

# PRELIMINARY REPORT OF 070523

last update on Wed May 23 20:11:51 GMT 2007

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 2007-05-22 00:00:00 to 2007-05-23 20:11:51

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	41	92	8	1	41
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	41	92	8	1	41
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	41	92	8	1	41
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	41	92	8	1	41

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	33	46	25	11	72
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	33	46	25	11	72
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	33	46	25	11	72
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	46	25	11	72

## 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	20070523 043734
H	20070522 050911

### 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



**P1a Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-15.238603	0.127074	-0.241554
7	P1a	-17.600096	0.071685	-0.059444
11	P1a	-17.739157	0.341734	-0.153226
15	P1a	-13.160085	0.153318	-0.156855
19	P1a	-15.441340	0.068595	-0.055479
22	P1a	-15.998667	0.340789	-0.013197
26	P1a	-14.950810	0.211598	-0.099675
30	P1a	-18.005129	0.420927	-0.407334

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.785155	0.009936	-0.012123
7	P1	-3.166516	0.008471	-0.040662
11	P1	-4.191000	0.017737	0.058437
15	P1	-6.468865	0.019331	-0.067661
19	P1	-3.777895	0.012046	-0.016929
22	P1	-4.740216	0.011392	0.038160
26	P1	-3.909349	0.017762	-0.030208
30	P1	-5.961853	0.009333	0.006509

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.649645	0.093535	0.017552
7	P2	-21.503256	0.093795	0.086287
11	P2	-15.278852	0.121766	0.055194
15	P2	-7.133356	0.091290	-0.005571
19	P2	-9.121868	0.082726	-0.012351
22	P2	-18.085377	0.077885	-0.000285
26	P2	-16.655140	0.084540	-0.051494
30	P2	-19.245173	0.084252	0.053177

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.244187	0.004617	0.002991
7	P3	-8.244187	0.004617	0.002991
11	P3	-8.244187	0.004617	0.002991
15	P3	-8.244187	0.004617	0.002991
19	P3	-8.244187	0.004617	0.002991
22	P3	-8.244187	0.004617	0.002991
26	P3	-8.244166	0.004623	0.003149
30	P3	-8.244166	0.004623	0.003149

**4.2.2 - Evolution for GM1**

Evolution of cal pulses for GM1



**P1a Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.516866	0.145165	-0.900312
7	P1a	-10.017662	0.105088	0.062548
11	P1a	-10.686337	0.060847	-0.056070
15	P1a	-10.771569	0.137864	0.086523
19	P1a	-15.865989	0.096052	-0.122746
22	P1a	-21.514719	1.338584	-0.081420
26	P1a	-15.569953	0.316107	-0.039240
30	P1a	-18.257101	0.414186	0.029968

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-7.892693	0.355586	1.680626
7	P1	-2.366443	0.053881	0.054815
11	P1	-2.868180	0.016370	0.008996
15	P1	-3.791231	0.033862	0.043906
19	P1	-3.607738	0.017592	-0.046193
22	P1	-4.942980	0.023349	0.033650

26	P1	-6.061177	0.021068	-0.048844
30	P1	-5.358909	0.030418	-0.061870

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.215054	0.089355	-0.053331
7	P2	-22.066360	0.179545	-0.004686
11	P2	-10.660496	0.057133	-0.047761
15	P2	-4.964053	0.045642	-0.082472
19	P2	-6.882563	0.045288	-0.030919
22	P2	-8.103498	0.063006	-0.028868
26	P2	-24.353632	0.114687	-0.046306
30	P2	-21.702925	0.098050	0.010980

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.092242	0.005206	-0.003885
7	P3	-8.092093	0.005202	-0.003678
11	P3	-8.092133	0.005195	-0.004161
15	P3	-8.092100	0.005198	-0.004222
19	P3	-8.092148	0.005206	-0.004010
22	P3	-8.092110	0.005205	-0.004433
26	P3	-8.092177	0.005209	-0.004563
30	P3	-8.092091	0.005201	-0.004266

## 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	0.000551431
	stdev	1.90270e-07
MEAN Q	mean	0.000511914
	stdev	2.36942e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136111
	stdev	0.00116312
STDEV Q	mean	0.136496
	stdev	0.00118005



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007052[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_WSM_1PNPDE20070521_162341_000002022058_00198_27306_5002.N1	0	46
ASA_WSM_1PNPDE20070521_180340_000001102058_00199_27307_5028.N1	0	5
ASA_WSM_1PNPDE20070522_190811_000001712058_00214_27322_6378.N1	0	73
ASA_WSM_1PNPDK20070521_150502_000001152058_00197_27305_8922.N1	0	89





## 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)**

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

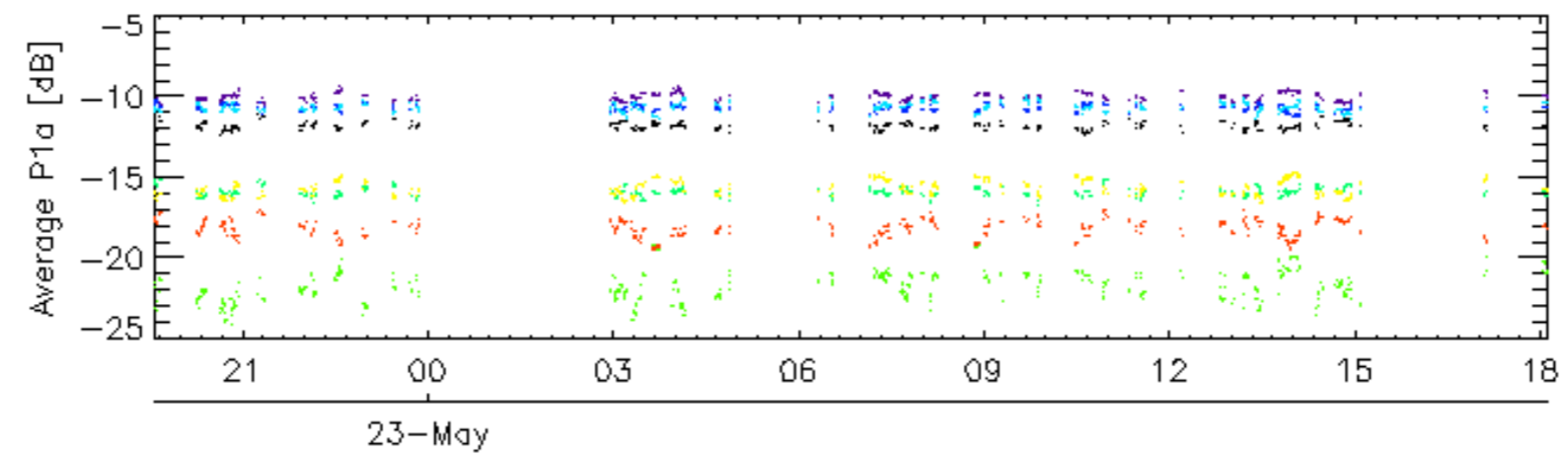
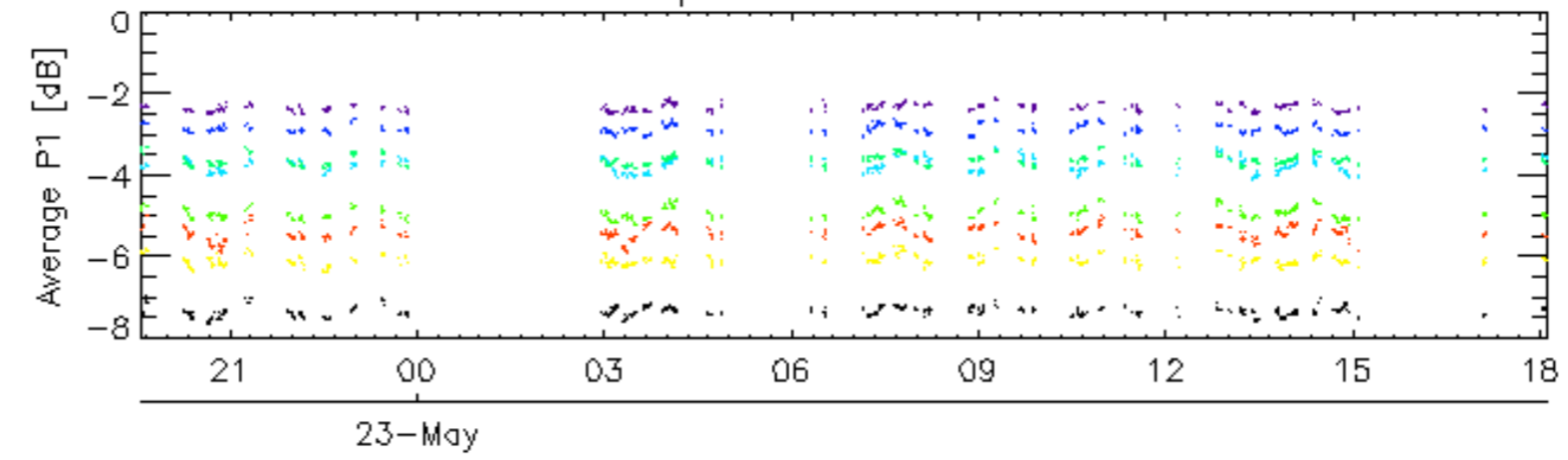
**7.5 - Absolute Doppler for GM1****Evolution of Absolute Doppler**

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

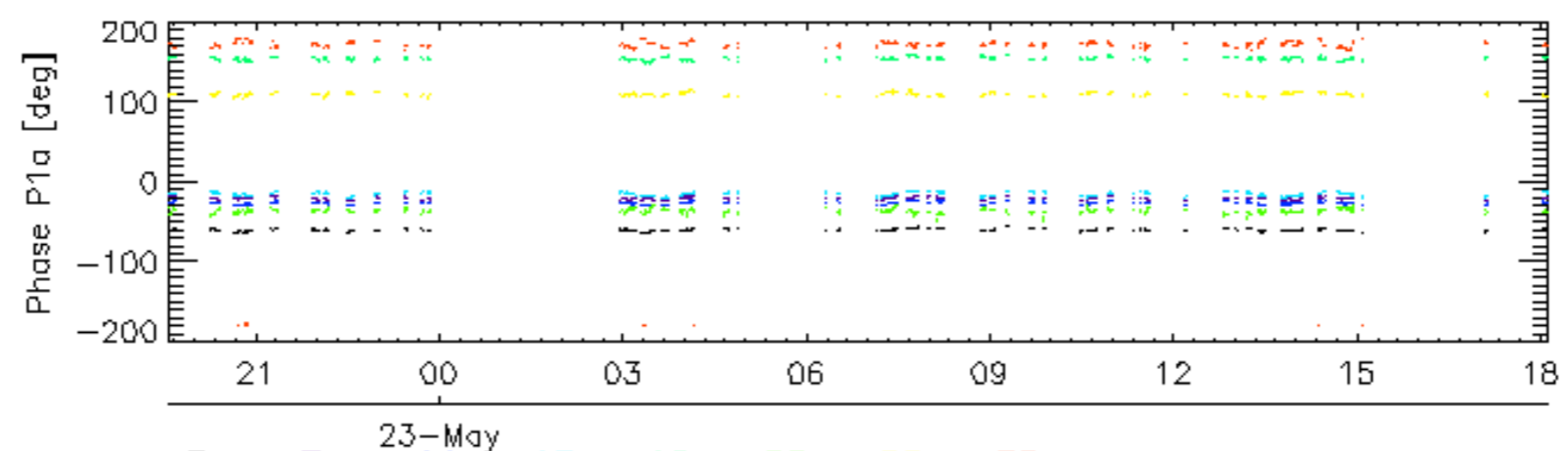
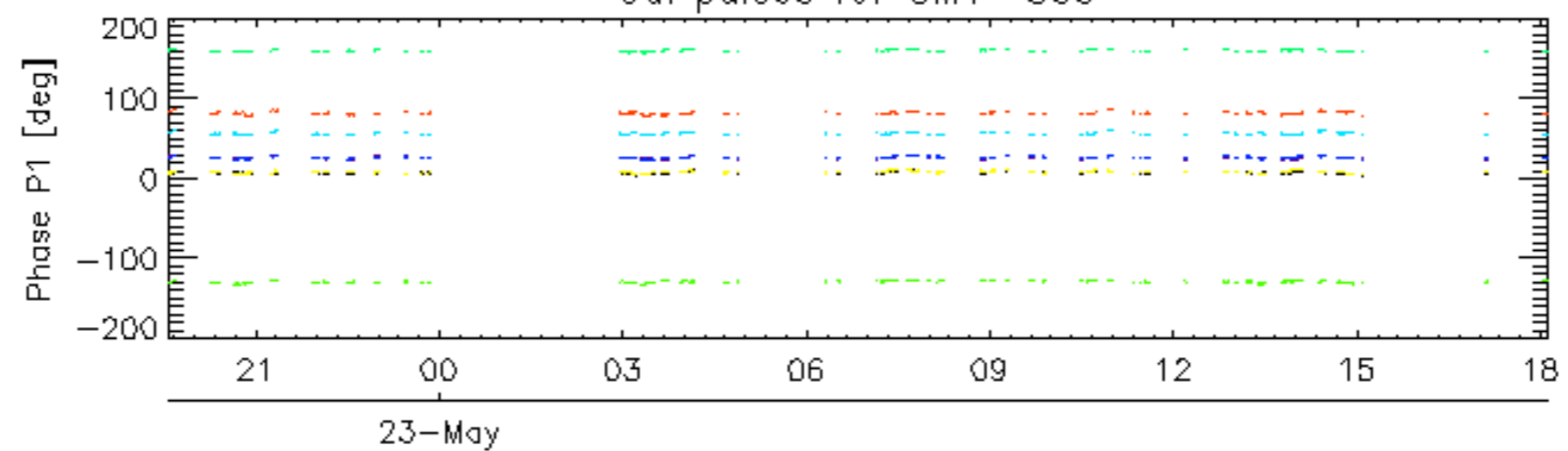
**7.6 - Doppler evolution versus ANX for GM1****Evolution Doppler error versus ANX**

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

Cal pulses for GM1 SS3

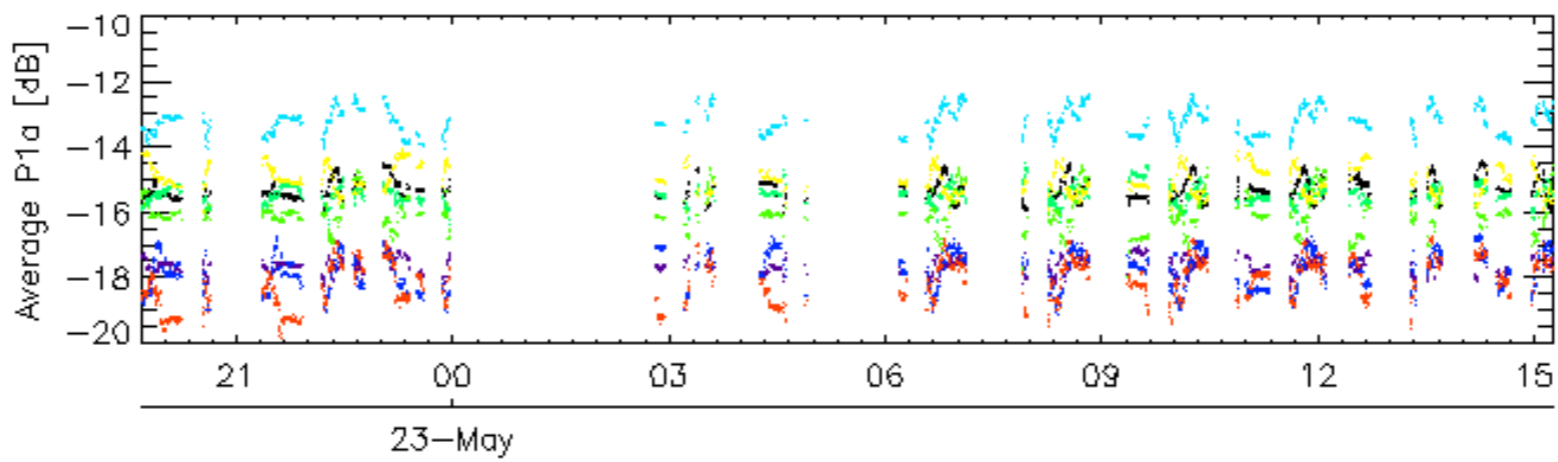
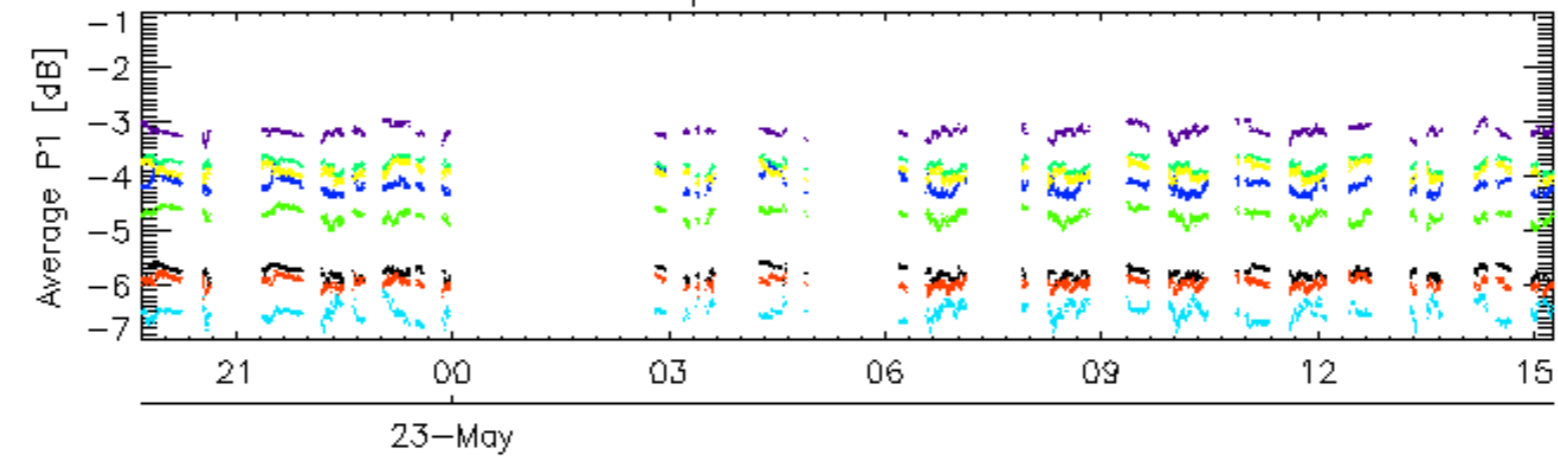


Cal pulses for GM1 SS3

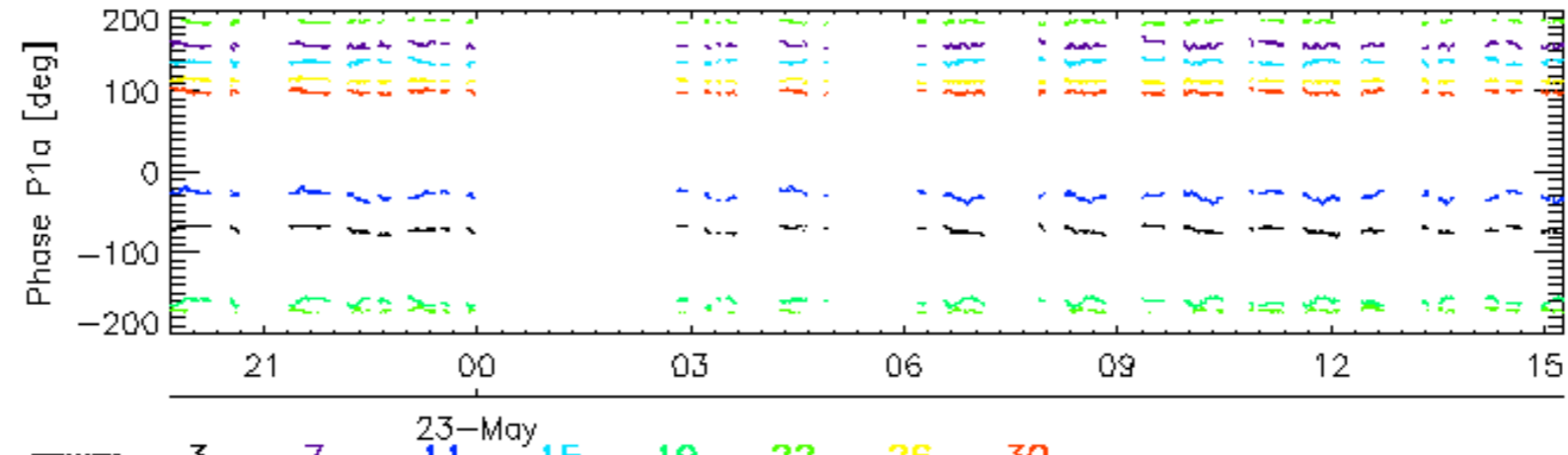
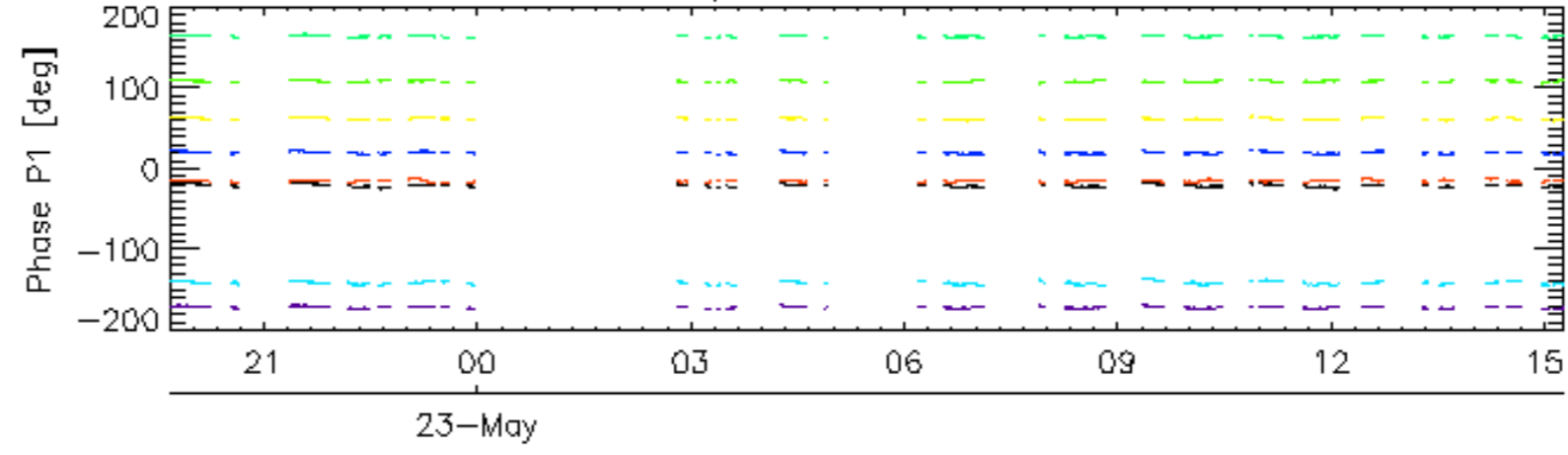


