

# PRELIMINARY REPORT OF 050802

last update on Tue Aug 2 11:10:37 GMT 2005

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 2005-08-01 00:00:00 to 2005-08-02 11:10:37

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	24	43	13	4	2
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	43	13	4	2
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	24	43	13	4	2
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	43	13	4	2

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	38	57	43	6	41
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	38	57	43	6	41
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	38	57	43	6	41
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	38	57	43	6	41

## 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	20050801 084159
H	20050801 015935

### 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	-3.312423	0.006555	0.016056
7	P1	-3.137928	0.014881	-0.013986
11	P1	-4.694811	0.032944	-0.044735
15	P1	-5.564291	0.048793	-0.046950
19	P1	-3.795645	0.046613	0.010250
22	P1	-4.640590	0.142366	-0.054937
26	P1	-4.864080	0.168326	-0.002057
30	P1	-7.247908	0.254249	-0.027573
3	P1	-15.563159	0.078291	0.052158
7	P1	-15.524763	0.104654	0.015545
11	P1	-21.665573	0.262563	-0.247377
15	P1	-11.293741	0.039998	-0.035410
19	P1	-14.500884	0.265637	0.064958
22	P1	-15.740955	0.354487	0.067001
26	P1	-17.414087	0.229602	0.217386
30	P1	-17.724360	0.508791	-0.038274

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.849094	0.084500	0.070711
7	P2	-22.008242	0.104590	0.098135
11	P2	-13.641090	0.107745	0.229441
15	P2	-7.079993	0.093974	0.027082
19	P2	-9.589906	0.096651	0.004439
22	P2	-16.848930	0.097989	0.025548
26	P2	-16.502224	0.099857	-0.016161
30	P2	-18.791368	0.086701	-0.013049

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.155136	0.002721	-0.002720
7	P3	-8.155136	0.002721	-0.002720
11	P3	-8.155136	0.002721	-0.002720
15	P3	-8.155136	0.002721	-0.002720
19	P3	-8.155136	0.002721	-0.002720
22	P3	-8.155136	0.002721	-0.002720
26	P3	-8.155136	0.002721	-0.002720
30	P3	-8.155136	0.002721	-0.002720

#### 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	-2.784259	0.013360	-0.005901
7	P1	-2.952352	0.030595	0.009171
11	P1	-4.000488	0.016232	-0.019808
15	P1	-3.578509	0.022941	-0.051978
19	P1	-3.662796	0.113211	0.116655
22	P1	-5.696757	0.159541	-0.009310
26	P1	-7.417181	0.320670	0.008992
30	P1	-6.344075	0.150460	0.000792
3	P1	-10.846782	0.041155	-0.119996
7	P1	-10.452869	0.150438	-0.030185
11	P1	-12.621605	0.108016	-0.068410
15	P1	-11.613094	0.070100	0.010799
19	P1	-15.632158	1.311025	0.435936
22	P1	-25.685310	3.709981	0.253725
26	P1	-15.362935	0.424416	0.189673
30	P1	-20.060801	1.343469	0.187926

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.591375	0.046269	0.096321
7	P2	-22.041821	0.040663	0.055536
11	P2	-9.669700	0.064433	0.184638
15	P2	-5.120331	0.045324	0.038545
19	P2	-6.899885	0.065379	0.030129
22	P2	-7.074655	0.038954	0.044349
26	P2	-23.972939	0.044139	0.001787
30	P2	-21.953251	0.043802	0.012714

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.997828	0.004233	0.001844
7	P3	-7.997716	0.004228	0.002336
11	P3	-7.997712	0.004227	0.002168
15	P3	-7.997832	0.004230	0.002496
19	P3	-7.997910	0.004233	0.002226
22	P3	-7.997844	0.004218	0.002397
26	P3	-7.997939	0.004216	0.002100
30	P3	-7.997746	0.004219	0.002418

## 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	0.000473061
	stdev	2.14605e-07
MEAN Q	mean	0.000501074
	stdev	2.32643e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128562
	stdev	0.000996109
STDEV Q	mean	0.128815
	stdev	0.00100669



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2005080[112]

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_1PNPDE20050801_155734_000002312039_00298_17887_1240.N1	1	0
ASA_IMM_1PNPDE20050801_174612_000001062039_00299_17888_1253.N1	1	0
ASA_WSM_1PNPDE20050801_063104_000002132039_00292_17881_2374.N1	0	1
ASA_WSM_1PNPDE20050802_010559_000000852039_00303_17892_2489.N1	0	19
ASA_WSM_1PNPDE20050802_021824_000003002039_00304_17893_2504.N1	5	0







## 7 - Doppler Analysis

Preliminary report. The data is not yet controlled



### 7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)


Acsending

Descending

### 7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler


Acsending

Descending


### 7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


---

### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)


---



Ascending

Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

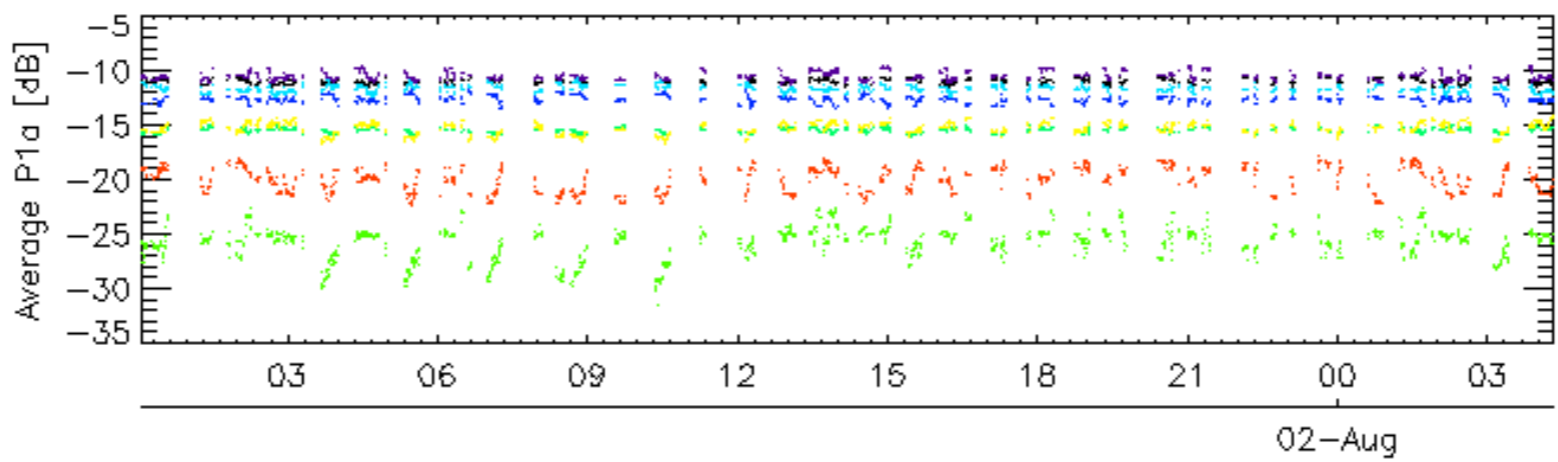
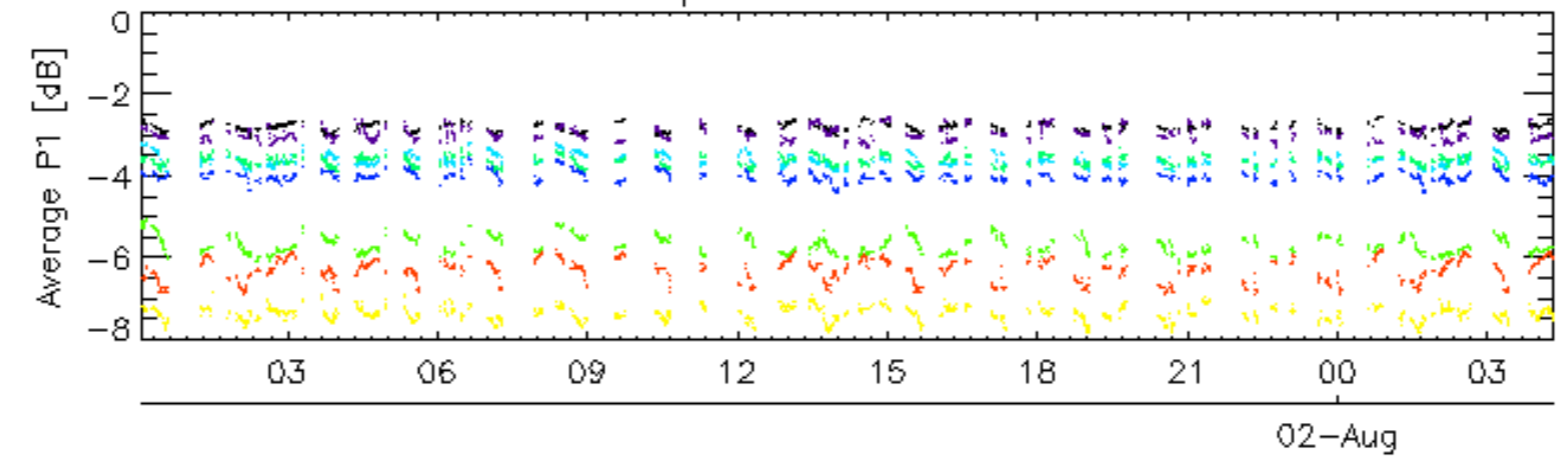
Ascending

Descending

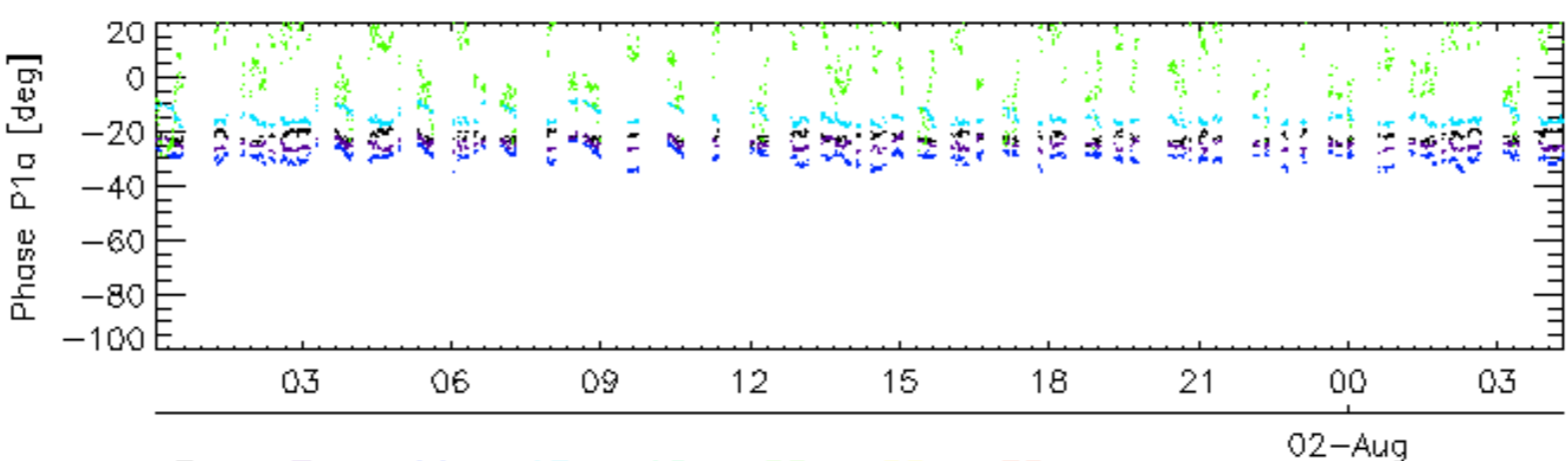
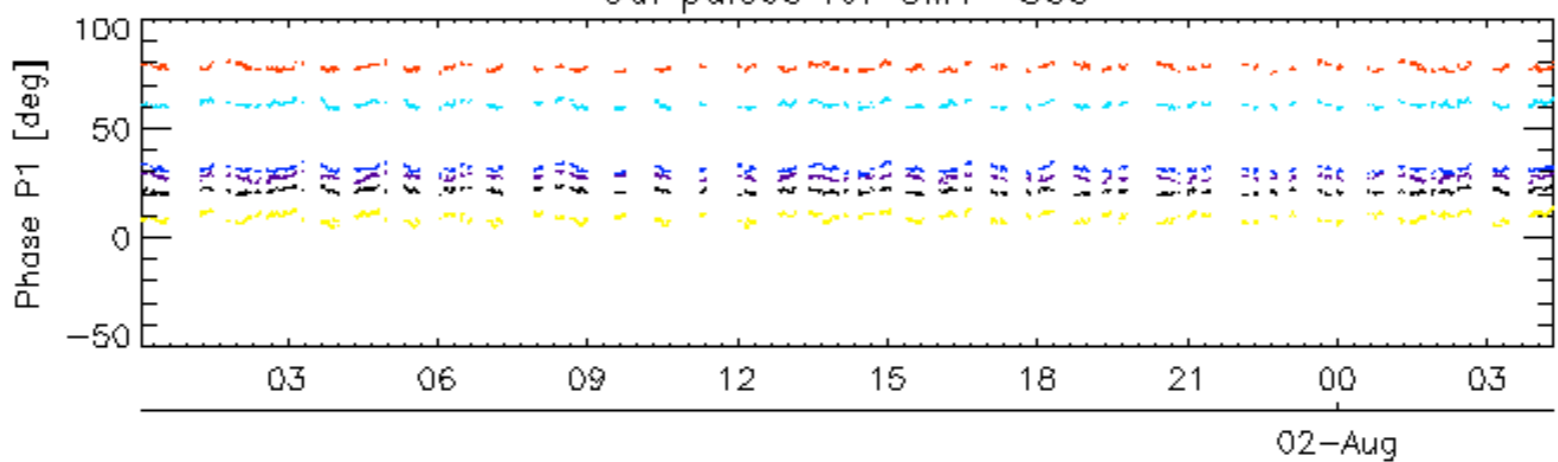
### 7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

