

# PRELIMINARY REPORT OF 051210

last update on Sat Dec 10 16:46:30 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 2005-12-09 00:00:00 to 2005-12-10 16:46:30

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	42	0	13	0	25
ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000	42	0	13	0	25
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	42	0	13	0	25
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	42	0	13	0	25

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	40	55	31	15	54
ASA_XCA_AXVIEC20051013_152531_20050916_195733_20061231_000000	40	55	31	15	54
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	40	55	31	15	54
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	40	55	31	15	54

## 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	20051210 064401
H	20051209 071539

### 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
☒	☒
☒	☒
☒	☒
☒	☒

**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	-3.525192	0.158533	0.480651
7	P1	-2.784394	0.114296	0.876705
11	P1	-4.144179	0.017425	-0.021940
15	P1	-5.248794	1.585184	3.587590
19	P1	-3.056543	0.055515	0.616901
22	P1	-4.446919	0.020220	0.208570
26	P1	-4.374320	0.056485	-0.602701
30	P1	-5.667777	0.030827	0.392973
3	P1	-15.195658	1.772915	1.760712
7	P1	-15.470623	2.395754	4.312281
11	P1	-16.353662	0.429858	0.958681
15	P1	-12.915875	0.901650	2.478876
19	P1	-13.464104	0.310463	1.419534
22	P1	-16.114096	0.600025	0.999553
26	P1	-15.240353	1.053128	2.633737
30	P1	-15.745304	2.265499	4.012247

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.878403	0.104501	-0.069458
7	P2	-22.561491	0.102941	0.032094
11	P2	-16.593796	0.117088	-0.129480
15	P2	-7.277371	0.102892	-0.077764
19	P2	-9.222584	0.100038	0.038113
22	P2	-17.862663	0.108144	0.161493
26	P2	-16.334909	0.131006	-0.537580
30	P2	-19.768236	0.116204	-0.411071

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.233485	0.007291	-0.019922
7	P3	-8.233485	0.007291	-0.019922
11	P3	-8.233485	0.007291	-0.019922
15	P3	-8.233485	0.007291	-0.019922
19	P3	-8.233485	0.007291	-0.019922
22	P3	-8.233485	0.007291	-0.019922
26	P3	-8.233485	0.007291	-0.019922
30	P3	-8.233485	0.007291	-0.019922

#### 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	-3.692575	0.007910	-0.027725
7	P1	-2.783588	0.010964	0.022402
11	P1	-2.876524	0.014071	-0.012929
15	P1	-3.400138	0.021466	-0.028673
19	P1	-3.379843	0.013310	-0.028797
22	P1	-5.117604	0.019799	-0.029036
26	P1	-5.825230	0.016239	-0.057852
30	P1	-5.268026	0.032523	-0.025454
3	P1	-11.465412	0.042260	-0.034796
7	P1	-9.970886	0.046327	-0.003433
11	P1	-10.050909	0.060947	-0.015896
15	P1	-10.573167	0.083853	-0.014255
19	P1	-15.503074	0.072991	-0.024721
22	P1	-20.917076	0.981048	-0.223351
26	P1	-17.207418	0.309327	0.069342
30	P1	-18.343519	0.322051	0.125241

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.645464	0.030518	0.059453
7	P2	-23.056967	0.062679	0.004155
11	P2	-11.667564	0.022249	0.107036
15	P2	-4.976790	0.021933	-0.047764
19	P2	-6.955660	0.021861	-0.034415
22	P2	-8.175701	0.023814	-0.071309
26	P2	-24.037939	0.031828	-0.054880
30	P2	-22.112267	0.020565	-0.037209

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.072921	0.002492	-0.012419
7	P3	-8.072992	0.002500	-0.012487
11	P3	-8.072901	0.002485	-0.012362
15	P3	-8.072916	0.002497	-0.012104
19	P3	-8.073100	0.002508	-0.012090
22	P3	-8.072970	0.002499	-0.012538
26	P3	-8.072895	0.002482	-0.012545
30	P3	-8.072791	0.002496	-0.011966

## 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	0.000477669
	stdev	2.12929e-07
MEAN Q	mean	0.000490383
	stdev	2.36258e-07



## 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.130163
	stdev	0.00110276
STDEV Q	mean	0.130458
	stdev	0.00111576



## 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2005120[890]

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_1PNPDE20051209_014321_000002582043_00146_19739_3553.N1	1	0
ASA_IMM_1PNPDE20051209_042648_000000522043_00147_19740_3577.N1	1	0
ASA_IMM_1PNPDE20051209_201740_000000372043_00157_19750_3609.N1	1	0
ASA_WSM_1PNPDE20051208_032332_000002442043_00133_19726_3277.N1	0	35
ASA_WSM_1PNPDE20051209_161730_000002202043_00155_19748_3468.N1	0	18







## 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
-----------



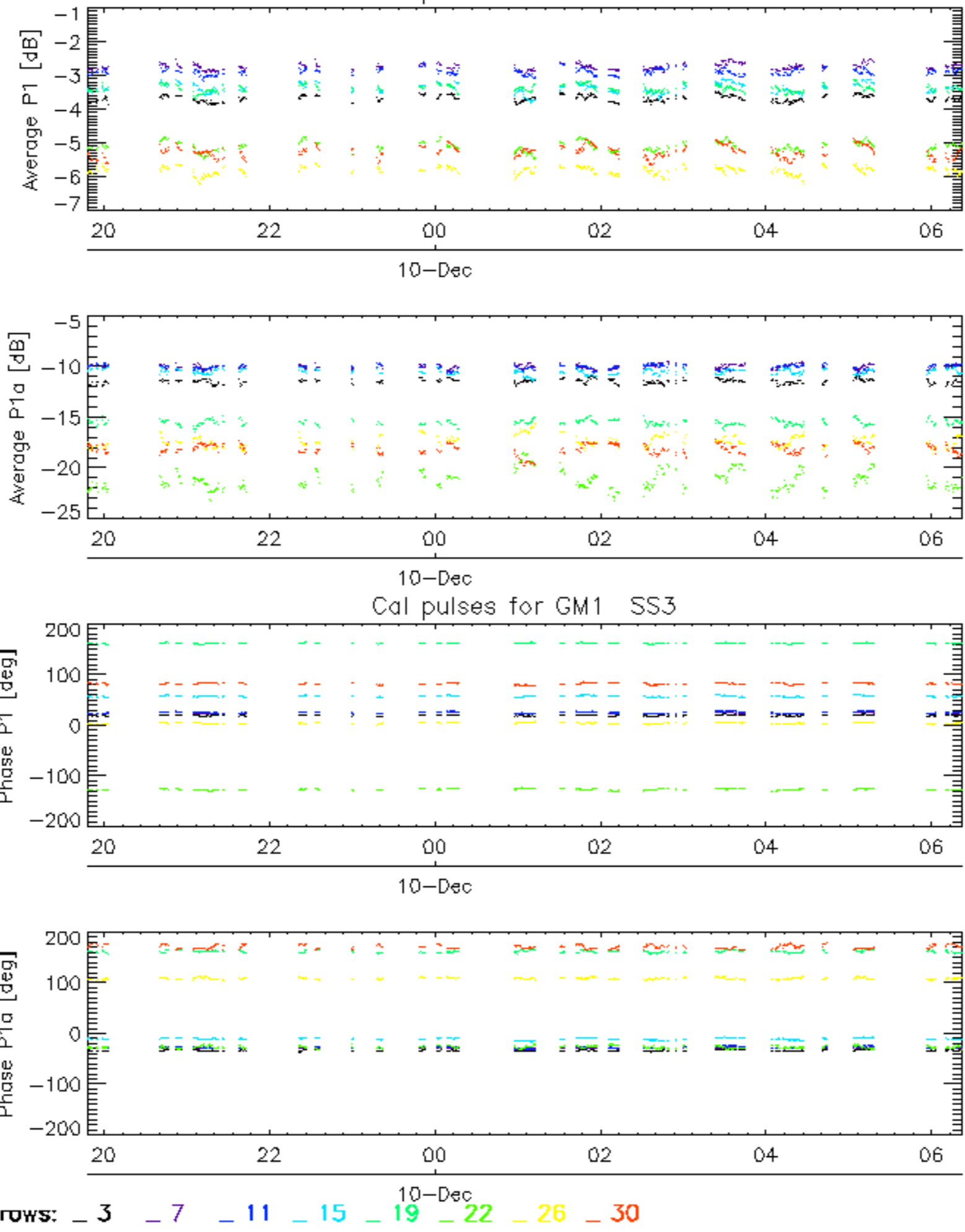
Descending
------------

### 7.6 - Doppler evolution versus ANX for GM1

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

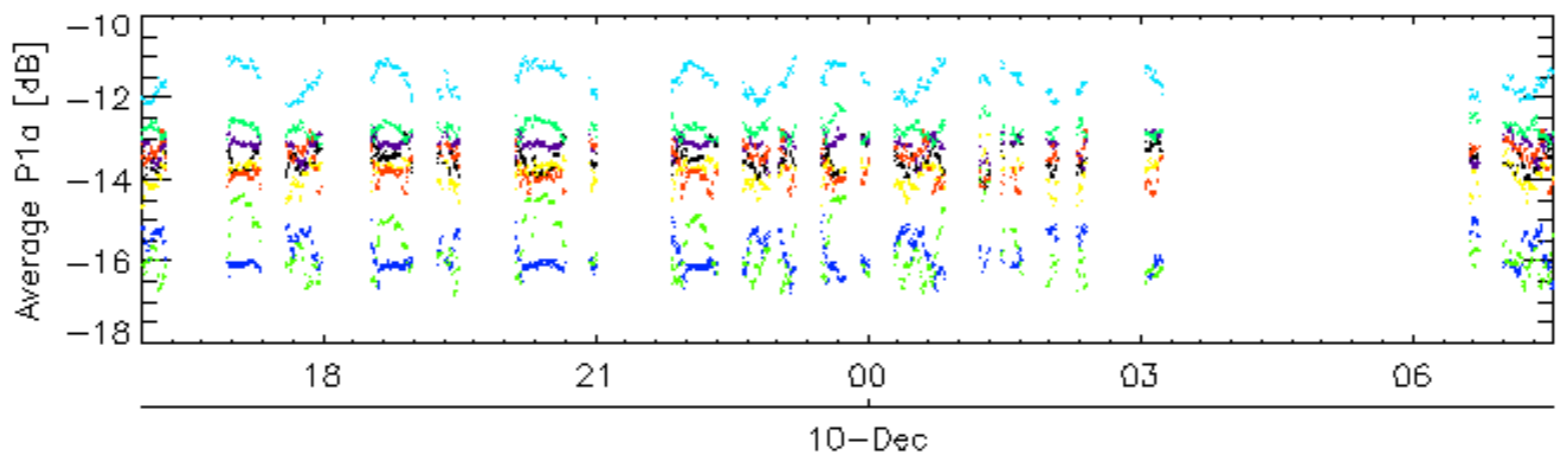
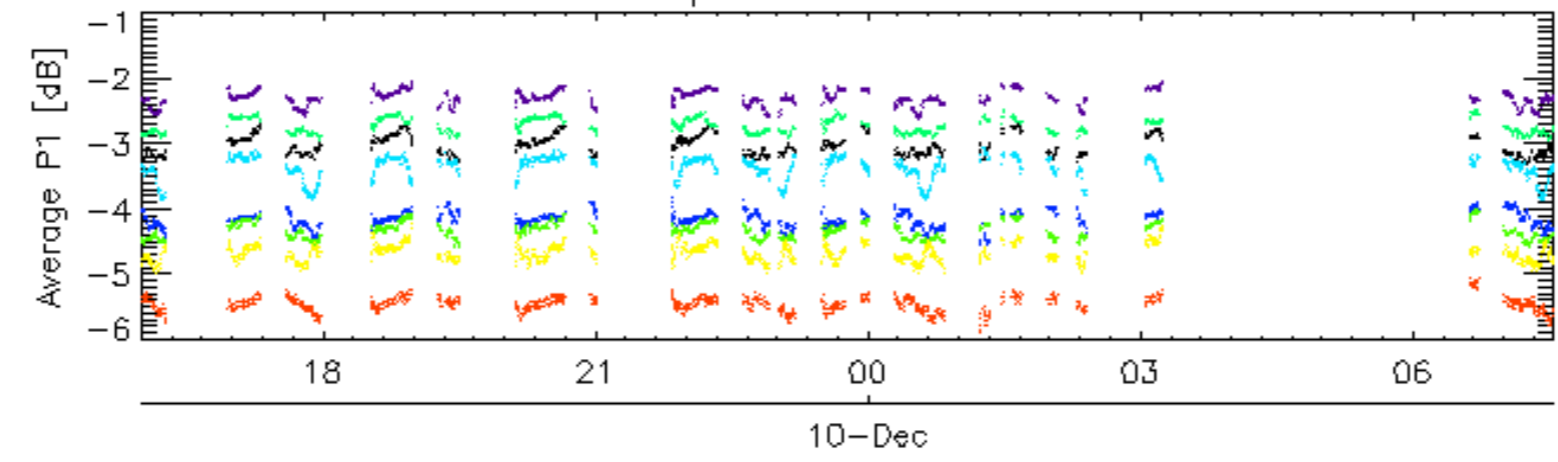


Cal pulses for GM1 SS3

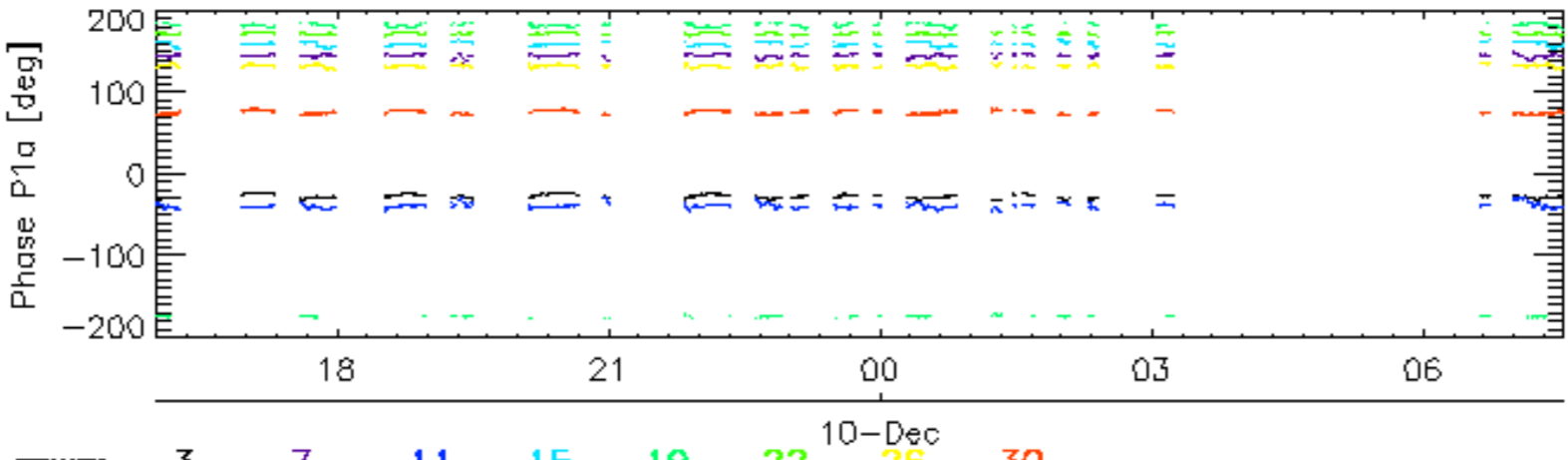
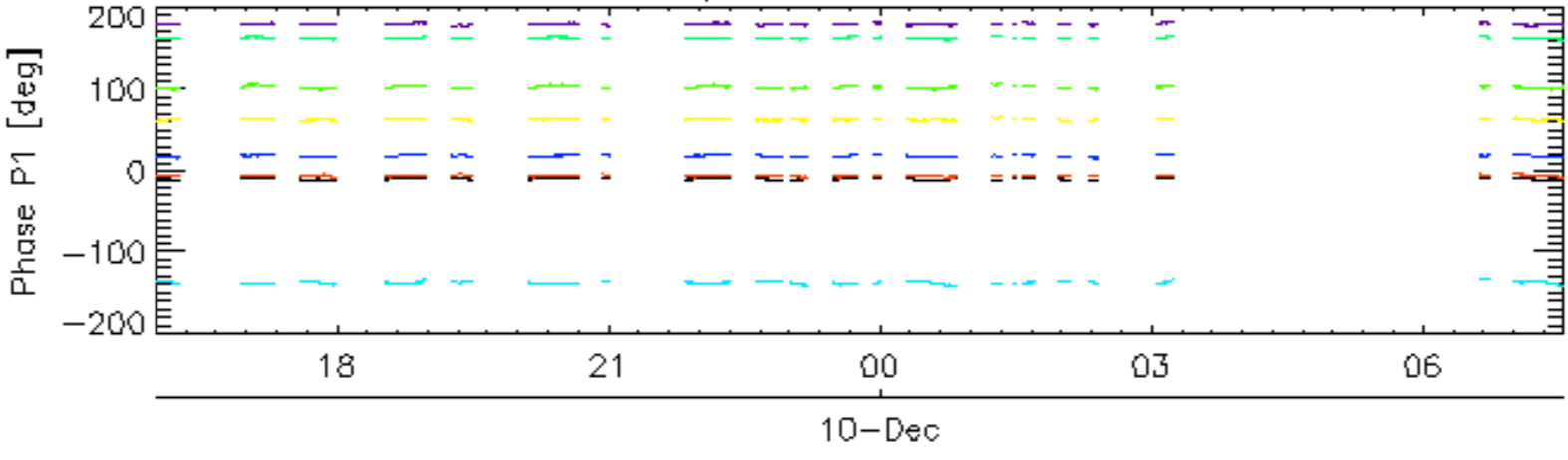


