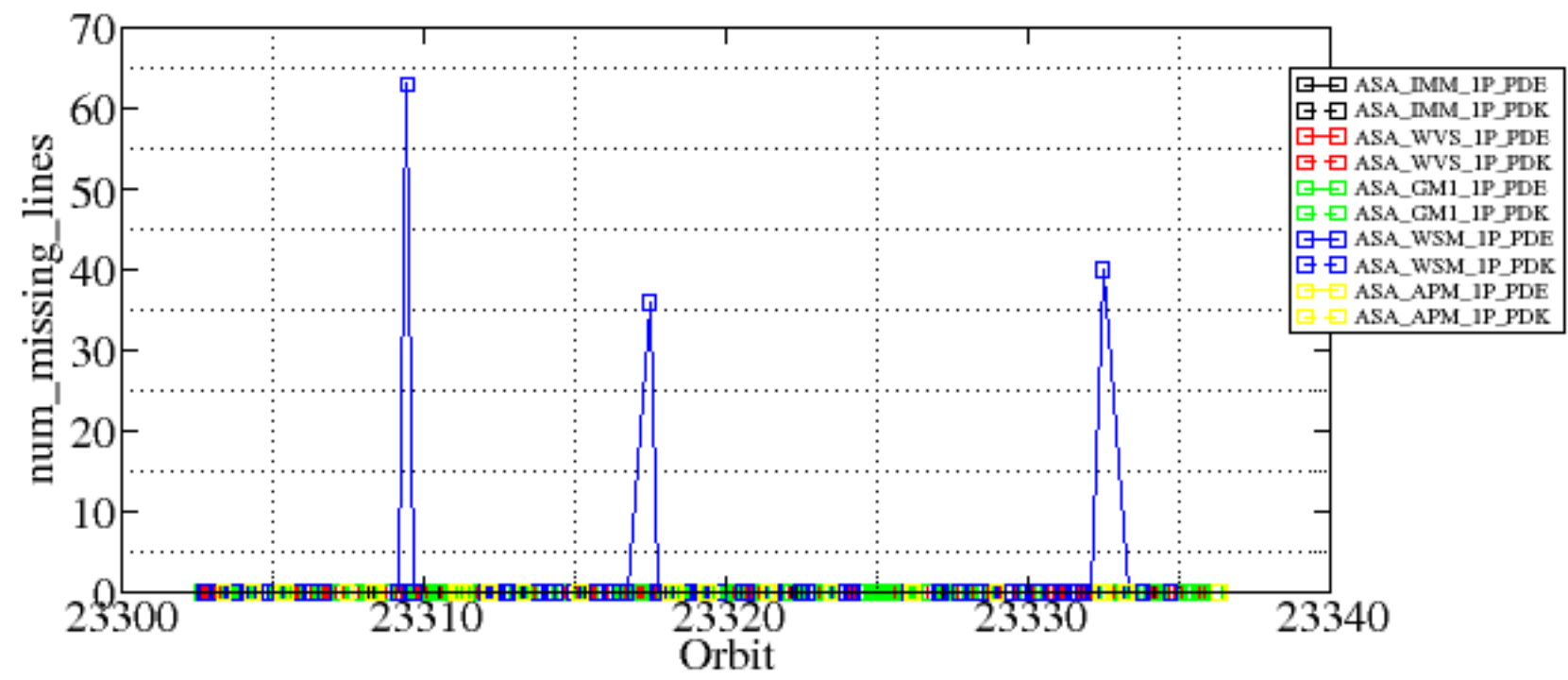


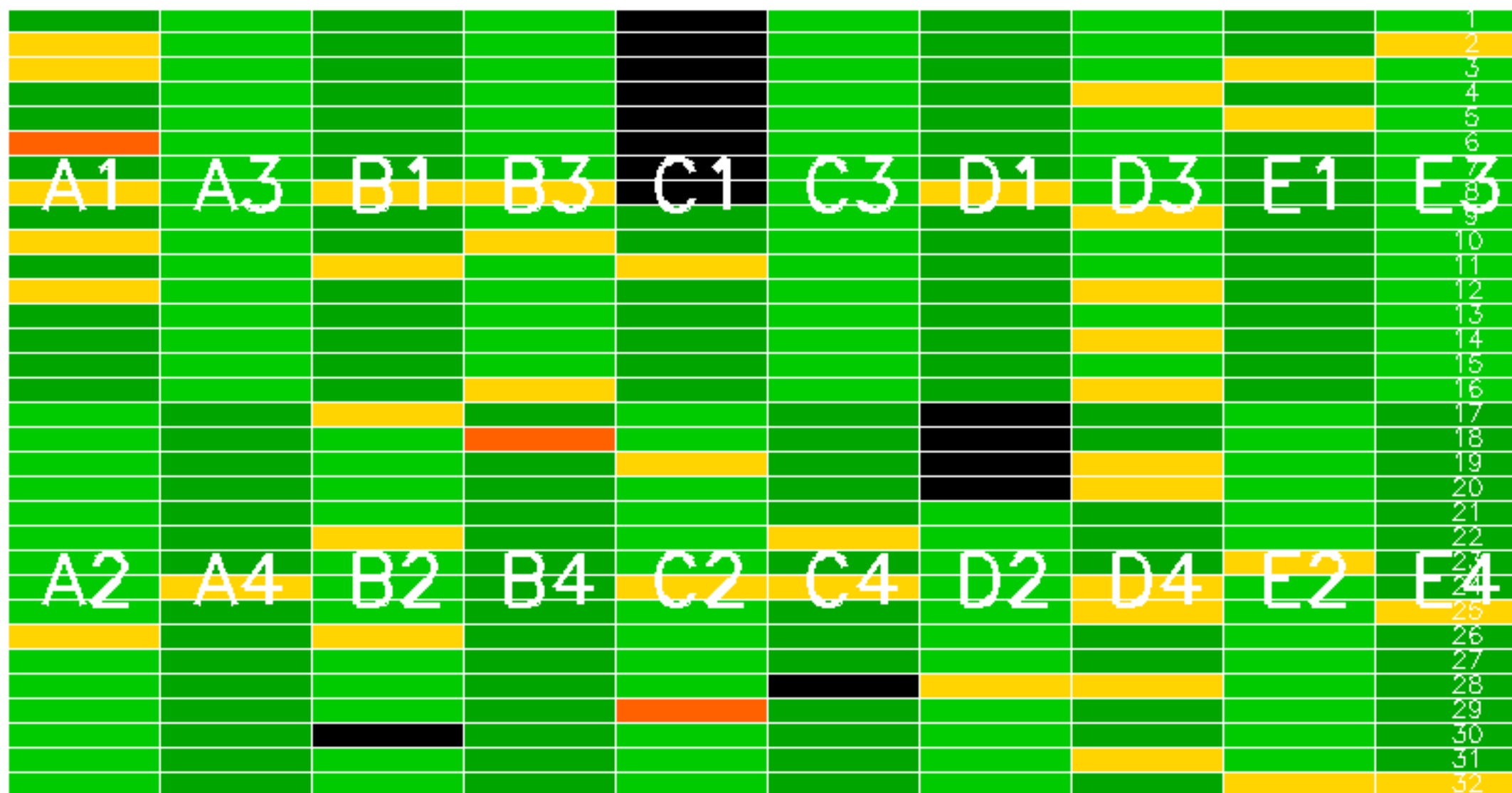
Summary of analysis for the last 3 days 2006081[567]

