

# PRELIMINARY REPORT OF 050323

last update on Wed Mar 23 11:35:33 GMT 2005

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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

ASAR unavailable from 22-MAR-2005 09:03:10.00 to 22-MAR-2005 09:09:10.00.  
Antenna reset due to OOL temperature for Tile E1.

### 2.2 - Auxiliary files

Summary of the auxiliary files used from 2005-03-22 00:00:00 to 2005-03-23 11:35:33

AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	29	48	1	0	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	29	48	1	0	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	29	48	1	0	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	29	48	1	0	4

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	44	40	4	8	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	44	40	4	8	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	44	40	4	8	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	44	40	4	8	4

## 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

Antenna OOL temperature for tile E1 visible from MS product analysis

- ASA\_MS\_\_OPNPDE20050322\_042857\_000000152035\_00405\_15990\_0109.N1

Polarisation	Start Time
V	20050322 042857
H	20050321 050034

### MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

### MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

## 4 - Internal calibration Results

No anomalies observed.

### 4.1 - Daily statistics

#### 4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS
<input type="checkbox"/>
<input type="checkbox"/>

#### 4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1
<input type="checkbox"/>
<input type="checkbox"/>

### 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)
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P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.353987	0.013799	0.071056
7	P1	-3.097534	0.008012	-0.024472
11	P1	-4.686695	0.029007	0.060692
15	P1	-5.647226	0.036432	0.063726
19	P1	-3.683864	0.003692	-0.019968
22	P1	-4.517320	0.012387	0.004811
26	P1	-4.944077	0.016595	0.033017
30	P1	-7.192554	0.018039	-0.010145
3	P1	-15.906917	0.326120	0.389096
7	P1	-15.517535	0.065041	0.030035
11	P1	-20.948410	0.449608	0.104386
15	P1	-11.585495	0.048091	-0.040739
19	P1	-14.296513	0.023539	-0.054824
22	P1	-15.645084	0.305840	0.050279
26	P1	-17.607489	0.212126	-0.025521
30	P1	-17.972509	0.462460	-0.018390

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.087444	0.082843	0.069119
7	P2	-22.274584	0.094920	0.076829
11	P2	-14.401046	0.106797	0.227068
15	P2	-7.043502	0.091209	0.021376
19	P2	-9.633579	0.093276	0.024844
22	P2	-16.917515	0.093070	0.057547
26	P2	-16.444738	0.091868	0.022217
30	P2	-18.858273	0.082702	0.074379

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.165488	0.004979	0.010673
7	P3	-8.165488	0.004979	0.010673
11	P3	-8.165488	0.004979	0.010673
15	P3	-8.165488	0.004979	0.010673
19	P3	-8.165488	0.004979	0.010673
22	P3	-8.165488	0.004979	0.010673
26	P3	-8.165488	0.004979	0.010673
30	P3	-8.165488	0.004979	0.010673

**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)
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**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-2.713848	0.025837	0.092694
7	P1	-3.019486	0.048196	0.045886
11	P1	-3.982905	0.026656	0.057605
15	P1	-3.558252	0.033779	0.098022
19	P1	-3.595041	0.013301	-0.015742
22	P1	-5.747099	0.034728	0.032848
26	P1	-7.291033	0.025110	-0.004618
30	P1	-6.227213	0.044998	-0.002858
3	P1	-10.711849	0.171647	0.221731
7	P1	-10.324846	0.175260	0.009537
11	P1	-12.535367	0.136709	0.157170
15	P1	-11.743328	0.101548	0.144907
19	P1	-15.566736	0.043890	0.004791
22	P1	-24.516880	1.158249	-0.294812

26	P1	-15.483335	0.168797	0.002104
30	P1	-20.222580	1.164976	-0.001310

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.793449	0.033547	0.092110
7	P2	-22.359169	0.037765	0.093988
11	P2	-10.170950	0.049626	0.179015
15	P2	-4.979873	0.021730	-0.001943
19	P2	-6.829088	0.032168	0.017332
22	P2	-7.094306	0.031073	0.065724
26	P2	-23.849195	0.027621	0.023535
30	P2	-21.895355	0.033254	0.037252

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998353	0.002784	0.012211
7	P3	-7.998363	0.002790	0.011785
11	P3	-7.998319	0.002807	0.012216
15	P3	-7.998412	0.002798	0.012397
19	P3	-7.998329	0.002804	0.011978
22	P3	-7.998304	0.002789	0.011871
26	P3	-7.998337	0.002795	0.011941
30	P3	-7.998335	0.002801	0.012172

## 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	0.000453910
	stdev	2.27210e-07
MEAN Q	mean	0.000484541
	stdev	2.36856e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127951
	stdev	0.00104771
STDEV Q	mean	0.128200
	stdev	0.00105903



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2005032[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_WSM_1PNPDE20050322_182848_000000862035_00414_15999_2591.N1	0	31







## 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


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### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)


Acsending



<input type="checkbox"/>
Descending

### 7.5 - Absolute Doppler for GM1

#### Evolution of Absolute Doppler

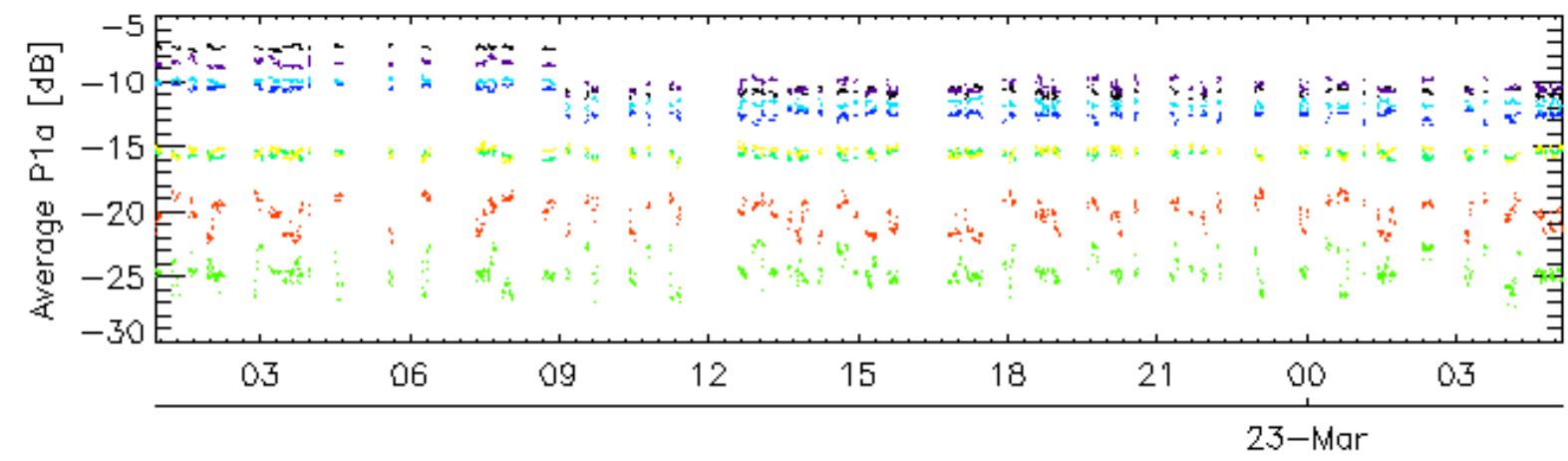
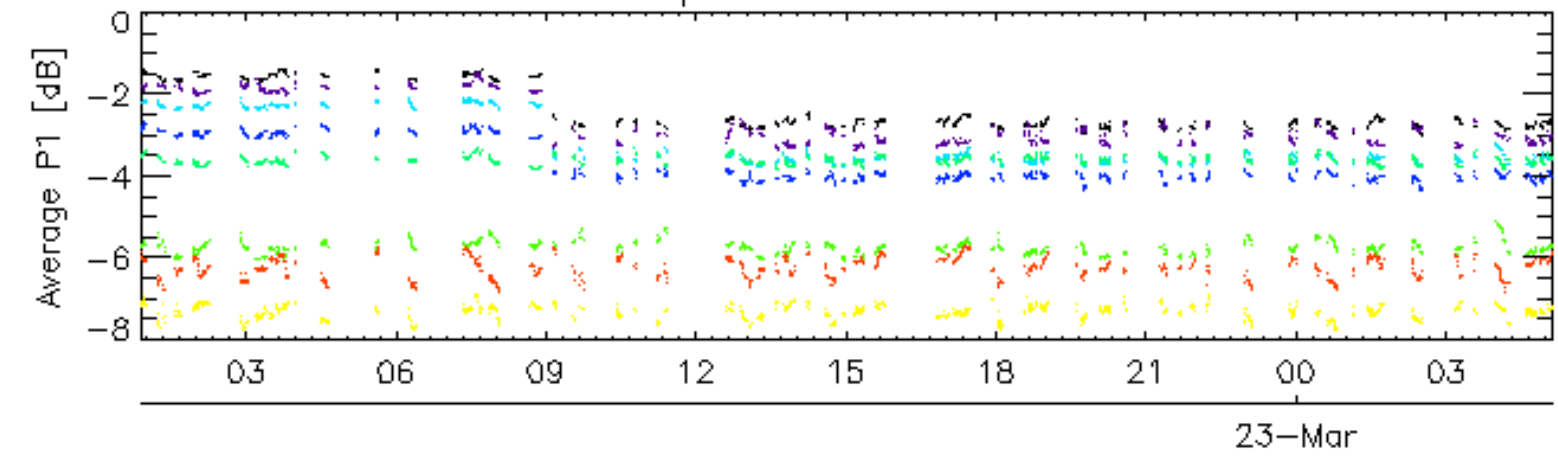
<input type="checkbox"/>
Ascending
<input type="checkbox"/>
Descending

### 7.6 - Doppler evolution versus ANX for GM1

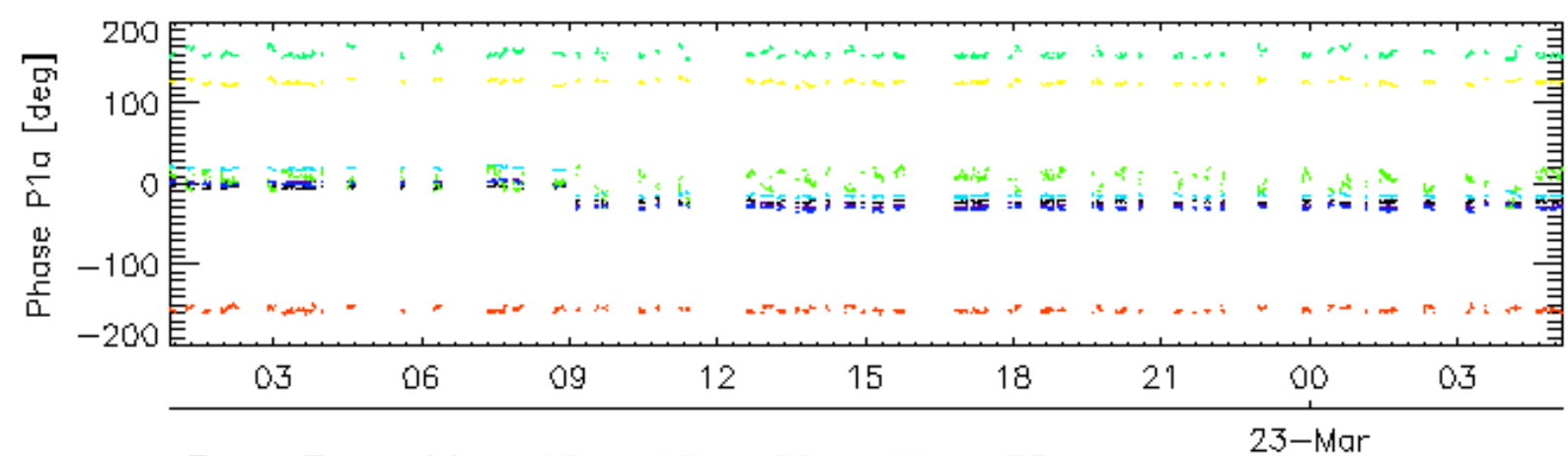
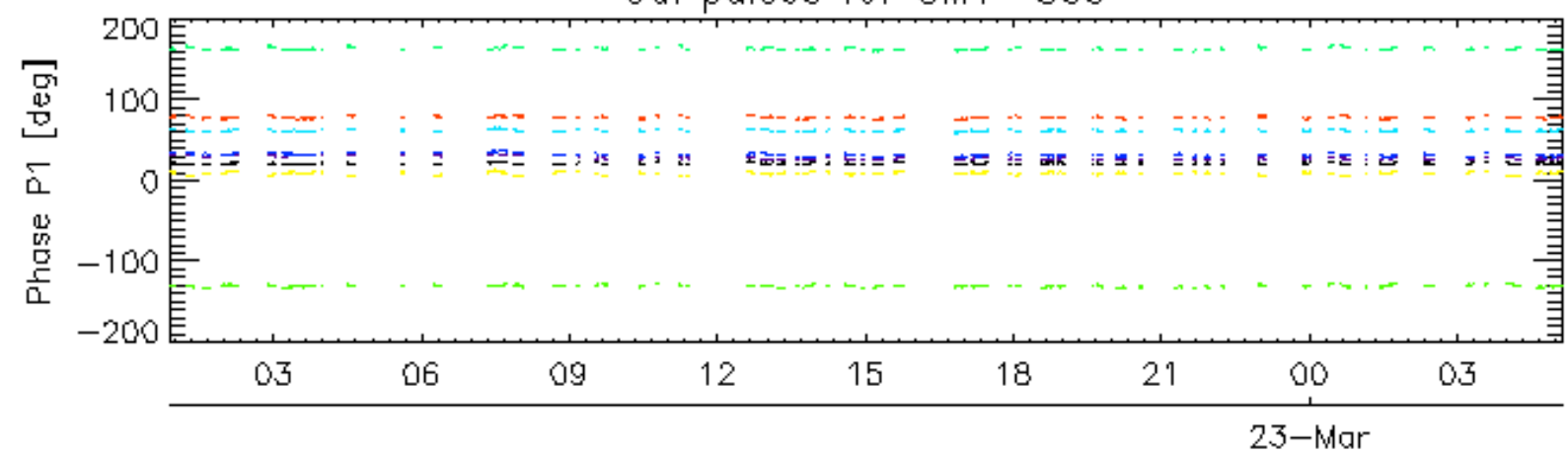
#### Evolution Doppler error versus ANX

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

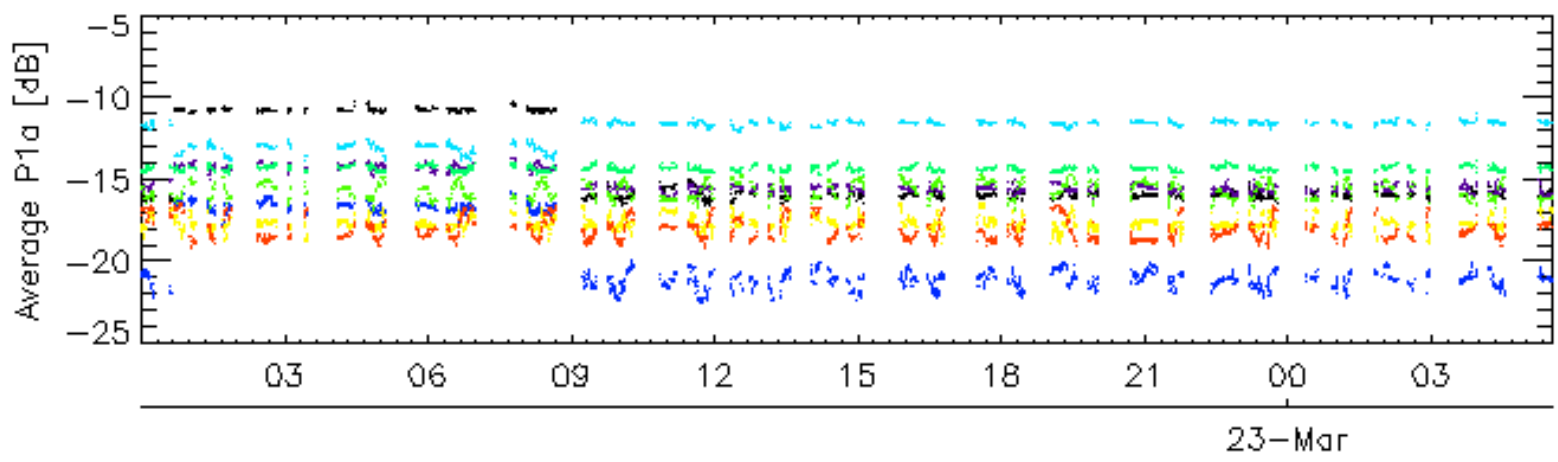
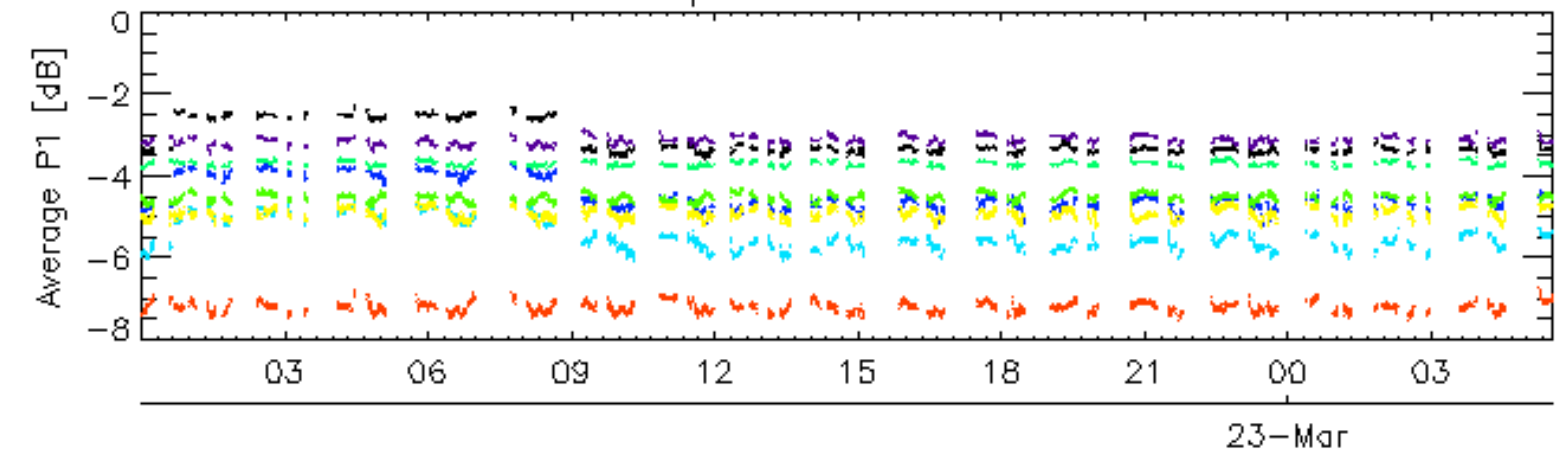


