

# PRELIMINARY REPORT OF 070123

last update on Tue Jan 23 16:32:26 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 2007-01-22 00:00:00 to 2007-01-23 16:32:26

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	13	18	3	3	1
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	13	18	3	3	1
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	13	18	3	3	1
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	13	18	3	3	1

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	23	30	14	6	48
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	23	30	14	6	48
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	23	30	14	6	48
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	23	30	14	6	48

### 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	20070122 180508
H	20070121 183646

### 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**

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☒

**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	-16.520096	0.250368	0.102450
7	P1a	-17.248184	0.177487	-0.024353
11	P1a	-17.272917	0.431975	-0.047016
15	P1a	-13.032942	0.121200	0.006219
19	P1a	-15.106824	0.112446	-0.107359
22	P1a	-15.781204	0.543967	0.069013
26	P1a	-15.023373	0.183596	0.030817
30	P1a	-17.526901	0.491988	-0.028865

**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.963433	0.007030	0.025946
7	P1	-3.125181	0.042886	0.060891
11	P1	-4.114537	0.025209	0.021056
15	P1	-6.339713	0.016775	-0.012818
19	P1	-3.693072	0.006115	-0.025162
22	P1	-4.683119	0.016628	-0.001442
26	P1	-3.948718	0.009906	0.040595
30	P1	-5.918366	0.008410	0.015894
3	P1a	-16.520096	0.250368	0.102450
7	P1a	-17.248184	0.177487	-0.024353
11	P1a	-17.272917	0.431975	-0.047016
15	P1a	-13.032942	0.121200	0.006219
19	P1a	-15.106824	0.112446	-0.107359
22	P1a	-15.781204	0.543967	0.069013
26	P1a	-15.023373	0.183596	0.030817
30	P1a	-17.526901	0.491988	-0.028865

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.774769	0.088610	0.093613
7	P2	-21.657879	0.087989	0.070200
11	P2	-15.527653	0.099190	0.082094

15	P2	-7.086712	0.101699	0.051272
19	P2	-9.165435	0.095447	0.052989
22	P2	-18.217299	0.087326	0.052514
26	P2	-16.587761	0.099981	0.057739
30	P2	-19.428015	0.082140	0.064157

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.236864	0.008025	0.018721
7	P3	-8.236864	0.008025	0.018721
11	P3	-8.236864	0.008025	0.018721
15	P3	-8.236864	0.008025	0.018721
19	P3	-8.236864	0.008025	0.018721
22	P3	-8.236864	0.008025	0.018721
26	P3	-8.236884	0.008025	0.018915
30	P3	-8.236884	0.008025	0.018915

**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	-11.725015	0.071975	-0.028554
7	P1a	-10.031096	0.083429	0.052019
11	P1a	-10.366873	0.086151	-0.063209
15	P1a	-10.748322	0.158289	-0.081210
19	P1a	-15.753154	0.098673	-0.044480
22	P1a	-21.491135	1.490519	0.522248
26	P1a	-15.934127	0.312615	0.400320
30	P1a	-17.965405	0.381348	-0.371129

**P1 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.921035	0.012799	-0.014243
7	P1	-2.465631	0.059242	0.066784
11	P1	-2.826674	0.014901	0.004914
15	P1	-3.721985	0.031922	-0.099077
19	P1	-3.553968	0.018524	-0.029616
22	P1	-5.003545	0.022110	-0.023548
26	P1	-6.044796	0.023392	-0.012812
30	P1	-5.349093	0.035430	0.016304
3	P1a	-11.725015	0.071975	-0.028554
7	P1a	-10.031096	0.083429	0.052019
11	P1a	-10.366873	0.086151	-0.063209
15	P1a	-10.748322	0.158289	-0.081210
19	P1a	-15.753154	0.098673	-0.044480
22	P1a	-21.491135	1.490519	0.522248
26	P1a	-15.934127	0.312615	0.400320
30	P1a	-17.965405	0.381348	-0.371129

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.407570	0.088679	0.163844
7	P2	-22.175468	0.206161	0.099772
11	P2	-10.820055	0.081538	0.124302
15	P2	-4.948143	0.183807	0.106222
19	P2	-6.936511	0.185658	0.079914
22	P2	-8.228082	0.113034	0.047877
26	P2	-24.342896	0.140295	0.044429
30	P2	-21.889048	0.124946	0.117177

#### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.085946	0.002731	0.035382
7	P3	-8.085674	0.002721	0.034853
11	P3	-8.085820	0.002732	0.035594
15	P3	-8.085735	0.002721	0.035099
19	P3	-8.085745	0.002735	0.035645
22	P3	-8.085734	0.002727	0.034596
26	P3	-8.085954	0.002726	0.035745
30	P3	-8.085784	0.002721	0.035240

### 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	0.000571638
	stdev	1.62386e-07
MEAN Q	mean	0.000512933
	stdev	2.09945e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.140441
	stdev	0.00114480
STDEV Q	mean	0.140838
	stdev	0.00116427



### 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2007012[123]

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_1PNPDE20070121_230117_000002812054_00488_25592_6348.N1	1	17
ASA_GM1_1PNPDK20070121_151713_000004412054_00483_25587_7539.N1	0	8
ASA_GM1_1PNPDK20070121_151713_000004412054_00483_25587_9075.N1	0	8
ASA_WSM_1PNPDE20070122_105323_000000672054_00495_25599_0010.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)

Ascending

Descending

### 7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

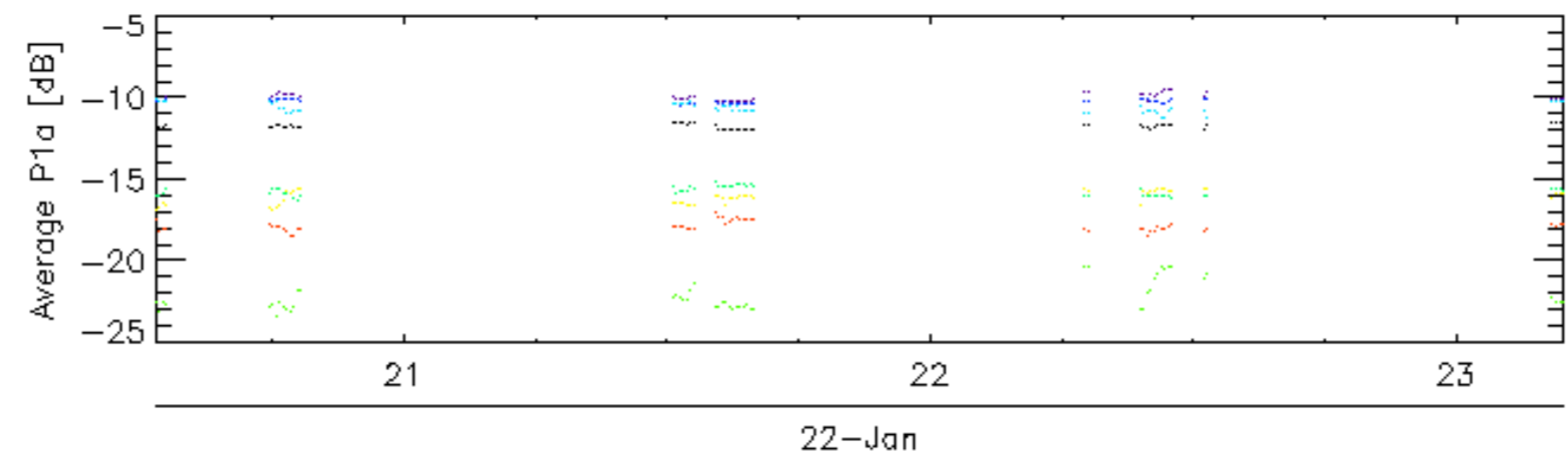
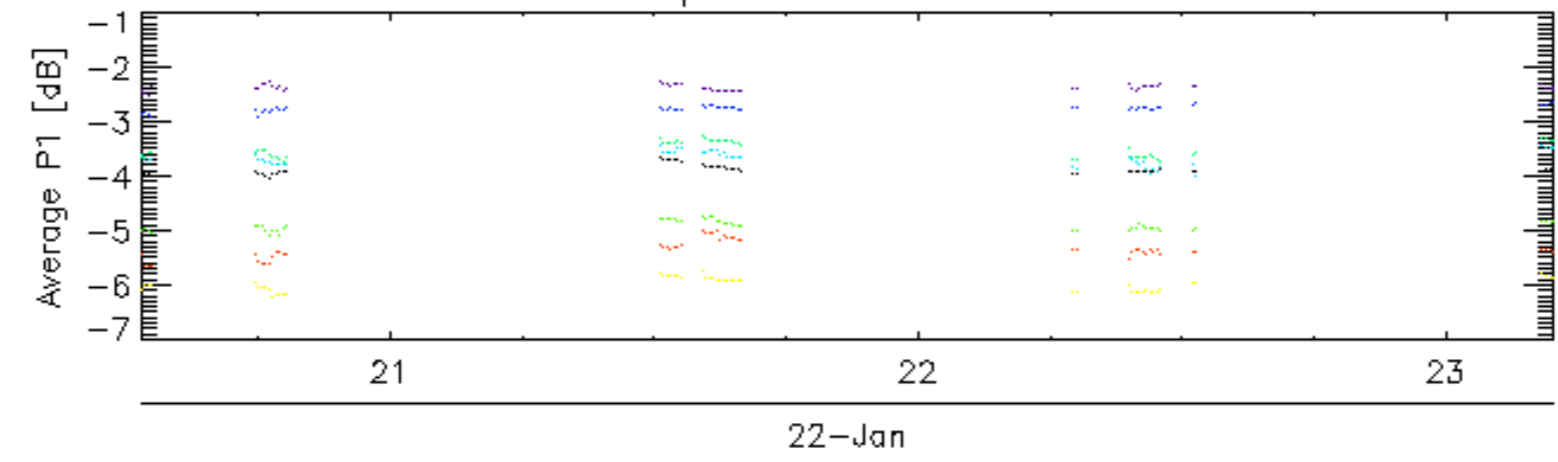
Ascending

Descending

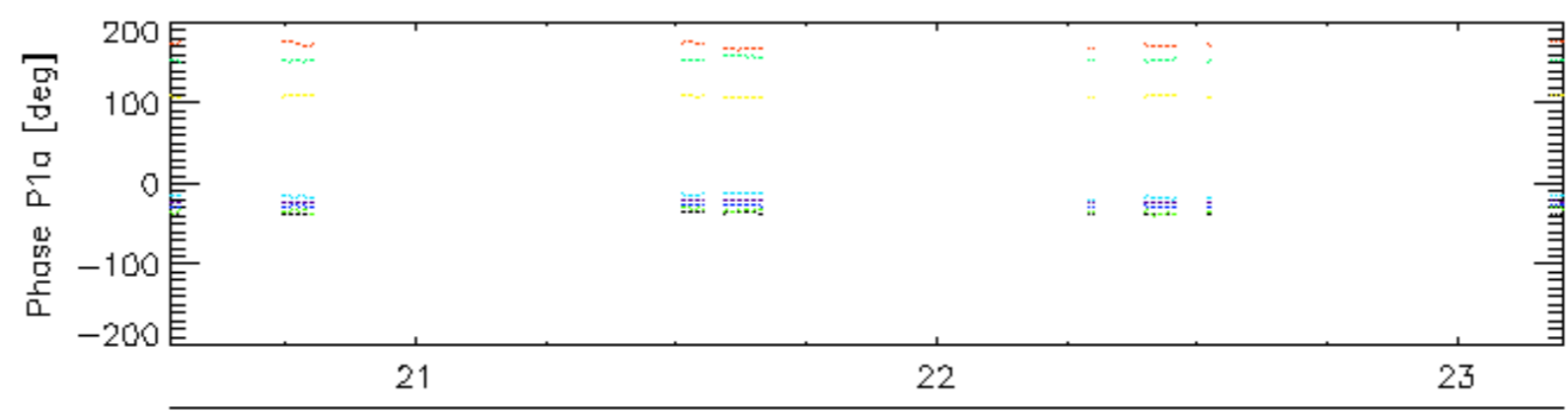
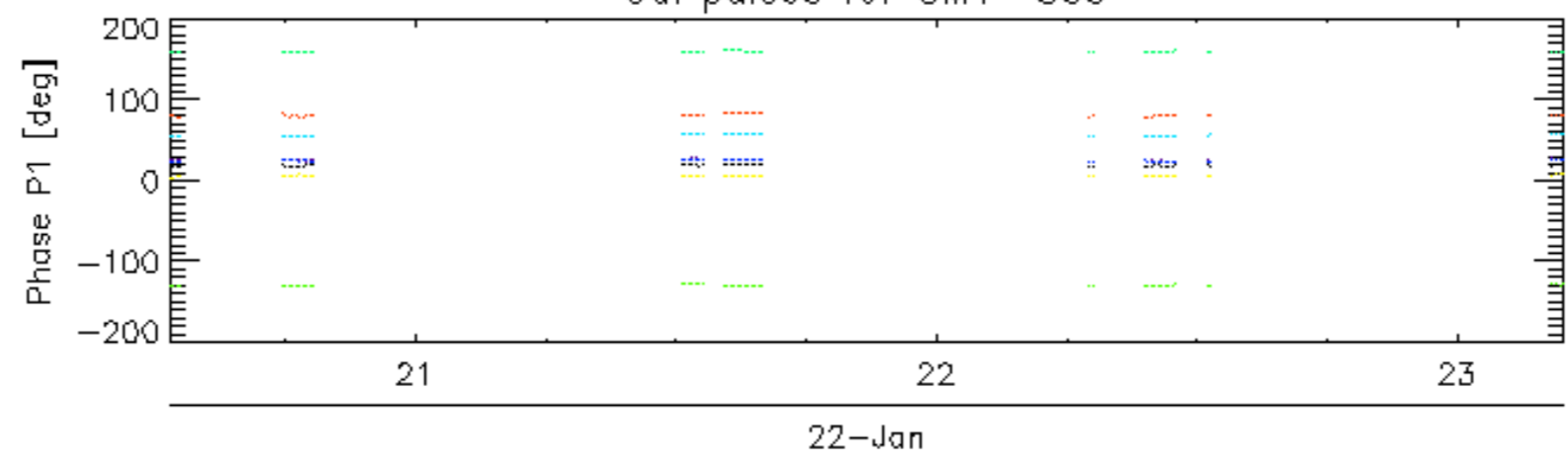
### 7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

