

# PRELIMINARY REPORT OF 051001

last update on Sat Oct 1 10:50:01 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 2005-09-30 00:00:00 to 2005-10-01 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	29	51	9	2	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	29	51	9	2	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	29	51	9	2	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	29	51	9	2	0

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	38	60	31	6	57
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	38	60	31	6	57
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	38	60	31	6	57
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	38	60	31	6	57

## 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	20050929 074720
H	20050930 071543

### 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	-3.485644	0.082288	-0.396994
7	P1	-3.051658	0.040165	0.434800
11	P1	-4.431777	0.163572	1.005368
15	P1	-5.845178	0.057894	-0.536172
19	P1	-3.379364	0.230015	1.012834
22	P1	-4.537362	0.024670	0.276368
26	P1	-4.598484	0.112987	0.764538
30	P1	-6.380173	0.697481	2.322727
3	P1	-15.885400	1.900413	-0.020829
7	P1	-16.573629	5.277966	-1.095180
11	P1	-19.627565	13.792894	8.054728
15	P1	-13.252535	10.937103	-3.213109
19	P1	-13.957828	0.340420	1.410038
22	P1	-17.166342	25.115276	-1.256430
26	P1	-18.069376	22.490240	0.932069
30	P1	-17.966406	9.235786	1.999369

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.791466	0.102351	-0.250604
7	P2	-22.349651	0.329767	-1.303322
11	P2	-15.292591	3.215723	-4.997766
15	P2	-7.161954	0.122662	-0.245442
19	P2	-9.273431	0.226383	0.631483
22	P2	-17.232876	0.283601	-1.279604
26	P2	-16.296526	0.143730	0.623508
30	P2	-19.279099	0.278538	-1.190399

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.167823	0.004552	-0.029006
7	P3	-8.167823	0.004552	-0.029006
11	P3	-8.167823	0.004552	-0.029006
15	P3	-8.167823	0.004552	-0.029006
19	P3	-8.167823	0.004552	-0.029006
22	P3	-8.167823	0.004552	-0.029006
26	P3	-8.167823	0.004552	-0.029006
30	P3	-8.167823	0.004552	-0.029006

#### 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	-3.110239	0.287001	-1.186947
7	P1	-2.976238	0.072758	0.128795
11	P1	-3.501284	0.364764	1.681122
15	P1	-3.532476	0.035847	0.365643
19	P1	-3.417505	0.082874	0.431543
22	P1	-5.325529	0.234222	0.851634
26	P1	-6.363885	1.000339	2.312102
30	P1	-5.588440	0.557135	1.572395
3	P1	-11.395973	0.526964	-0.667240
7	P1	-11.643606	21.315479	0.199106
11	P1	-13.290646	40.198532	2.909164
15	P1	-12.971629	35.842388	0.669708
19	P1	-15.319752	0.224728	0.054104
22	P1	-22.937681	7.214165	6.909457
26	P1	-16.780600	6.459664	-3.018191
30	P1	-19.810040	2.049634	1.450600

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.546974	0.070558	-0.451237
7	P2	-22.555115	0.381474	-1.562157
11	P2	-10.664510	1.398785	-3.326361
15	P2	-4.979794	0.051597	0.262655
19	P2	-6.764143	0.122043	-0.048043
22	P2	-7.515340	0.306261	-1.505321
26	P2	-23.900961	0.042528	0.147905
30	P2	-22.041235	0.070977	-0.212530

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.010427	0.003433	-0.027127
7	P3	-8.010367	0.003438	-0.027207
11	P3	-8.010207	0.003436	-0.026683
15	P3	-8.010240	0.003441	-0.027175
19	P3	-8.010431	0.003428	-0.026957
22	P3	-8.010235	0.003431	-0.026841
26	P3	-8.010433	0.003435	-0.027441
30	P3	-8.010347	0.003446	-0.027394

## 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	0.000515213
	stdev	1.91594e-07
MEAN Q	mean	0.000517900
	stdev	2.19177e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.133779
	stdev	0.00105303
STDEV Q	mean	0.134080
	stdev	0.00106682



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2005093[901]

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_1PNPDE20050930_042647_000000522041_00147_18738_7026.N1	1	0
ASA_IMM_1PNPDE20050930_201742_000000402041_00157_18748_7067.N1	1	0
ASA_WSM_1PNPDE20050930_161705_000001092041_00155_18746_1510.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)


Ascending

Descending

### 7.2 - Absolute Doppler for WVS

#### Evolution of Absolute Doppler


Ascending

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

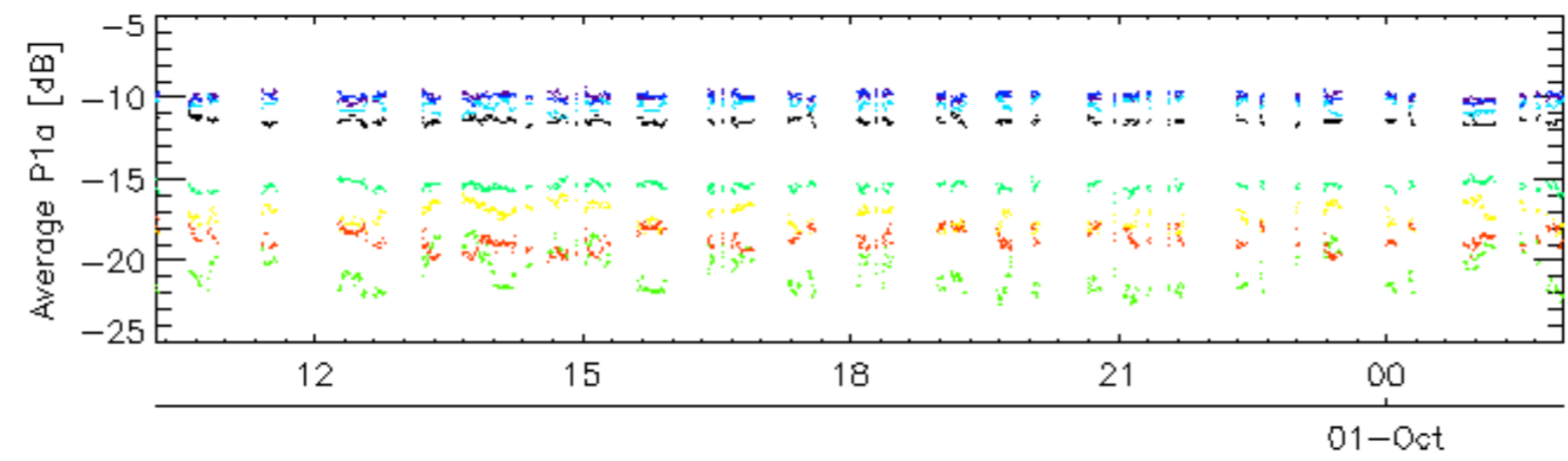
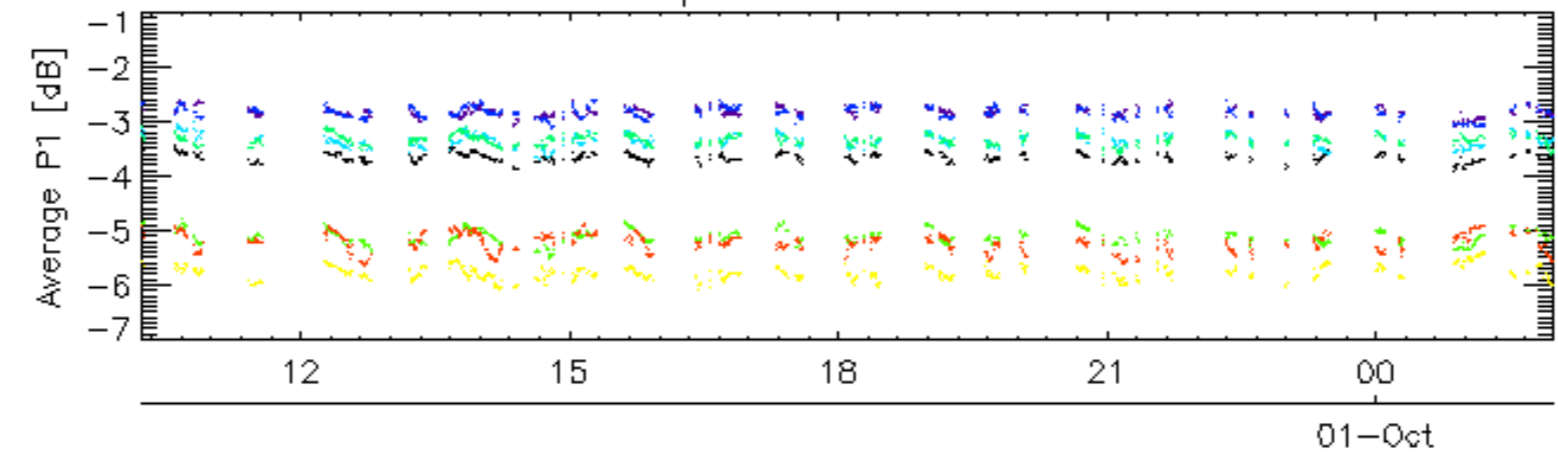
Ascending

Descending

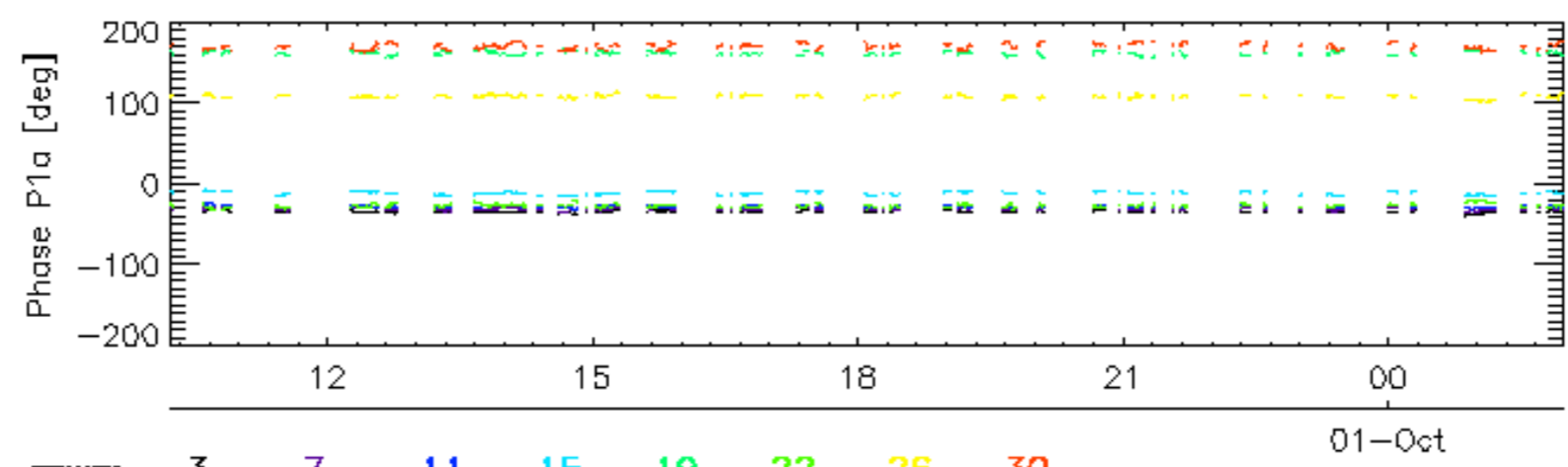
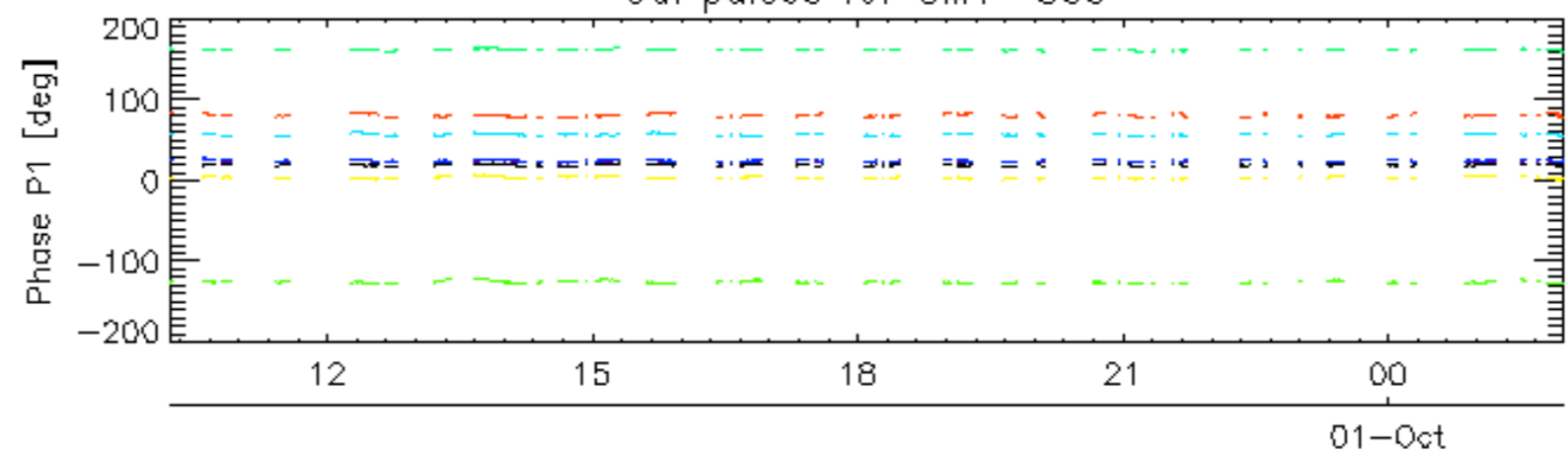
### 7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

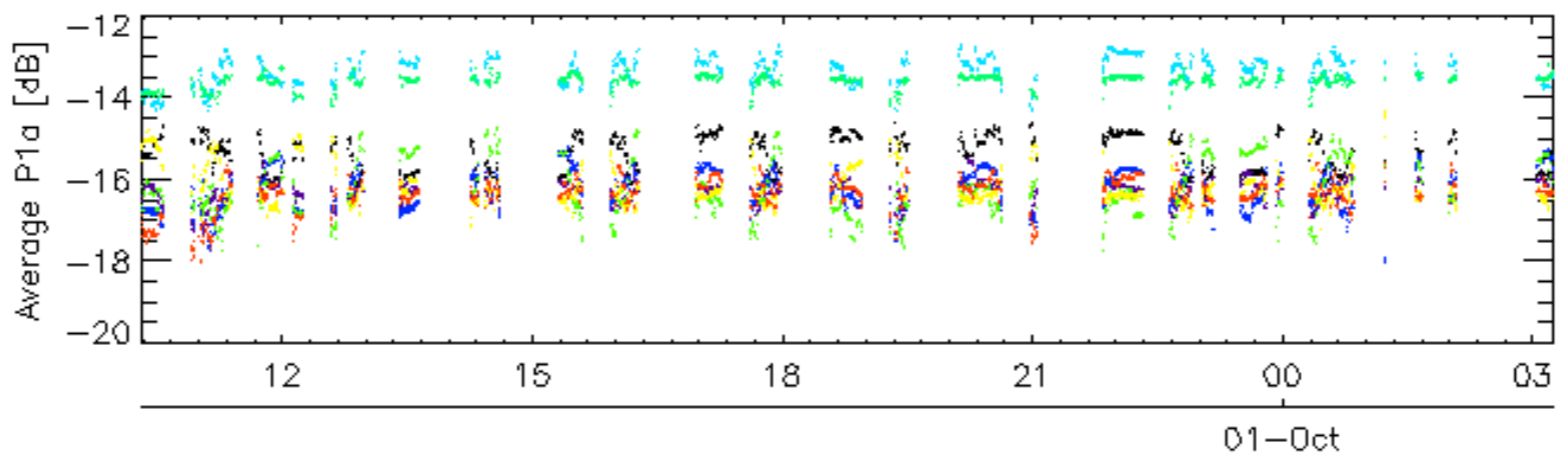
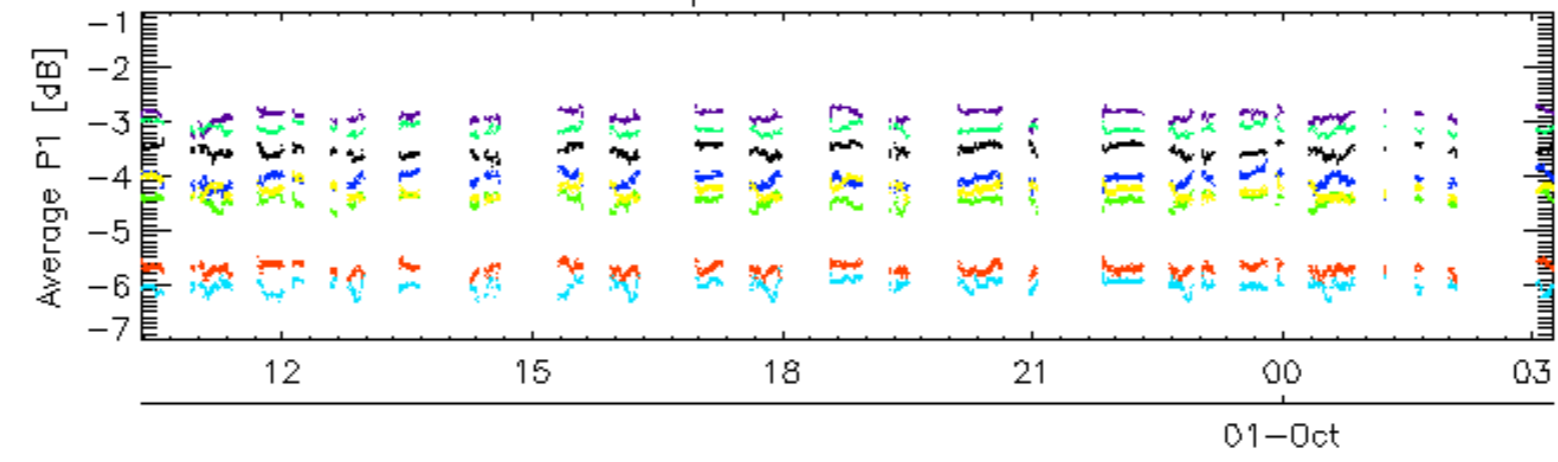