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

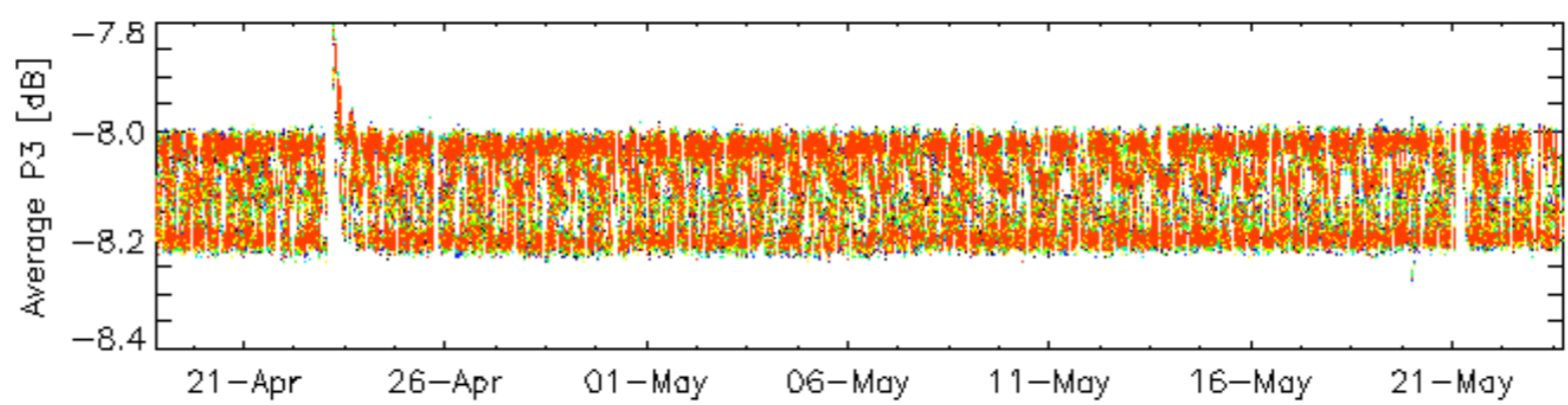
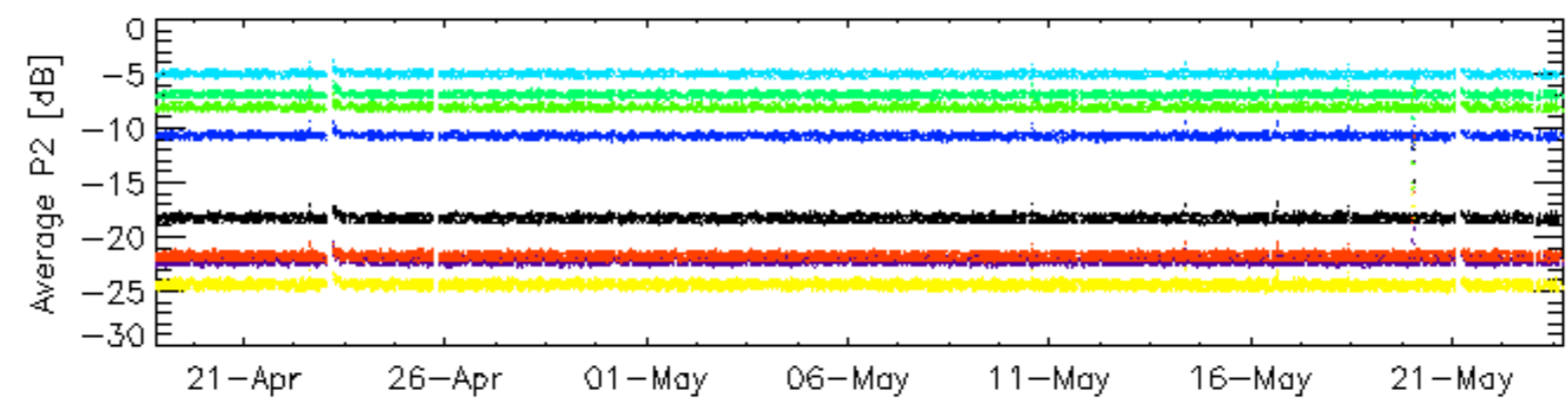
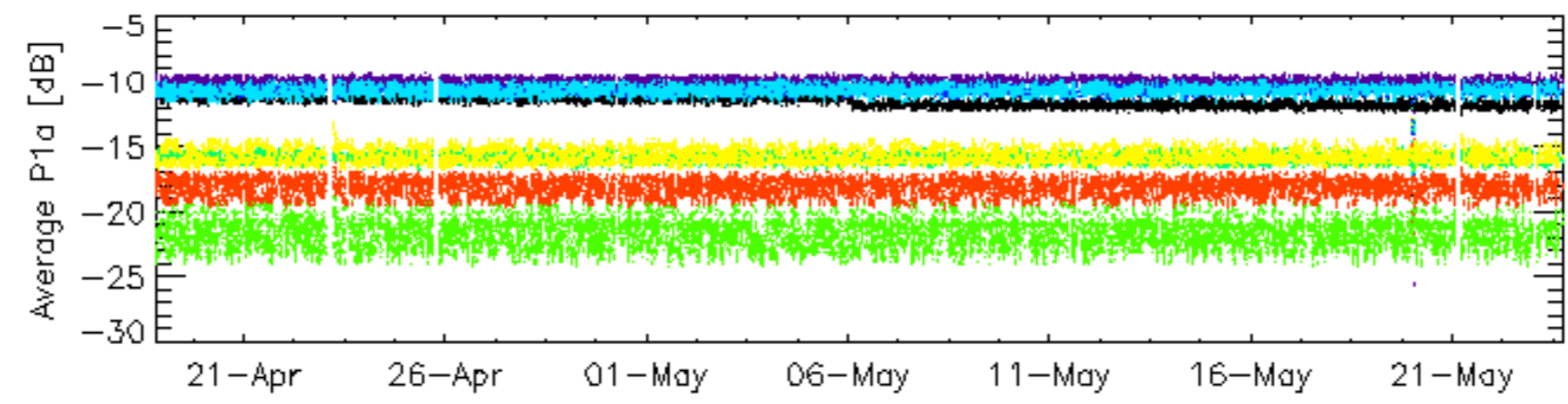
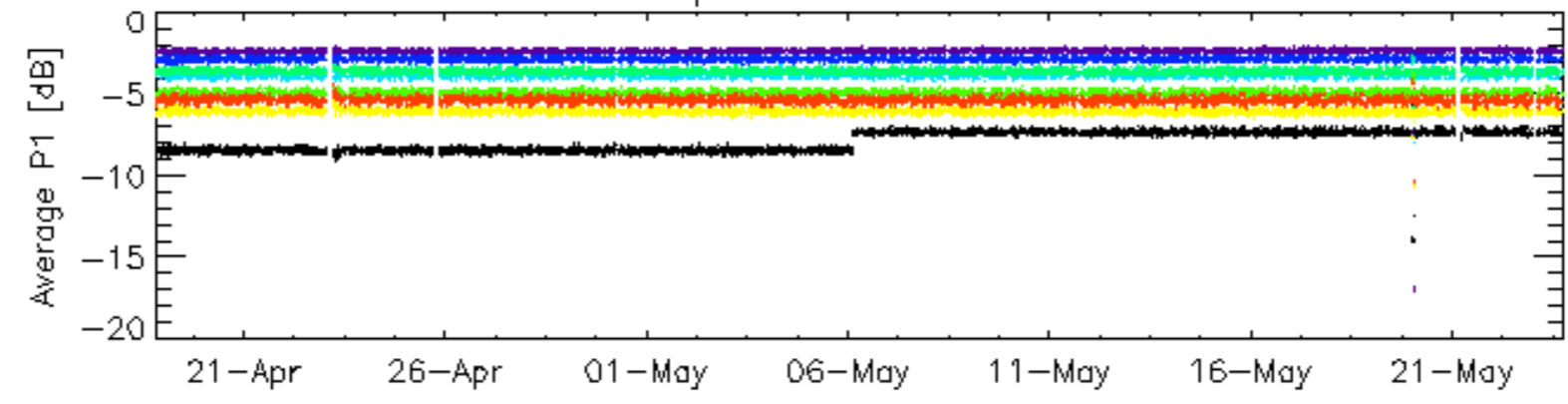


Cal pulses for WVS IS2



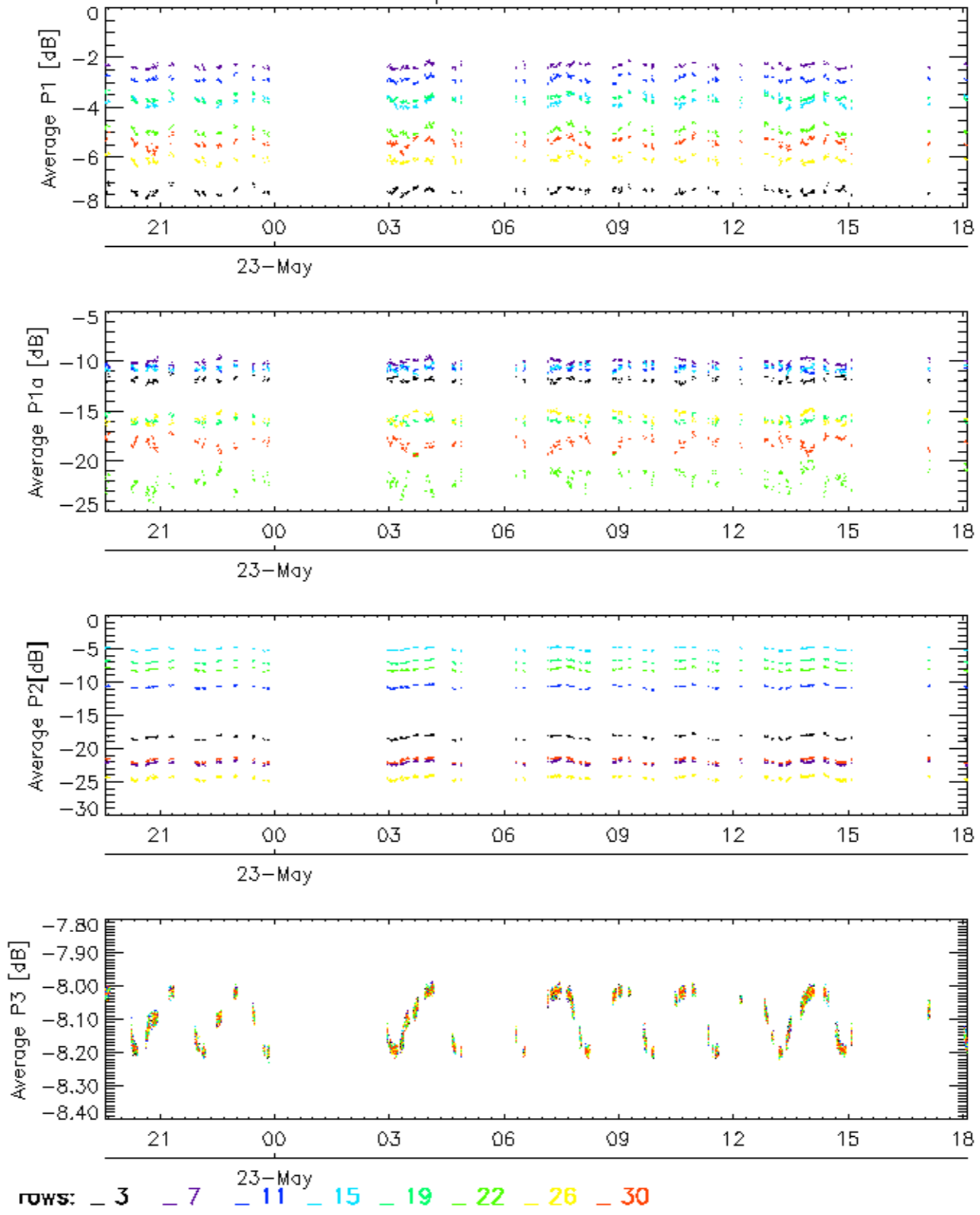
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

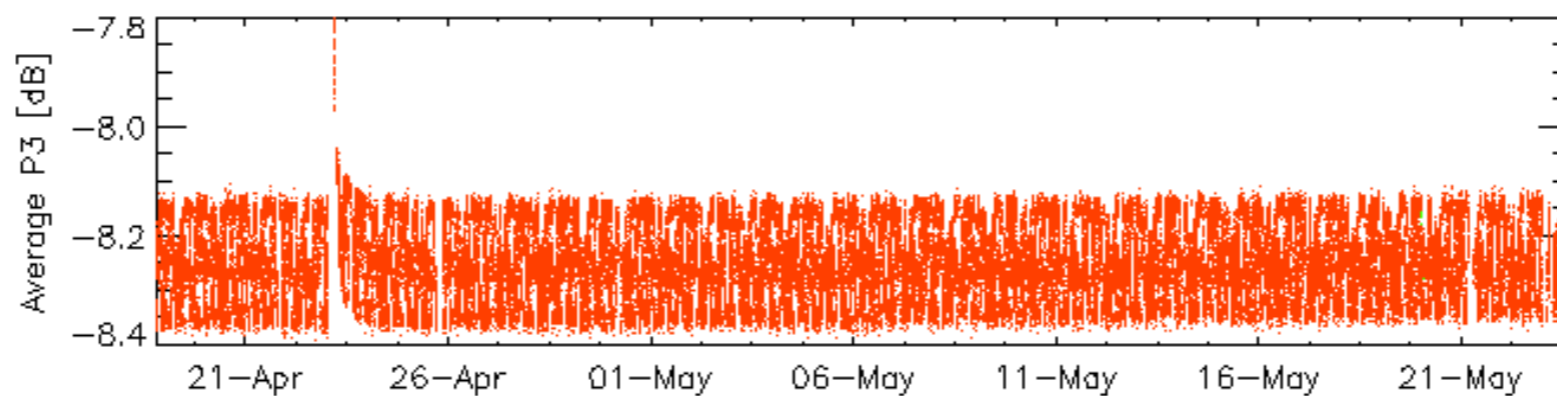
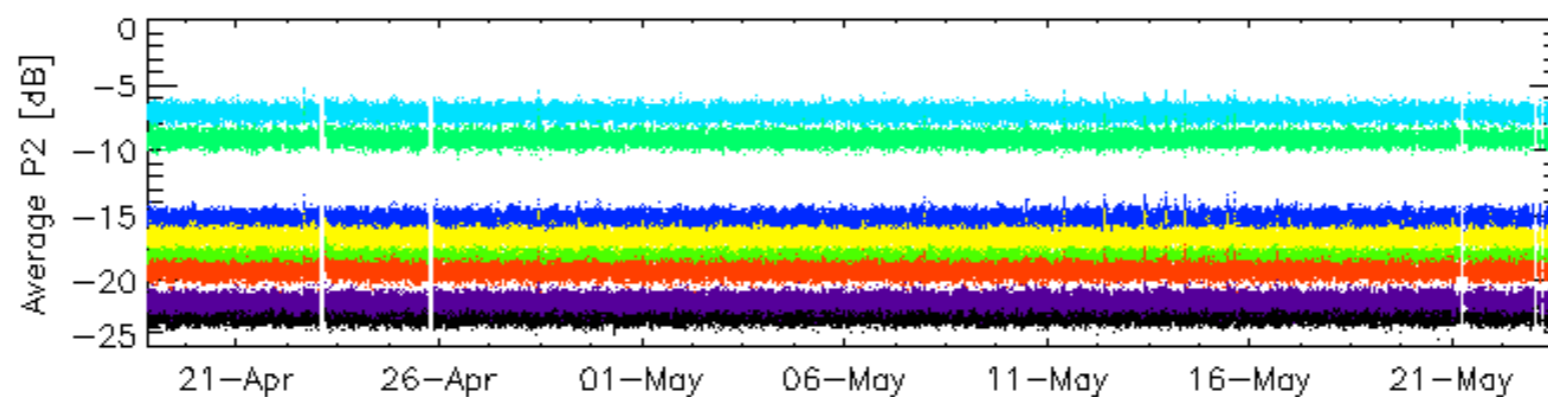
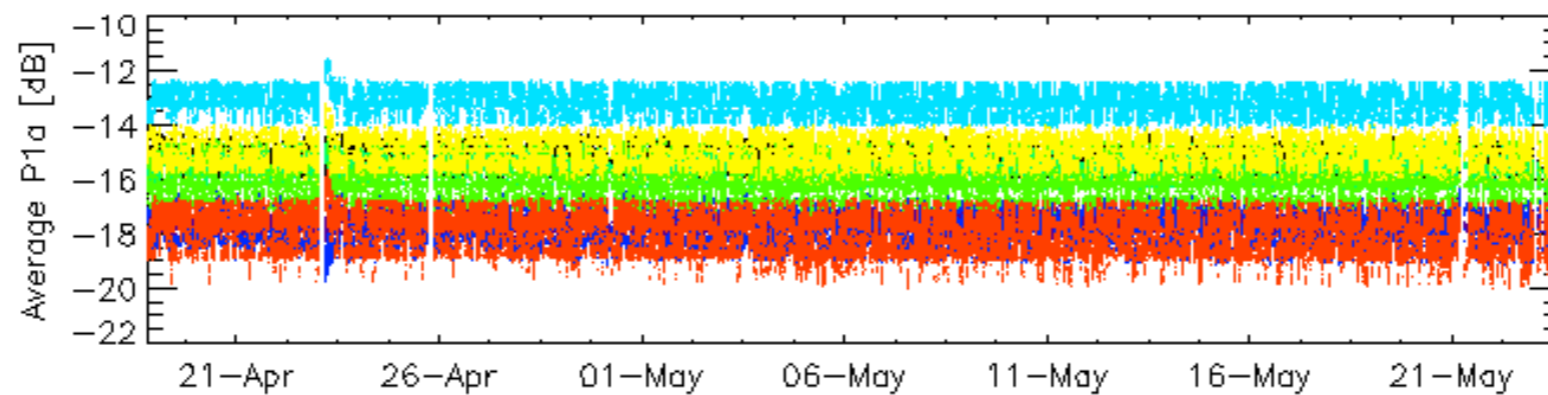
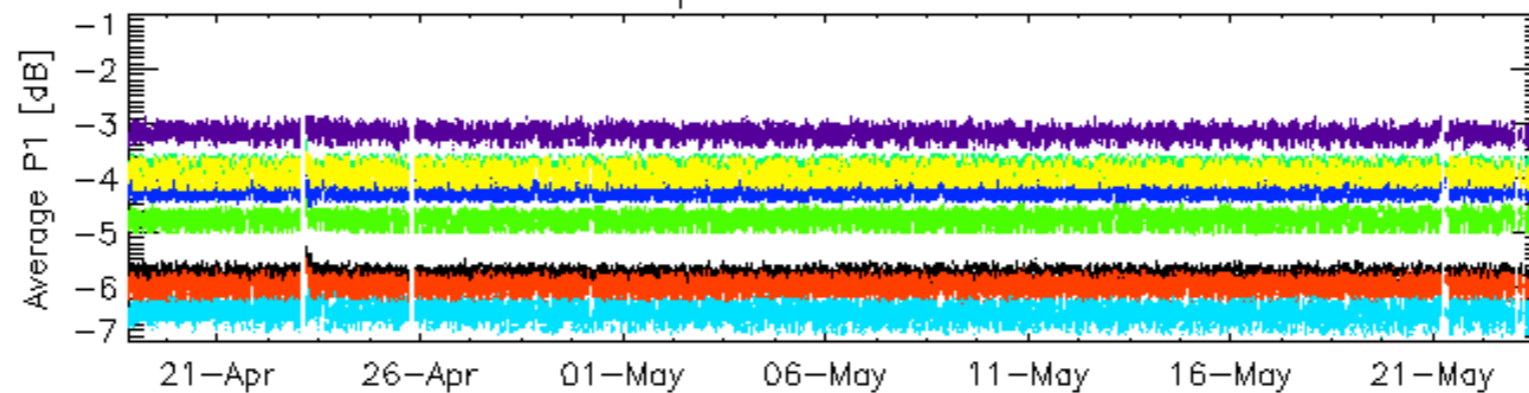