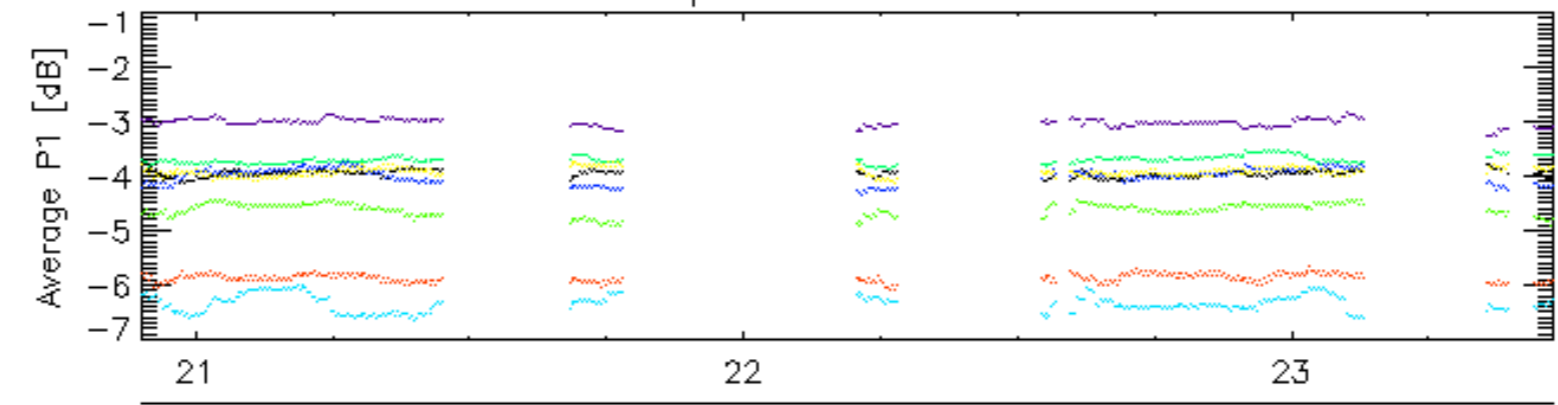


Cal pulses for GM1 SS3

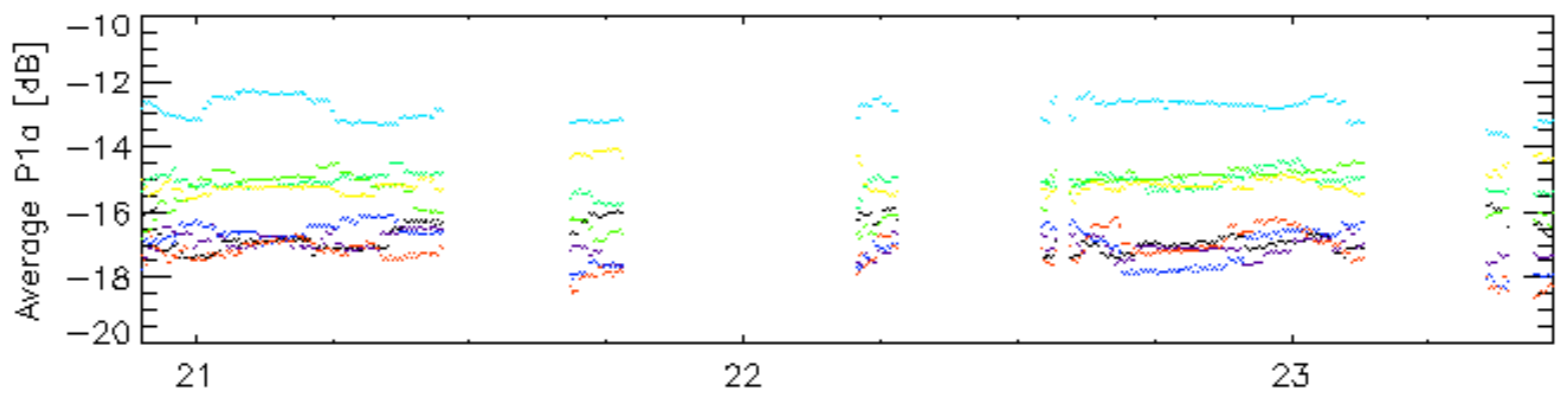


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2

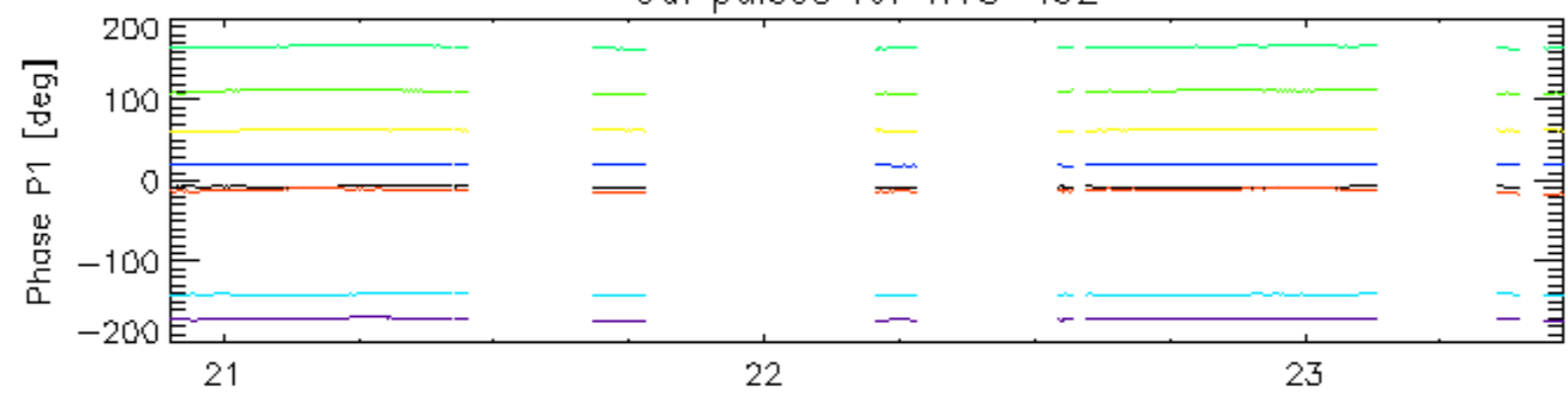


22-Jan

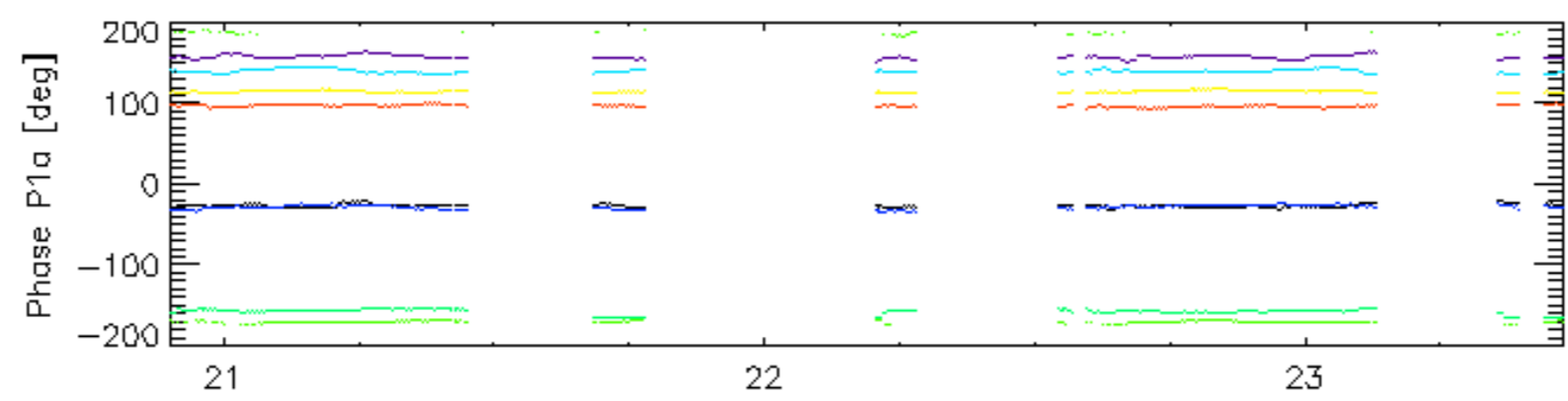


22-Jan

Cal pulses for WVS IS2

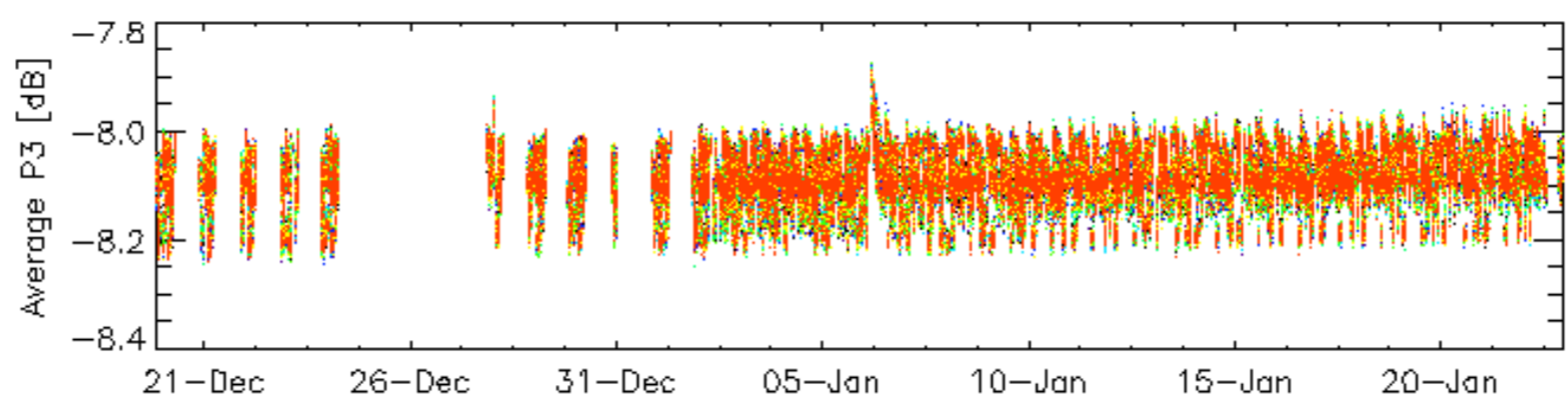
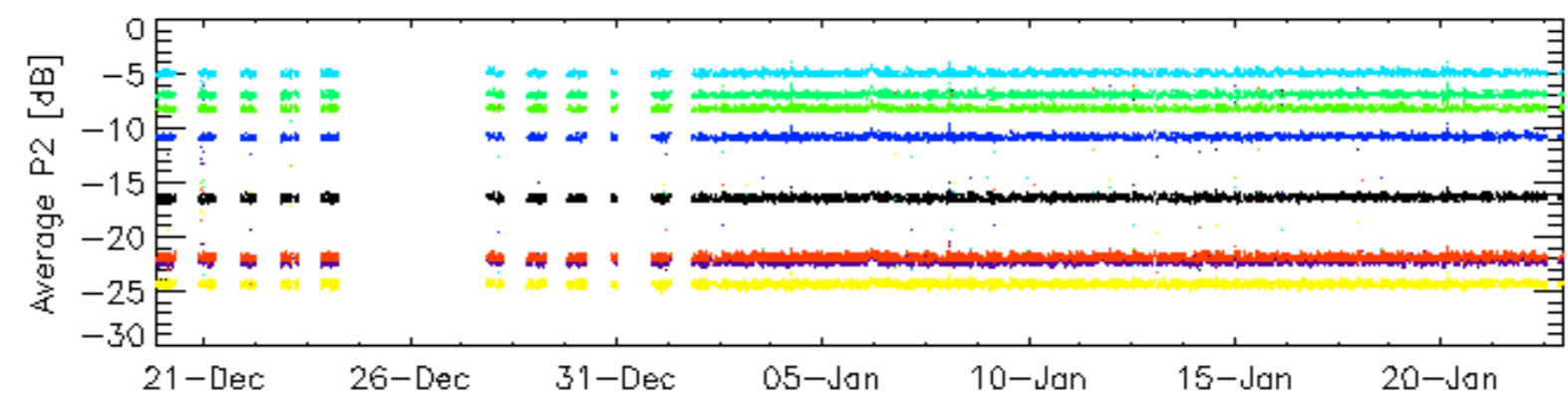
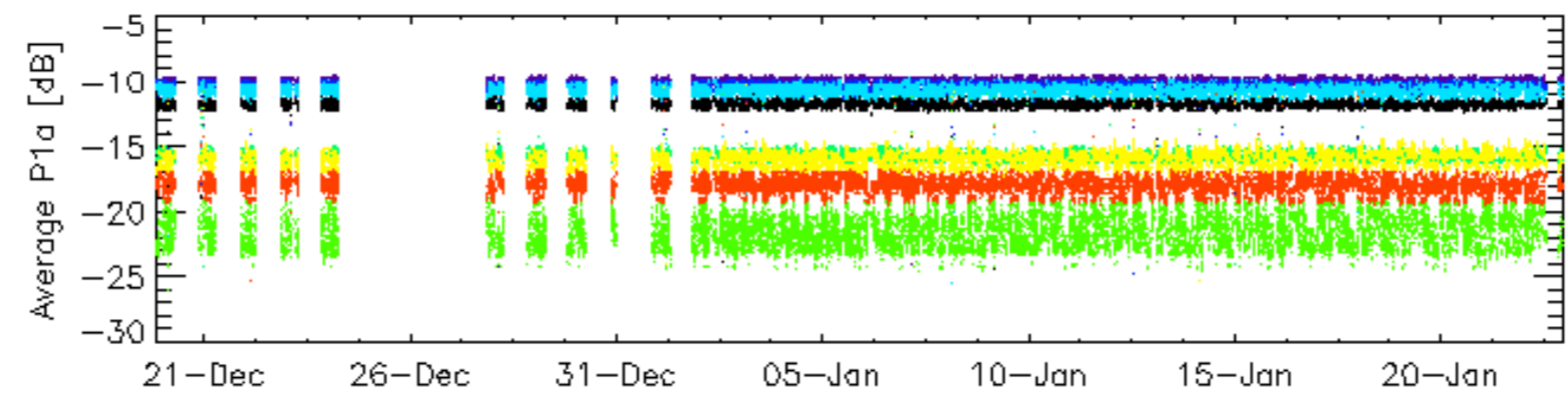
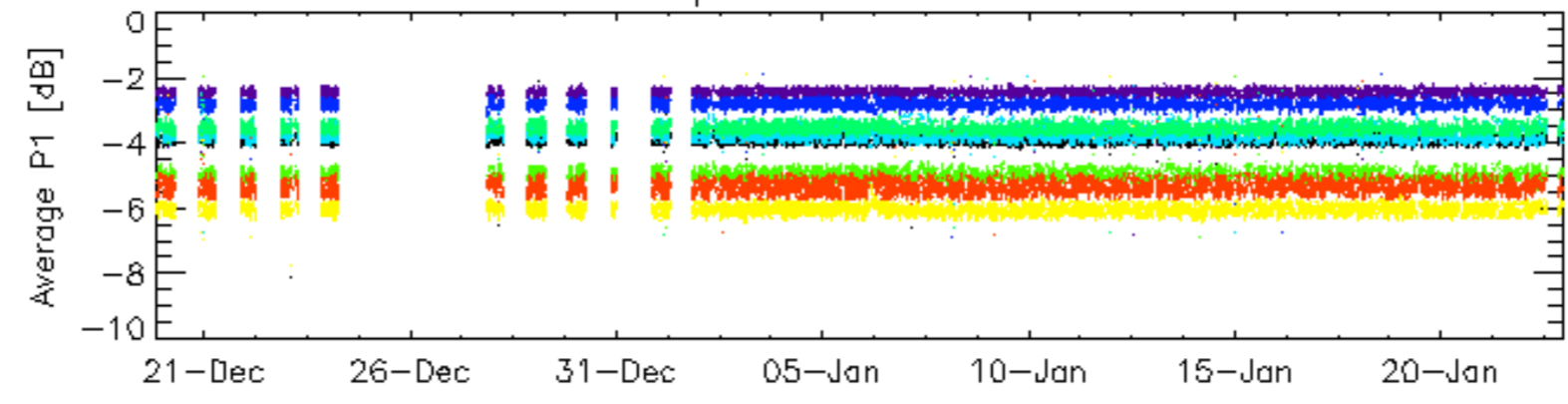


22-Jan



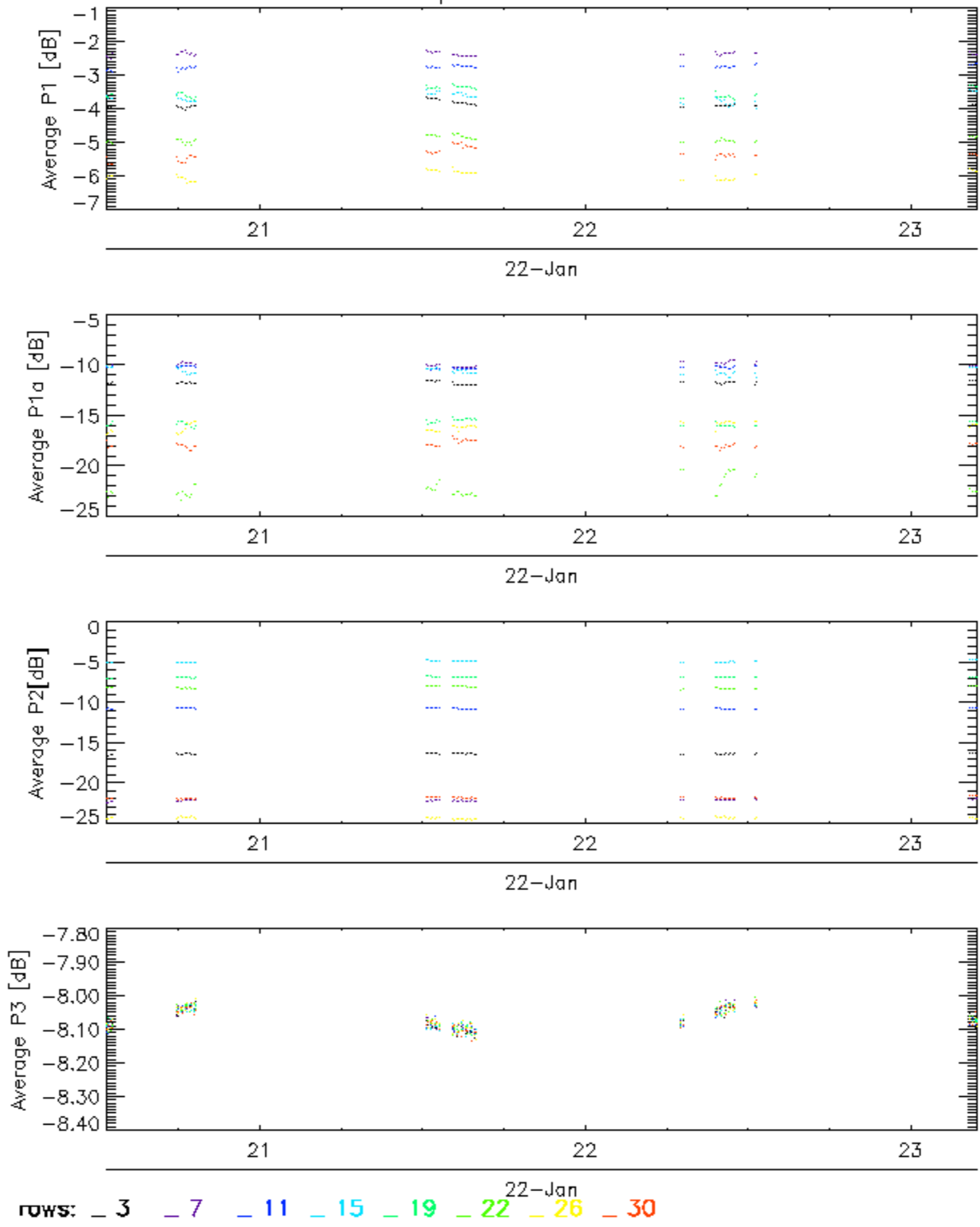
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



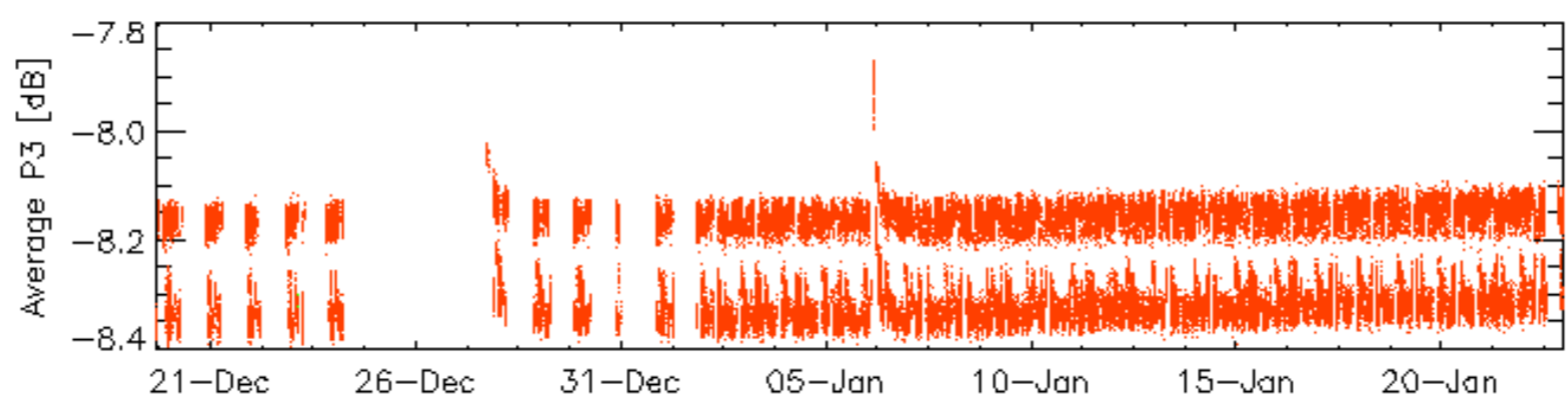
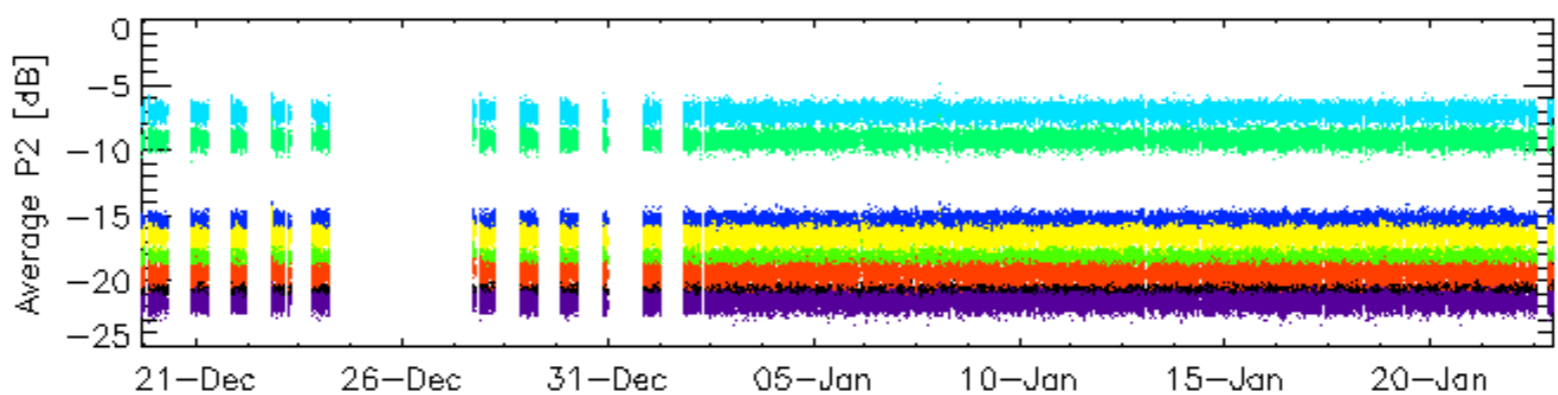
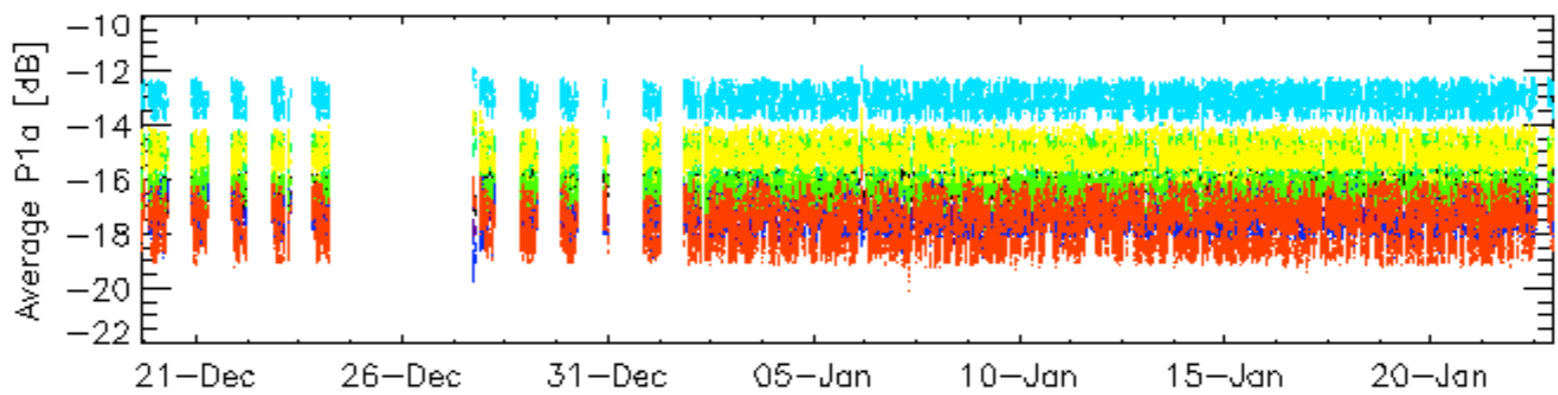
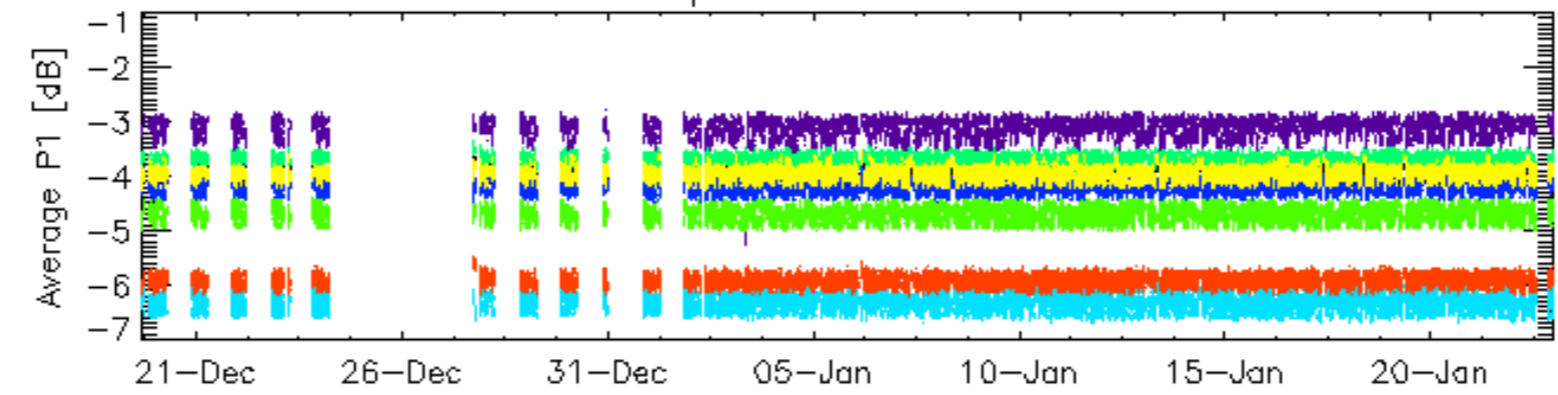
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



