

# PRELIMINARY REPORT OF 070419

last update on Thu Apr 19 18:15:37 GMT 2007

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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 2007-04-18 00:00:00 to 2007-04-19 18:15:37

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	44	61	9	1	25
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	44	61	9	1	25
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	44	61	9	1	25
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	44	61	9	1	25

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	41	51	26	10	55
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	41	51	26	10	55
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	41	51	26	10	55
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	41	51	26	10	55

## 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	20070418 043731
H	20070419 040554

### 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	-15.059688	0.151502	-0.032896
7	P1a	-17.541405	0.120181	-0.061068
11	P1a	-17.390808	0.324729	-0.709674
15	P1a	-12.955249	0.103453	-0.434193
19	P1a	-15.291793	0.067674	-0.415292
22	P1a	-15.870145	0.412398	-0.673210
26	P1a	-15.085659	0.190086	0.513369
30	P1a	-17.613575	0.284694	-0.743945

**P1t Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.761759	0.010833	-0.035600
7	P1	-3.146333	0.008950	-0.015969
11	P1	-4.207837	0.012405	-0.026811
15	P1	-6.389356	0.018765	-0.132588
19	P1	-3.790289	0.009731	0.051001
22	P1	-4.744963	0.009157	-0.054981
26	P1	-3.930311	0.018441	0.107205
30	P1	-5.970697	0.009238	0.031107

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.662432	0.090356	-0.080627
7	P2	-21.576836	0.086317	0.113153
11	P2	-15.384991	0.112508	0.204370
15	P2	-7.125214	0.087528	-0.040311
19	P2	-9.120663	0.078151	0.032300
22	P2	-18.090311	0.075627	-0.010188
26	P2	-16.610123	0.078977	-0.053096
30	P2	-19.286480	0.081470	0.007162

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.245213	0.005272	-0.023307
7	P3	-8.245213	0.005272	-0.023307
11	P3	-8.245213	0.005272	-0.023307
15	P3	-8.245213	0.005272	-0.023307
19	P3	-8.245213	0.005272	-0.023307
22	P3	-8.245213	0.005272	-0.023307
26	P3	-8.245213	0.005272	-0.023307
30	P3	-8.245213	0.005272	-0.023307

#### 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	-11.196846	0.186665	-0.279928
7	P1a	-10.073293	0.297792	-0.191530
11	P1a	-10.699343	0.135206	-0.010644
15	P1a	-10.858560	0.193824	-0.057167
19	P1a	-15.791793	0.100350	-0.071317
22	P1a	-21.317242	1.455252	-0.772983
26	P1a	-15.468062	0.383215	-0.436163
30	P1a	-18.346540	0.475275	0.398265

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.454011	0.073234	-0.036972
7	P1	-2.424187	0.178155	-0.097630
11	P1	-2.900954	0.033327	0.024925
15	P1	-3.827881	0.043341	0.025915
19	P1	-3.586188	0.015171	-0.040613
22	P1	-4.984266	0.023292	0.094676
26	P1	-6.033179	0.033601	-0.075090
30	P1	-5.338944	0.036954	-0.081608

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.167656	0.069159	-0.105280
7	P2	-22.028248	0.279257	0.050467
11	P2	-10.633850	0.048517	-0.075971
15	P2	-4.914137	0.038999	-0.181820
19	P2	-6.870245	0.037429	-0.134912
22	P2	-8.122422	0.127003	-0.191146
26	P2	-24.314407	0.206270	0.020601
30	P2	-21.717117	0.132191	0.092349

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.092093	0.004518	-0.040204
7	P3	-8.092154	0.004538	-0.039930
11	P3	-8.091898	0.004528	-0.040241
15	P3	-8.091889	0.004530	-0.040818
19	P3	-8.092029	0.004558	-0.039605
22	P3	-8.092015	0.004511	-0.039546
26	P3	-8.092076	0.004525	-0.040379
30	P3	-8.092022	0.004523	-0.041205

## 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	0.000540441
	stdev	2.05406e-07
MEAN Q	mean	0.000491783
	stdev	2.44785e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.135347
	stdev	0.00123520
STDEV Q	mean	0.135740
	stdev	0.00125326



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007041[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_GM1_1PNPDK20070418_201215_000007792057_00228_26835_3683.N1	0	43
ASA_WSM_1PNPDE20070417_112928_000000852057_00209_26816_5448.N1	0	52
ASA_WSM_1PNPDE20070417_190808_000001712057_00214_26821_5641.N1	0	73
ASA_WSM_1PNPDE20070418_005604_000000852057_00217_26824_6083.N1	0	31
ASA_WSM_1PNPDE20070418_165614_000001522057_00227_26834_6862.N1	0	57
ASA_WSM_1PNPDE20070418_184029_000002312057_00228_26835_6864.N1	0	11
ASA_WSM_1PNPDK20070417_122637_000001462057_00210_26817_1935.N1	0	36
ASA_WSM_1PNPDK20070419_094719_000000852057_00237_26844_4060.N1	0	28



## 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



### 7.4 - Unbiased Doppler Error for GM1



**Evolution of unbiased Doppler error (Real - Expected)**

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

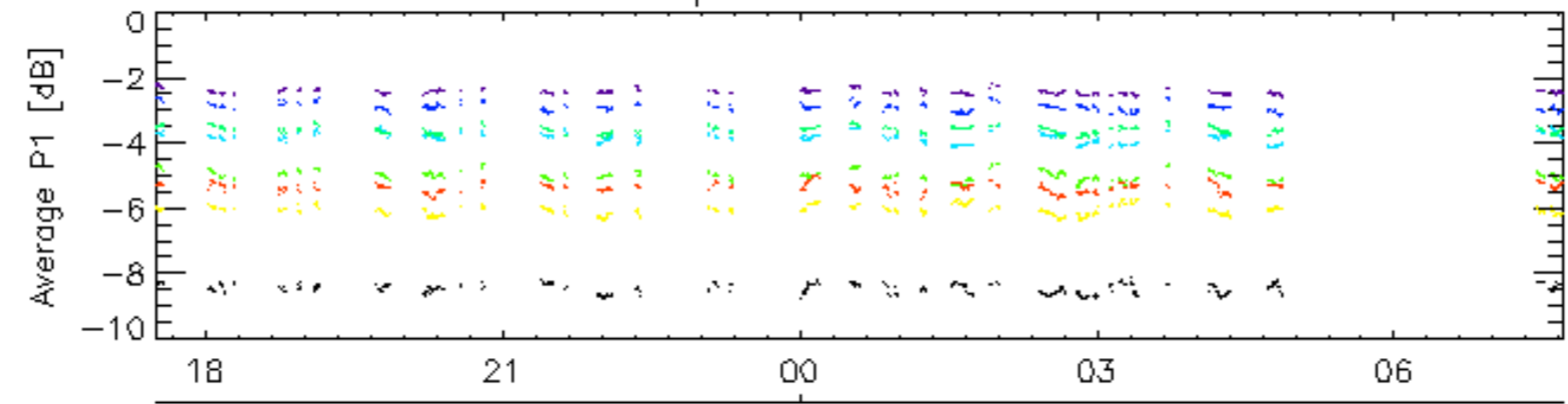
**7.5 - Absolute Doppler for GM1****Evolution of Absolute Doppler**

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

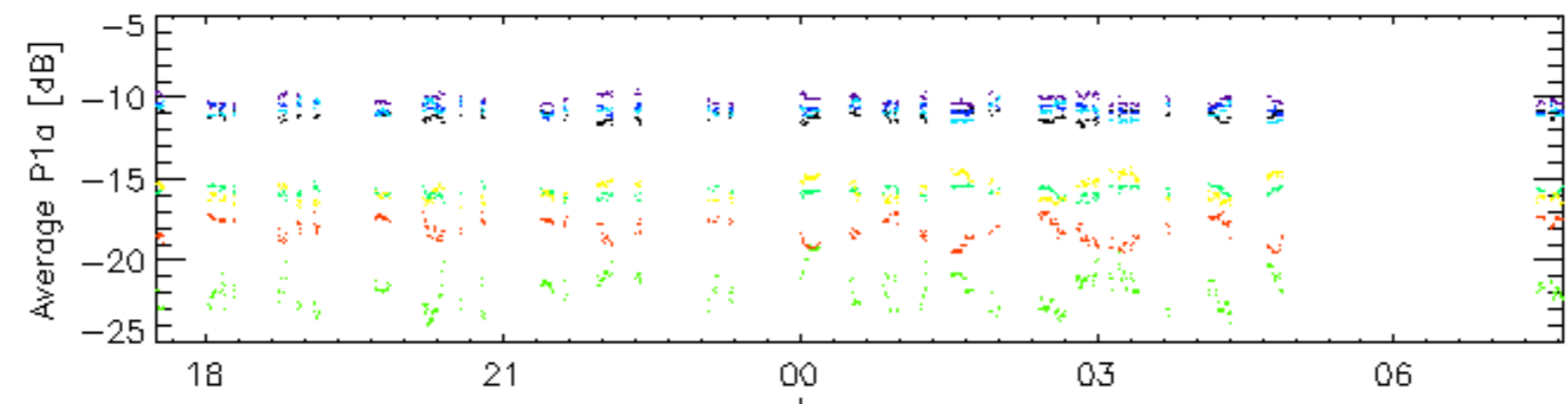
**7.6 - Doppler evolution versus ANX for GM1****Evolution Doppler error versus ANX**

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

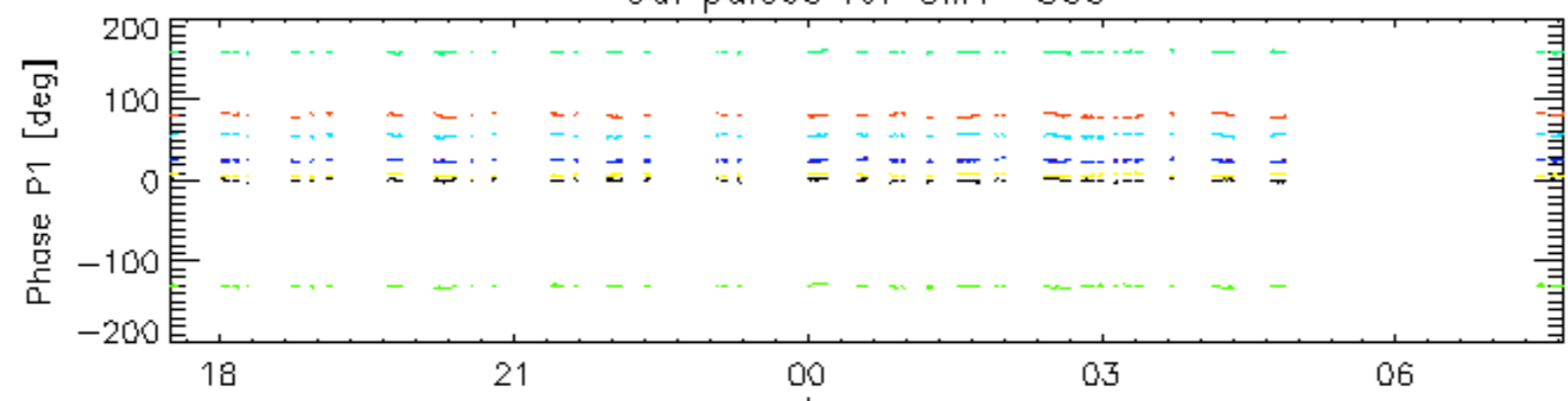


19-Apr

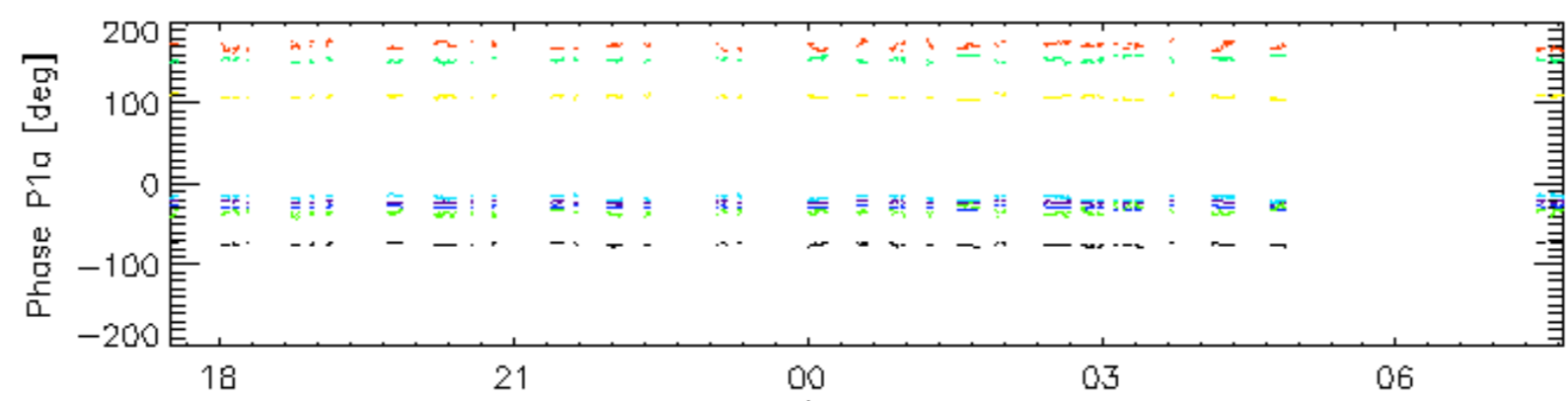


19-Apr

Cal pulses for GM1 SS3

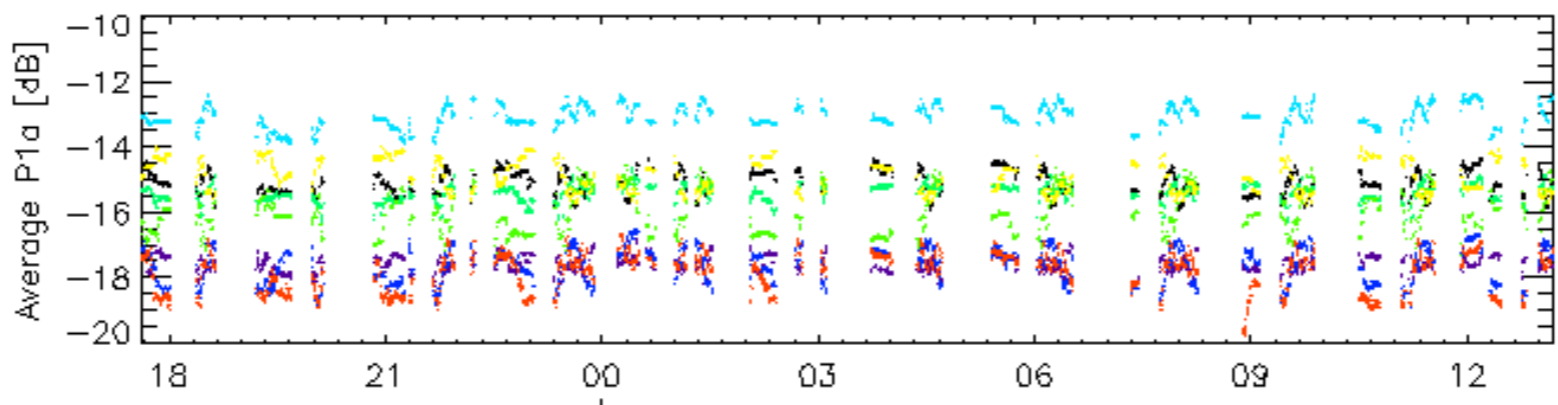
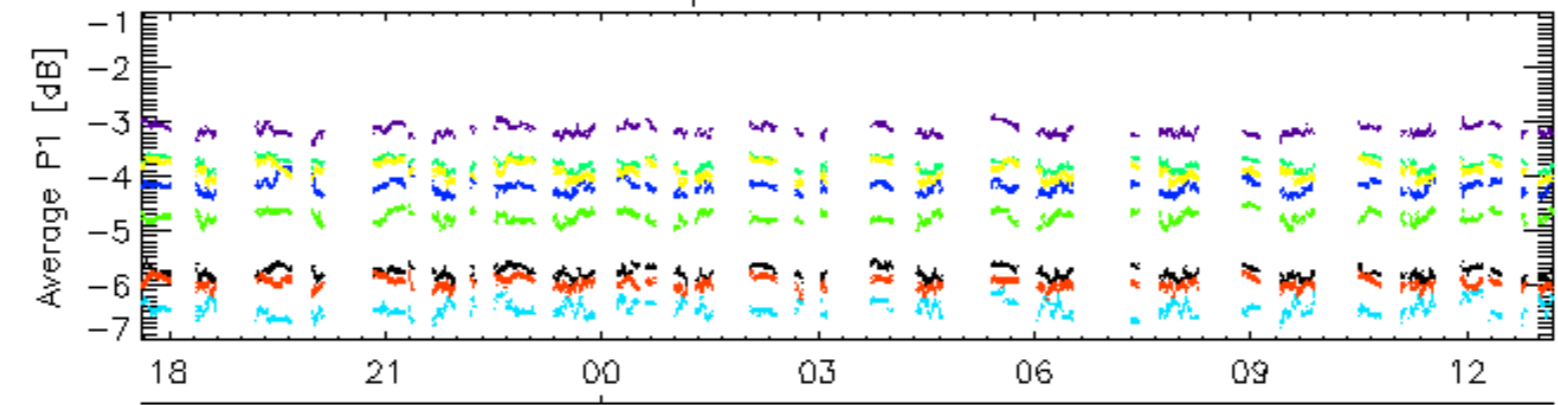


19-Apr

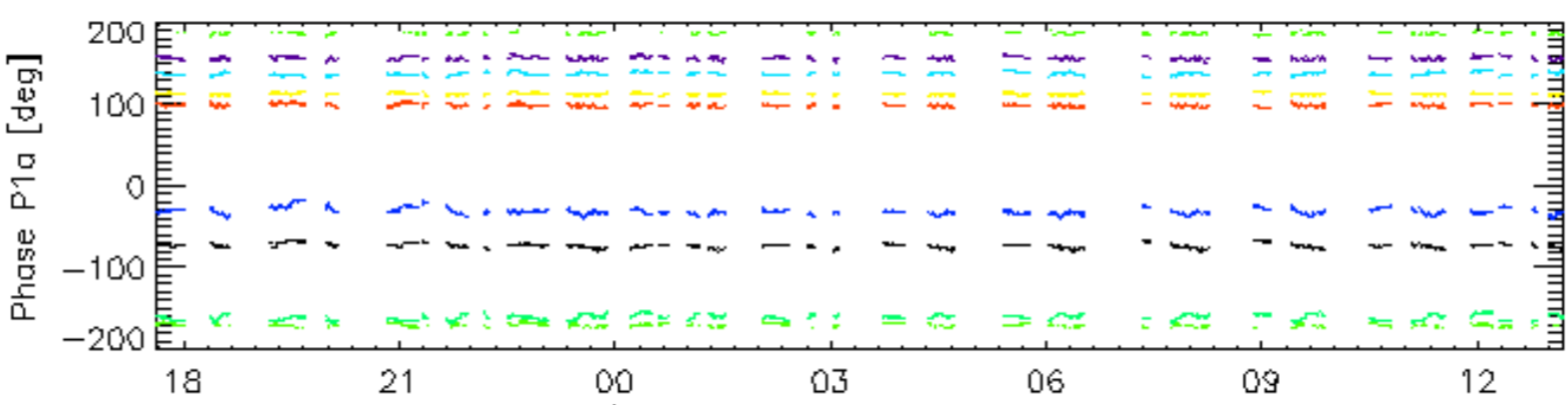
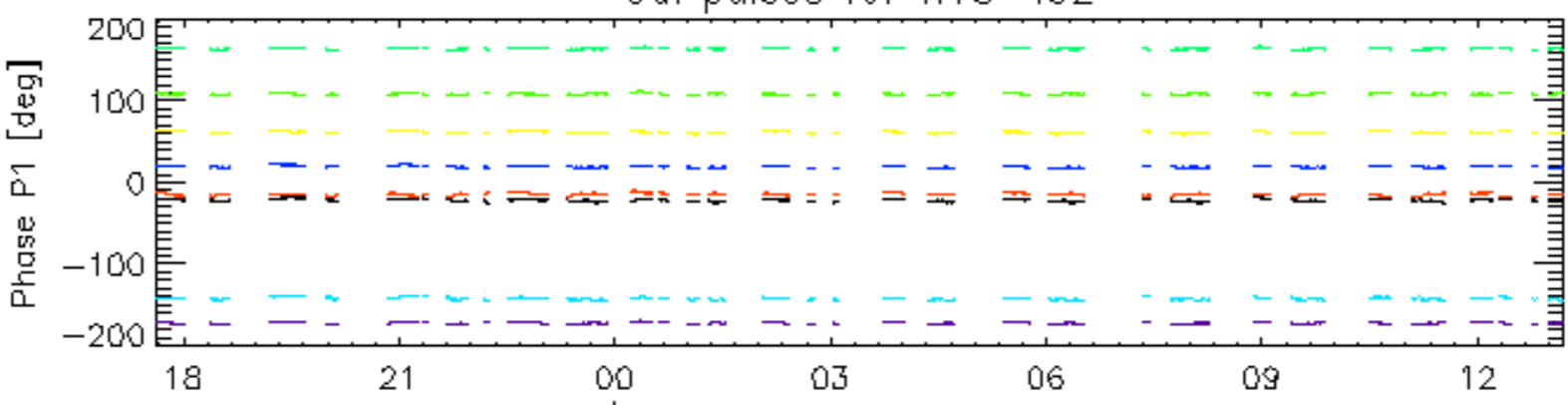


