

# PRELIMINARY REPORT OF 070103

last update on Wed Jan 3 16:30:22 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 2007-01-02 00:00:00 to 2007-01-03 16:30:22

PDHS-K
--------

AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
----------------	-----	-----	-----	-----	-----

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	45	48	29	5	71
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	45	48	29	5	71
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	45	48	29	5	71
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	45	48	29	5	71

## 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	20070103 043733
H	20070102 050910

### MSM in V/V 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"/>

### MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
<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

☒
☒

#### 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

☒
---

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
-----	-------	-----------	------------	-----------------

**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.960729	0.008196	-0.021577
7	P1	-3.134388	0.024853	0.044255
11	P1	-4.118052	0.026255	0.010881
15	P1	-6.327557	0.017101	-0.023916
19	P1	-3.664716	0.005549	-0.054839
22	P1	-4.663615	0.014298	-0.035916
26	P1	-3.961992	0.009141	-0.006135
30	P1	-5.902471	0.009350	-0.042495
3	P1	-16.544239	0.263819	-0.080552
7	P1	-17.277859	0.195114	0.128968
11	P1	-17.188173	0.493010	-0.072285
15	P1	-13.038766	0.137304	0.042221
19	P1	-15.014269	0.096430	-0.116899
22	P1	-15.824689	0.538951	0.115771
26	P1	-15.081973	0.188943	0.084007
30	P1	-17.517109	0.474926	0.070558

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.794931	0.094798	-0.012911
7	P2	-21.710648	0.093464	0.077916
11	P2	-15.562971	0.102336	0.005762
15	P2	-7.106557	0.109570	0.020258
19	P2	-9.187647	0.105515	0.024818
22	P2	-18.225668	0.098784	0.001459
26	P2	-16.594660	0.111953	-0.014880
30	P2	-19.448597	0.089815	-0.004784

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.237883	0.009076	-0.000232
7	P3	-8.237883	0.009076	-0.000232
11	P3	-8.237883	0.009076	-0.000232

15	P3	-8.237883	0.009076	-0.000232
19	P3	-8.237883	0.009076	-0.000232
22	P3	-8.237883	0.009076	-0.000232
26	P3	-8.237916	0.009076	-0.000336
30	P3	-8.237916	0.009076	-0.000336

#### 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	-3.921759	0.014980	-0.005420
7	P1	-2.470968	0.015552	0.026026
11	P1	-2.851223	0.017630	0.029762
15	P1	-3.690185	0.032272	-0.021865
19	P1	-3.548538	0.020592	-0.019210
22	P1	-5.024732	0.024461	0.035729
26	P1	-6.033754	0.031387	-0.035255
30	P1	-5.347404	0.040495	-0.014723
3	P1	-11.741663	0.084661	0.029438
7	P1	-10.072591	0.082185	0.051235
11	P1	-10.356670	0.117422	-0.008522
15	P1	-10.715095	0.127294	-0.046204
19	P1	-15.731353	0.125166	-0.047248
22	P1	-21.586840	1.401269	-0.134243
26	P1	-16.057106	0.354631	0.012154
30	P1	-17.892456	0.373625	0.057489

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.467991	0.116804	-0.004352
7	P2	-22.218054	0.291265	0.008274
11	P2	-10.862021	0.114295	0.007224
15	P2	-4.982403	0.193521	-0.006856
19	P2	-6.965167	0.271806	-0.012805
22	P2	-8.247938	0.113197	-0.013563
26	P2	-24.319321	0.171366	-0.099597
30	P2	-21.950308	0.120209	0.032574

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.087951	0.005299	-0.021296
7	P3	-8.087780	0.005274	-0.020738
11	P3	-8.087860	0.005294	-0.021303
15	P3	-8.087710	0.005274	-0.021300
19	P3	-8.087773	0.005302	-0.021388
22	P3	-8.087728	0.005289	-0.020794
26	P3	-8.087880	0.005290	-0.021989
30	P3	-8.087814	0.005268	-0.021394

## 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	0.000561169
	stdev	1.66100e-07
MEAN Q	mean	0.000499308
	stdev	2.12211e-07



## 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.140241
	stdev	0.00123160
STDEV Q	mean	0.140641
	stdev	0.00125240



## 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007010[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_1PNPDE20070101_001945_000003242054_00188_25292_5736.N1	0	36
ASA_WSM_1PNPDE20070101_162341_000002442054_00198_25302_6523.N1	0	51
ASA_WSM_1PNPDE20070101_180340_000001092054_00199_25303_6563.N1	0	10
ASA_WSM_1PNPDE20070101_234907_000002872054_00202_25306_7044.N1	0	36
ASA_WSM_1PNPDE20070102_012643_000001402054_00203_25307_7173.N1	0	40
ASA_WSM_1PNPDE20070103_005606_000003242054_00217_25321_9226.N1	0	36
ASA_WSM_1PNPDE20070103_072858_000003062054_00221_25325_9975.N1	0	1







## 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)


Acsending



<input type="checkbox"/>
Descending

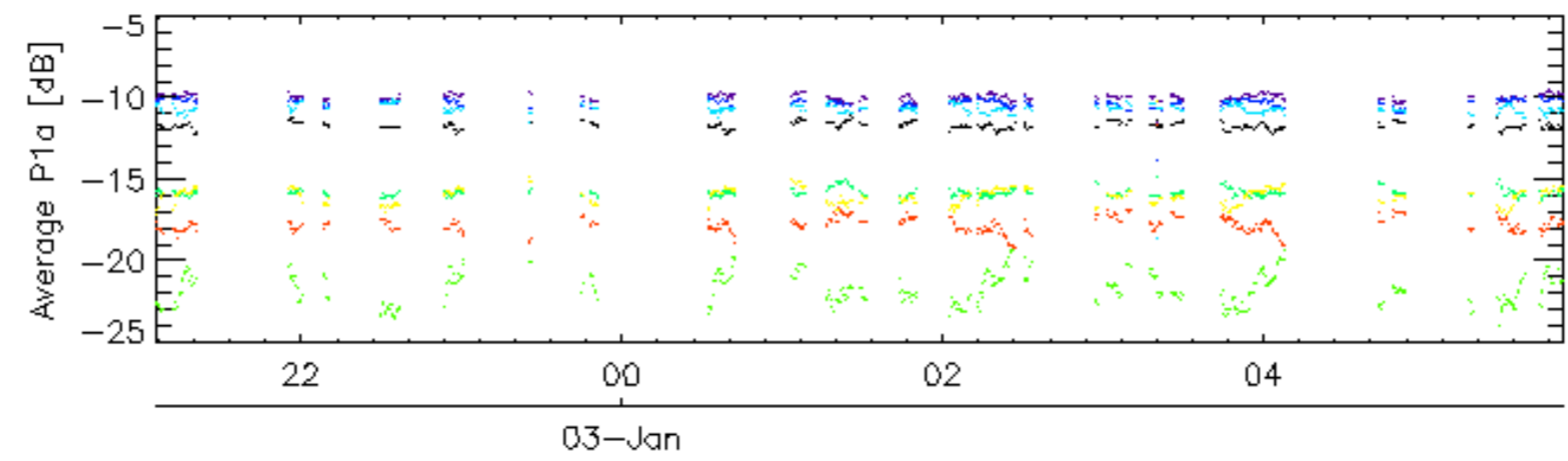
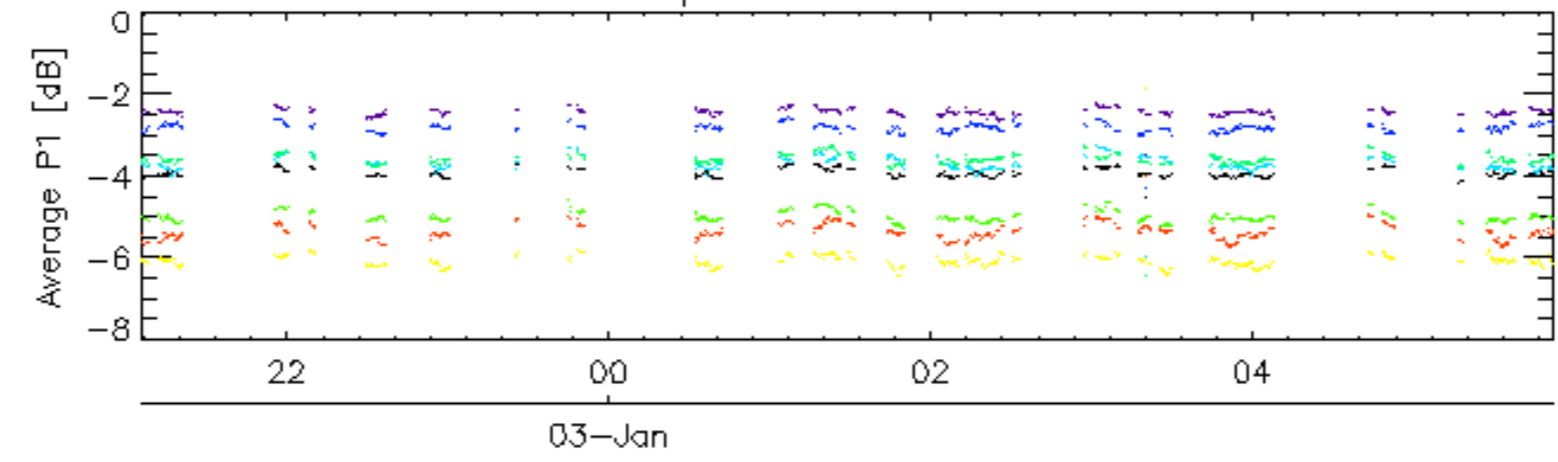
### 7.5 - Absolute Doppler for GM1

<b>Evolution of Absolute Doppler</b>
<input type="checkbox"/>
Ascending
<input type="checkbox"/>
Descending

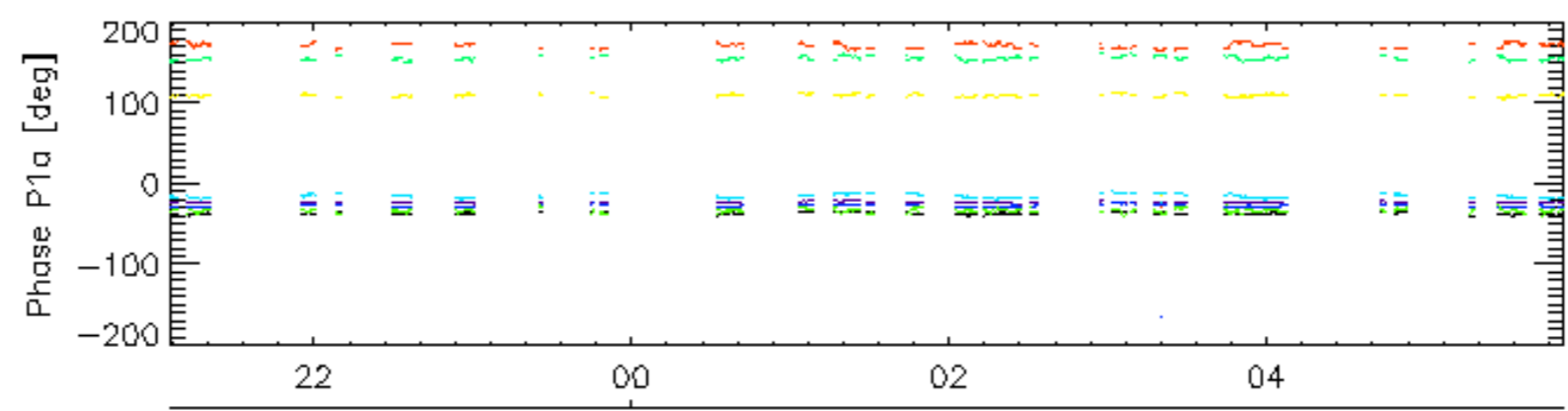
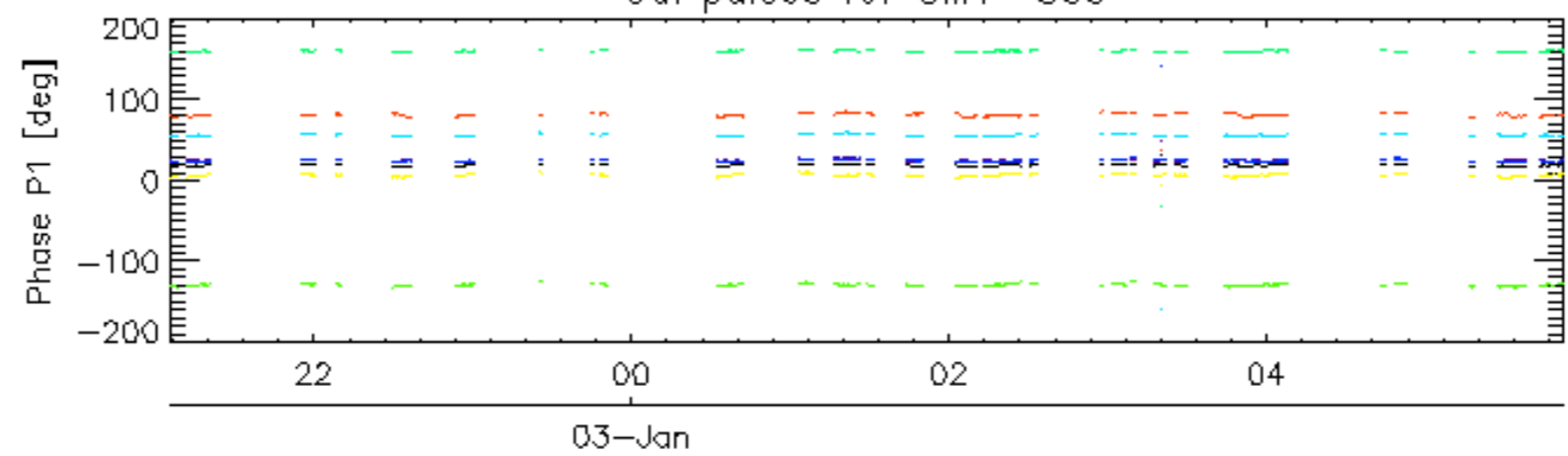
### 7.6 - Doppler evolution versus ANX for GM1

<b>Evolution Doppler error versus ANX</b>
<input type="checkbox"/>

Cal pulses for GM1 SS3

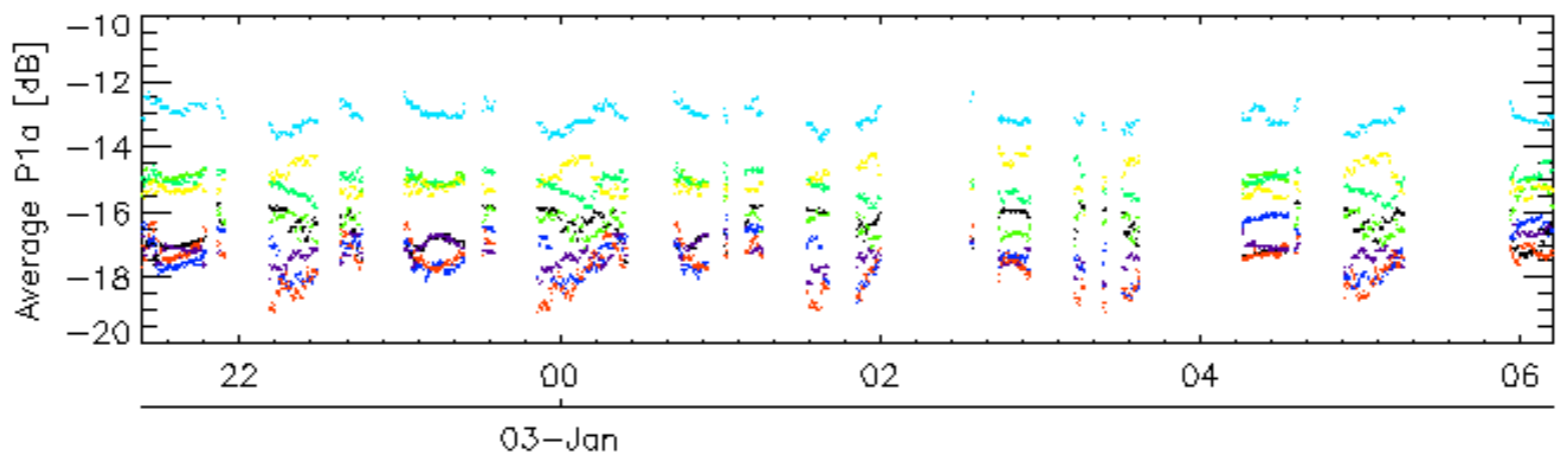
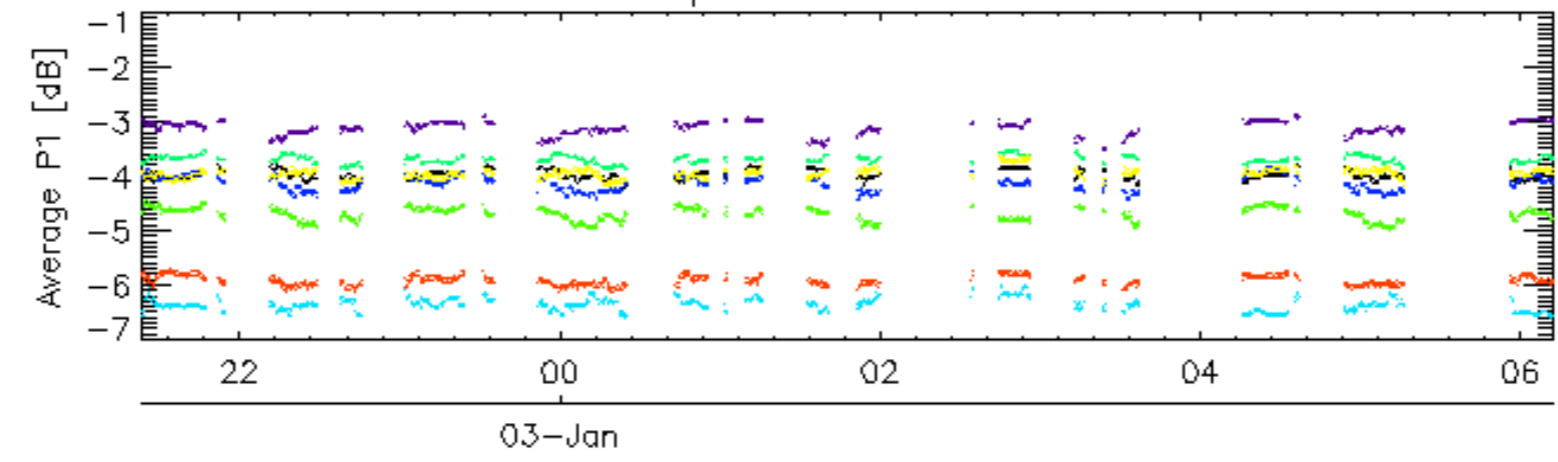


