

# PRELIMINARY REPORT OF 070206

last update on Tue Feb 6 16:18:13 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 2007-02-05 00:00:00 to 2007-02-06 16:18:13

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	38	82	9	5	26
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	38	82	9	5	26
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	38	82	9	5	26
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	38	82	9	5	26

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	47	59	47	13	55
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	47	59	47	13	55
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	47	59	47	13	55
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	47	59	47	13	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	20070205 054044
H	20070206 050907

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
⊗	
⊗	
⊗	
⊗	

## 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	-11.442839	0.320625	4.382605
7	P1a	-10.087770	0.069614	-1.107672
11	P1a	-10.630921	0.097388	-1.632795
15	P1a	-11.442725	1.366094	-8.874903
19	P1a	-15.262851	0.906389	7.125283
22	P1a	-20.146032	6.961708	18.428217
26	P1a	-15.661704	0.420857	-1.268561
30	P1a	-19.526922	6.132531	-18.487626

#### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.882894	1.651300	-10.916344
7	P1	-2.581428	0.011494	-0.553831
11	P1	-3.145352	0.118889	-2.613058
15	P1	-4.359327	1.115598	-8.272688
19	P1	-3.470041	0.076187	1.963641
22	P1	-5.283712	0.121294	-2.513757
26	P1	-5.552382	0.579279	5.851700
30	P1	-5.413301	0.064343	-1.259388

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.480104	0.478243	-4.994419
7	P2	-21.984764	0.157909	1.683260
11	P2	-10.859659	0.124646	1.755686
15	P2	-5.125669	0.093559	0.415204
19	P2	-7.256924	0.080506	0.306931
22	P2	-8.369987	0.077128	-0.330703

26	P2	-24.212255	0.118274	1.749704
30	P2	-21.701002	0.070227	0.031139

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.223217	0.007462	0.037930
7	P3	-8.223217	0.007462	0.037930
11	P3	-8.223217	0.007462	0.037930
15	P3	-8.223217	0.007462	0.037930
19	P3	-8.223217	0.007462	0.037930
22	P3	-8.223217	0.007462	0.037930
26	P3	-8.223217	0.007462	0.037930
30	P3	-8.223217	0.007462	0.037930

### 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	-11.615573	0.107983	1.848188
7	P1a	-10.016298	0.046477	-0.007467
11	P1a	-10.511916	0.061395	-0.377592
15	P1a	-10.828789	0.131622	-0.103131
19	P1a	-15.748829	0.061071	-0.042402
22	P1a	-20.930632	1.350335	1.102545
26	P1a	-15.487508	0.251089	0.347564
30	P1a	-18.323038	0.363543	-0.229360

### P1t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.982815	2.462524	-12.012861
7	P1	-2.440759	0.006315	-0.007615

11	P1	-2.855235	0.017336	-0.104737
15	P1	-3.775112	0.033303	-0.118820
19	P1	-3.549531	0.013559	-0.034565
22	P1	-5.023107	0.023972	-0.002047
26	P1	-6.000734	0.022496	-0.035764
30	P1	-5.289398	0.023568	0.017834

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.591864	0.486748	-4.652372
7	P2	-22.033640	0.047499	0.046120
11	P2	-10.695430	0.030507	0.069492
15	P2	-4.841348	0.026364	0.022260
19	P2	-6.842445	0.026507	0.016250
22	P2	-8.151708	0.029306	-0.002636
26	P2	-24.254597	0.031144	0.041568
30	P2	-21.798426	0.033839	0.054618

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.055327	0.002554	0.018109
7	P3	-8.055166	0.002550	0.017108
11	P3	-8.055193	0.002545	0.019230
15	P3	-8.055243	0.002530	0.018224
19	P3	-8.055180	0.002537	0.018116
22	P3	-8.055319	0.002546	0.018619
26	P3	-8.055209	0.002548	0.018777
30	P3	-8.055219	0.002553	0.018275

## 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	0.000695838
	stdev	2.84727e-07
MEAN Q	mean	0.000263340
	stdev	2.21888e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.0581178
	stdev	0.000893372
STDEV Q	mean	0.0576702
	stdev	0.000906665



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007020[456]

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_1PNPDE20070205_151401_000000852055_00197_25802_5978.N1	0	1



## 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)**

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Acsending
<input type="checkbox"/>
Descending

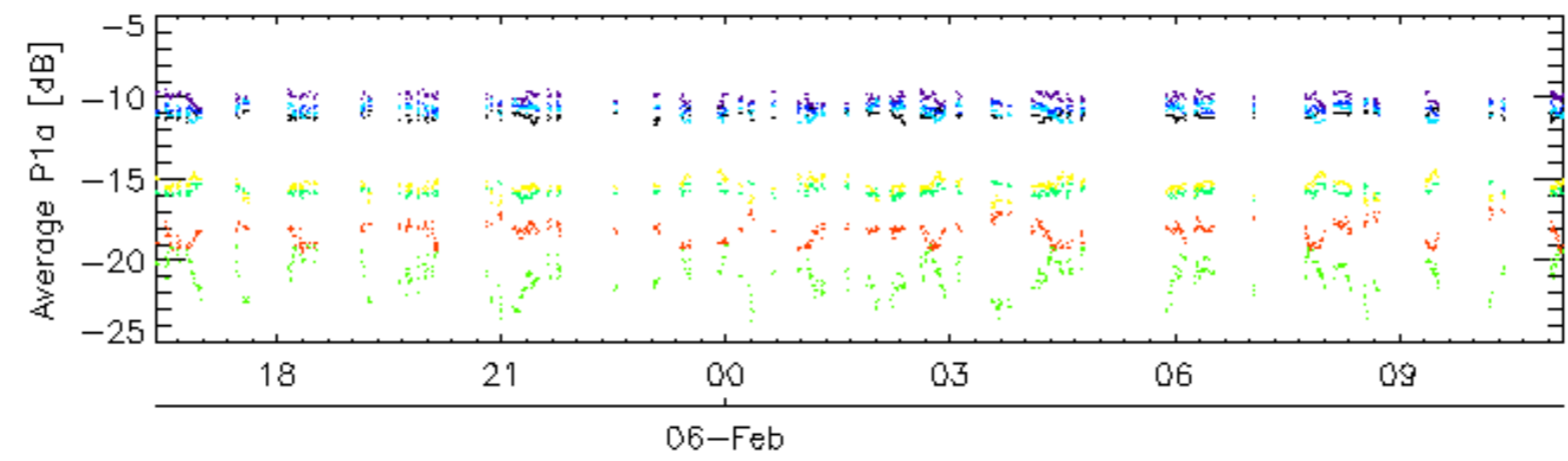
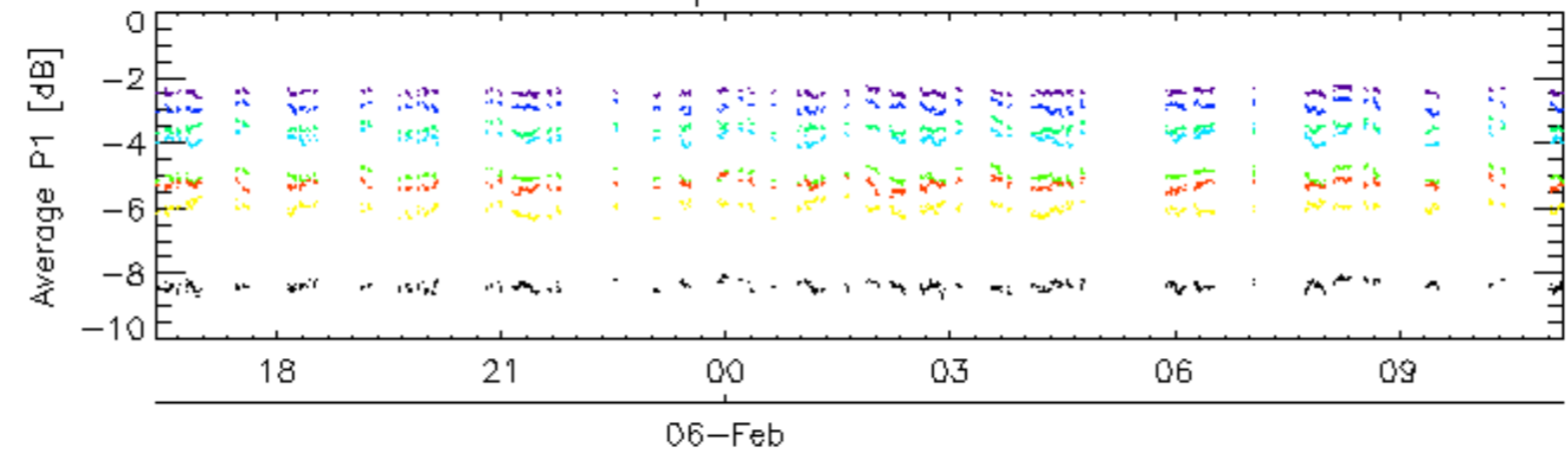
**7.5 - Absolute Doppler for GM1****Evolution of Absolute Doppler**

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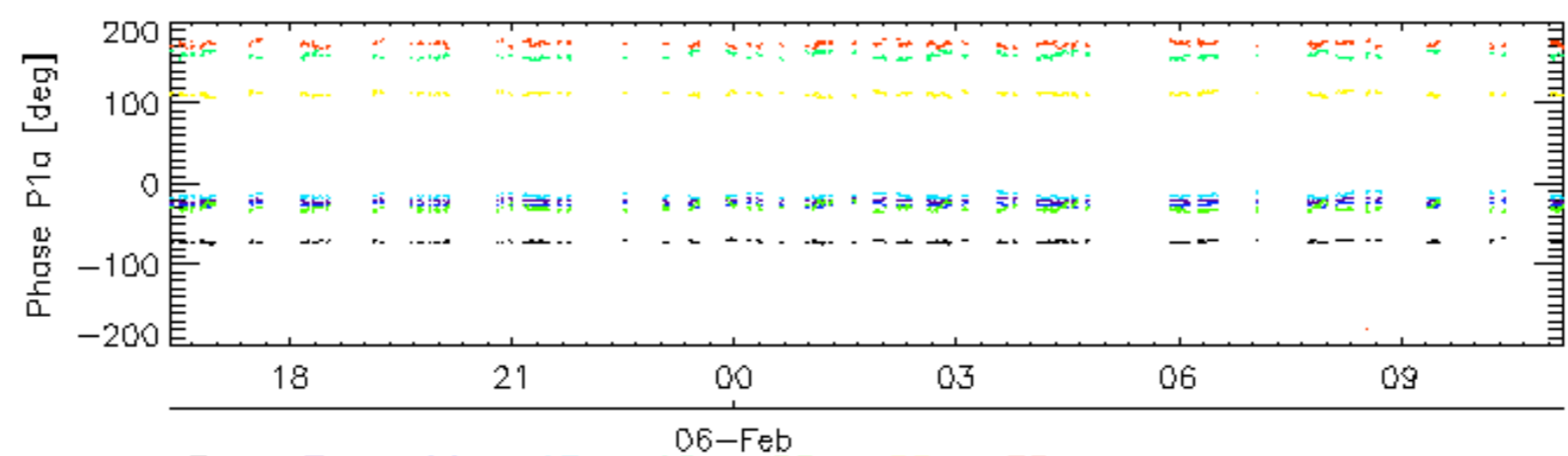
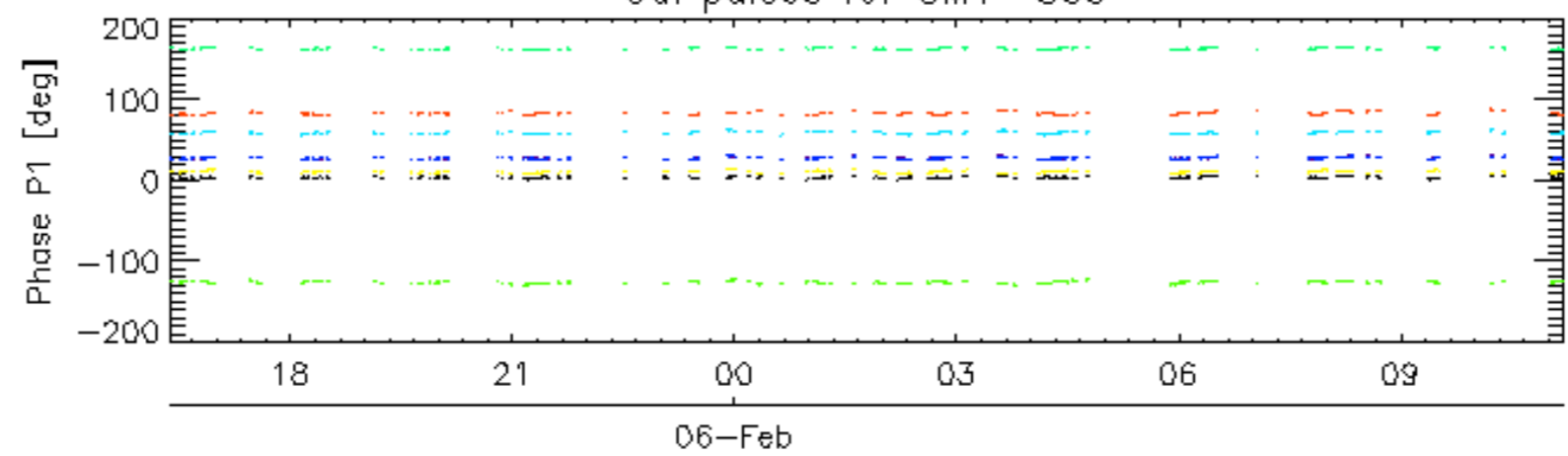
**7.6 - Doppler evolution versus ANX for GM1****Evolution Doppler error versus ANX**

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

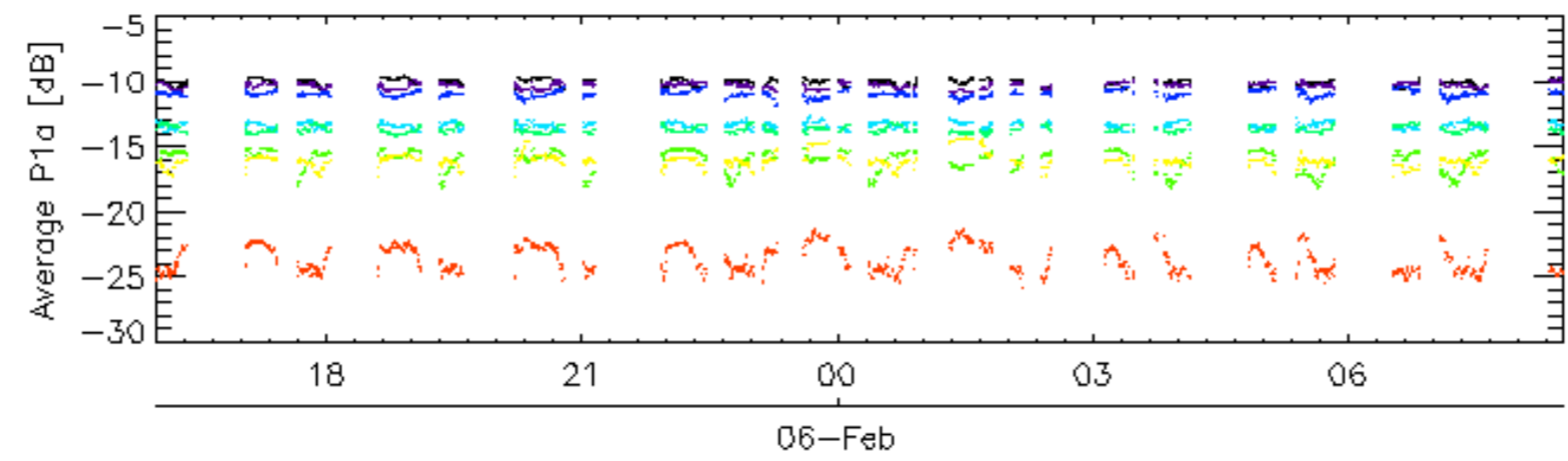
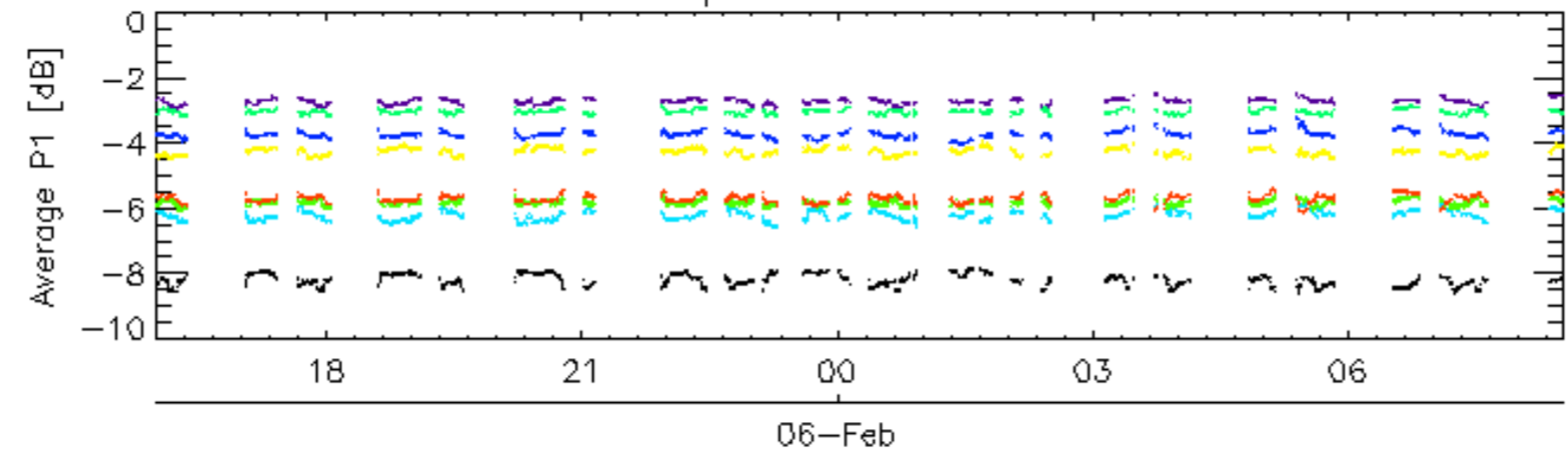


Cal pulses for GM1 SS3

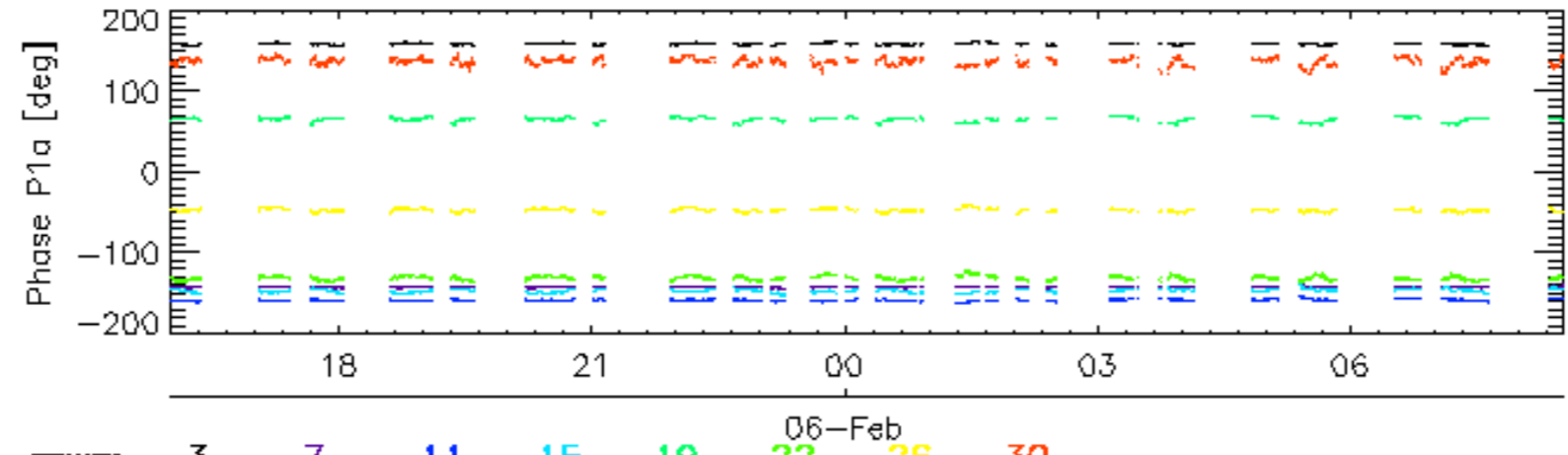
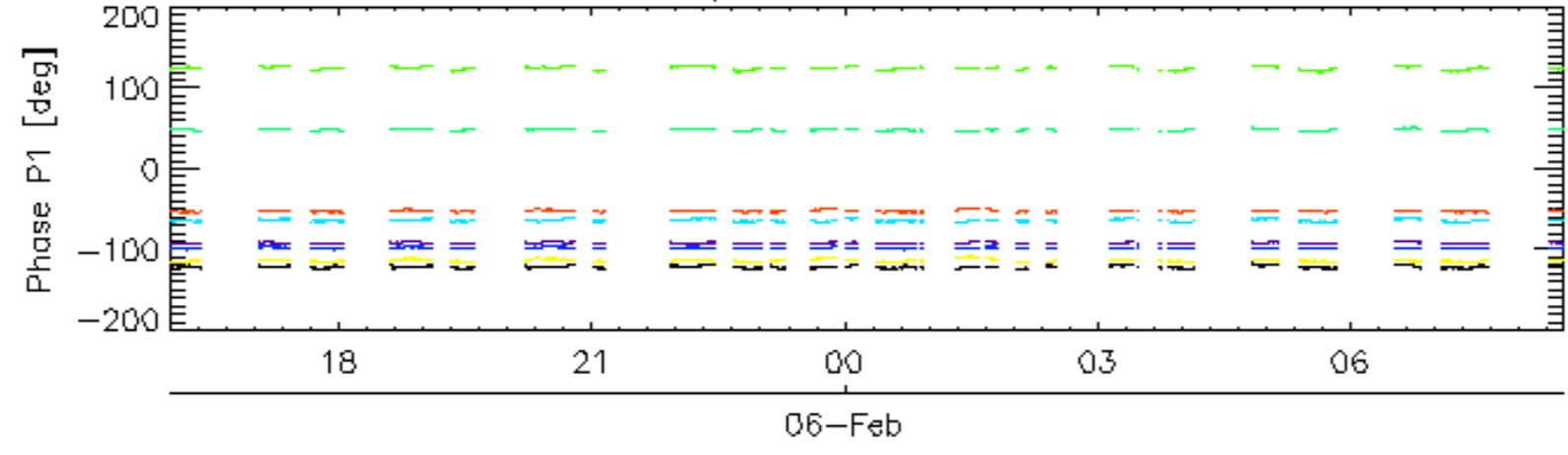


