

# PRELIMINARY REPORT OF 070309

**last update on Fri Mar 9 17:59:47 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 2007-03-08 00:00:00 to 2007-03-09 17:59:47

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	45	81	13	3	27
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	45	81	13	3	27
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	45	81	13	3	27
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	45	81	13	3	27

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	42	58	51	13	93
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	42	58	51	13	93
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	42	58	51	13	93
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	42	58	51	13	93

## 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	20070308 074714
H	20070309 071537

### 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

#### P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-10.627186	0.276483	-0.656484
7	P1a	-10.164295	0.231492	0.247276
11	P1a	-10.839144	0.119471	0.233087
15	P1a	-11.924200	1.652159	1.580090
19	P1a	-14.909368	1.162205	-1.375376
22	P1a	-18.990627	7.938072	-3.258996
26	P1a	-15.561120	0.497982	0.320727
30	P1a	-20.588585	7.429546	3.302822

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.382817	0.089587	-0.283771
7	P1	-2.619865	0.055214	0.098936
11	P1	-3.330359	0.160735	0.477836
15	P1	-4.858793	1.493251	1.507195
19	P1	-3.387788	0.097905	-0.426708
22	P1	-5.414558	0.162731	0.456199
26	P1	-5.259355	0.769127	-1.138837
30	P1	-5.473699	0.068189	0.245563

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.083414	0.090589	0.035255
7	P2	-21.827444	0.126255	-0.242357
11	P2	-10.771824	0.135847	-0.381277
15	P2	-5.097342	0.082163	-0.113163
19	P2	-7.222886	0.080961	-0.061926
22	P2	-8.363825	0.080749	0.064014

26	P2	-24.137943	0.127519	-0.415518
30	P2	-21.652735	0.067606	0.048386

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.229982	0.007980	-0.045778
7	P3	-8.229982	0.007980	-0.045778
11	P3	-8.229982	0.007980	-0.045778
15	P3	-8.229982	0.007980	-0.045778
19	P3	-8.229982	0.007980	-0.045778
22	P3	-8.229982	0.007980	-0.045778
26	P3	-8.229982	0.007980	-0.045778
30	P3	-8.229982	0.007980	-0.045778

### 4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1
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### P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.076286	0.050304	-0.024684
7	P1a	-10.062009	0.134697	-0.042418
11	P1a	-10.652975	0.064492	-0.052605
15	P1a	-10.910213	0.134947	-0.172467
19	P1a	-15.713535	0.069236	0.086095
22	P1a	-20.851351	1.168856	-0.158288
26	P1a	-15.325704	0.268978	0.228760
30	P1a	-18.383623	0.343627	-0.126286

### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.383442	0.039661	-0.060688
7	P1	-2.432445	0.021630	0.008550

11	P1	-2.916875	0.019133	-0.032141
15	P1	-3.834392	0.039601	-0.060279
19	P1	-3.553233	0.011642	-0.008627
22	P1	-5.039471	0.023423	-0.044863
26	P1	-5.970725	0.026289	0.047970
30	P1	-5.279458	0.021698	0.011995

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.097471	0.032699	0.001752
7	P2	-21.960115	0.055486	0.047083
11	P2	-10.650641	0.030895	0.009044
15	P2	-4.818959	0.027607	-0.015178
19	P2	-6.810623	0.029794	-0.005531
22	P2	-8.099931	0.034186	0.062877
26	P2	-24.266787	0.036341	-0.108507
30	P2	-21.749483	0.037855	0.053169

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.048244	0.003673	-0.038644
7	P3	-8.048269	0.003680	-0.038335
11	P3	-8.048388	0.003680	-0.038850
15	P3	-8.048262	0.003690	-0.038979
19	P3	-8.048357	0.003677	-0.038942
22	P3	-8.048378	0.003678	-0.038886
26	P3	-8.048195	0.003676	-0.038920
30	P3	-8.048340	0.003691	-0.038653

## 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	0.000625910
	stdev	2.45277e-07
MEAN Q	mean	0.000380080
	stdev	2.63326e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.109773
	stdev	0.00245577
STDEV Q	mean	0.109808
	stdev	0.00251093



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007030[789]

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_1PNPDE20070308_014959_000000802056_00132_26238_4901.N1	1	0
ASA_IMM_1PNPDE20070309_042629_000000782056_00147_26253_6465.N1	1	0



ASA_WSM_1PNPDE20070307_055614_000000672056_00120_26226_4215.N1	5	157
ASA_WSM_1PNPDE20070307_111810_000000852056_00123_26229_4255.N1	0	72
ASA_WSM_1PNPDE20070307_171620_000002262056_00127_26233_4397.N1	0	63
ASA_WSM_1PNPDE20070309_015045_000000852056_00146_26252_6150.N1	0	52
ASA_WSM_1PNPDK20070307_135748_000000852056_00125_26231_9424.N1	0	15
ASA_APM_1PNPDE20070308_204806_000000422056_00143_26249_5615.N1	15	257
ASA_APM_1PNPDE20070309_011941_000000422056_00146_26252_6027.N1	14	0
ASA_APM_1PNPDK20070309_095951_000000542056_00151_26257_1118.N1	0	4





## 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)	
	Ascending
	Descending

### 7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler	
	Ascending
	Descending



### 7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

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### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

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Acsending

✕
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Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

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Acsending

✕
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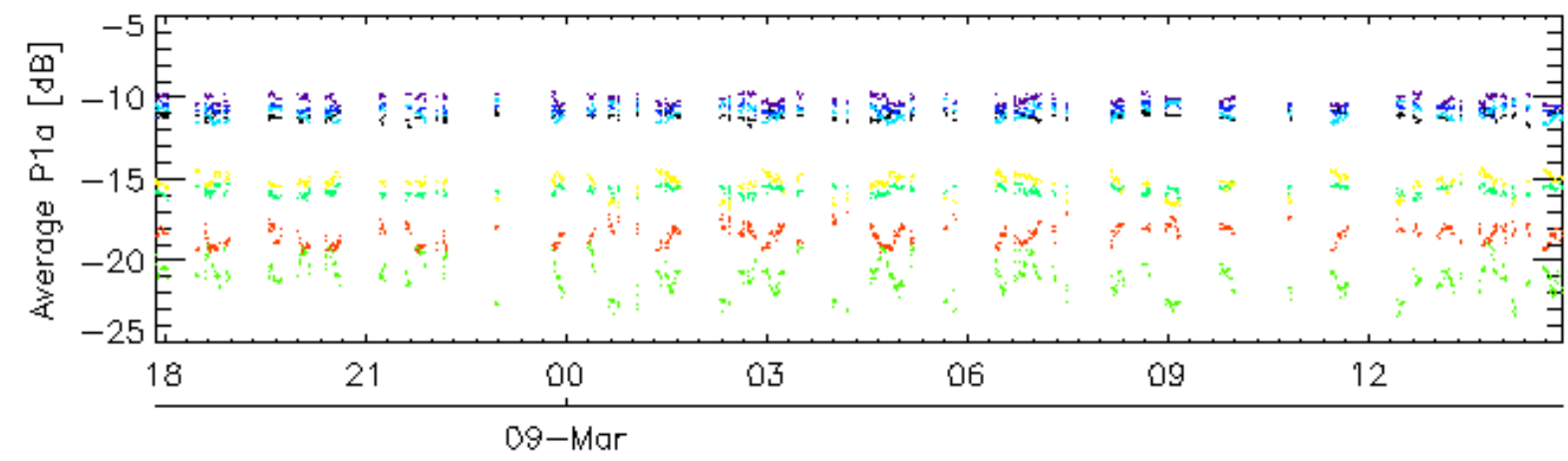
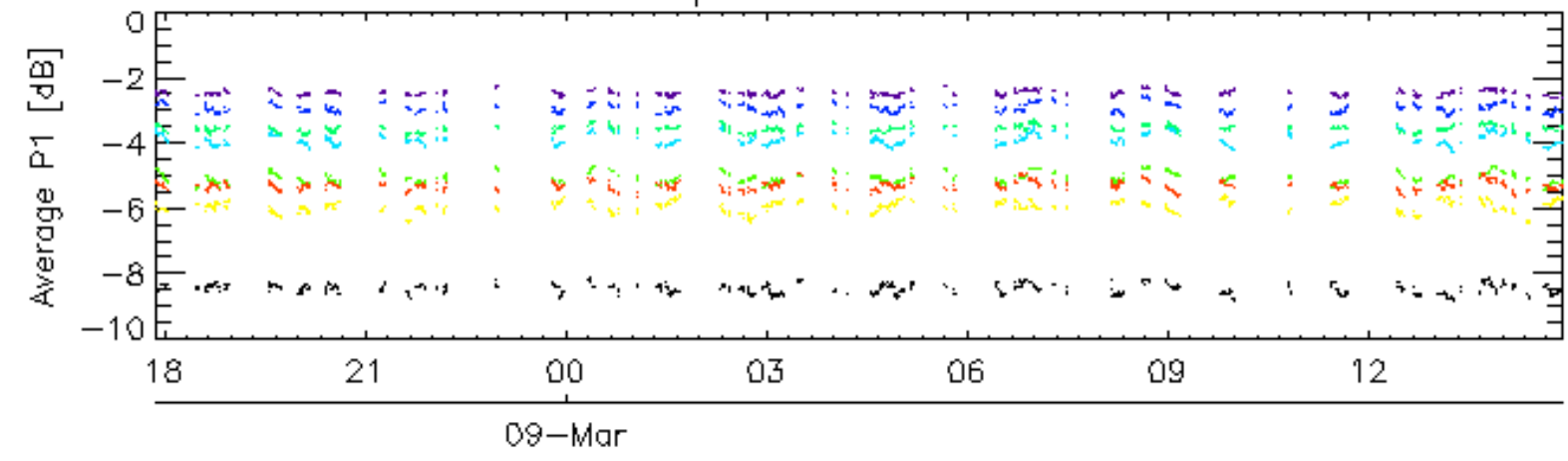
Descending

### 7.6 - Doppler evolution versus ANX for GM1

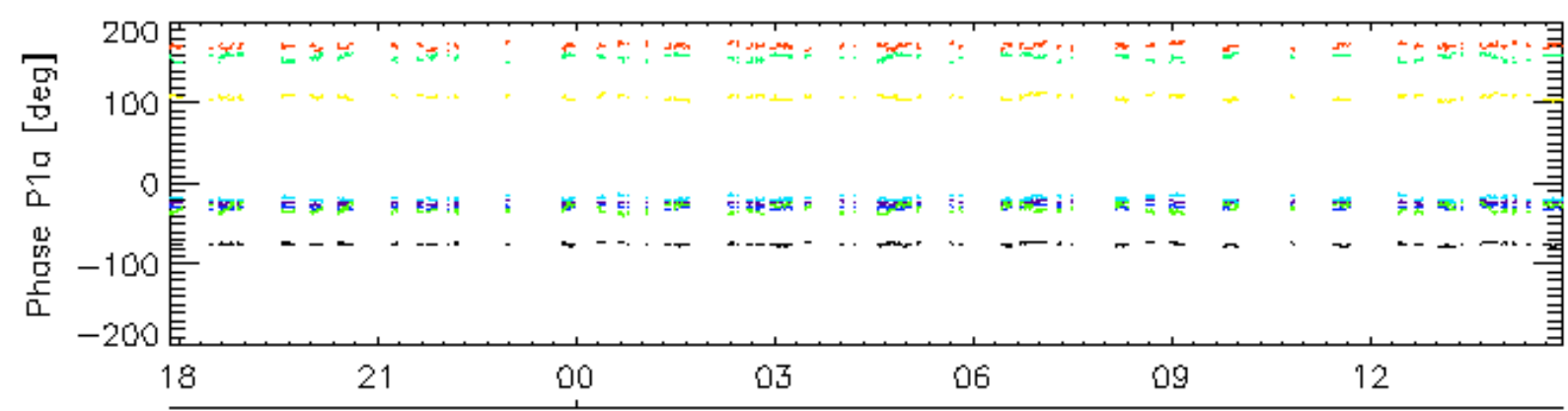
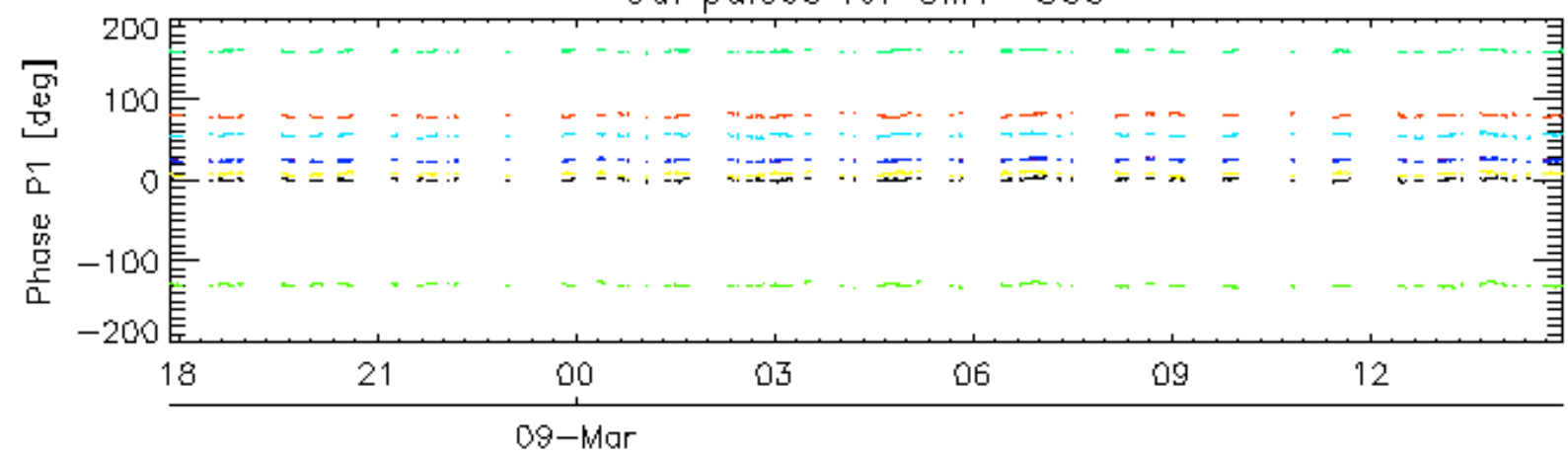
Evolution Doppler error versus ANX

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Cal pulses for GM1 SS3

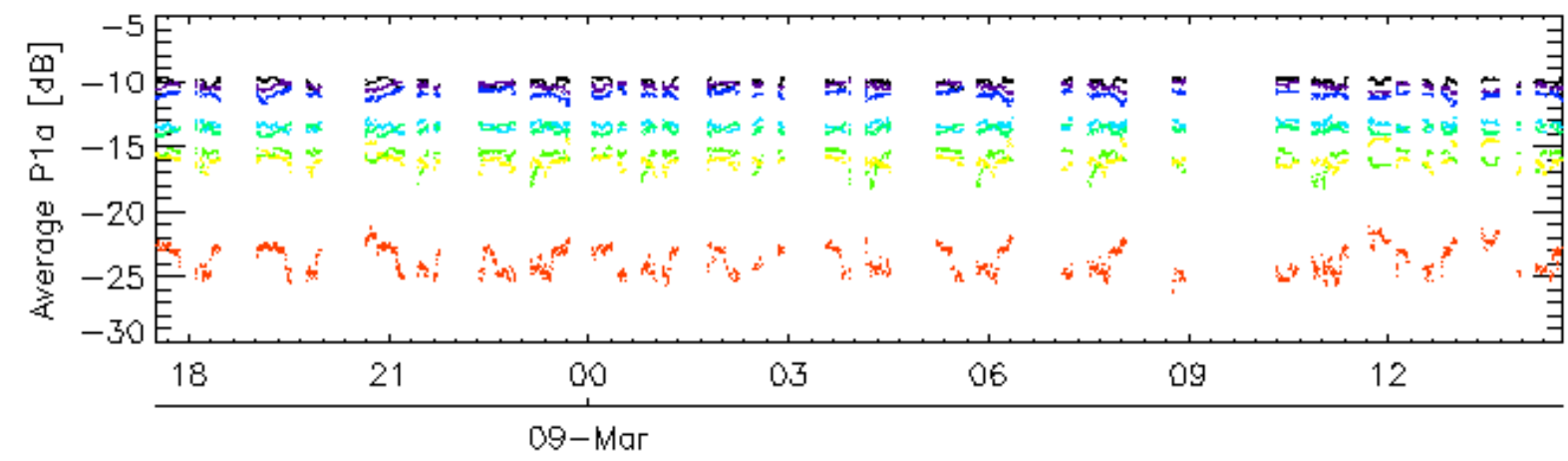
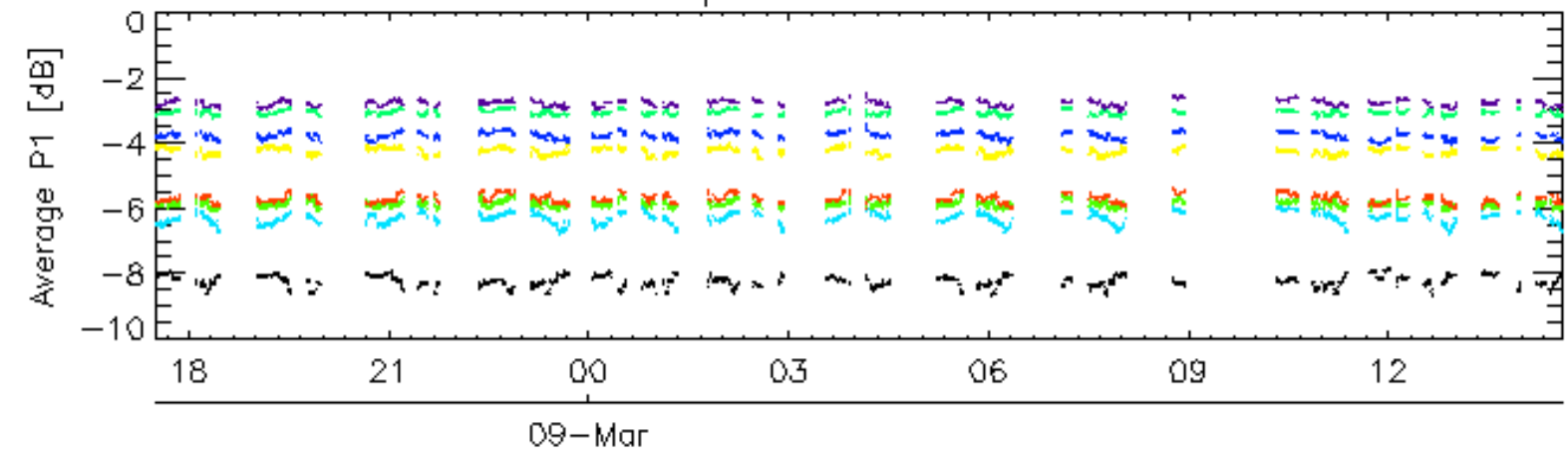


Cal pulses for GM1 SS3

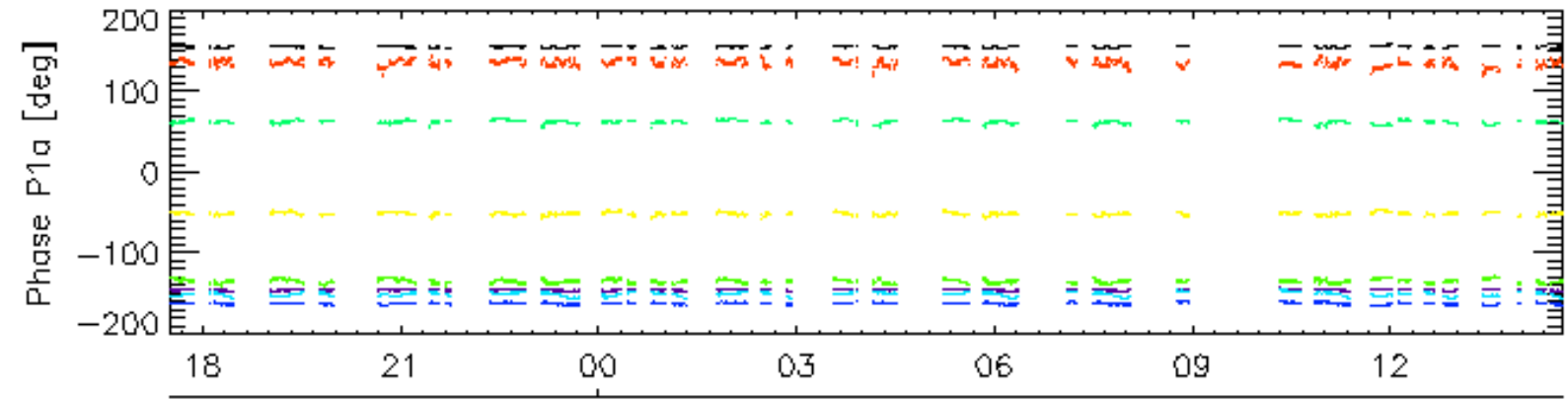
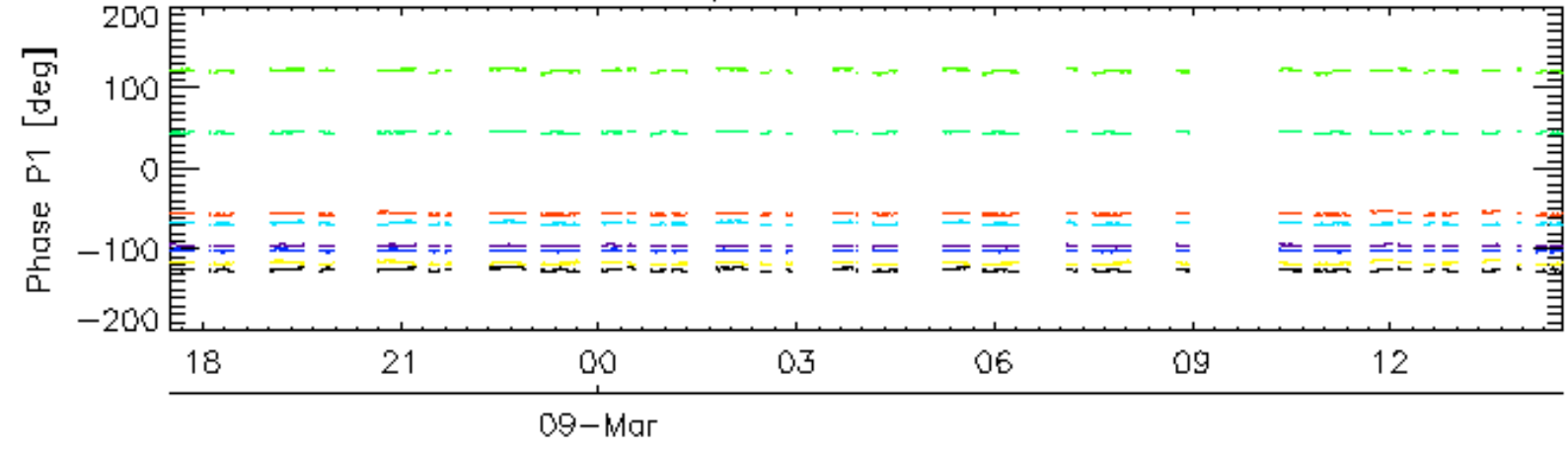