Cal pulses for GM1 SS3

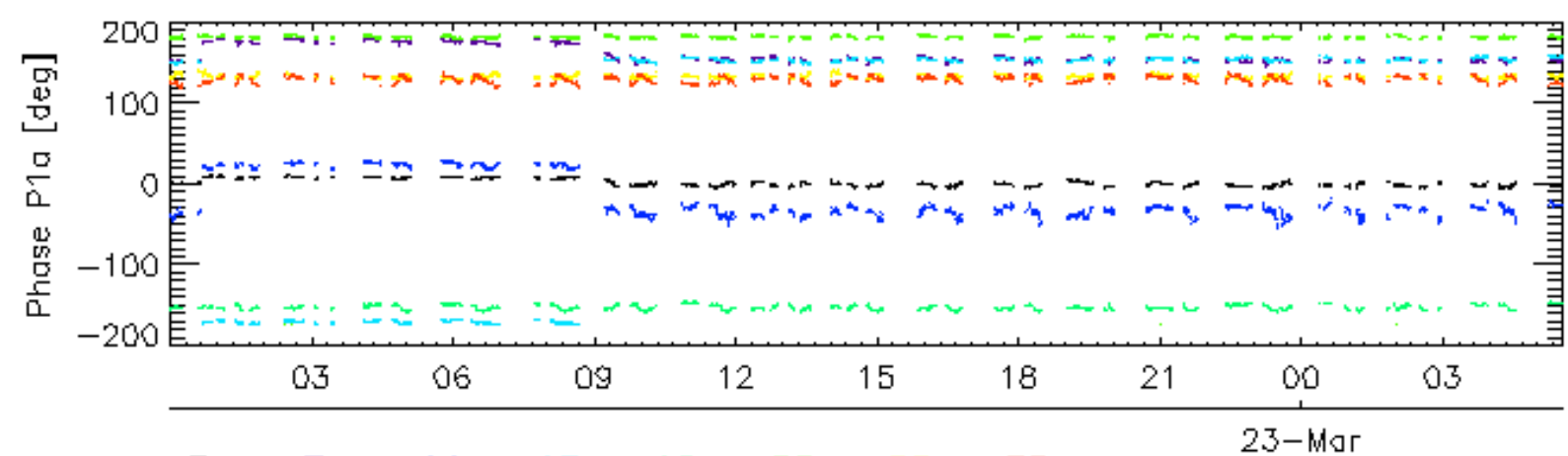
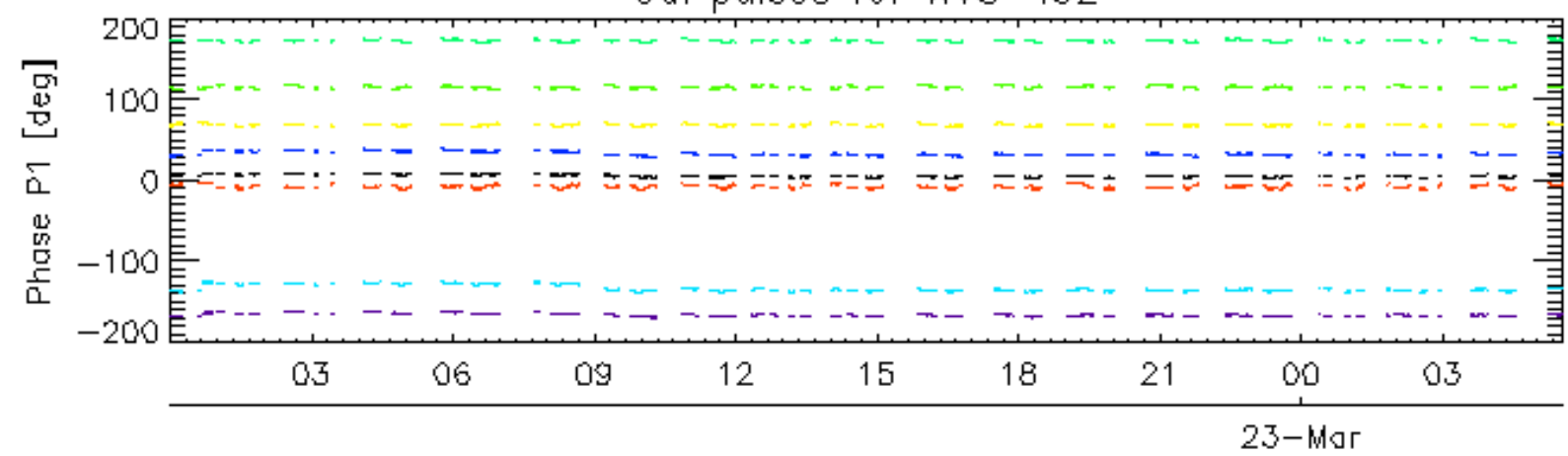


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

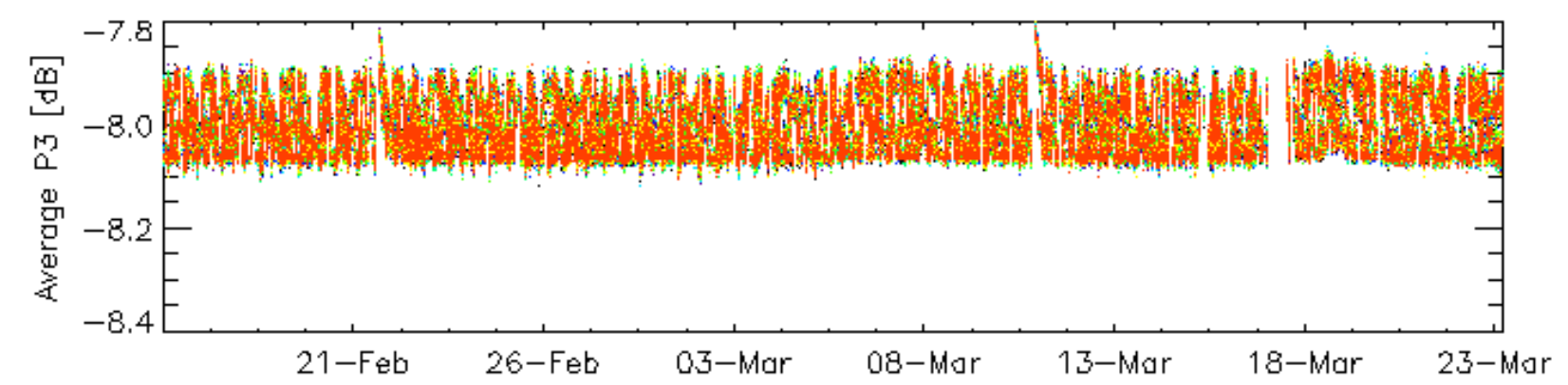
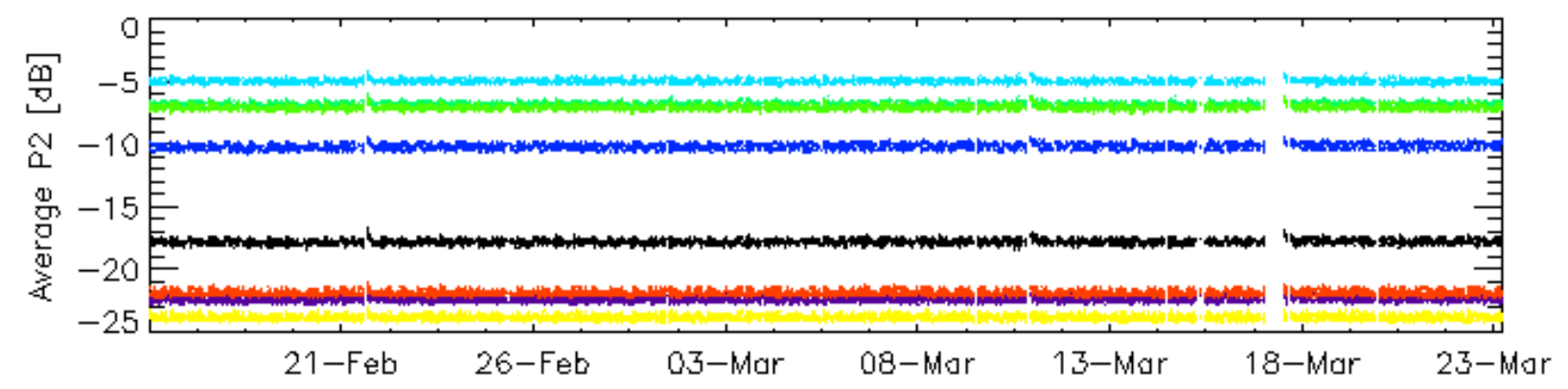
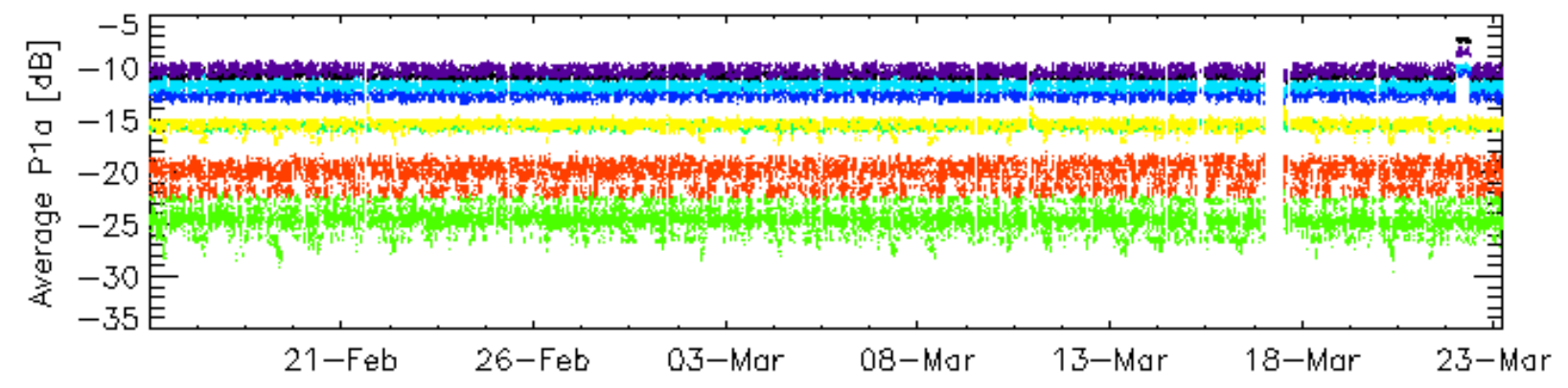
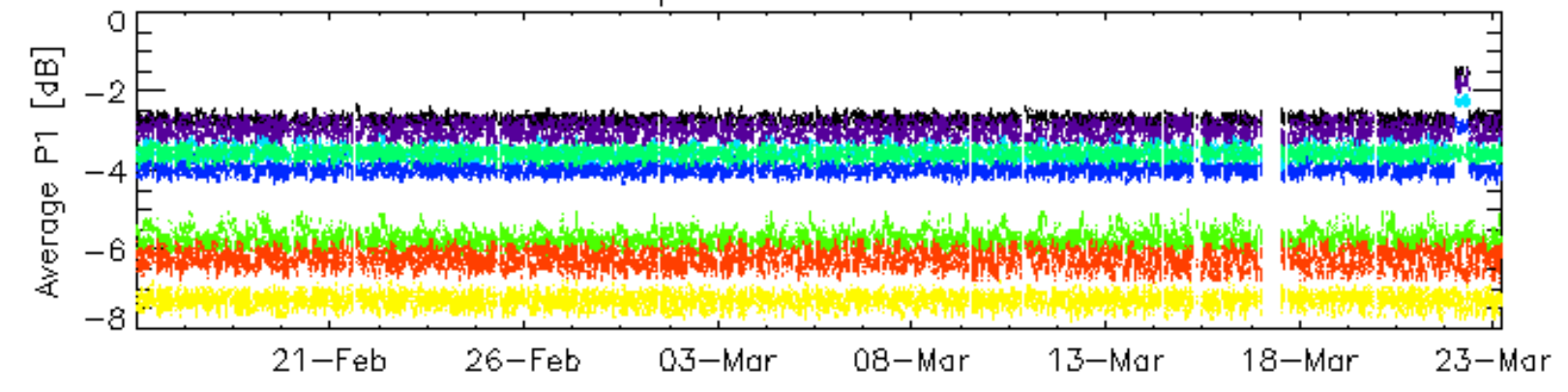


Cal pulses for WVS IS2



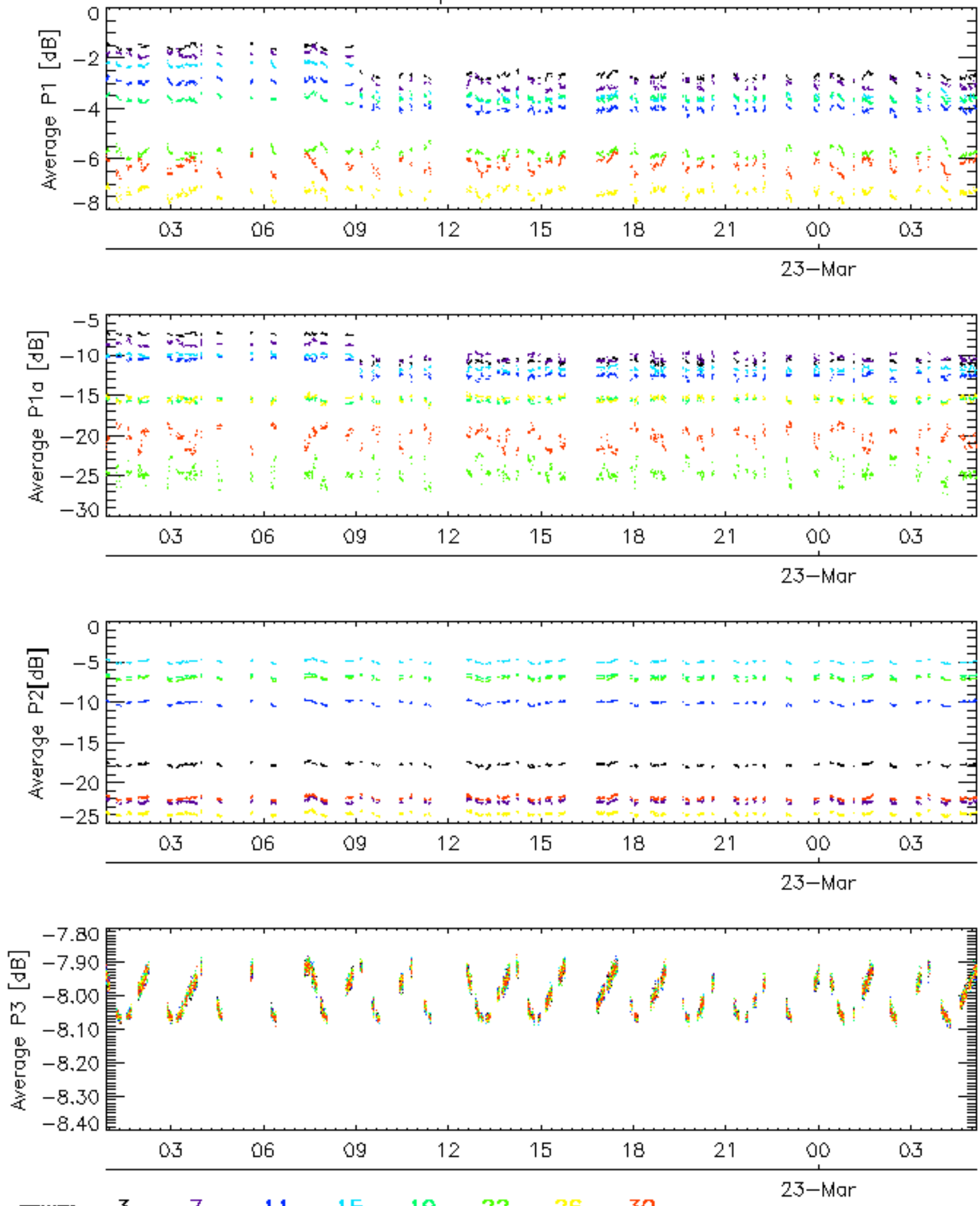
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



