

# PRELIMINARY REPORT OF 070124

last update on Wed Jan 24 16:36:10 GMT 2007

1. [Introduction](#)
2. [Summary](#)
  - [Instrument Unavailability](#)
  - [Auxiliary files used](#)
  - [Browse Visual Inspection](#)
  - [Module Stepping Results](#)
  - [Data Analysis](#)
3. [Module Stepping](#)
4. [Internal Calibration pulses](#)
  - [Daily statistics](#)
  - [Cyclic statistics](#)
  - [cal pulses monitoring \(all rows\)](#)
5. [Raw Data Statistics](#)
  - [raw data mean I and Q](#)
  - [raw data stdev I and Q](#)
  - [raw gain imbalance](#)
6. [TLM analysis](#)
7. [Wave Doppler analysis](#)
  - [Unbiased Doppler Error for WVS](#)
  - [Absolute Doppler for WVS](#)
  - [Doppler evolution versus ANX for WVS](#)
  - [Unbiased Doppler Error for GM1](#)
  - [Absolute Doppler for GM1](#)
  - [Doppler evolution versus ANX for GM1](#)

## 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 2007-01-23 00:00:00 to 2007-01-24 16:36:10

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	40	89	9	6	14
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	40	89	9	6	14
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	40	89	9	6	14
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	40	89	9	6	14

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	27	34	12	3	40
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	27	34	12	3	40
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	27	34	12	3	40
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	27	34	12	3	40

## 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	20070122 180508
H	20070123 173331

### MSM in V/V polarisation

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

## 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
<input type="checkbox"/>

**P1a Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-16.524975	0.248636	0.035243
7	P1a	-17.243082	0.175051	0.016784
11	P1a	-17.270275	0.430010	0.002054
15	P1a	-13.020804	0.124144	0.062503
19	P1a	-15.105433	0.112335	-0.089220
22	P1a	-15.762444	0.546413	0.176311
26	P1a	-15.019450	0.187277	0.044079
30	P1a	-17.508825	0.494304	0.088292

**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.961356	0.007081	0.030177
7	P1	-3.121104	0.041609	0.086283
11	P1	-4.111513	0.025306	0.036695
15	P1	-6.337422	0.017096	-0.006335
19	P1	-3.693561	0.006171	-0.026432
22	P1	-4.682518	0.016585	0.002507
26	P1	-3.947032	0.009991	0.042794
30	P1	-5.917146	0.008518	0.022209
3	P1a	-16.524975	0.248636	0.035243
7	P1a	-17.243082	0.175051	0.016784
11	P1a	-17.270275	0.430010	0.002054
15	P1a	-13.020804	0.124144	0.062503
19	P1a	-15.105433	0.112335	-0.089220
22	P1a	-15.762444	0.546413	0.176311
26	P1a	-15.019450	0.187277	0.044079
30	P1a	-17.508825	0.494304	0.088292

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.769825	0.088590	0.115314
7	P2	-21.654804	0.088002	0.068279
11	P2	-15.525523	0.098971	0.076355
15	P2	-7.081450	0.102037	0.071221

19	P2	-9.159698	0.095243	0.070939
22	P2	-18.210567	0.088050	0.083931
26	P2	-16.581448	0.100390	0.084876
30	P2	-19.422504	0.082375	0.077758

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.234805	0.008066	0.026525
7	P3	-8.234805	0.008066	0.026525
11	P3	-8.234805	0.008066	0.026525
15	P3	-8.234805	0.008066	0.026525
19	P3	-8.234805	0.008066	0.026525
22	P3	-8.234805	0.008066	0.026525
26	P3	-8.234818	0.008066	0.026739
30	P3	-8.234818	0.008066	0.026739

**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	-11.728757	0.070636	-0.049475
7	P1a	-10.030355	0.081061	0.037279
11	P1a	-10.374608	0.084501	-0.102653
15	P1a	-10.748419	0.152442	-0.082339
19	P1a	-15.753756	0.096015	-0.037794
22	P1a	-21.466812	1.500756	0.615121
26	P1a	-15.904131	0.321239	0.505212
30	P1a	-17.983881	0.382980	-0.420739

**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
-----	-------	-----------	------------	-----------------

3	P1	-3.921330	0.012775	-0.016424
7	P1	-2.463741	0.055999	0.069012
11	P1	-2.827919	0.015113	-0.010274
15	P1	-3.724898	0.032025	-0.105742
19	P1	-3.553653	0.018203	-0.026844
22	P1	-5.003888	0.022131	-0.031186
26	P1	-6.042157	0.023312	0.004478
30	P1	-5.345140	0.035096	0.041559
3	P1a	-11.728757	0.070636	-0.049475
7	P1a	-10.030355	0.081061	0.037279
11	P1a	-10.374608	0.084501	-0.102653
15	P1a	-10.748419	0.152442	-0.082339
19	P1a	-15.753756	0.096015	-0.037794
22	P1a	-21.466812	1.500756	0.615121
26	P1a	-15.904131	0.321239	0.505212
30	P1a	-17.983881	0.382980	-0.420739

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.395346	0.086296	0.205142
7	P2	-22.163763	0.191536	0.146911
11	P2	-10.808562	0.079799	0.168569
15	P2	-4.939347	0.175399	0.139063
19	P2	-6.926253	0.167979	0.116493
22	P2	-8.220742	0.100648	0.071354
26	P2	-24.333532	0.134329	0.090076
30	P2	-21.879986	0.120588	0.139882

#### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.083621	0.002791	0.041423
7	P3	-8.083363	0.002787	0.040911
11	P3	-8.083485	0.002793	0.041669
15	P3	-8.083408	0.002788	0.041342
19	P3	-8.083426	0.002797	0.041589
22	P3	-8.083472	0.002789	0.040796
26	P3	-8.083576	0.002791	0.041787
30	P3	-8.083485	0.002783	0.041097

### 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	0.000568800
	stdev	1.65248e-07
MEAN Q	mean	0.000510787
	stdev	2.10468e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.139088
	stdev	0.00122022
STDEV Q	mean	0.139475
	stdev	0.00124002



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007012[234]

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_IMM_1PNPDE20070123_140435_000000342055_00010_25615_0987.N1	15	1262
ASA_IMM_1PNPDE20070123_181423_000001682055_00013_25618_1065.N1	2	47
ASA_GM1_1PNPDK20070123_141358_000007732055_00010_25615_0389.N1	0	14
ASA_GM1_1PNPDK20070123_141358_000007732055_00010_25615_0634.N1	0	14
ASA_WSM_1PNPDE20070122_105323_000000672054_00495_25599_0010.N1	0	1
ASA_WSM_1PNPDE20070123_145428_000002012055_00011_25616_1023.N1	0	96
ASA_WSM_1PNPDE20070123_181840_000000852055_00013_25618_1069.N1	0	47
ASA_APM_1PNPDE20070123_144834_000000422055_00011_25616_0989.N1	0	20



## 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


Acsending
☒
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)
☒
Acsending
☒
Descending

### 7.5 - Absolute Doppler for GM1

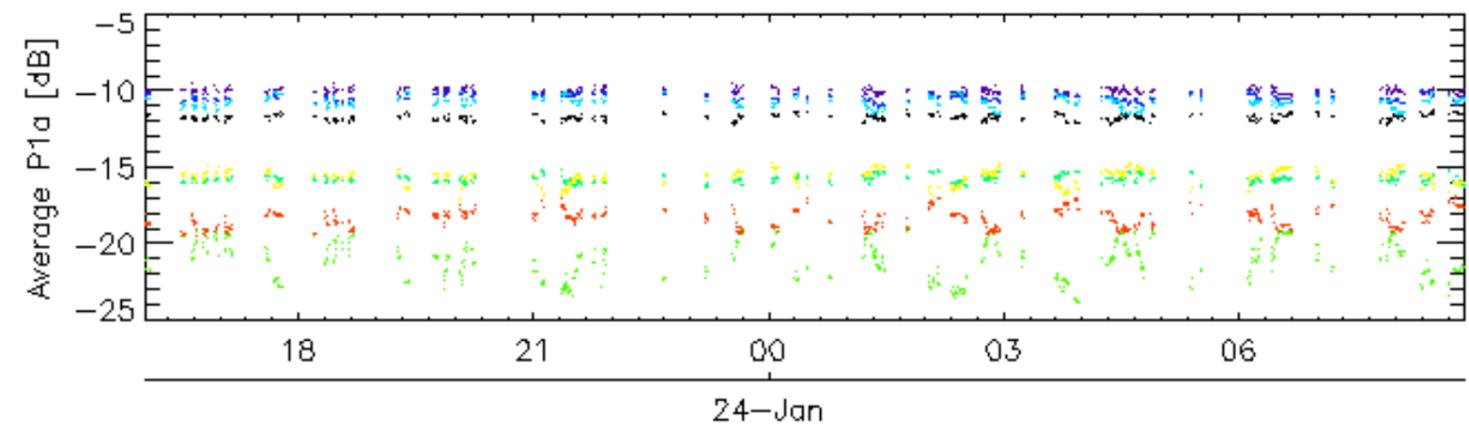
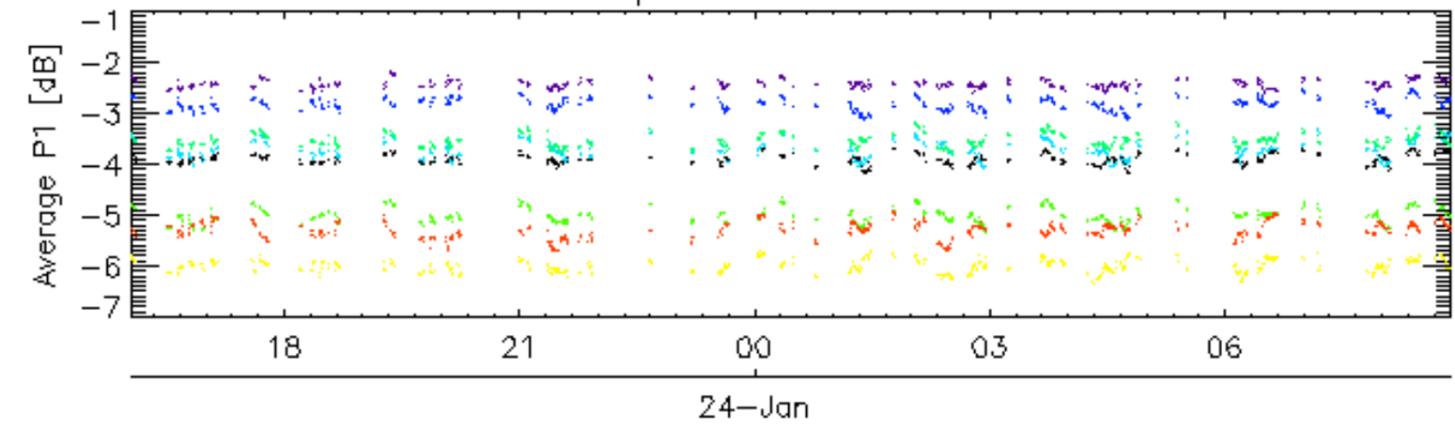
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

### 7.6 - Doppler evolution versus ANX for GM1

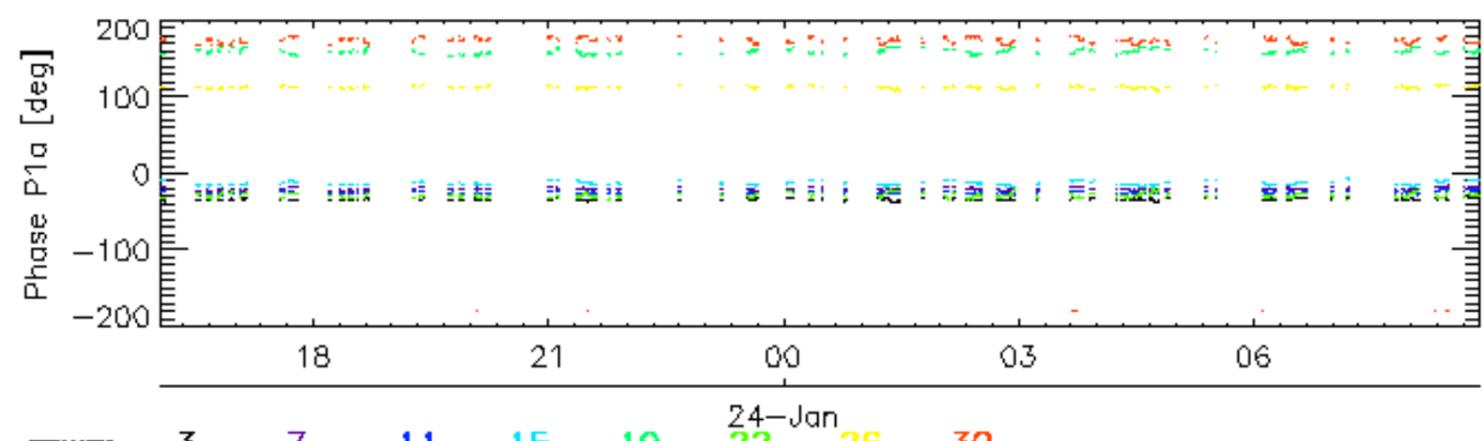
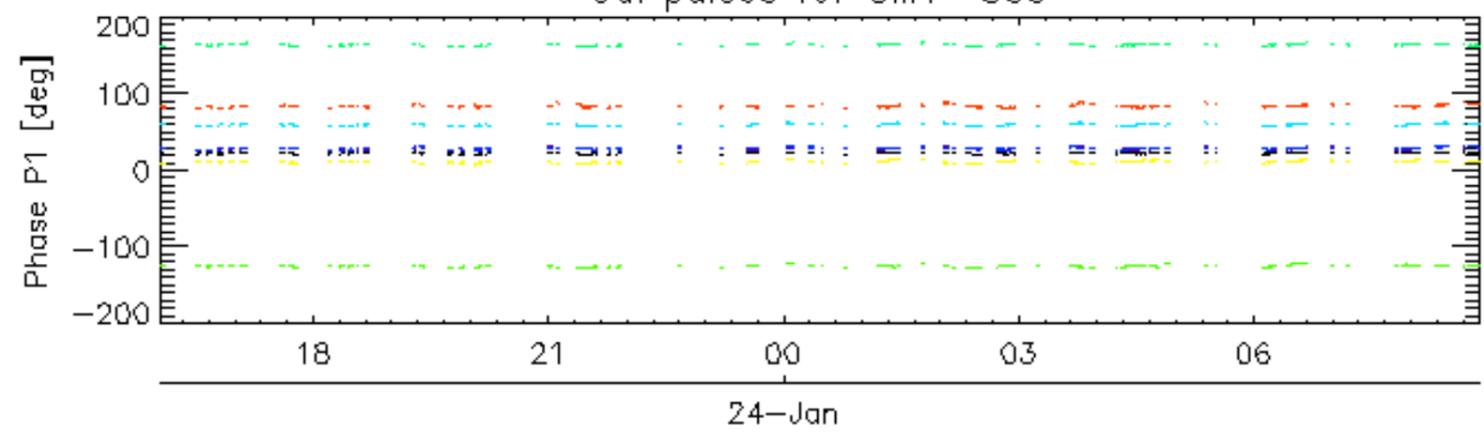
Evolution Doppler error versus ANX
☒



Cal pulses for GM1 SS3

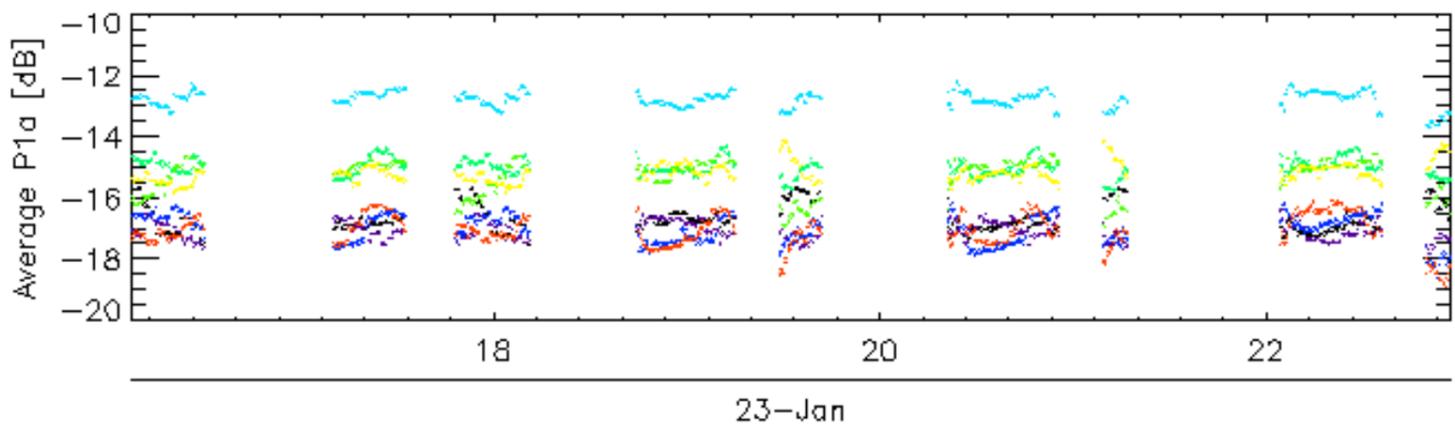
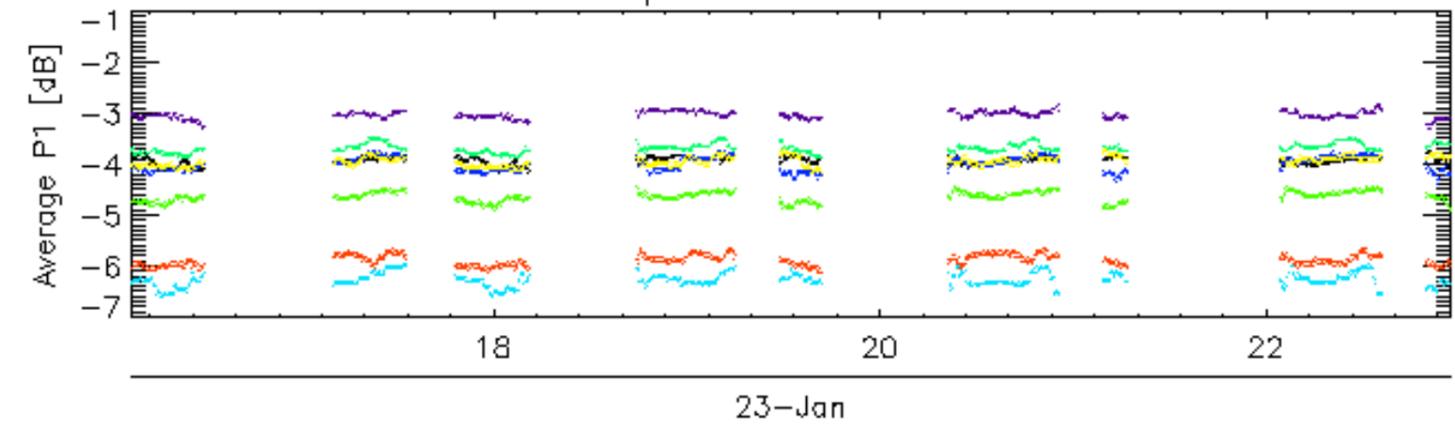