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS4

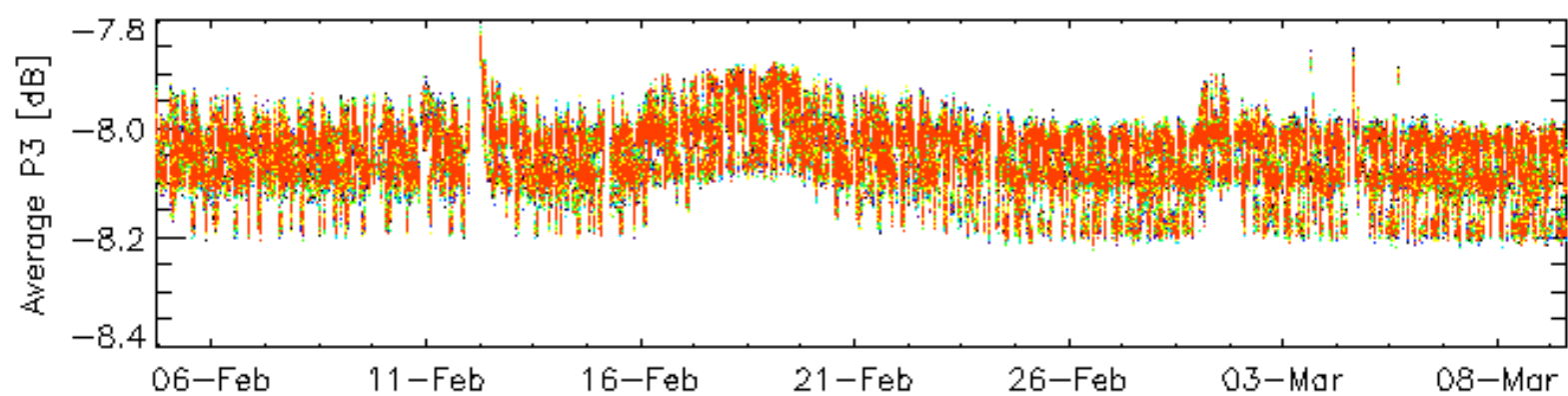
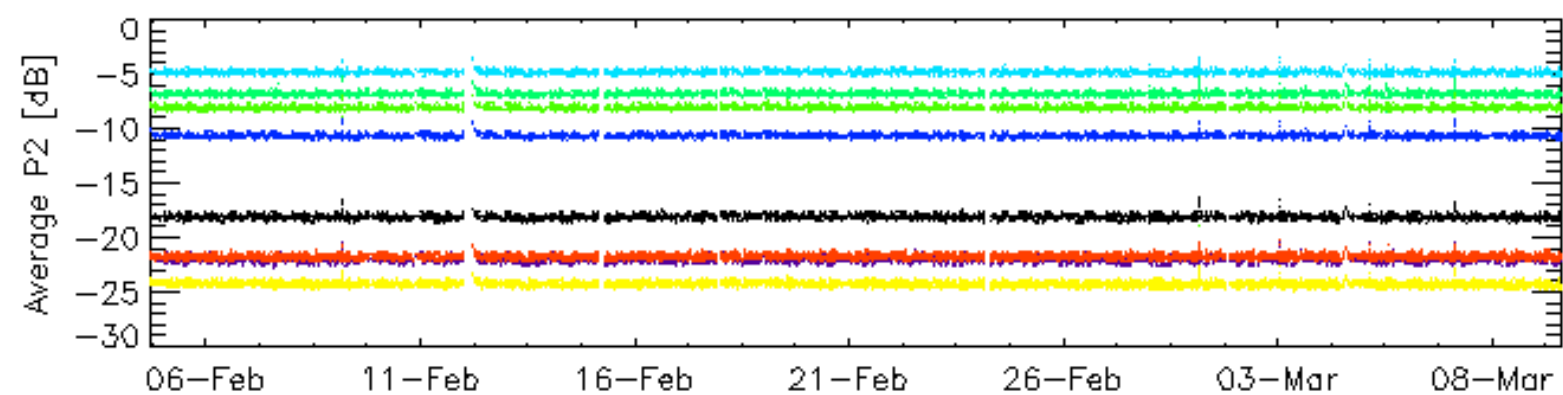
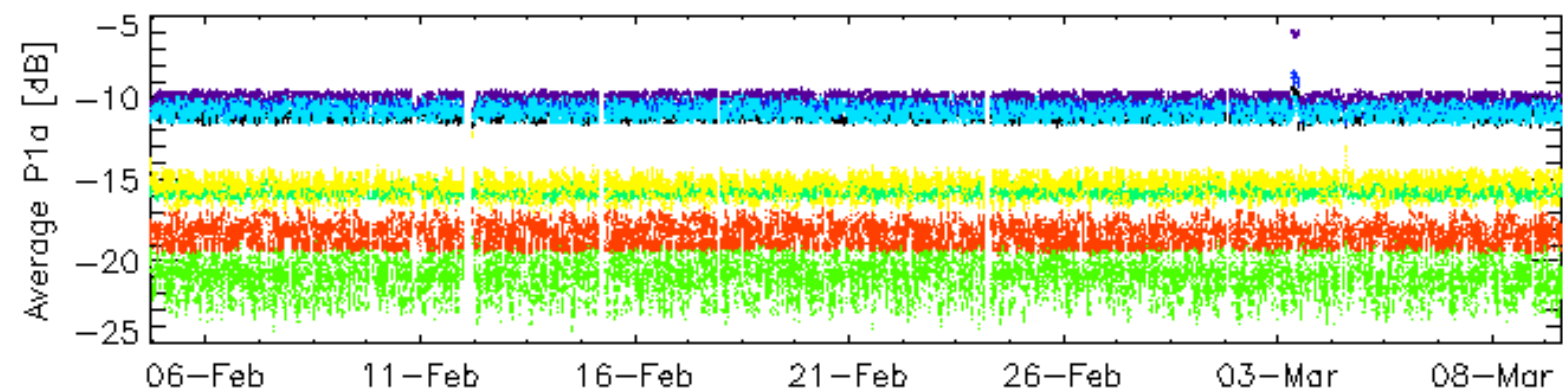
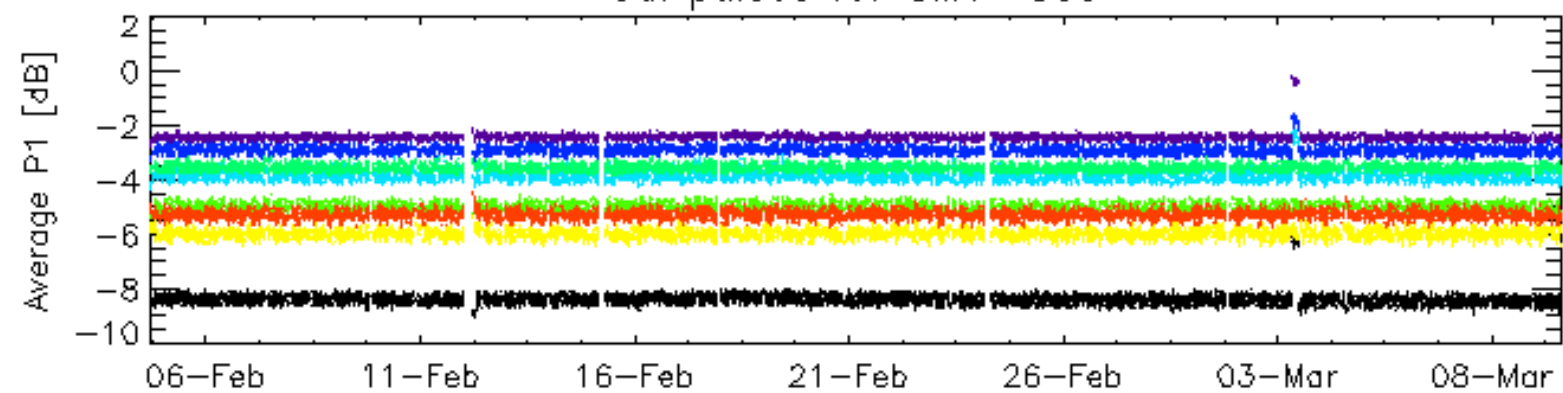


Cal pulses for WVS IS4



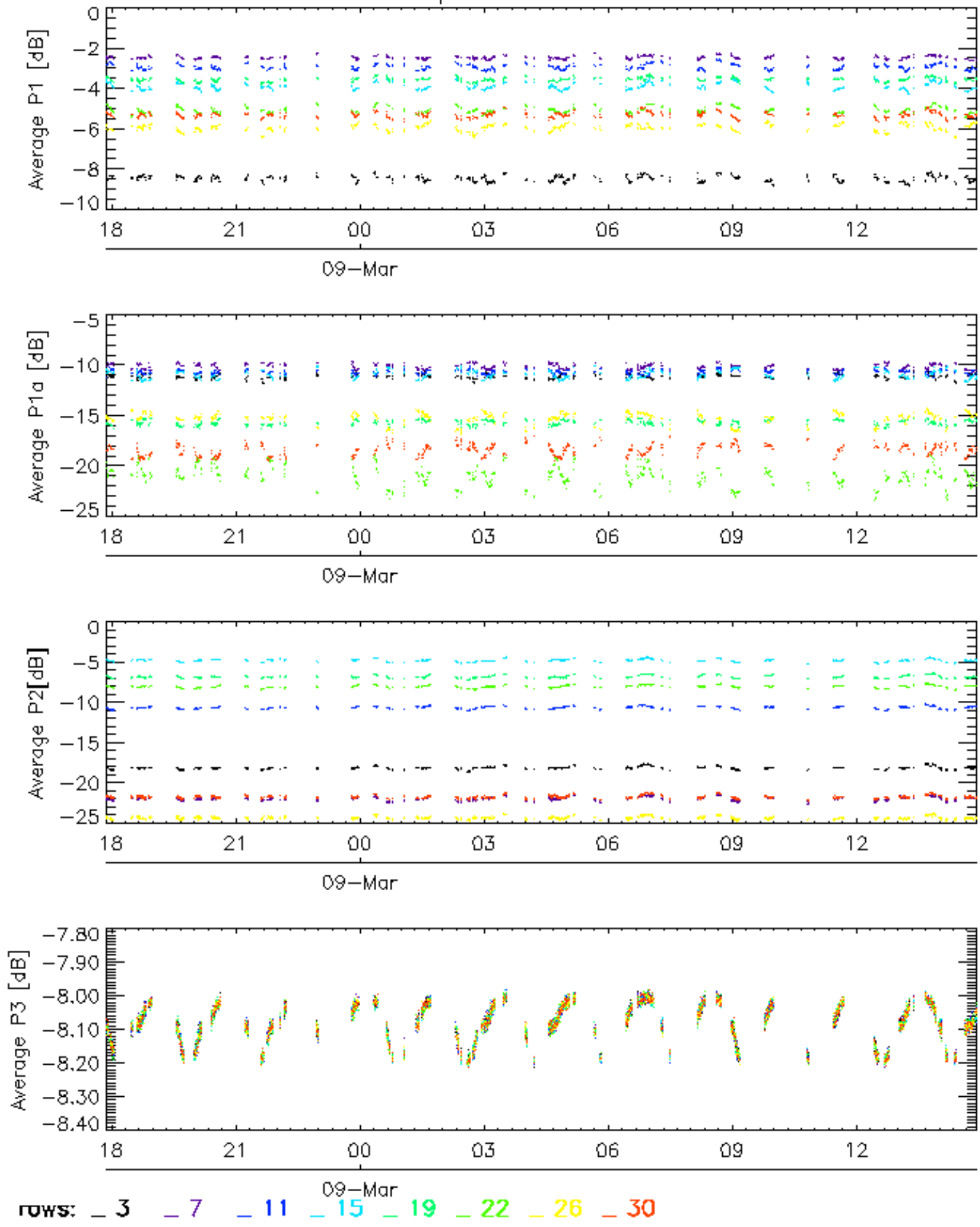
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

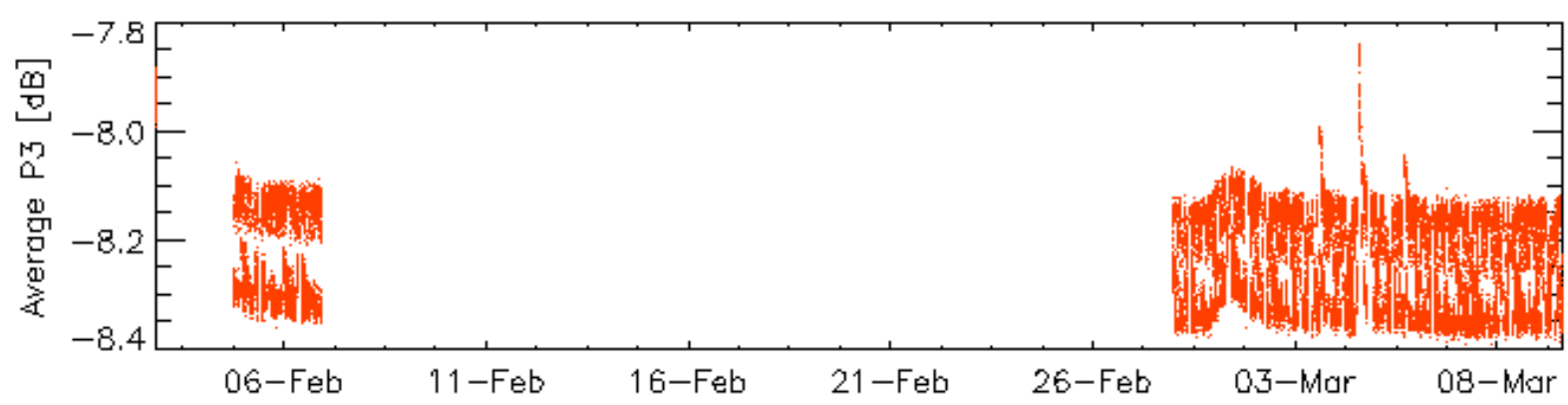
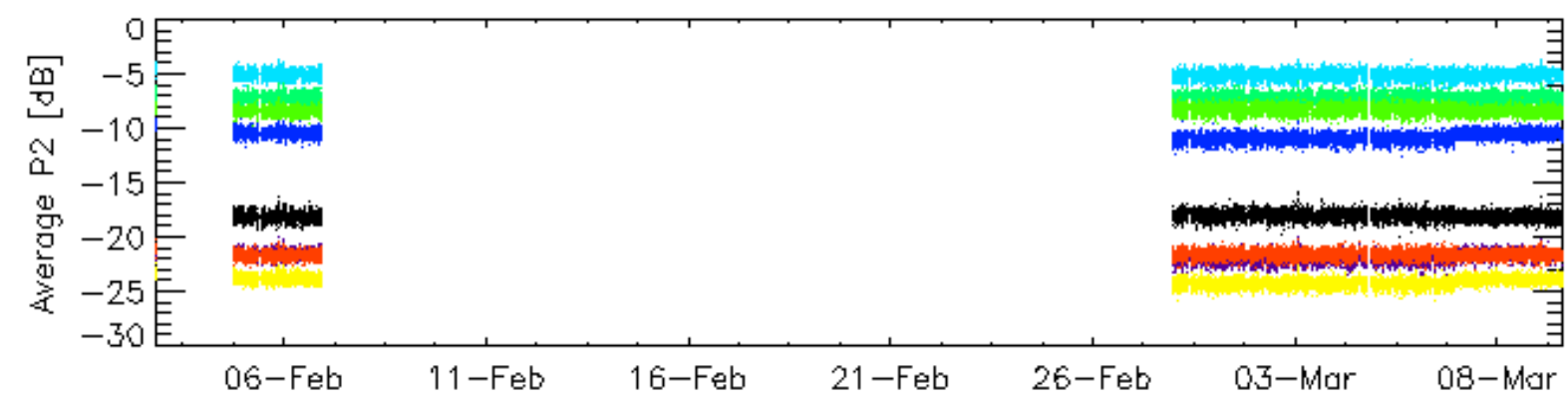
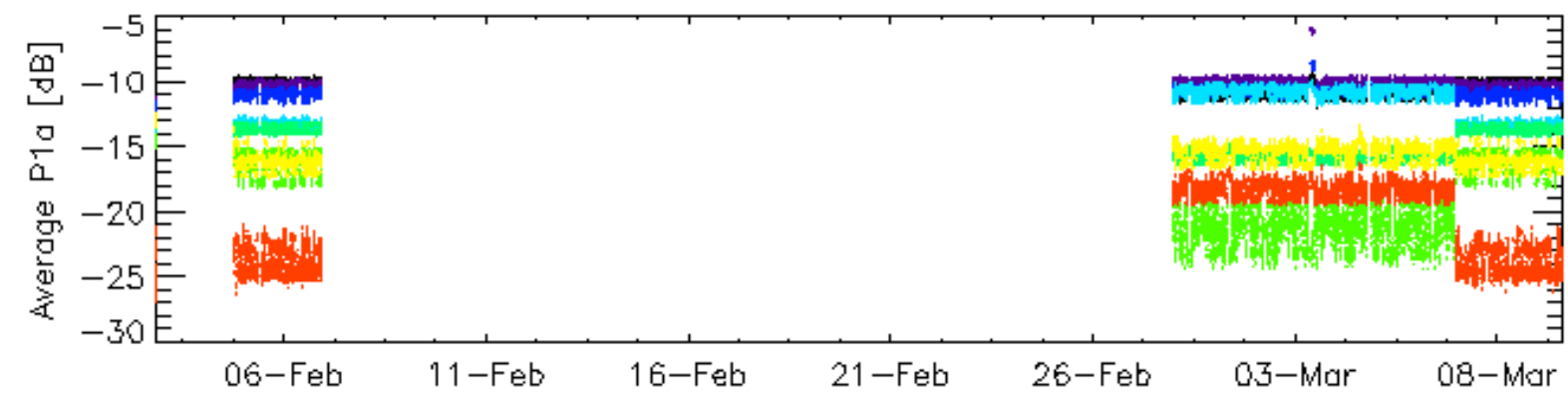
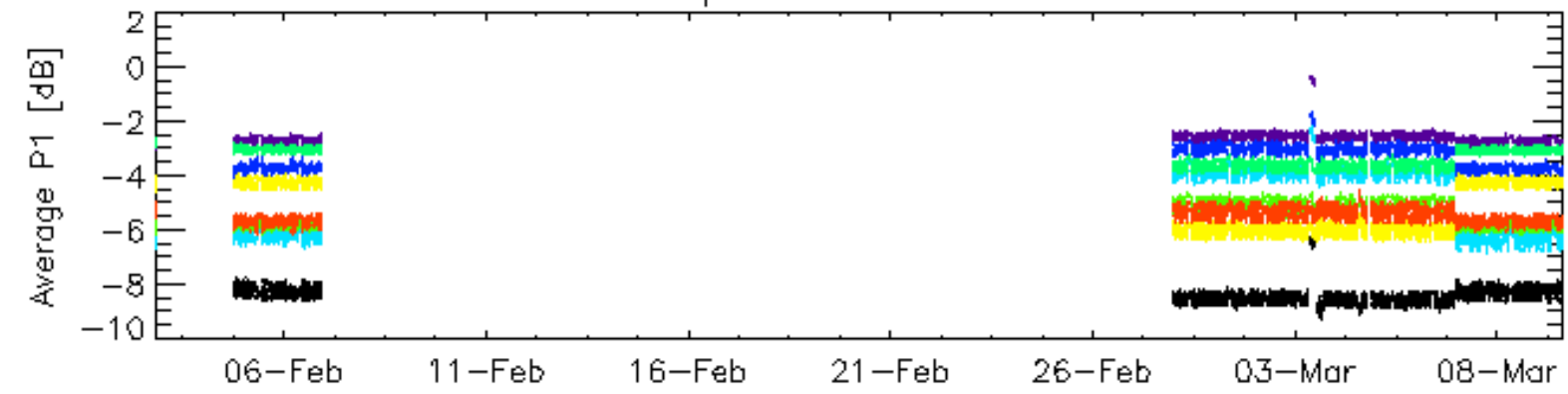