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2

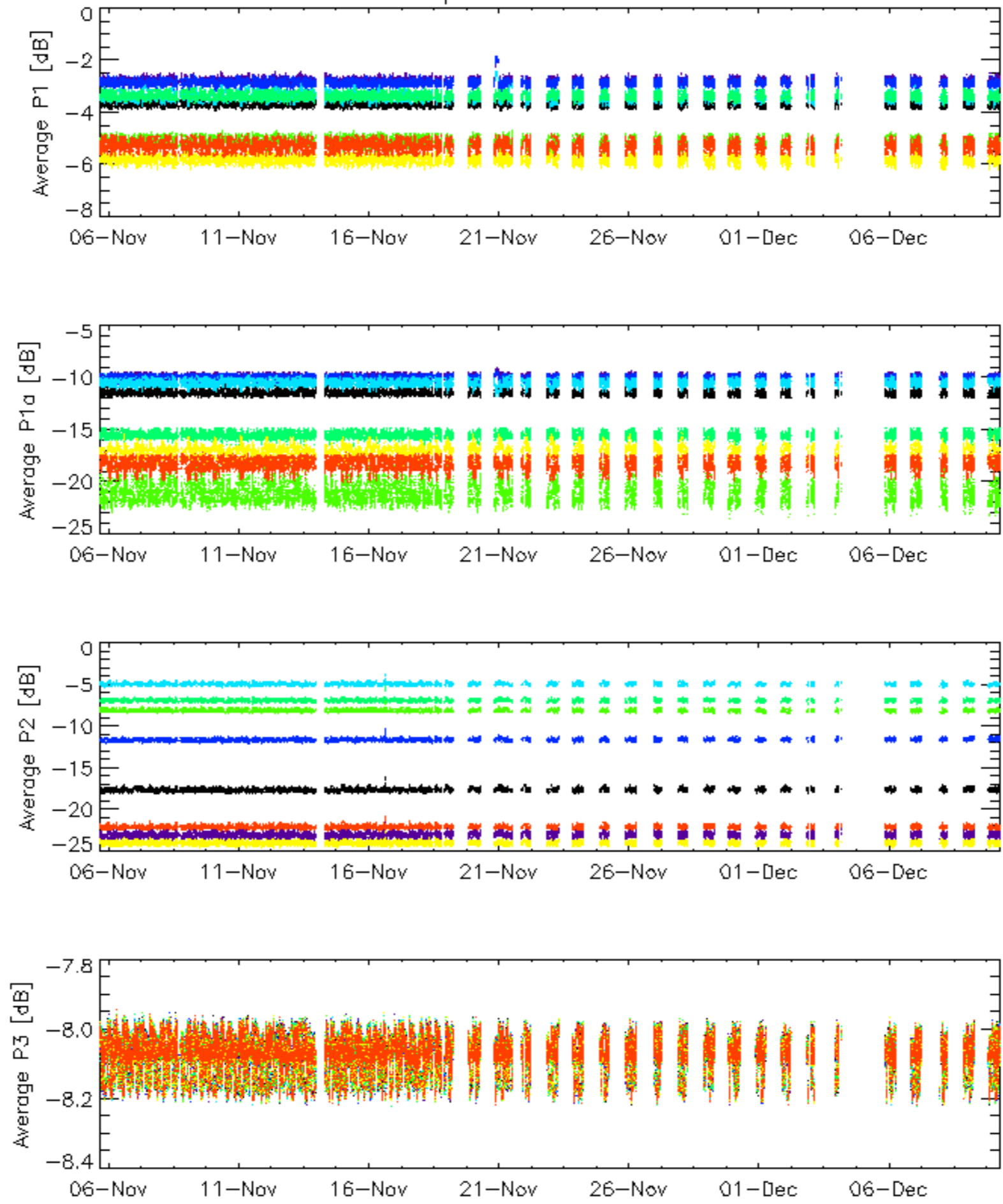


Cal pulses for WVS IS2



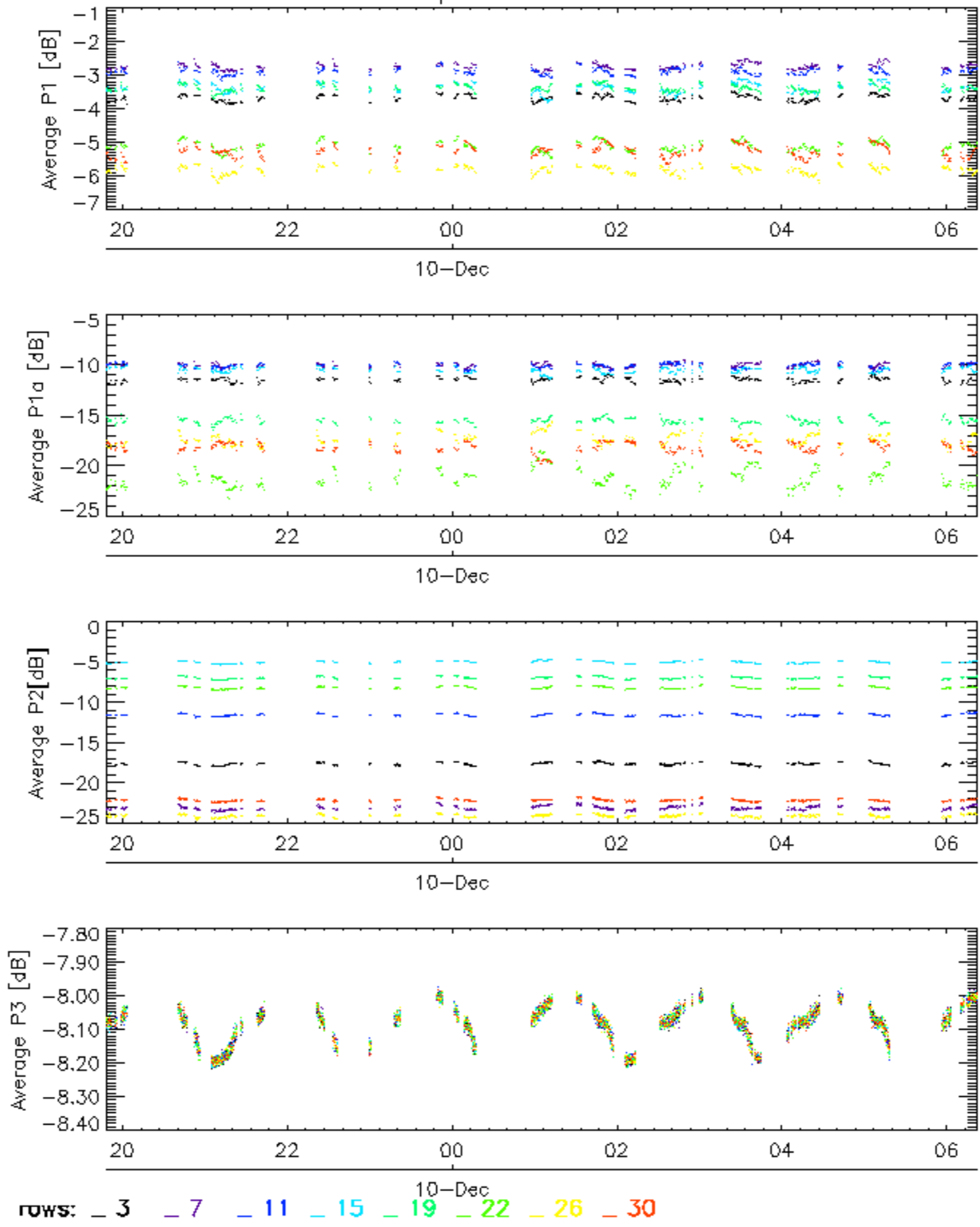
rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for GM1 SS3

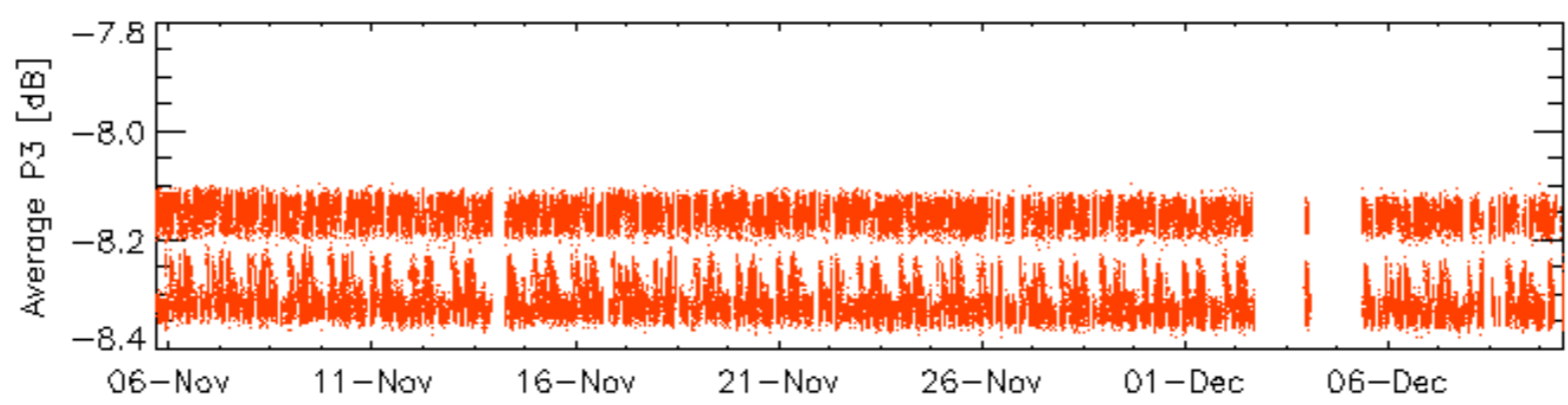
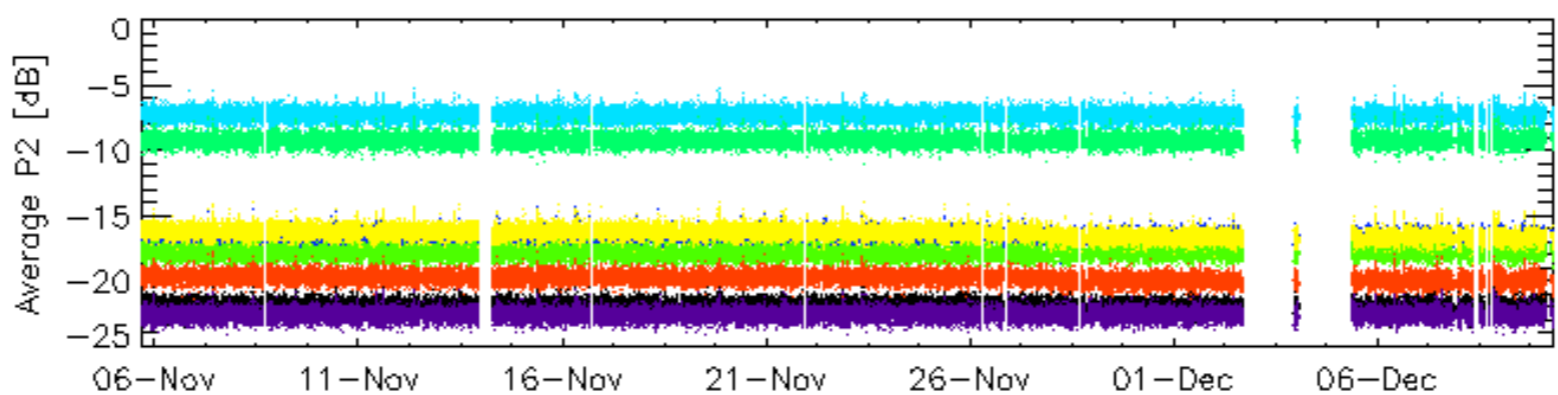
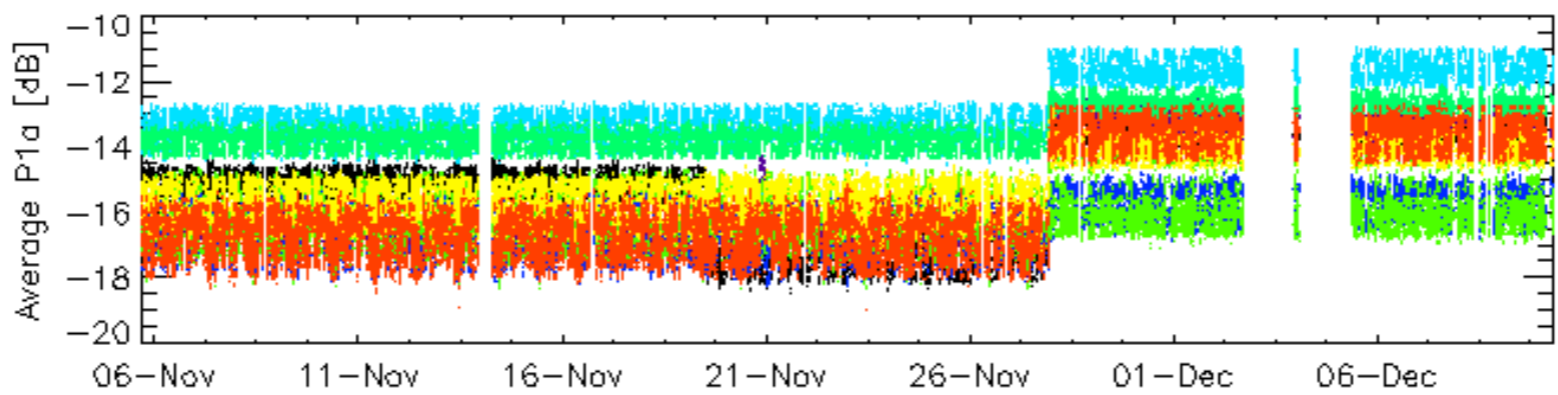
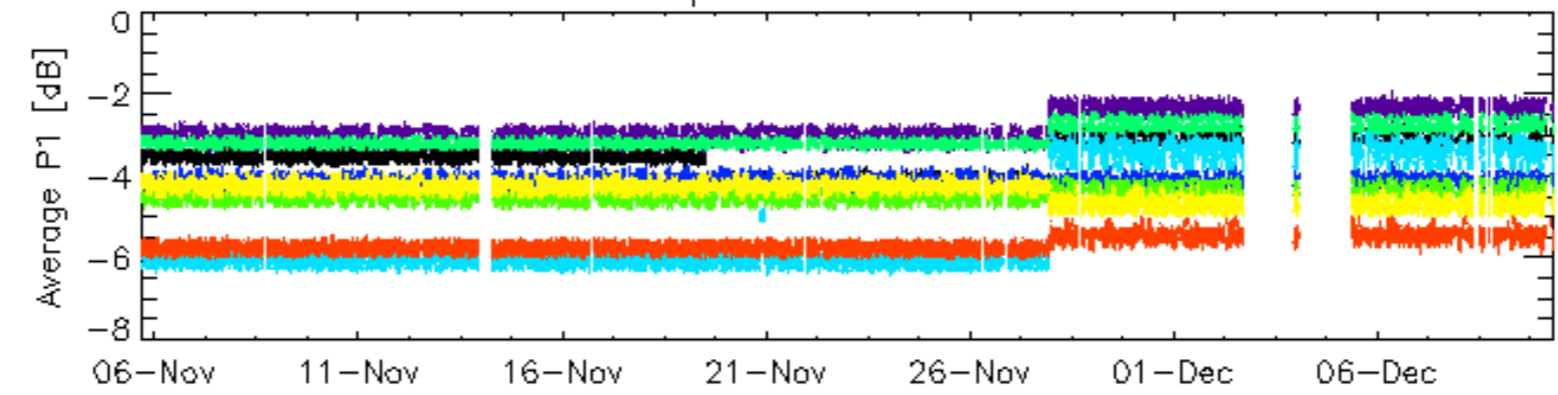