Cal pulses for GM1 SS3

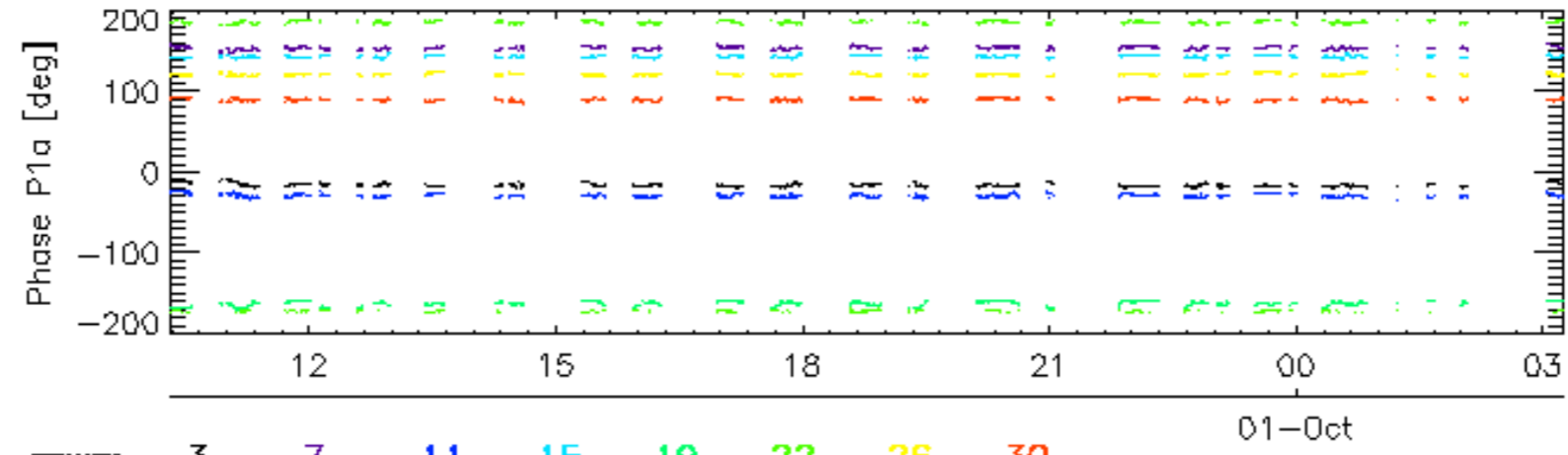
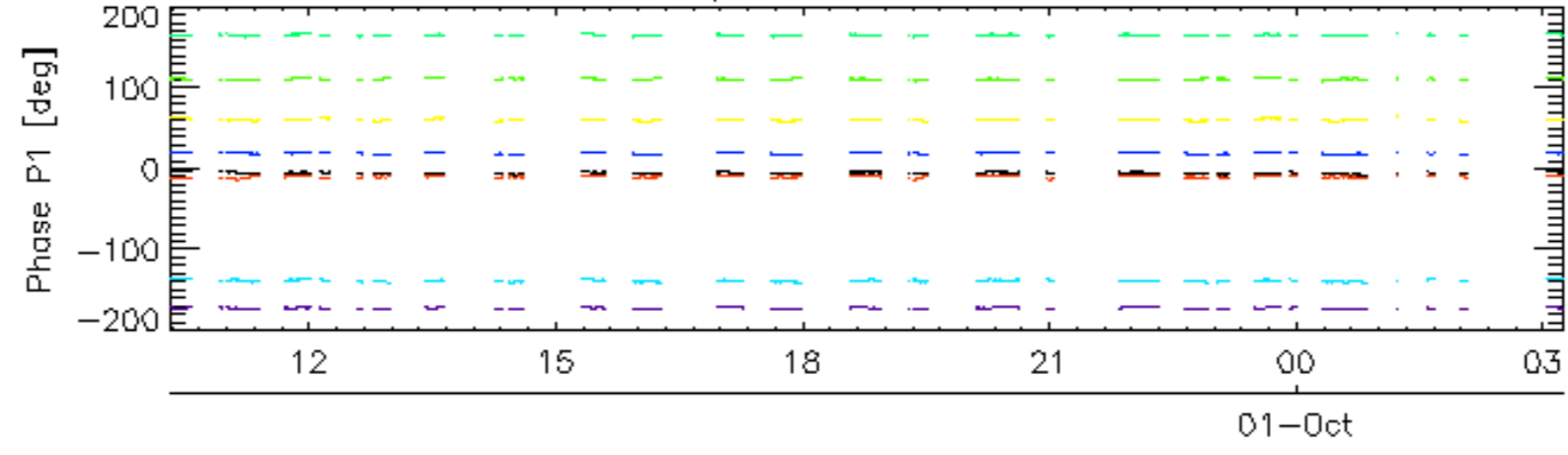


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

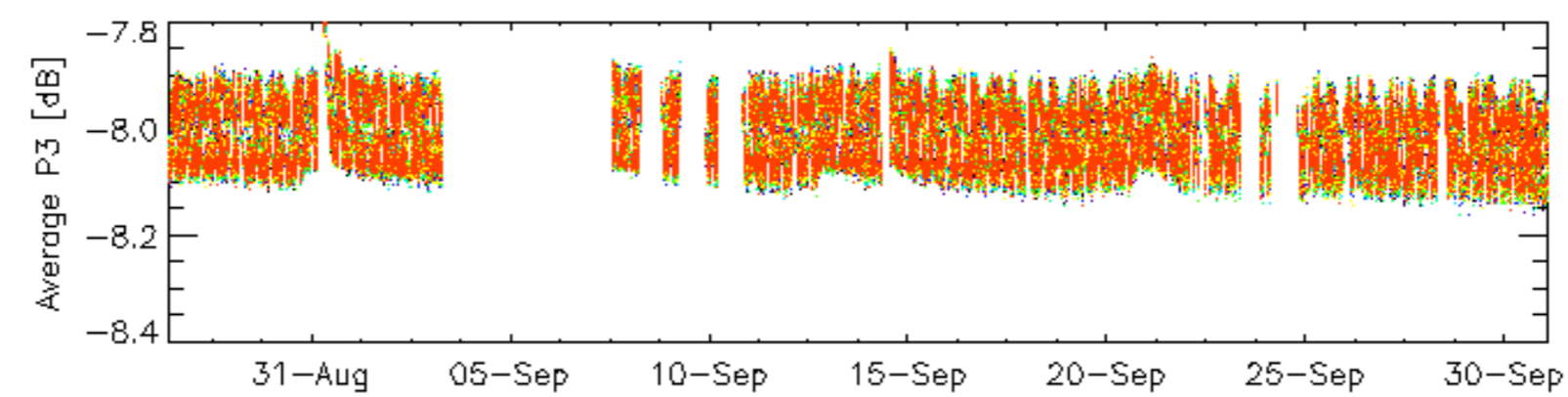
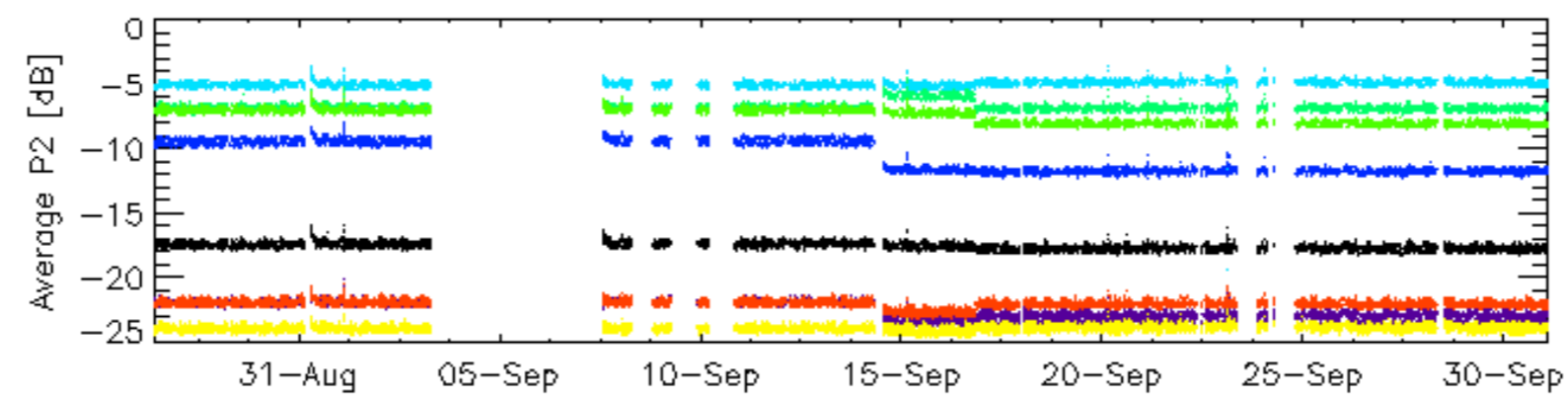
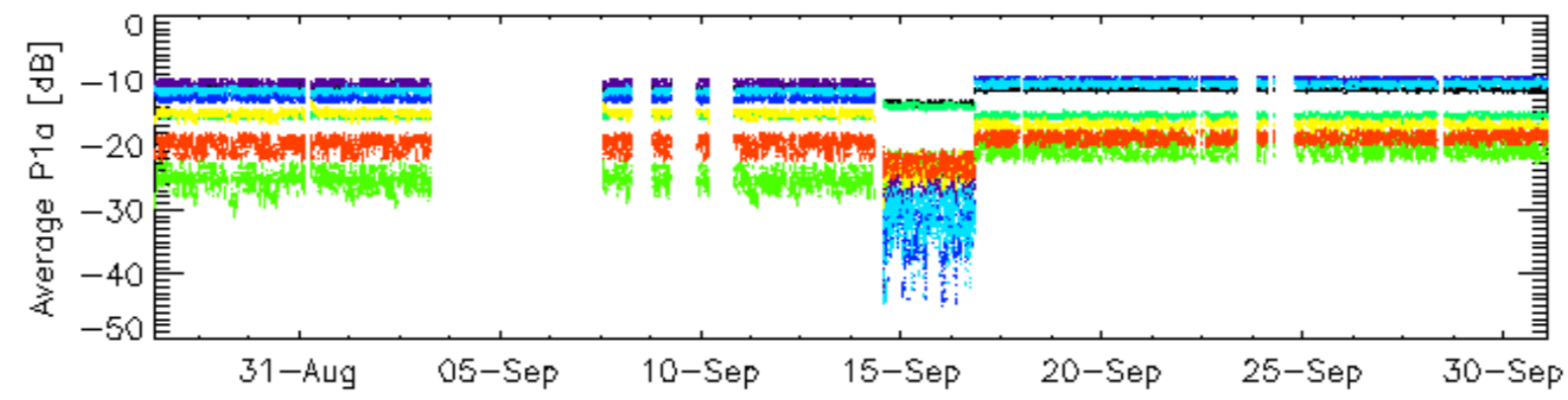
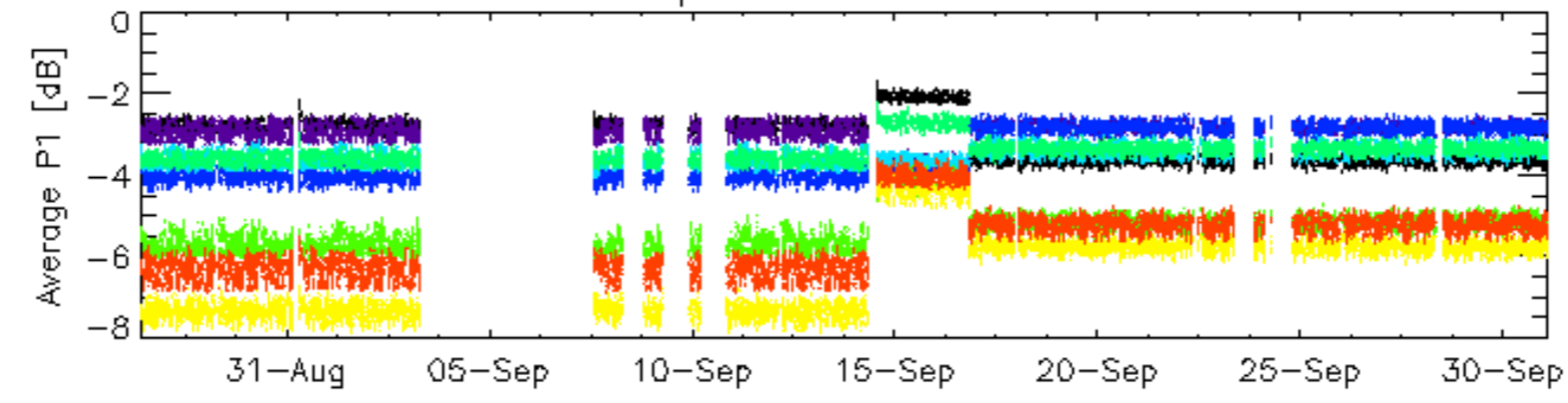


Cal pulses for WVS IS2



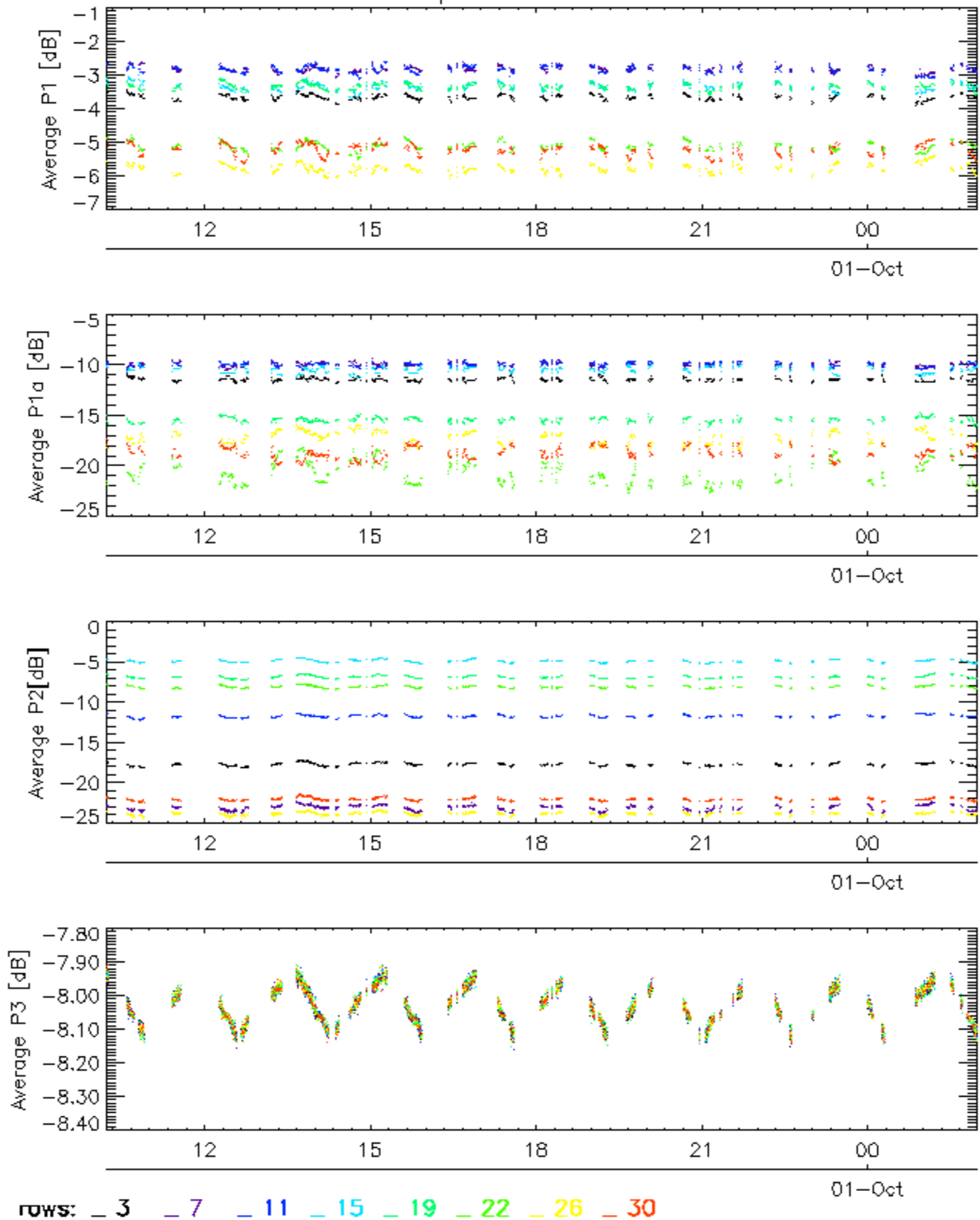
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

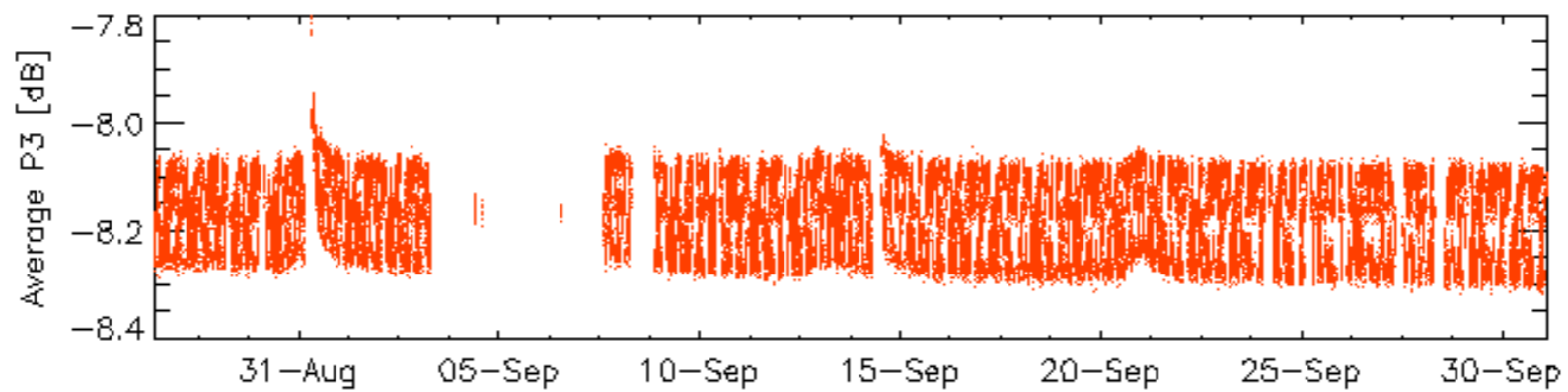
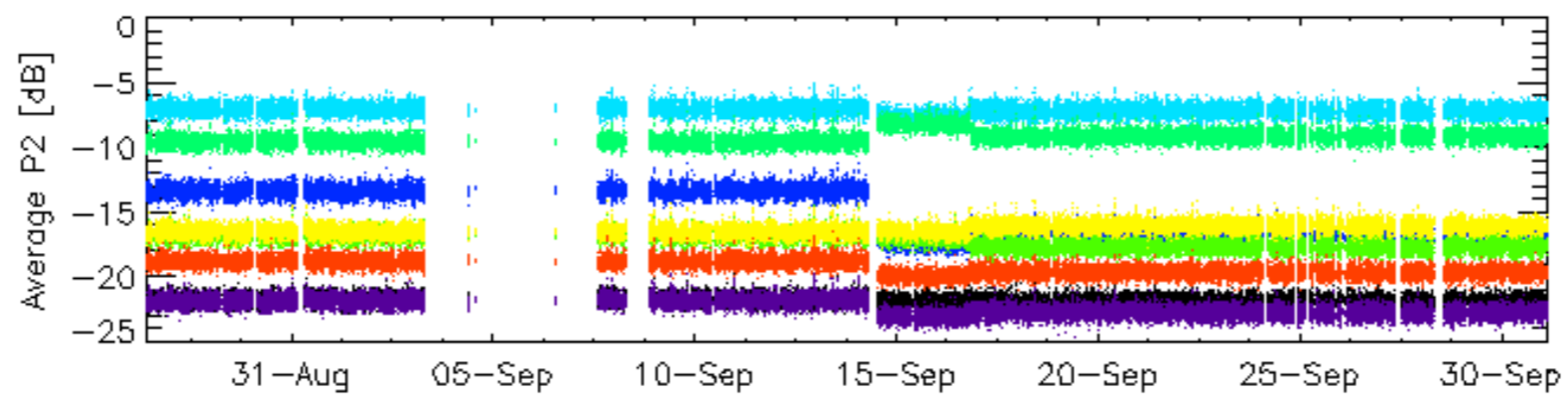
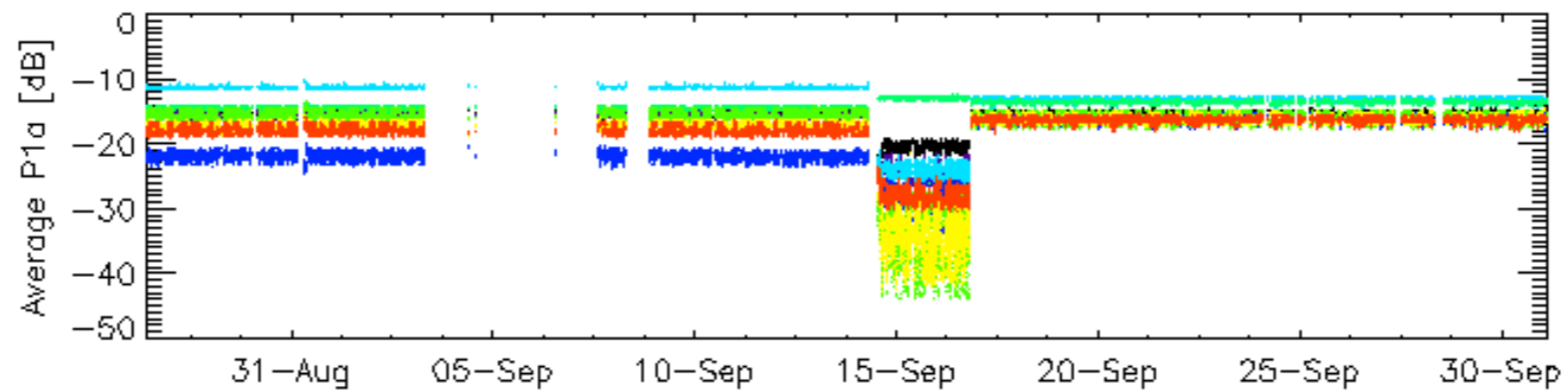
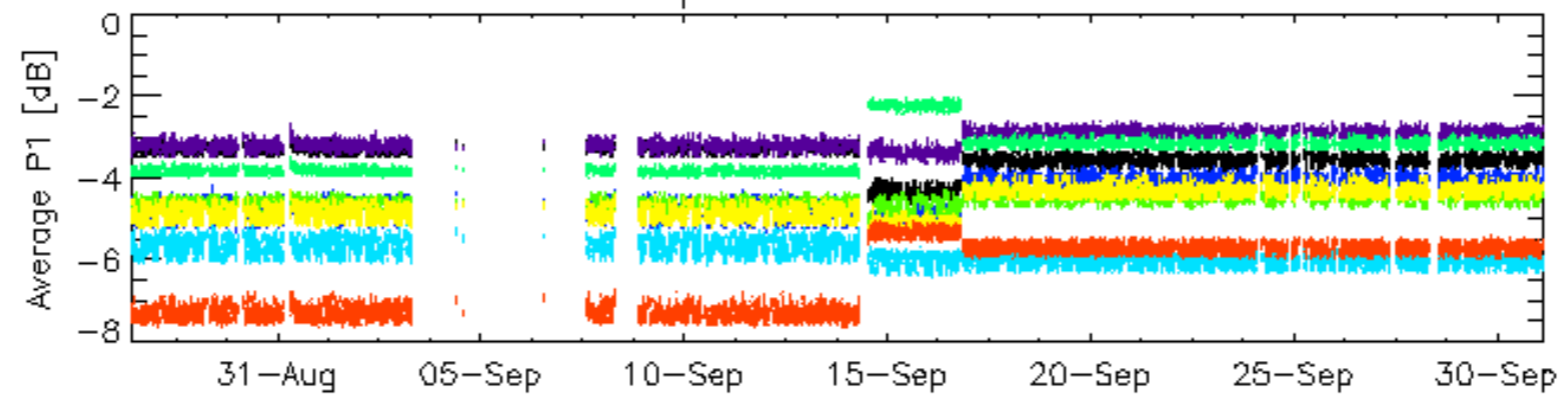


