

PRELIMINARY REPORT OF 070313

last update on Tue Mar 13 18:00:26 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 2007-03-12 00:00:00 to 2007-03-13 18:00:26

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	40	71	5	2	36
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	40	71	5	2	36
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	40	71	5	2	36
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	40	71	5	2	36

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	51	56	35	11	59
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	51	56	35	11	59
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	51	56	35	11	59
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	51	56	35	11	59

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	20070312 054045
H	20070313 050908

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

☒
☒

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	-10.557517	0.279745	1.616658
7	P1a	-10.183067	0.201639	-0.660493
11	P1a	-10.844659	0.110436	-0.509758
15	P1a	-12.142613	1.700763	-4.699832
19	P1a	-14.707256	1.245189	4.128549
22	P1a	-18.496838	8.247972	10.066863
26	P1a	-15.678532	0.476524	-1.563813
30	P1a	-21.088346	7.918212	-10.363487

P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.371257	0.079953	0.439642
7	P1	-2.640322	0.050821	-0.423623
11	P1	-3.379165	0.151371	-1.314254
15	P1	-5.066174	1.534127	-4.512901
19	P1	-3.334746	0.101161	1.122332
22	P1	-5.473556	0.162231	-1.380320
26	P1	-5.104881	0.798780	3.292996
30	P1	-5.492432	0.062395	-0.606292

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.089720	0.082867	-0.213961
7	P2	-21.775036	0.131130	0.850705
11	P2	-10.718801	0.137261	1.016250
15	P2	-5.089486	0.076211	0.150458

19	P2	-7.208131	0.076270	0.161510
22	P2	-8.363838	0.074981	-0.180834
26	P2	-24.107250	0.118272	0.858126
30	P2	-21.635626	0.063242	0.049862

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.223365	0.007562	0.040061
7	P3	-8.223365	0.007562	0.040061
11	P3	-8.223365	0.007562	0.040061
15	P3	-8.223365	0.007562	0.040061
19	P3	-8.223365	0.007562	0.040061
22	P3	-8.223365	0.007562	0.040061
26	P3	-8.223365	0.007562	0.040061
30	P3	-8.223365	0.007562	0.040061

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	-11.075171	0.049451	-0.001836
7	P1a	-10.062168	0.130608	-0.040158
11	P1a	-10.656677	0.063305	-0.064019
15	P1a	-10.917212	0.137160	-0.130541
19	P1a	-15.709558	0.069400	0.088094
22	P1a	-20.864790	1.176624	-0.146556
26	P1a	-15.310493	0.273017	0.235648
30	P1a	-18.390329	0.342301	-0.135345

P1t Cyclic statistics

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

3	P1	-8.385693	0.038209	-0.058416
7	P1	-2.428766	0.020794	0.014380
11	P1	-2.916062	0.018750	-0.019997
15	P1	-3.835295	0.039312	-0.038184
19	P1	-3.552402	0.011306	0.001829
22	P1	-5.037940	0.023431	-0.024305
26	P1	-5.967118	0.026130	0.050858
30	P1	-5.278343	0.021963	0.019945

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.094334	0.033219	0.015067
7	P2	-21.952477	0.056361	0.067287
11	P2	-10.644217	0.031338	0.052029
15	P2	-4.815585	0.027751	0.005688
19	P2	-6.805999	0.030152	0.021113
22	P2	-8.091734	0.033511	0.085162
26	P2	-24.267914	0.036850	-0.053517
30	P2	-21.739904	0.038506	0.074988

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.045432	0.003787	-0.016550
7	P3	-8.045448	0.003792	-0.016351
11	P3	-8.045581	0.003791	-0.016551
15	P3	-8.045510	0.003810	-0.016759
19	P3	-8.045495	0.003788	-0.016590
22	P3	-8.045514	0.003791	-0.016496
26	P3	-8.045373	0.003788	-0.016473
30	P3	-8.045483	0.003800	-0.016511

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	0.000634919
	stdev	2.58933e-07
MEAN Q	mean	0.000353312
	stdev	2.74415e-07



5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.106615
	stdev	0.00244669
STDEV Q	mean	0.106611
	stdev	0.00250347



5.3 - Gain imbalance I/Q



6 - Telemetry analysis

Summary of analysis for the last 3 days 2007031[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_IMM_1PNPDE20070311_004054_000000622056_00174_26280_8589.N1	1	0
ASA_WSM_1PNPDE20070311_151024_000002872056_00183_26289_9475.N1	0	52
ASA_WSM_1PNPDE20070312_033052_000001472056_00190_26296_0216.N1	0	1
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDK20070311_220425_000001762056_00187_26293_4171.N1	0	10
ASA_WSM_1PNPDK20070311_235015_000001842056_00188_26294_4185.N1	0	4
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)


Acsending

Descending

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler


Acsending

Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX**7.4 - Unbiased Doppler Error for GM1****Evolution of unbiased Doppler error (Real - Expected)**

Acsending

Descending

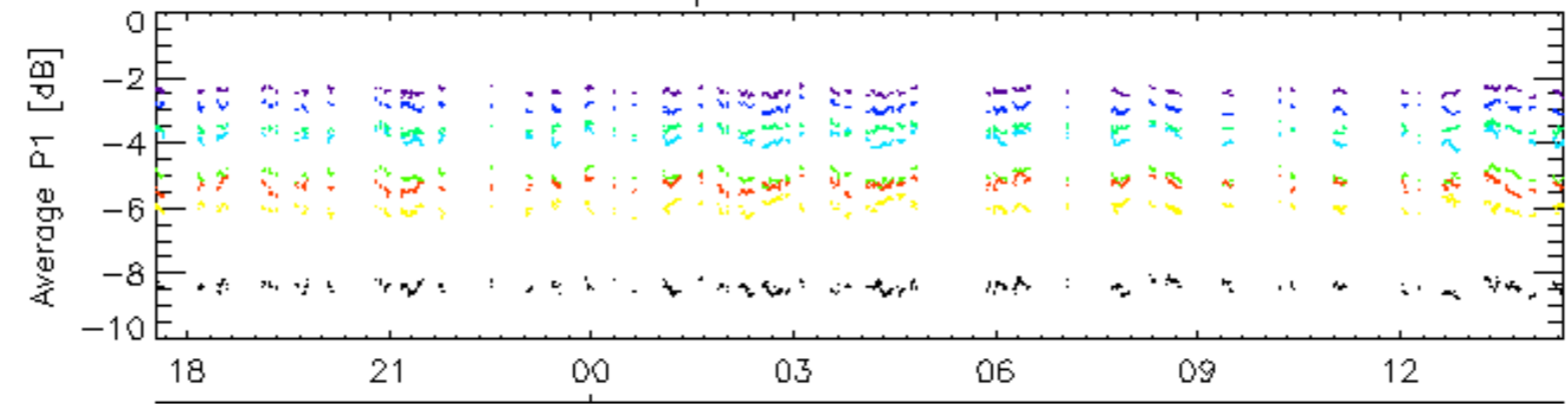
7.5 - Absolute Doppler for GM1**Evolution of Absolute Doppler**

Acsending

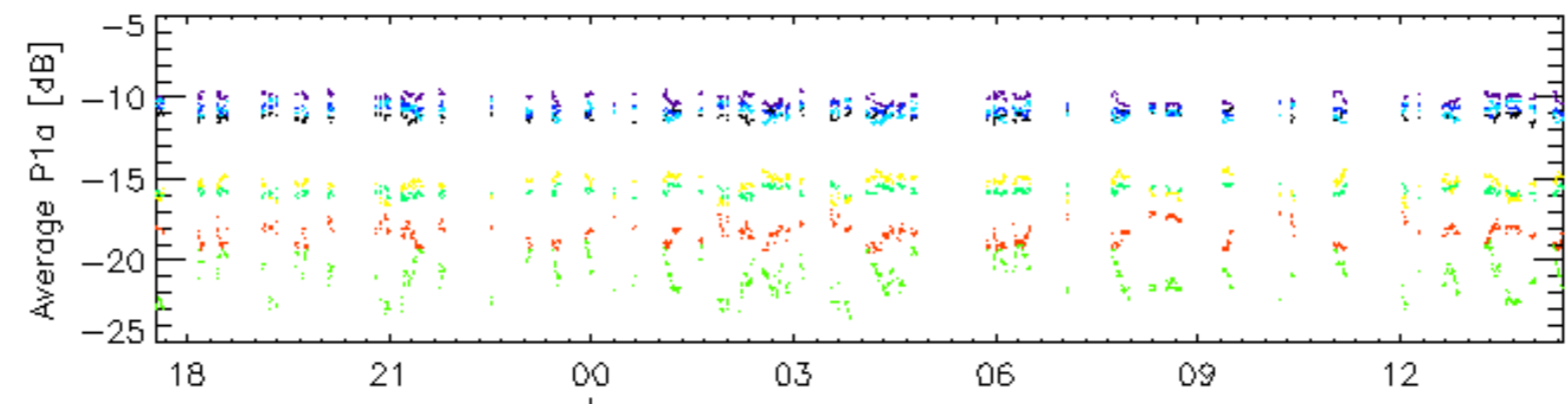
Descending

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

Cal pulses for GM1 SS3

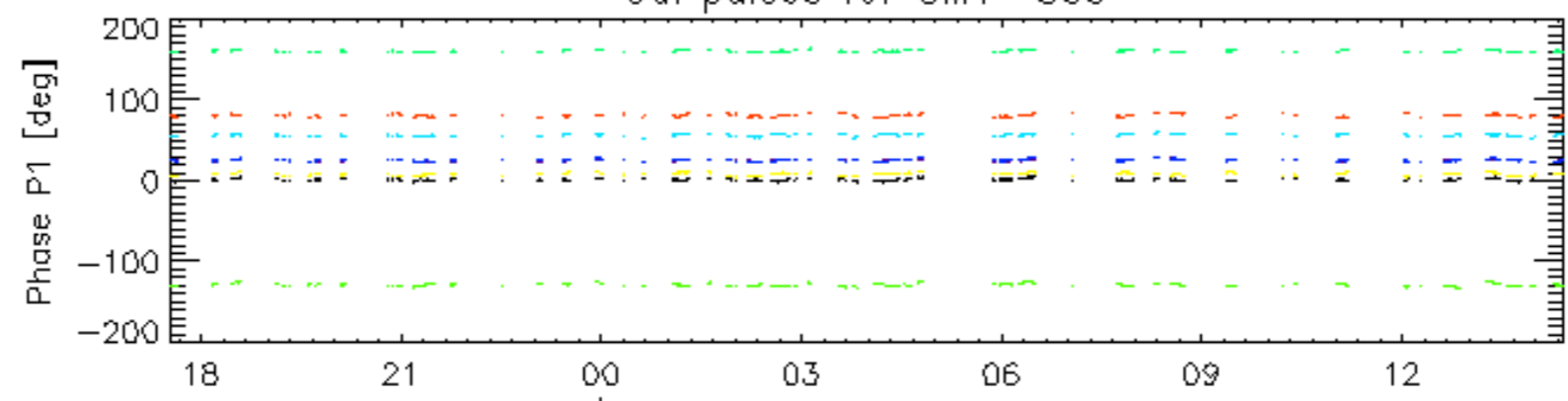


13-Mar

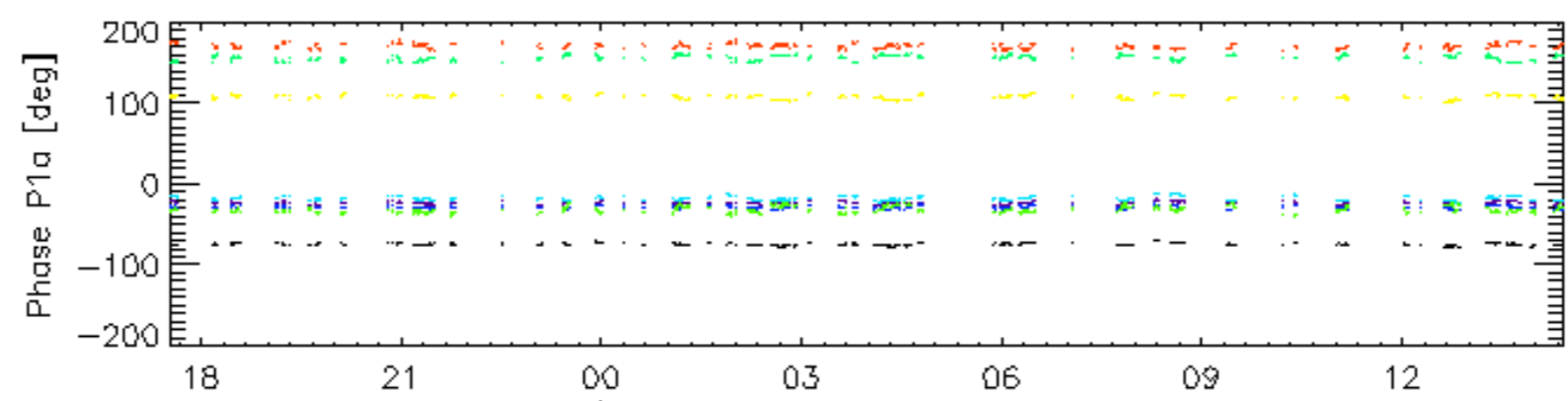


13-Mar

Cal pulses for GM1 SS3

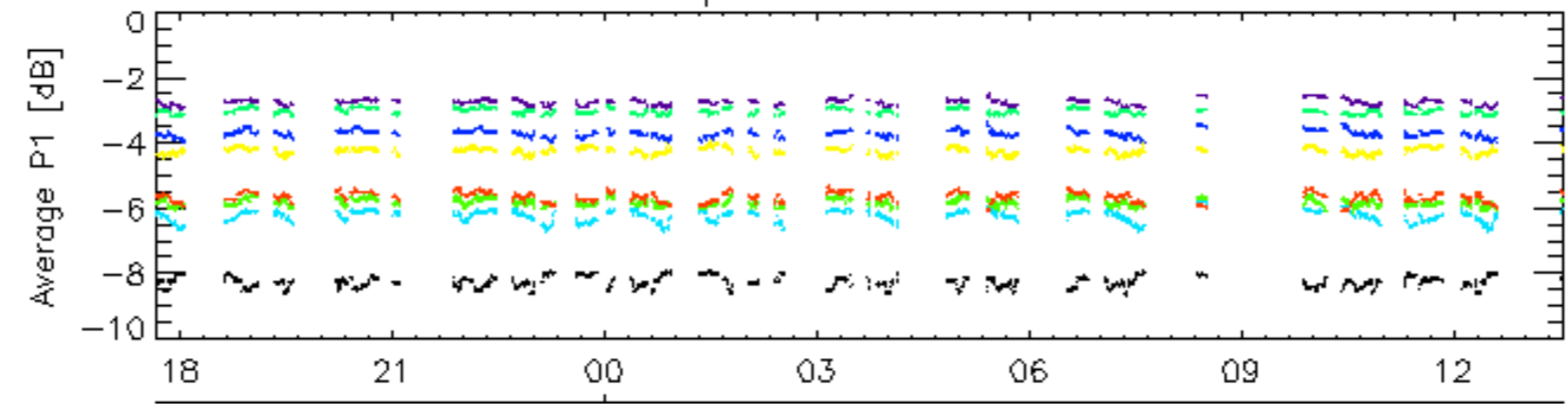


13-Mar

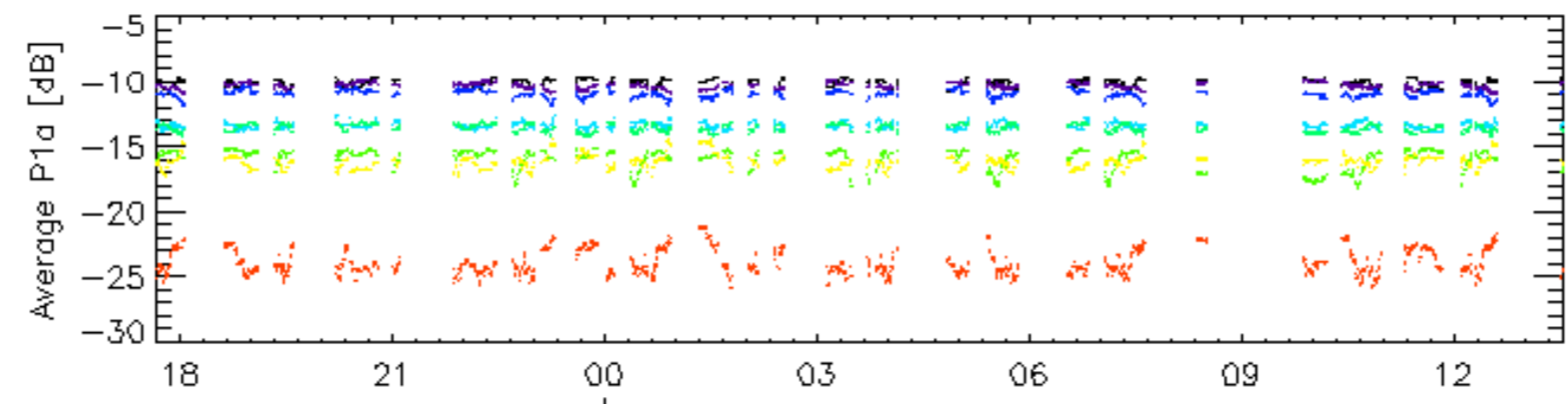


rows: _ 3 _ 7 _ 11 _ 13-Mar _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS4

