

# REPORT OF 041018

last update on Mon Oct 18 15:37:46 GMT 2004

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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

Unavailability starts from 17-OCT-2004 02:28:31 to 07:45:11.  
ASAR enters into heater/refuse mode while it was operating in AP/IS3 mode due to PSUs being off for tile D1  
No science data is affected by the anomaly.

### 2.2 - Browse Visual Inspection

### 2.3 - Data Analysis

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

### 3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis. The purpose of this mode is to identify any malfunctioning modules and to identify modules for which calibration offsets are to be applied.

No anomalies observed on available MS products:

Polarisation	Start Time
V	20041016 064408
H	20041015 071545

#### 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)
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#### P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.476419	0.024164	0.014150
7	P1	-3.346816	0.023195	-0.004274
11	P1	-4.636335	0.035334	0.094423
15	P1	-5.731888	0.079241	0.152955
19	P1	-3.521652	0.005916	-0.094918
22	P1	-4.550290	0.012819	-0.074879
24	P1	-4.972859	0.010510	0.028609
30	P1	-7.037659	0.017379	-0.022281
3	P1	-16.153240	0.406672	0.292595
7	P1	-14.034060	0.064228	-0.025001

11	P1	-20.367018	0.246468	-0.356382
15	P1	-11.733238	0.042447	0.078644
19	P1	-13.988864	0.026303	-0.070860
22	P1	-16.092951	0.398336	-0.404392
24	P1	-14.530380	0.266471	-0.231972
30	P1	-18.031904	0.361783	0.016938

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.326519	0.089123	-0.073781
7	P2	-22.593945	0.123006	-0.041772
11	P2	-15.140629	0.125347	0.064182
15	P2	-7.081119	0.103721	-0.079411
19	P2	-9.605900	0.132354	-0.136951
22	P2	-17.282541	0.108831	0.051174
24	P2	-20.779633	0.091345	-0.046316
30	P2	-19.110254	0.083351	0.109027

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.168097	0.005255	-0.041102
7	P3	-8.168099	0.005255	-0.041092
11	P3	-8.168098	0.005255	-0.041092
15	P3	-8.168098	0.005255	-0.041094
19	P3	-8.168100	0.005255	-0.041088
22	P3	-8.168102	0.005255	-0.041090
24	P3	-8.168109	0.005256	-0.041044
30	P3	-8.168063	0.005257	-0.040881

**4.2.2 - Evolution for GM1**

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

**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	-2.837706	0.049464	0.078529
7	P1	-3.009395	0.101056	0.144384
11	P1	-3.898006	0.066014	0.050062
15	P1	-3.514457	0.082262	0.122015
19	P1	-3.527333	0.013710	-0.093364
22	P1	-5.673707	0.053508	0.092983
24	P1	-3.963539	0.021289	-0.008216
30	P1	-6.203622	0.052953	-0.056322
3	P1	-10.848637	0.189625	0.372477
7	P1	-10.097052	0.174353	0.061228
11	P1	-12.222730	0.131190	-0.148681
15	P1	-11.692276	0.082877	0.057325
19	P1	-15.592334	0.060583	-0.036861
22	P1	-23.556871	1.315287	-0.408254
24	P1	-18.105930	0.233253	-0.066814
30	P1	-20.392469	1.148115	0.140021

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.001760	0.049174	-0.085438
7	P2	-22.705679	0.066222	0.027197
11	P2	-10.872851	0.053464	-0.003732
15	P2	-4.986004	0.030177	-0.084102
19	P2	-6.814613	0.044622	-0.166686
22	P2	-7.394523	0.042260	0.012682
24	P2	-11.095845	0.055008	-0.114842
30	P2	-22.112297	0.039452	0.038694

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.015249	0.003763	-0.028885

7	P3	-8.015247	0.003759	-0.028489
11	P3	-8.015321	0.003748	-0.028618
15	P3	-8.015233	0.003749	-0.028610
19	P3	-8.015311	0.003751	-0.028677
22	P3	-8.015261	0.003754	-0.028583
24	P3	-8.015333	0.003780	-0.028955
30	P3	-8.015246	0.003766	-0.028698

### 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	0.000479894
	stdev	2.15919e-07
MEAN Q	mean	0.000550636
	stdev	2.33289e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127635
	stdev	0.000932380
STDEV Q	mean	0.127854

stdev 0.000941656



### 5.3 - Gain imbalance I/Q



## 6 - Doppler Analysis

Preliminary report. The data is not yet controlled

### 6.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

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

### 6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

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

### 6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

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

Evolution of unbiased Doppler error (Real - Expected)
<input type="checkbox"/>
Ascending
<input type="checkbox"/>
Descending

### 6.5 - Absolute Doppler for GM1

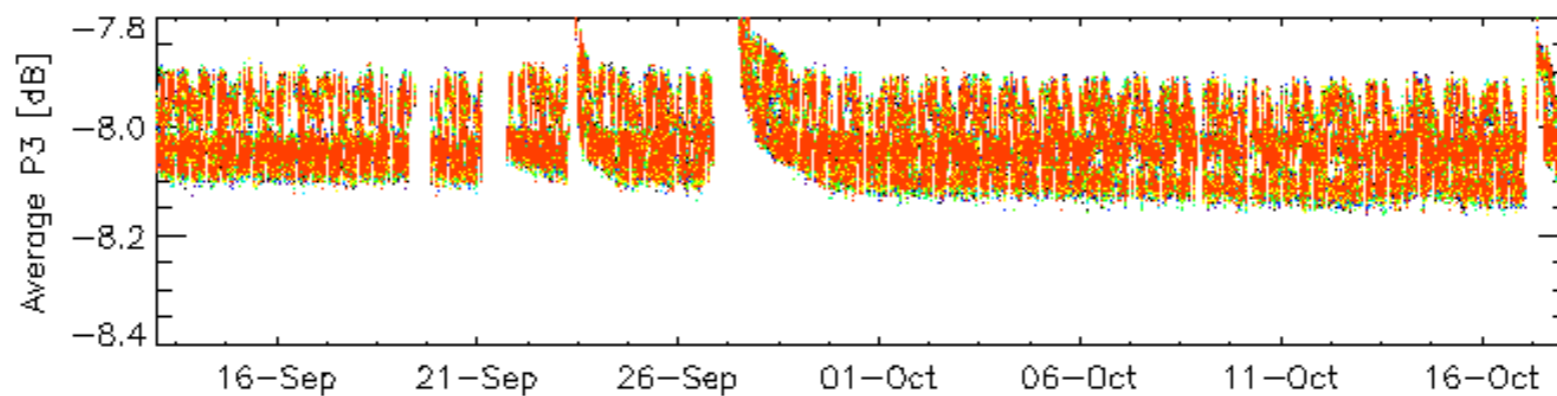
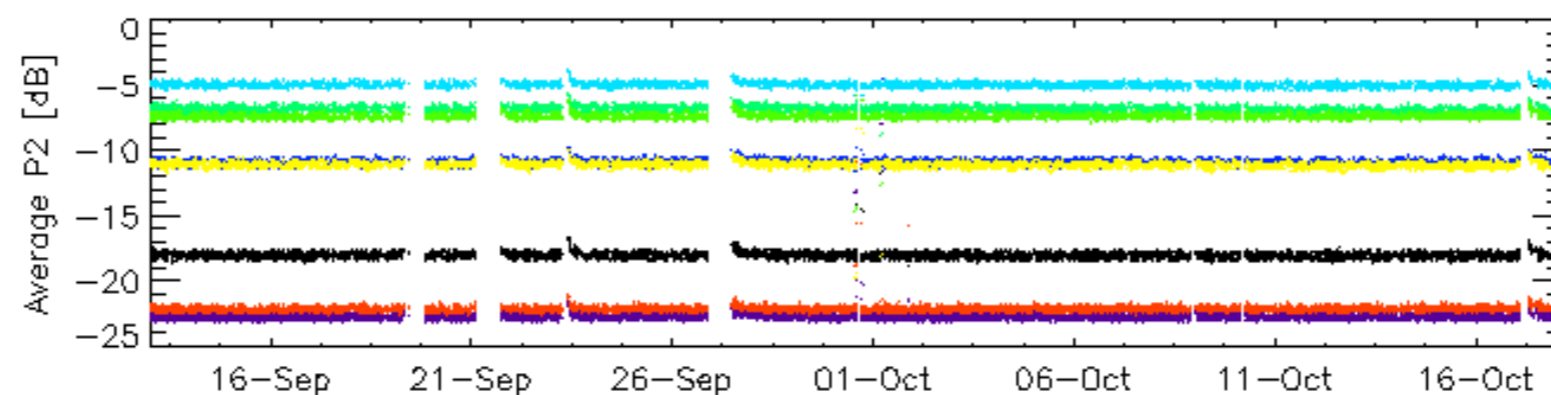
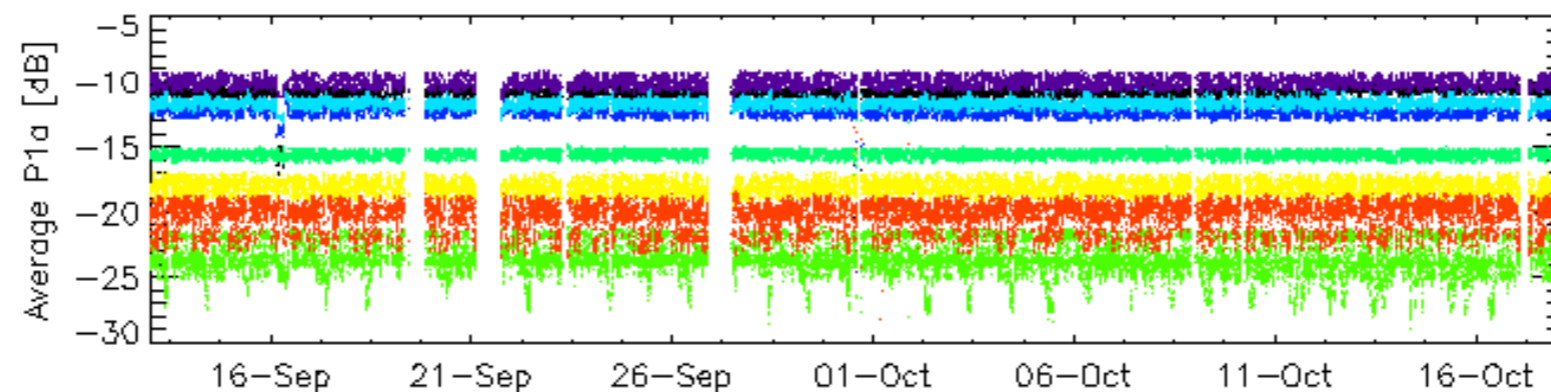
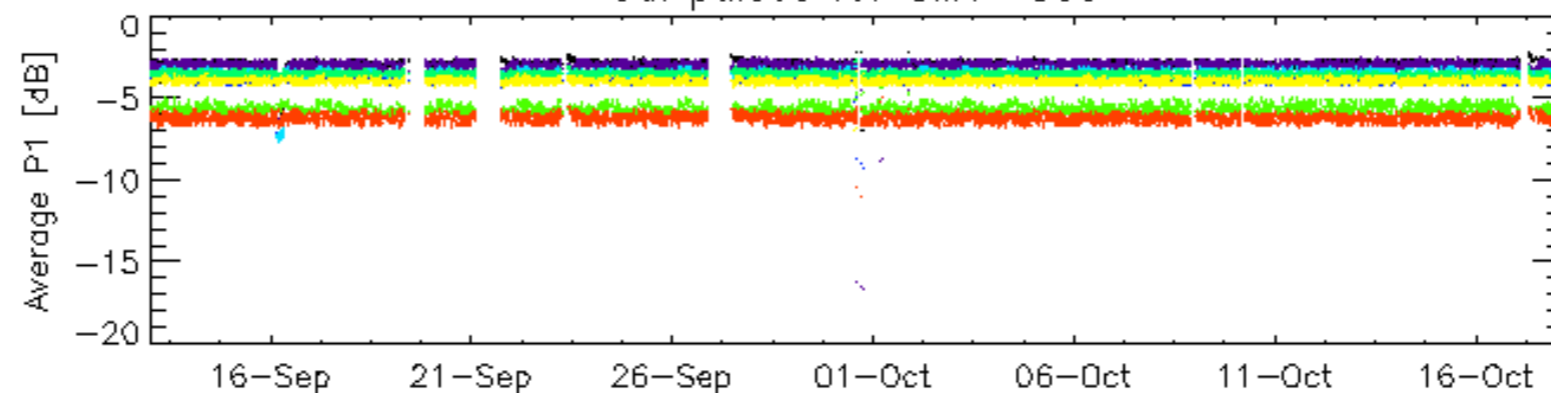
Evolution of Absolute Doppler
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Ascending
<input type="checkbox"/>
Descending

### 6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
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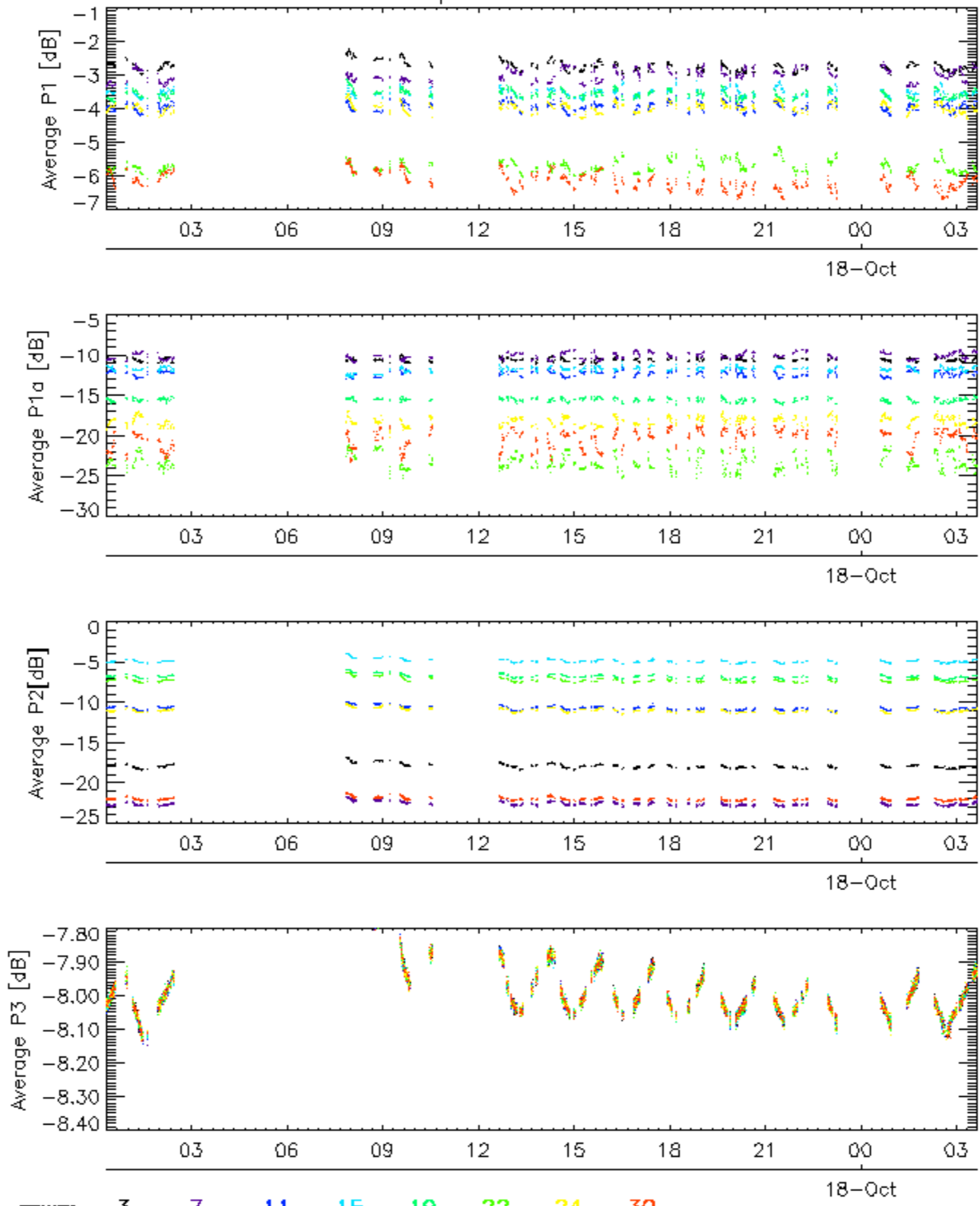


