

# REPORT OF 031020

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## 1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA\_WVS\_1P) products, which are the available few hours after the acquisition, on the high rate browse (BP) products and on the Module Stepping (MS) product.

## 2 - Summary

### 2.1 - Instrument Unavailability

ASAR was unavailable on 2003-10-19 09:49:41 to 2003-10-19 12:50:59.

ASAR was back to operations with the B4 tile malfunctioning in transmit with a remarkable impact on P1 and P1A pulses as well as on science data.

### 2.2 - Browse Visual Inspection

The disfunctioning of the tile B4 has an impact on data, in particular on WS products where the boundaries of the subswaths are visible.

### 2.3 - Data Analysis

-P1 and P1A pulses present high variation on amplitude [till 5dB] depending on the row number.

-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.

Anomaly of tile B4 is visible in txH/V mode:









- ASA\_MS\_\_0PNPDK20031019\_190249\_000000152020\_00485\_08555\_0066.N1
- ASA\_MS\_\_0PNPDK20031019\_190109\_000000152020\_00485\_08555\_0067.N1

Gain of module 24 in tile B4 shows a drop ~30dB.











Polarisation	Start Time
V	20031019 190249
H	20031019 190109

#### 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

Anomaly visible on transmit cal pulses for the rows relative to second part of the antenna. A drop of ~5dB in P1 pulses is noticeable .

### 4.1 - Daily statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-3.78702	-22.5504	-8.15186
	stdev	0.00549781	0.0570862	0.00247004
24	mean	-8.03080	-21.2578	-8.15186
	stdev	6.67309	0.0548790	0.00247004



### 4.2 - Cyclic statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-3.79648	-22.5401	-8.13617
	stdev	0.00547818	0.0629221	0.00249616
24	mean	-5.27071	-21.2761	-8.13617
	stdev	0.380371	0.0603168	0.00249616



### 4.3 - cal pulses monitoring (all rows)



## 5 - RAW data statistics

No anomalies observed.

### 5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000365025
	stdev	3.60710e-07
MEAN Q	mean	0.000285859
	stdev	3.30575e-07



## 5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.114611
	stdev	0.00144115
STDEV Q	mean	0.114854
	stdev	0.00145910



## 5.3 - Gain imbalance I/Q



## 6 - Wave Doppler Analysis

No anomalies observed Doppler evolution.  
Doppler analysis performed over the last 60 days

### 6.1 - Unbiased Doppler Error

Evolution of unbiased Doppler error (Real - Expected)
Ascending
Descending

### 6.2 - Absolute Doppler

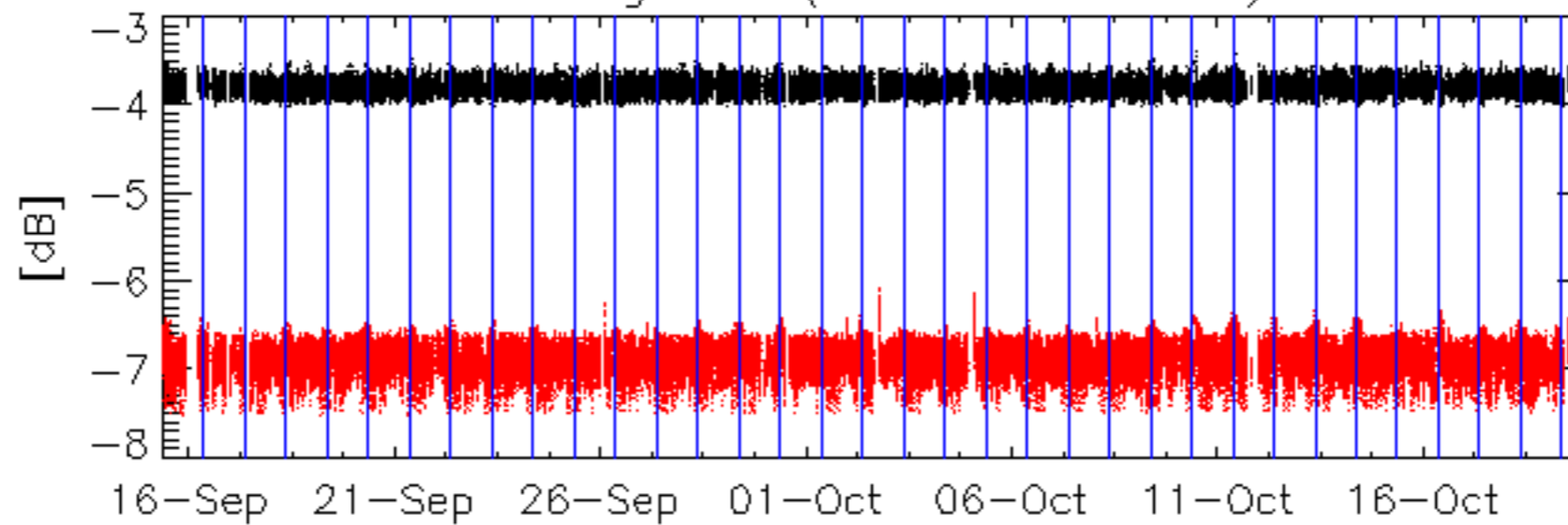
Evolution of Absolute Doppler
Ascending
Descending

