

# PRELIMINARY REPORT OF 070311

last update on Sun Mar 11 17:55:52 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 2007-03-10 00:00:00 to 2007-03-11 17:55:52

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	41	78	10	2	34
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	41	78	10	2	34
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	41	78	10	2	34
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	41	78	10	2	34

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	42	49	41	7	59
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	42	49	41	7	59
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	42	49	41	7	59
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	42	49	41	7	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	20070310 064400
H	20070311 061222

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	-10.550919	0.281284	-0.362830
7	P1a	-10.188370	0.204029	0.094852
11	P1a	-10.855486	0.111301	0.115245
15	P1a	-12.140979	1.688092	0.728923
19	P1a	-14.720693	1.207345	-0.619517
22	P1a	-18.526936	8.070078	-1.419302
26	P1a	-15.652060	0.477709	0.147304
30	P1a	-21.054029	7.722959	1.494111

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.361974	0.083509	-0.174388
7	P1	-2.638162	0.050229	0.023979
11	P1	-3.386451	0.155985	0.231472
15	P1	-5.065231	1.522758	0.695254
19	P1	-3.336056	0.099460	-0.204923
22	P1	-5.476777	0.162962	0.213126
26	P1	-5.107446	0.790245	-0.544538
30	P1	-5.502448	0.065115	0.148532

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.093180	0.085774	0.029282
7	P2	-21.785082	0.127133	-0.090435
11	P2	-10.724643	0.135386	-0.166186
15	P2	-5.090295	0.077260	-0.055407
19	P2	-7.214438	0.076625	-0.009653
22	P2	-8.371109	0.076213	0.047983

26	P2	-24.099945	0.123616	-0.224191
30	P2	-21.650236	0.064358	0.072316

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.226789	0.007534	-0.017795
7	P3	-8.226789	0.007534	-0.017795
11	P3	-8.226789	0.007534	-0.017795
15	P3	-8.226789	0.007534	-0.017795
19	P3	-8.226789	0.007534	-0.017795
22	P3	-8.226789	0.007534	-0.017795
26	P3	-8.226789	0.007534	-0.017795
30	P3	-8.226789	0.007534	-0.017795

### 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	-11.074586	0.049507	-0.020486
7	P1a	-10.061545	0.130437	-0.044256
11	P1a	-10.653838	0.063435	-0.058025
15	P1a	-10.910923	0.135870	-0.156397
19	P1a	-15.711837	0.069467	0.082941
22	P1a	-20.859282	1.169923	-0.153309
26	P1a	-15.320610	0.269101	0.233647
30	P1a	-18.386520	0.342711	-0.117510

### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.383963	0.037962	-0.065744
7	P1	-2.431039	0.020665	0.011720

11	P1	-2.915994	0.018806	-0.027575
15	P1	-3.833567	0.038971	-0.053233
19	P1	-3.552664	0.011551	-0.004734
22	P1	-5.038339	0.023447	-0.034815
26	P1	-5.969488	0.026238	0.050710
30	P1	-5.279147	0.021756	0.015306

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.096630	0.032594	0.008369
7	P2	-21.957689	0.055540	0.060242
11	P2	-10.647846	0.030755	0.031623
15	P2	-4.817955	0.027540	-0.003126
19	P2	-6.809012	0.029544	0.011368
22	P2	-8.096980	0.033768	0.074690
26	P2	-24.266182	0.036118	-0.082927
30	P2	-21.746458	0.037841	0.064586

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.047111	0.003678	-0.025161
7	P3	-8.047129	0.003682	-0.024854
11	P3	-8.047227	0.003683	-0.025120
15	P3	-8.047139	0.003698	-0.025399
19	P3	-8.047182	0.003682	-0.025273
22	P3	-8.047211	0.003681	-0.025227
26	P3	-8.047007	0.003681	-0.025248
30	P3	-8.047168	0.003695	-0.024978

## 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	0.000632049
	stdev	2.56409e-07
MEAN Q	mean	0.000358741
	stdev	2.73478e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.107475
	stdev	0.00244496
STDEV Q	mean	0.107483
	stdev	0.00250135



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007031[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_1PNPDE20070311_004054_000000622056_00174_26280_8589.N1	1	0
ASA_WSM_1PNPDE20070310_172247_000001772056_00170_26276_8196.N1	0	2

ASA_WSM_1PNPDK20070310_140332_000000862056_00168_26274_2612.N1	0	15
ASA_APM_1PNPDE20070311_032625_000000402056_00176_26282_8971.N1	13	0



## 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	
<input type="checkbox"/>	



### 7.4 - Unbiased Doppler Error for GM1

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

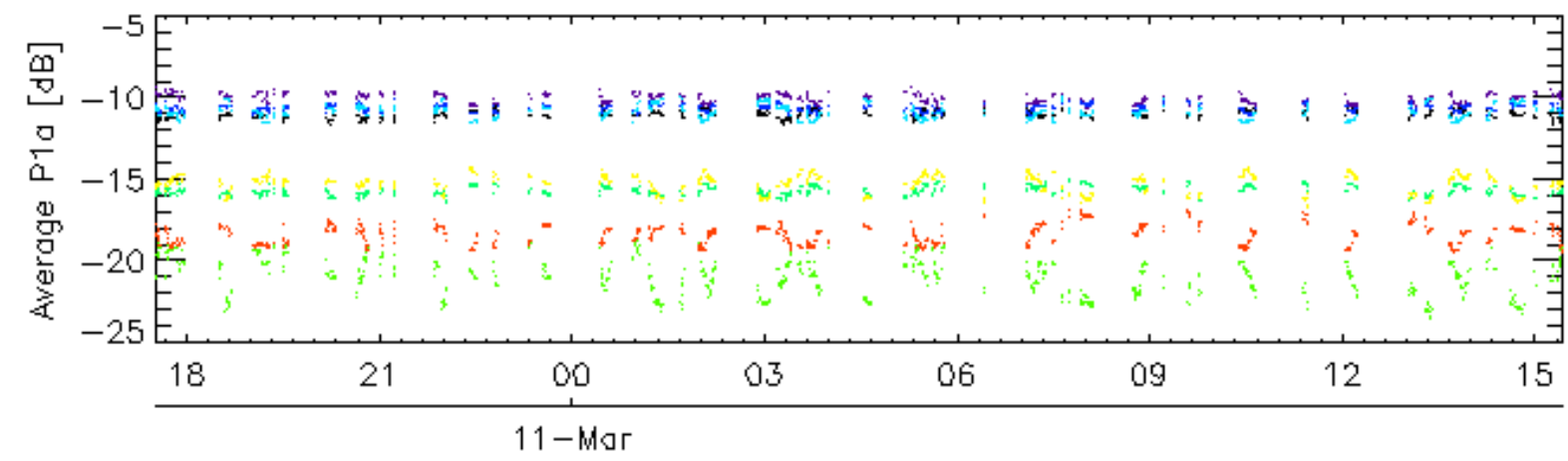
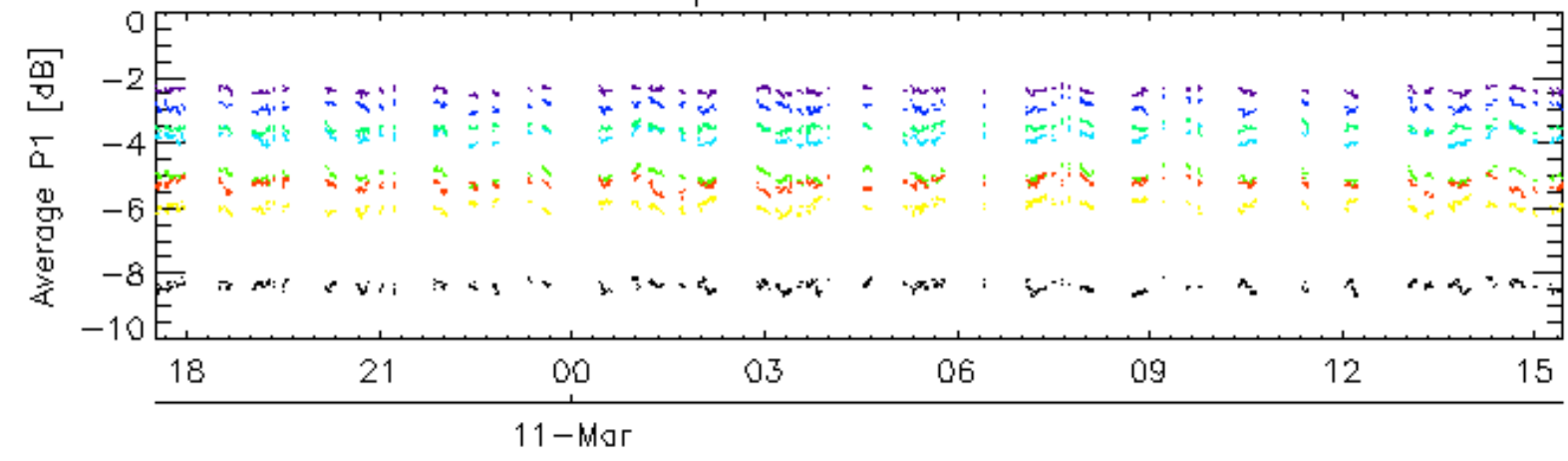
### 7.5 - Absolute Doppler for GM1

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

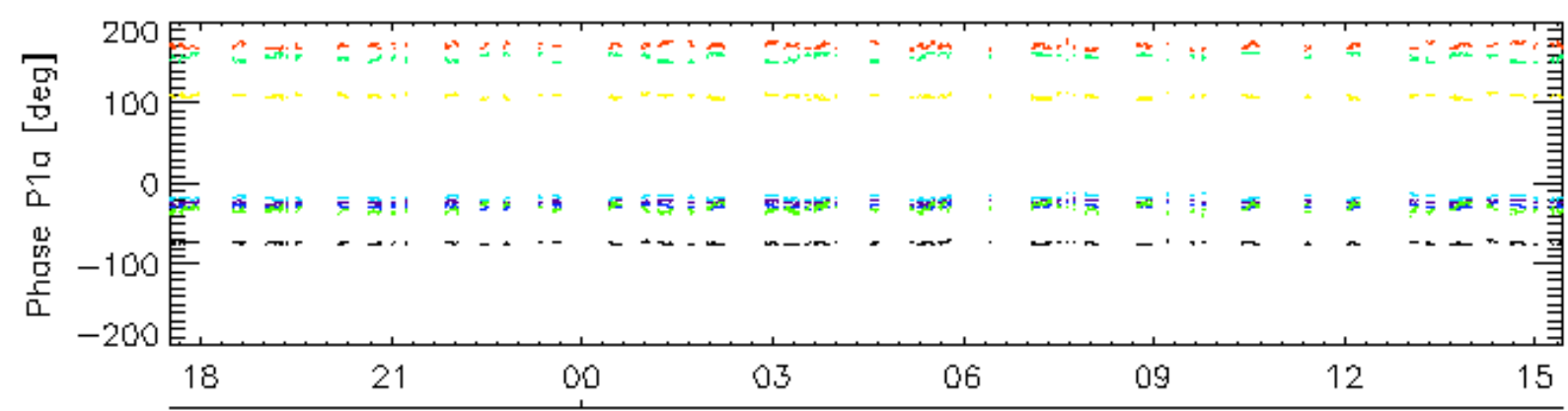
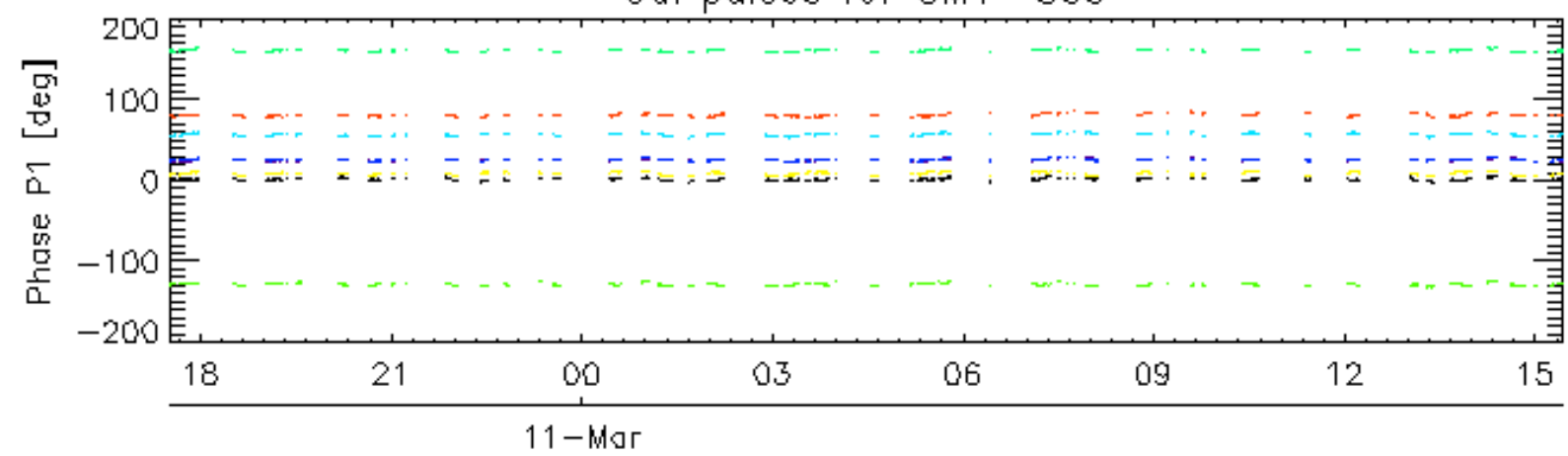
### 7.6 - Doppler evolution versus ANX for GM1