Cal pulses for GM1 SS3

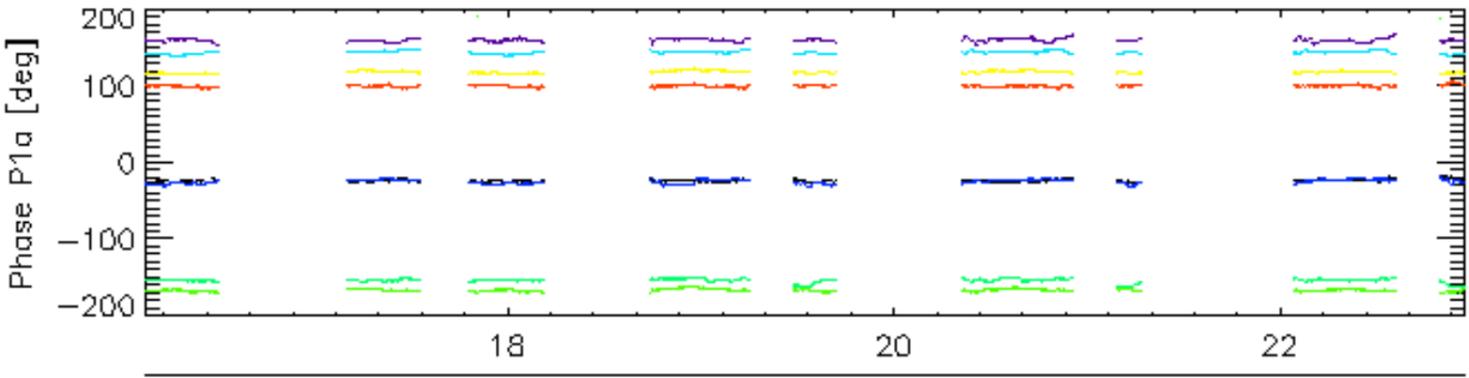
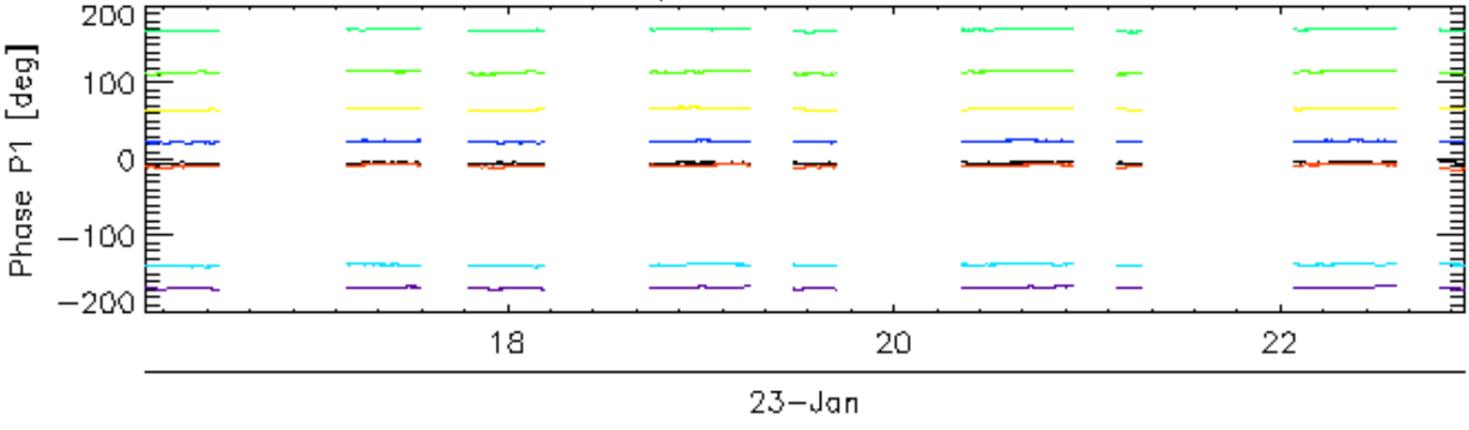


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

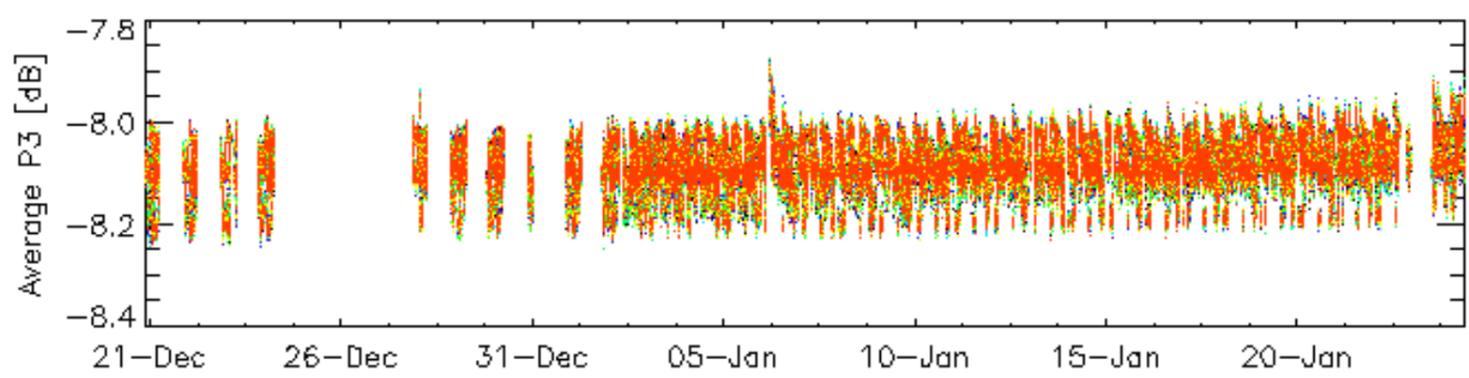
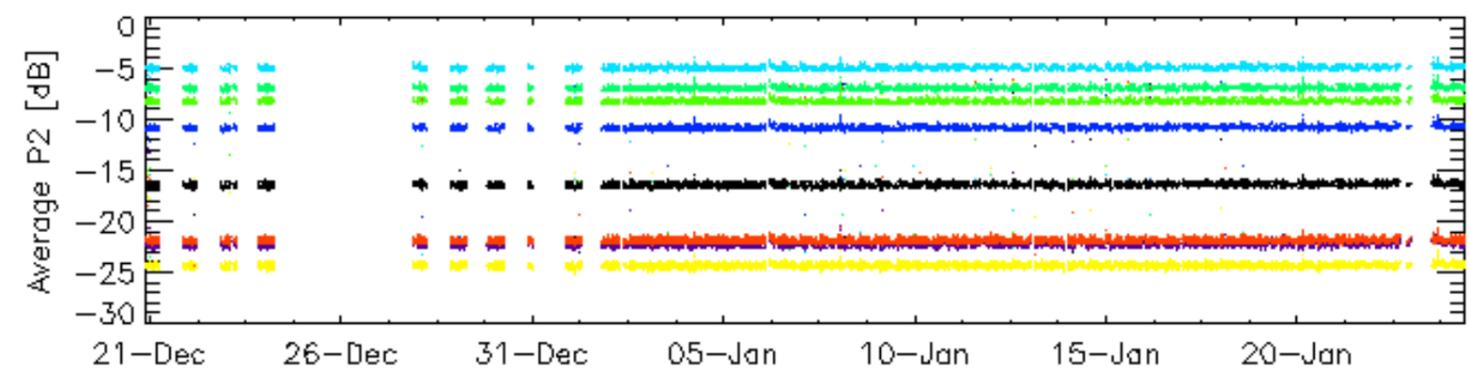
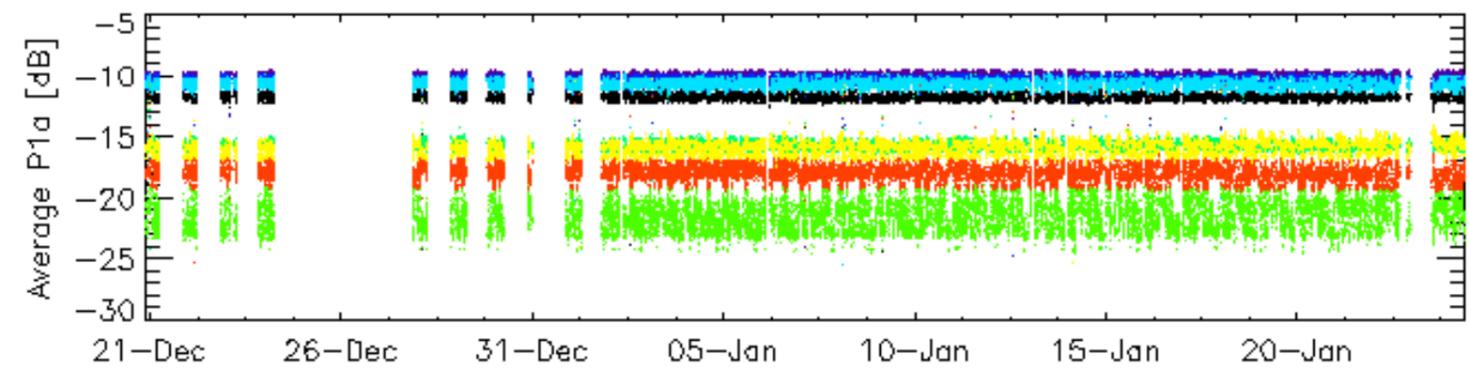
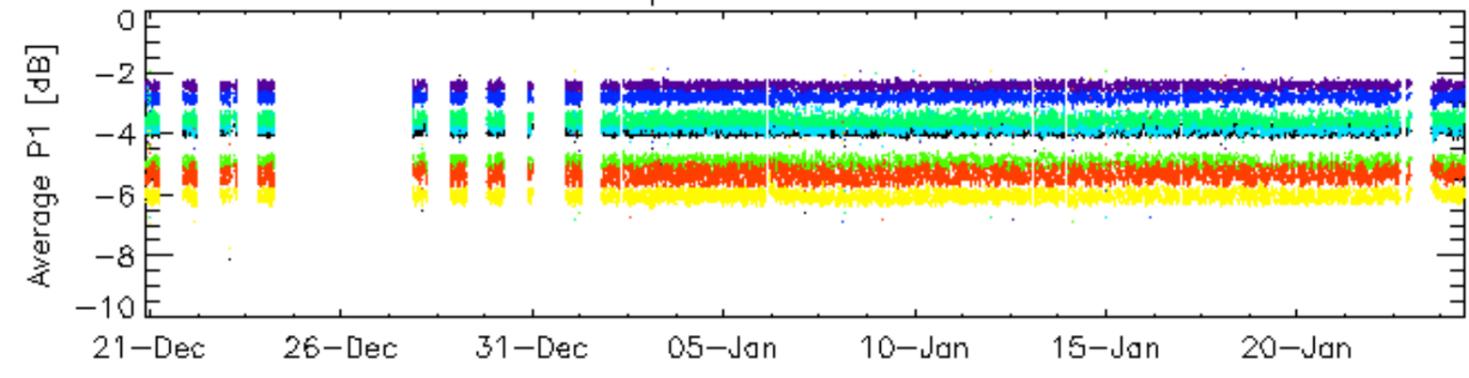


Cal pulses for WVS IS2



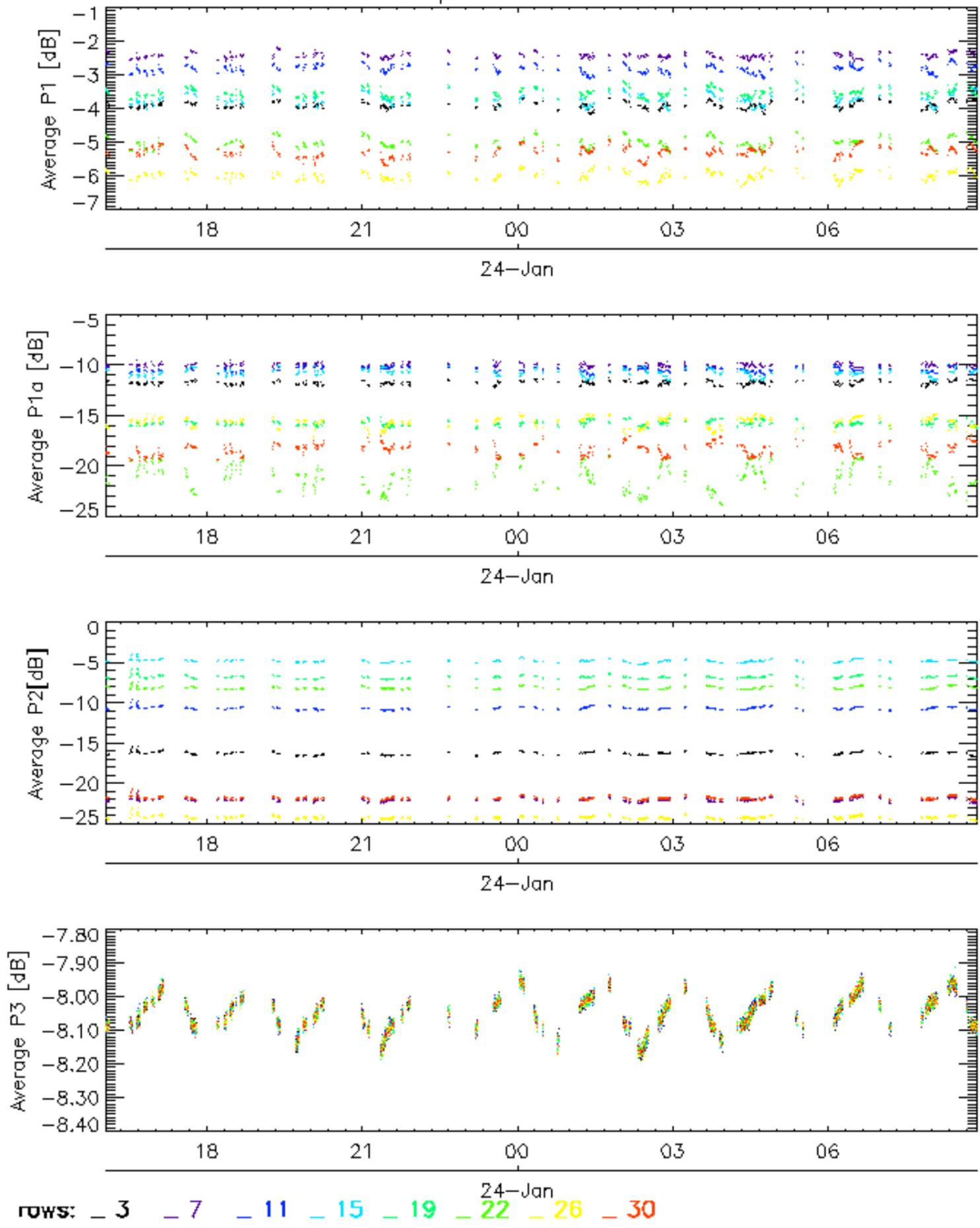
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

