

# PRELIMINARY REPORT OF 070303

**last update on Sat Mar 3 17:54:05 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 2007-03-02 00:00:00 to 2007-03-03 17:54:05

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	42	76	6	3	30
ASA_INS_AXVIEC20070227_105626_20070228_060000_20071231_000000	42	76	6	3	30
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	42	76	6	3	30
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	42	76	6	3	30

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	45	54	36	18	59
ASA_INS_AXVIEC20070227_105626_20070228_060000_20071231_000000	45	54	36	18	59
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	45	54	36	18	59
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	45	54	36	18	59

## 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	20070228 170158
H	20070303 145426

MSM in V/V polarisation

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

#### 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)
3	P1a	-11.070030	0.406774	0.424426
7	P1a	-10.099710	0.228873	0.247165
11	P1a	-10.727242	0.135932	0.045219
15	P1a	-11.686276	1.567348	1.033840
19	P1a	-15.076802	1.075822	-0.874635
22	P1a	-19.566778	7.645126	-1.969601
26	P1a	-15.607040	0.480968	0.409772
30	P1a	-20.065077	7.059342	2.029984

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-6.636679	3.392993	-3.779897
7	P1	-2.582174	0.052679	0.131808
11	P1	-3.228489	0.151478	0.276013
15	P1	-4.596347	1.340583	0.944063
19	P1	-3.422179	0.092984	-0.255052
22	P1	-5.344672	0.145745	0.323028
26	P1	-5.405175	0.698982	-0.726805
30	P1	-5.442270	0.066483	0.145432

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.229034	0.888310	-1.727393
7	P2	-21.911289	0.143523	-0.076642
11	P2	-10.810749	0.136110	-0.222996
15	P2	-5.108122	0.087726	-0.022989
19	P2	-7.237677	0.080909	-0.000758
22	P2	-8.368378	0.078649	0.082062

26	P2	-24.167374	0.130993	-0.210355
30	P2	-21.677956	0.069595	0.075061

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.221575	0.007806	-0.011373
7	P3	-8.221575	0.007806	-0.011373
11	P3	-8.221575	0.007806	-0.011373
15	P3	-8.221575	0.007806	-0.011373
19	P3	-8.221575	0.007806	-0.011373
22	P3	-8.221575	0.007806	-0.011373
26	P3	-8.221575	0.007806	-0.011373
30	P3	-8.221575	0.007806	-0.011373

### 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	-11.165062	0.101646	0.558536
7	P1a	-10.036054	0.130973	-0.015319
11	P1a	-10.614648	0.068719	-0.136794
15	P1a	-10.885036	0.134111	-0.144208
19	P1a	-15.730555	0.066803	0.092700
22	P1a	-20.837509	1.200622	-0.024017
26	P1a	-15.370830	0.264378	0.262305
30	P1a	-18.366953	0.352646	-0.126907

### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-7.801947	1.813763	-3.208110
7	P1	-2.428079	0.022126	0.041031

11	P1	-2.897286	0.019949	-0.066290
15	P1	-3.816674	0.040105	-0.067674
19	P1	-3.552417	0.011992	0.003658
22	P1	-5.031632	0.022979	-0.039162
26	P1	-5.982053	0.024530	0.064812
30	P1	-5.281287	0.021943	0.027279

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.817869	0.449517	-1.538670
7	P2	-21.979033	0.054022	0.117927
11	P2	-10.663467	0.030510	0.065962
15	P2	-4.821553	0.026954	0.035374
19	P2	-6.817277	0.028128	0.045639
22	P2	-8.116164	0.033814	0.094281
26	P2	-24.260387	0.034245	-0.037364
30	P2	-21.758585	0.036822	0.088484

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.045709	0.003409	0.002583
7	P3	-8.045723	0.003423	0.002772
11	P3	-8.045764	0.003417	0.002111
15	P3	-8.045717	0.003426	0.002233
19	P3	-8.045792	0.003413	0.002114
22	P3	-8.045801	0.003416	0.002363
26	P3	-8.045684	0.003417	0.002251
30	P3	-8.045742	0.003423	0.002381

## 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	0.000623481
	stdev	2.33081e-07
MEAN Q	mean	0.000393809
	stdev	2.53634e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.109248
	stdev	0.00253358
STDEV Q	mean	0.109300
	stdev	0.00258611



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007030[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_1PNPDE20070301_152552_000001832056_00040_26146_6817.N1	0	26
ASA_WSM_1PNPDE20070301_153707_000002392056_00040_26146_6781.N1	0	93

ASA_WSM_1PNPDE20070301_184853_000000852056_00042_26148_6897.N1	0	7
ASA_WSM_1PNPDE20070302_003405_000002632056_00045_26151_7324.N1	0	32
ASA_WSM_1PNPDE20070302_145414_000000852056_00054_26160_8003.N1	0	31
ASA_WSM_1PNPDE20070302_181712_000000852056_00056_26162_8077.N1	0	27



## 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"/>
Acsending
<input type="checkbox"/>
Descending

### 7.2 - Absolute Doppler for WVS

#### Evolution of Absolute Doppler

<input type="checkbox"/>
Acsending
<input type="checkbox"/>
Descending

### 7.3 - Doppler evolution versus ANX for WVS

#### Evolution Doppler error versus ANX

<input type="checkbox"/>
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### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)
<input type="checkbox"/>
Acsending
<input type="checkbox"/>
Descending

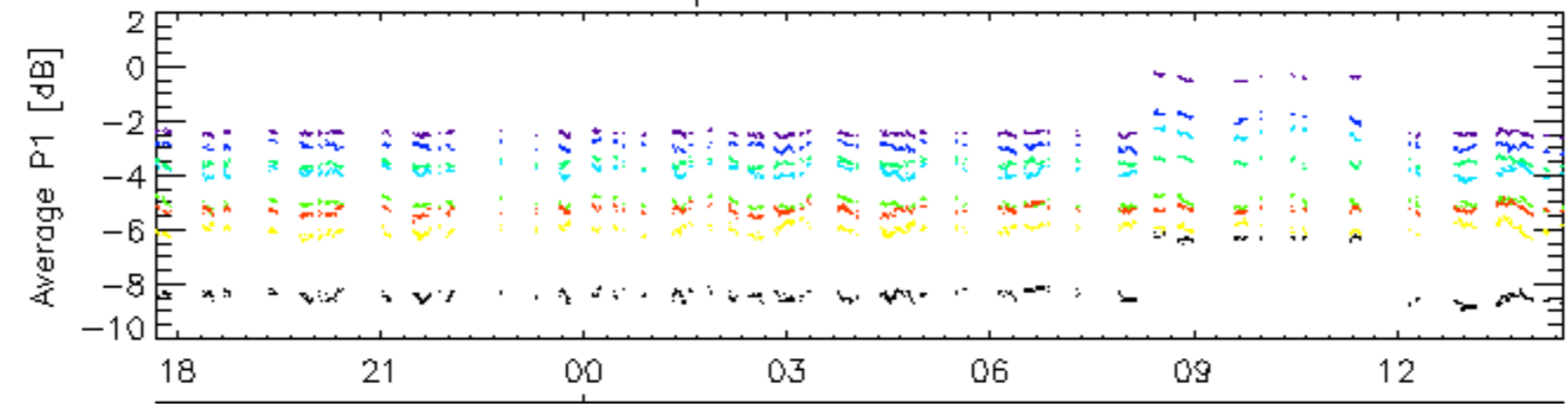
### 7.5 - Absolute Doppler for GM1

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

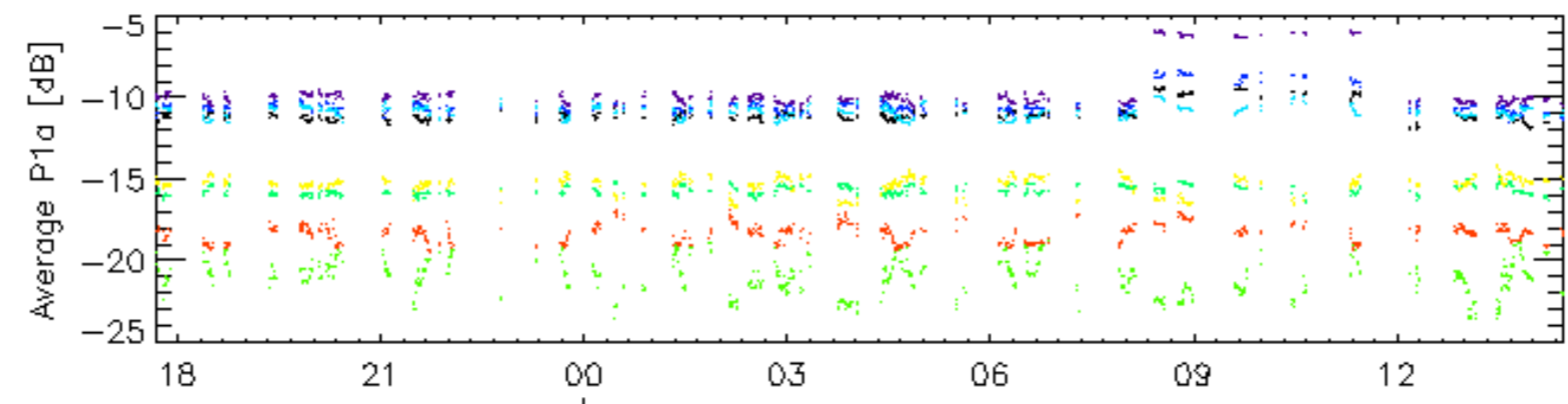
### 7.6 - Doppler evolution versus ANX for GM1

