

# REPORT OF 040511

last update on Tue May 11 13:32:58 GMT 2004

1. [Introduction](#)
2. [Summary](#)
  - [Instrument Unavailability](#)
  - [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. [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 - Browse Visual Inspection

No anomalies observed on available browse products.

### 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:

- ASA\_MS\_\_0PNPDK20040510\_202334\_000000152026\_00400\_11476\_0118.N1

Polarisation	Start Time
V	20040509 191535
H	20040510 202334

#### 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

#### P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.598026	0.083814	-0.035179
7	P1	-3.325457	0.061904	-0.056989
11	P1	-4.600893	0.030950	0.100230
15	P1	-4.937580	0.043171	0.124025
19	P1	-3.369349	0.005596	-0.036019
22	P1	-4.520061	0.013711	-0.022065
24	P1	-4.986085	0.014739	0.107903
28	P1	-4.591829	0.013777	0.007887

#### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.410719	0.081843	-0.054062

7	P2	-22.882517	0.113195	-0.041413
11	P2	-15.820232	0.123522	0.157598
15	P2	-7.169662	0.092213	-0.048527
19	P2	-9.525365	0.126999	-0.020740
22	P2	-17.637014	0.094571	0.039479
24	P2	-20.954666	0.097032	0.063702
28	P2	-16.606390	0.084168	-0.004620

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.135406	0.003152	-0.008631
7	P3	-8.135403	0.003152	-0.008641
11	P3	-8.135401	0.003152	-0.008642
15	P3	-8.135399	0.003152	-0.008649
19	P3	-8.135401	0.003152	-0.008654
22	P3	-8.135401	0.003152	-0.008657
24	P3	-8.135401	0.003152	-0.008666
28	P3	-8.135346	0.003155	-0.008235

### 4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1



### P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.245580	0.314279	0.039380
7	P1	-2.878093	0.267292	-0.102445
11	P1	-3.810256	0.021687	0.059474
15	P1	-4.007935	0.355205	0.257016
19	P1	-3.267529	0.059705	-0.135447
22	P1	-5.787523	0.044231	0.145908
24	P1	-4.054705	0.085053	0.068343
28	P1	-2.890819	0.067816	-0.110625

## P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.125128	0.041068	-0.086323
7	P2	-22.988333	0.027470	-0.000224
11	P2	-11.069492	0.196305	-0.179945
15	P2	-4.941794	0.032193	-0.125332
19	P2	-6.849199	0.033185	-0.103277
22	P2	-7.707288	0.028515	-0.038321
24	P2	-11.029801	0.059905	-0.124006
28	P2	-19.030914	0.026806	-0.064755

## P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.971237	0.003700	-0.019361
7	P3	-7.971259	0.003705	-0.019114
11	P3	-7.971173	0.003698	-0.019036
15	P3	-7.971158	0.003712	-0.019448
19	P3	-7.971211	0.003699	-0.019360
22	P3	-7.971402	0.003686	-0.019001
24	P3	-7.971091	0.003716	-0.019183
28	P3	-7.971135	0.003717	-0.019654

## 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	0.000492255
	stdev	2.23531e-07
MEAN Q	mean	0.000516242
	stdev	2.57953e-07



## 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128531
	stdev	0.00108220
STDEV Q	mean	0.128772
	stdev	0.00109503





## 5.3 - Gain imbalance I/Q



## 6 - Doppler Analysis

No anomalies observed in Doppler evolution.  
Analysis performed over the last 35 days.

### 6.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

Ascending

Descending

## 6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

Ascending

Descending

## 6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

## 6.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

Ascending

Descending

## 6.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler

Ascending

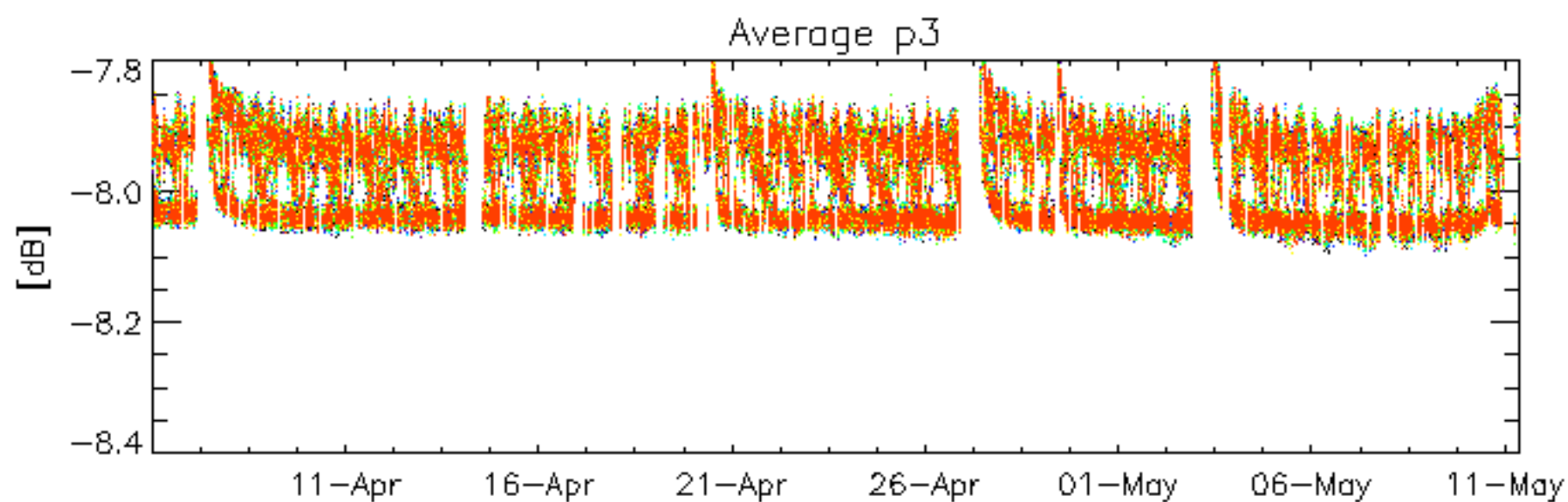
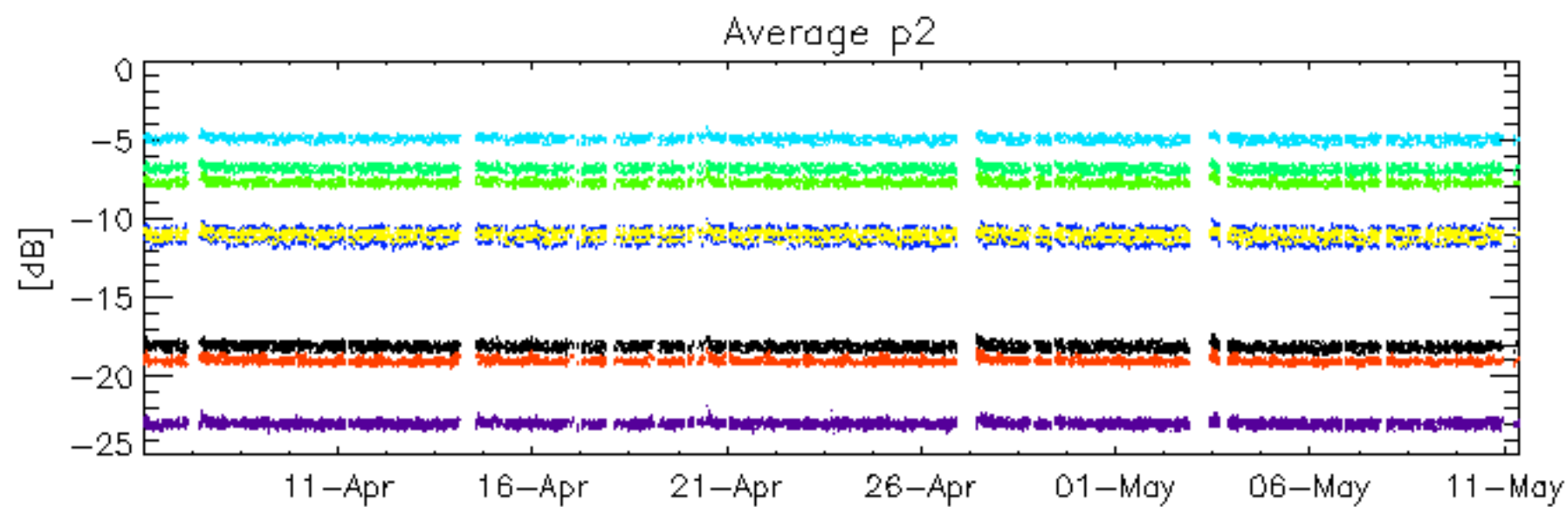
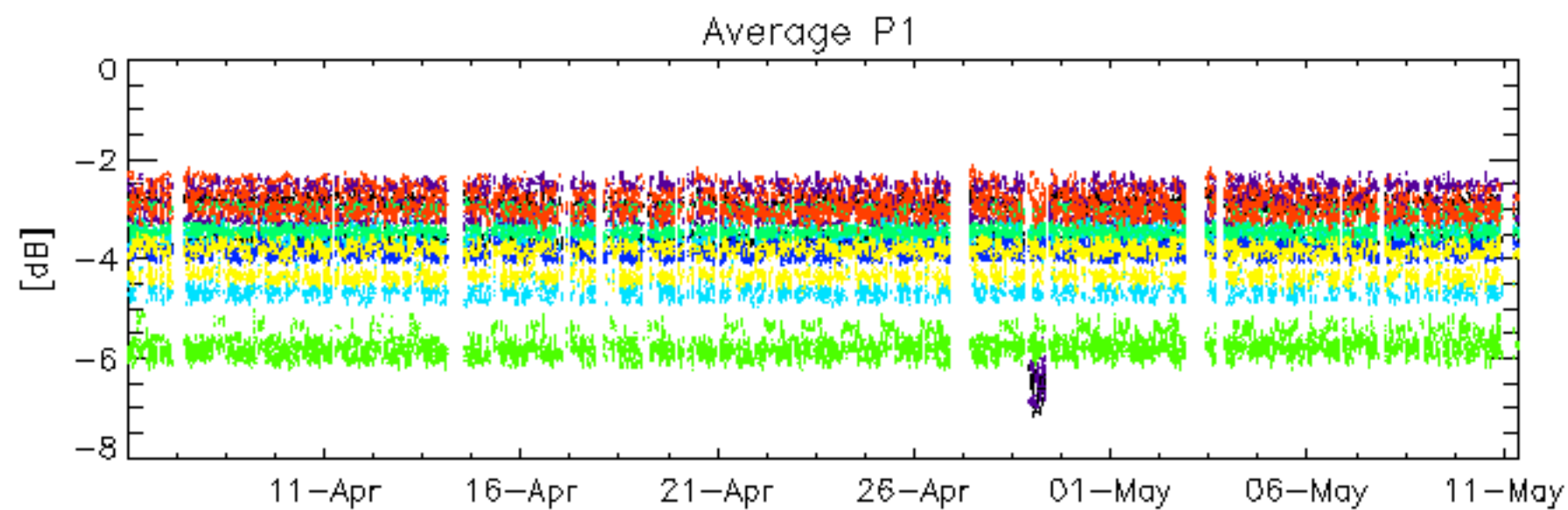
Descending