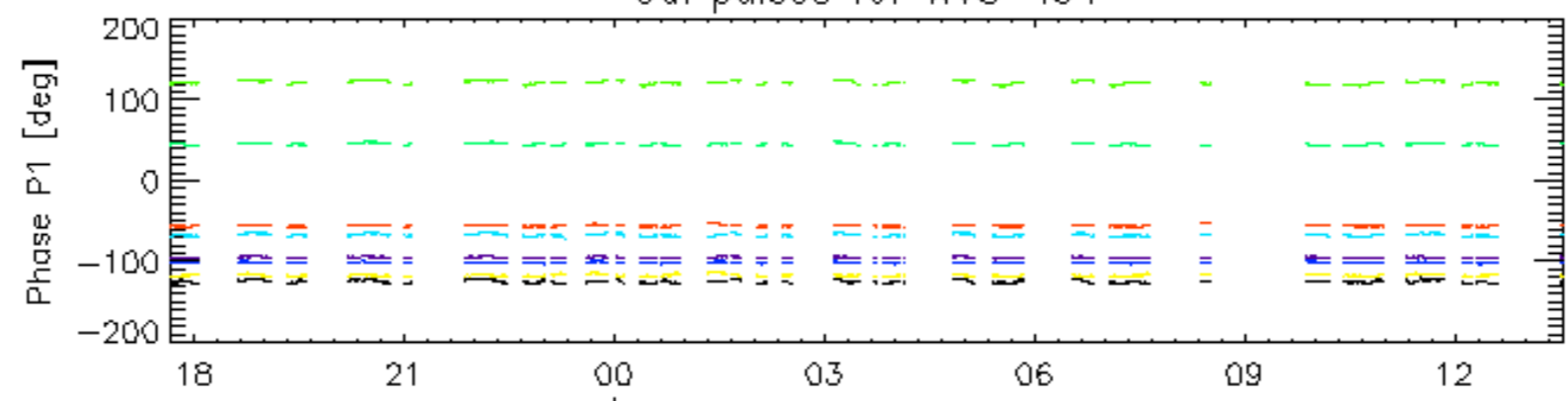


13-Mar

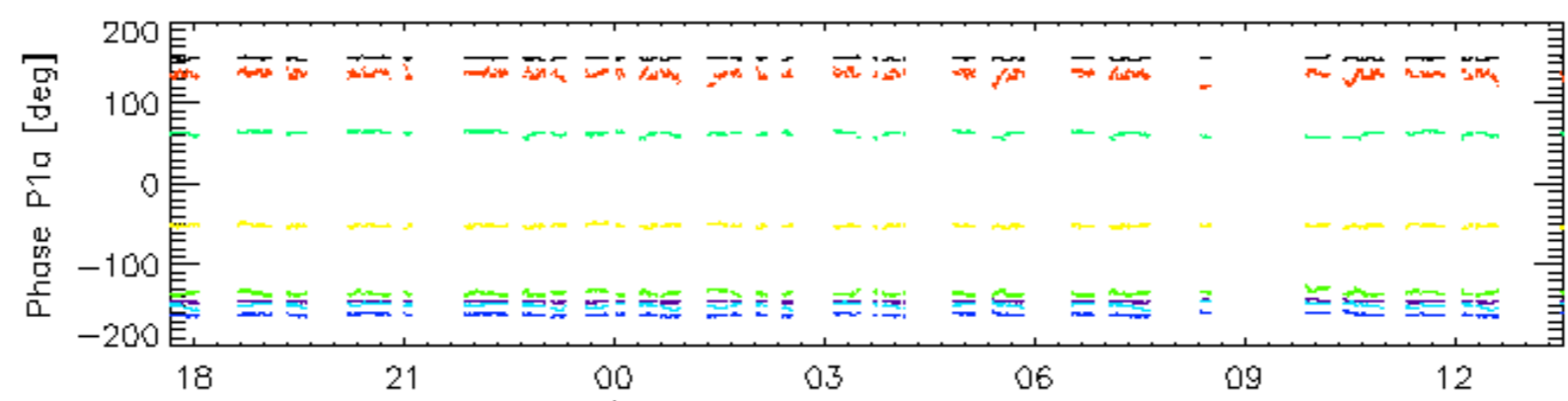


13-Mar

Cal pulses for WVS IS4

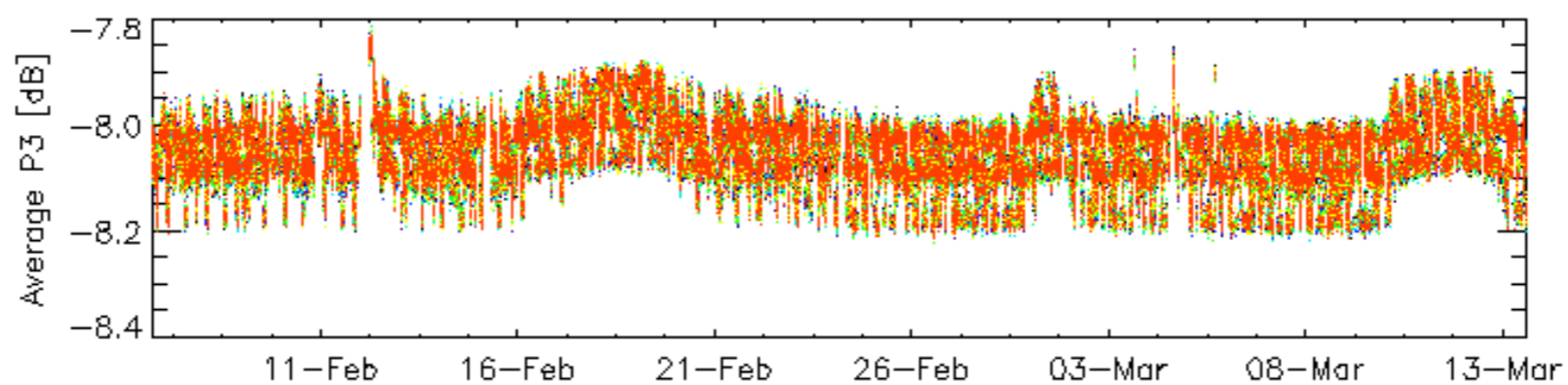
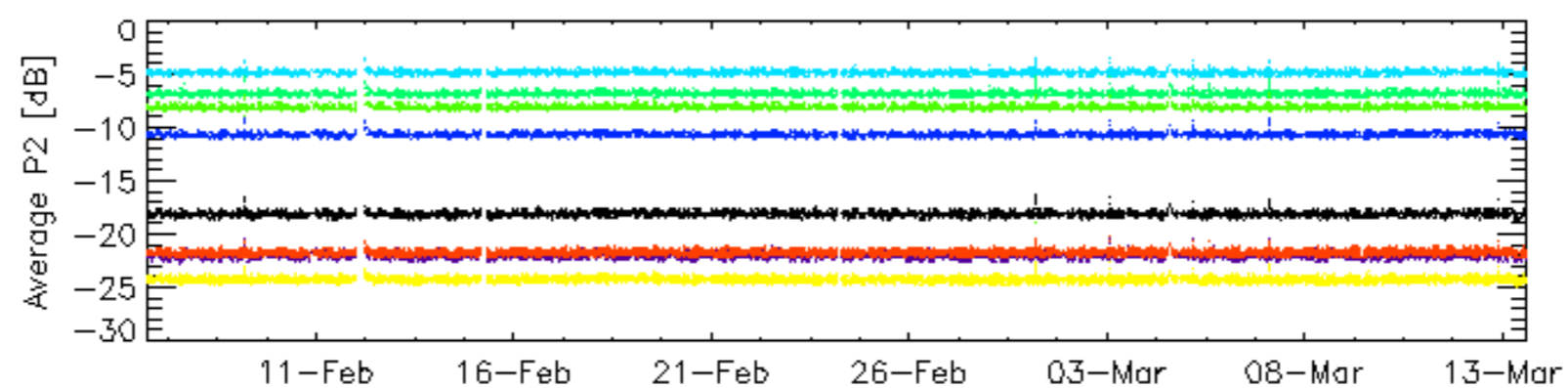
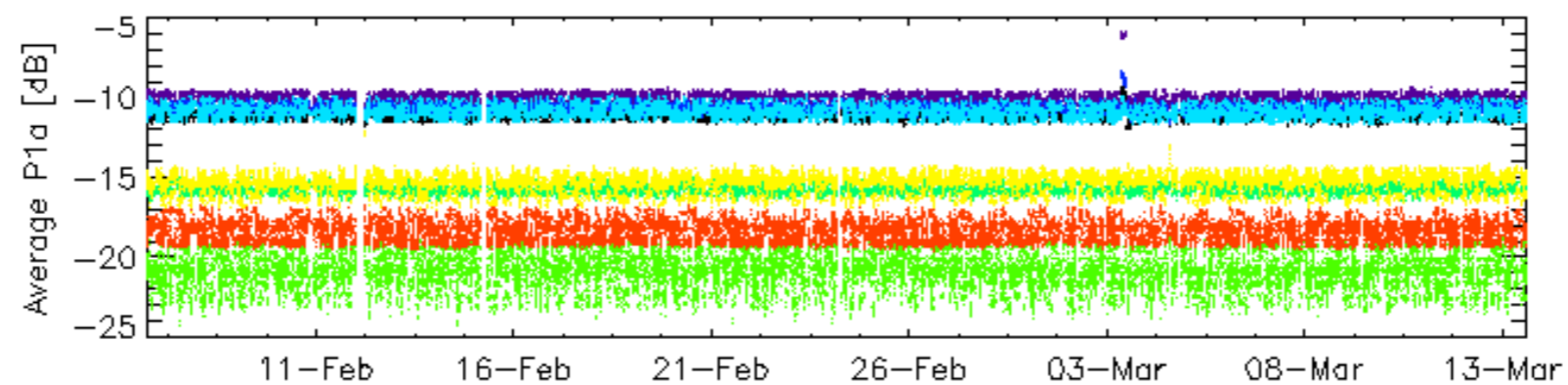
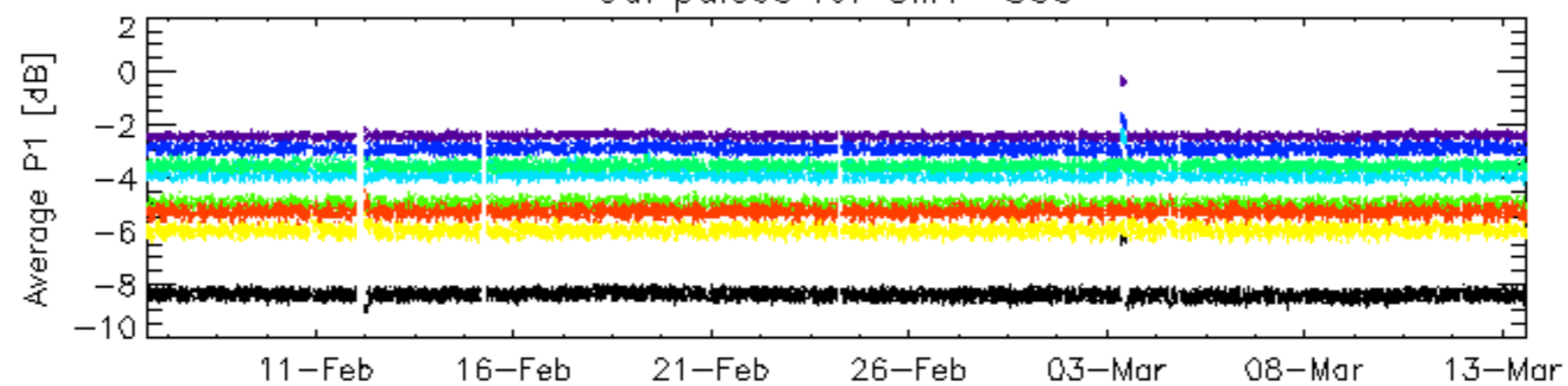


13-Mar



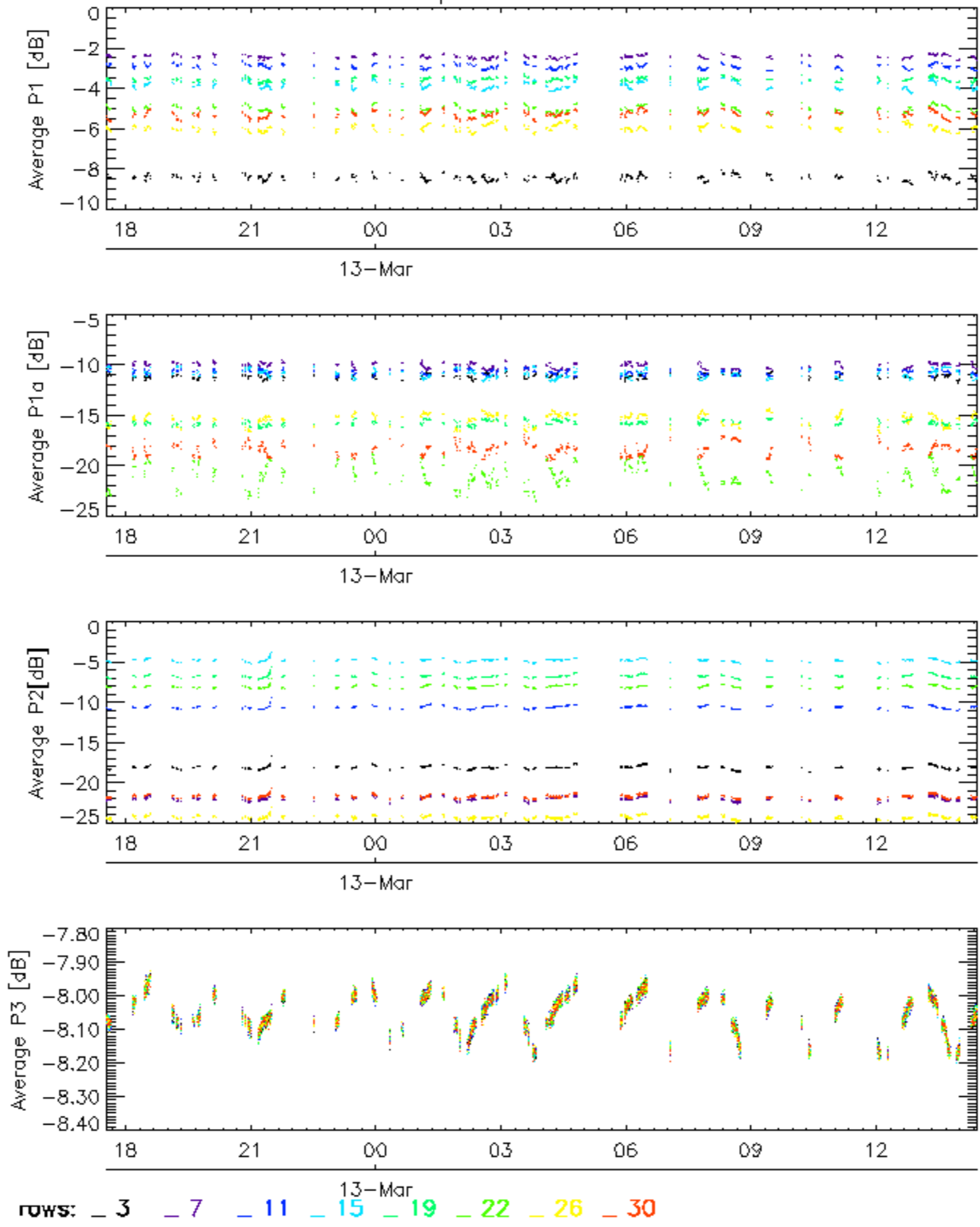
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

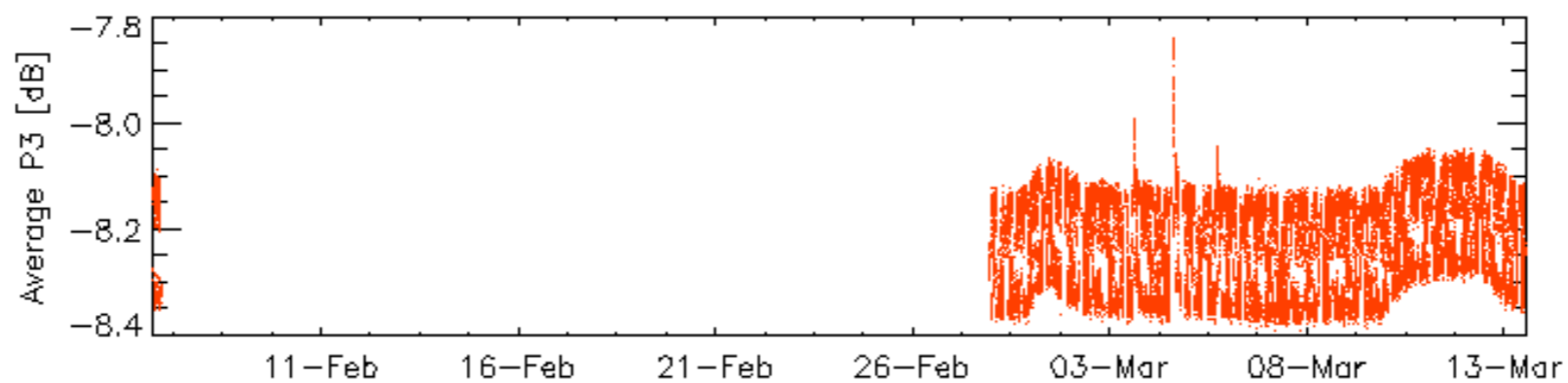
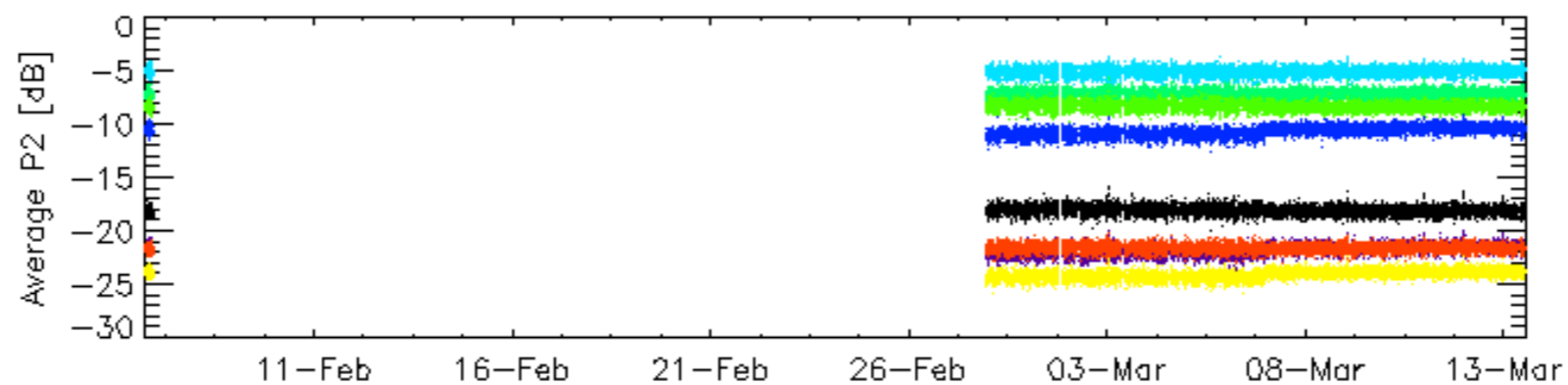
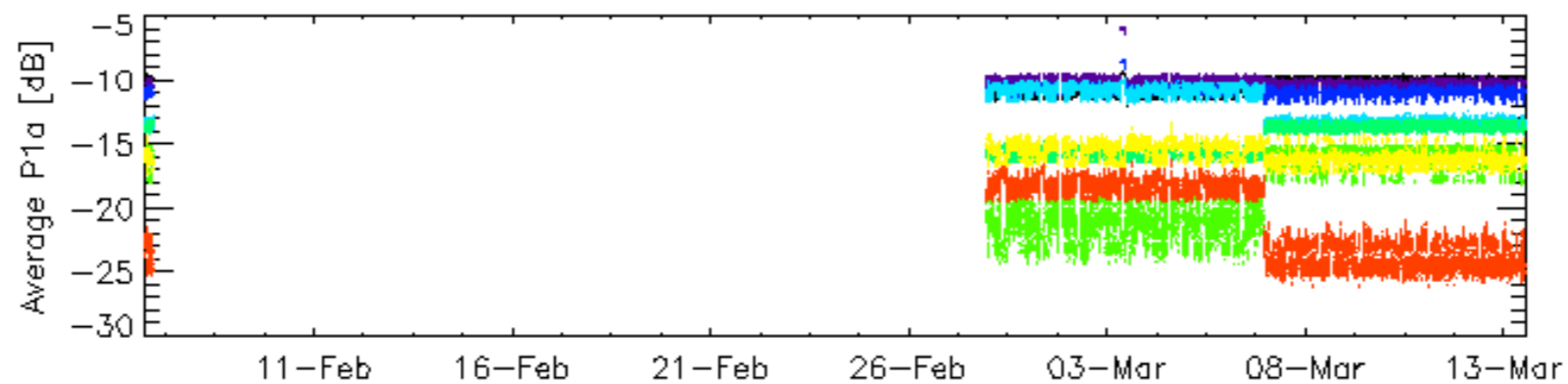
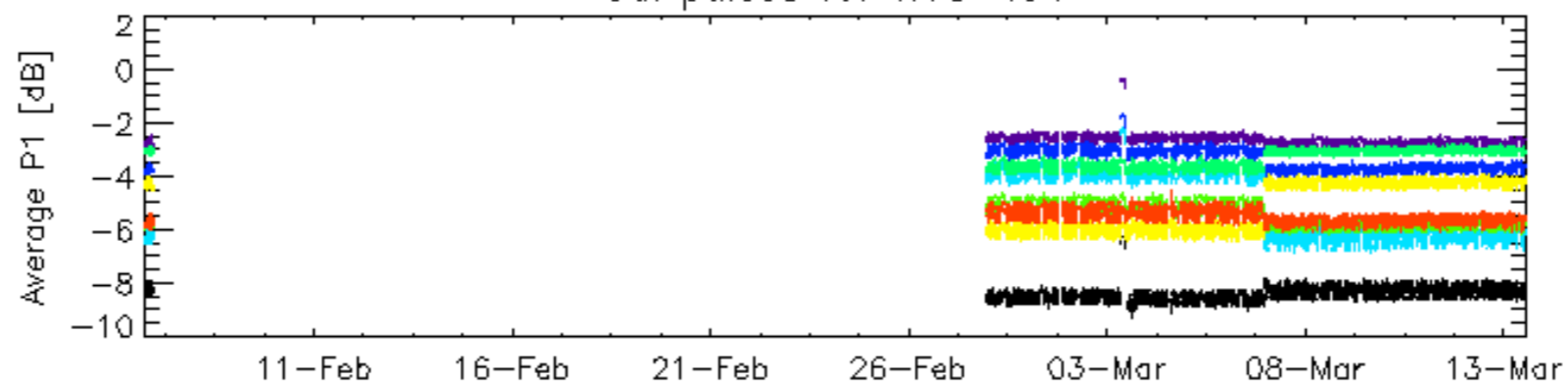


