

# PRELIMINARY REPORT OF 070224

last update on Sat Feb 24 16:24:19 GMT 2007

Due to an ASAR test acquisition campaign, the daily analysis on WVS products will be based on IS4 instead of IS2 during the following periods:

From orbit 25621 (23-Jan-2007) to 25720 (30-Jan-2007) in HH polarization  
From orbit 26122 (27-Feb-2007) to 26221 (06-Mar-2007) in HH polarization  
From orbit 25721 (30-Jan-2007) to 25820 (06-Feb-2007) in VV polarization  
From orbit 26222 (06-Mar-2007) to 26321 (13-Mar-2007) in VV polarization

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## 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 2007-02-23 00:00:00 to 2007-02-24 16:24:19

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	40	68	11	0	21
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	40	68	11	0	21
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	40	68	11	0	21
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	40	68	11	0	21

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	34	33	60	11	17
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	34	33	60	11	17
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	34	33	60	11	17
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	34	33	60	11	17

## 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	20070222 100804
H	20070223 143815

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

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☒

#### 4.1.2 - Evolution for GM1

##### Evolution of cal pulses for GM1

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☒

## 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	-15.139049	0.219078	1.189428
7	P1a	-17.401875	0.106035	-0.131144
11	P1a	-17.310314	0.350068	0.086403
15	P1a	-12.839390	0.104934	-0.112994
19	P1a	-15.086635	0.092646	-0.010564
22	P1a	-15.483347	0.477046	-0.003655
26	P1a	-15.025106	0.208638	-0.220238
30	P1a	-17.307800	0.343306	-0.198037

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.626544	0.137163	-1.266888
7	P1	-3.102327	0.009215	-0.024471
11	P1	-4.124219	0.019313	-0.014606
15	P1	-6.326976	0.016016	-0.053637
19	P1	-3.708447	0.008679	-0.014873
22	P1	-4.668126	0.014260	0.025886
26	P1	-3.927696	0.013008	-0.004779
30	P1	-5.913620	0.011807	-0.003108

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.549976	0.244200	-1.365717
7	P2	-21.592924	0.083775	0.098660
11	P2	-15.479688	0.101151	0.012831
15	P2	-7.006109	0.098190	0.004284

19	P2	-9.073529	0.086548	0.010785
22	P2	-18.097681	0.081447	-0.023447
26	P2	-16.496622	0.094578	-0.002686
30	P2	-19.327438	0.077382	0.010085

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.194181	0.007681	0.019514
7	P3	-8.194181	0.007681	0.019514
11	P3	-8.194181	0.007681	0.019514
15	P3	-8.194181	0.007681	0.019514
19	P3	-8.194181	0.007681	0.019514
22	P3	-8.194181	0.007681	0.019514
26	P3	-8.194181	0.007681	0.019514
30	P3	-8.194181	0.007681	0.019514

**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	-11.287521	0.137608	0.964842
7	P1a	-10.036661	0.063943	-0.048321
11	P1a	-10.586983	0.058158	-0.211854
15	P1a	-10.855801	0.131552	-0.088198
19	P1a	-15.738953	0.064562	0.031909
22	P1a	-20.863388	1.268027	0.284790
26	P1a	-15.418693	0.264717	0.245329
30	P1a	-18.337961	0.358371	-0.077328

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
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3	P1	-7.031441	3.723232	-6.072147
7	P1	-2.434190	0.005894	0.023636
11	P1	-2.886179	0.015920	-0.082237
15	P1	-3.803676	0.033149	-0.090144
19	P1	-3.549599	0.012458	0.000554
22	P1	-5.025211	0.022709	-0.007705
26	P1	-5.986498	0.023551	0.048123
30	P1	-5.284276	0.022774	0.025270

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.499649	0.749298	-2.620231
7	P2	-21.988821	0.053085	0.150708
11	P2	-10.667940	0.030637	0.089858
15	P2	-4.821713	0.027180	0.069759
19	P2	-6.818611	0.028412	0.078223
22	P2	-8.124411	0.029798	0.092660
26	P2	-24.247524	0.032187	0.025162
30	P2	-21.769865	0.036085	0.109505

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.042431	0.003235	0.044635
7	P3	-8.042434	0.003248	0.044469
11	P3	-8.042514	0.003240	0.044184
15	P3	-8.042433	0.003248	0.044472
19	P3	-8.042460	0.003232	0.044335
22	P3	-8.042551	0.003240	0.044293
26	P3	-8.042415	0.003240	0.044440
30	P3	-8.042459	0.003248	0.044233

## 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	0.000617432
	stdev	2.36689e-07
MEAN Q	mean	0.000391378
	stdev	2.50845e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.106260
	stdev	0.00258270
STDEV Q	mean	0.106303
	stdev	0.00263269



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007022[234]

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
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ASA_WSM_1PNPDE20070222_172653_000001032055_00442_26047_8220.N1	0	12
ASA_WSM_1PNPDE20070222_190519_000001092055_00443_26048_8248.N1	0	65
ASA_WSM_1PNPDE20070223_023249_000000852055_00447_26052_8839.N1	0	29
ASA_WSM_1PNPDE20070223_153029_000000242055_00455_26060_9423.N1	2	470
ASA_WSM_1PNPDK20070222_140625_000000852055_00440_26045_4805.N1	0	16
ASA_WSM_1PNPDK20070224_094429_000000852055_00466_26071_6572.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)	
<input type="checkbox"/>	Ascending
<input type="checkbox"/>	Descending

### 7.2 - Absolute Doppler for WVS

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

Descending

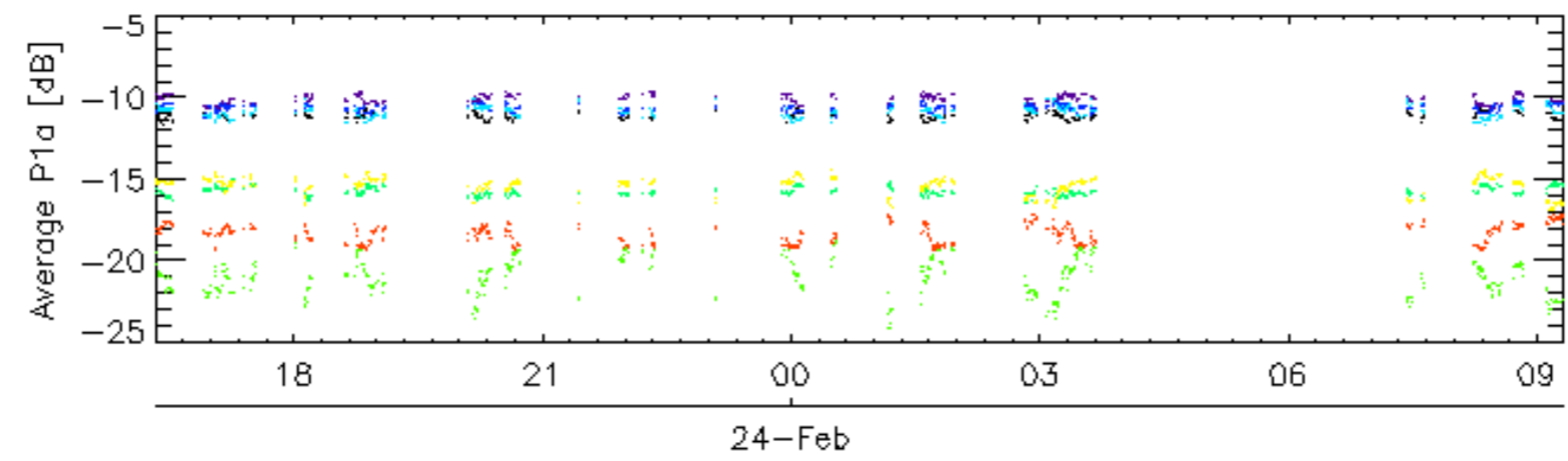
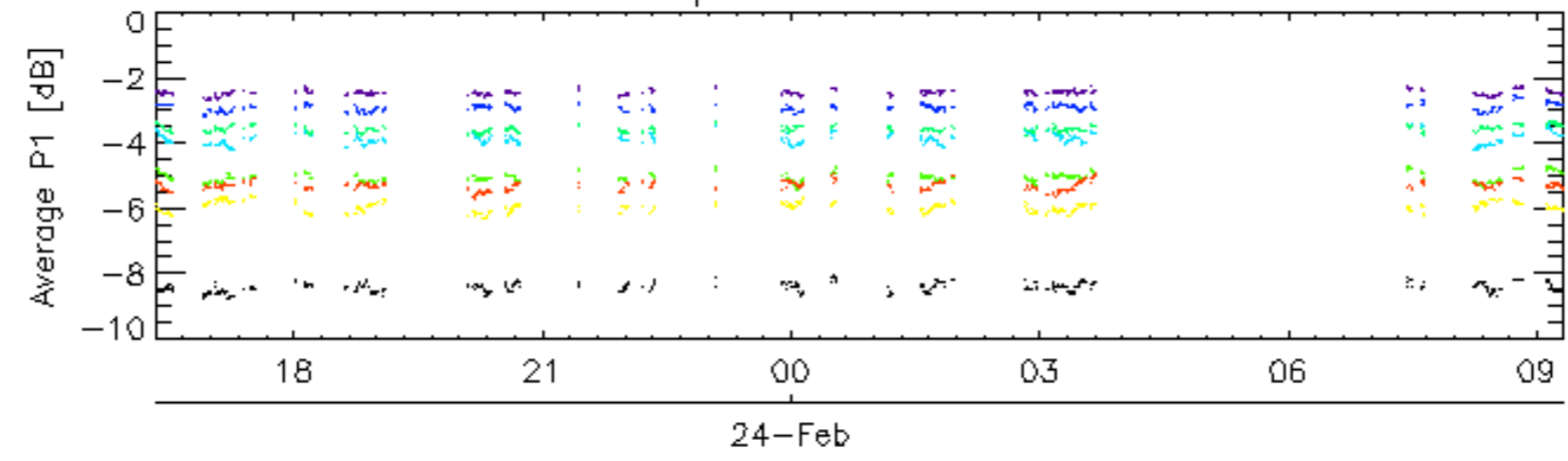
**7.5 - Absolute Doppler for GM1****Evolution of Absolute Doppler**

Acsending

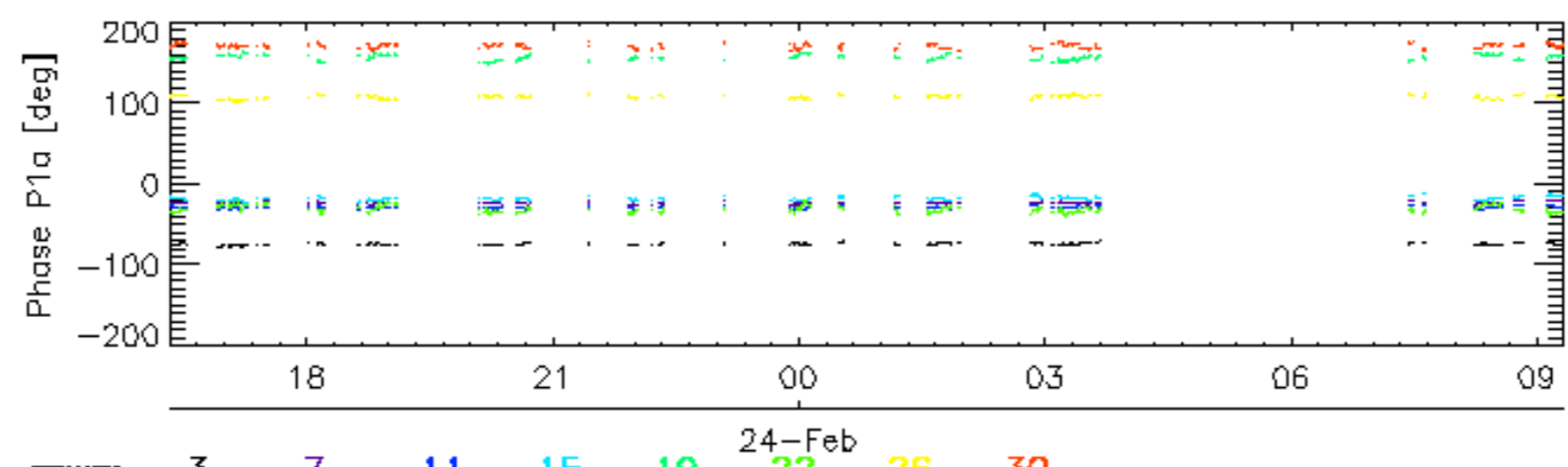
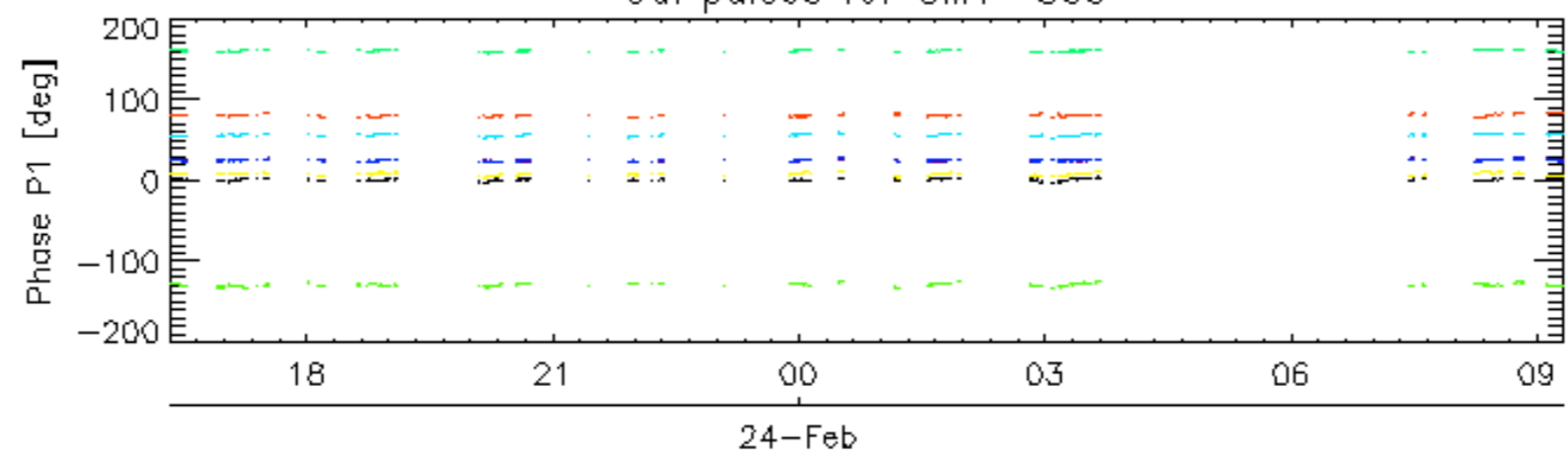
Descending

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

Cal pulses for GM1 SS3

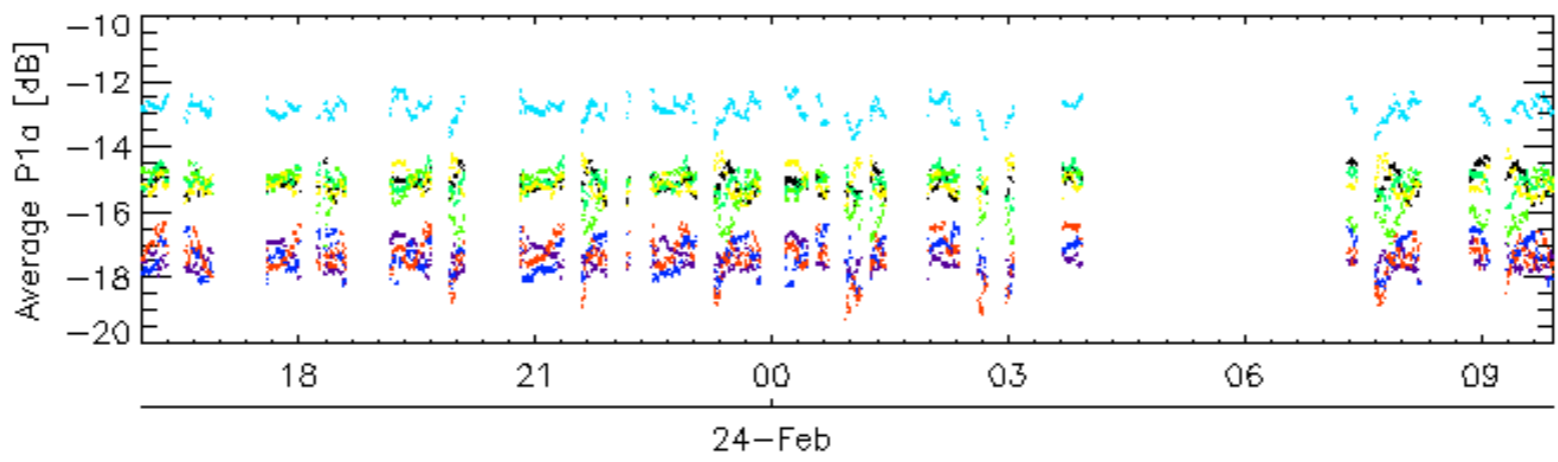
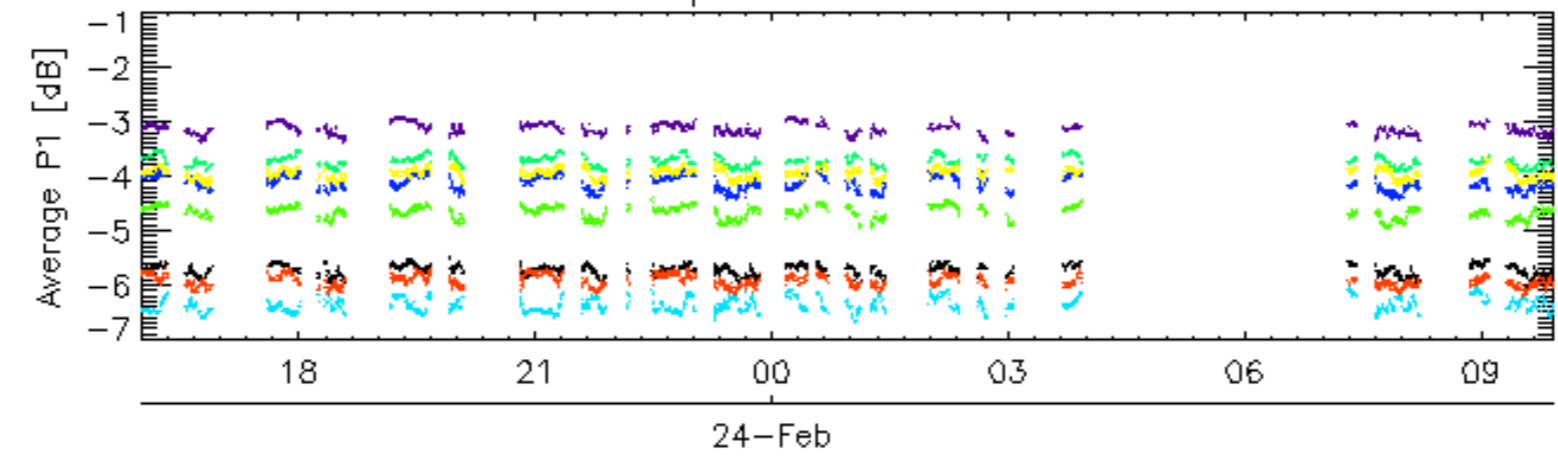