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

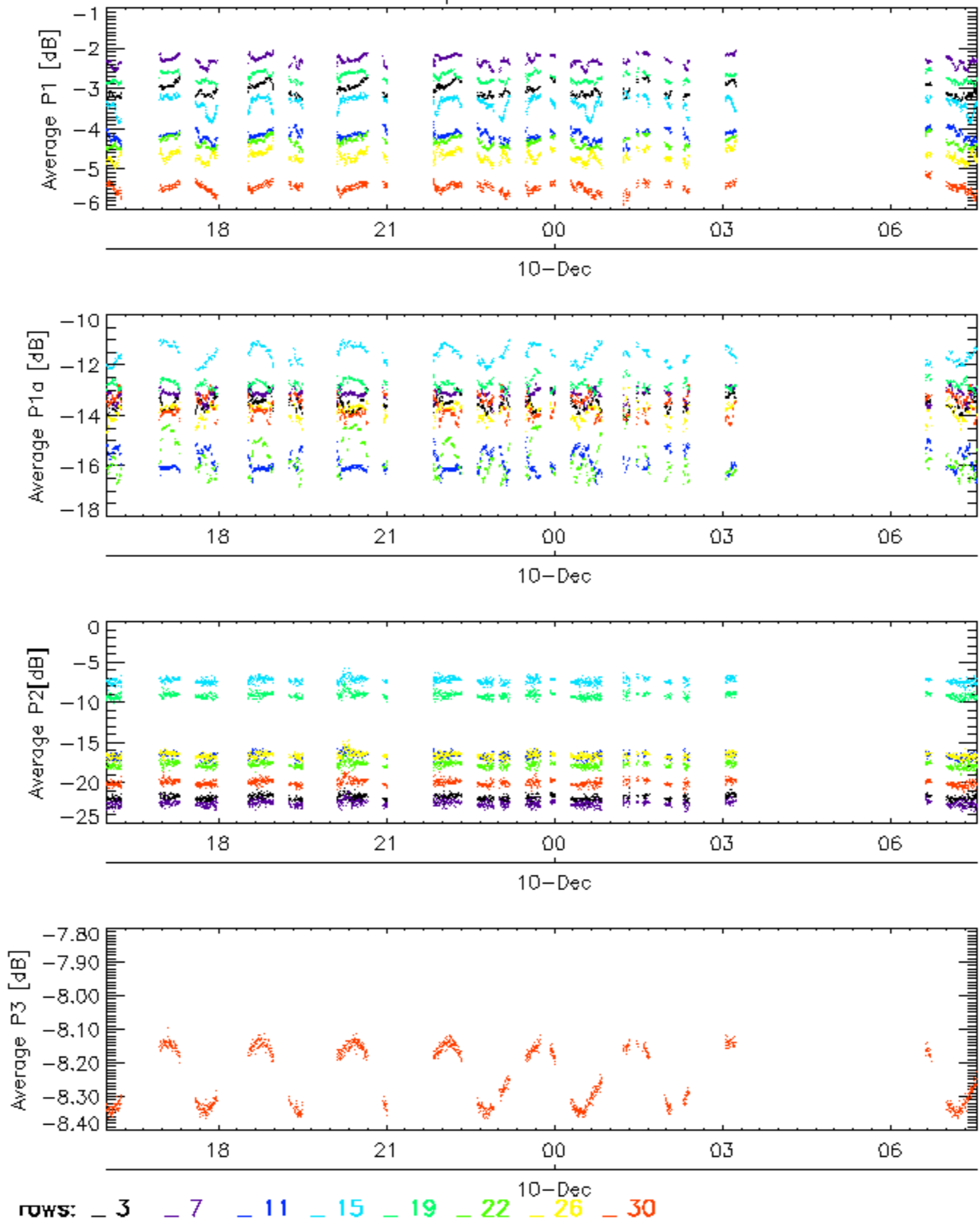


Cal pulses for WVS IS2



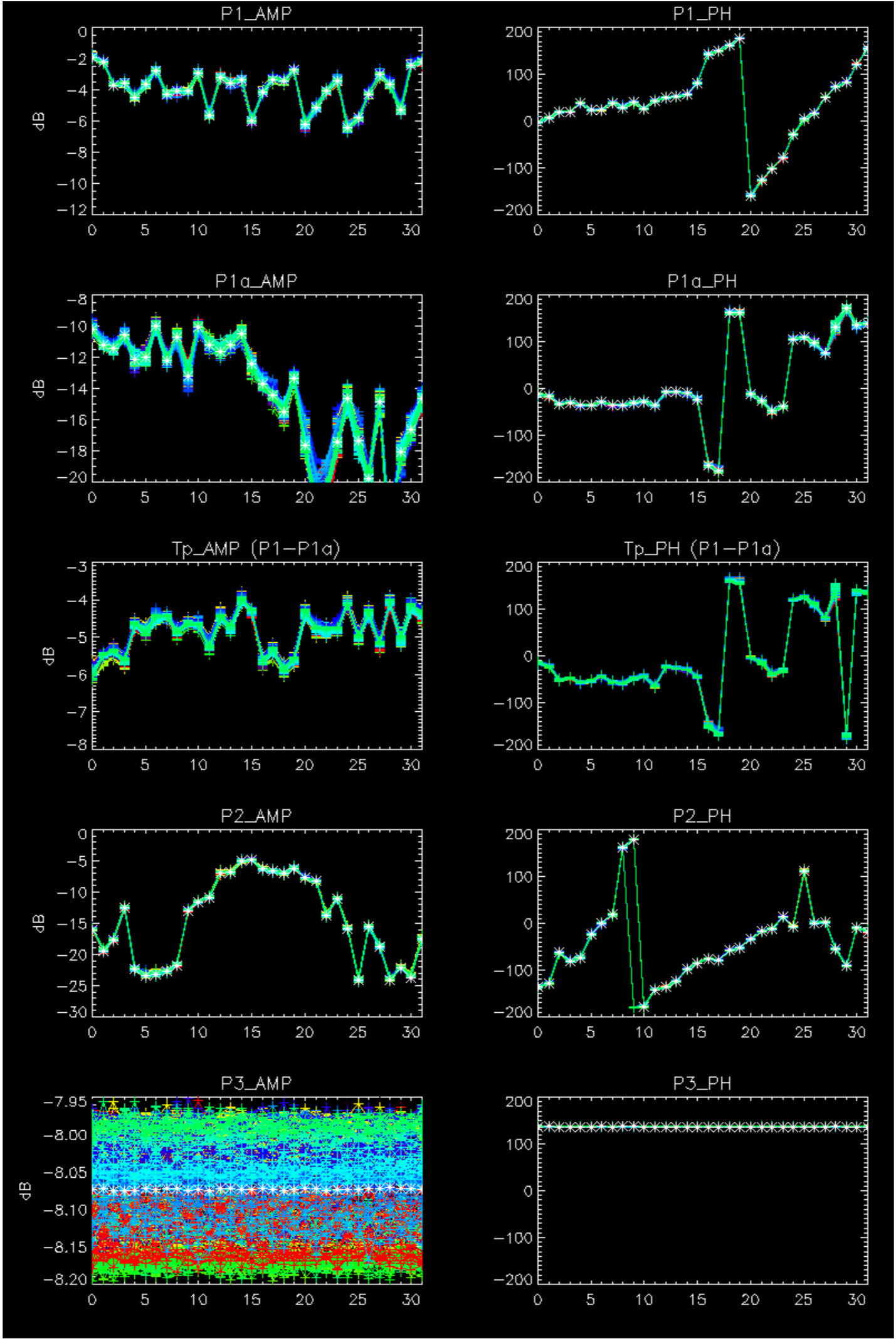
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

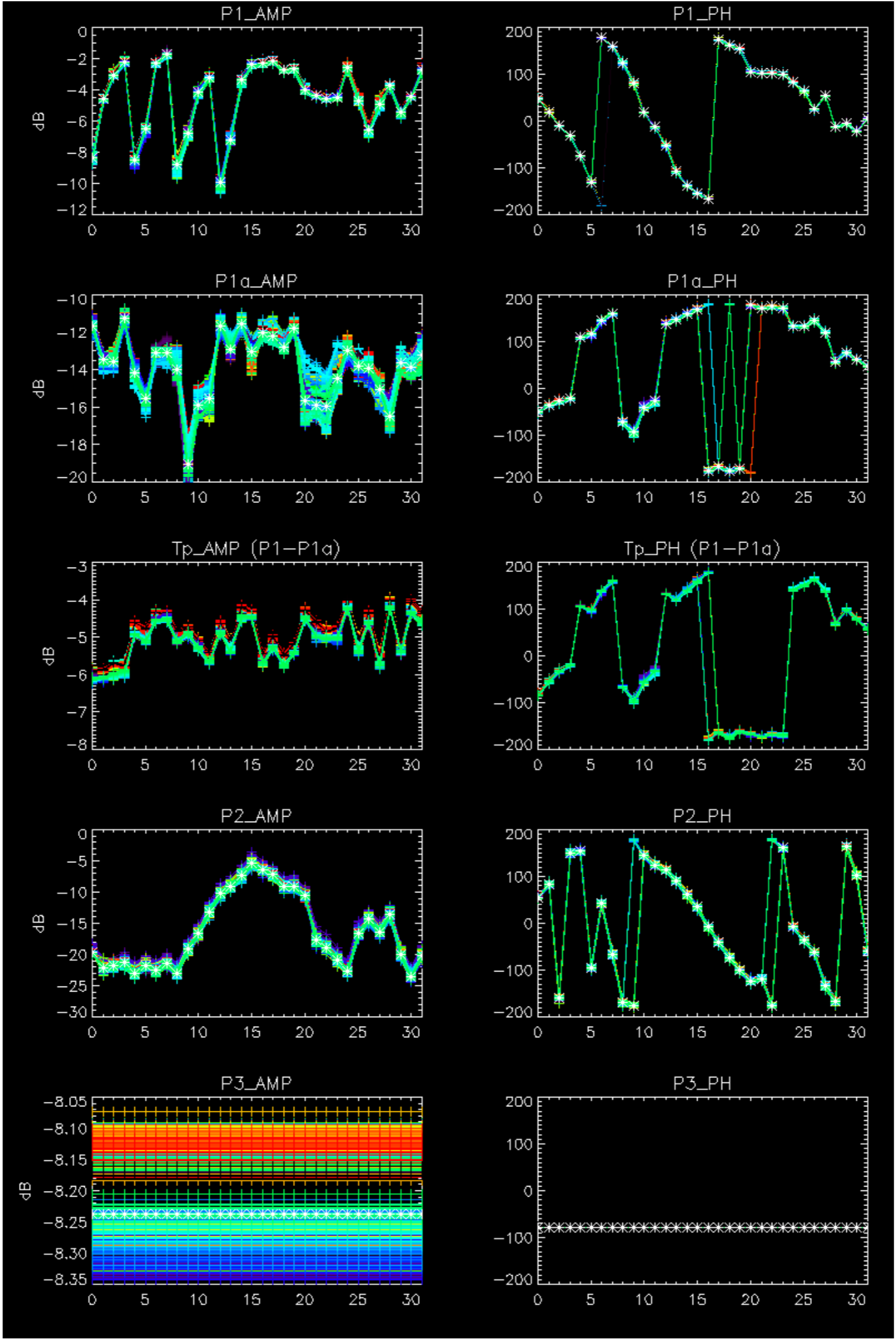
Cal pulses for WVS IS2



No anomalies observed.



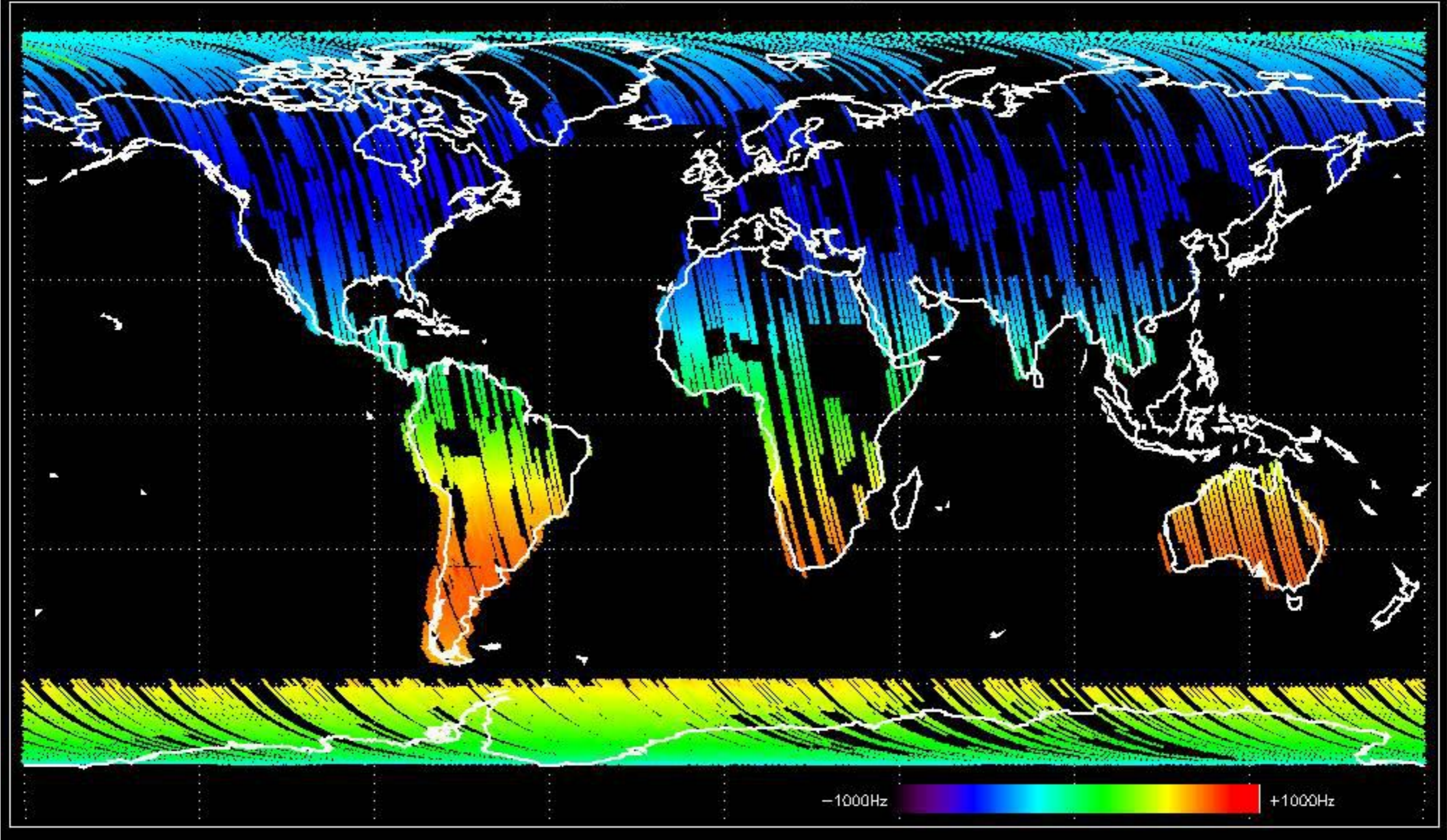




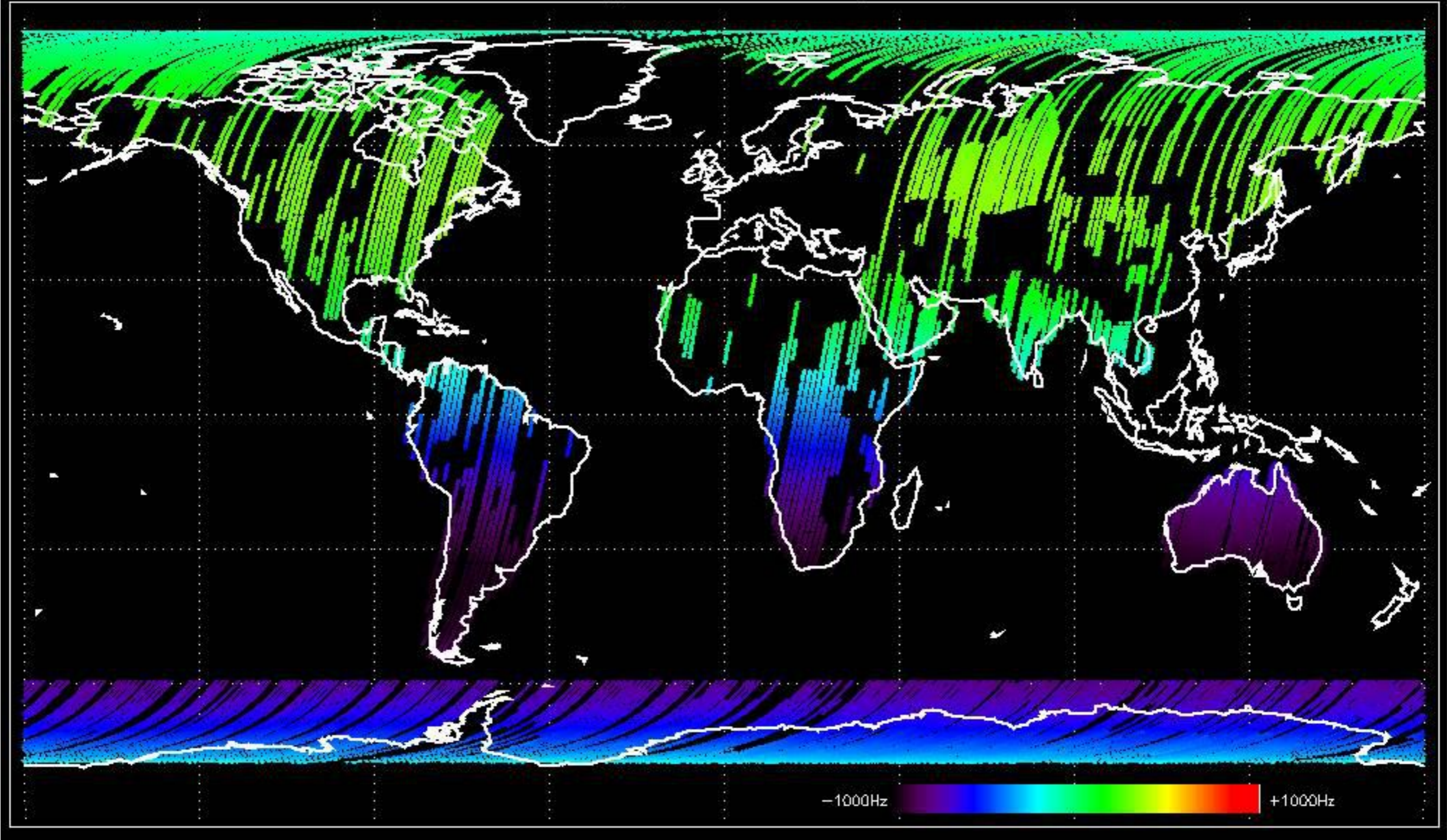
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