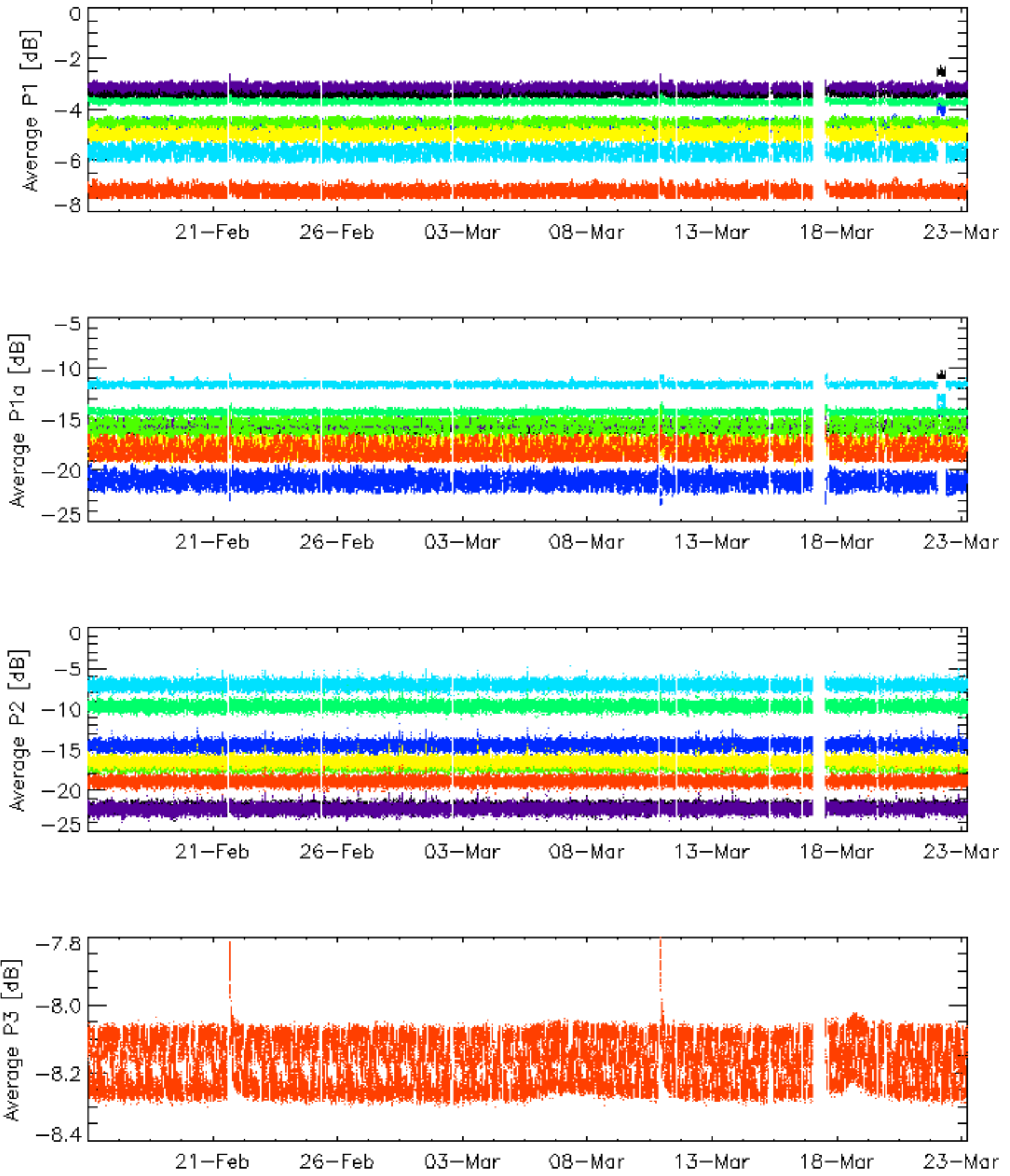
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3



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

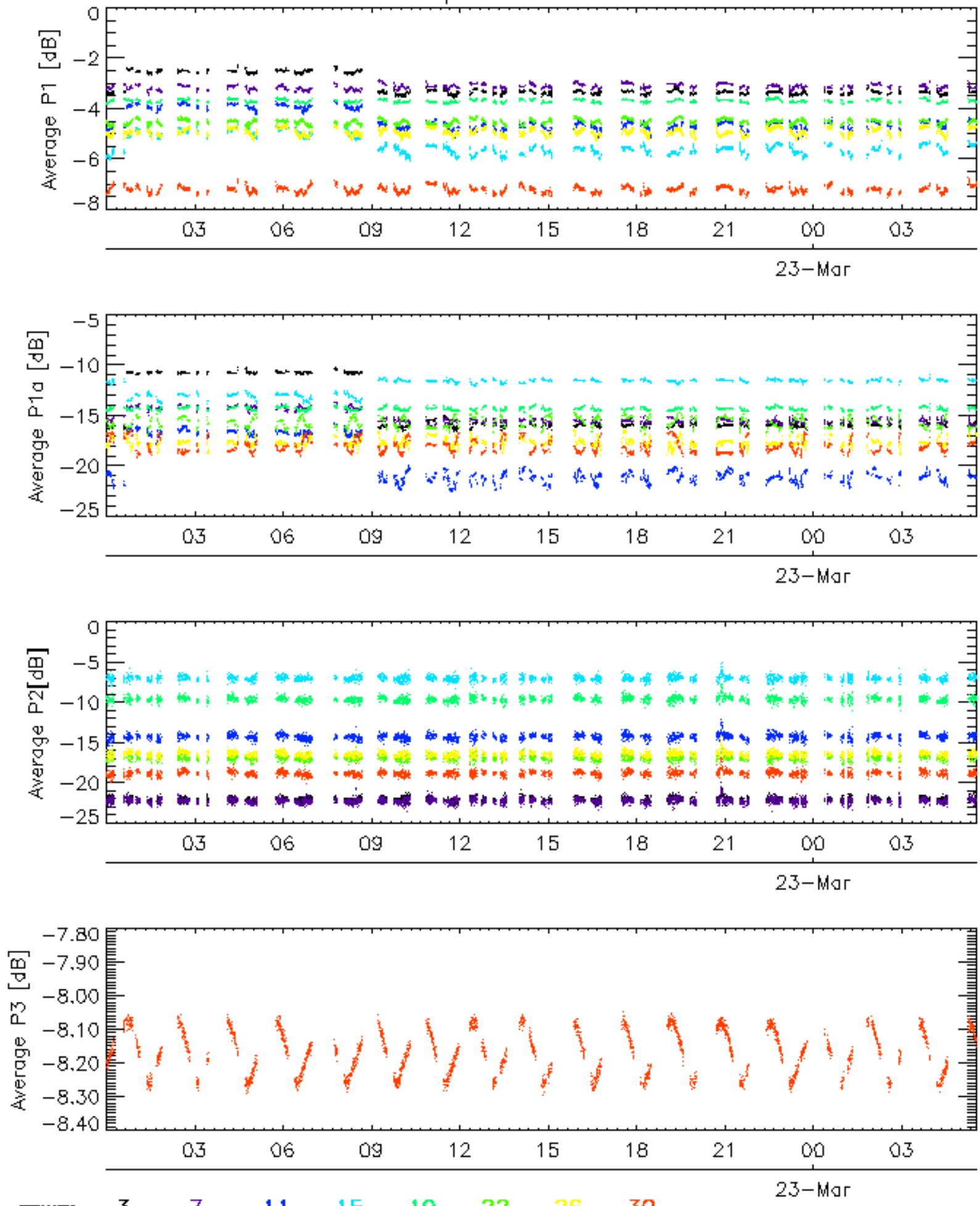
Cal pulses for WVS IS2



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



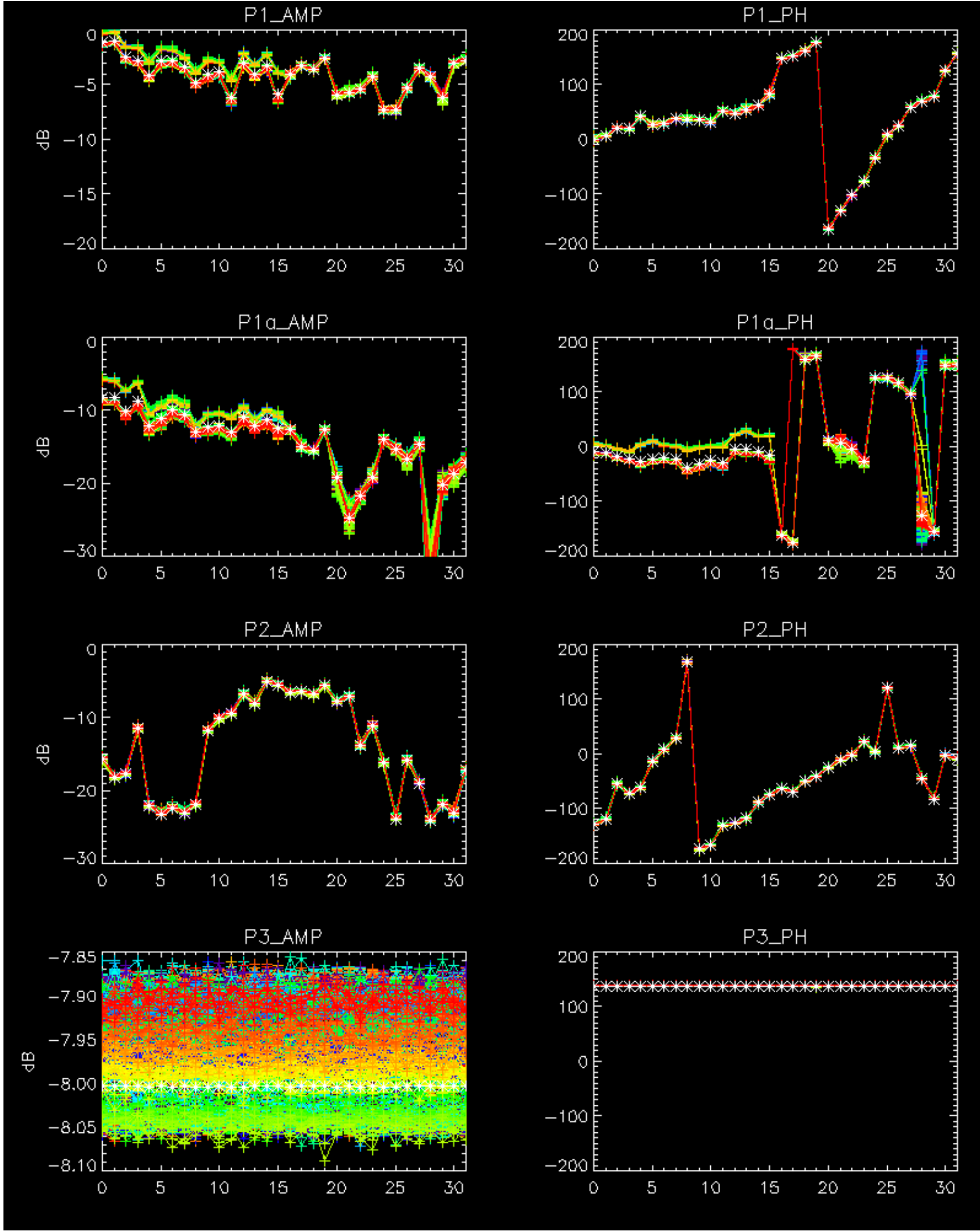
Cal pulses for WVS IS2

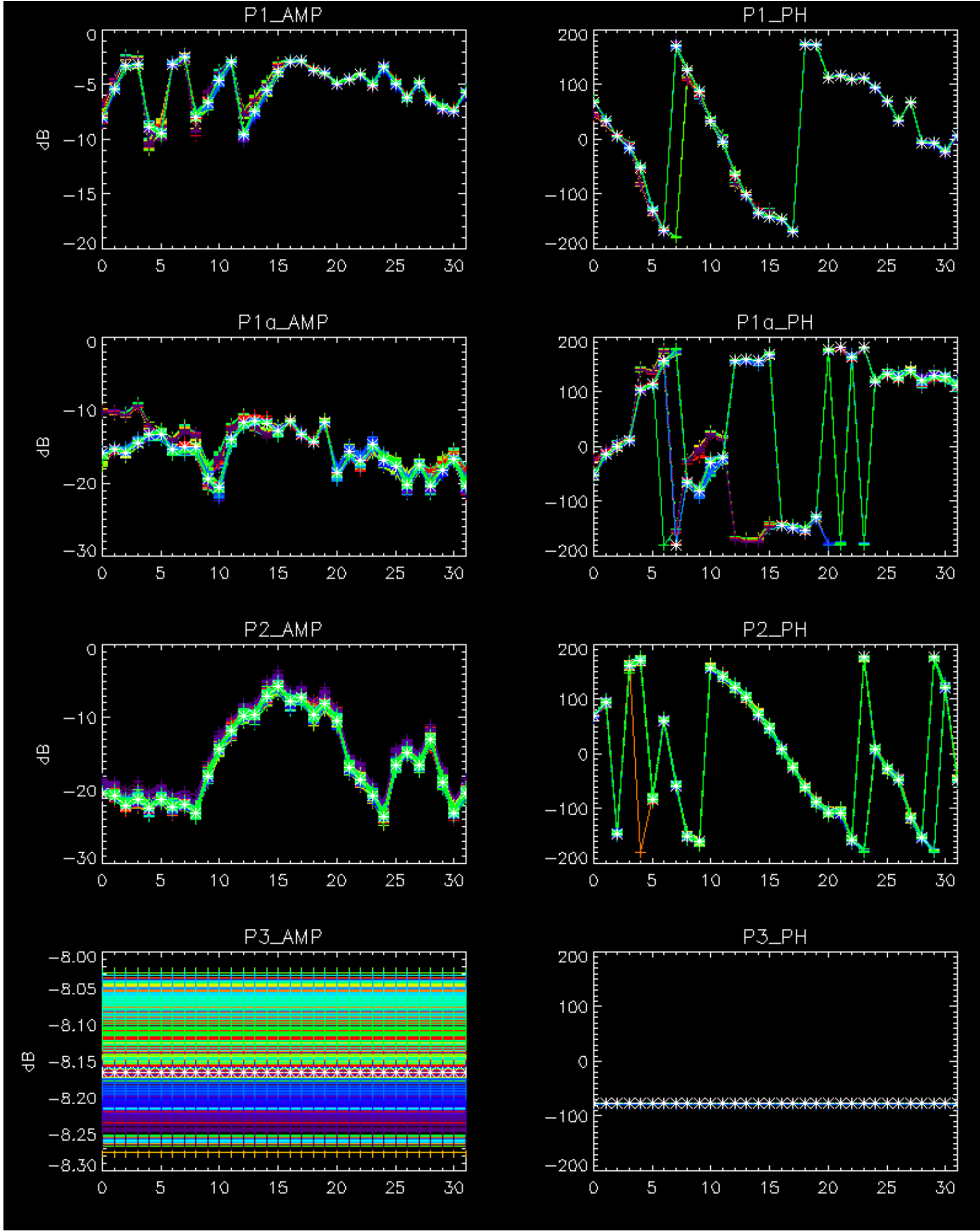


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

No anomalies observed.