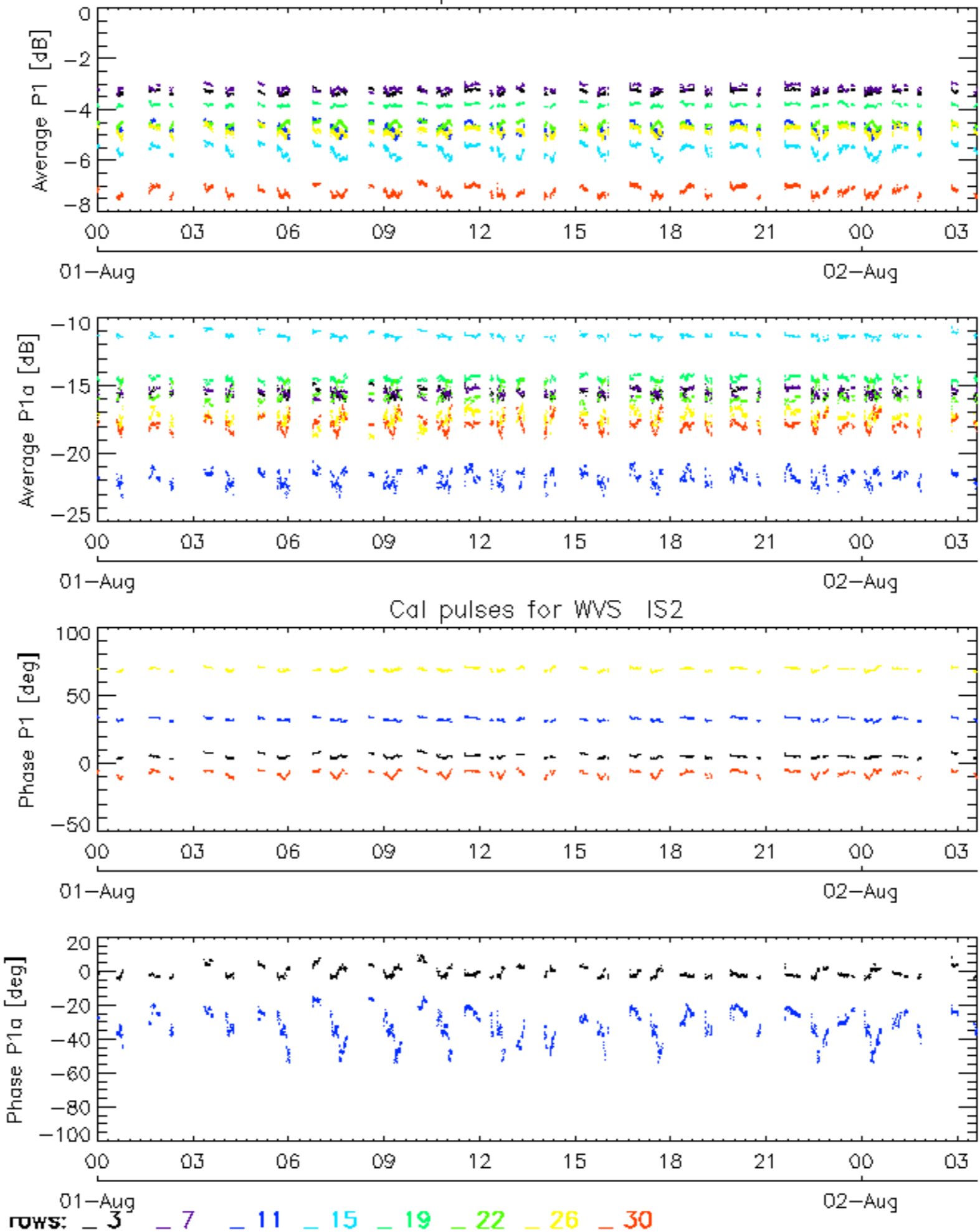


Cal pulses for GM1 SS3

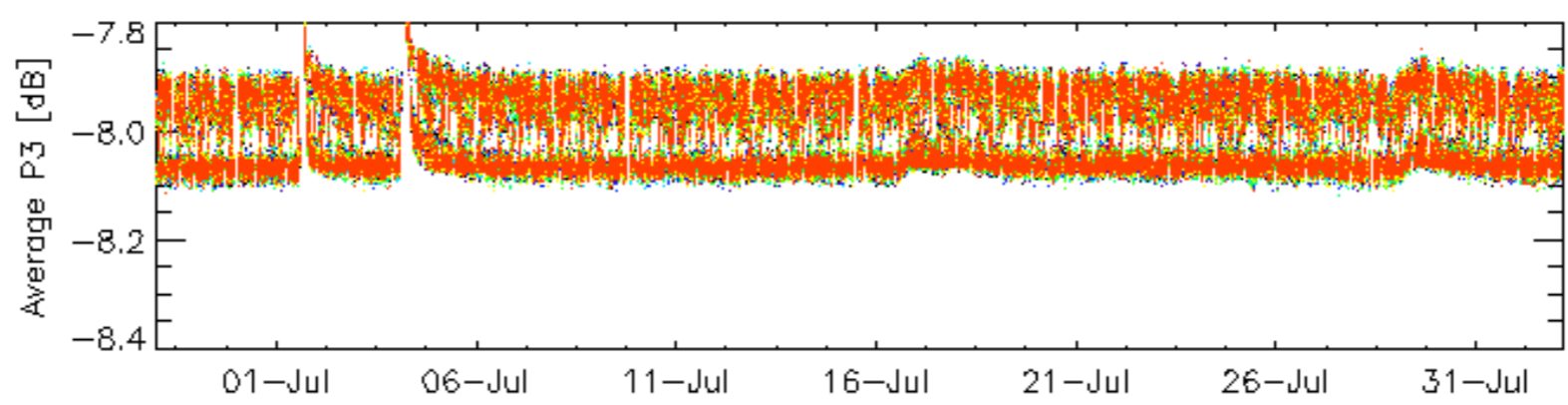
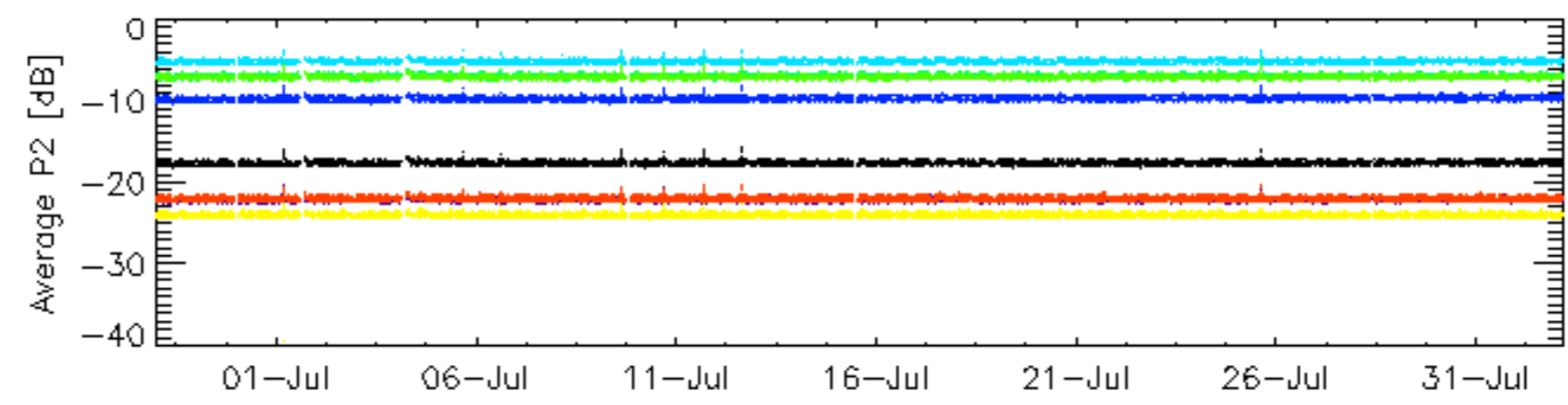
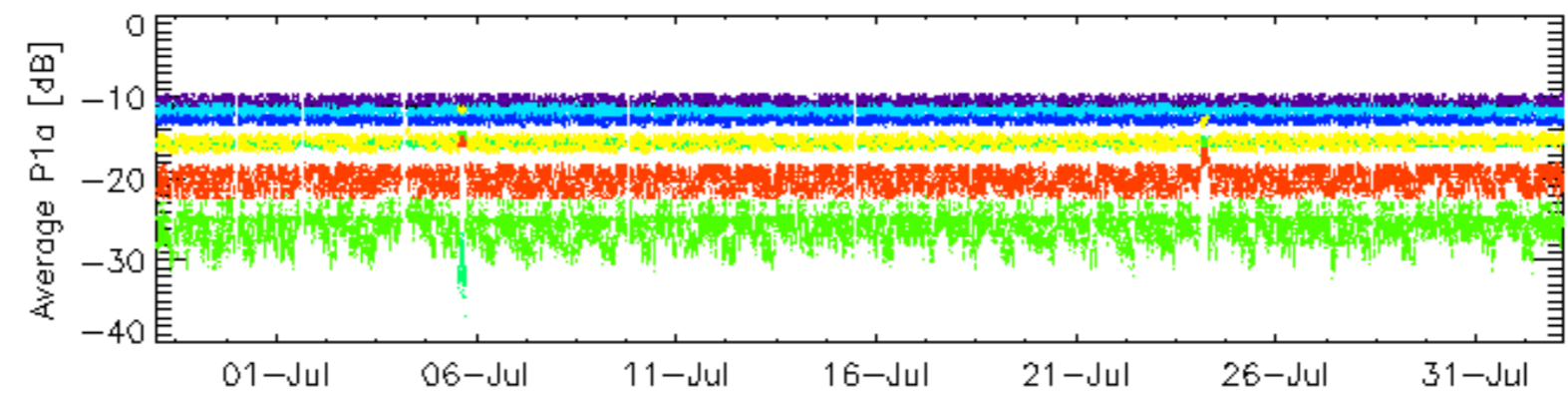
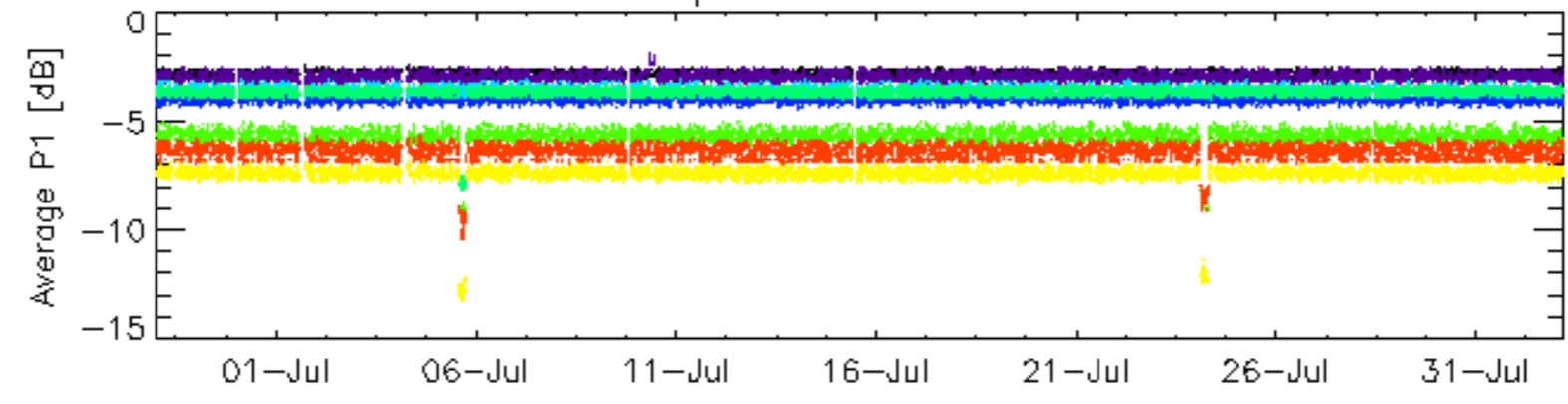


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

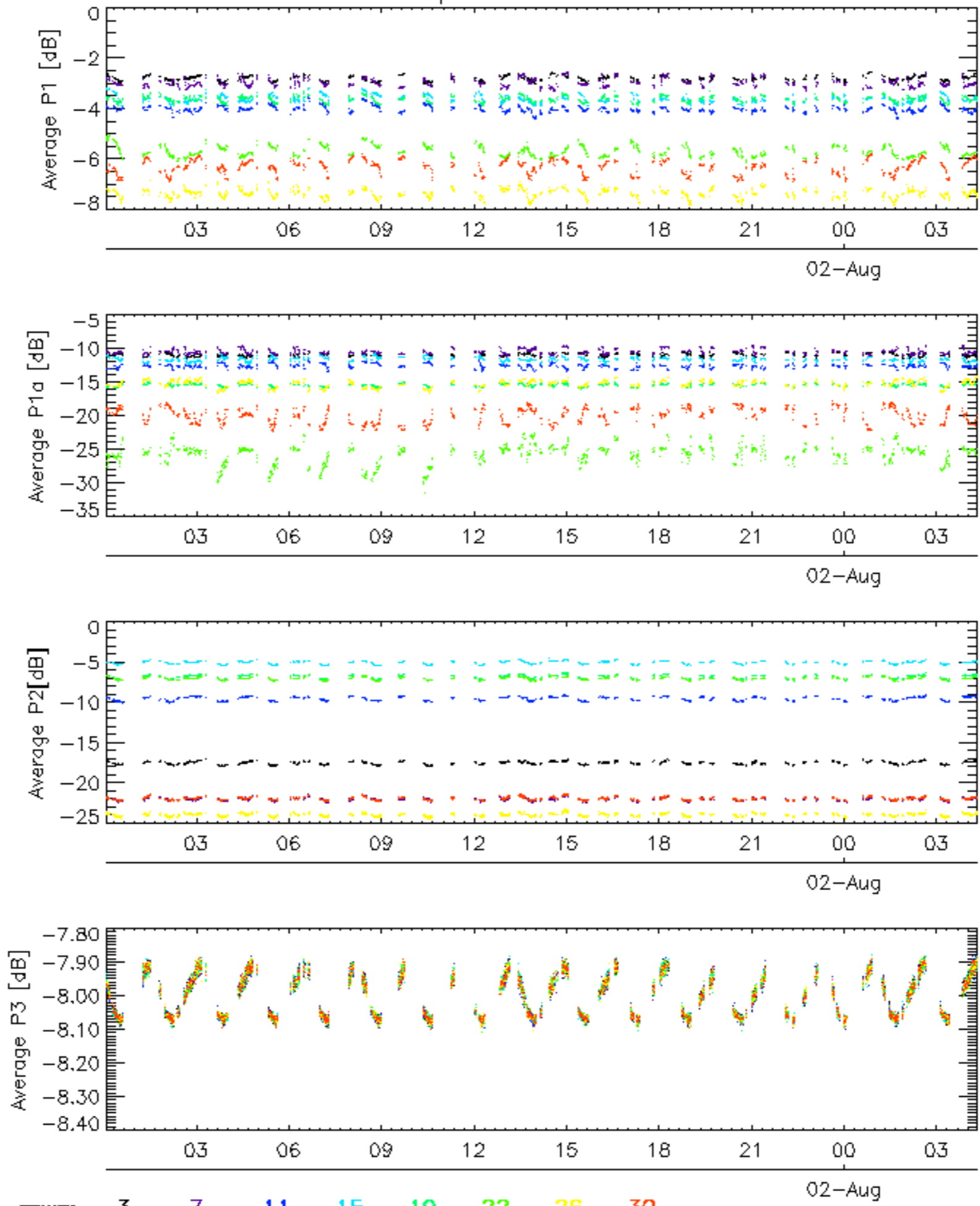


Cal pulses for GM1 SS3

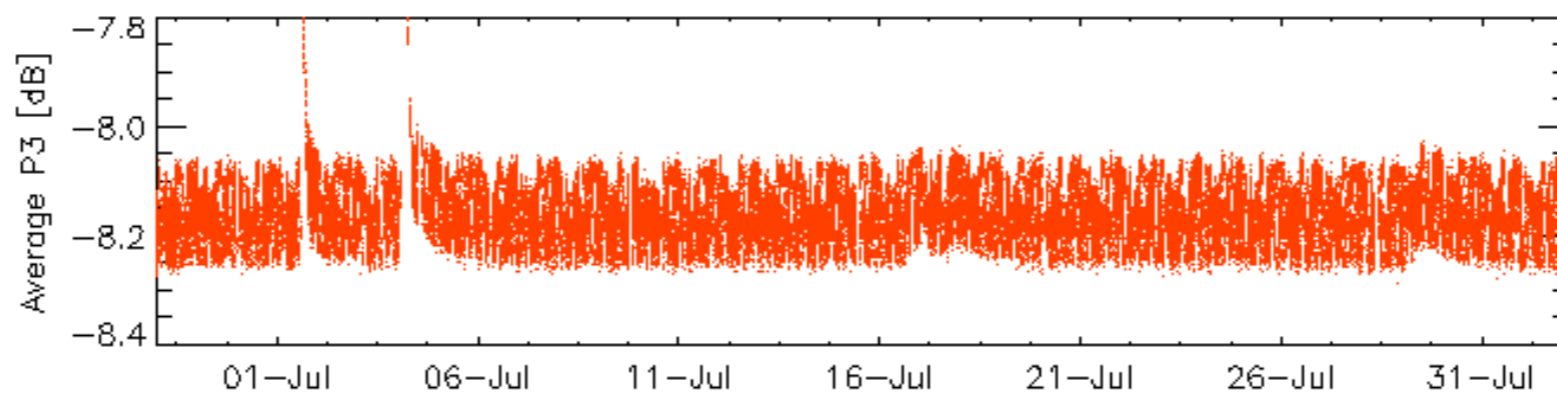
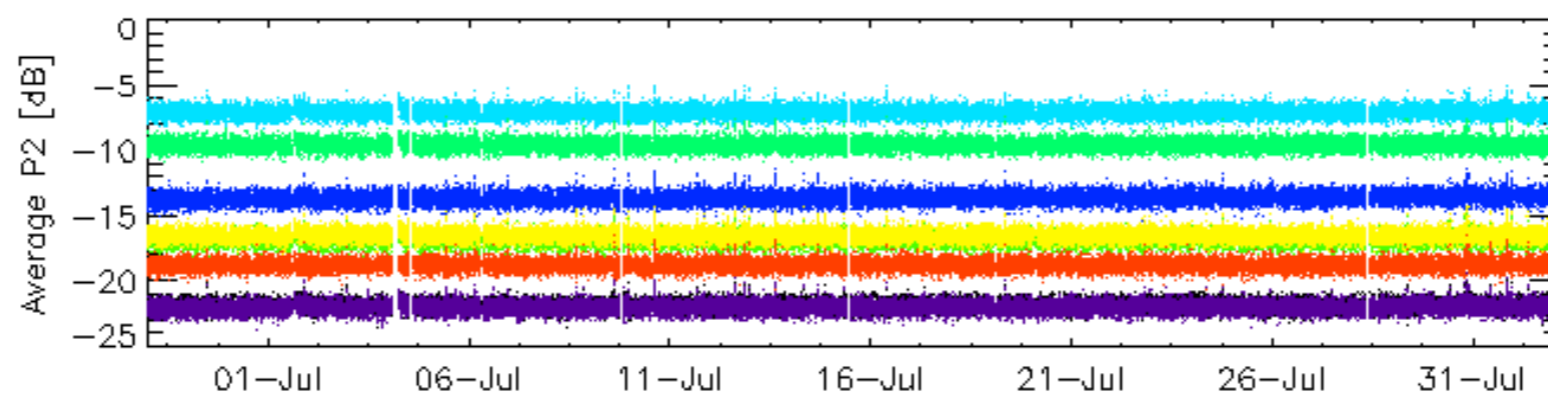
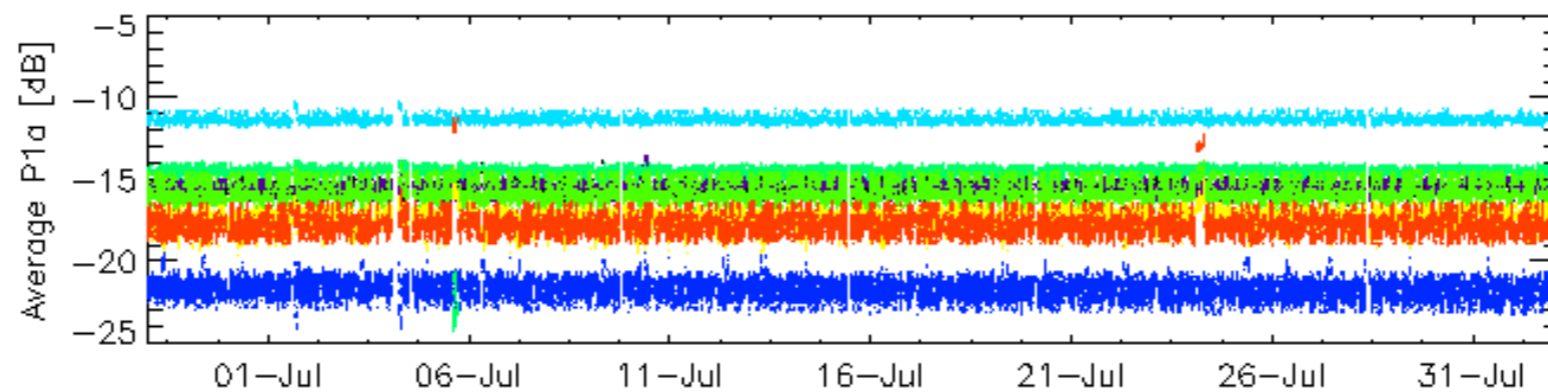
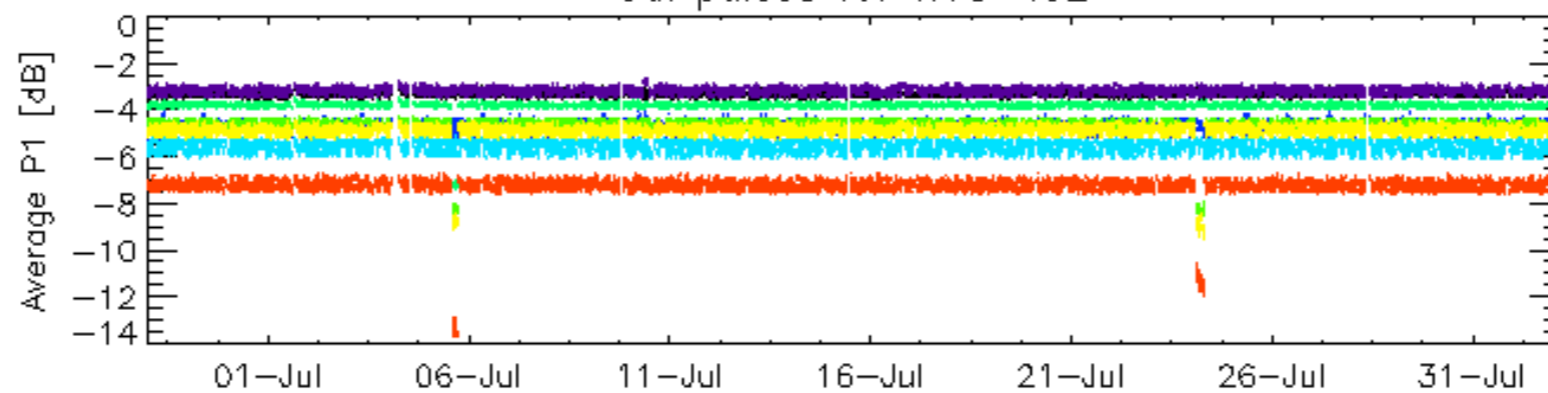