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

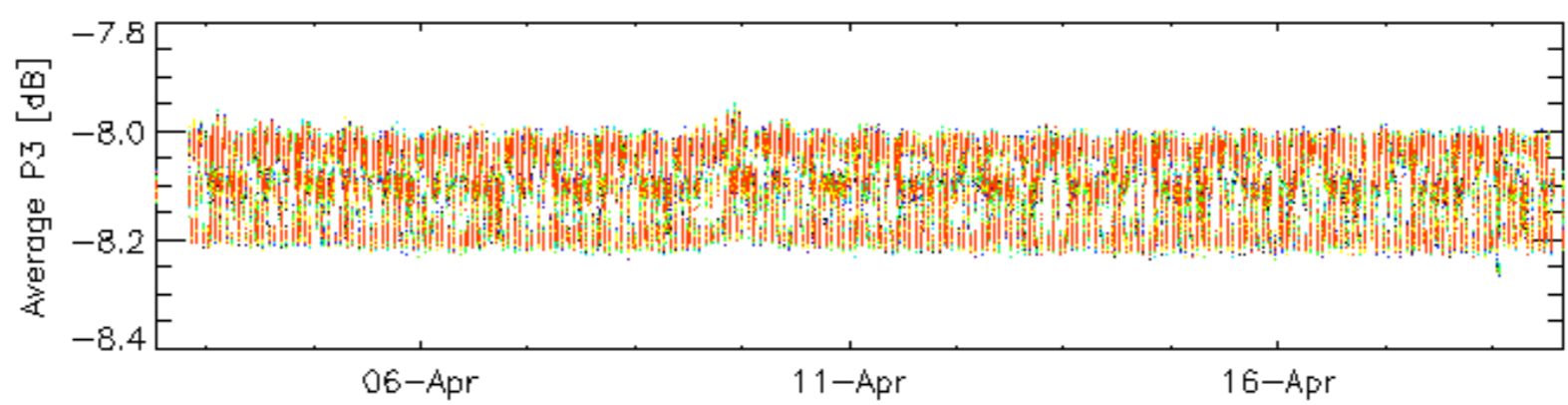
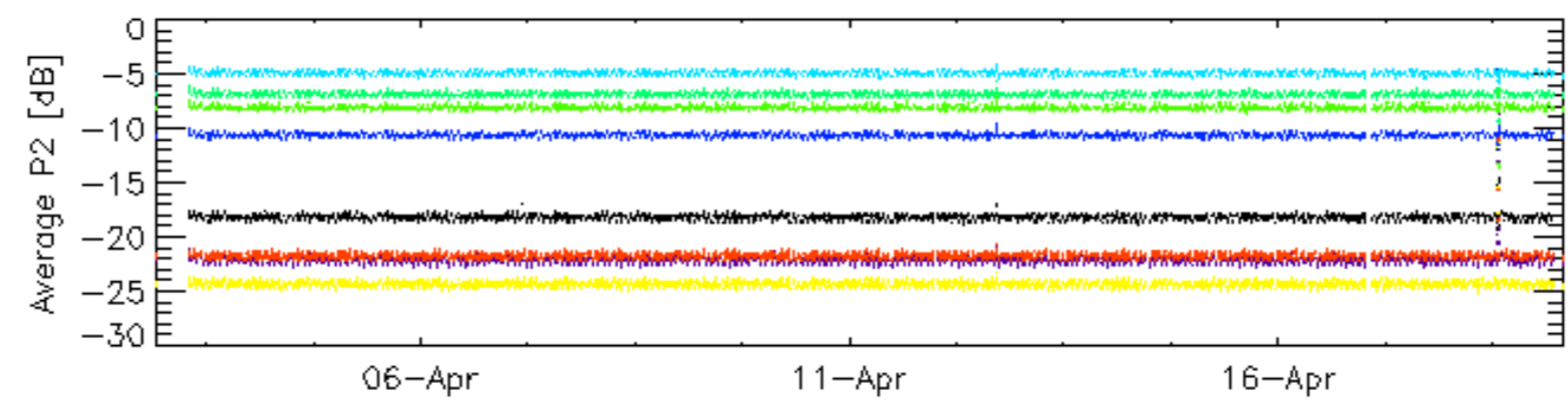
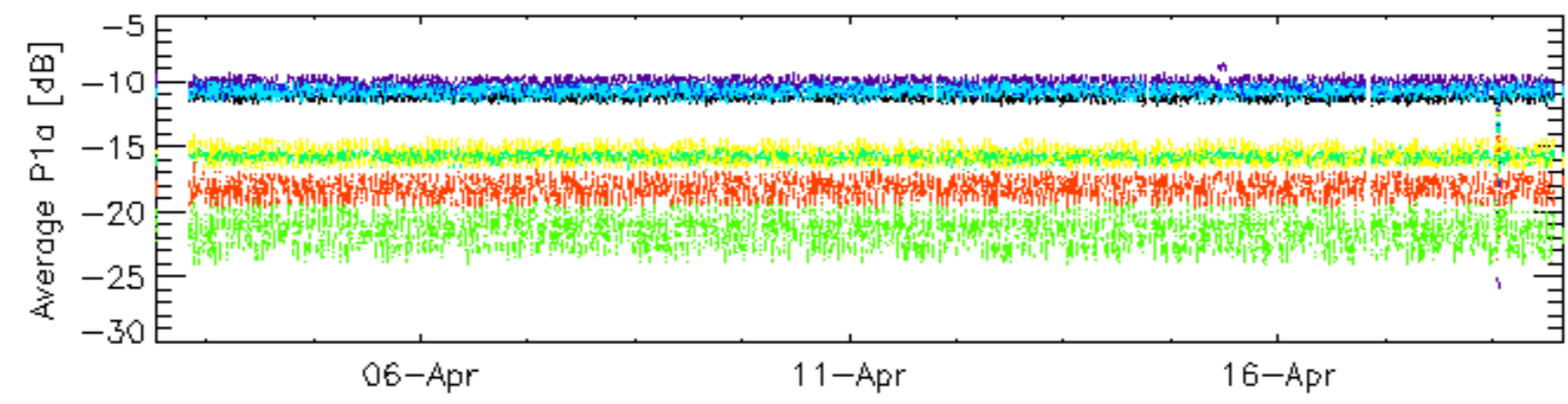
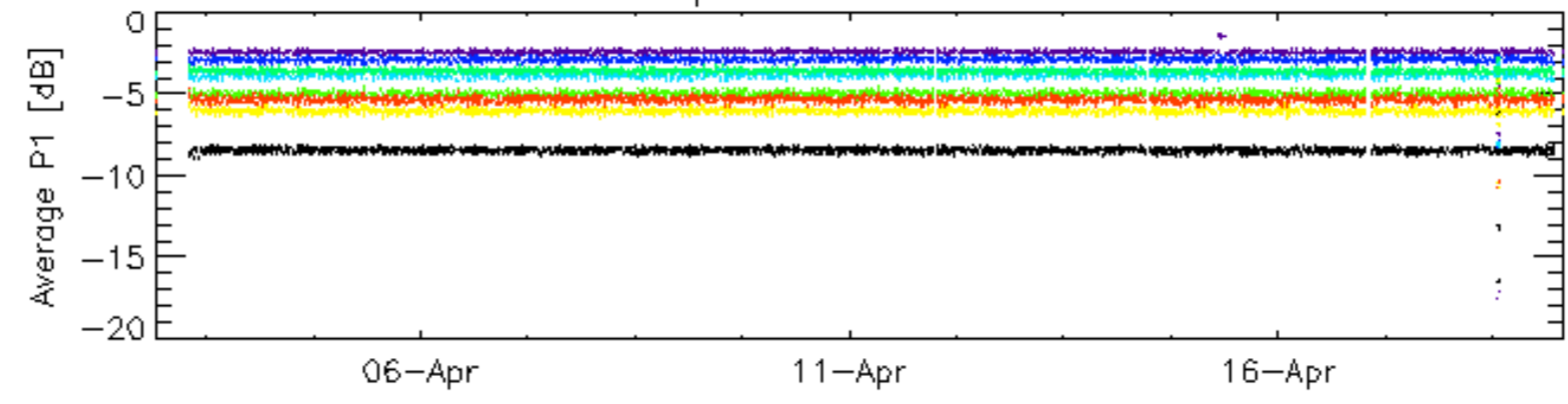


Cal pulses for WVS IS2



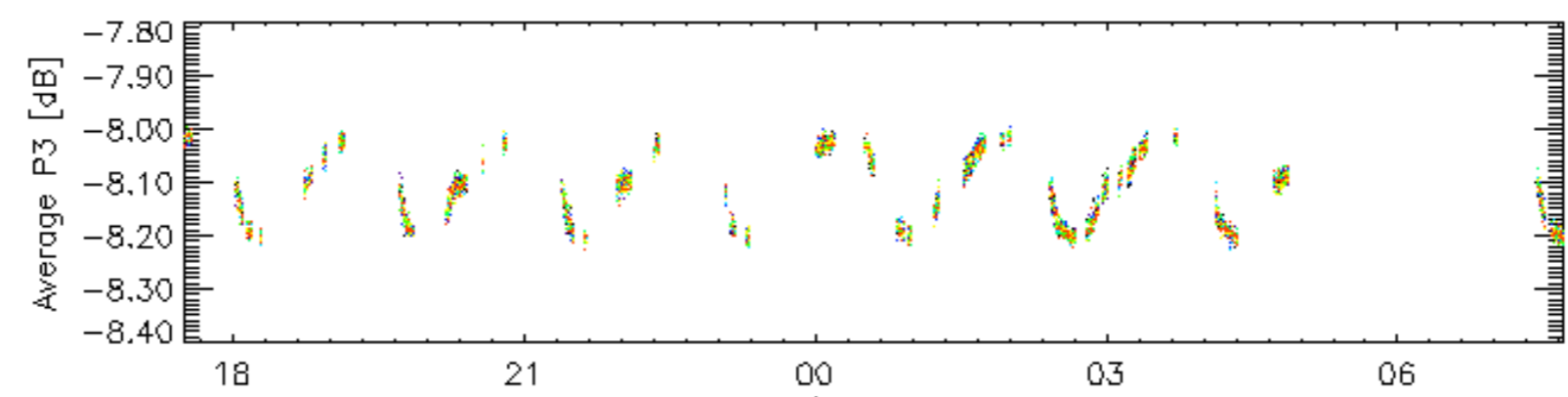
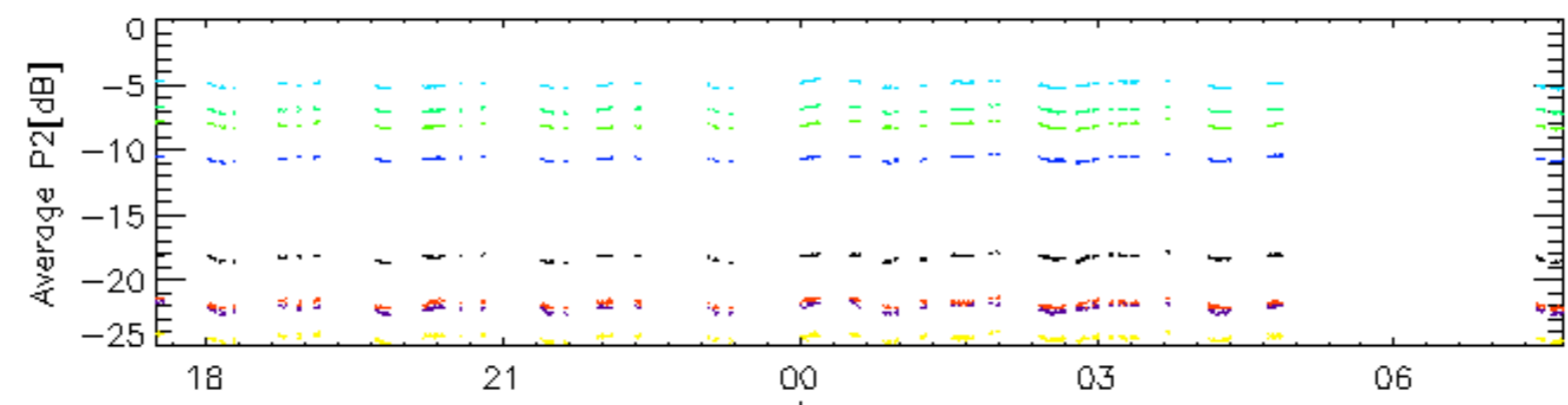
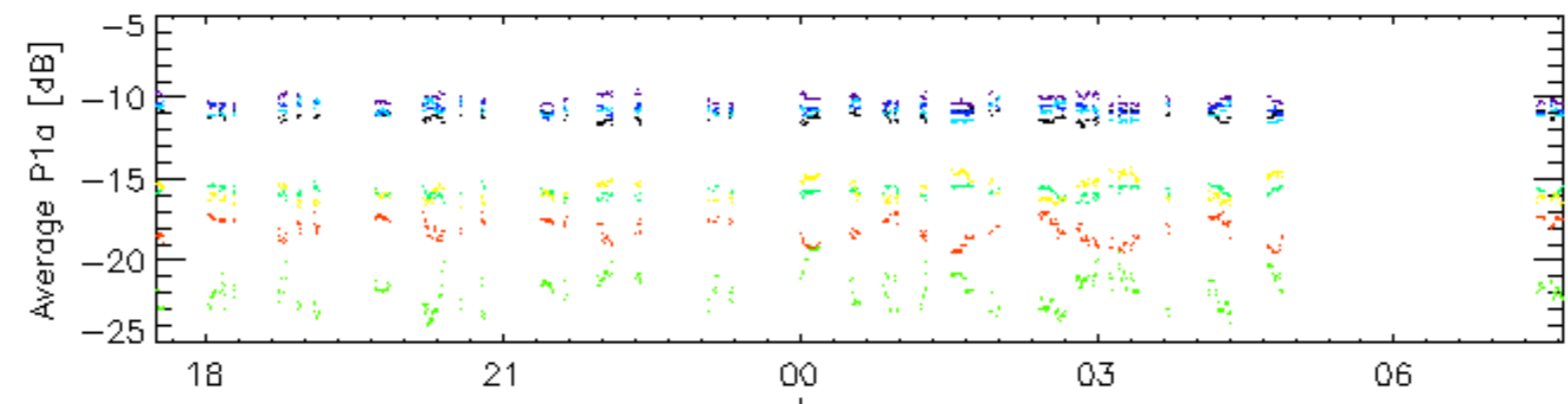
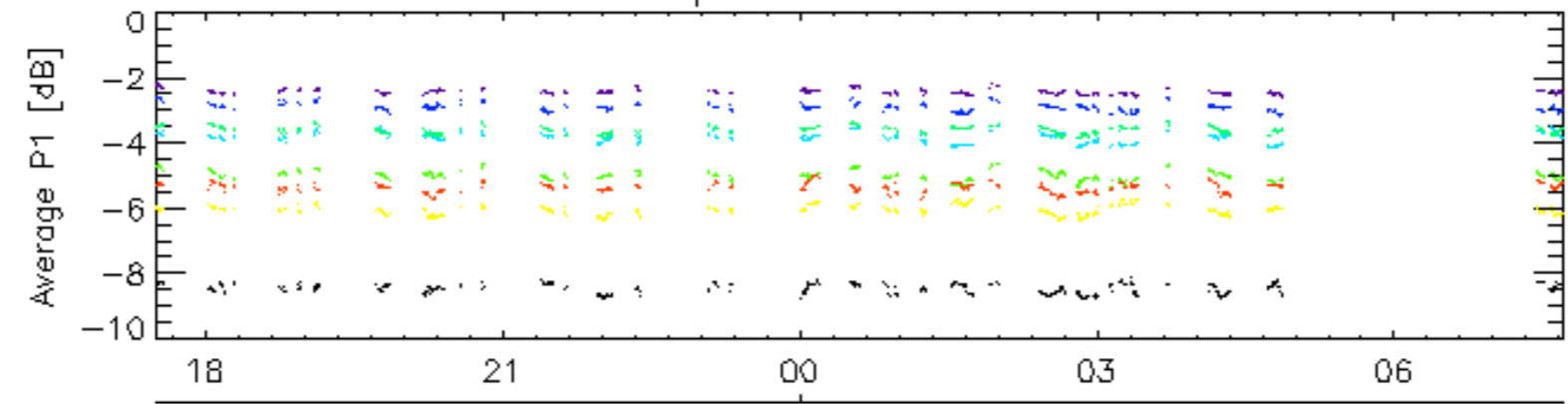
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3