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

Cal pulses for GM1 SS3

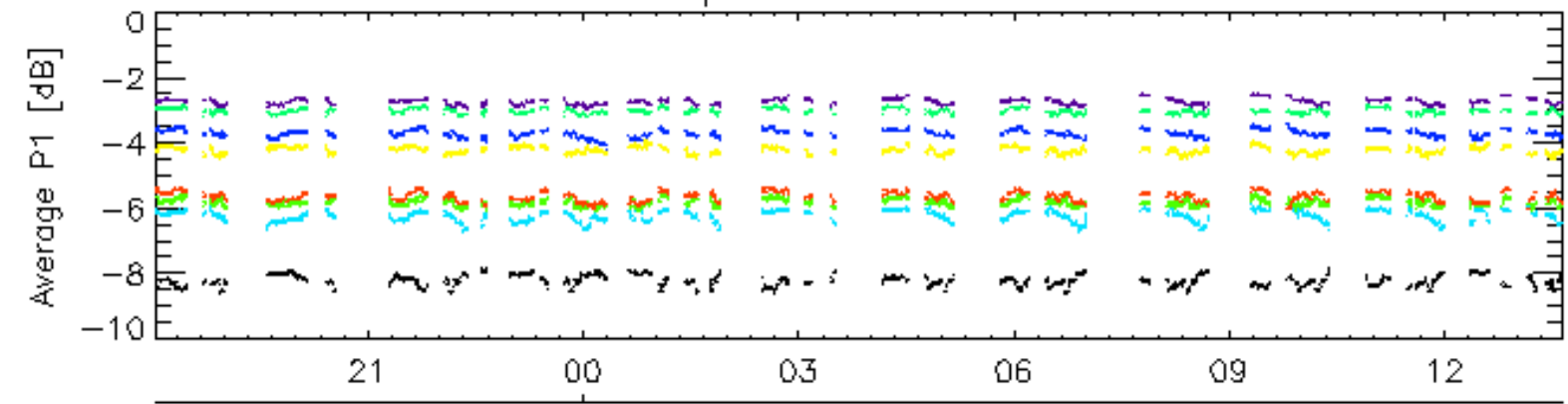


Cal pulses for GM1 SS3

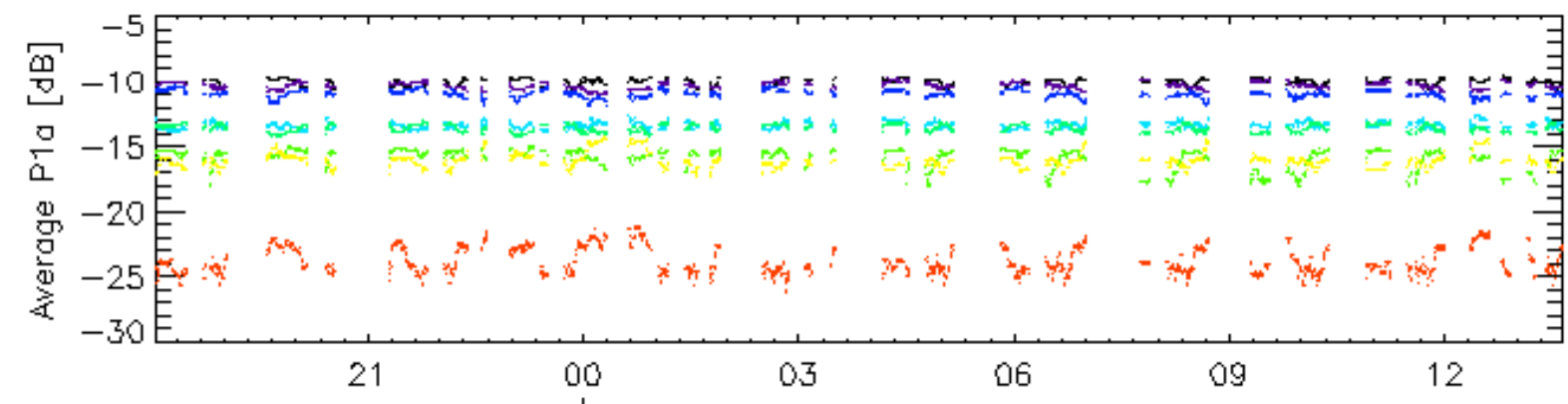


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS4

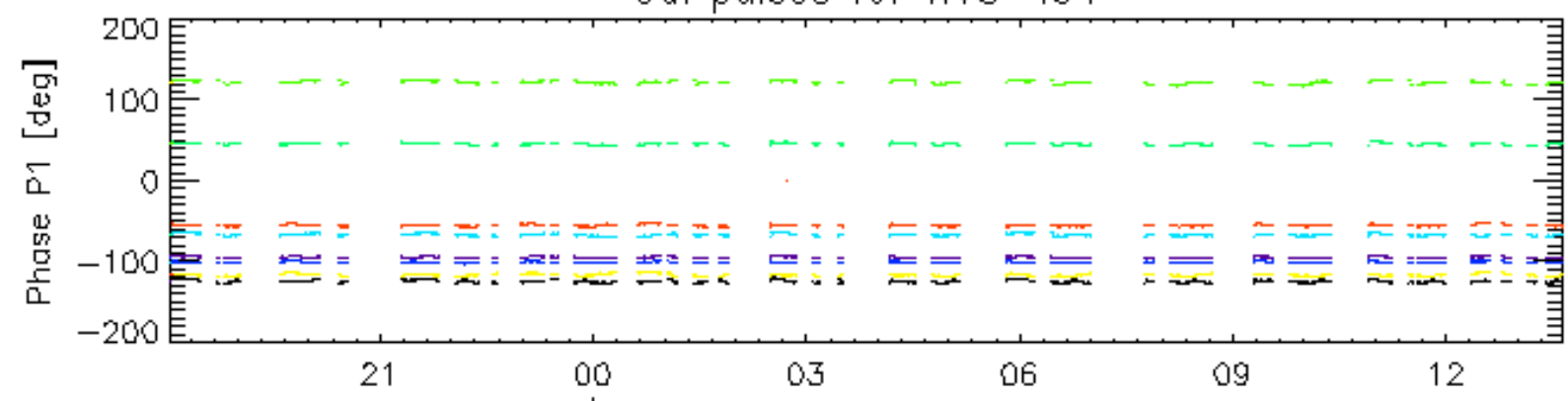


11-Mar

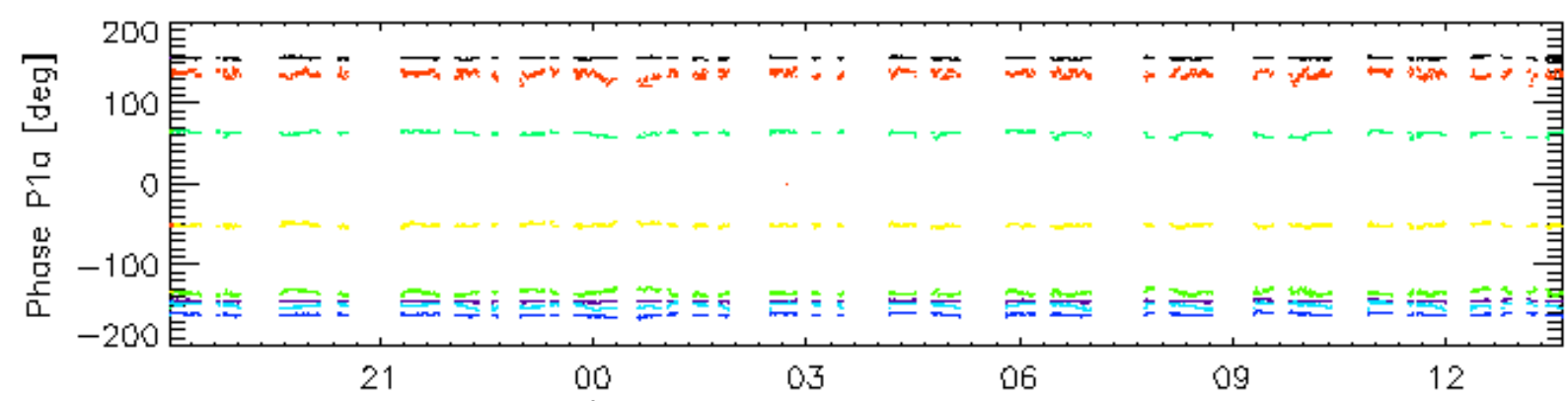


11-Mar

Cal pulses for WVS IS4

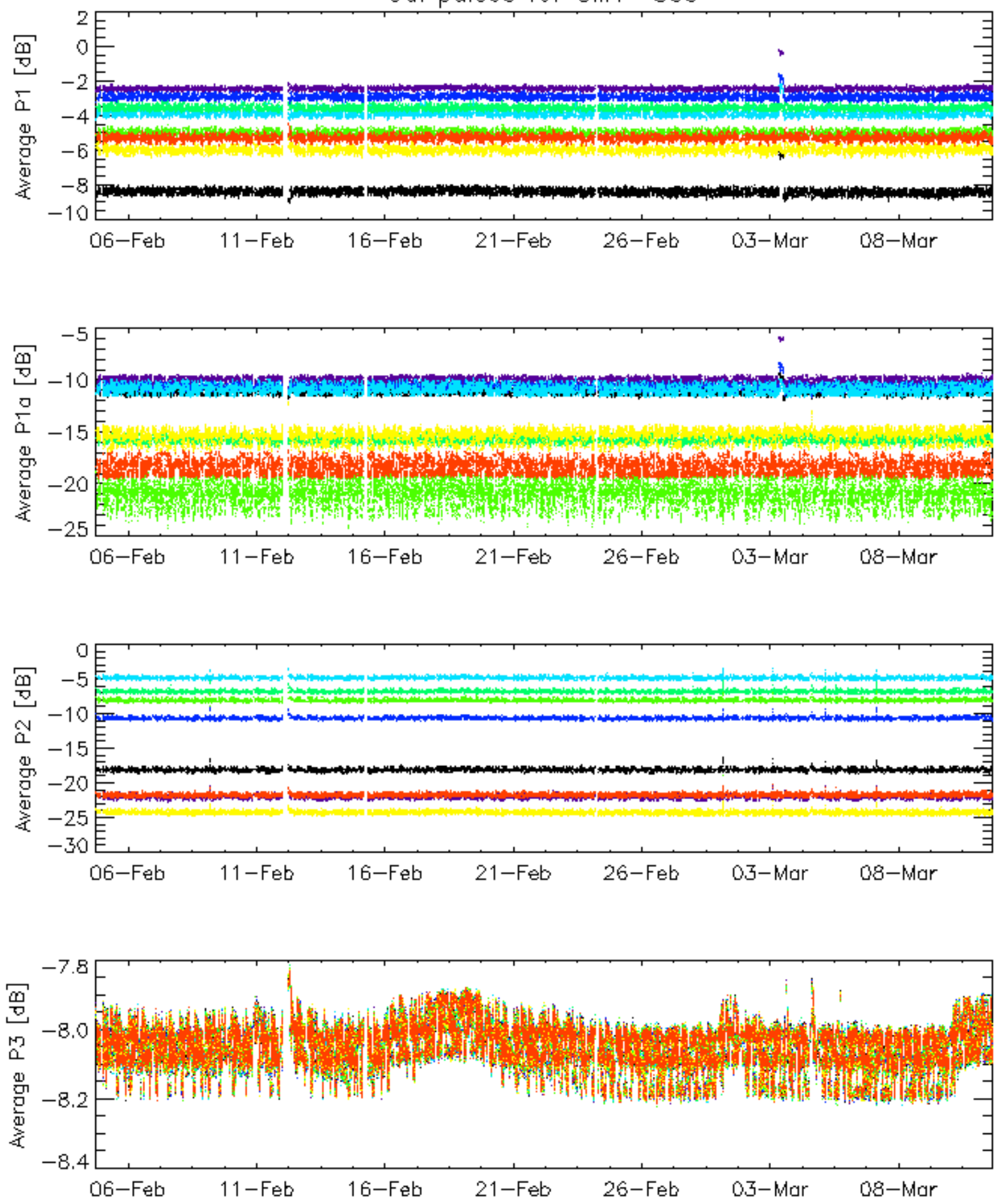


11-Mar



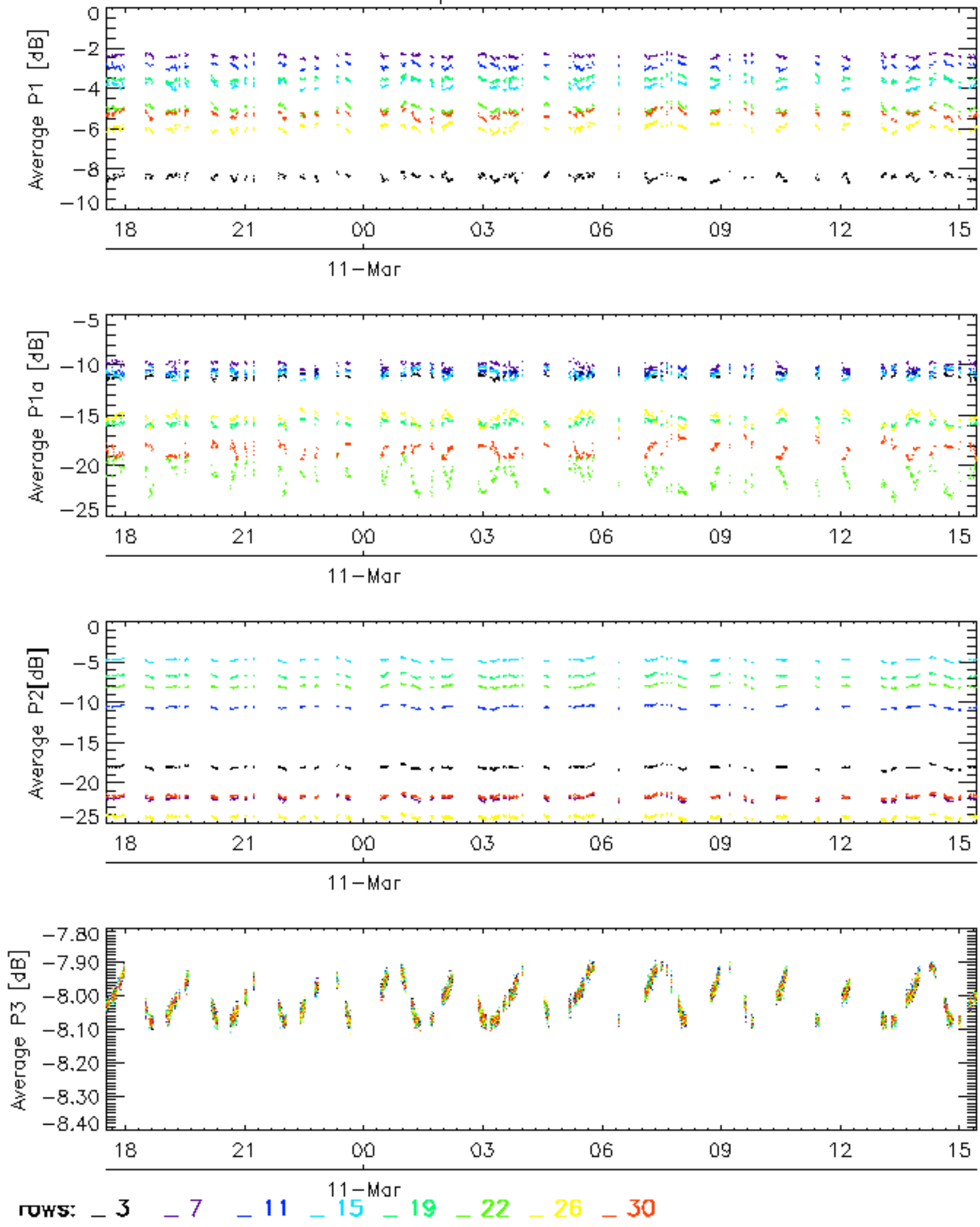
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

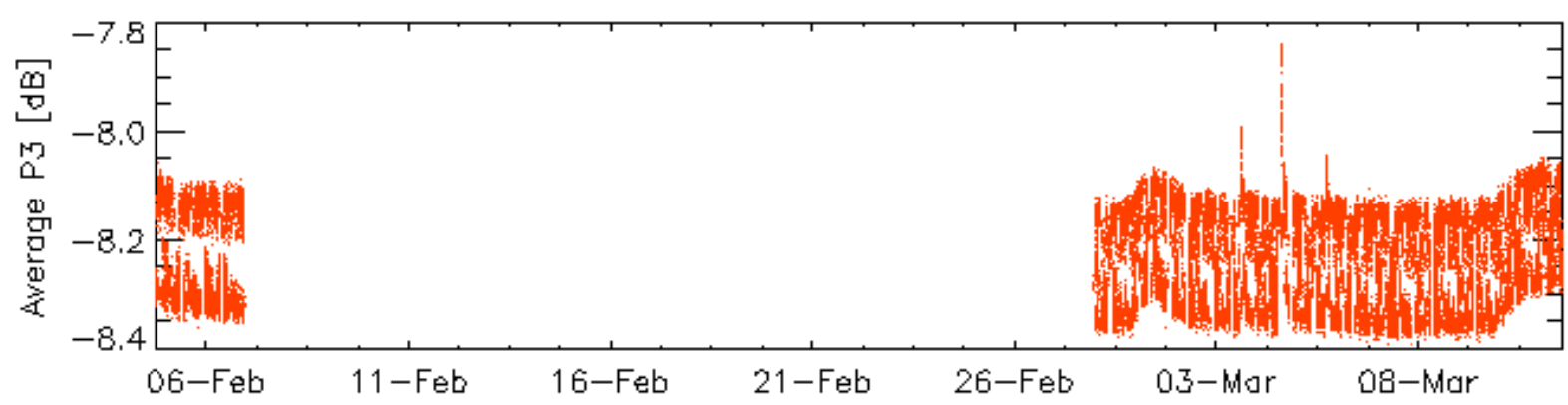
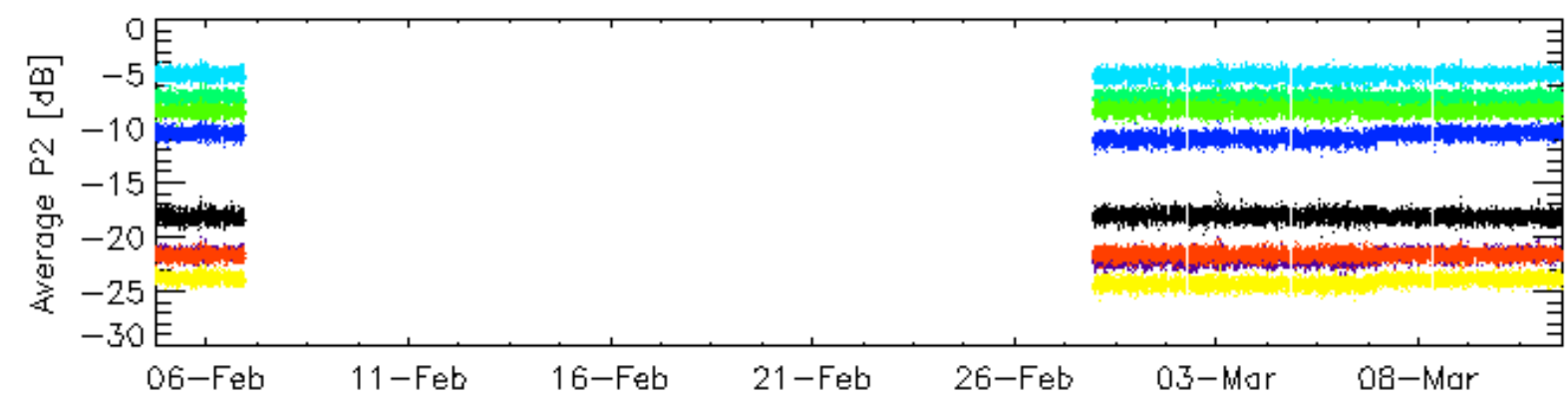
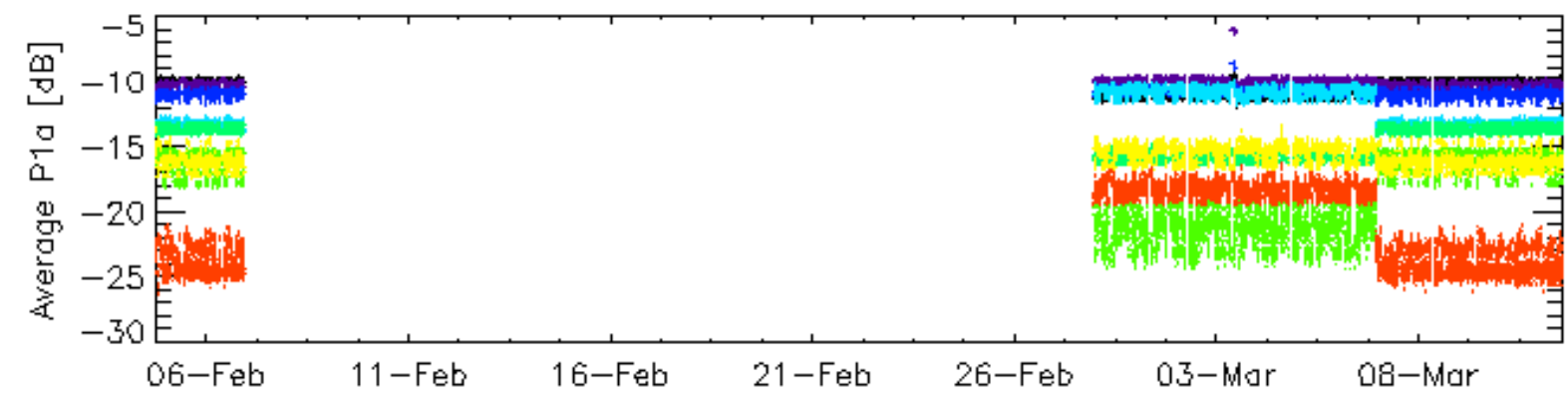
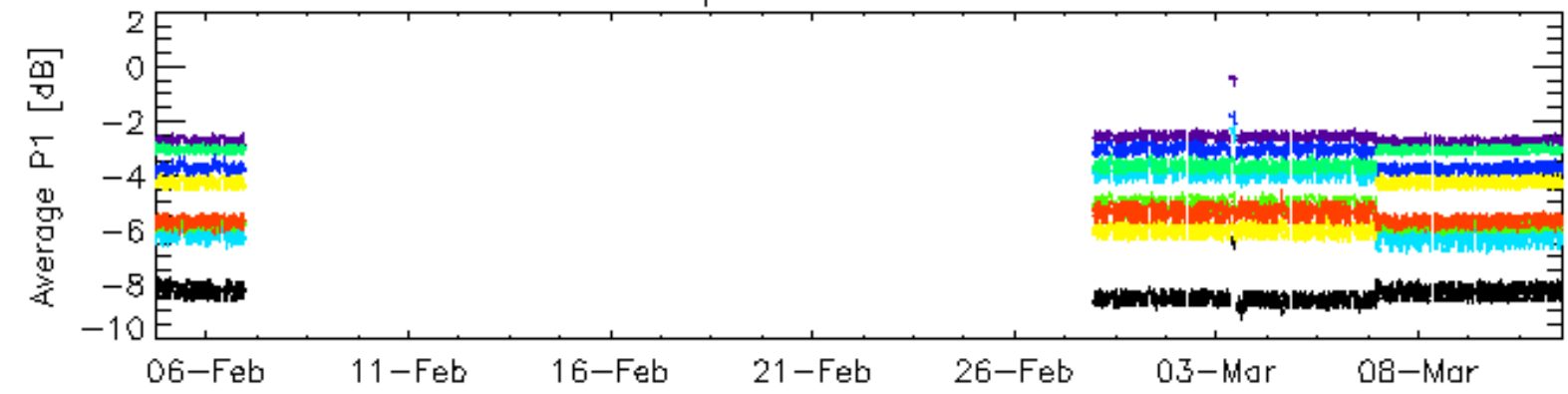