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

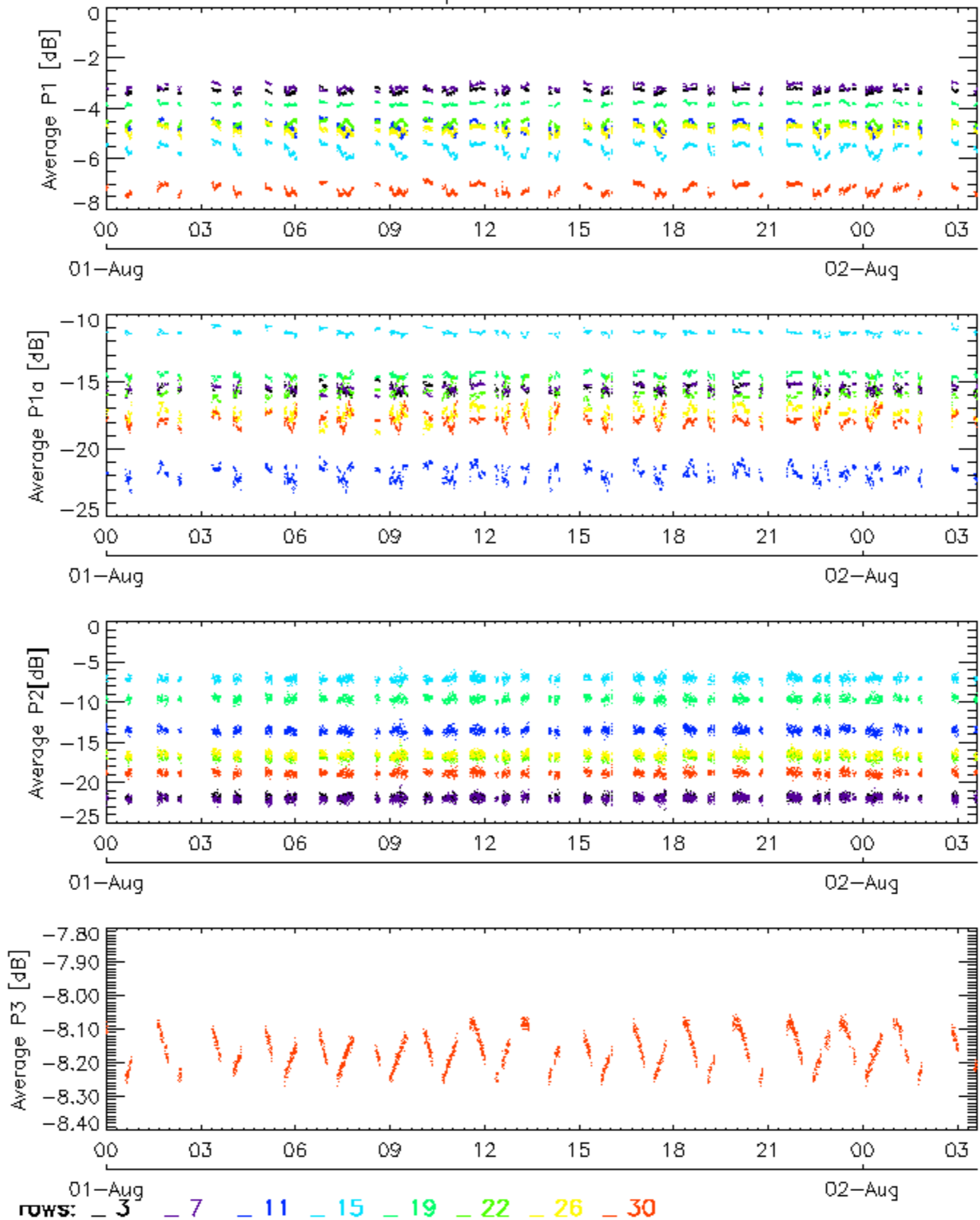


Cal pulses for WVS IS2



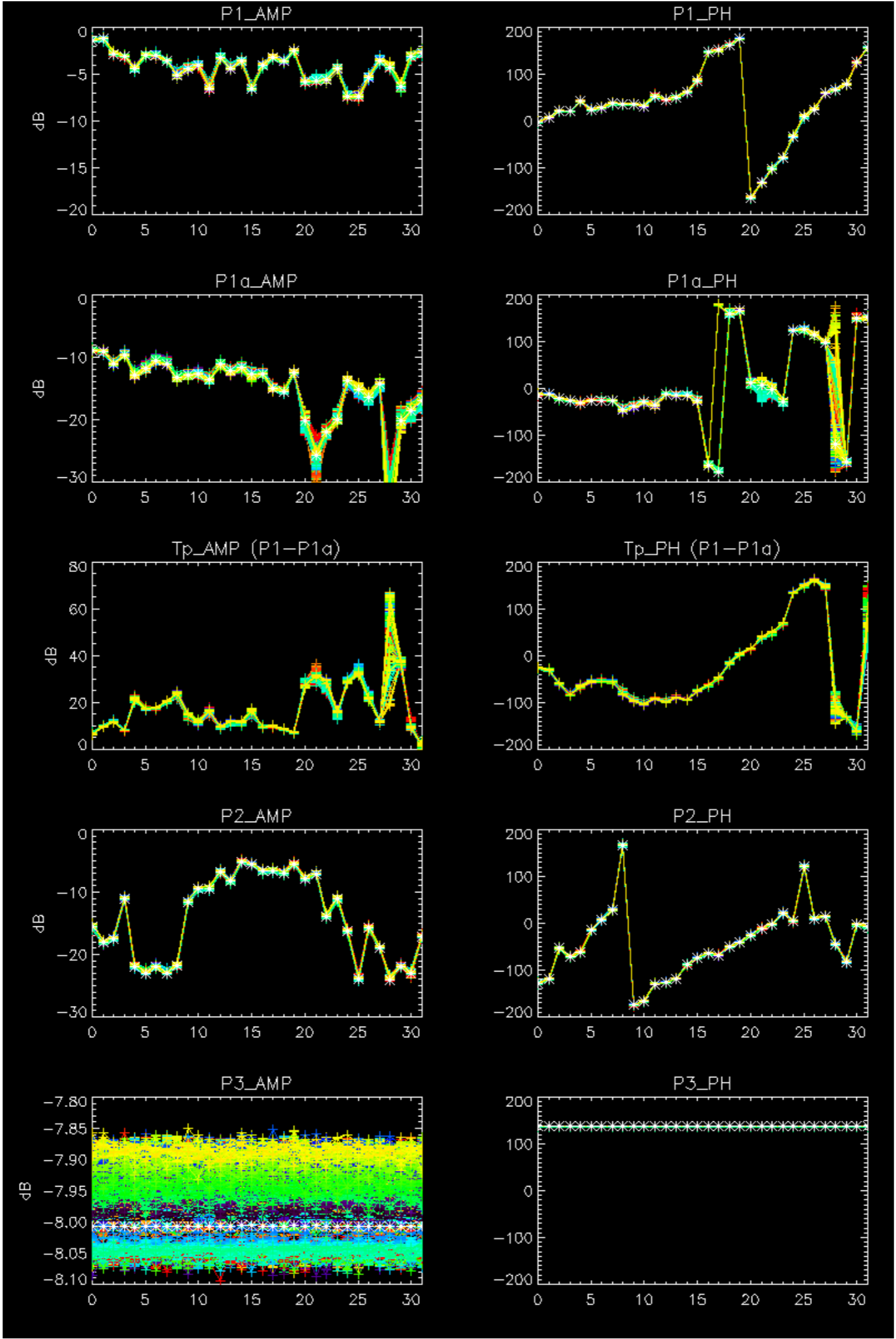
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

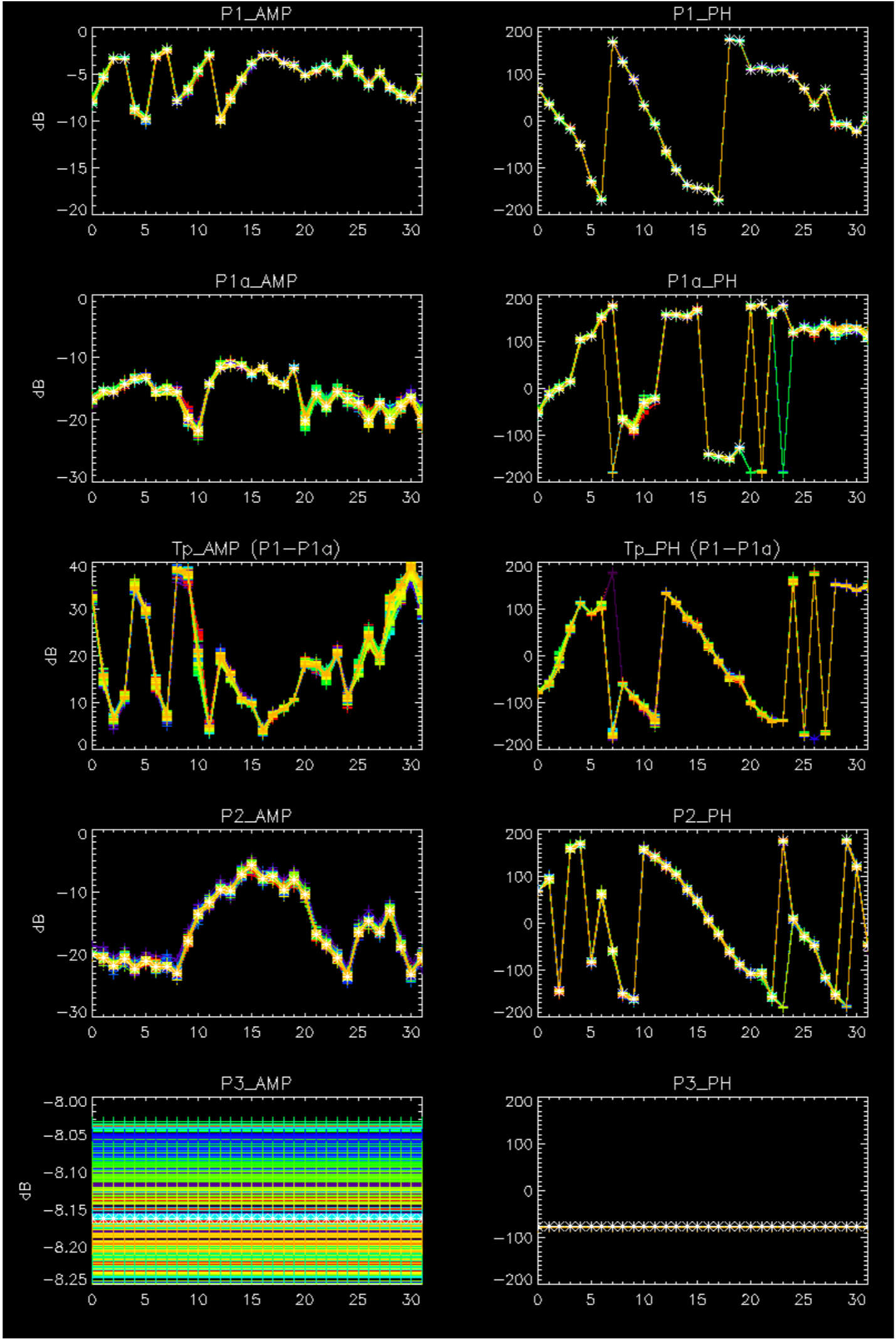
Cal pulses for WVS IS2



No anomalies observed.



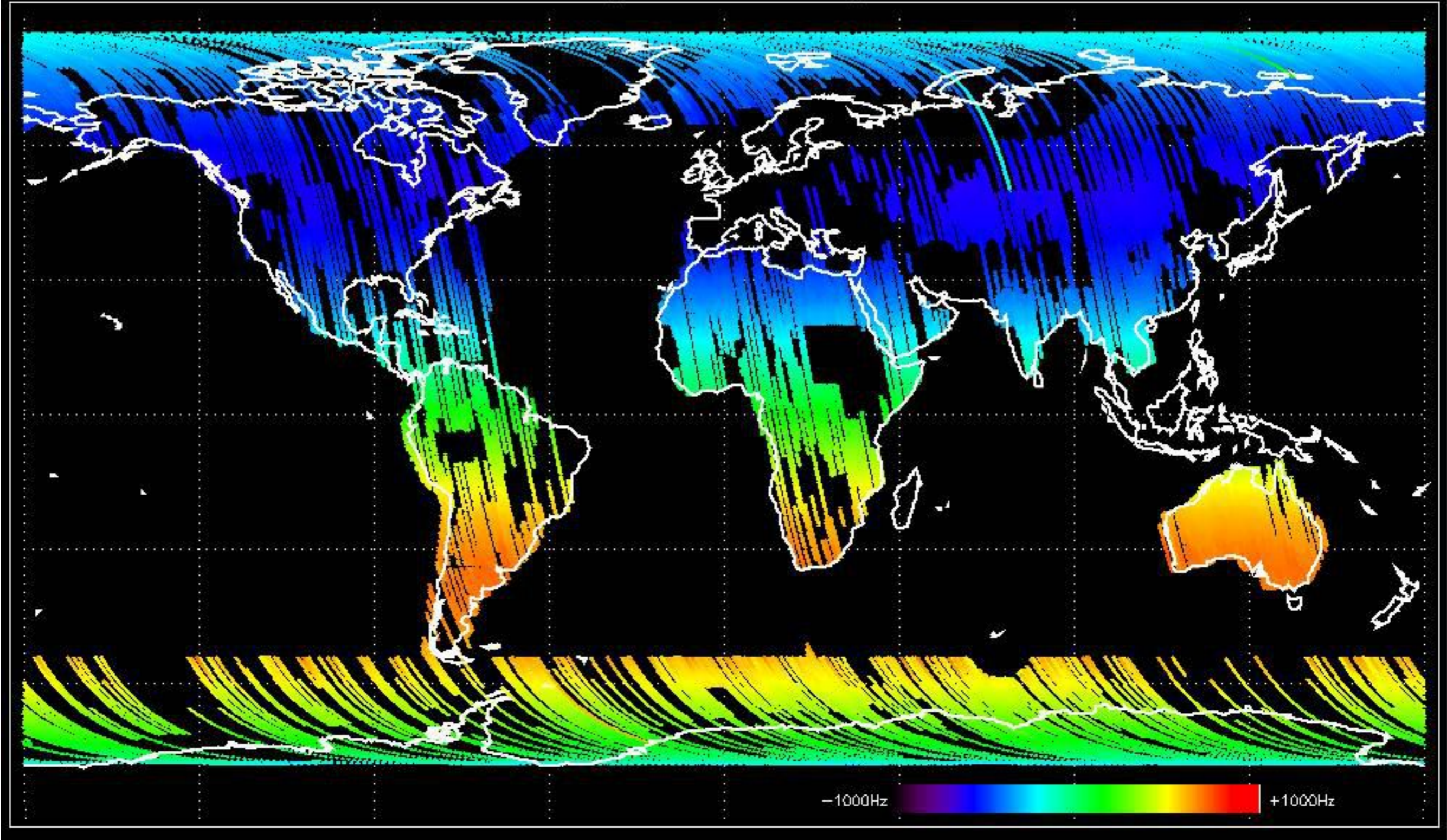




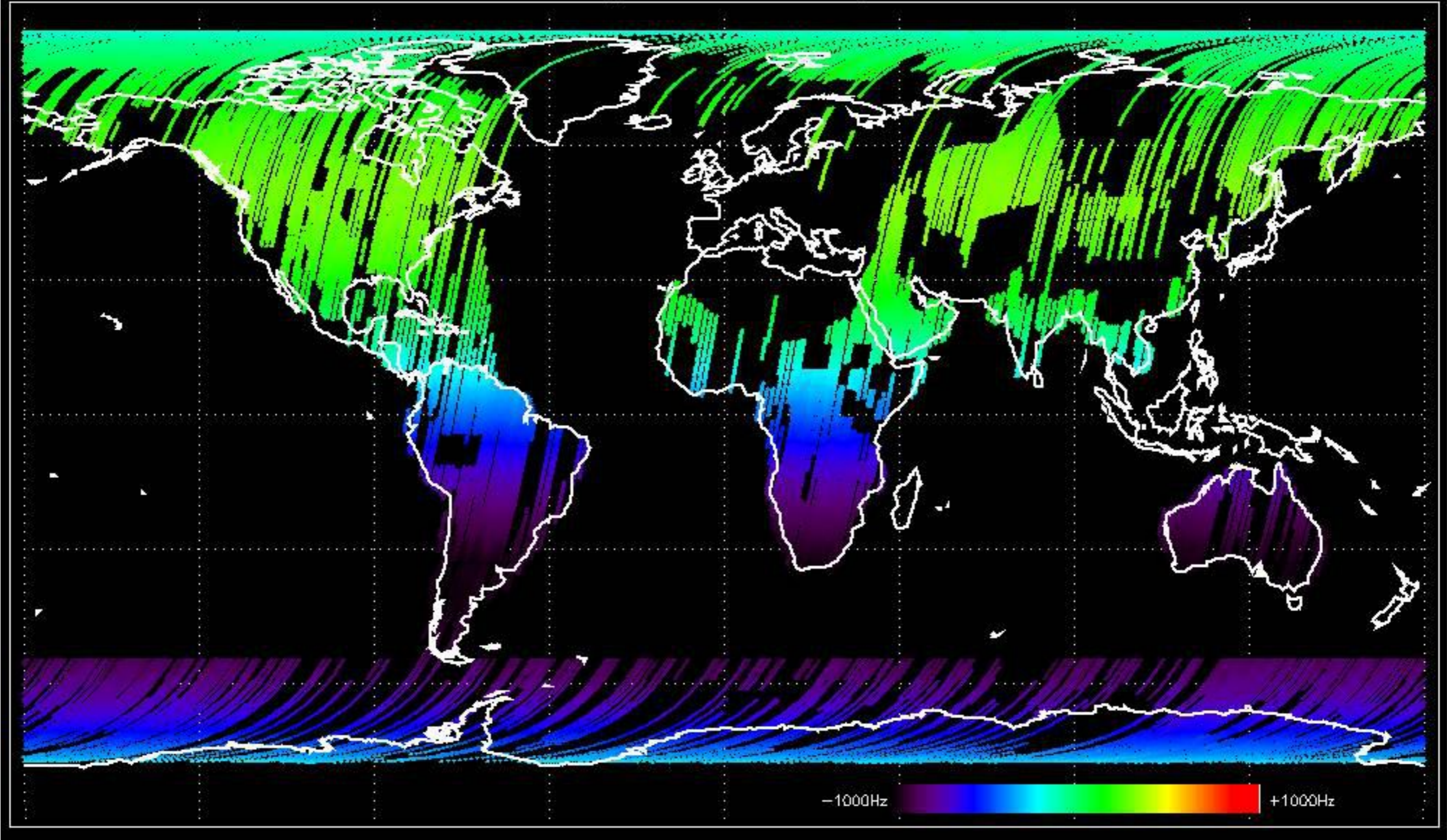
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



