

# PRELIMINARY REPORT OF 061231

last update on Sun Dec 31 16:19:19 GMT 2006

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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 2006-12-30 00:00:00 to 2006-12-31 16:19:19

PDHS-K
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AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
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PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	24	31	23	7	55
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	24	31	23	7	55
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	24	31	23	7	55
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	24	31	23	7	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	20061228 074716
H	20061229 071539

### MSM in V/V polarisation

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

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## 4 - Internal calibration Results

No anomalies observed.

### 4.1 - Daily statistics

#### 4.1.1 - Evolution for WVS

##### Evolution of cal pulses for WVS

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#### 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

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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	-3.959768	0.008086	-0.021657
7	P1	-3.135957	0.025092	0.043171
11	P1	-4.116781	0.026619	0.011936
15	P1	-6.324702	0.016879	-0.019911
19	P1	-3.658223	0.005700	-0.063431
22	P1	-4.659537	0.014197	-0.030595
26	P1	-3.959615	0.009284	-0.021784
30	P1	-5.897610	0.009492	-0.049017
3	P1	-16.541176	0.260578	-0.113775
7	P1	-17.283043	0.194217	0.099320
11	P1	-17.185873	0.488596	0.018419
15	P1	-13.041209	0.138993	0.084662
19	P1	-15.001960	0.094840	-0.088744
22	P1	-15.819014	0.548278	0.101591
26	P1	-15.080488	0.189445	0.039097
30	P1	-17.508022	0.477833	0.115331

**P2 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.795321	0.095115	0.008228
7	P2	-21.714245	0.093871	0.062946
11	P2	-15.566695	0.102200	0.008629
15	P2	-7.106699	0.109514	0.016334
19	P2	-9.187308	0.105856	0.014991
22	P2	-18.226786	0.099268	0.026860
26	P2	-16.590403	0.112065	-0.037034
30	P2	-19.450817	0.089725	0.003872

**P3 Cyclic statistics**

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.237110	0.009128	0.000462
7	P3	-8.237110	0.009128	0.000462
11	P3	-8.237110	0.009128	0.000462

15	P3	-8.237110	0.009128	0.000462
19	P3	-8.237110	0.009128	0.000462
22	P3	-8.237110	0.009128	0.000462
26	P3	-8.237146	0.009129	0.000302
30	P3	-8.237146	0.009129	0.000302

#### 4.2.2 - Evolution for GM1

##### Evolution of cal pulses for GM1

#### 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	-3.918966	0.014863	-0.013468
7	P1	-2.470749	0.015059	0.008555
11	P1	-2.850608	0.017703	0.000241
15	P1	-3.687054	0.031867	-0.036753
19	P1	-3.544624	0.019364	-0.008367
22	P1	-5.023870	0.024445	0.013128
26	P1	-6.030560	0.029343	-0.022457
30	P1	-5.345064	0.039380	-0.003442
3	P1	-11.739355	0.083605	0.011753
7	P1	-10.069163	0.081559	-0.010576
11	P1	-10.348608	0.119656	-0.063939
15	P1	-10.710178	0.117094	-0.070222
19	P1	-15.726388	0.125298	0.005411
22	P1	-21.597996	1.390669	0.049774
26	P1	-16.065981	0.347101	0.064463
30	P1	-17.879793	0.364670	-0.067180

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.464920	0.114681	0.009742
7	P2	-22.221918	0.268749	0.038081
11	P2	-10.863928	0.109850	0.023338
15	P2	-4.981881	0.195294	0.003718
19	P2	-6.962415	0.273682	-0.012648
22	P2	-8.246428	0.111026	-0.003143
26	P2	-24.316402	0.158332	-0.053641
30	P2	-21.949732	0.118580	0.024591

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.086834	0.005242	-0.017841
7	P3	-8.086788	0.005218	-0.017093
11	P3	-8.086831	0.005233	-0.017228
15	P3	-8.086698	0.005218	-0.017370
19	P3	-8.086716	0.005238	-0.017634
22	P3	-8.086708	0.005230	-0.017377
26	P3	-8.086857	0.005230	-0.017938
30	P3	-8.086773	0.005210	-0.018209

## 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	0.000562112
	stdev	1.65485e-07
MEAN Q	mean	0.000503993
	stdev	2.13509e-07



## 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.139984
	stdev	0.00122309
STDEV Q	mean	0.140380
	stdev	0.00124372



## 5.3 - Gain imbalance I/Q



## 6 - Telemetry analysis

Summary of analysis for the last 3 days 2006123[901]

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_1PNPDE20061230_061449_000002592054_00163_25267_3906.N1	5	0
ASA_WSM_1PNPDE20061230_012058_000004402054_00160_25264_3489.N1	0	41
ASA_WSM_1PNPDE20061230_144646_000004462054_00168_25272_4293.N1	0	36
ASA_WSM_1PNPDE20061230_172249_000001772054_00170_25274_4329.N1	0	4
ASA_WSM_1PNPDE20061230_190232_000000972054_00171_25275_4361.N1	0	48
ASA_WSM_1PNPDE20061231_005022_000002612054_00174_25278_4768.N1	0	36







## 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)


Acsending

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


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### 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

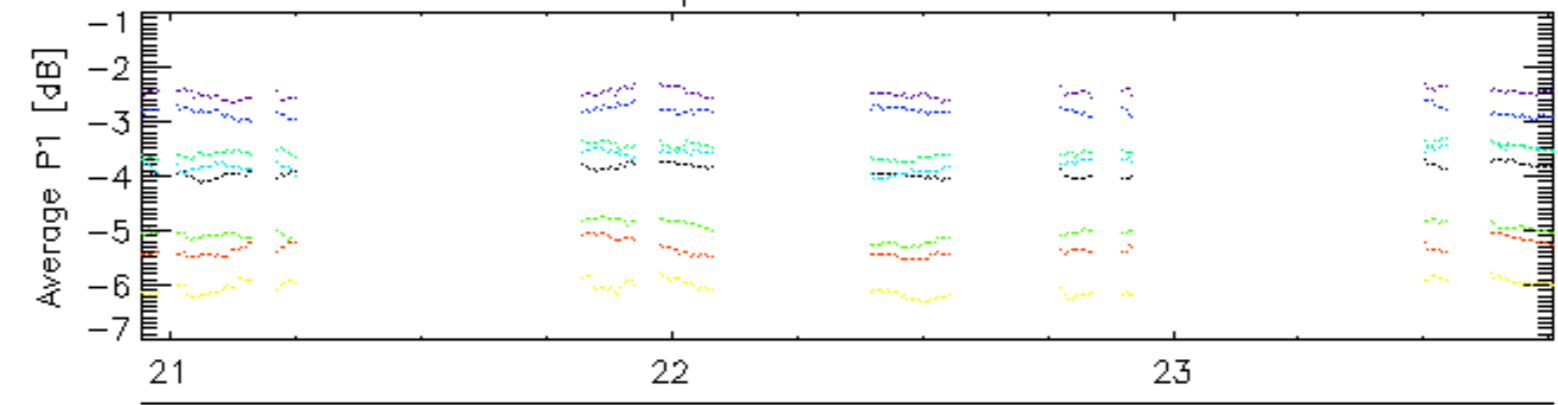
Ascending

Descending

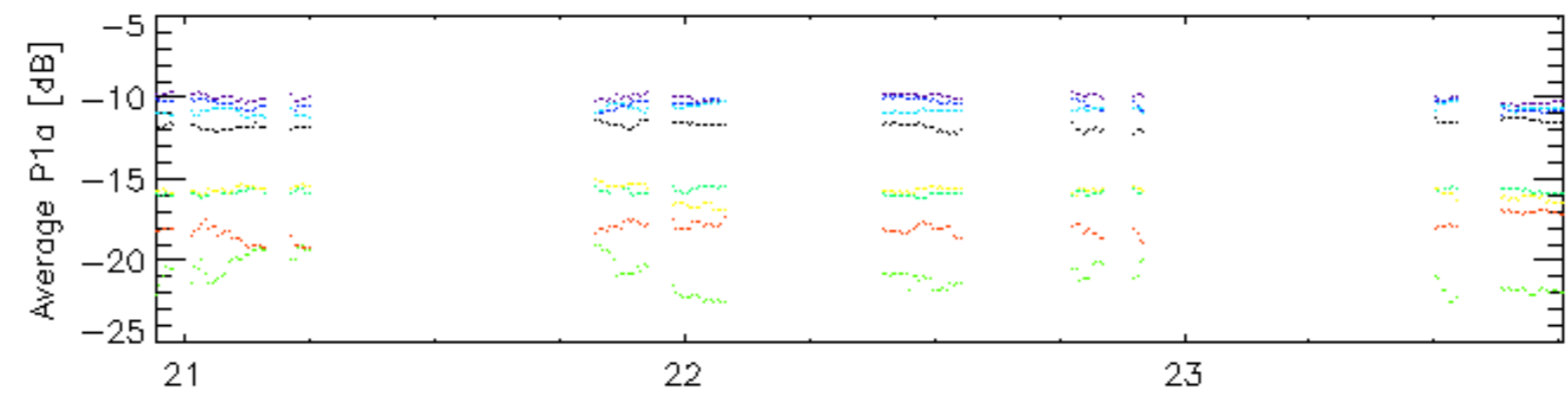
### 7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

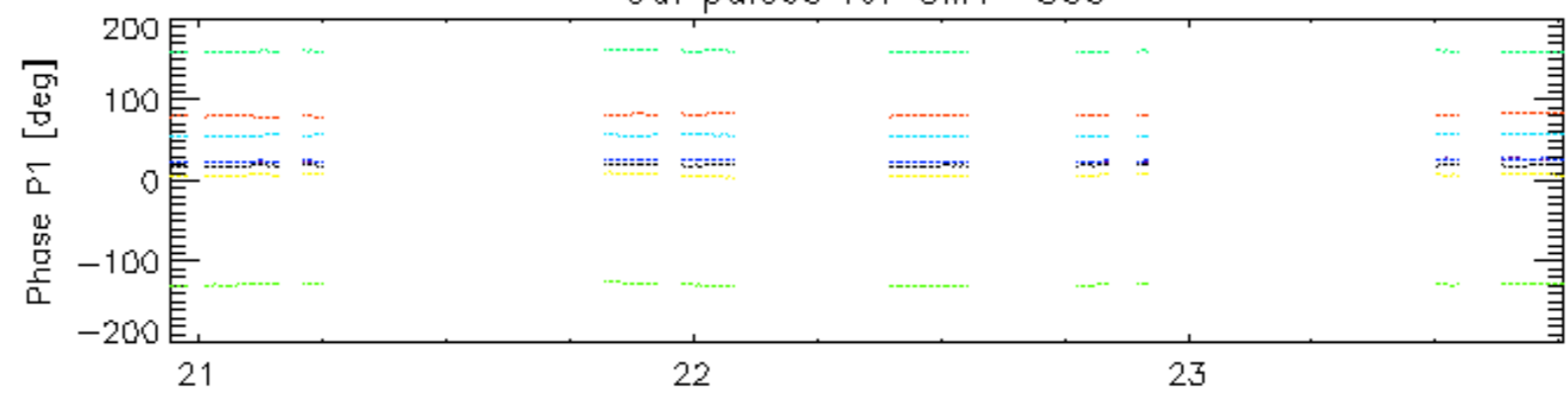


30-Dec

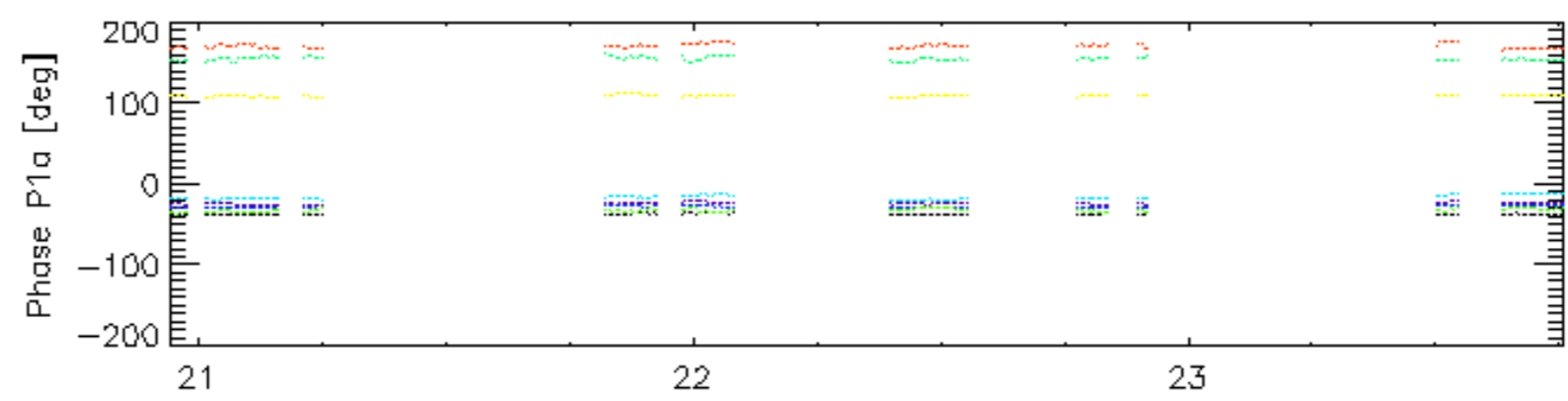


30-Dec

Cal pulses for GM1 SS3

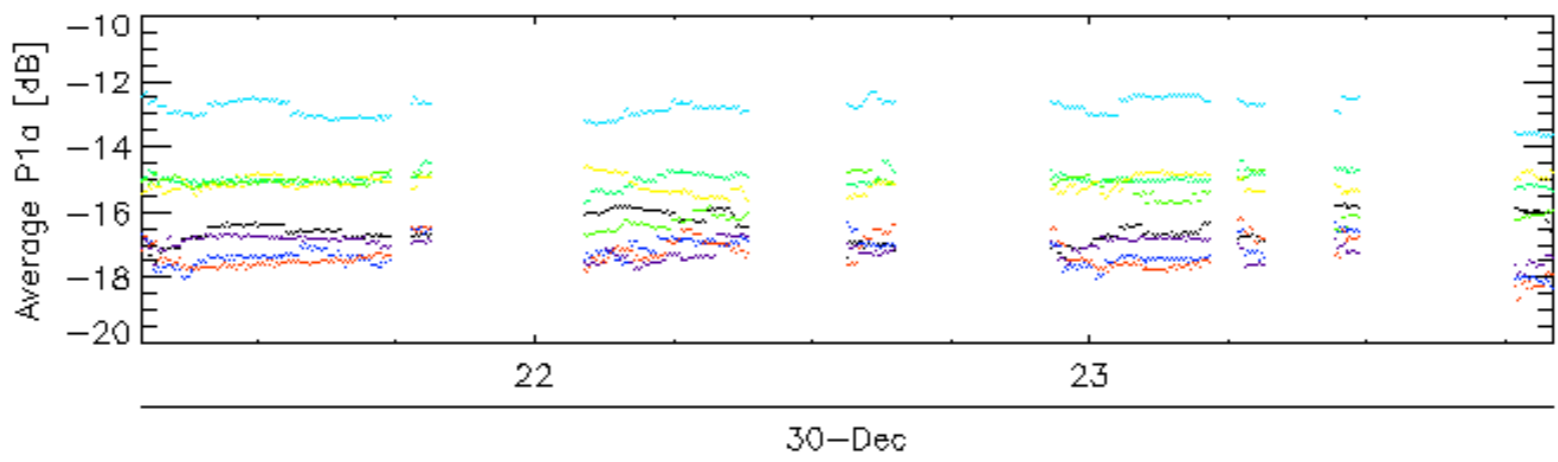
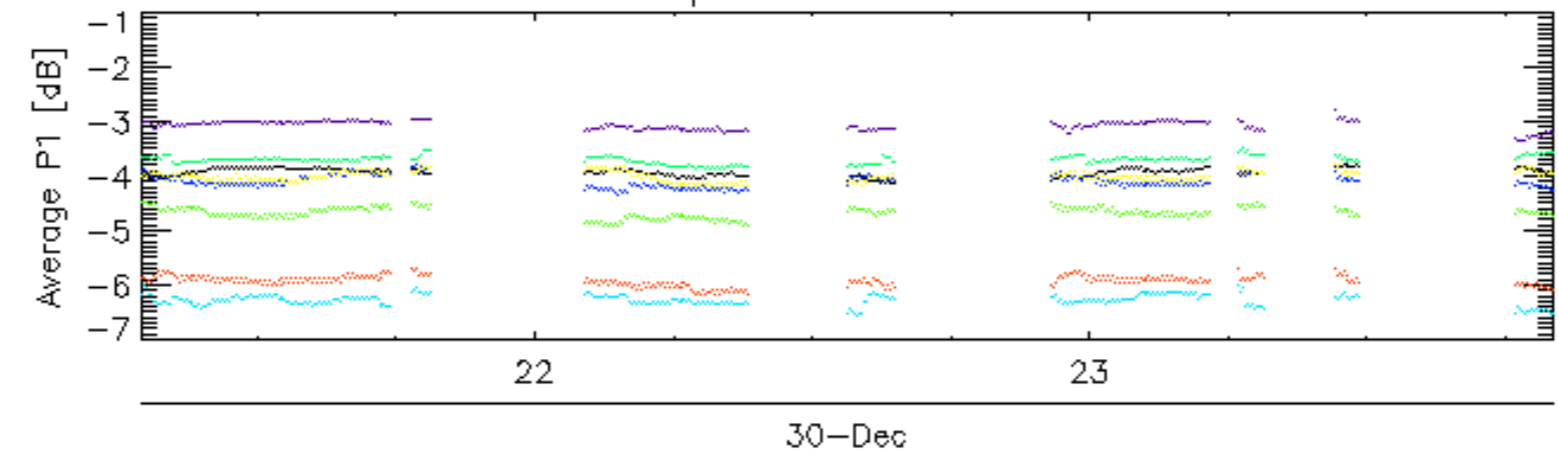