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

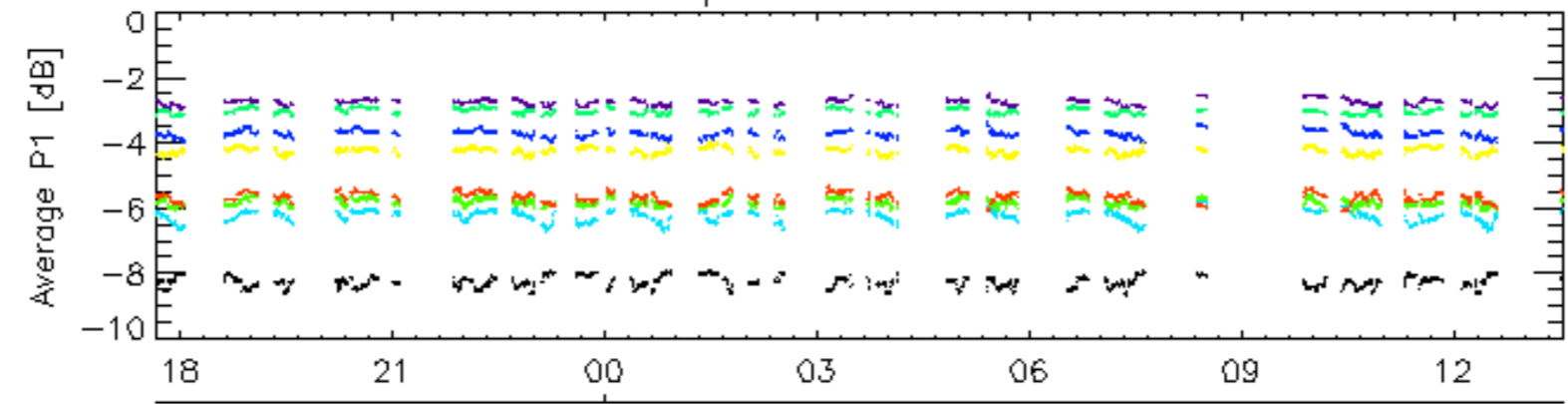


Cal pulses for WVS IS4

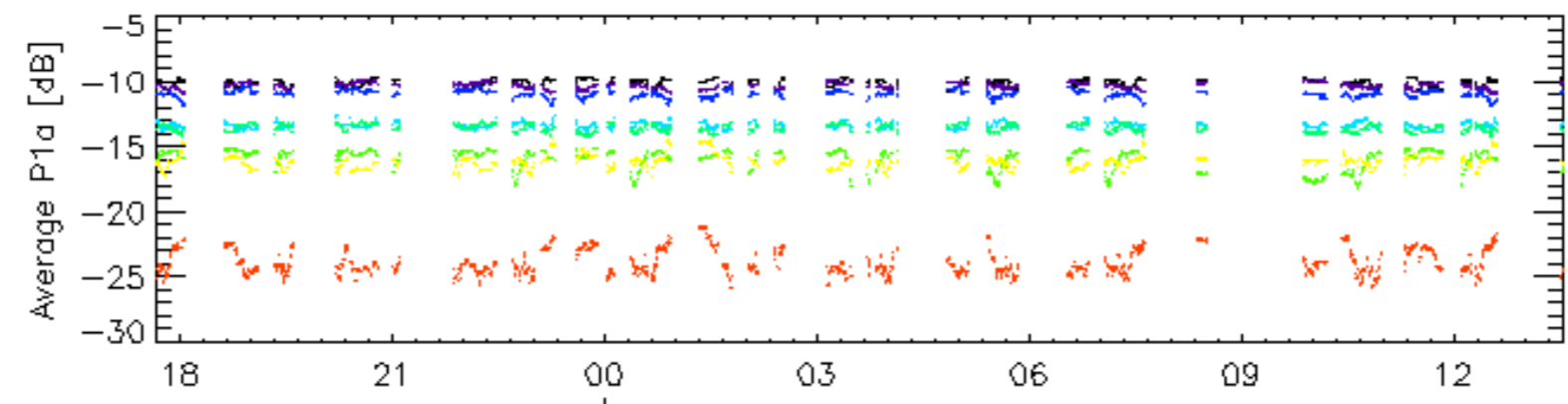


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

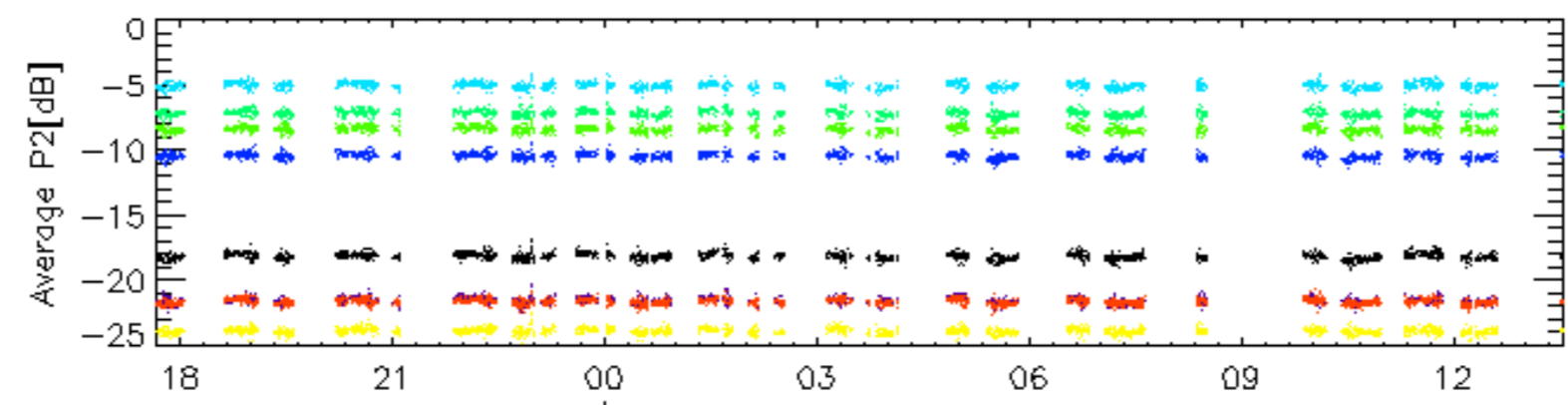
Cal pulses for WVS IS4



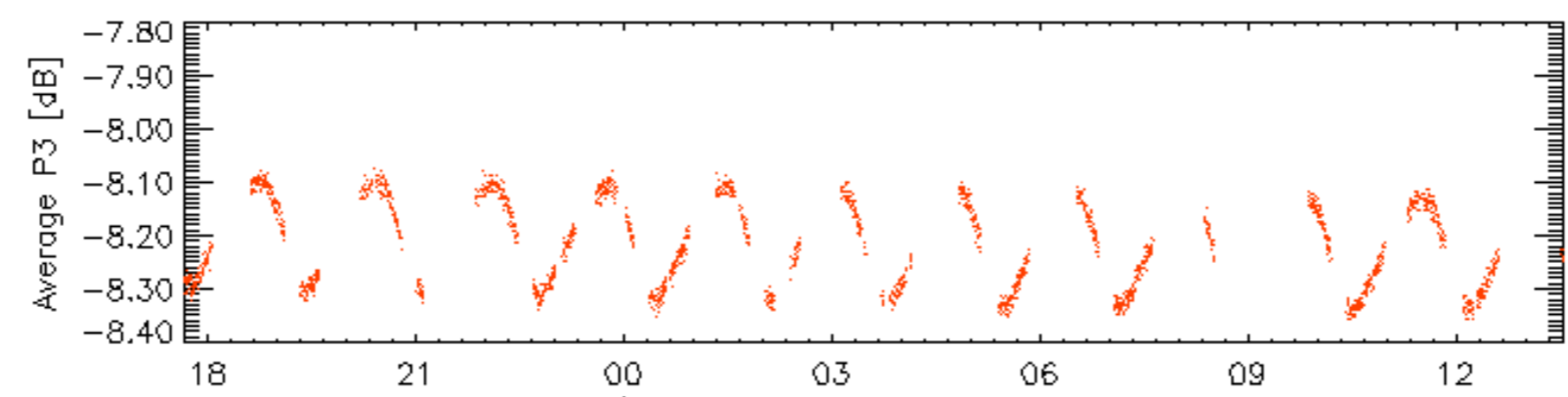
13-Mar



13-Mar



13-Mar

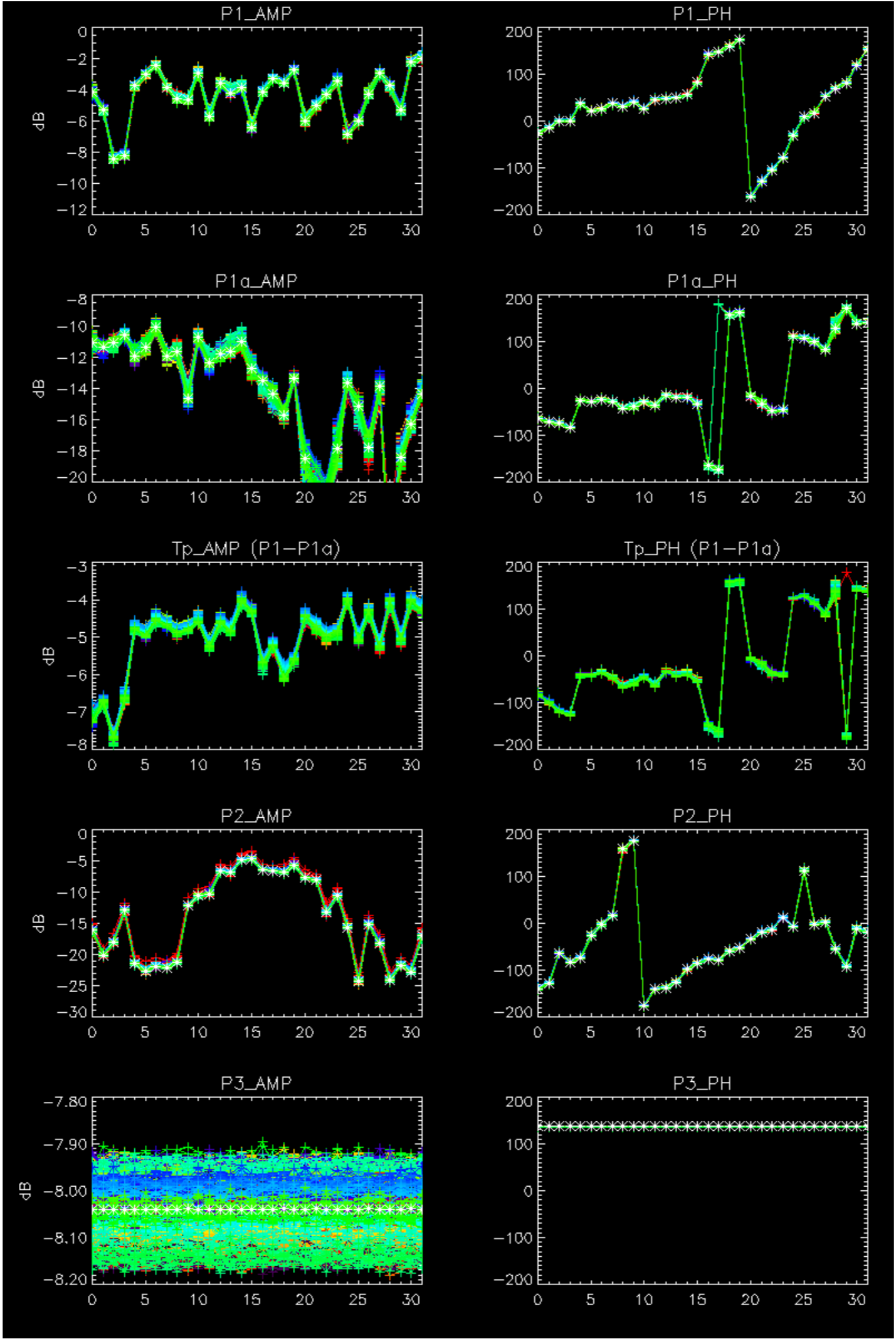


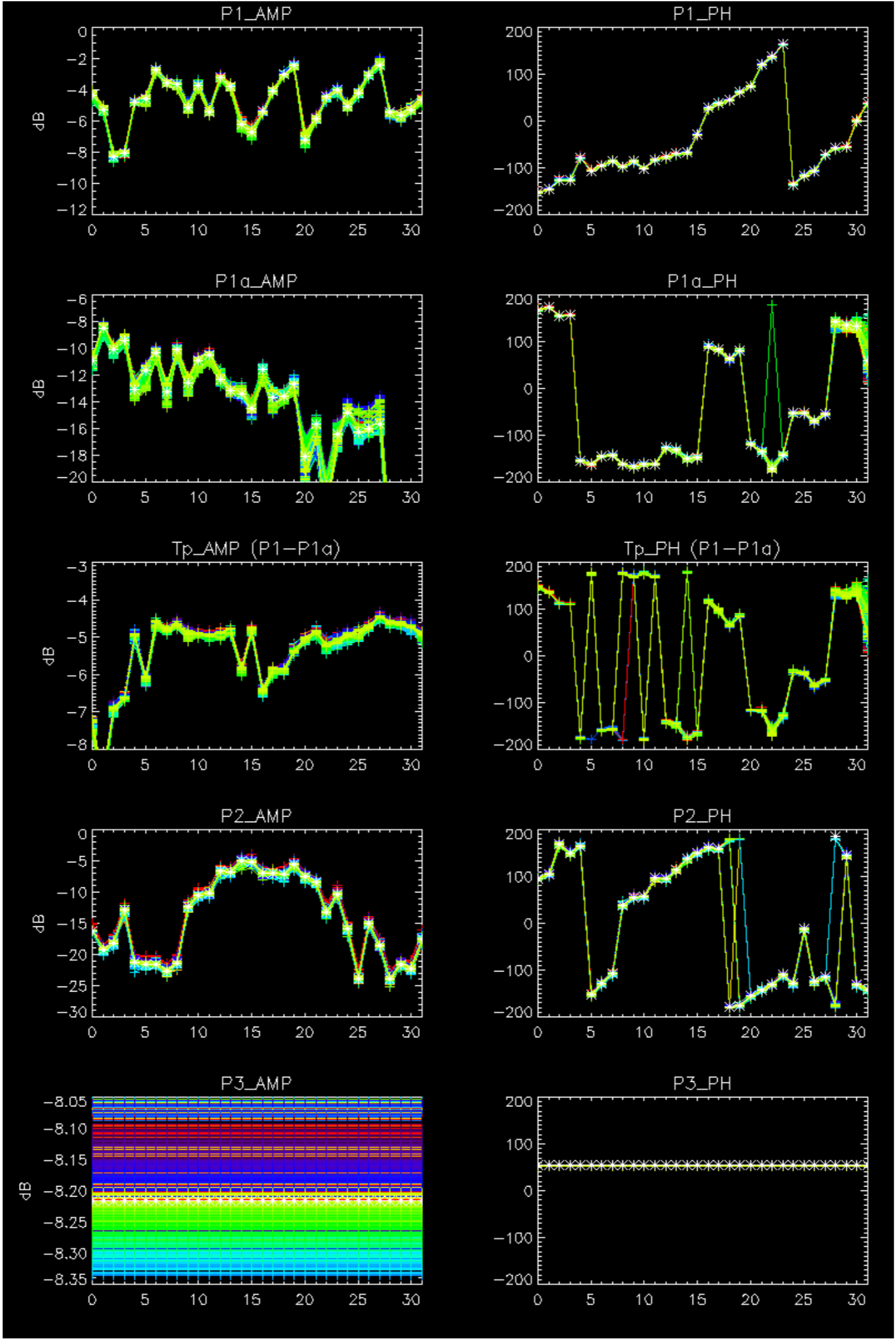
13-Mar

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

No anomalies observed on available browse products

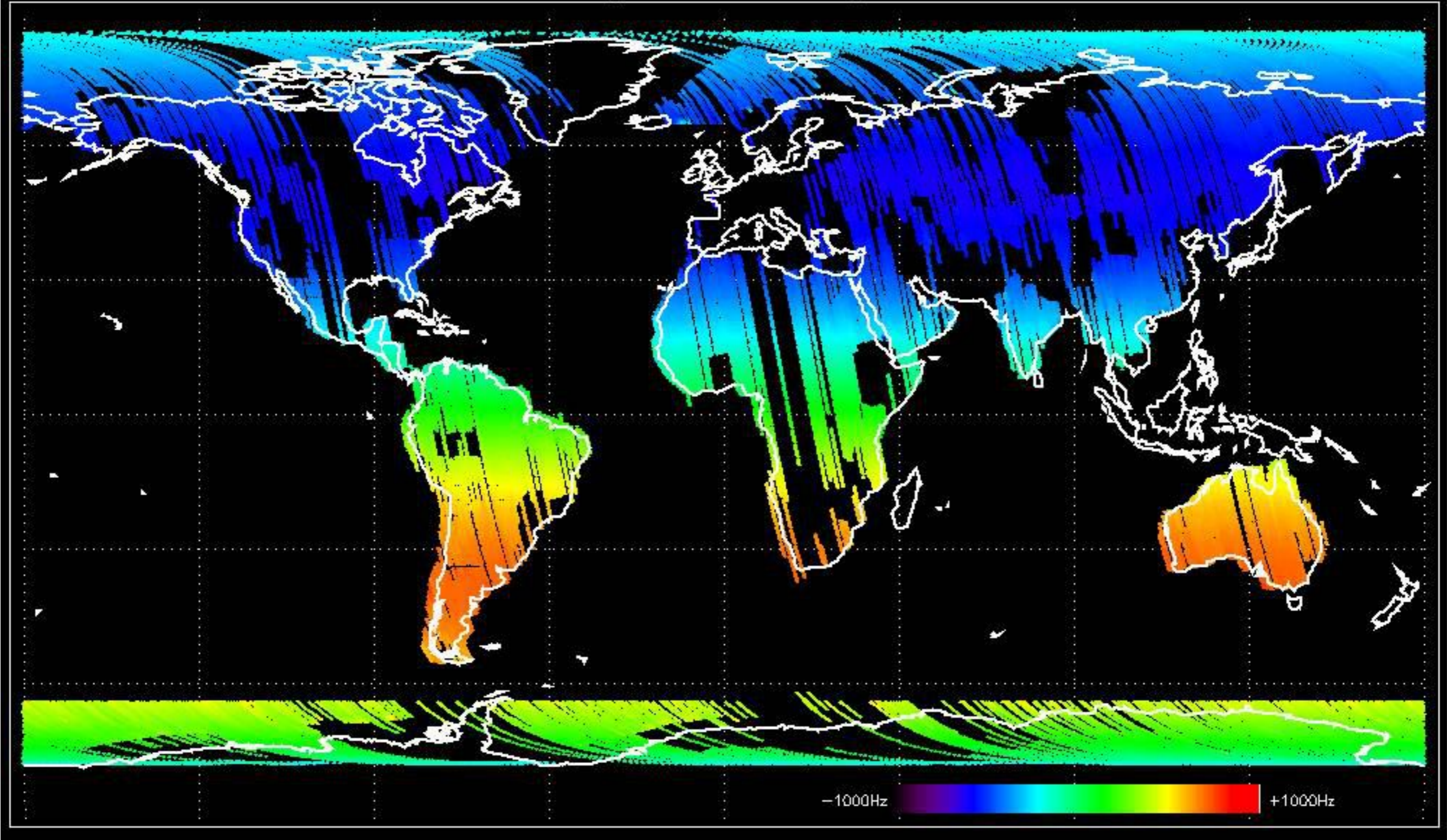
No anomalies observed.