Cal pulses for GM1 SS3

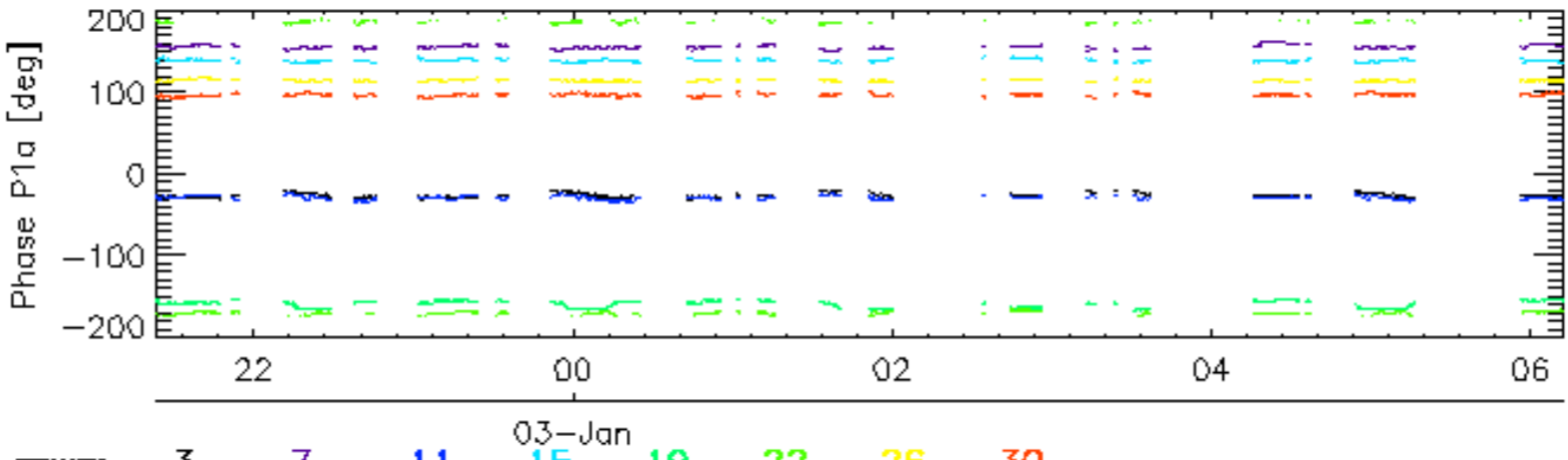
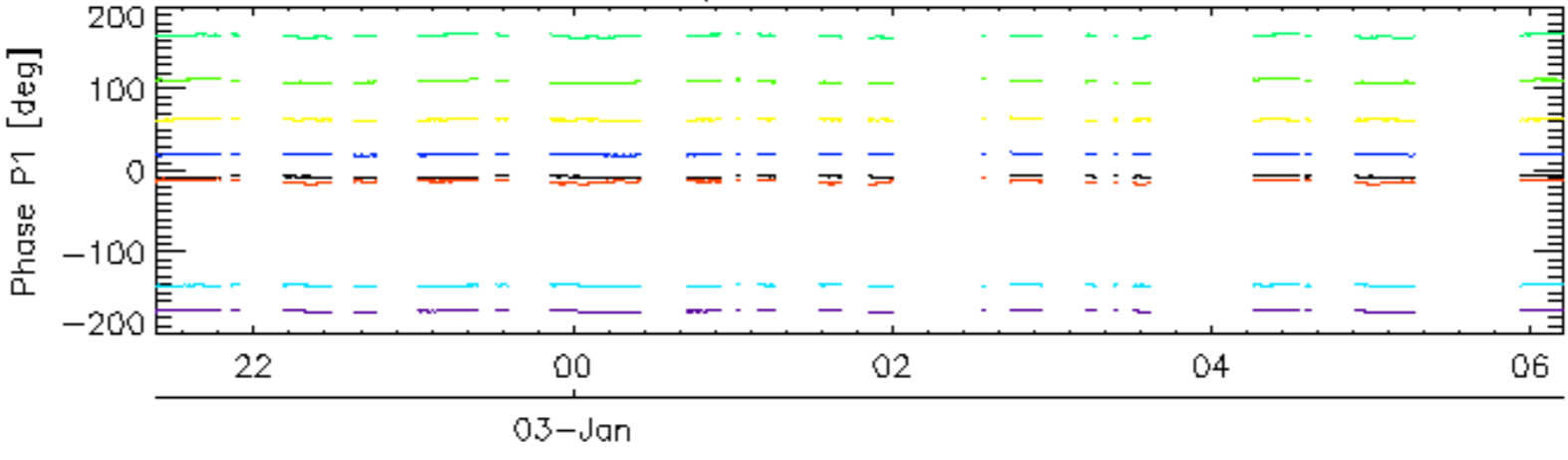


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

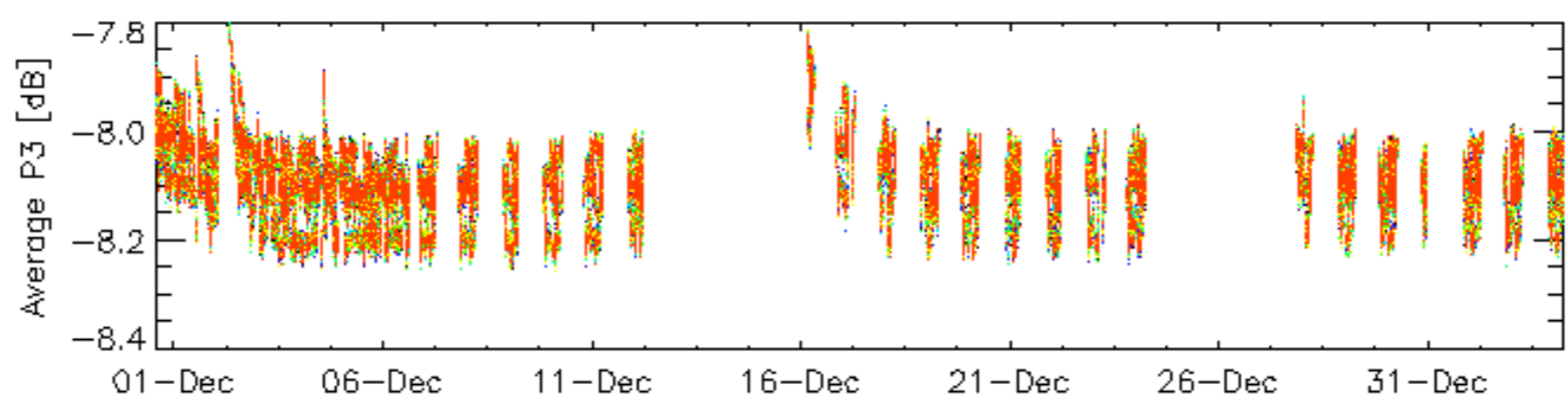
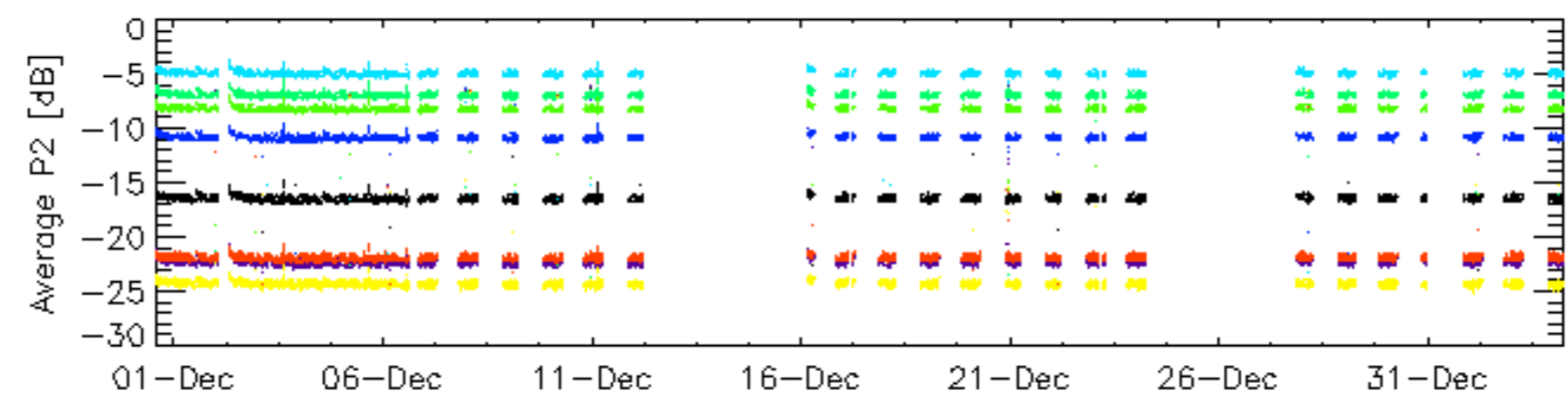
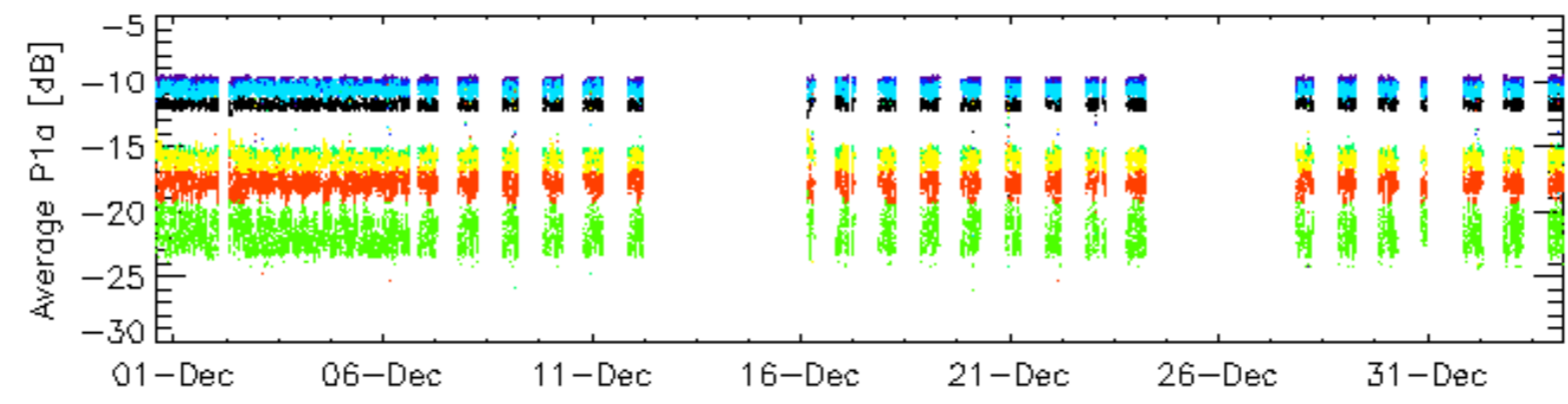
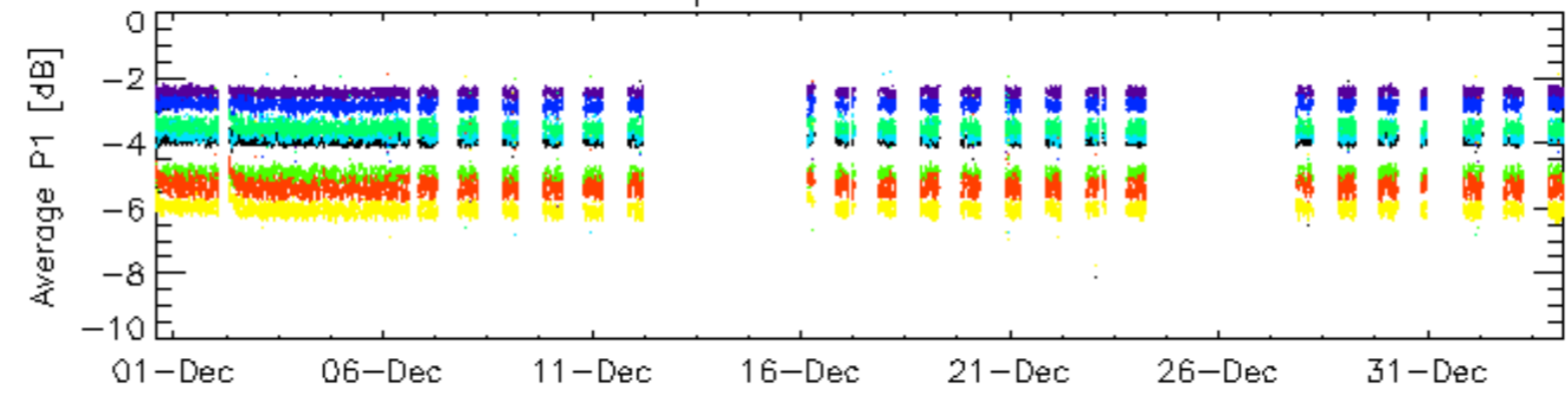


Cal pulses for WVS IS2



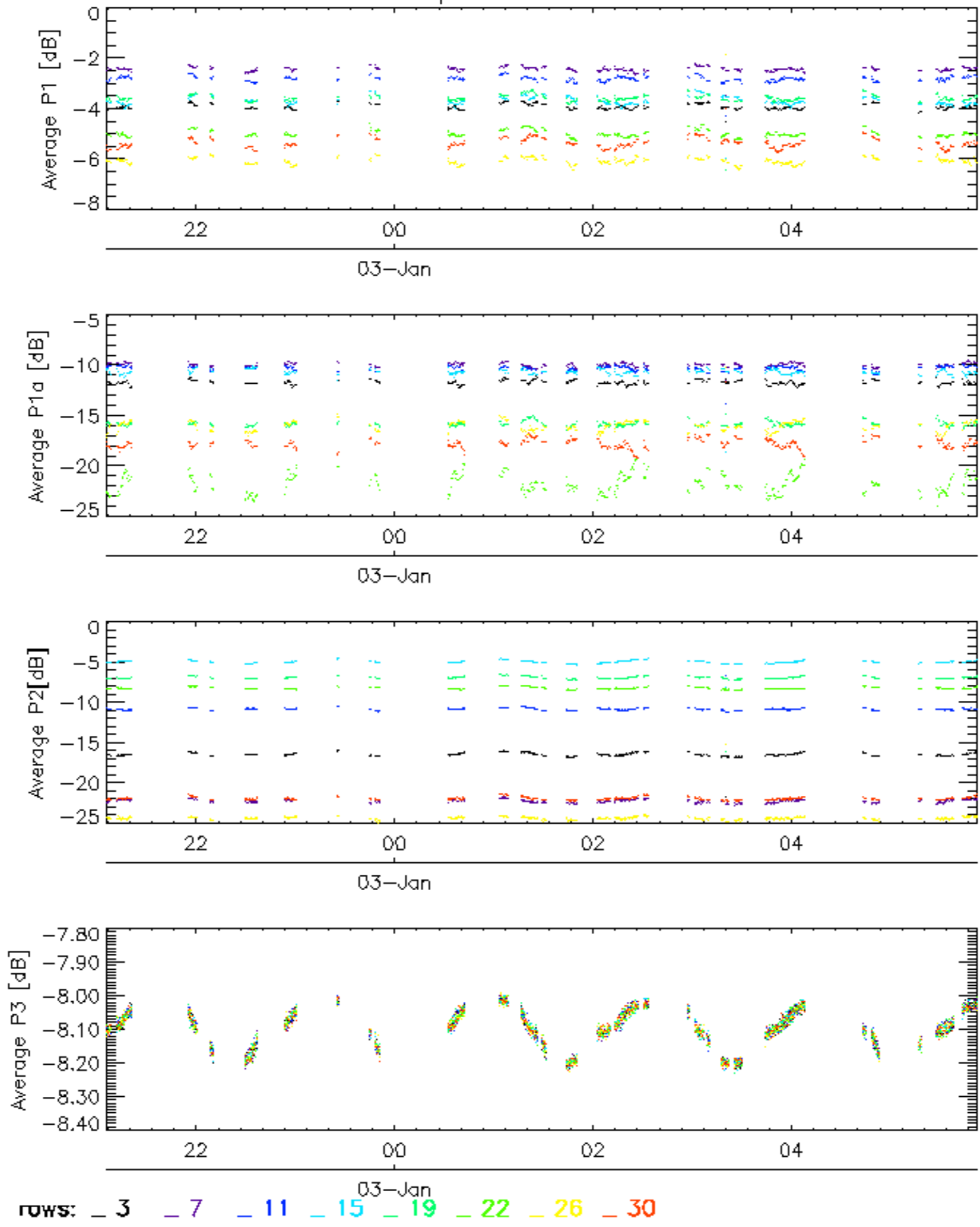
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

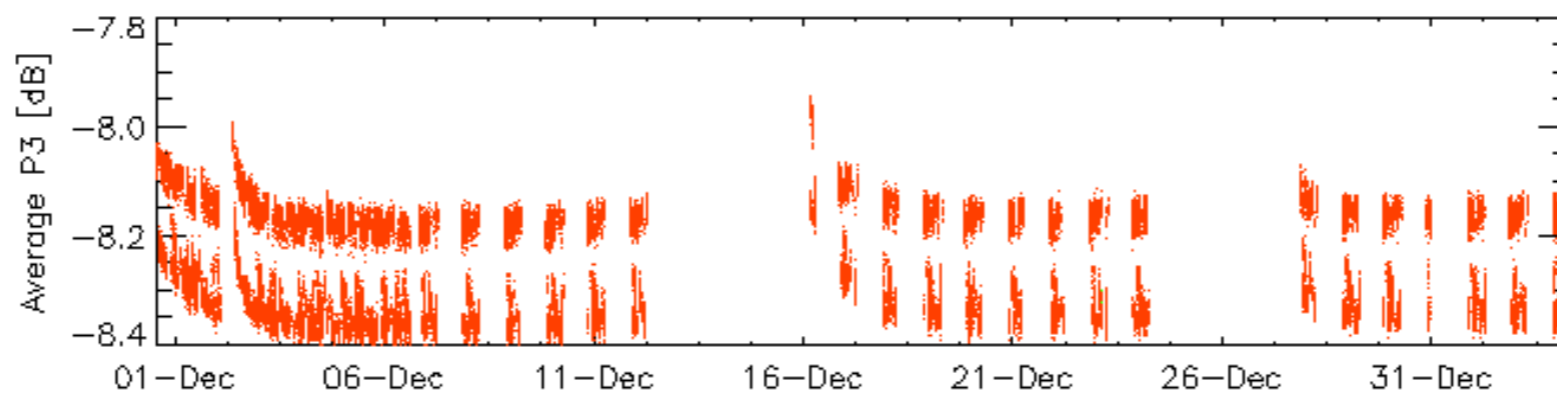
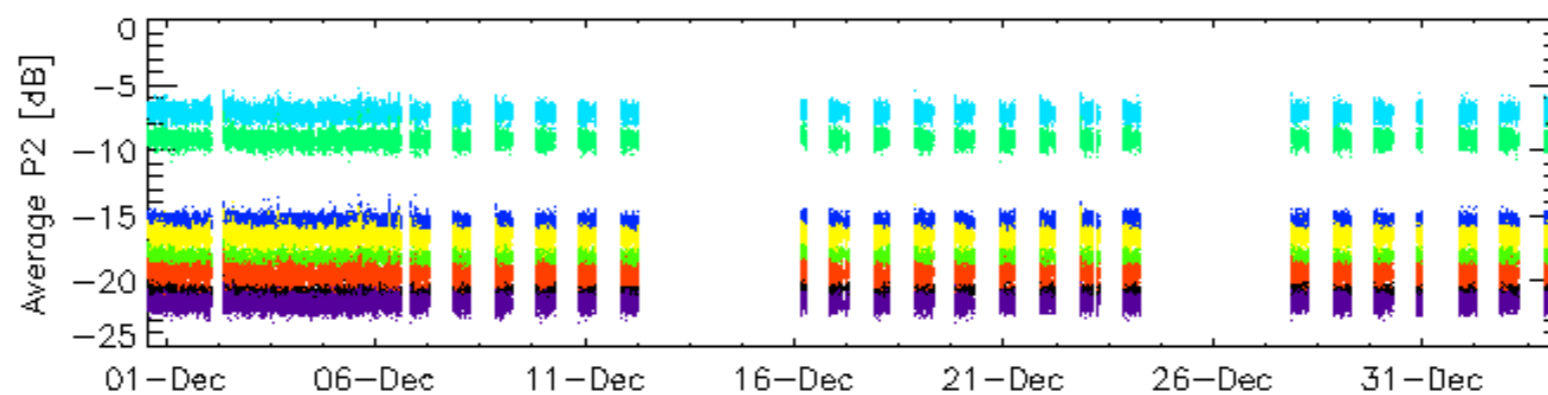
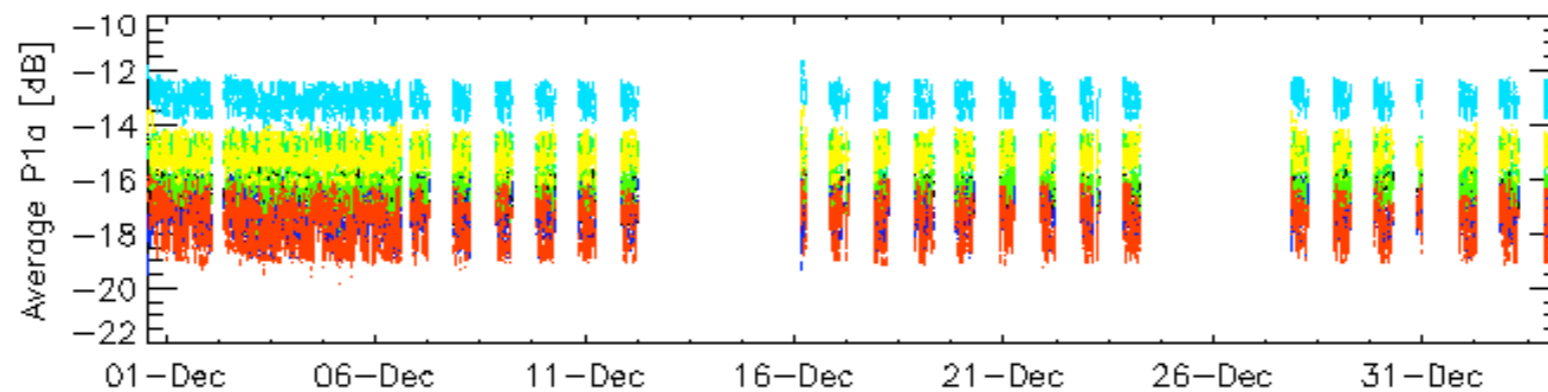
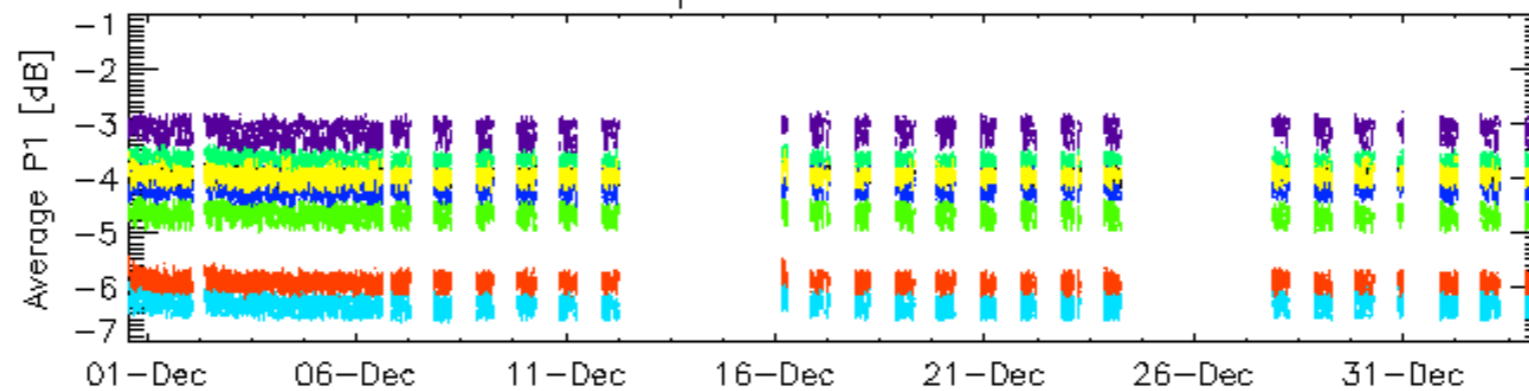