30-Dec

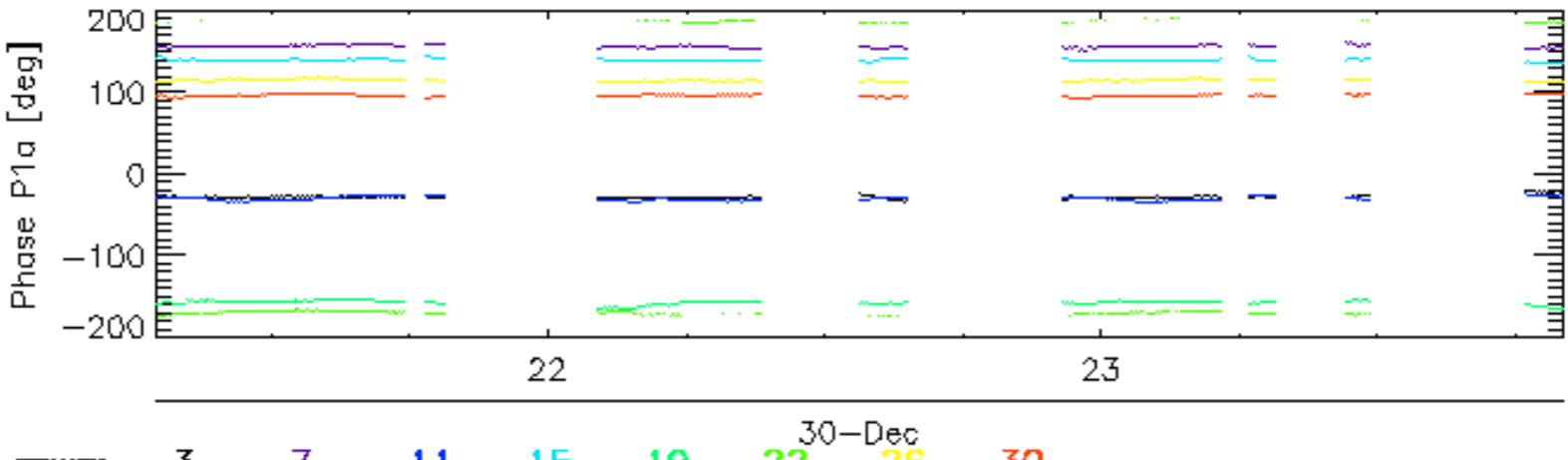
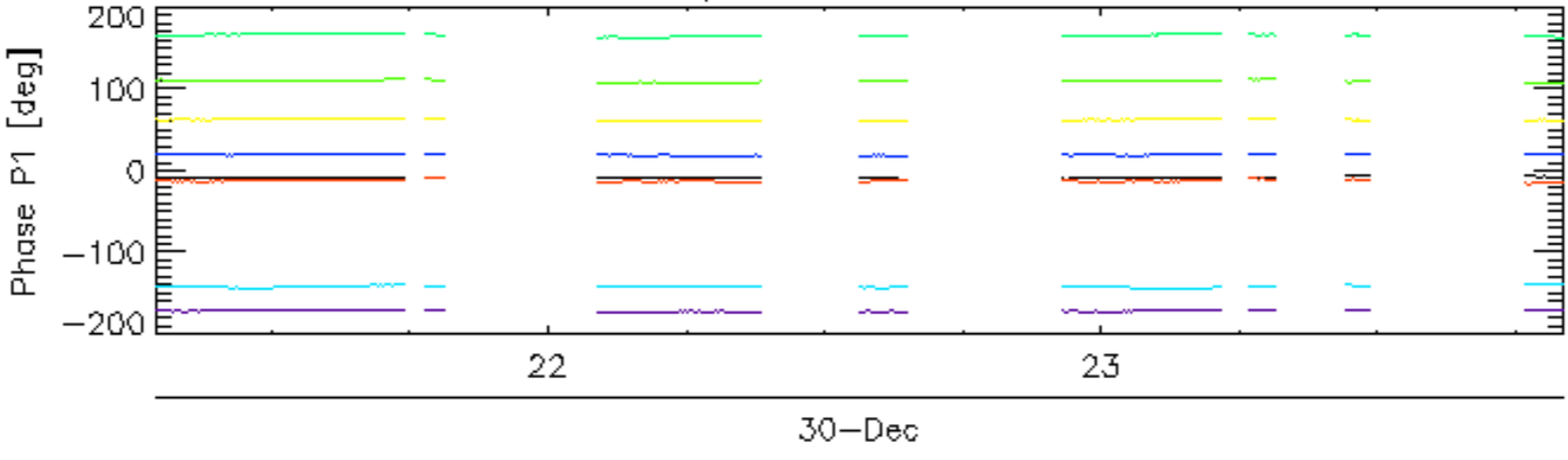


rows: **3** **7** **11** **15** **19** **22** **26** **30**

Cal pulses for WVS IS2

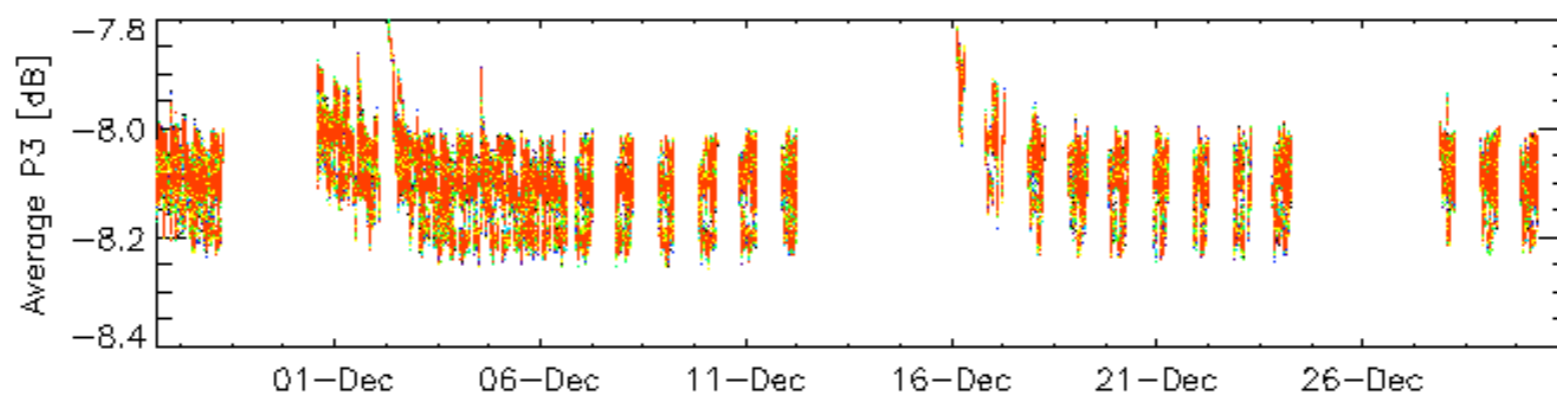
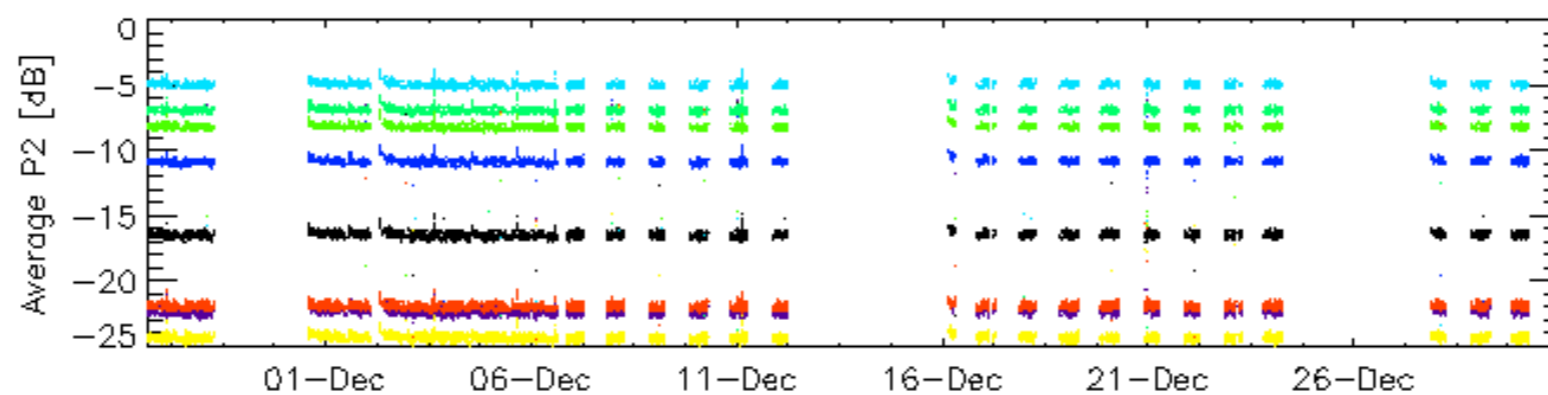
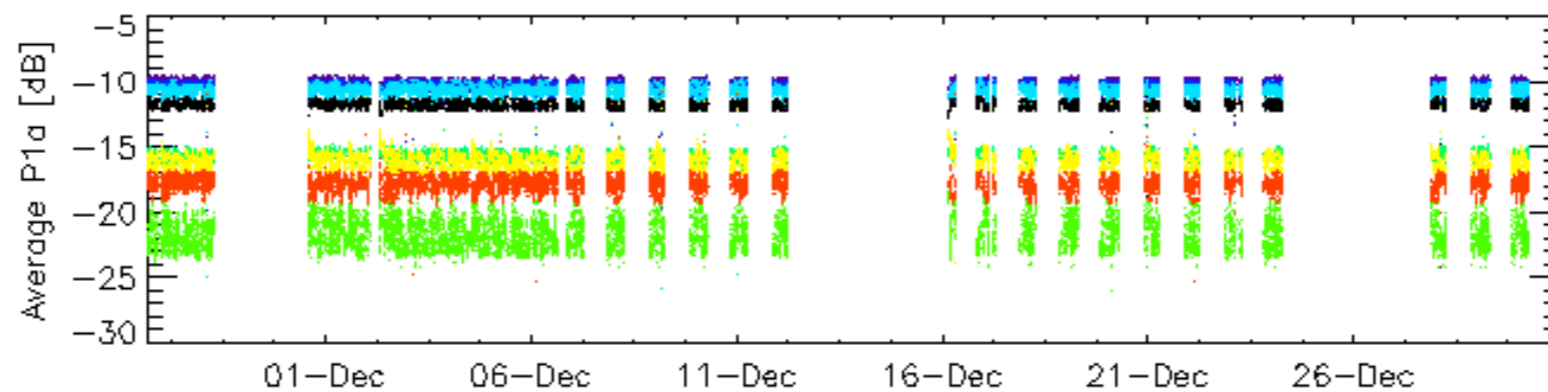
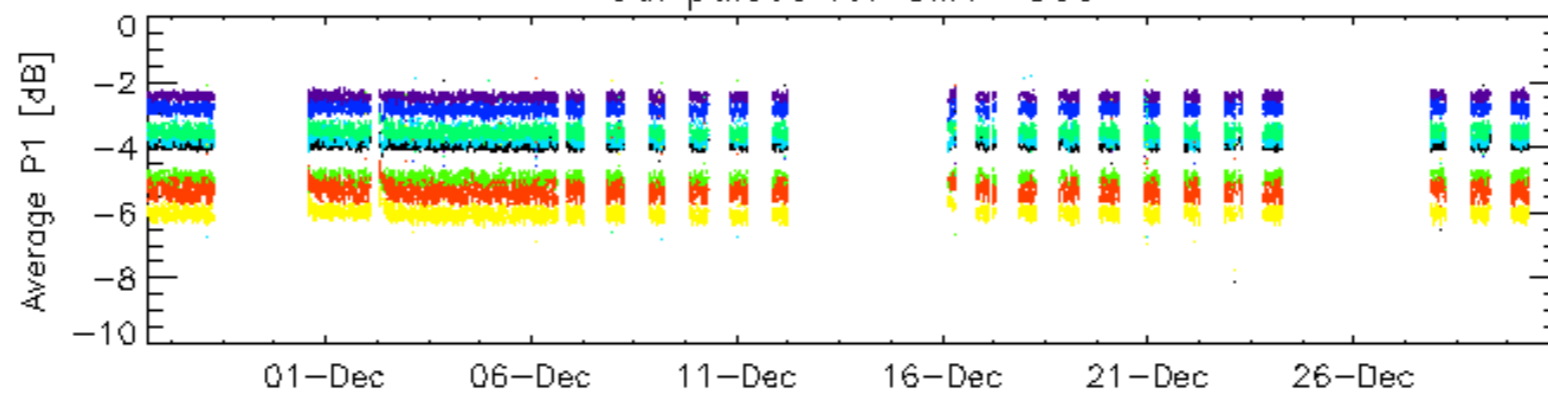


Cal pulses for WVS IS2



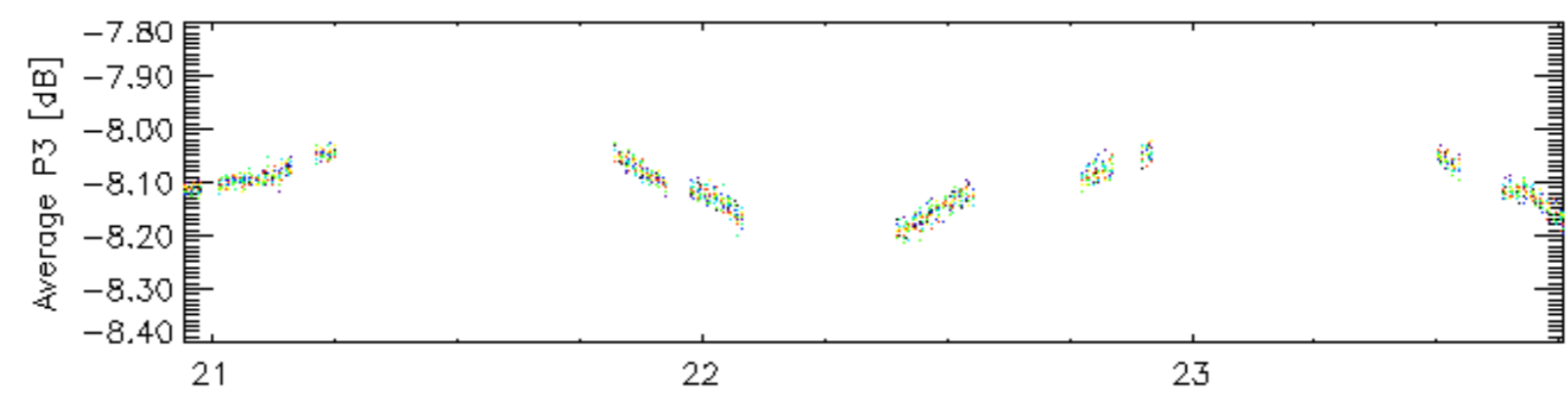
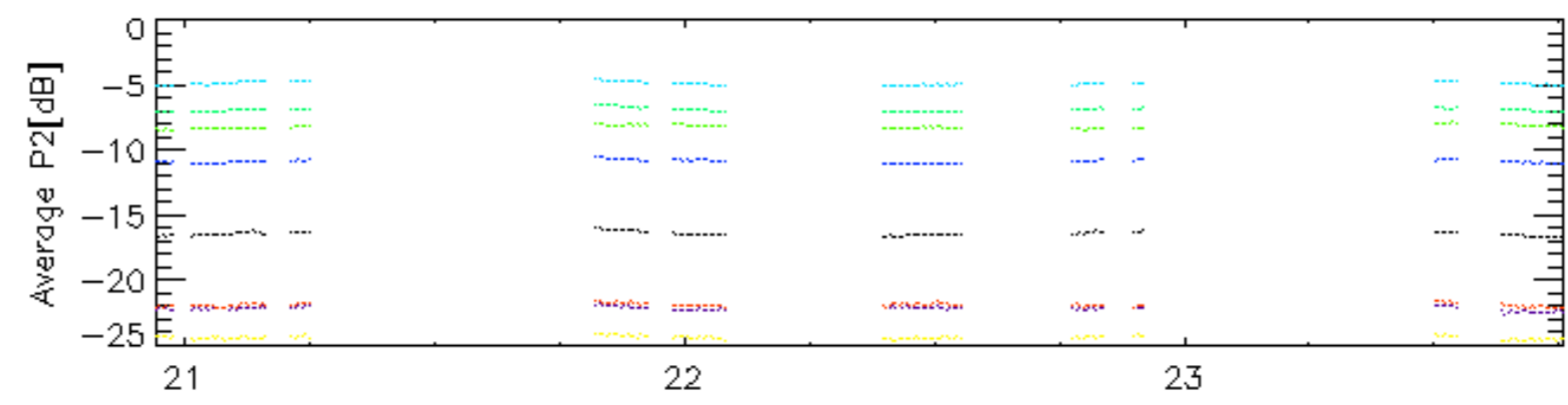
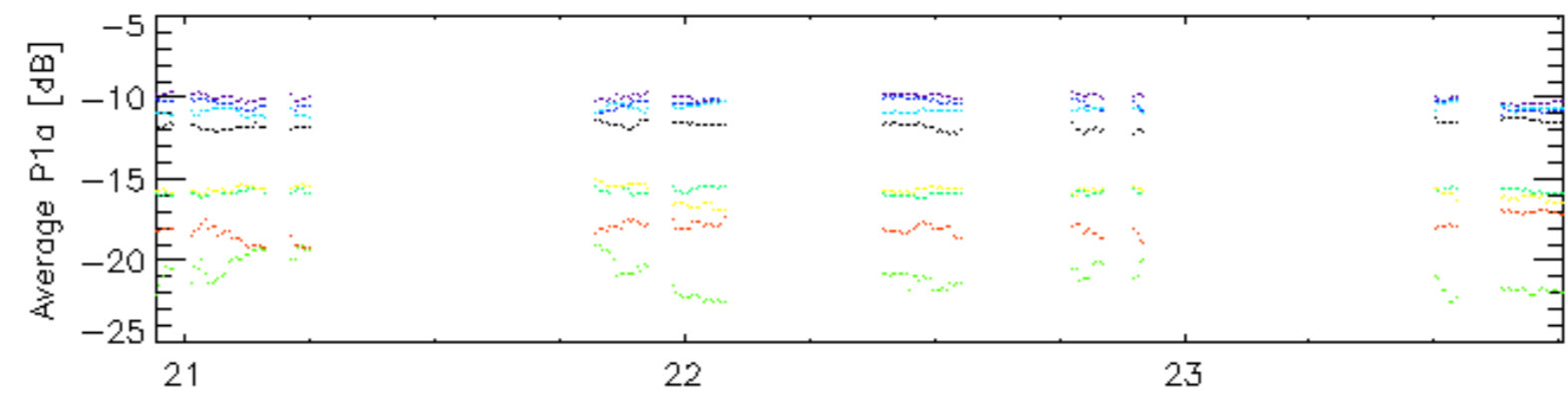
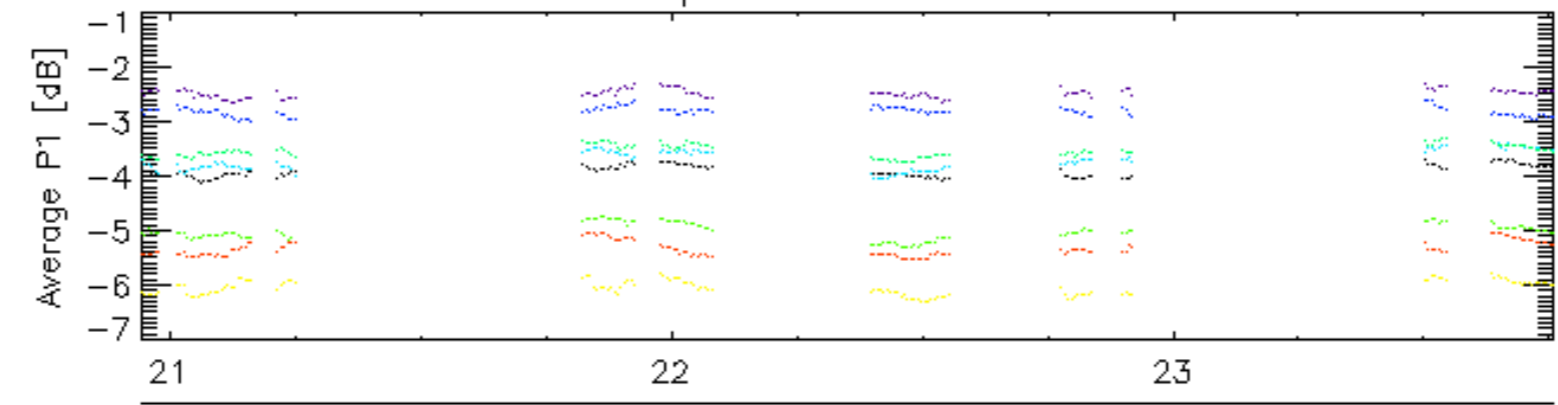
rows: 3 7 11 15 19 22 26 30