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS4

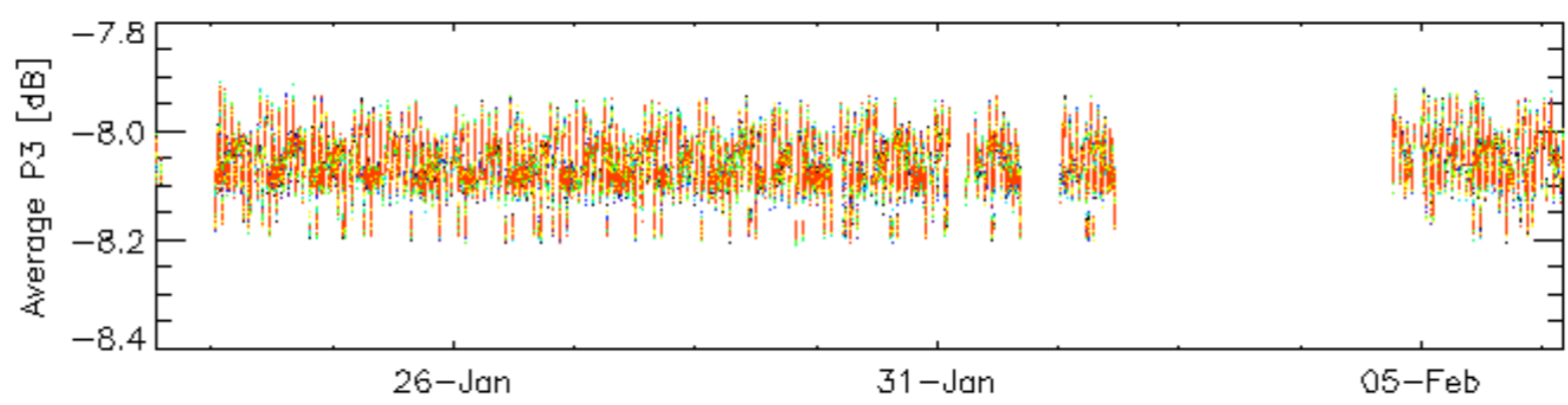
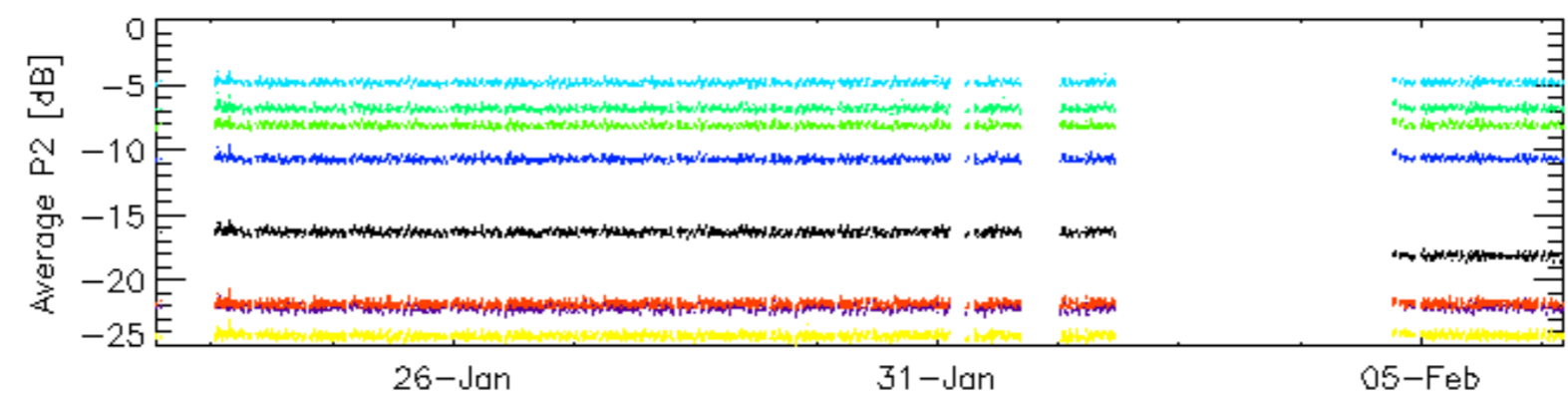
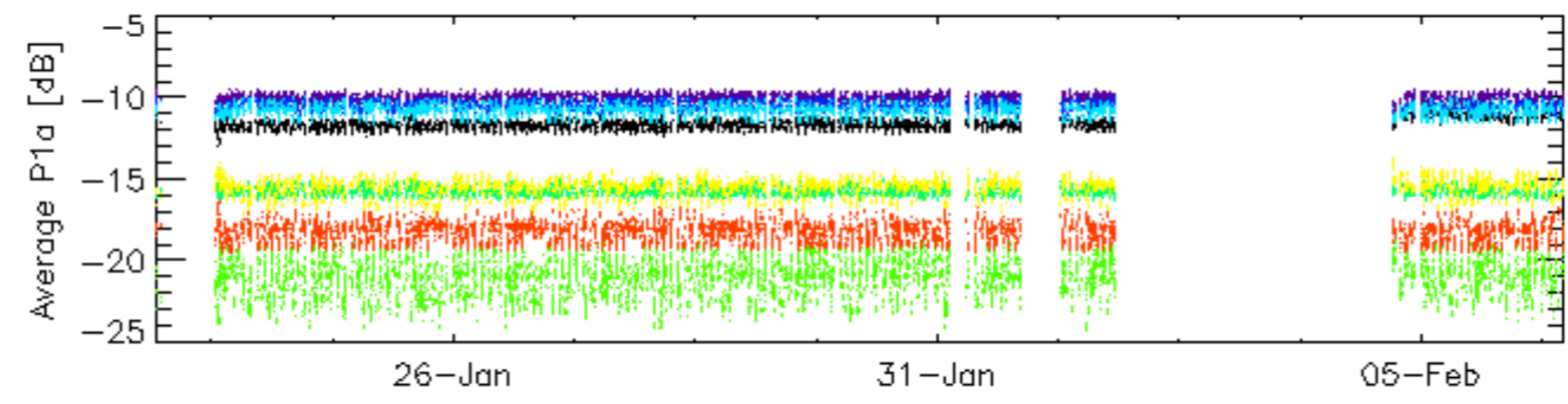
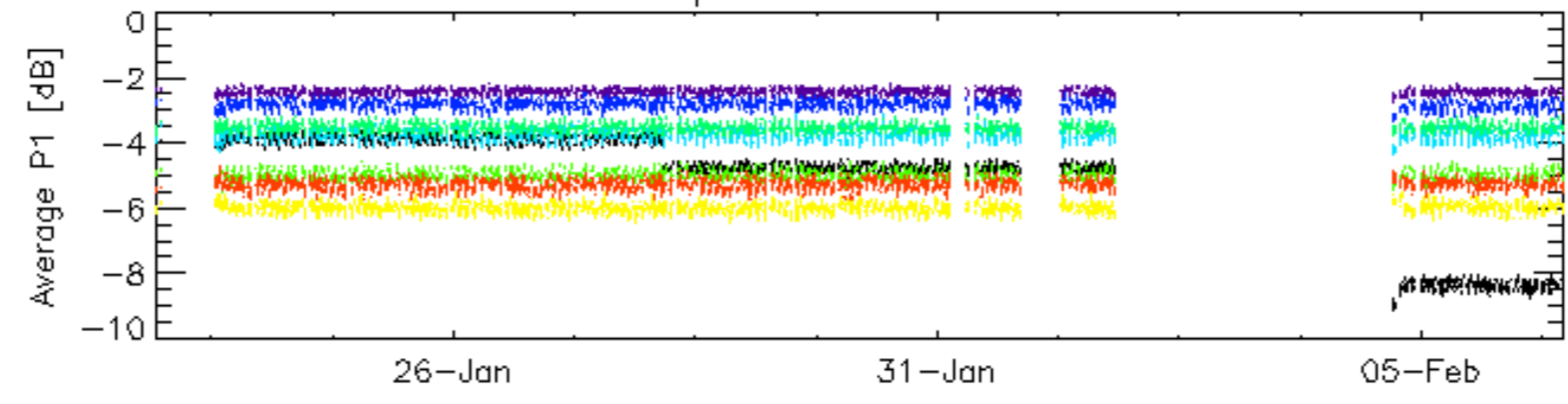


Cal pulses for WVS IS4



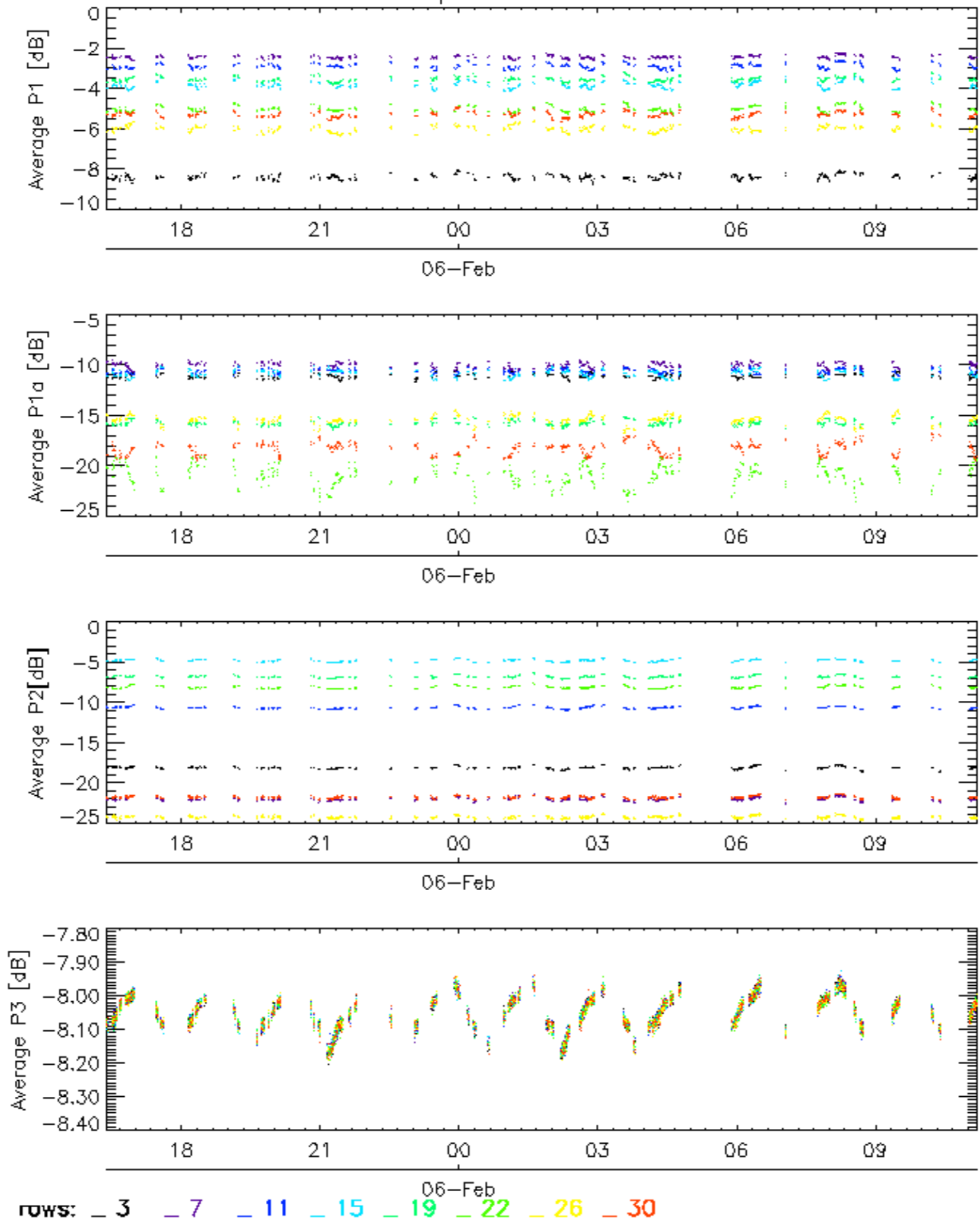
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

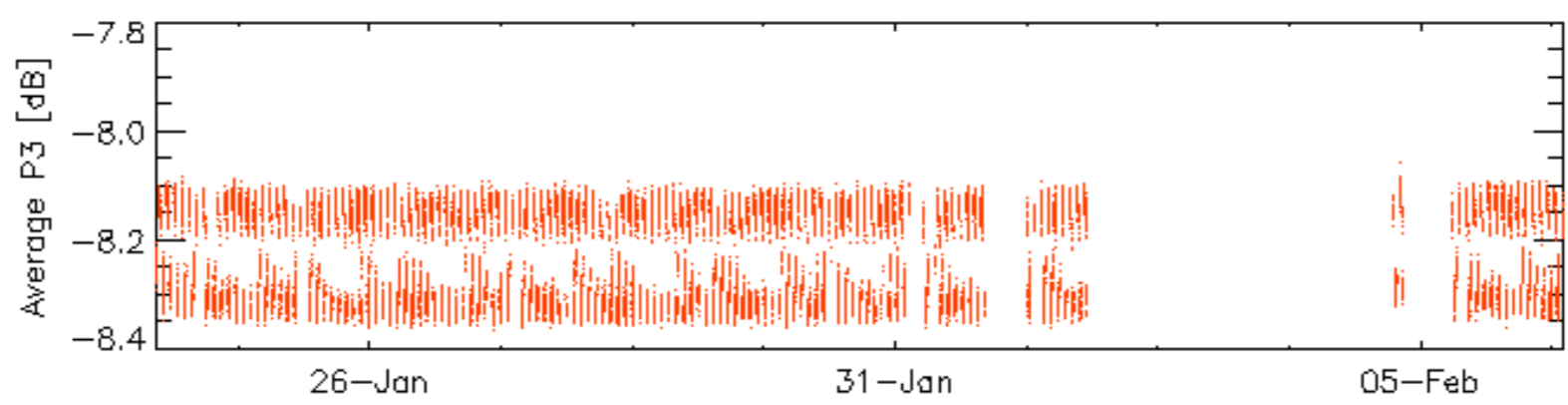
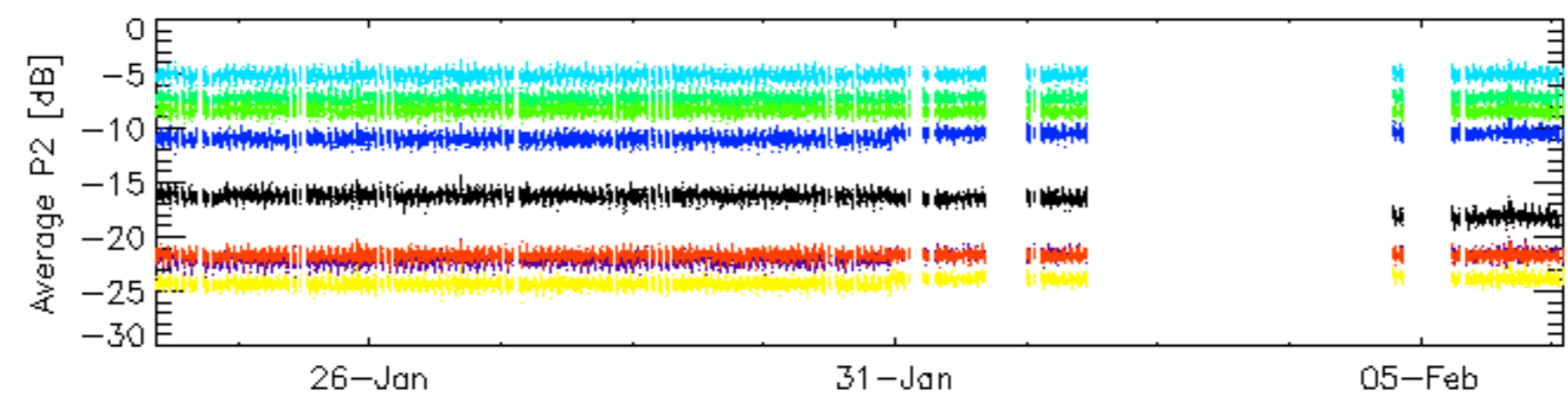
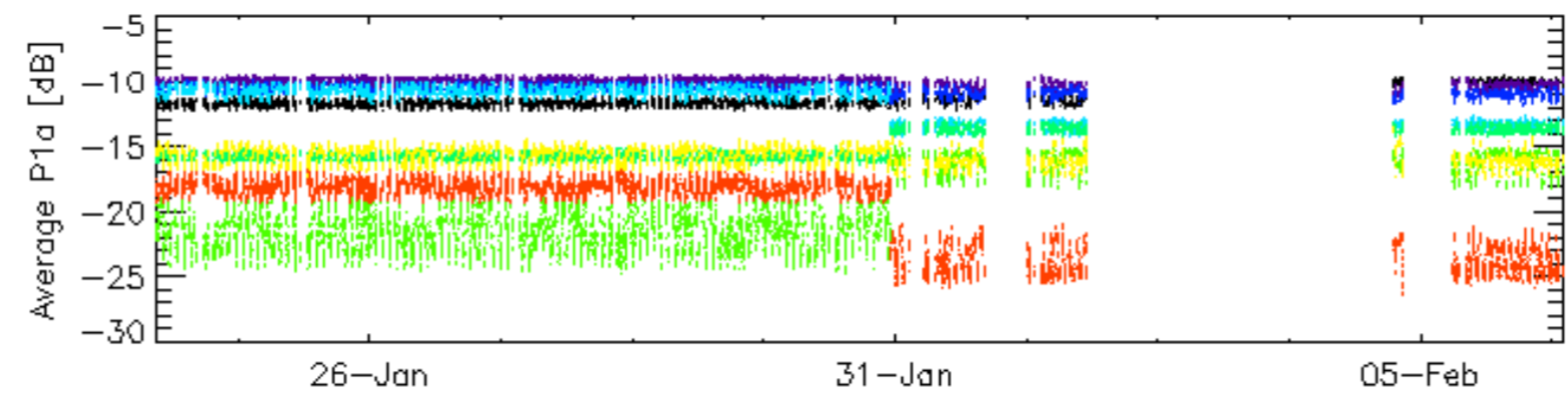
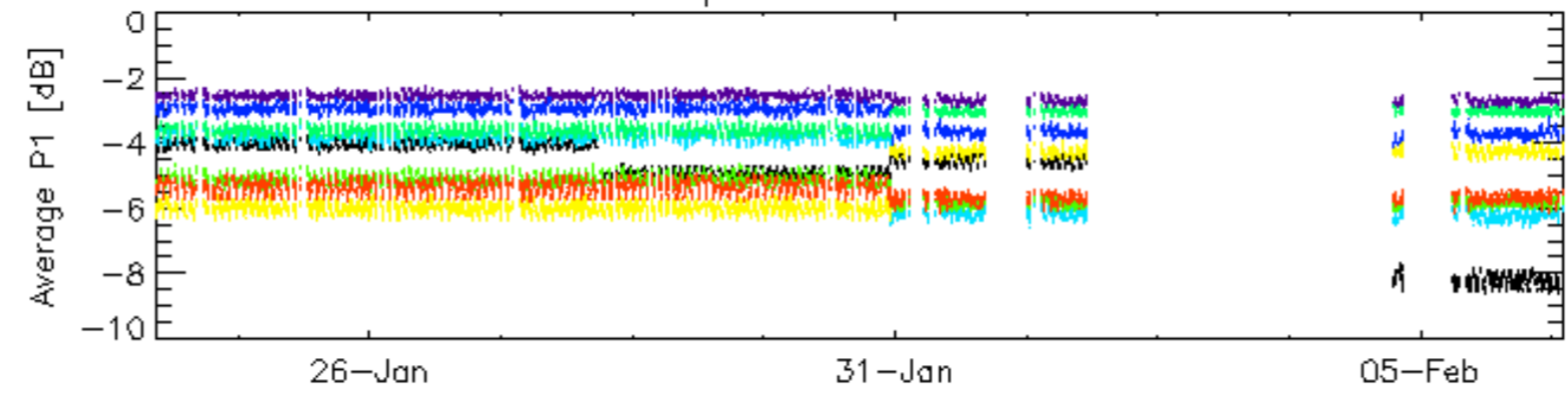