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

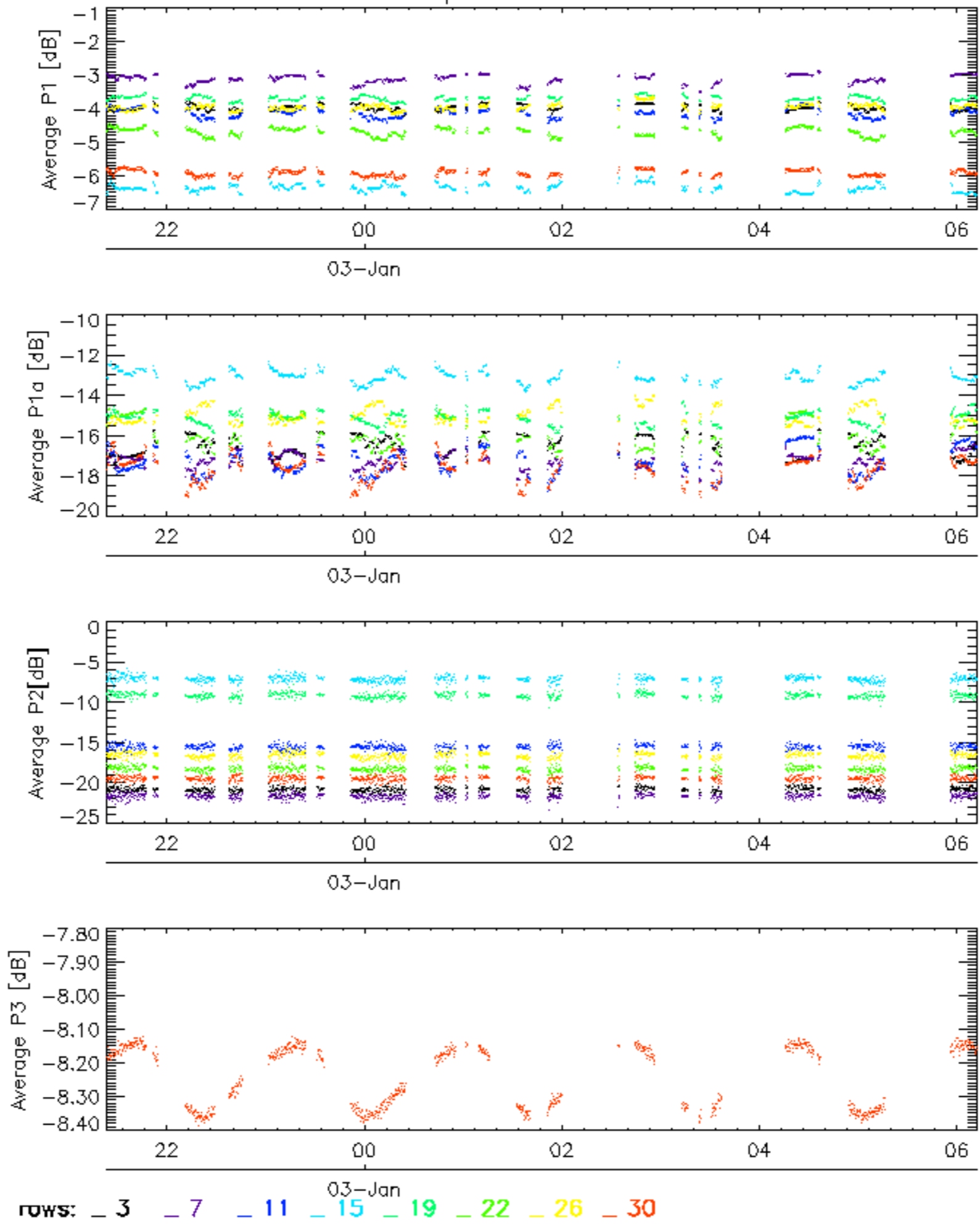


Cal pulses for WVS IS2



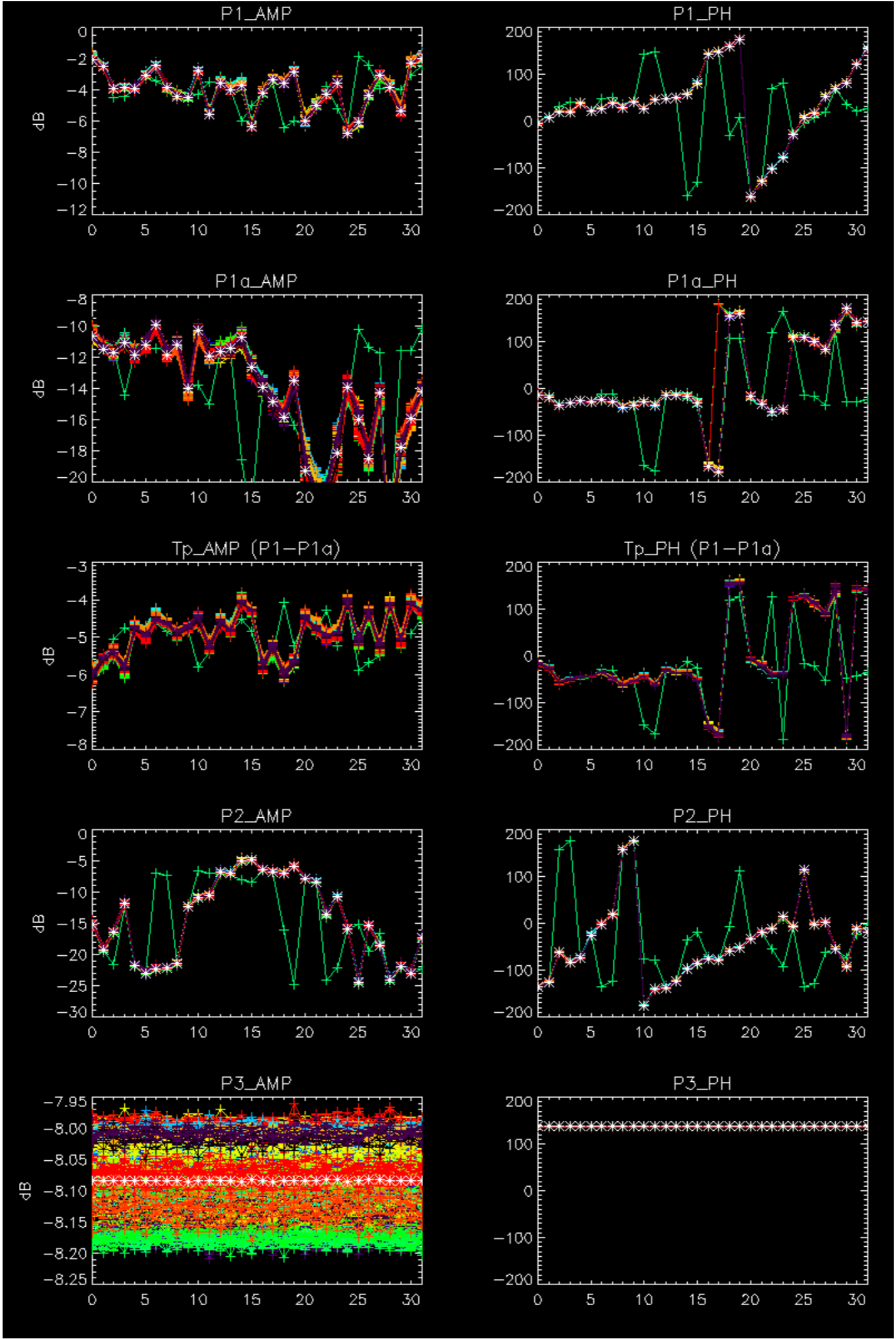
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

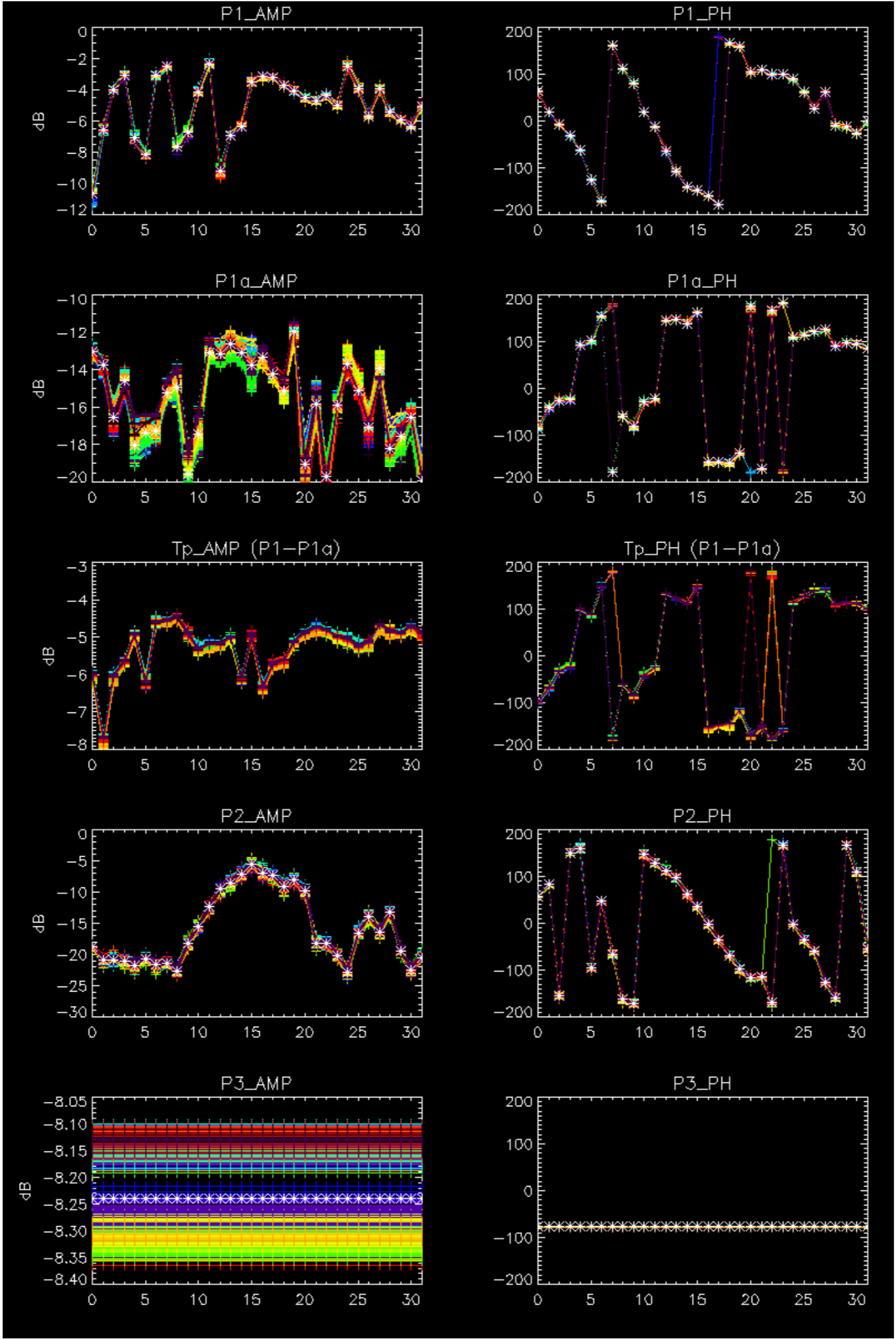
Cal pulses for WVS IS2



No anomalies observed.



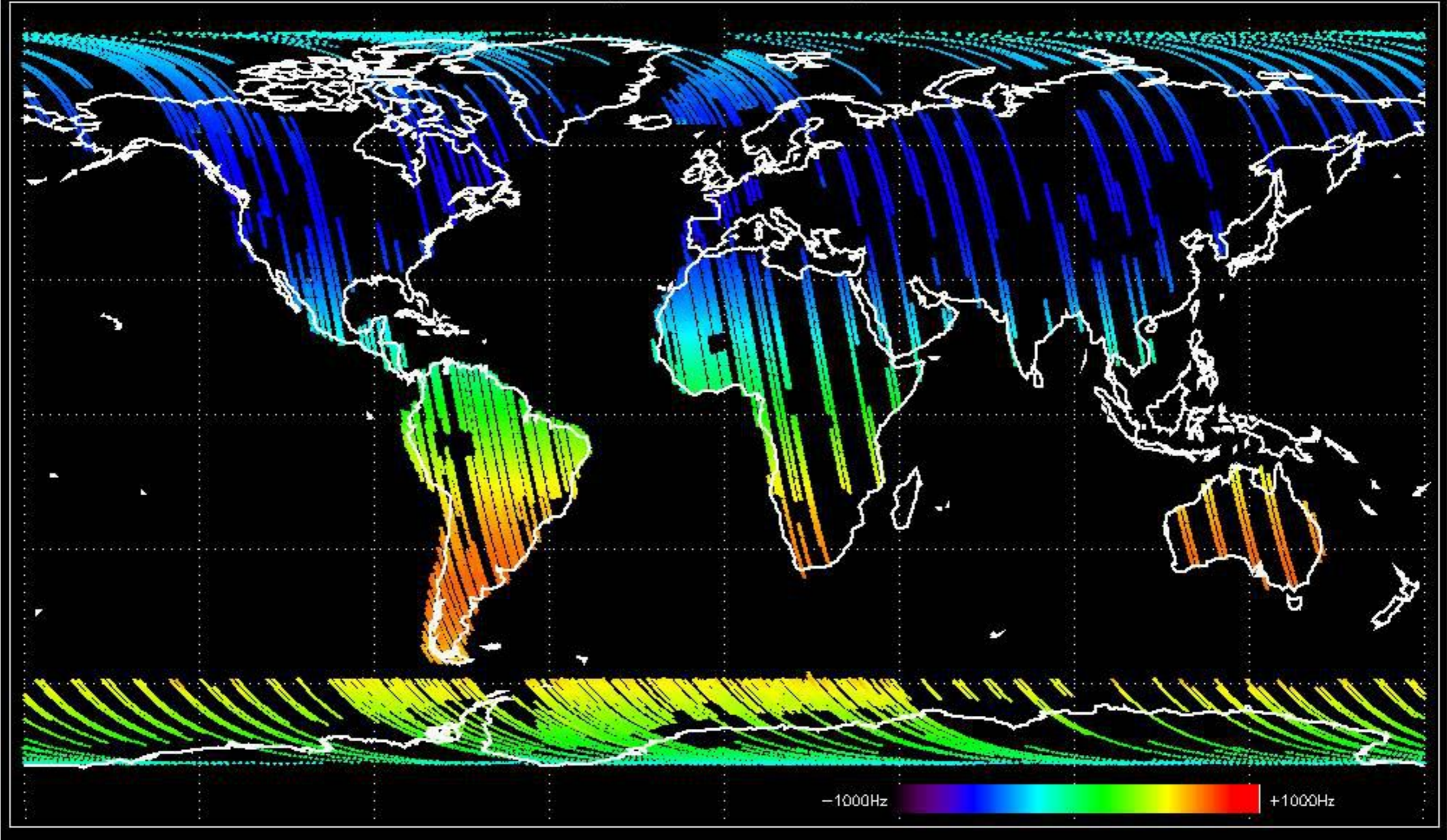




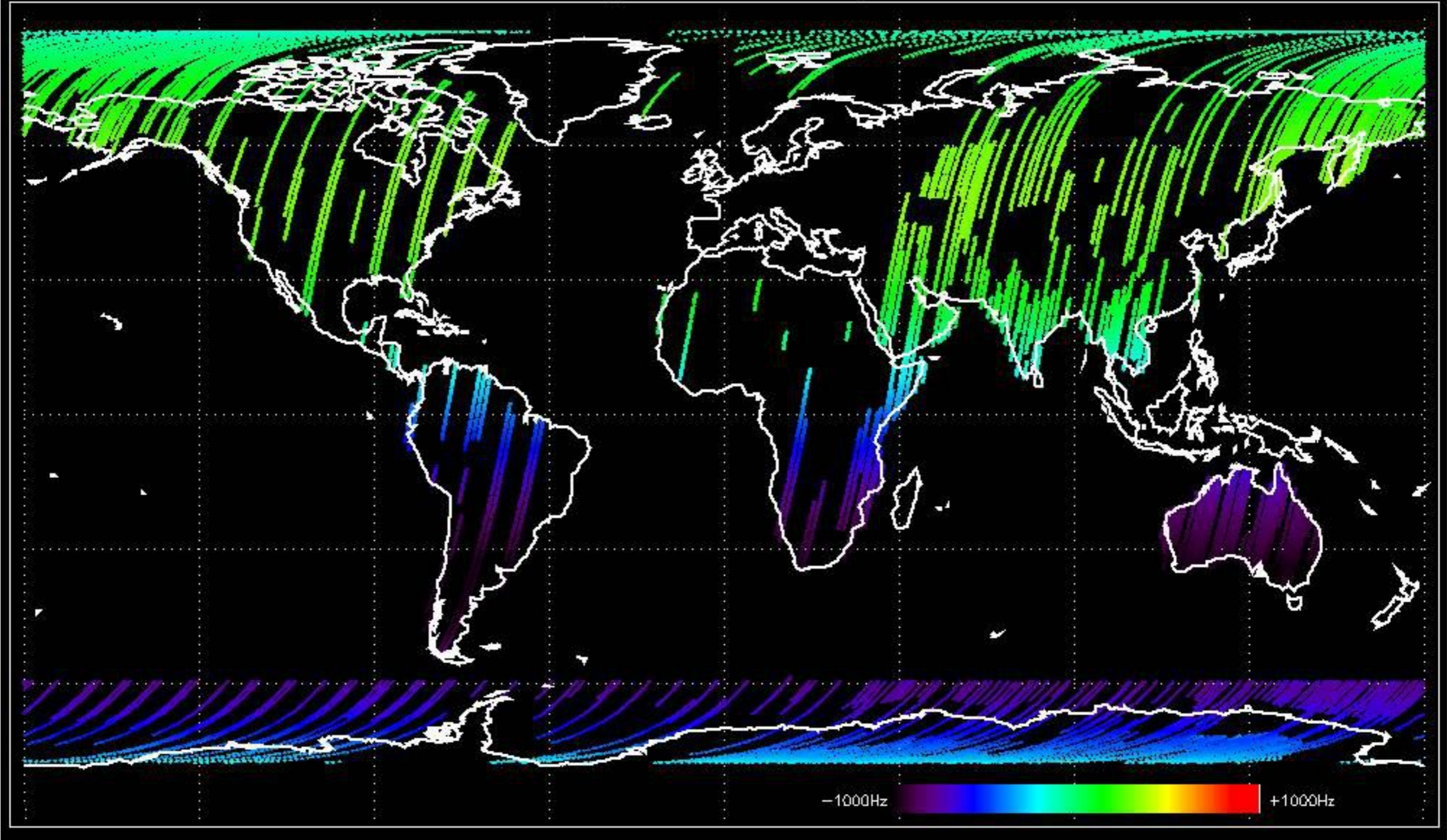
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