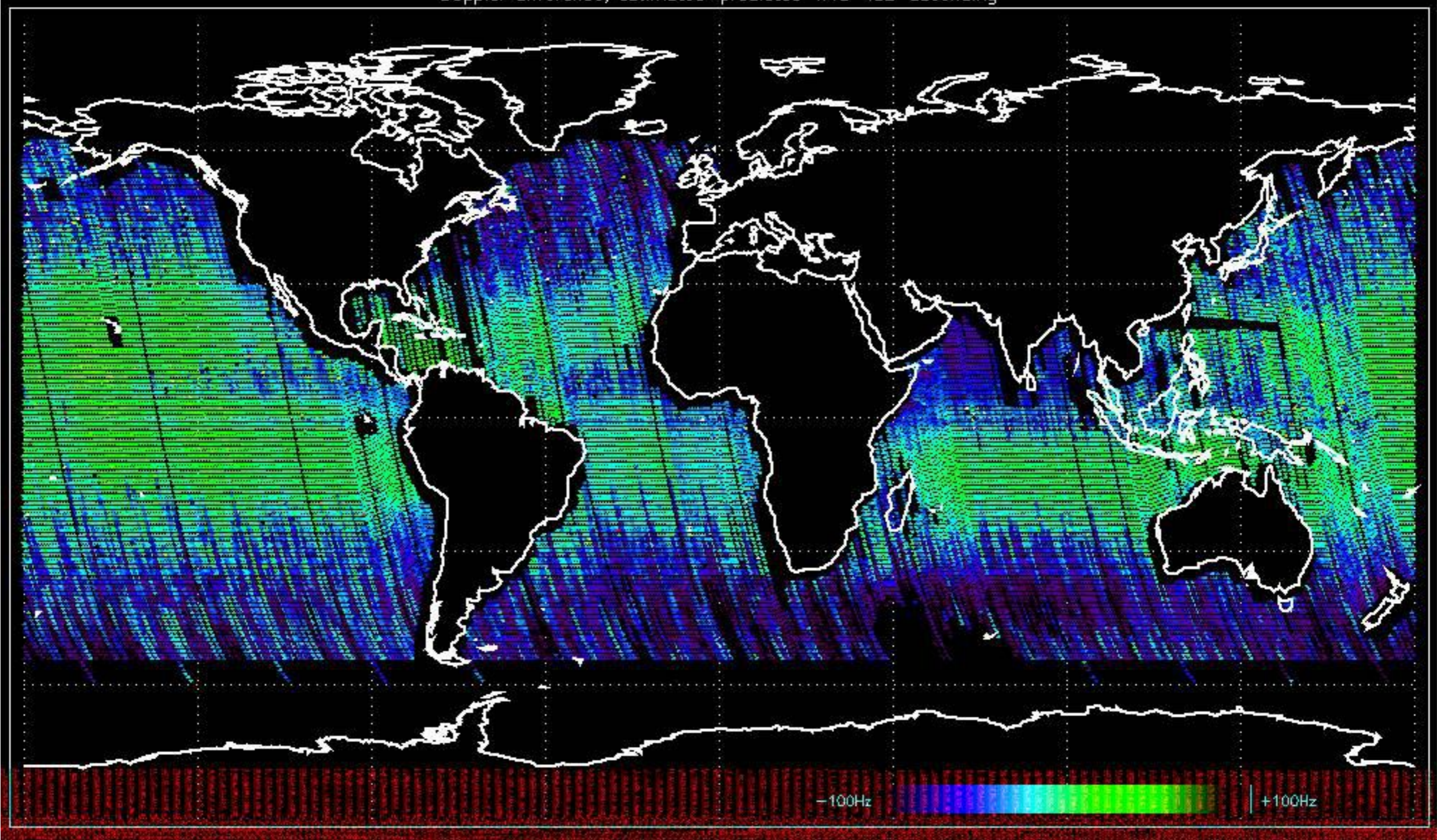
Doppler 'GM1' 'SS1' ascending



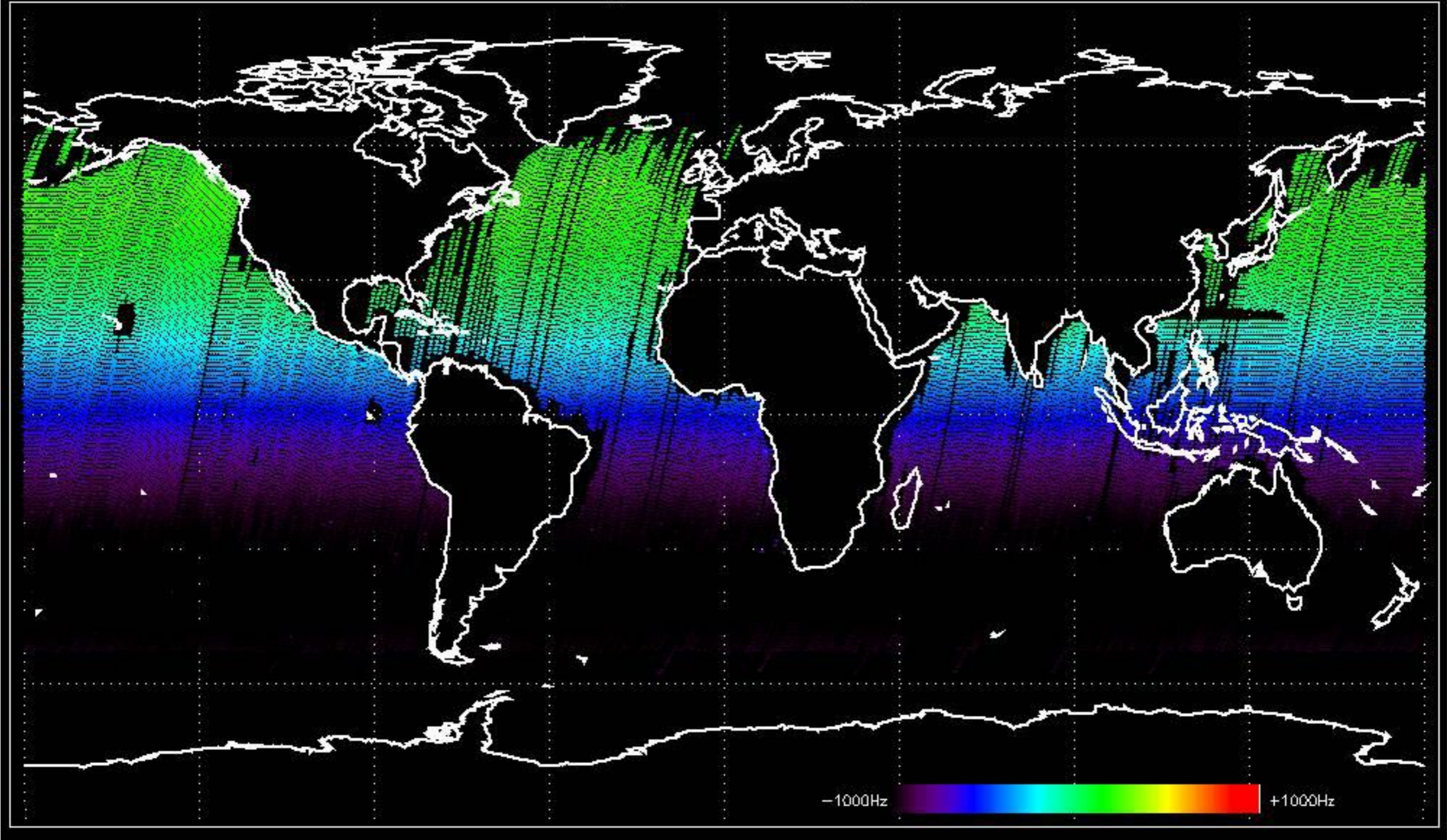
Doppler 'GM1' 'SS1' descending



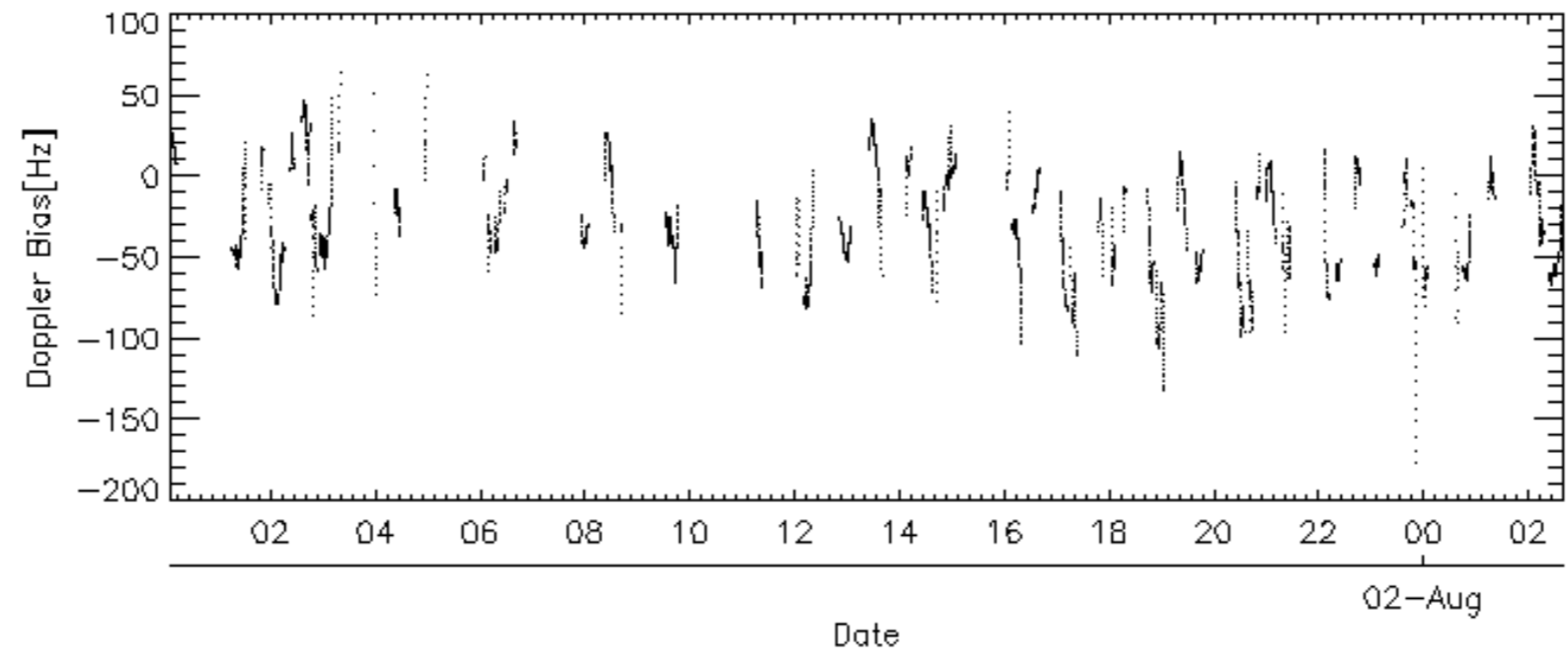
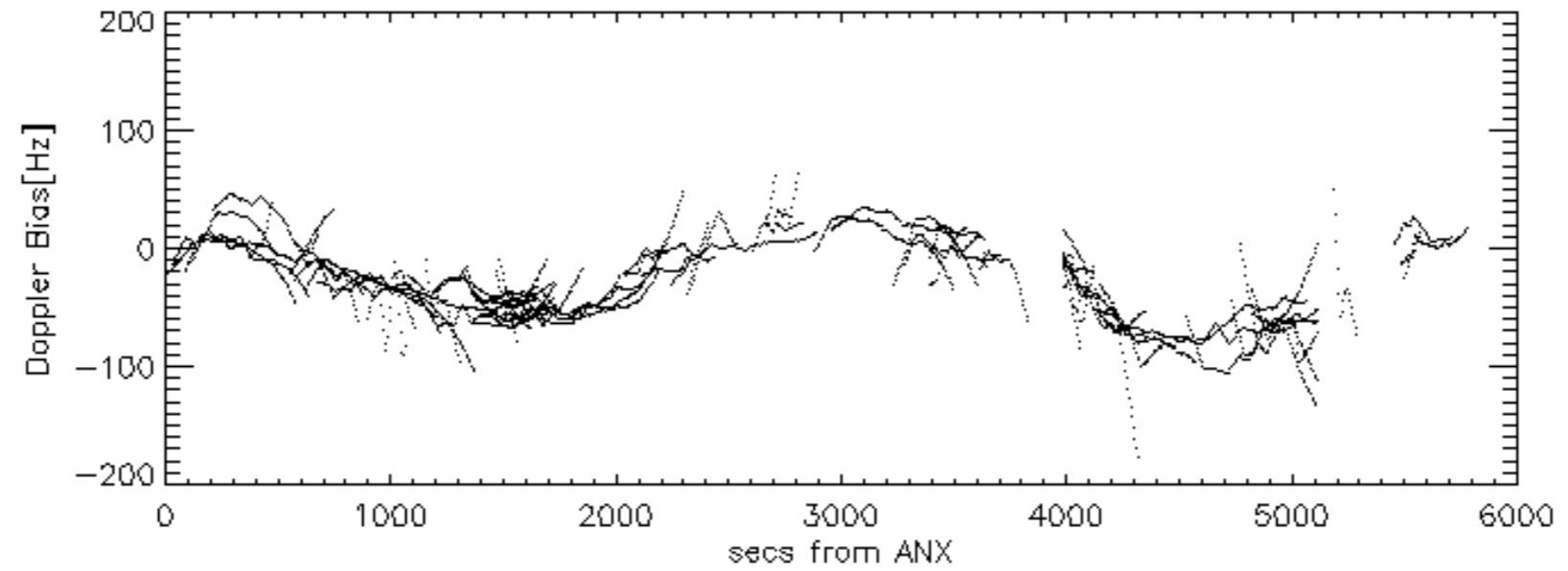
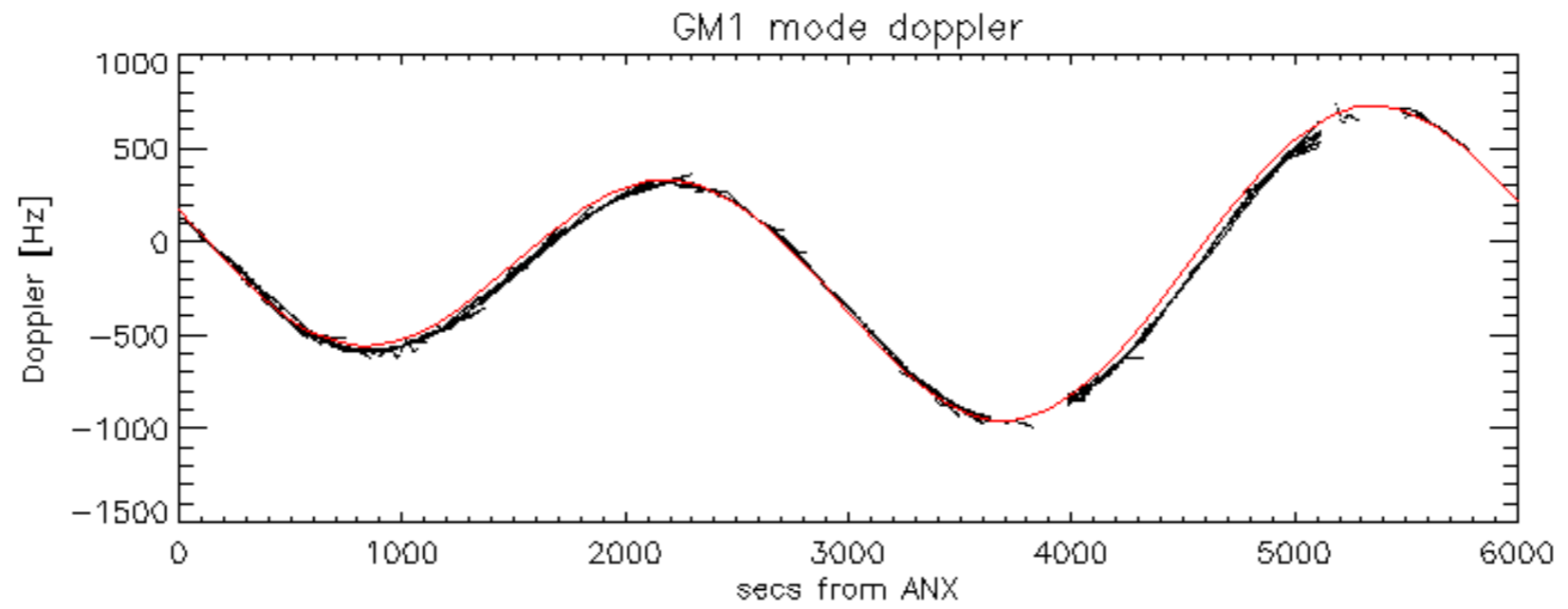
Doppler difference, estimated-predicted 'WVS' 'IS2' ascending