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

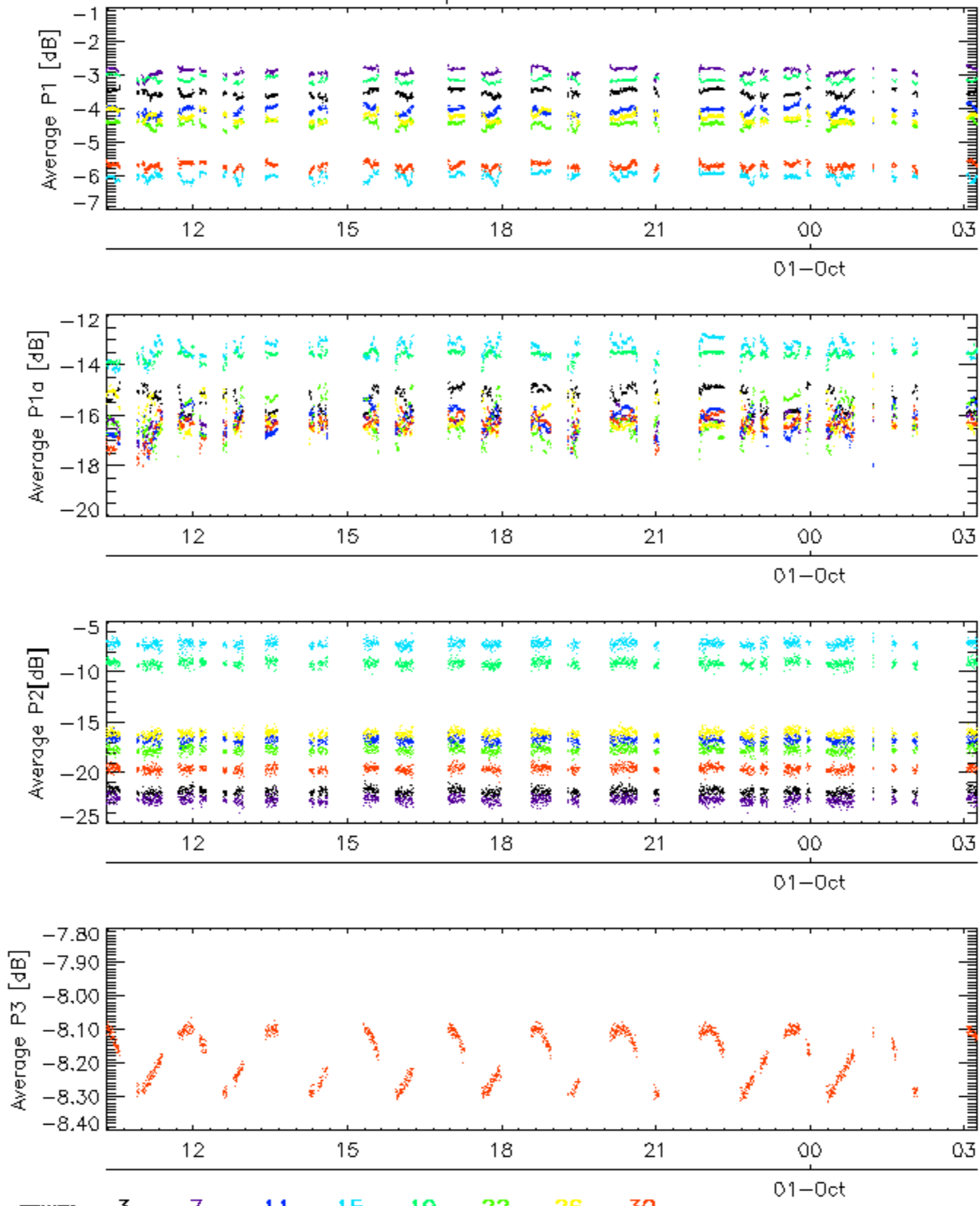


Cal pulses for WVS IS2



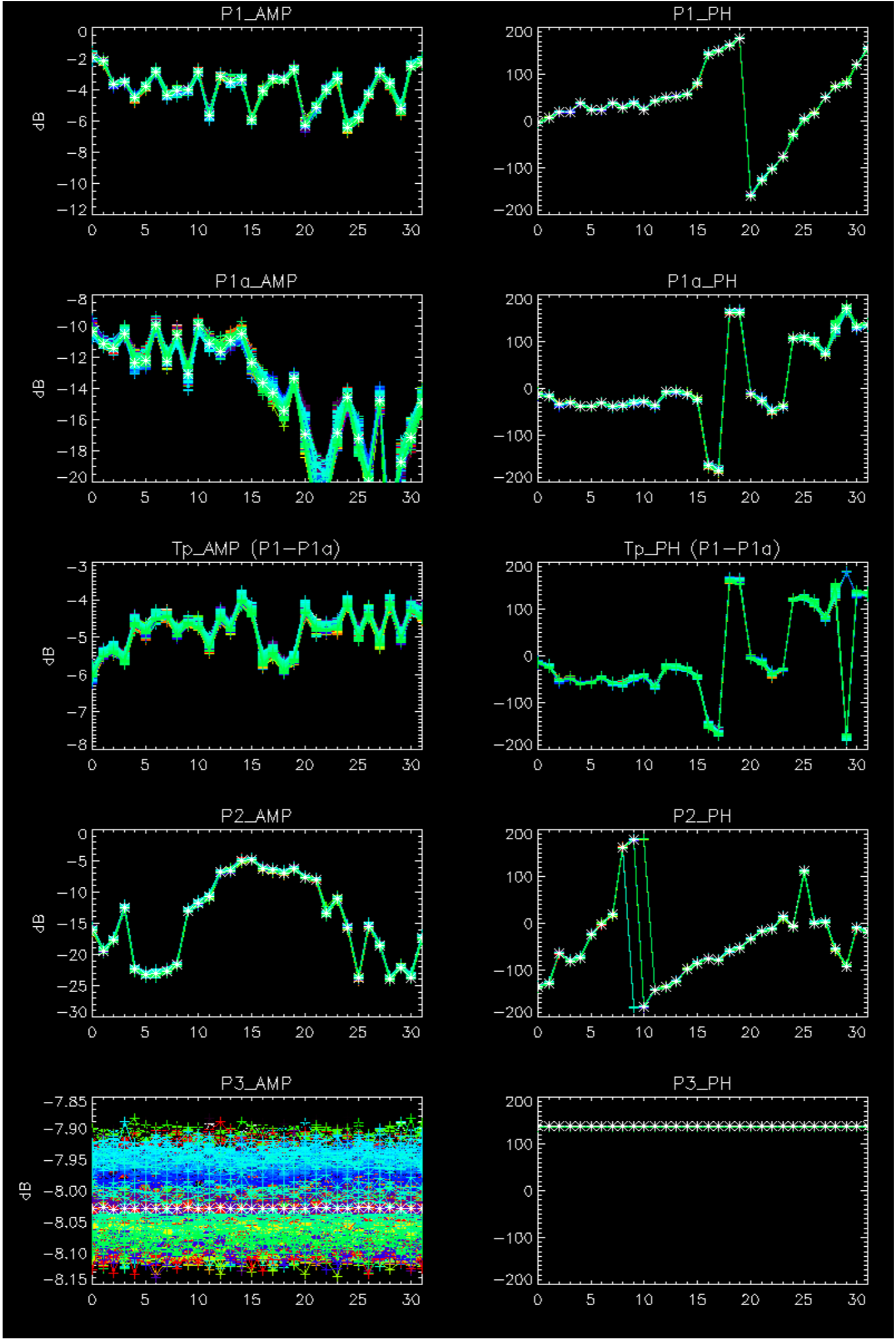
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

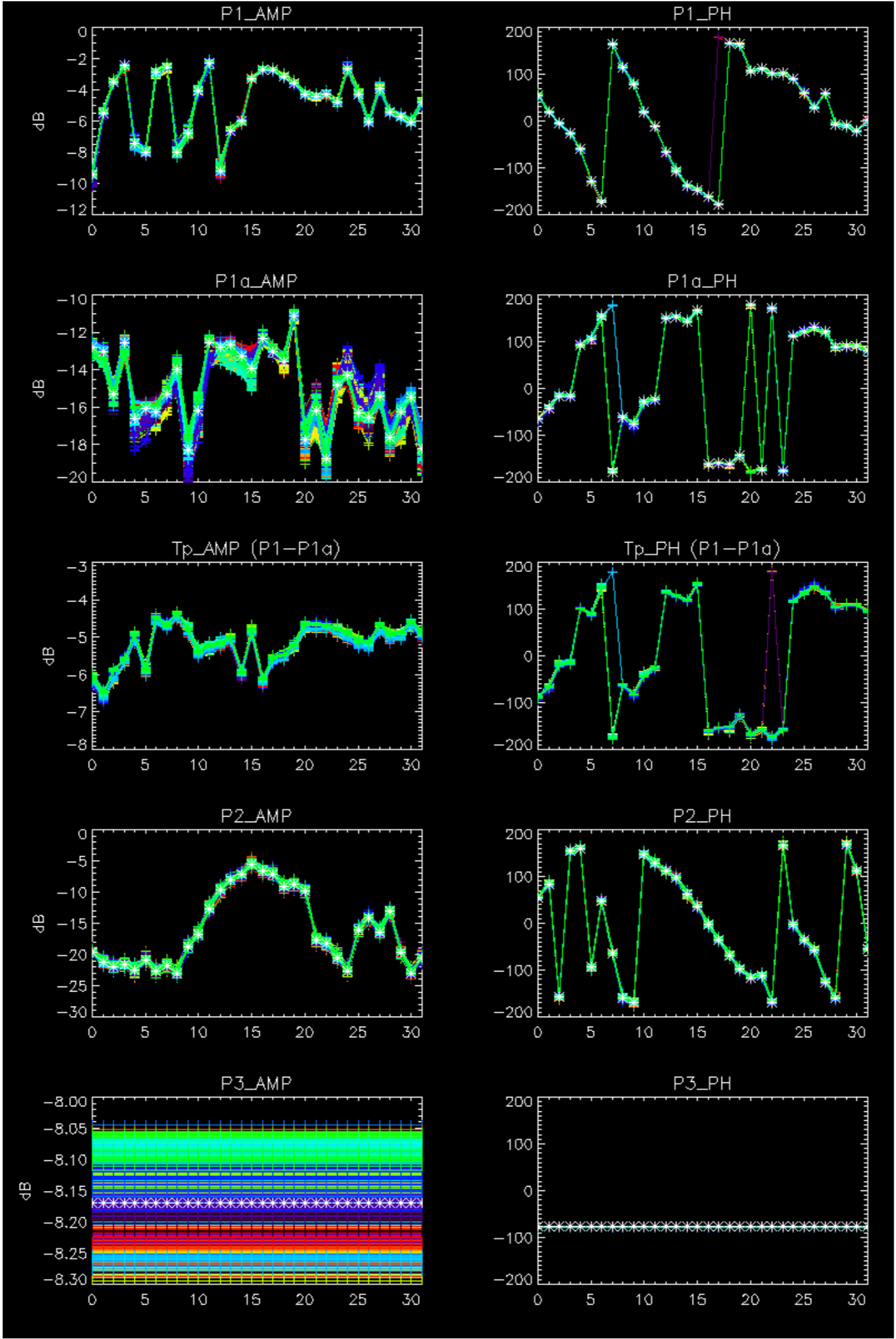
Cal pulses for WVS IS2



No anomalies observed.