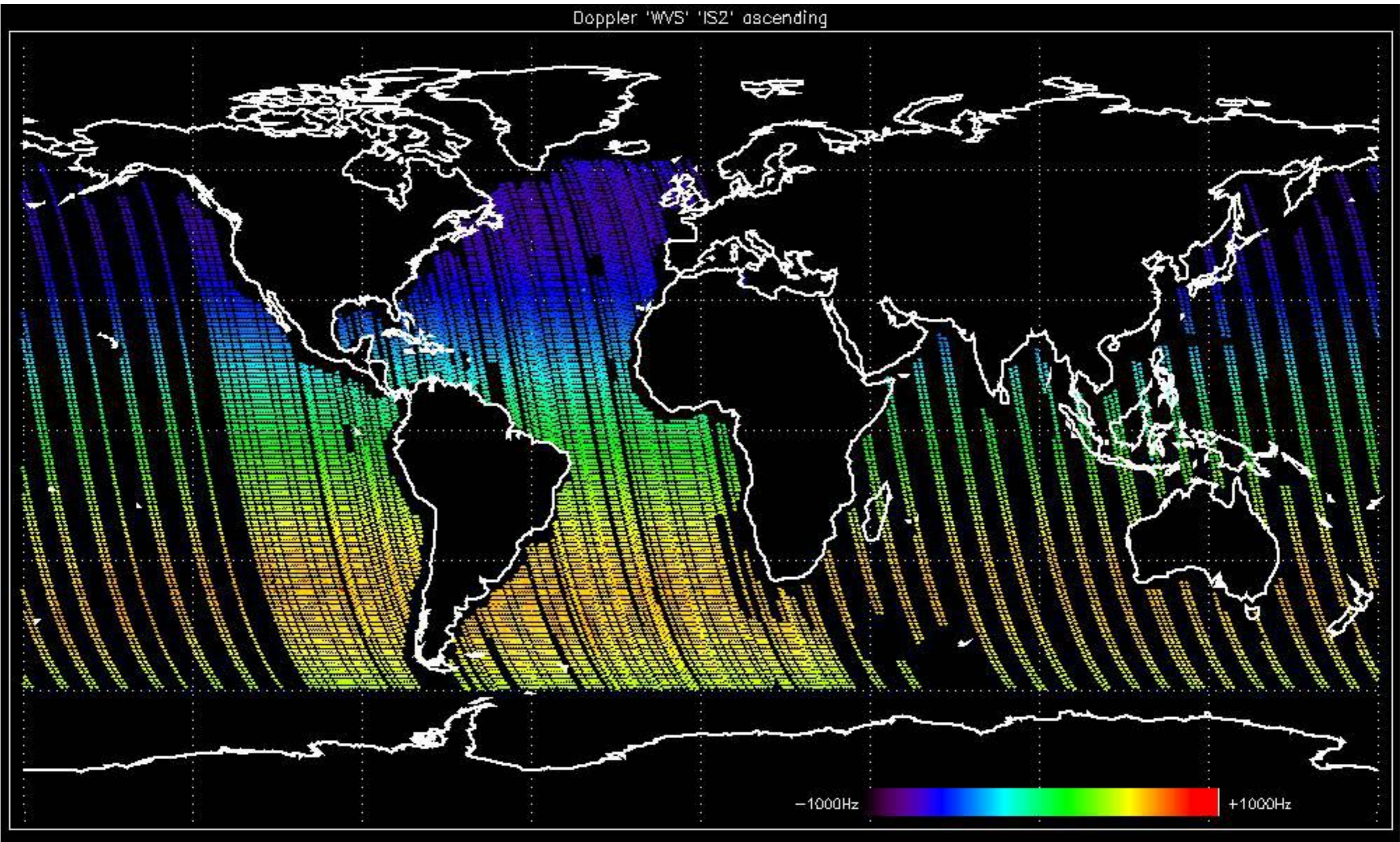
Doppler 'GM1' 'SS1' ascending



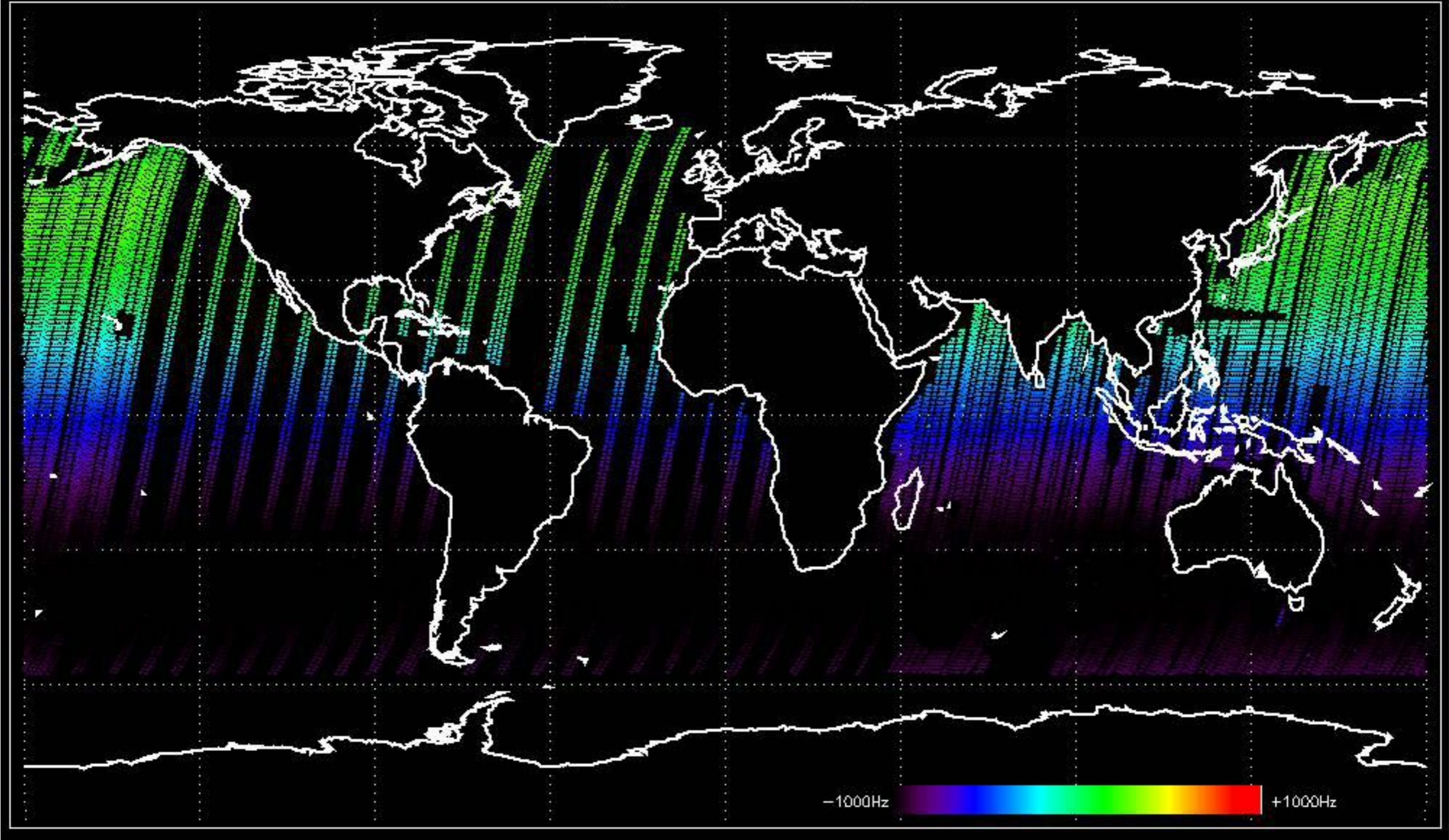
Doppler 'GM1' 'SS1' descending



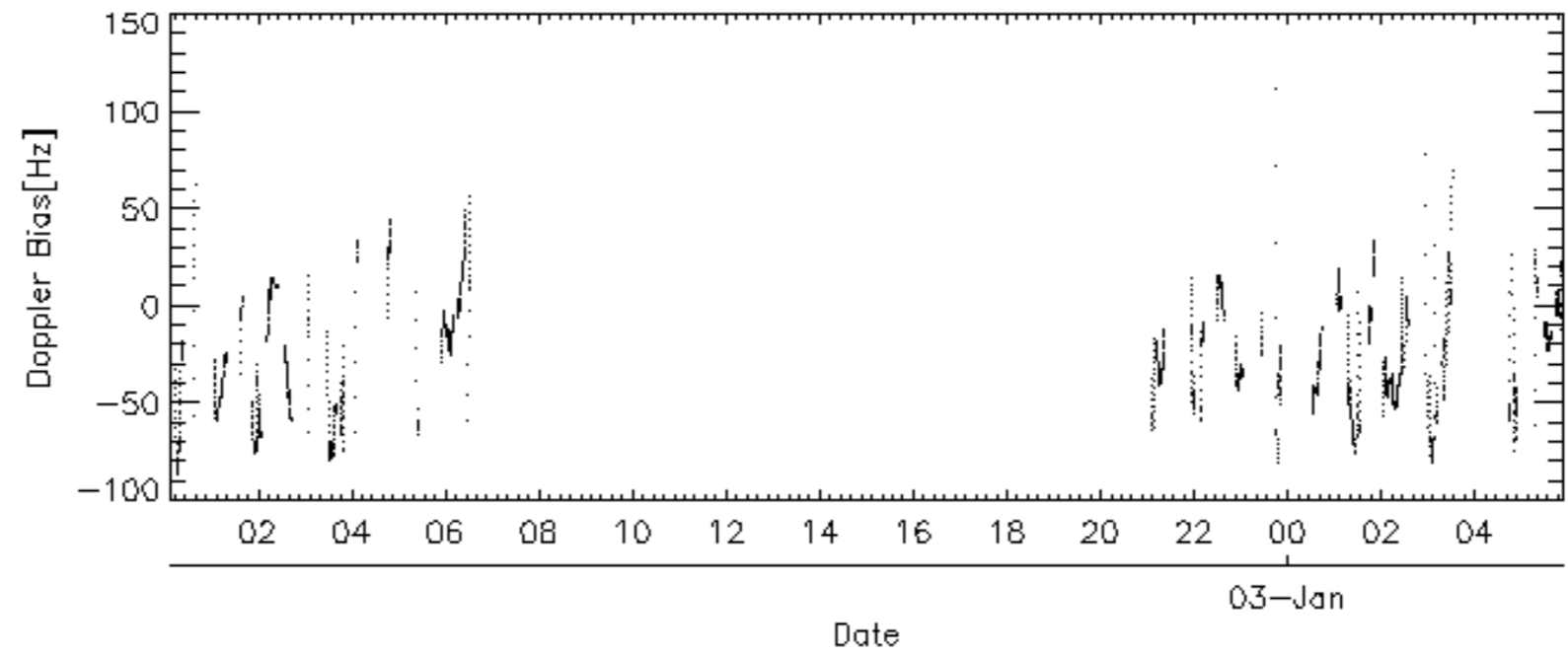
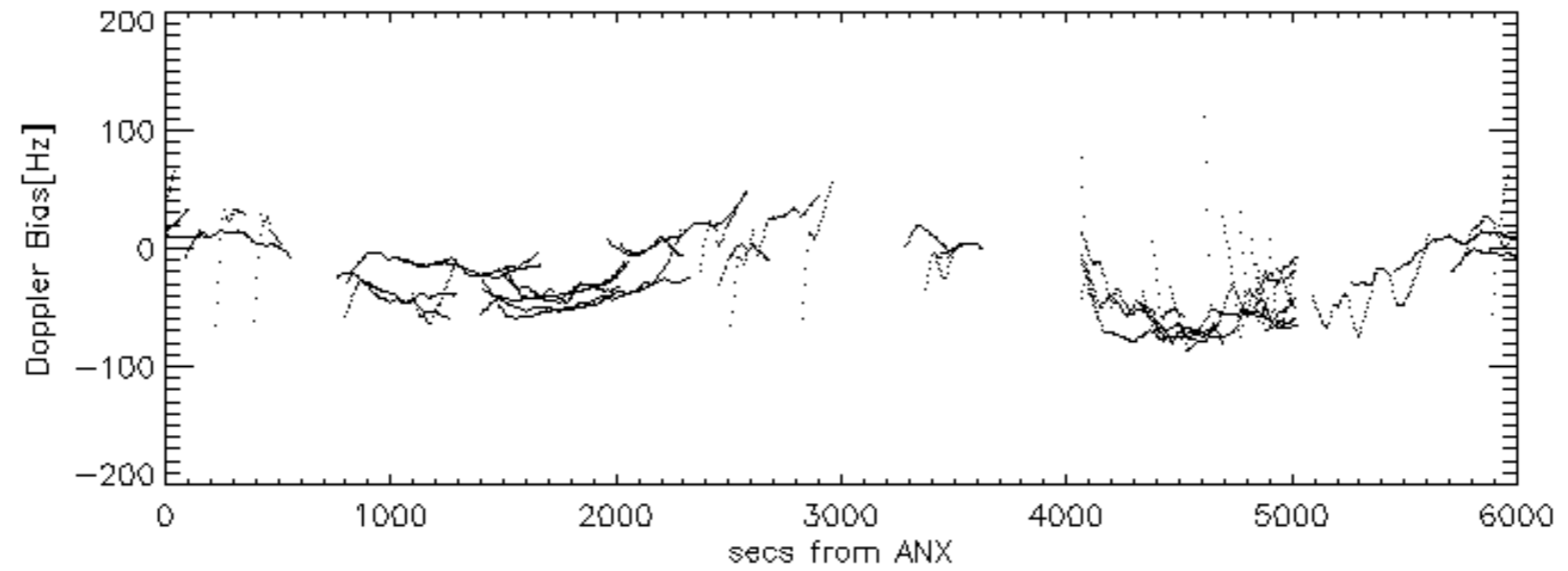
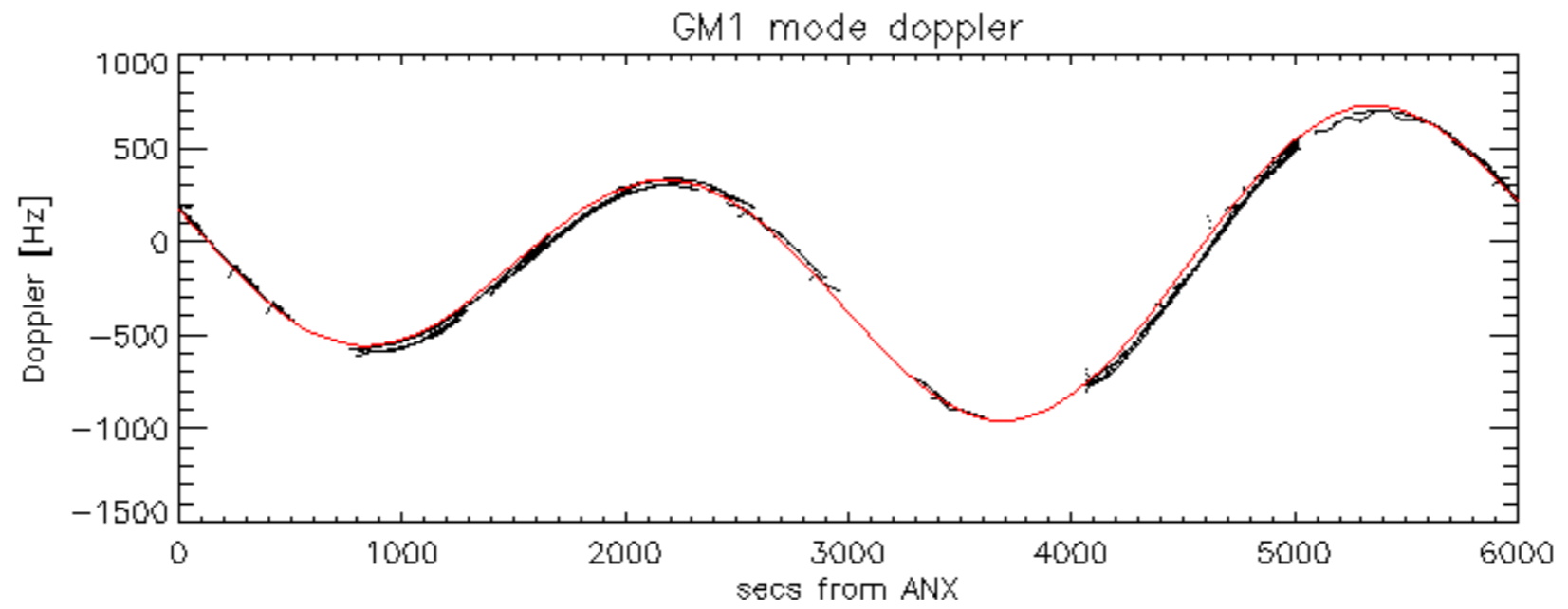
Doppler 'WVS' 'IS2' ascending