### 6.3 - Doppler evolution versus ANX

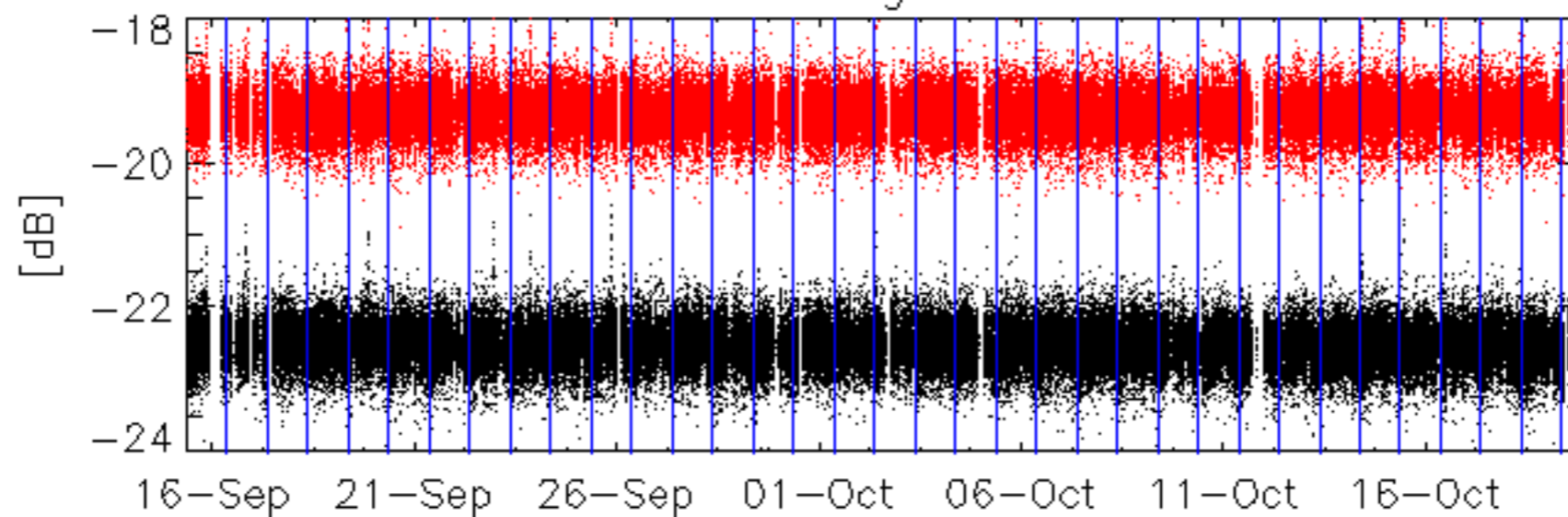
Evolution Doppler error versus ANX



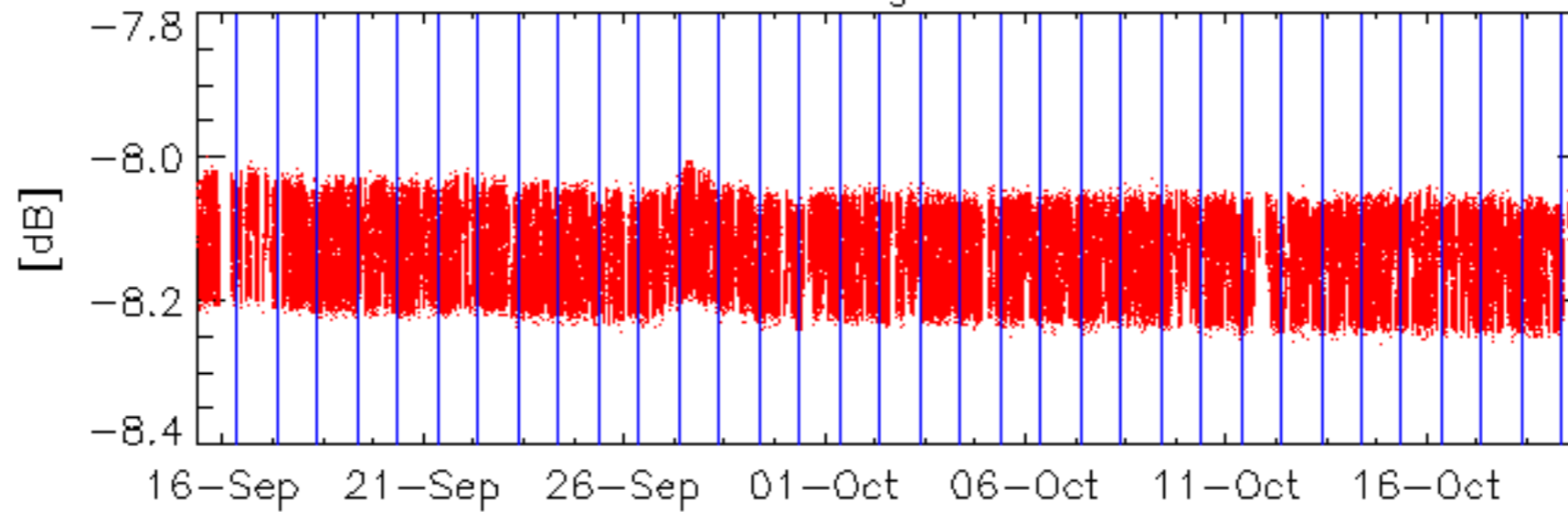
Average P1 (row 3 & row 10)