Cal pulses for GM1 SS3



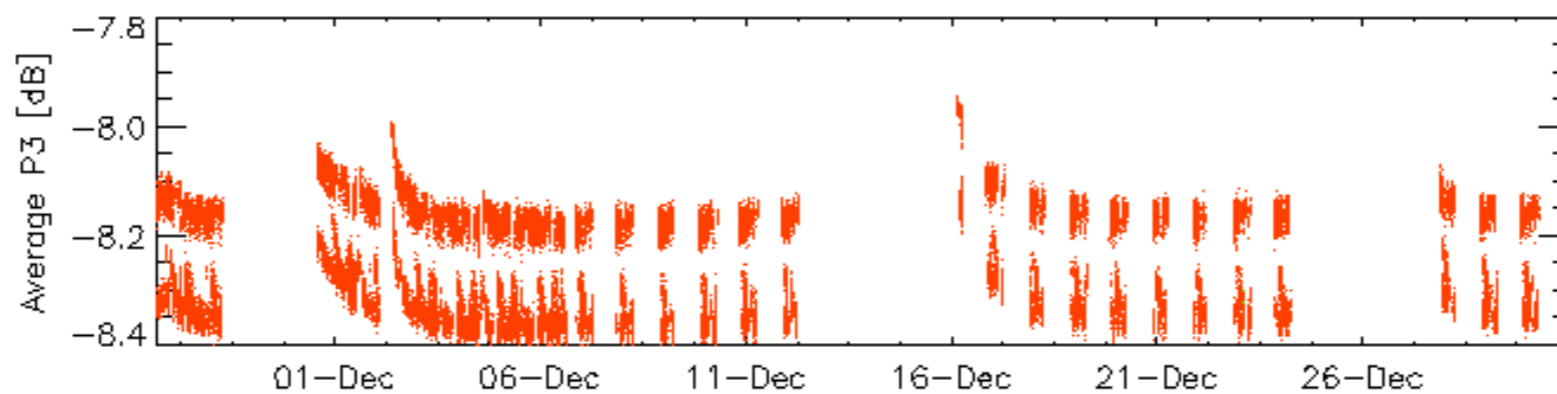
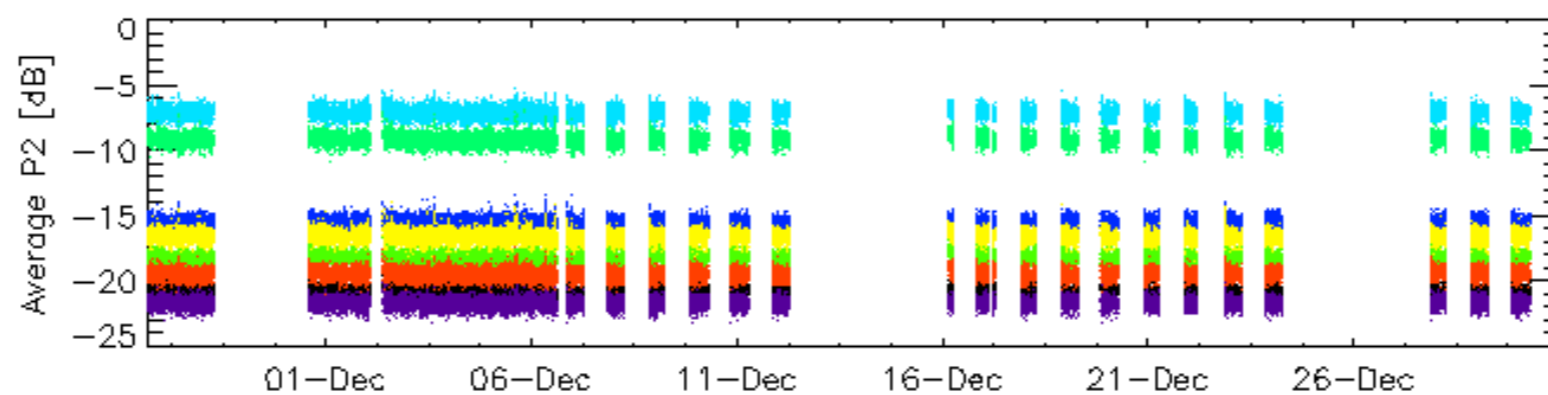
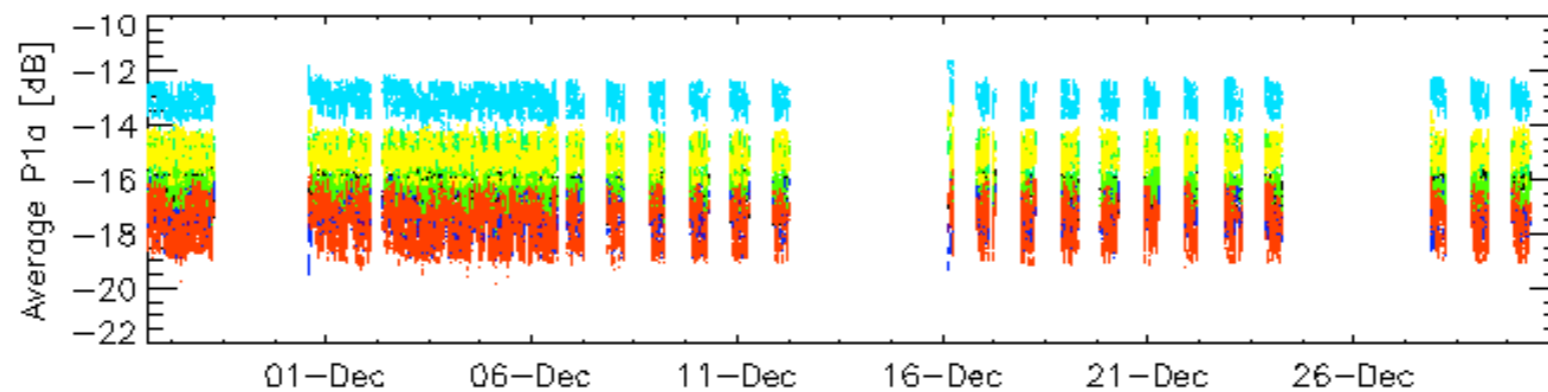
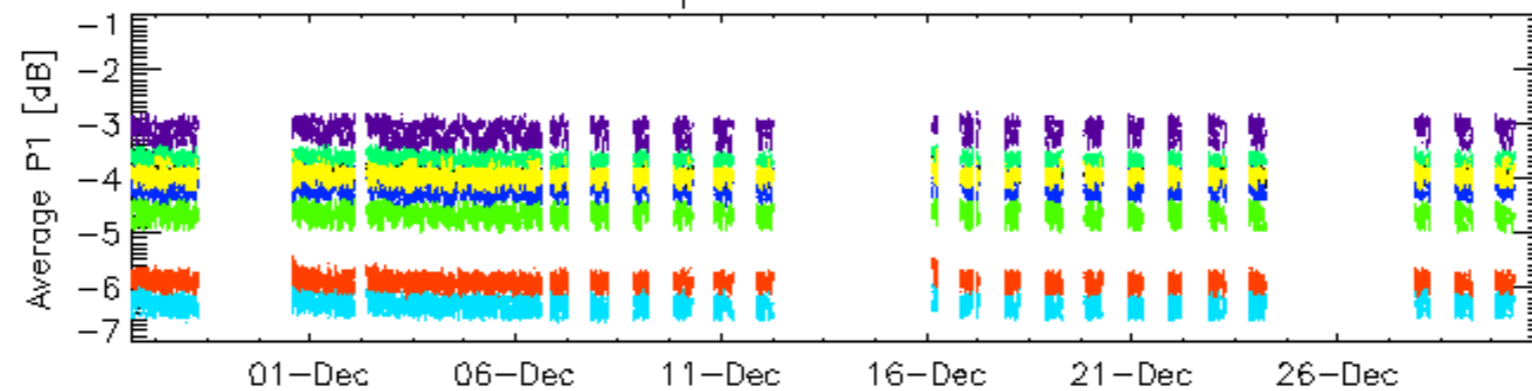
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for GM1 SS3



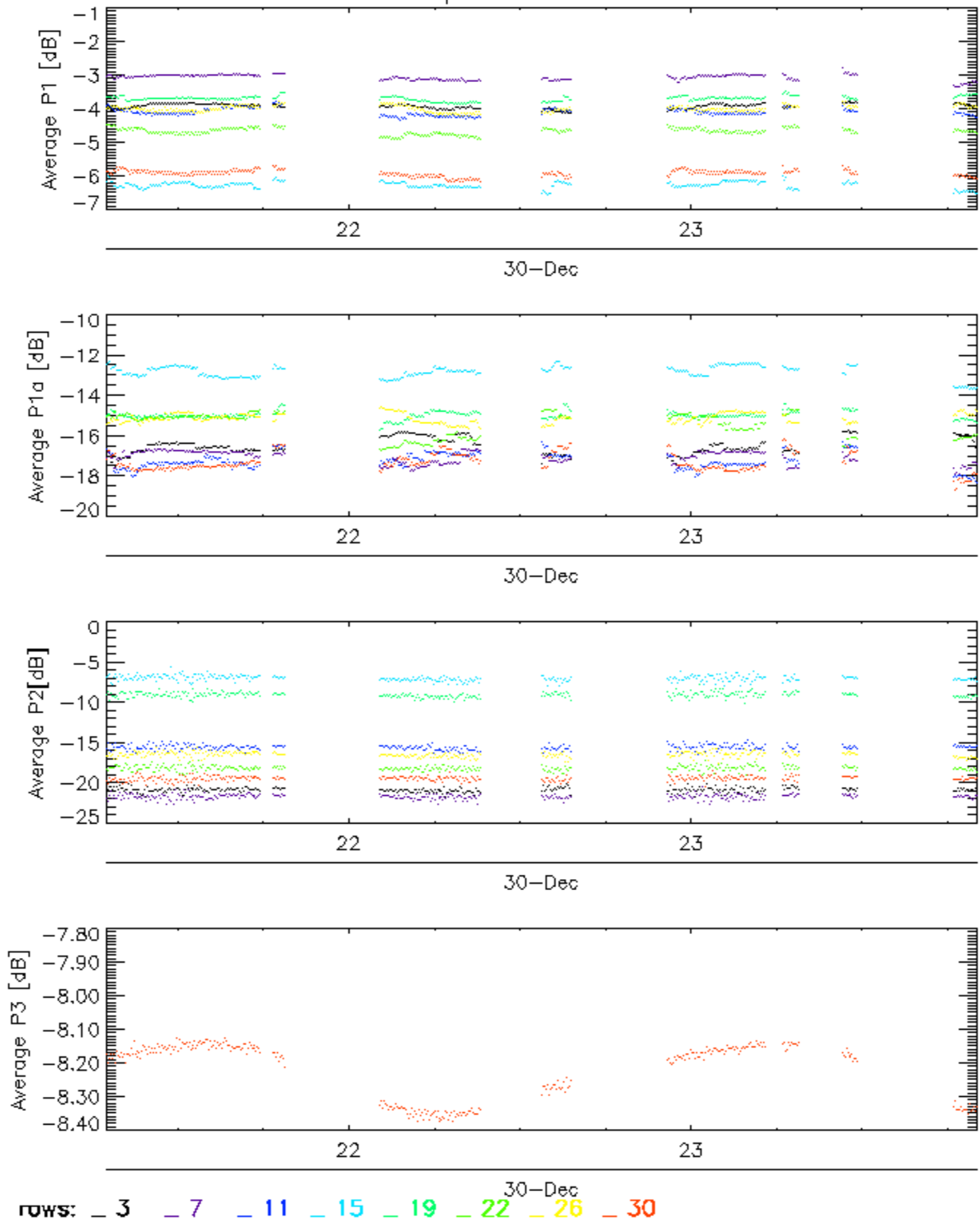
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

Cal pulses for WVS IS2



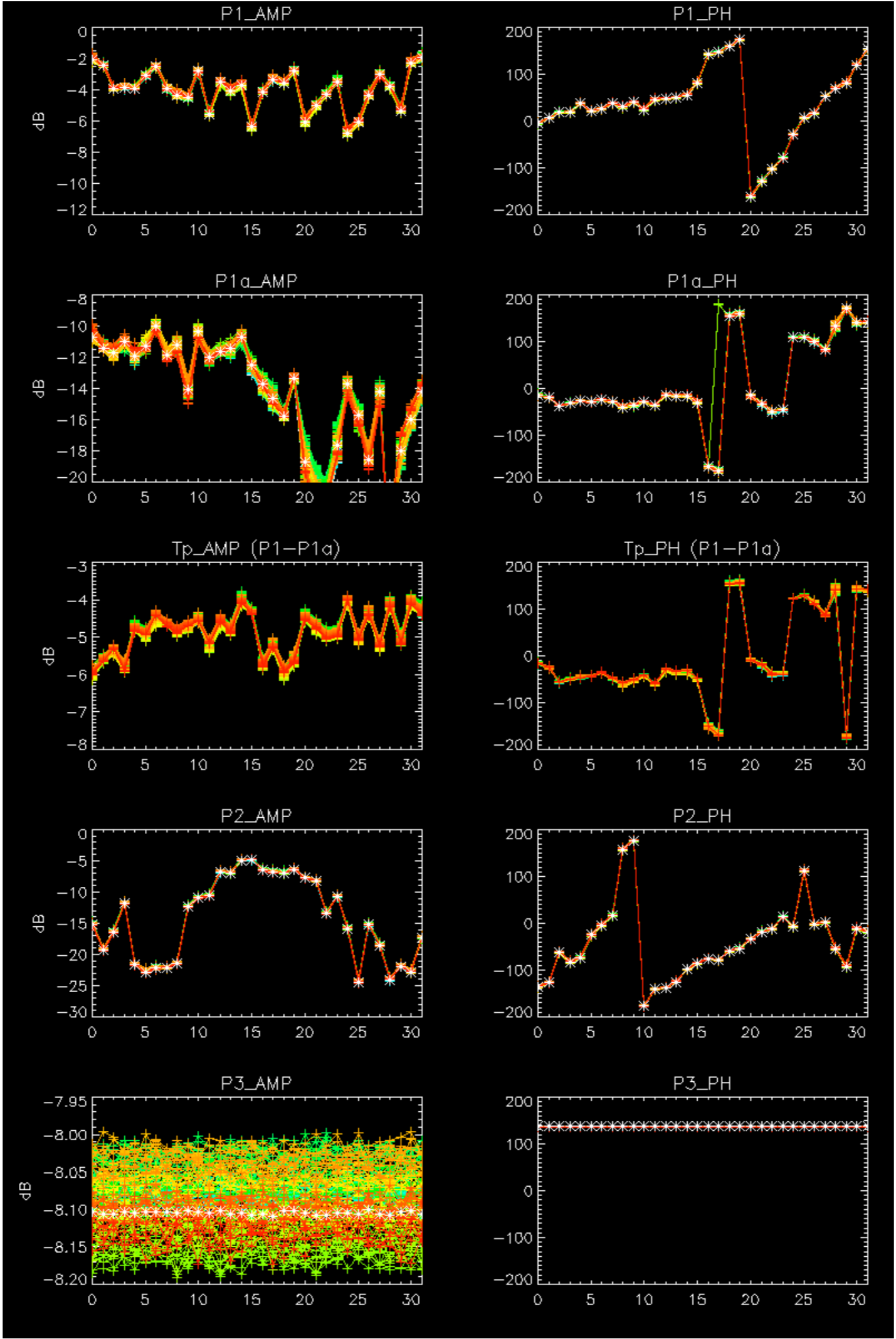
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 26 \_ 30

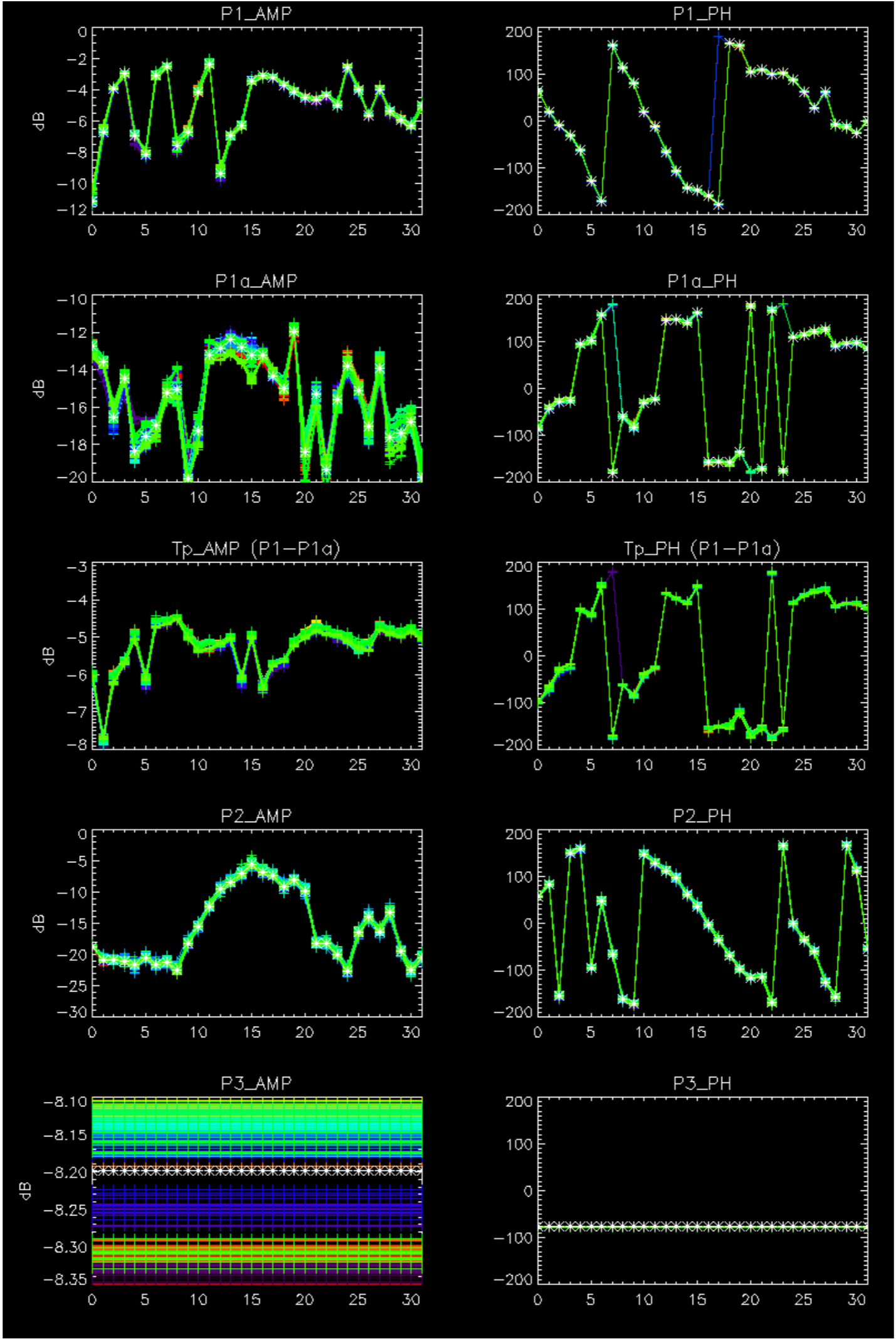
Cal pulses for WVS IS2



No anomalies observed.



