

# REPORT OF 040430

last update on Fri Apr 30 13:30:49 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

ASAR unavailable from 29-APR-2004 08:32:08 to 29-APR-2004 10:18:18. Antenna reset due to repeated tile D3 temperature anomalies.

### 2.2 - Browse Visual Inspection

No anomaly observed from available browse visual inspection.

### 2.3 - Data Analysis

-The Tx Power drop affecting the first 8 rows of the antenna (PSU1 and 2) has been solved as visible on p1 and p1a calibration pulses of WV data.

-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\_\_0PNPDK20040429\_192357\_000000152026\_00242\_11318\_0102.N1

- ASA\_MS\_\_0PNPDK20040429\_192517\_000000152026\_00242\_11318\_0103.N1

Polarisation	Start Time
V	20040429 192517
H	20040429 192357

#### 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

The Tx Power drop affecting the first 8 rows of the antenna (PSU1 and 2) has been solved as visible on p1 and p1a calibration pulses of WV data.

## 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	-3.605119	0.076672	-0.182695
7	P1	-3.325035	0.056988	-0.149730
11	P1	-4.625489	0.024689	0.055379
15	P1	-4.971802	0.039716	0.071098
19	P1	-3.355169	0.005655	-0.034007
22	P1	-4.515841	0.014359	0.017095
24	P1	-5.016803	0.014951	0.079293
28	P1	-4.593028	0.013617	0.004590

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.400137	0.080205	-0.007329
7	P2	-22.875643	0.118277	-0.012059
11	P2	-15.879489	0.140793	0.157292
15	P2	-7.159530	0.089700	0.004164
19	P2	-9.515610	0.150635	0.021694
22	P2	-17.648512	0.096543	0.066607
24	P2	-20.981283	0.103656	0.054411
28	P2	-16.604380	0.081519	0.005474

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.131922	0.003144	-0.007126
7	P3	-8.131927	0.003144	-0.007100
11	P3	-8.131935	0.003144	-0.007041
15	P3	-8.131934	0.003144	-0.007039
19	P3	-8.131932	0.003144	-0.007048
22	P3	-8.131928	0.003144	-0.007066
24	P3	-8.131927	0.003144	-0.007093
28	P3	-8.131868	0.003142	-0.007122

### 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	-3.259117	0.329207	-0.345826
7	P1	-2.888157	0.276077	-0.243952
11	P1	-3.815580	0.020263	-0.015835
15	P1	-4.040255	0.352617	-0.030736
19	P1	-3.242061	0.061910	-0.031223
22	P1	-5.812411	0.042367	0.016841
24	P1	-4.050697	0.091988	-0.064292
28	P1	-2.851612	0.071094	-0.125820

### P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.101612	0.039215	-0.061968
7	P2	-22.998571	0.027404	0.062155
11	P2	-11.048716	0.179546	0.019830
15	P2	-4.911837	0.025580	-0.053195
19	P2	-6.813331	0.028741	-0.094706
22	P2	-7.700035	0.027878	-0.002897
24	P2	-11.004519	0.049822	-0.033793
28	P2	-19.018200	0.027918	-0.013249

### P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.966098	0.003441	-0.006175
7	P3	-7.966105	0.003438	-0.006037
11	P3	-7.966089	0.003440	-0.005947
15	P3	-7.965960	0.003458	-0.006260
19	P3	-7.966044	0.003444	-0.006206
22	P3	-7.966207	0.003438	-0.006297
24	P3	-7.965940	0.003458	-0.006018
28	P3	-7.965940	0.003455	-0.005869

## 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	0.000481545
	stdev	2.35398e-07
MEAN Q	mean	0.000488164
	stdev	2.70087e-07



### 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127714
	stdev	0.00117017
STDEV Q	mean	0.127967
	stdev	0.00118352





### 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)	
	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

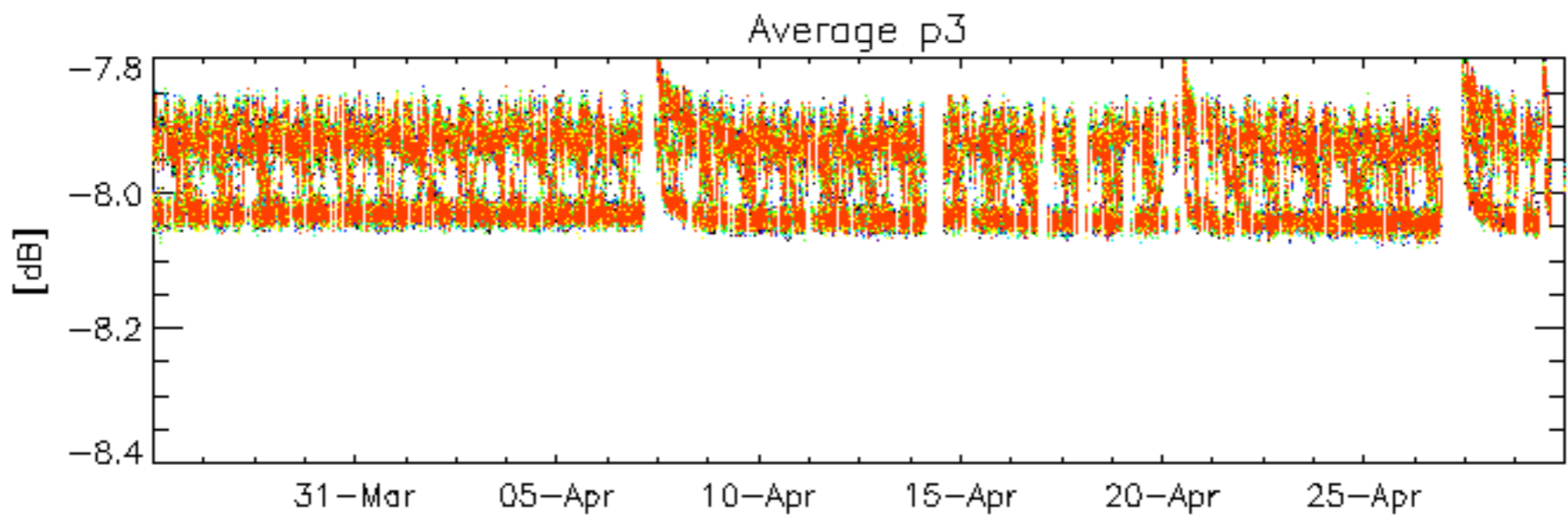
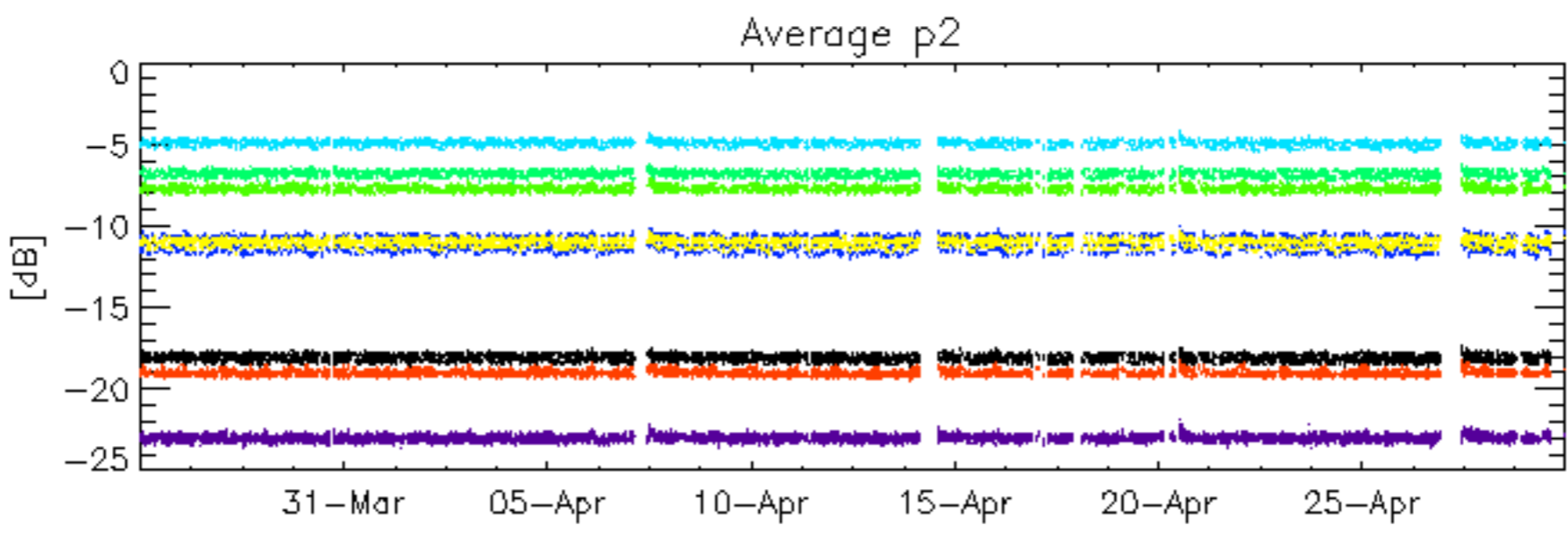
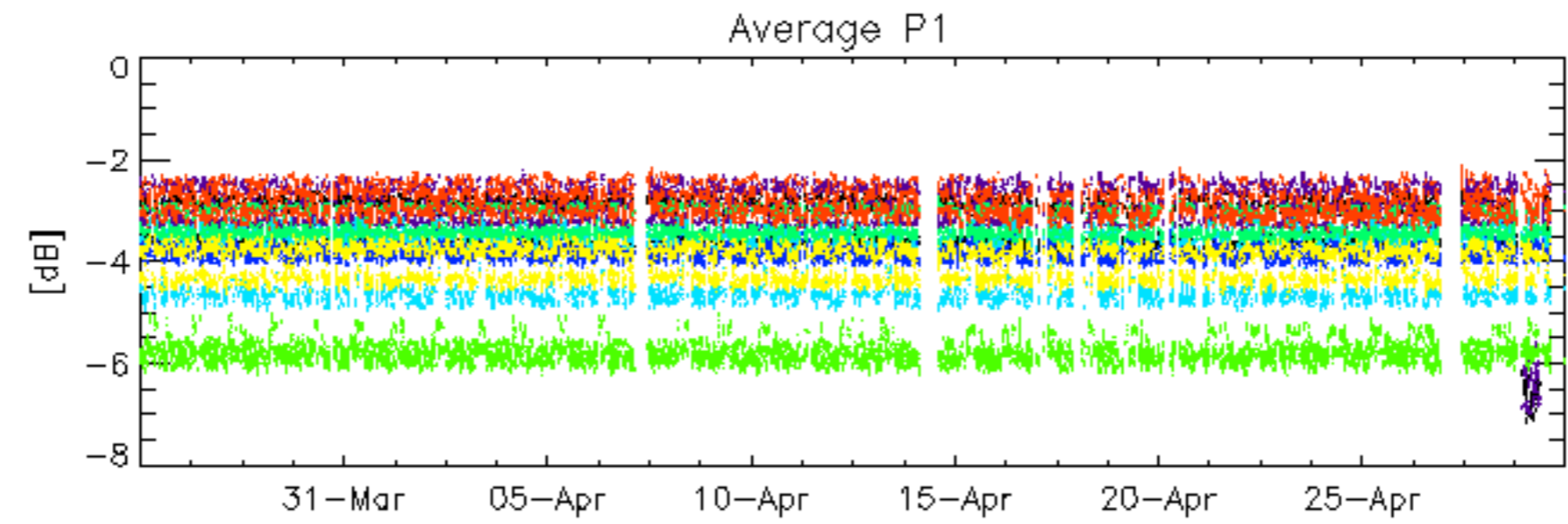
Descending