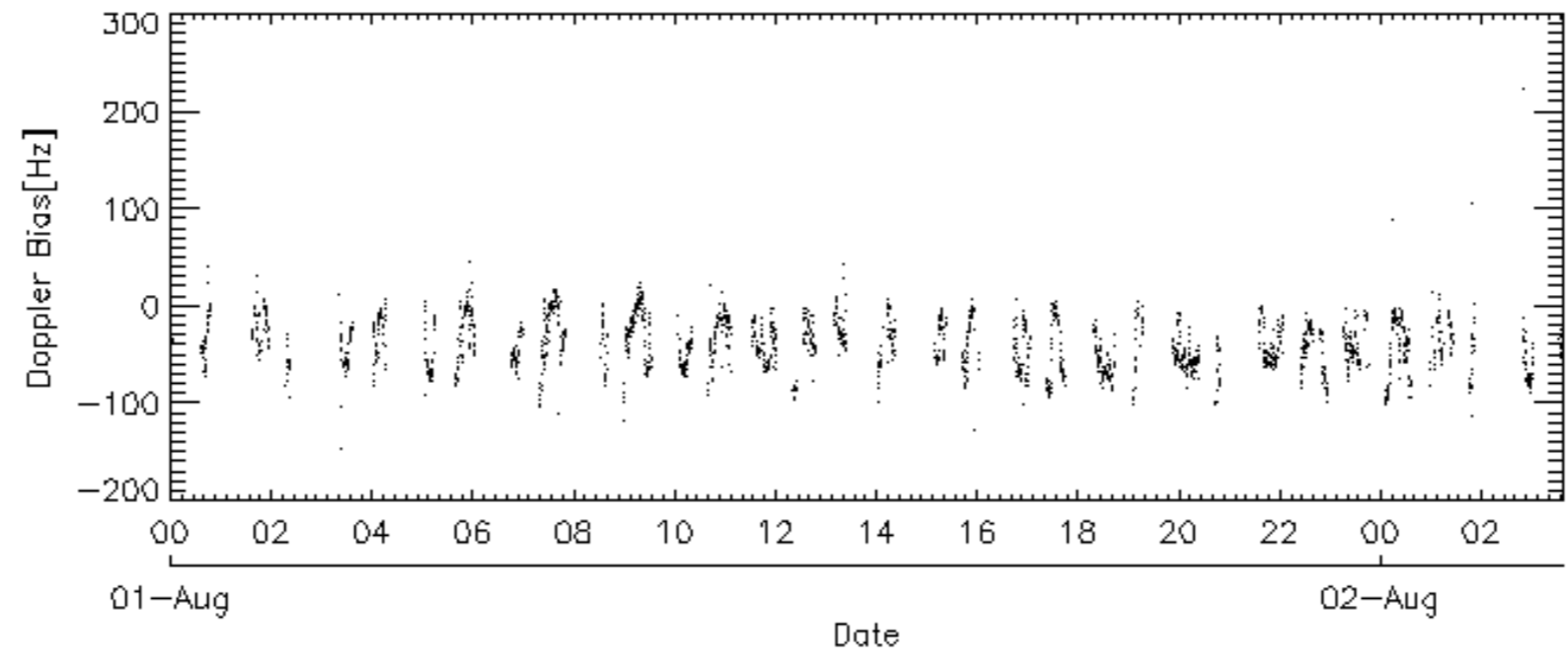
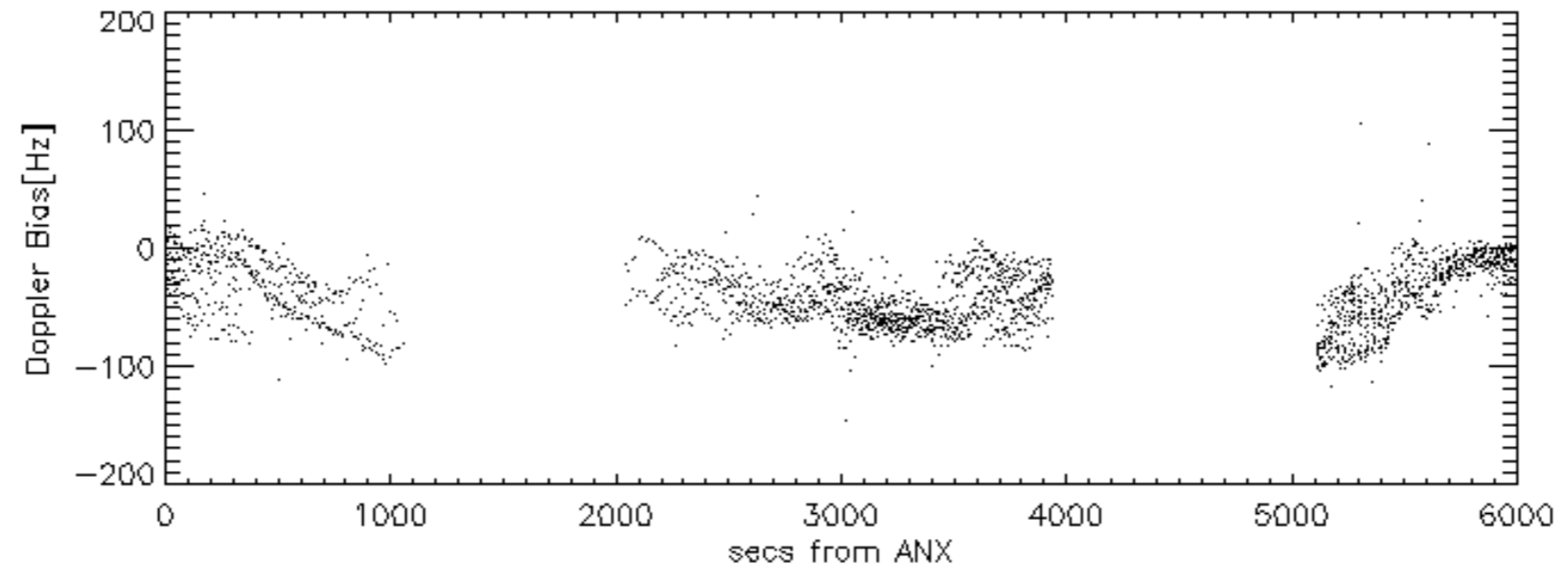
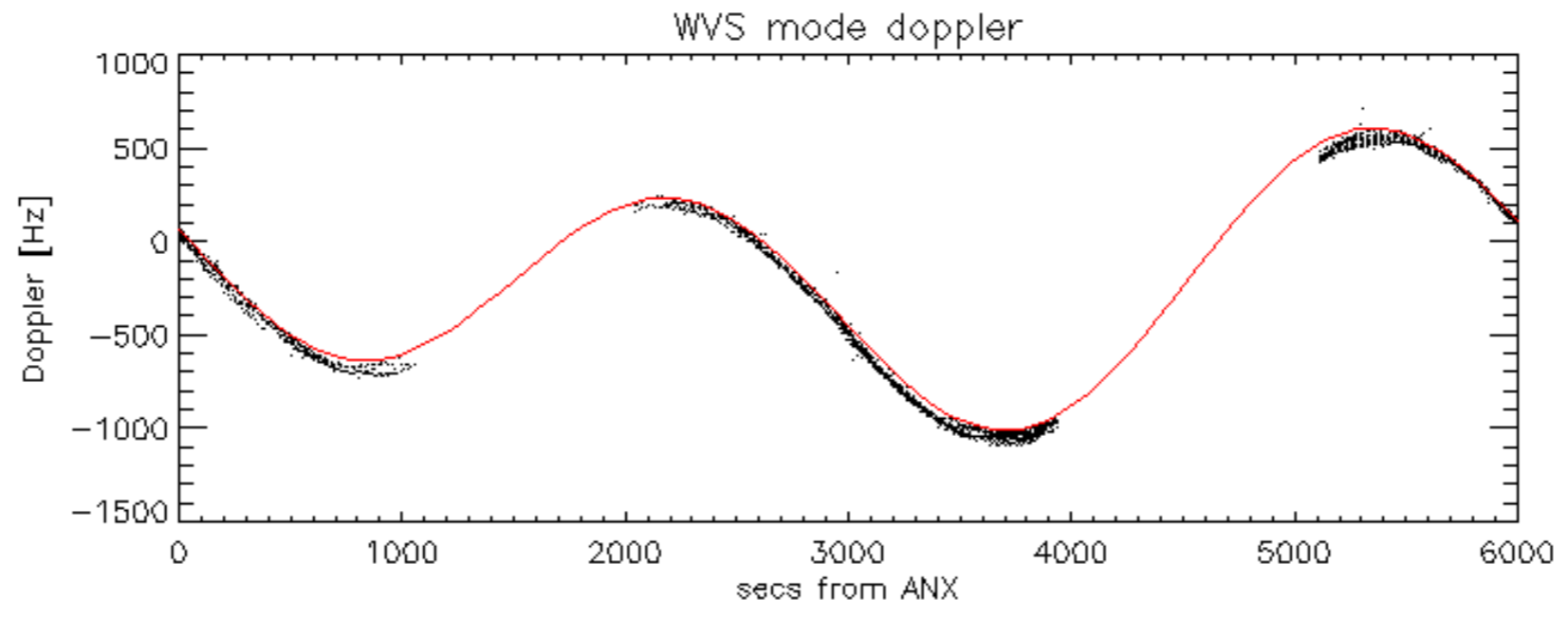


Doppler 'WVS' 'IS2' descending

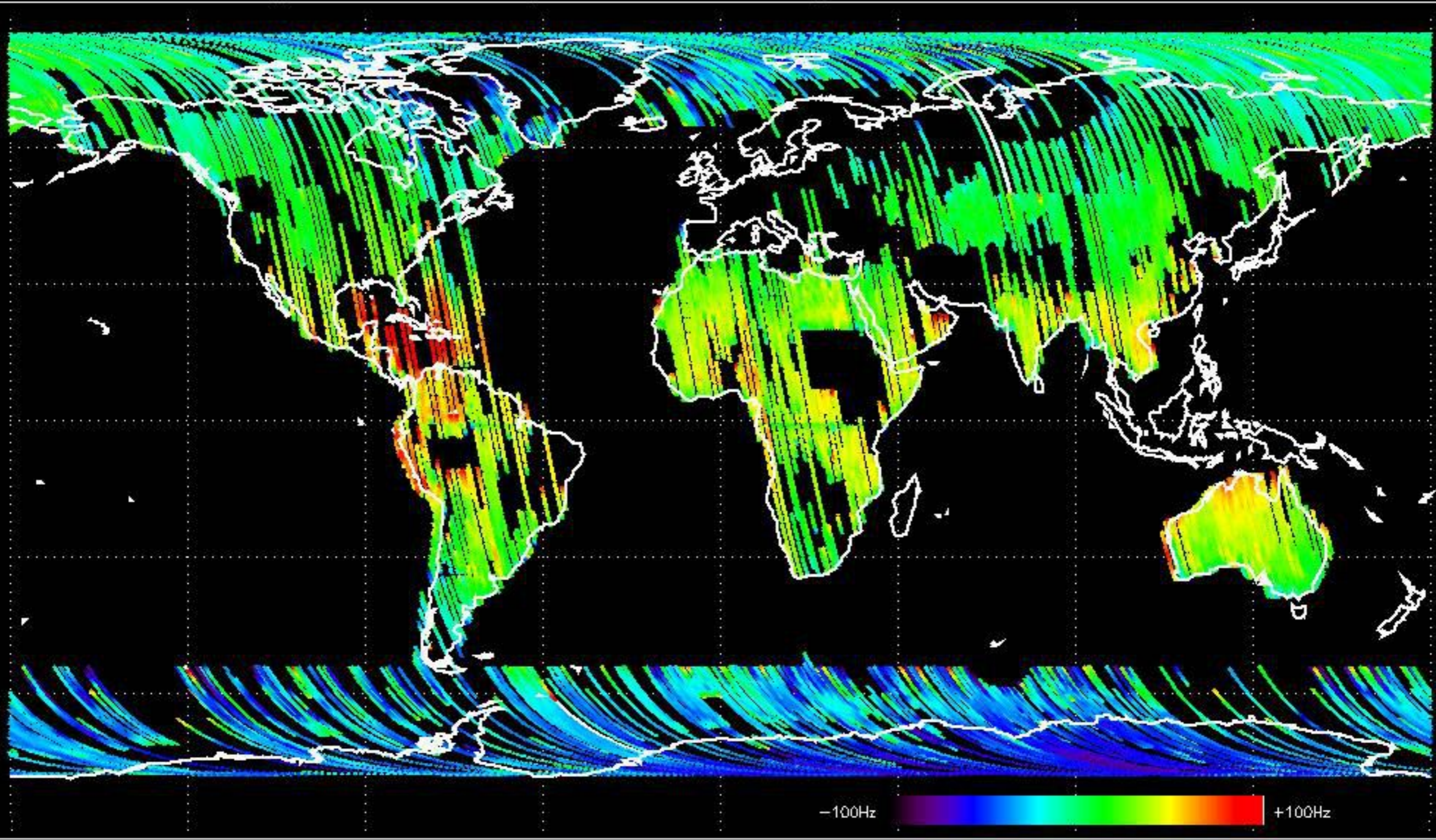




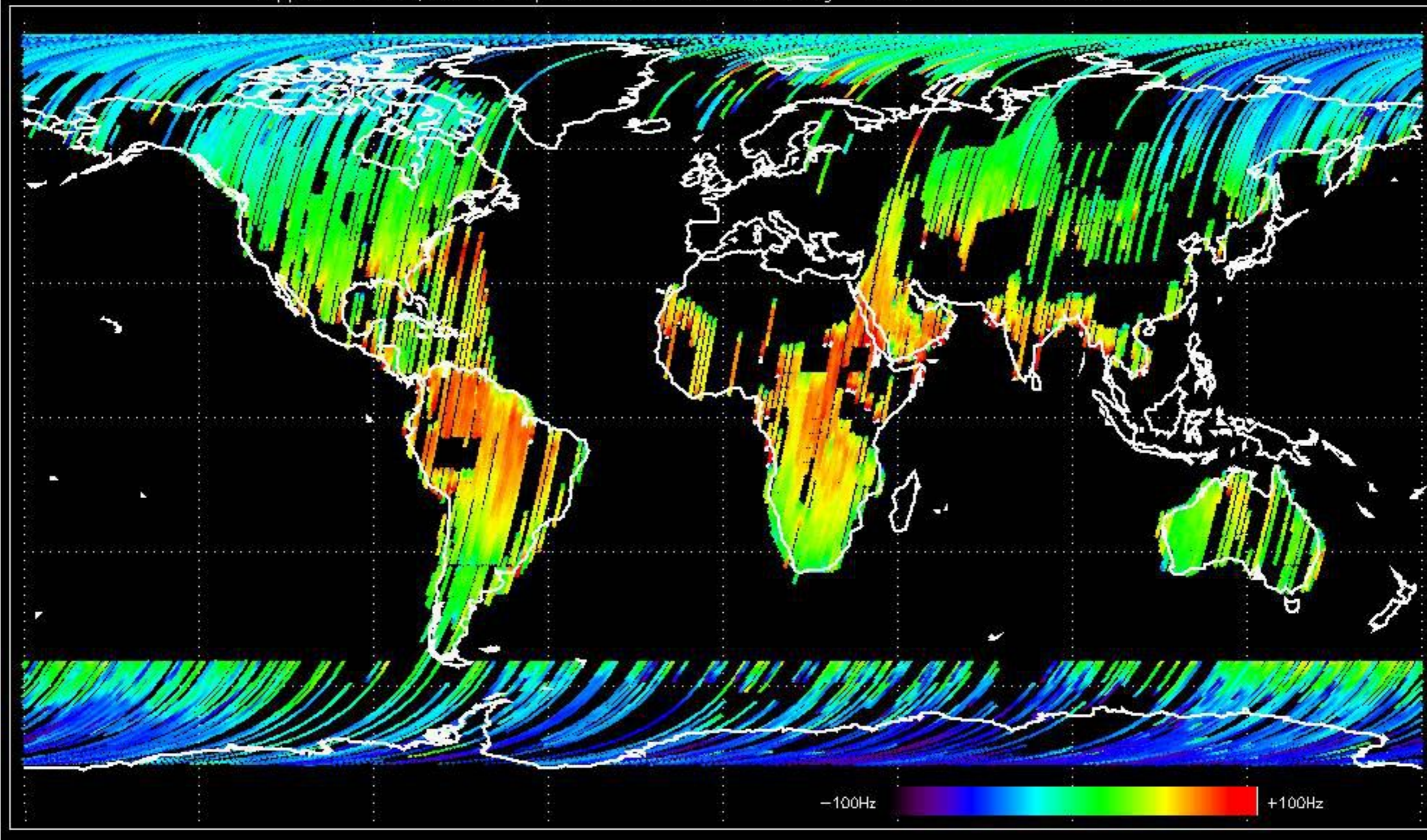




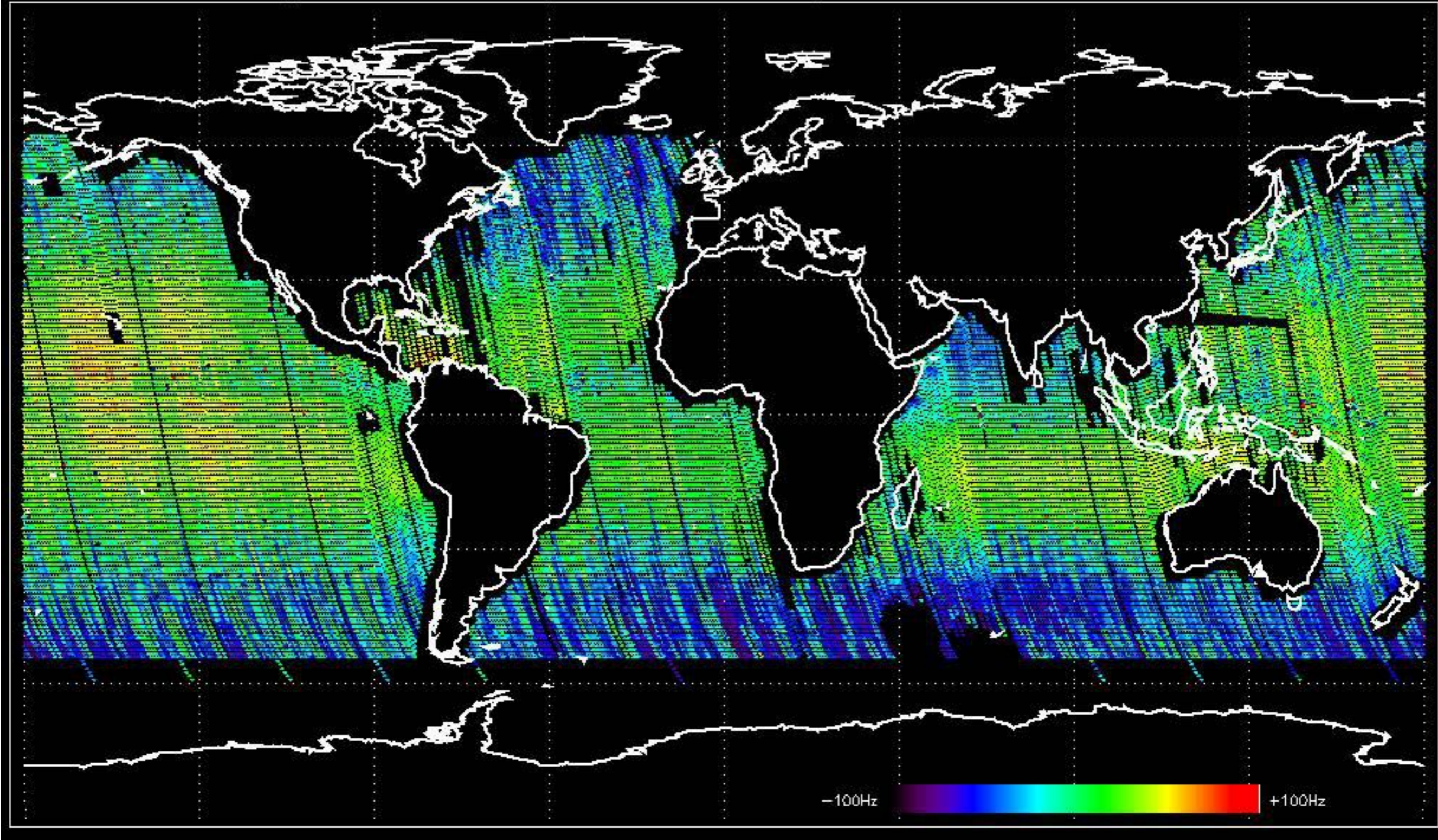
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -35.107267 Hz