Cal pulses for GM1 SS3

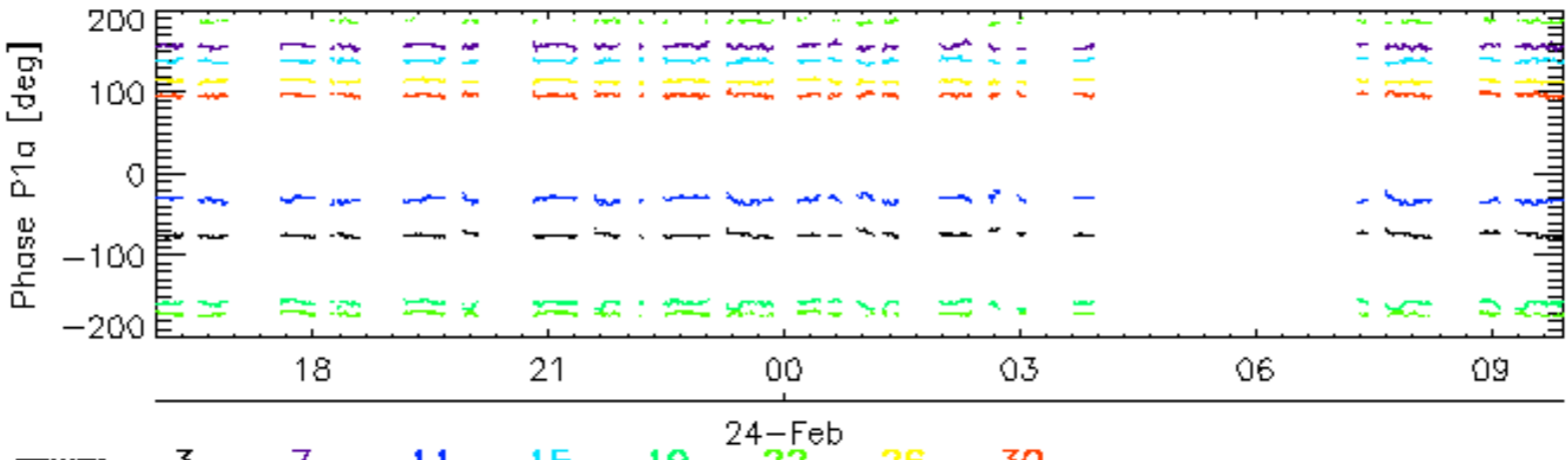
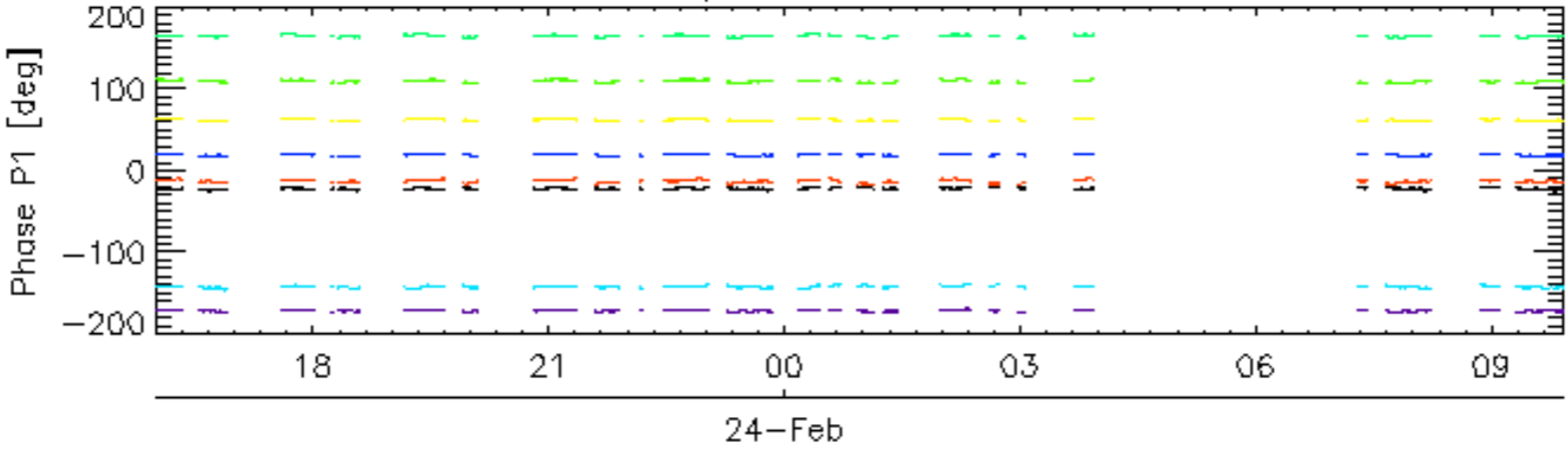


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2

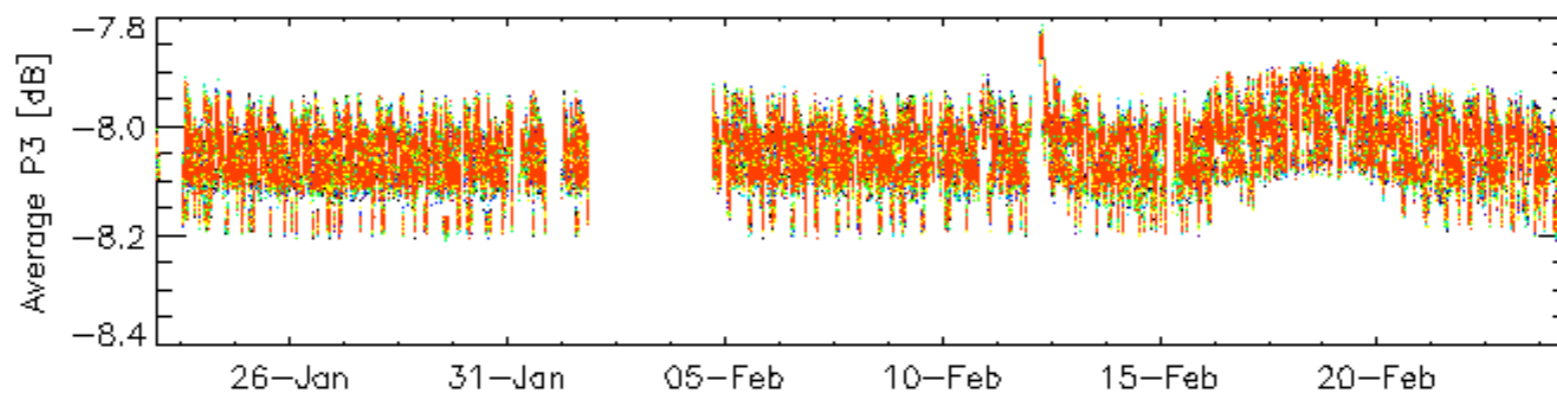
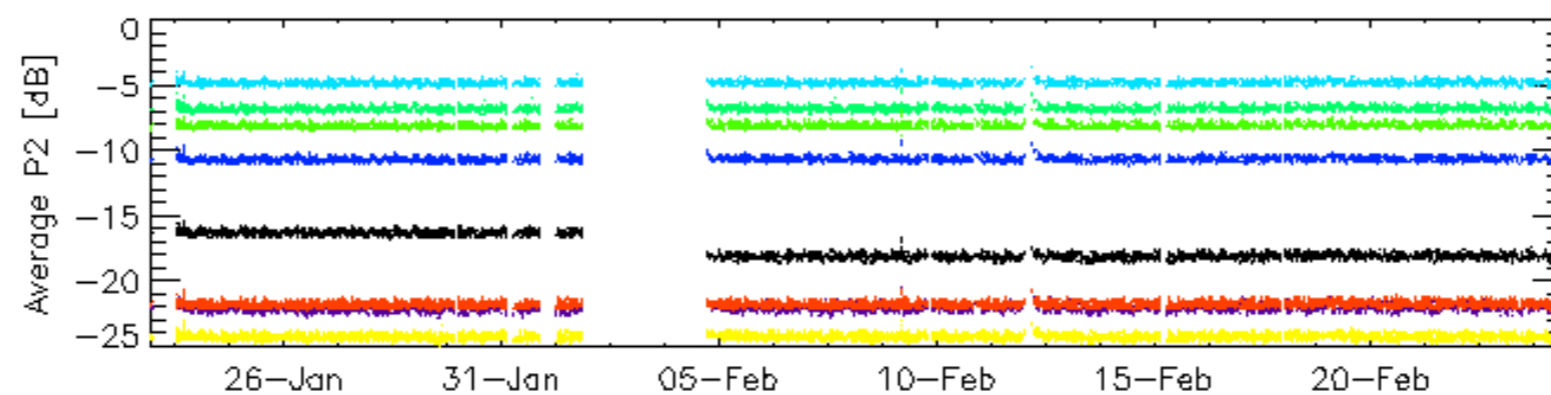
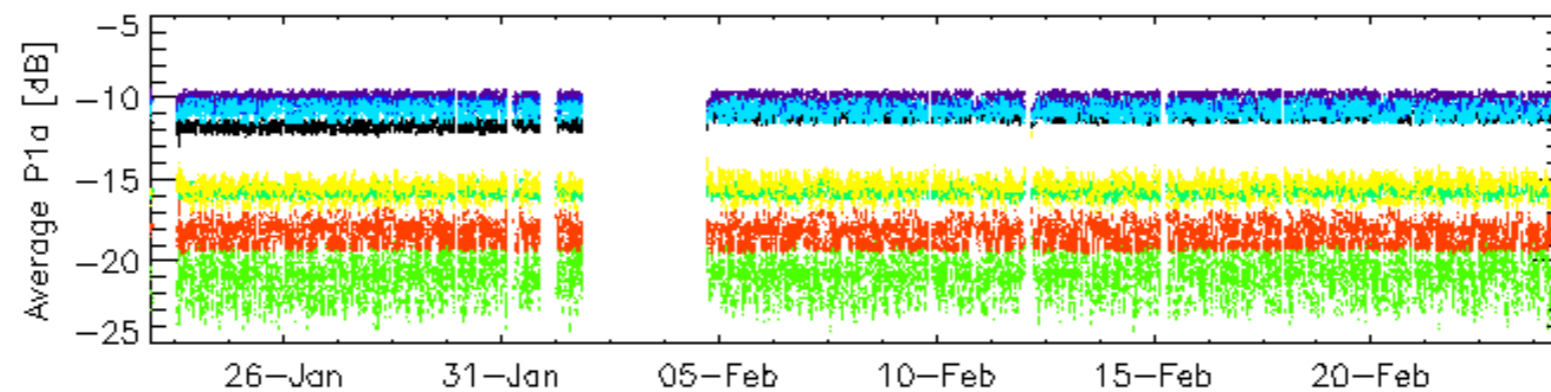
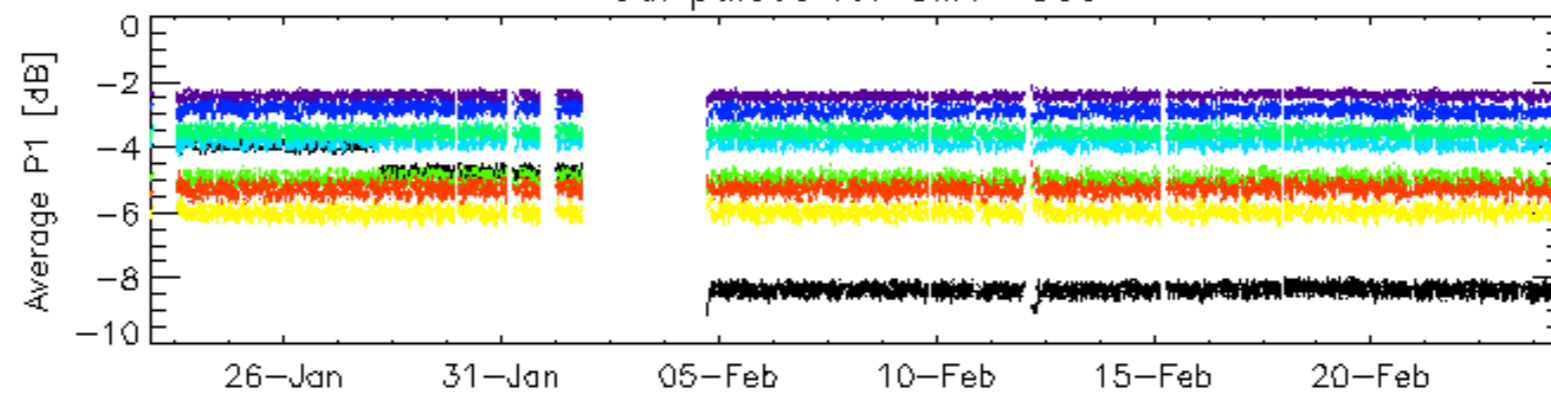


Cal pulses for WVS IS2



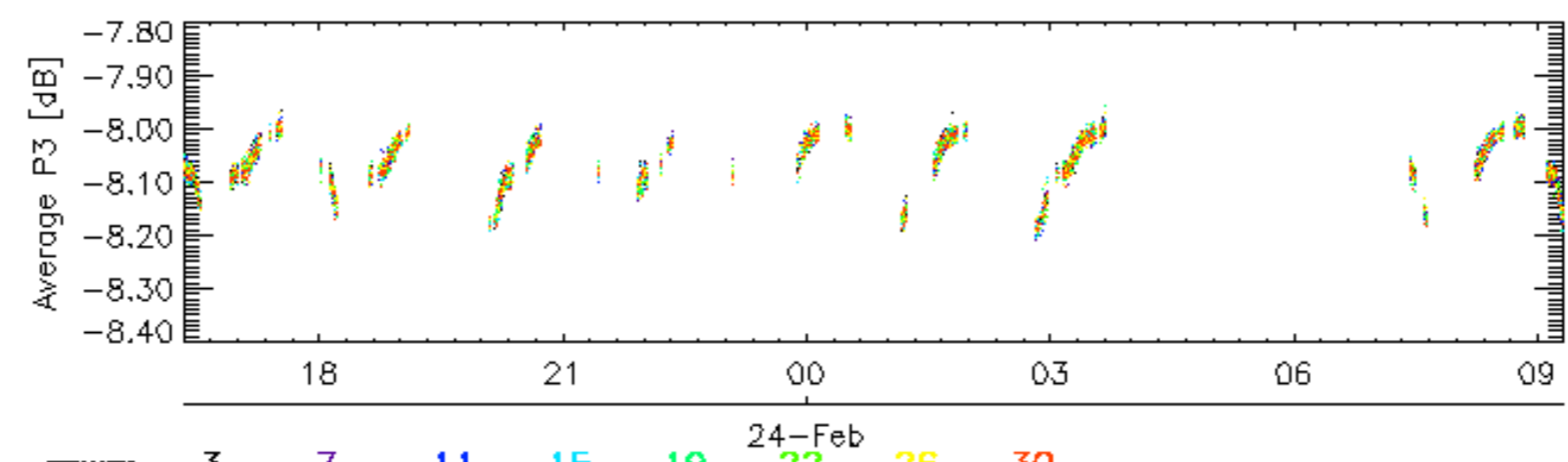
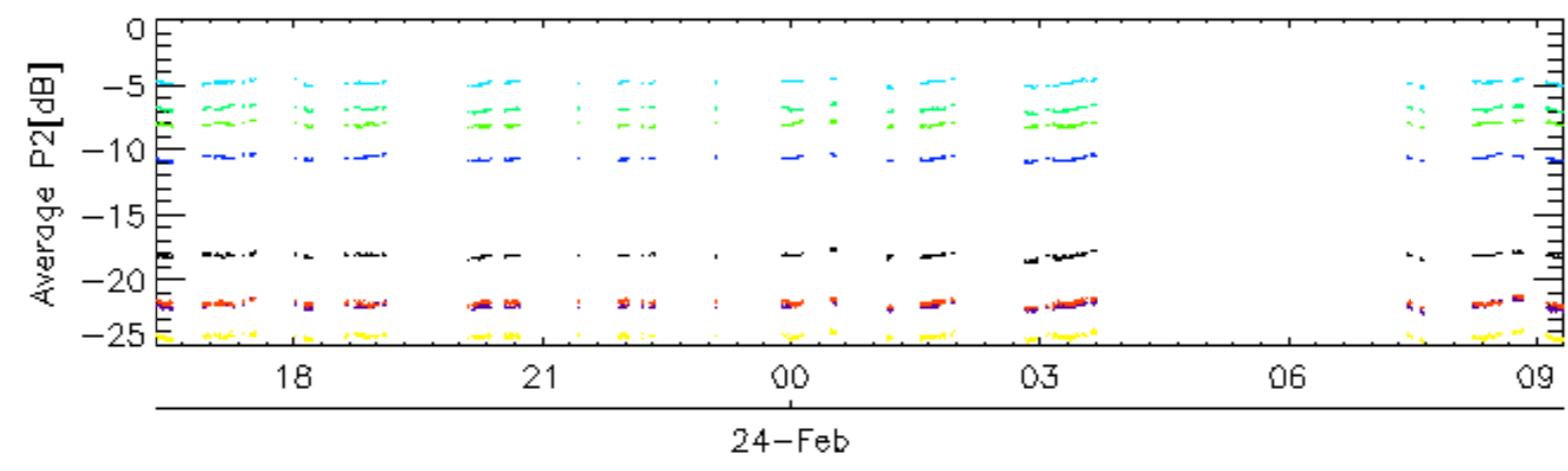
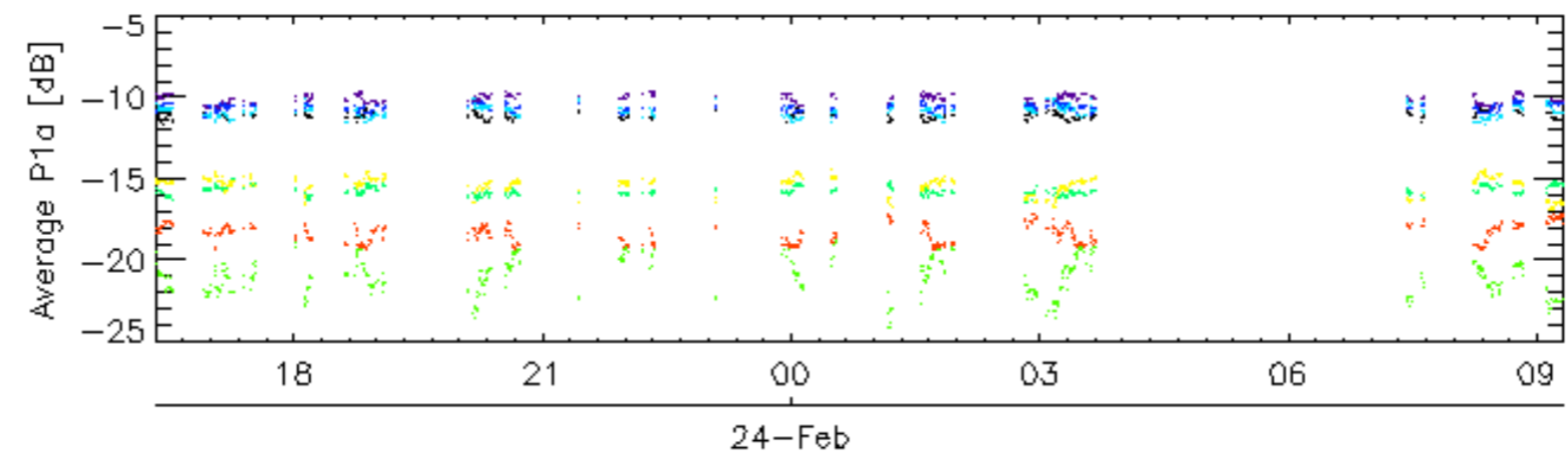
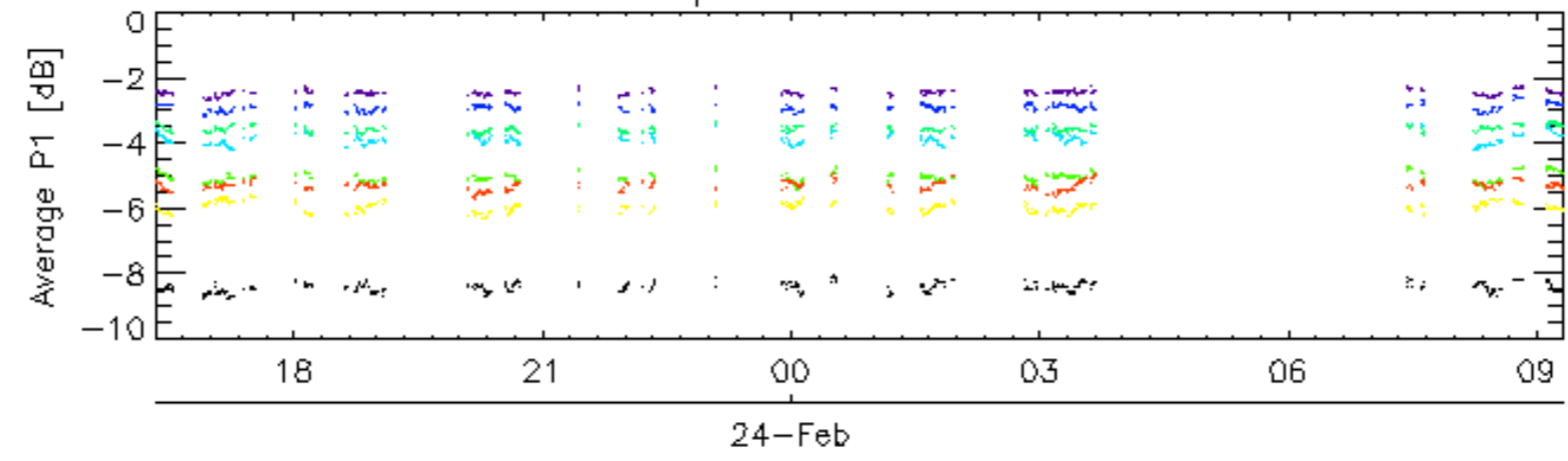
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