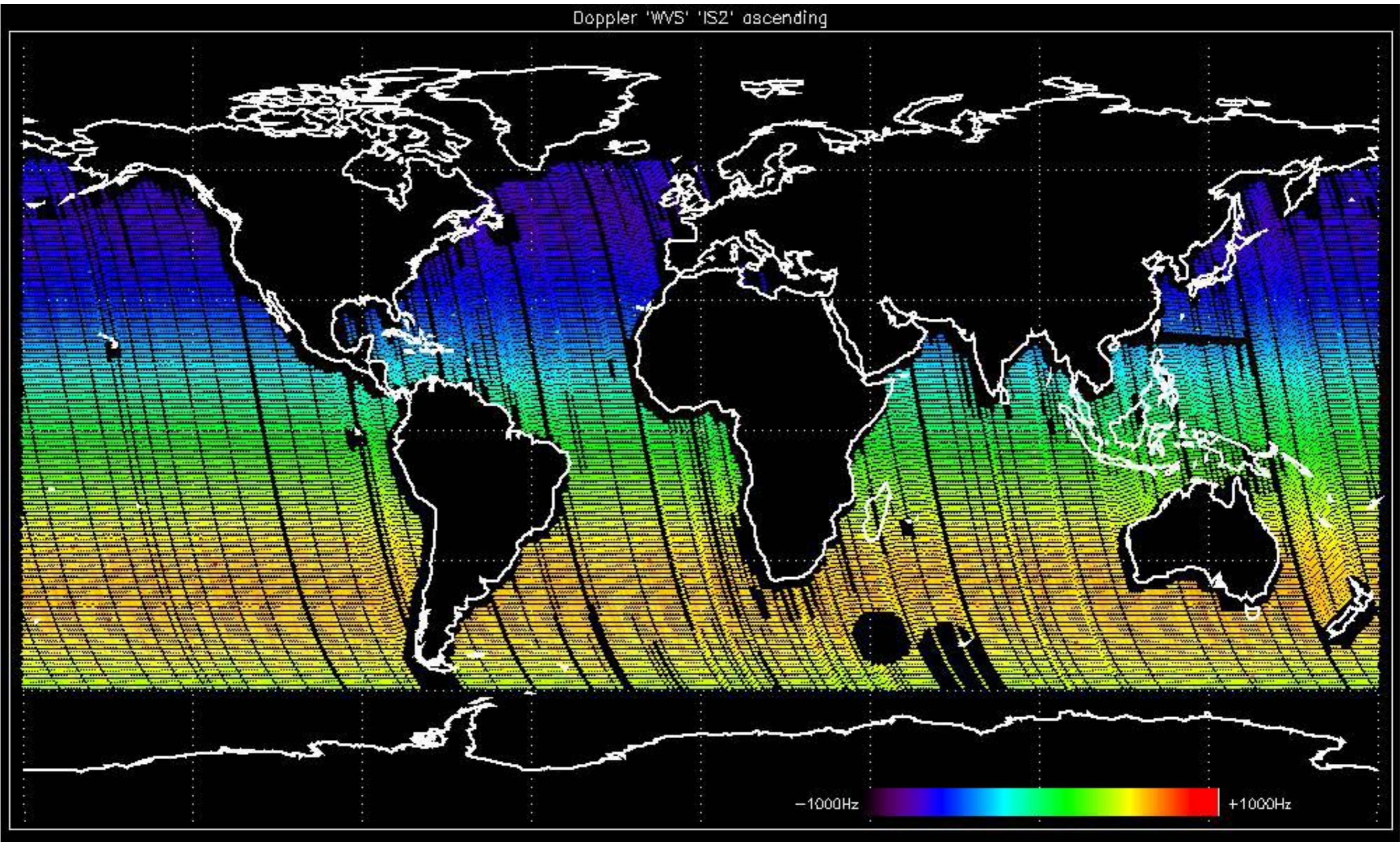
Doppler 'GM1' 'SS1' ascending



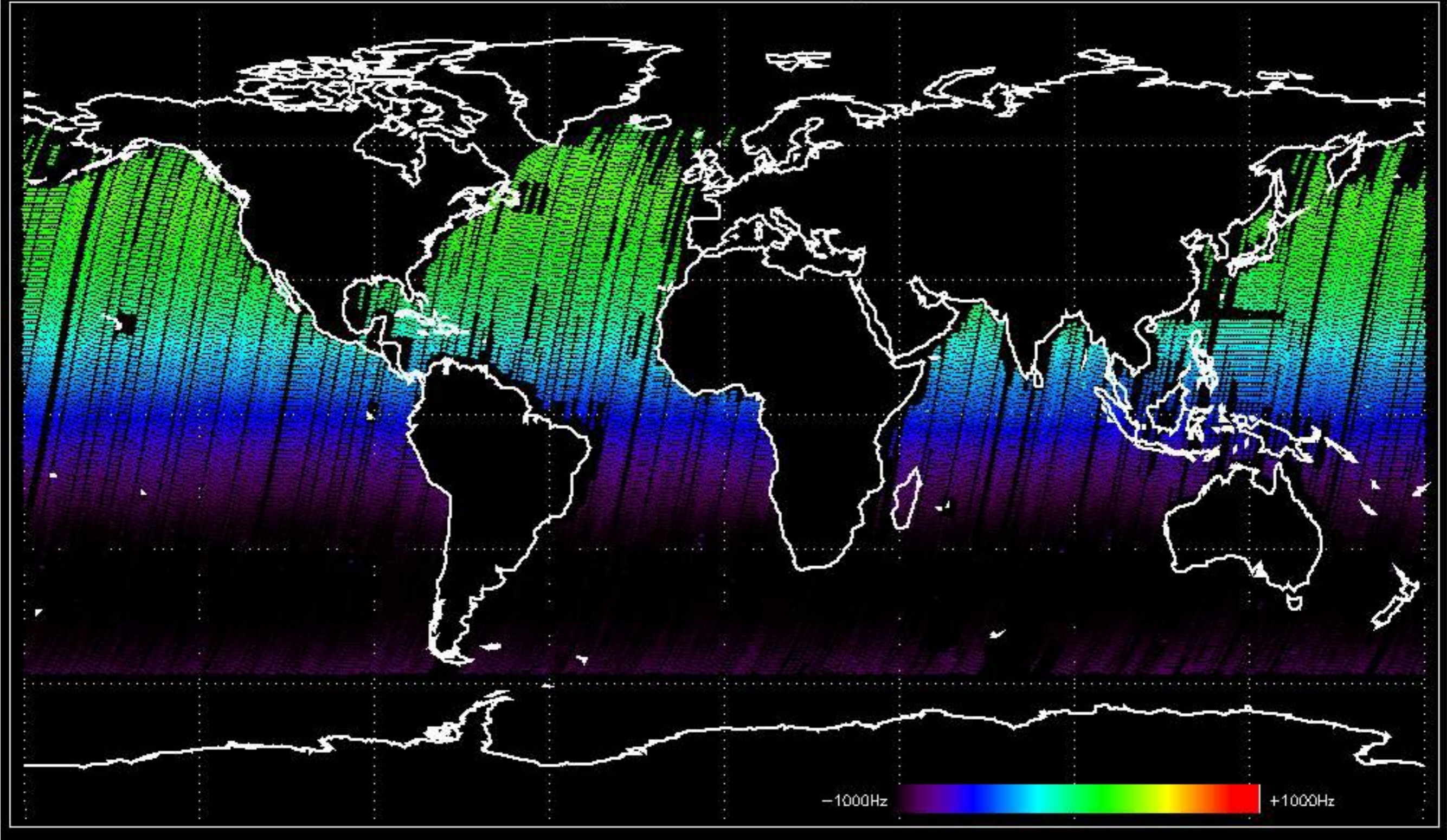
Doppler 'GM1' 'SS1' descending



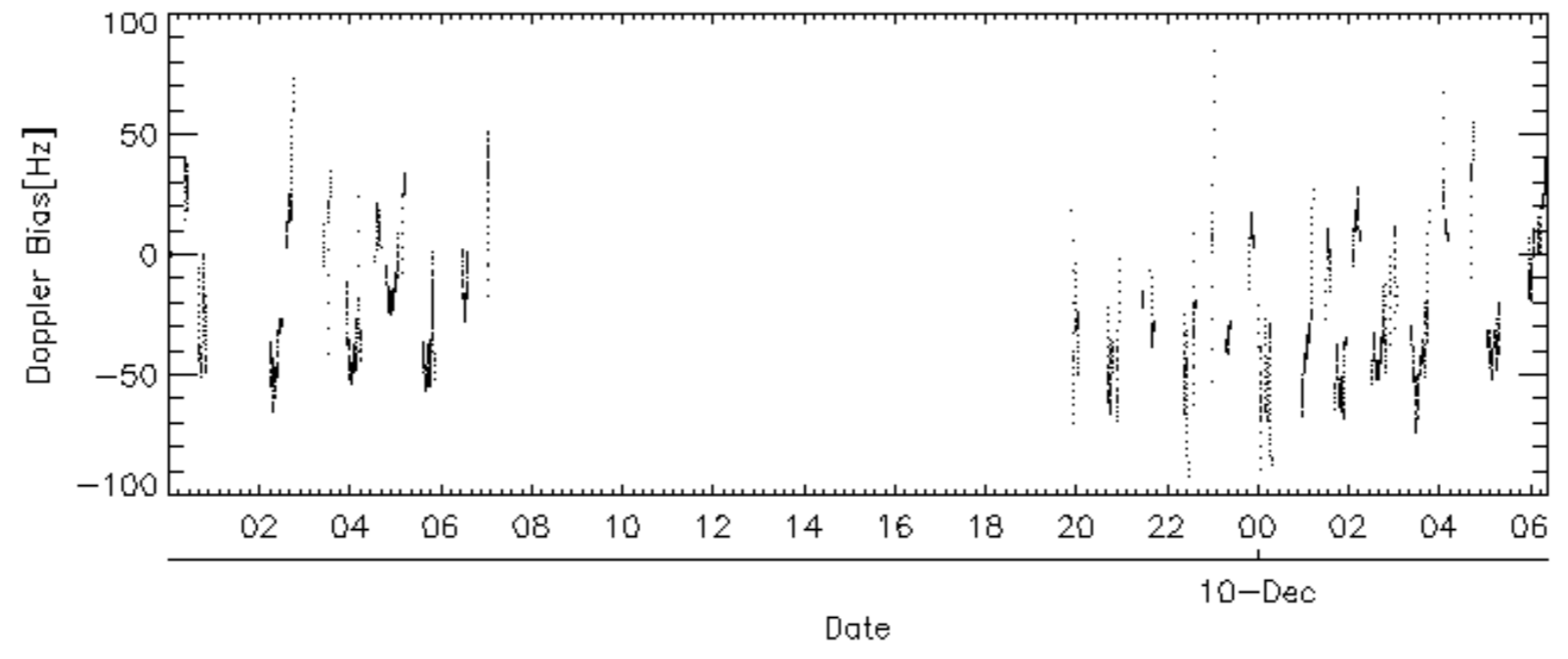
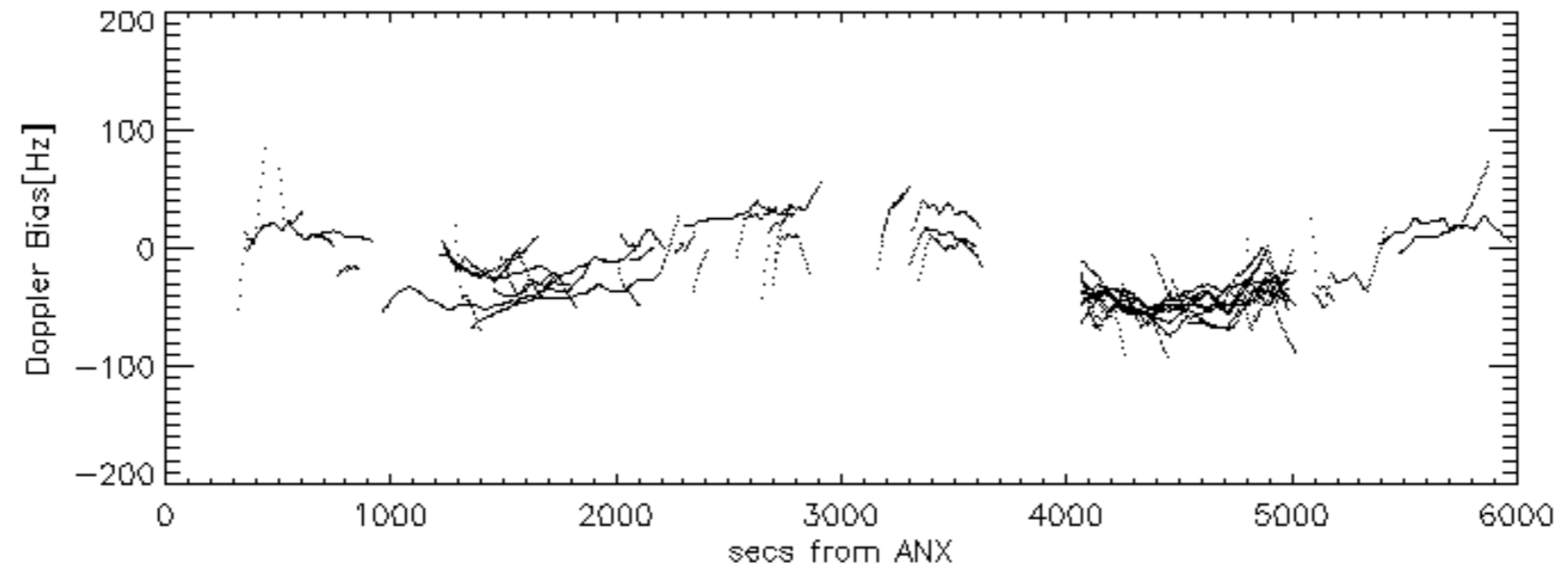
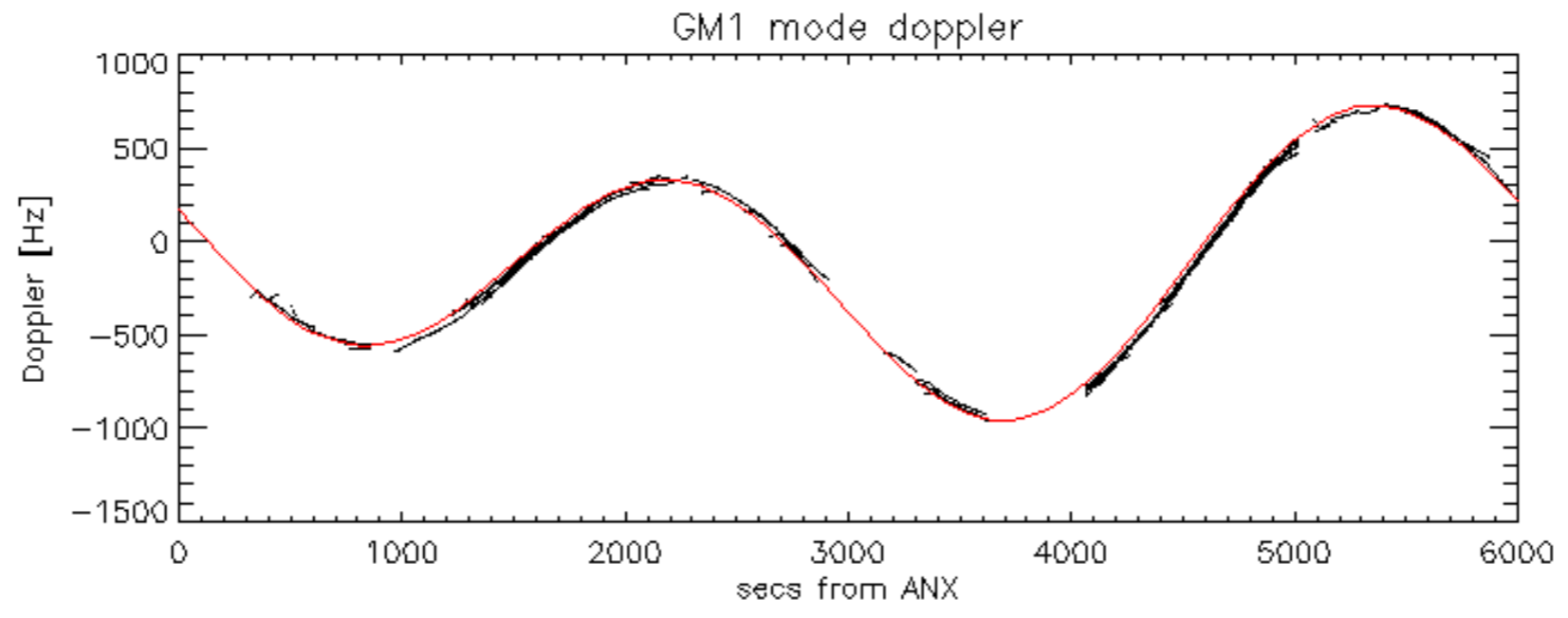
Doppler 'WVS' 'IS2' ascending