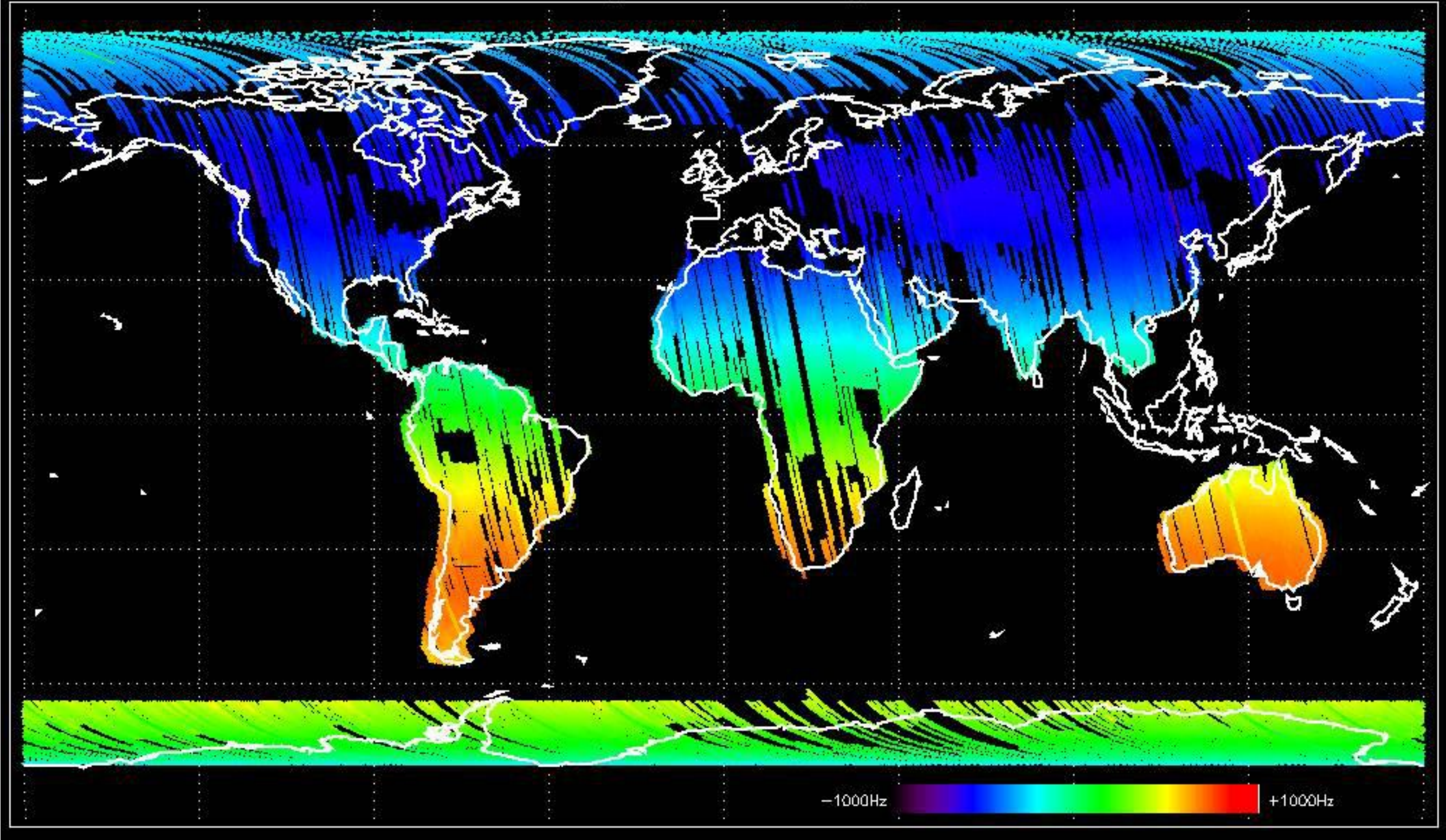


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



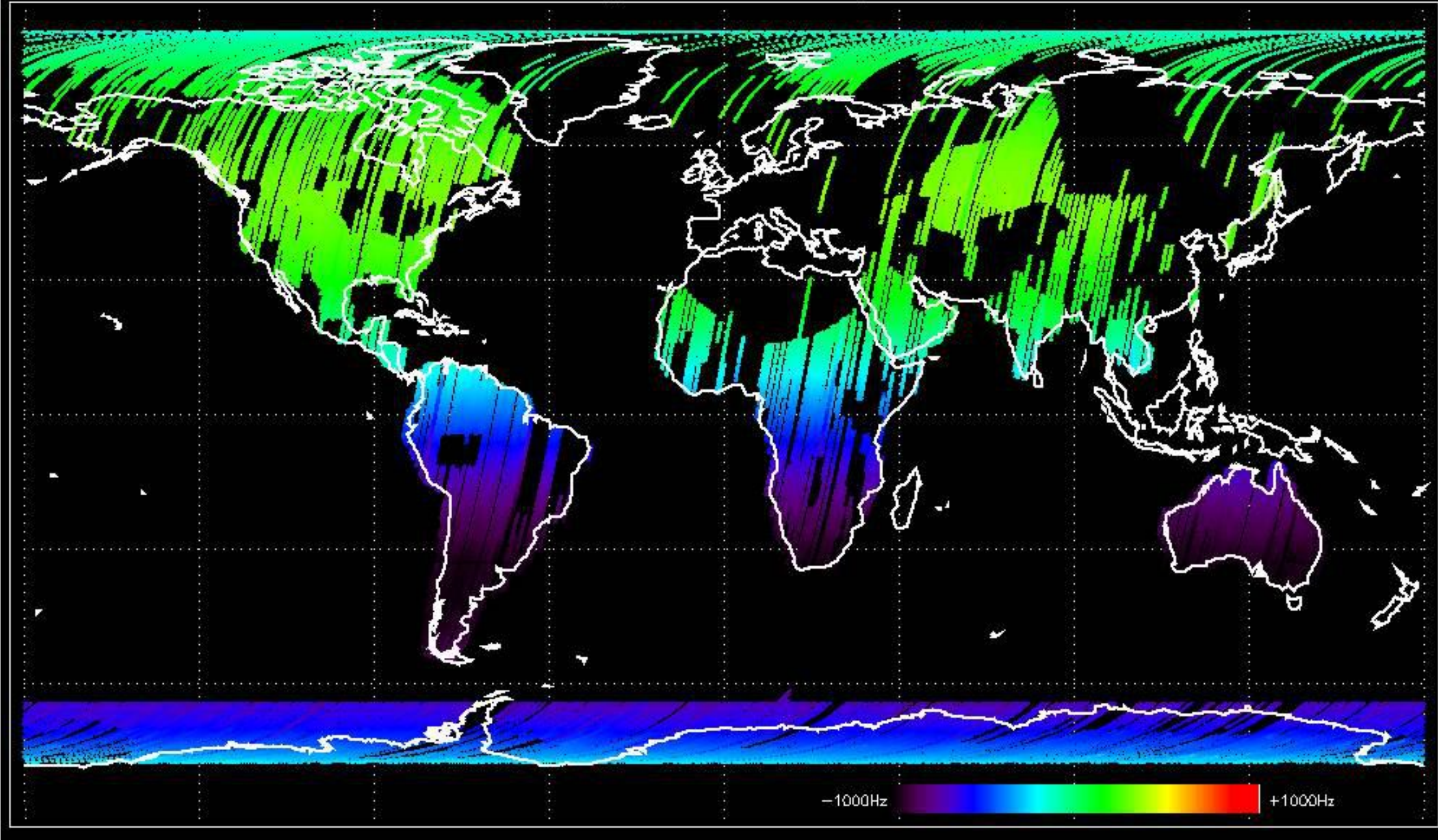


Doppler 'GM1' 'SS1' ascending



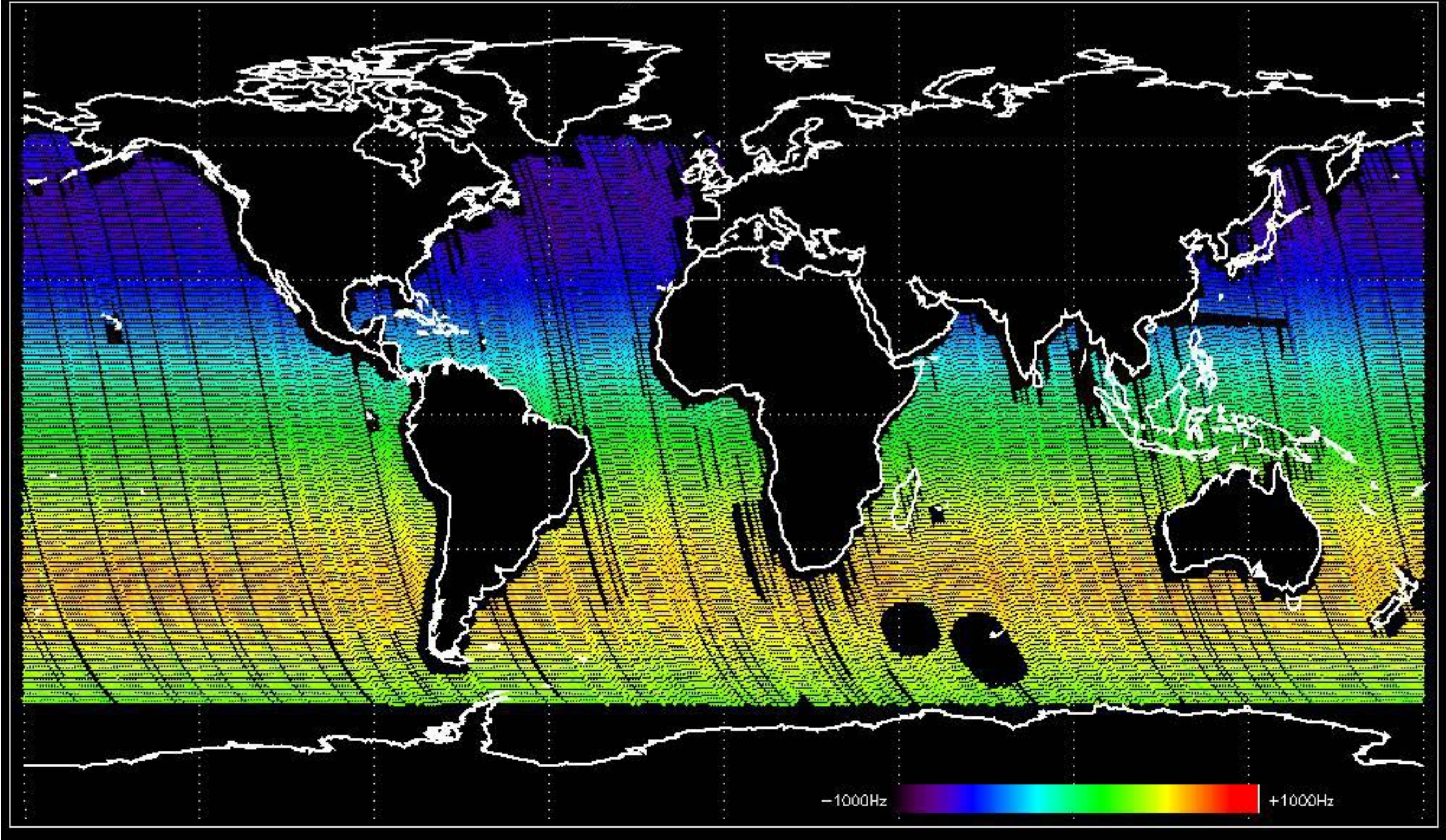


Doppler 'GM1' 'SS1' descending



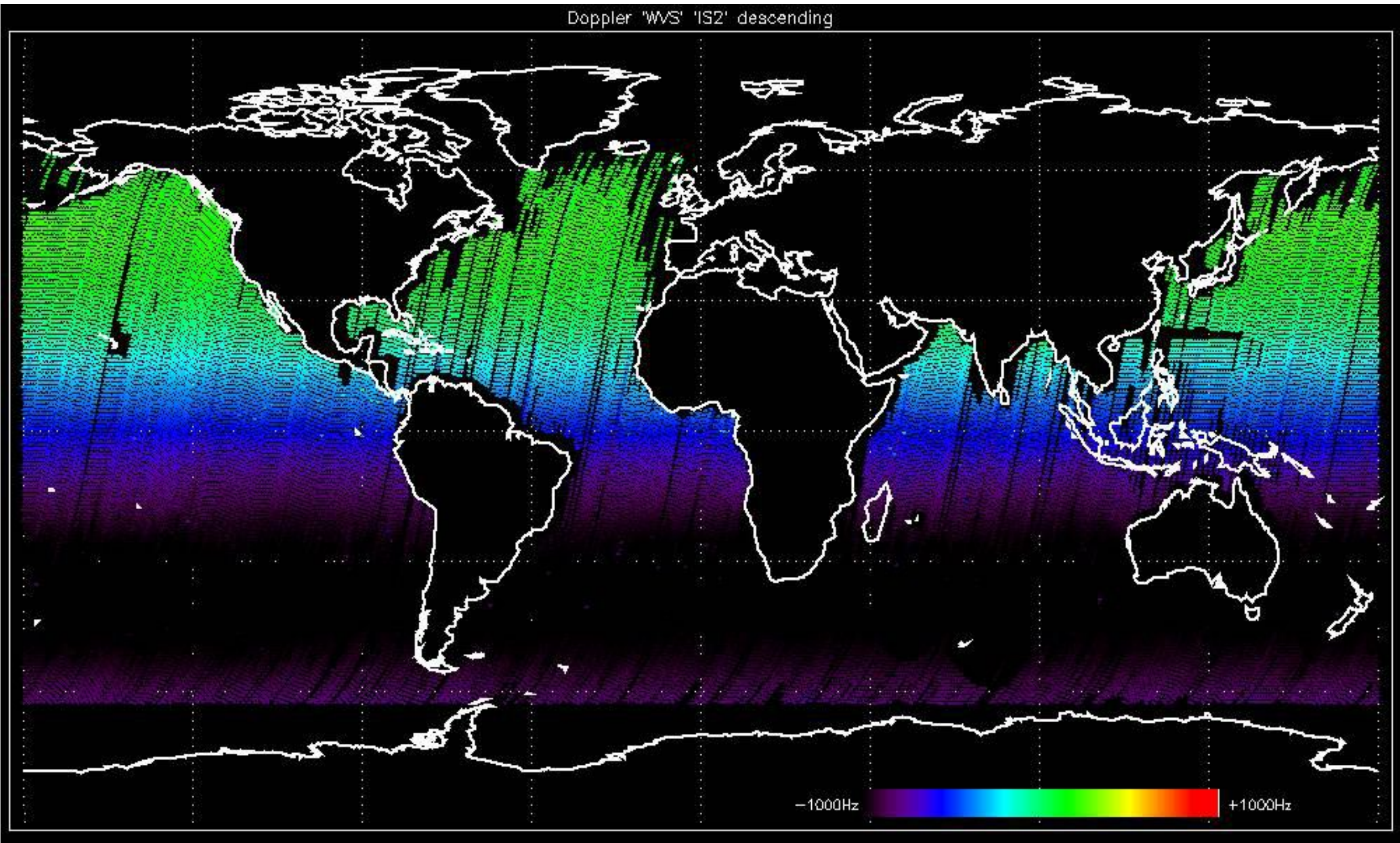


Doppler 'WVS' 'IS2' ascending



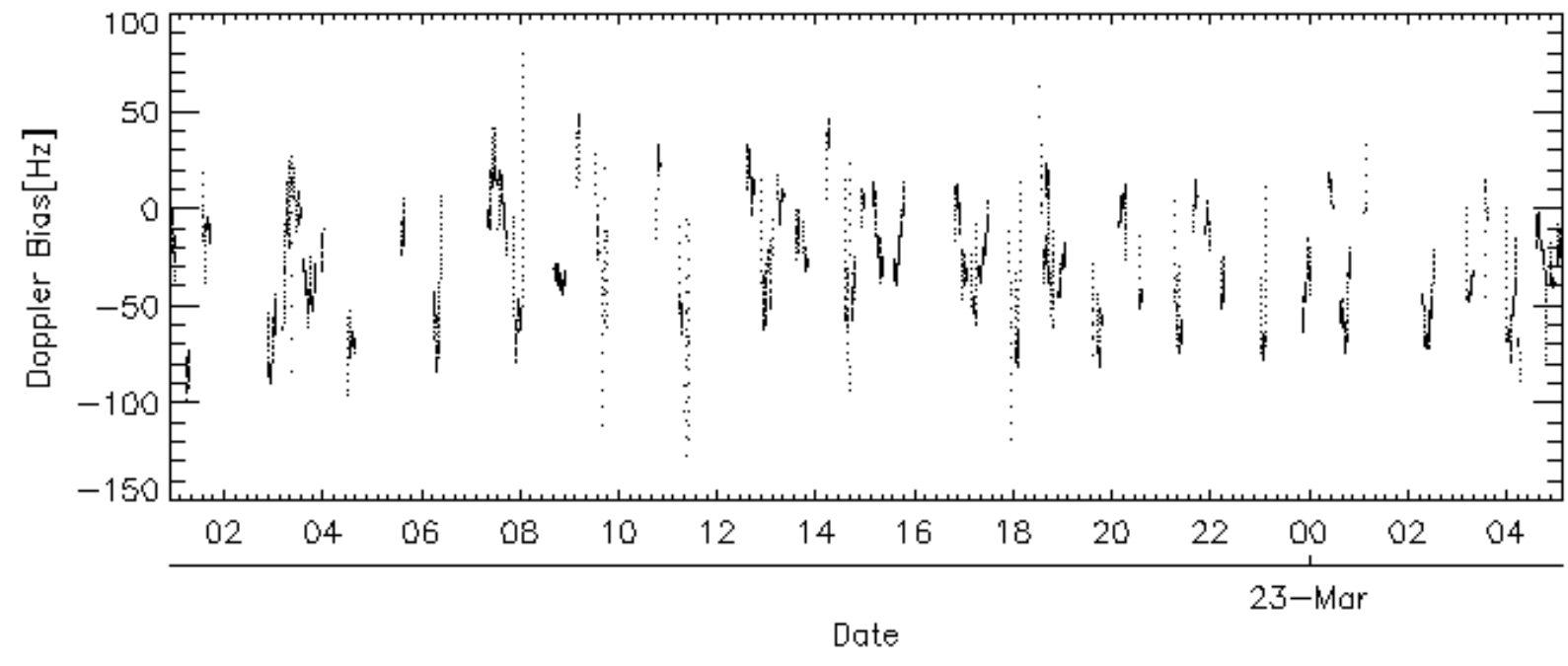
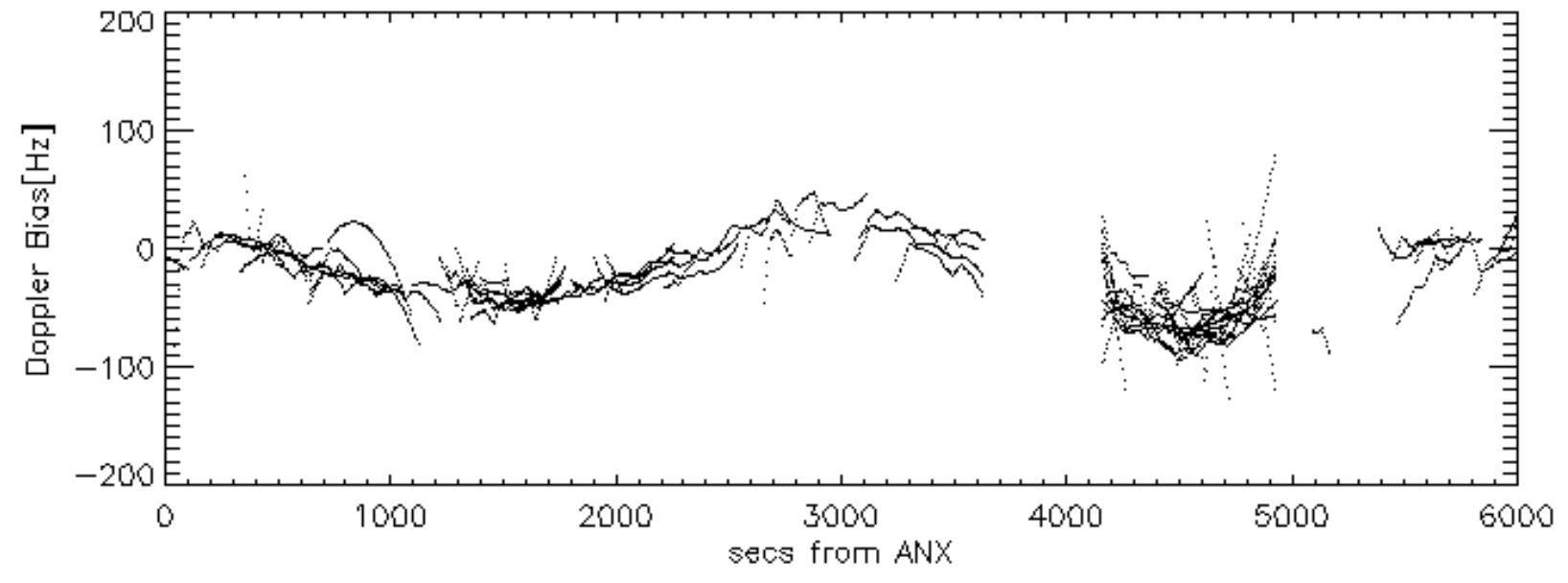
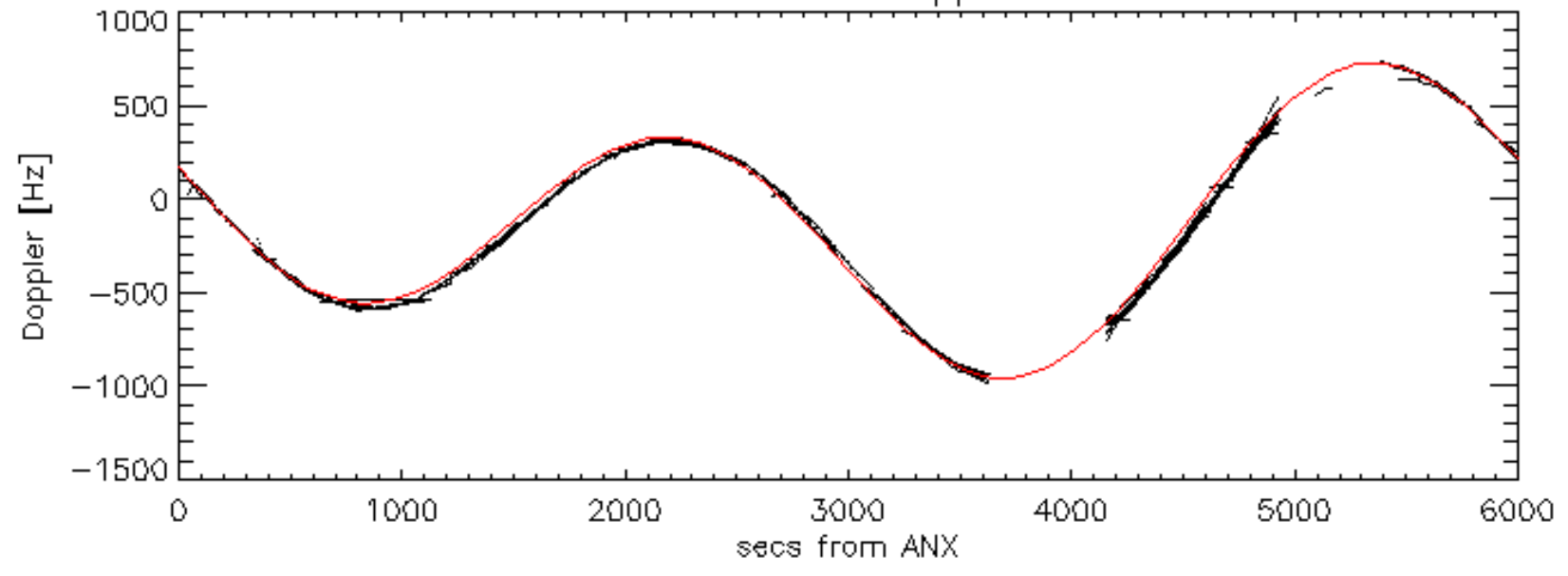