Cal pulses for GM1 SS3

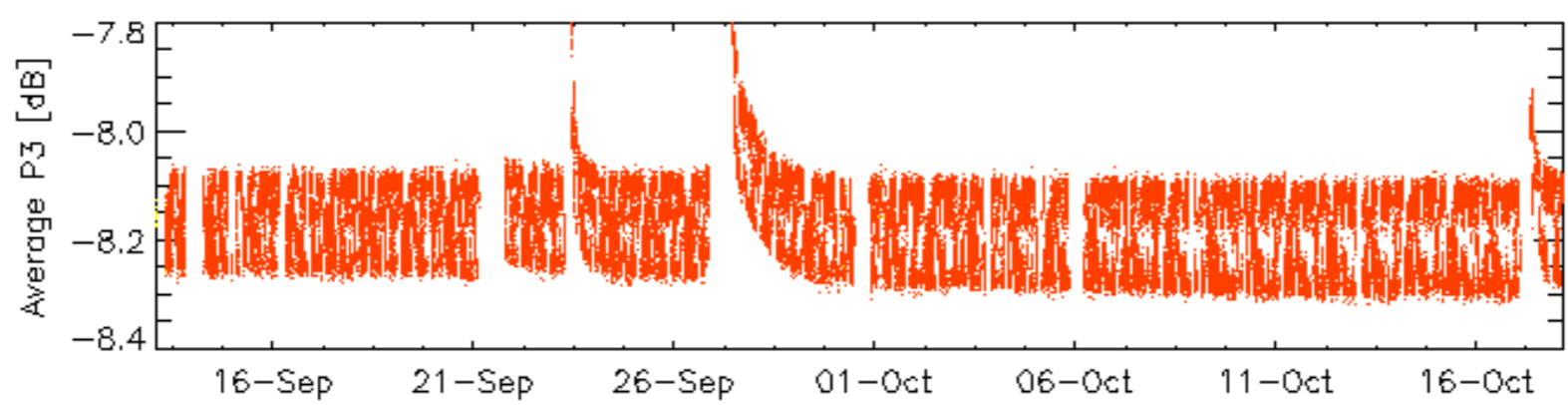
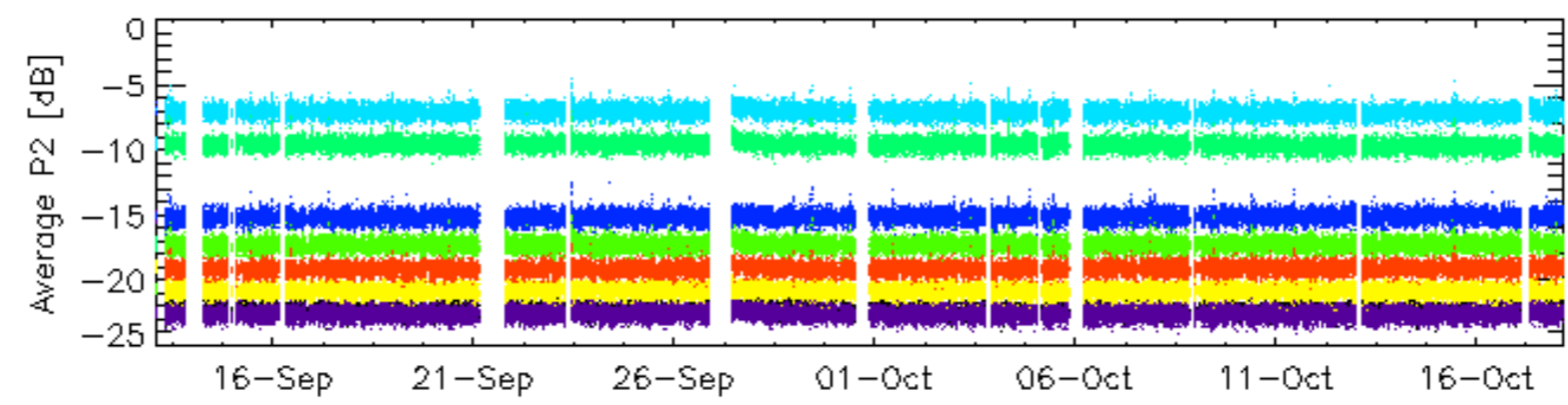
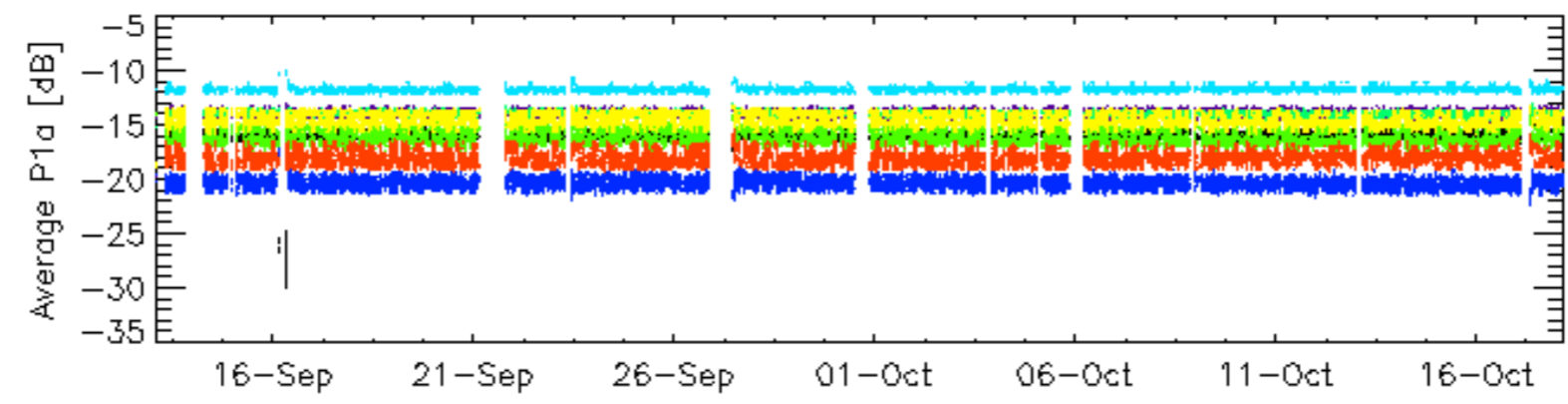
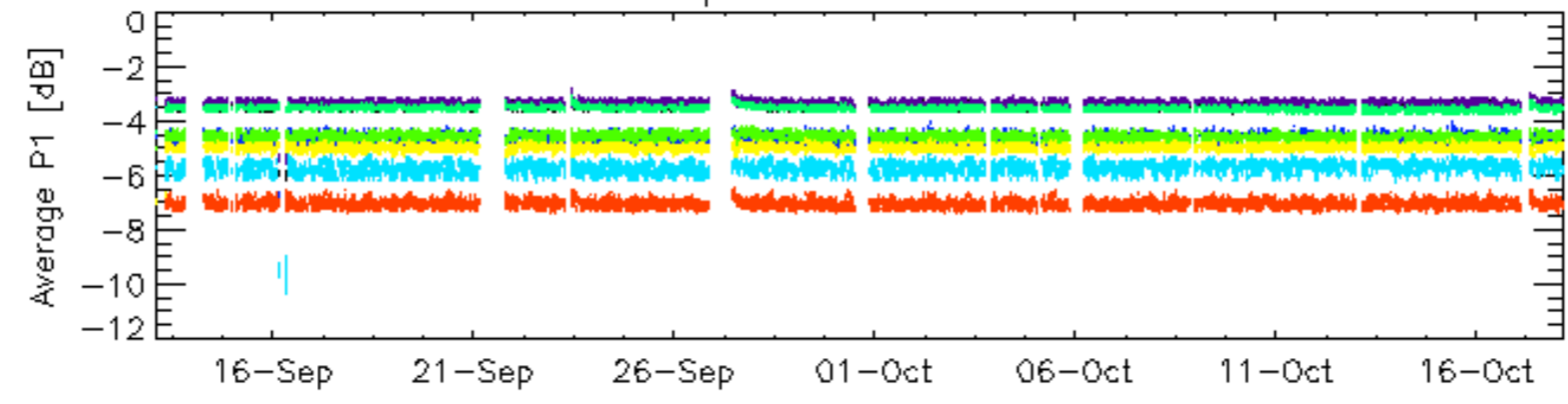


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 30

### Cal pulses for GM1 SS3

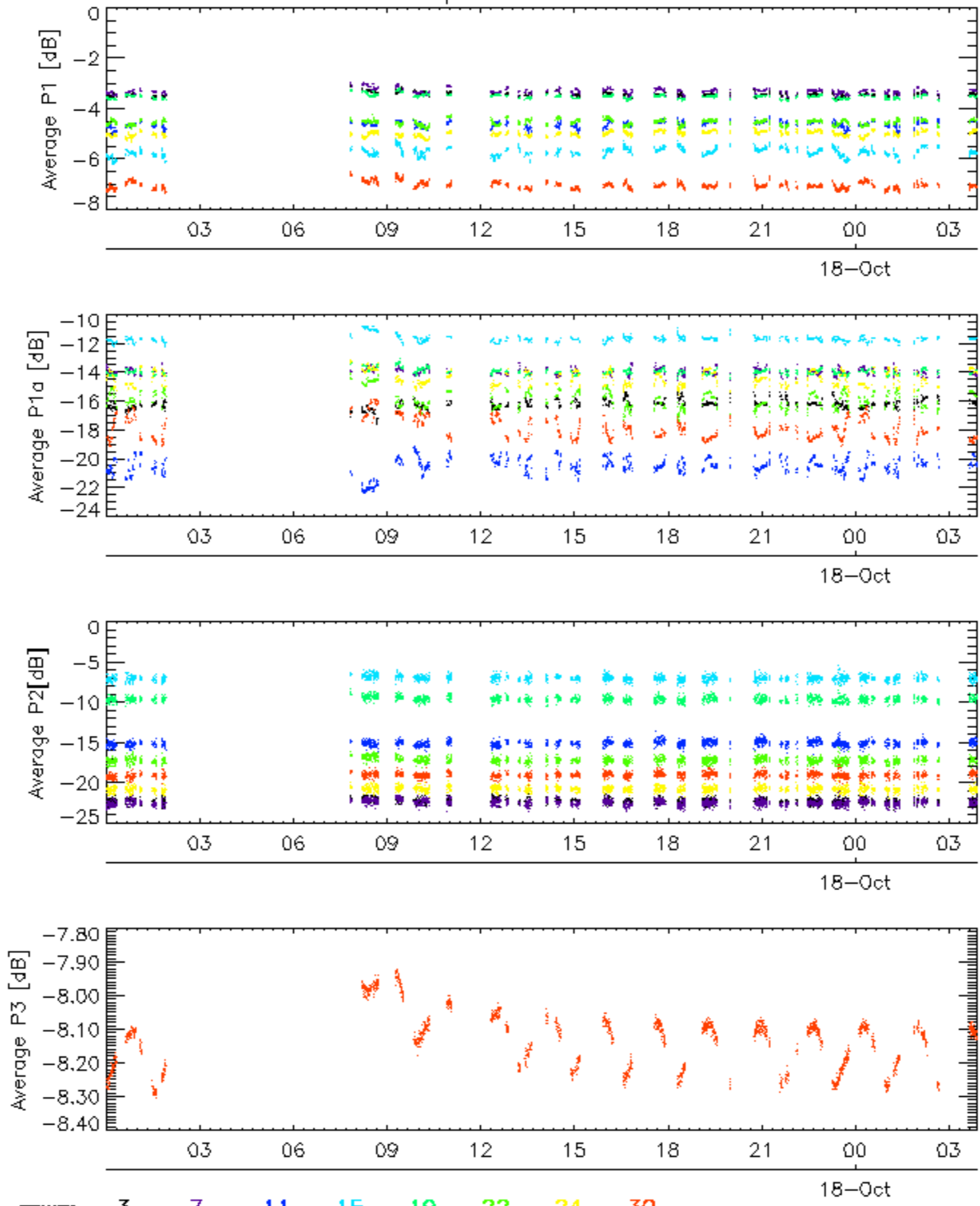


Cal pulses for WVS IS2

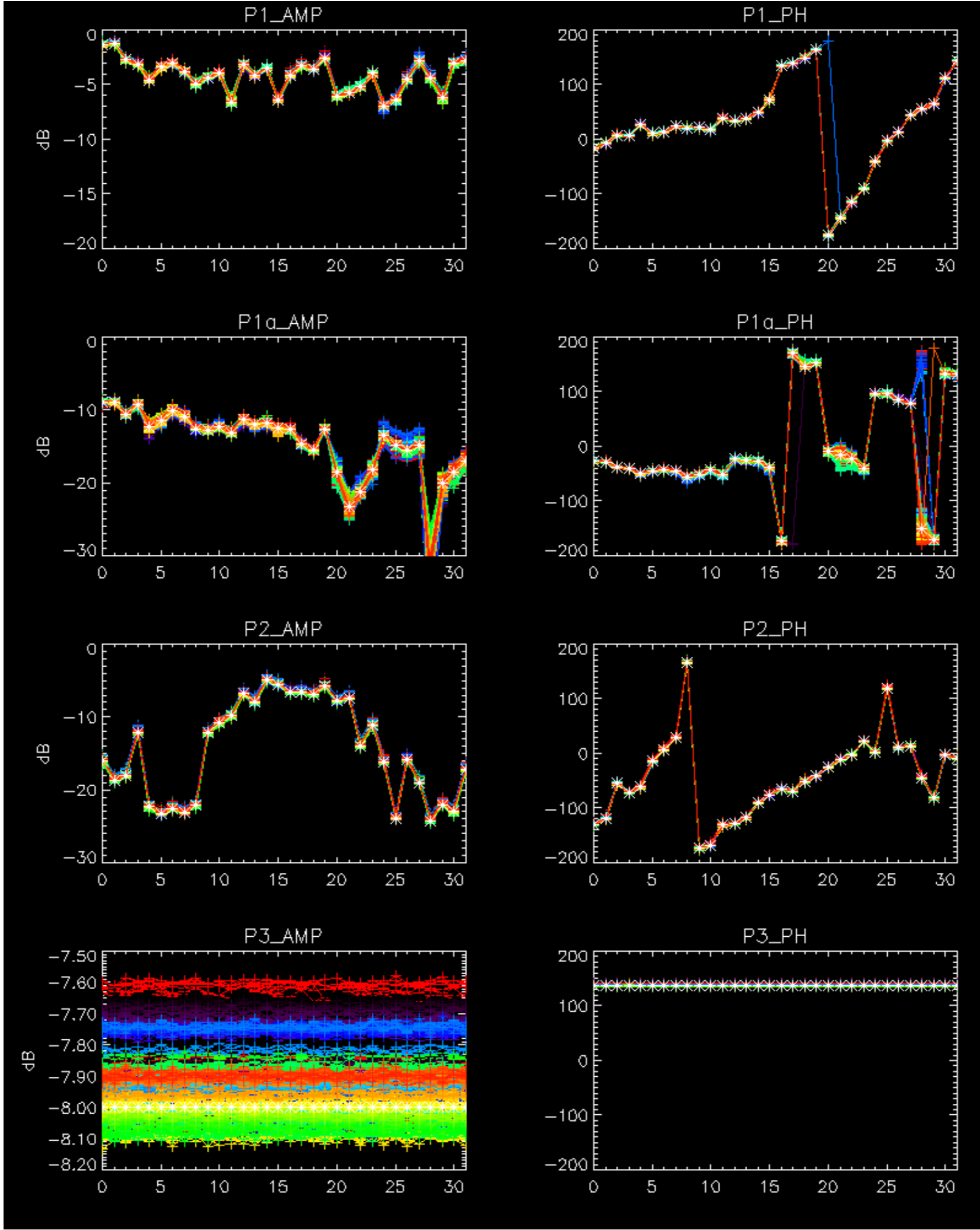


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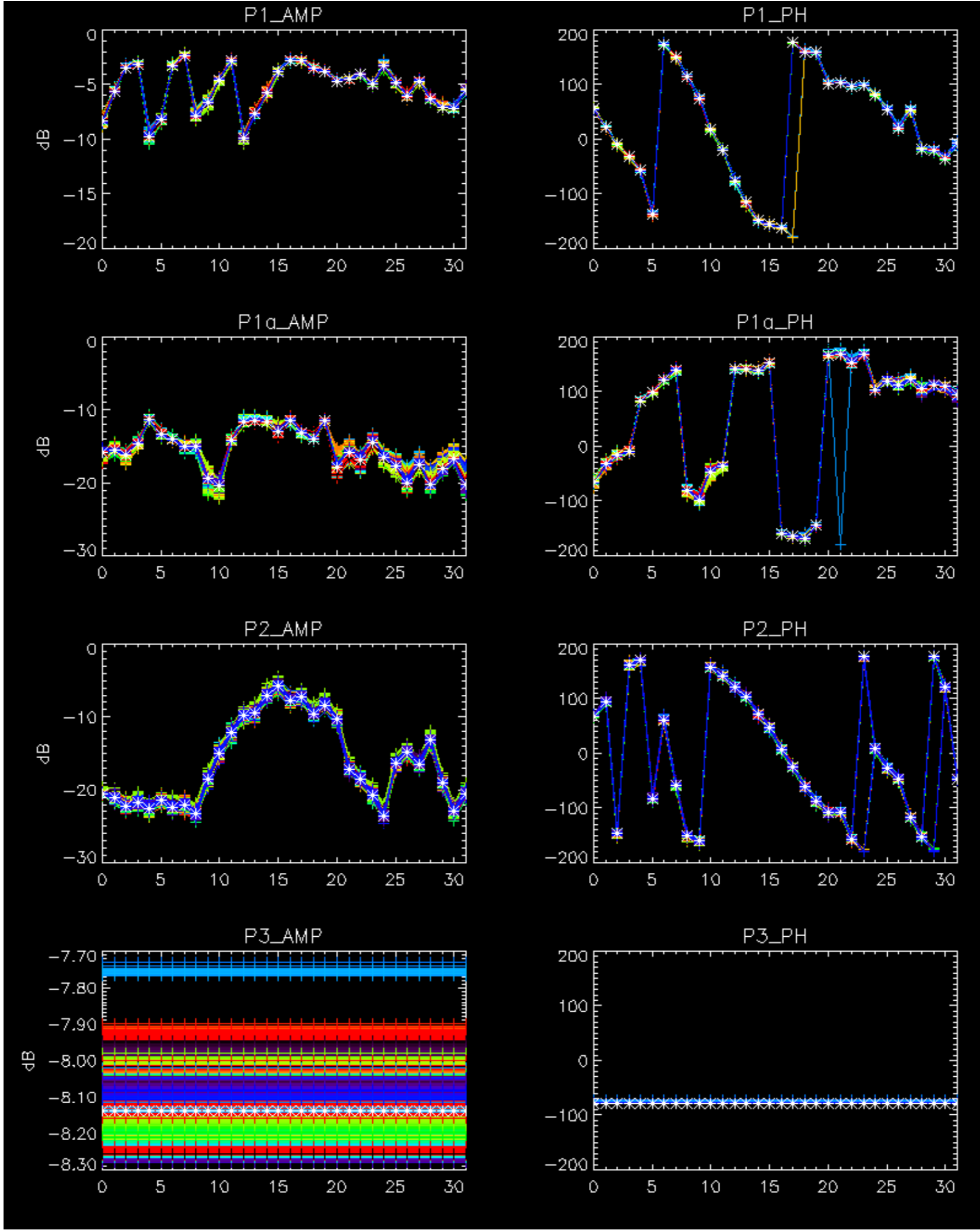
Cal pulses for WVS IS2



No anomalies observed.





