

# PRELIMINARY REPORT OF 070314

**last update on Wed Mar 14 10:06:32 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

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 2007-03-13 00:00:00 to 2007-03-14 10:06:32

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	28	43	3	2	26
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	28	43	3	2	26
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	28	43	3	2	26
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	28	43	3	2	26

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	47	50	27	7	54
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	47	50	27	7	54
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	47	50	27	7	54
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	47	50	27	7	54

## 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	20070314 043731
H	20070313 050908

### 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
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## 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

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✕	

#### P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-15.079446	0.106355	-0.054672
7	P1a	-17.415356	0.105191	0.006626
11	P1a	-17.309429	0.340421	0.121358
15	P1a	-12.853338	0.100228	-0.029896
19	P1a	-15.094865	0.091314	0.001264
22	P1a	-15.489589	0.469033	0.197504
26	P1a	-15.048067	0.196105	-0.291307
30	P1a	-17.333027	0.328688	-0.078322

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.706676	0.010470	-0.051883
7	P1	-3.110061	0.009188	-0.024236
11	P1	-4.132515	0.018615	-0.010691
15	P1	-6.337710	0.016104	-0.073501
19	P1	-3.716662	0.008922	-0.069209
22	P1	-4.672215	0.013936	-0.003032
26	P1	-3.933602	0.012926	-0.050657
30	P1	-5.919460	0.011671	-0.019594

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.638611	0.089982	-0.017131
7	P2	-21.595400	0.082874	0.023958
11	P2	-15.490818	0.100392	-0.091803

15	P2	-7.017828	0.097335	-0.037930
19	P2	-9.082108	0.085219	-0.010346
22	P2	-18.105000	0.079825	-0.000455
26	P2	-16.507523	0.092539	-0.008563
30	P2	-19.333853	0.076408	-0.005069

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.201683	0.007832	-0.037073
7	P3	-8.201683	0.007832	-0.037073
11	P3	-8.201683	0.007832	-0.037073
15	P3	-8.201683	0.007832	-0.037073
19	P3	-8.201683	0.007832	-0.037073
22	P3	-8.201683	0.007832	-0.037073
26	P3	-8.201683	0.007832	-0.037073
30	P3	-8.201683	0.007832	-0.037073

**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	-11.077785	0.049527	-0.011437
7	P1a	-10.060572	0.130068	-0.029366
11	P1a	-10.658403	0.063277	-0.066920
15	P1a	-10.916949	0.137074	-0.116887
19	P1a	-15.711461	0.069200	0.074168
22	P1a	-20.857702	1.178773	-0.144385
26	P1a	-15.307892	0.271800	0.223049
30	P1a	-18.395121	0.340460	-0.131365

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.386756	0.038272	-0.060875
7	P1	-2.428408	0.020799	0.012714
11	P1	-2.916023	0.018697	-0.017906
15	P1	-3.835411	0.039293	-0.034545
19	P1	-3.552881	0.011253	-0.001407
22	P1	-5.037437	0.023416	-0.019282
26	P1	-5.967300	0.026064	0.038230
30	P1	-5.278453	0.021929	0.013775

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.093929	0.033390	0.012479
7	P2	-21.951719	0.056330	0.054788
11	P2	-10.644387	0.031338	0.046250
15	P2	-4.814821	0.027911	-0.002261
19	P2	-6.805424	0.030231	0.015822
22	P2	-8.091251	0.033391	0.074625
26	P2	-24.268492	0.037041	-0.051466
30	P2	-21.737514	0.038808	0.072603

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.045723	0.003816	-0.021048
7	P3	-8.045728	0.003817	-0.020639
11	P3	-8.045853	0.003820	-0.020946
15	P3	-8.045804	0.003839	-0.021176
19	P3	-8.045783	0.003816	-0.020877
22	P3	-8.045831	0.003820	-0.020914
26	P3	-8.045677	0.003817	-0.020808
30	P3	-8.045758	0.003826	-0.020910

## 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	0.000631256
	stdev	2.56902e-07
MEAN Q	mean	0.000359410
	stdev	2.72279e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.107419
	stdev	0.00244638
STDEV Q	mean	0.107427
	stdev	0.00250255



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007031[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_GM1_1PNPDK20070313_145235_000003622056_00211_26317_5845.N1	0	6
ASA_WSM_1PNPDE20070312_033052_000001472056_00190_26296_0216.N1	0	1
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDE20070313_140917_000000852056_00211_26317_0134.N1	0	15
ASA_WSM_1PNPDE20070313_145059_000000852056_00211_26317_0127.N1	0	31
ASA_WSM_1PNPDE20070313_190809_000001652056_00214_26320_0261.N1	0	70
ASA_APM_1PNPDE20070313_154612_000000412056_00212_26318_0150.N1	12	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"/>	
	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"/>
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Acsending

<input type="checkbox"/>
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Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

<input type="checkbox"/>
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Acsending

<input type="checkbox"/>
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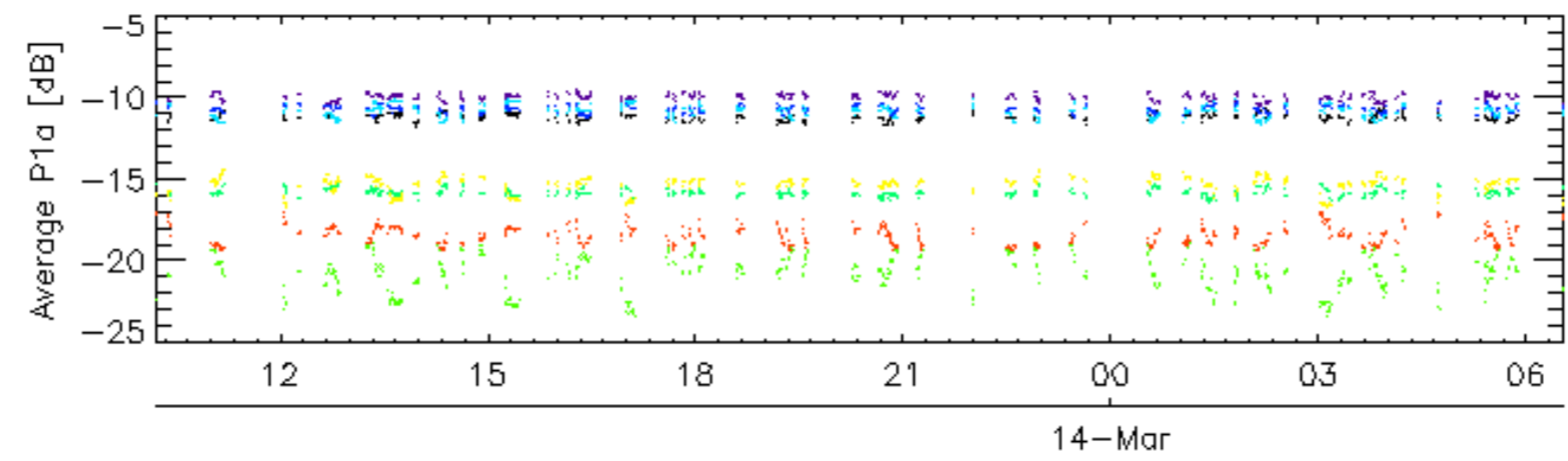
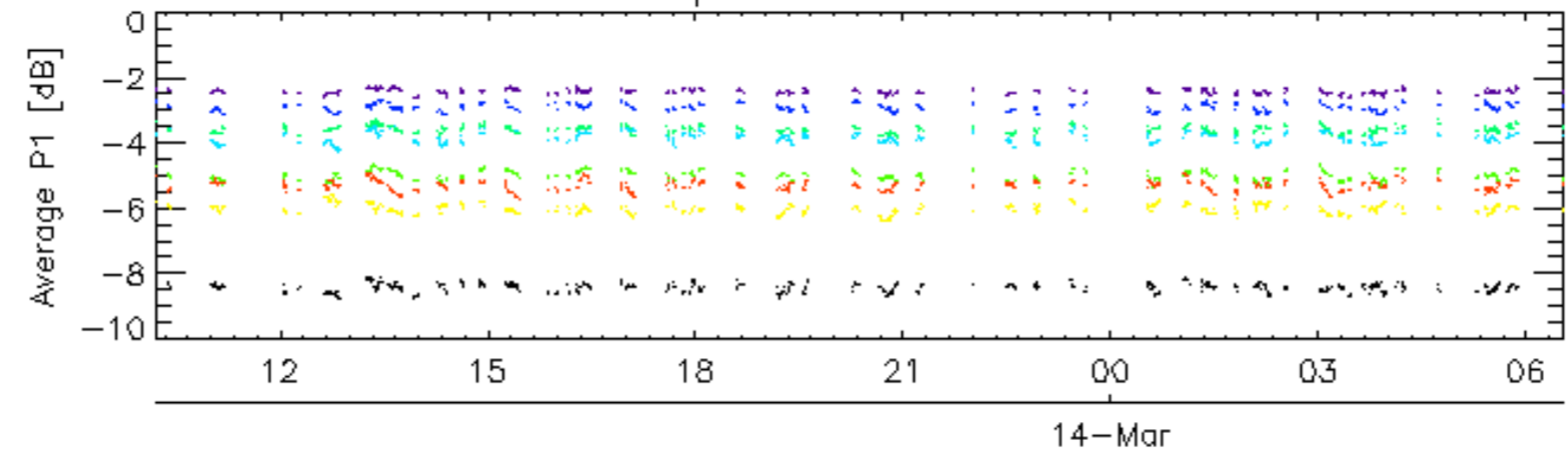
Descending

### 7.6 - Doppler evolution versus ANX for GM1

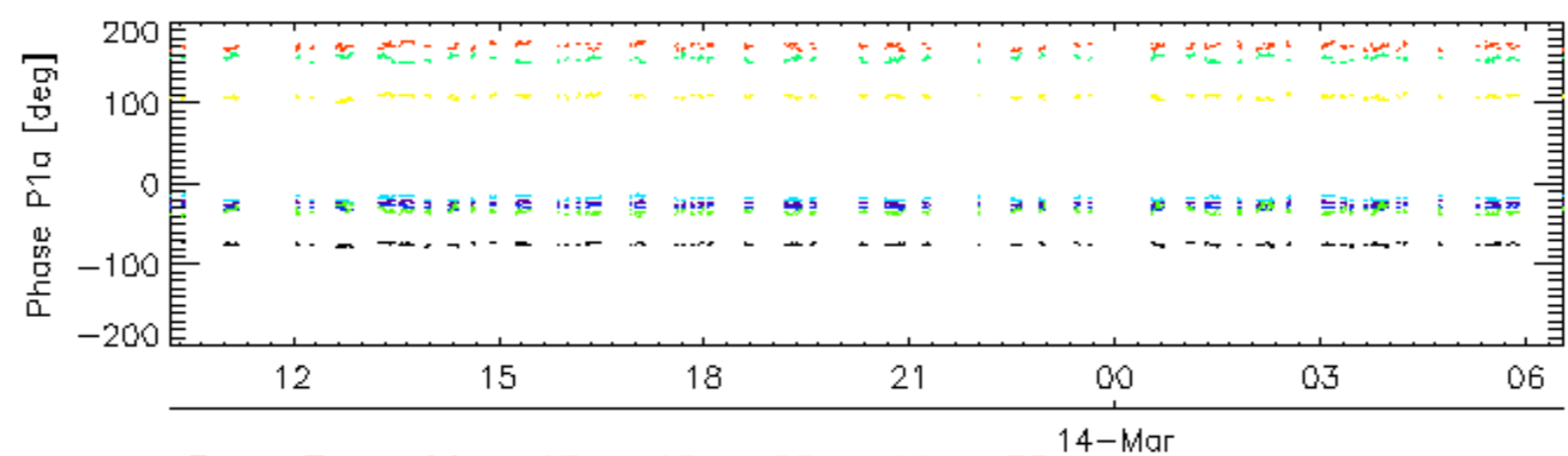
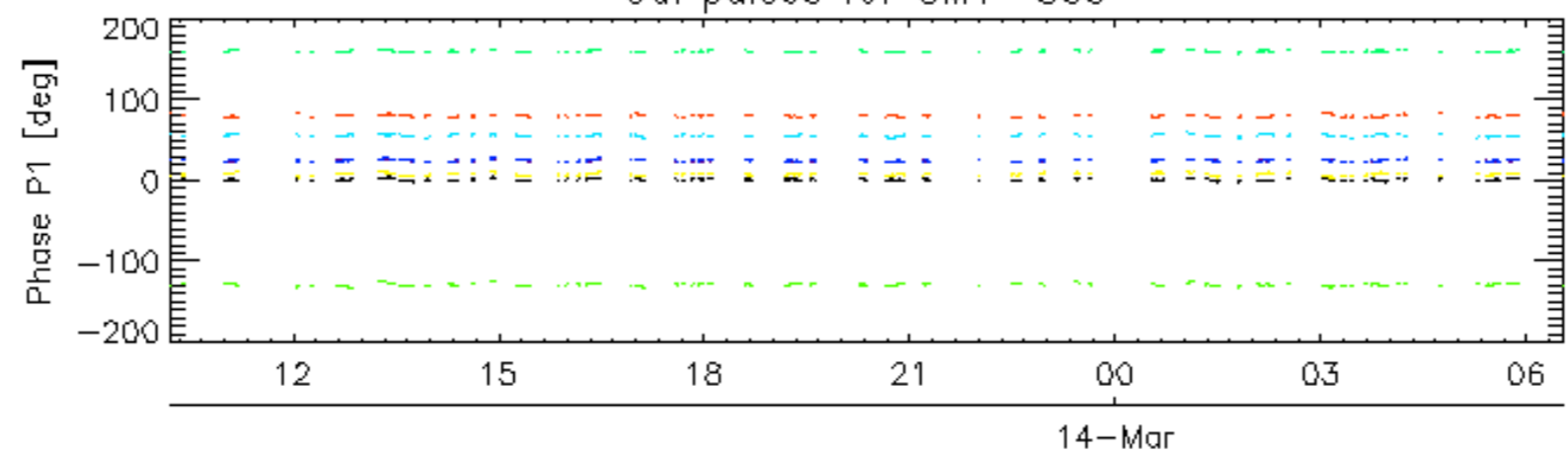
Evolution Doppler error versus ANX

<input type="checkbox"/>
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Cal pulses for GM1 SS3