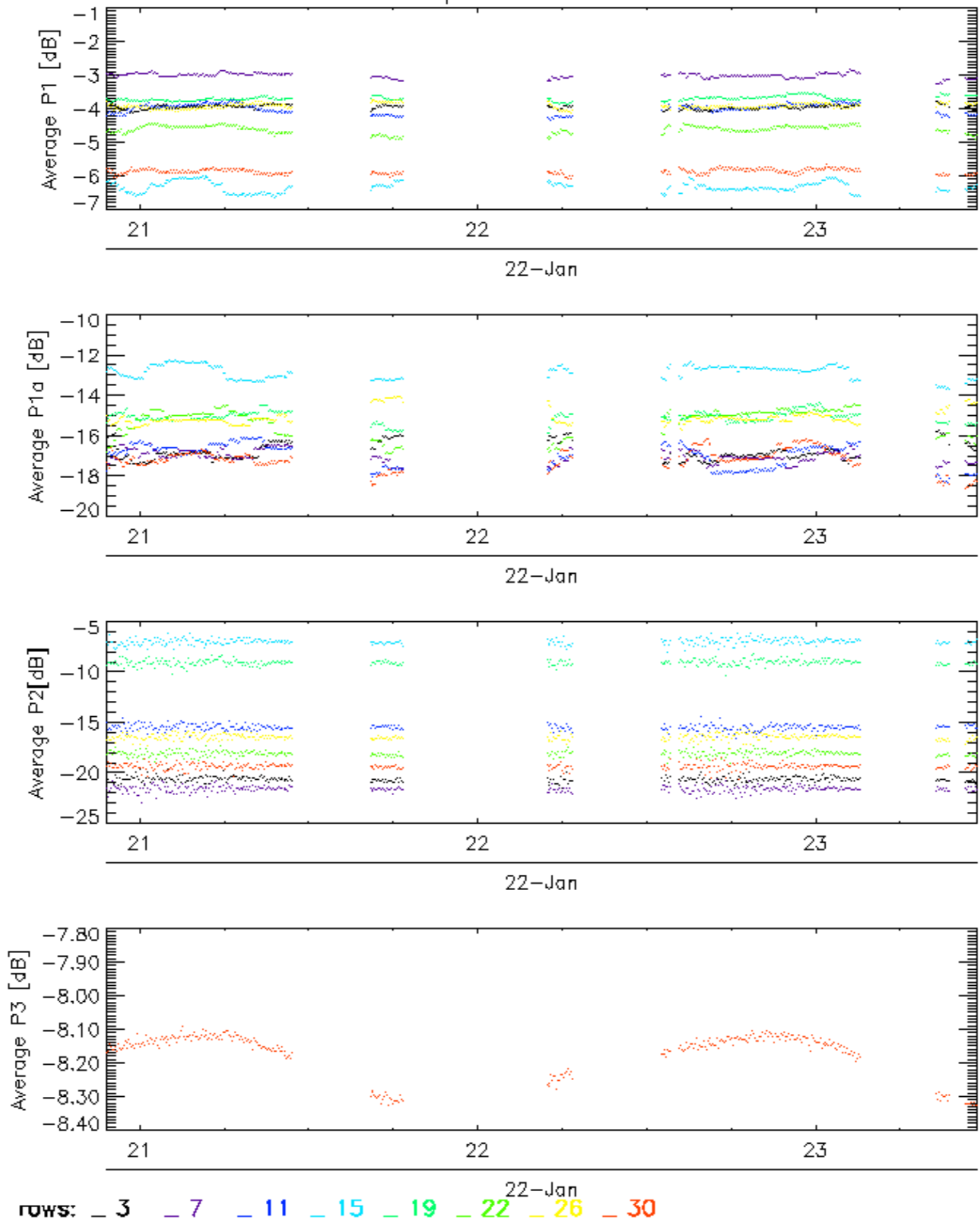
rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2



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

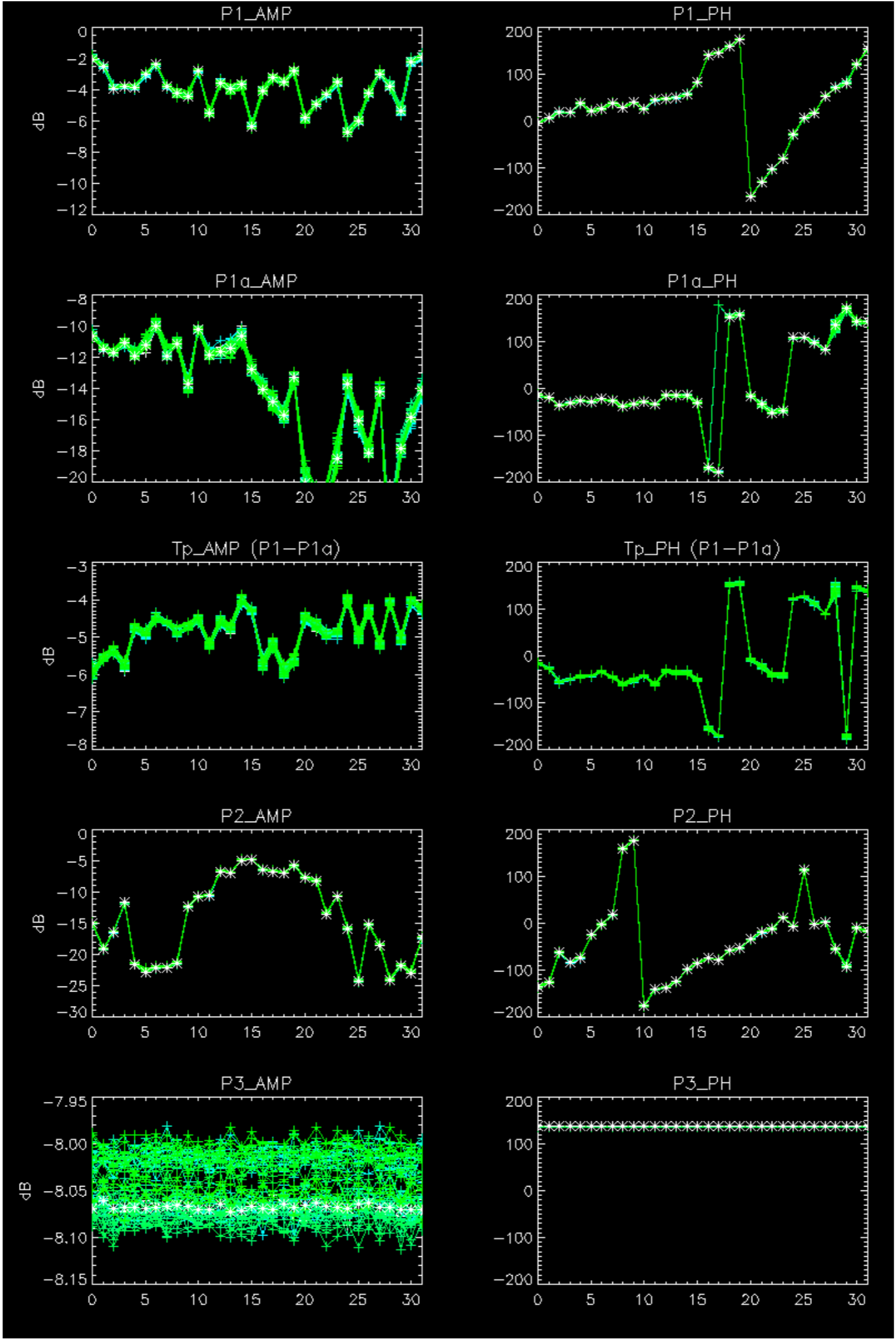
Cal pulses for WVS IS2

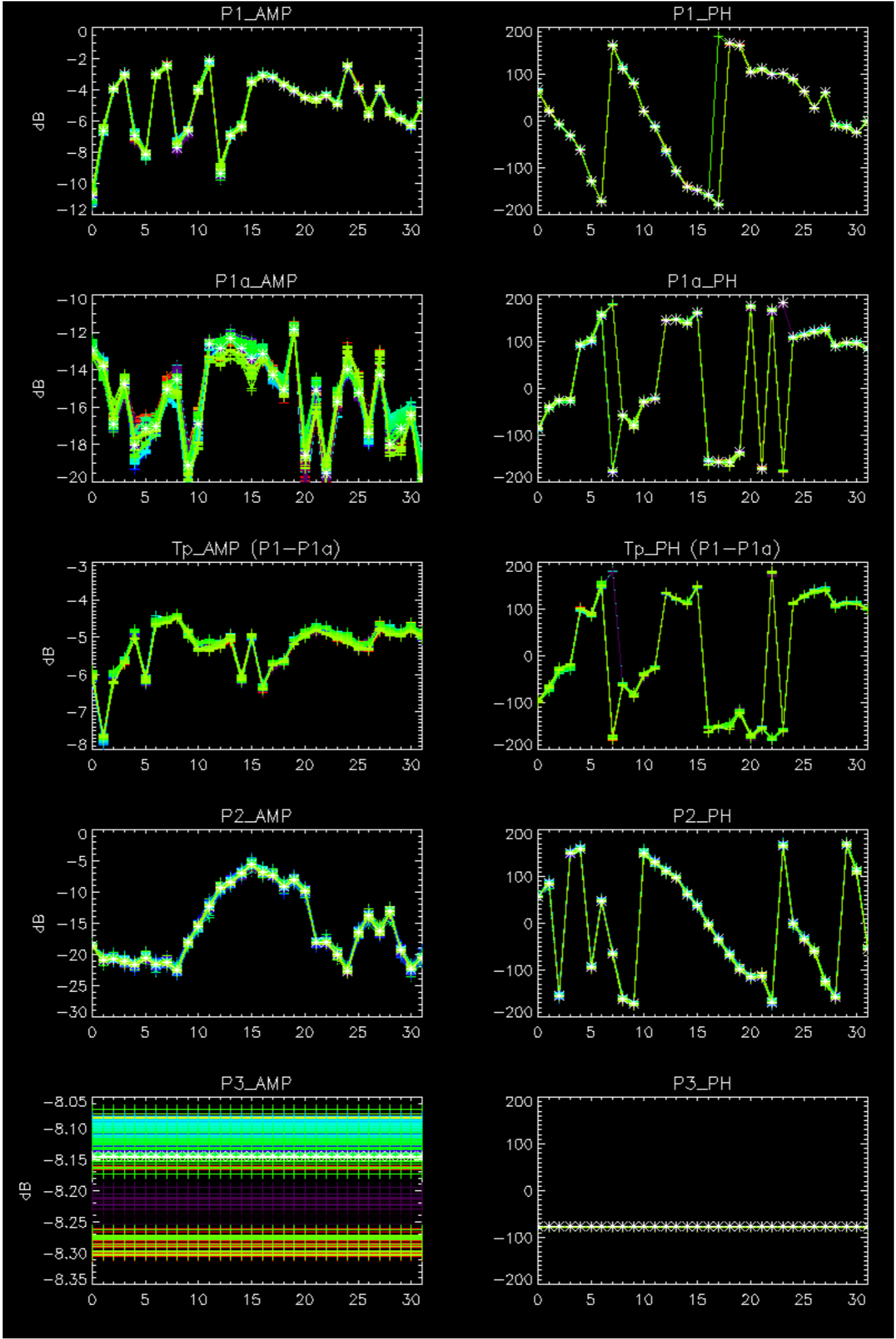


No anomalies observed on available browse products



No anomalies observed.