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

Cal pulses for GM1 SS3

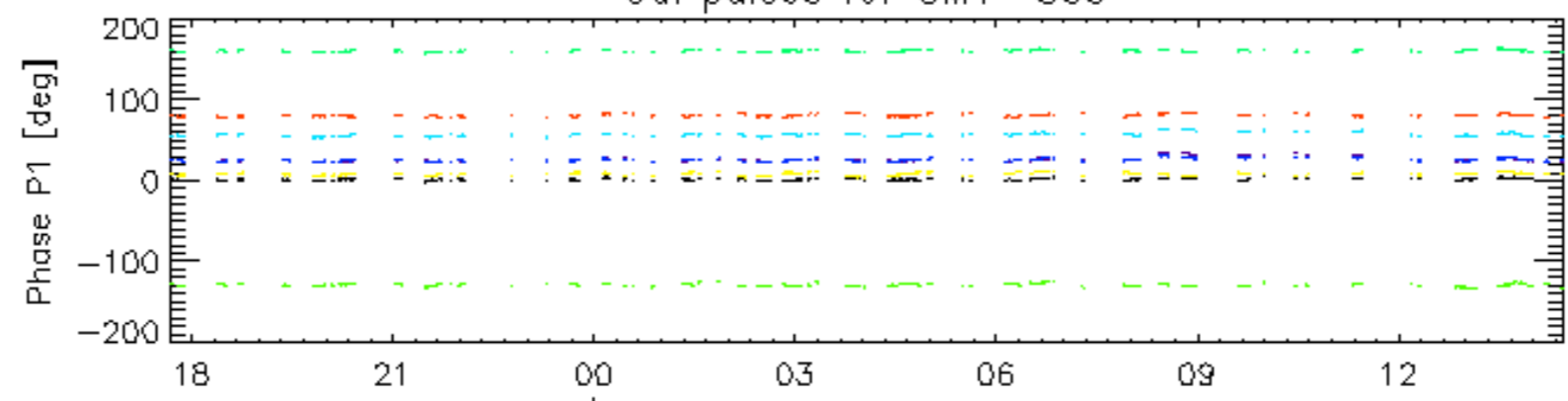


03-Mar

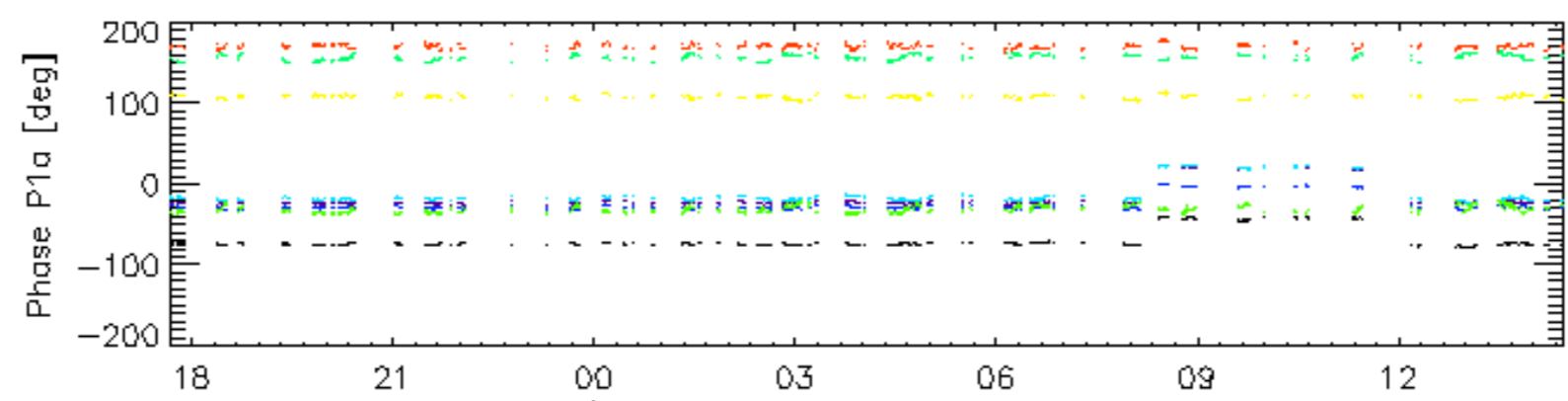


03-Mar

Cal pulses for GM1 SS3

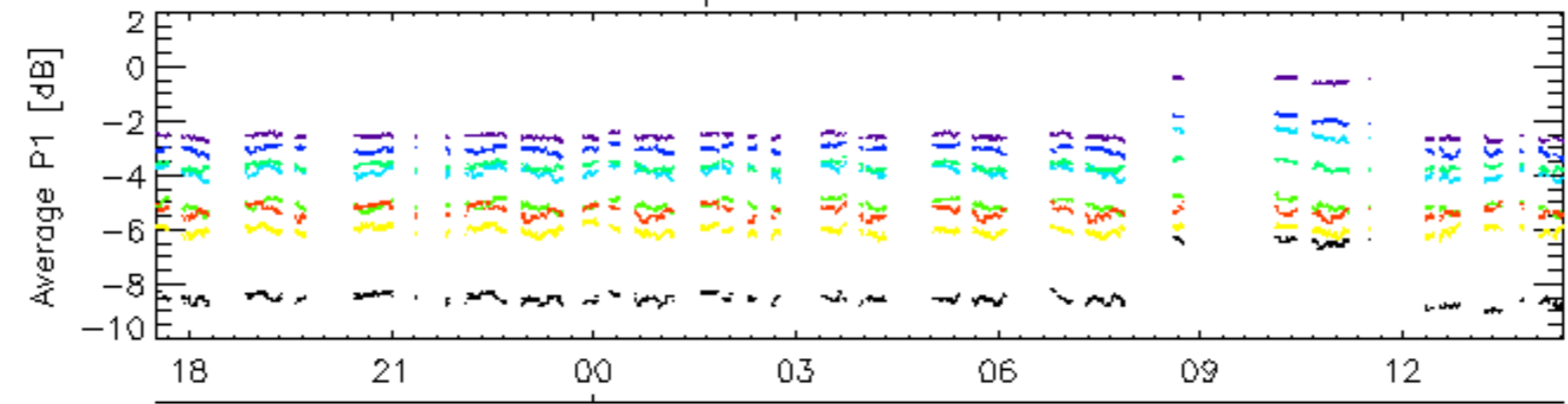


03-Mar

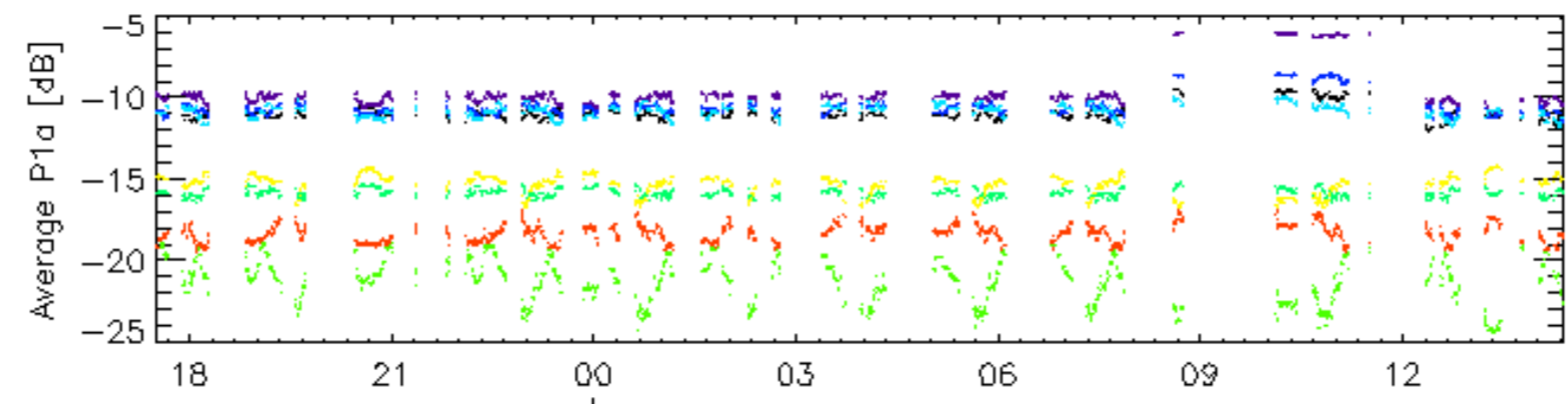


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS4

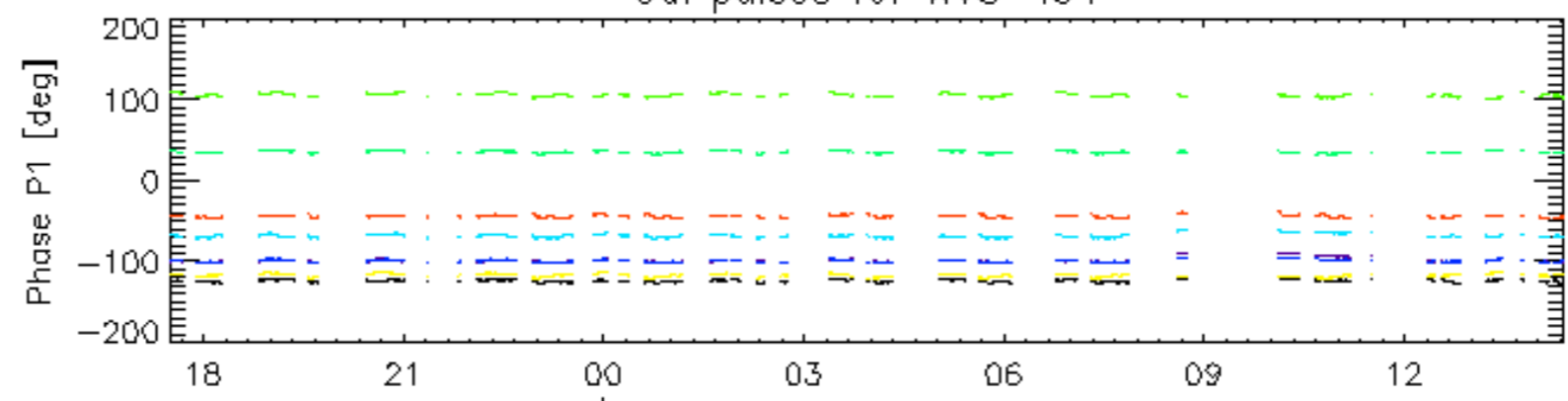


03-Mar

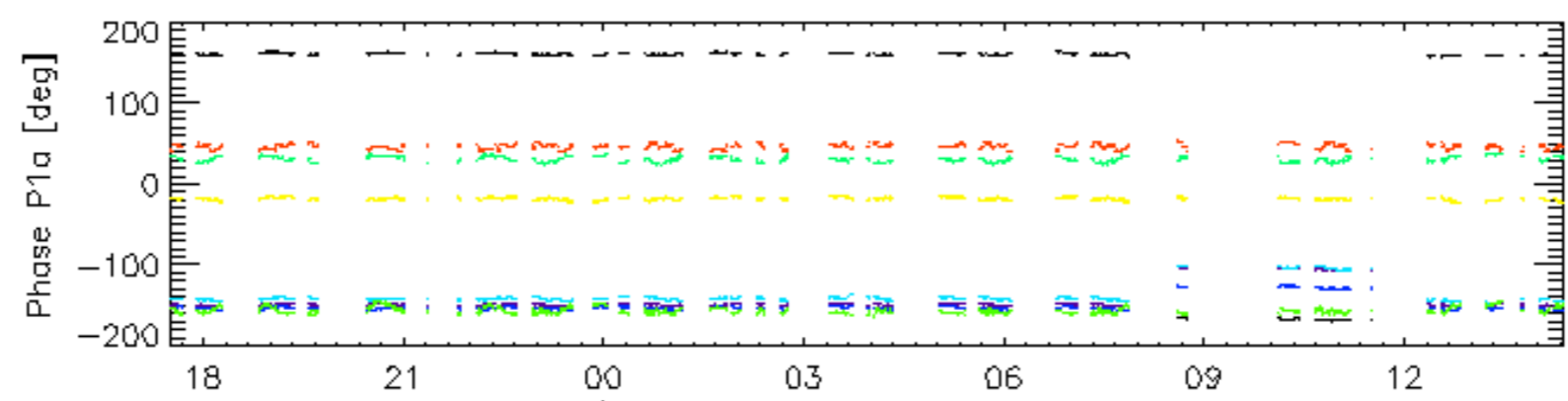


03-Mar

Cal pulses for WVS IS4



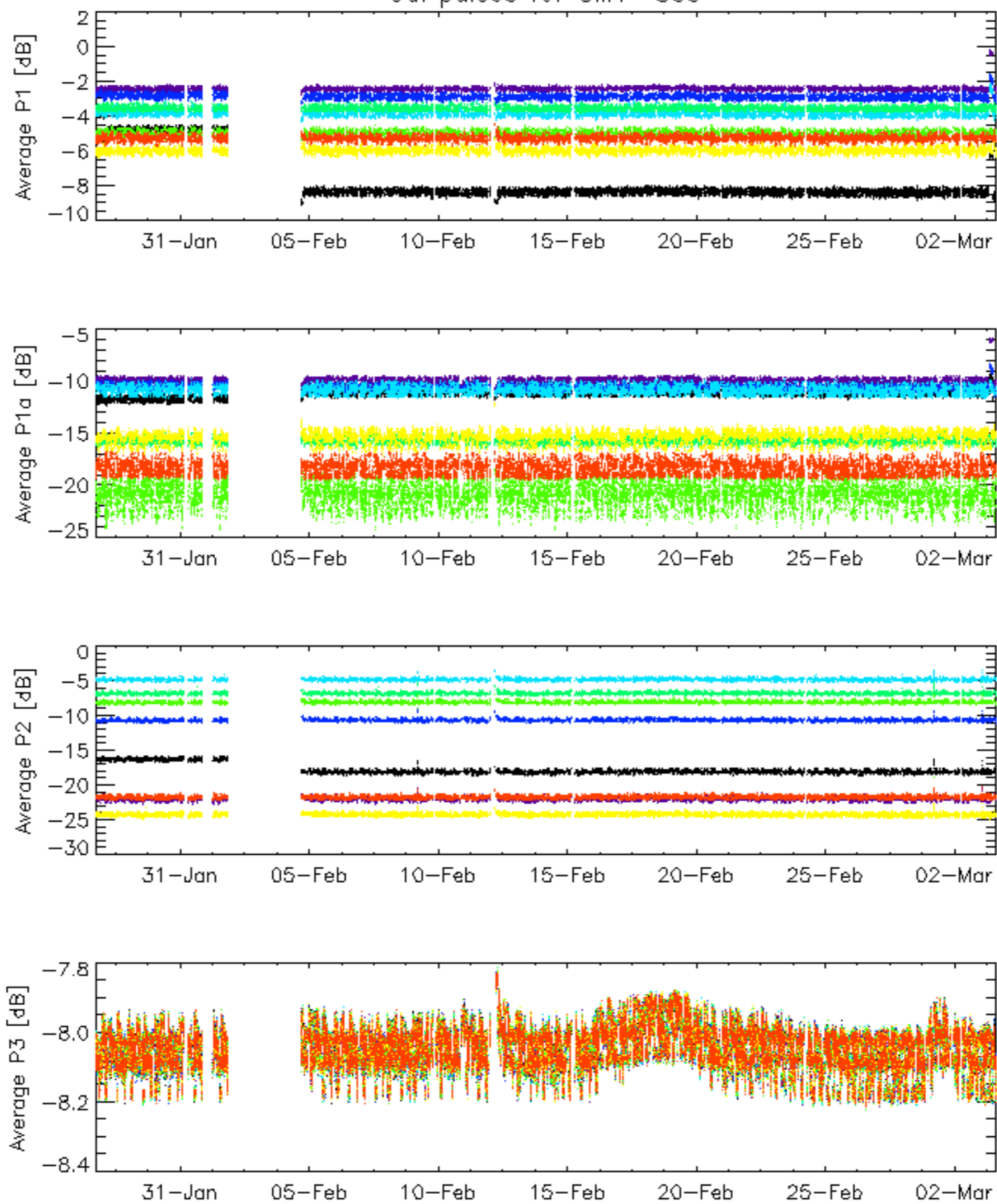
03-Mar



03-Mar

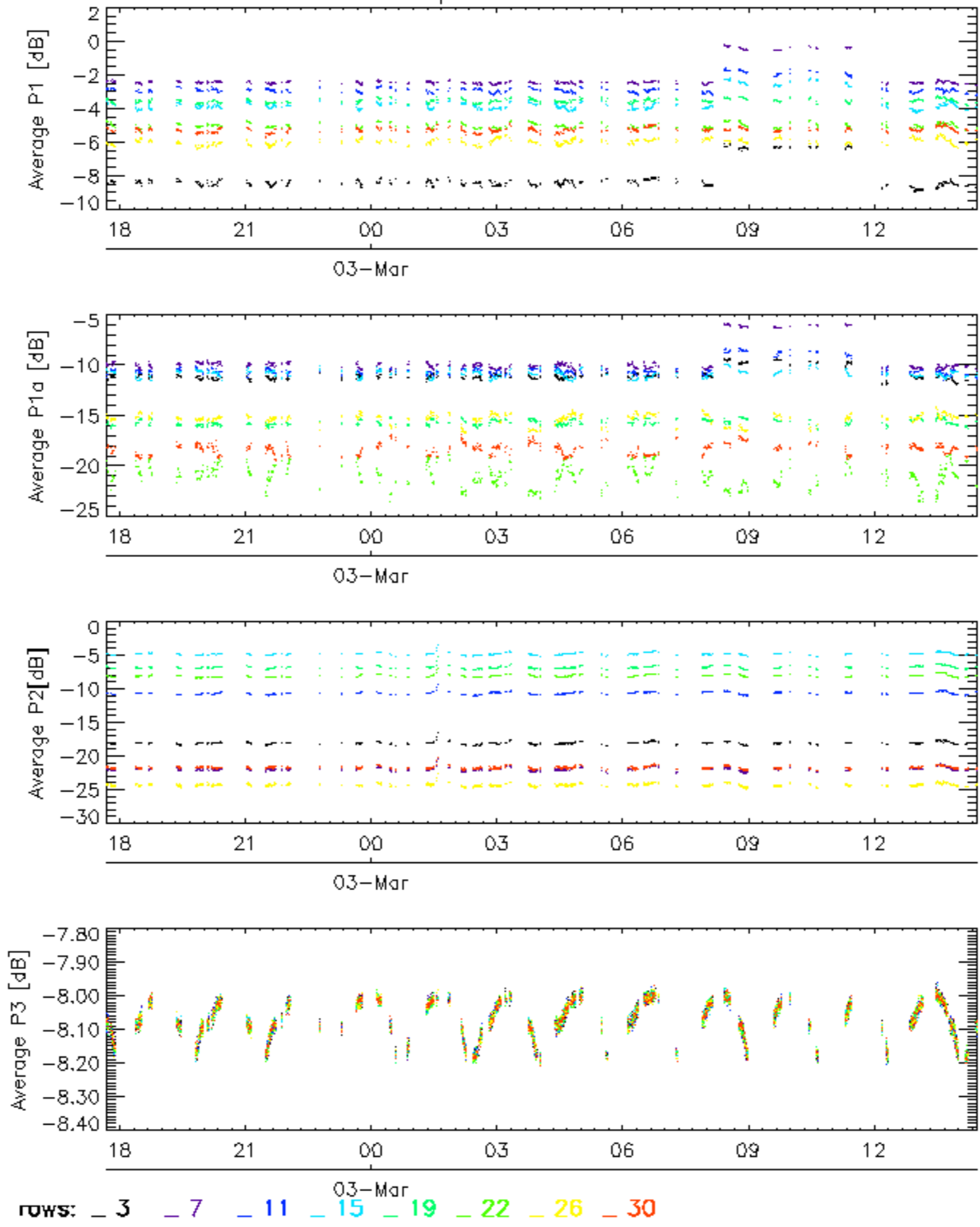
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

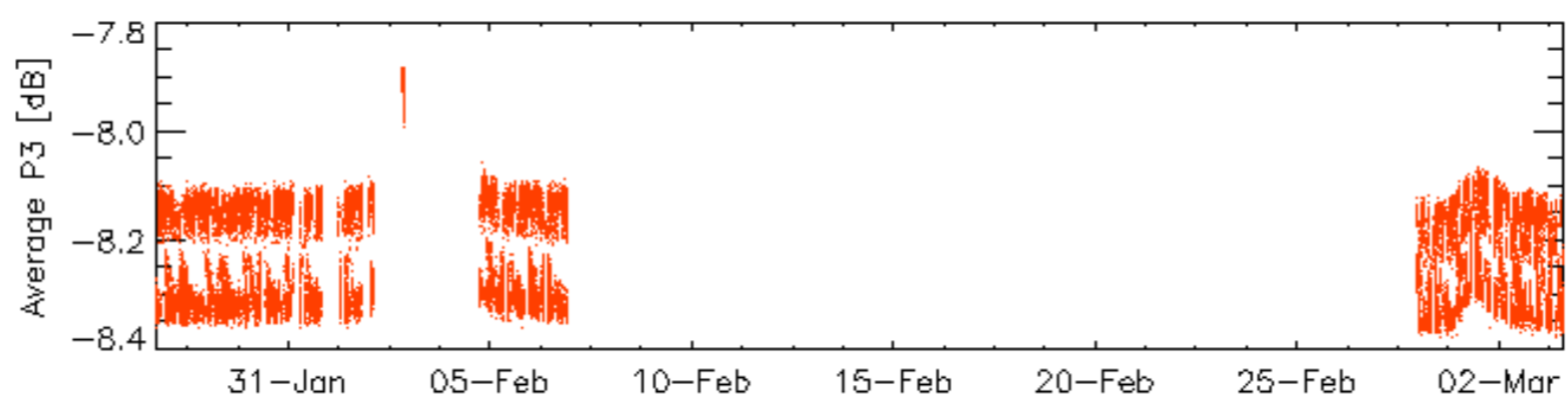
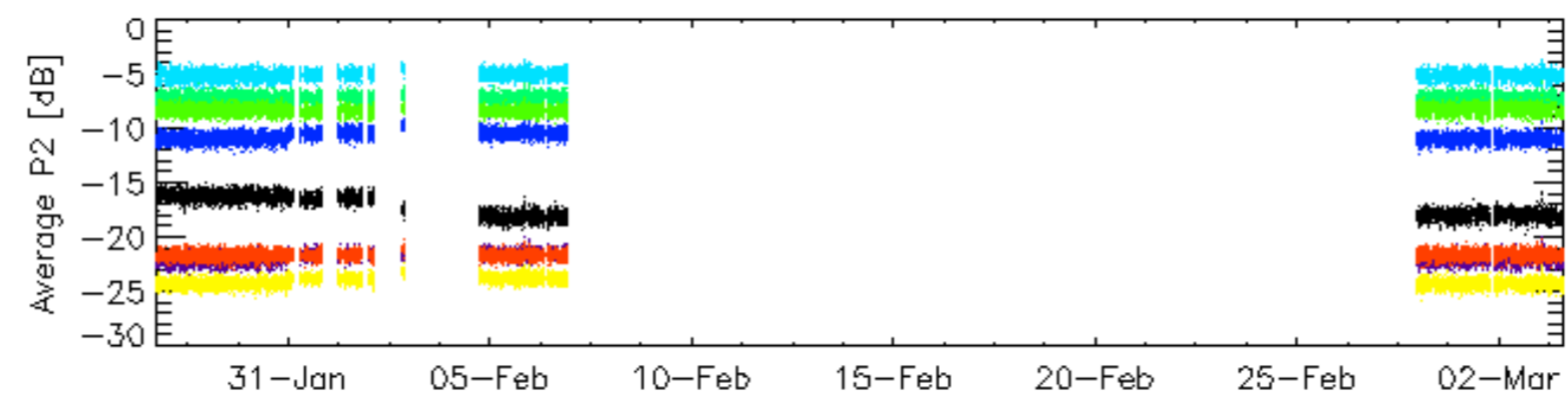
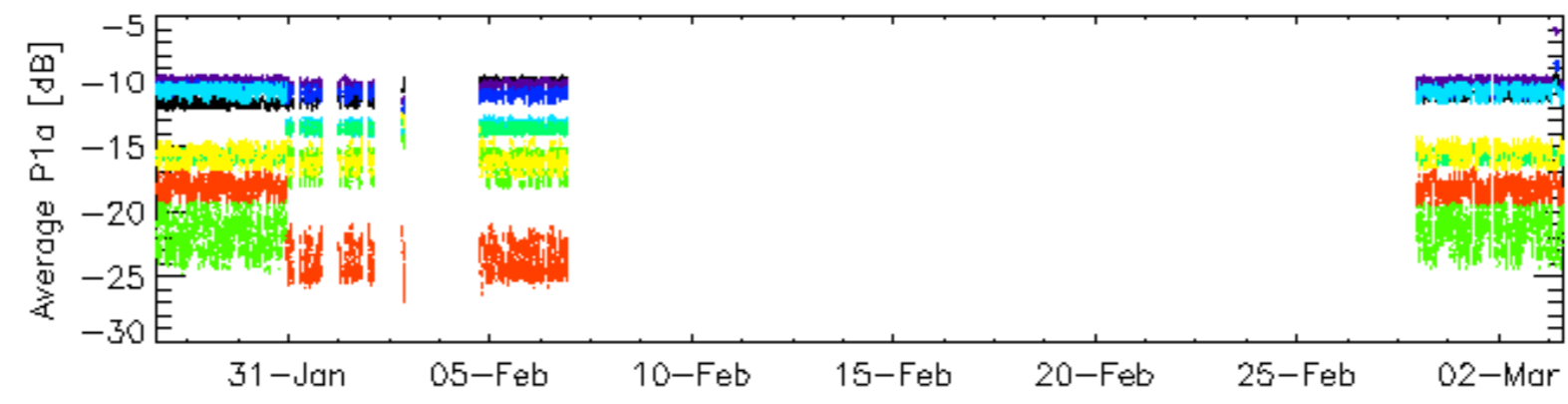
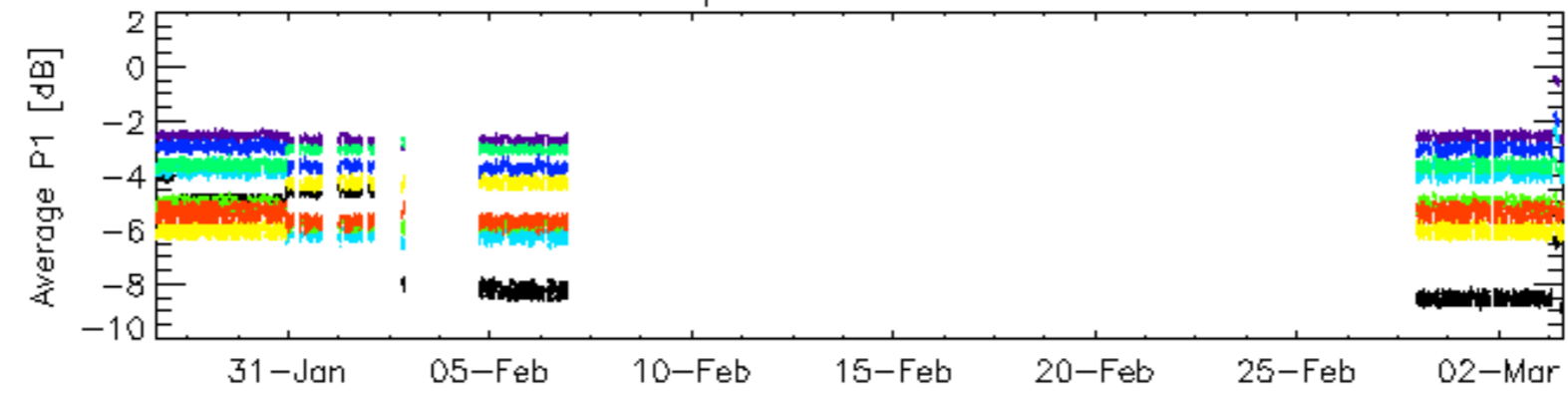


