

PRELIMINARY REPORT OF 070227

last update on Tue Feb 27 16:29:18 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 2007-02-26 00:00:00 to 2007-02-27 16:29:18

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	40	78	9	1	27
ASA_INS_AXVIEC20070223_140724_20070226_000000_20071231_000000	40	78	9	1	27
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	40	78	9	1	27
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	40	78	9	1	27

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	41	56	34	13	64
ASA_INS_AXVIEC20070223_140724_20070226_000000_20071231_000000	41	56	34	13	64
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	41	56	34	13	64
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	41	56	34	13	64

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	20070226 180512
H	20070225 183649

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	-15.108912	0.159407	0.556405
7	P1a	-17.409765	0.106254	-0.127823
11	P1a	-17.302315	0.342670	-0.028698
15	P1a	-12.849440	0.101142	-0.053770
19	P1a	-15.091328	0.092528	-0.034515
22	P1a	-15.492177	0.470617	0.053810
26	P1a	-15.045374	0.198360	-0.157481
30	P1a	-17.323503	0.334108	-0.160699

P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.670370	0.070991	-0.672480
7	P1	-3.108116	0.009215	-0.043307
11	P1	-4.129865	0.019129	-0.046565
15	P1	-6.333571	0.016204	-0.070627
19	P1	-3.714489	0.008910	-0.050014
22	P1	-4.671388	0.014102	-0.007184
26	P1	-3.932984	0.012923	-0.026574
30	P1	-5.918660	0.011711	-0.016172

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.596754	0.170098	-0.744984
7	P2	-21.595165	0.084065	0.029636
11	P2	-15.487916	0.101332	-0.070228
15	P2	-7.016505	0.098682	-0.034629
19	P2	-9.081117	0.086366	-0.026640
22	P2	-18.104227	0.081299	-0.028047

26	P2	-16.506359	0.094364	-0.027855
30	P2	-19.333782	0.077177	-0.002734

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.200629	0.007832	-0.024737
7	P3	-8.200629	0.007832	-0.024737
11	P3	-8.200629	0.007832	-0.024737
15	P3	-8.200629	0.007832	-0.024737
19	P3	-8.200629	0.007832	-0.024737
22	P3	-8.200629	0.007832	-0.024737
26	P3	-8.200629	0.007832	-0.024737
30	P3	-8.200629	0.007832	-0.024737

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	-11.258815	0.126731	0.815760
7	P1a	-10.038329	0.065108	-0.076201
11	P1a	-10.594869	0.058109	-0.229172
15	P1a	-10.865390	0.134124	-0.130912
19	P1a	-15.739927	0.064458	0.037538
22	P1a	-20.846737	1.241630	0.233593
26	P1a	-15.409744	0.266422	0.295823
30	P1a	-18.357740	0.356161	-0.113910

P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-7.207241	3.433511	-5.251585
7	P1	-2.434783	0.005811	0.006003

11	P1	-2.889950	0.015914	-0.099367
15	P1	-3.808038	0.033210	-0.106334
19	P1	-3.552183	0.012277	-0.008763
22	P1	-5.027825	0.022869	-0.029164
26	P1	-5.988882	0.023218	0.049885
30	P1	-5.285484	0.022457	0.029105

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.576468	0.693226	-2.268660
7	P2	-21.991114	0.052605	0.134710
11	P2	-10.670590	0.030109	0.081468
15	P2	-4.824619	0.026962	0.053095
19	P2	-6.822123	0.027471	0.064433
22	P2	-8.125695	0.029490	0.085566
26	P2	-24.254467	0.032613	0.000774
30	P2	-21.768356	0.036206	0.098520

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.045211	0.003290	0.021197
7	P3	-8.045275	0.003303	0.020829
11	P3	-8.045298	0.003299	0.020546
15	P3	-8.045266	0.003309	0.020830
19	P3	-8.045262	0.003287	0.020675
22	P3	-8.045346	0.003300	0.020678
26	P3	-8.045240	0.003297	0.020714
30	P3	-8.045261	0.003307	0.020534

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	0.000612668
	stdev	2.31764e-07
MEAN Q	mean	0.000401347
	stdev	2.49106e-07



5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.109279
	stdev	0.00255007
STDEV Q	mean	0.109353
	stdev	0.00259935



5.3 - Gain imbalance I/Q



6 - Telemetry analysis

Summary of analysis for the last 3 days 2007022[567]

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_1PNPDE20070225_022551_000000212055_00476_26081_1575.N1	1	0
ASA_WVS_1PNPDK20070225_151346_000000152055_00483_26088_8098.N1	0	8

ASA_WVS_1PNPDK20070225_151416_000001352055_00483_26088_8120.N1	0	8
ASA_WSM_1PNPDE20070225_141210_000000852055_00483_26088_1631.N1	0	16
ASA_WSM_1PNPDE20070226_153355_000000672055_00498_26103_2948.N1	0	57
ASA_WSM_1PNPDE20070226_165904_000002192055_00499_26104_3039.N1	0	74
ASA_WSM_1PNPDE20070226_165904_000002192055_00499_26104_3045.N1	0	74
ASA_WSM_1PNPDE20070227_002822_000002612056_00002_26108_3509.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"/>	Ascending
<input type="checkbox"/>	Descending

7.2 - Absolute Doppler for WVS

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

7.3 - Doppler evolution versus ANX for WVS

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

Acsending

Descending

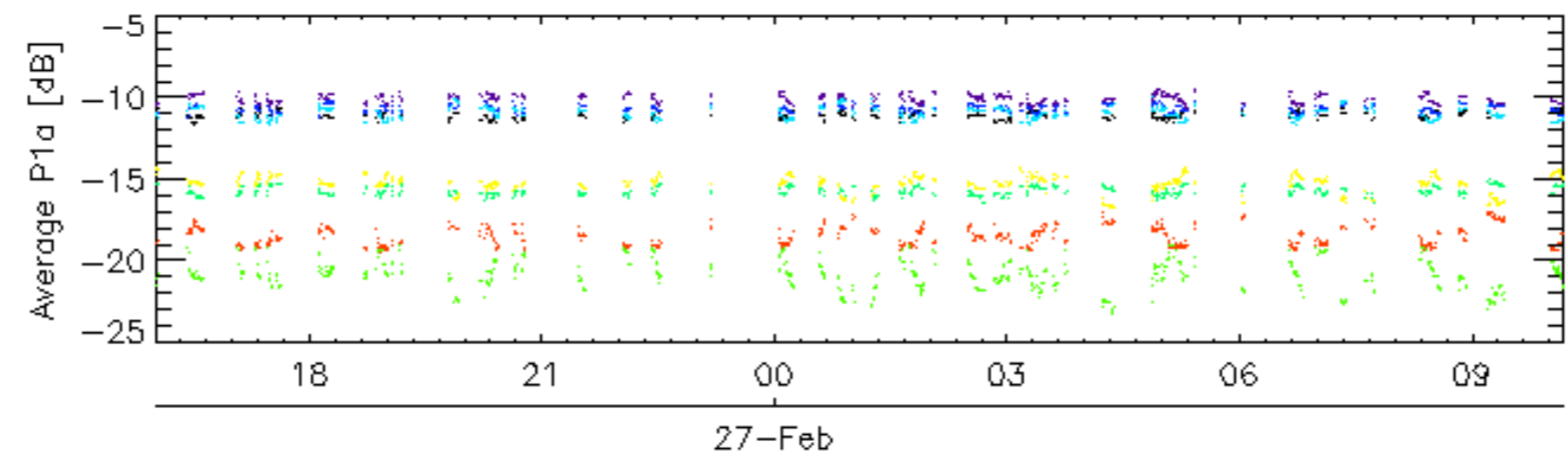
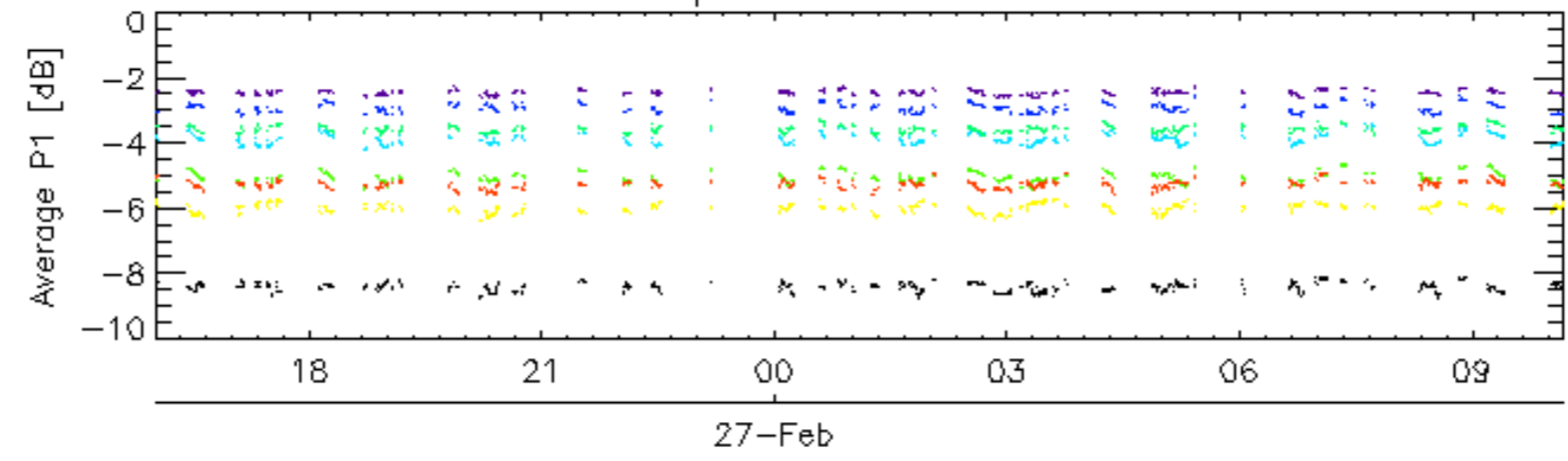
7.5 - Absolute Doppler for GM1**Evolution of Absolute Doppler**

Acsending

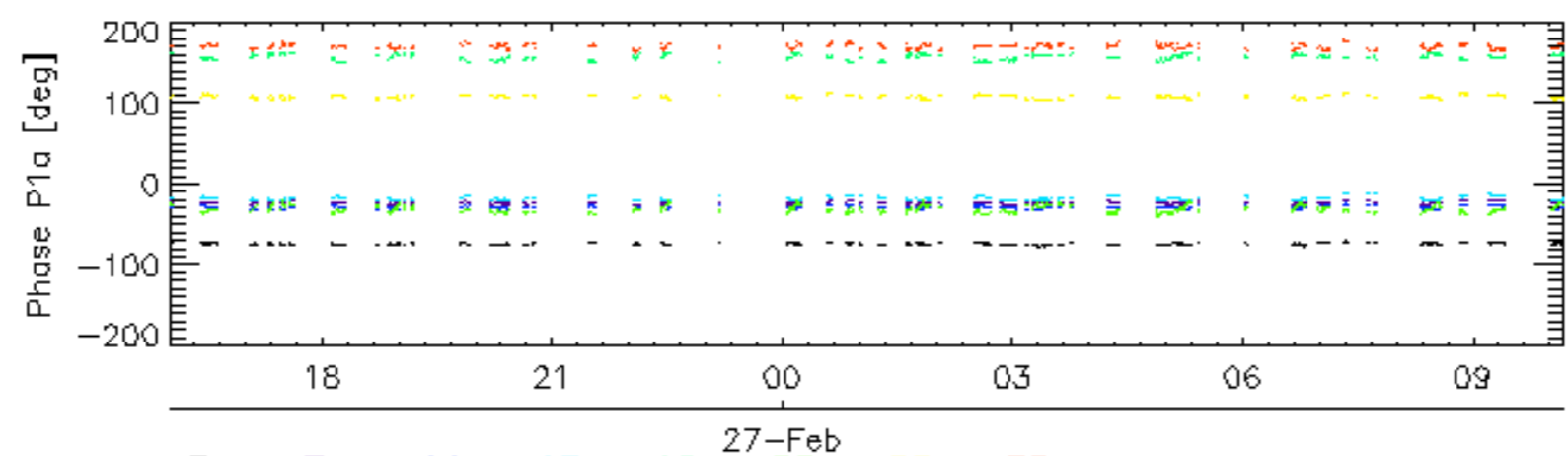
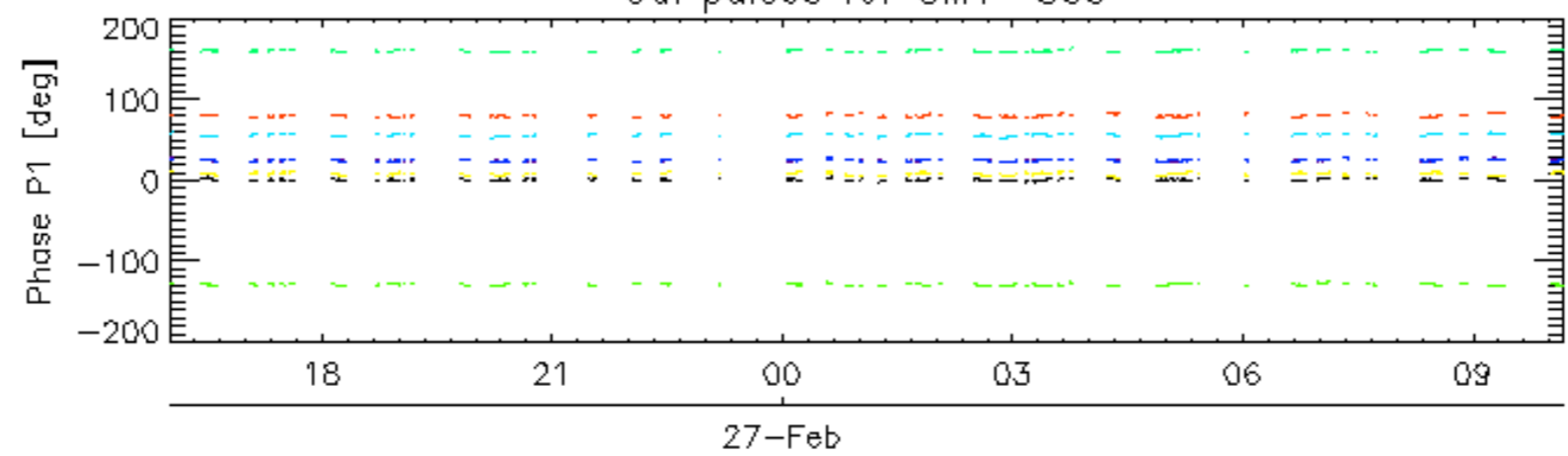
Descending

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

Cal pulses for GM1 SS3

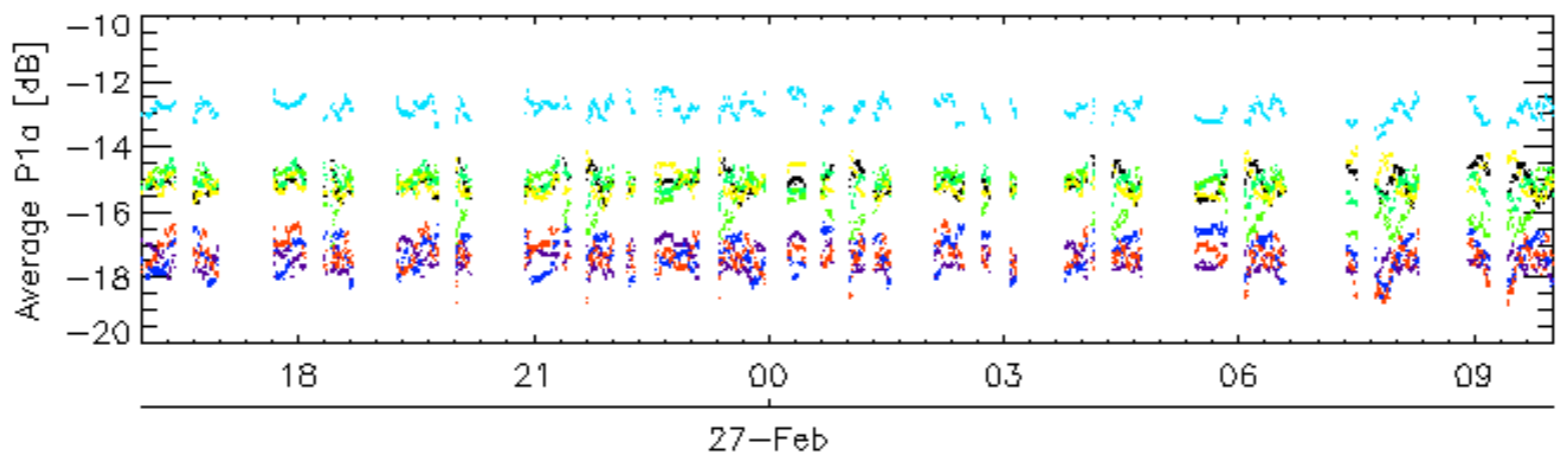
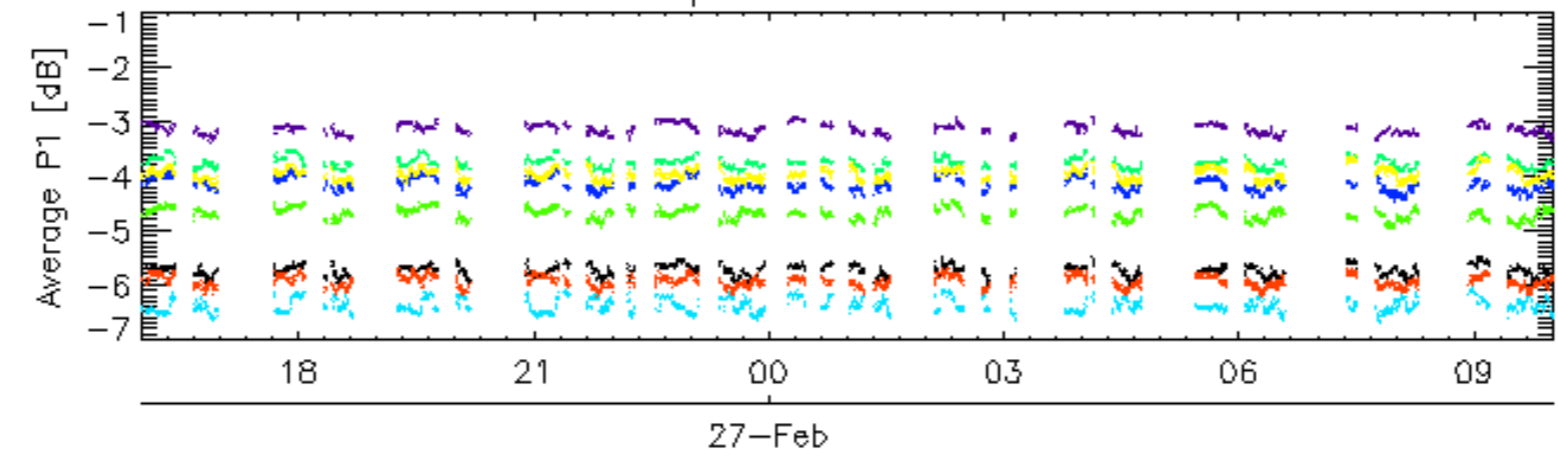


Cal pulses for GM1 SS3

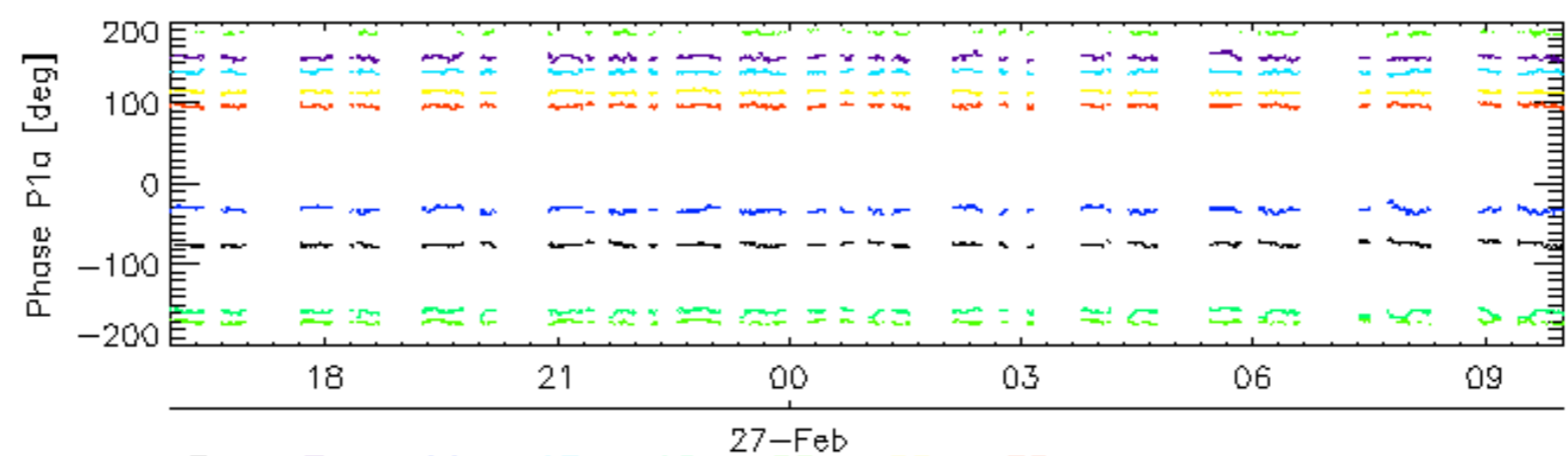
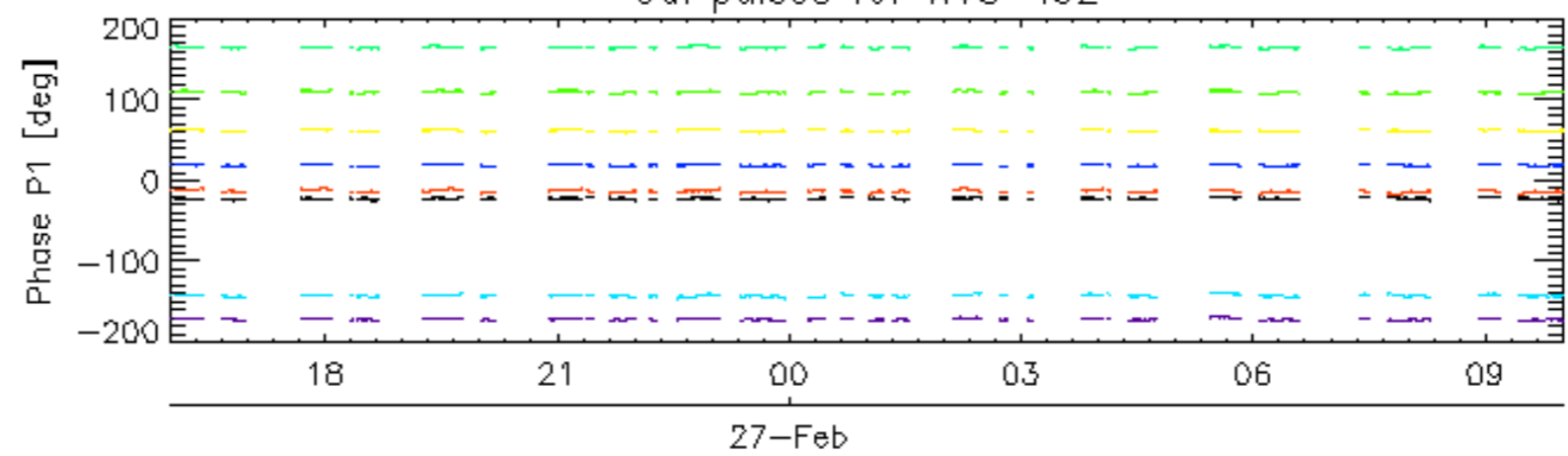