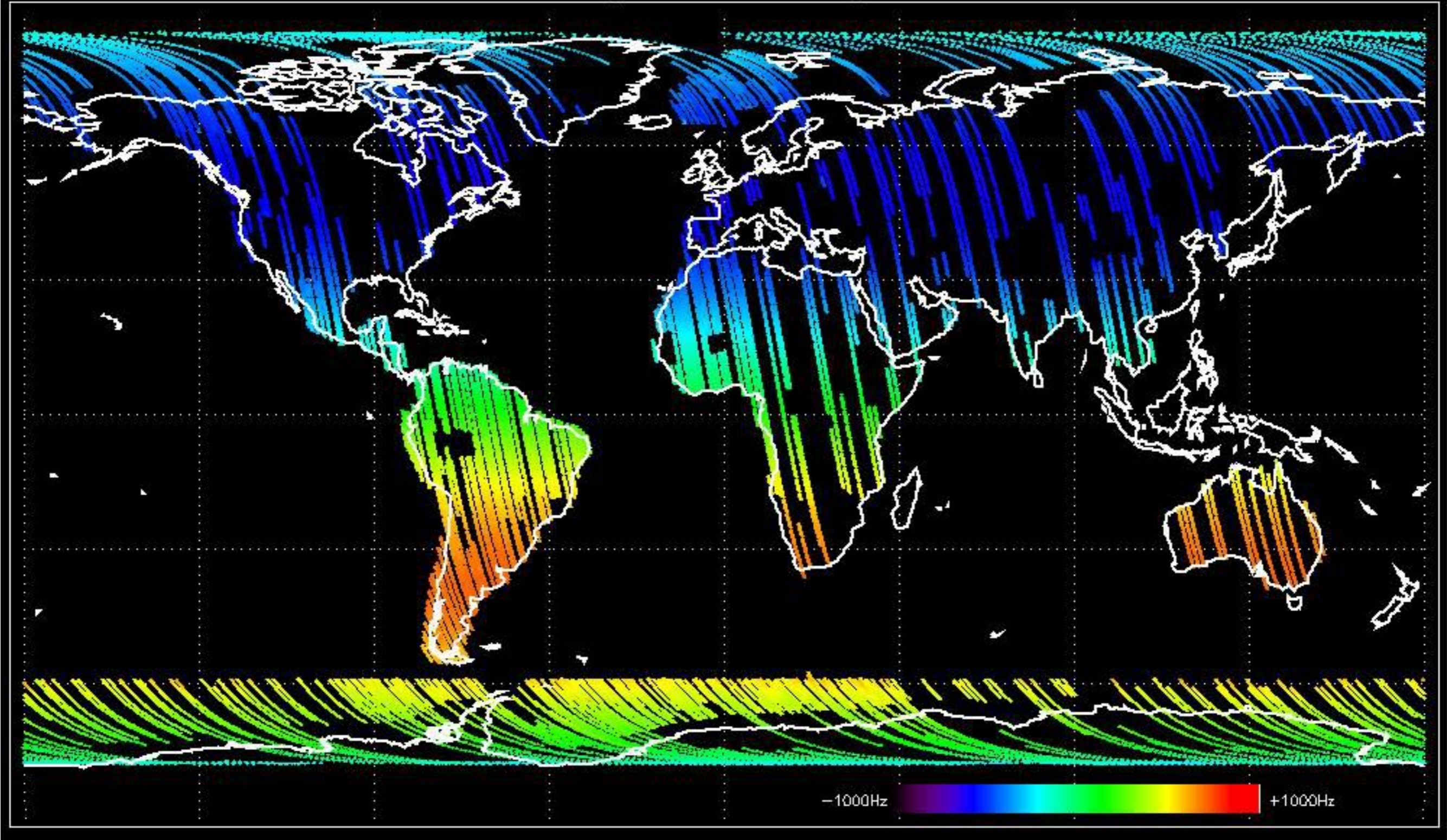




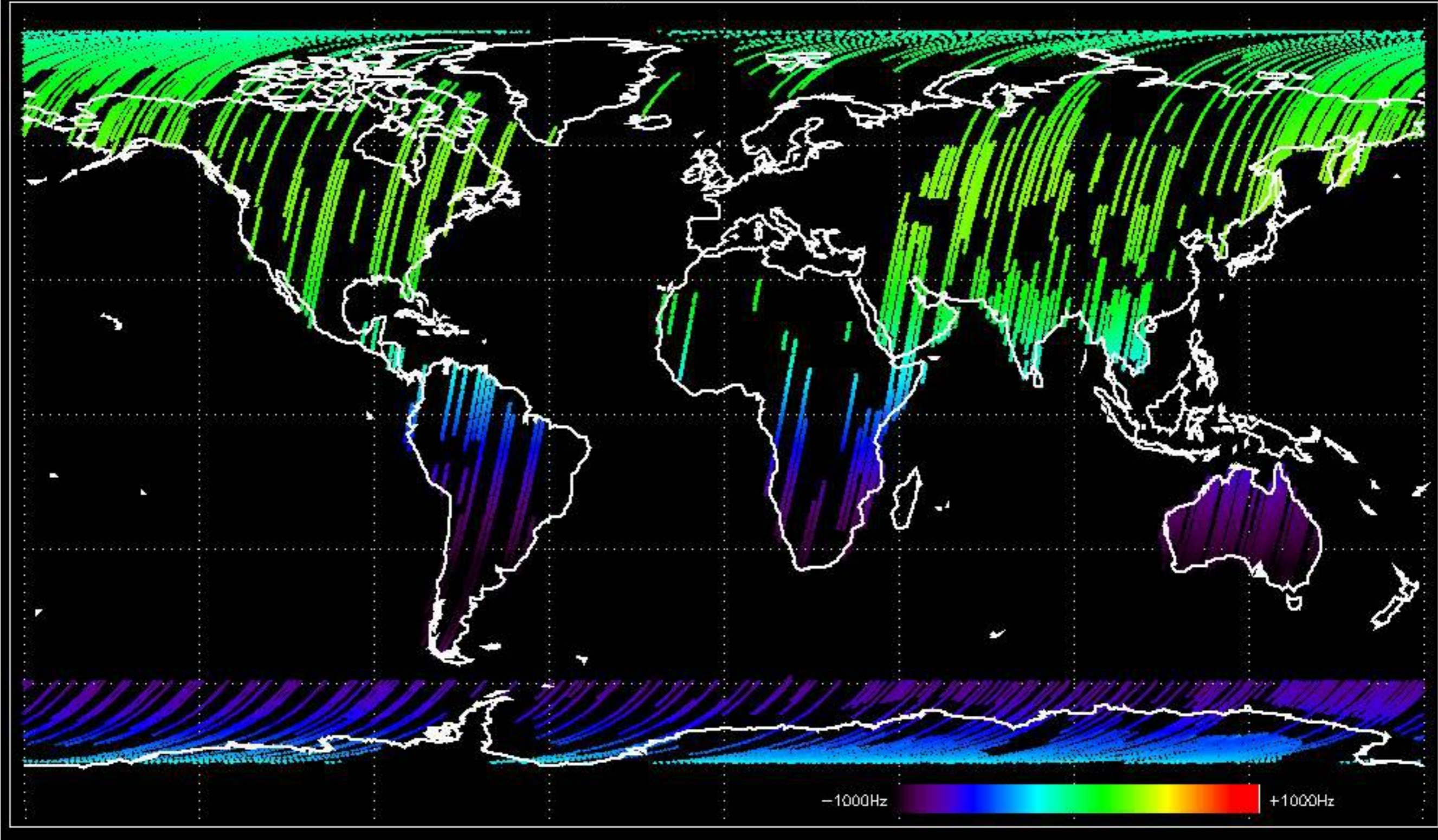
- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.



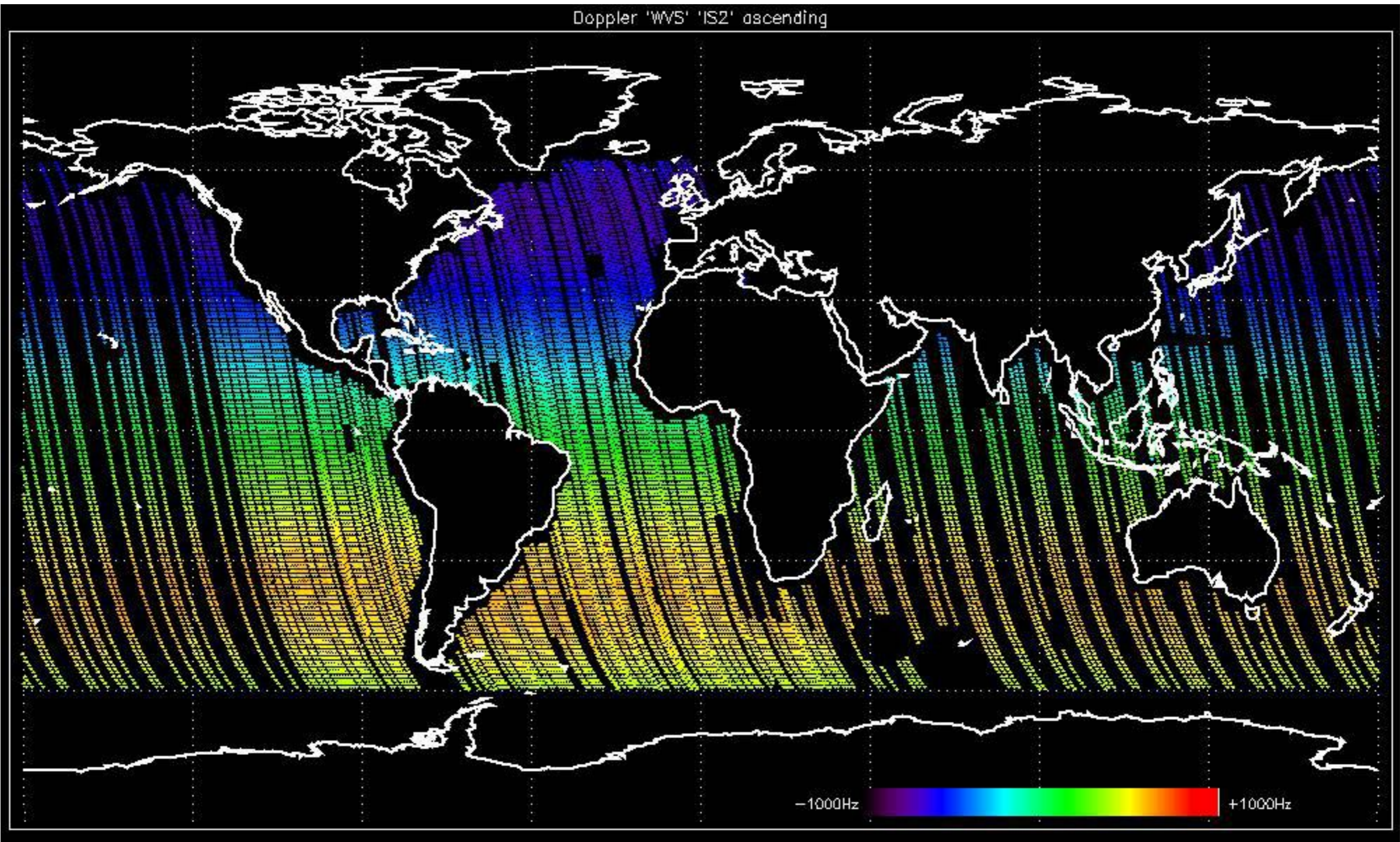
Doppler 'GM1' 'SS1' ascending



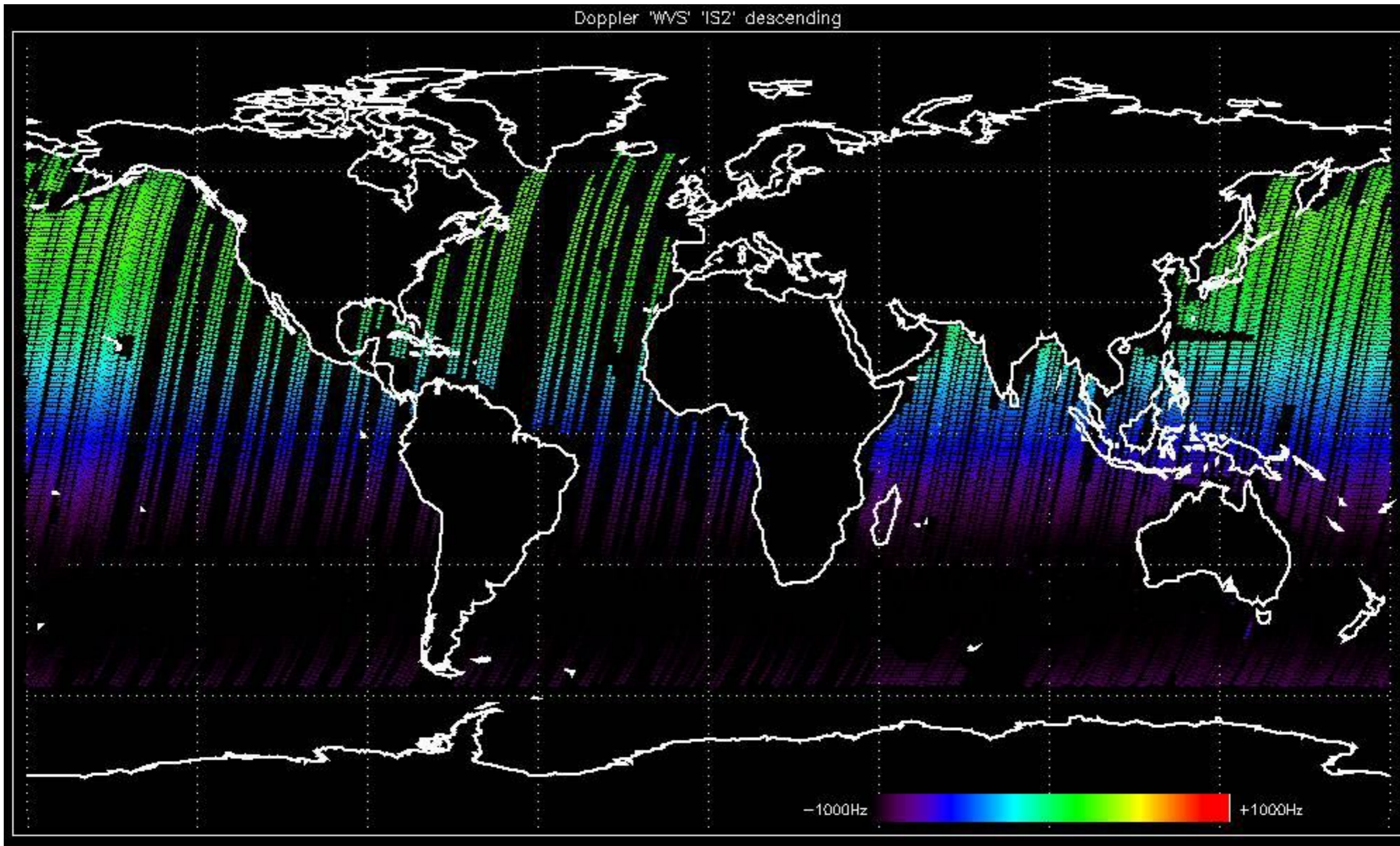
Doppler 'GM1' 'SS1' descending



Doppler 'WVS' 'IS2' ascending

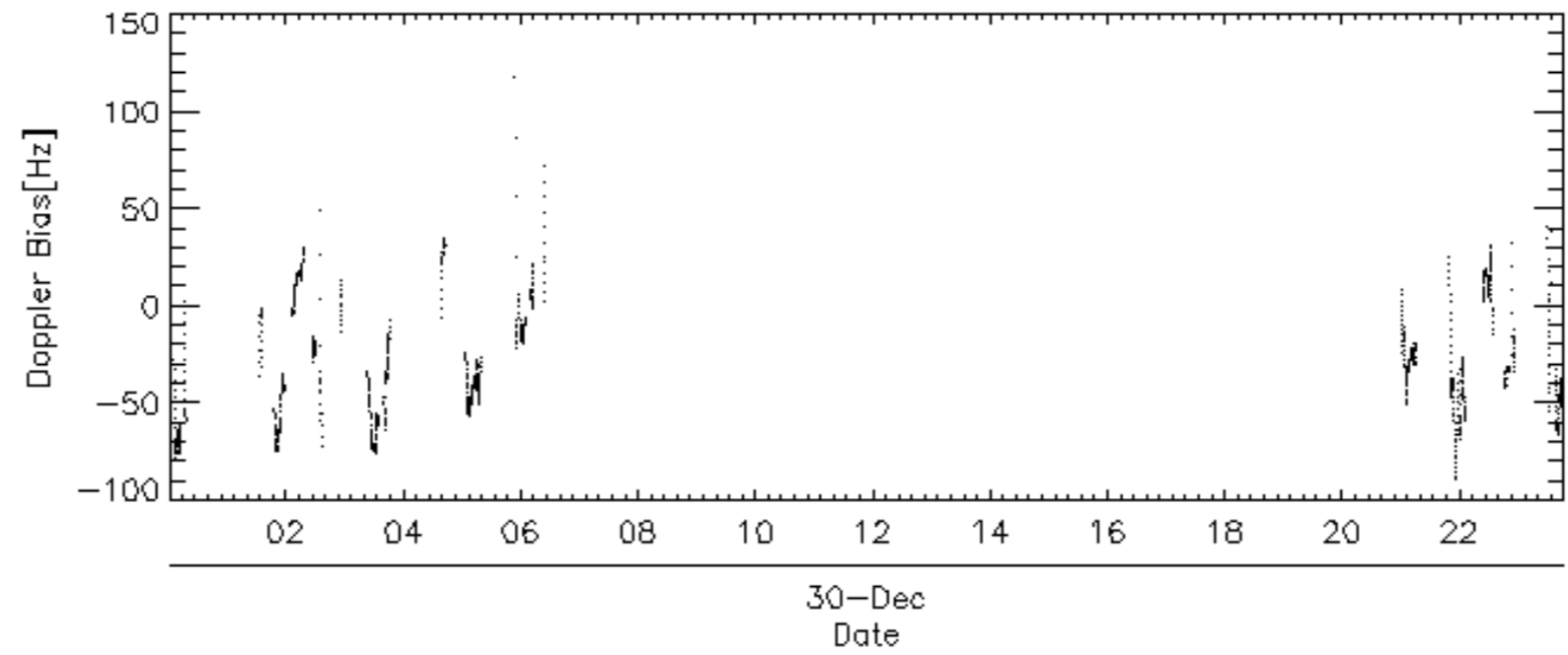
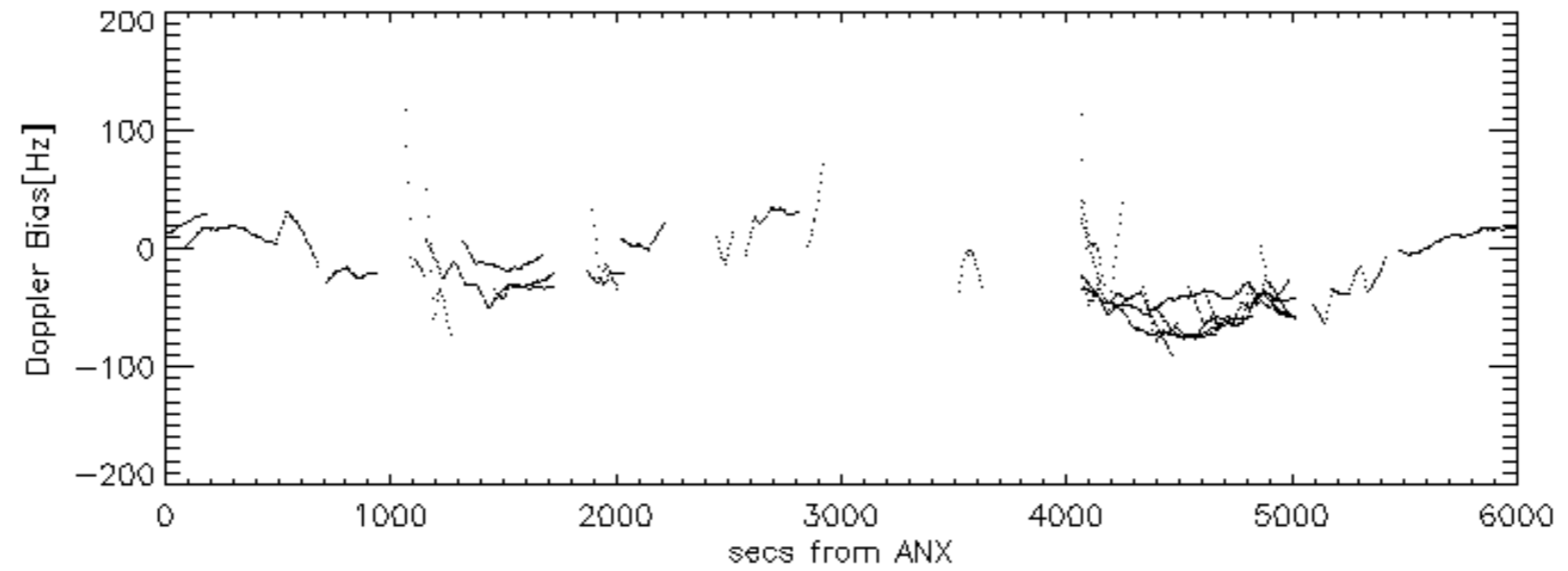
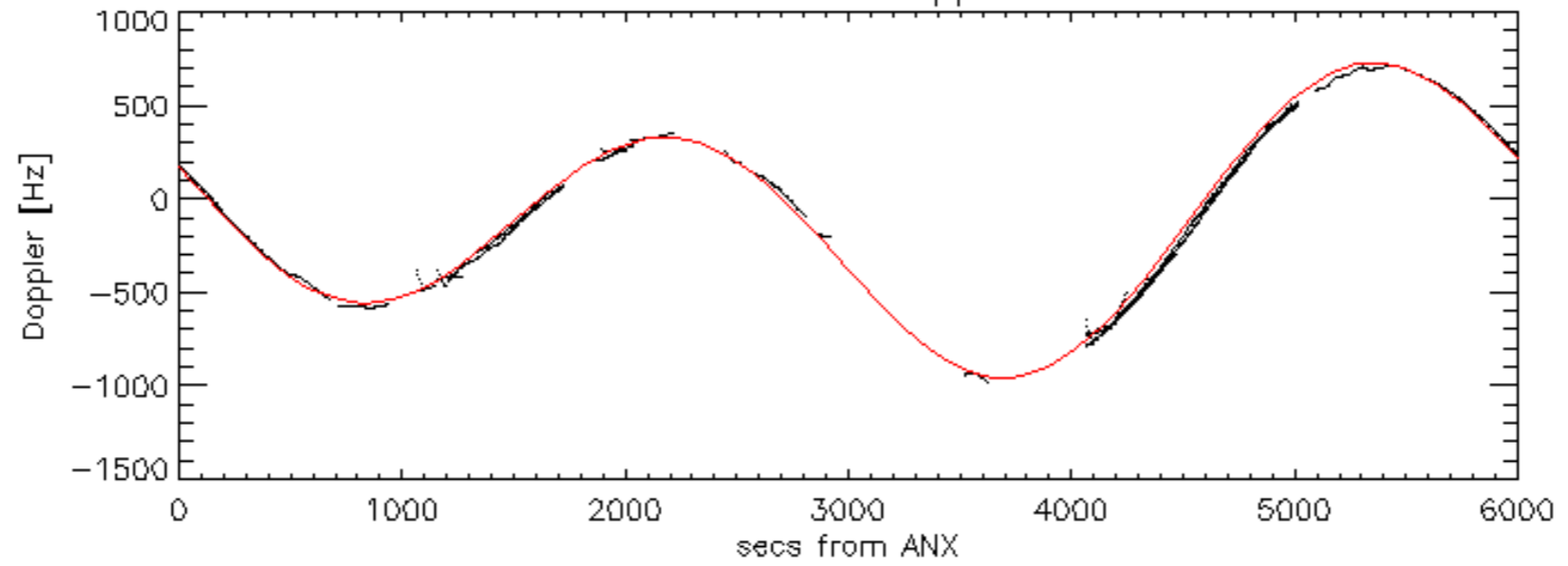


