

# PRELIMINARY REPORT OF 070315

**last update on Thu Mar 15 14:08:38 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 2007-03-14 00:00:00 to 2007-03-15 14:08:38

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	34	58	2	3	30
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	34	58	2	3	30
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	34	58	2	3	30
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	34	58	2	3	30

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	44	51	36	10	60
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	44	51	36	10	60
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	44	51	36	10	60
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	44	51	36	10	60

## 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	20070314 043731
H	20070315 070227

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)
3	P1a	-15.102113	0.124142	-0.007771
7	P1a	-17.438669	0.113785	-0.108743
11	P1a	-17.277473	0.308819	0.162642
15	P1a	-12.899035	0.080951	-0.153476
19	P1a	-15.169610	0.078416	-0.114067
22	P1a	-15.280335	1.278519	0.686923
26	P1a	-14.835314	1.307917	1.203081
30	P1a	-17.289711	0.556057	0.324887

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.737980	0.010844	-0.058340
7	P1	-3.131738	0.008474	-0.007780
11	P1	-4.169916	0.013953	-0.085300
15	P1	-6.377735	0.015446	-0.004350
19	P1	-3.774635	0.008636	-0.075484
22	P1	-4.576111	0.220764	0.469267
26	P1	-3.861151	0.131848	0.423347
30	P1	-5.821474	0.232081	0.473086

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.668585	0.092188	0.017317
7	P2	-21.614590	0.082821	0.023491
11	P2	-15.535998	0.098723	0.083085
15	P2	-7.075198	0.094454	-0.083325

19	P2	-9.111095	0.083965	-0.033213
22	P2	-18.113024	0.076593	0.001269
26	P2	-16.546877	0.086995	-0.080618
30	P2	-19.346090	0.079189	0.061721

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.239444	0.006432	-0.017005
7	P3	-8.239444	0.006432	-0.017005
11	P3	-8.239444	0.006432	-0.017005
15	P3	-8.239444	0.006432	-0.017005
19	P3	-8.239444	0.006432	-0.017005
22	P3	-8.239444	0.006432	-0.017005
26	P3	-8.239444	0.006432	-0.017005
30	P3	-8.239444	0.006432	-0.017005

**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	-11.080225	0.059061	-0.079918
7	P1a	-10.071293	0.189526	-0.036156
11	P1a	-10.679447	0.077279	-0.129602
15	P1a	-10.954172	0.142165	0.122813
19	P1a	-15.686935	0.072464	-0.119316
22	P1a	-20.850542	1.705825	1.071234
26	P1a	-15.235397	0.304489	0.221465
30	P1a	-18.344885	0.741480	0.941134

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
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3	P1	-8.406648	0.056688	-0.106451
7	P1	-2.424966	0.037270	-0.014010
11	P1	-2.923434	0.023874	0.005397
15	P1	-3.844491	0.047011	0.001542
19	P1	-3.554227	0.011069	-0.023372
22	P1	-5.028867	0.040005	0.255292
26	P1	-5.937015	0.059895	0.212783
30	P1	-5.268763	0.026544	0.036137

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.099230	0.034685	-0.021964
7	P2	-21.947636	0.058698	0.026176
11	P2	-10.635856	0.032402	0.069078
15	P2	-4.823640	0.028959	0.028318
19	P2	-6.806828	0.031937	0.047202
22	P2	-8.074144	0.037132	0.050622
26	P2	-24.291605	0.040081	0.087665
30	P2	-21.725925	0.041318	0.090276

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.056960	0.003855	0.044307
7	P3	-8.056882	0.003840	0.044365
11	P3	-8.056914	0.003846	0.044500
15	P3	-8.057053	0.003855	0.045208
19	P3	-8.057008	0.003852	0.046618
22	P3	-8.056946	0.003843	0.044280
26	P3	-8.056770	0.003836	0.045607
30	P3	-8.056871	0.003849	0.043955

## 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	0.000710904
	stdev	3.22651e-07
MEAN Q	mean	0.000206472
	stdev	2.74319e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.0729863
	stdev	0.00154451
STDEV Q	mean	0.0725802
	stdev	0.00158676



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007031[345]

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
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ASA_GM1_1PNPDK20070313_145235_000003622056_00211_26317_5845.N1	0	6
ASA_GM1_1PNPDK20070314_201257_000009242056_00228_26334_0828.N1	0	22
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDE20070313_140917_000000852056_00211_26317_0134.N1	0	15
ASA_WSM_1PNPDE20070313_145059_000000852056_00211_26317_0127.N1	0	31
ASA_WSM_1PNPDE20070313_190809_000001652056_00214_26320_0261.N1	0	70
ASA_WSM_1PNPDE20070314_141836_000000852056_00225_26331_1665.N1	0	37
ASA_WSM_1PNPDE20070314_153245_000000612056_00226_26332_1616.N1	3	801
ASA_WSM_1PNPDK20070315_094718_000000862056_00237_26343_1332.N1	0	29
ASA_APM_1PNPDE20070313_154612_000000412056_00212_26318_0150.N1	12	0
ASA_APM_1PNPDE20070315_070600_000002082056_00235_26341_2835.N1	12	0





## 7 - Doppler Analysis

Preliminary report. The data is not yet controlled

### 7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

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

<input type="checkbox"/>
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### 7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

<input type="checkbox"/>
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Ascending

<input type="checkbox"/>
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Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

<input type="checkbox"/>
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Ascending

<input type="checkbox"/>
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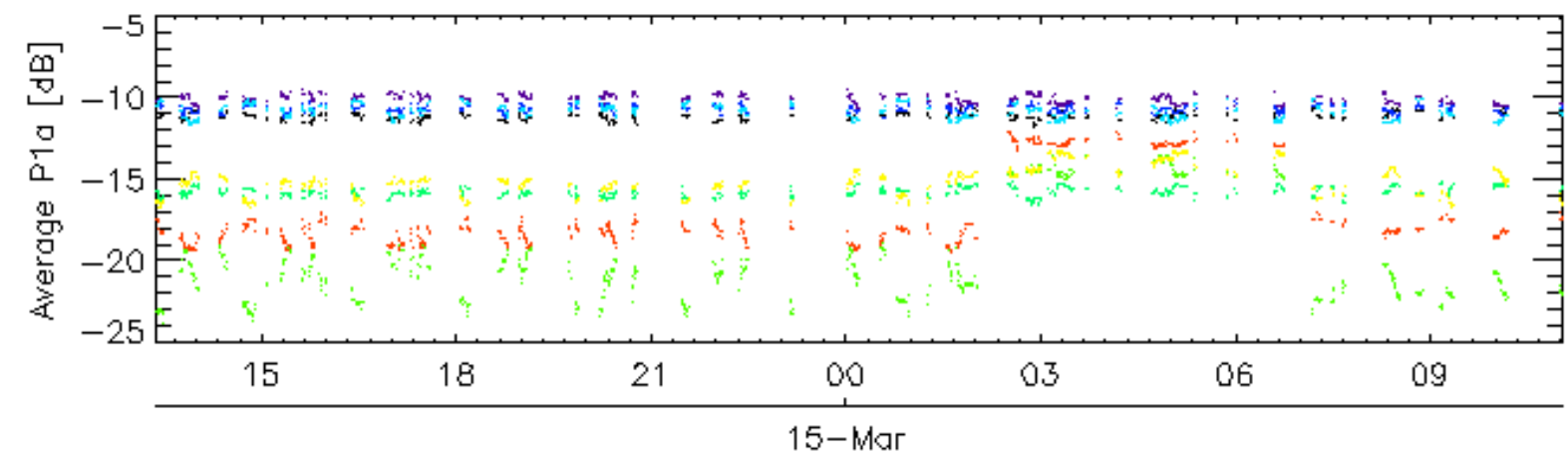
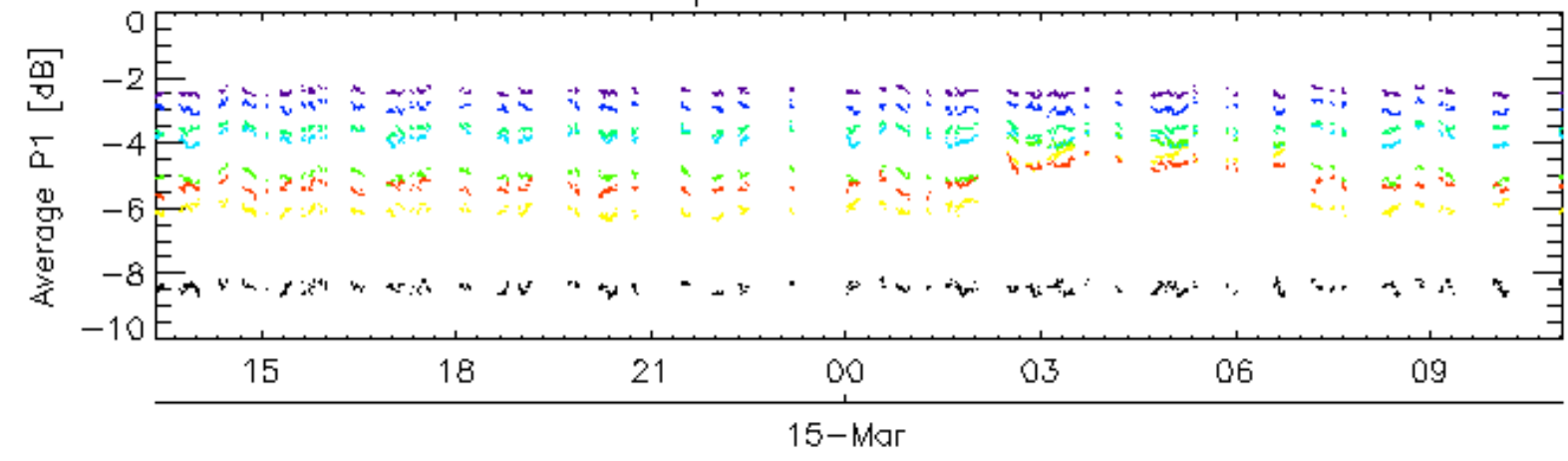
Descending

### 7.6 - Doppler evolution versus ANX for GM1

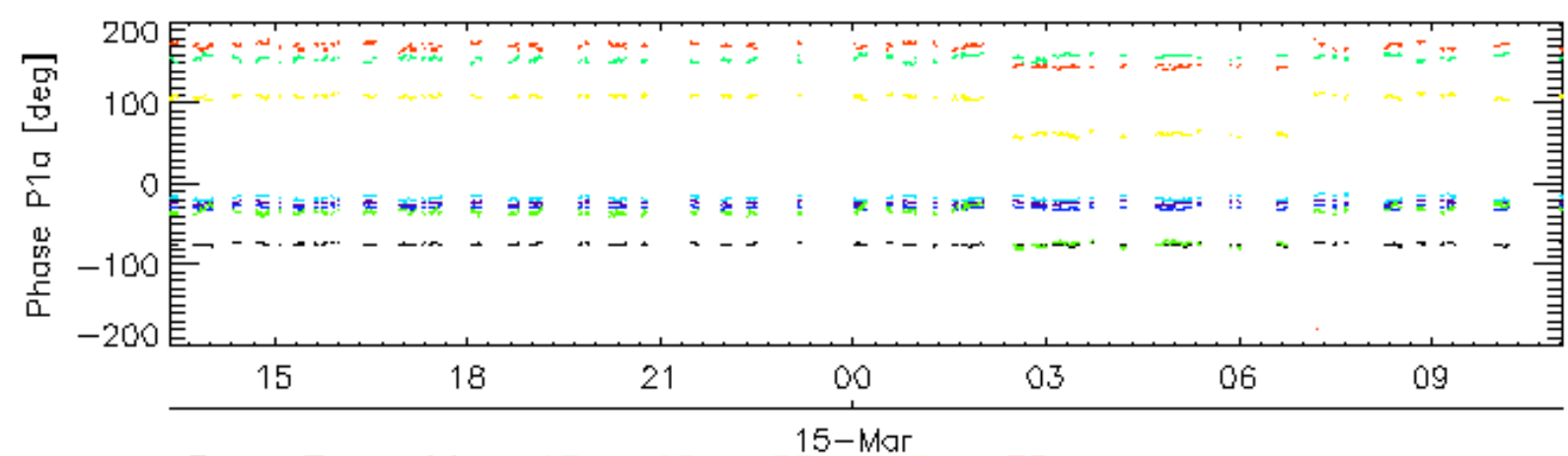
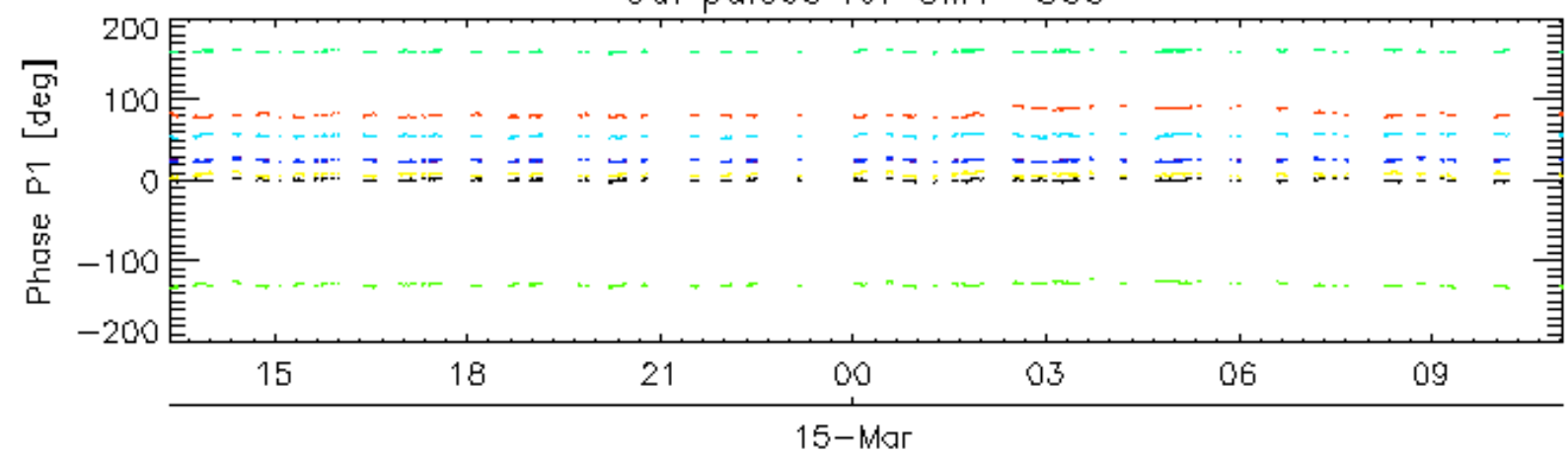
Evolution Doppler error versus ANX

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

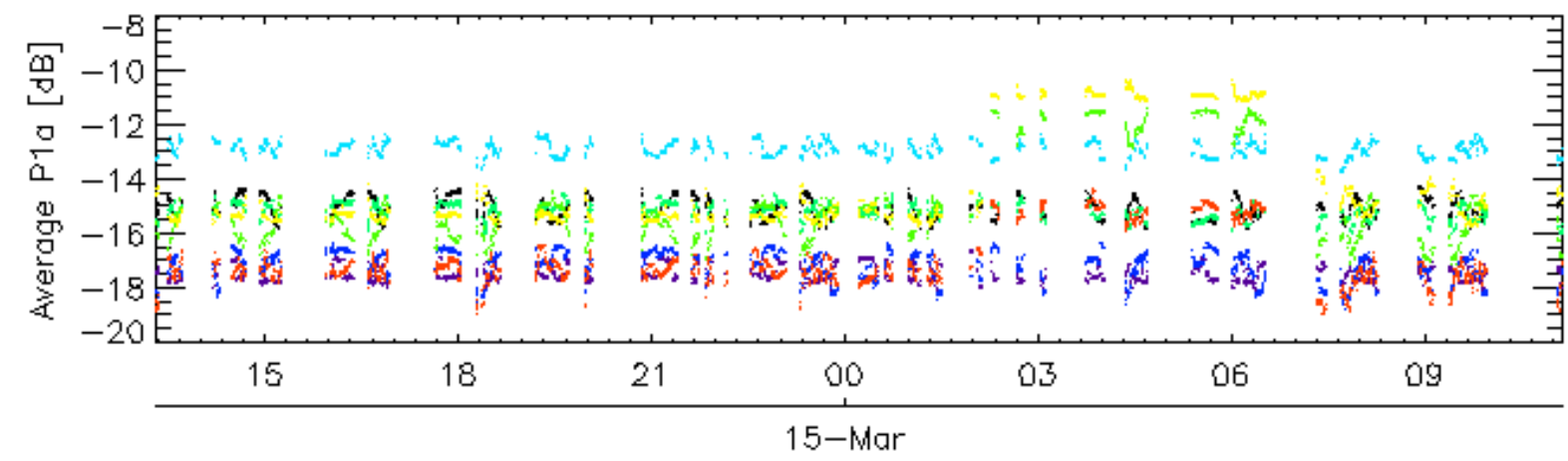
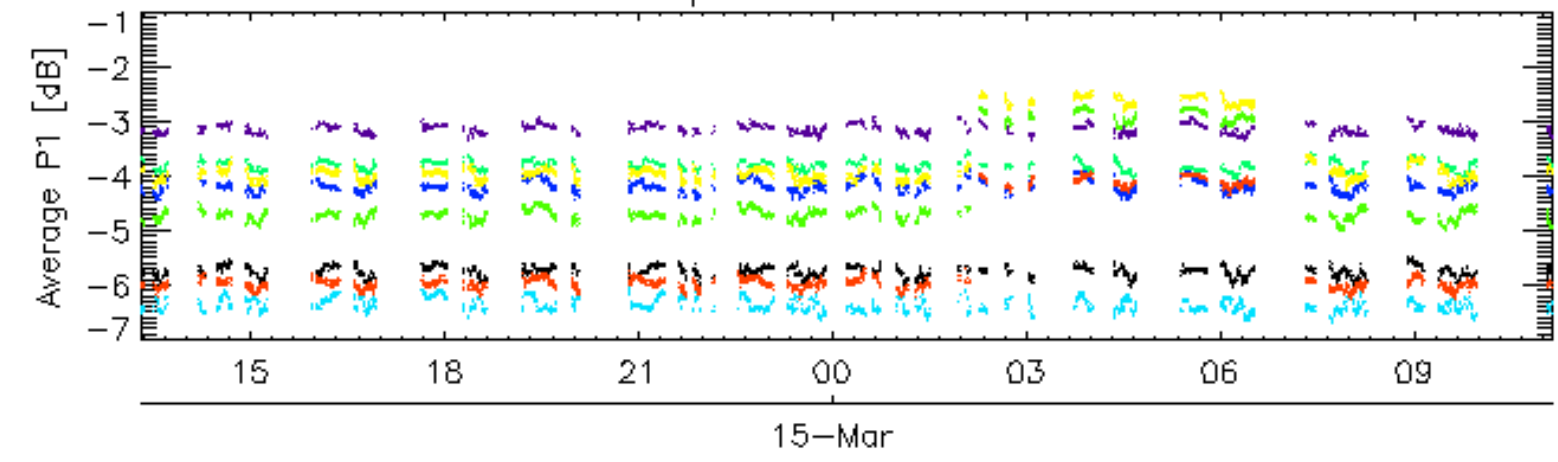