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

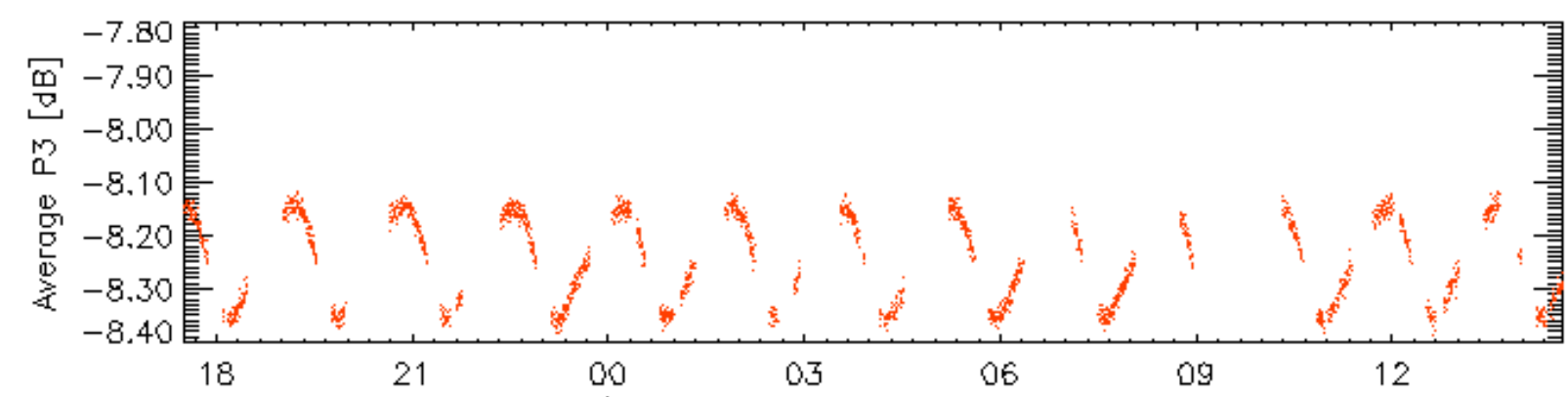
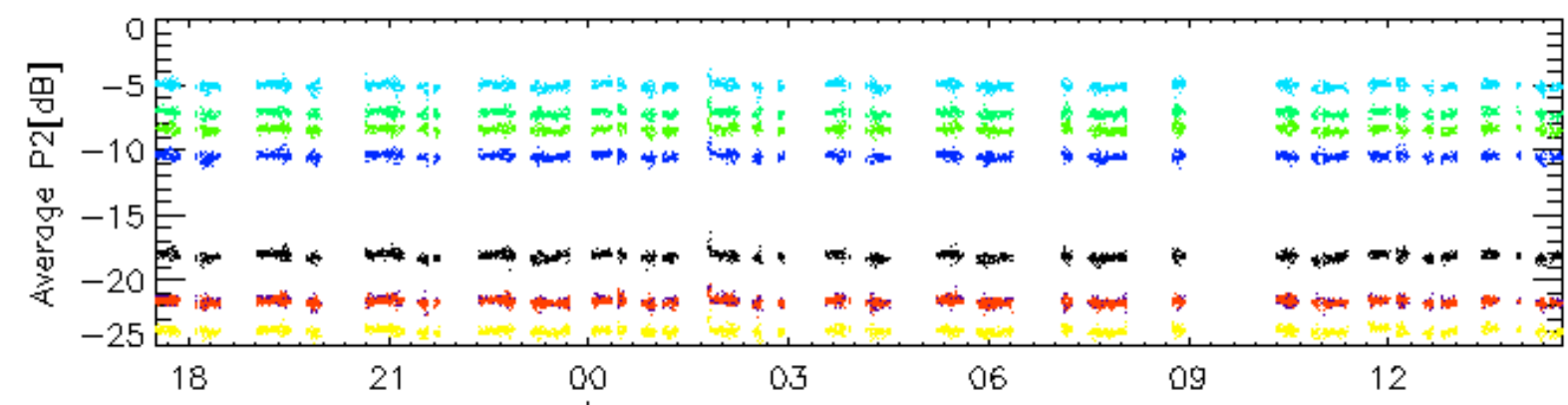
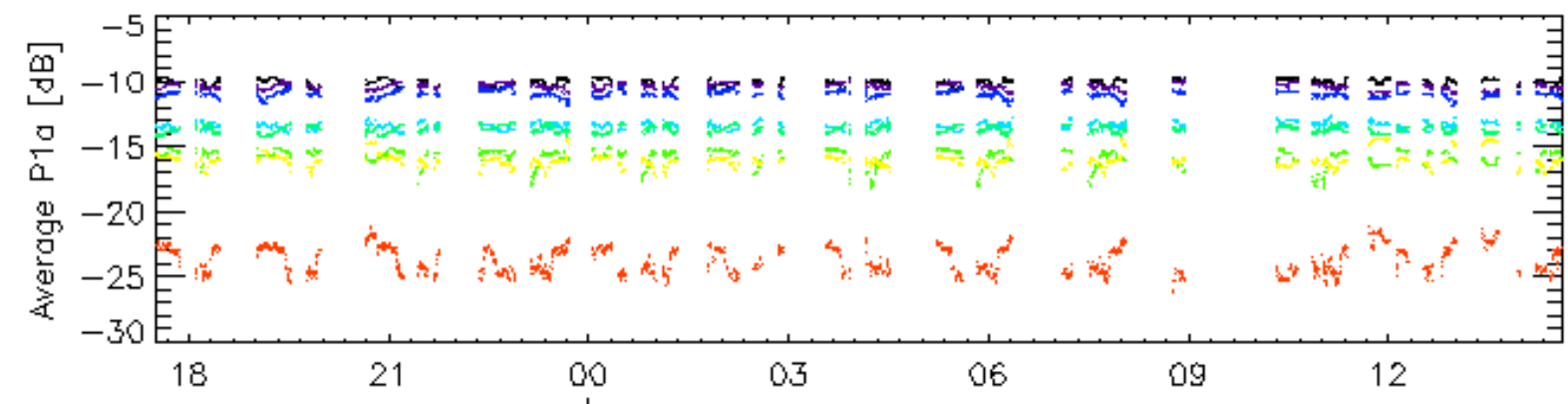
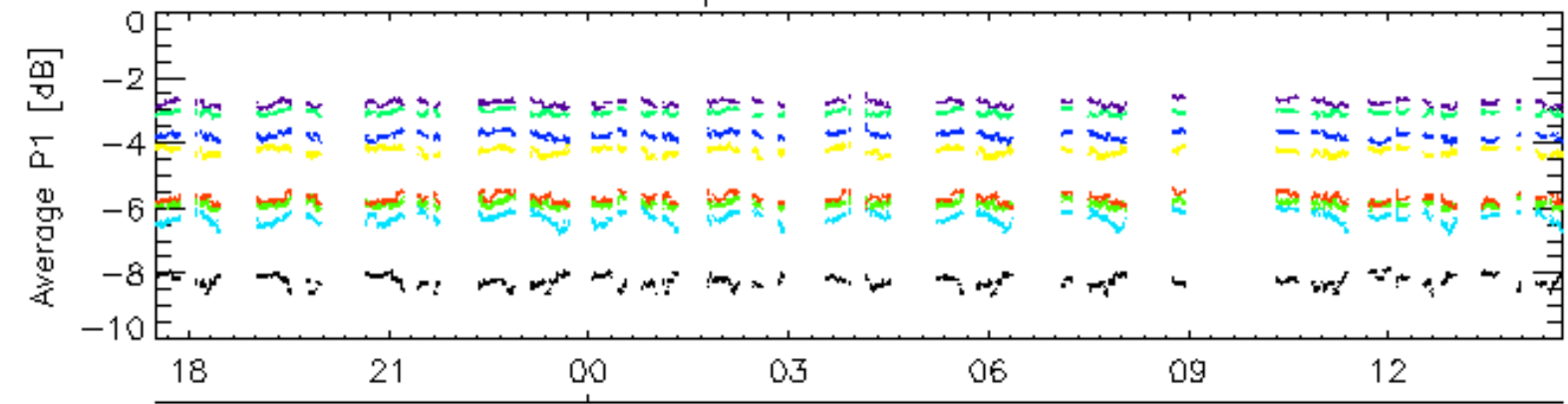


Cal pulses for WVS IS4



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

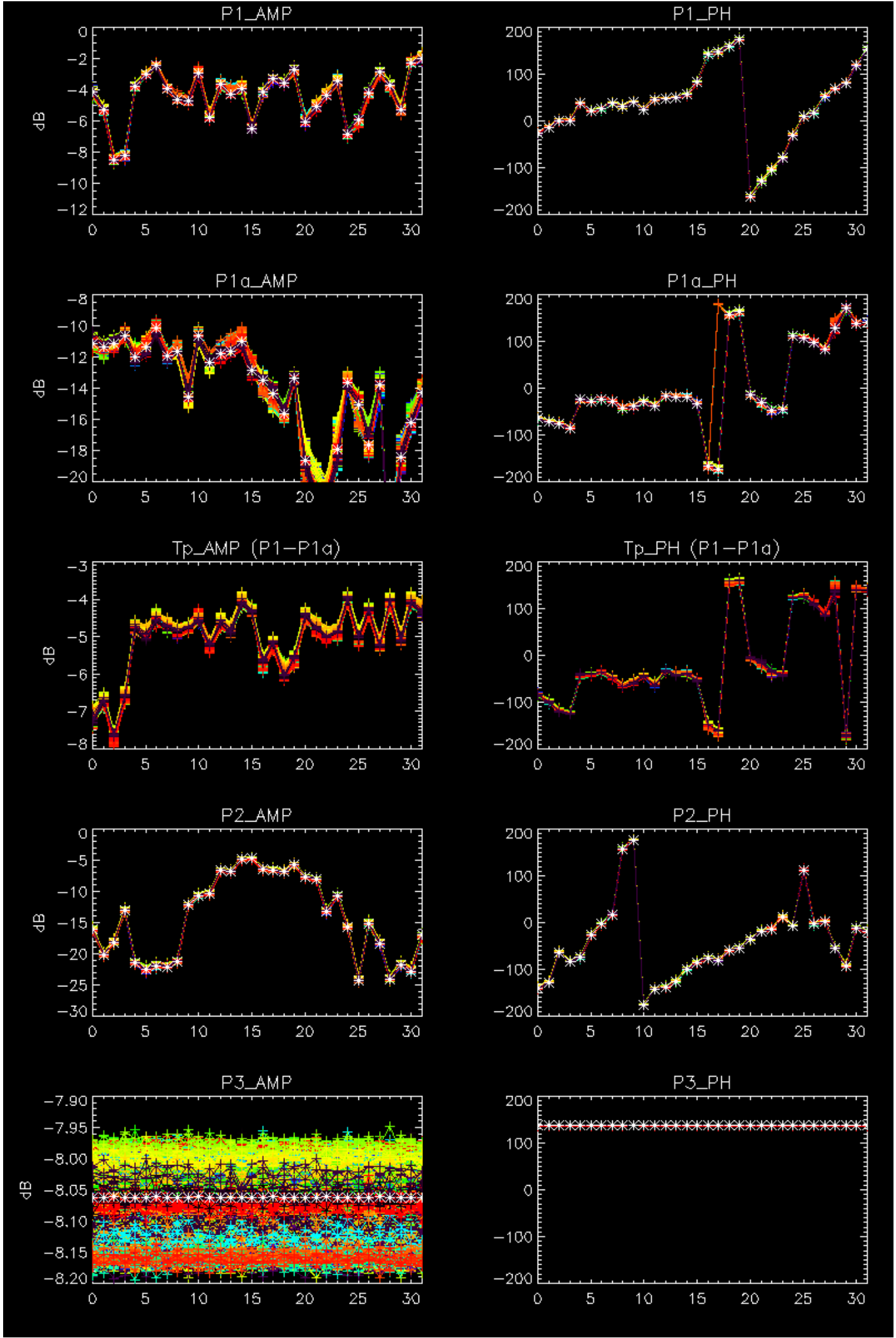
Cal pulses for WVS IS4

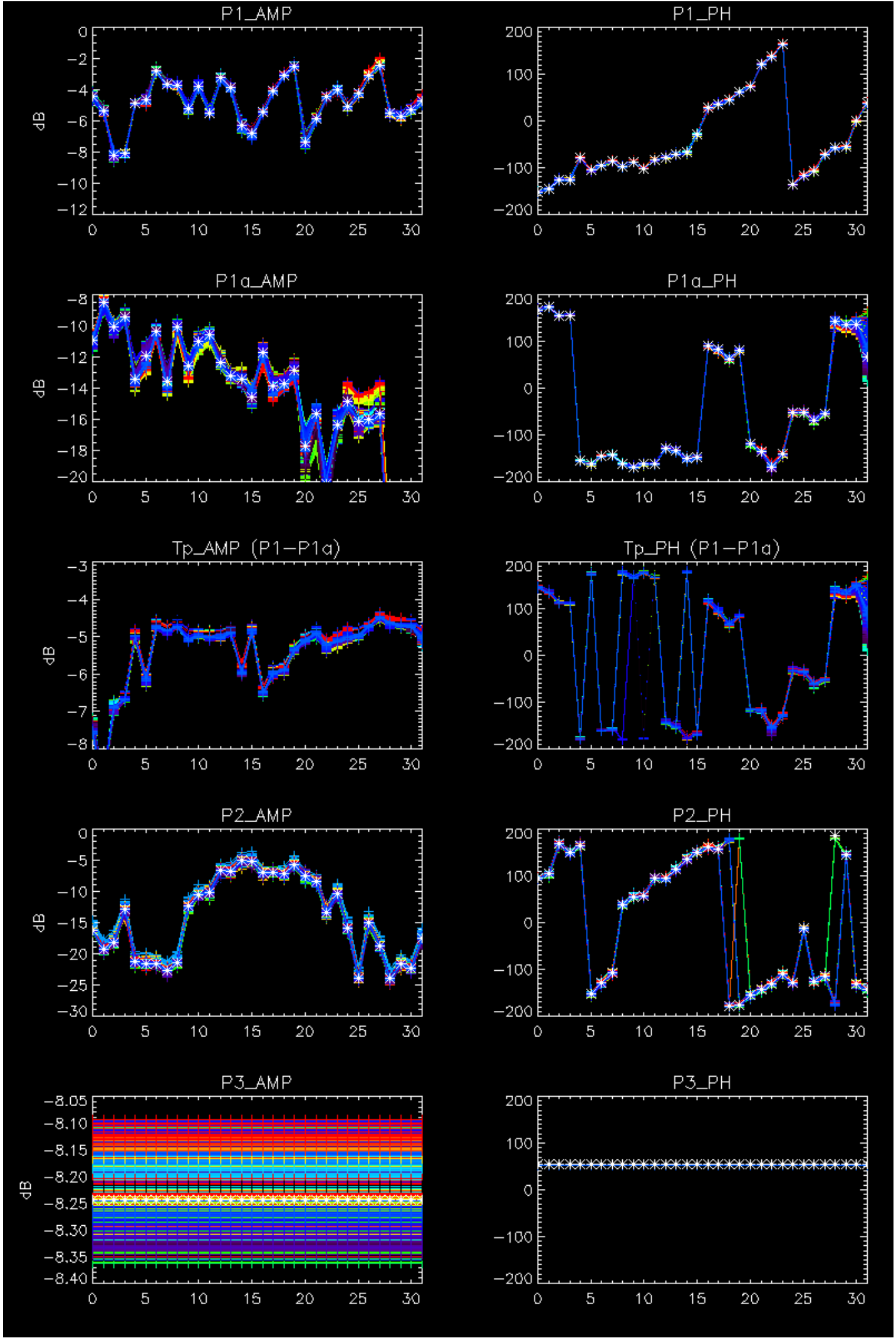


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

No anomalies observed.