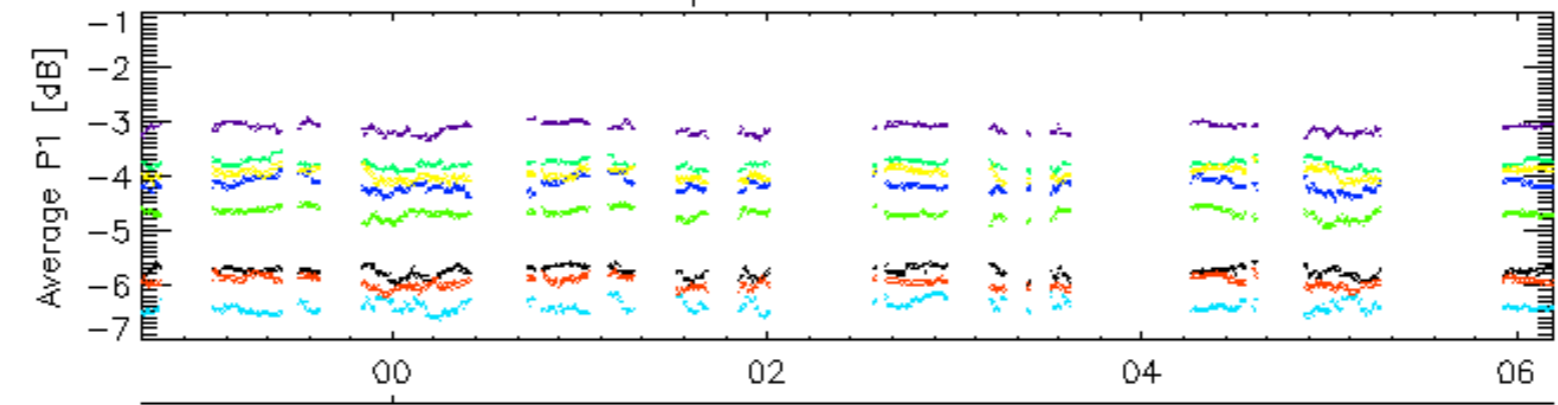


Cal pulses for GM1 SS3

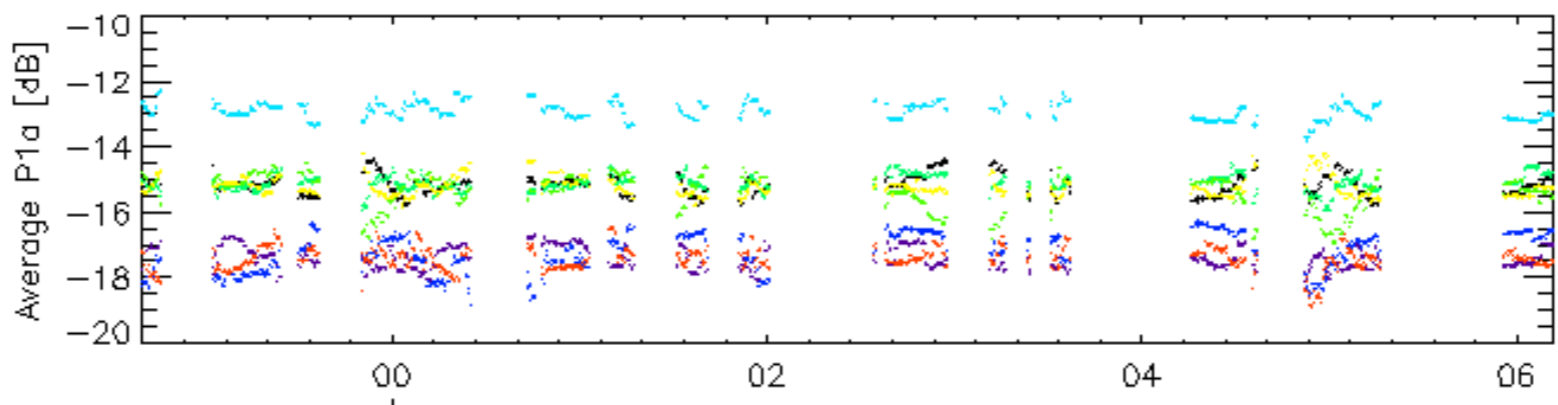


rows: **3** **7** **11** **15** **19** **22** **26** **30** 14-Mar

Cal pulses for WVS IS2

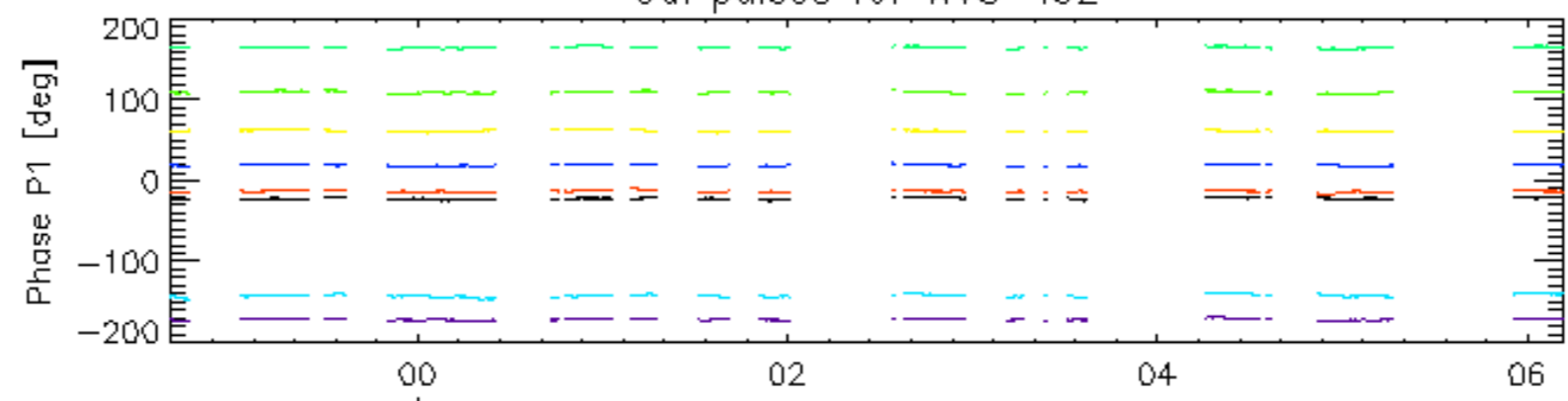


14-Mar

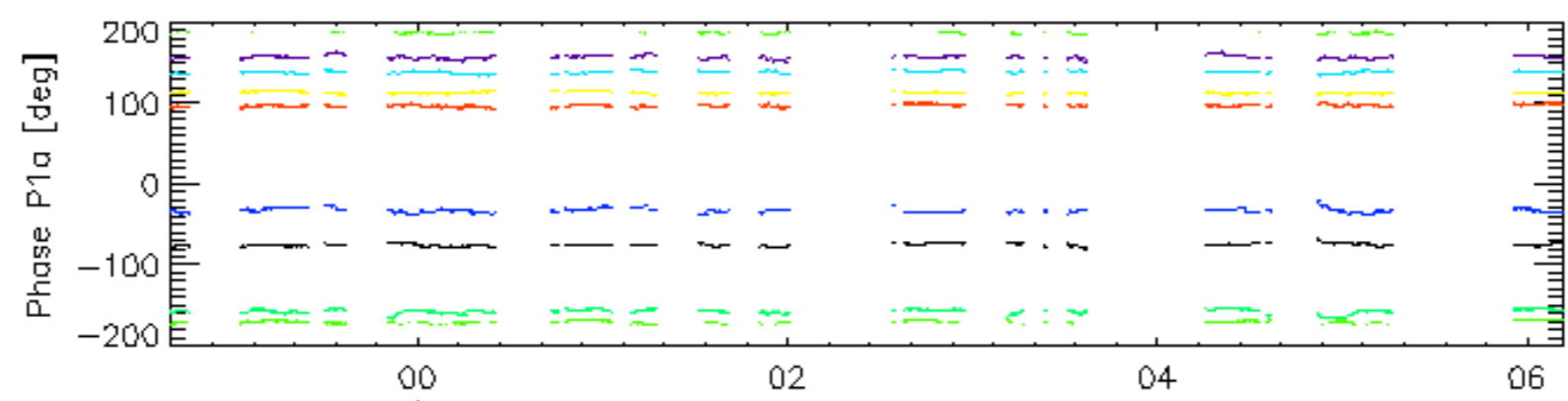


14-Mar

Cal pulses for WVS IS2

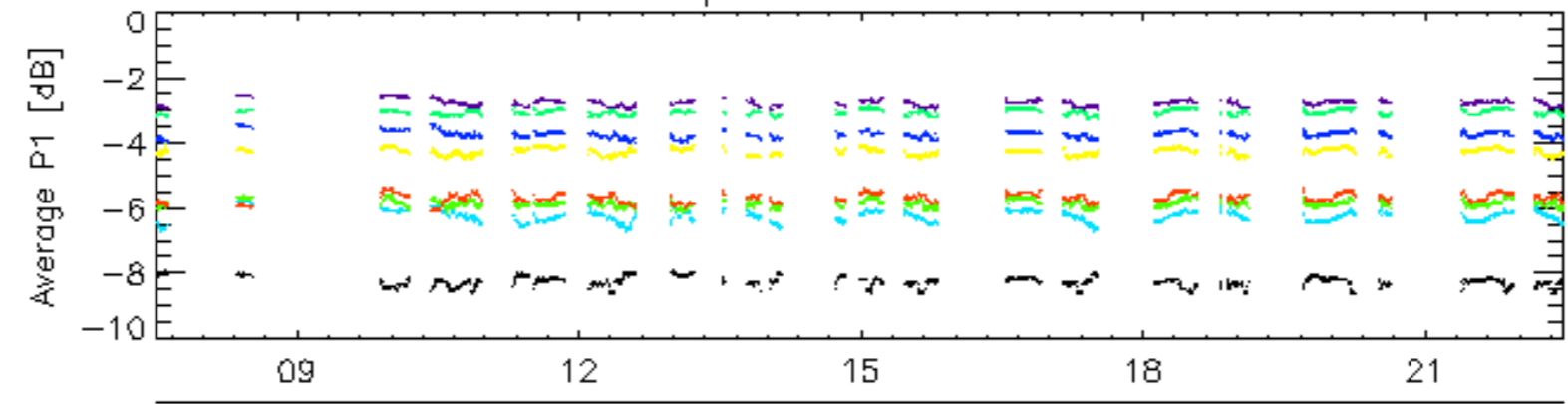


14-Mar

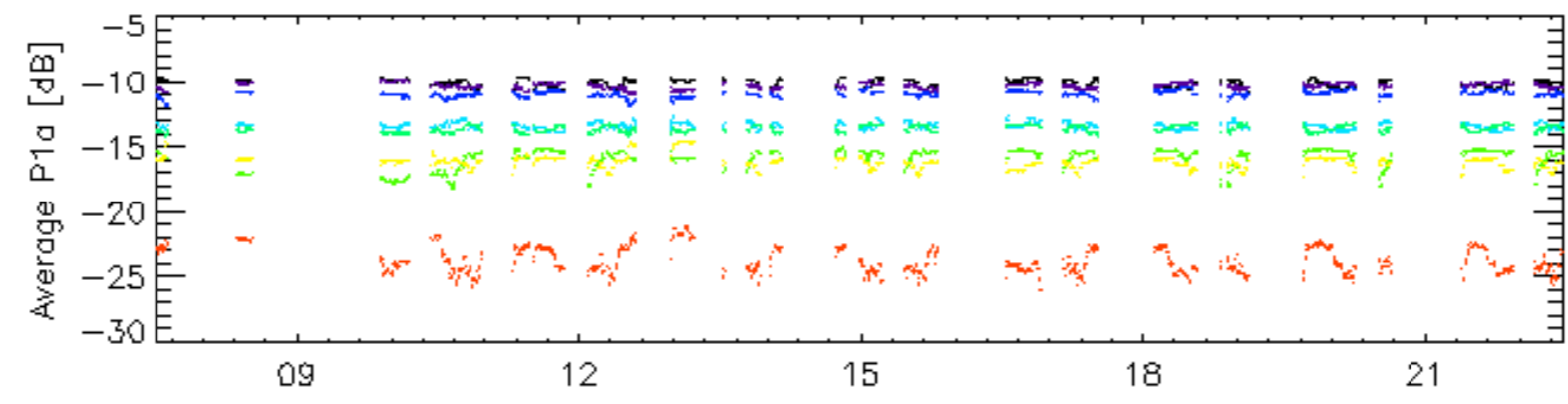


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS4

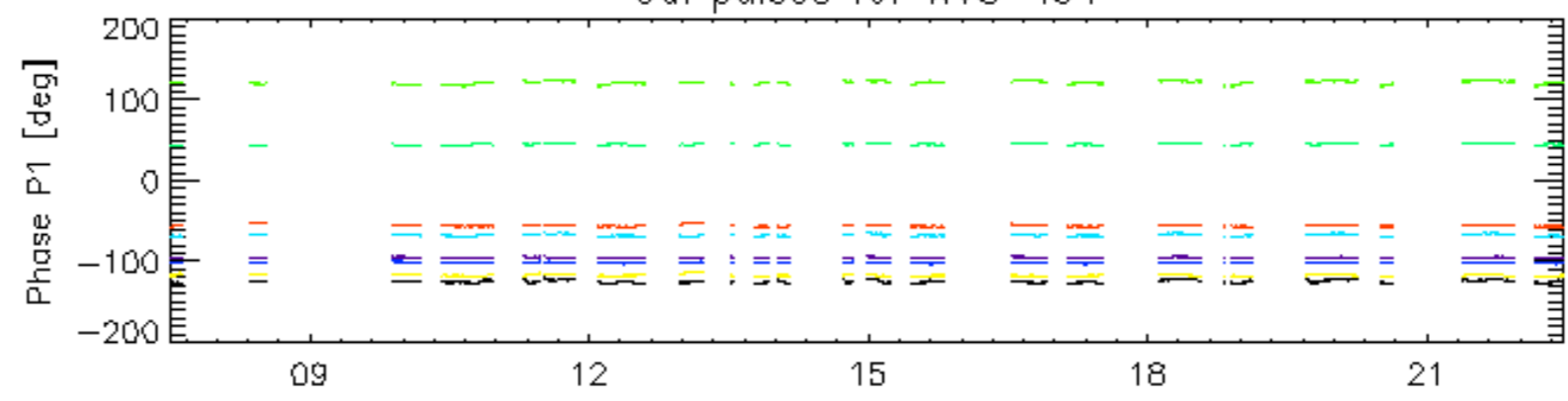


13-Mar

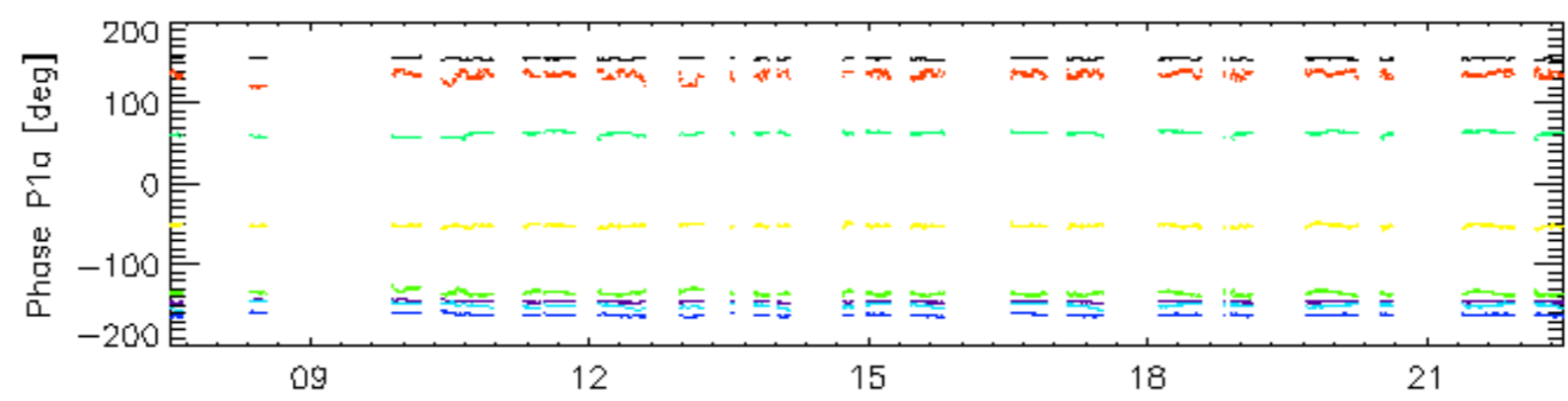


13-Mar

Cal pulses for WVS IS4

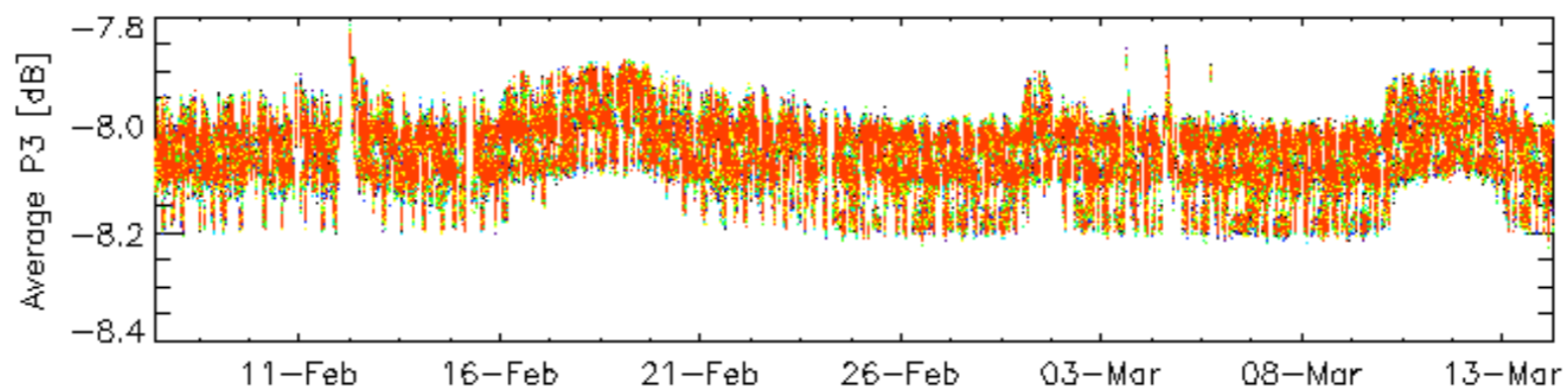
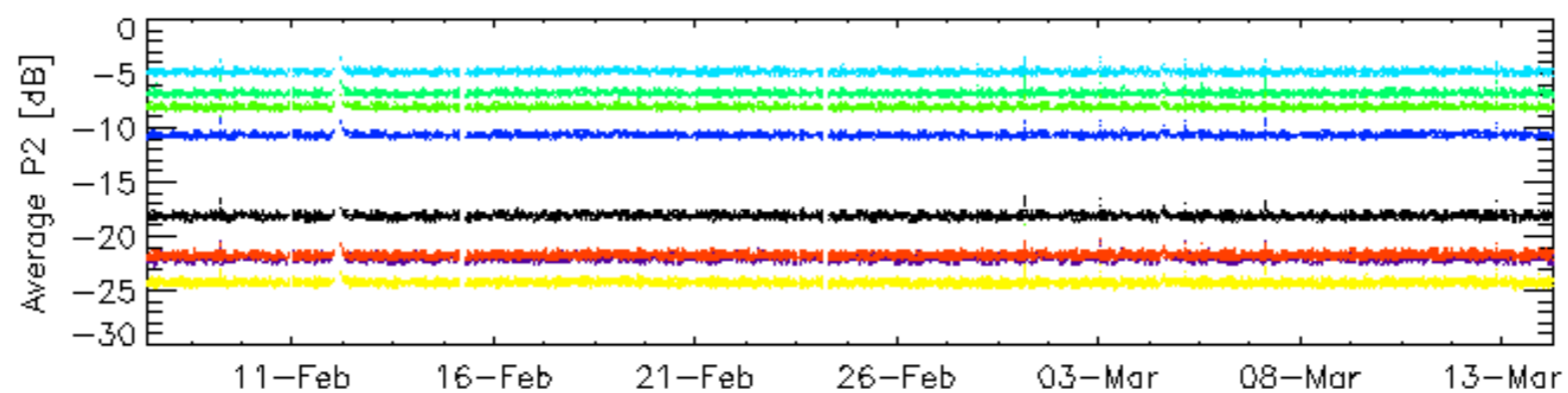
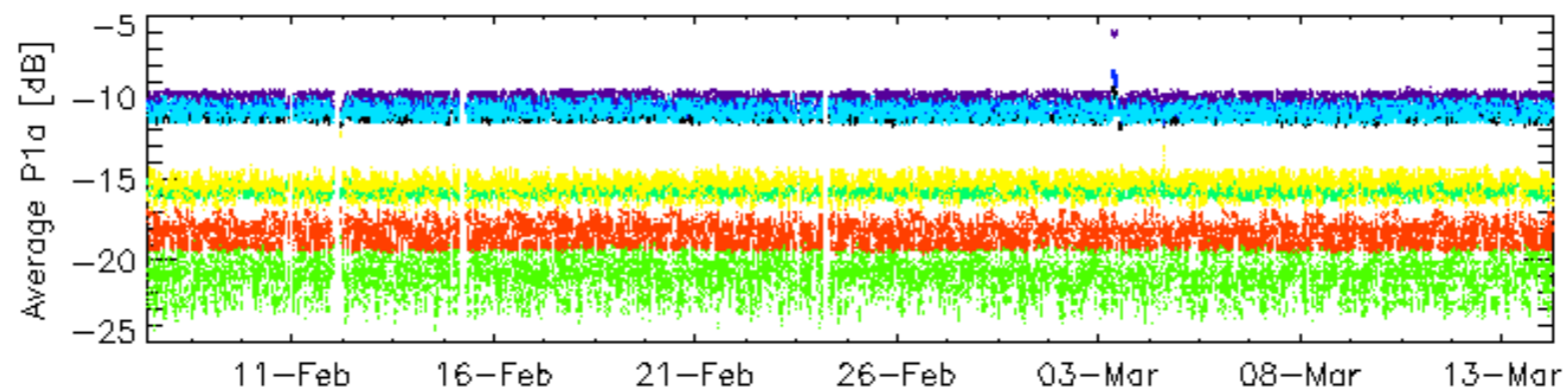
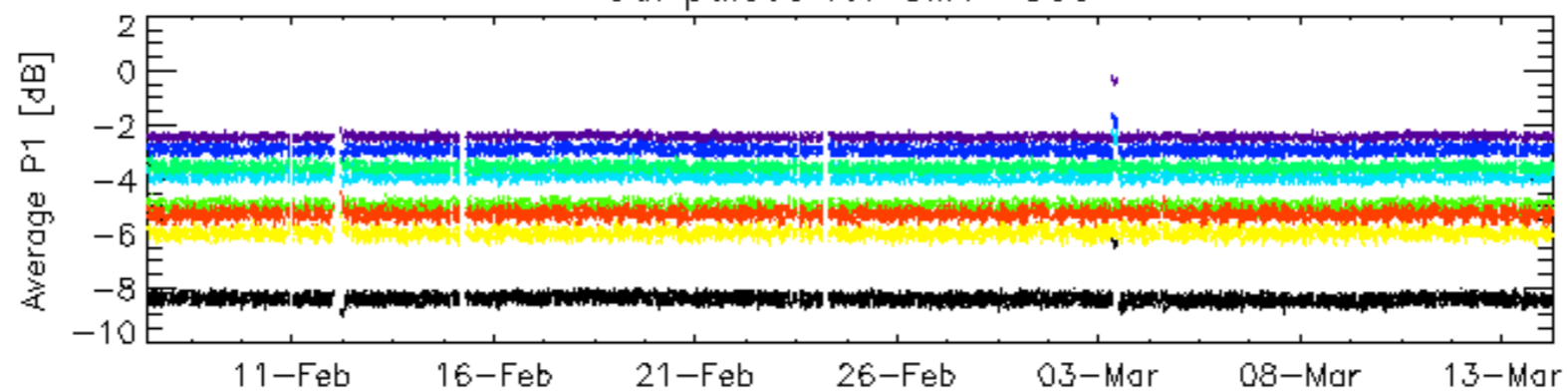


13-Mar



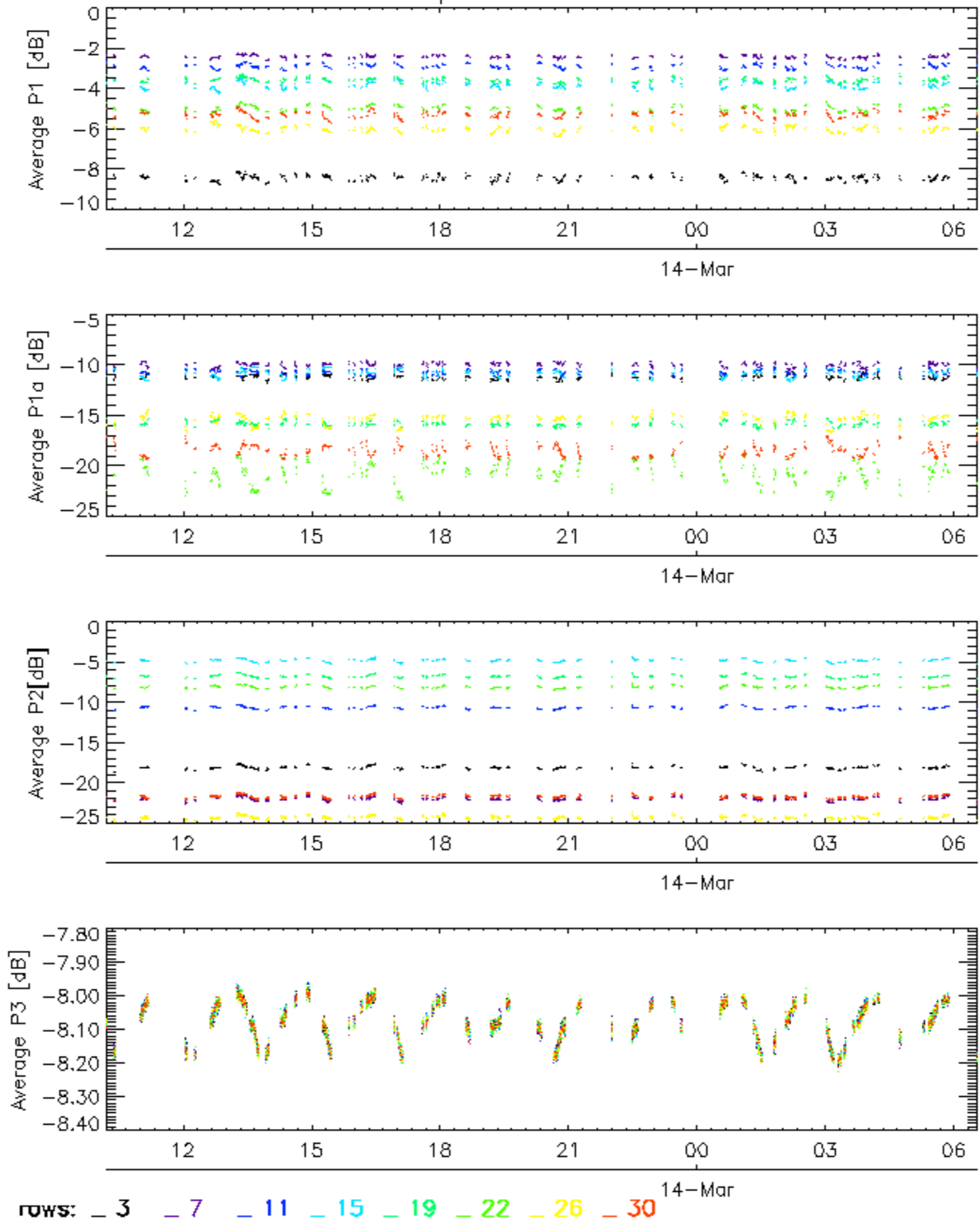
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Cal pulses for GM1 SS3

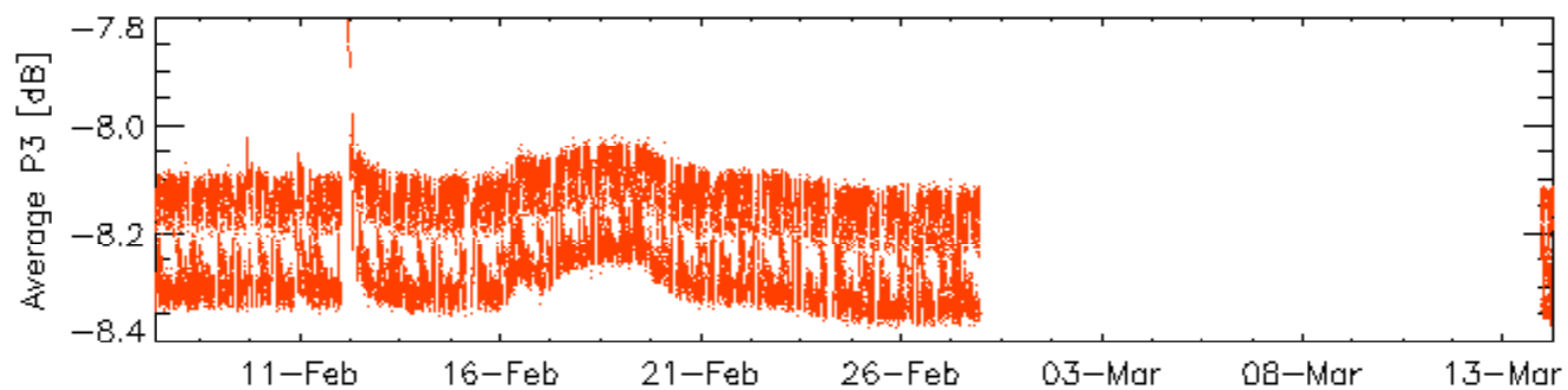
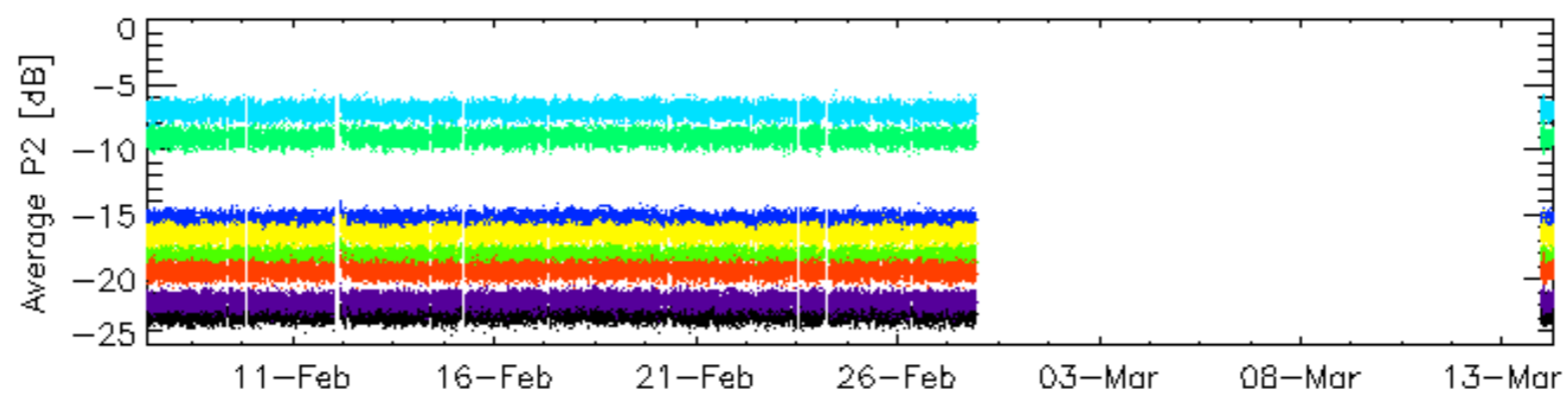
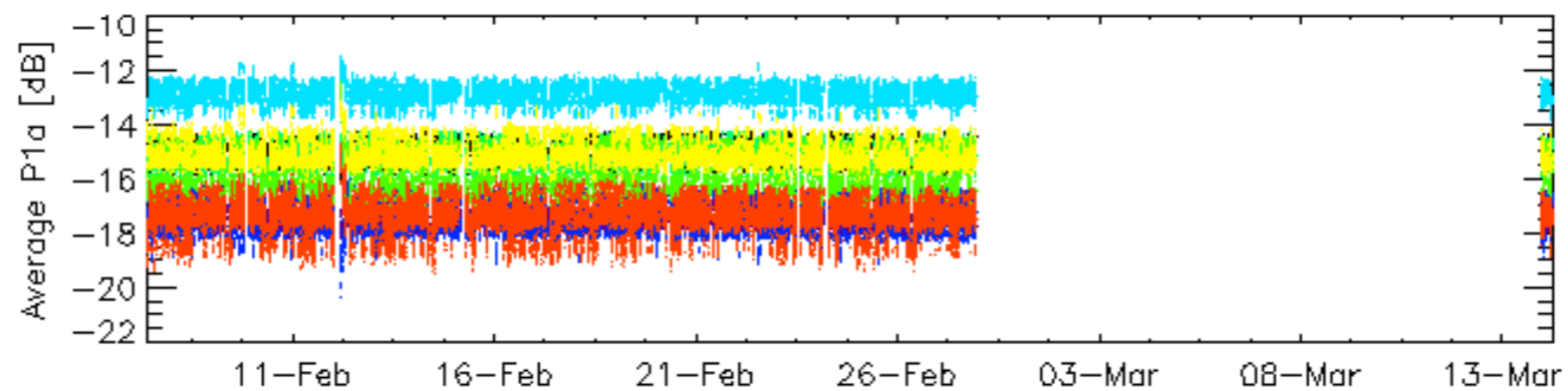
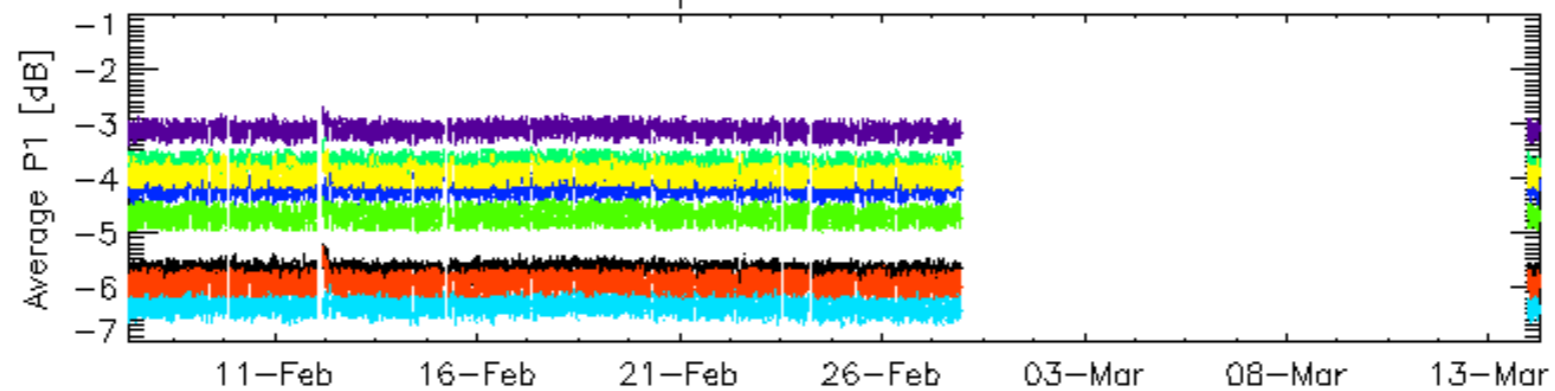