## 6.6 - Doppler evolution versus ANX for GM1

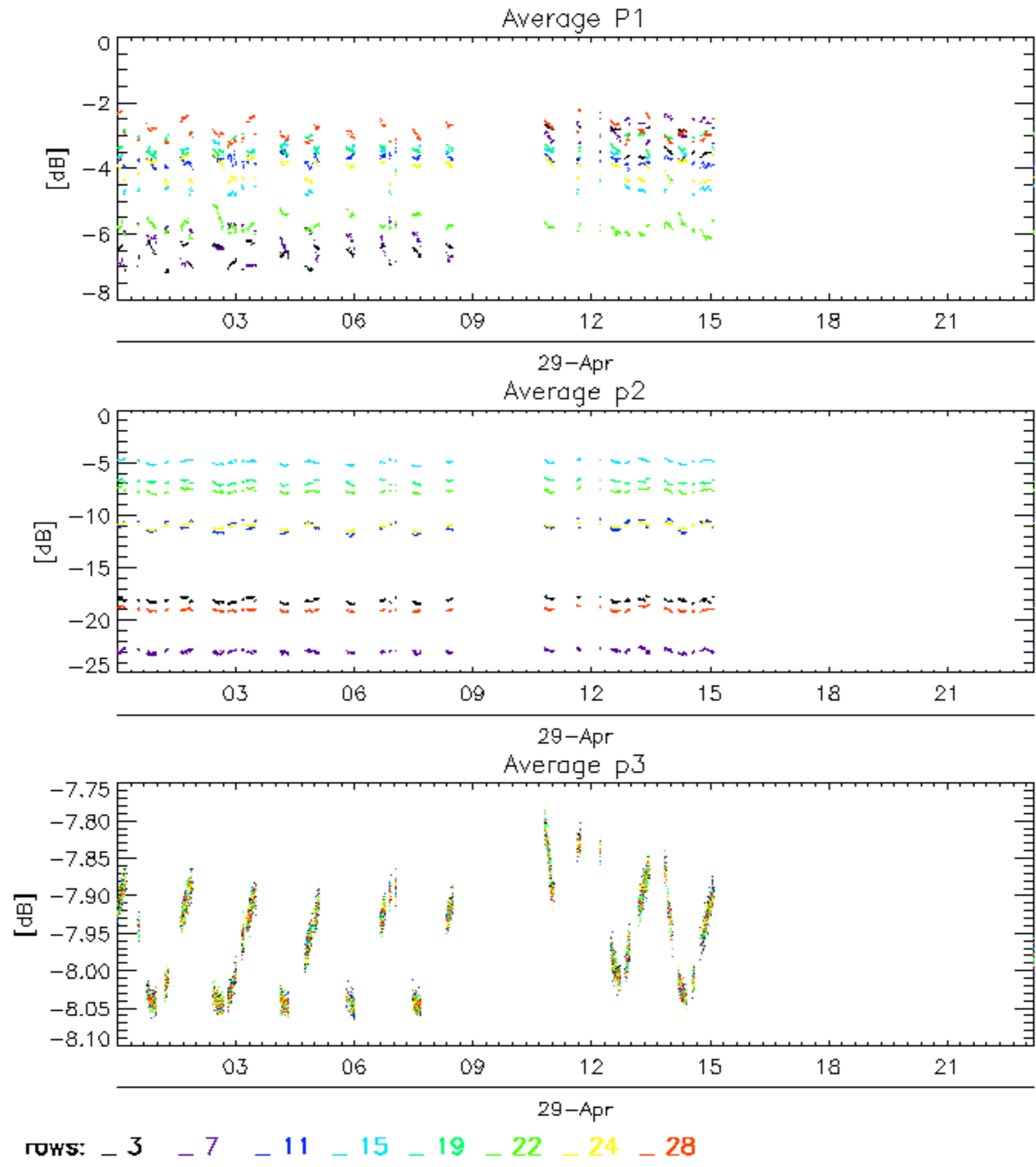
Evolution Doppler error versus ANX

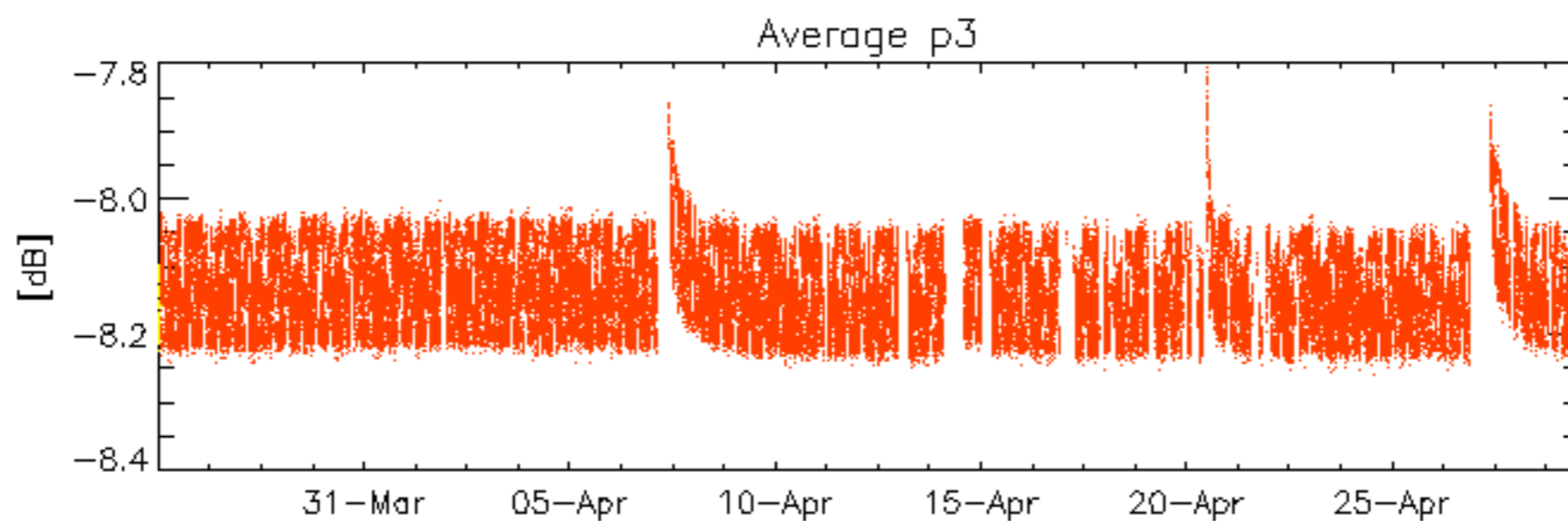
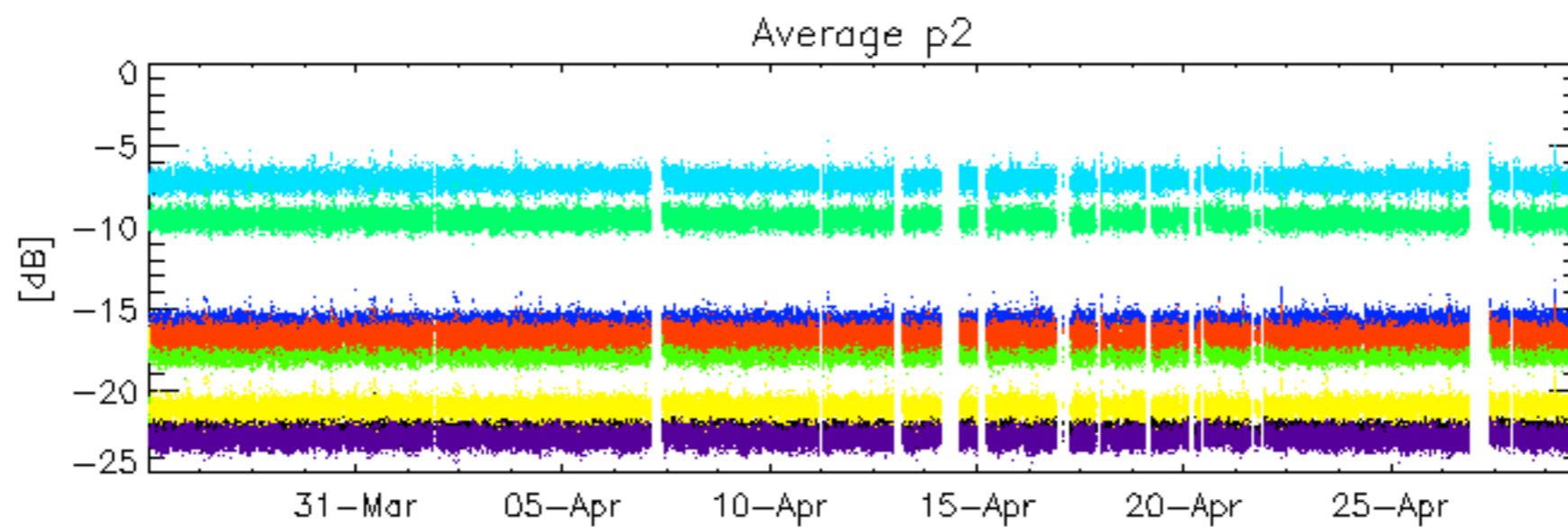
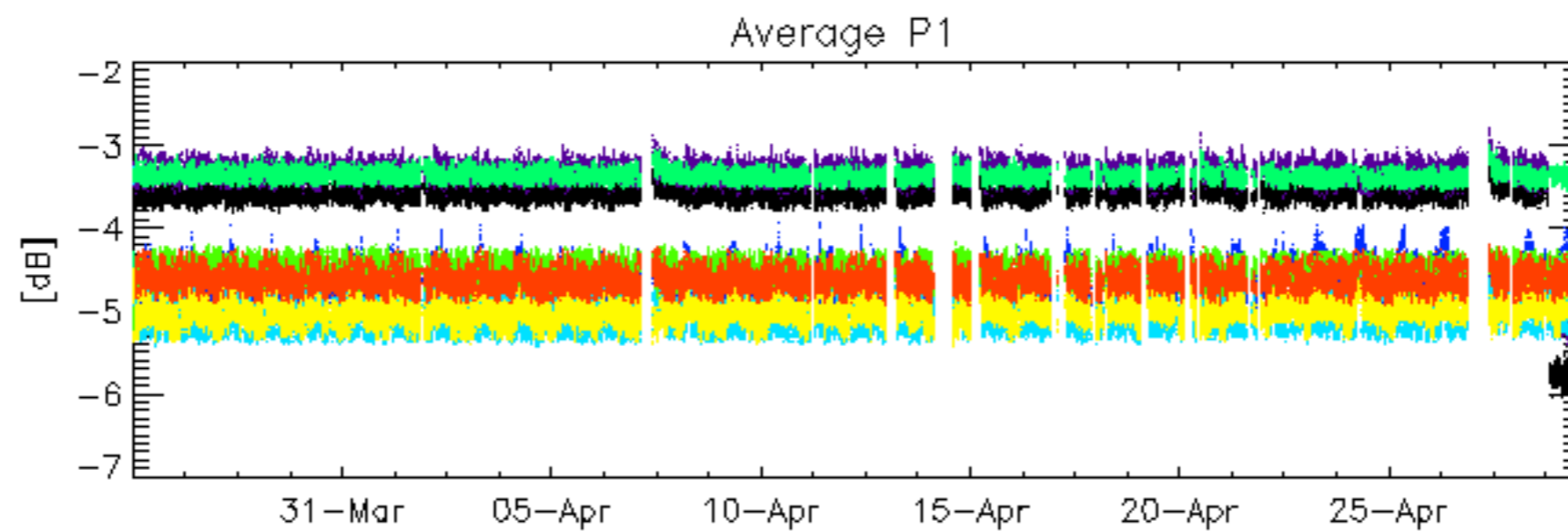