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

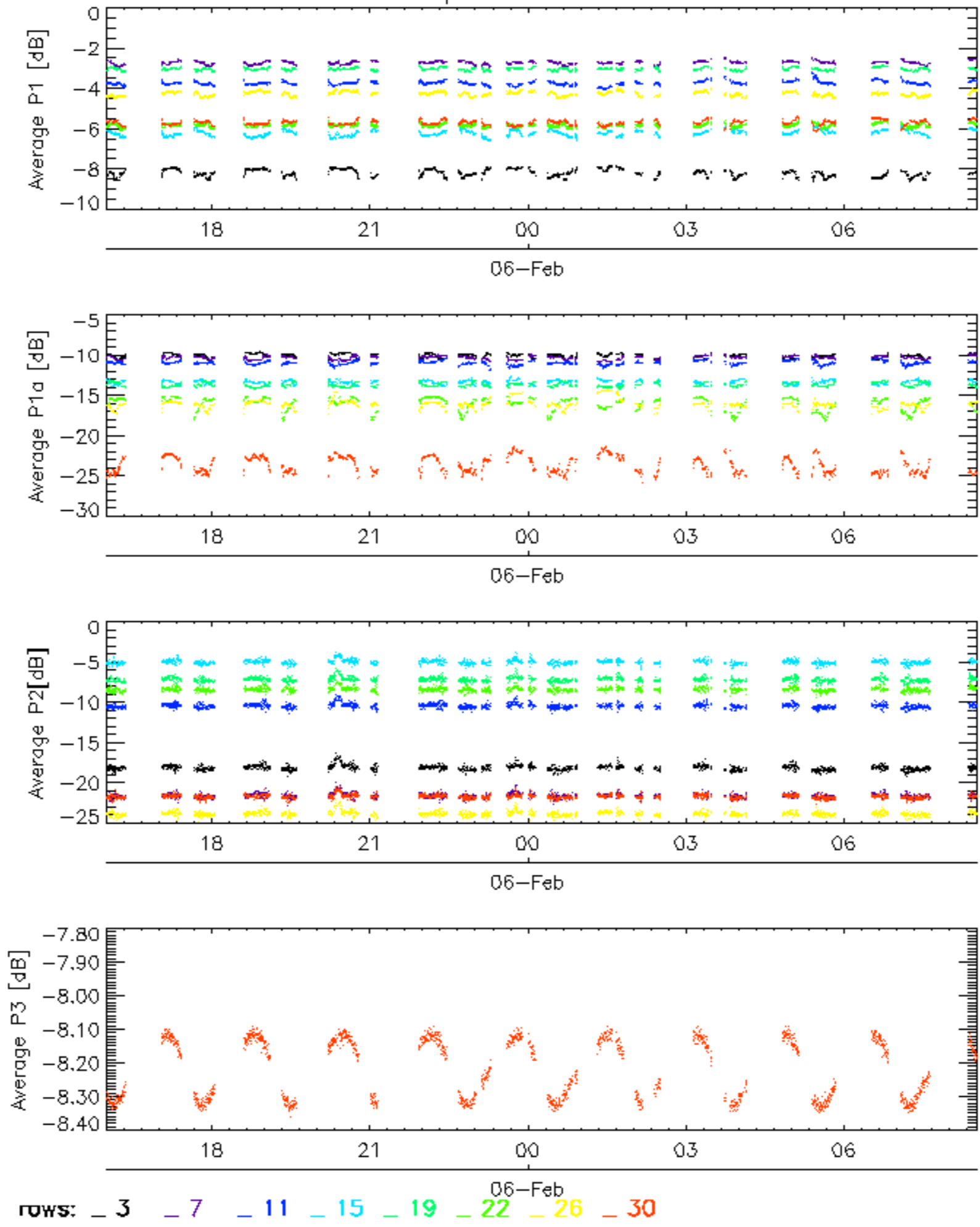


Cal pulses for WVS IS4



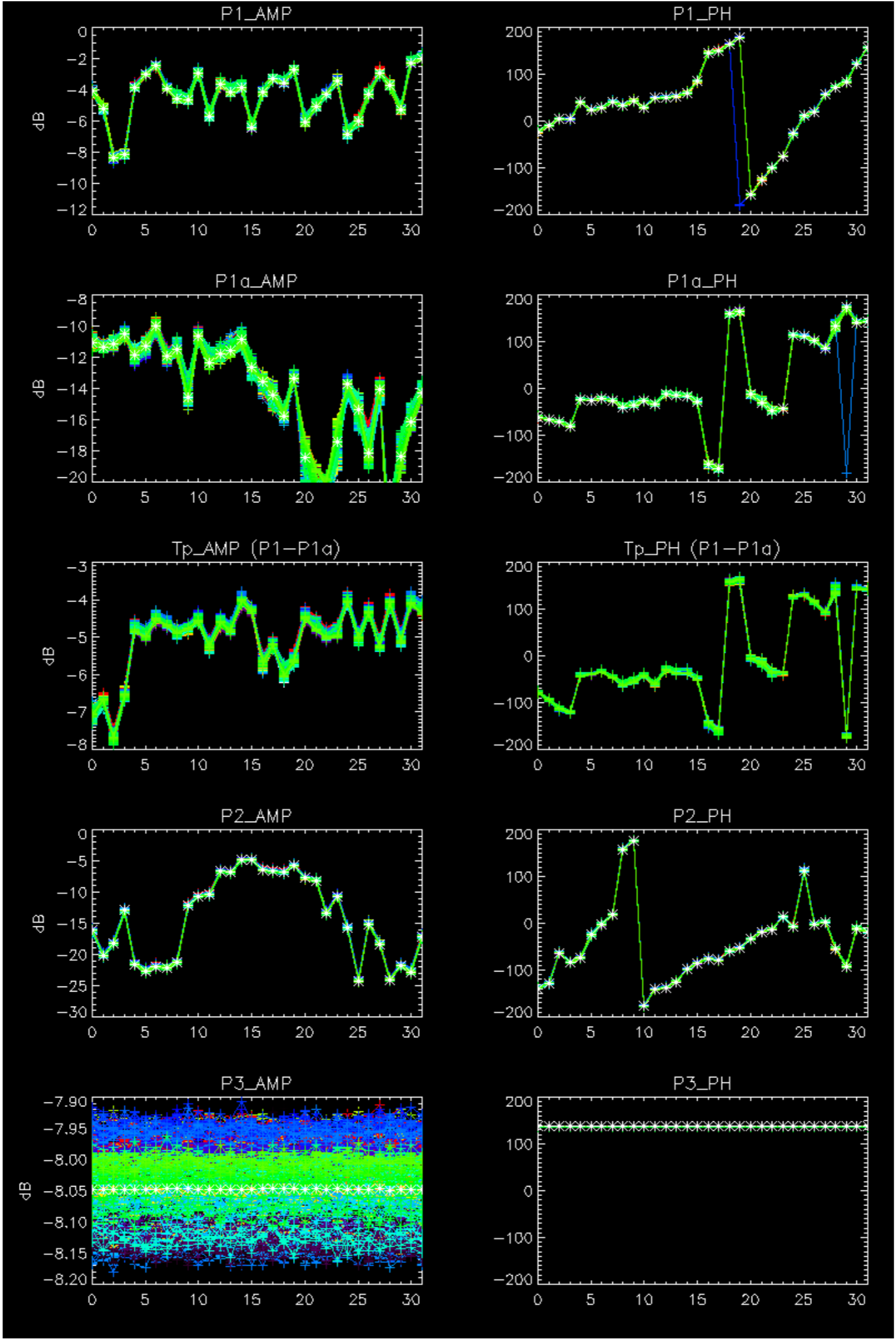
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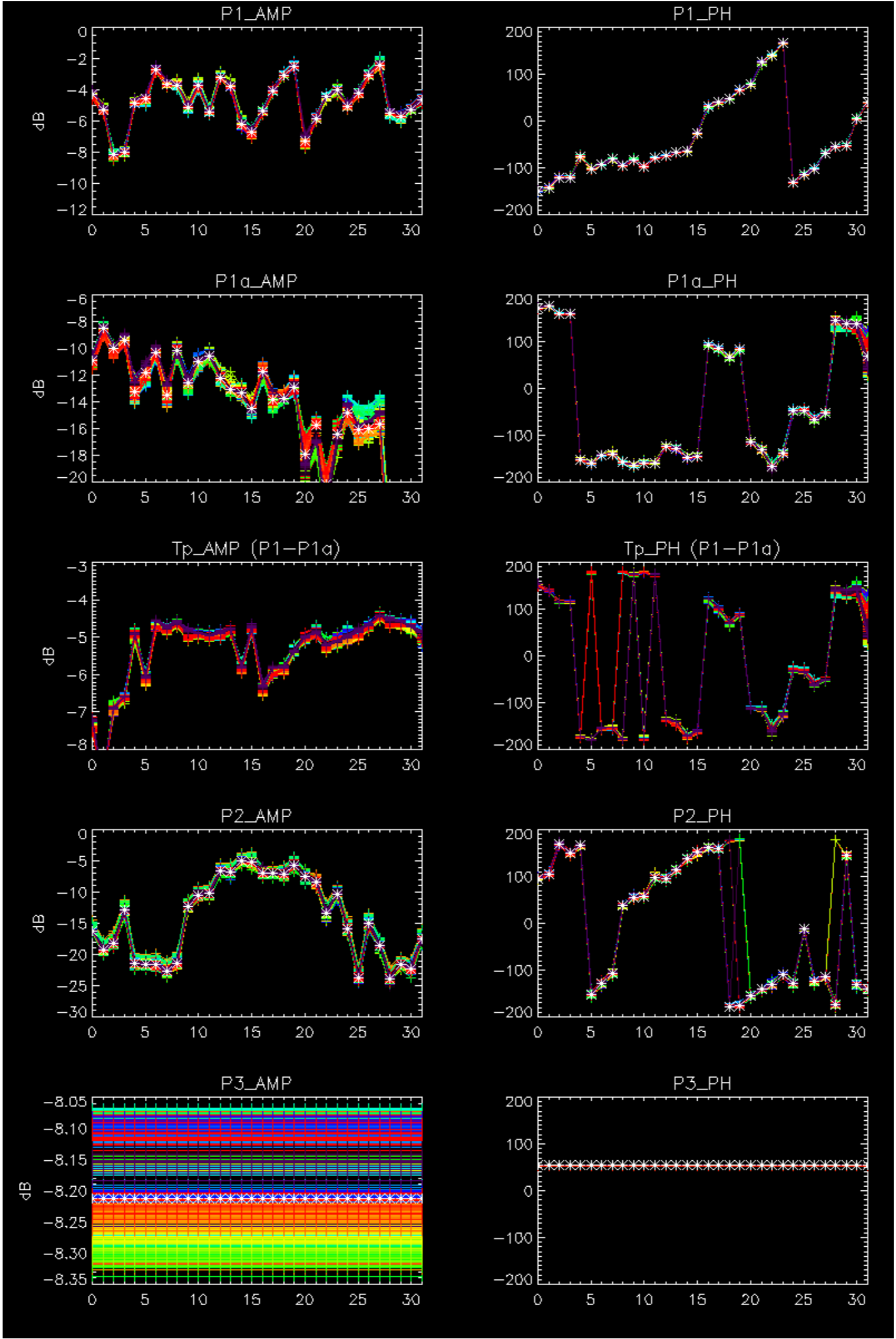
Cal pulses for WVS IS4



No anomalies observed.