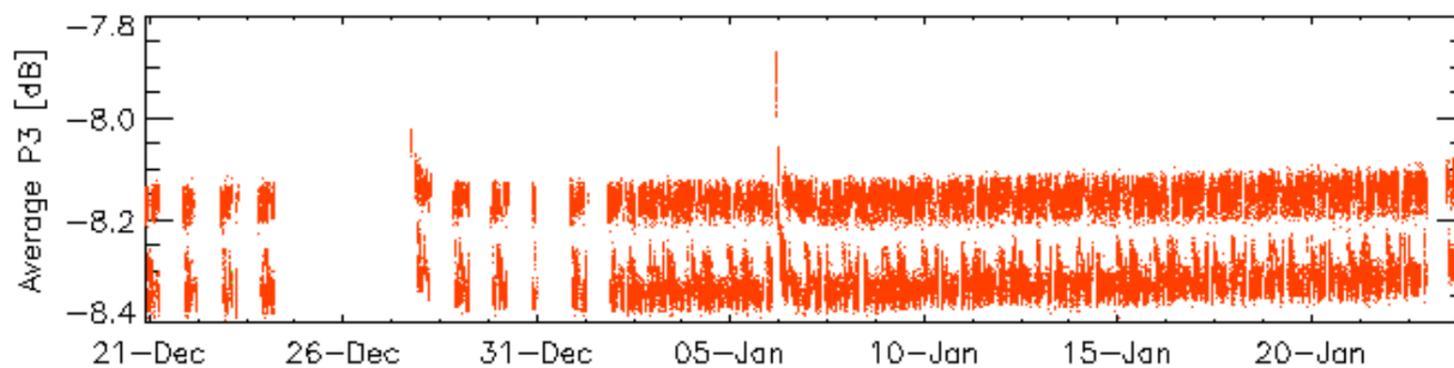
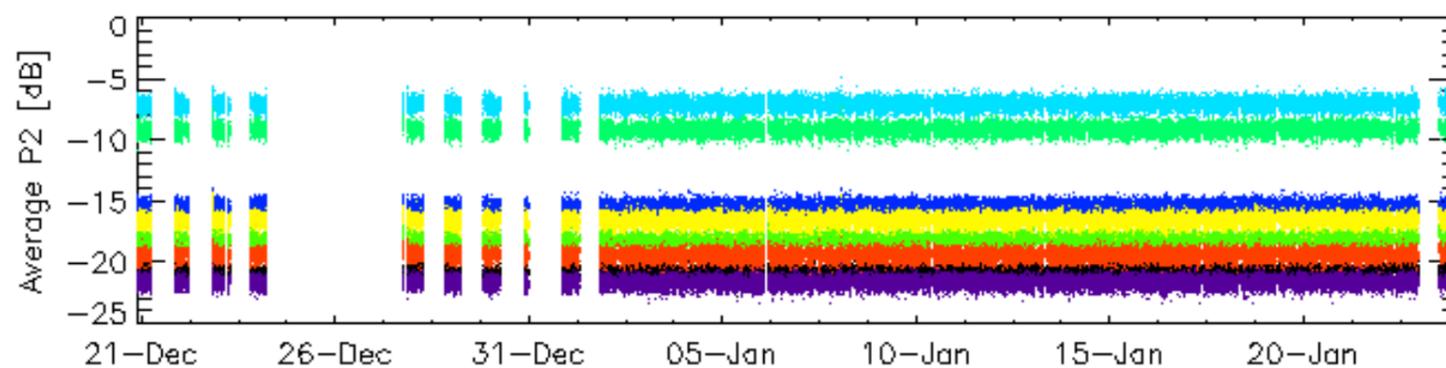
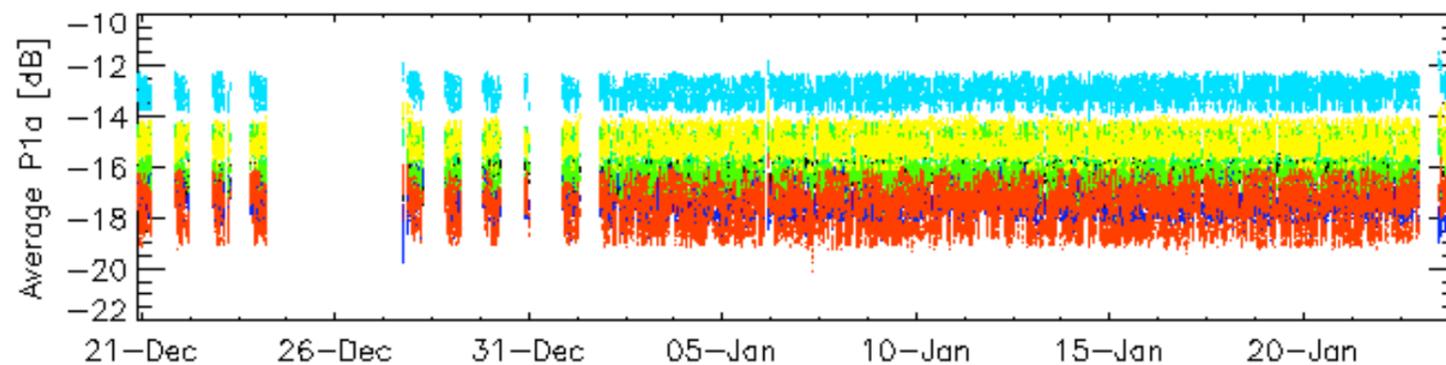
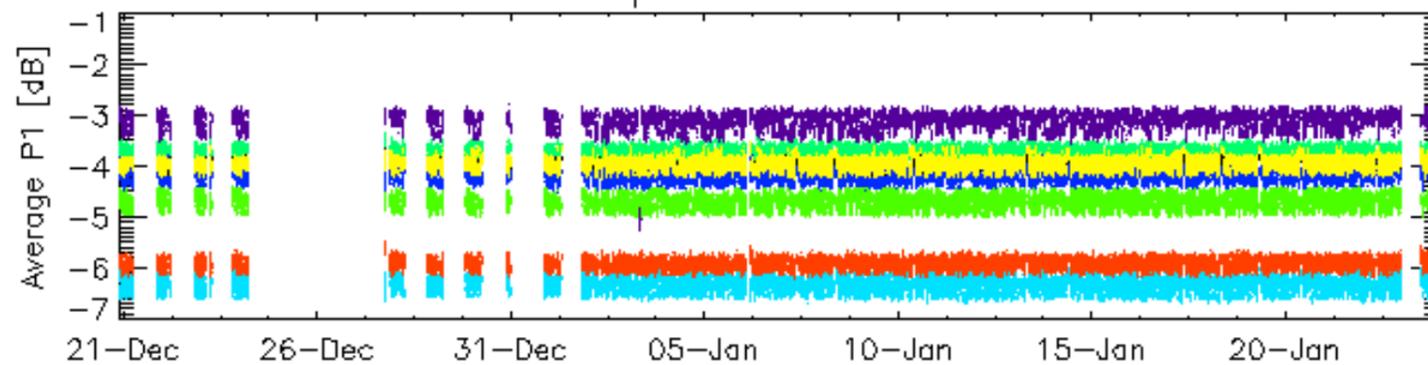


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

### Cal pulses for GM1 SS3

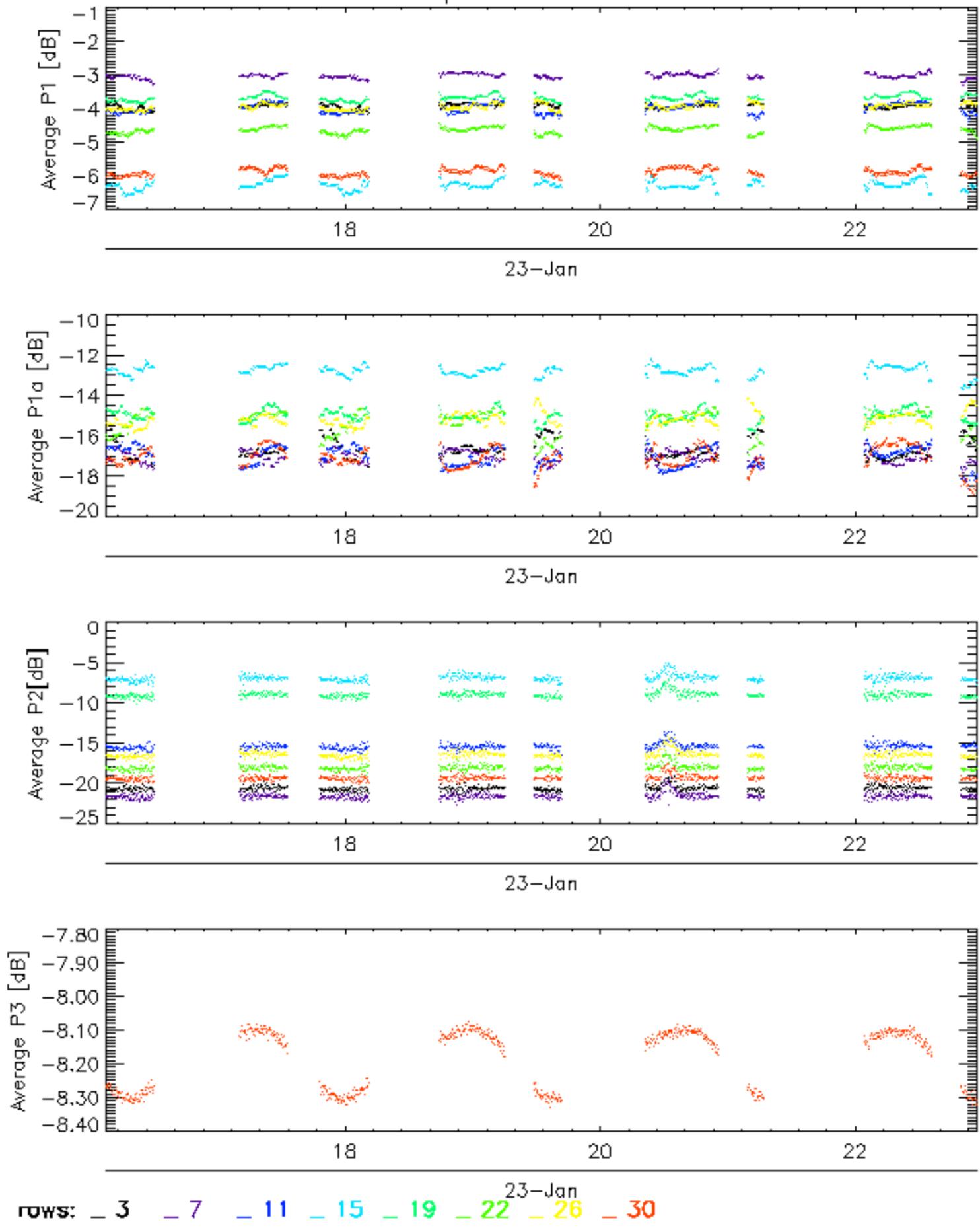


Cal pulses for WVS IS2

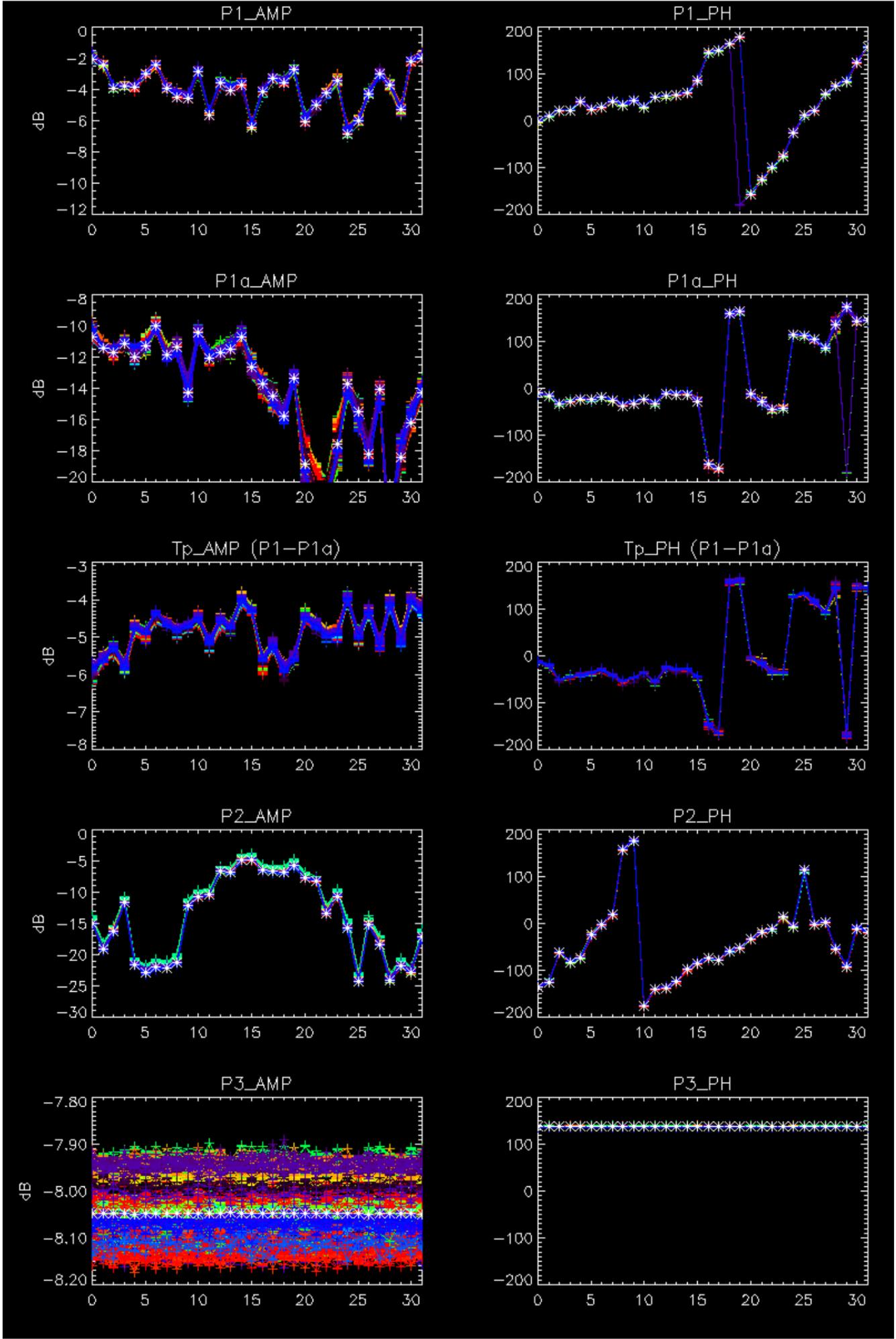


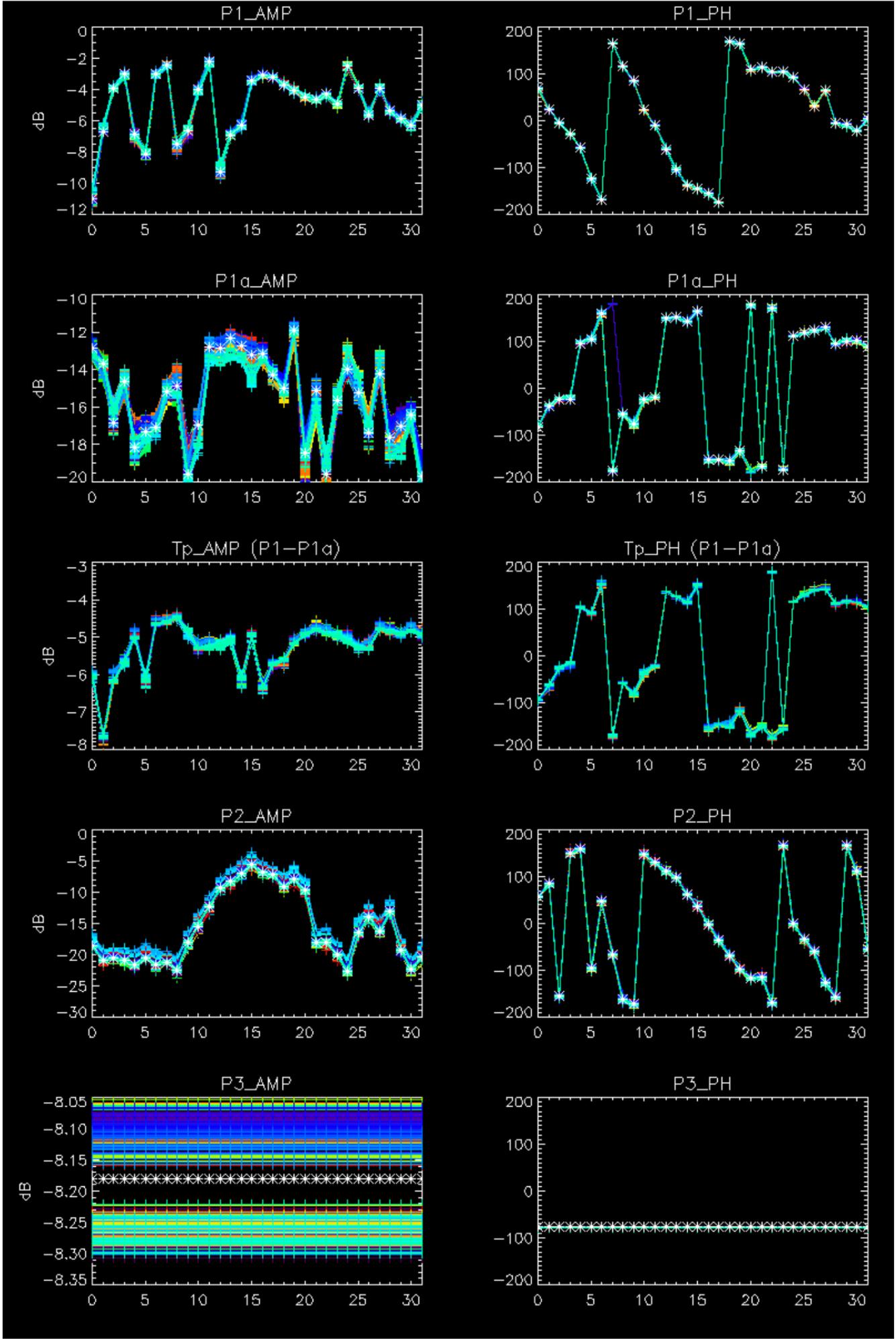
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2



No anomalies observed.