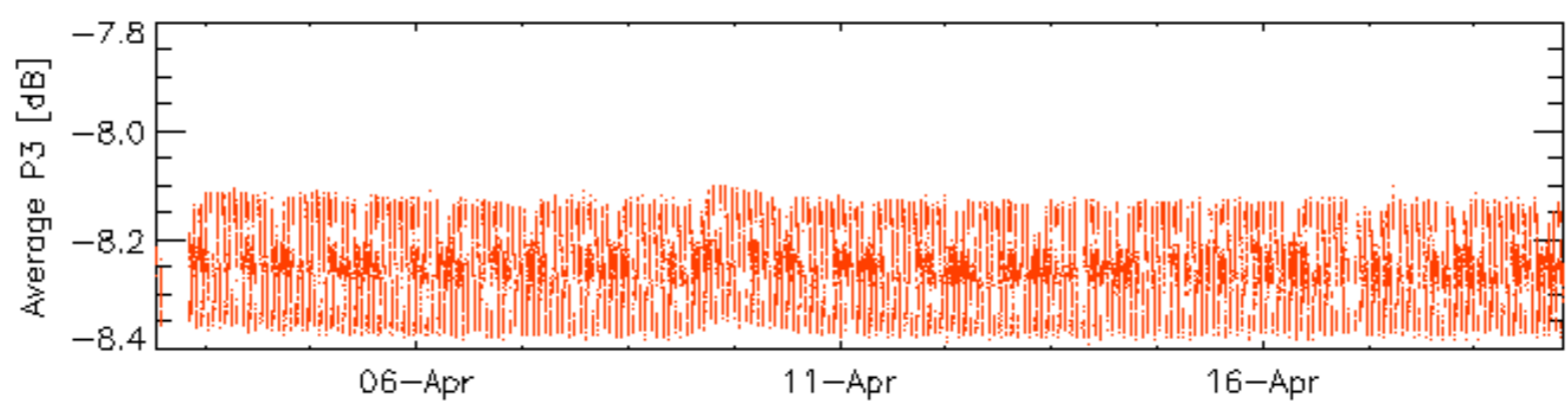
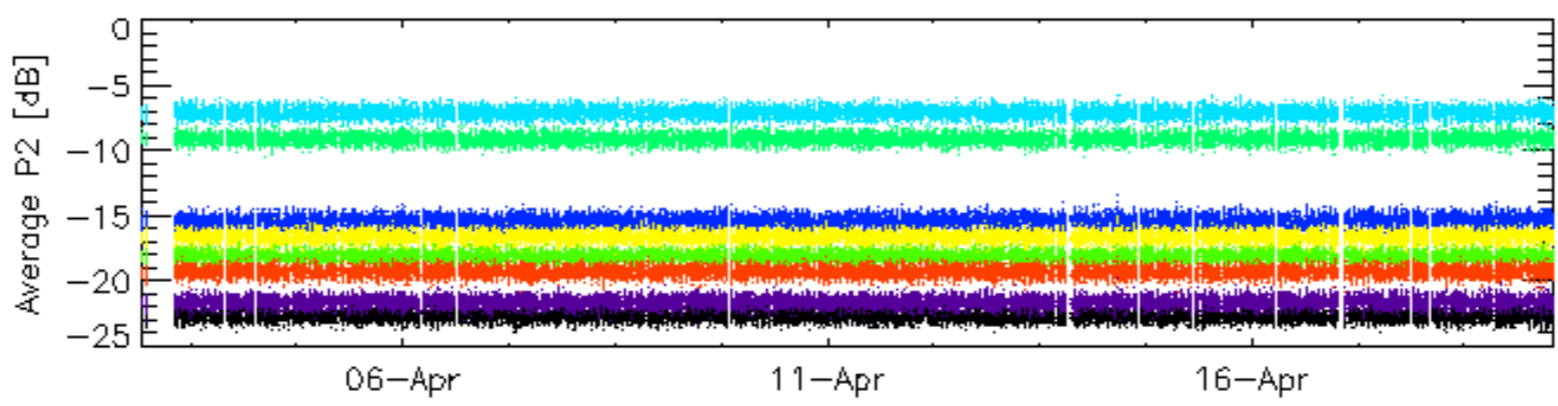
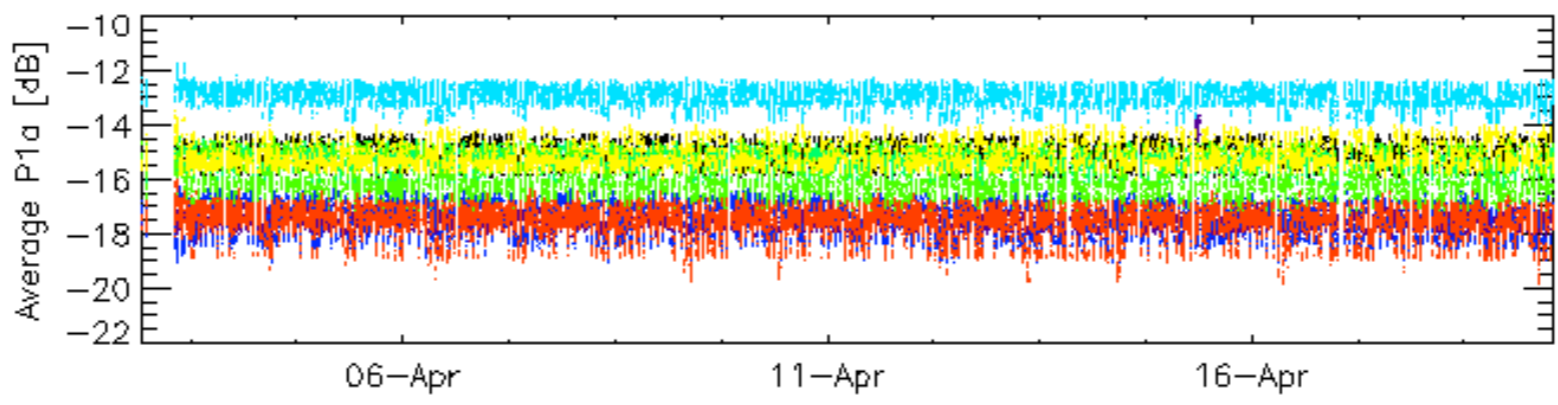
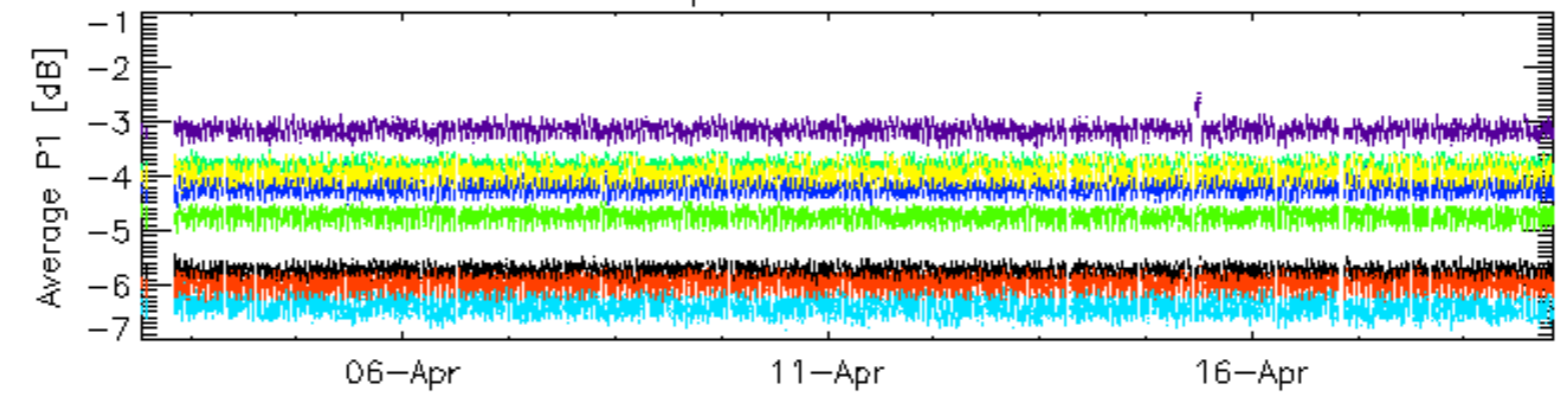
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



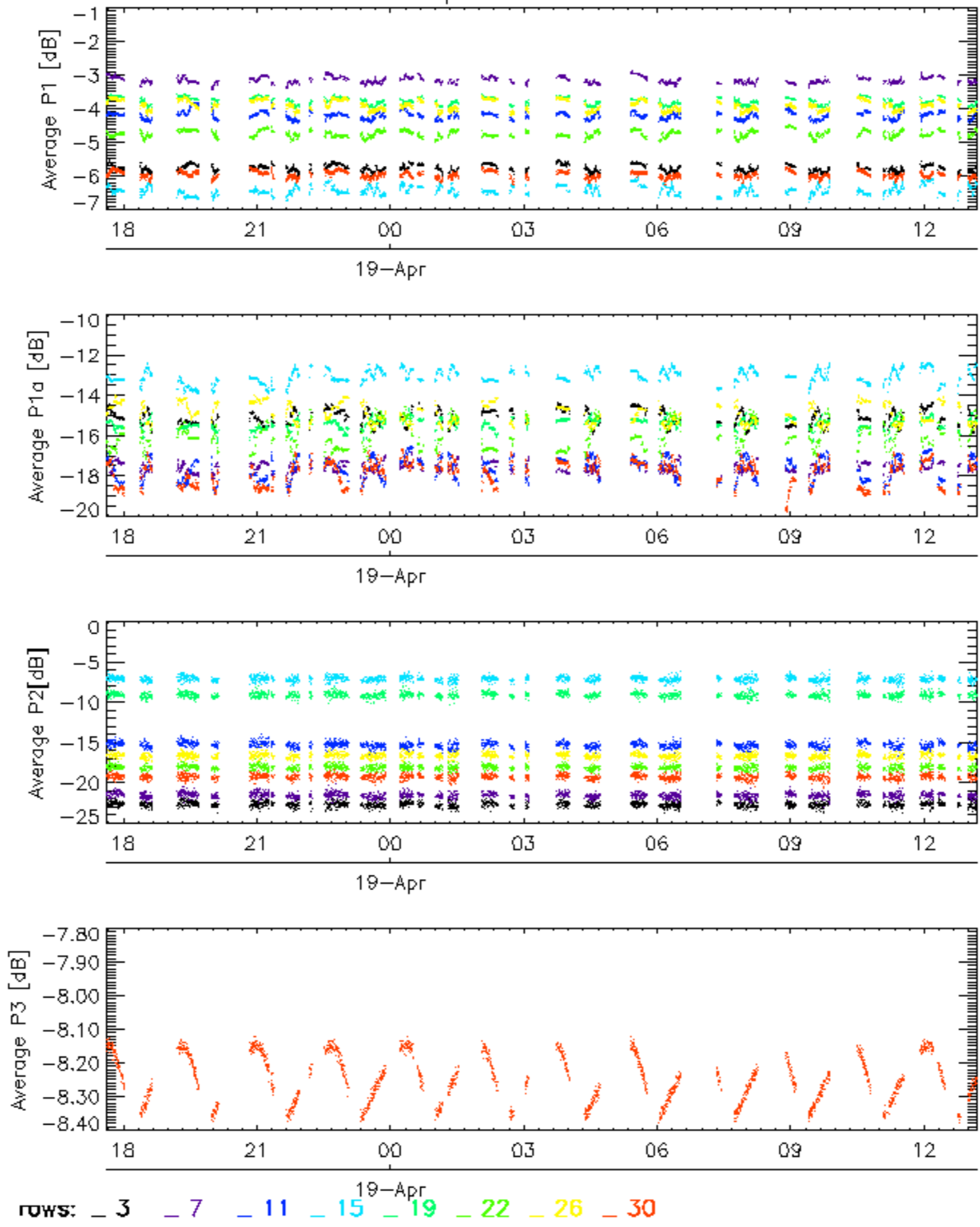
rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2



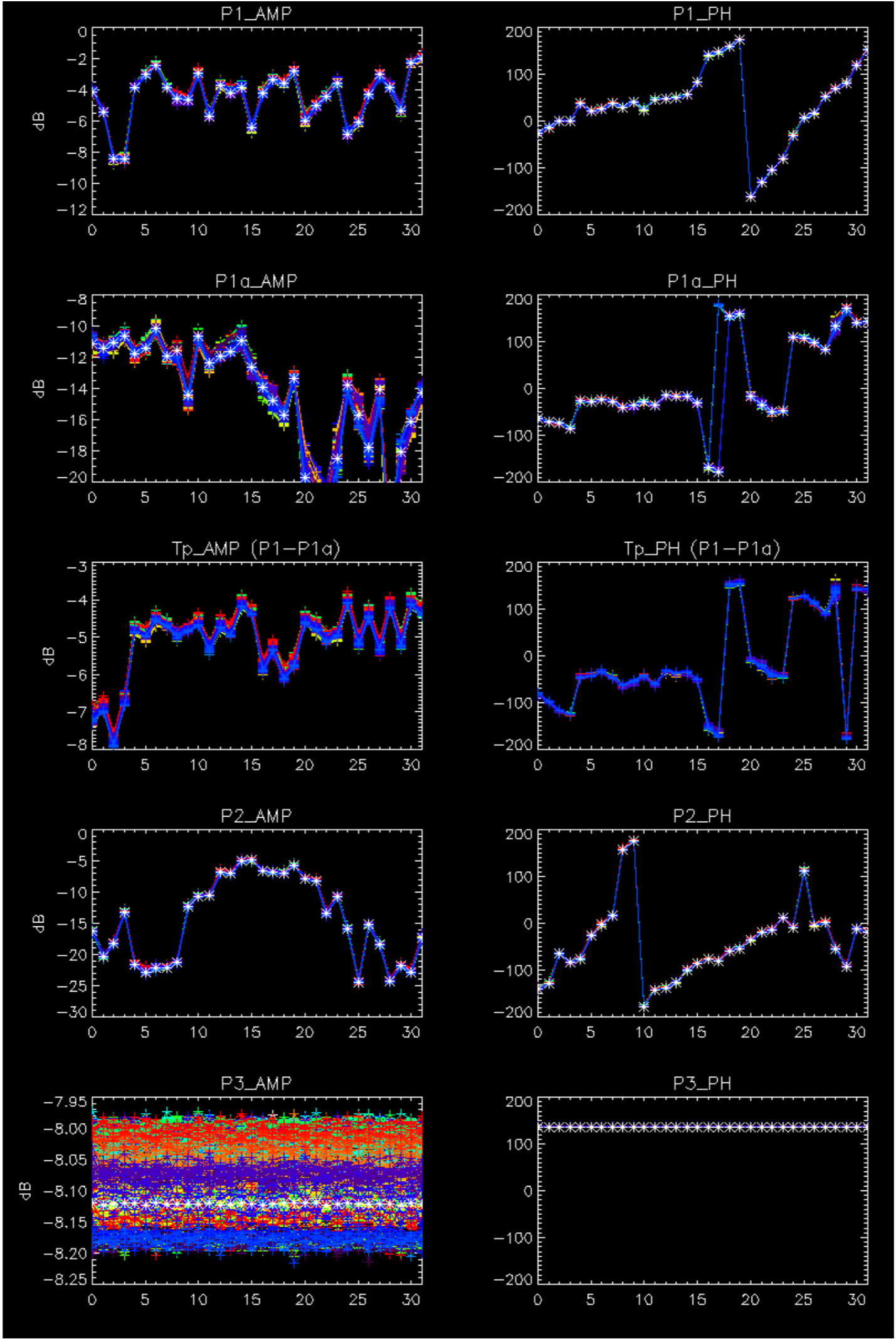
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

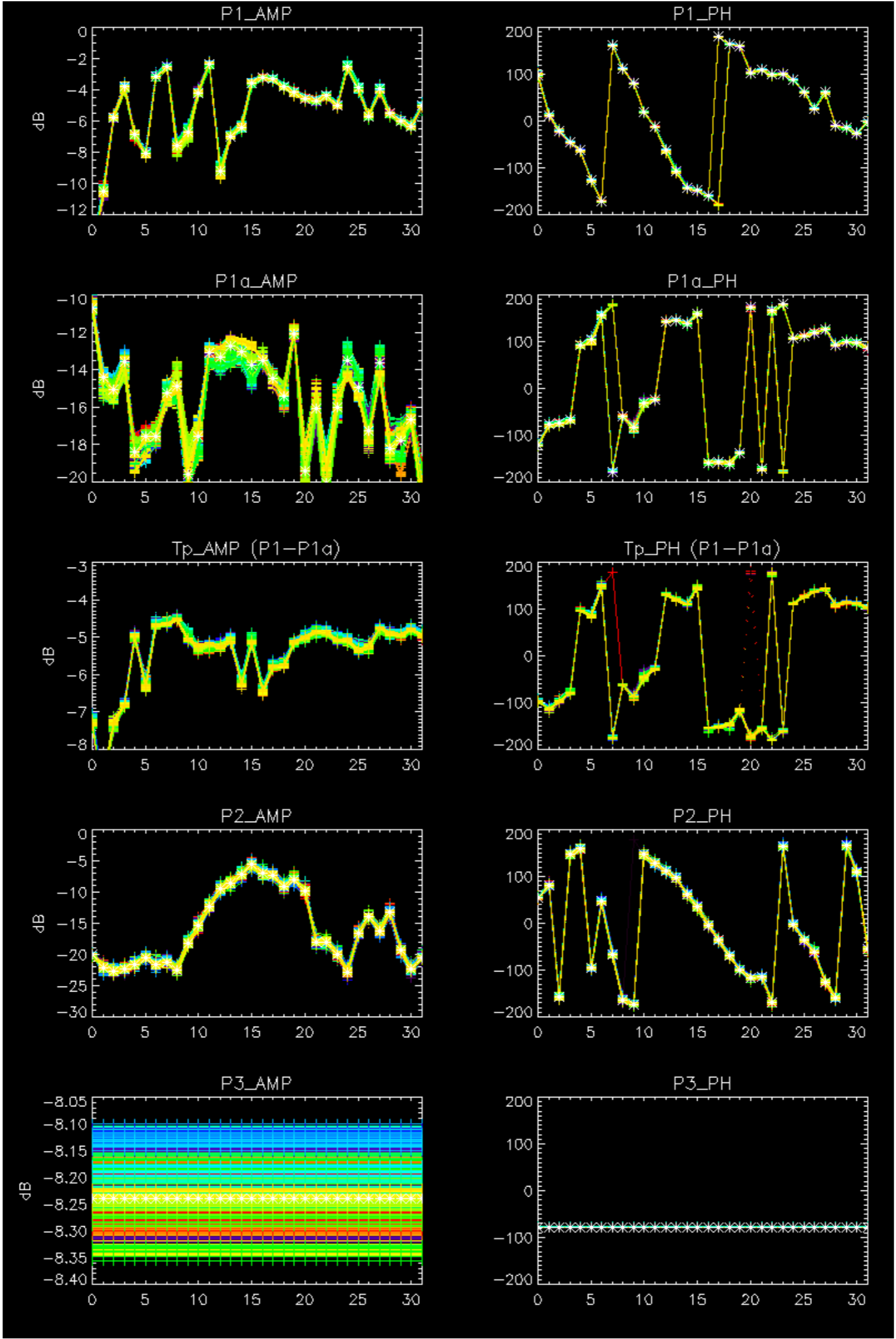
Cal pulses for WVS IS2



No anomalies observed.



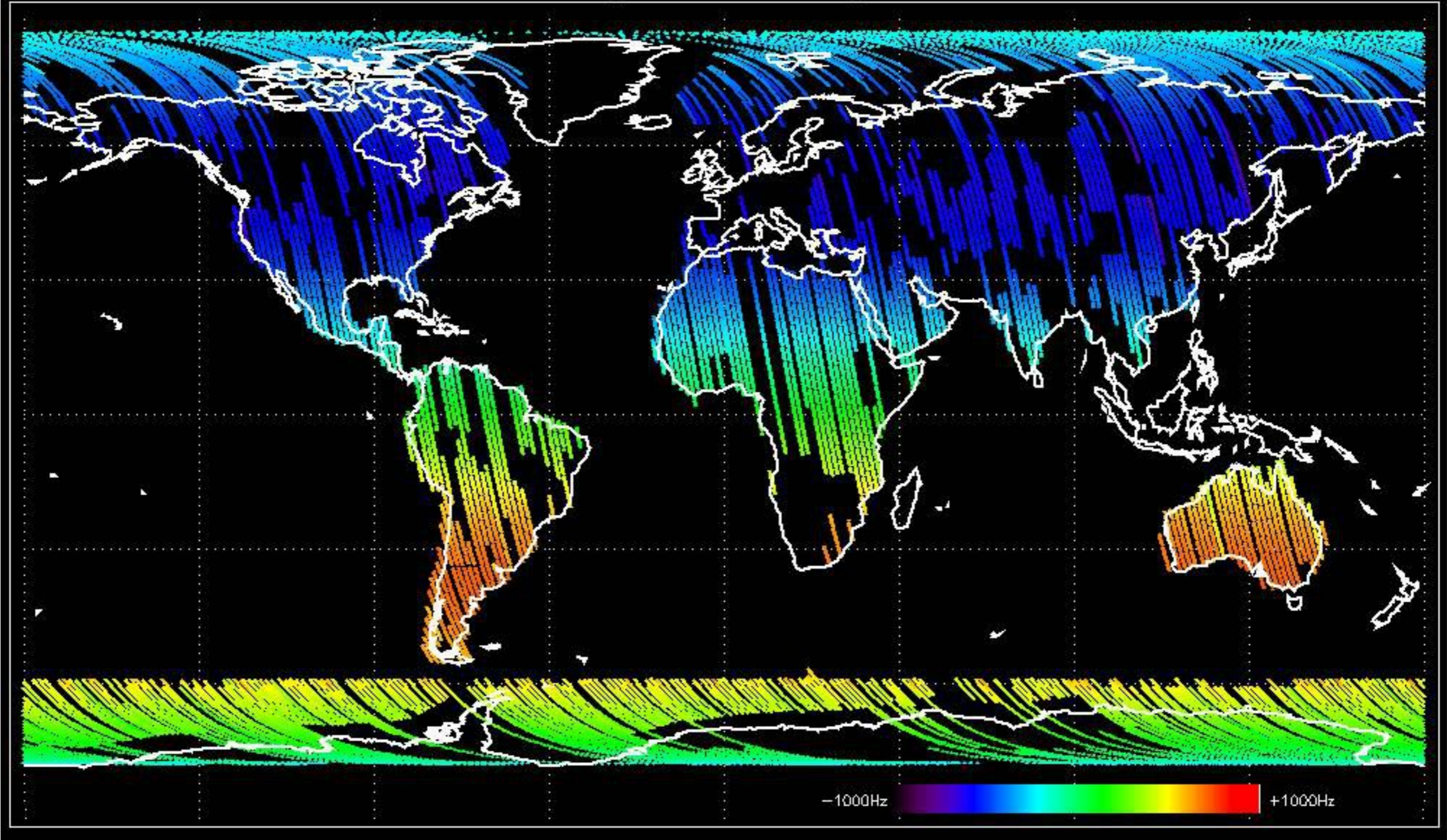




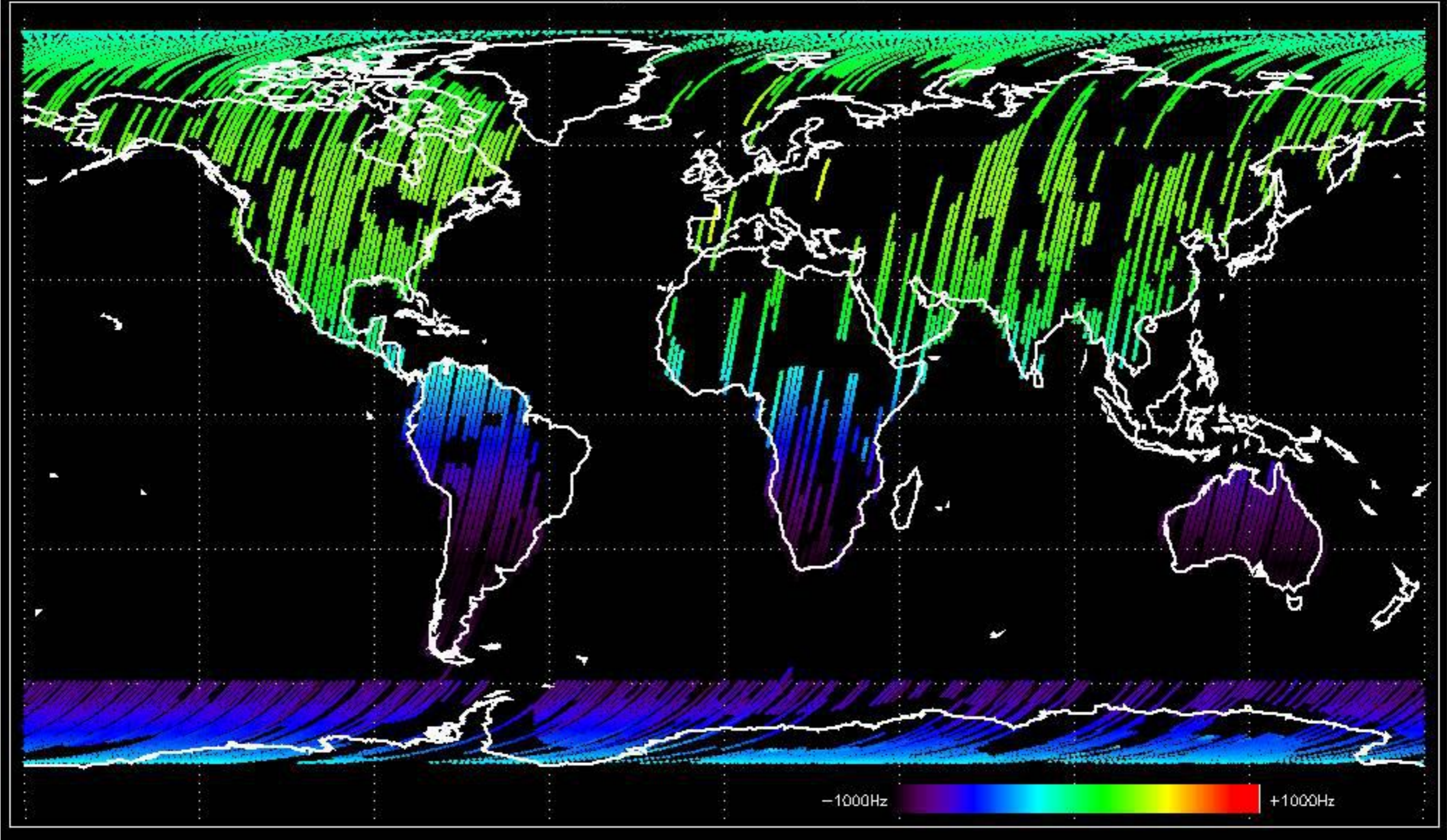
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