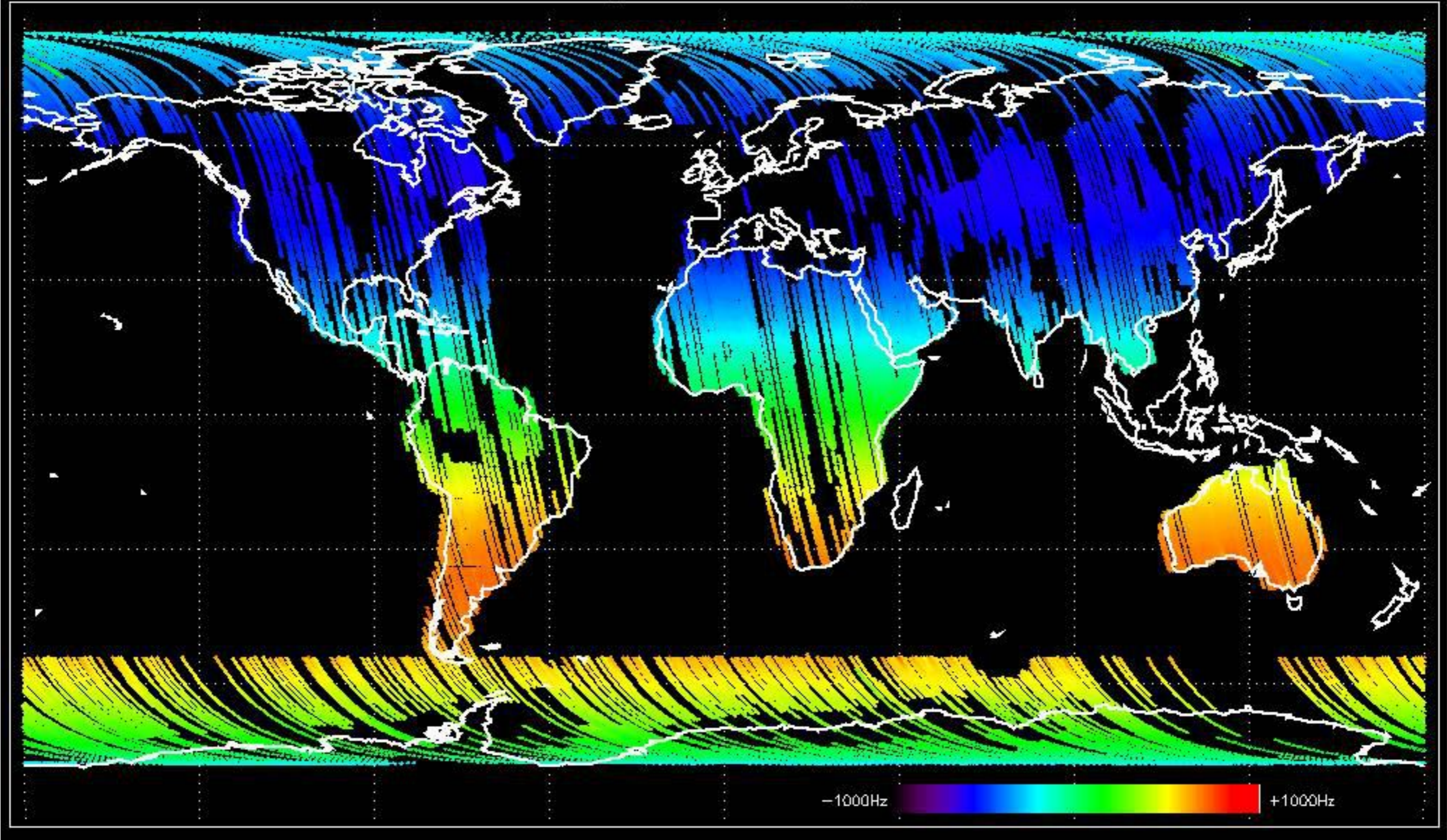


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



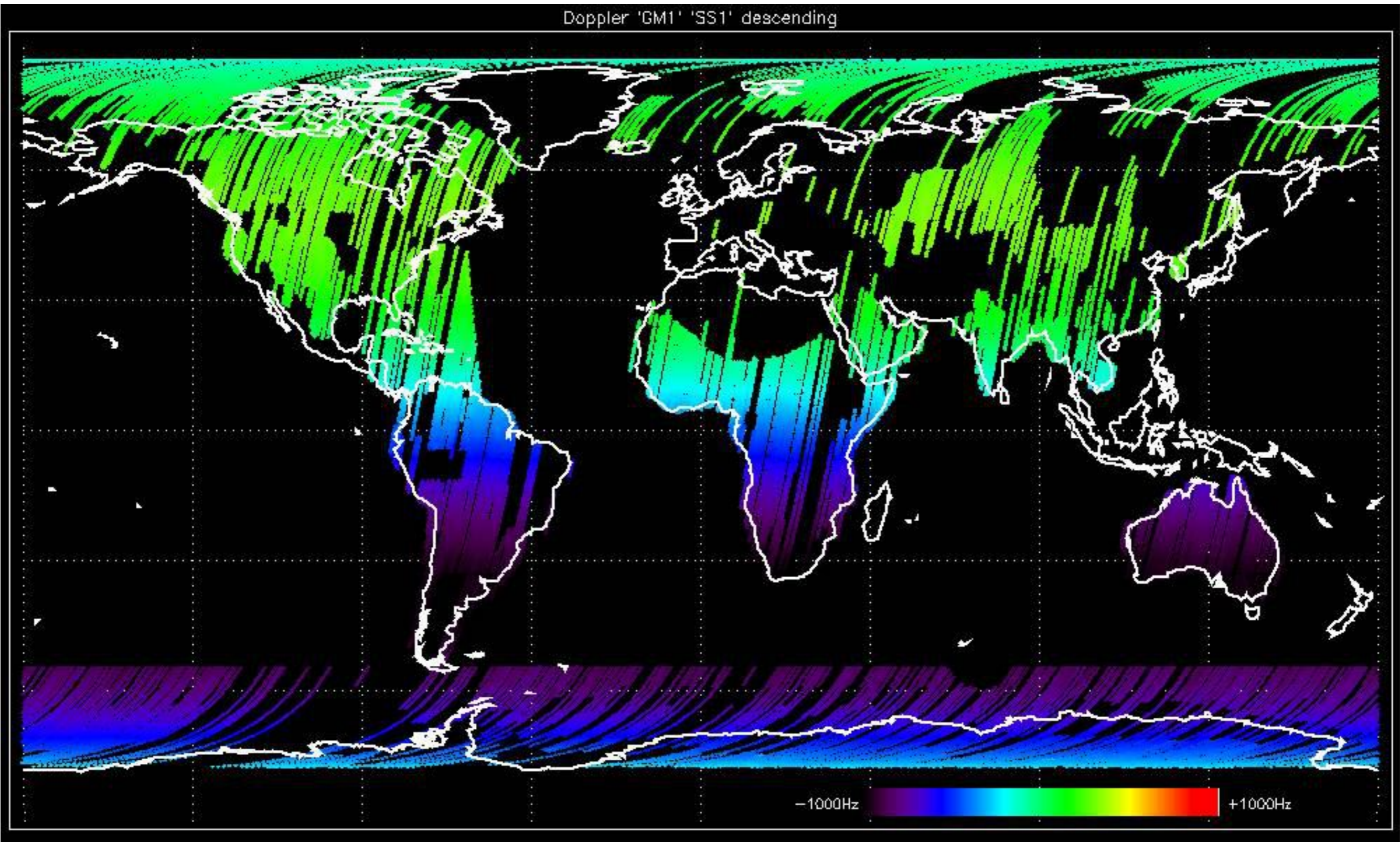


Doppler 'GM1' 'SS1' ascending



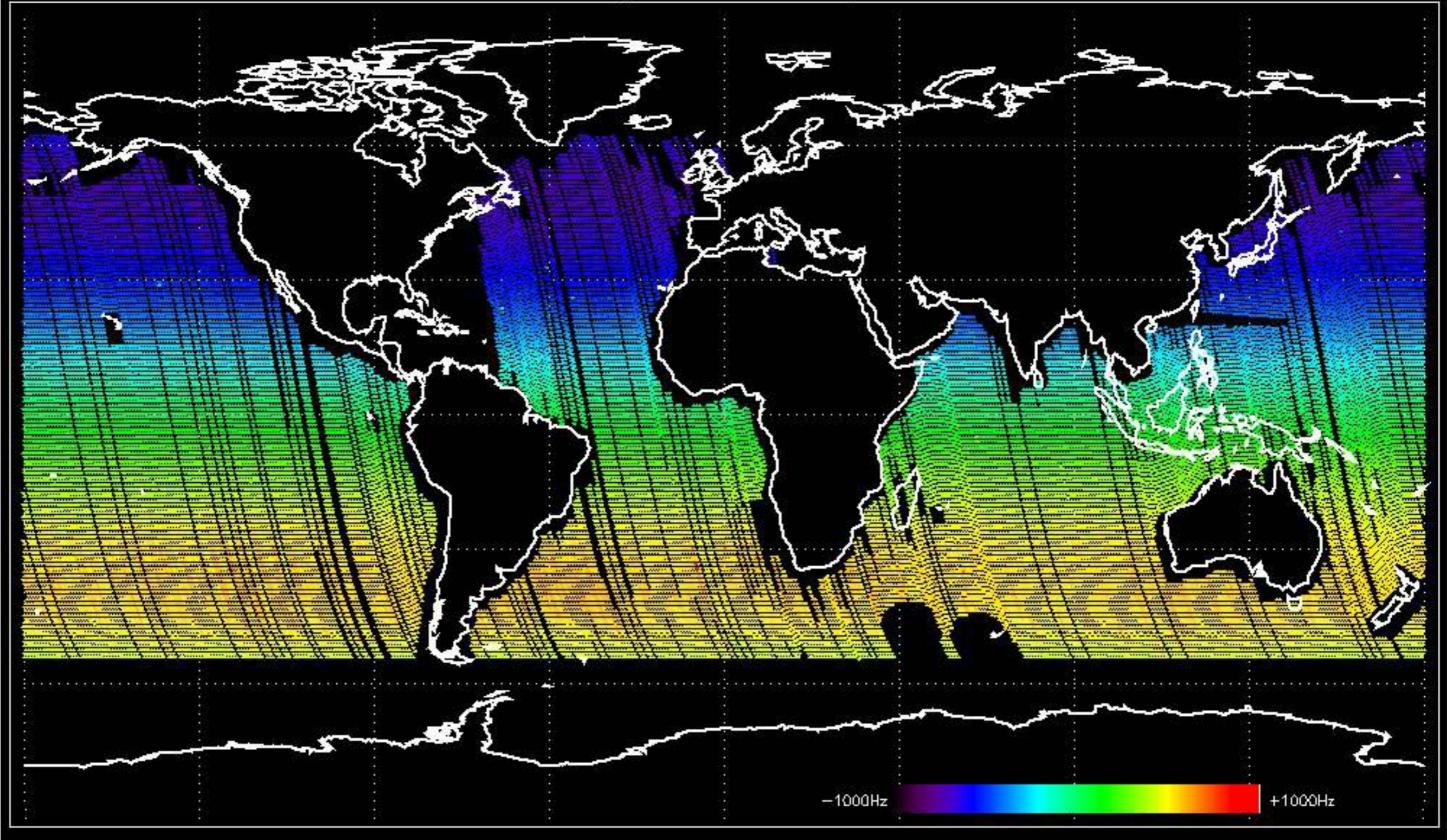


Doppler 'GM1' 'SS1' descending



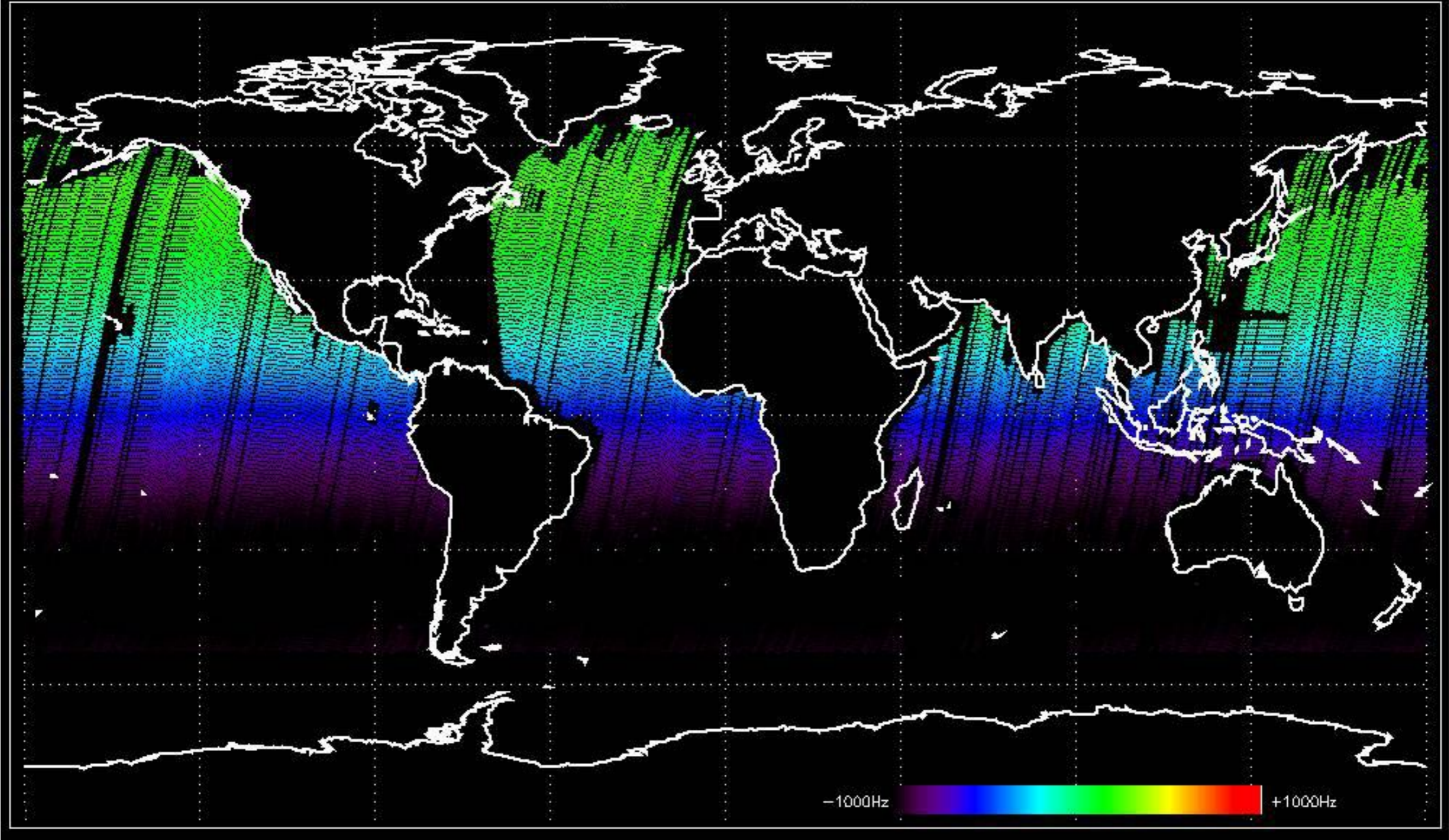