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

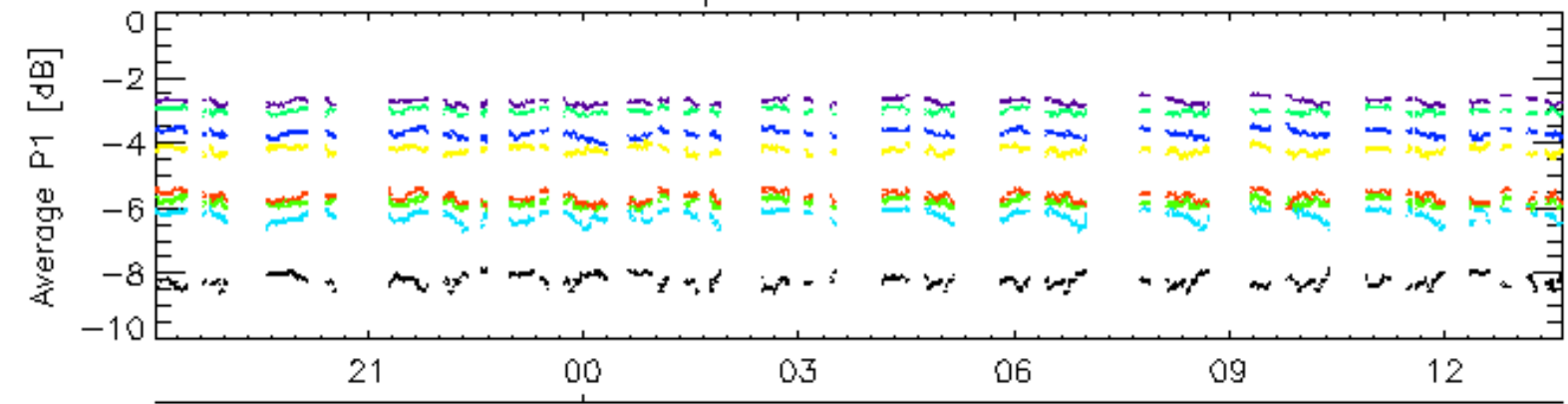


Cal pulses for WVS IS4

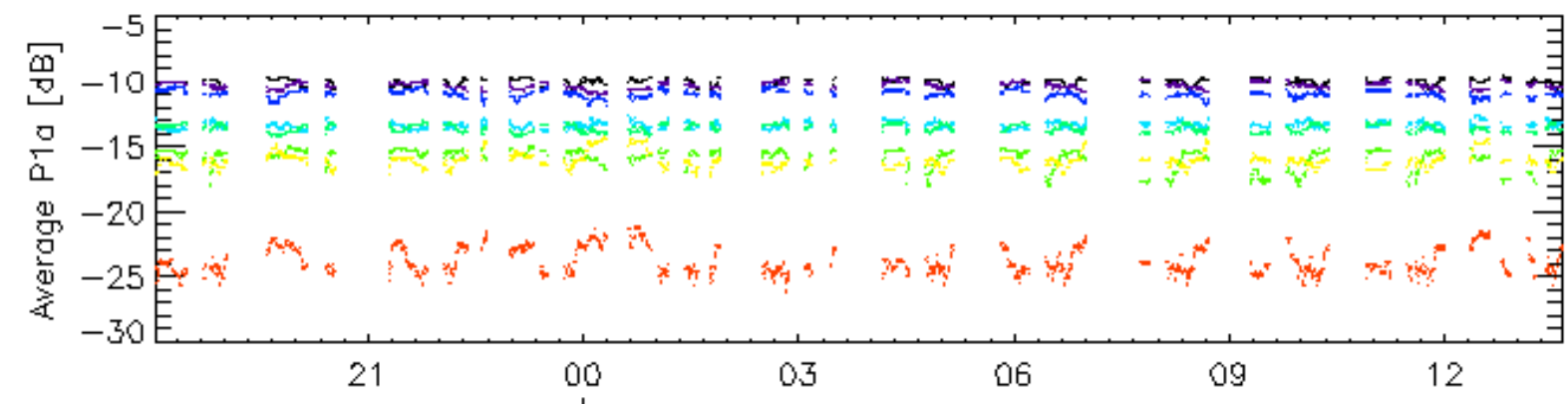


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

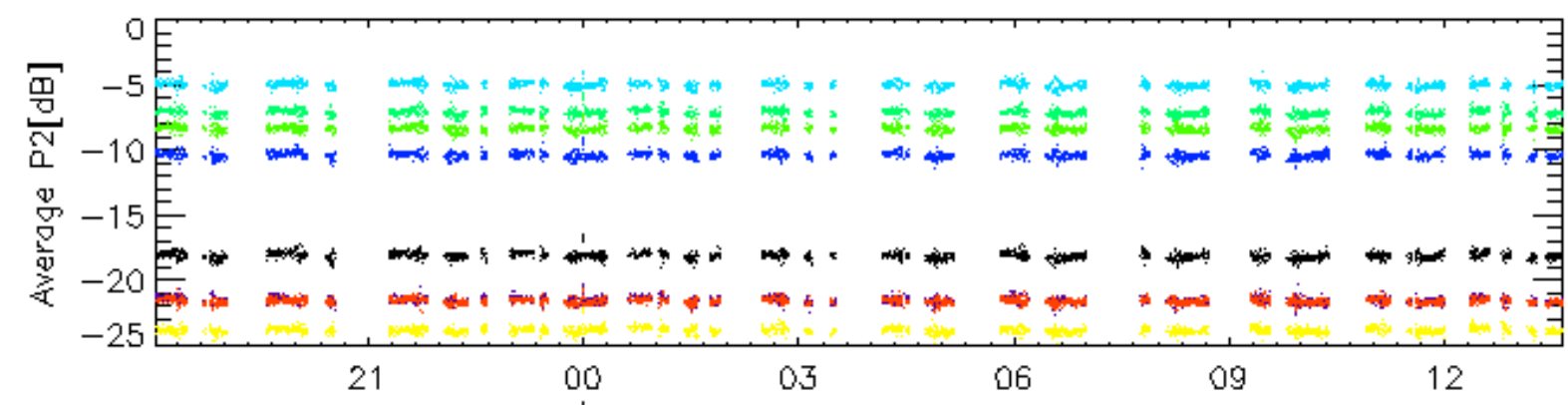
Cal pulses for WVS IS4



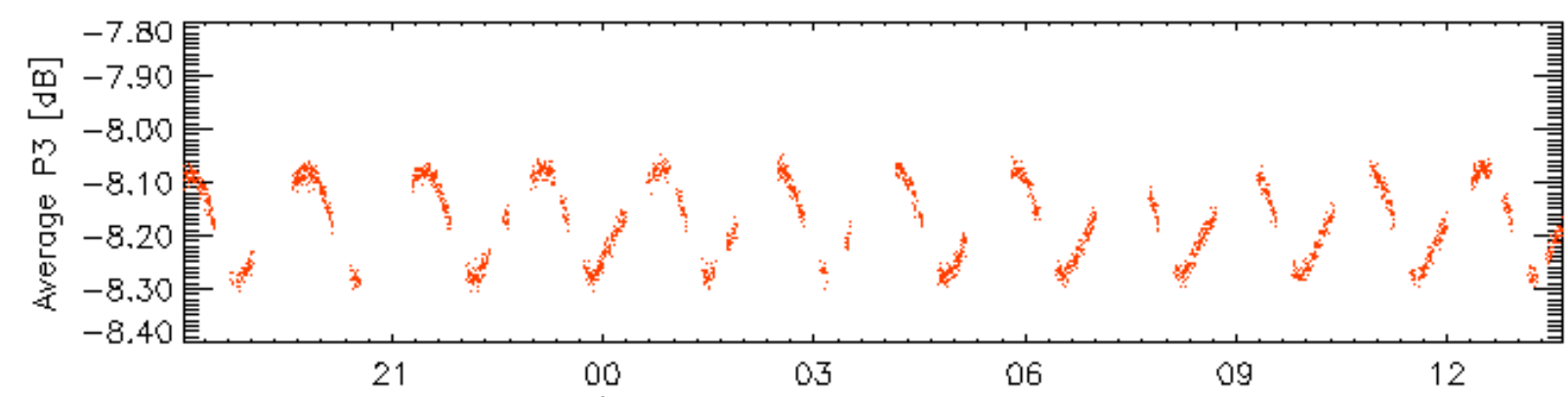
11-Mar



11-Mar



11-Mar

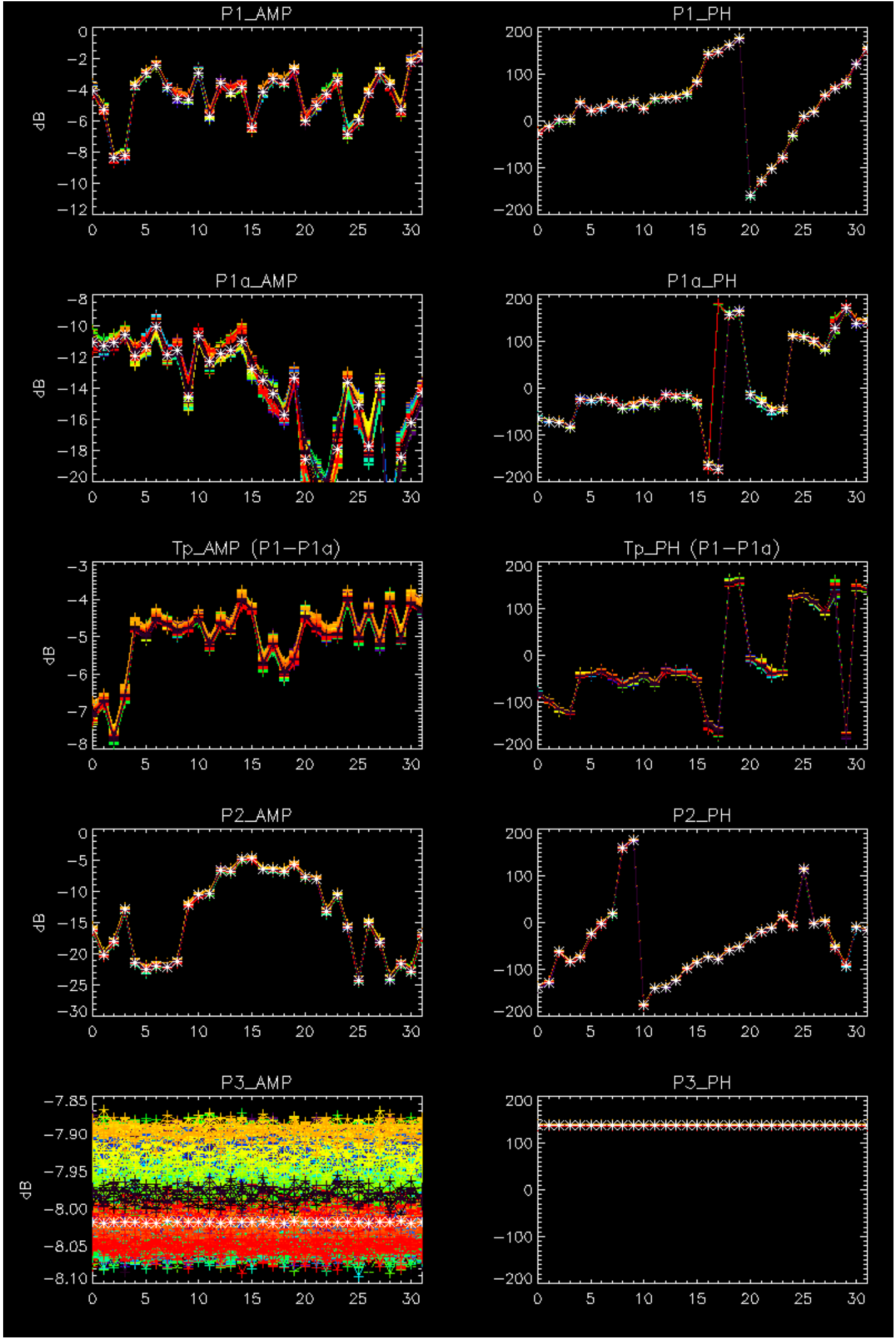


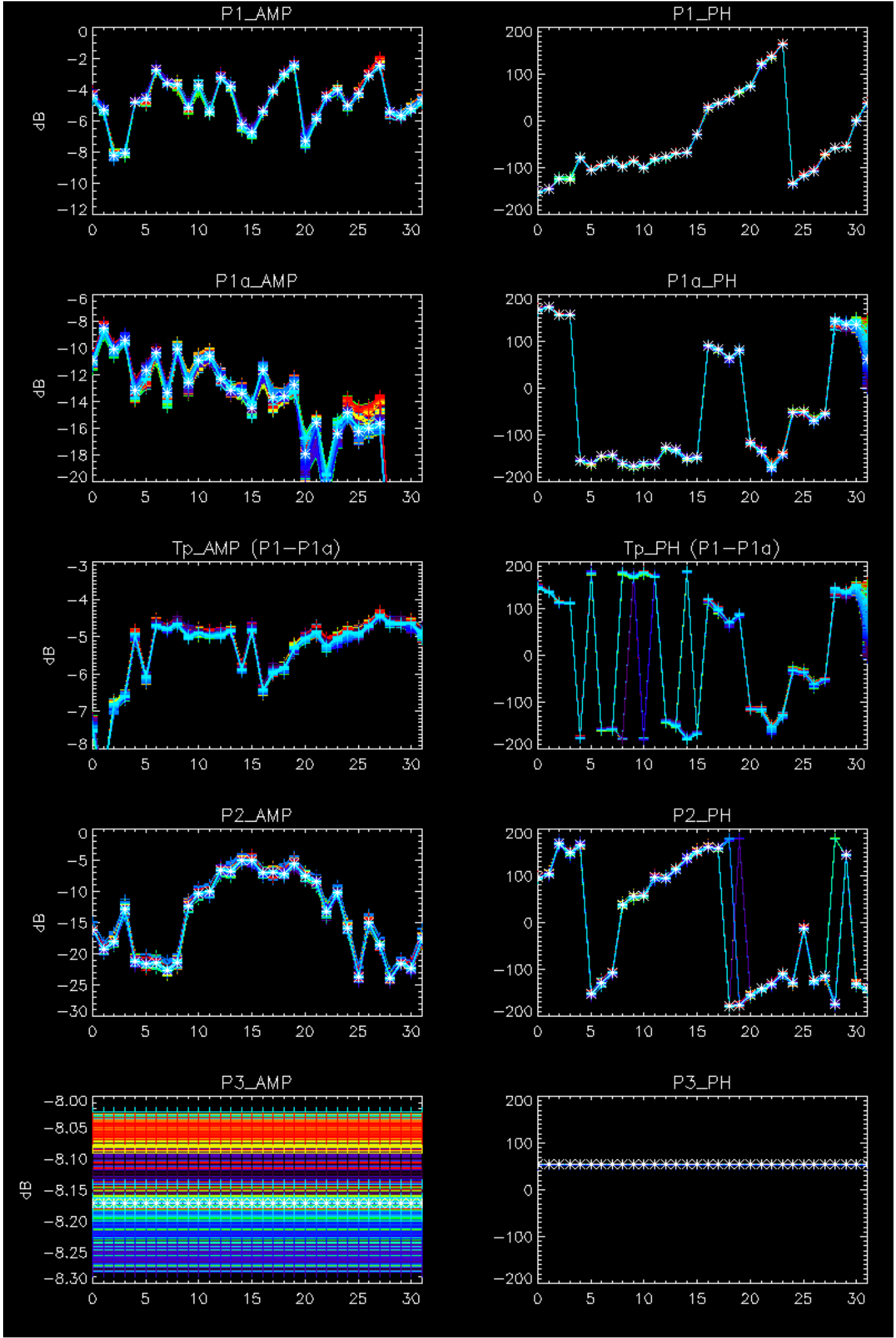
11-Mar

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

No anomalies observed.