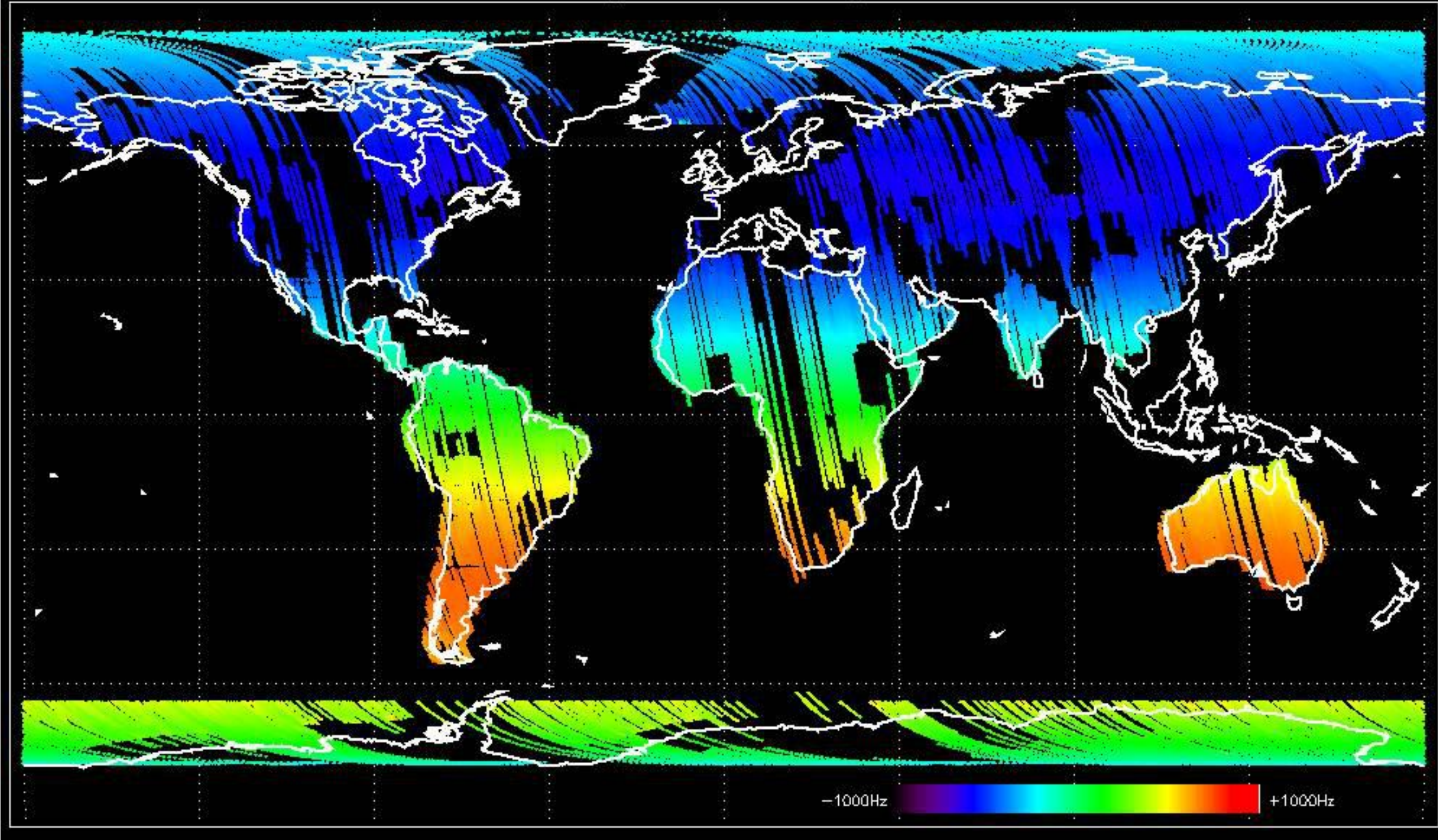


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



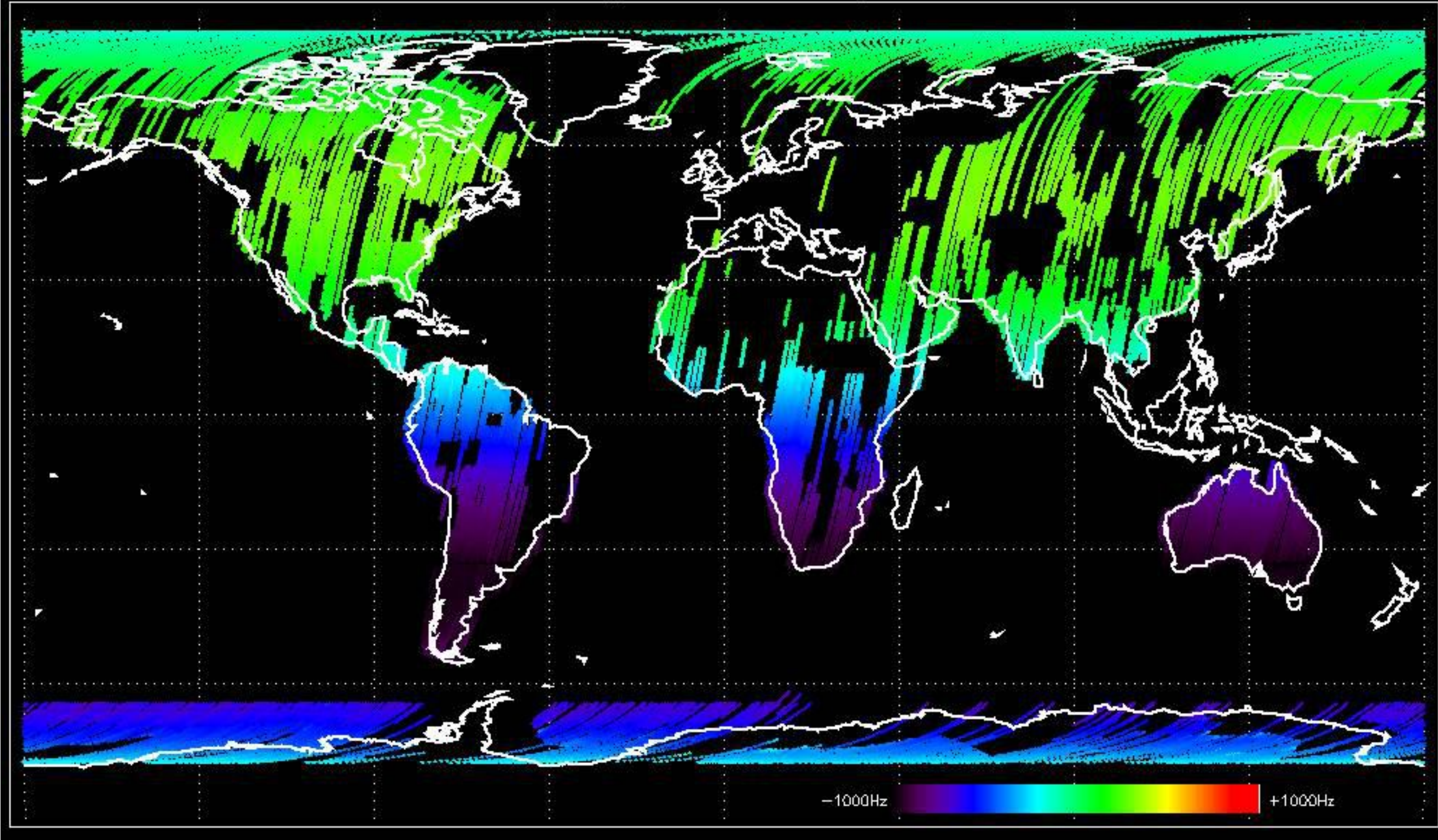


Doppler 'GM1' 'SS1' ascending



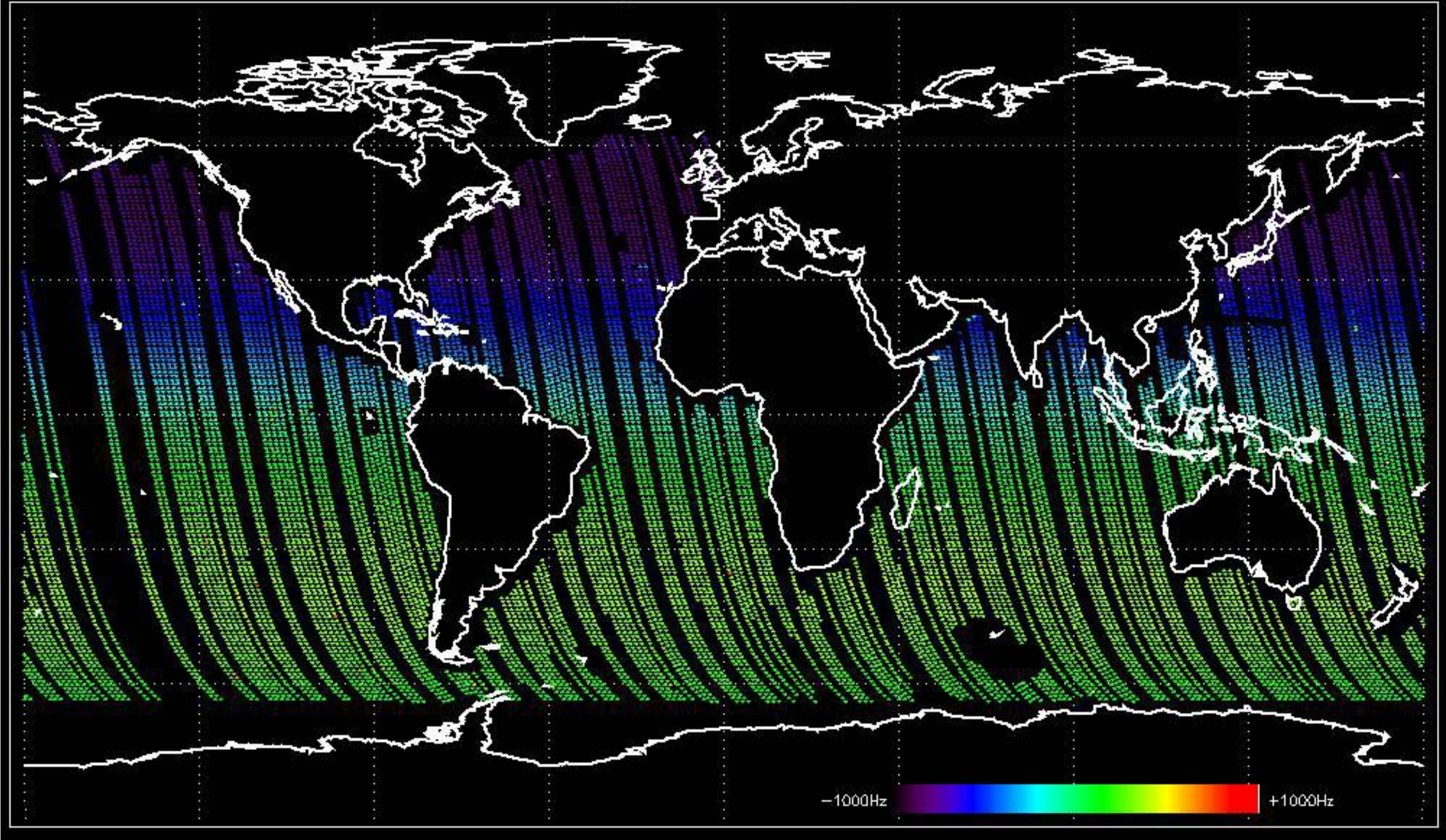


Doppler 'GM1' 'SS1' descending



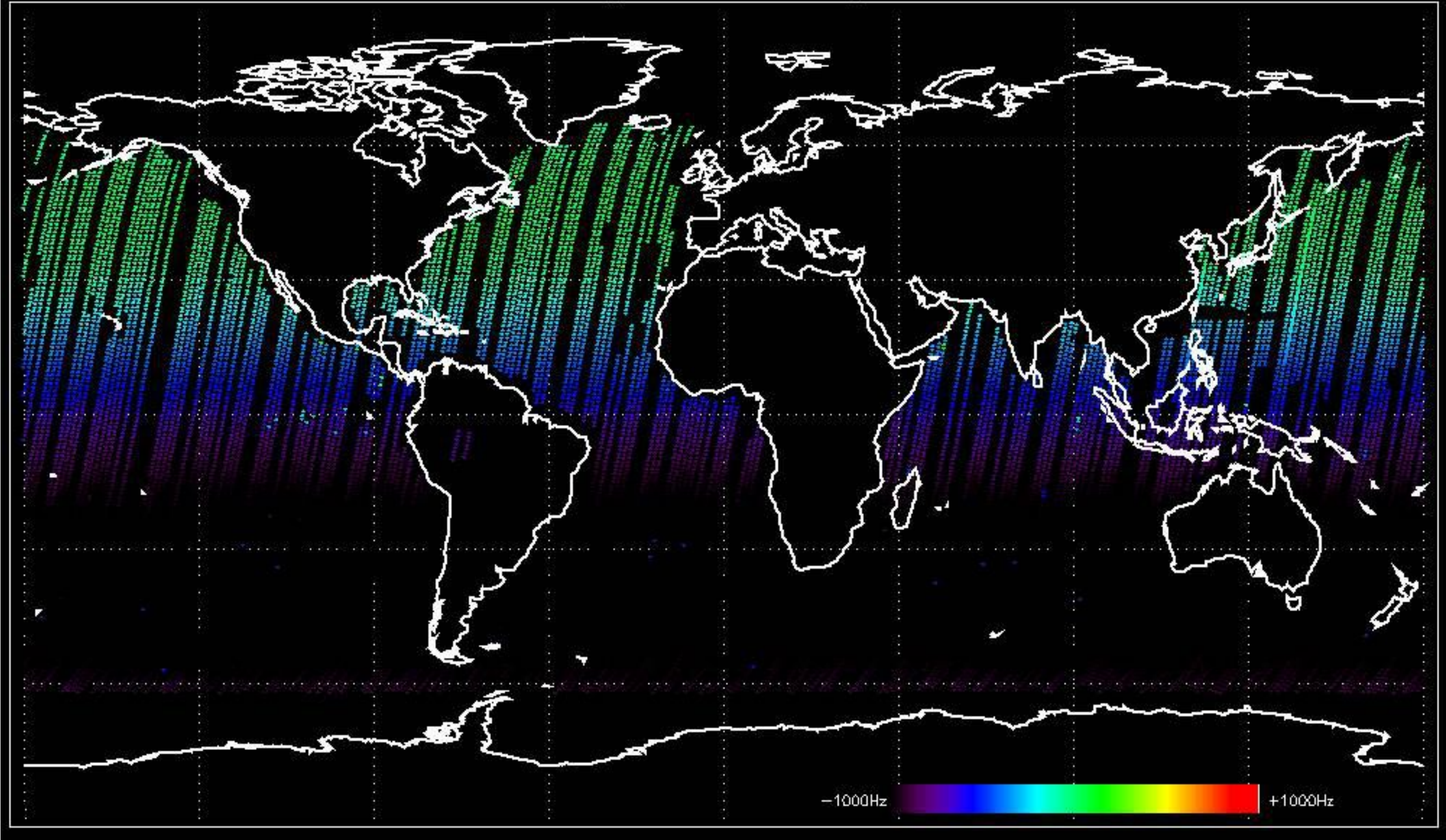


Doppler 'WVS' 'IS4' ascending



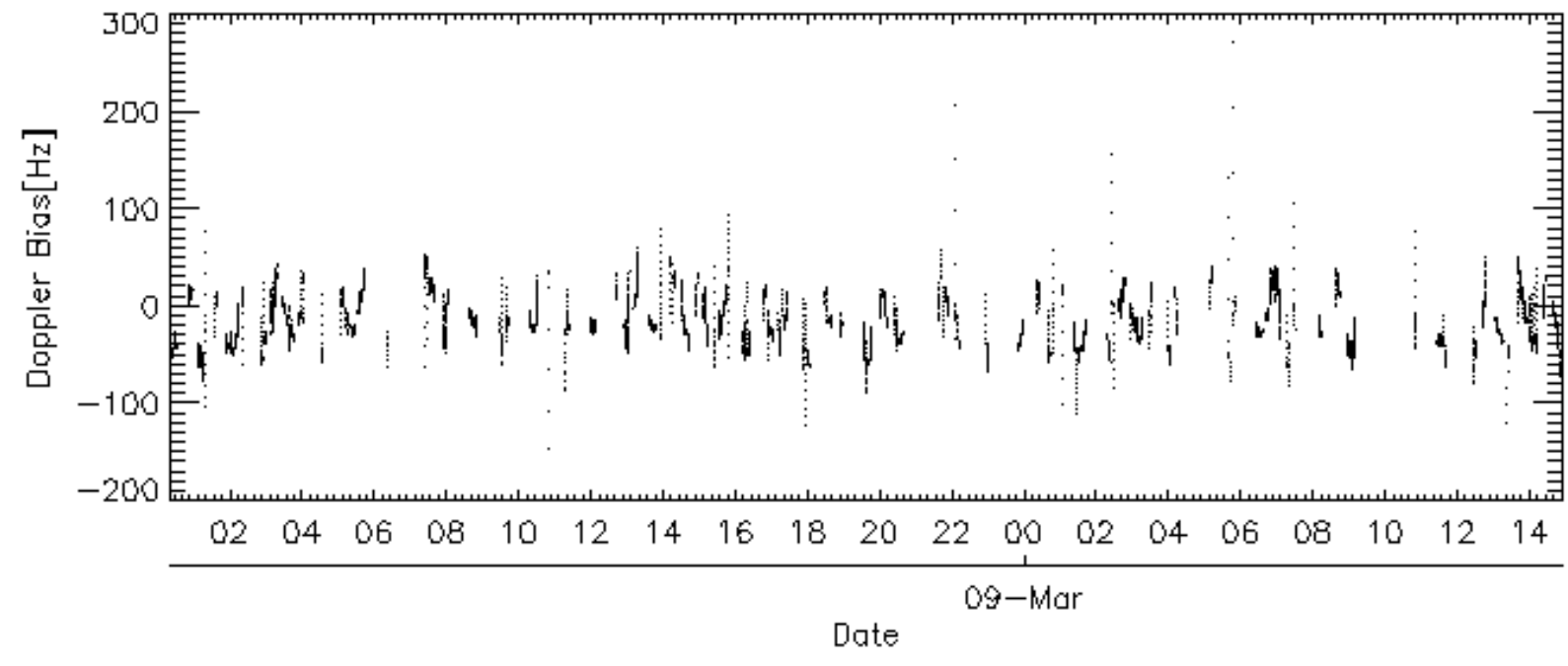
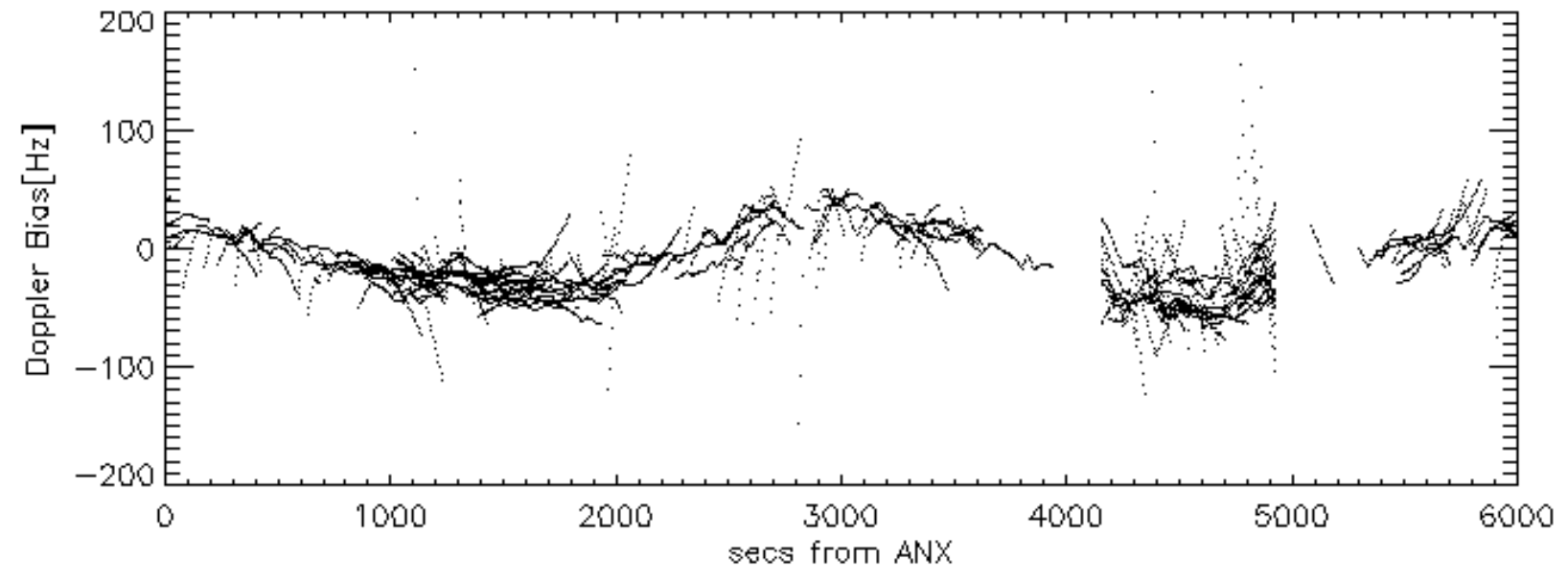
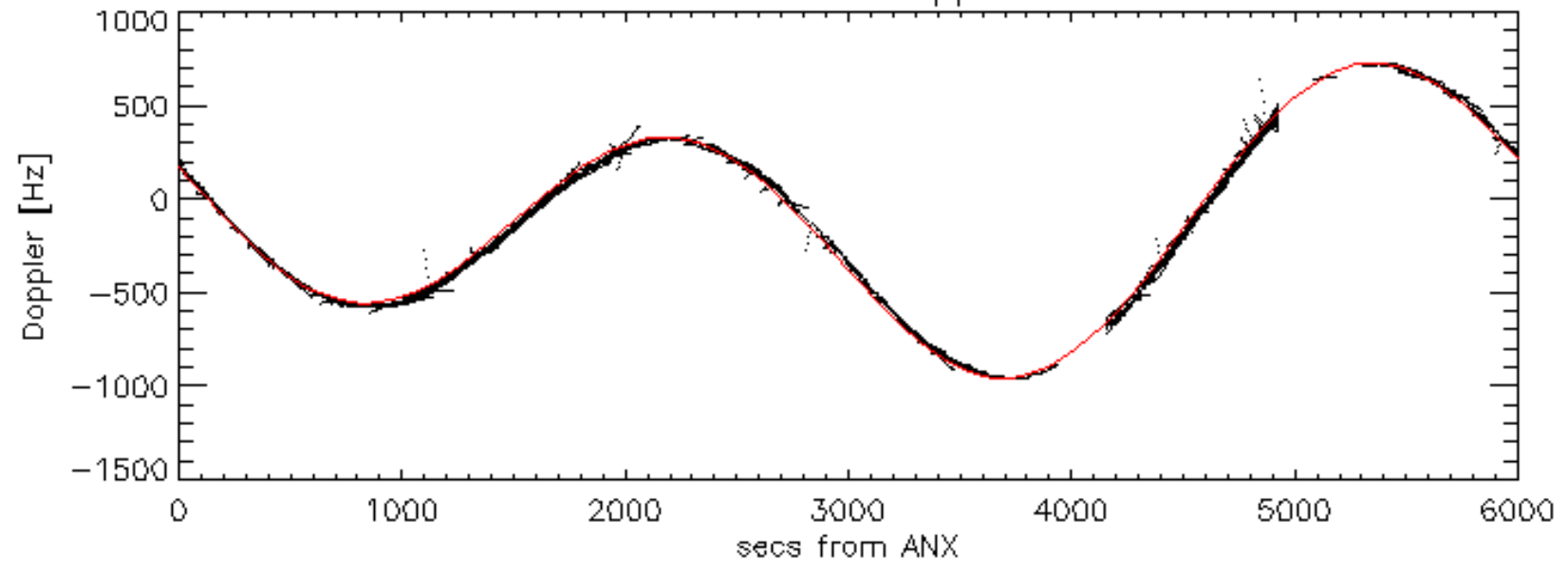


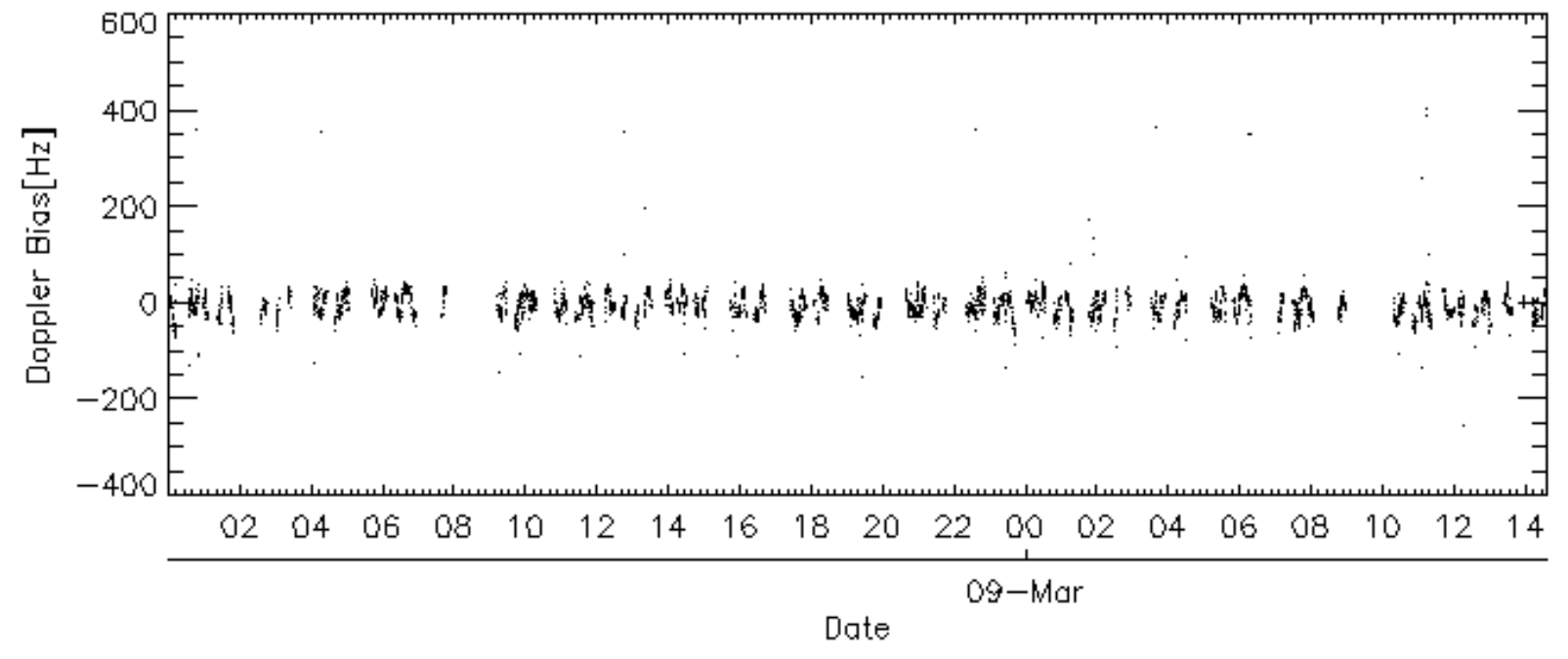
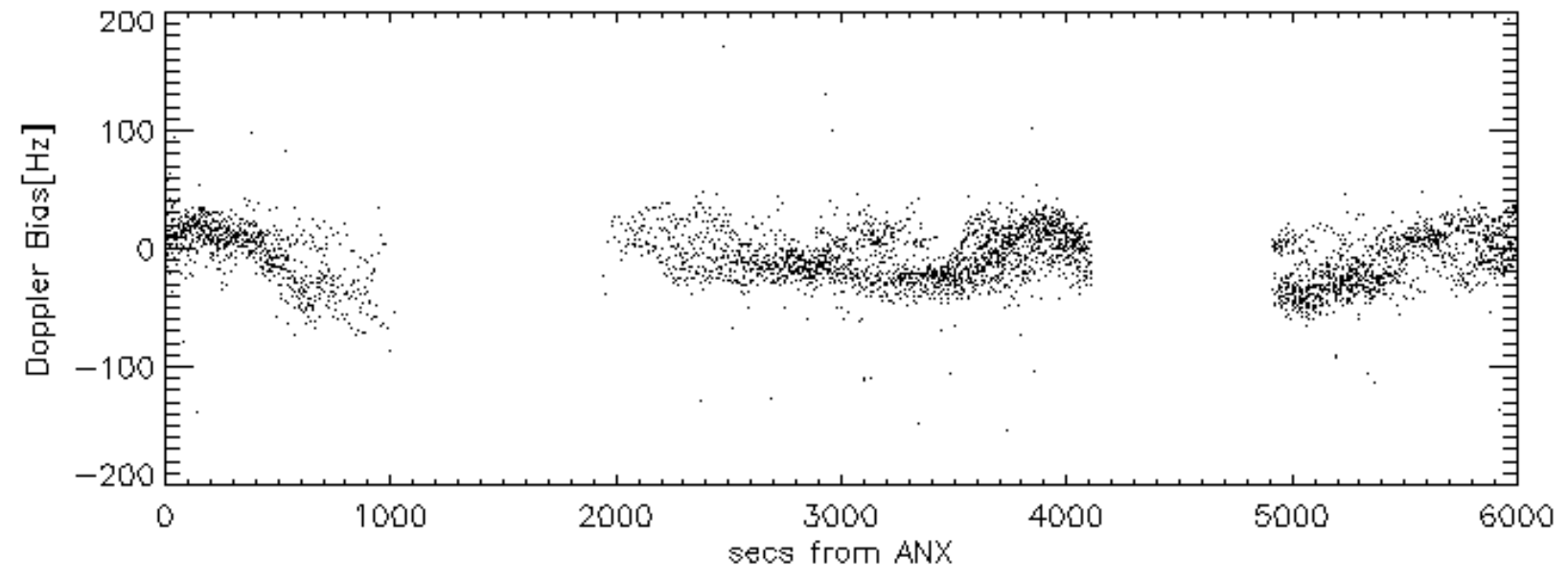
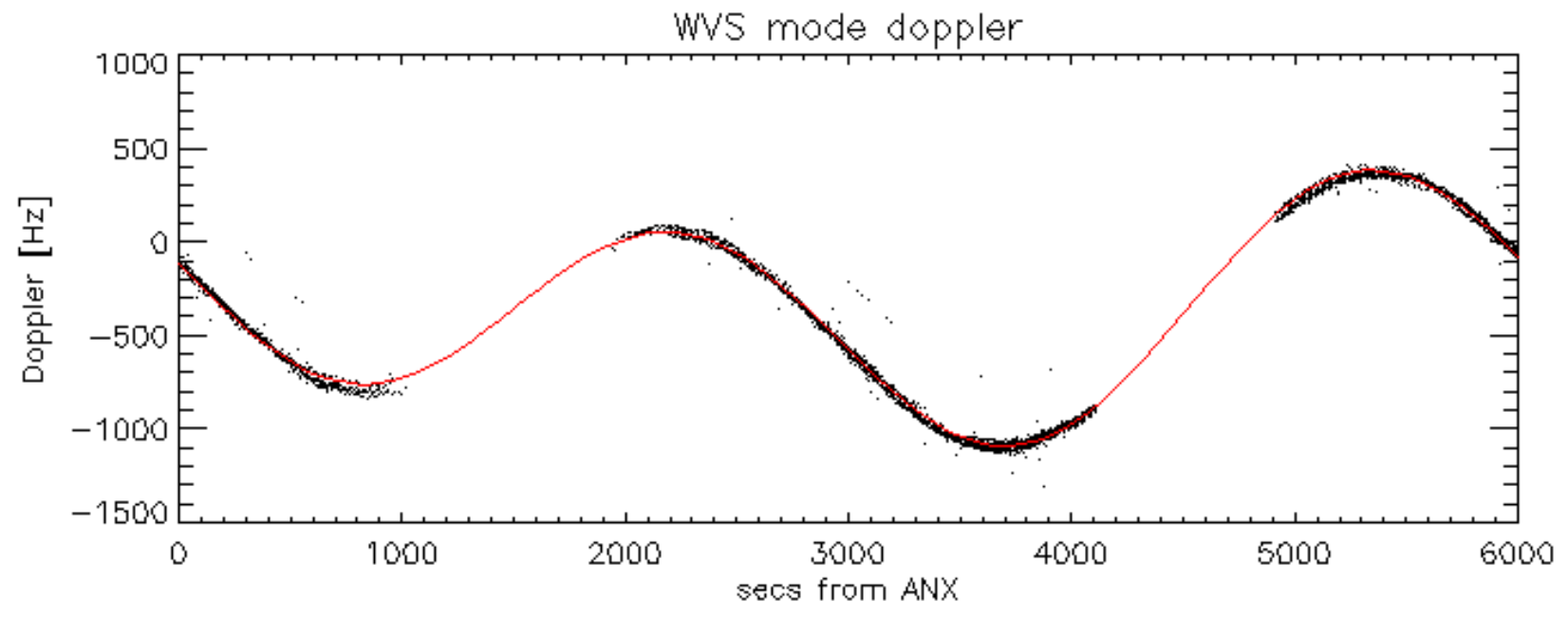
Doppler 'WVS' 'IS4' descending