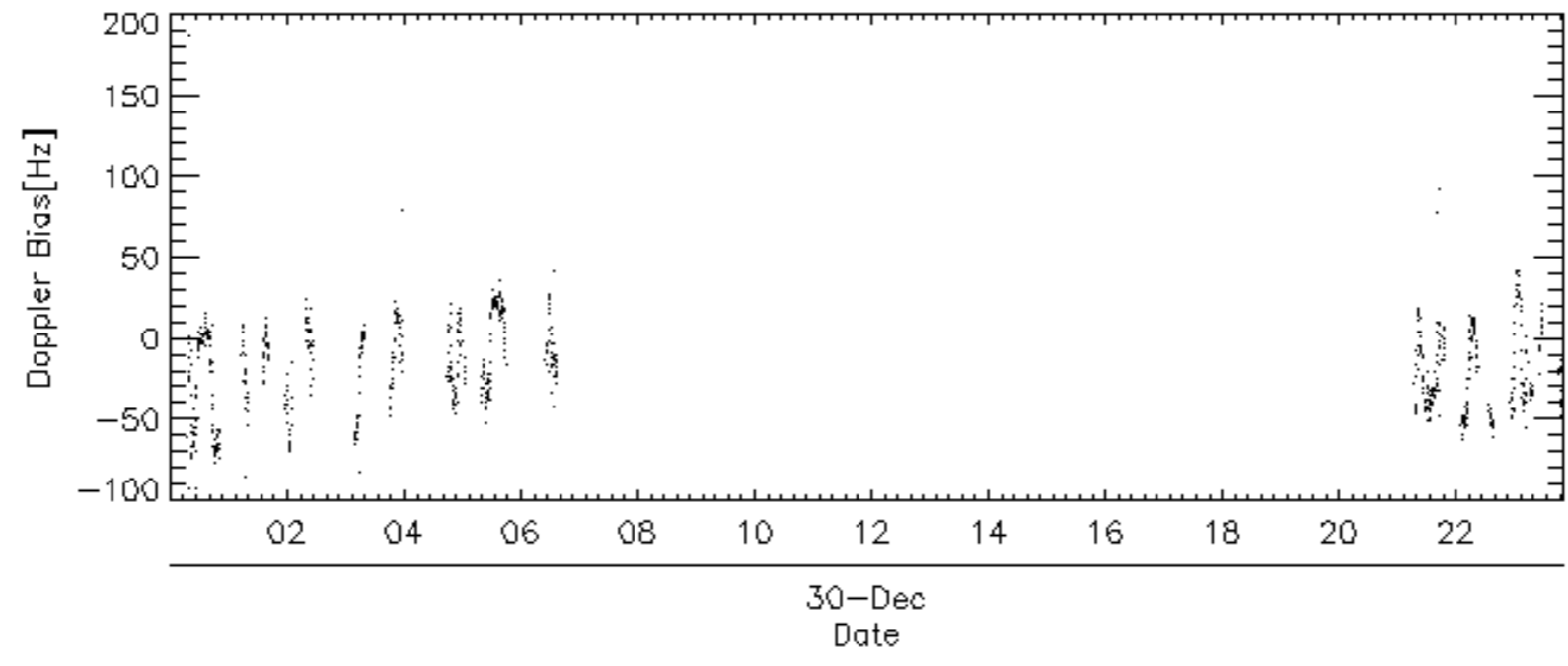
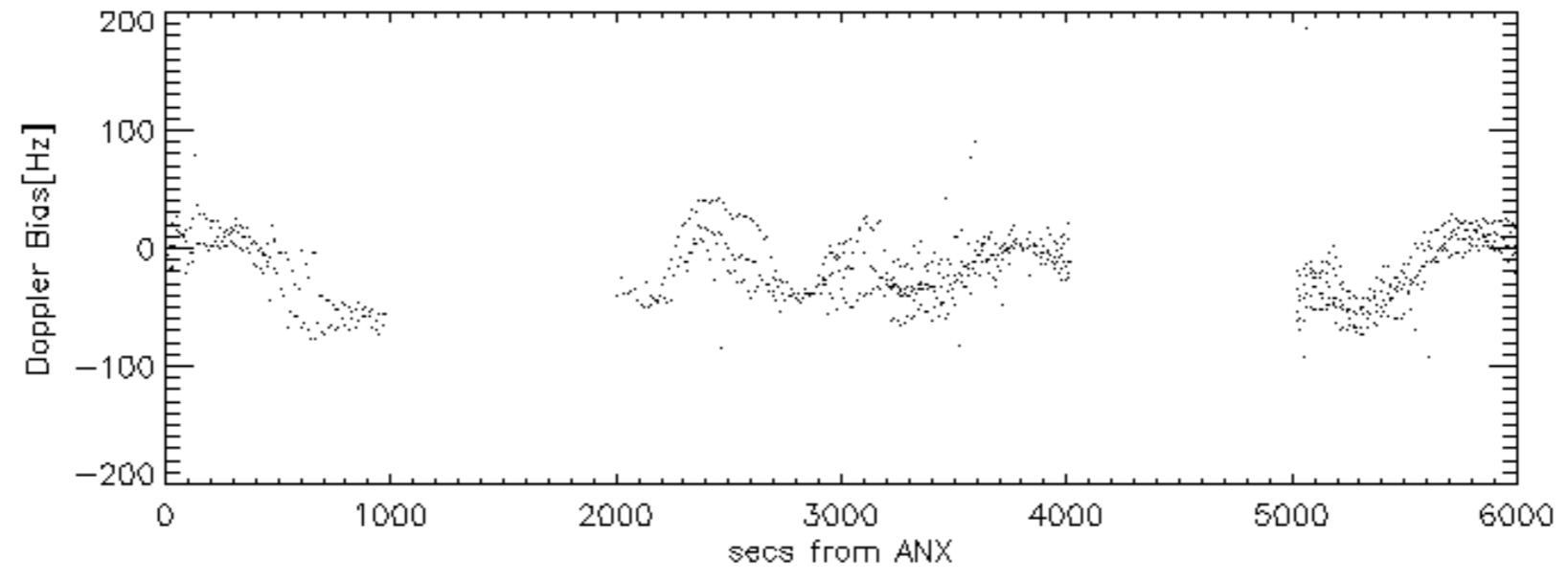
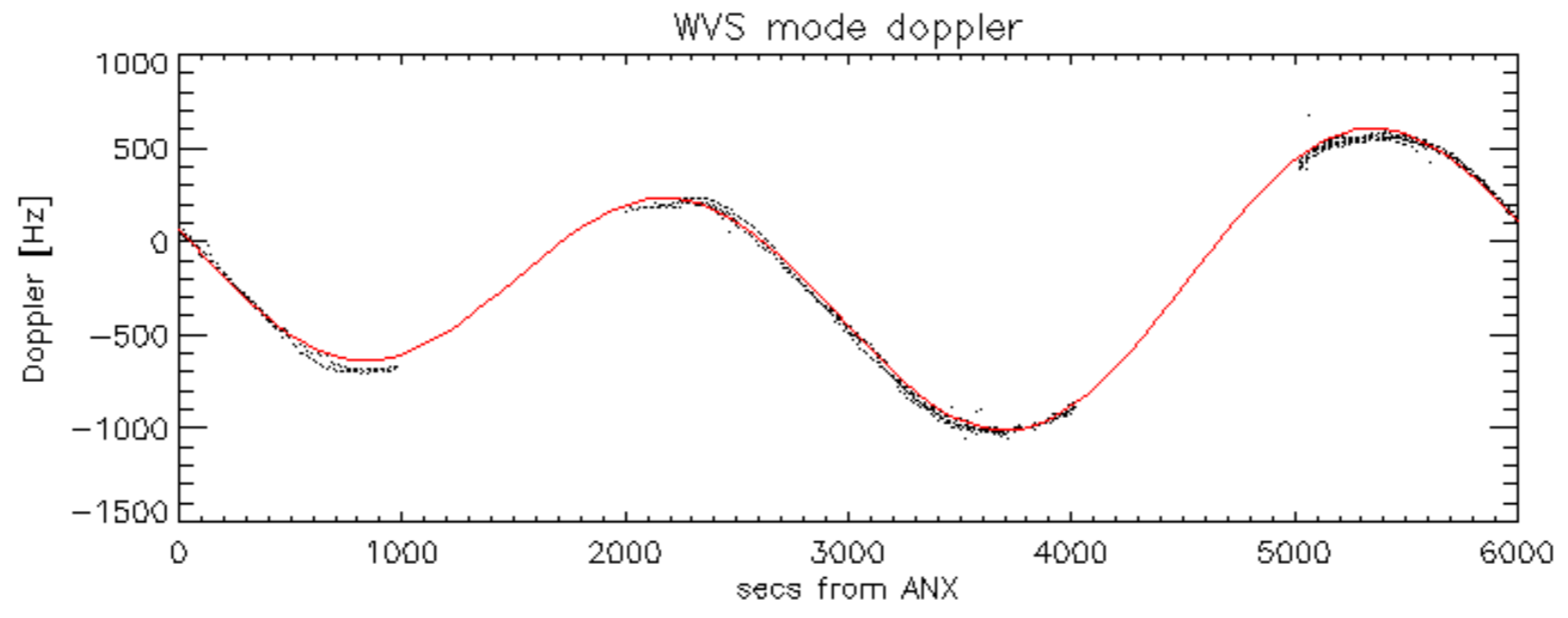
Doppler 'WVS' 'IS2' descending