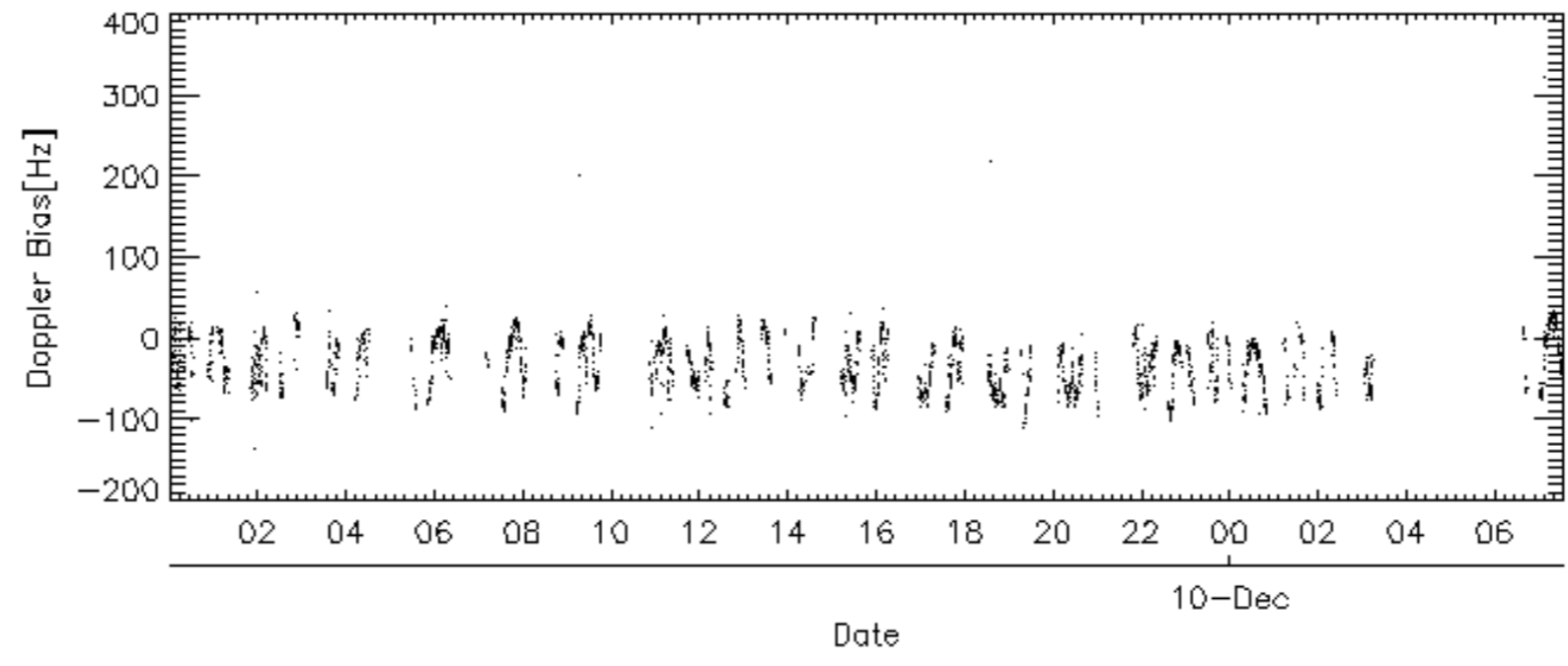
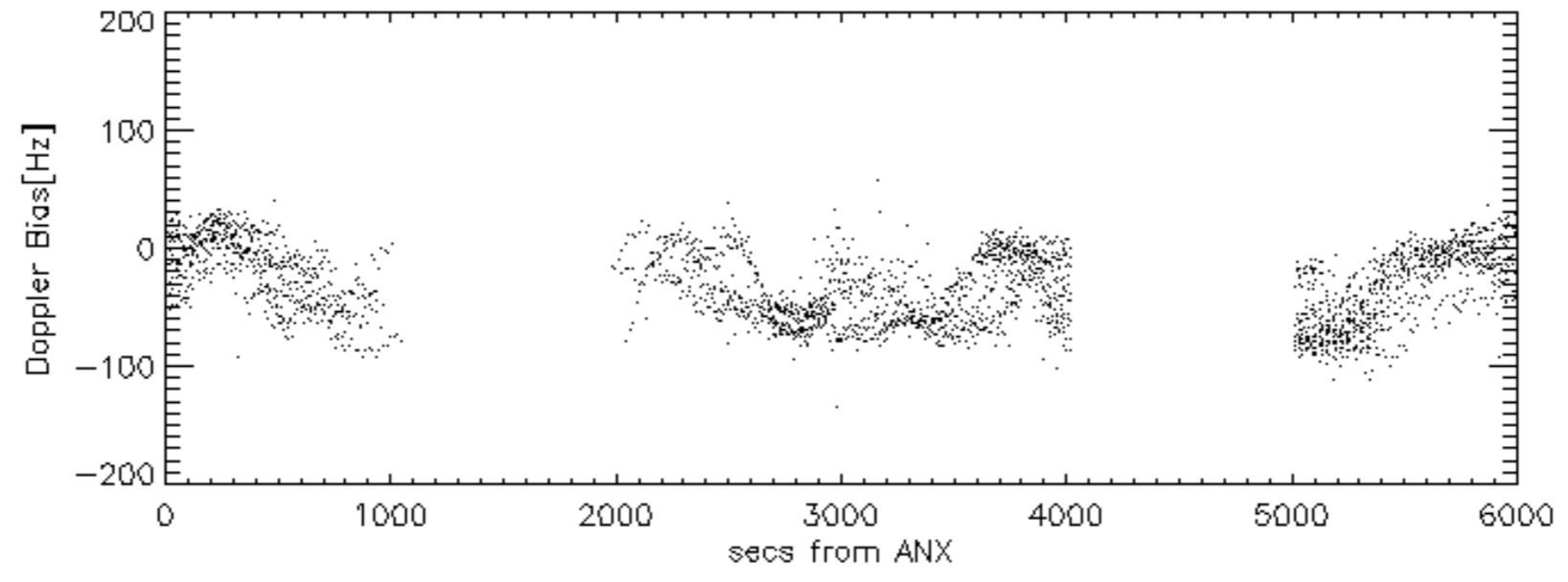
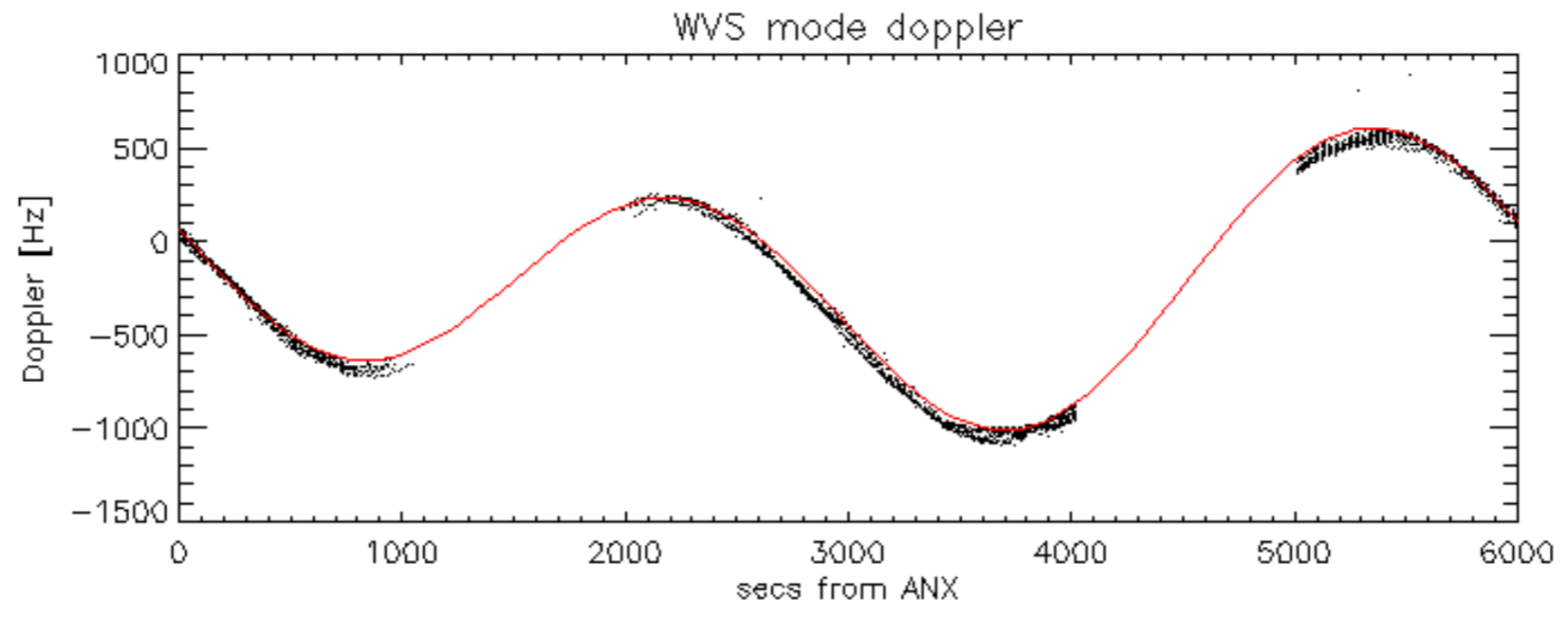


Doppler 'WVS' 'IS2' descending

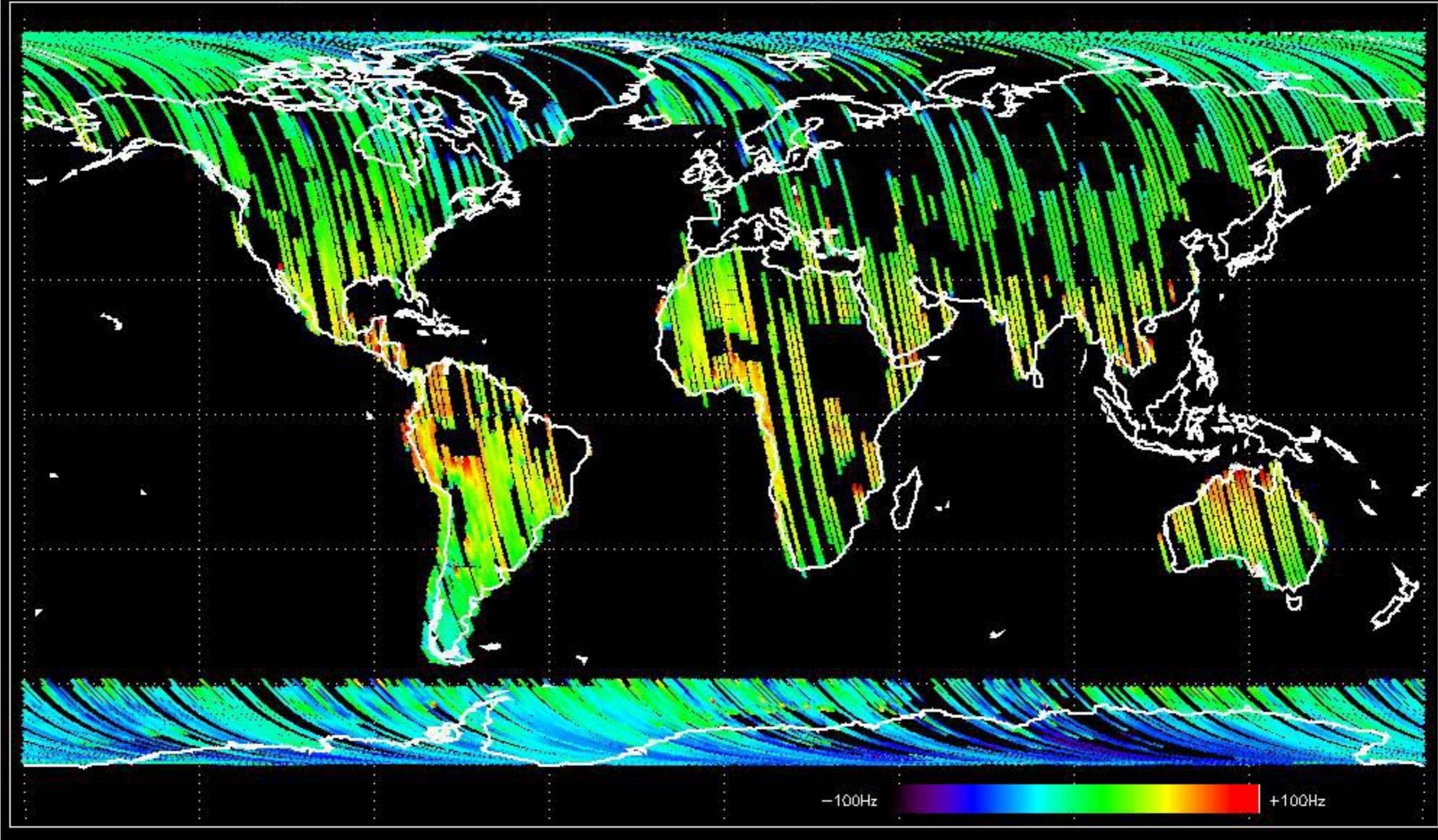




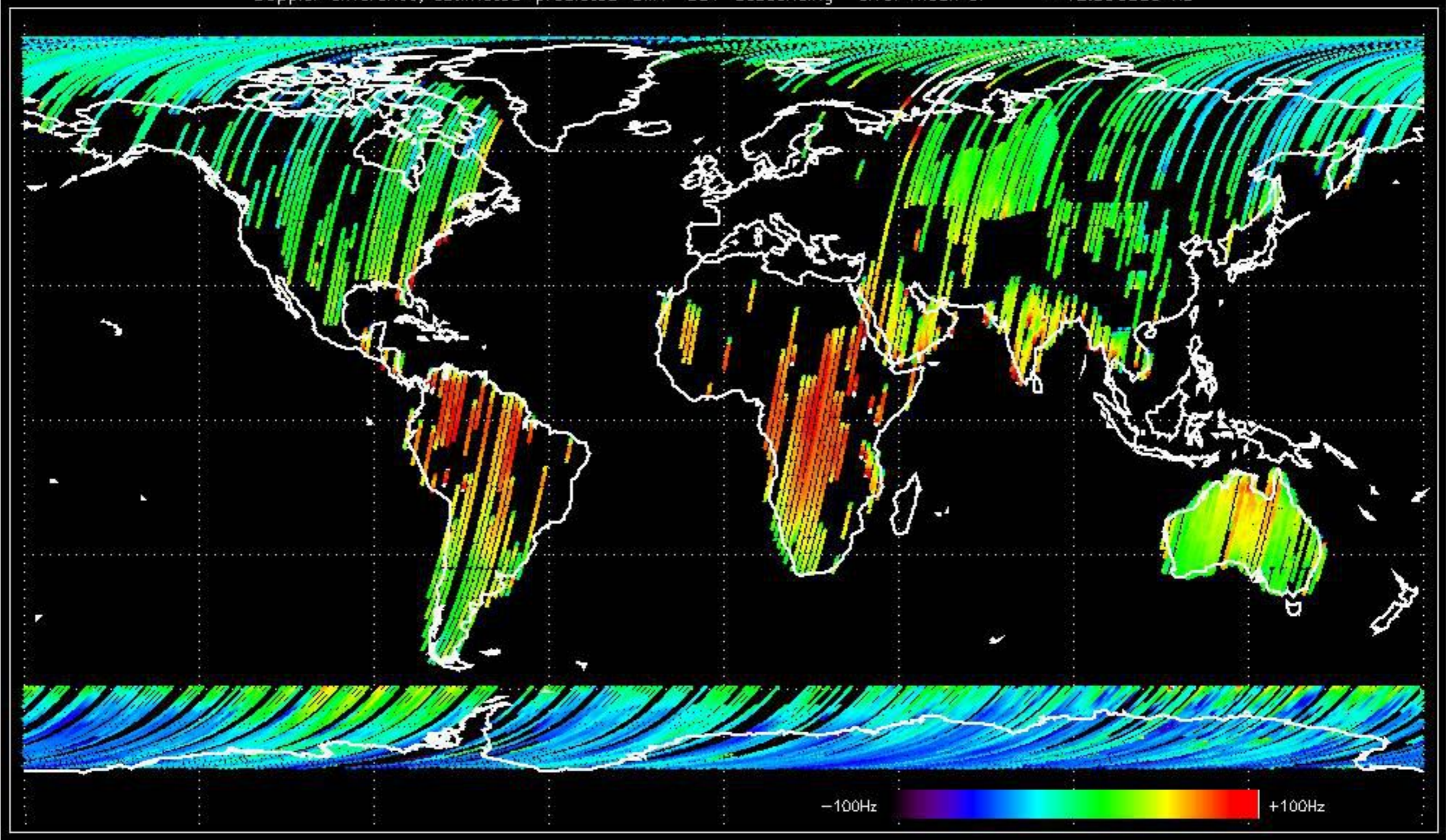




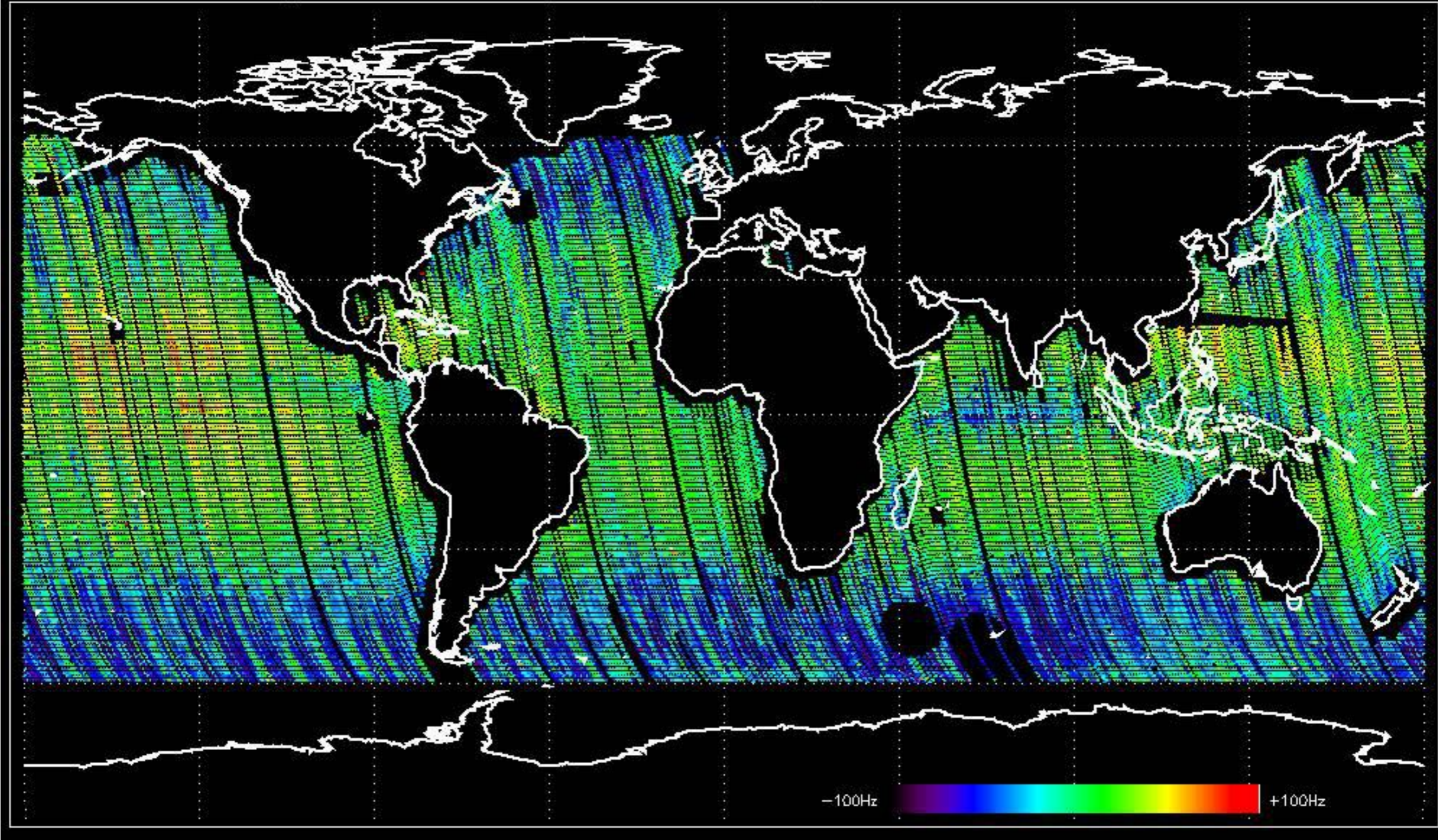
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -15.979711 Hz



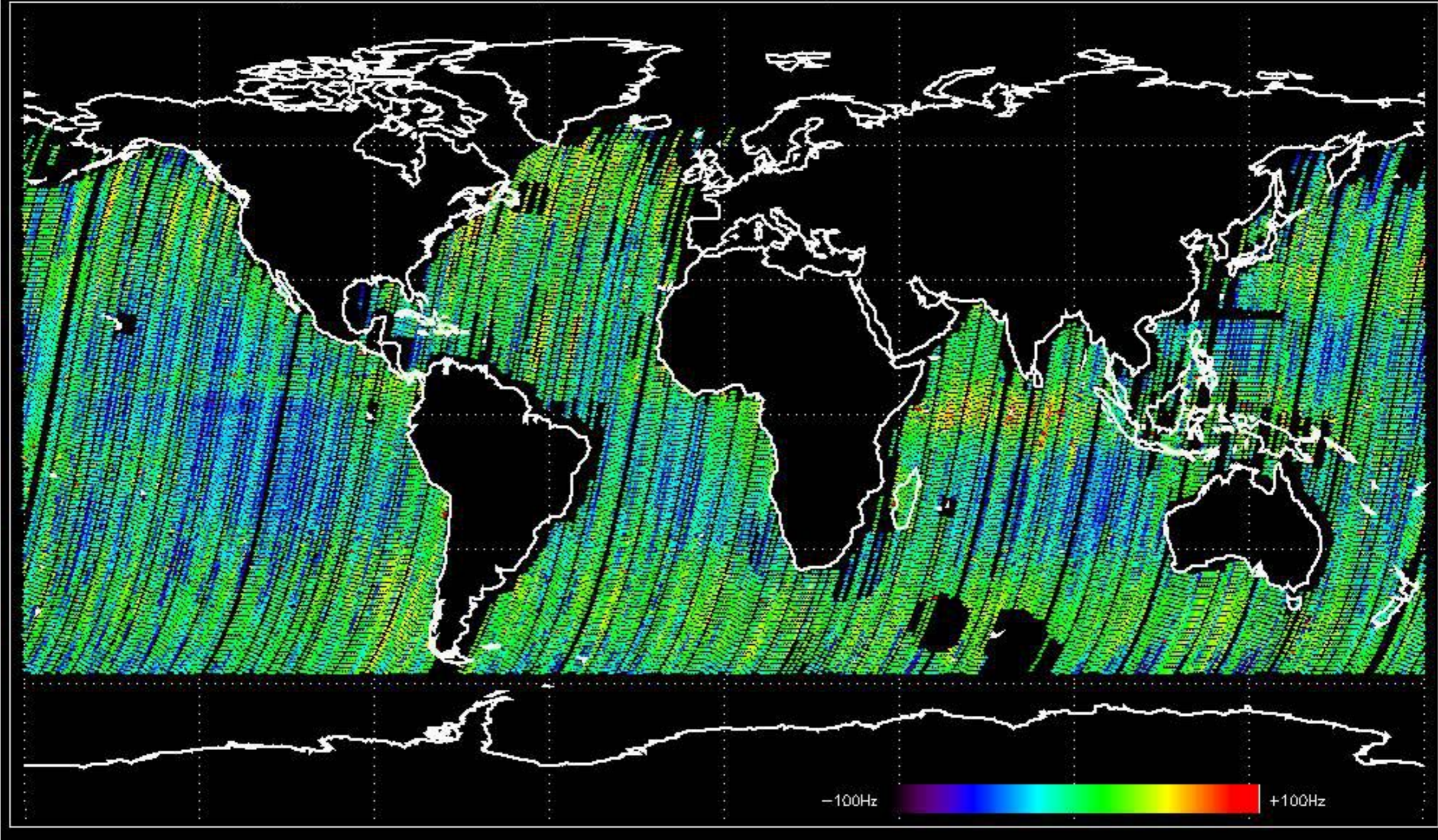
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -12.996305 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -8.3311474 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -11.711030 Hz



No anomalies observed on available MS products:

No anomalies observed.



