Doppler 'WVS' 'IS2' ascending

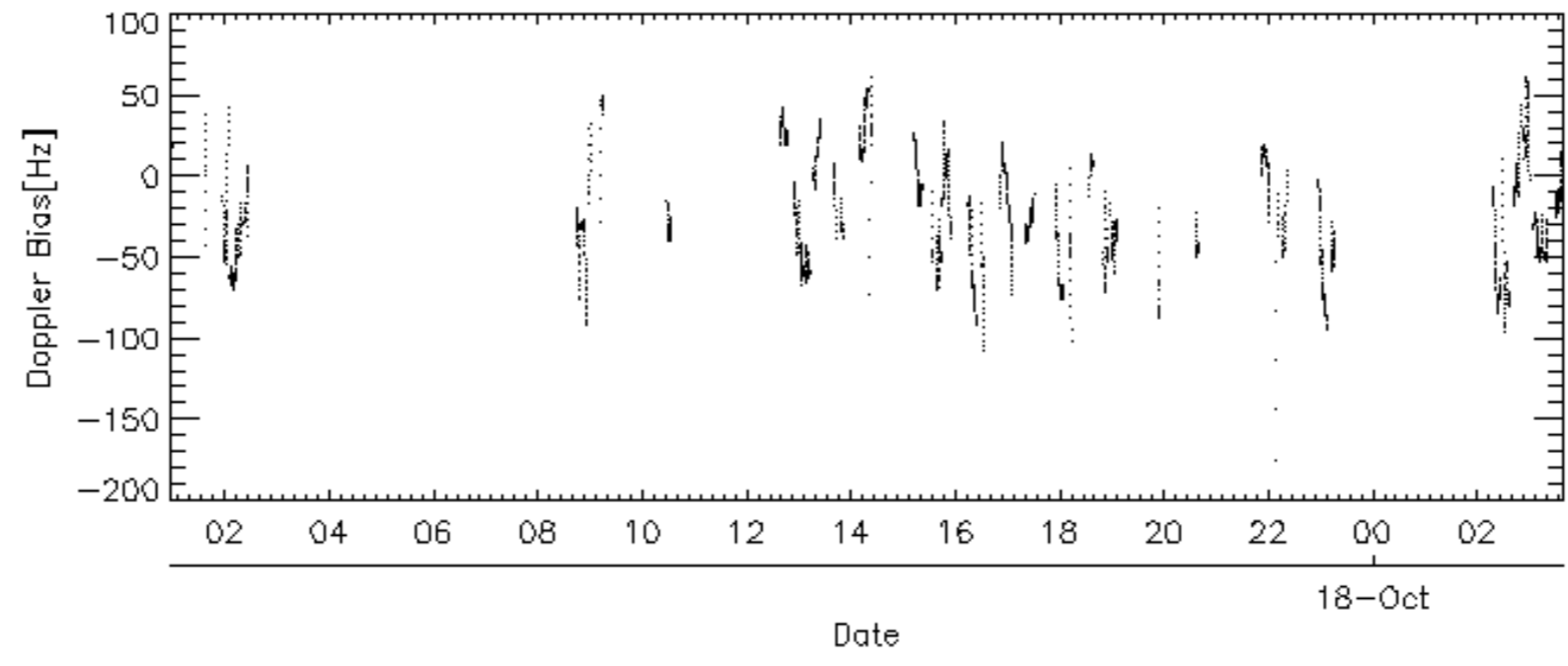
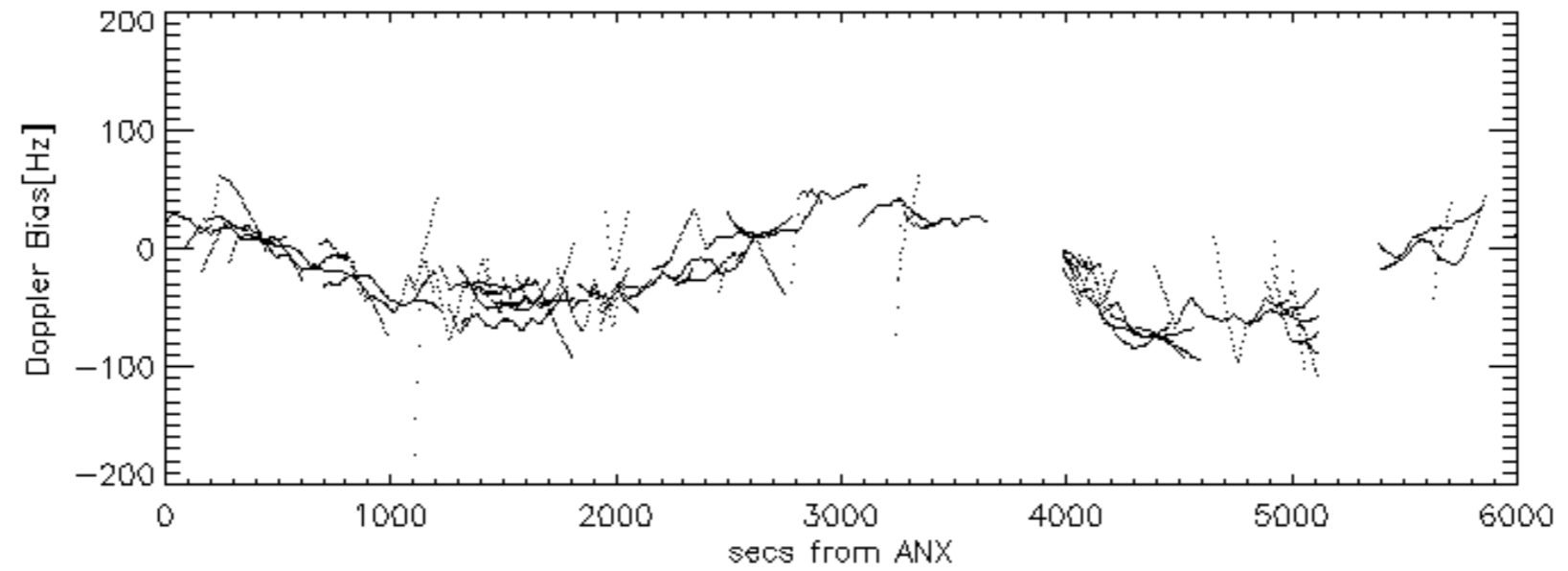
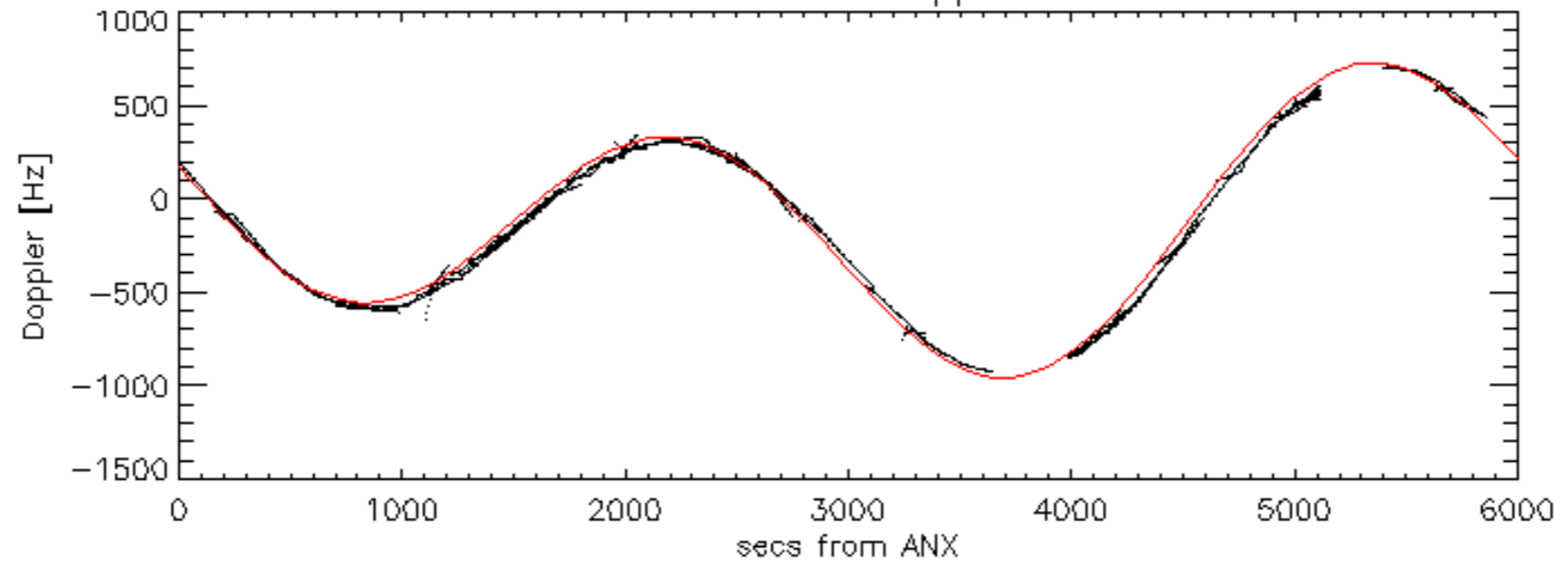


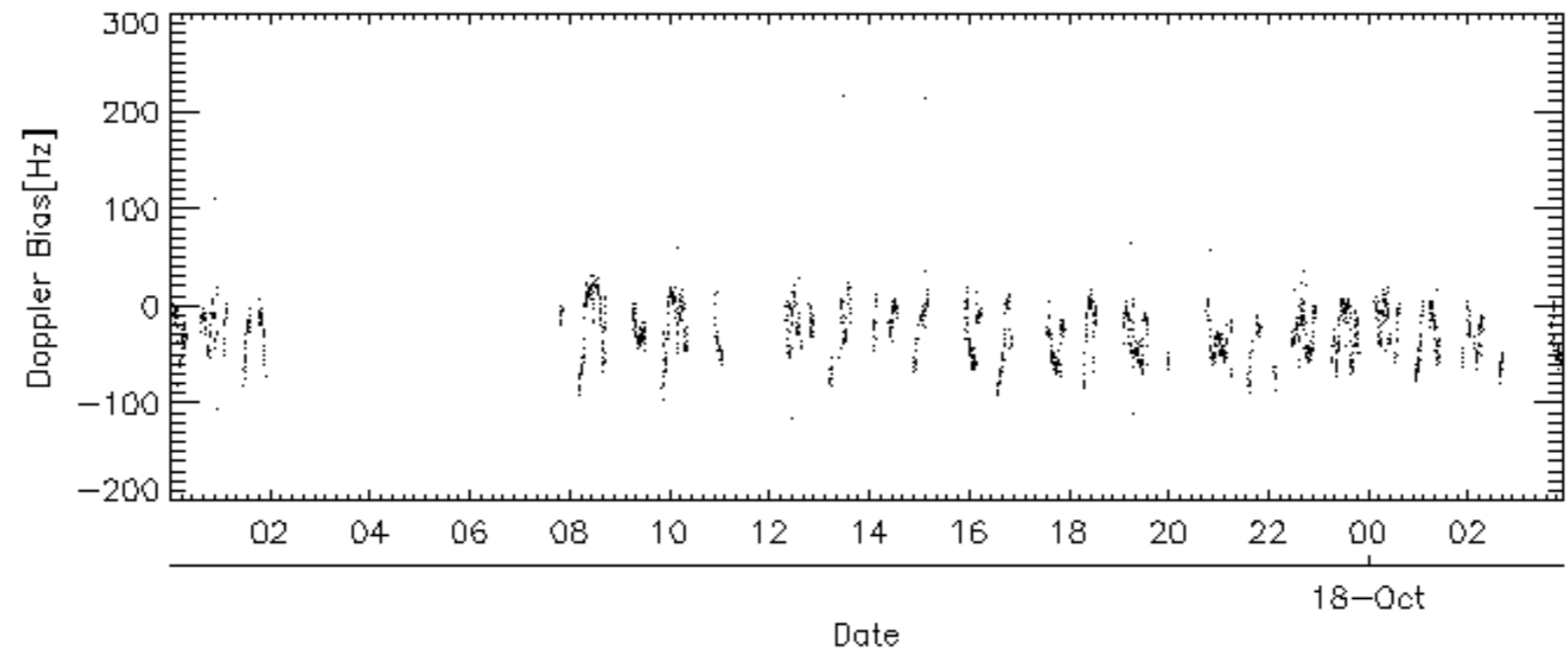
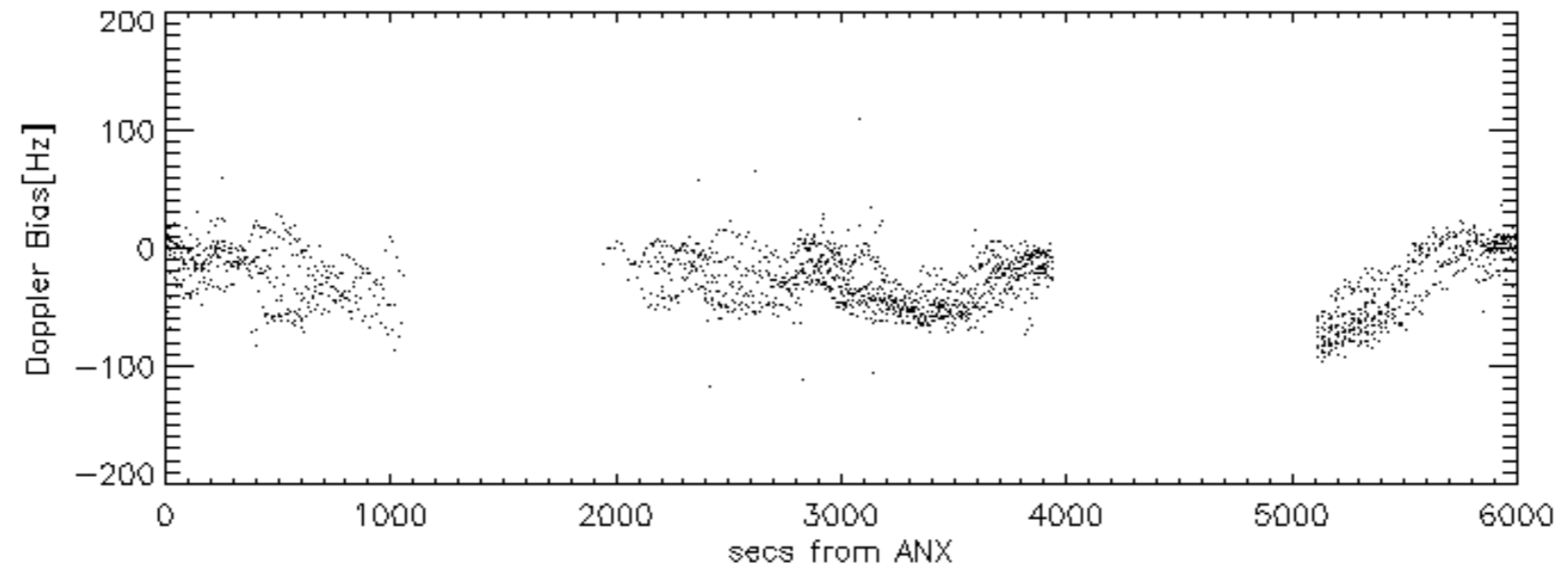
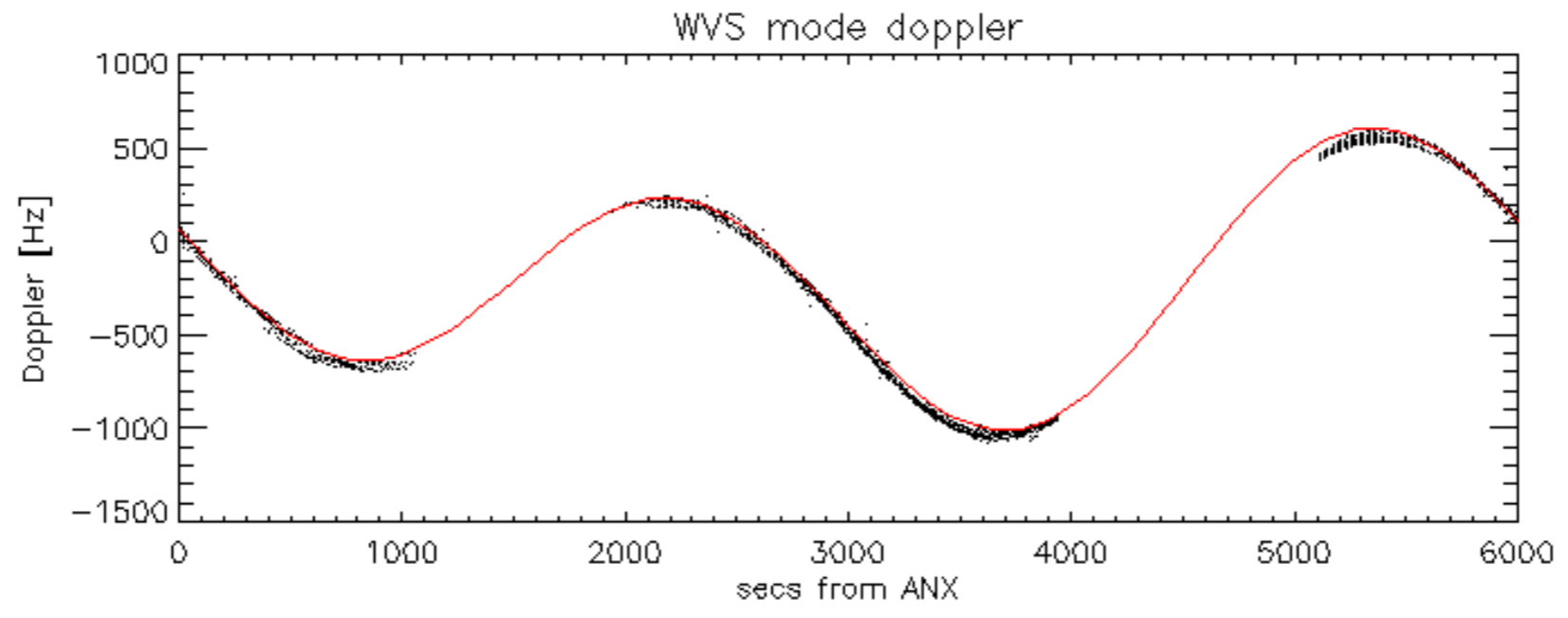