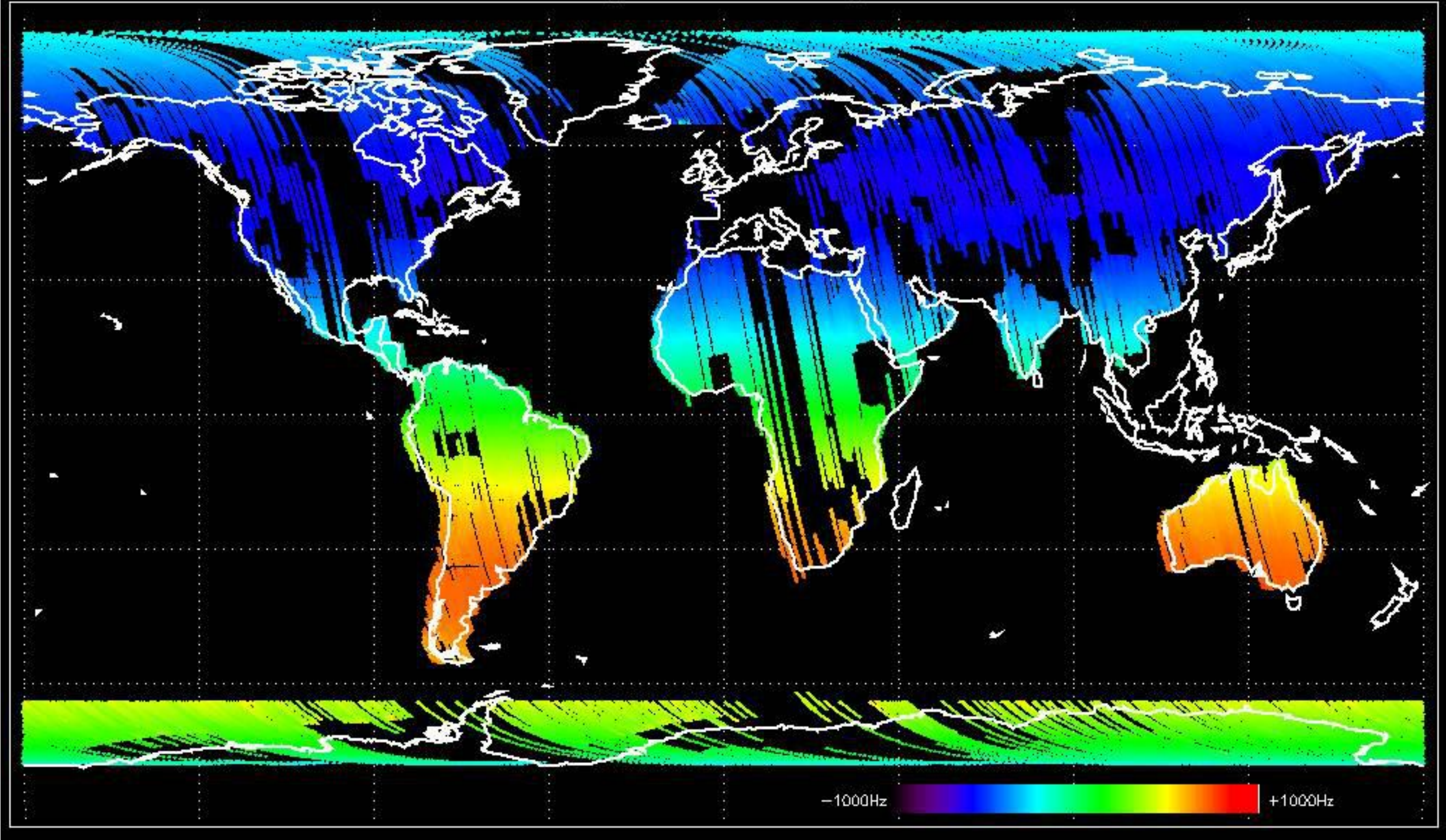


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



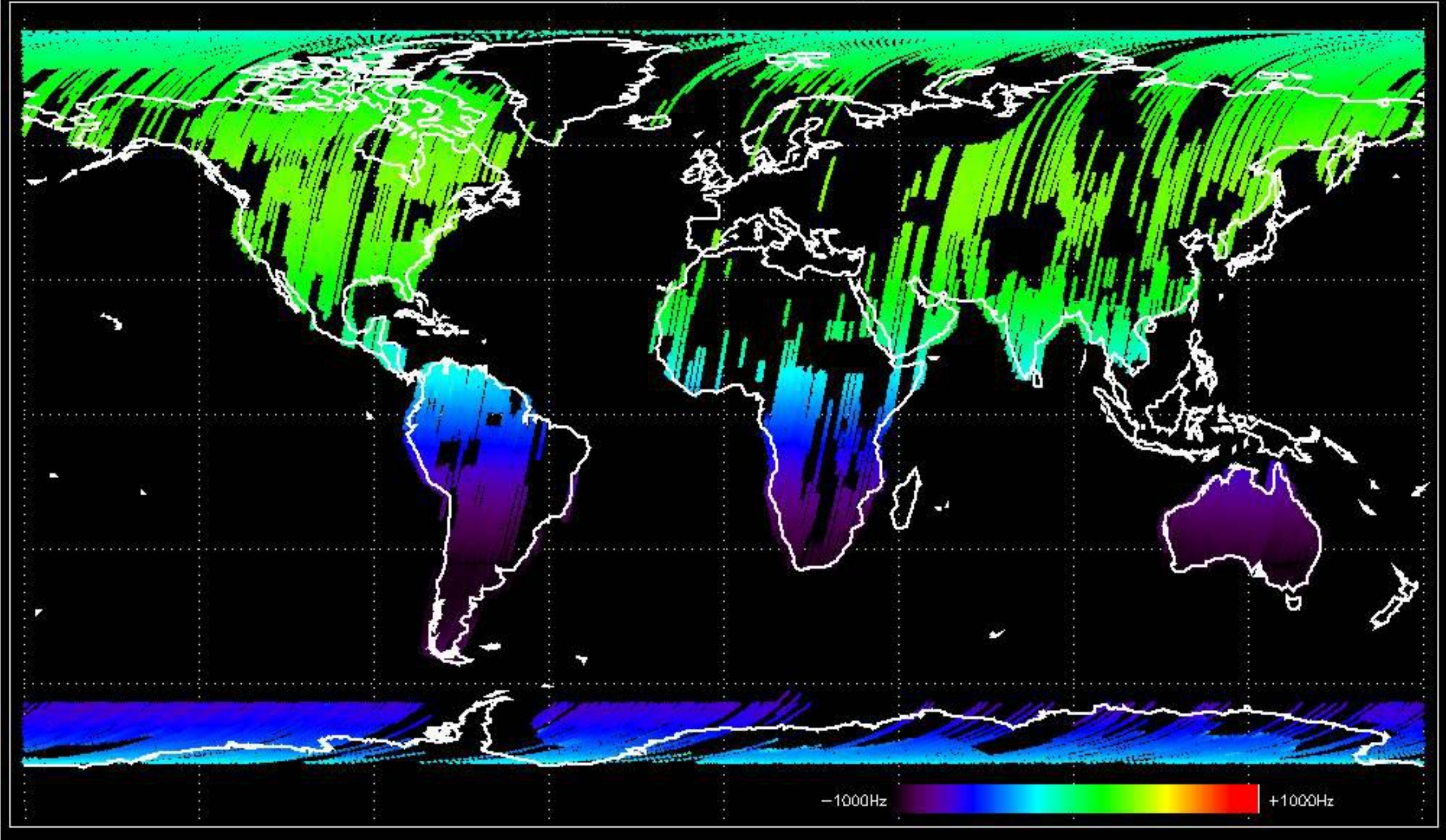


Doppler 'GM1' 'SS1' ascending



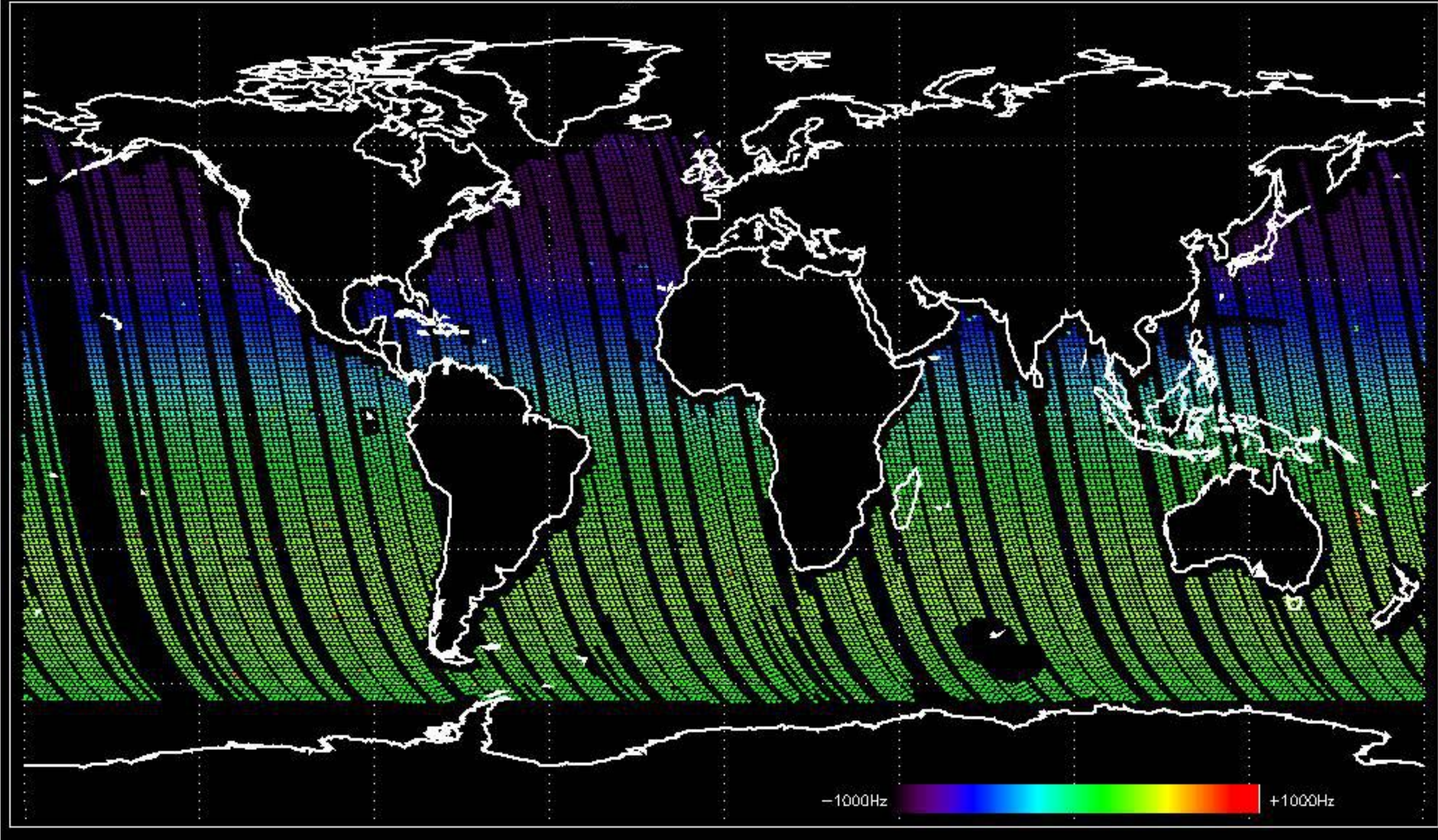


Doppler 'GM1' 'SS1' descending



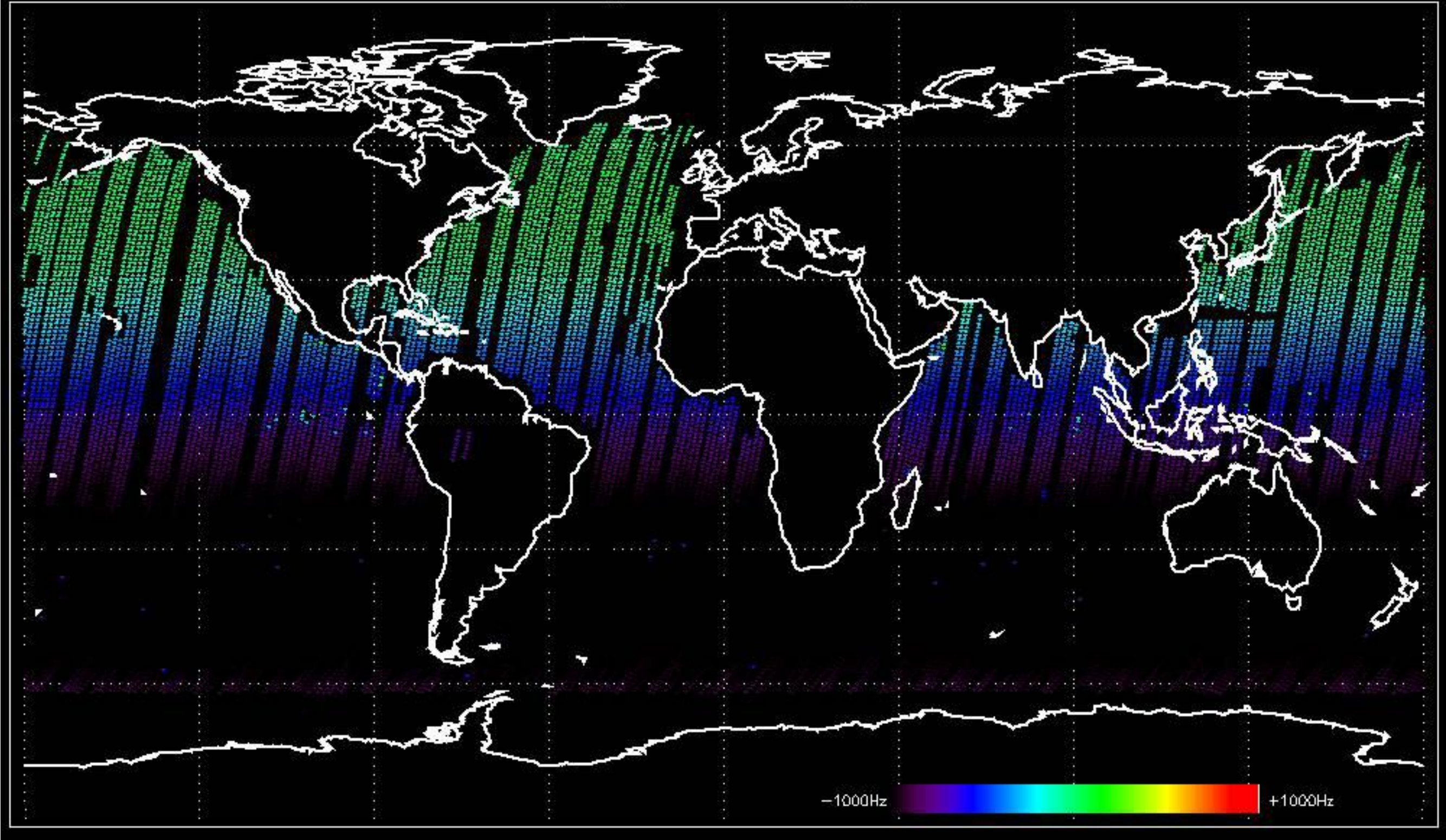


Doppler 'WVS' 'IS4' ascending



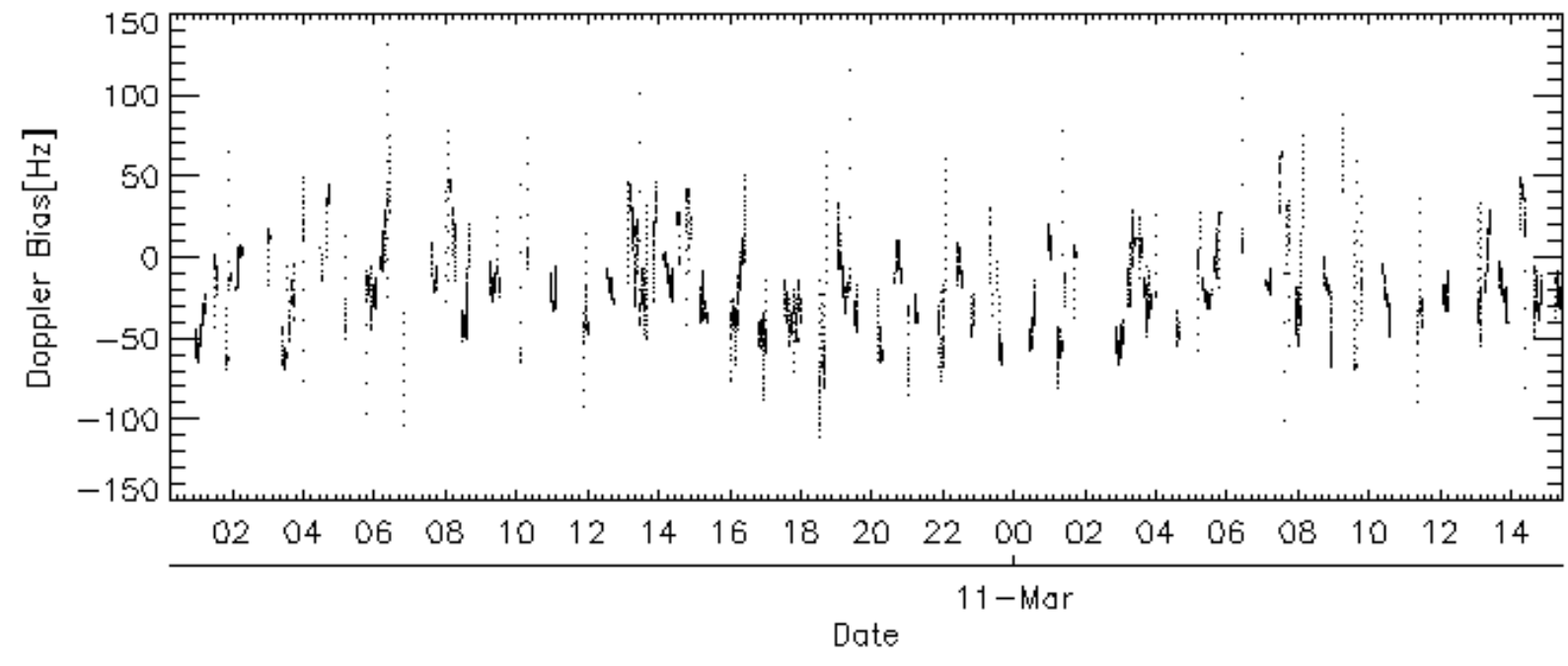
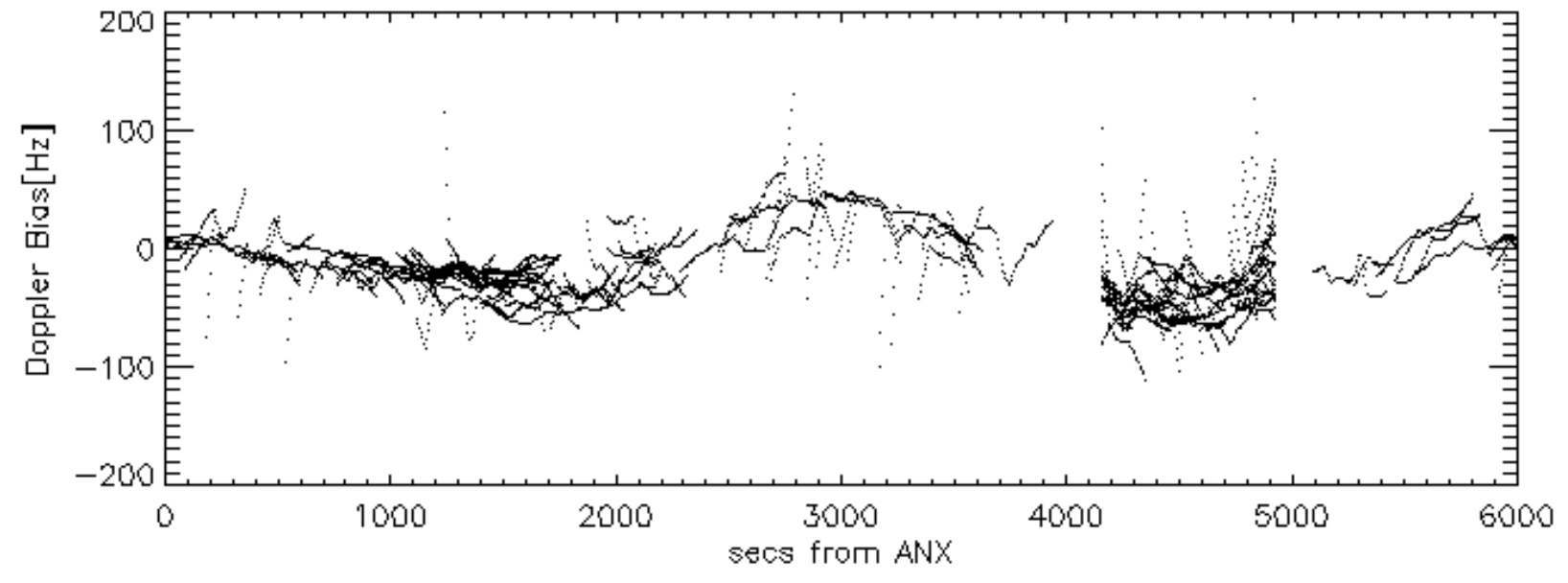
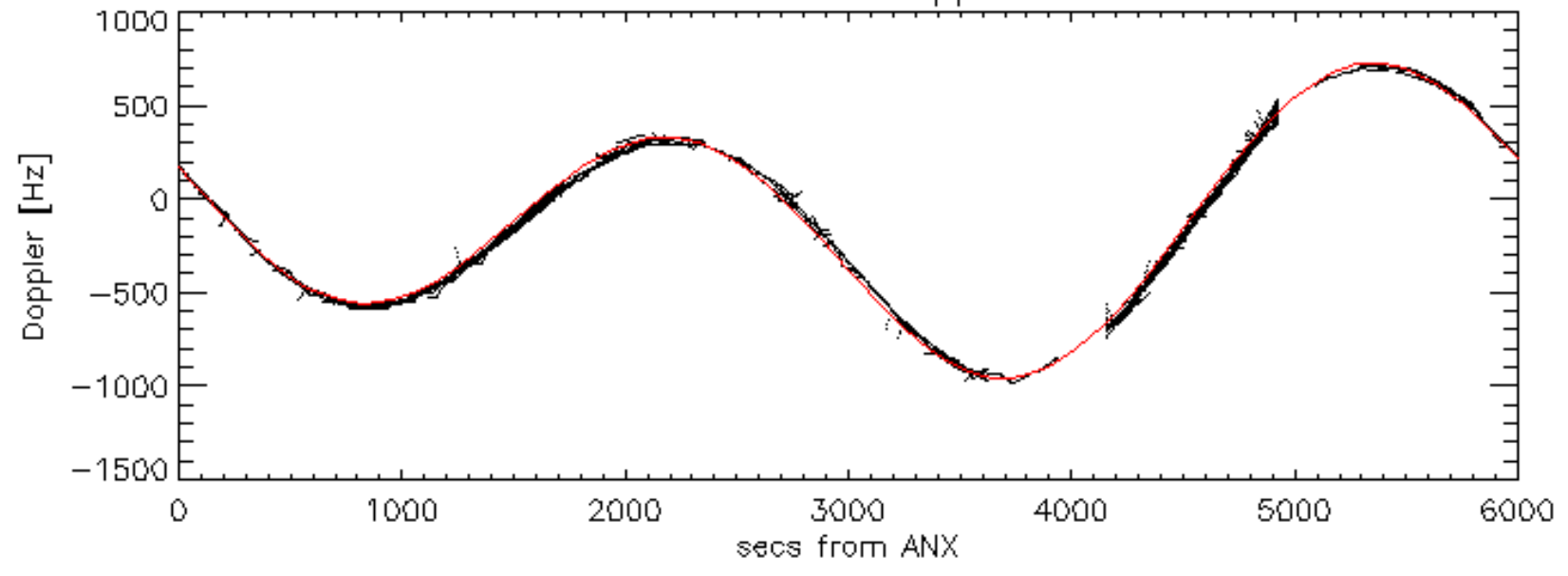


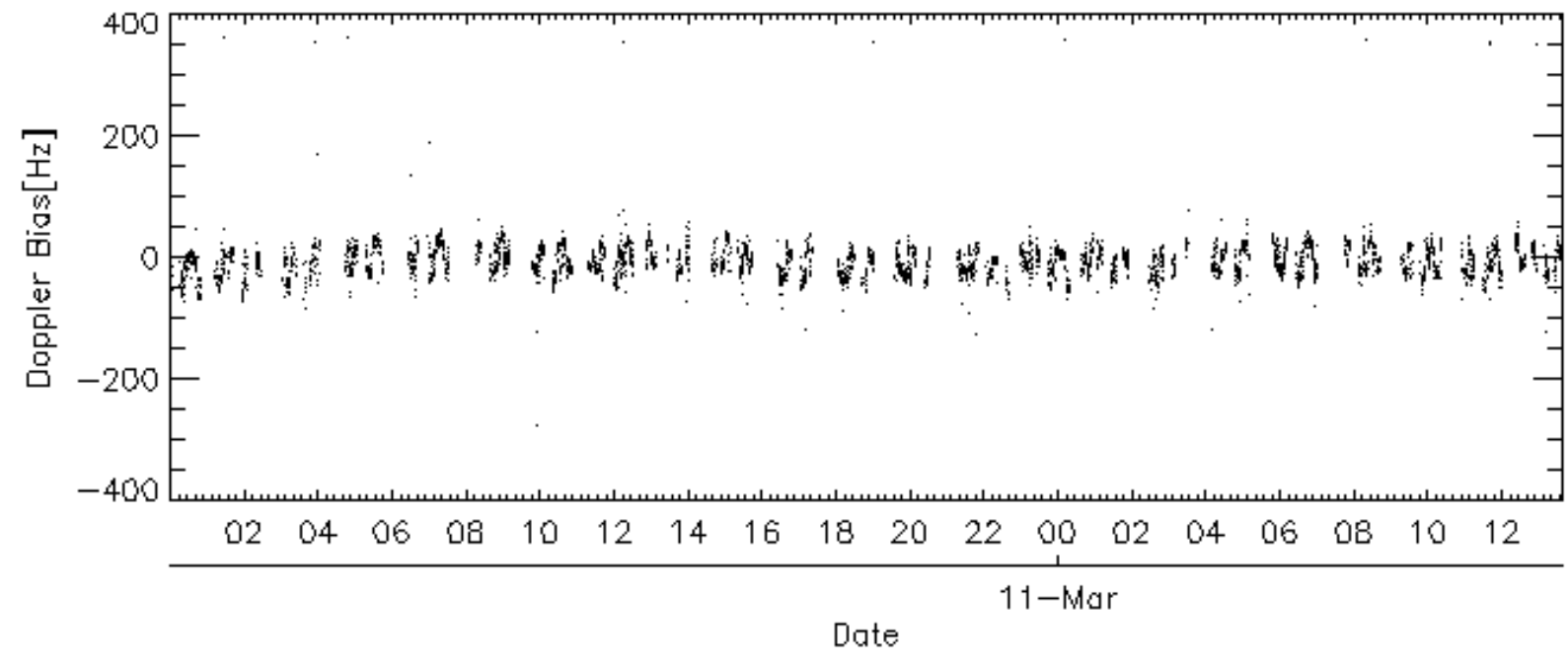
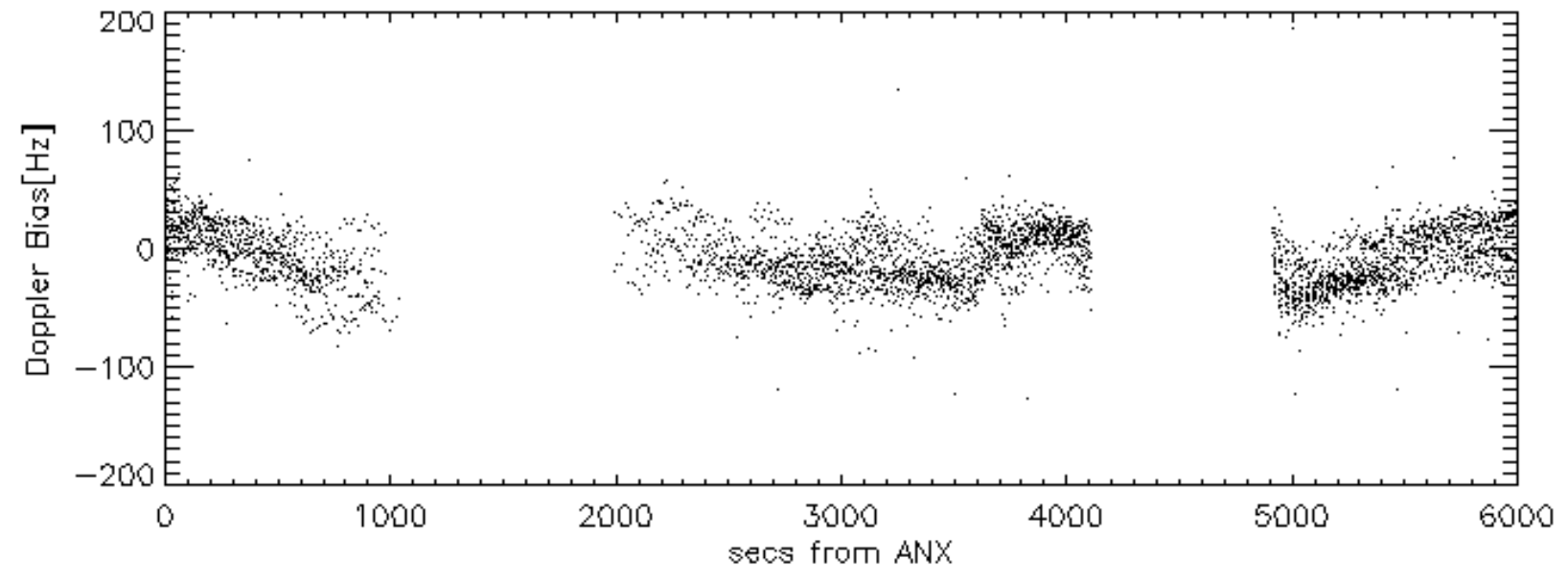
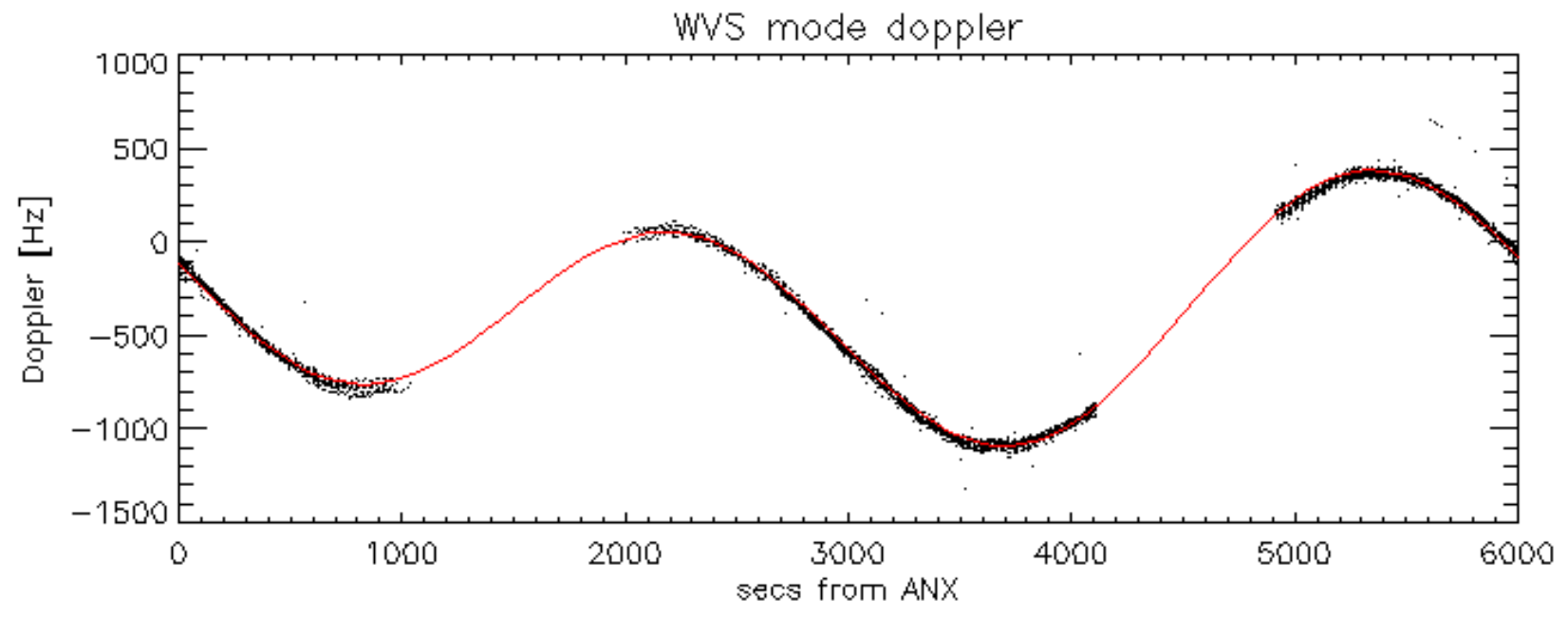
Doppler 'WVS' 'IS4' descending