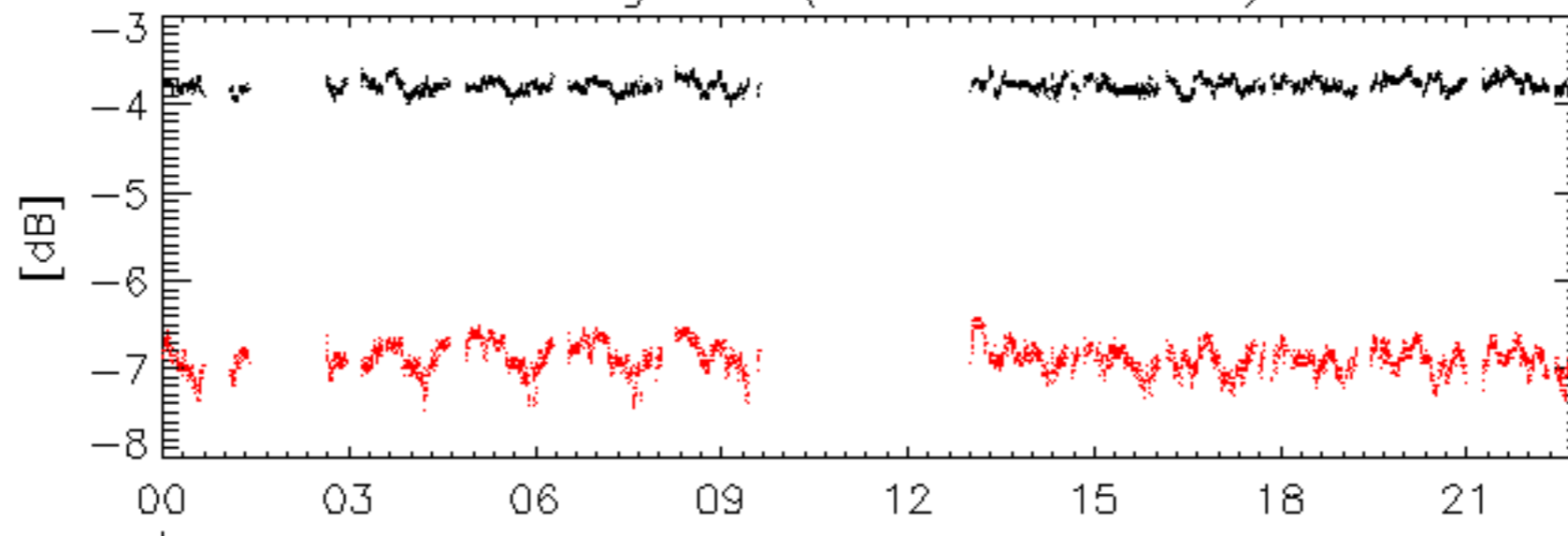
Average P2



Average P3

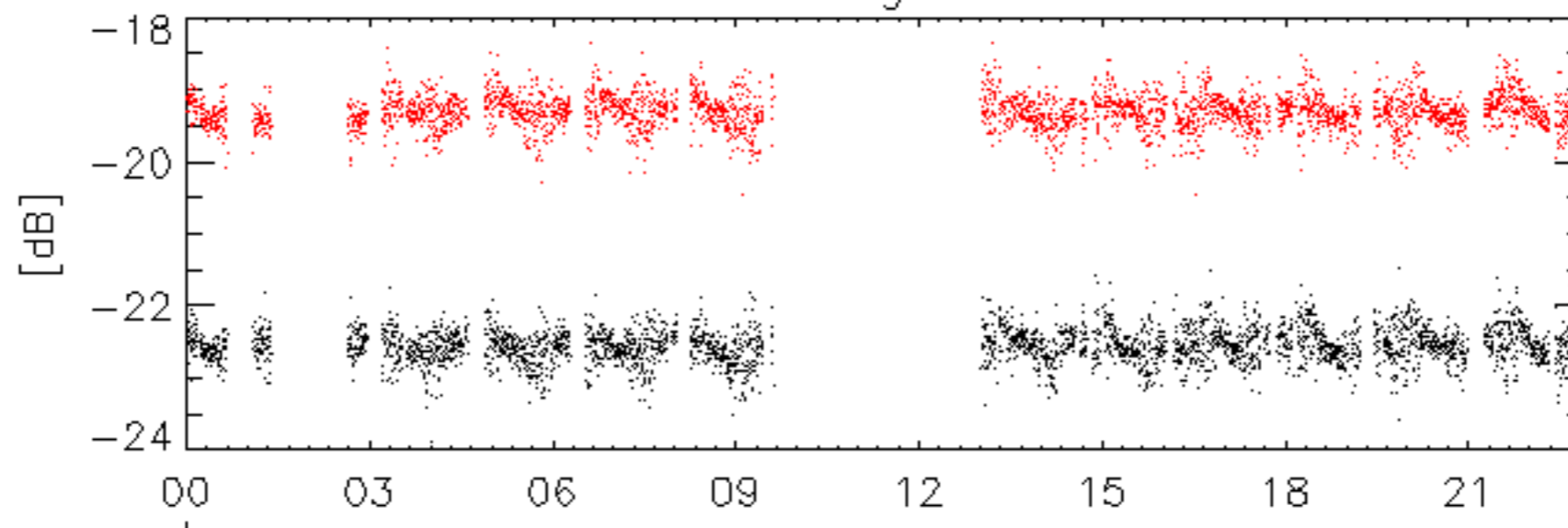


Average P1 (row 3 & row 10)