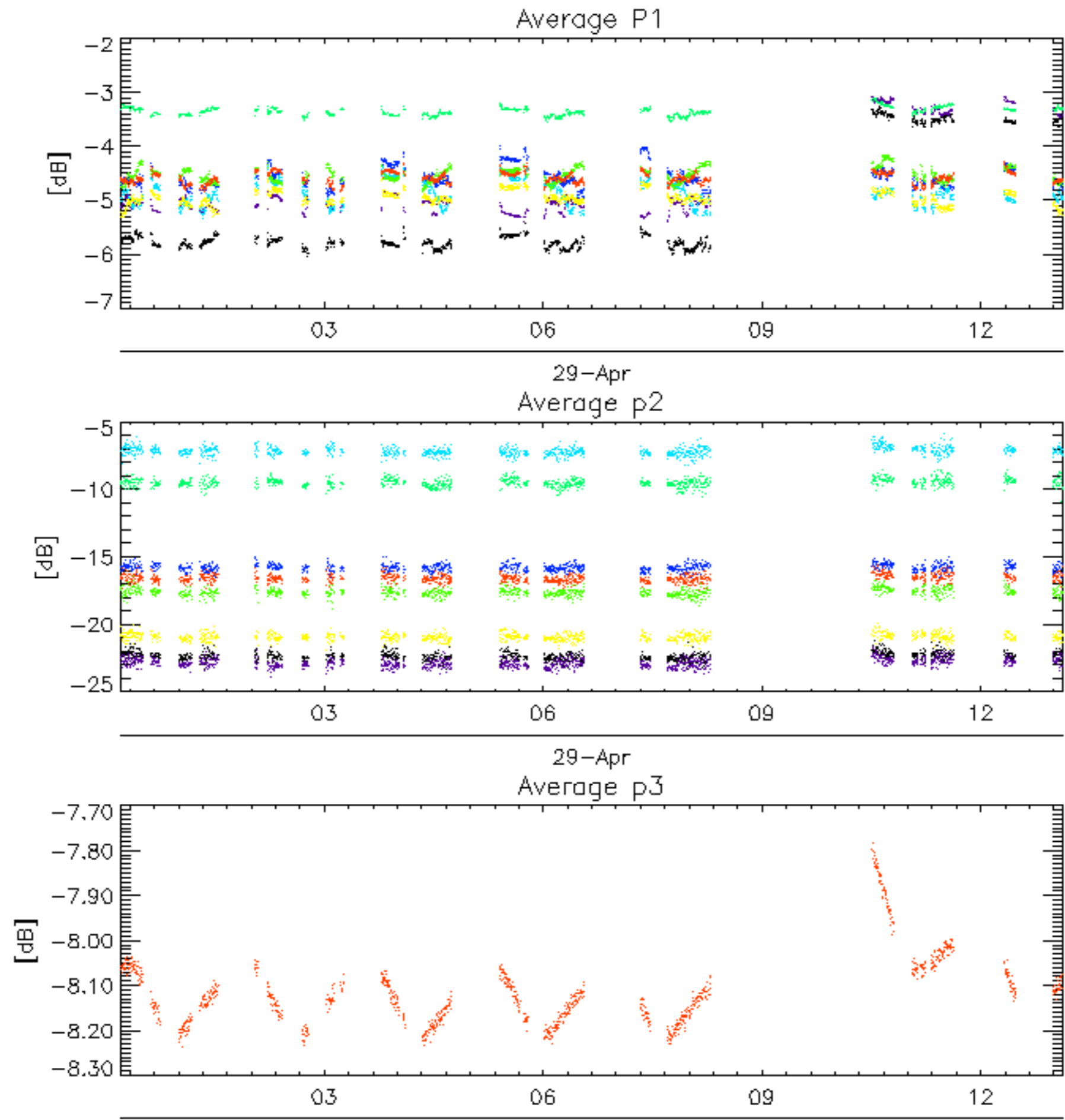


rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 28





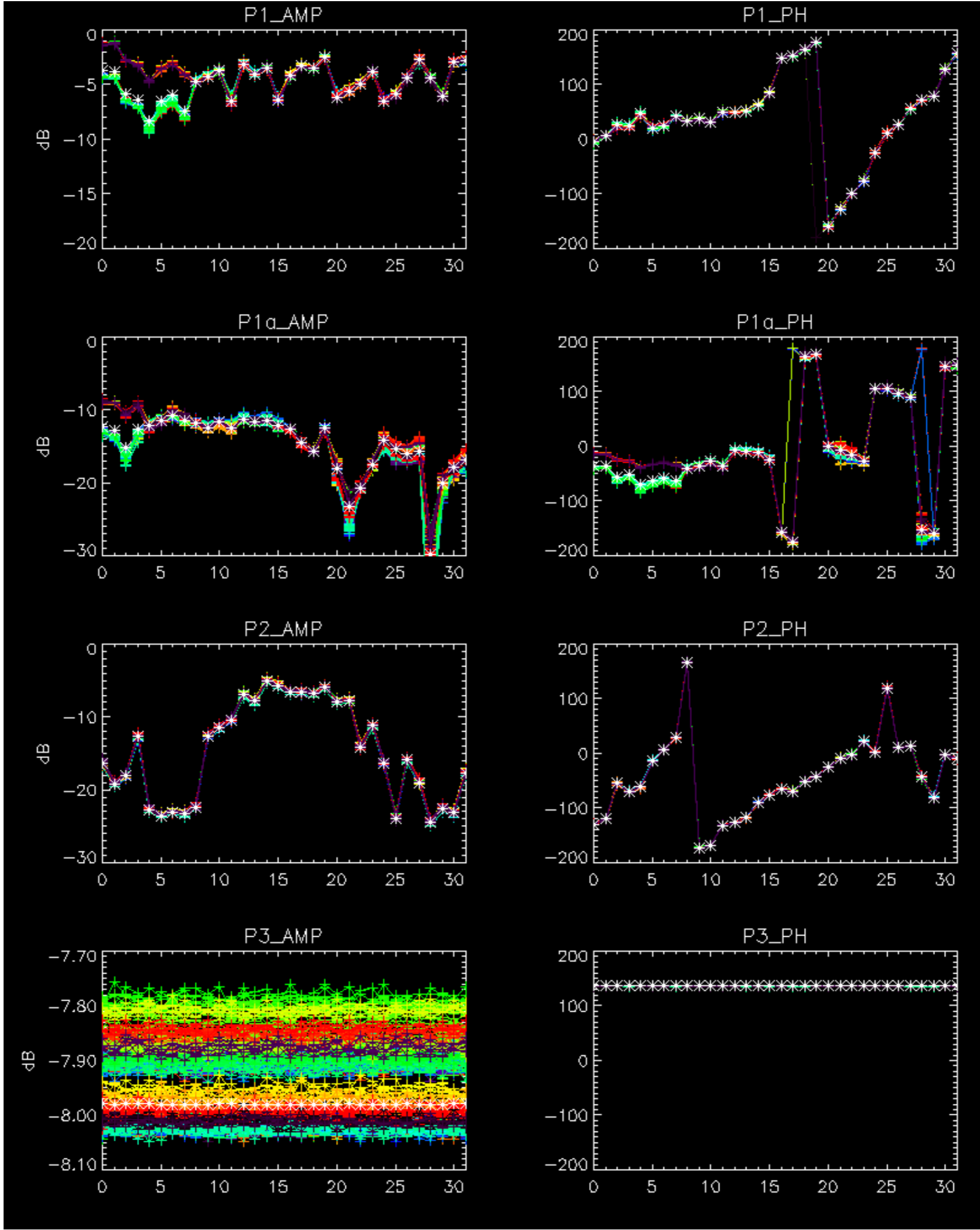
rows: \_ 3 \_ 7 \_ 11 \_ 15 \_ 19 \_ 22 \_ 24 \_ 28

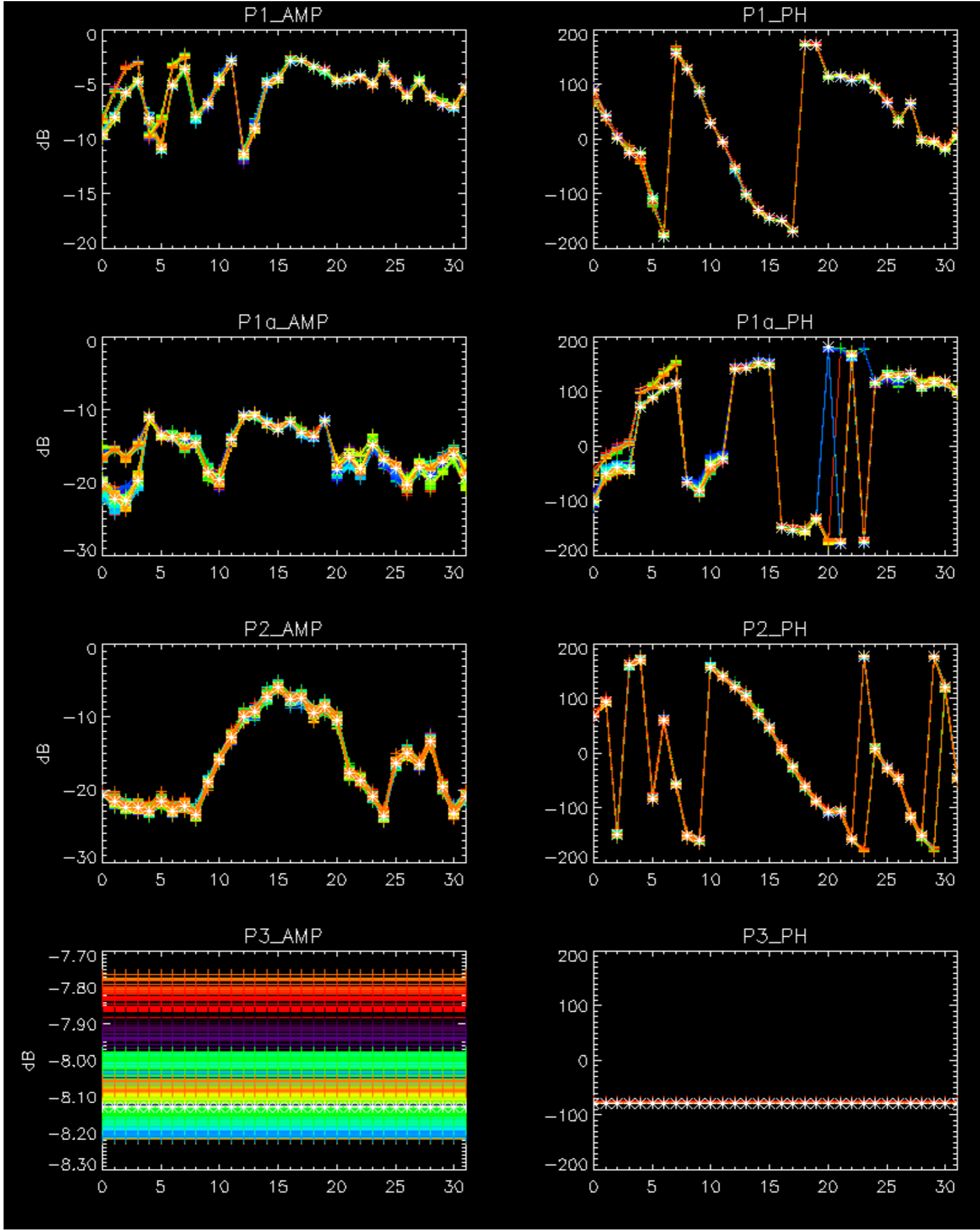


rows: **3** **7** **11** **15** **19** **22** **24** **28**

No anomaly observed from available browse visual inspection.

The Tx Power drop affecting the first 8 rows of the antenna (PSU1 and 2) has been solved as visible on p1 and p1a calibration pulses of WV data.