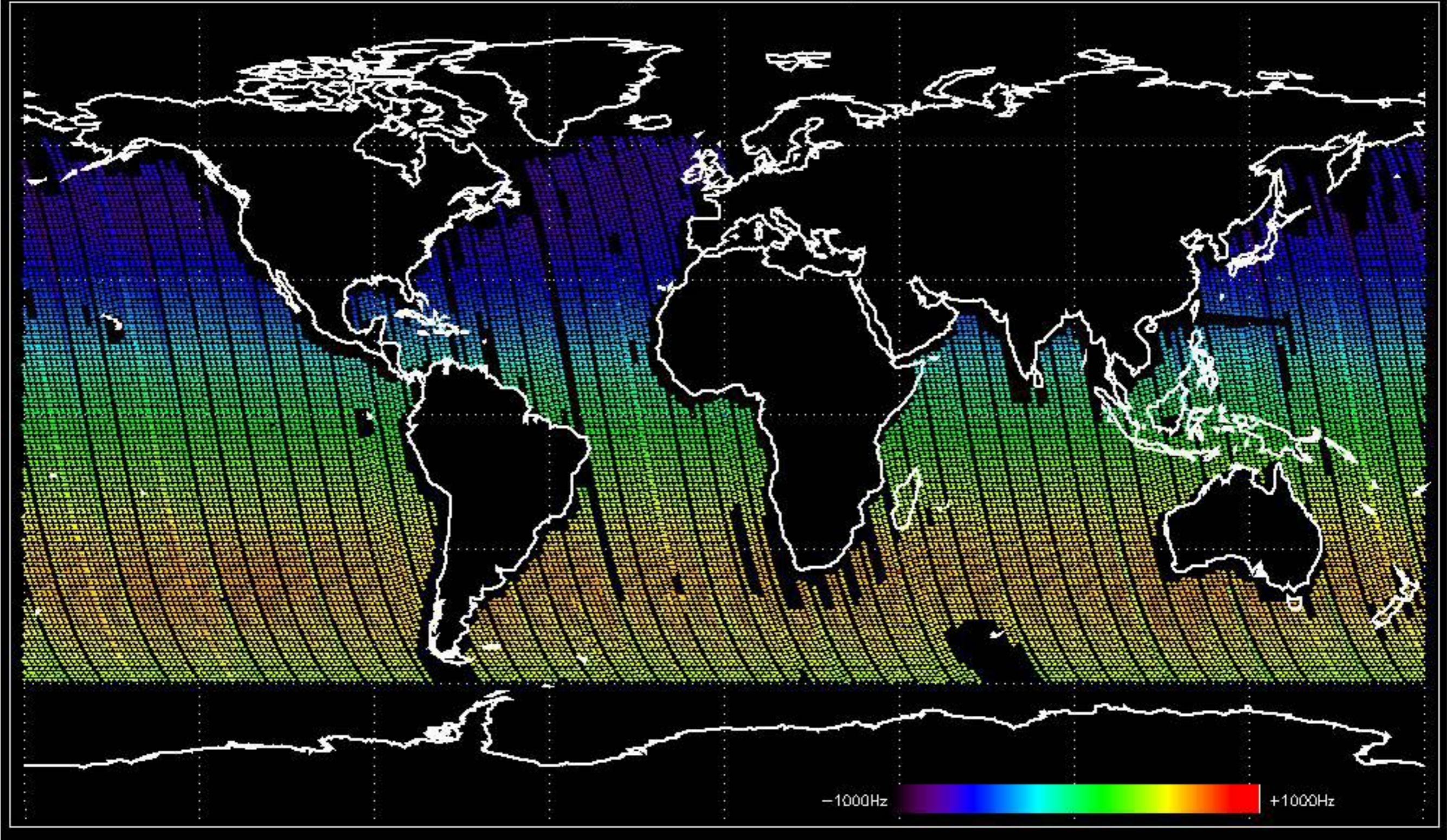
Doppler 'GM1' 'SS1' ascending



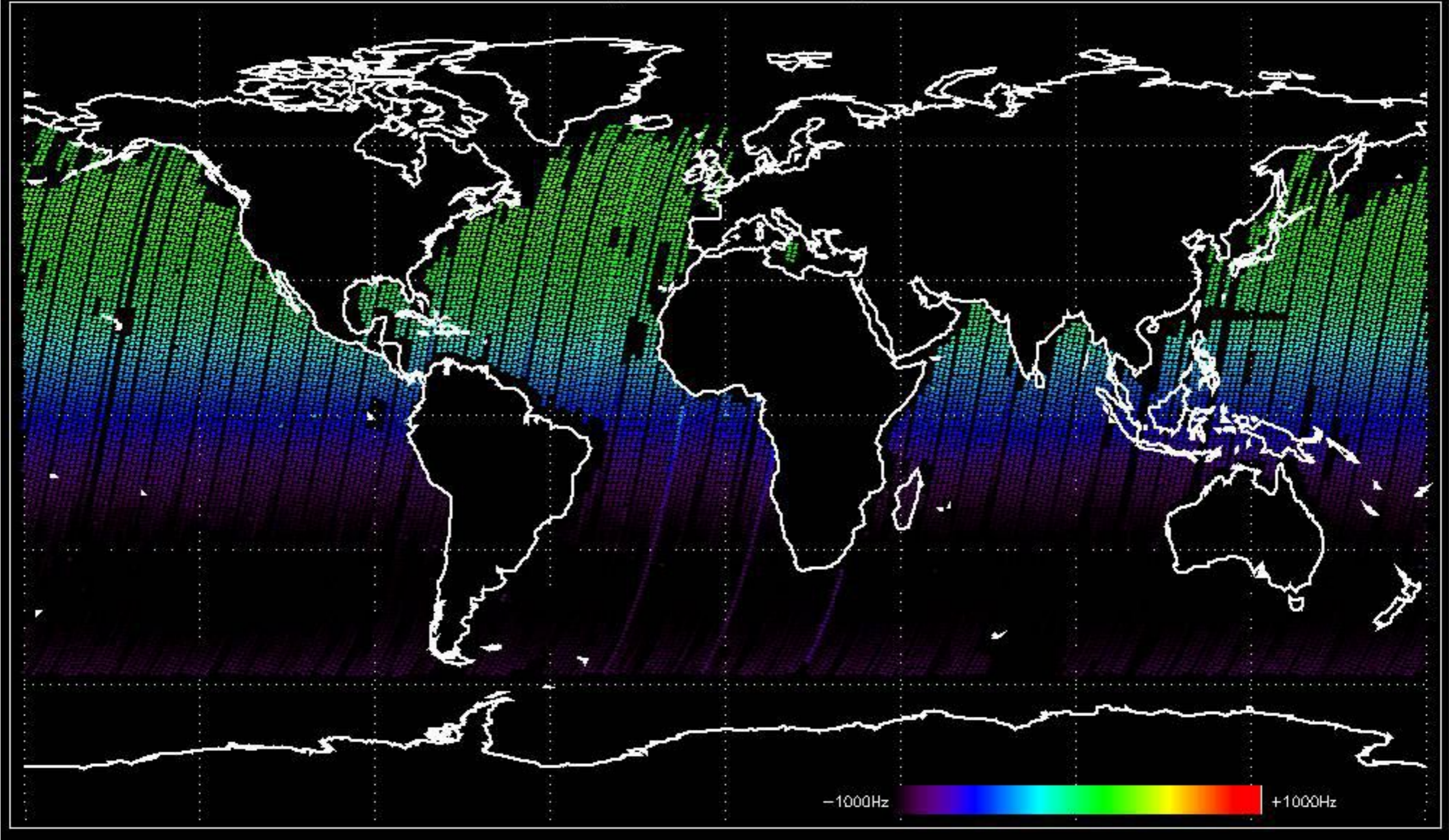
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS2' ascending

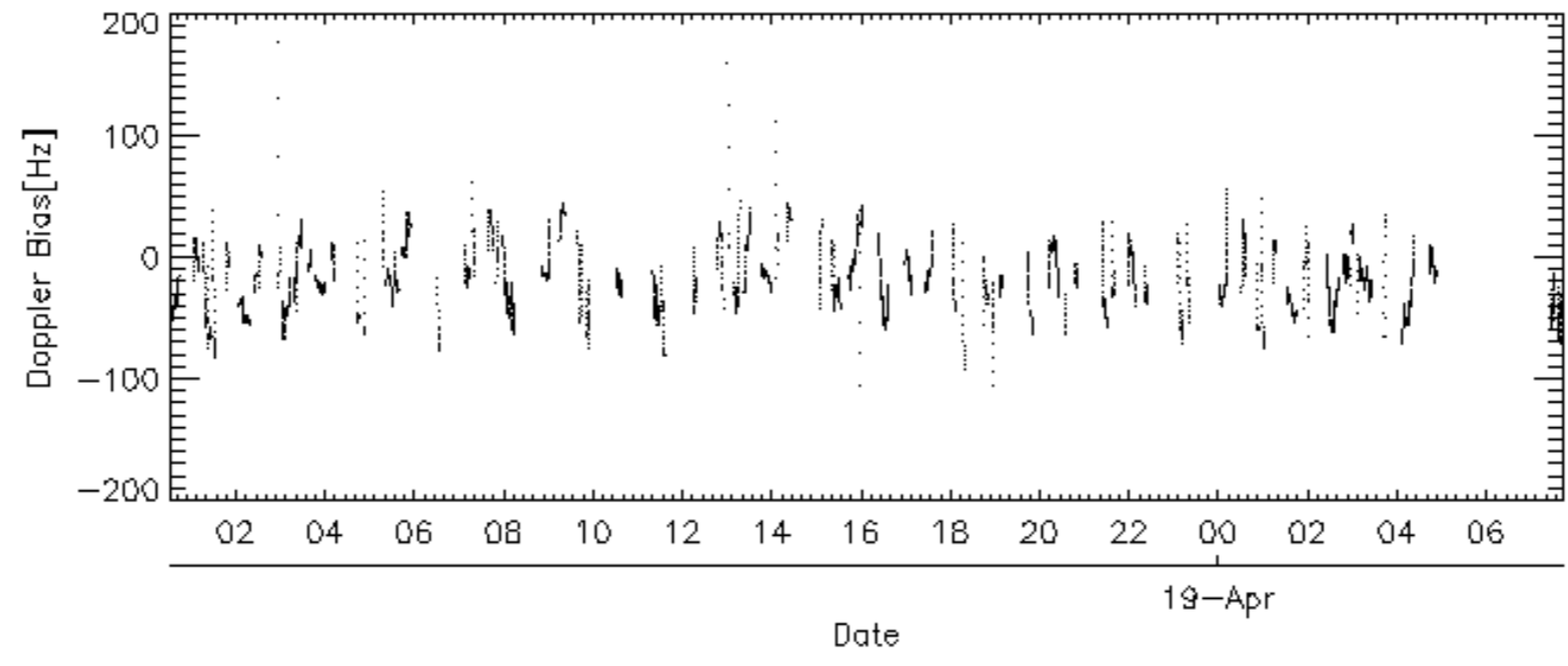
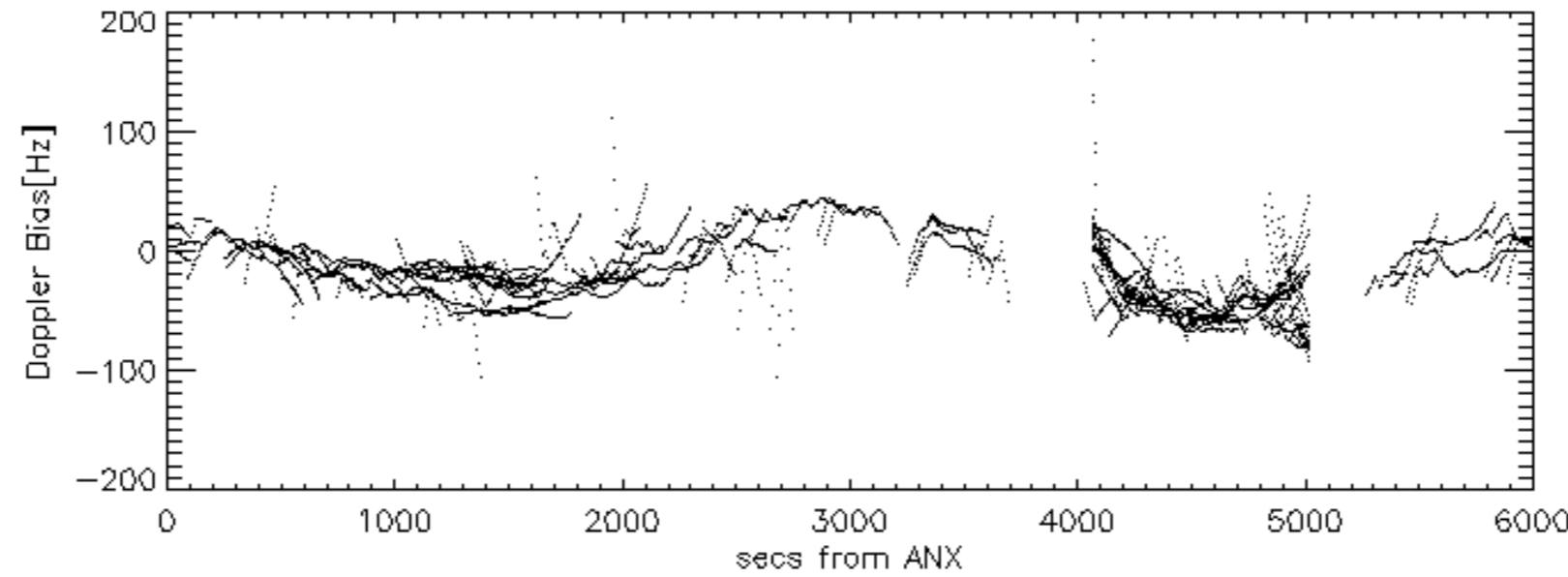
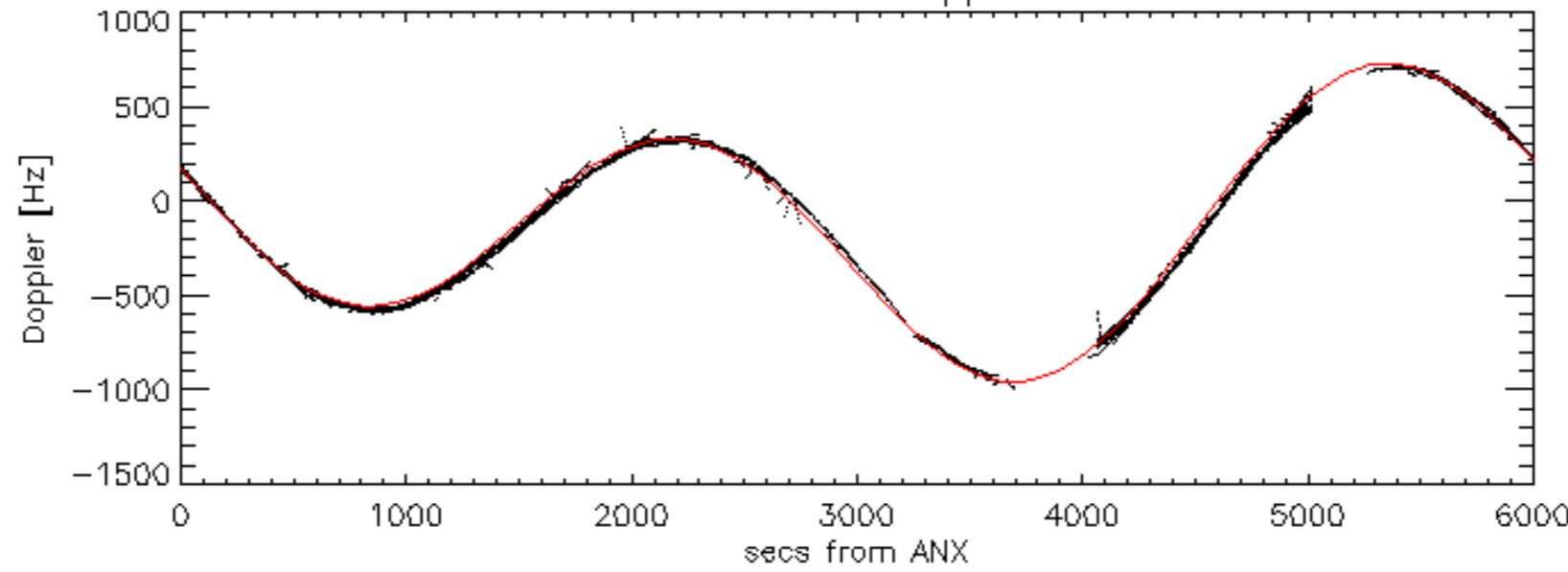