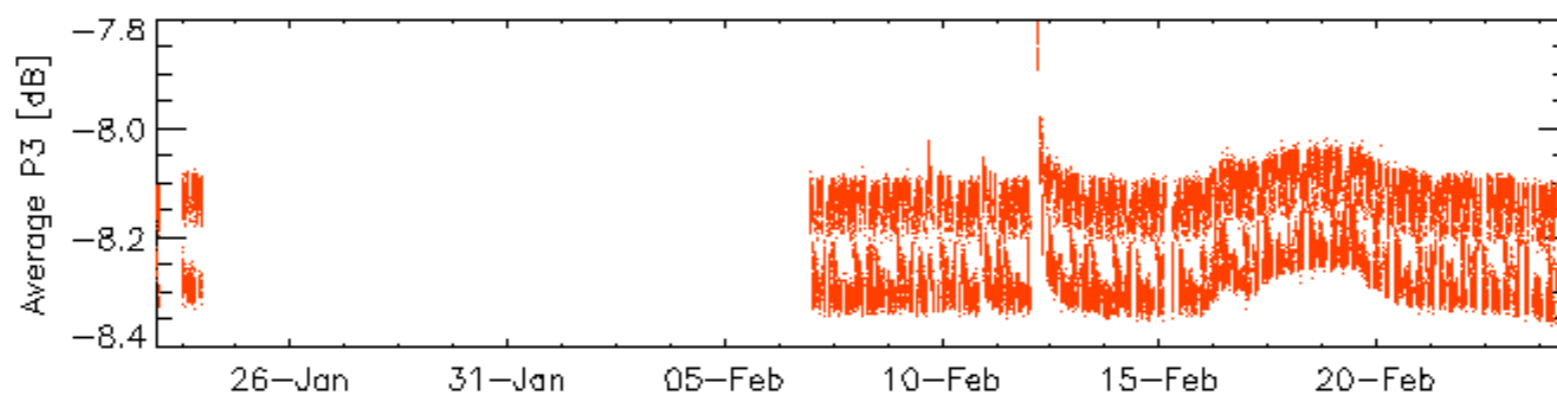
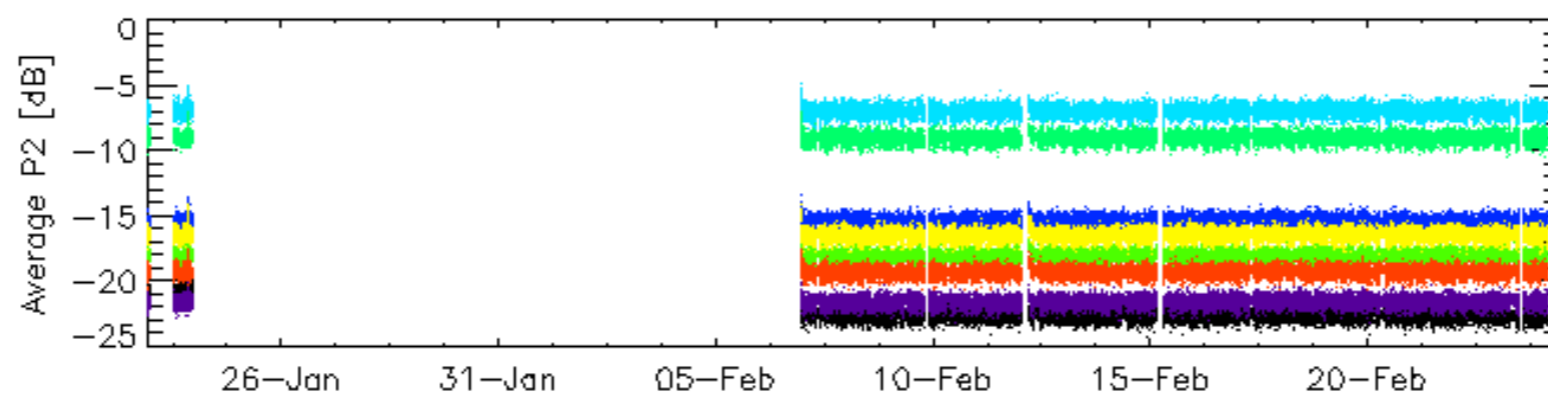
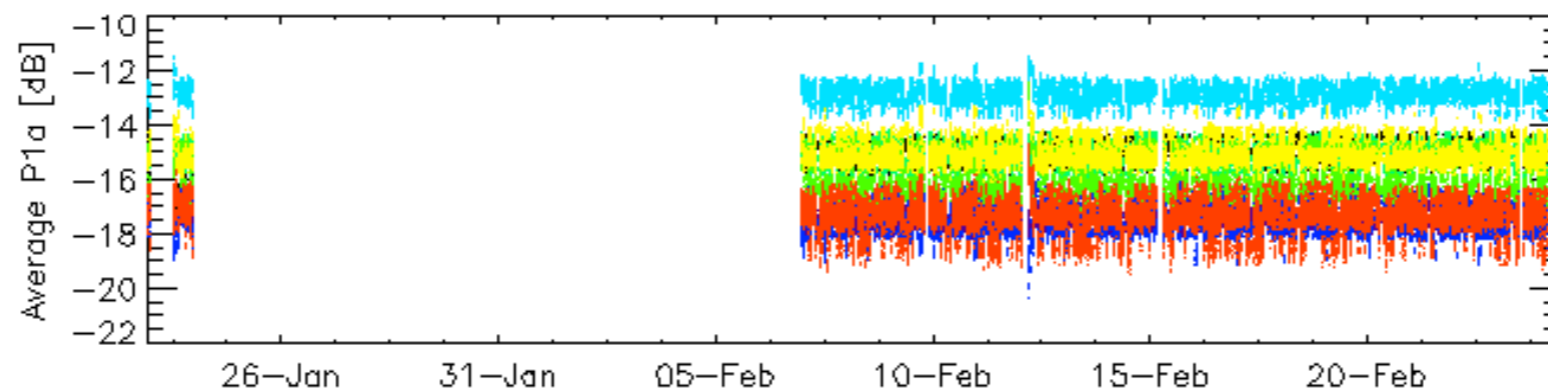
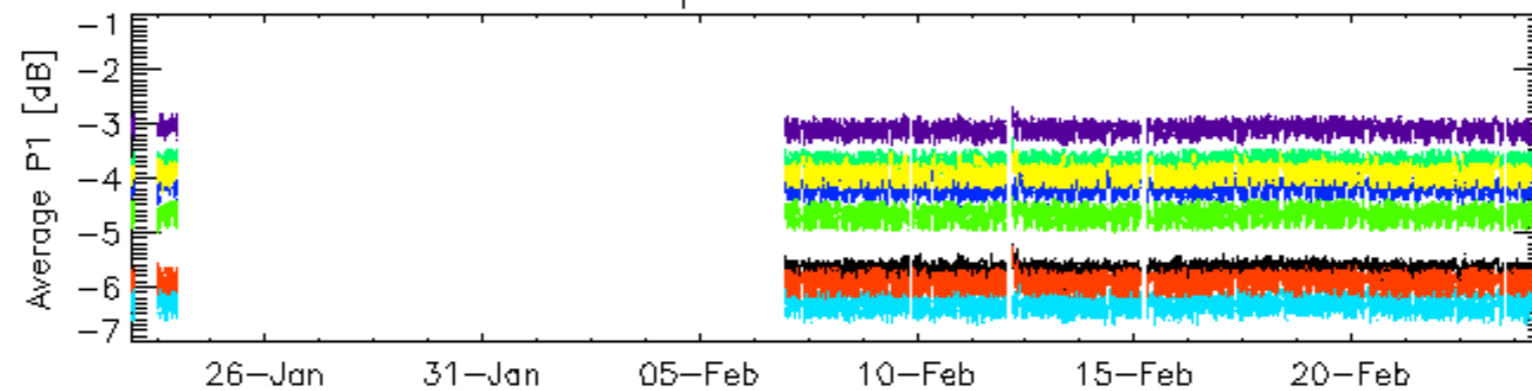
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



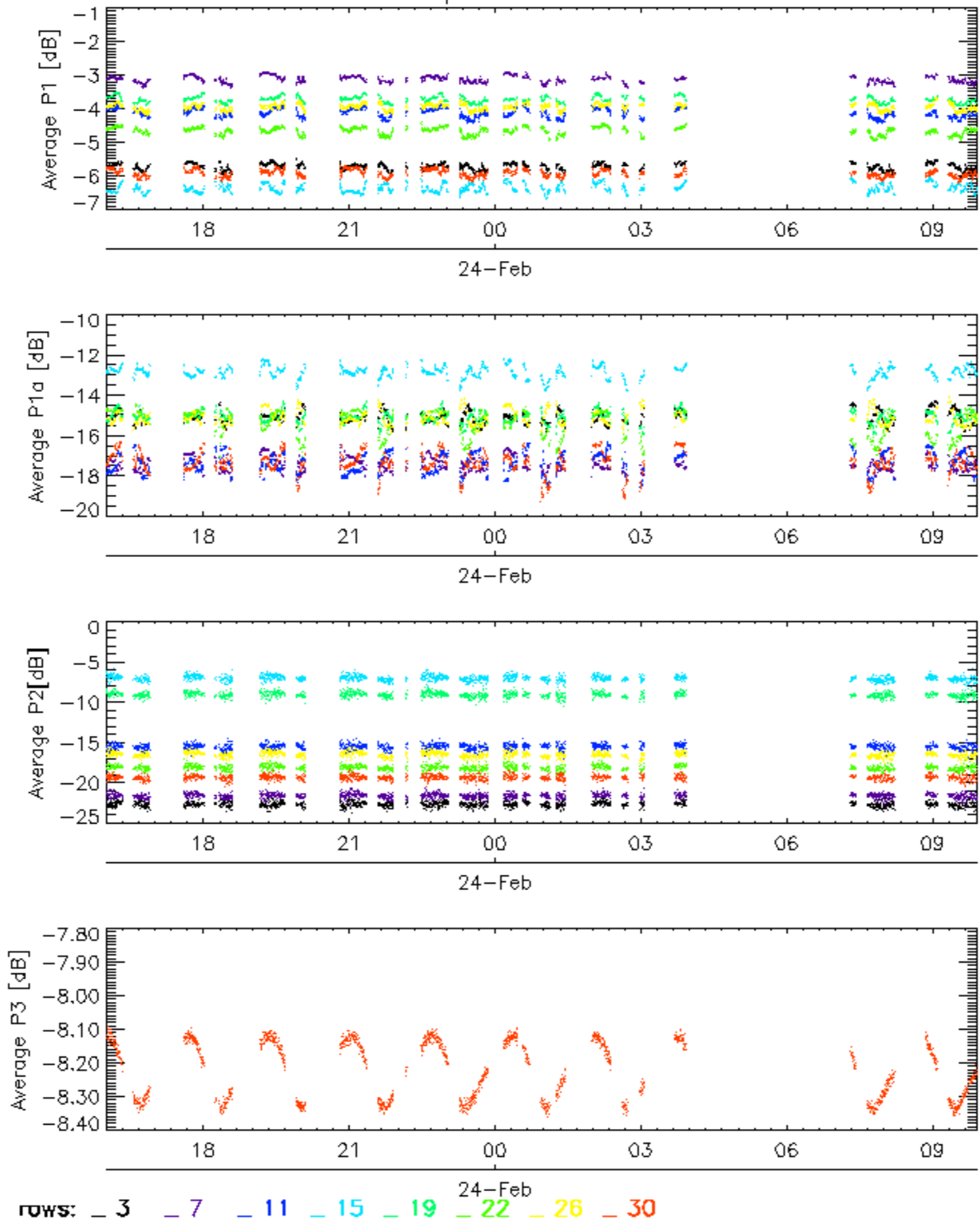
rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2



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

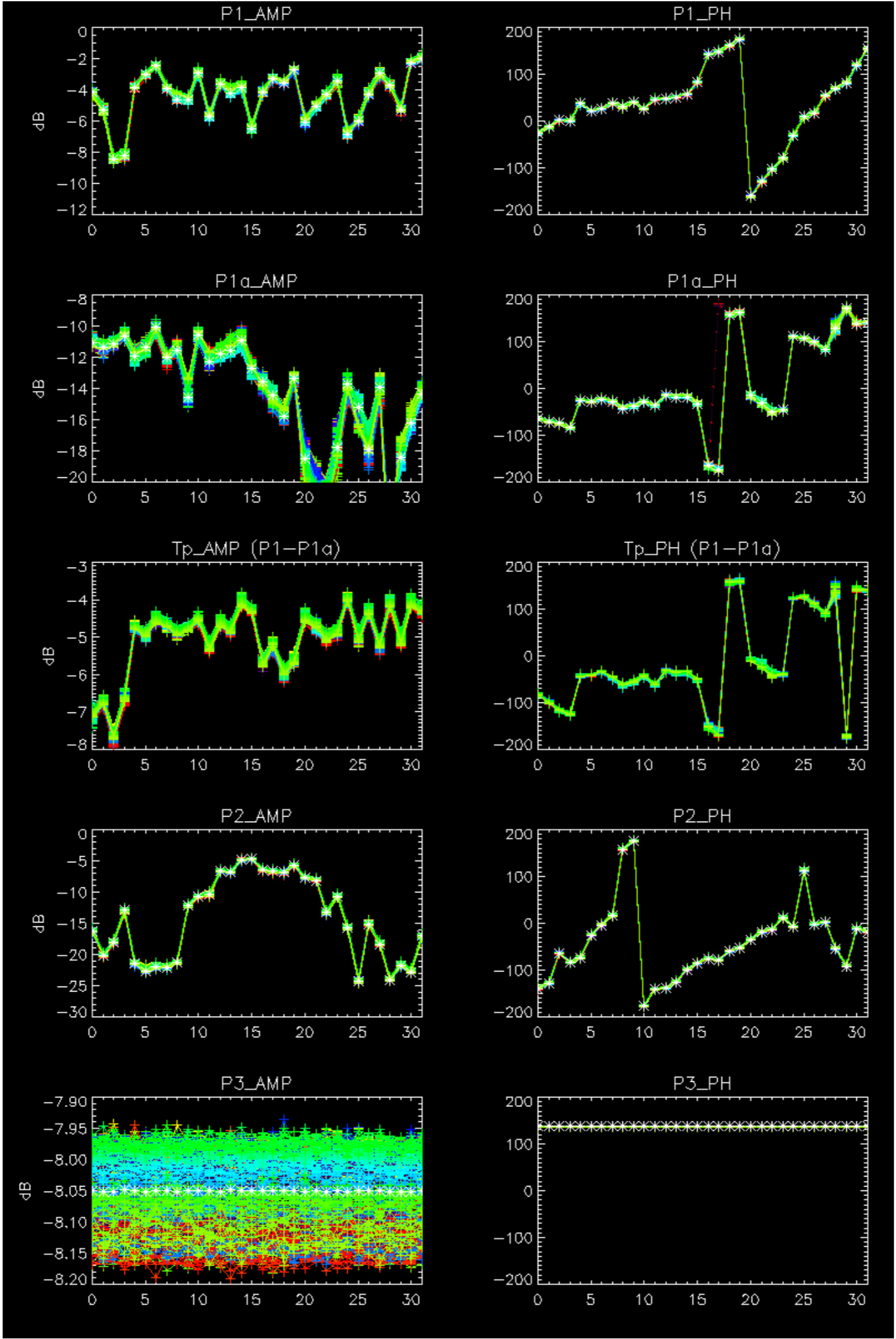
Cal pulses for WVS IS2

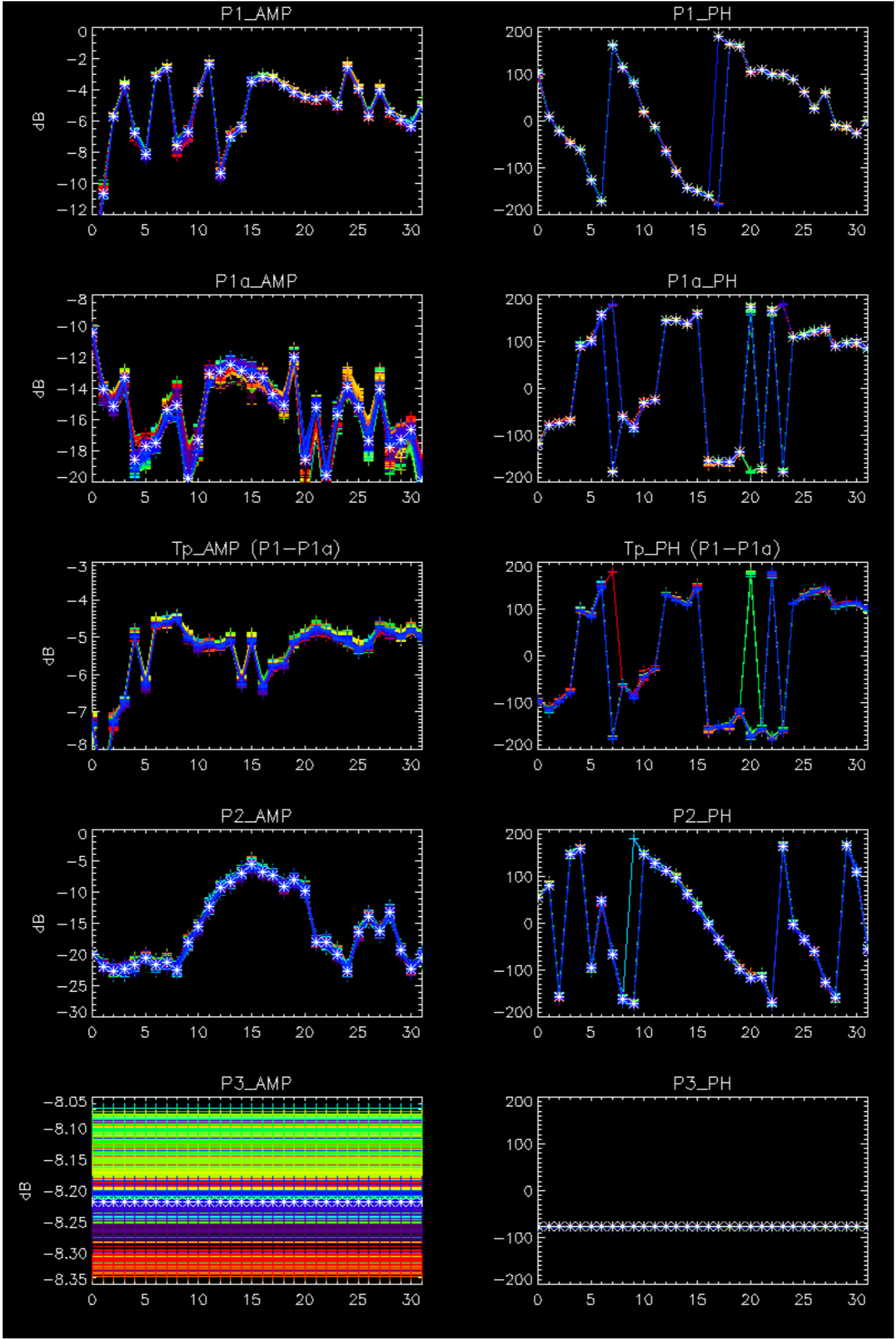


No anomalies observed on available browse products



No anomalies observed.