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

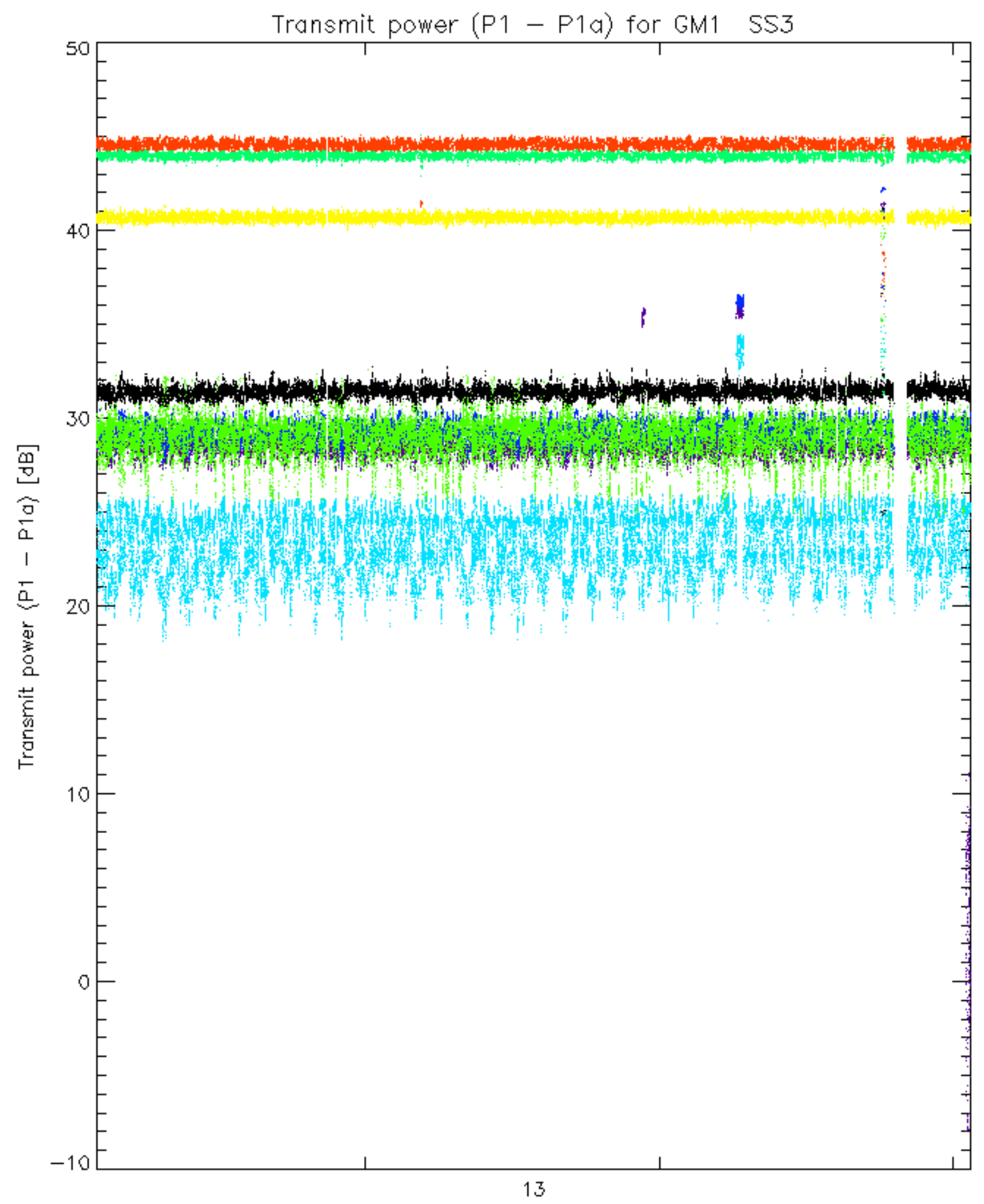
| Filename   | num_gaps | num_missing_lines |
|--|----------|-------------------|