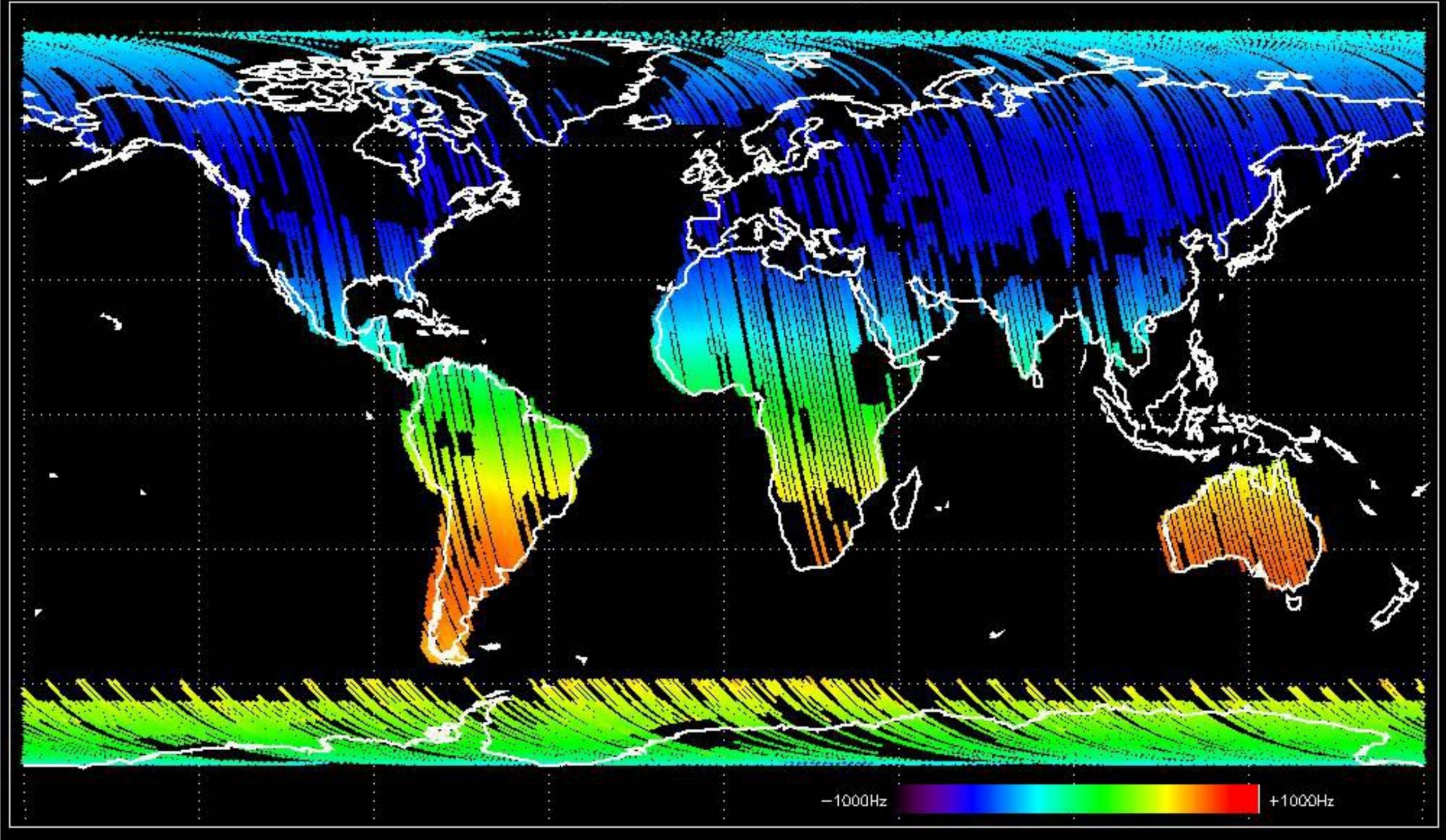




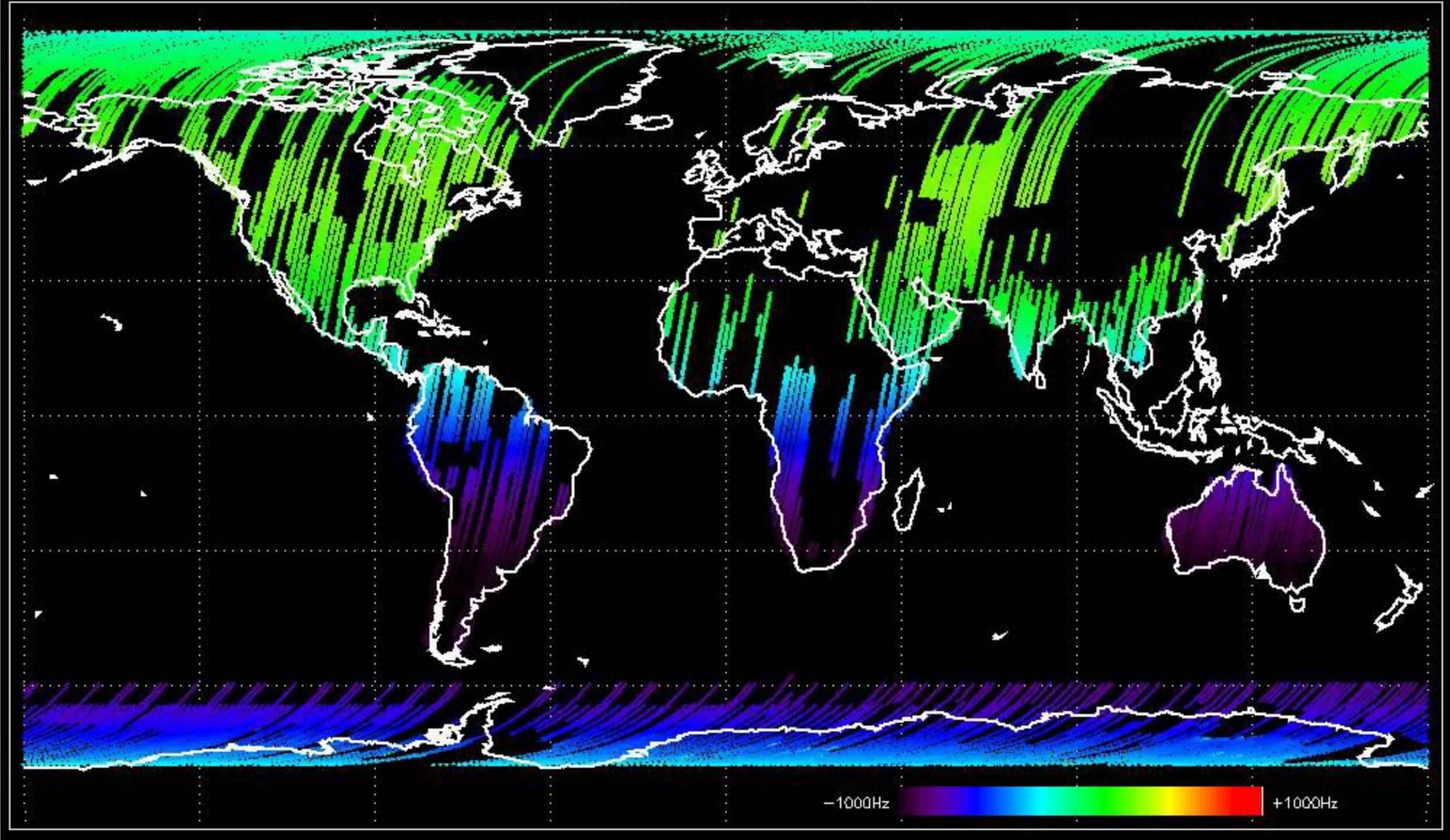
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



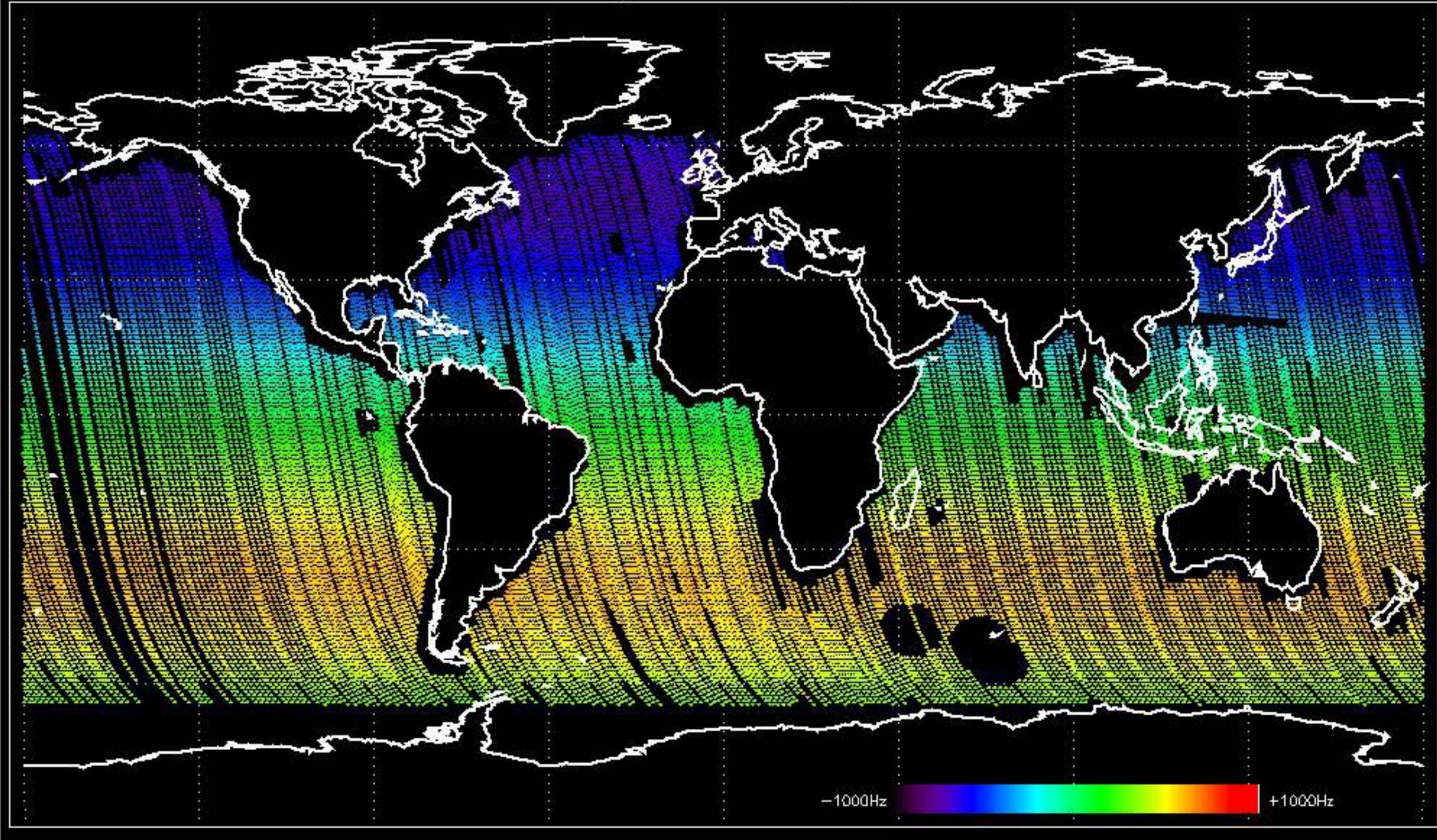
Doppler 'GM1' 'SS1' ascending



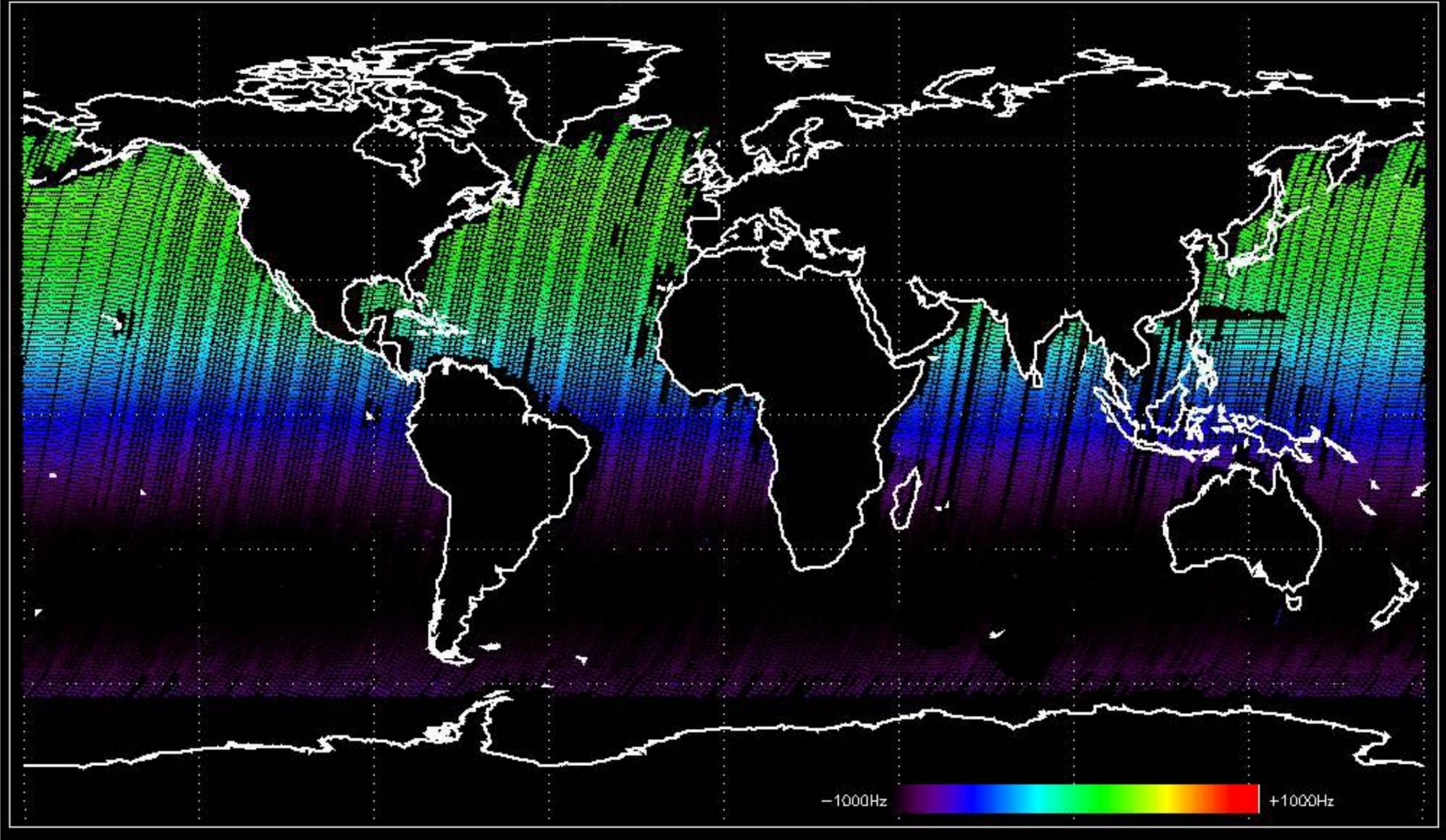
Doppler 'GM1' 'SS1' descending



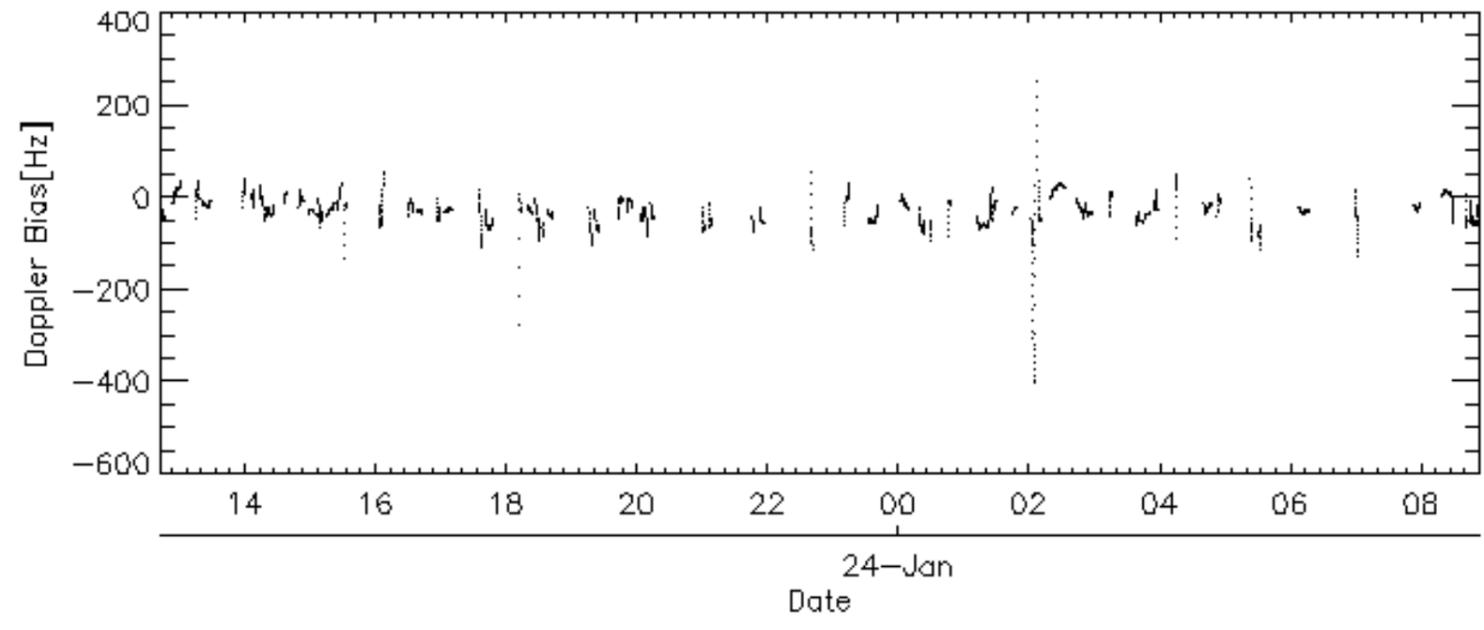
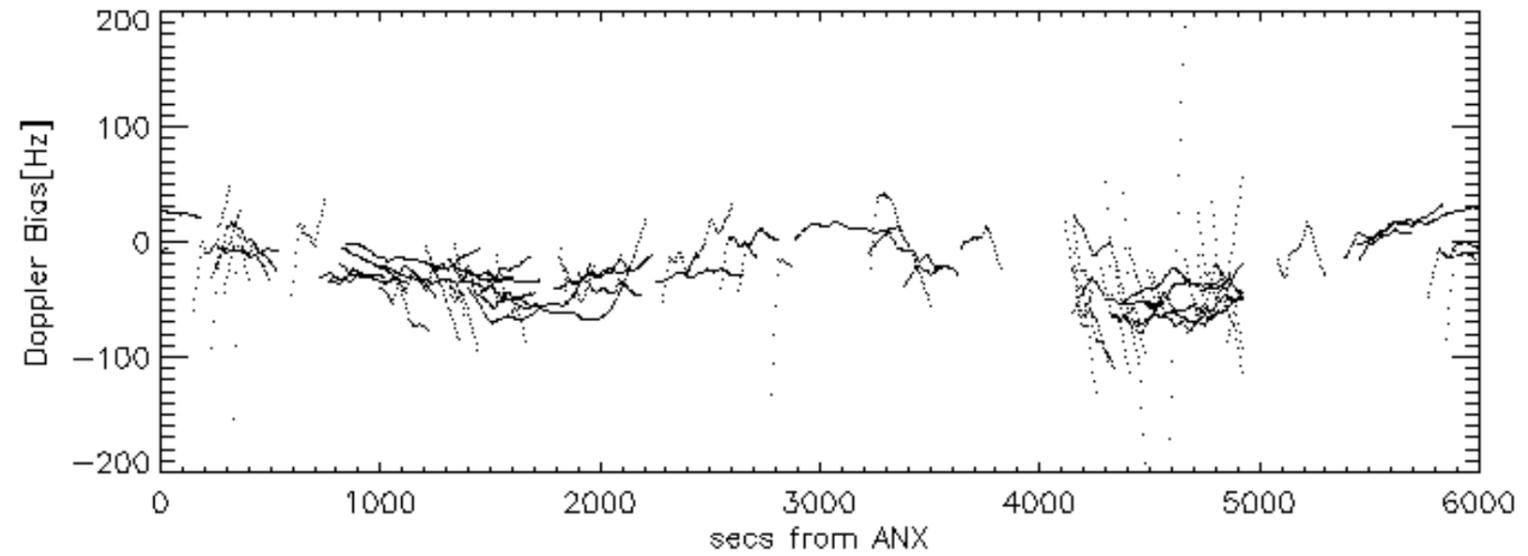
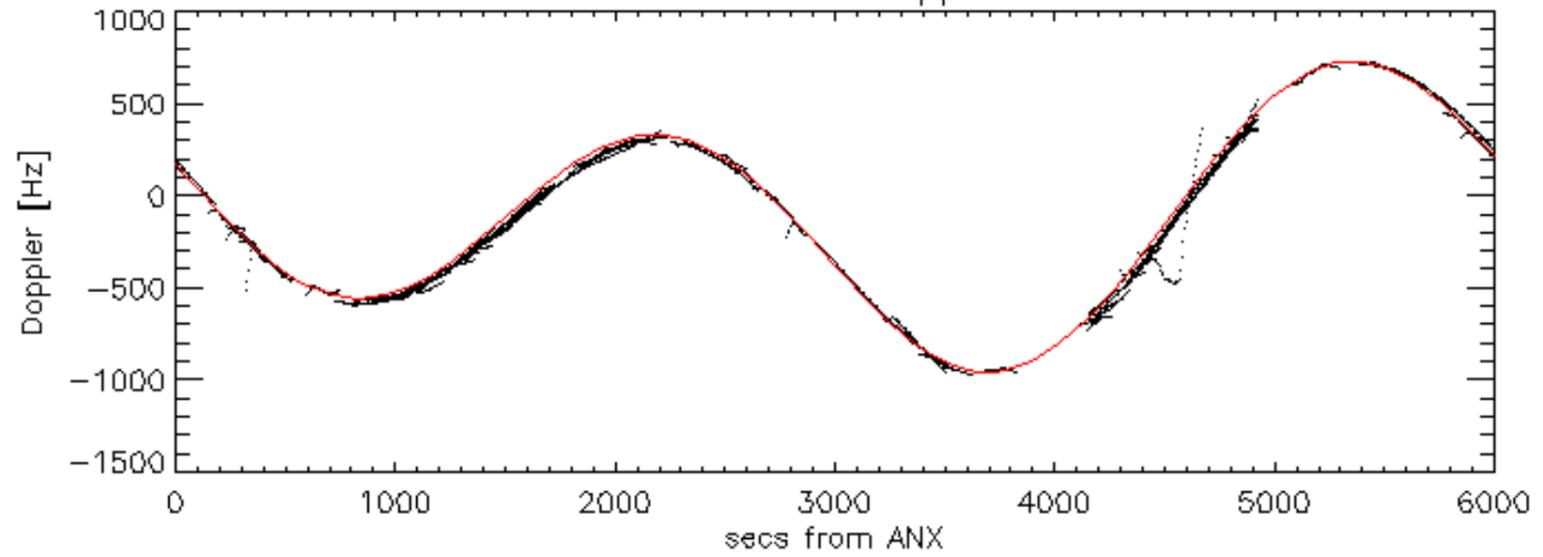
Doppler 'WVS' 'IS2' ascending