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

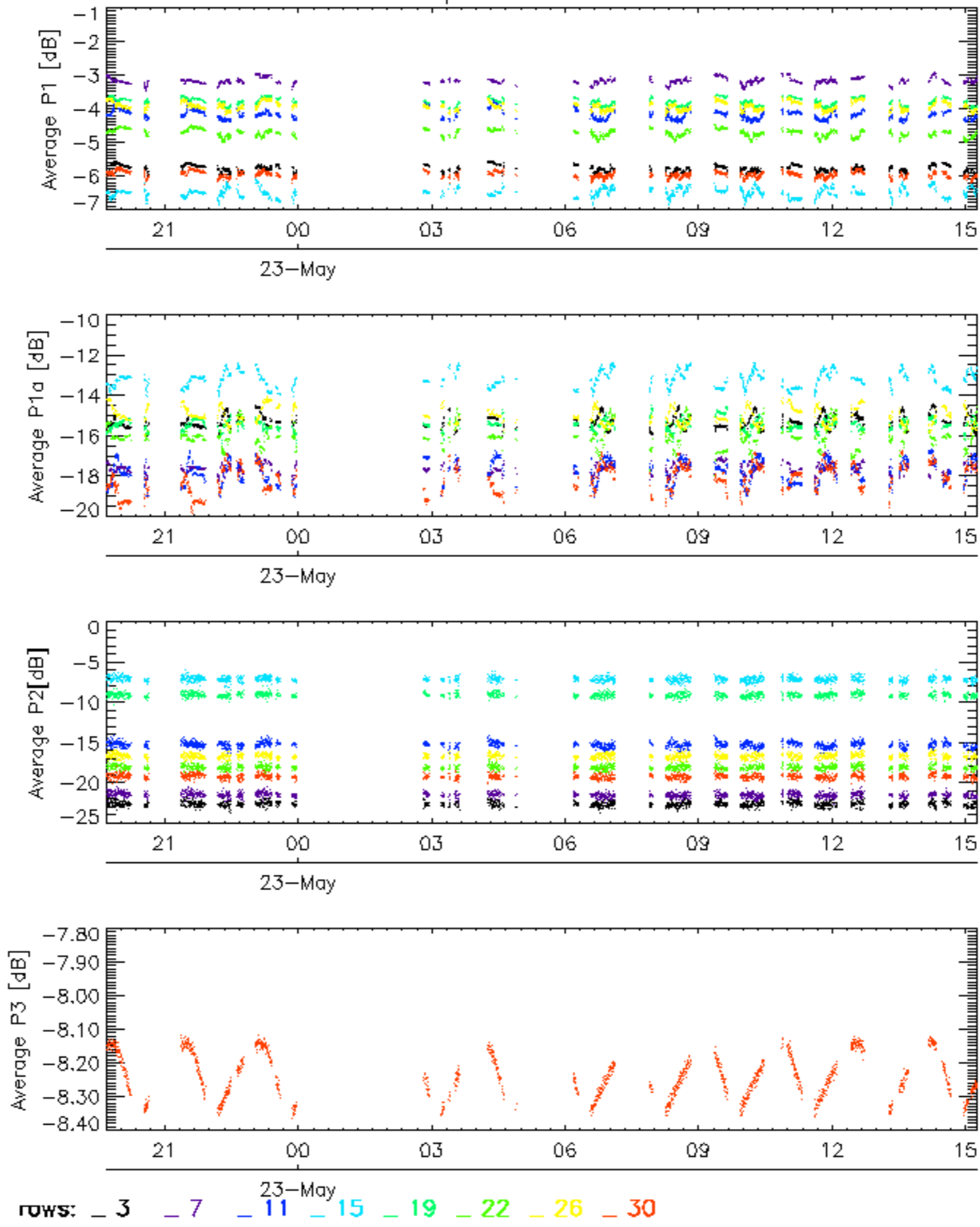


Cal pulses for WVS IS2



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

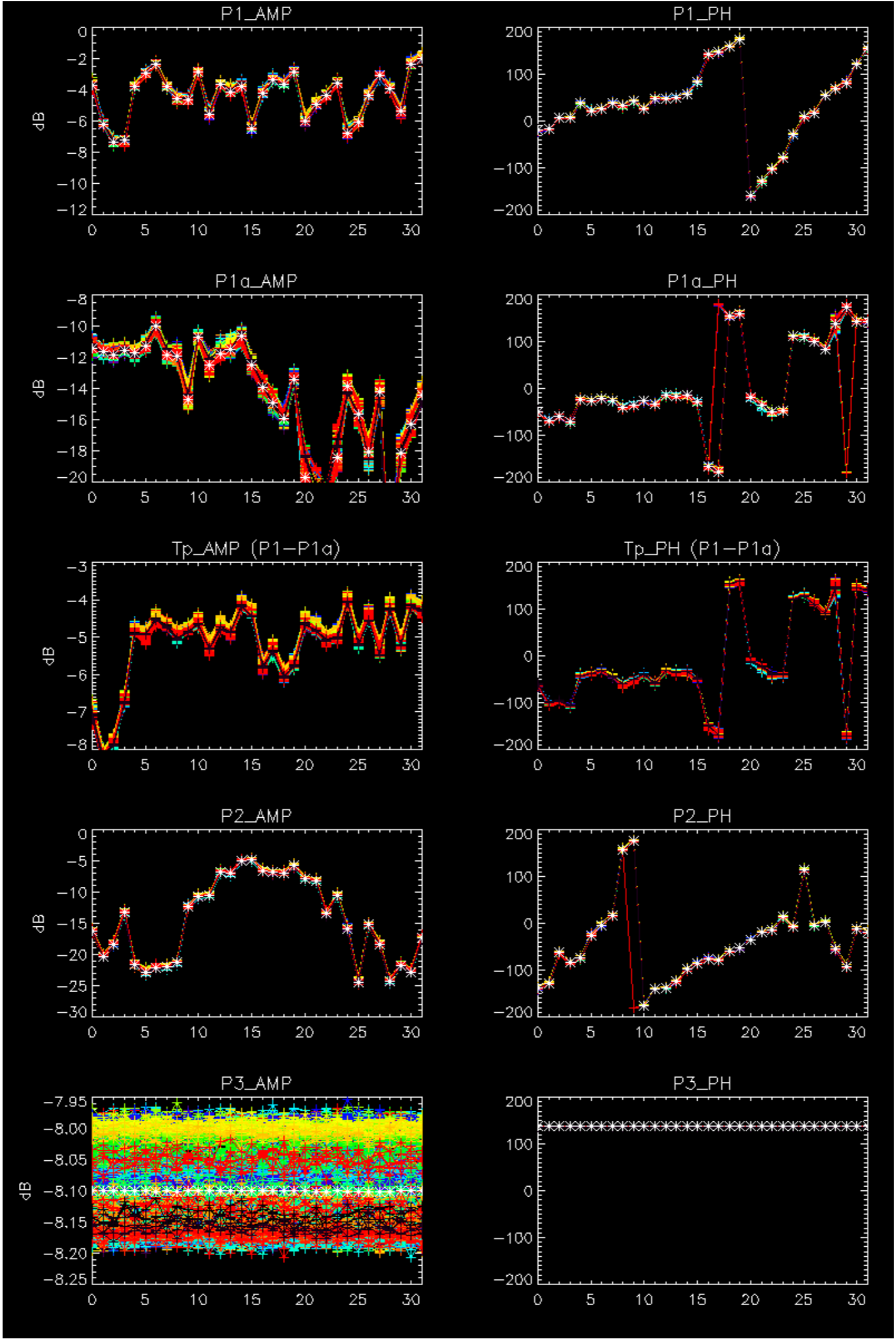
Cal pulses for WVS IS2

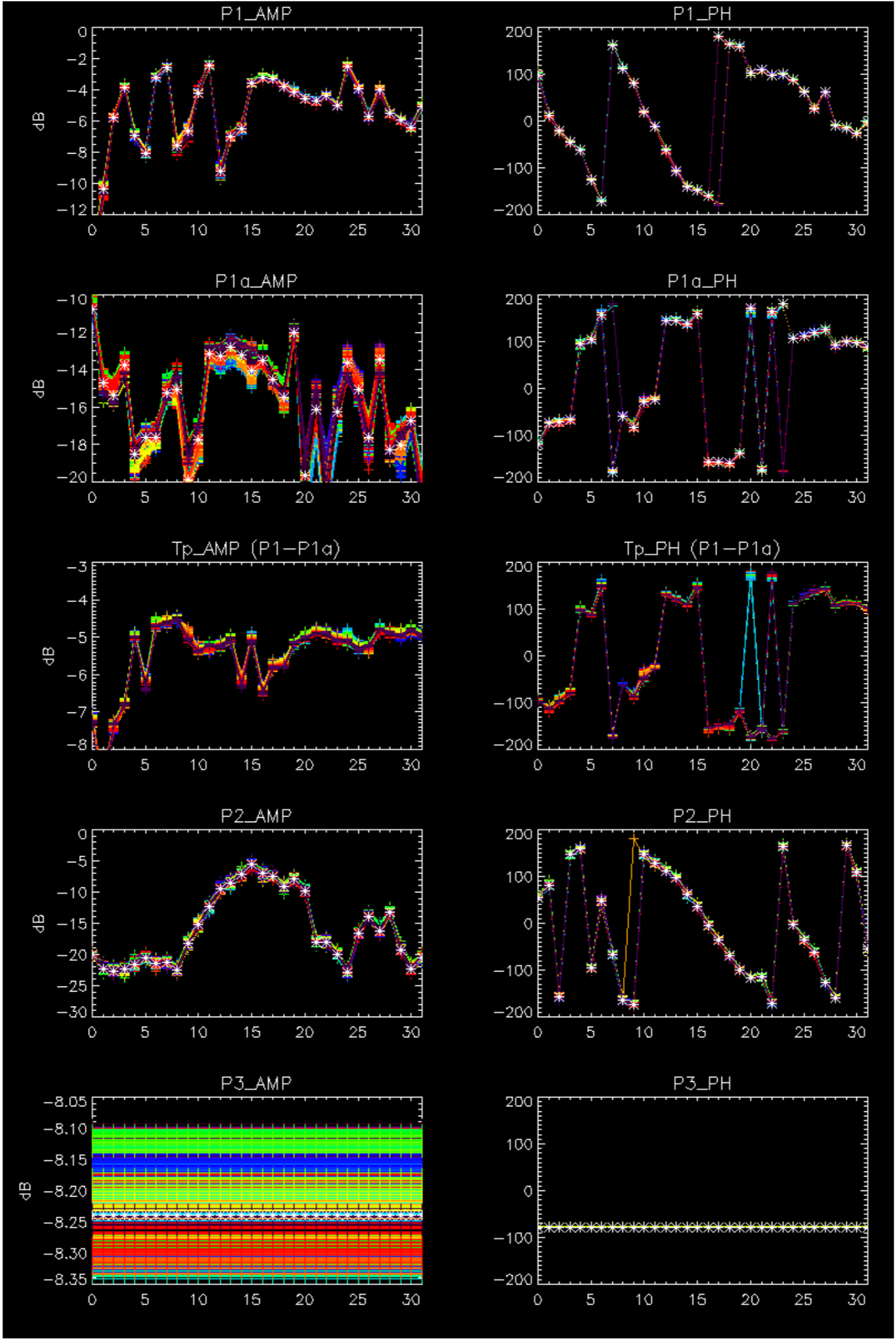


No anomalies observed on available browse products



No anomalies observed.

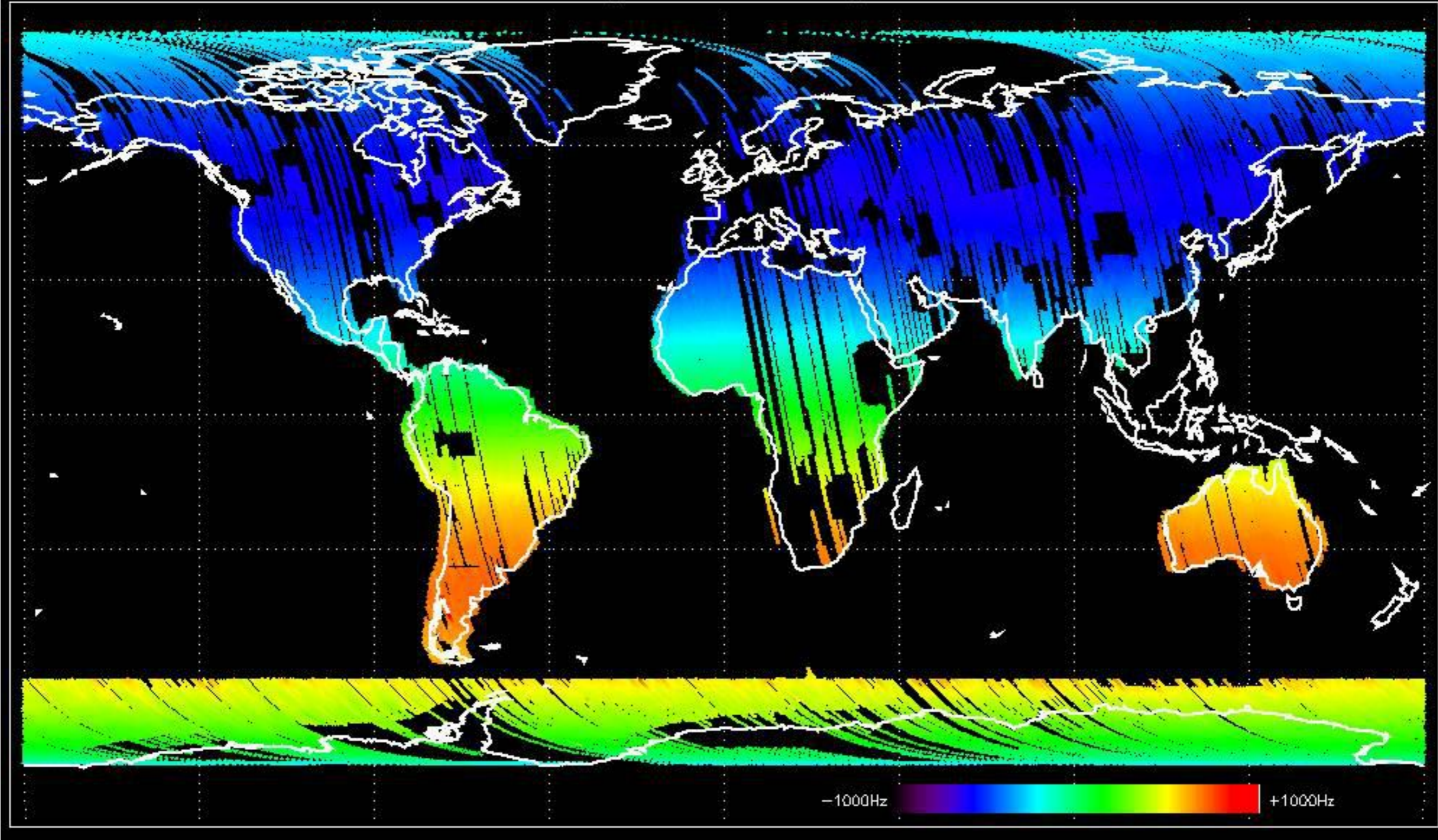




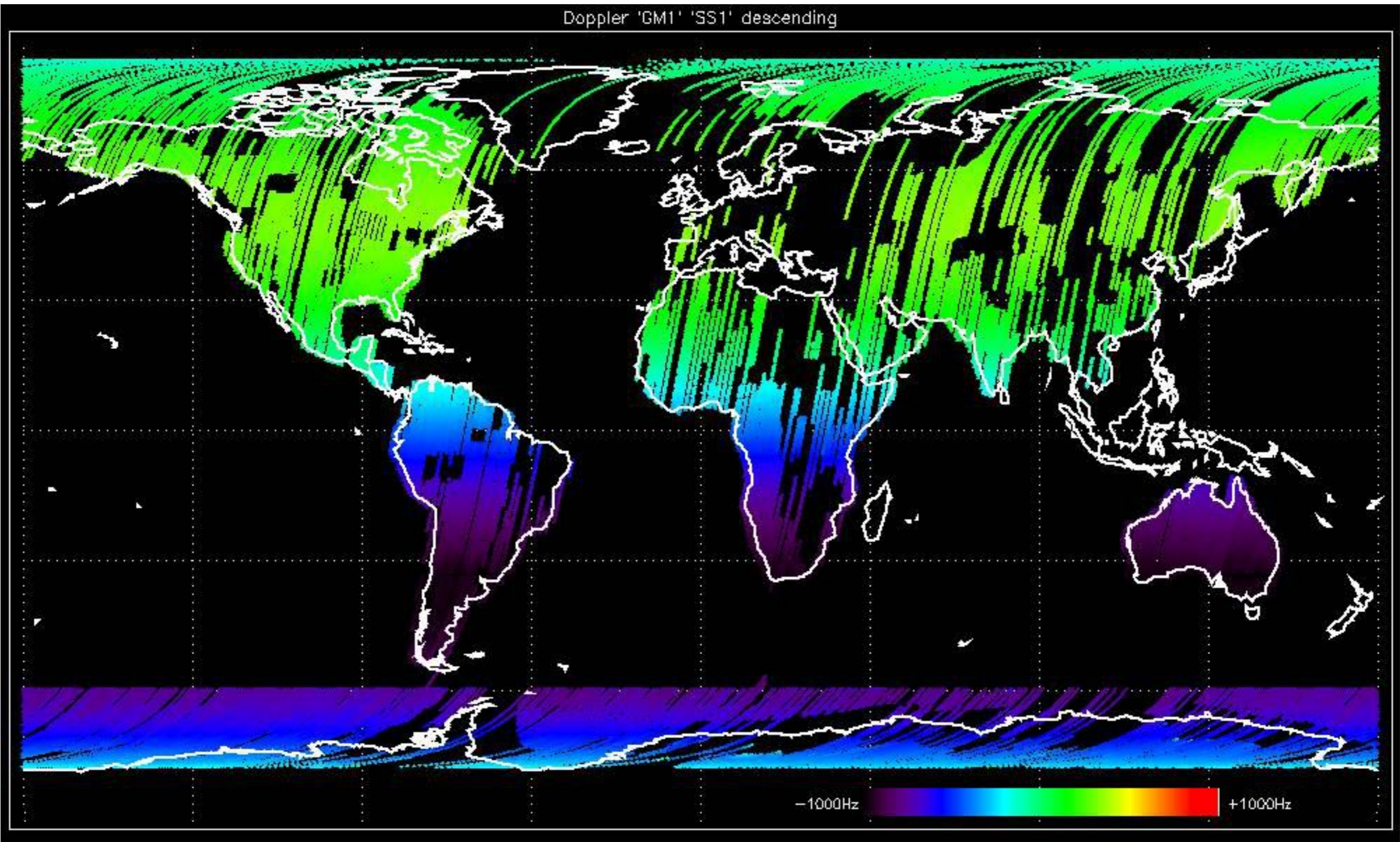
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