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2

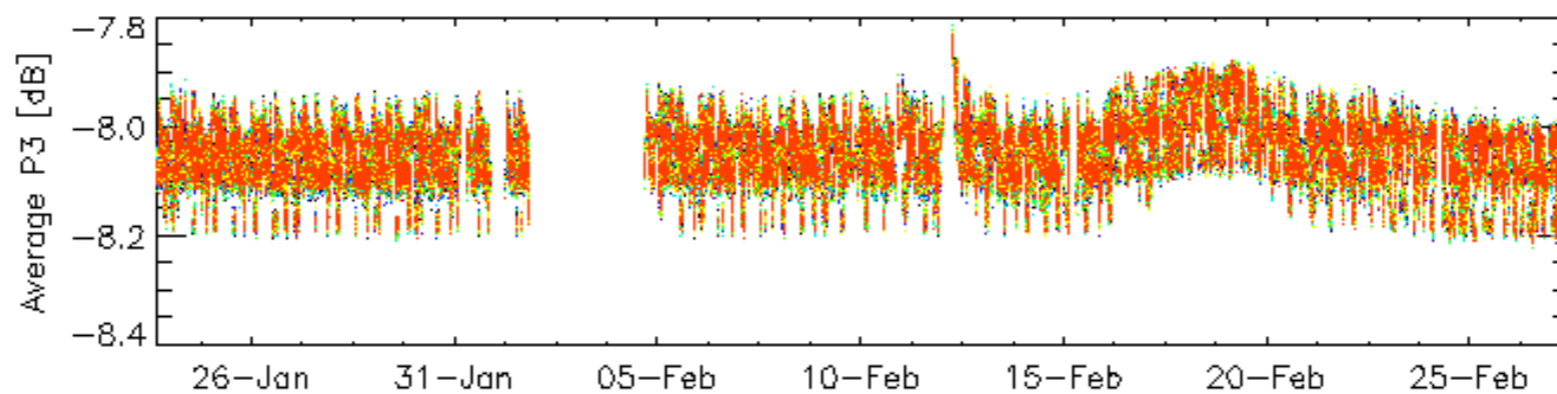
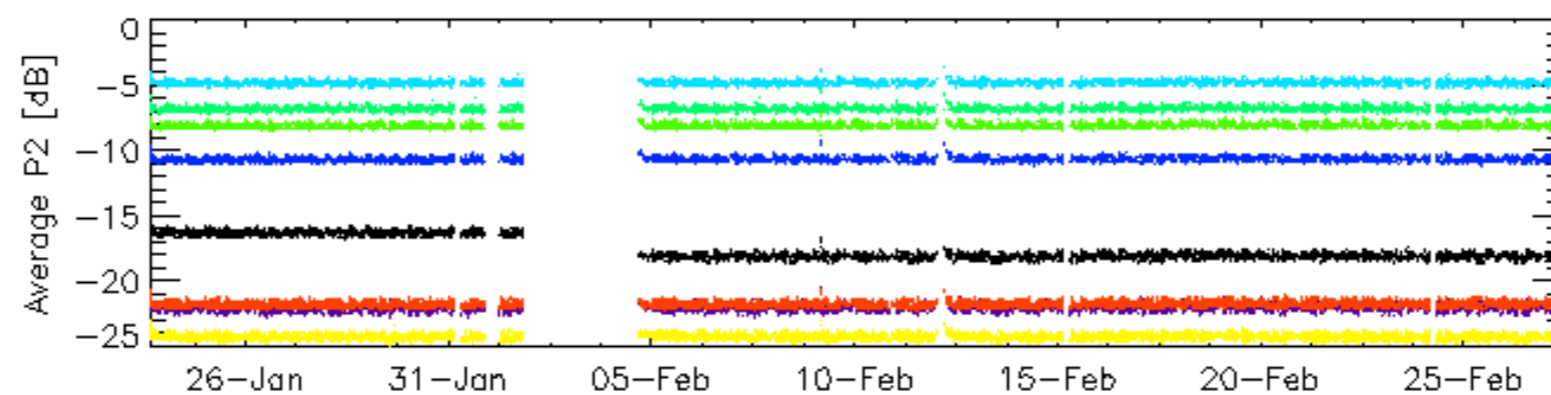
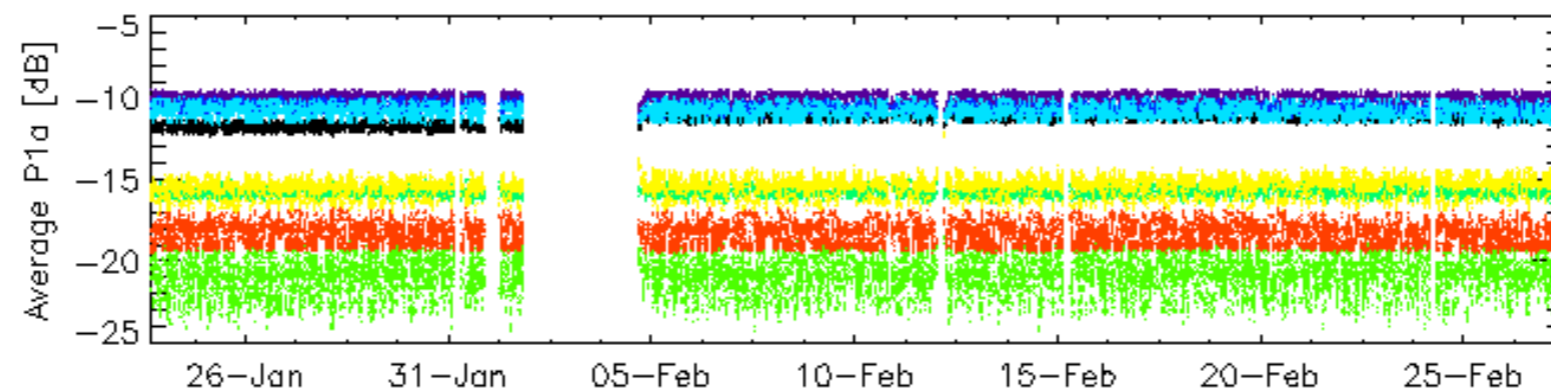
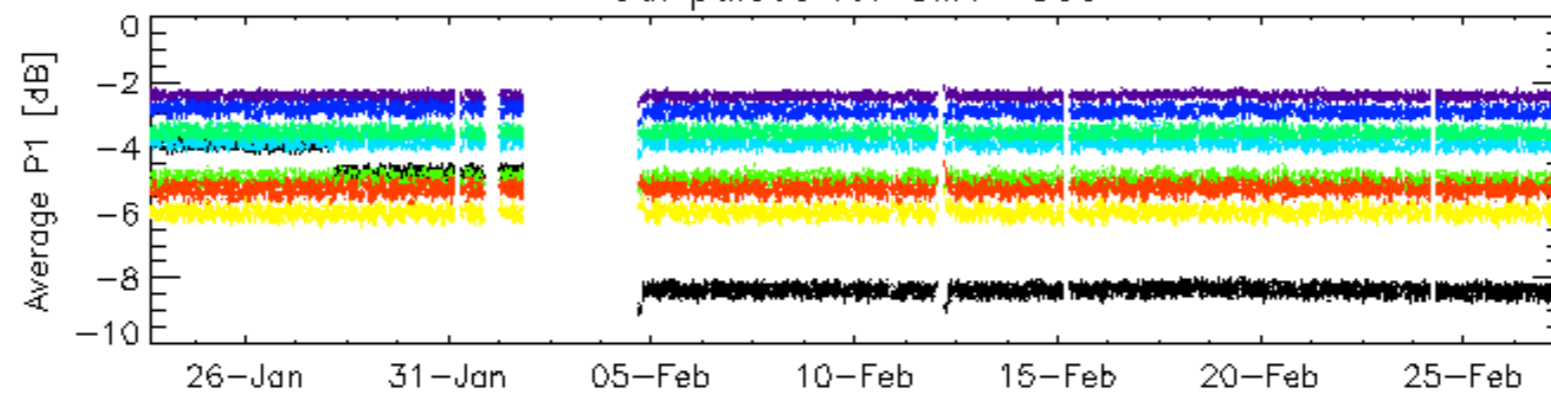


Cal pulses for WVS IS2



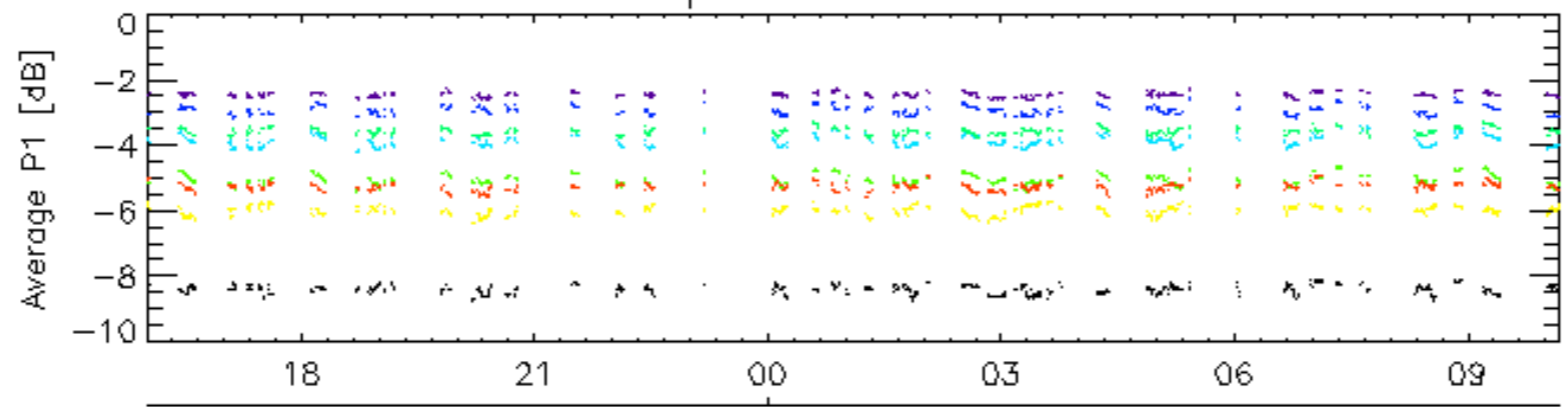
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

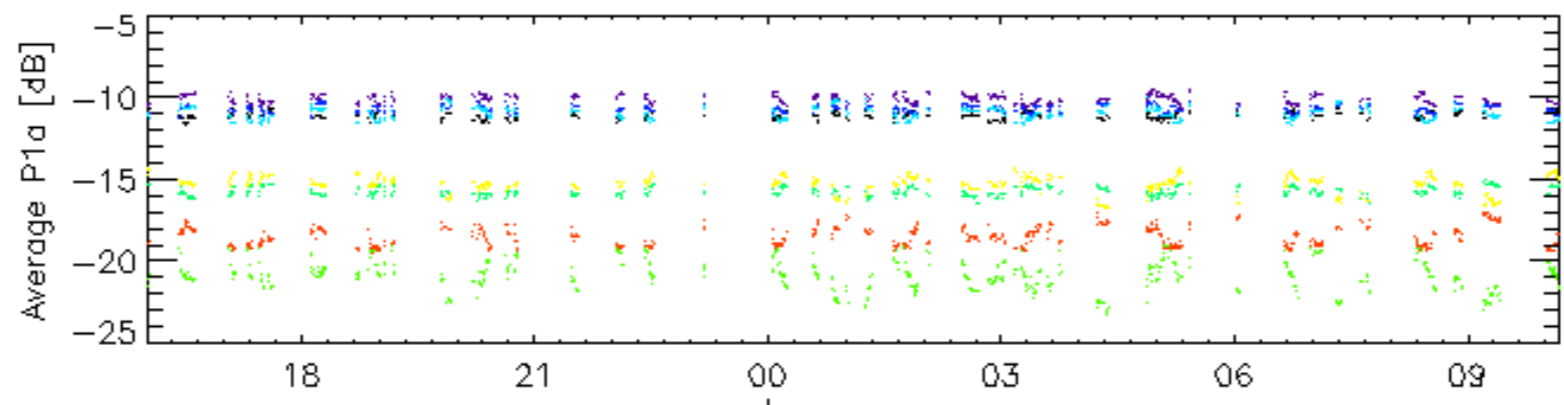


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

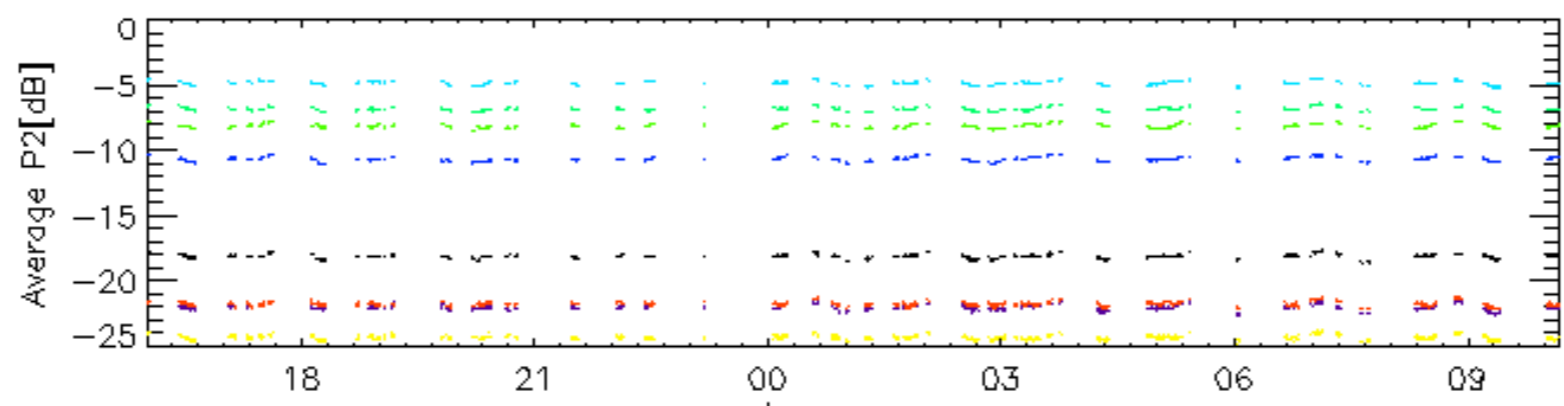
Cal pulses for GM1 SS3



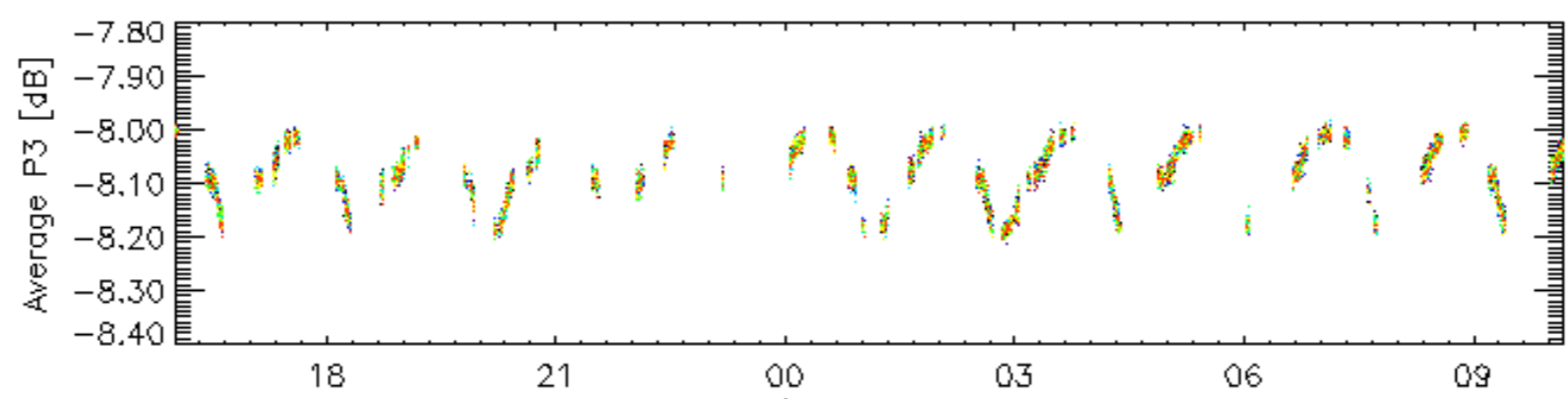
27-Feb



27-Feb



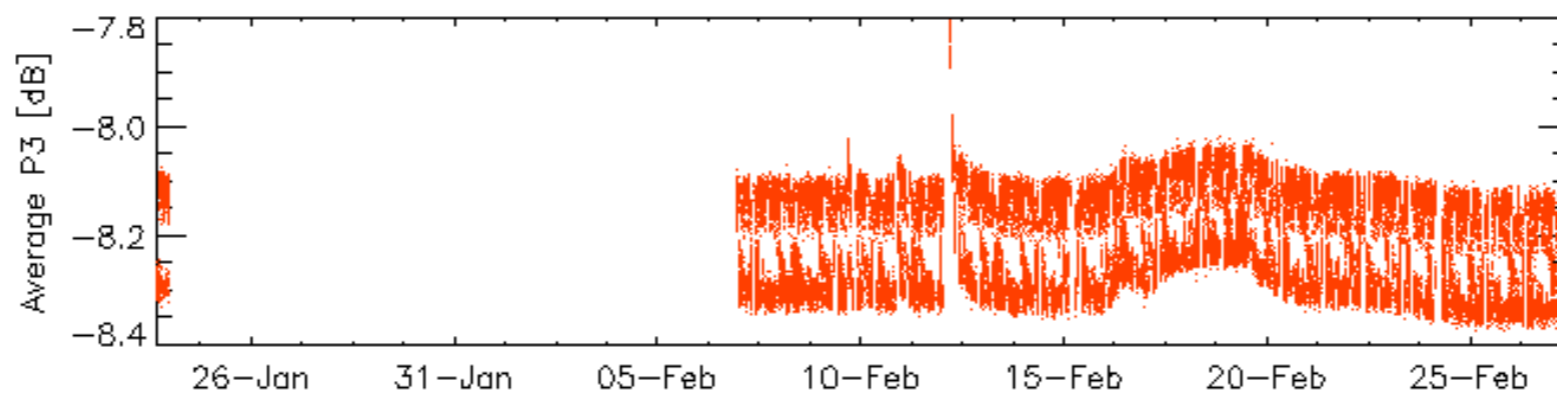
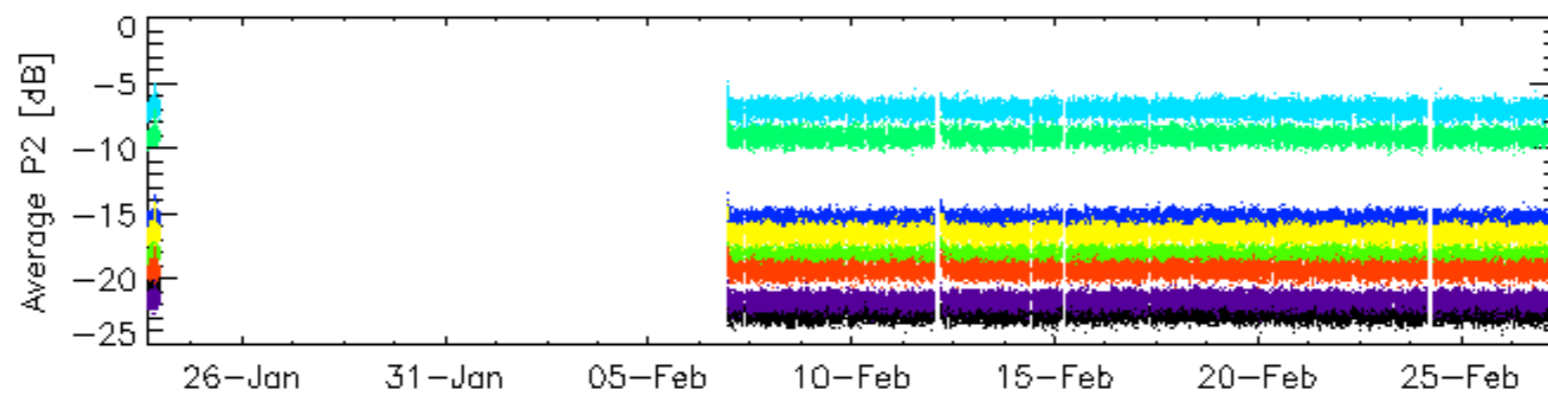
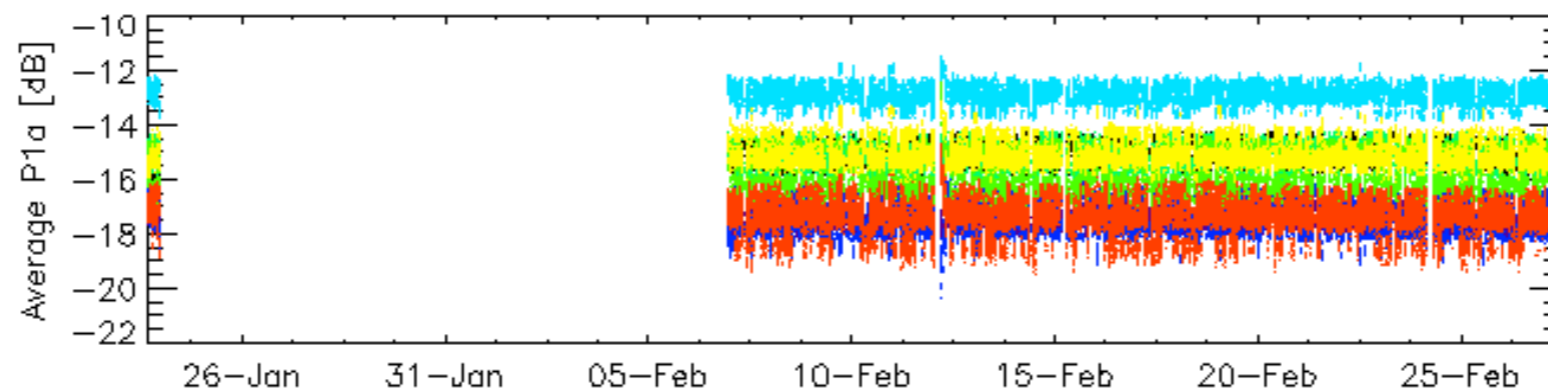
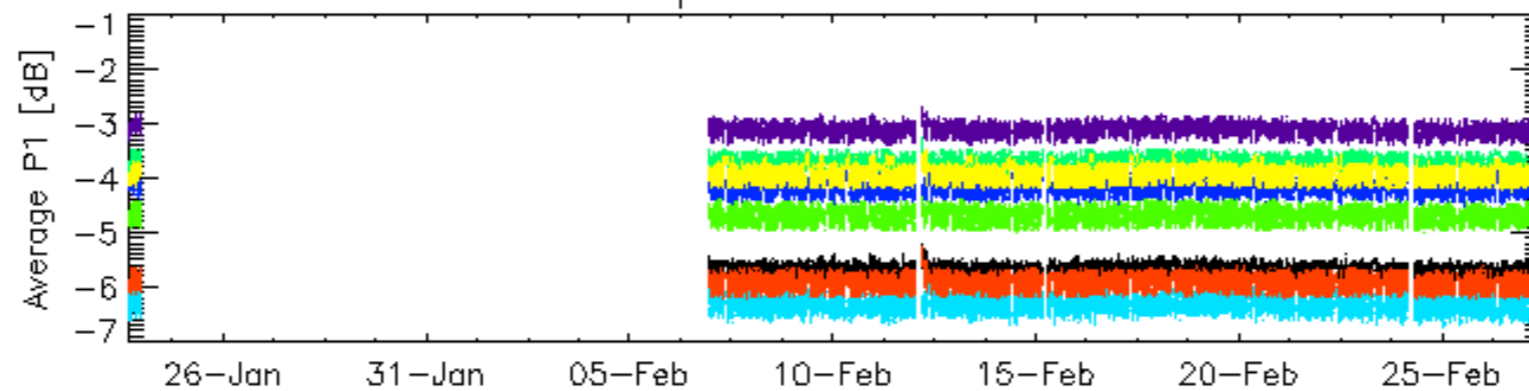
27-Feb