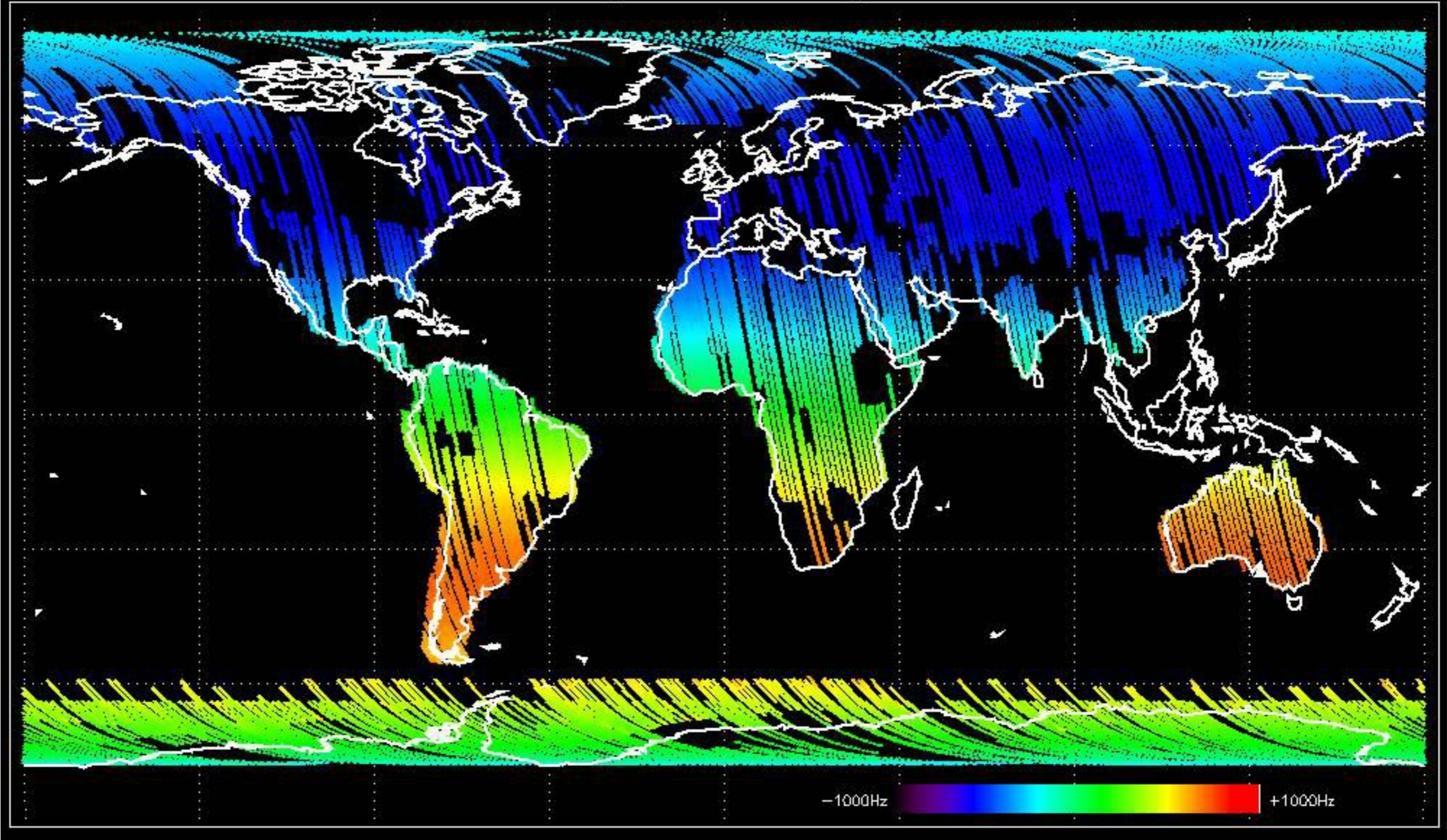




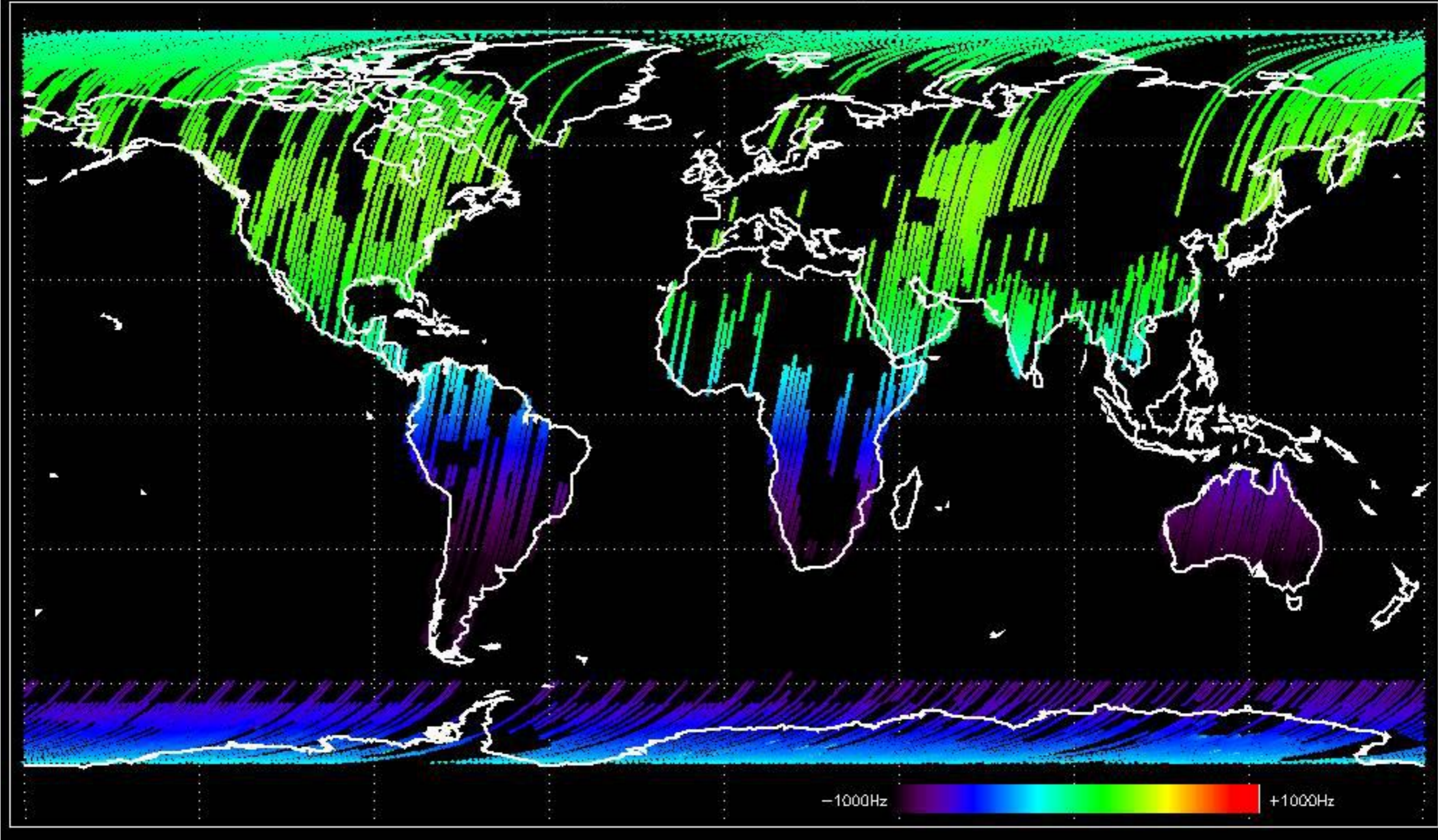
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



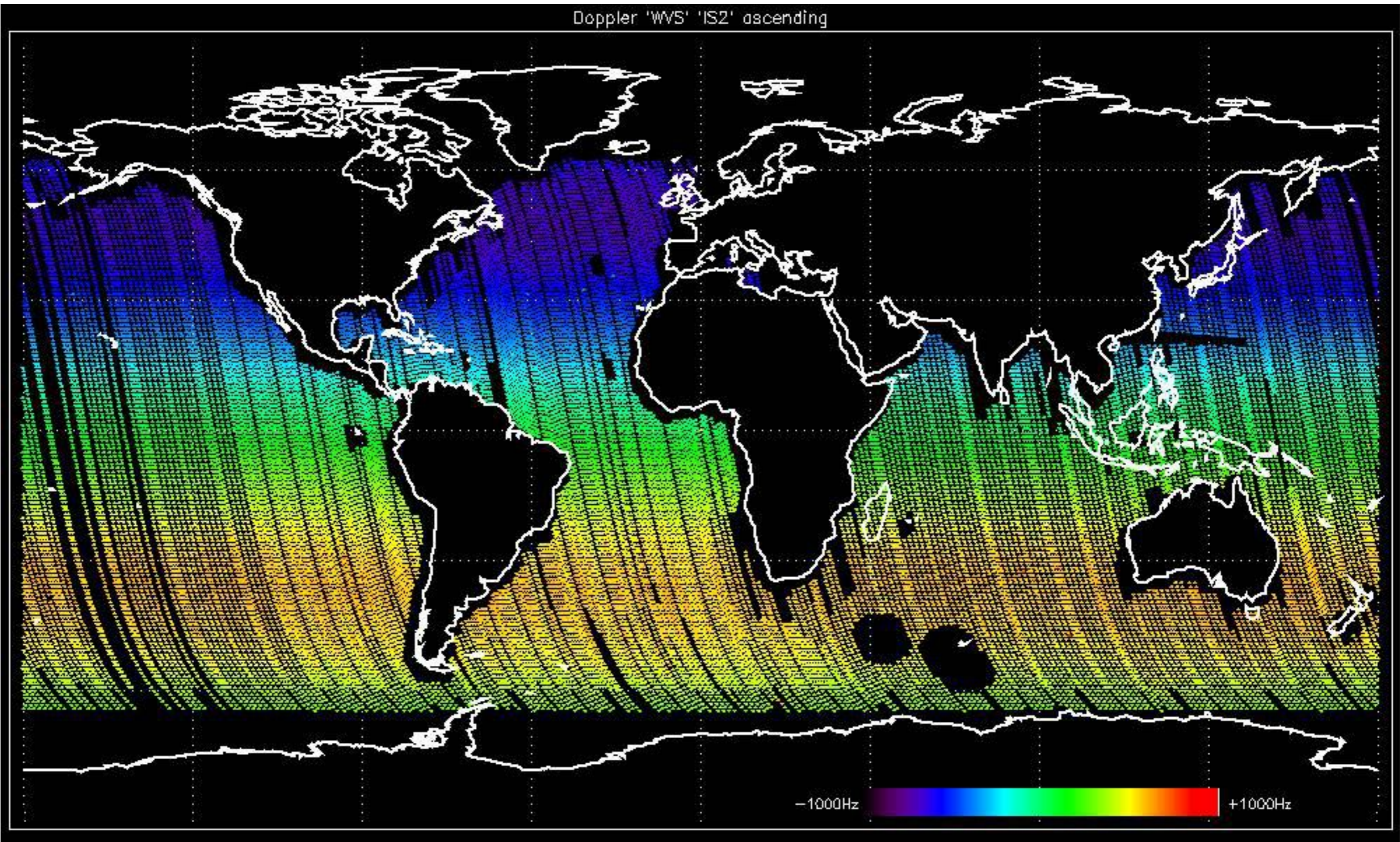
Doppler 'GM1' 'SS1' ascending



Doppler 'GM1' 'SS1' descending

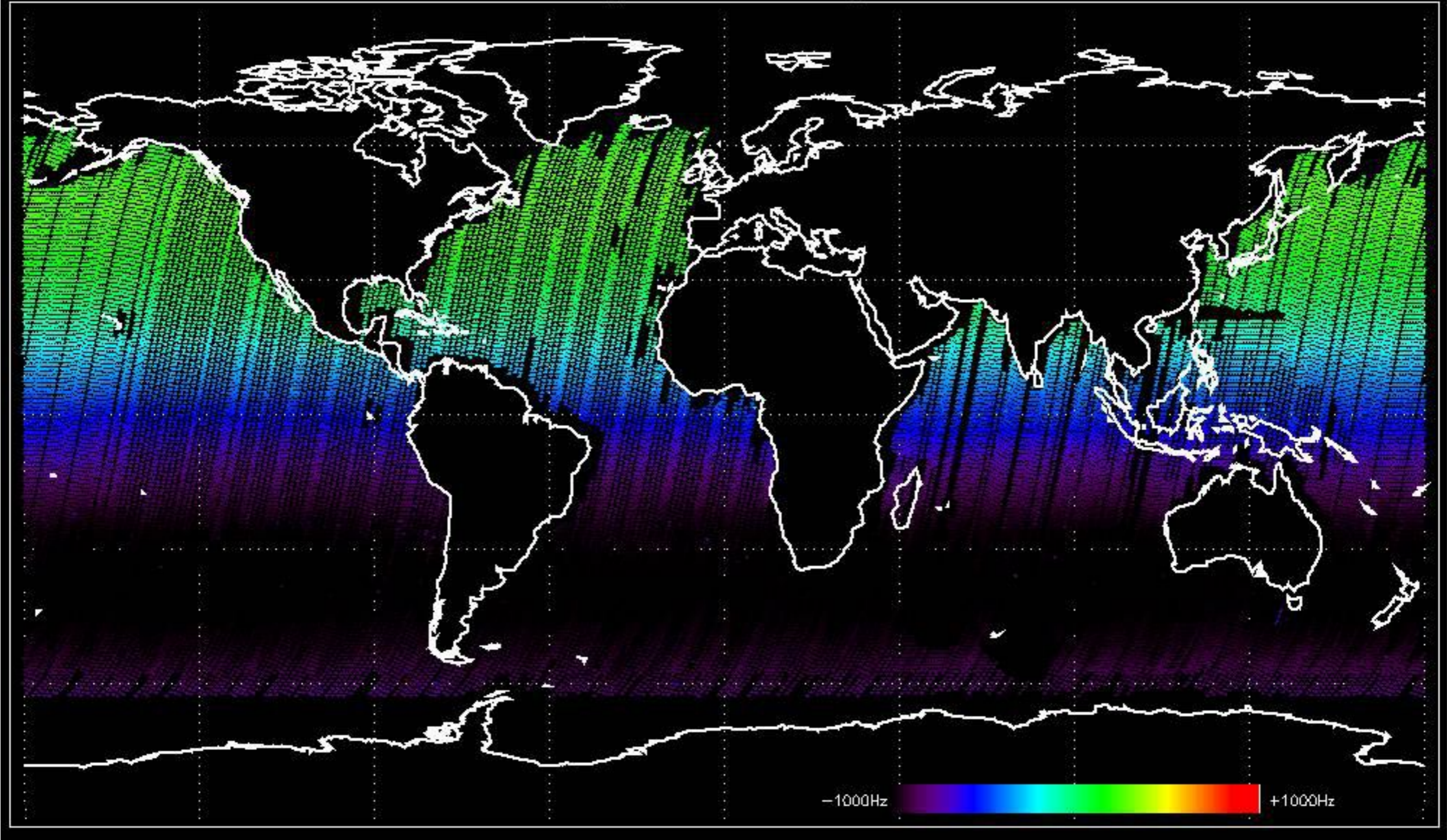


Doppler 'WVS' 'IS2' ascending

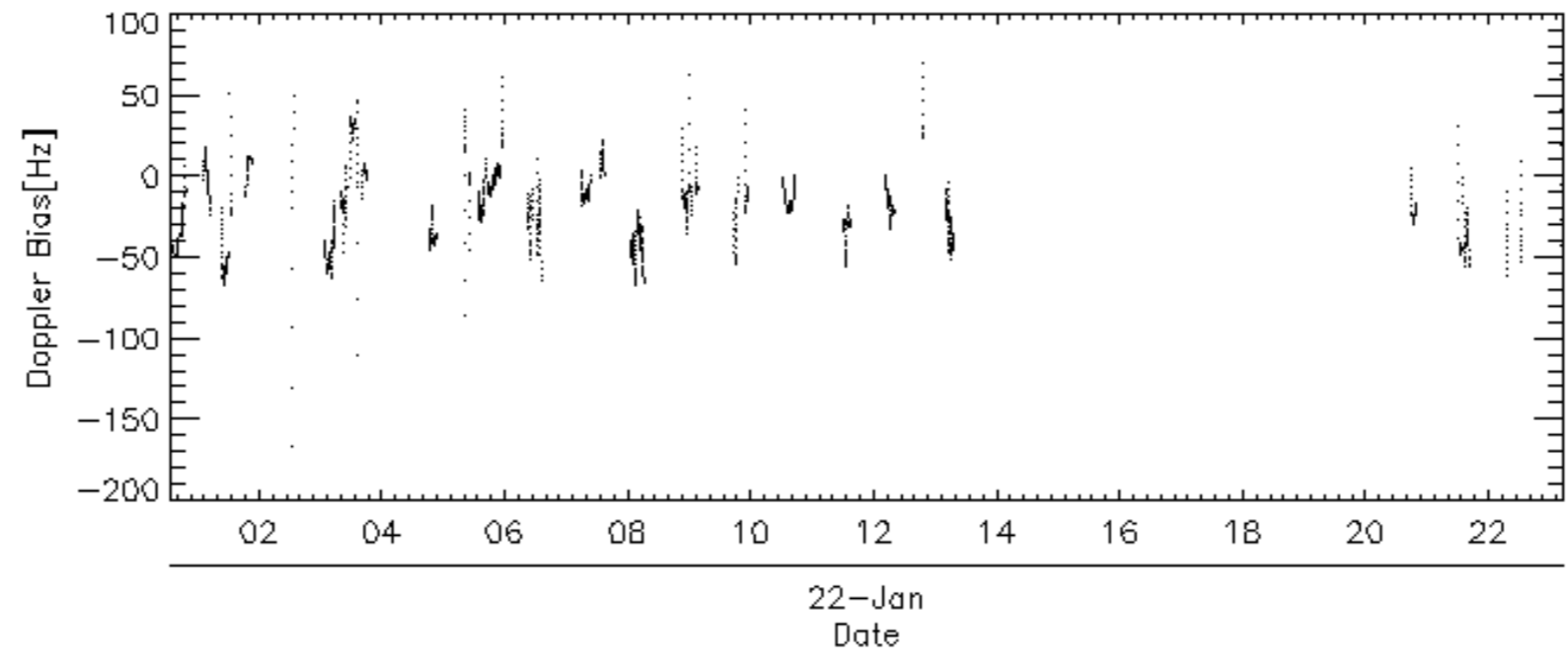
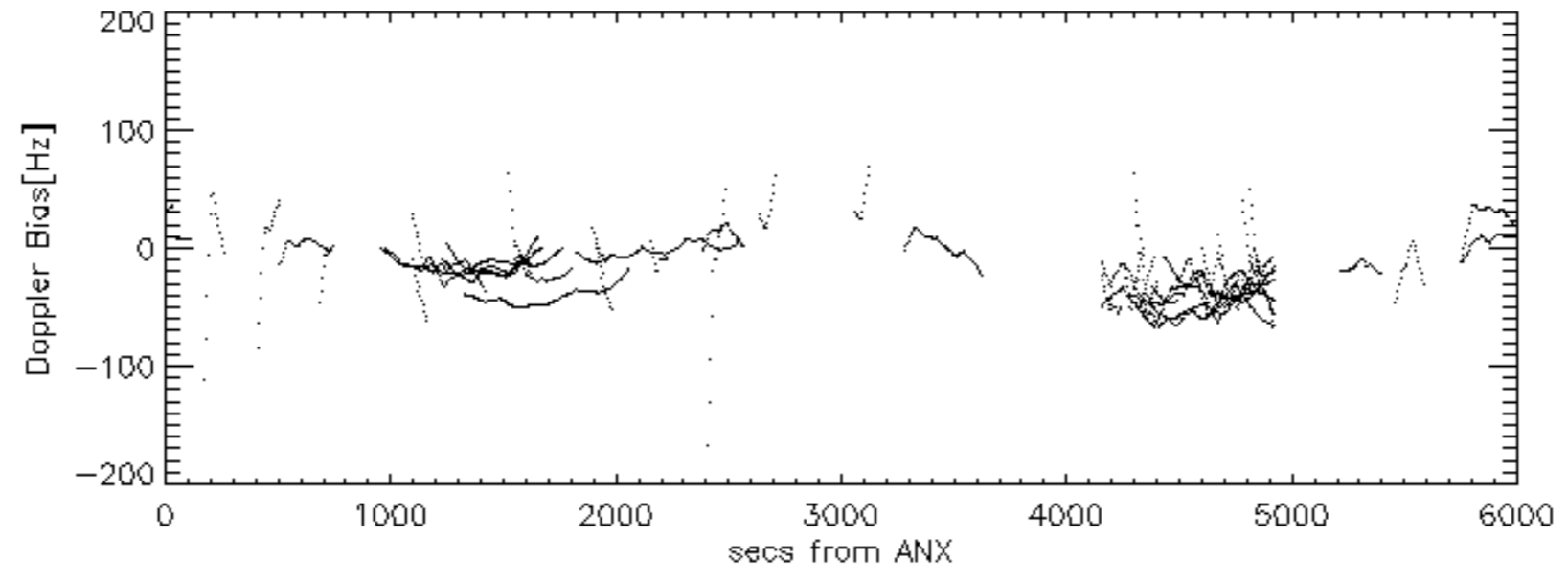
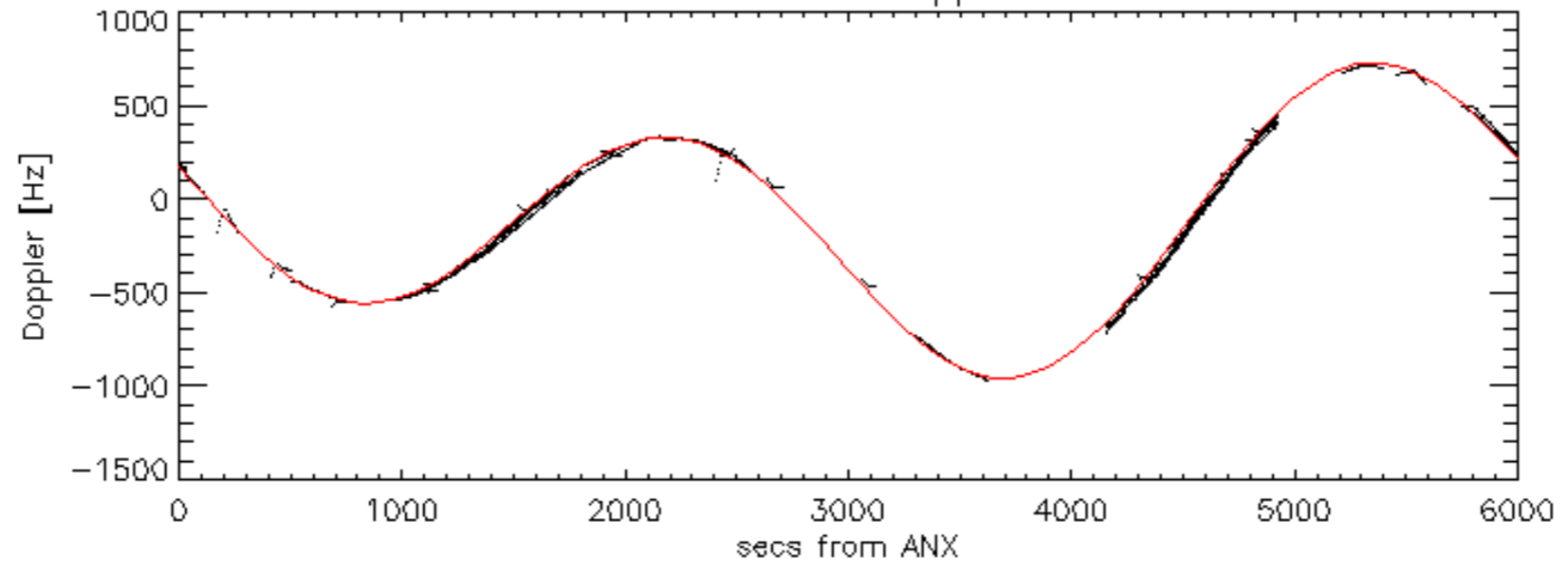