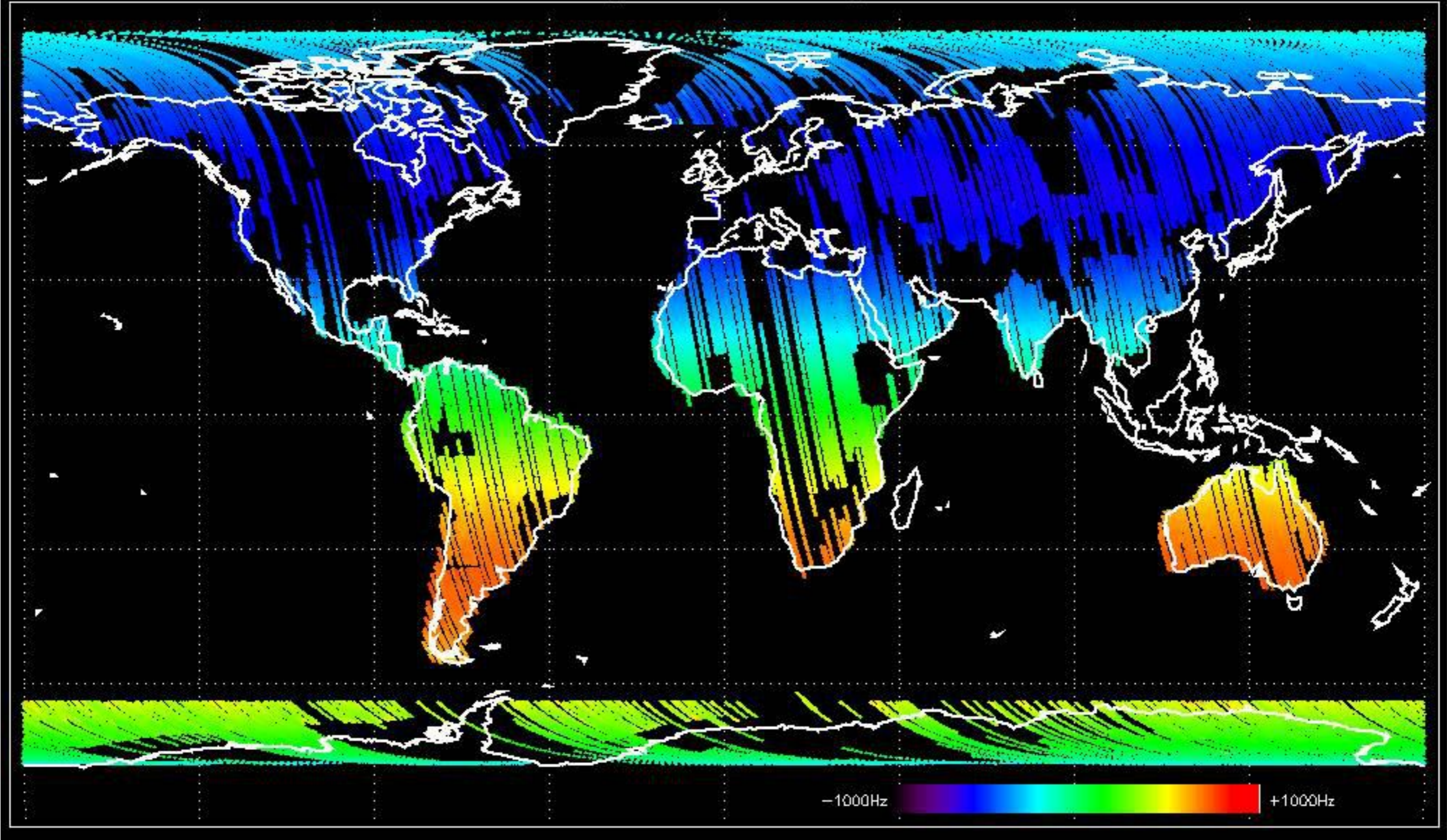




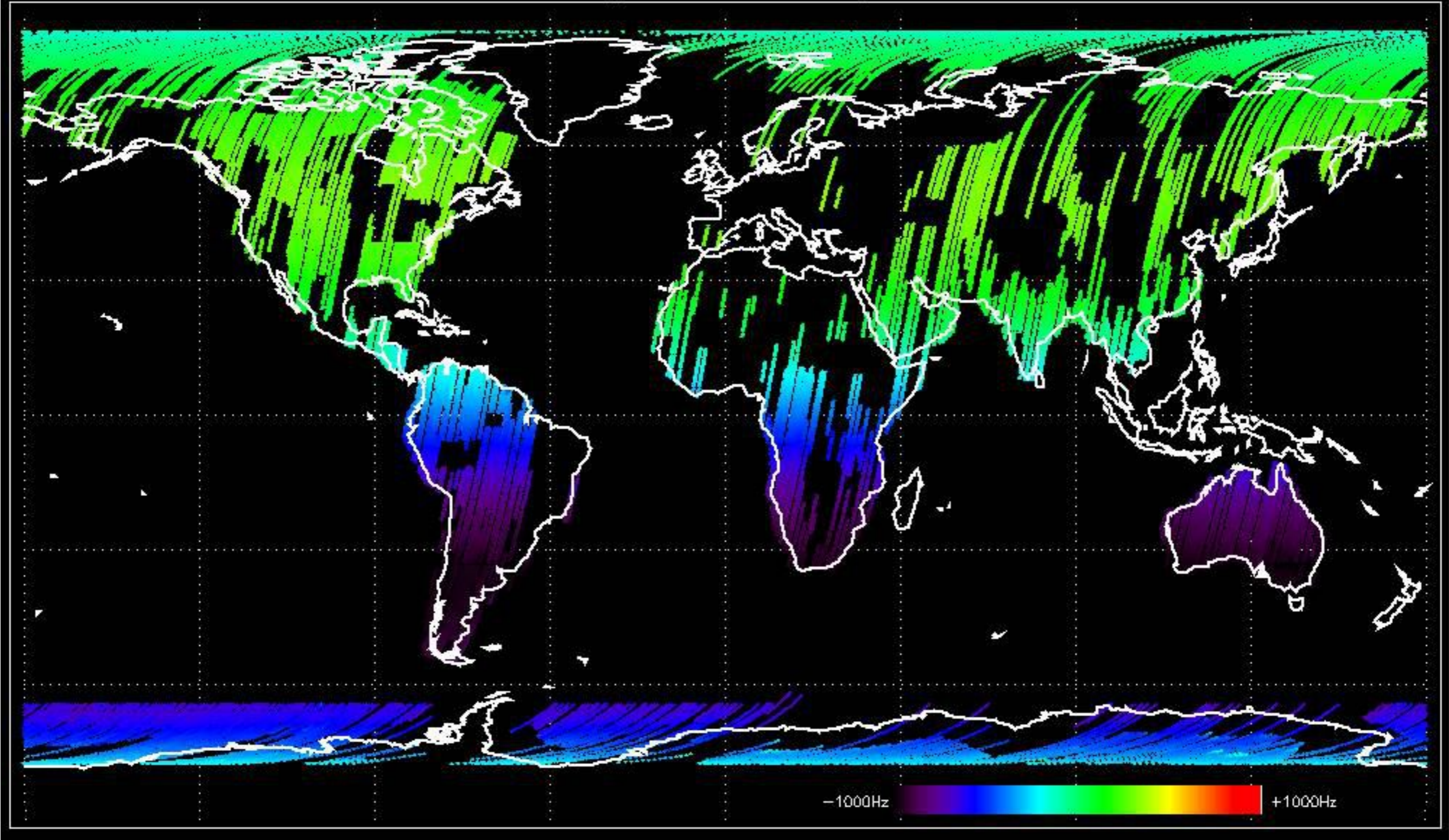
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



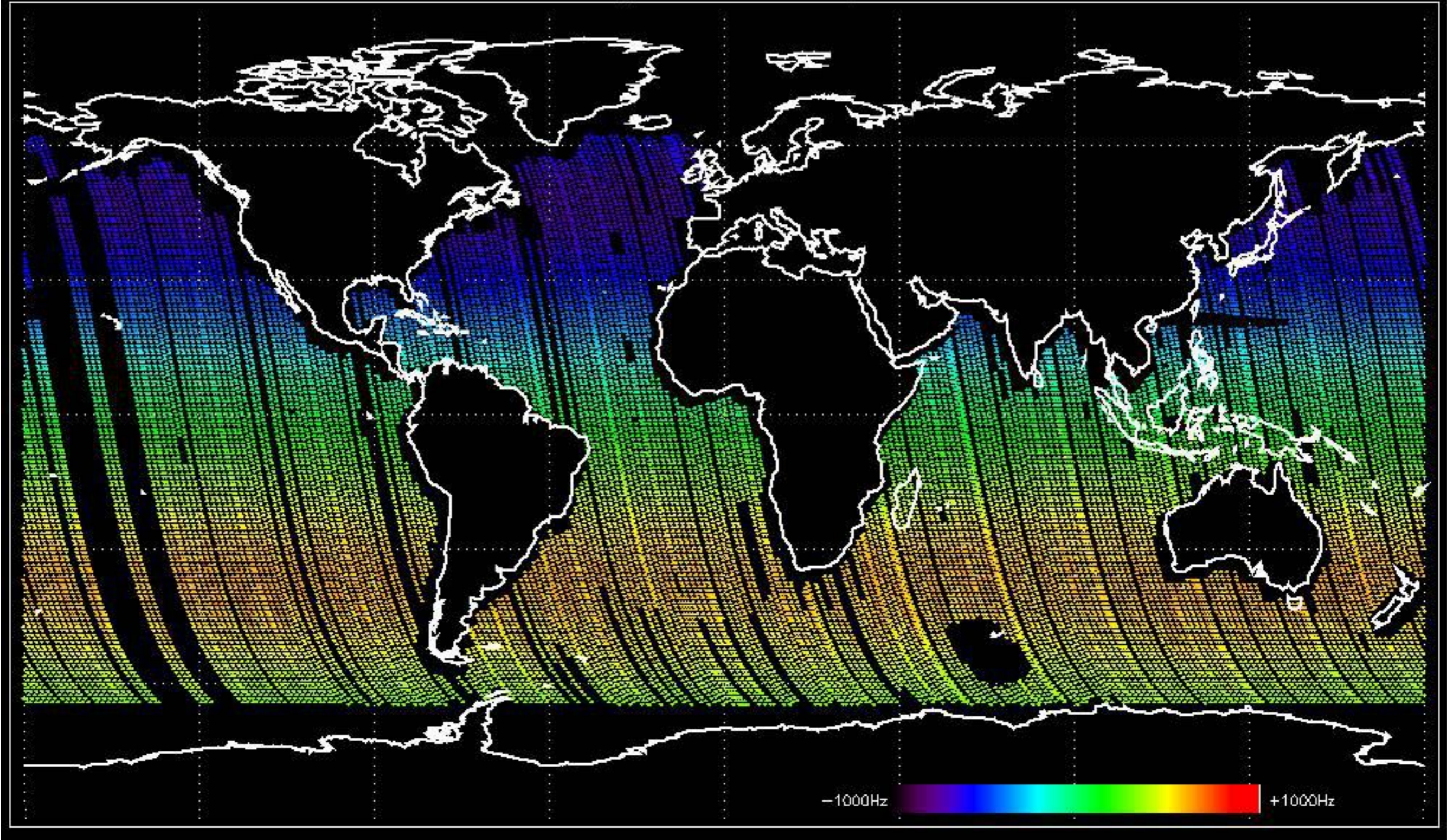
Doppler 'GM1' 'SS1' ascending



Doppler 'GM1' 'SS1' descending

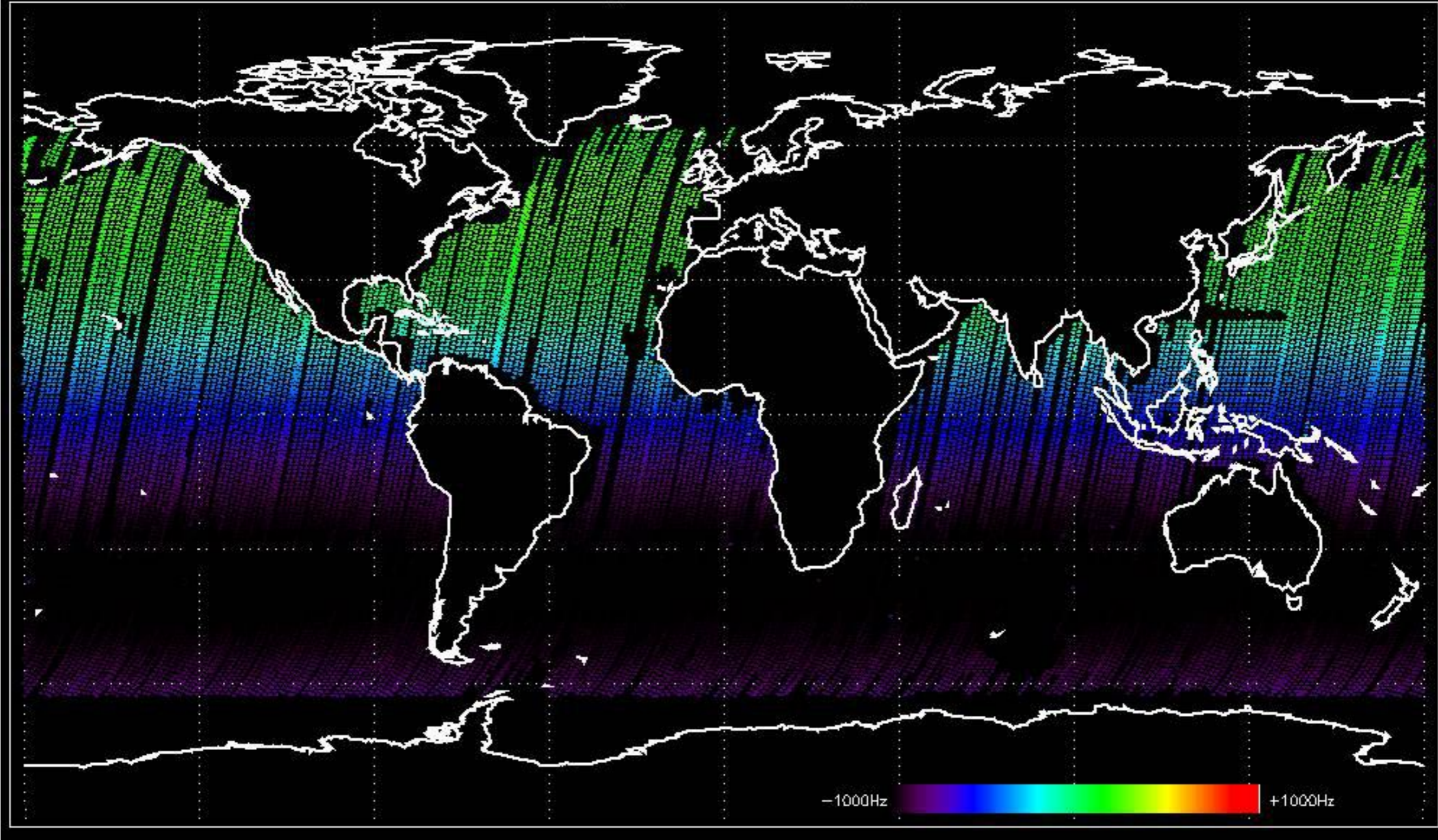


Doppler 'WVS' 'IS2' ascending

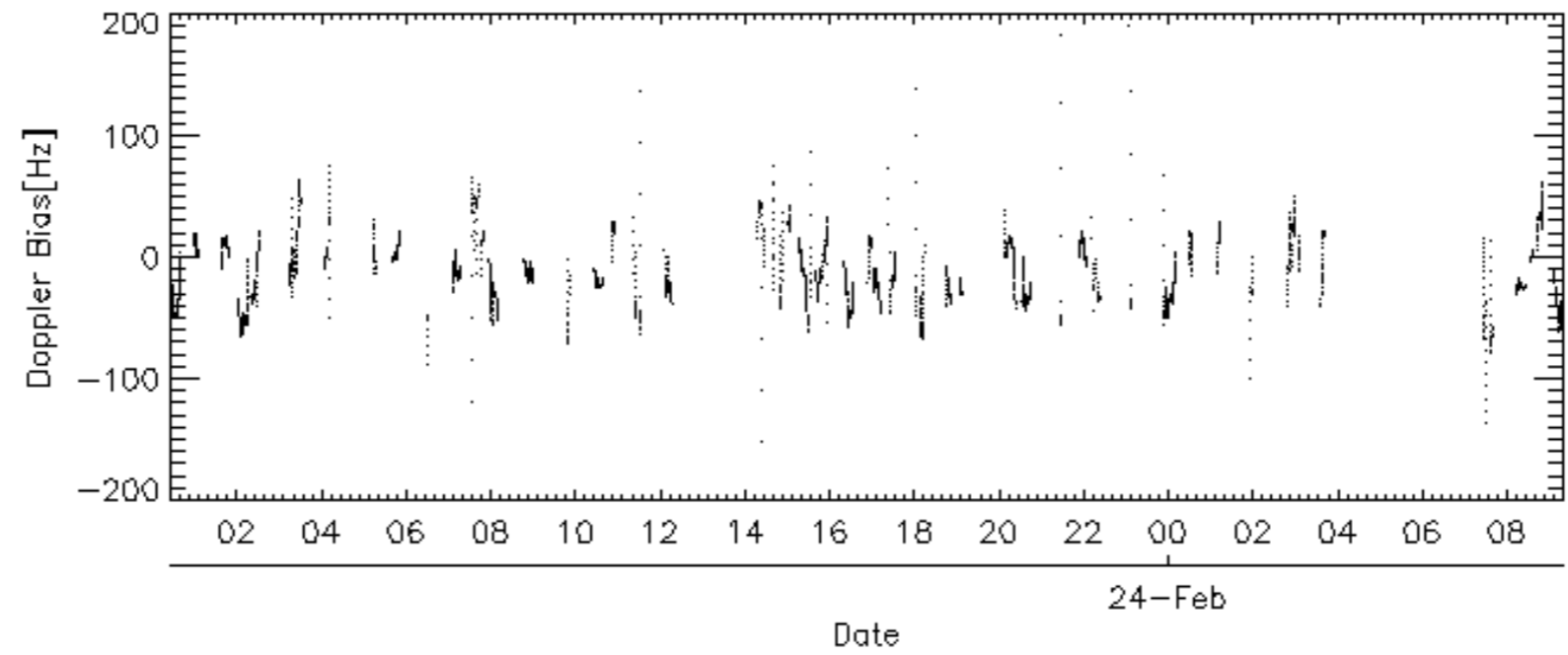
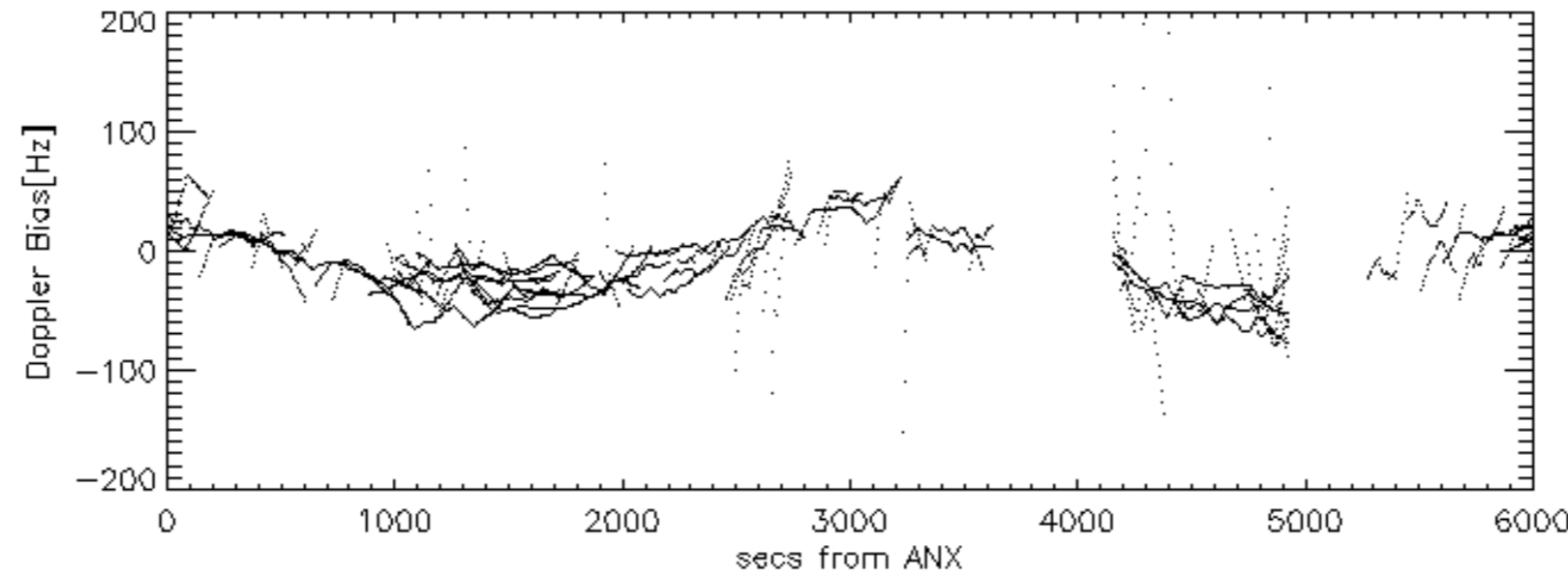
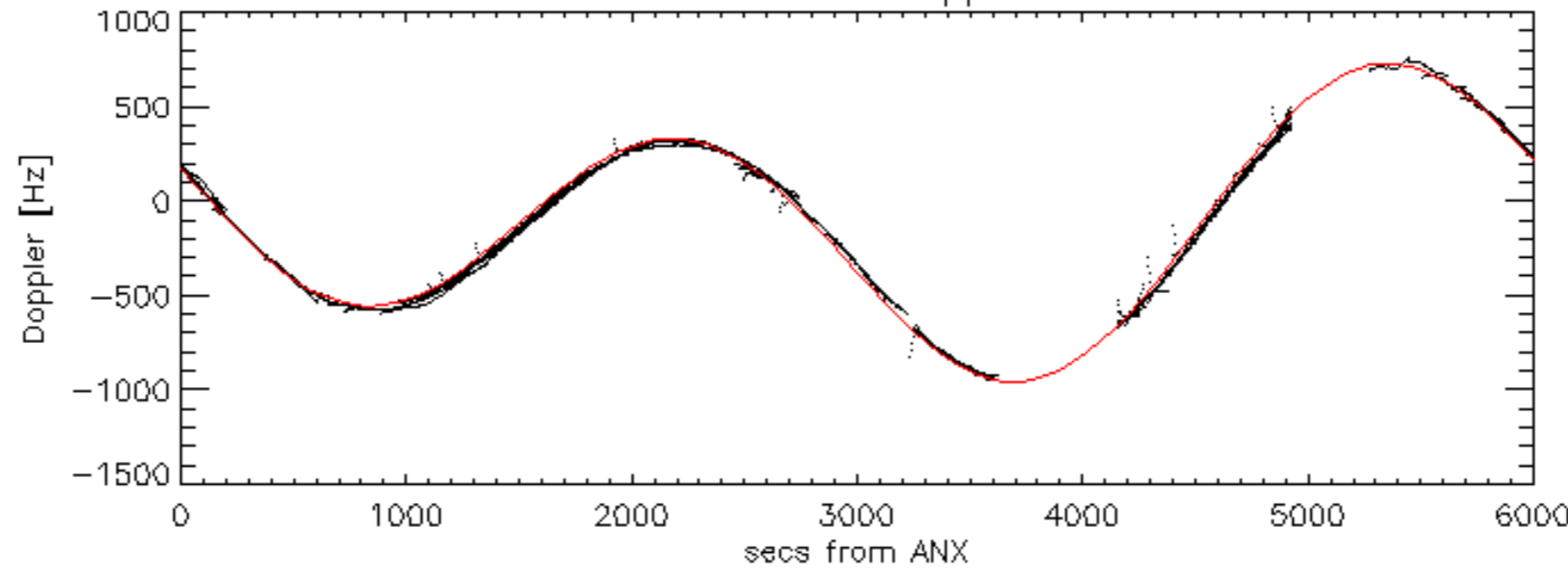