27-Feb

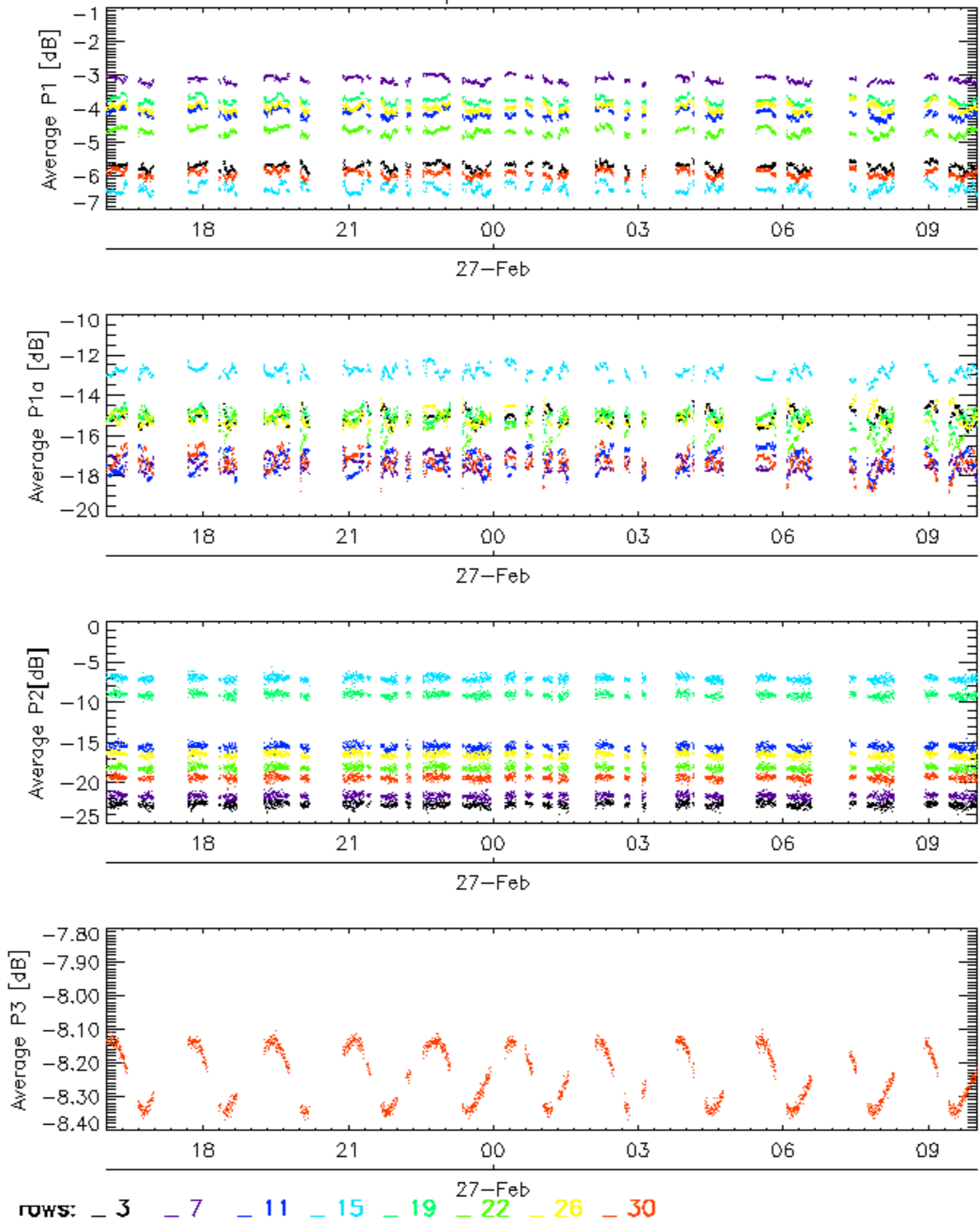
rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

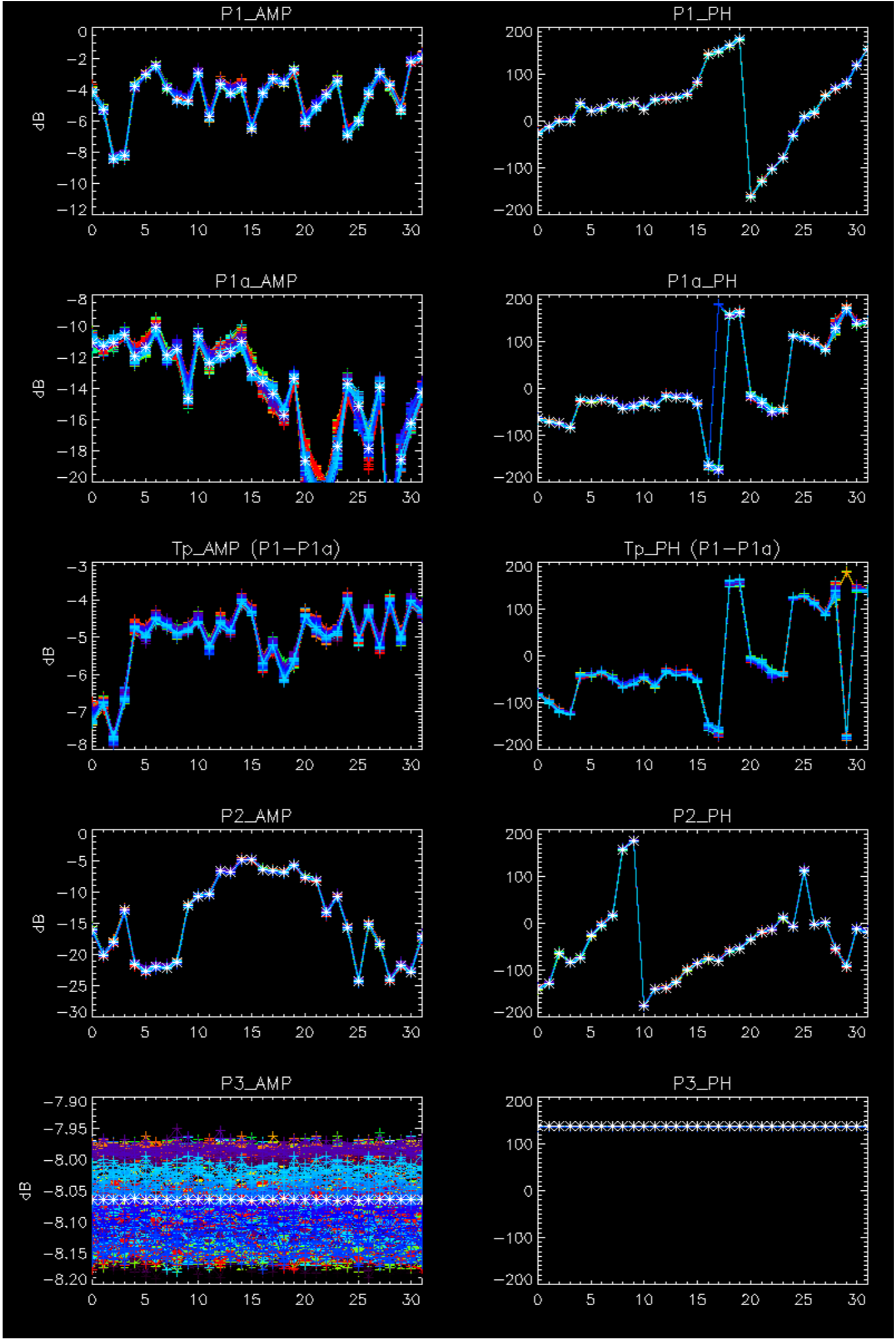


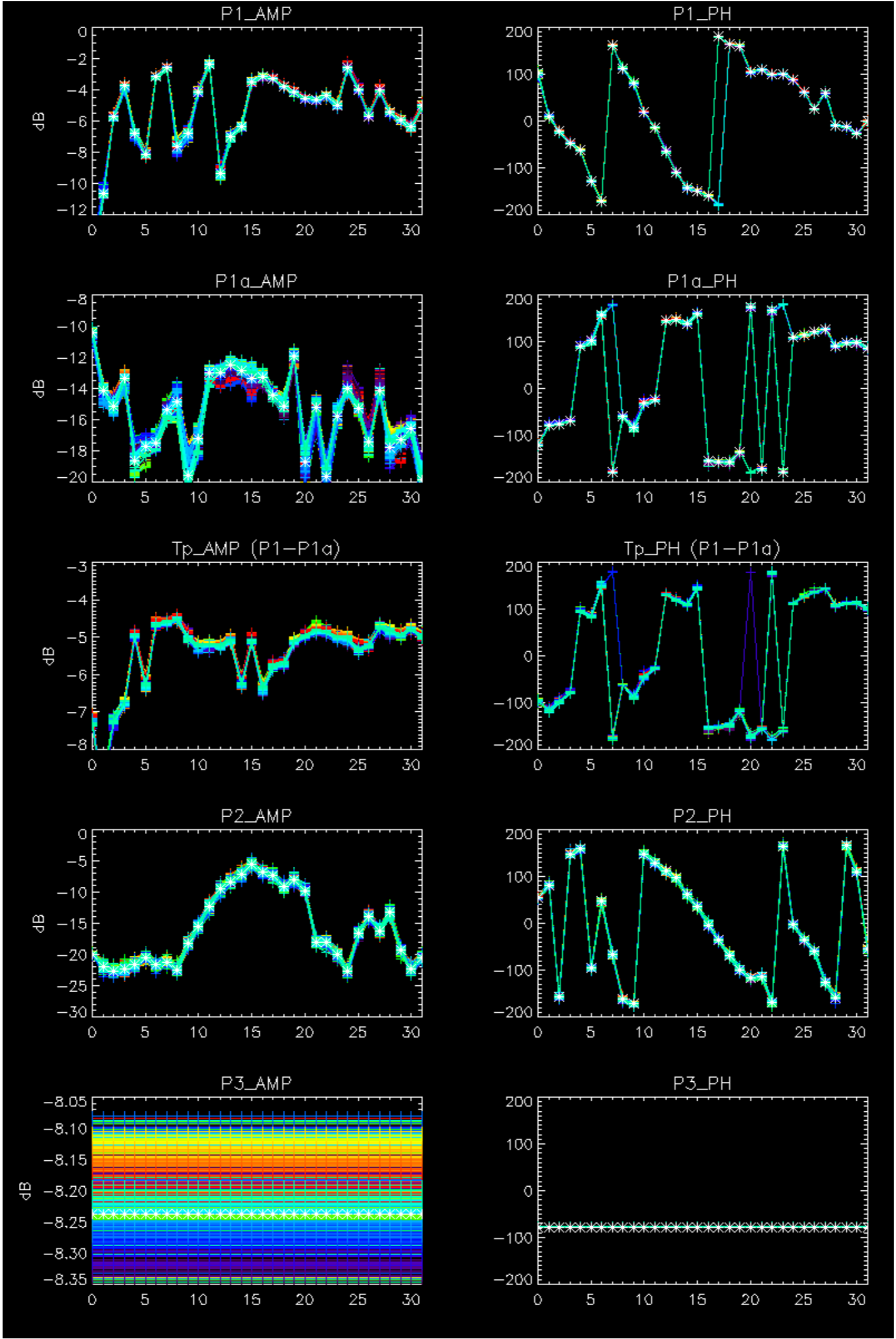
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS2



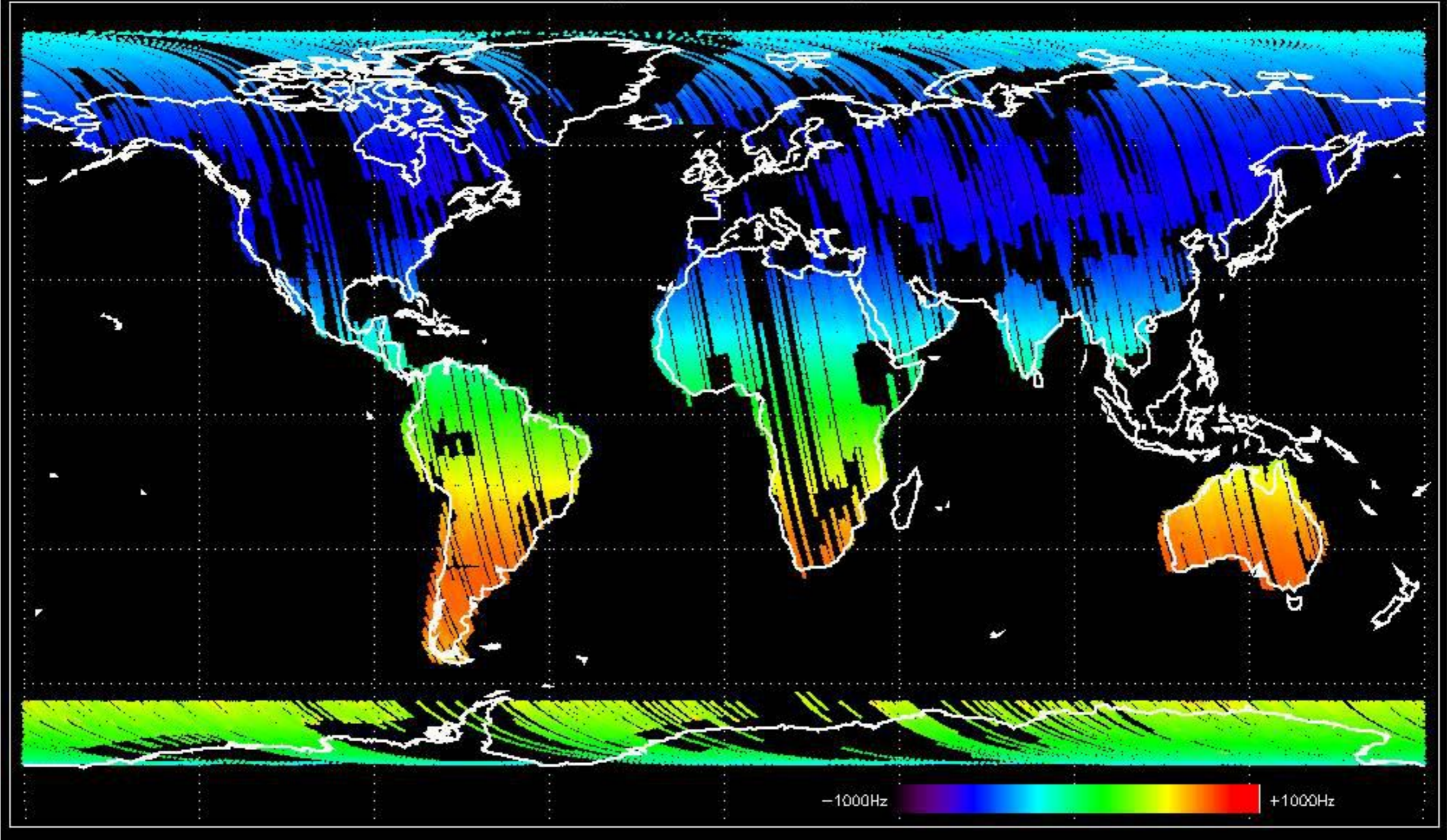
No anomalies observed.