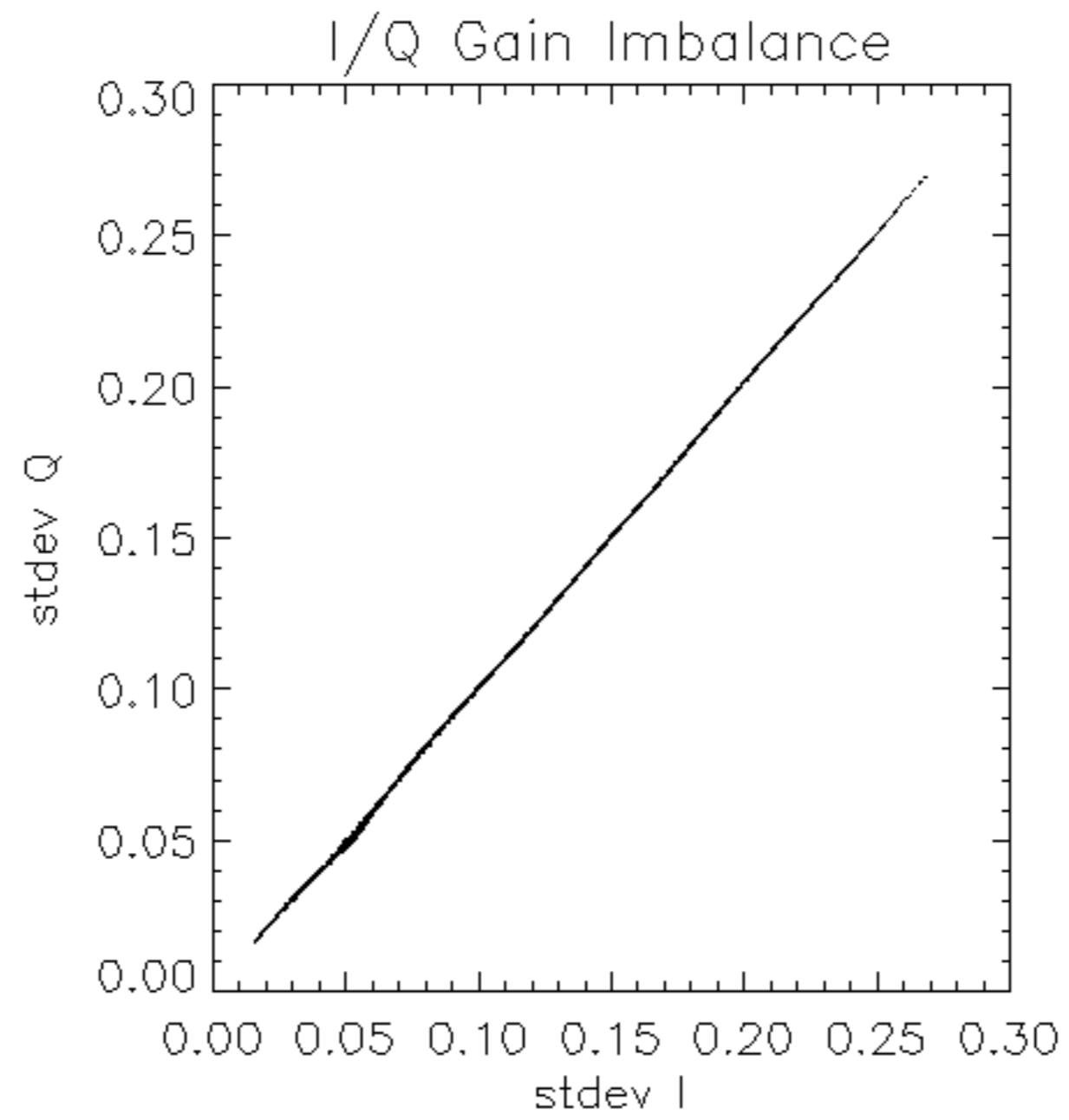


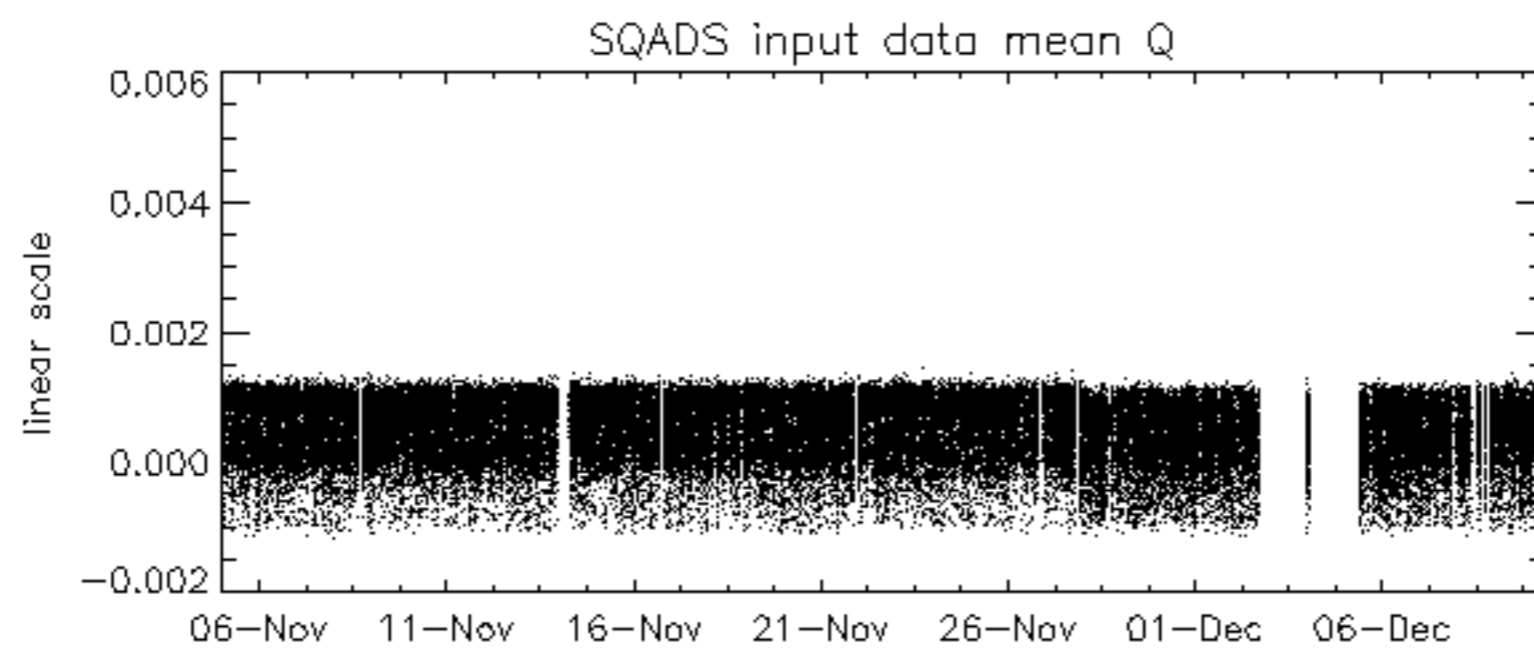
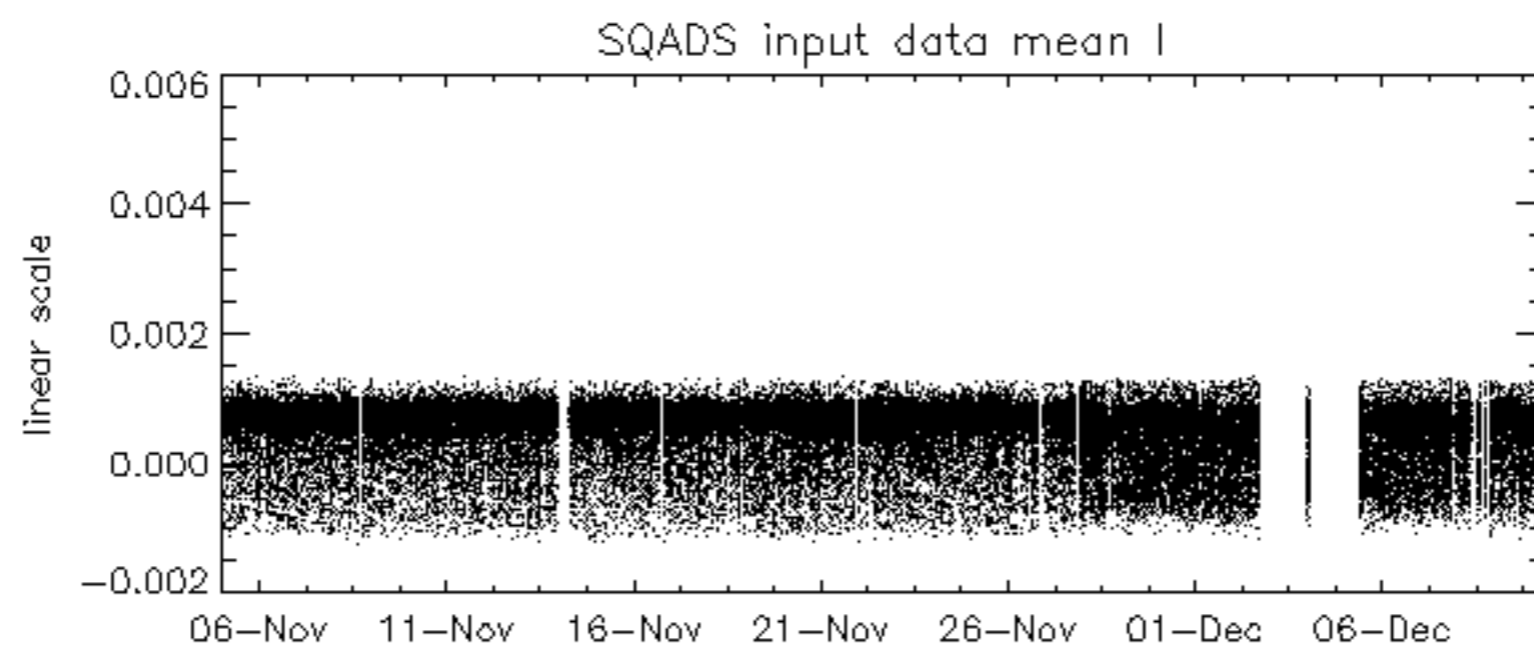
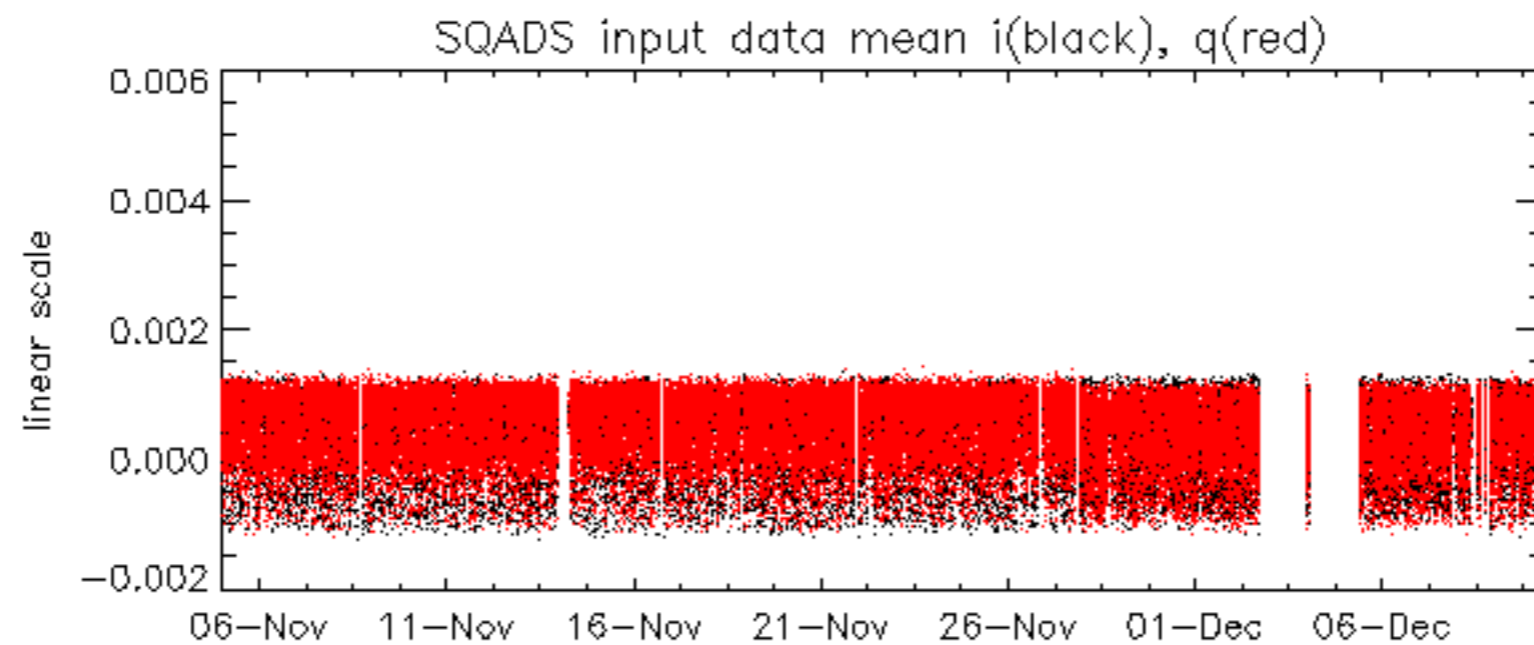