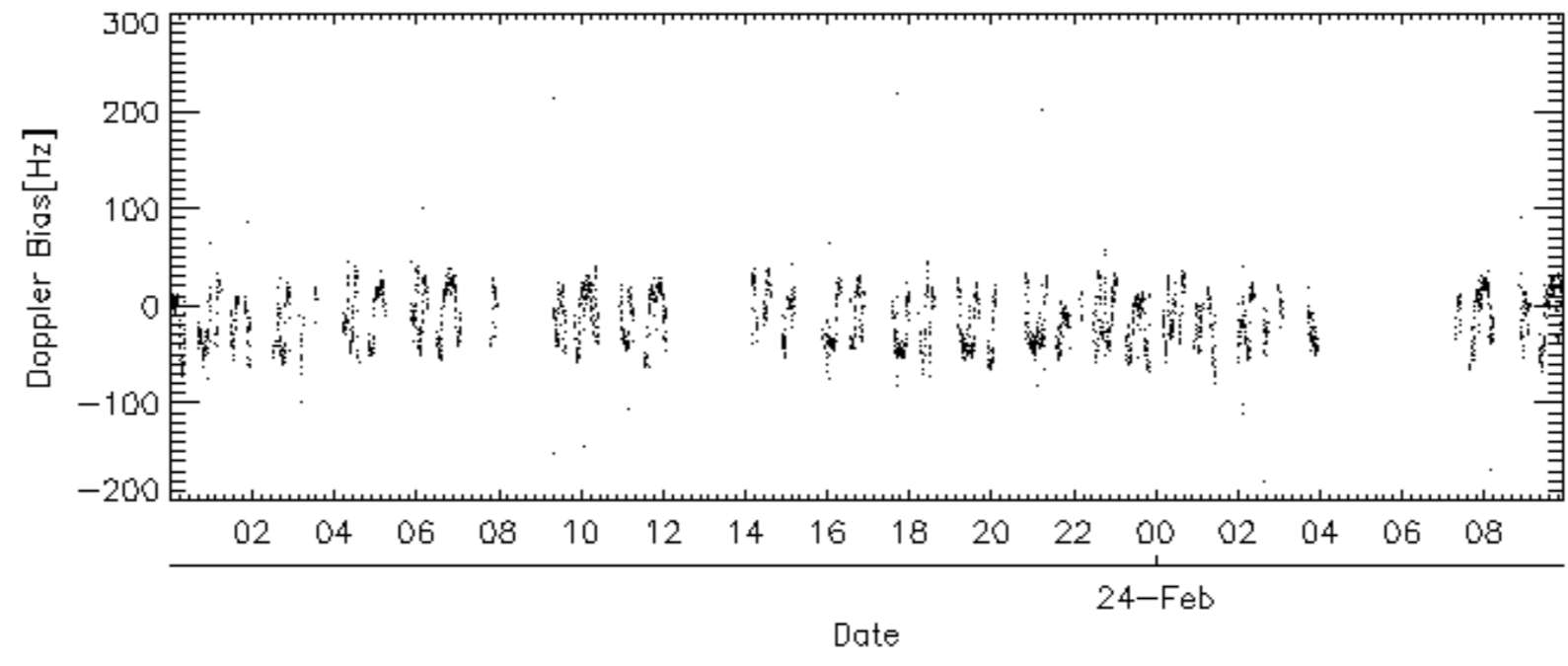
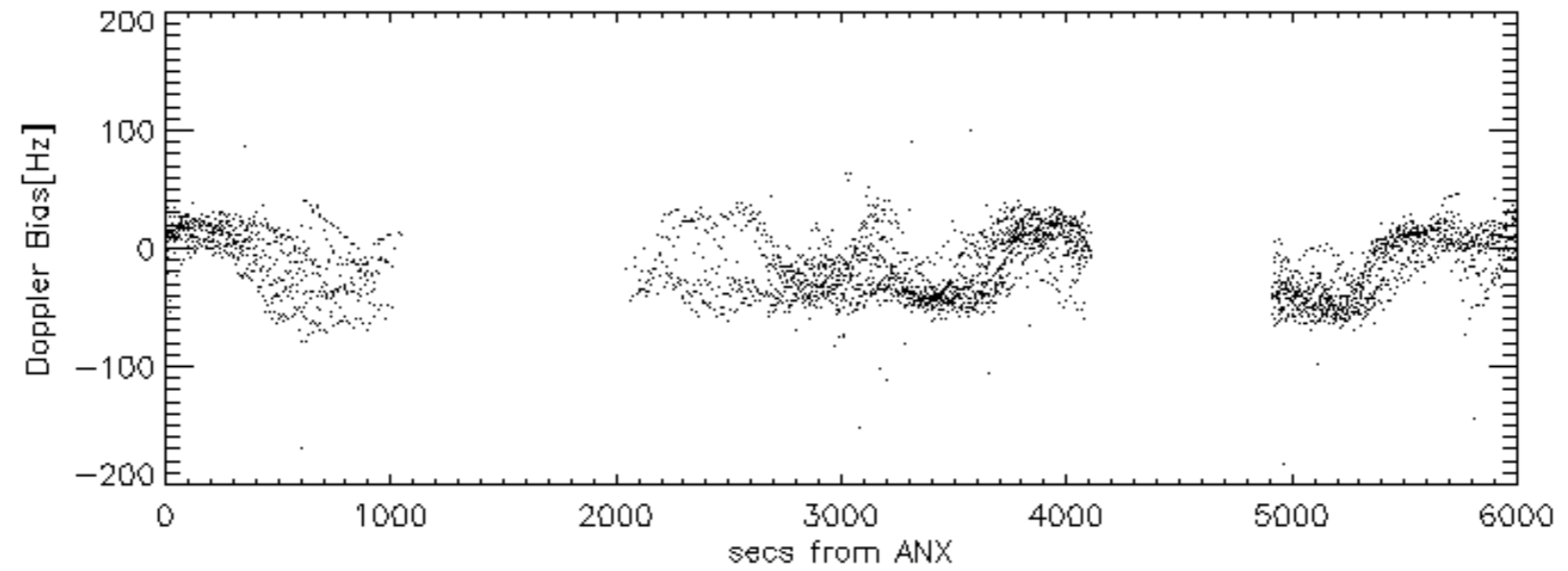
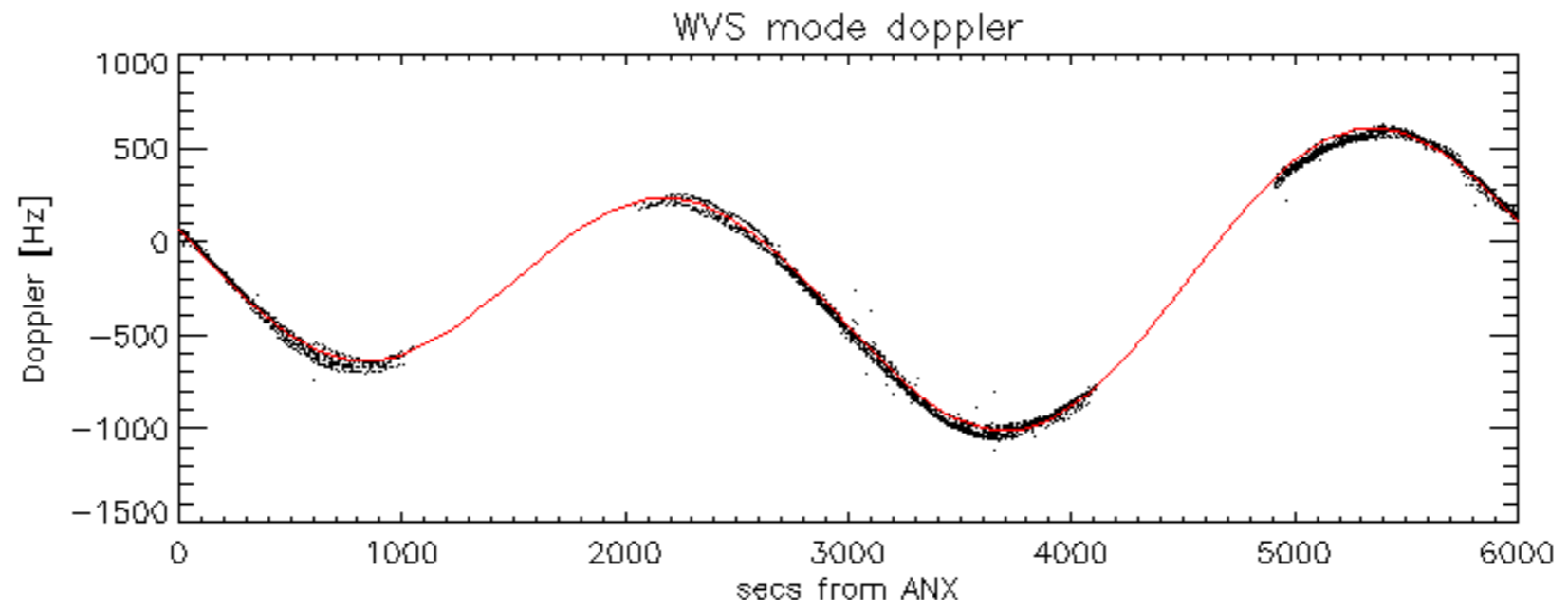