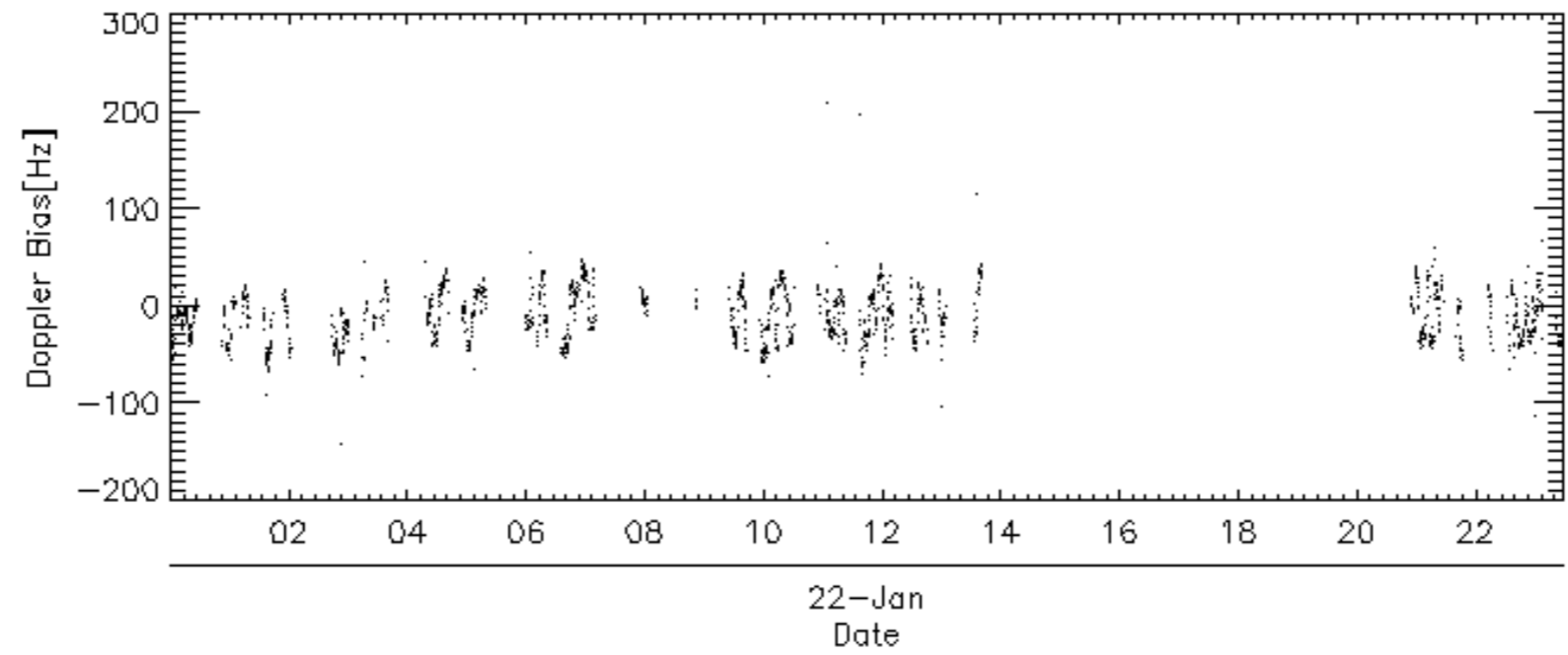
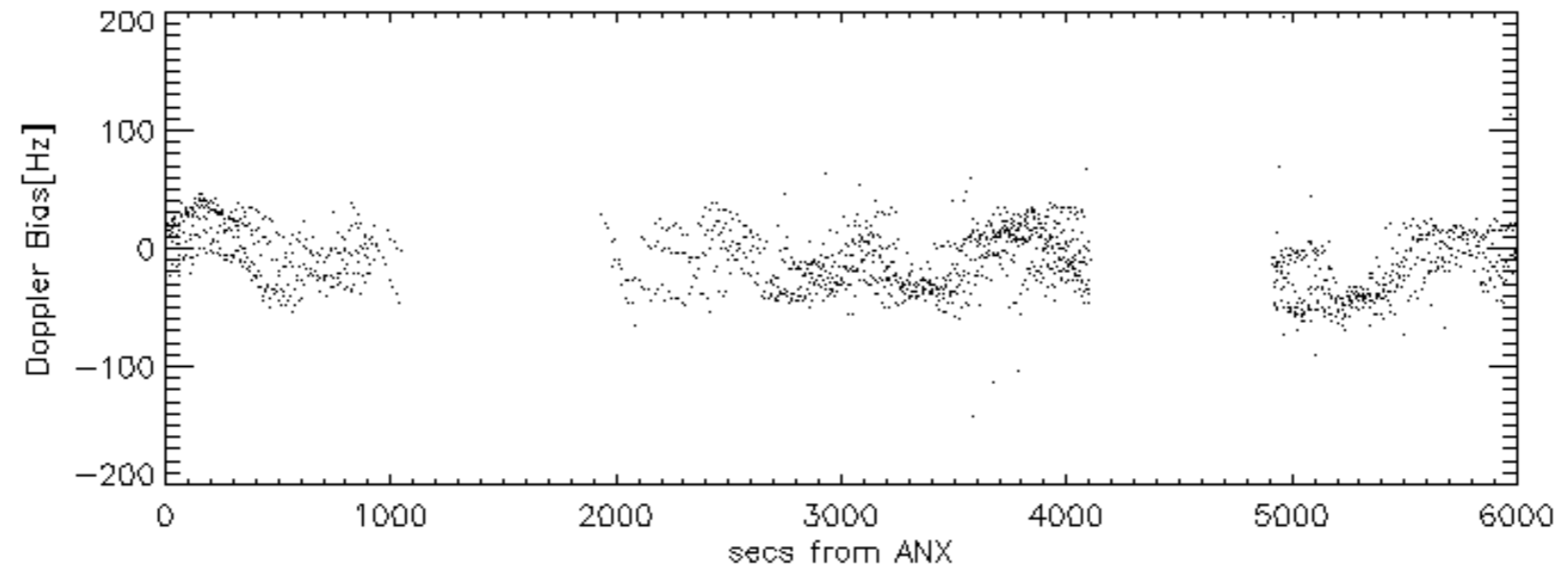
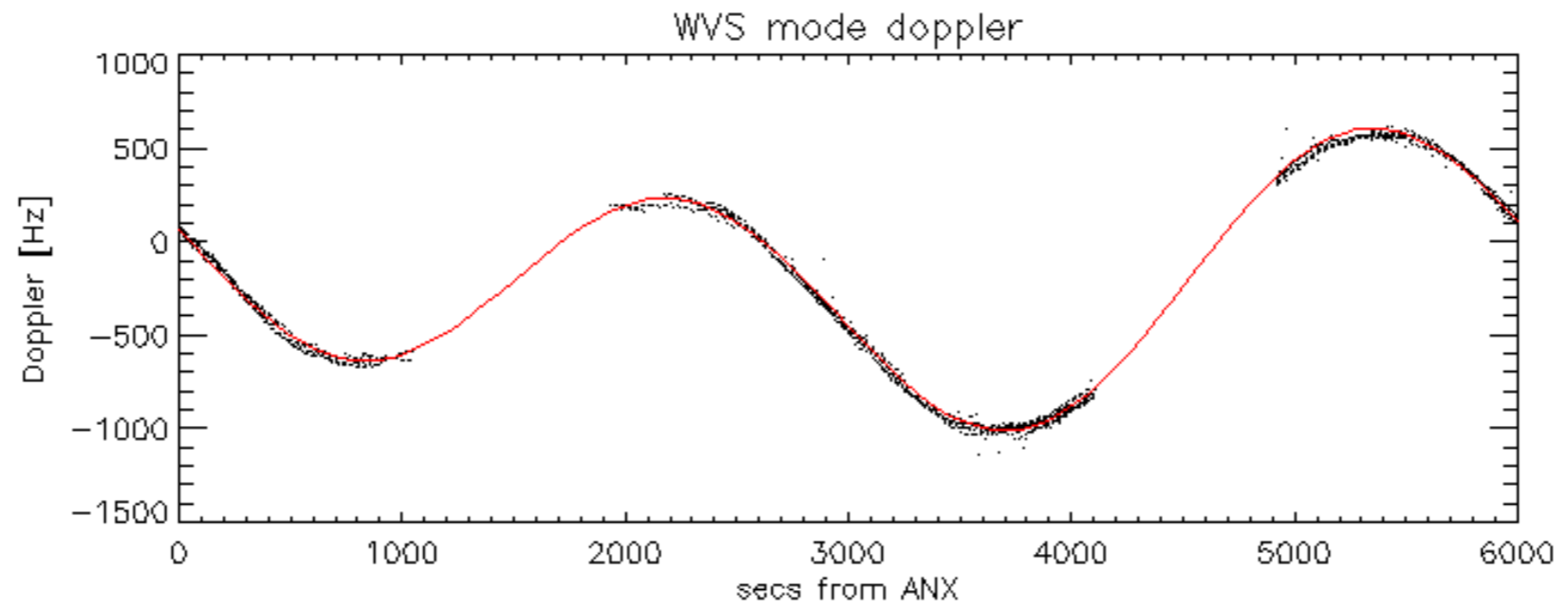


Doppler 'WVS' 'IS2' descending

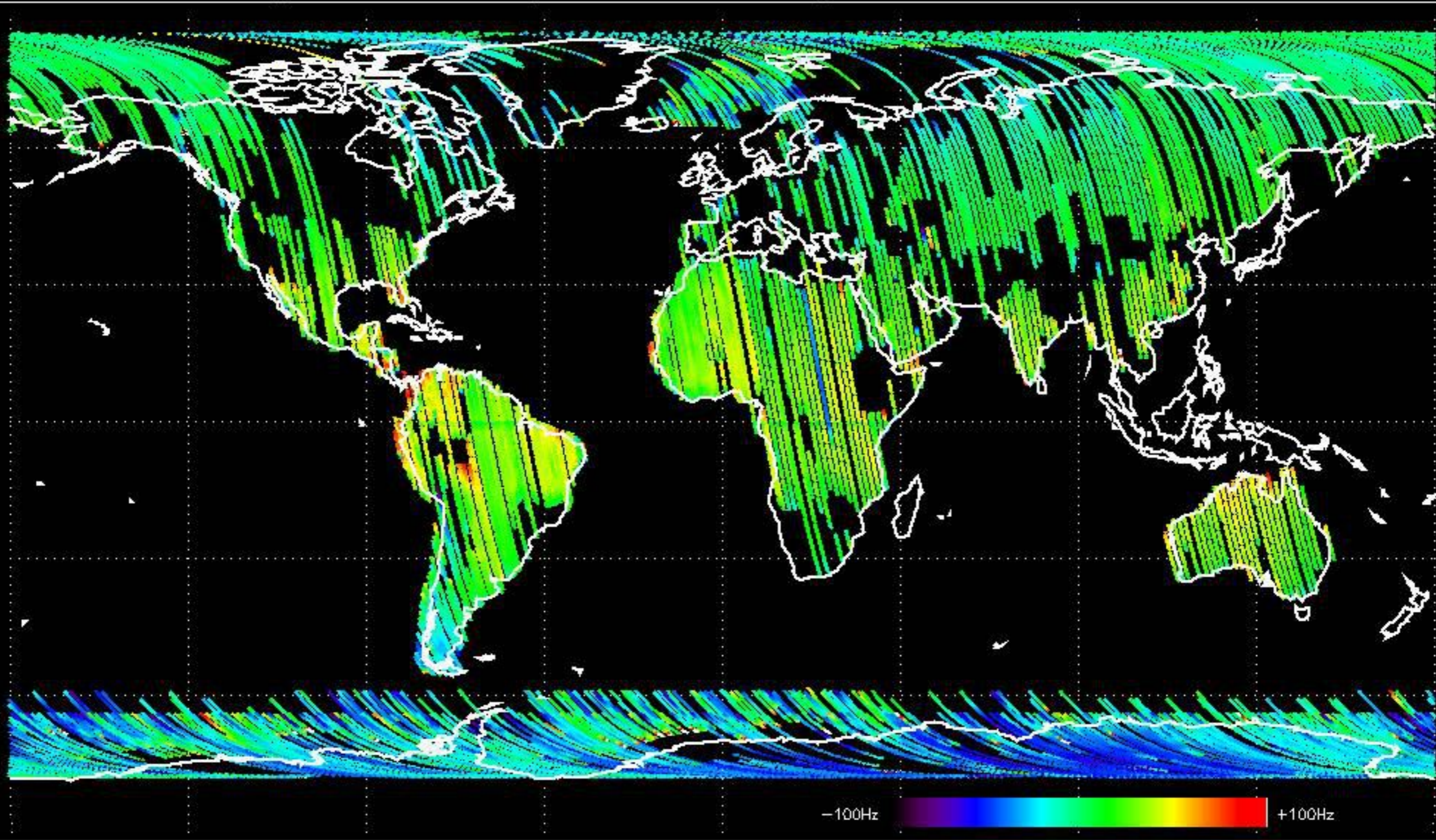


GM1 mode doppler

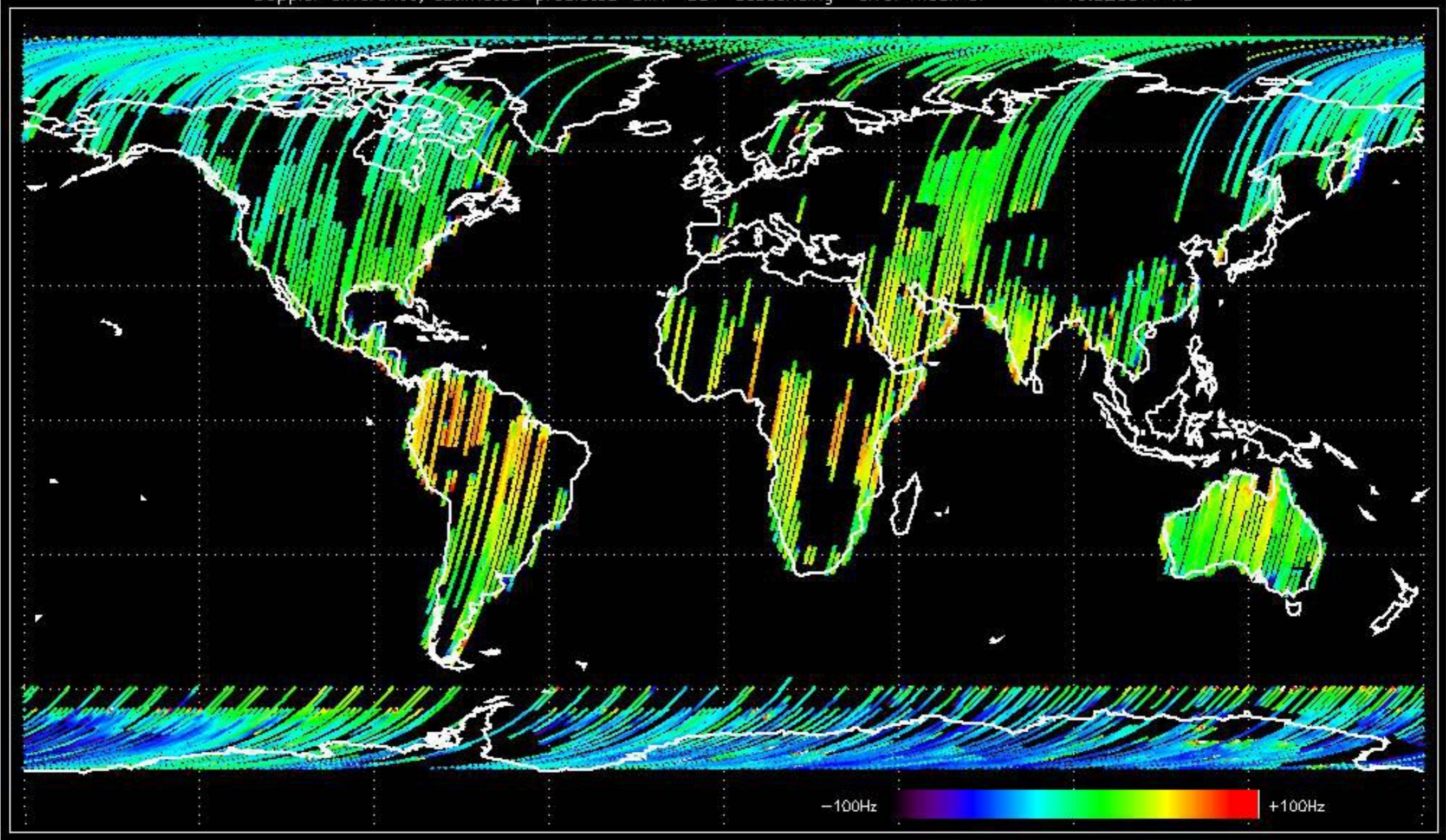




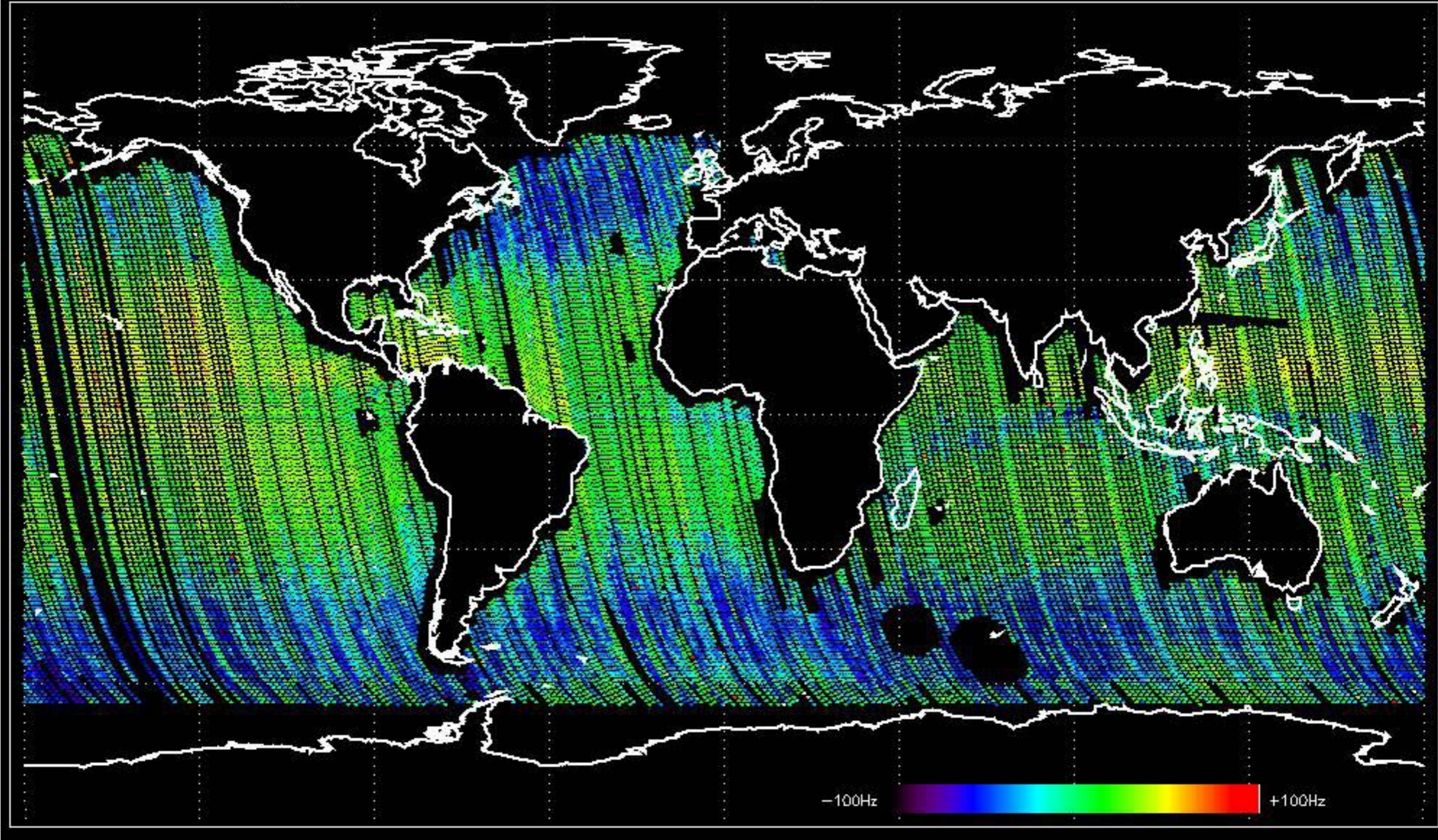
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.190835 Hz