Doppler 'WVS' 'IS2' descending

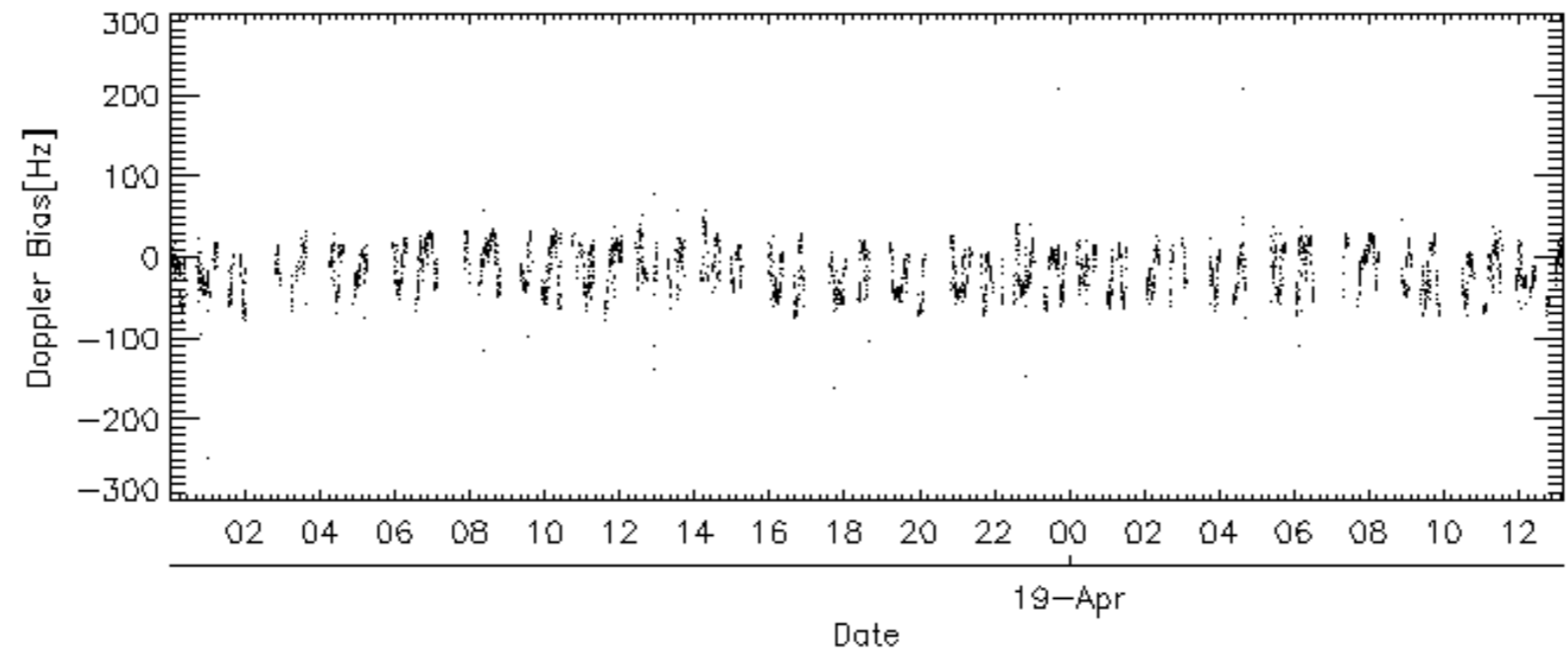
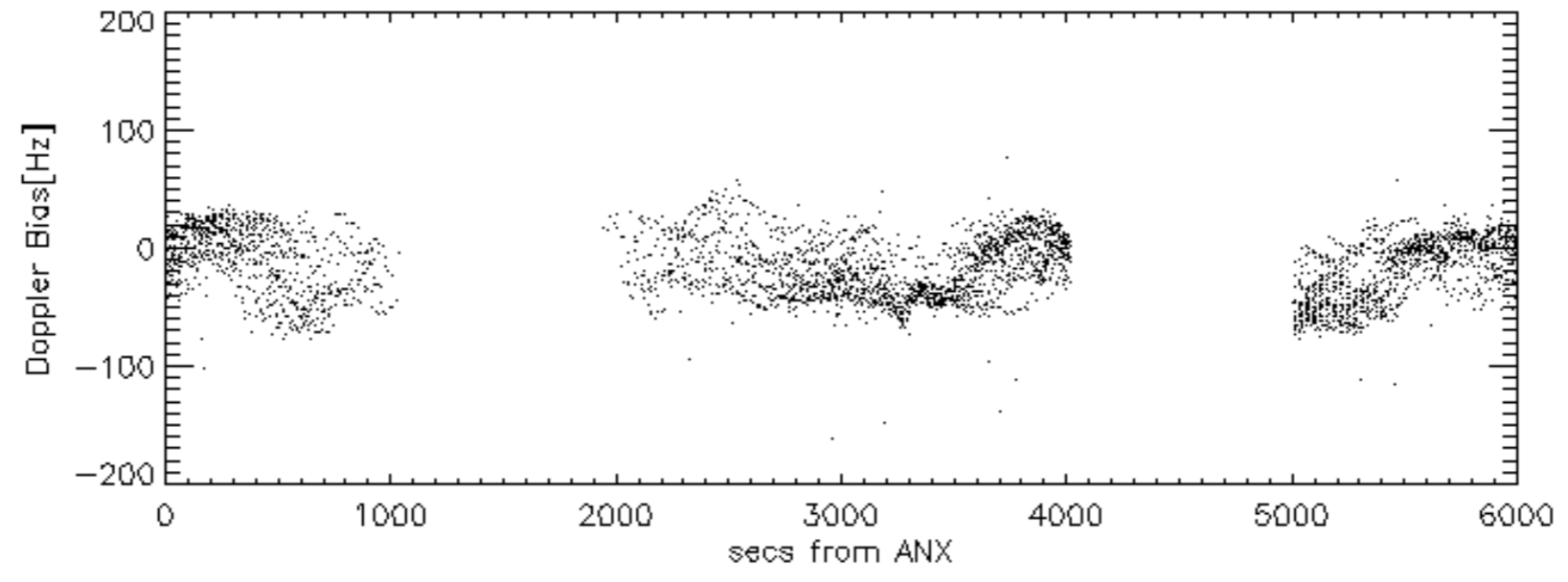
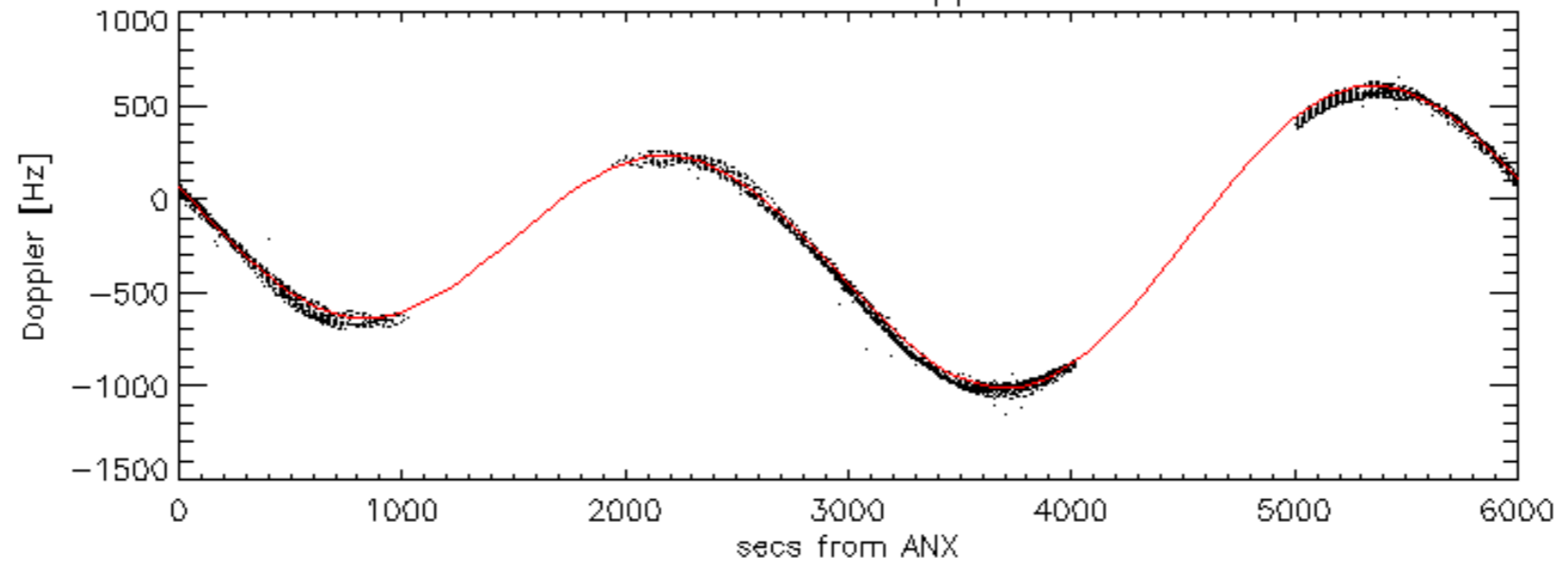




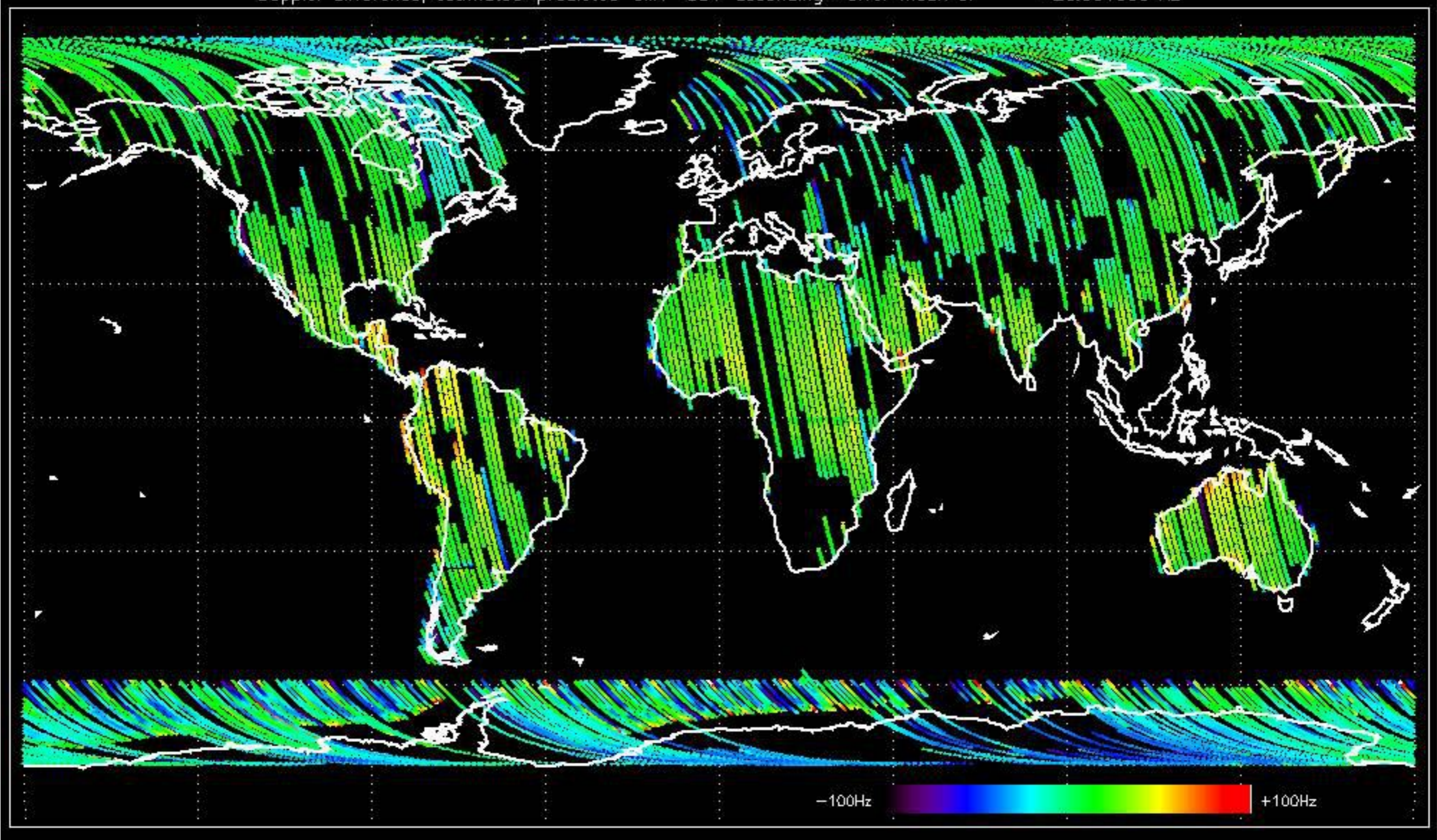
GM1 mode doppler



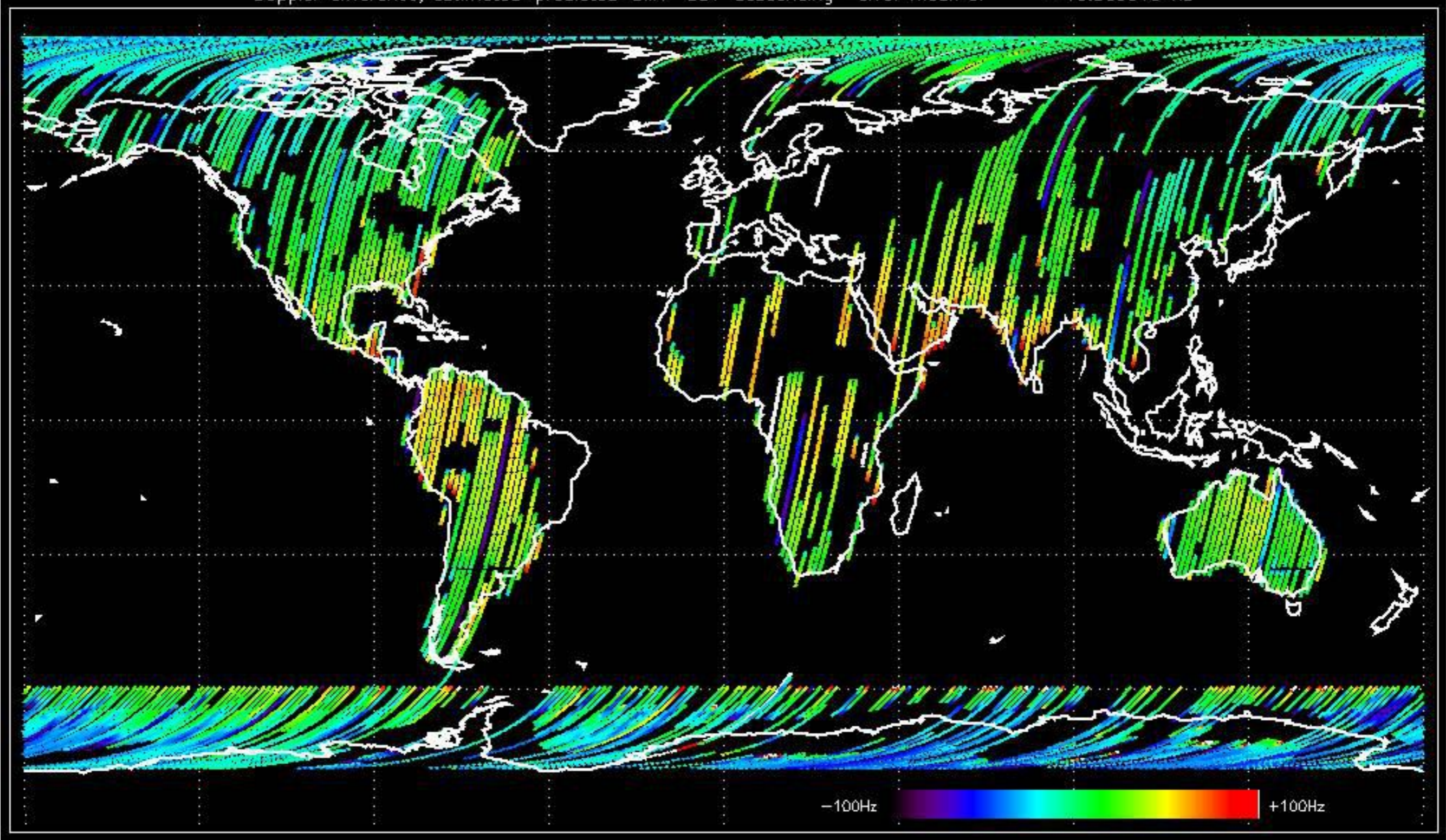
WVS mode doppler



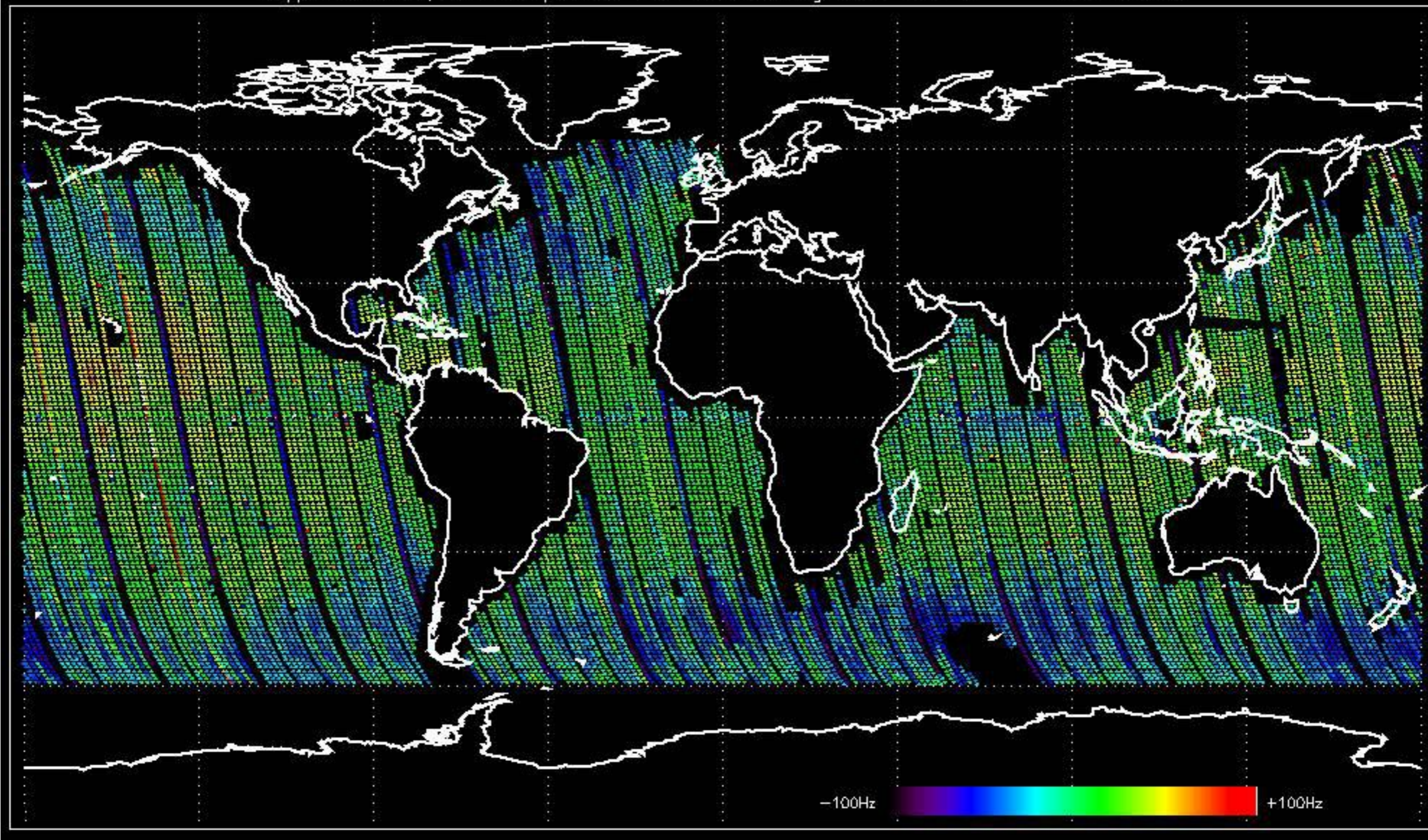
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -26.901006 Hz



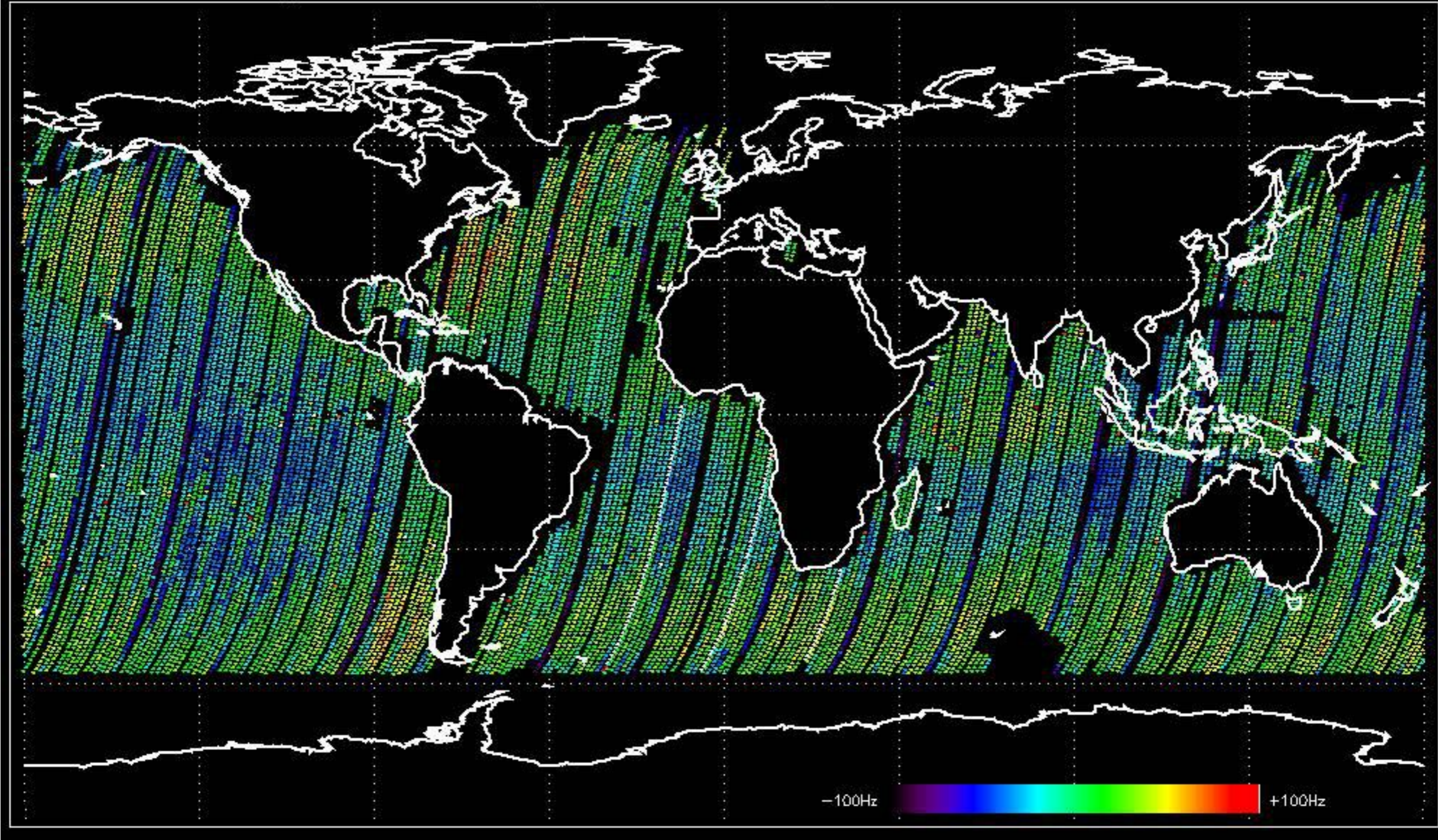
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.569915 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -22.658072 Hz