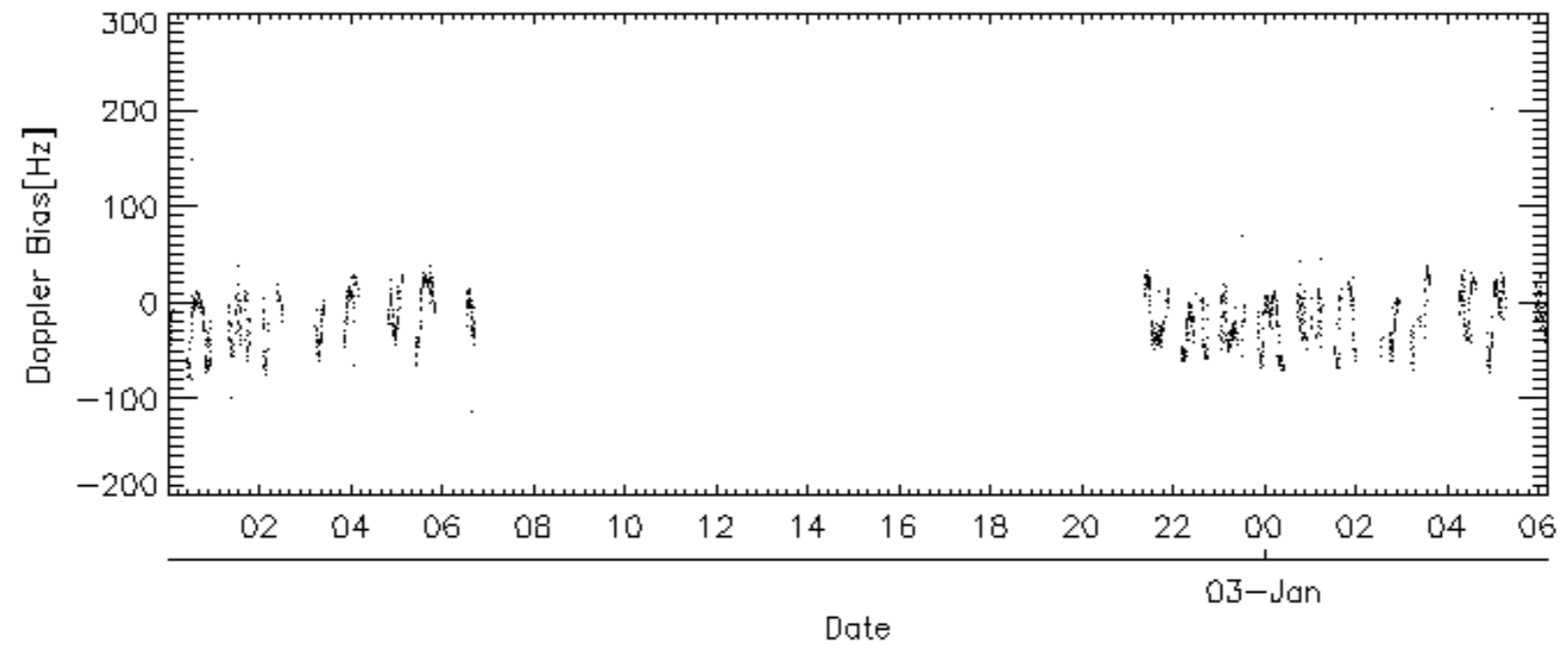
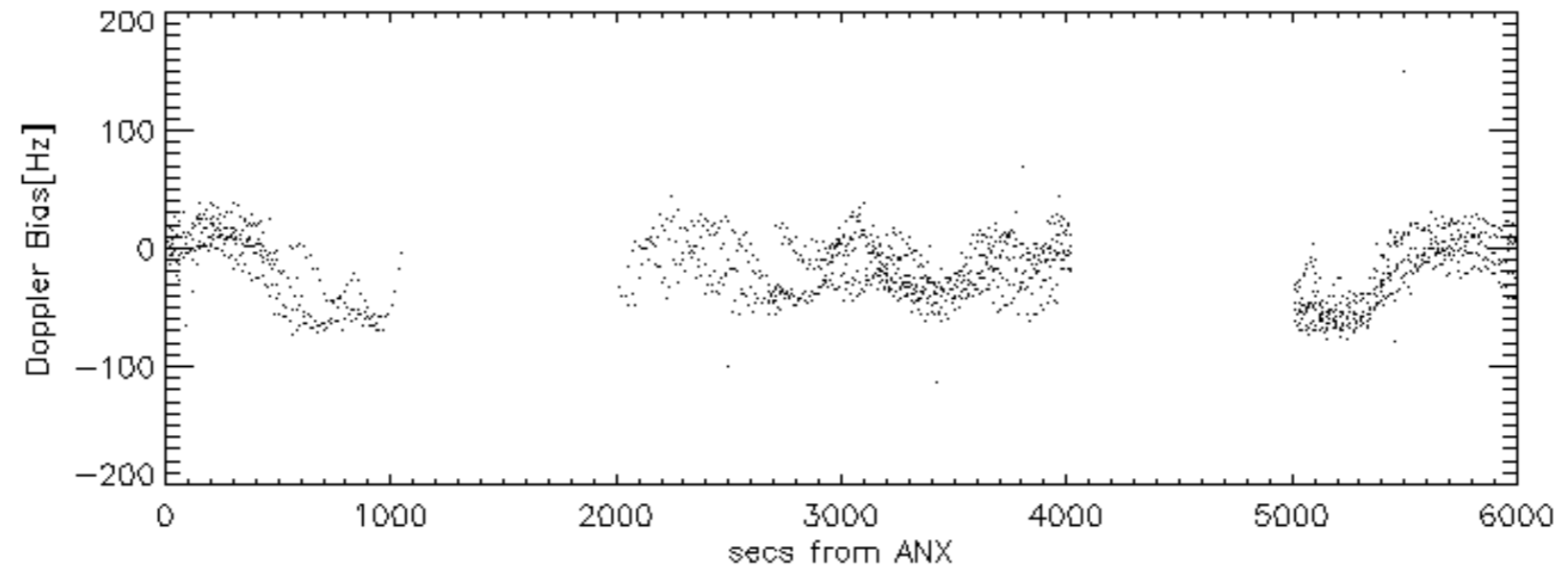
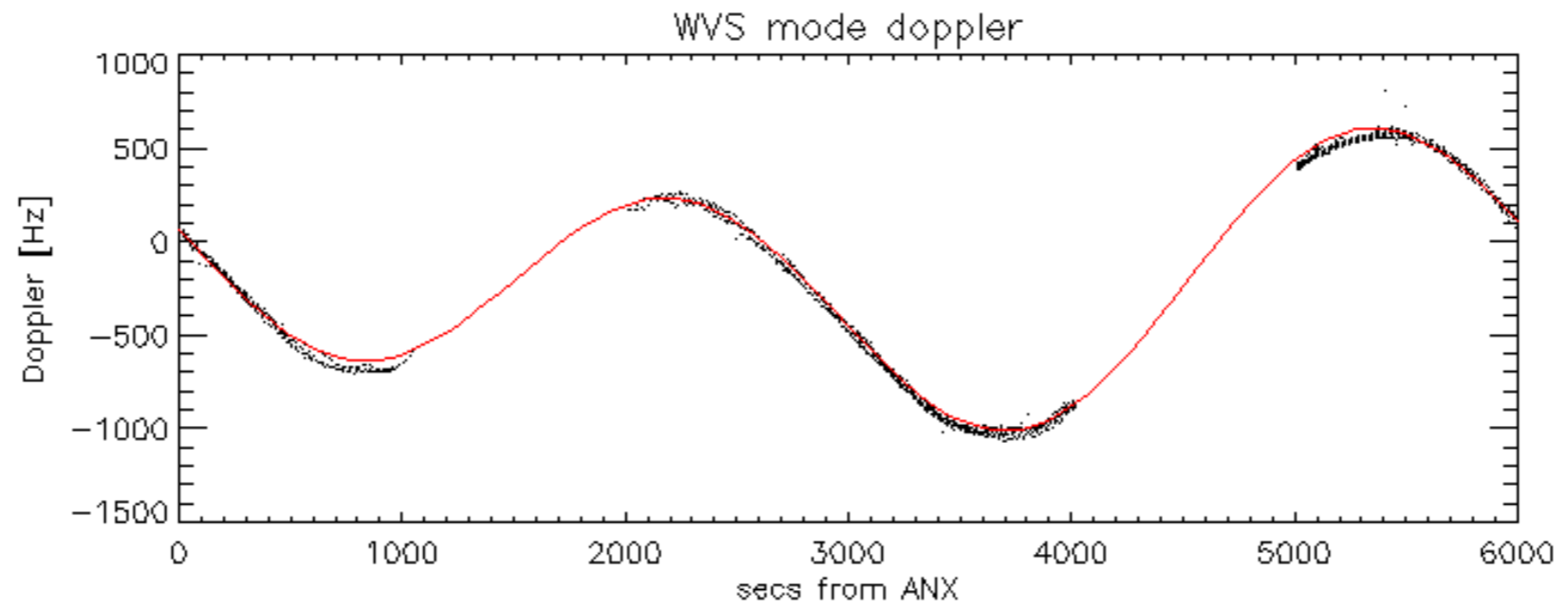


Doppler 'WVS' 'IS2' descending

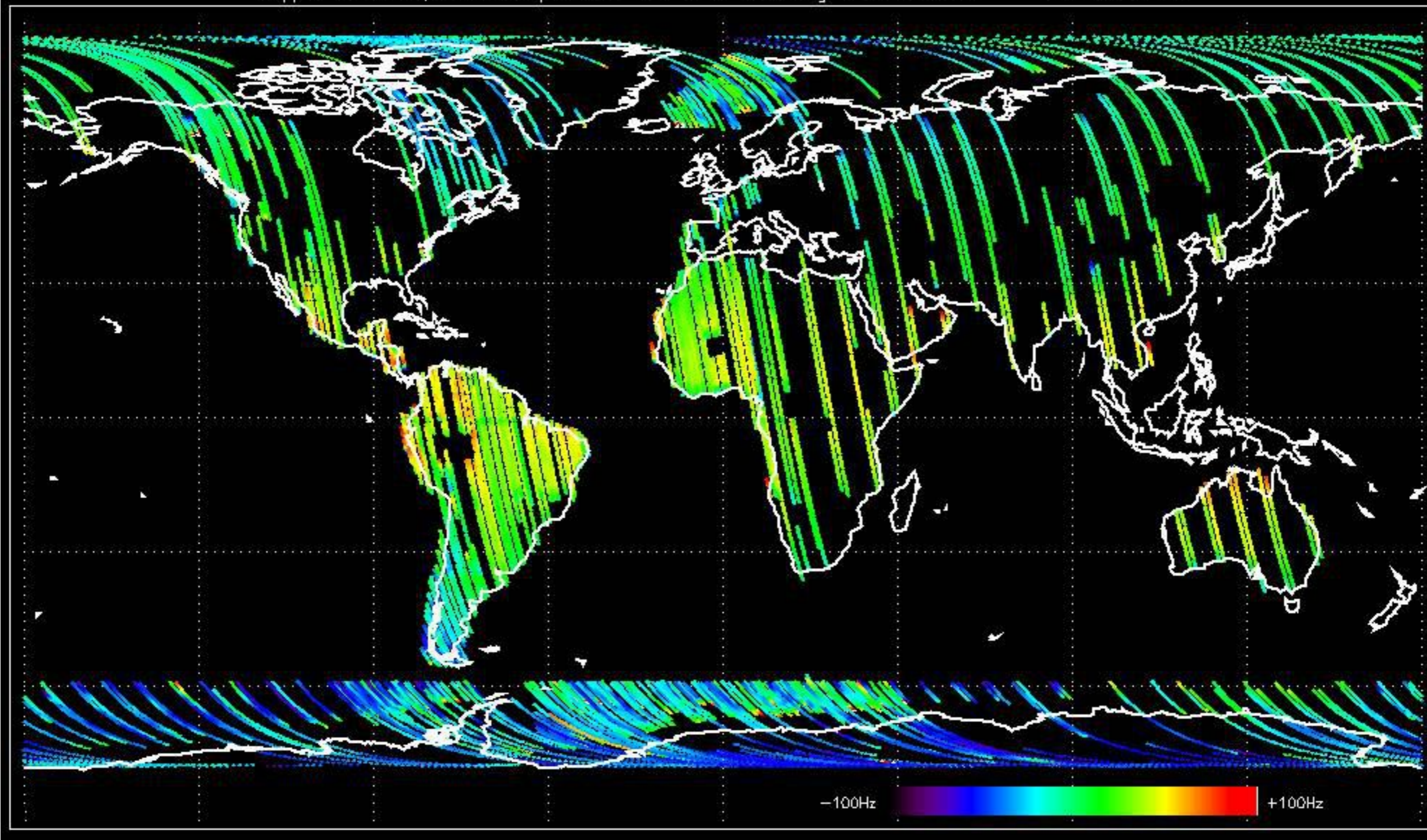




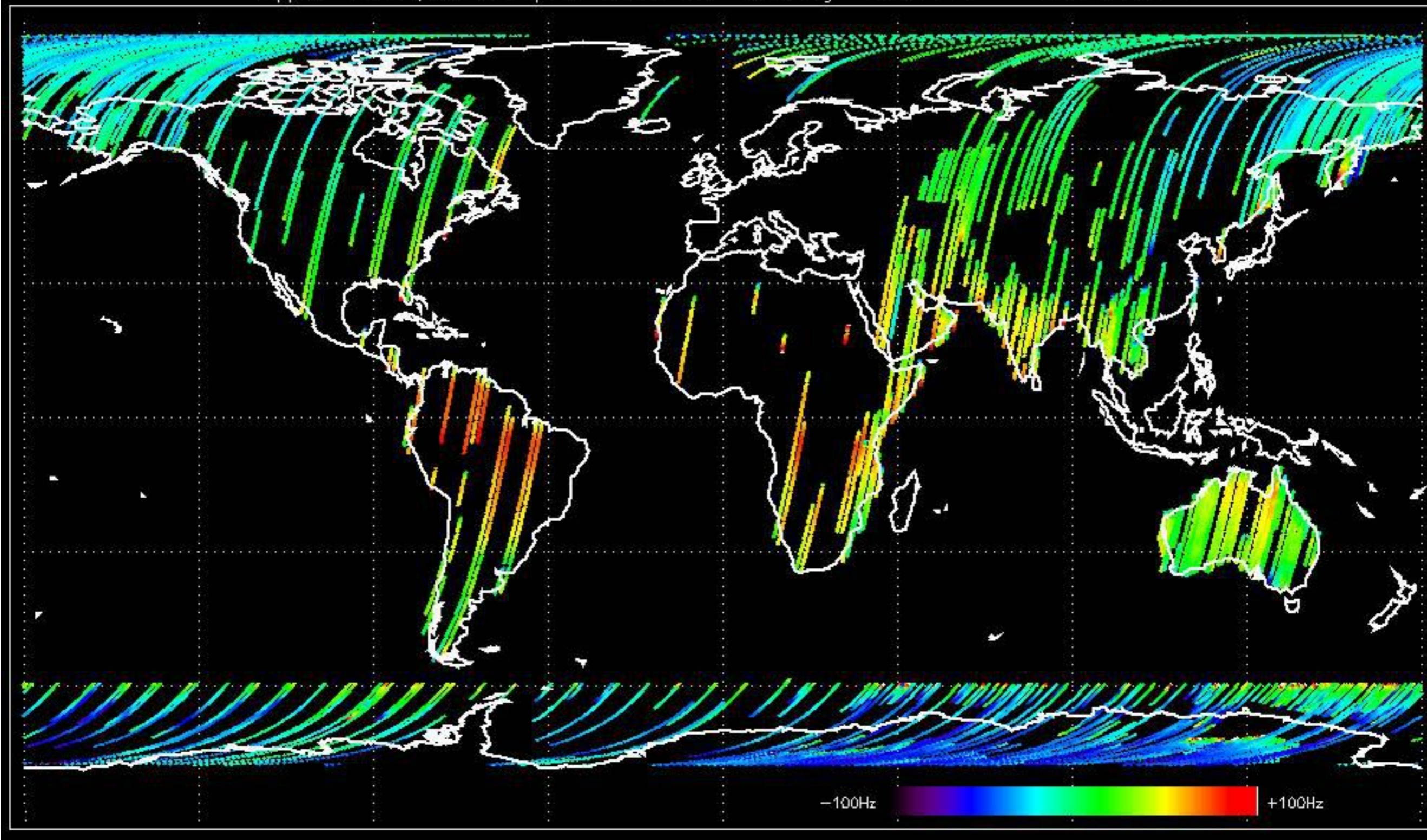




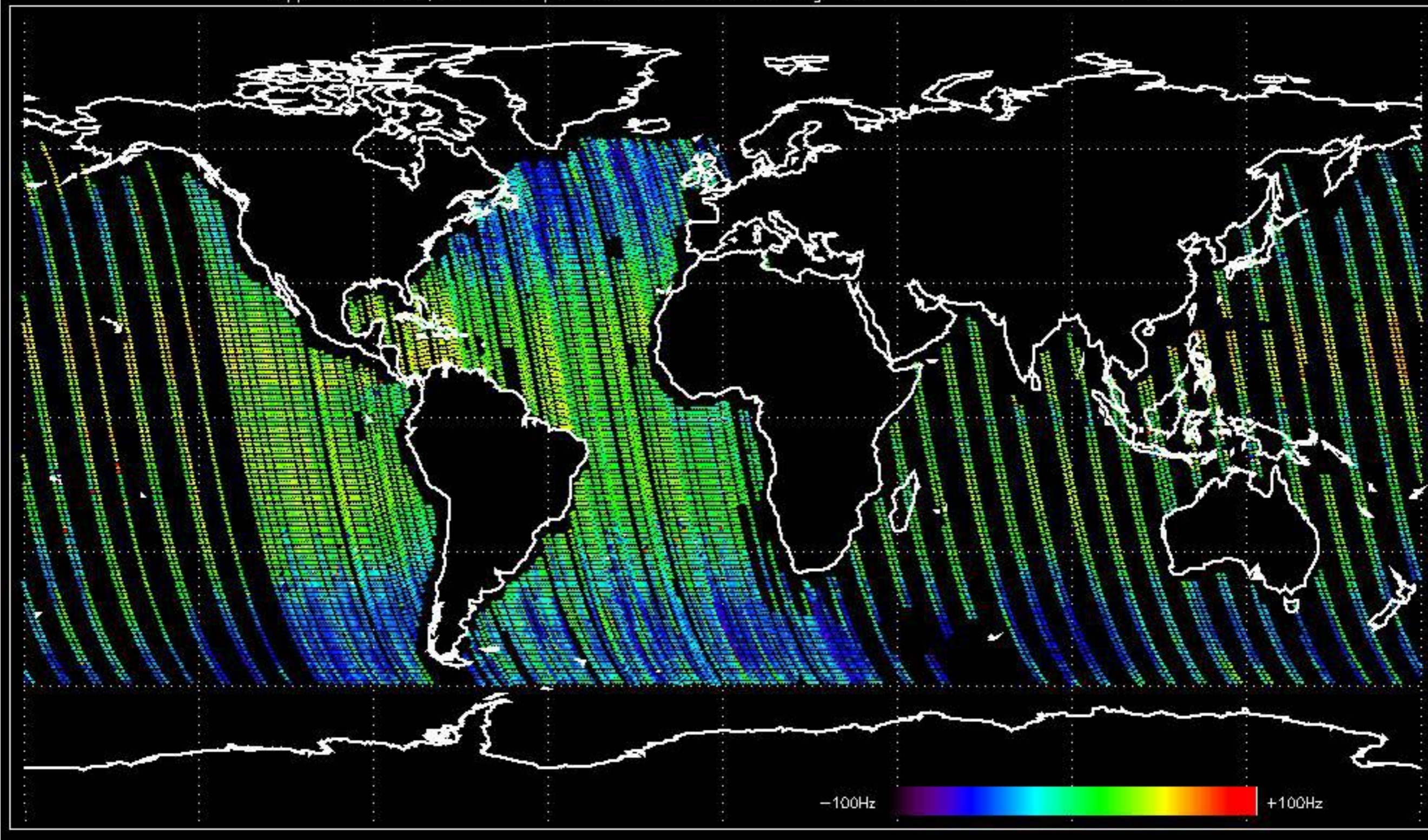
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -17.230868 Hz



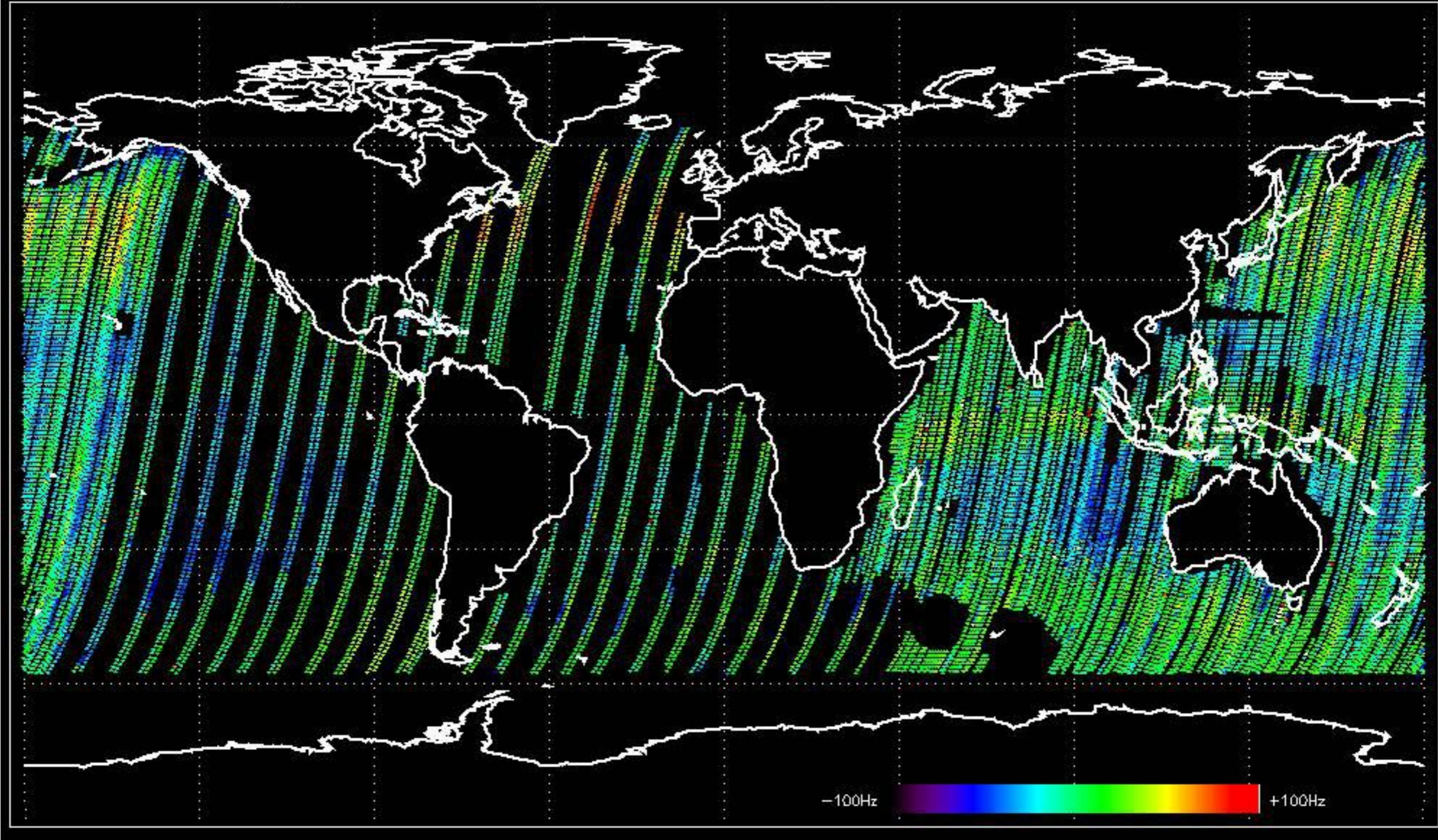
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.295404 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -13.865837 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -9.4341719 Hz



No anomalies observed on available MS products:

No anomalies observed.