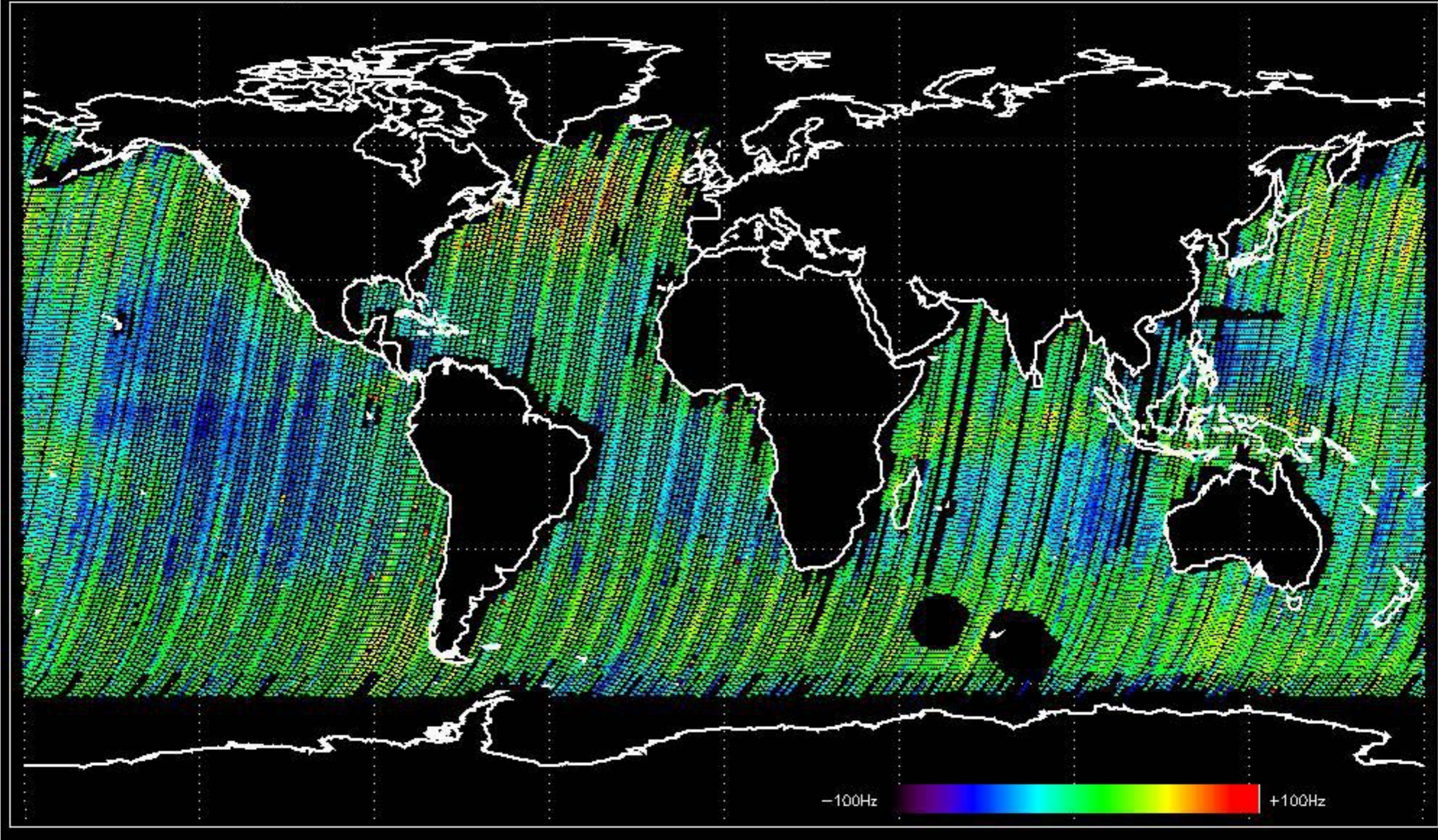
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.520377 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -12.011822 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -13.597419 Hz



No anomalies observed on available MS products:



No anomalies observed.

















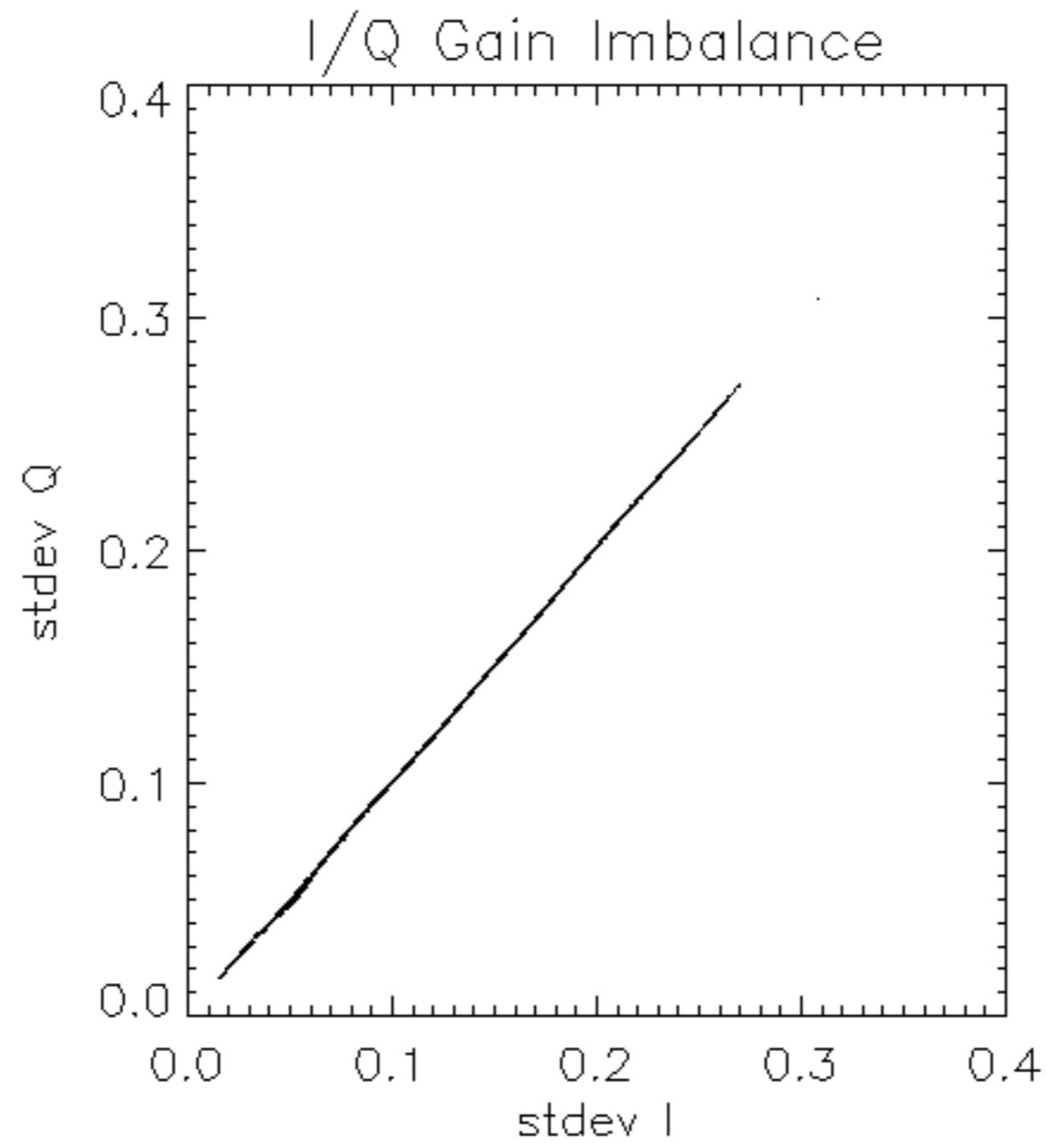


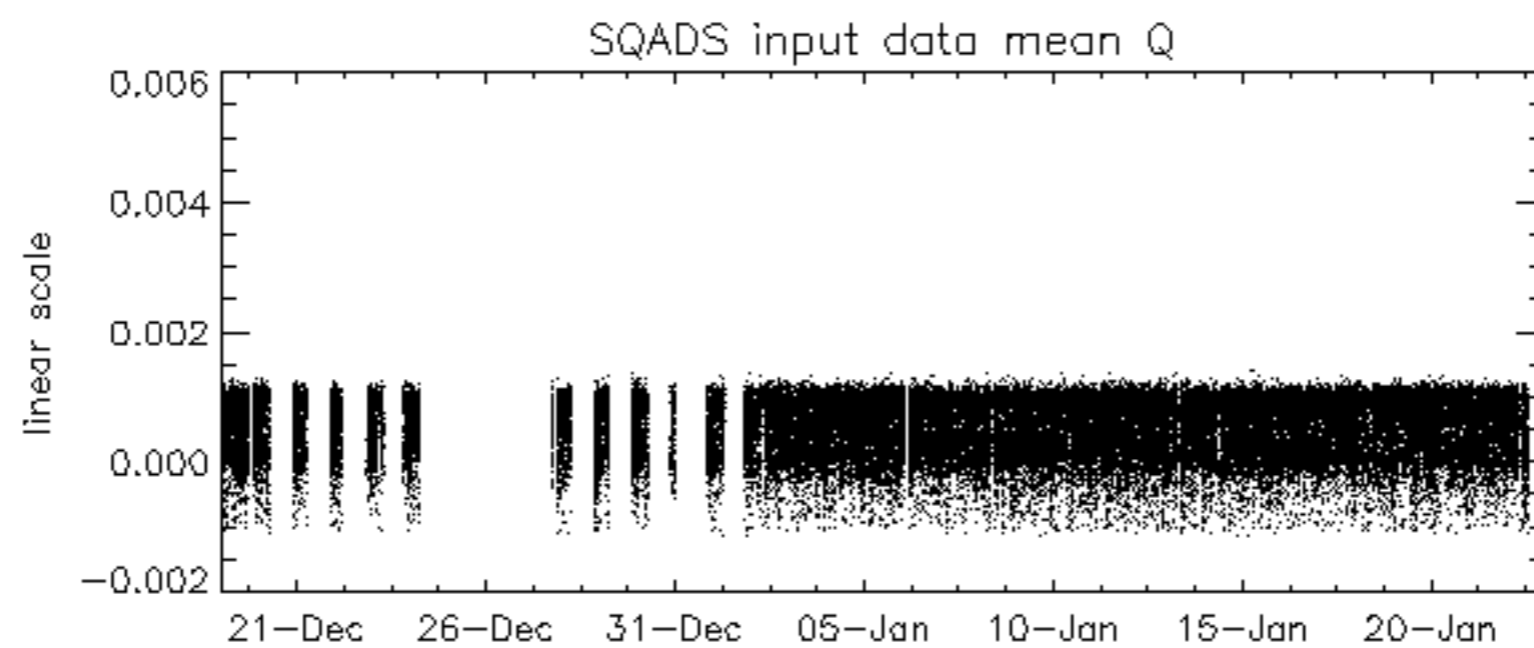
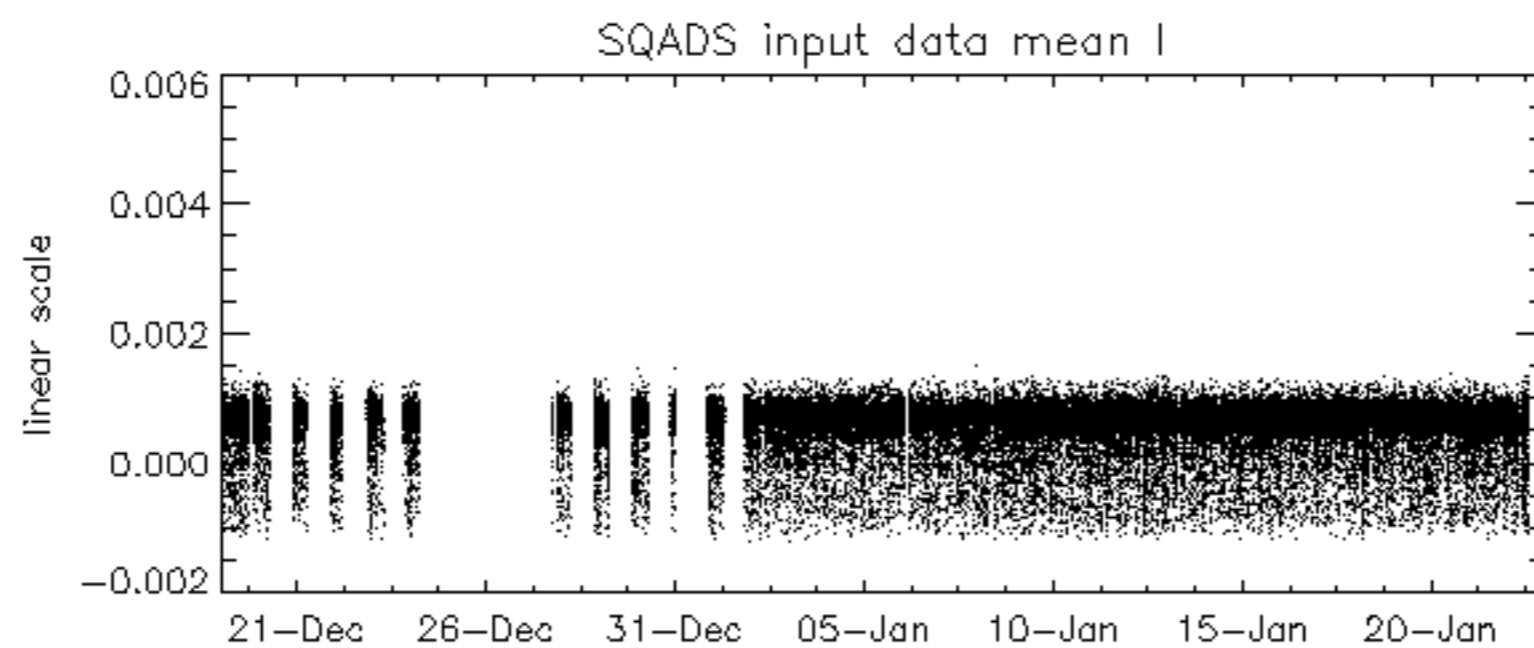
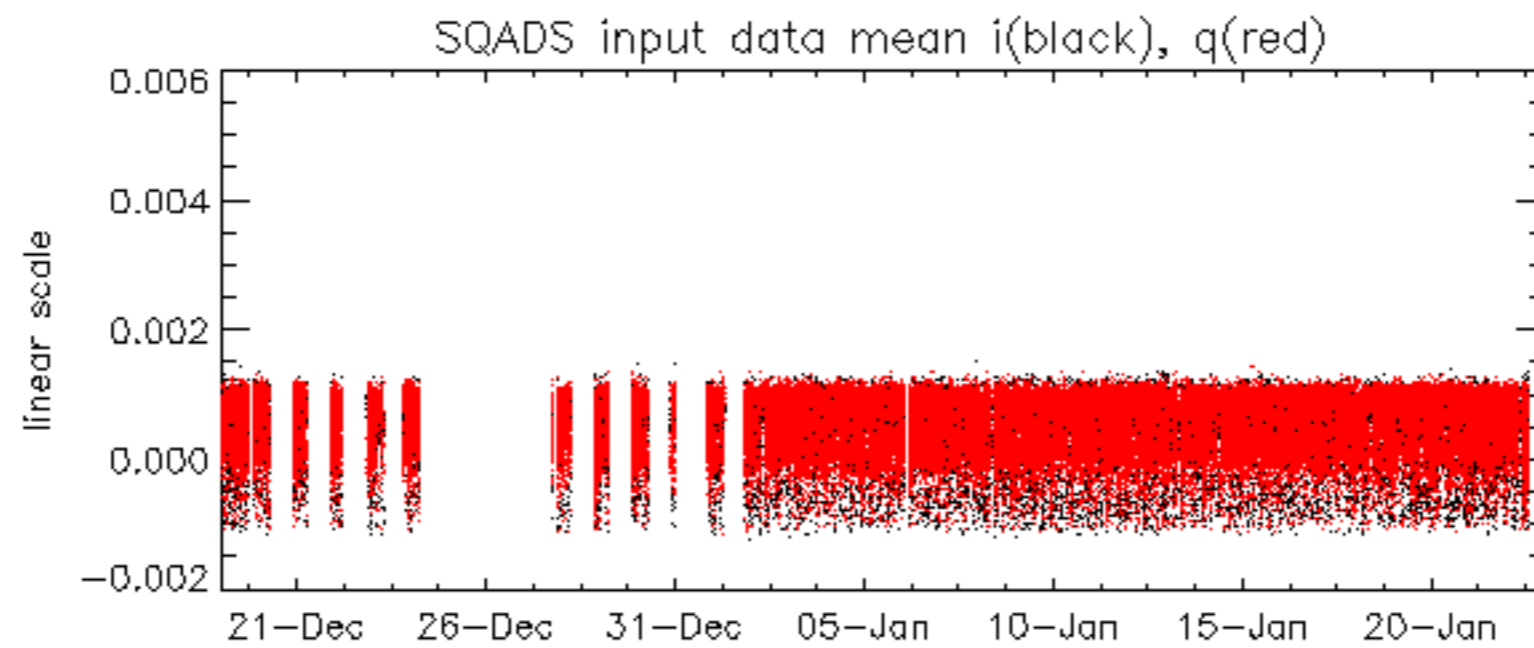