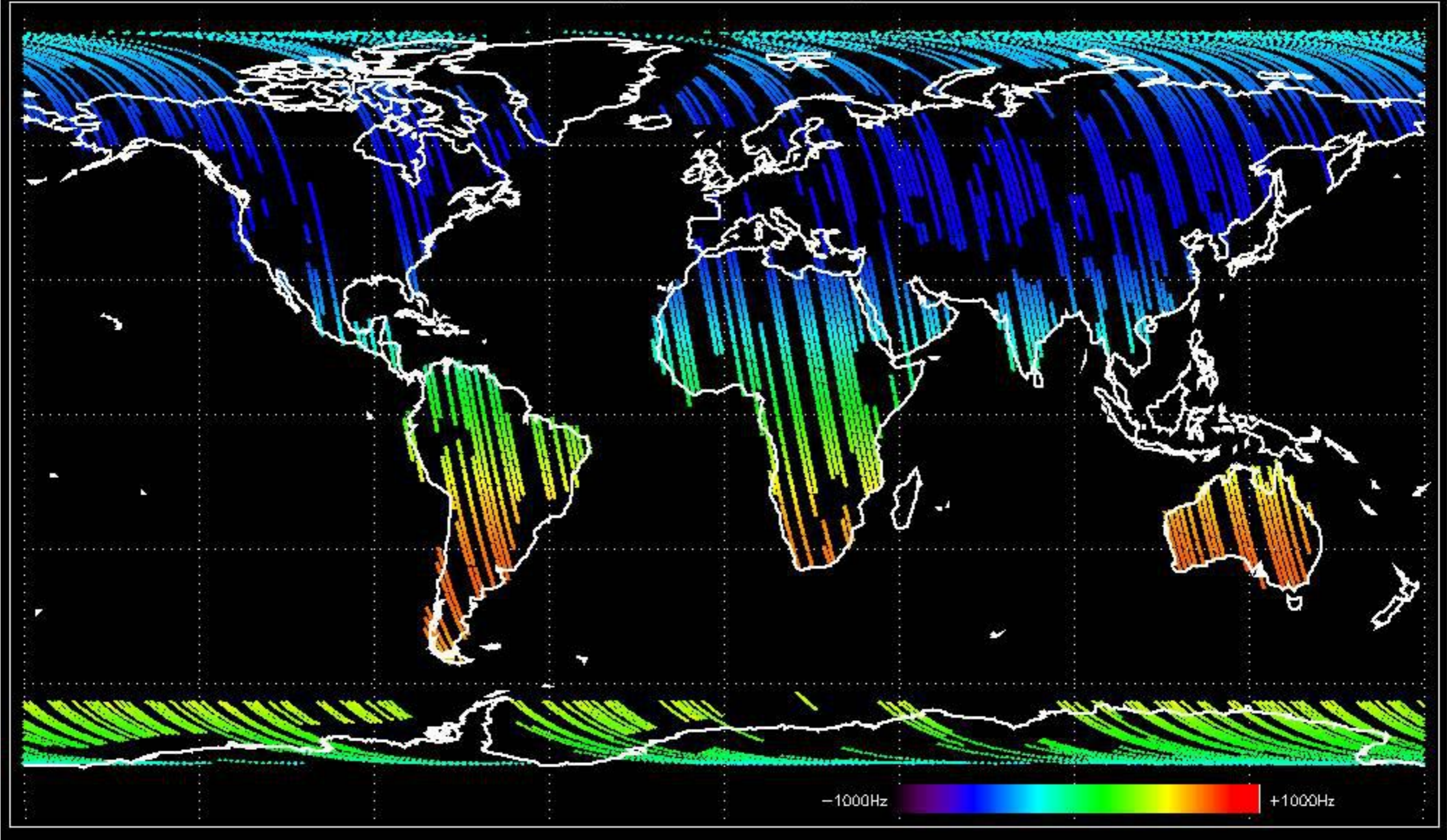


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



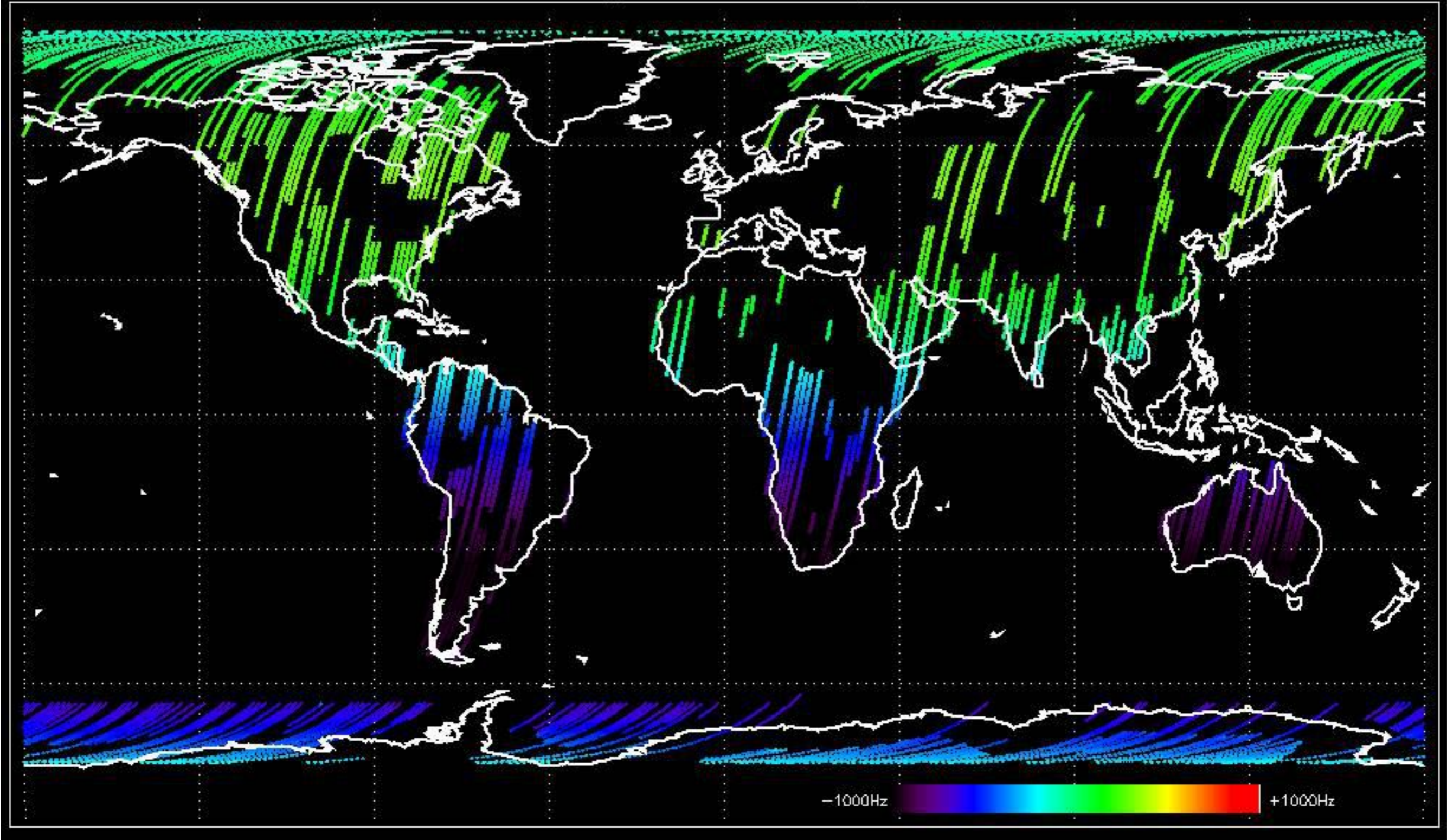


Doppler 'GM1' 'SS1' ascending



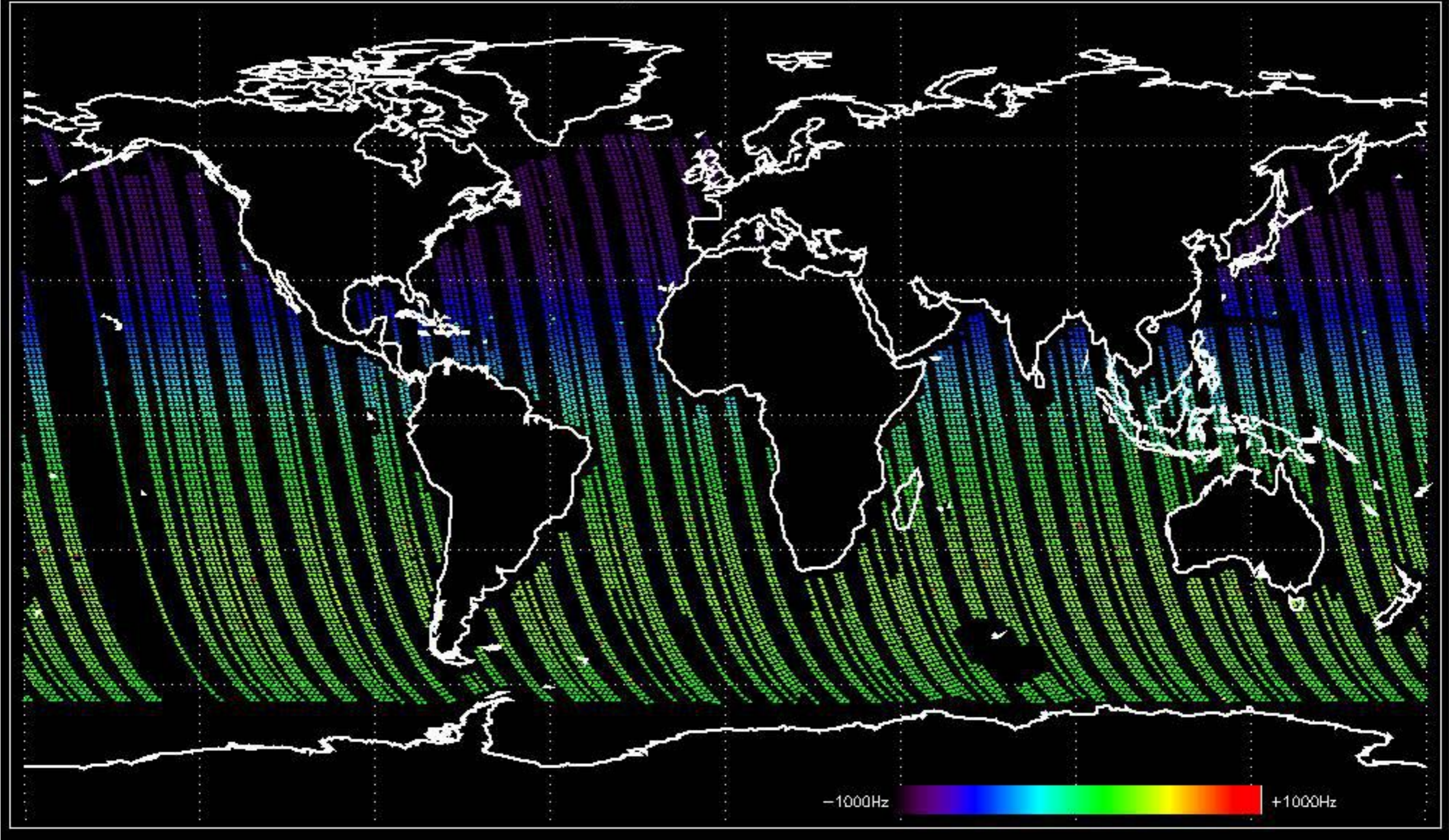


Doppler 'GM1' 'SS1' descending



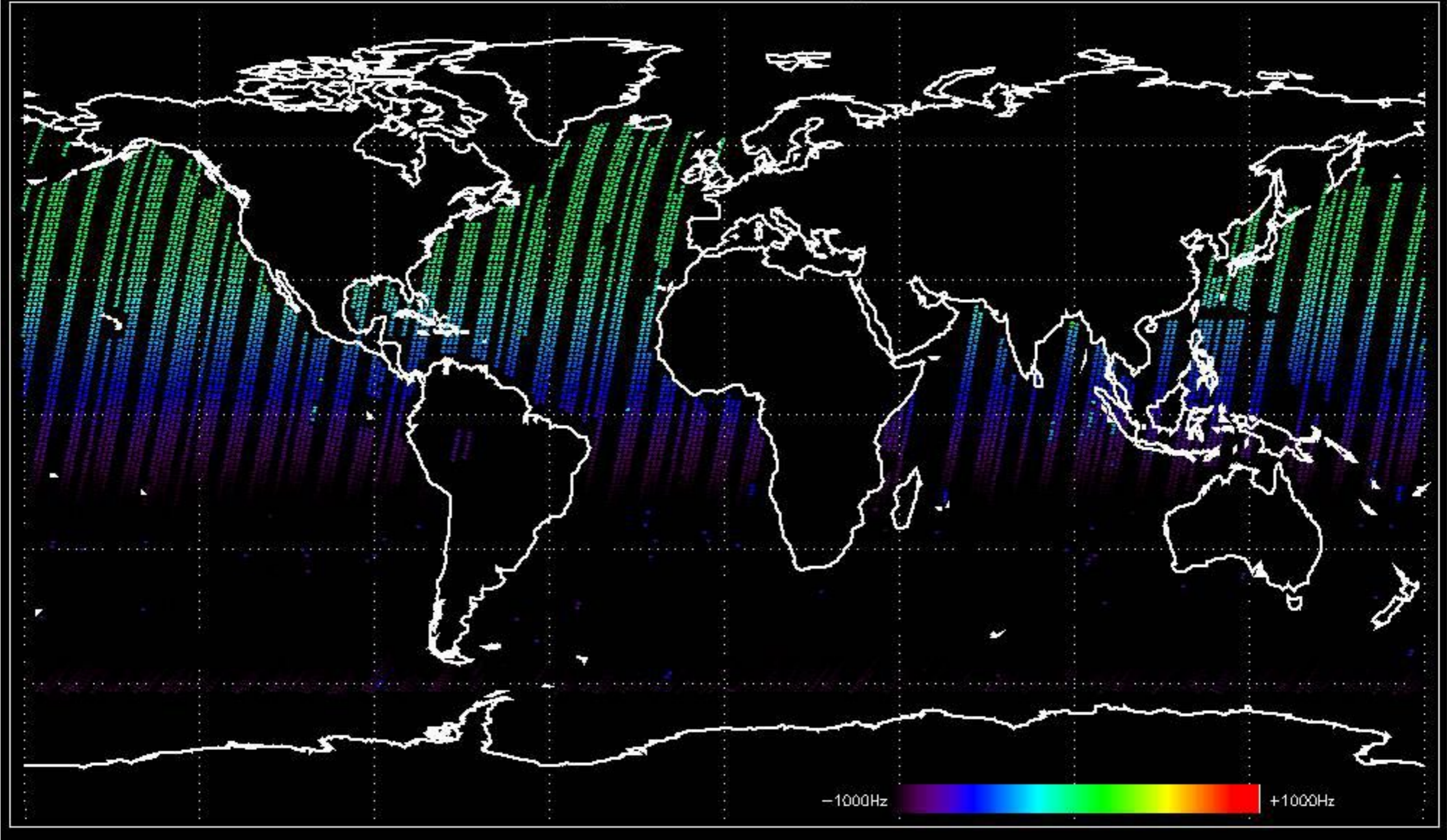


Doppler 'WVS' 'IS4' ascending



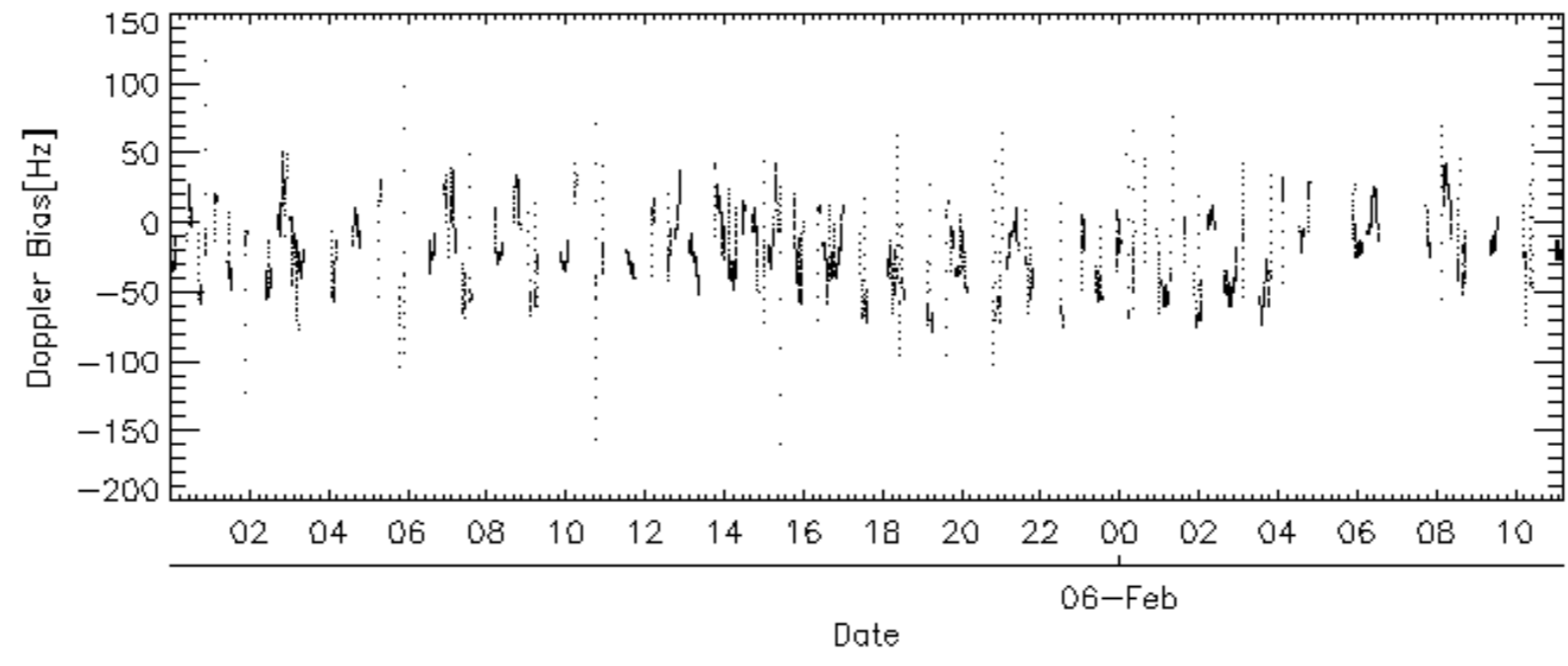
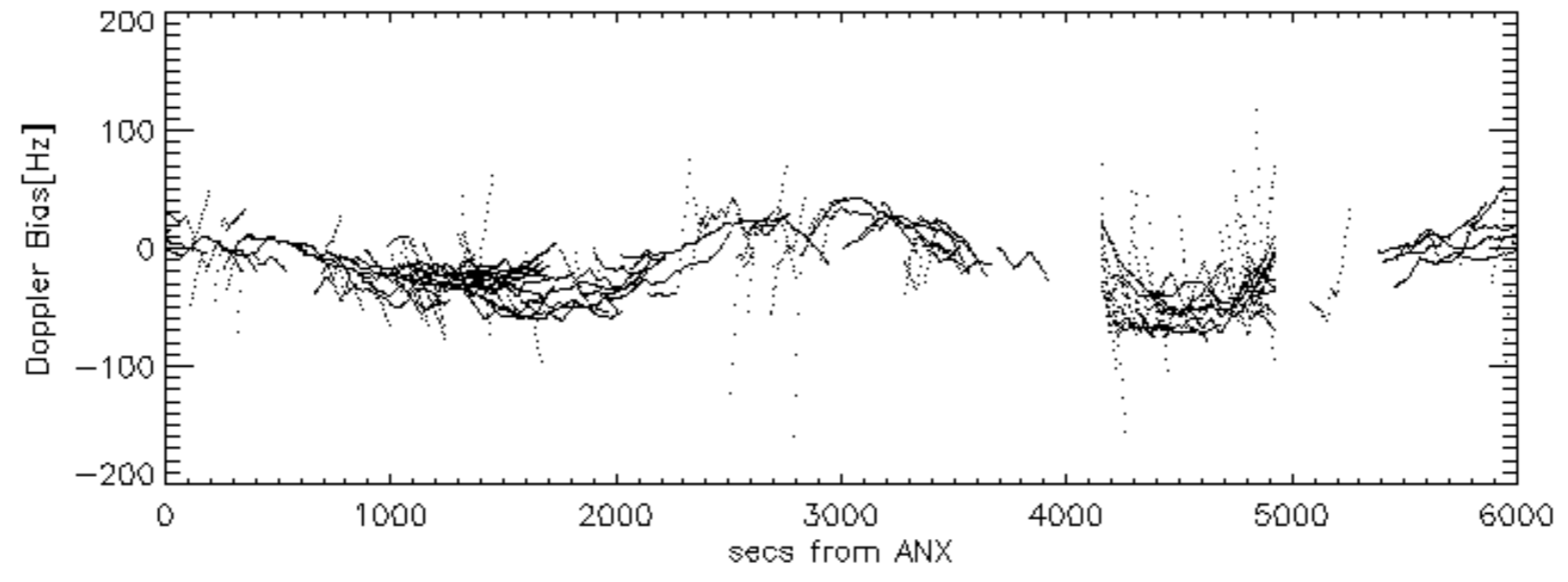
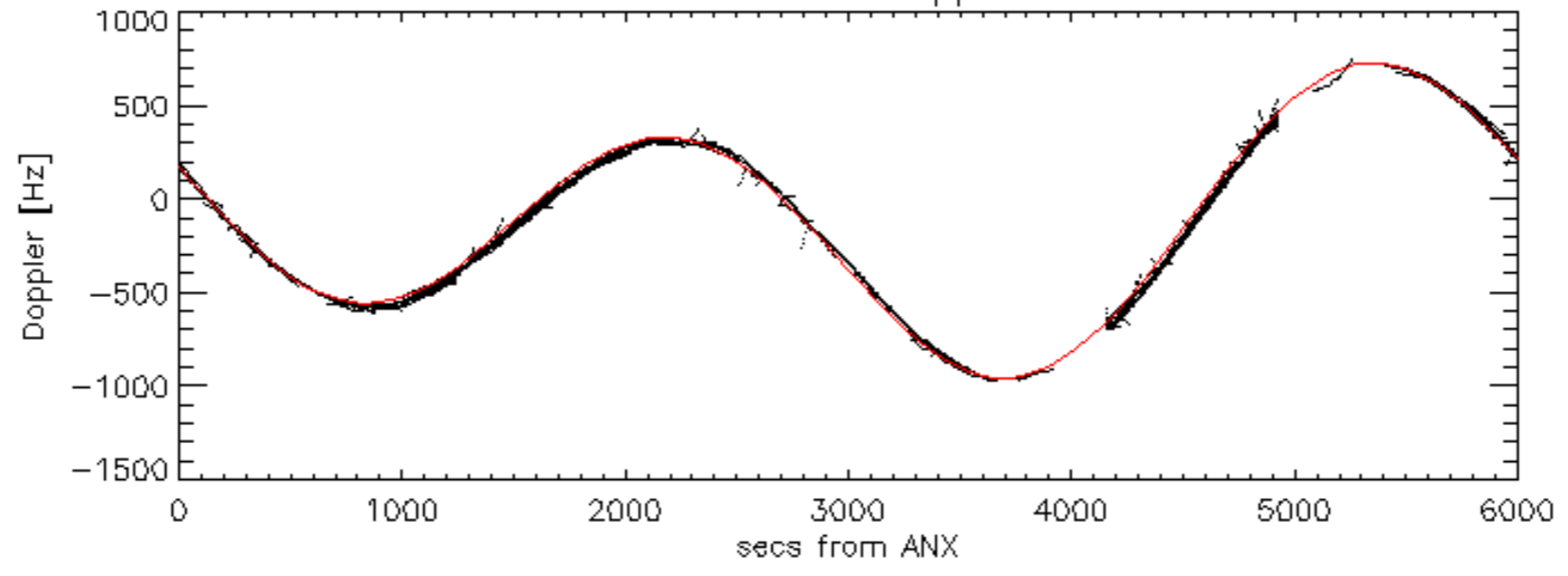


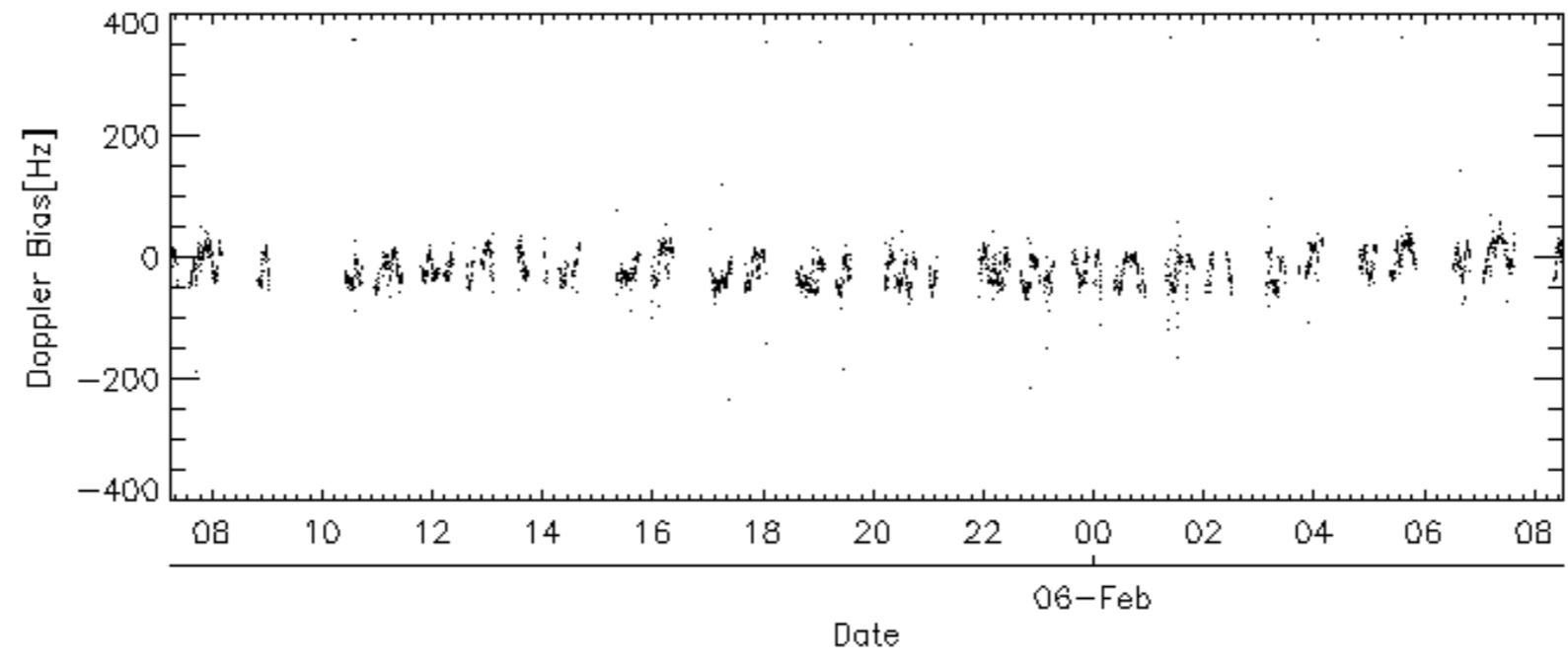
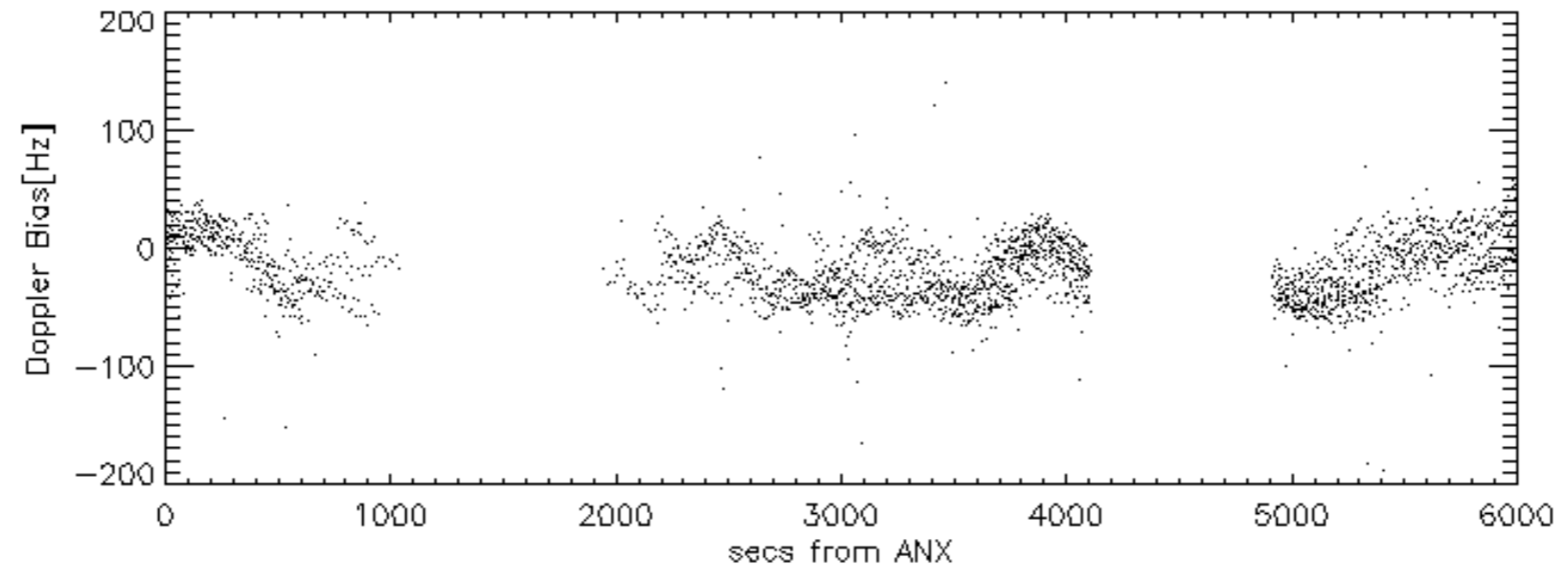
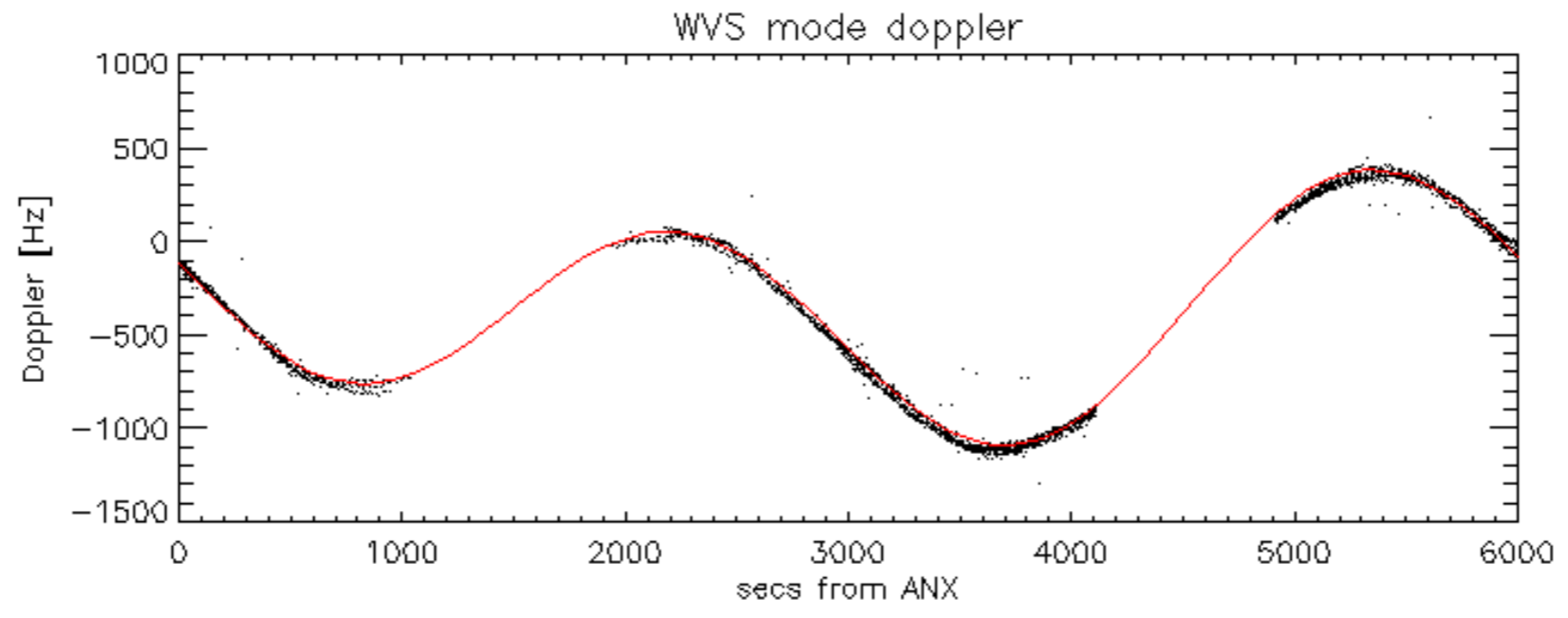
Doppler 'WVS' 'IS4' descending