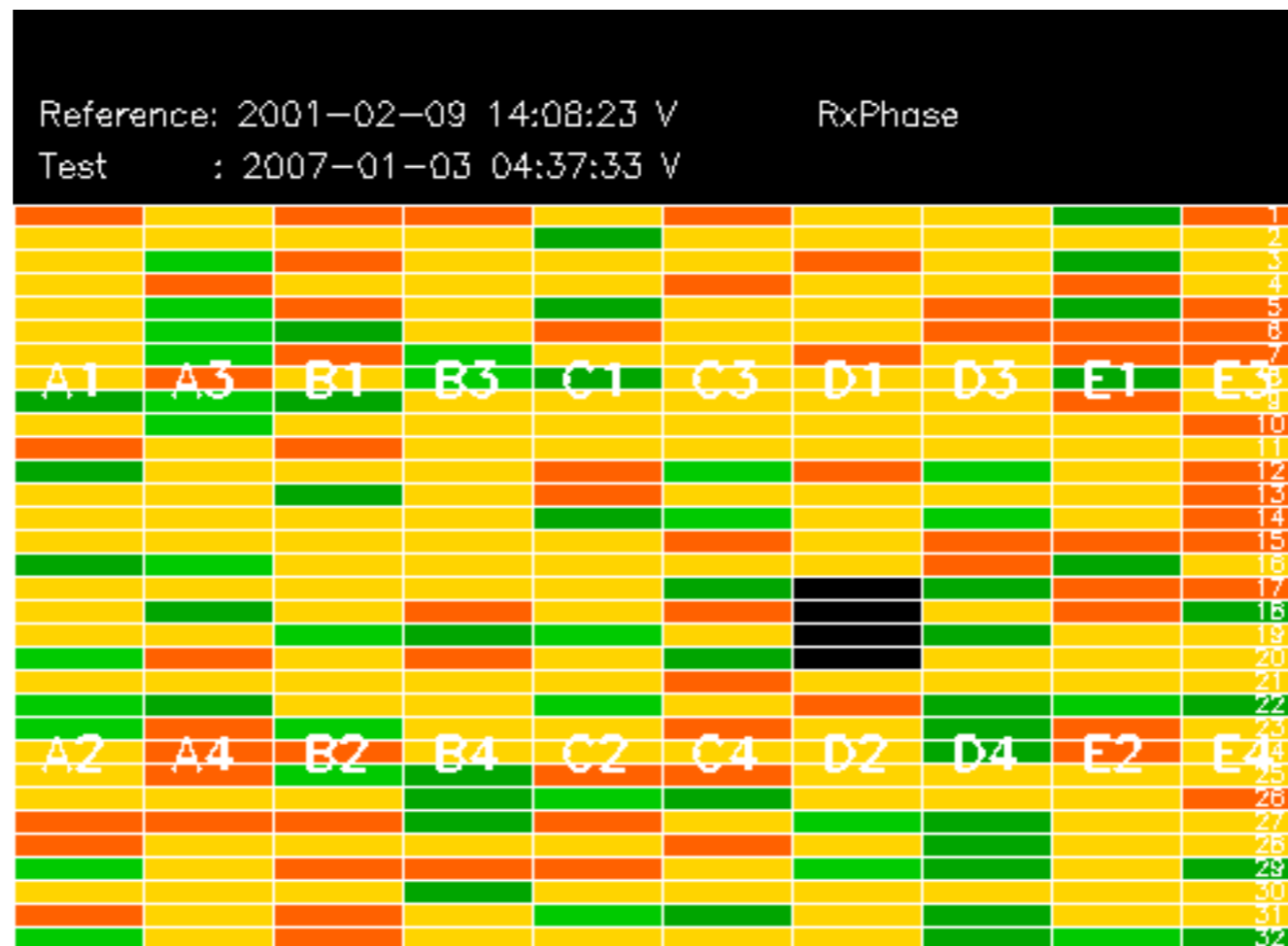




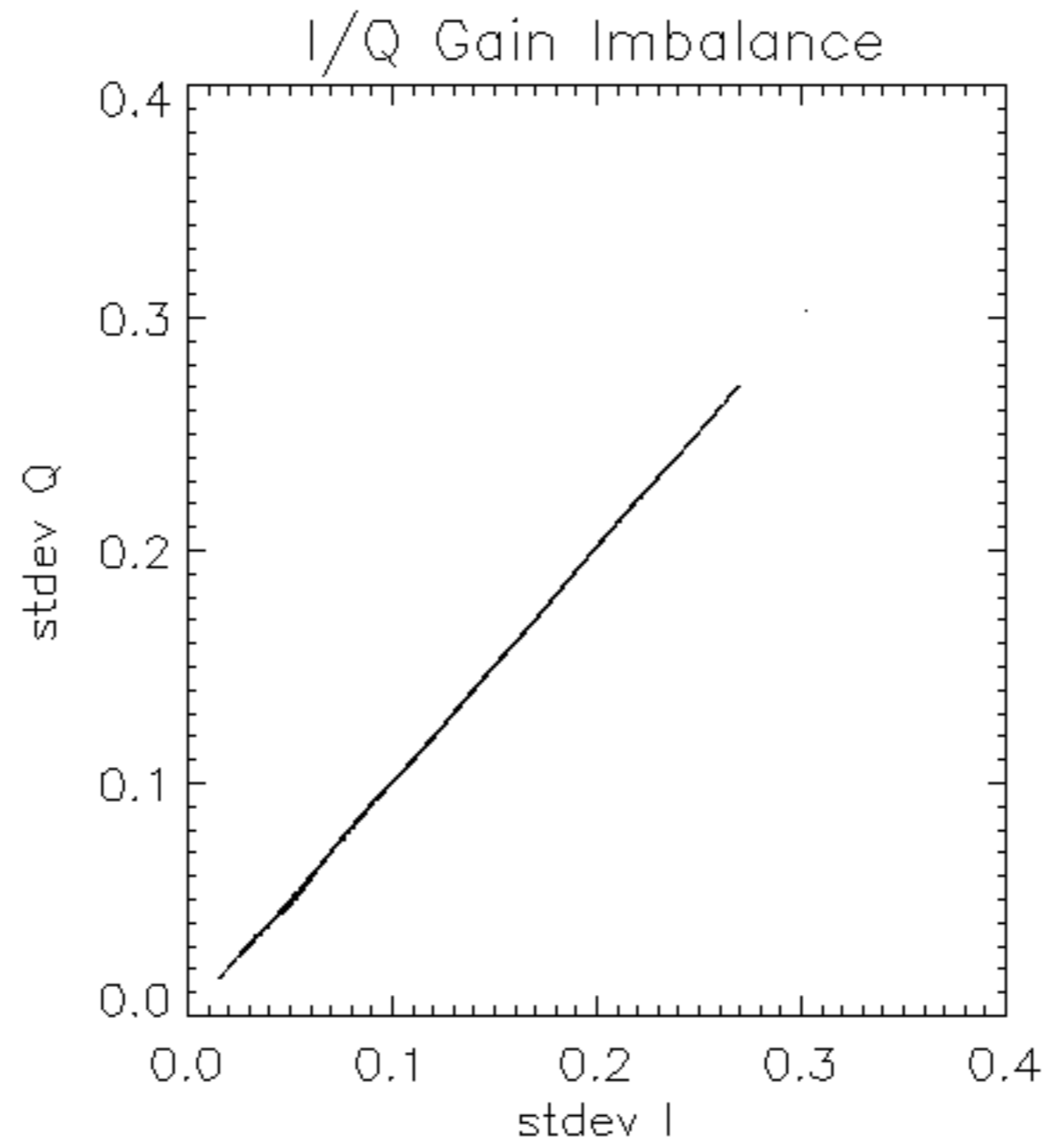


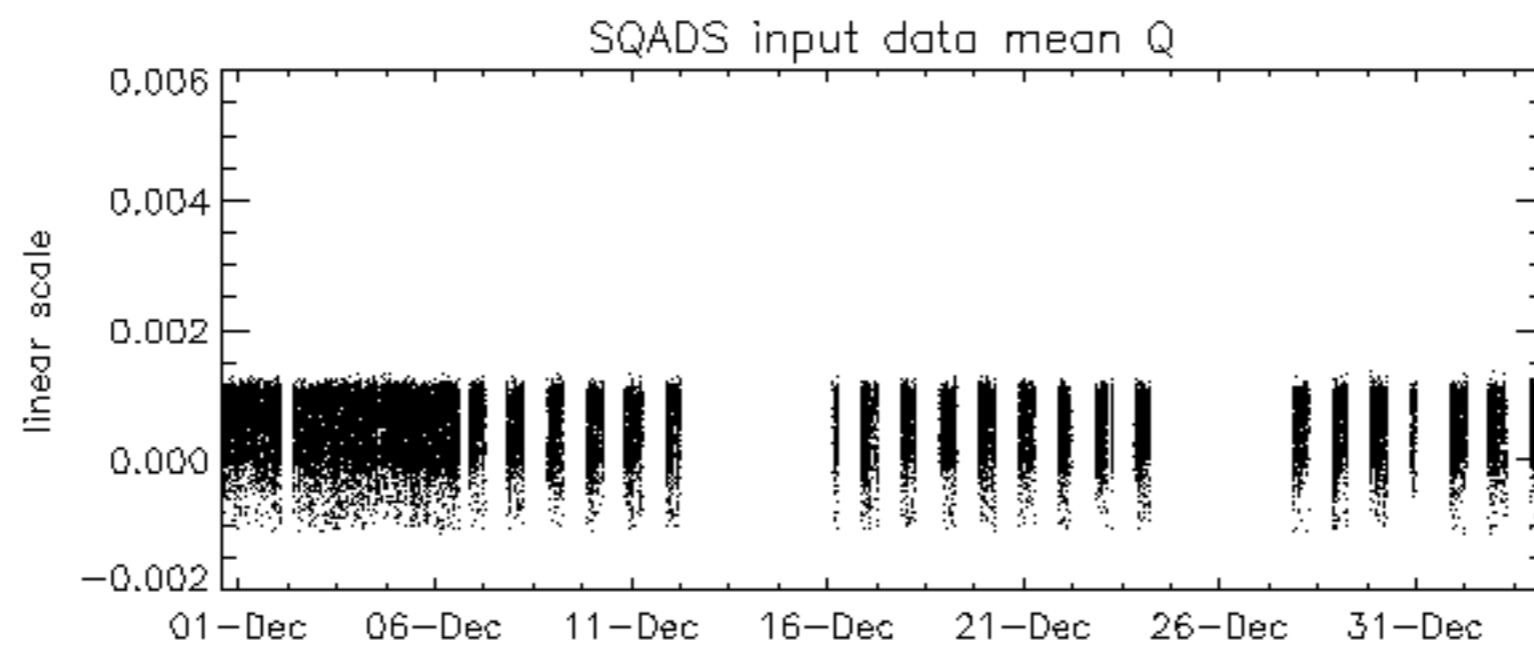
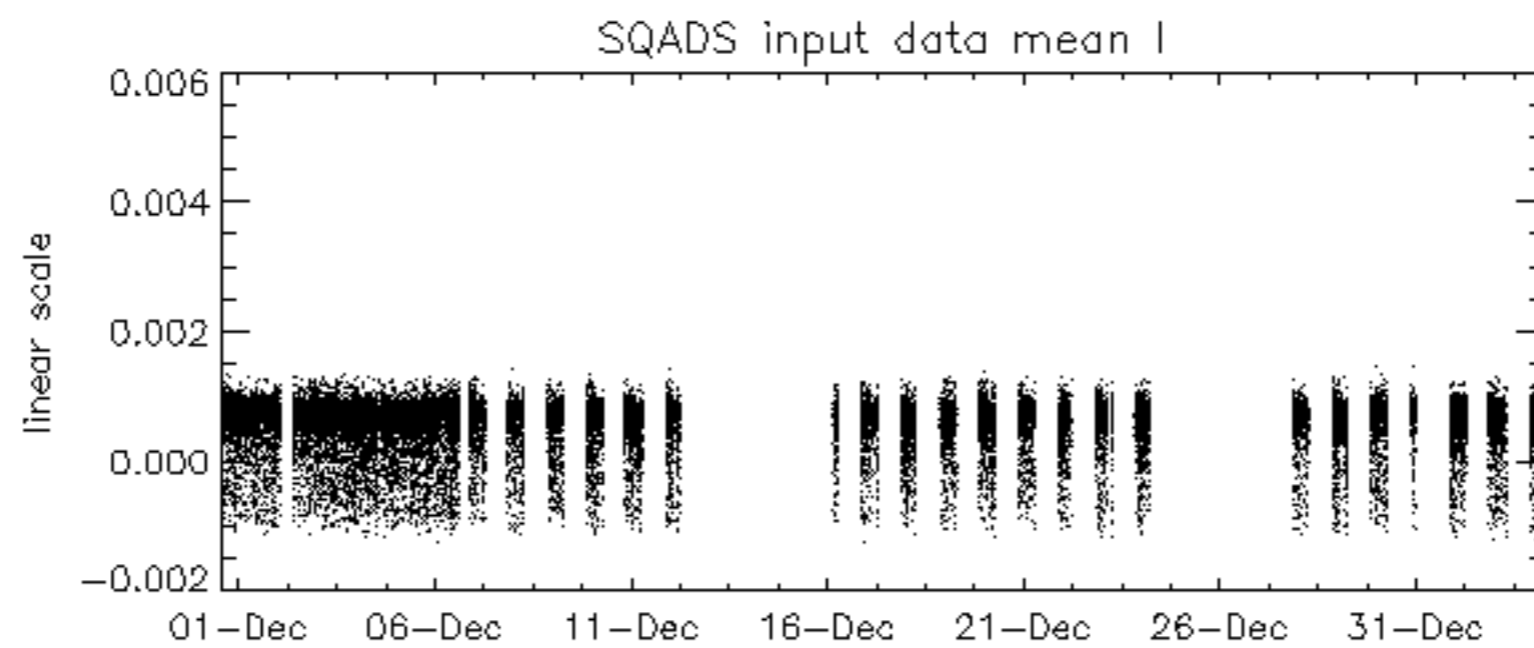
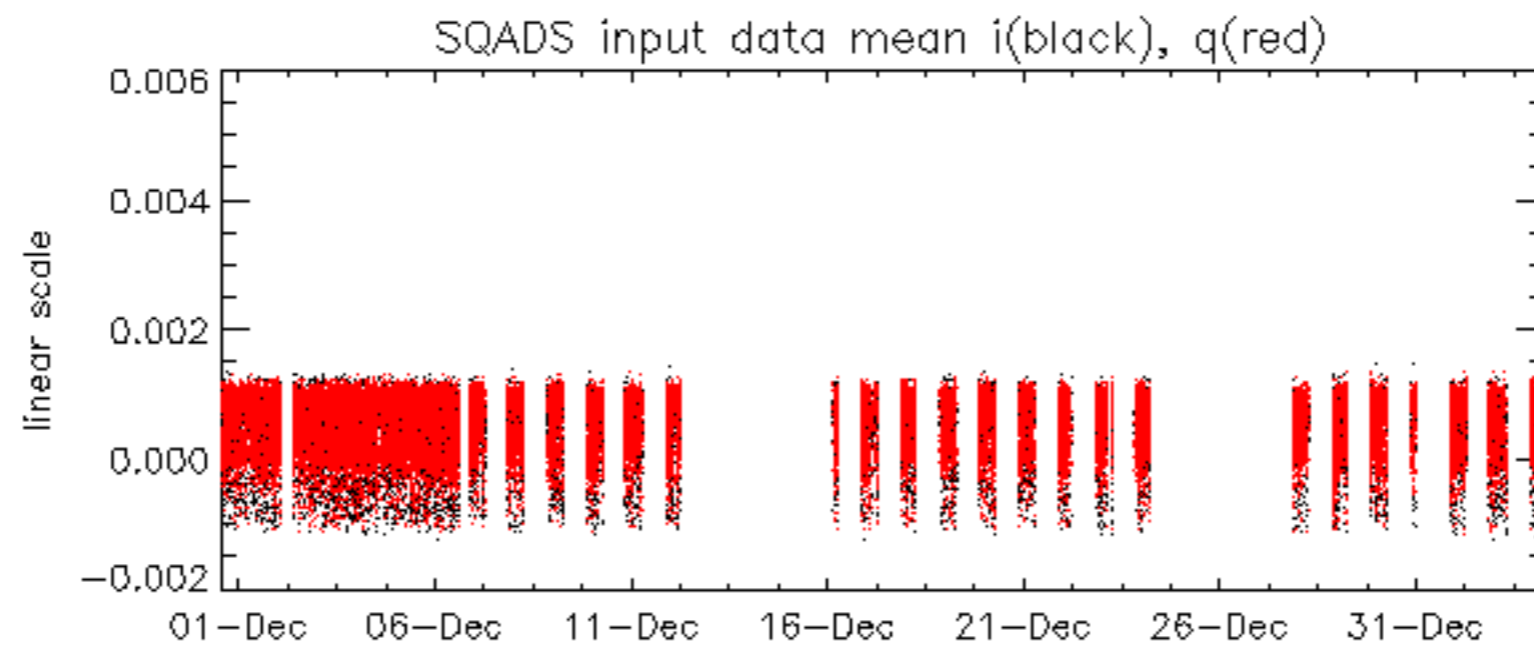