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

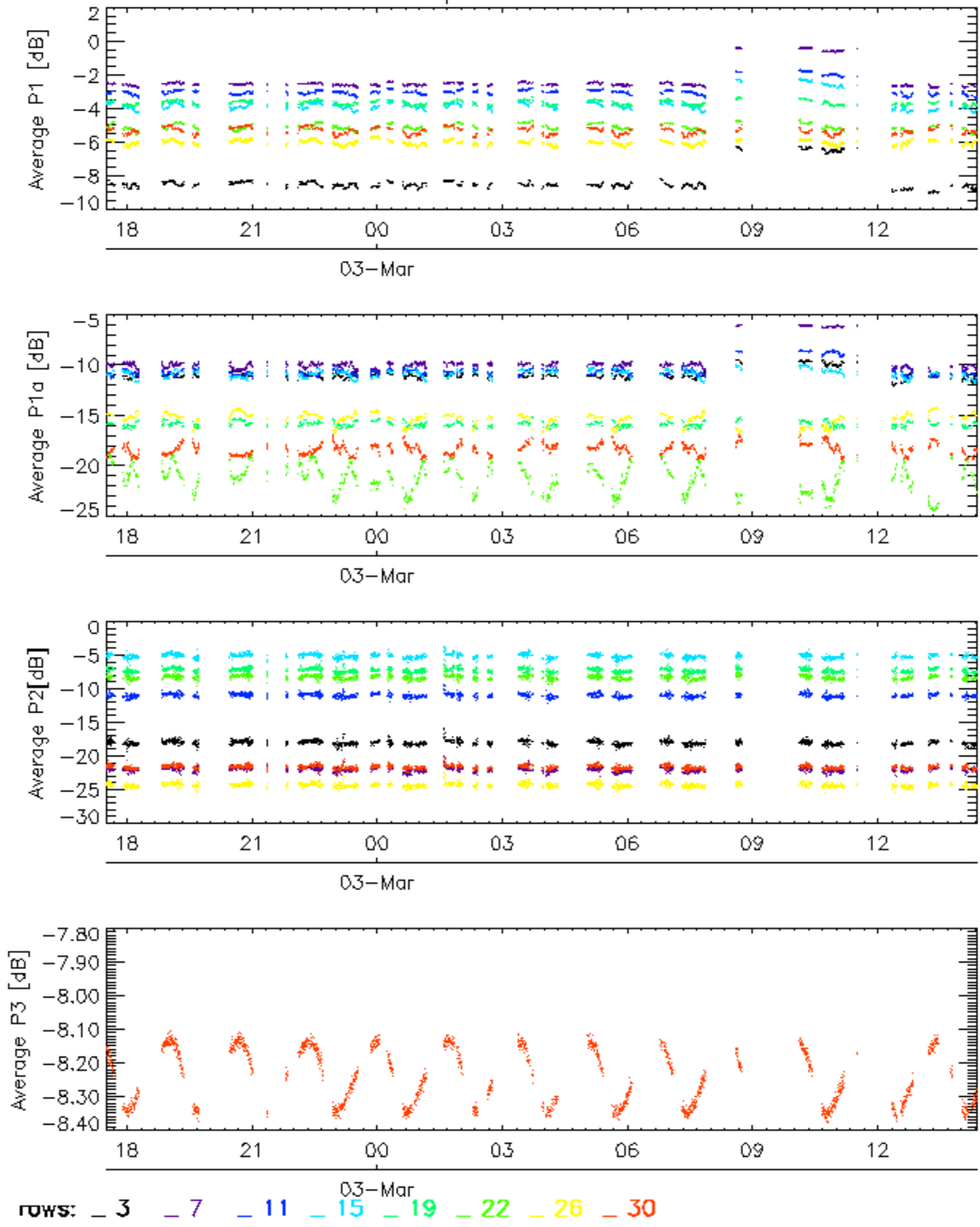


Cal pulses for WVS IS4



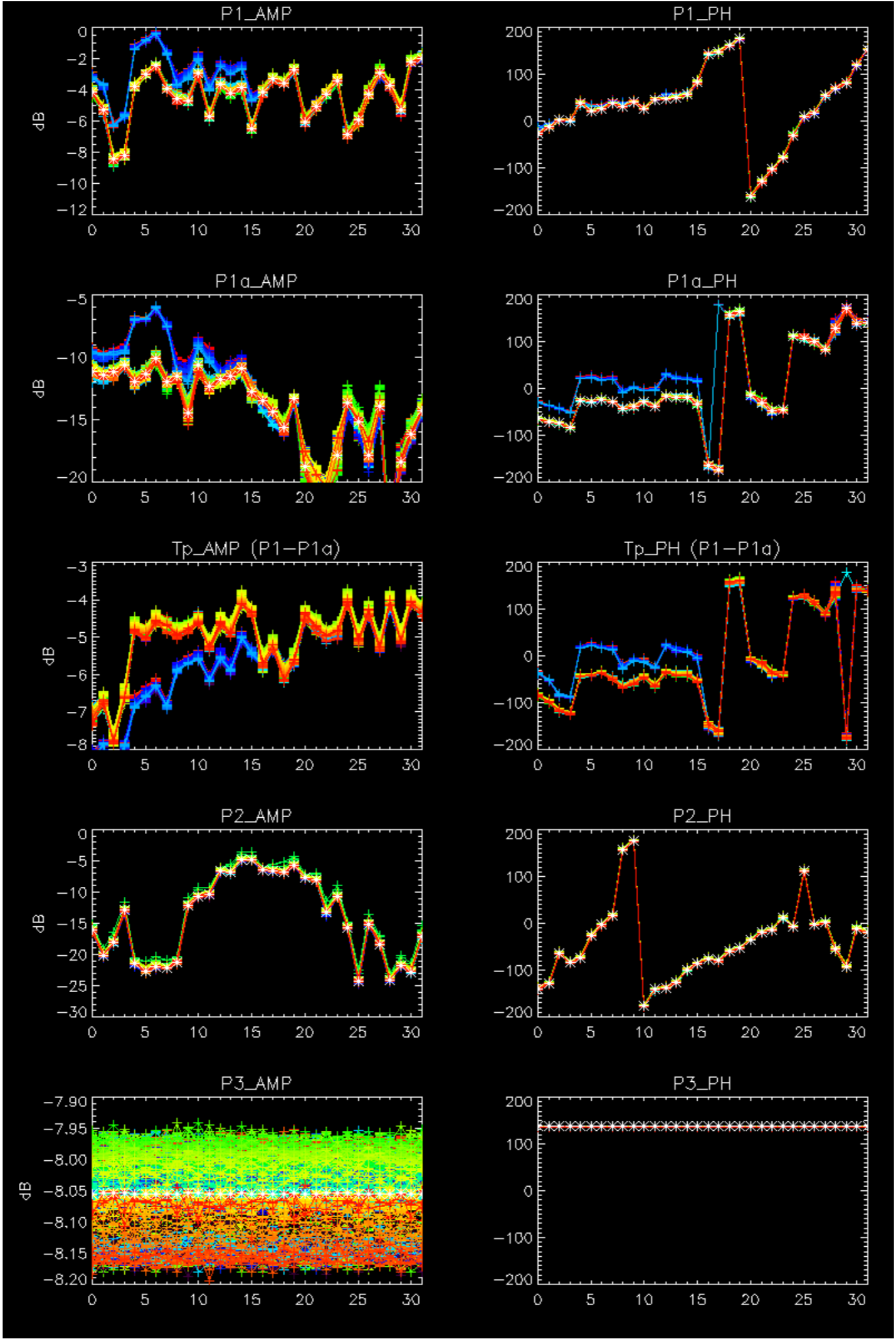
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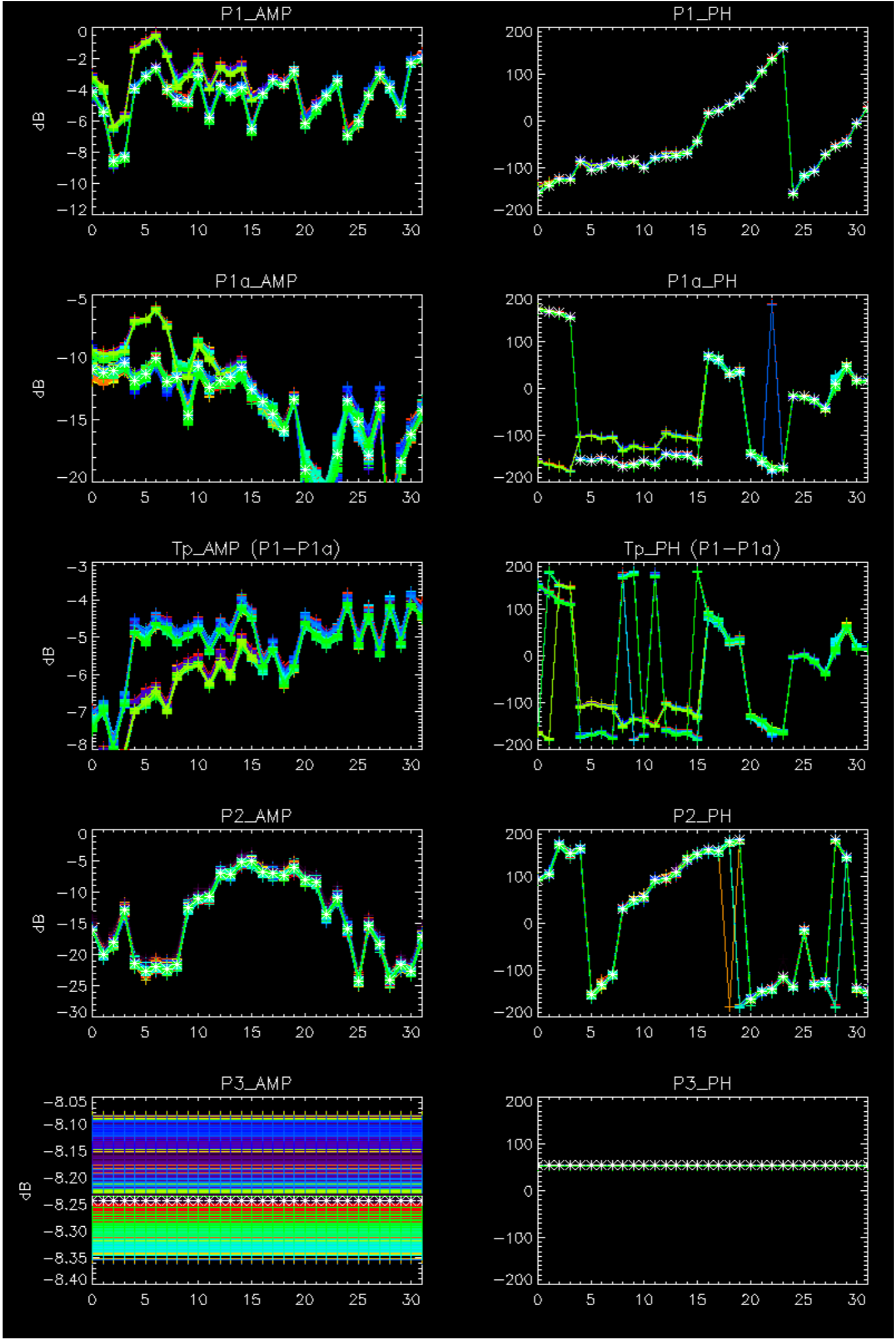
Cal pulses for WVS IS4



No anomalies observed.



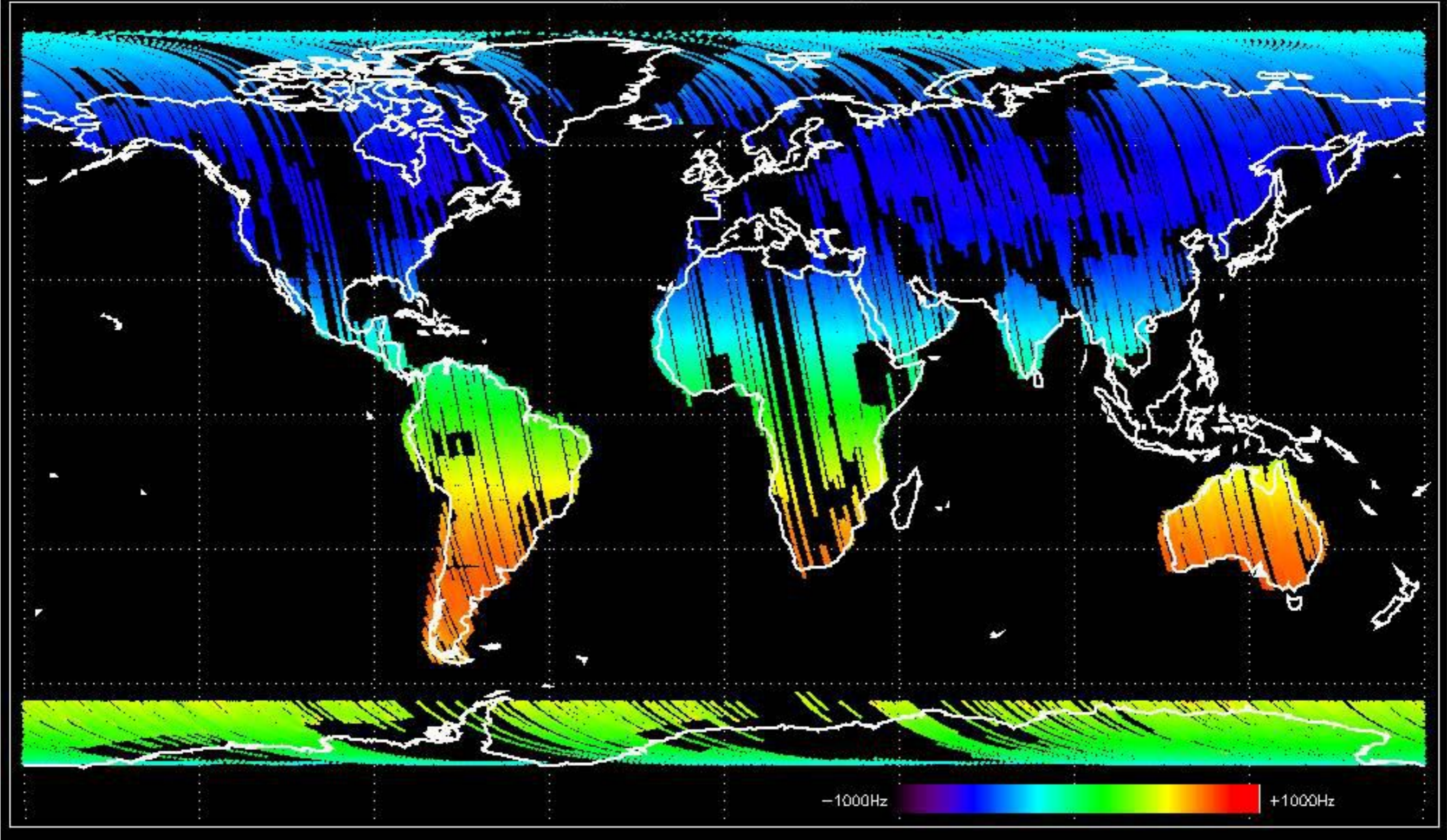




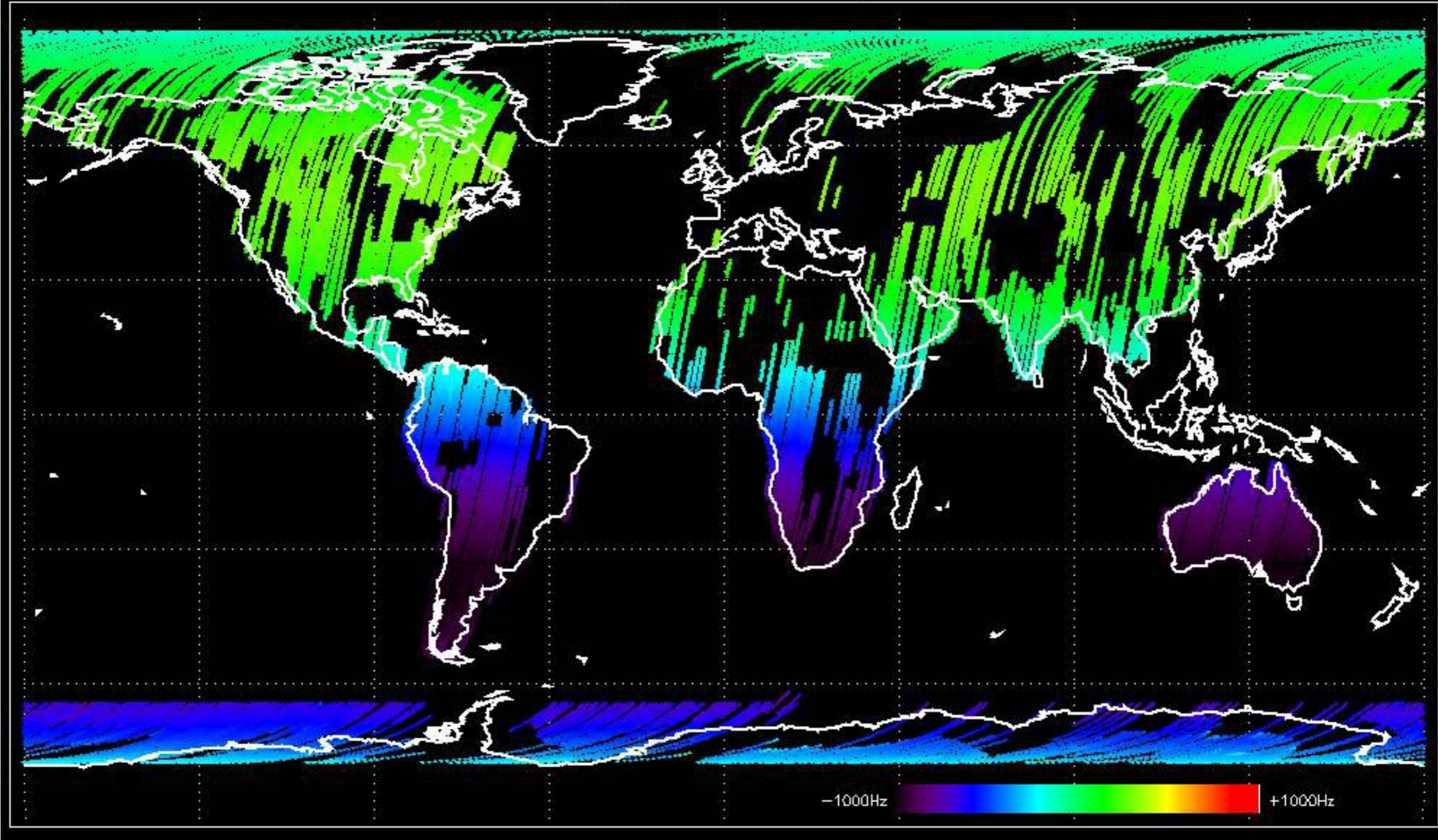
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



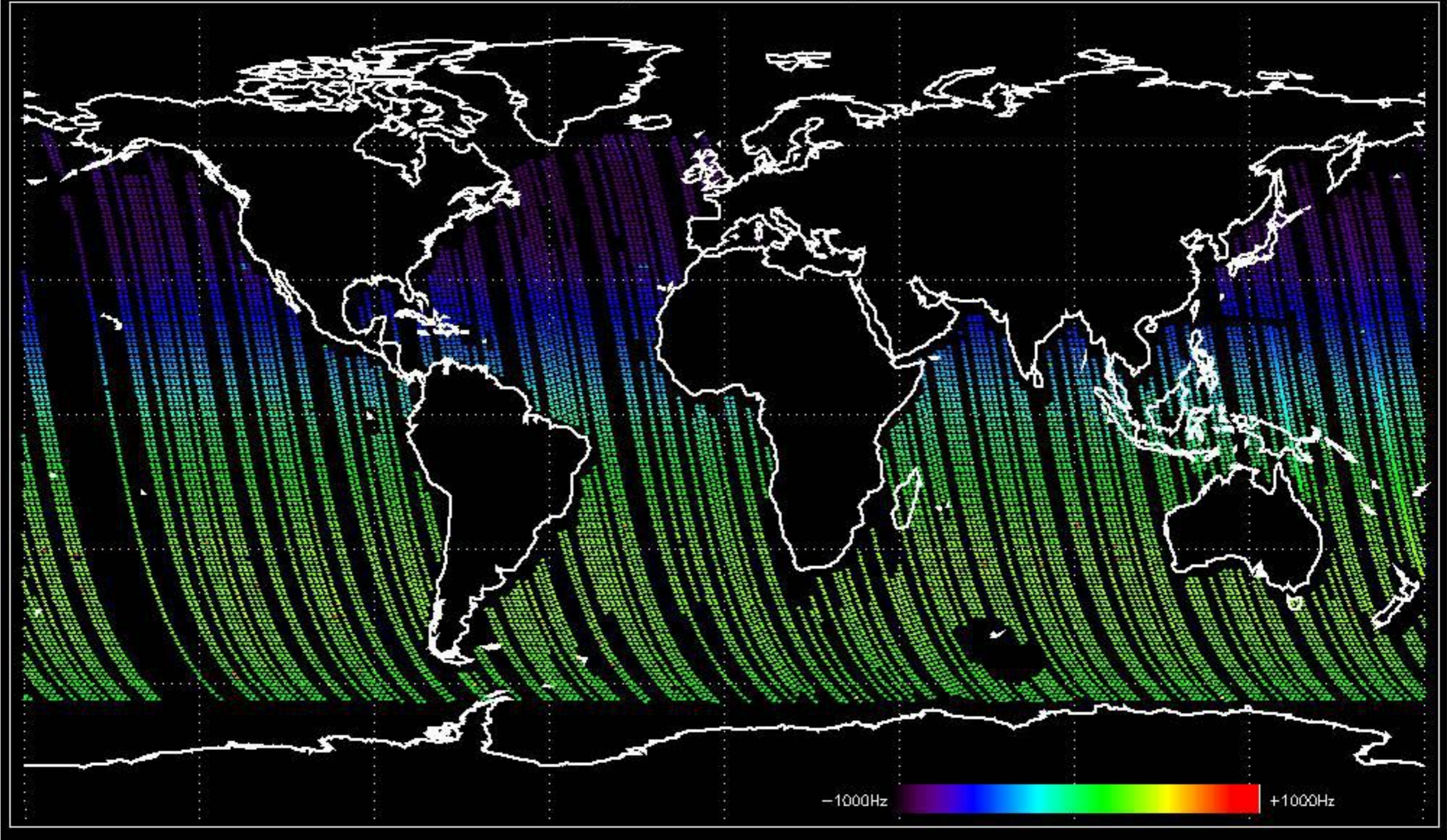
Doppler 'GM1' 'SS1' ascending



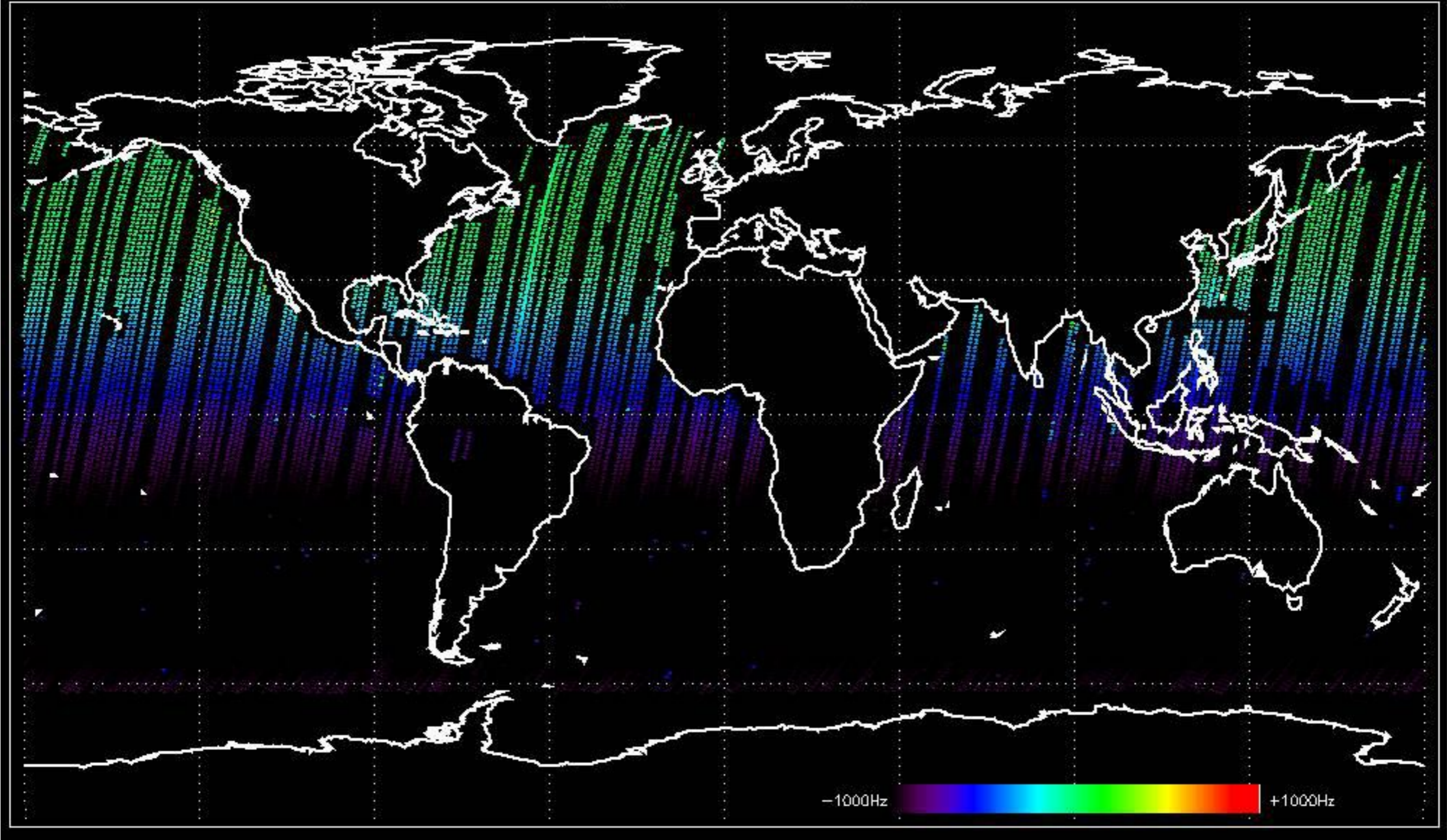
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS4' ascending