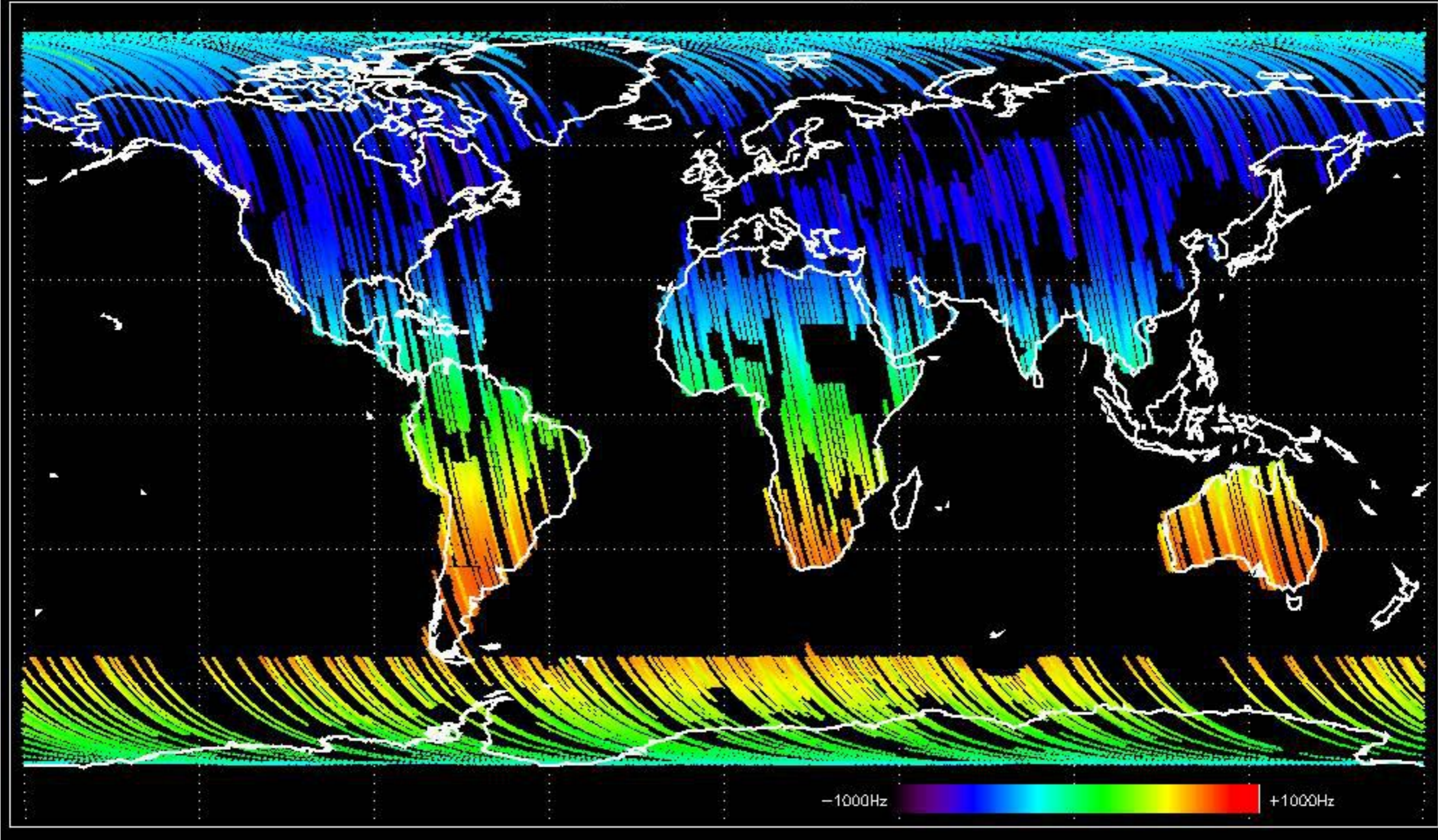




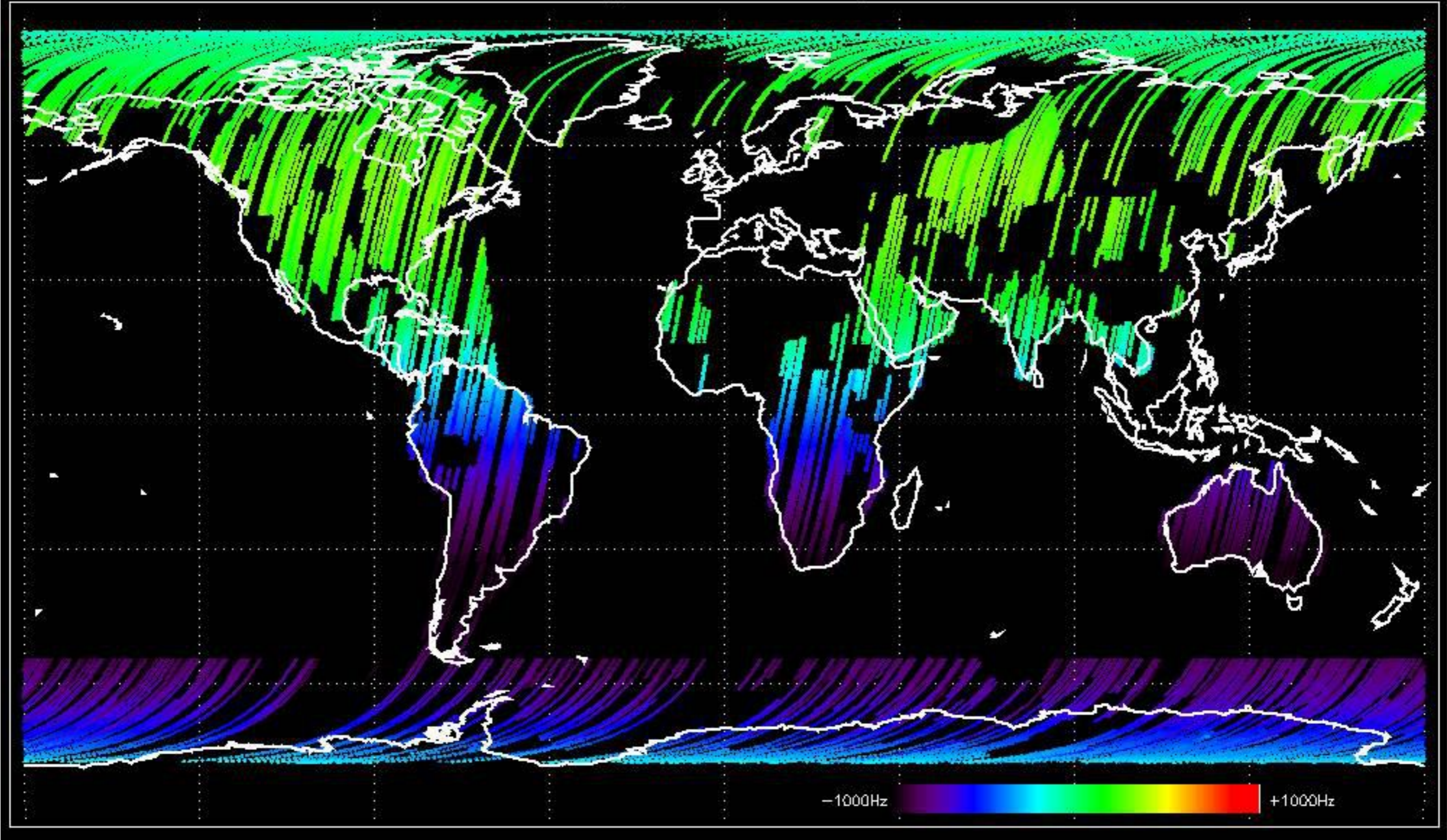
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



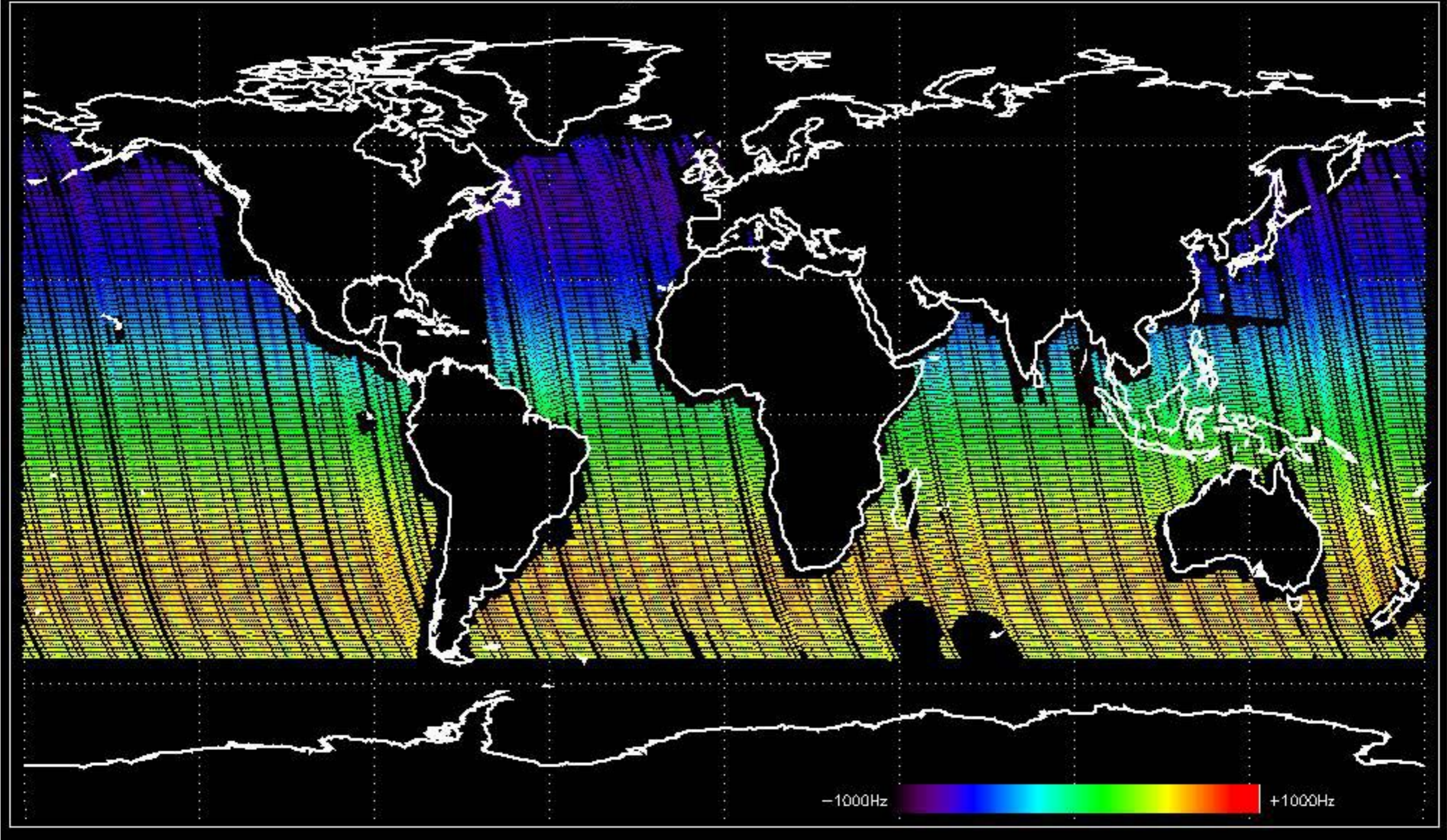
Doppler 'GM1' 'SS1' ascending



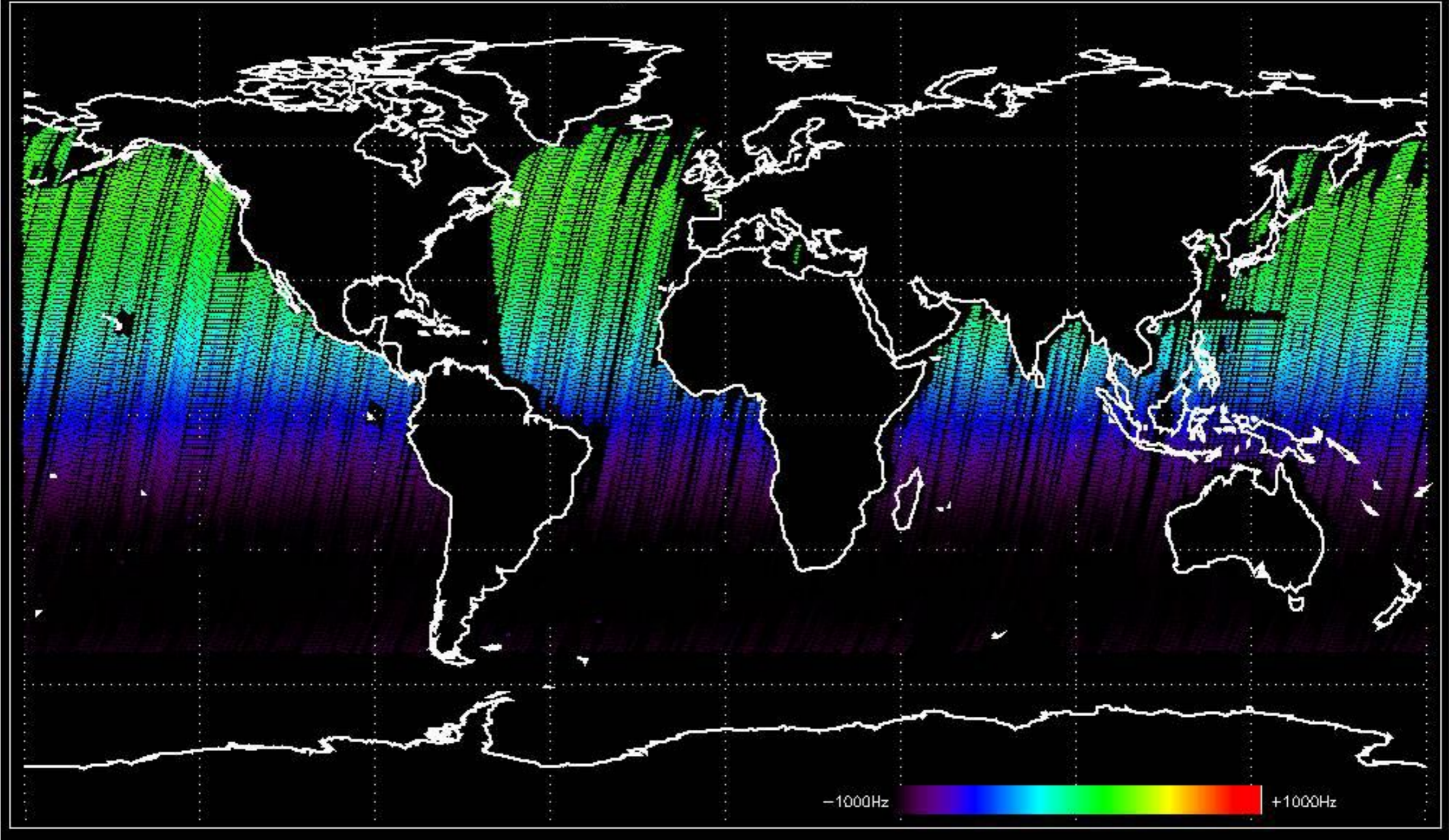
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS2' ascending

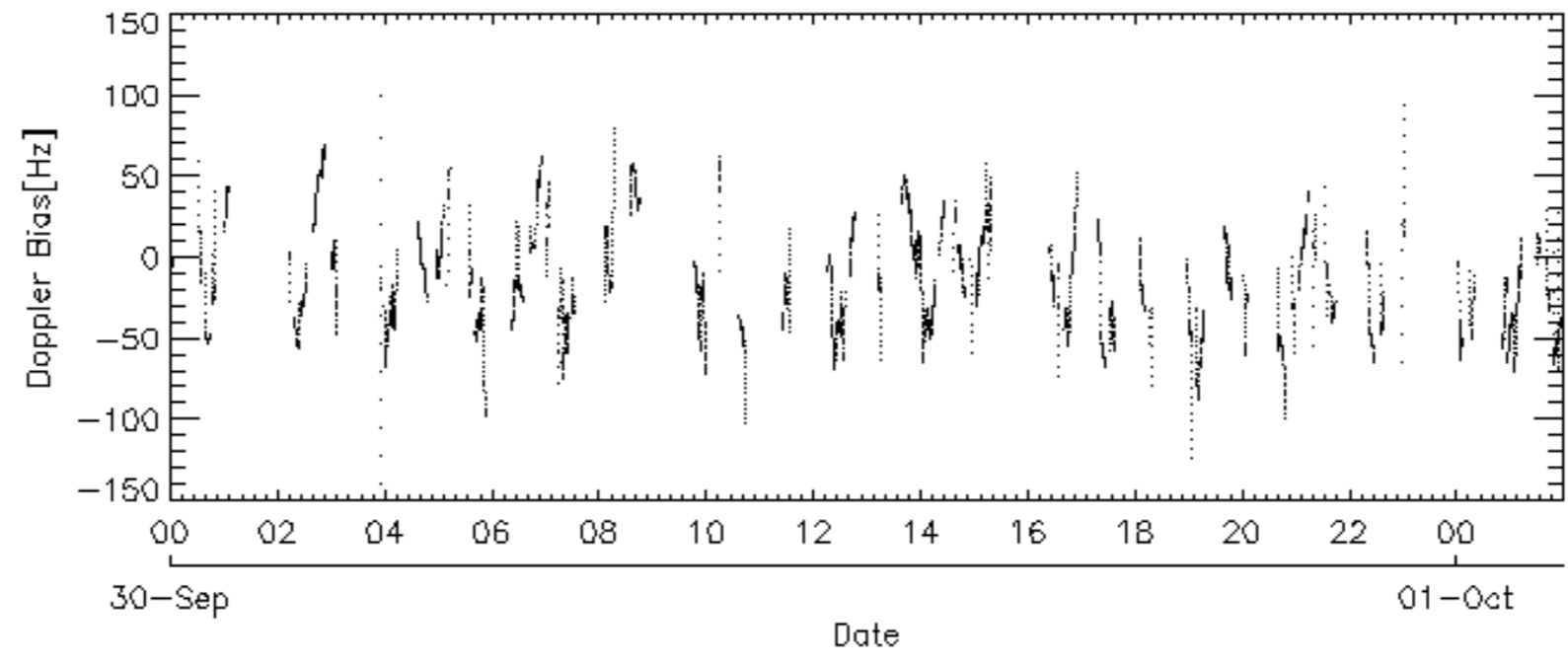
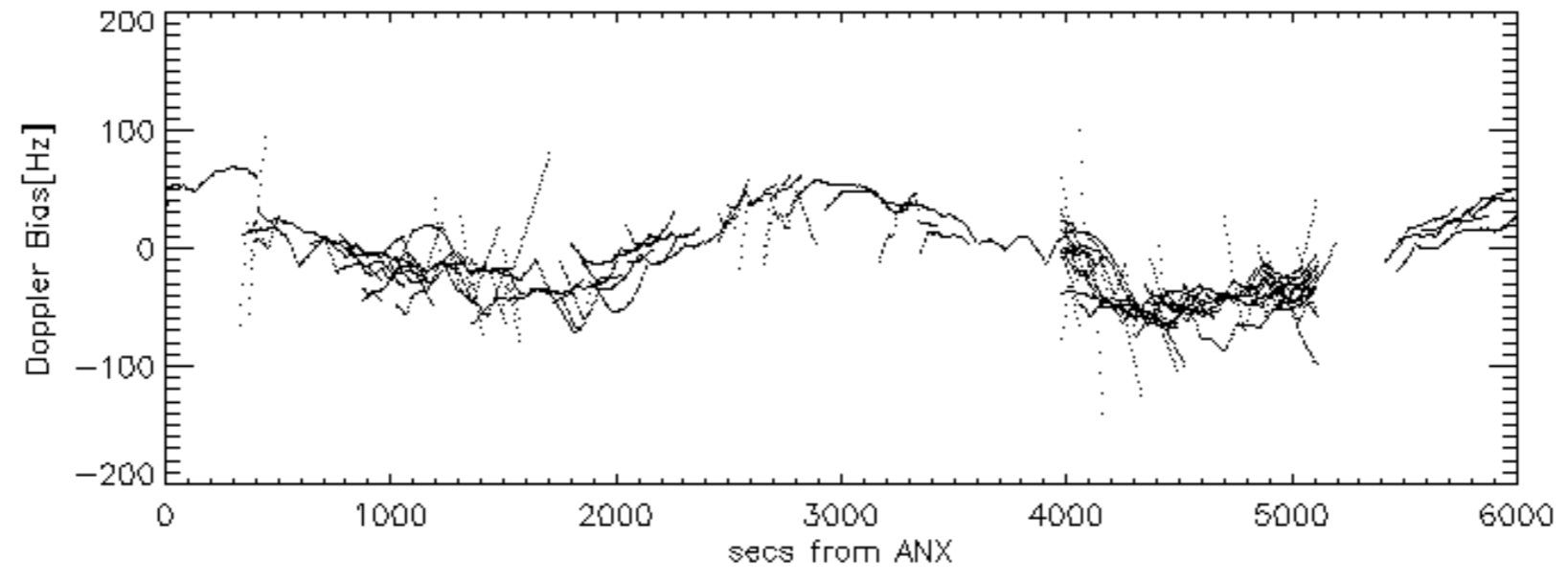
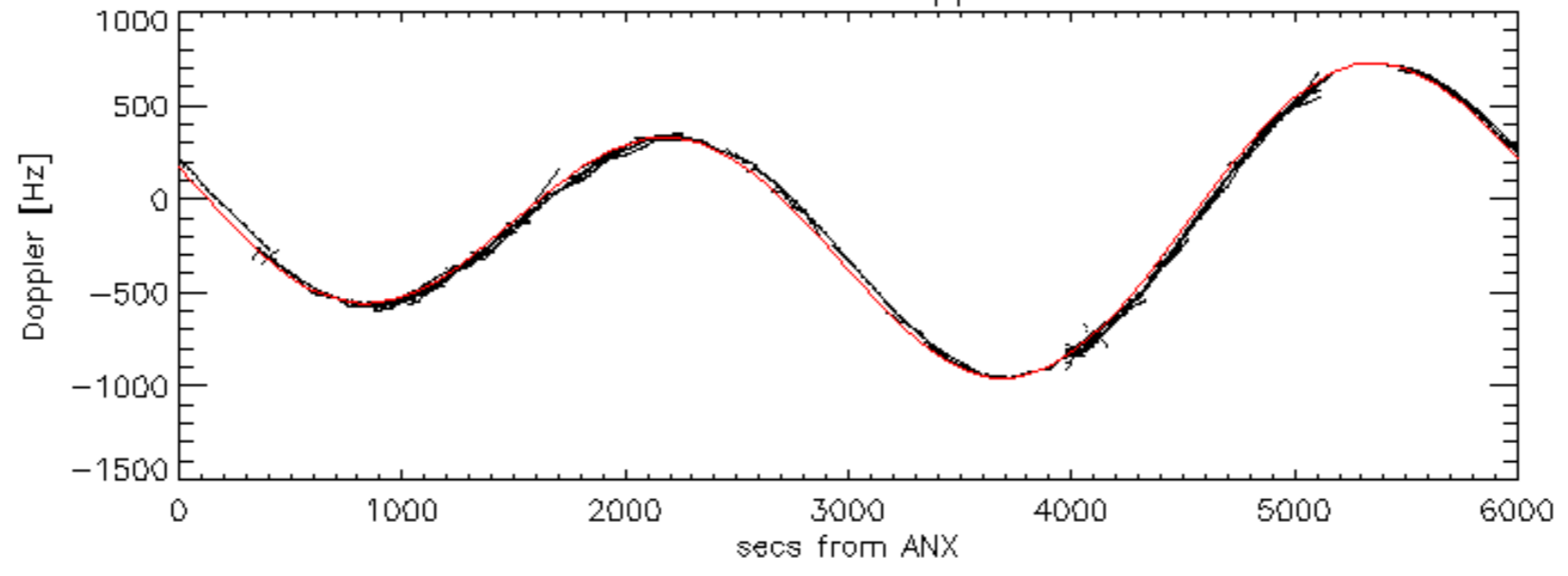