## 6.6 - Doppler evolution versus ANX for GM1

**Evolution Doppler error versus ANX**

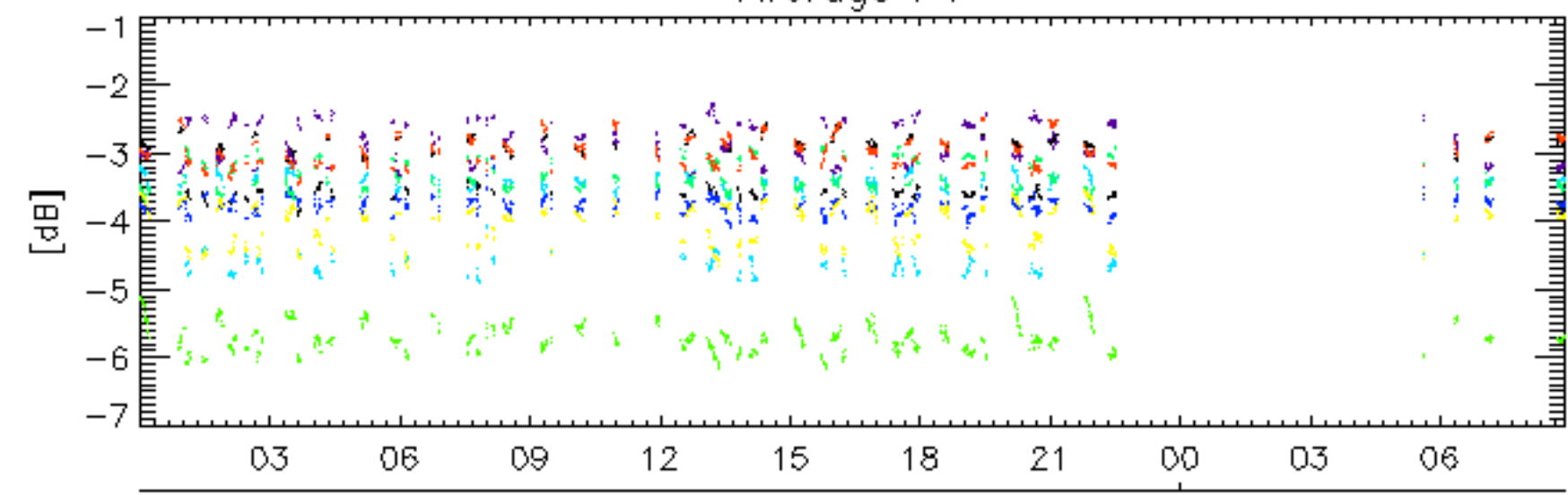




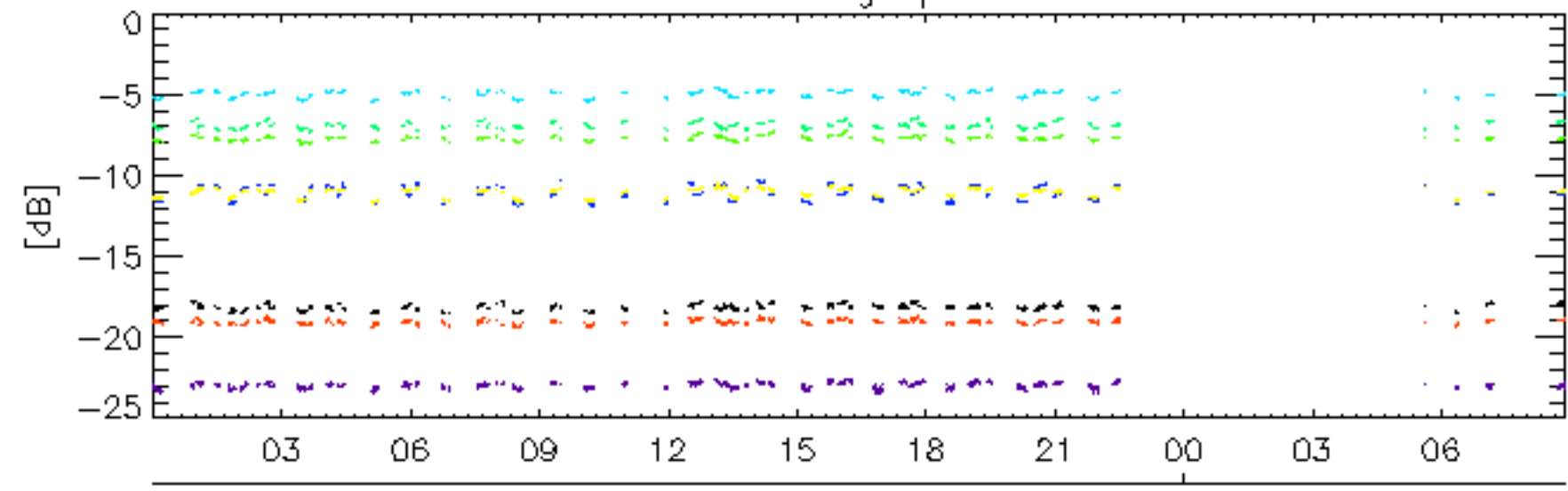


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 28

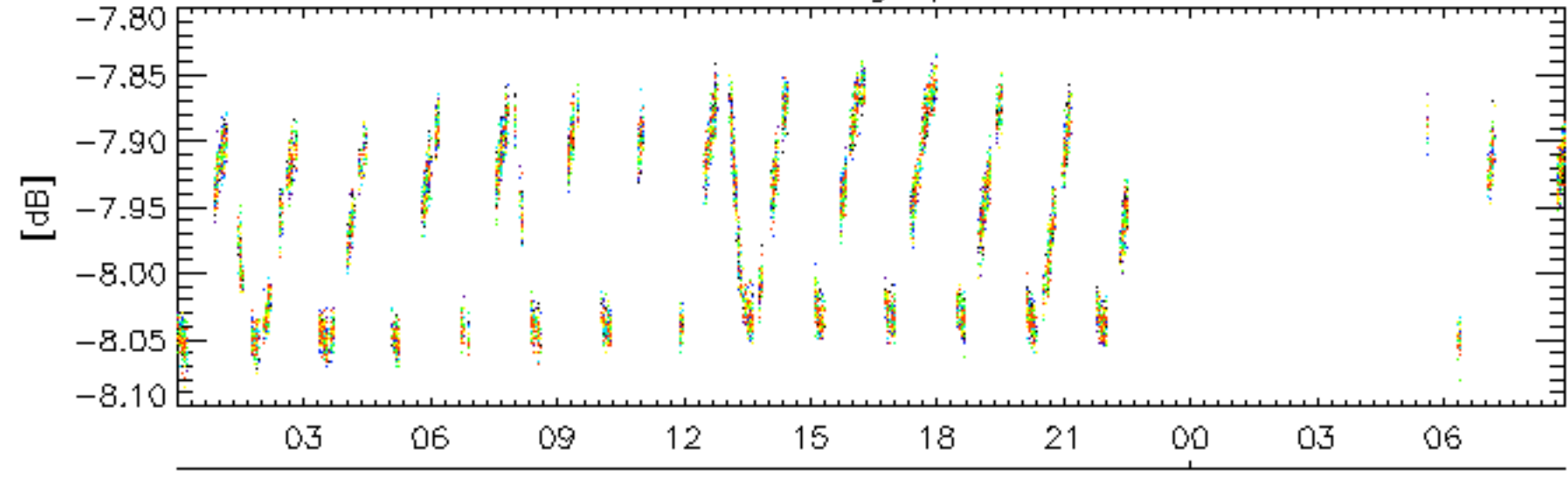
Average P1



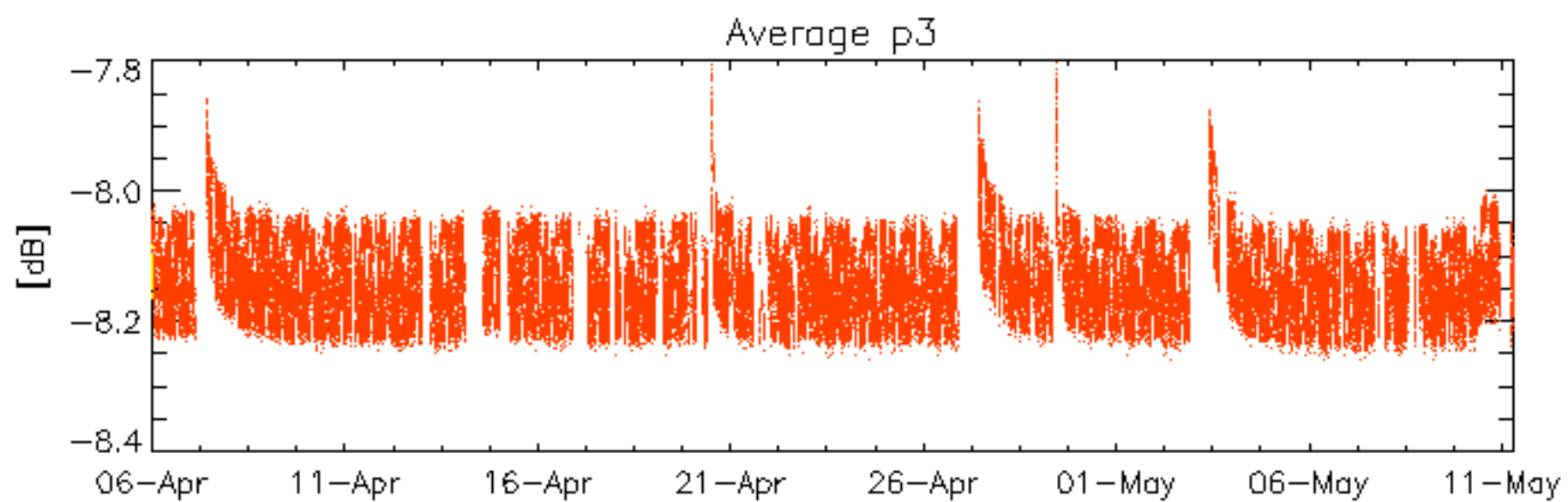
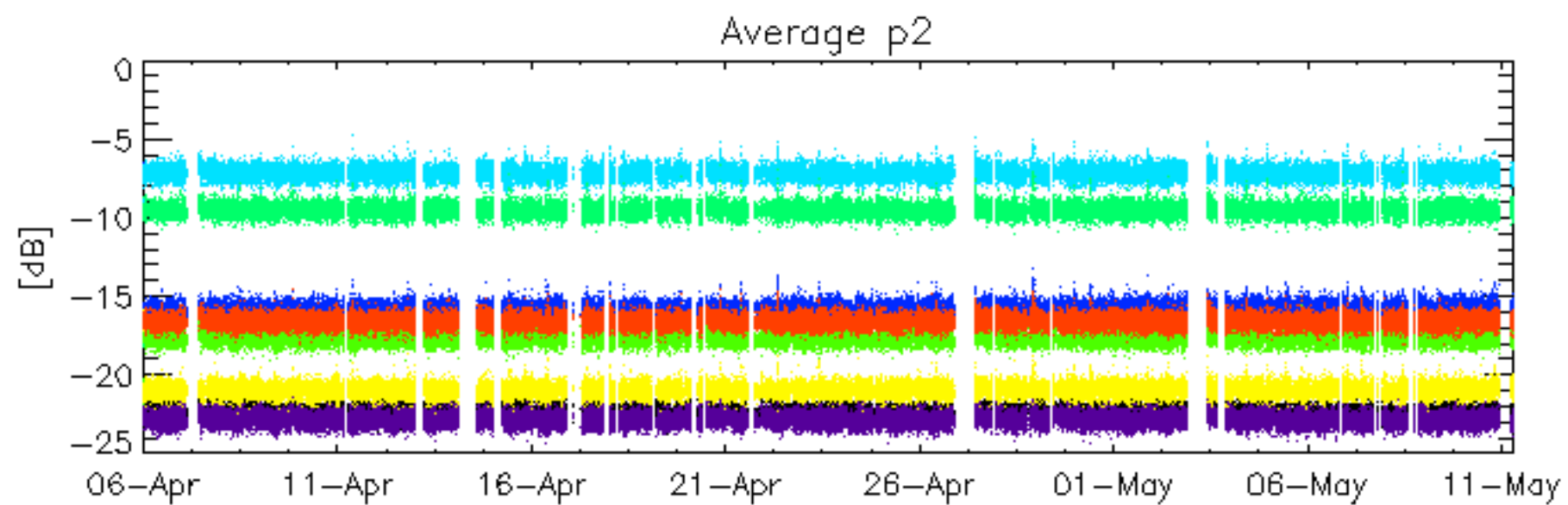
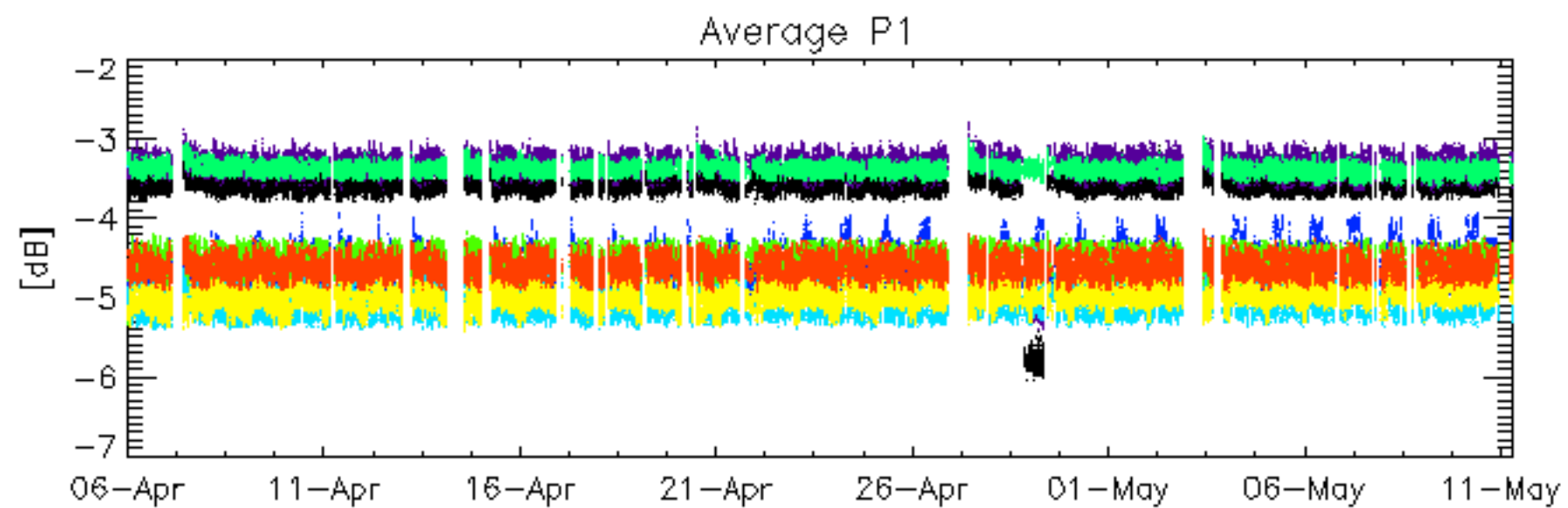
Average p2