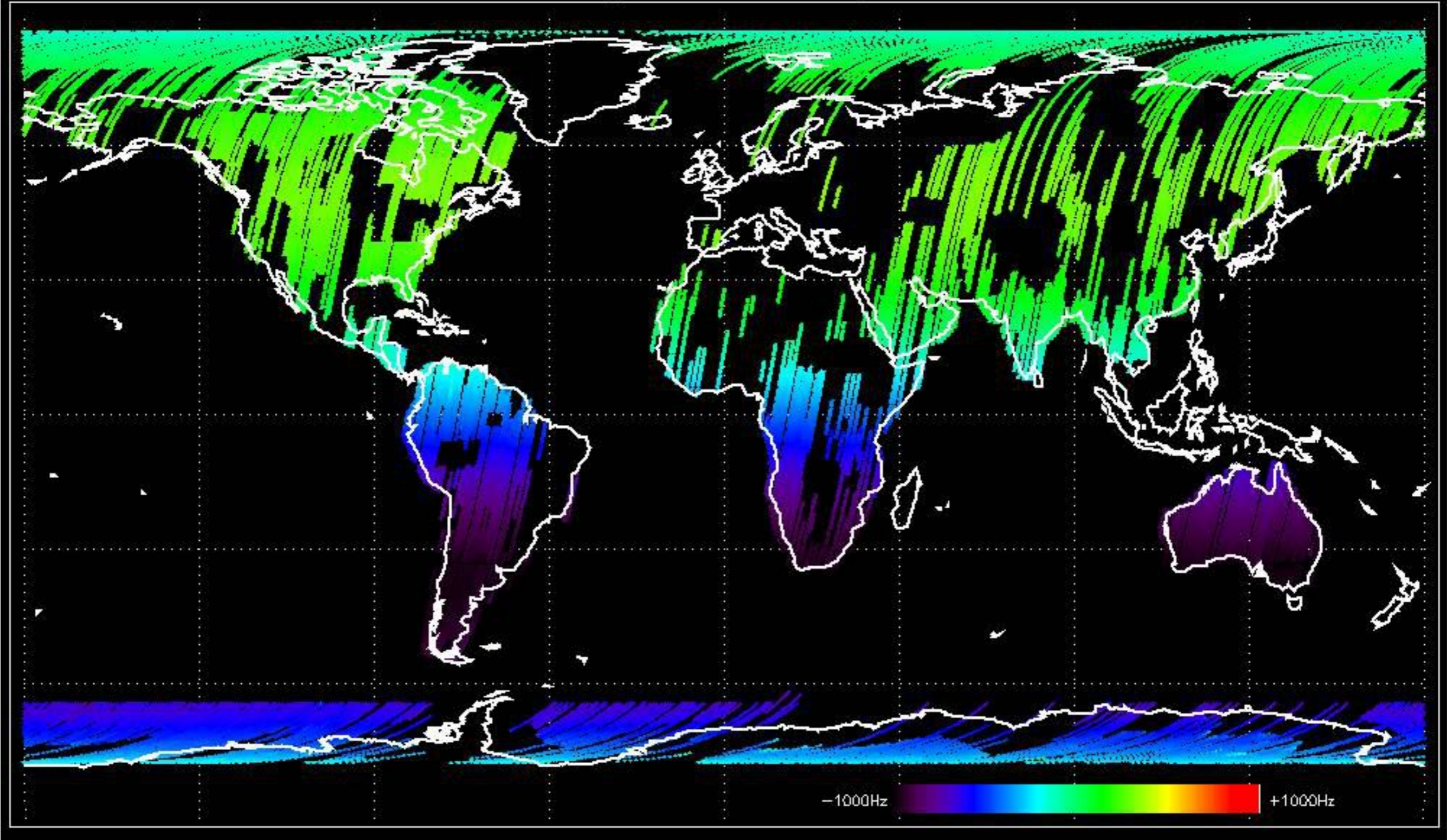


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

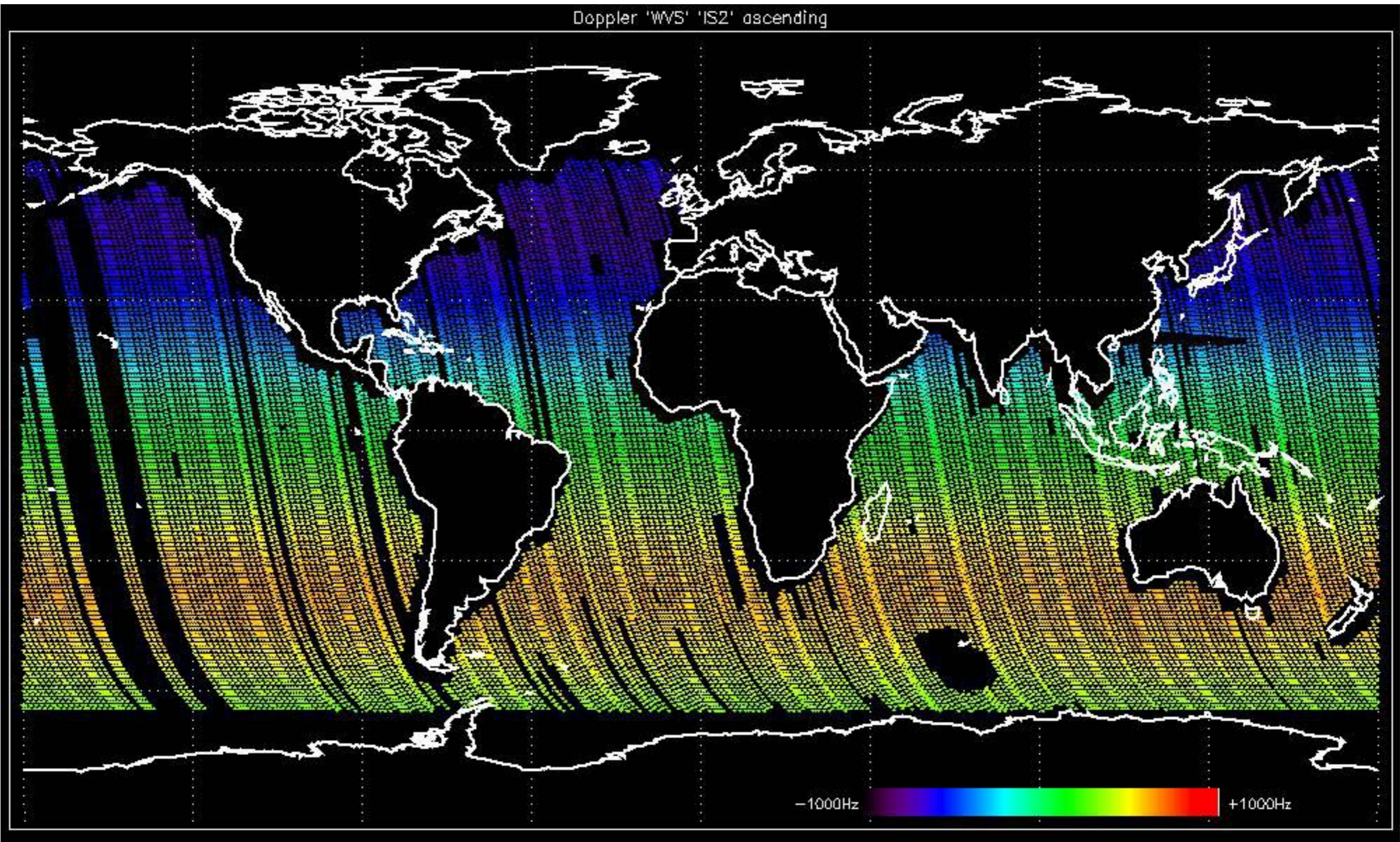
Doppler 'GM1' 'SS1' ascending



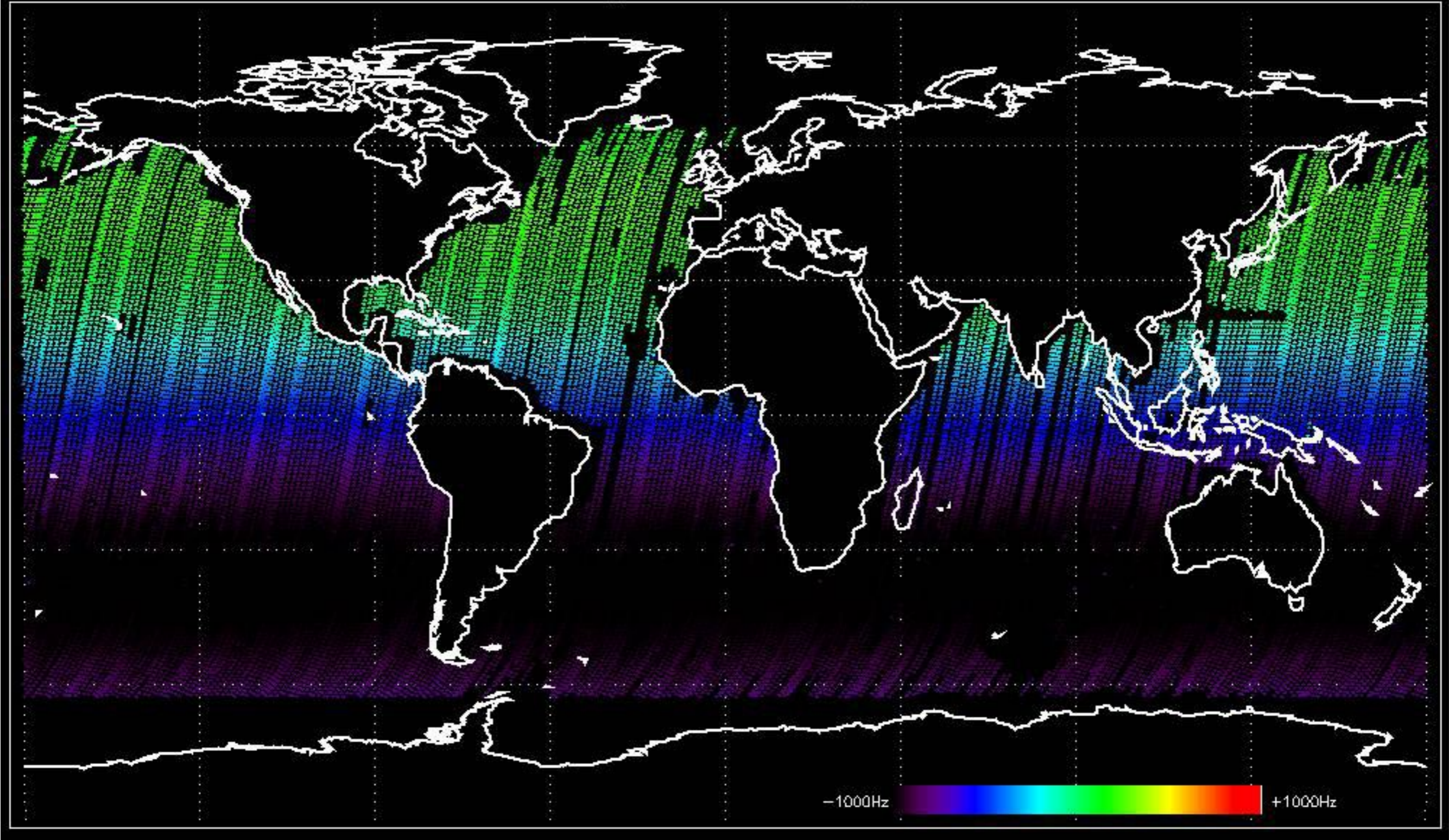
Doppler 'GM1' 'SS1' descending



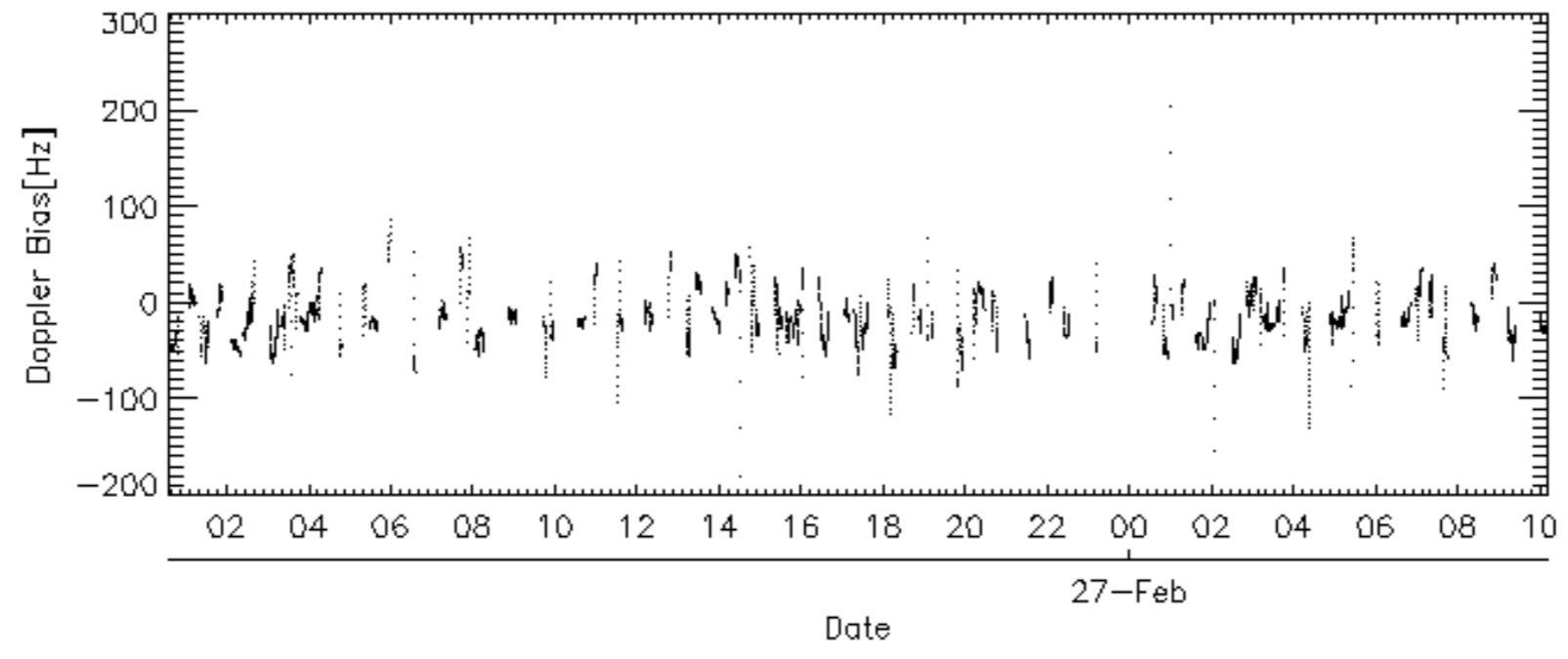
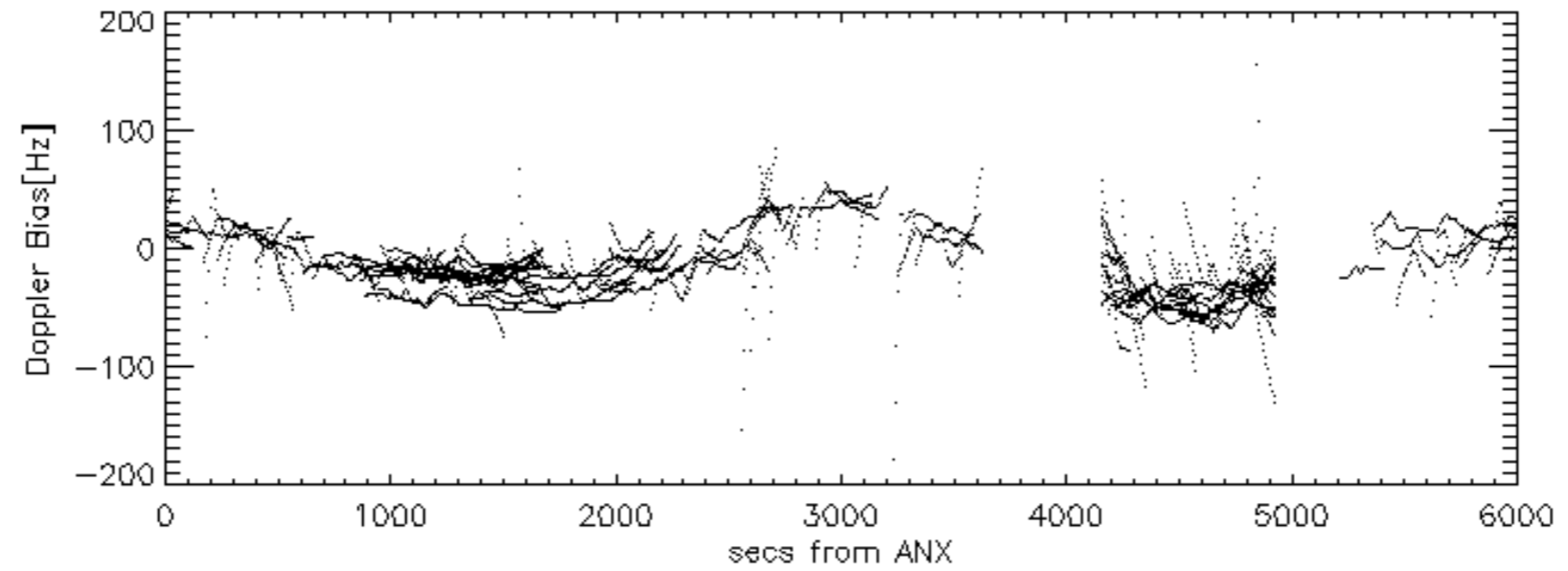
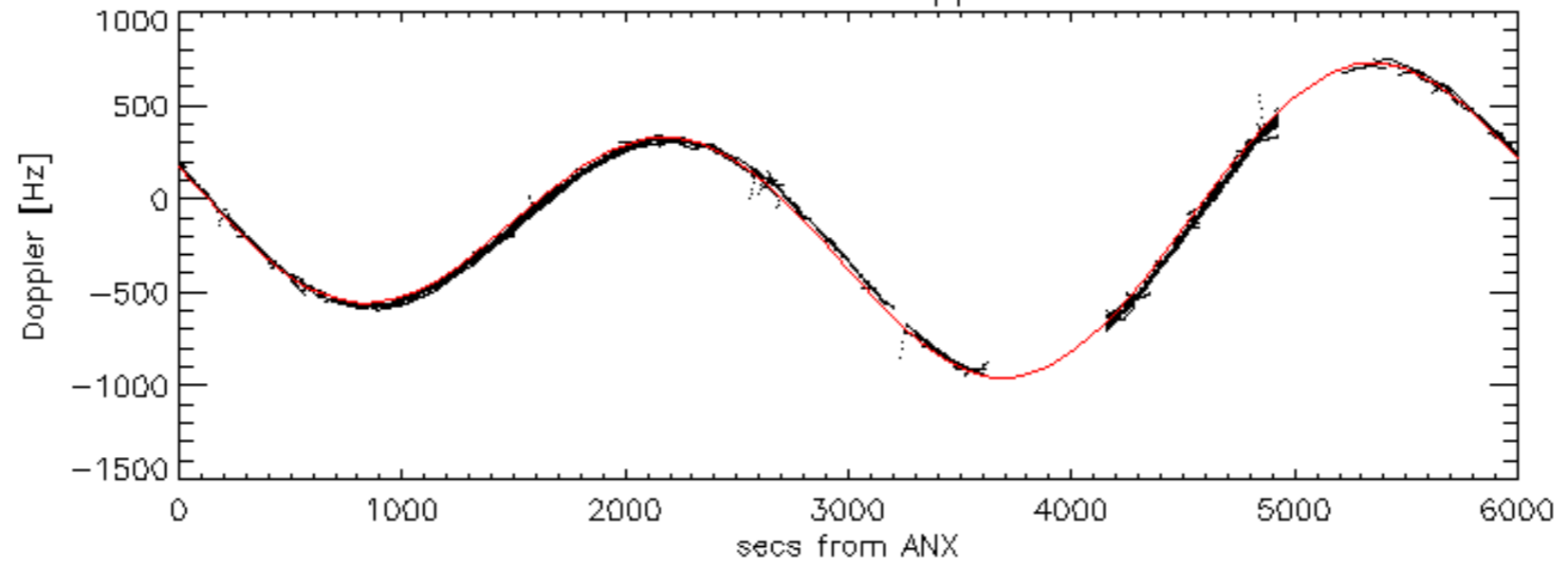
Doppler 'WVS' 'IS2' ascending



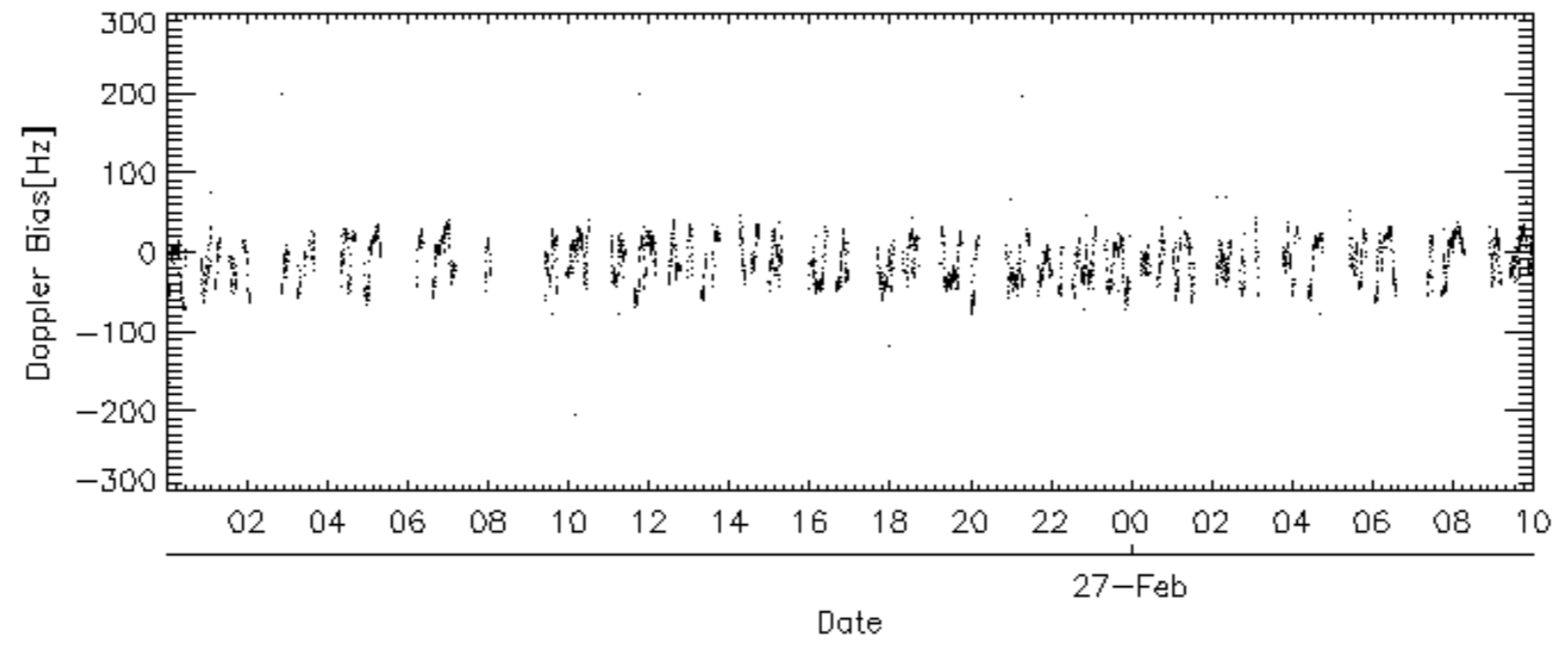
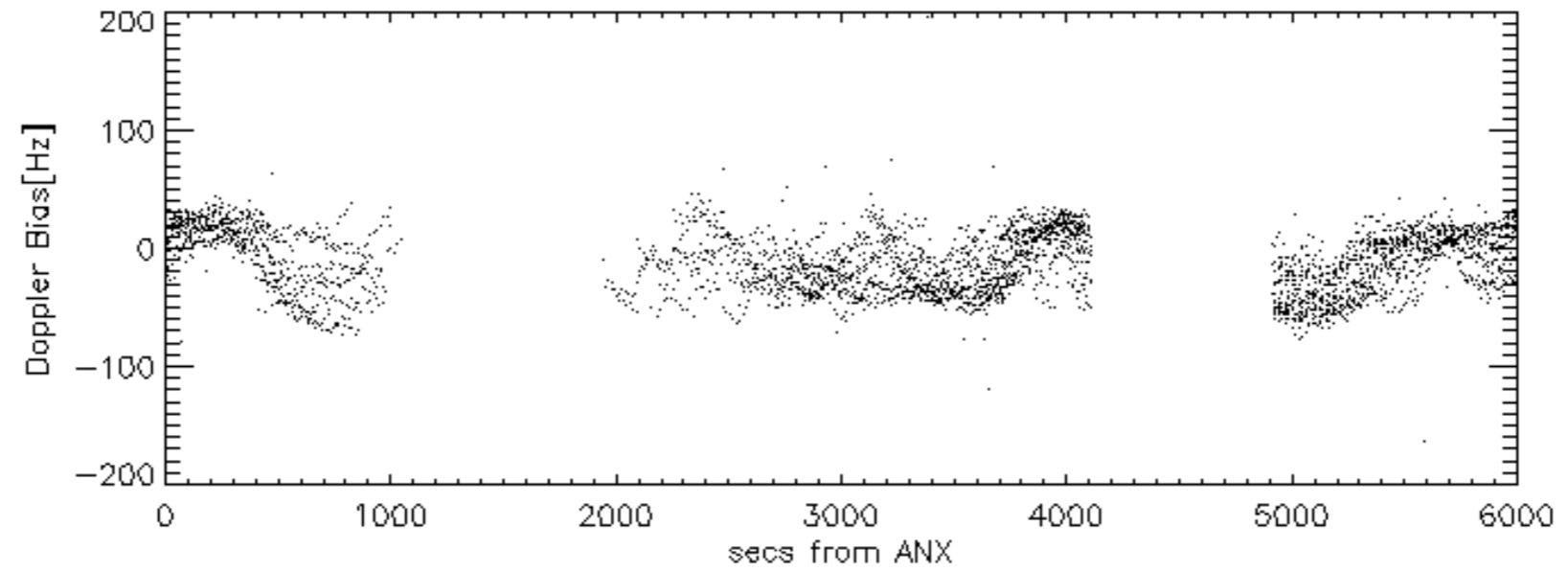
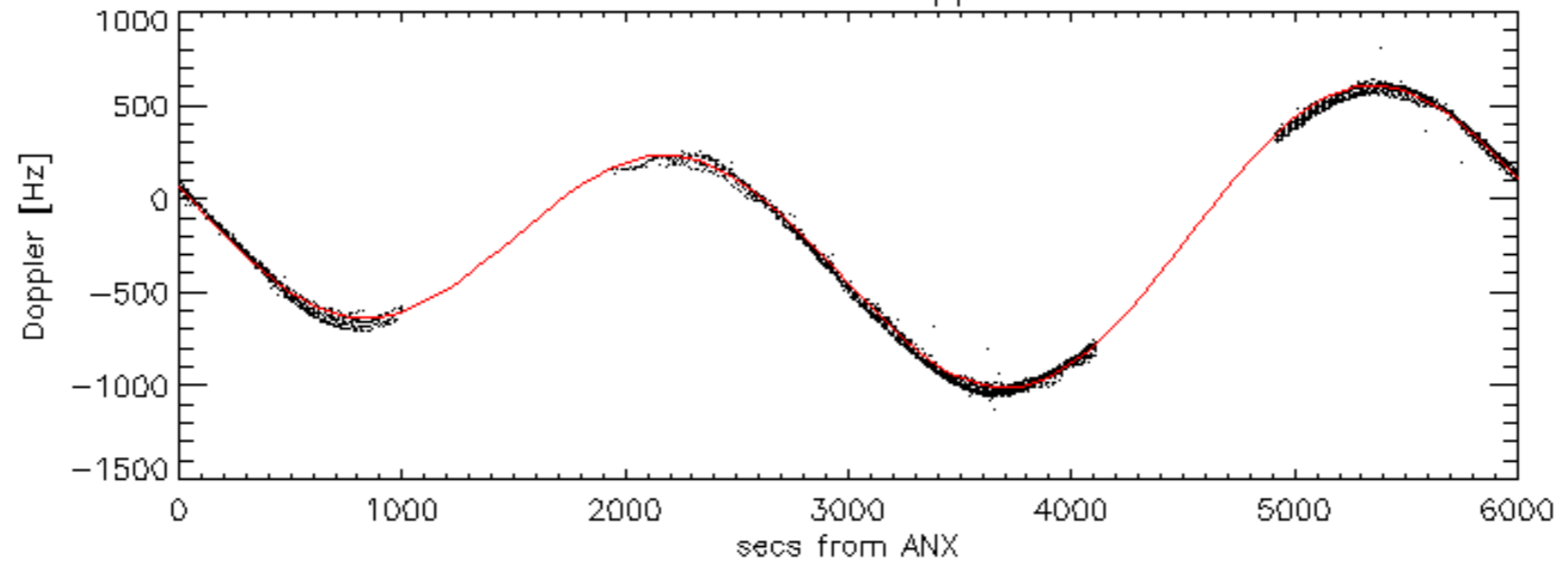
Doppler 'WVS' 'IS2' descending