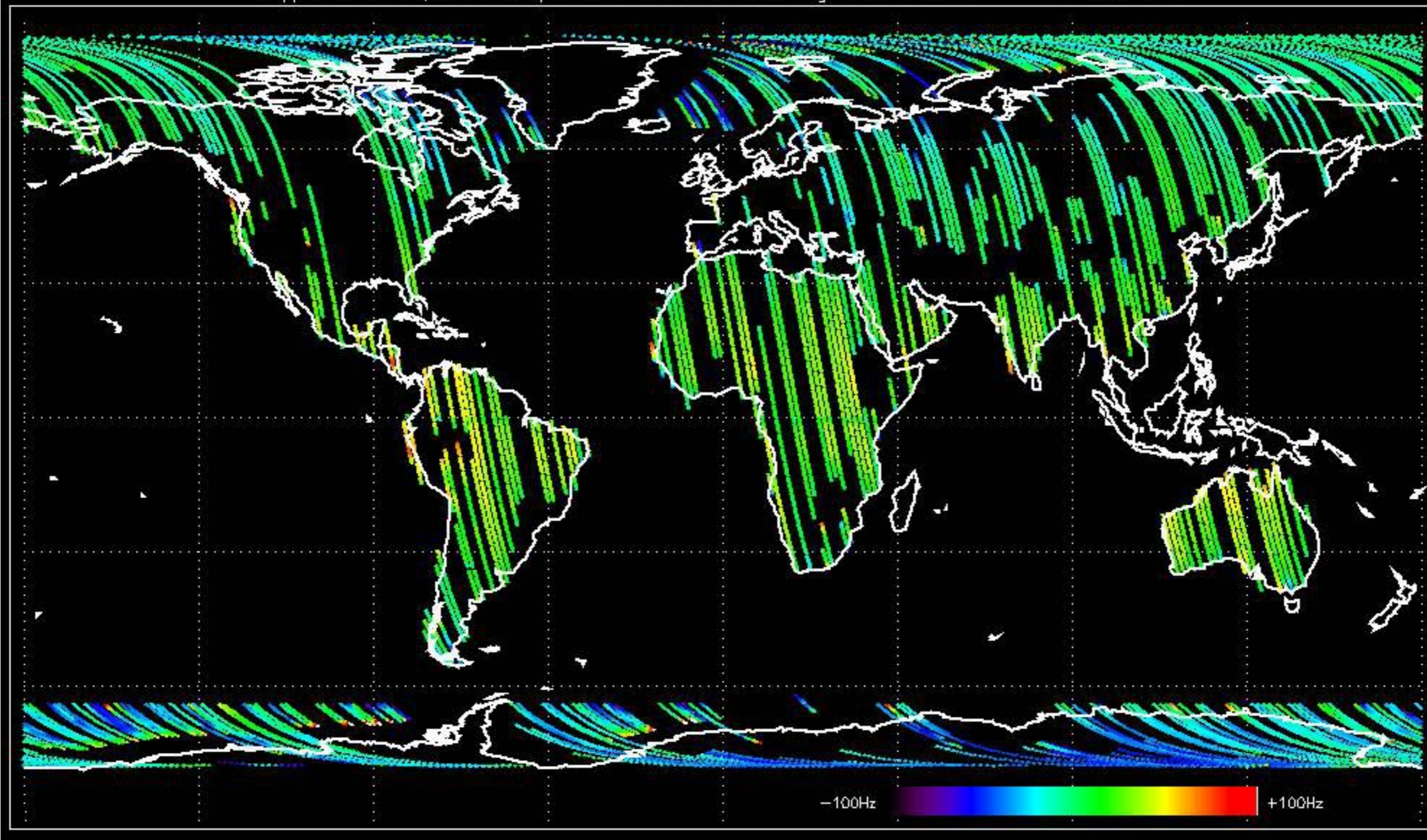
GM1 mode doppler





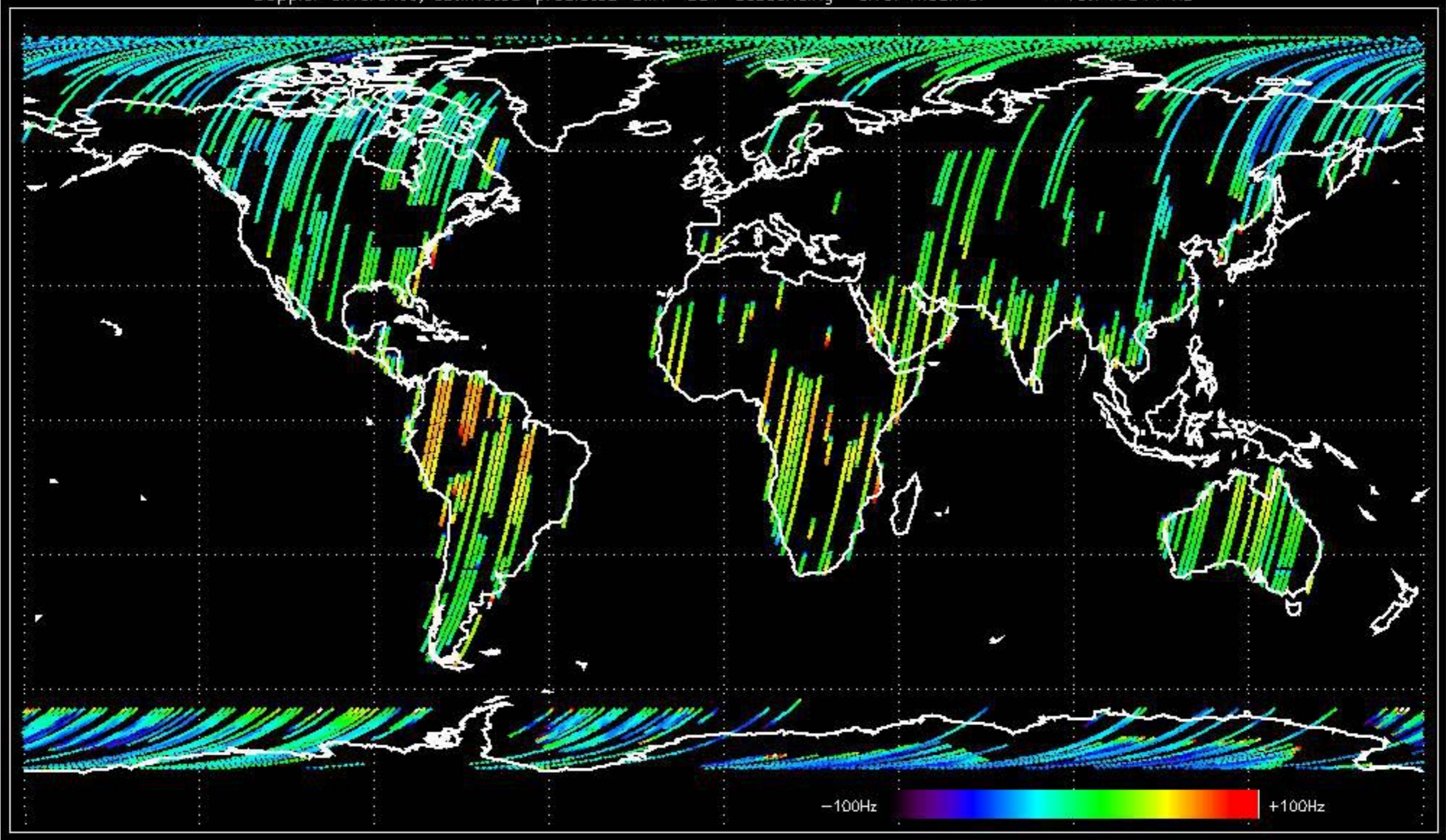


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -17.131383 Hz



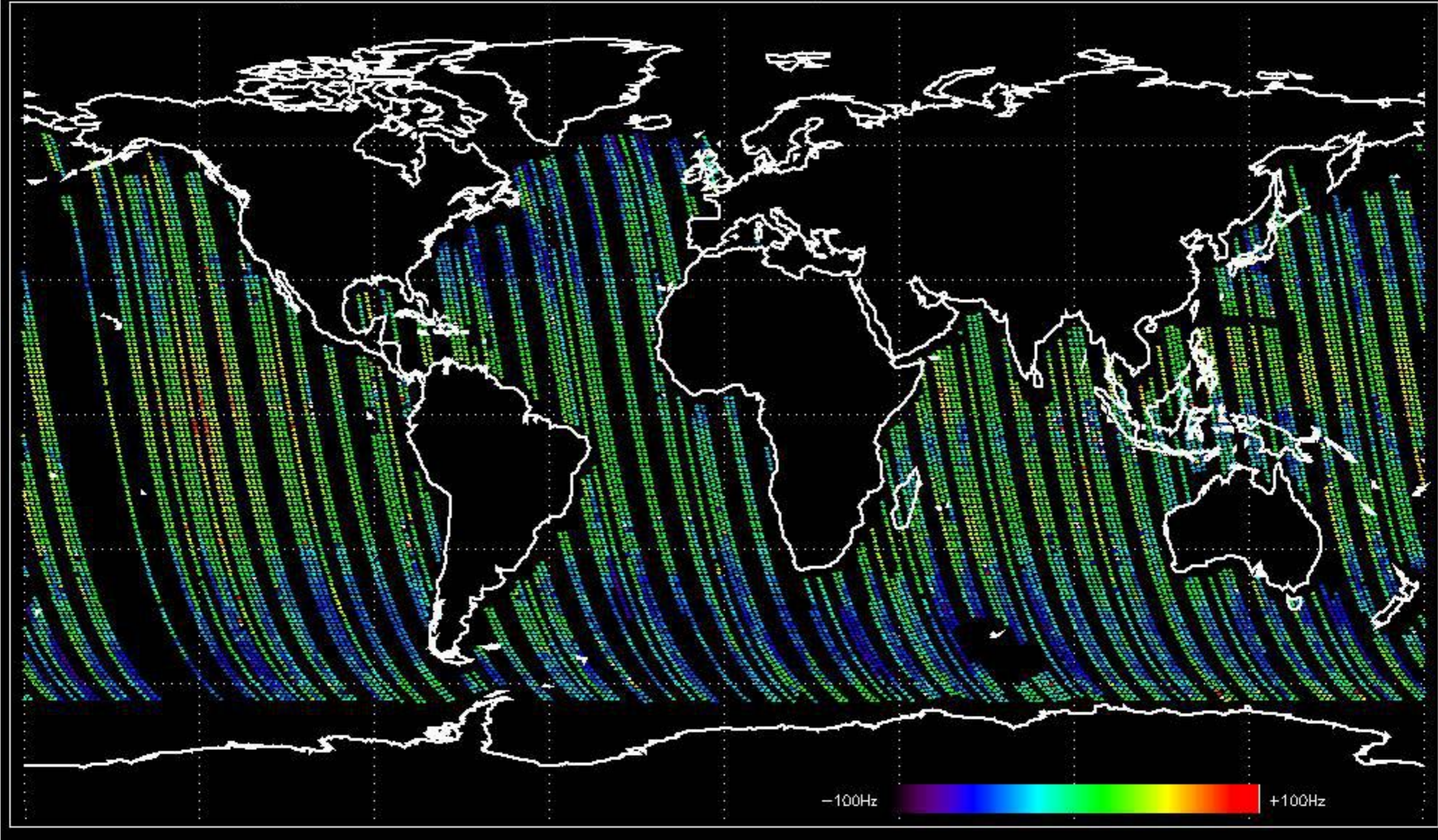


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.747544 Hz



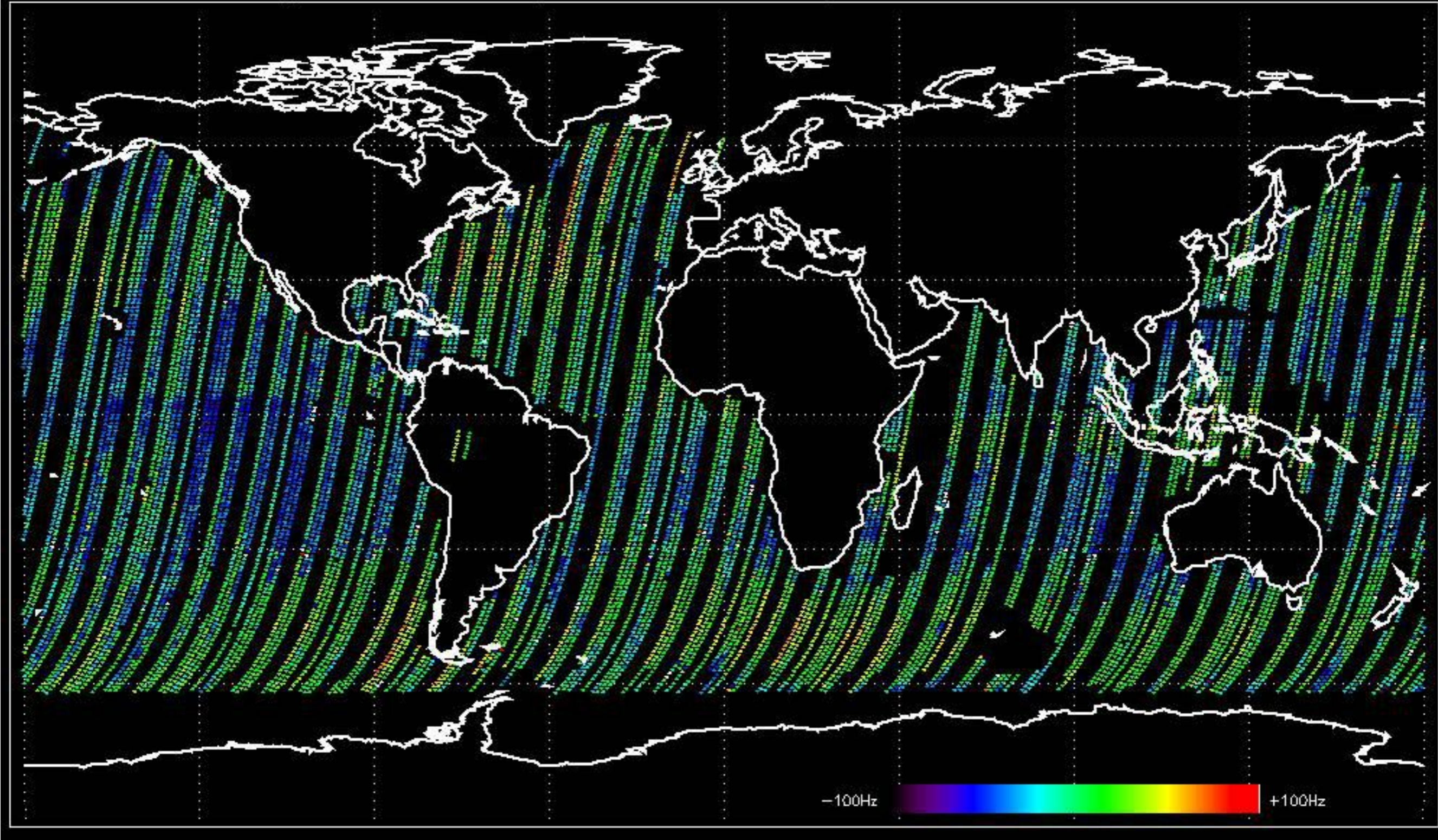


Doppler difference, estimated-predicted 'WVS' 'IS4' ascending -error mean of -23.583557 Hz





Doppler difference, estimated-predicted 'WVS' 'IS4' descending -error mean of -31.003273 Hz





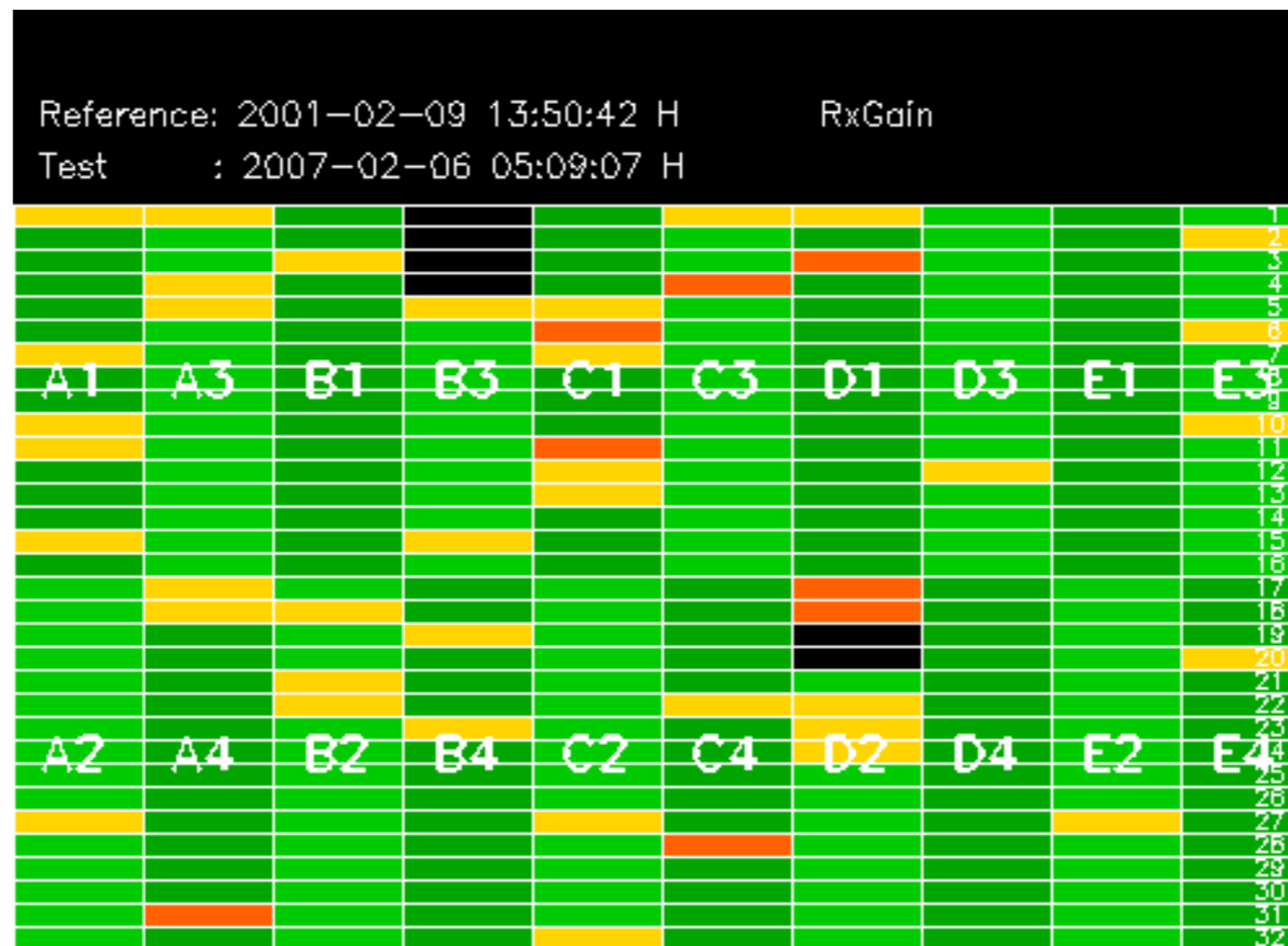
No anomalies observed on available MS products:

No anomalies observed.

