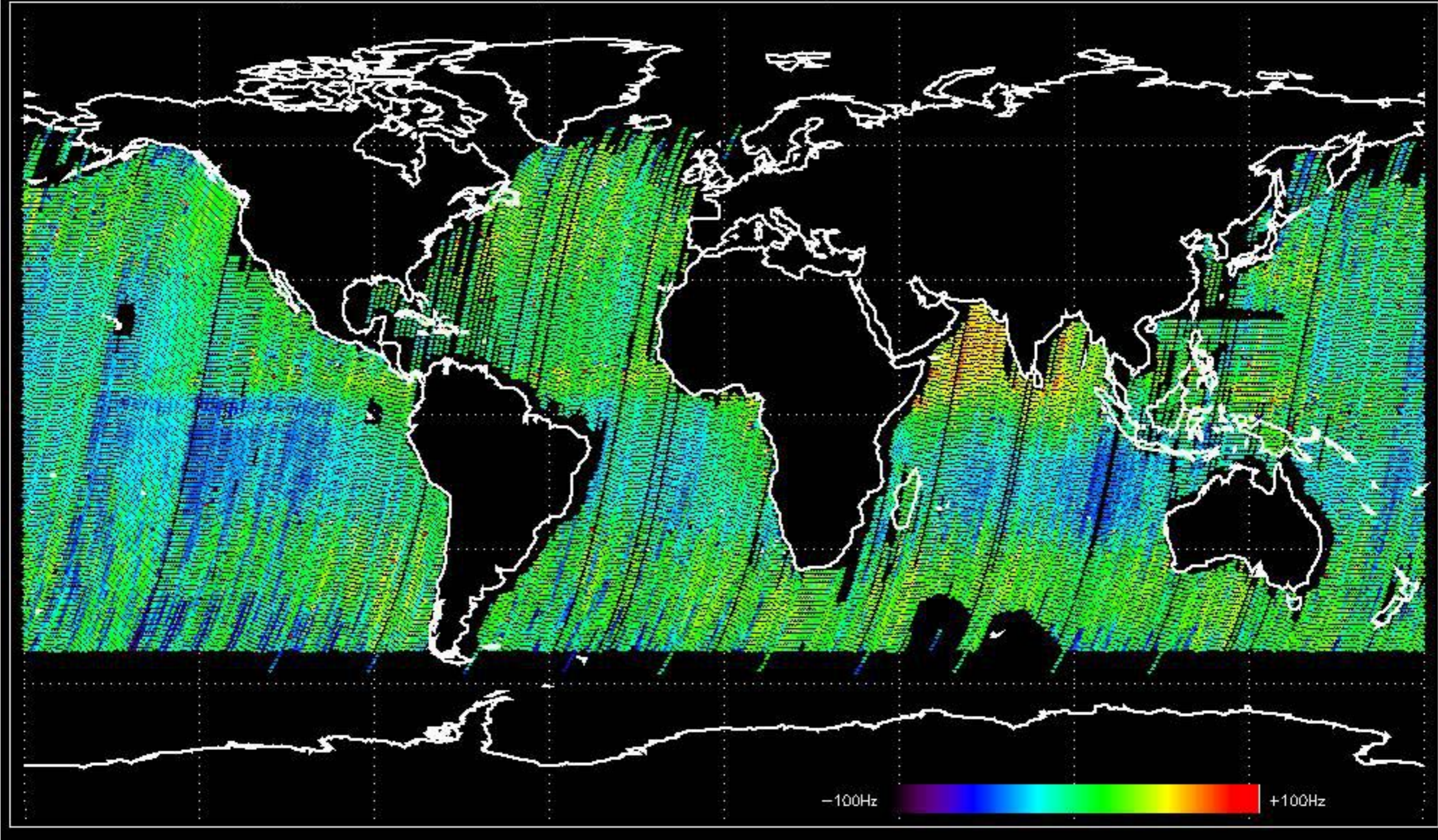
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.157547 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -32.635732 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -35.577884 Hz



No anomalies observed on available MS products:

No anomalies observed.





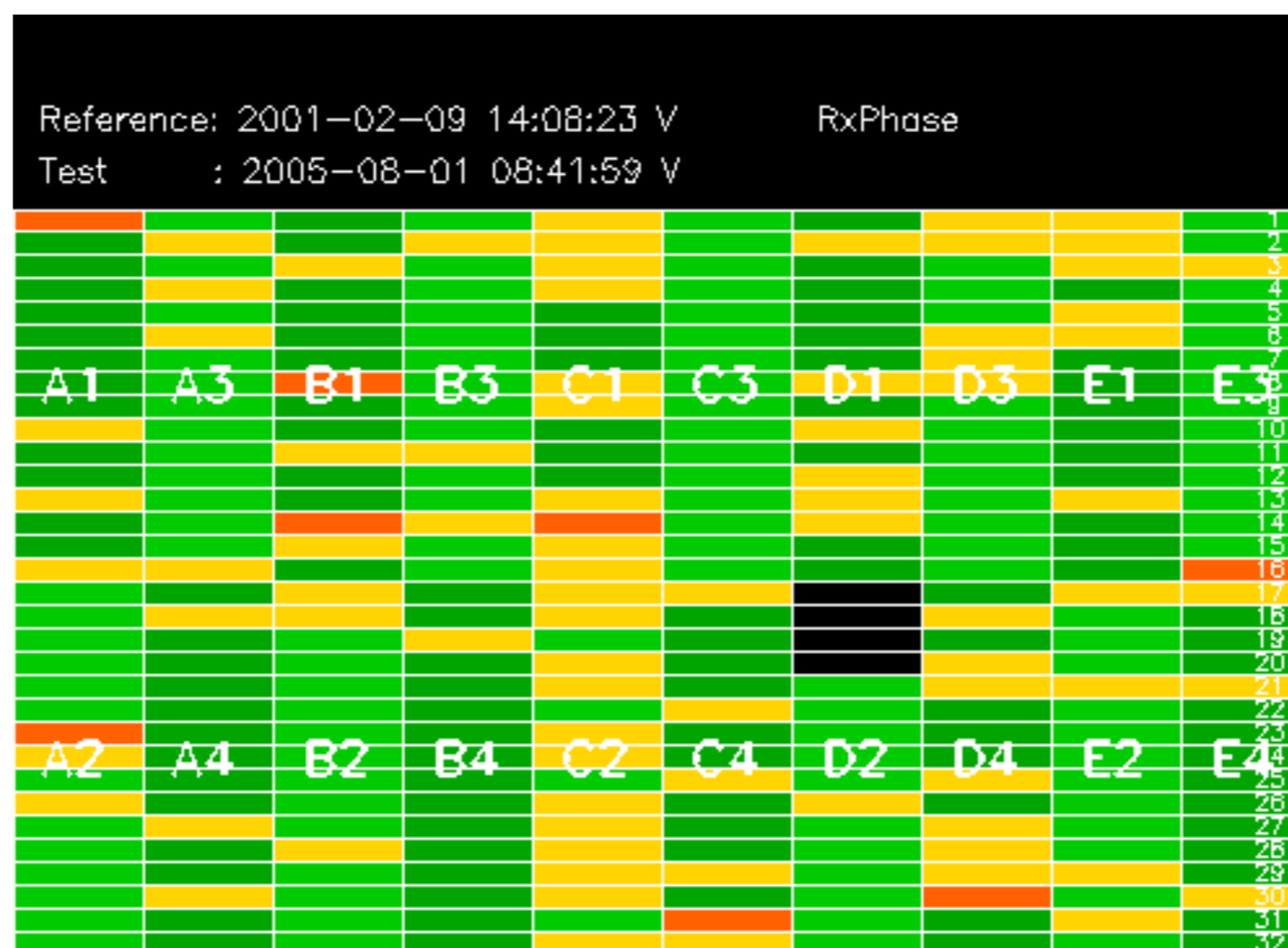






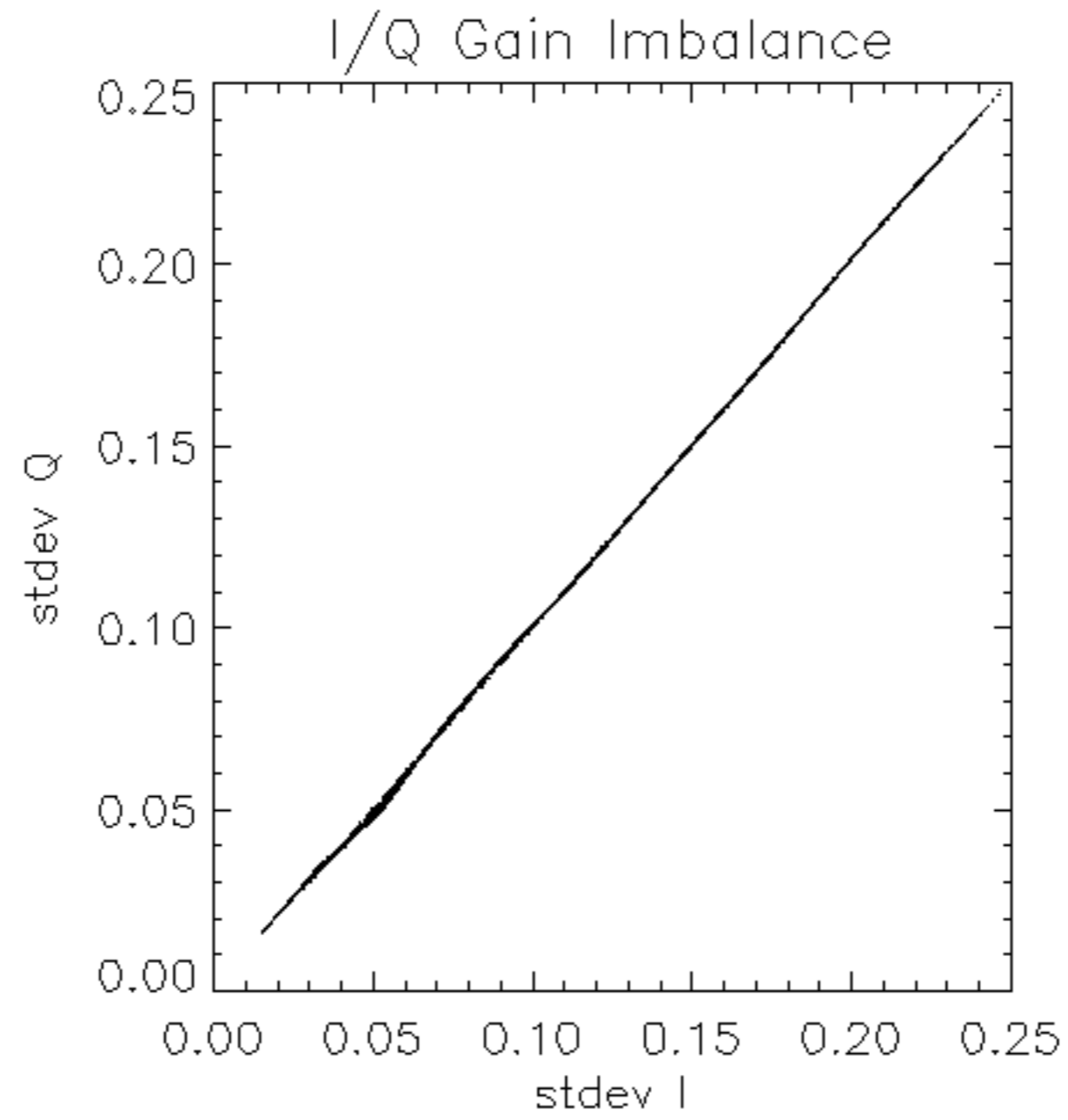


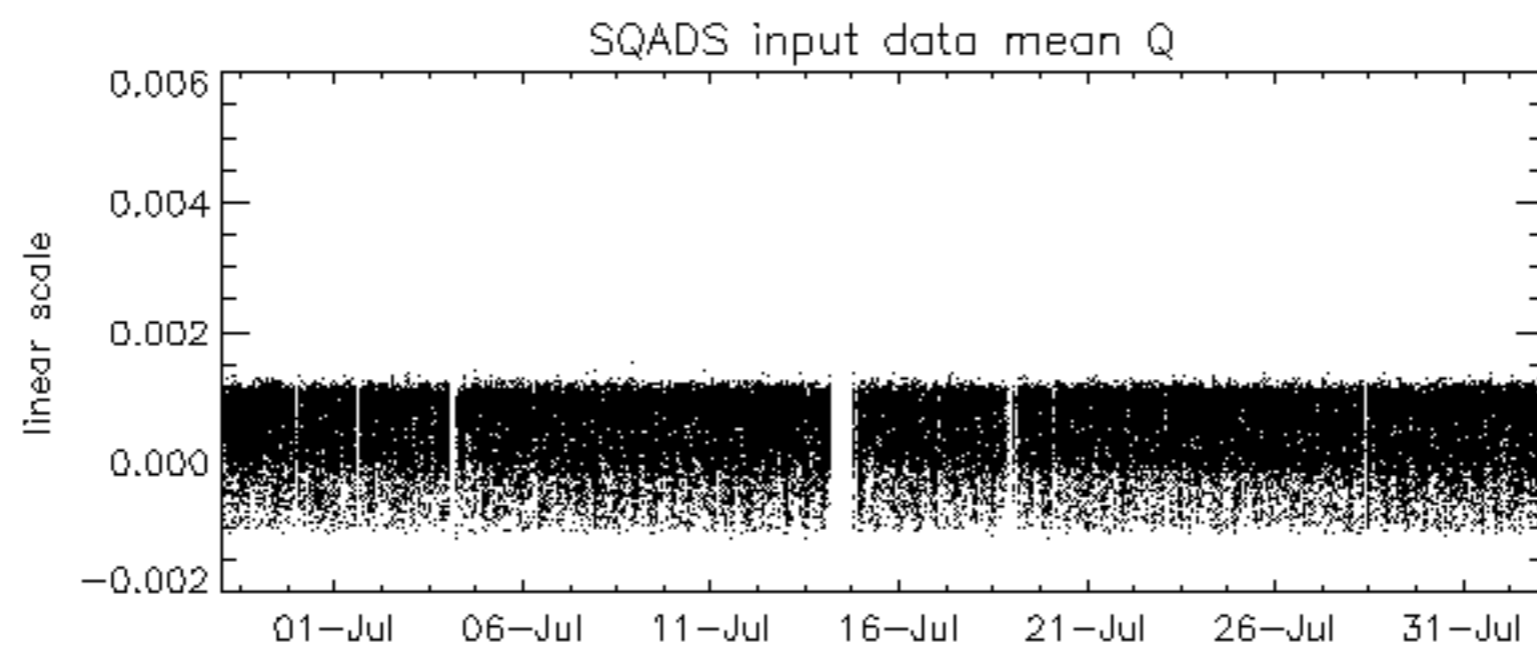
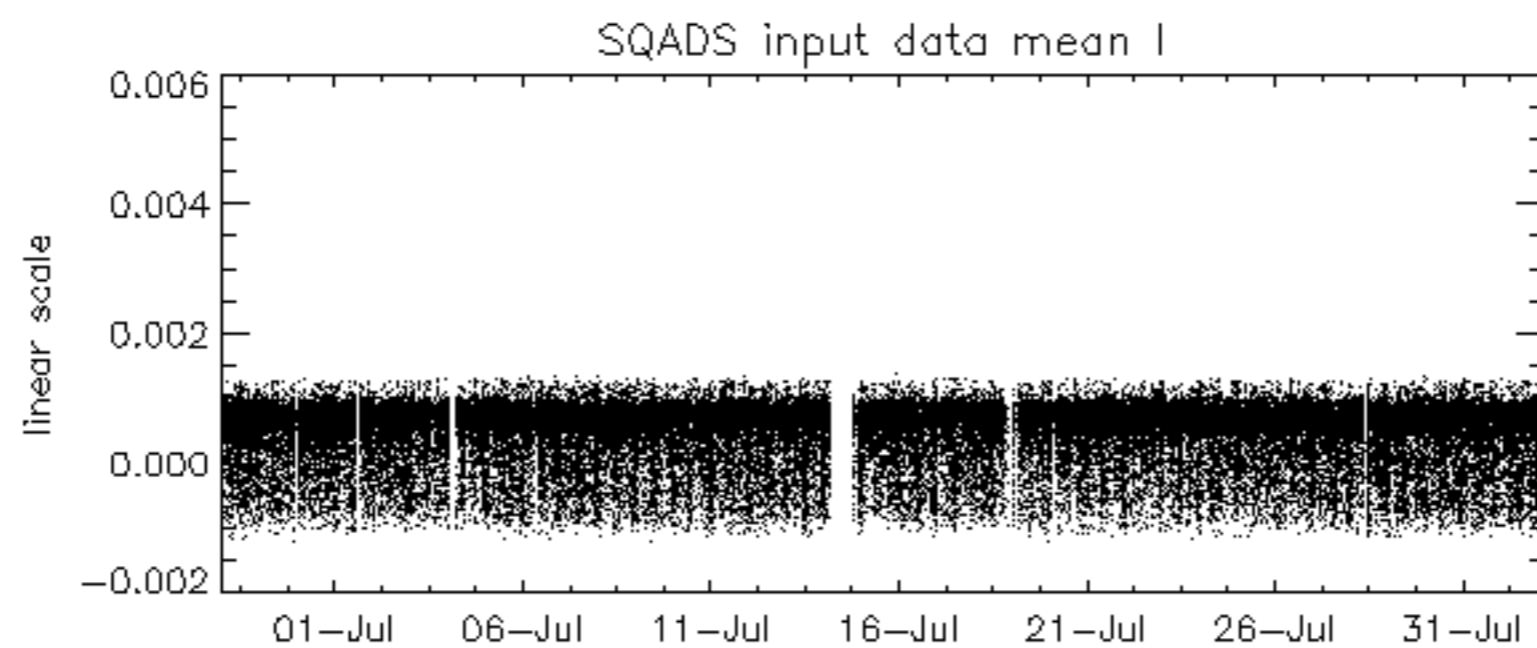
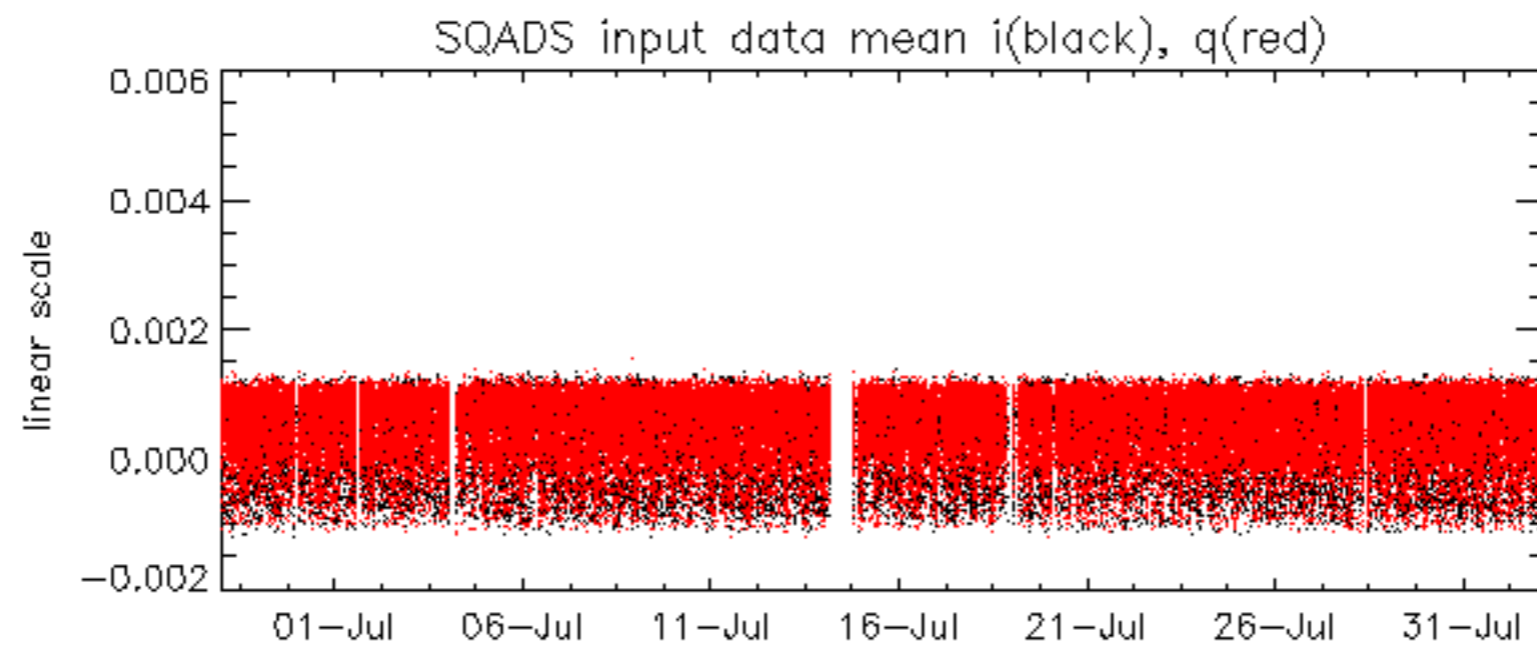