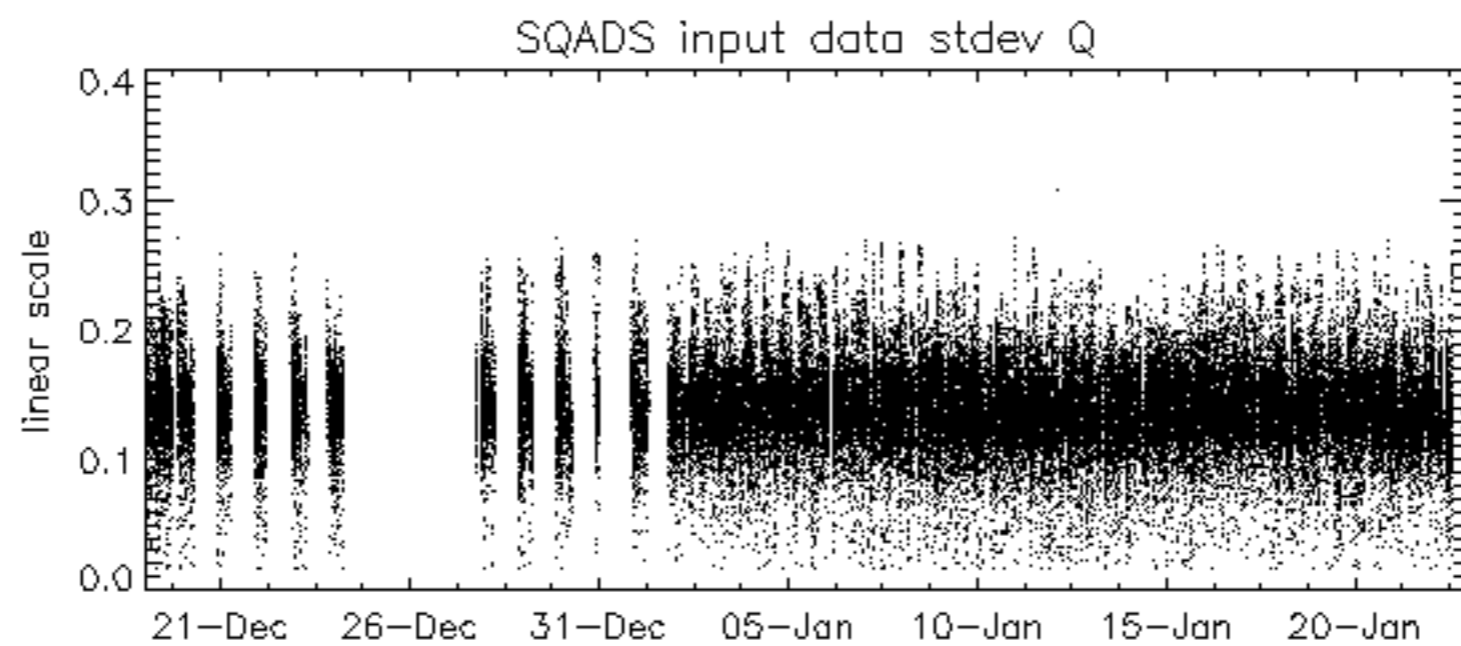
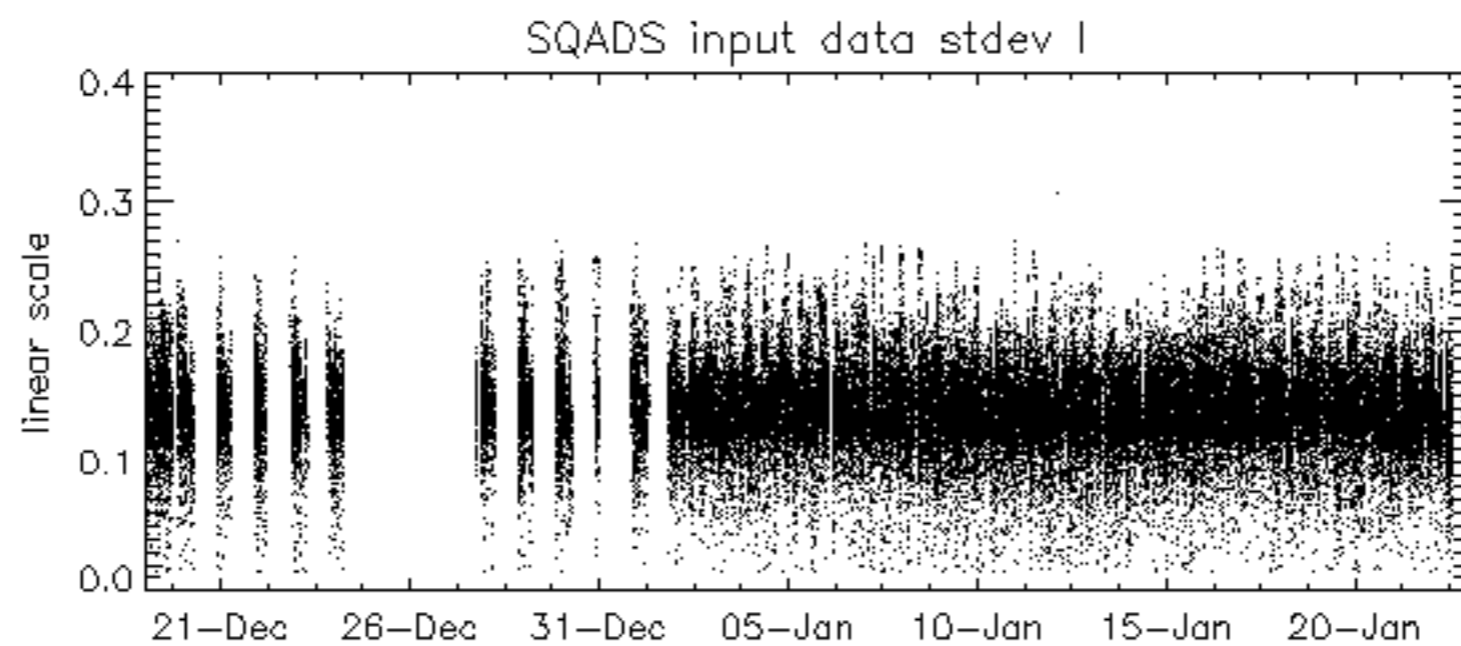
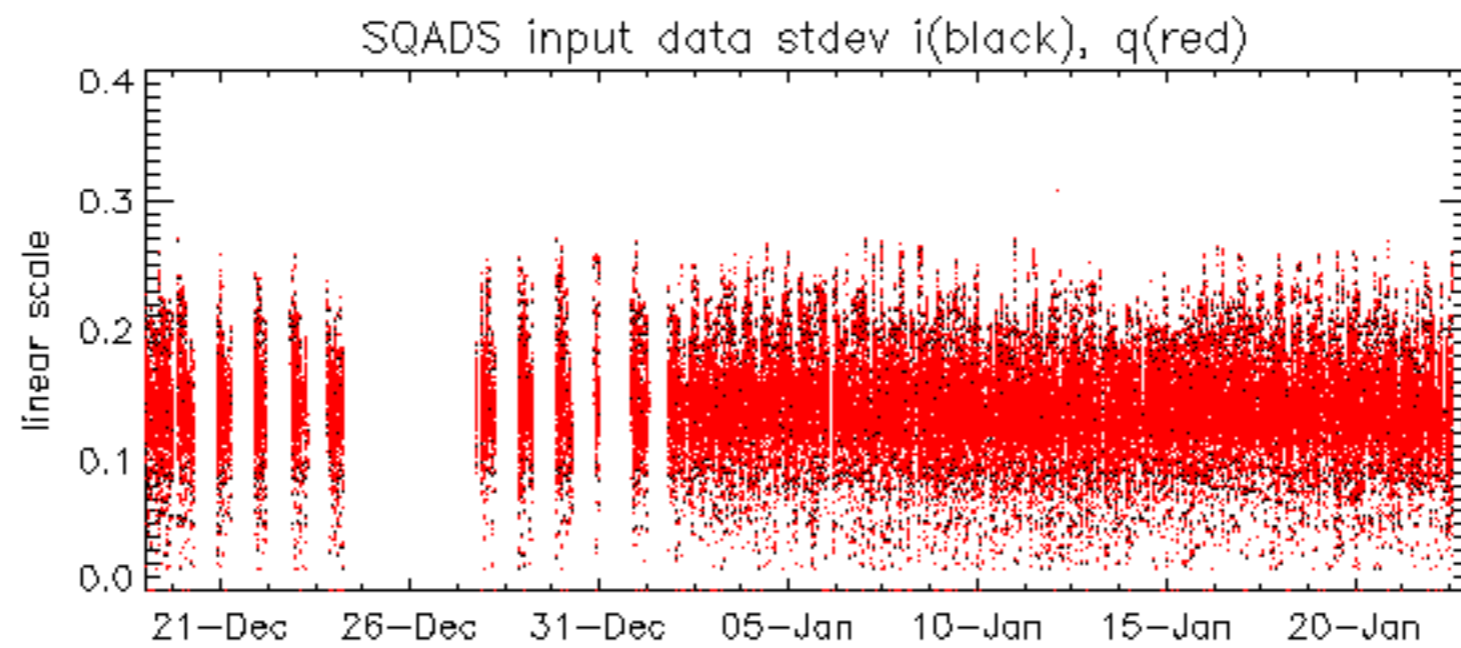






















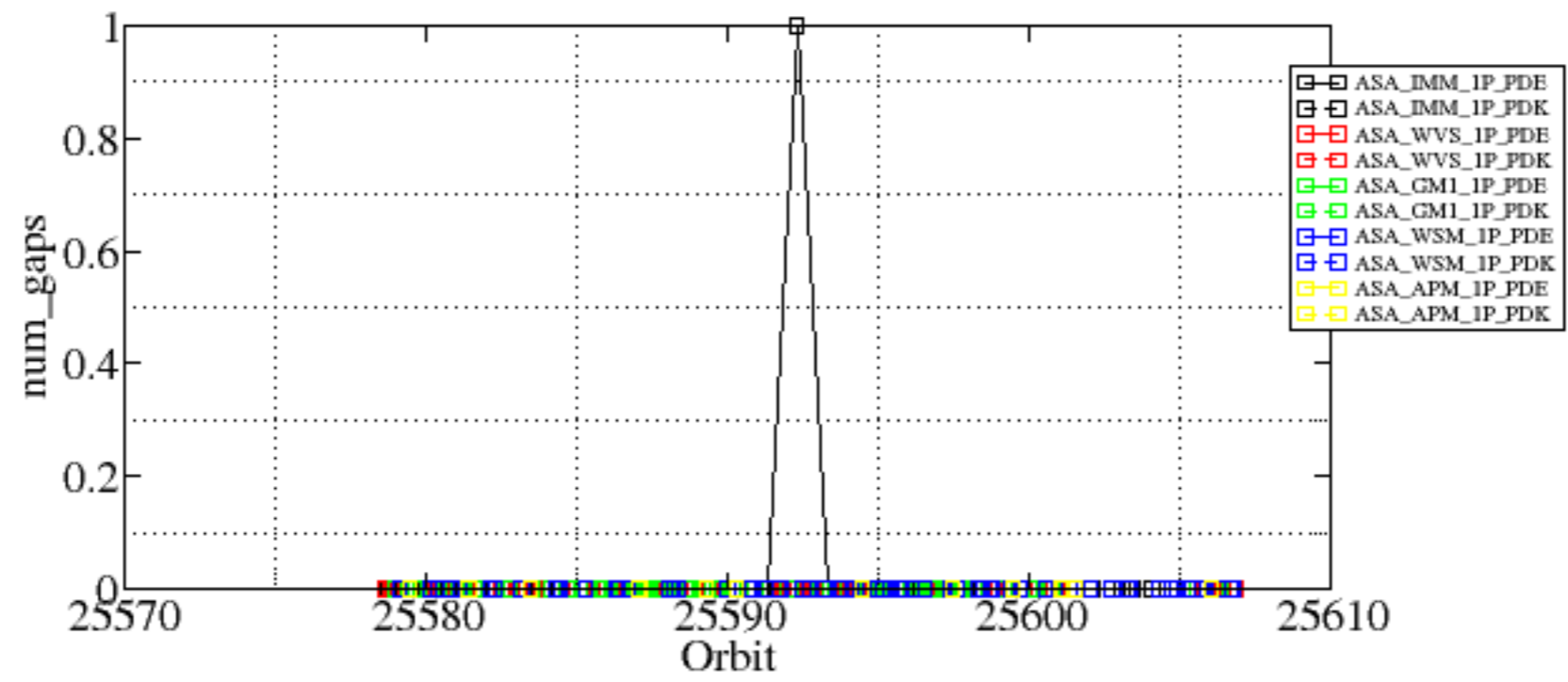




Summary of analysis for the last 3 days 2007012[123]

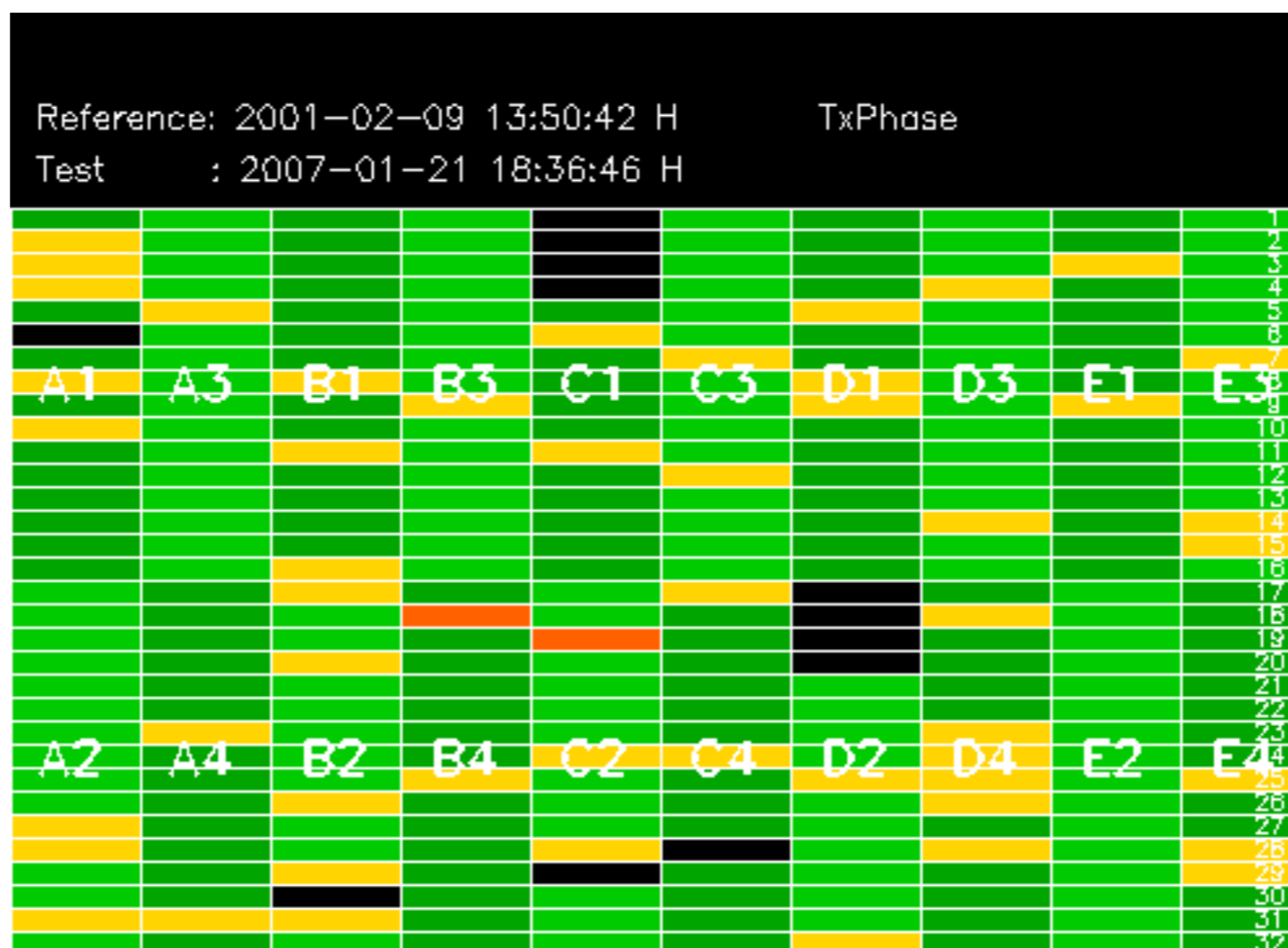
The assumption is taken that the SQADS num\_gaps and num\_missing\_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_IMM_1PNPDE20070121_230117_000002812054_00488_25592_6348.N1	1	17
ASA_GM1_1PNPDK20070121_151713_000004412054_00483_25587_7539.N1	0	8
ASA_GM1_1PNPDK20070121_151713_000004412054_00483_25587_9075.N1	0	8
ASA_WSM_1PNPDE20070122_105323_00000672054_00495_25599_0010.N1	0	1