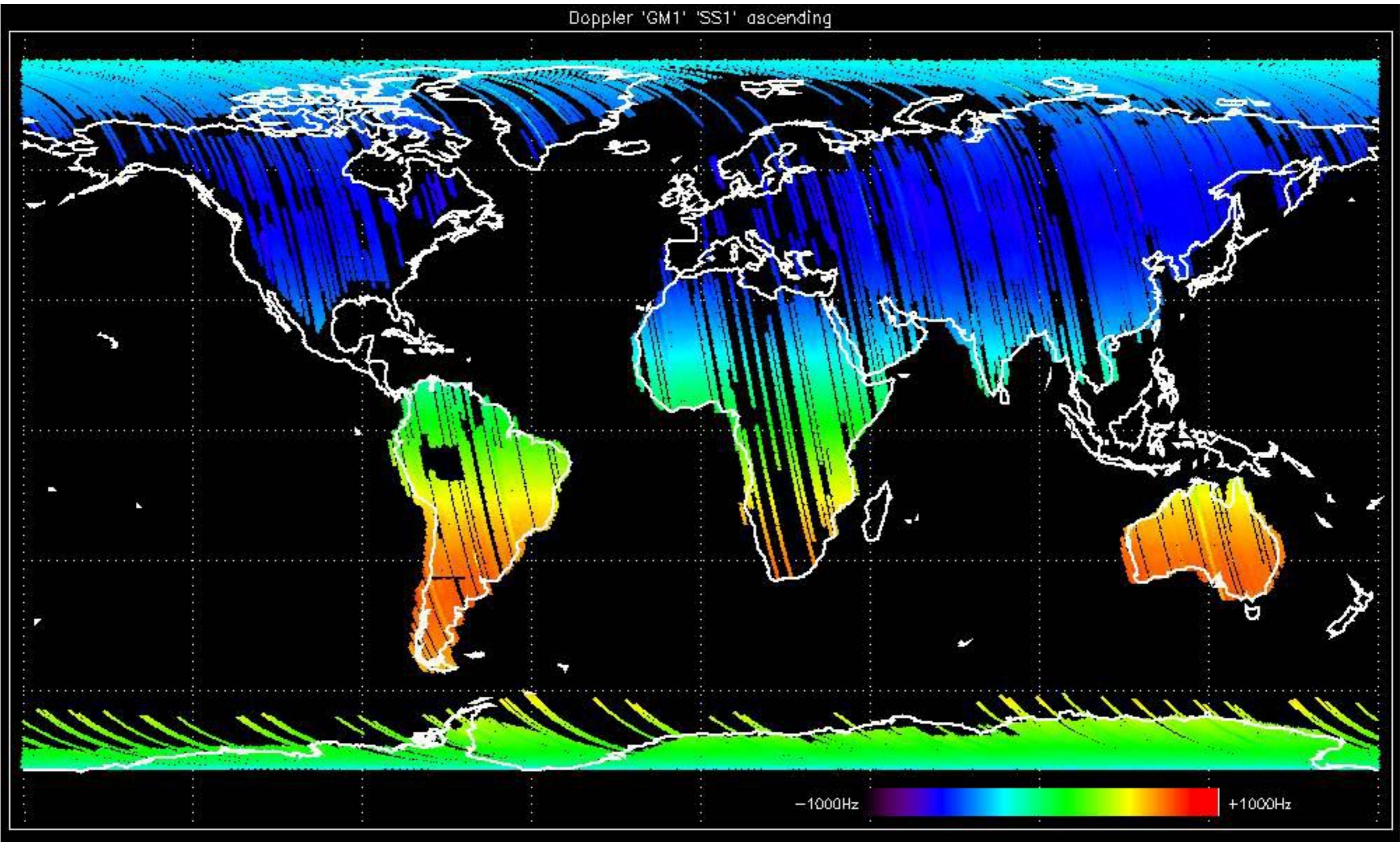




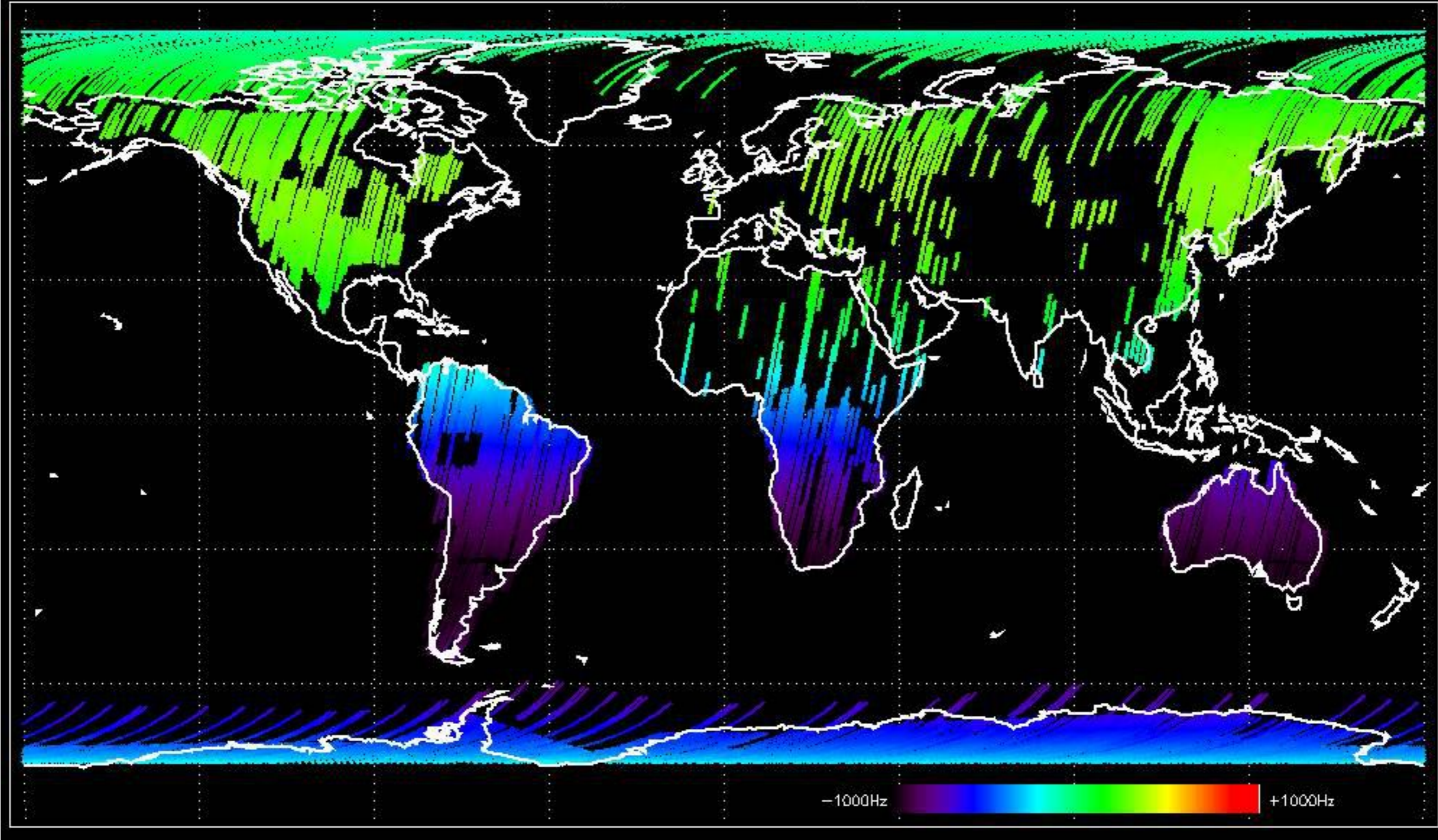
- The Tx Power drop affecting the first 8 rows of the antenna (PSU1 and 2) has been solved as visible on p1 and p1a calibration pulses of WV data.
- Stable raw data statistics.
- Nominal Doppler behavior.