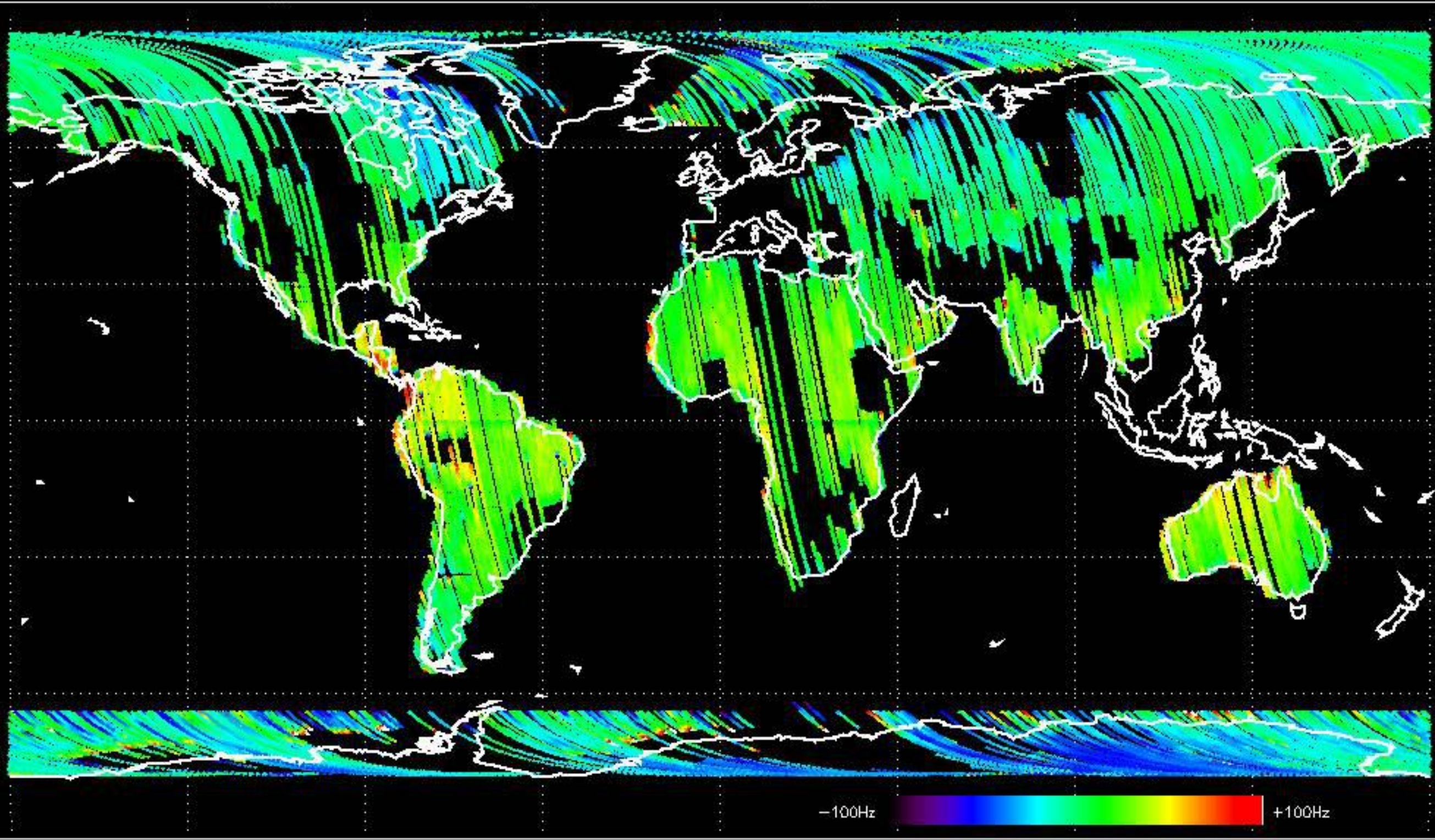
GM1 mode doppler





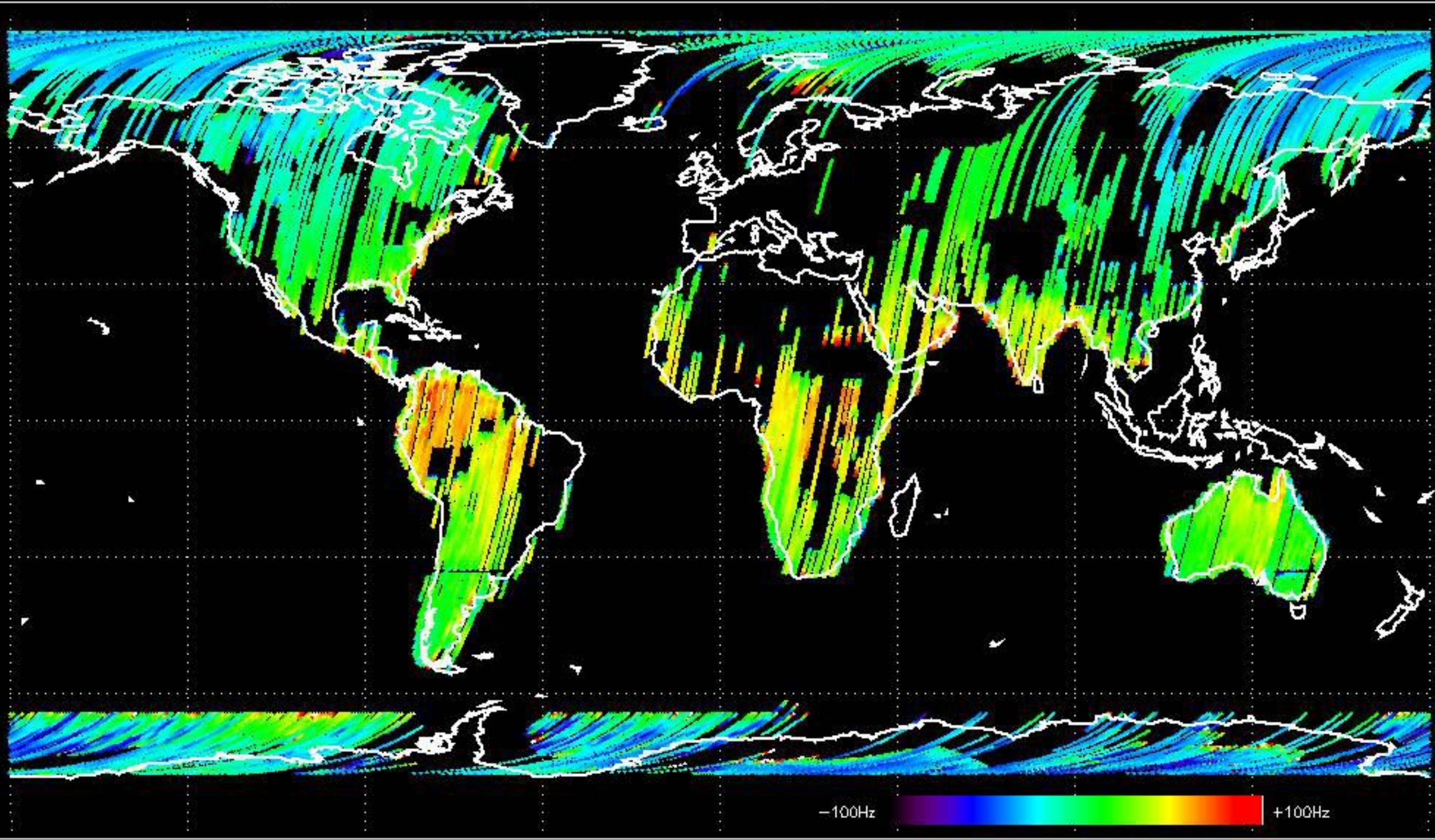


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.299059 Hz



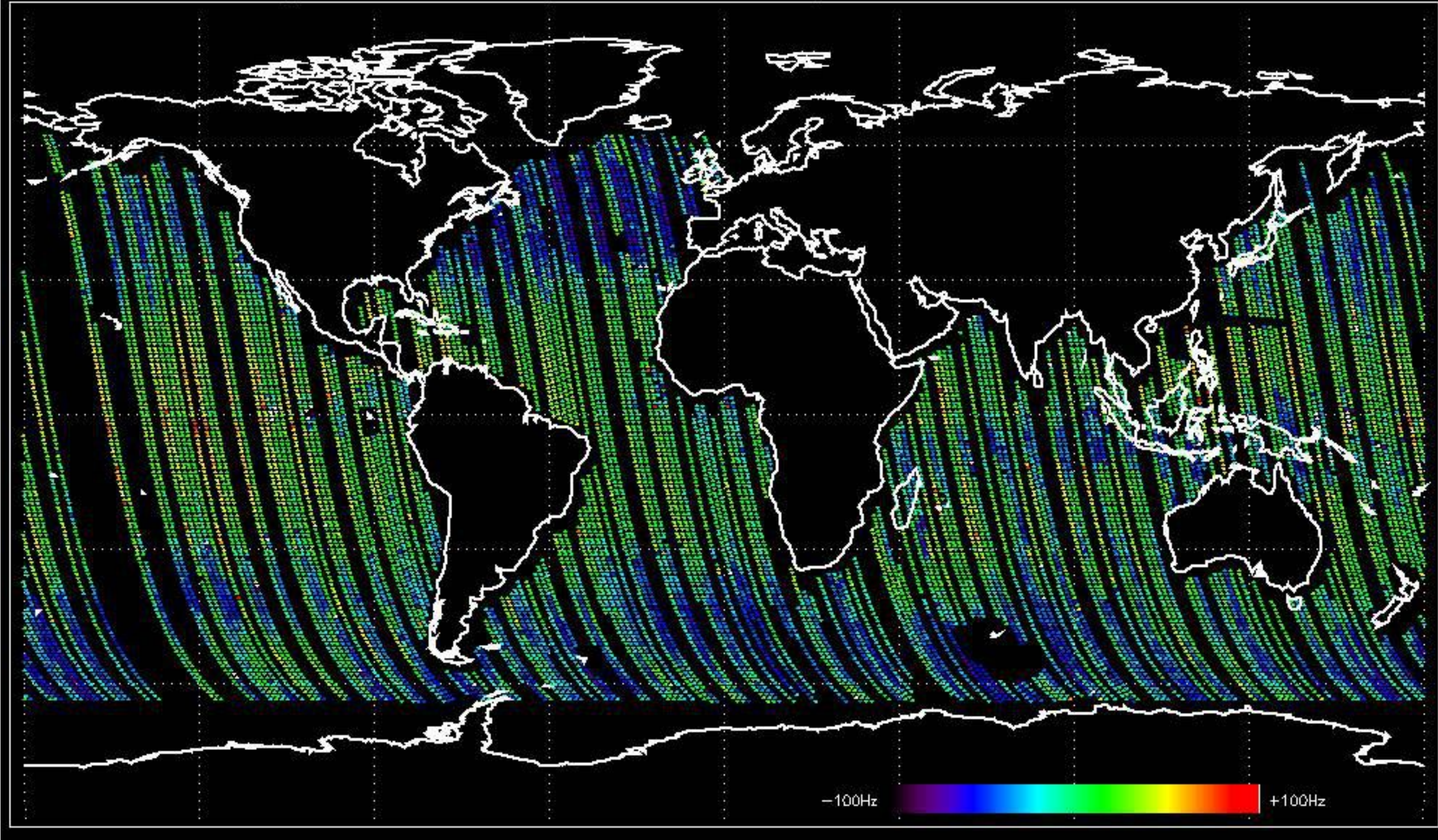


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -16.509493 Hz



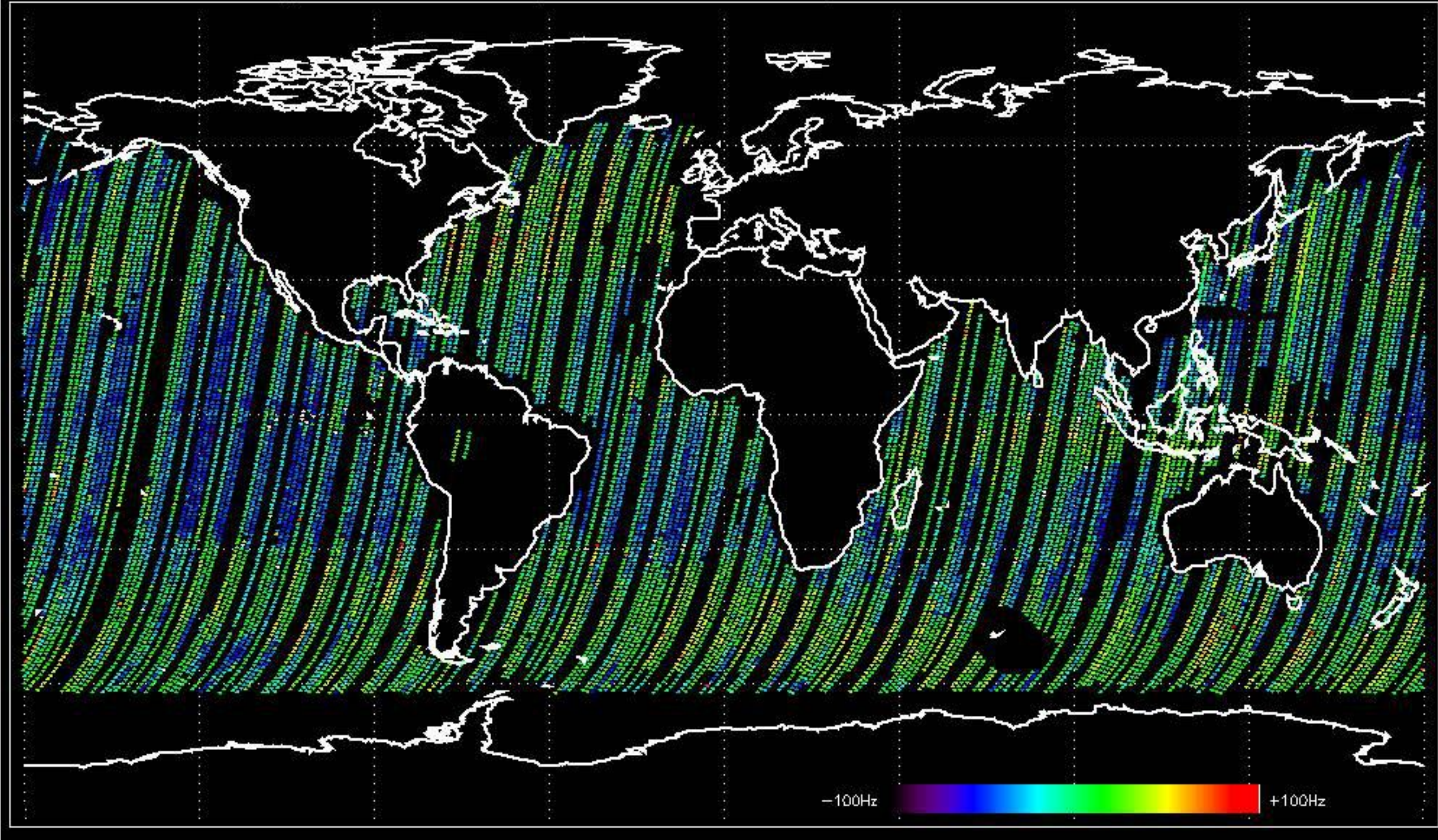


Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -22.941353 Hz





Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -24.618151 Hz

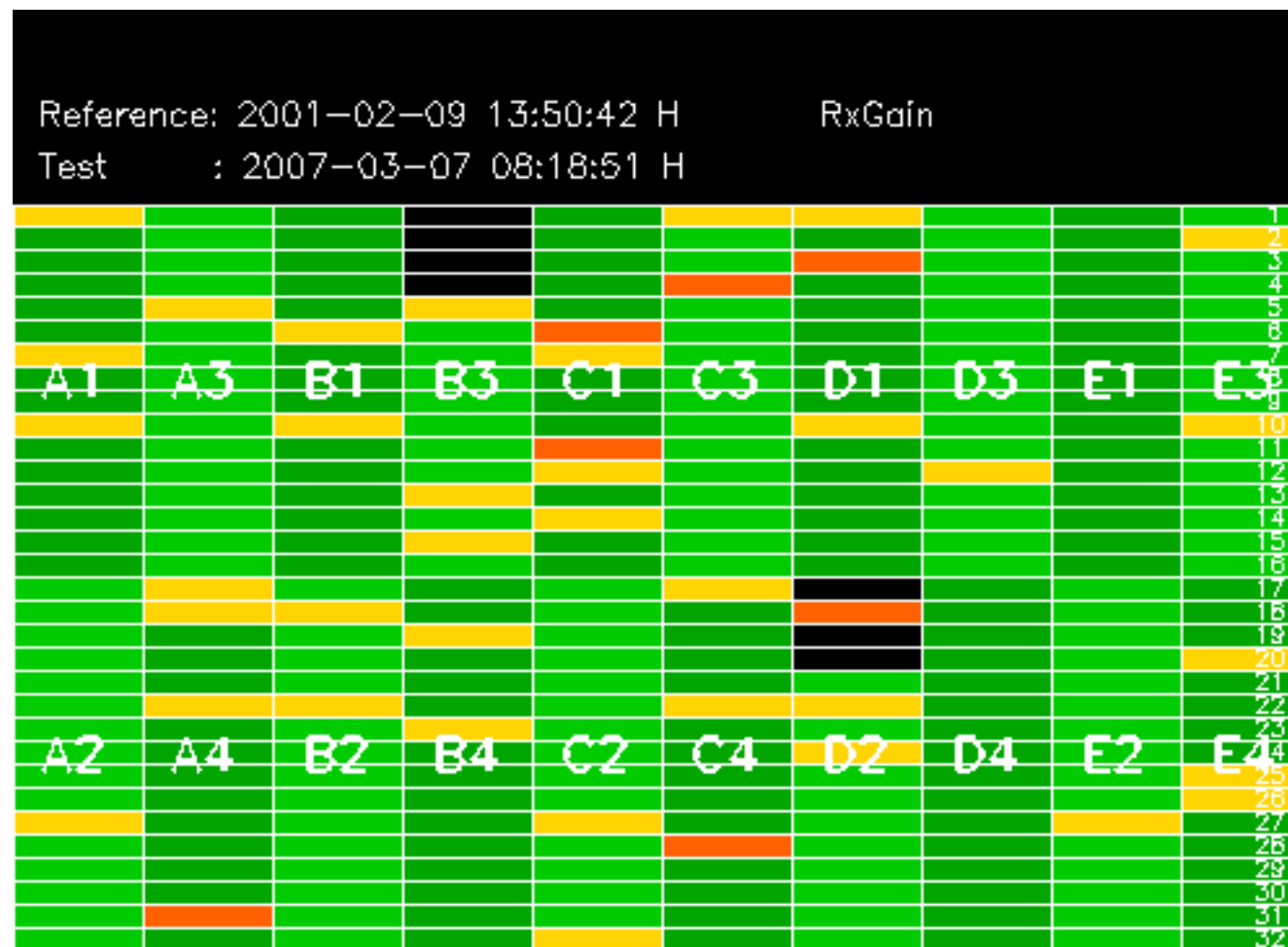




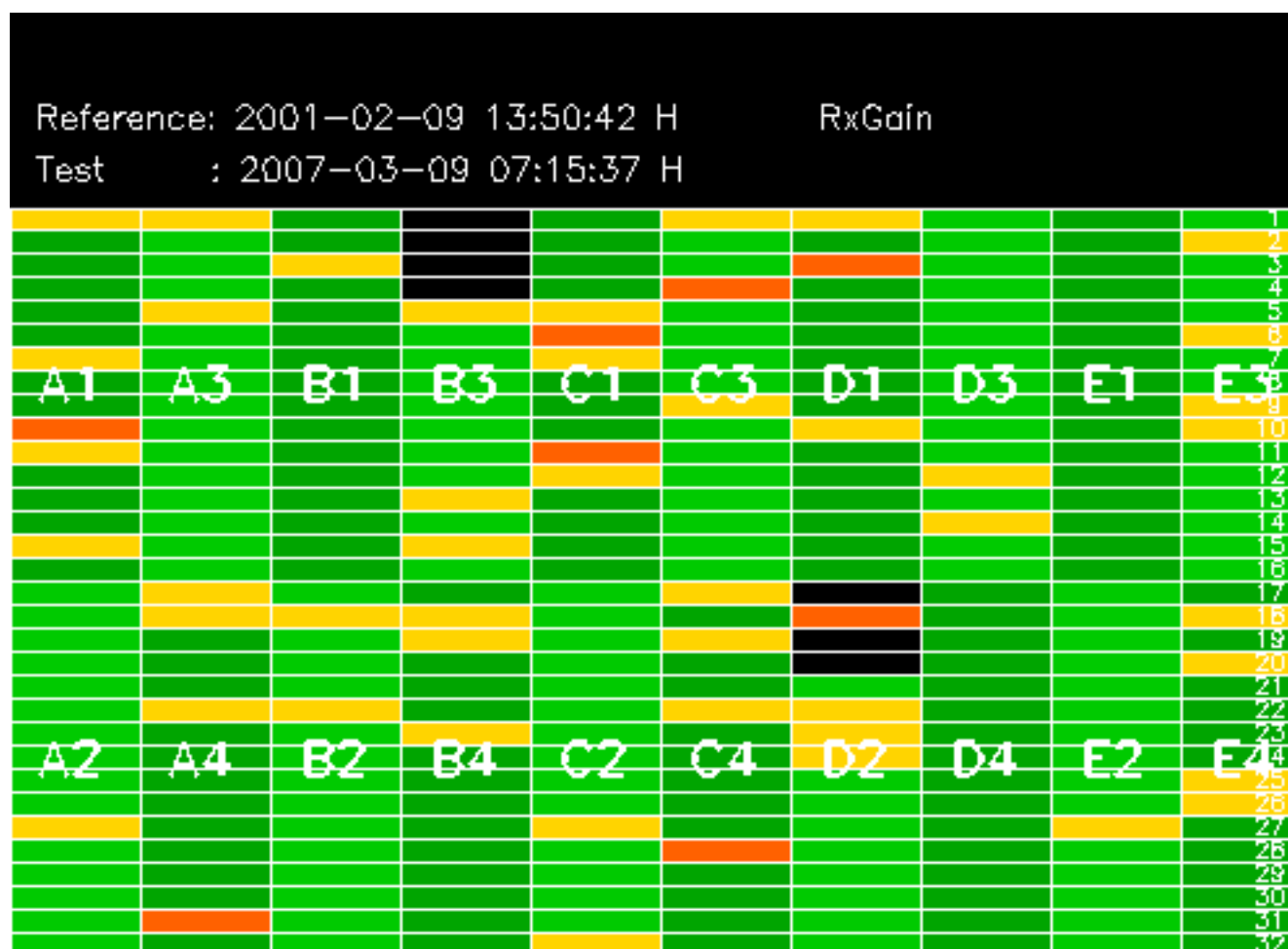
No anomalies observed on available MS products:

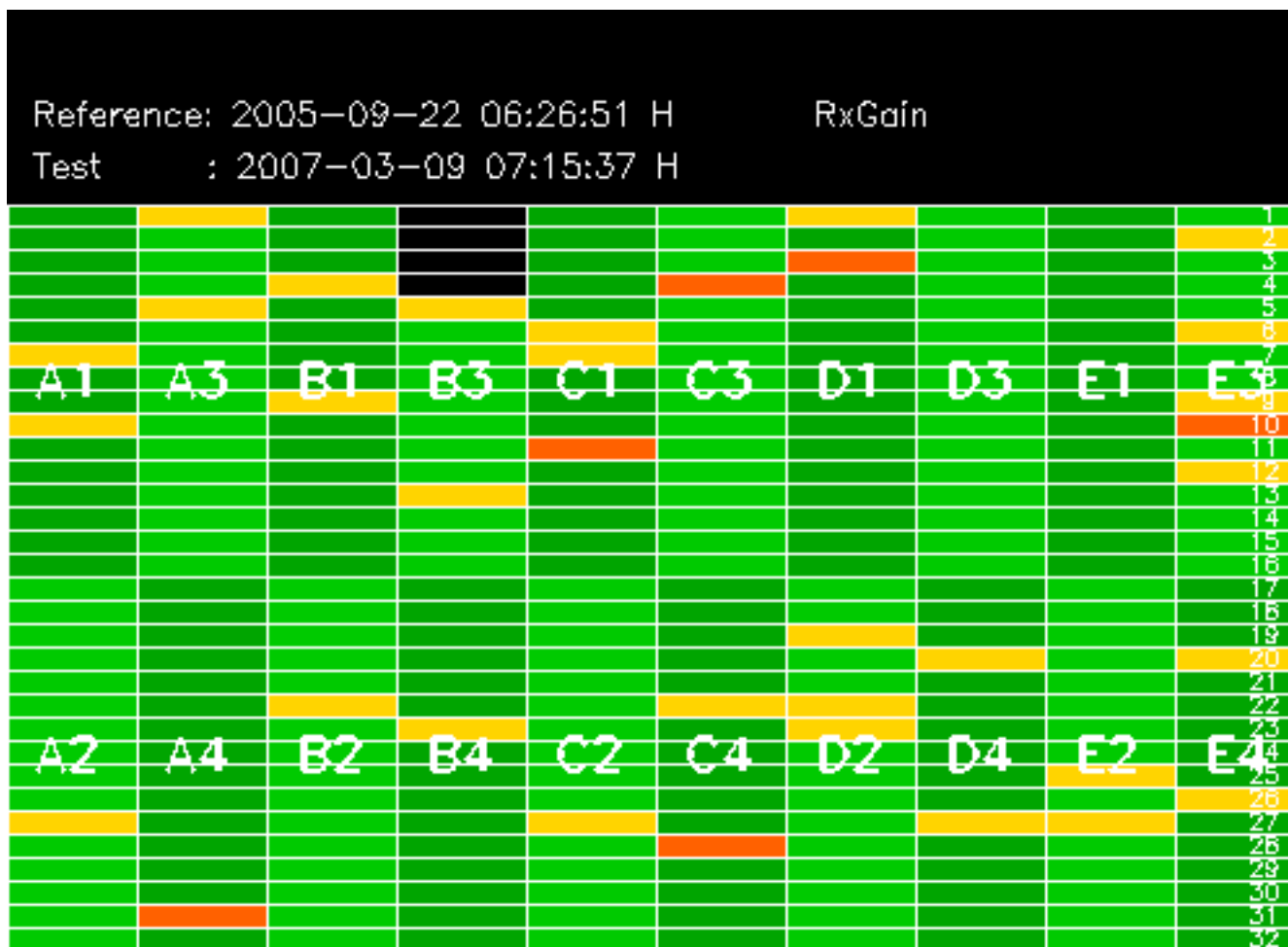
No anomalies observed.