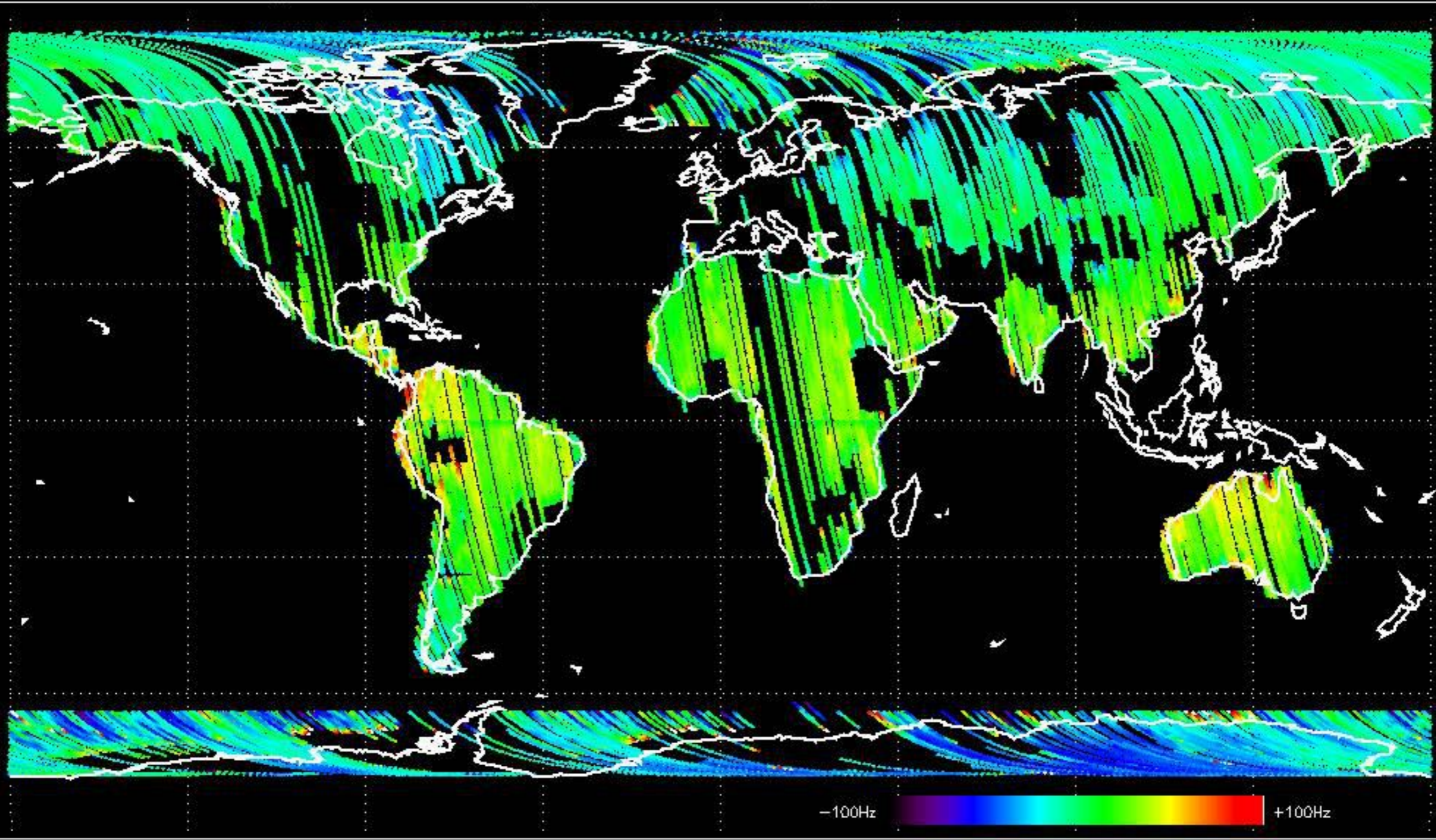
GM1 mode doppler



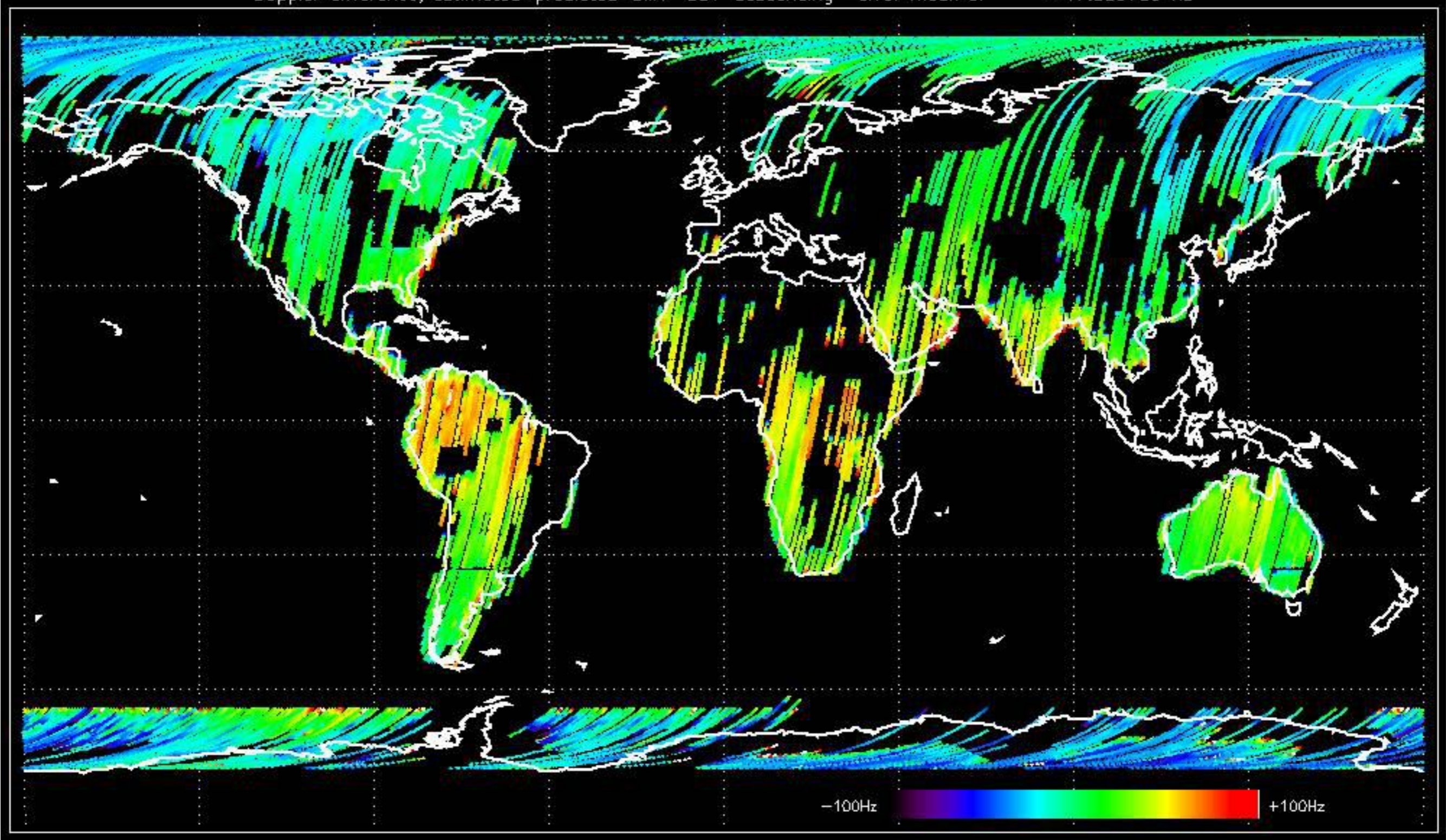
WVS mode doppler



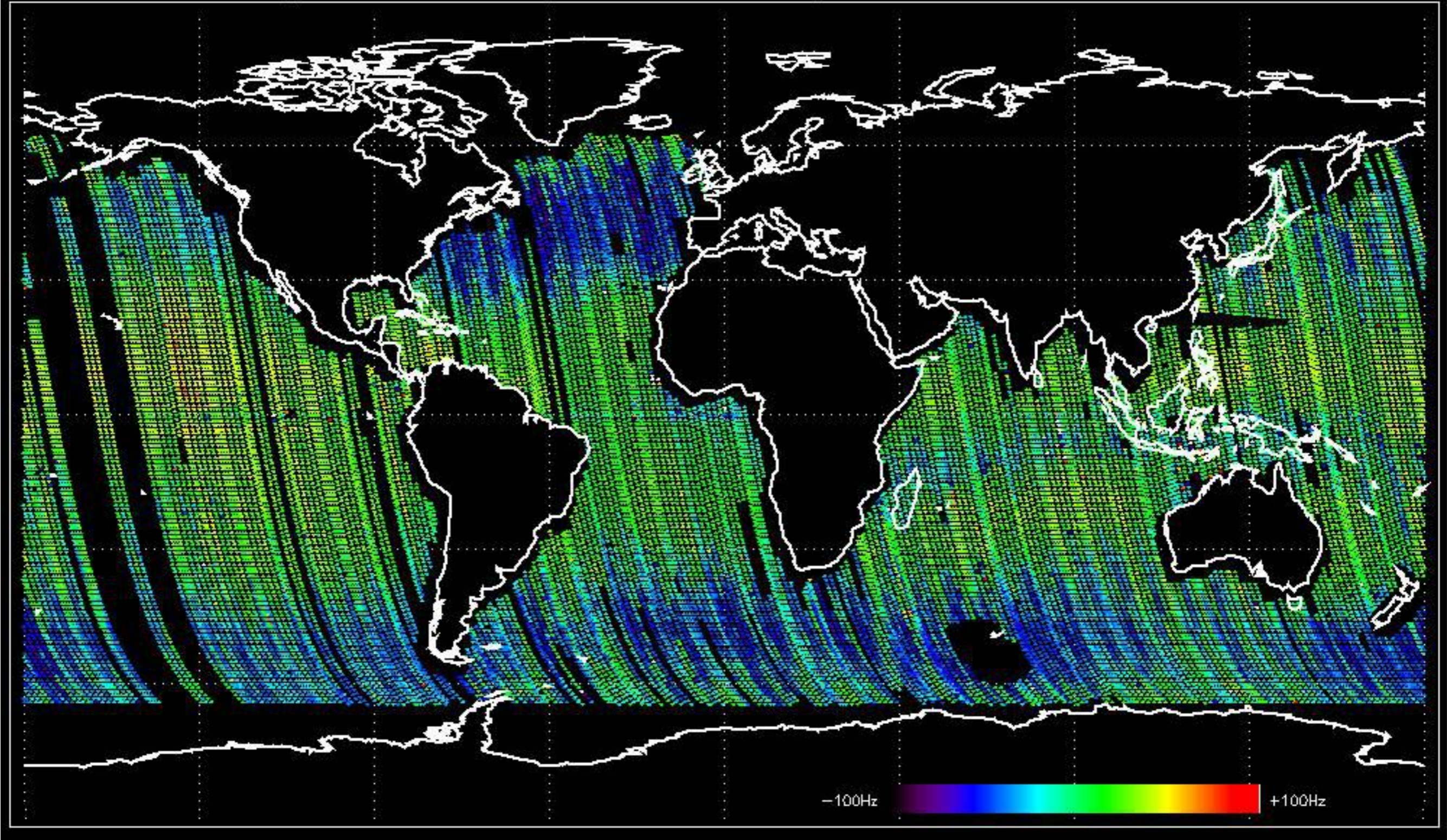
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.658819 Hz



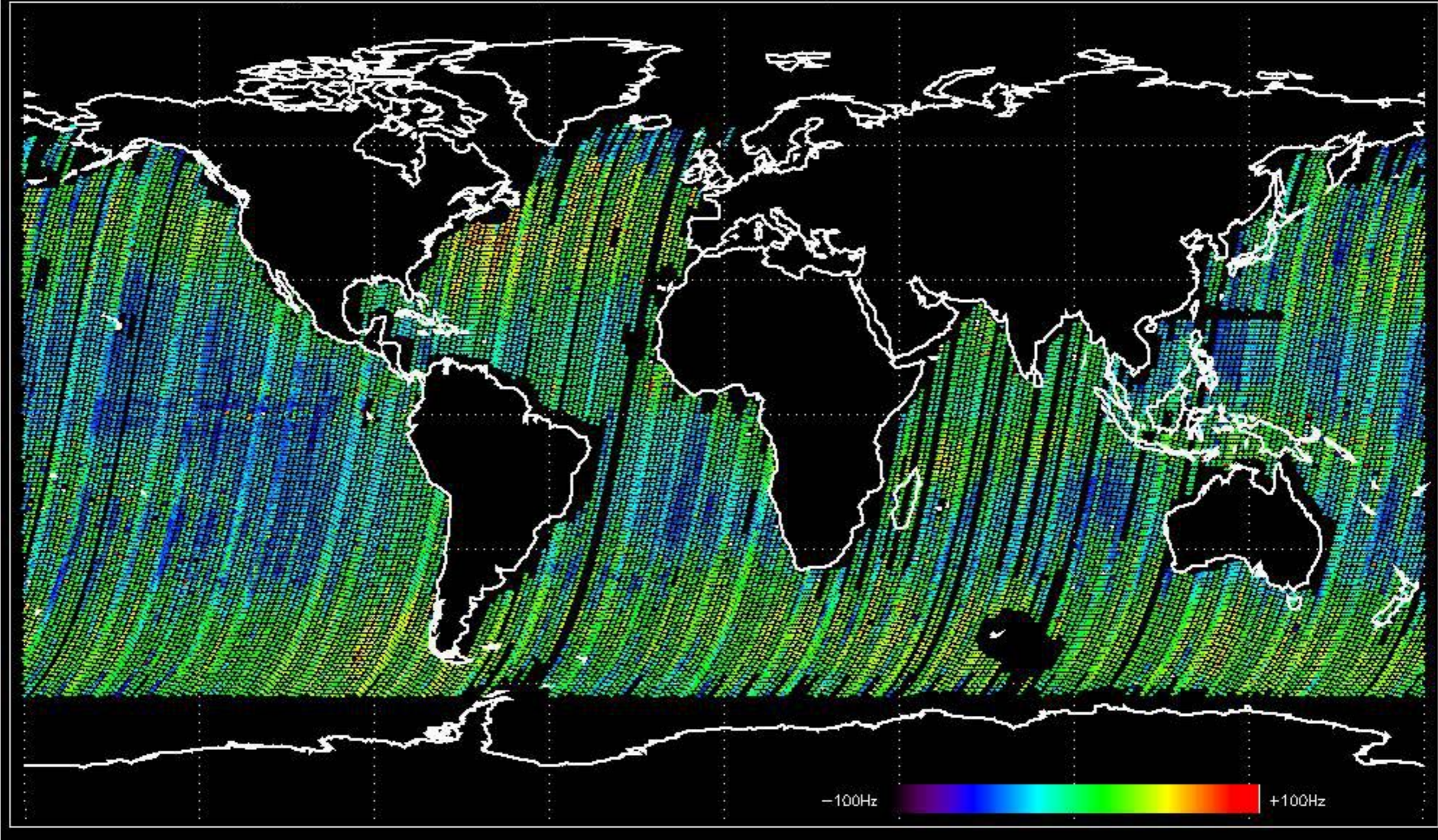
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.359733 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -15.295591 Hz

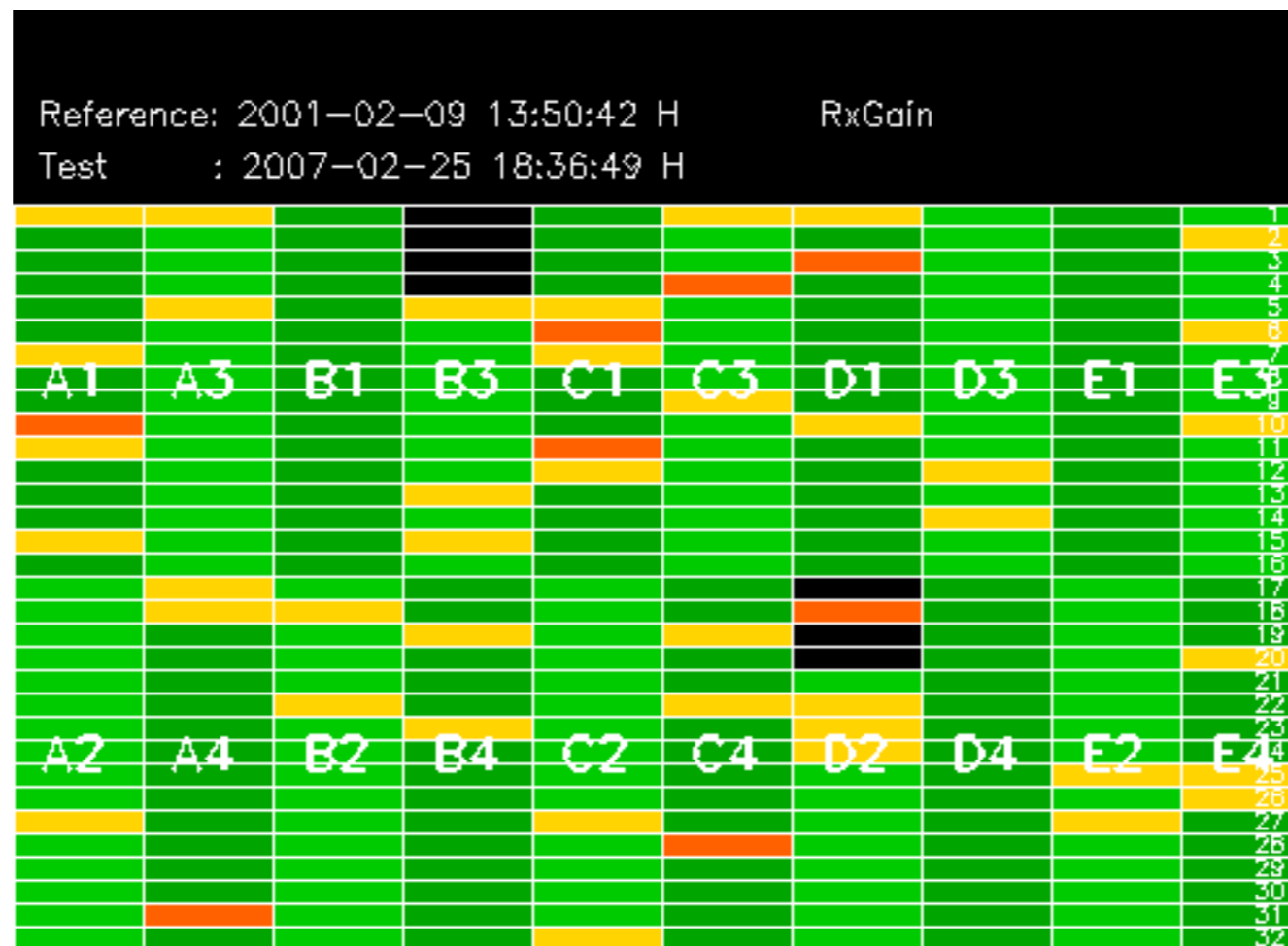


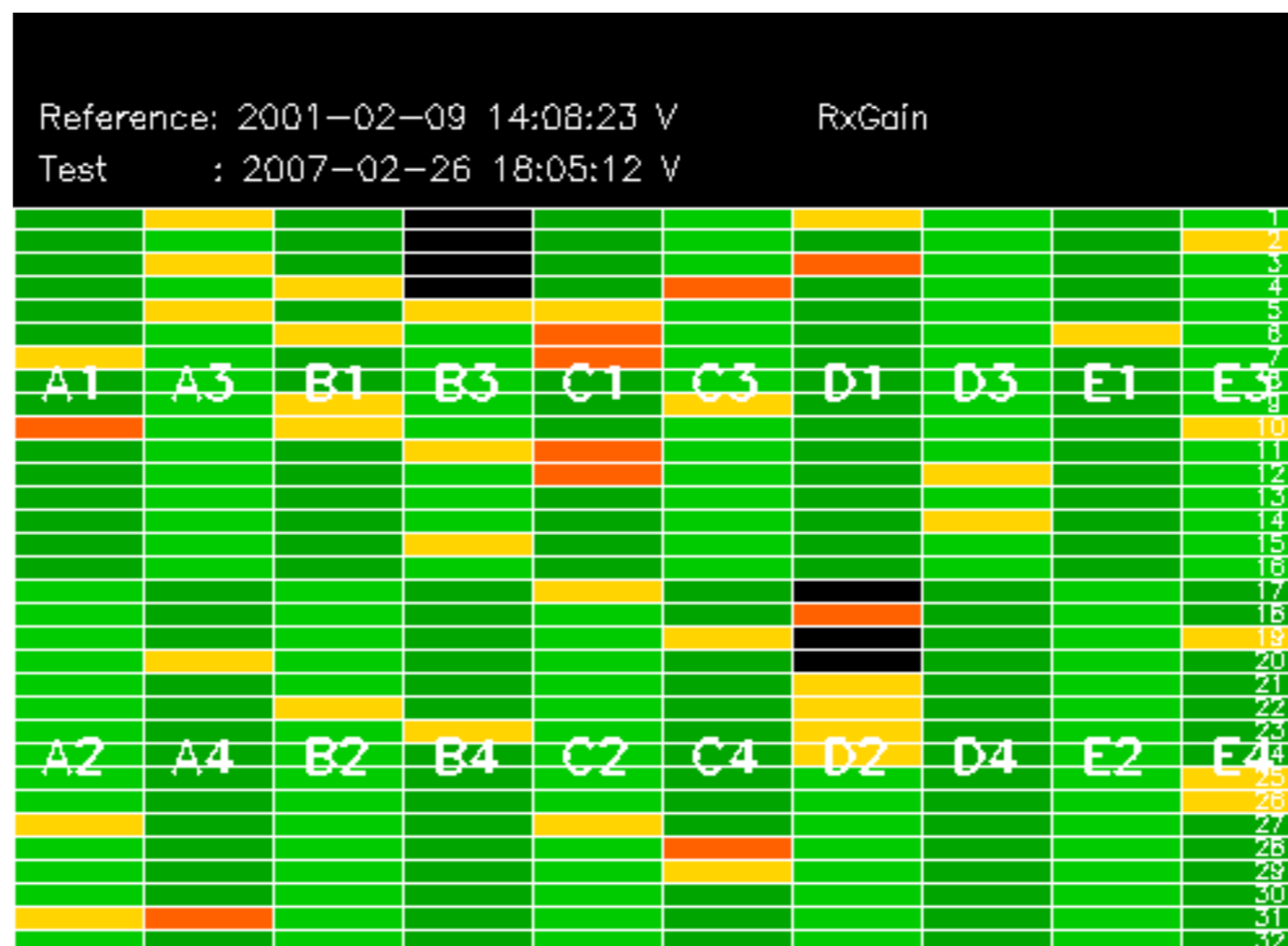
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -16.737597 Hz