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

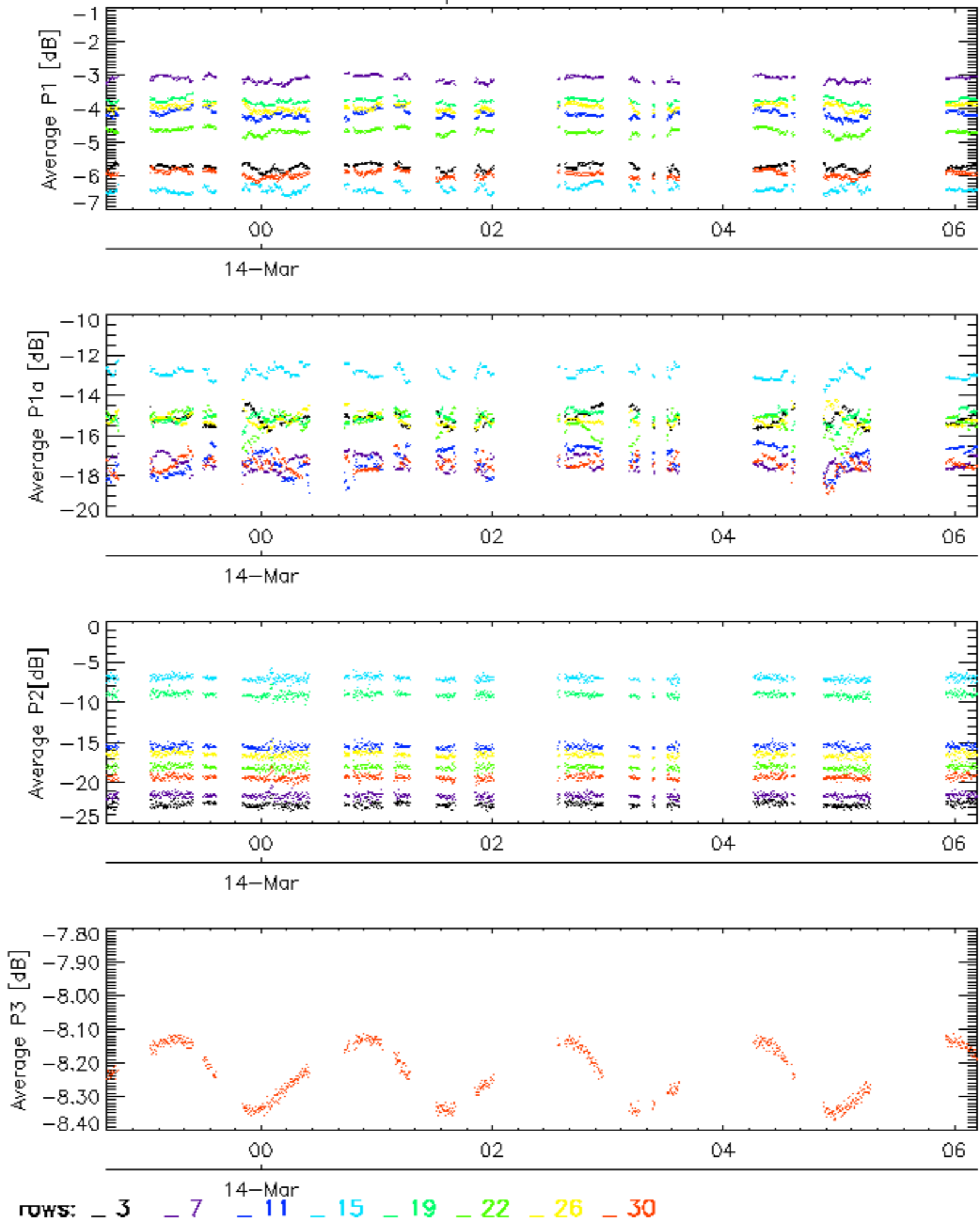


Cal pulses for WVS IS2



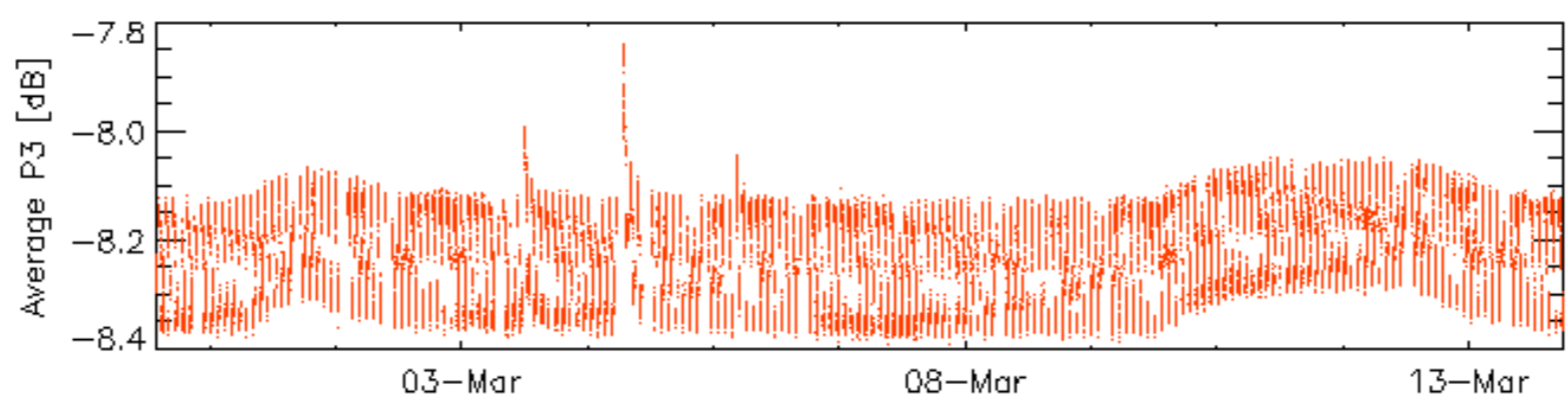
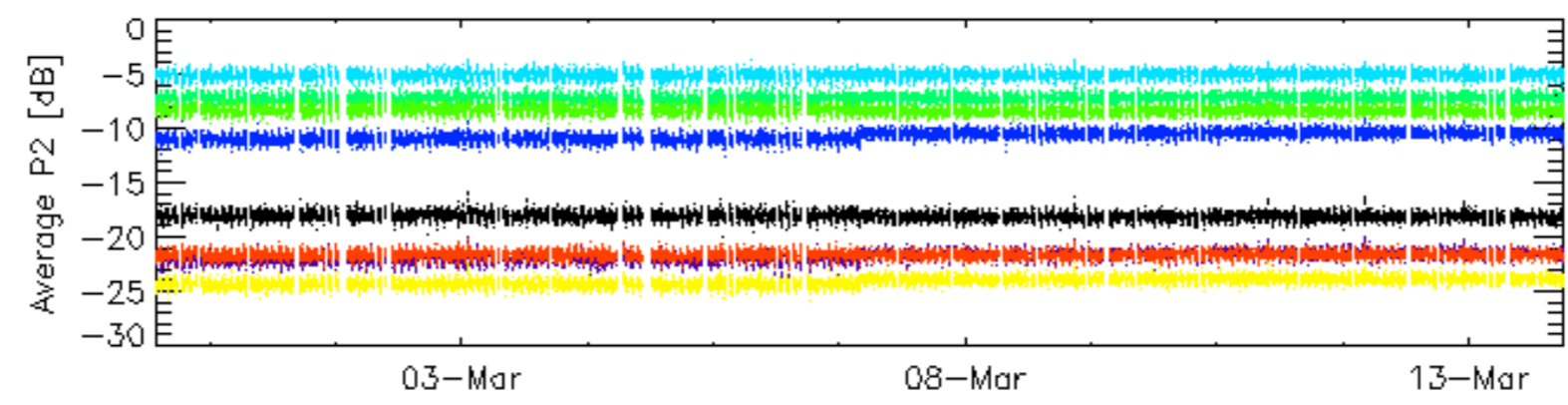
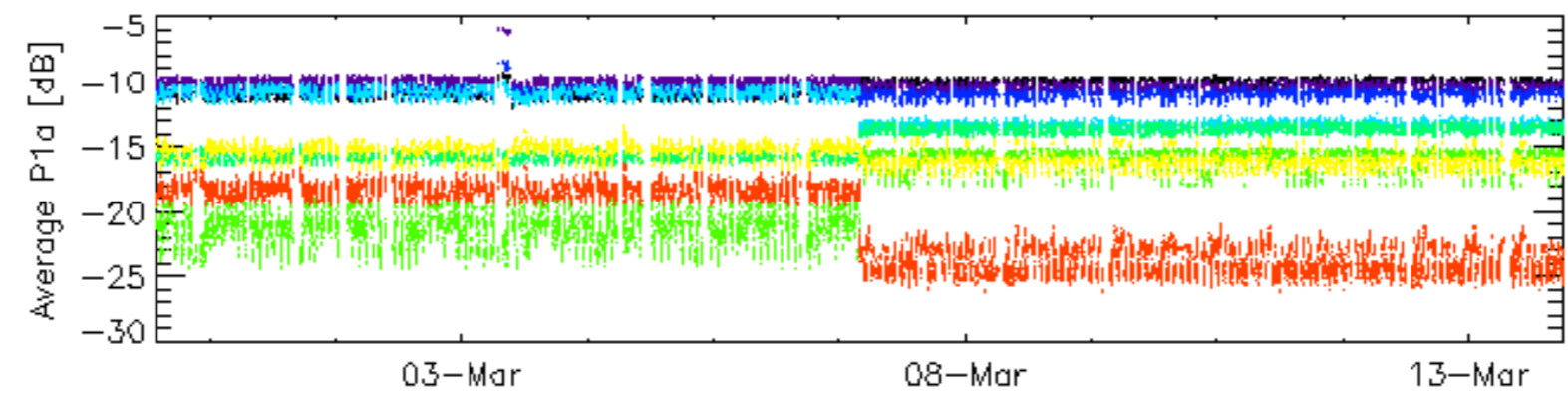
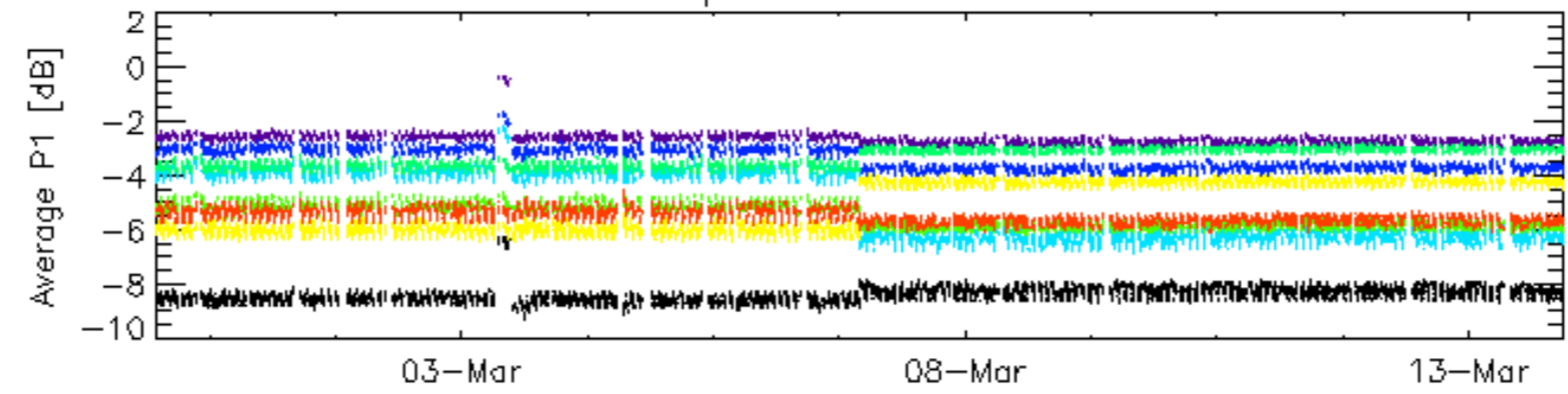
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2



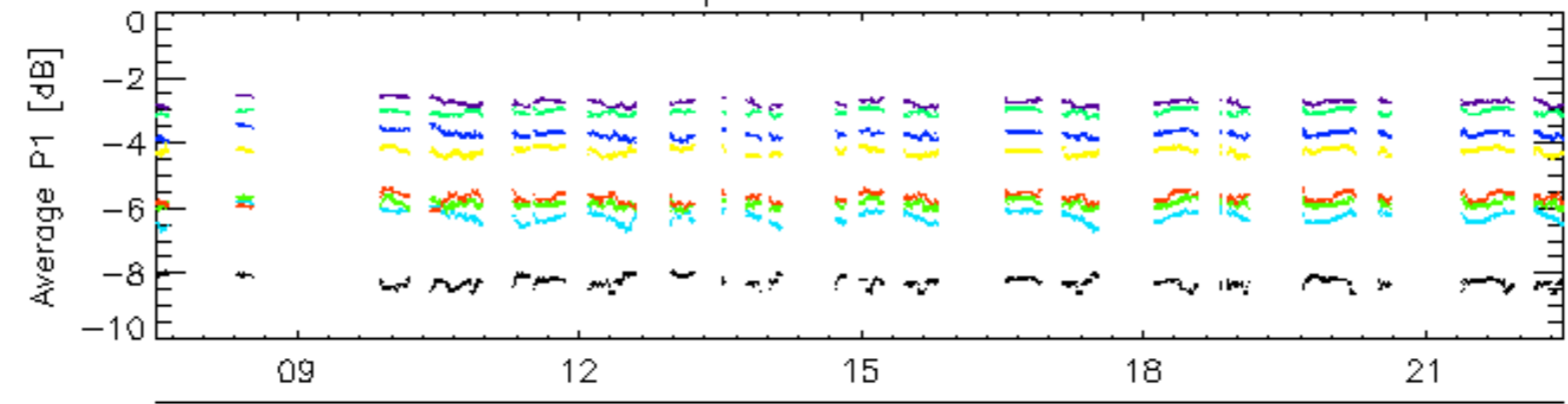


Cal pulses for WVS IS4

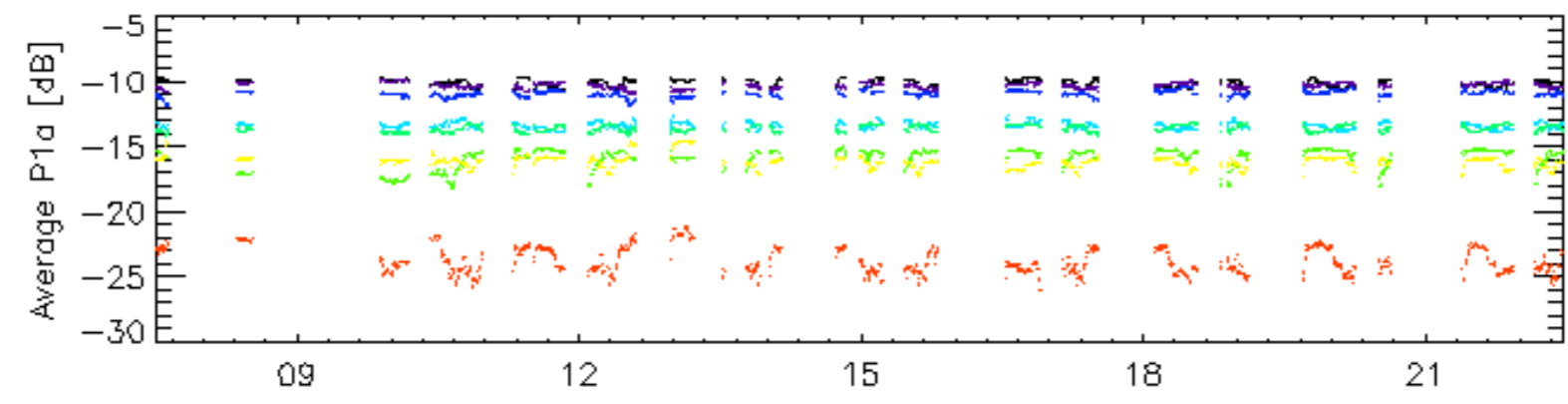


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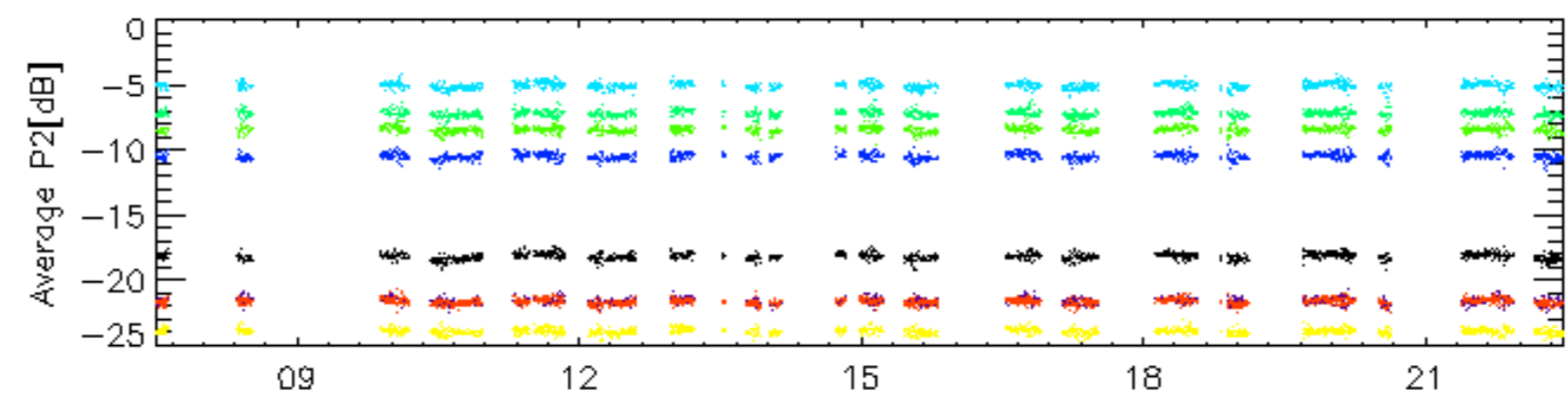
Cal pulses for WVS IS4



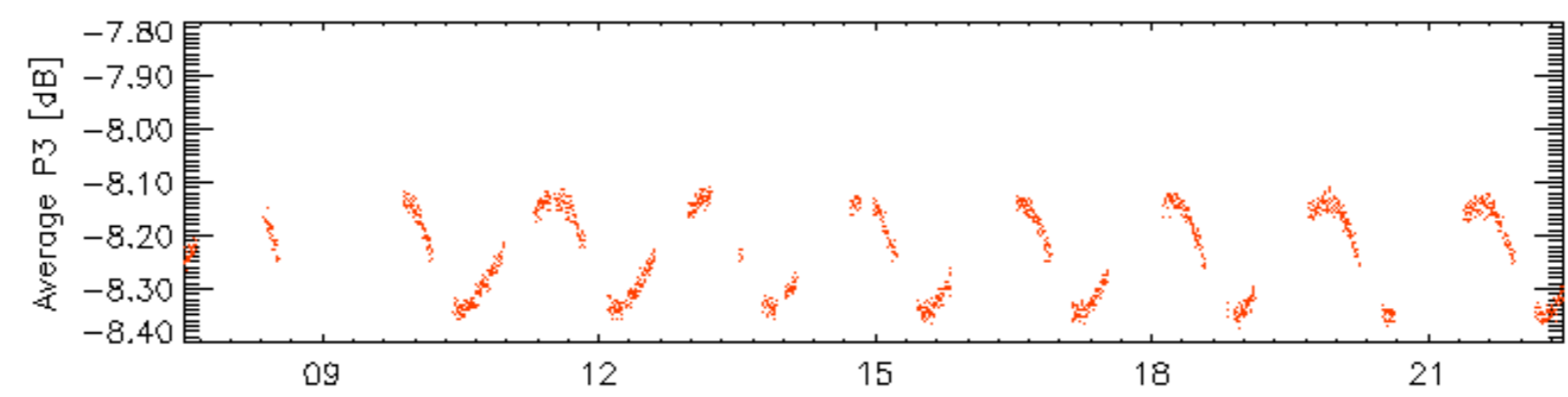
13-Mar



13-Mar



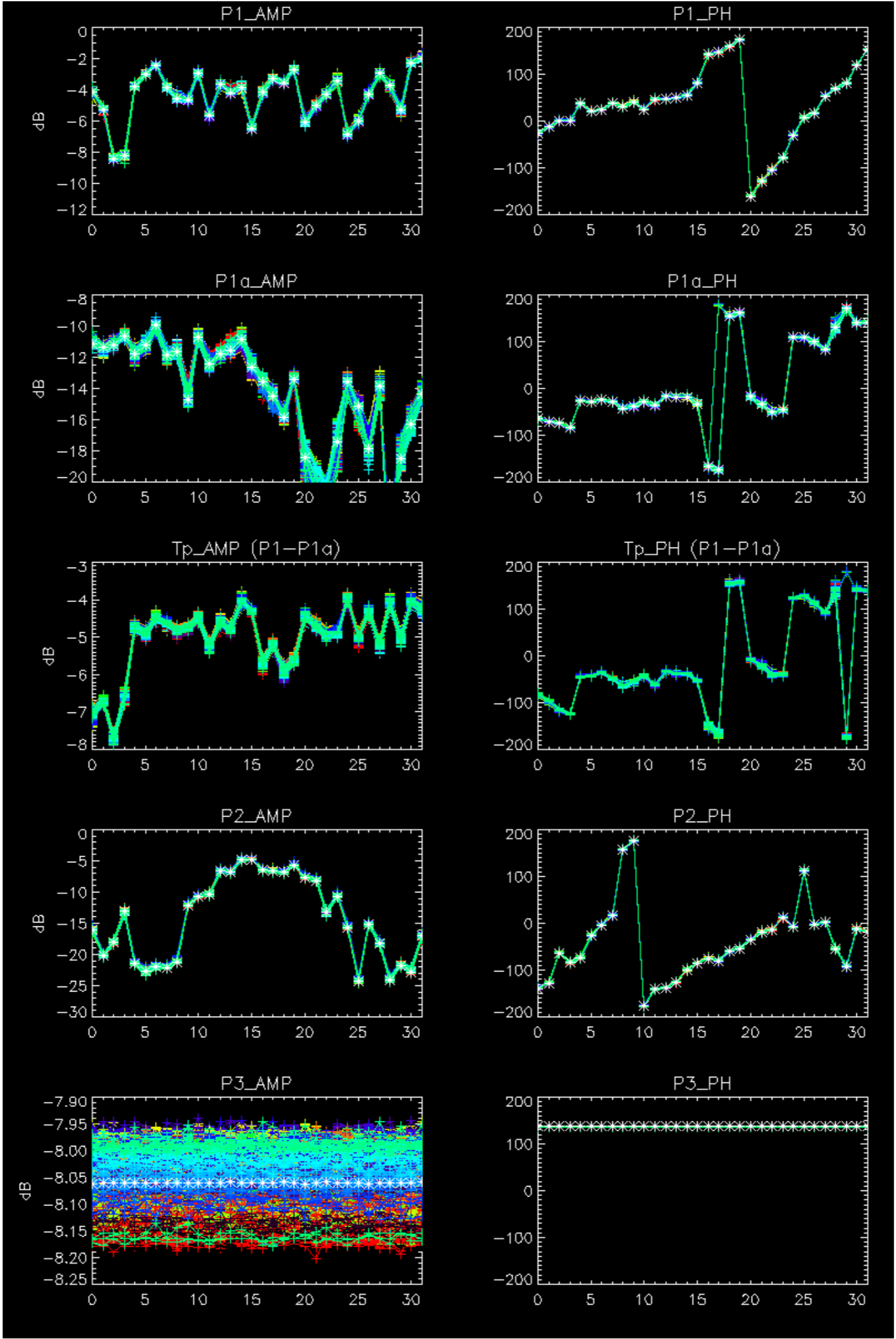
13-Mar

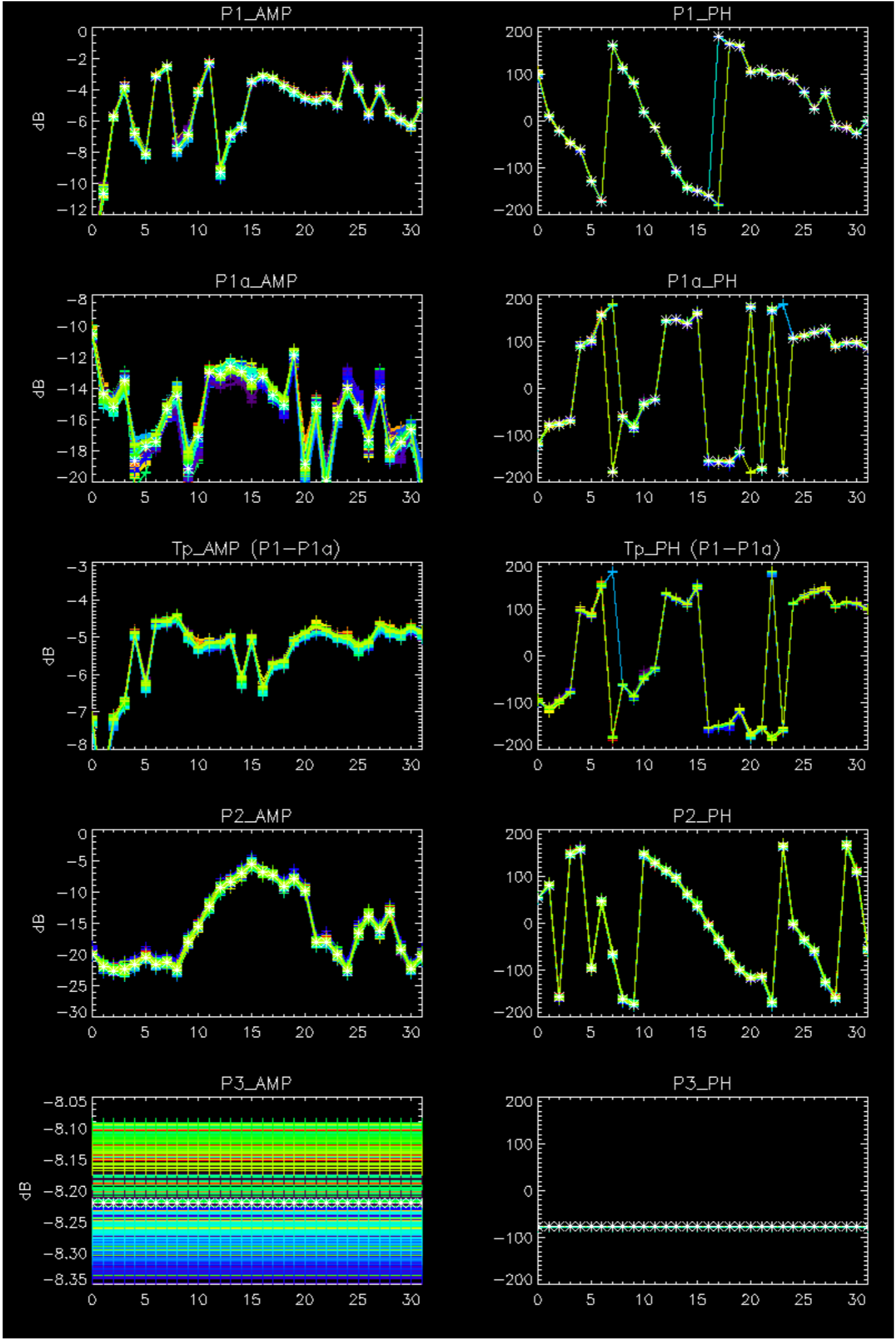


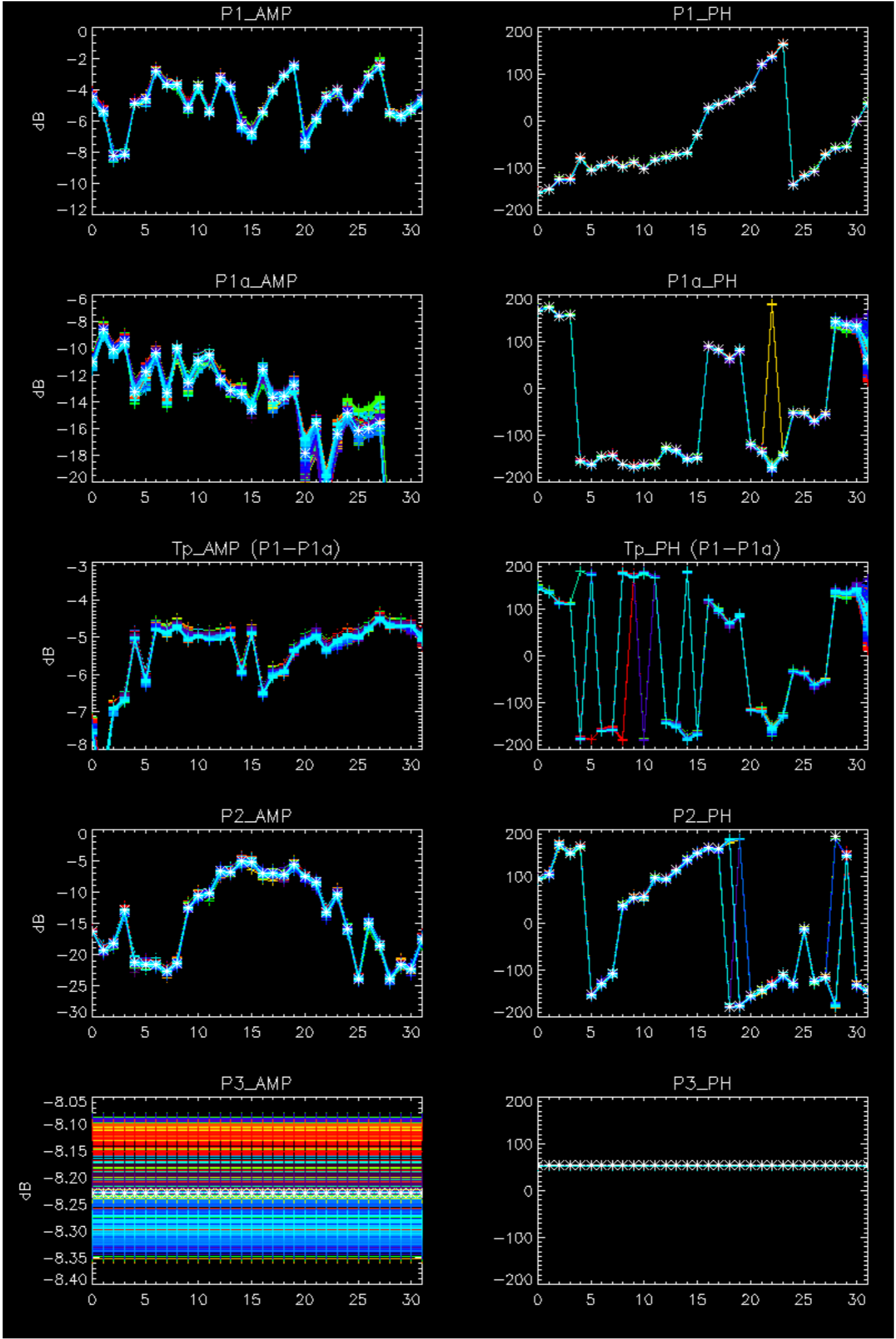
13-Mar

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

No anomalies observed.