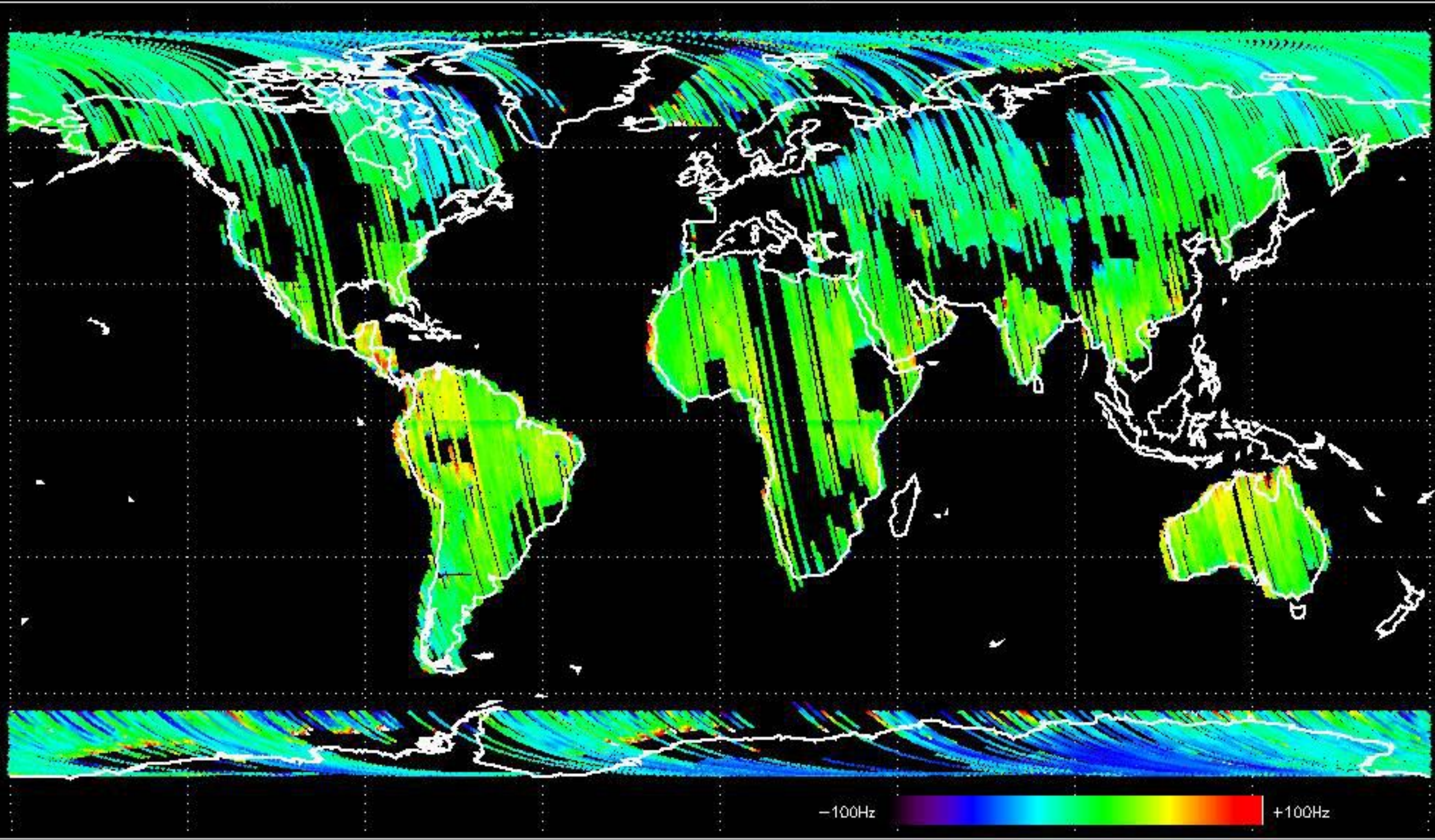
GM1 mode doppler





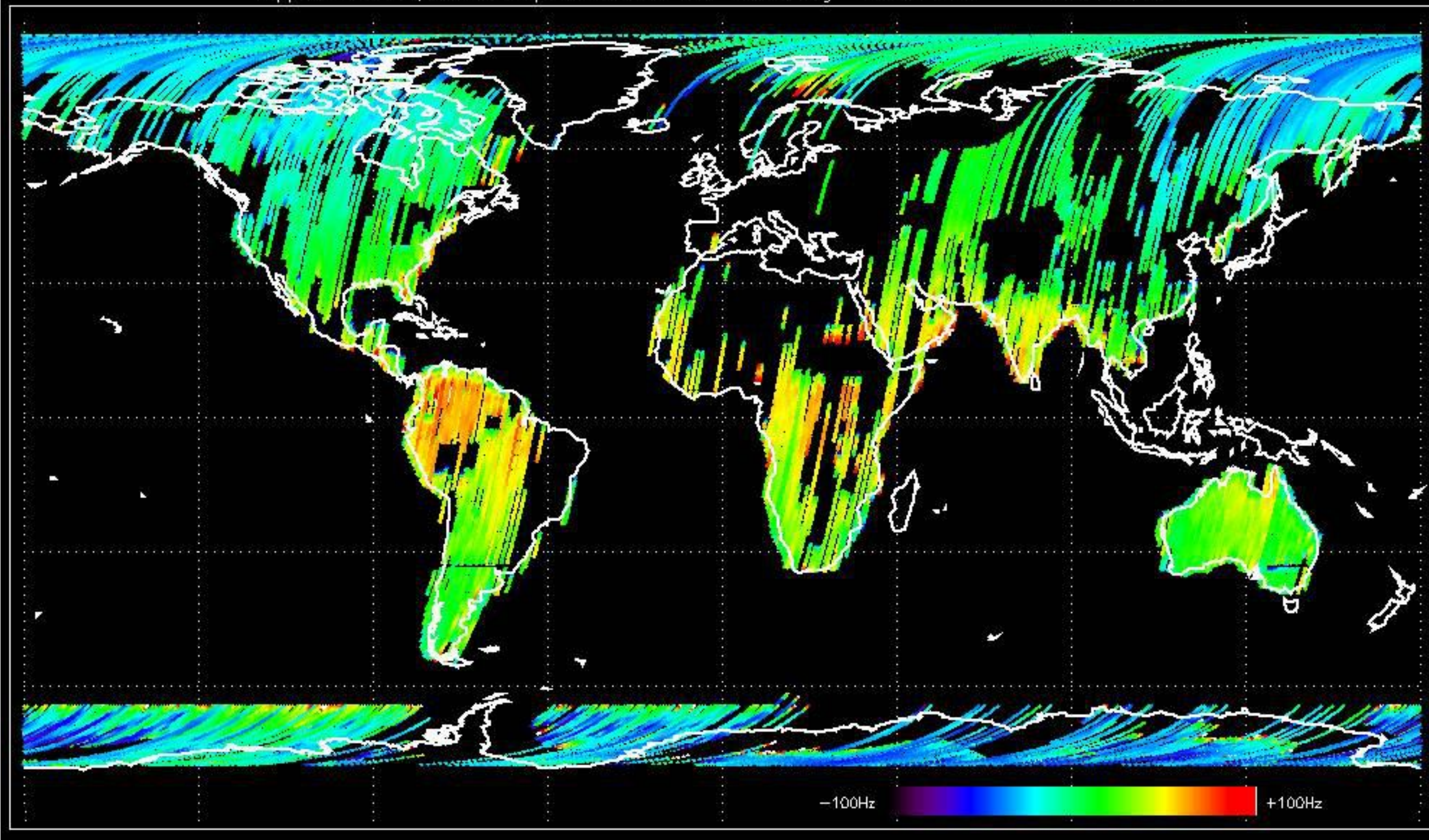


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.471158 Hz



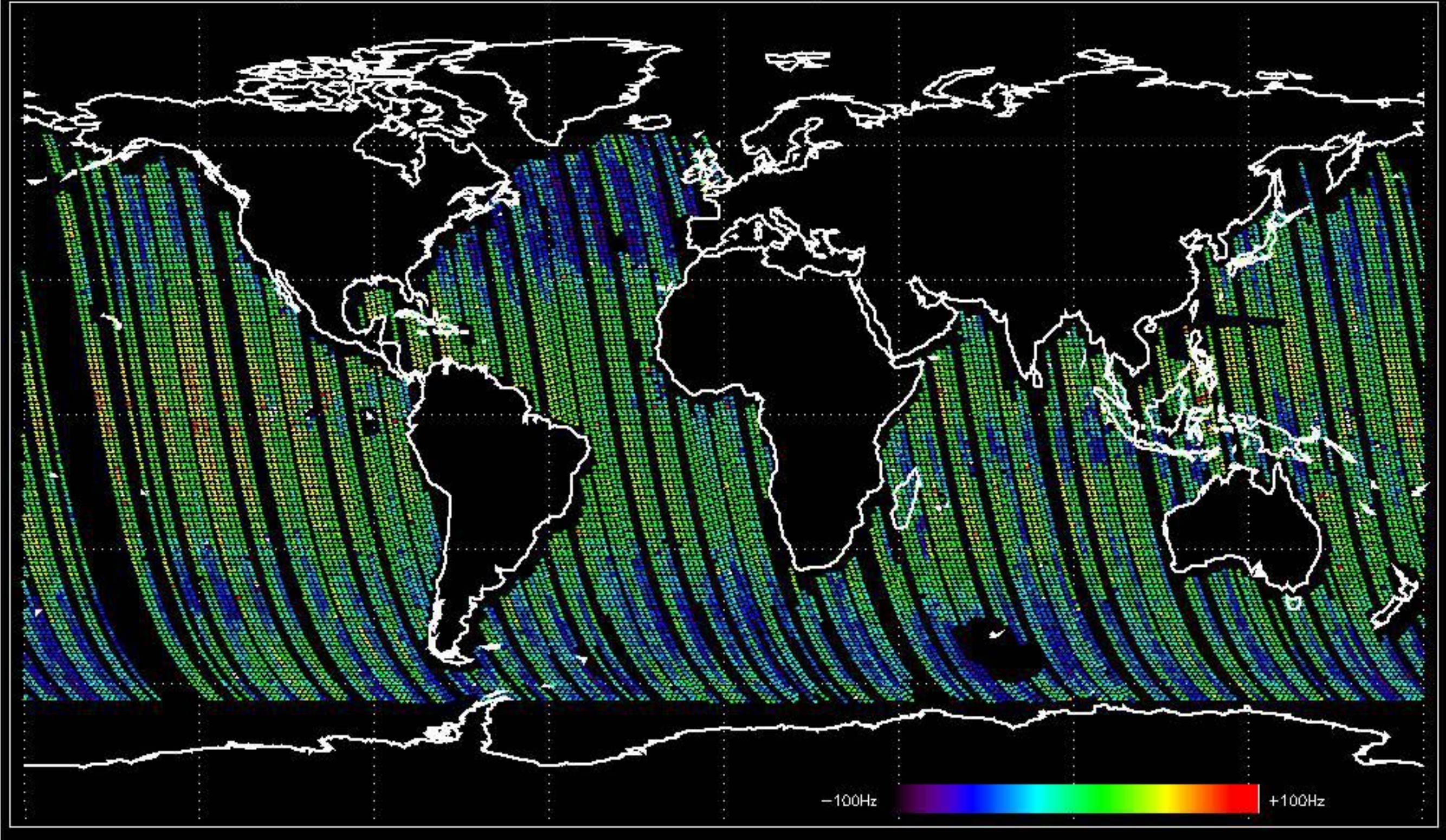


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.819228 Hz



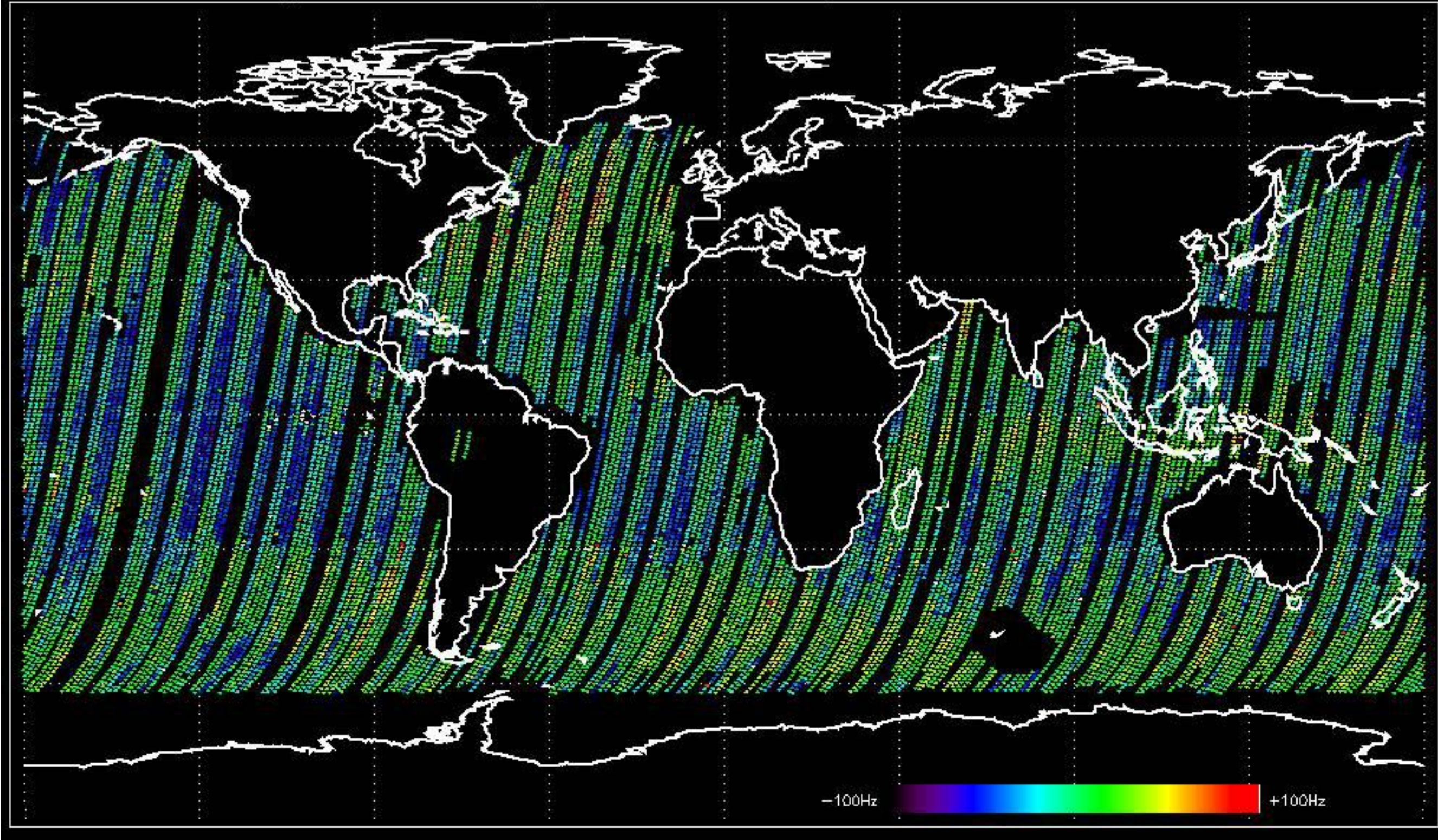


Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -20.829673 Hz





Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -22.671630 Hz

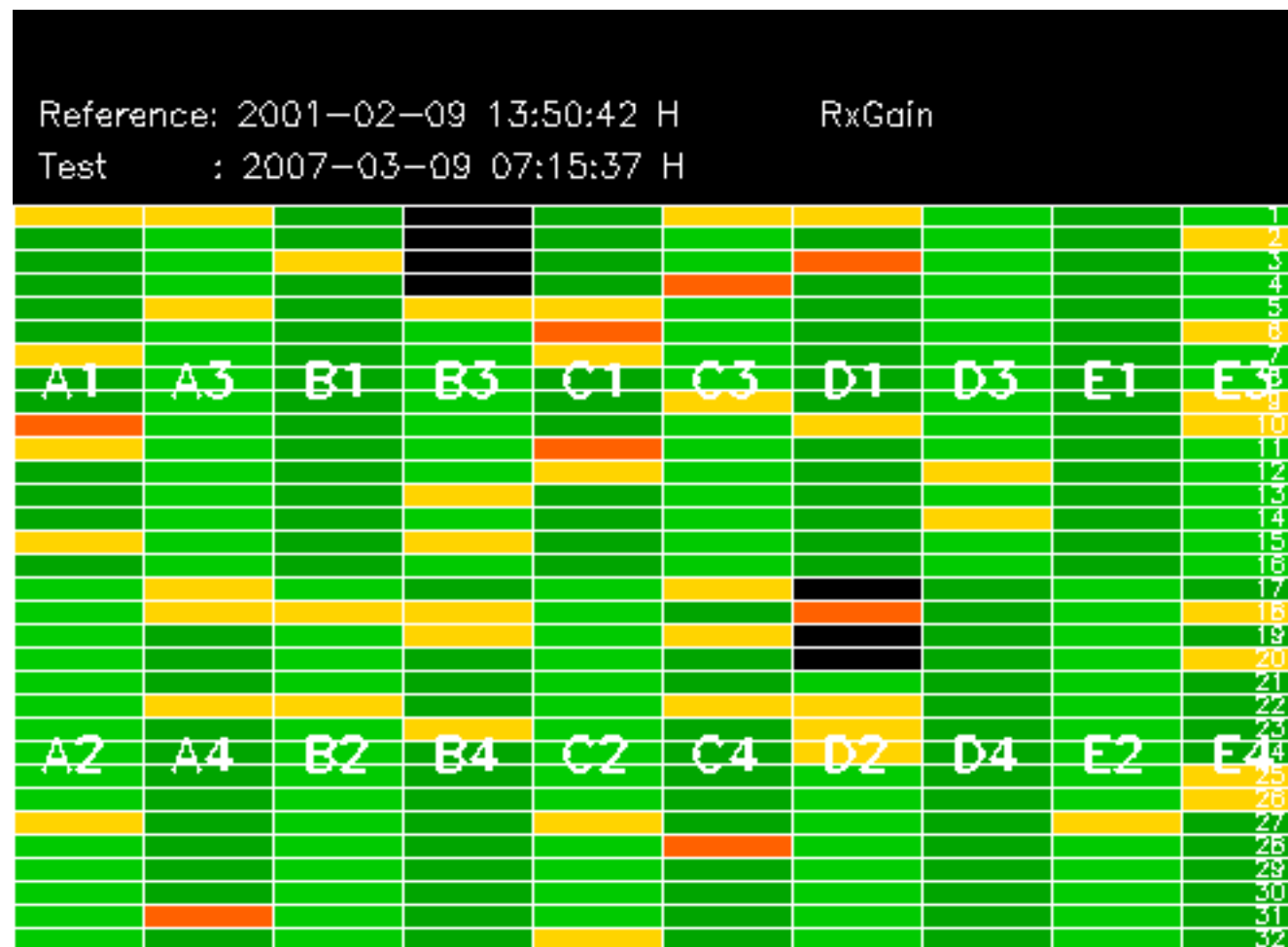


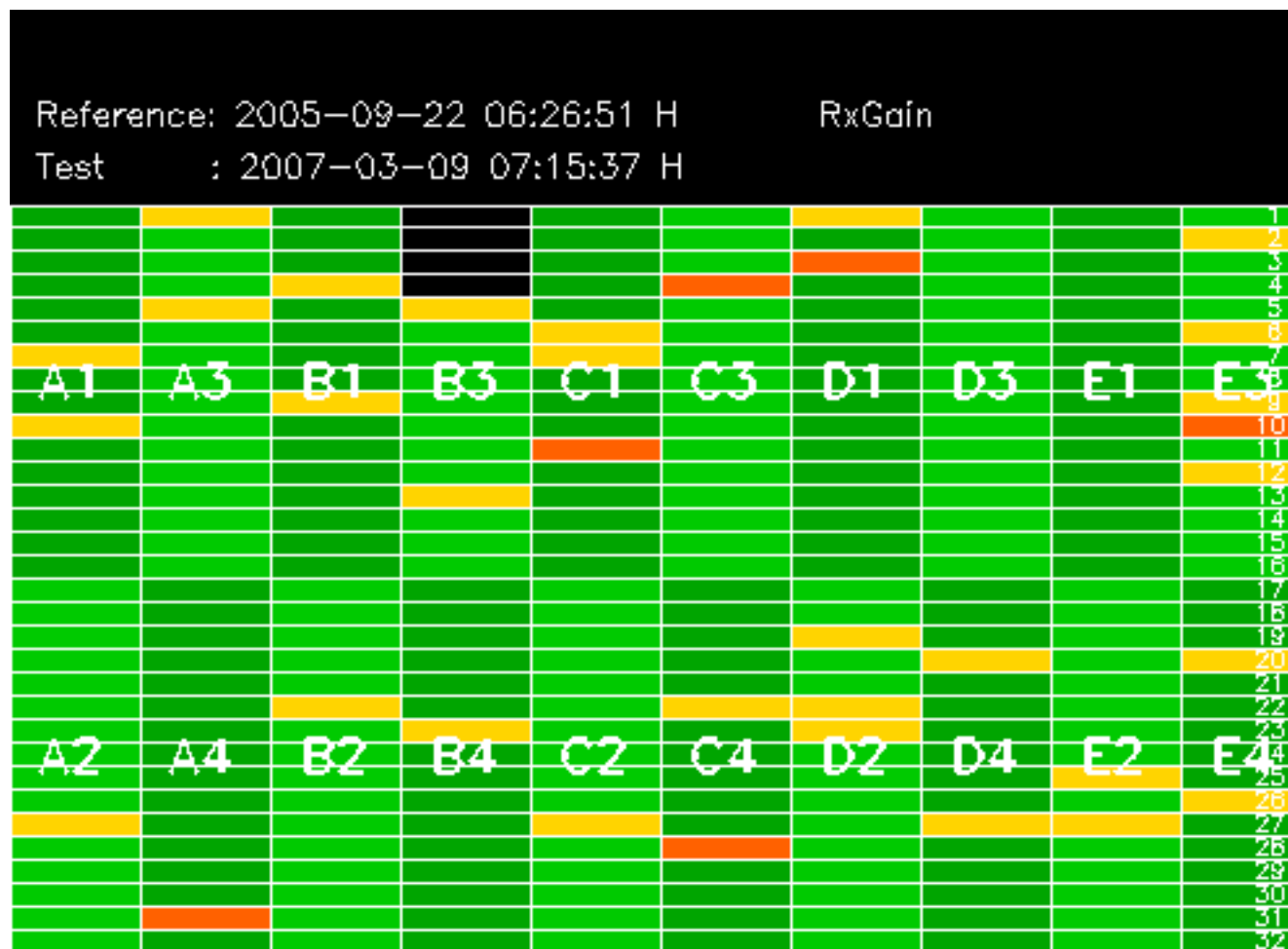


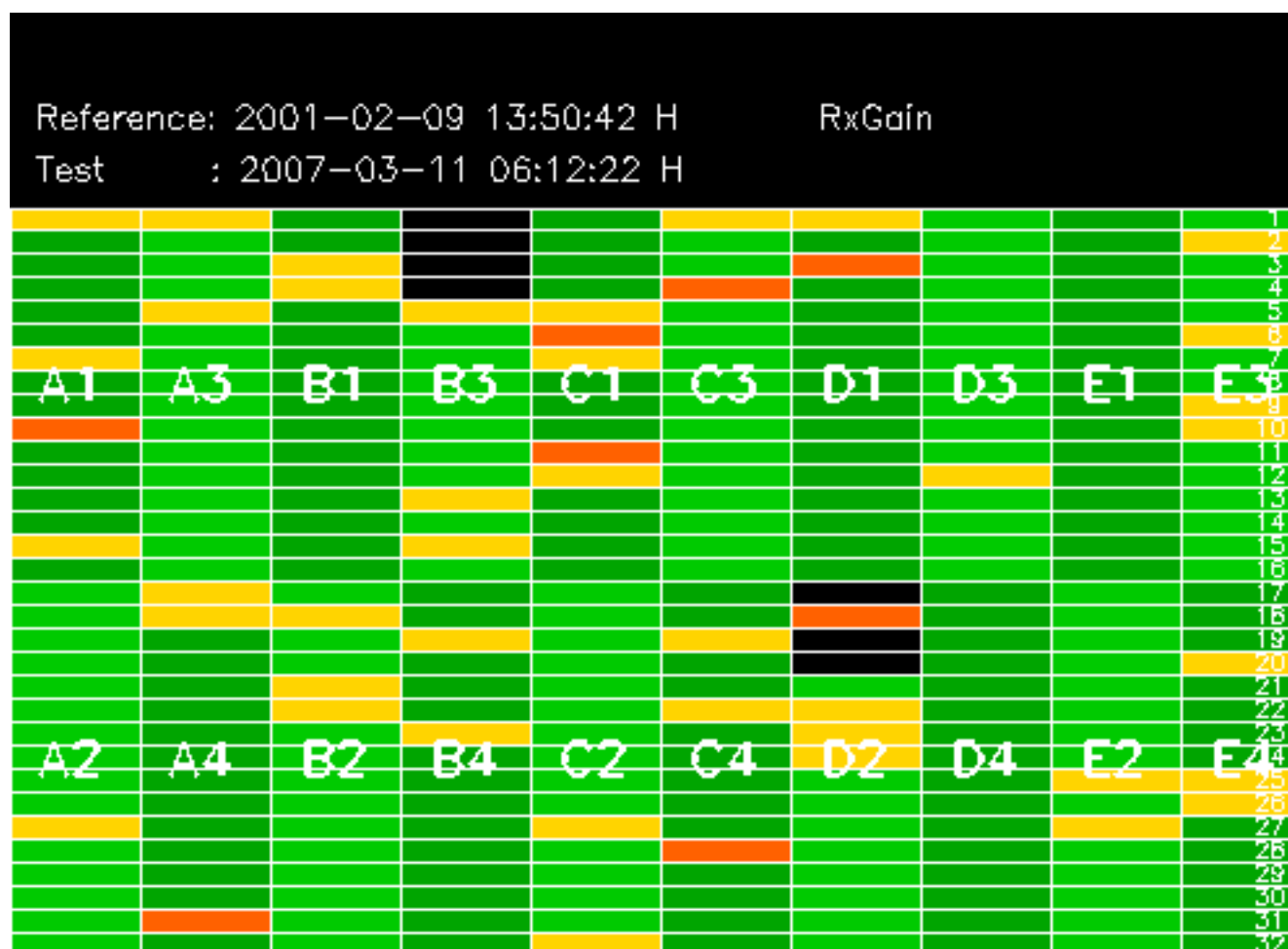
No anomalies observed on available MS products:

No anomalies observed.