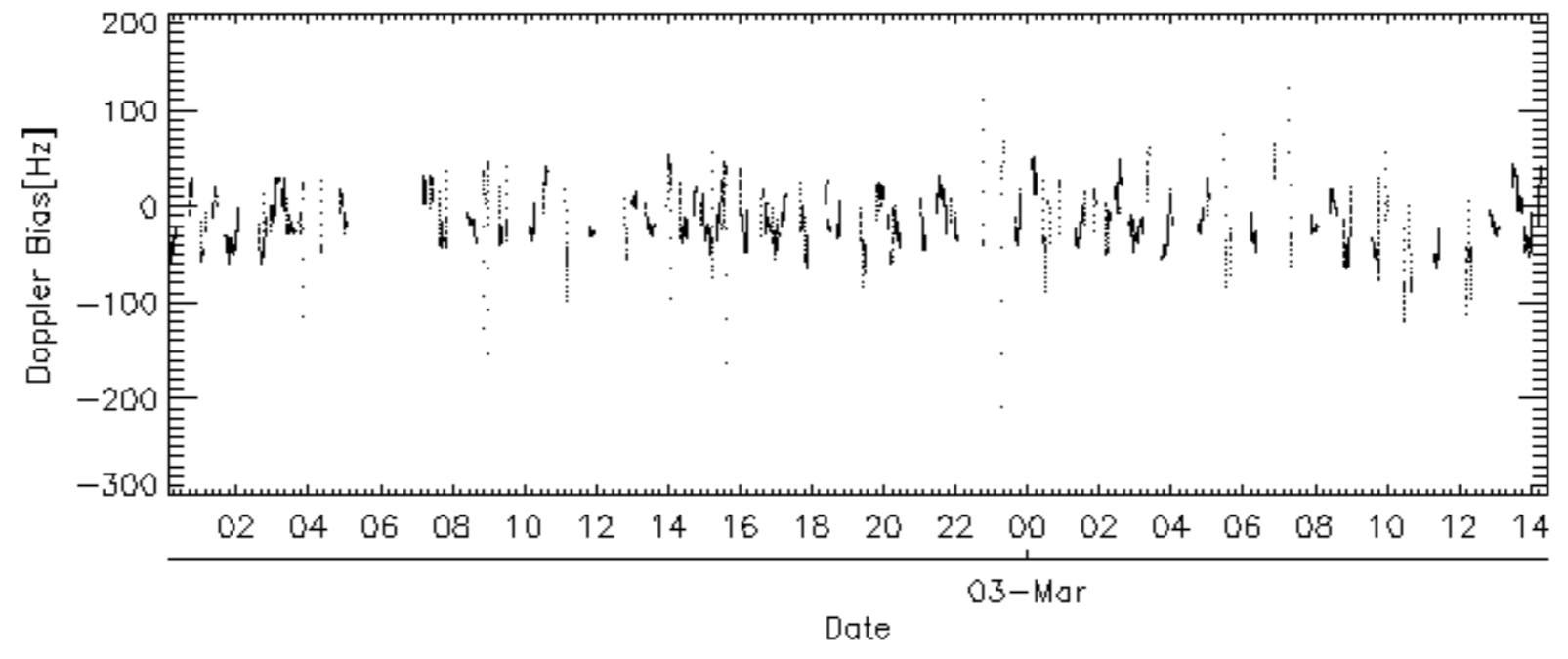
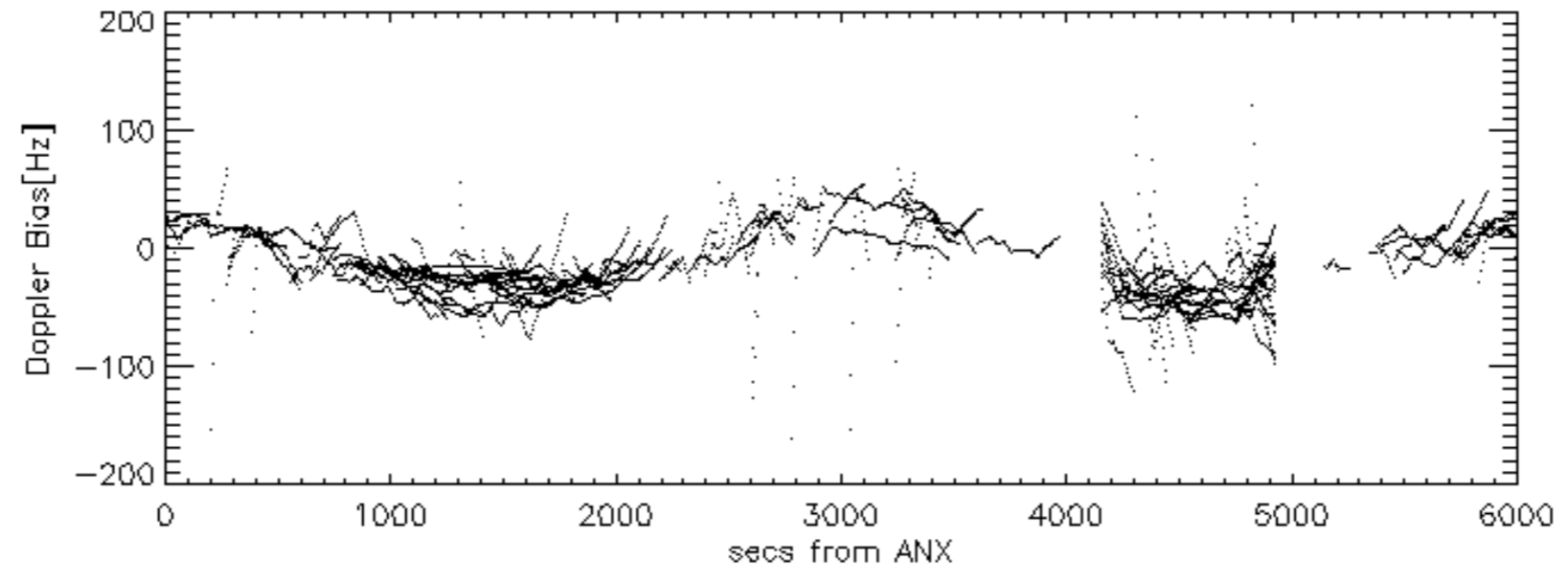
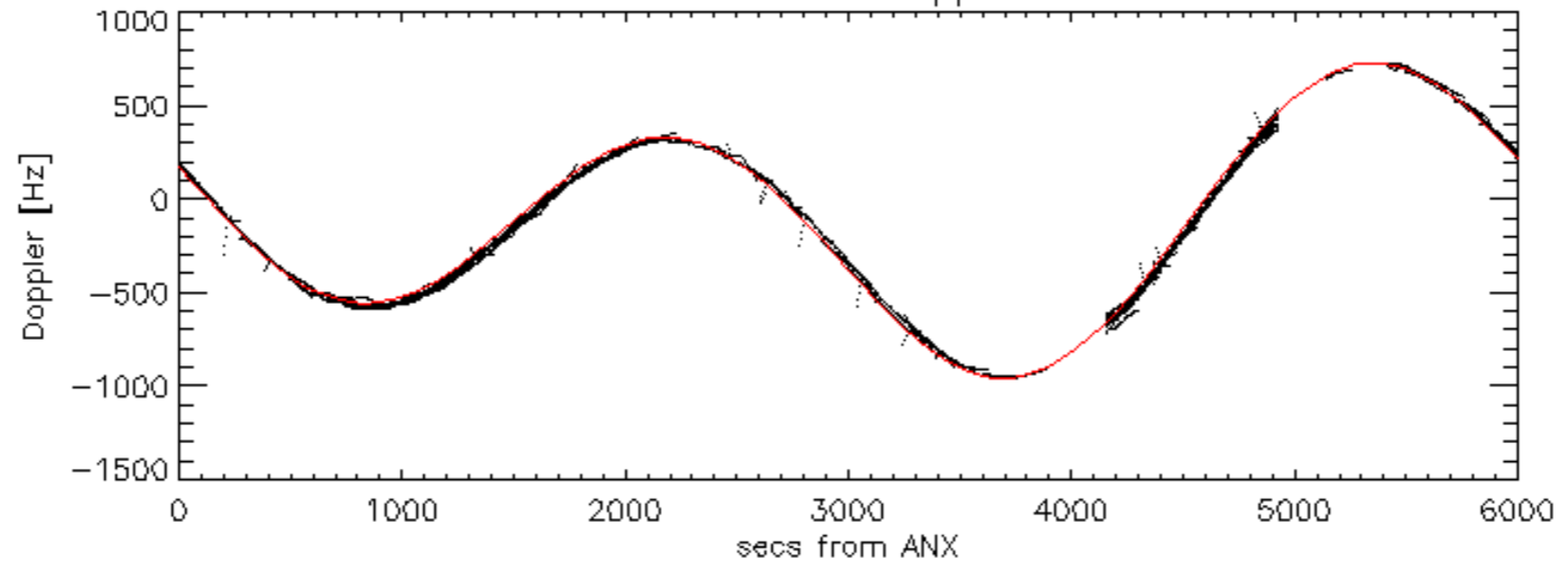


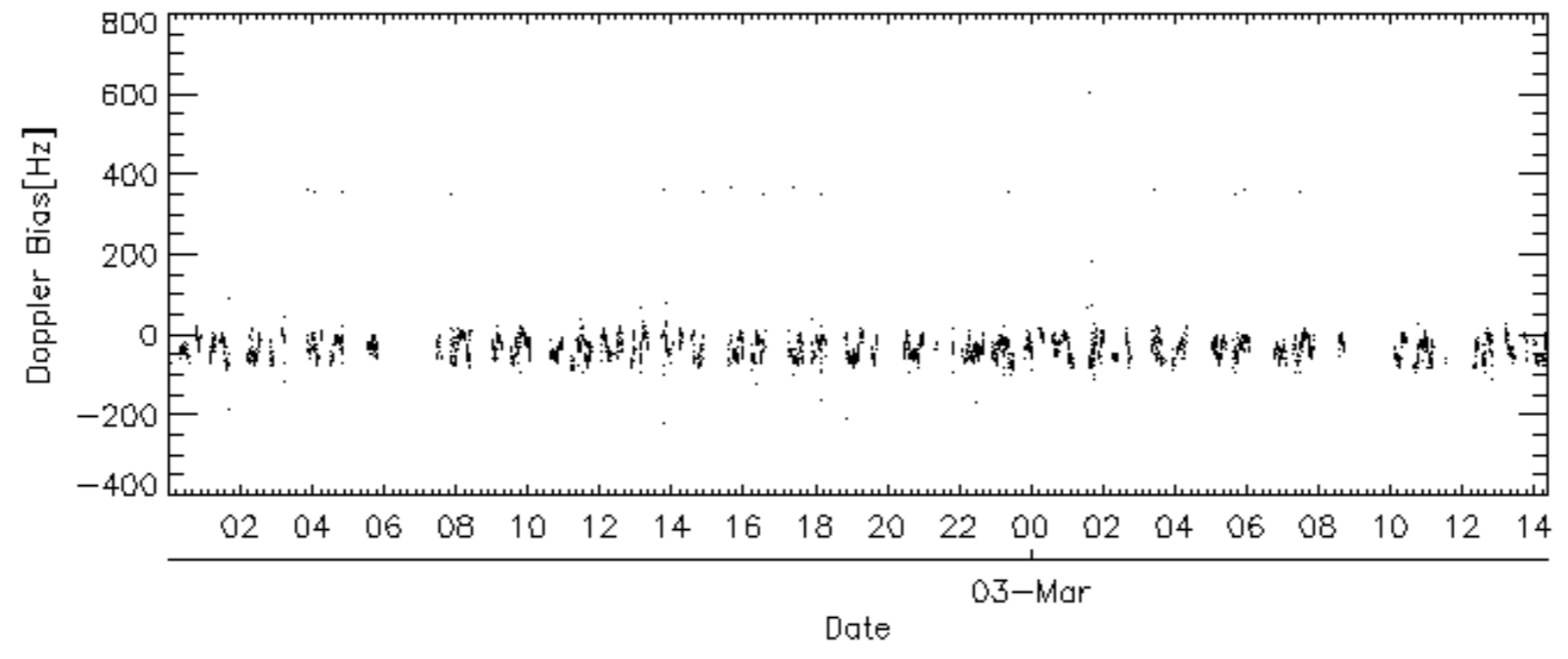
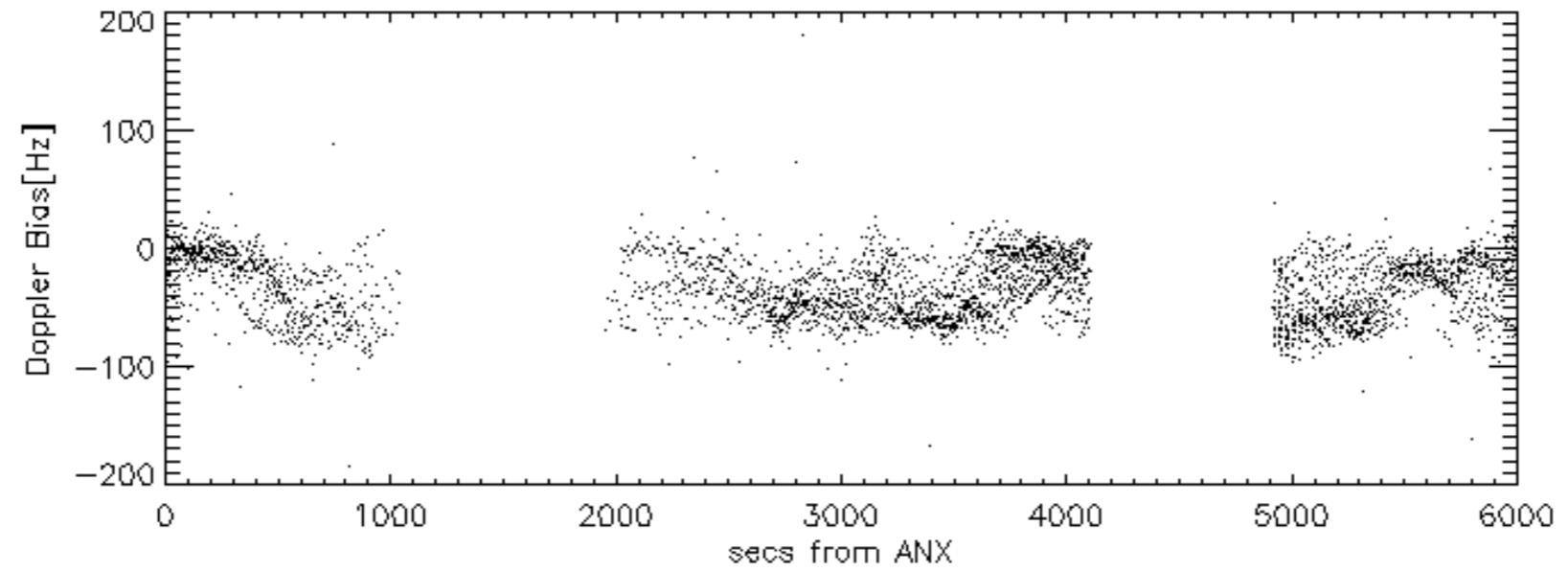
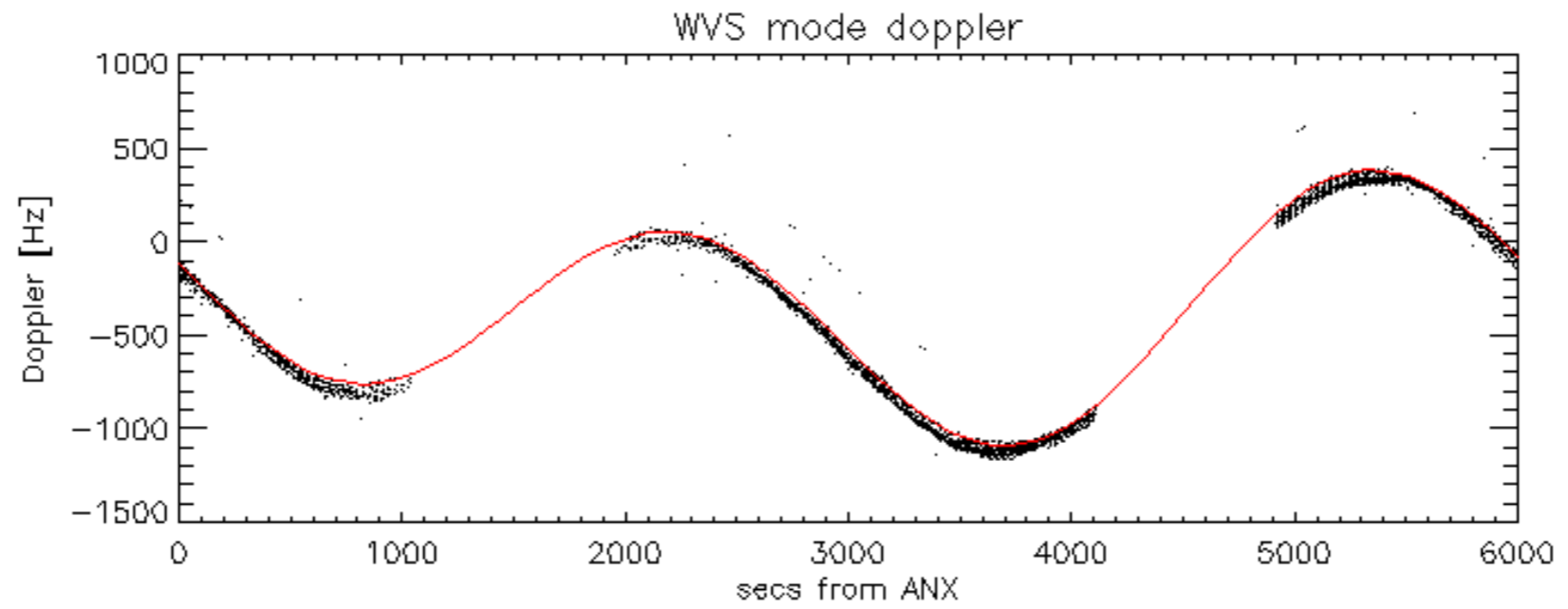
Doppler 'WVS' 'IS4' descending