Cal pulses for GM1 SS3

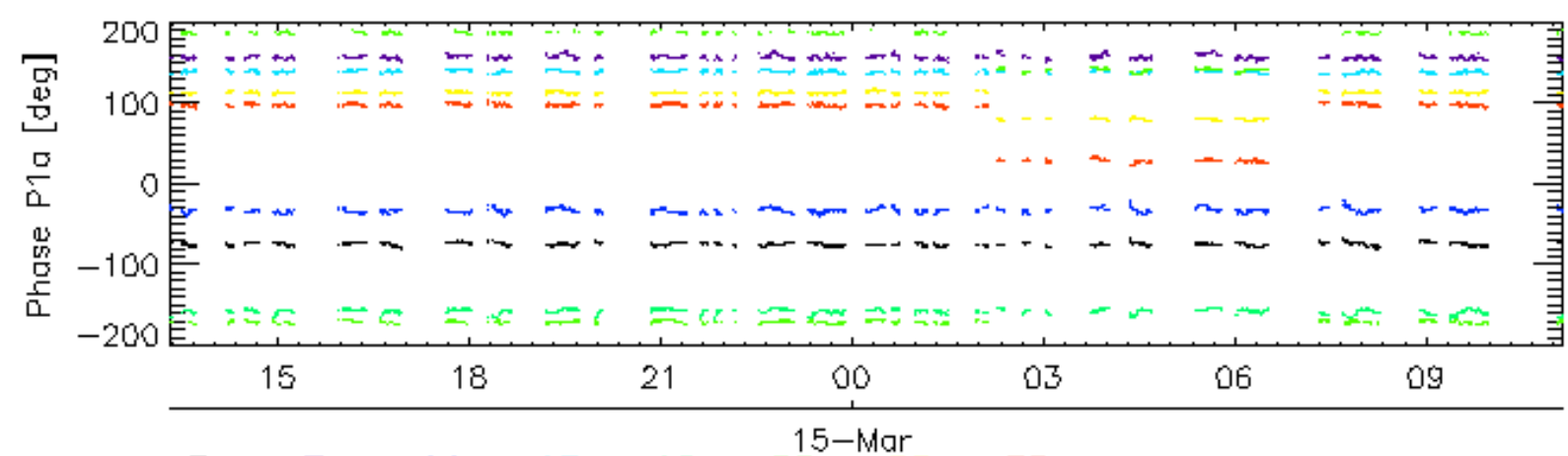
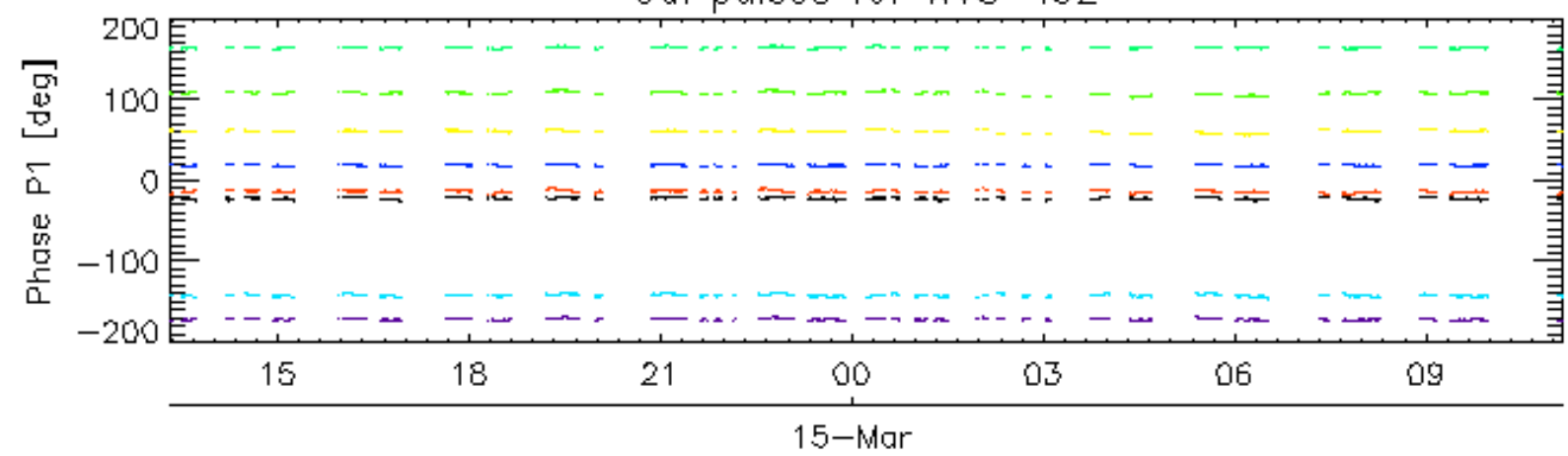


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2

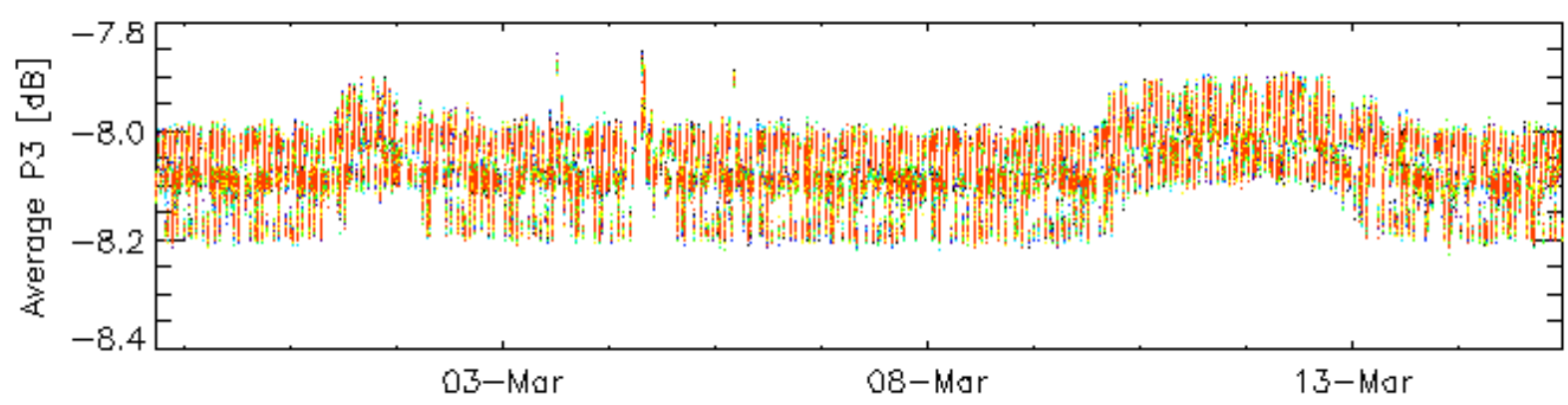
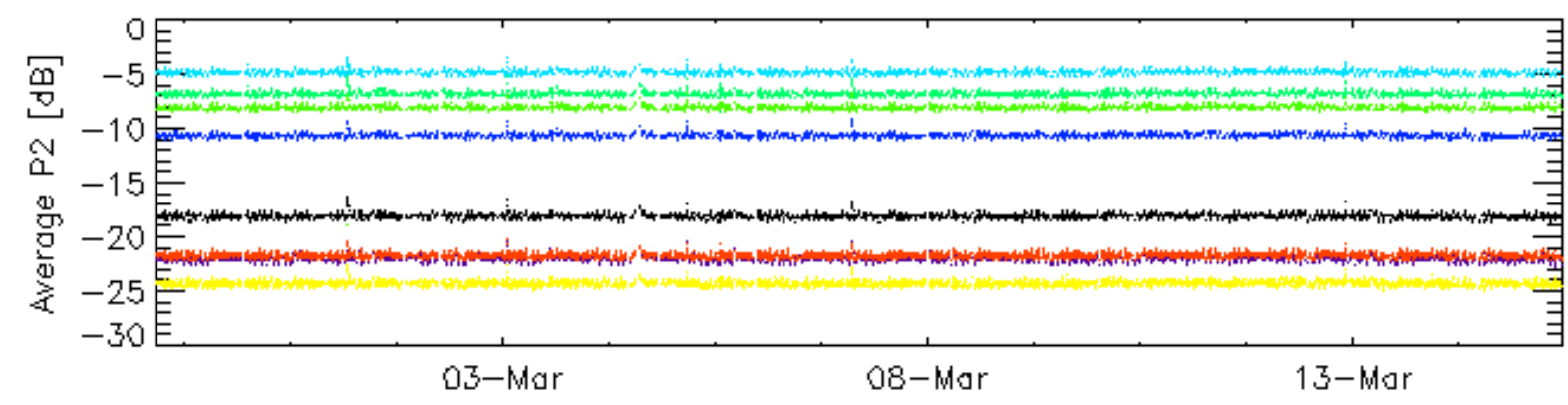
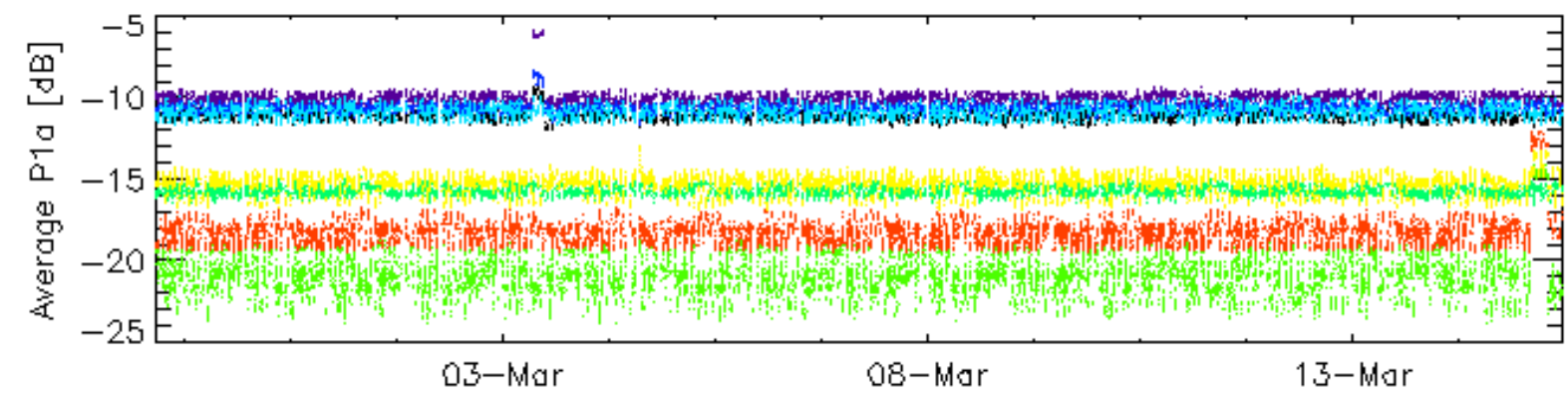
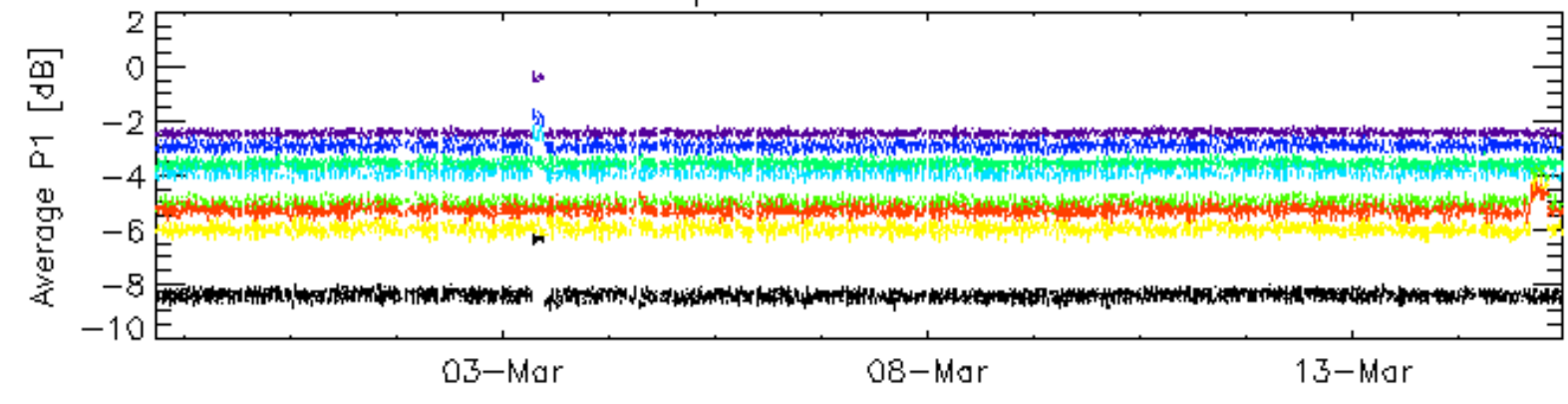


Cal pulses for WVS IS2



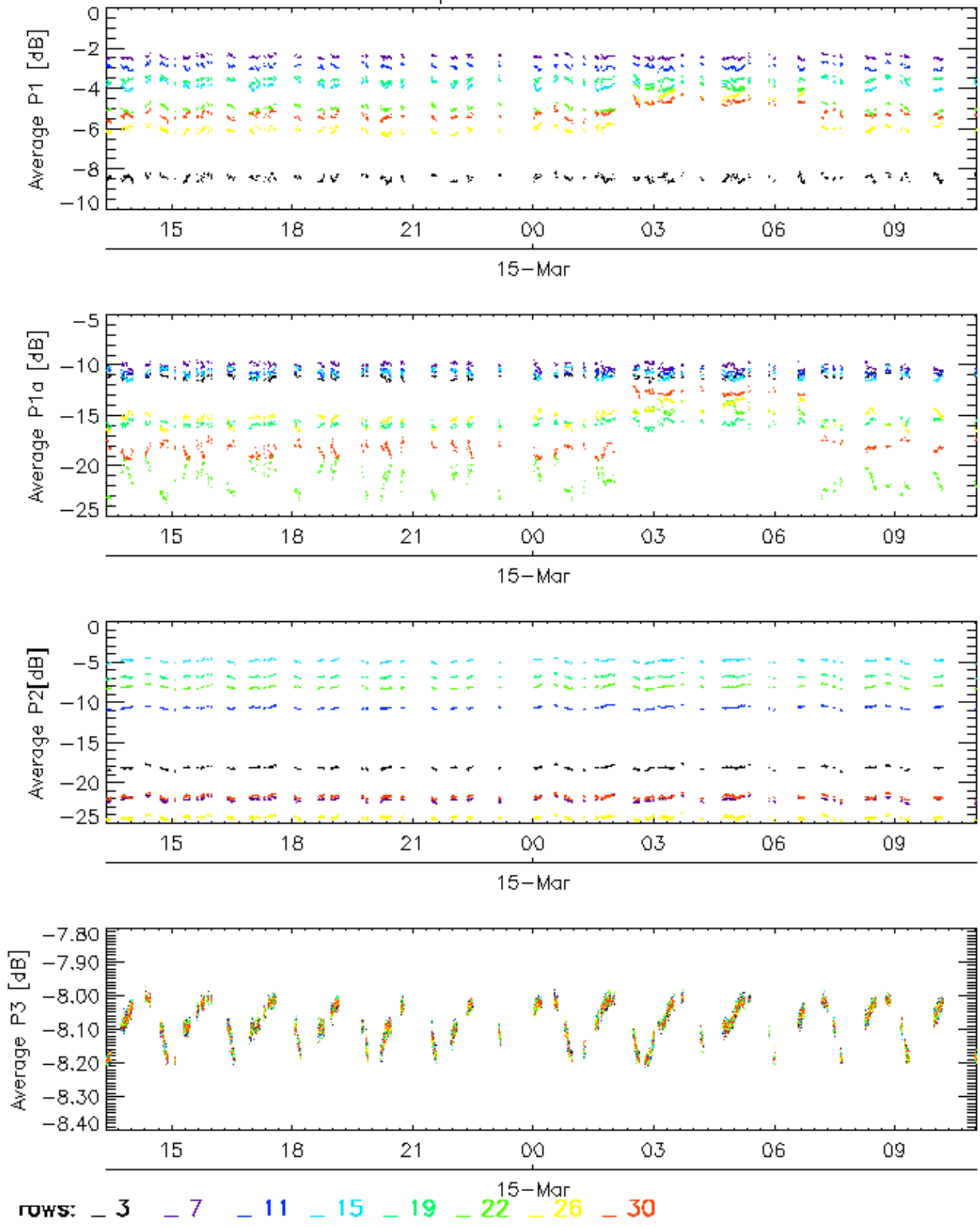
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3

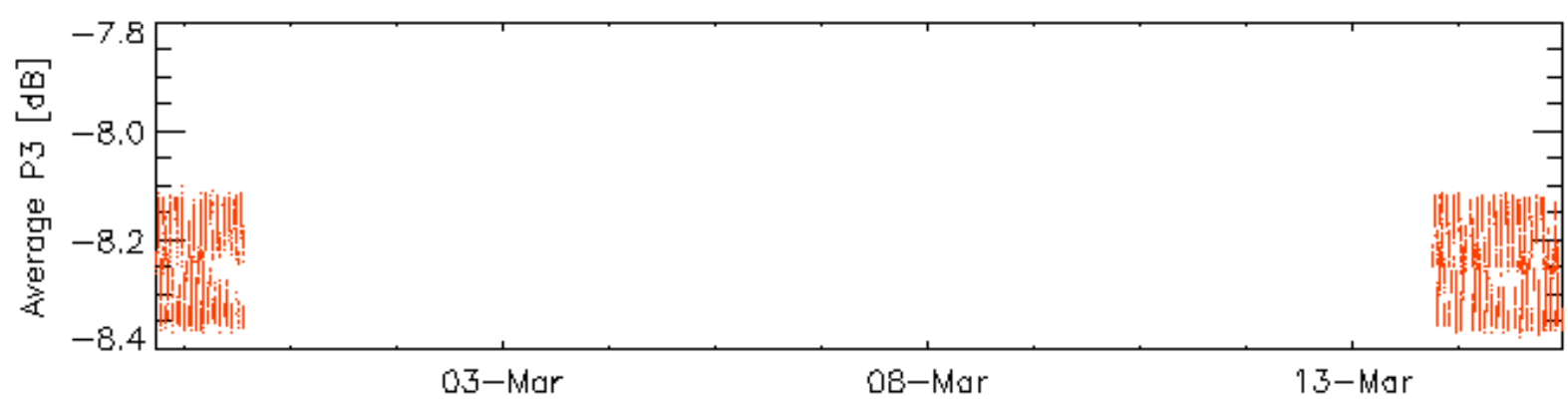
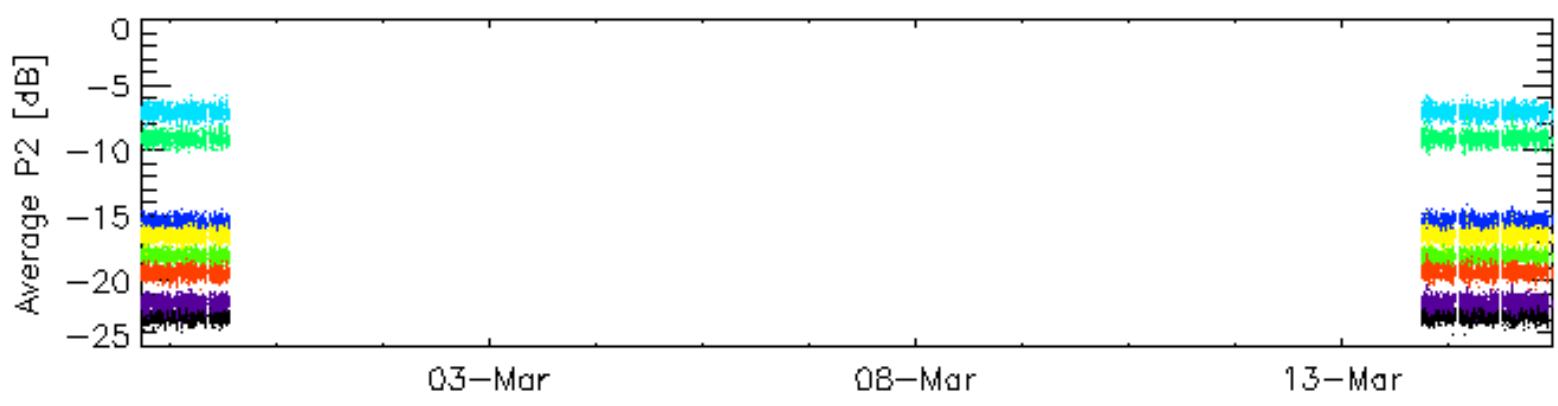
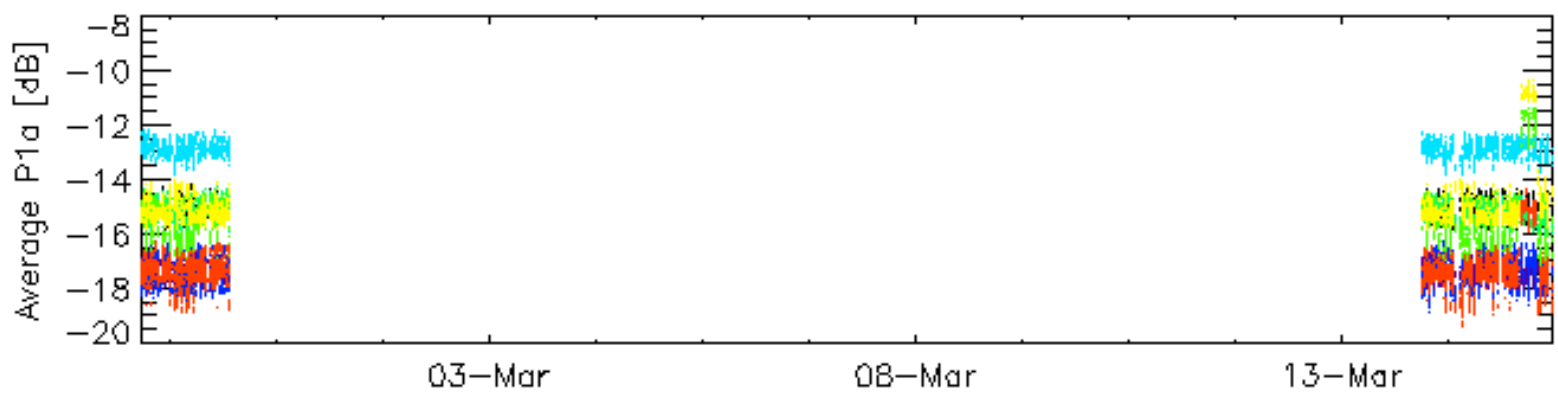
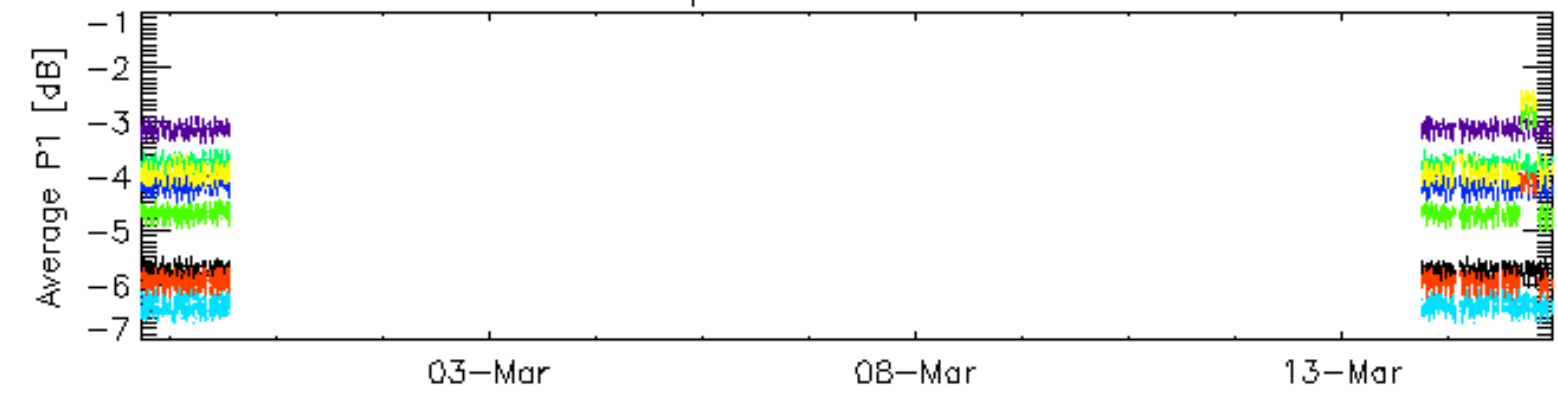