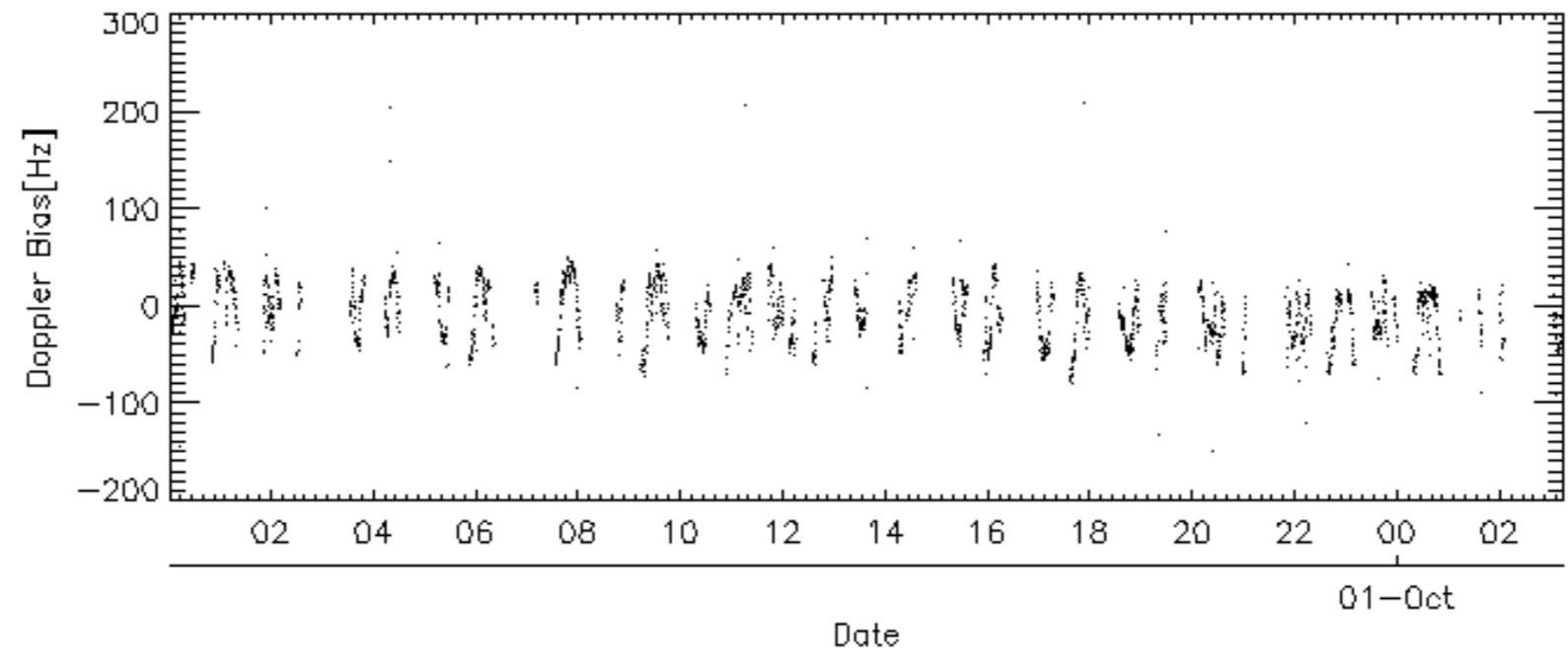
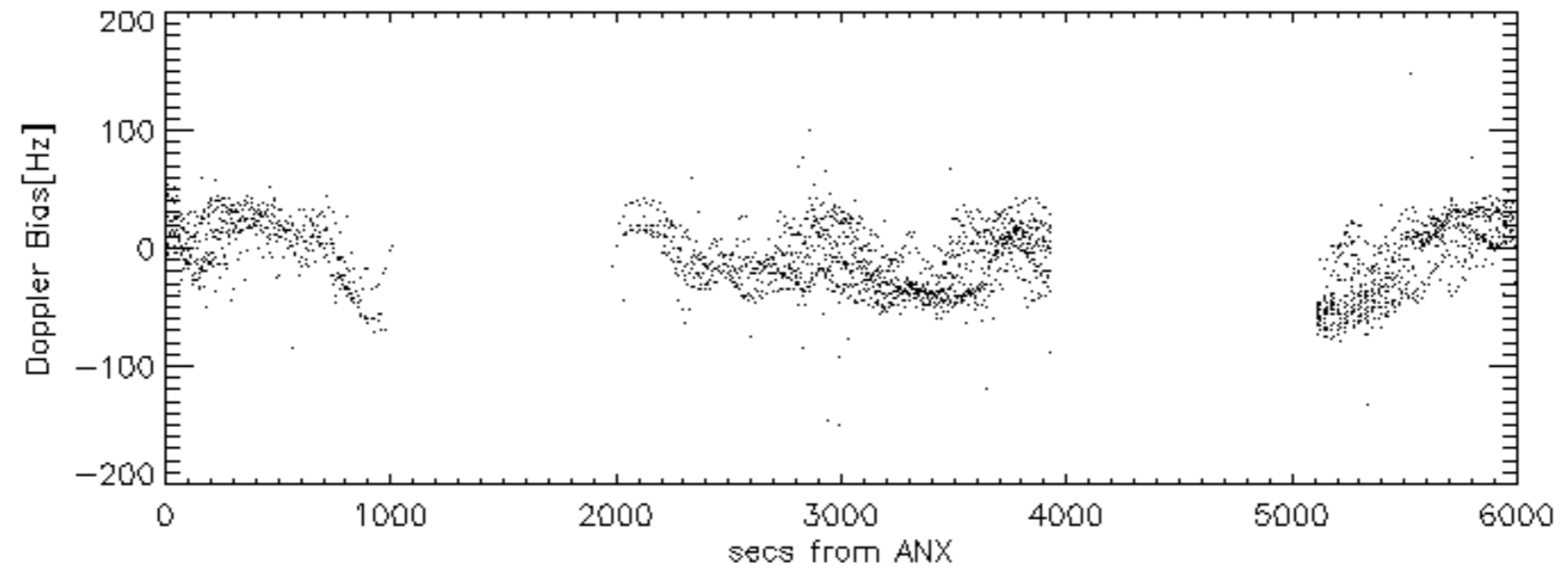
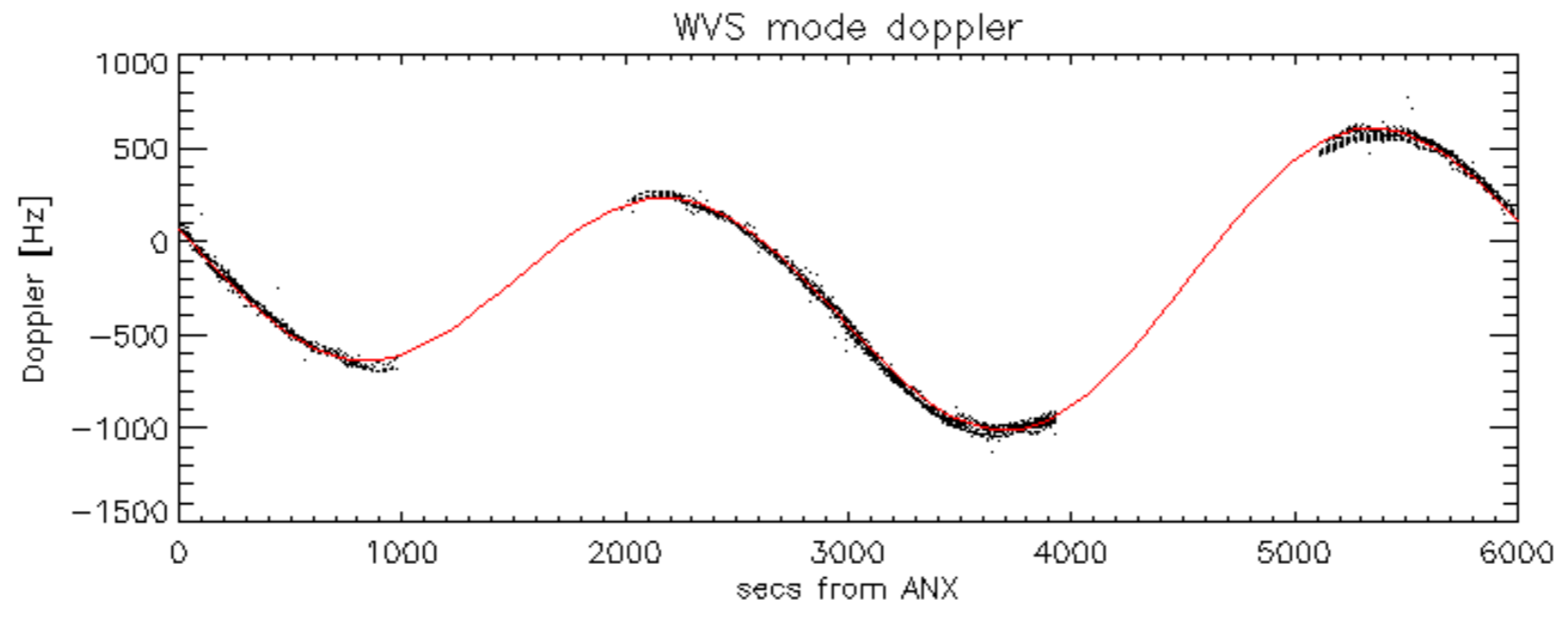
Doppler 'WVS' 'IS2' descending



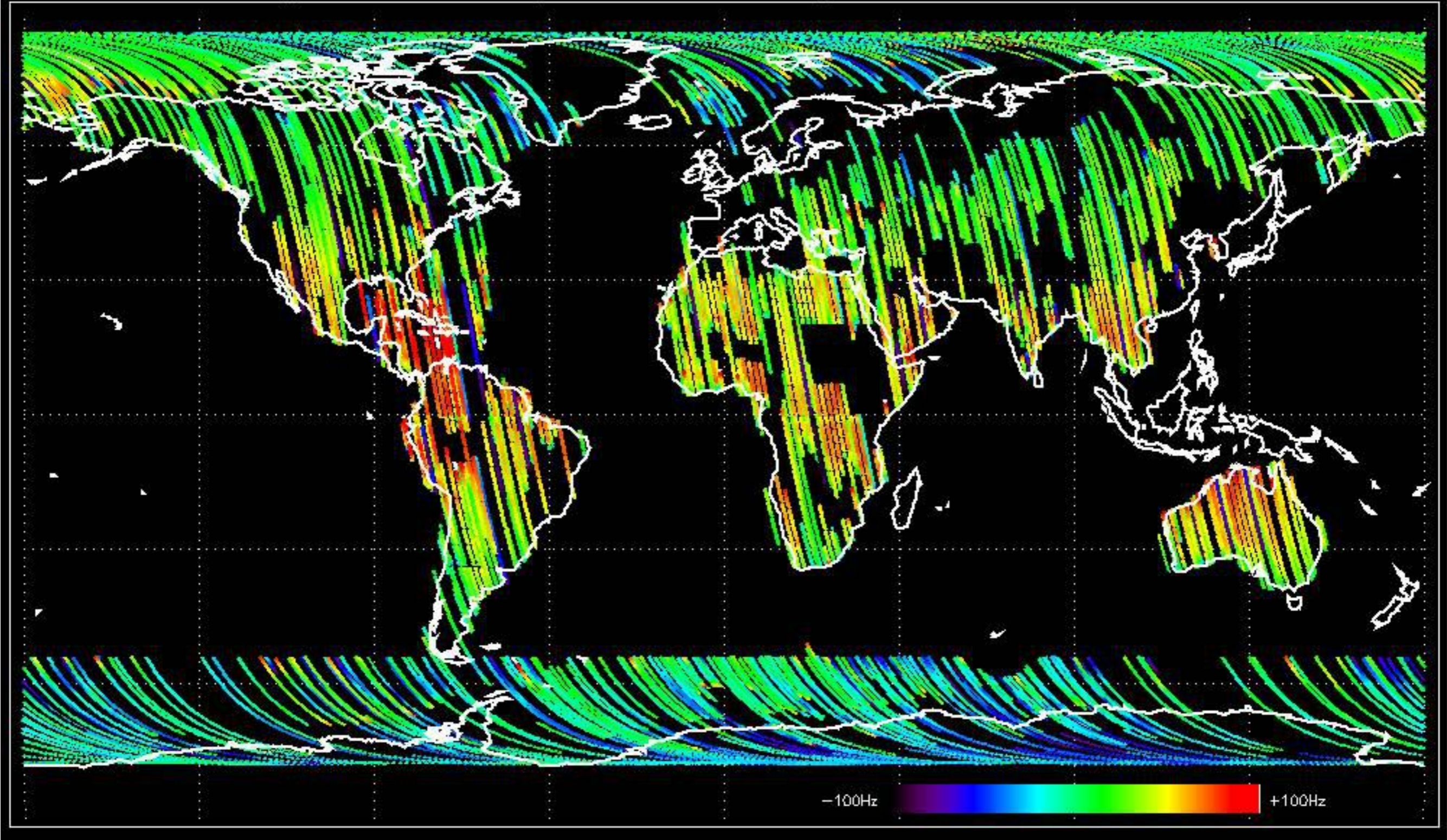


GM1 mode doppler

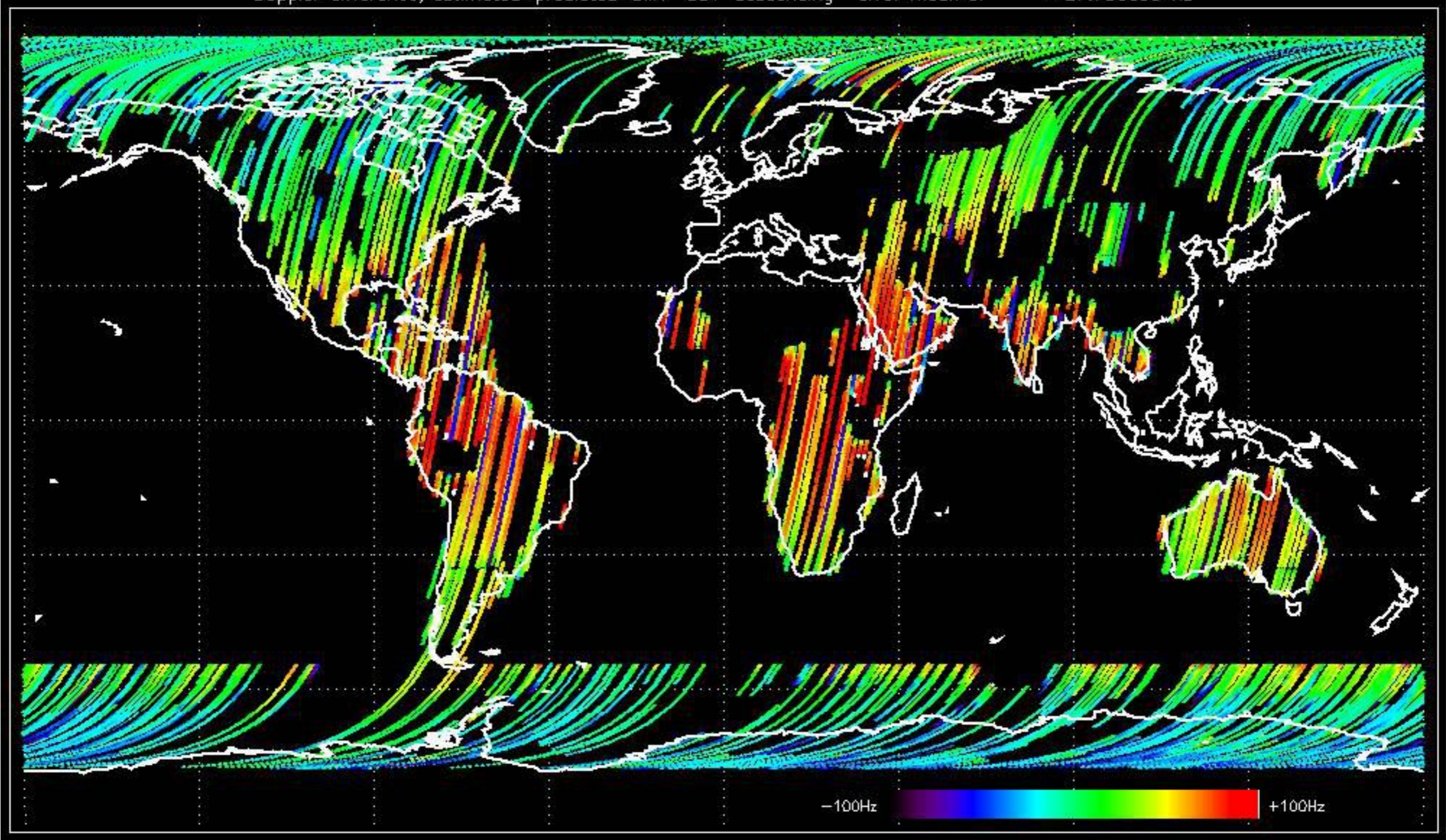




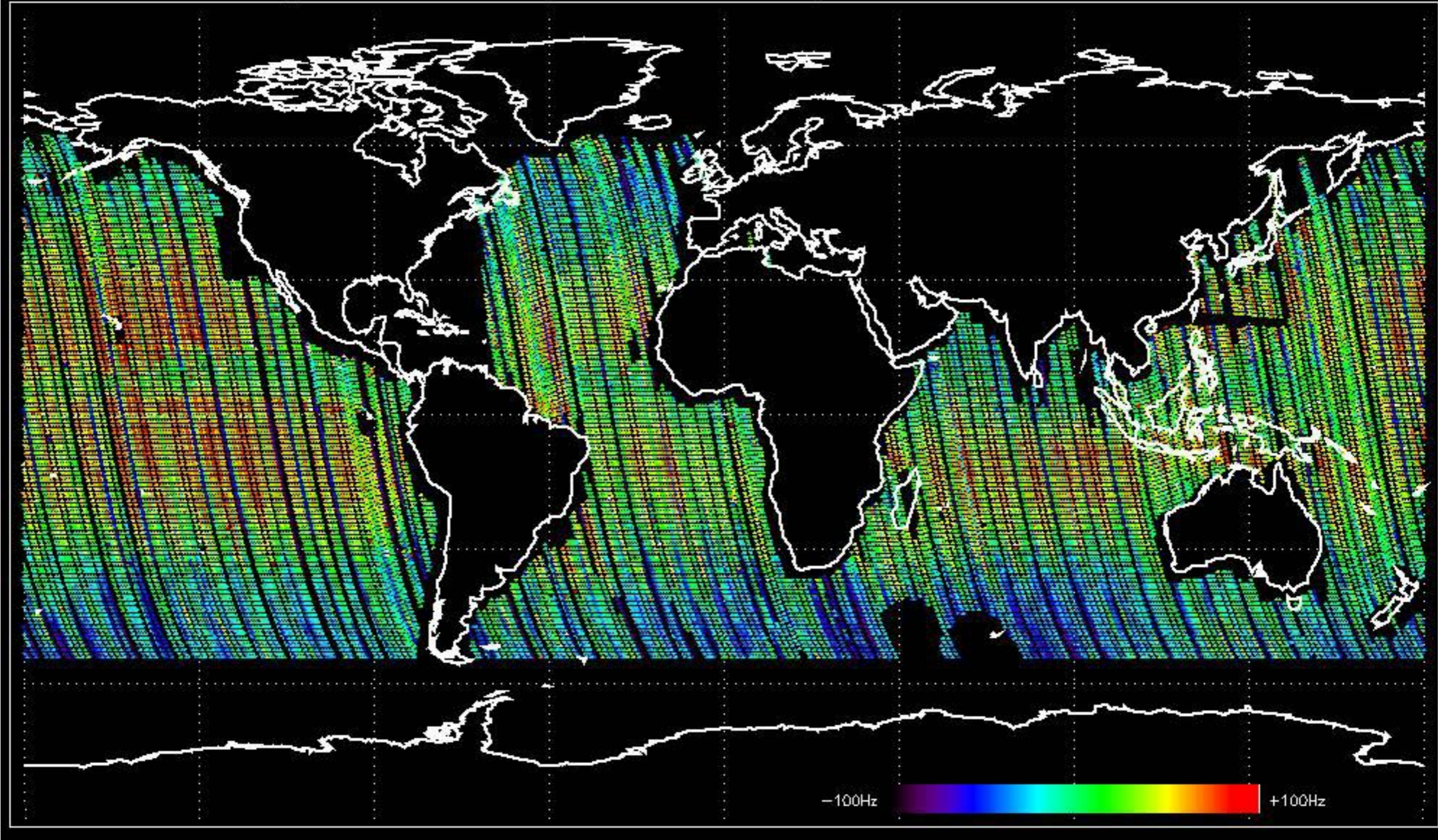
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -30.213517 Hz