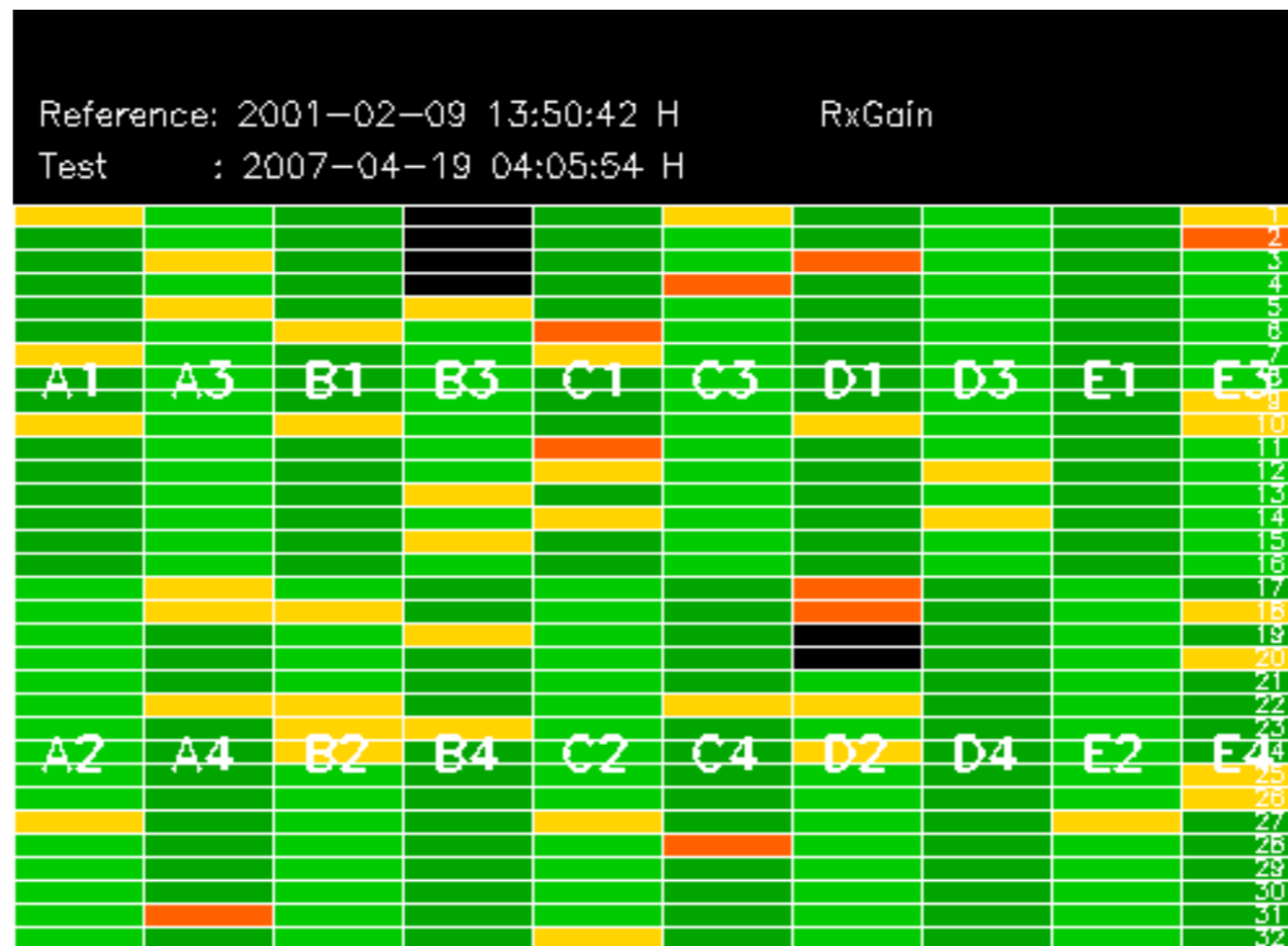
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -21.931720 Hz



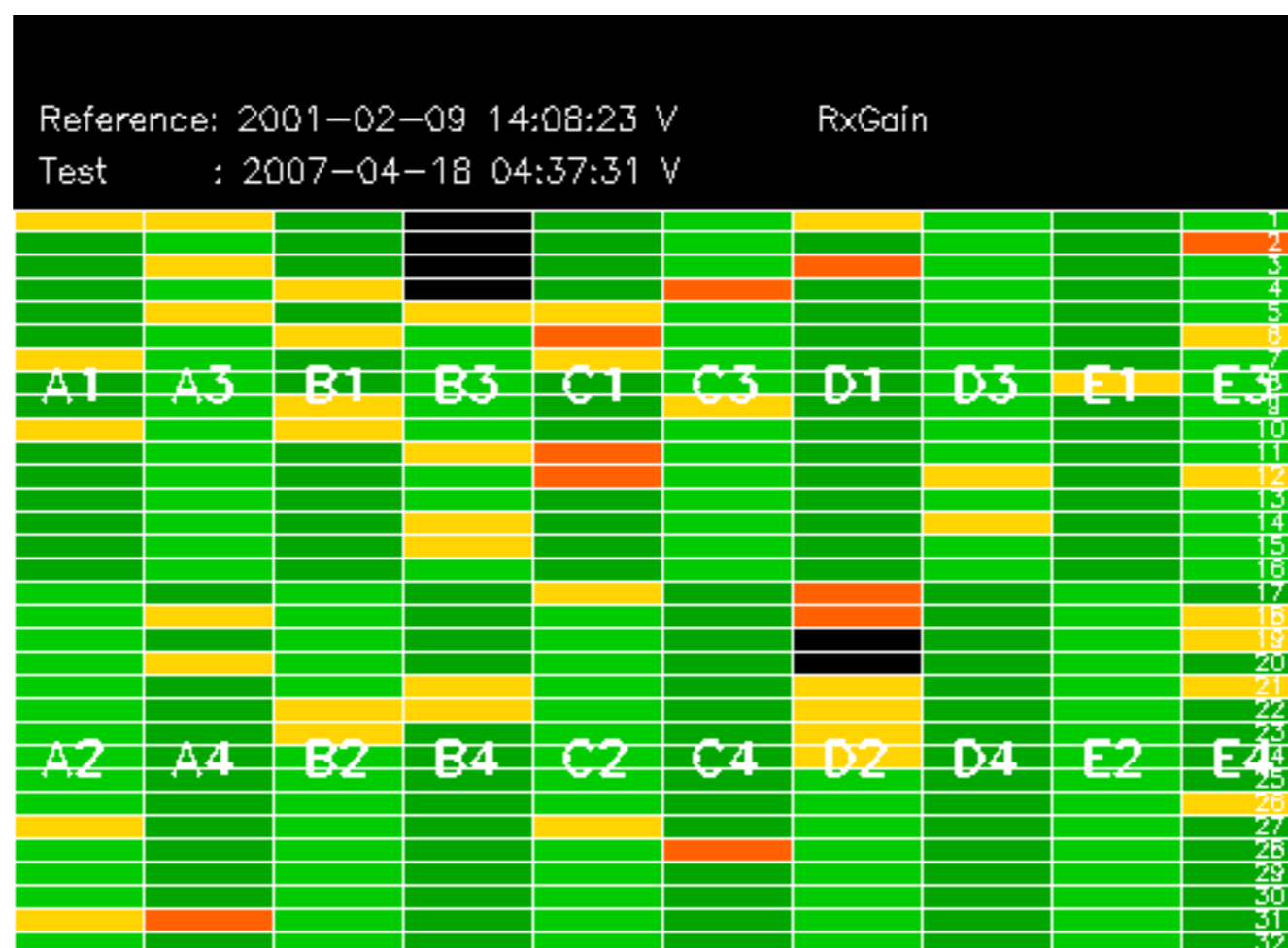
No anomalies observed on available MS products:

No anomalies observed.











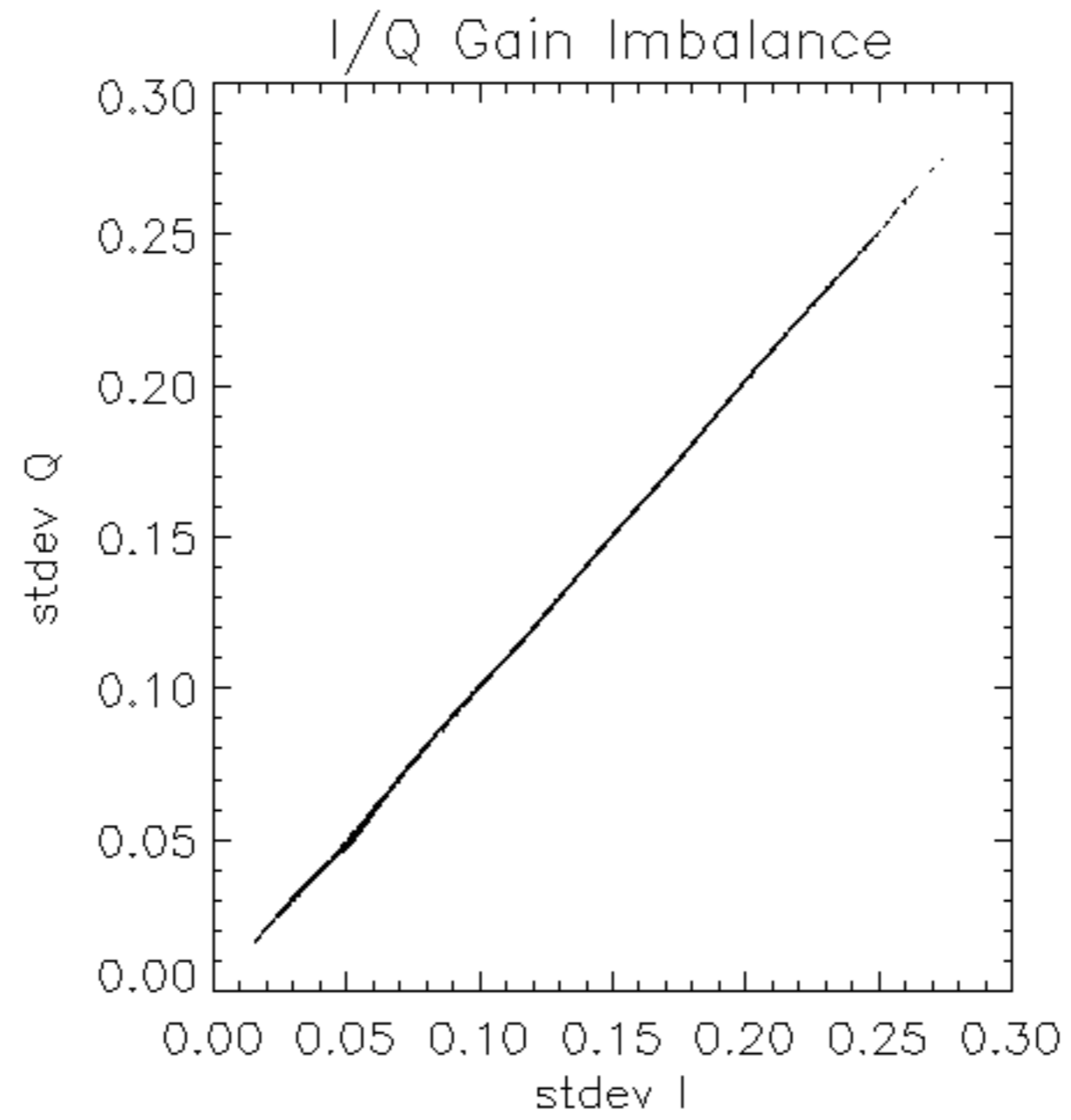


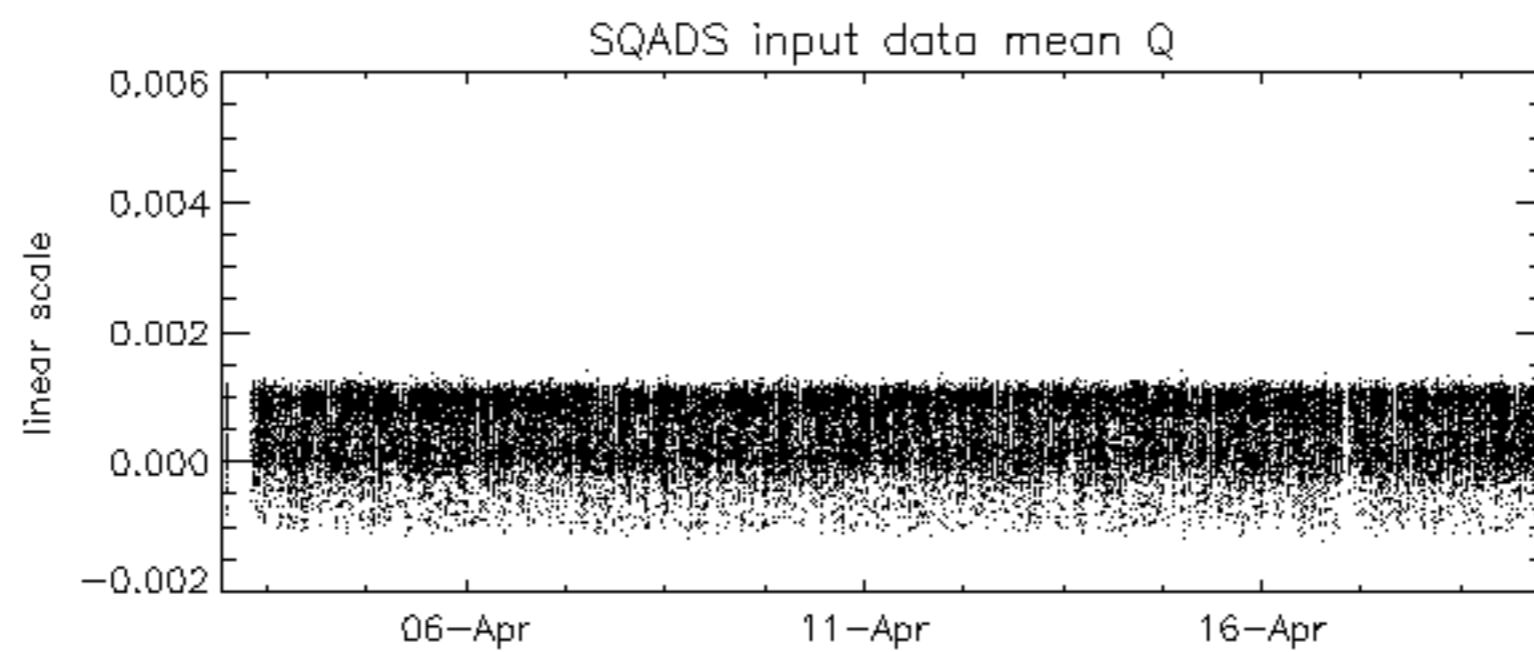
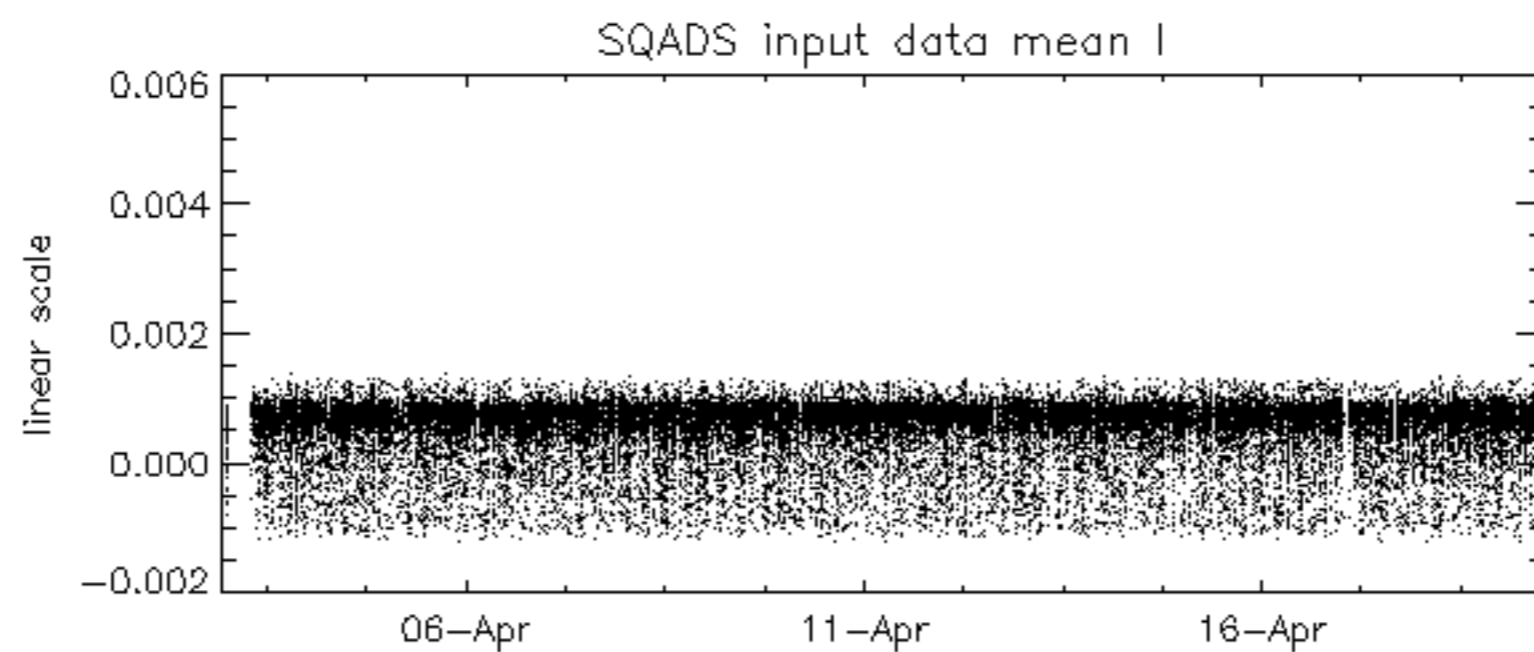
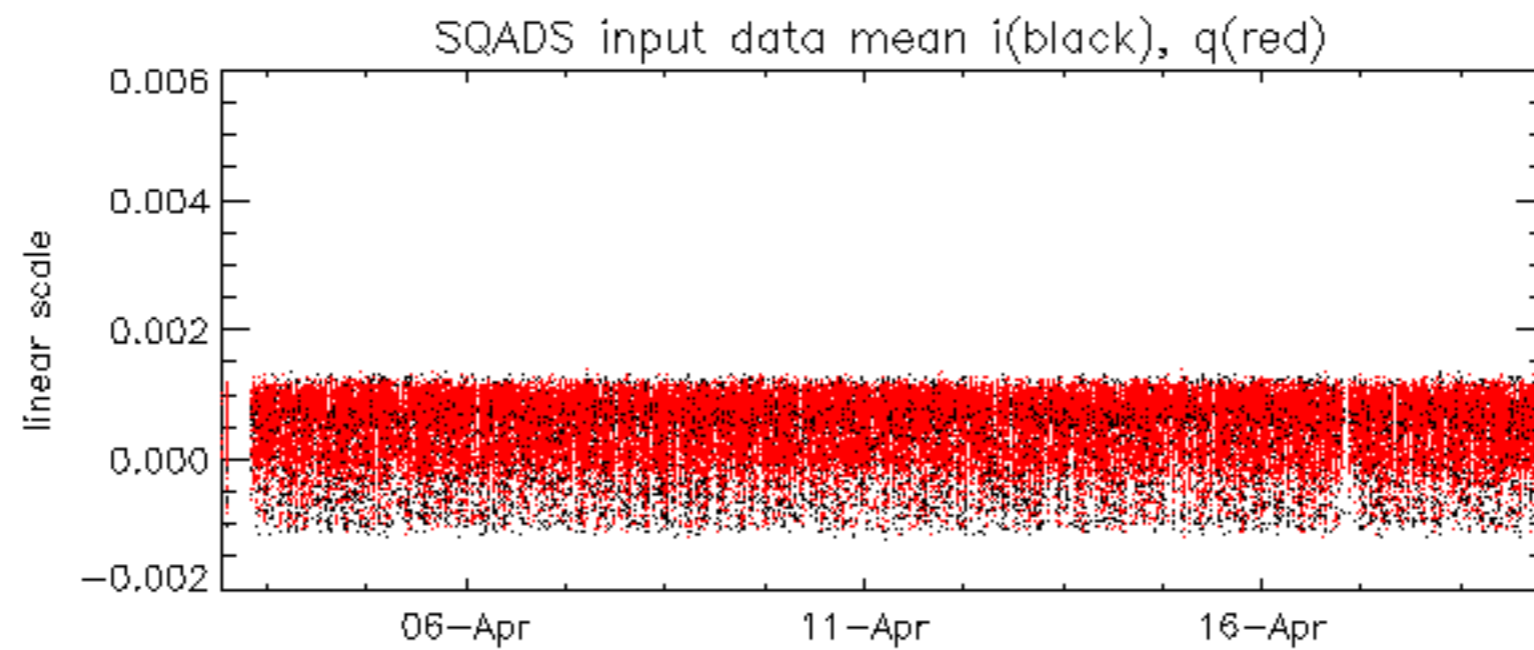