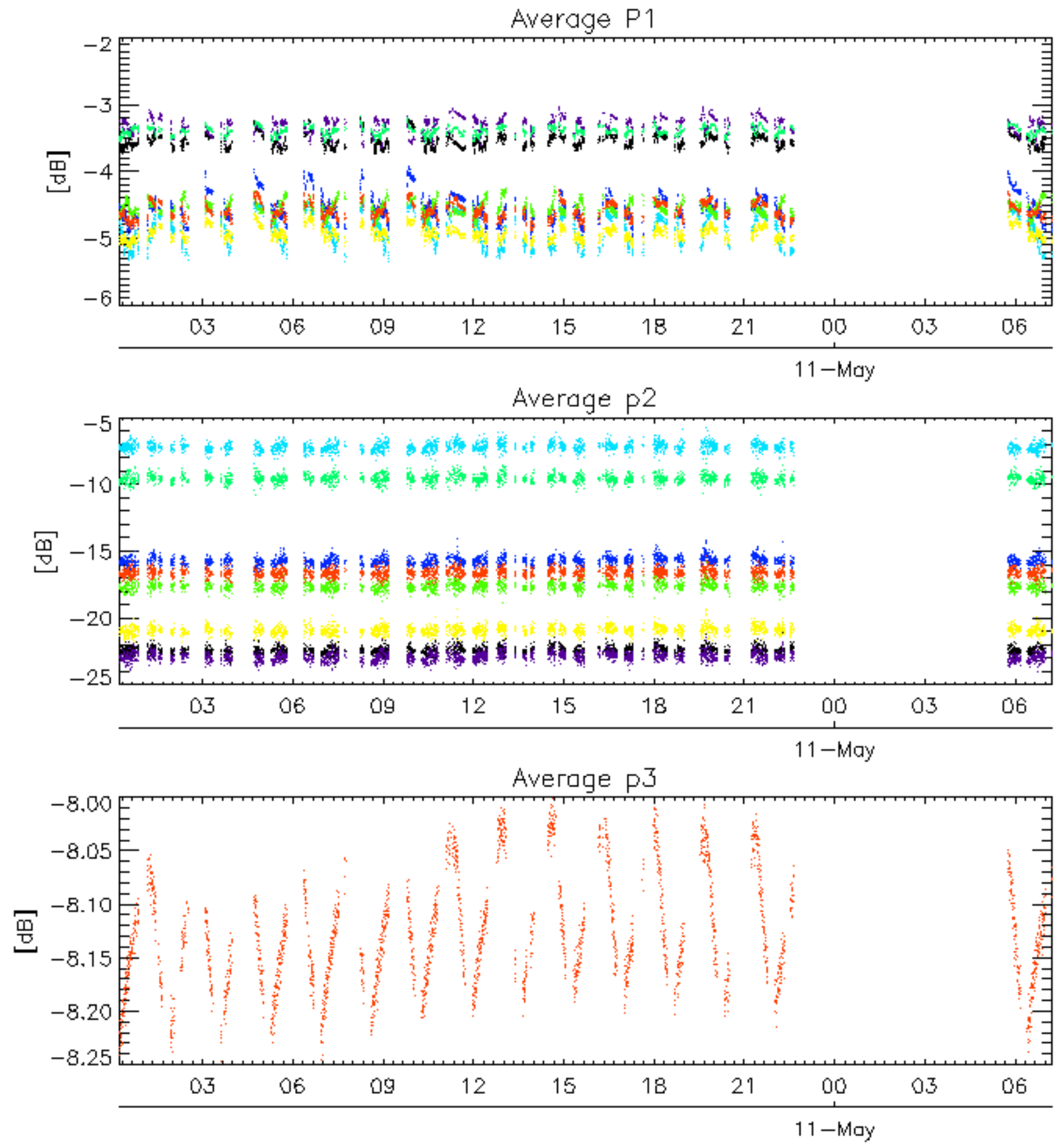
Average p3



rows: **3** **7** **11** **15** **19** **22** **24** **28**



rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 28

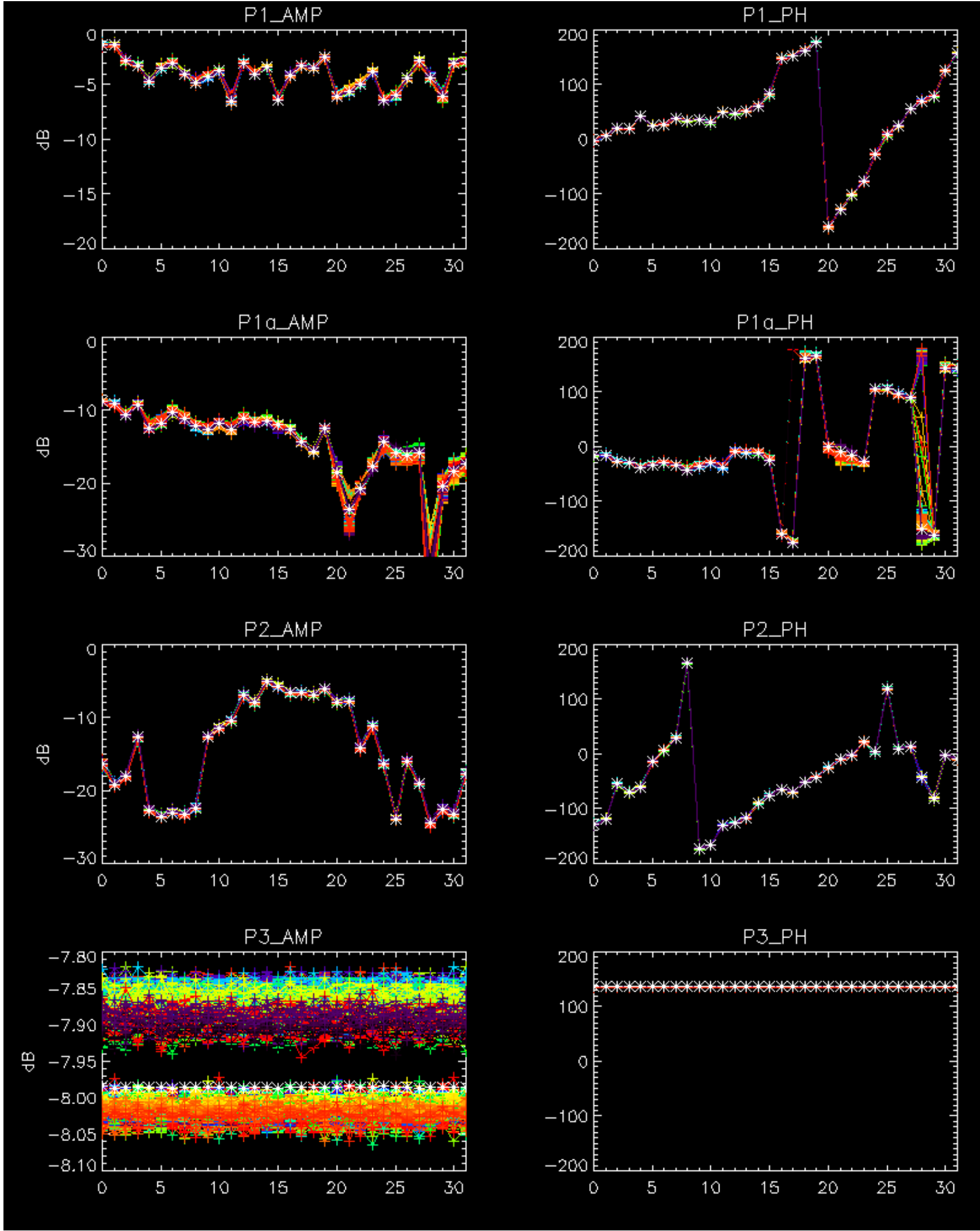


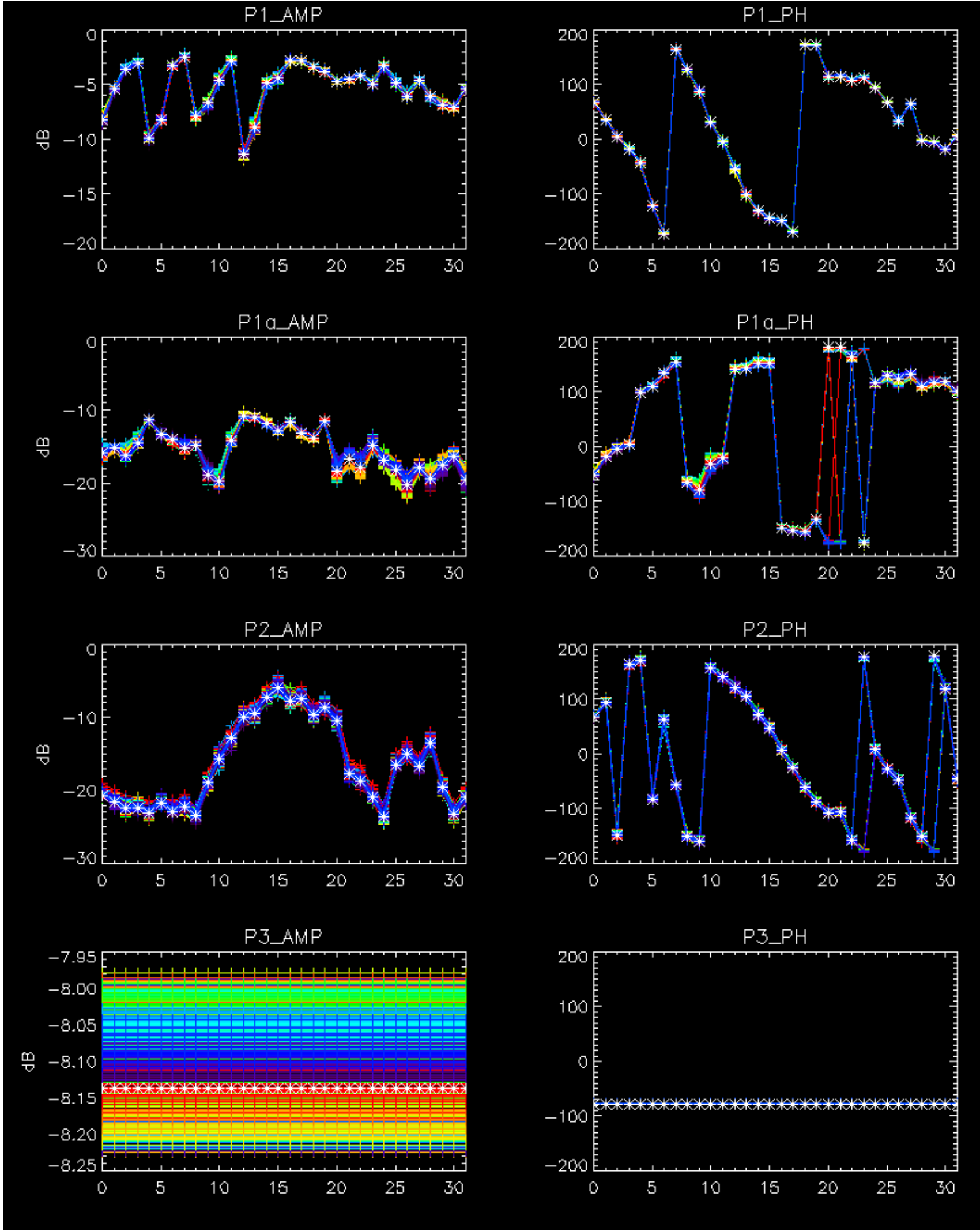
rows: **3** **7** **11** **15** **19** **22** **24** **28**

No anomalies observed on available browse products.

No anomalies observed.