| ASA_IMM_1PNPDE20060815_003718_000001342050_00202_23302_3468.N1 | 1        | 0                 |
| ASA_WSM_1PNPDE20060815_112846_000001522050_00209_23309_7957.N1 | 0        | 63                |
| ASA_WSM_1PNPDE20060816_005609_000000852050_00217_23317_8045.N1 | 0        | 36                |
| ASA_WSM_1PNPDE20060817_020406_000002322050_00232_23332_8255.N1 | 0        | 40                |



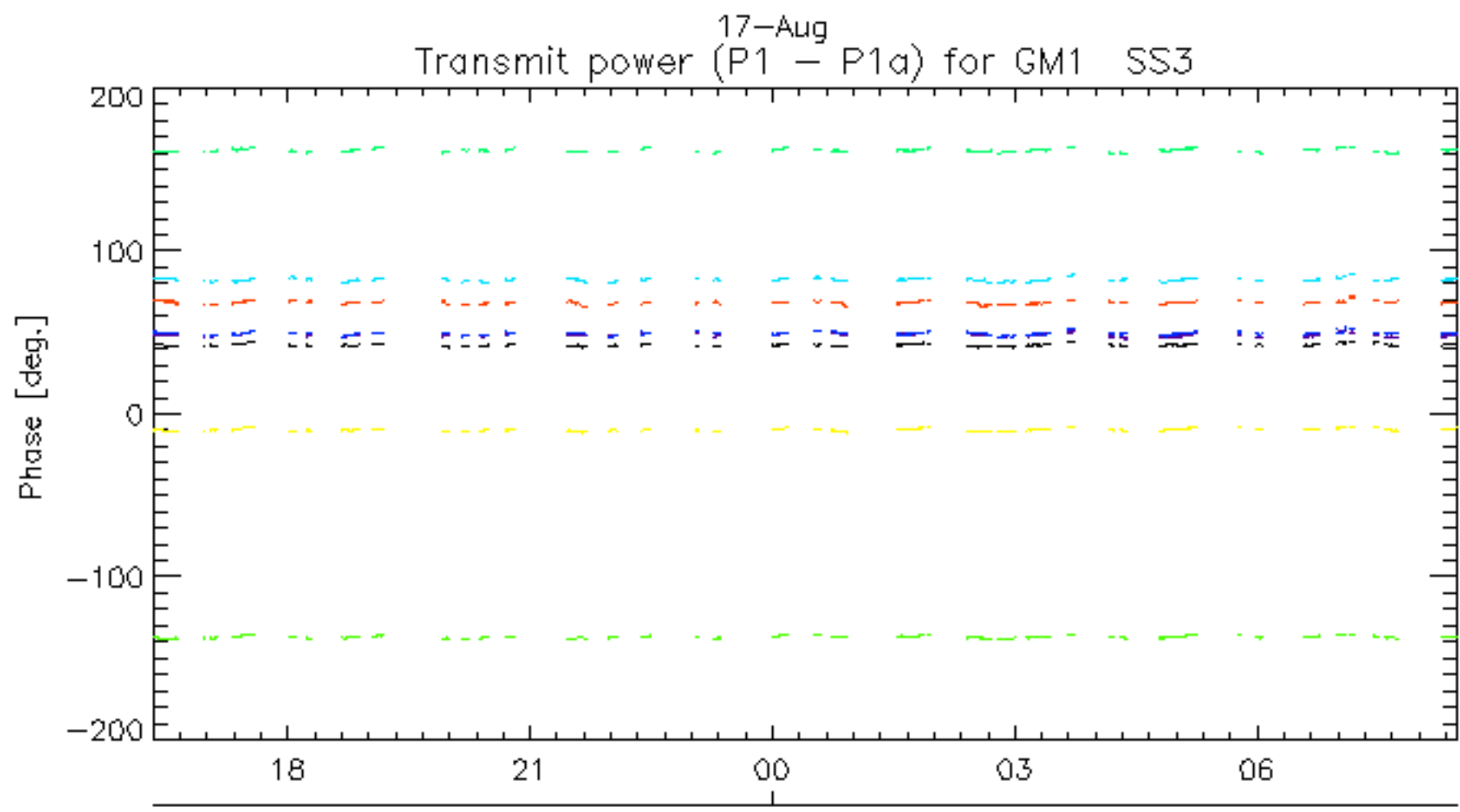