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

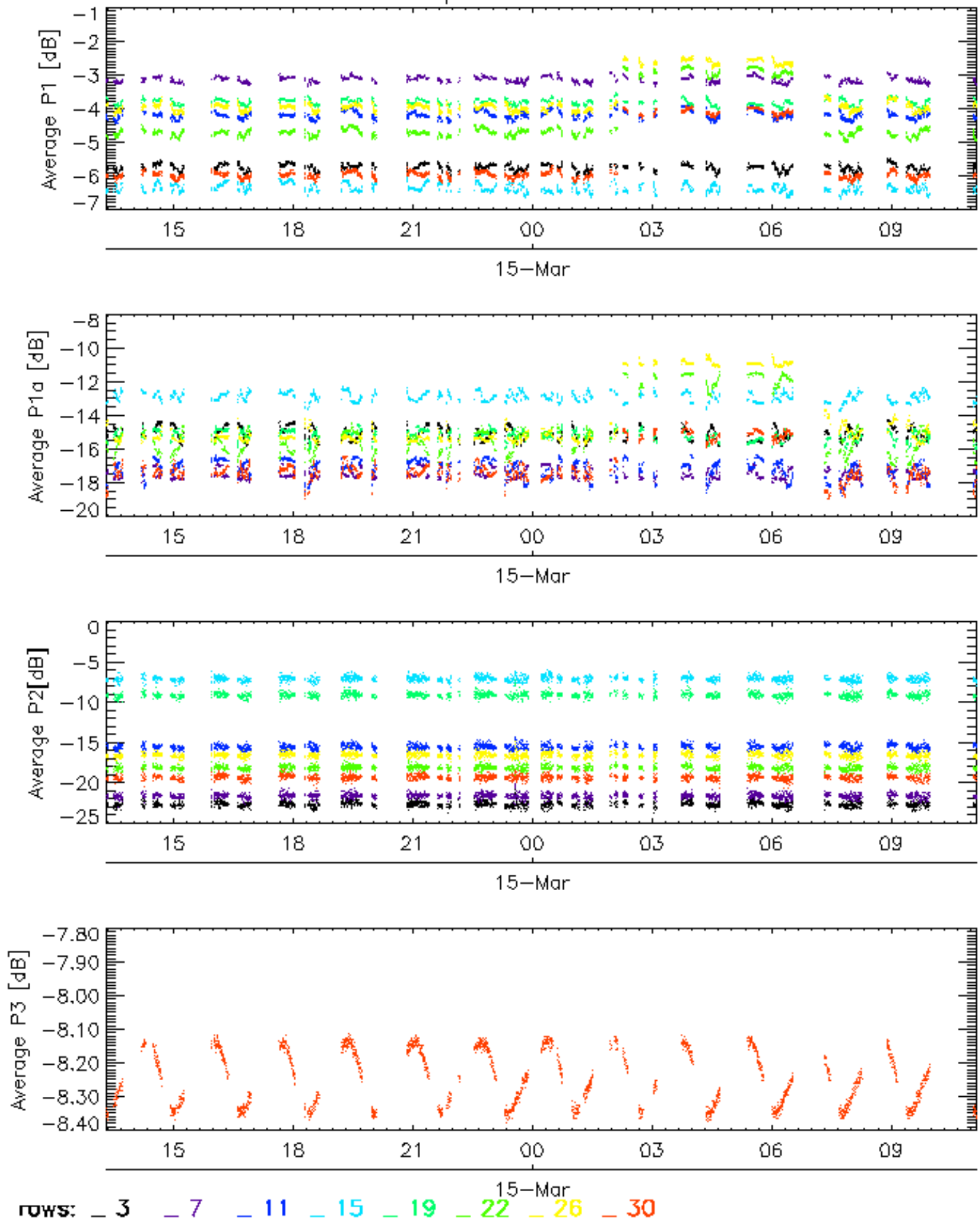


Cal pulses for WVS IS2



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

Cal pulses for WVS IS2

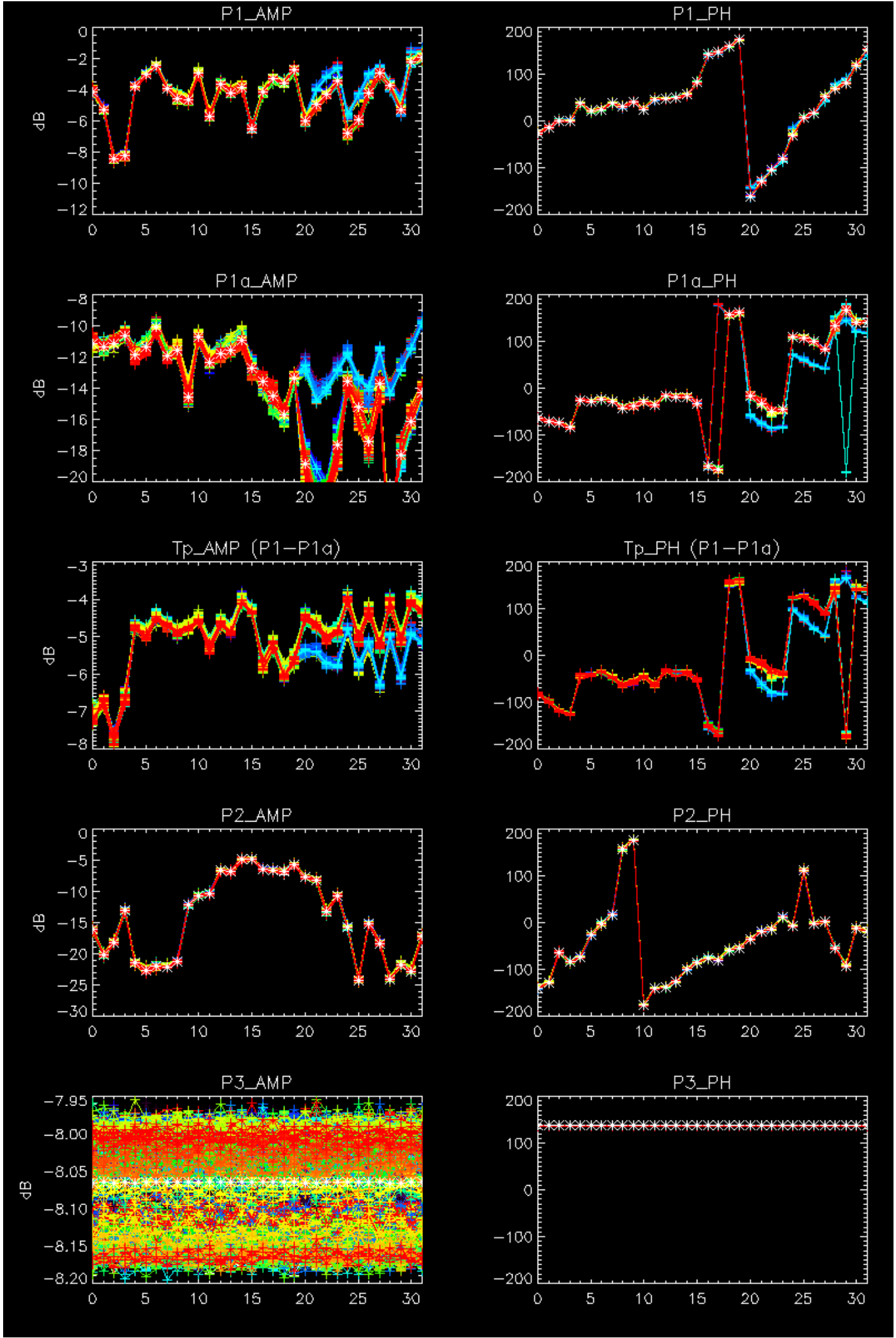


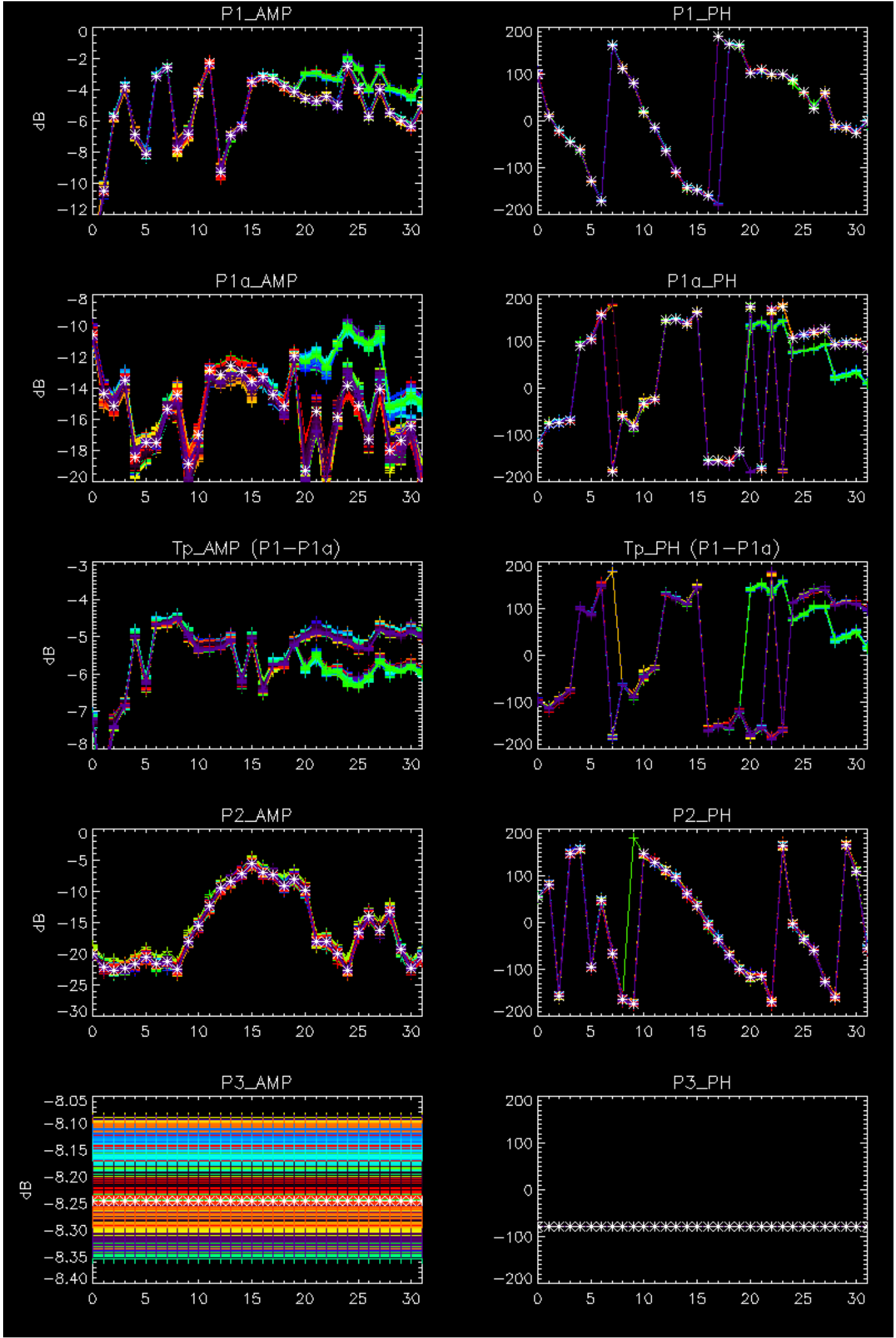


No anomalies observed on available browse products



No anomalies observed.