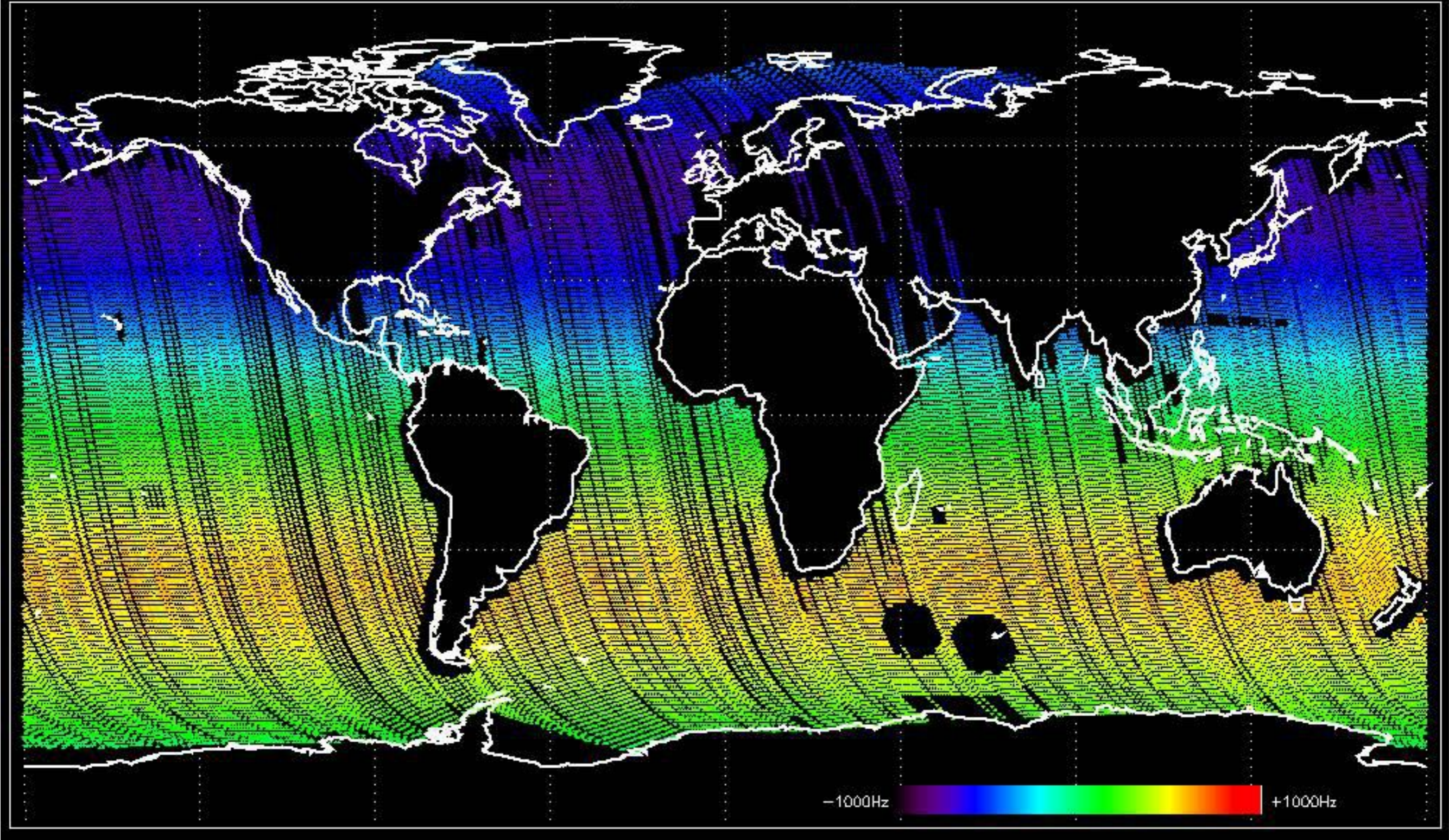
Doppler 'GM1' 'SS1' ascending



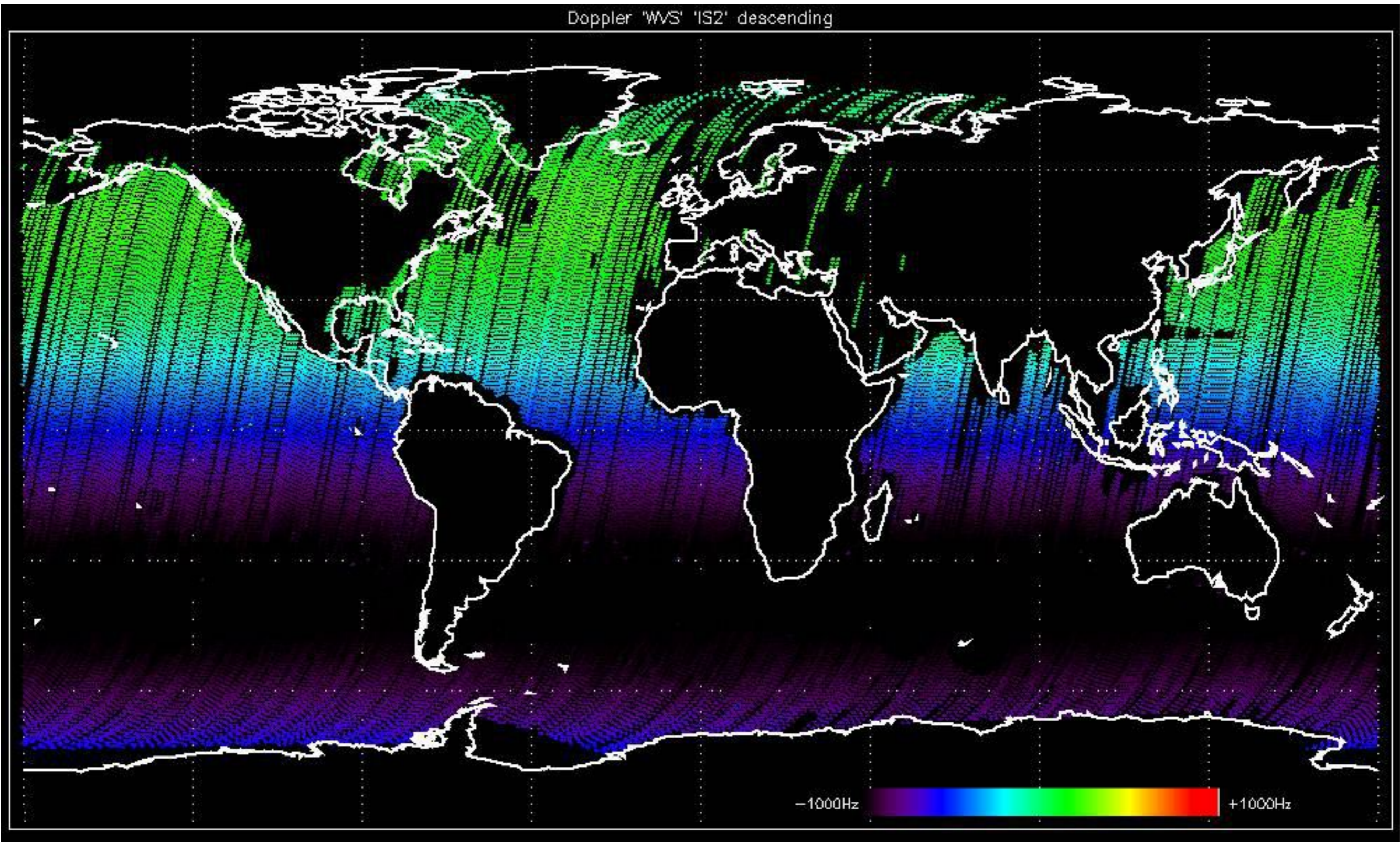
Doppler 'GM1' 'SS1' descending

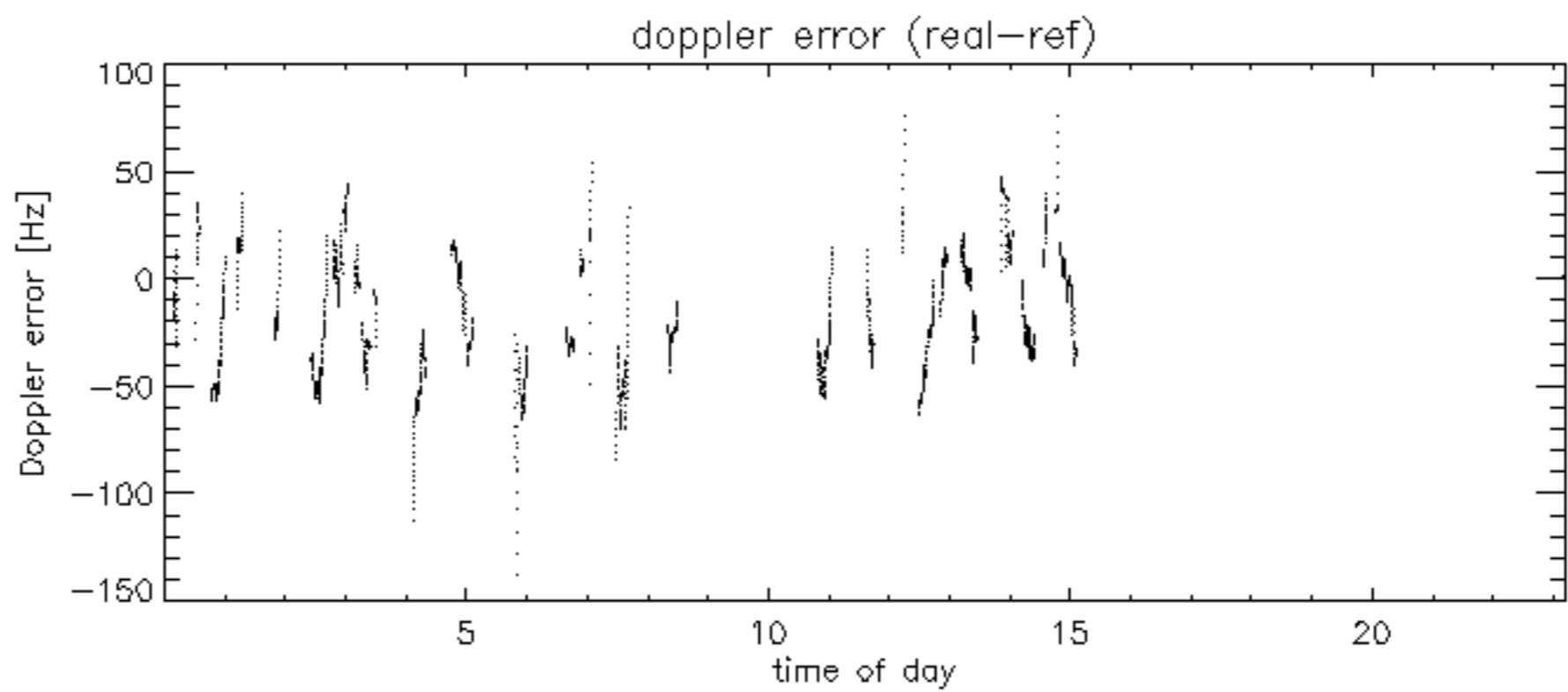
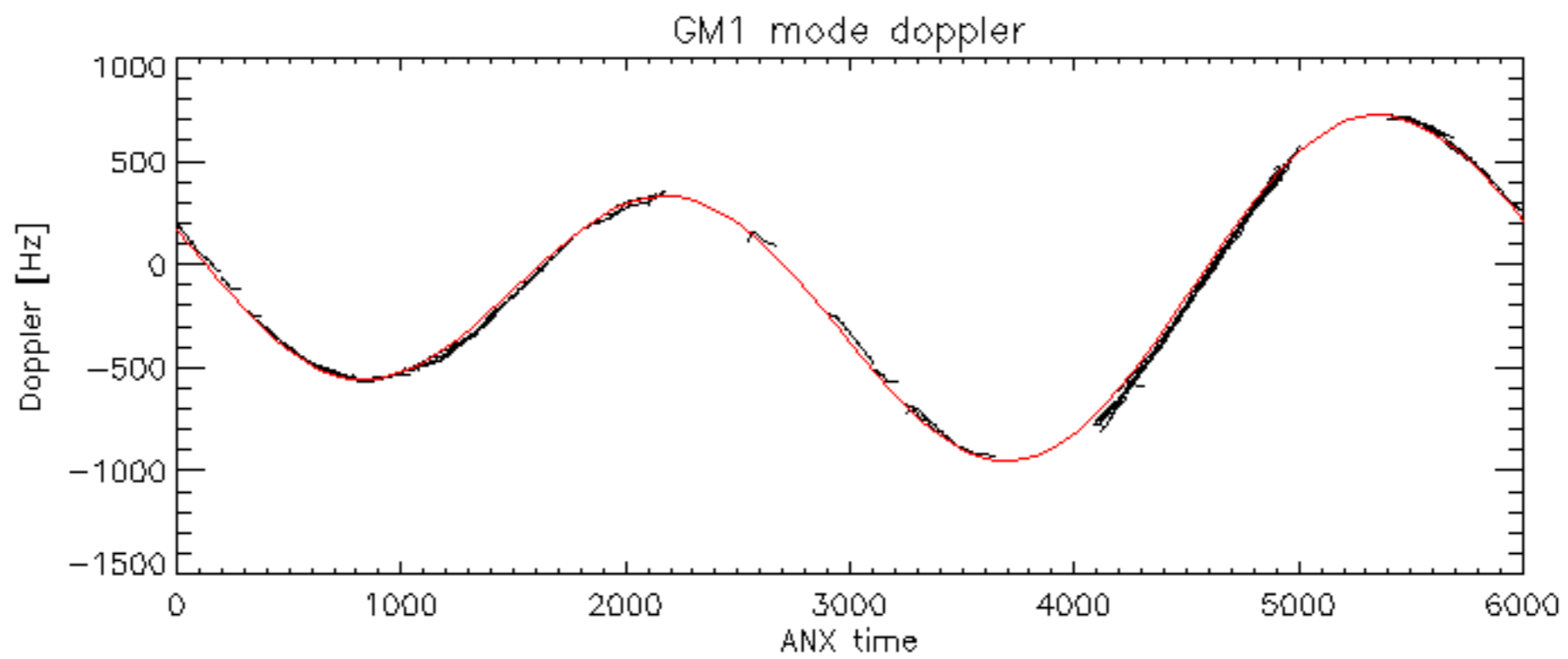


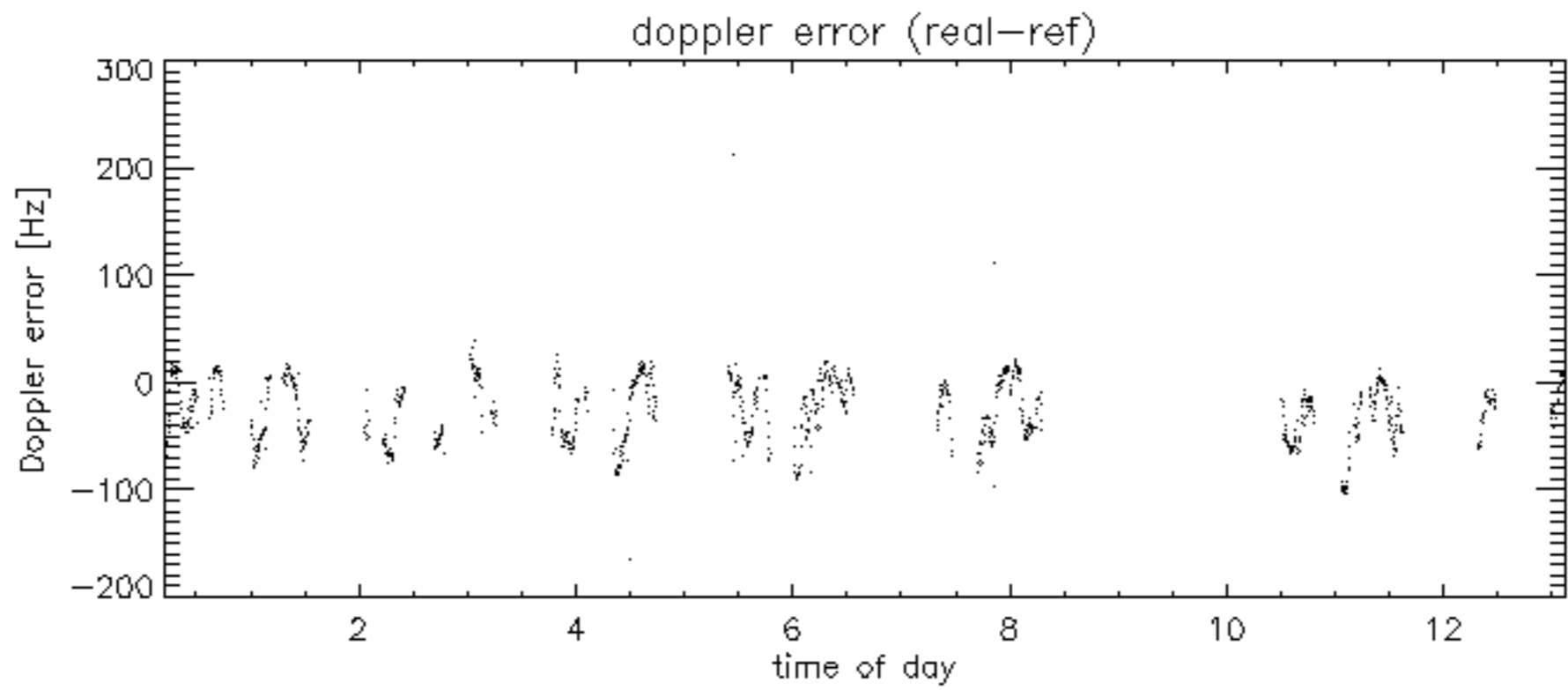
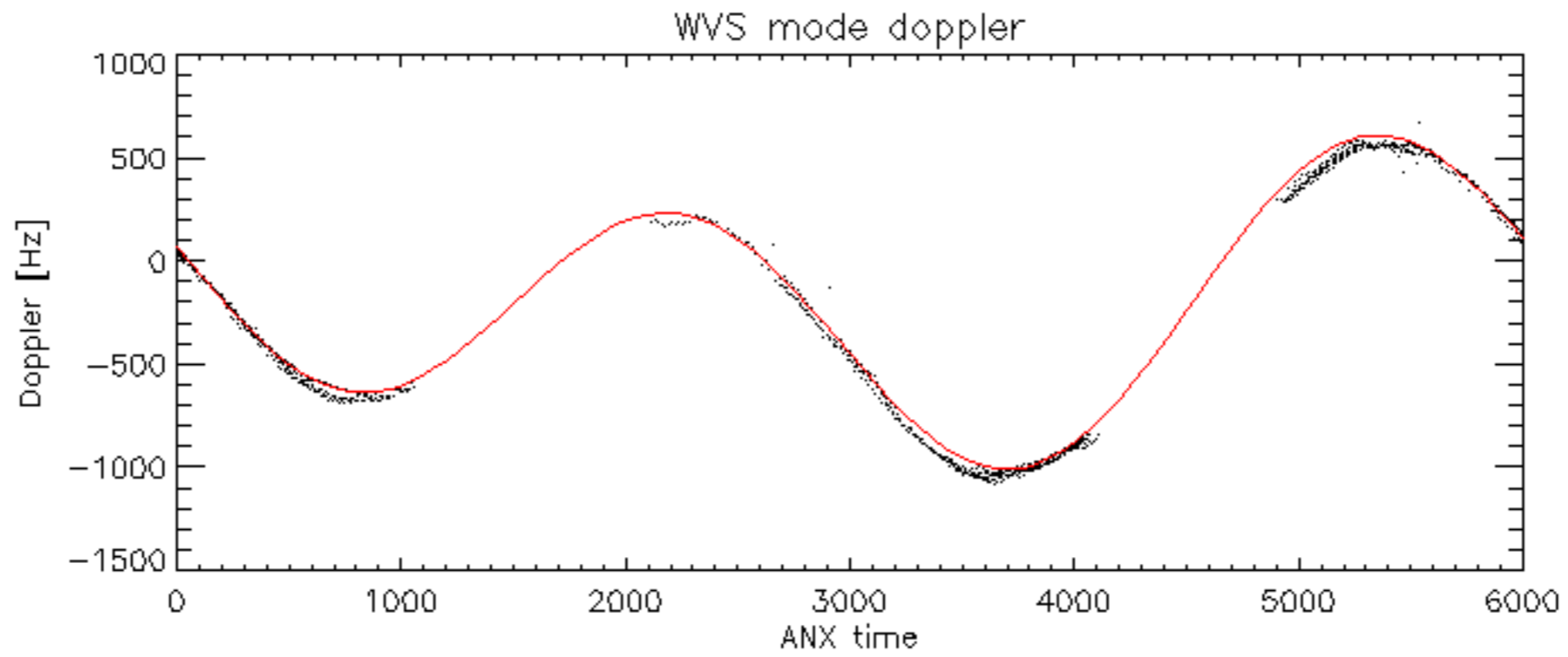
Doppler 'WVS' 'IS2' ascending