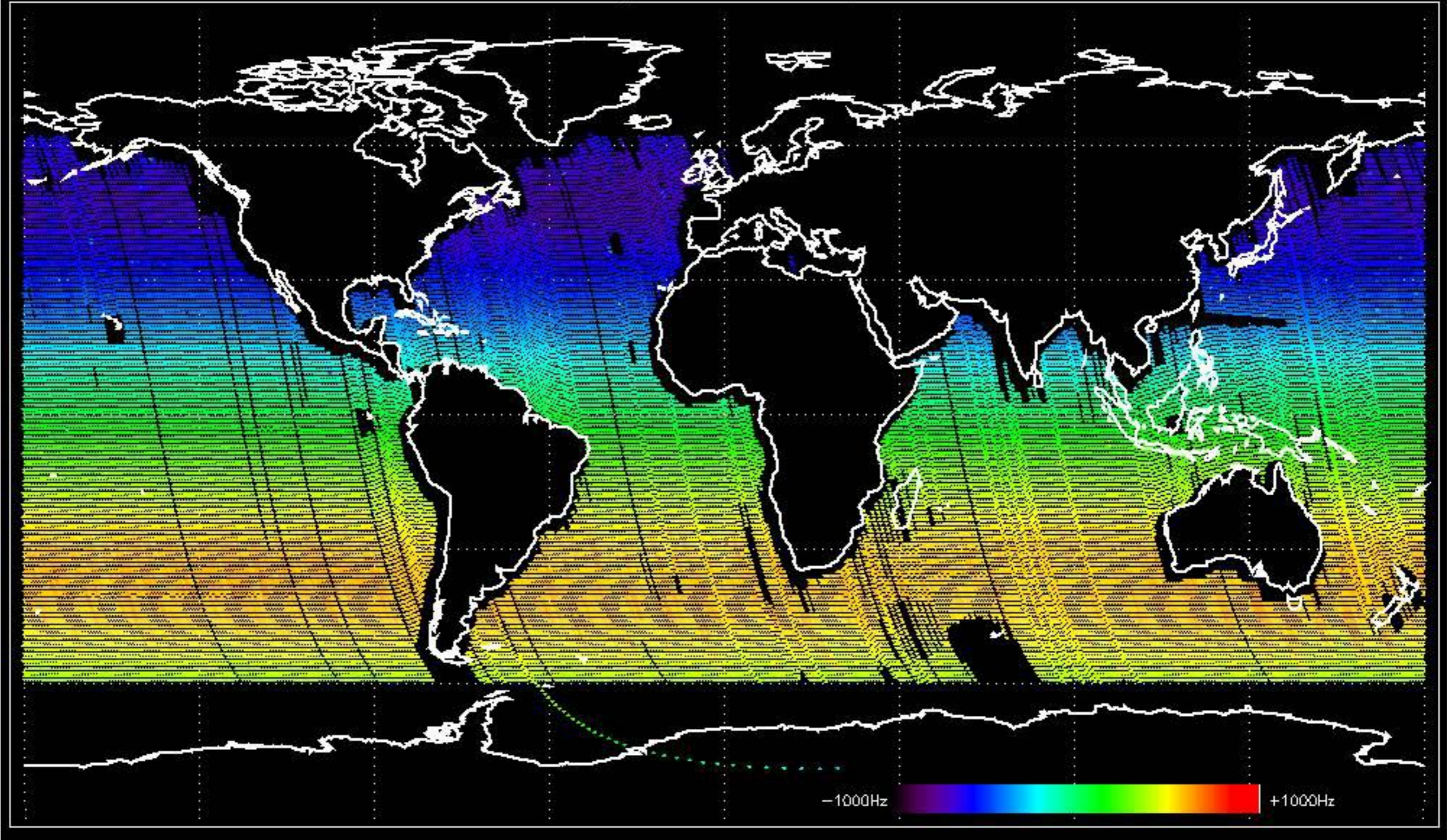
Doppler 'GM1' 'SS1' ascending



Doppler 'GM1' 'SS1' descending

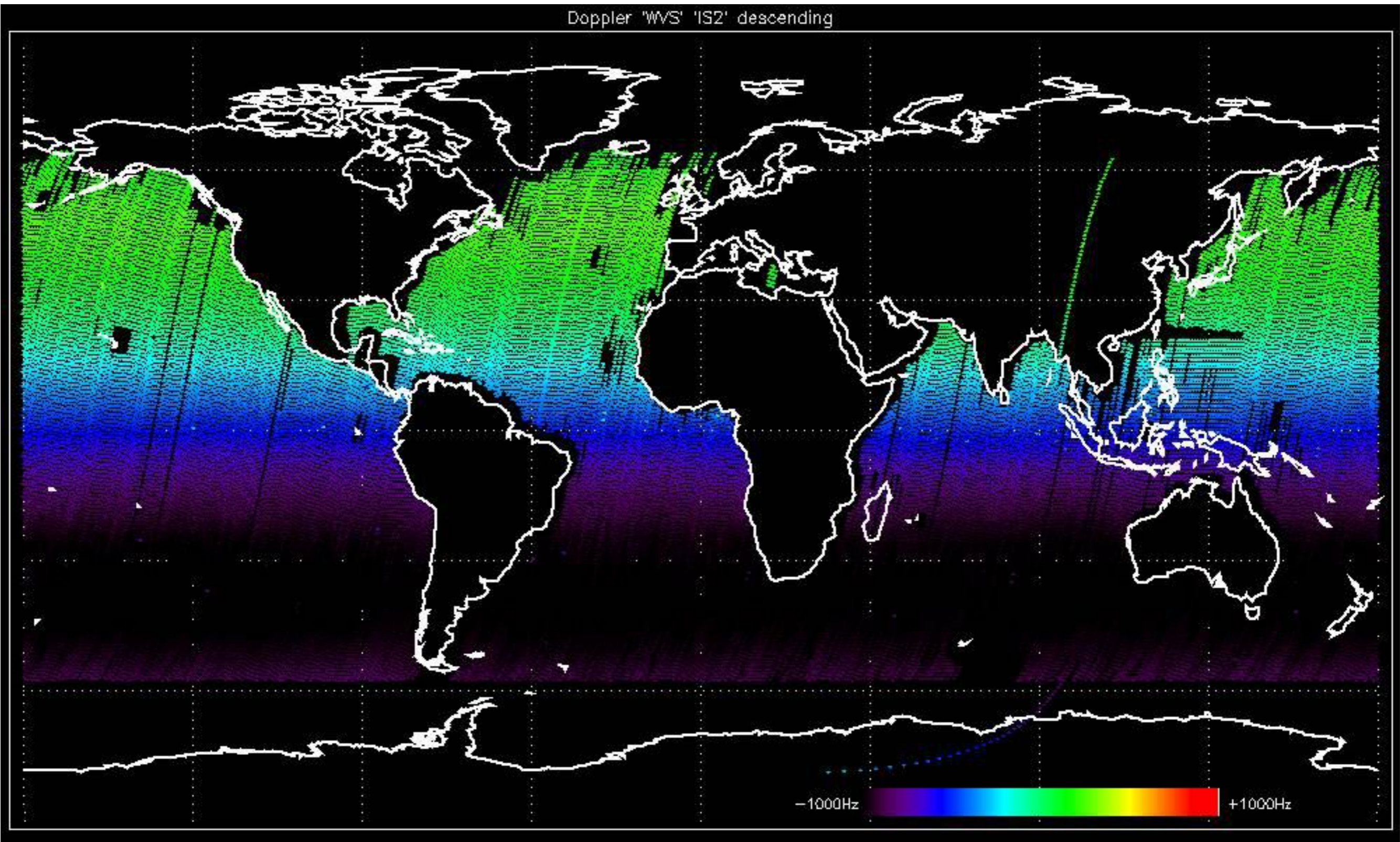


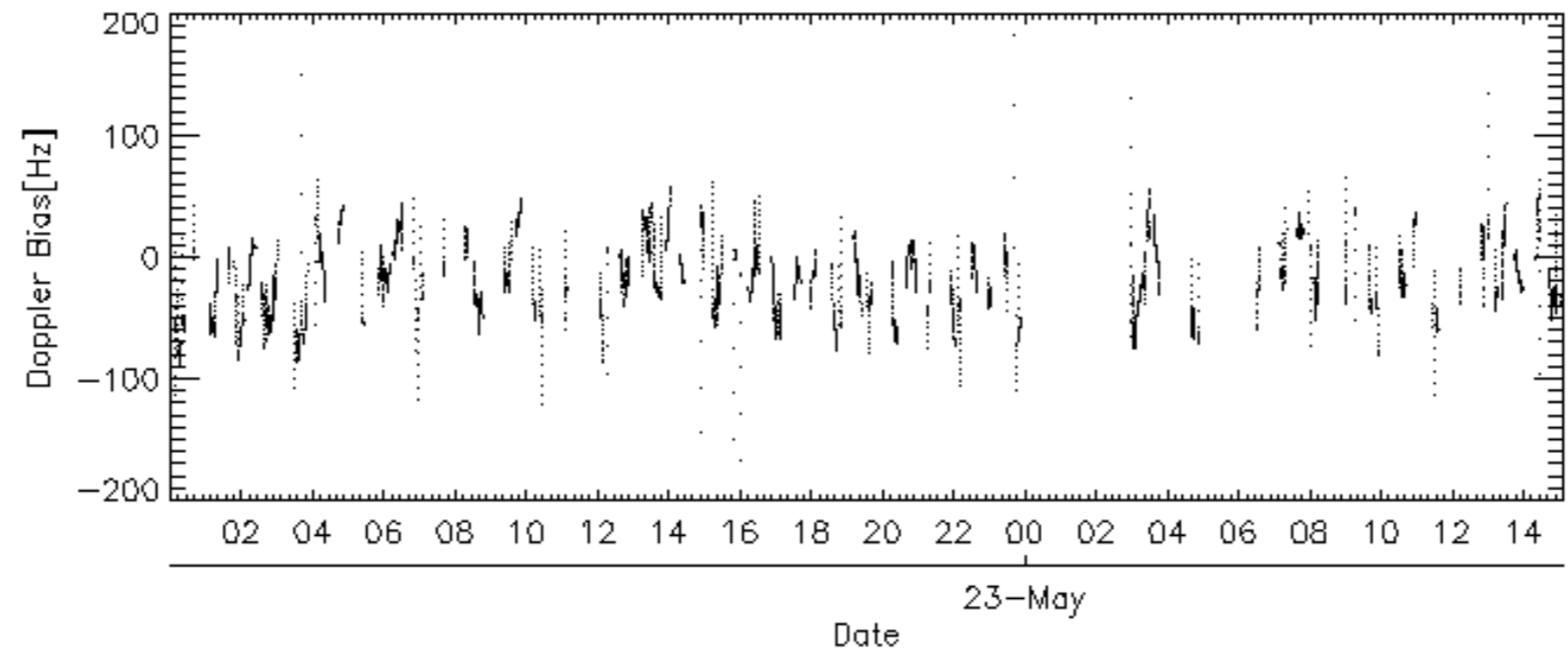
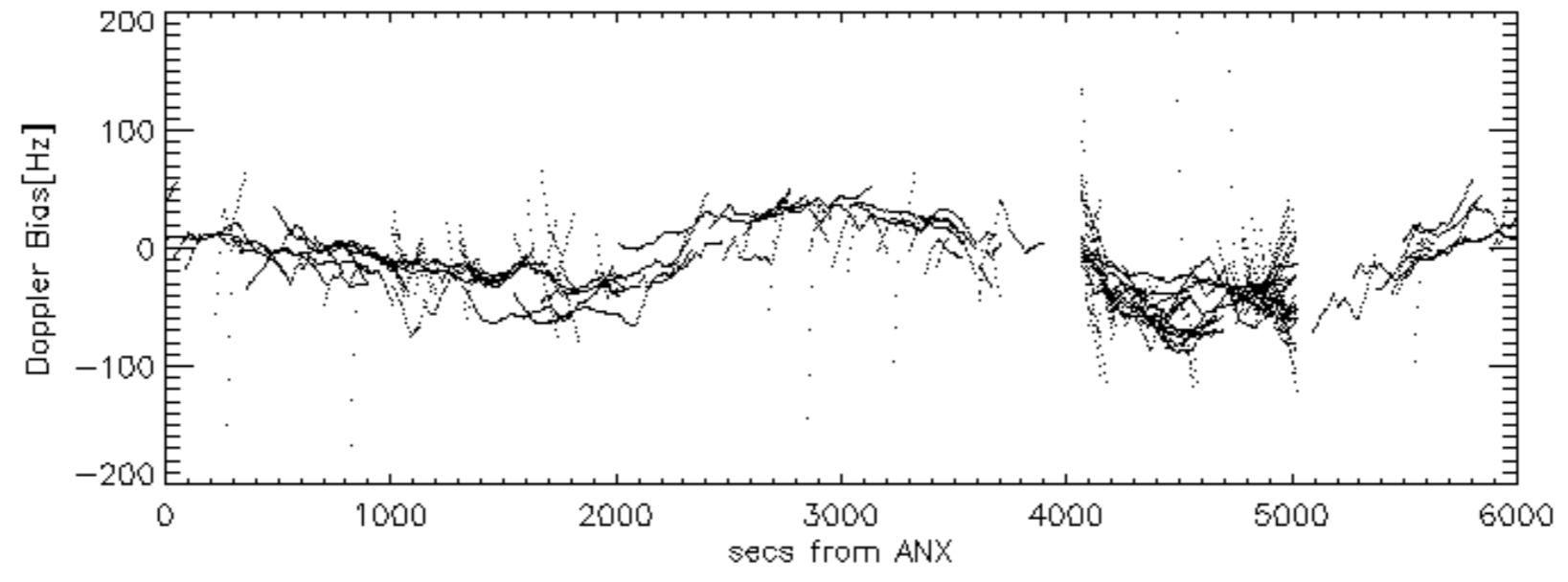
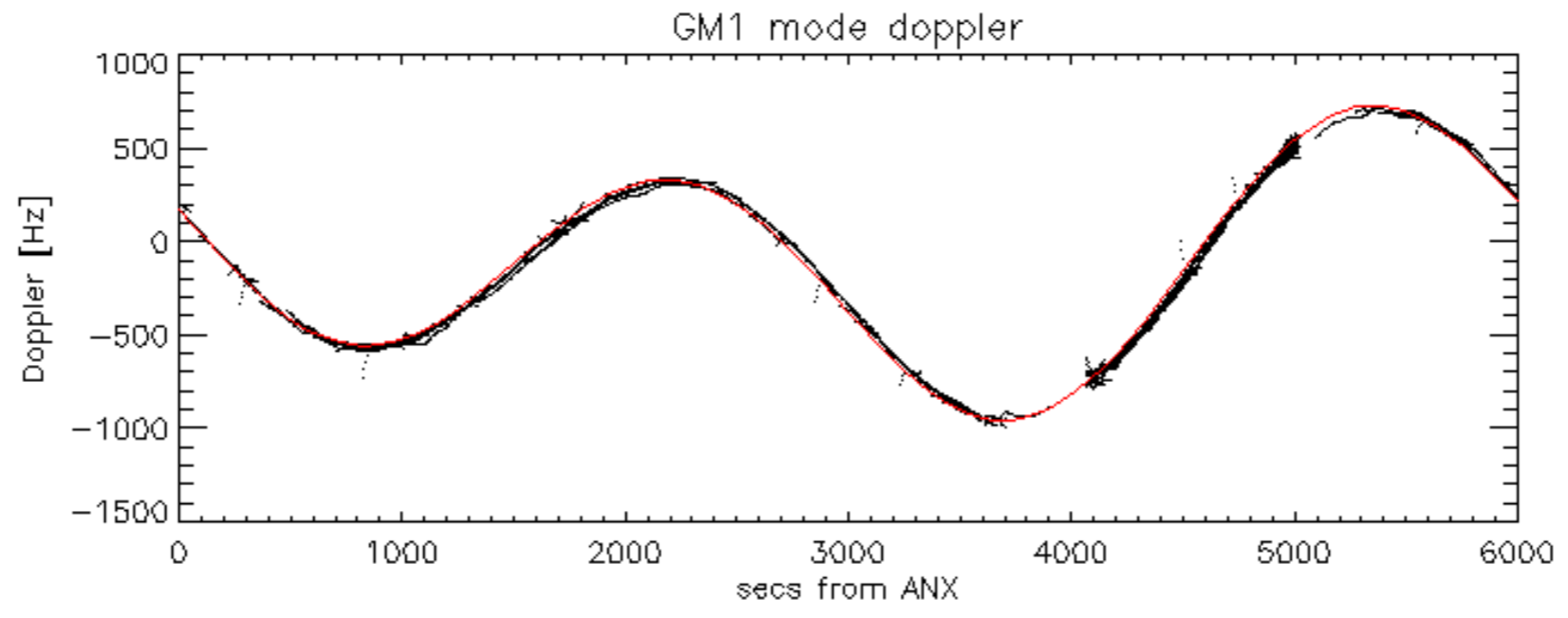
Doppler 'WVS' 'IS2' ascending

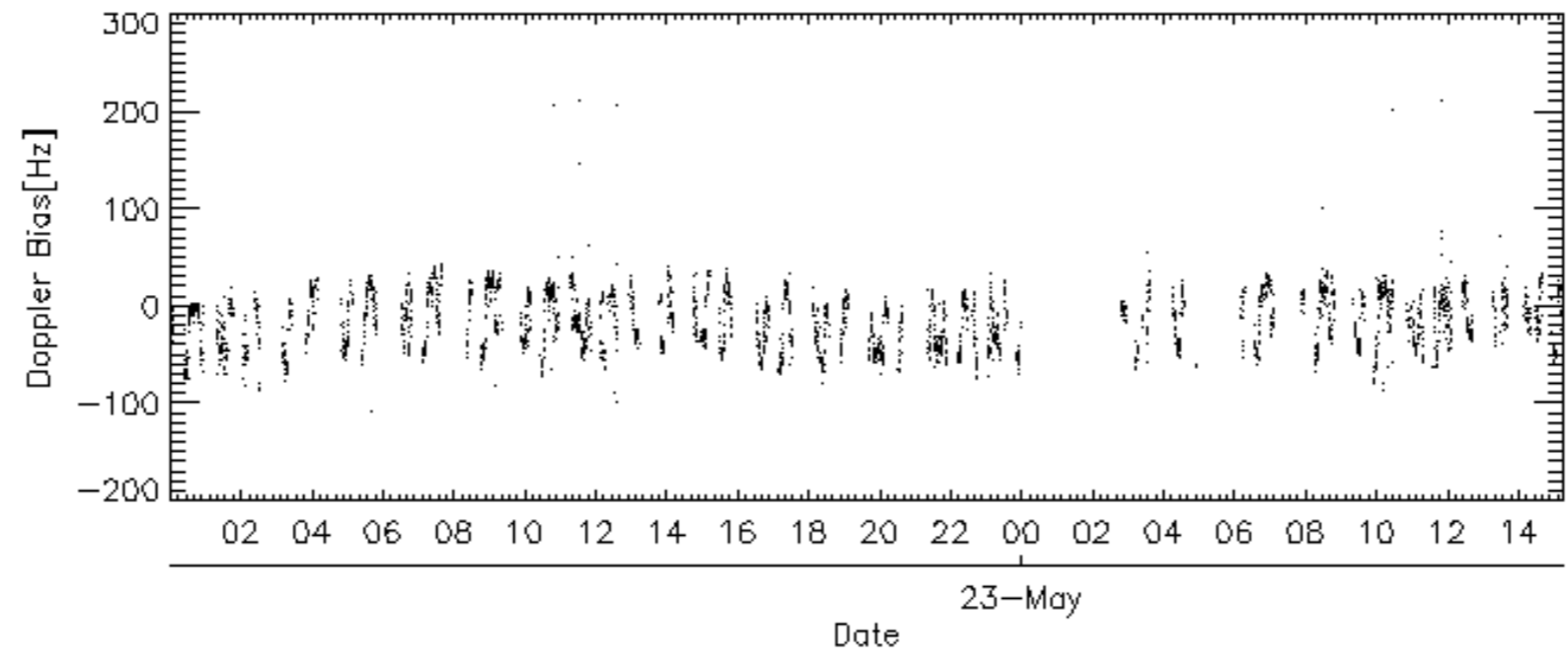
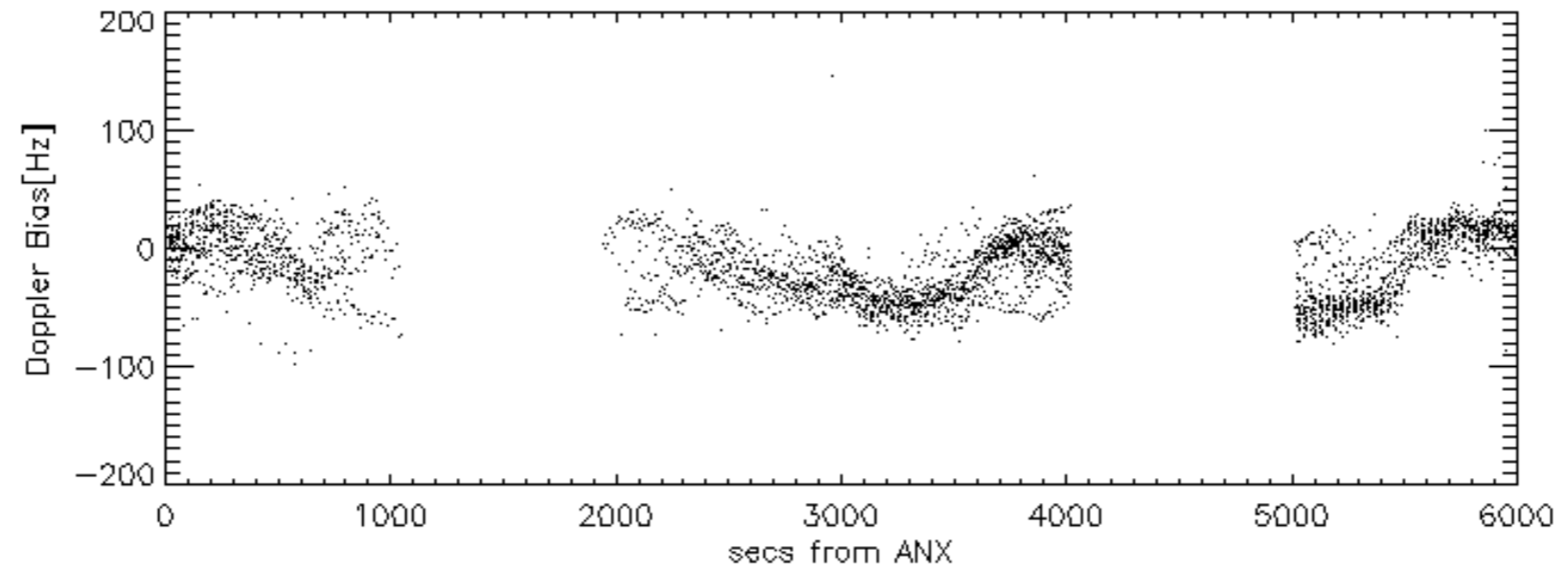
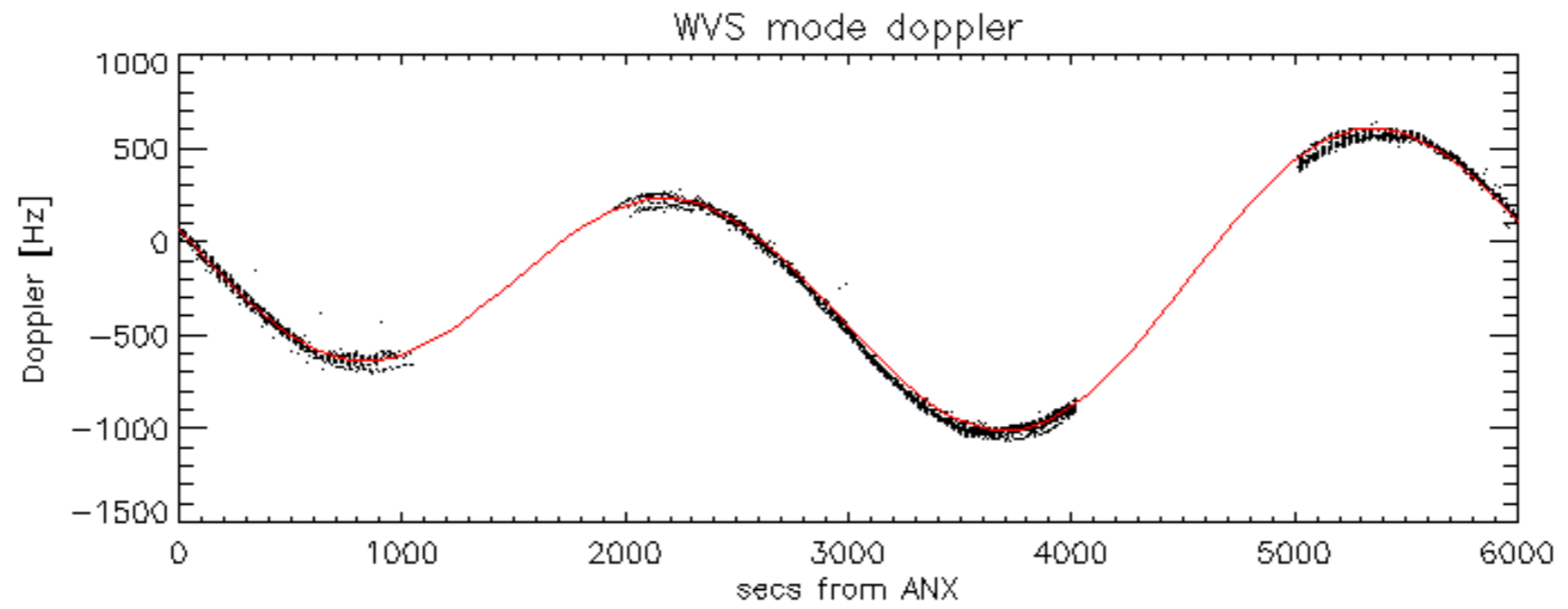