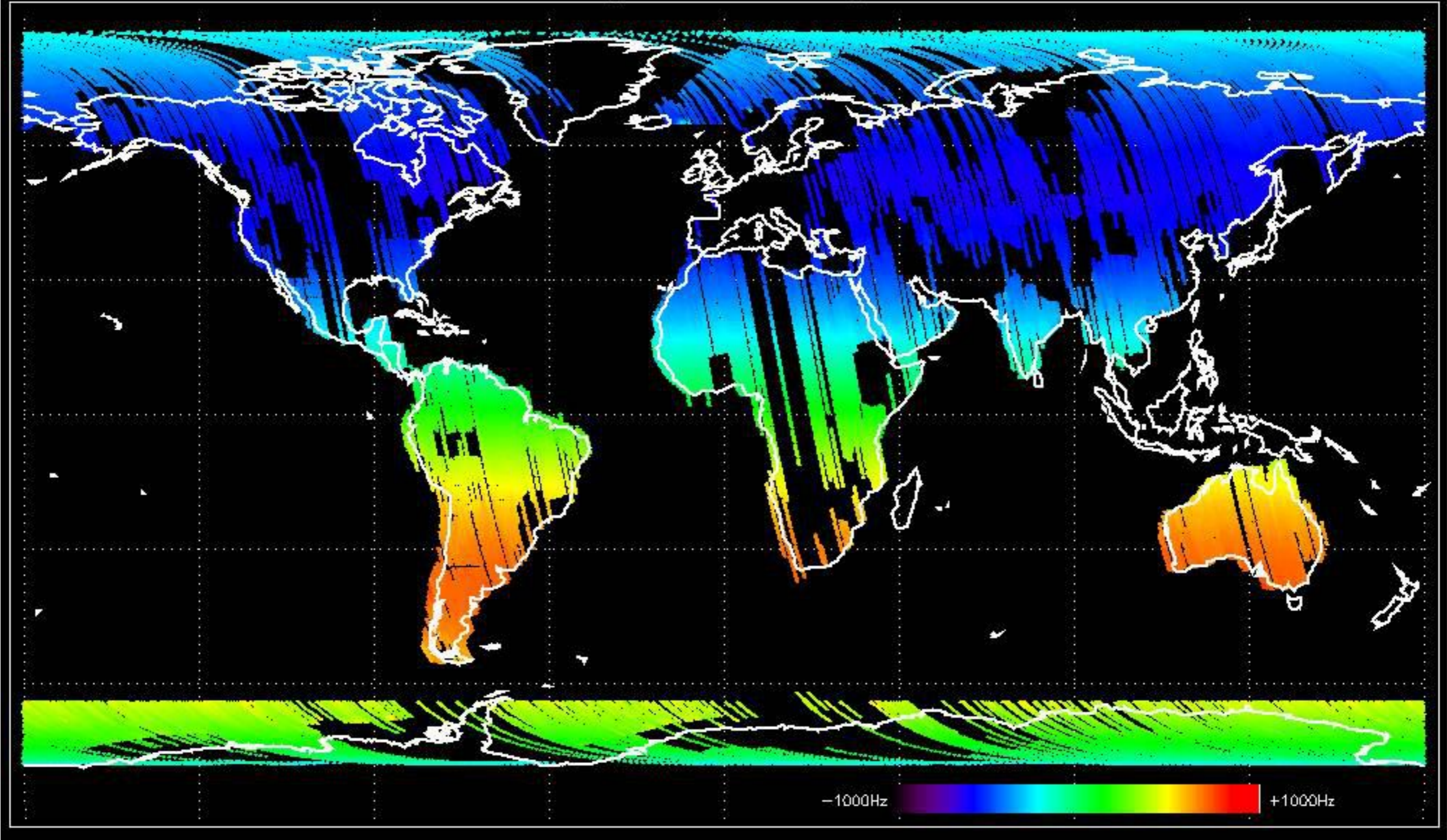


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

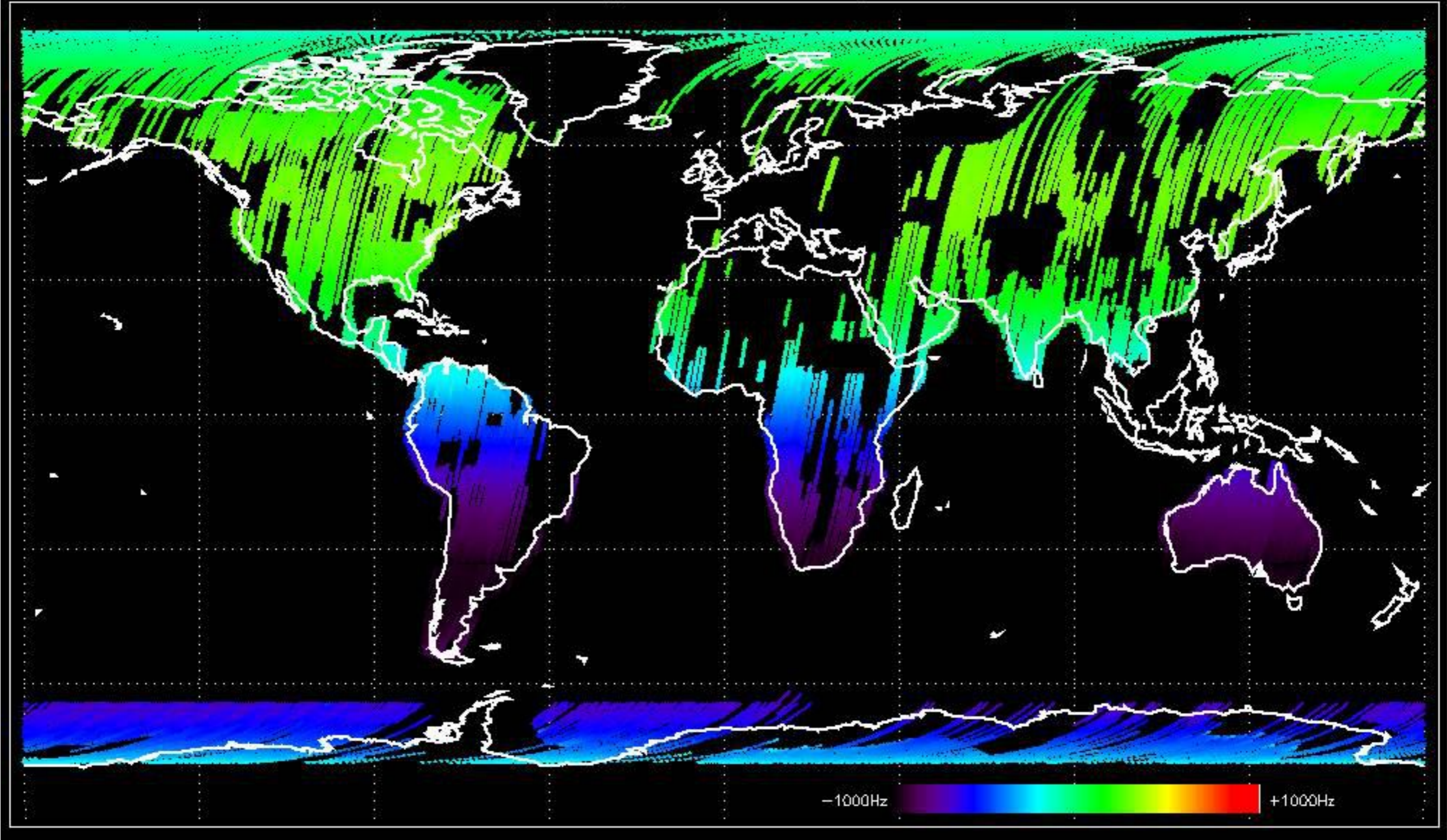




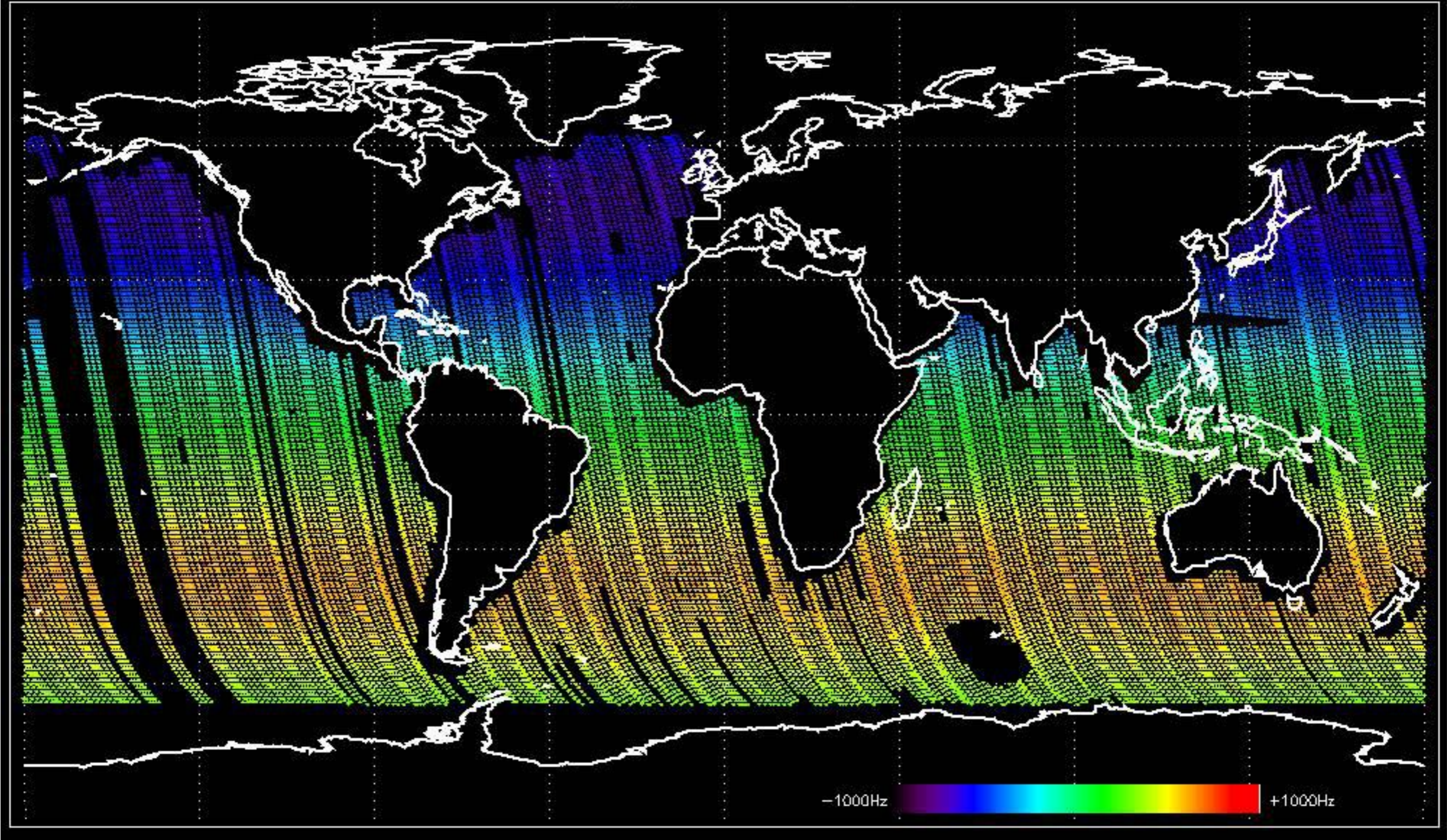
Doppler 'GM1' 'SS1' ascending



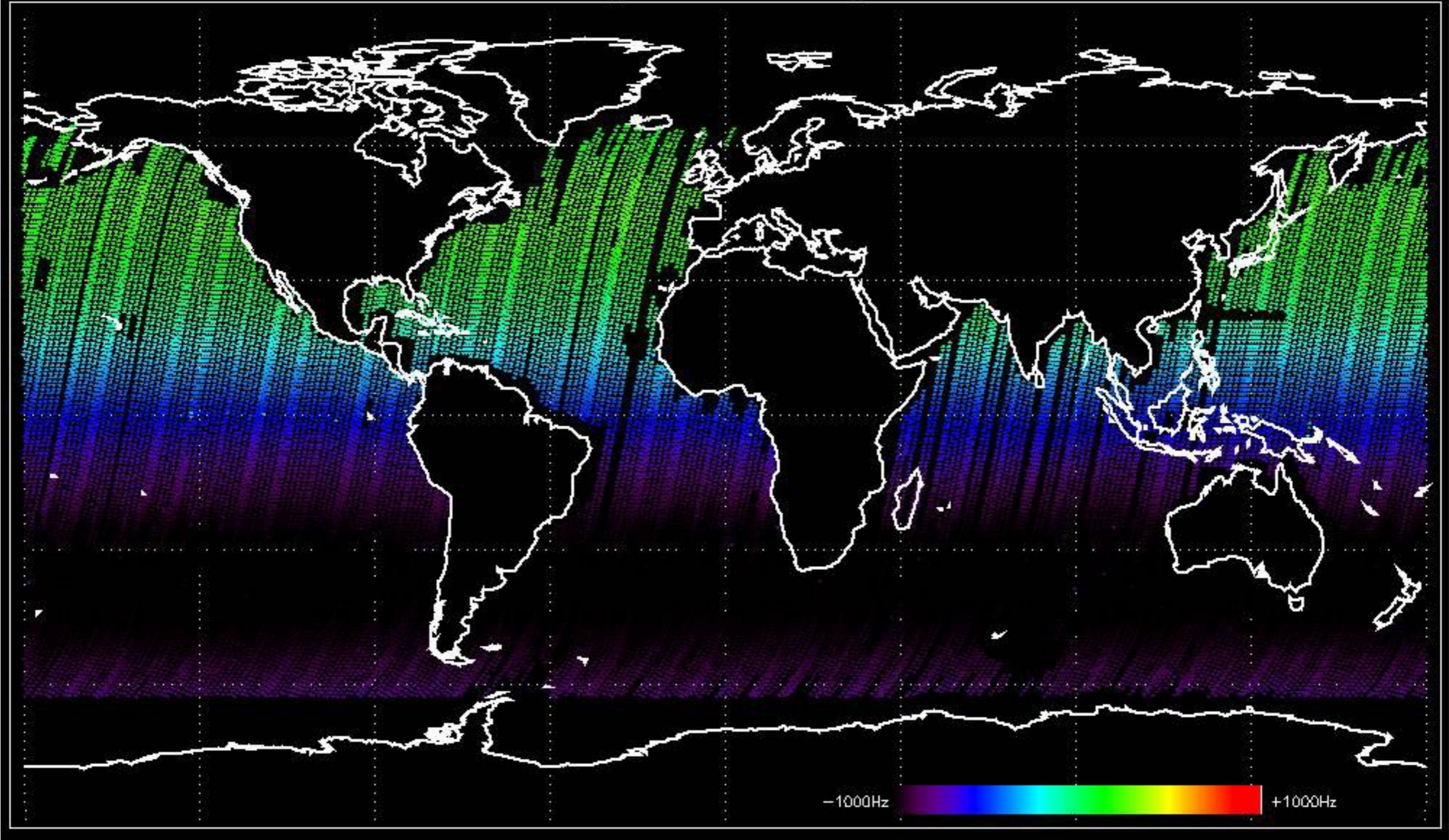
Doppler 'GM1' 'SS1' descending



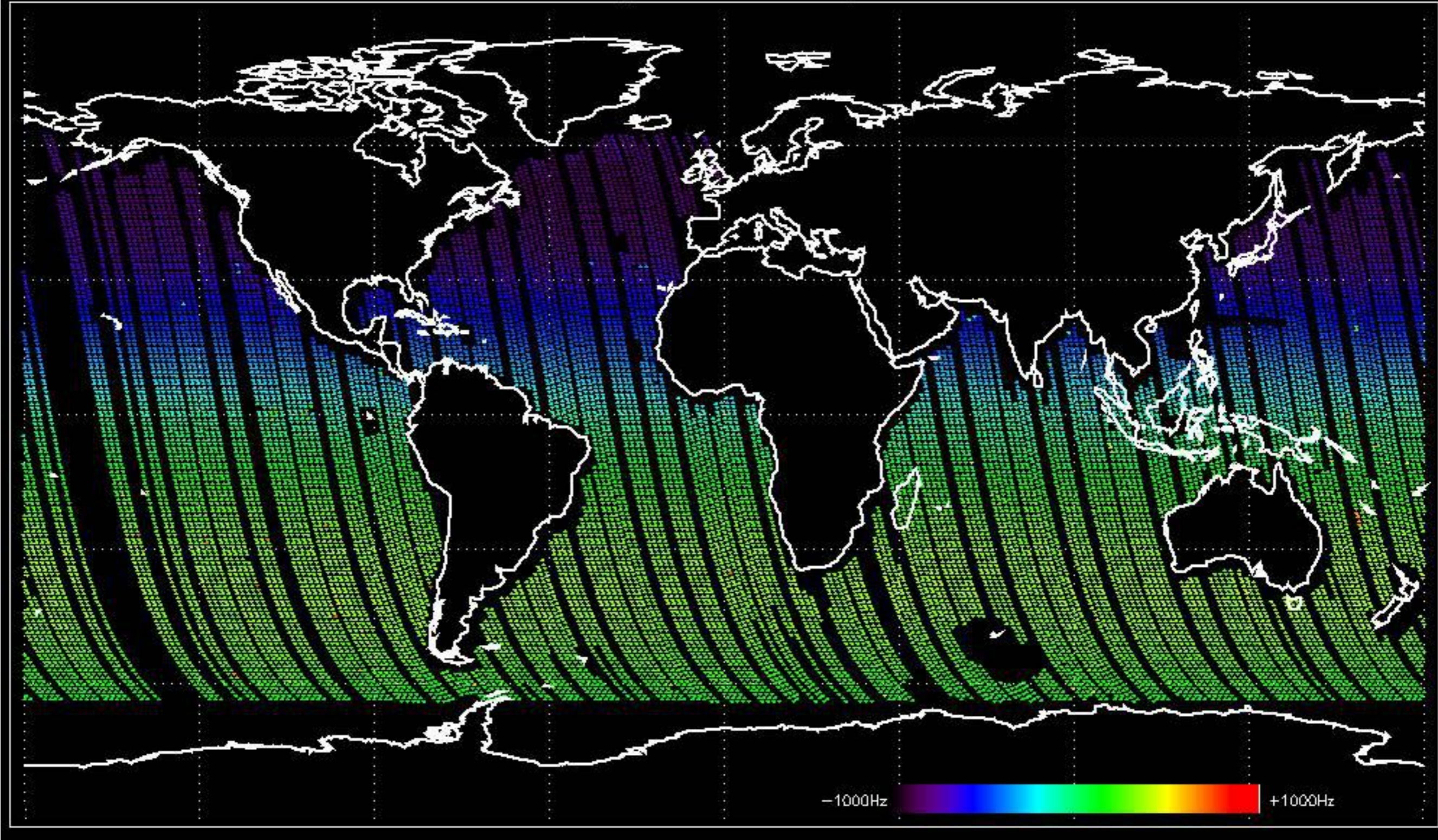
Doppler 'WVS' 'IS2' ascending



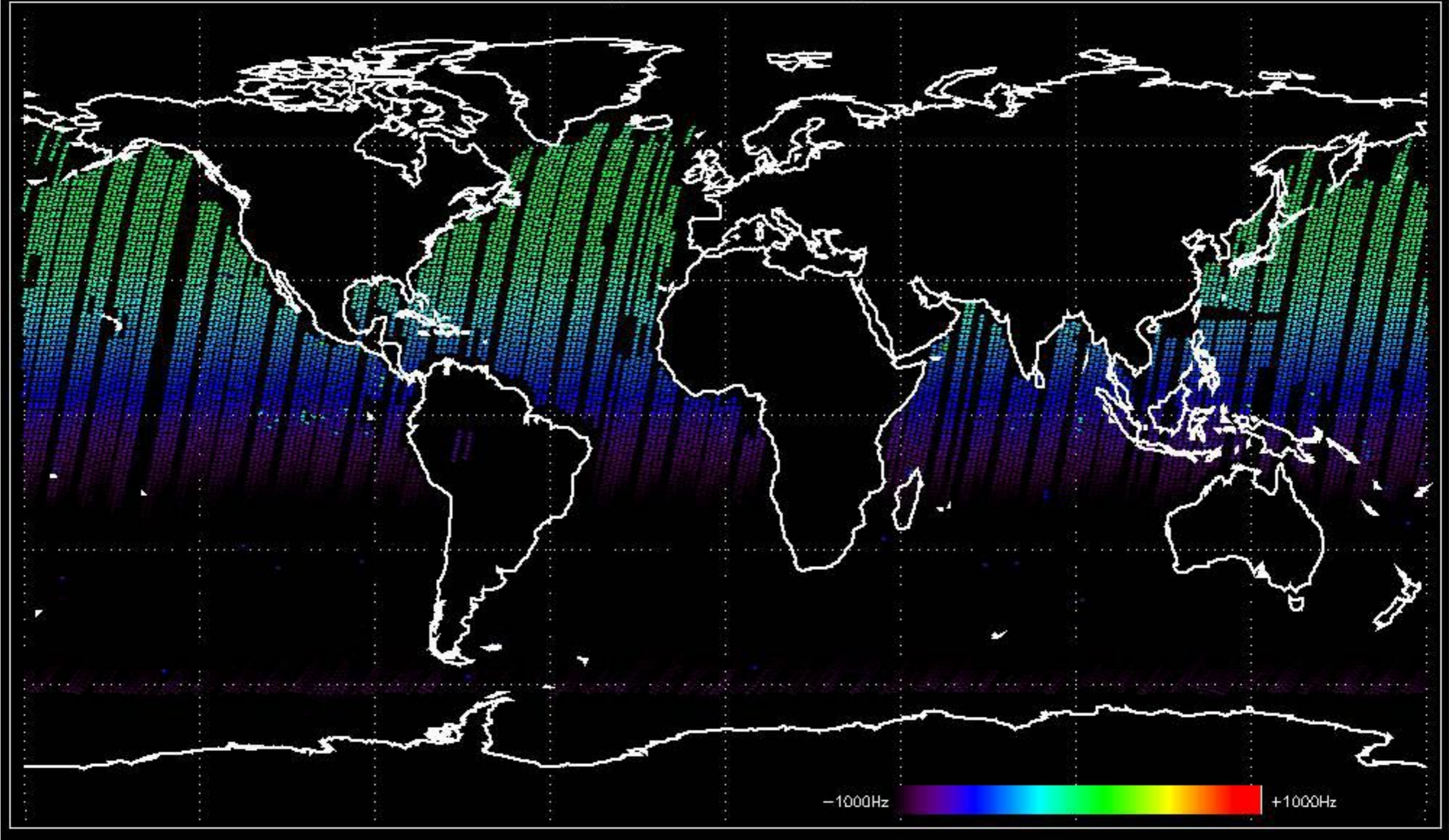
Doppler 'WVS' 'IS2' descending



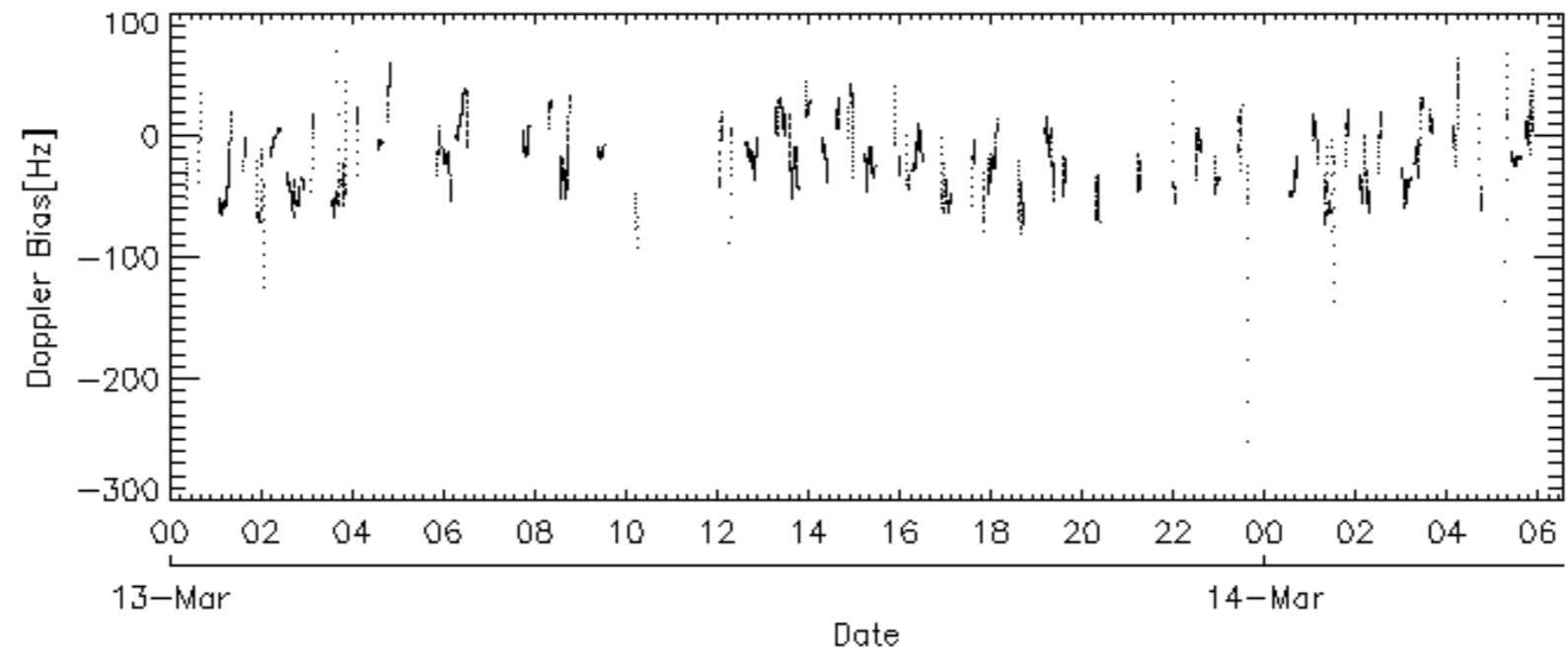