Doppler 'WVS' 'IS2' descending

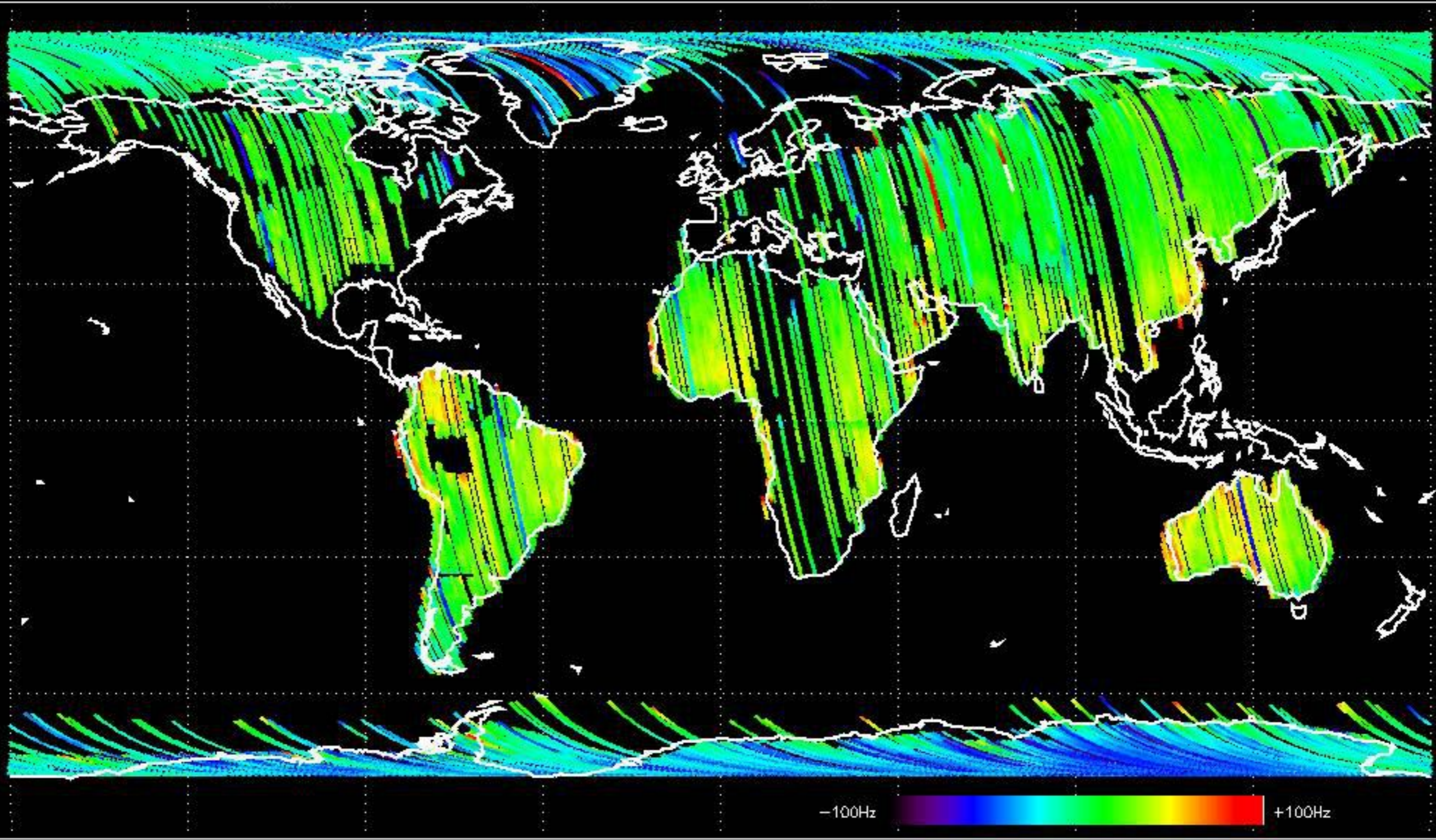




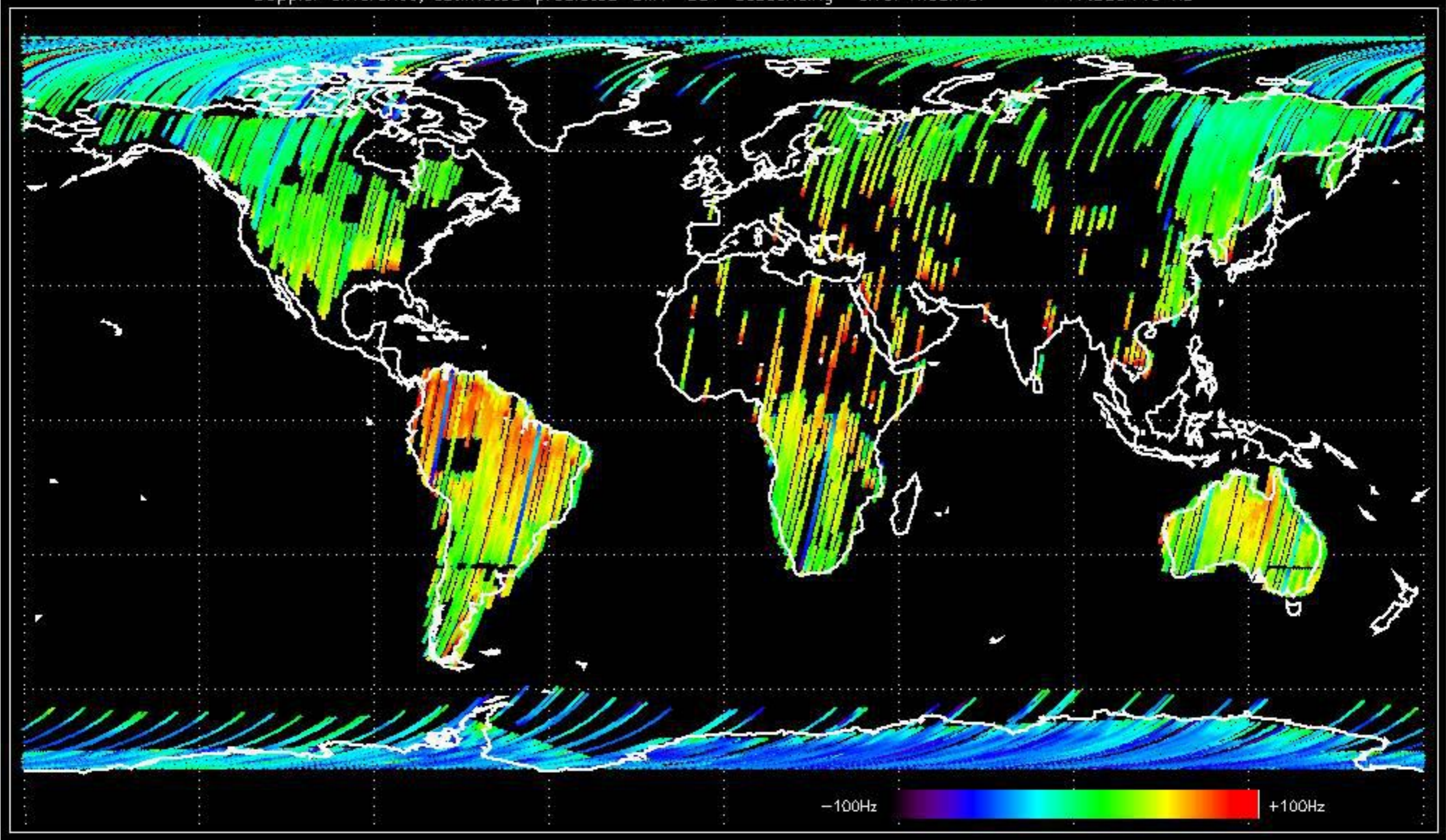




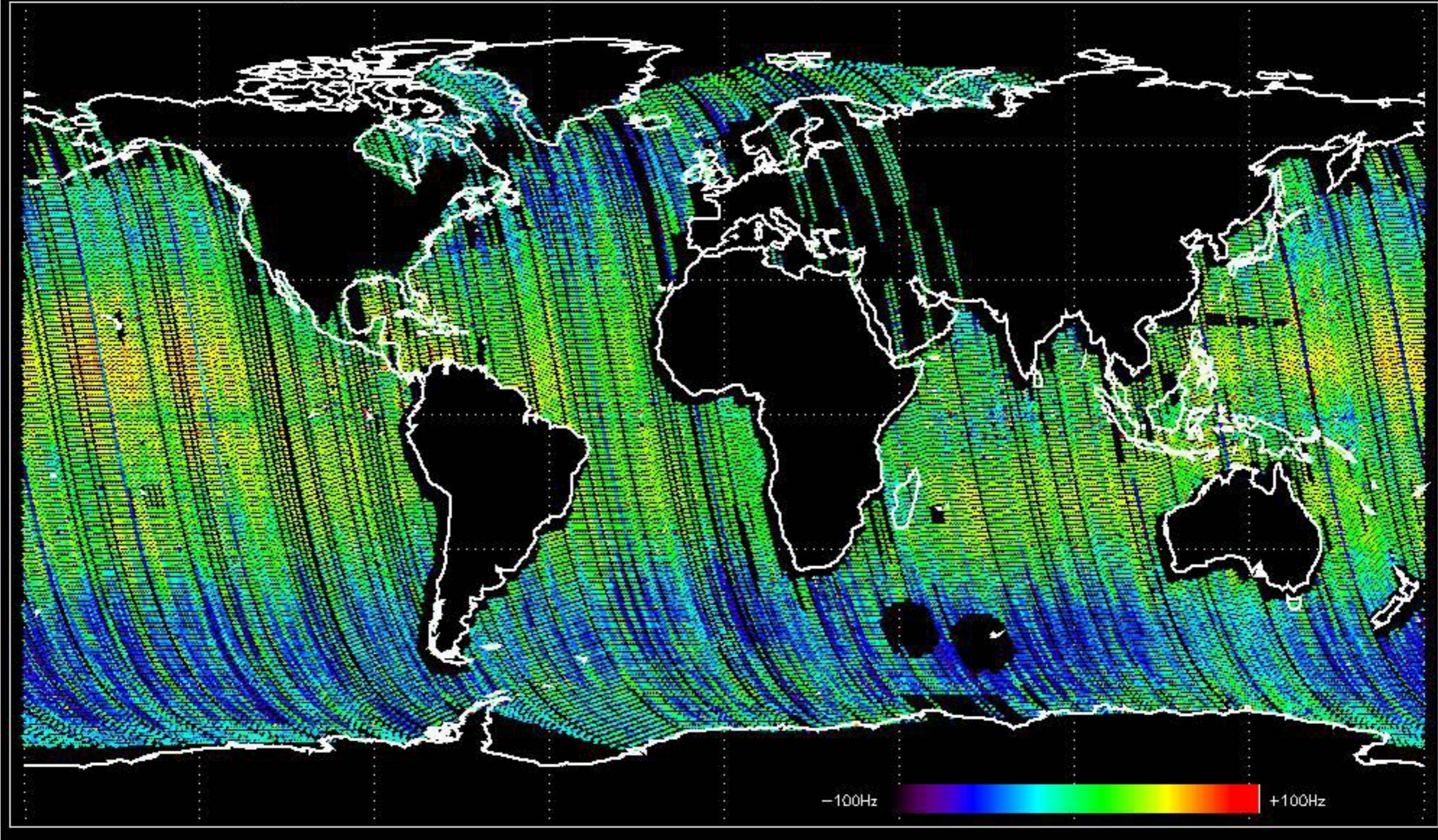
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.411592 Hz