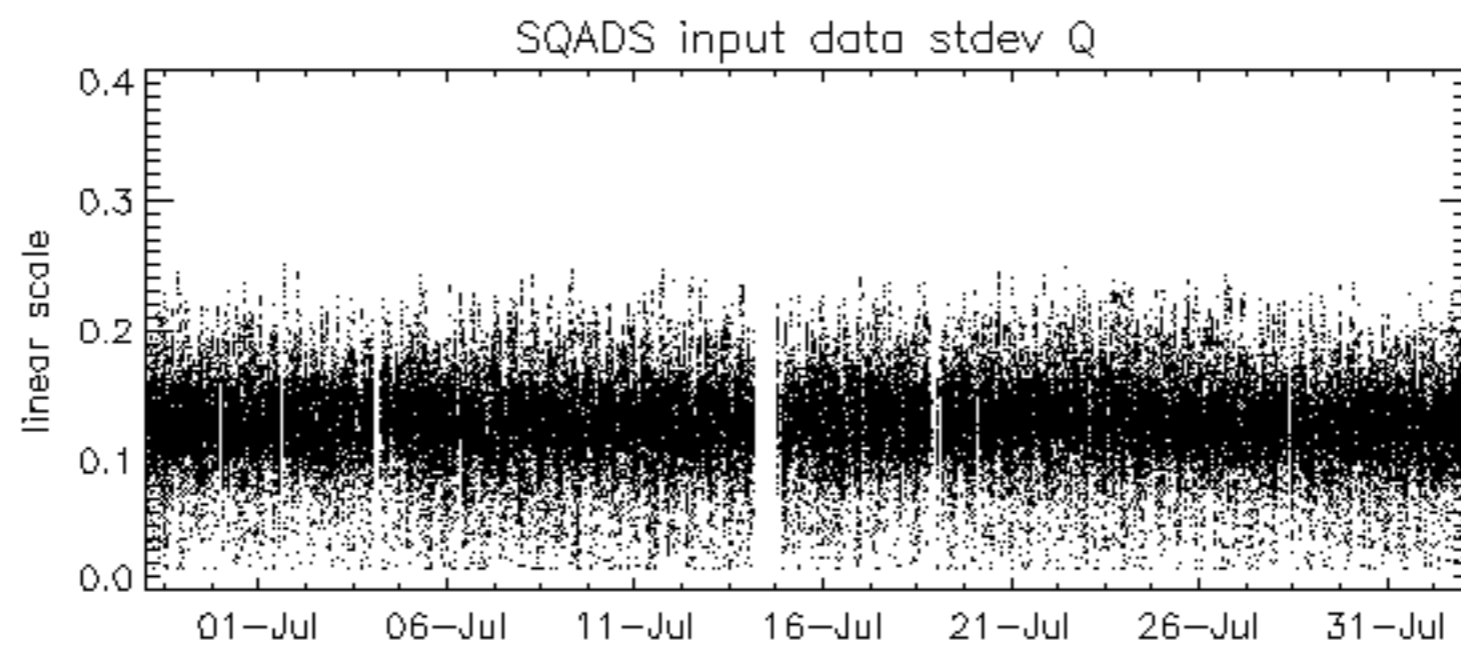
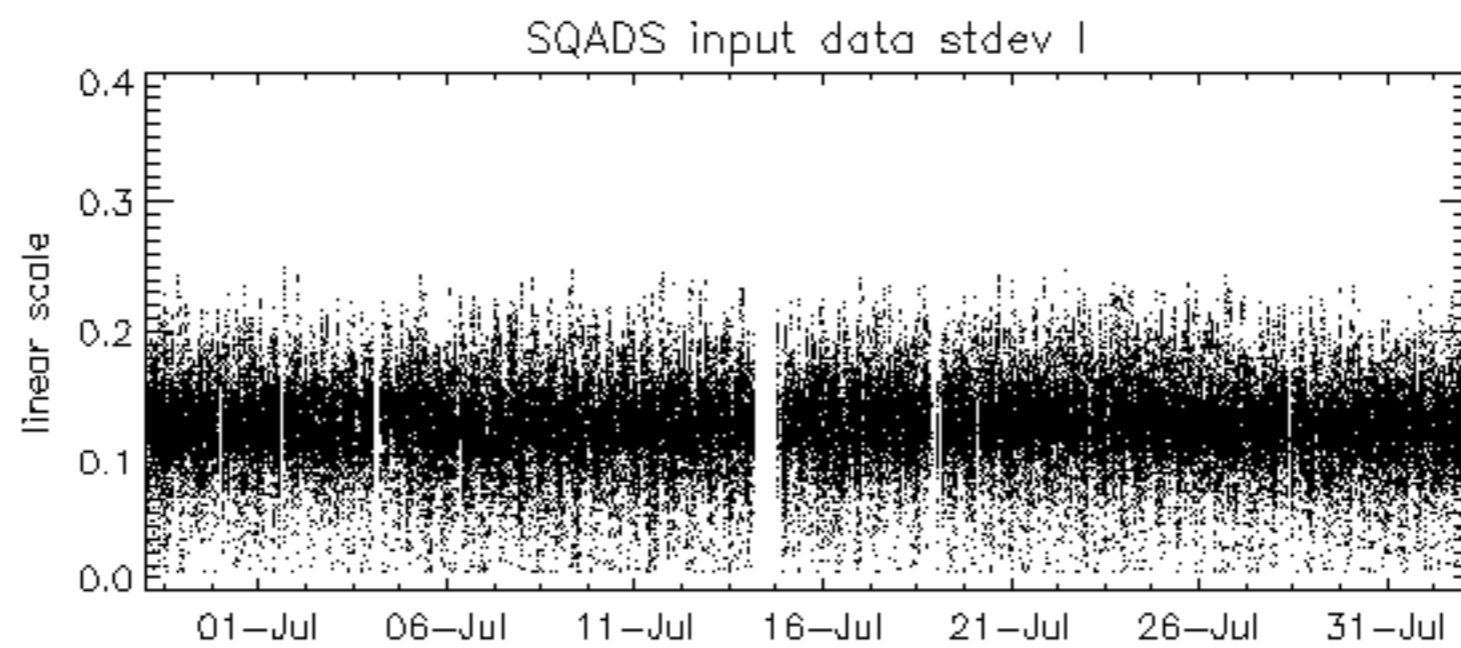
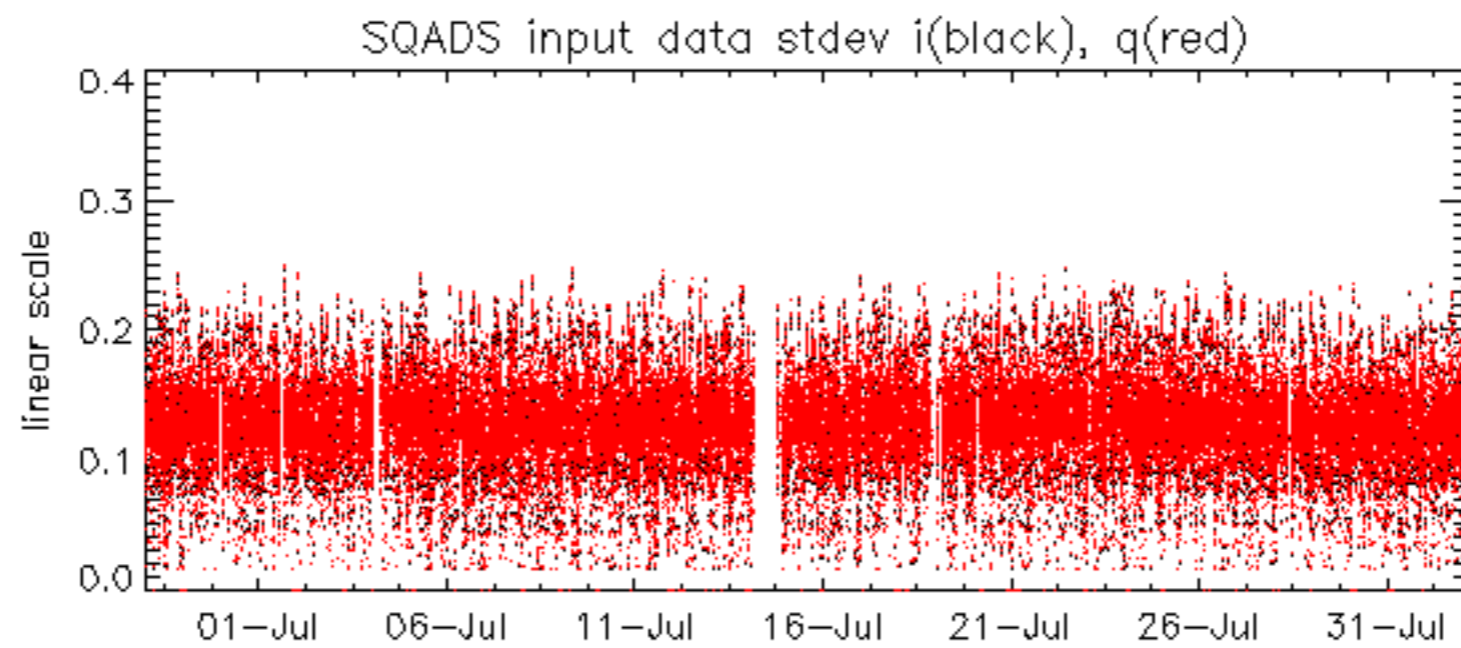






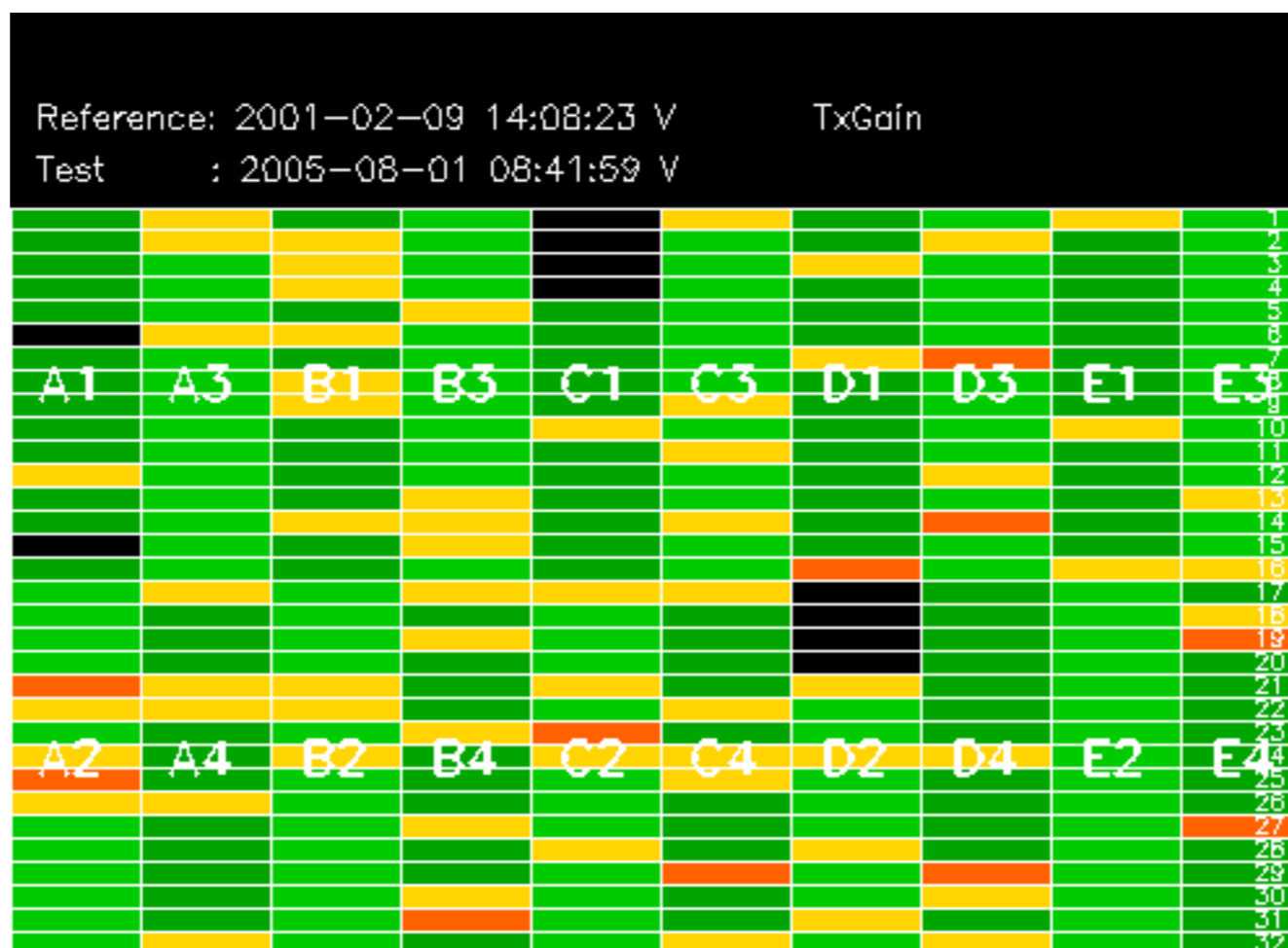














Summary of analysis for the last 3 days 2005080[112]

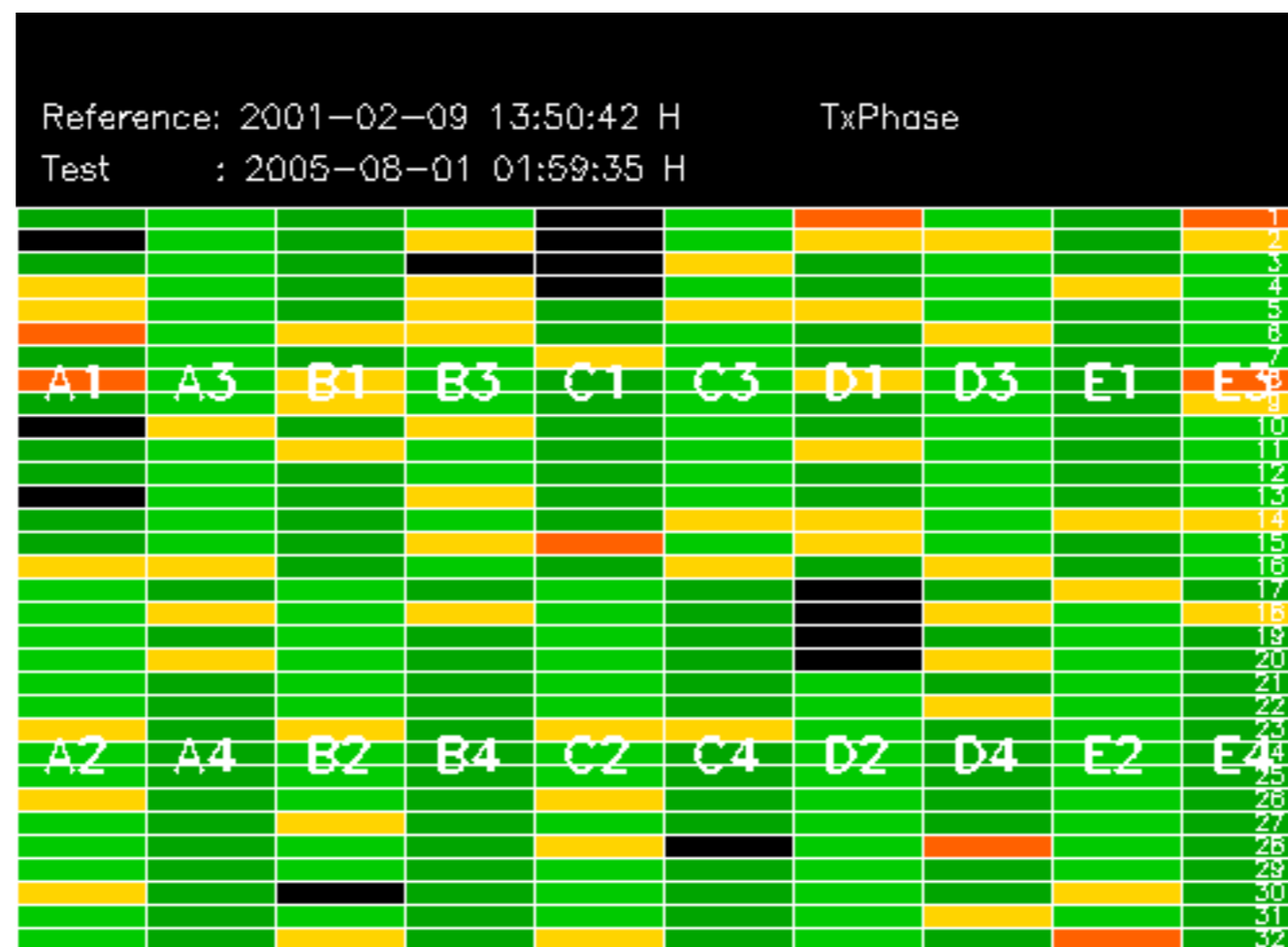
The assumption is taken that the SQUADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_IMM_1PNPDE20050801_155734_000002312039_00298_17887_1240.N1	1	0
ASA_IMM_1PNPDE20050801_174612_000001062039_00299_17888_1253.N1	1	0
ASA_WSM_1PNPDE20050801_063104_000002132039_00292_17881_2374.N1	0	1
ASA_WSM_1PNPDE20050802_010559_000000852039_00303_17892_2489.N1	0	19
ASA_WSM_1PNPDE20050802_021824_000003002039_00304_17893_2504.N1	5	0