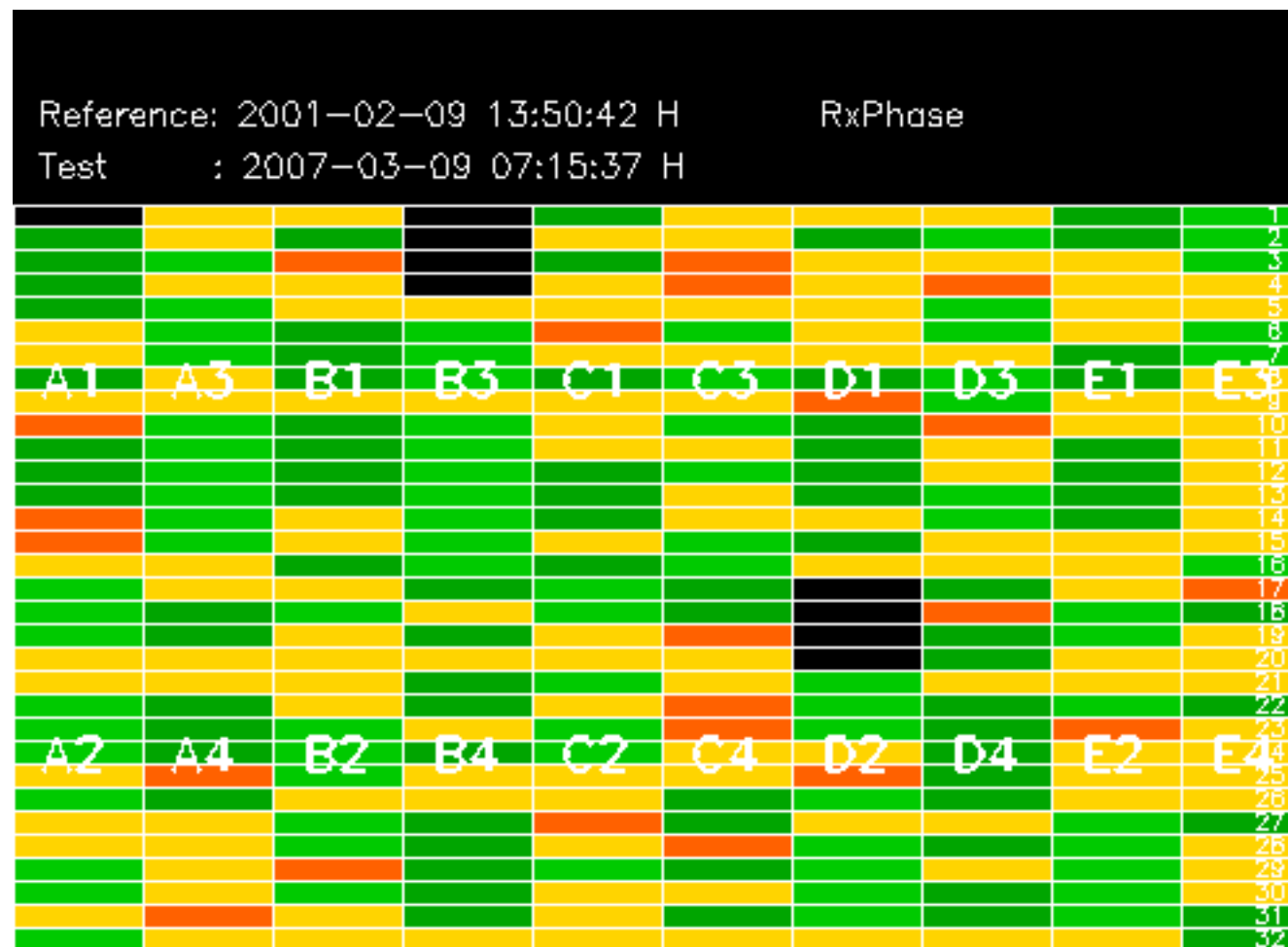


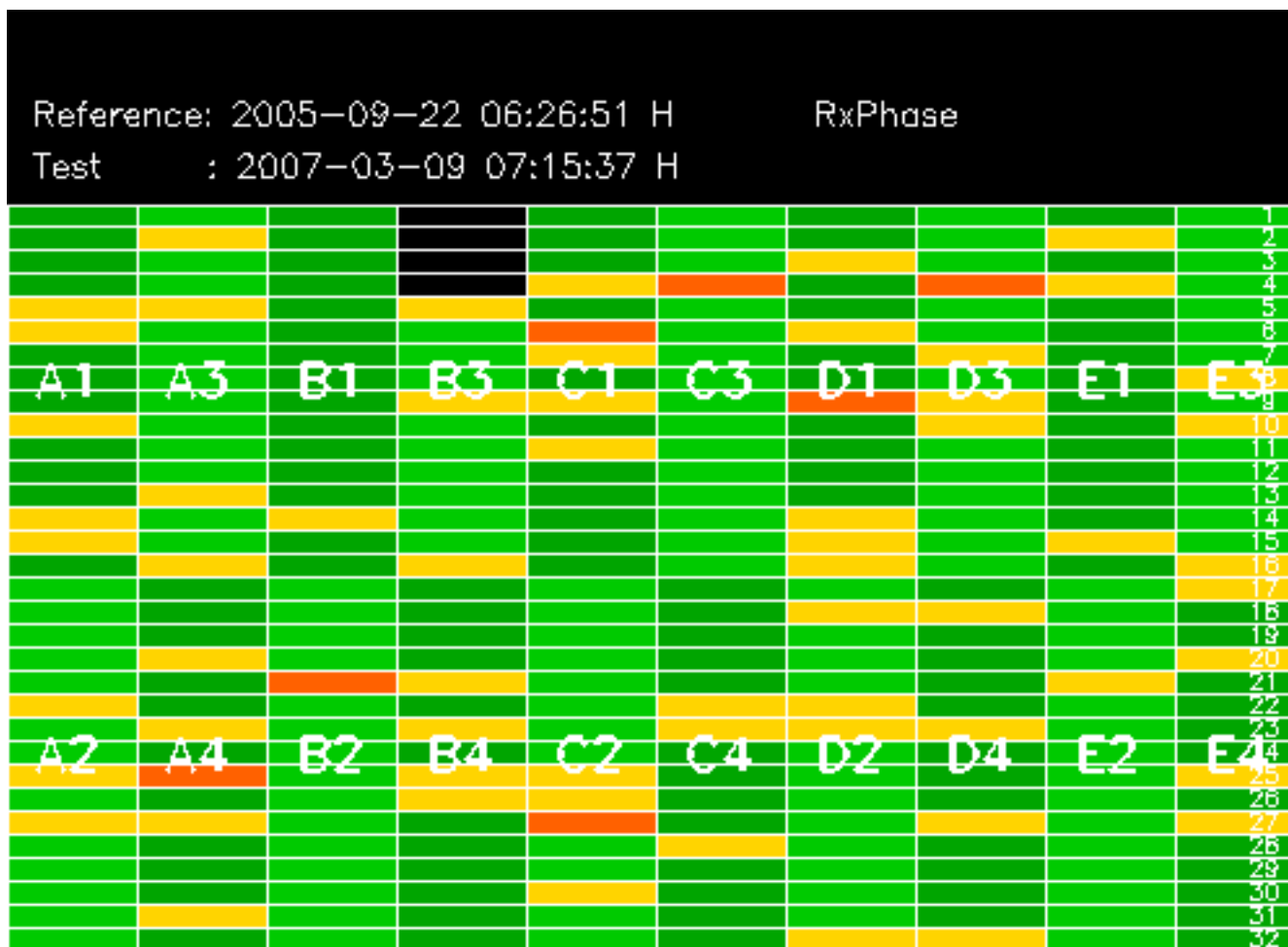




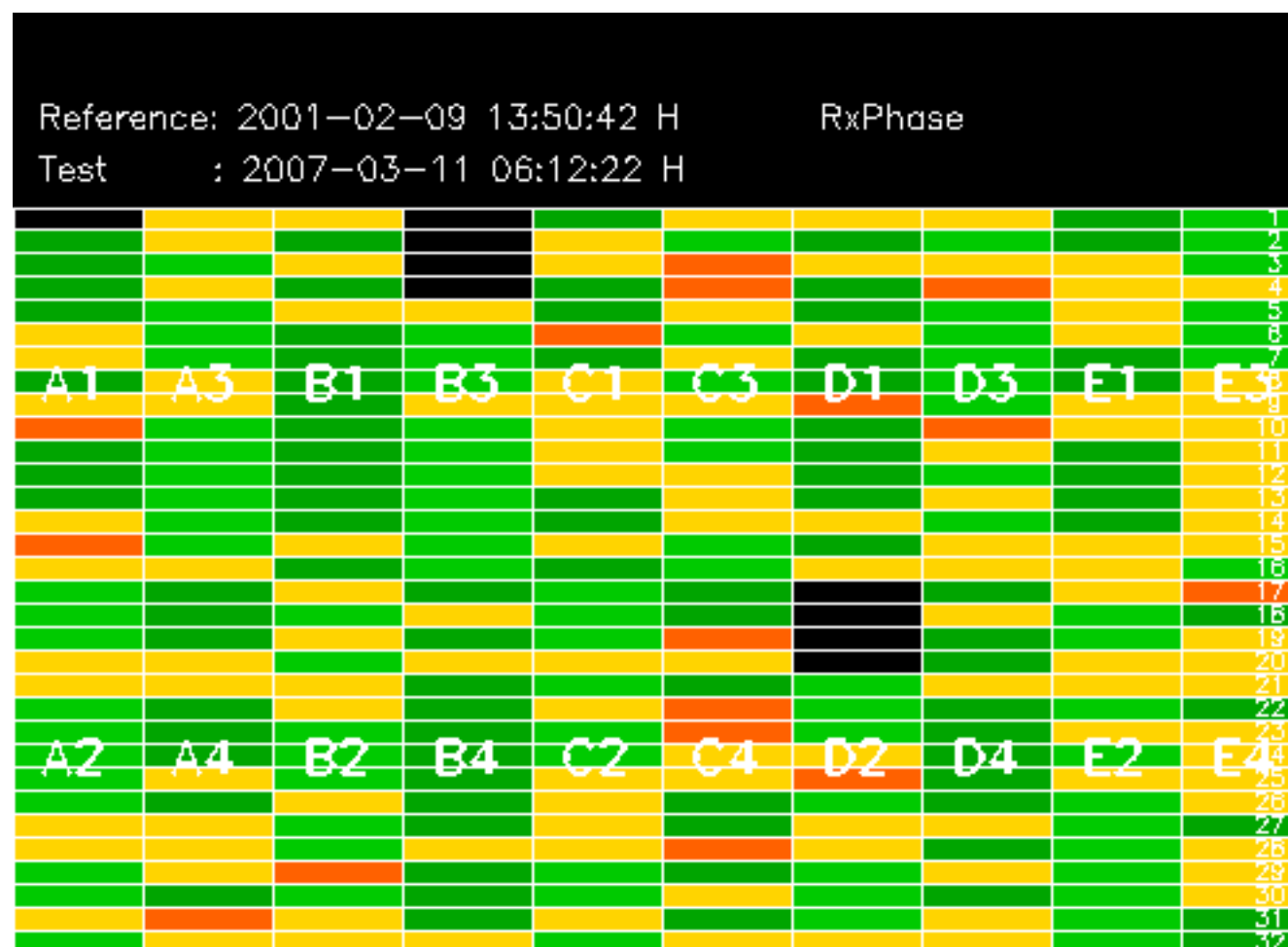








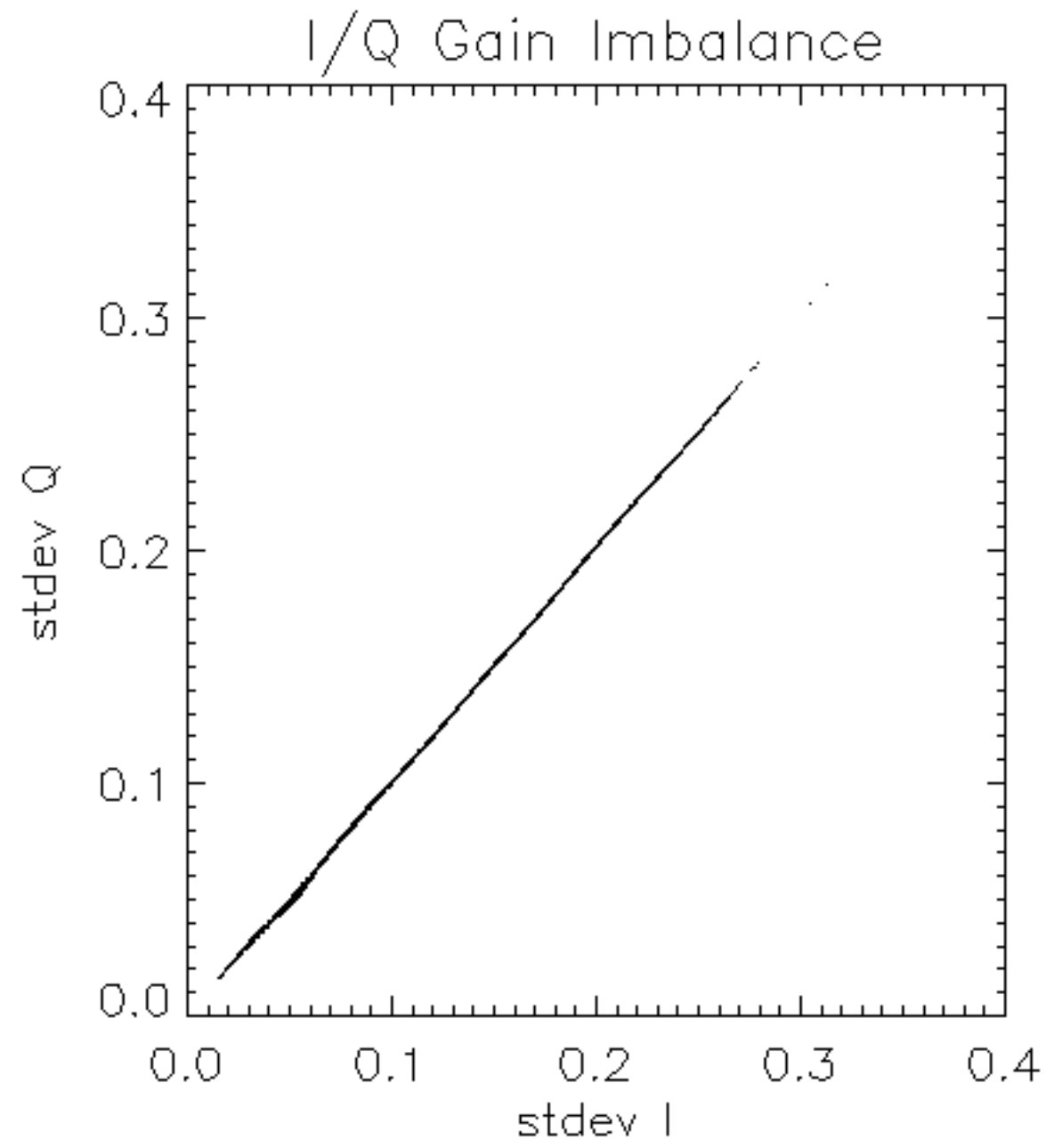


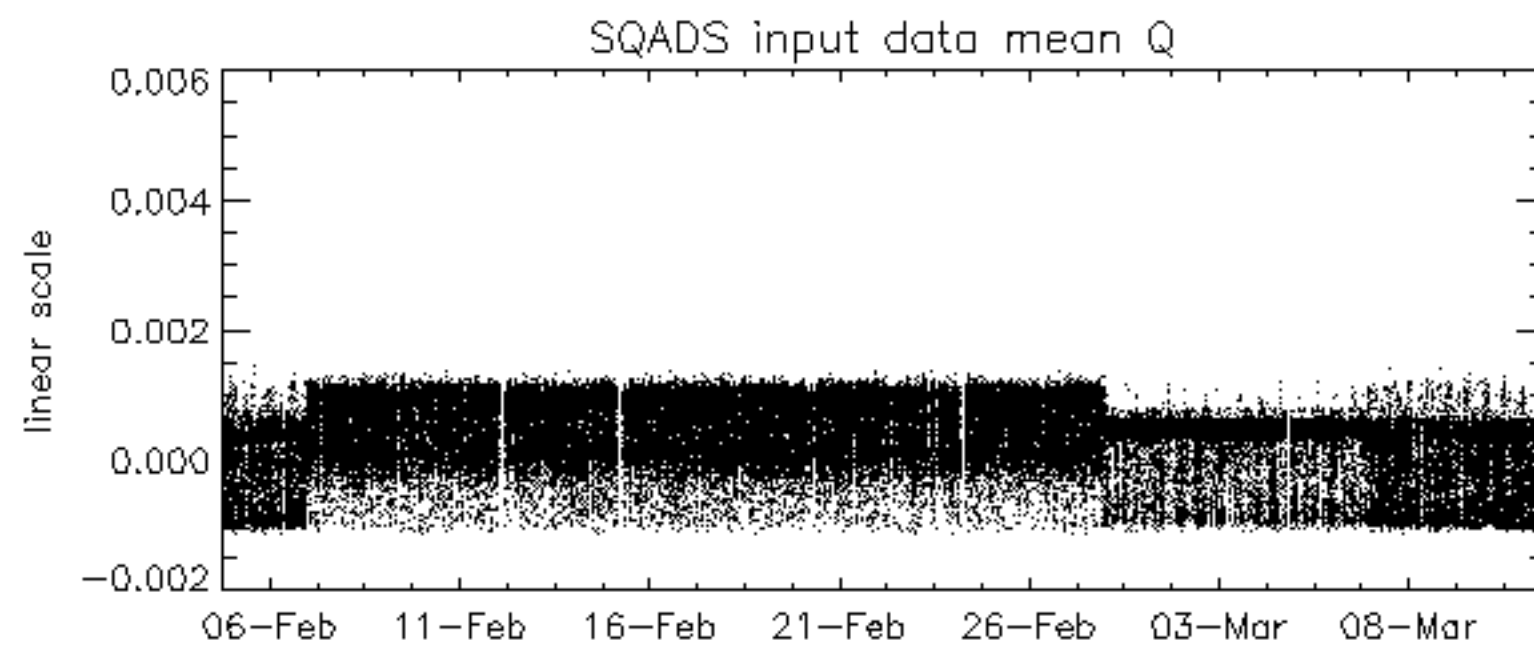
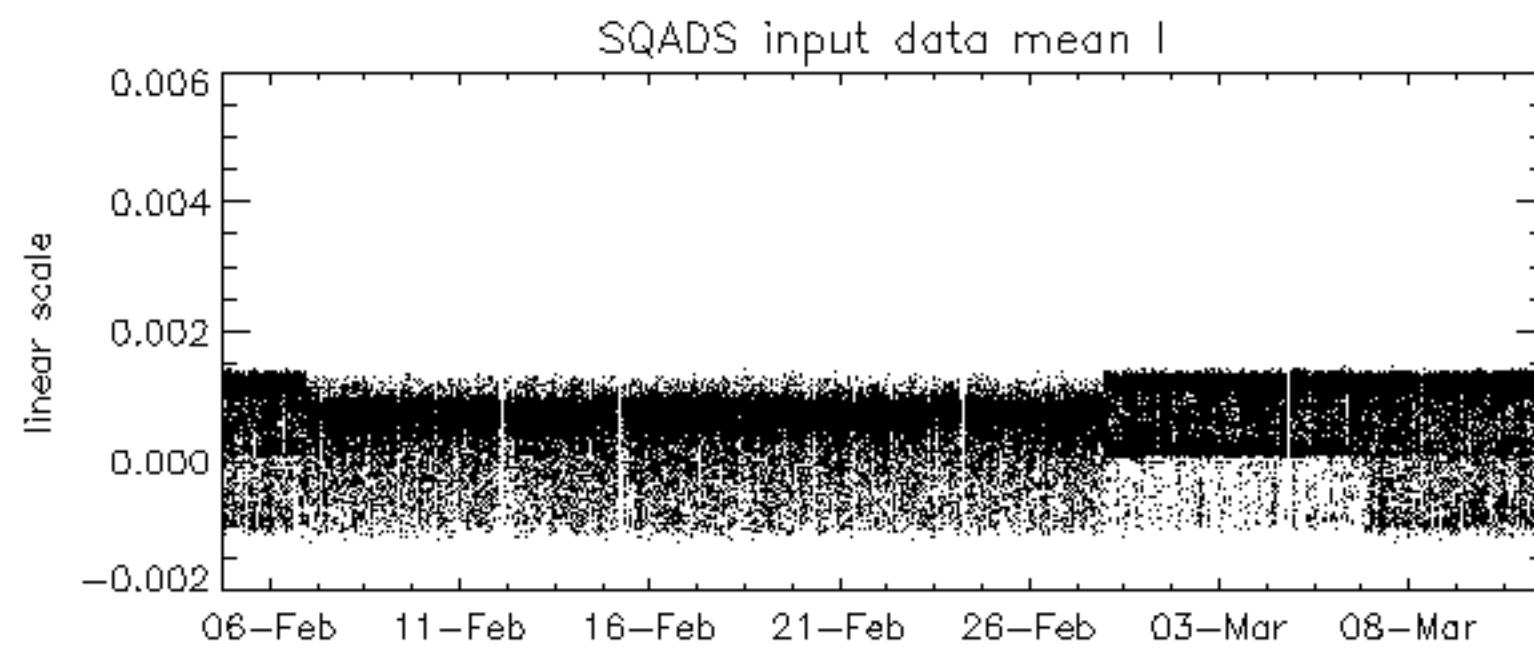
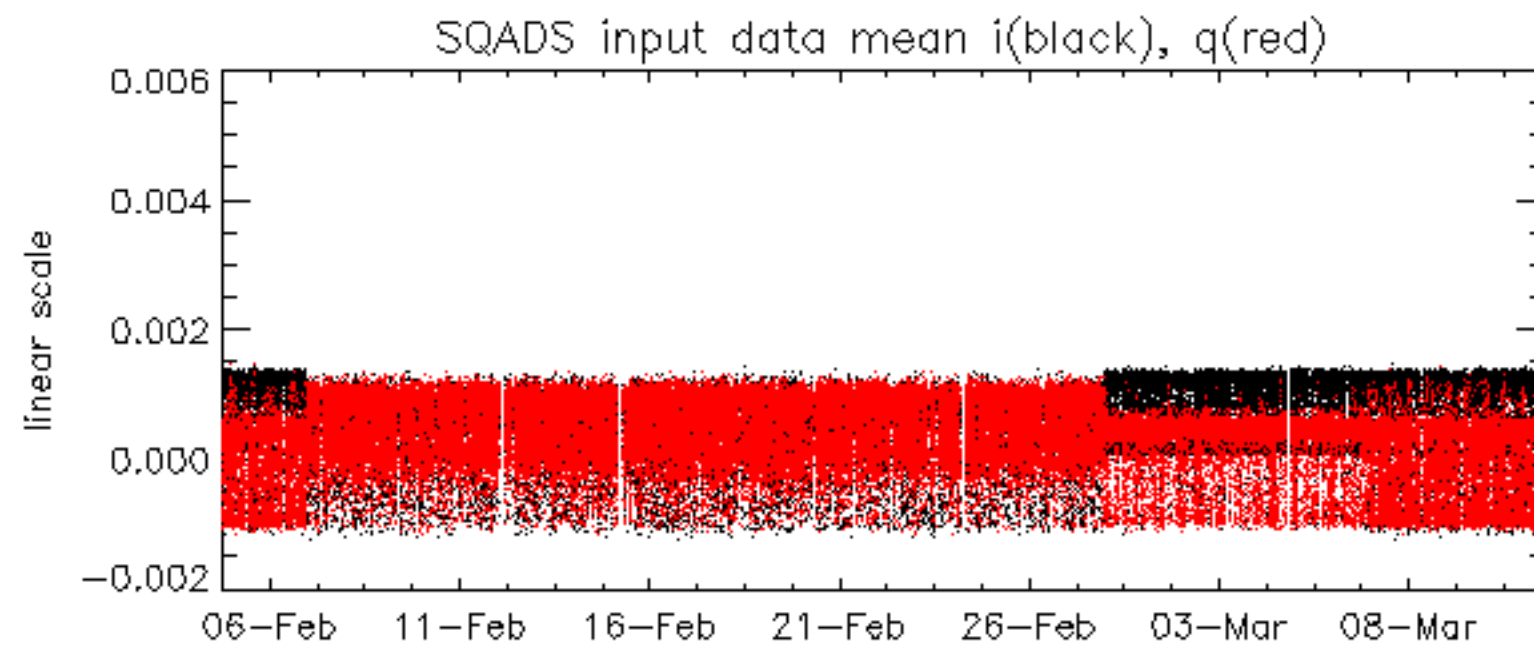


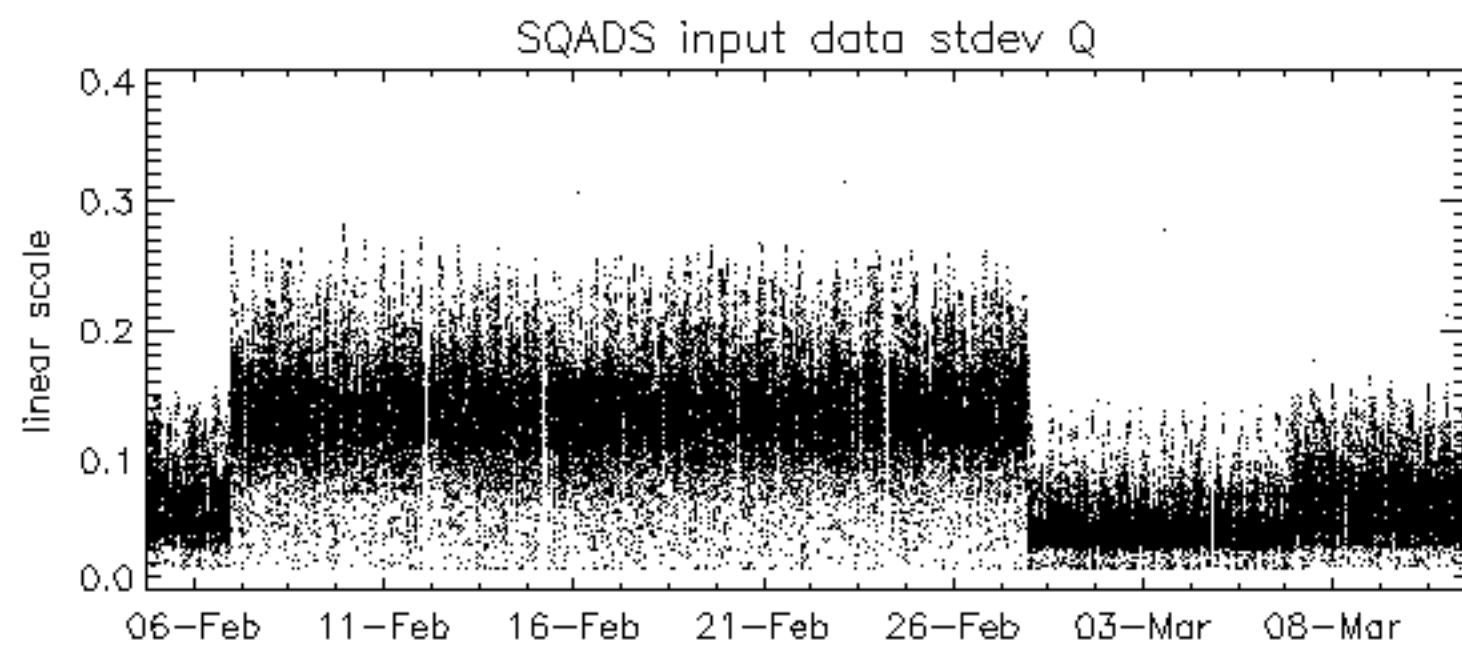
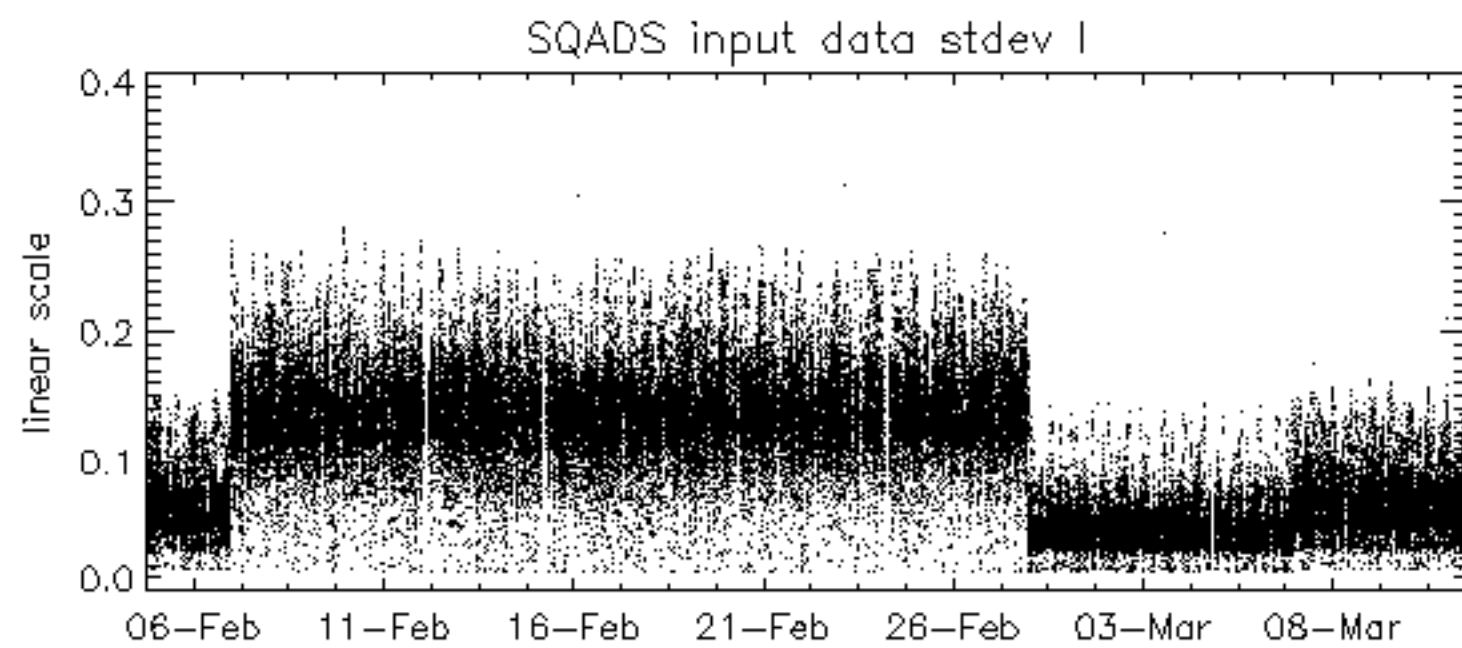