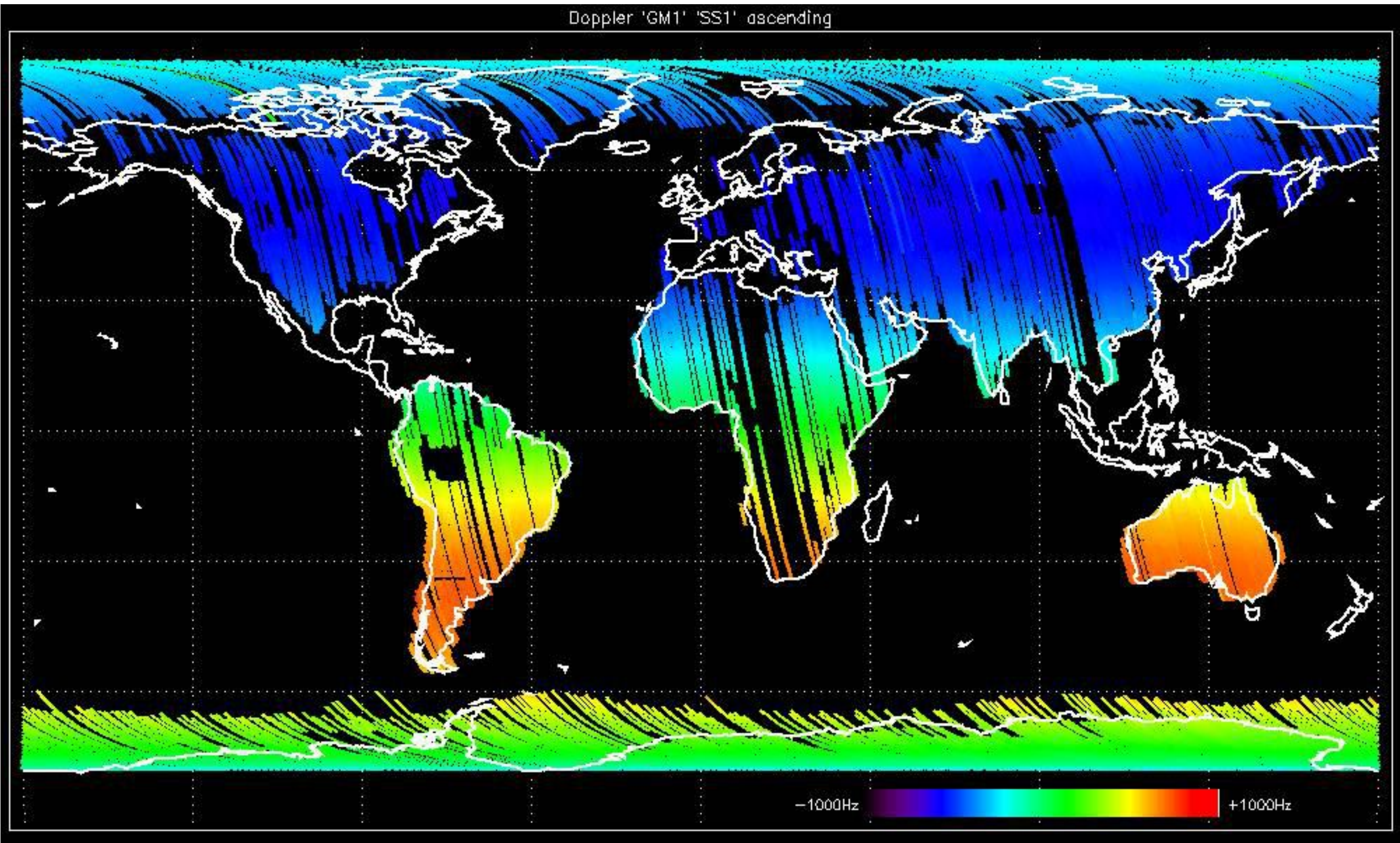




- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

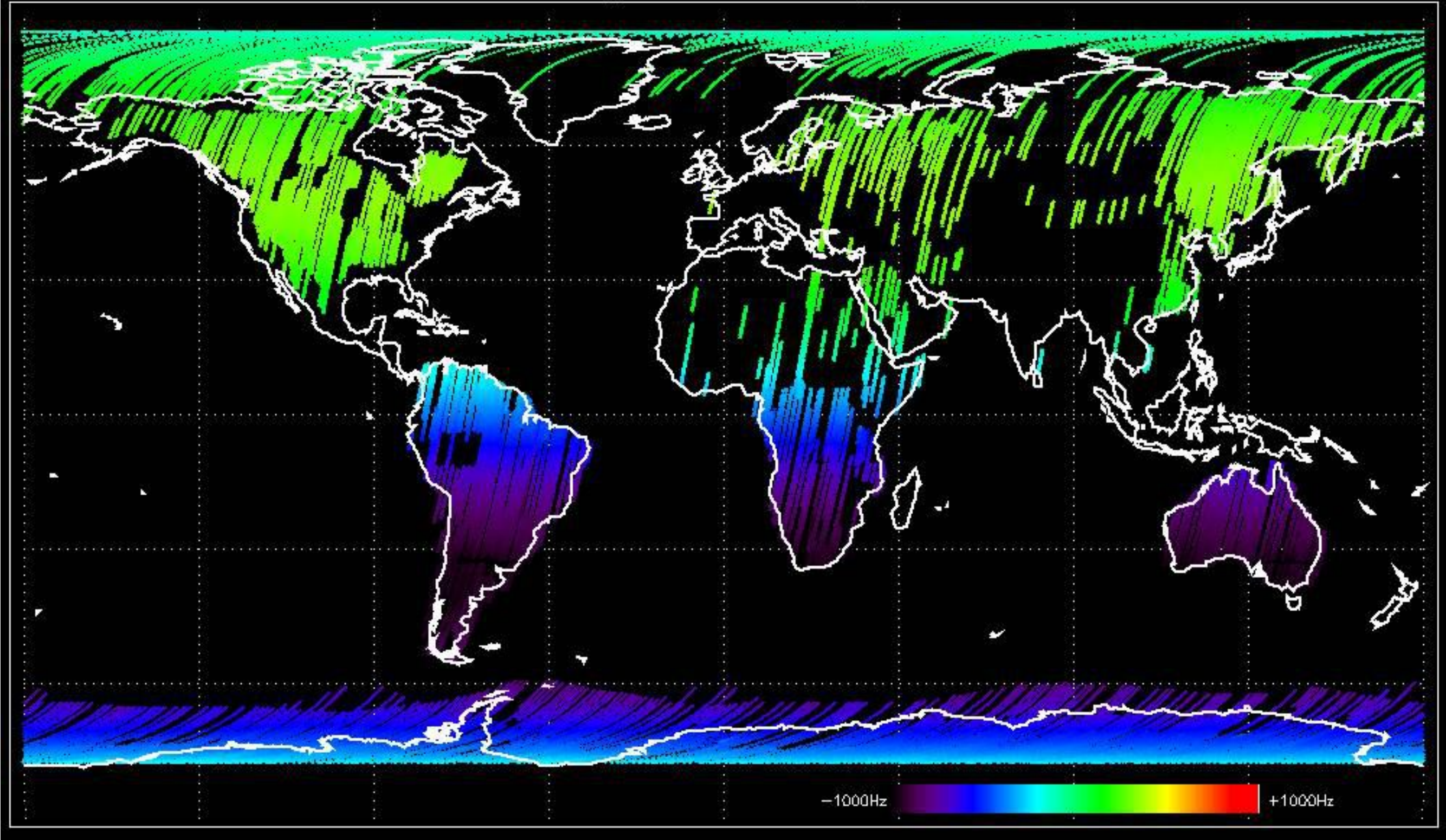
No anomalies observed in Doppler evolution.  
Analysis performed over the last 35 days.