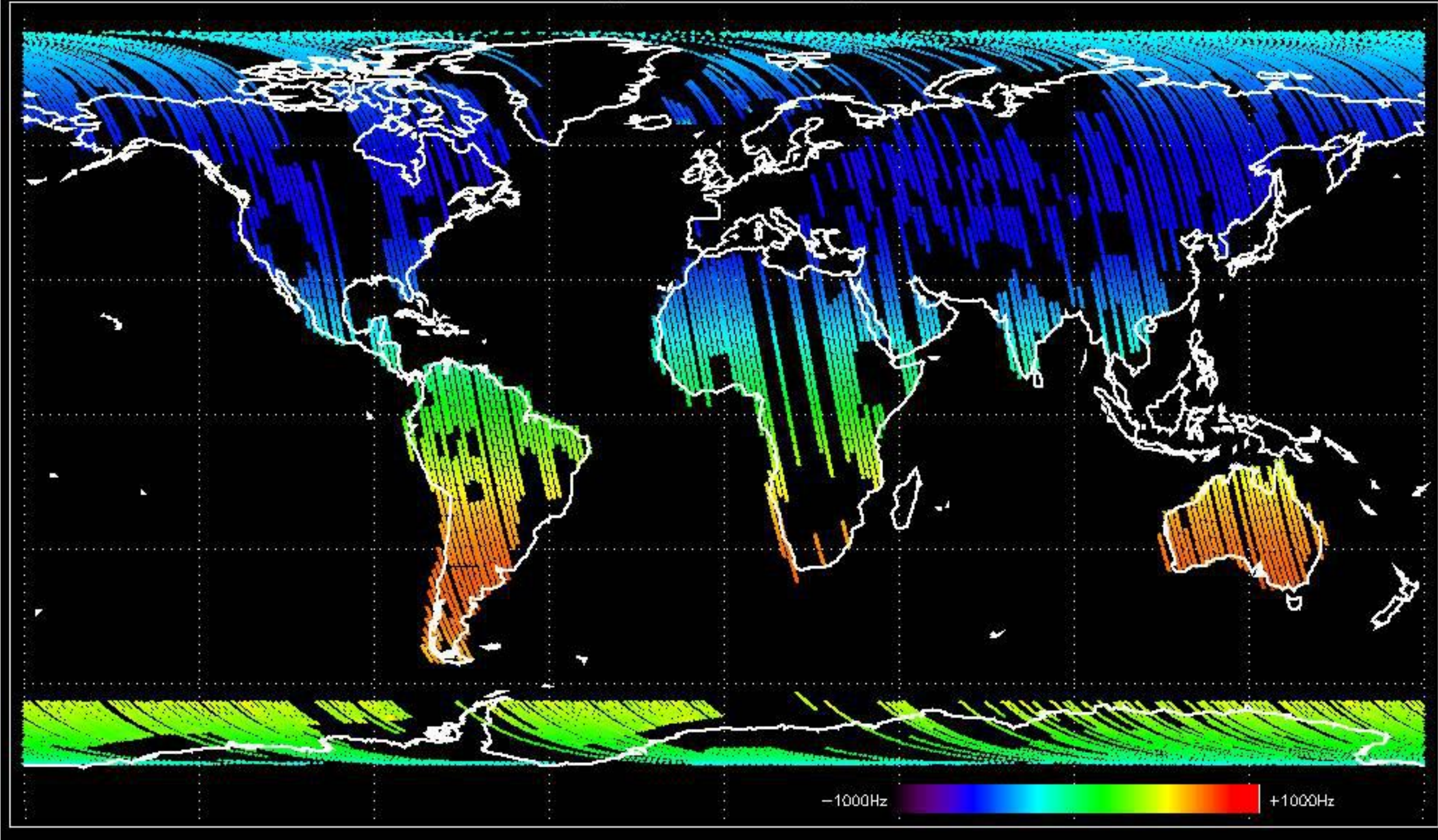


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



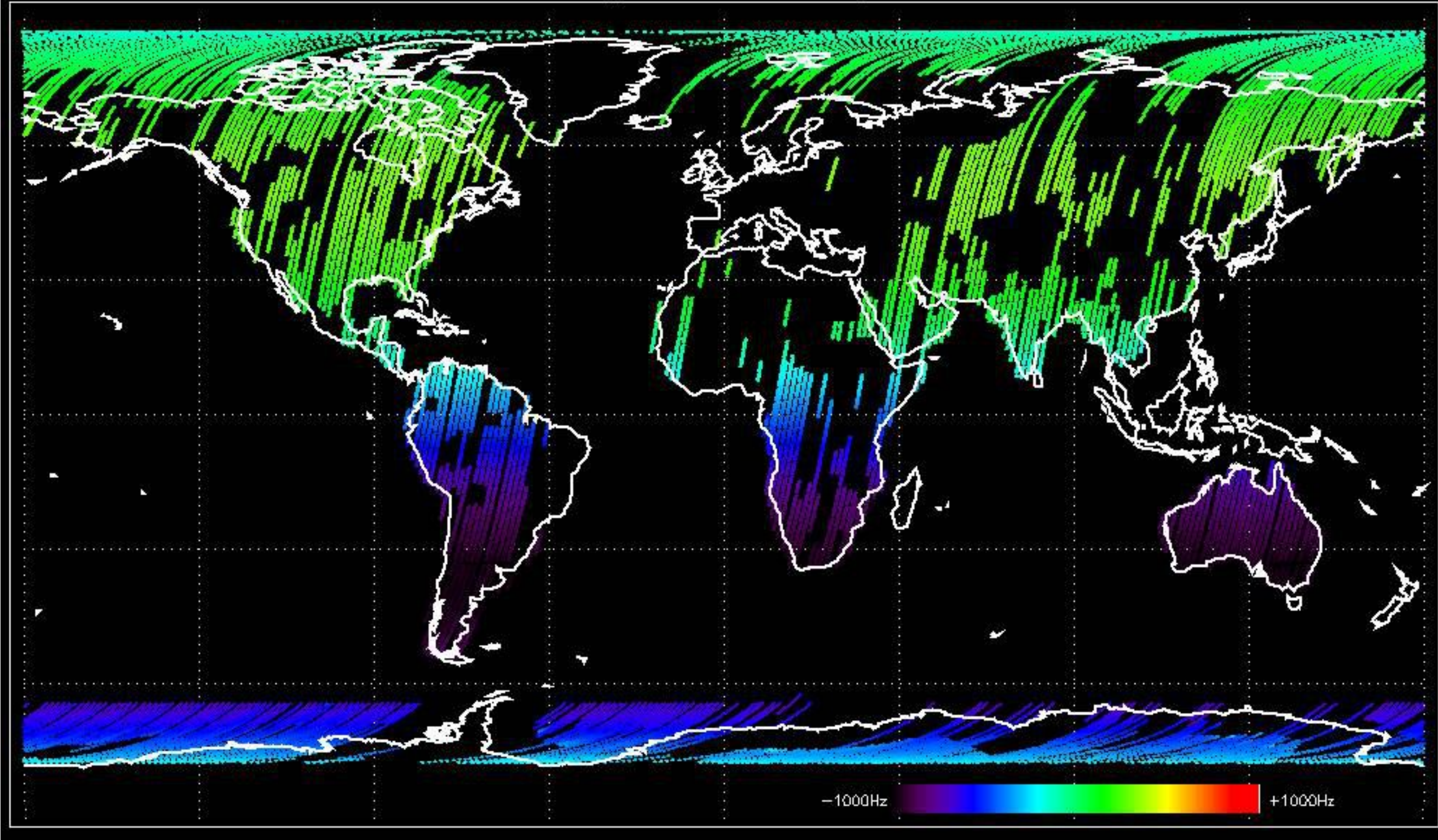


Doppler 'GM1' 'SS1' ascending



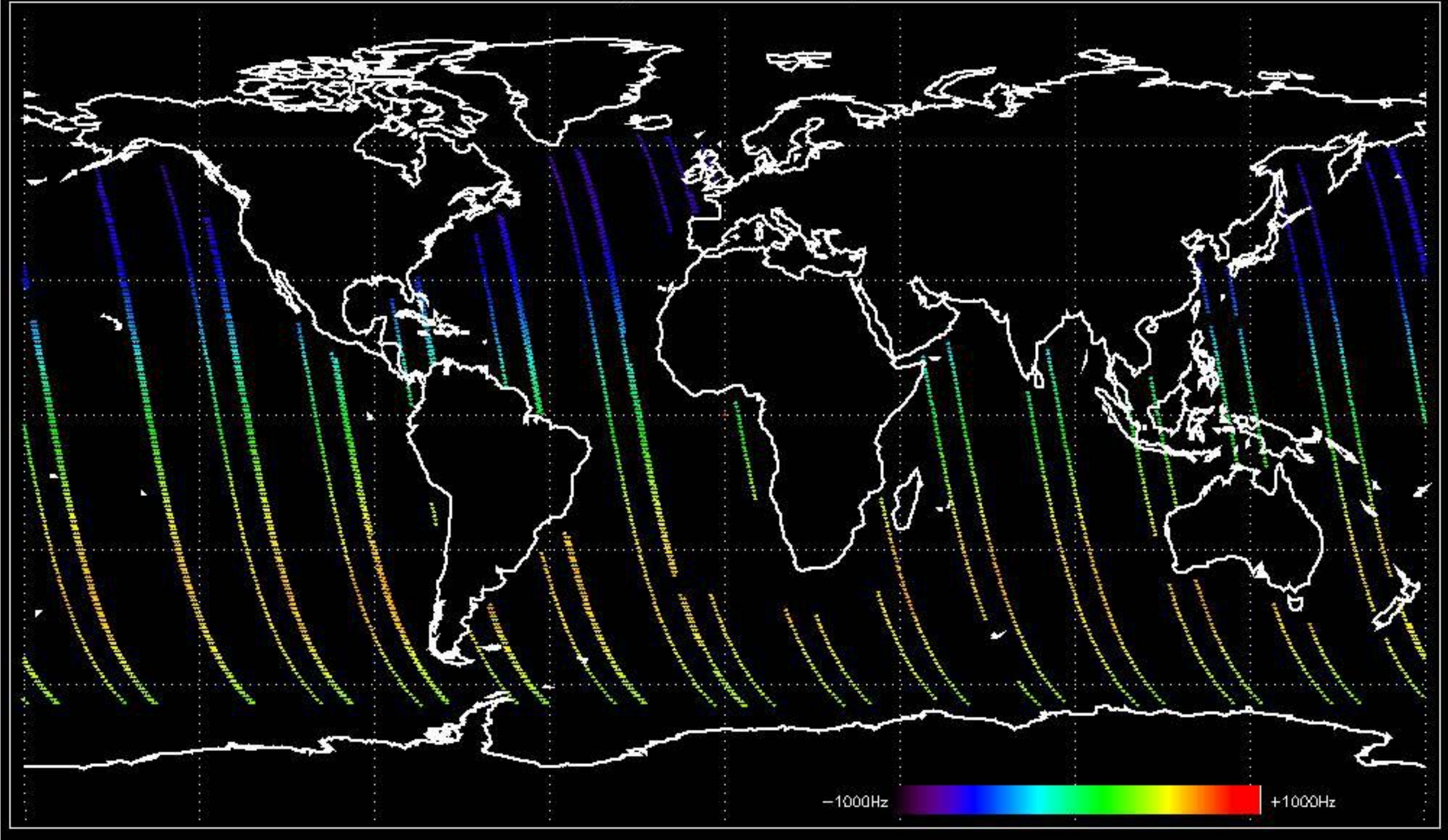


Doppler 'GM1' 'SS1' descending



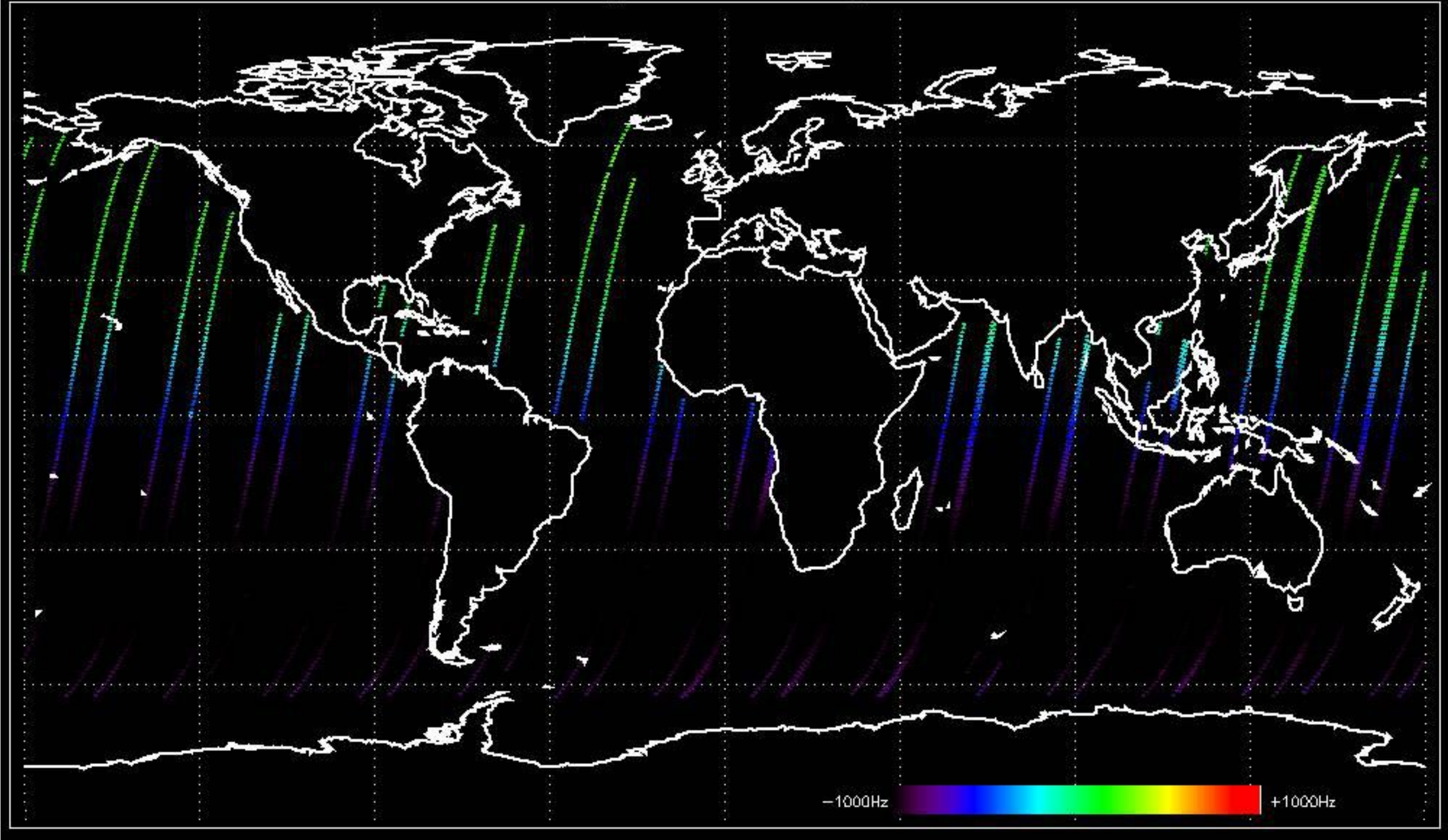


Doppler 'WVS' 'IS2' ascending

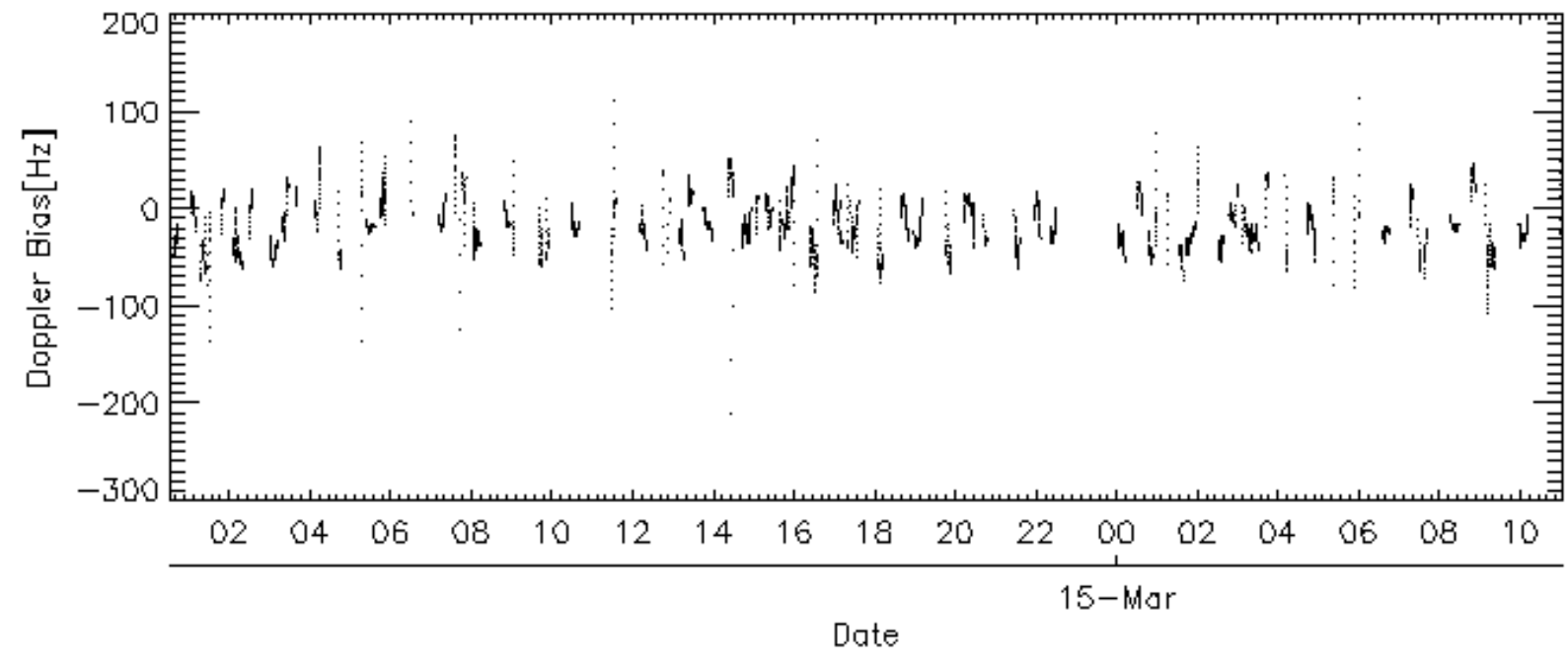
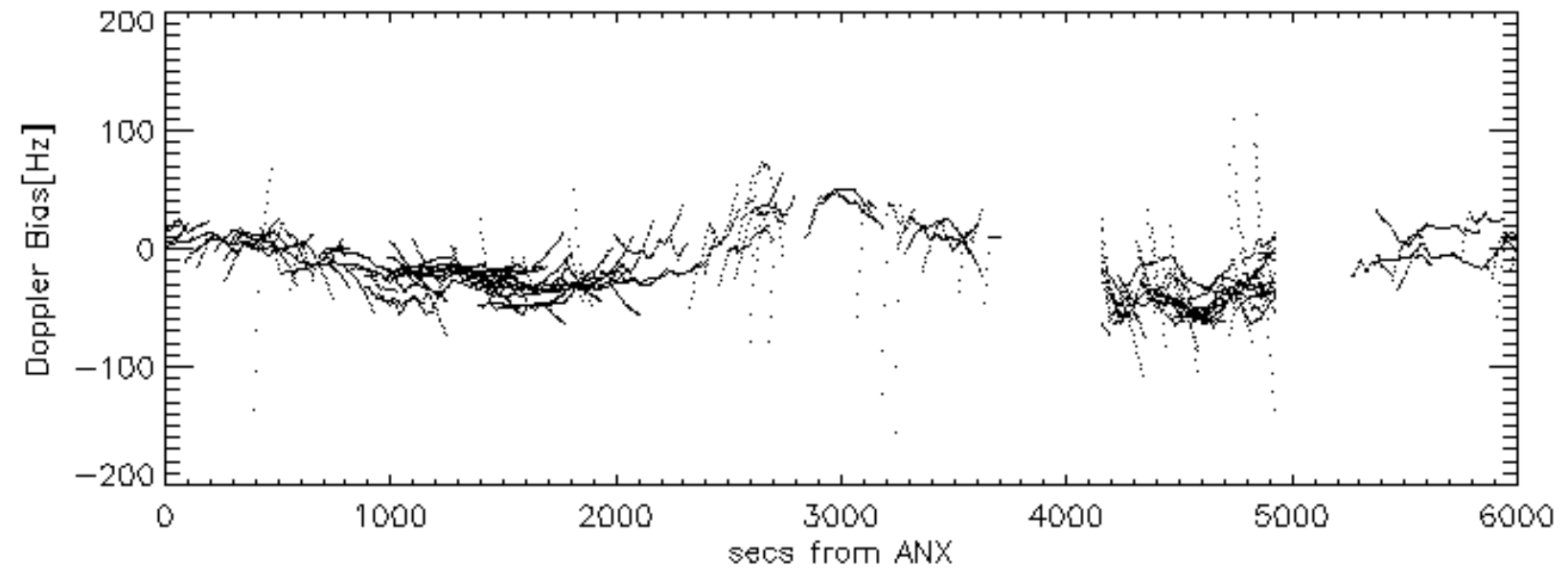
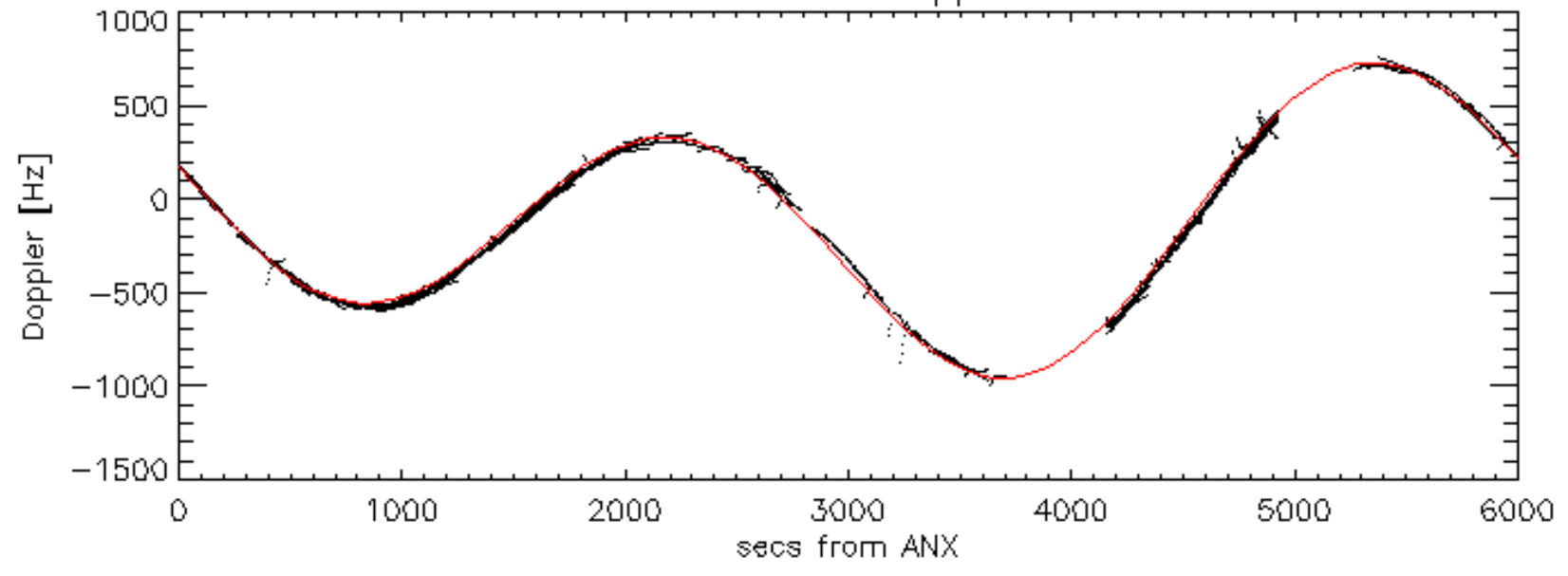