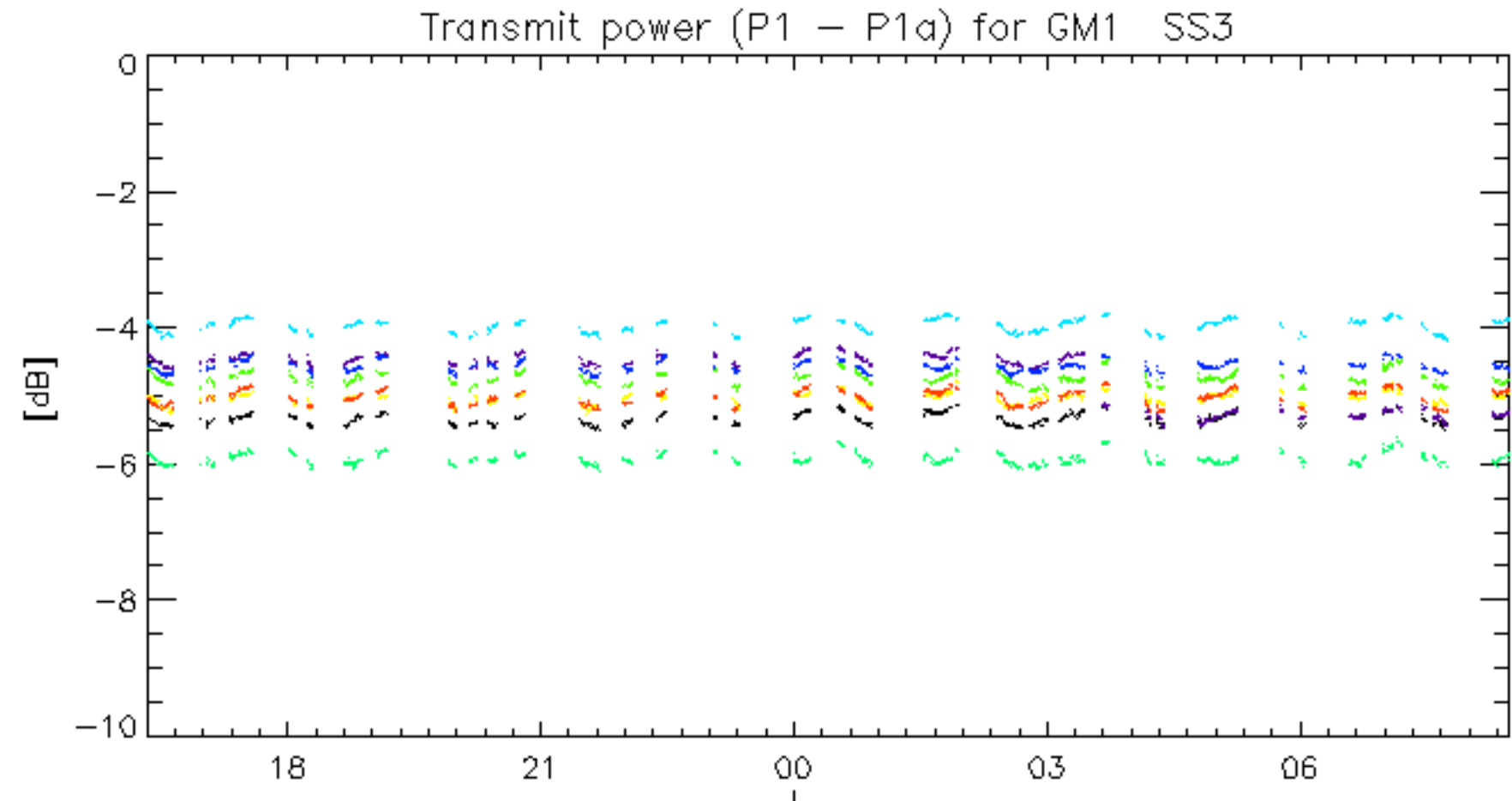






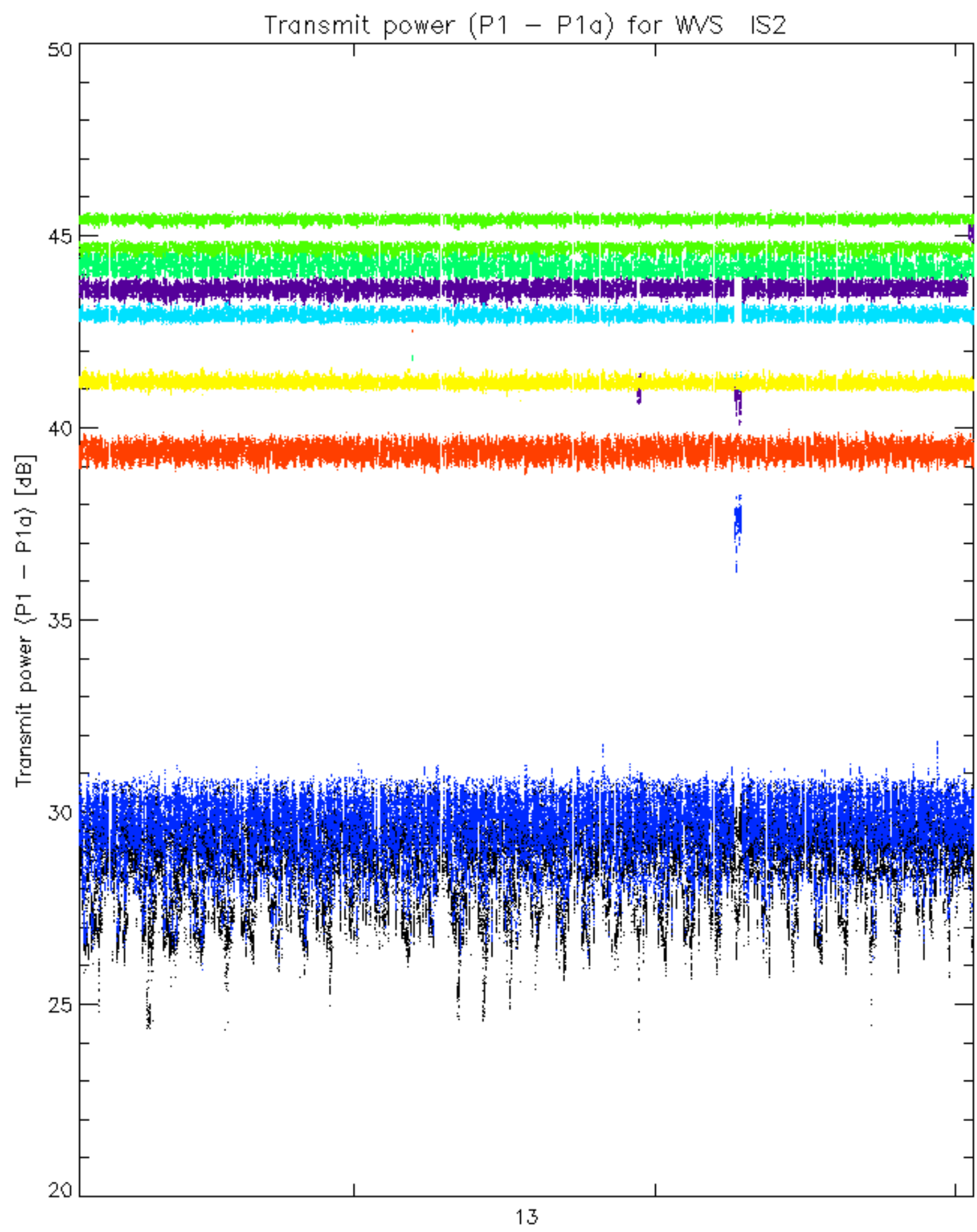


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