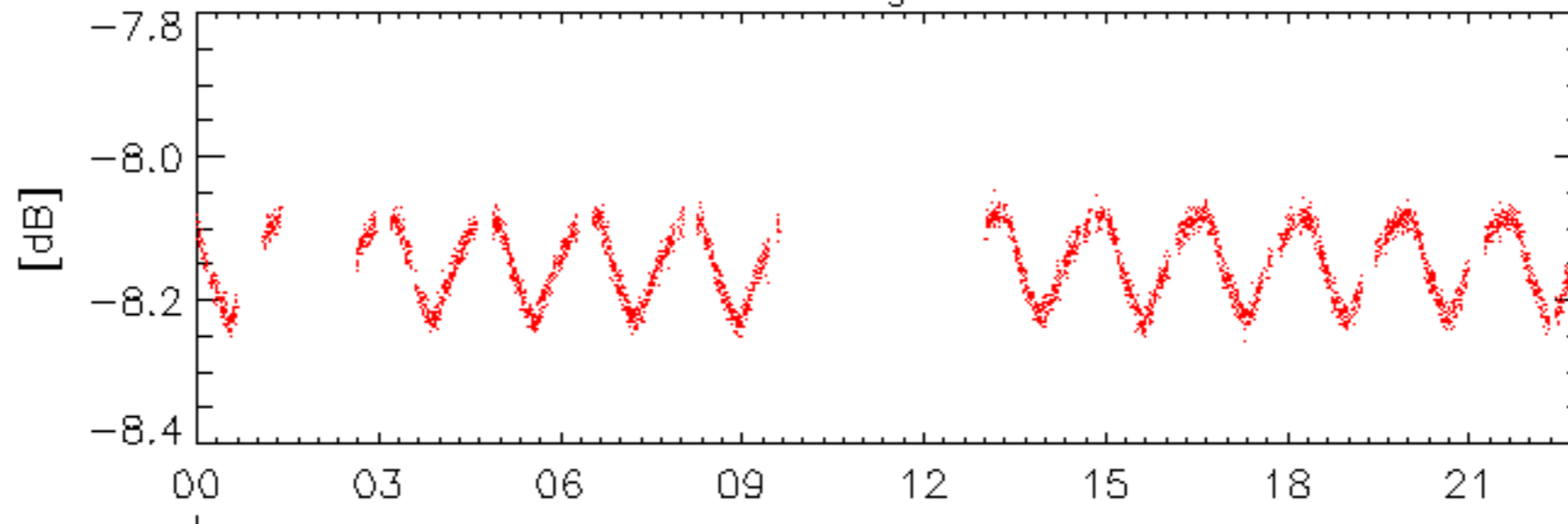
19-Oct

Average P2