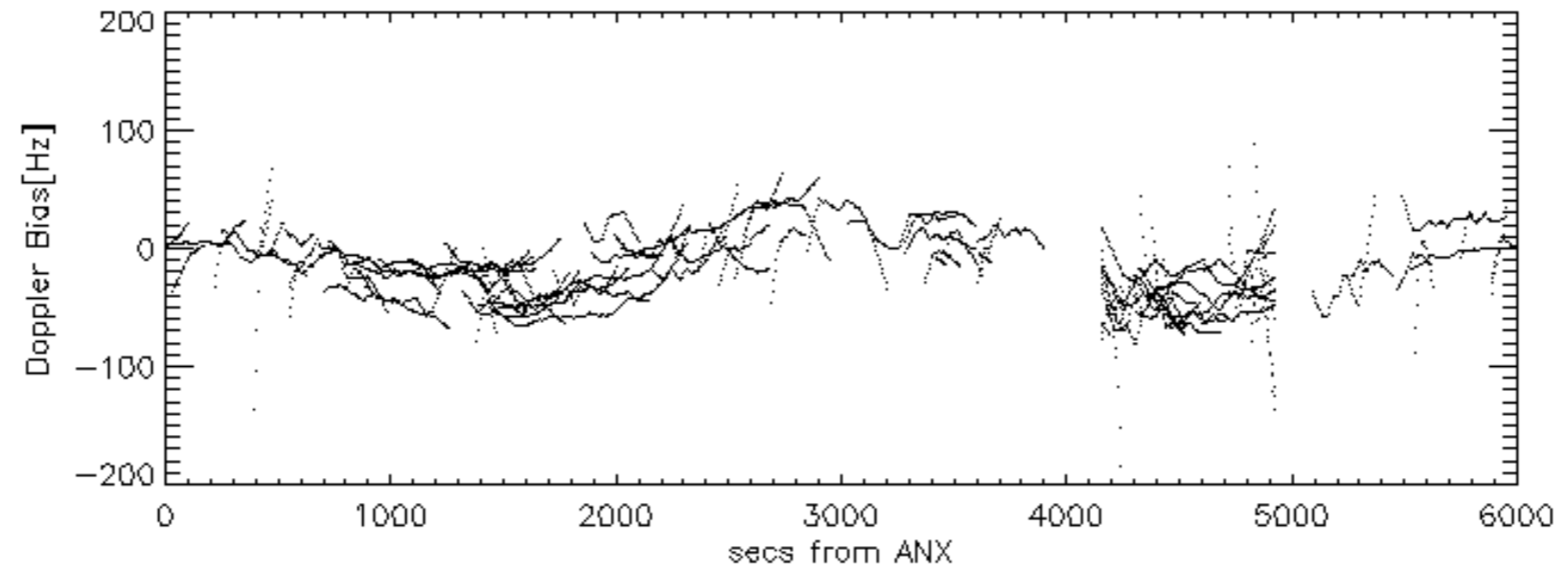
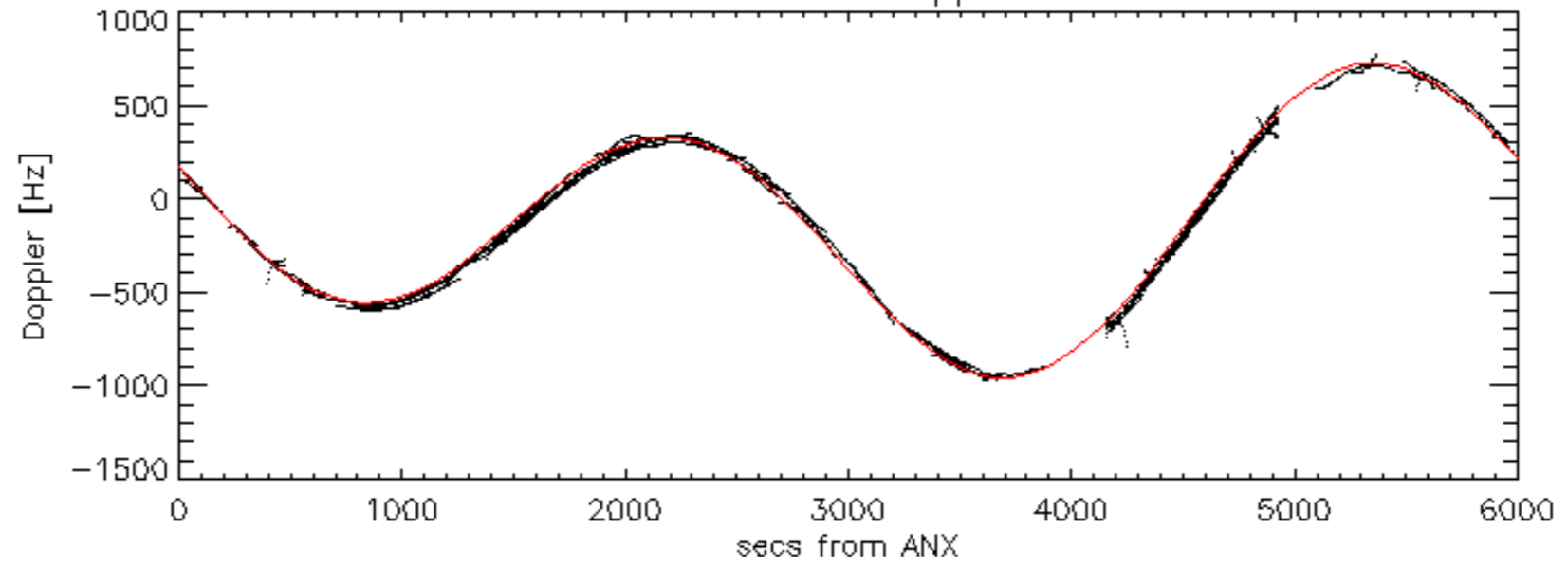
Doppler 'WVS' 'IS4' ascending

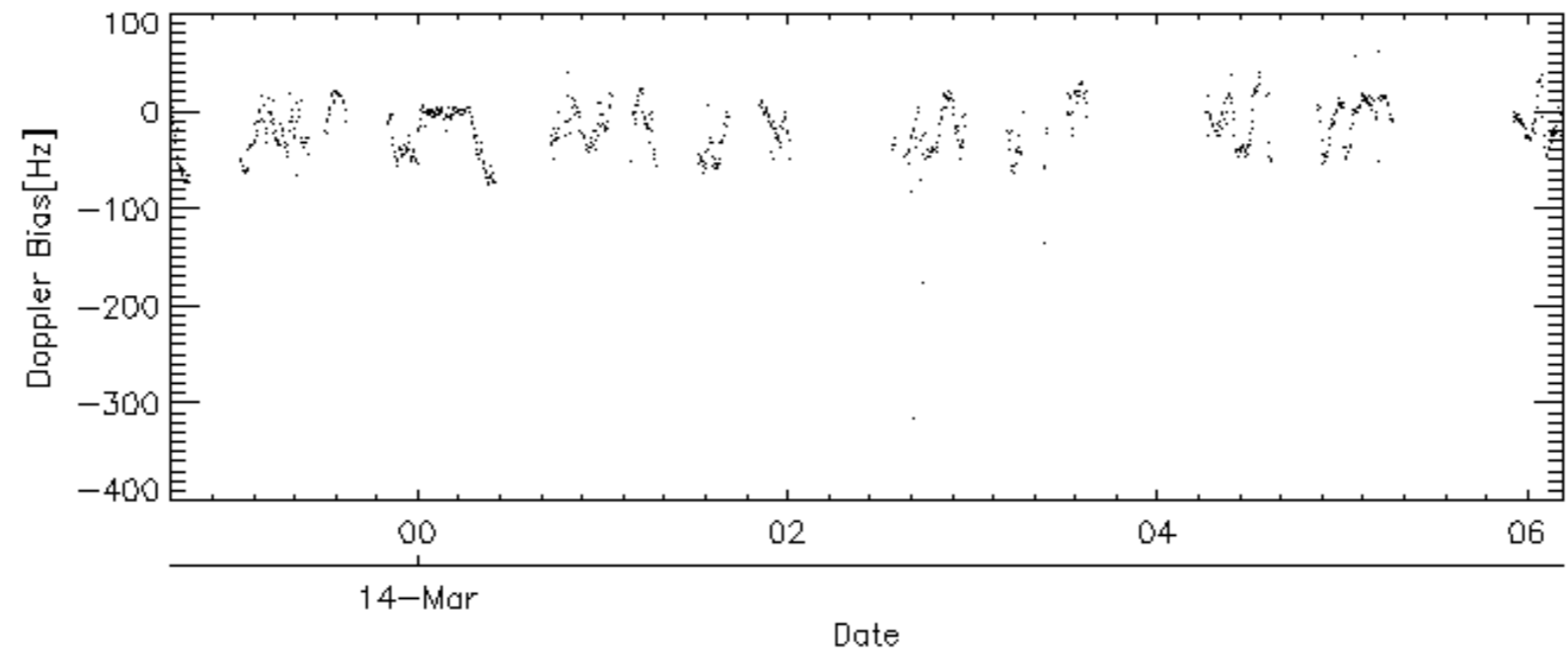
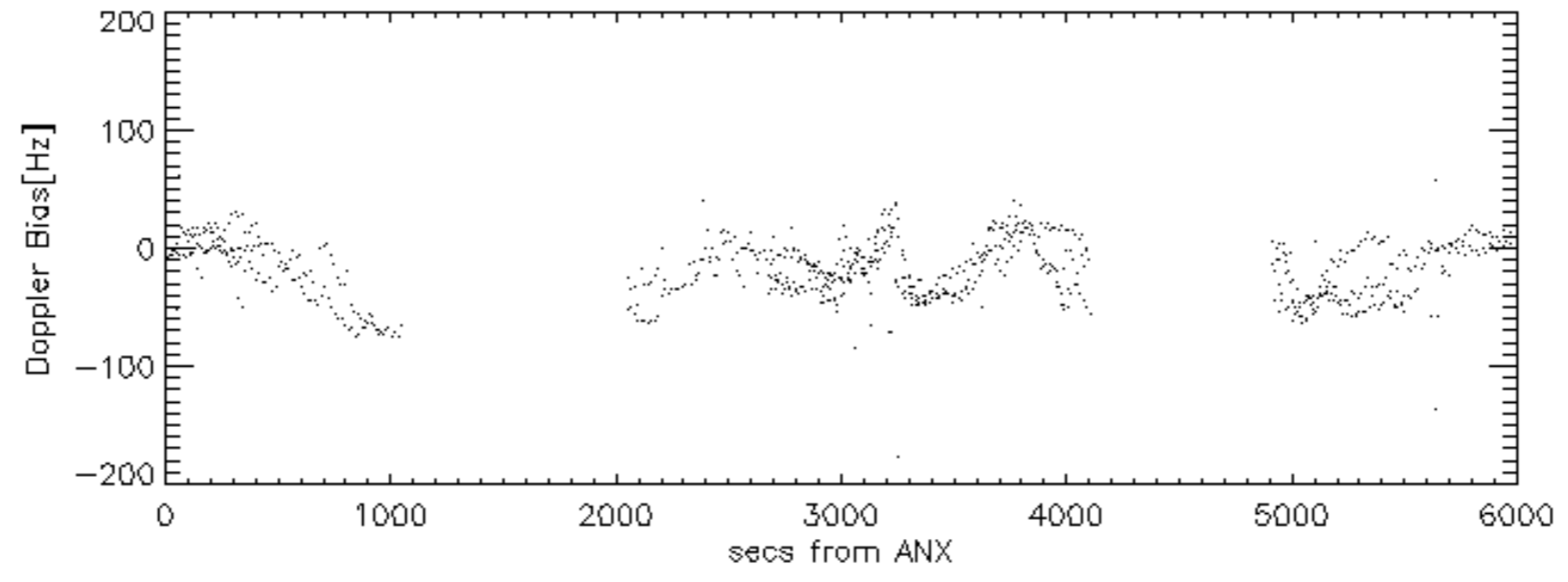
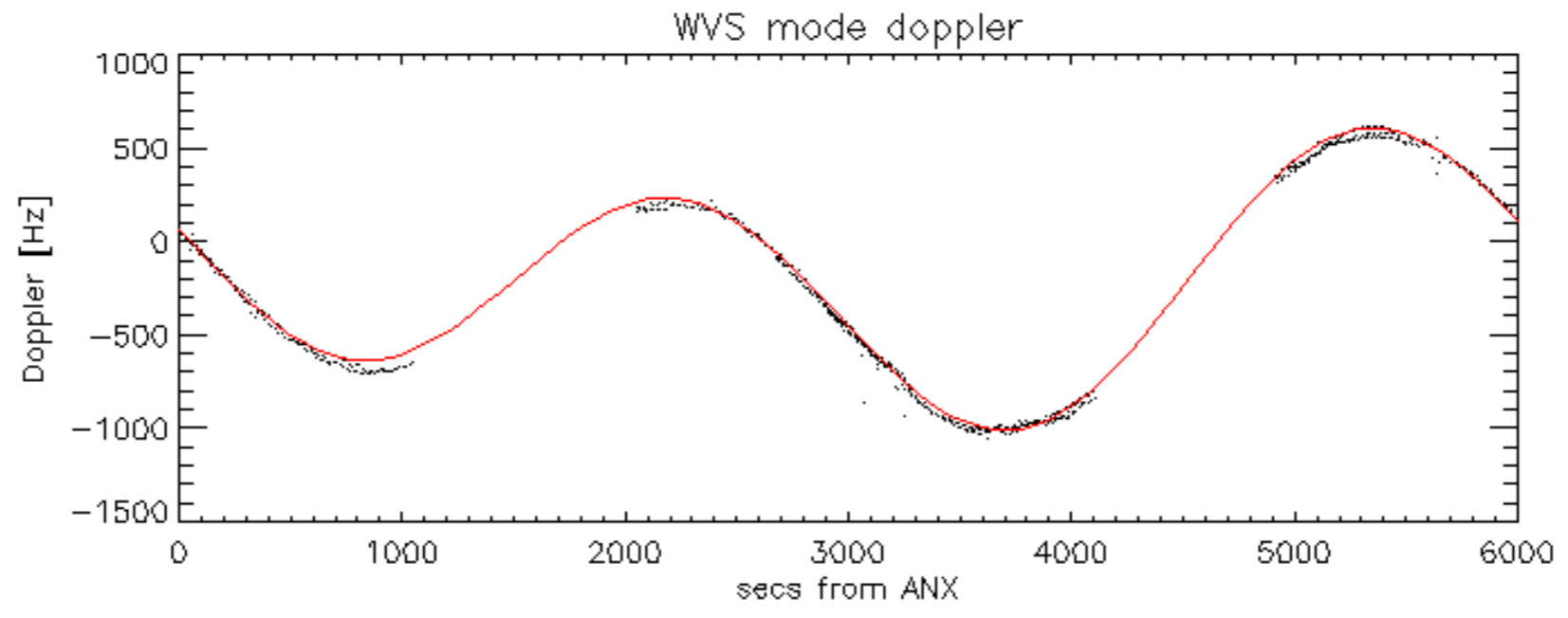


Doppler 'WVS' 'IS4' descending



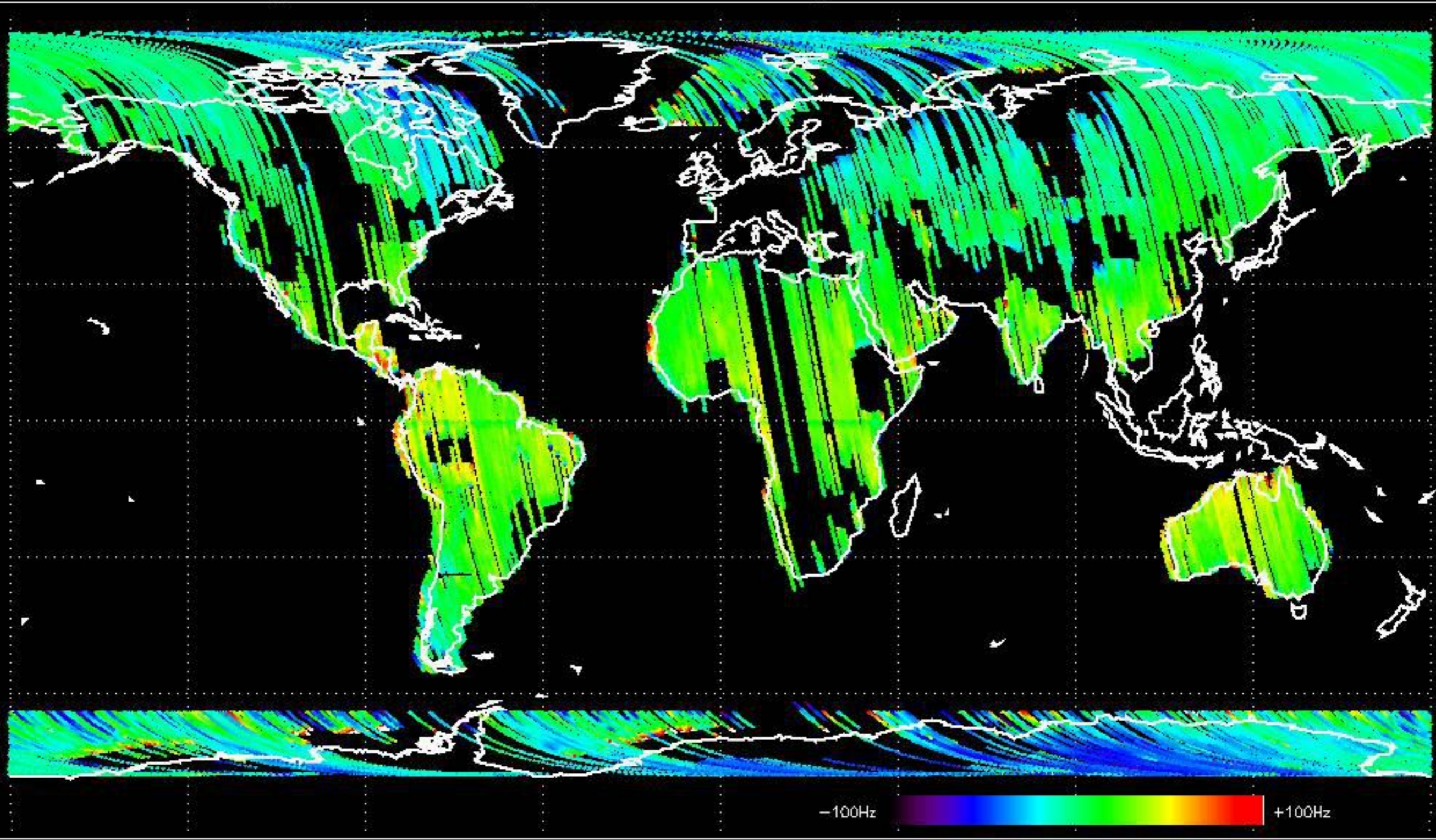
GM1 mode doppler



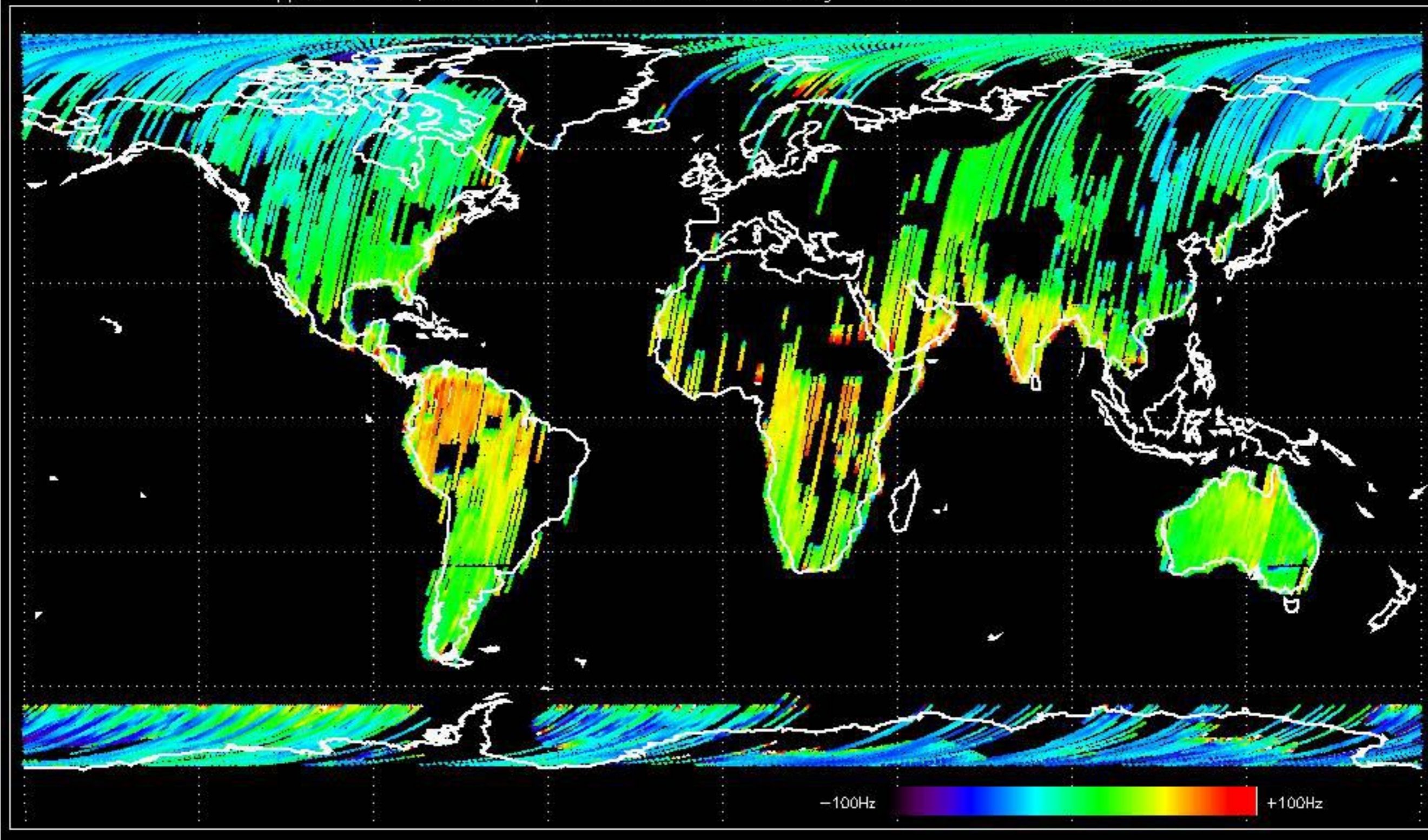




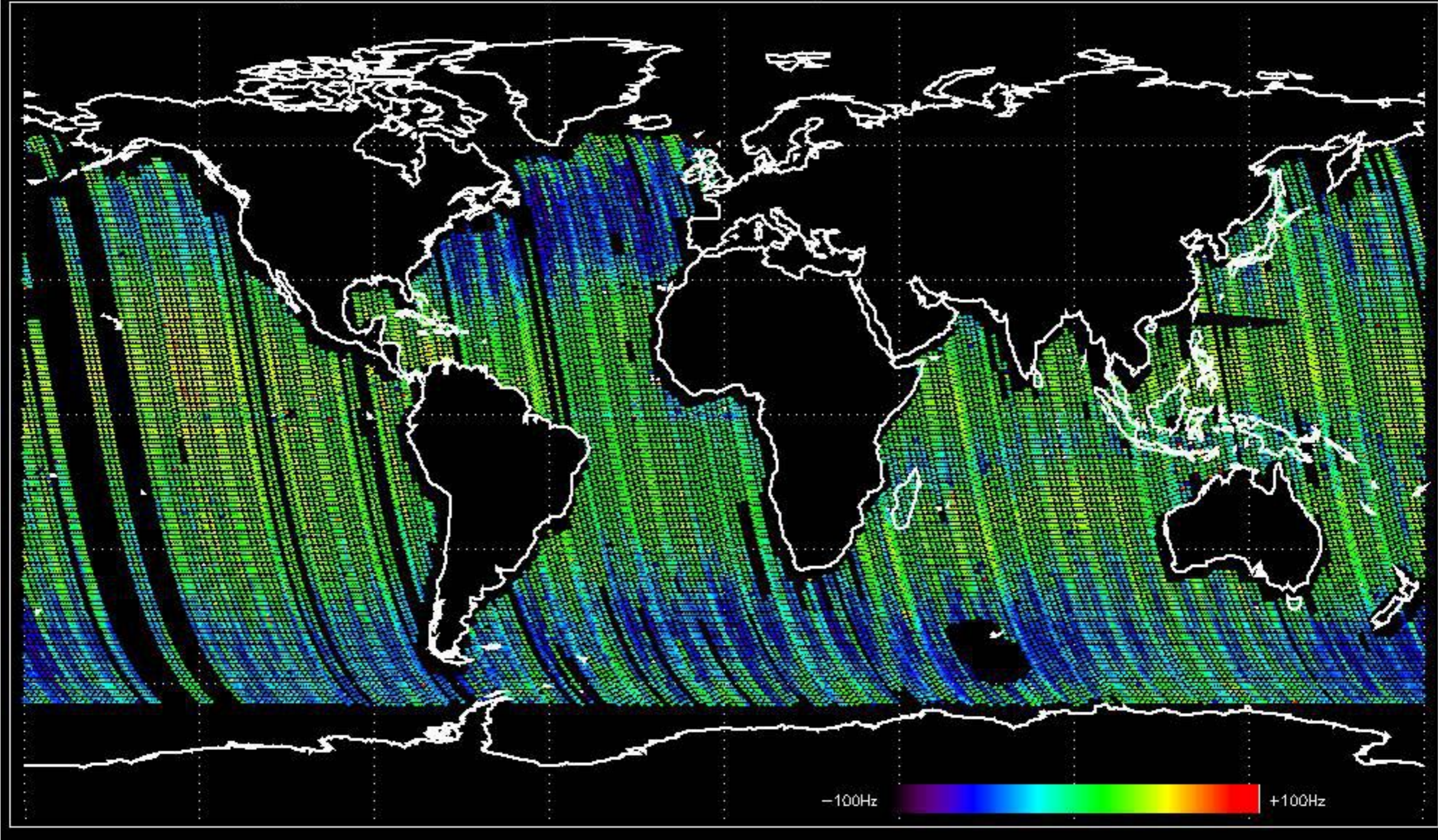
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.768042 Hz