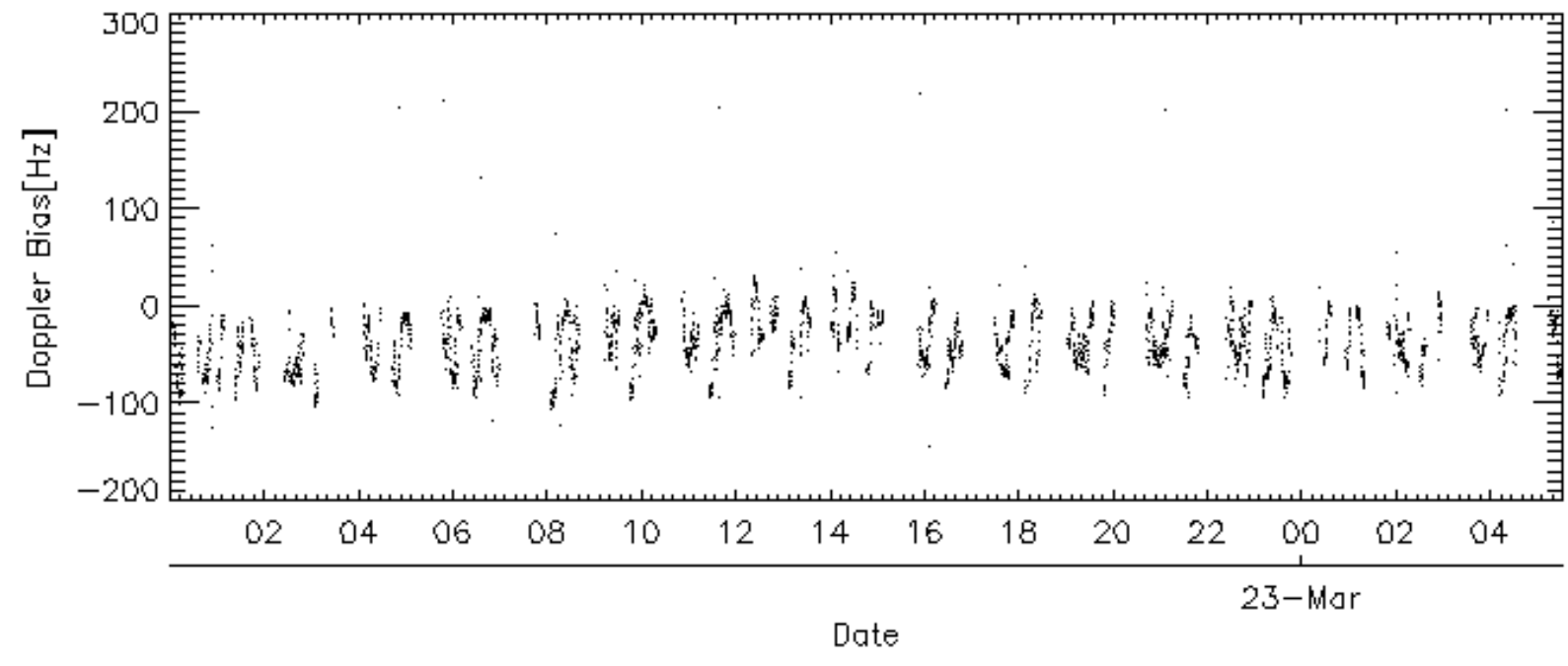
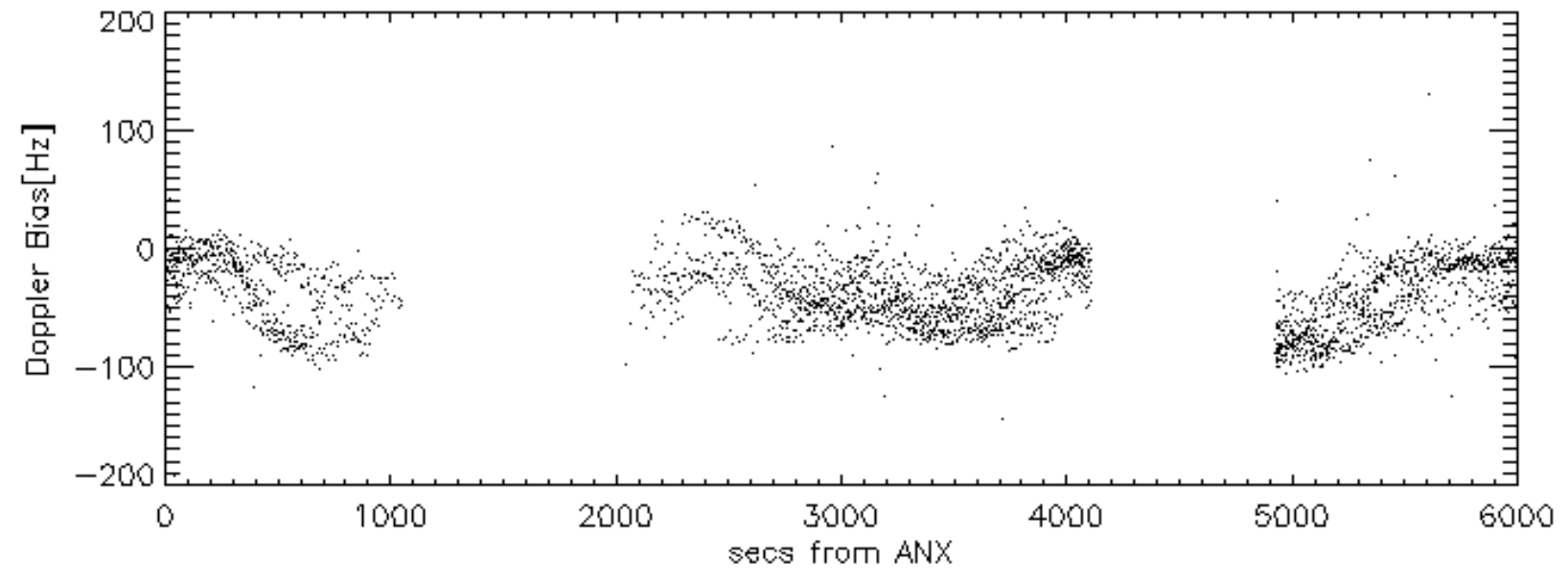
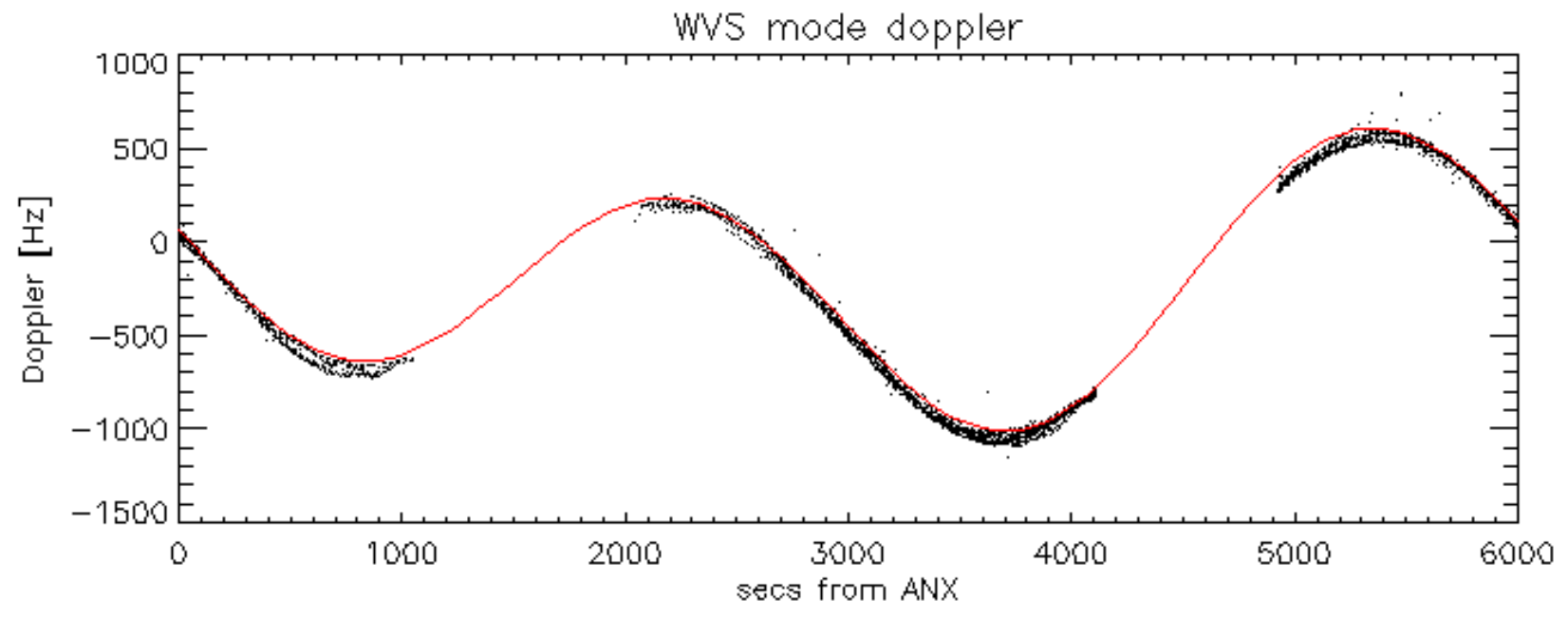
Doppler 'WVS' 'IS2' descending