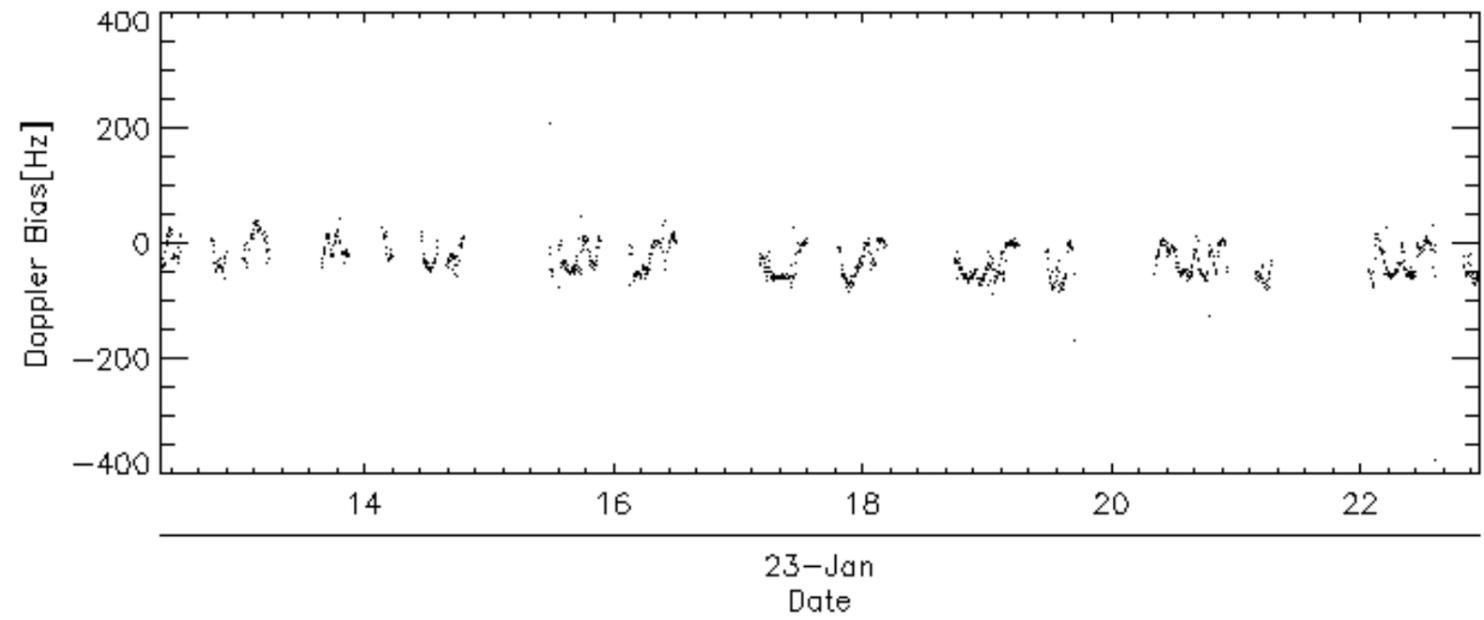
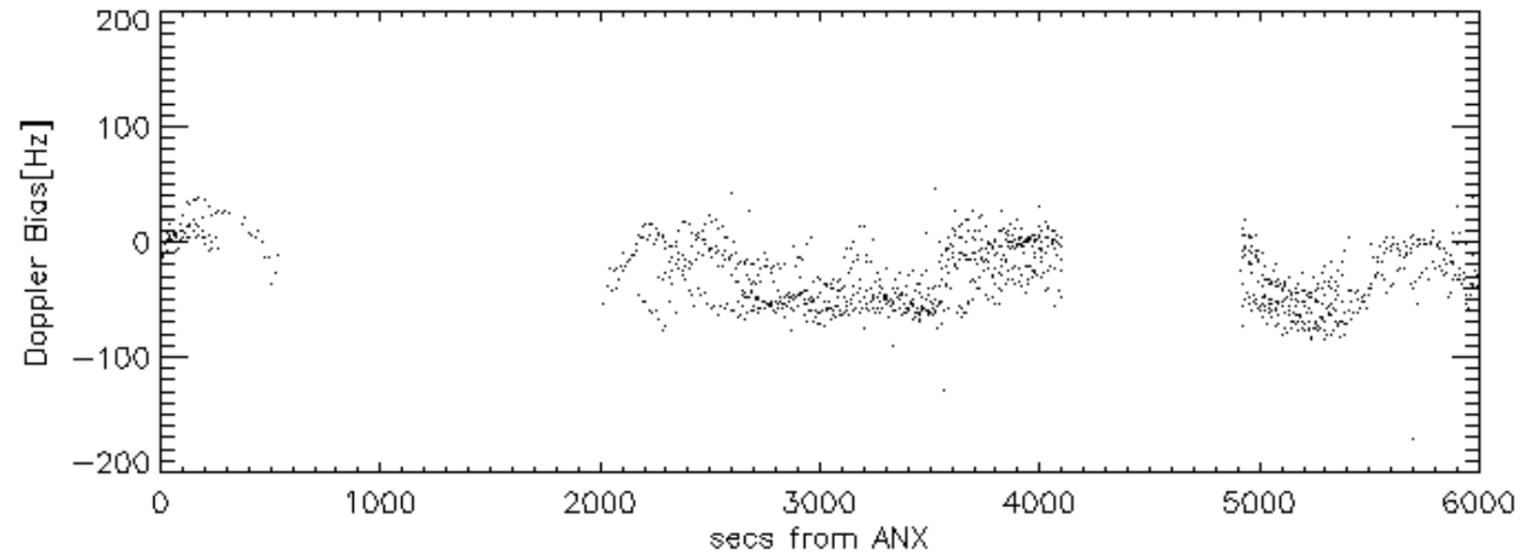
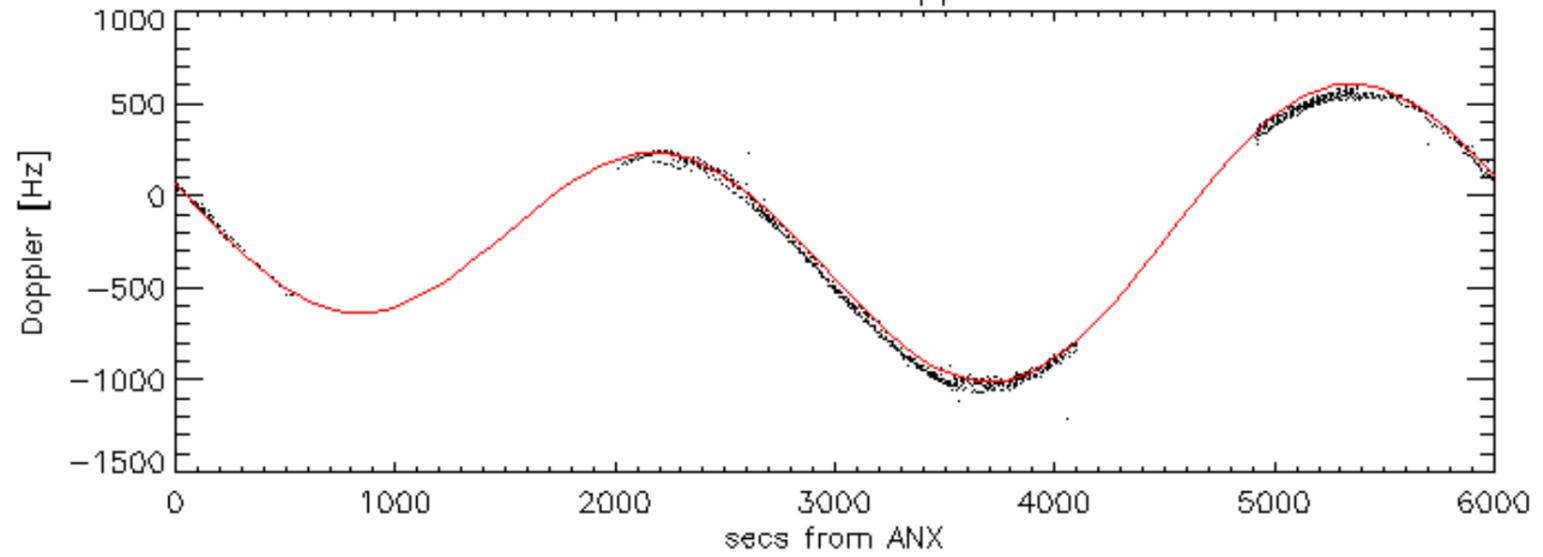
Doppler 'WVS' 'IS2' descending



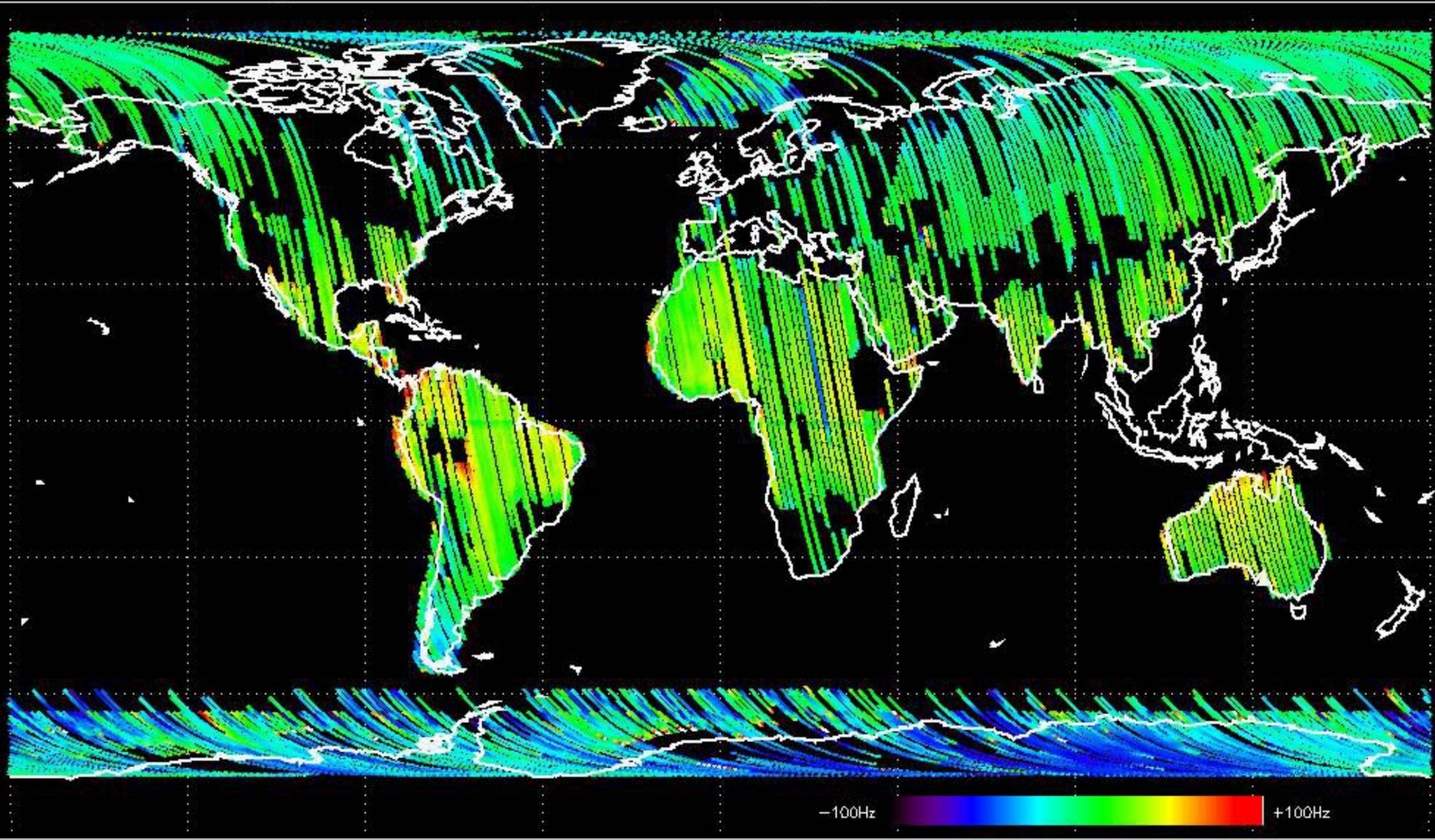
GM1 mode doppler



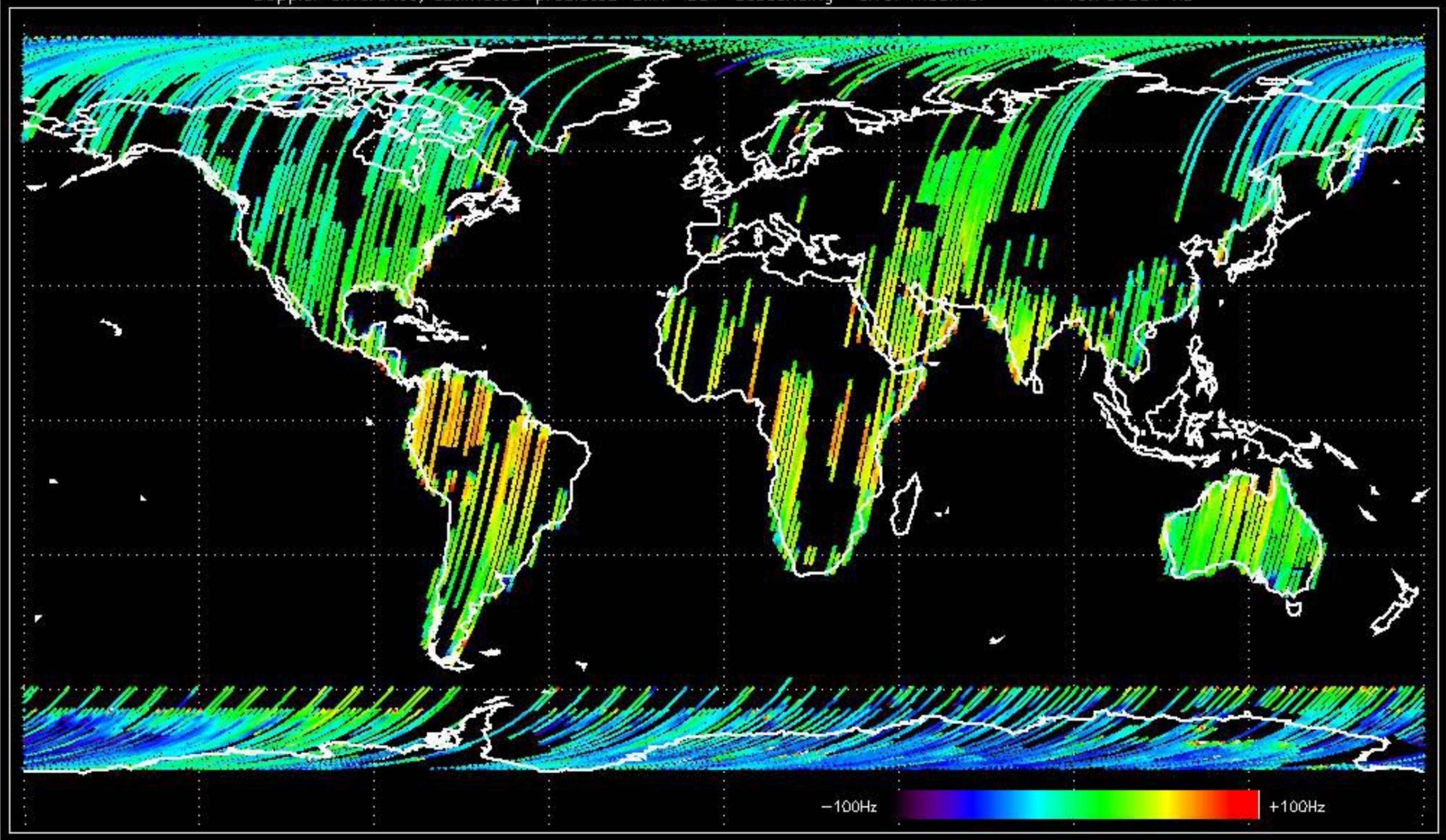
WVS mode doppler



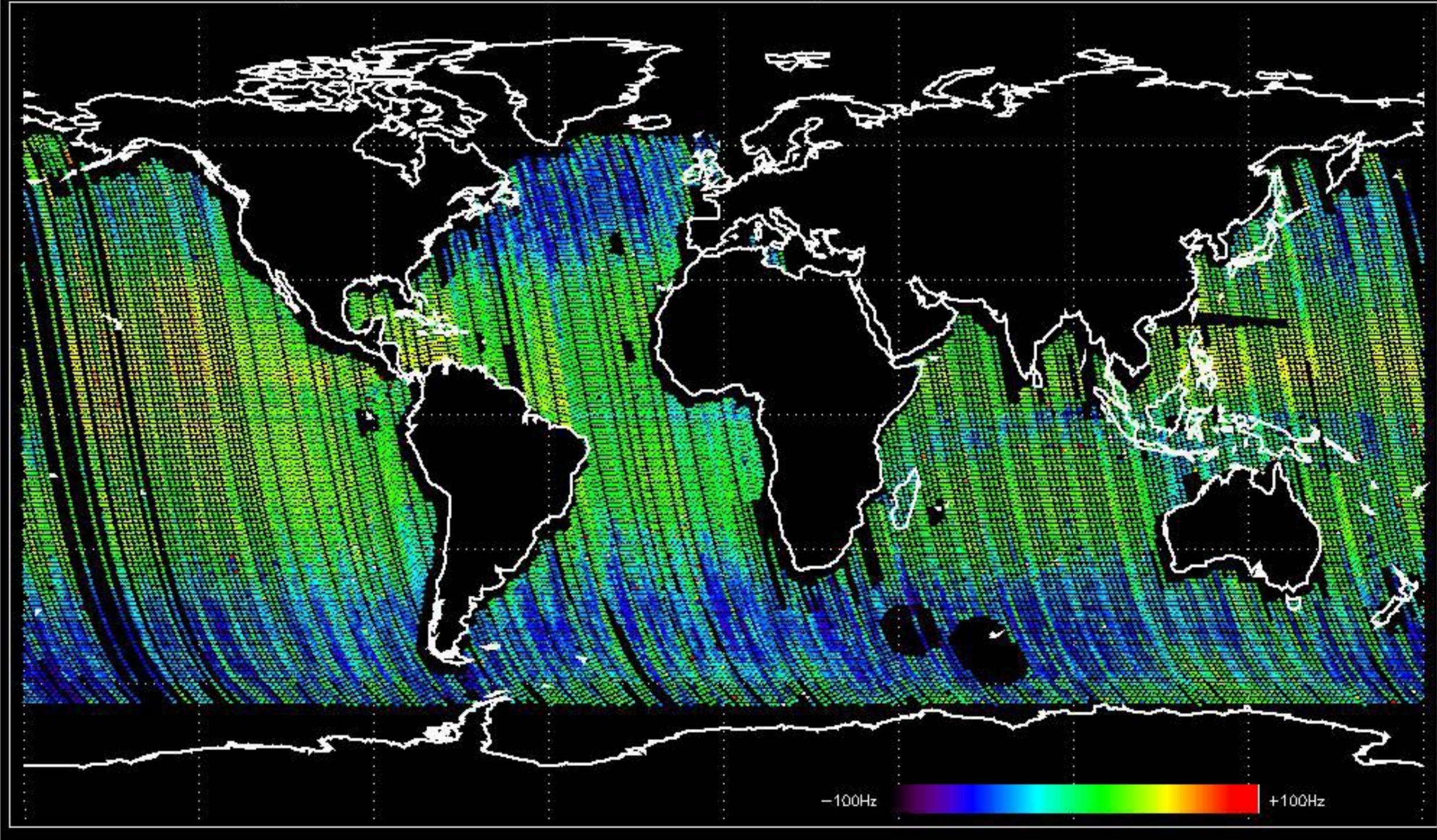
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.176273 Hz