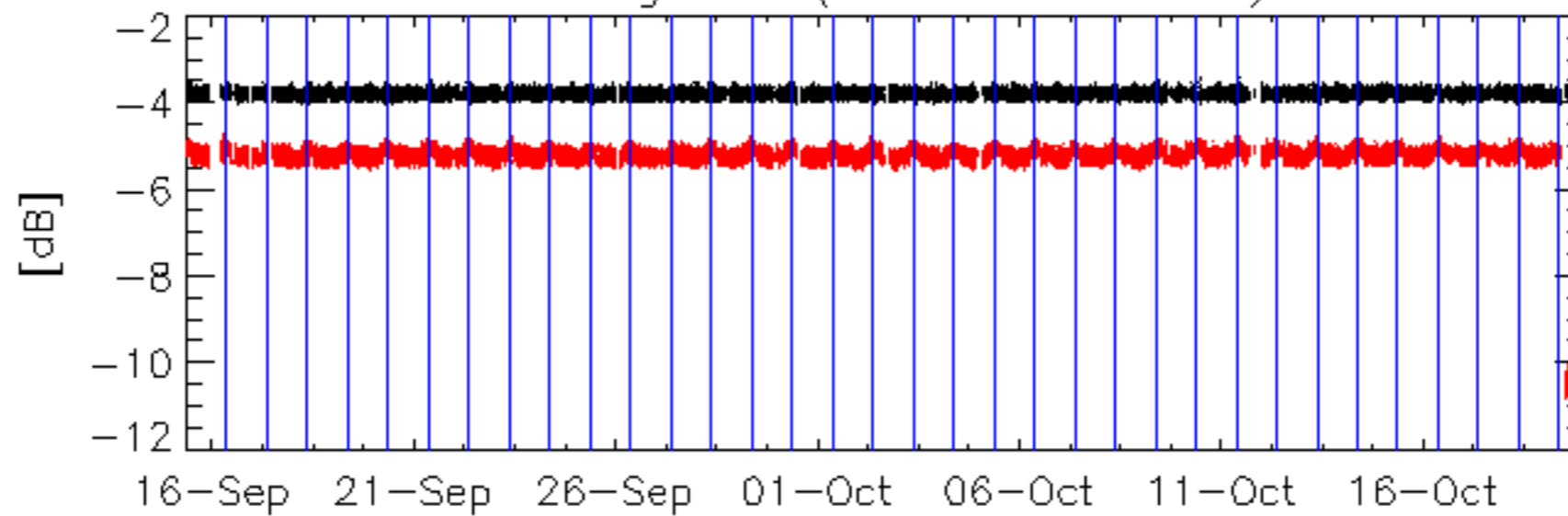
19-Oct

Average P3

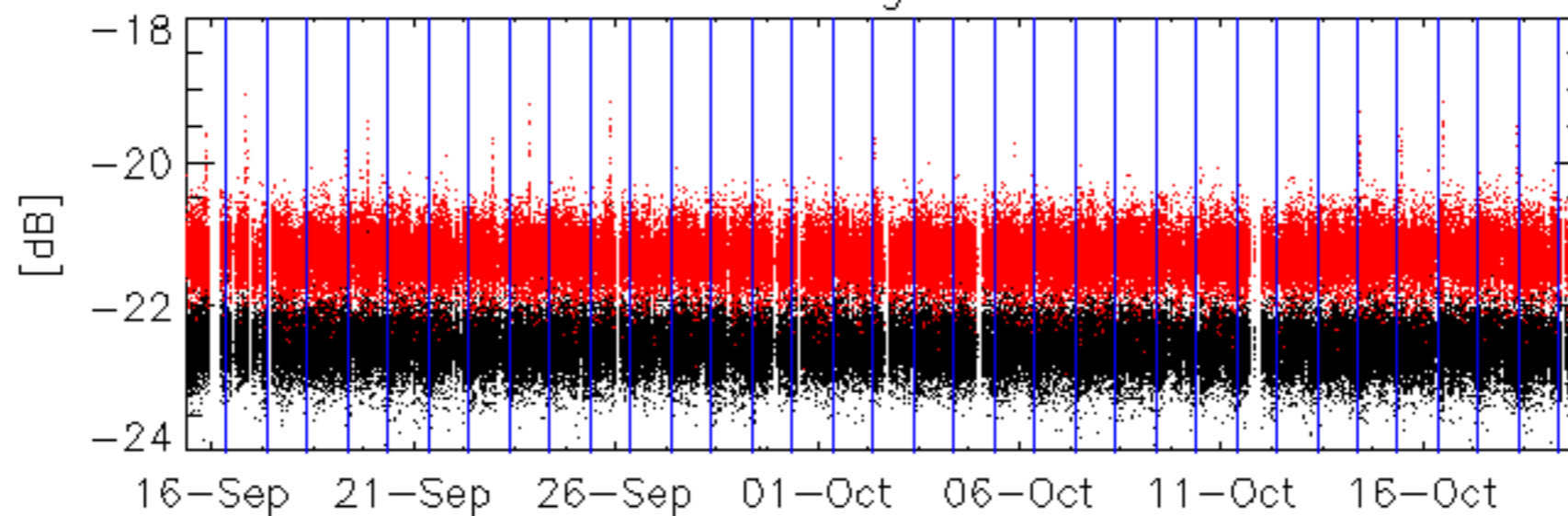