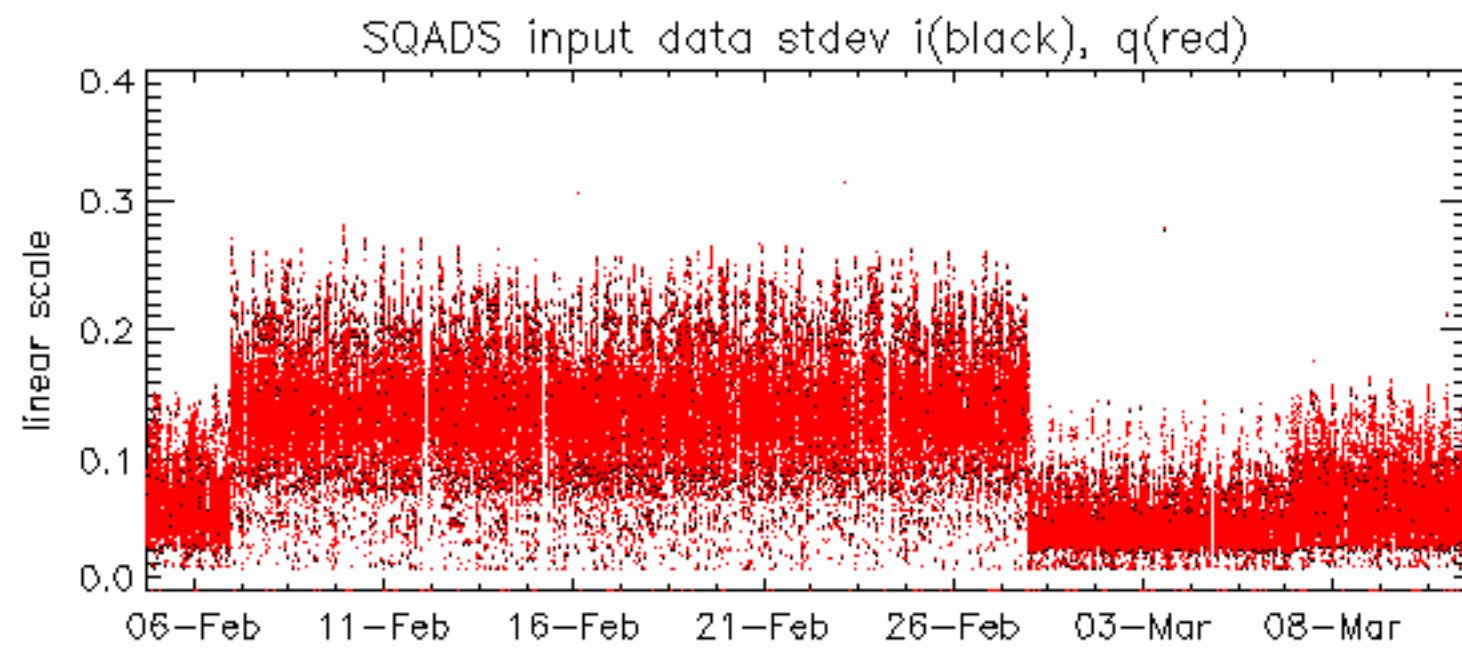


























Summary of analysis for the last 3 days 2007031[901]

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_1PNPDE20070311_004054_000000622056_00174_26280_8589.N1	1	0
ASA_WSM_1PNPDE20070310_172247_000001772056_00170_26276_8196.N1	0	2
ASA_WSM_1PNPDK20070310_140332_000000862056_00168_26274_2612.N1	0	15
ASA_APM_1PNPDE20070311_032625_000000402056_00176_26282_8971.N1	13	0