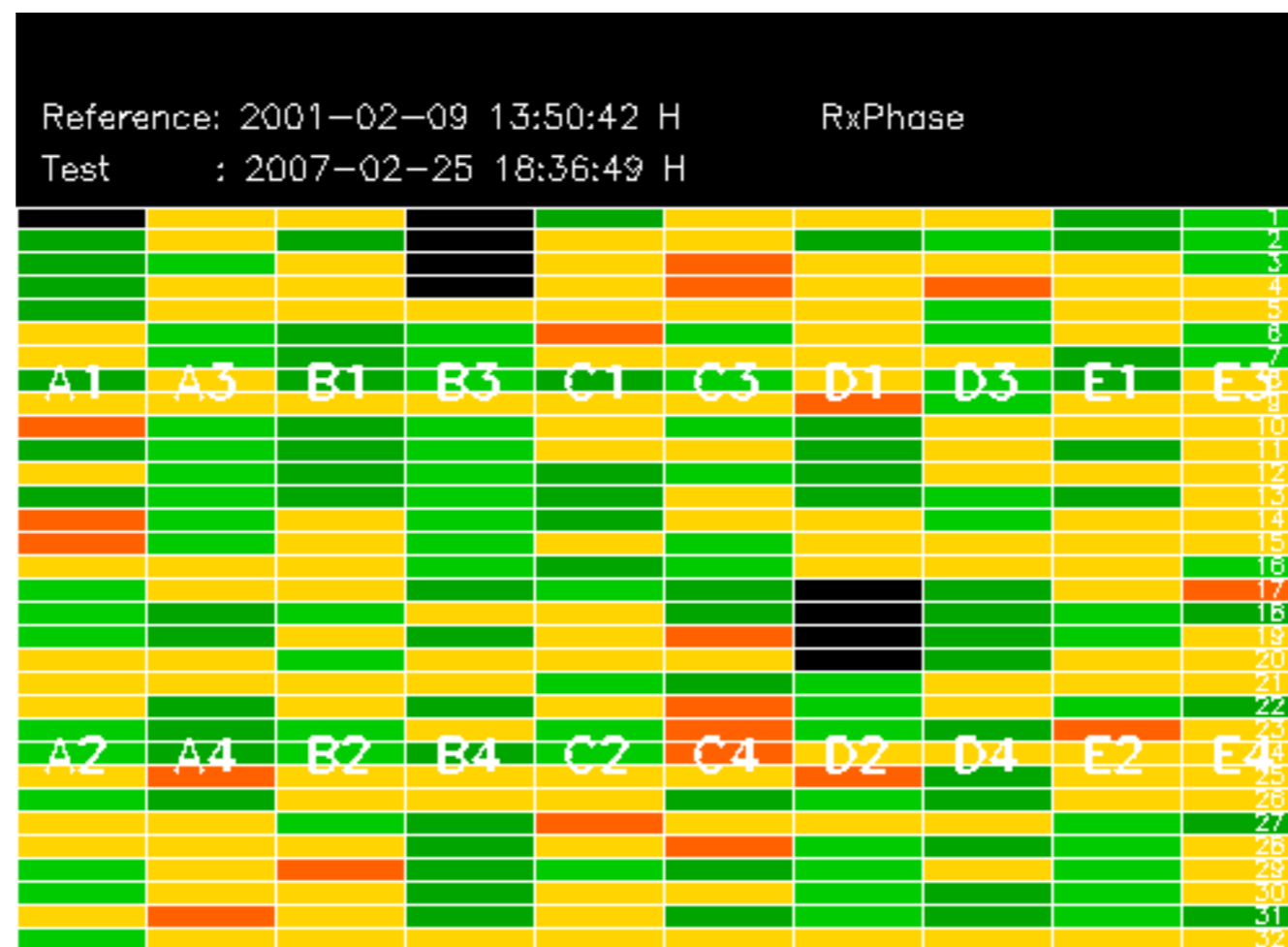


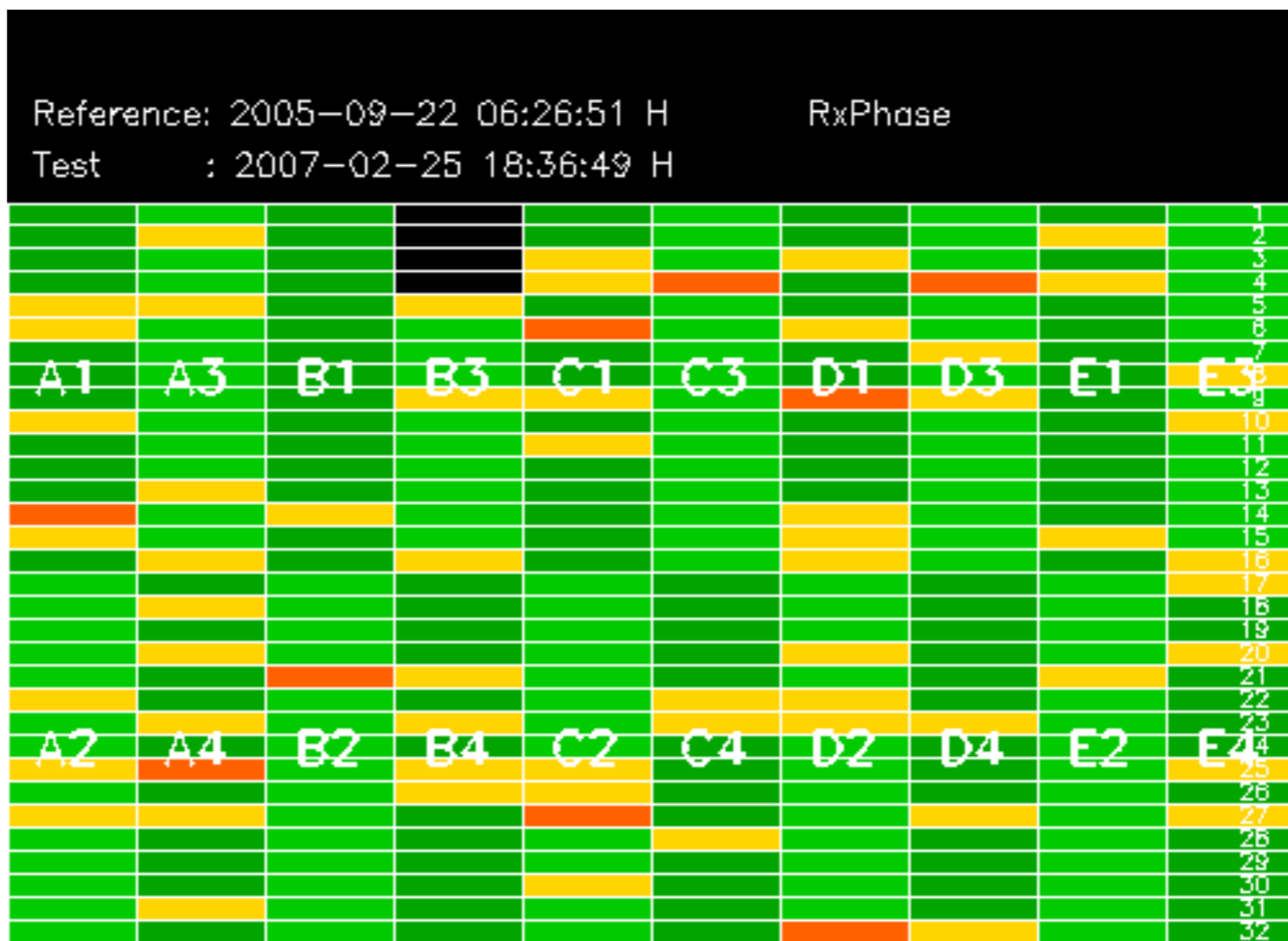
No anomalies observed on available MS products:

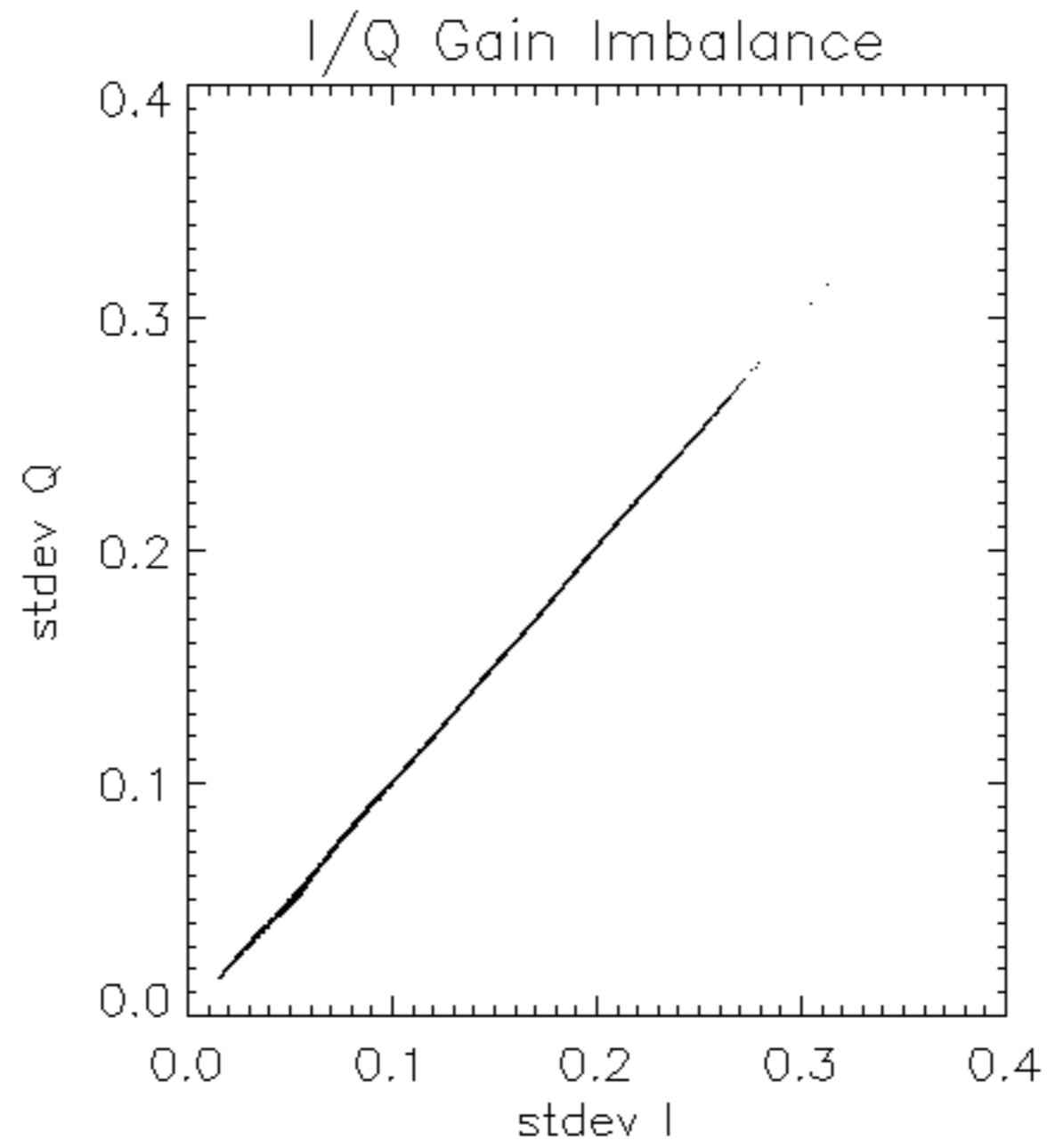
No anomalies observed.

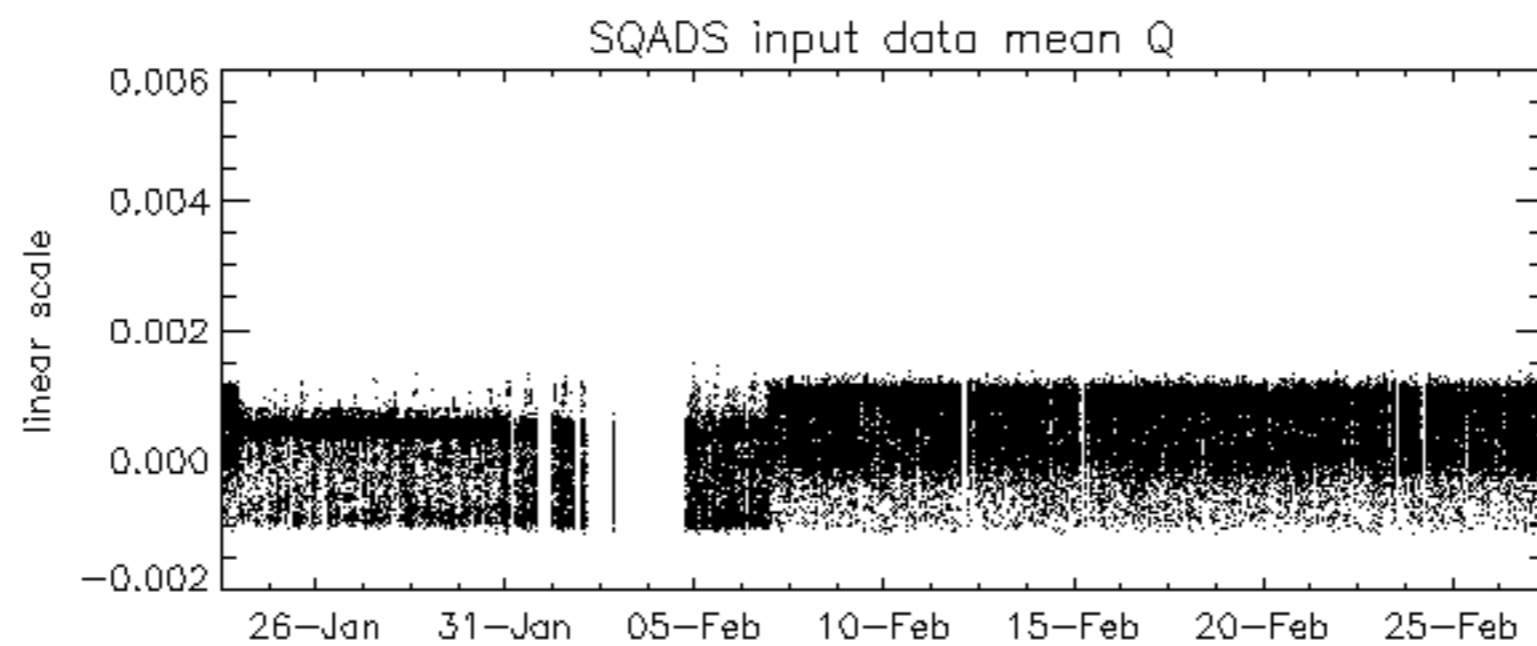
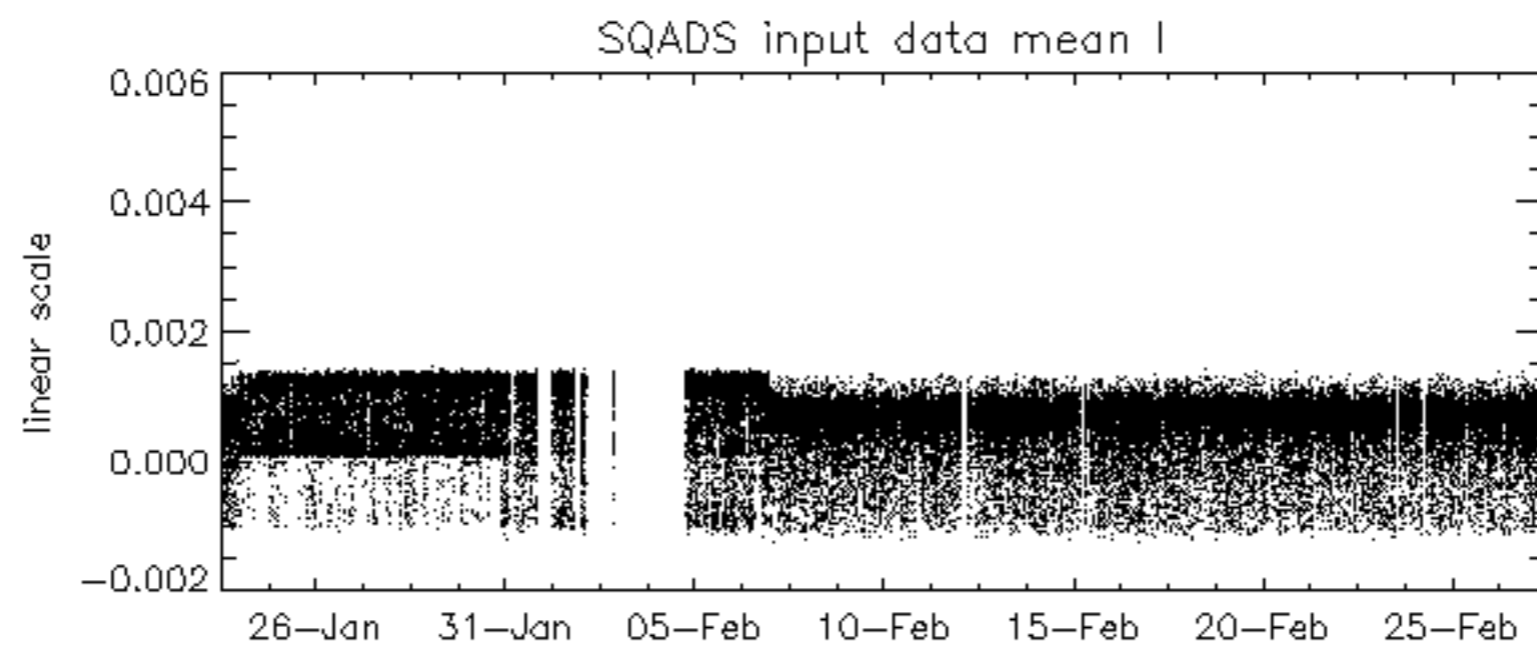
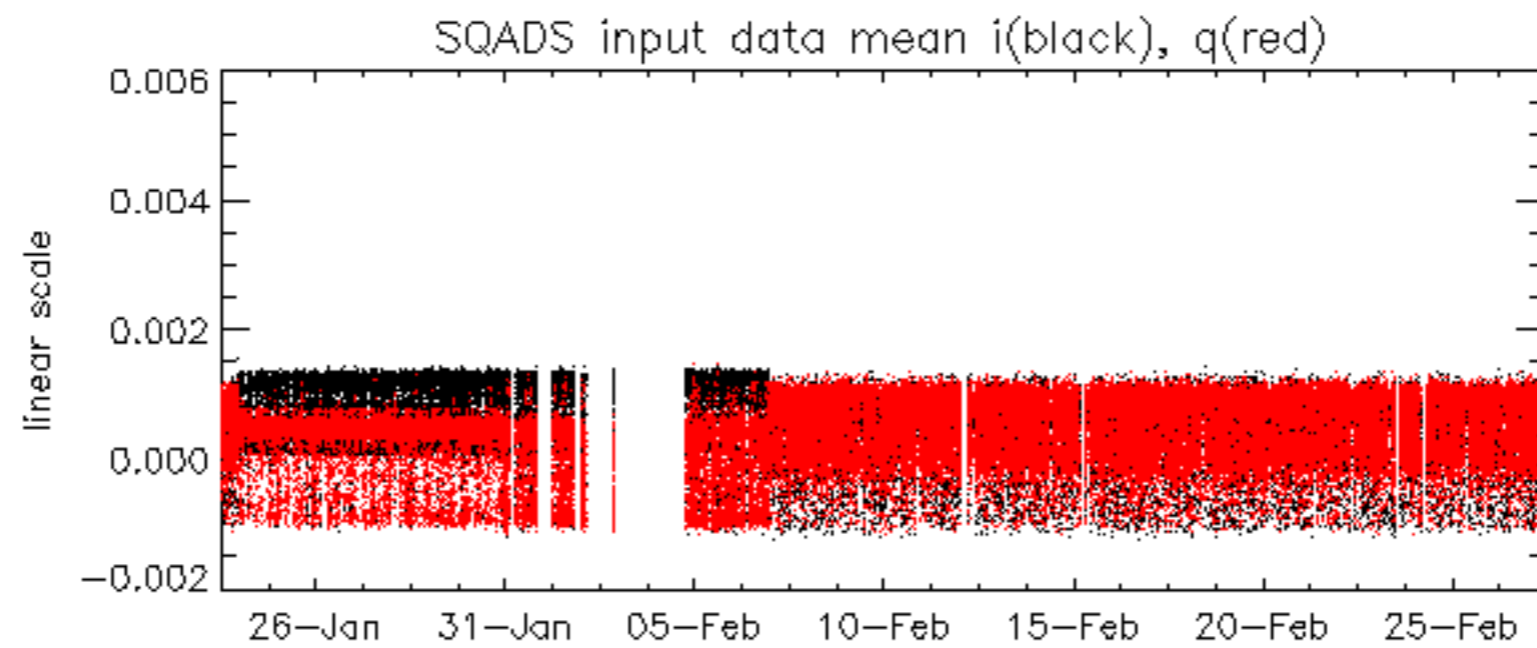