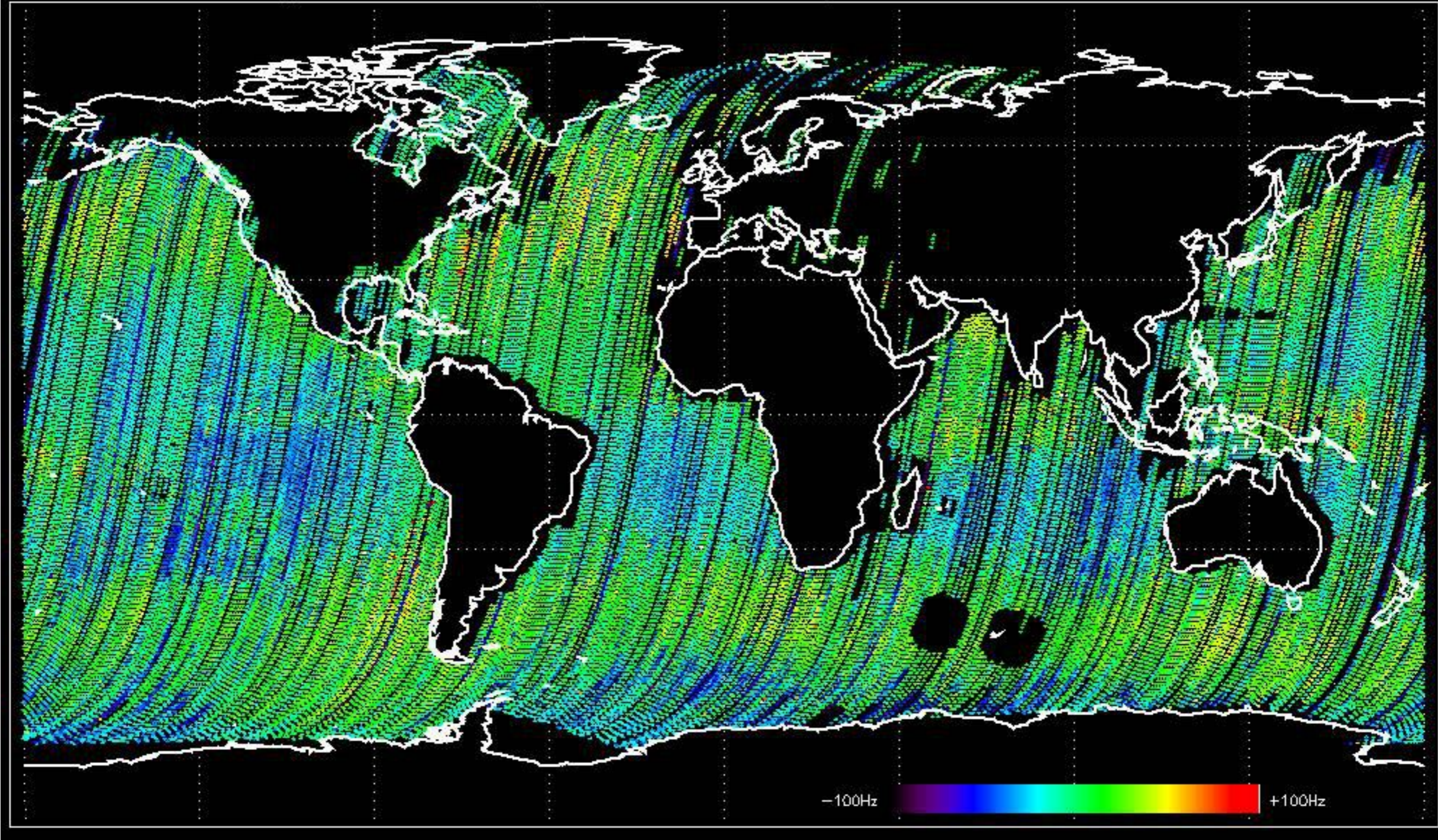
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.889443 Hz



Doppler difference, estimated-predicted 'WS' 'IS2' ascending -error mean of -36.842771 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -34.222939 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\_\_0PNPDK20040429\_192357\_000000152026\_00242\_11318\_0102.N1
- ASA\_MS\_\_0PNPDK20040429\_192517\_000000152026\_00242\_11318\_0103.N1

No anomalies observed.



























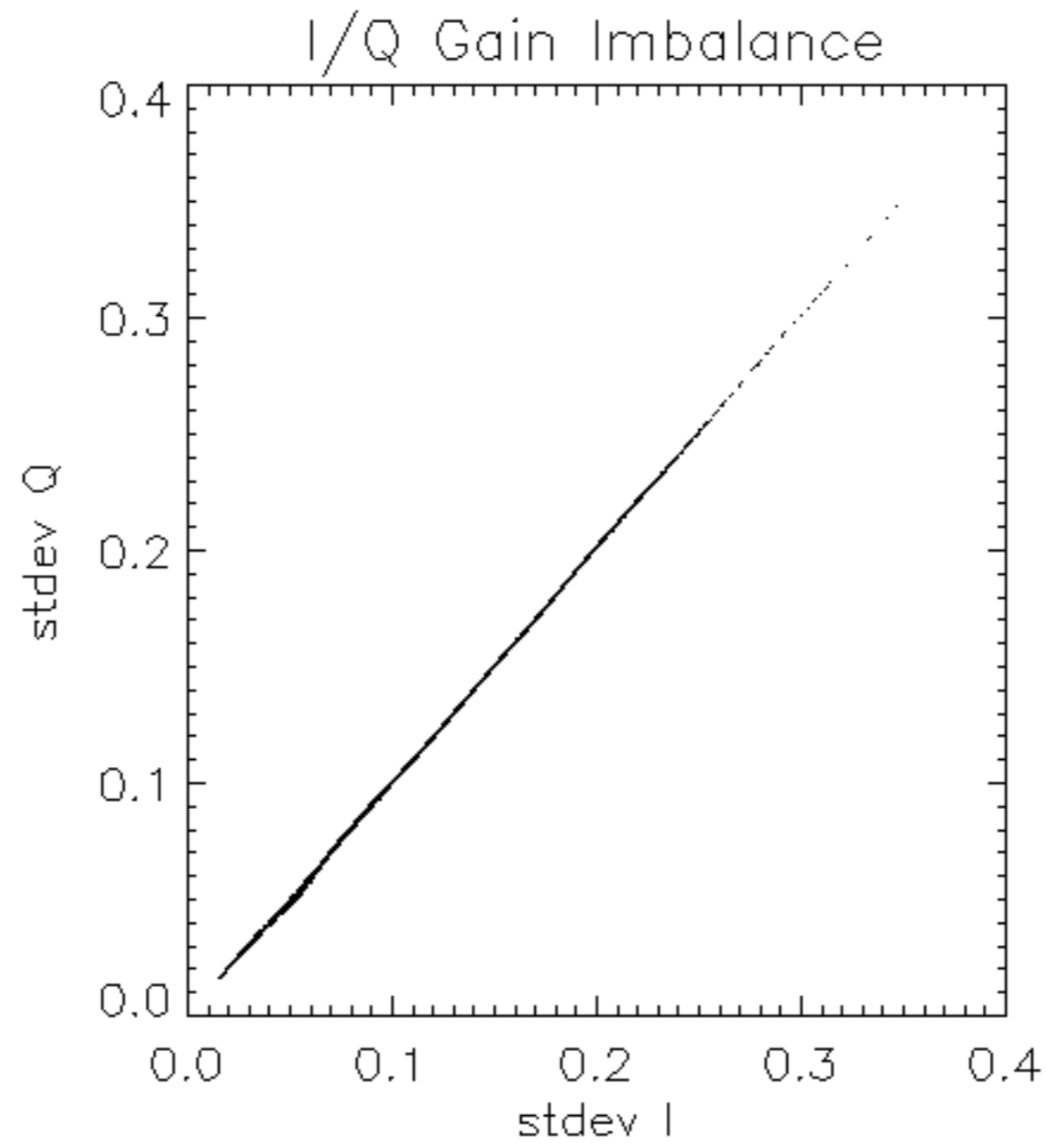


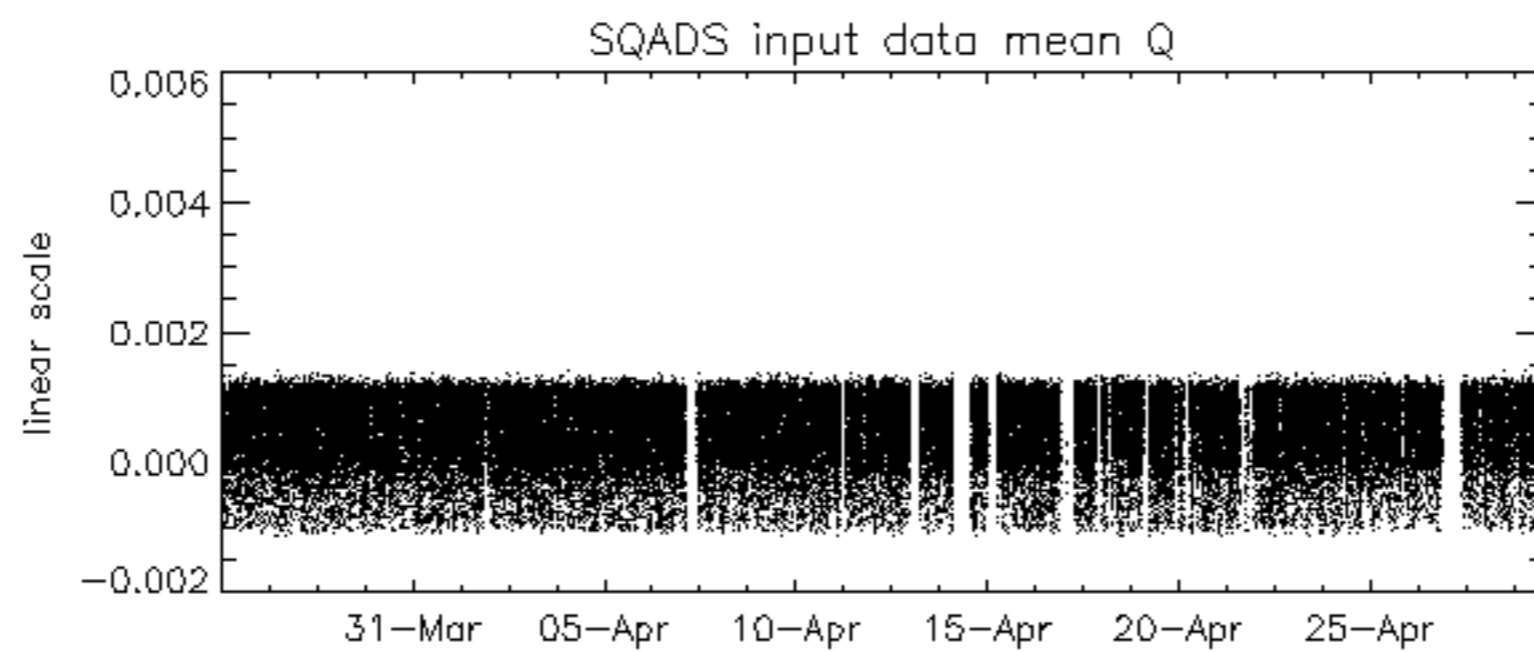
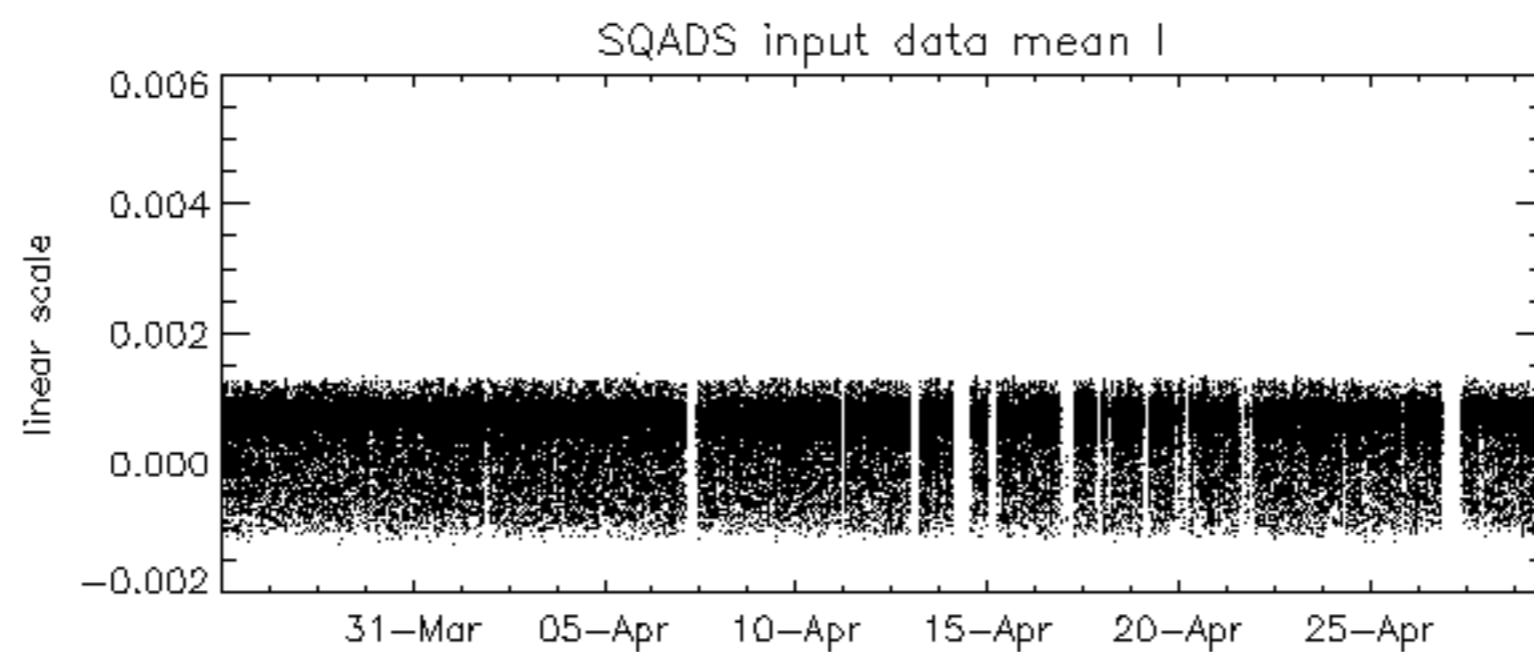
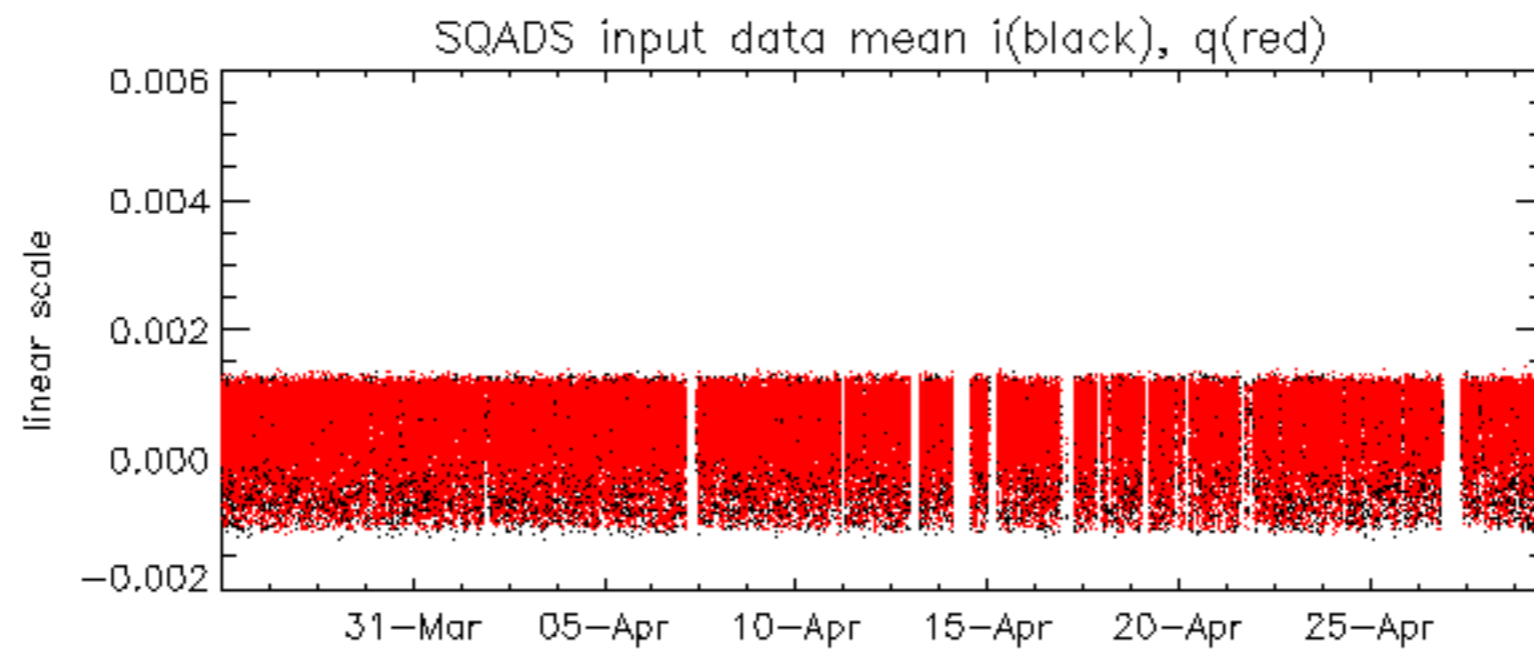