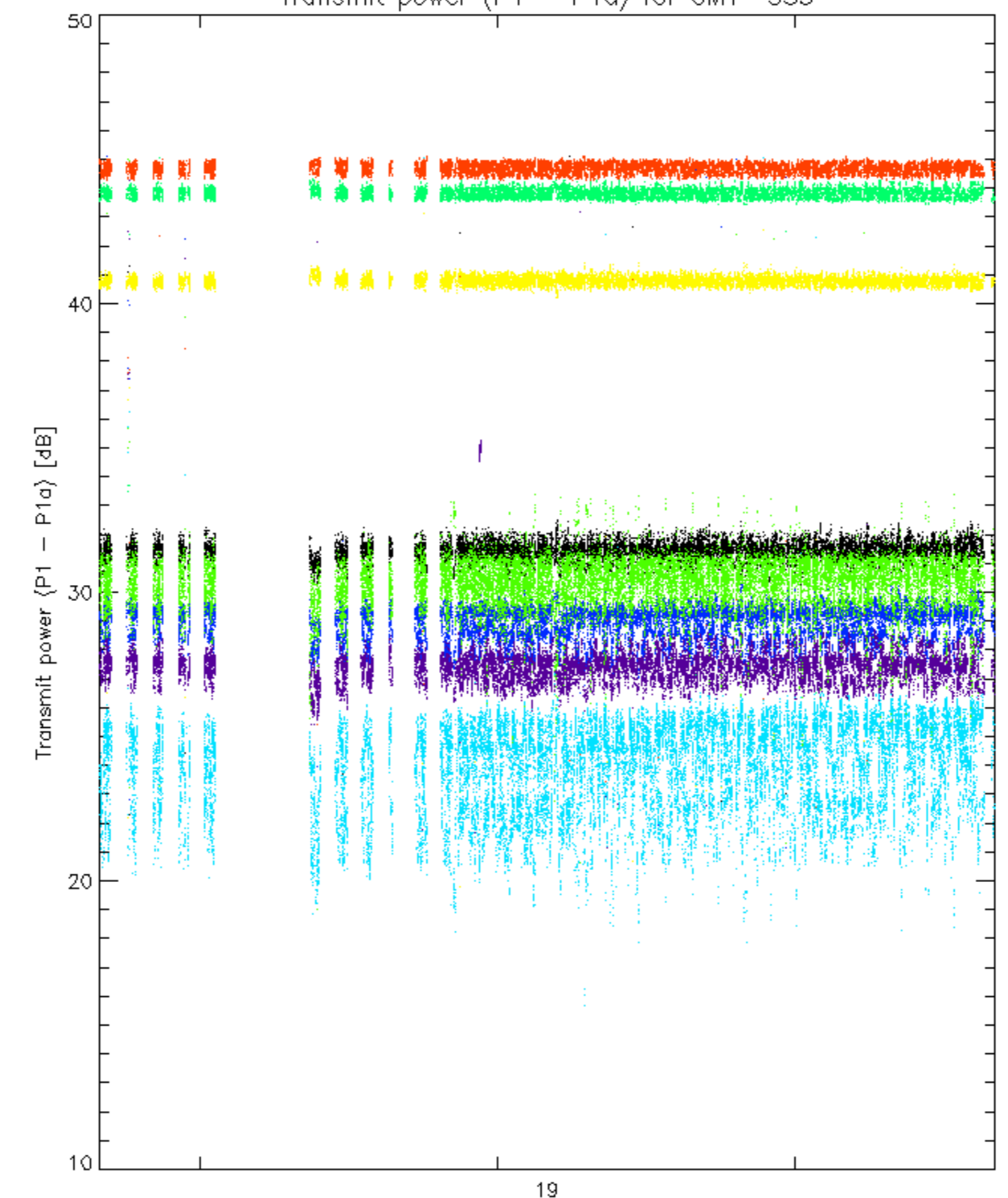






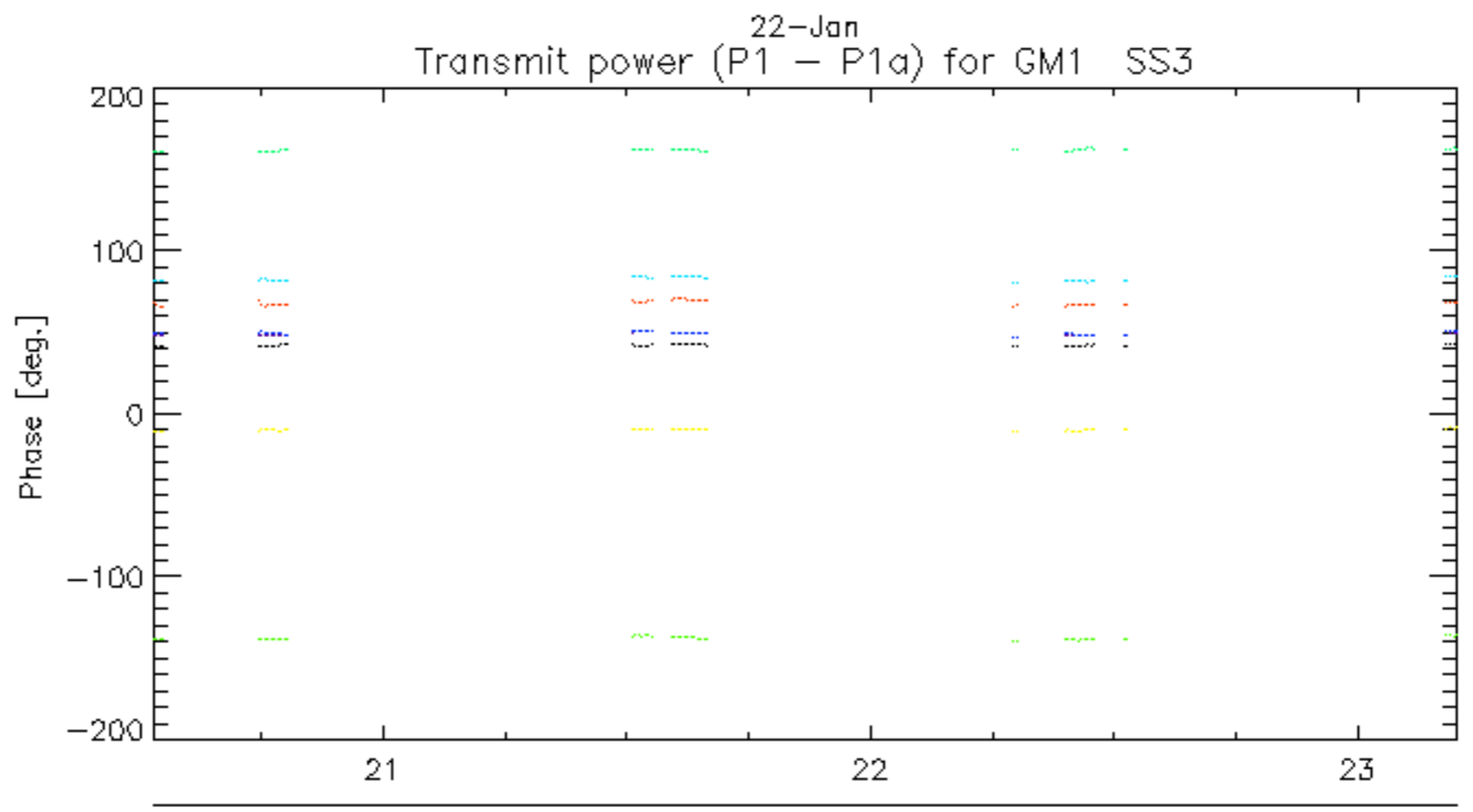
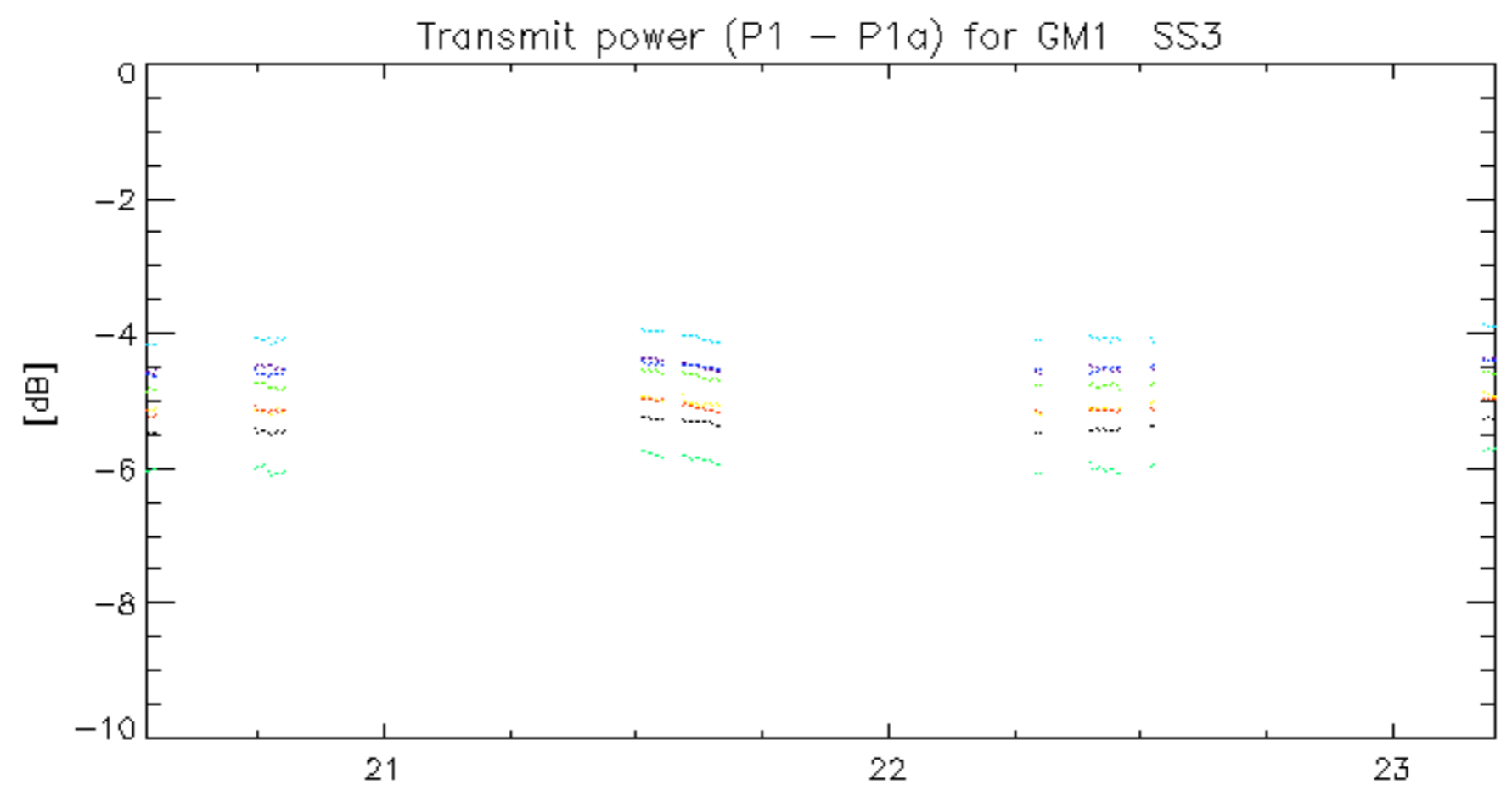


Transmit power (P1 - P1a) for GM1 SS3



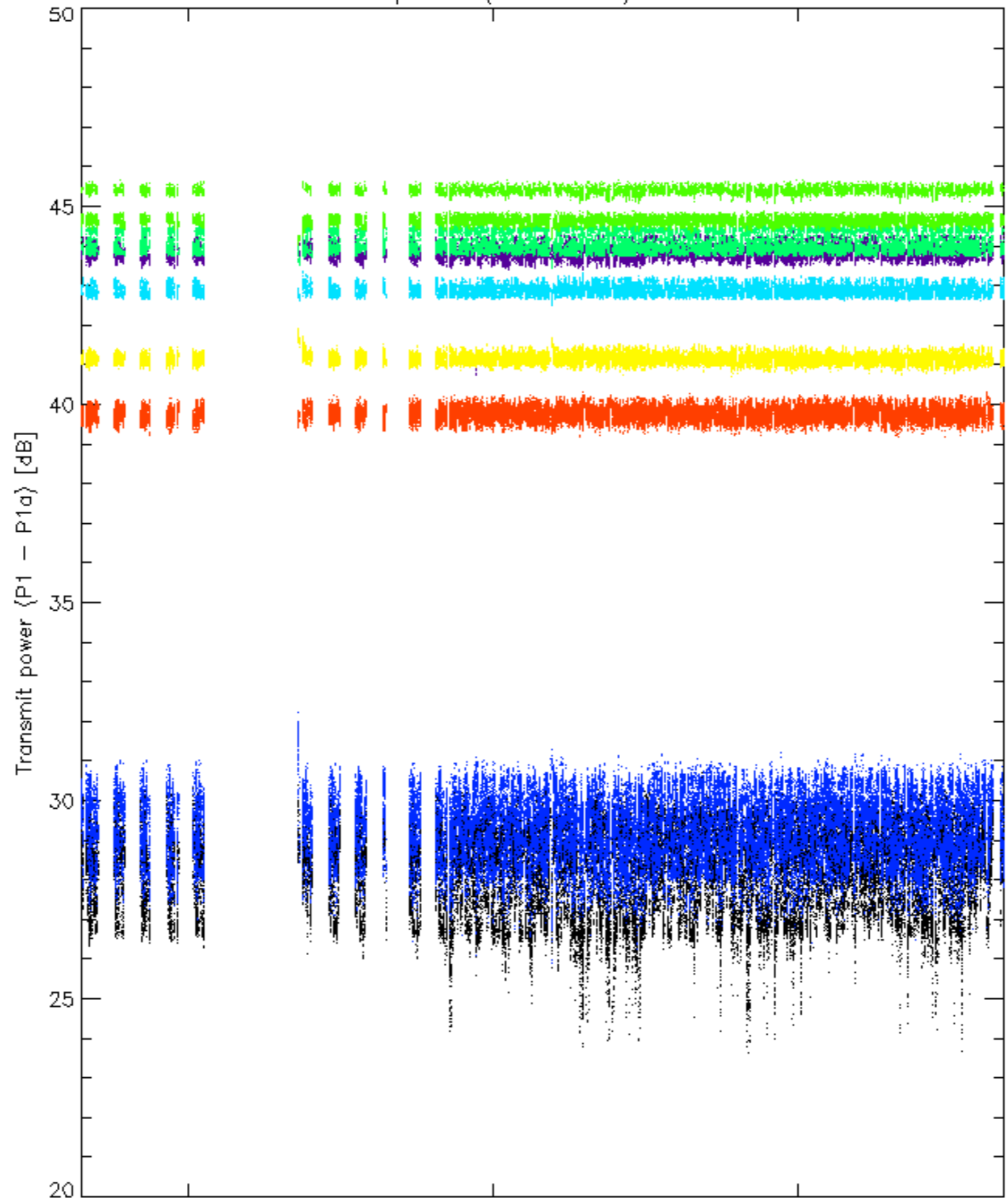
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30



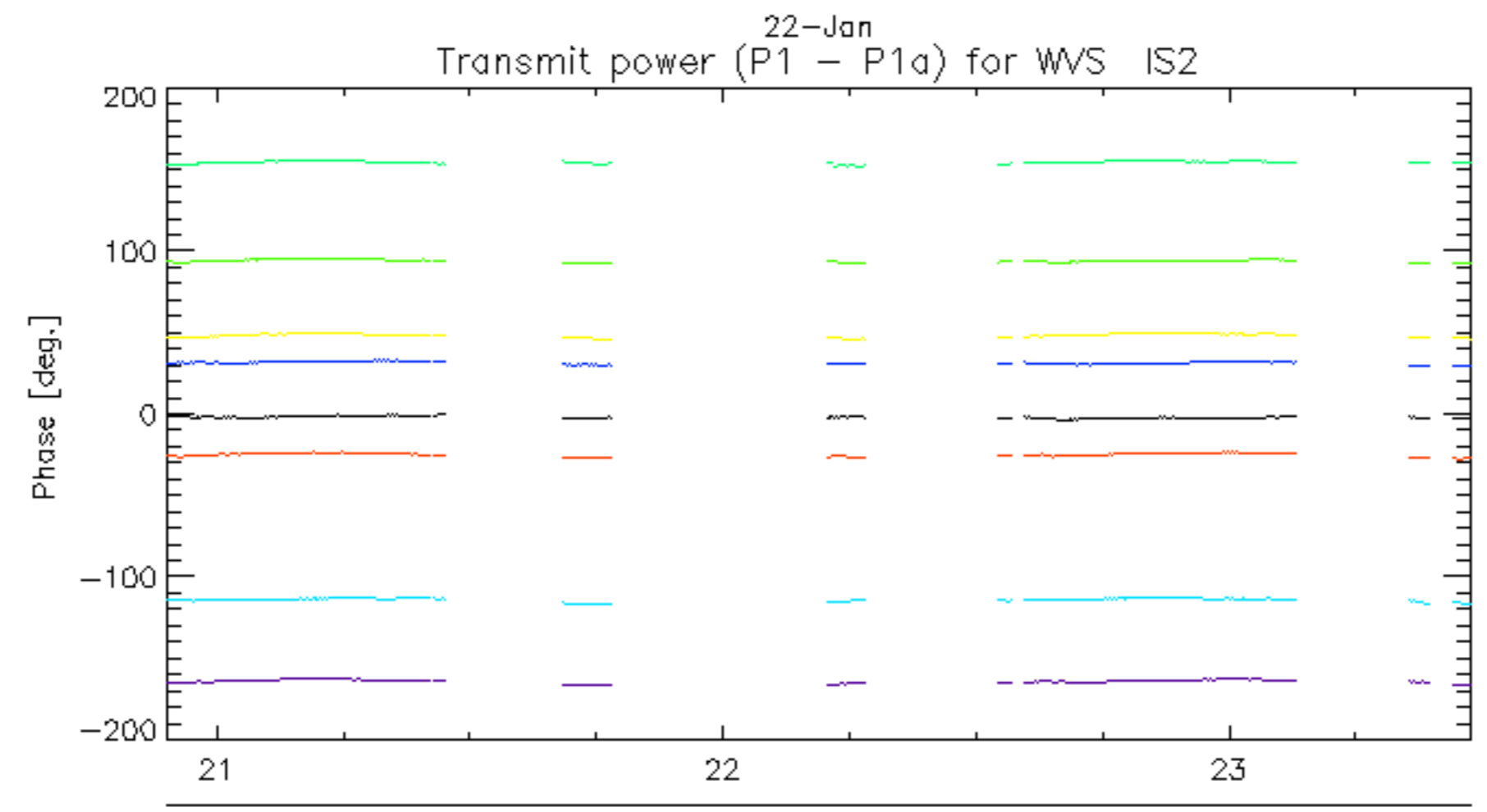
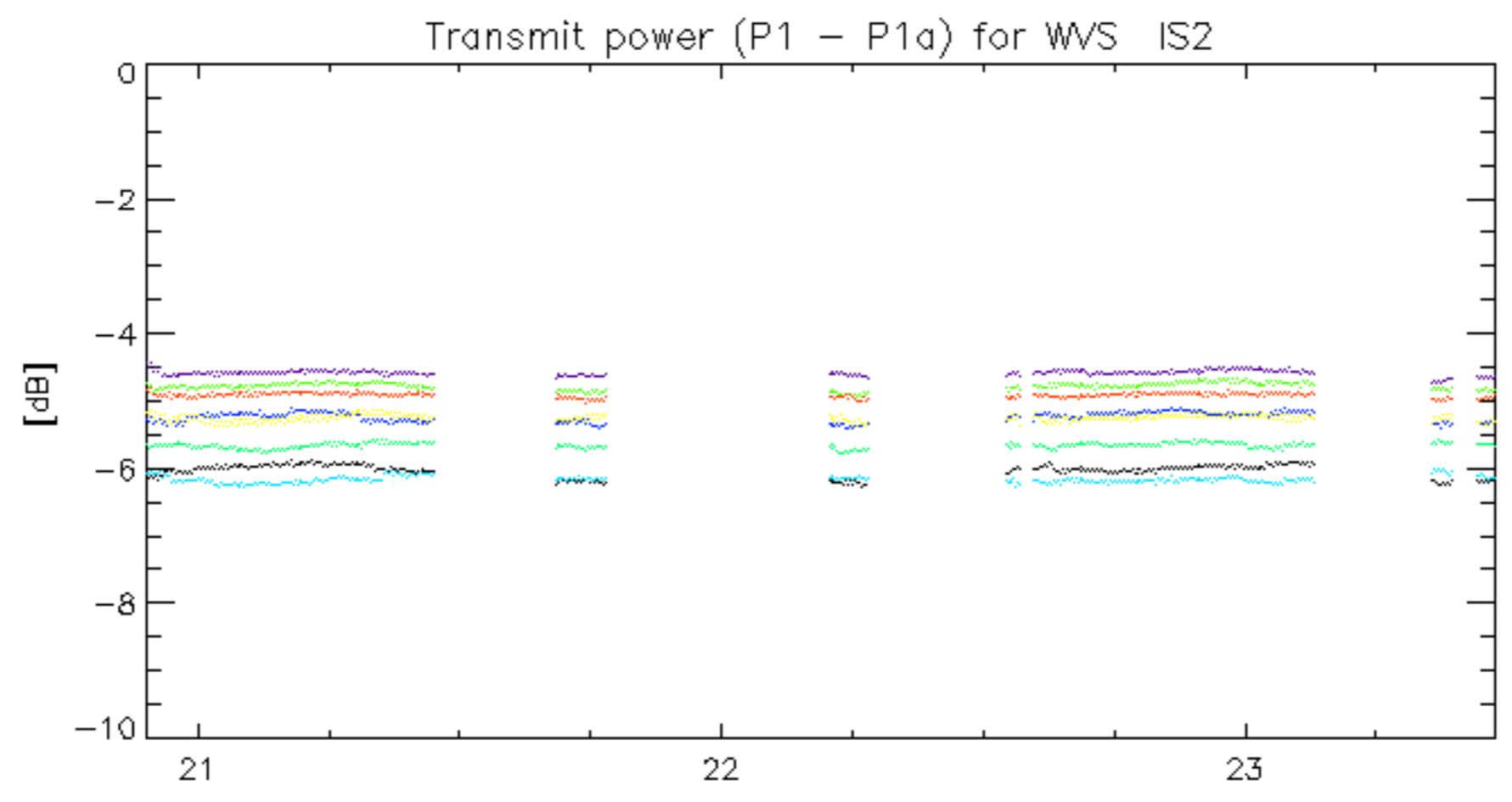


rows: **3** **7** **11** **15** **19** **22** **26** **30**

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.