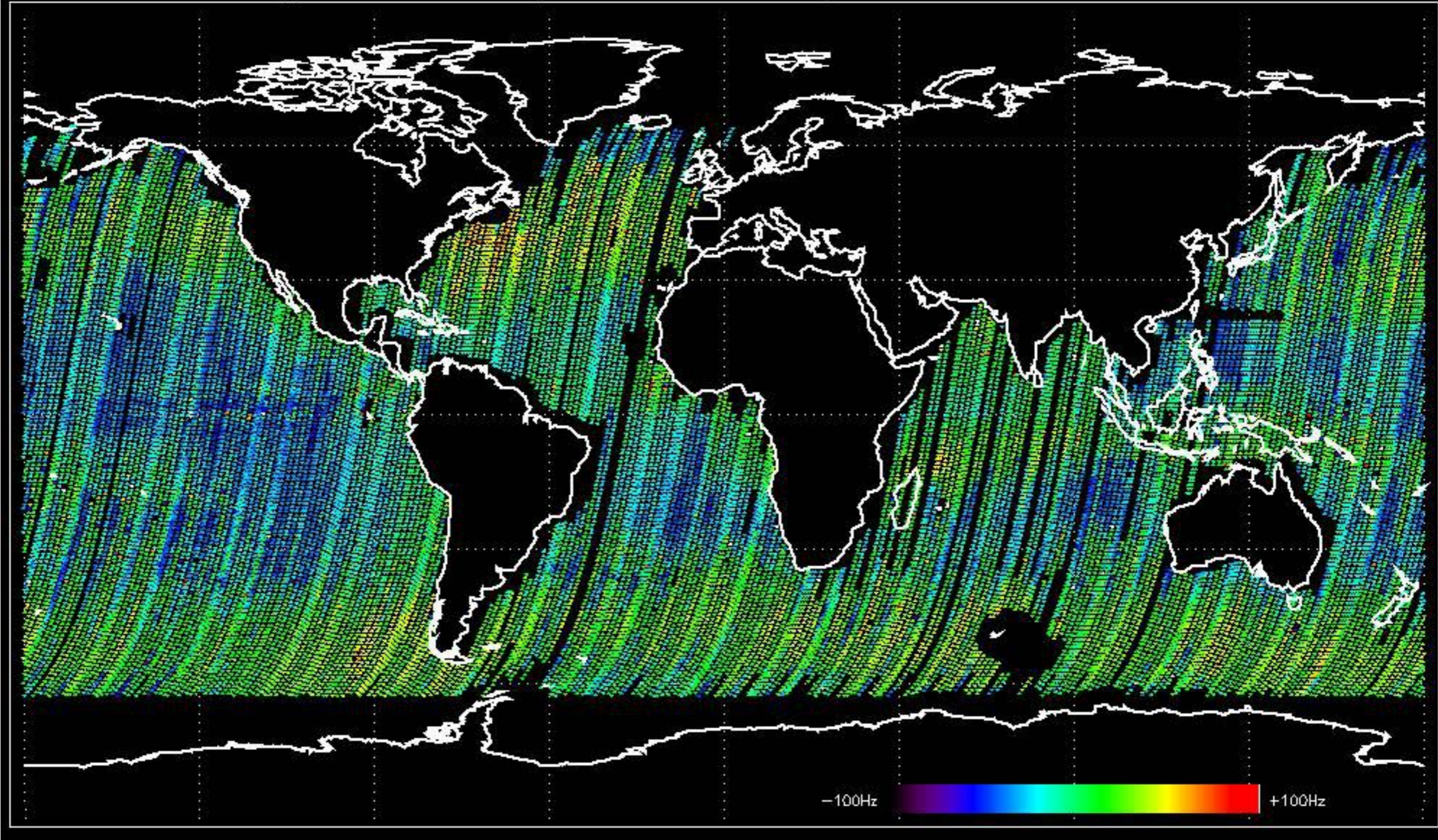
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.945820 Hz



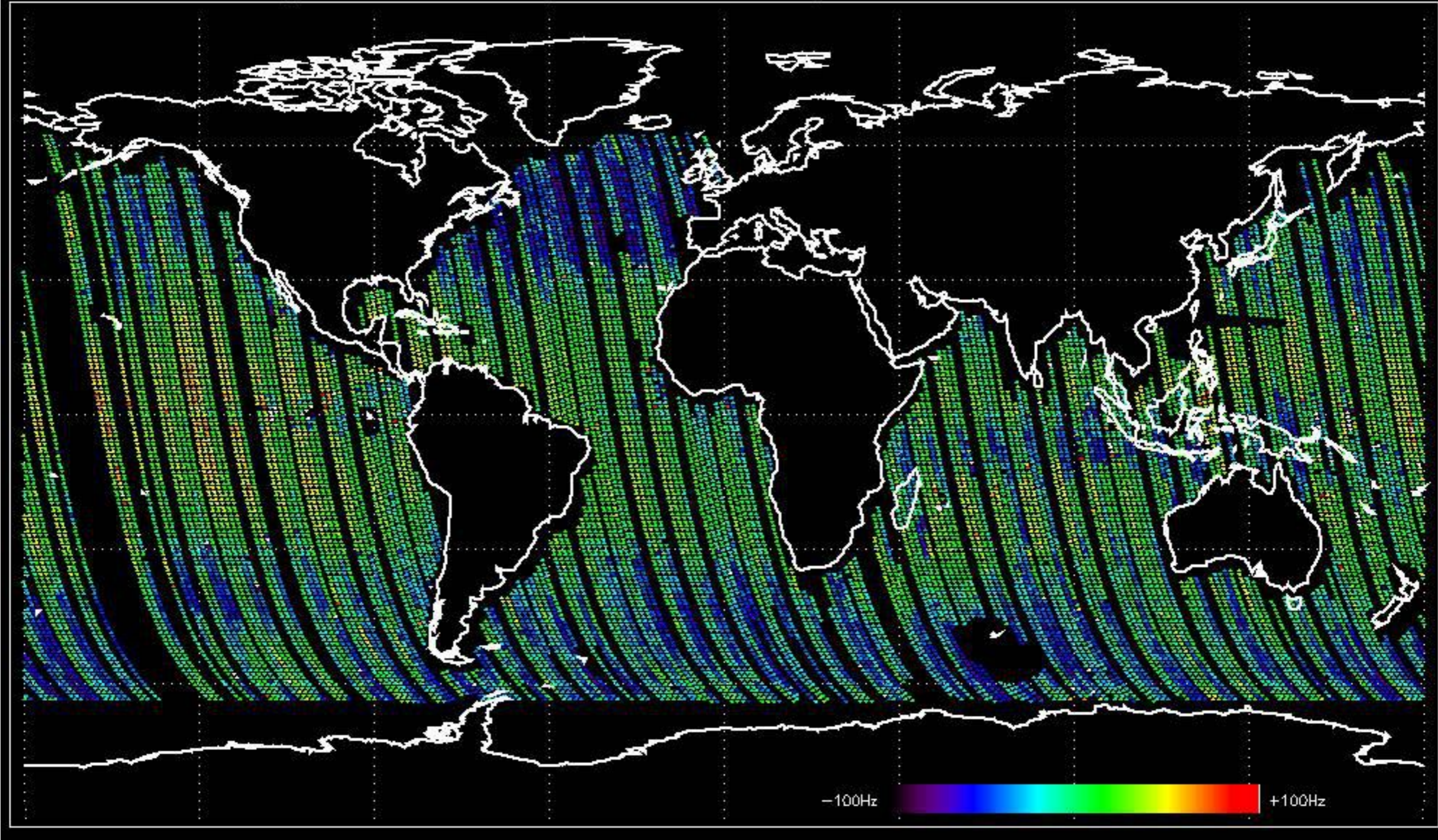
Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -14.945233 Hz



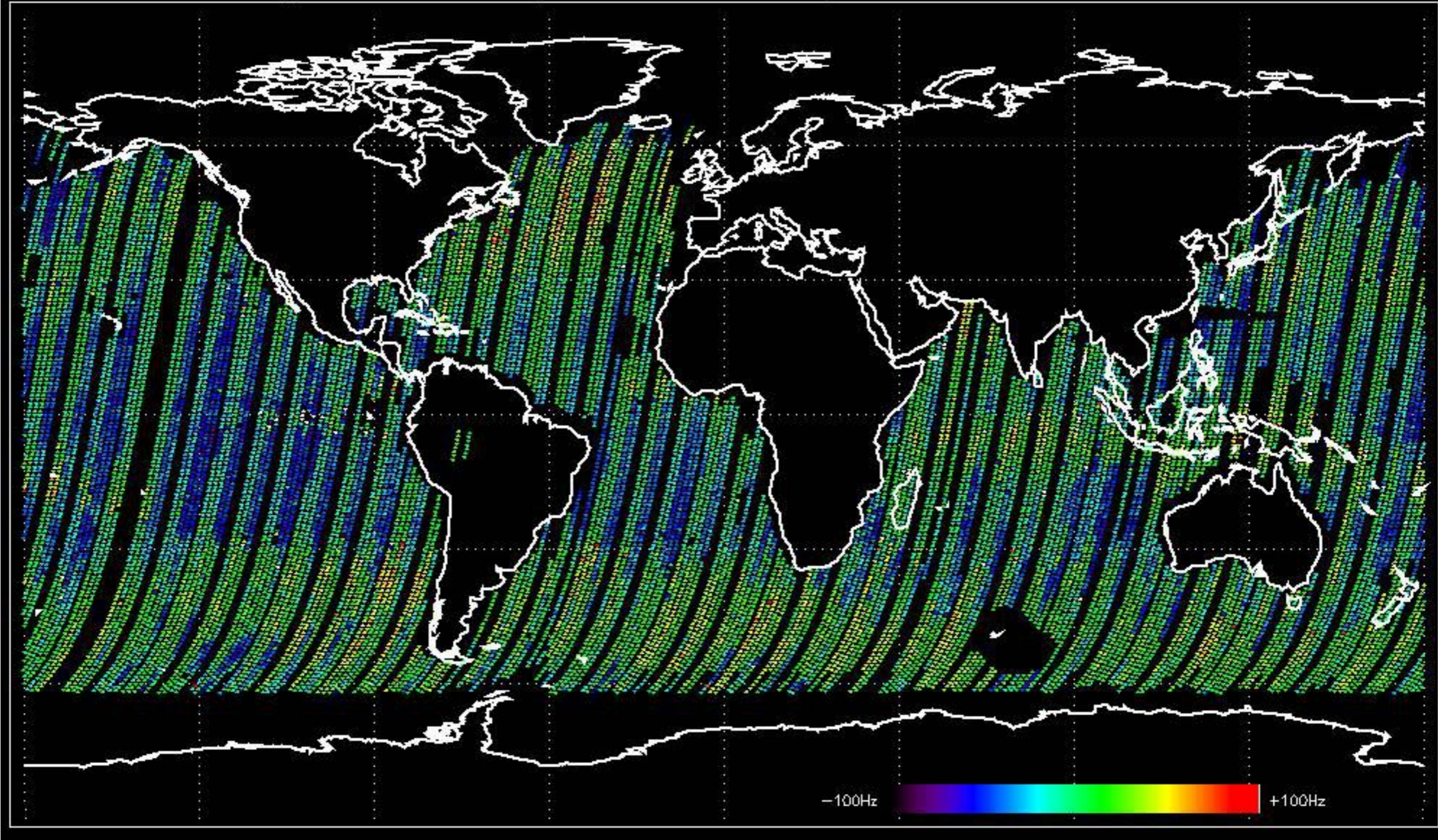
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -16.257238 Hz



Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -20.743416 Hz



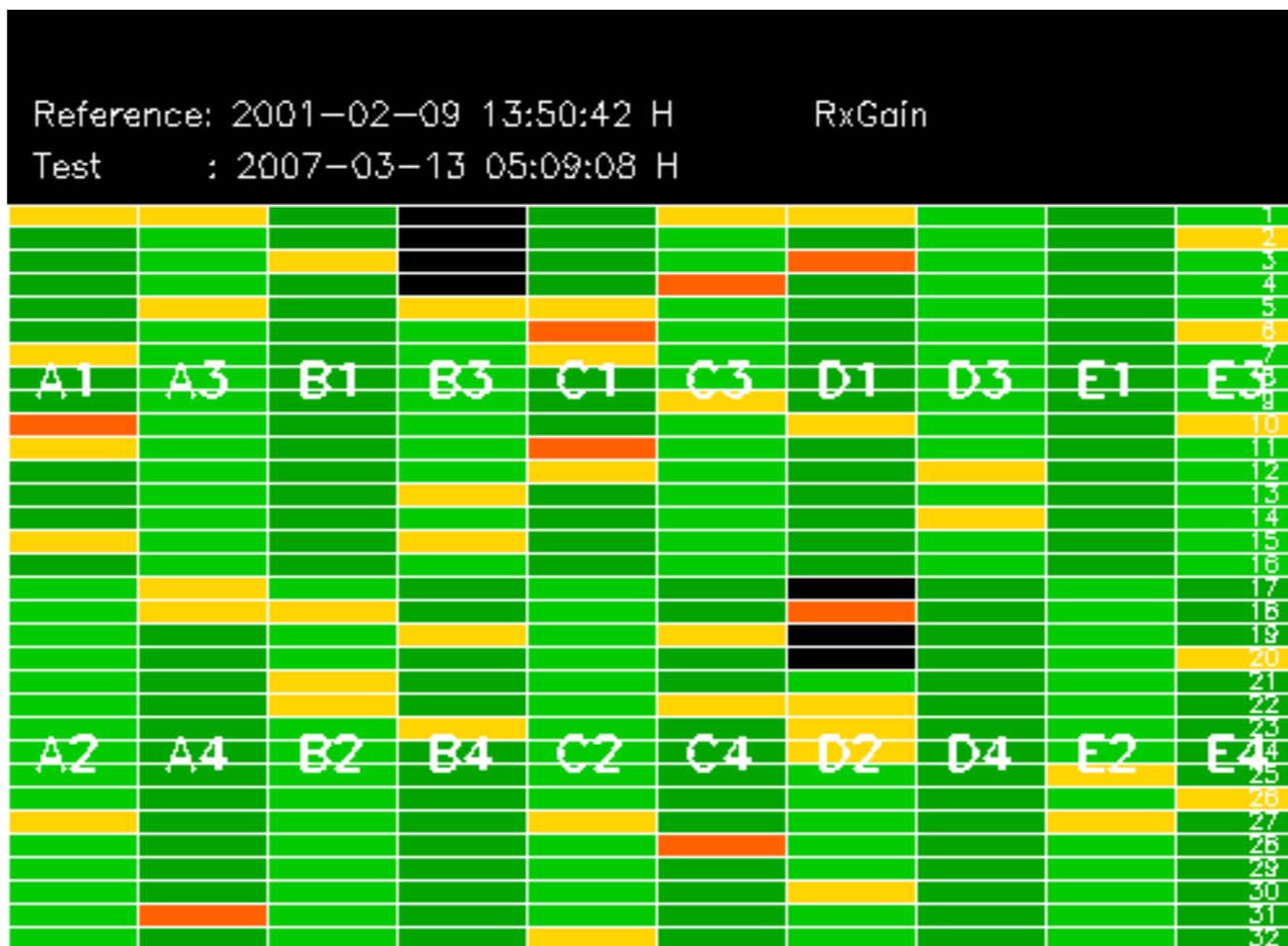
Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -21.544606 Hz

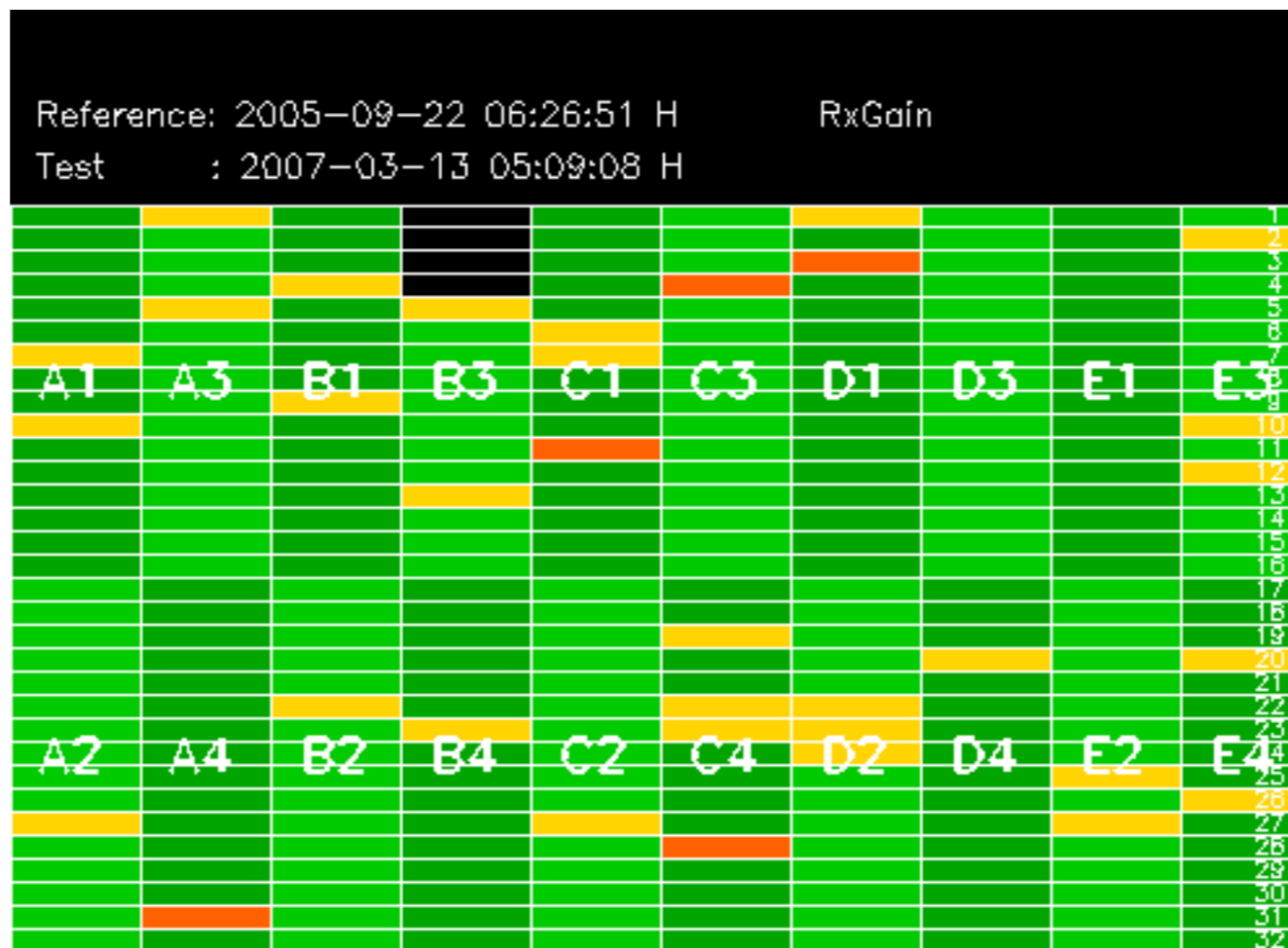


No anomalies observed on available MS products:

No anomalies observed.



