Doppler 'WVS' 'IS2' descending



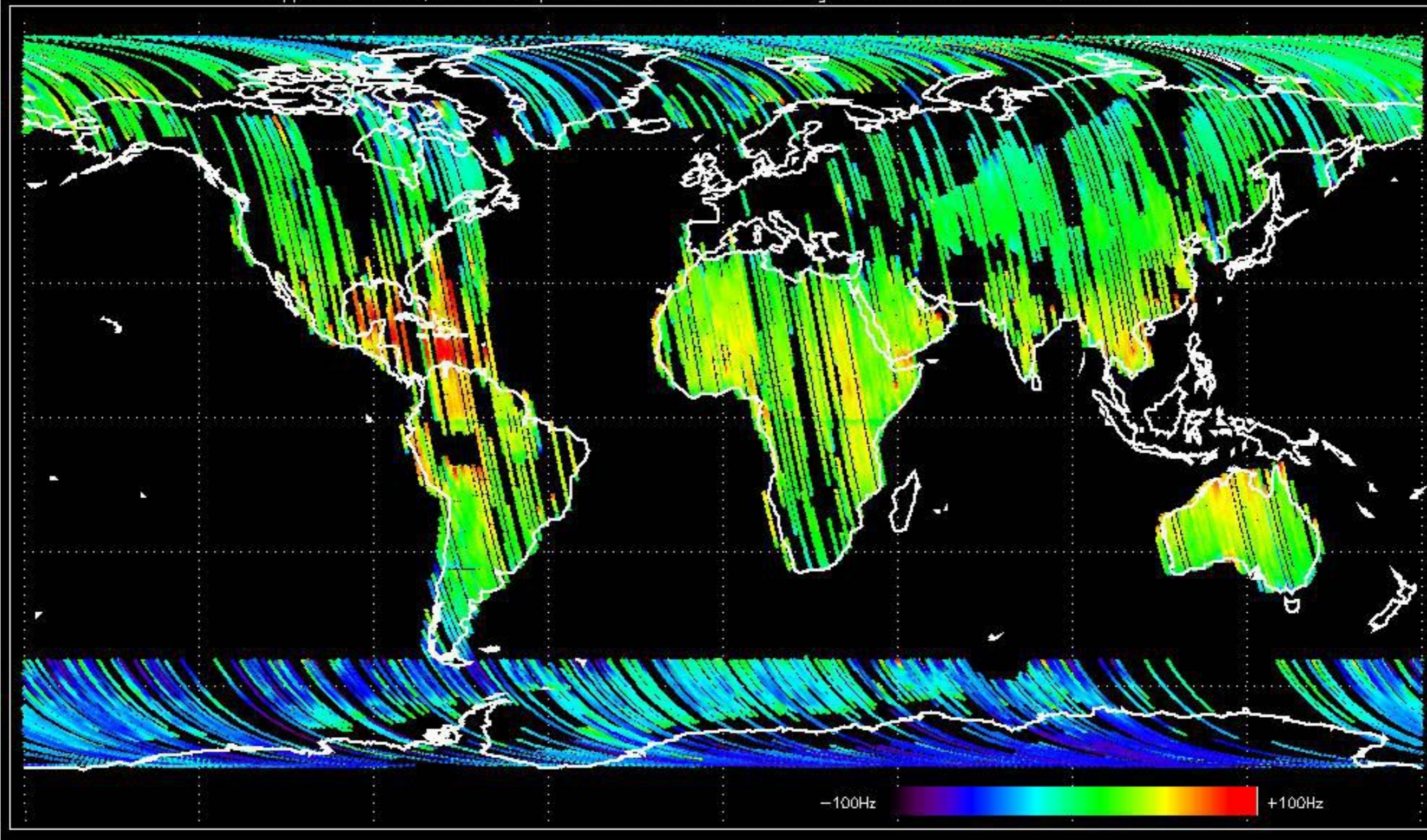
GM1 mode doppler





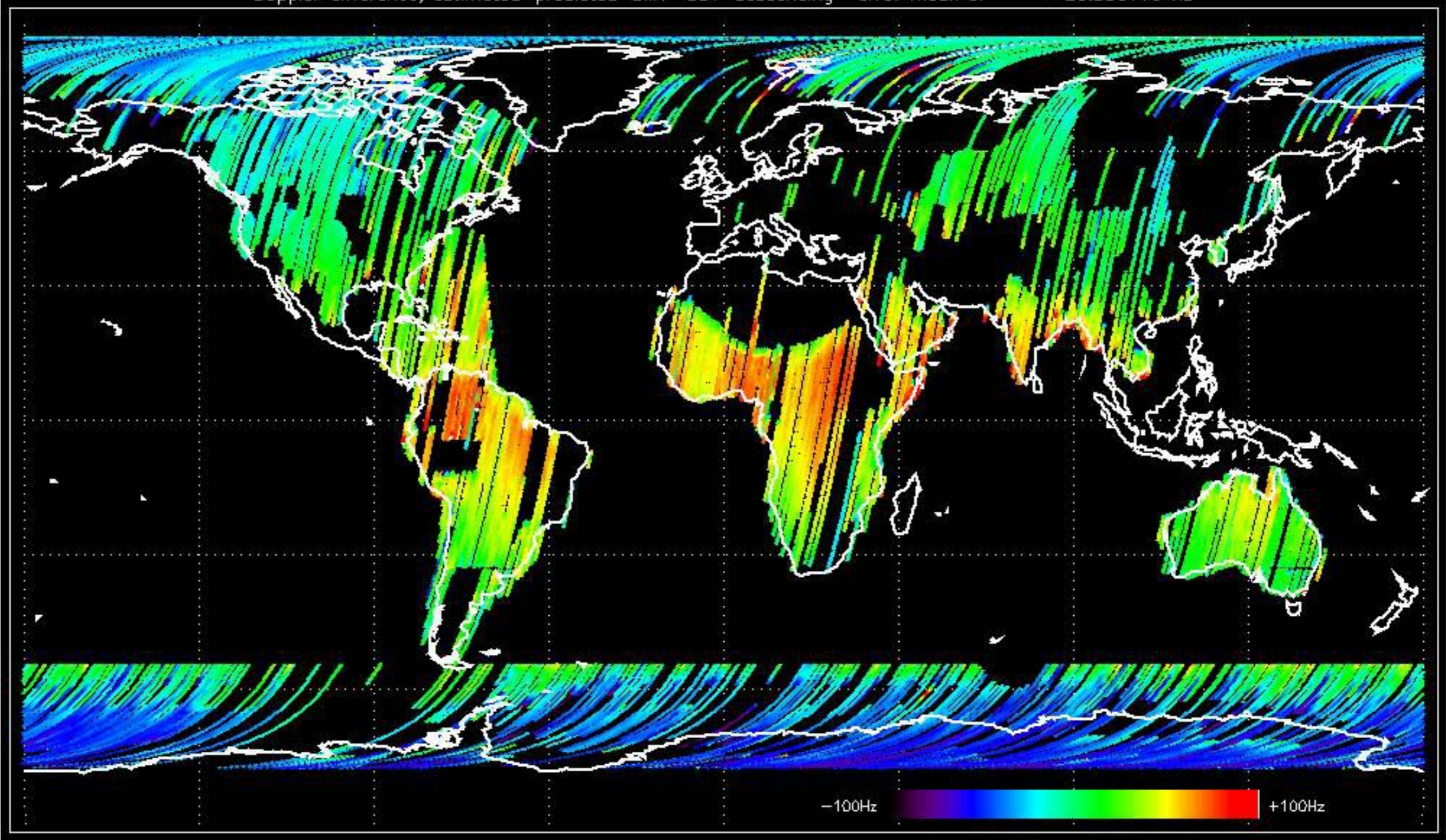


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -30.637346 Hz



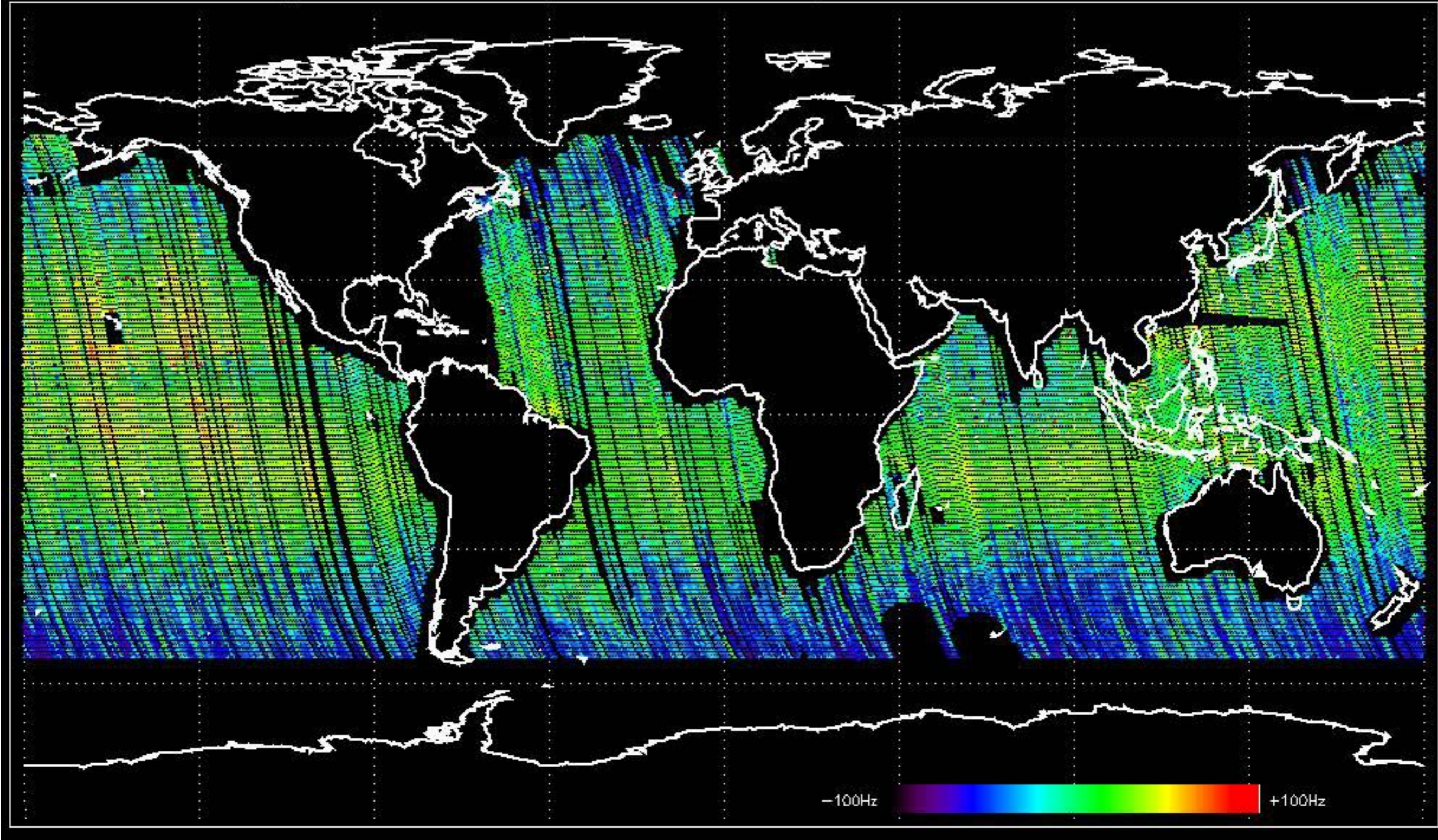


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -23.536116 Hz



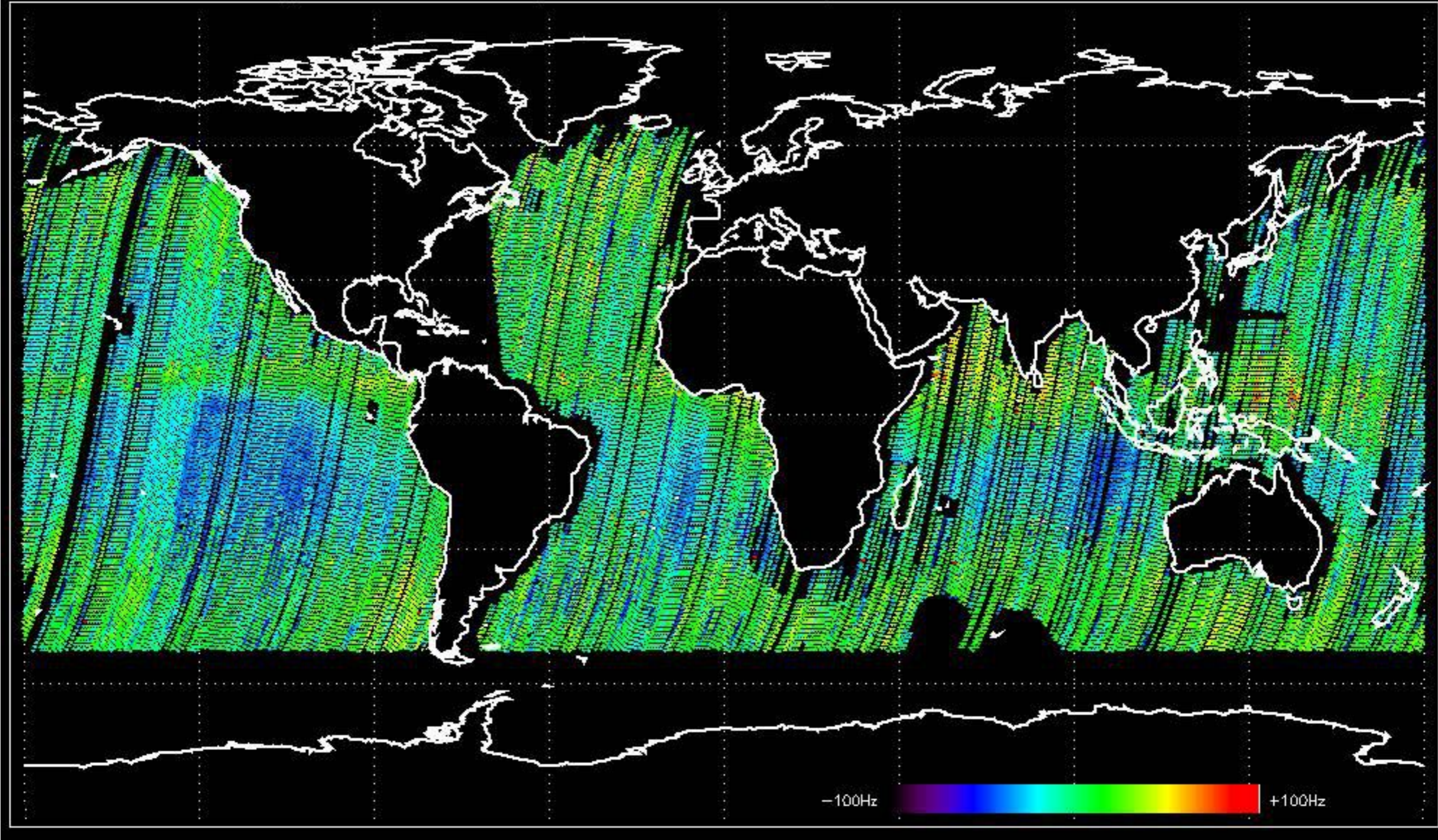


Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -30.081701 Hz





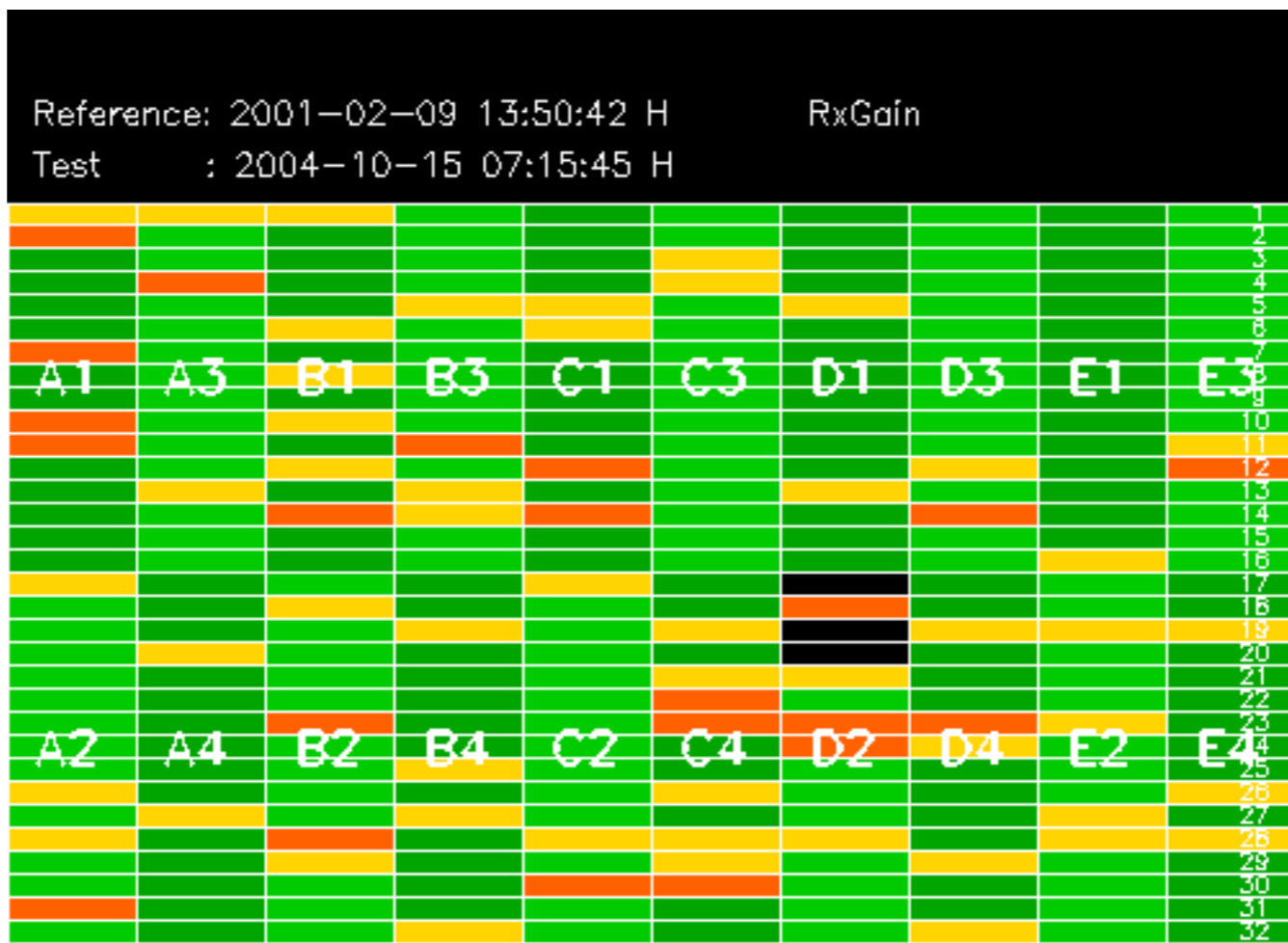
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -33.396035 Hz