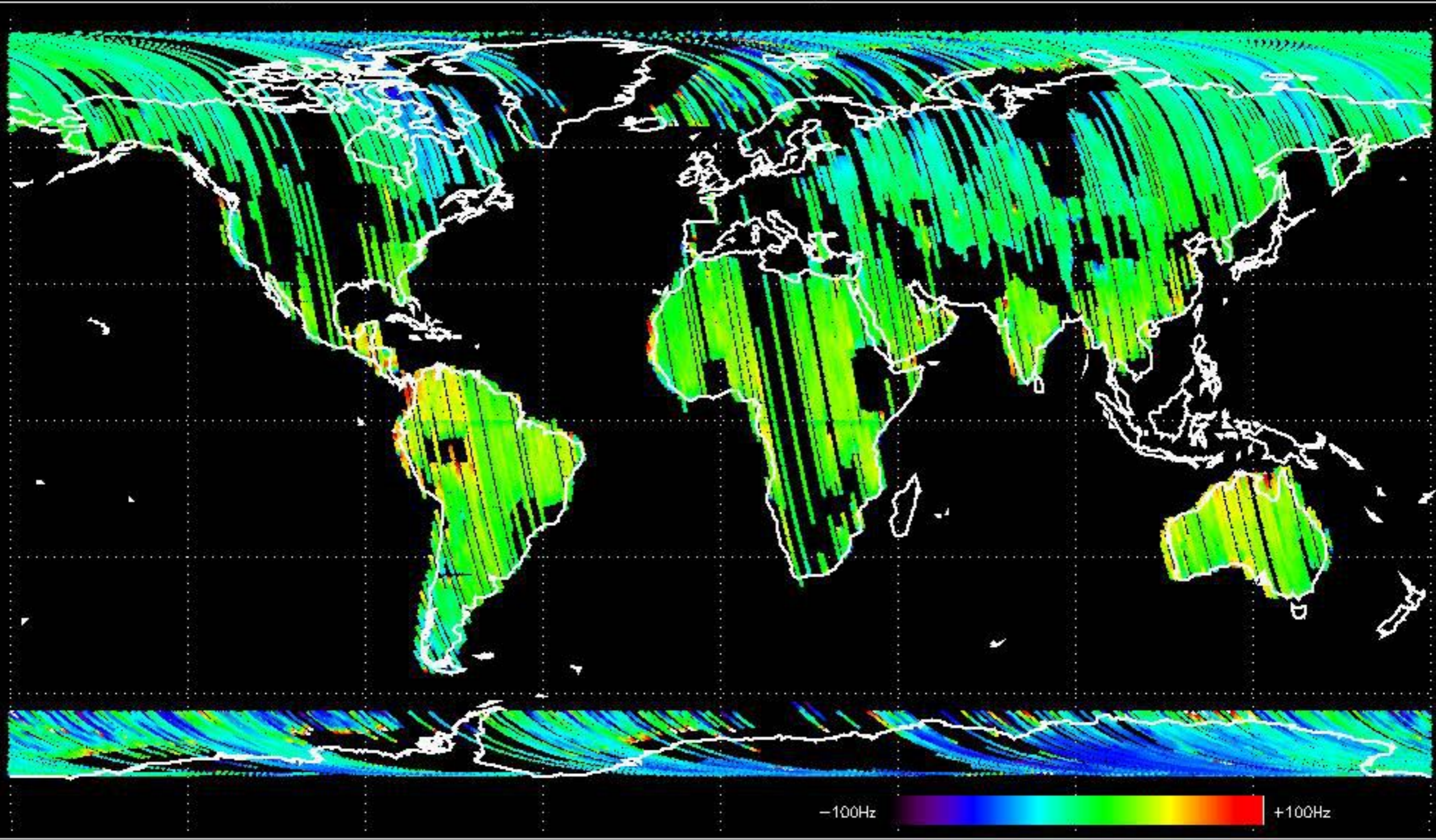


GM1 mode doppler

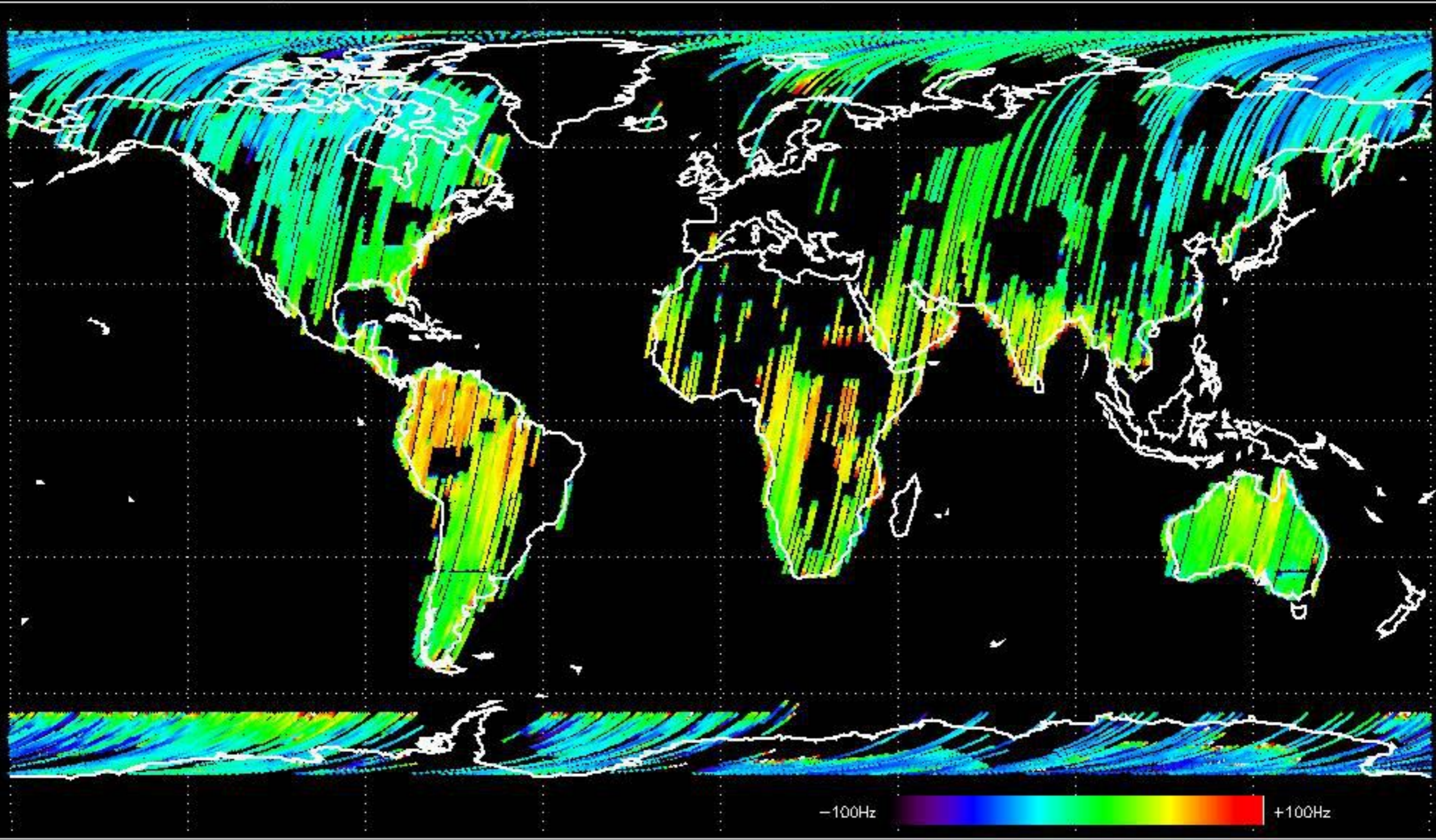




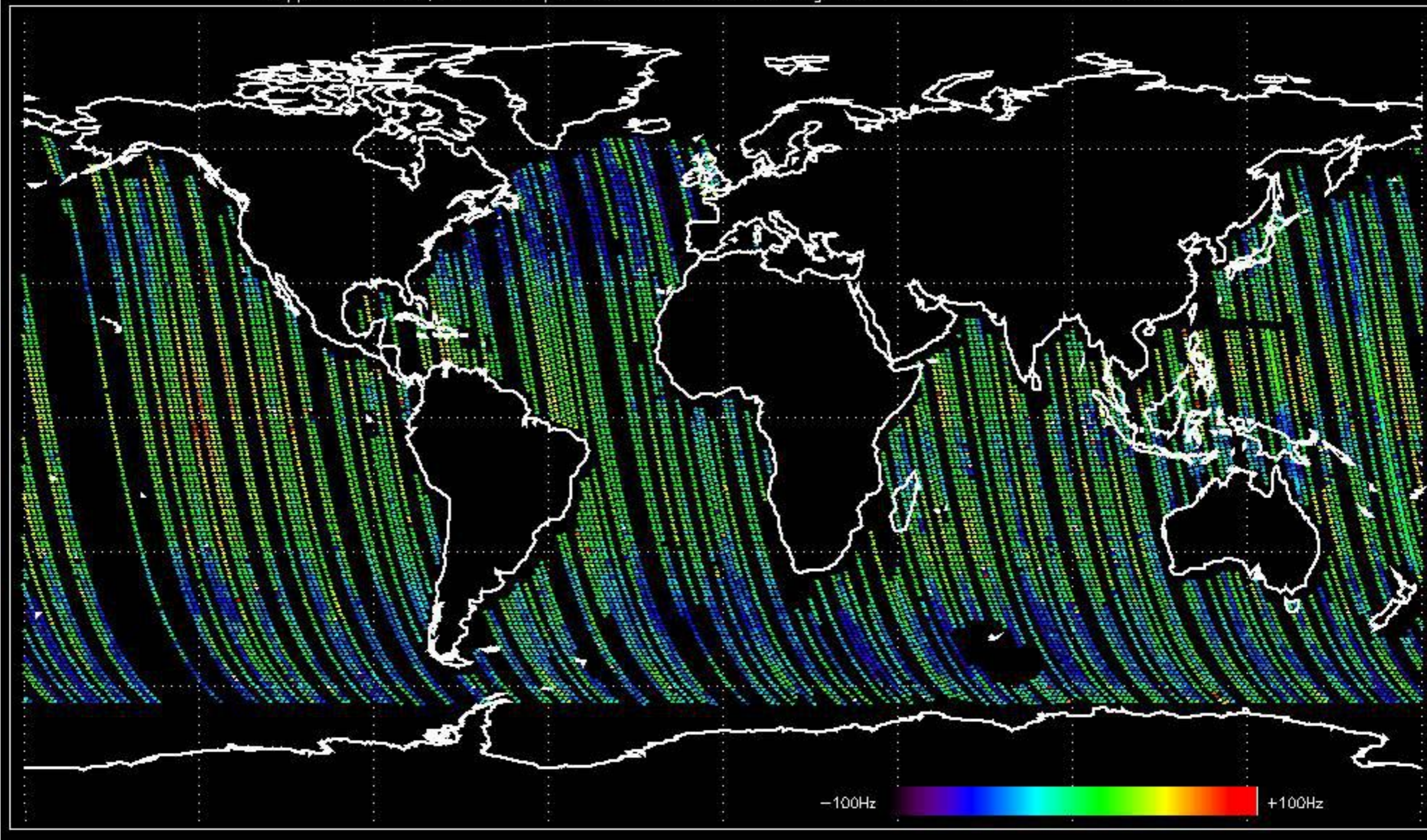
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.689937 Hz



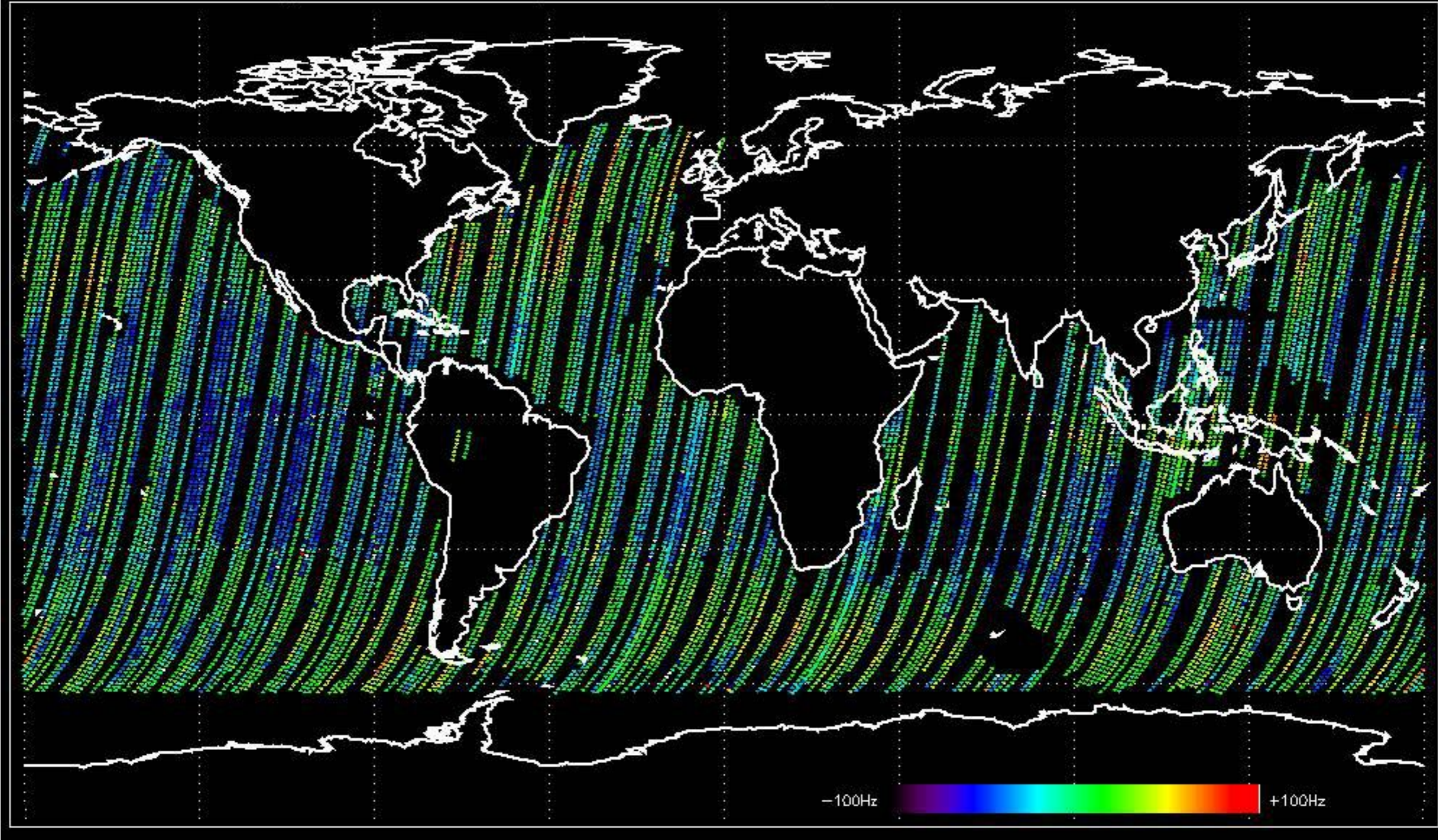
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.385822 Hz



Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -23.779299 Hz



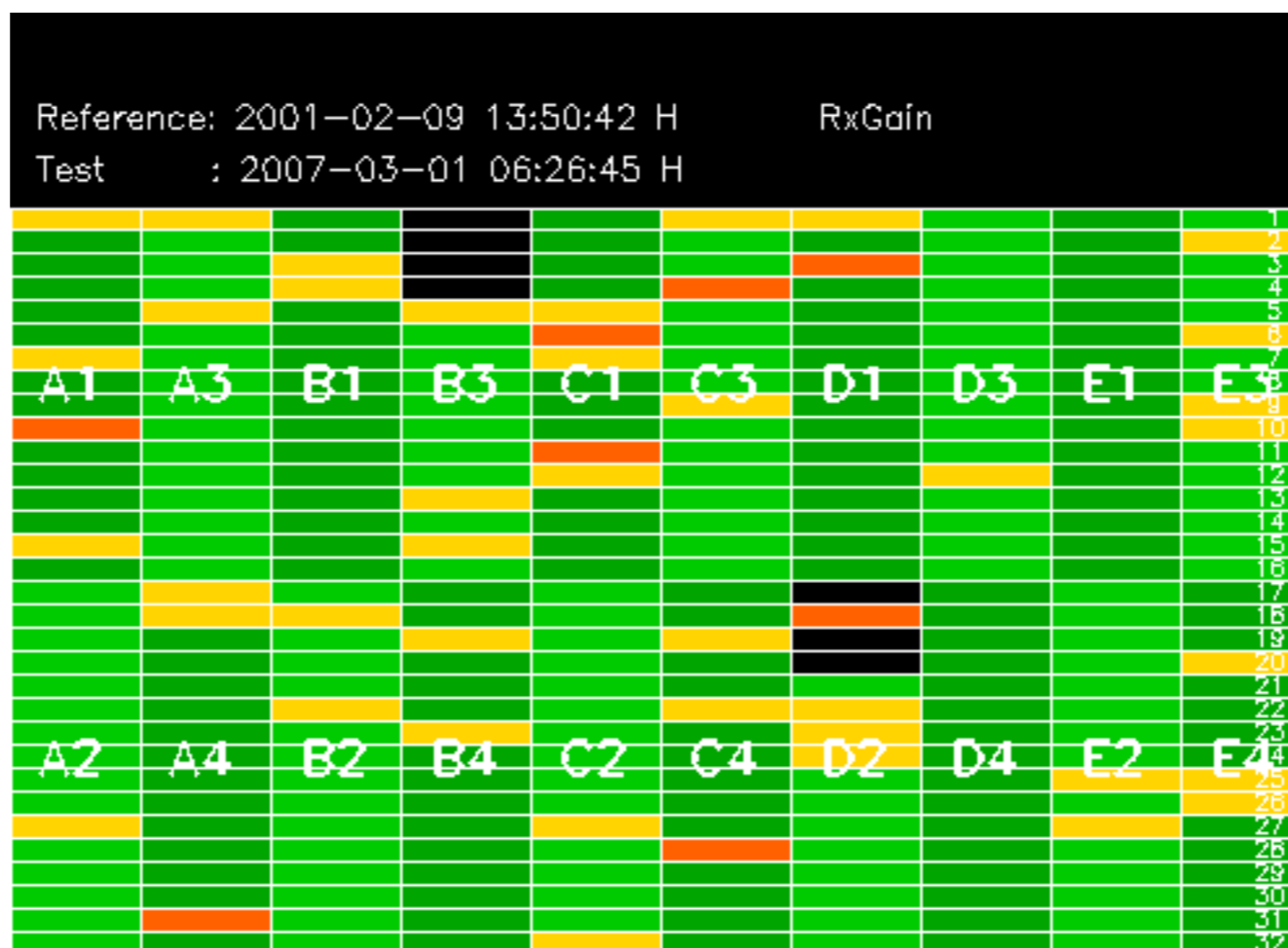
Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -29.062954 Hz



No anomalies observed on available MS products:

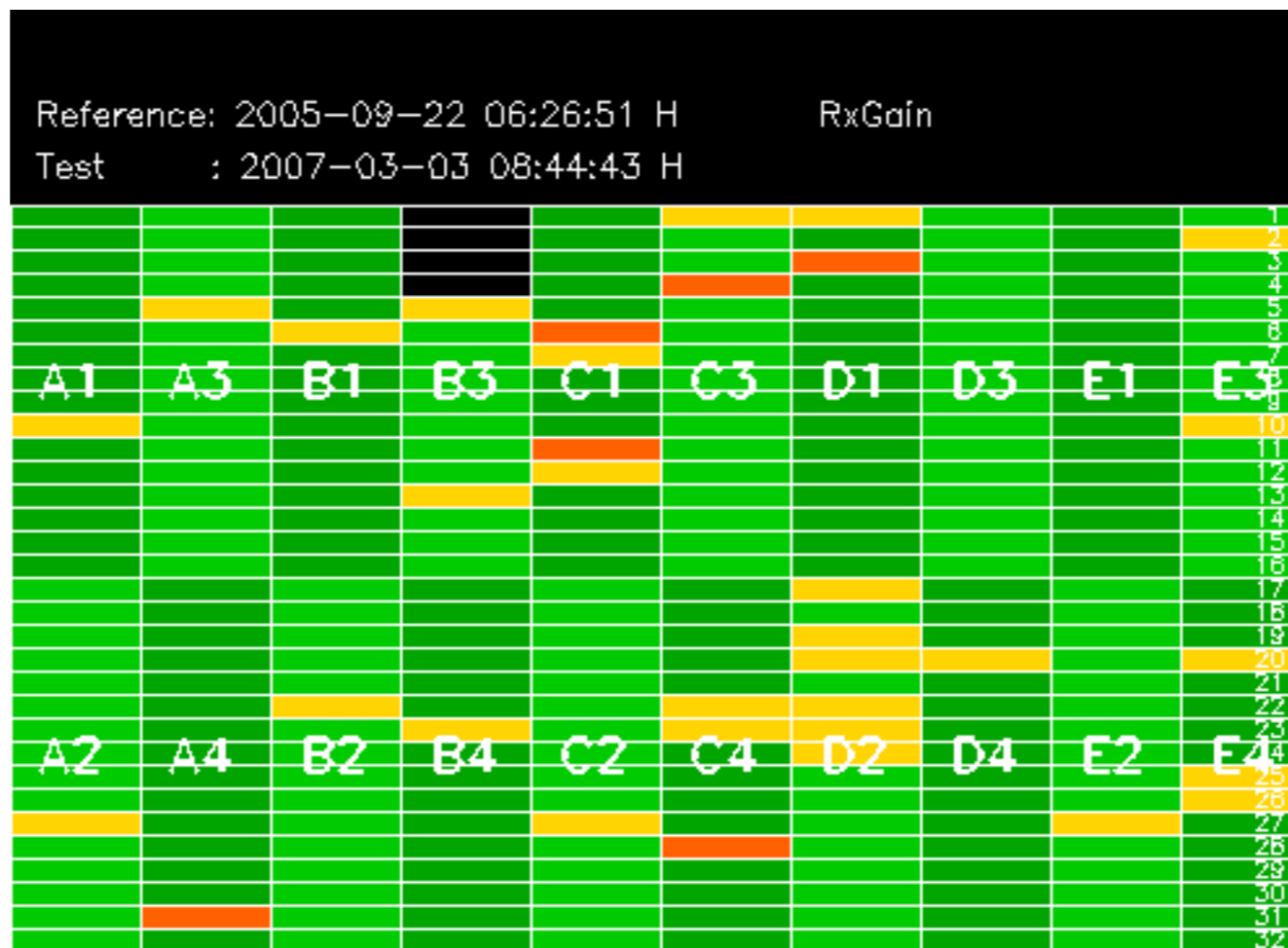
No anomalies observed.