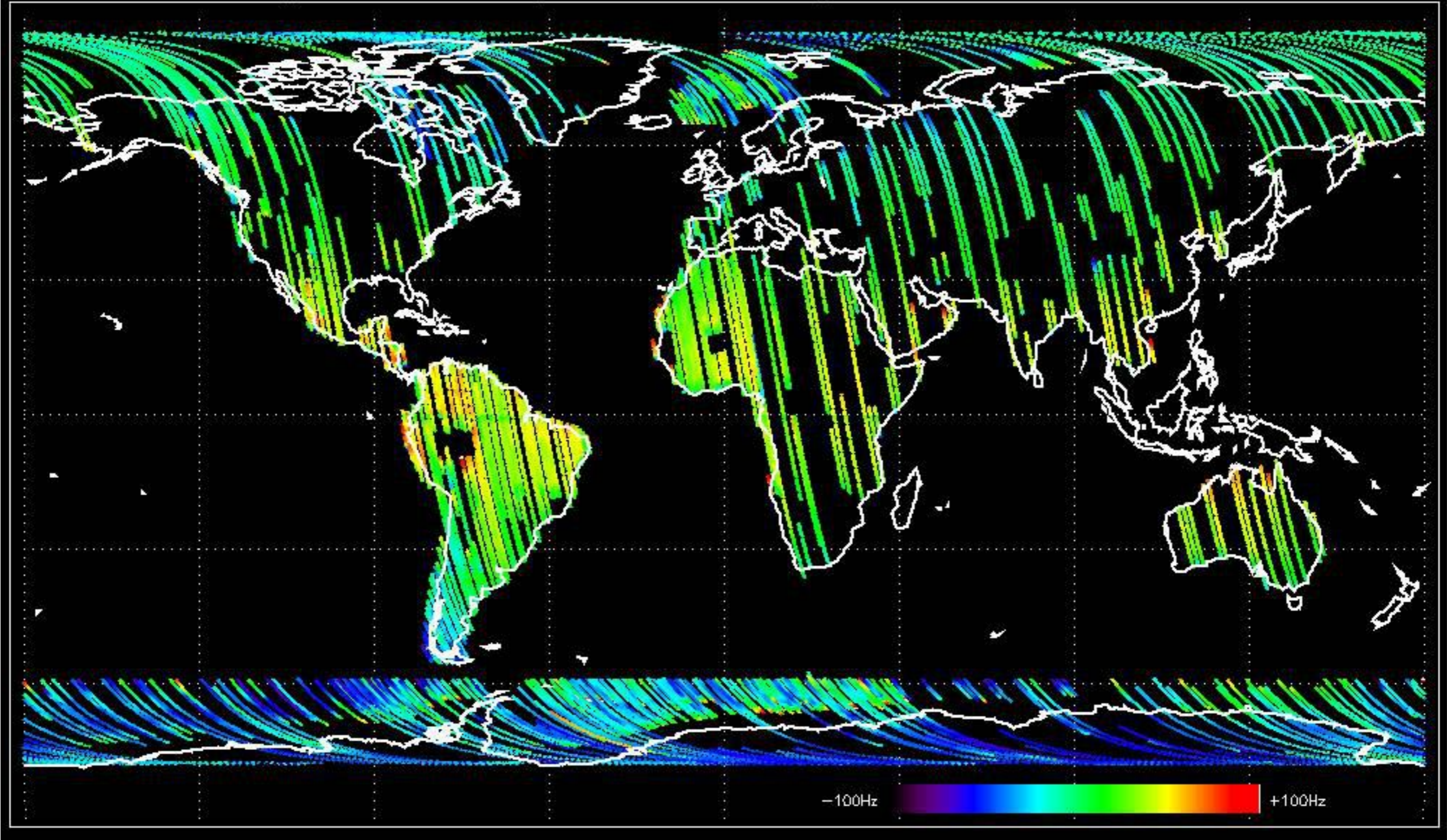


GM1 mode doppler

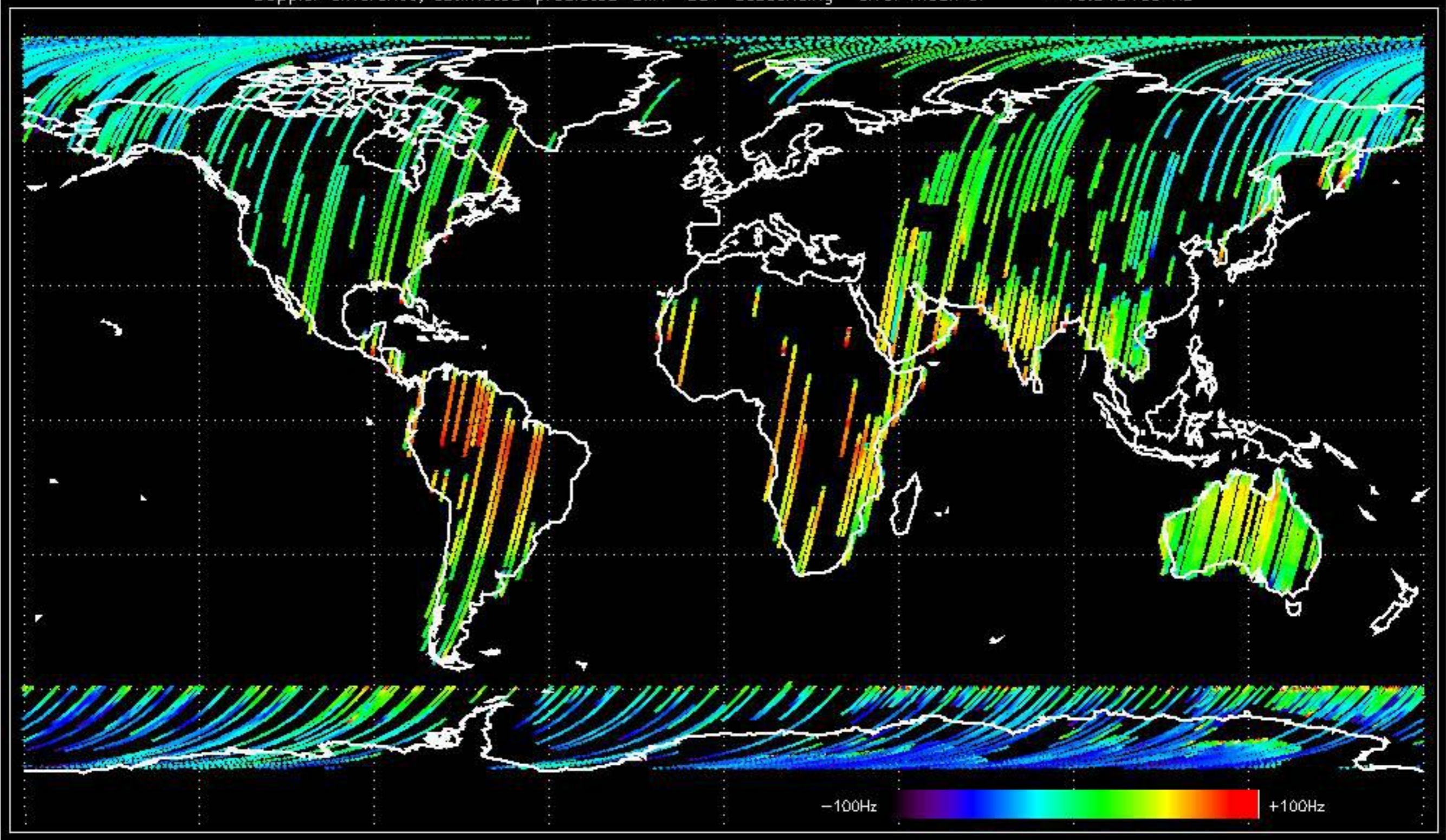




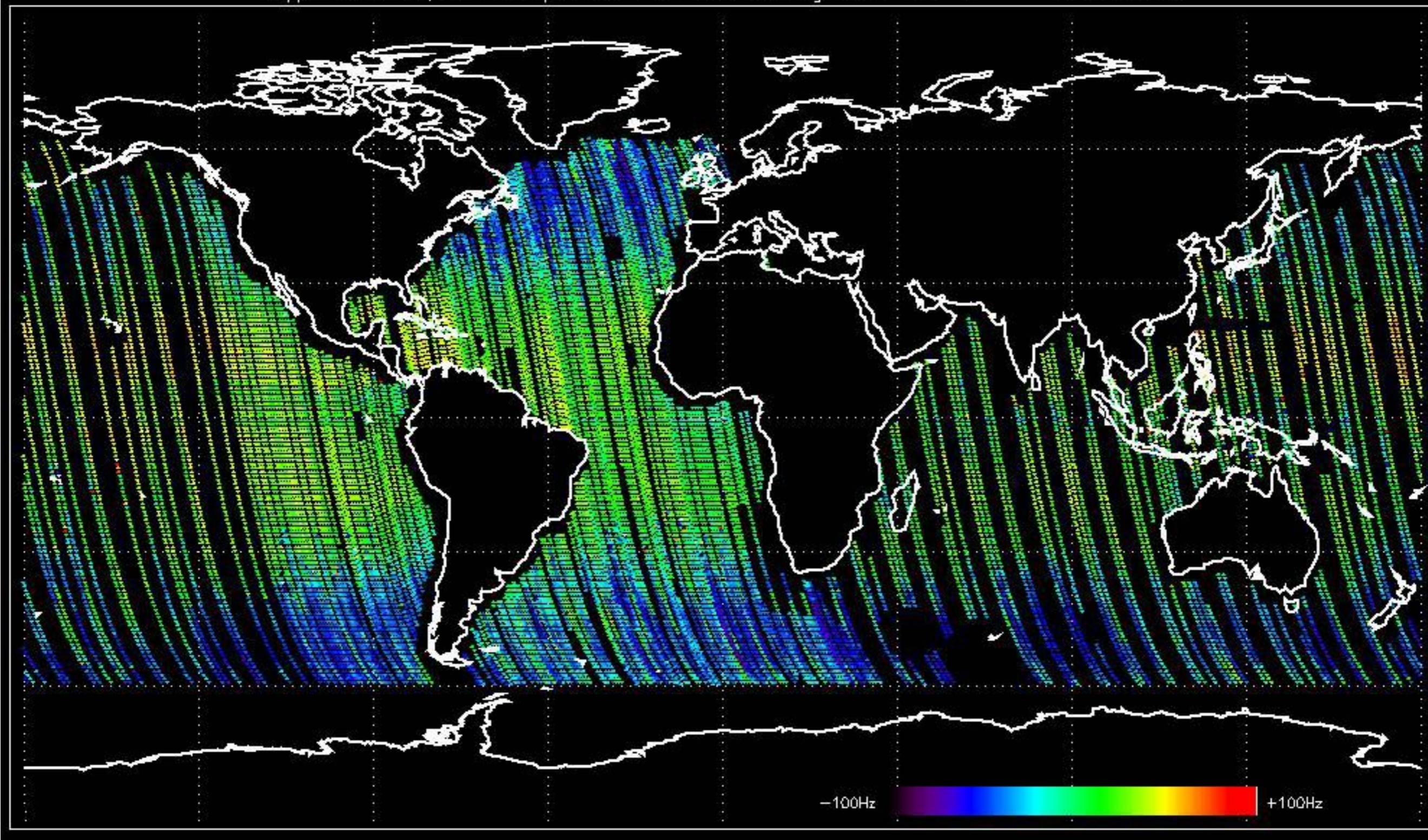
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -17.276453 Hz



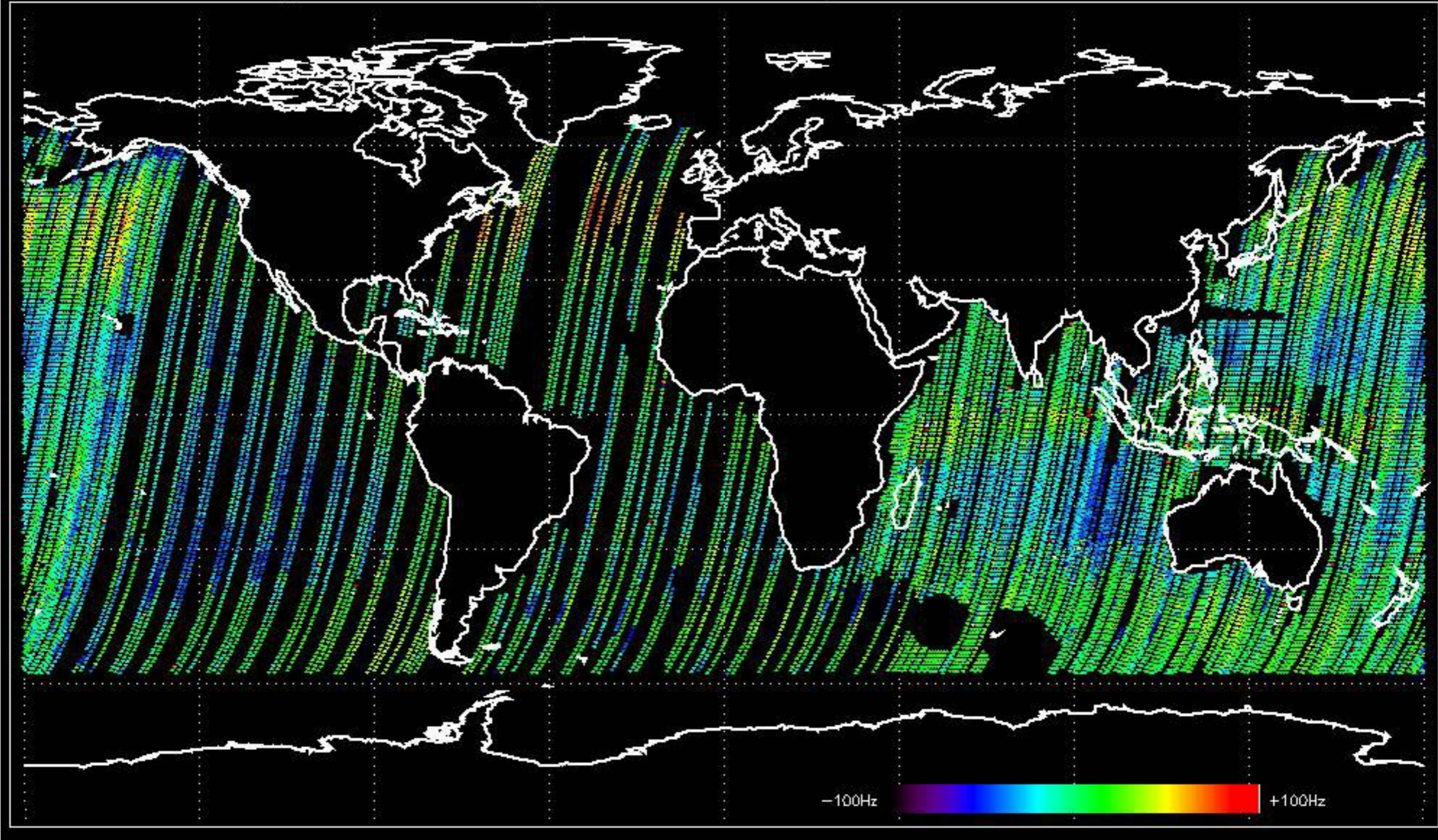
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -15.313460 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -12.697862 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -9.1542834 Hz



No anomalies observed on available MS products:

No anomalies observed.











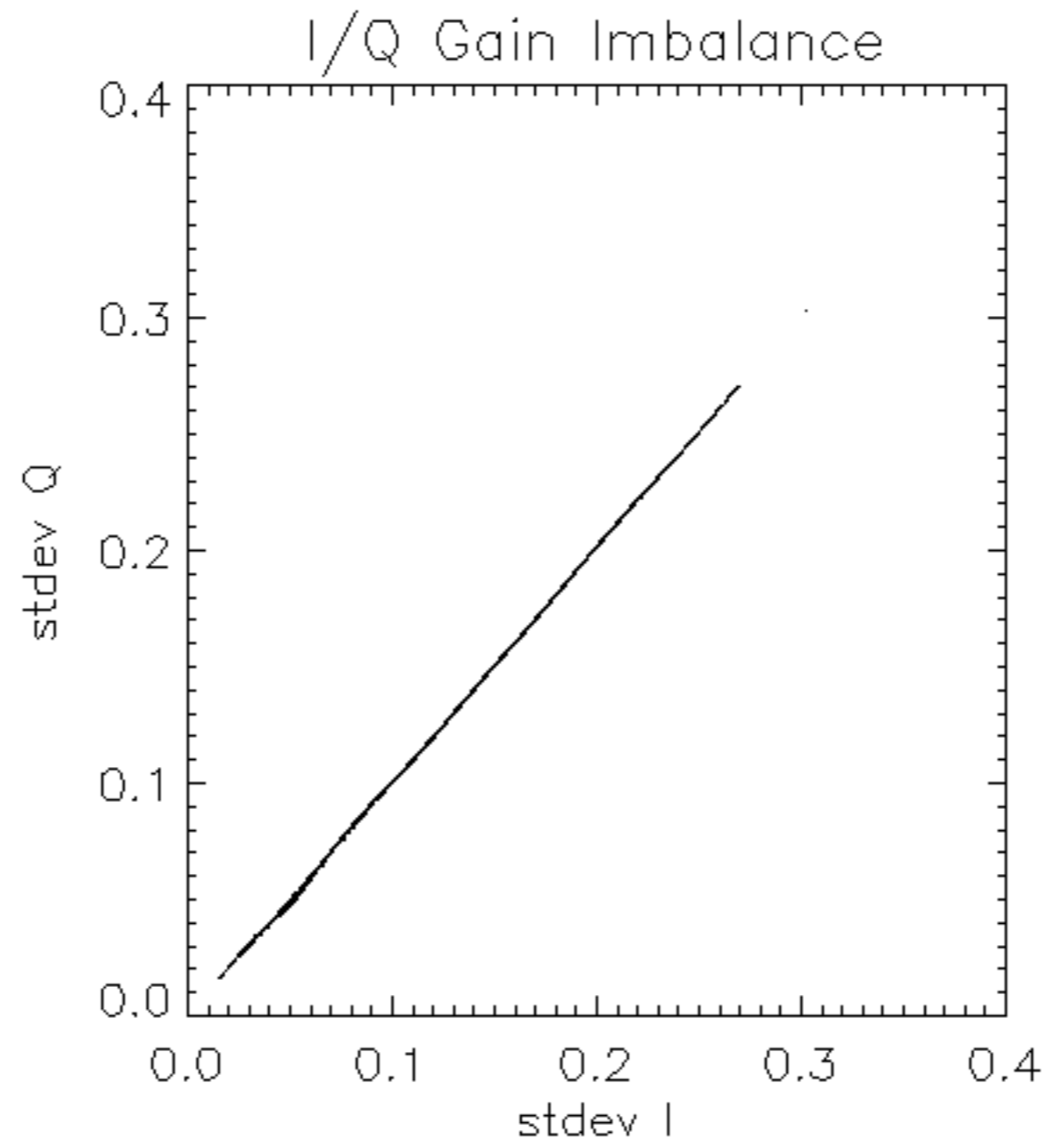


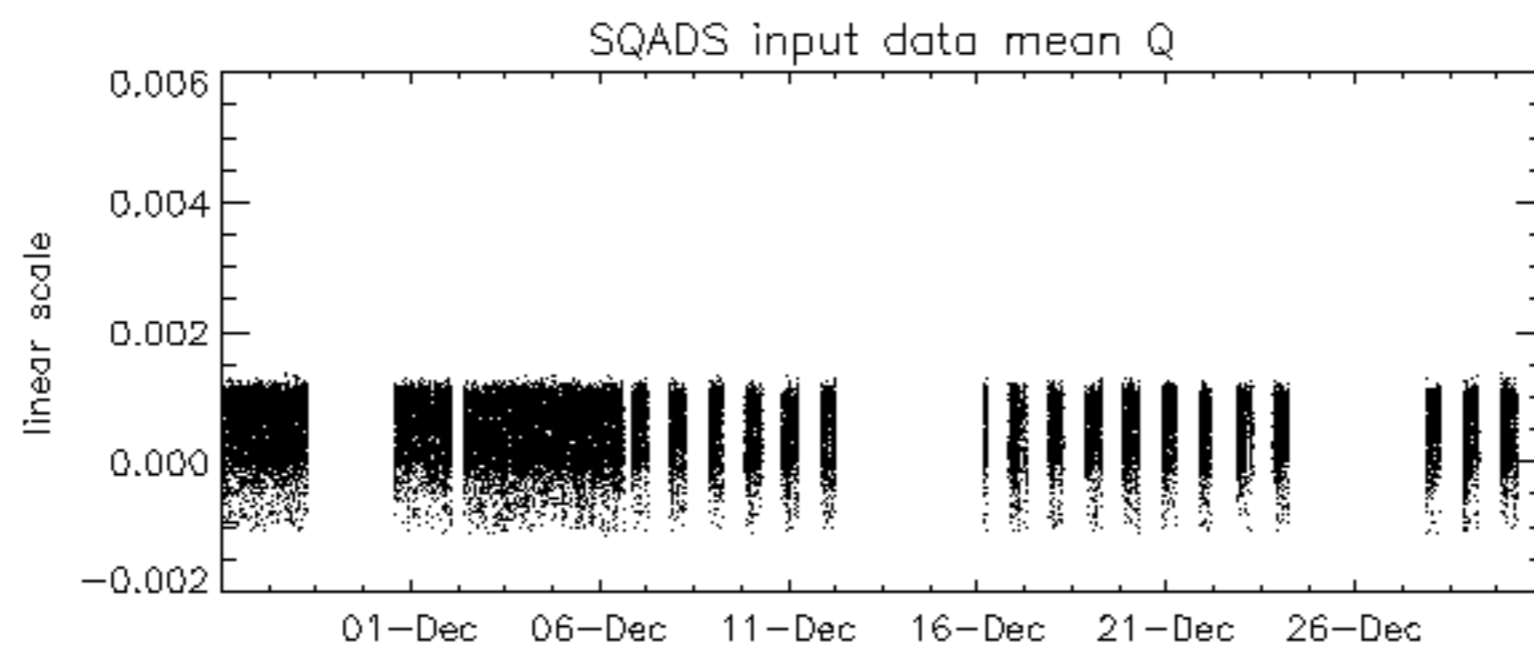
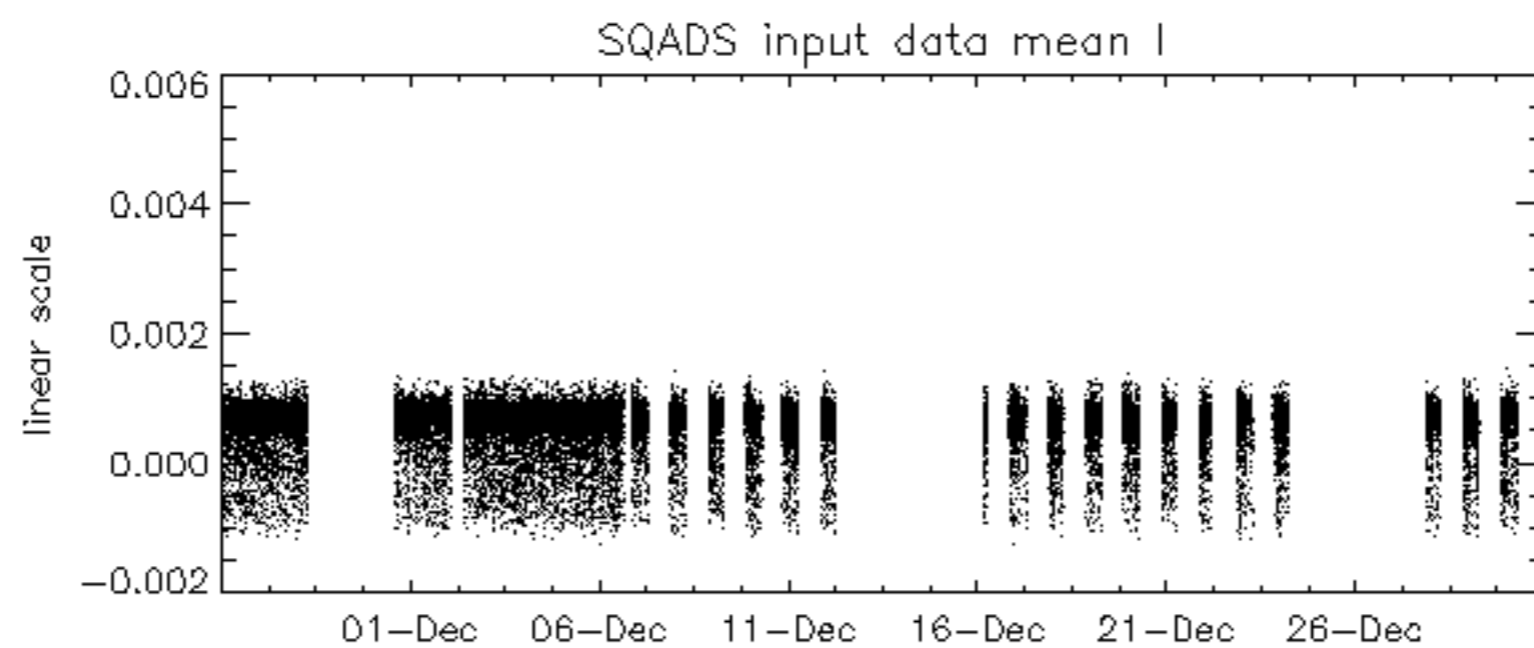
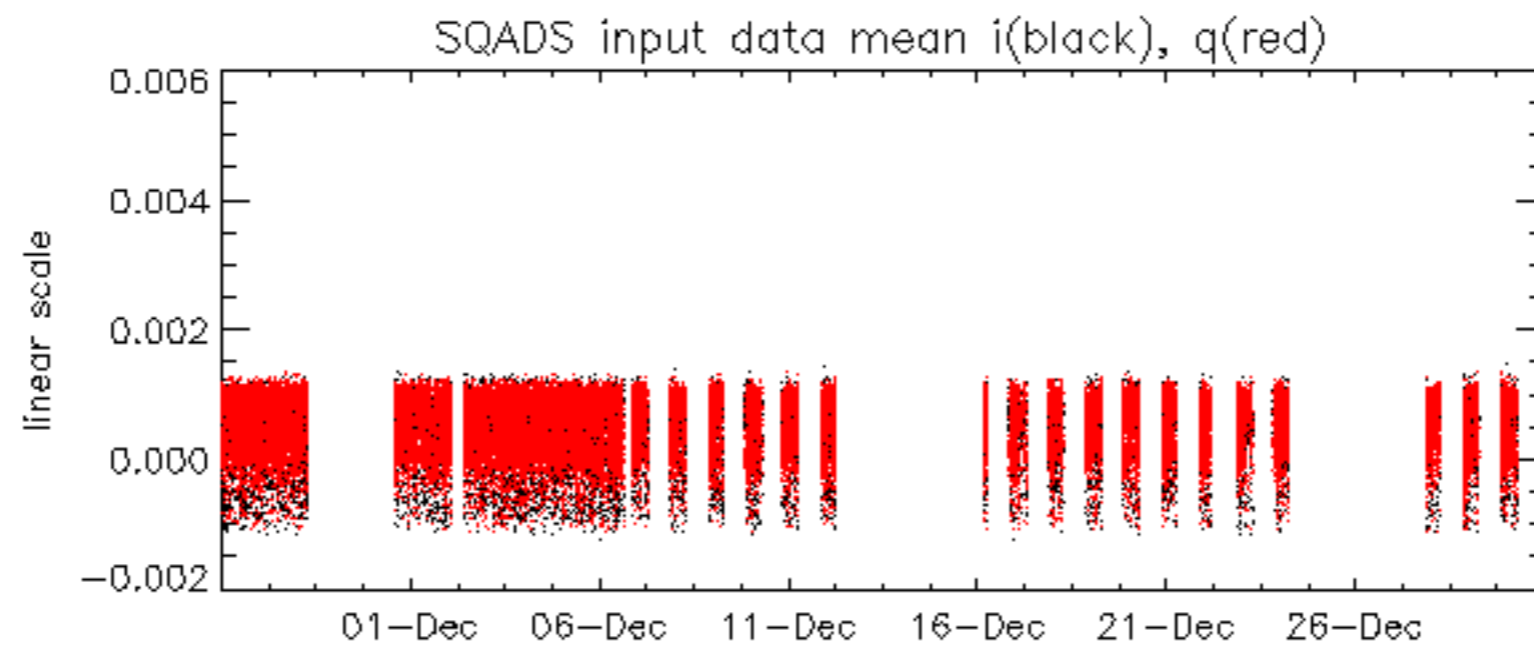