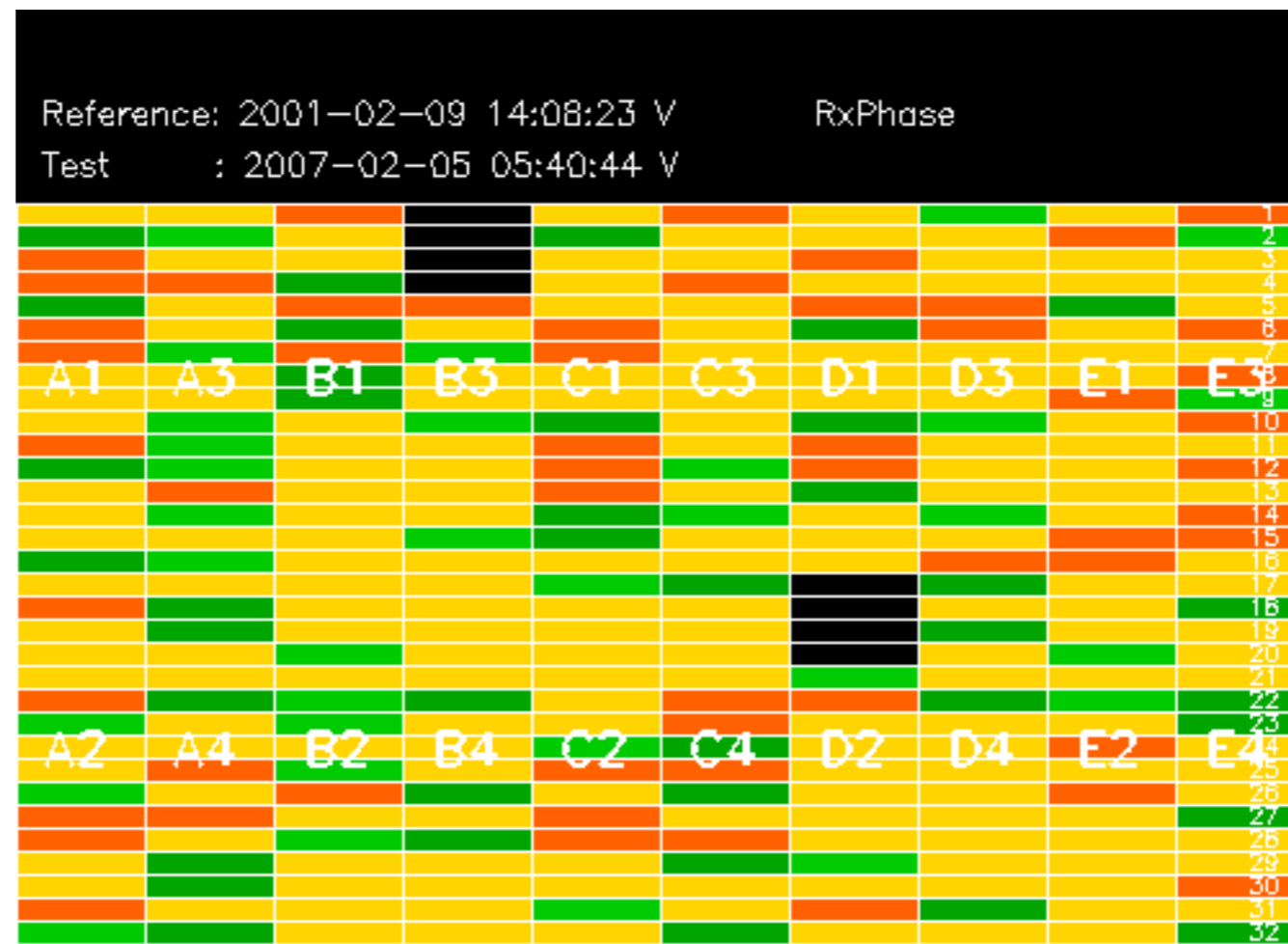






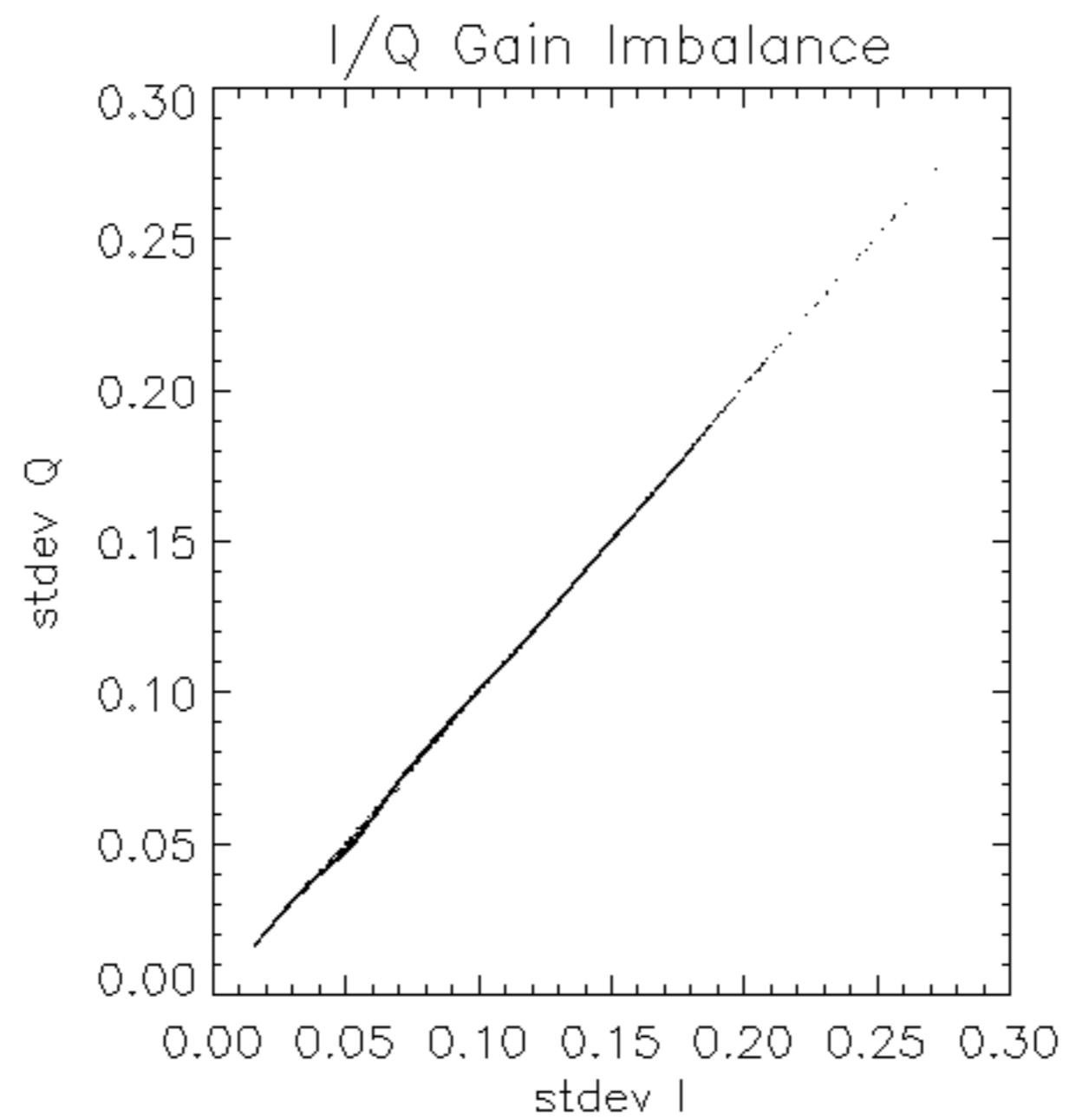


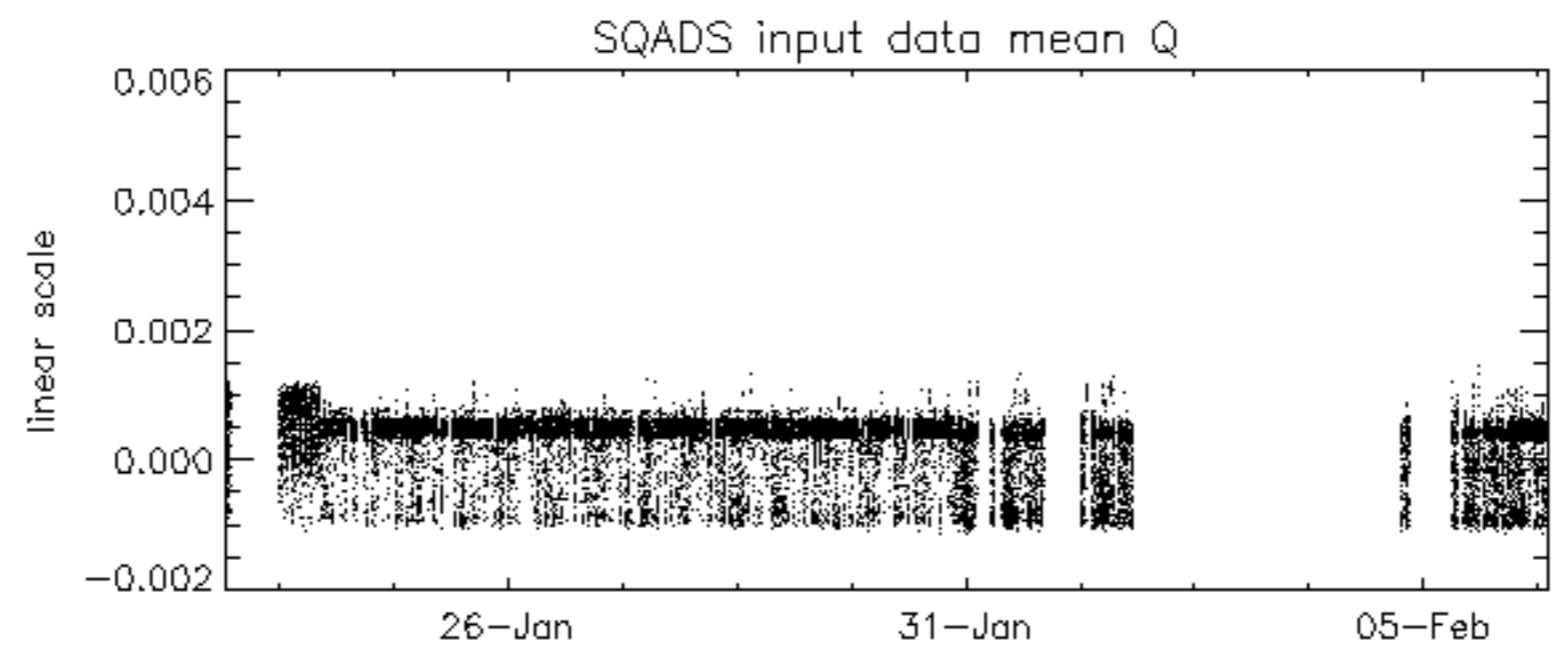
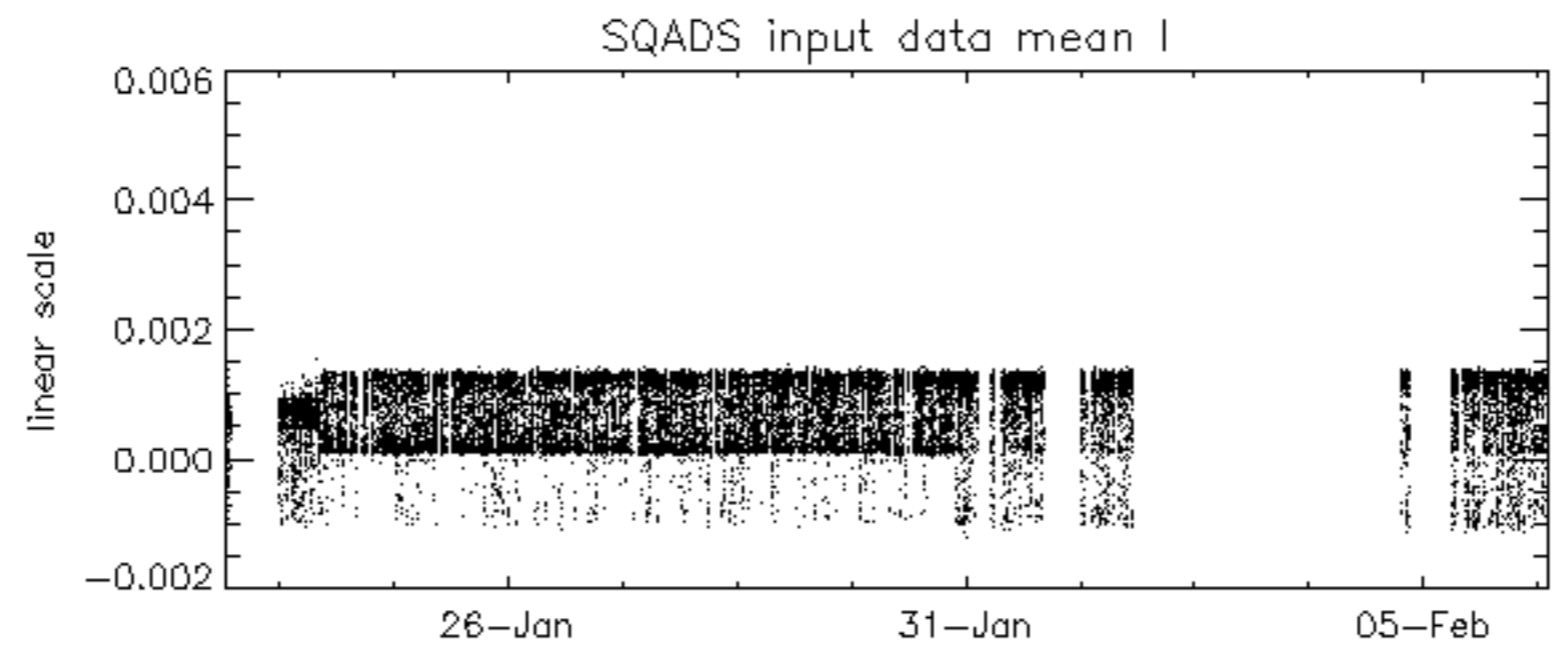
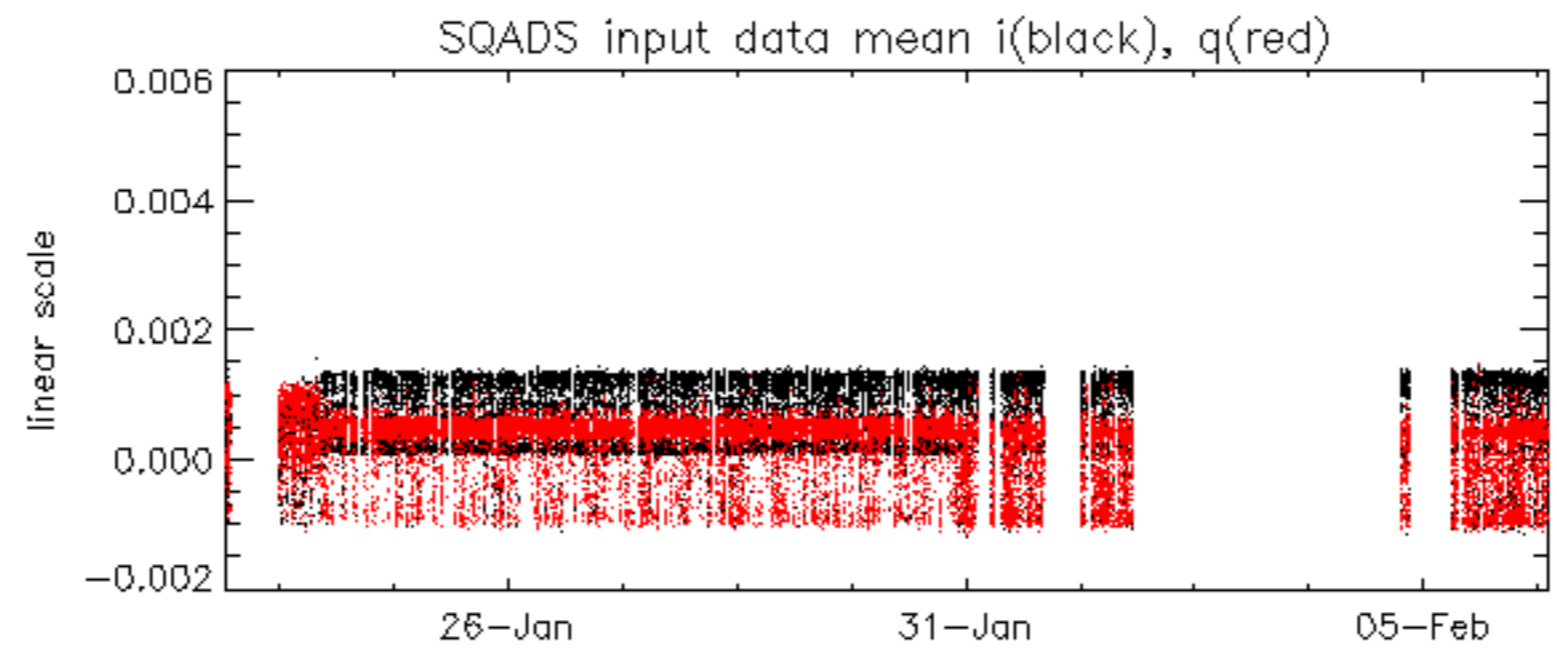