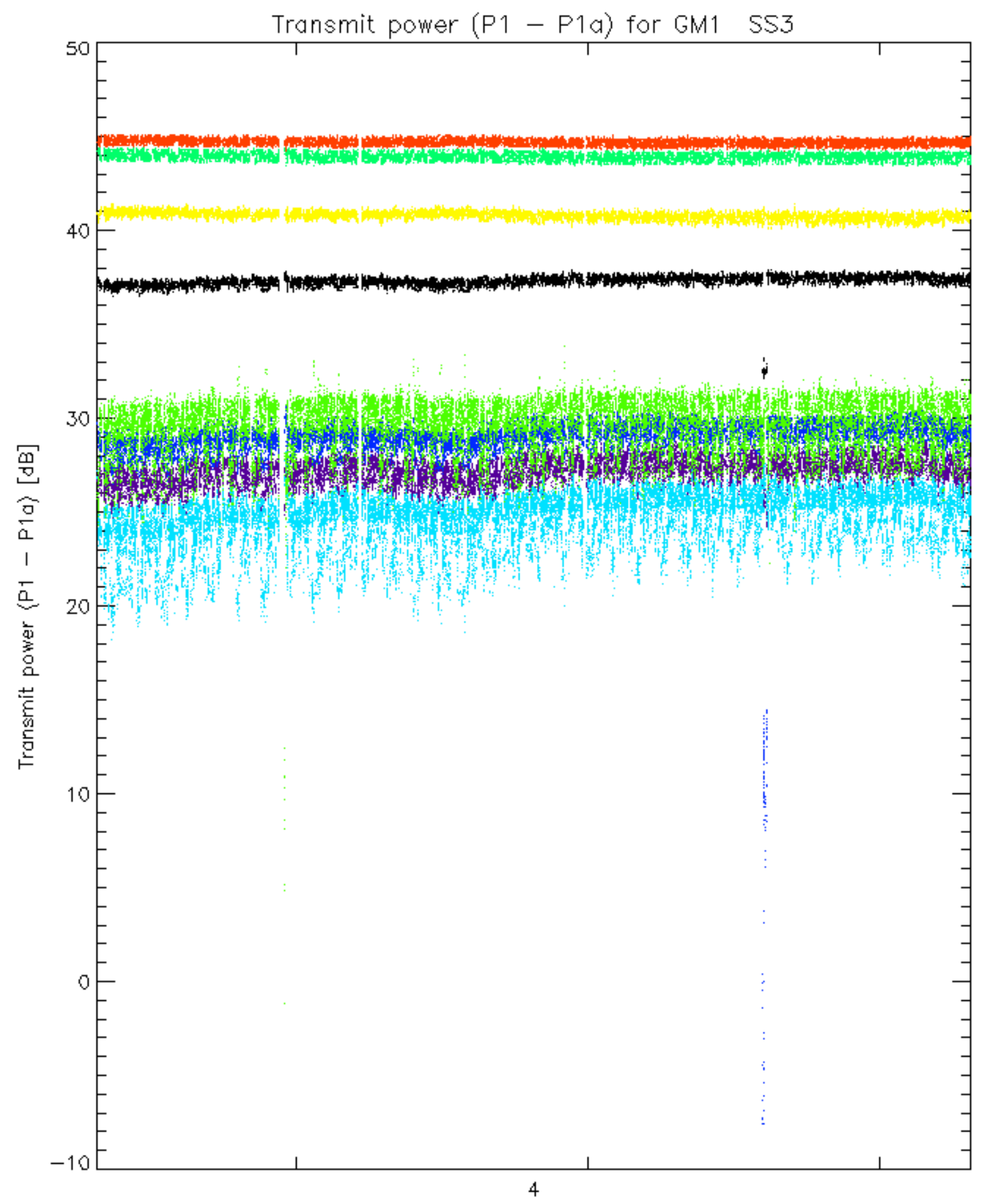




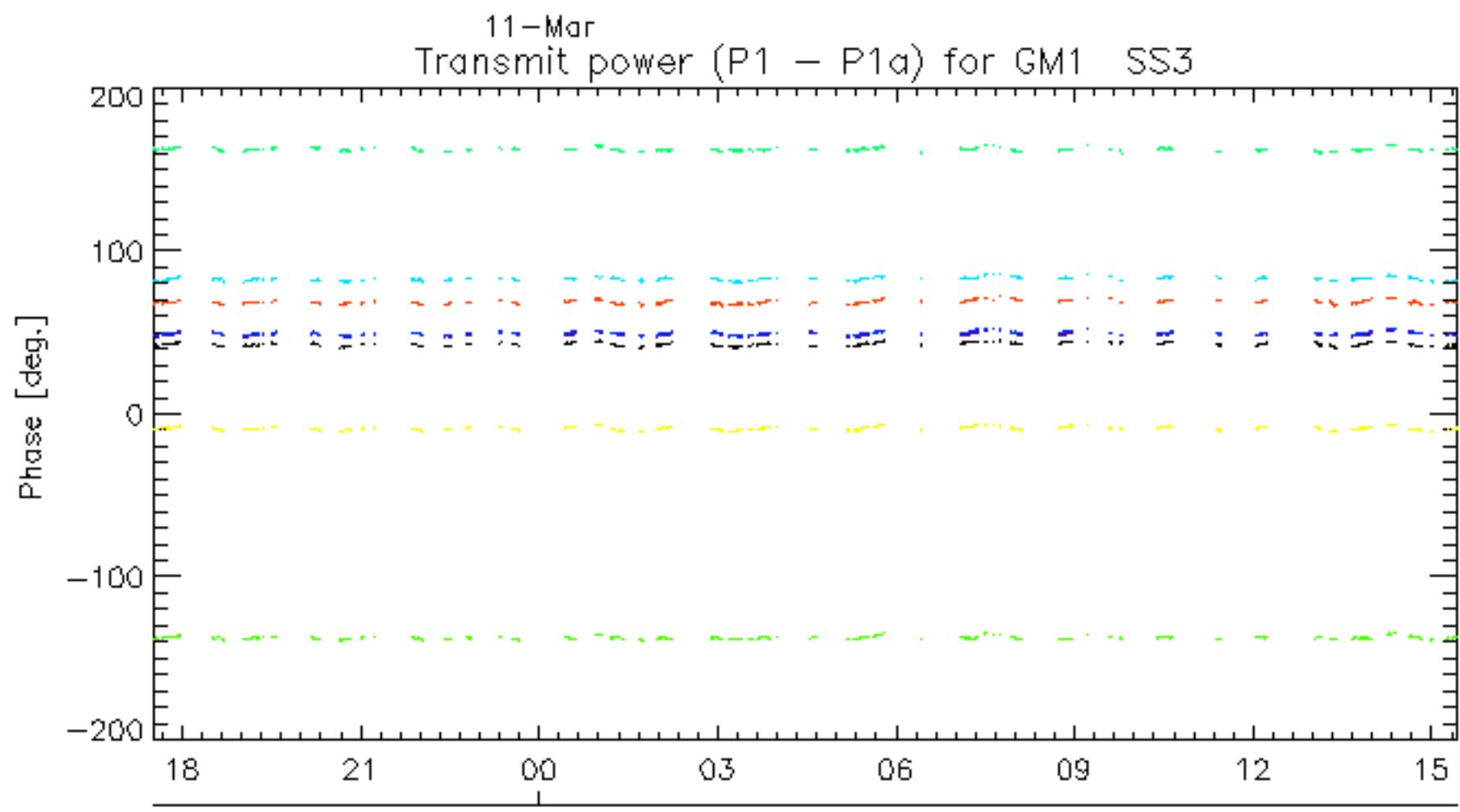
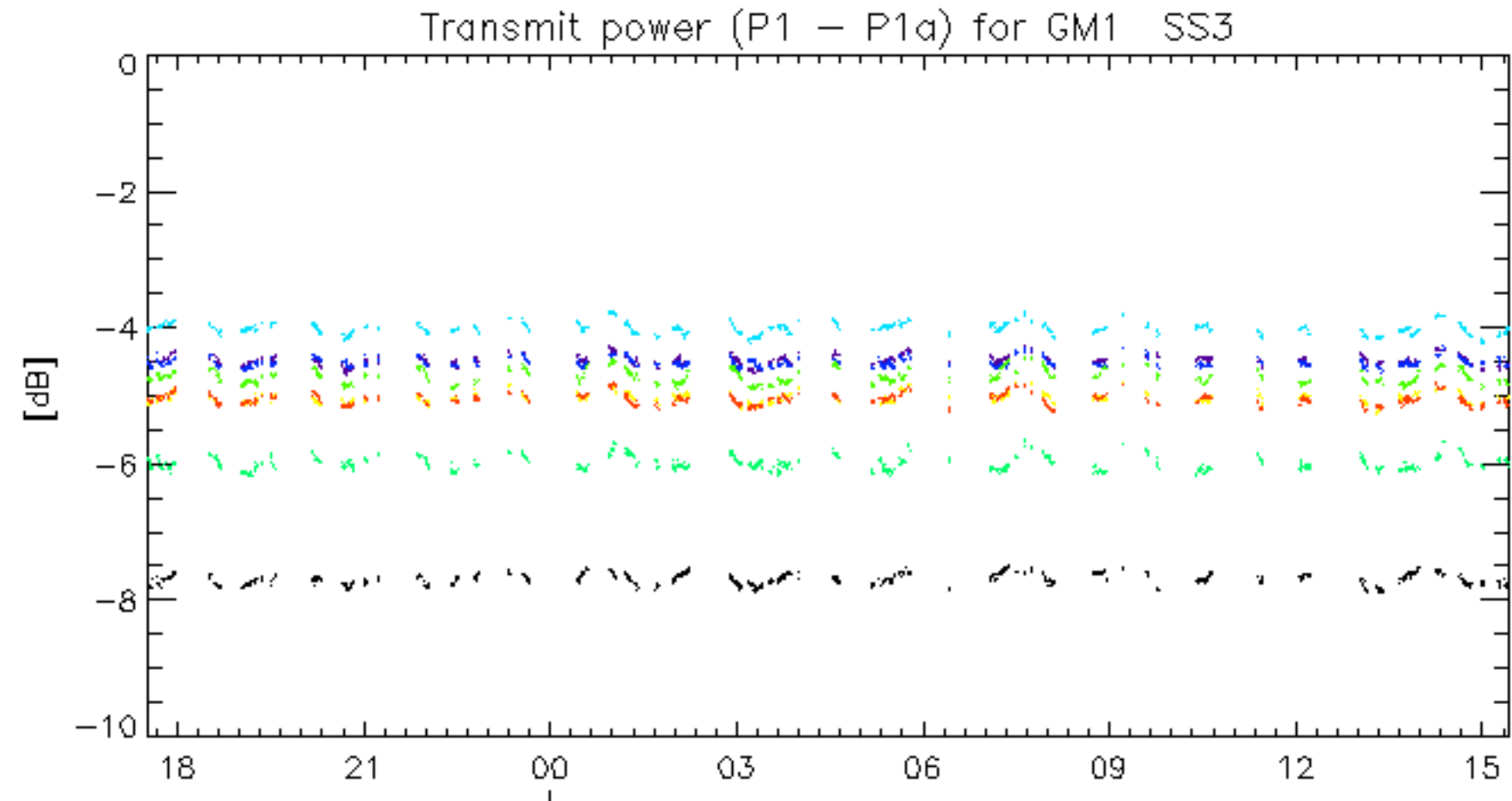




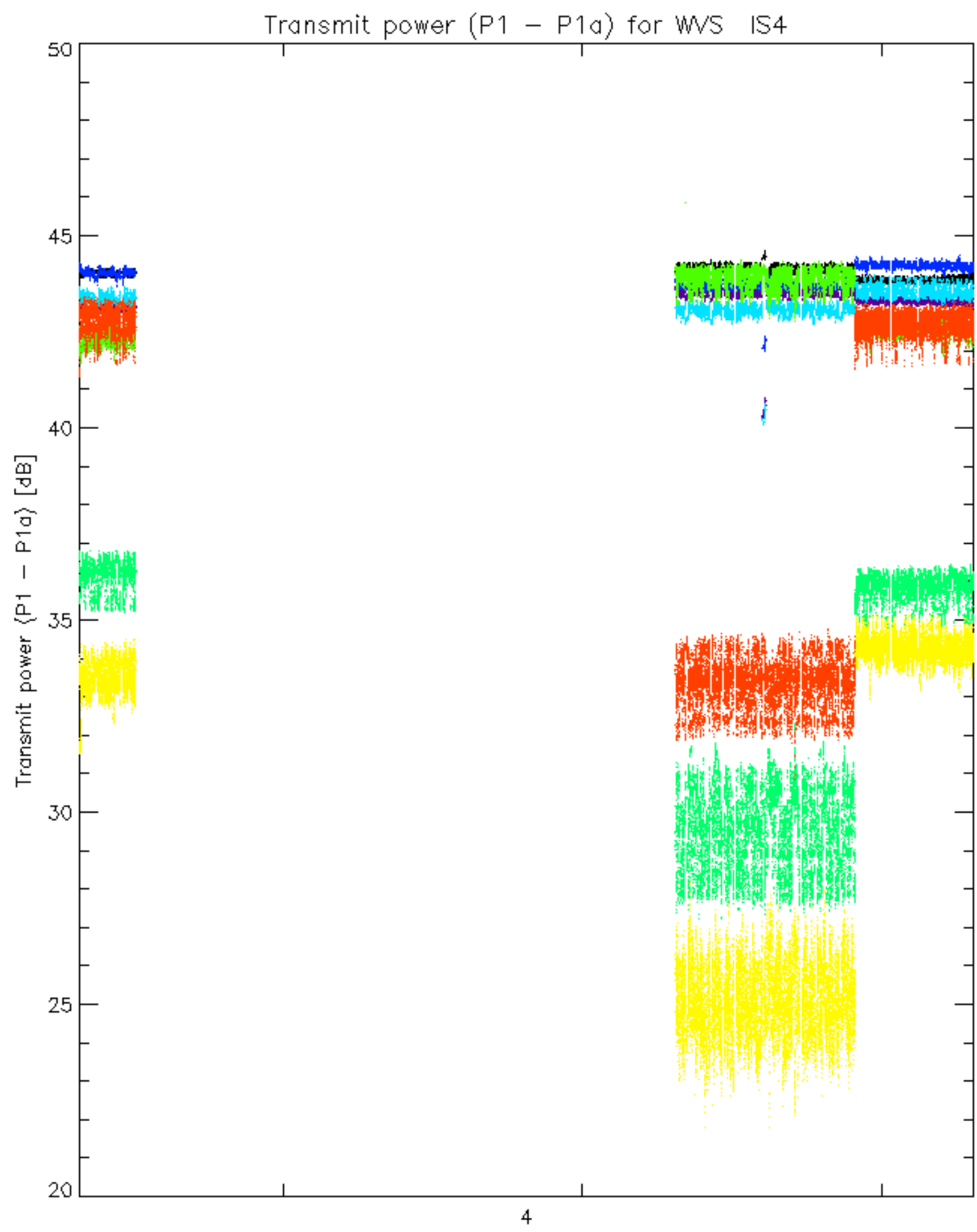


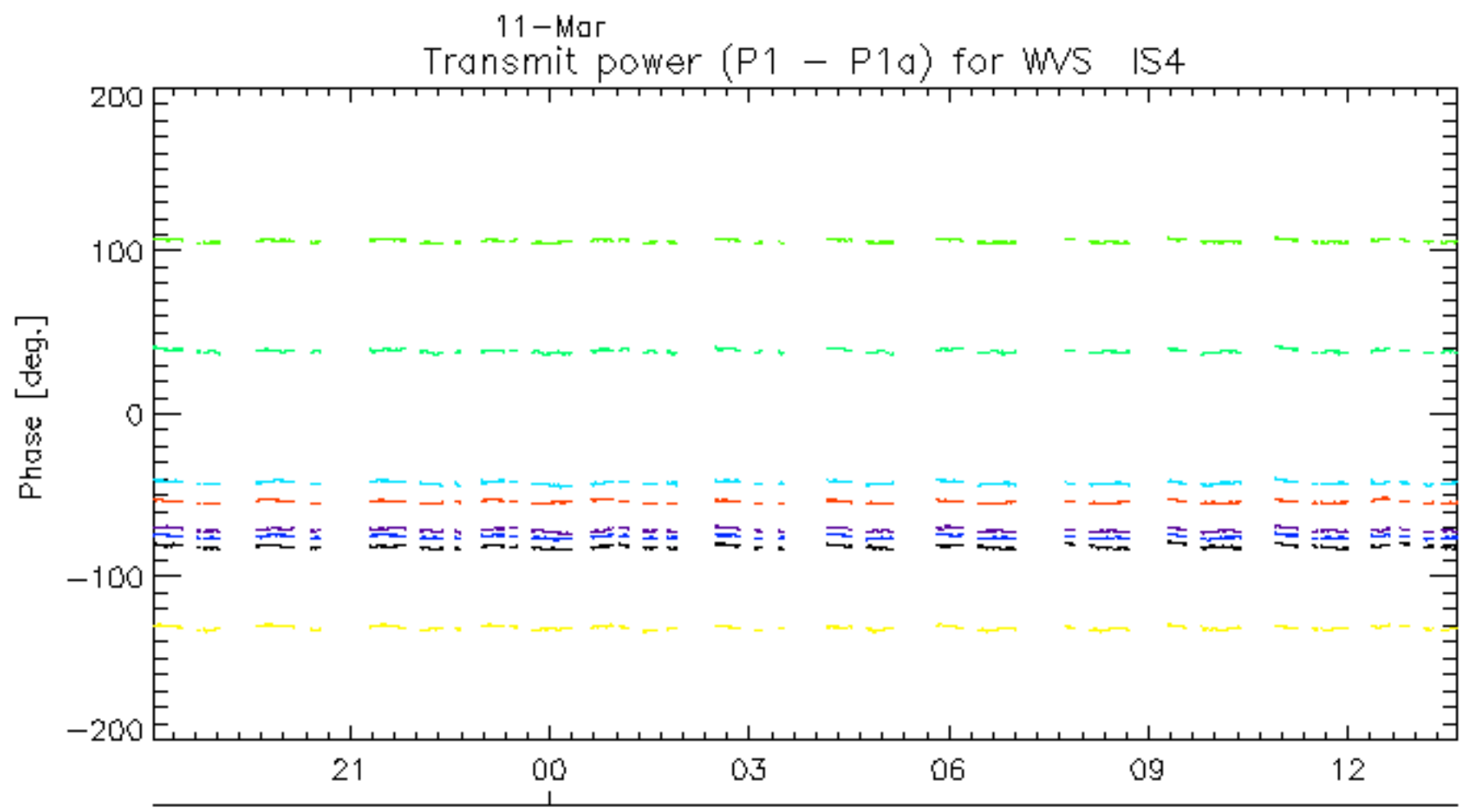
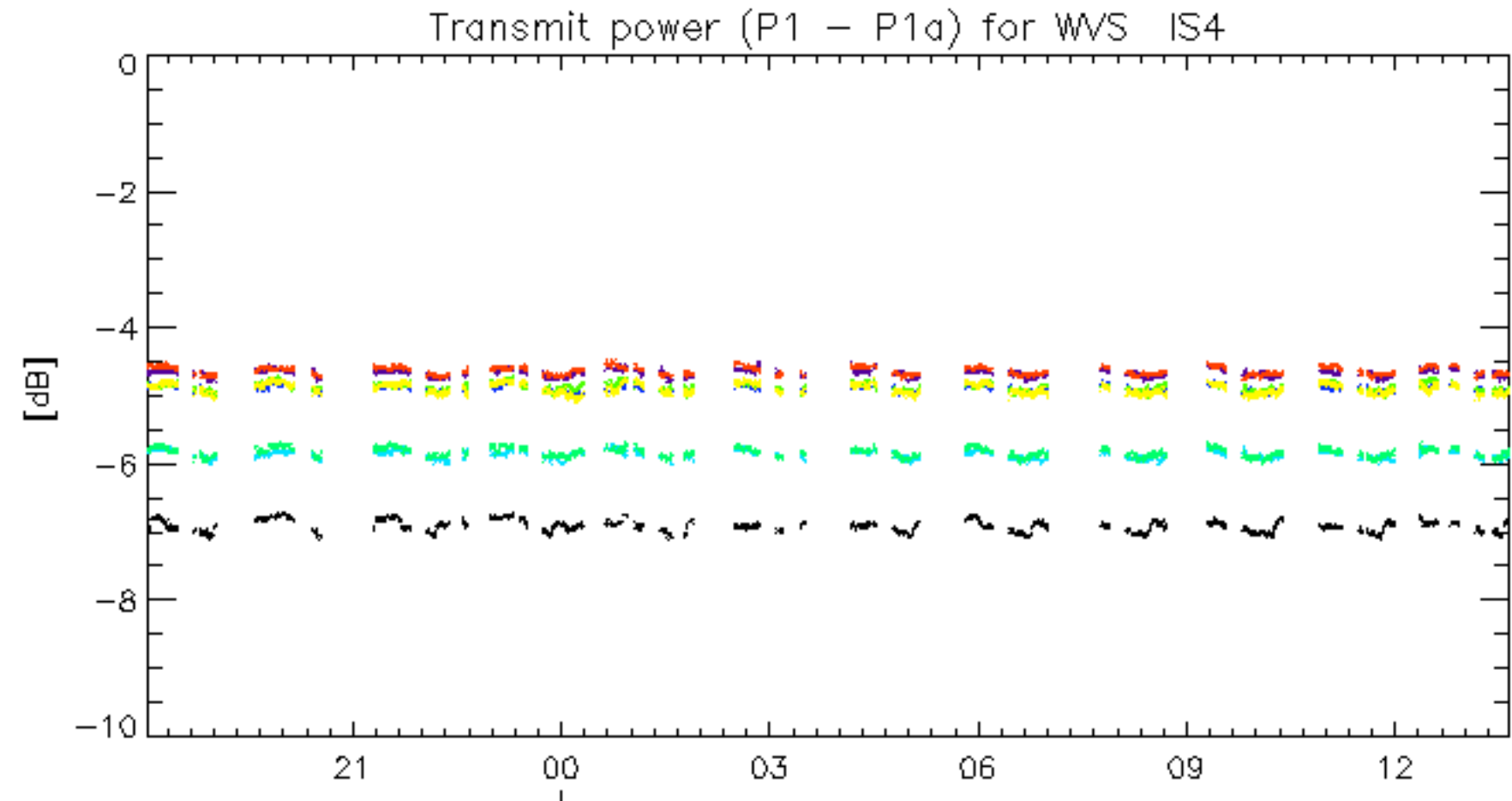


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



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





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

No unavailabilities during the reported period.