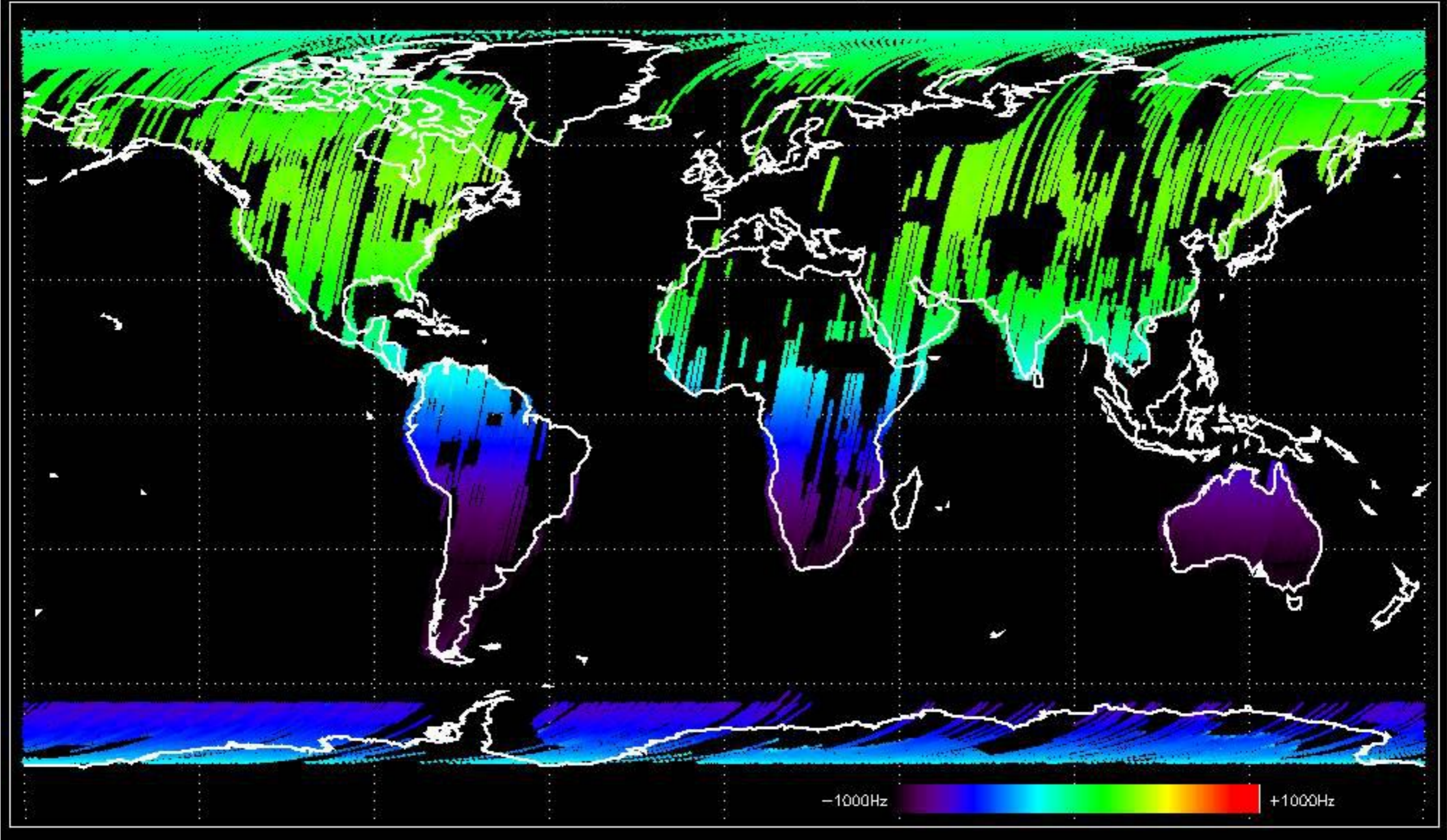


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

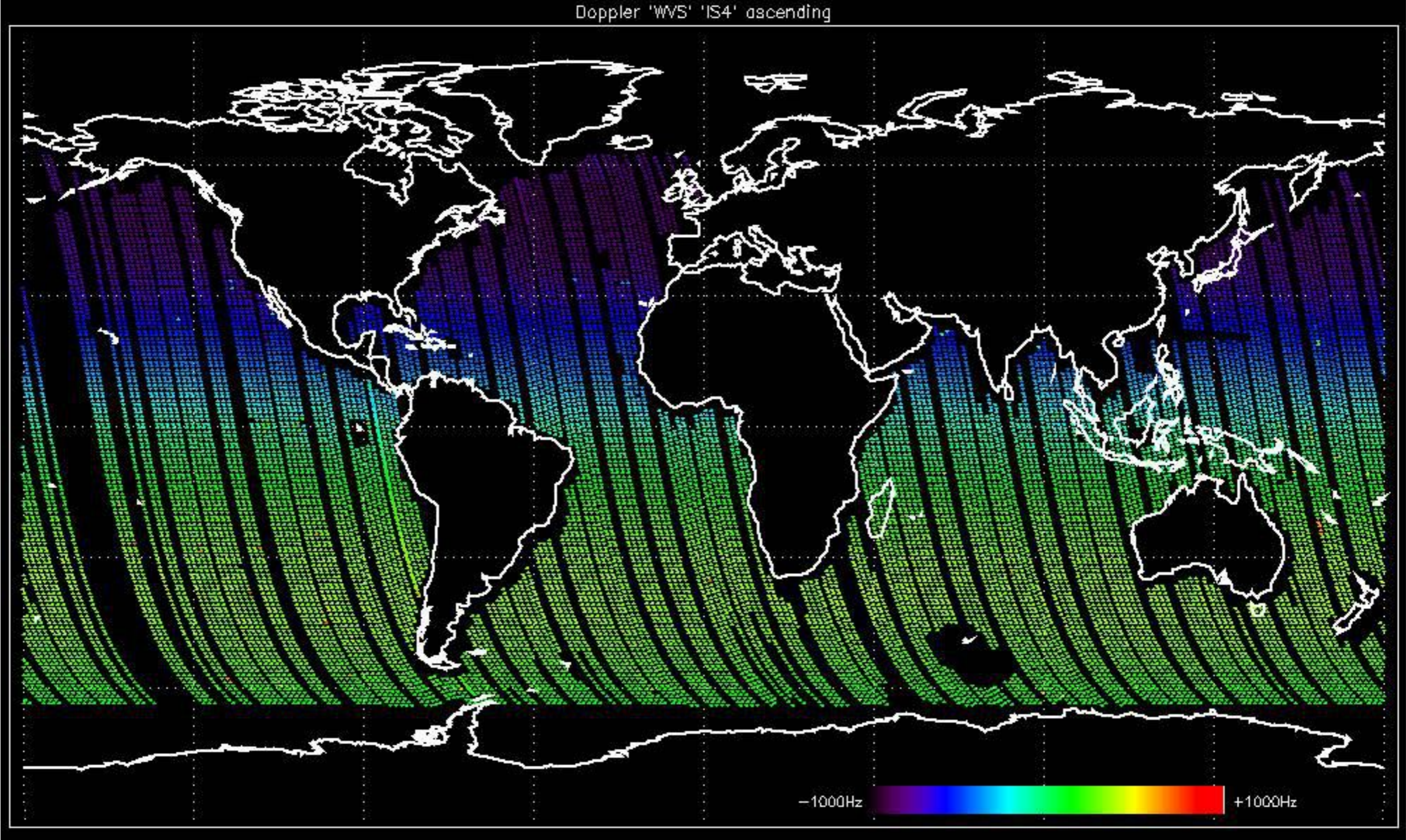
Doppler 'GM1' 'SS1' ascending



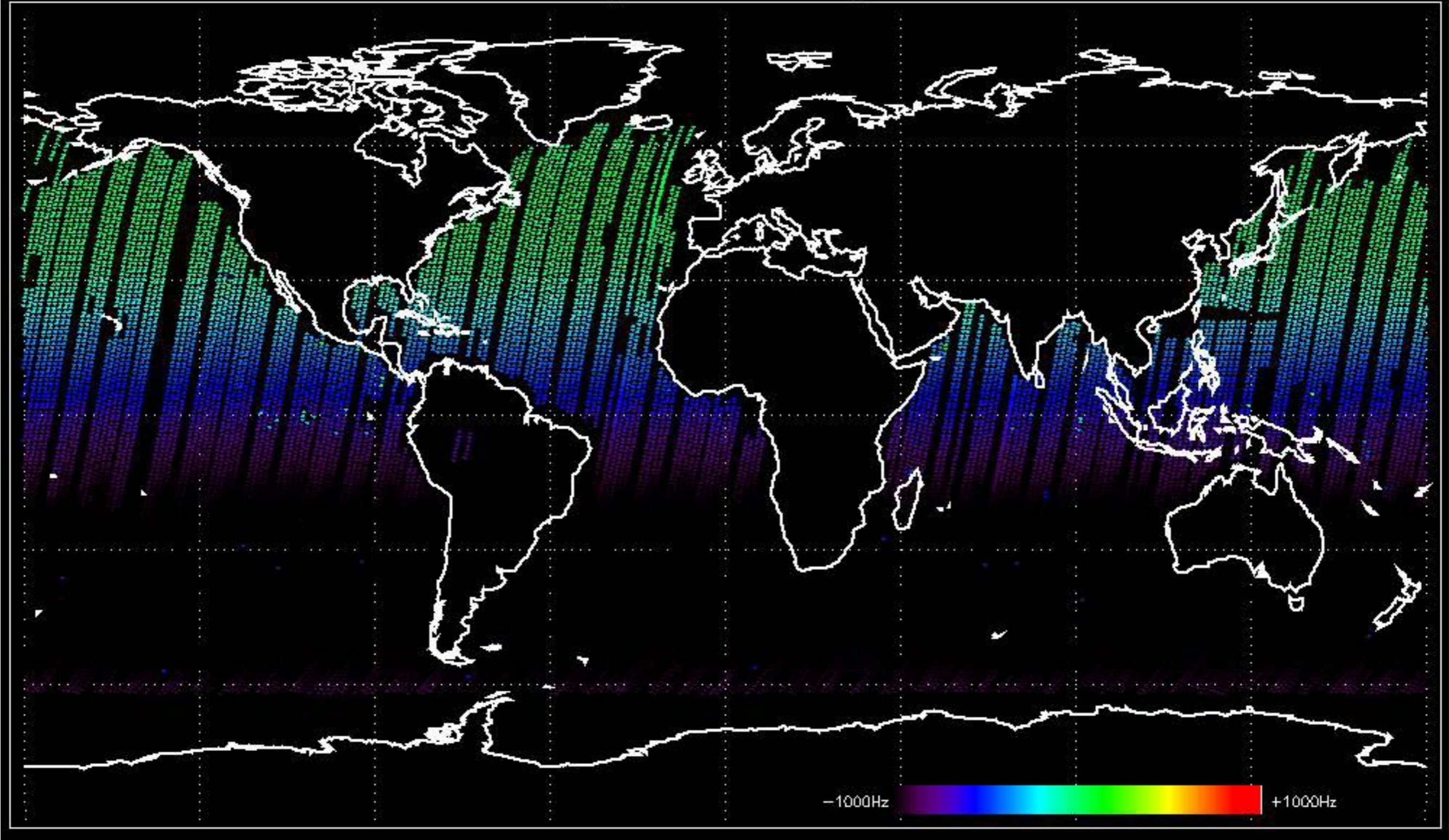
Doppler 'GM1' 'SS1' descending



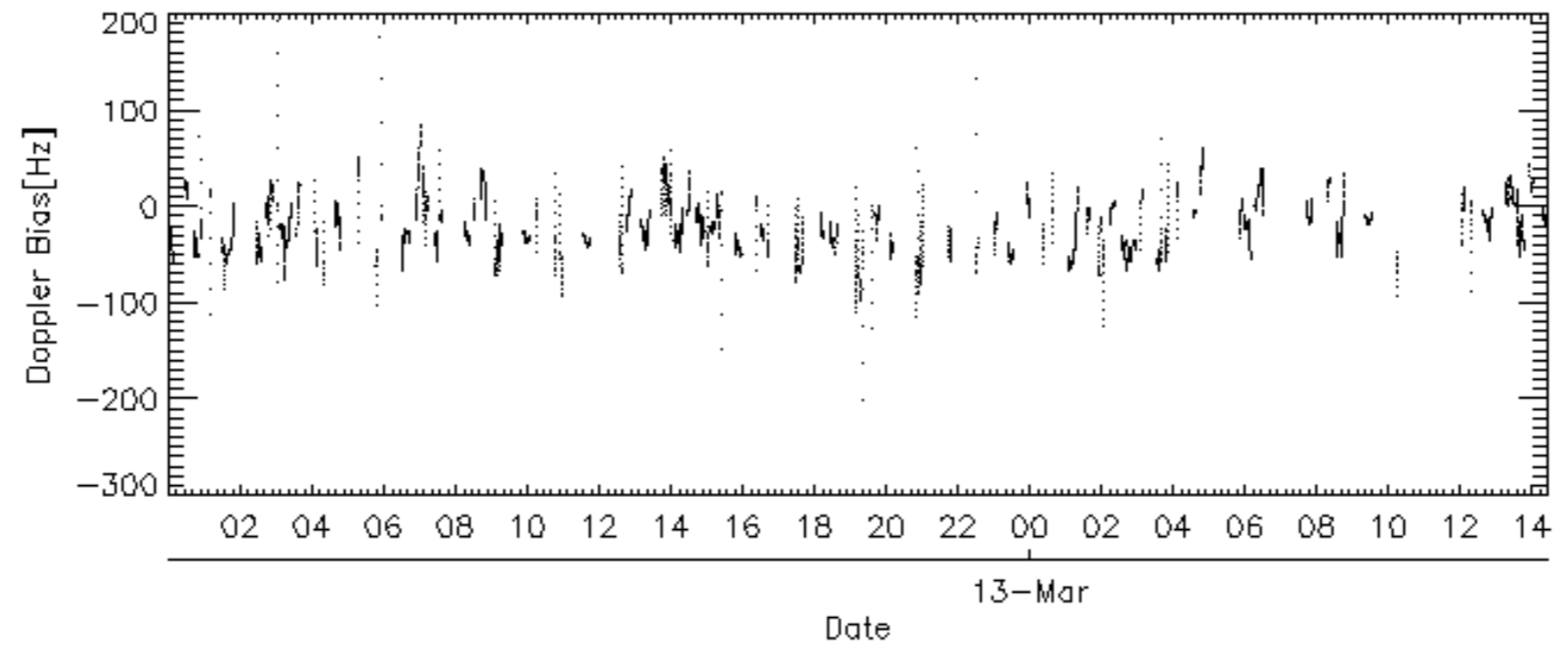
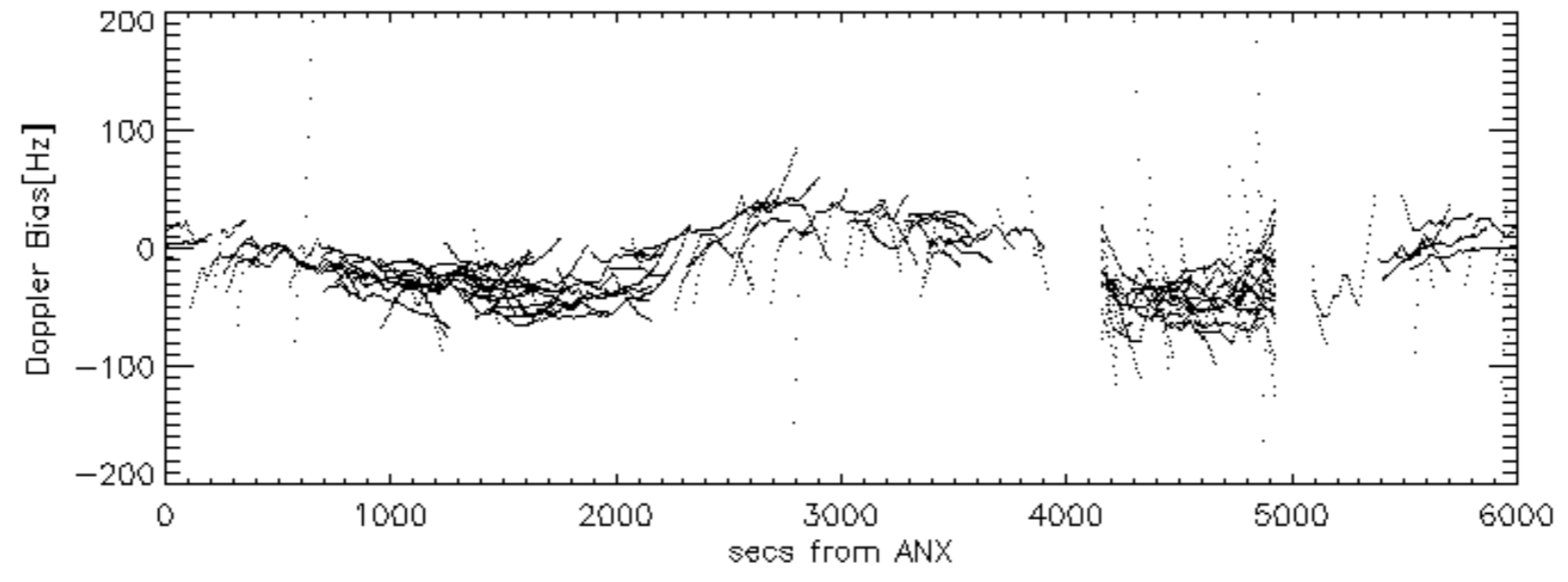
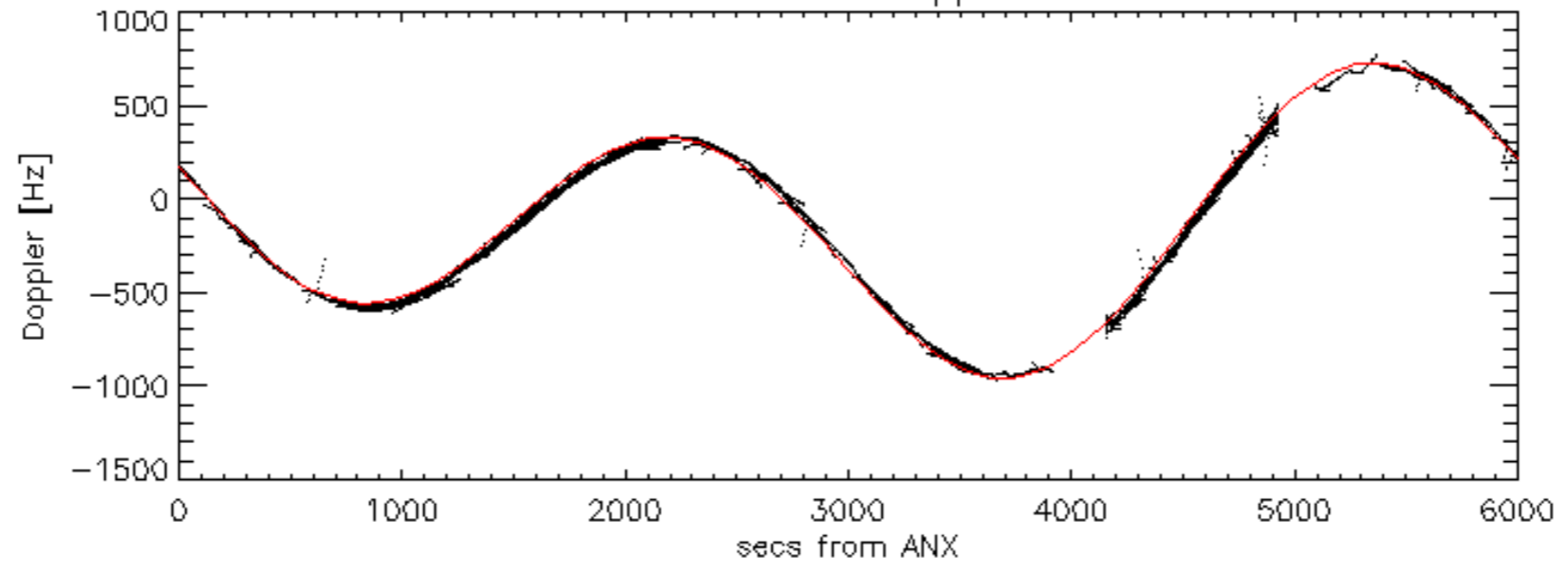
Doppler 'WVS' 'IS4' ascending