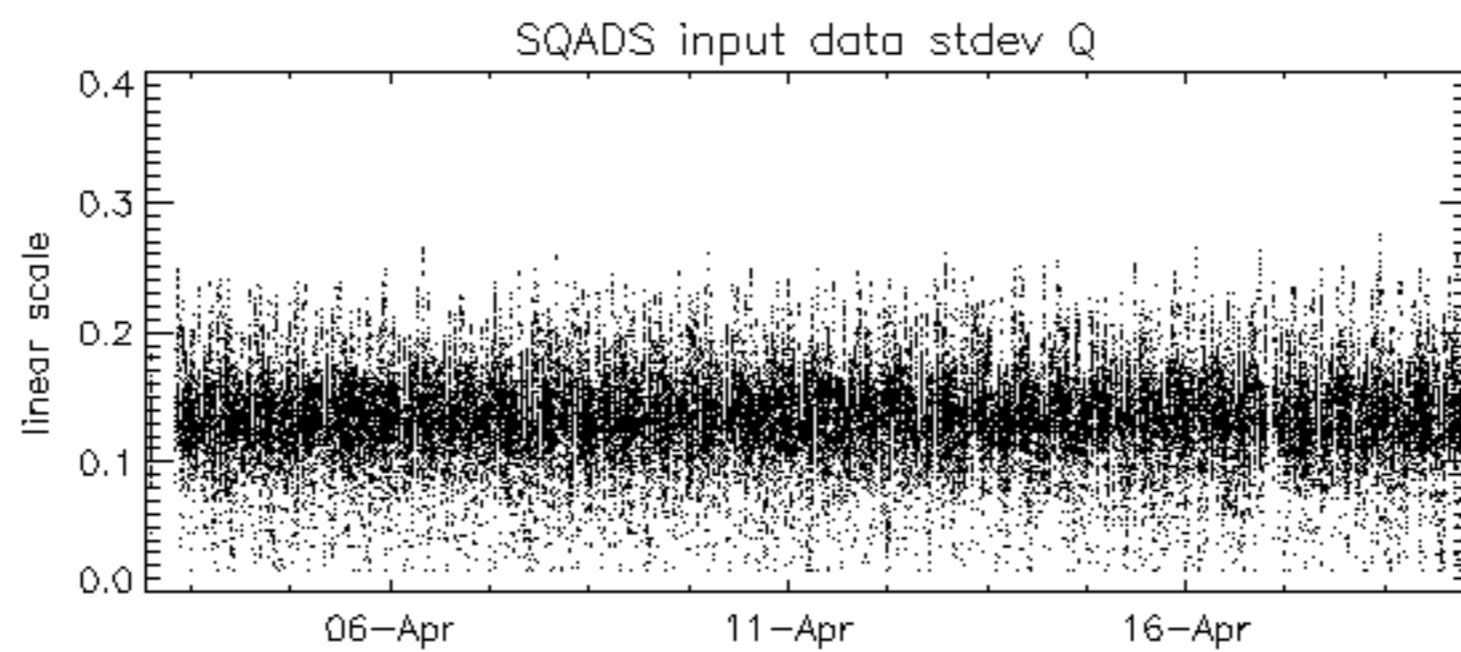
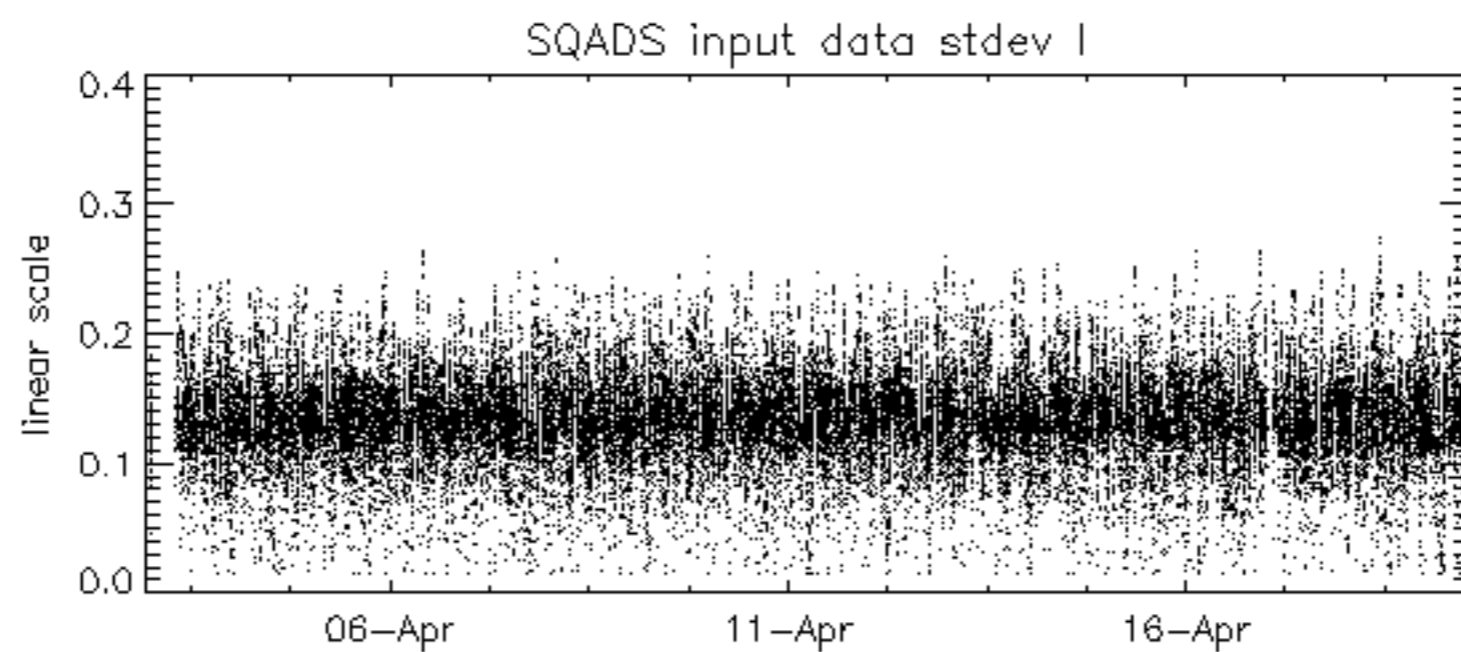
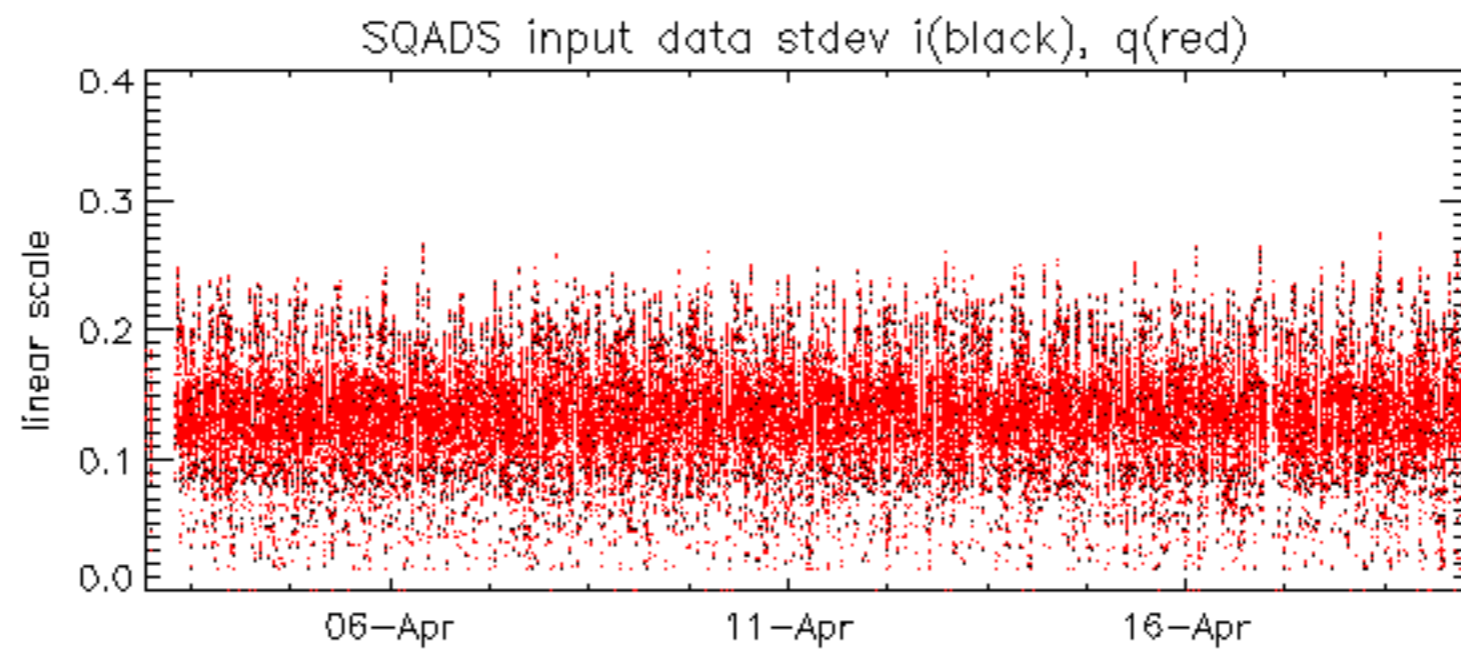


















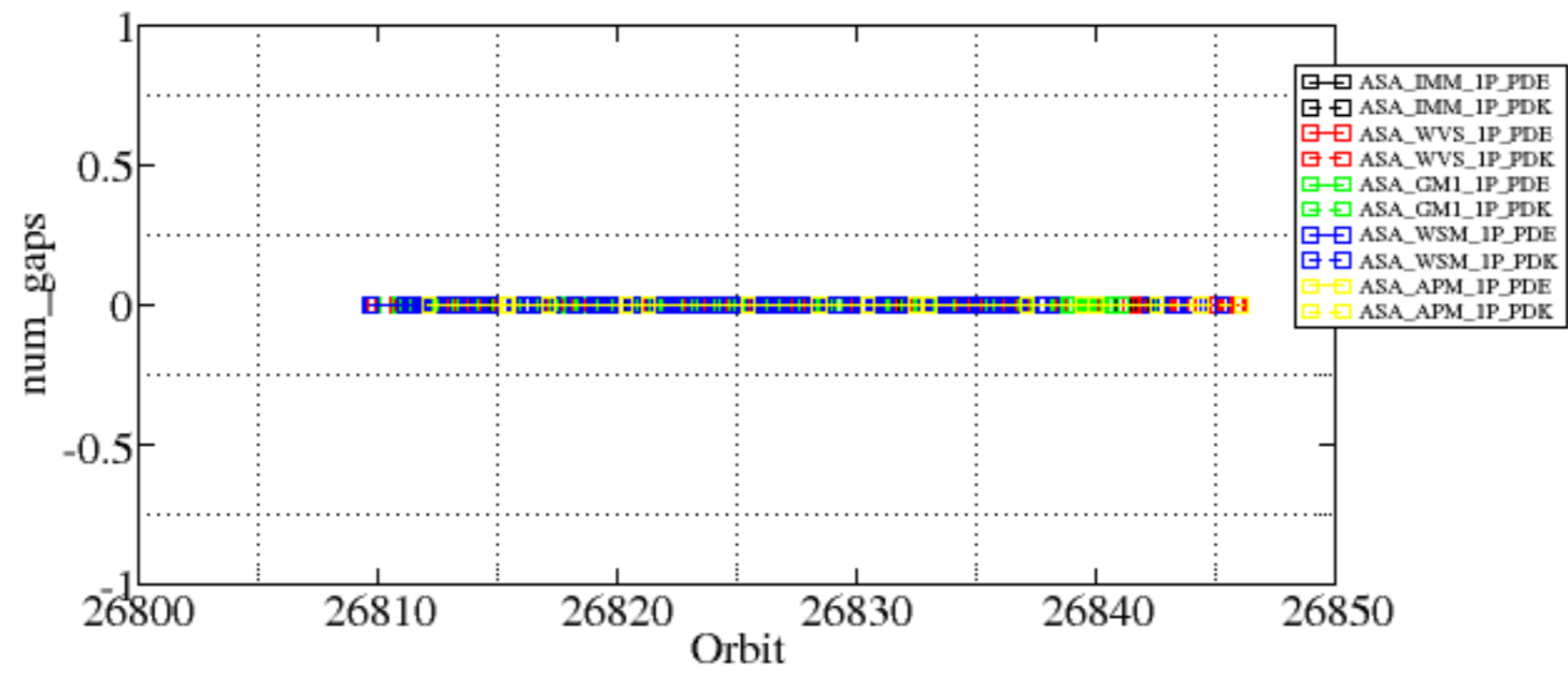


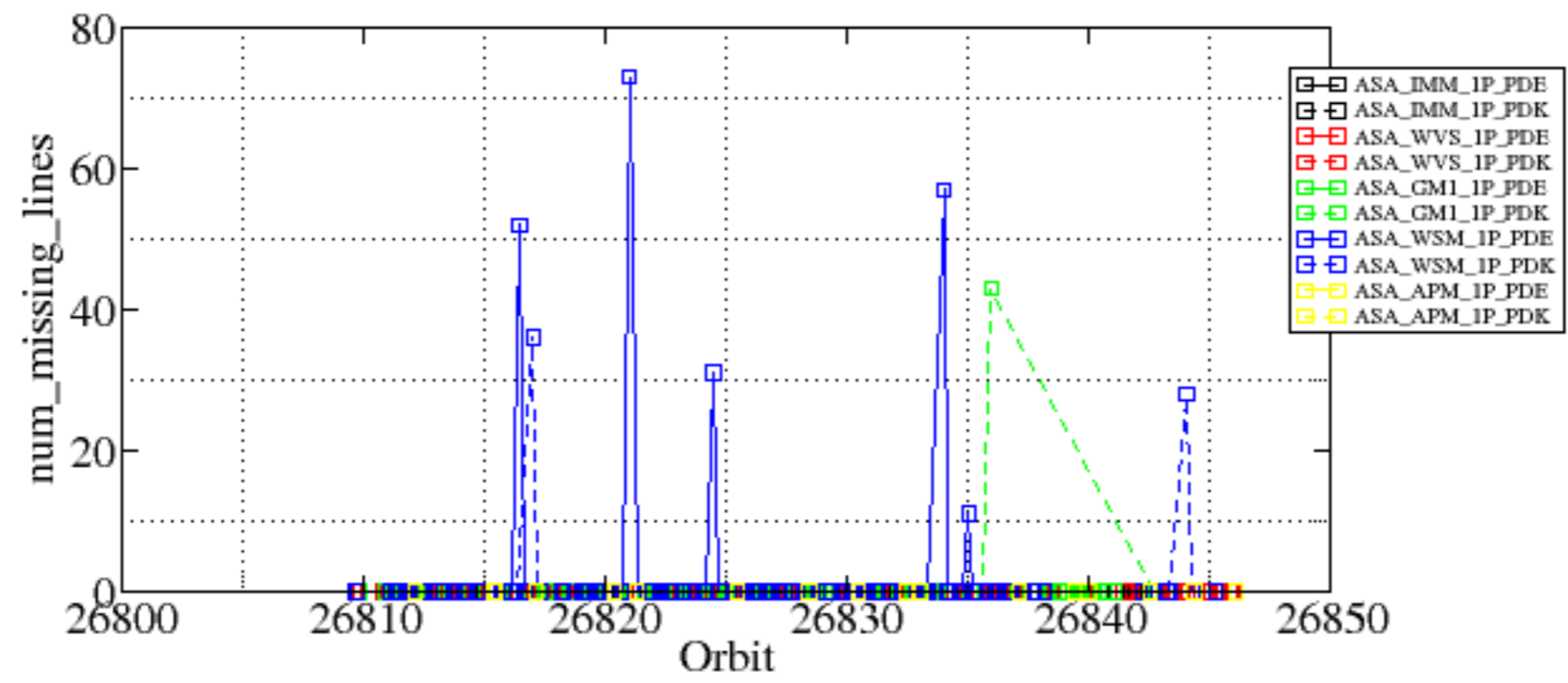
Summary of analysis for the last 3 days 2007041[789]

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_GM1_1PNPDK20070418_201215_000007792057_00228_26835_3683.N1	0	43
ASA_WSM_1PNPDE20070417_112928_000000852057_00209_26816_5448.N1	0	52
ASA_WSM_1PNPDE20070417_190808_000001712057_00214_26821_5641.N1	0	73
ASA_WSM_1PNPDE20070418_005604_000000852057_00217_26824_6083.N1	0	31
ASA_WSM_1PNPDE20070418_165614_000001522057_00227_26834_6862.N1	0	57
ASA_WSM_1PNPDE20070418_184029_000002312057_00228_26835_6864.N1	0	11
ASA_WSM_1PNPDK20070417_122637_000001462057_00210_26817_1935.N1	0	36
ASA_WSM_1PNPDK20070419_094719_000000852057_00237_26844_4060.N1	0	28