The MS mode provides an internal health check on an individual module basis.  
The purpose of this mode is to identify to identify any malfunctioning modules and  
to identify modules for which calibration offsets are to be applied.  
No anomalies observed on available MS products:

No anomalies observed.

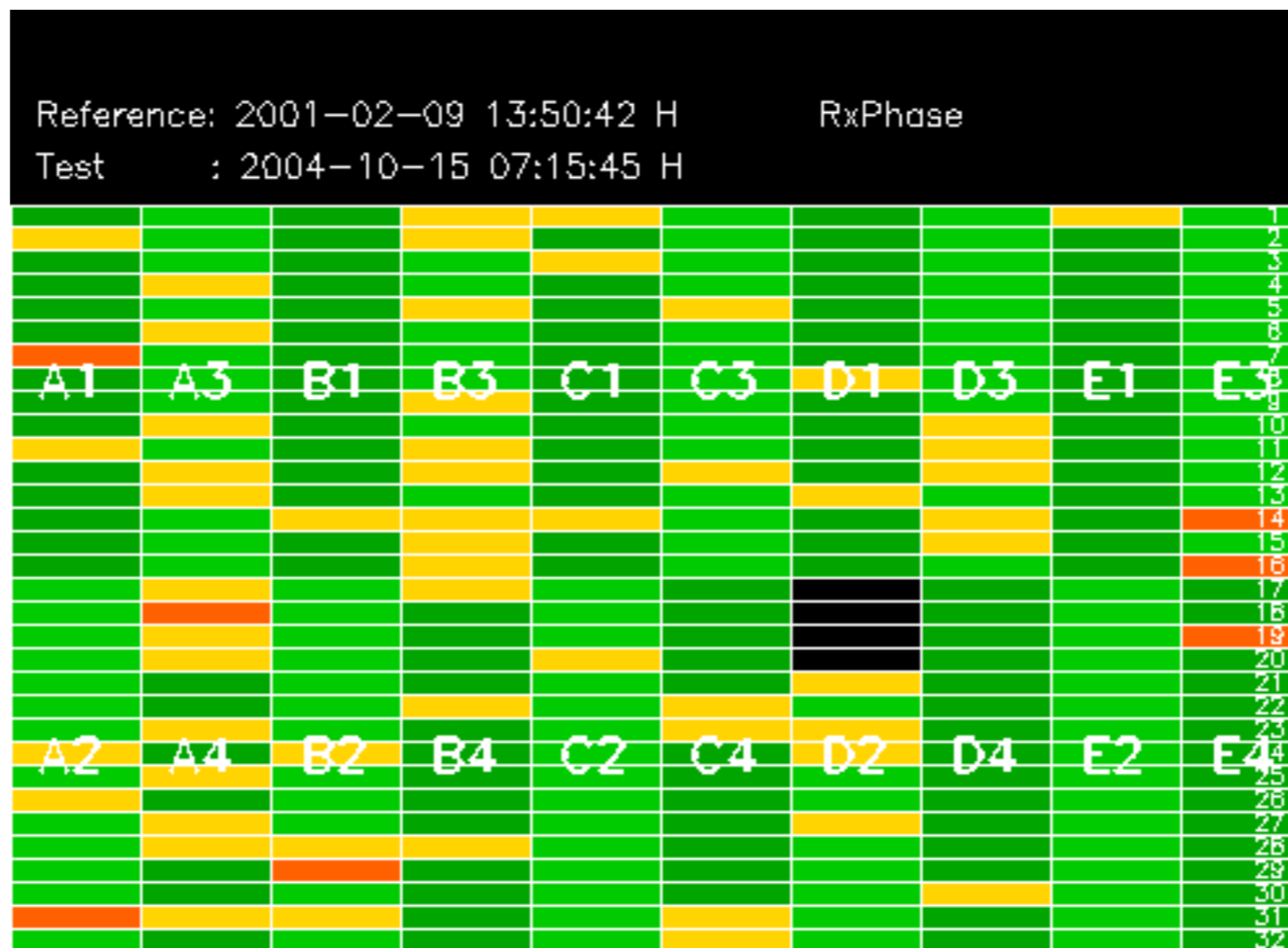








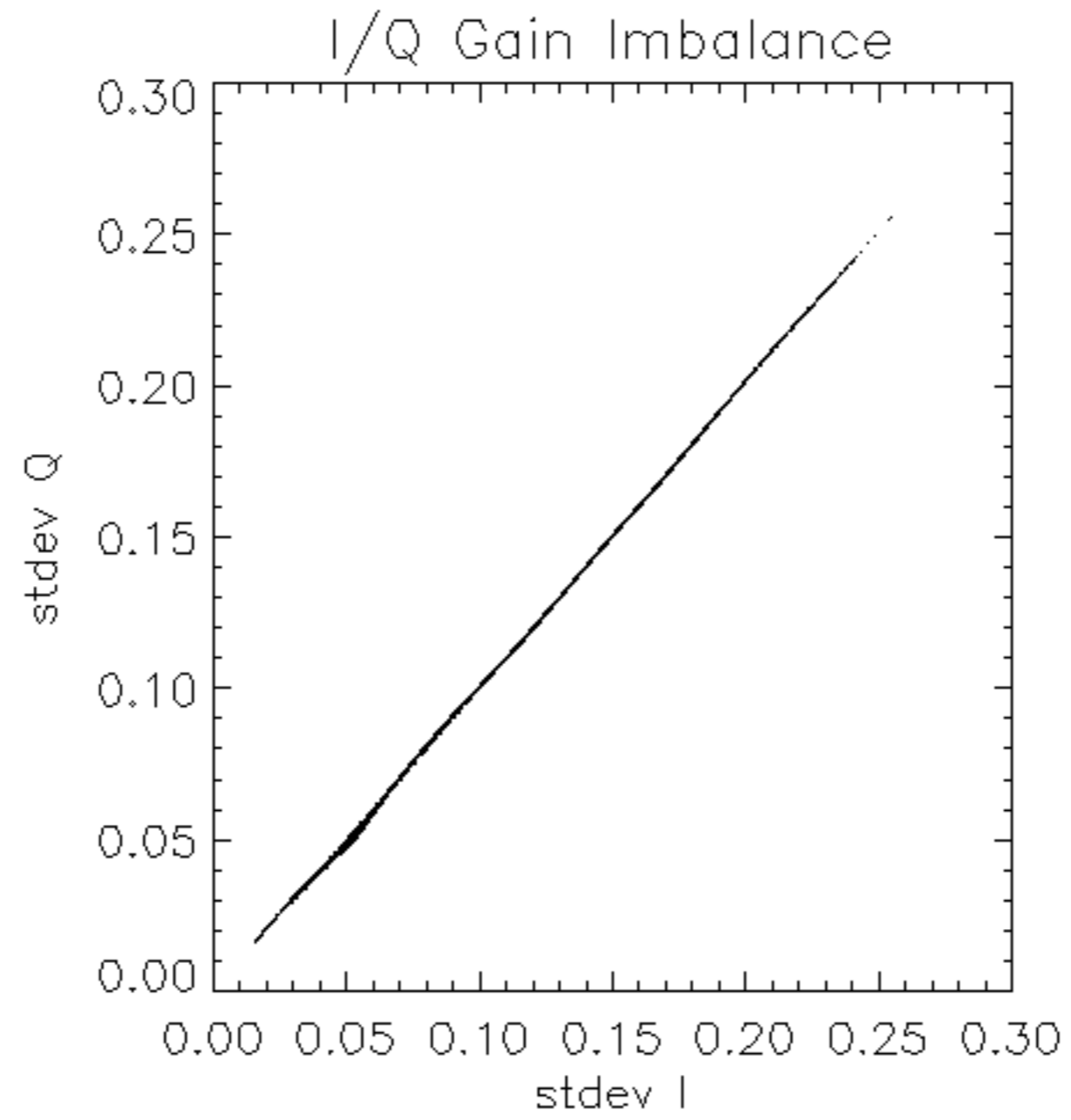


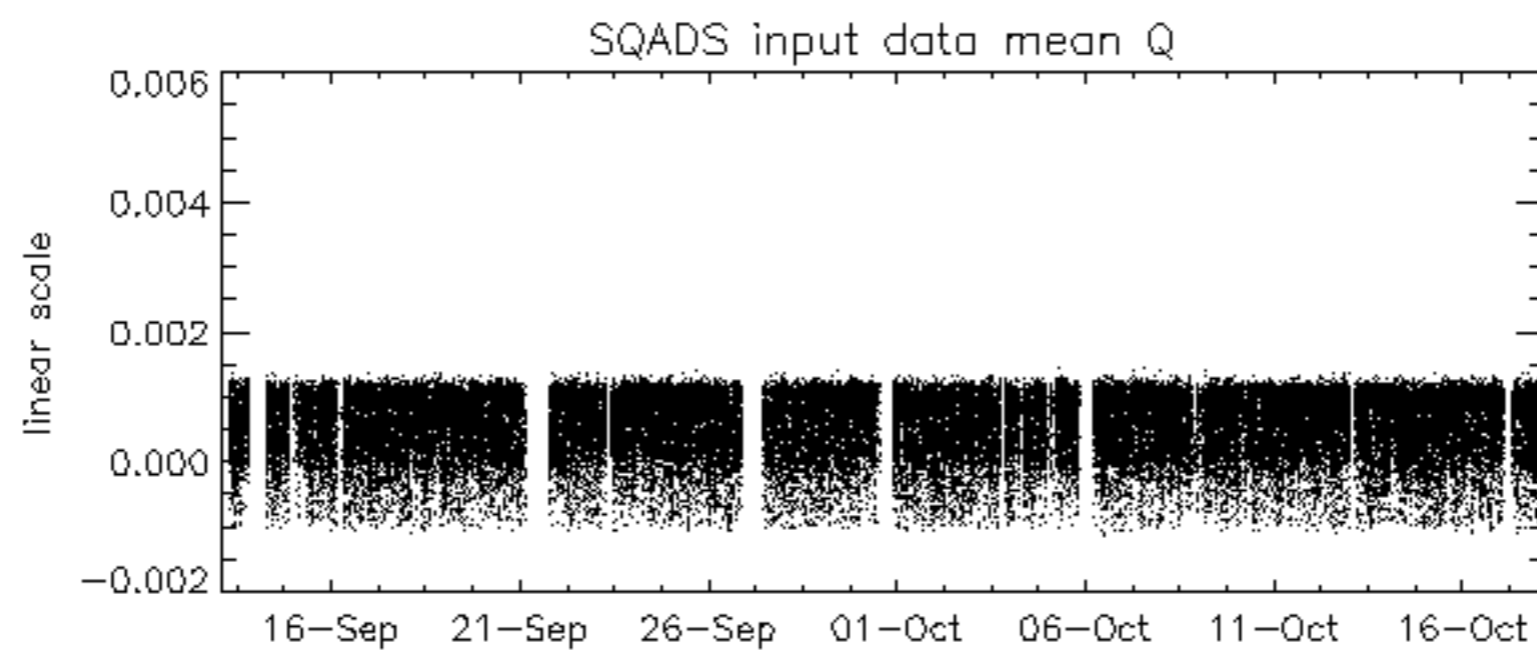
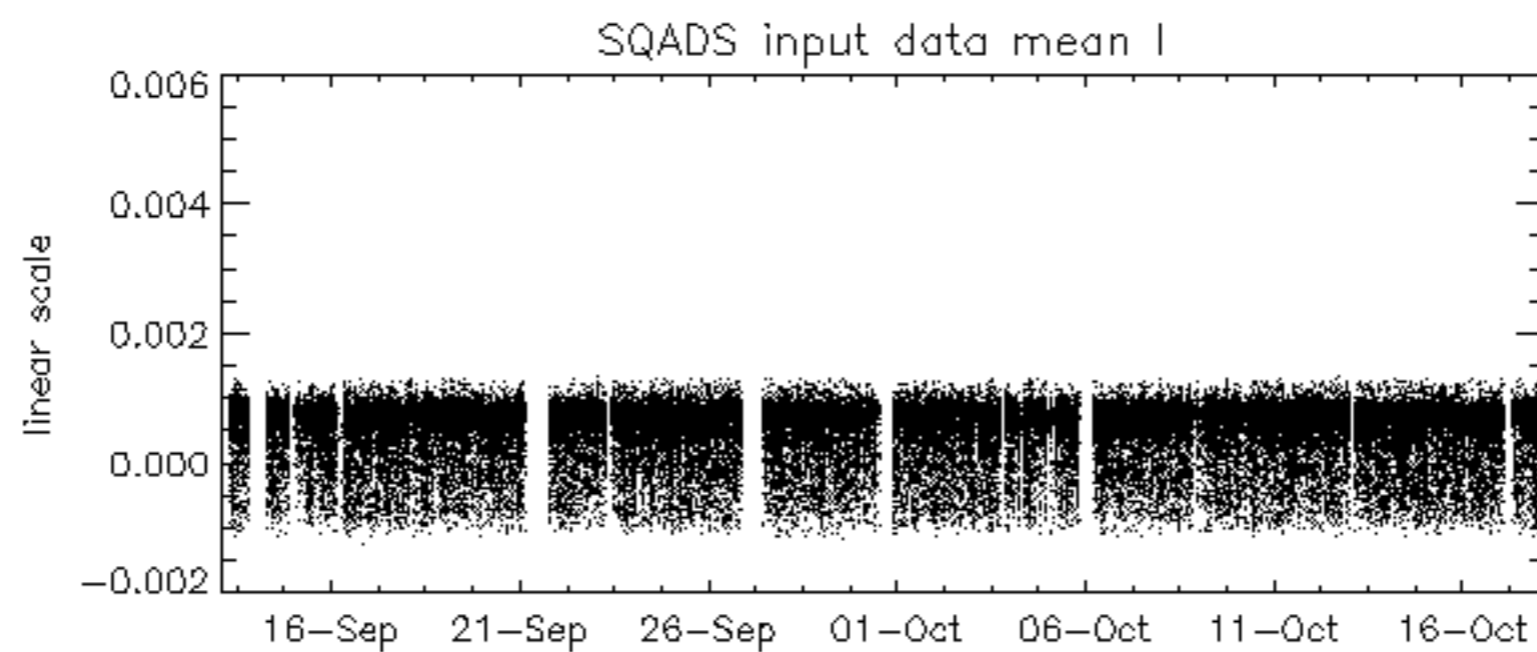
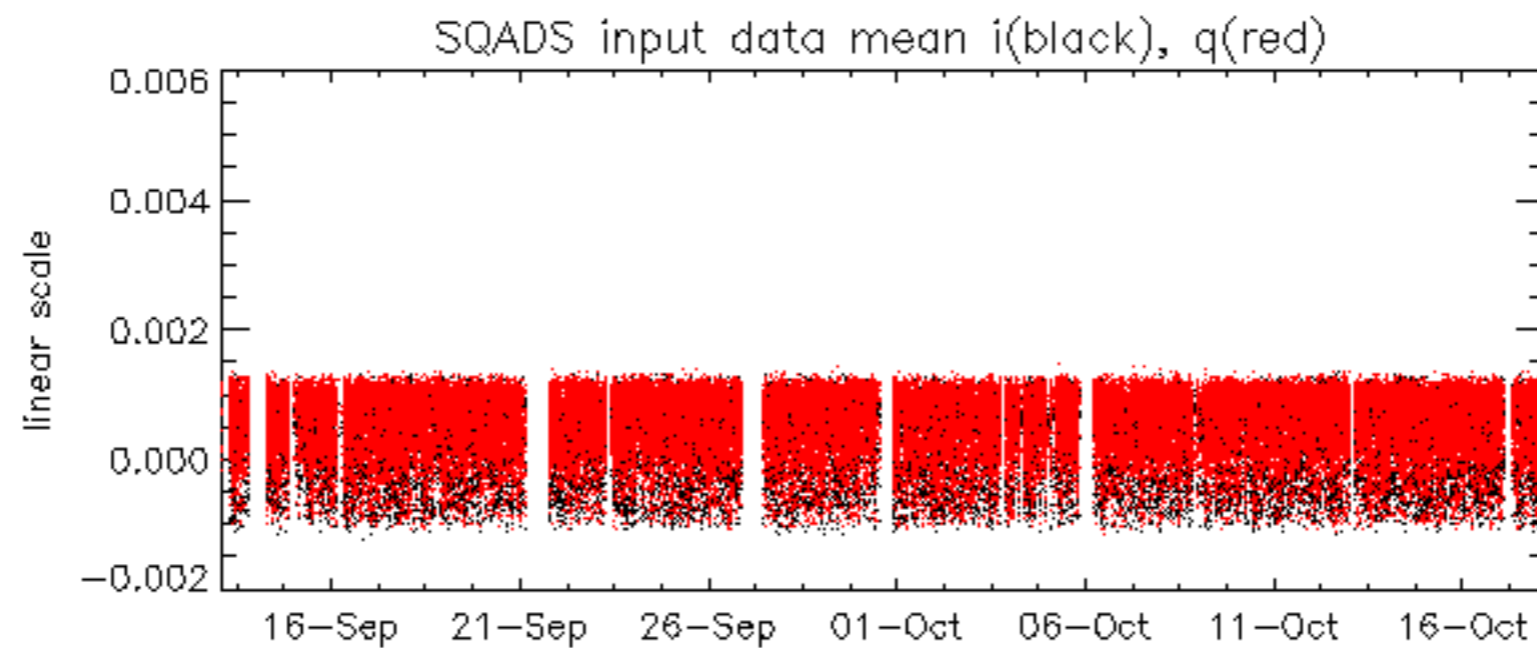