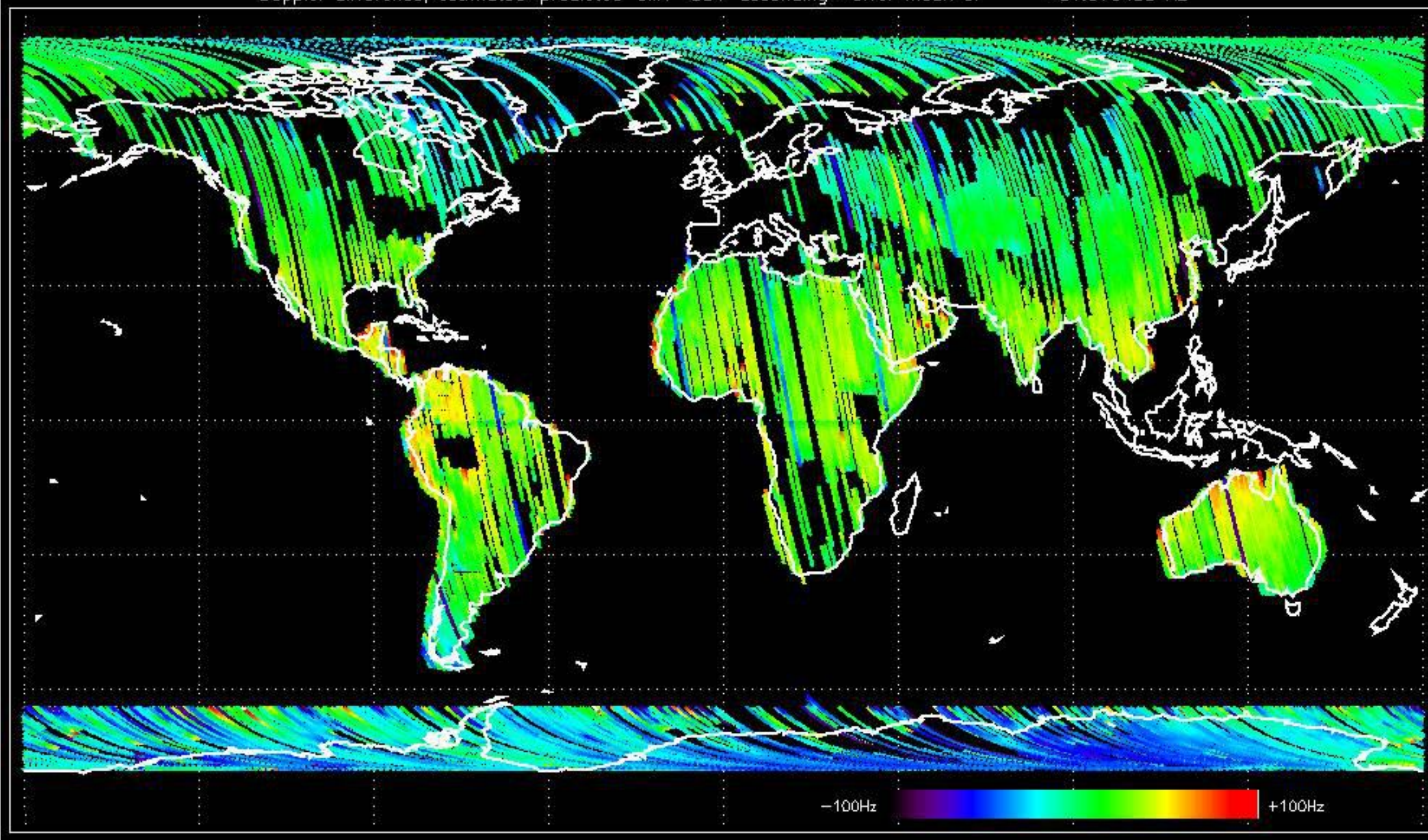
GM1 mode doppler





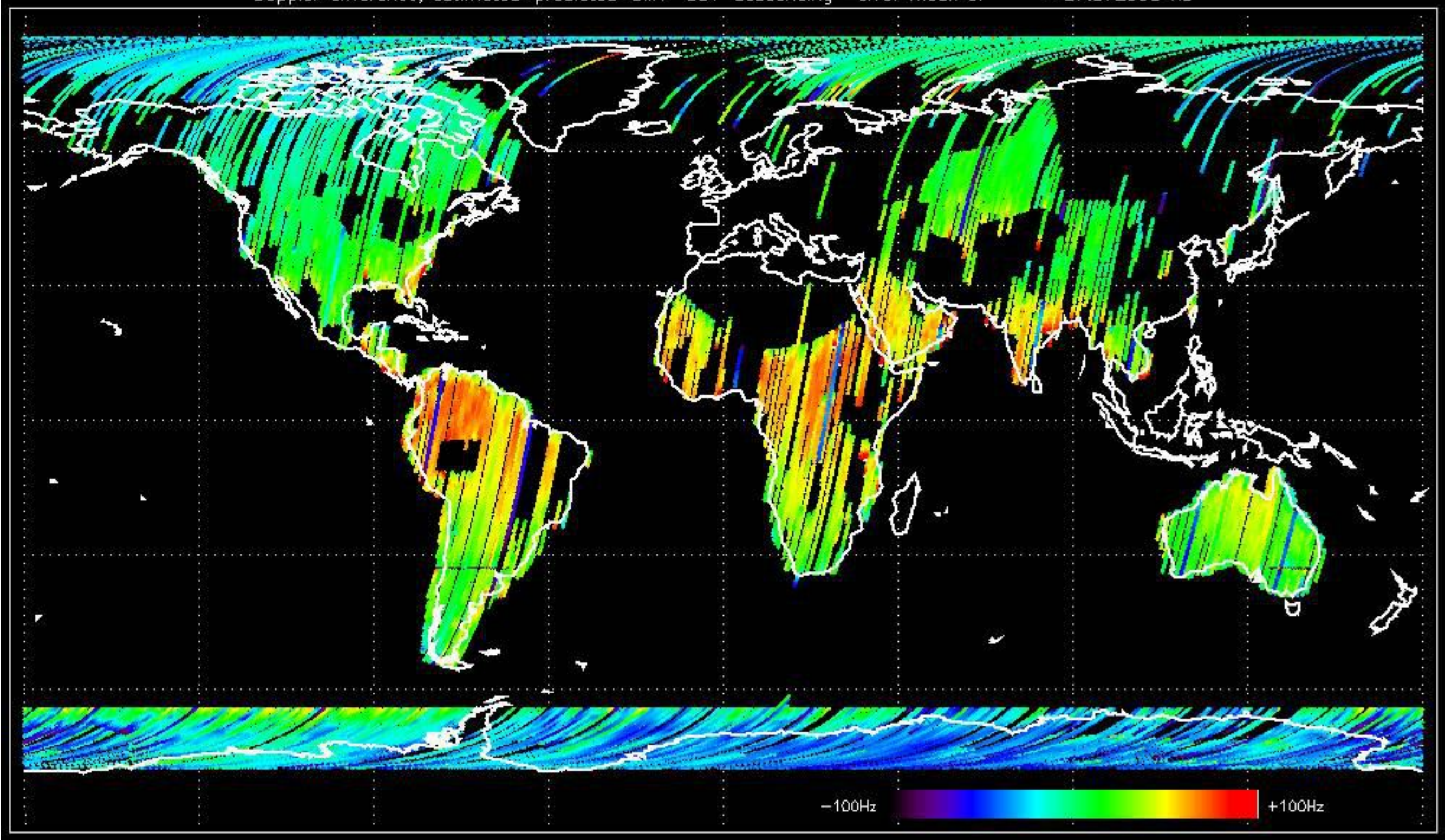


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -31.975485 Hz



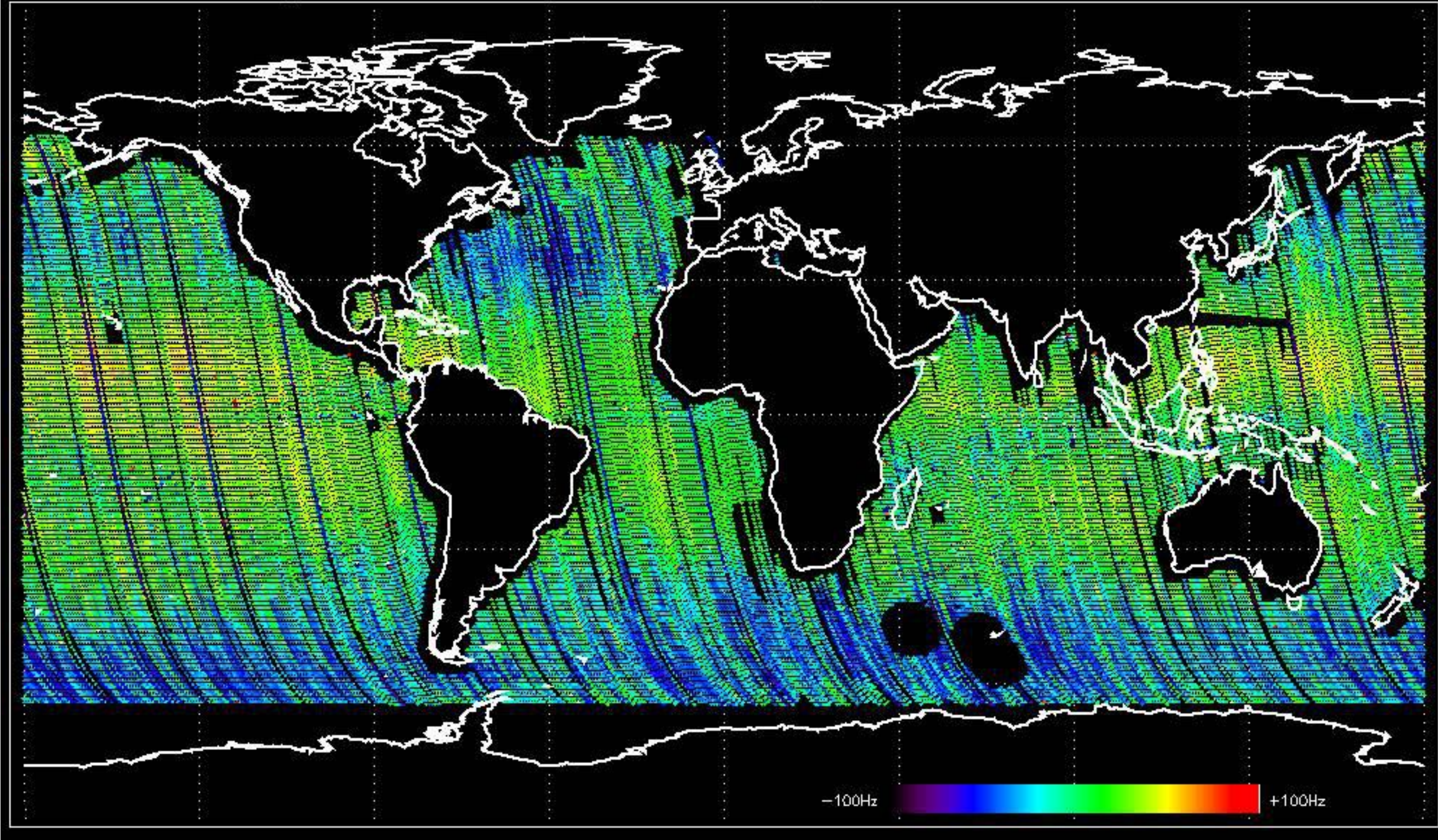


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -27.872998 Hz



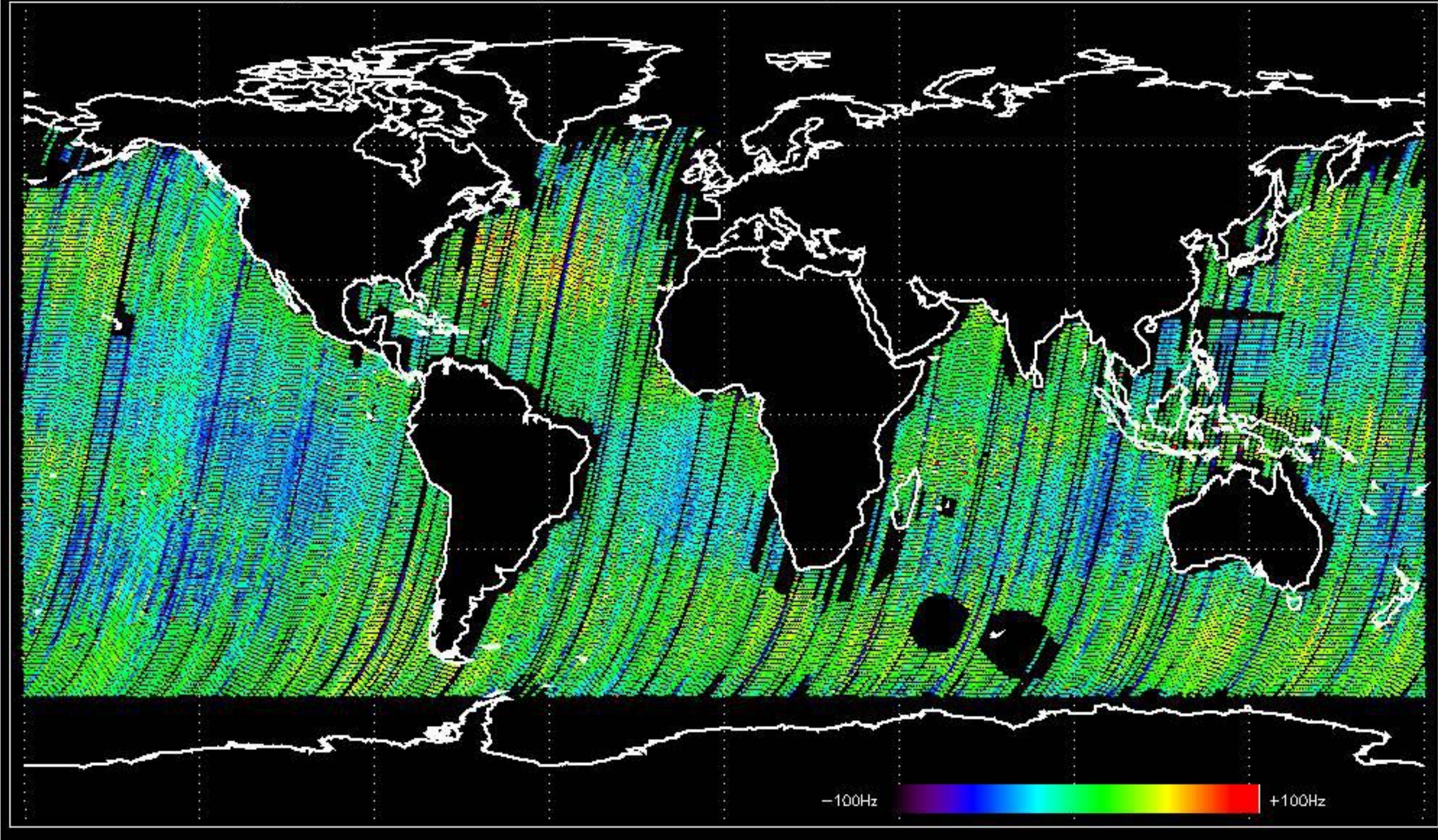


Doppler difference, estimated-predicted 'WS' 'IS2' ascending -error mean of -37.125032 Hz





Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -35.552374 Hz





Antenna OOL temperature for tile E1 visible from MS product analysis

- ASA\_MS\_\_0PNPDE20050322\_042857\_000000152035\_00405\_15990\_0109.N1

No anomalies observed.