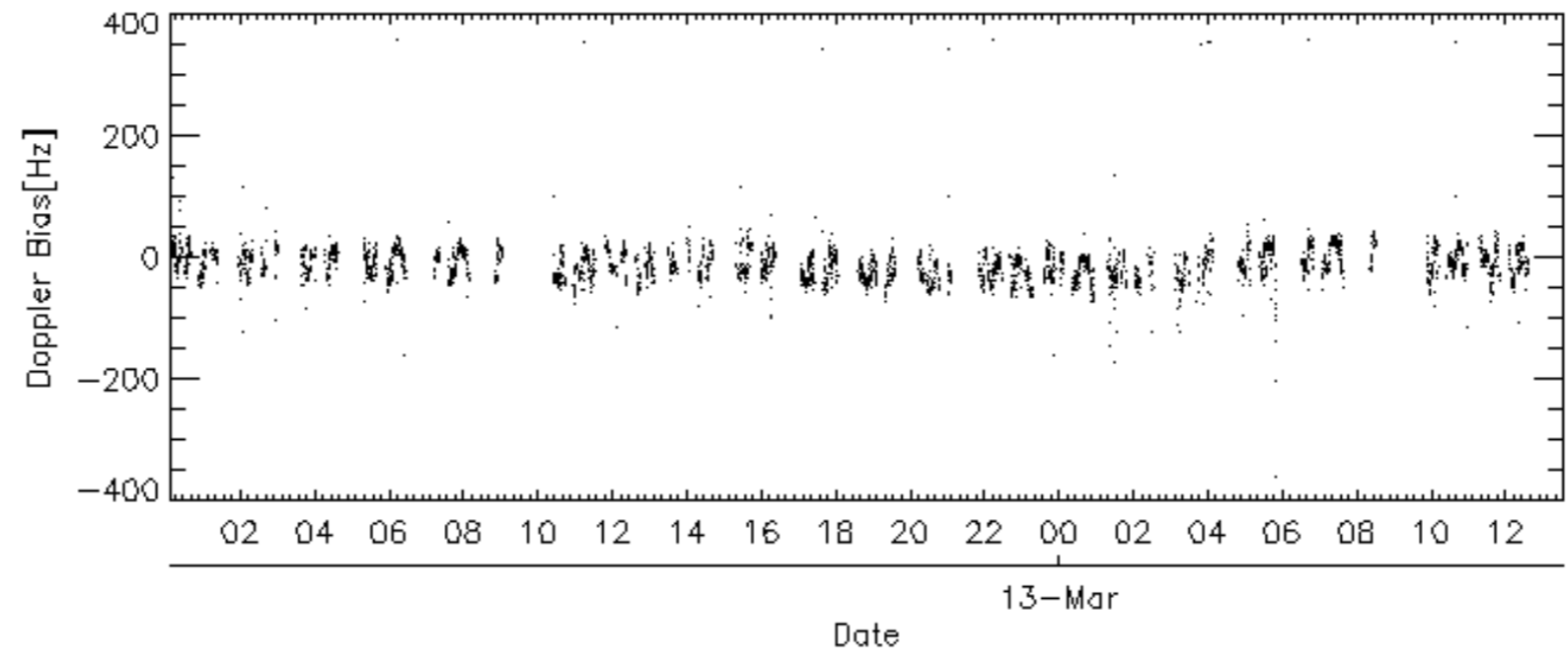
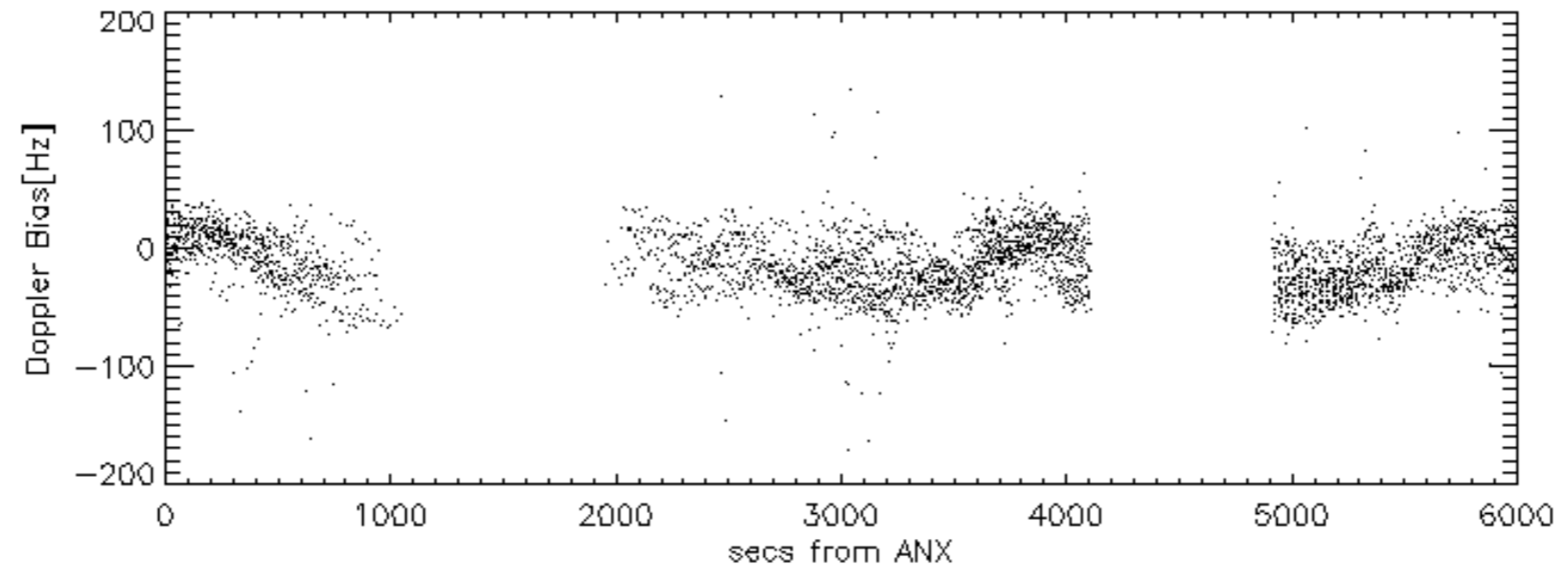
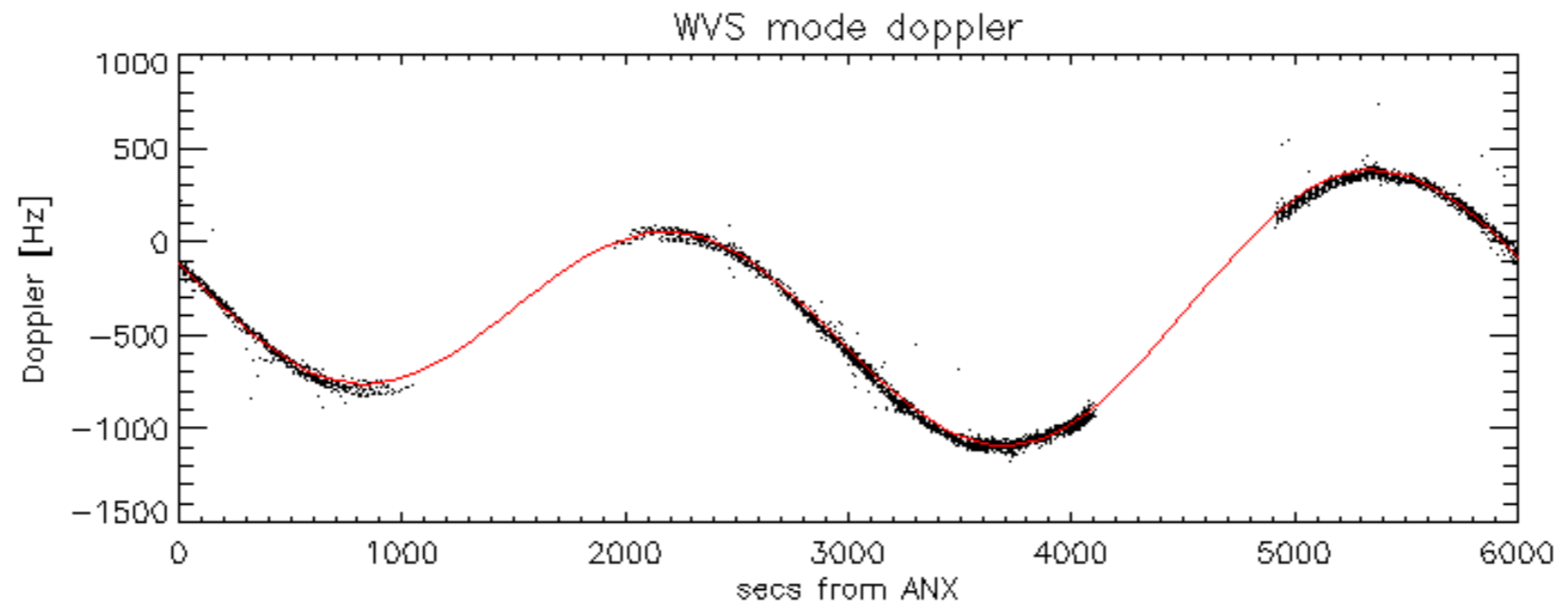


Doppler 'WVS' 'IS4' descending

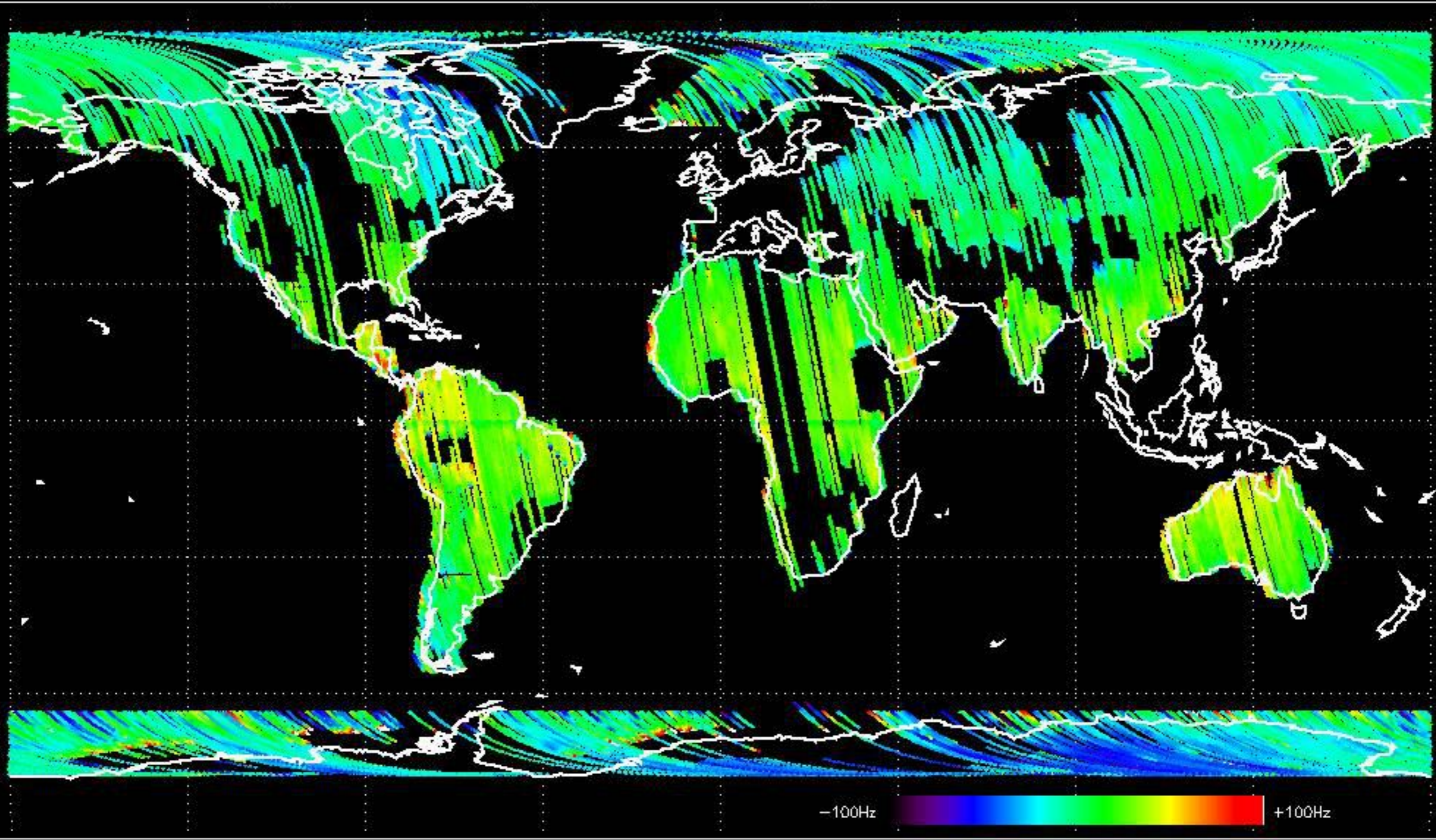


GM1 mode doppler

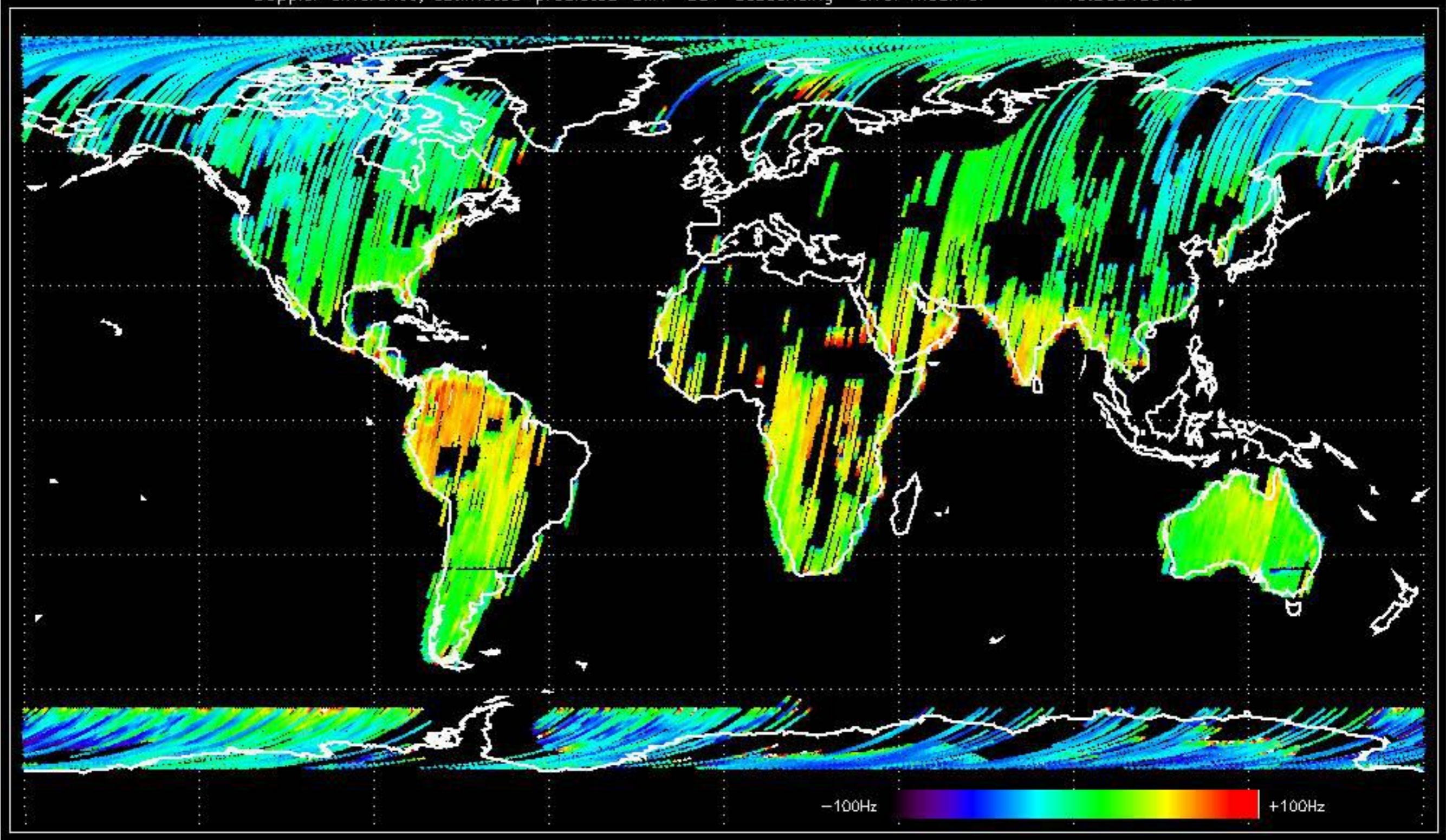




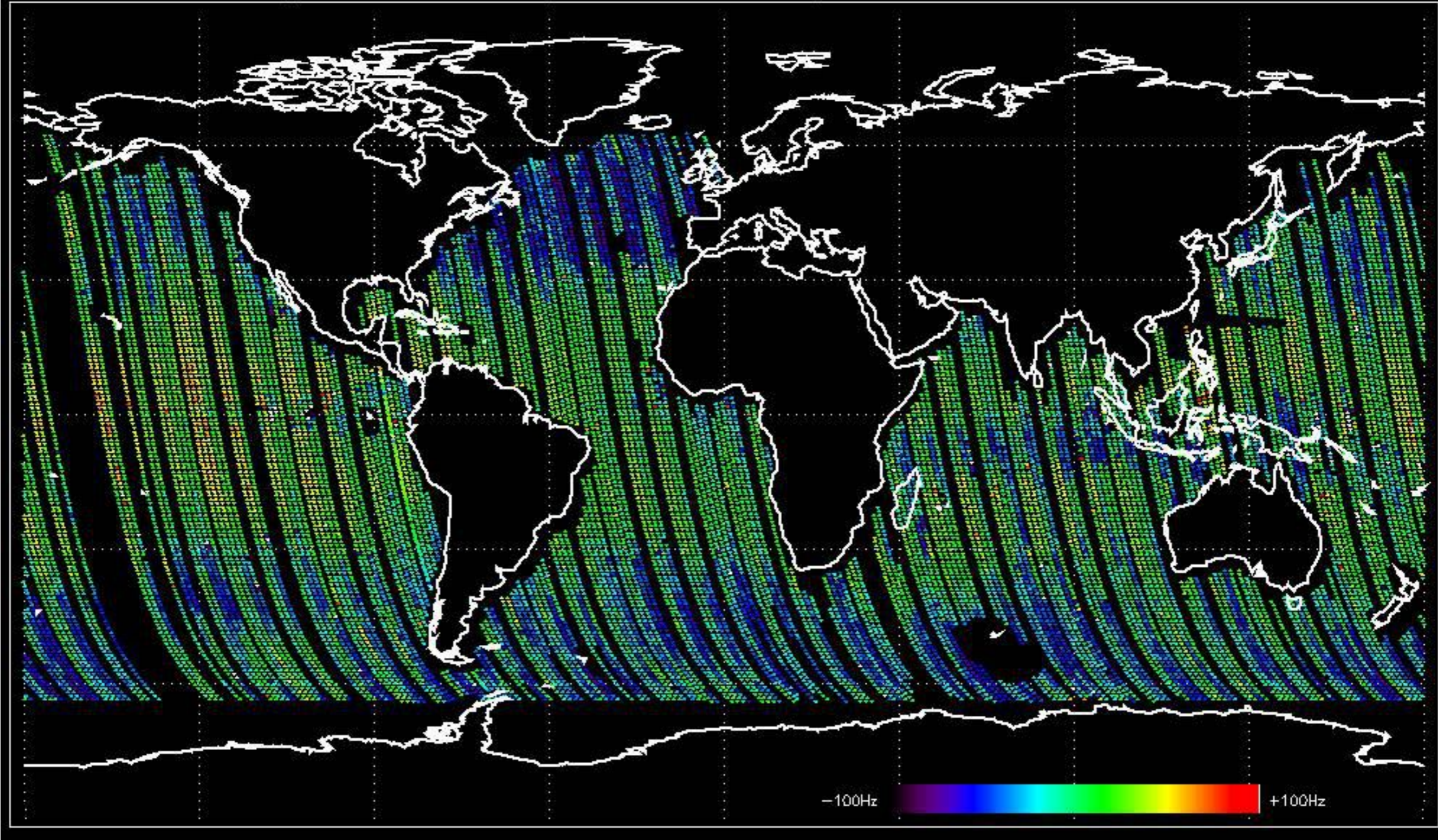
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.775711 Hz



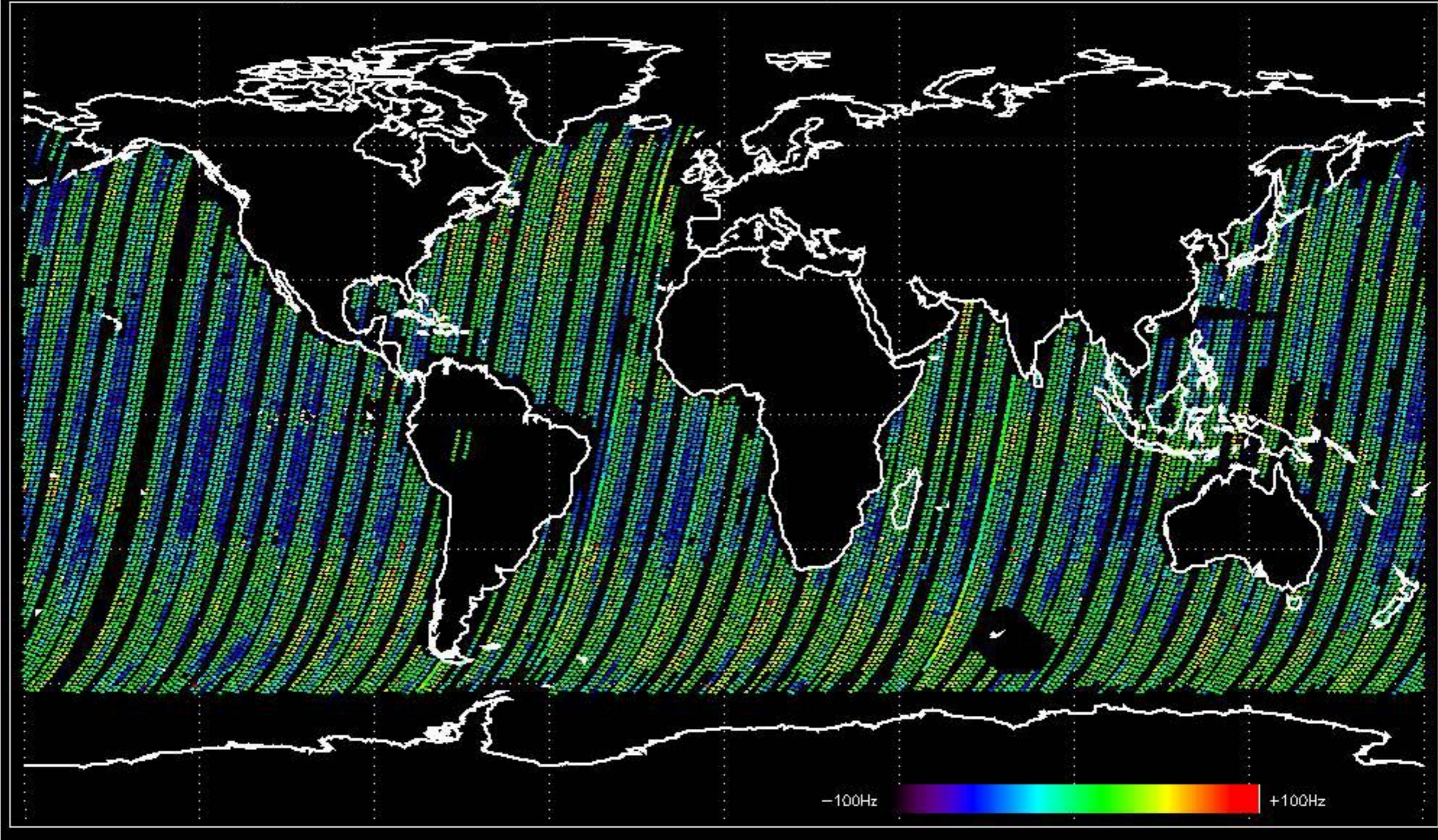
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.803483 Hz



Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -20.179355 Hz

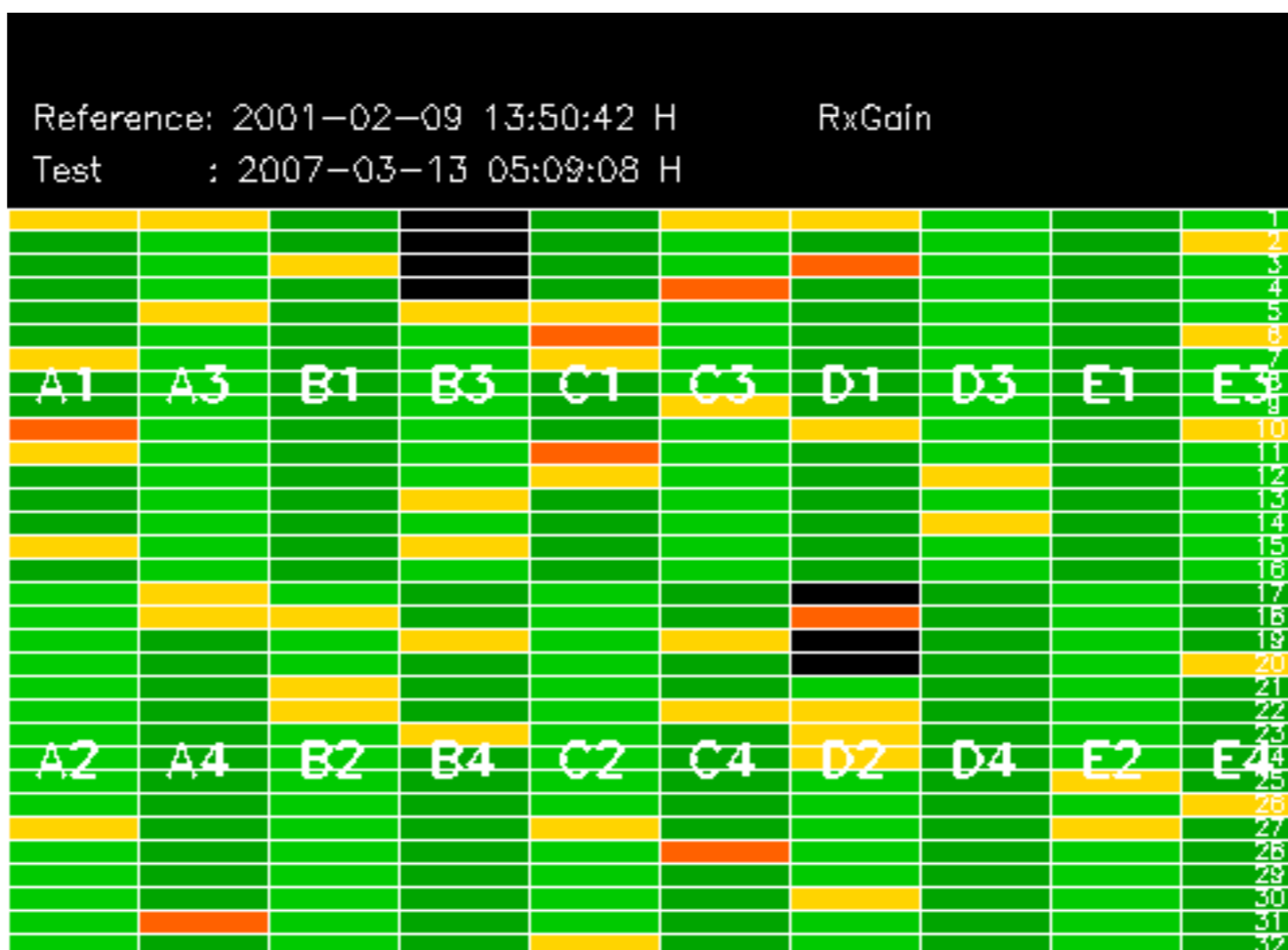


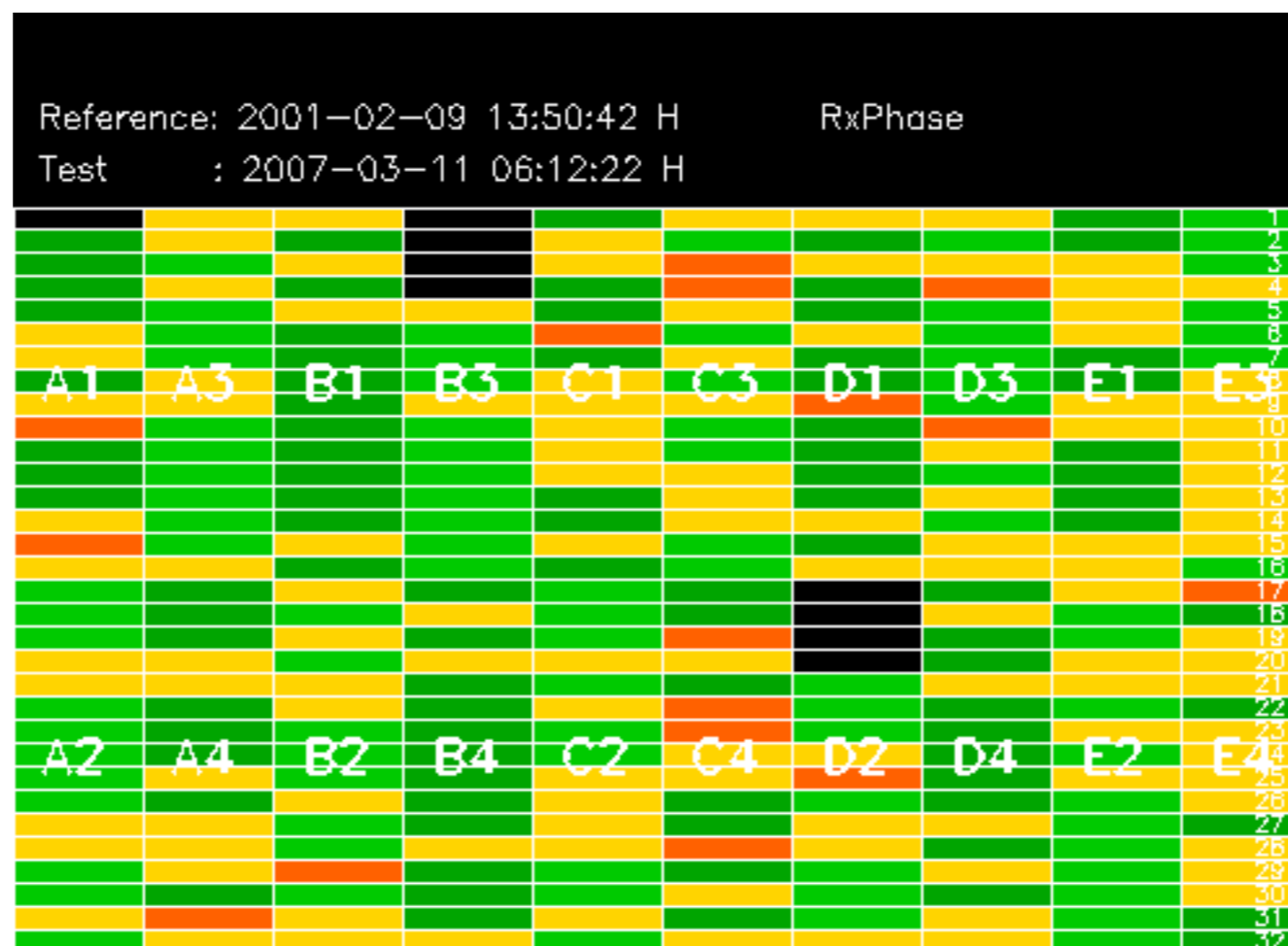
Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -21.454340 Hz

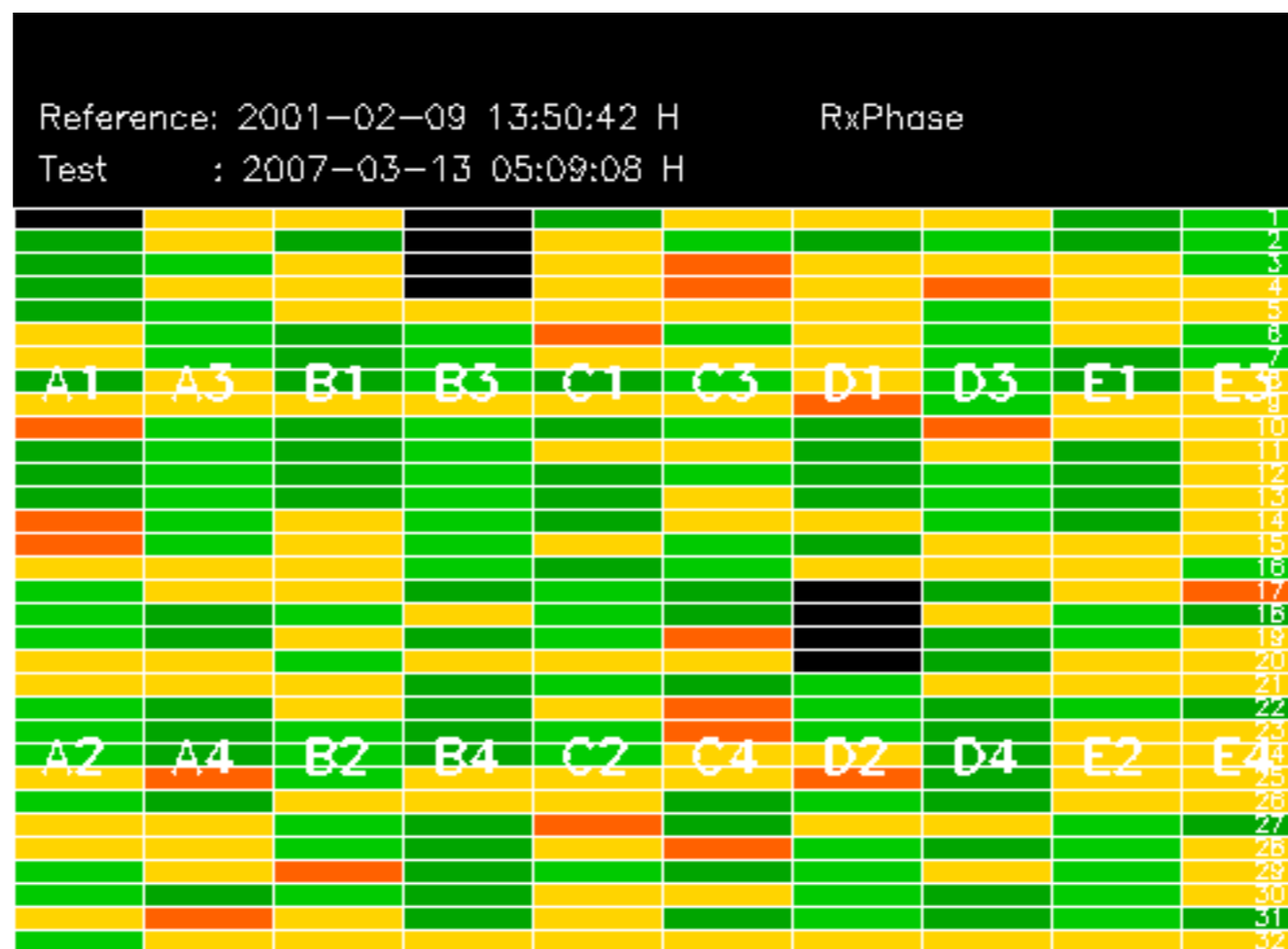


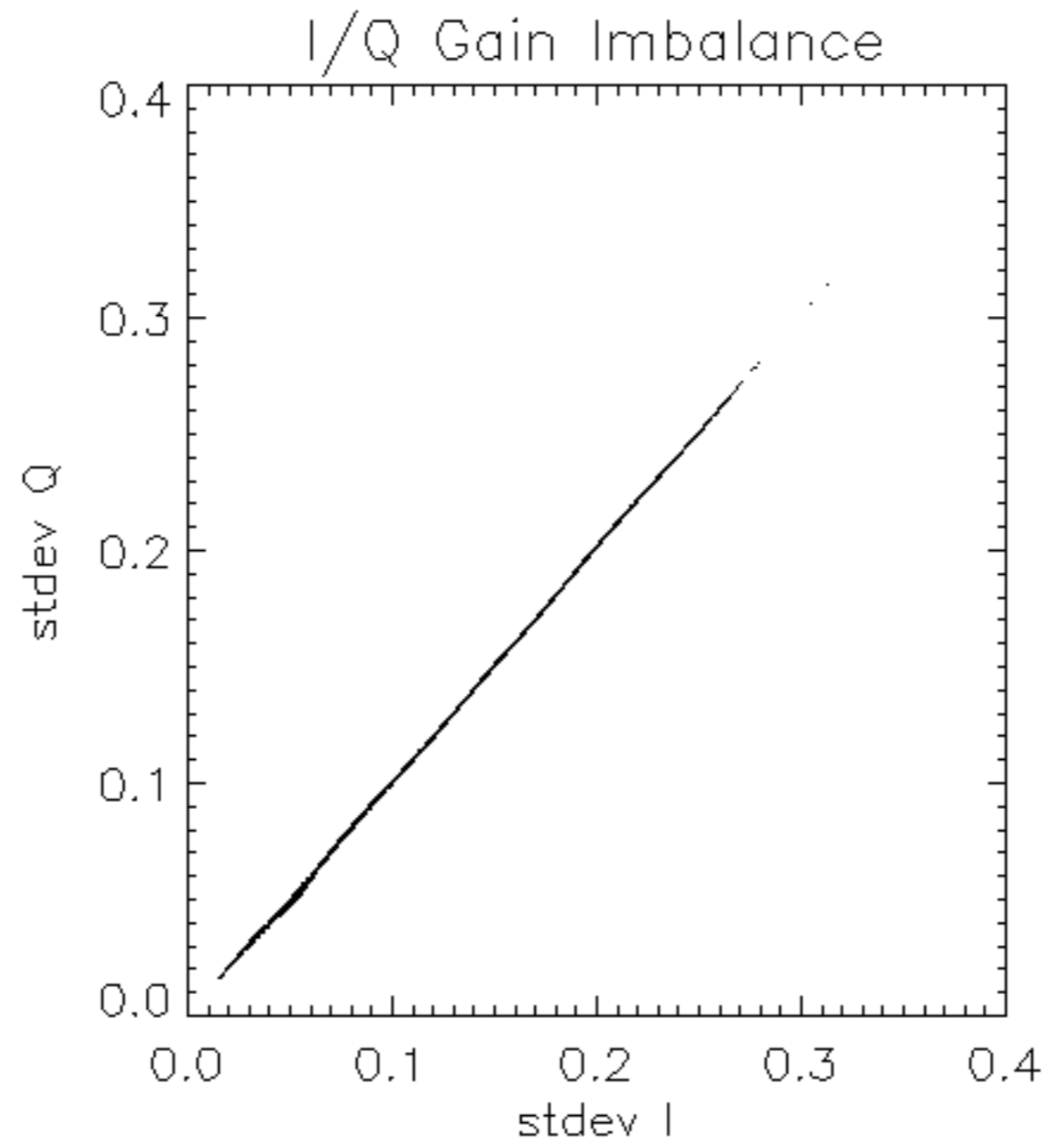
No anomalies observed on available MS products:

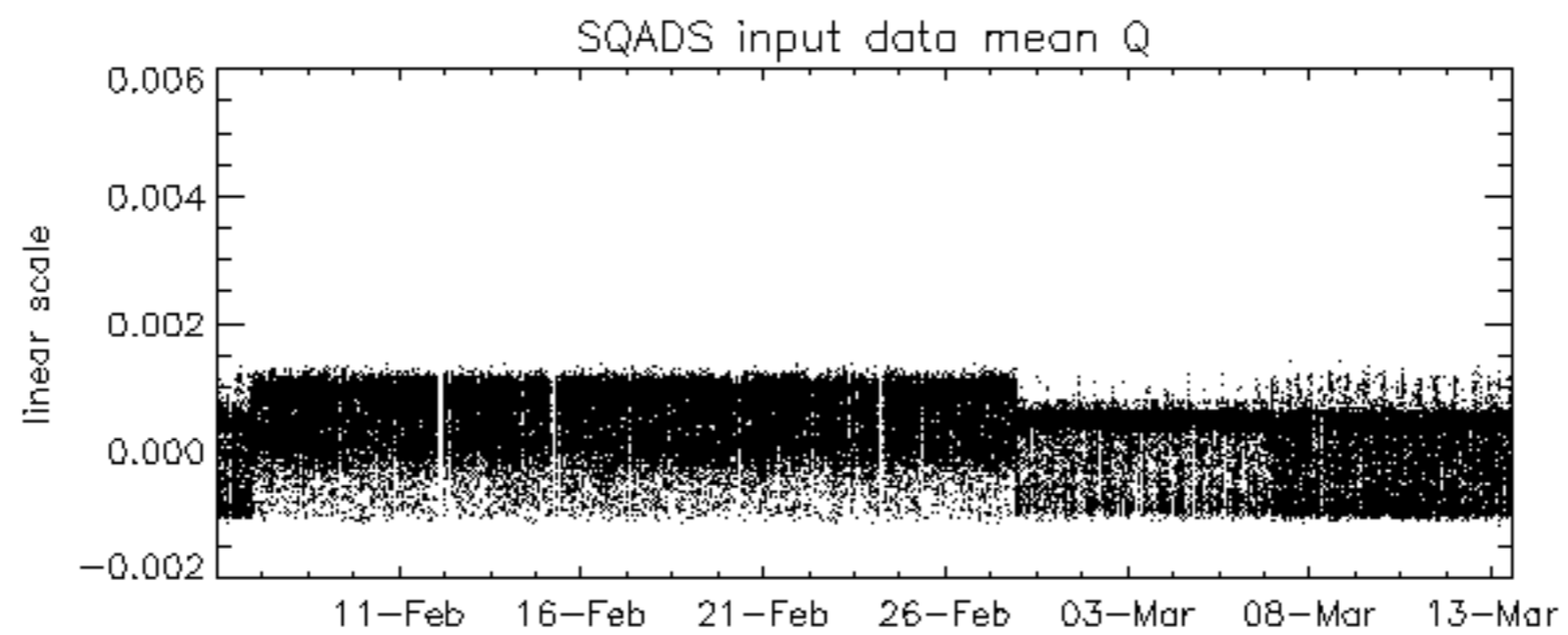
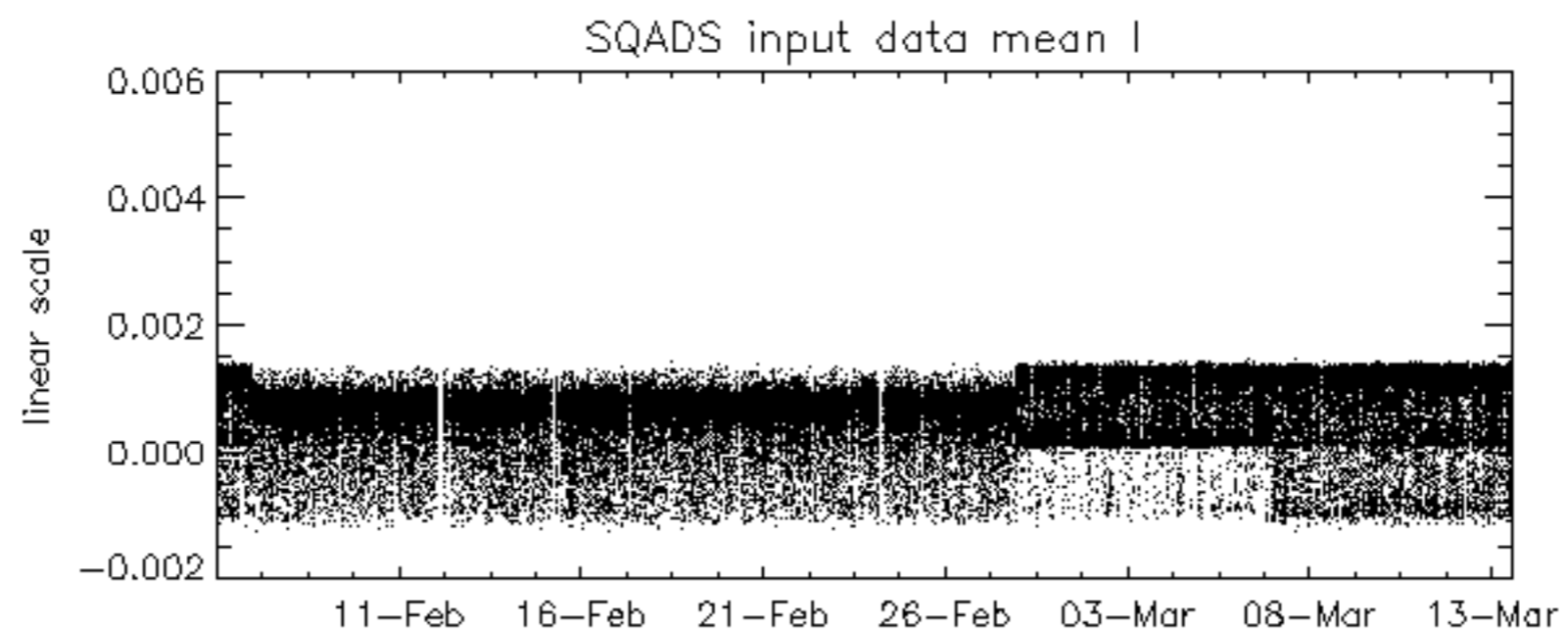
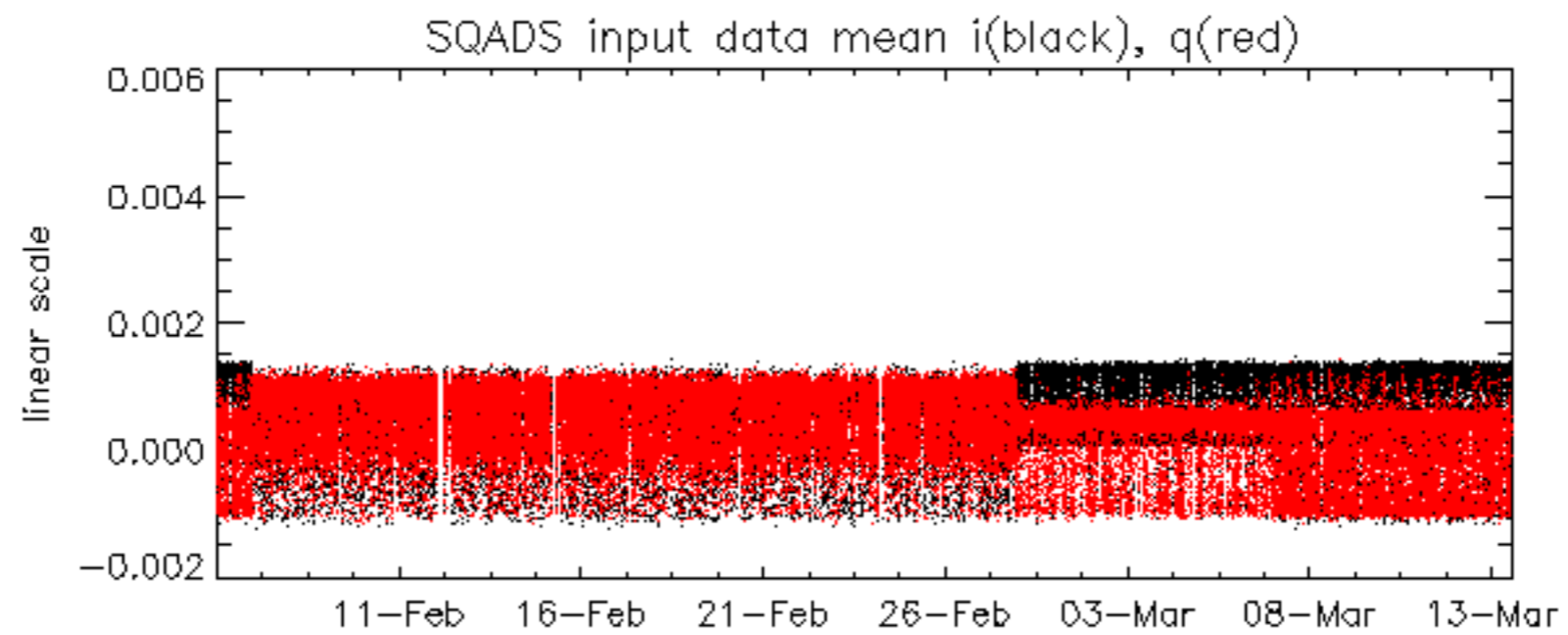
No anomalies observed.

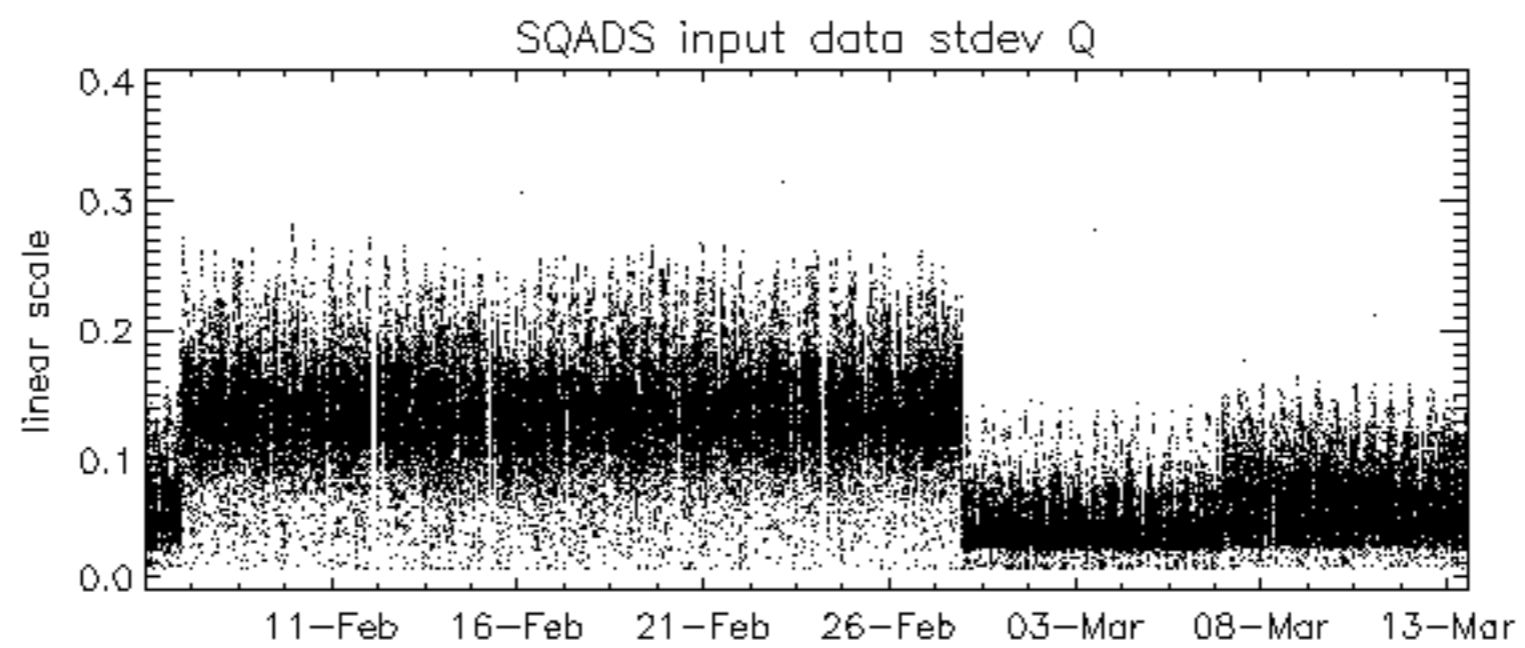
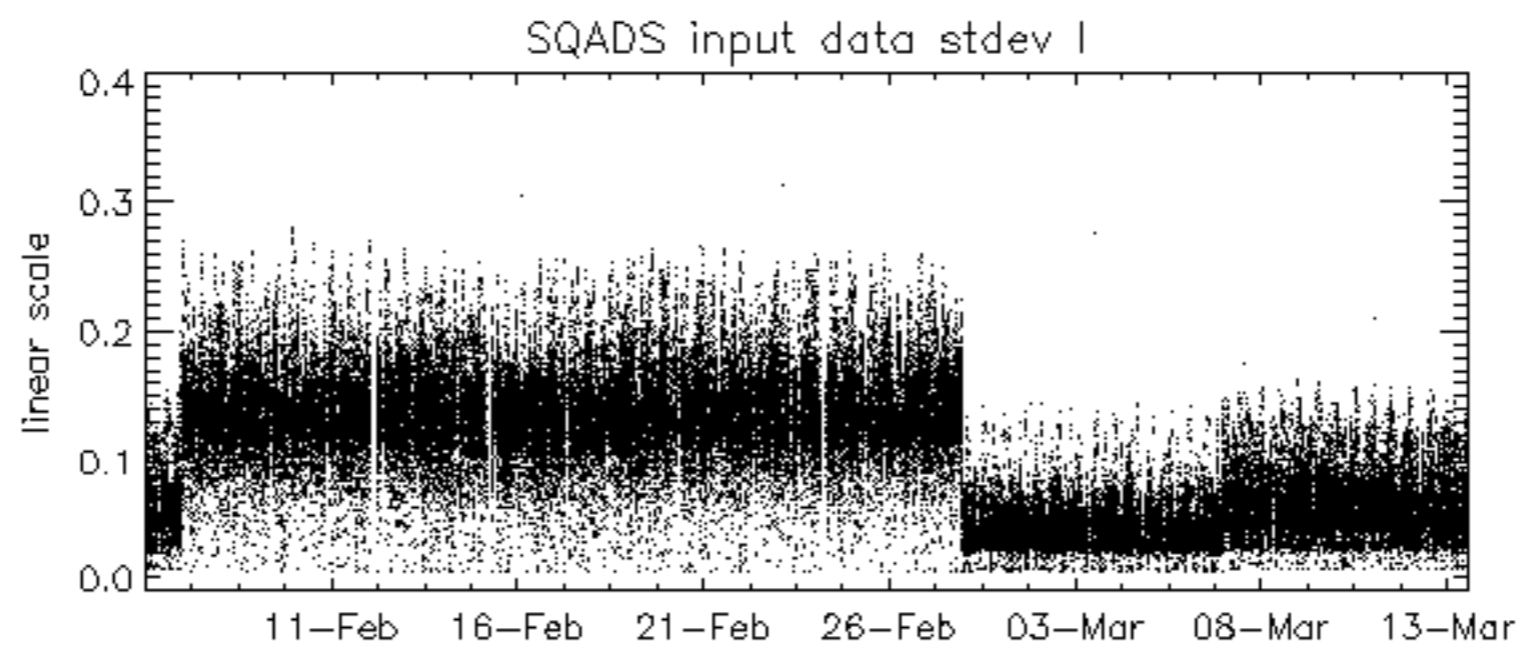
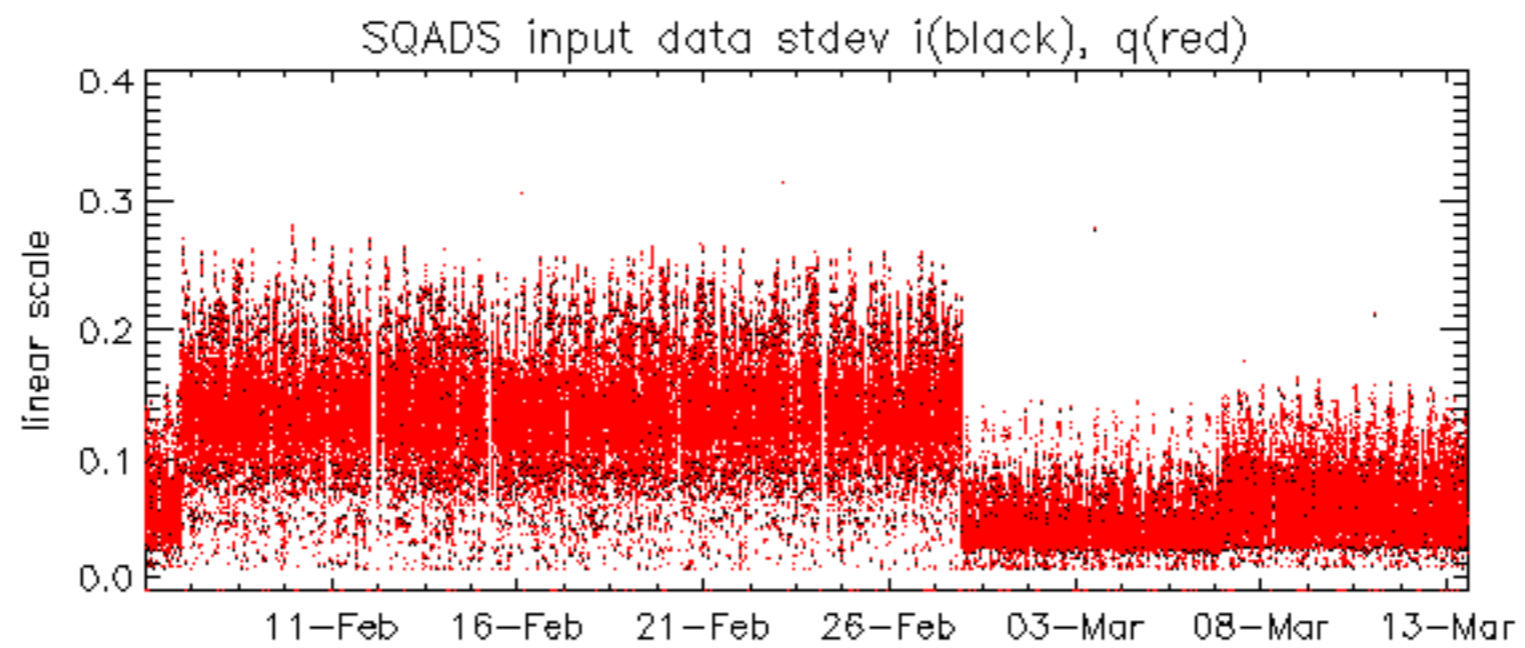








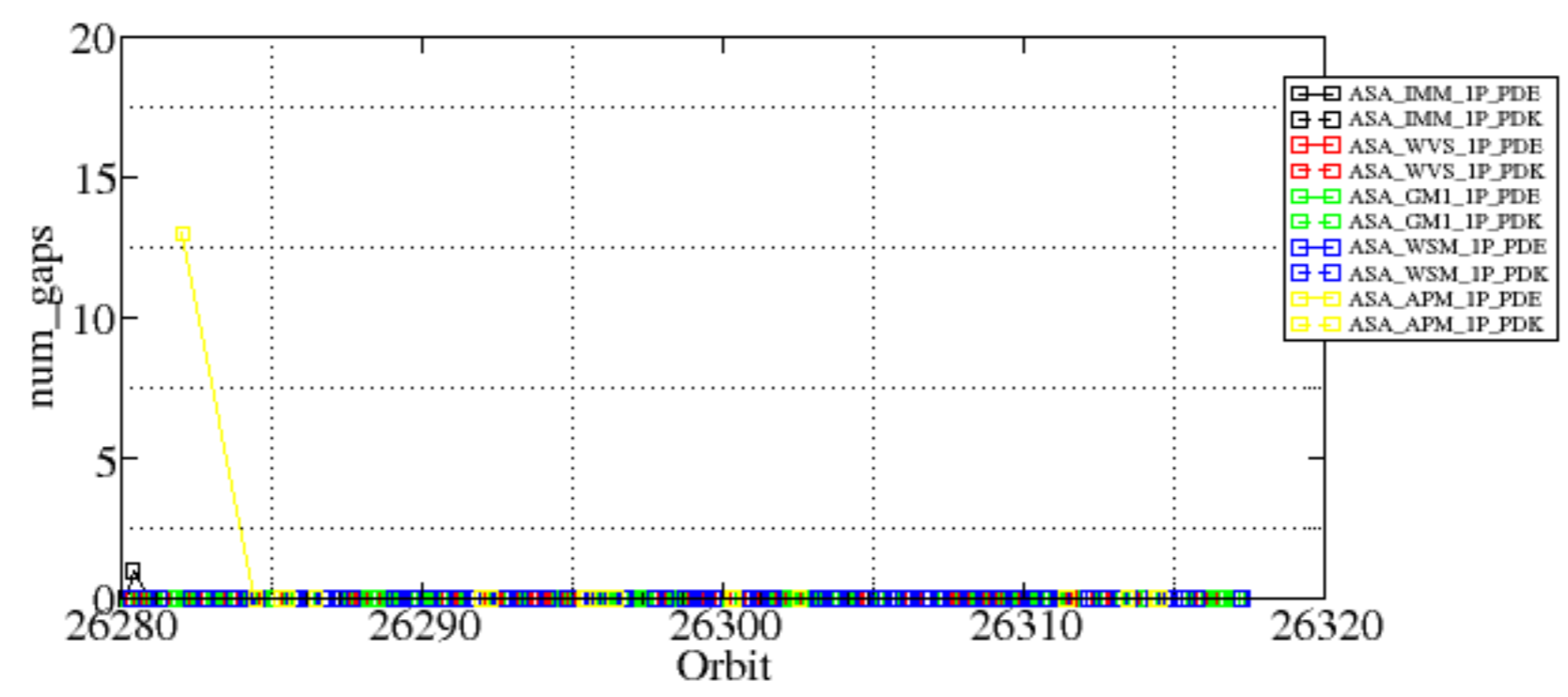


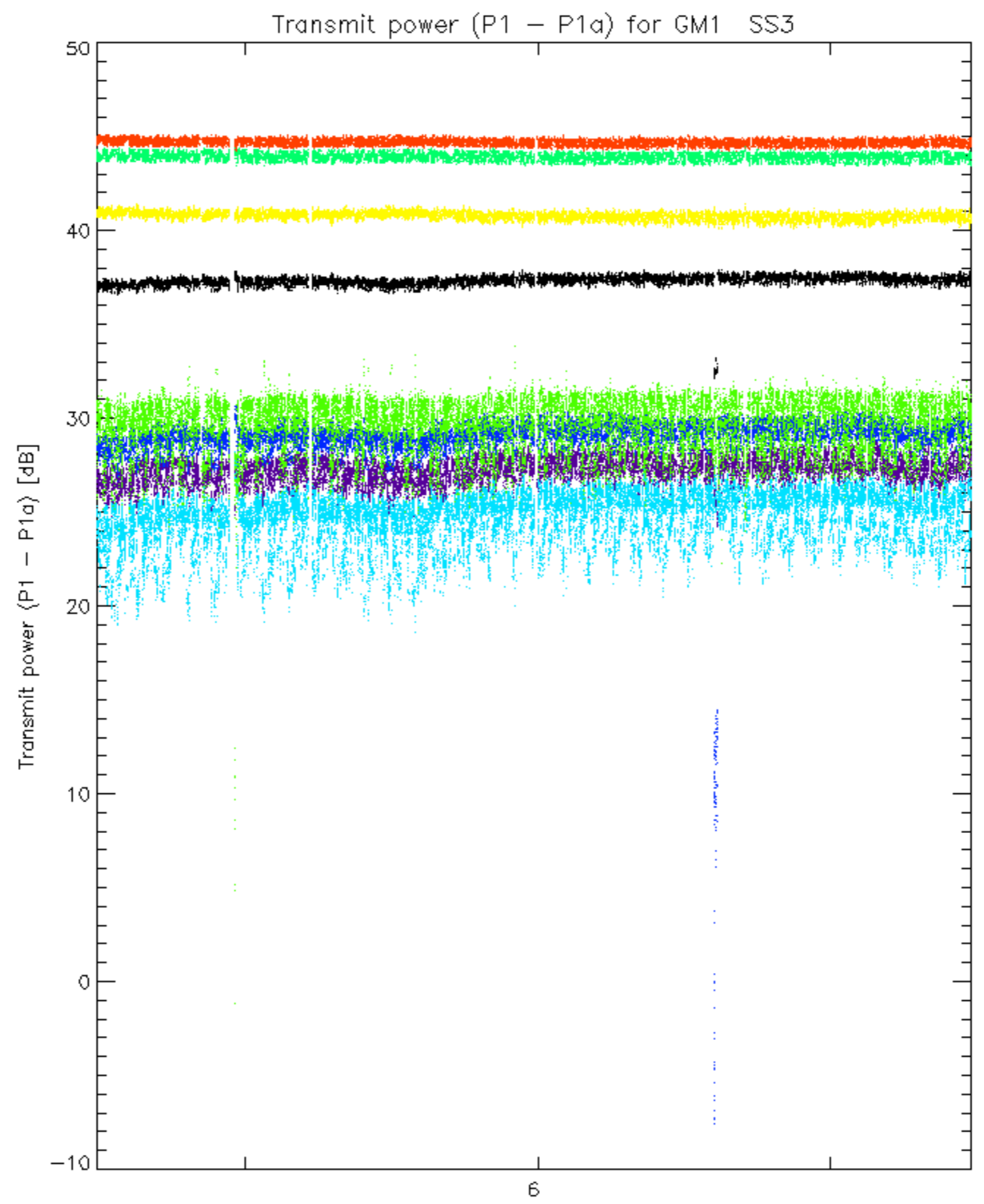


Summary of analysis for the last 3 days 2007031[123]