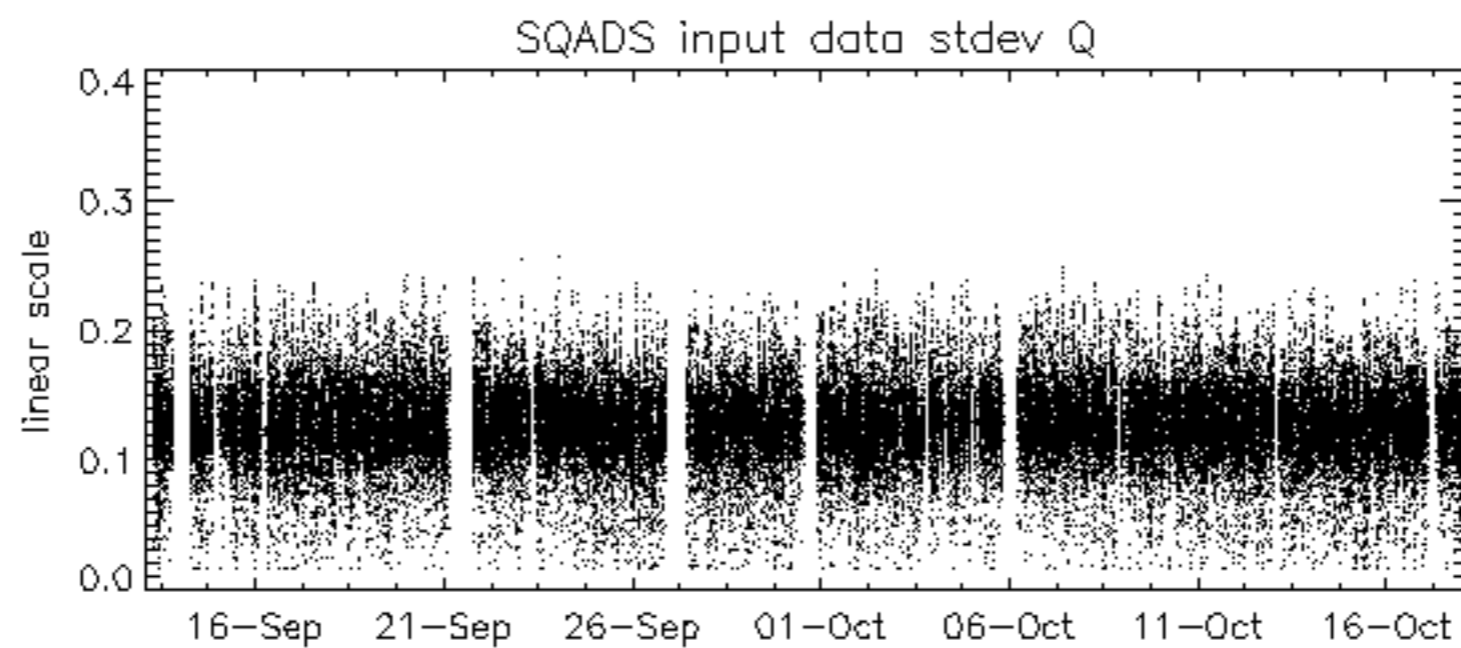
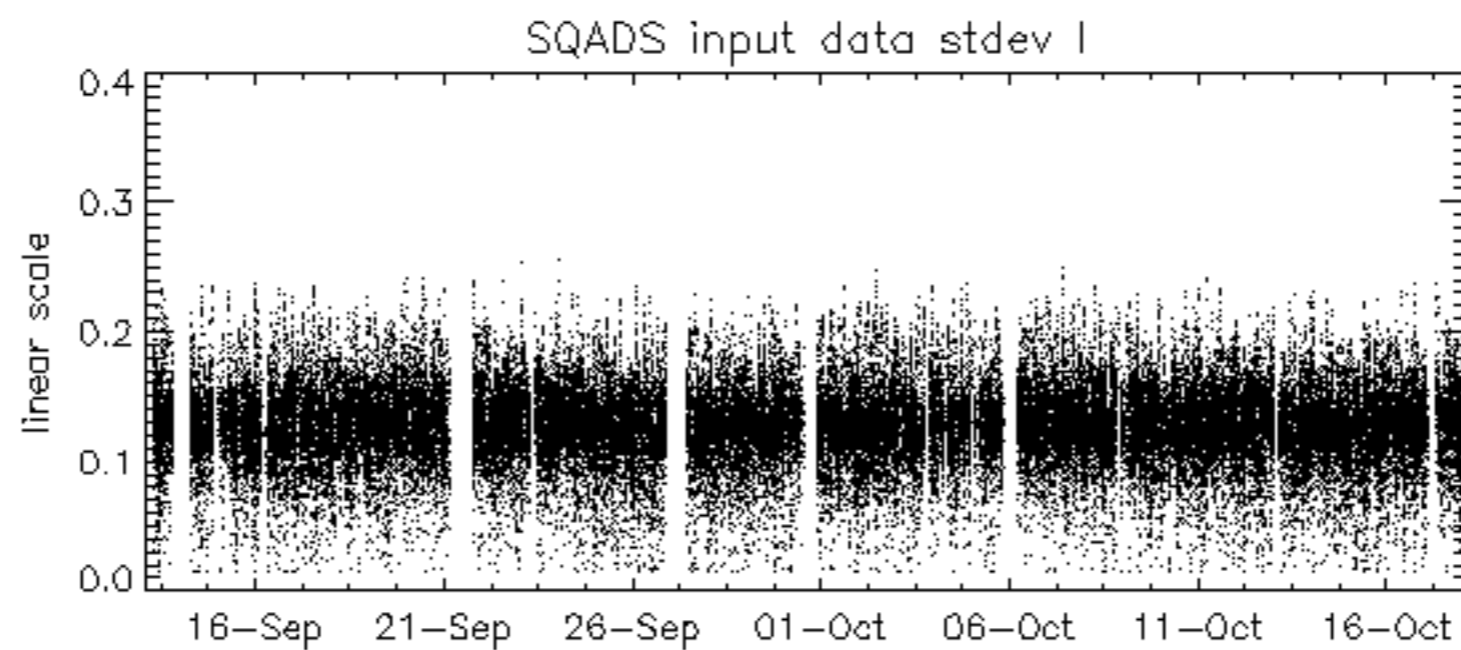
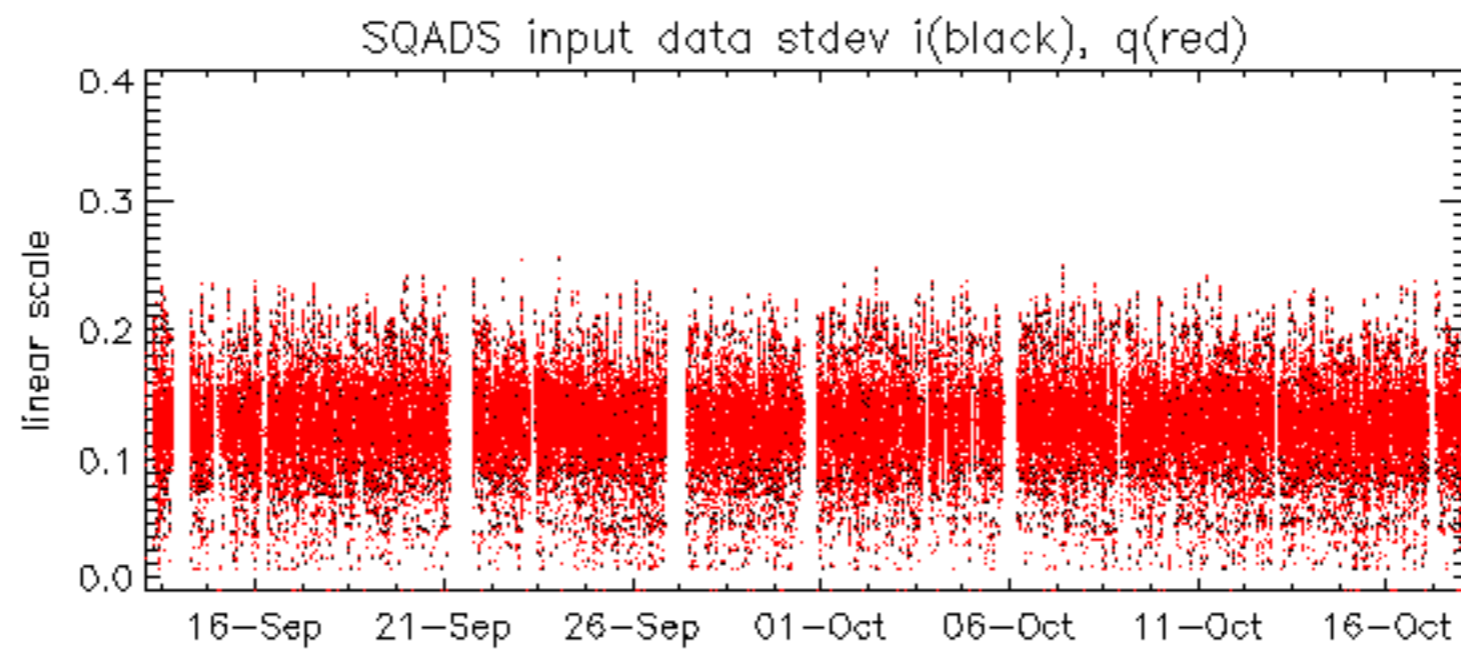