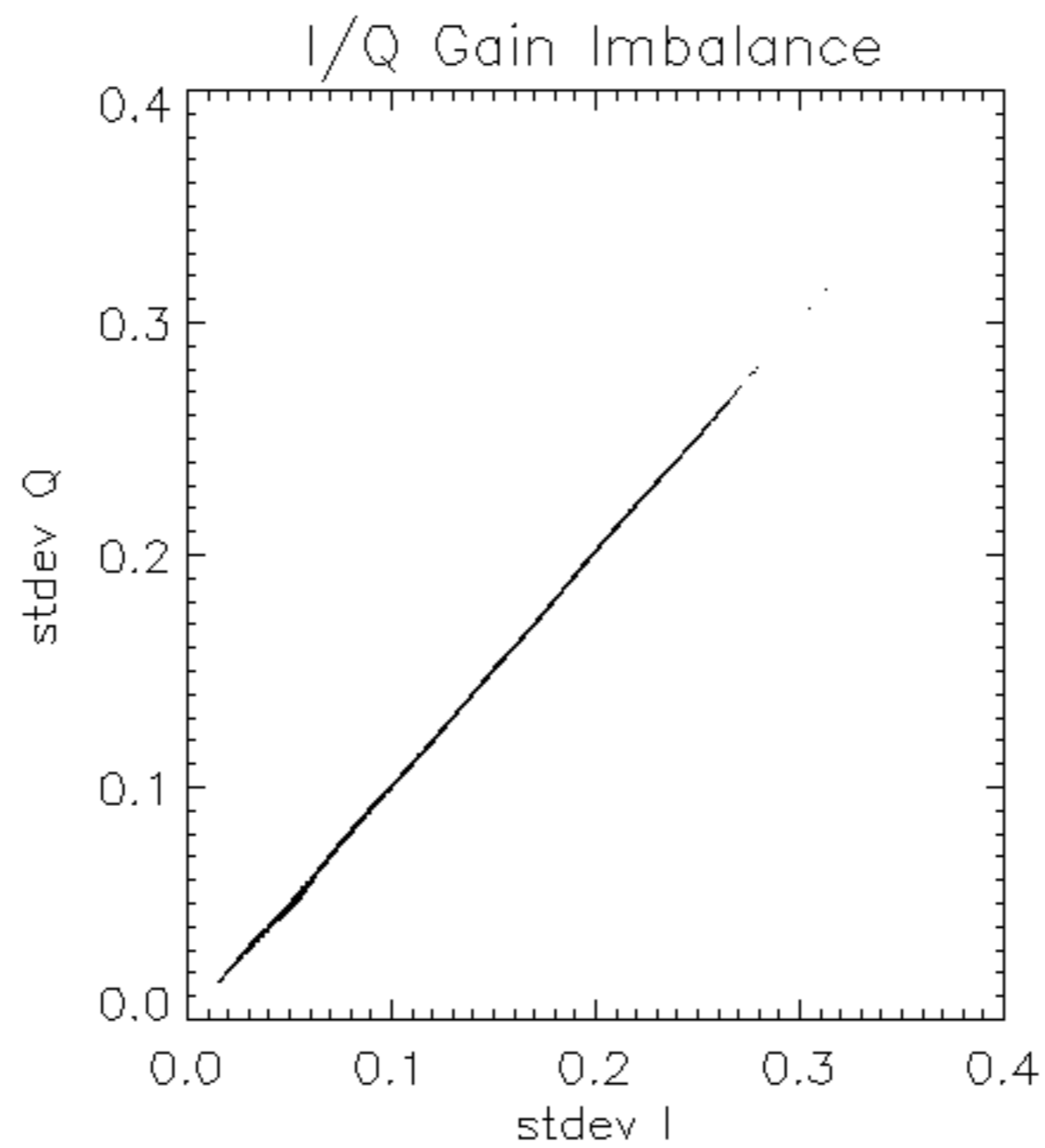


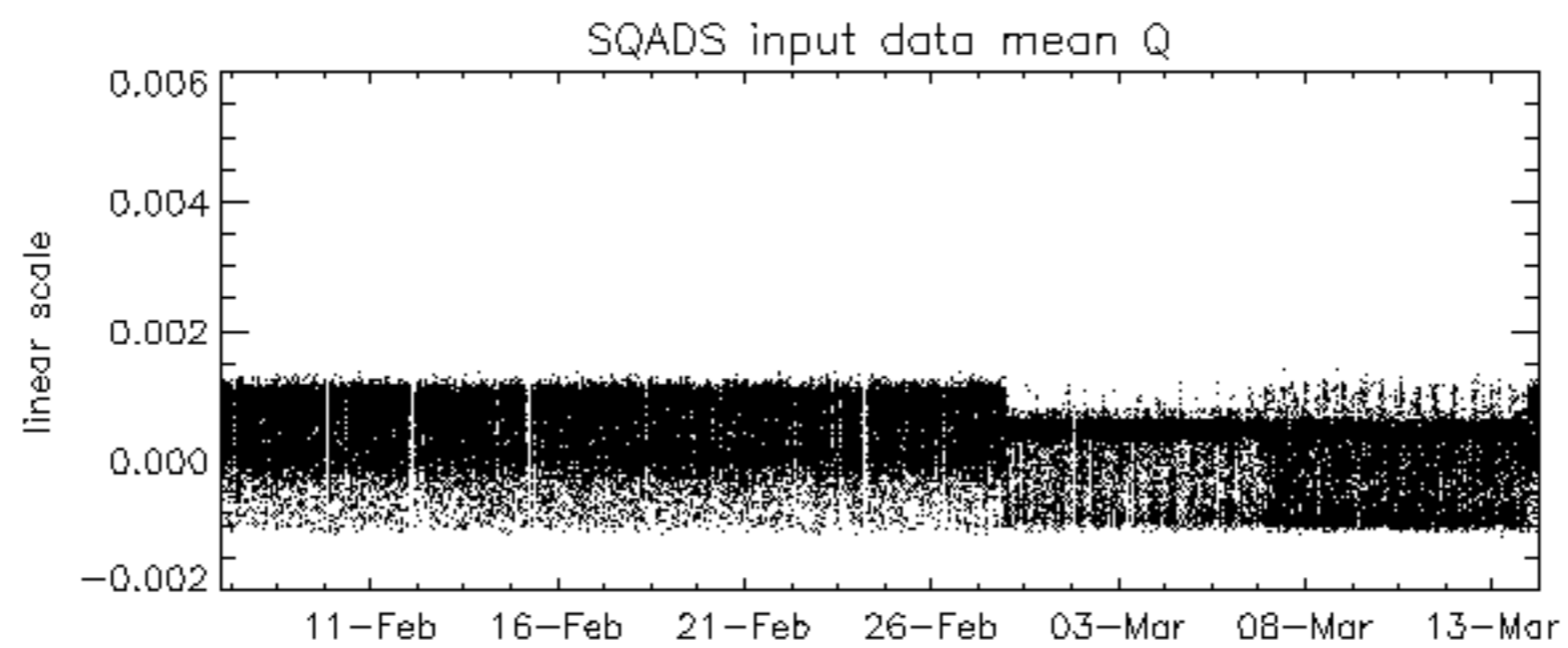
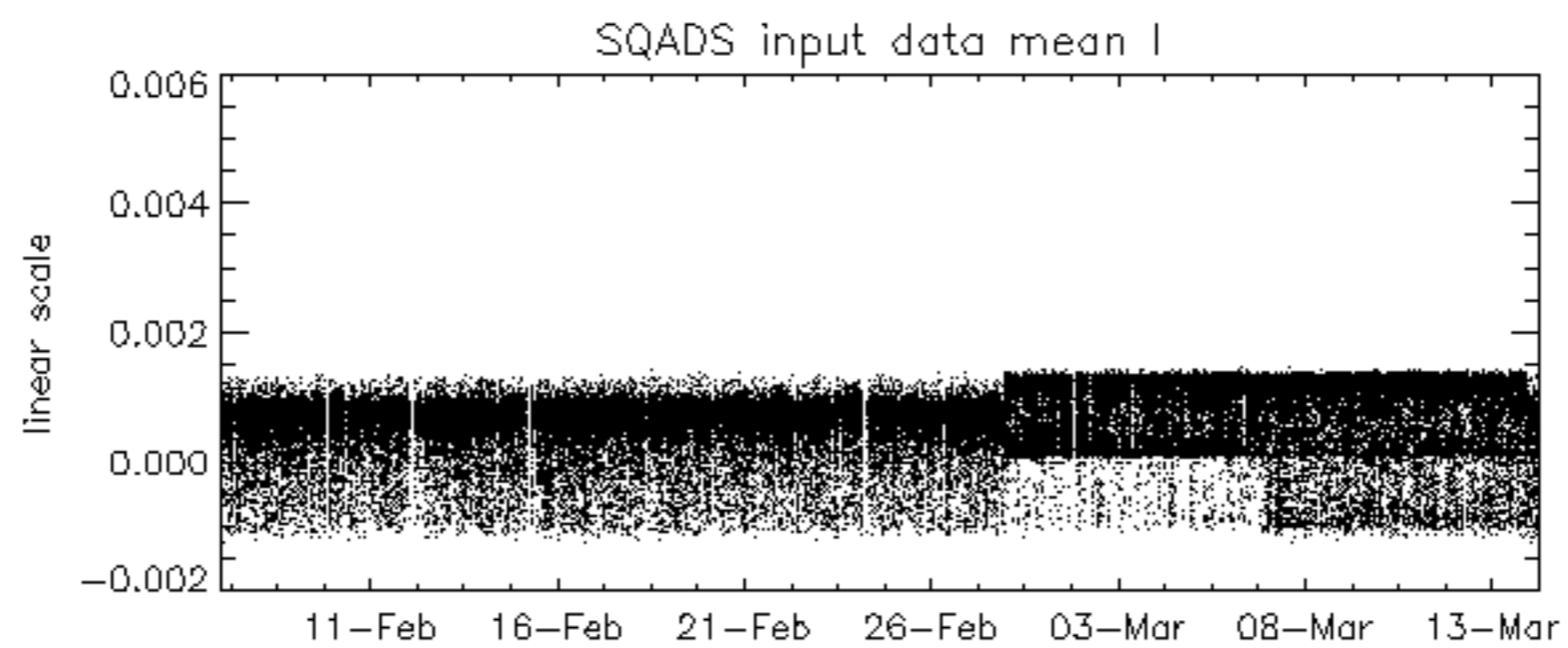
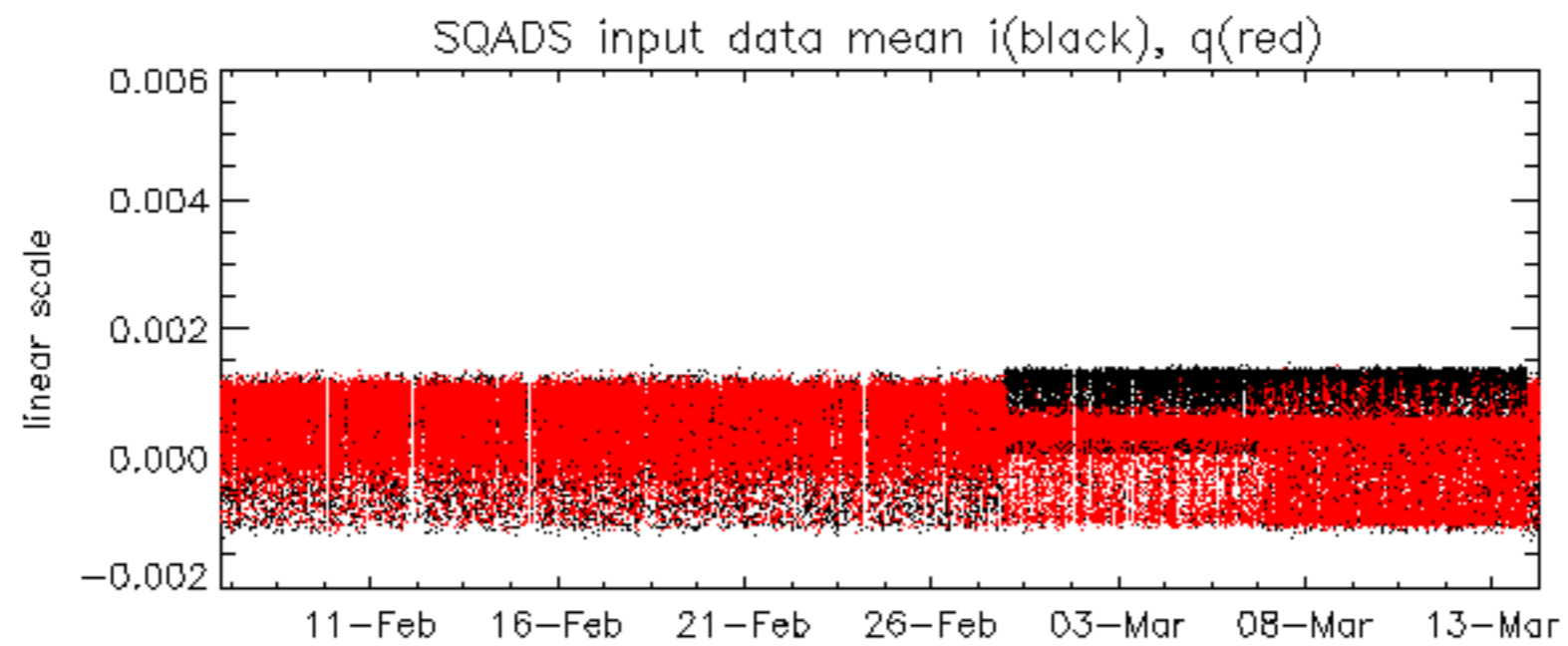


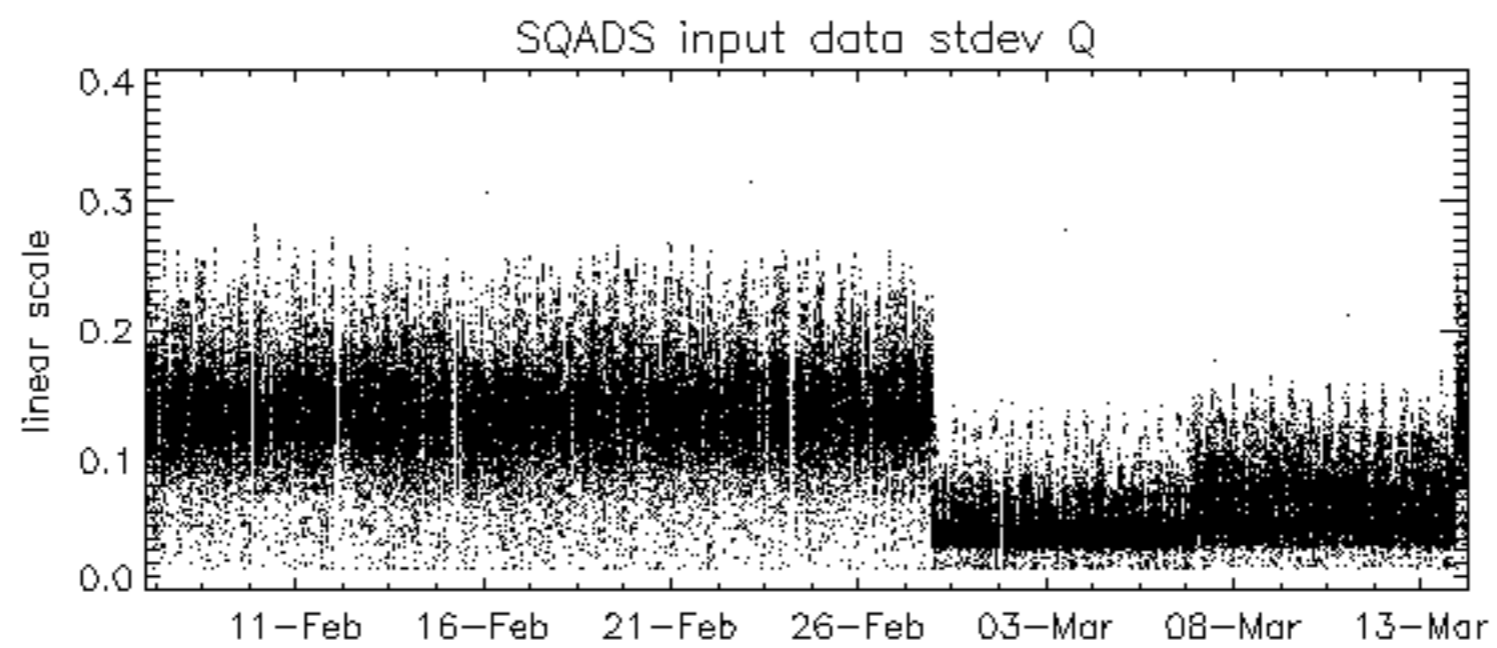
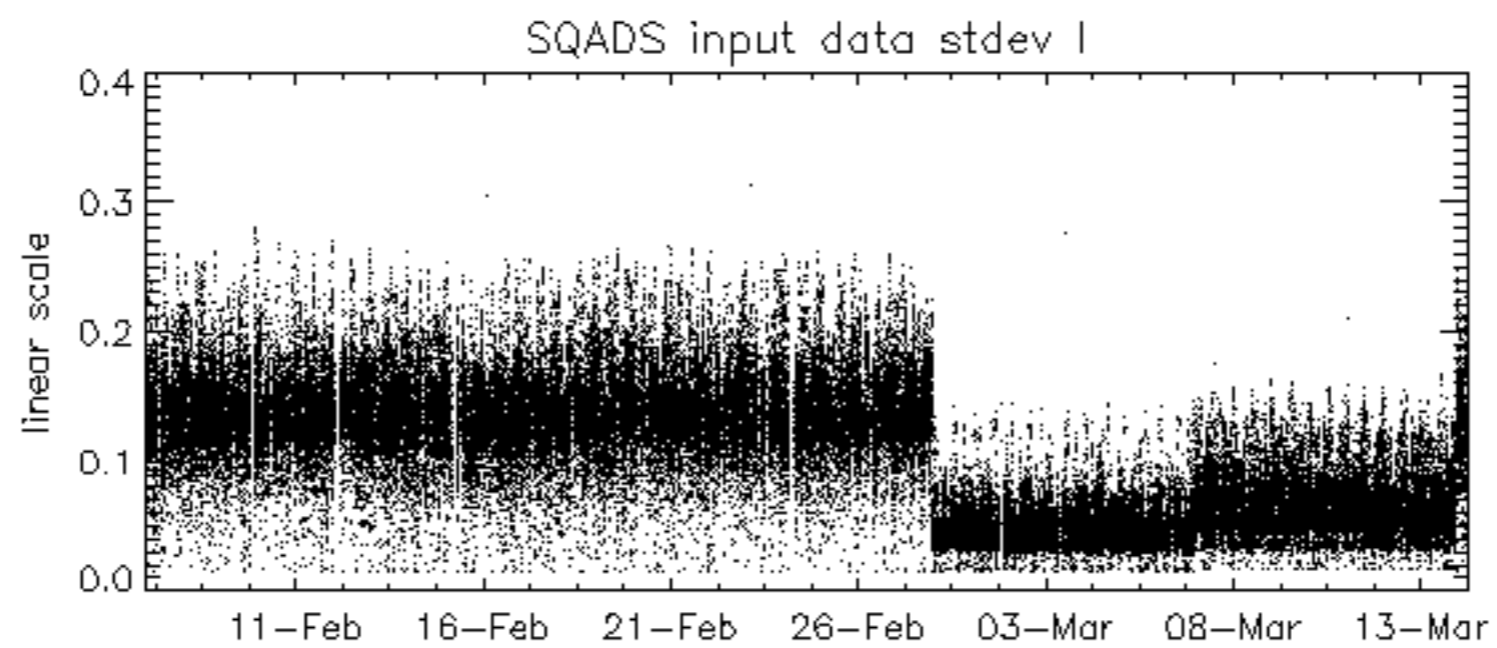
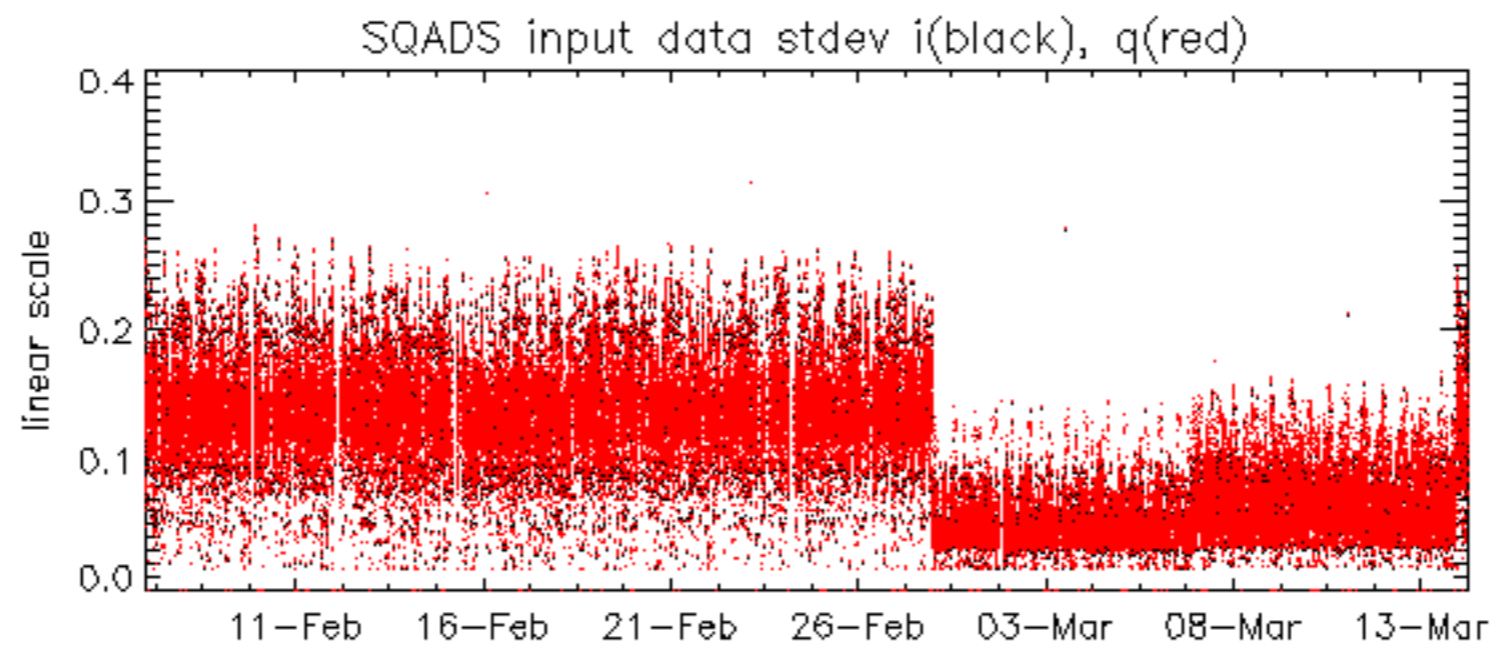


























Summary of analysis for the last 3 days 2007031[234]

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_GM1_1PNPDK20070313_145235_000003622056_00211_26317_5845.N1	0	6
ASA_WSM_1PNPDE20070312_033052_000001472056_00190_26296_0216.N1	0	1
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDE20070313_140917_000000852056_00211_26317_0134.N1	0	15
ASA_WSM_1PNPDE20070313_145059_000000852056_00211_26317_0127.N1	0	31
ASA_WSM_1PNPDE20070313_190809_000001652056_00214_26320_0261.N1	0	70
ASA_APM_1PNPDE20070313_154612_000000412056_00212_26318_0150.N1	12	0











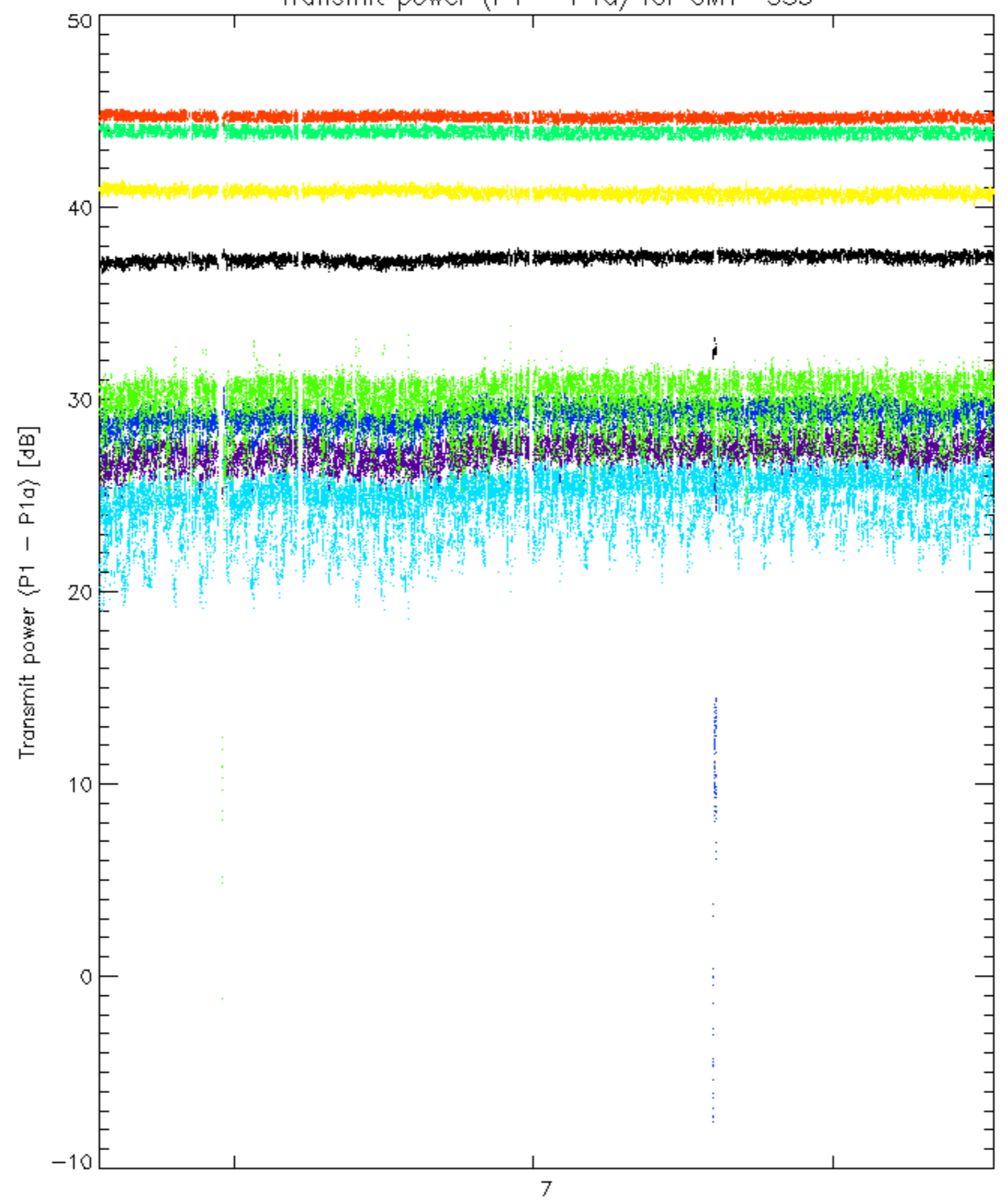




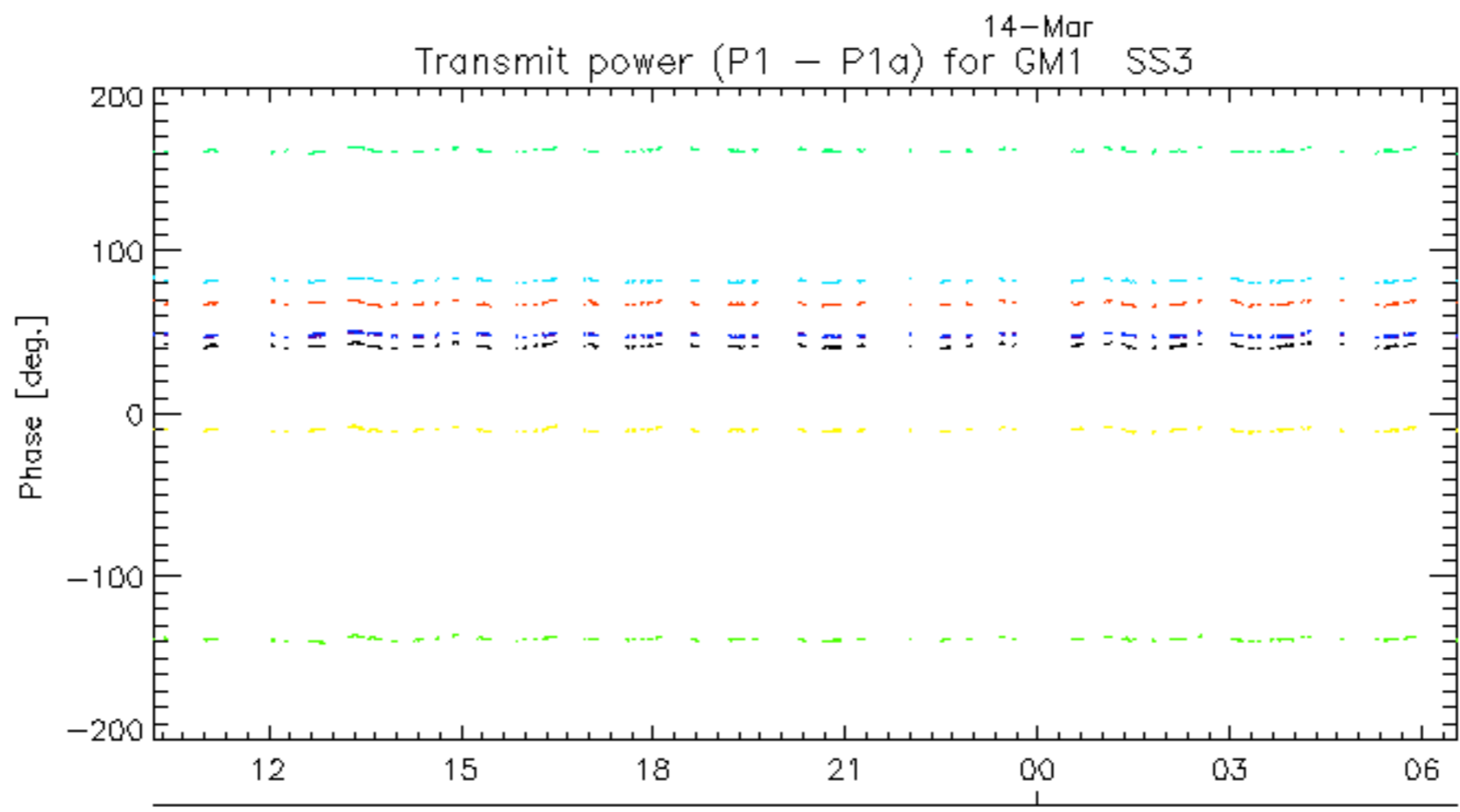
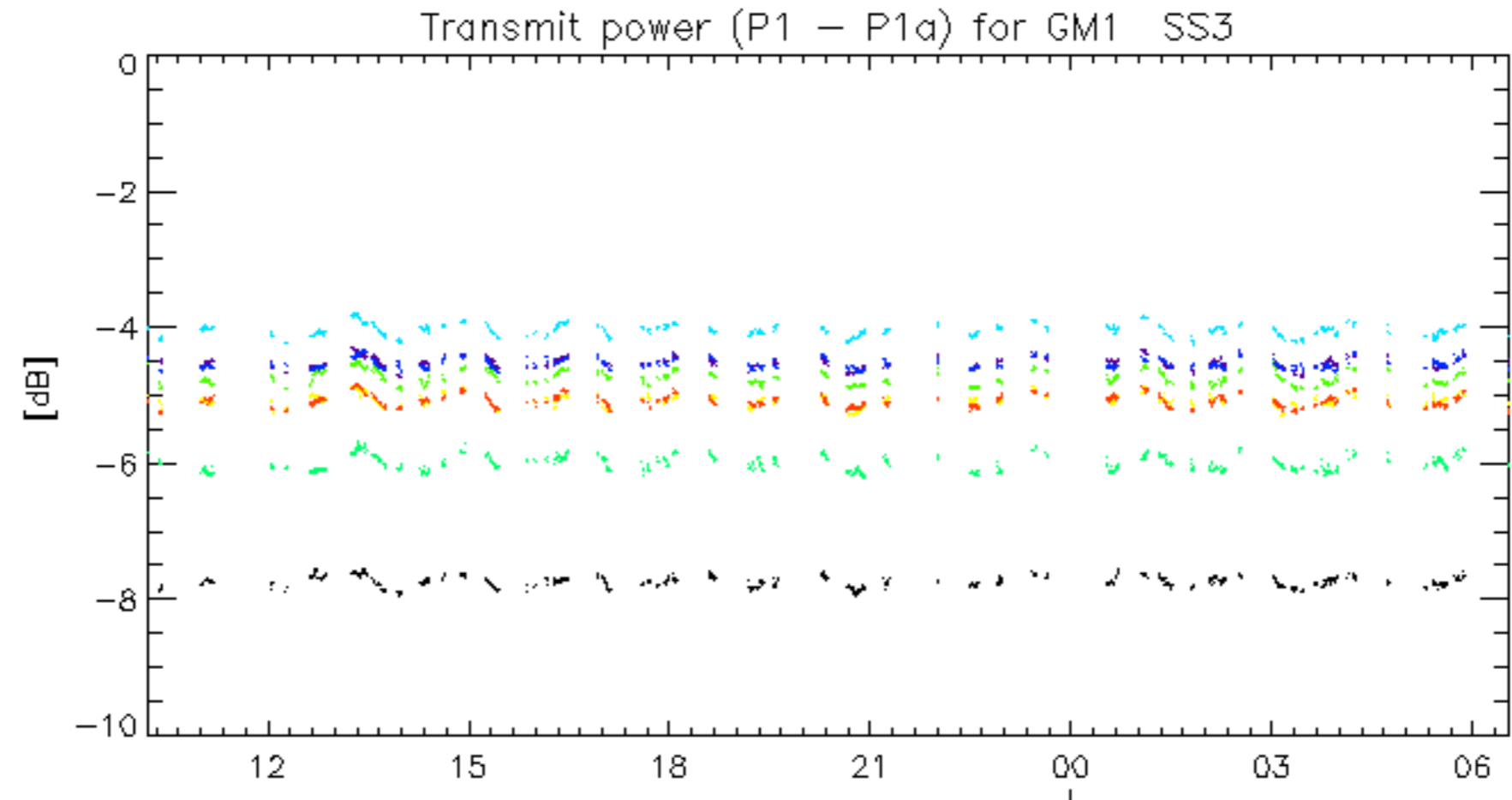