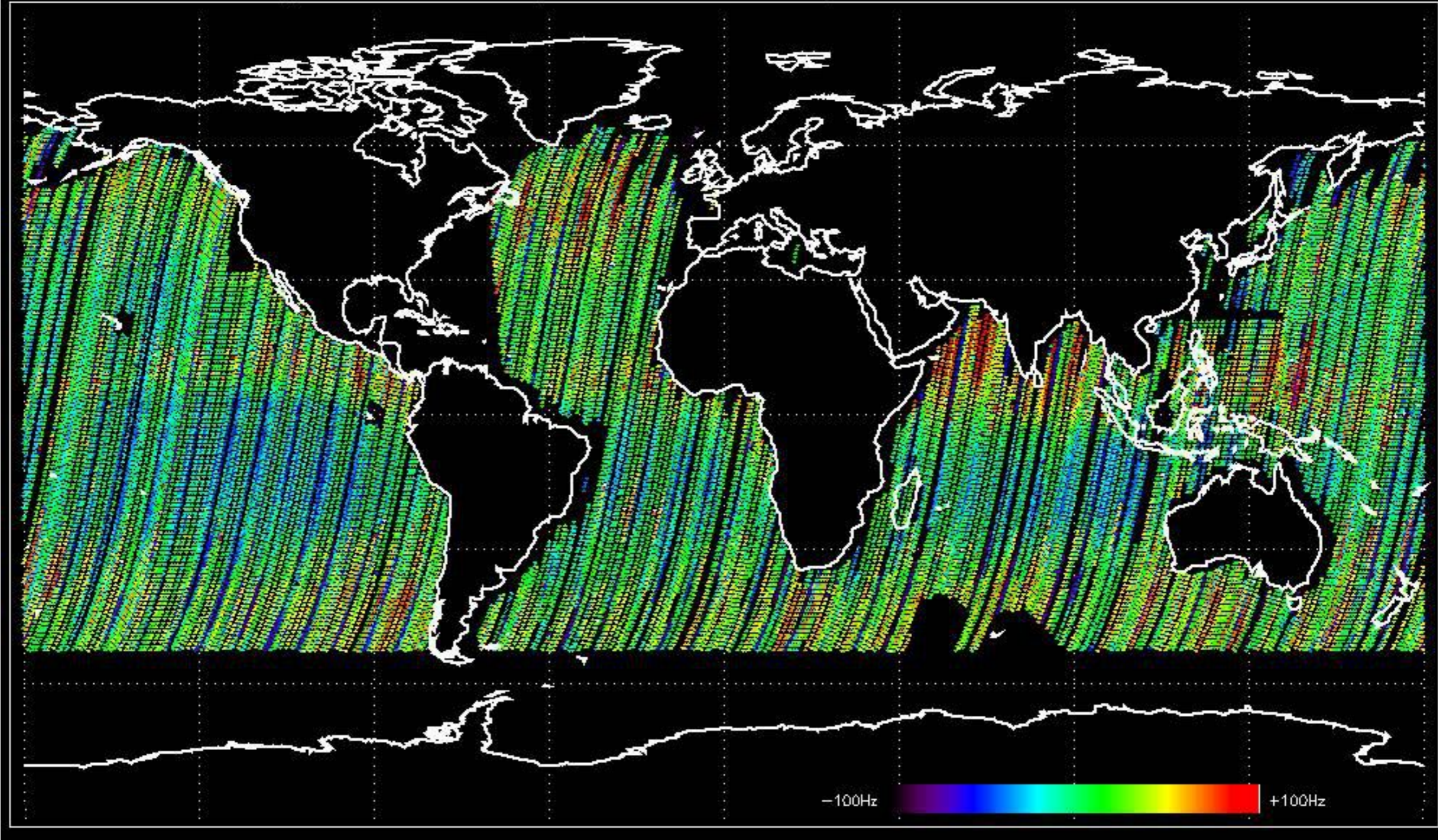
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -27.736695 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -26.990816 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -32.262514 Hz

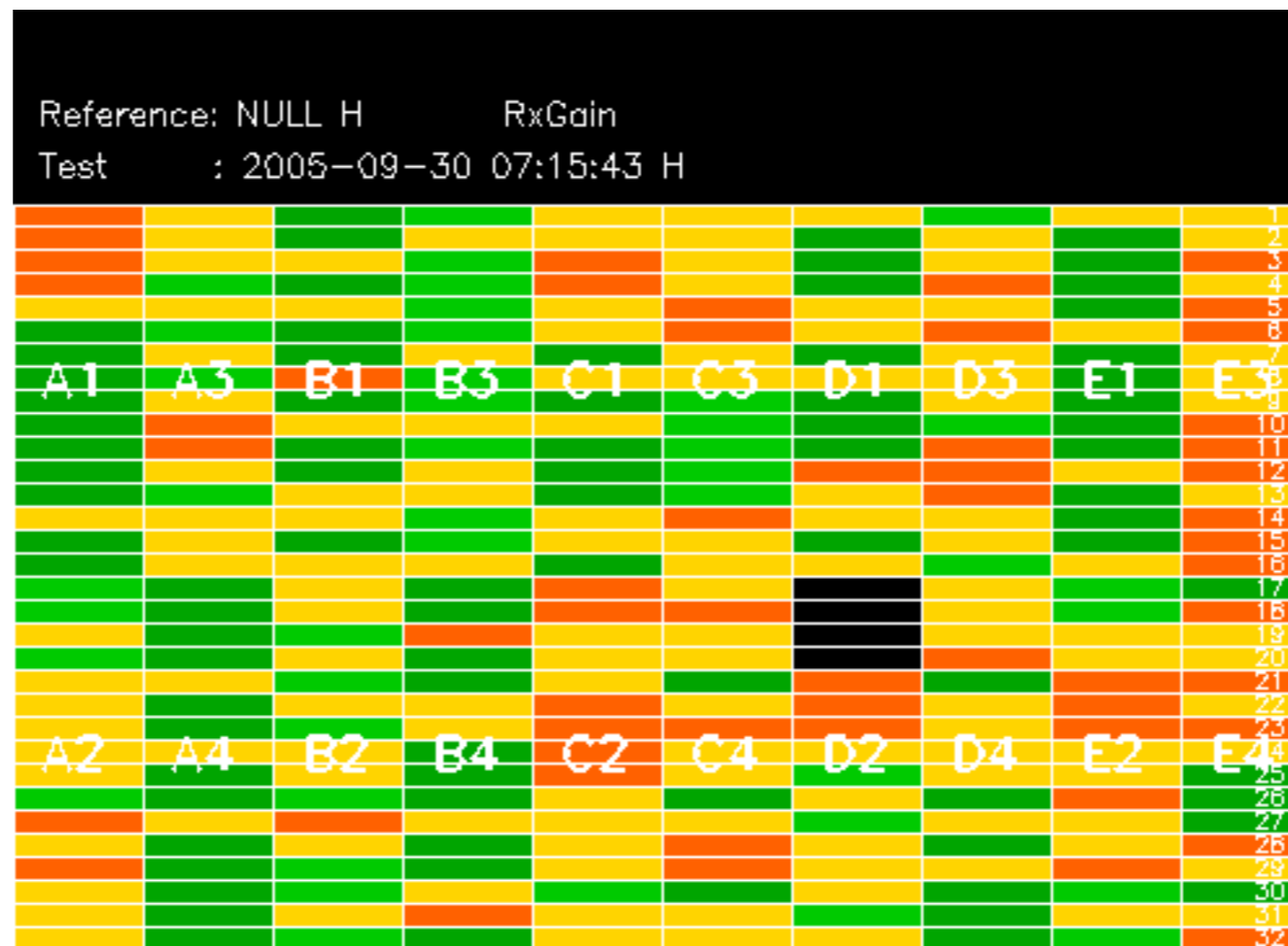


No anomalies observed on available MS products:

No anomalies observed.











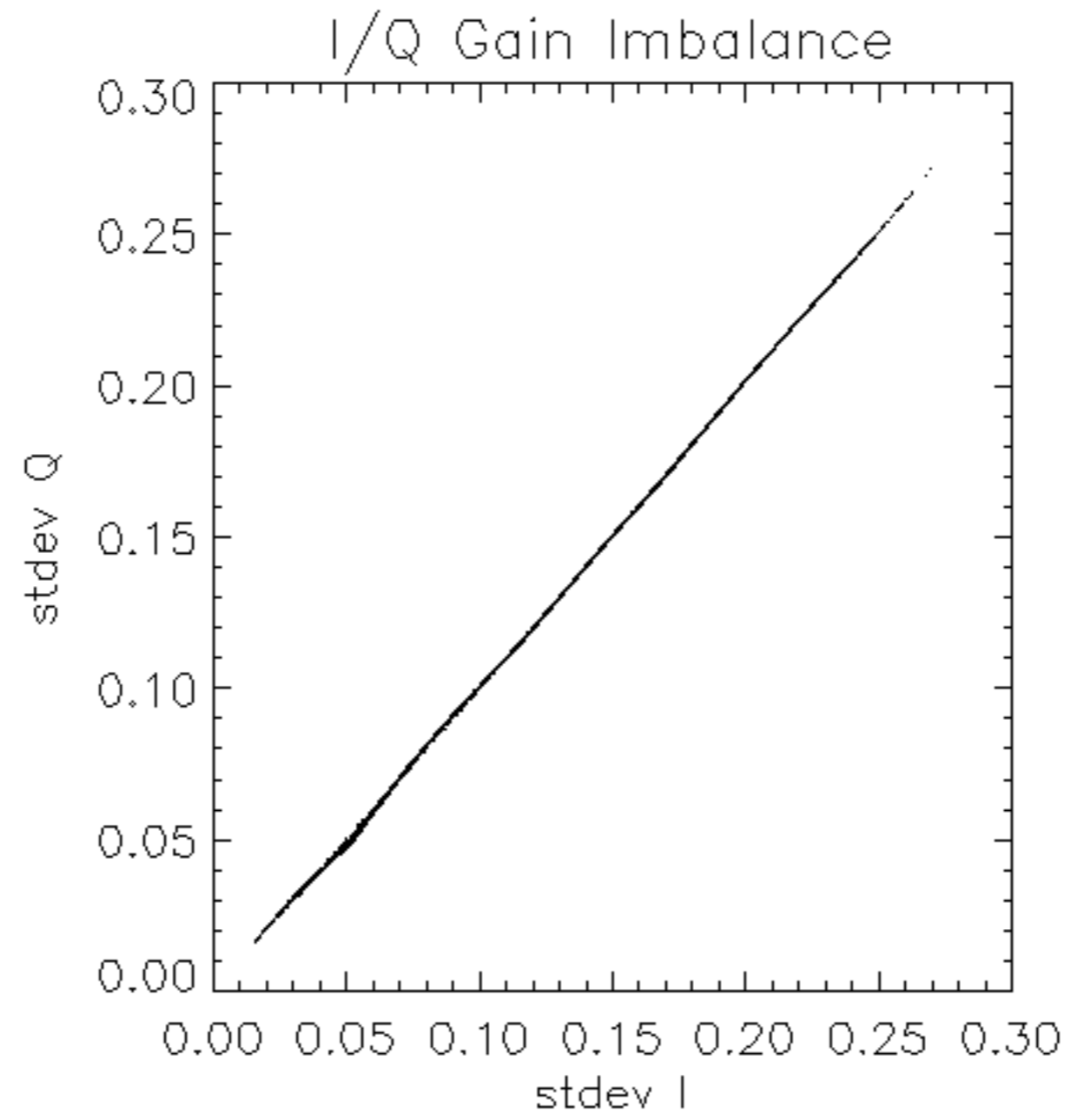


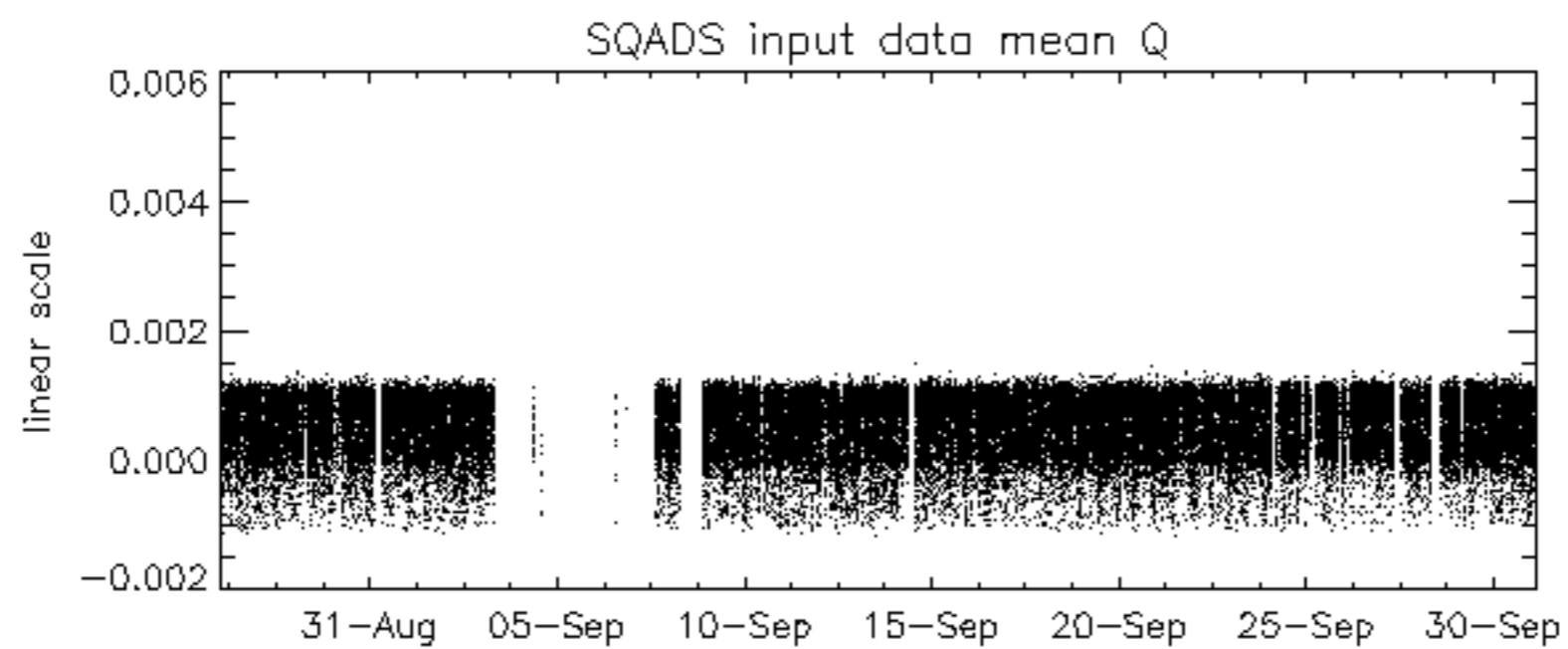
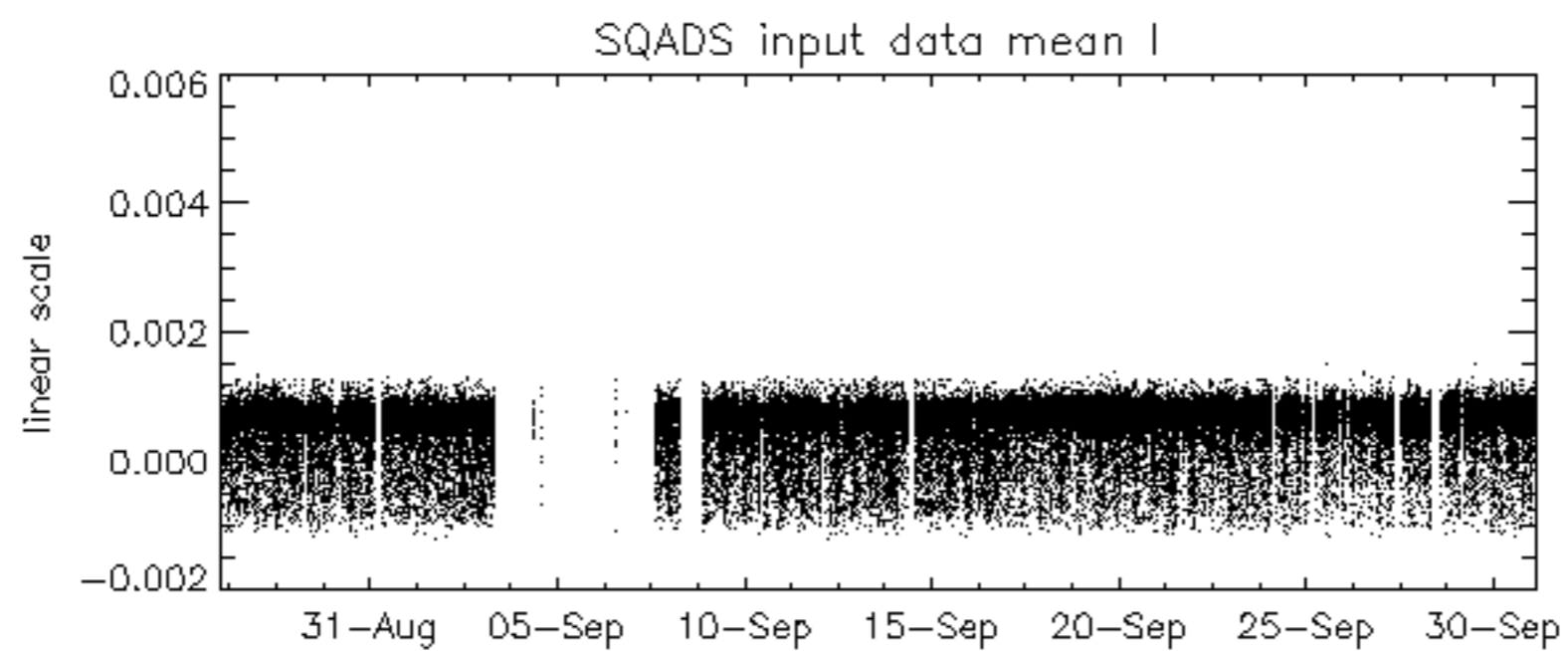
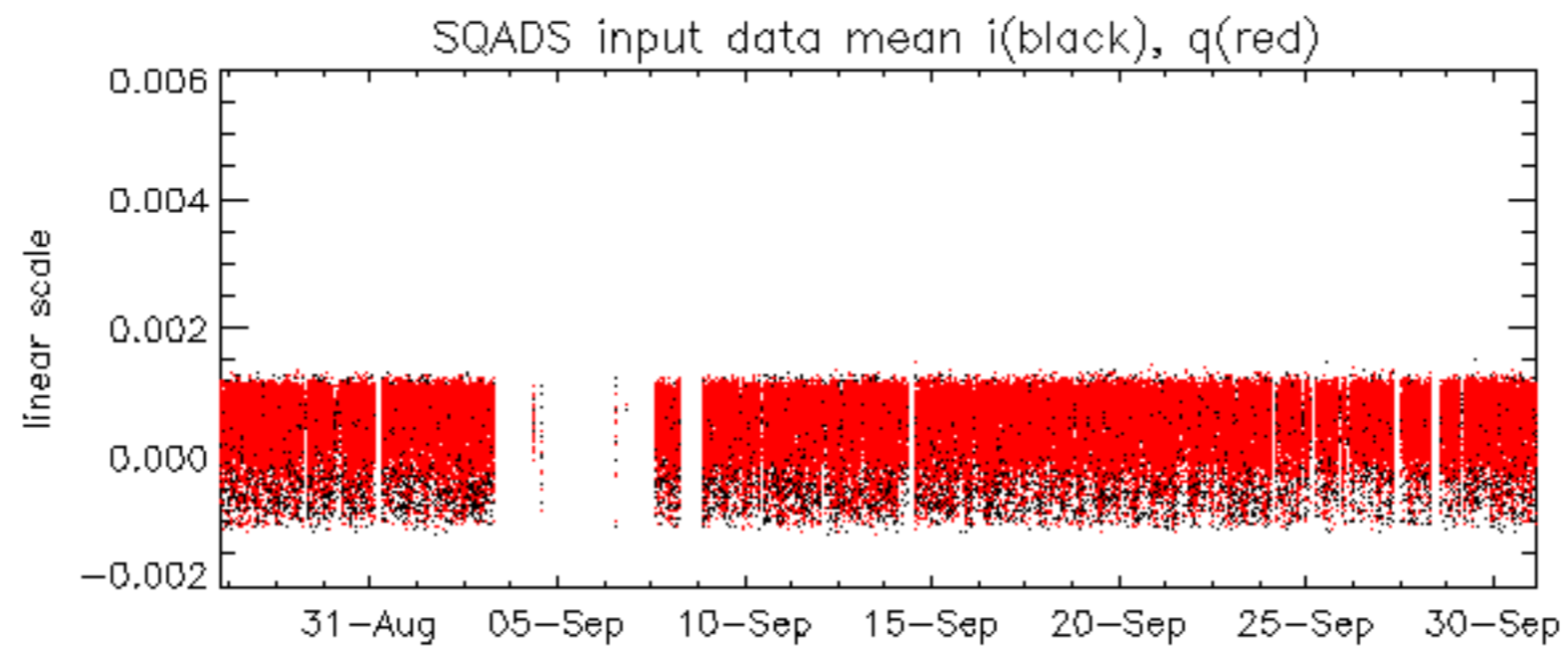