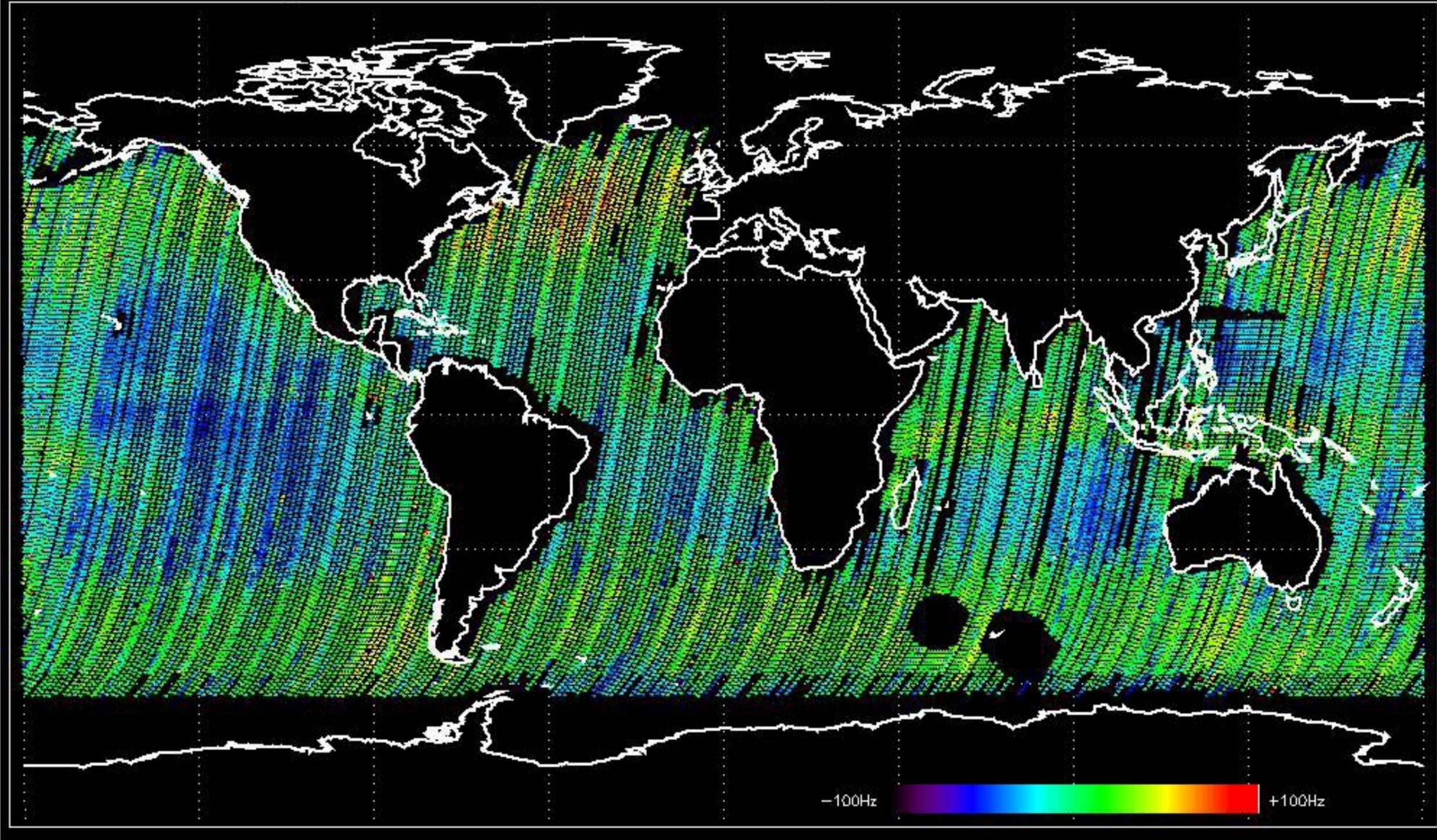
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.767831 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -12.453435 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -14.240883 Hz



No anomalies observed on available MS products:

No anomalies observed.















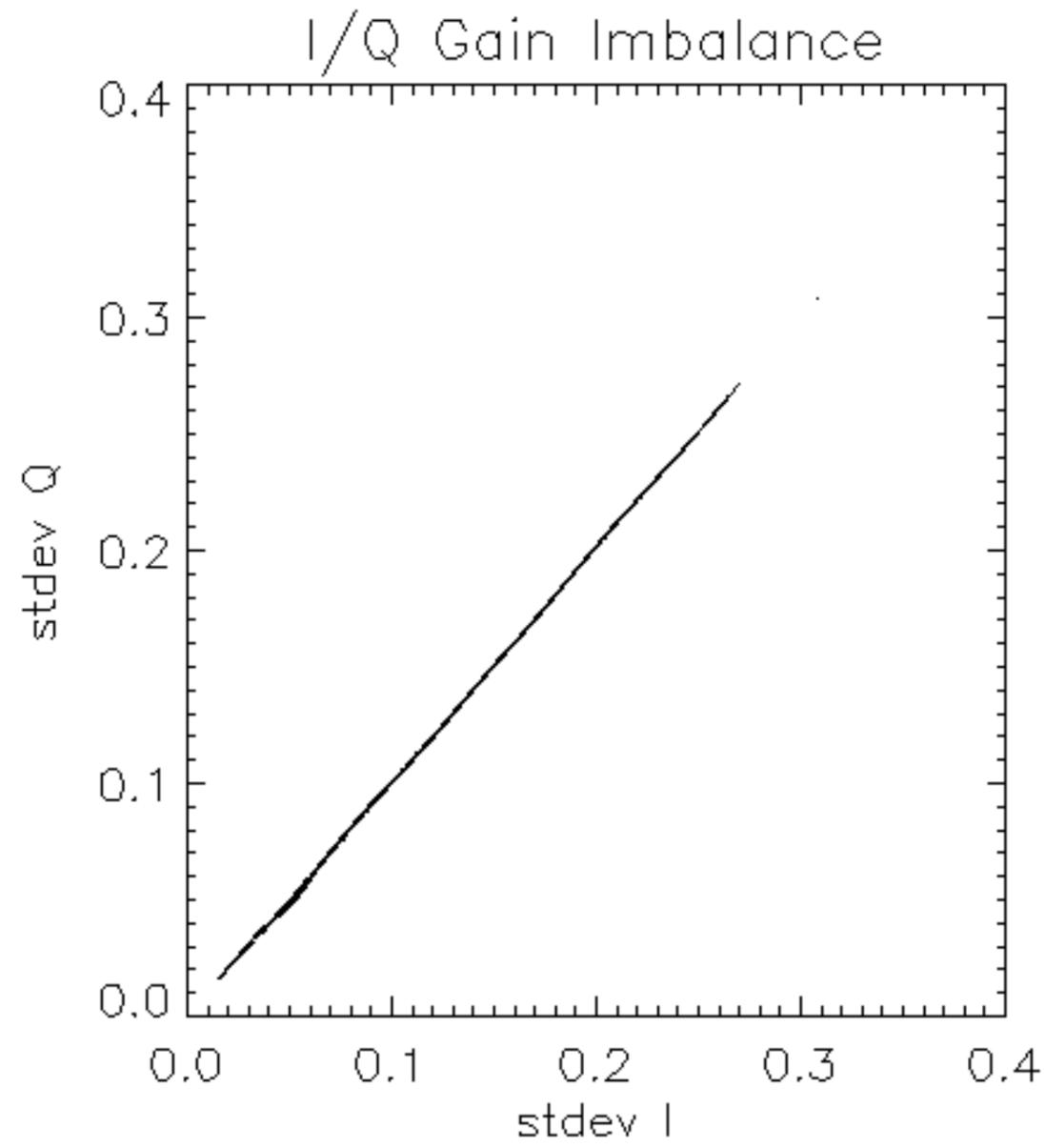


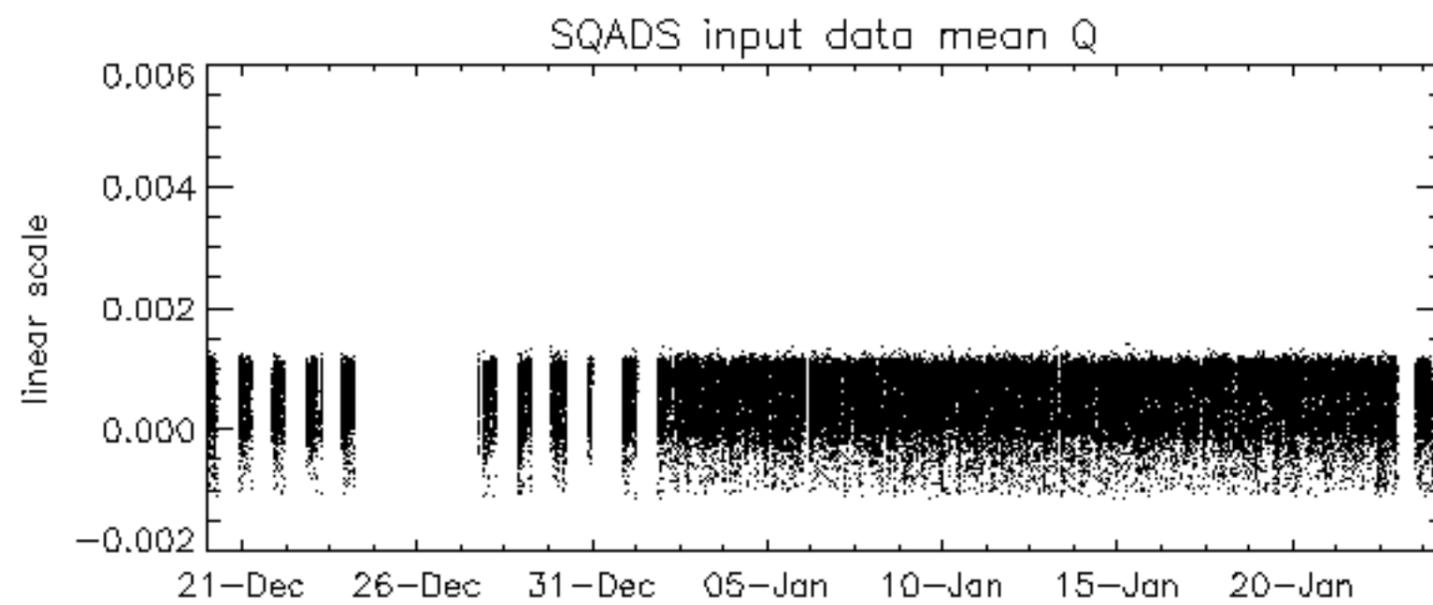
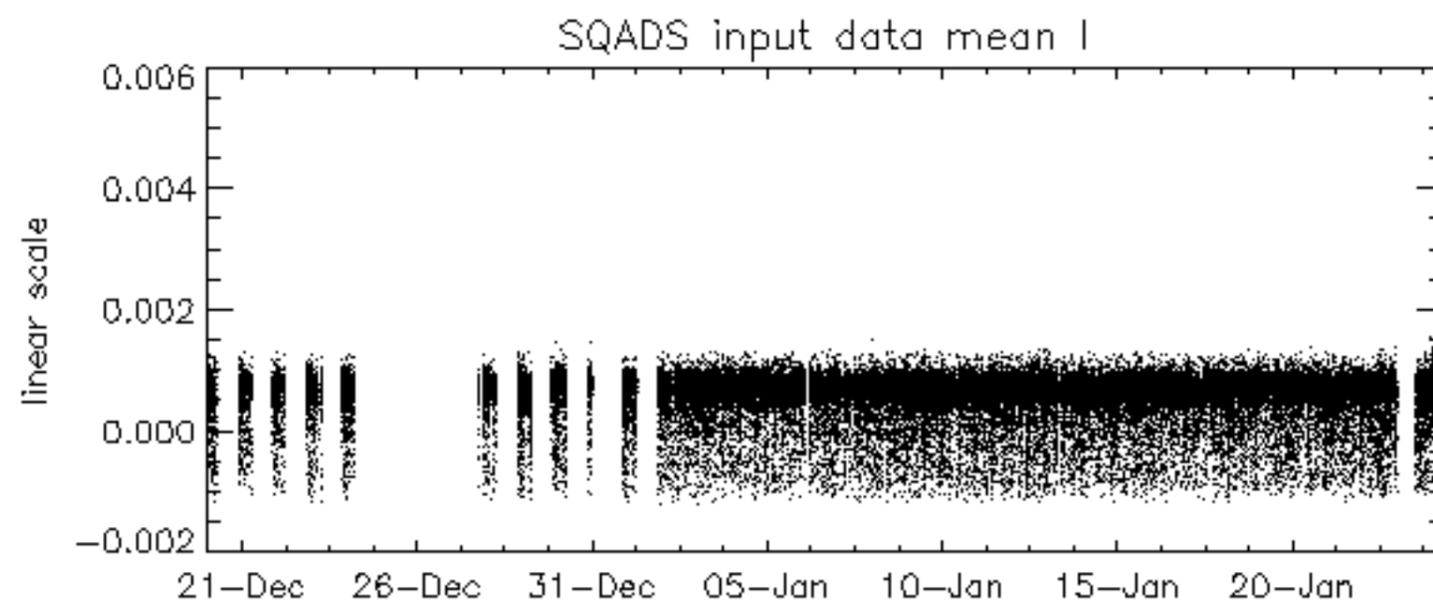
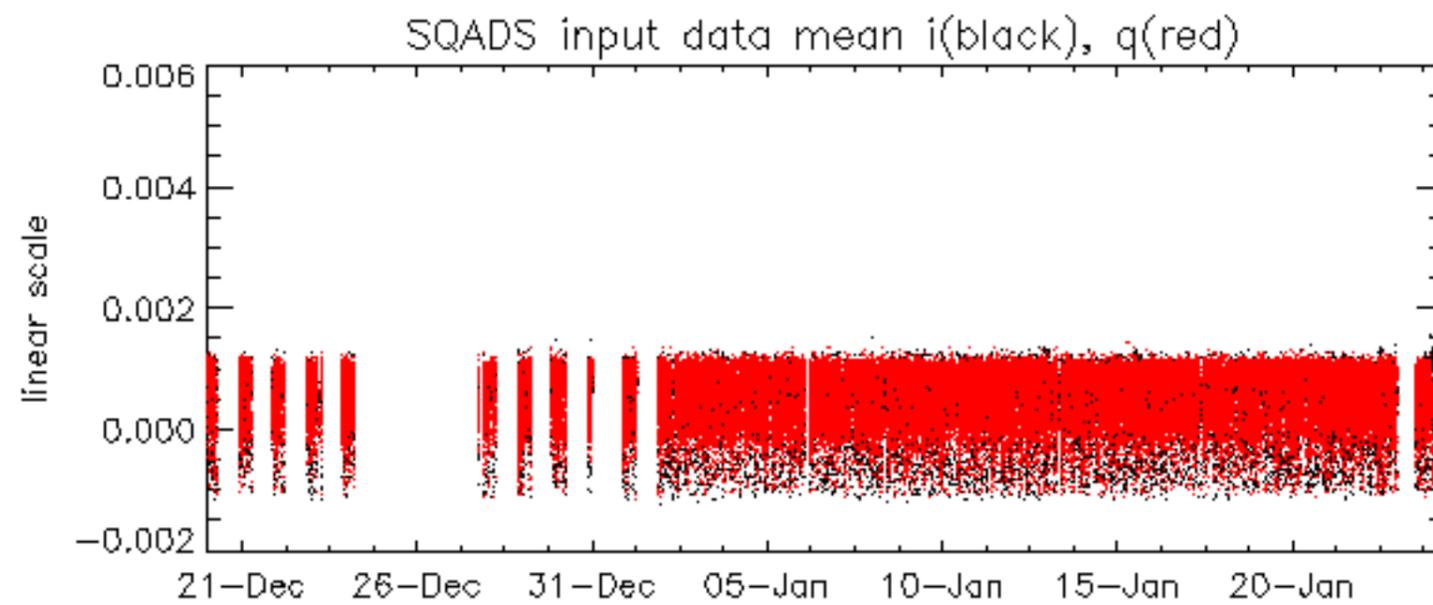