Doppler 'GM1' 'SS1' ascending



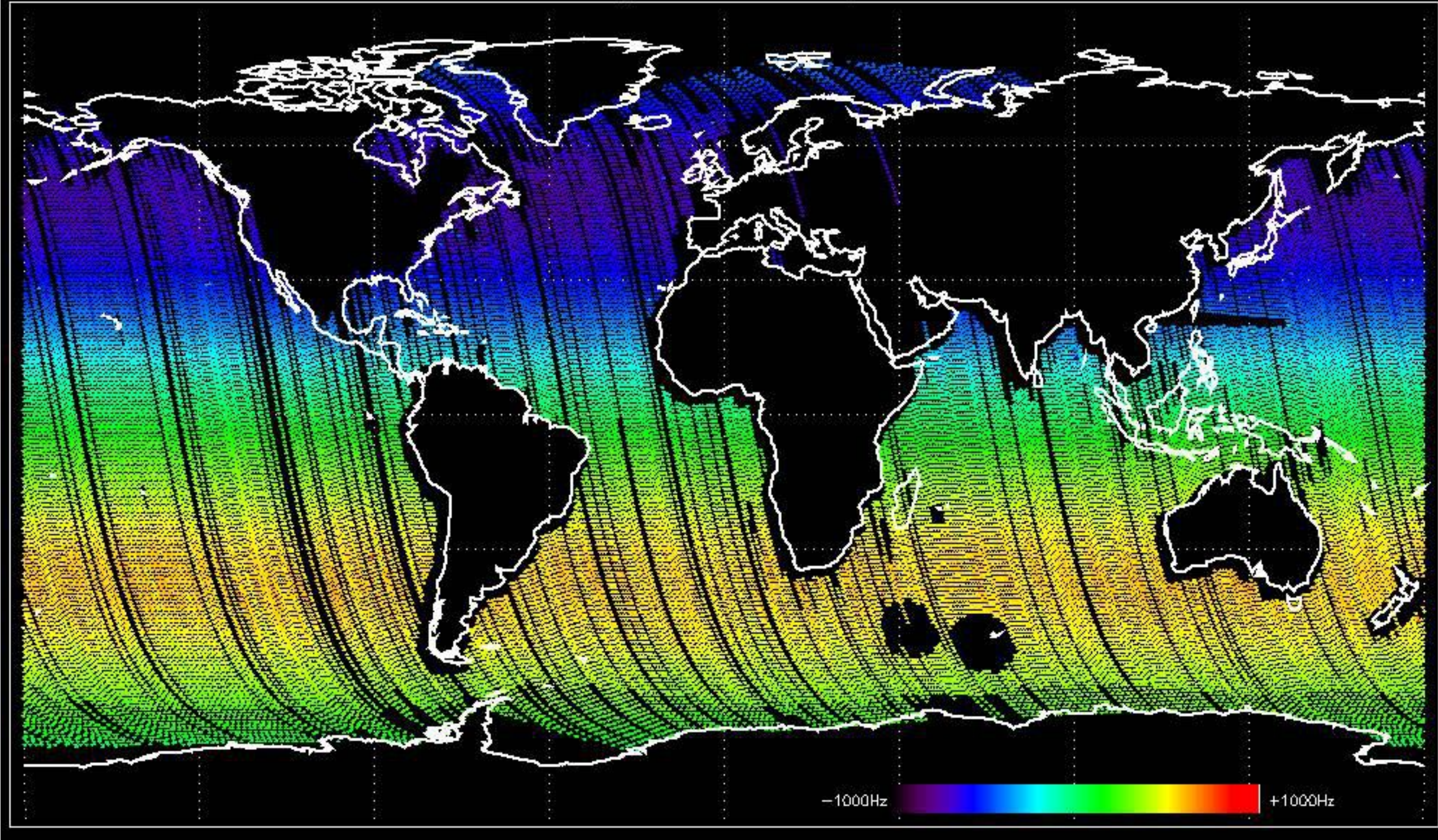


Doppler 'GM1' 'SS1' descending



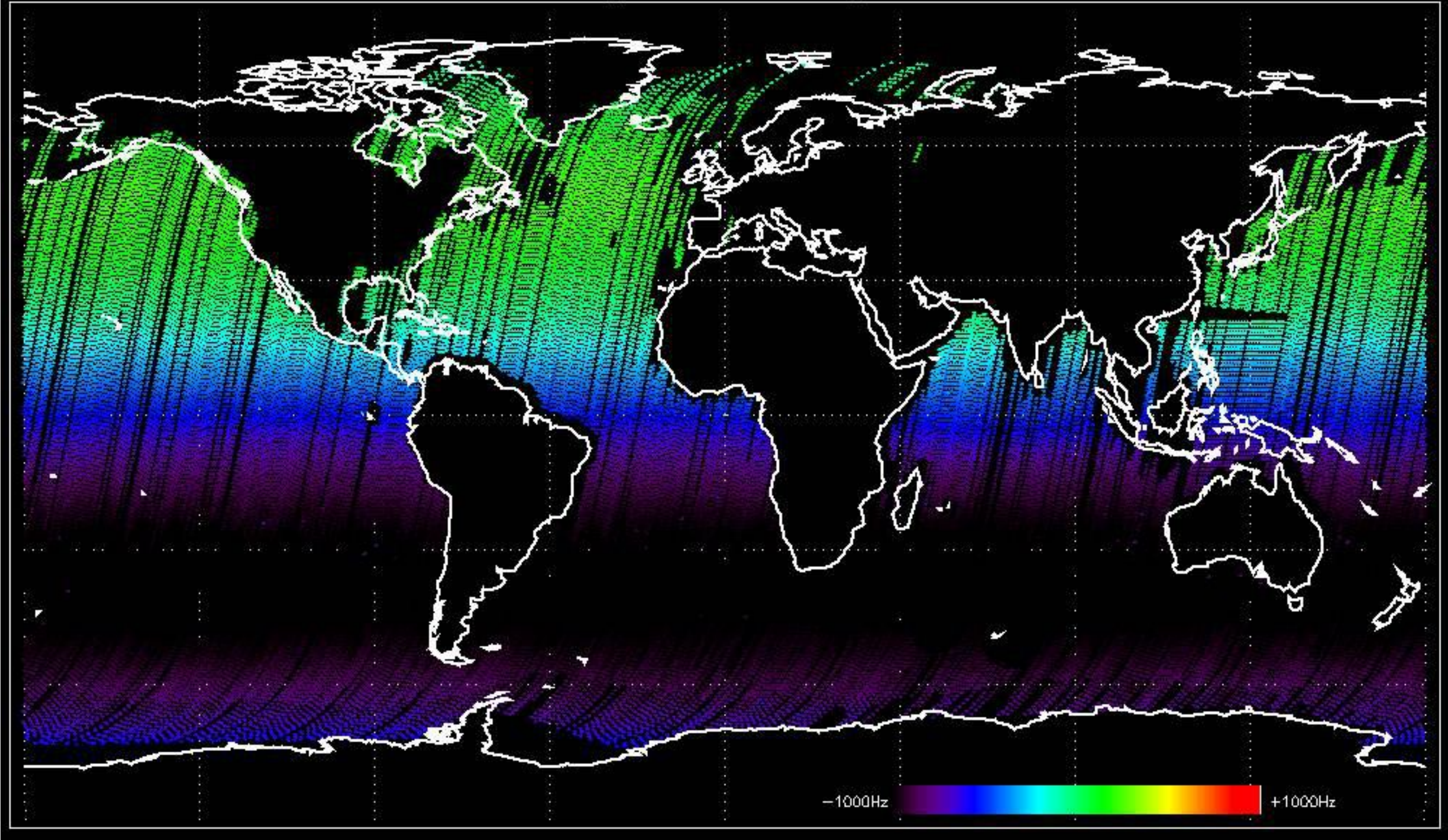


Doppler 'WVS' 'IS2' ascending

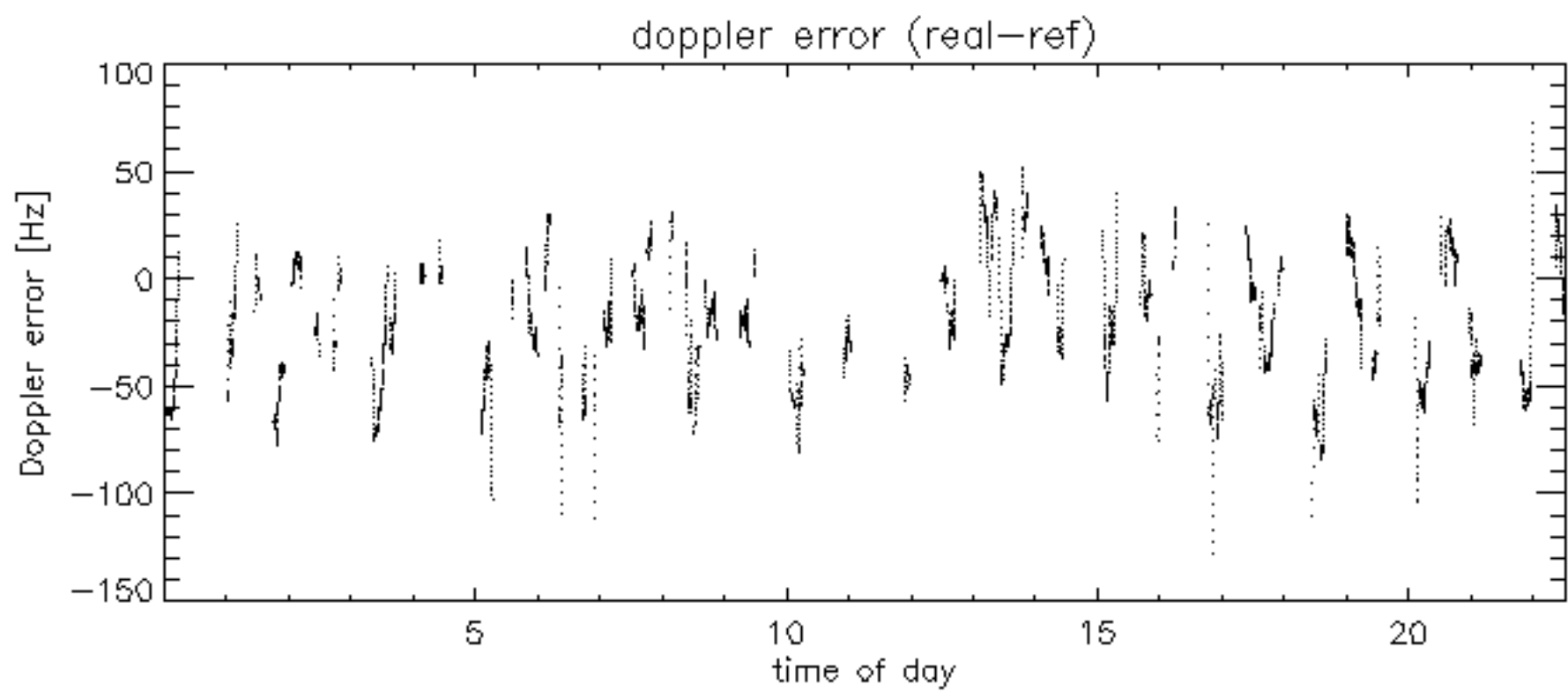
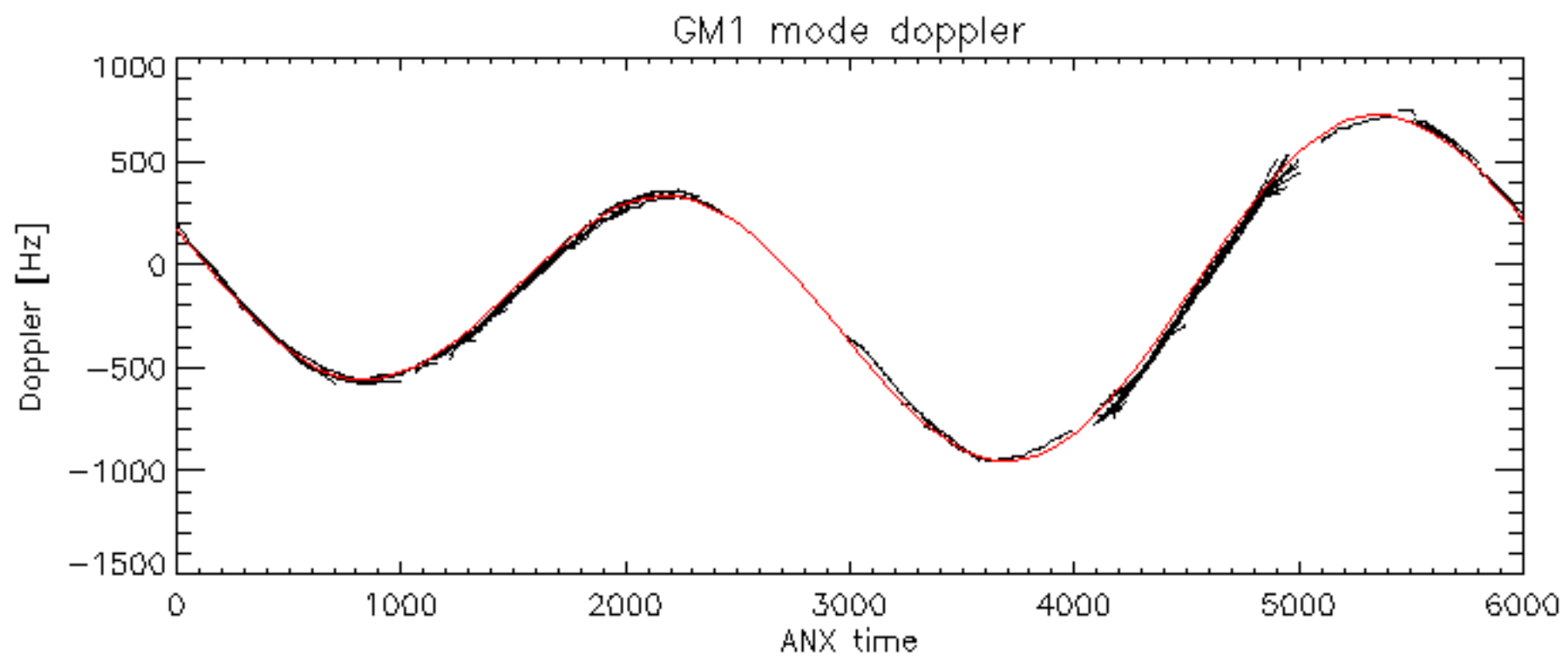


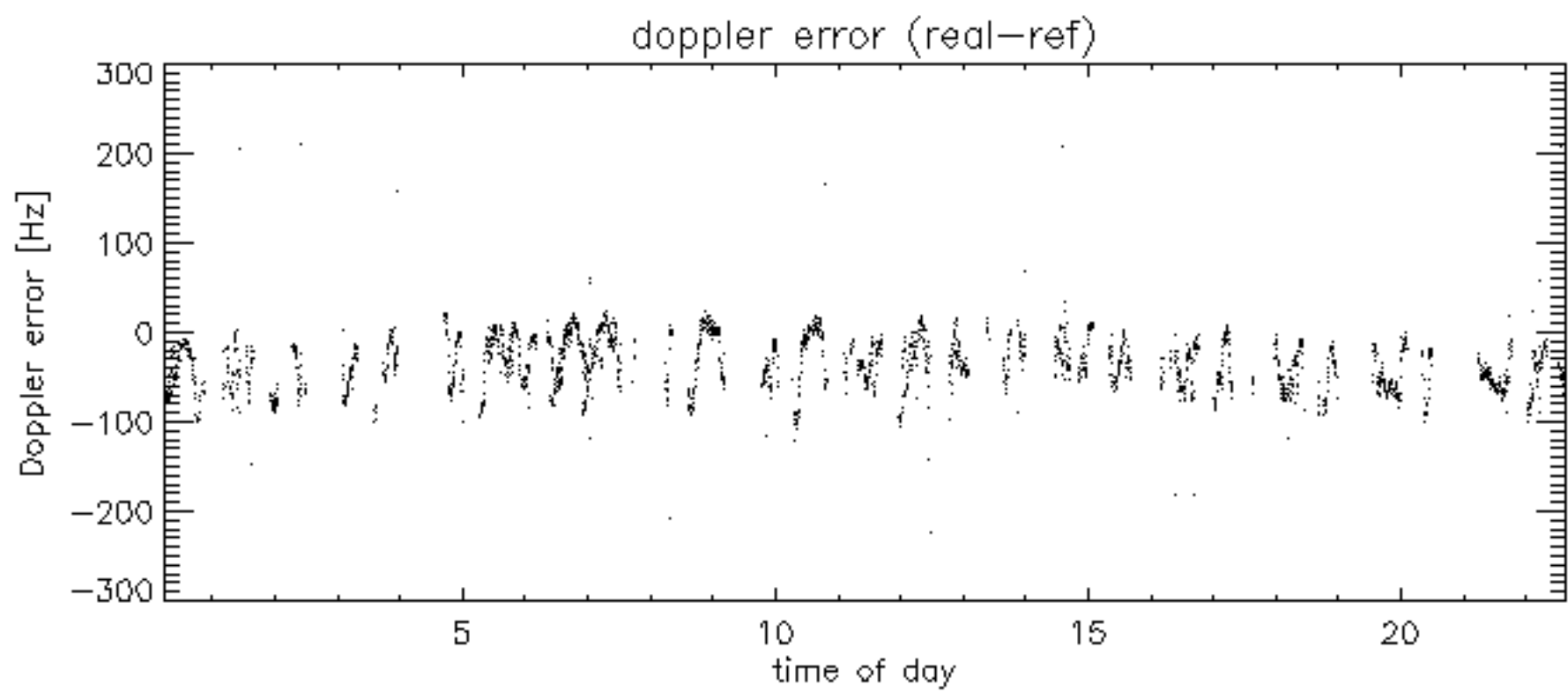
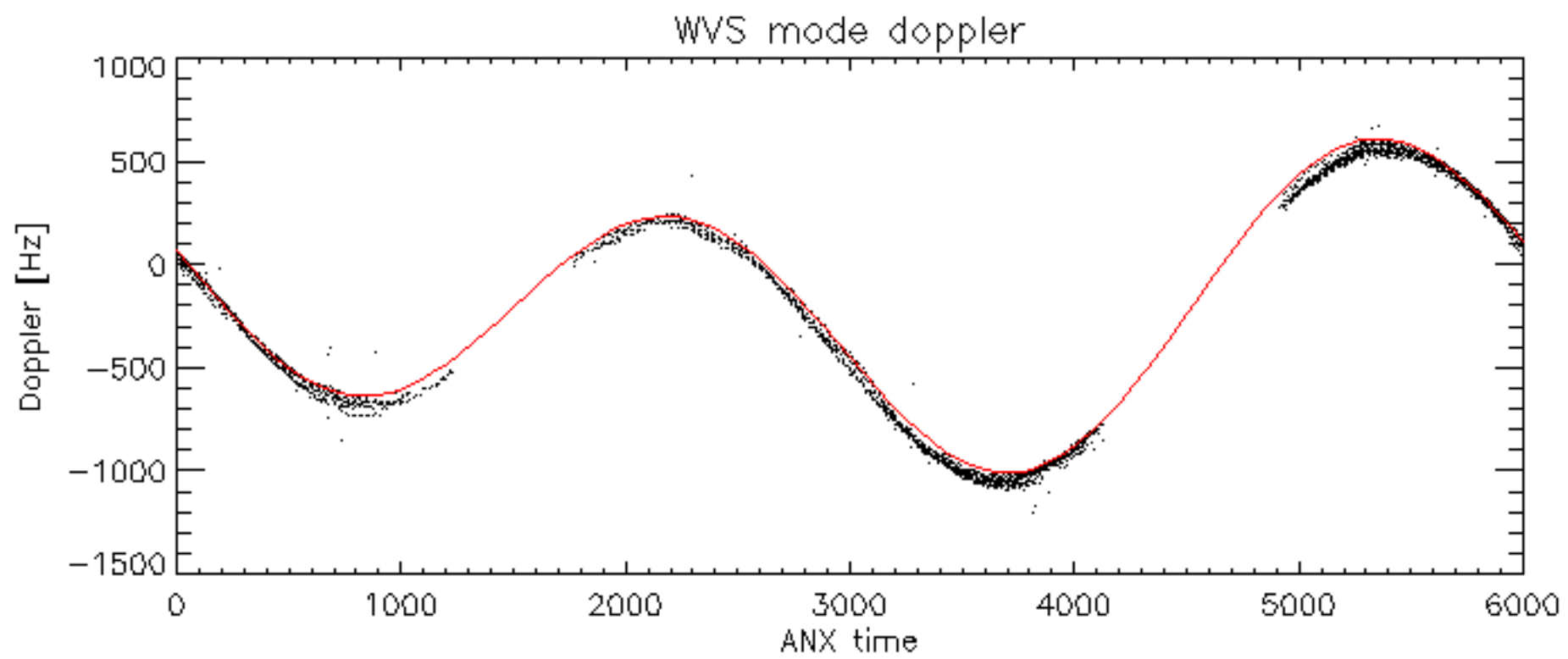