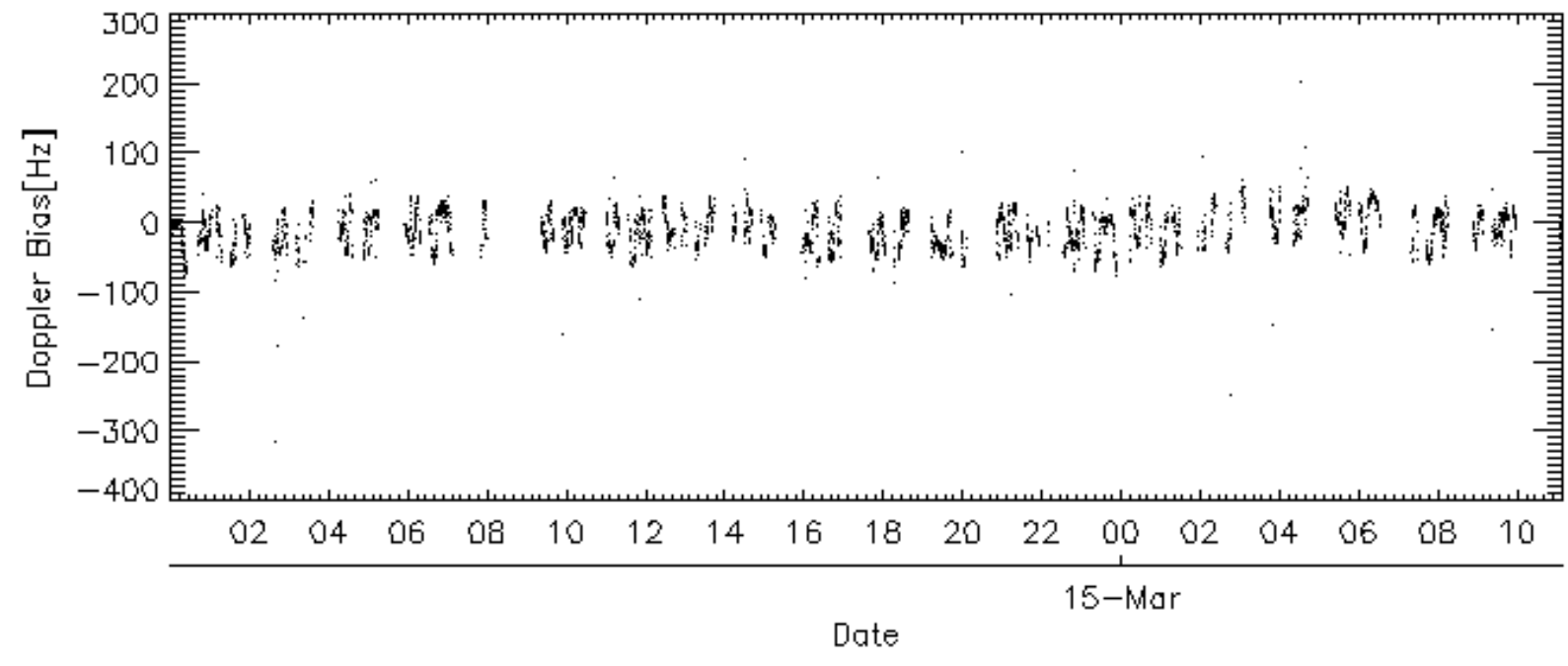
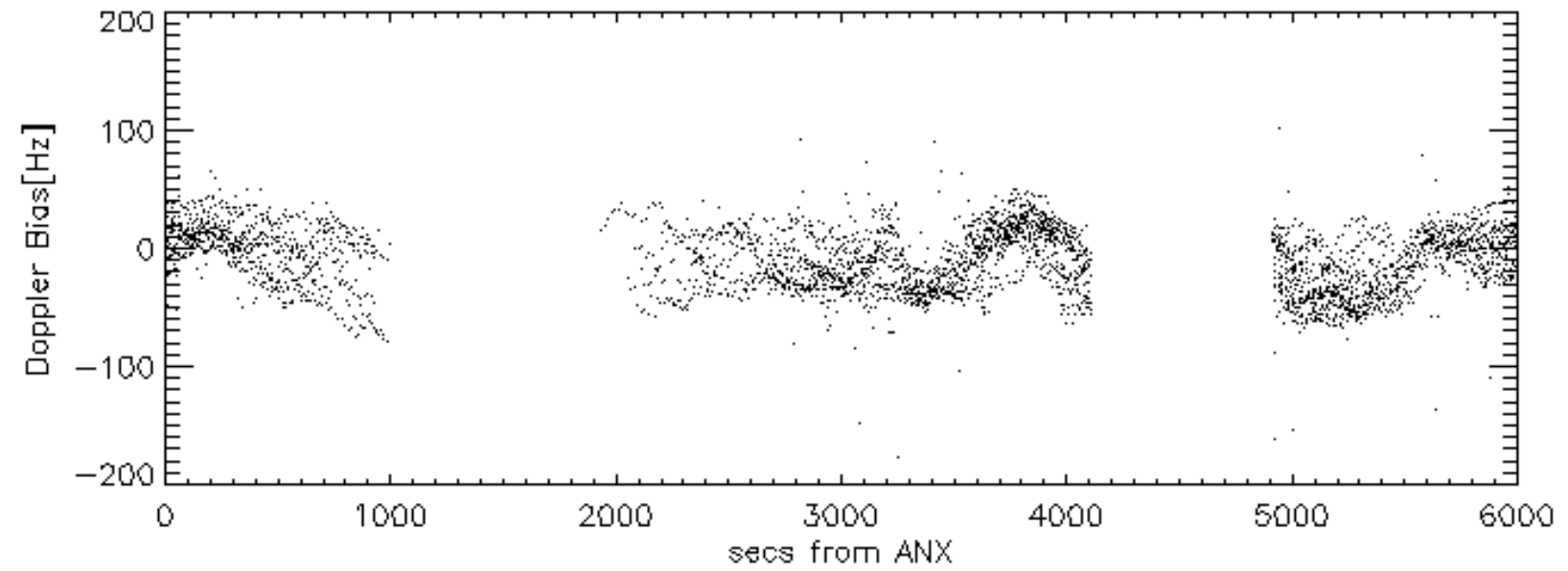
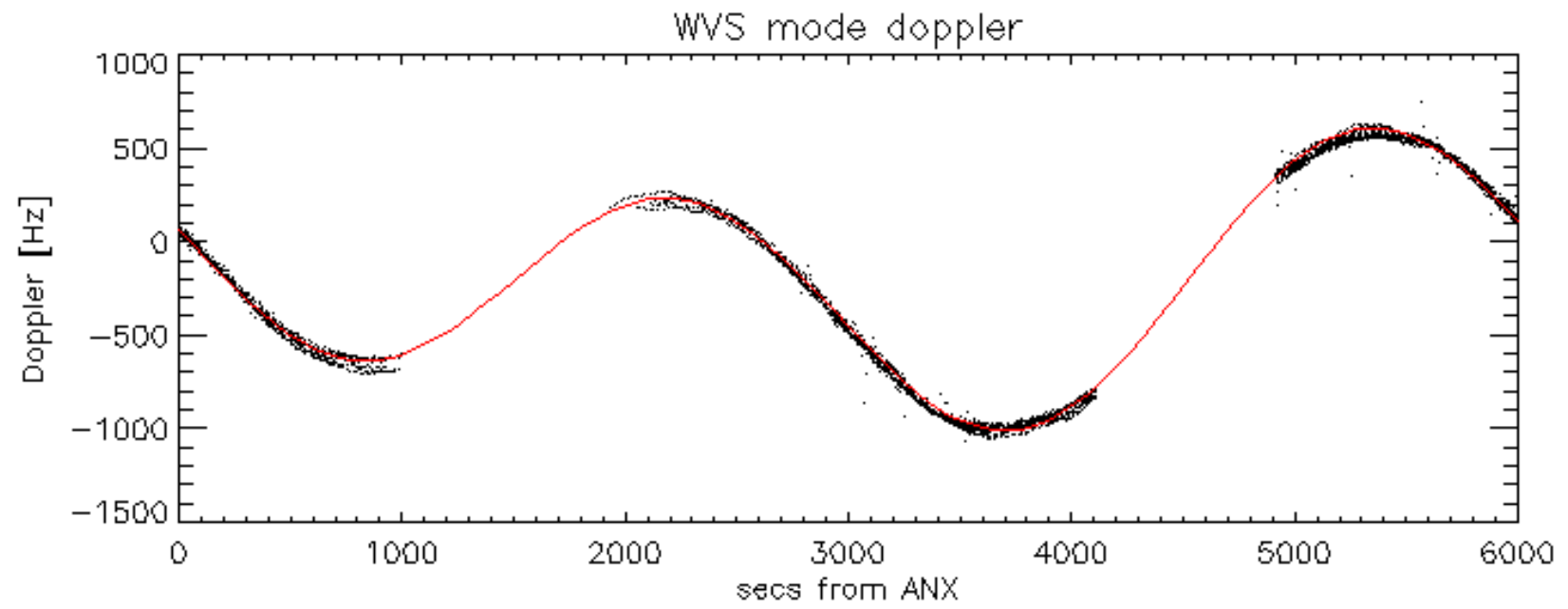