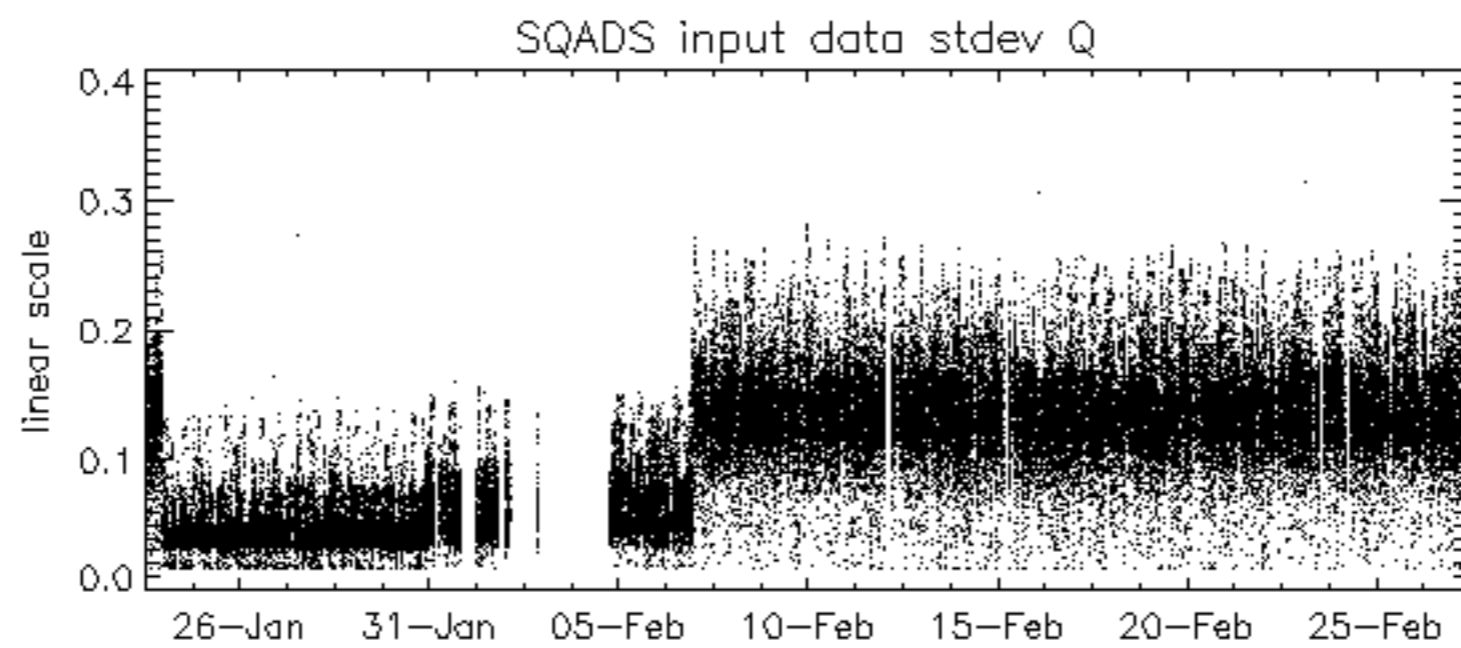
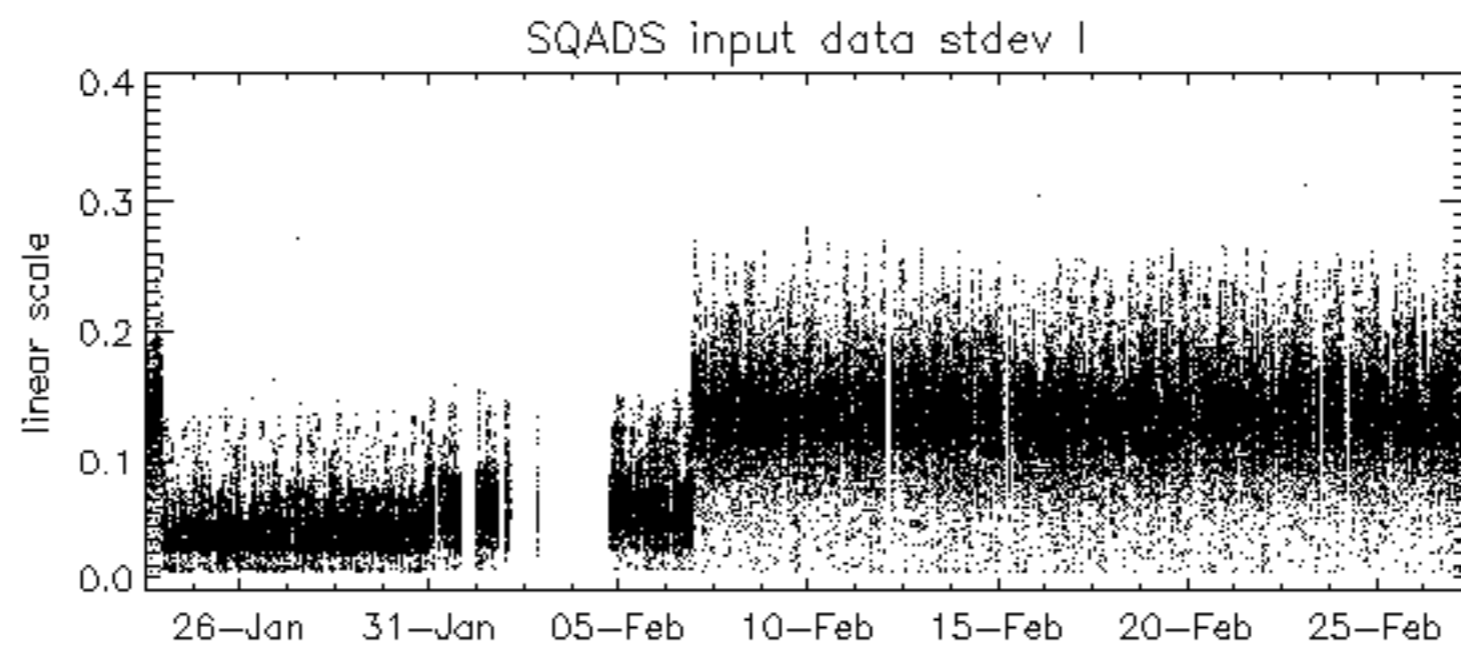
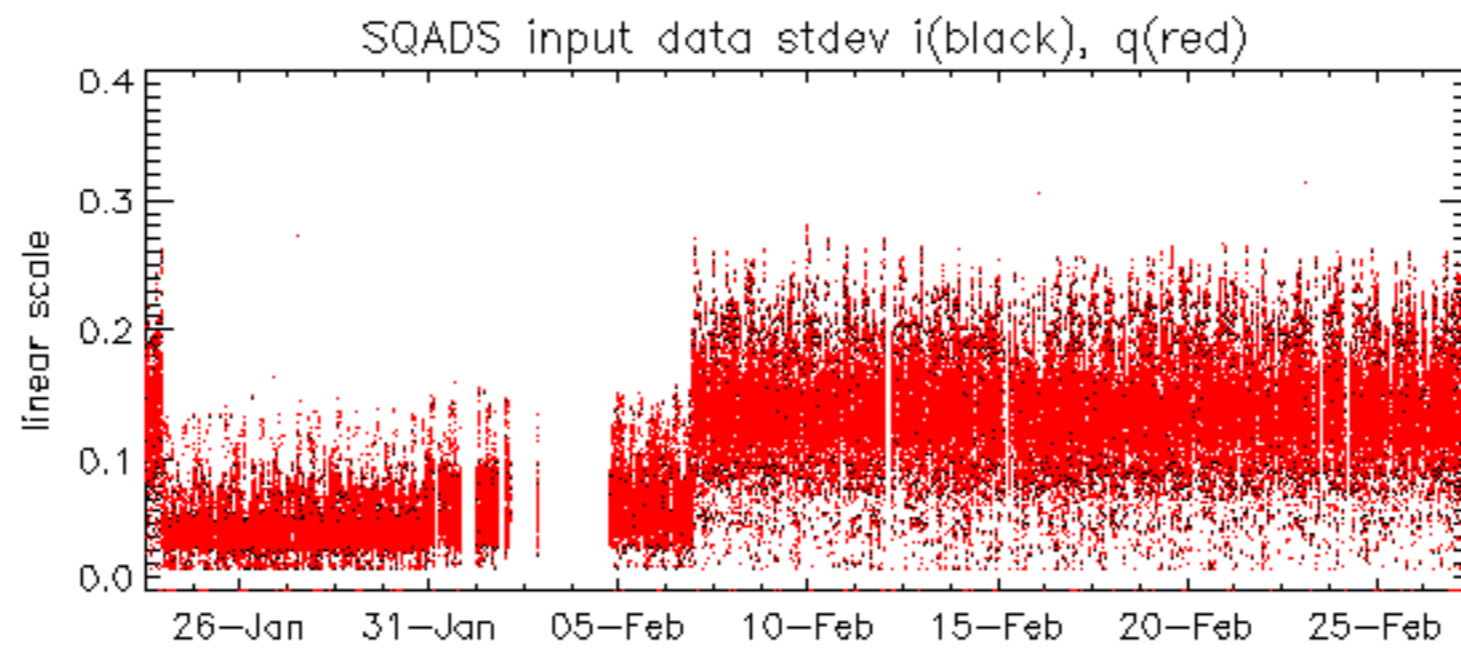




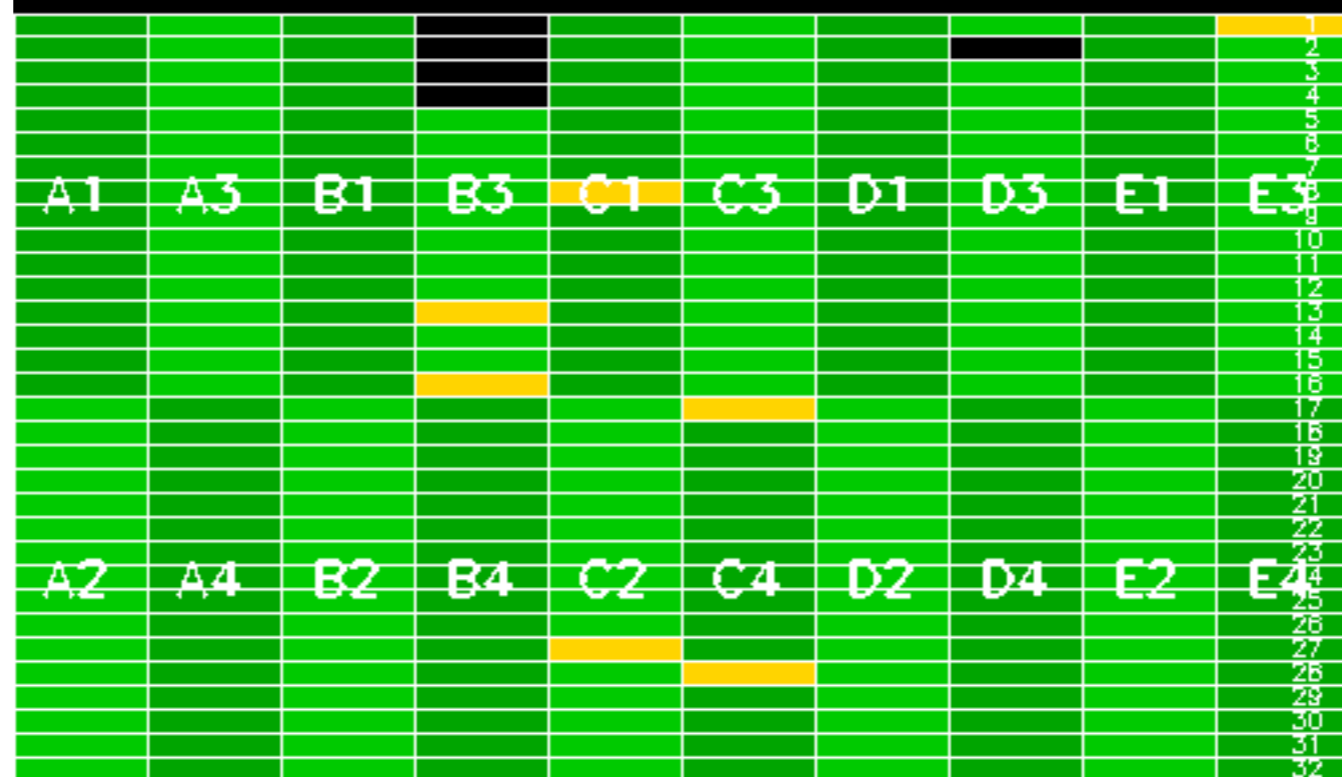








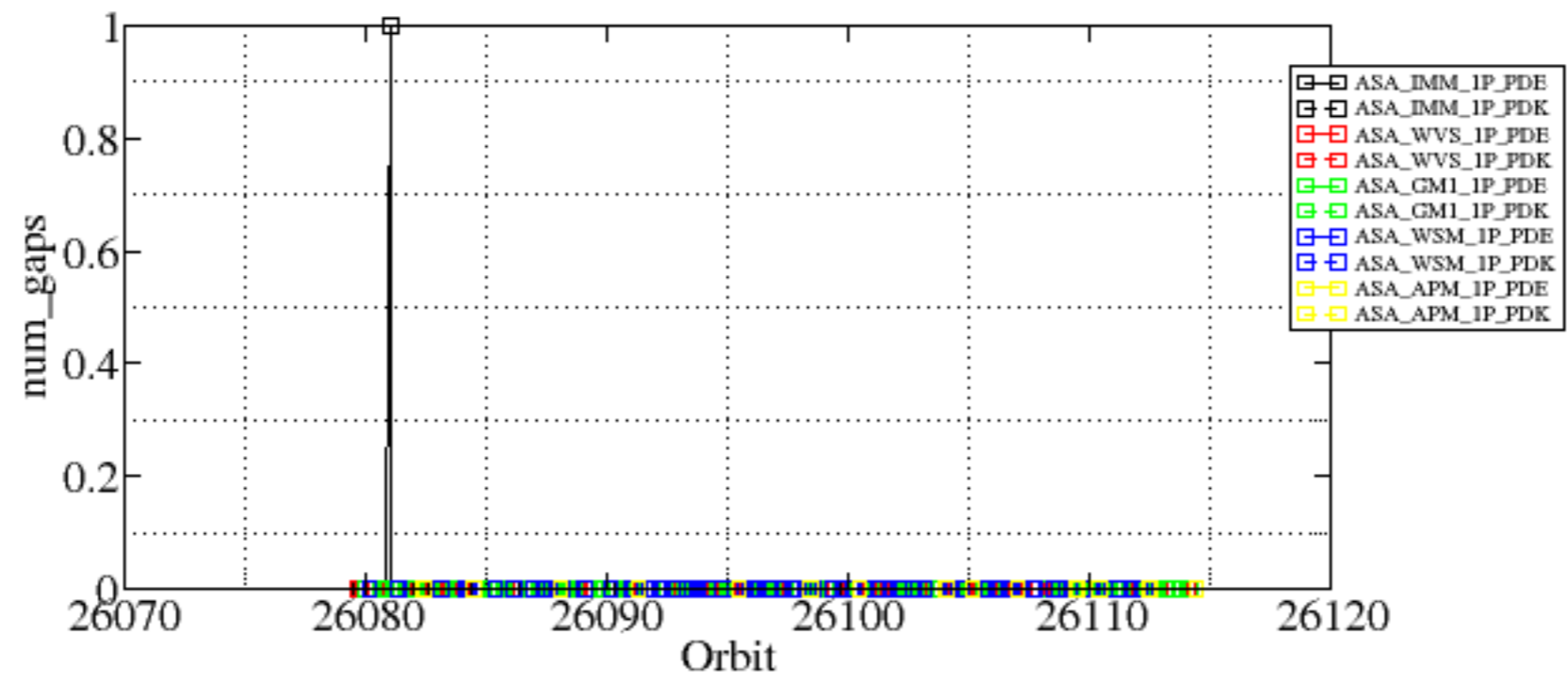
Reference: 2005-09-23 05:55:14 V TxGain
 Test : 2007-02-26 18:05:12 V

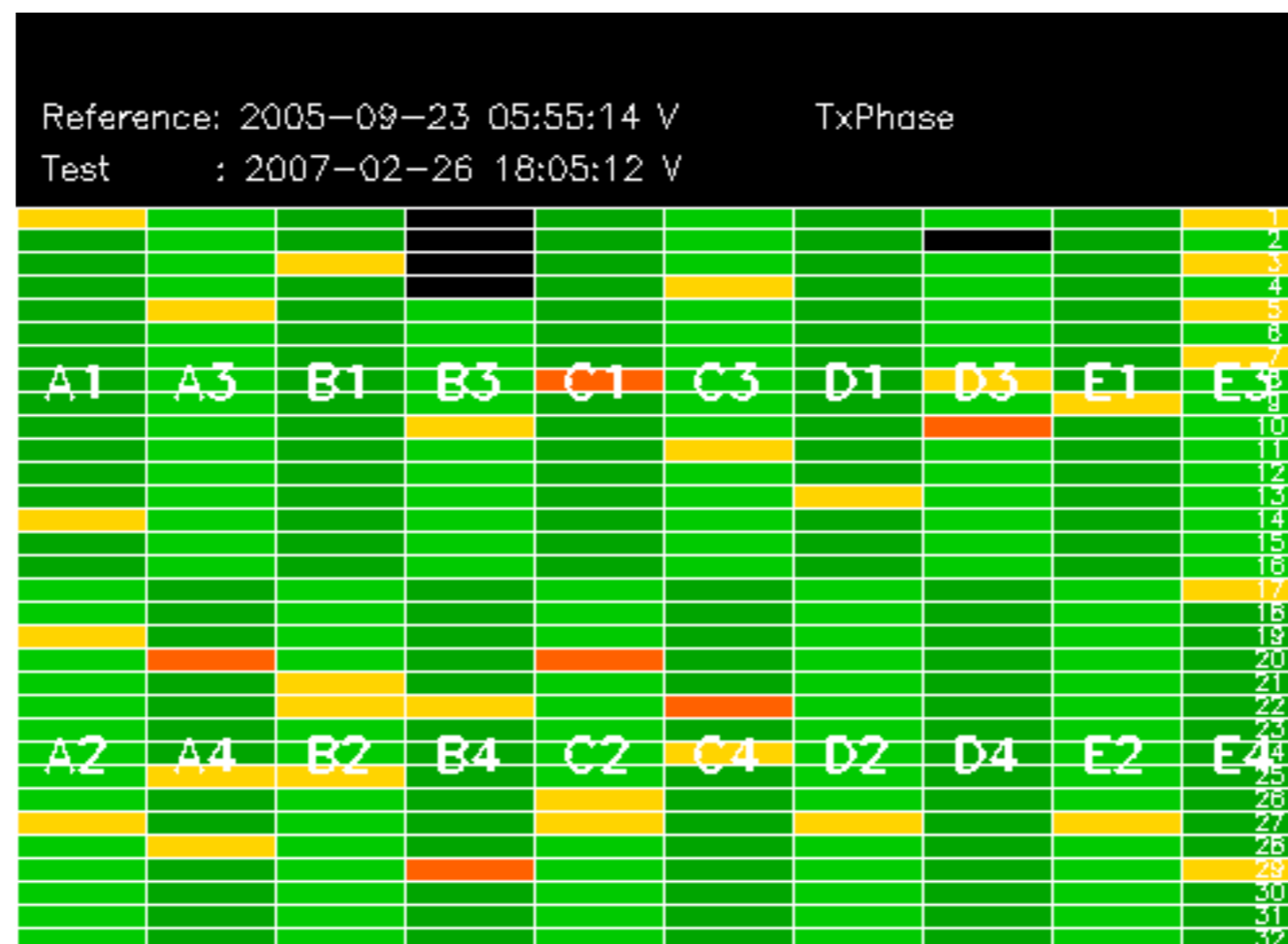


Summary of analysis for the last 3 days 2007022[567]