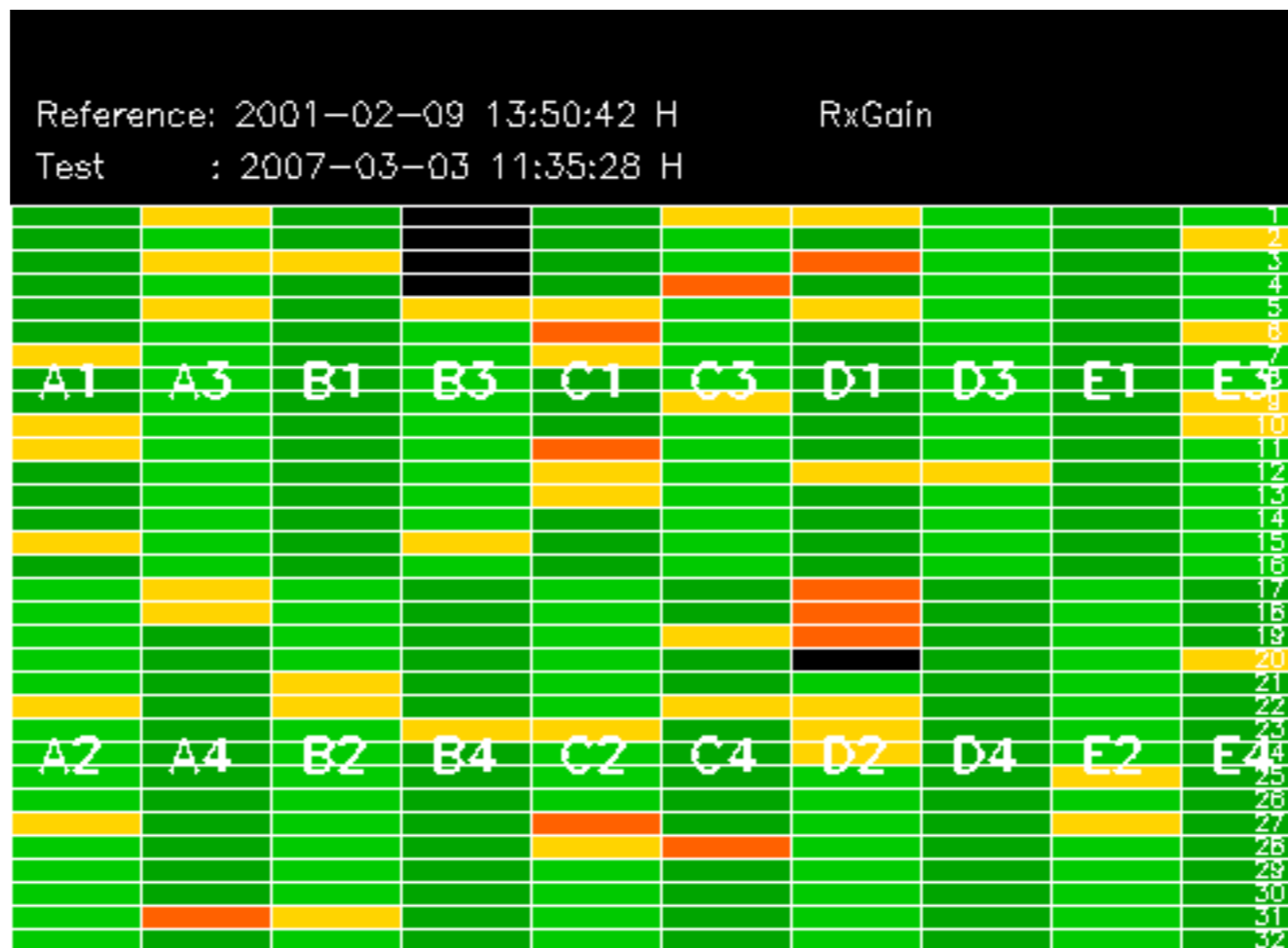




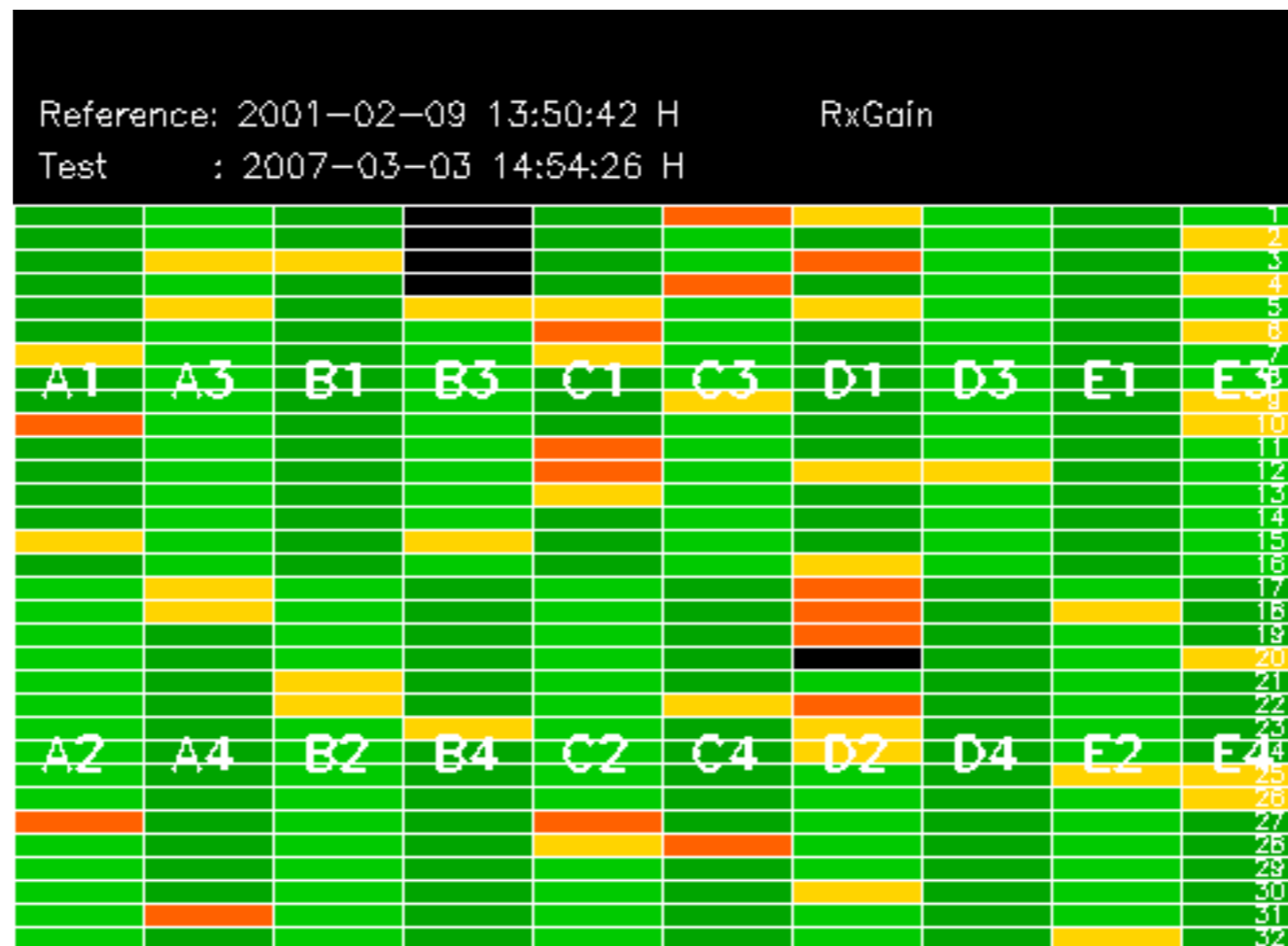






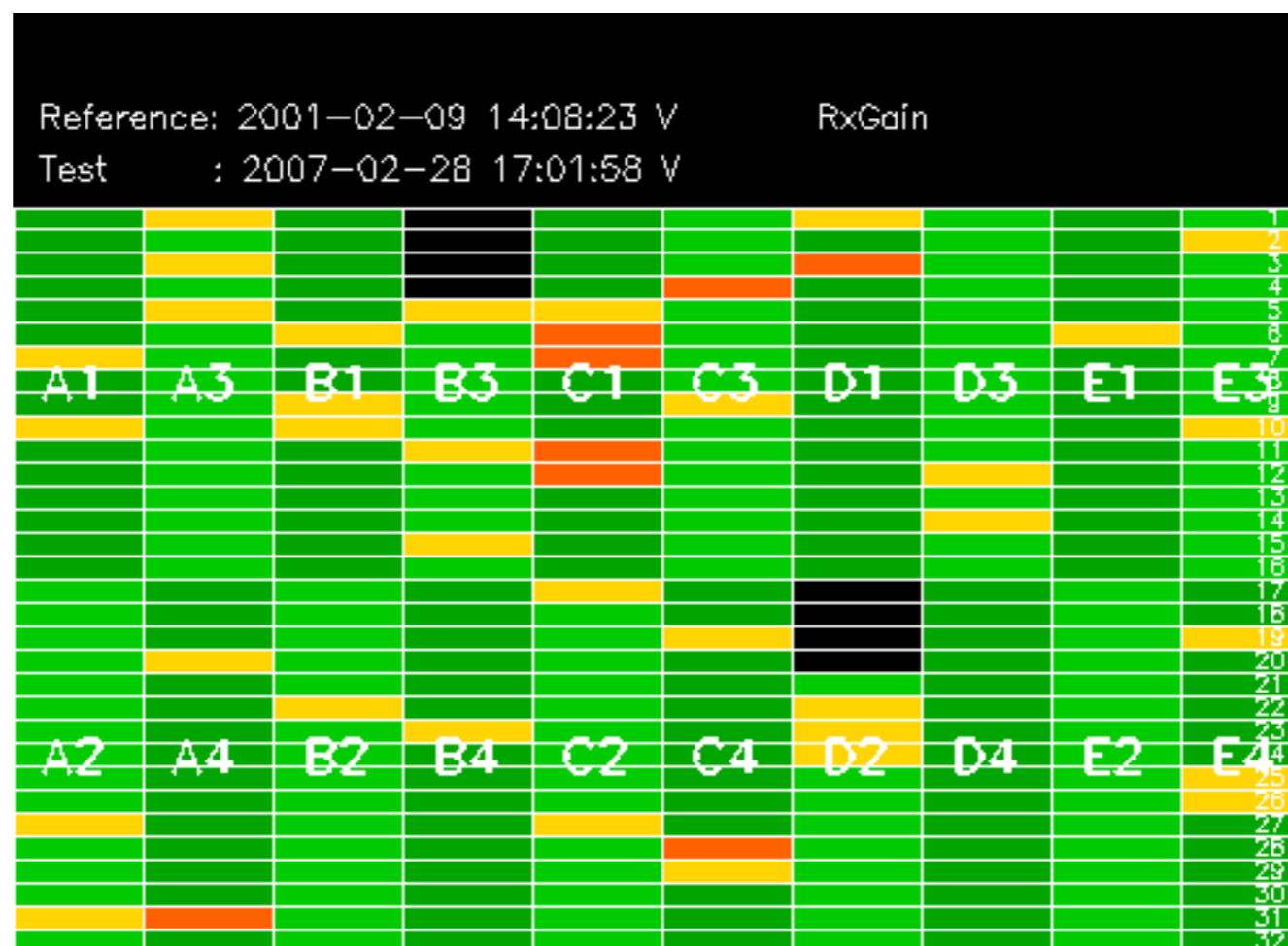




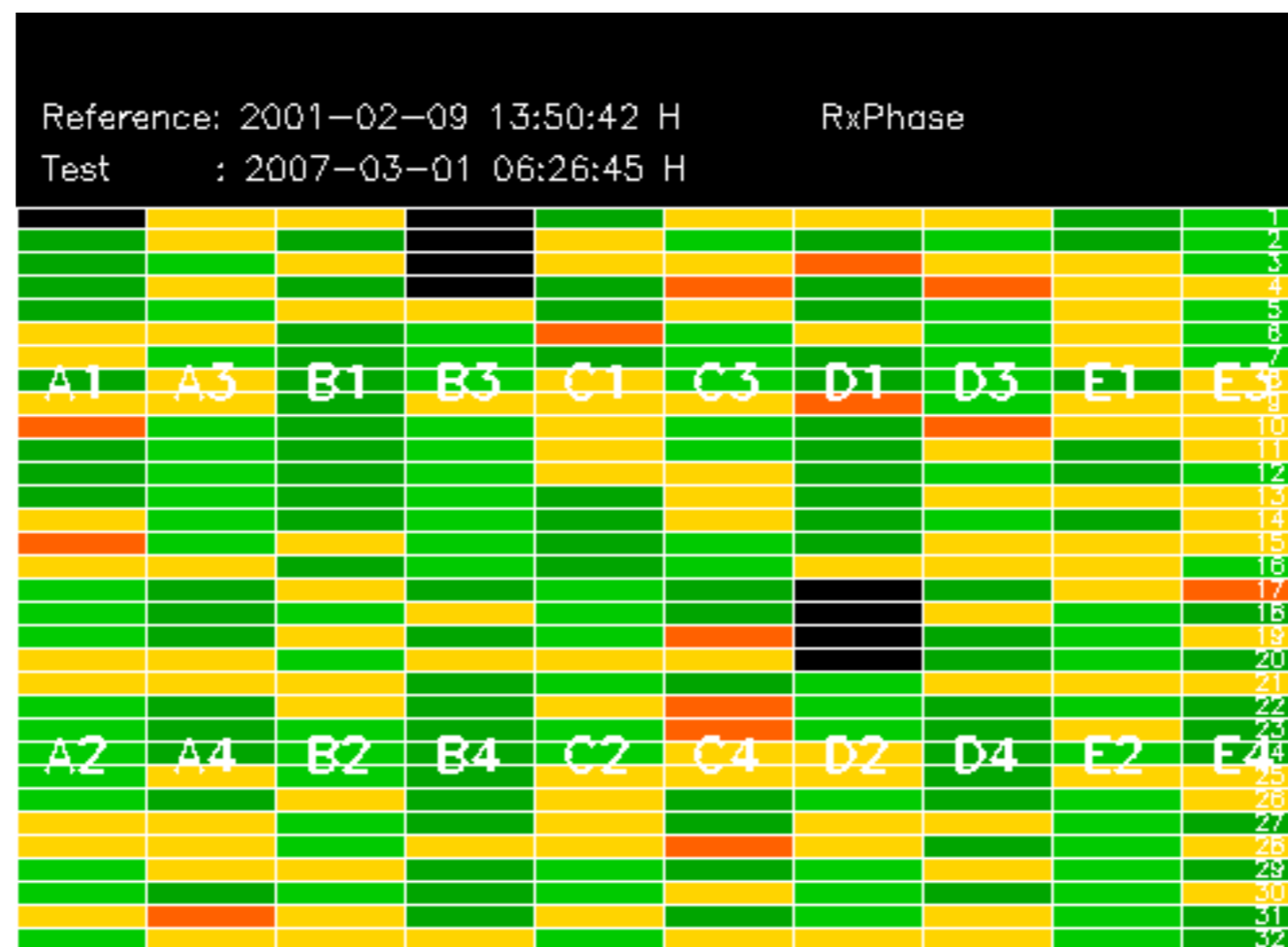






















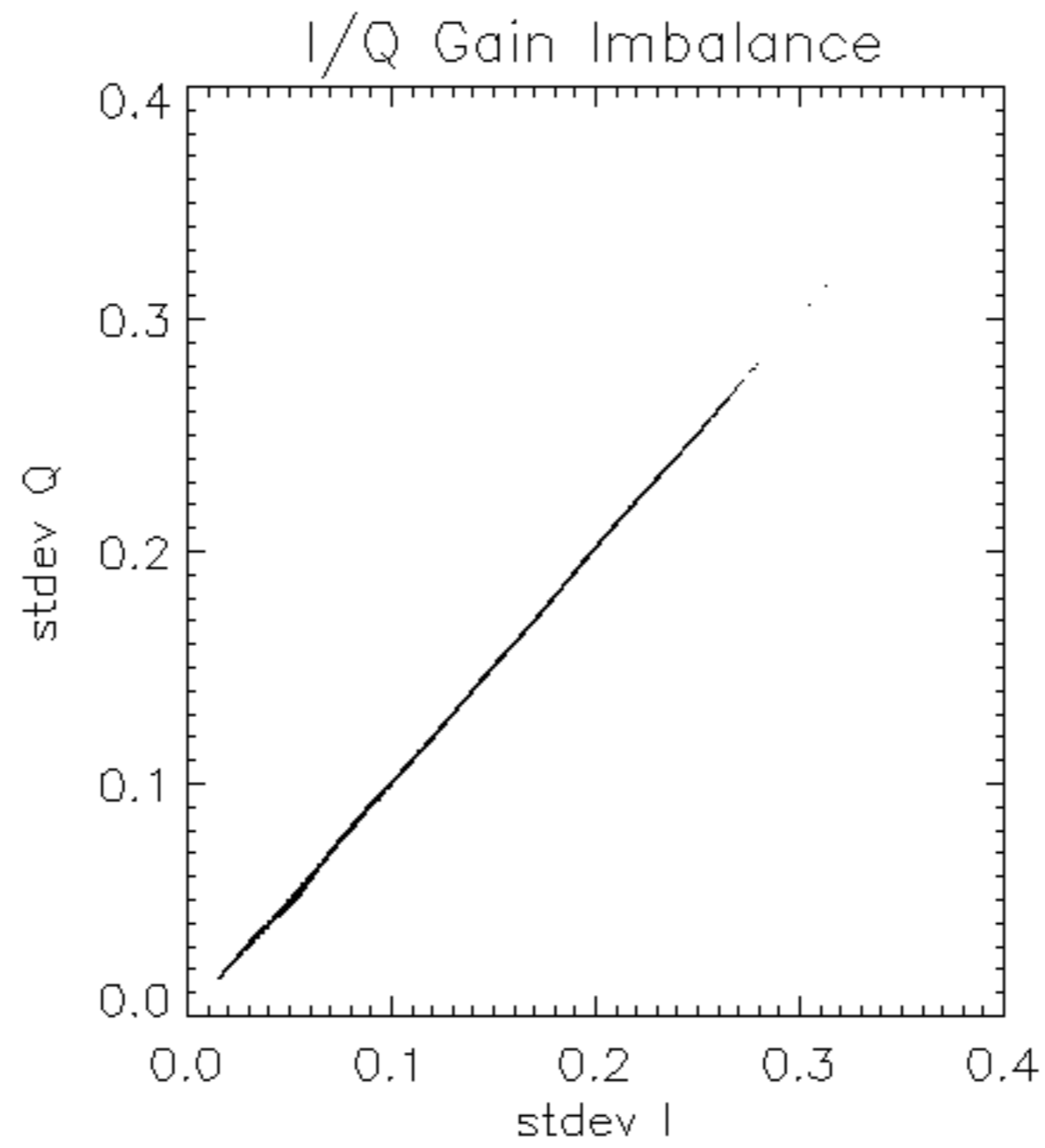


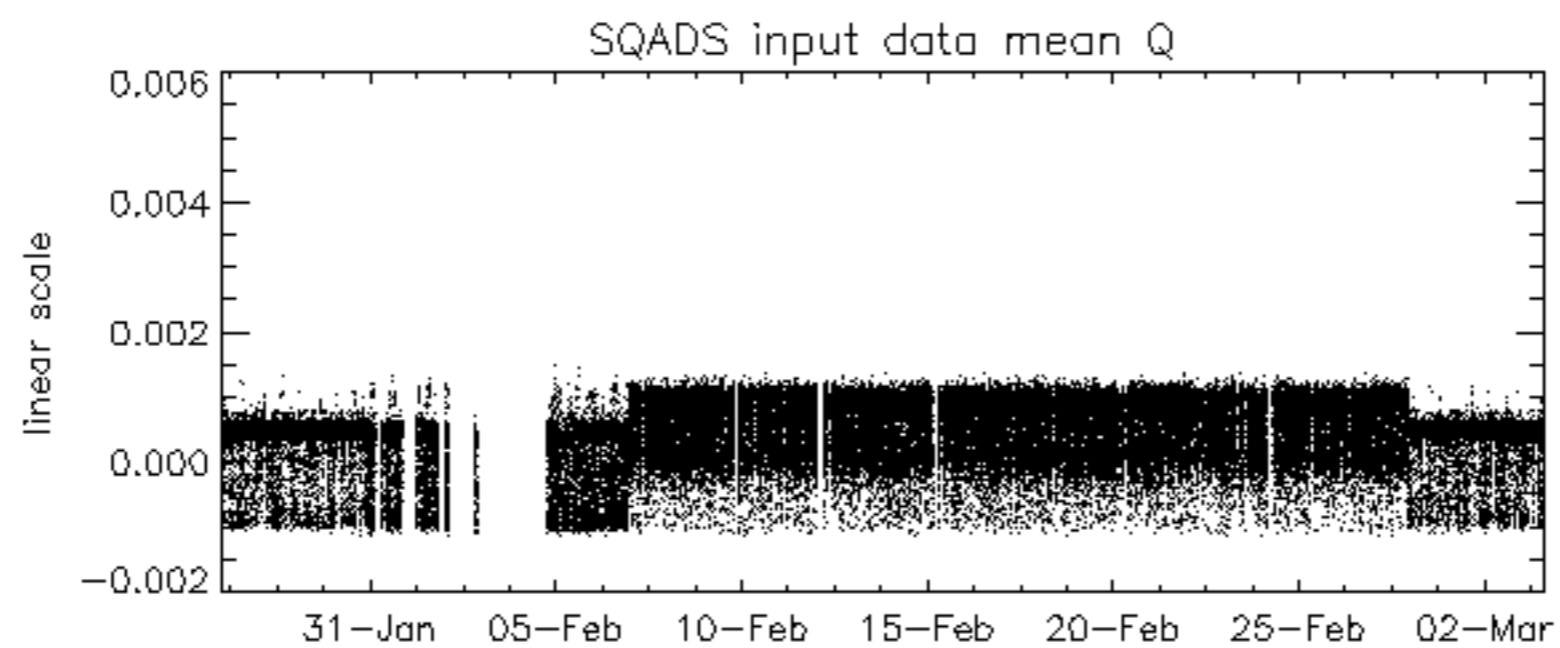
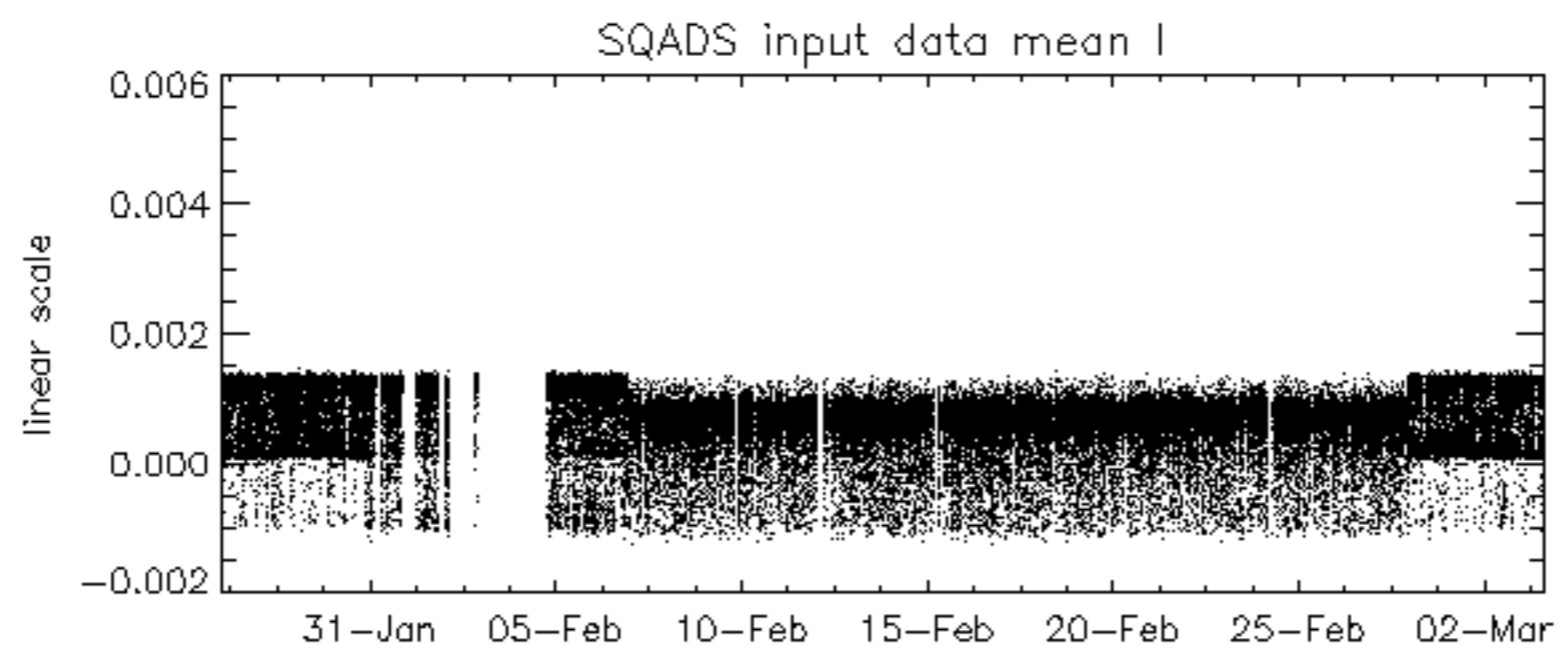
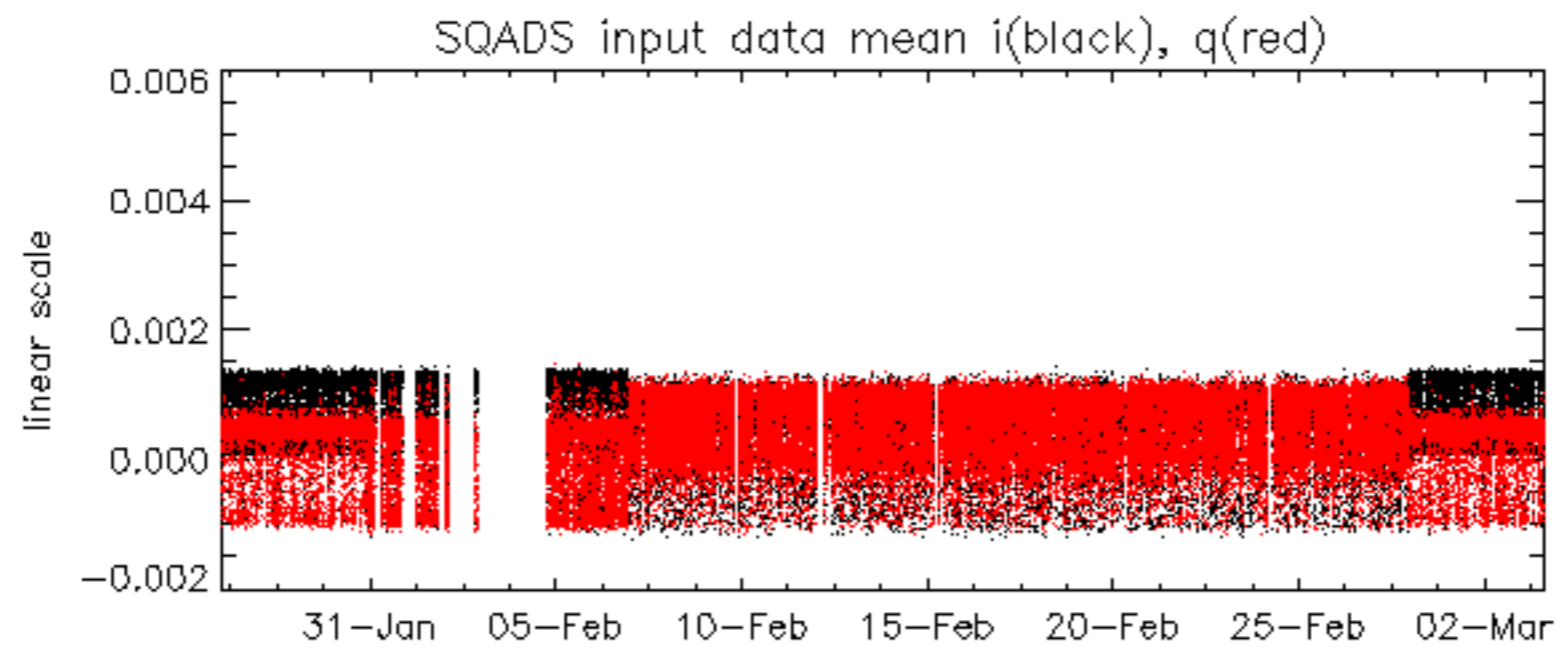