Doppler 'WVS' 'IS2' descending

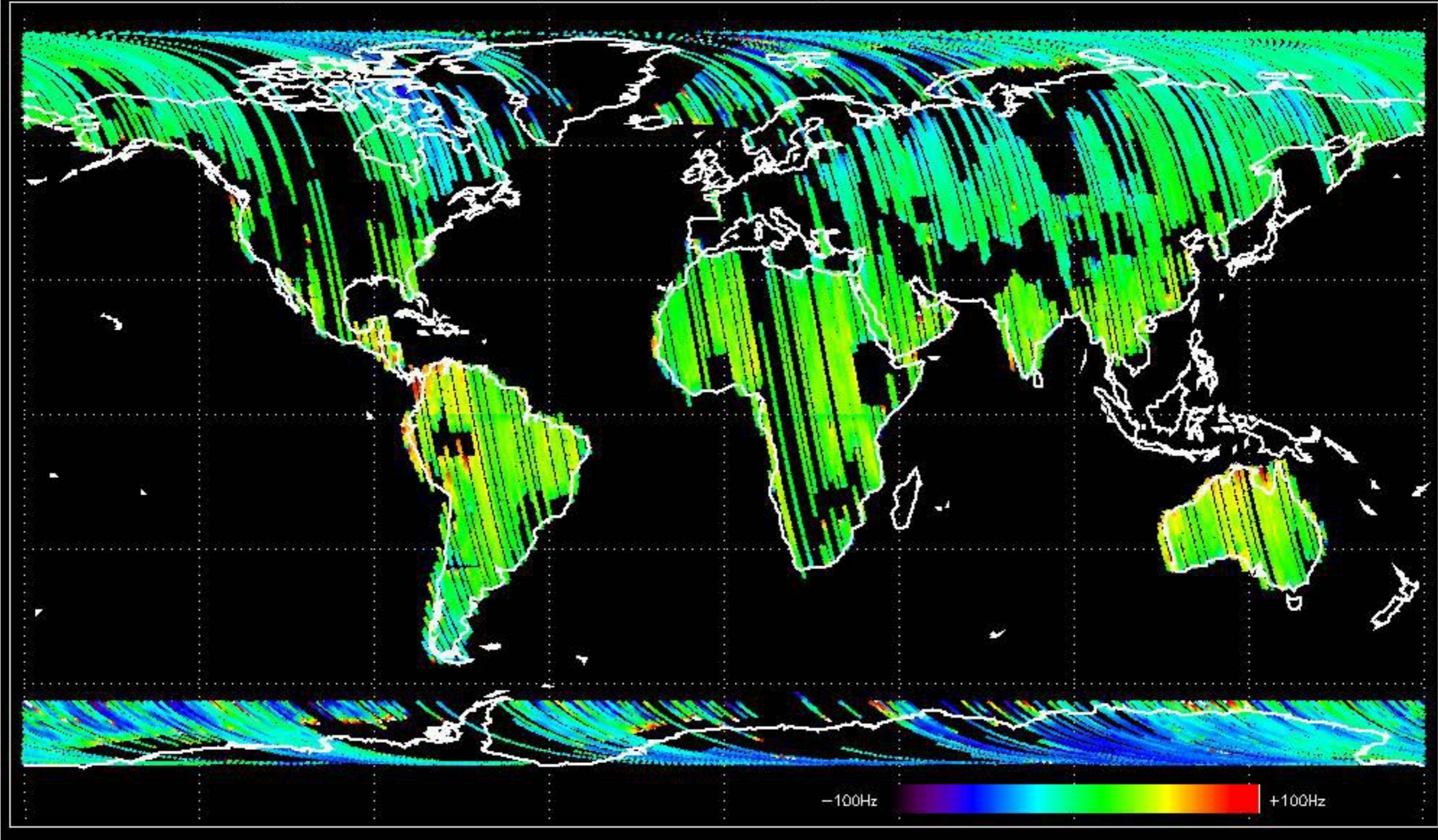


GM1 mode doppler

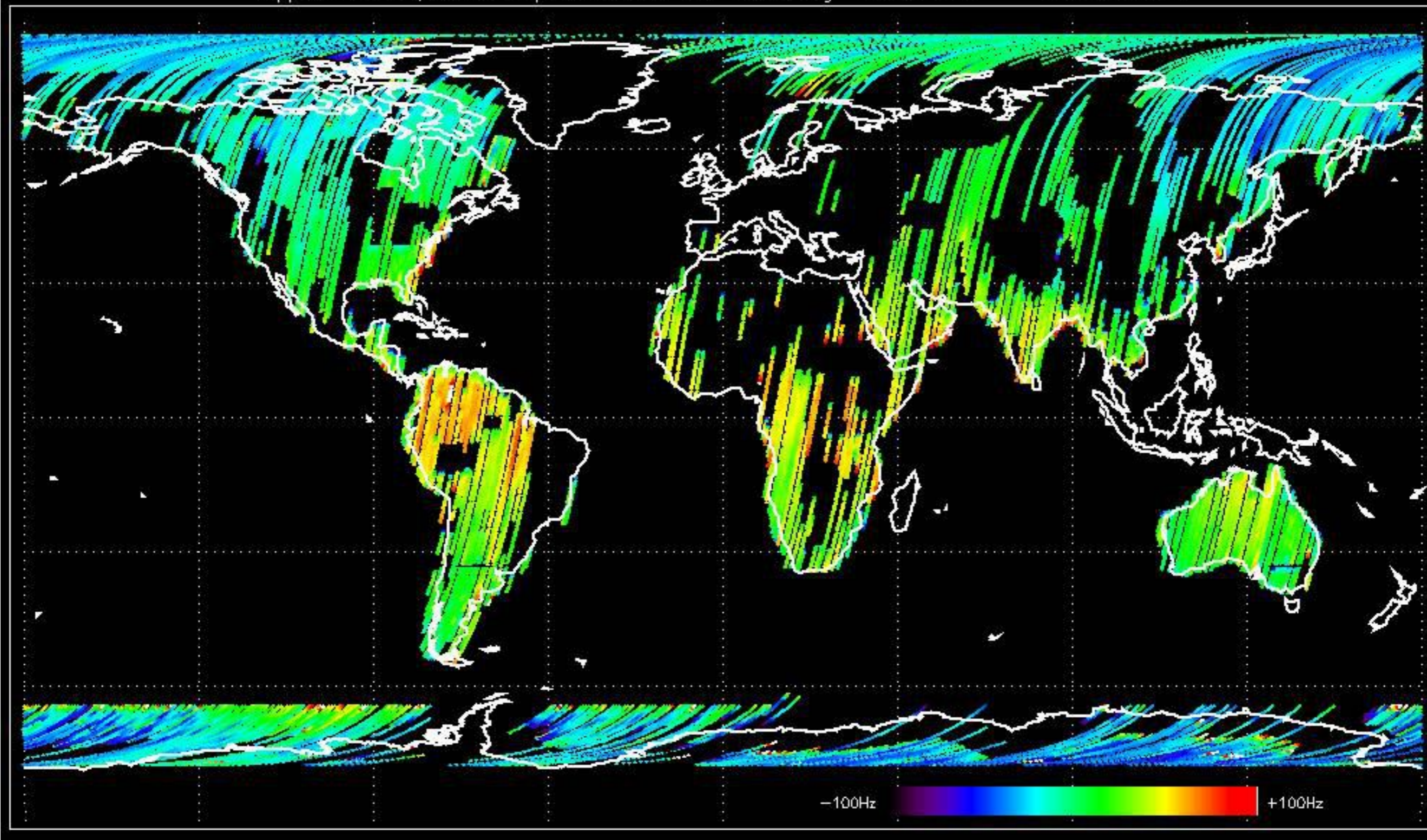




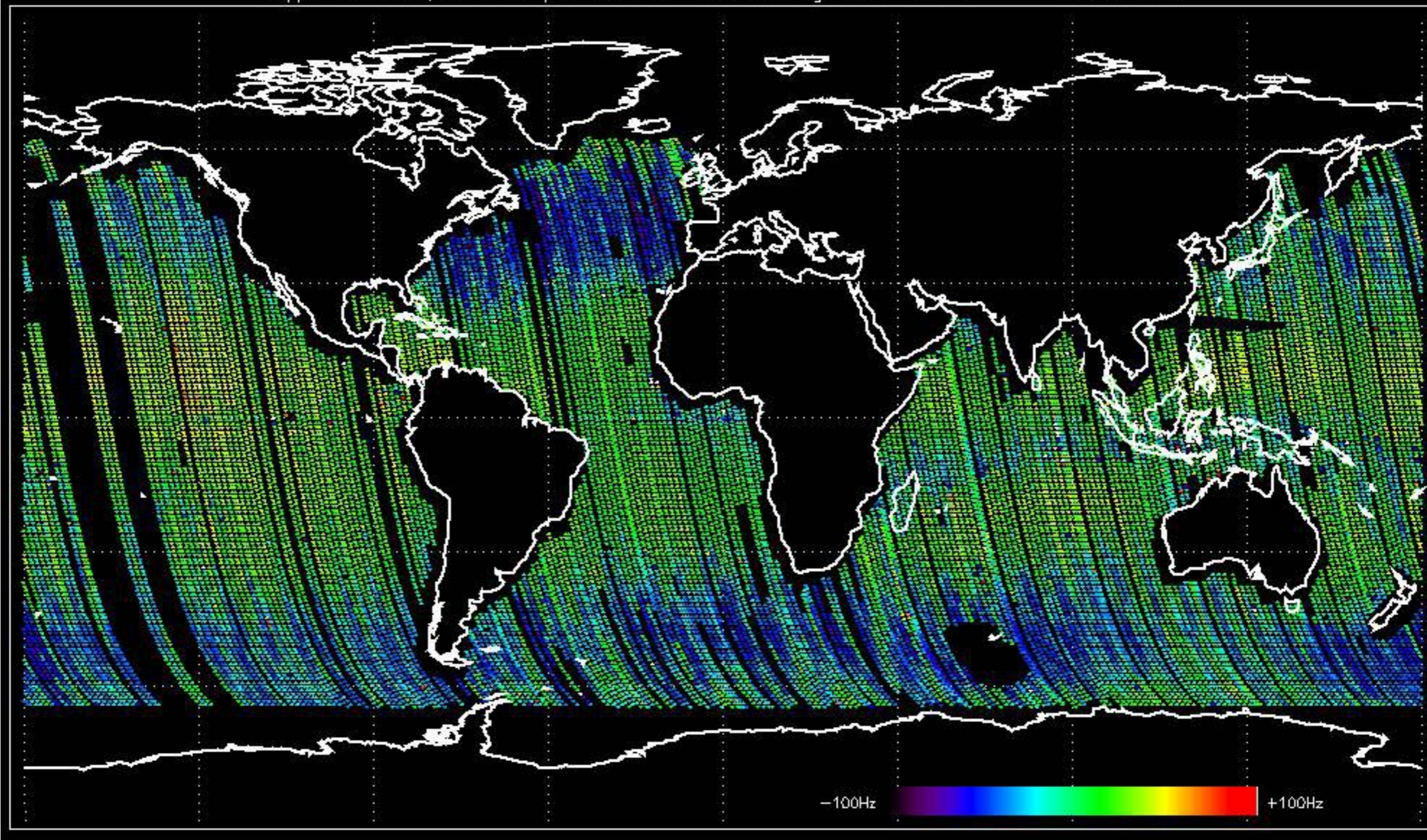
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.349772 Hz



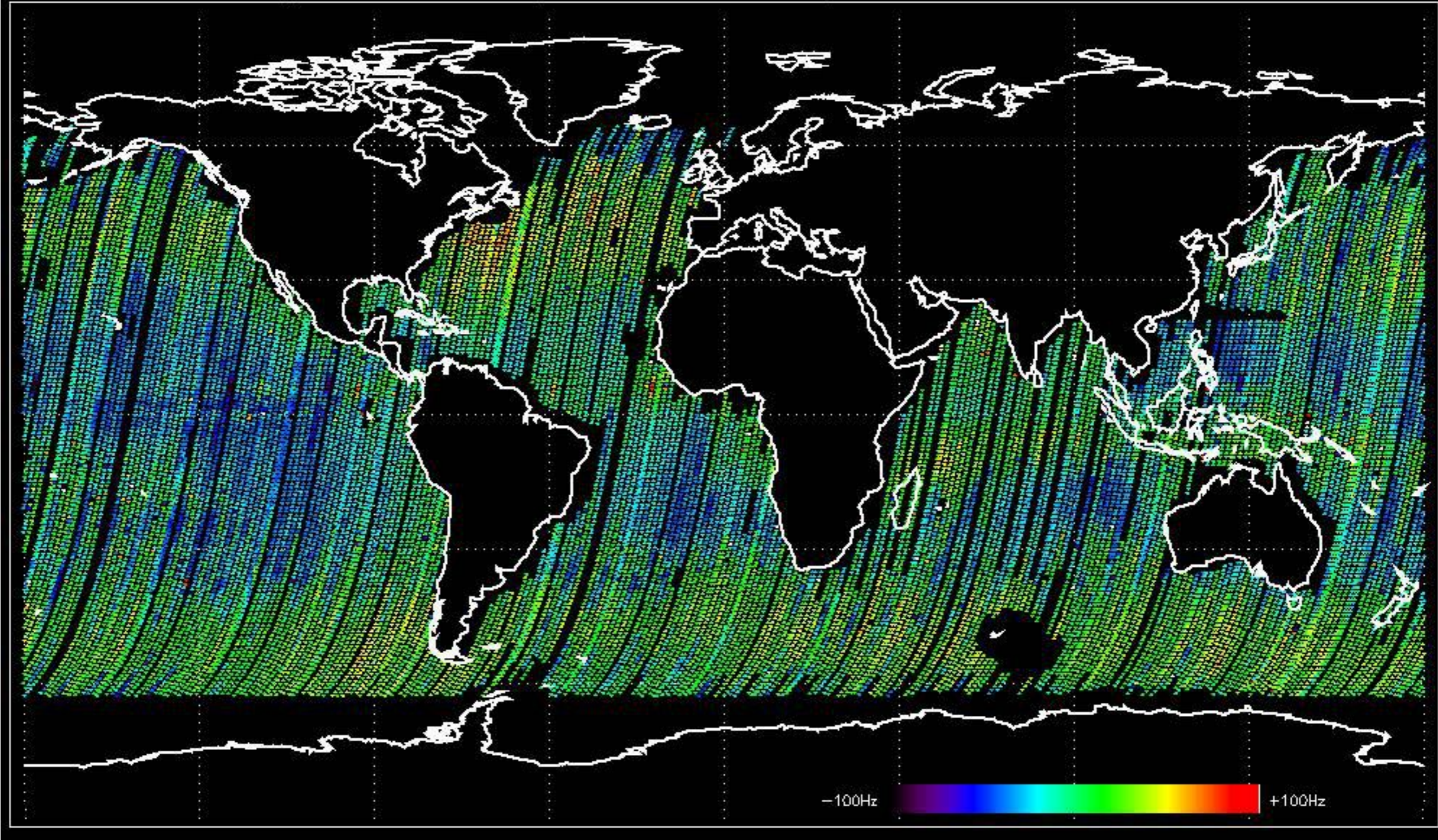
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.682780 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -15.489956 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -16.567438 Hz



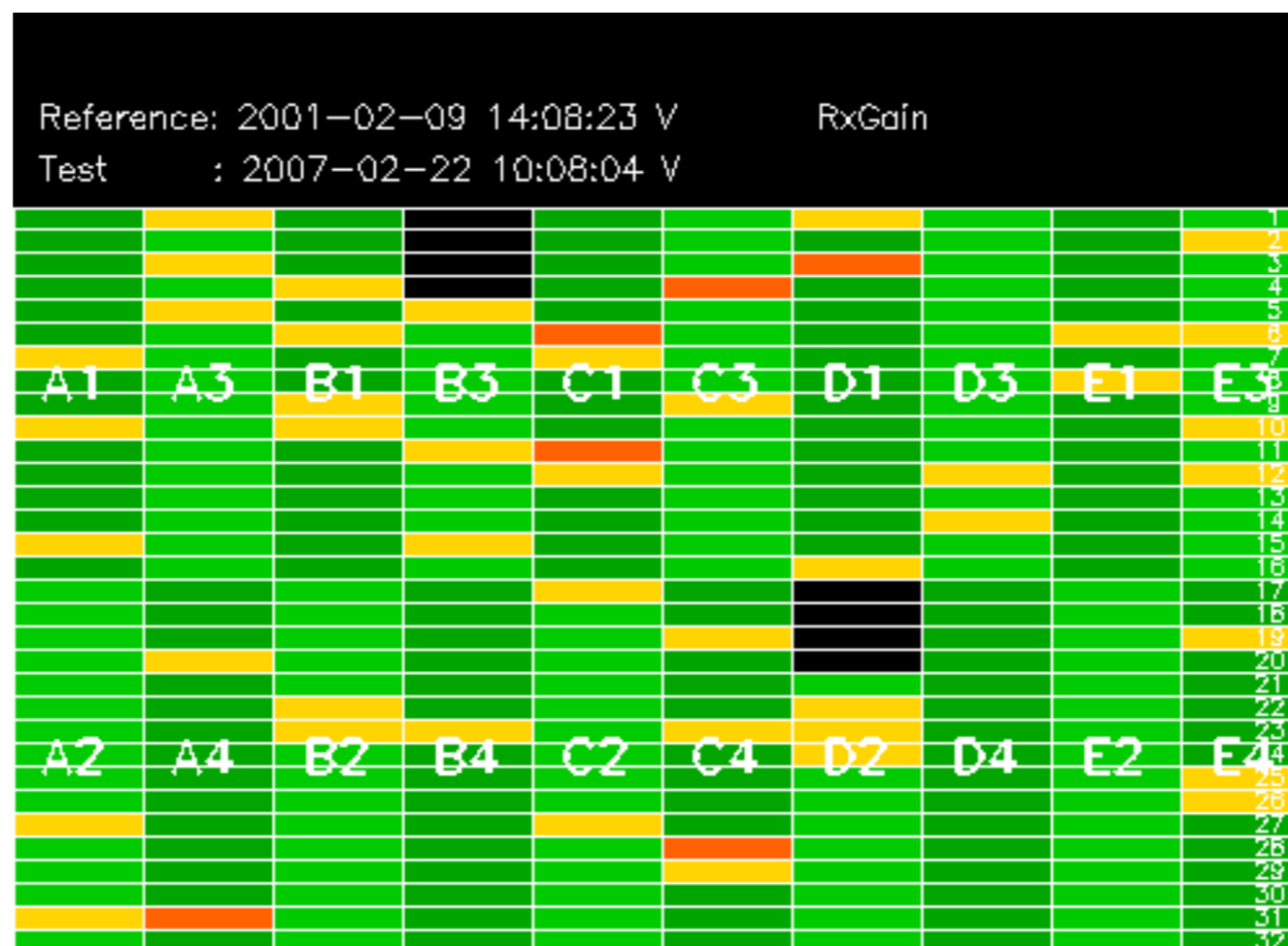
No anomalies observed on available MS products:



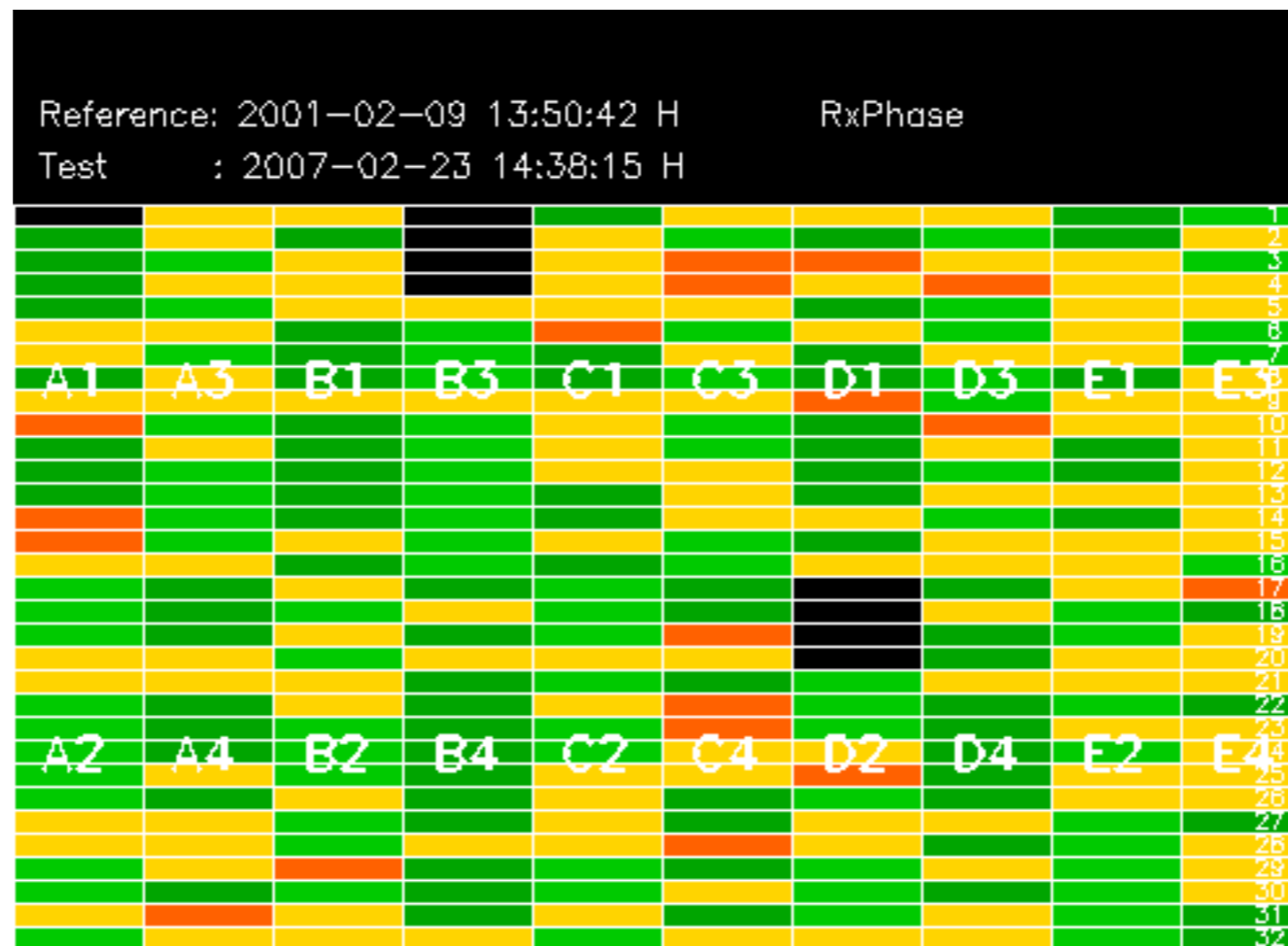
No anomalies observed.