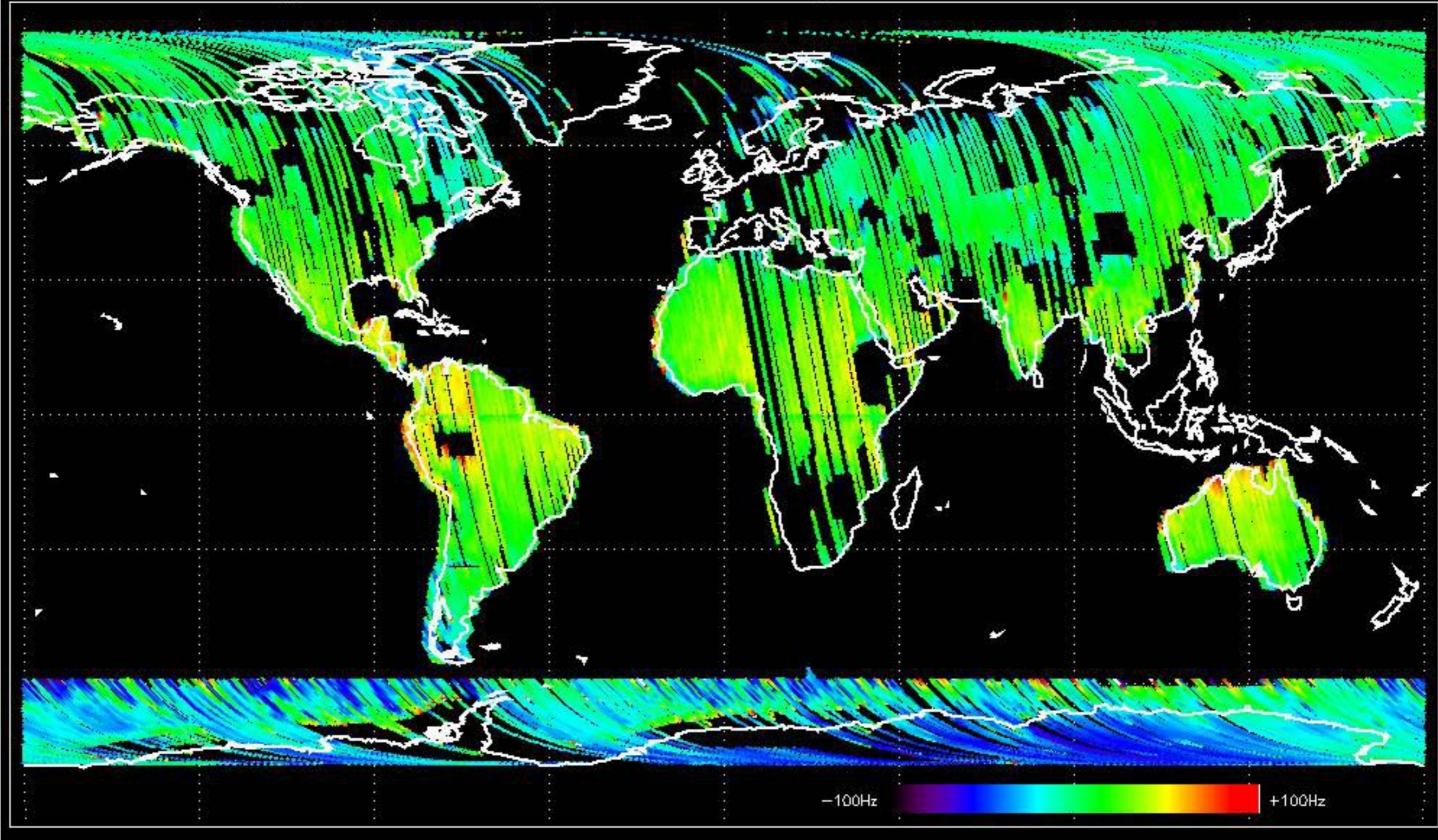
Doppler 'WVS' 'IS2' descending



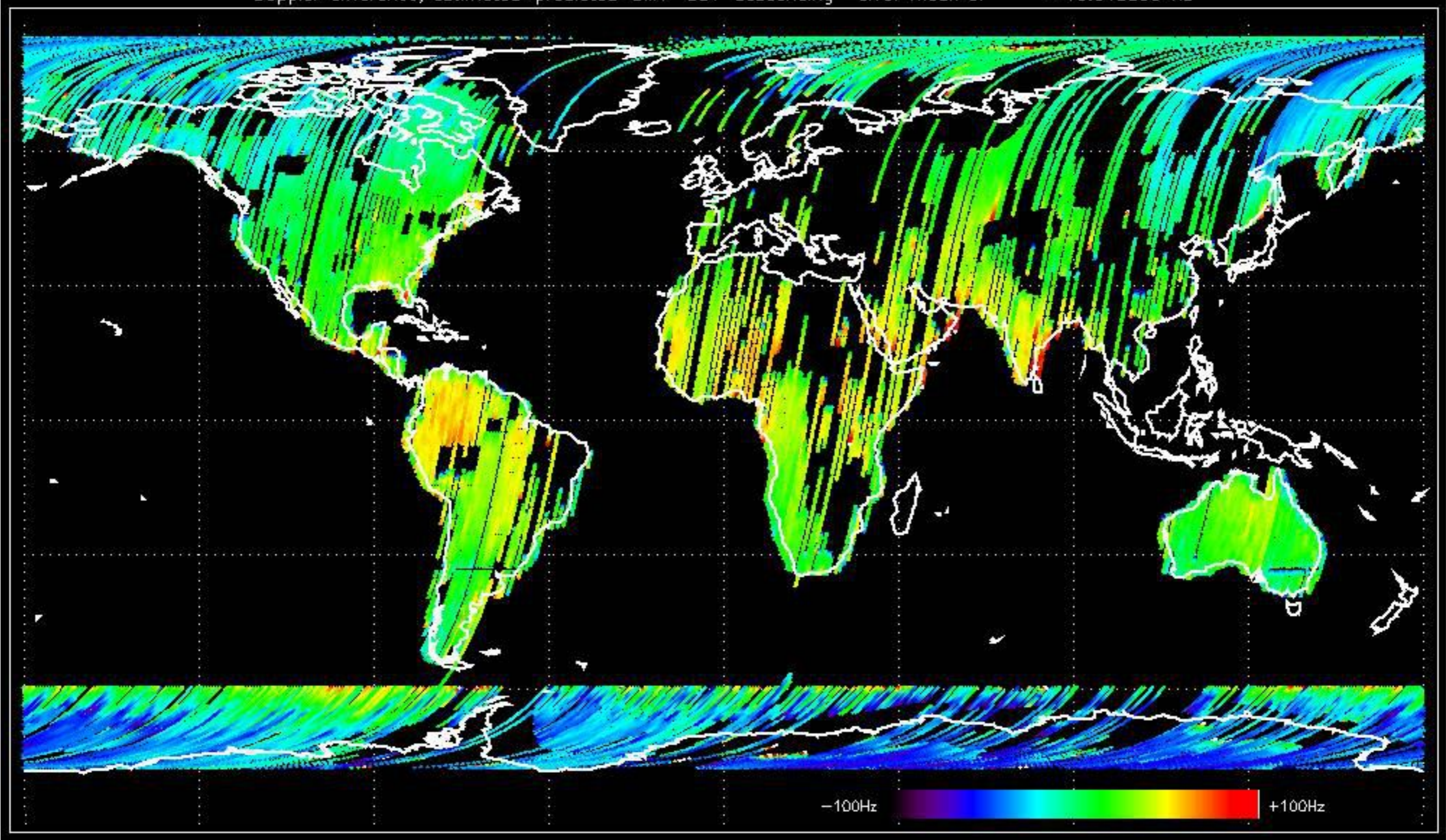




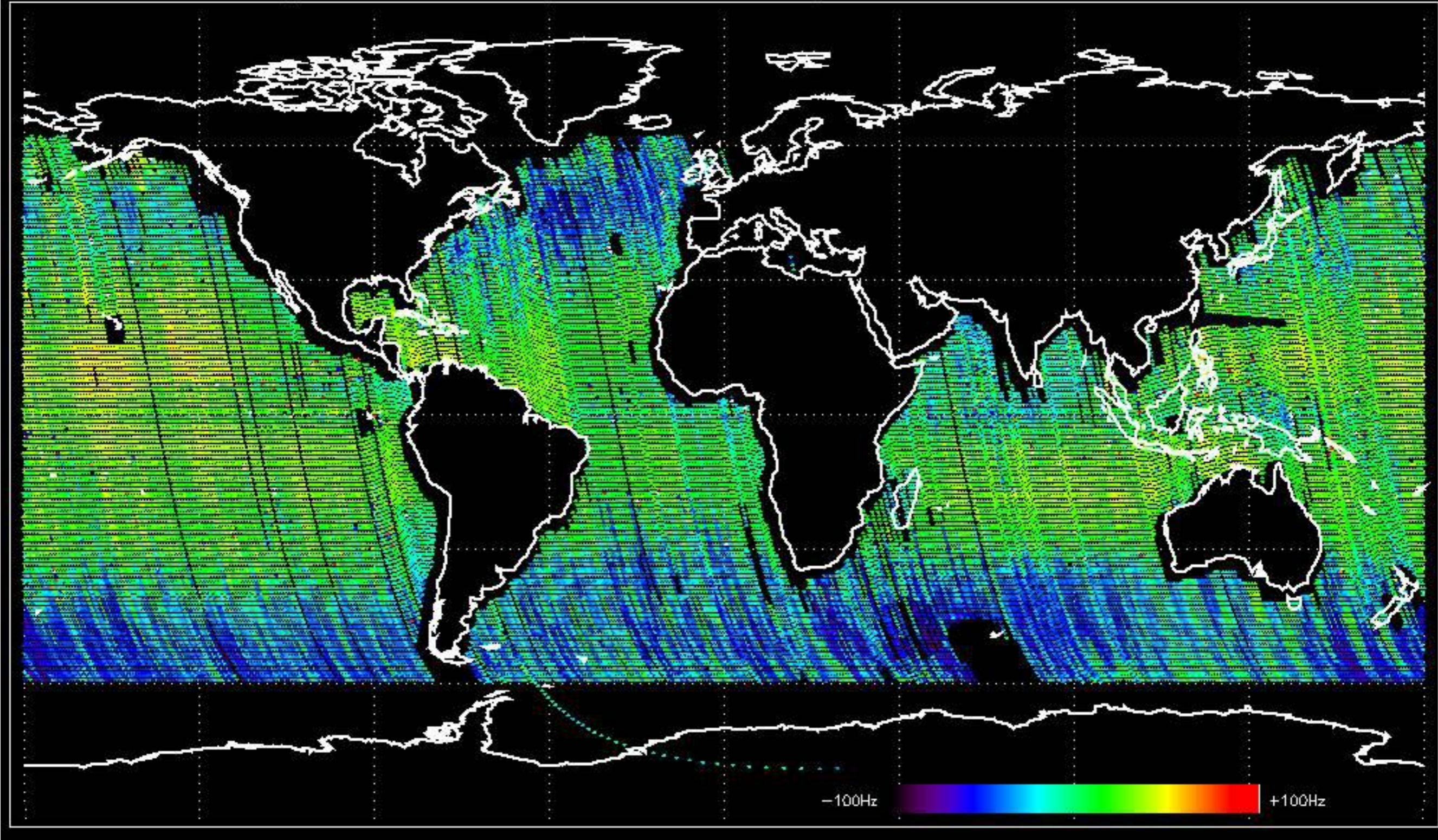
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -22.076958 Hz



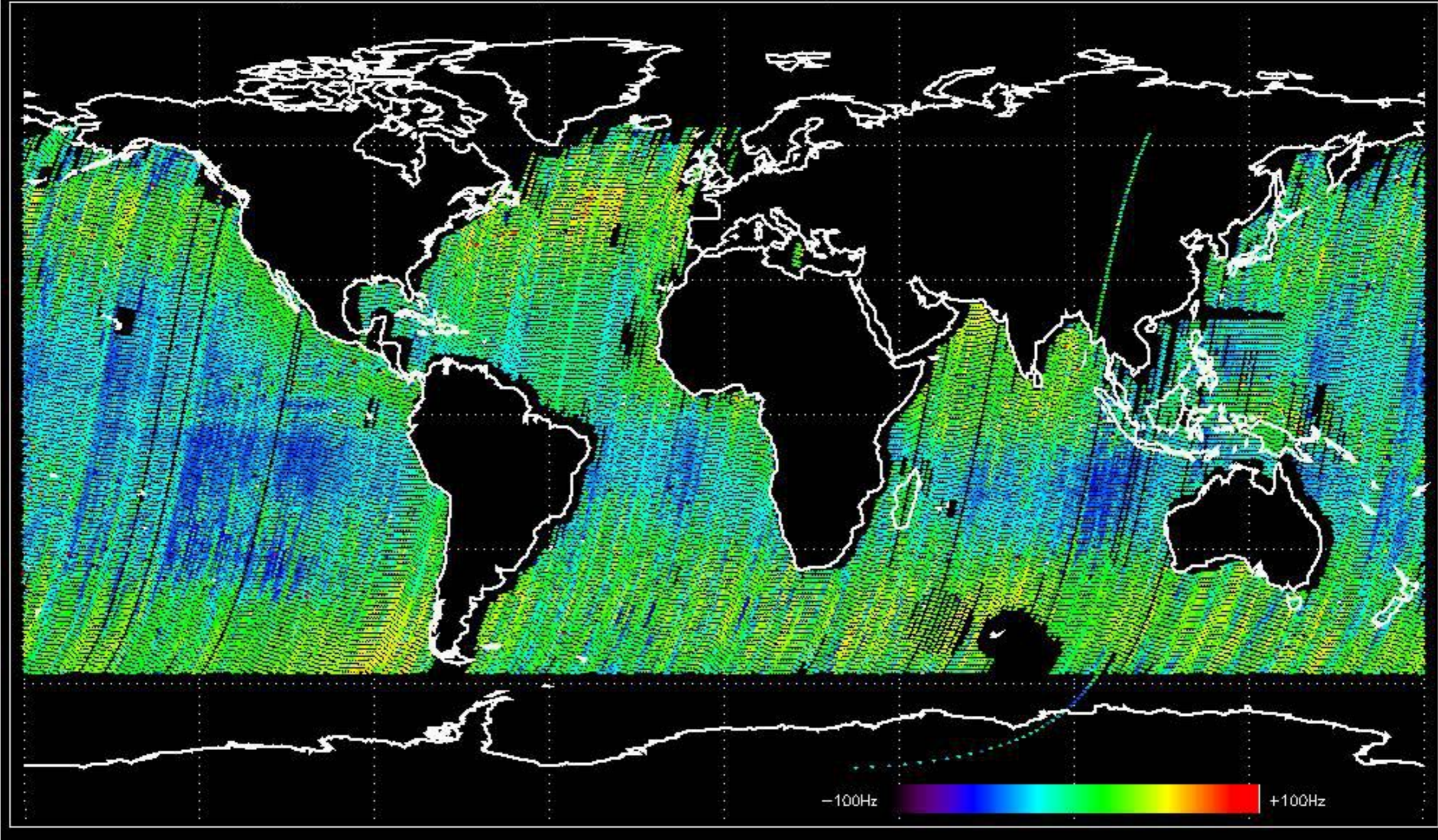
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -15.615399 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -14.627138 Hz



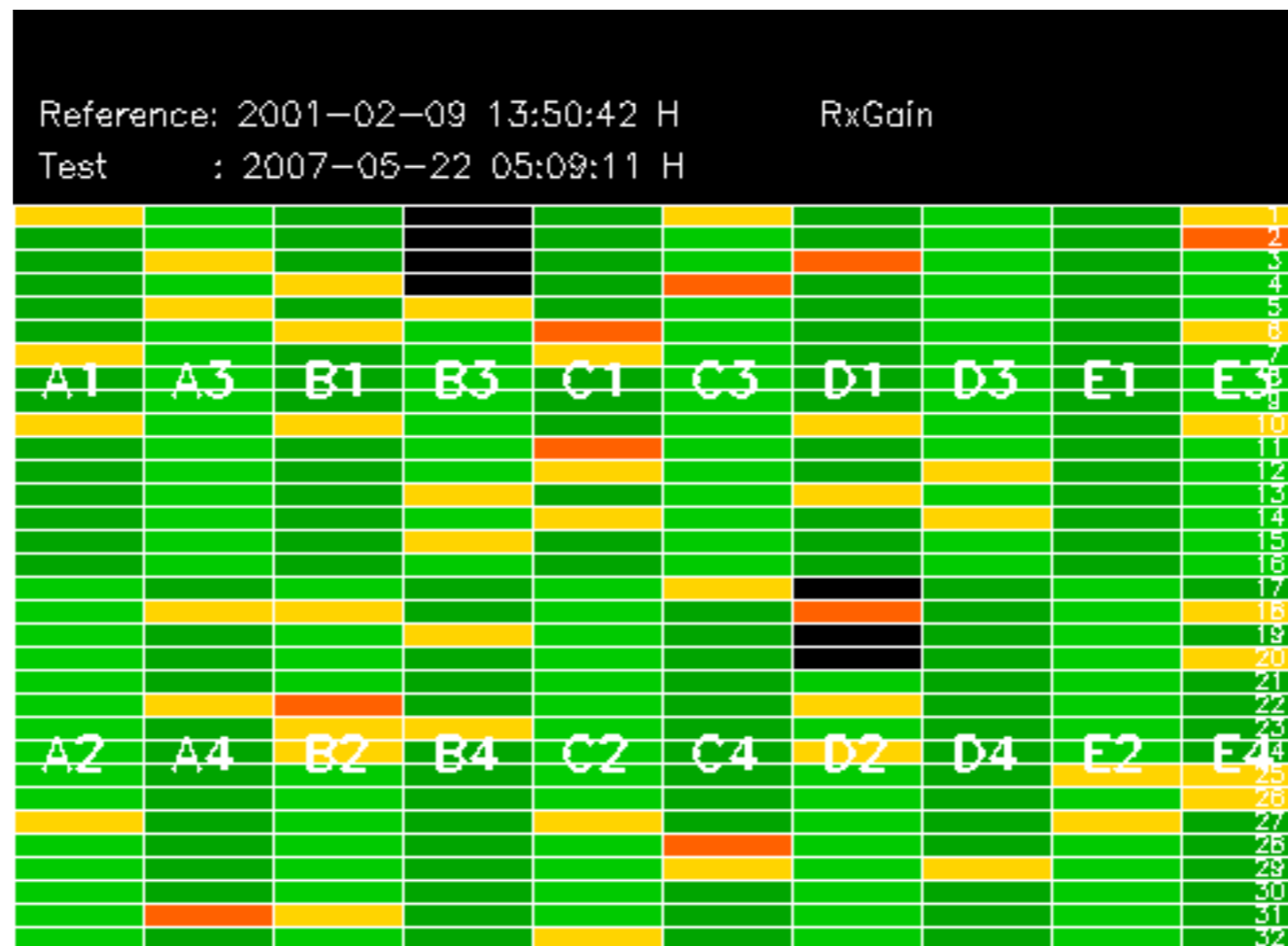
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -21.790121 Hz



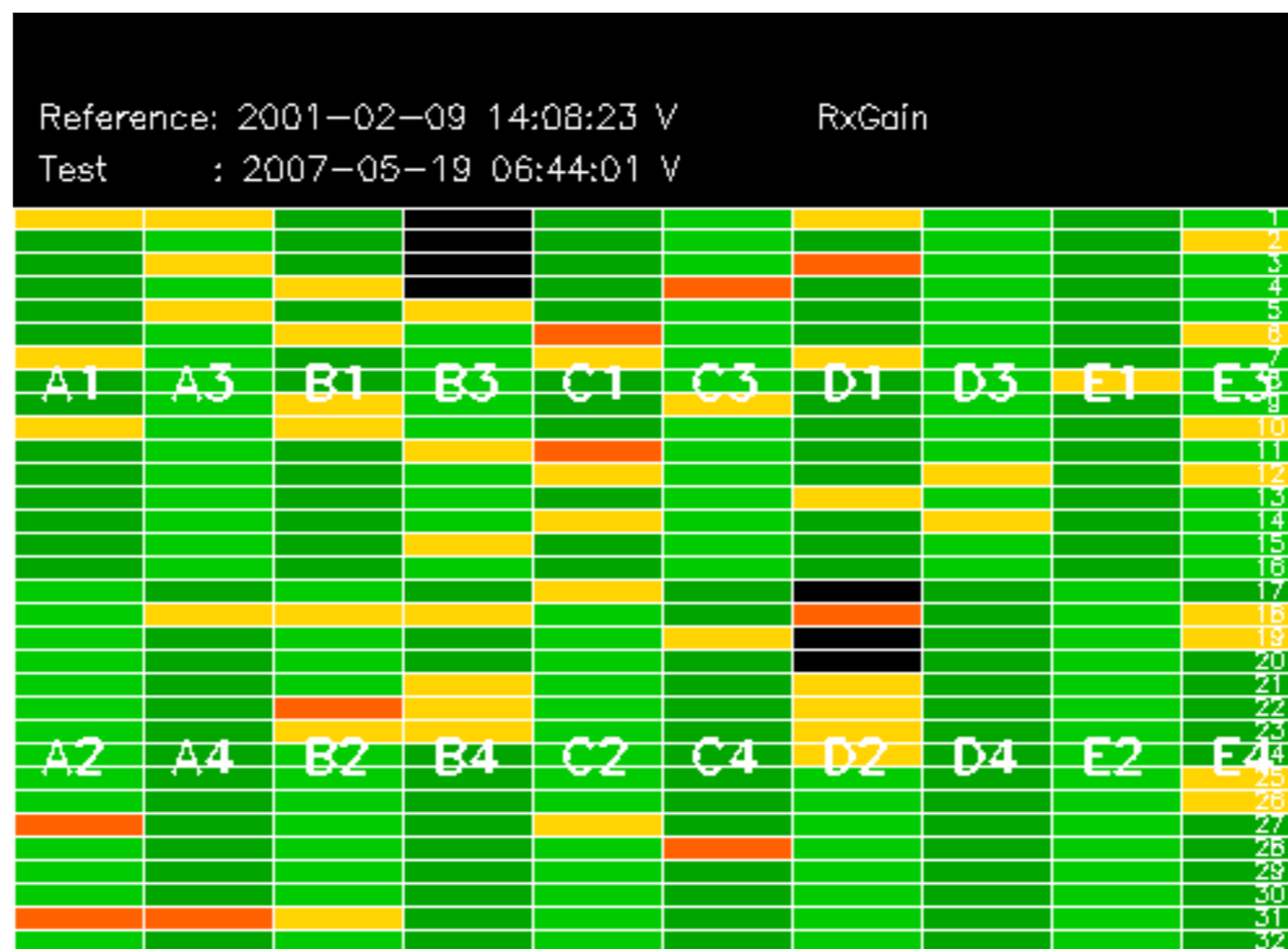
No anomalies observed on available MS products:



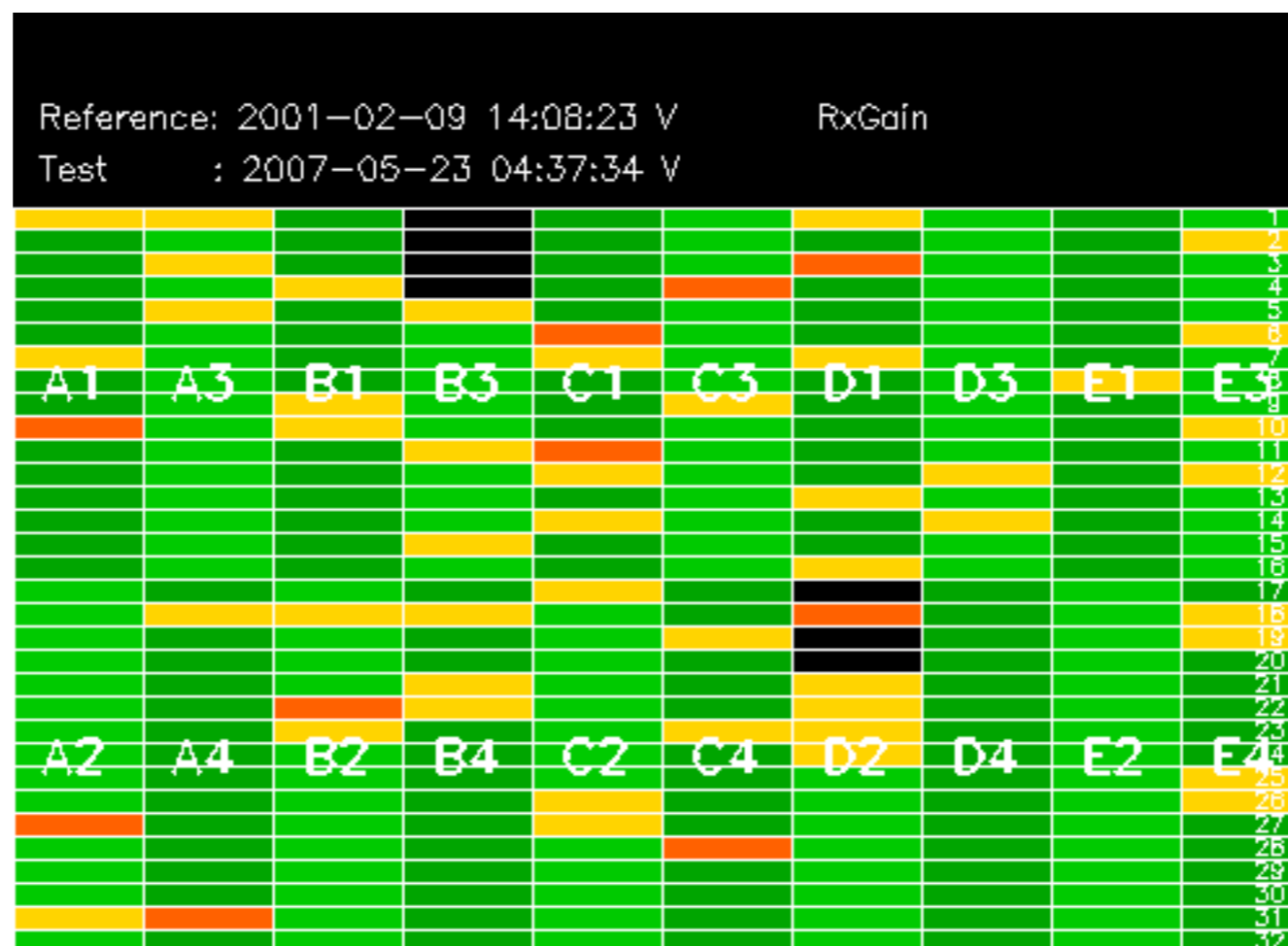
No anomalies observed.