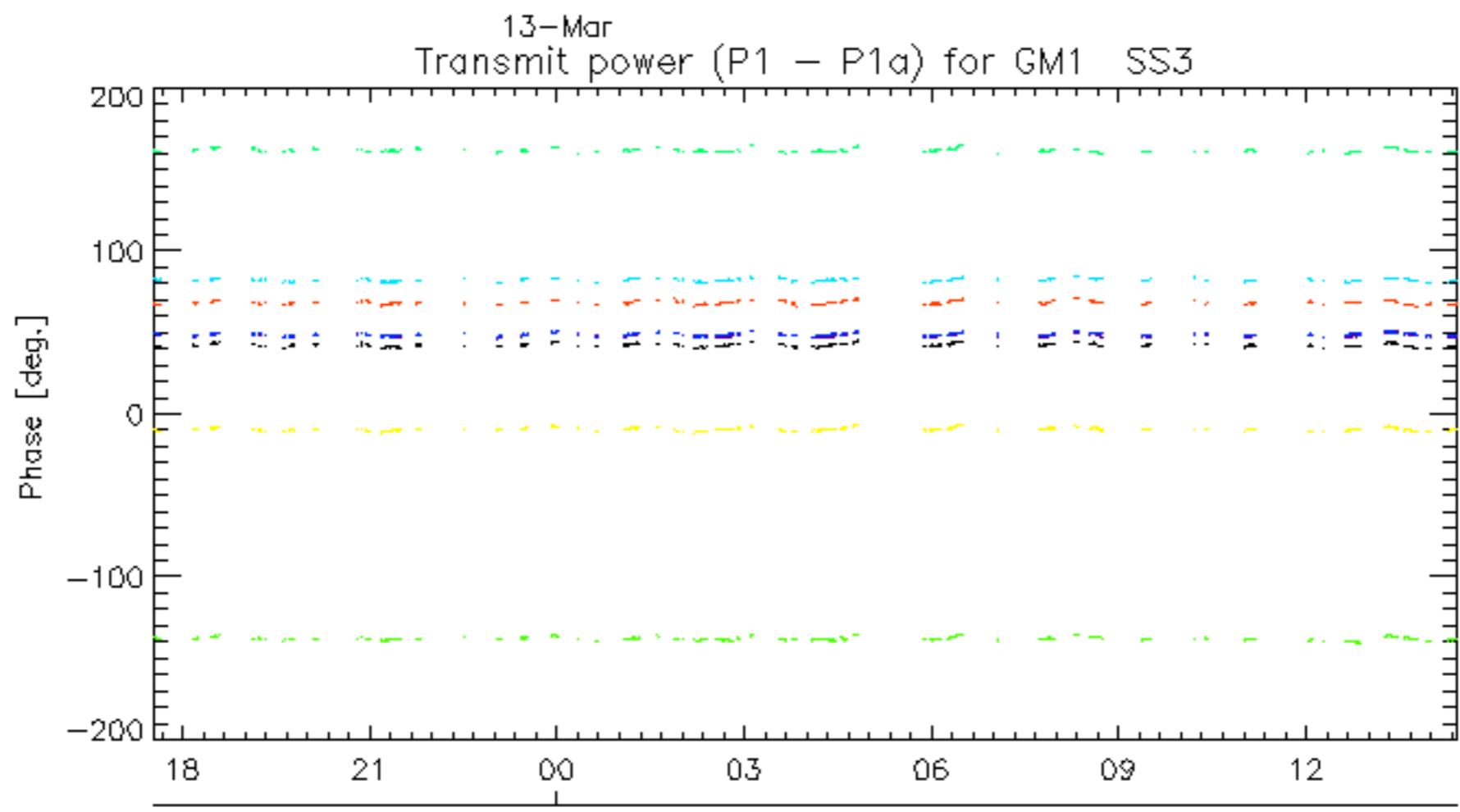
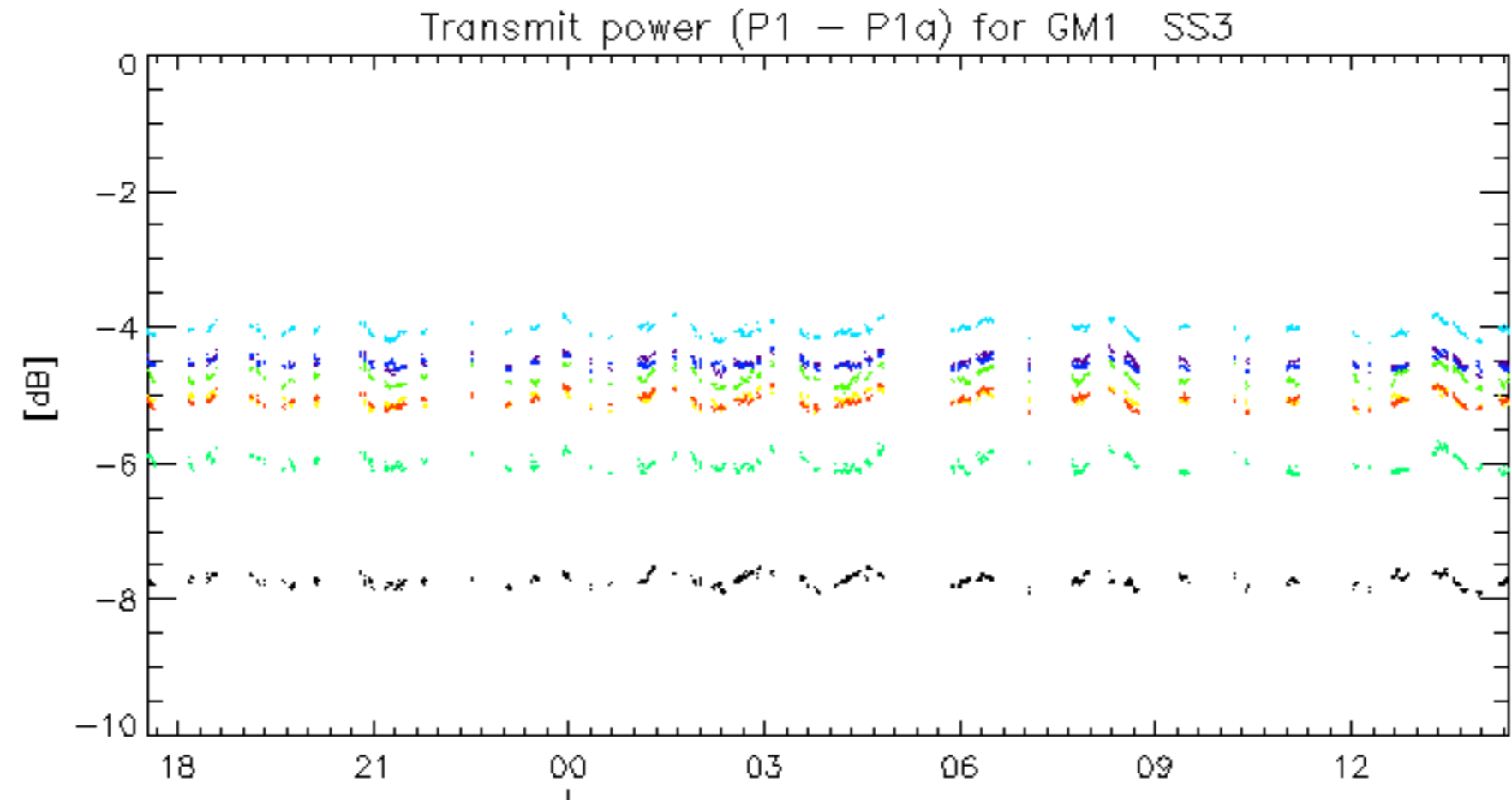
The assumption is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_IMM_1PNPDE20070311_004054_00000622056_00174_26280_8589.N1	1	0
ASA_WSM_1PNPDE20070311_151024_000002872056_00183_26289_9475.N1	0	52
ASA_WSM_1PNPDE20070312_033052_000001472056_00190_26296_0216.N1	0	1
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDK20070311_220425_000001762056_00187_26293_4171.N1	0	10
ASA_WSM_1PNPDK20070311_235015_000001842056_00188_26294_4185.N1	0	4
ASA_APM_1PNPDE20070311_032625_00000402056_00176_26282_8971.N1	13	0

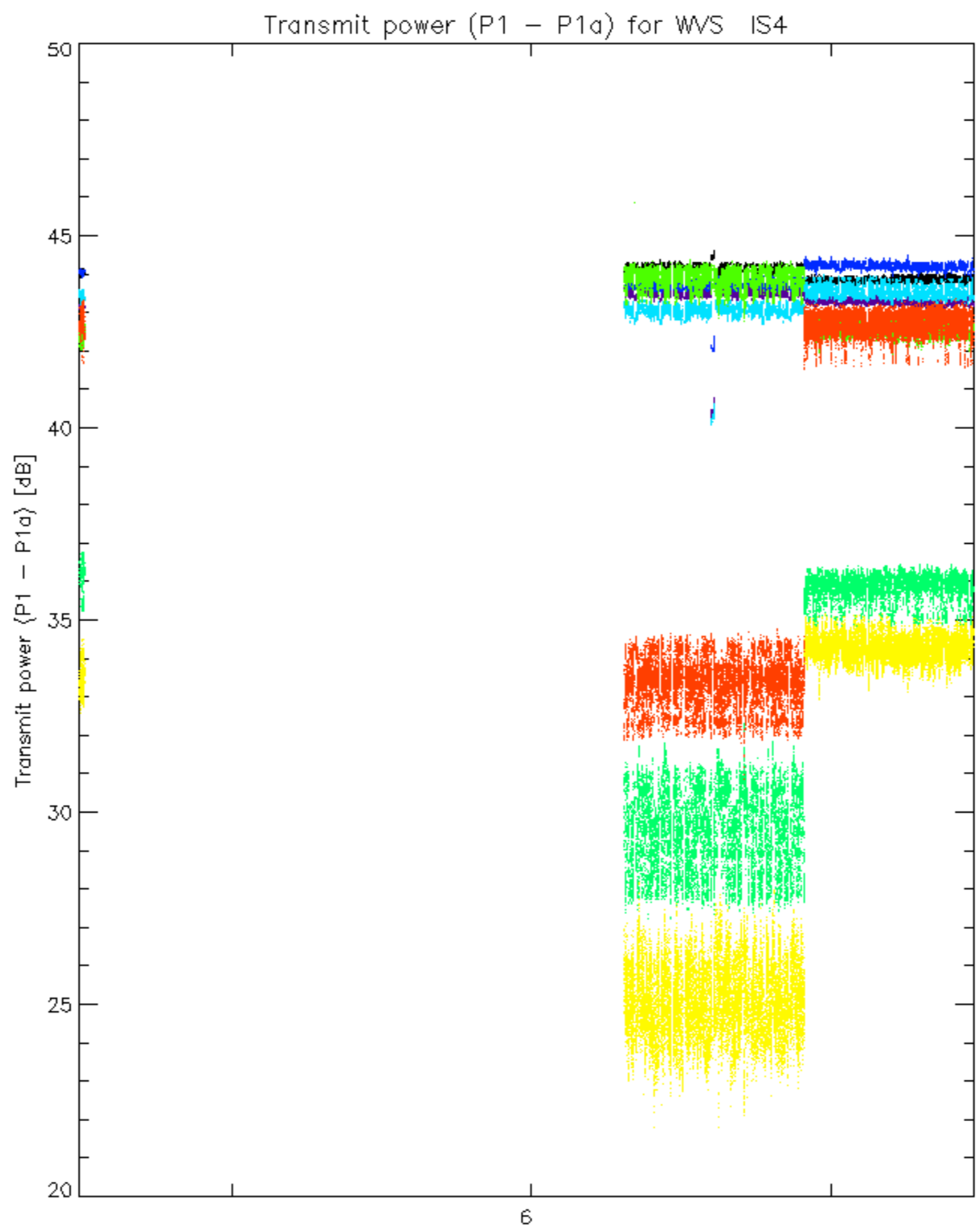




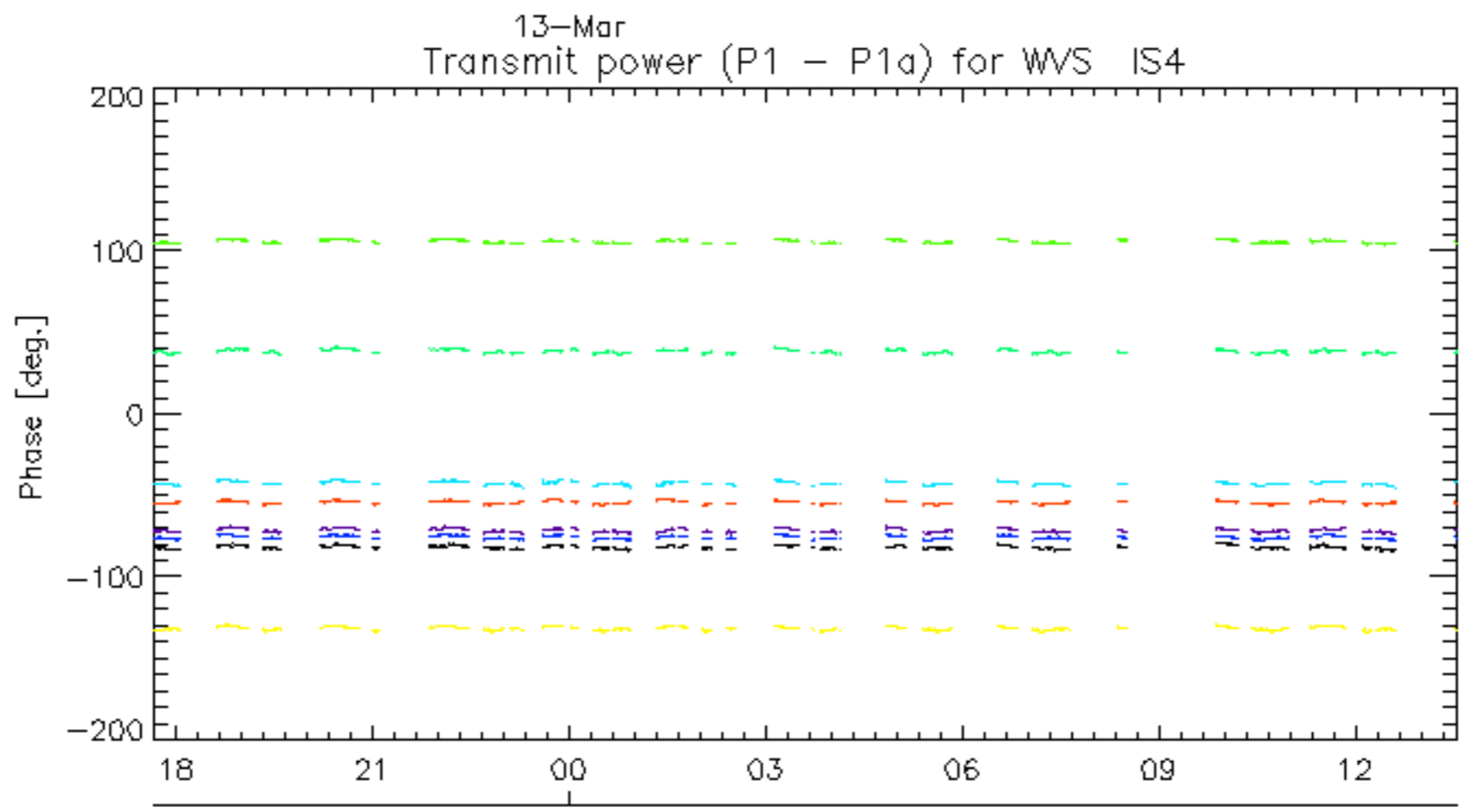
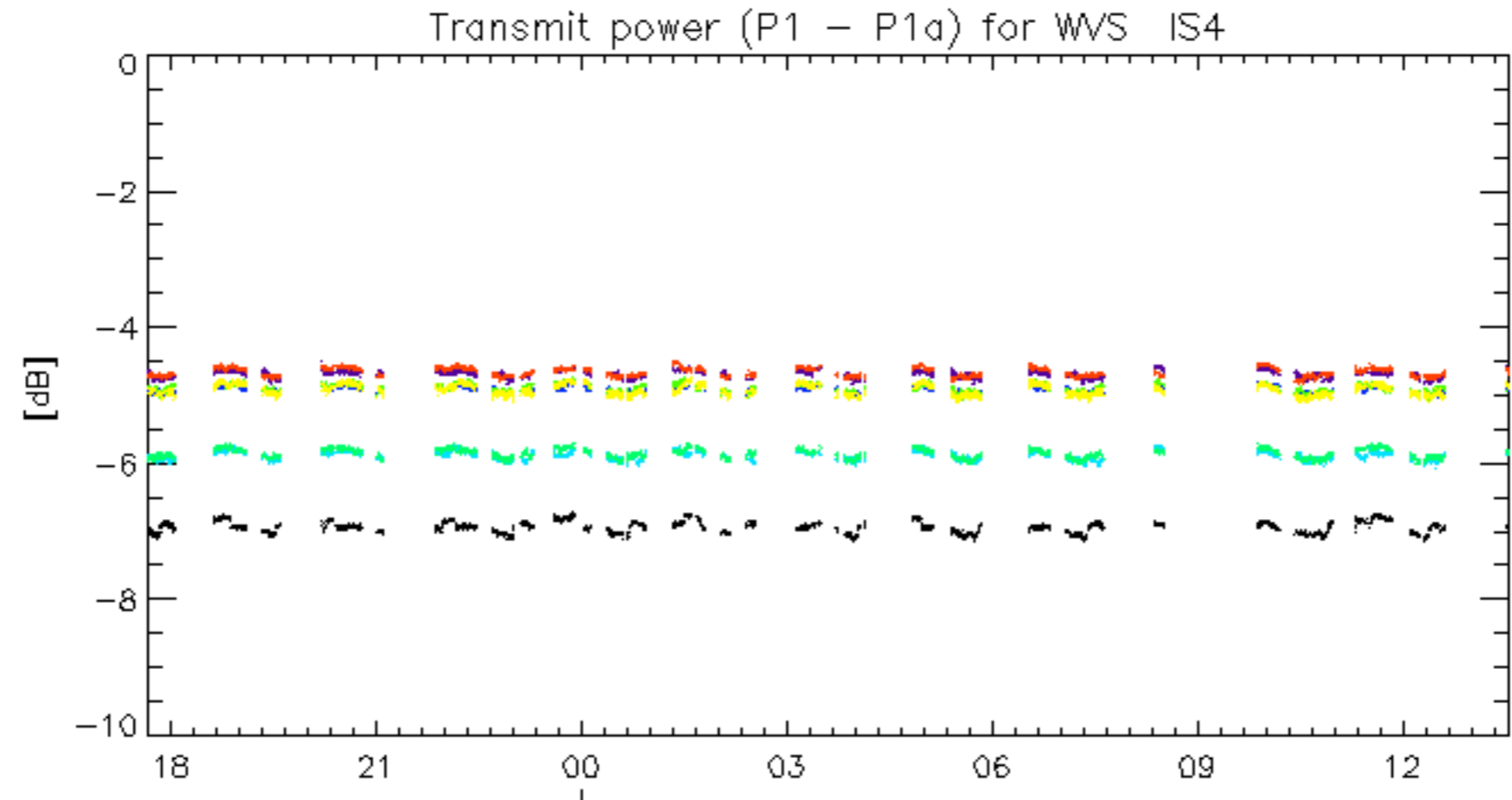
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30



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



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



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

No unavailabilities during the reported period.