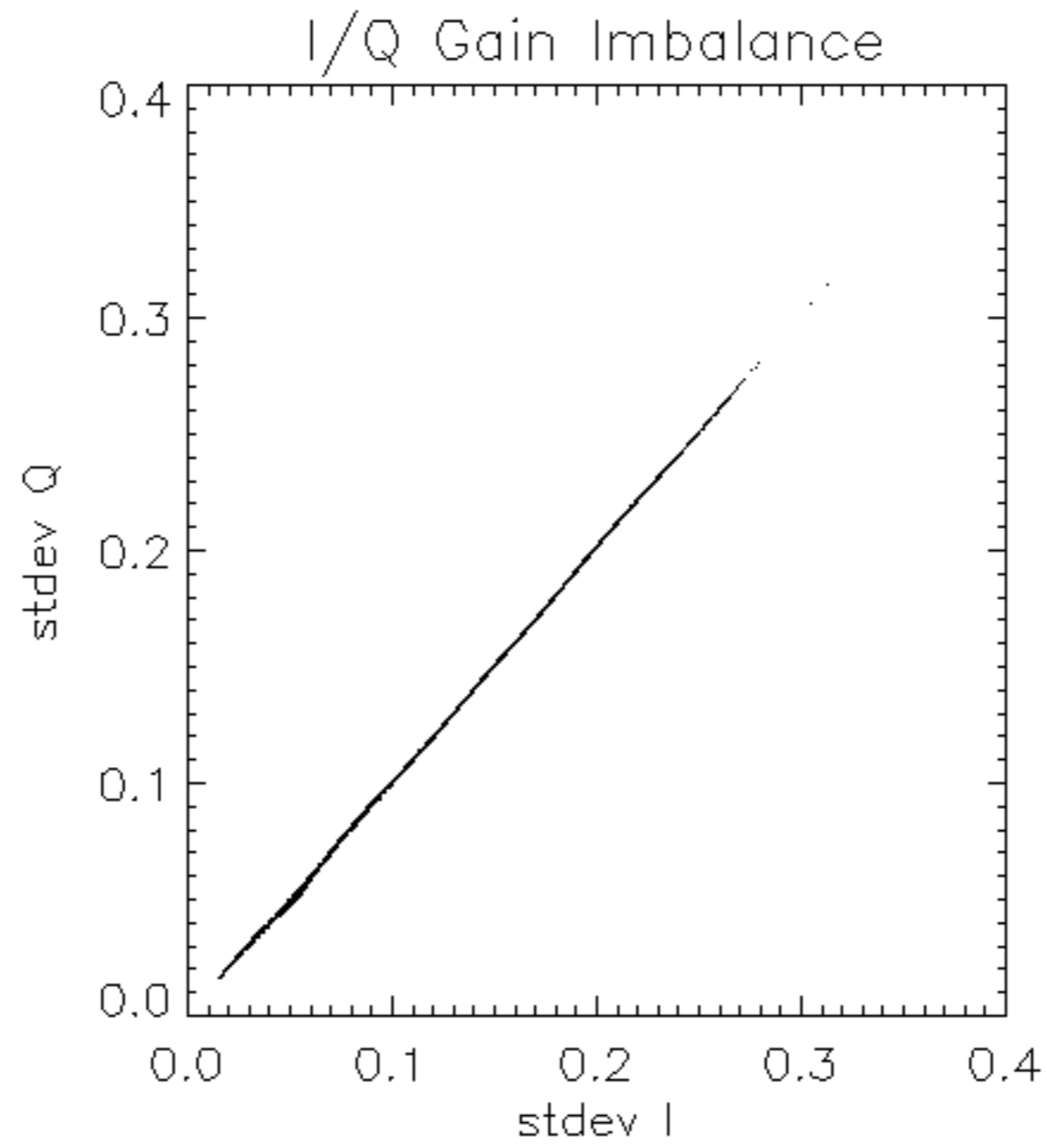


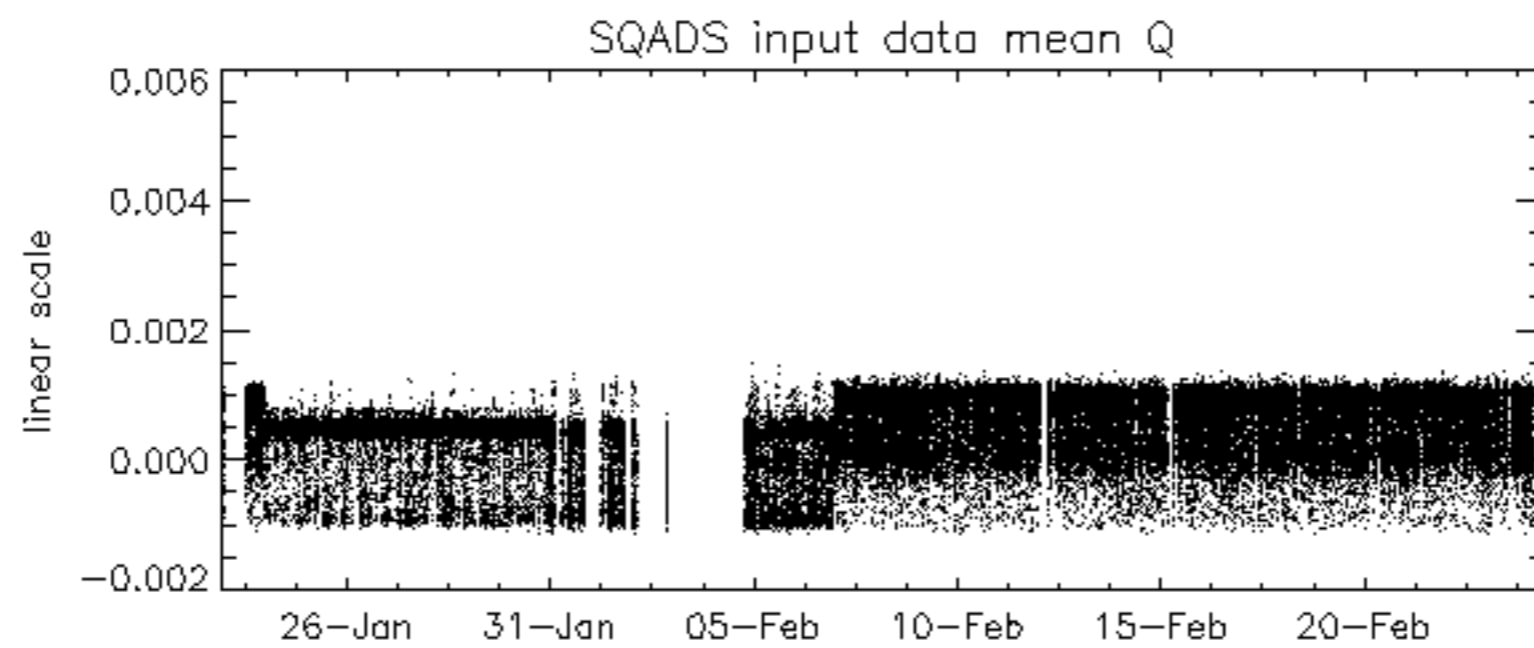
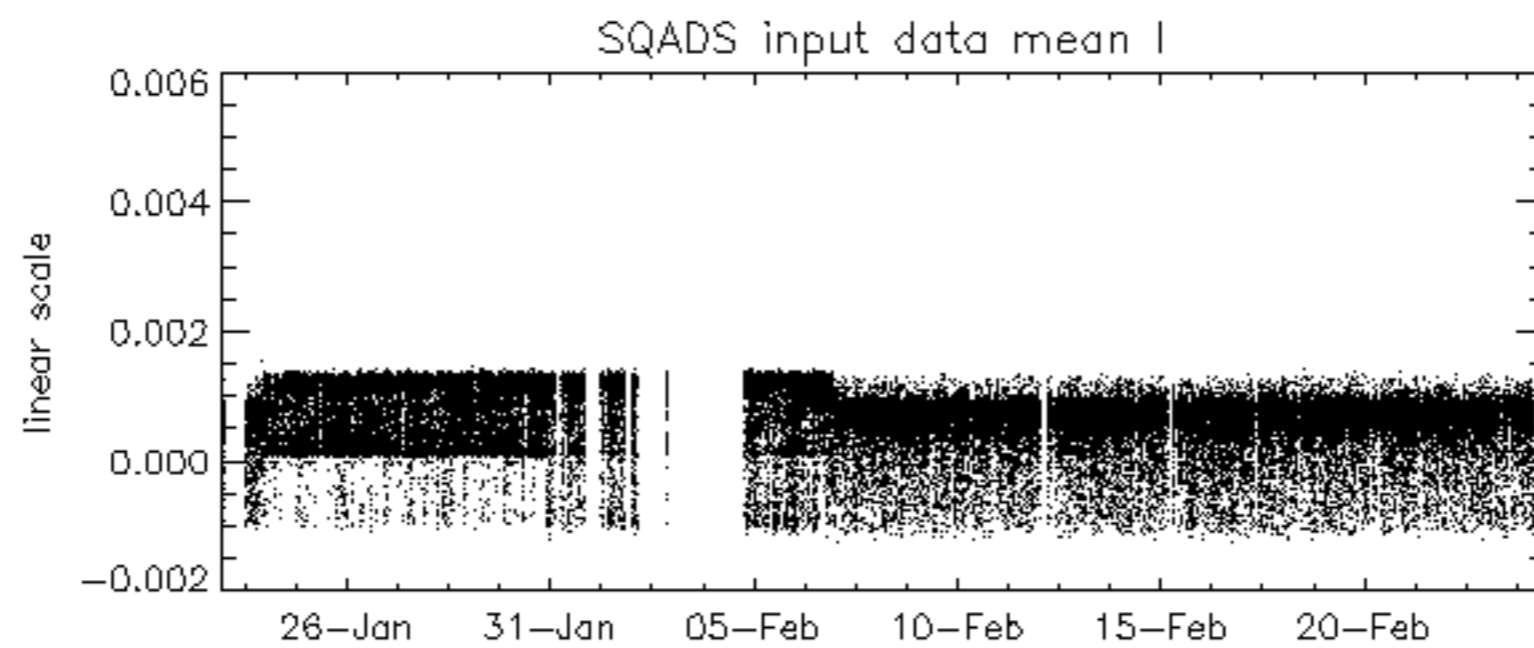
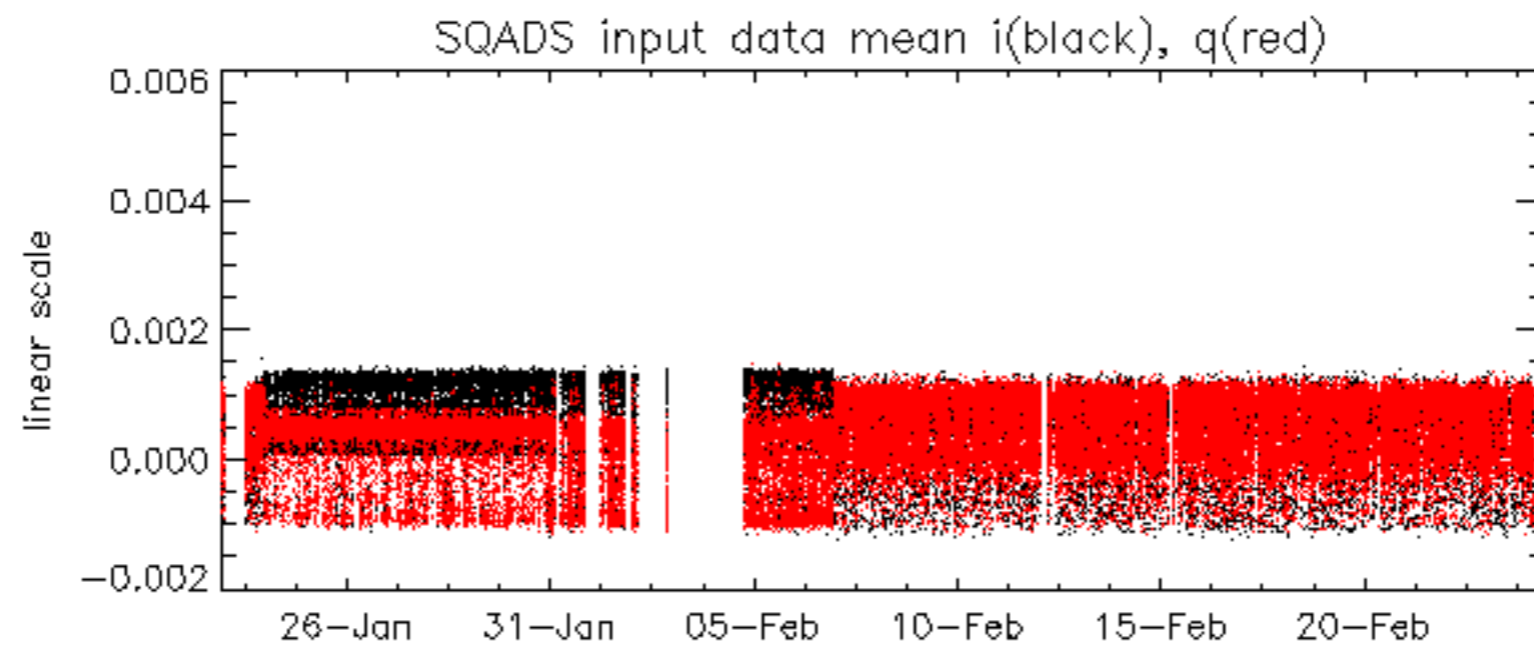


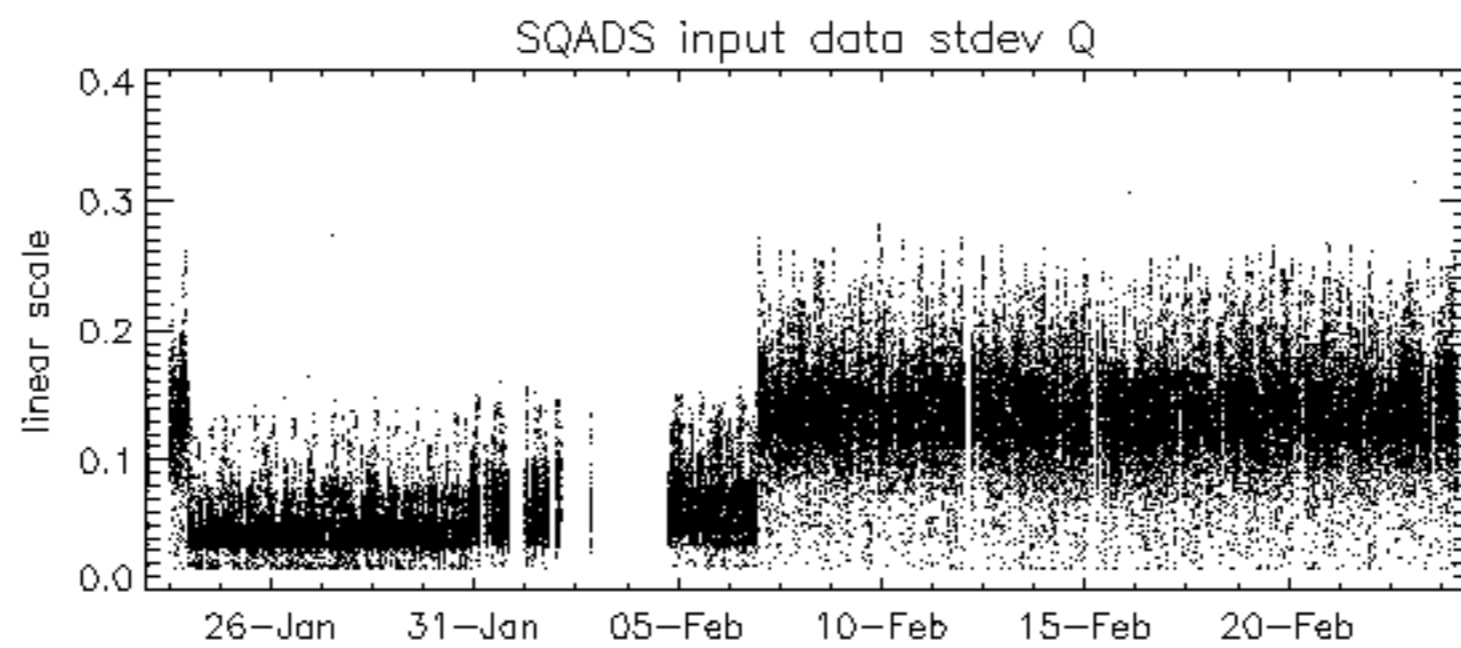
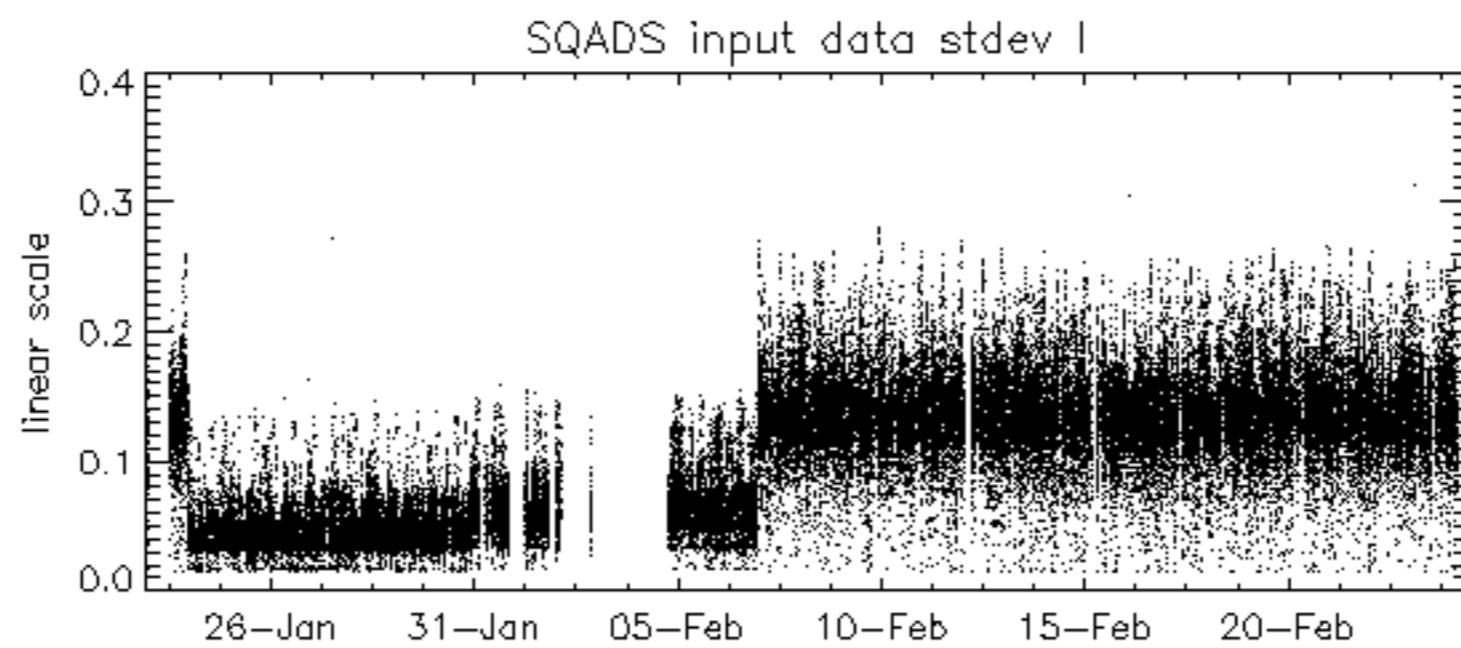
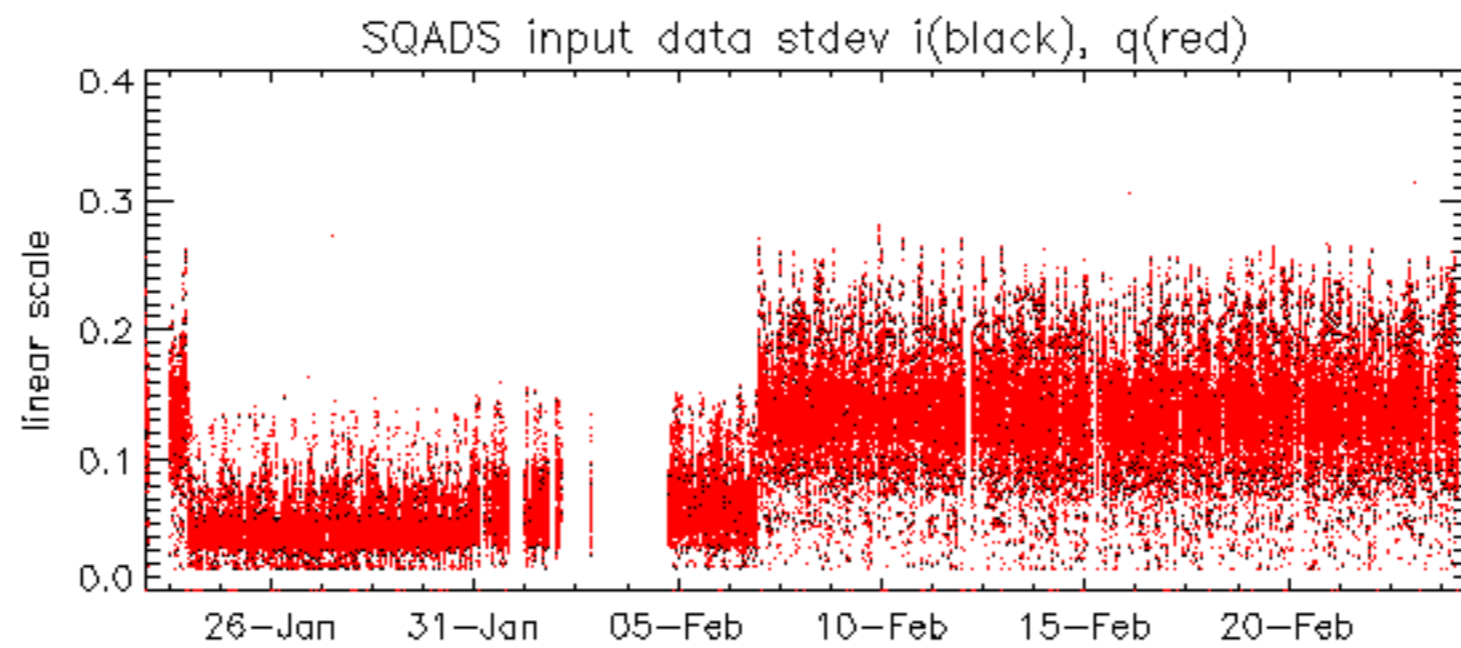






















Summary of analysis for the last 3 days 2007022[234]

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_1PNPDE20070222_172653_000001032055_00442_26047_8220.N1	0	12
ASA_WSM_1PNPDE20070222_190519_000001092055_00443_26048_8248.N1	0	65
ASA_WSM_1PNPDE20070223_023249_000000852055_00447_26052_8839.N1	0	29
ASA_WSM_1PNPDE20070223_153029_000000242055_00455_26060_9423.N1	2	470
ASA_WSM_1PNPDK20070222_140625_000000852055_00440_26045_4805.N1	0	16
ASA_WSM_1PNPDK20070224_094429_000000852055_00466_26071_6572.N1	0	19