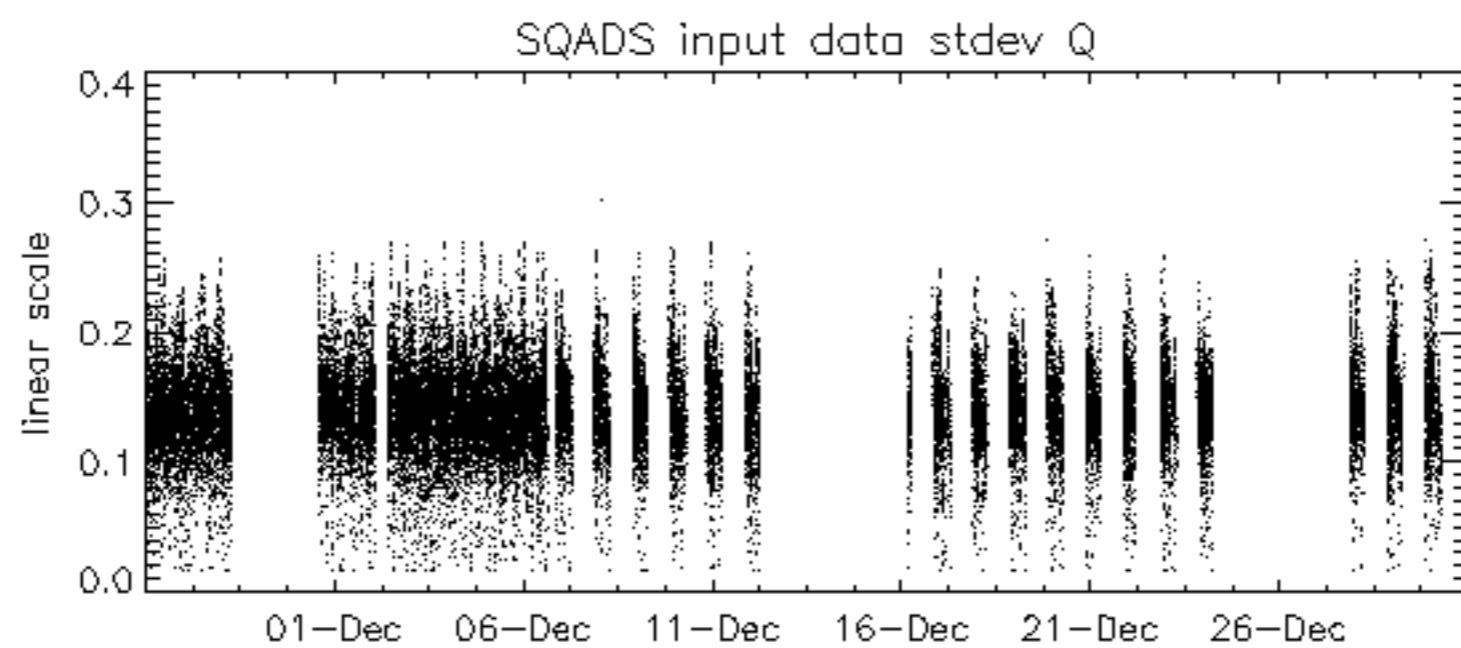
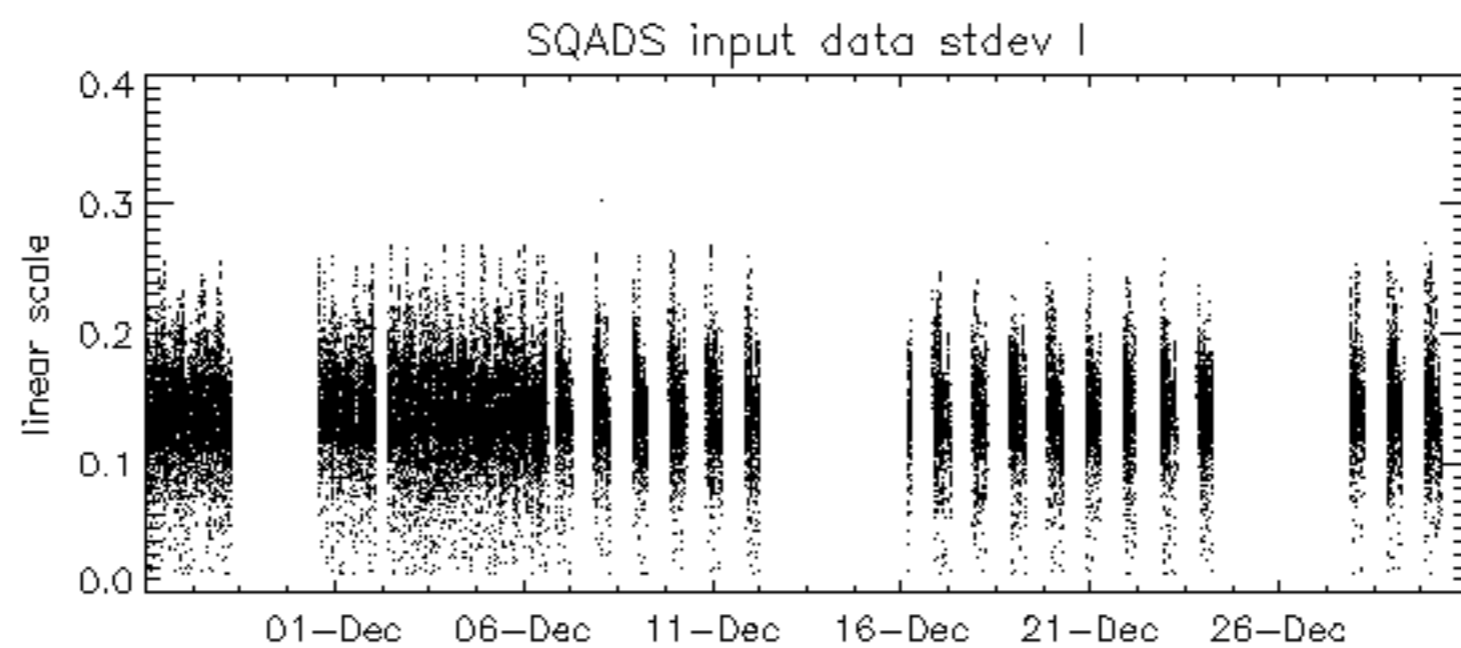
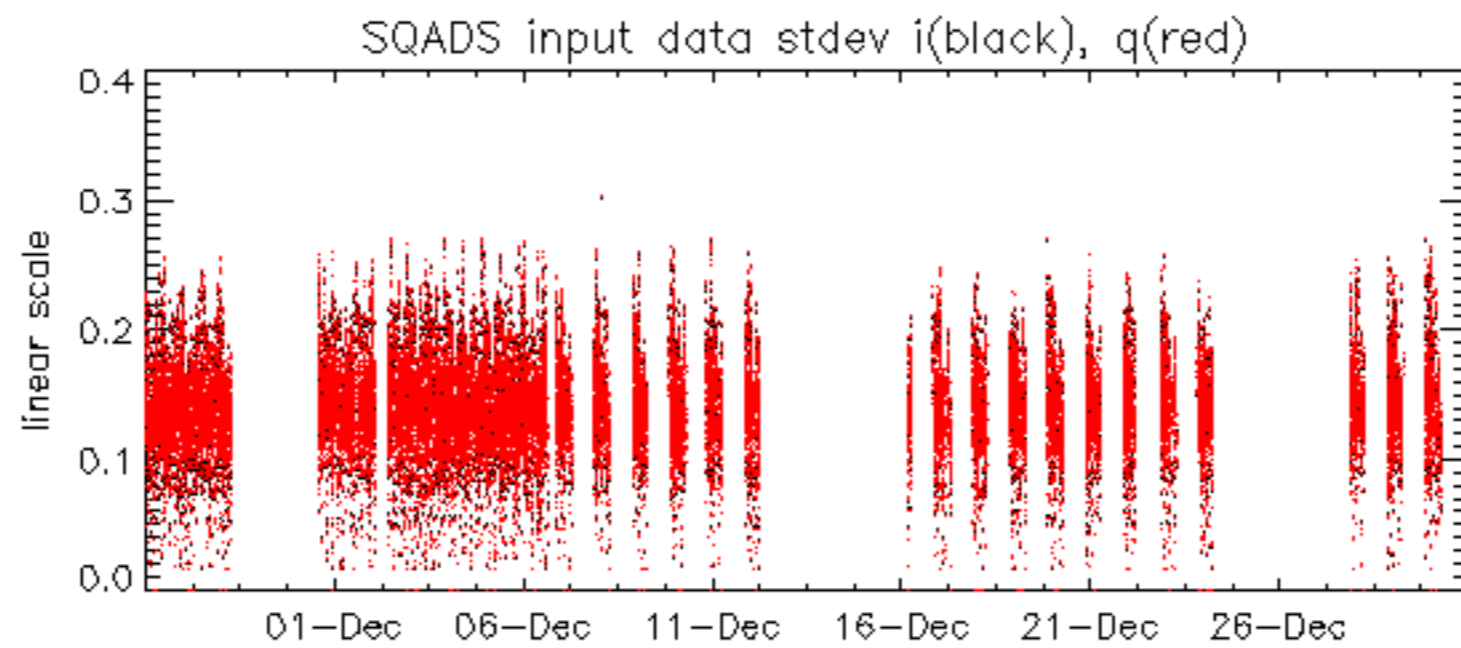


















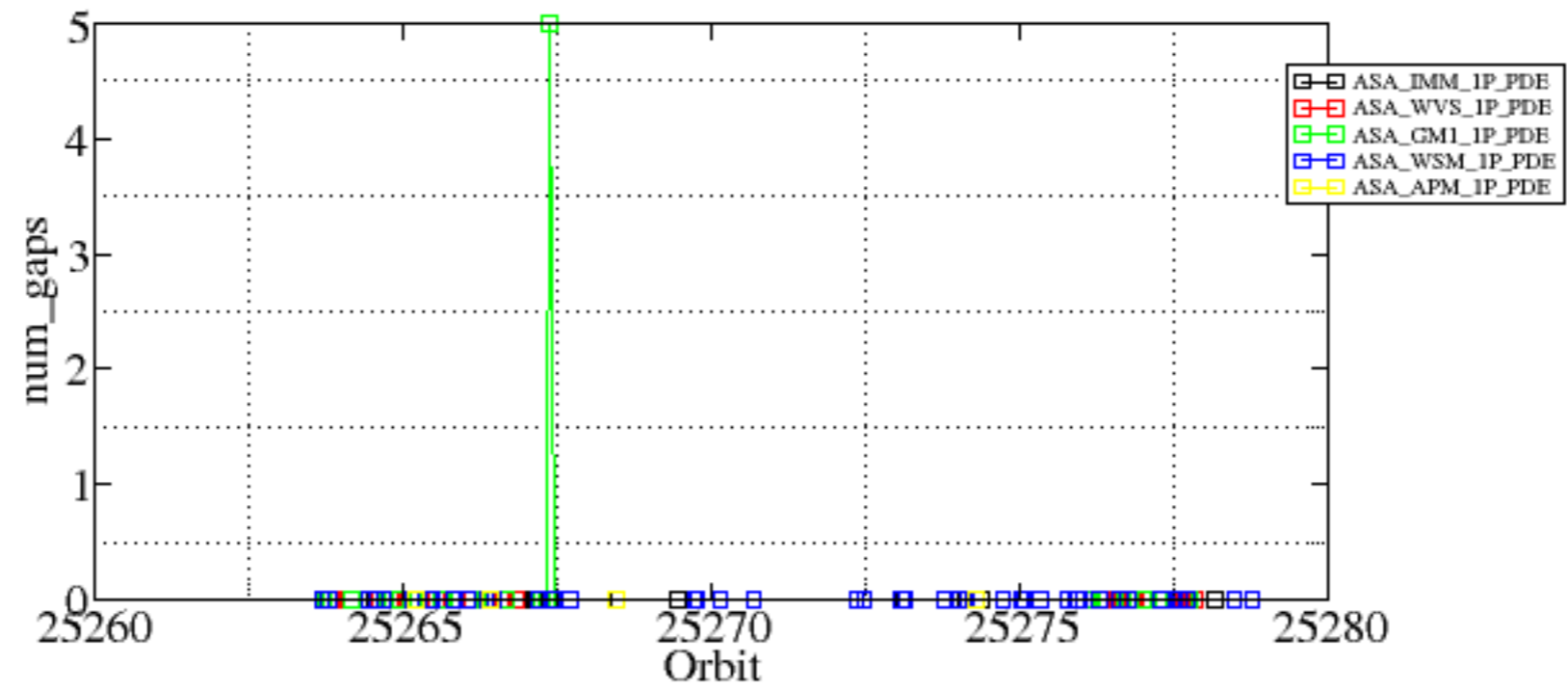


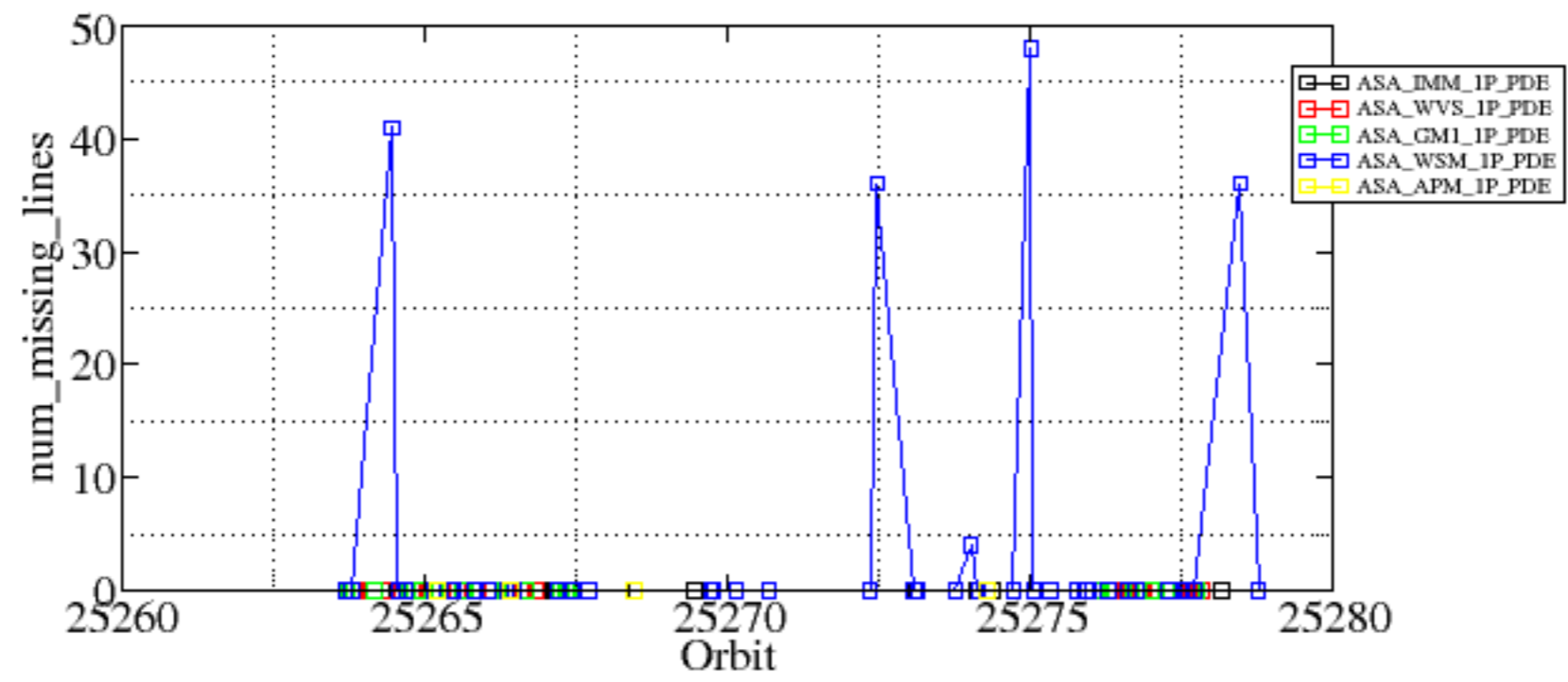
Summary of analysis for the last 3 days 2006123[901]

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_1PNPDE20061230_061449_000002592054_00163_25267_3906.N1	5	0
ASA_WSM_1PNPDE20061230_012058_000004402054_00160_25264_3489.N1	0	41
ASA_WSM_1PNPDE20061230_144646_000004462054_00168_25272_4293.N1	0	36
ASA_WSM_1PNPDE20061230_172249_000001772054_00170_25274_4329.N1	0	4
ASA_WSM_1PNPDE20061230_190232_000000972054_00171_25275_4361.N1	0	48
ASA_WSM_1PNPDE20061231_005022_000002612054_00174_25278_4768.N1	0	36