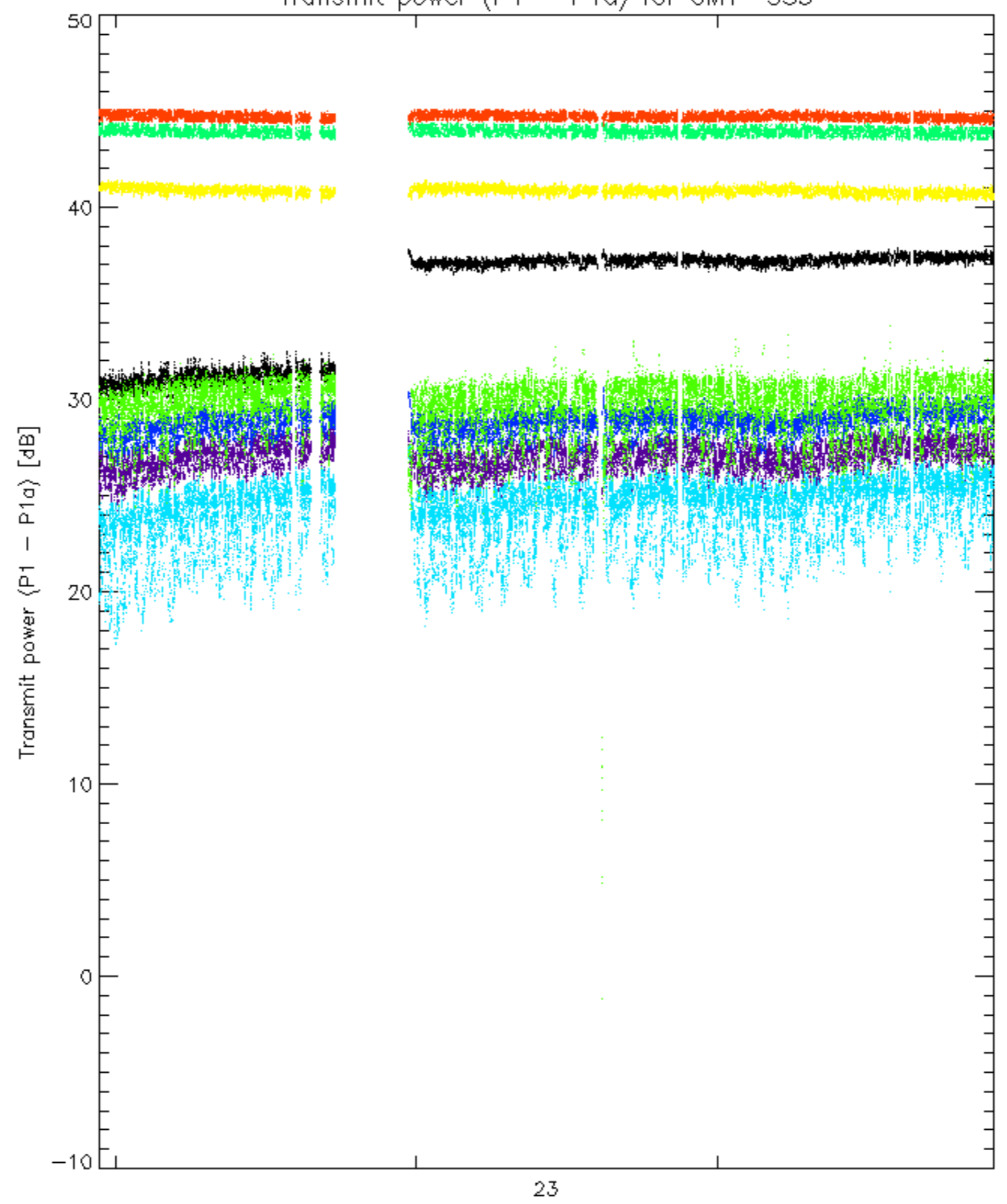
The assumption is taken that the SQUADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_IMM_1PNPDE20070225_022551_00000212055_00476_26081_1575.N1	1	0
ASA_WVS_1PNPDK20070225_151346_00000152055_00483_26088_8098.N1	0	8
ASA_WVS_1PNPDK20070225_151416_000001352055_00483_26088_8120.N1	0	8
ASA_WSM_1PNPDE20070225_141210_000000852055_00483_26088_1631.N1	0	16
ASA_WSM_1PNPDE20070226_153355_000000672055_00498_26103_2948.N1	0	57
ASA_WSM_1PNPDE20070226_165904_000002192055_00499_26104_3039.N1	0	74
ASA_WSM_1PNPDE20070226_165904_000002192055_00499_26104_3045.N1	0	74
ASA_WSM_1PNPDE20070227_002822_000002612056_00002_26108_3509.N1	0	27

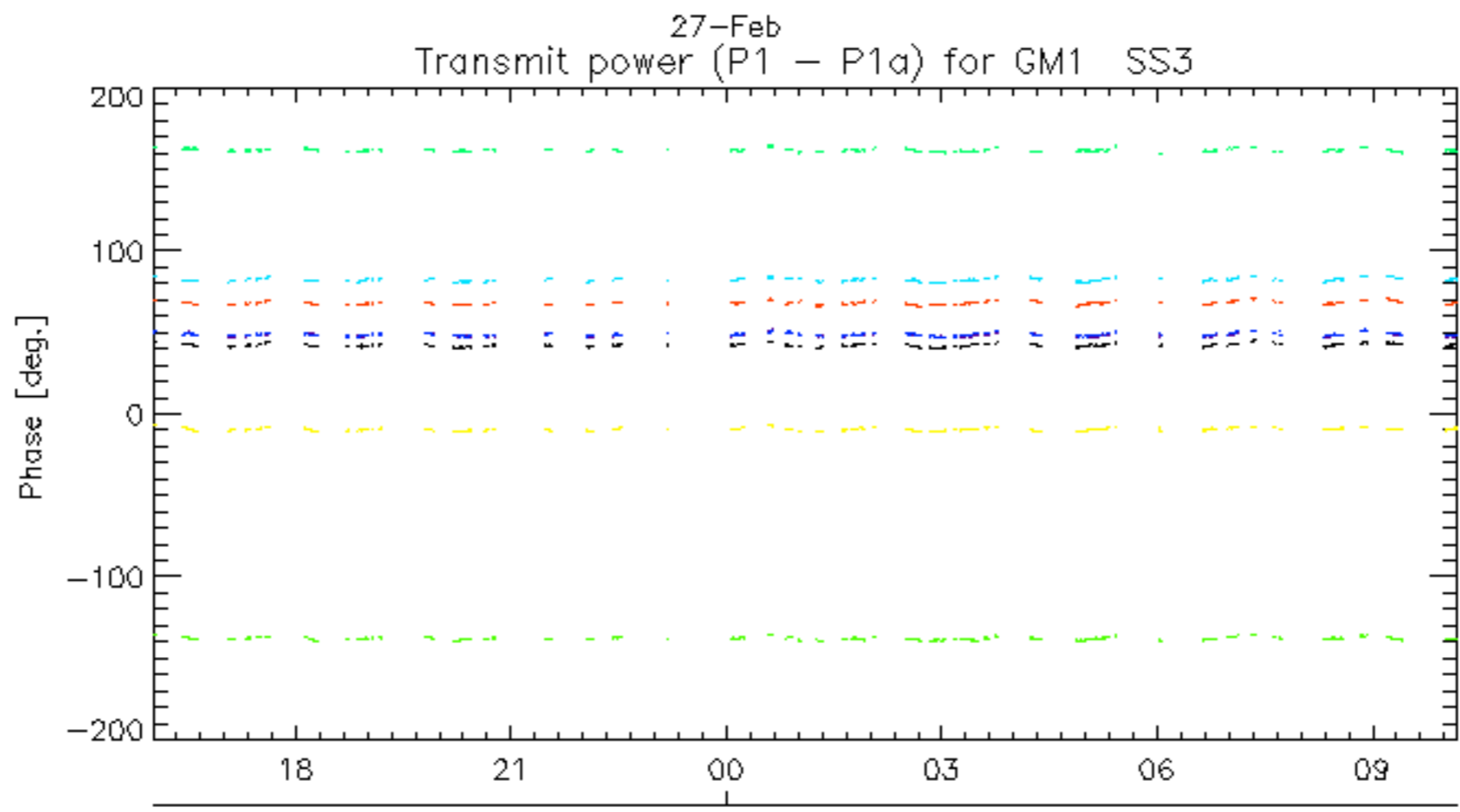
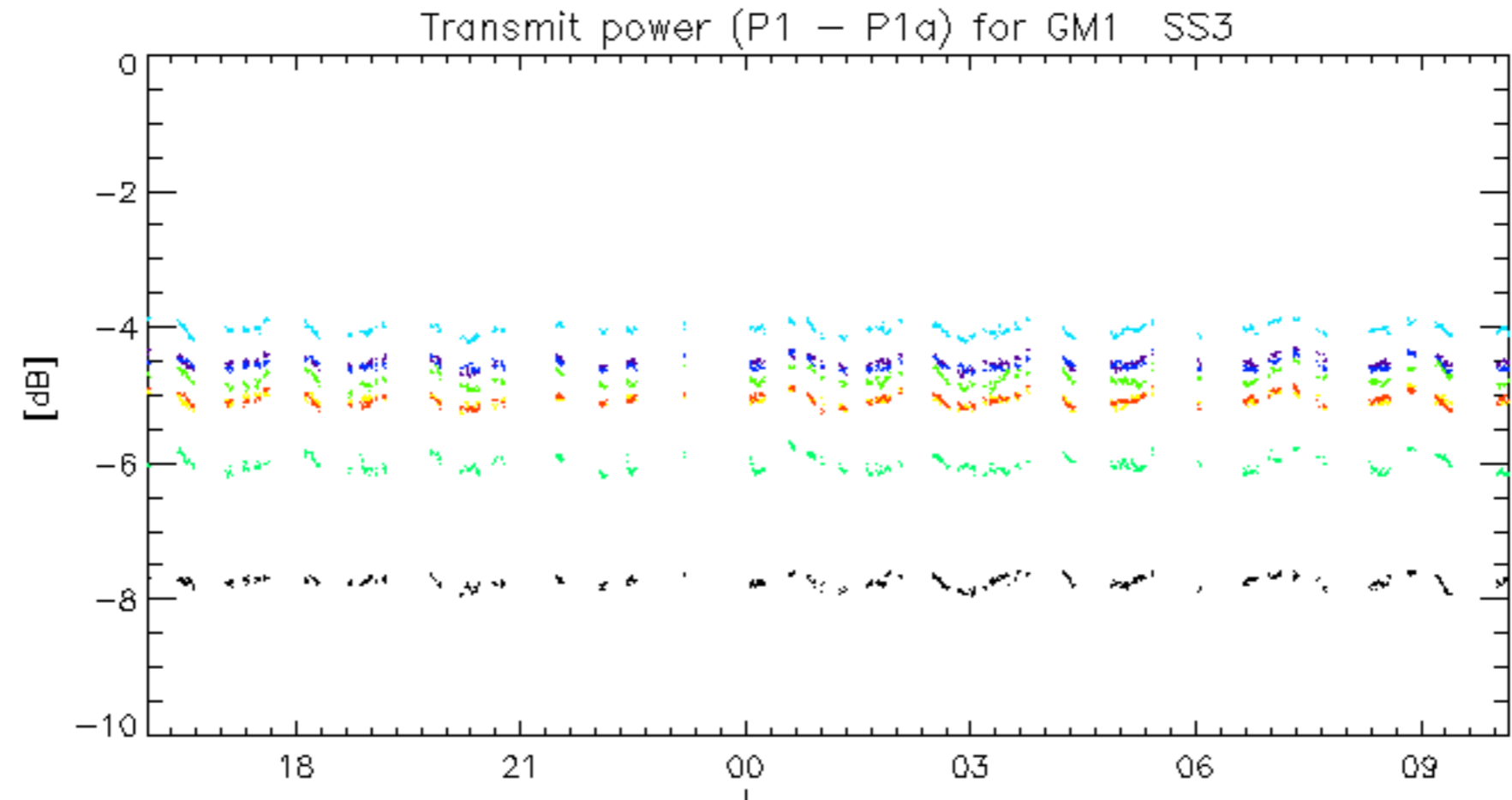




Transmit power (P1 - P1a) for GM1 SS3

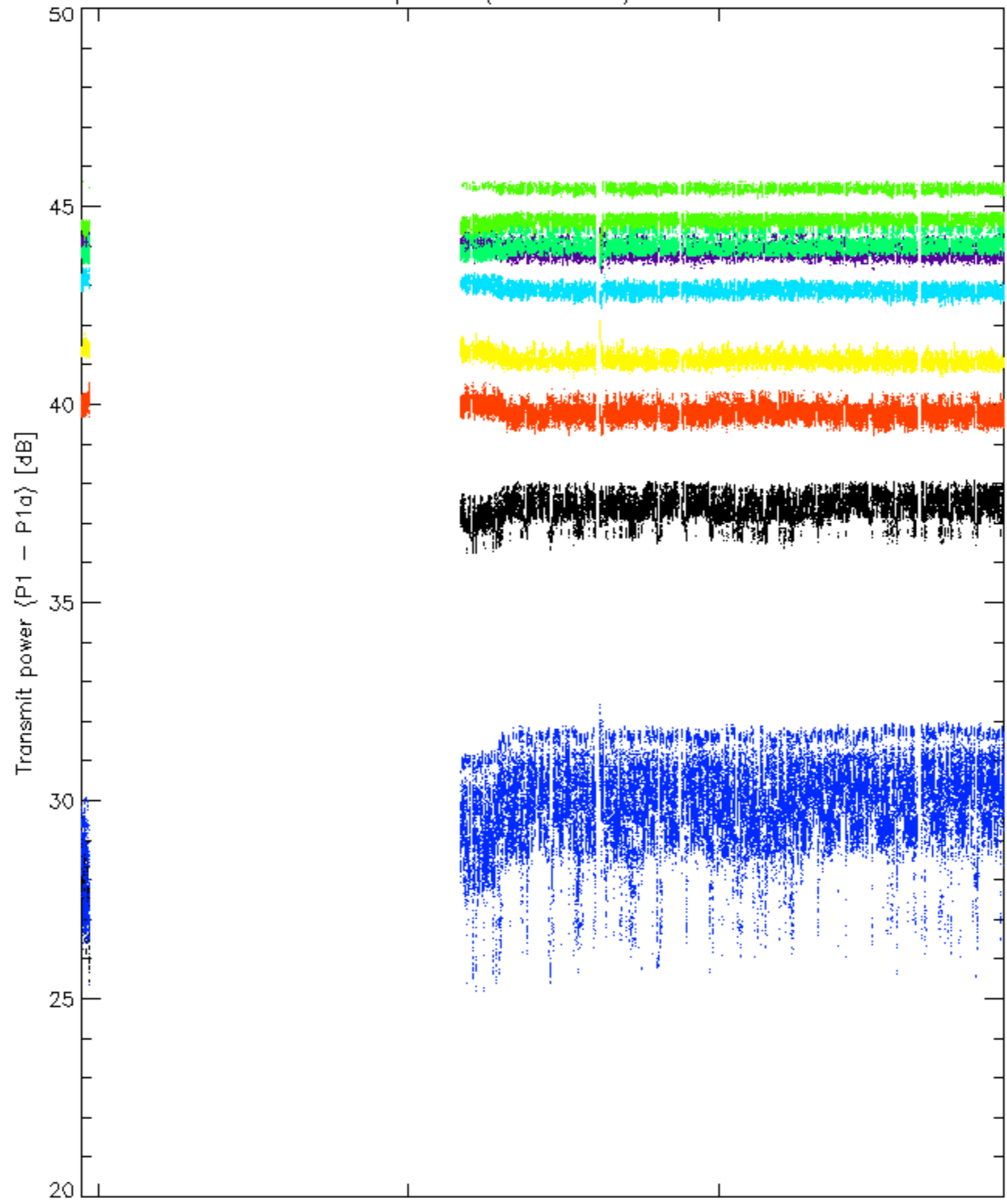


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

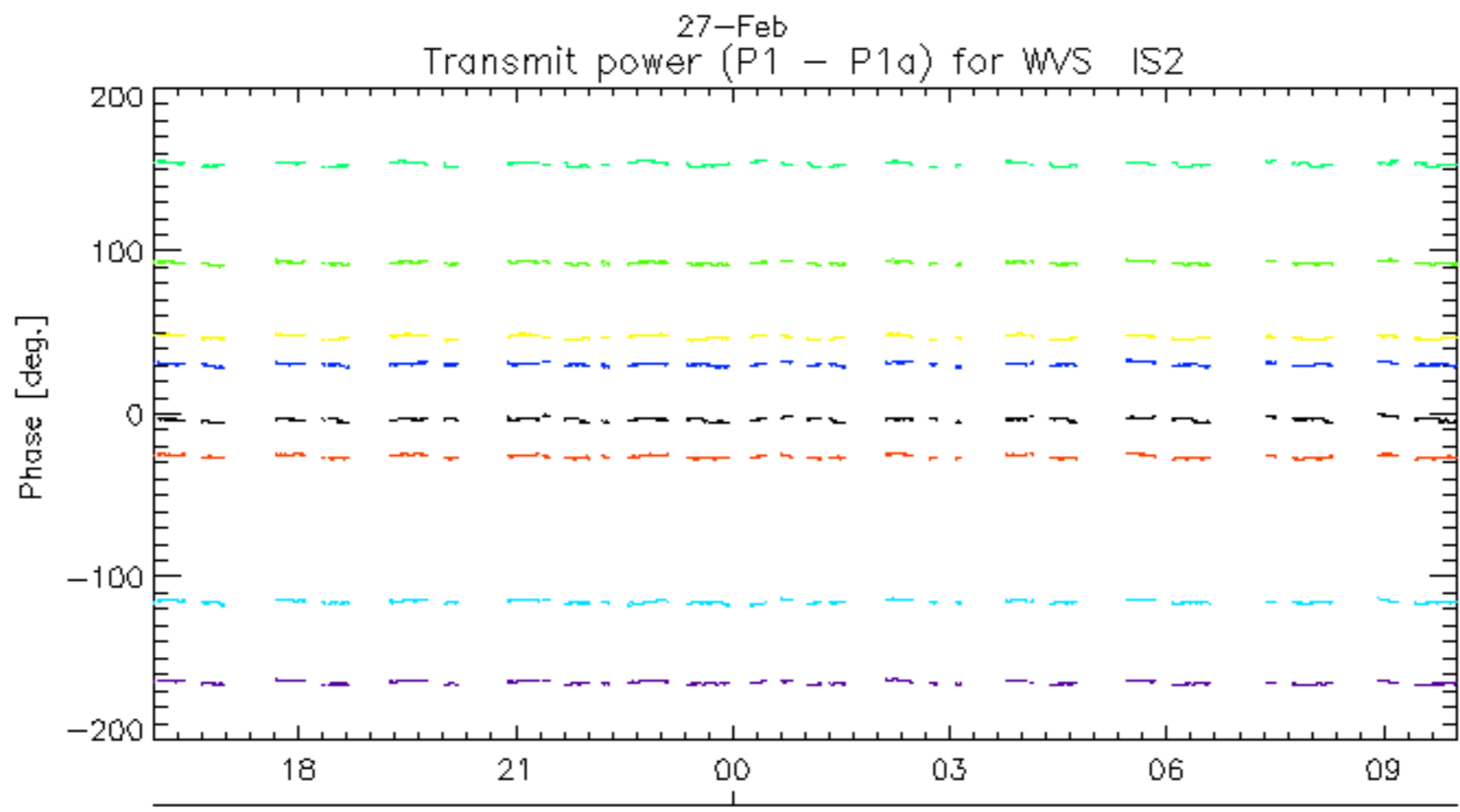
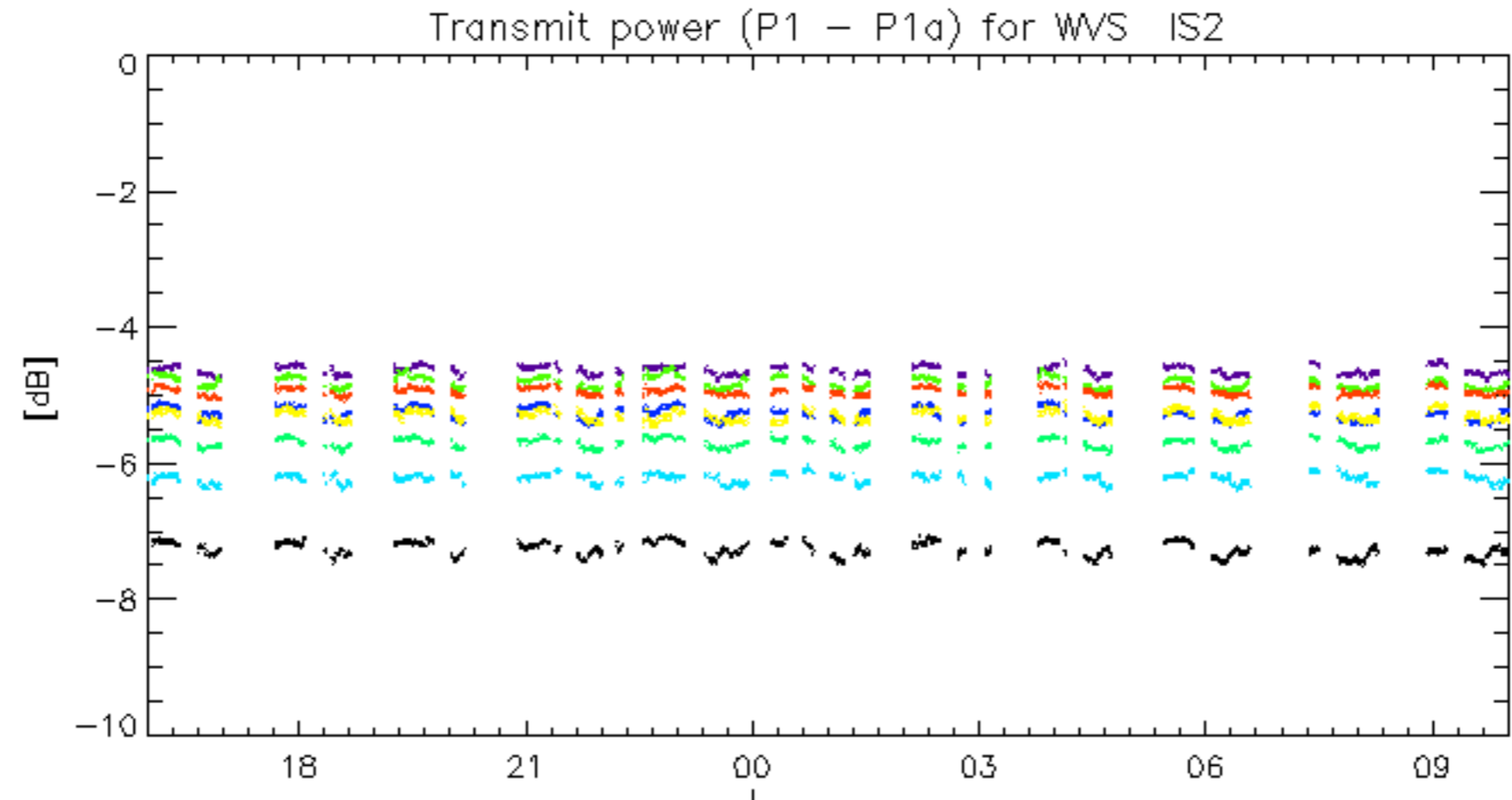


rows: 3 7 11 15 19 22 26 30

Transmit power (P1 - P1a) for WVS IS2



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



rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.