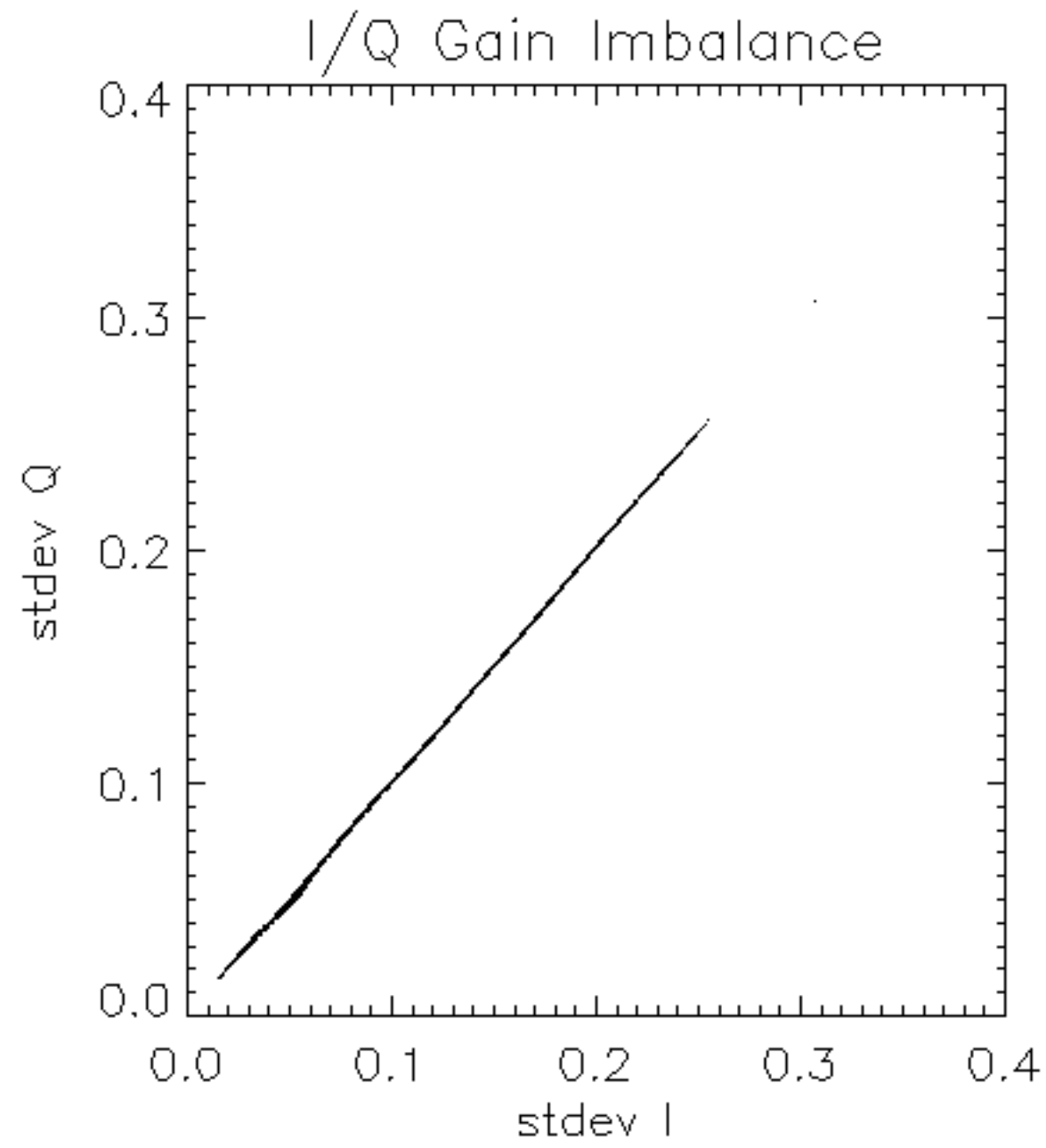


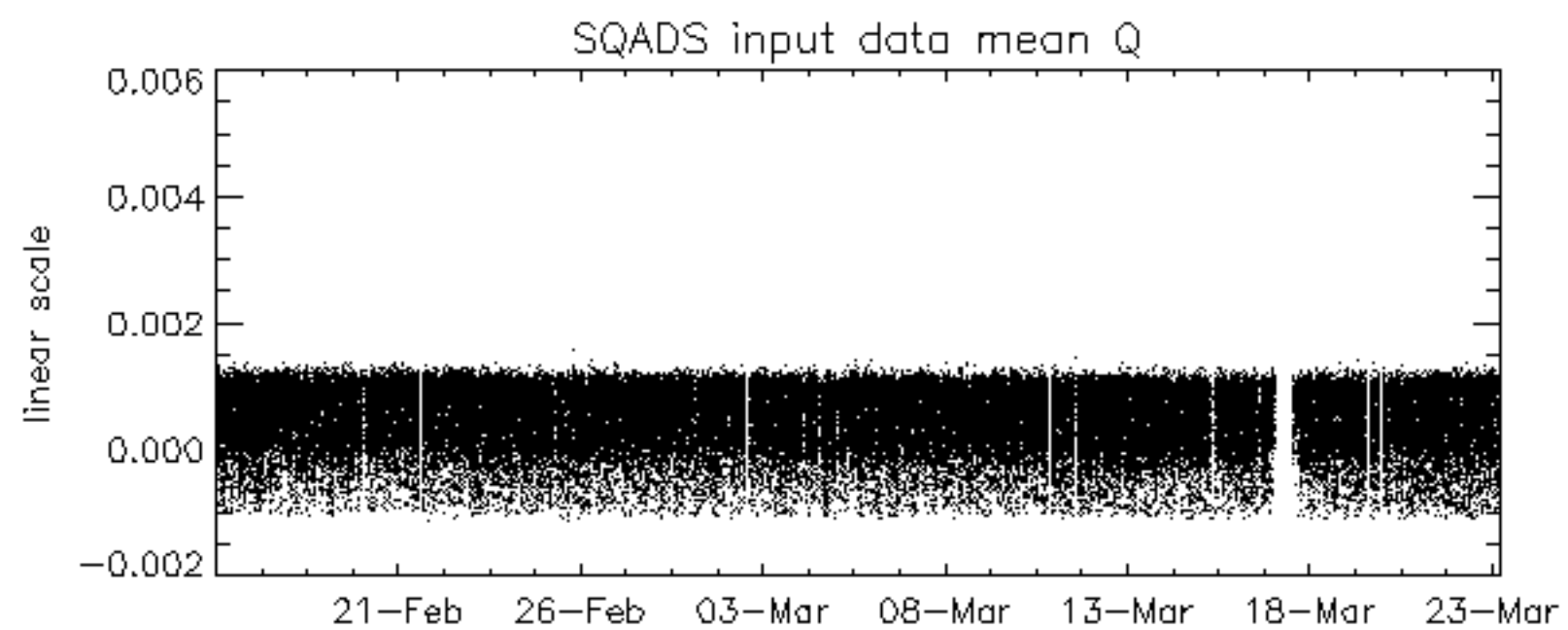
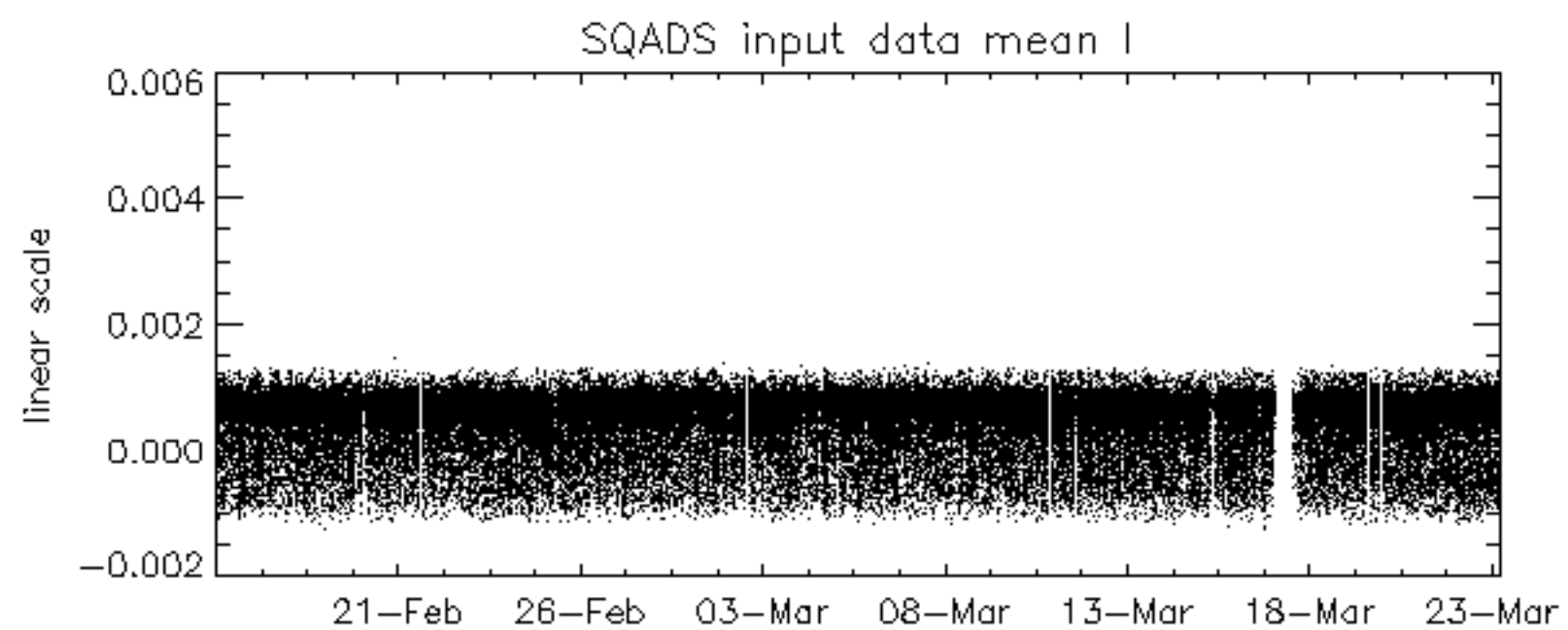
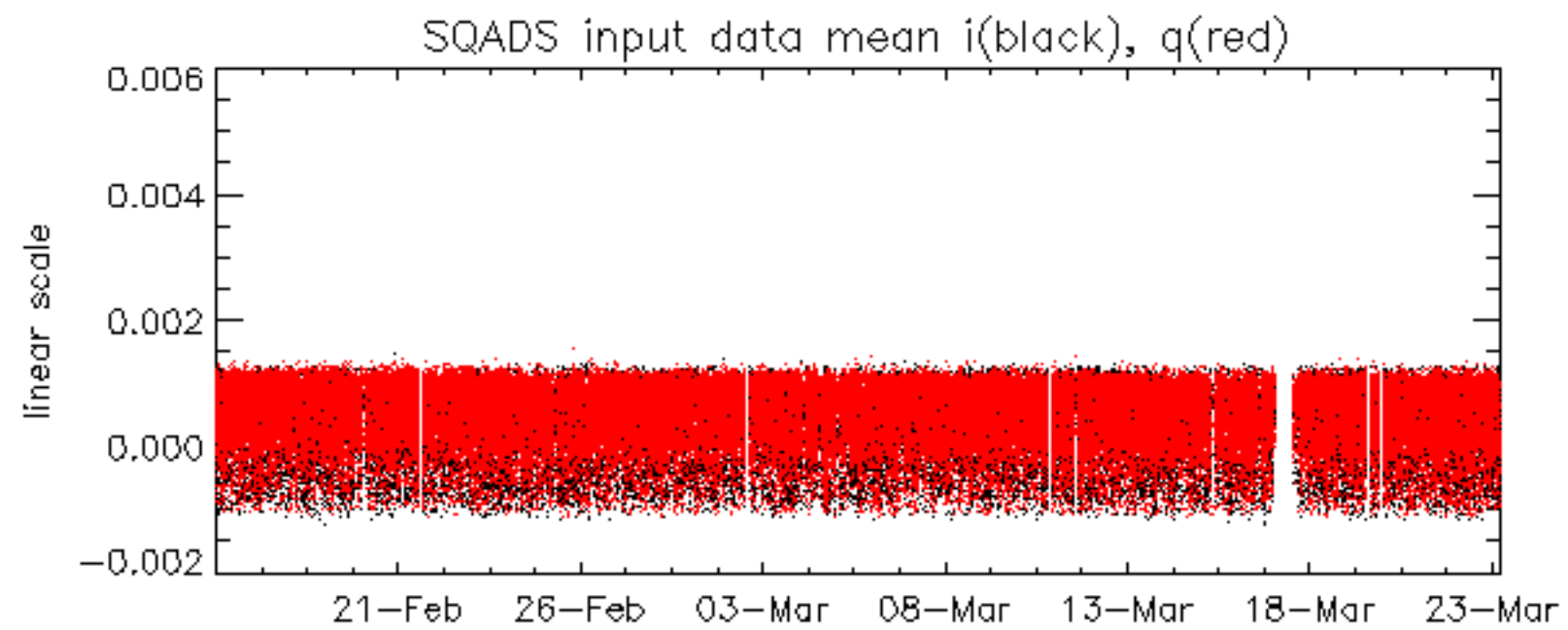


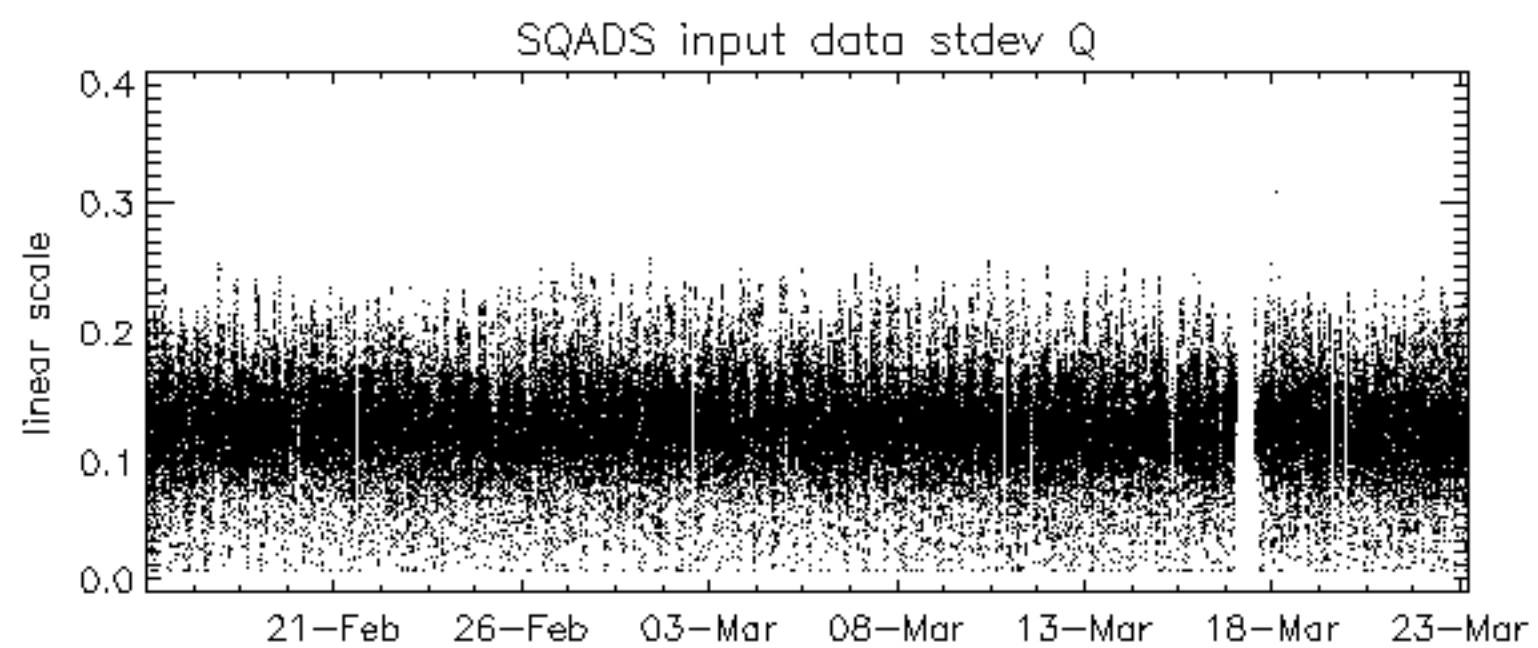
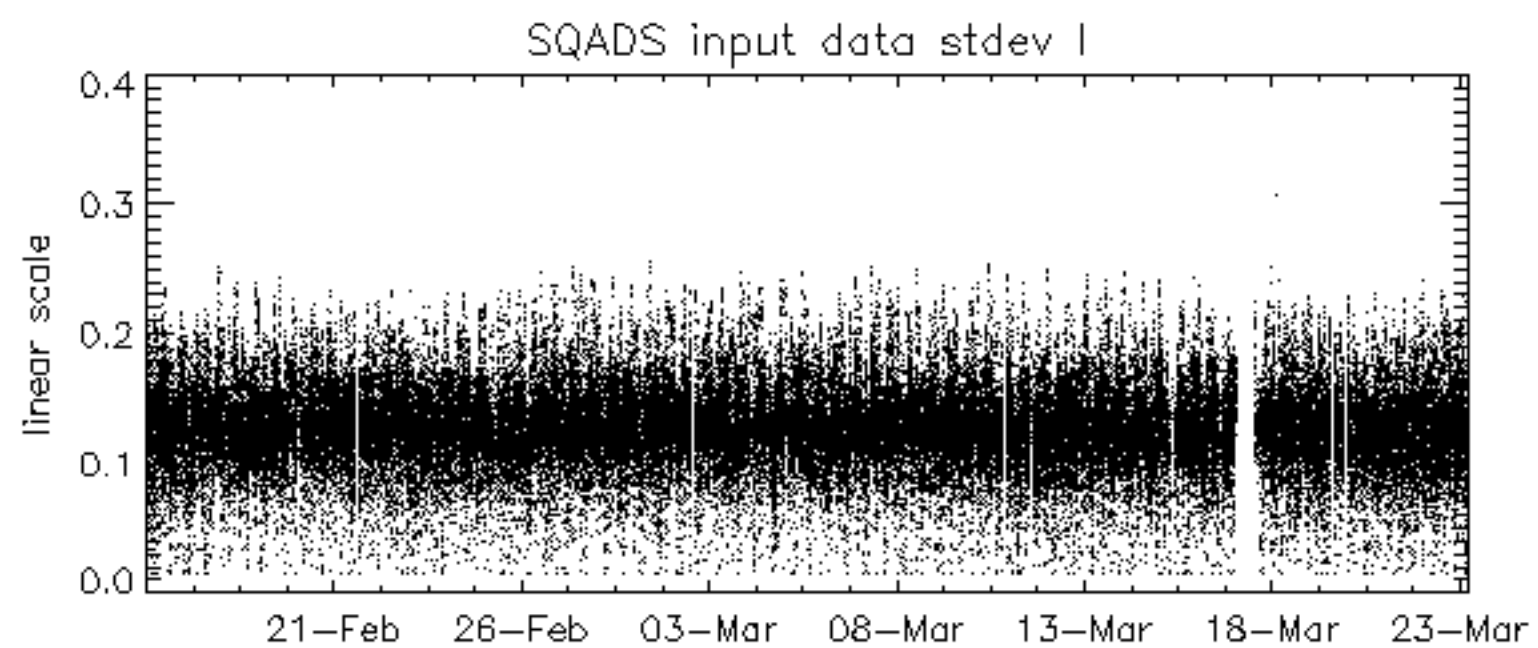
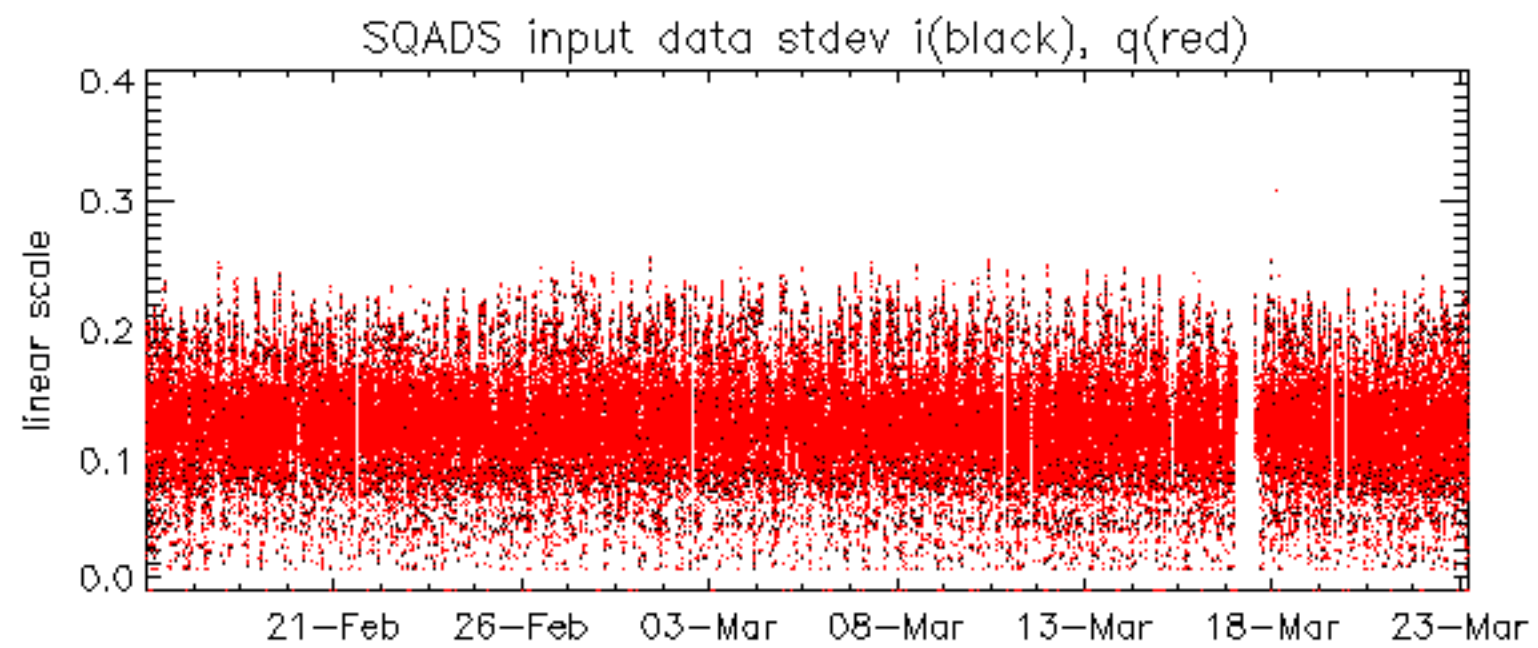


