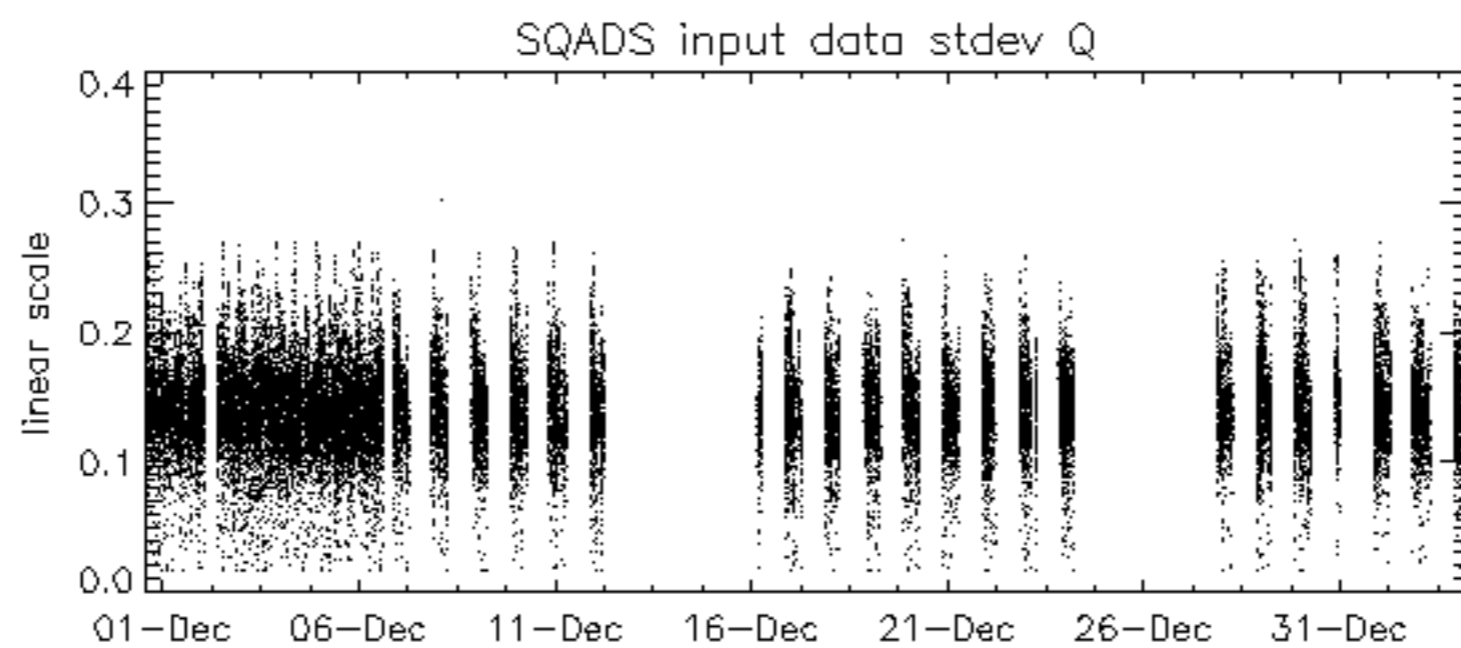
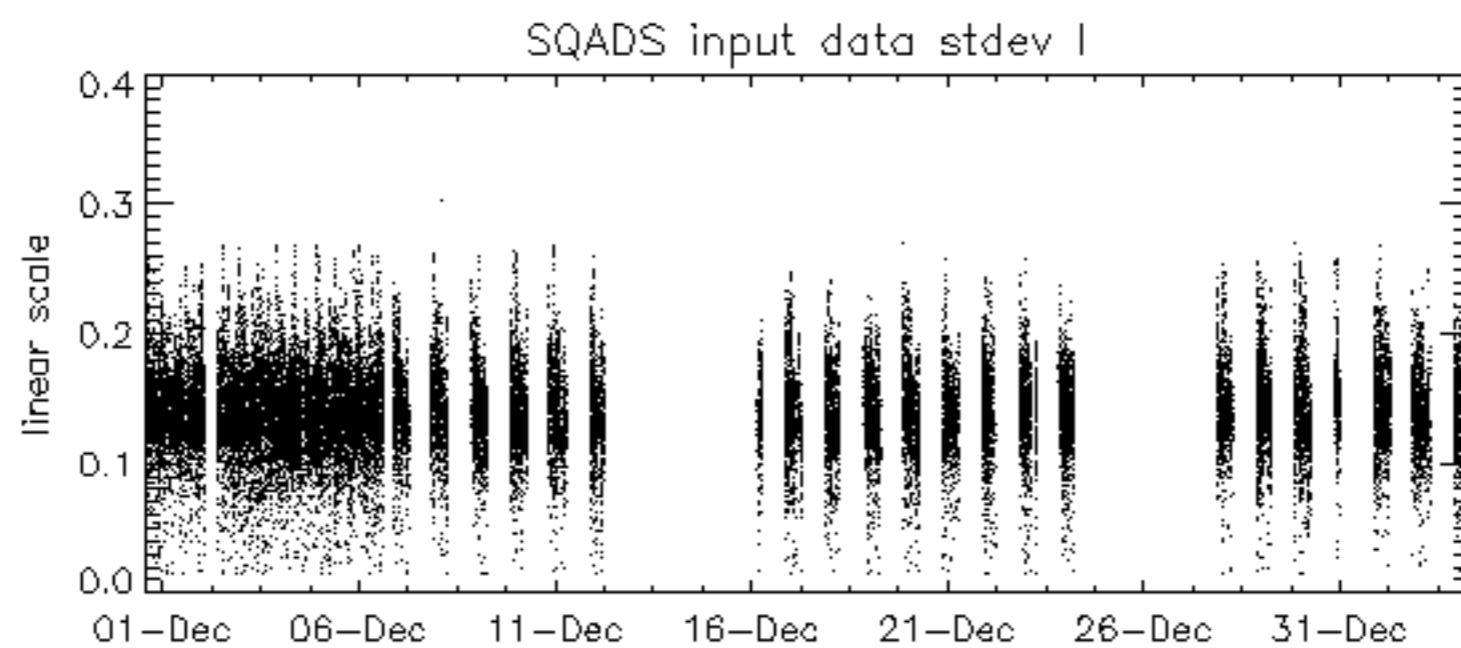
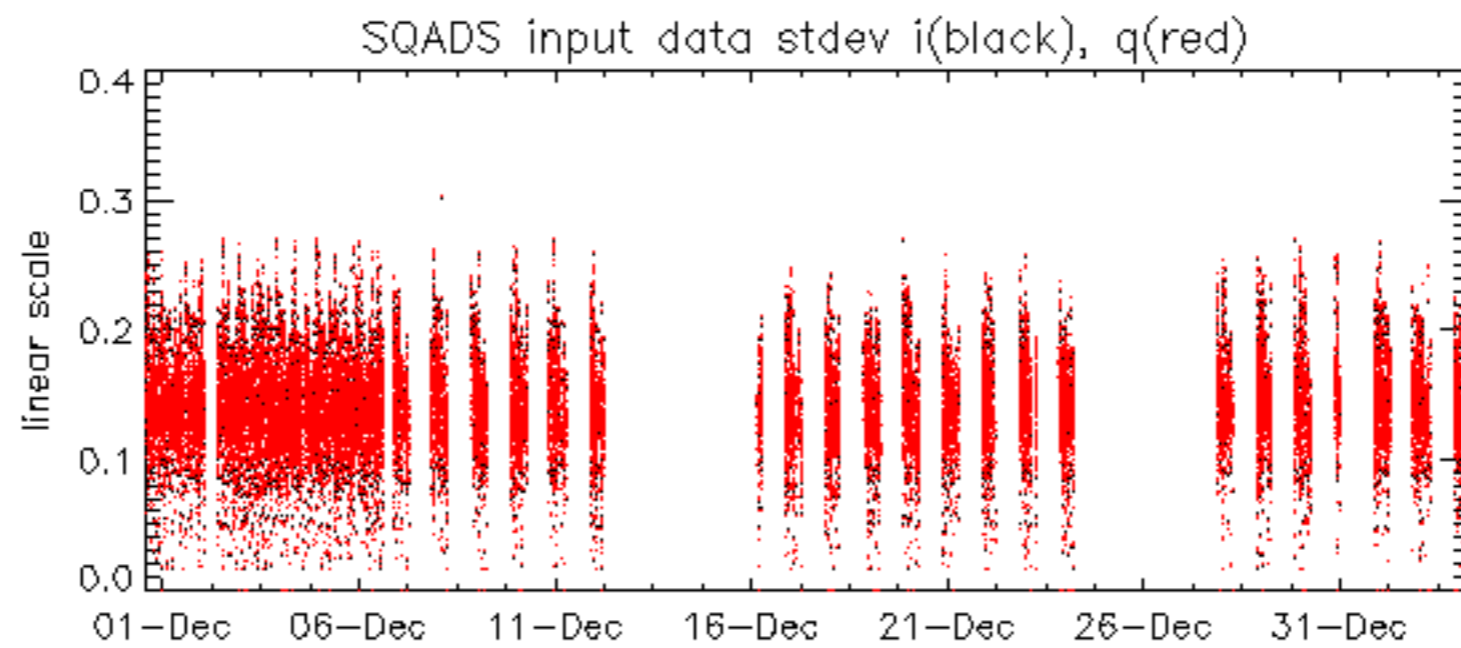






















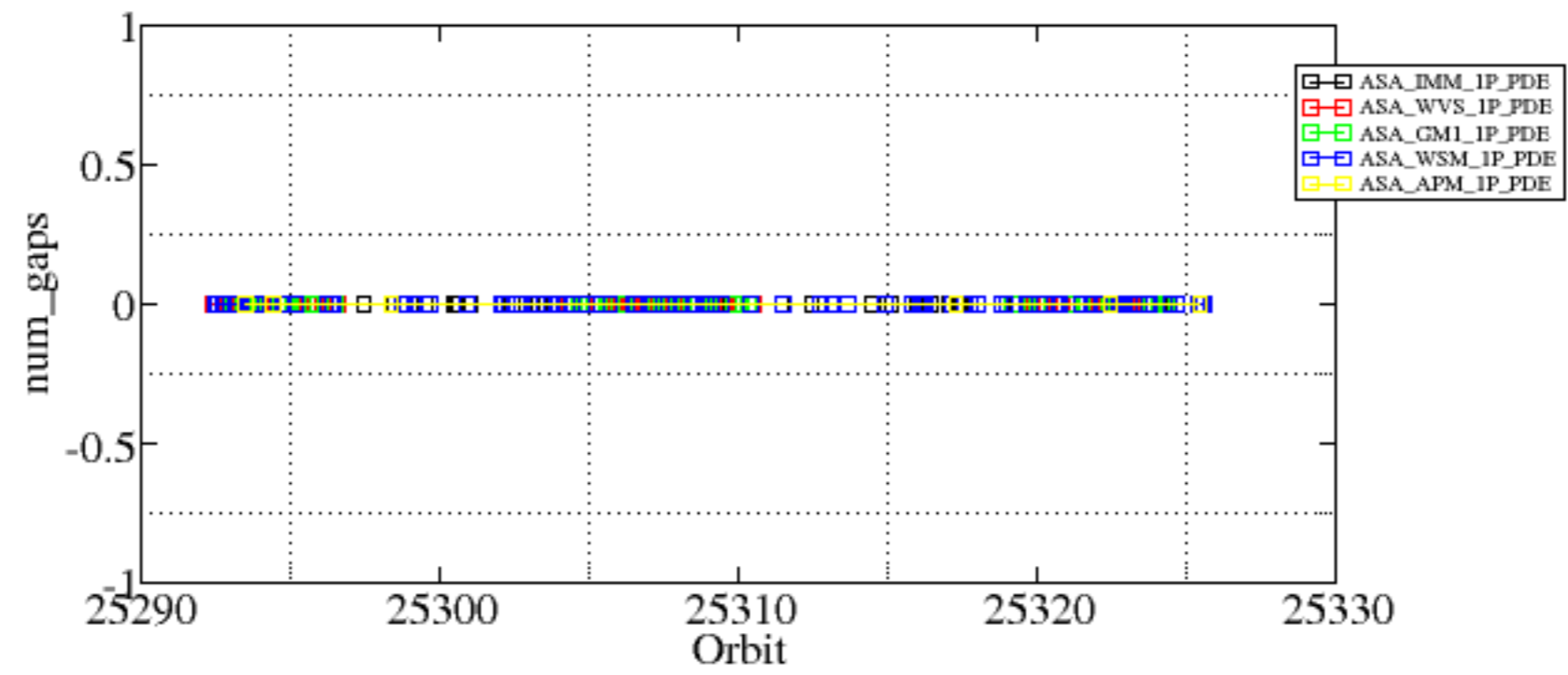


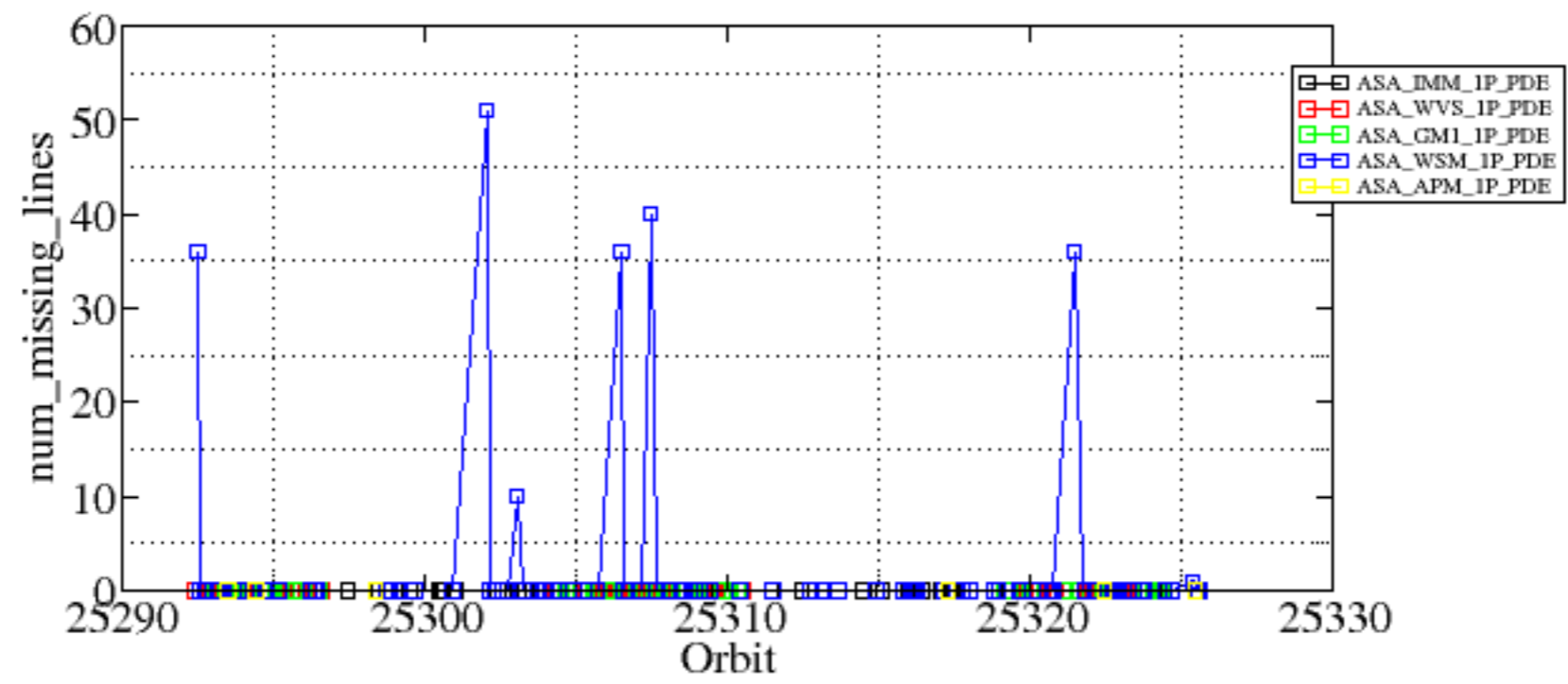


Summary of analysis for the last 3 days 2007010[123]

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_WSM_1PNPDE20070101_001945_000003242054_00188_25292_5736.N1	0	36
ASA_WSM_1PNPDE20070101_162341_000002442054_00198_25302_6523.N1	0	51
ASA_WSM_1PNPDE20070101_180340_000001092054_00199_25303_6563.N1	0	10
ASA_WSM_1PNPDE20070101_234907_000002872054_00202_25306_7044.N1	0	36
ASA_WSM_1PNPDE20070102_012643_000001402054_00203_25307_7173.N1	0	40
ASA_WSM_1PNPDE20070103_005606_000003242054_00217_25321_9226.N1	0	36
ASA_WSM_1PNPDE20070103_072858_000003062054_00221_25325_9975.N1	0	1