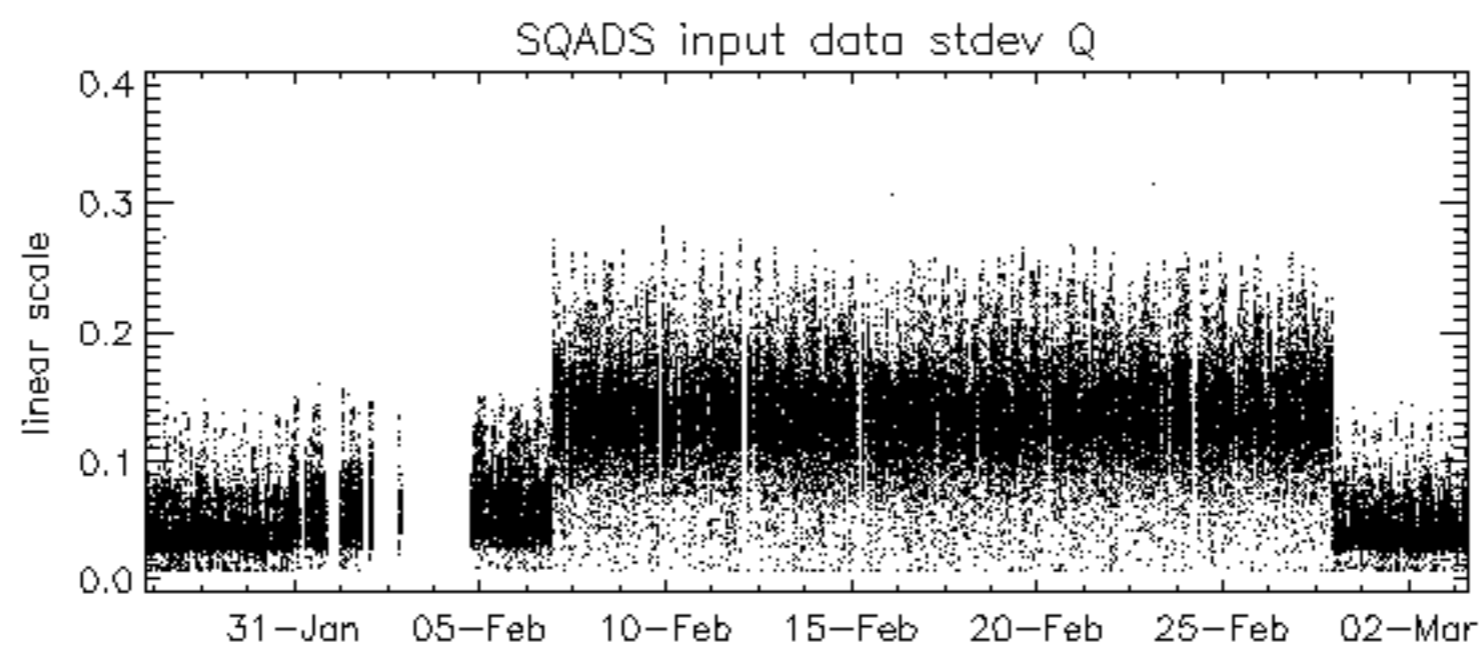
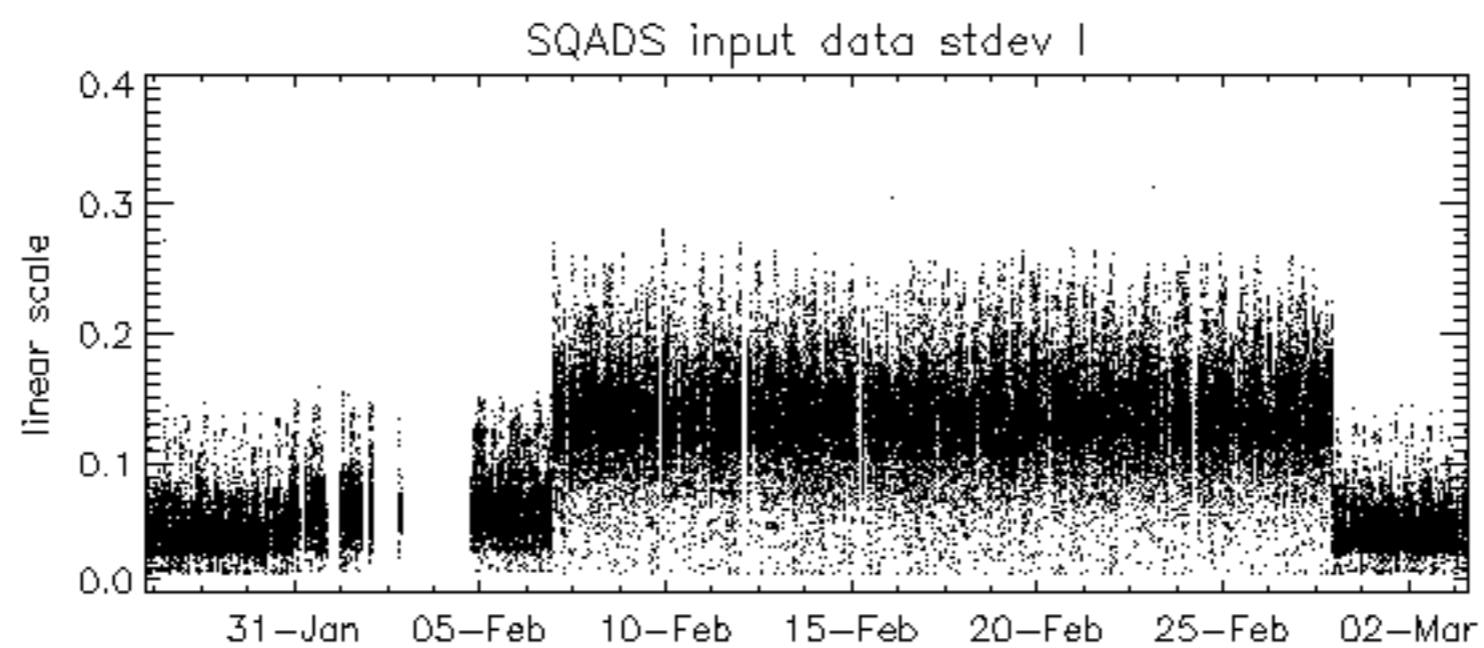
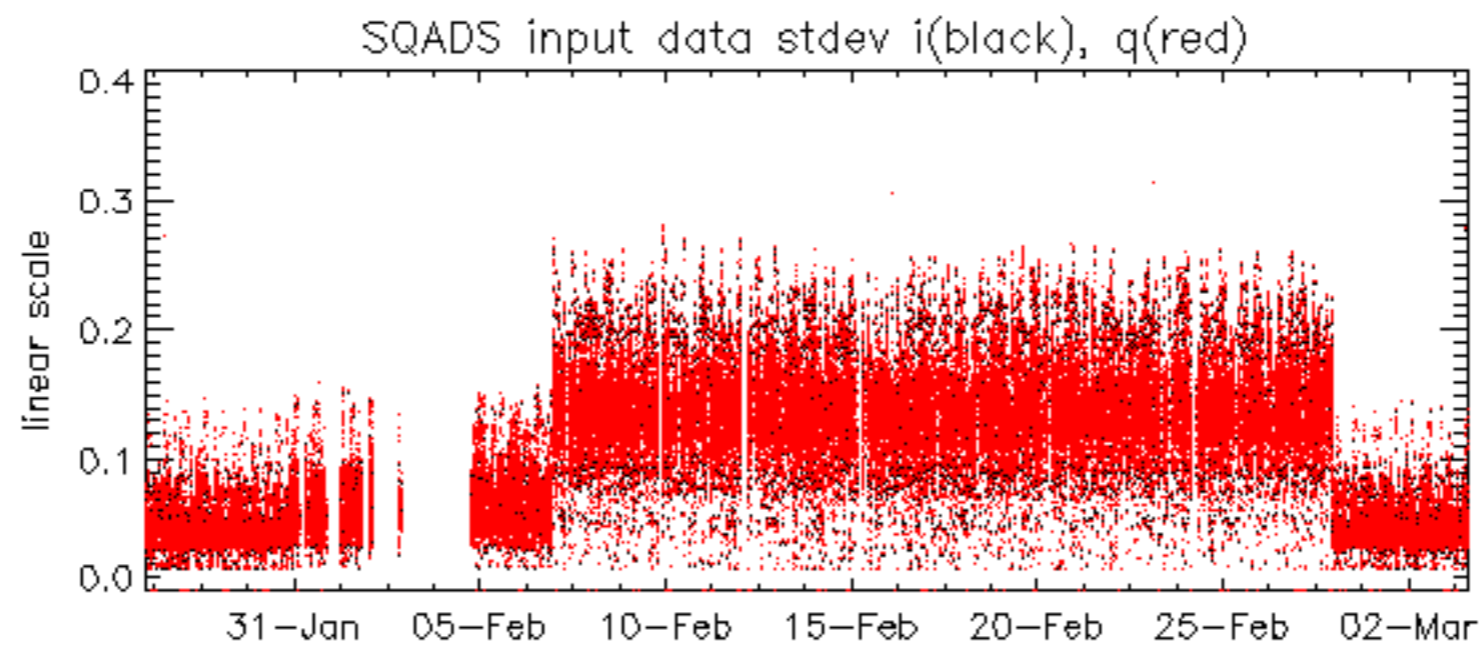
































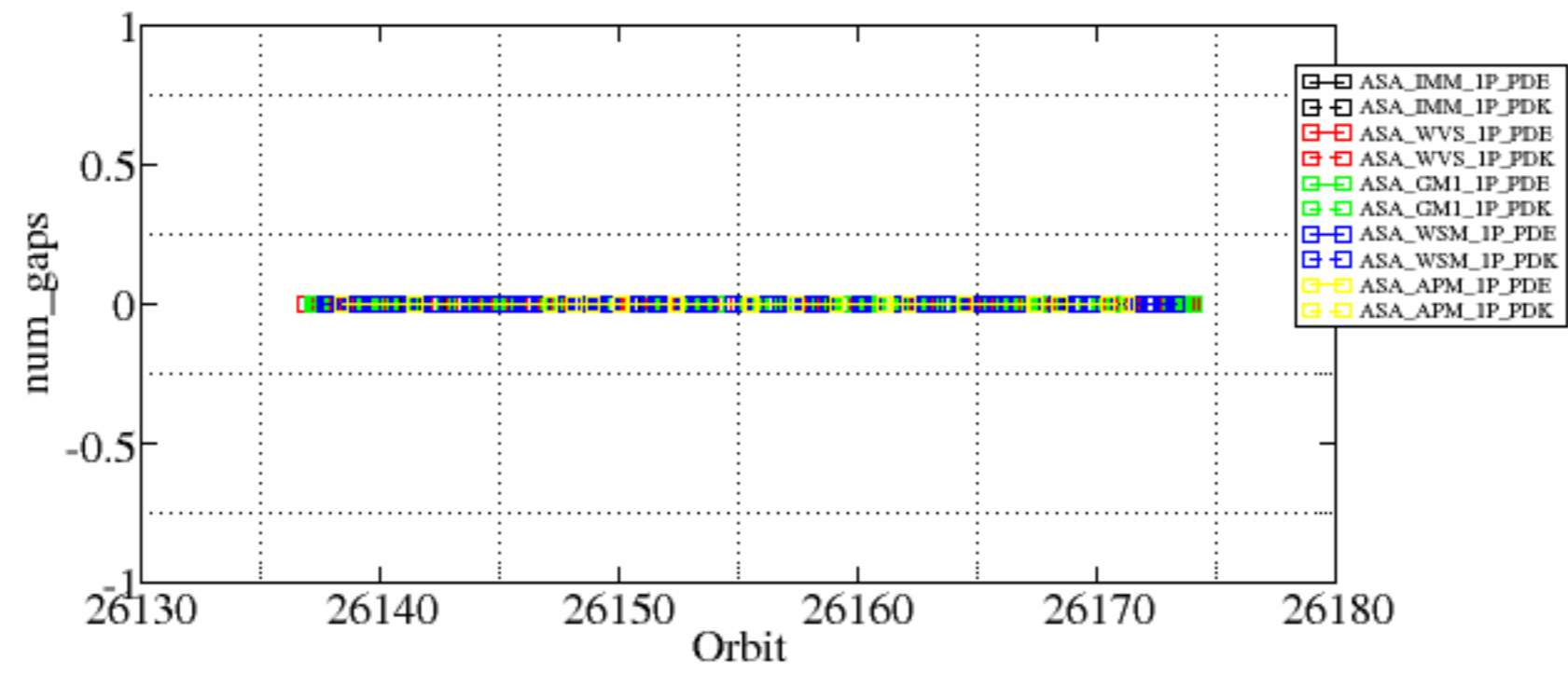




Summary of analysis for the last 3 days 2007030[123]

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_1PNPDE20070301_152552_000001832056_00040_26146_6817.N1	0	26
ASA_WSM_1PNPDE20070301_153707_000002392056_00040_26146_6781.N1	0	93
ASA_WSM_1PNPDE20070301_184853_000000852056_00042_26148_6897.N1	0	7
ASA_WSM_1PNPDE20070302_003405_000002632056_00045_26151_7324.N1	0	32
ASA_WSM_1PNPDE20070302_145414_000000852056_00054_26160_8003.N1	0	31
ASA_WSM_1PNPDE20070302_181712_000000852056_00056_26162_8077.N1	0	27