Doppler 'WVS' 'IS2' descending



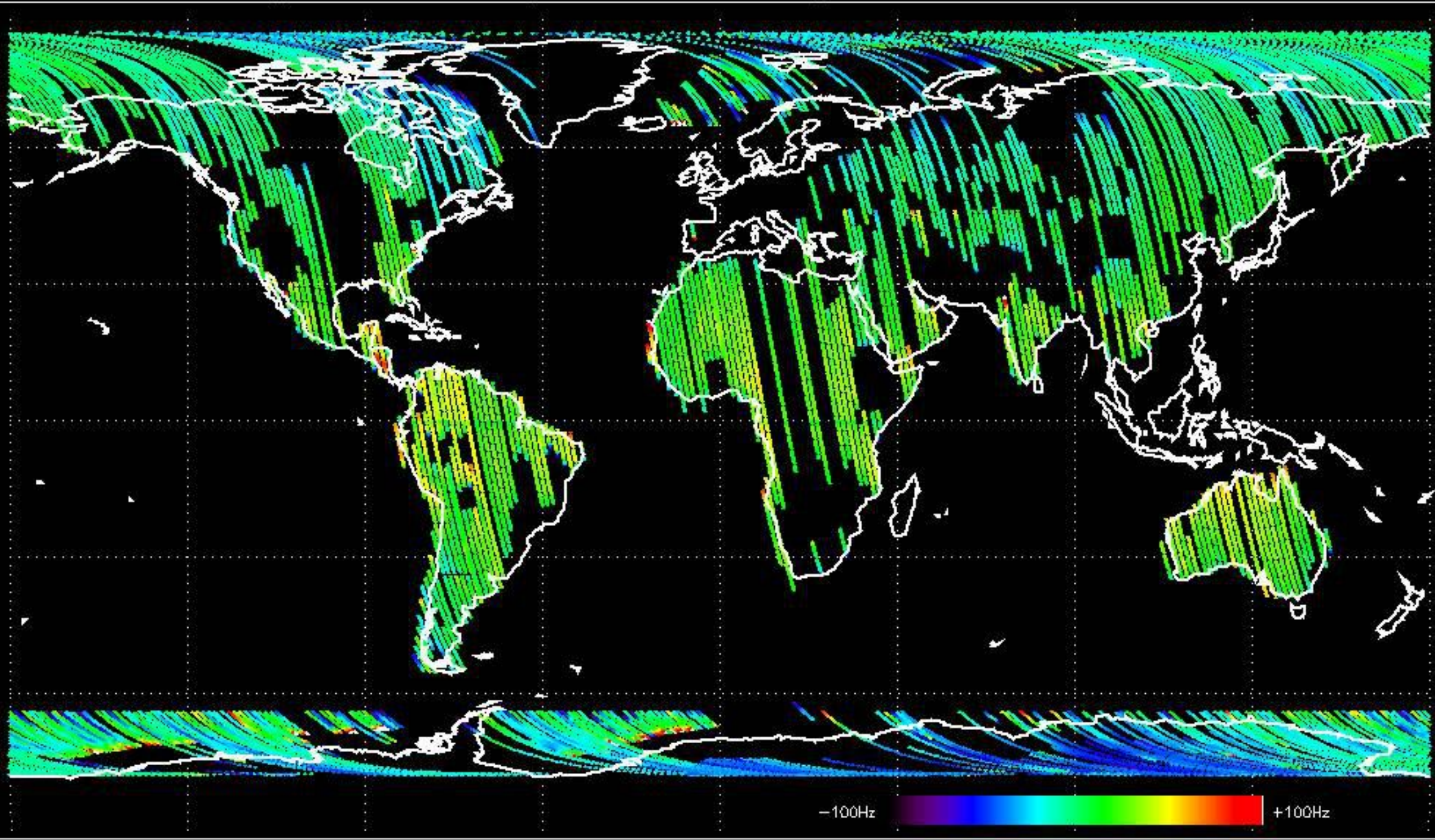
GM1 mode doppler





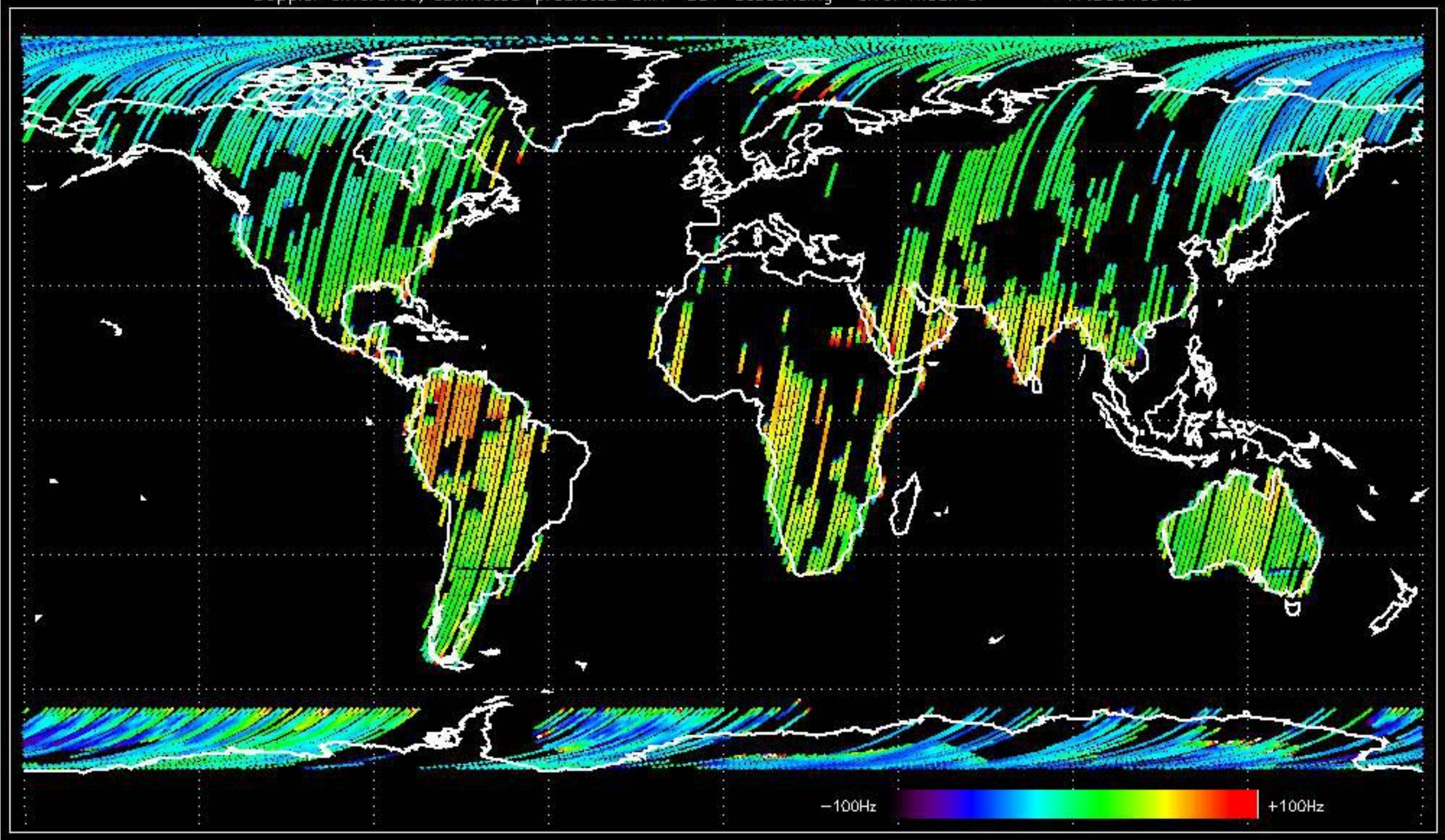


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.949618 Hz



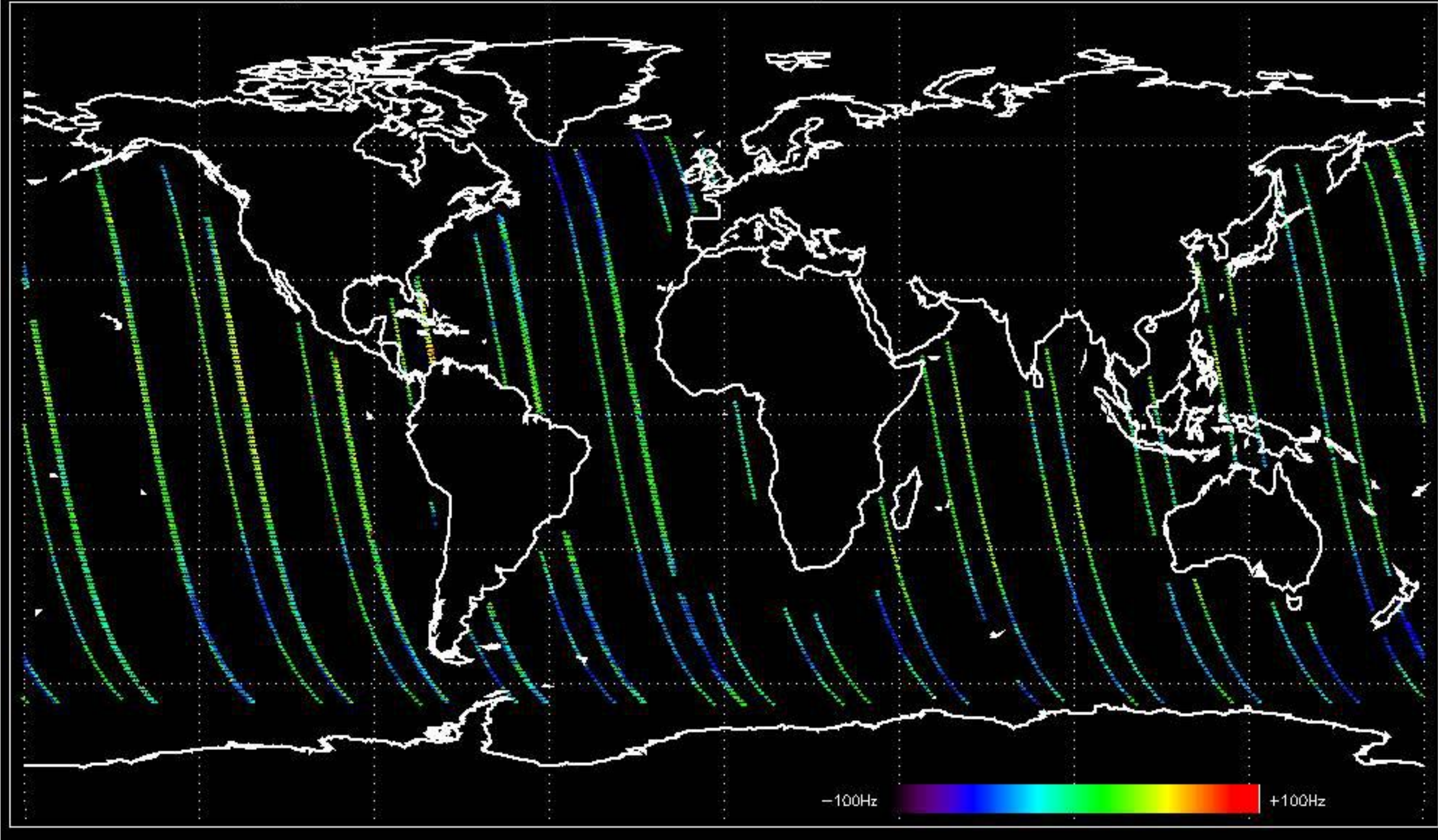


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.360463 Hz



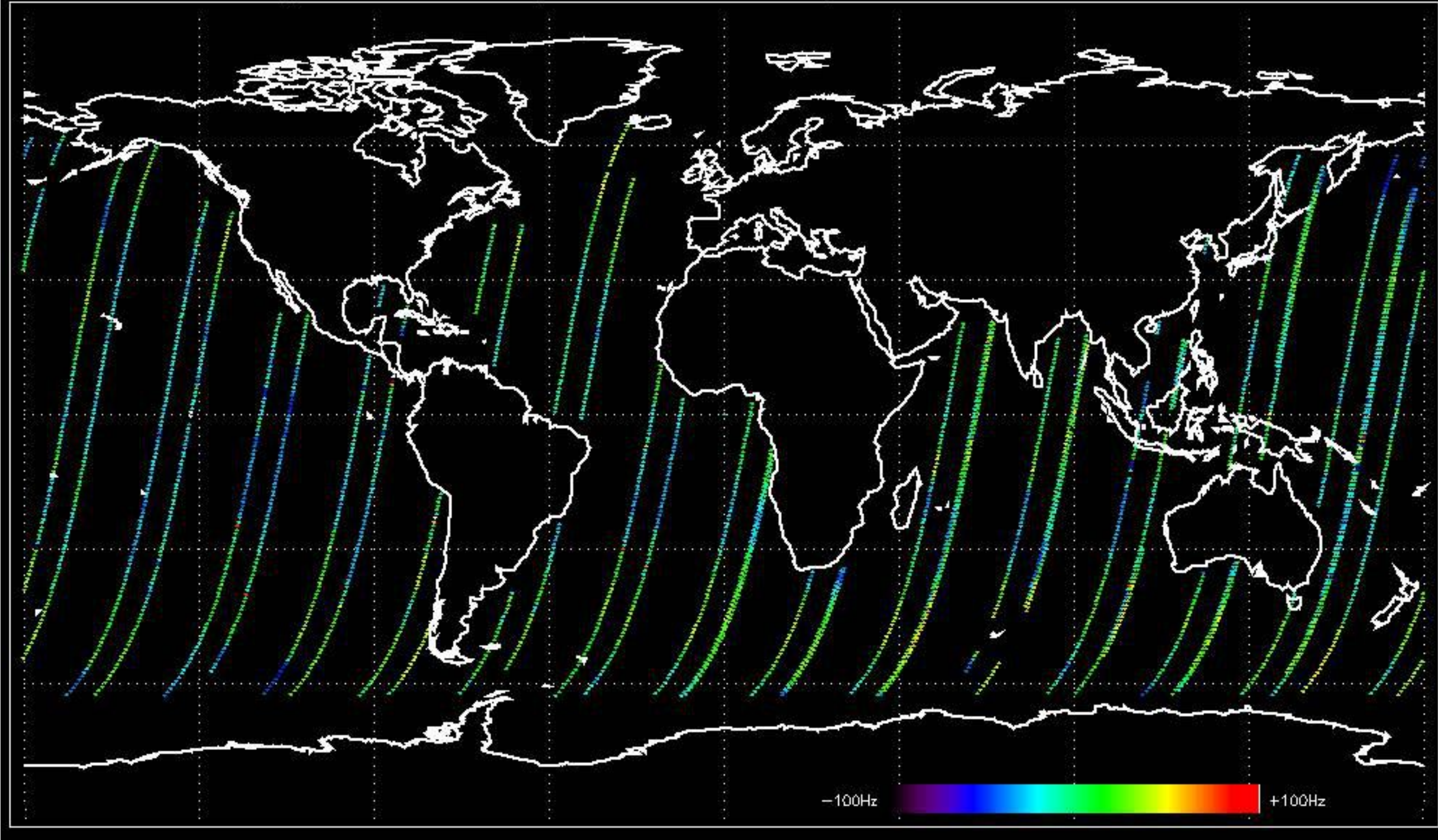


Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -10.840231 Hz





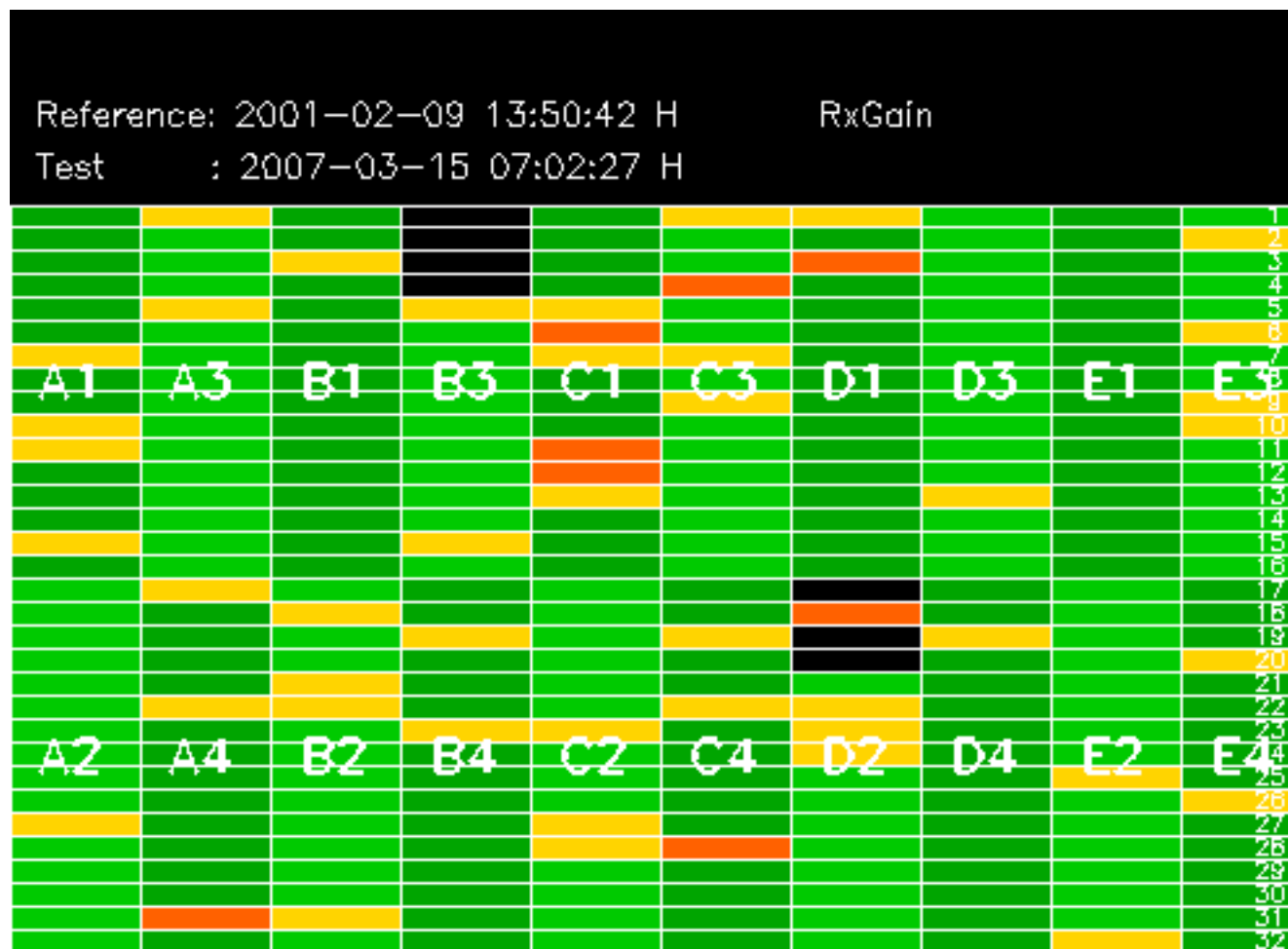
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -10.636836 Hz



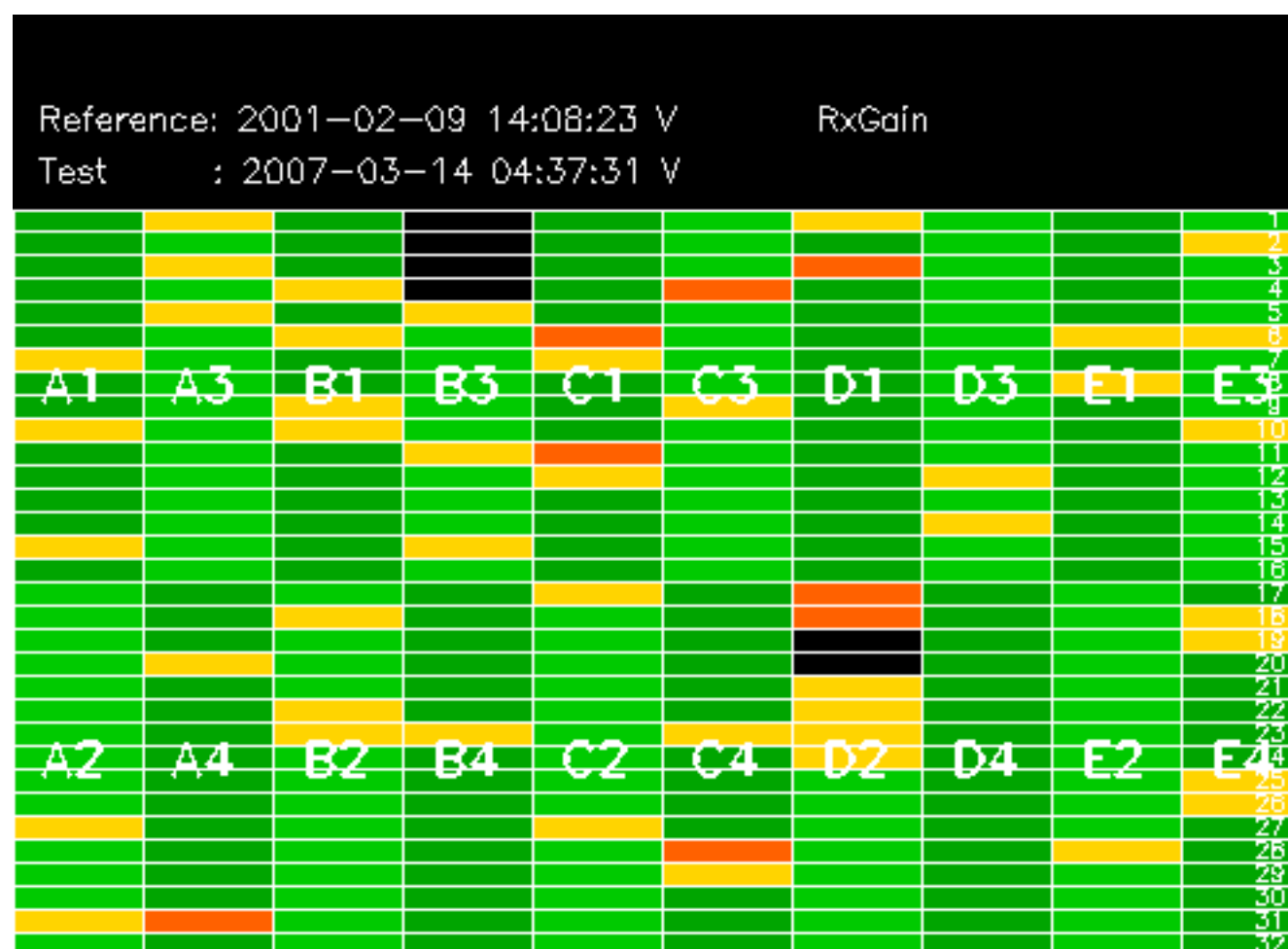
No anomalies observed on available MS products:



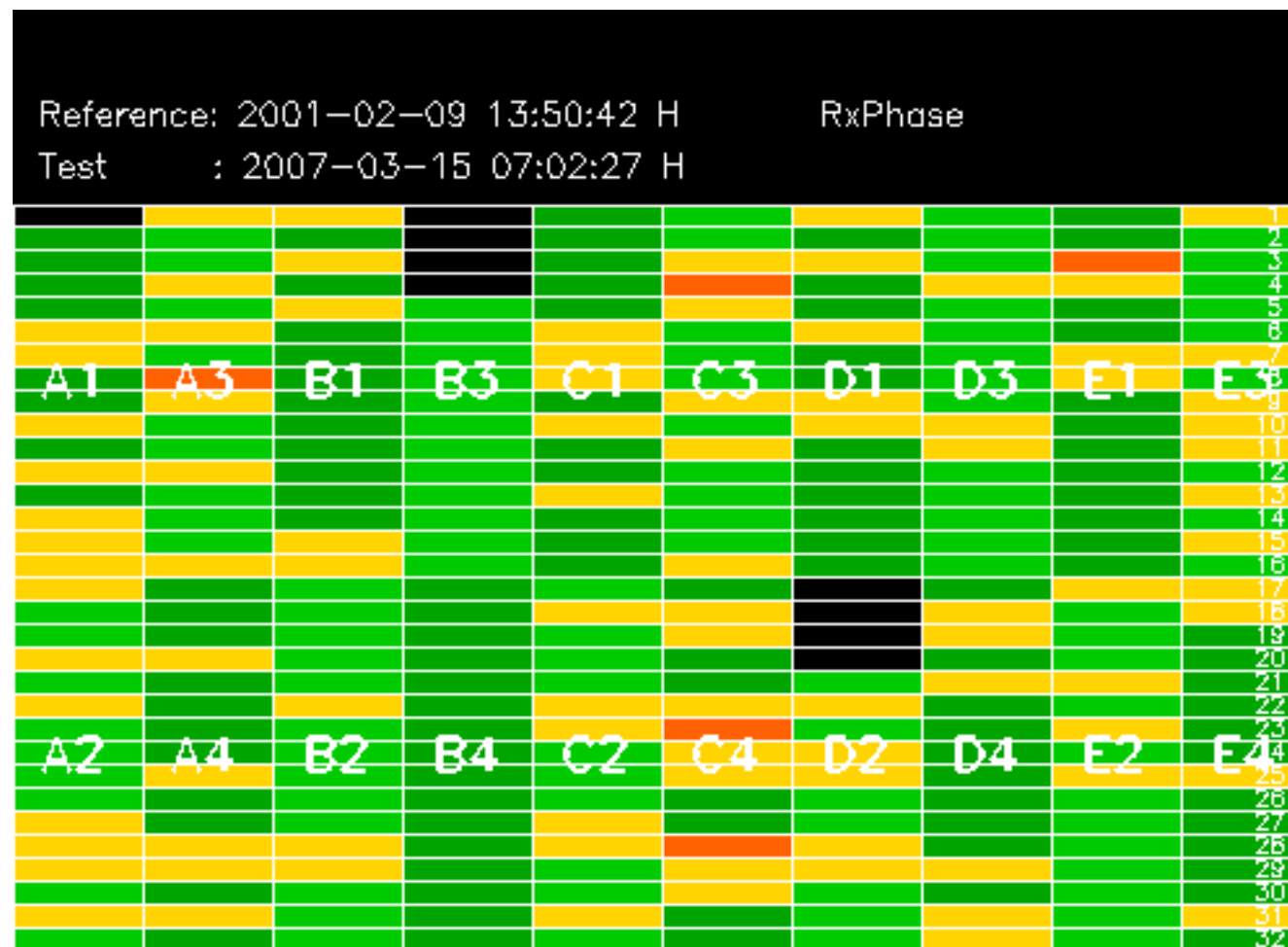
No anomalies observed.