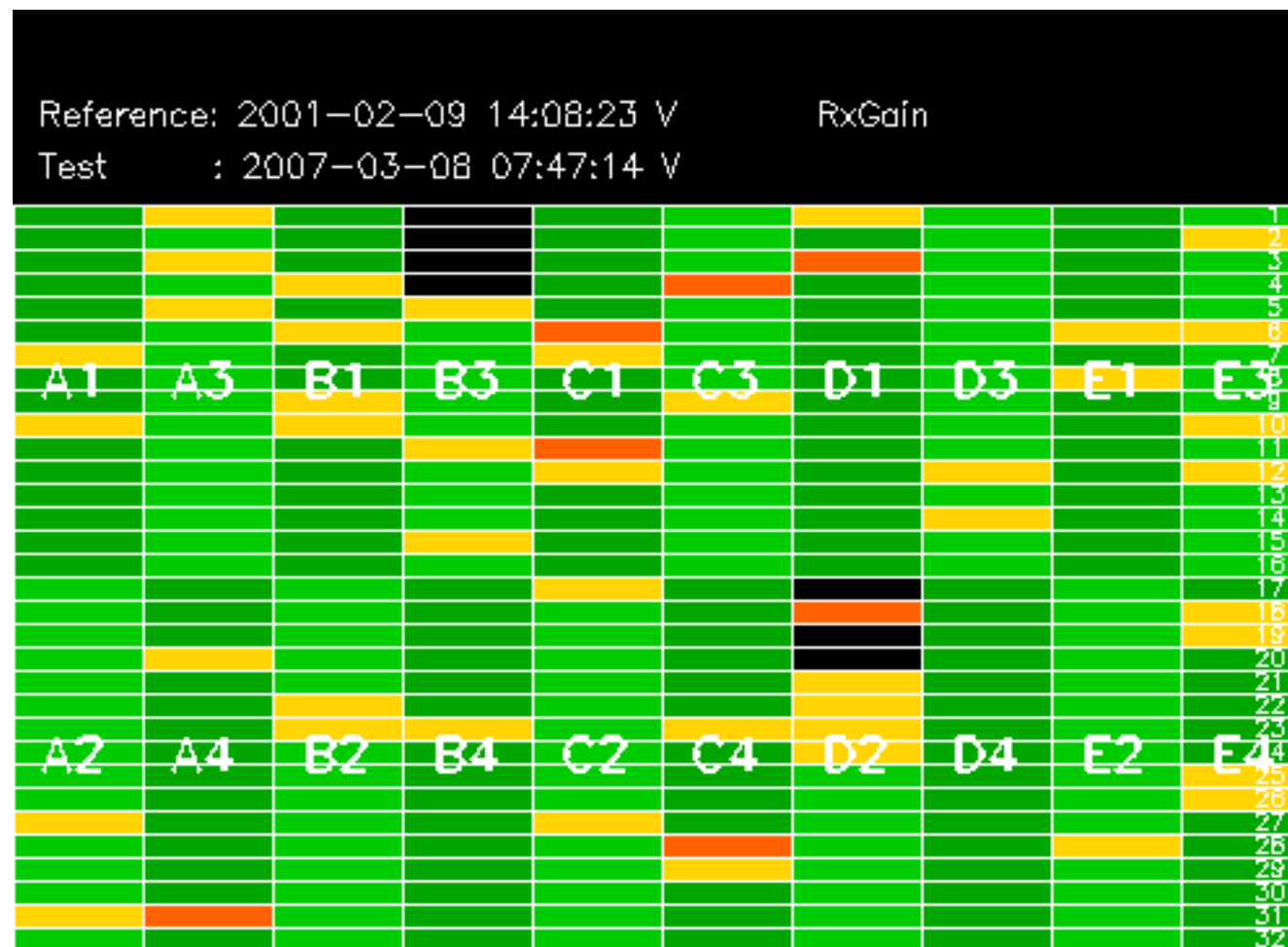






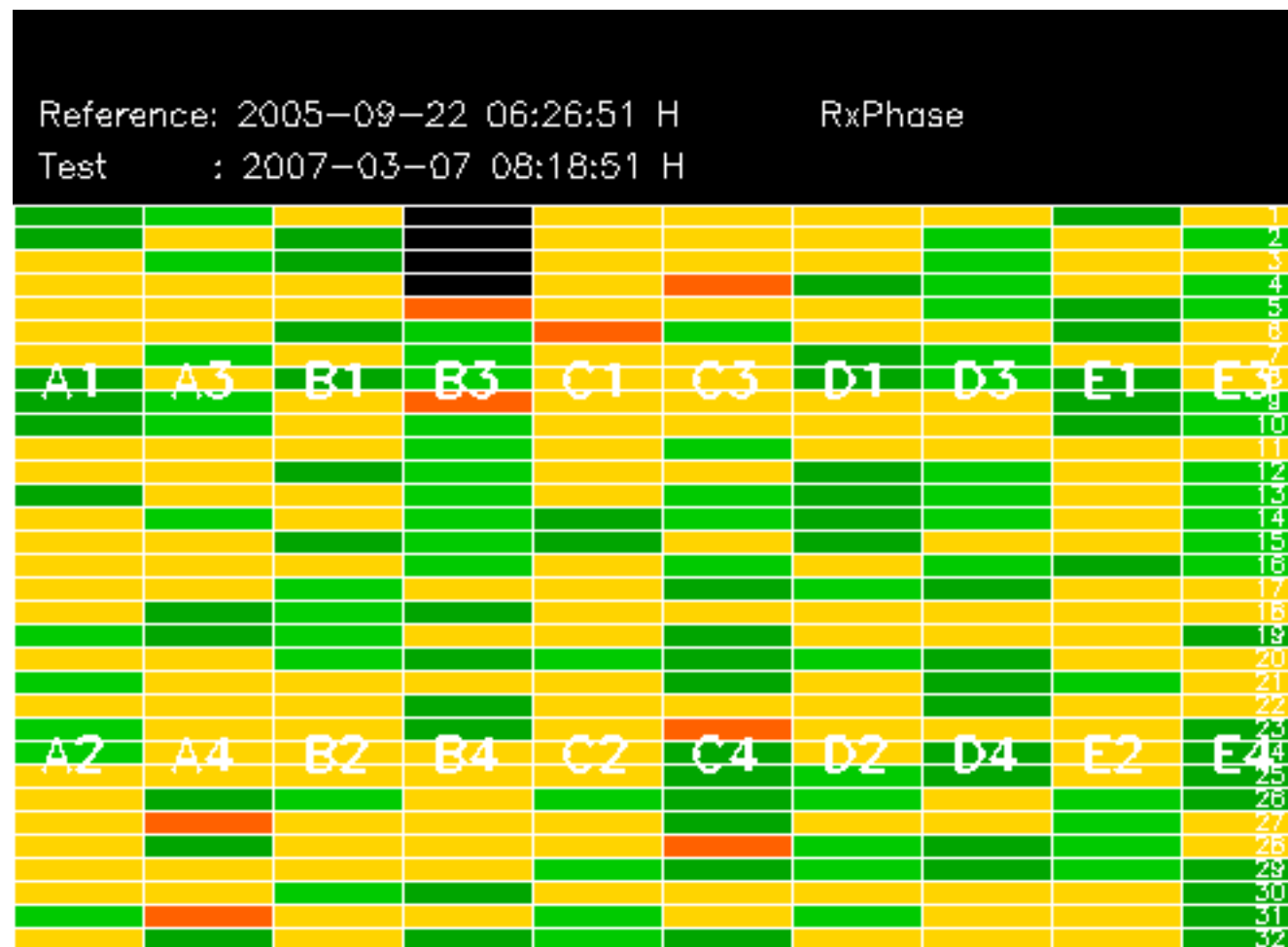




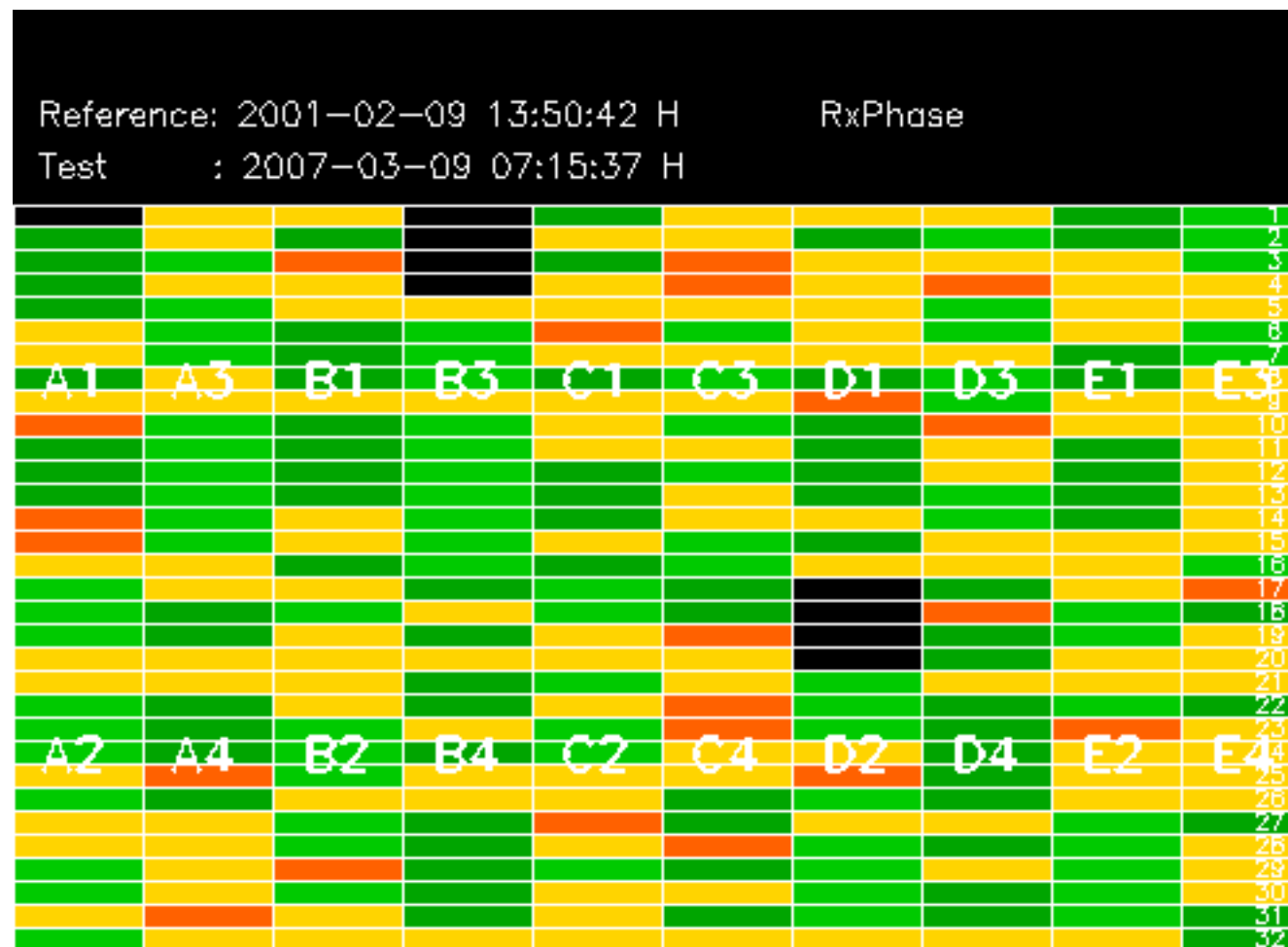




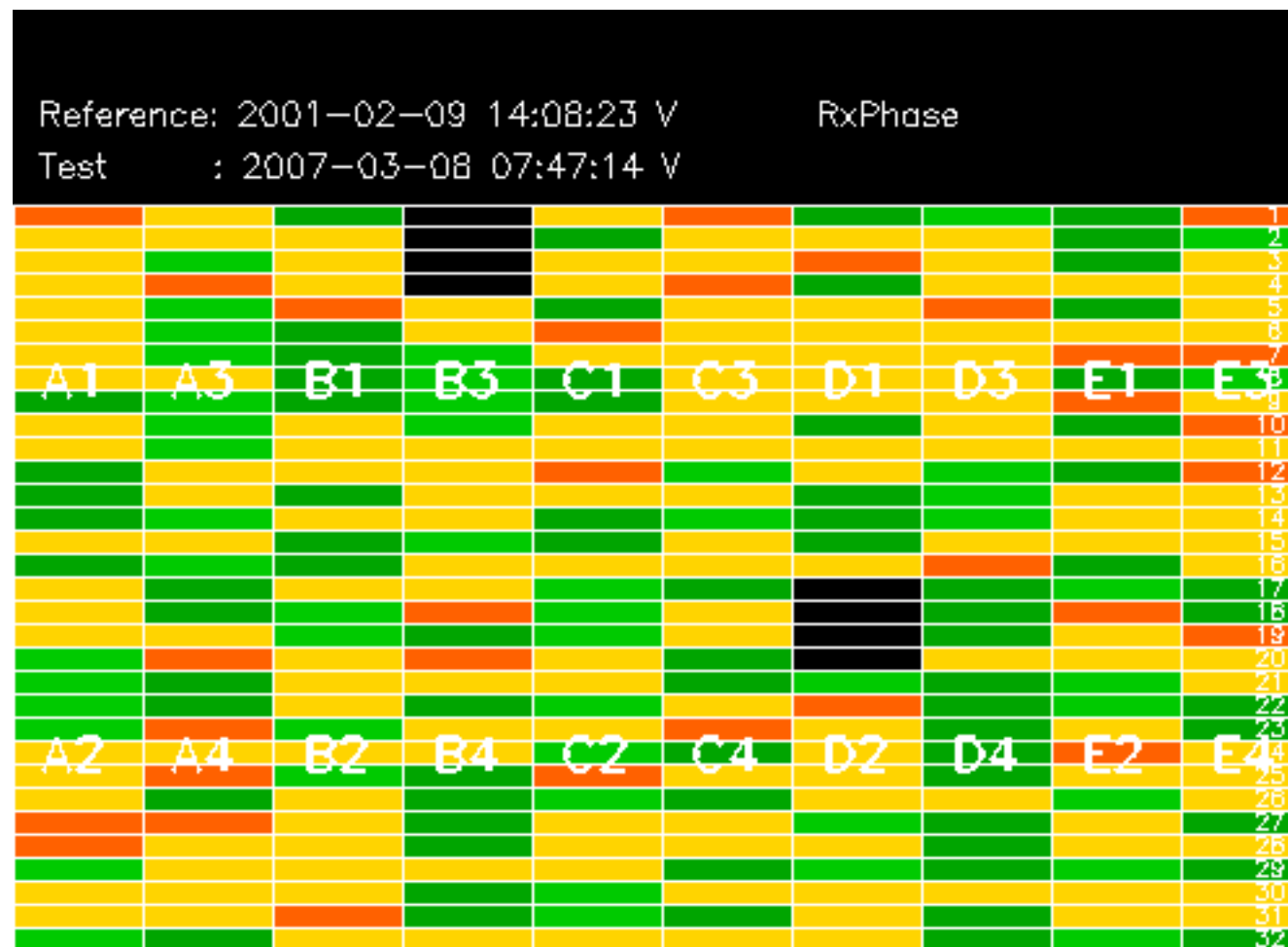




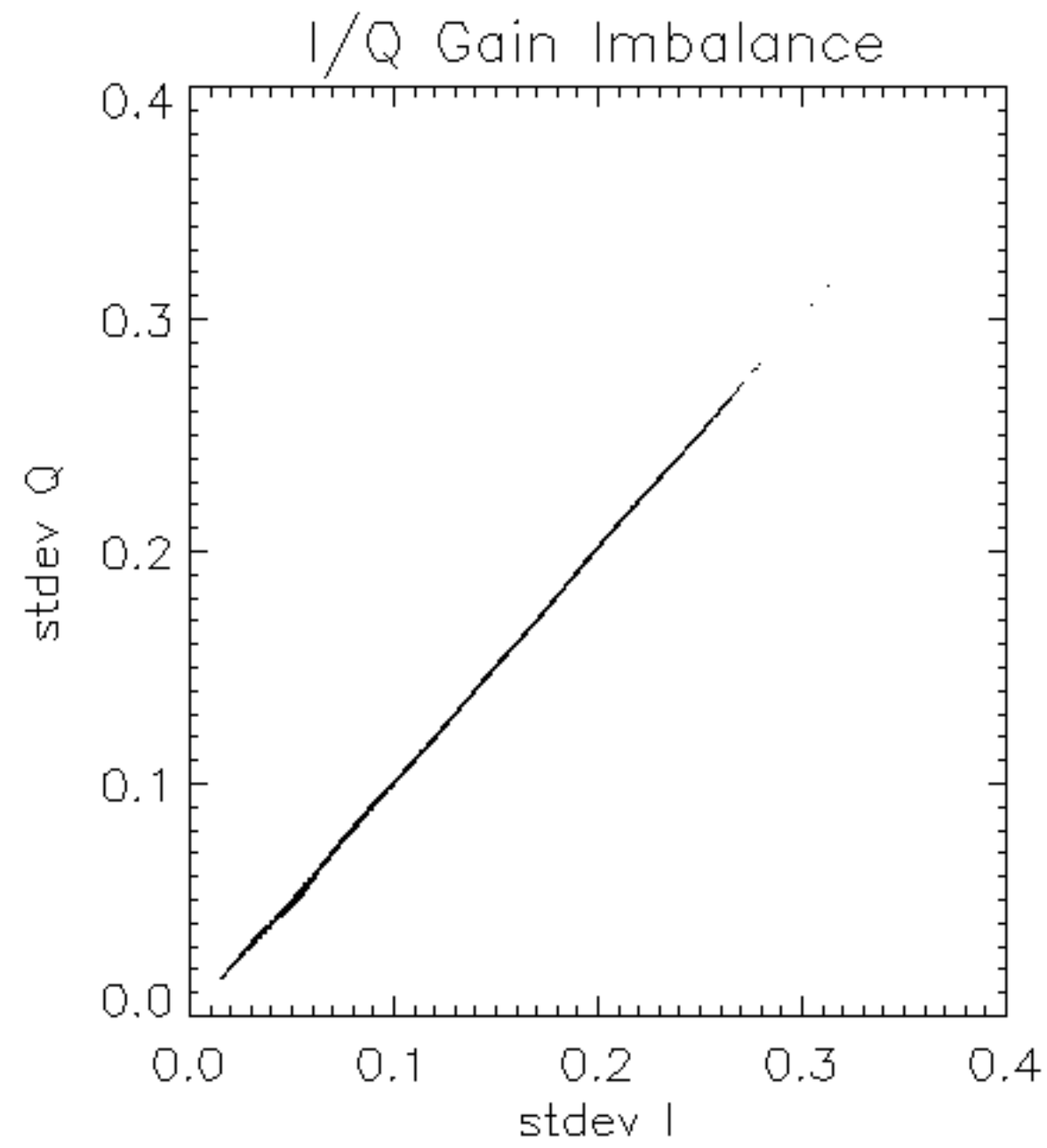


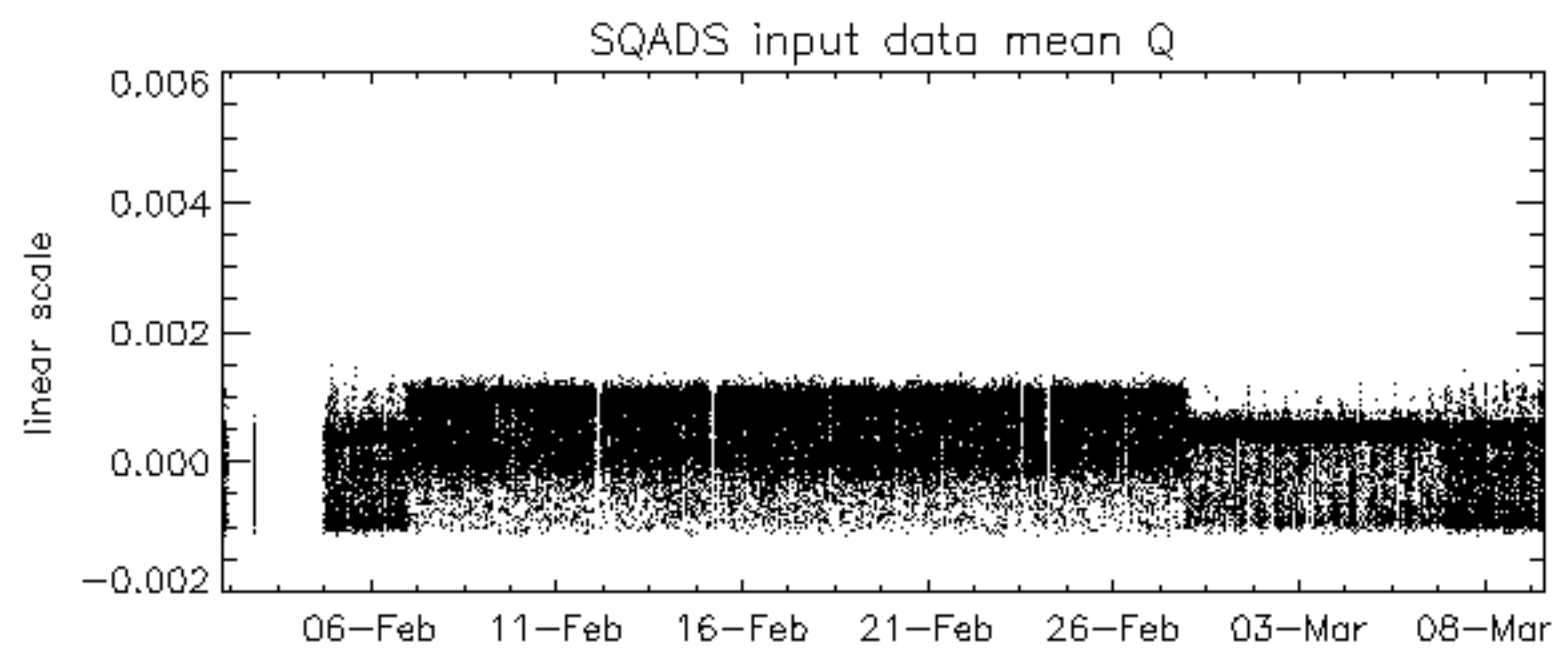
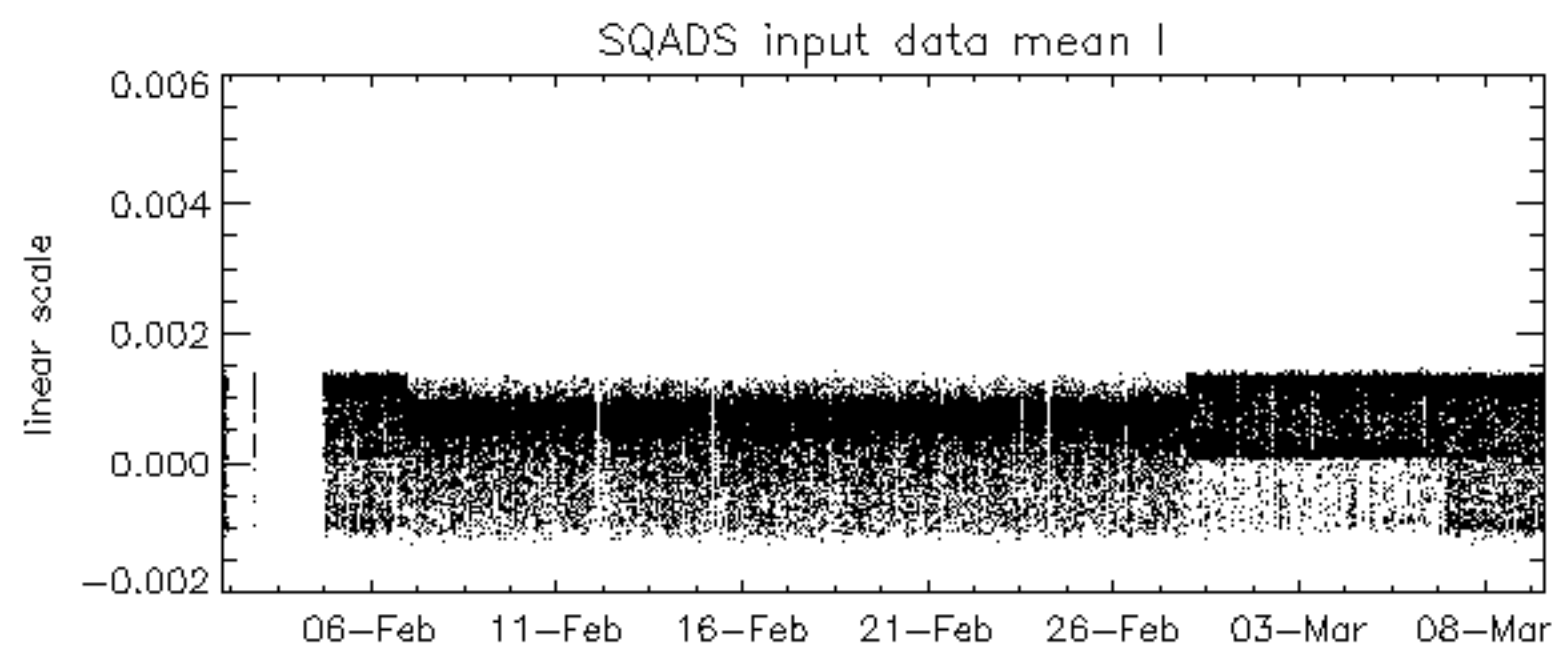
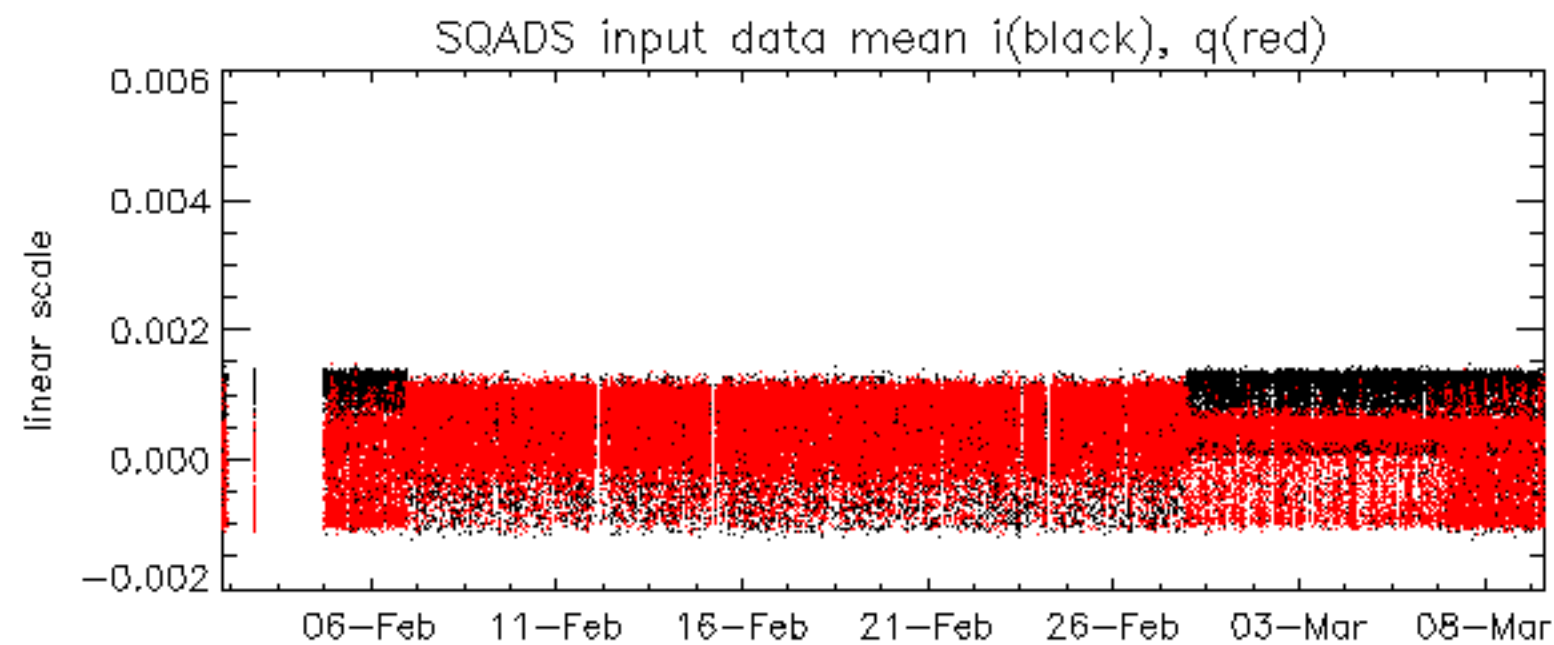


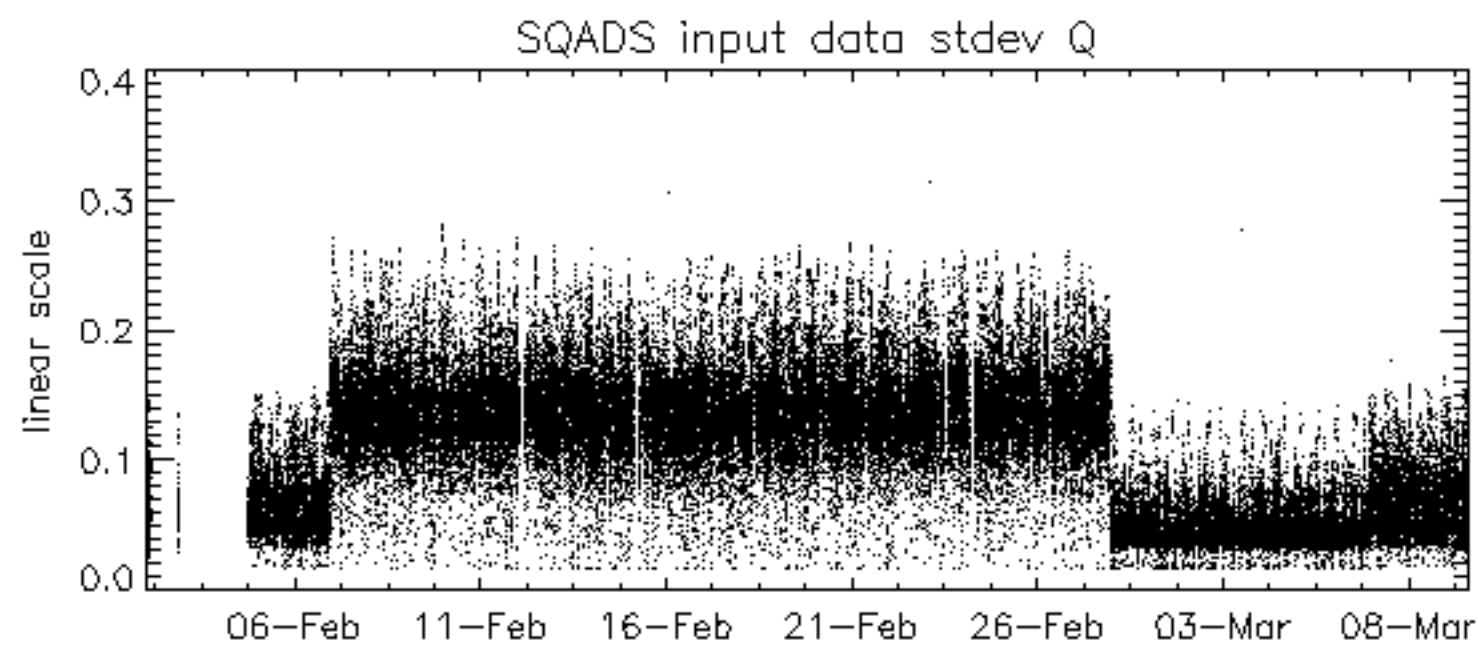
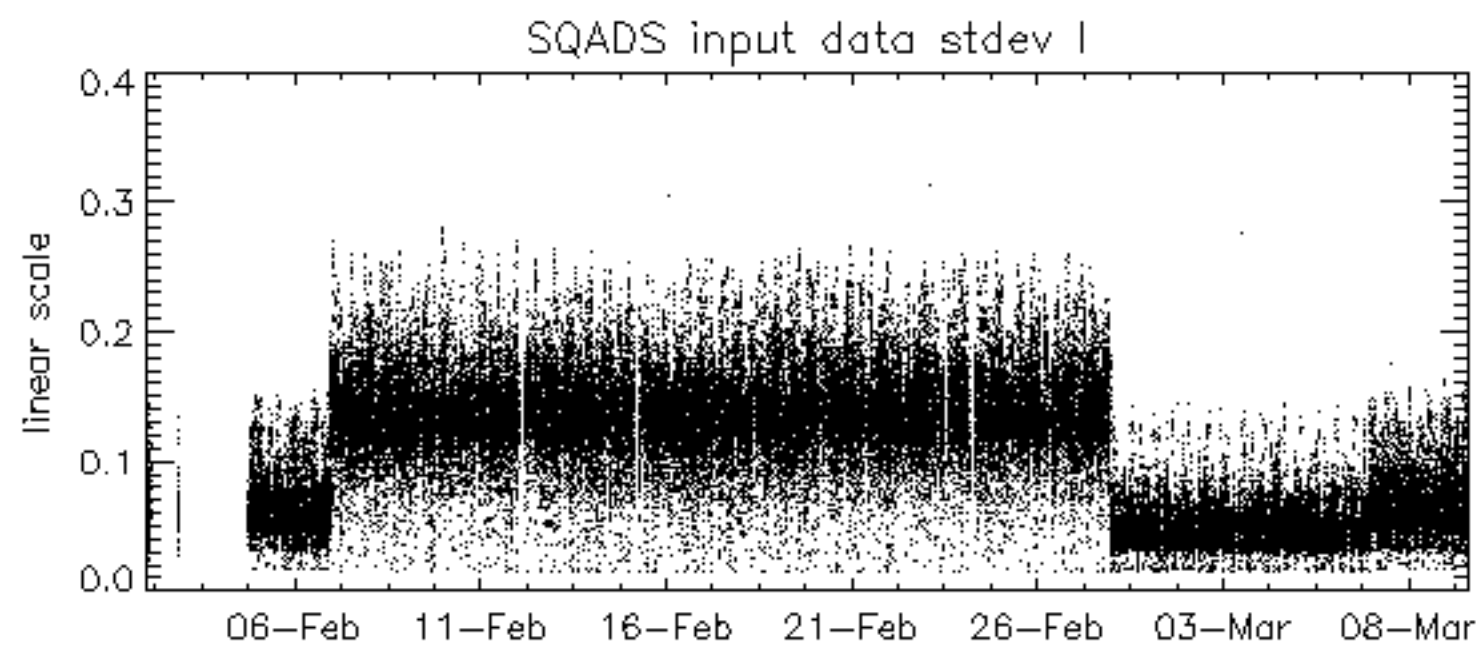
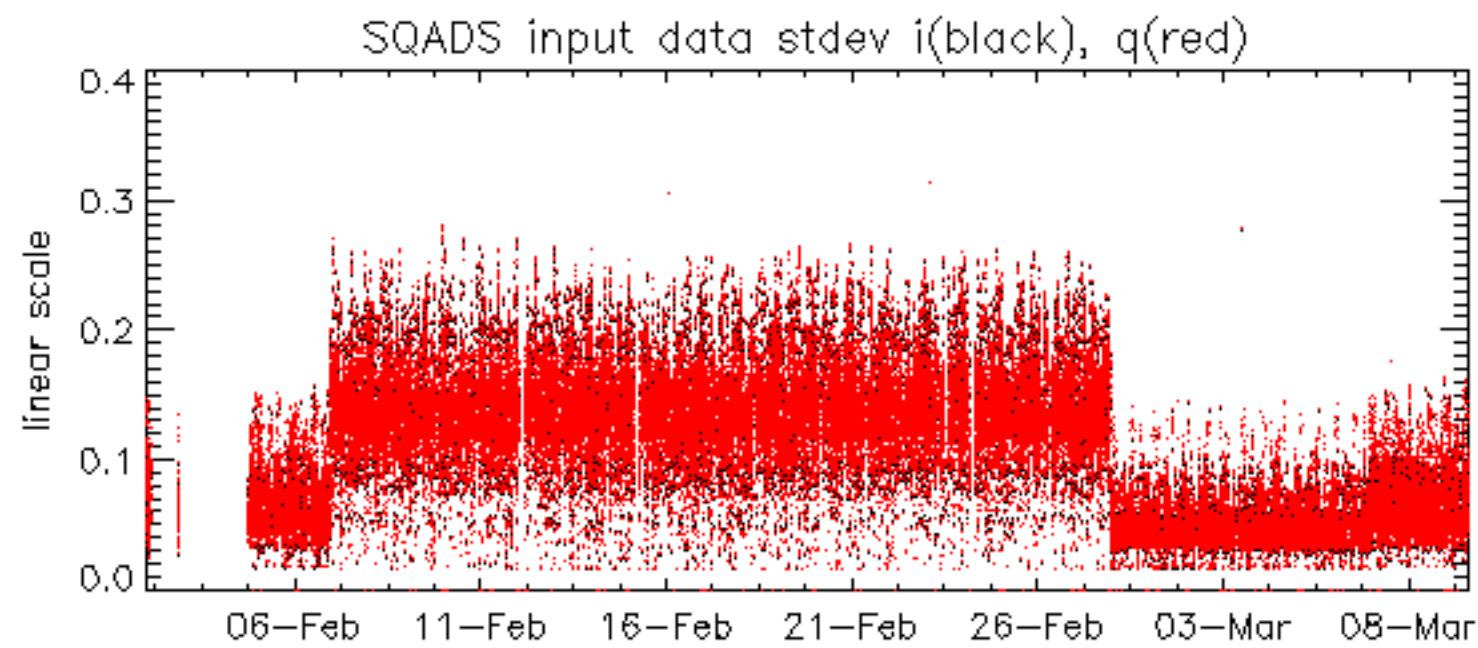


























Summary of analysis for the last 3 days 2007030[789]

The assumptions 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_1PNPDE20070308_014959_000000802056_00132_26238_4901.N1	1	0
ASA_IMM_1PNPDE20070309_042629_000000782056_00147_26253_6465.N1	1	0
ASA_WSM_1PNPDE20070307_055614_000000672056_00120_26226_4215.N1	5	157
ASA_WSM_1PNPDE20070307_111810_000000852056_00123_26229_4255.N1	0	72
ASA_WSM_1PNPDE20070307_171620_000002262056_00127_26233_4397.N1	0	63
ASA_WSM_1PNPDE20070309_015045_000000852056_00146_26252_6150.N1	0	52
ASA_WSM_1PNPDK20070307_135748_000000852056_00125_26231_9424.N1	0	15
ASA_APM_1PNPDE20070308_204806_000000422056_00143_26249_5615.N1	15	257
ASA_APM_1PNPDE20070309_011941_000000422056_00146_26252_6027.N1	14	0
ASA_APM_1PNPDK20070309_095951_000000542056_00151_26257_1118.N1	0	4