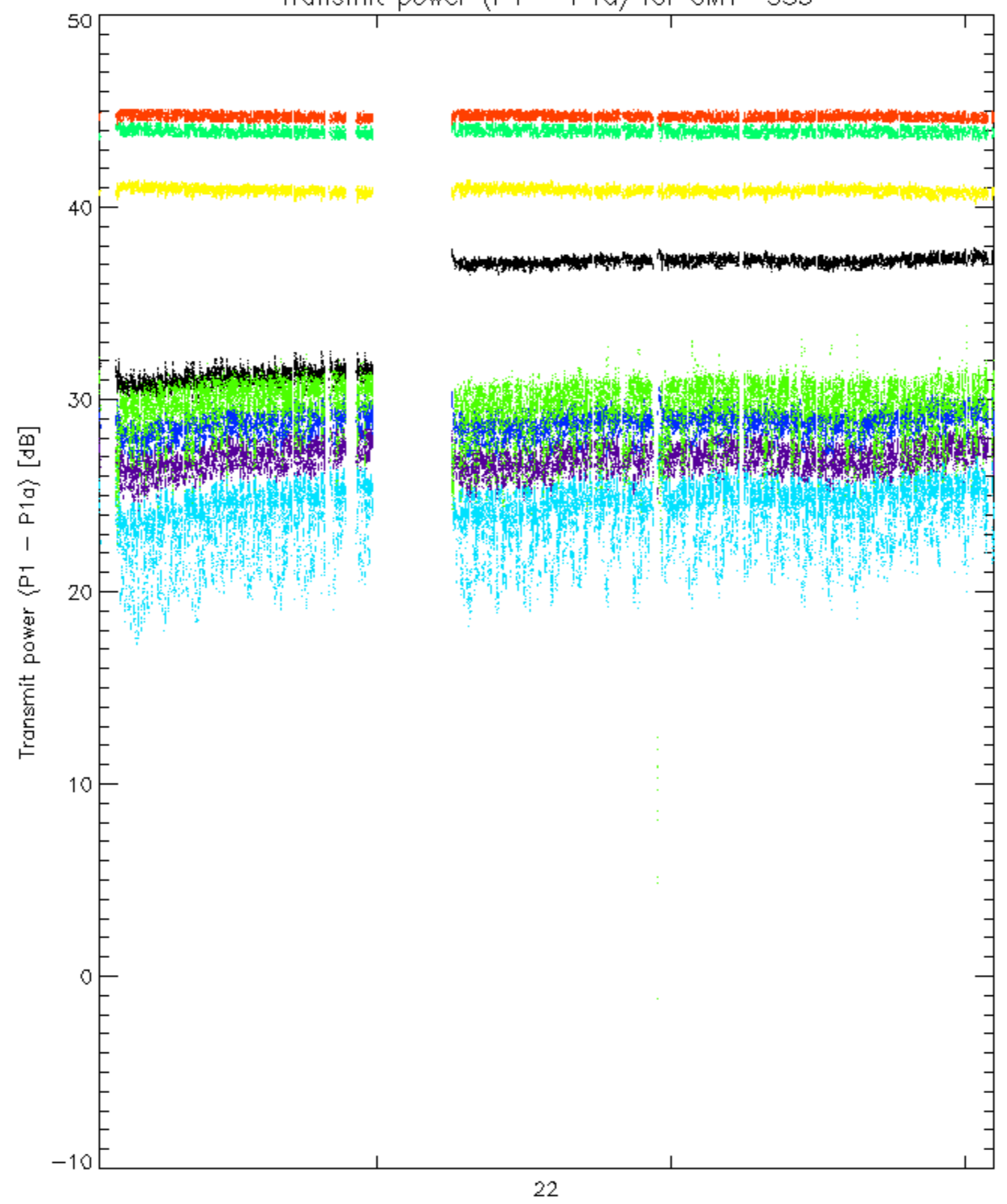






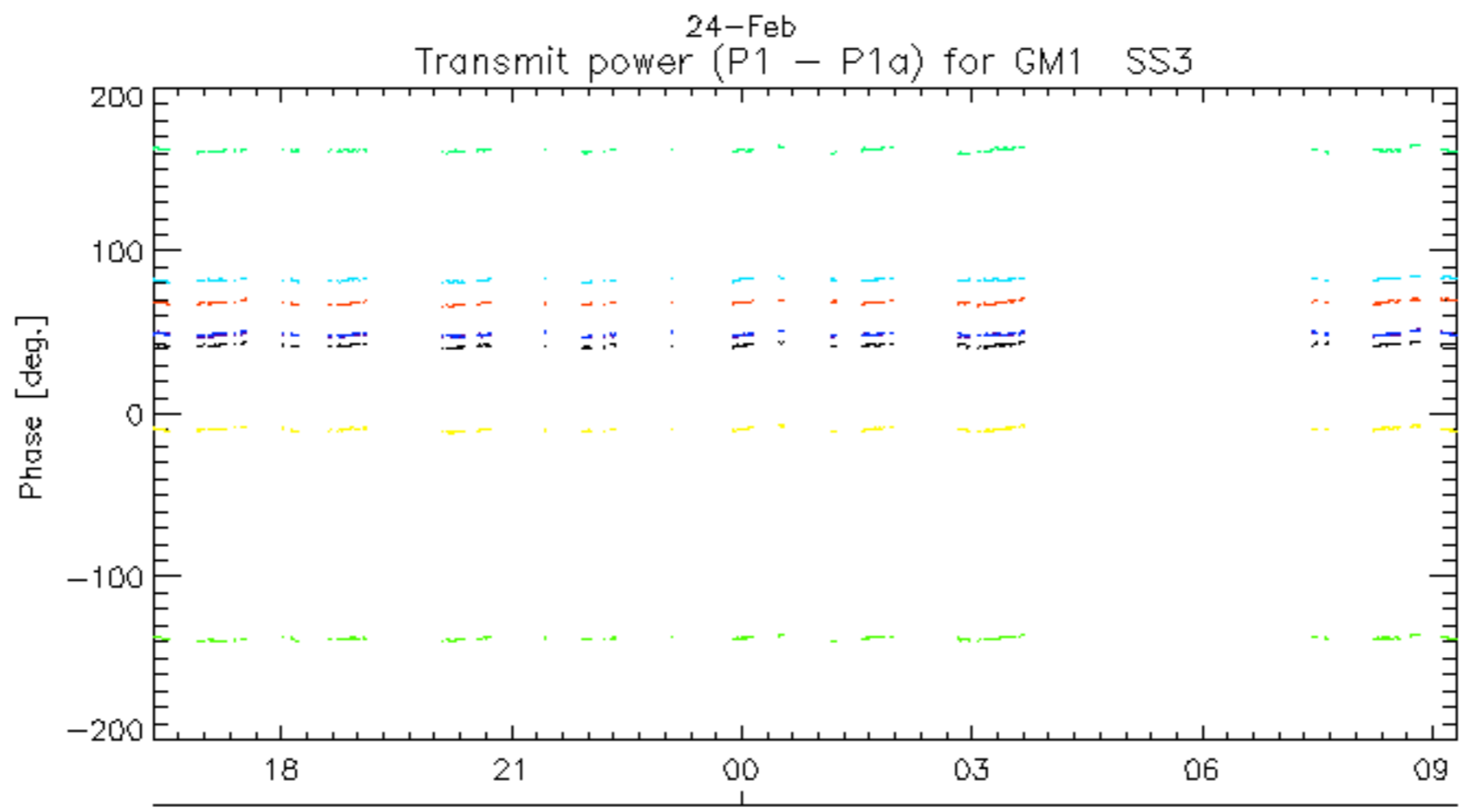
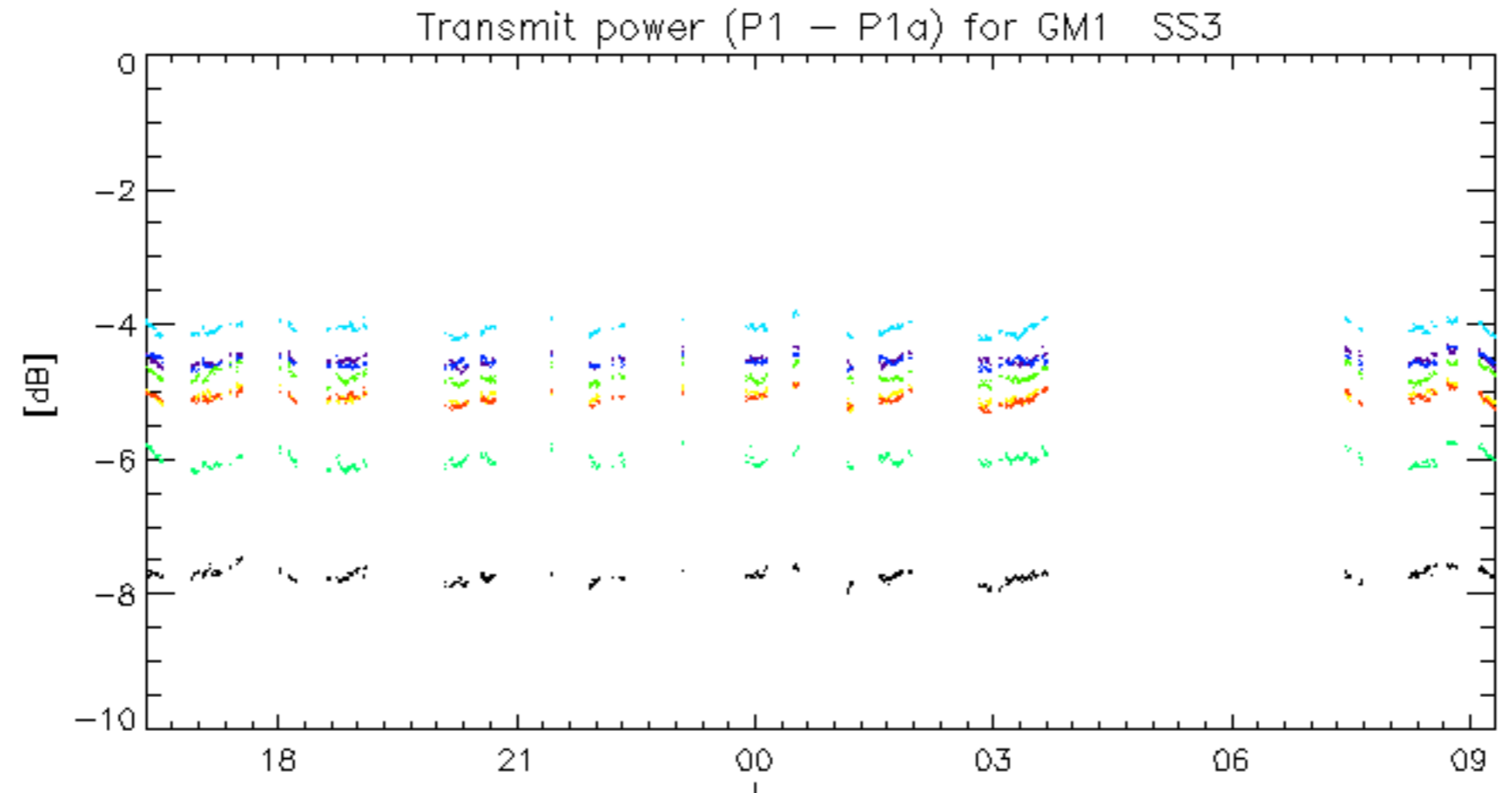


Transmit power (P1 - P1a) for GM1 SS3



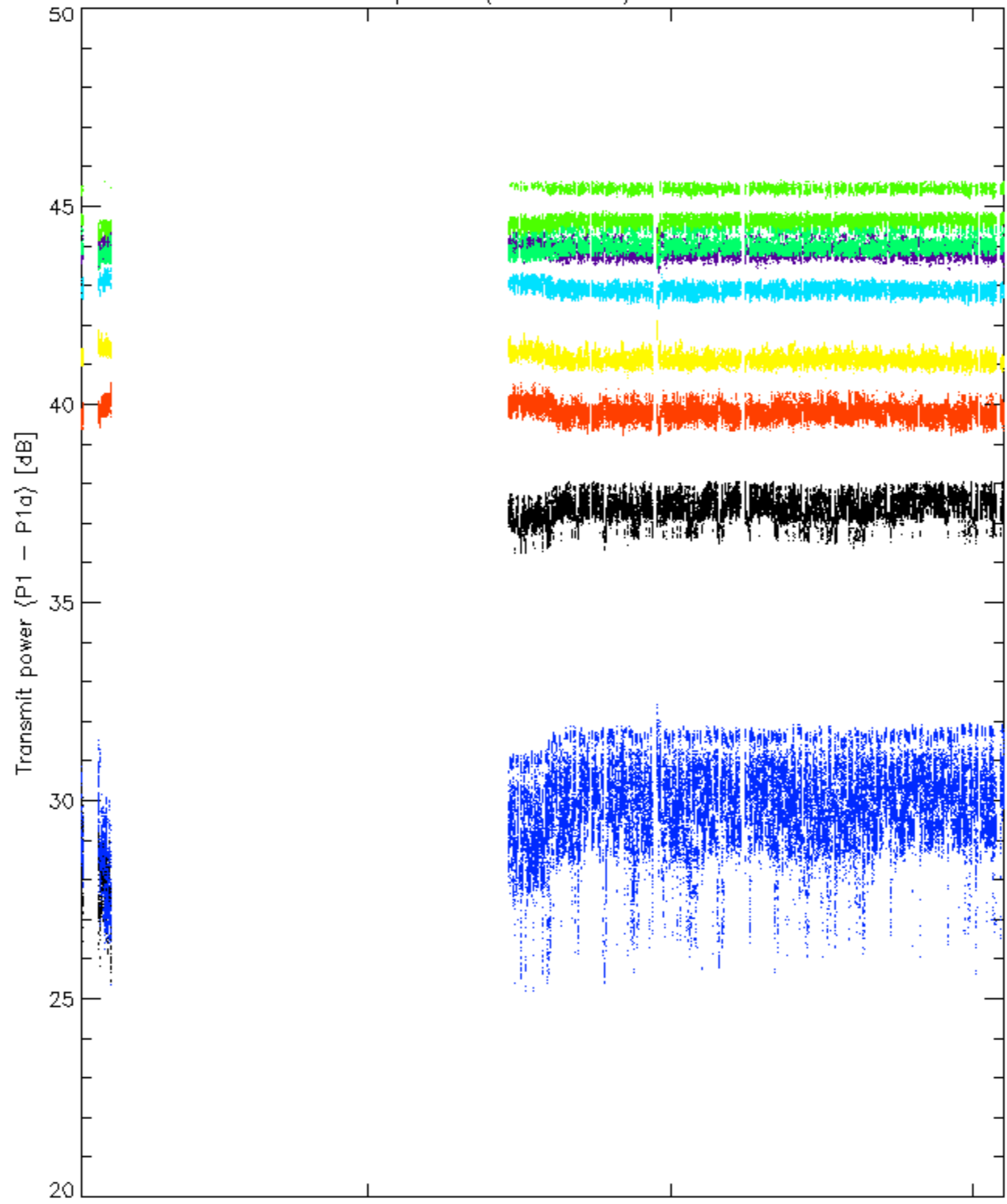
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



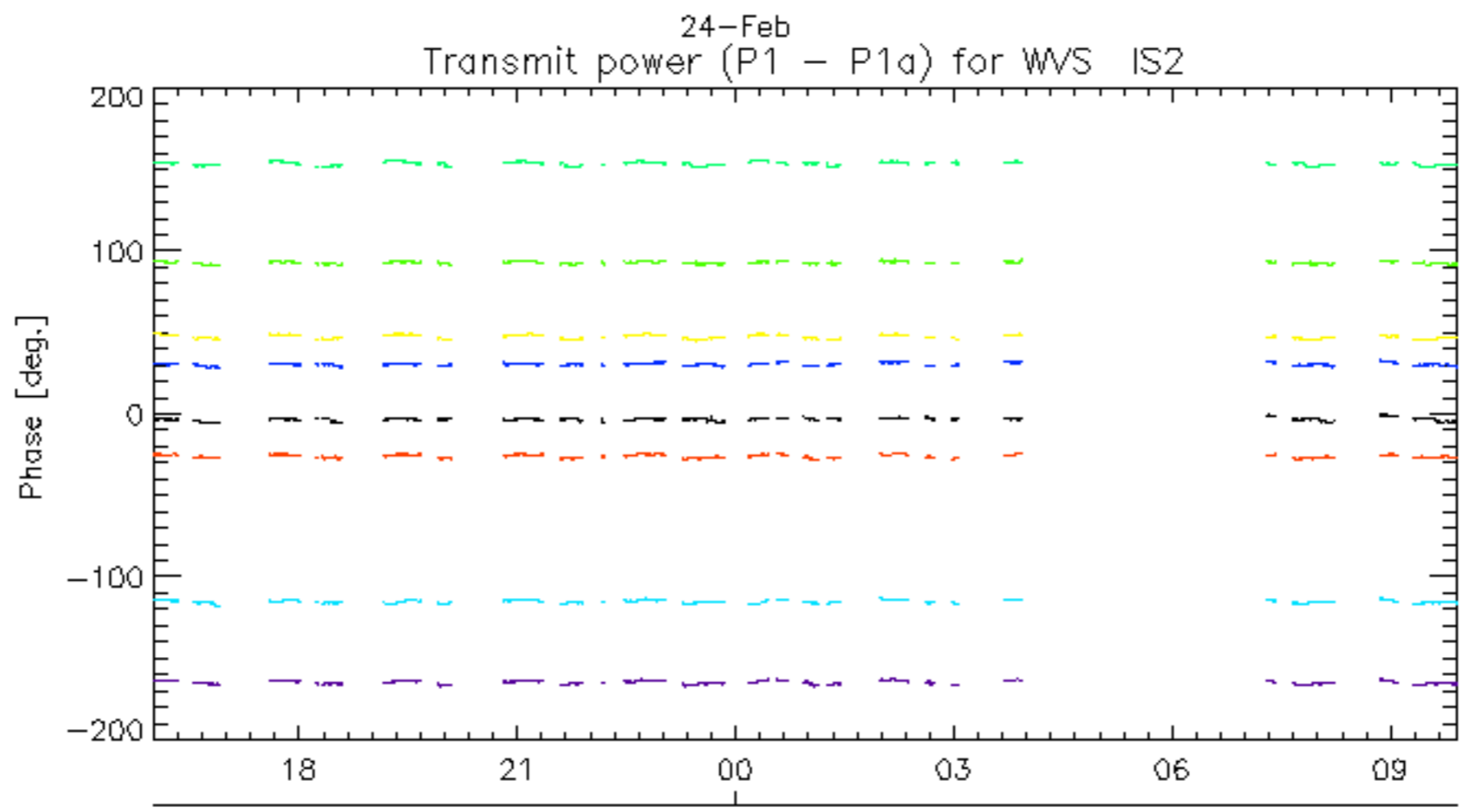
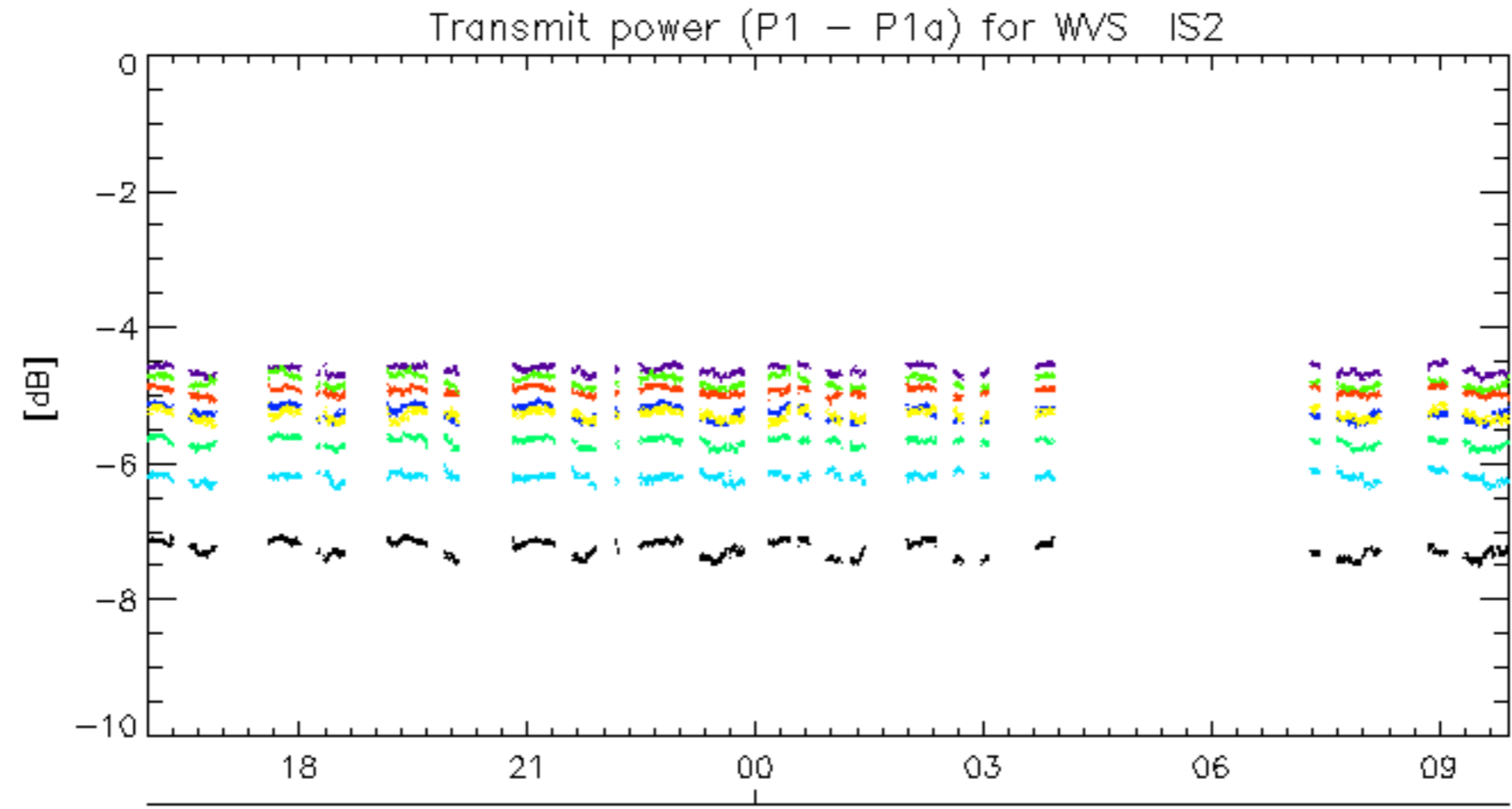


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

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.