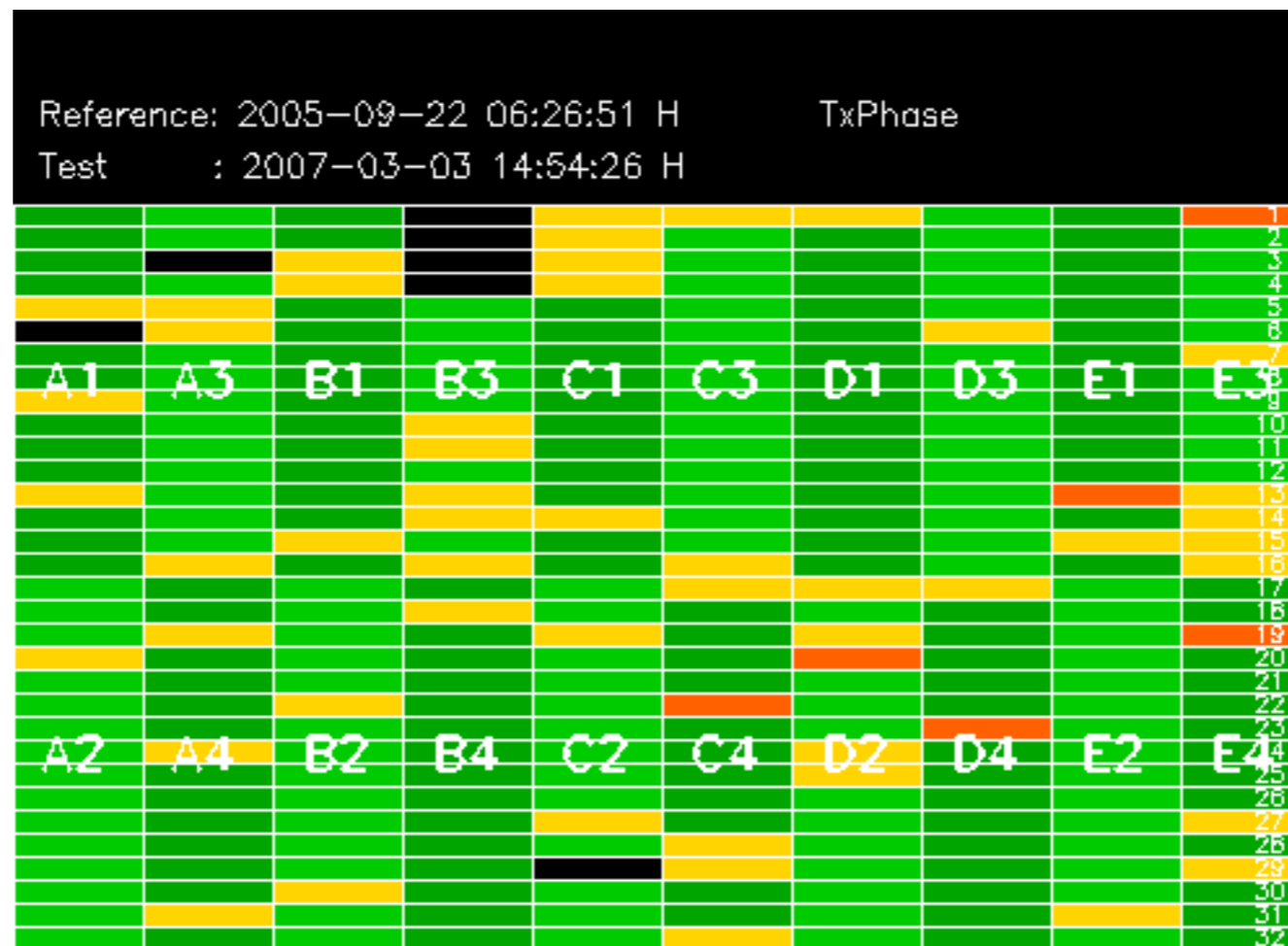








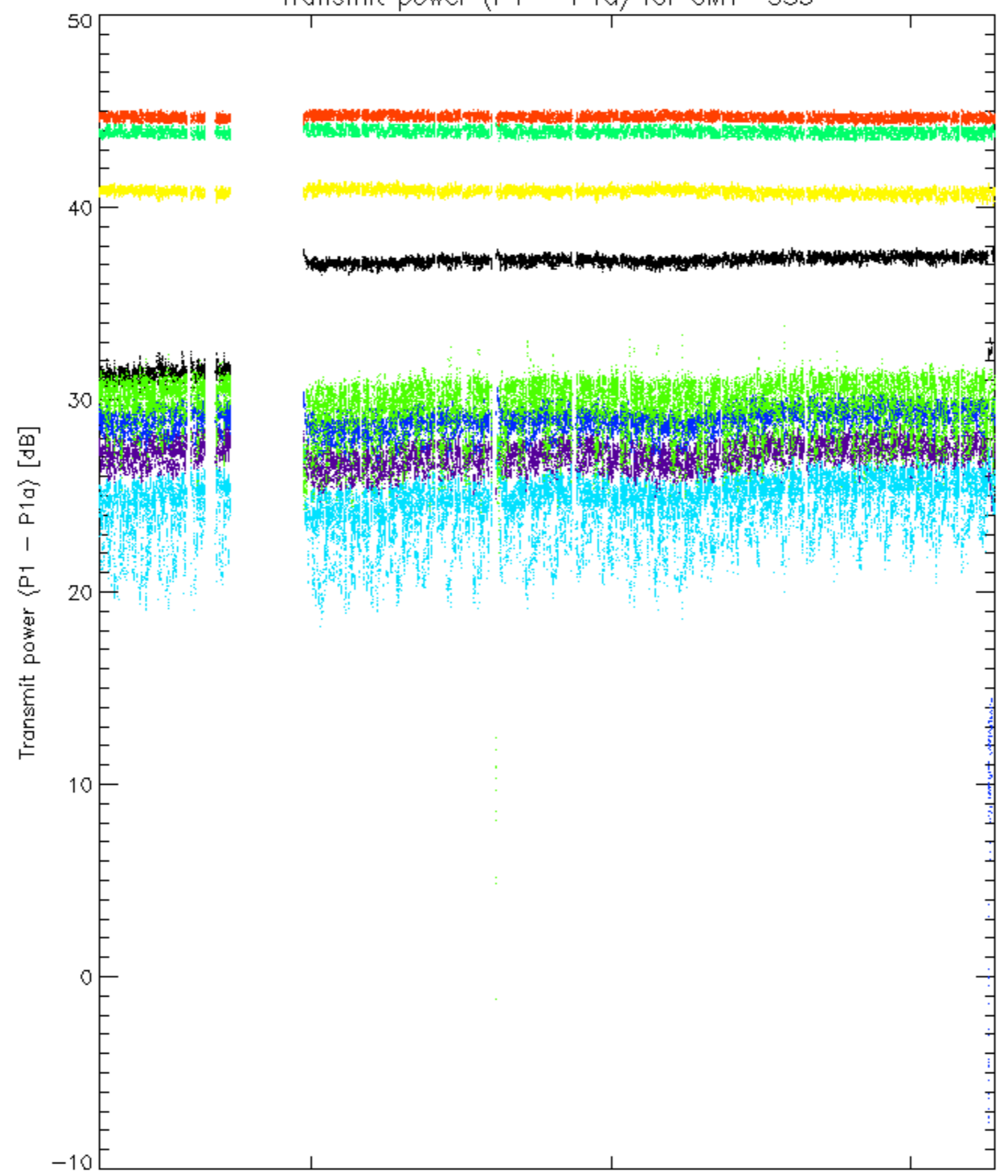




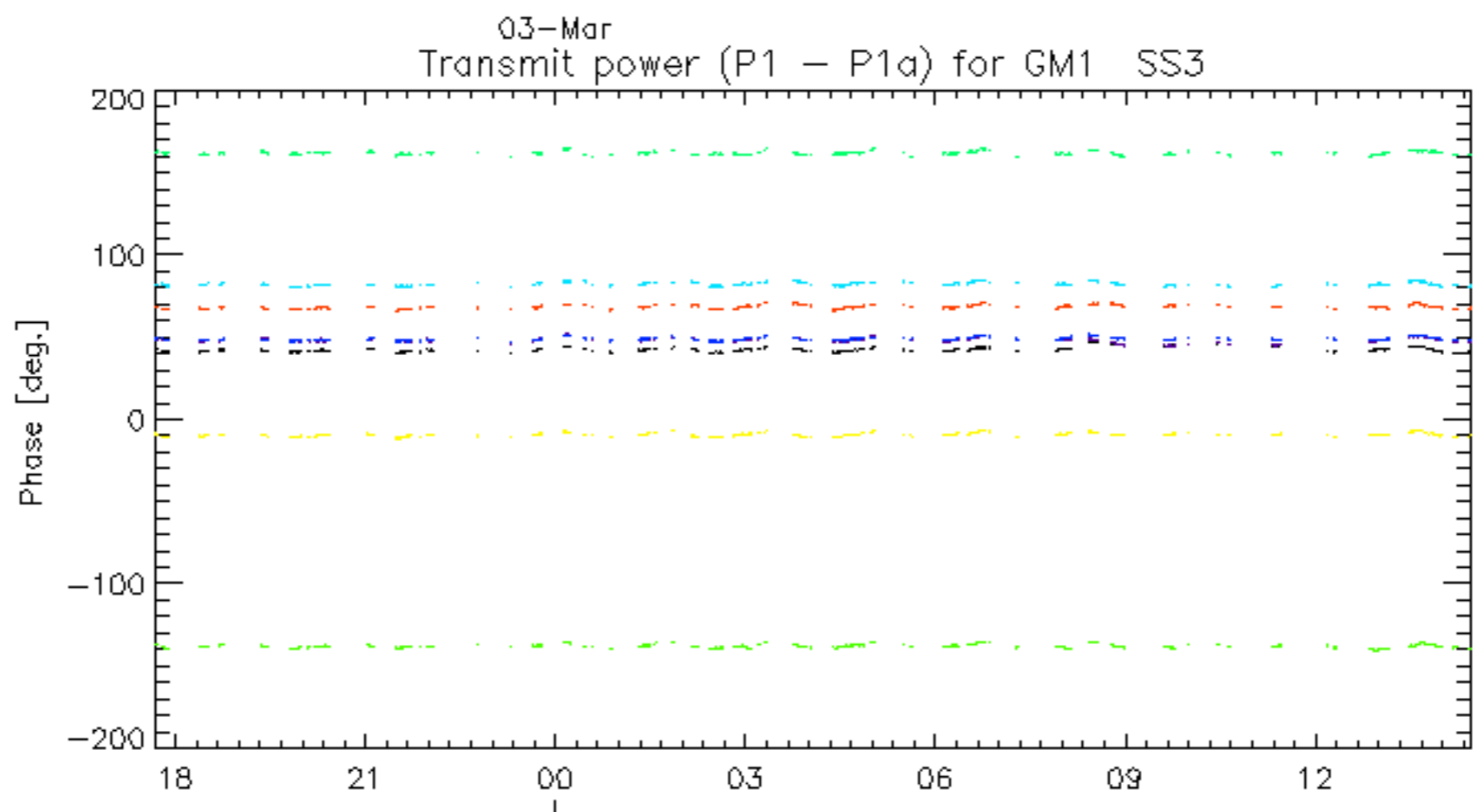
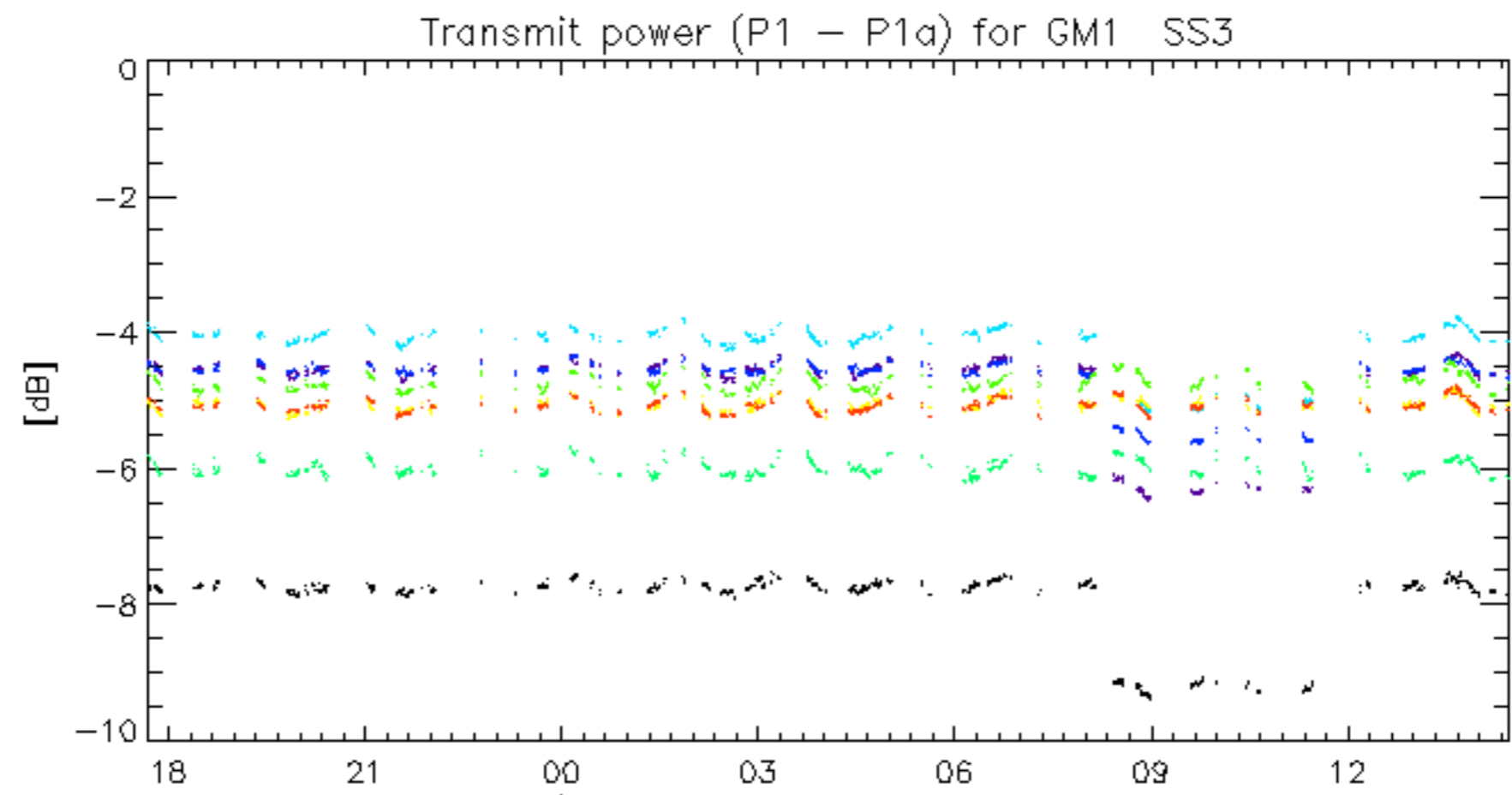




Transmit power (P1 - P1a) for GM1 SS3

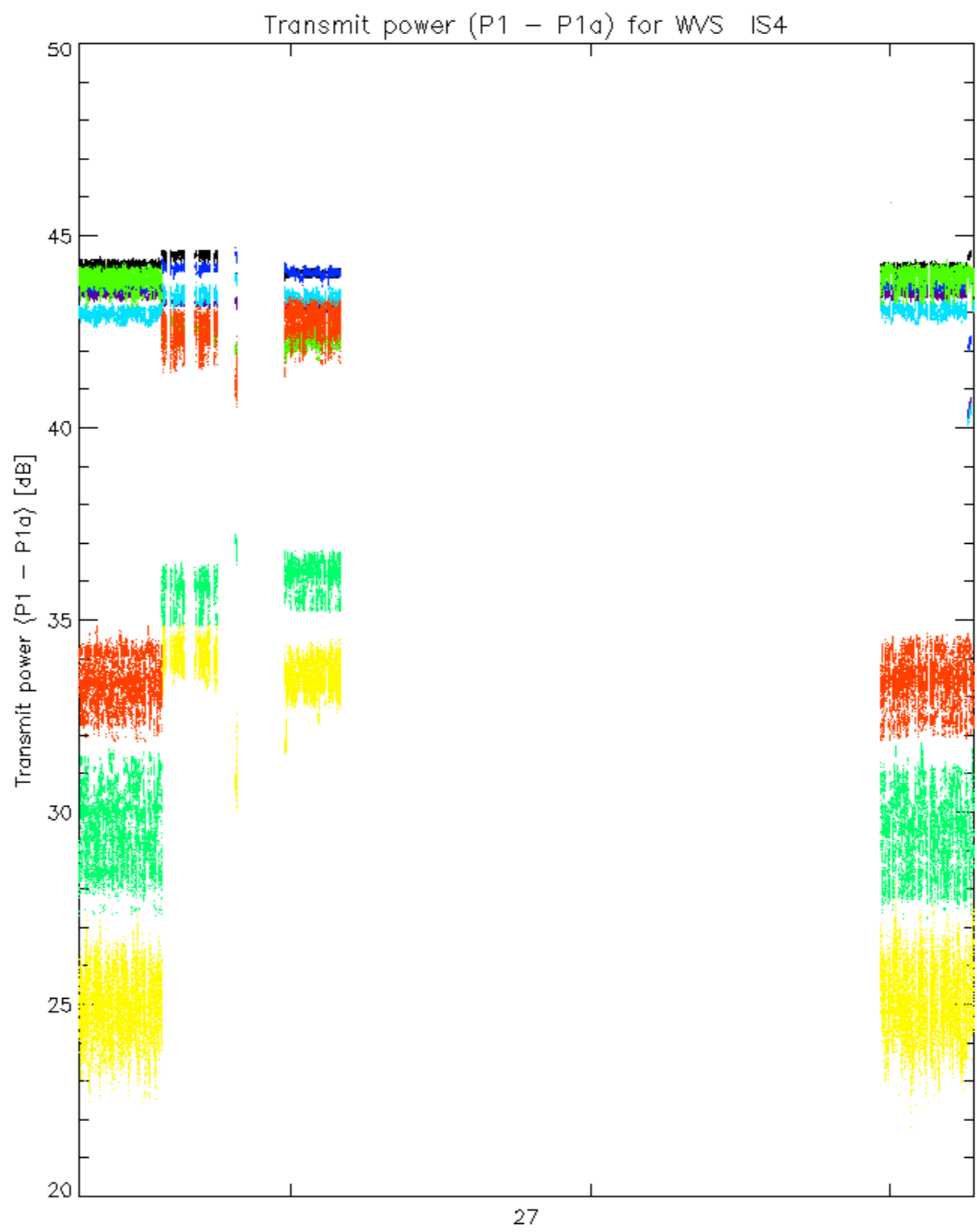


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

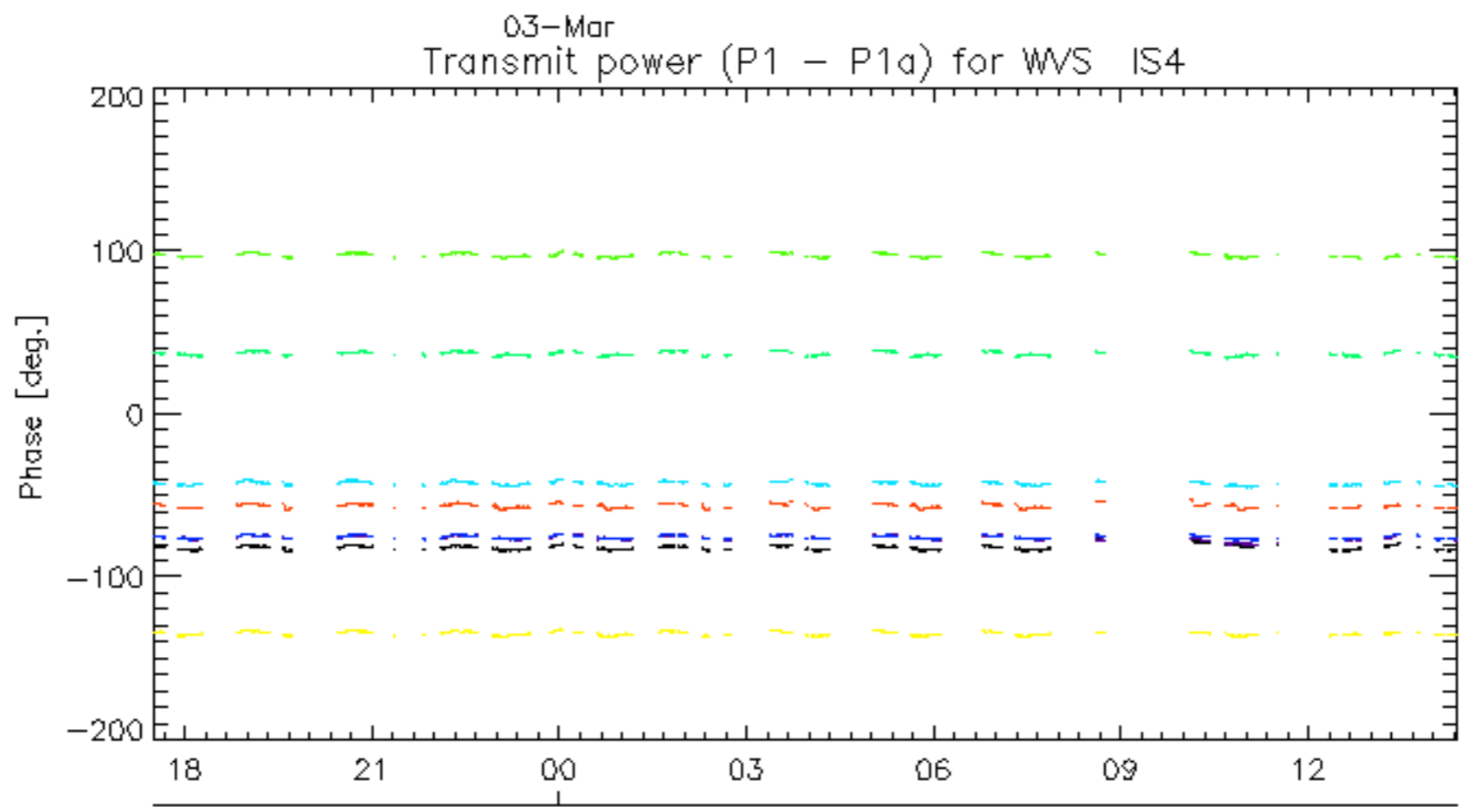
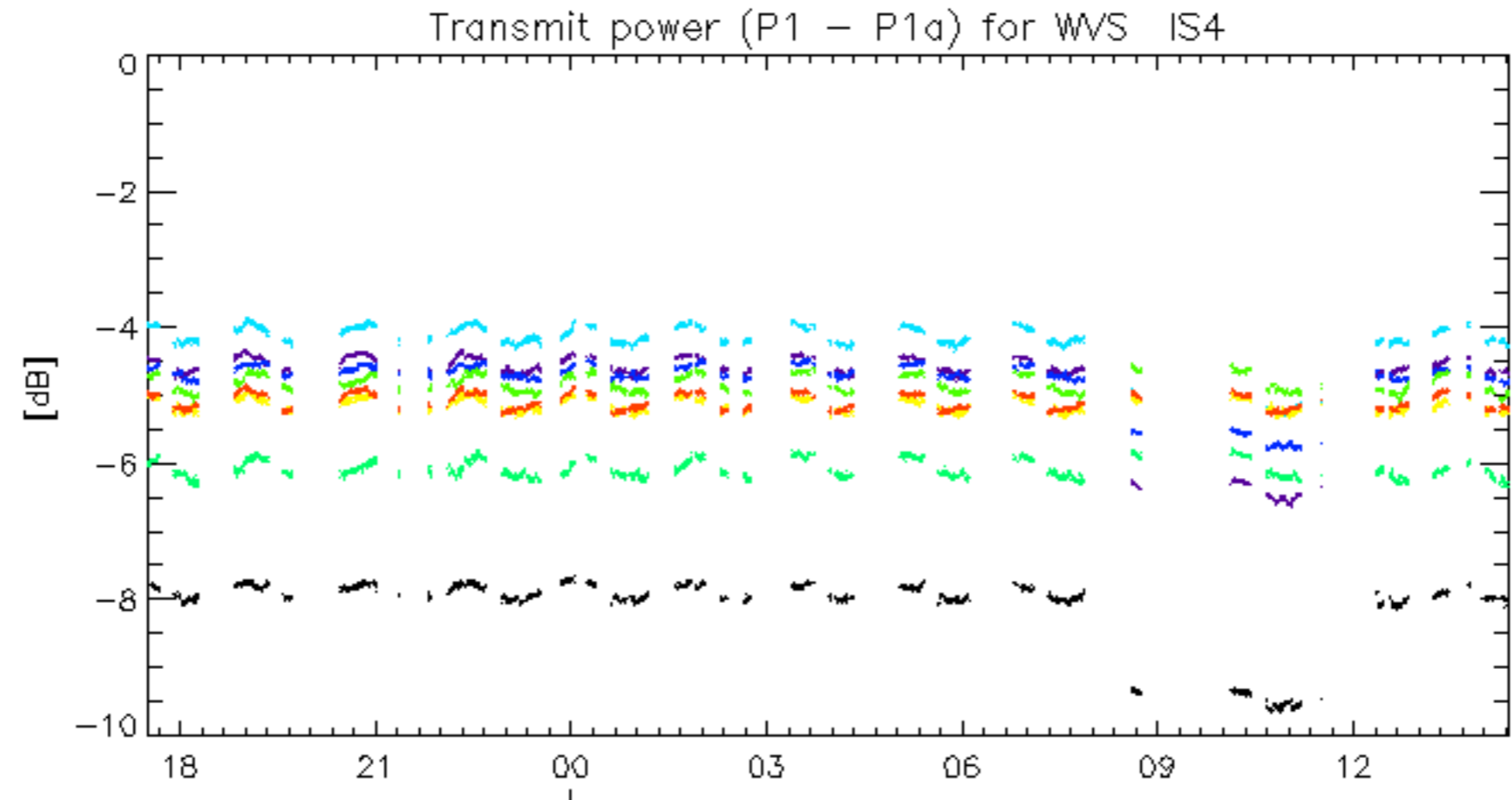


03-Mar  
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30





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



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

No unavailabilities during the reported period.