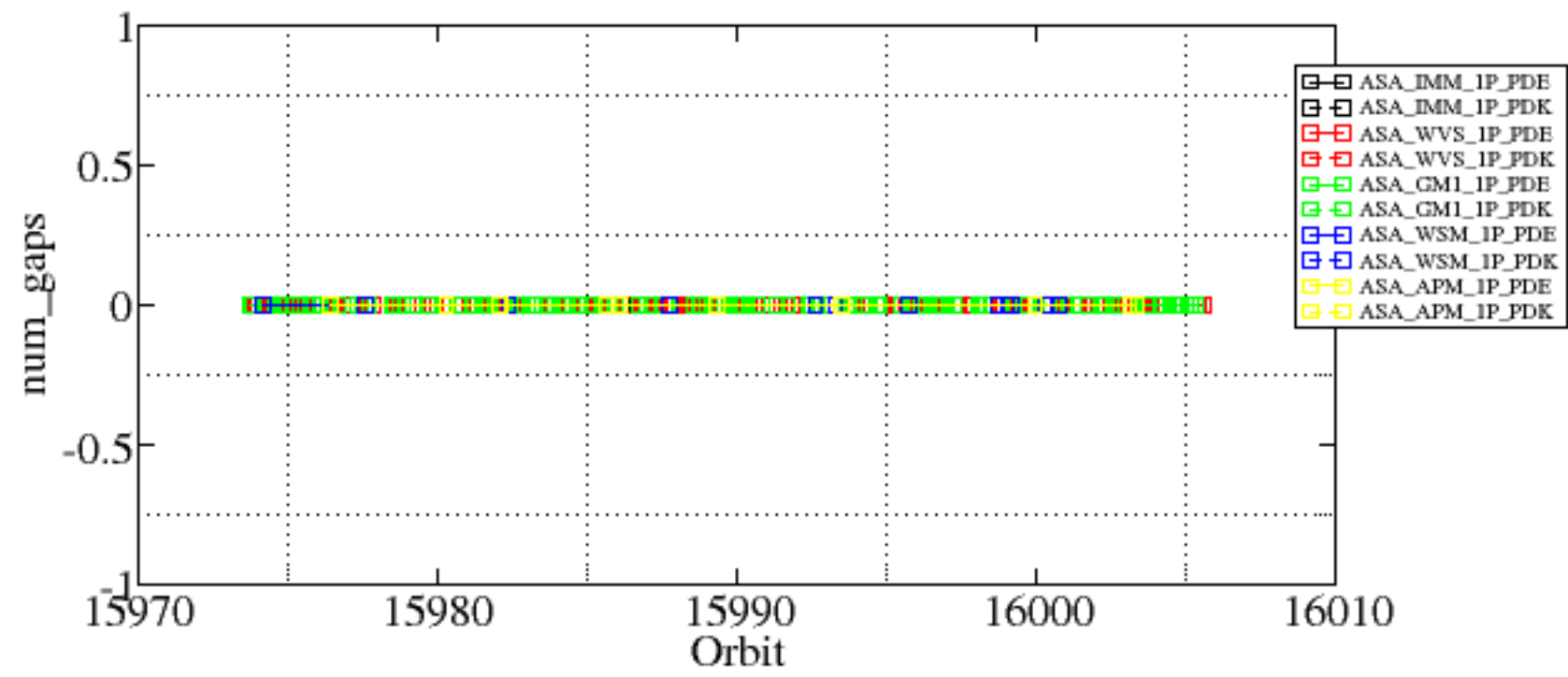


Summary of analysis for the last 3 days 2005032[123]

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_WSM_1PNPDE20050322_182848_00000862035_00414_15999_2591.N1	0	31





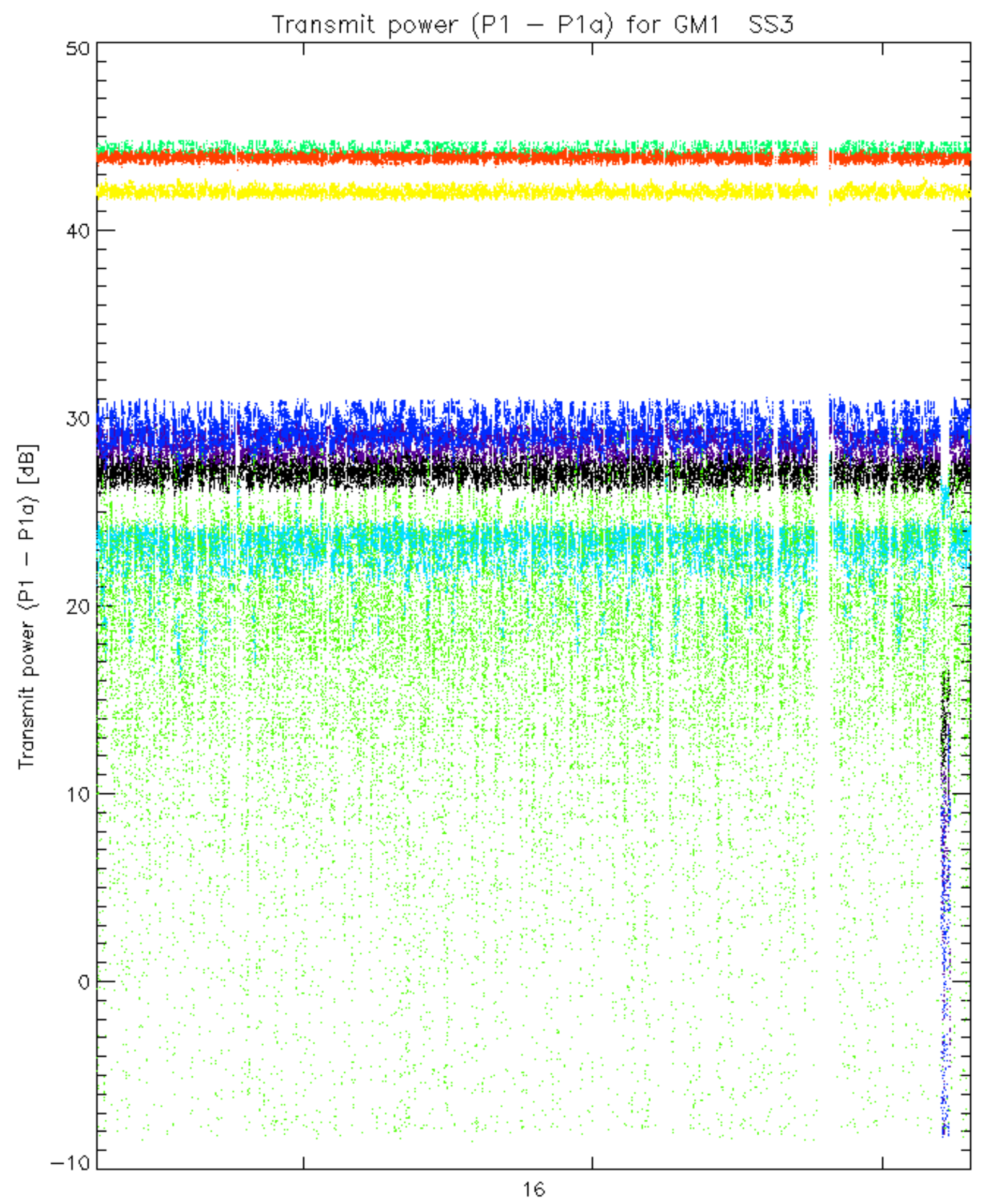




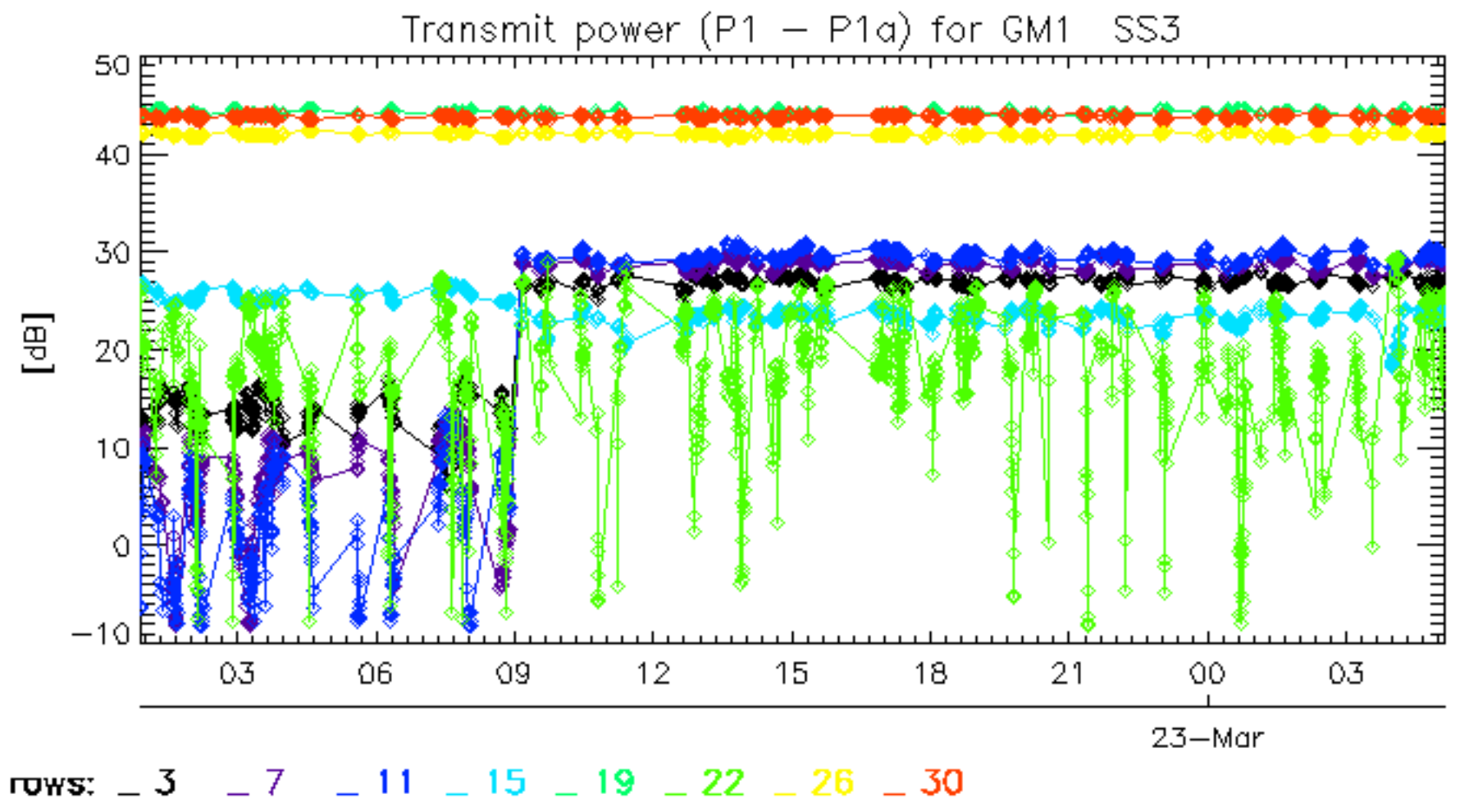




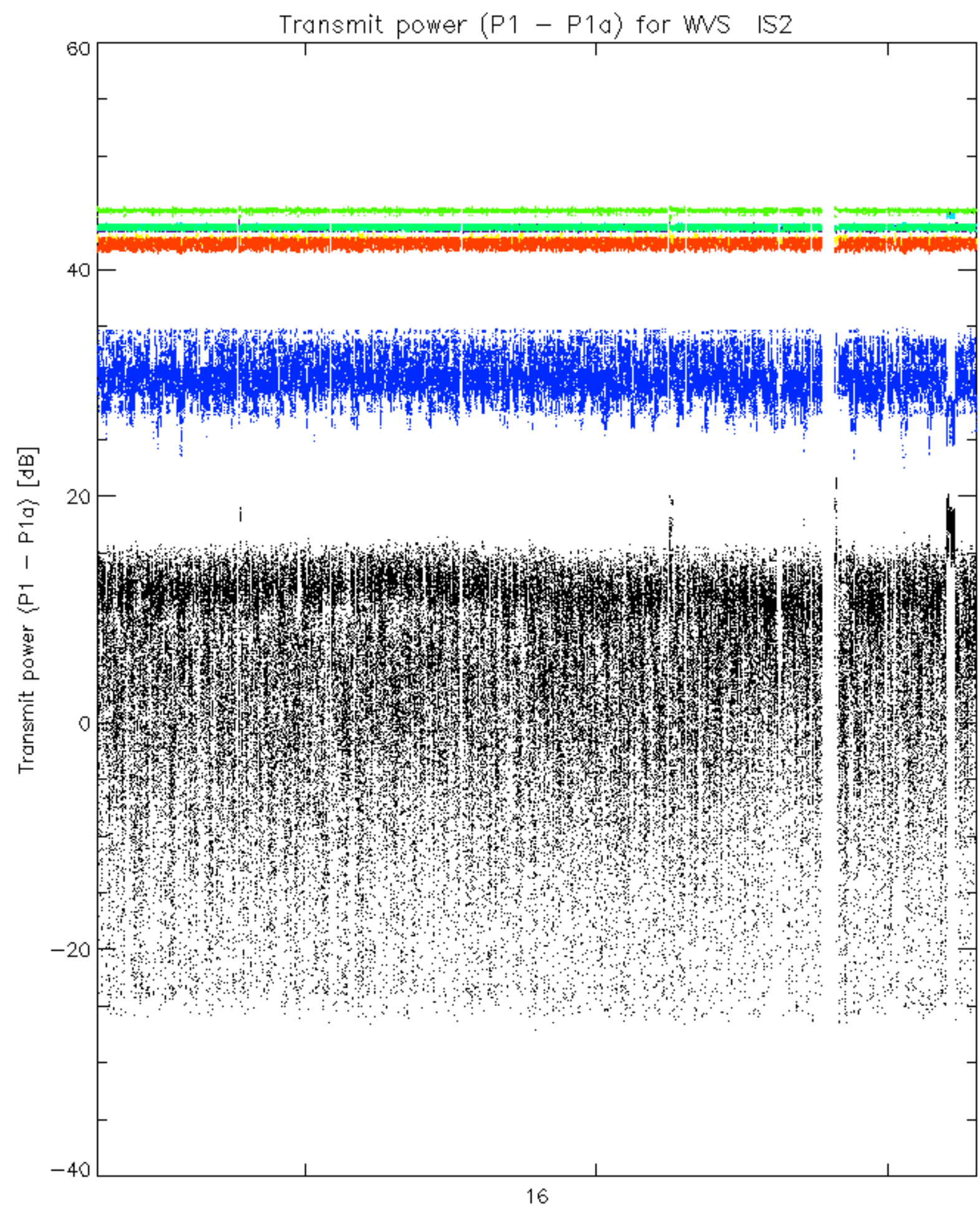




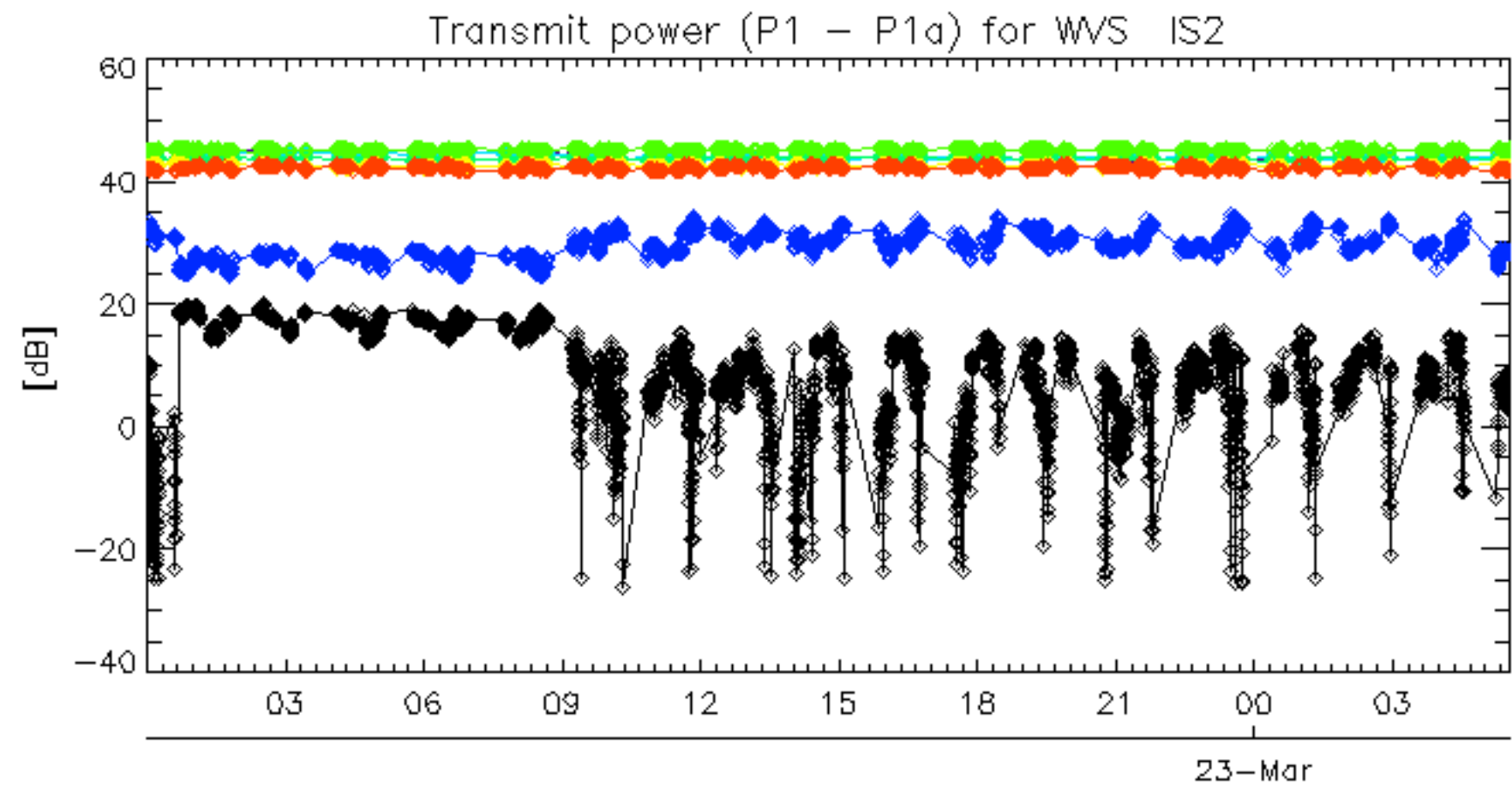
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30







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



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

ASAR unavailable from 22-MAR-2005 09:03:10.00 to 22-MAR-2005 09:09:10.00.  
Antenna reset due to OOL tempterature for Tile E1.