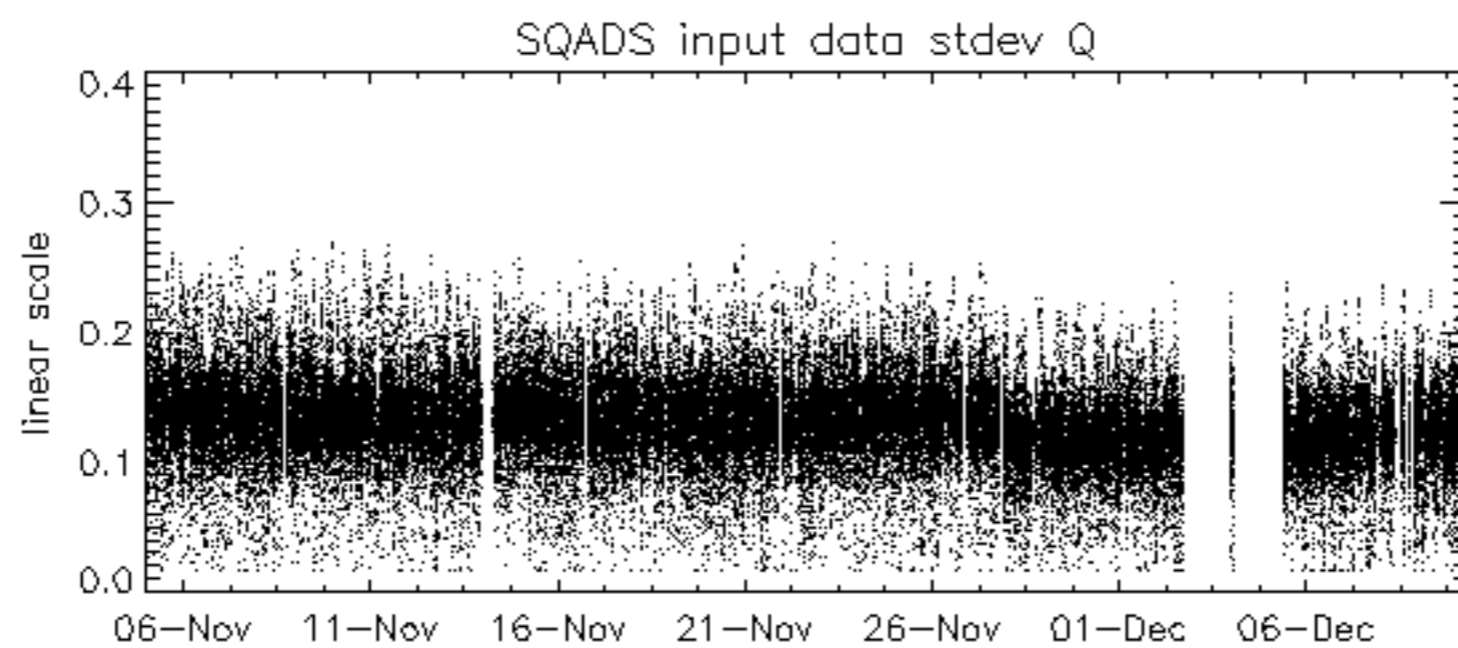
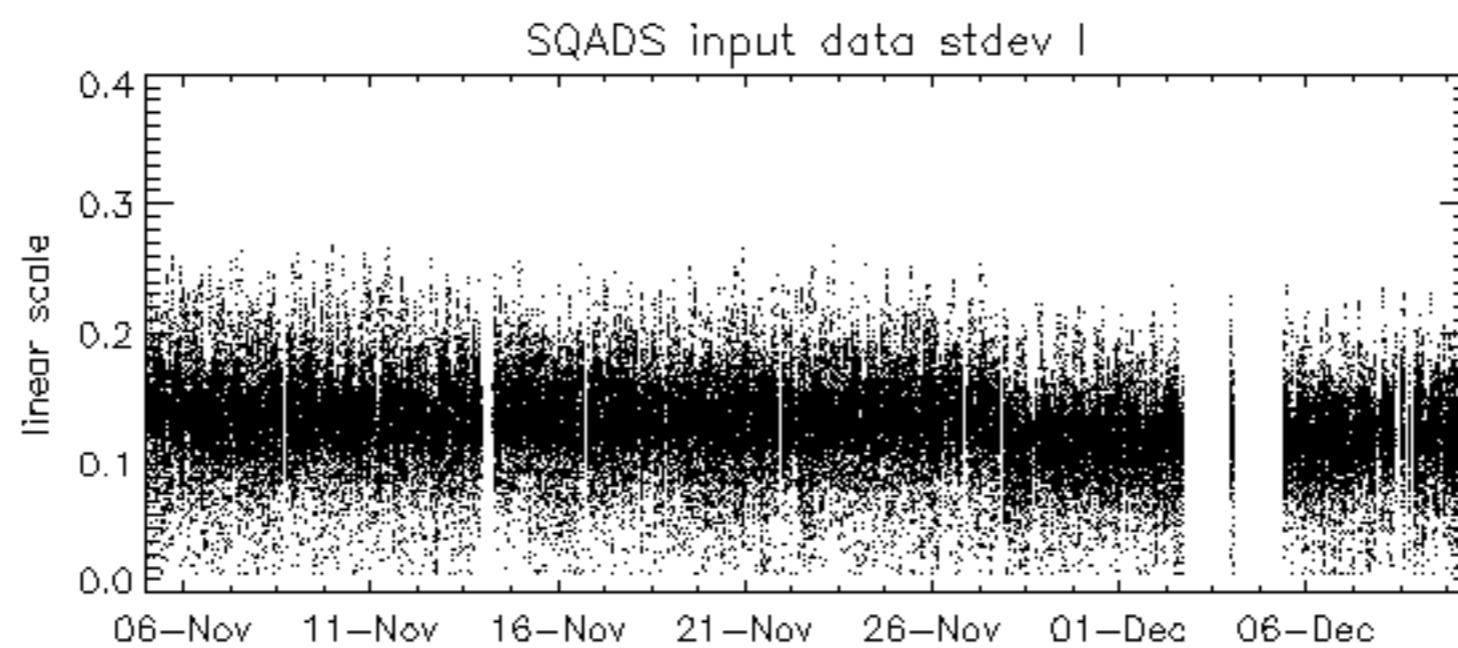
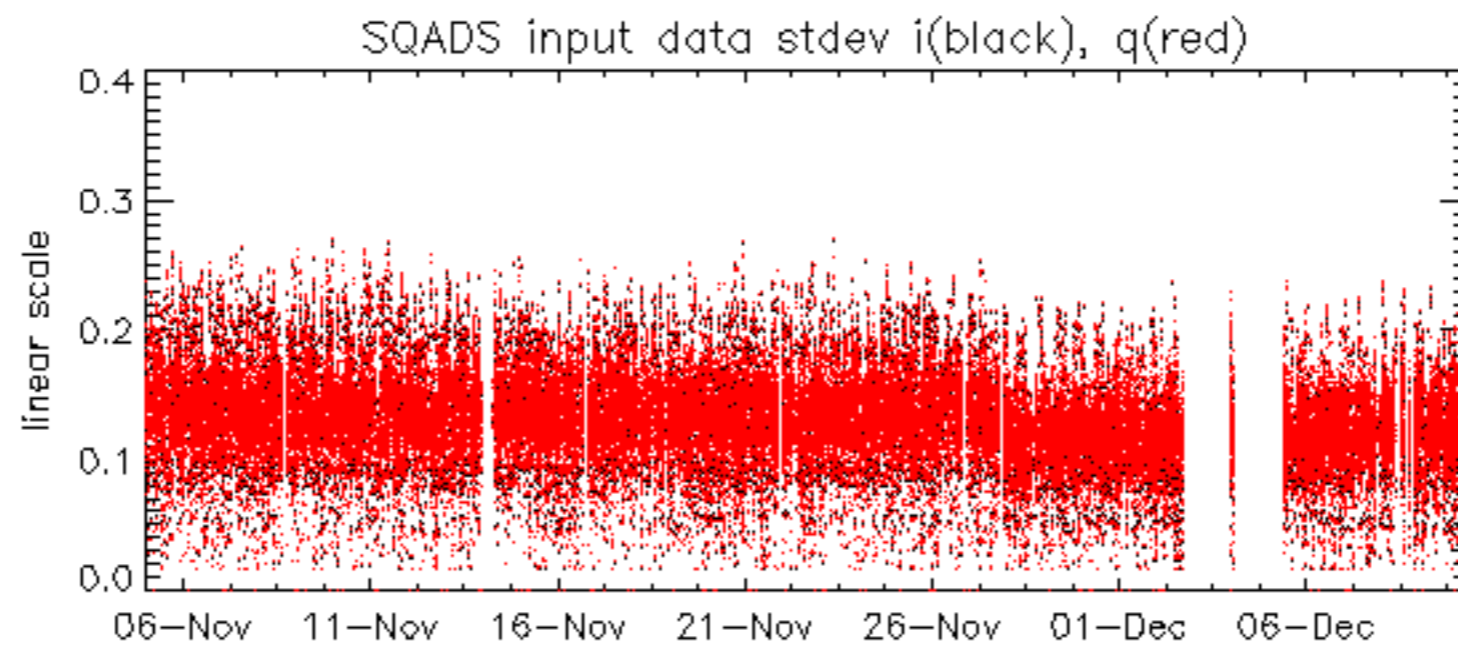






















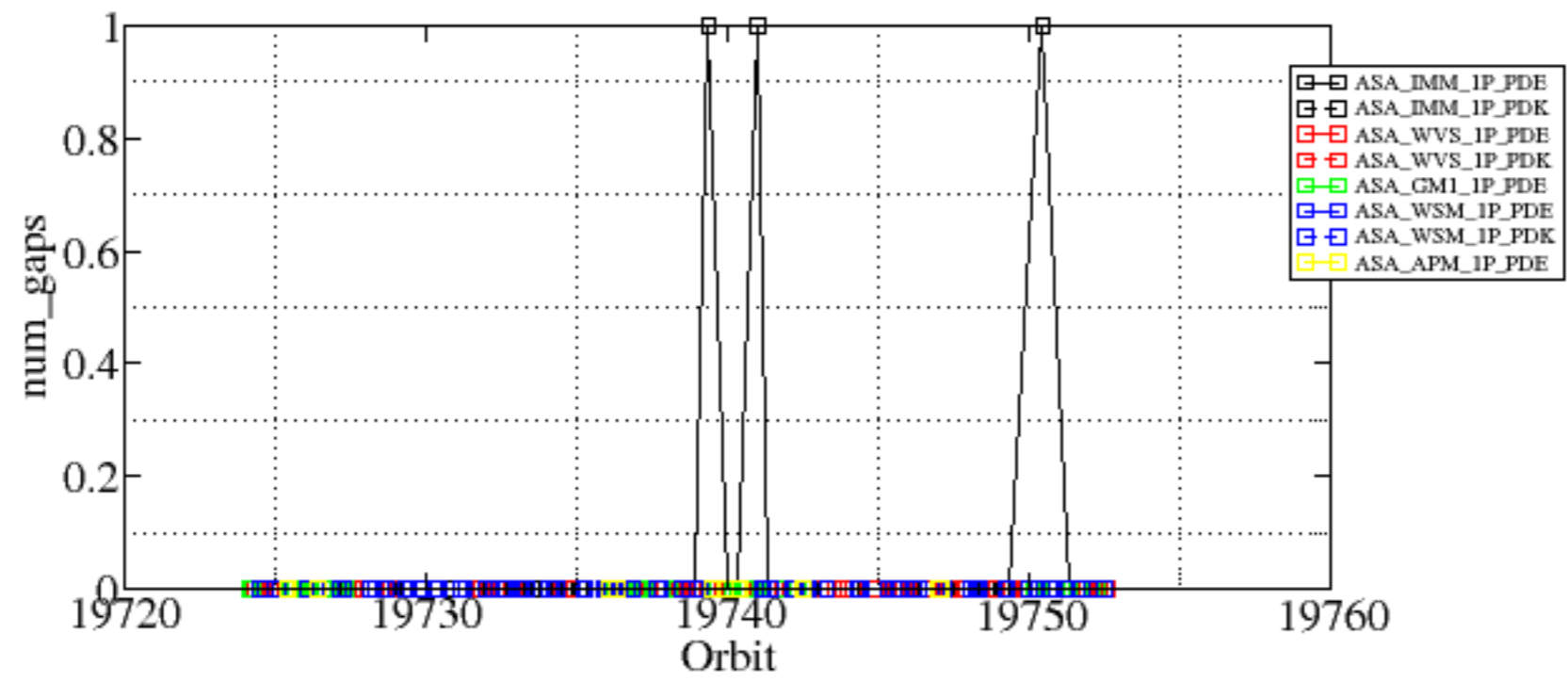


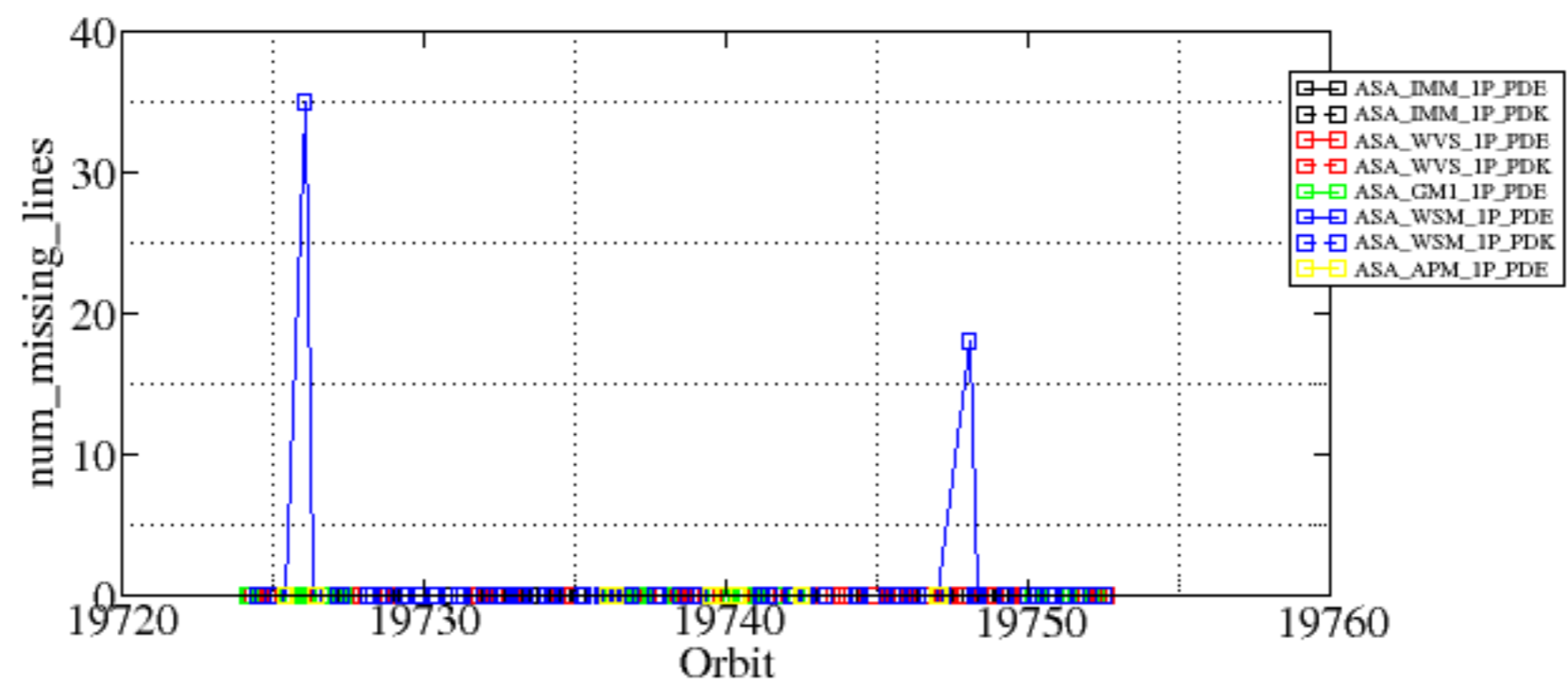


Summary of analysis for the last 3 days 2005120[890]

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_1PNPDE20051209_014321_000002582043_00146_19739_3553.N1	1	0
ASA_IMM_1PNPDE20051209_042648_000000522043_00147_19740_3577.N1	1	0
ASA_IMM_1PNPDE20051209_201740_000000372043_00157_19750_3609.N1	1	0
ASA_WSM_1PNPDE20051208_032332_000002442043_00133_19726_3277.N1	0	35
ASA_WSM_1PNPDE20051209_161730_000002202043_00155_19748_3468.N1	0	18