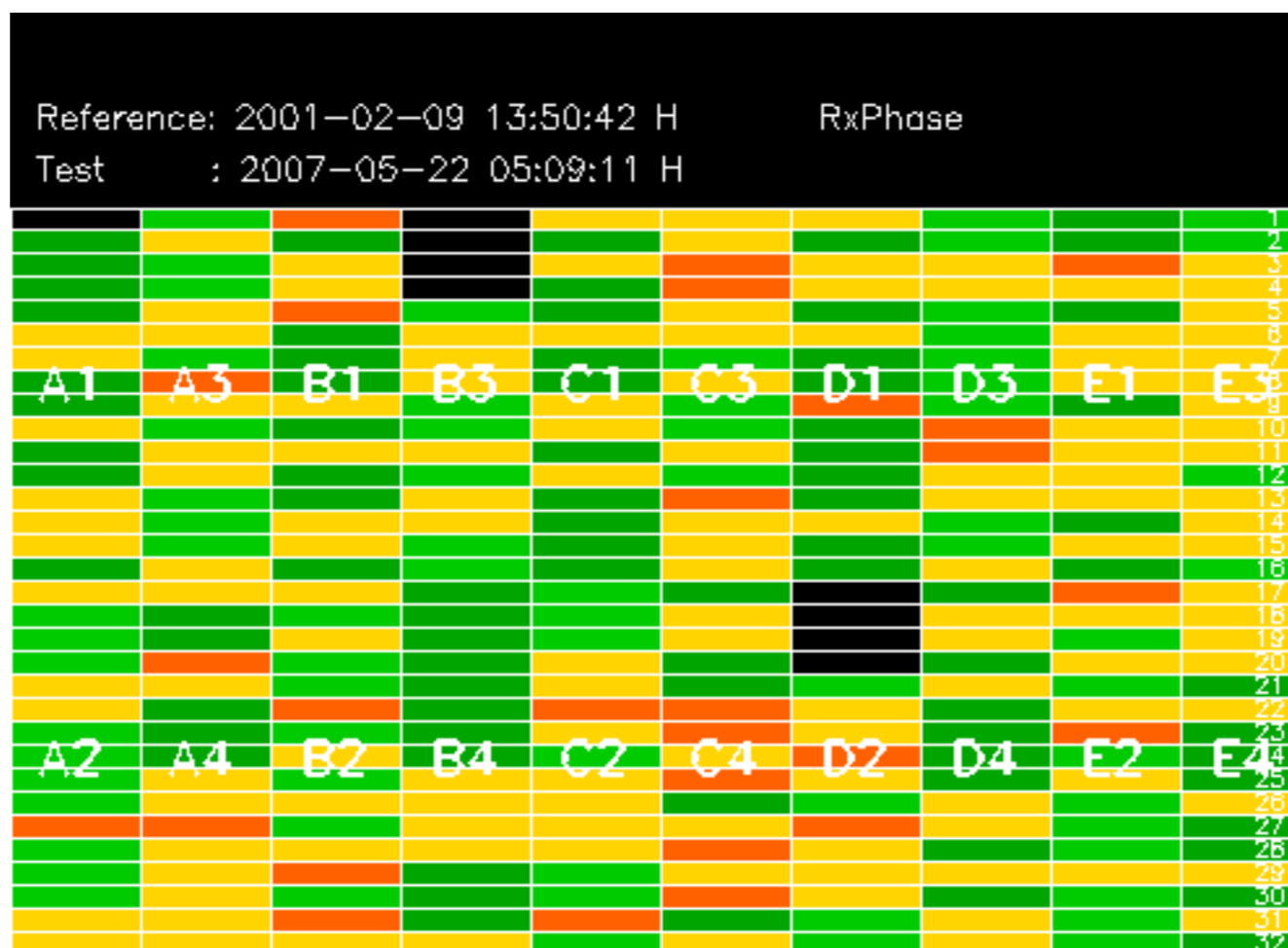






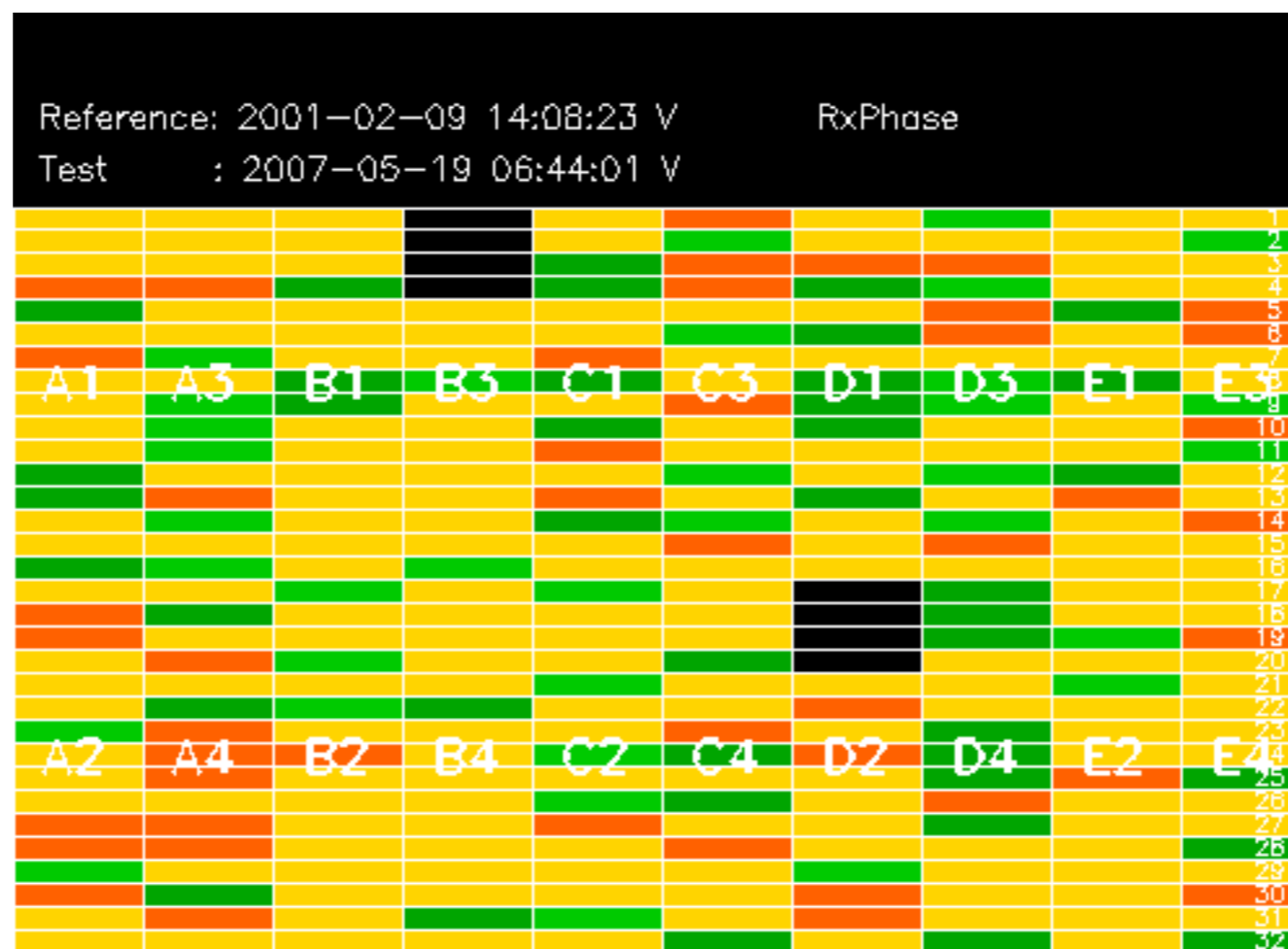


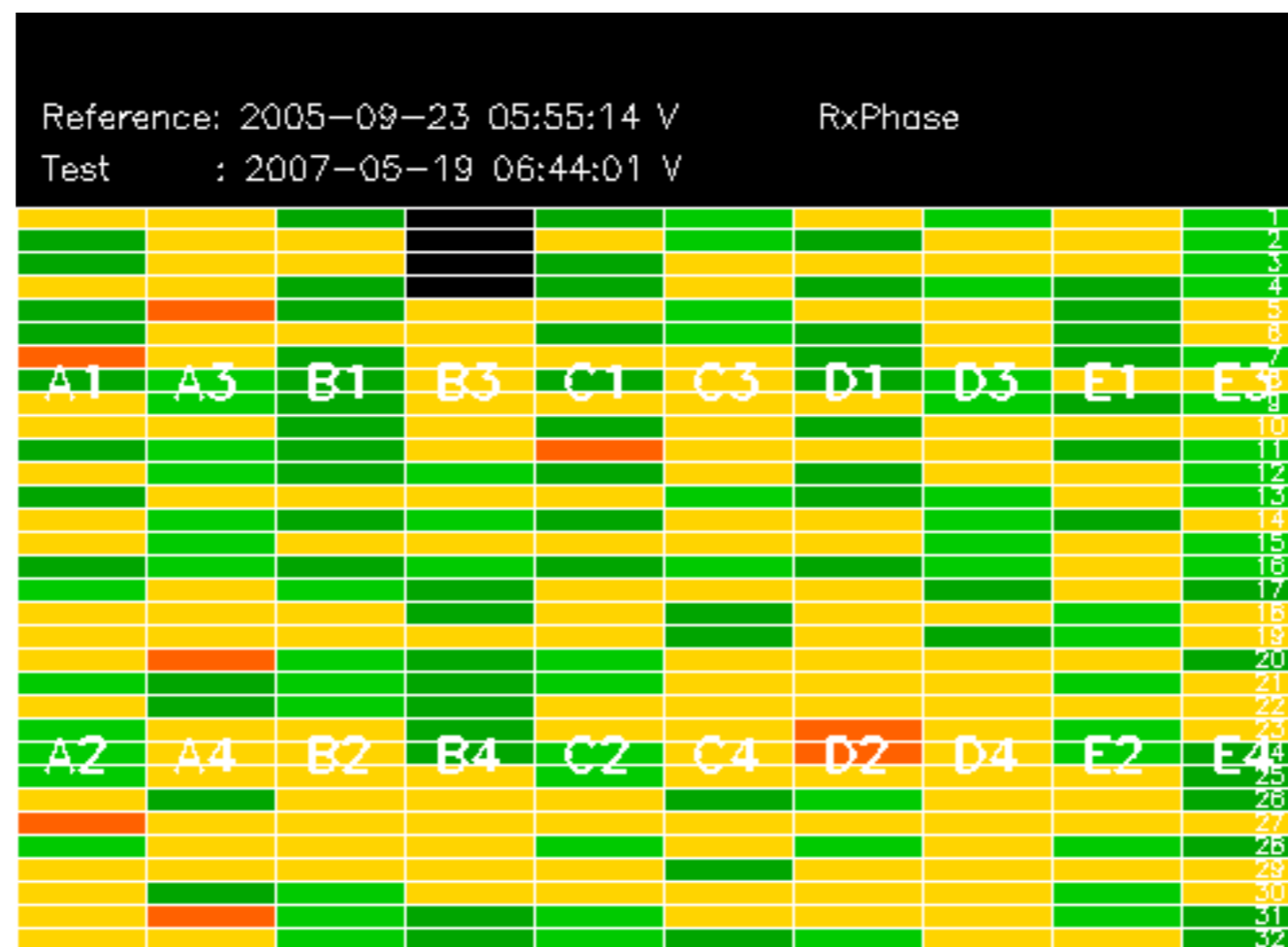


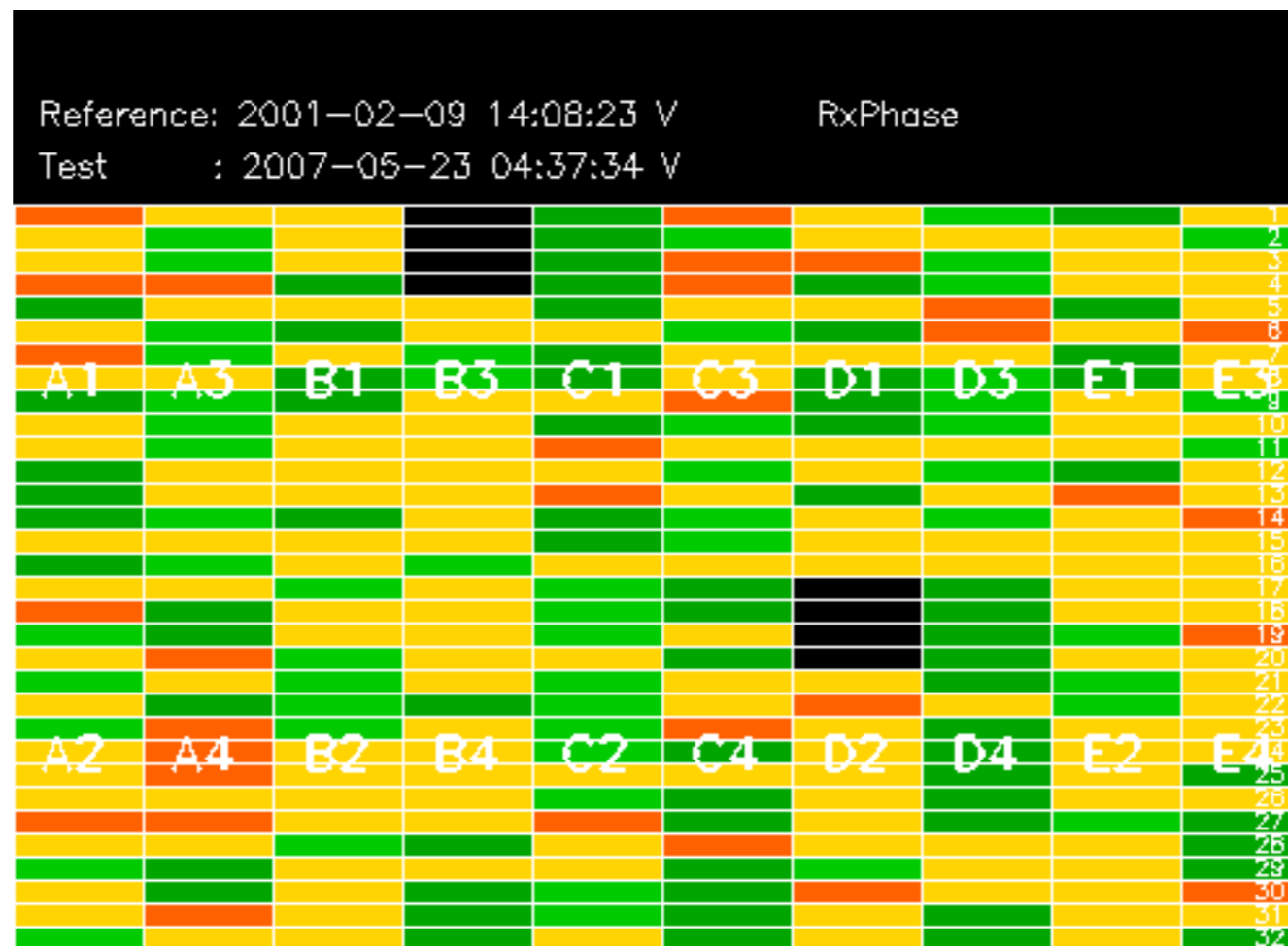




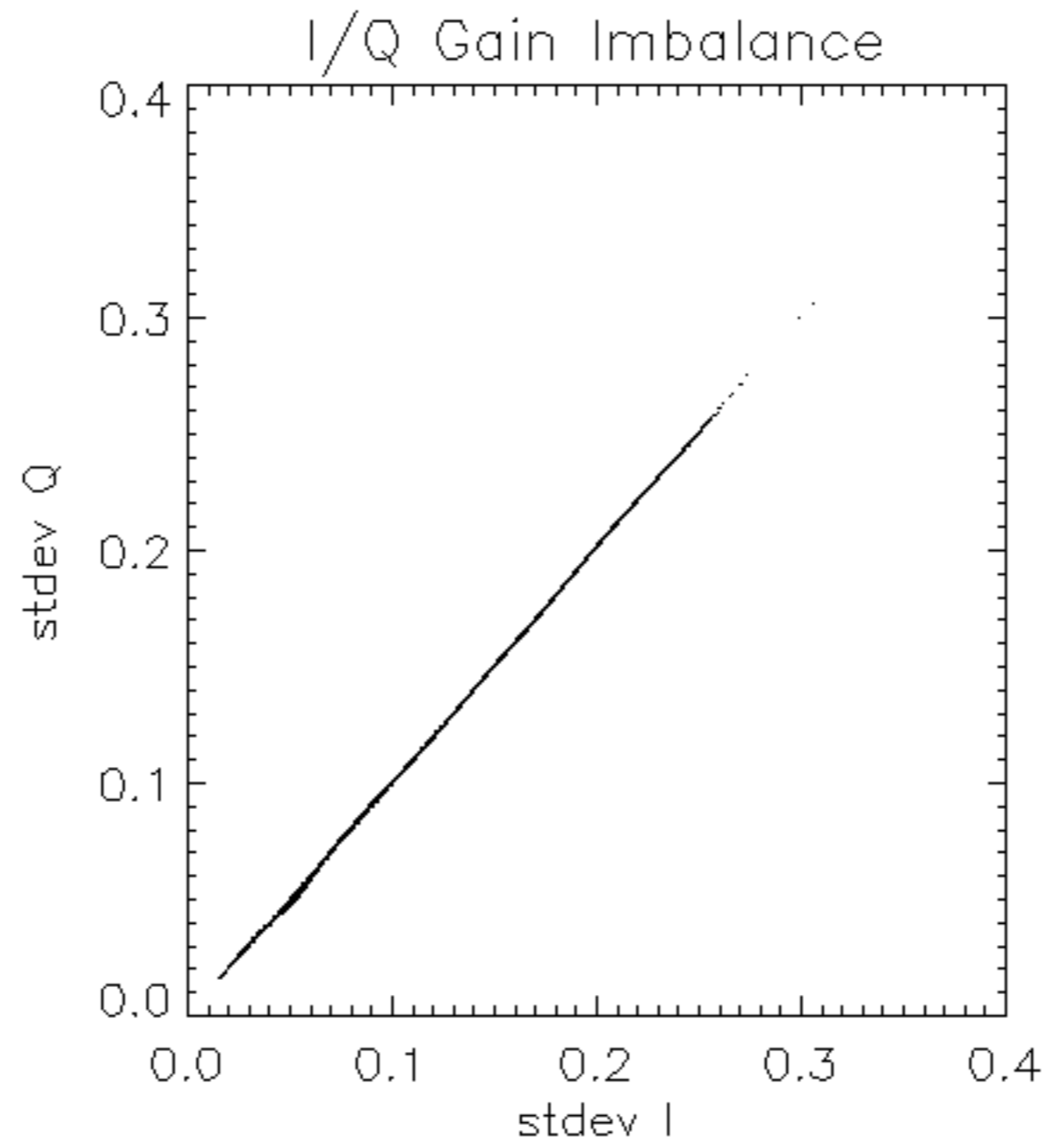


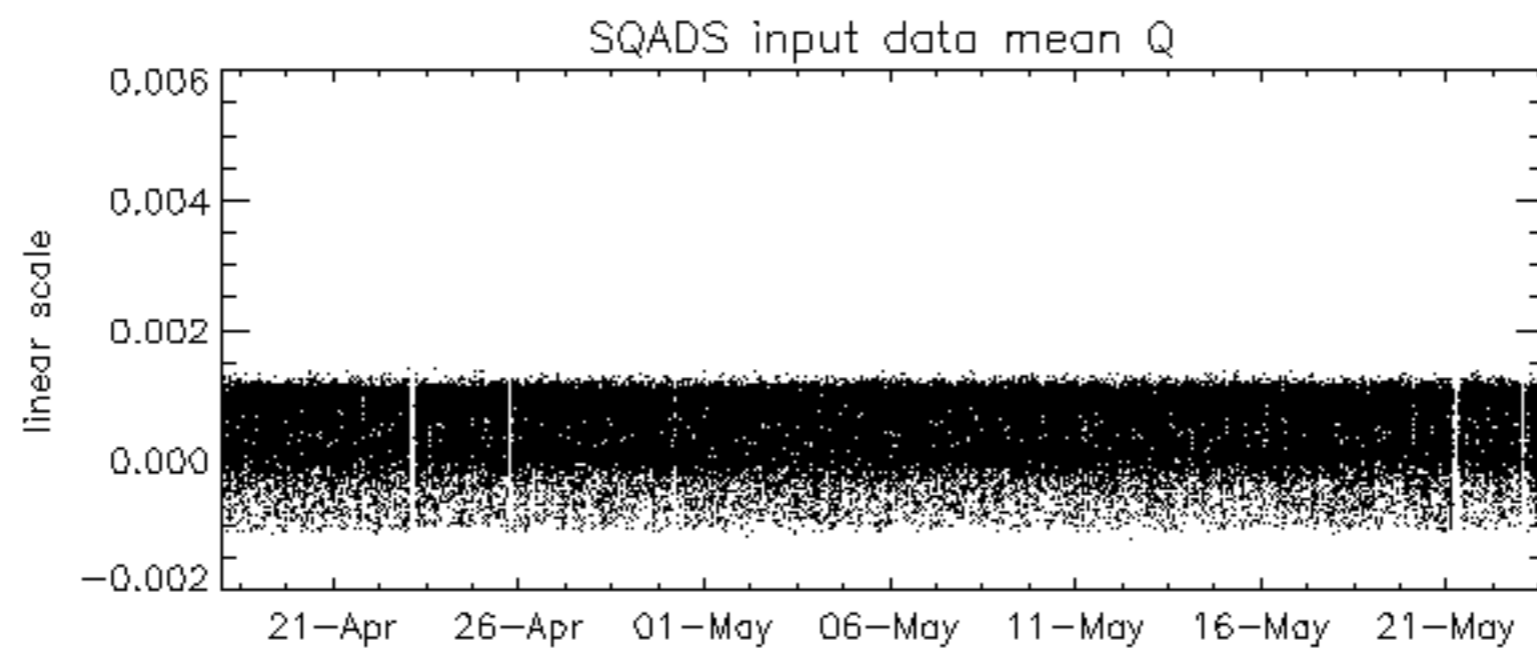
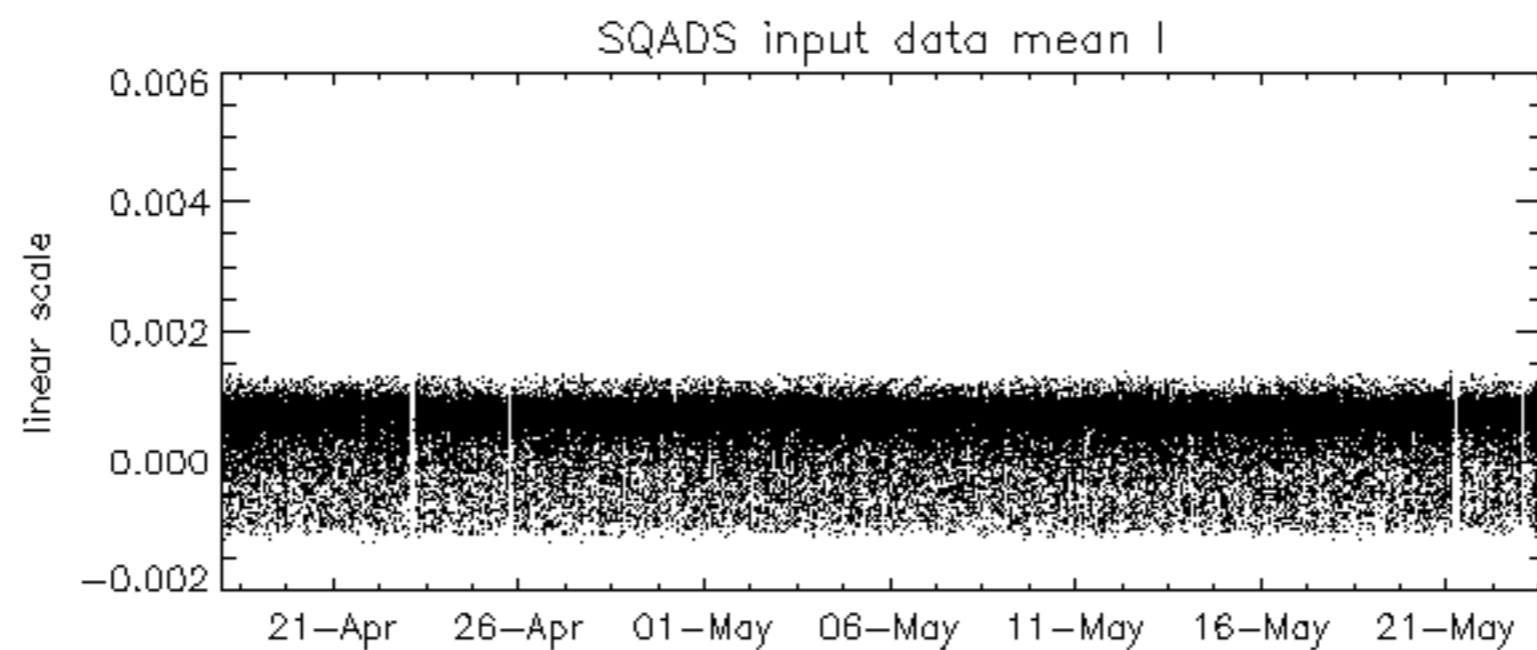
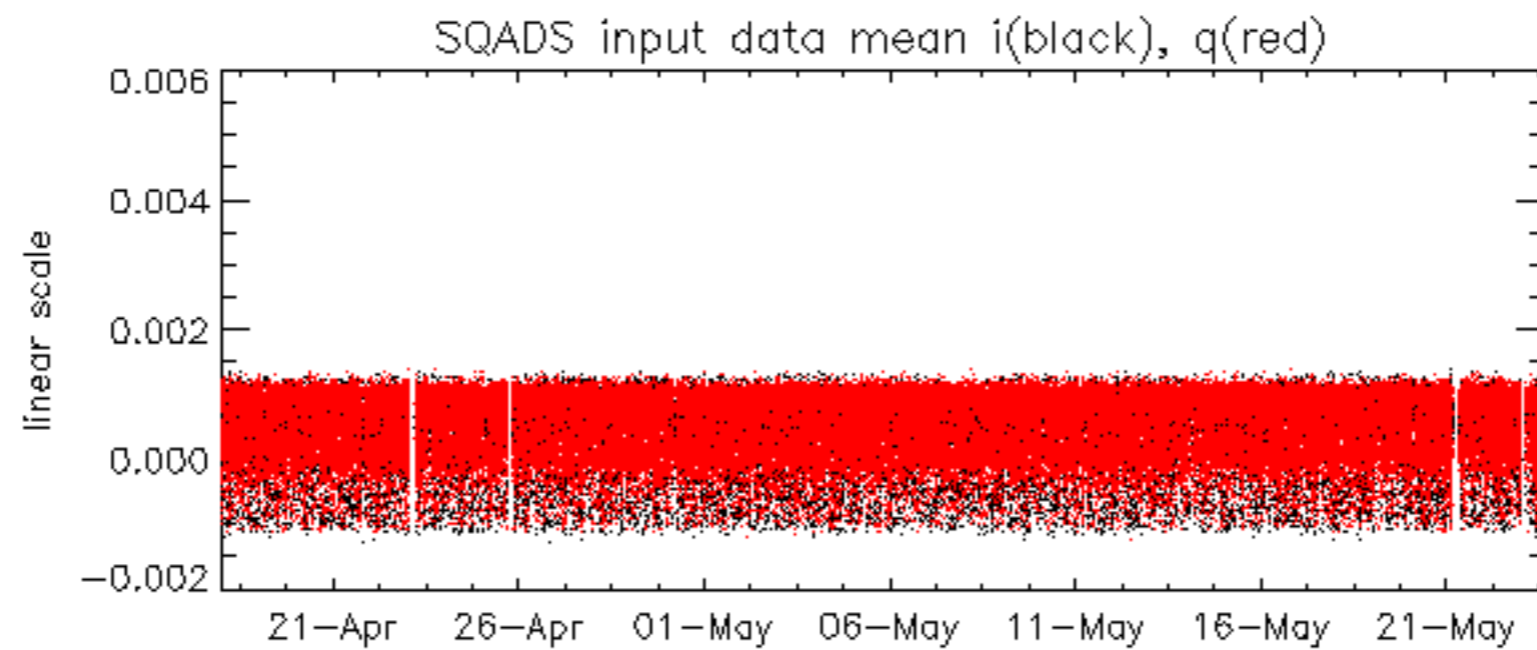