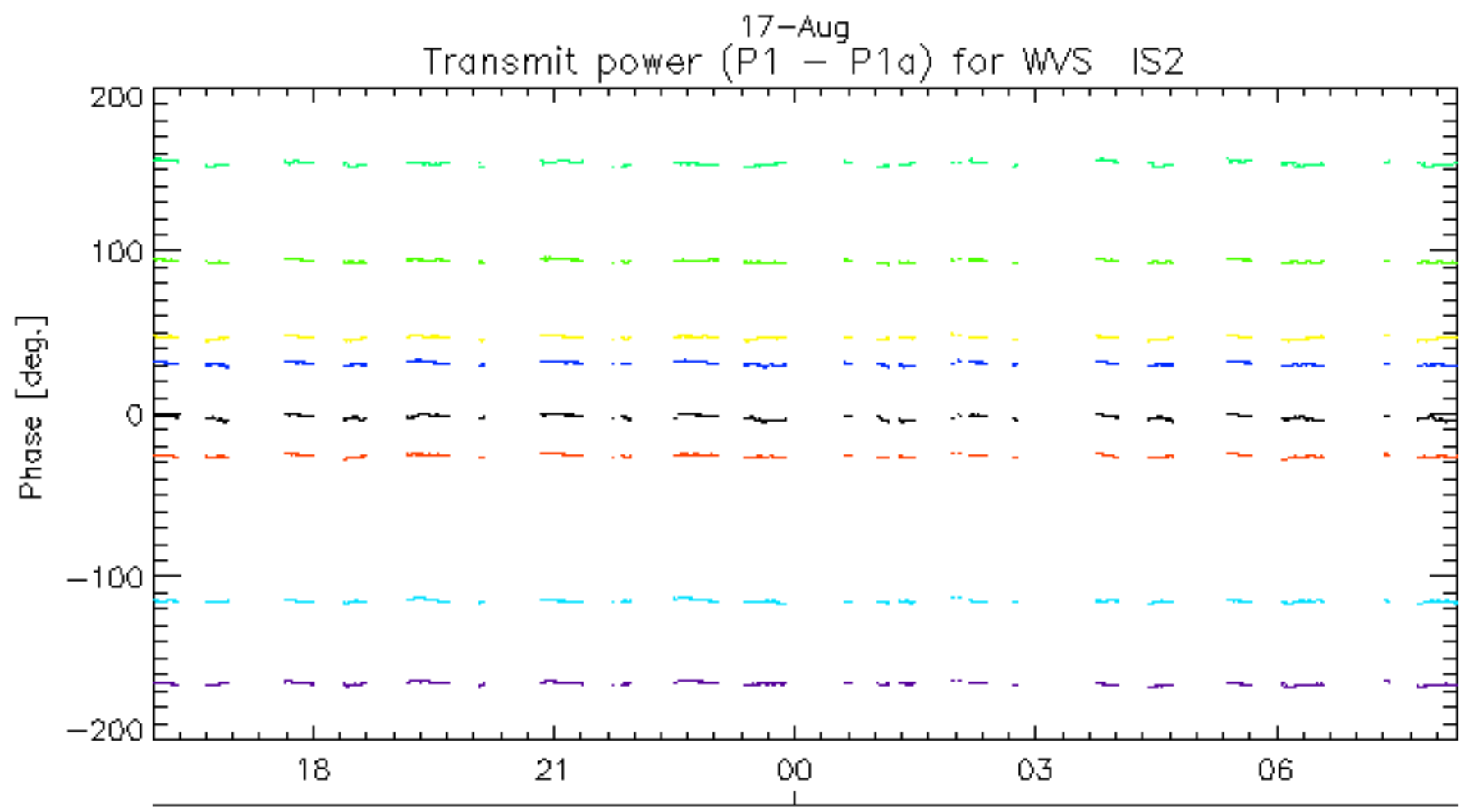
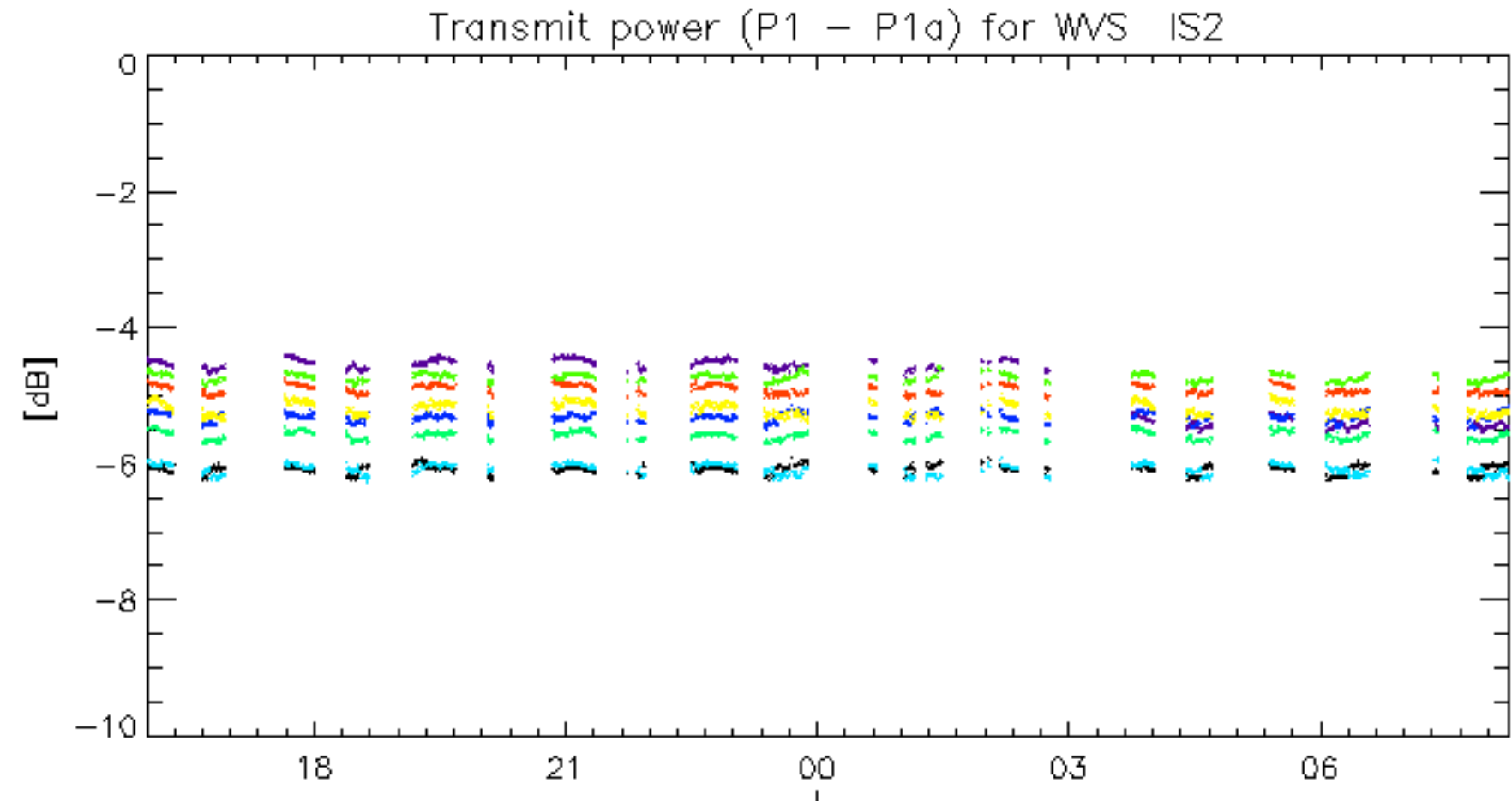


17-Aug  
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30





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



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

No unavailabilities during the reported period.