19-Oct

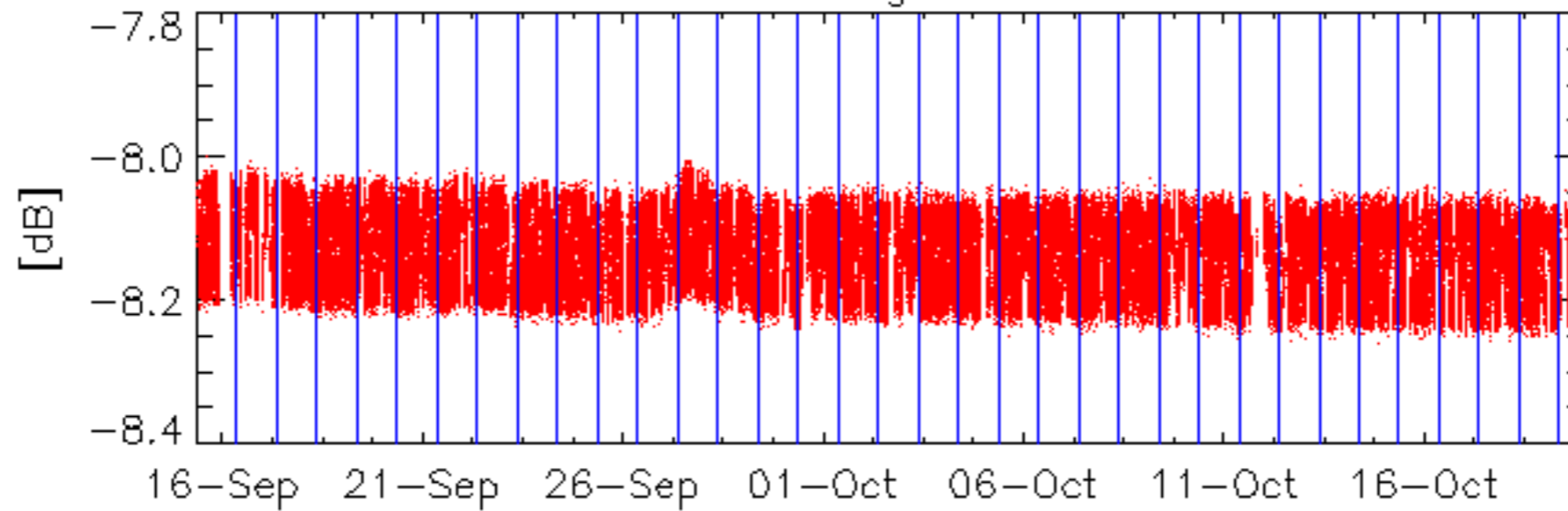
Average P1 (row 3 & row 24)