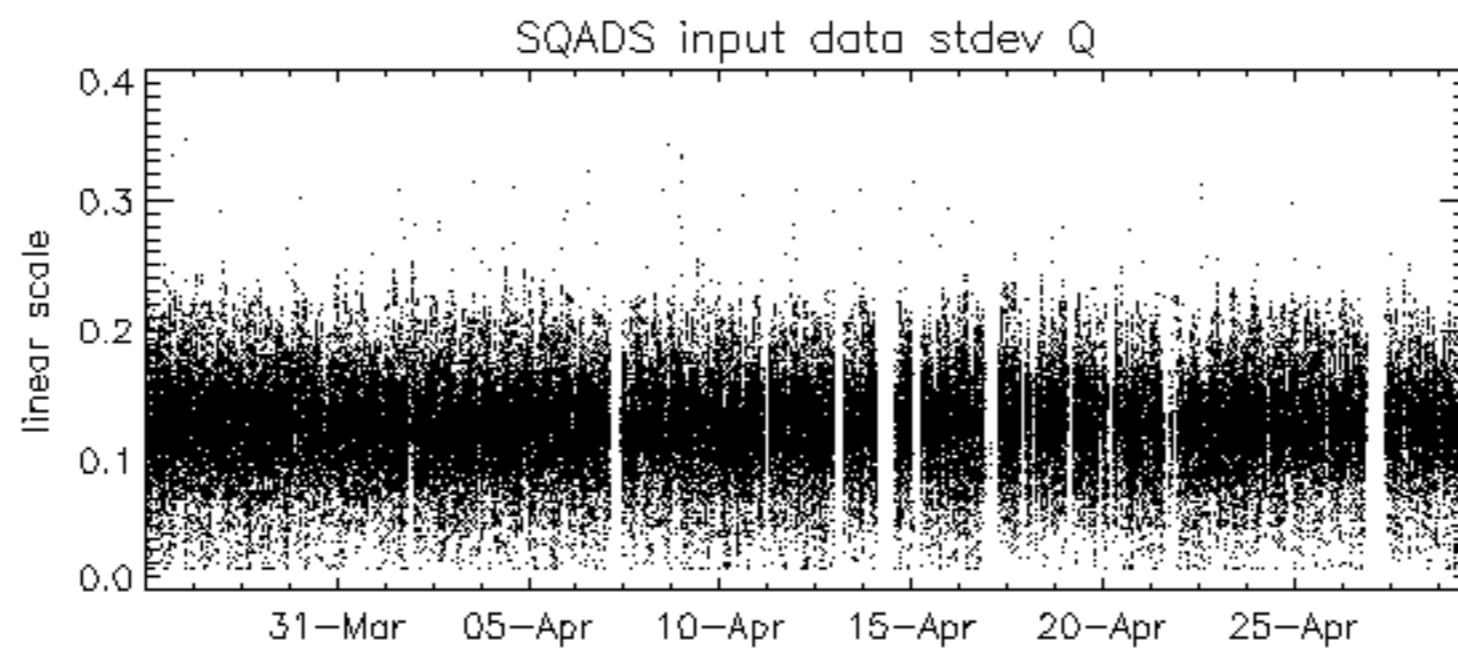
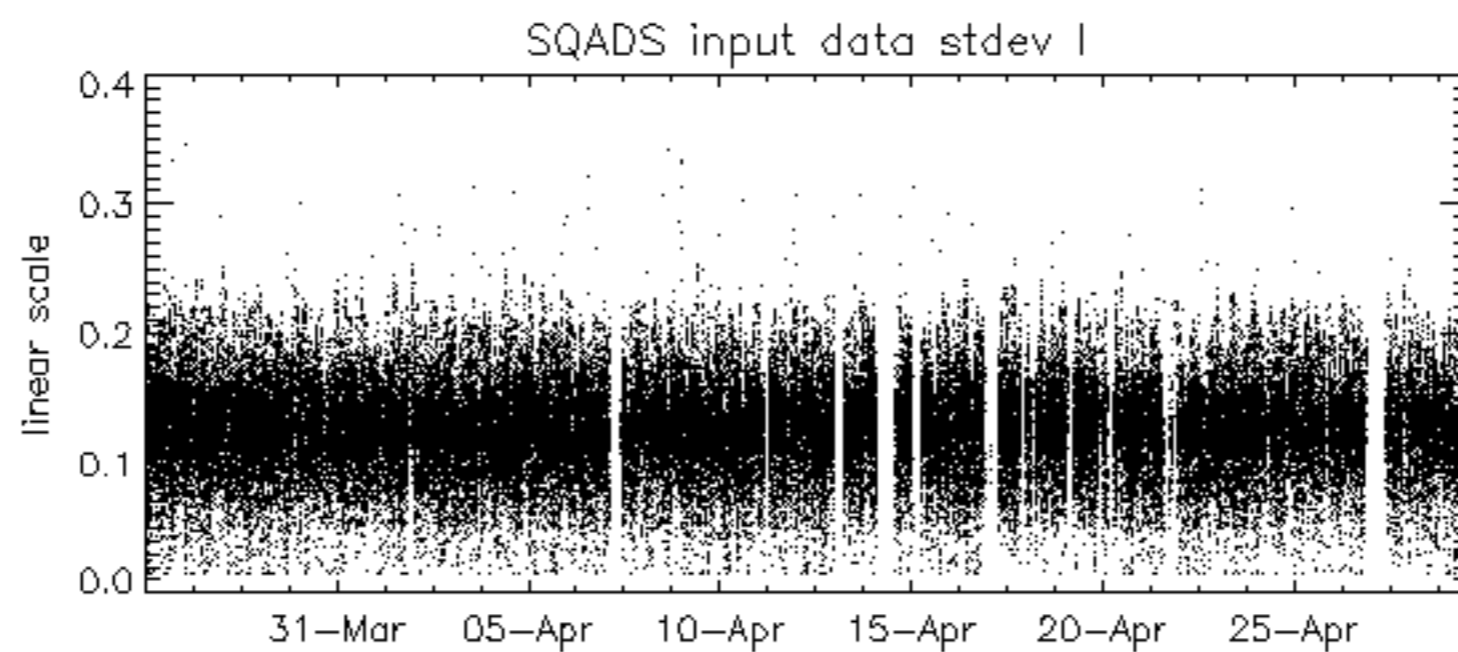
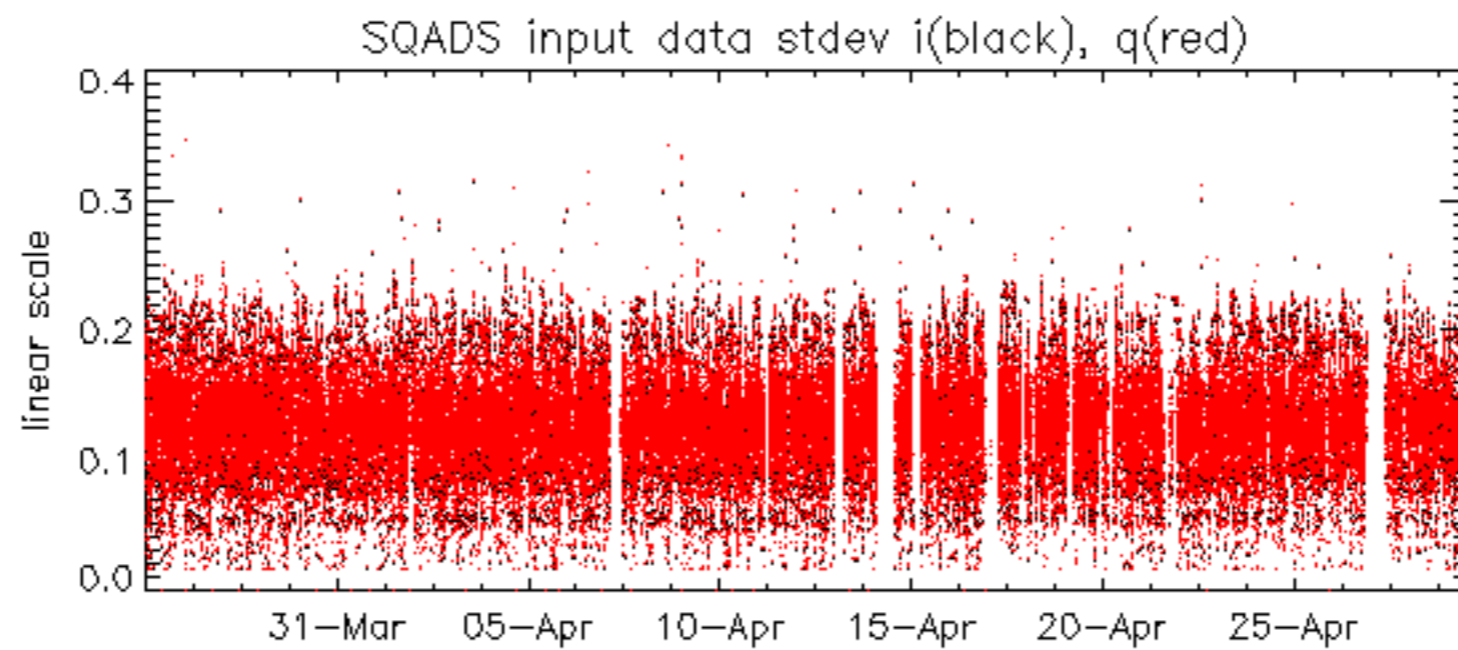
















































ASAR unavailable from 29-APR-2004 08:32:08 to 29-APR-2004 10:18:18. Antenna reset due to repeated tile D3 temperature anomalies.