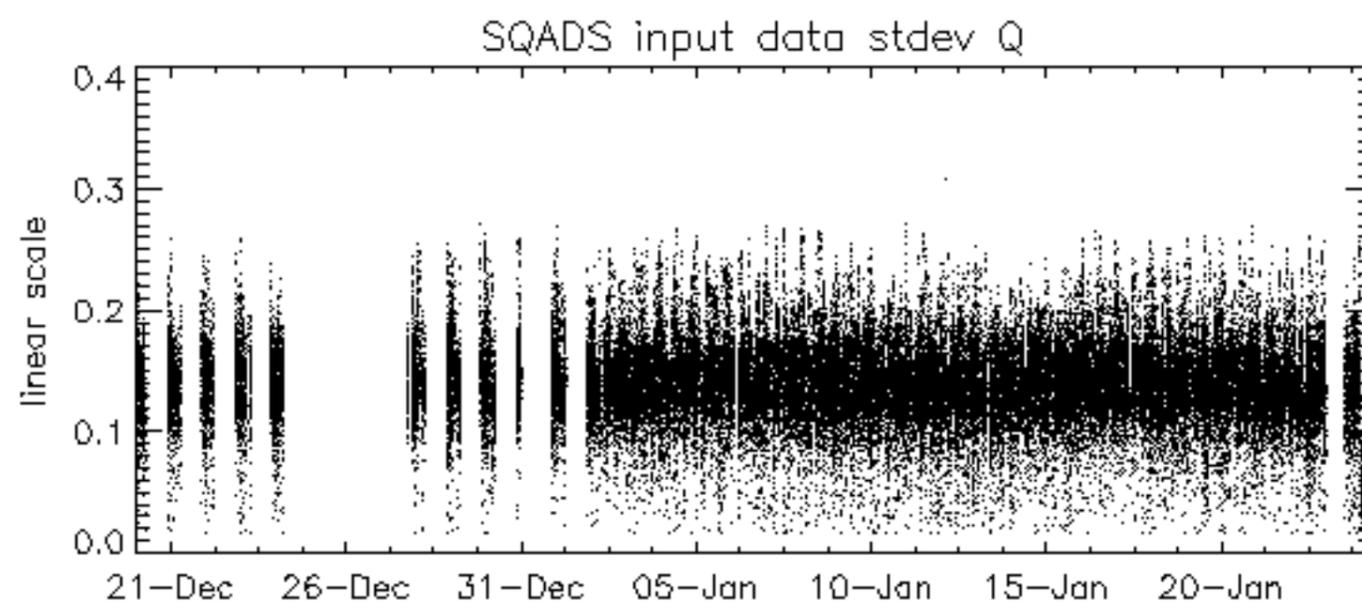
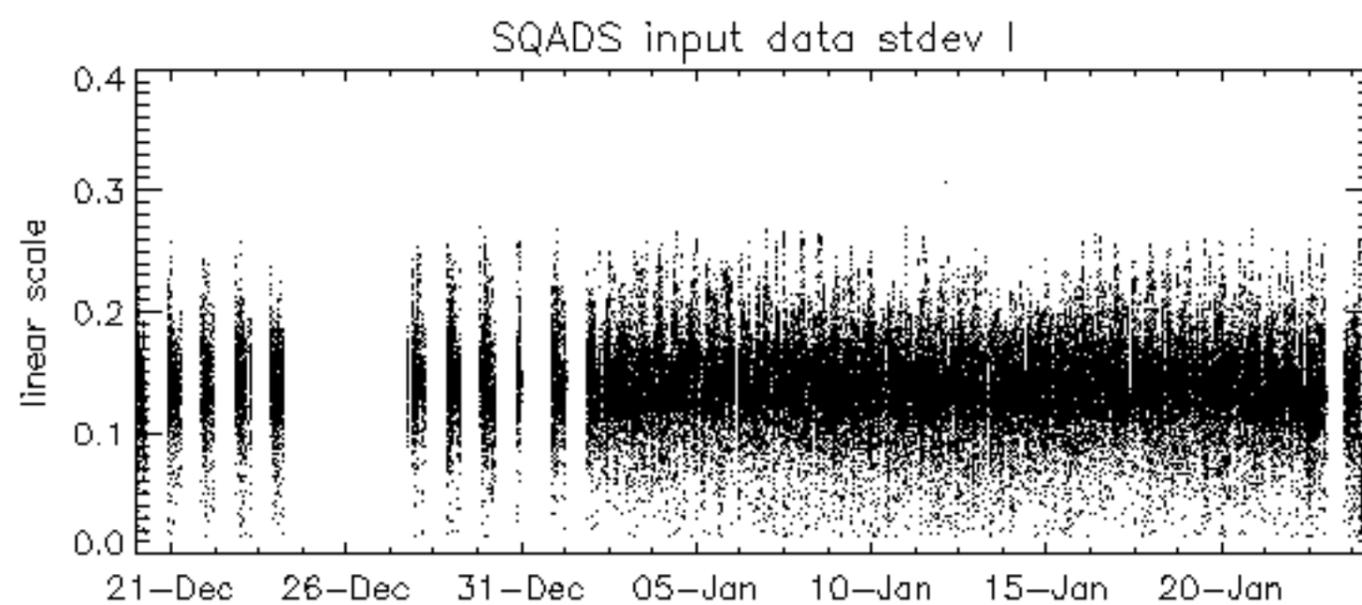
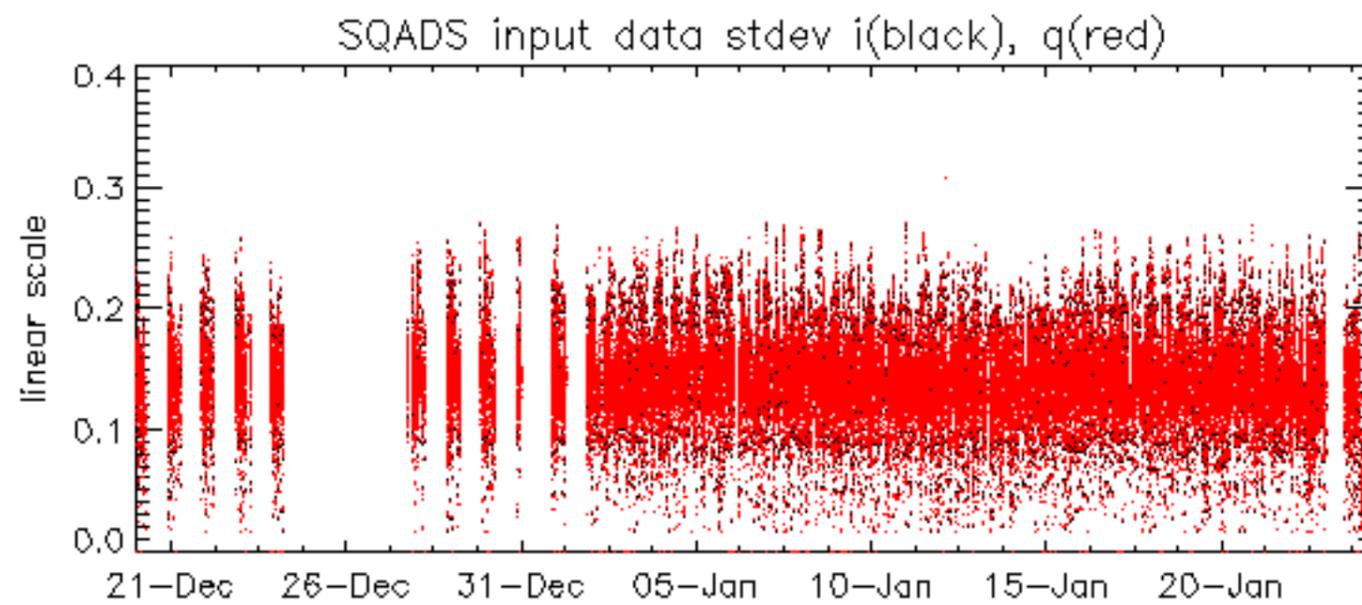


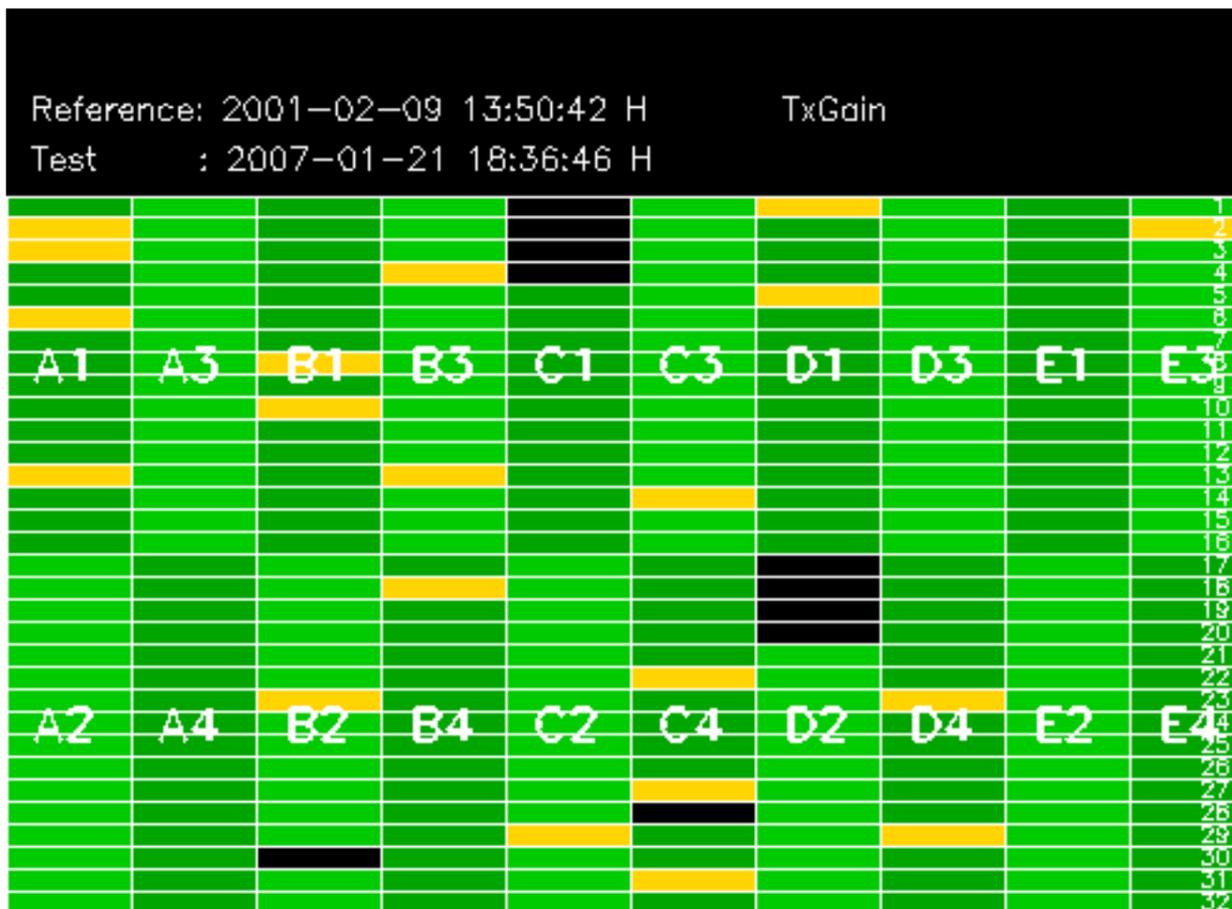






















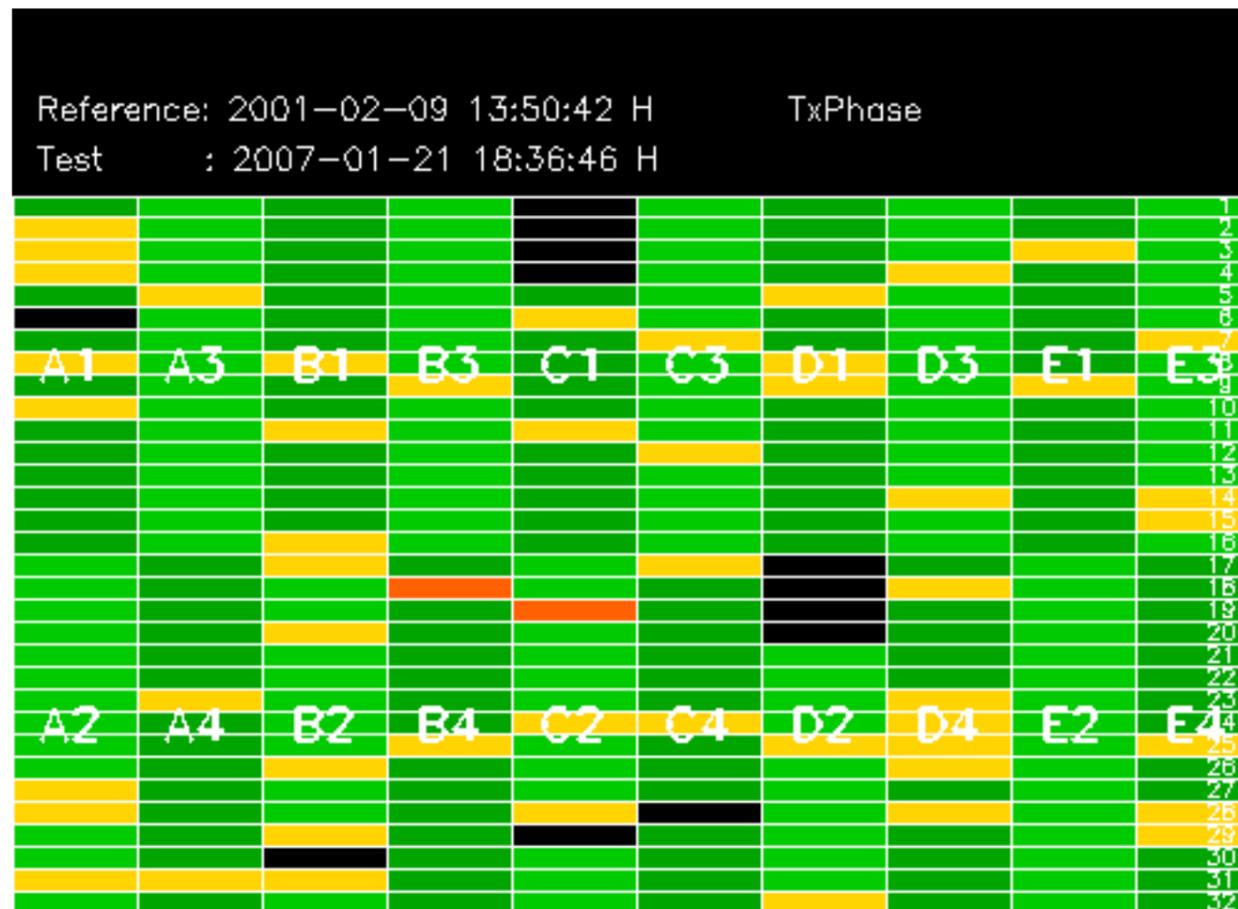
Summary of analysis for the last 3 days 2007012[234]

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_IMM_1PNPDE20070123_140435_000000342055_00010_25615_0987.N1	15	1262
ASA_IMM_1PNPDE20070123_181423_000001682055_00013_25618_1065.N1	2	47
ASA_GM1_1PNPDK20070123_141358_000007732055_00010_25615_0389.N1	0	14
ASA_GM1_1PNPDK20070123_141358_000007732055_00010_25615_0634.N1	0	14
ASA_WSM_1PNPDE20070122_105323_000000672054_00495_25599_0010.N1	0	1
ASA_WSM_1PNPDE20070123_145428_000002012055_00011_25616_1023.N1	0	96
ASA_WSM_1PNPDE20070123_181840_000000852055_00013_25618_1069.N1	0	47
ASA_APM_1PNPDE20070123_144834_000000422055_00011_25616_0989.N1	0	20