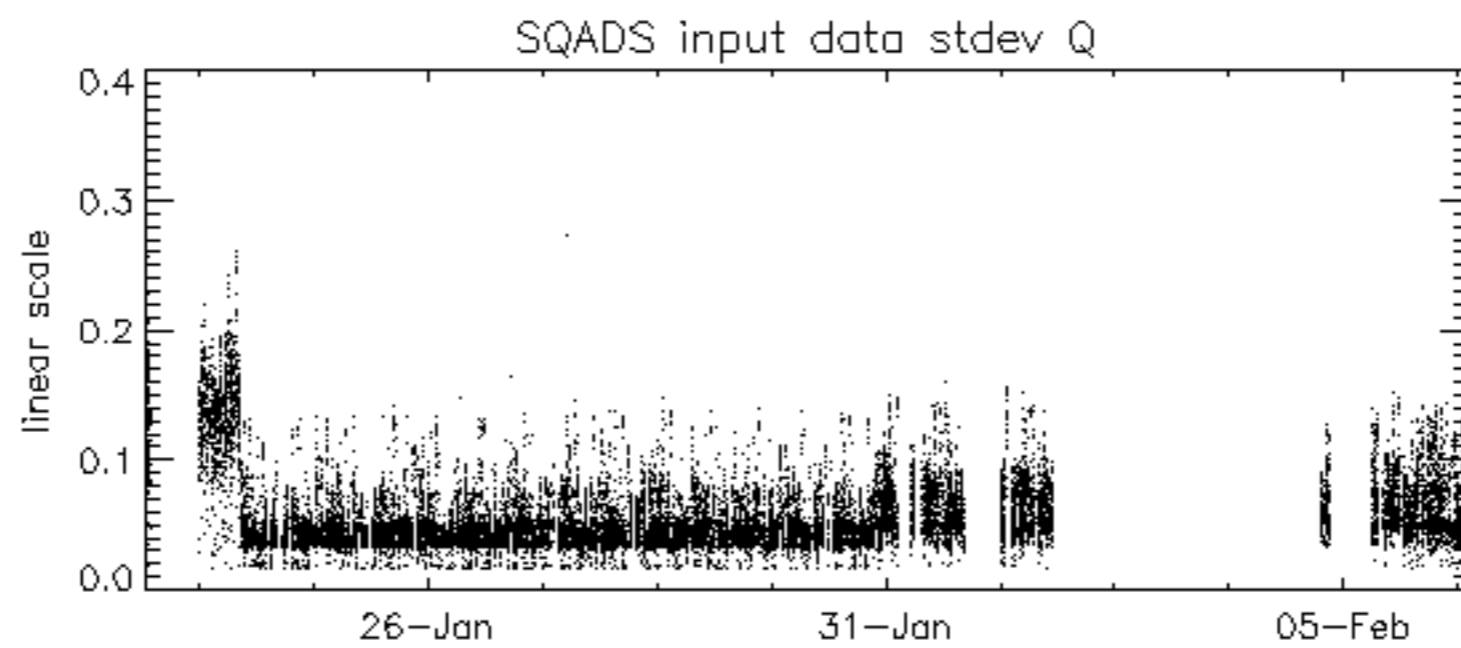
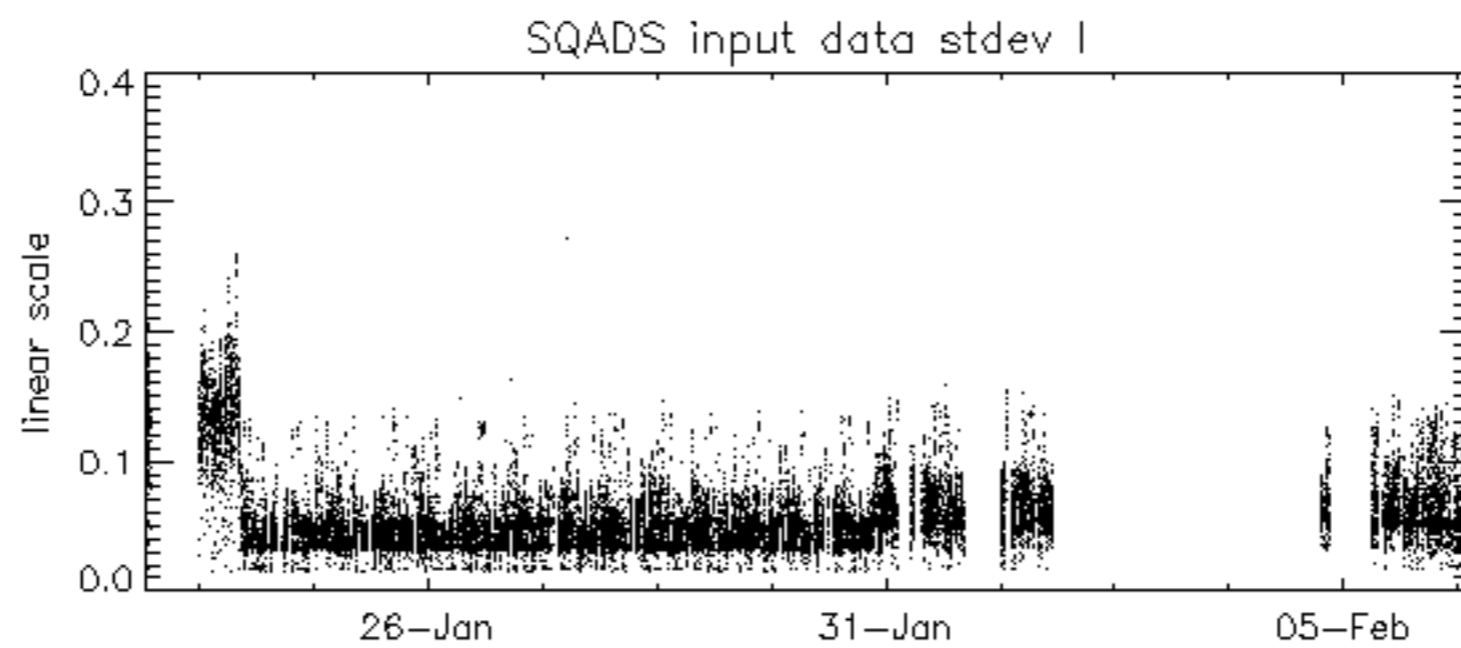
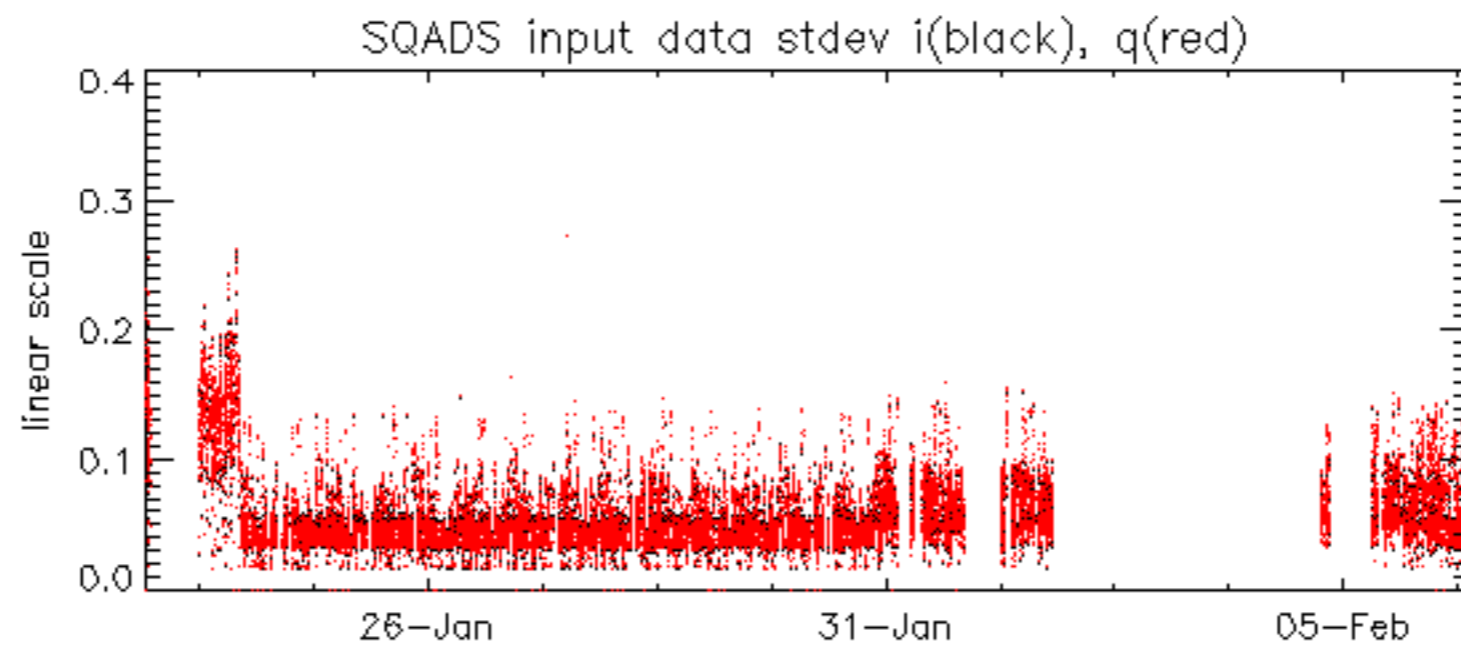






























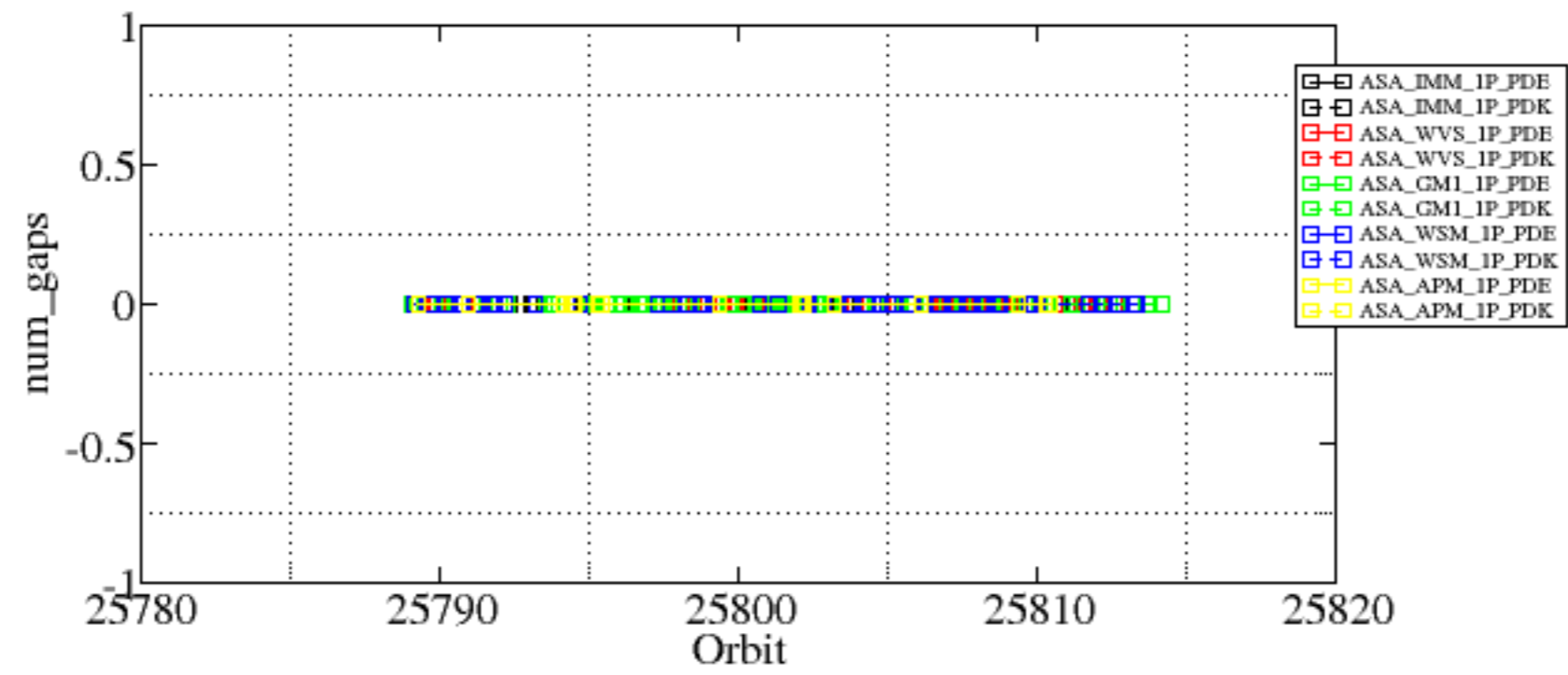


Summary of analysis for the last 3 days 2007020[456]

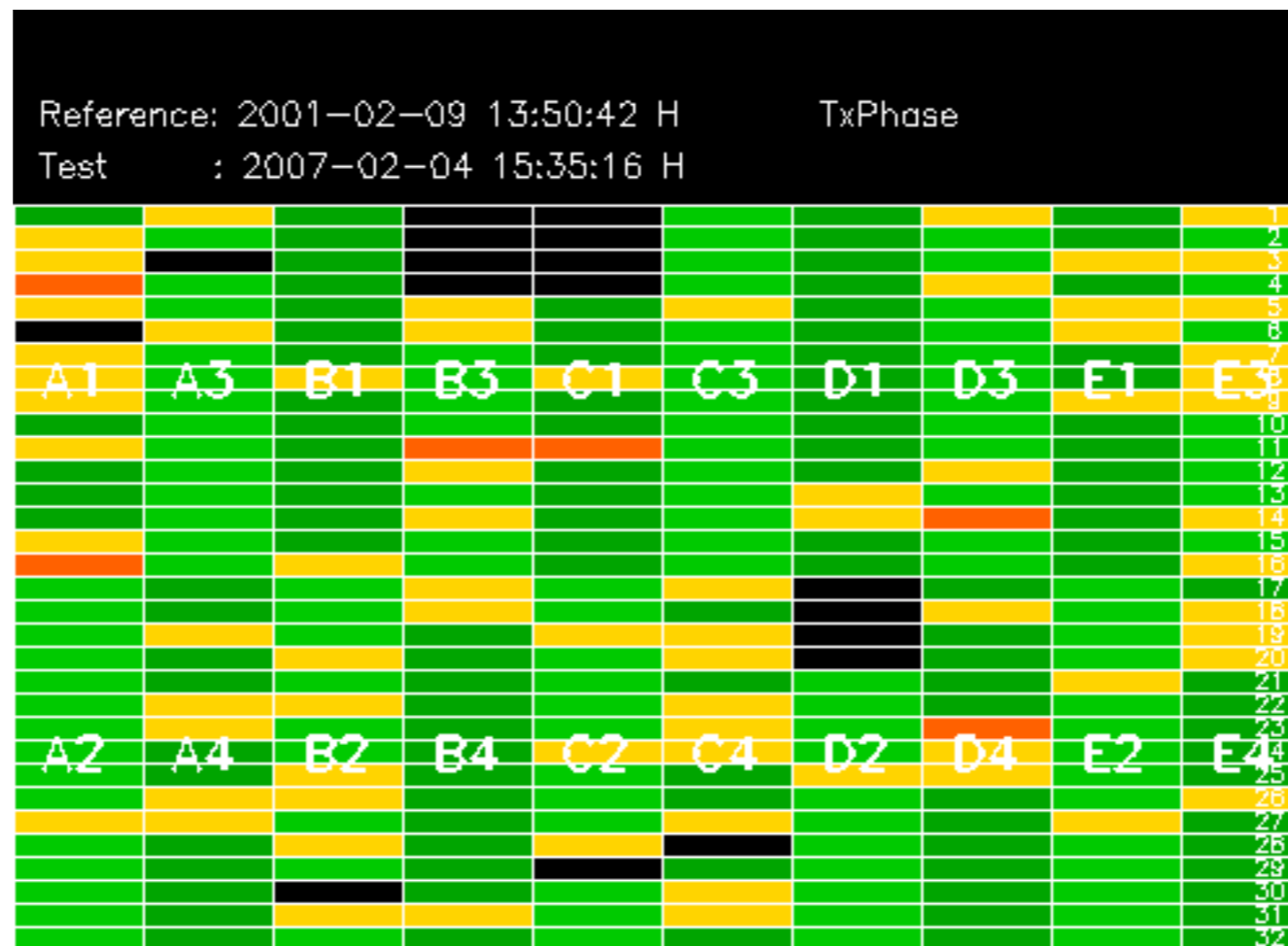
The assumption is taken that the SQADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

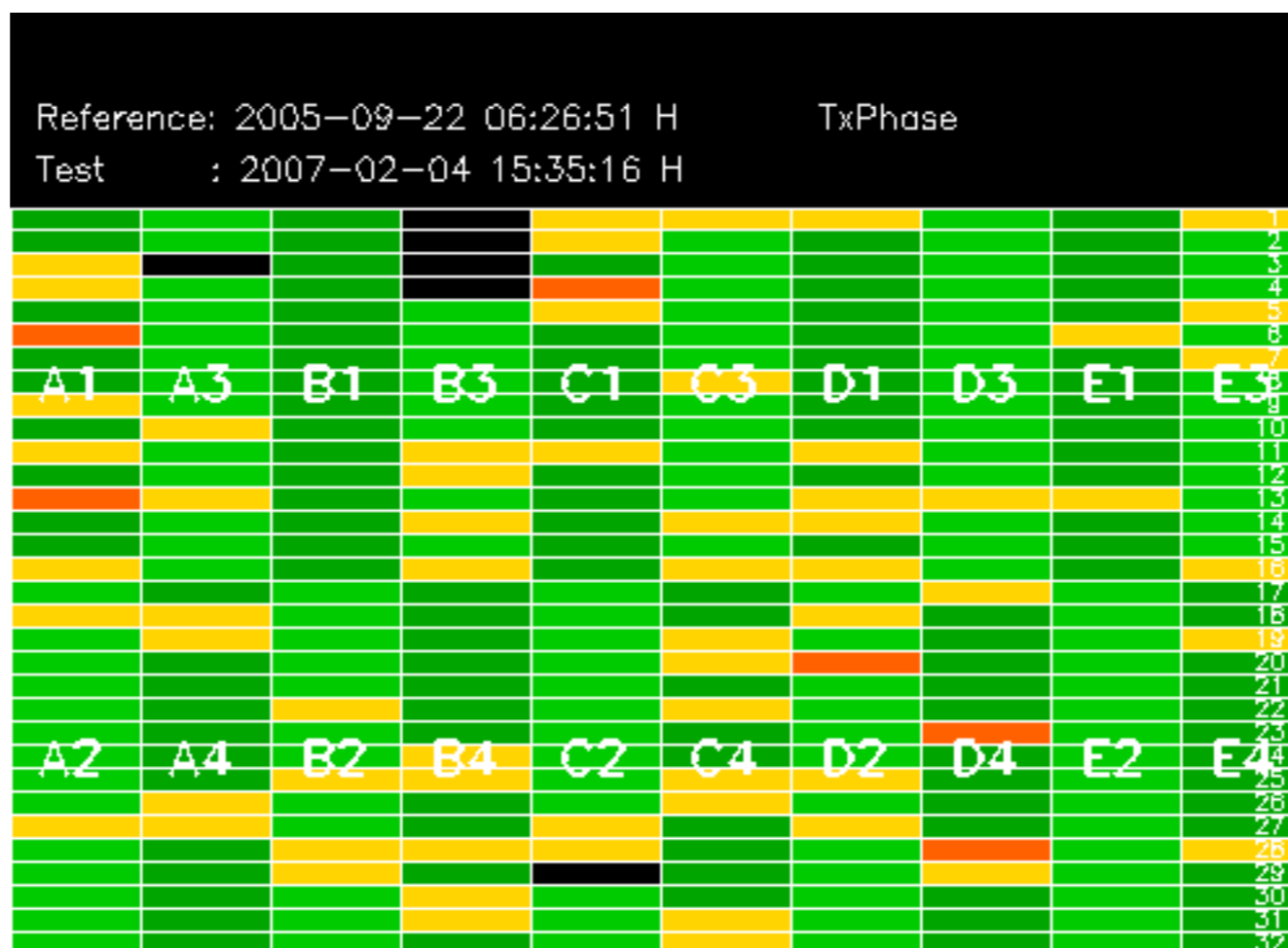
Filename	num_gaps	num_missing_lines
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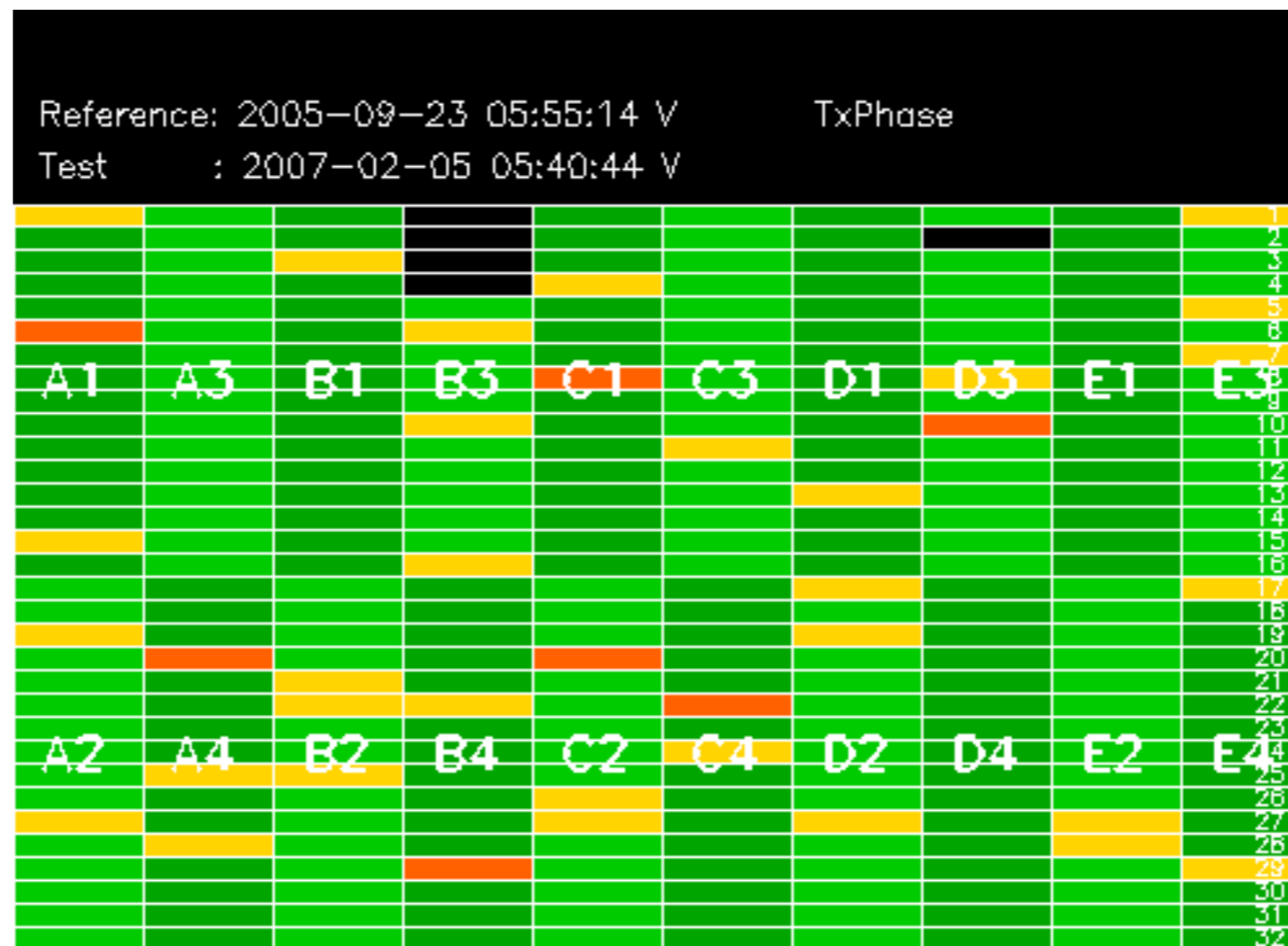