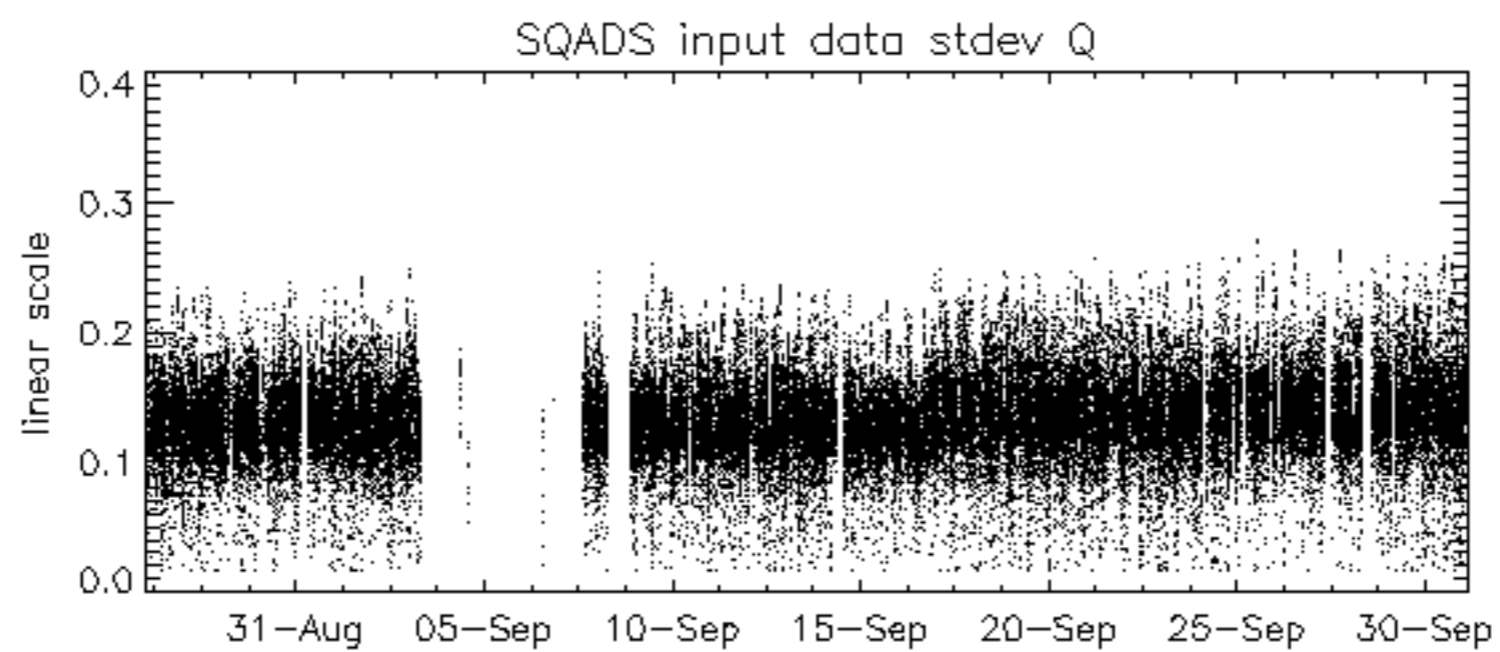
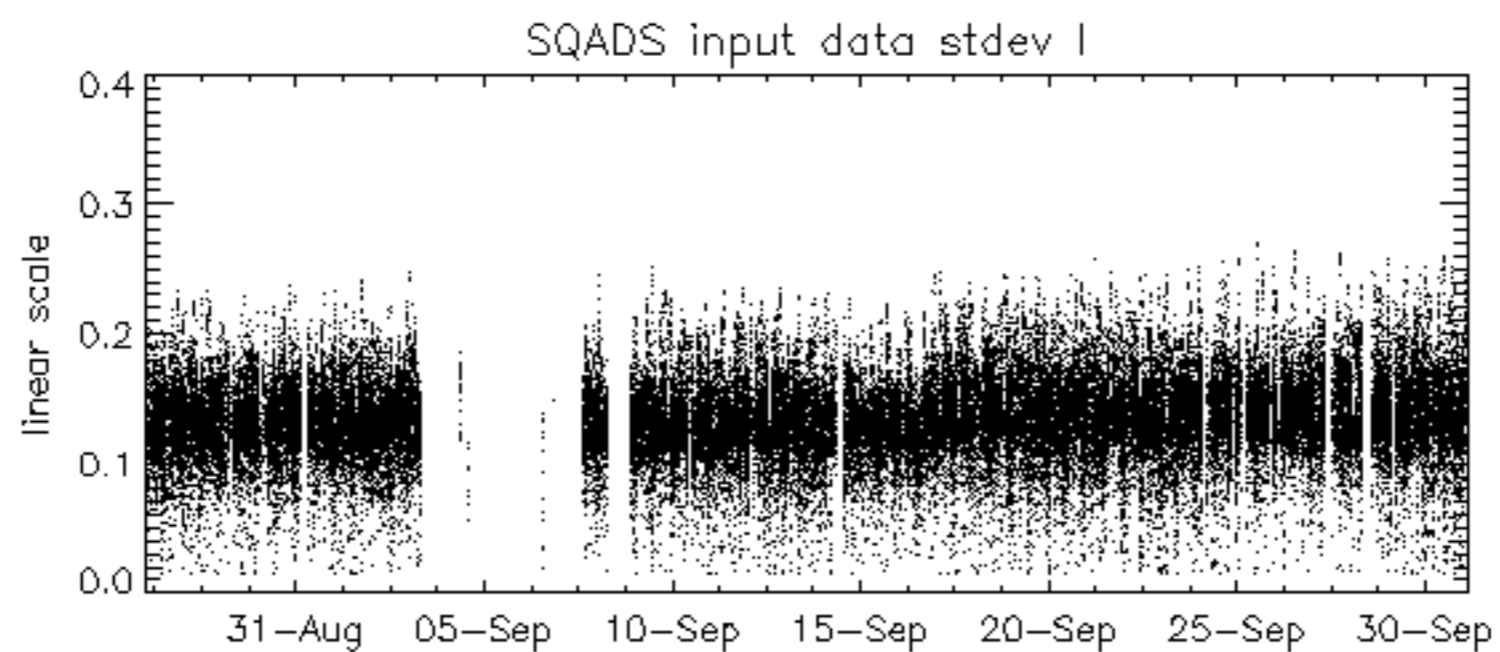
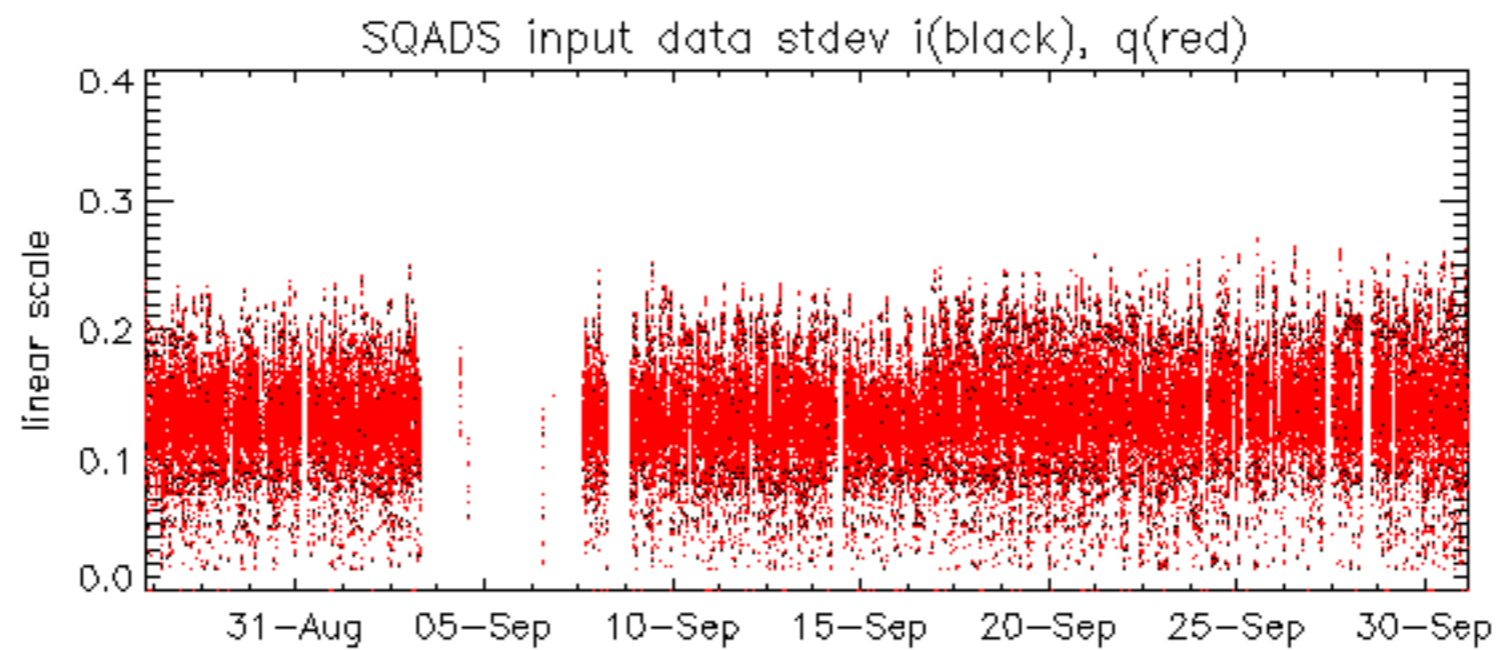


















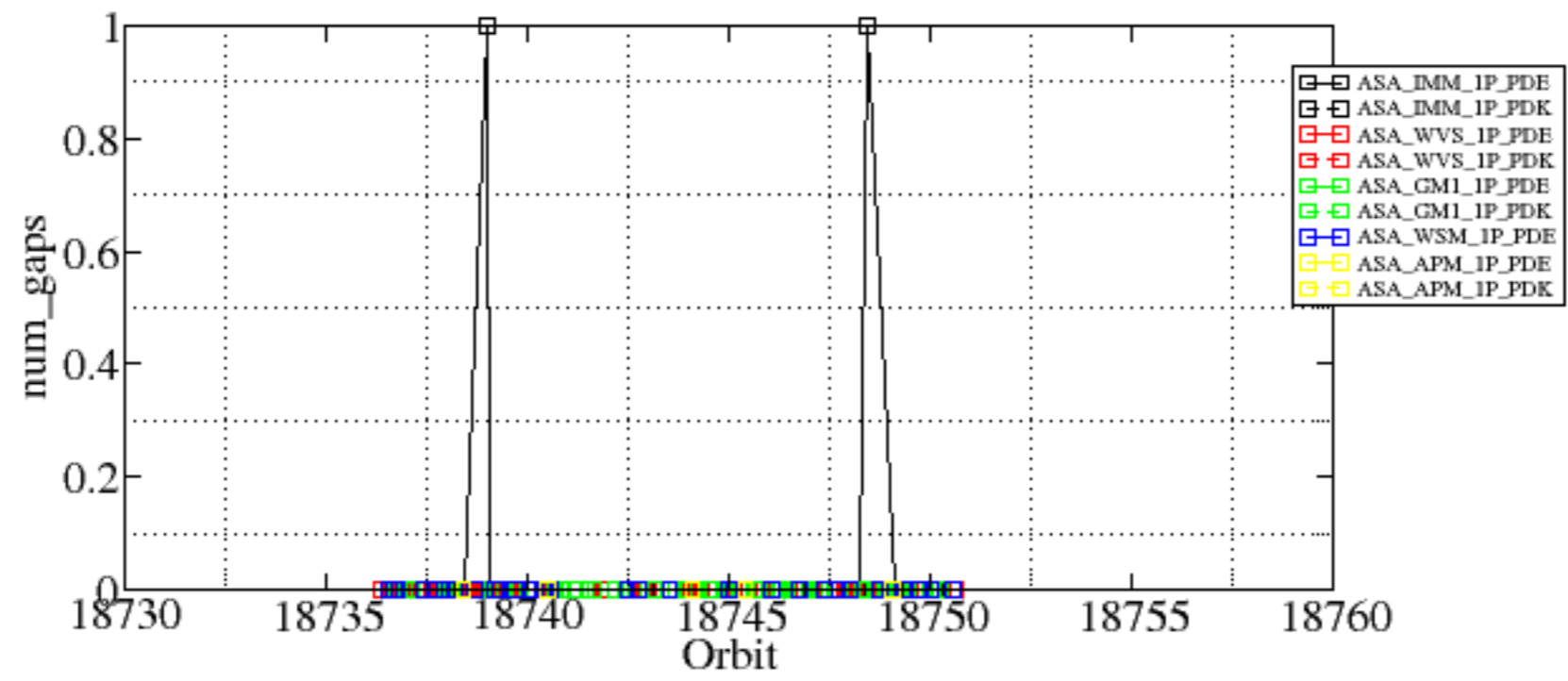


Summary of analysis for the last 3 days 2005093[901]

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_1PNPDE20050930_042647_000000522041_00147_18738_7026.N1	1	0
ASA_IMM_1PNPDE20050930_201742_000000402041_00157_18748_7067.N1	1	0
ASA_WSM_1PNPDE20050930_161705_000001092041_00155_18746_1510.N1	0	19