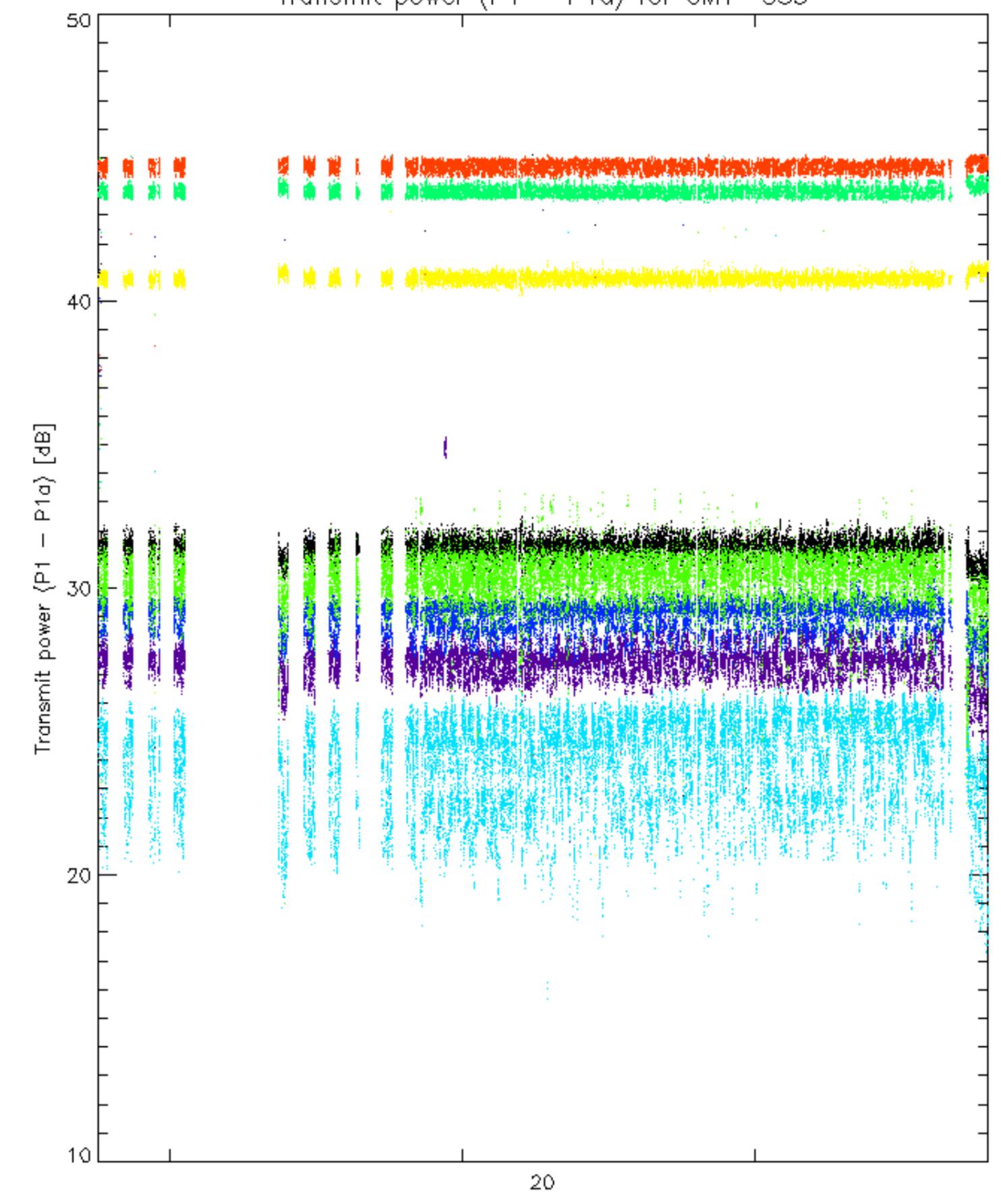




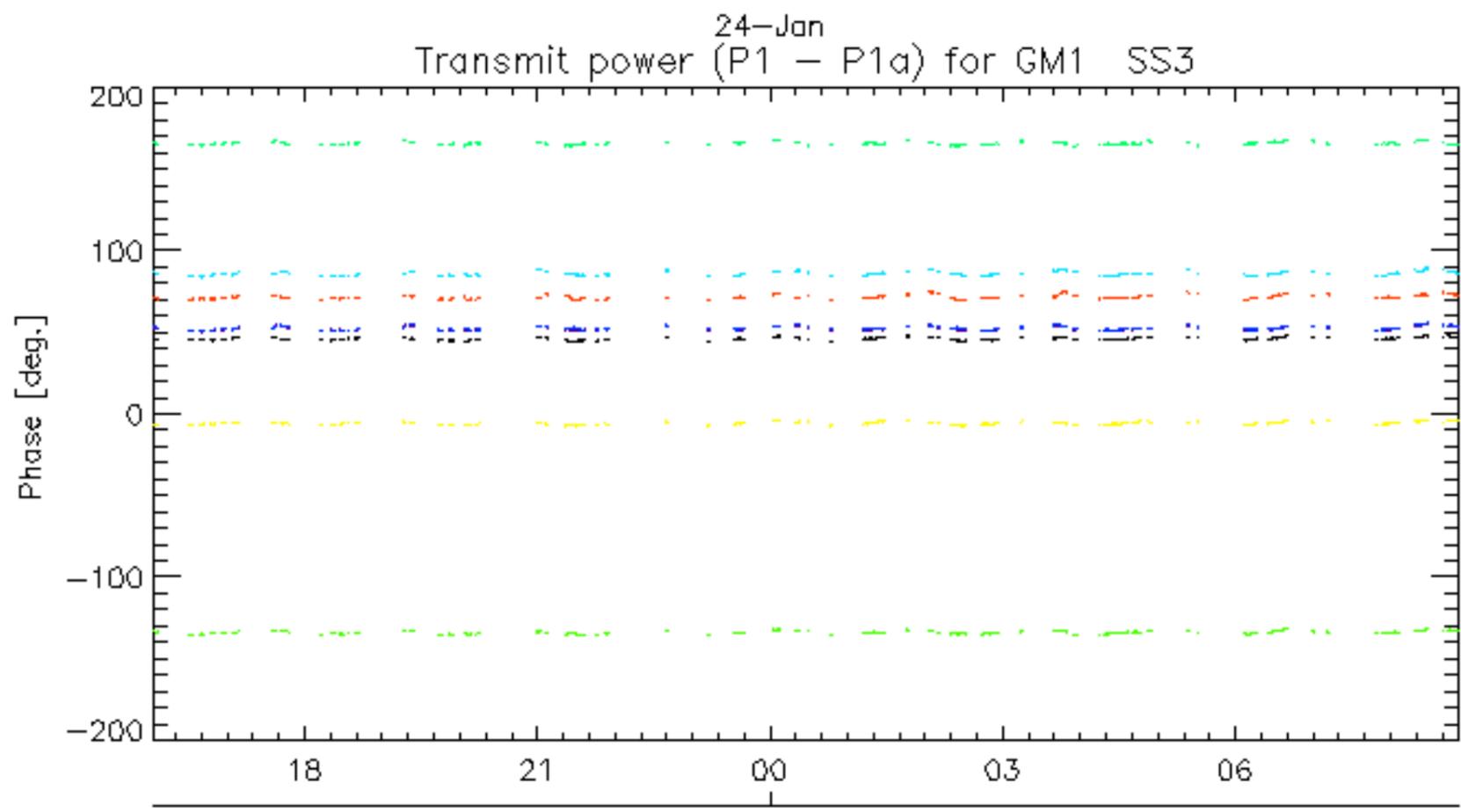
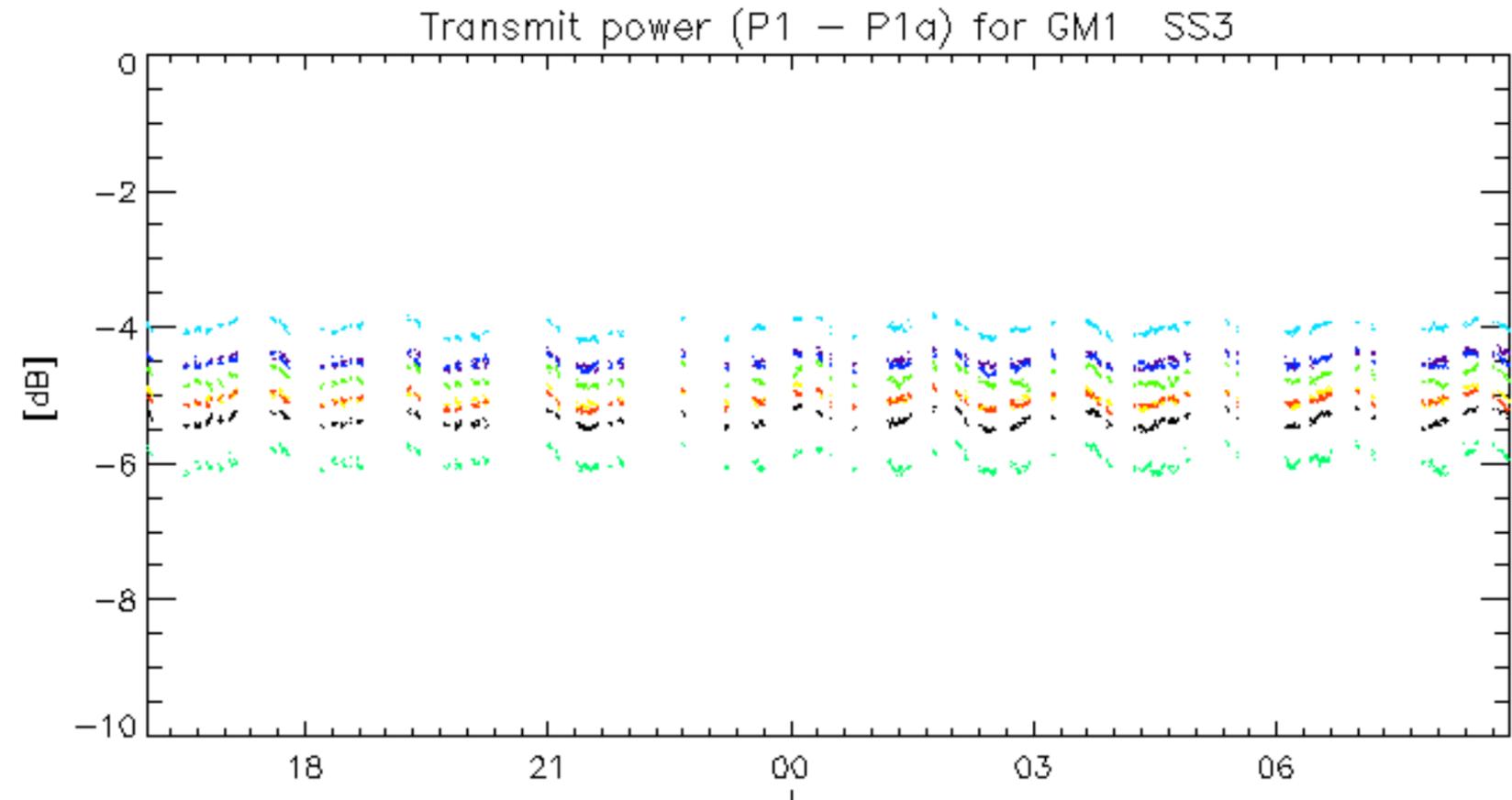




Transmit power (P1 - P1a) for GM1 SS3

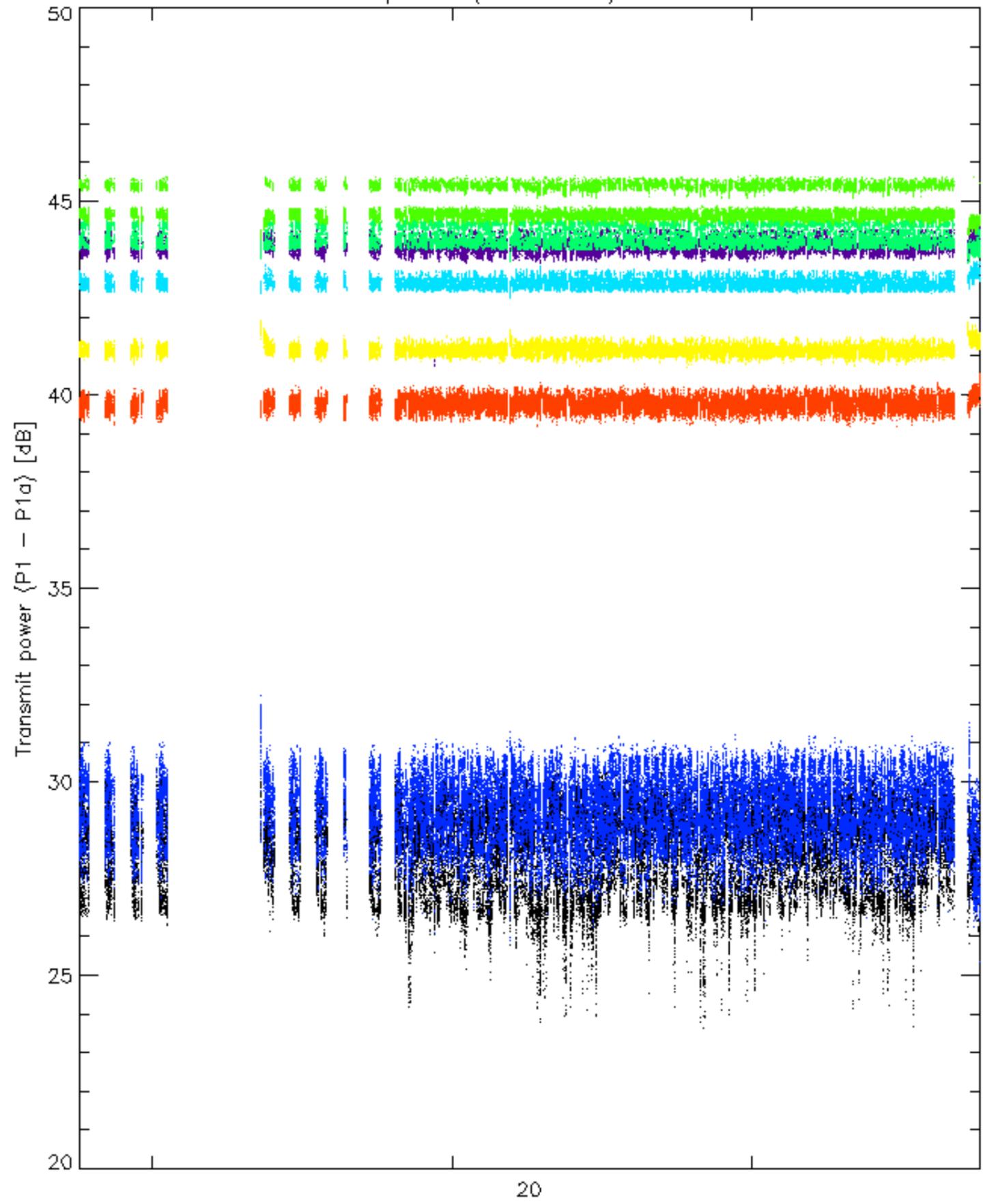


rows: 3 7 11 15 19 22 26 30

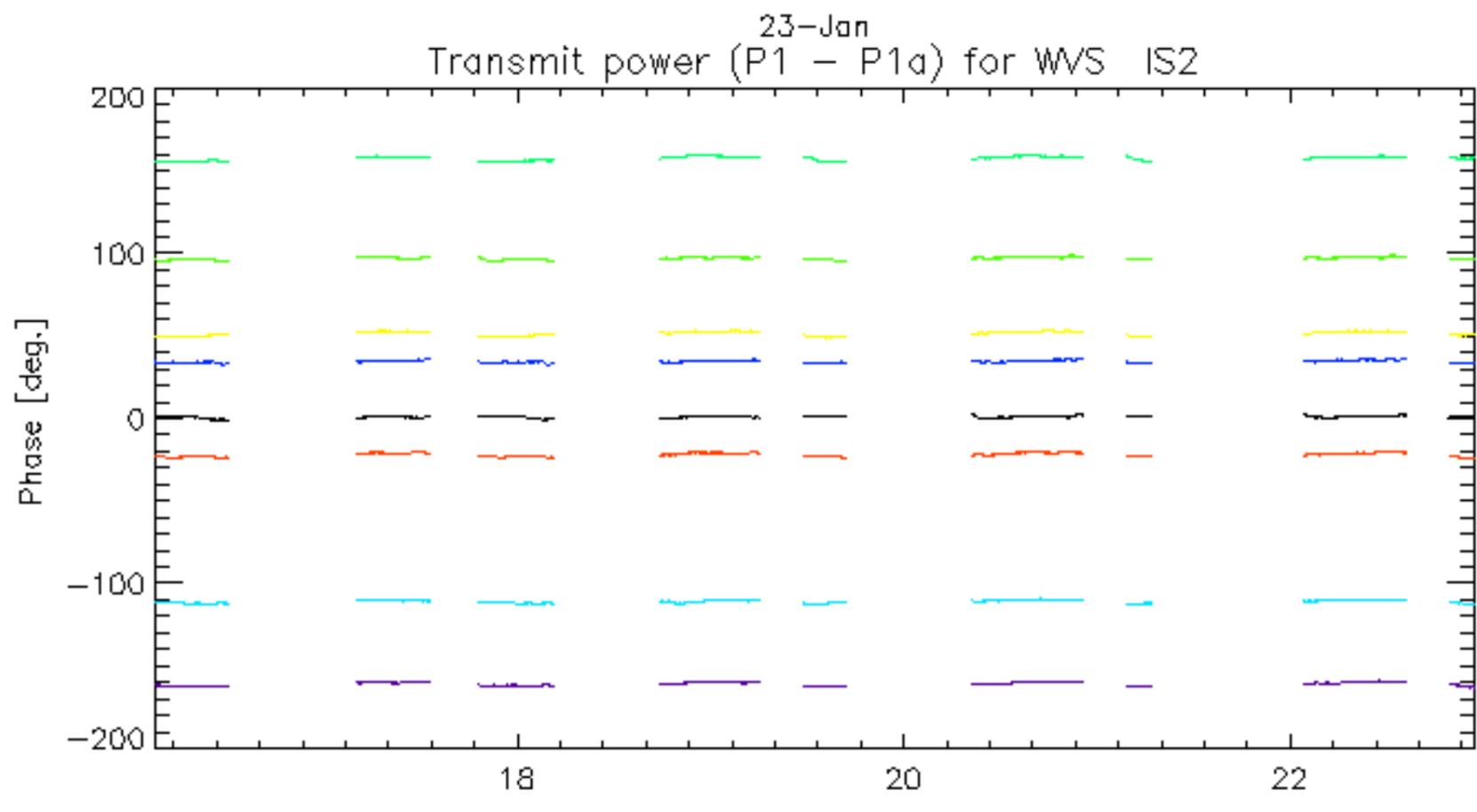
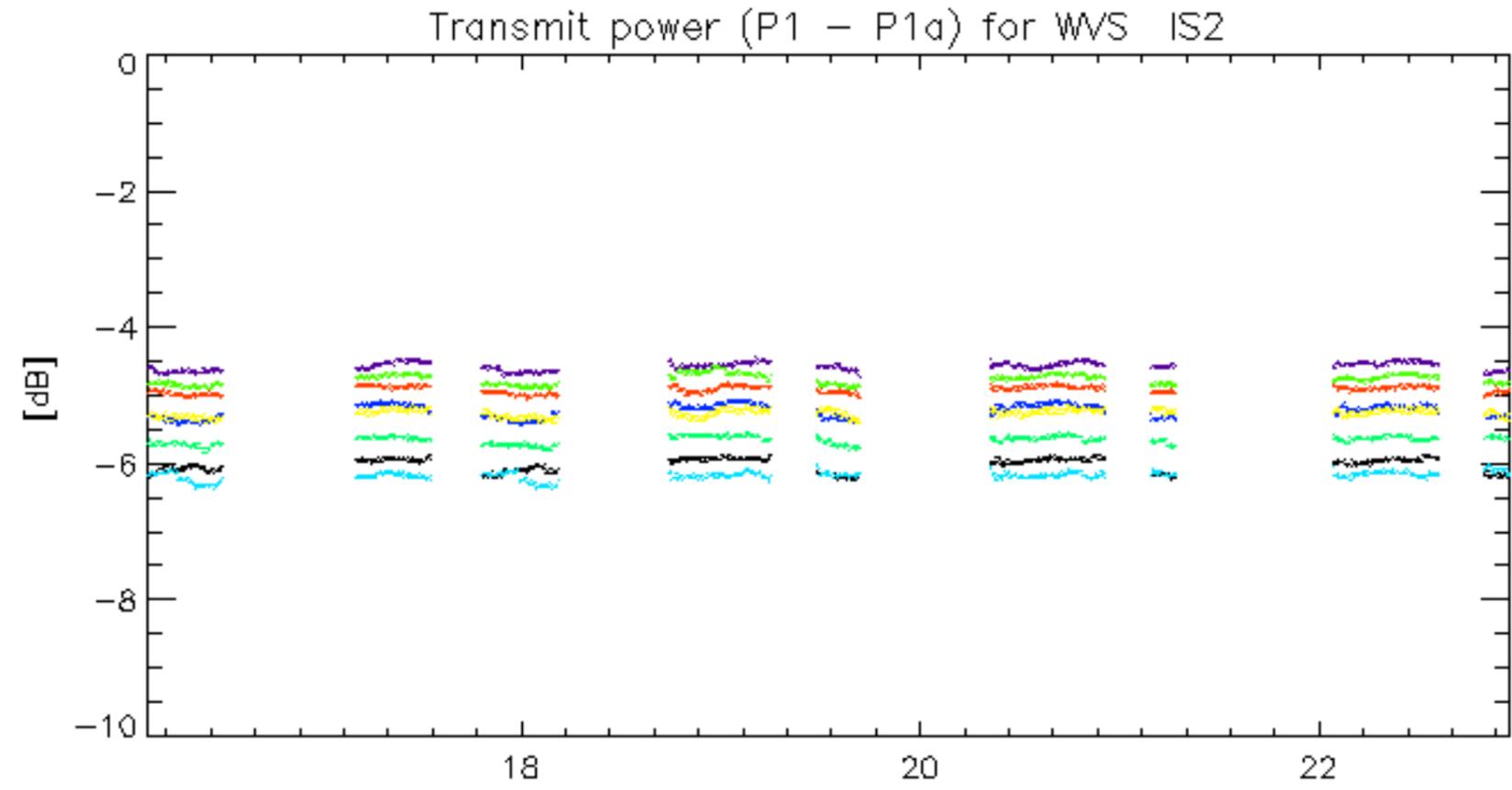


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

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.