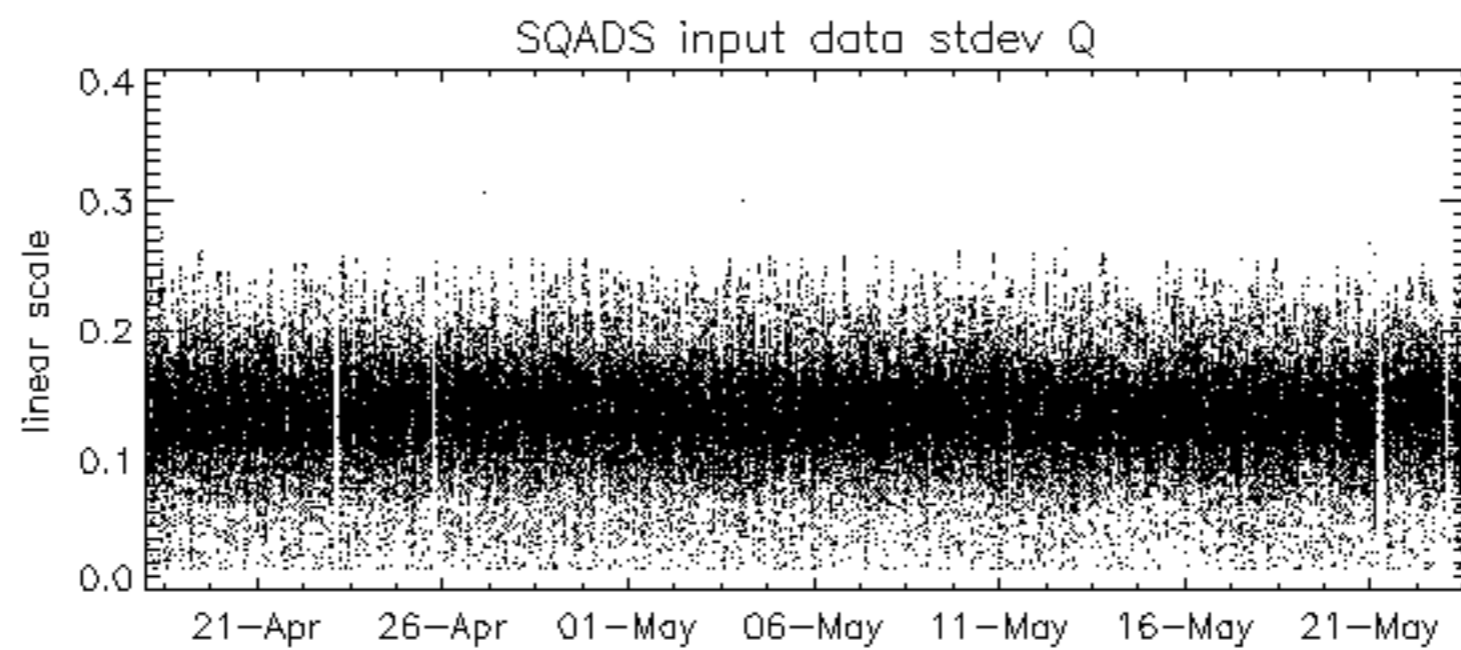
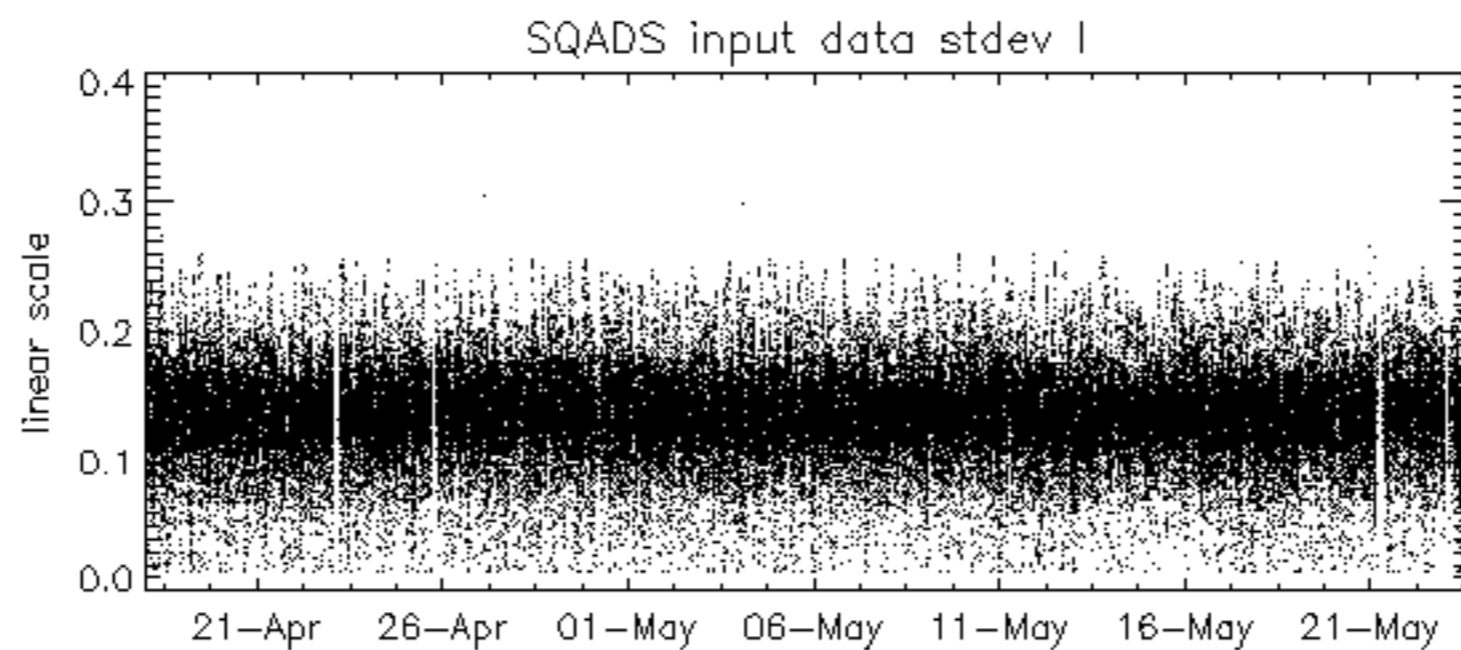
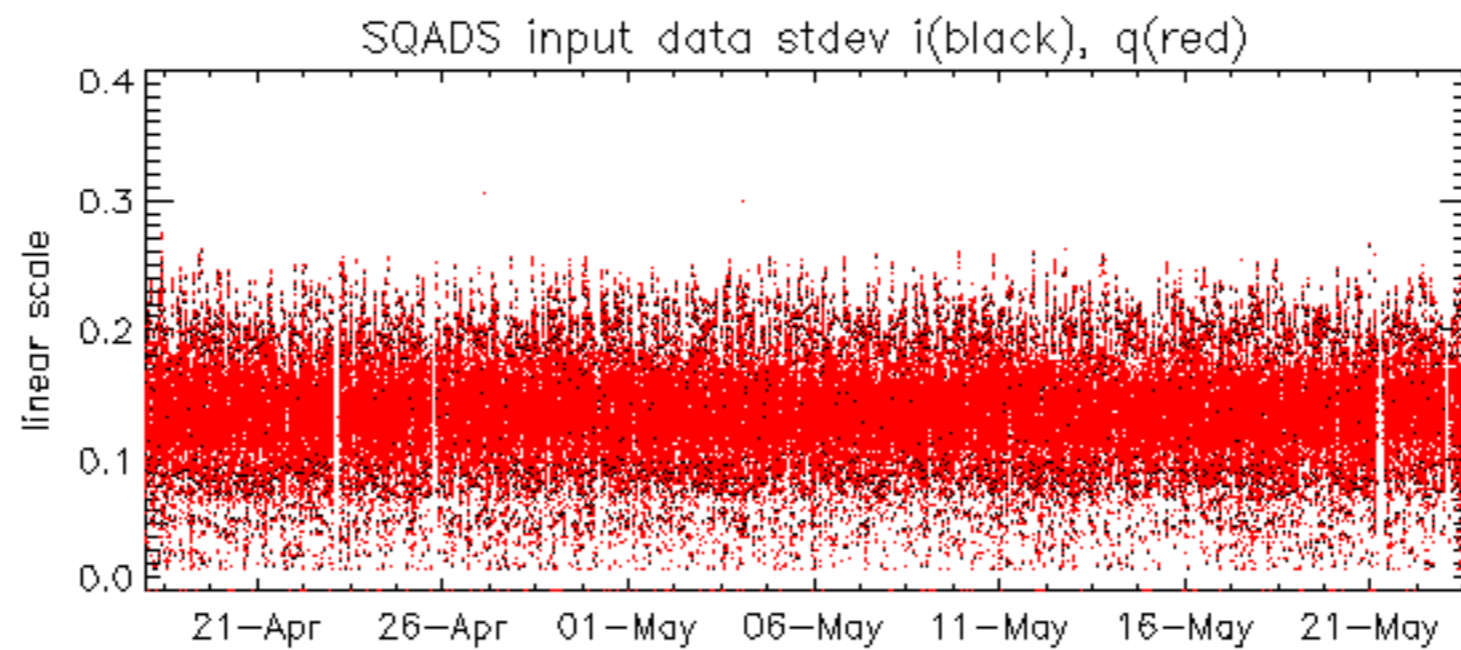






















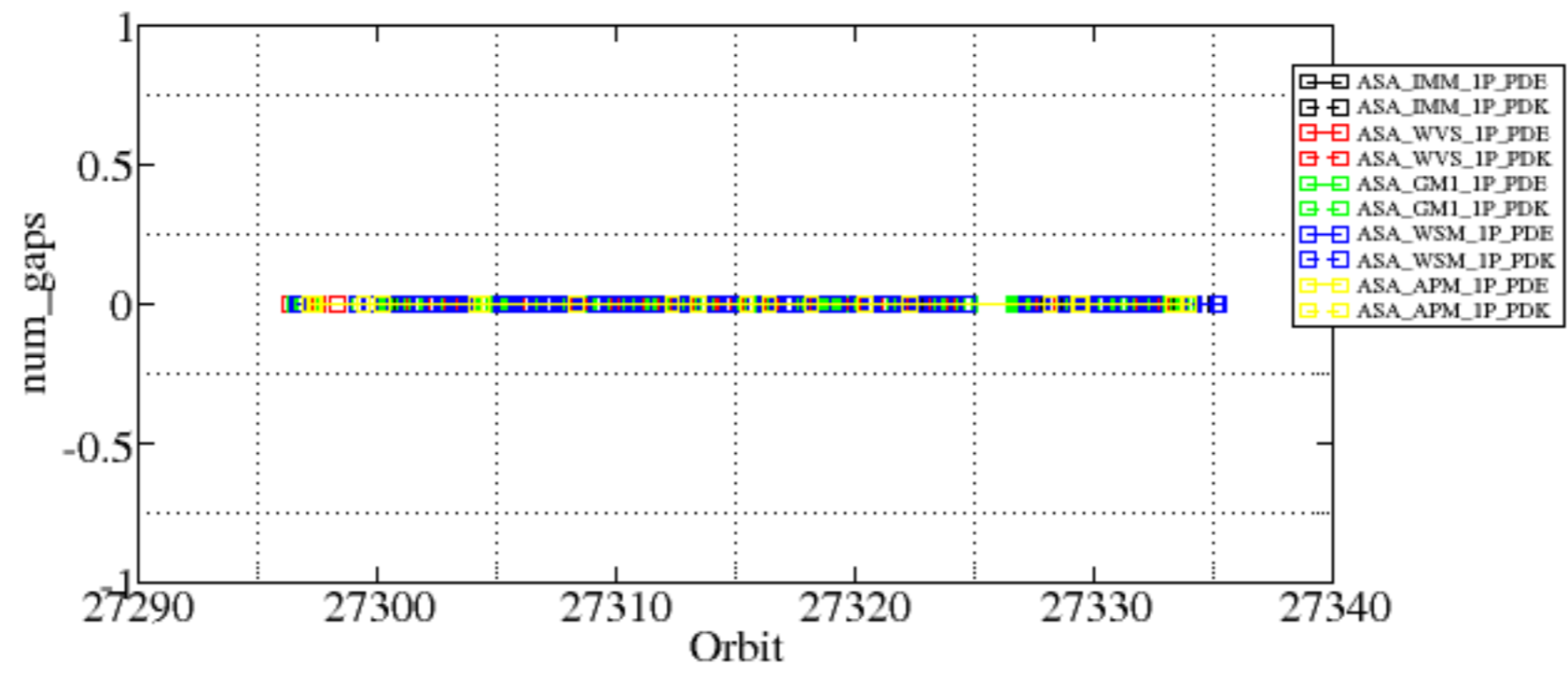




Summary of analysis for the last 3 days 2007052[123]

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_WSM_1PNPDE20070521_162341_000002022058_00198_27306_5002.N1	0	46
ASA_WSM_1PNPDE20070521_180340_000001102058_00199_27307_5028.N1	0	5
ASA_WSM_1PNPDE20070522_190811_000001712058_00214_27322_6378.N1	0	73
ASA_WSM_1PNPDK20070521_150502_000001152058_00197_27305_8922.N1	0	89