Doppler 'WVS' 'IS2' descending



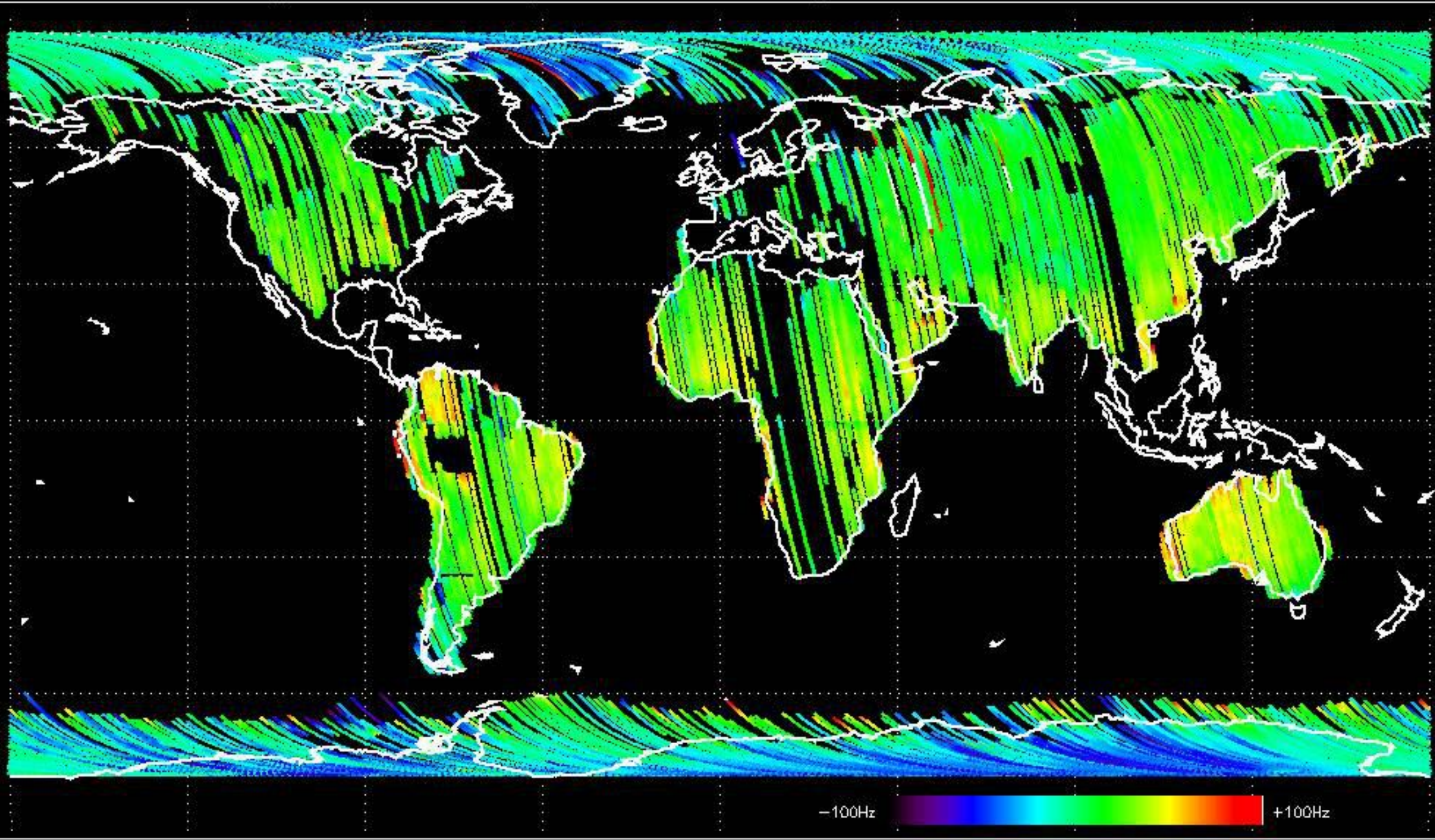






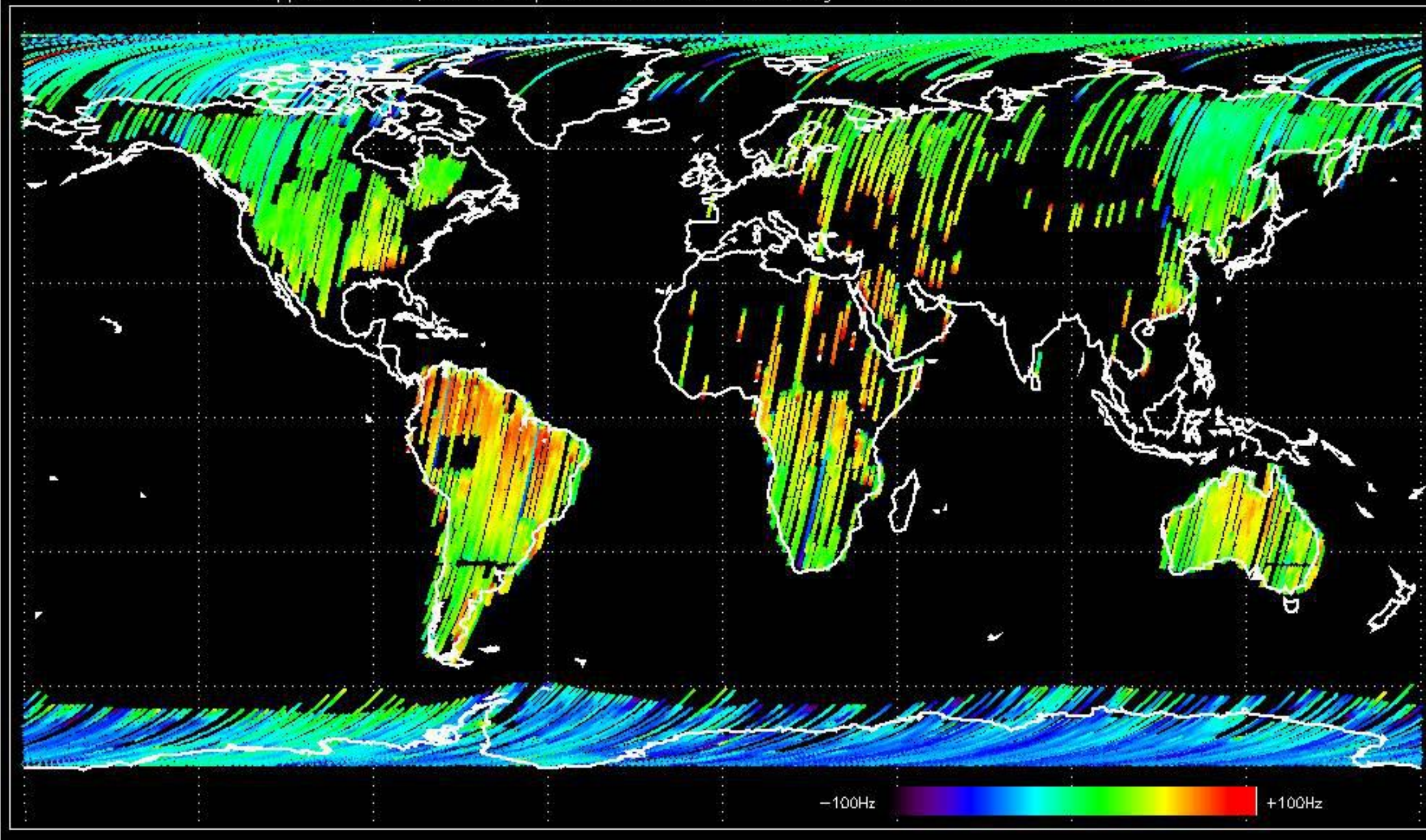


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.389724 Hz



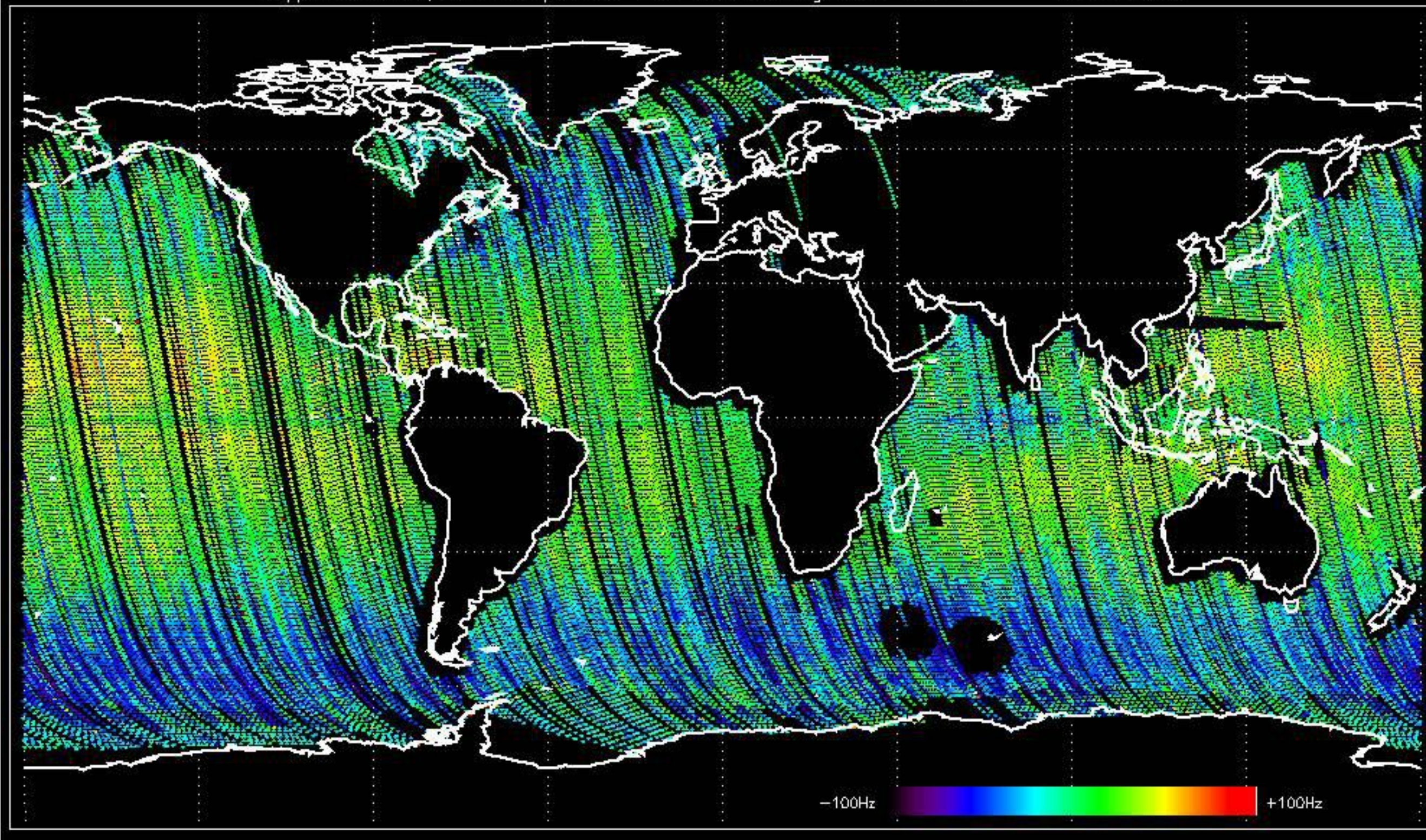


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -19.521294 Hz



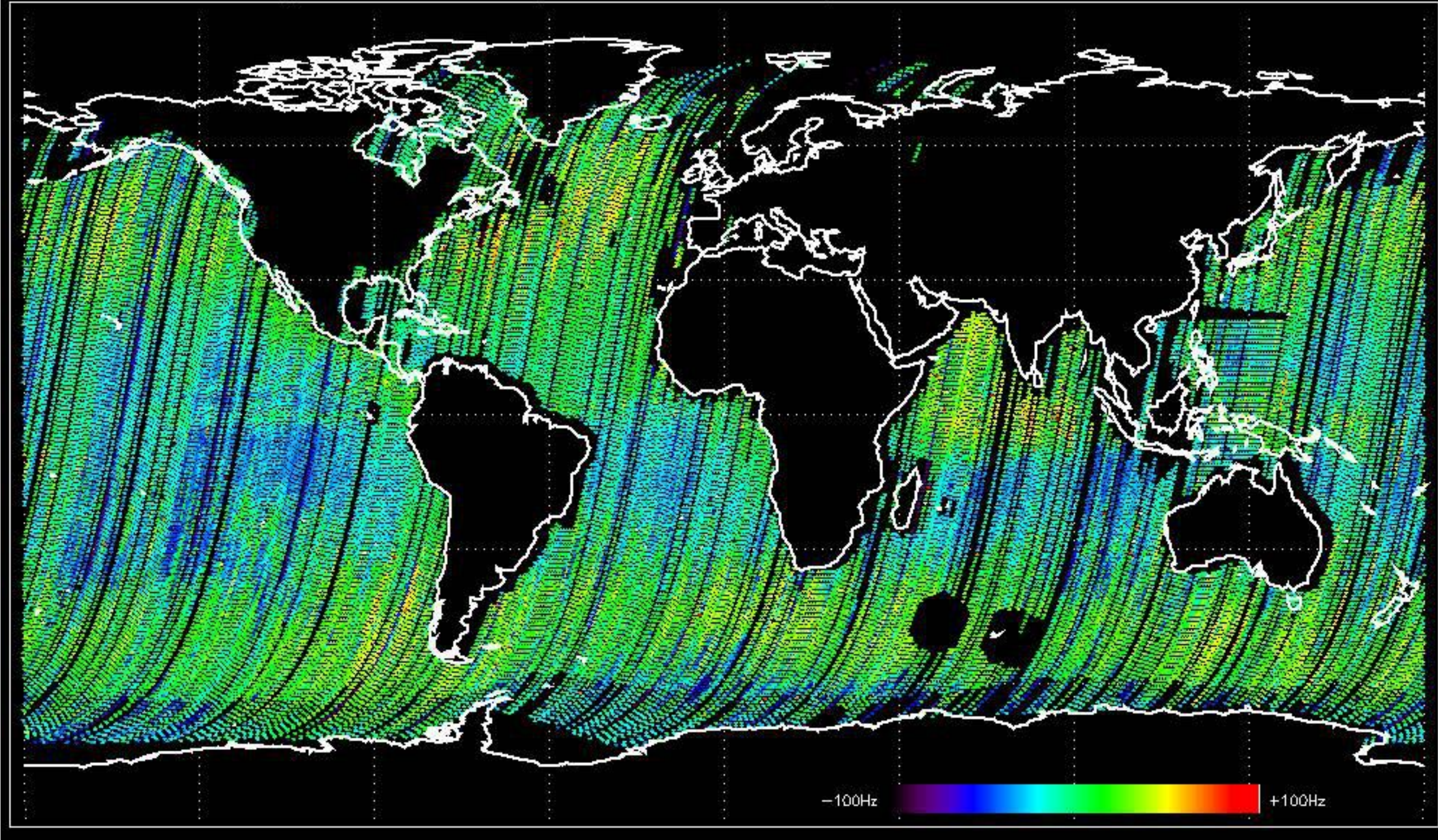


Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -37.146878 Hz





Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -36.960649 Hz





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:

- ASA\_MS\_\_0PNPDK20040510\_202334\_000000152026\_00400\_11476\_0118.N1

No anomalies observed.









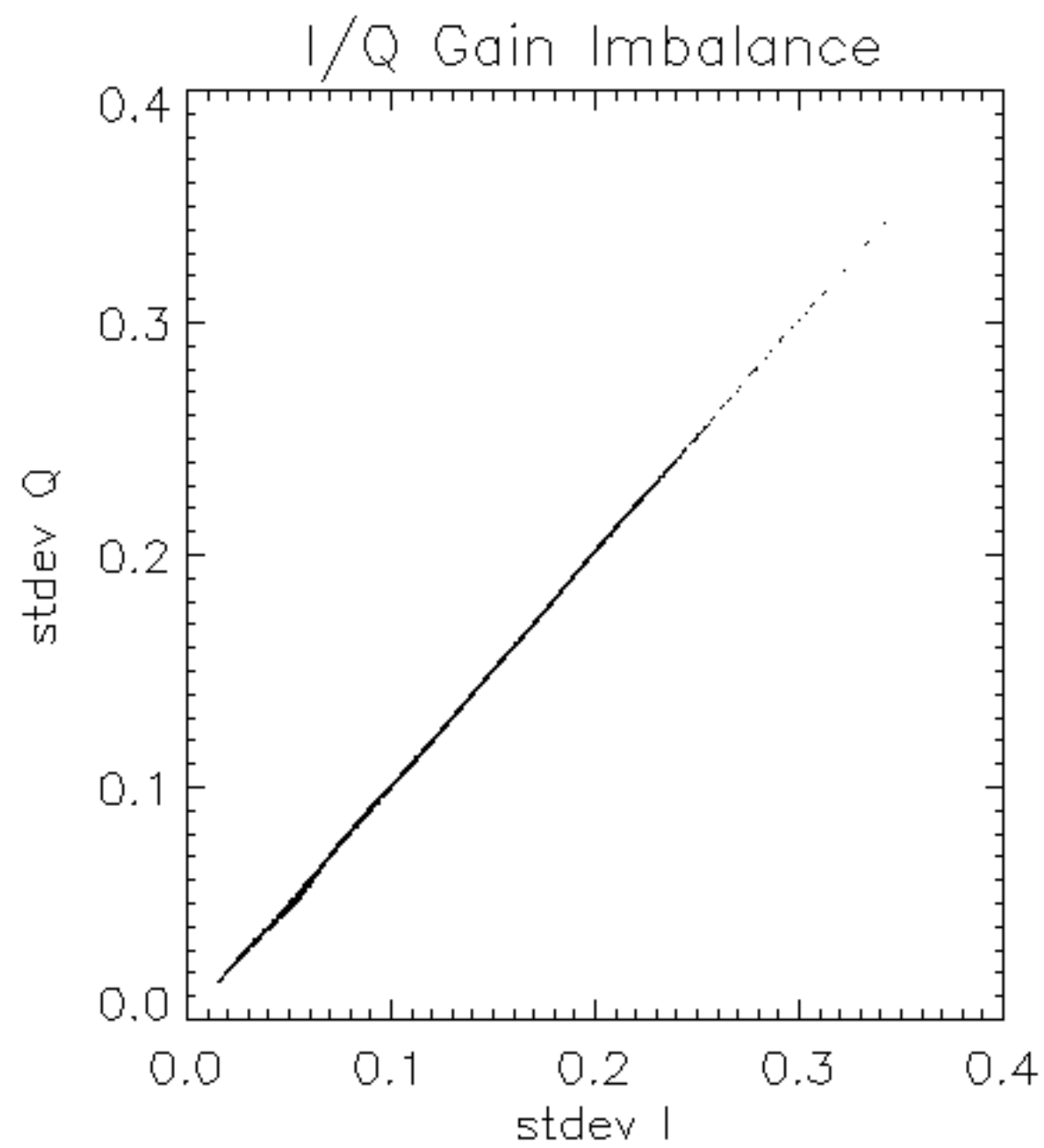


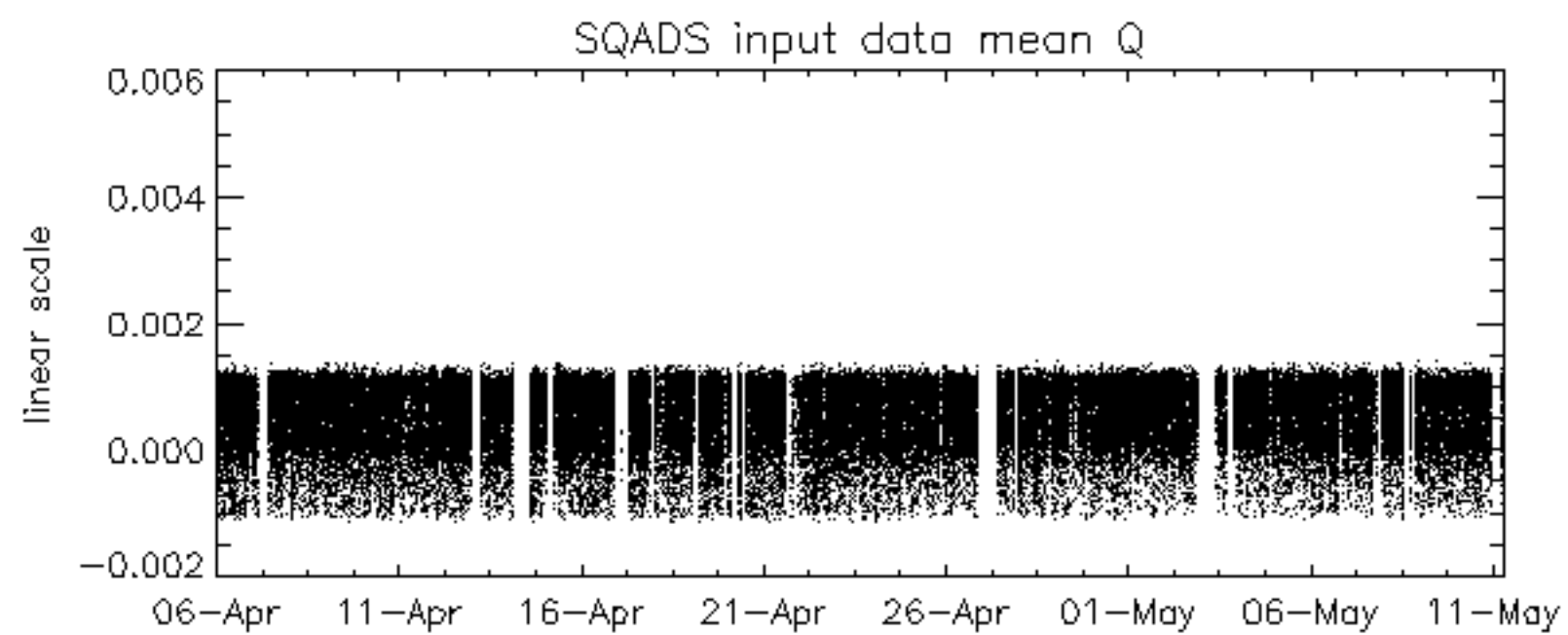
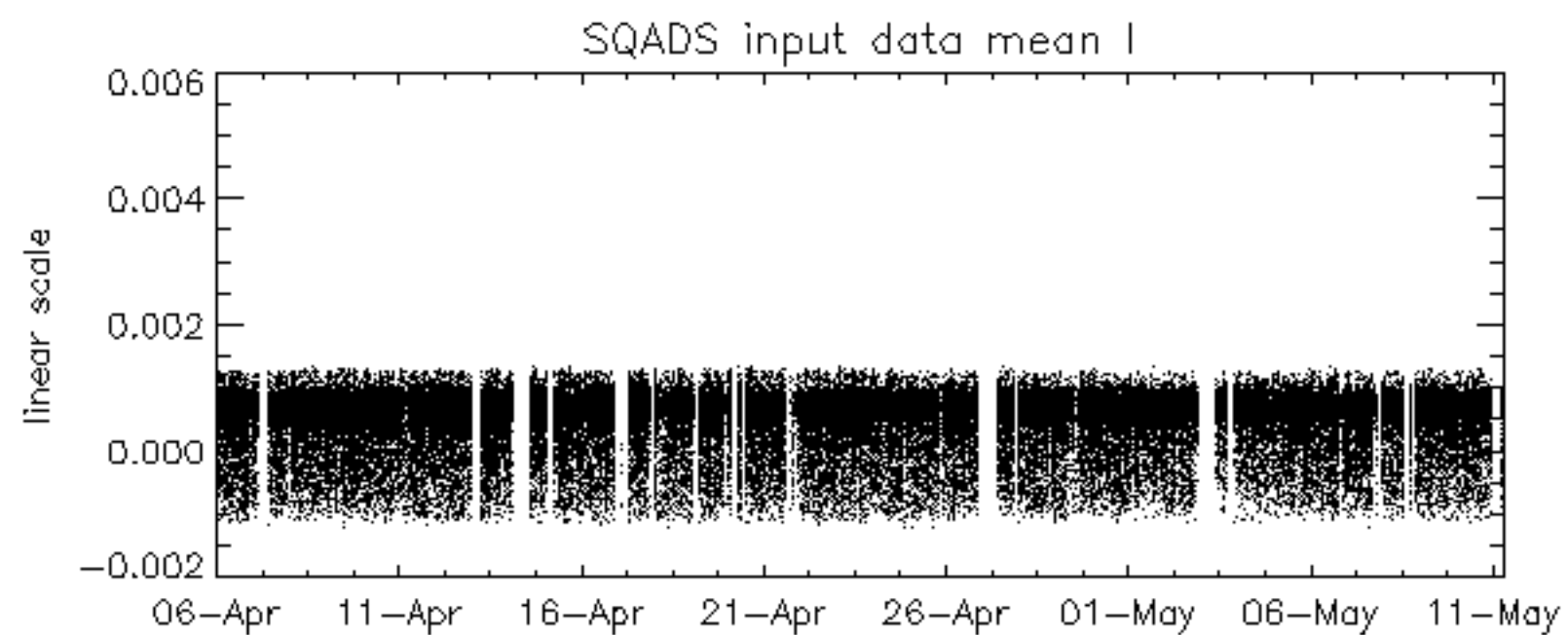
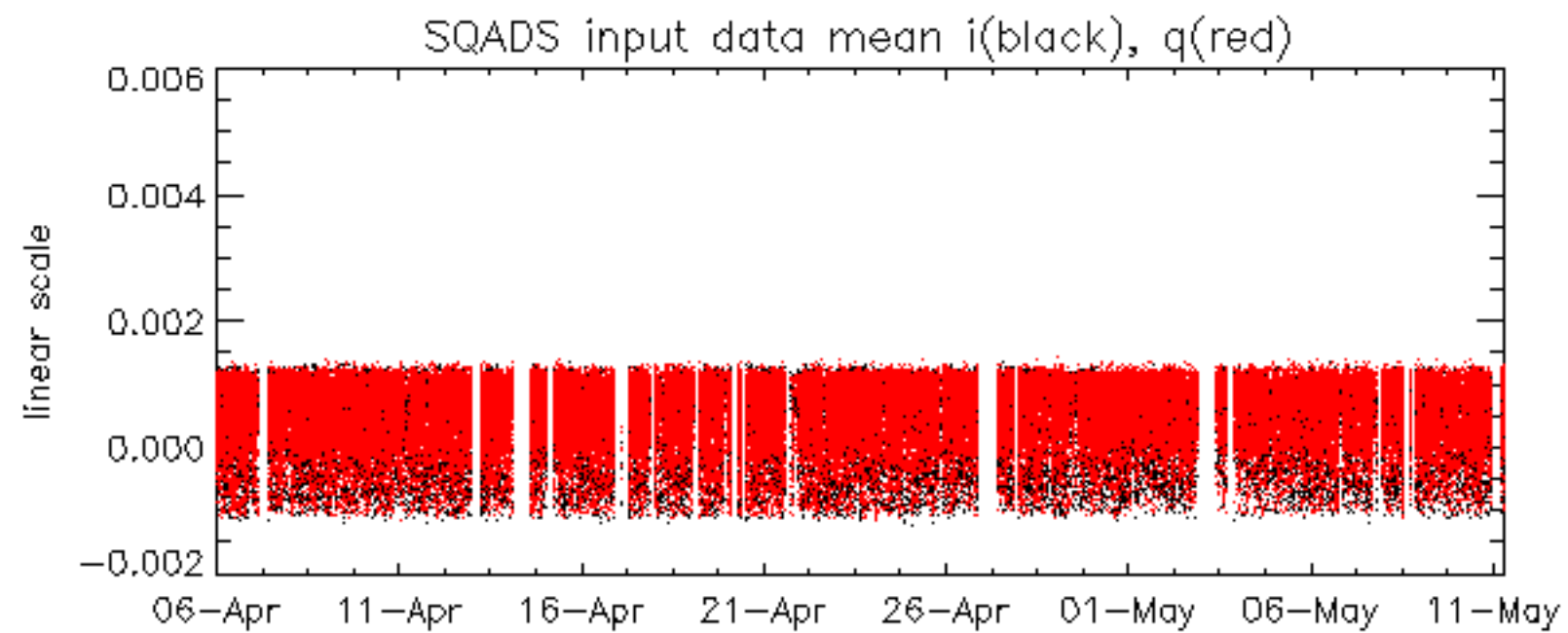