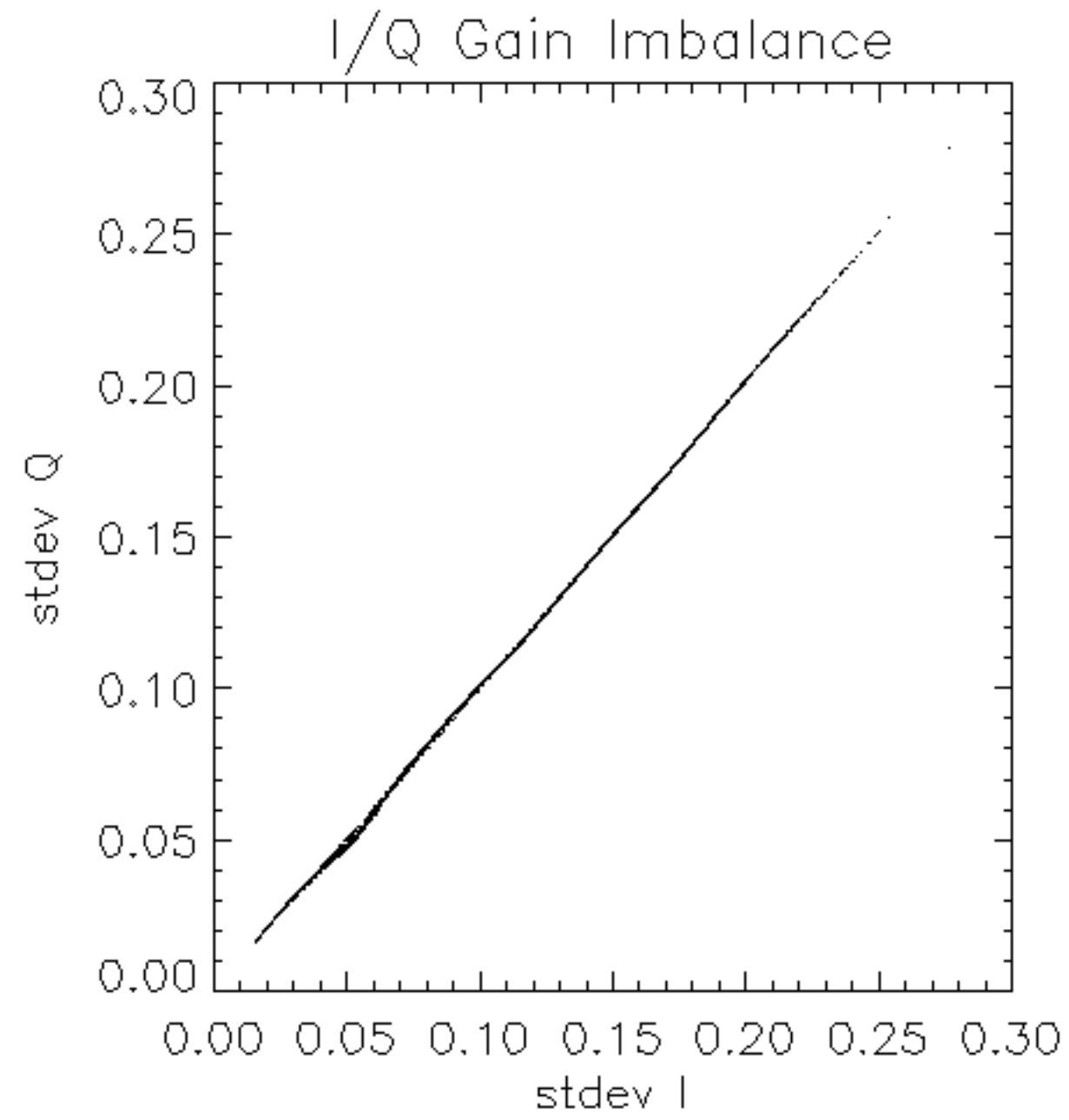


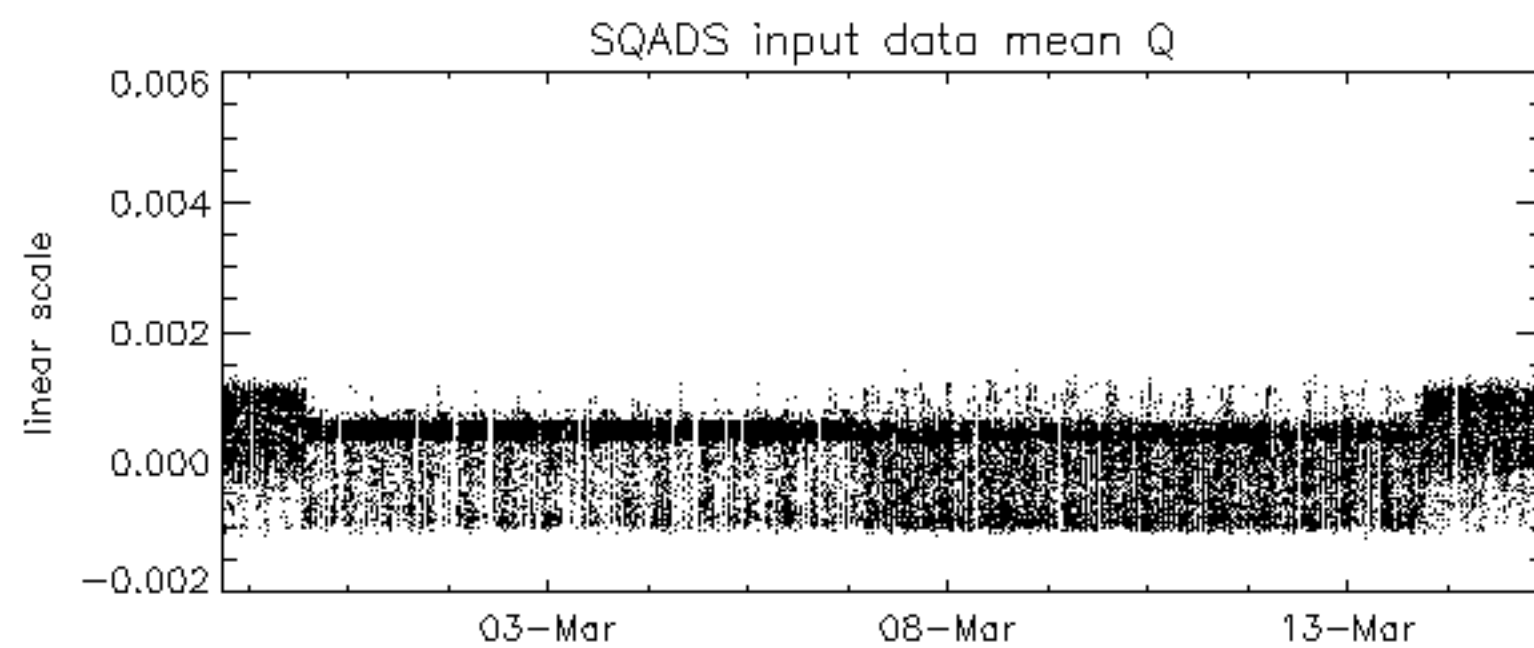
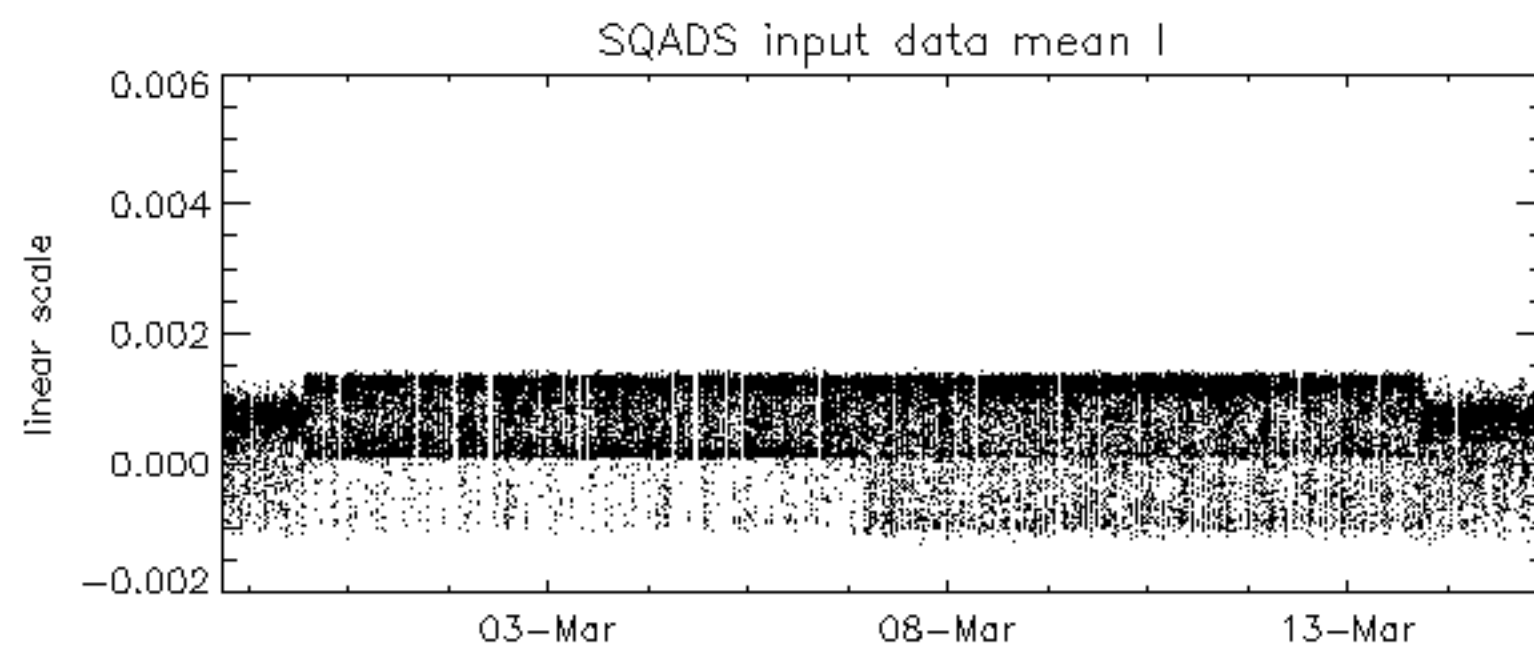
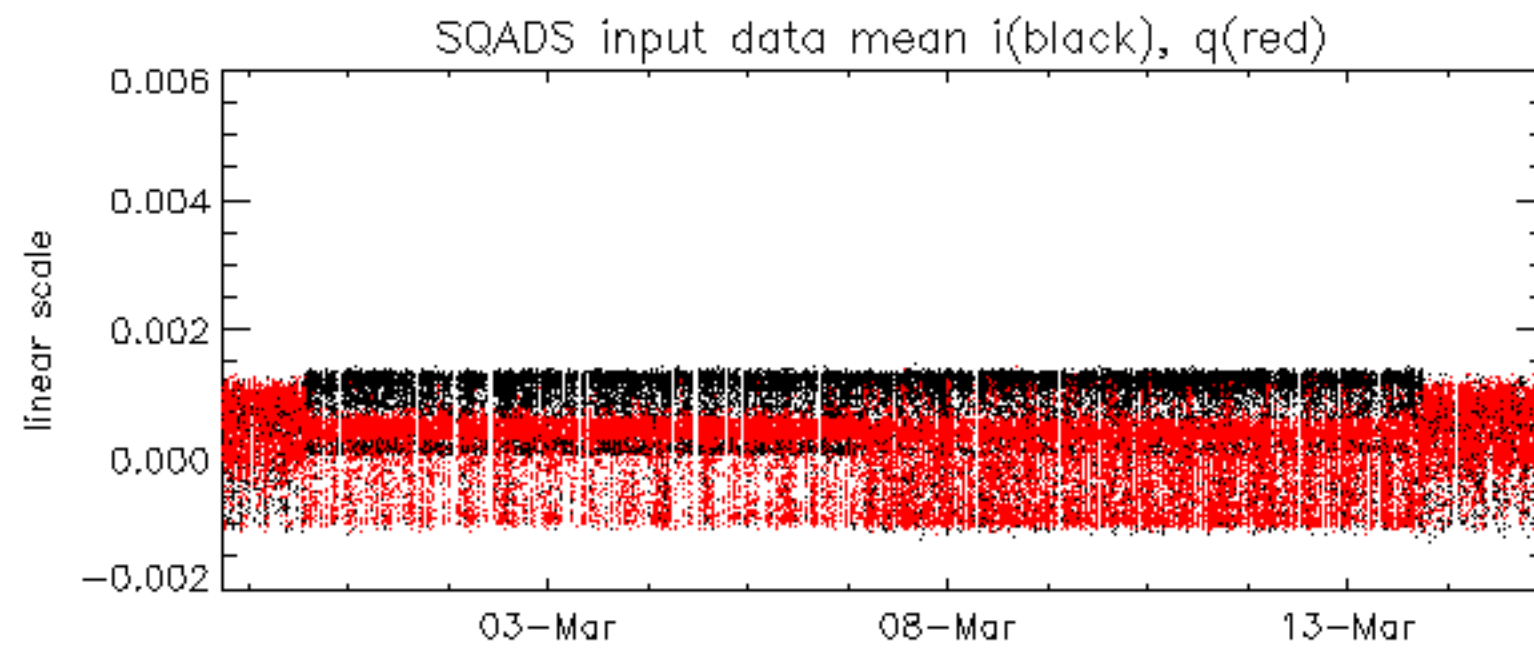


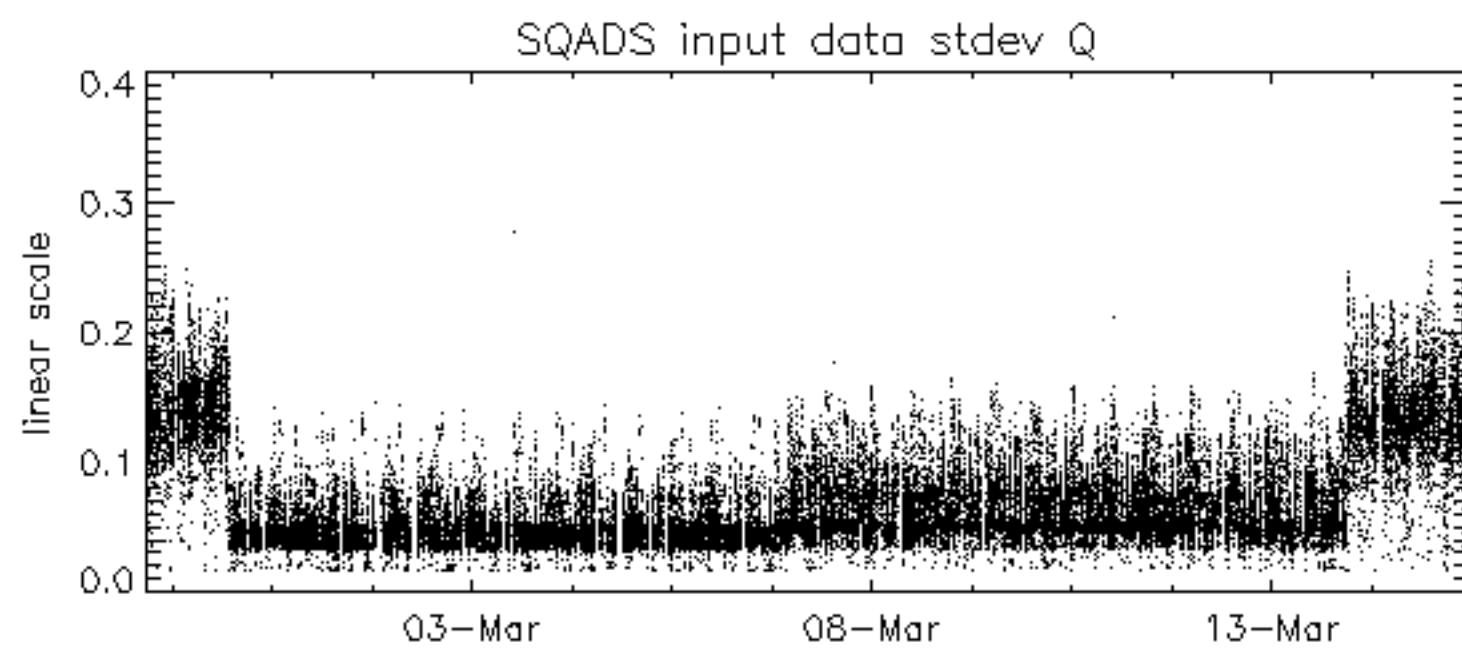
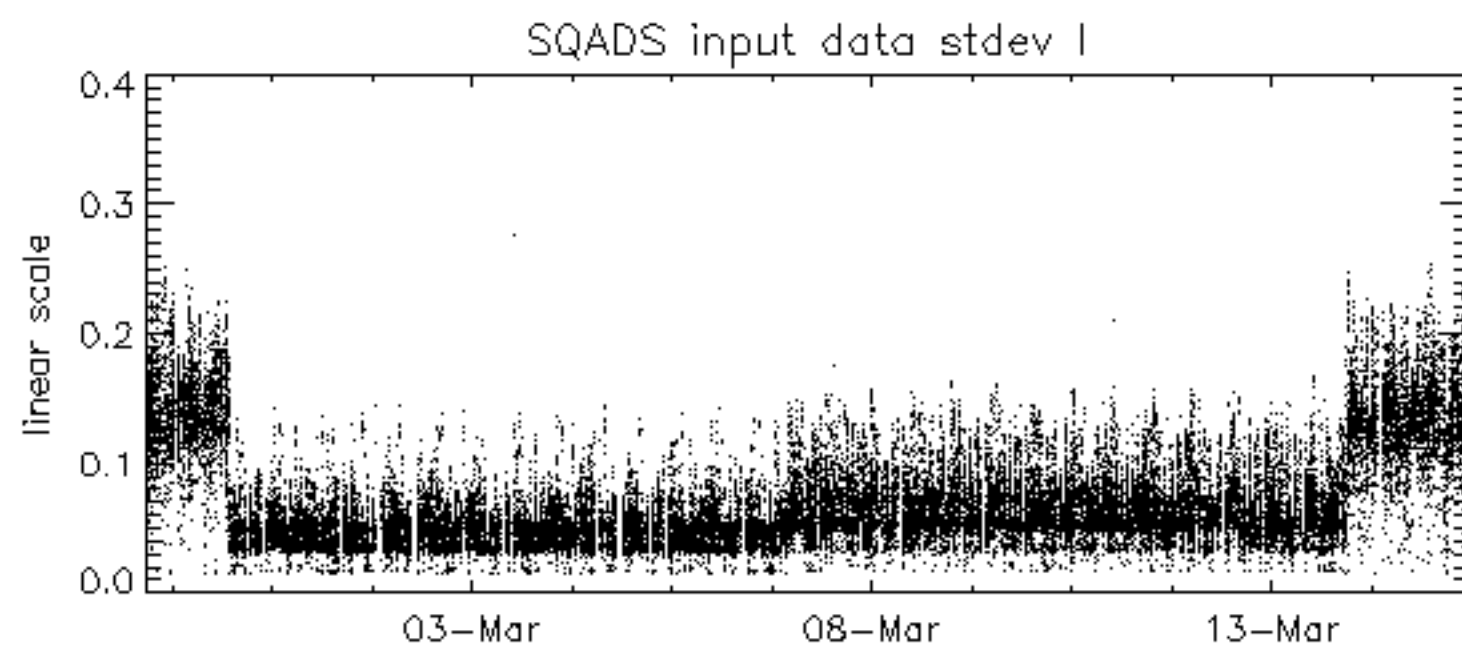
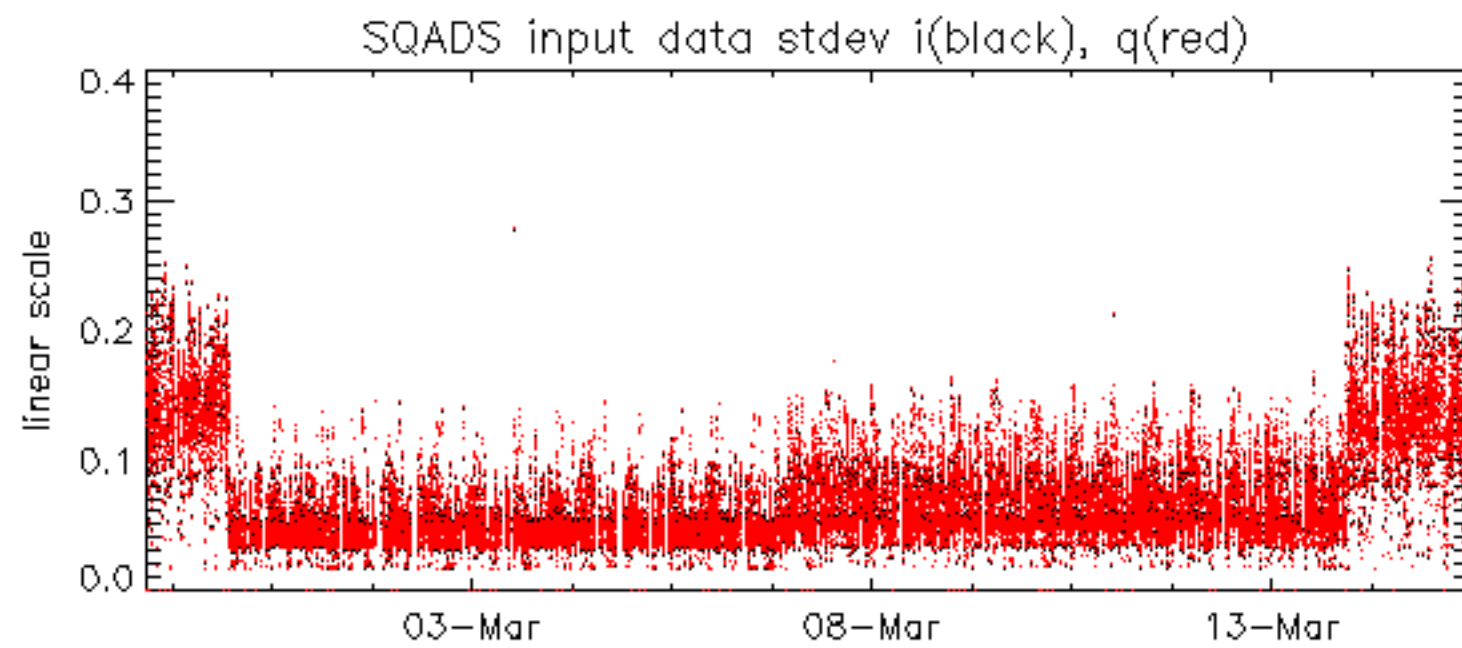






















Summary of analysis for the last 3 days 2007031[345]

The assumptions is taken that the SQADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_GM1_1PNPDK20070313_145235_000003622056_00211_26317_5845.N1	0	6
ASA_GM1_1PNPDK20070314_201257_000009242056_00228_26334_0828.N1	0	22
ASA_WSM_1PNPDE20070313_112859_000001282056_00209_26315_0052.N1	0	47
ASA_WSM_1PNPDE20070313_140917_000000852056_00211_26317_0134.N1	0	15
ASA_WSM_1PNPDE20070313_145059_000000852056_00211_26317_0127.N1	0	31
ASA_WSM_1PNPDE20070313_190809_000001652056_00214_26320_0261.N1	0	70
ASA_WSM_1PNPDE20070314_141836_000000852056_00225_26331_1665.N1	0	37
ASA_WSM_1PNPDE20070314_153245_000000612056_00226_26332_1616.N1	3	801
ASA_WSM_1PNPDK20070315_094718_000000862056_00237_26343_1332.N1	0	29
ASA_APM_1PNPDE20070313_154612_000000412056_00212_26318_0150.N1	12	0
ASA_APM_1PNPDE20070315_070600_000002082056_00235_26341_2835.N1	12	0