Transmit power (P1 - P1a) for GM1 SS3



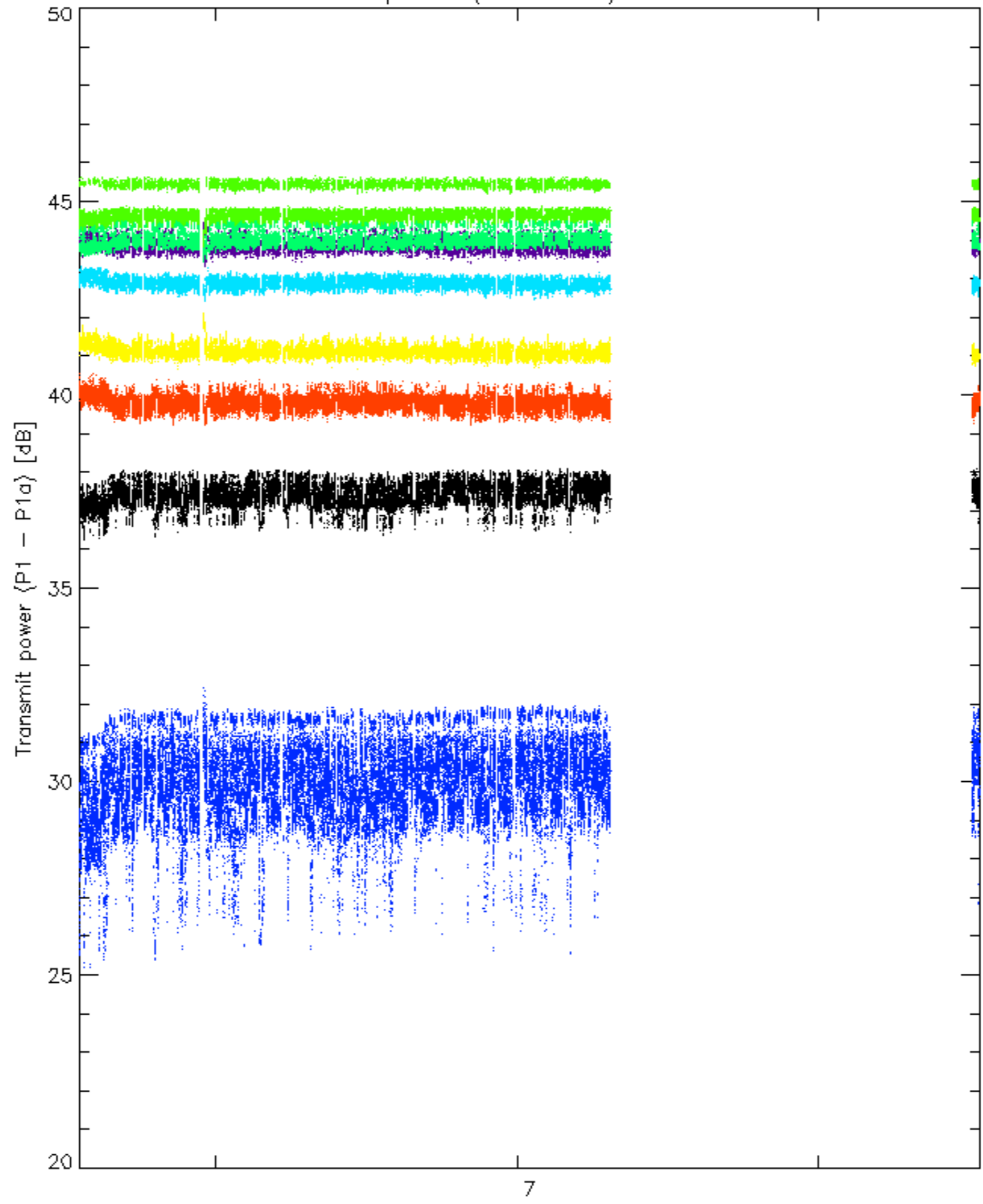
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



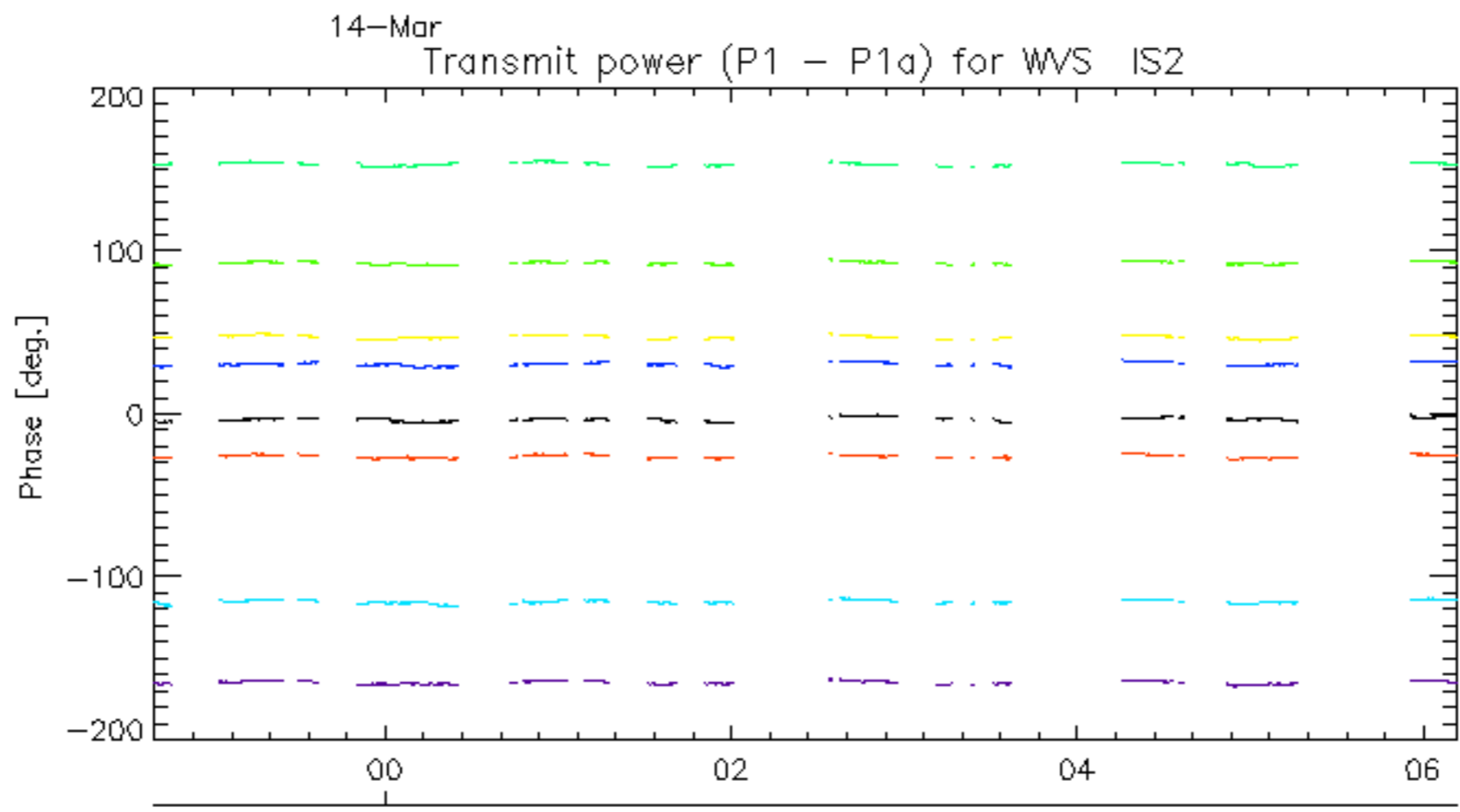
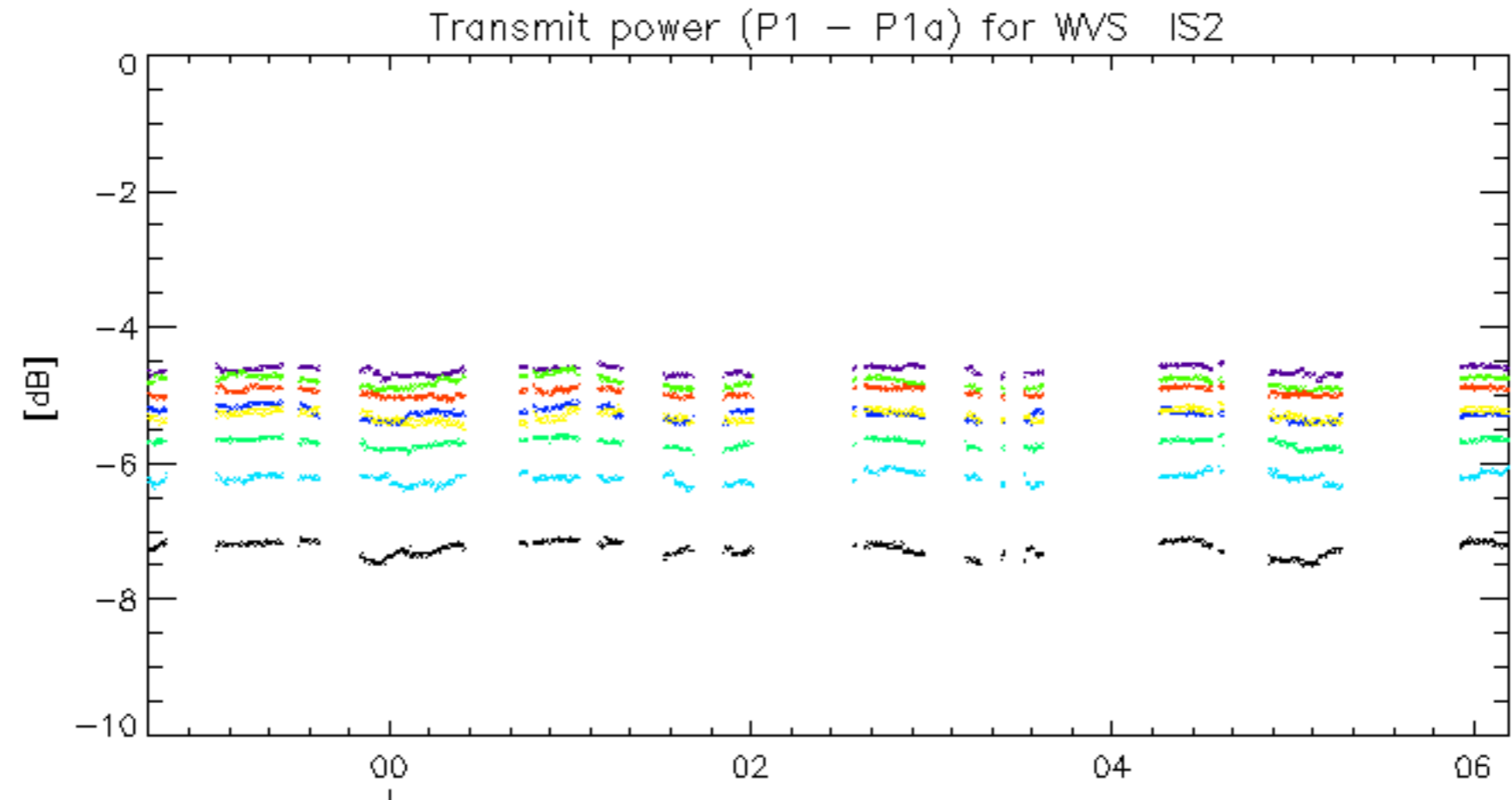
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



Transmit power (P1 - P1a) for WVS IS2

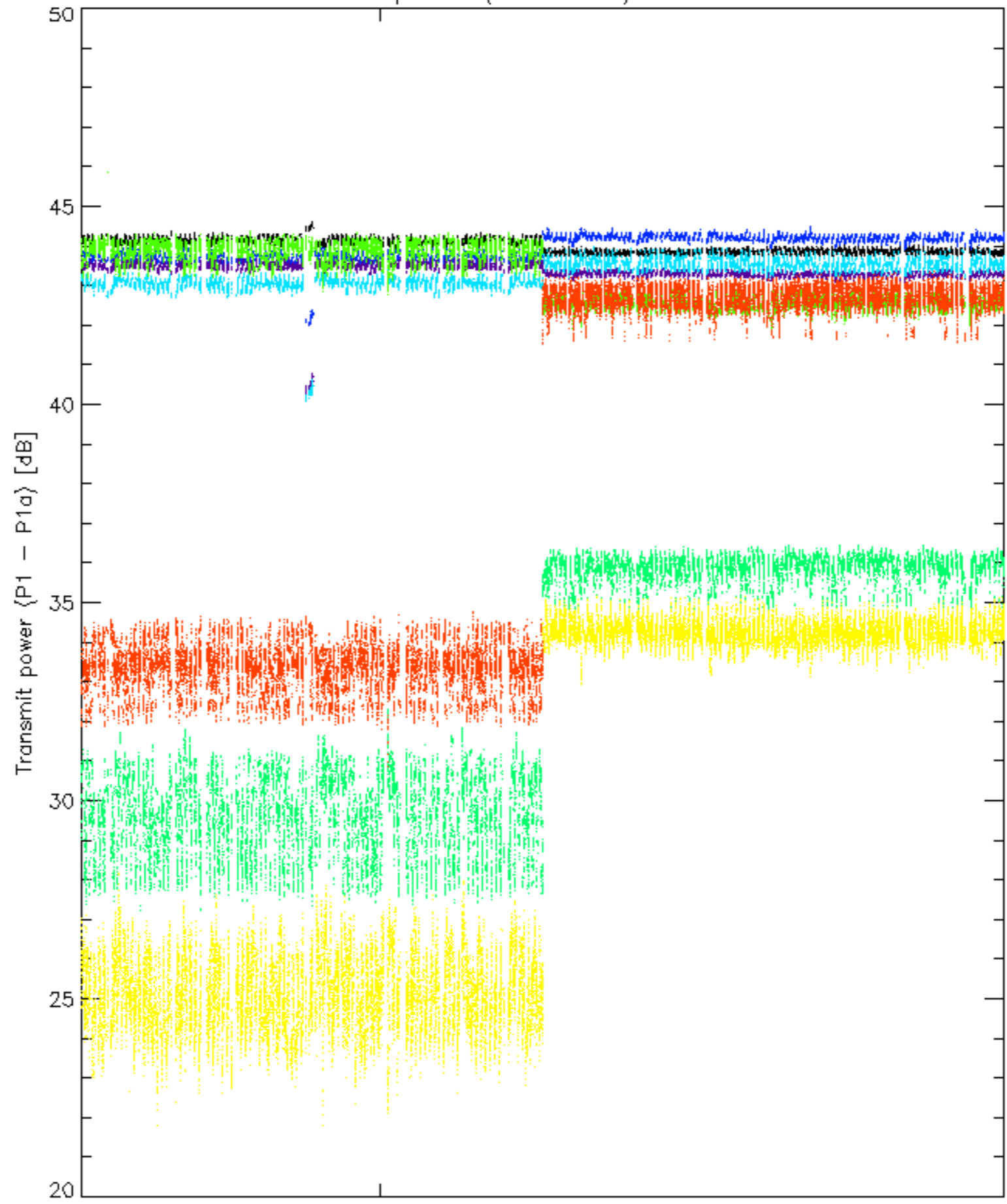


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

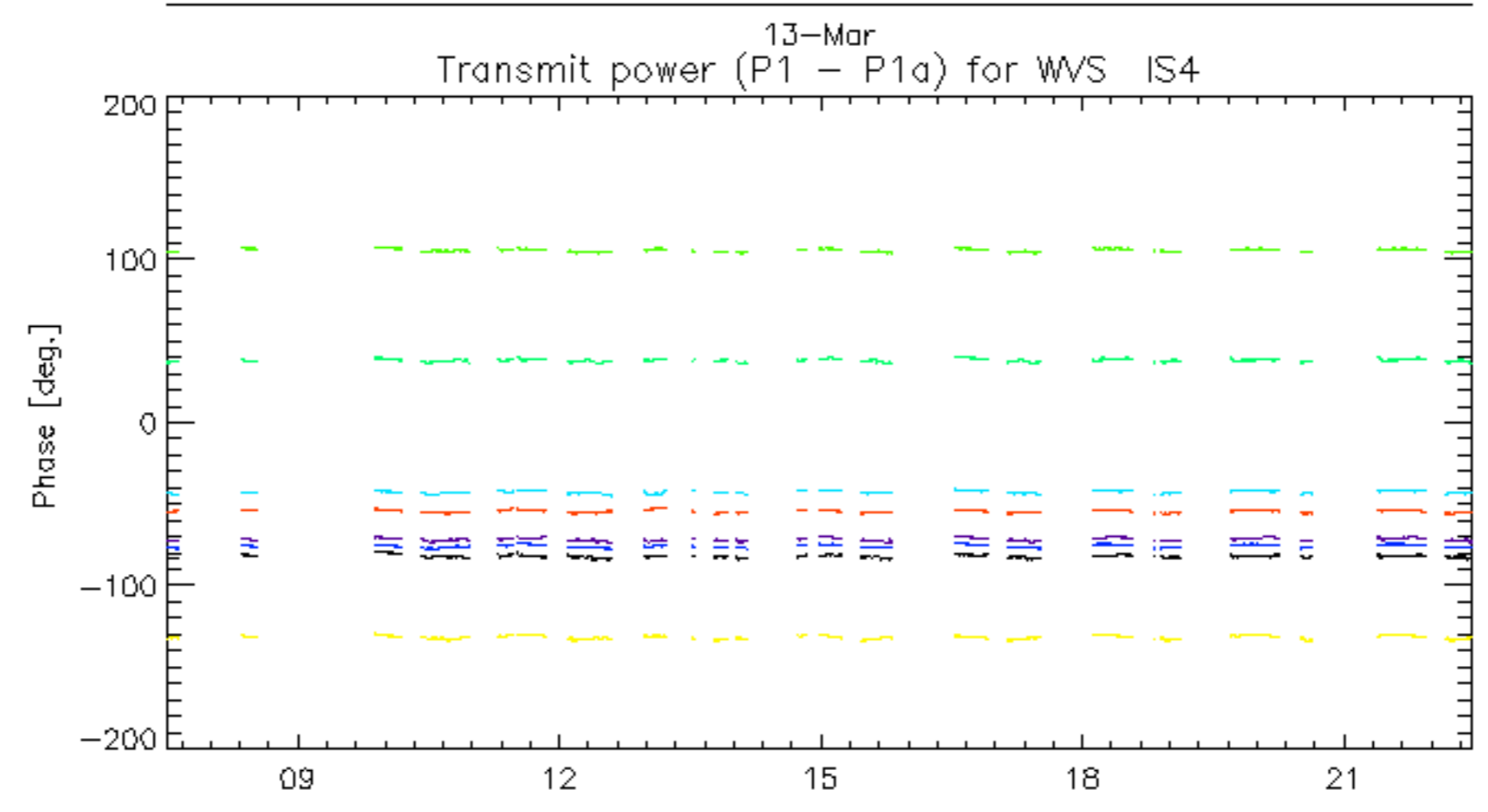
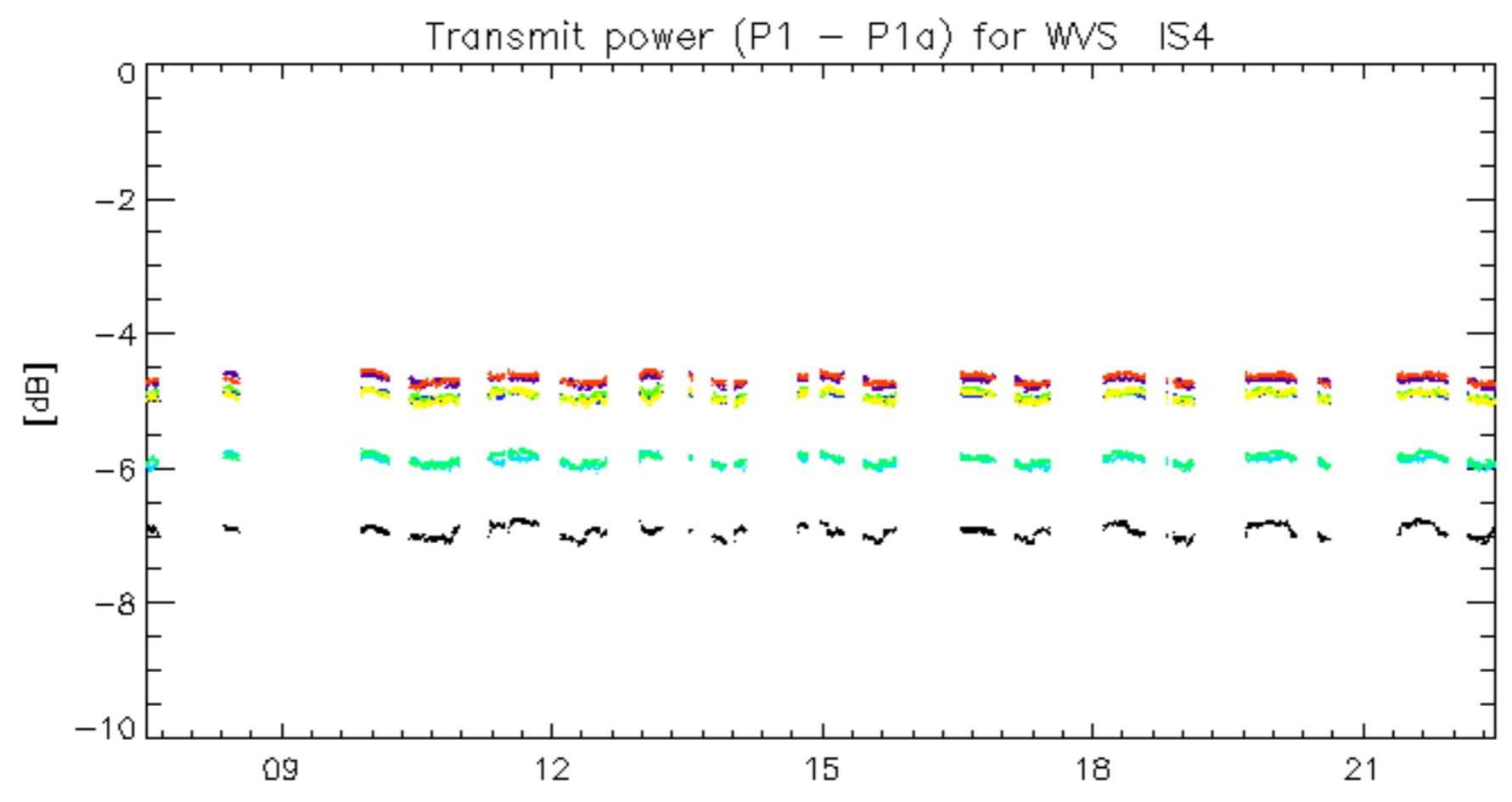


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Transmit power (P1 - P1a) for WVS IS4



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



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

No unavailabilities during the reported period.