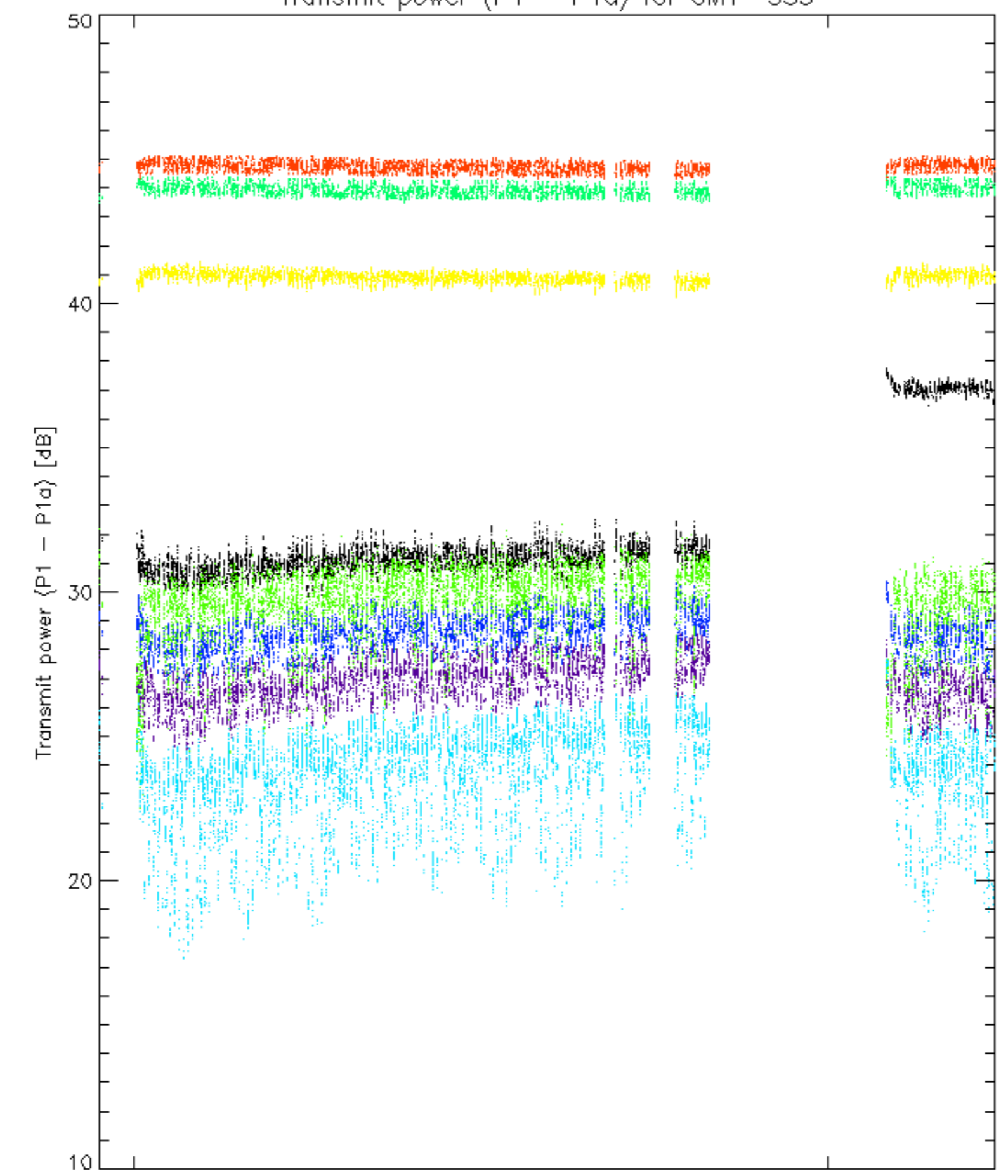




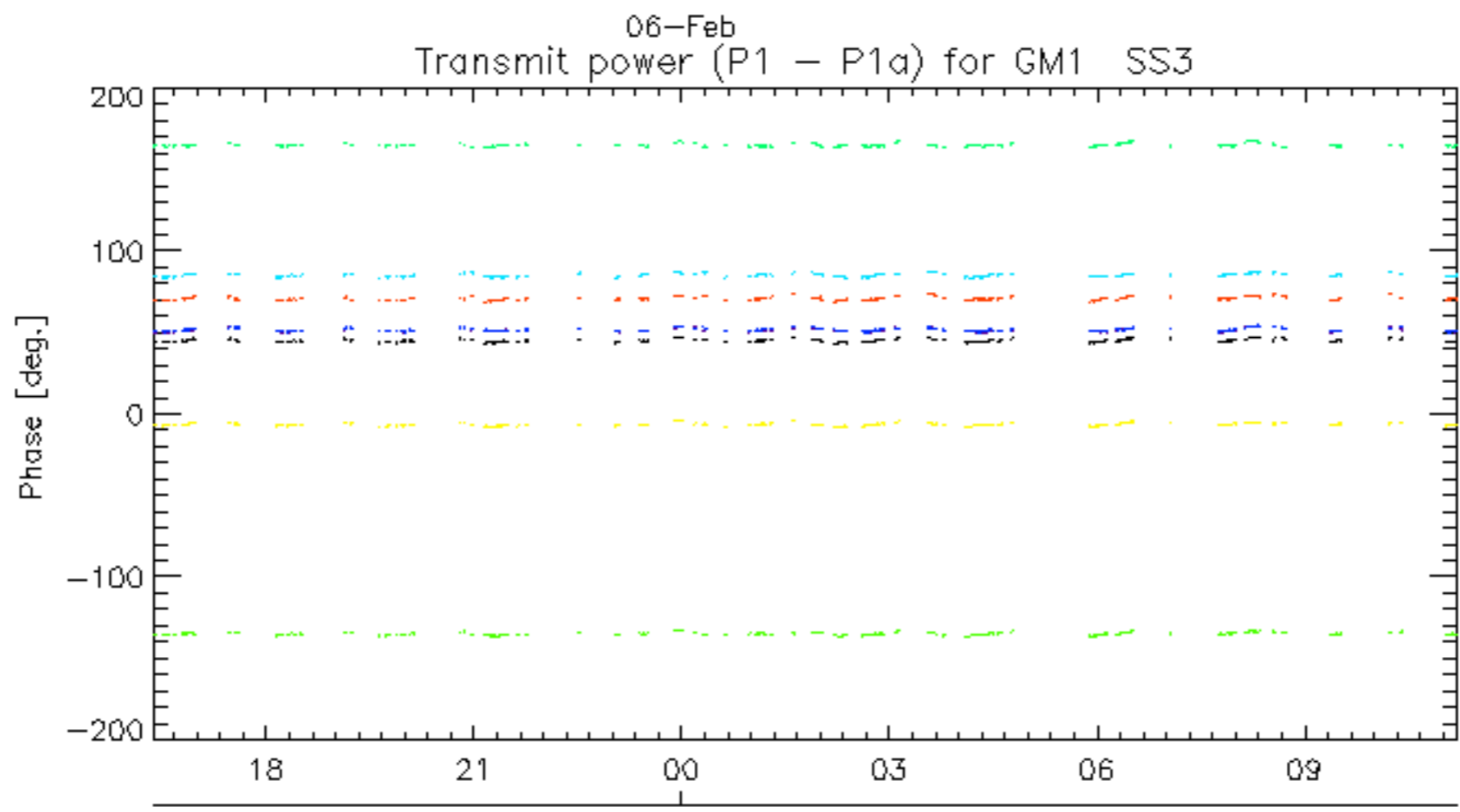
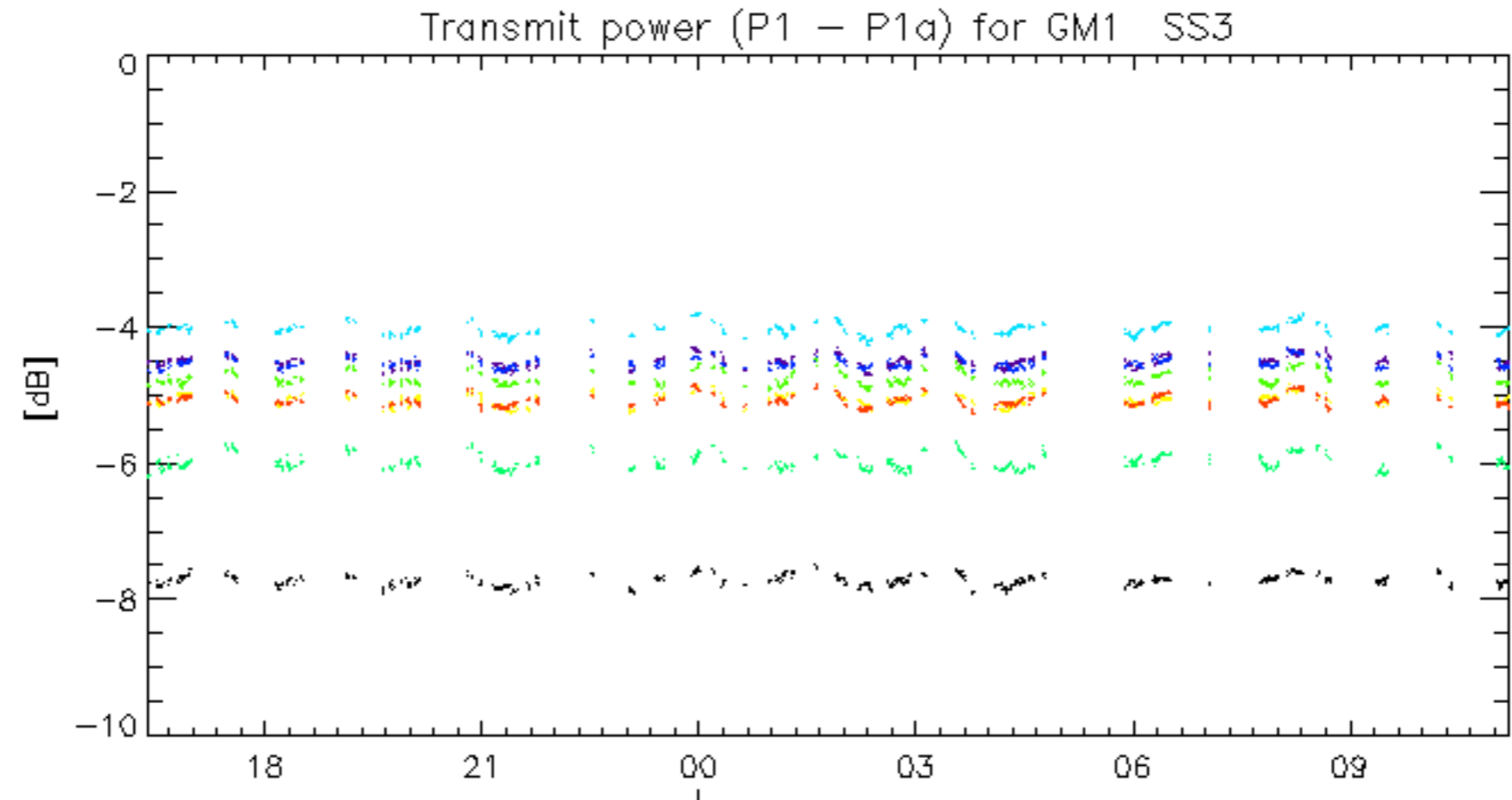




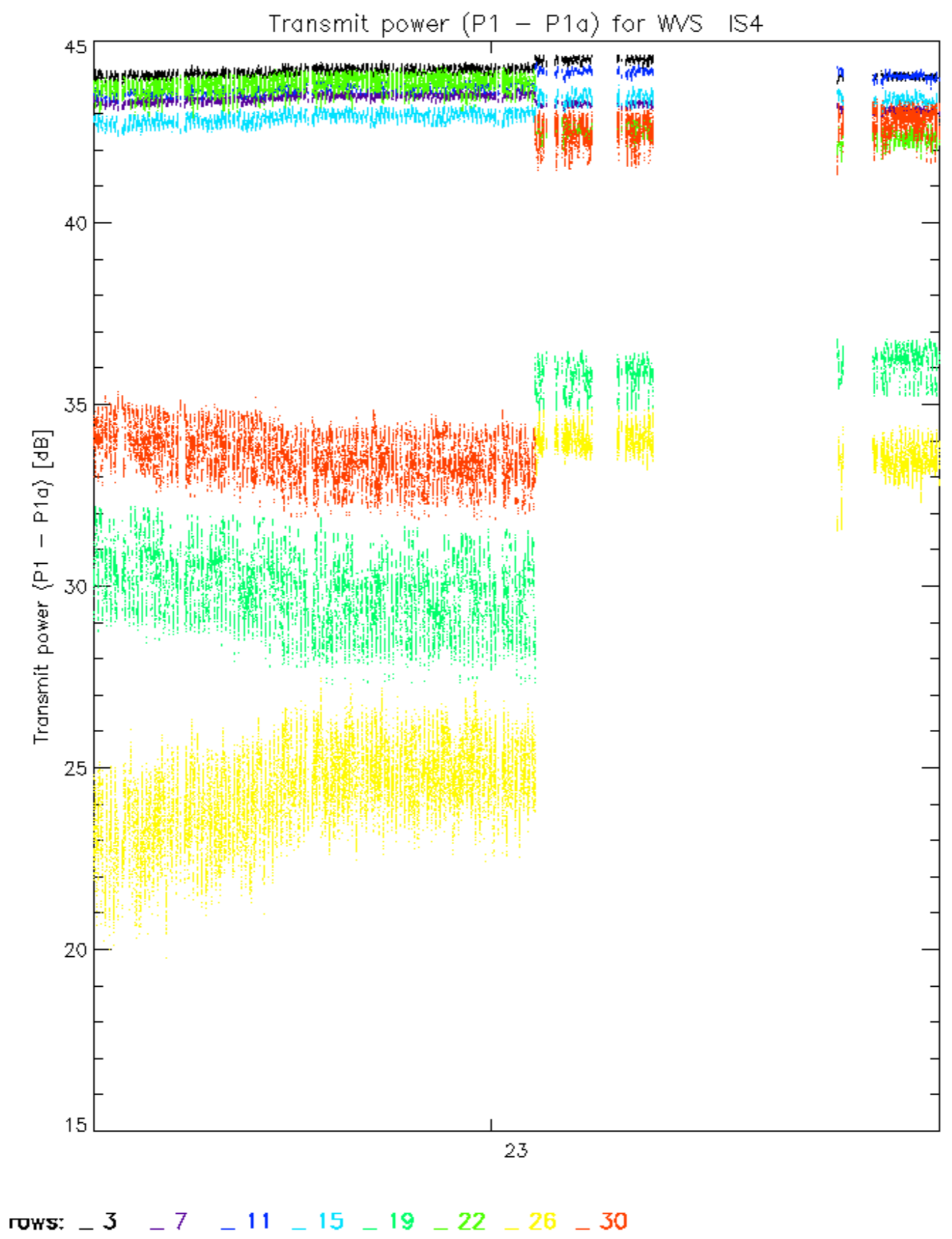
Transmit power (P1 - P1a) for GM1 SS3

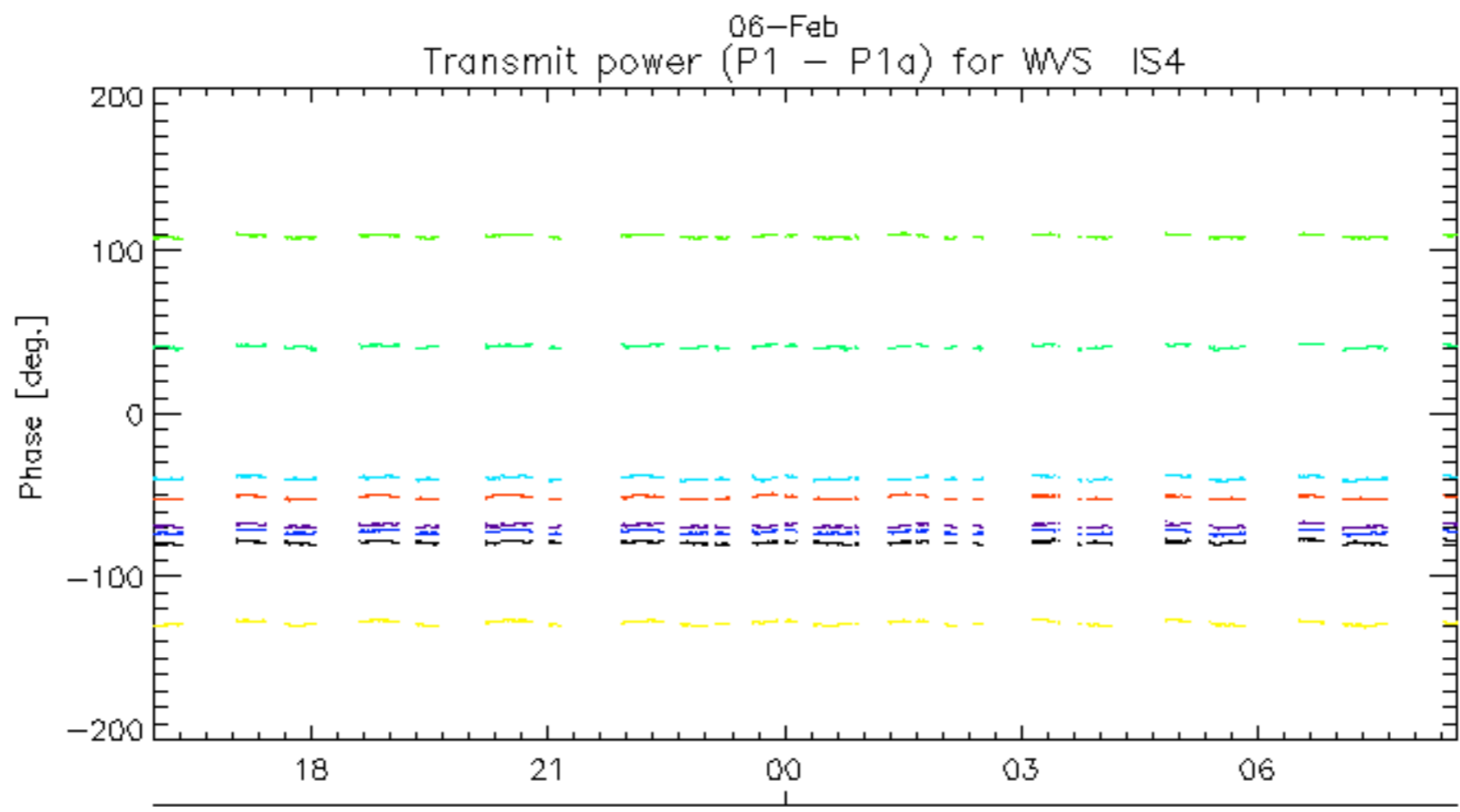
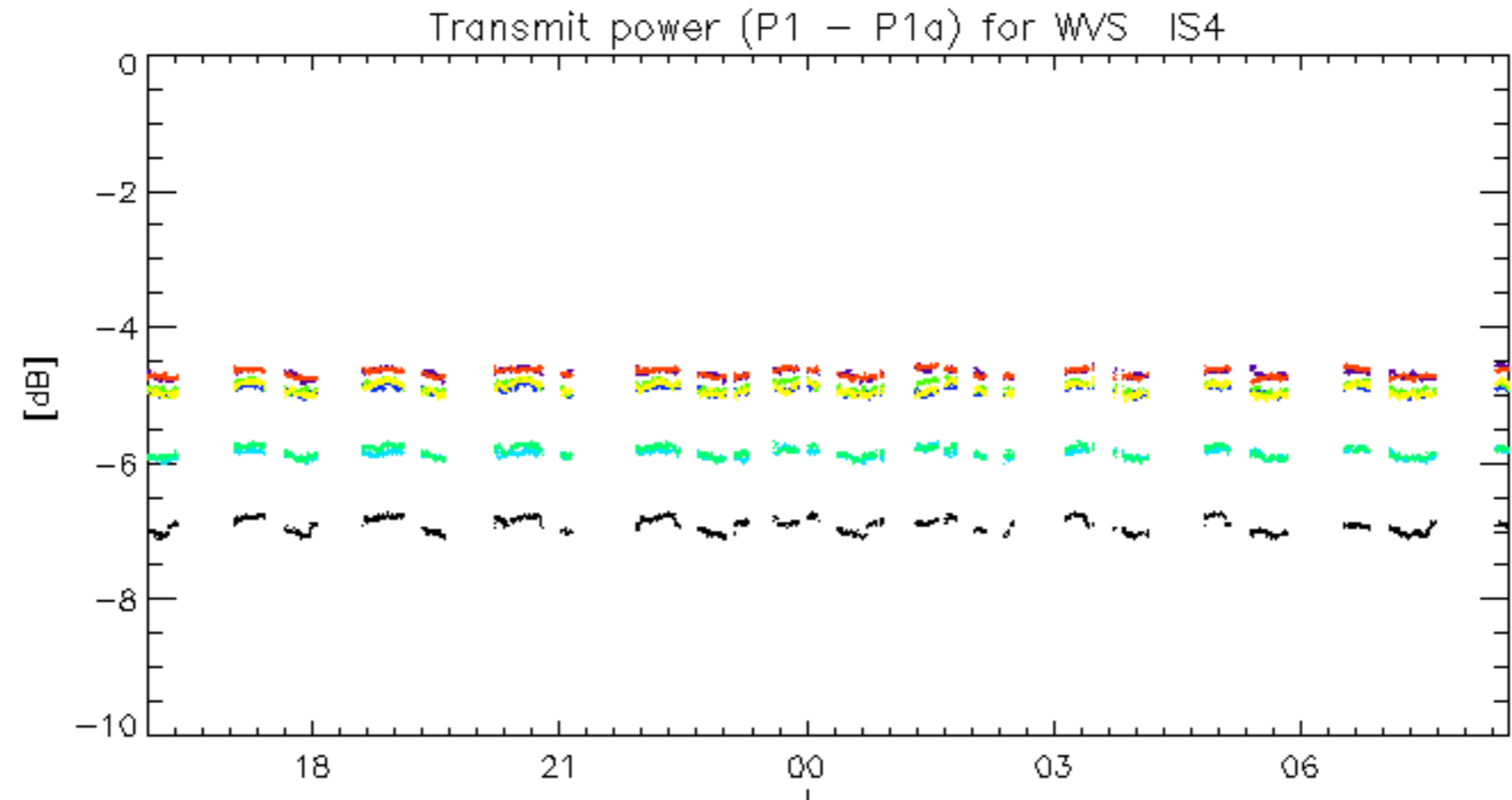


rows: 3 7 11 15 19 22 26 30



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





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

No unavailabilities during the reported period.