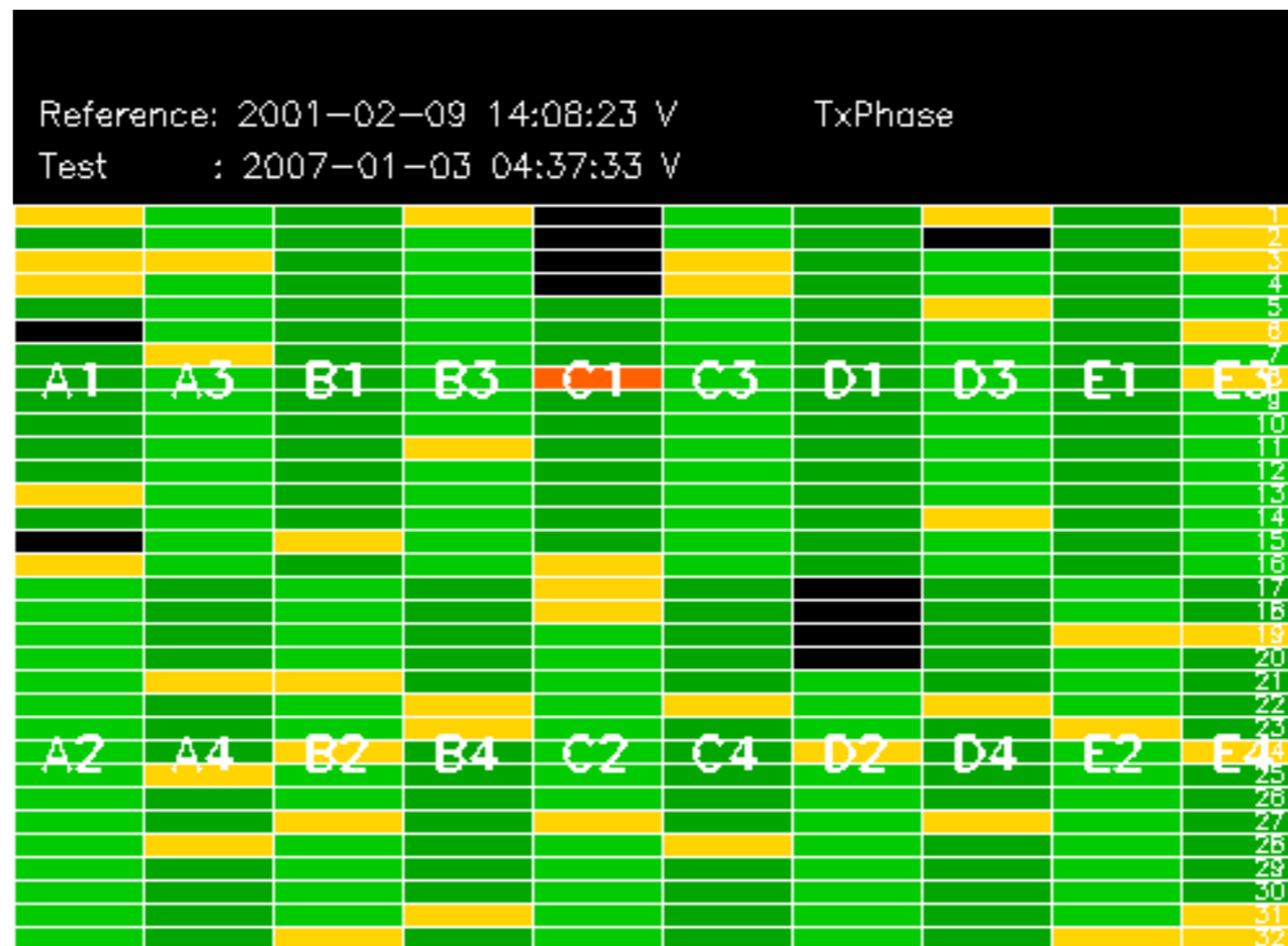




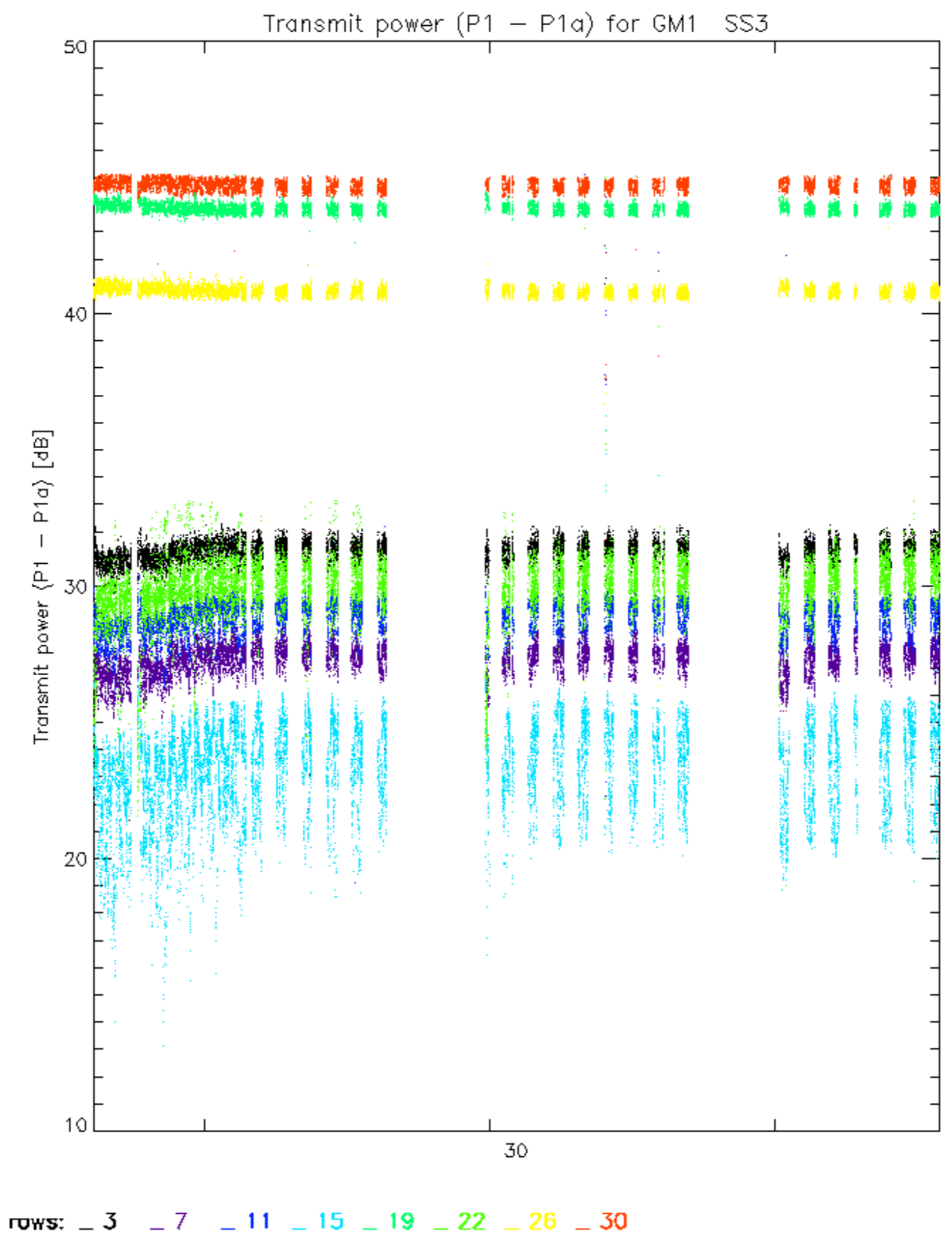


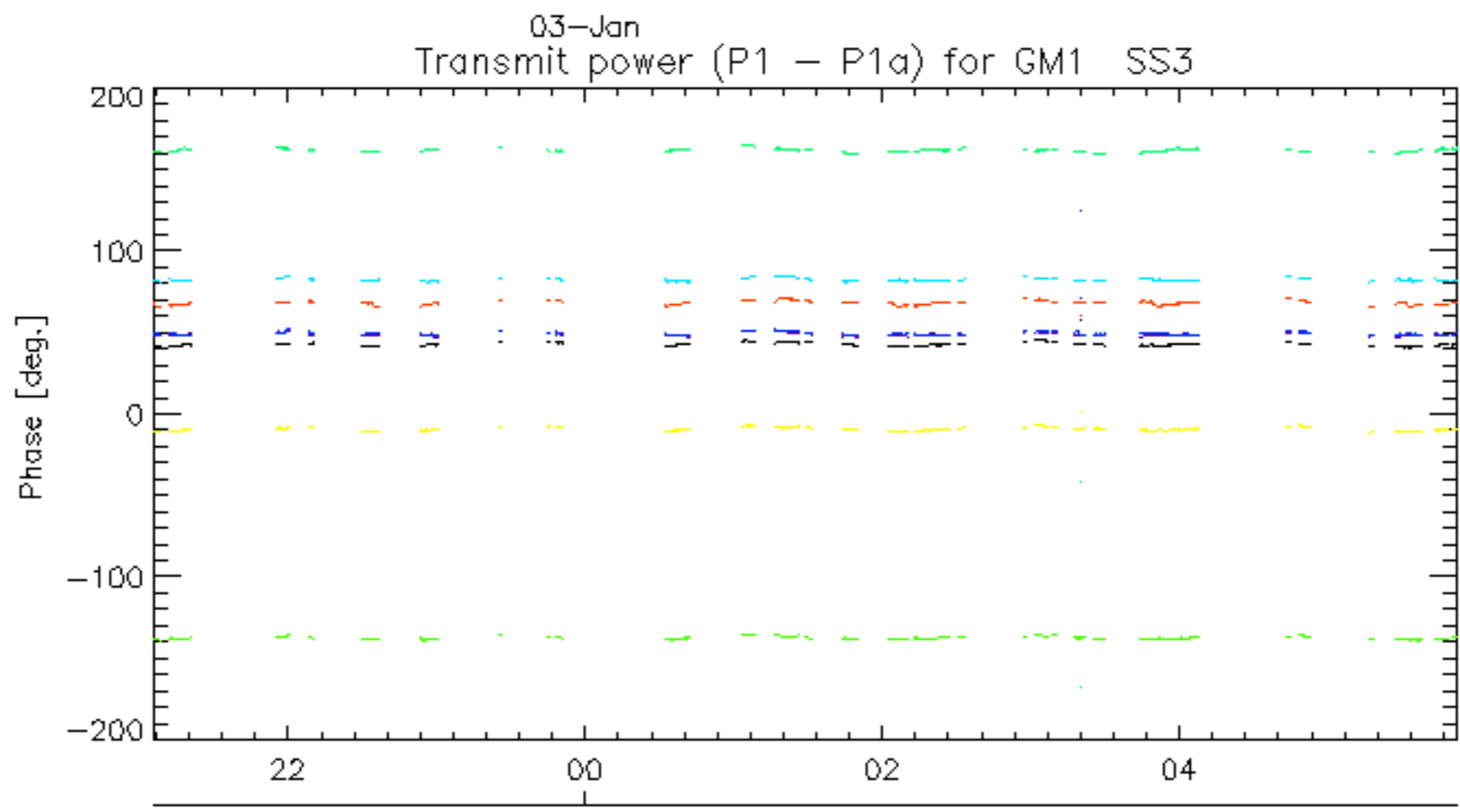
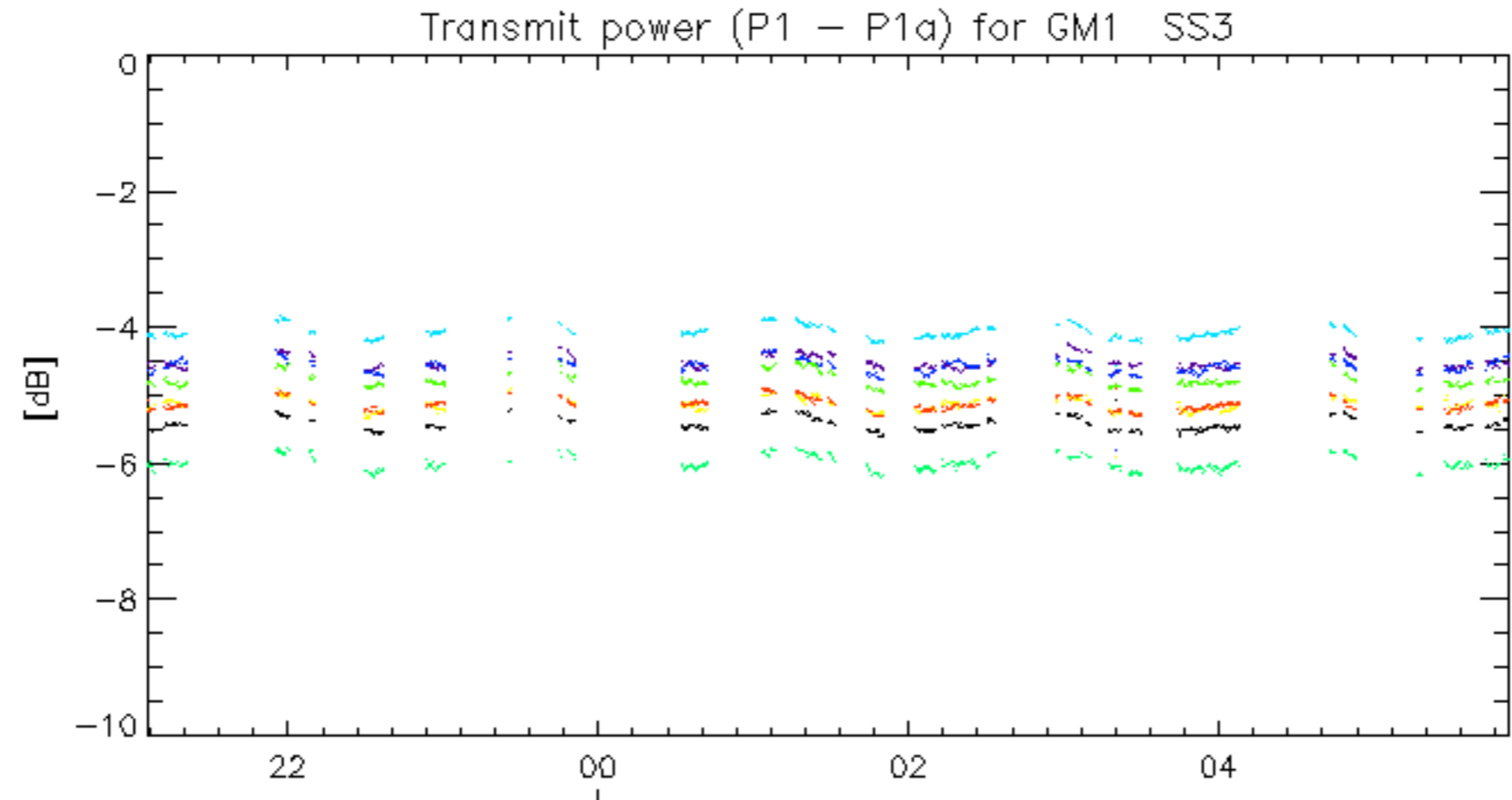








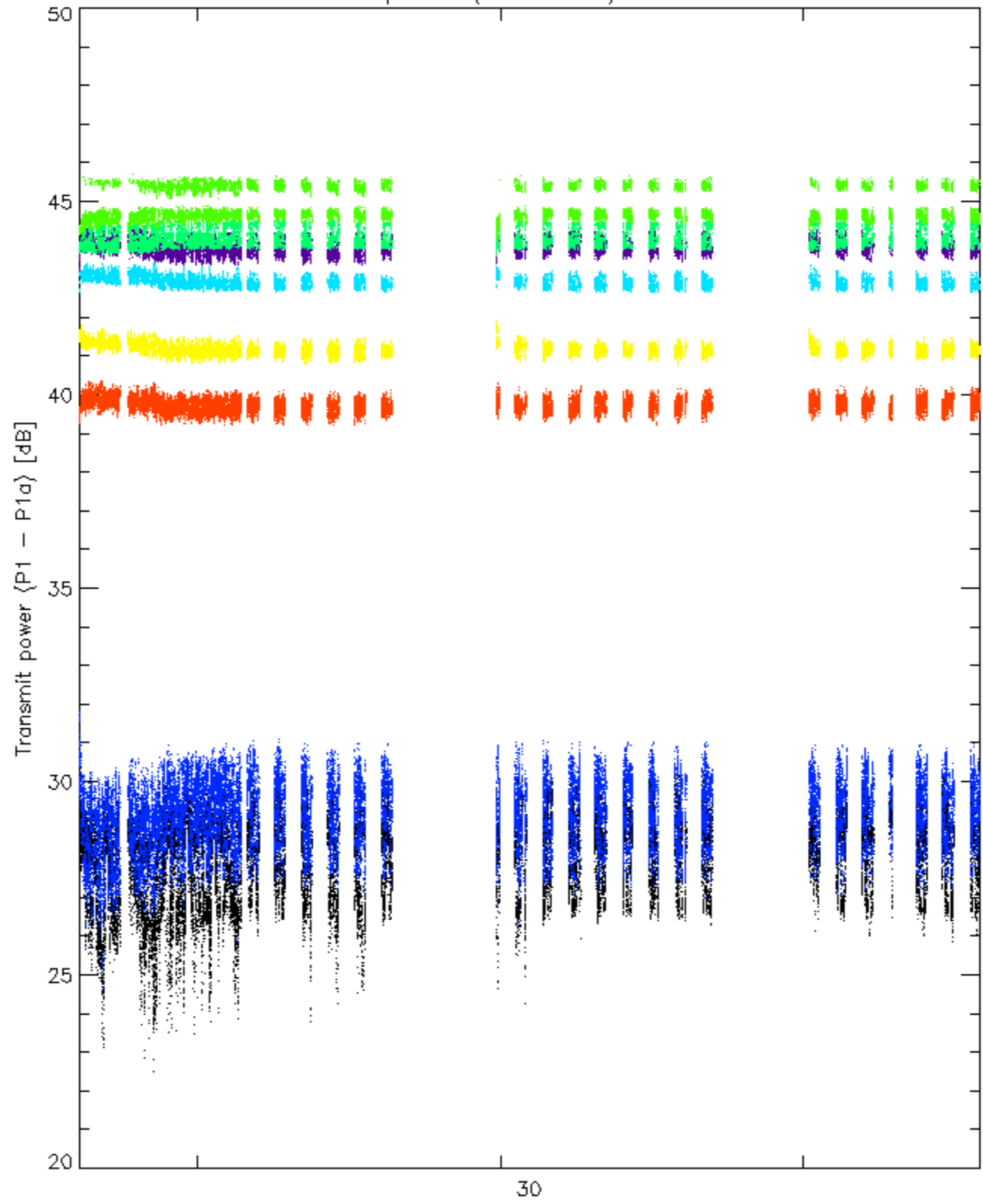




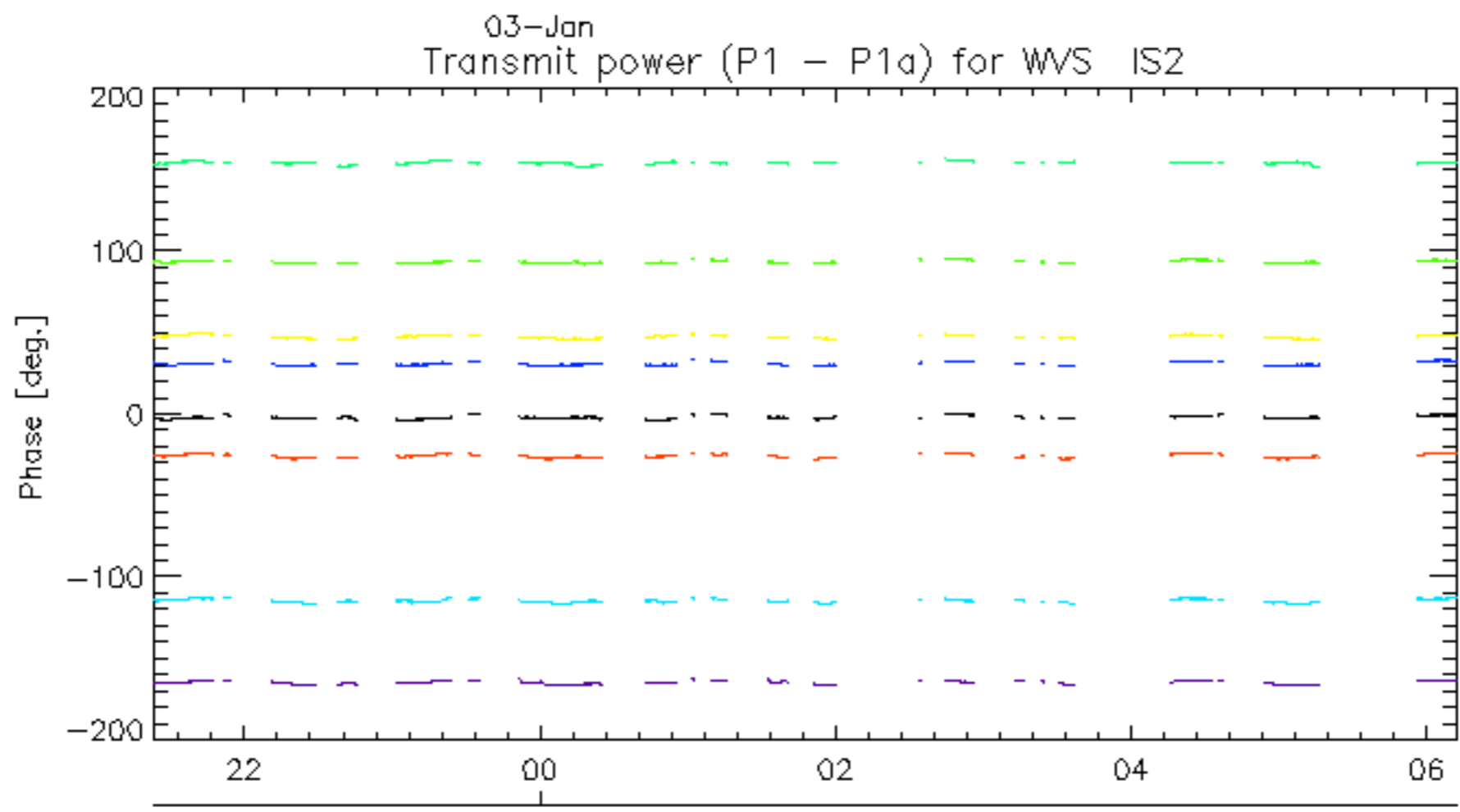
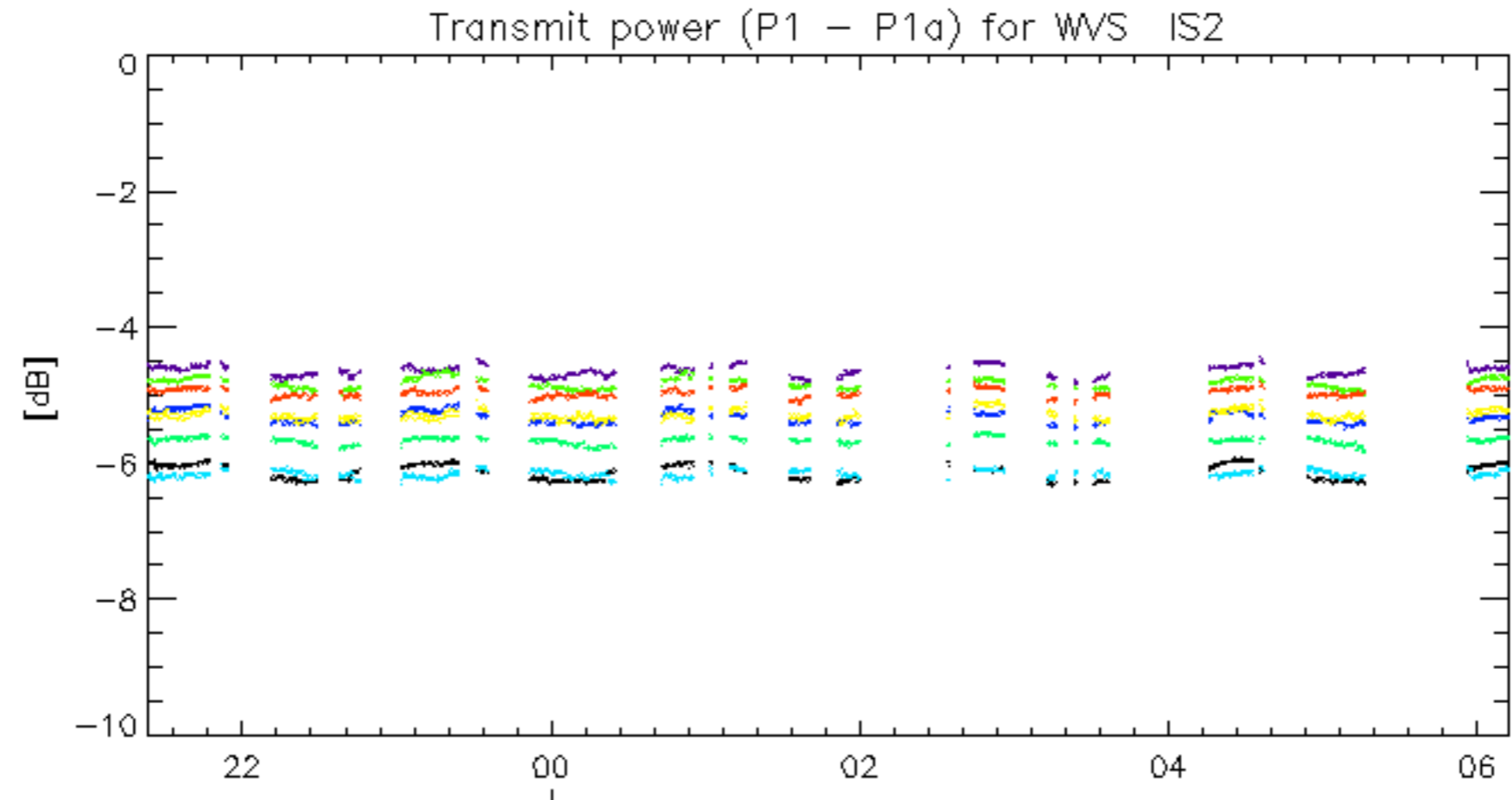
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



Transmit power (P1 - P1a) for WVS IS2



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



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

No unavailabilities during the reported period.