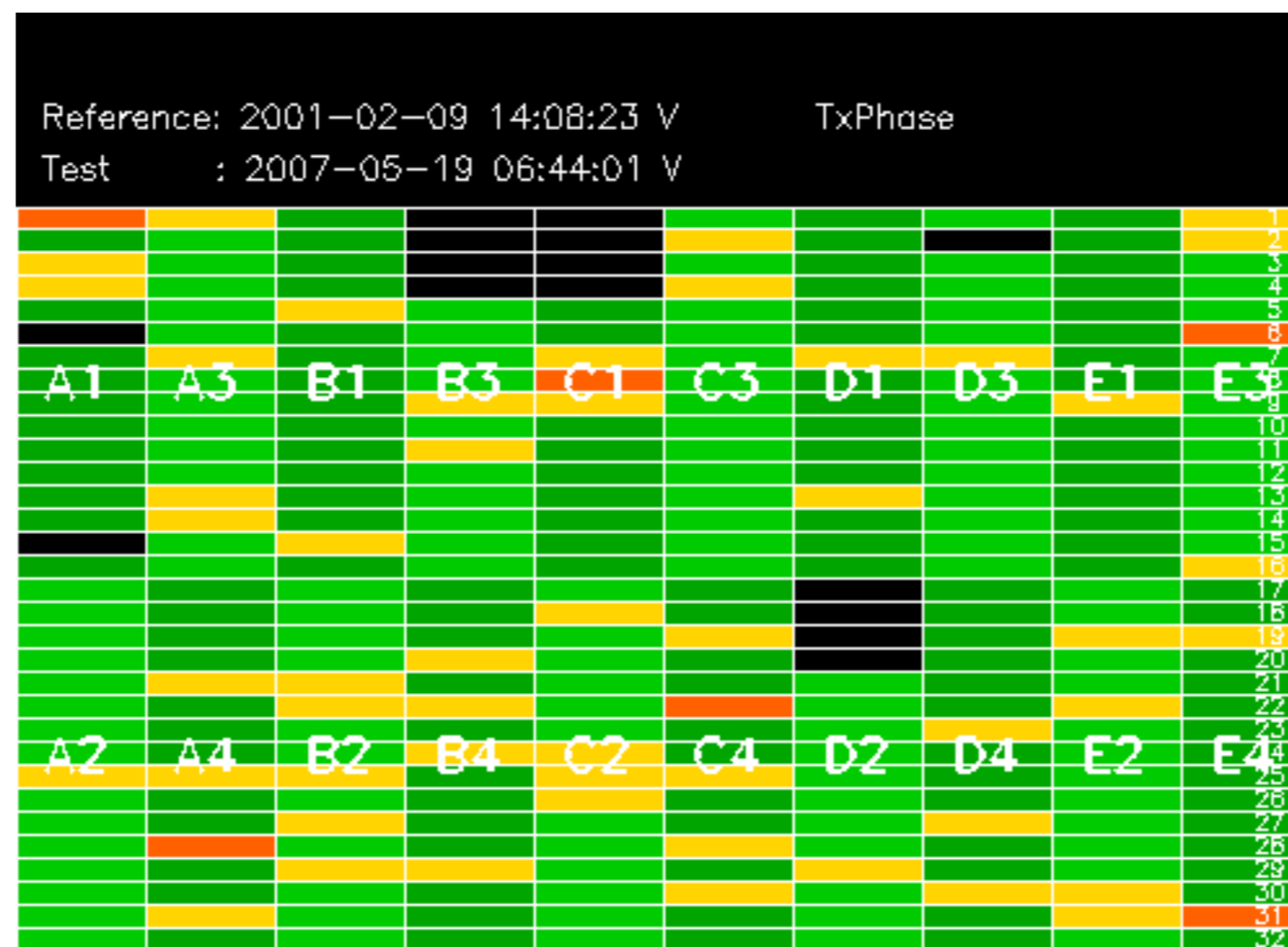




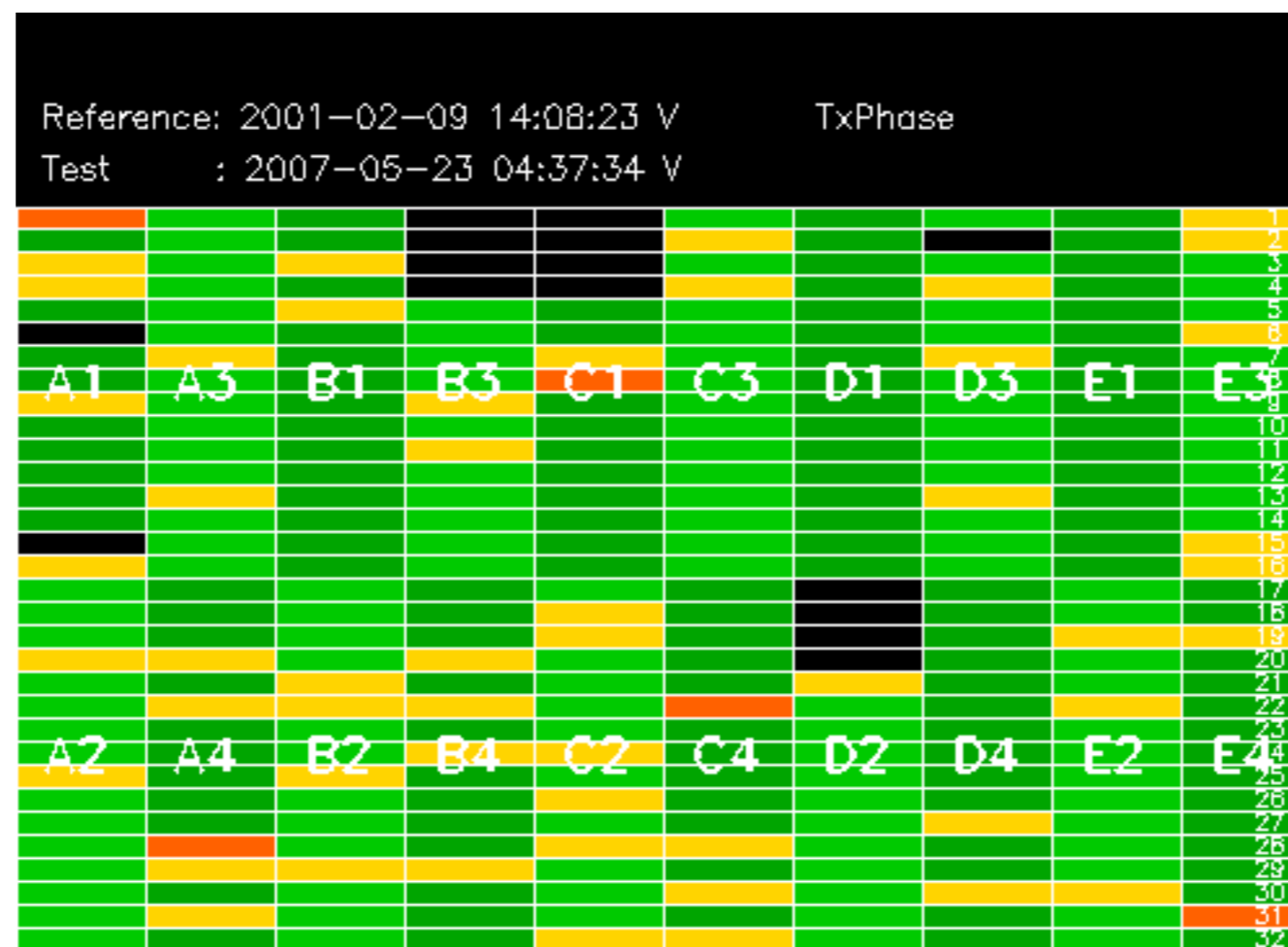


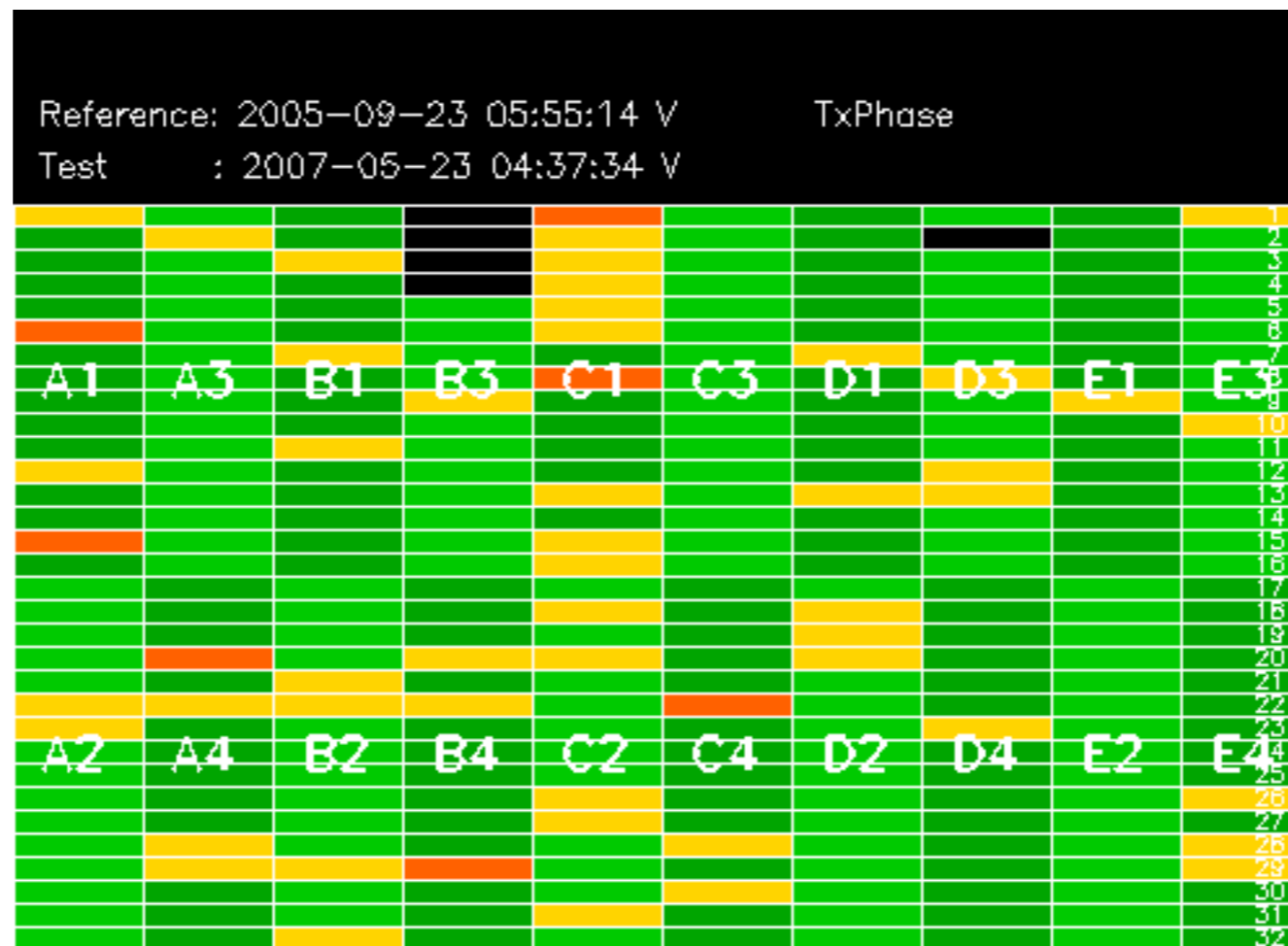


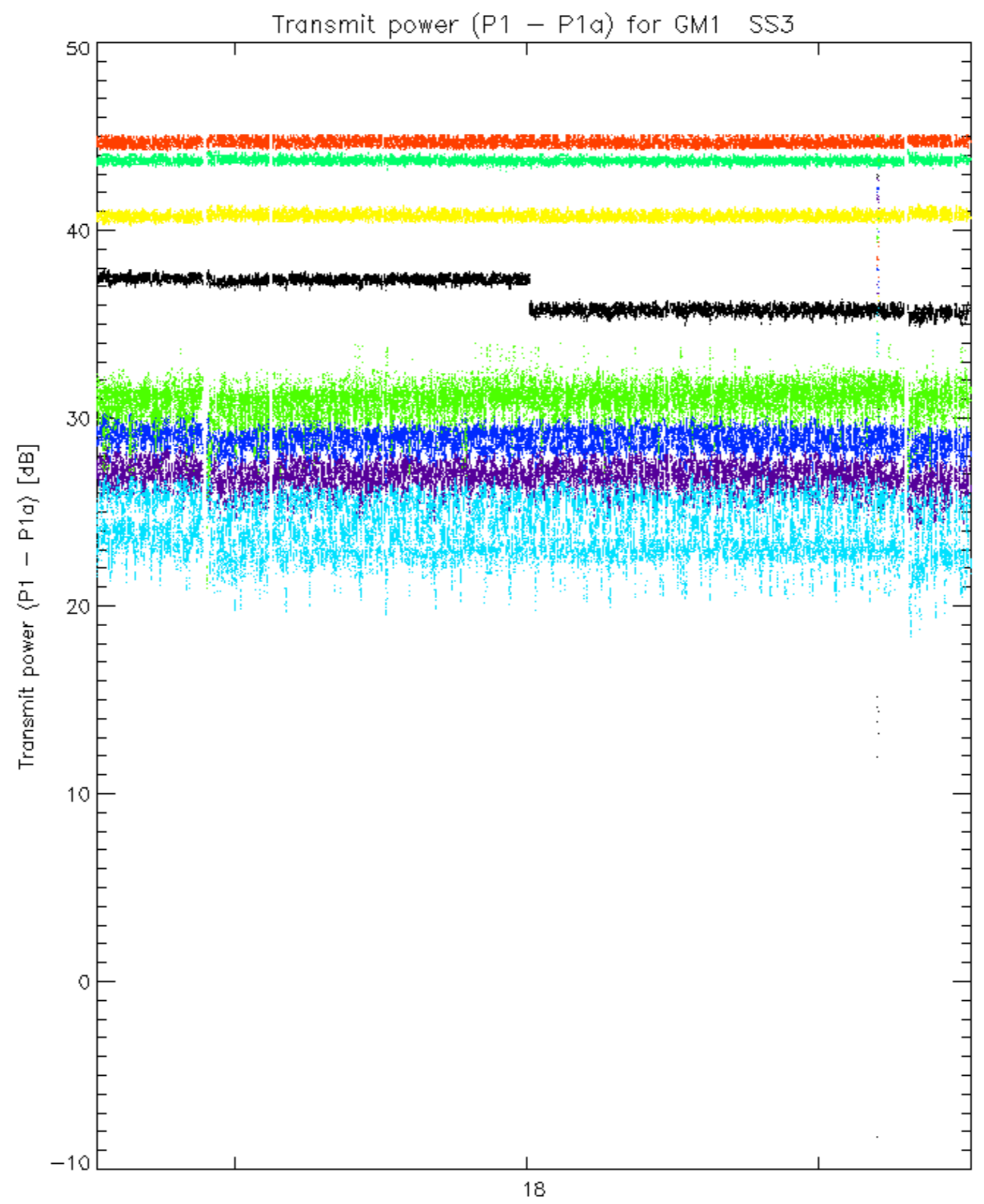






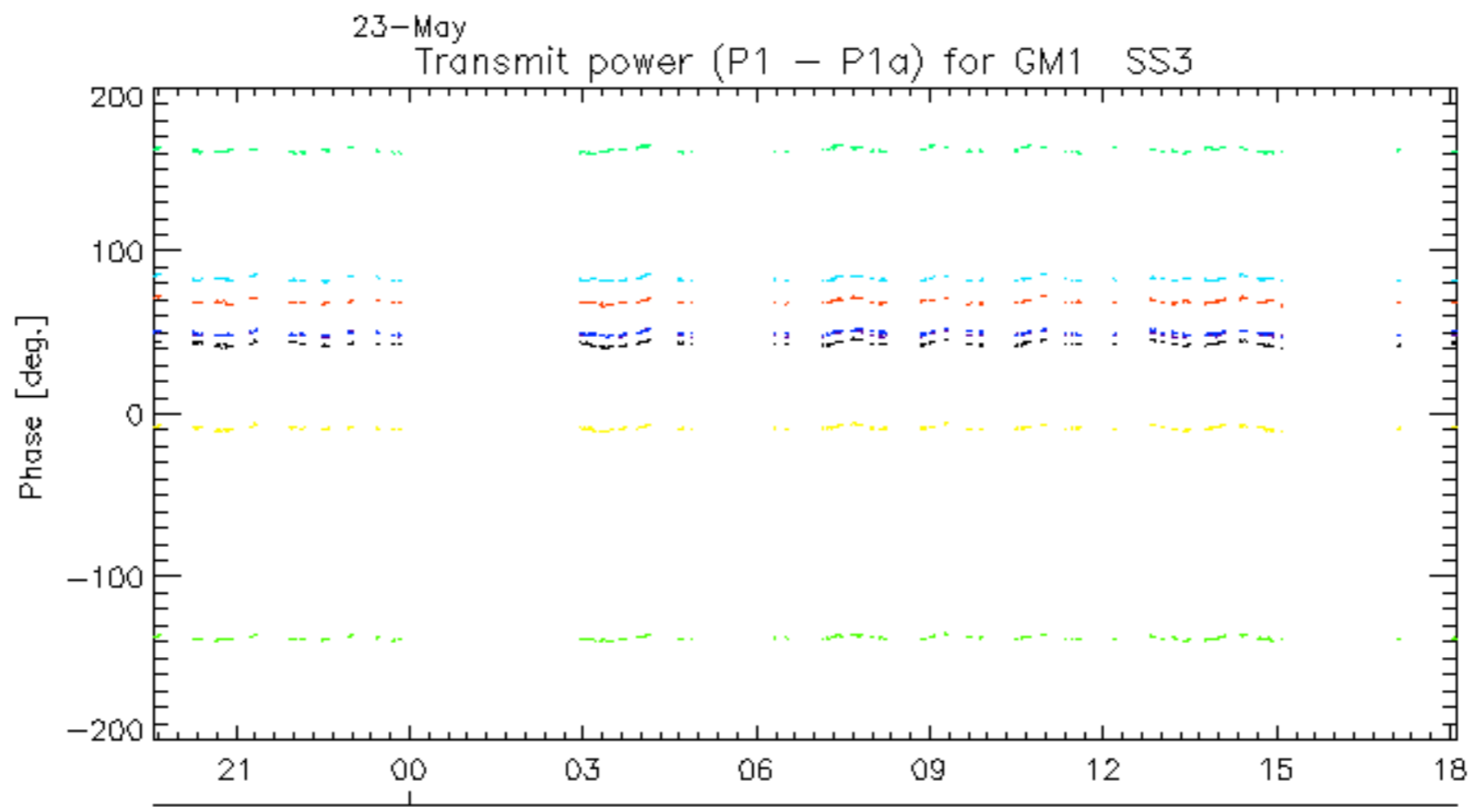
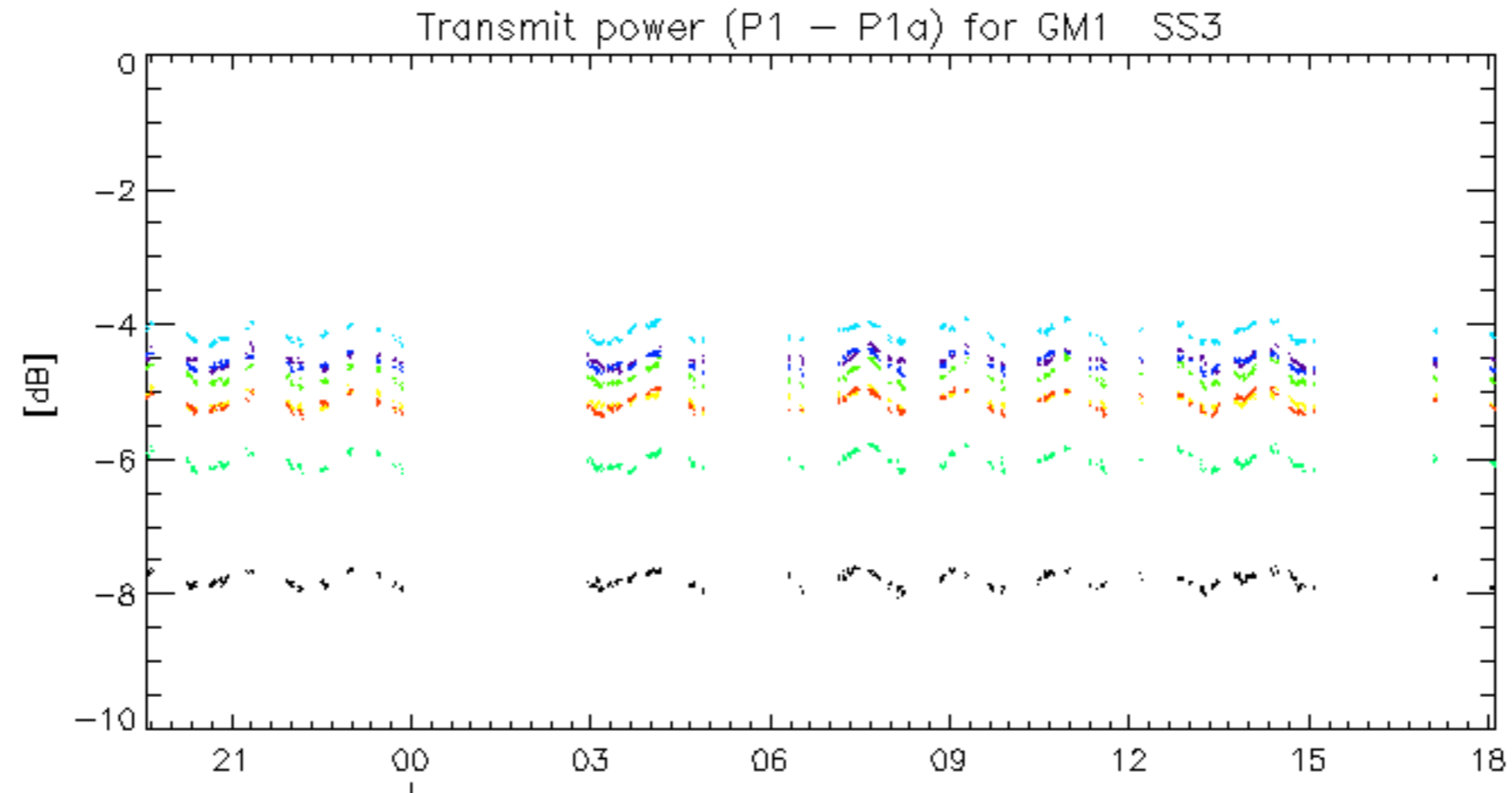




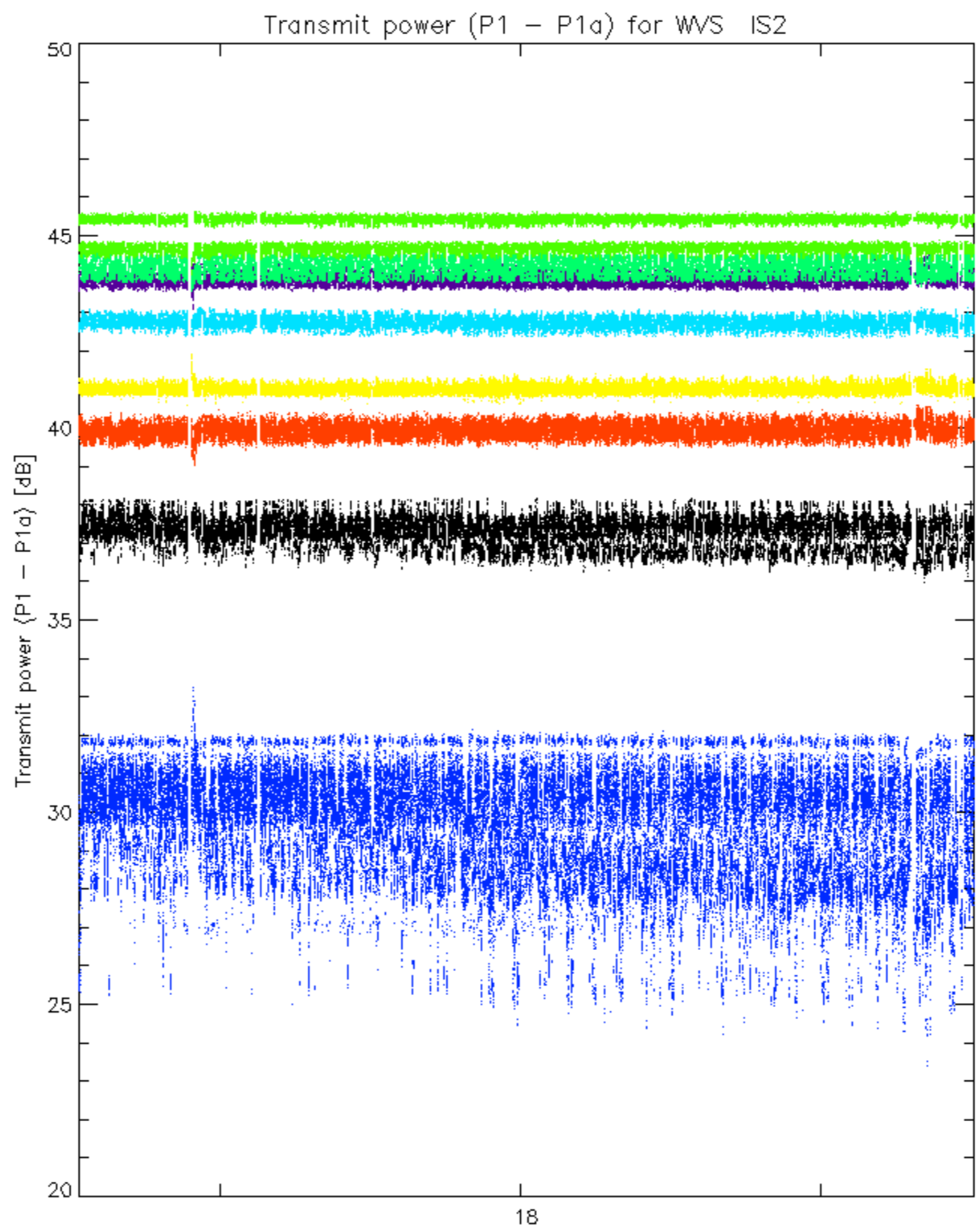


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

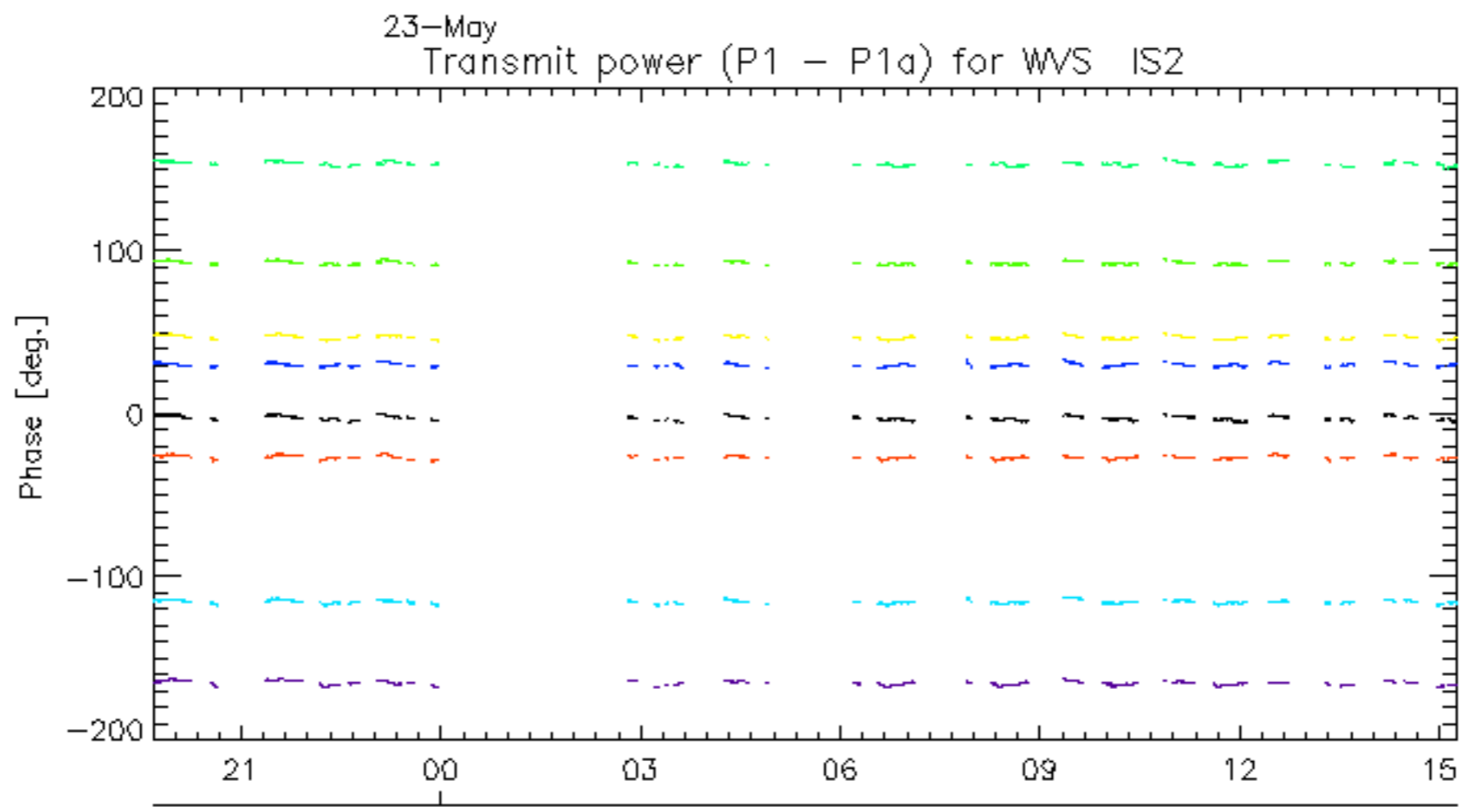
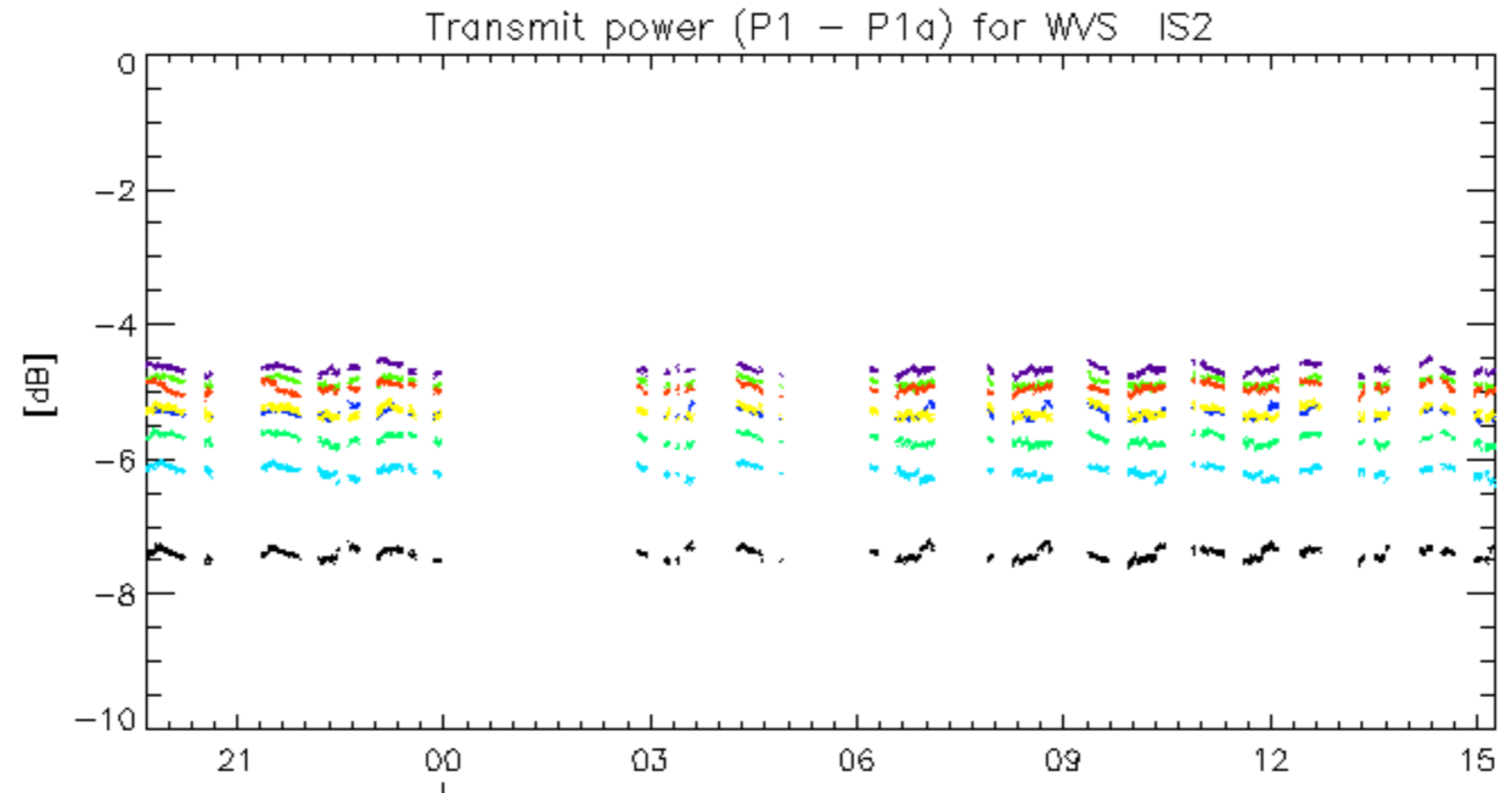




rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



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



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

No unavailabilities during the reported period.