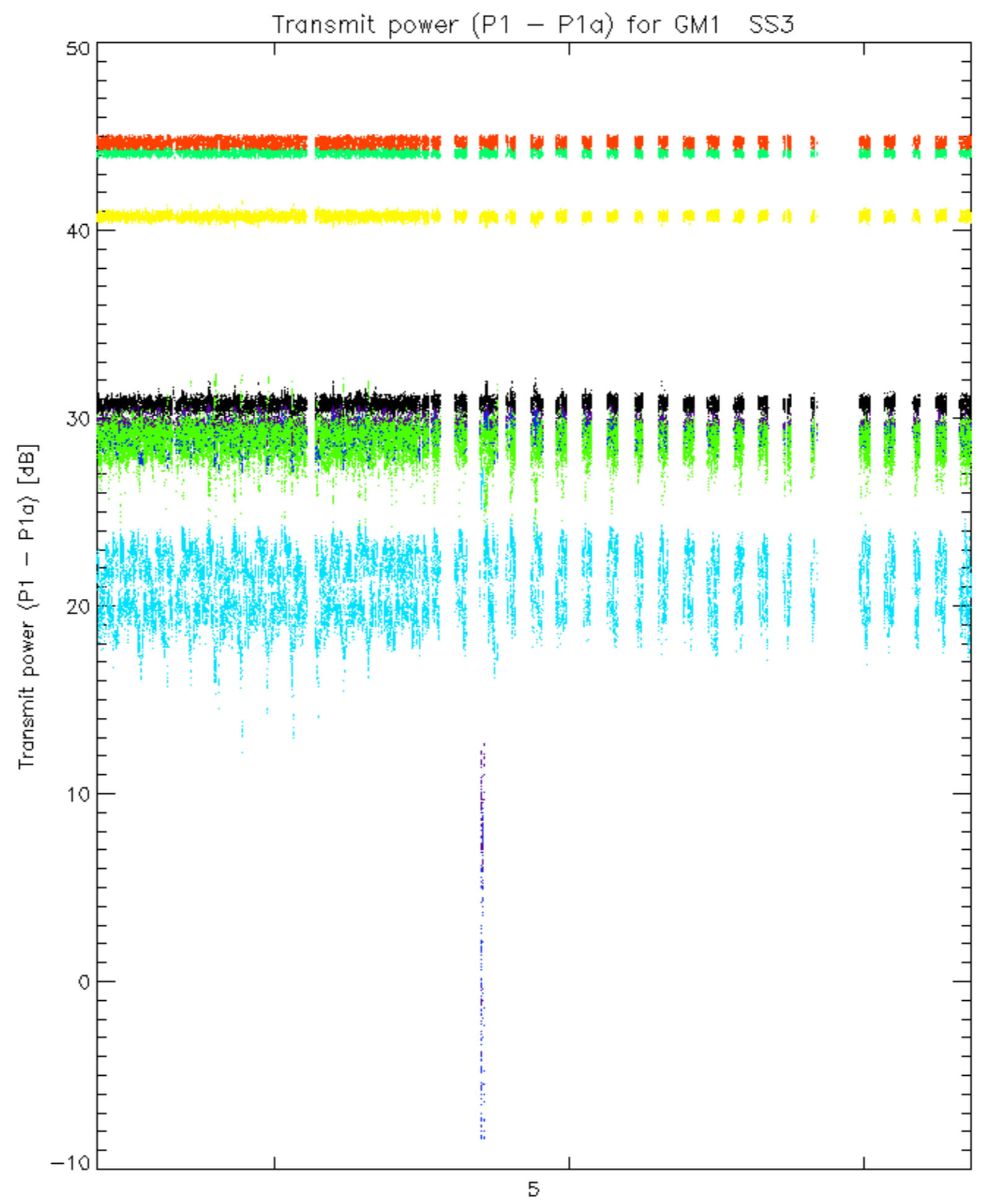




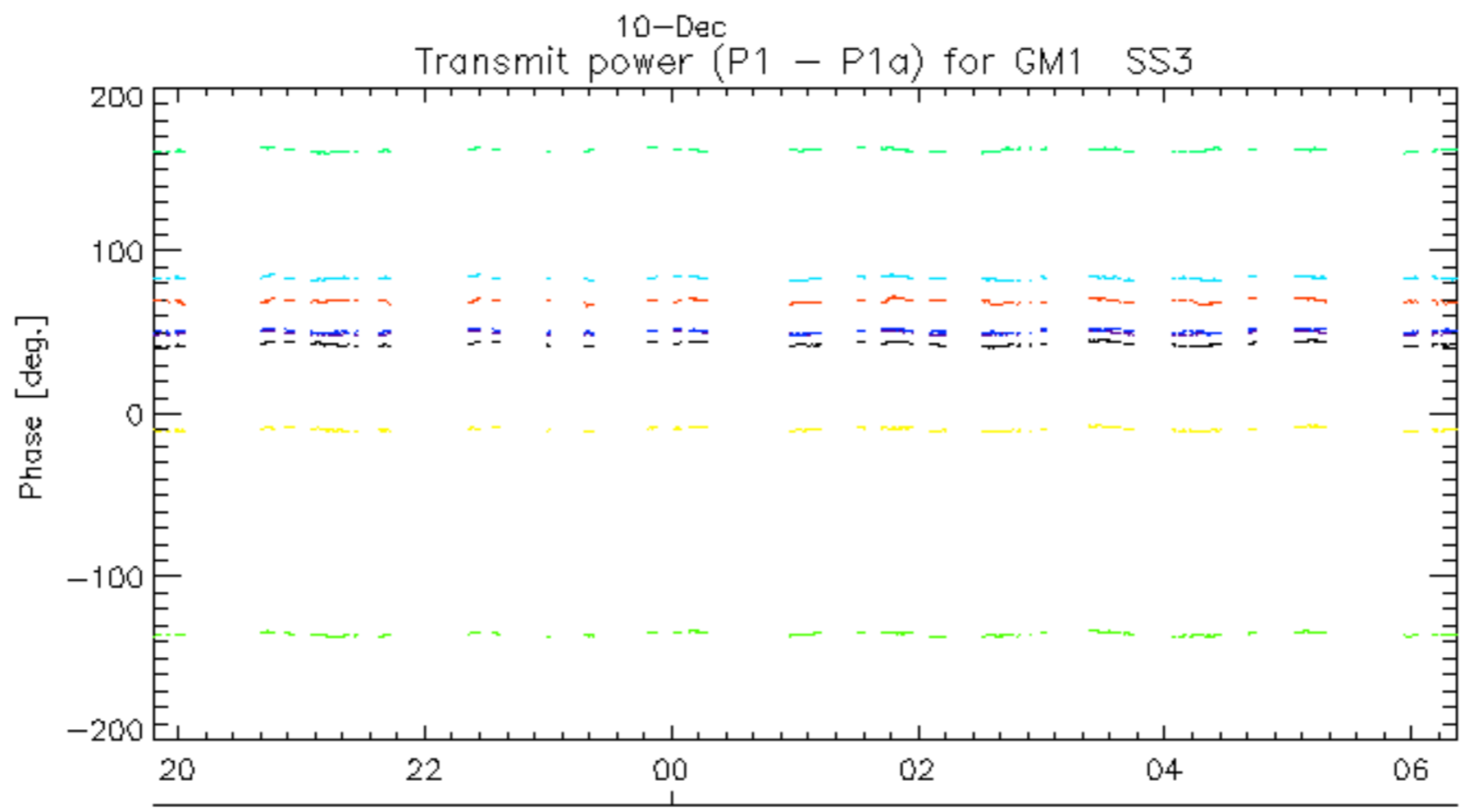
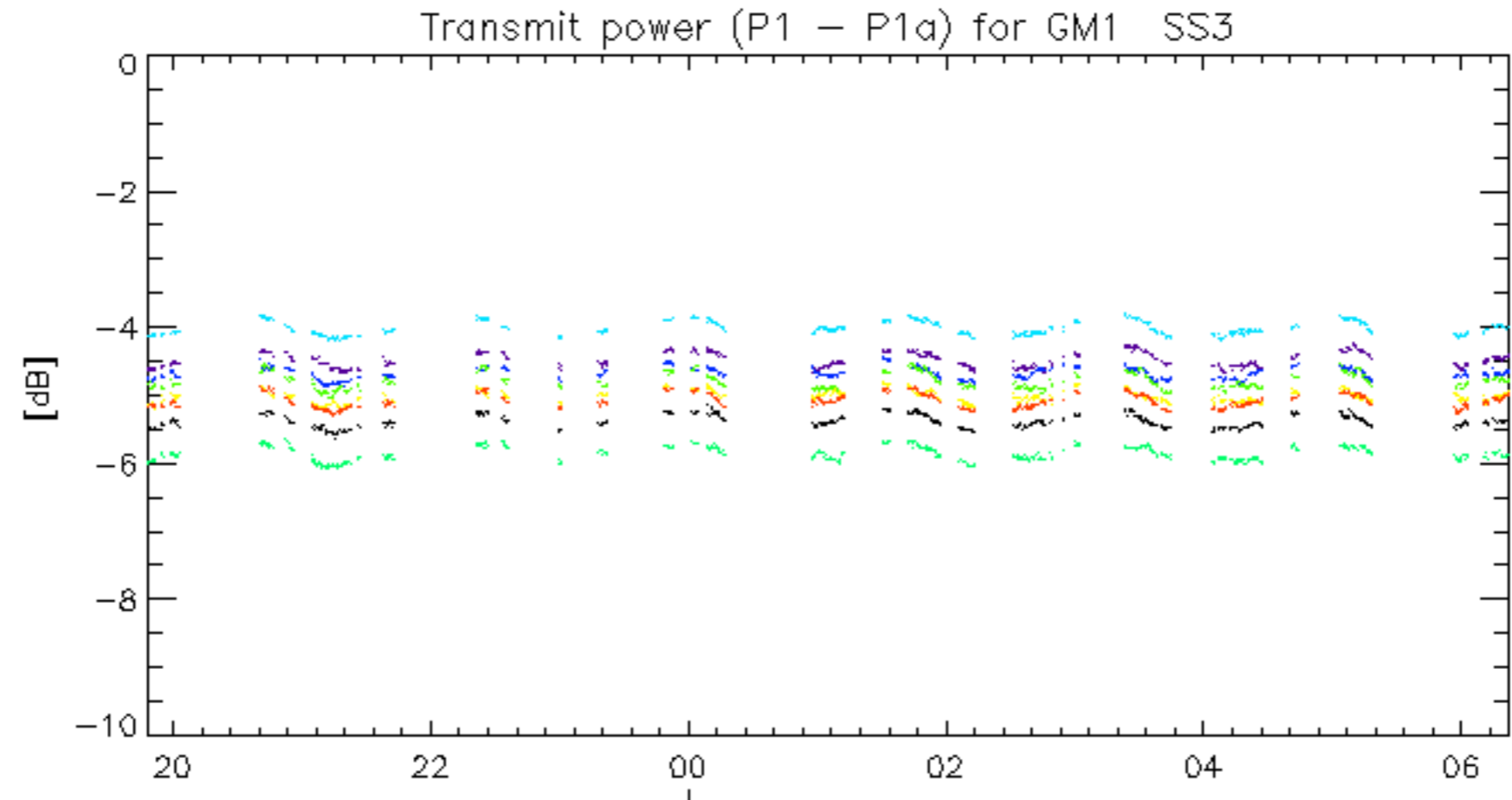






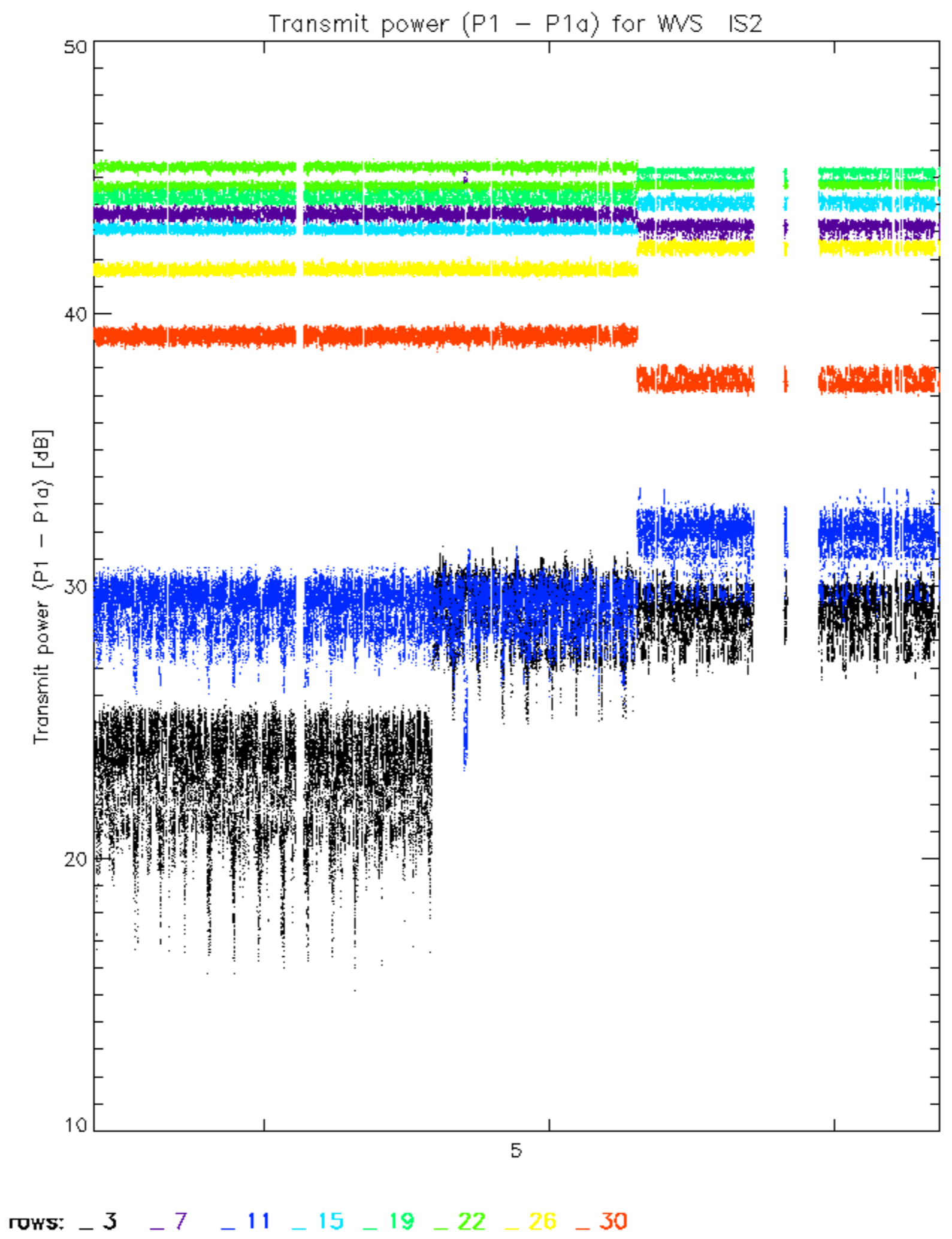


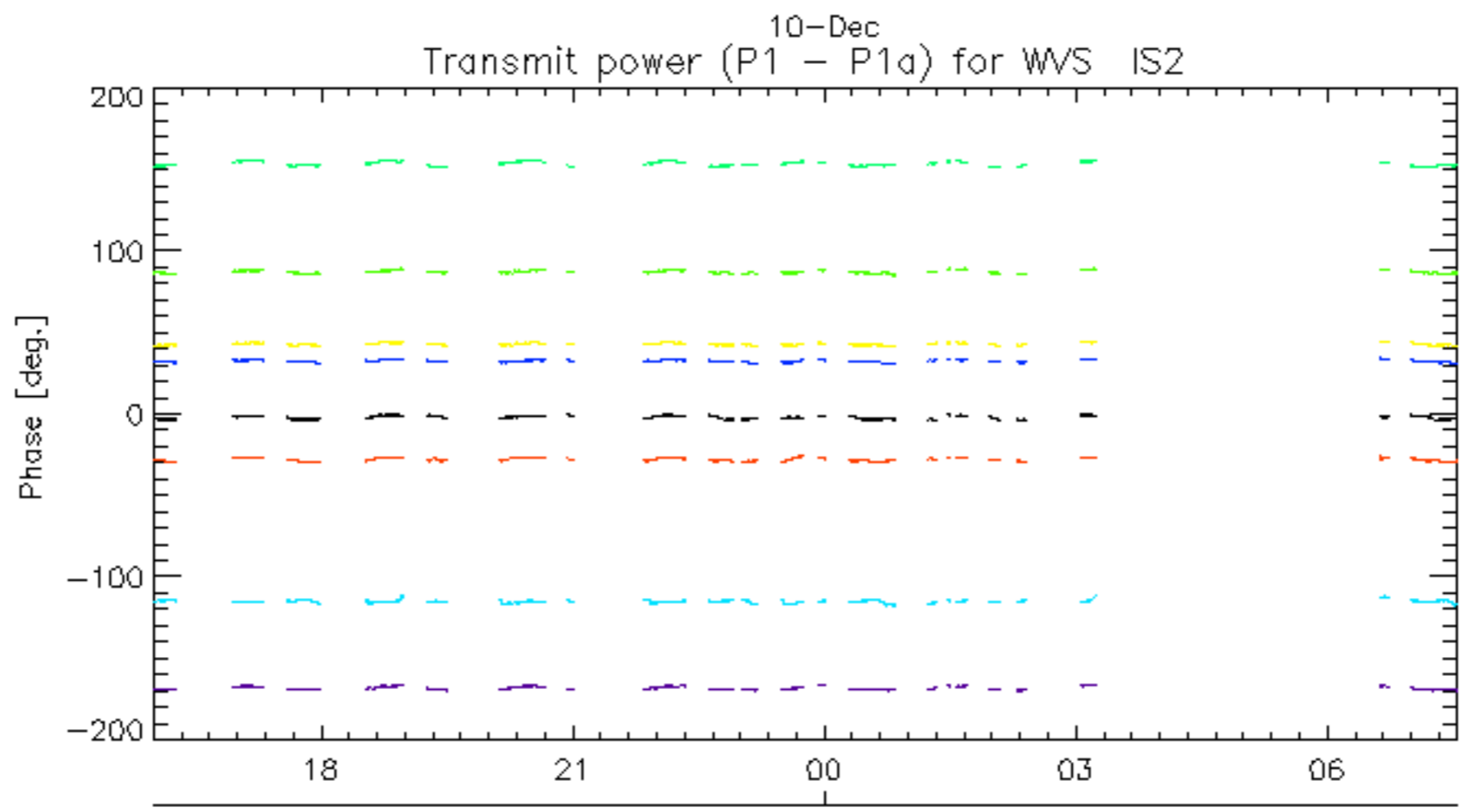
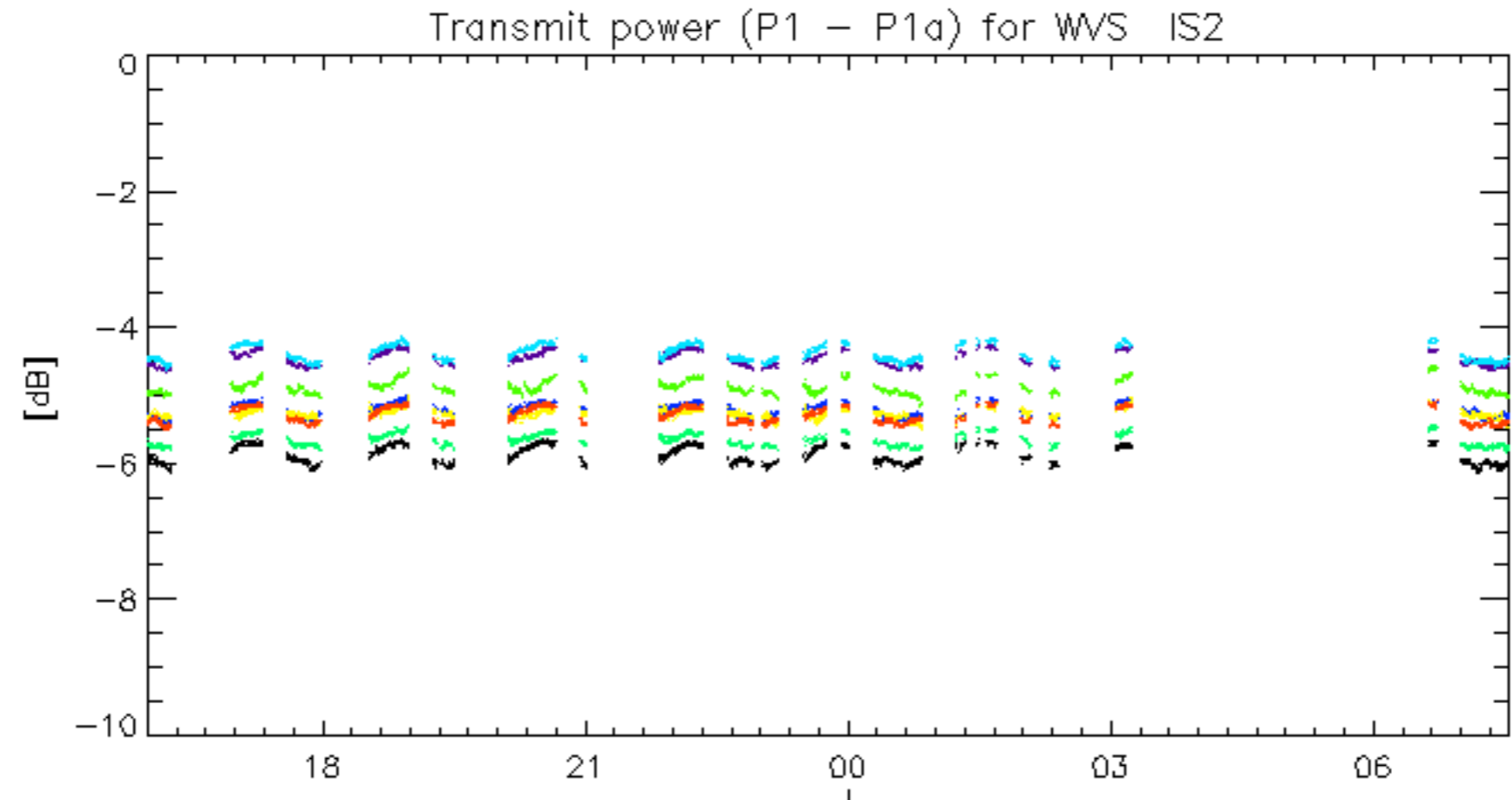
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



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







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

No unavailabilities during the reported period.