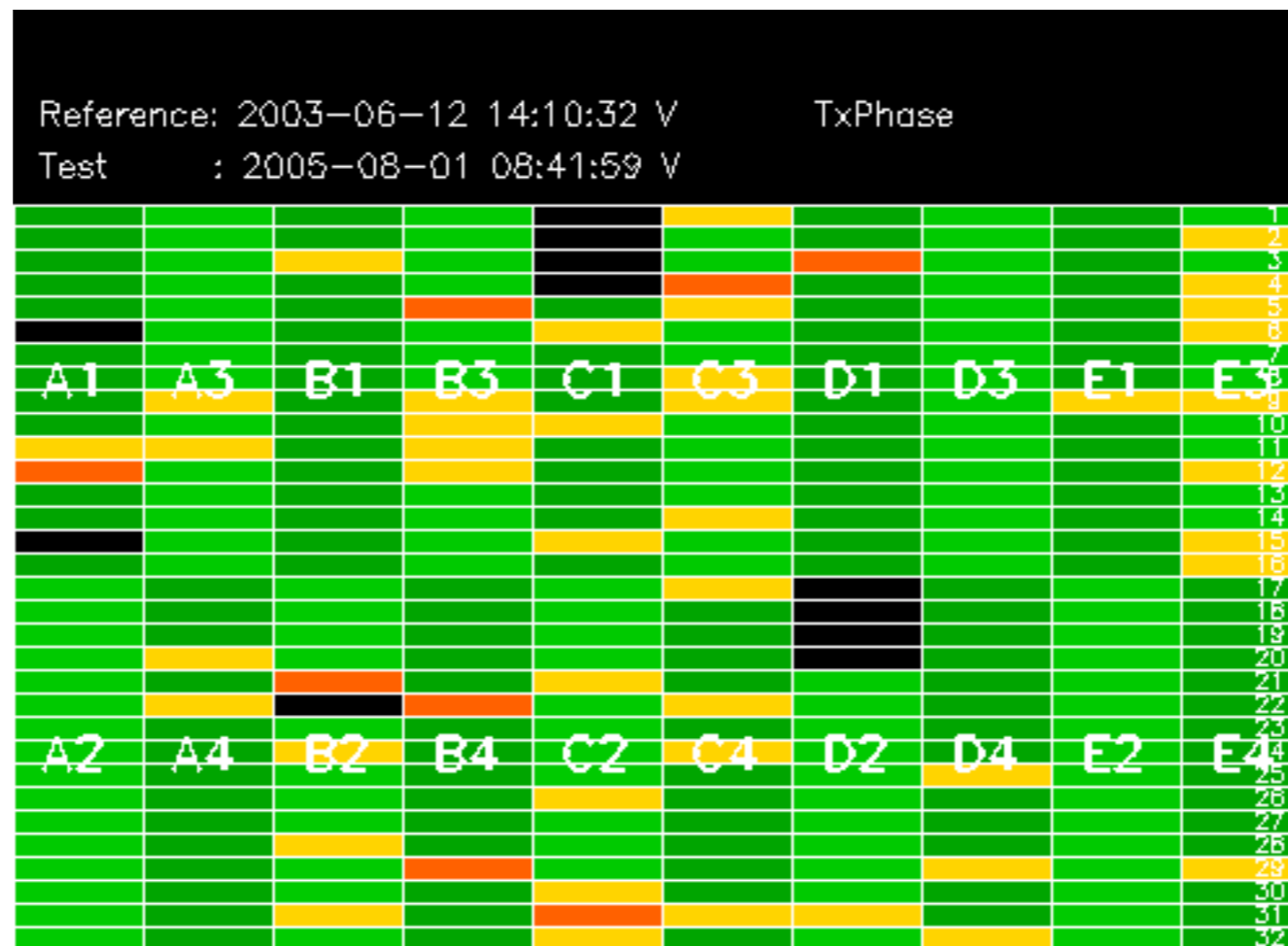


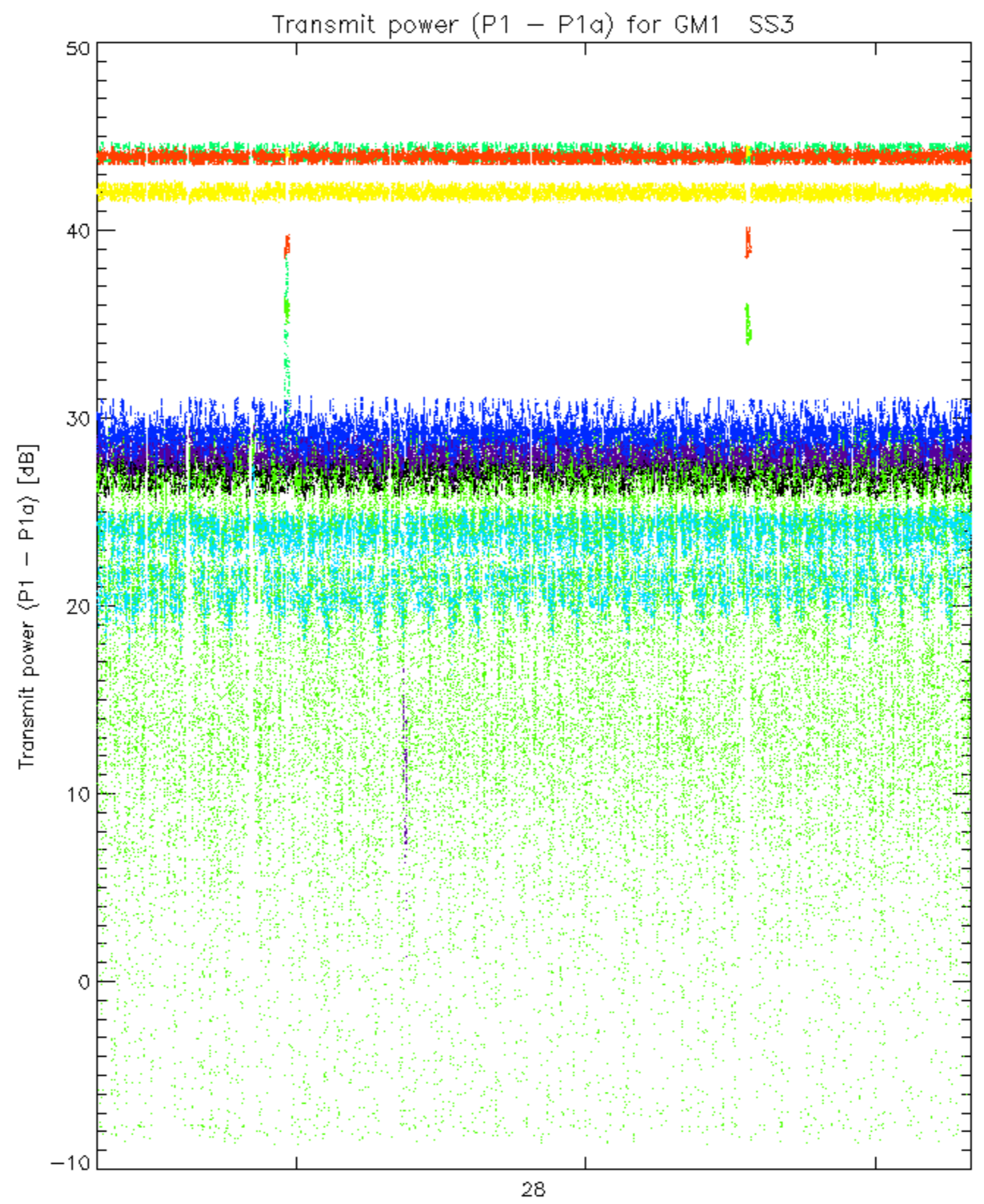


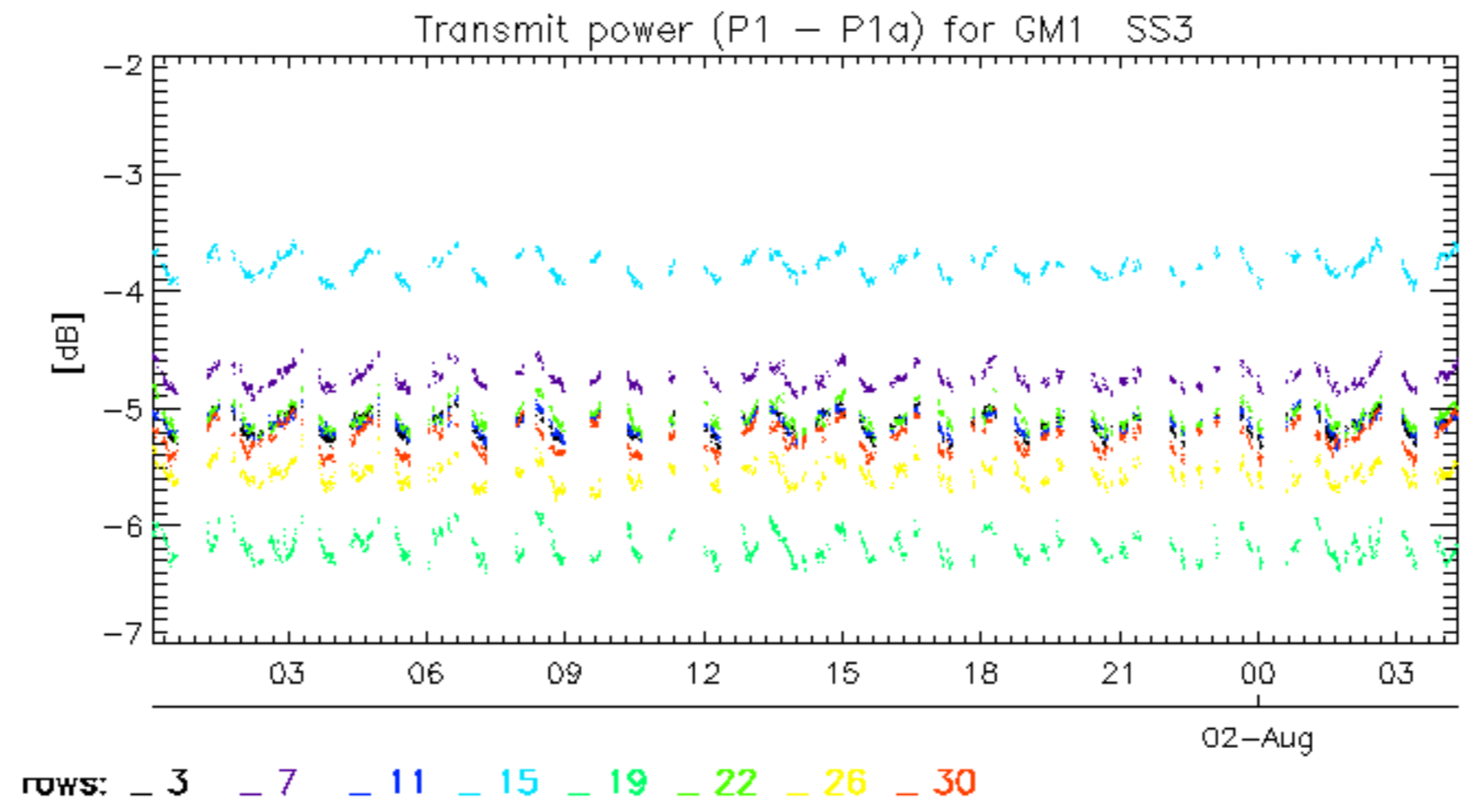




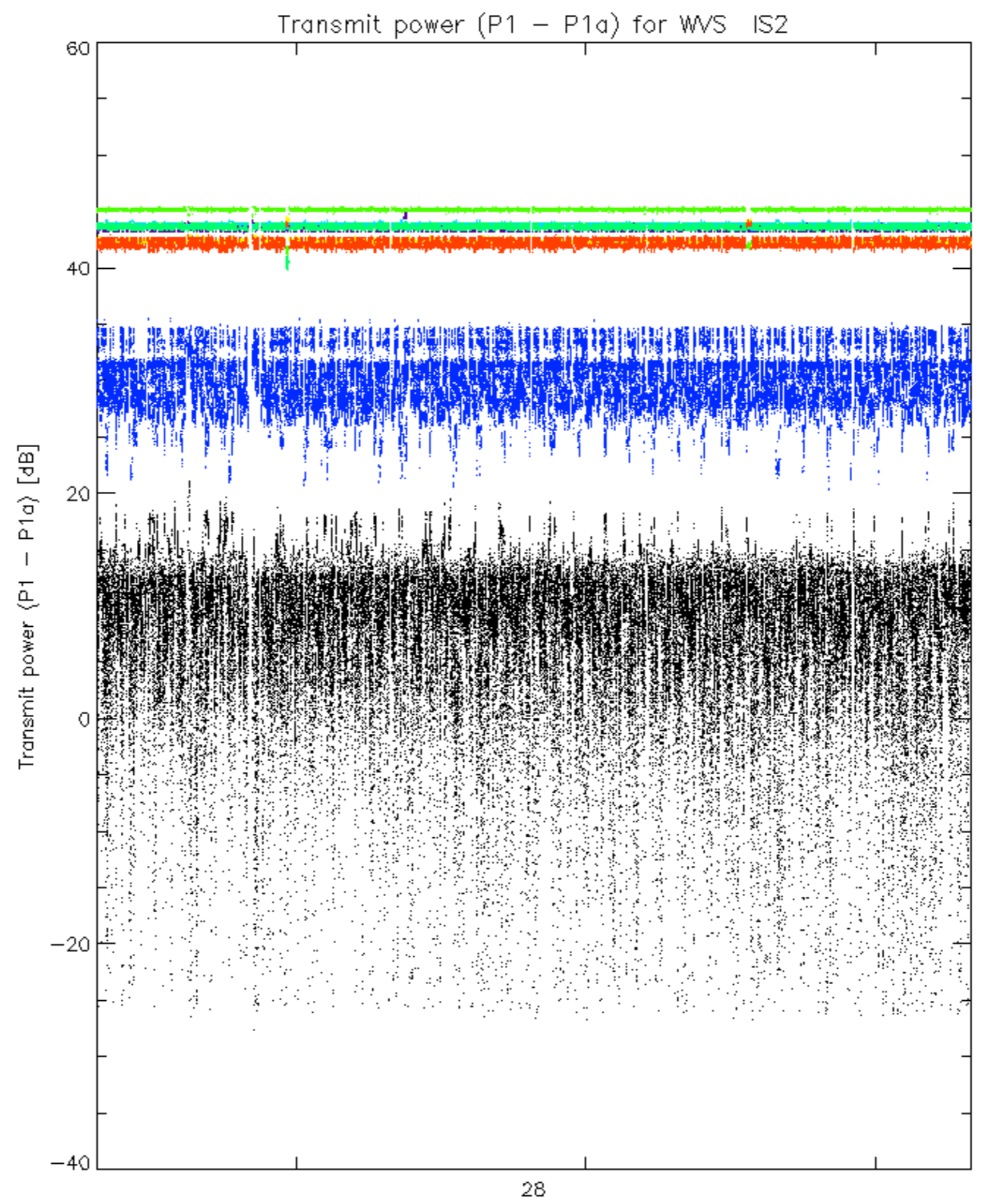




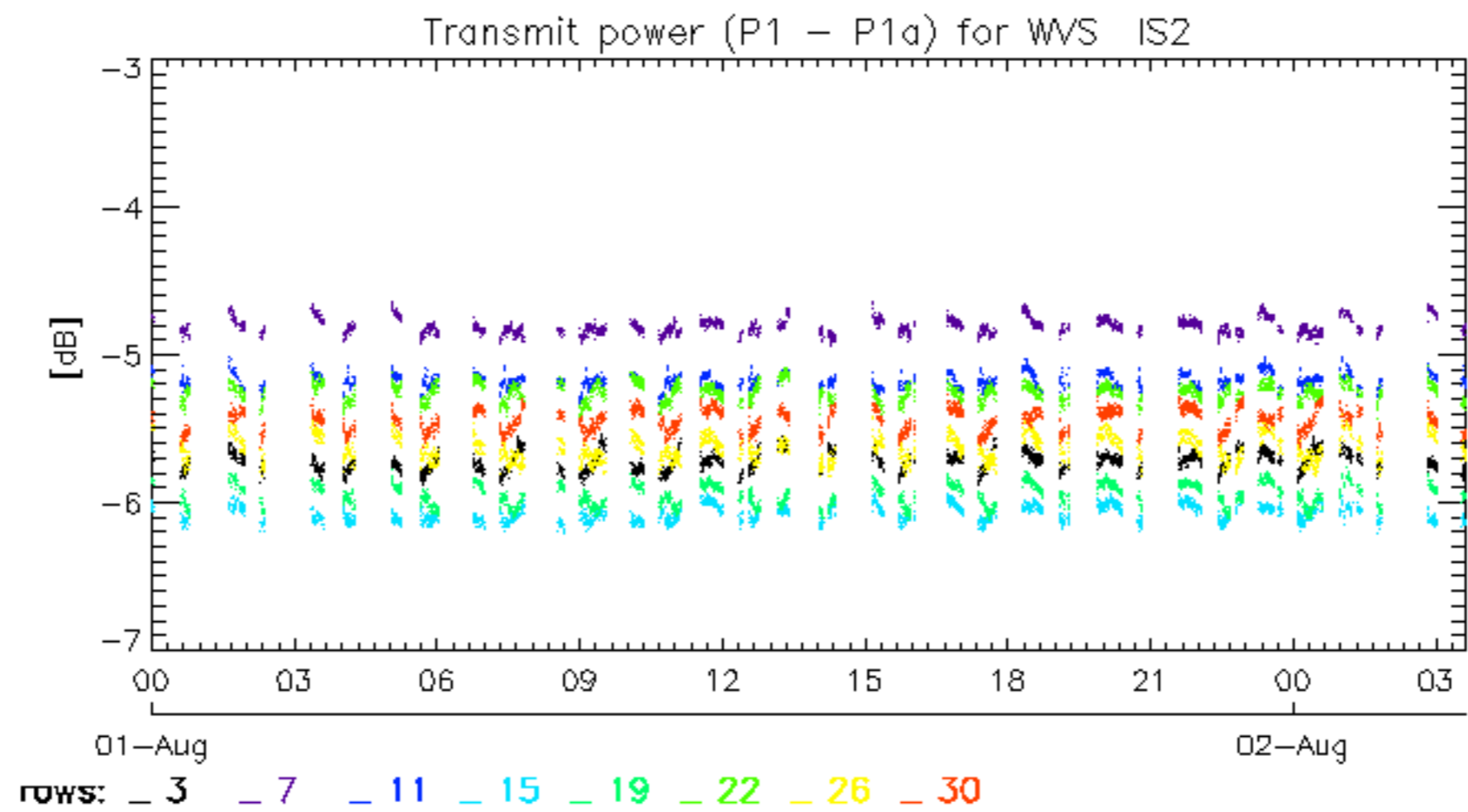








rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



No unavailabilities during the reported period.