Average P2

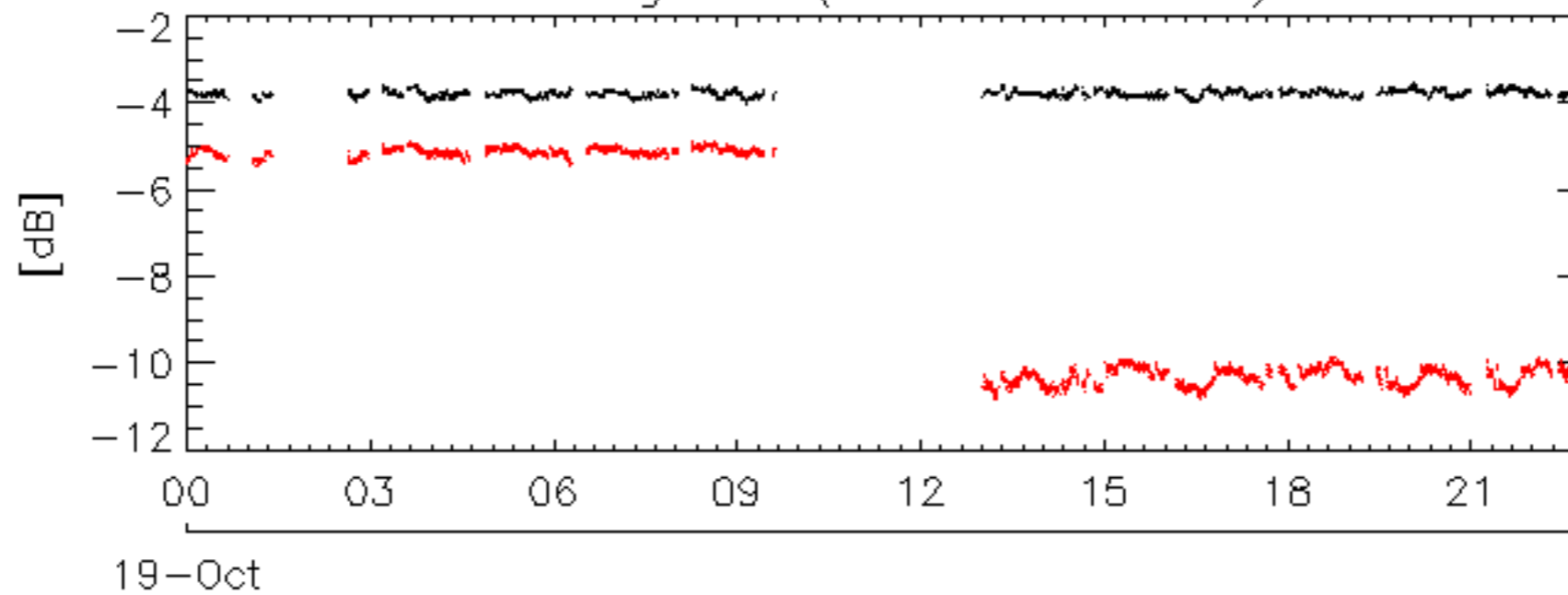