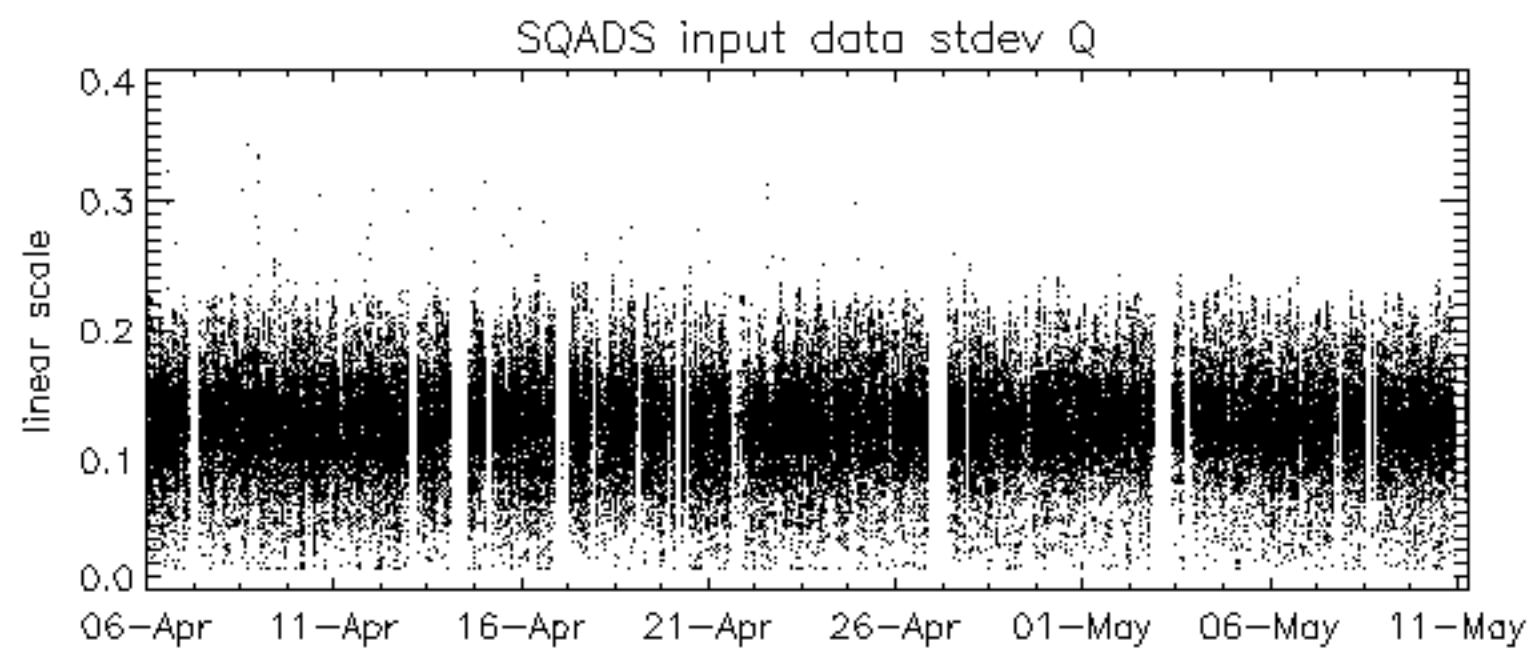
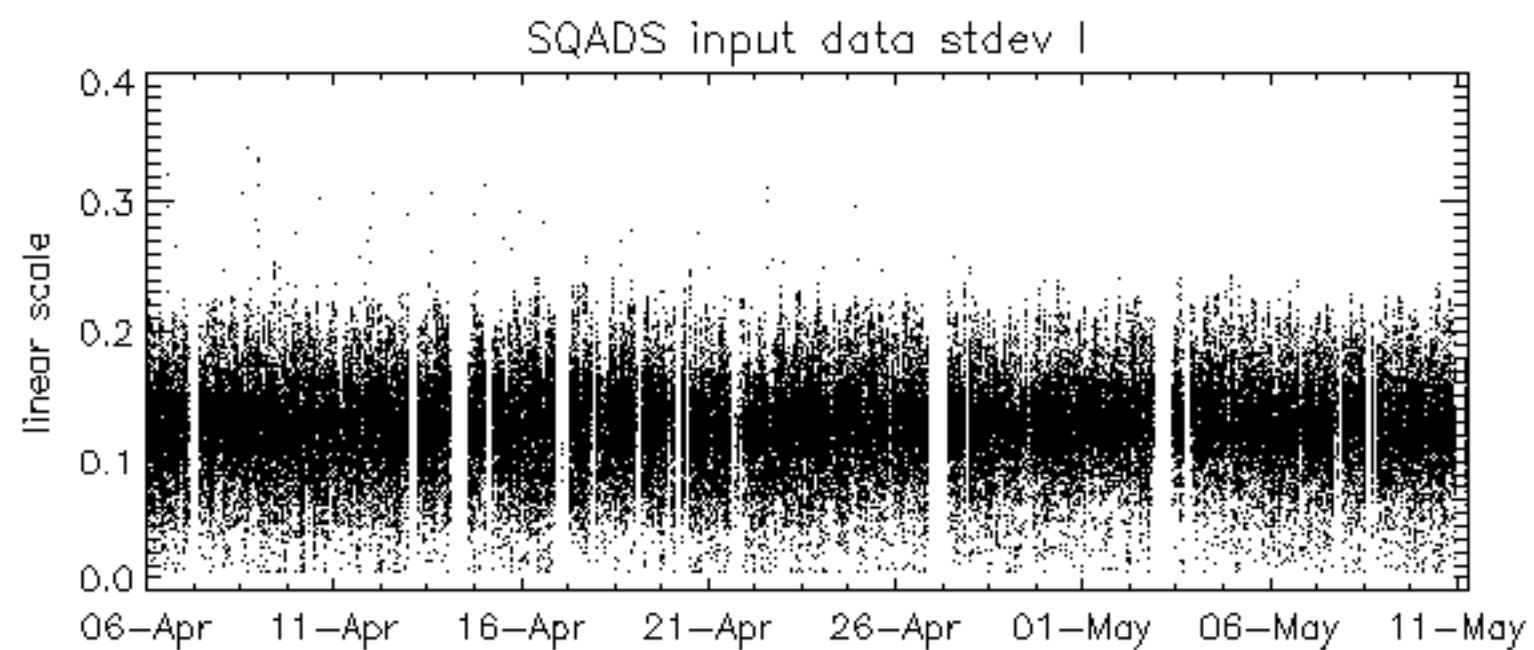
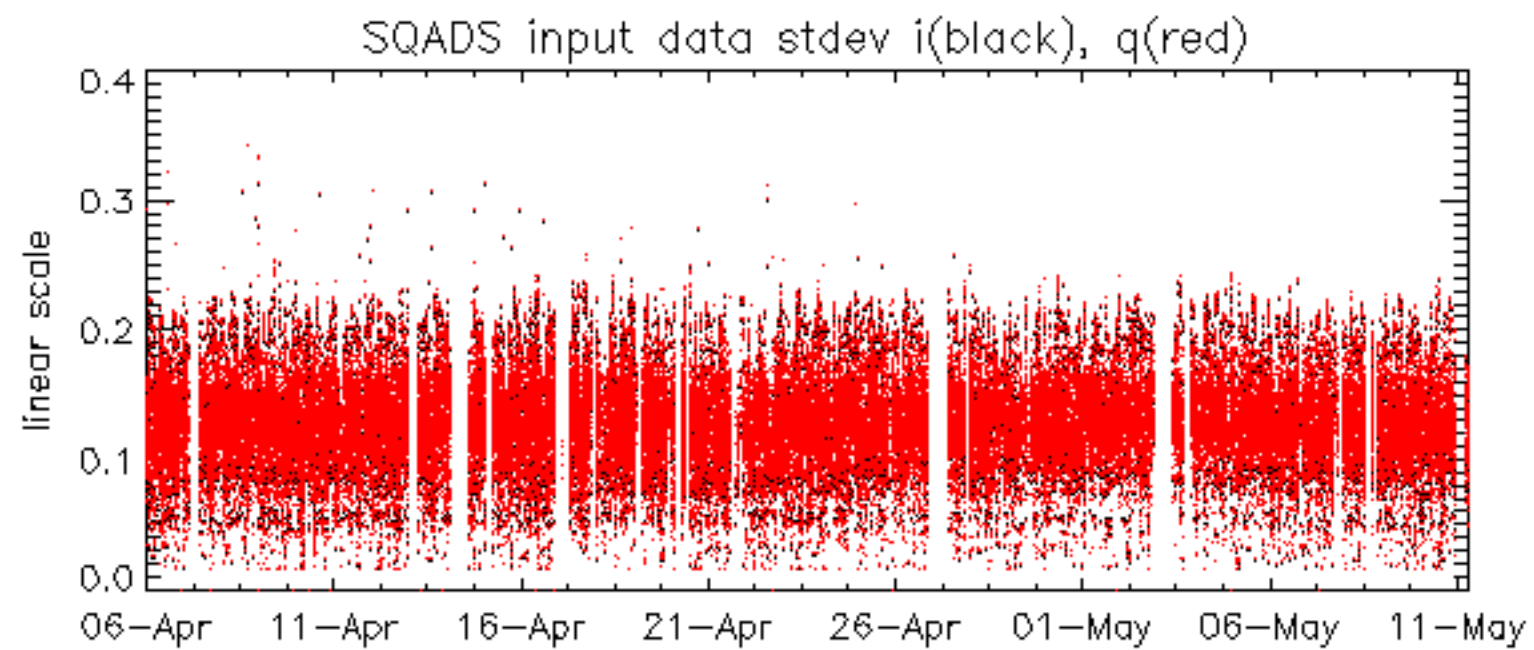






























No unavailabilities during the reported period.