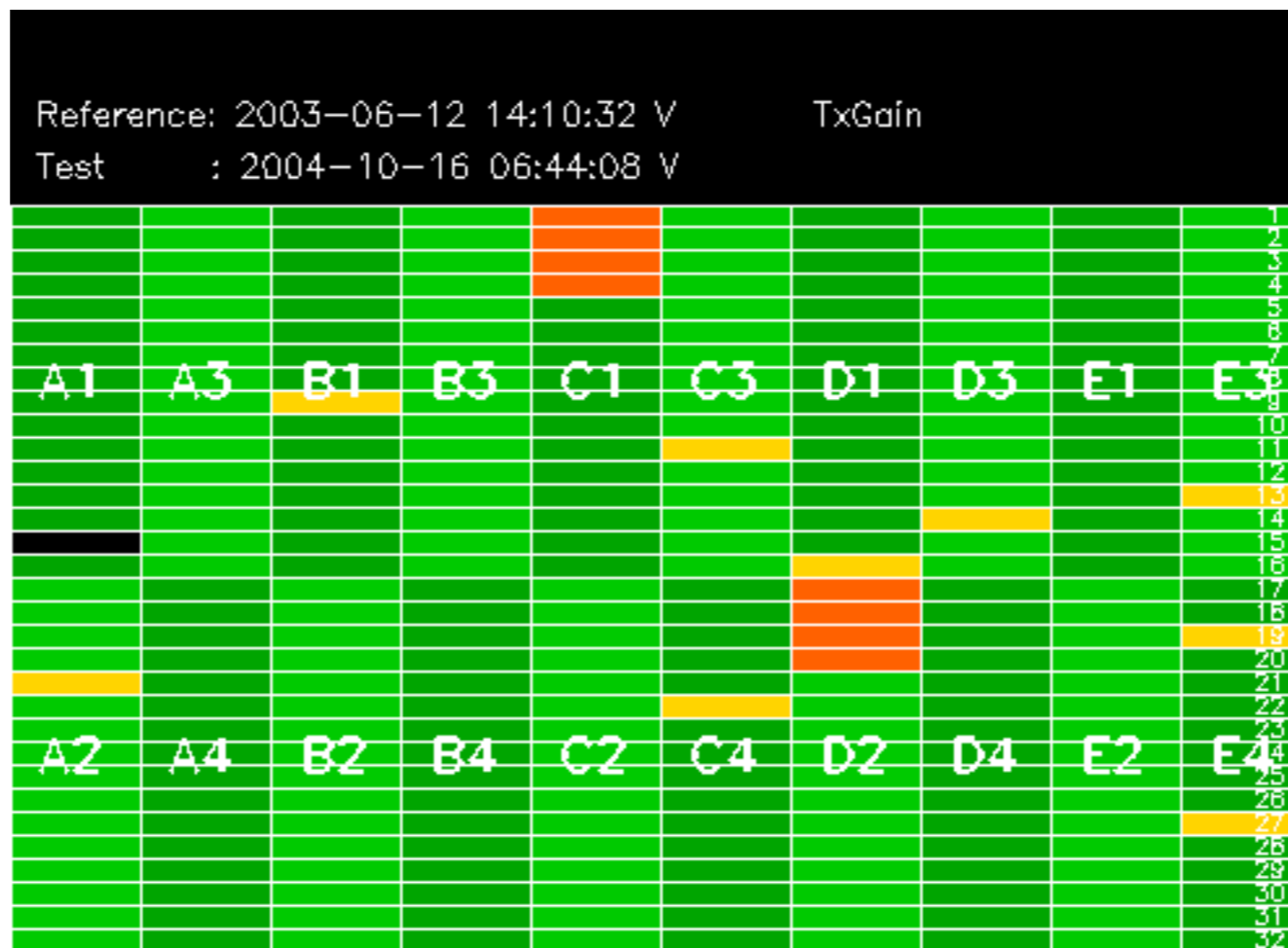


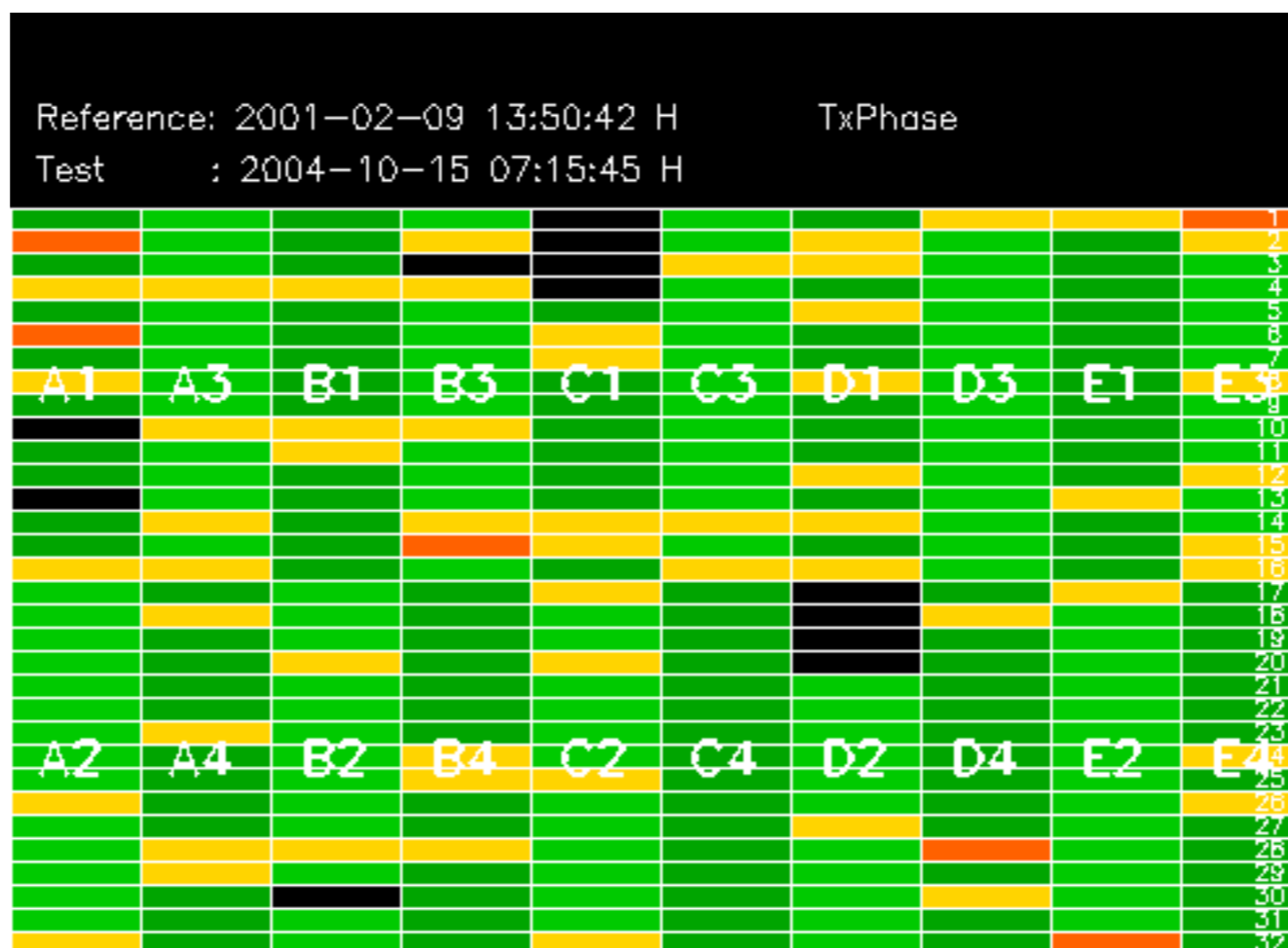












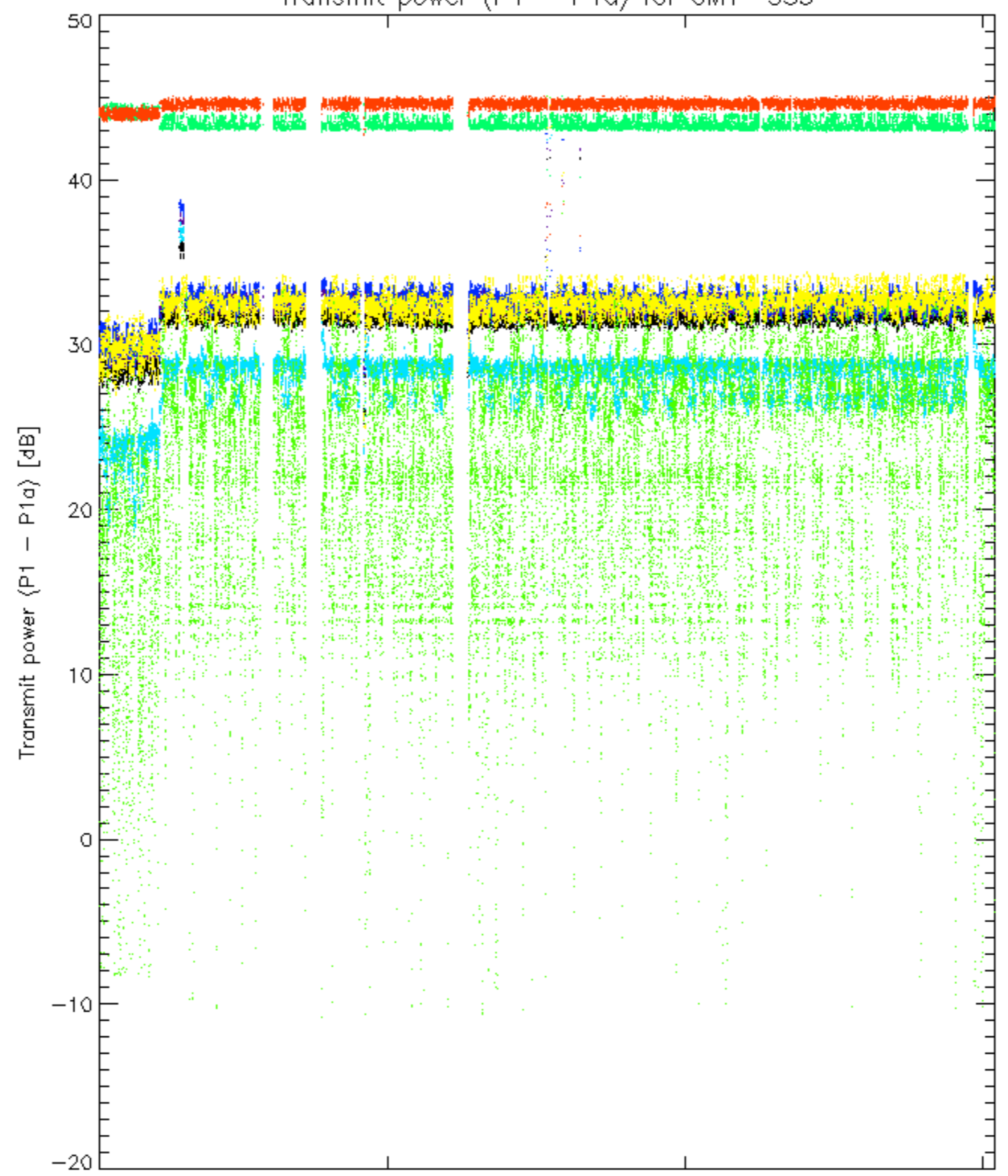






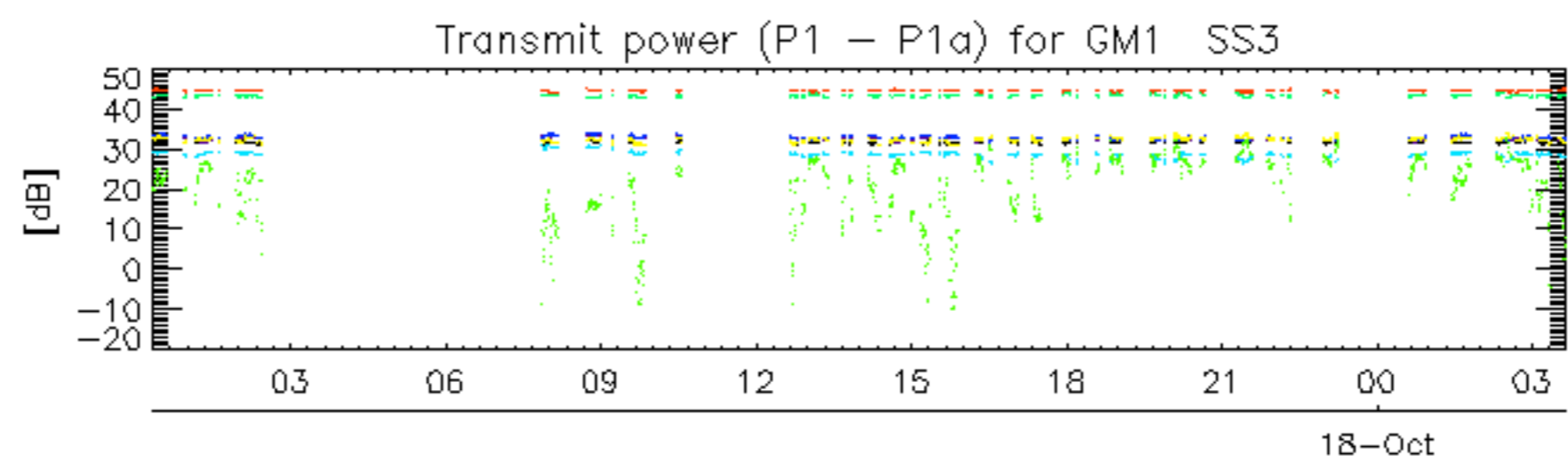


Transmit power (P1 - P1a) for GM1 SS3

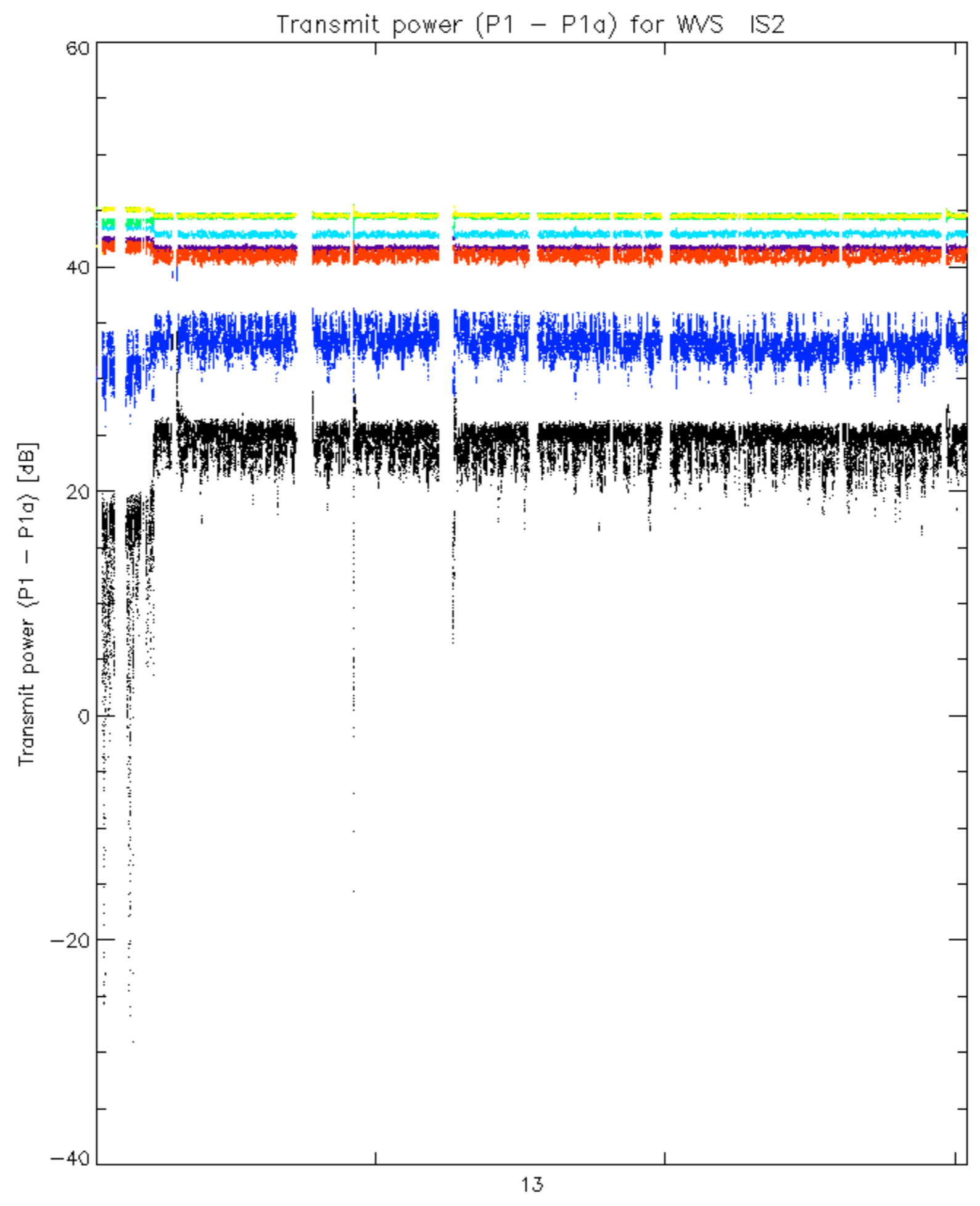


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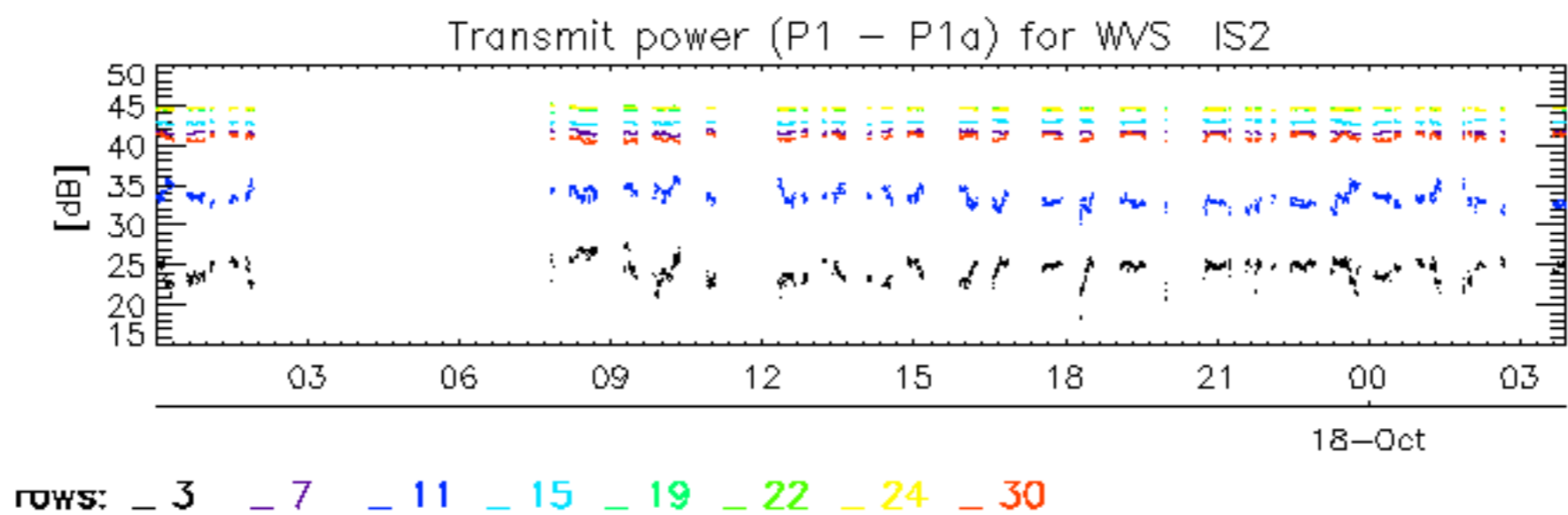




rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 30



rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 30



Unavailability starts from 17-OCT-2004 02:28:31 to 07:45:11.  
ASAR enters into heater/refuse mode while it was operating in AP/IS3 mode due to PSUs being off for tile D1  
No science data is affected by the anomaly.