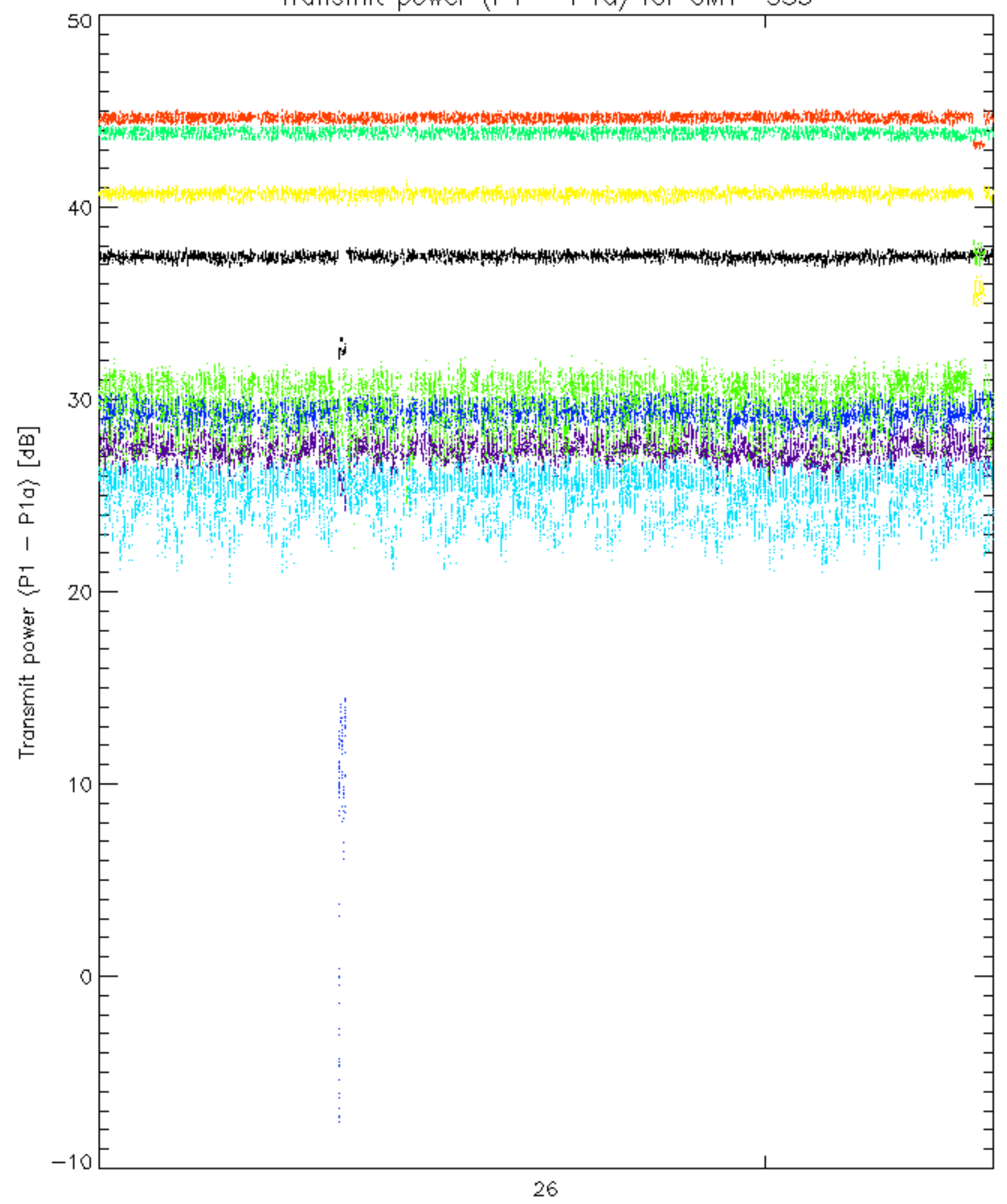






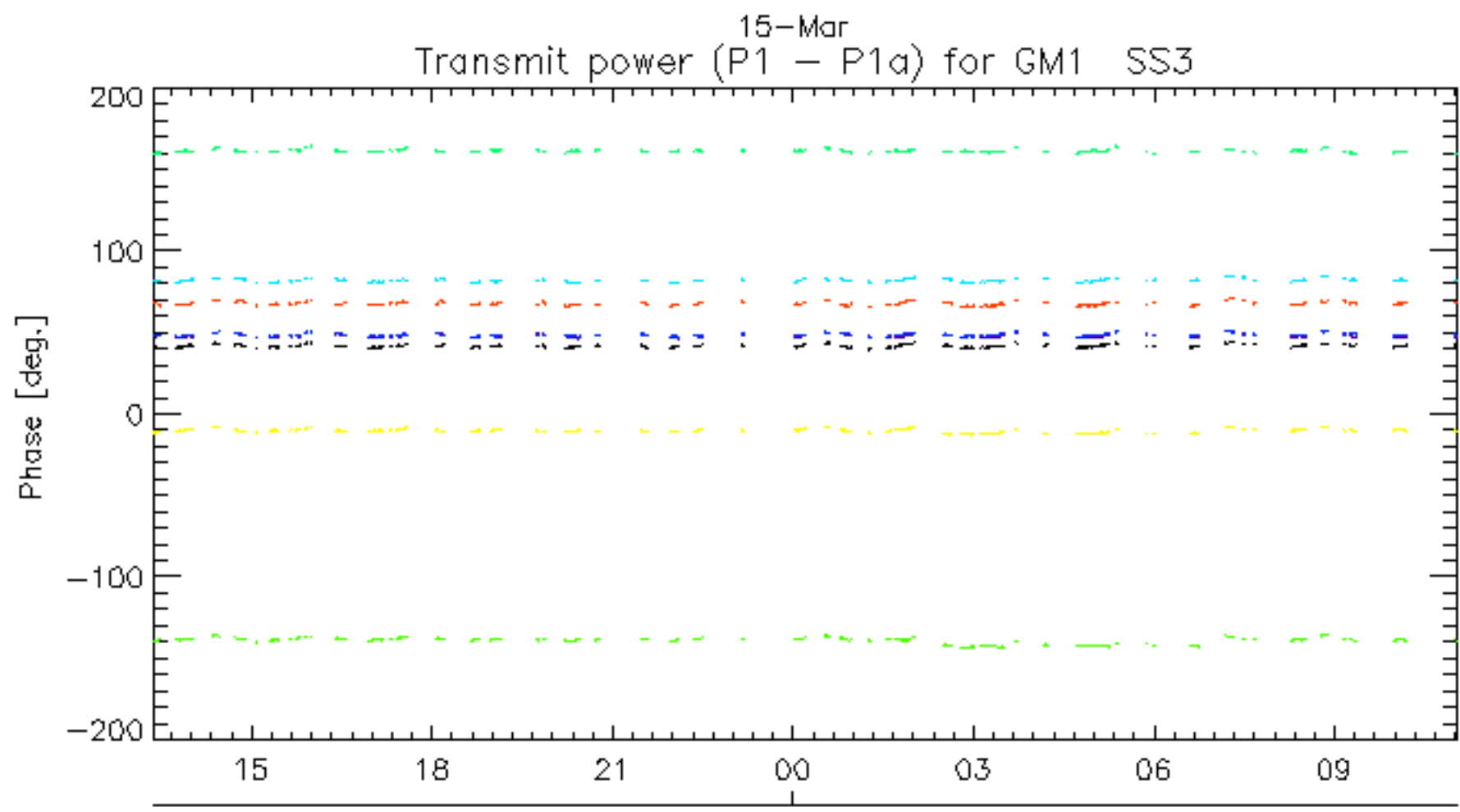
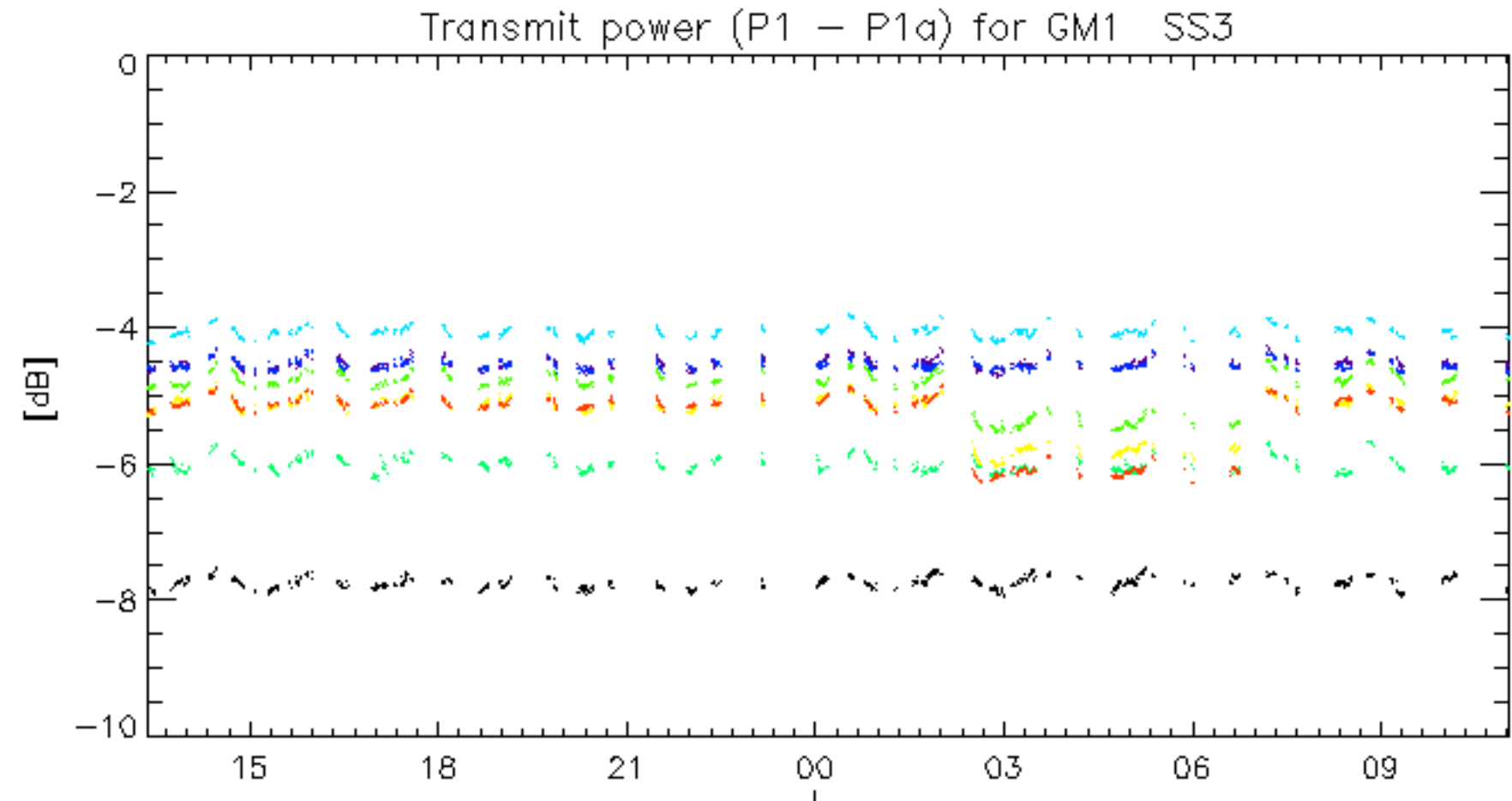


Transmit power (P1 - P1a) for GM1 SS3



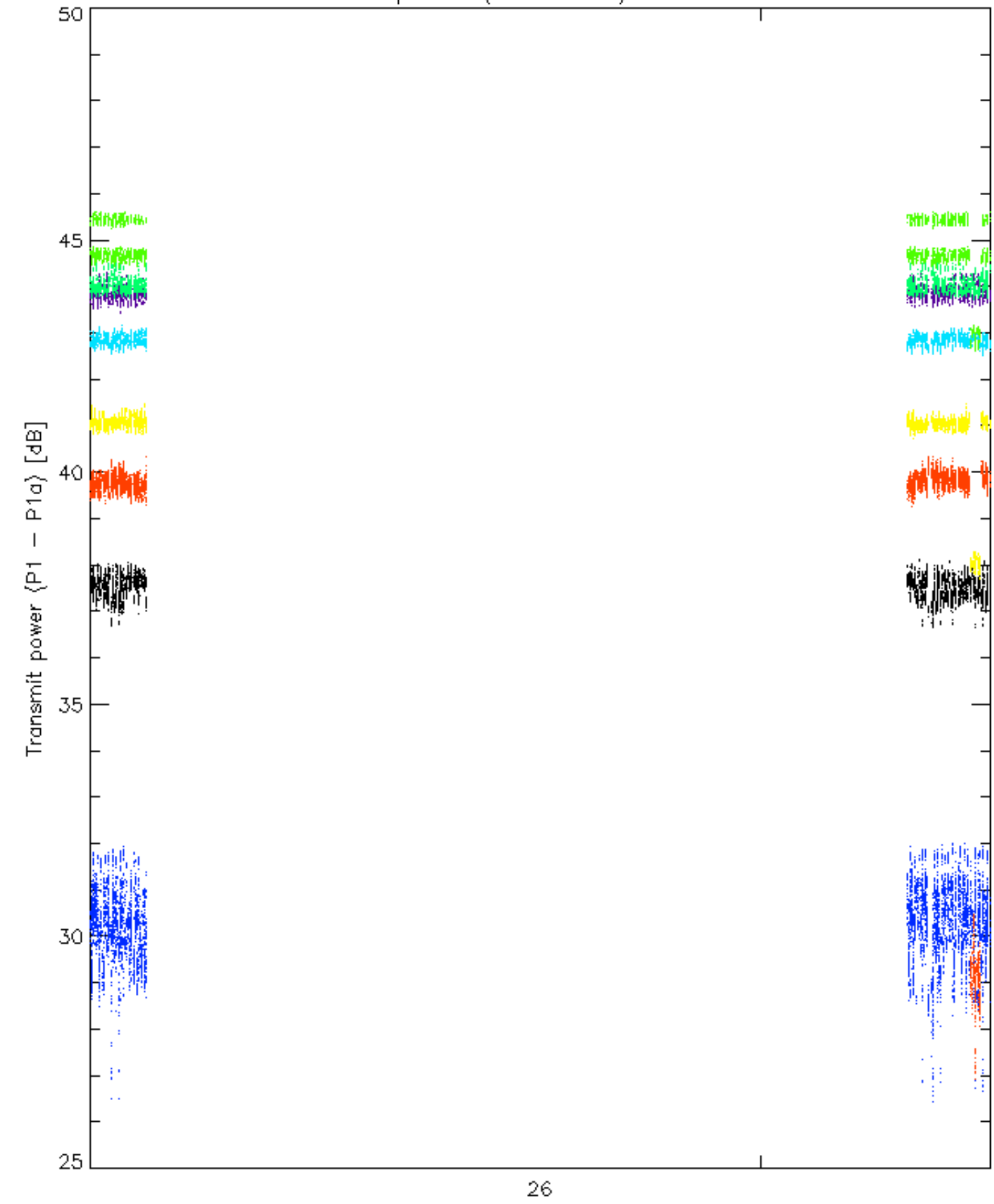
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



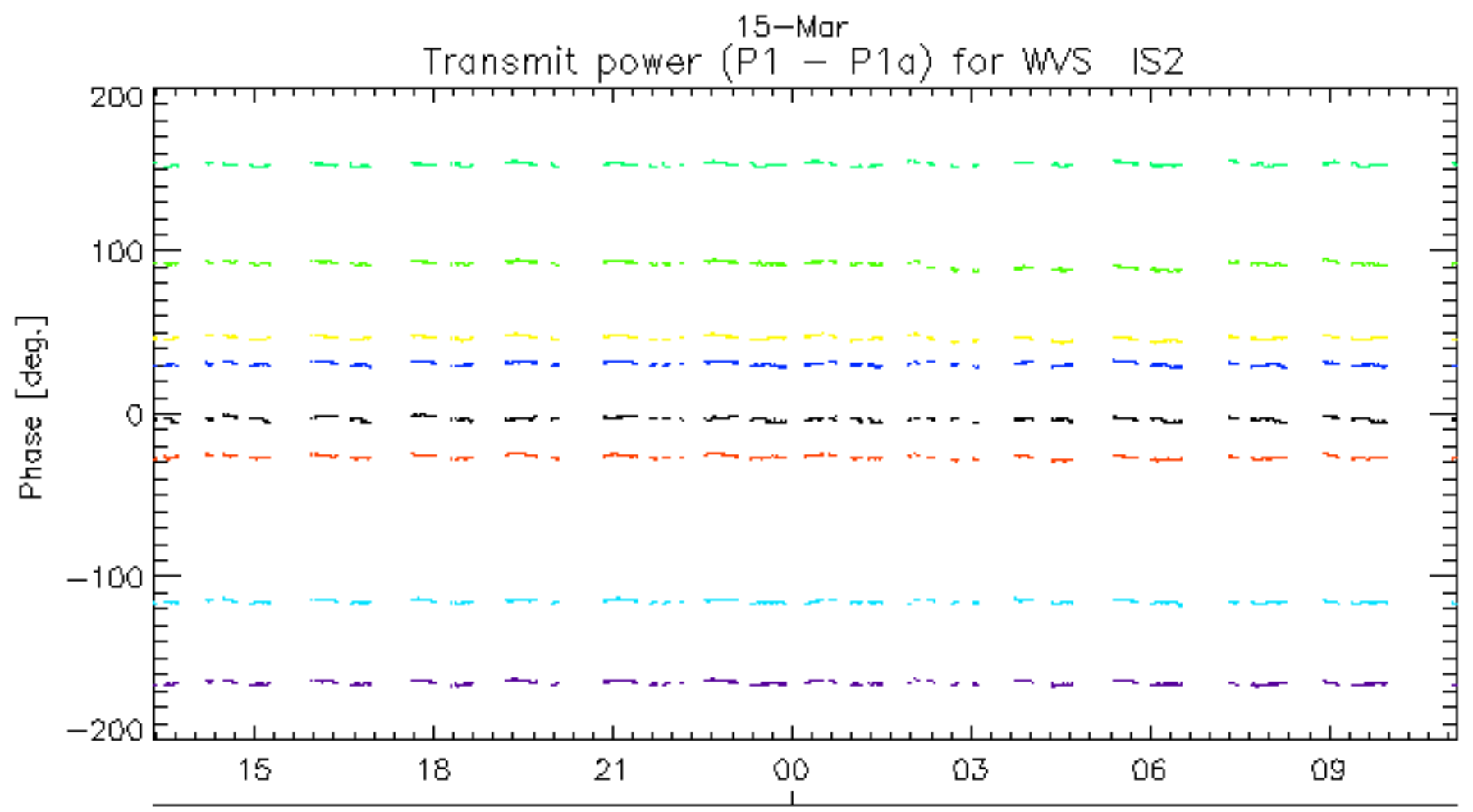
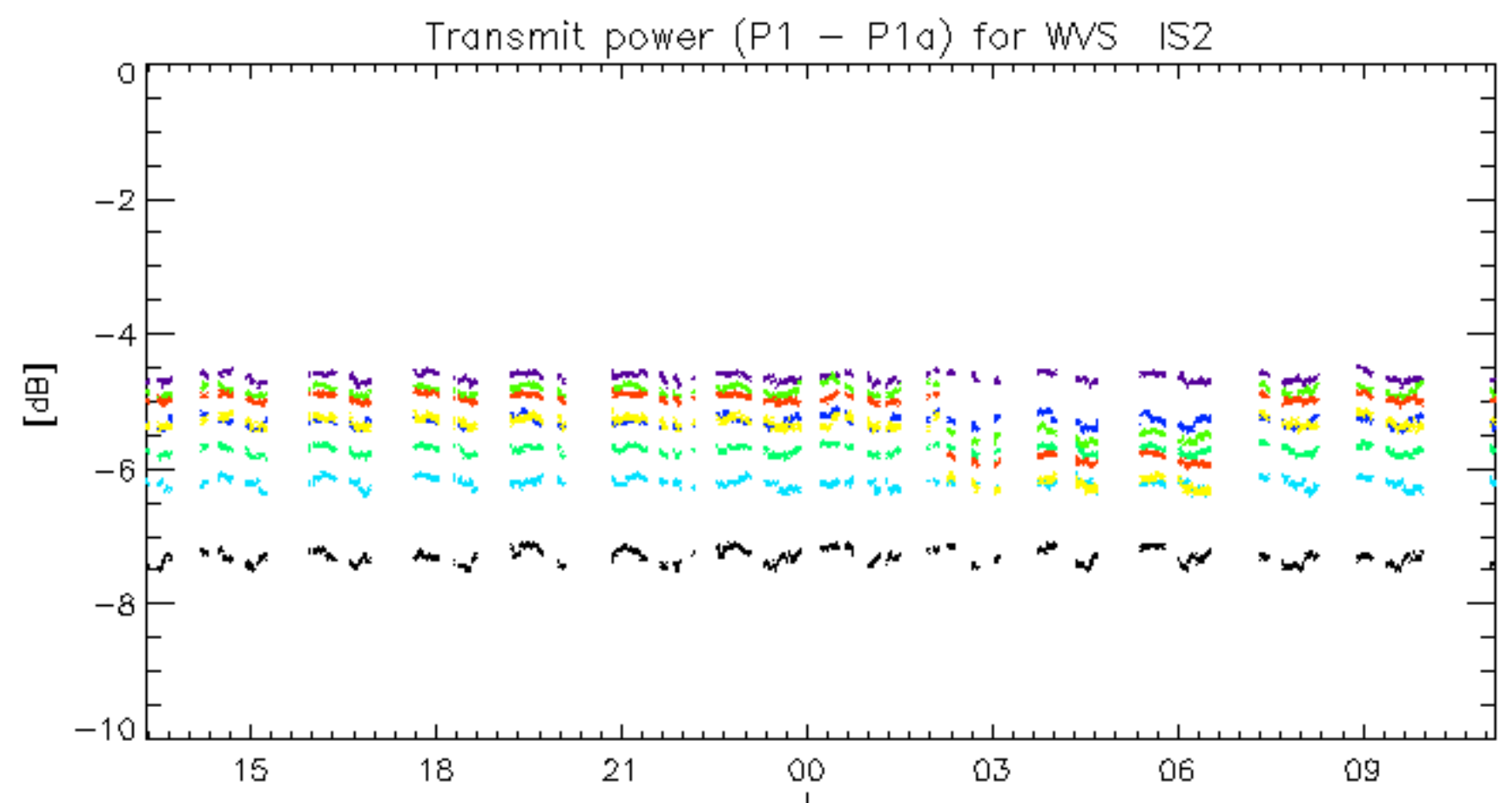


rows: 3 7 11 15 19 22 26 30

Transmit power (P1 - P1a) for WVS IS2



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



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

No unavailabilities during the reported period.