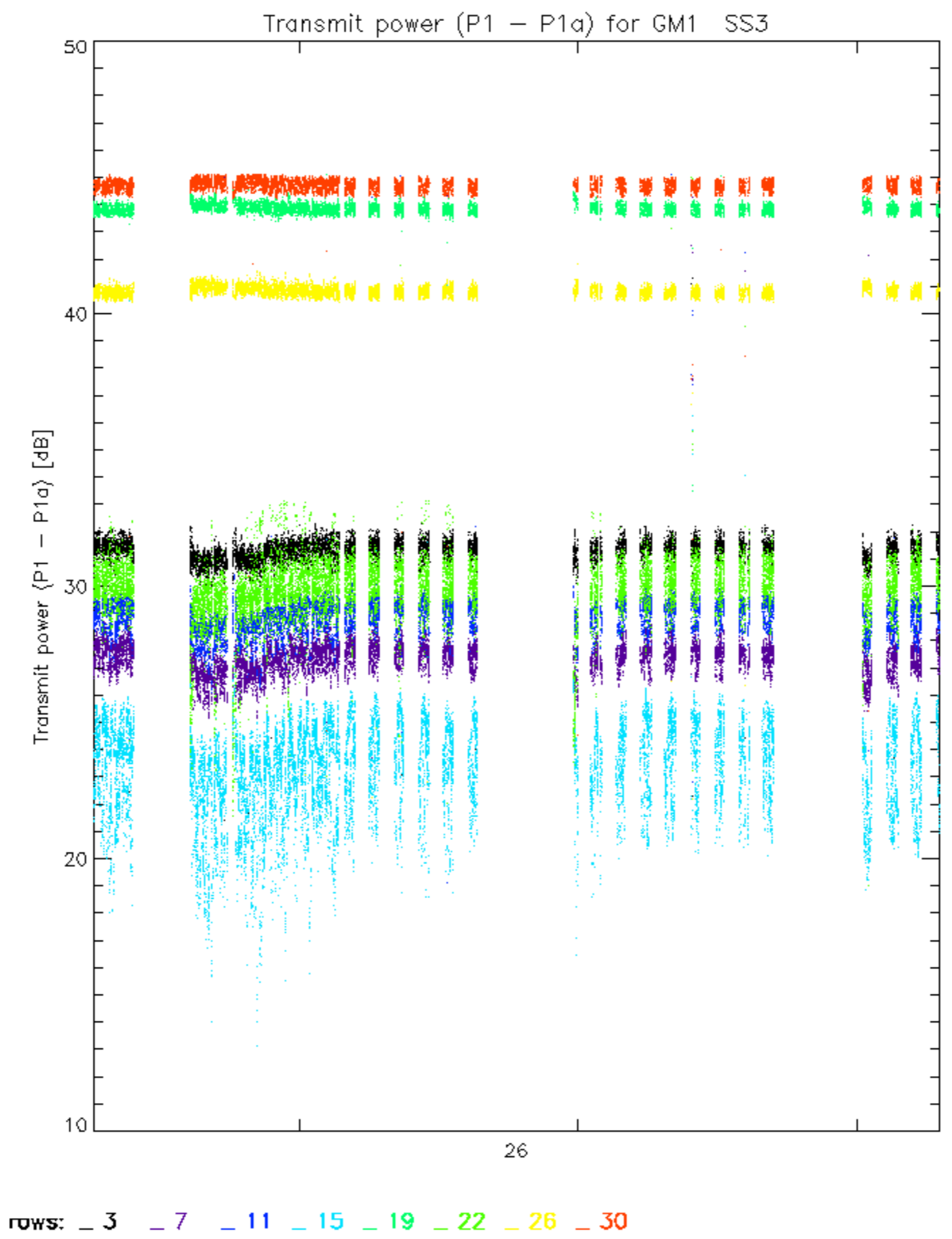


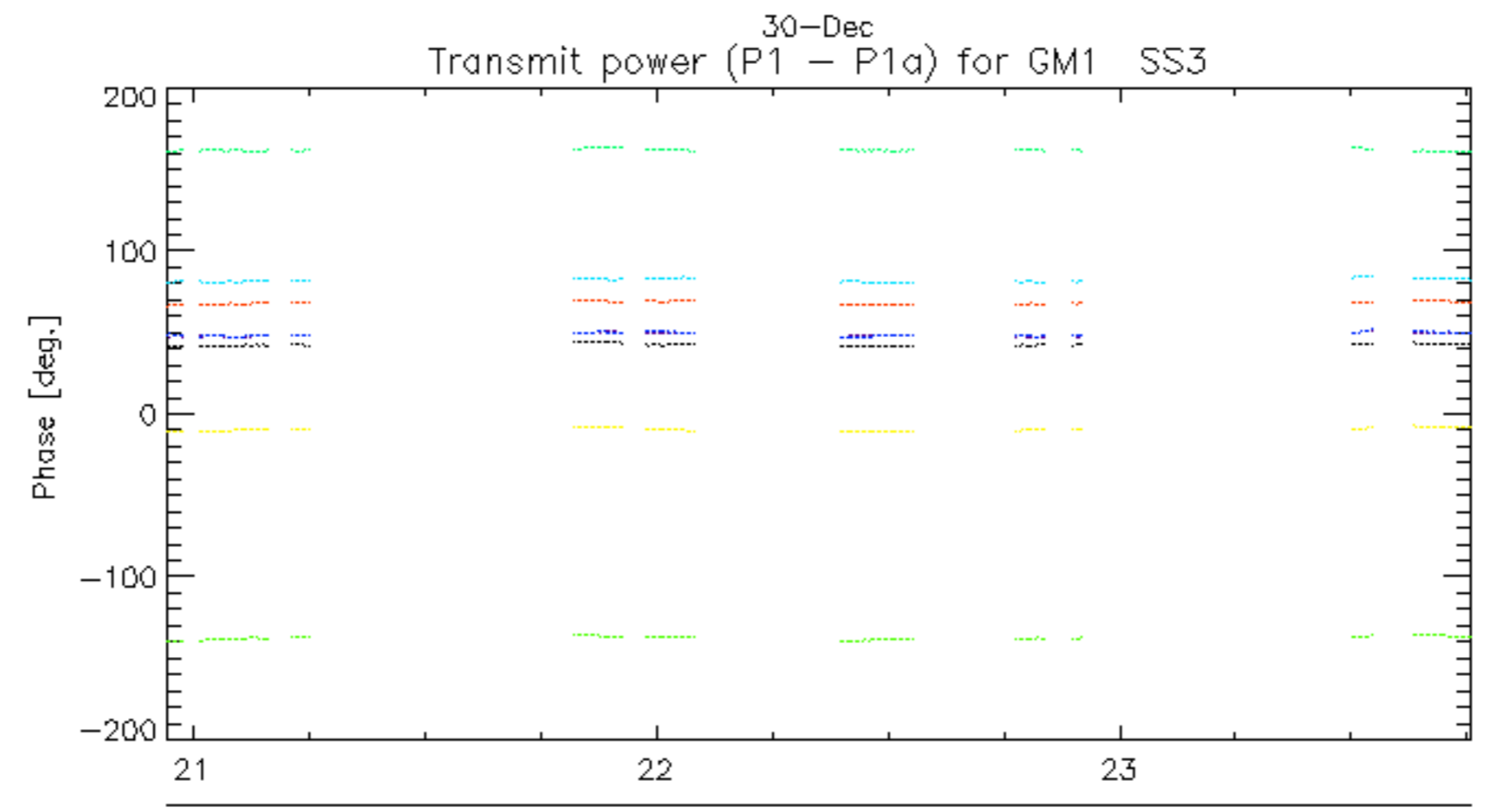
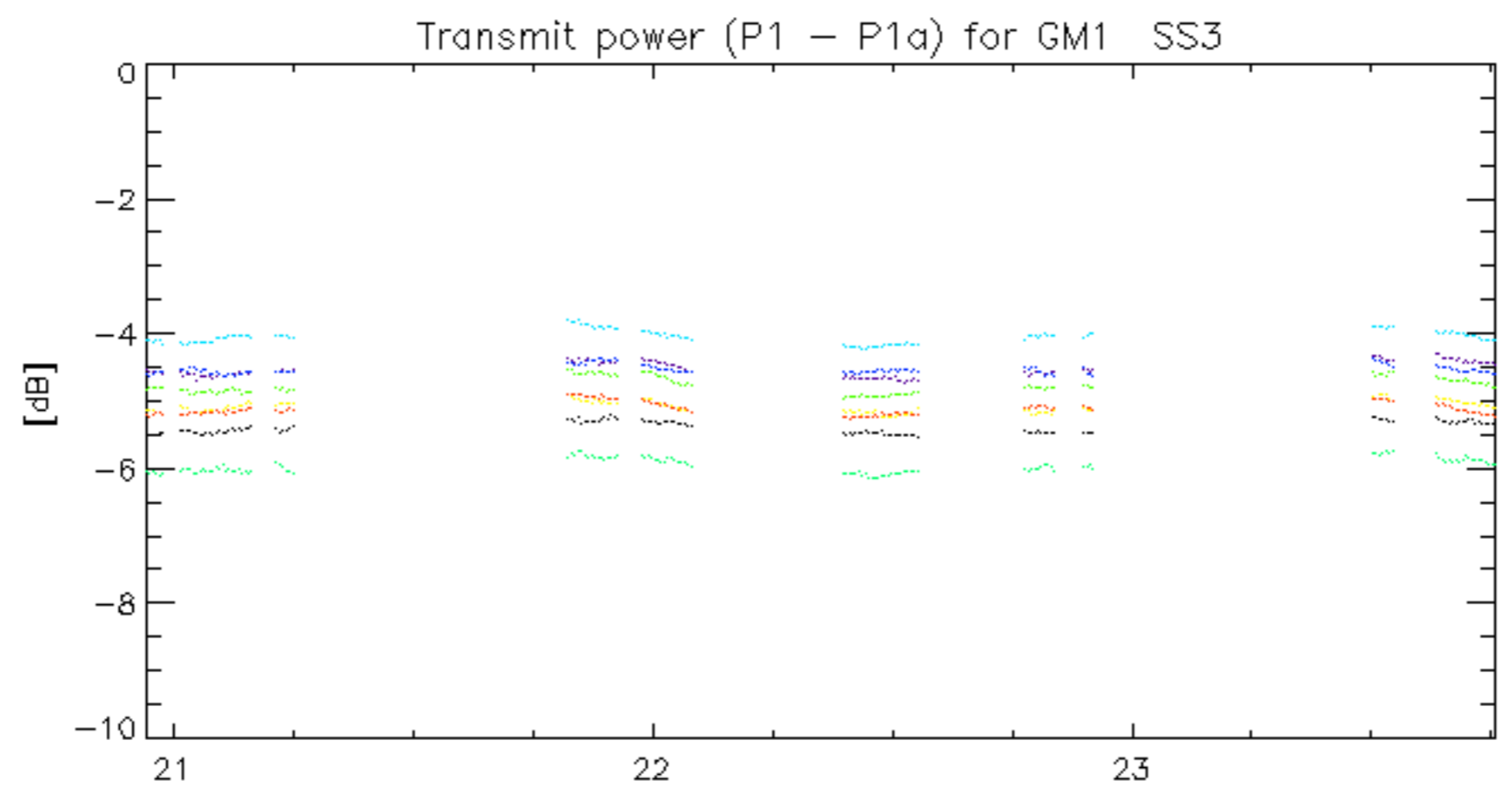








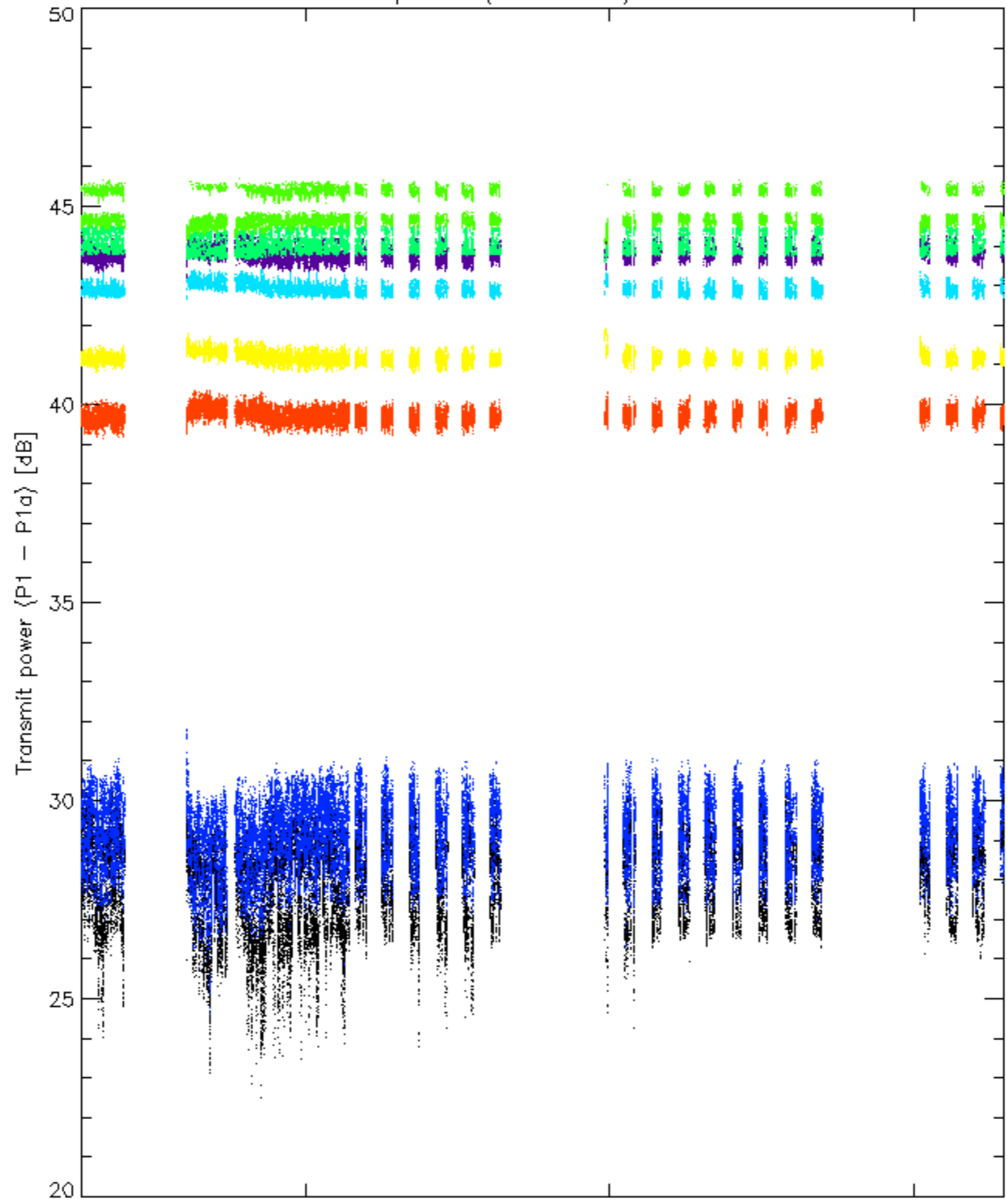




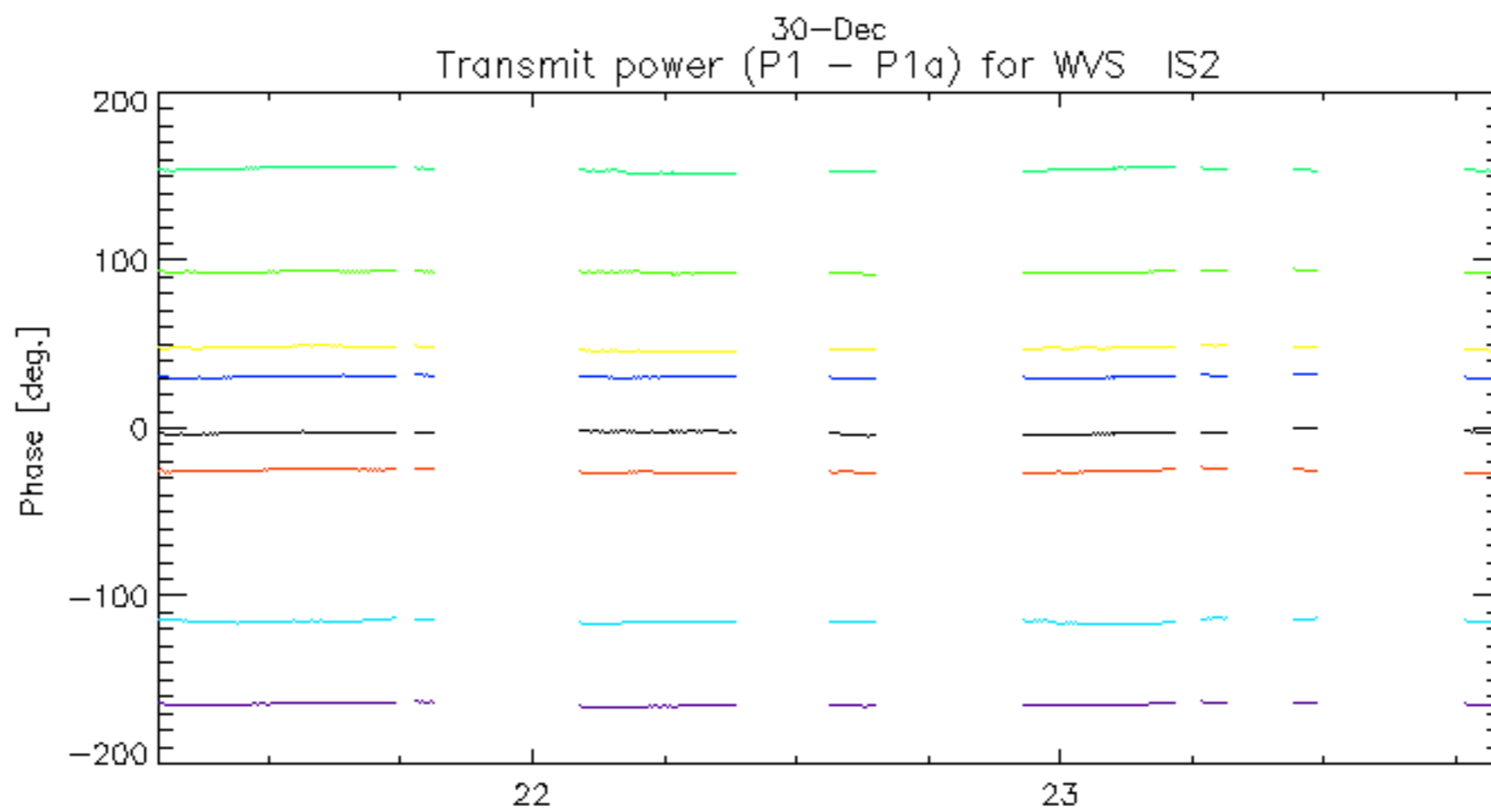
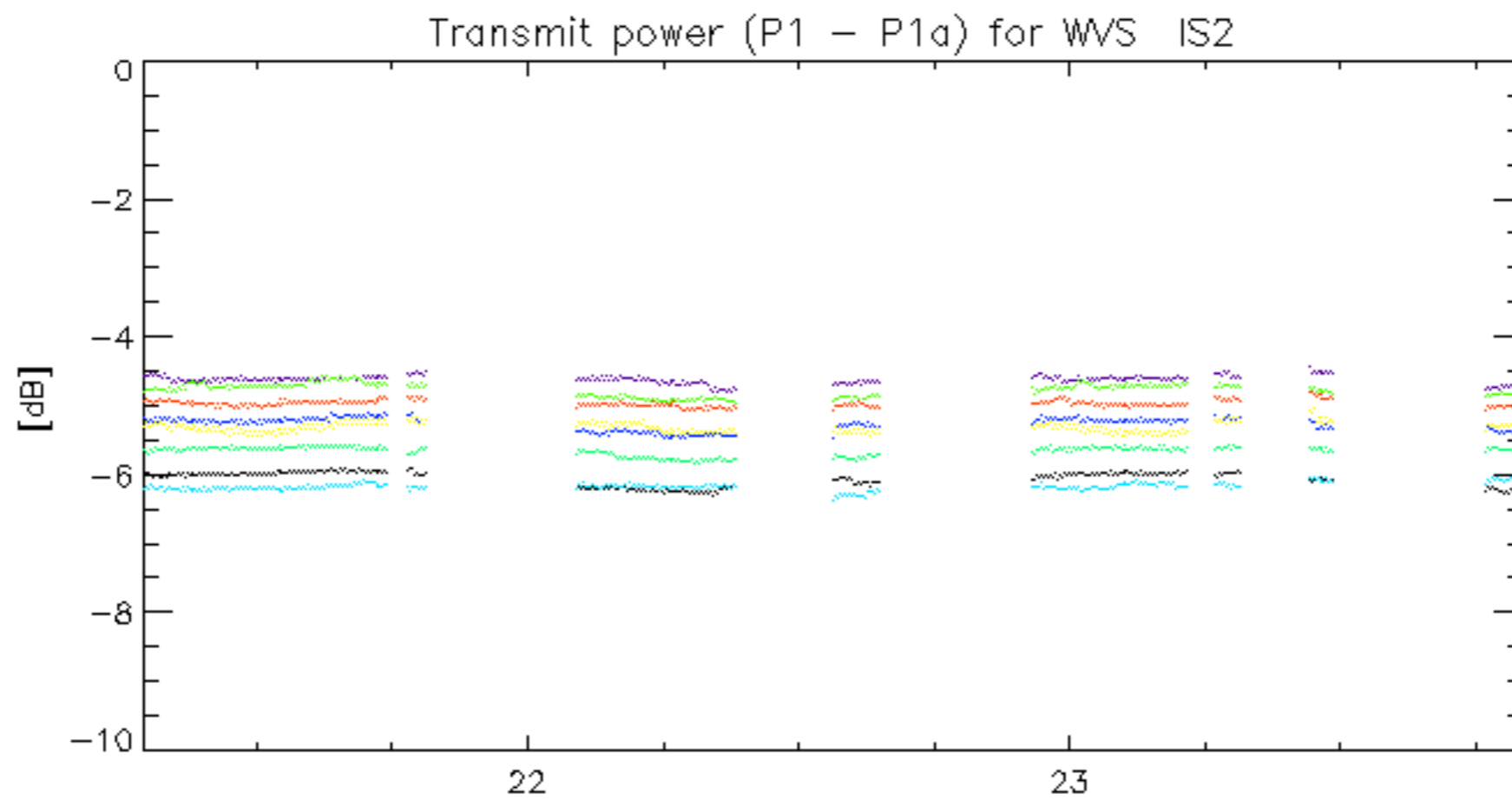
rows: **3** **7** **11** **15** **19** **22** **26** **30**



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.