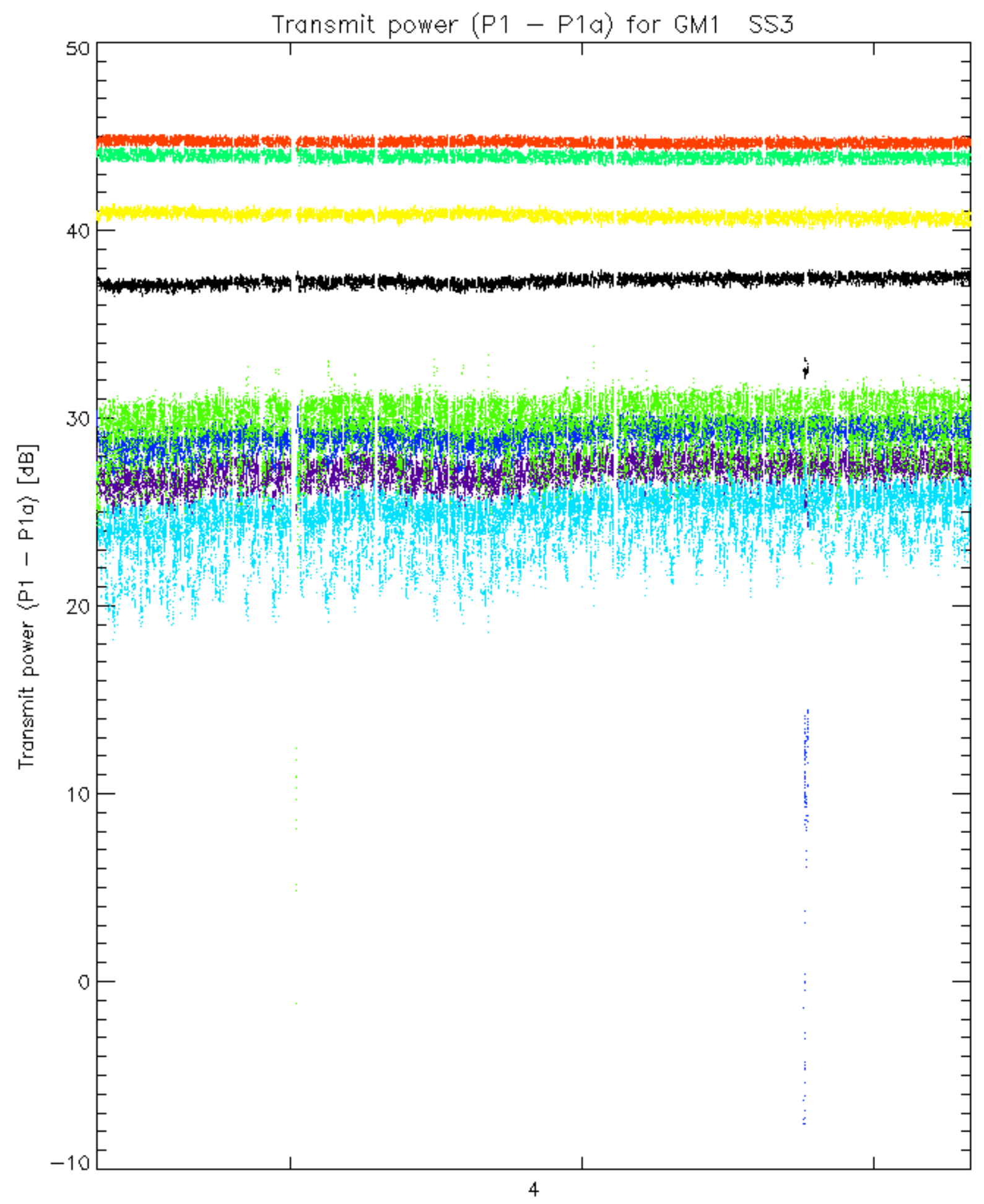




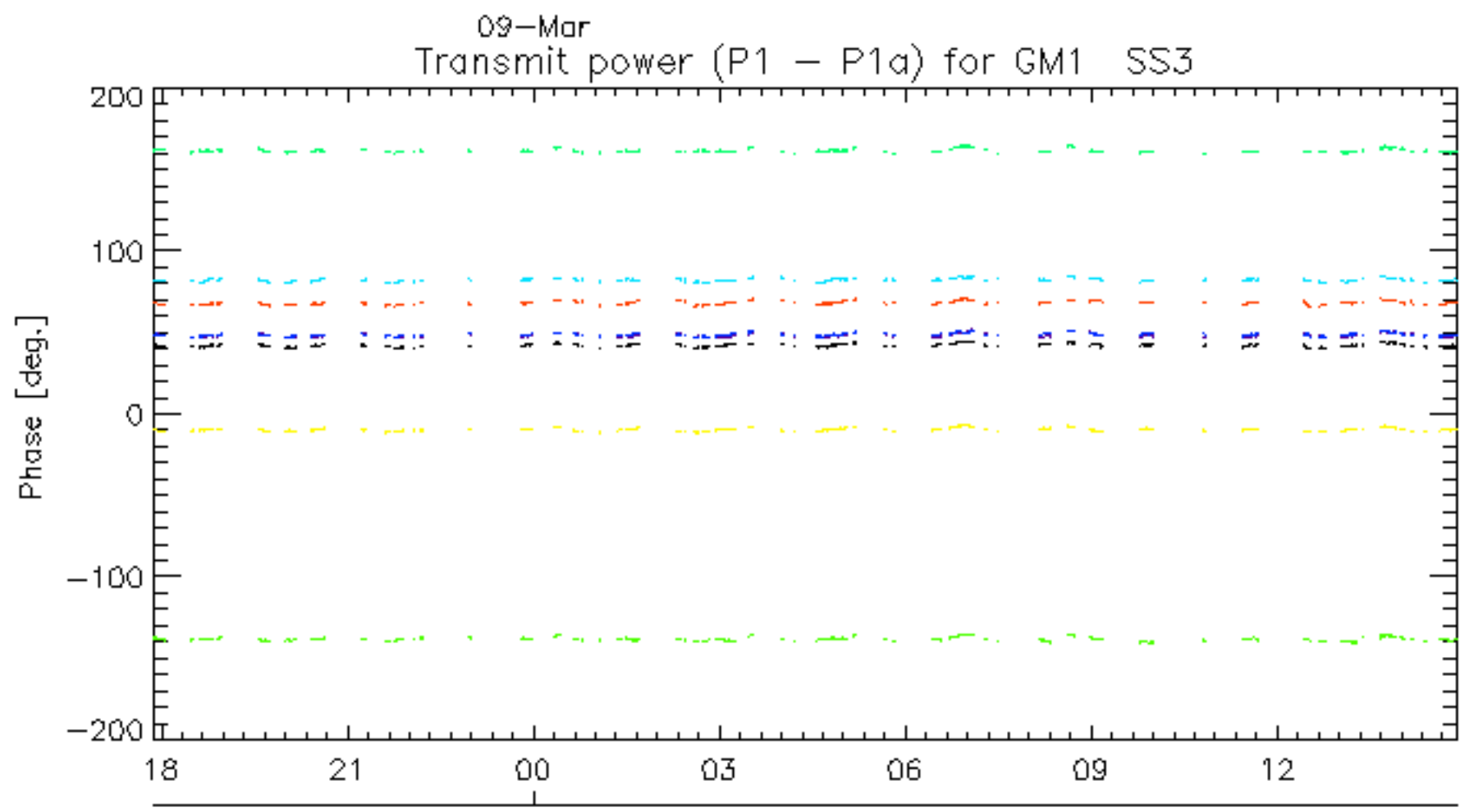
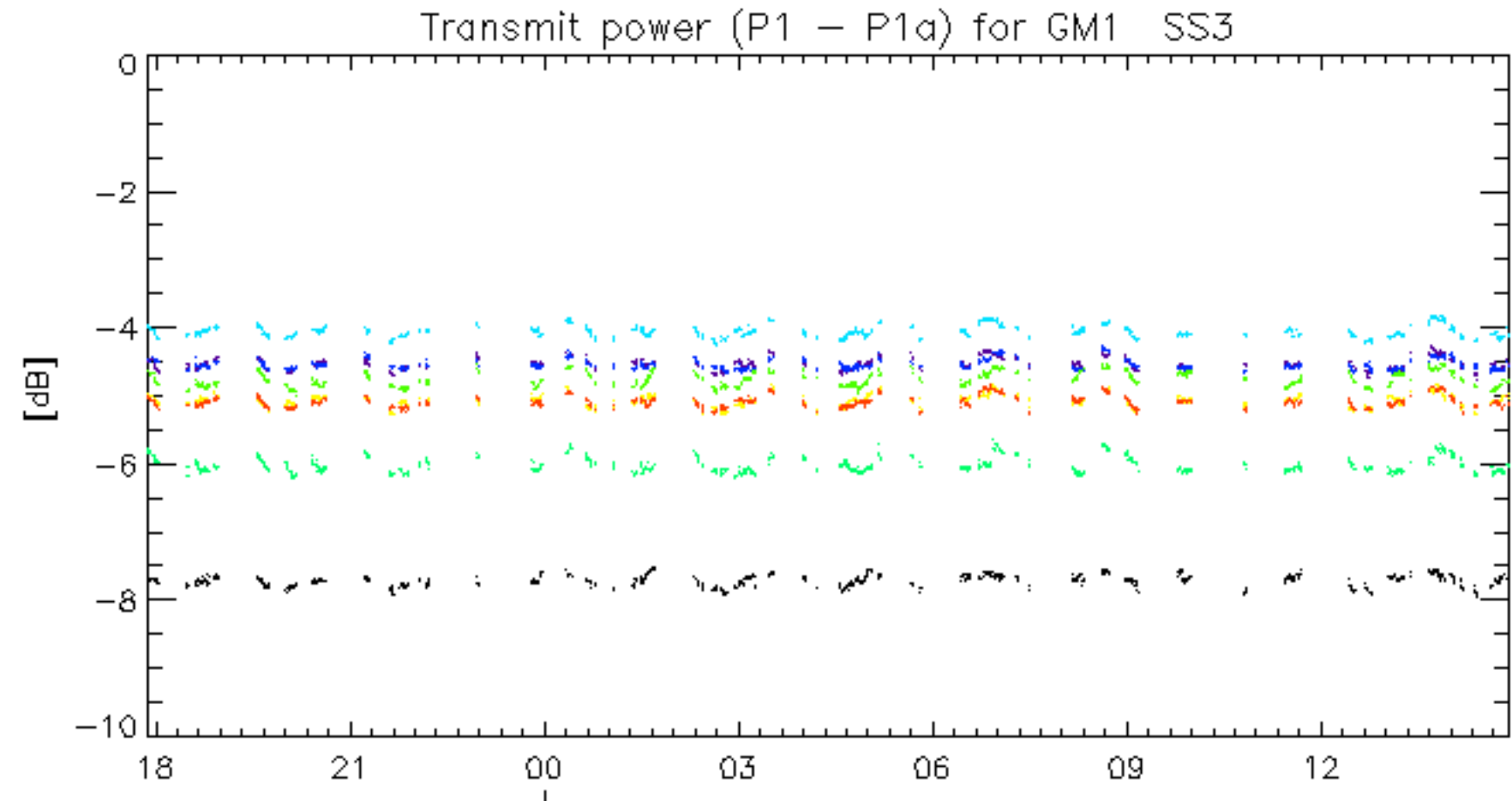






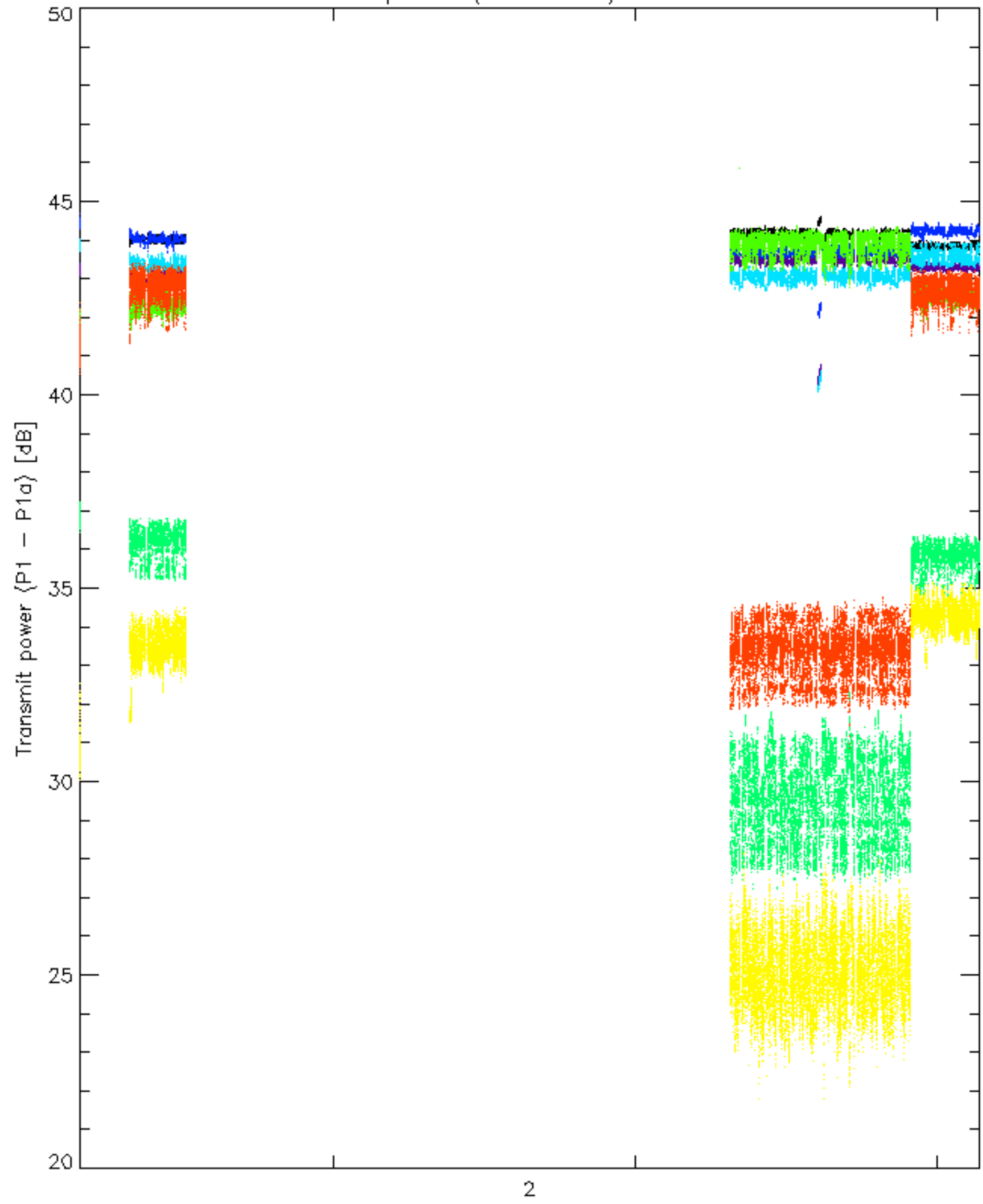


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

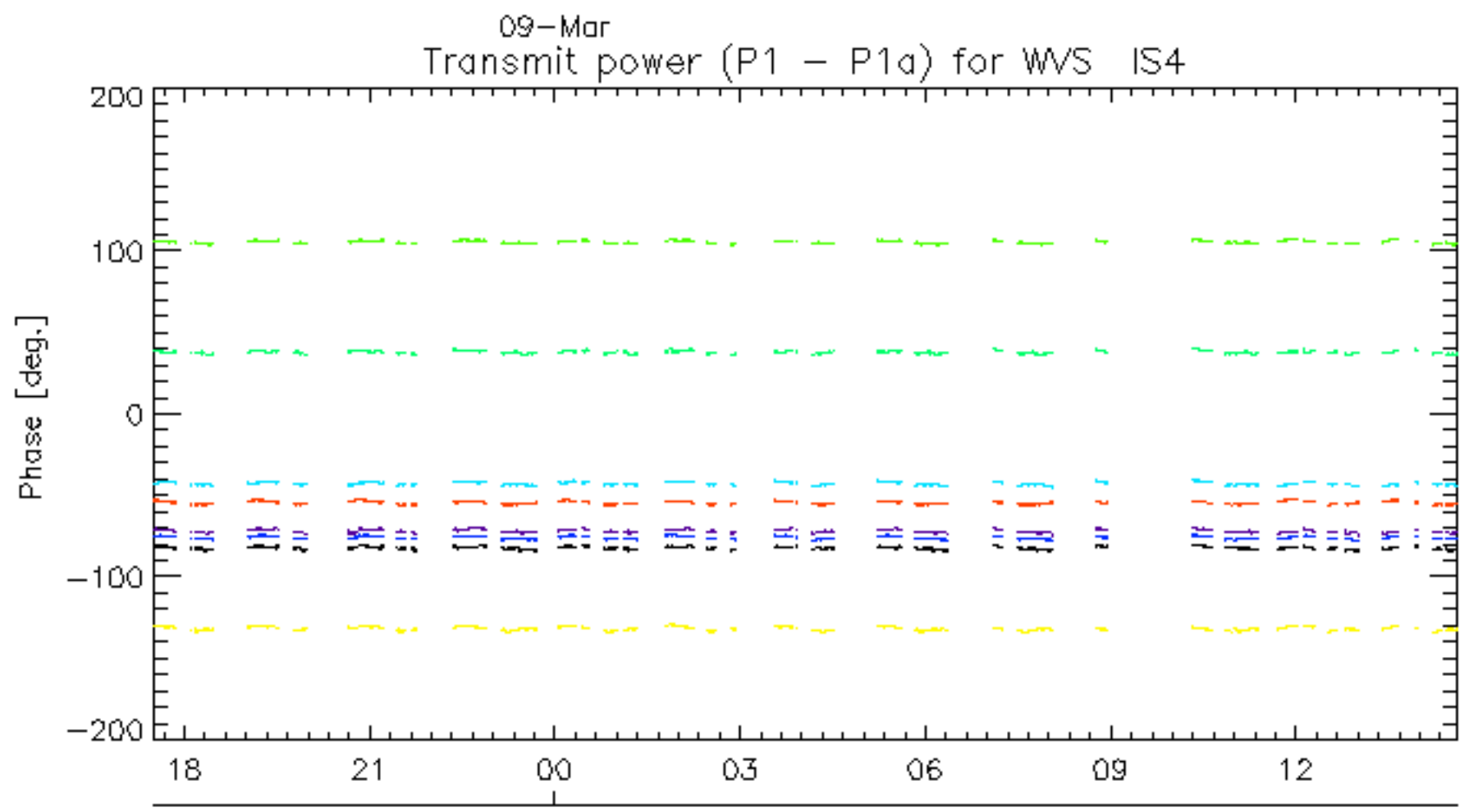
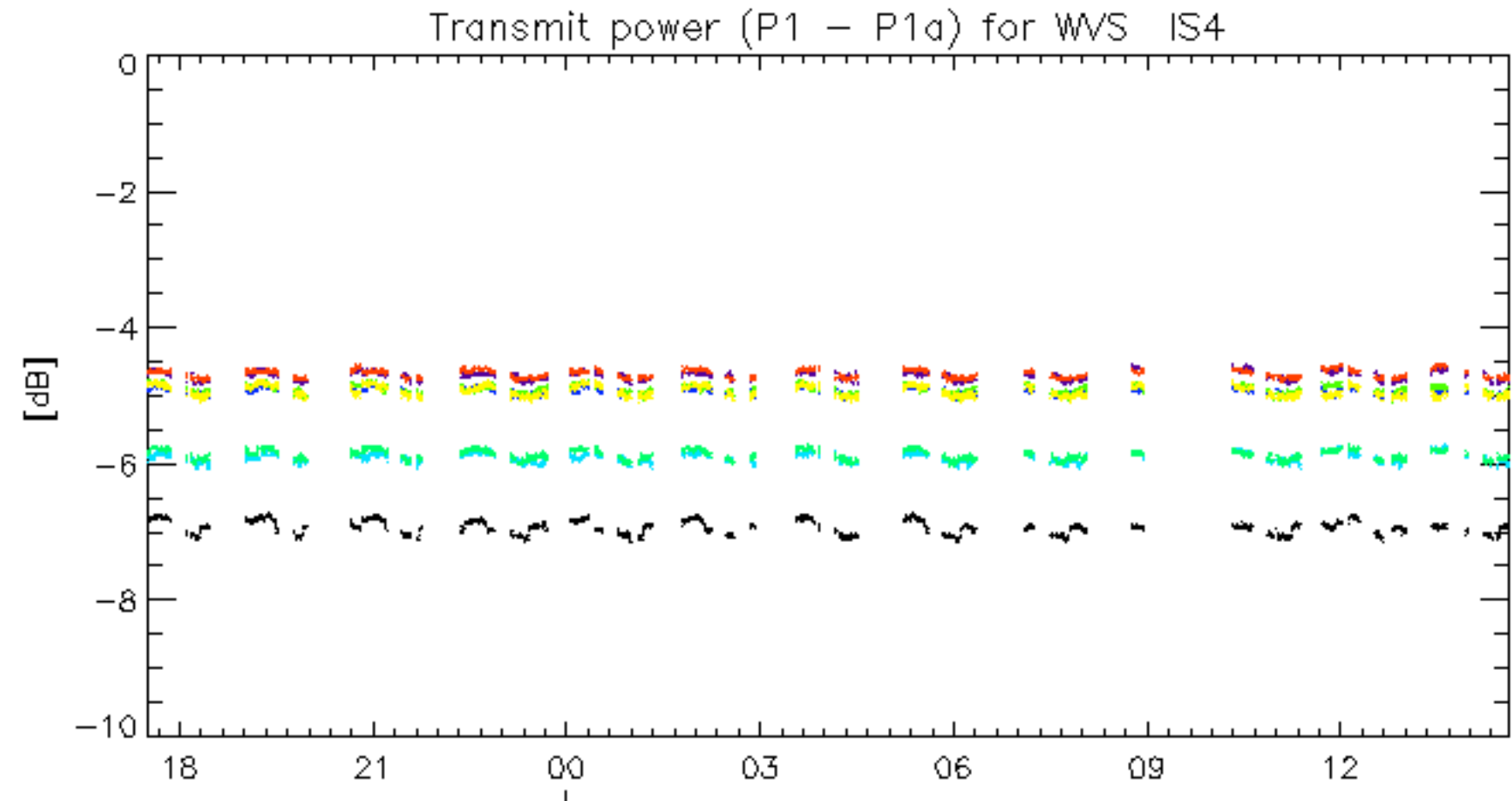


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Transmit power (P1 - P1a) for WVS IS4



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



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



No unavailabilities during the reported period.