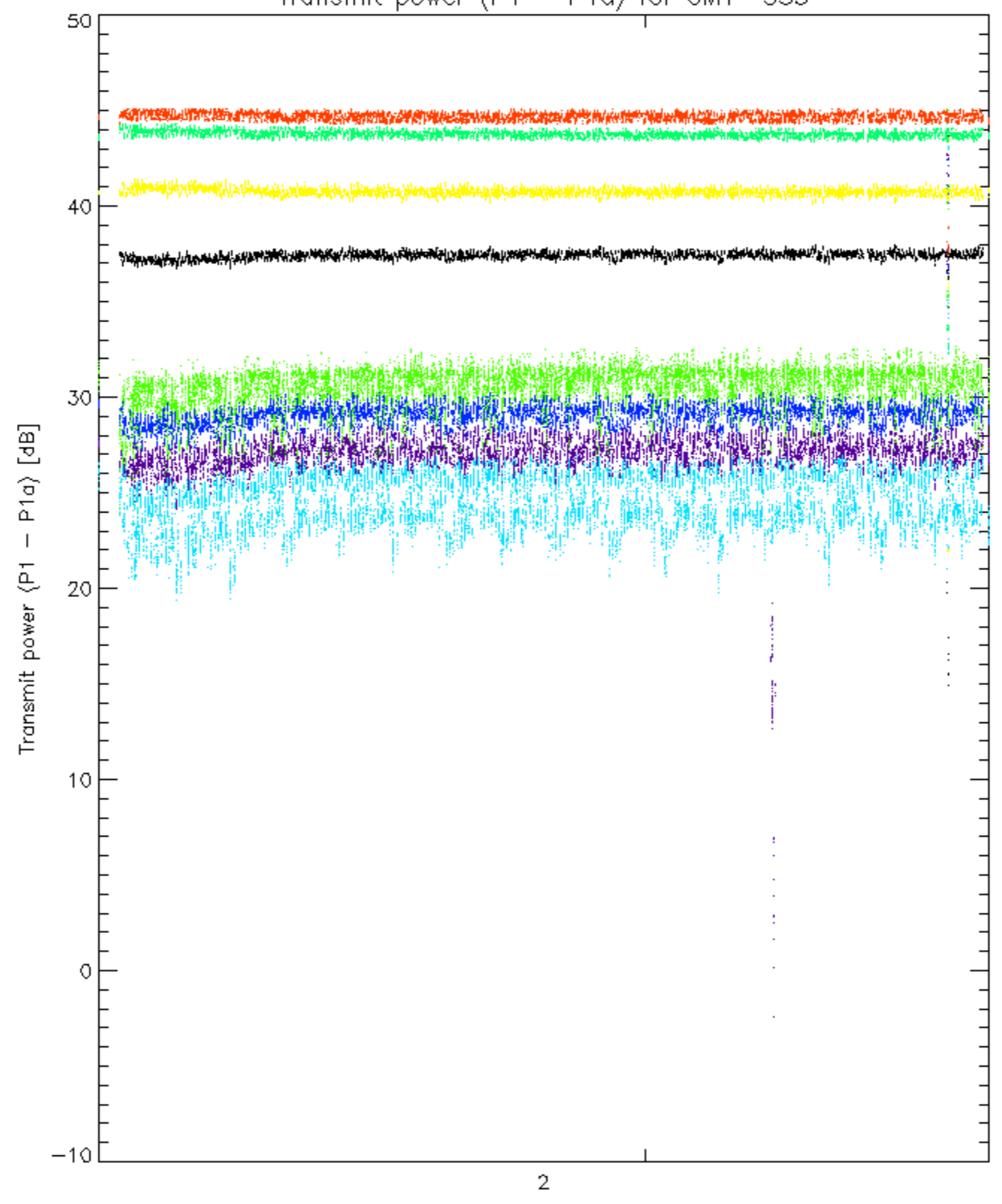




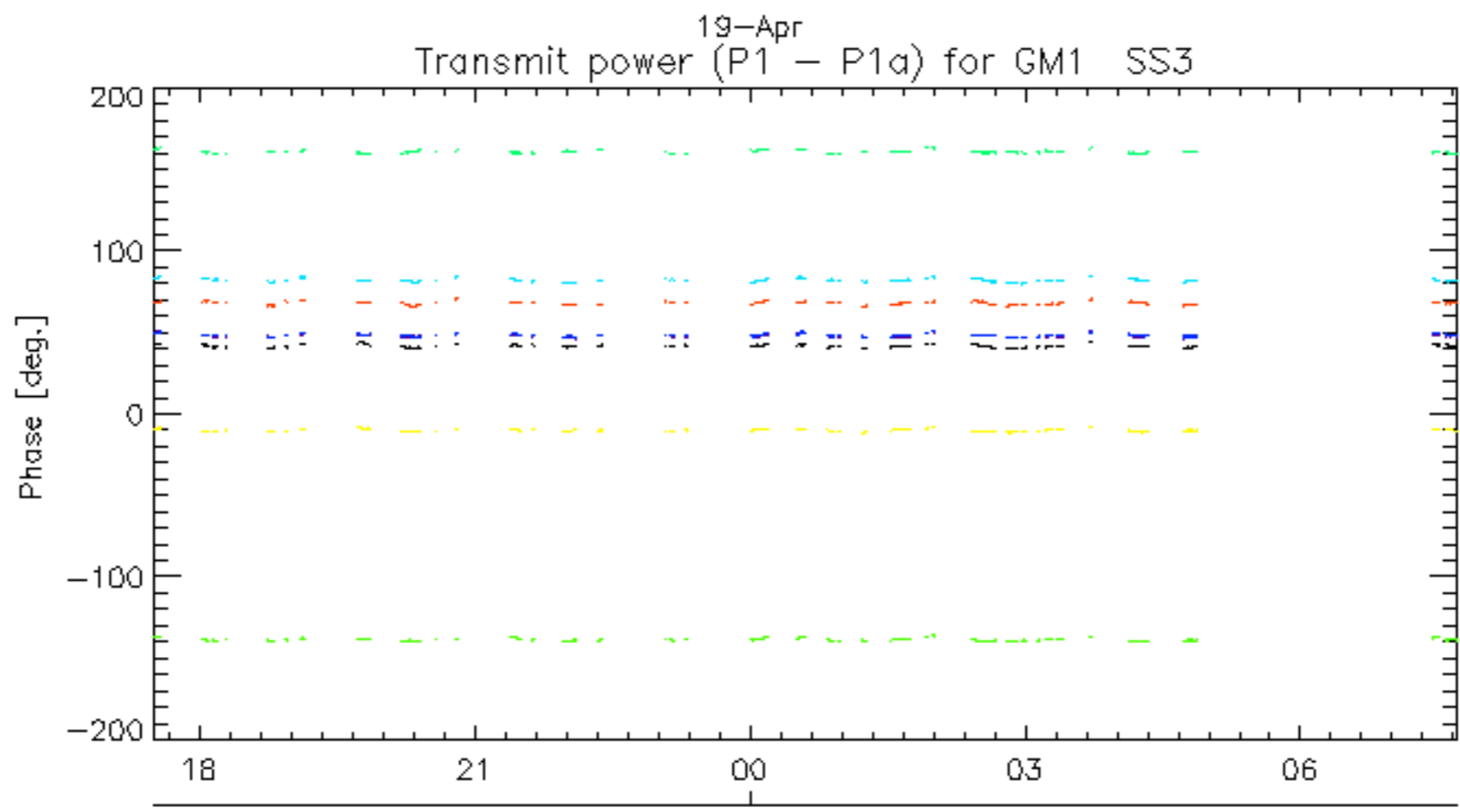
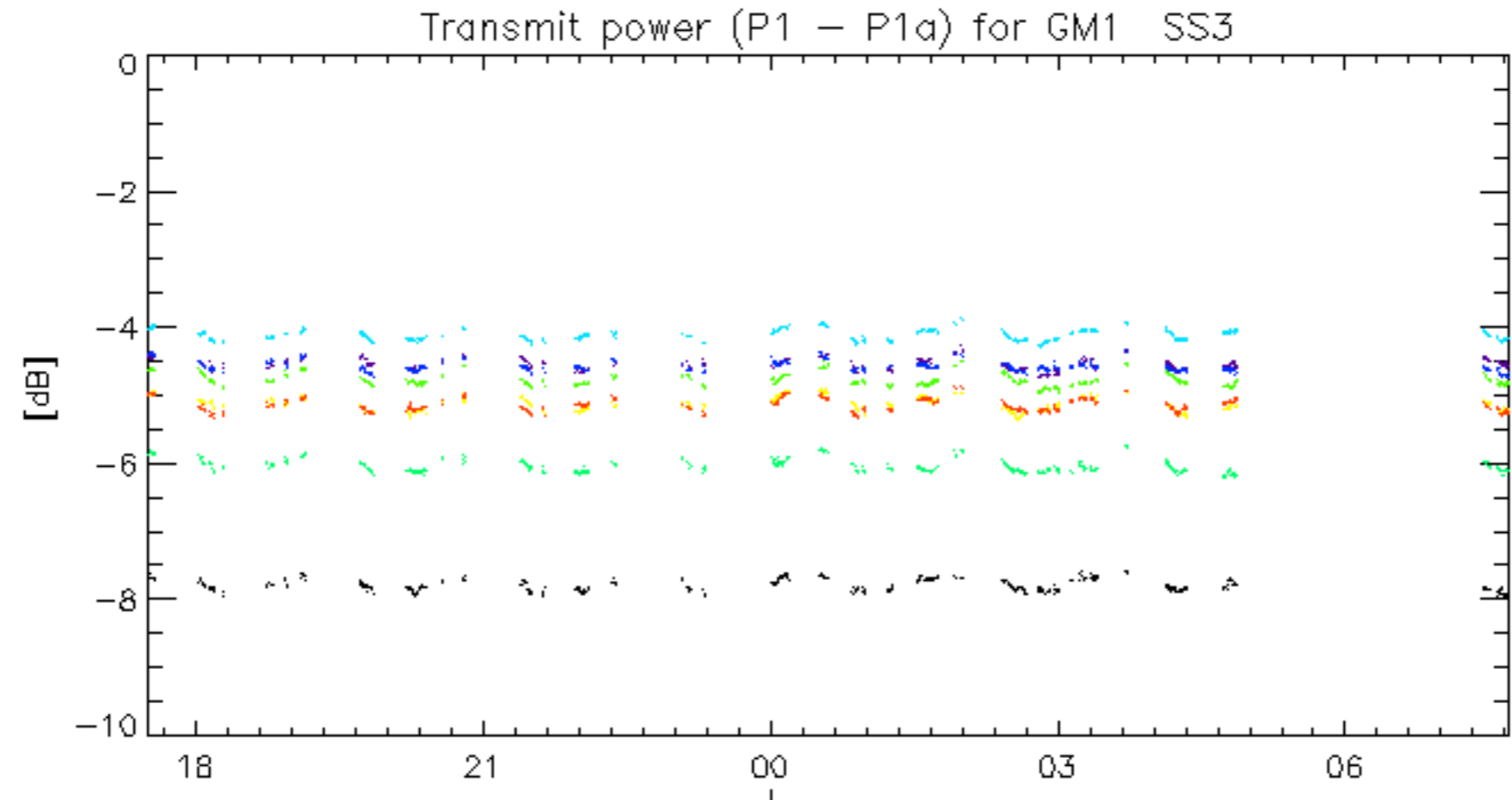




Transmit power (P1 - P1a) for GM1 SS3



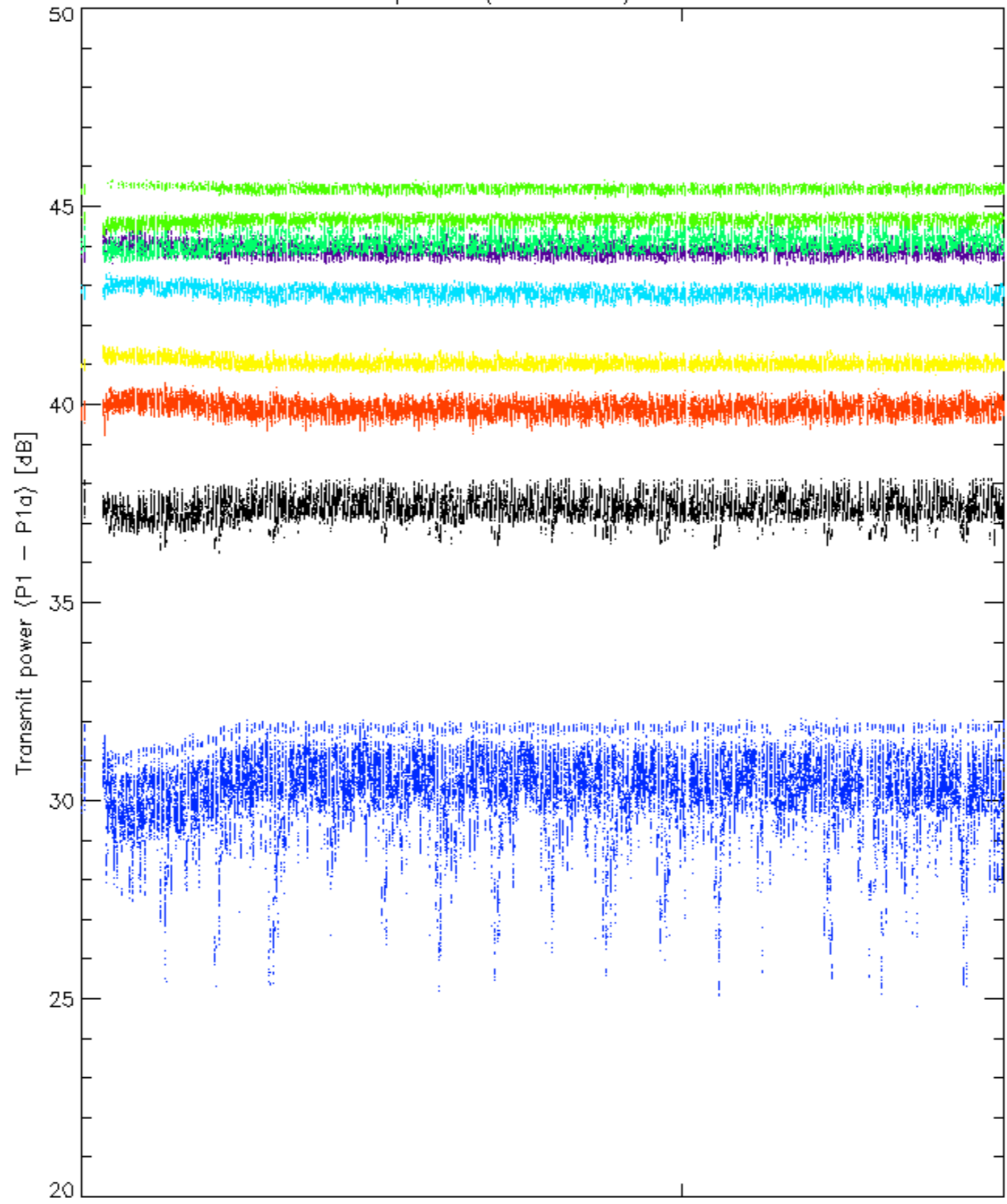
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



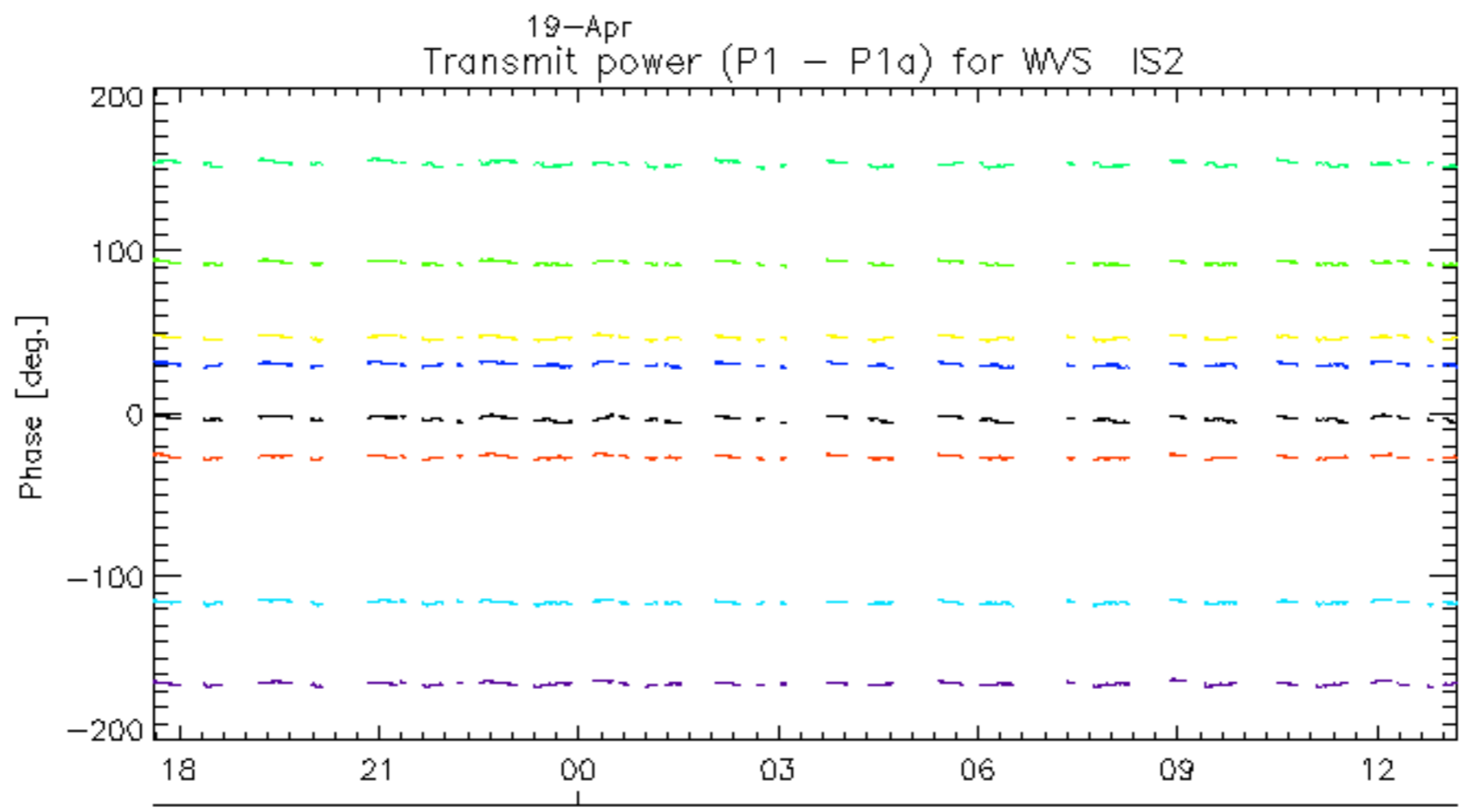
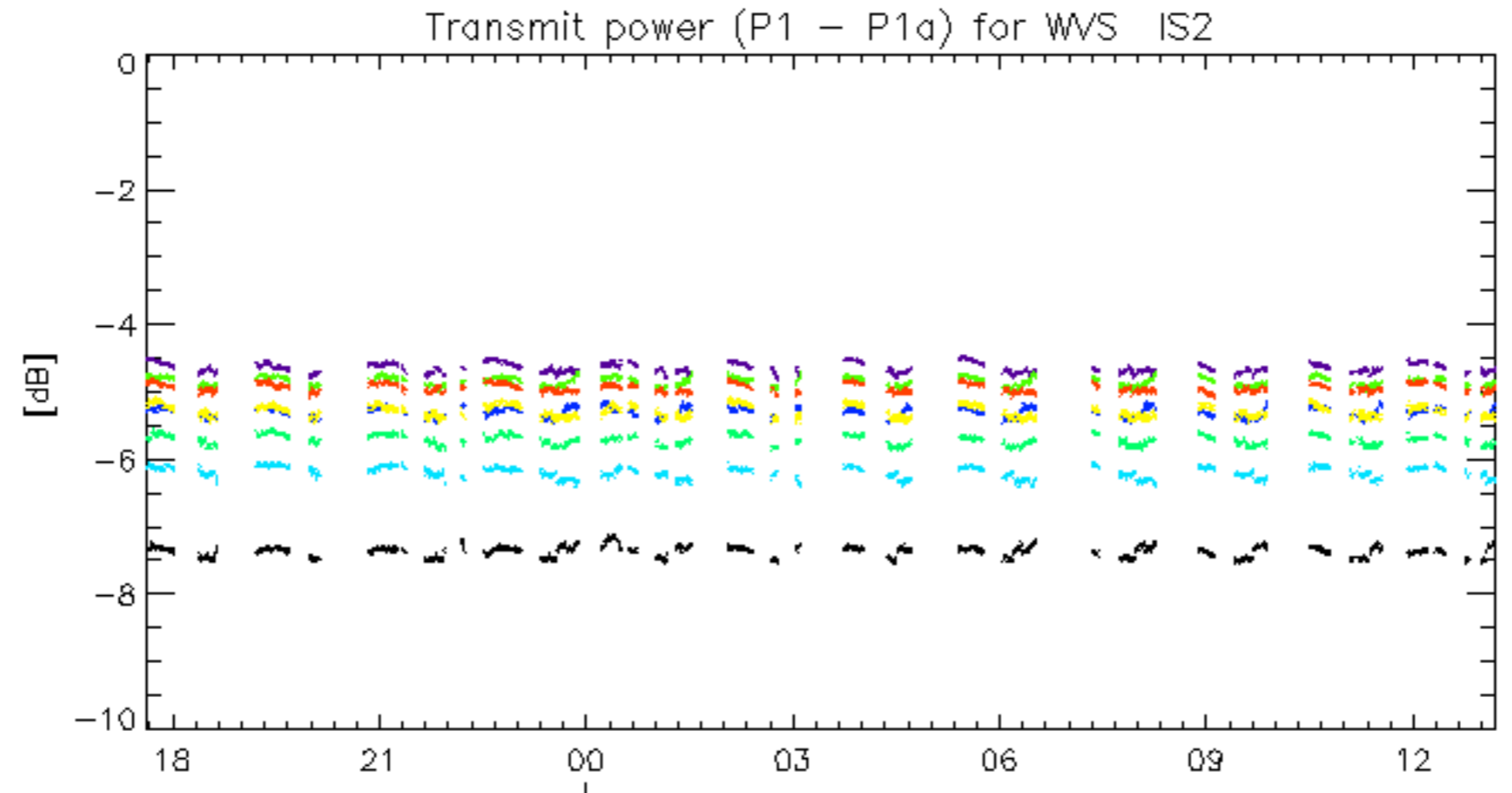
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



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.