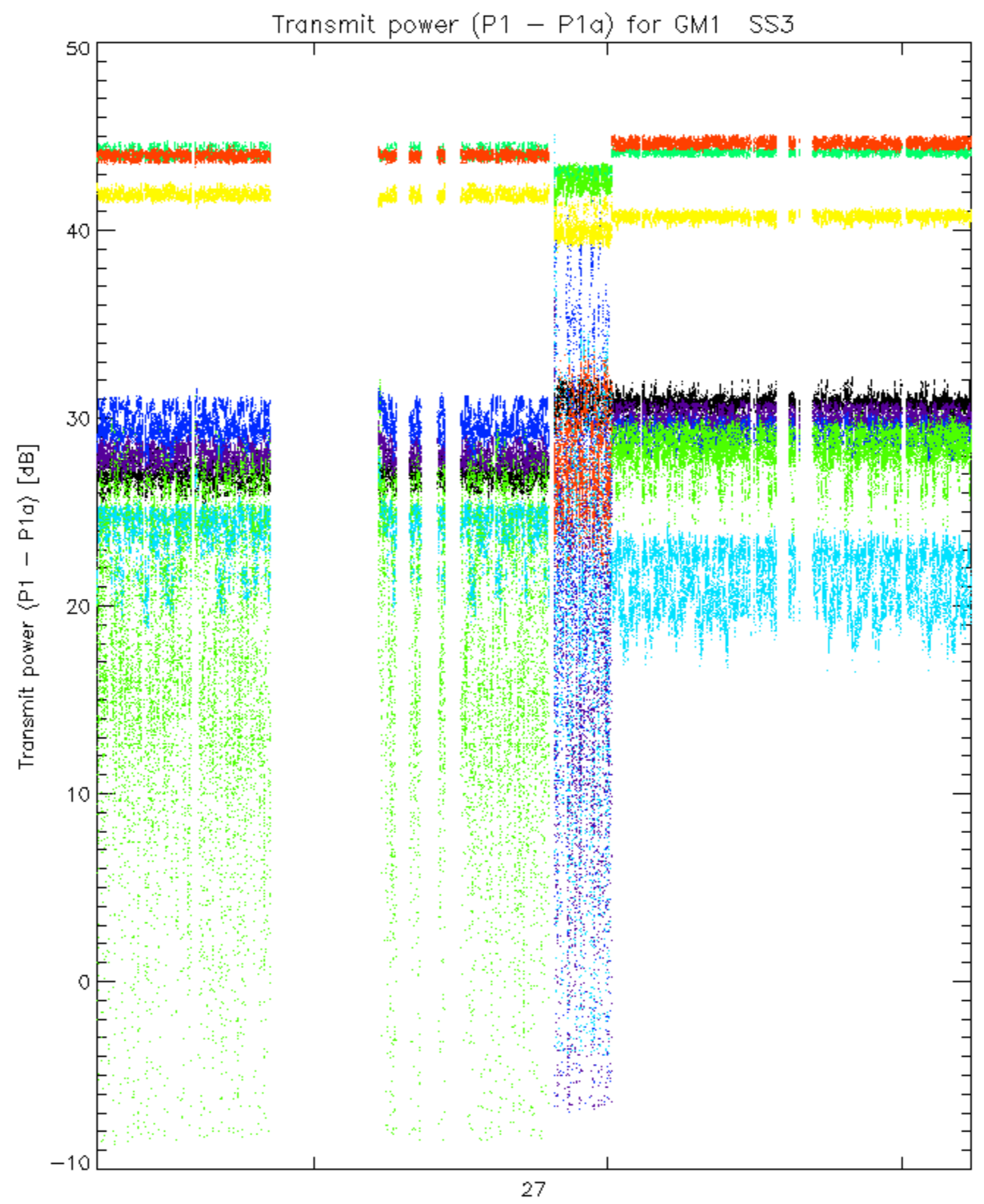


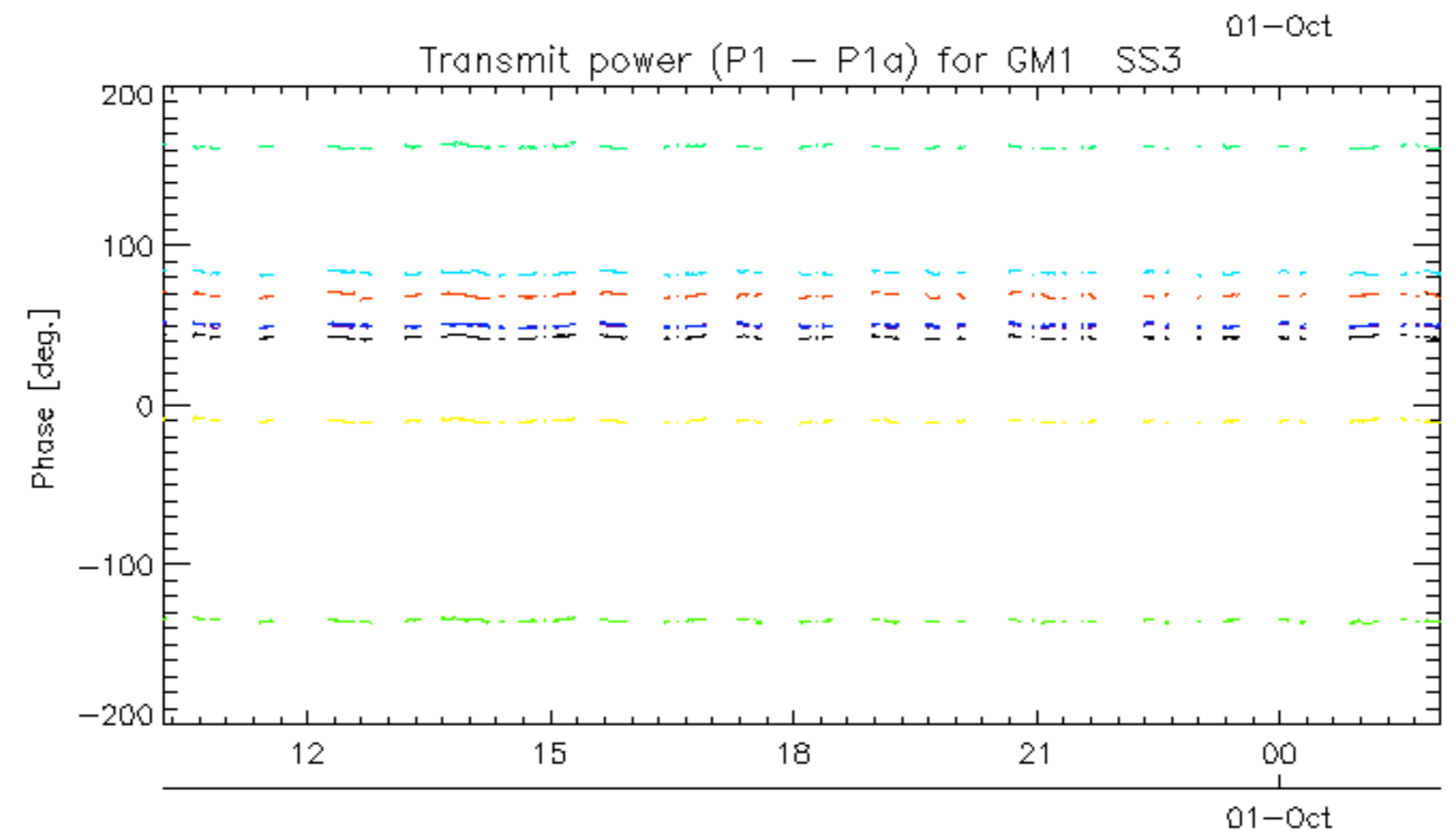
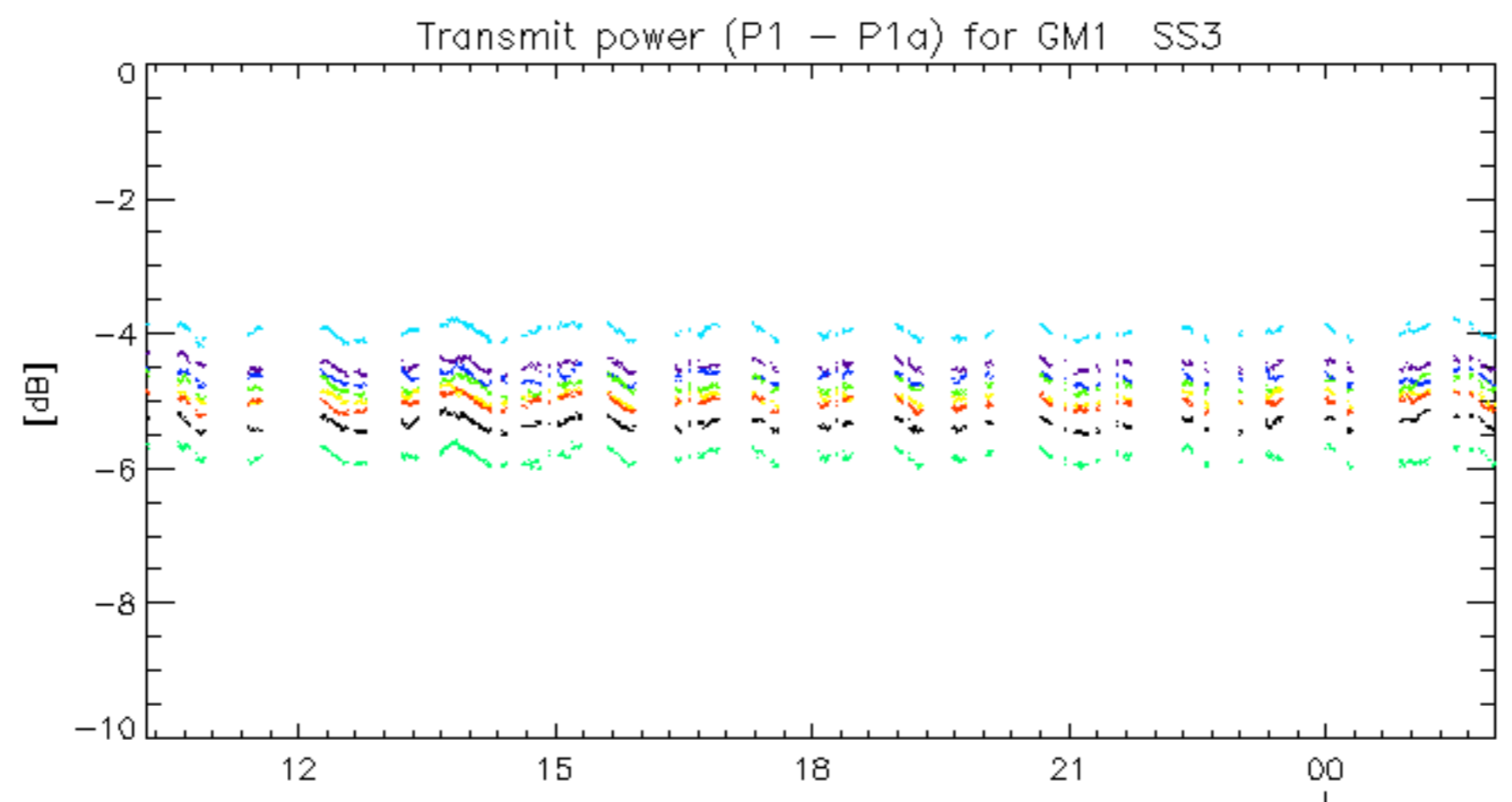






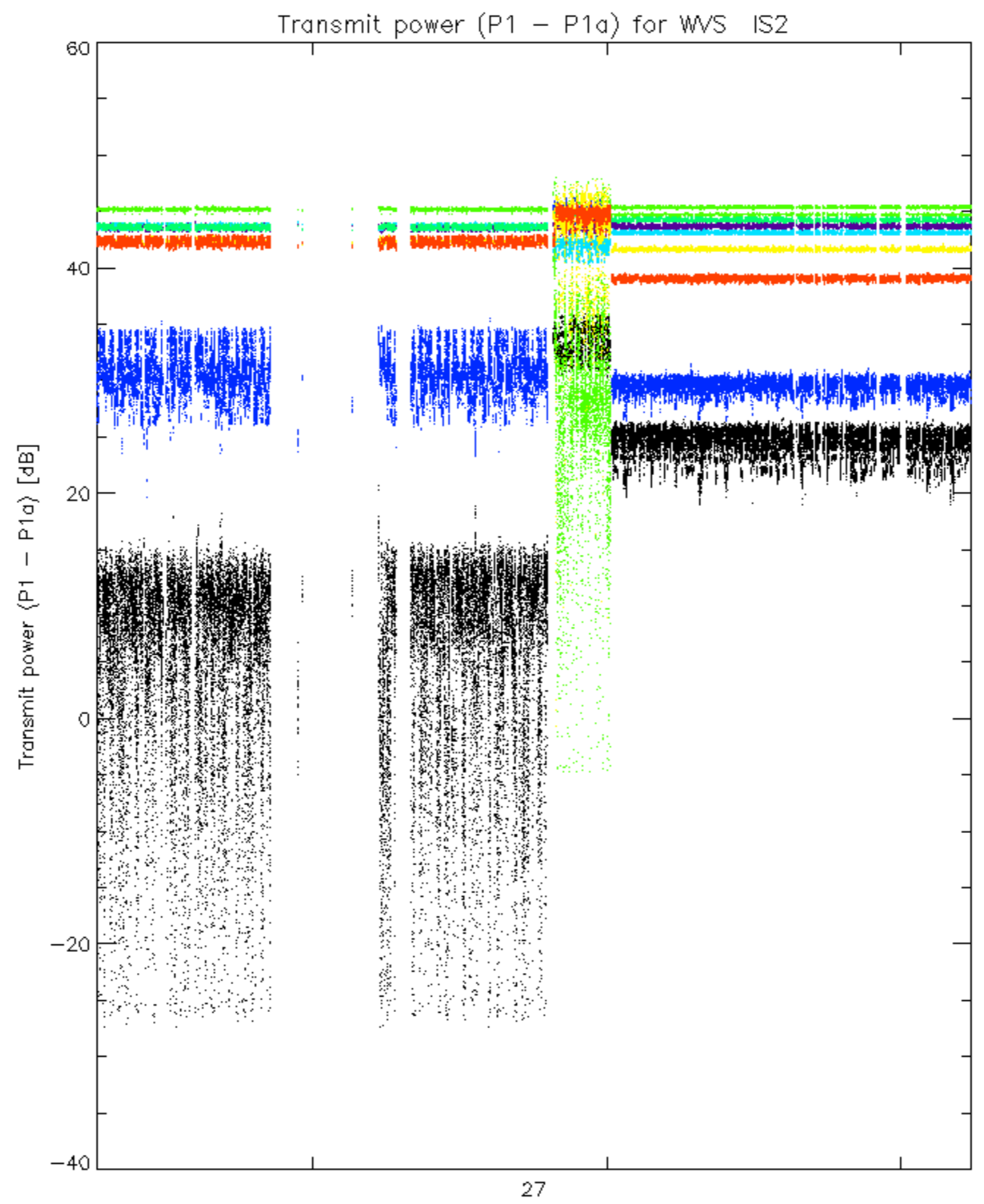


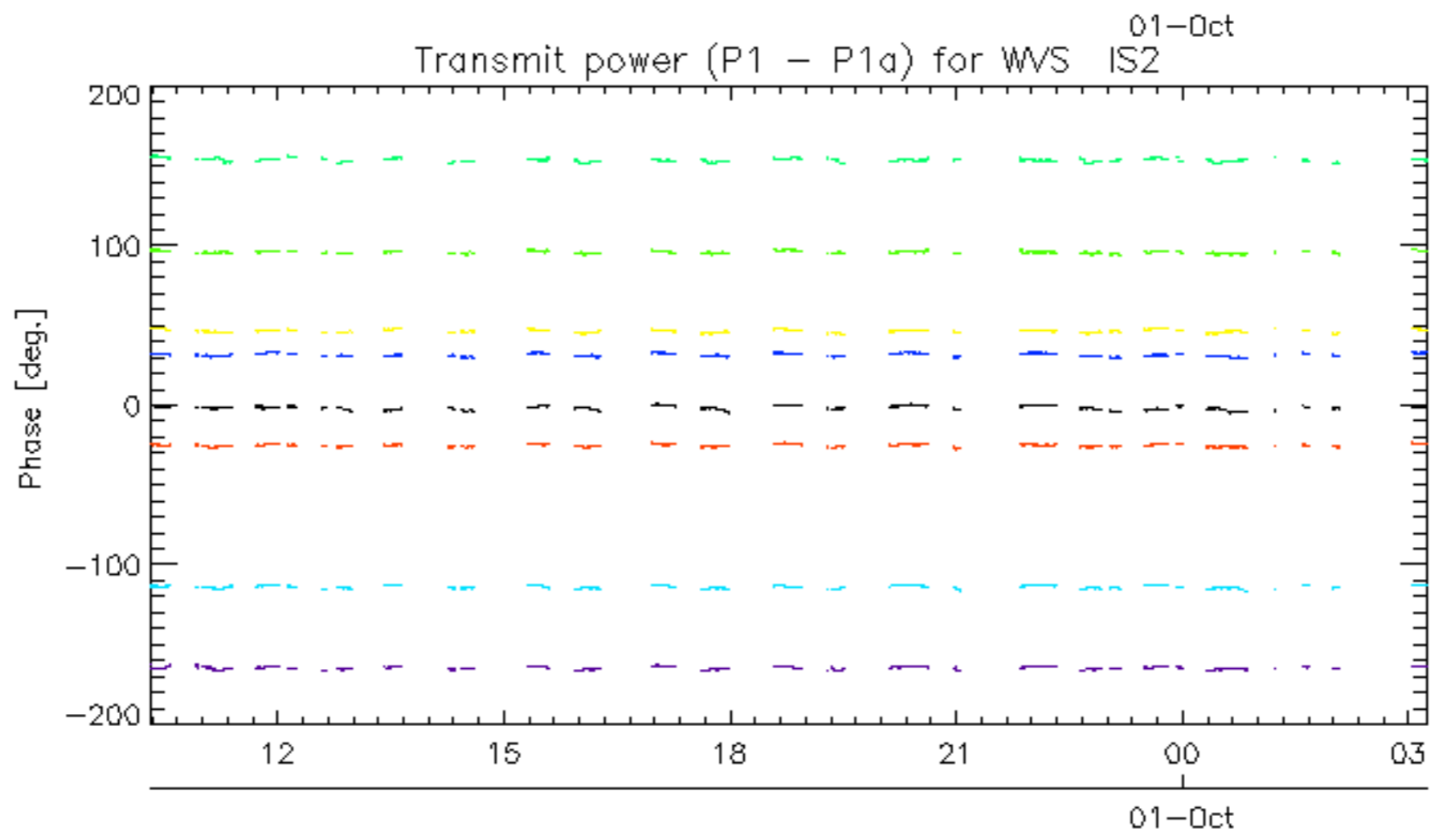
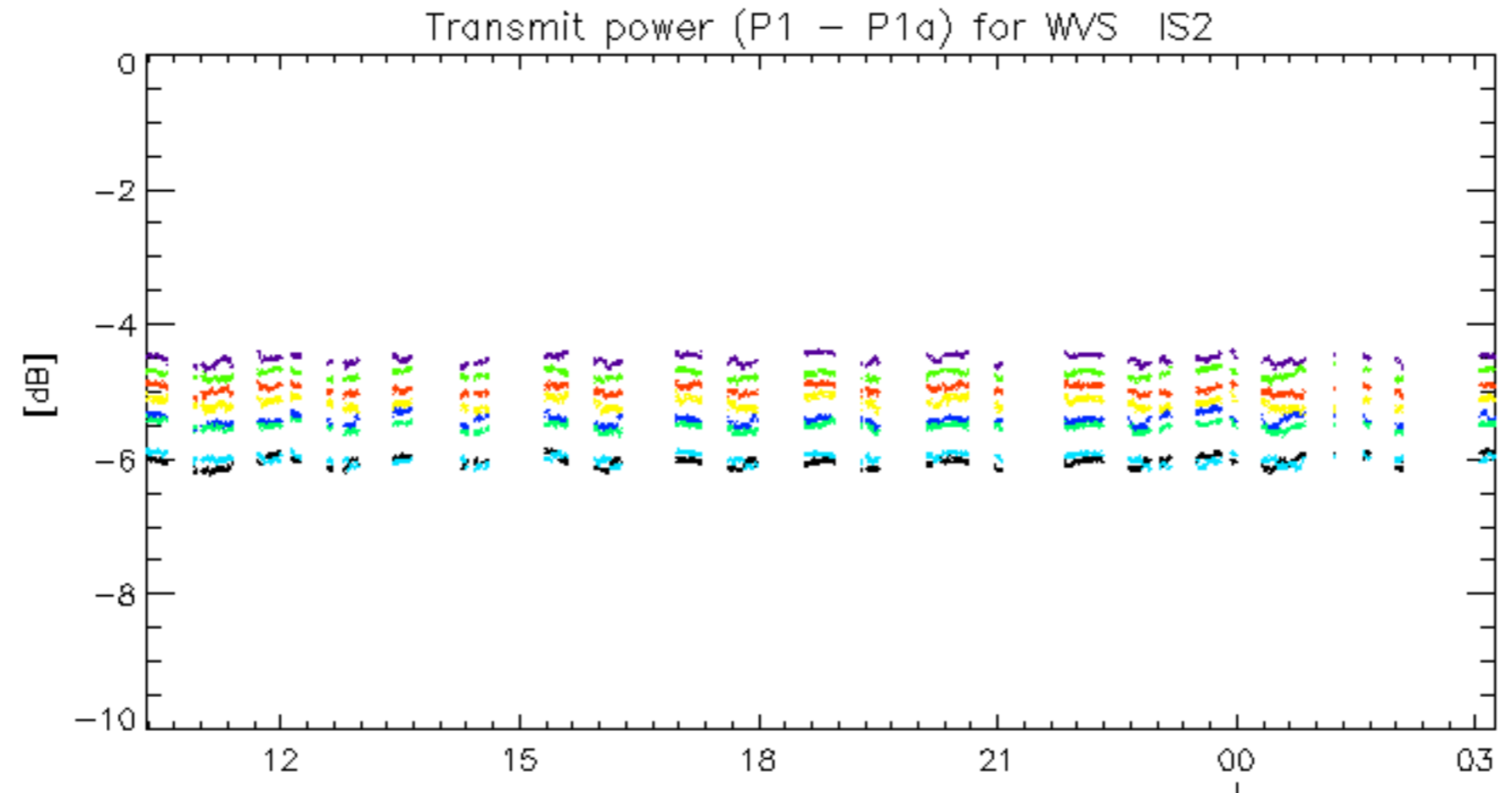




rows: **3** **7** **11** **15** **19** **22** **26** **30**







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

No unavailabilities during the reported period.