Average P3

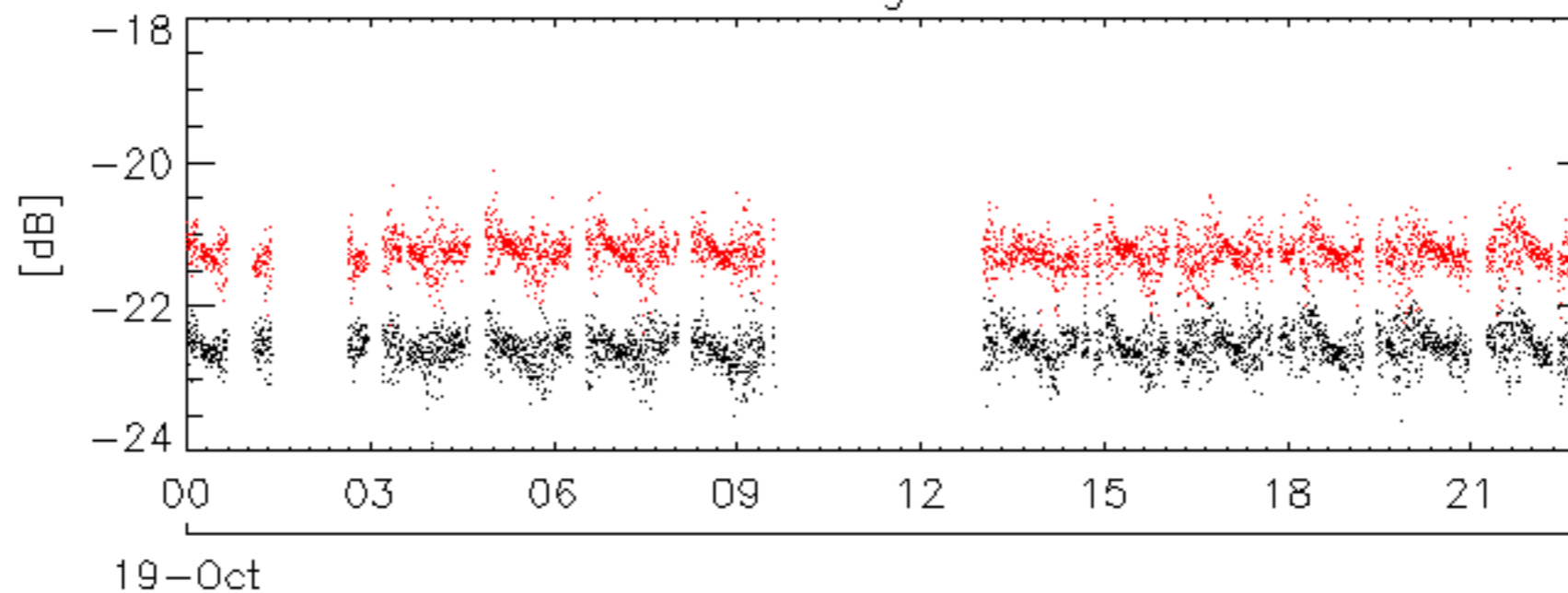




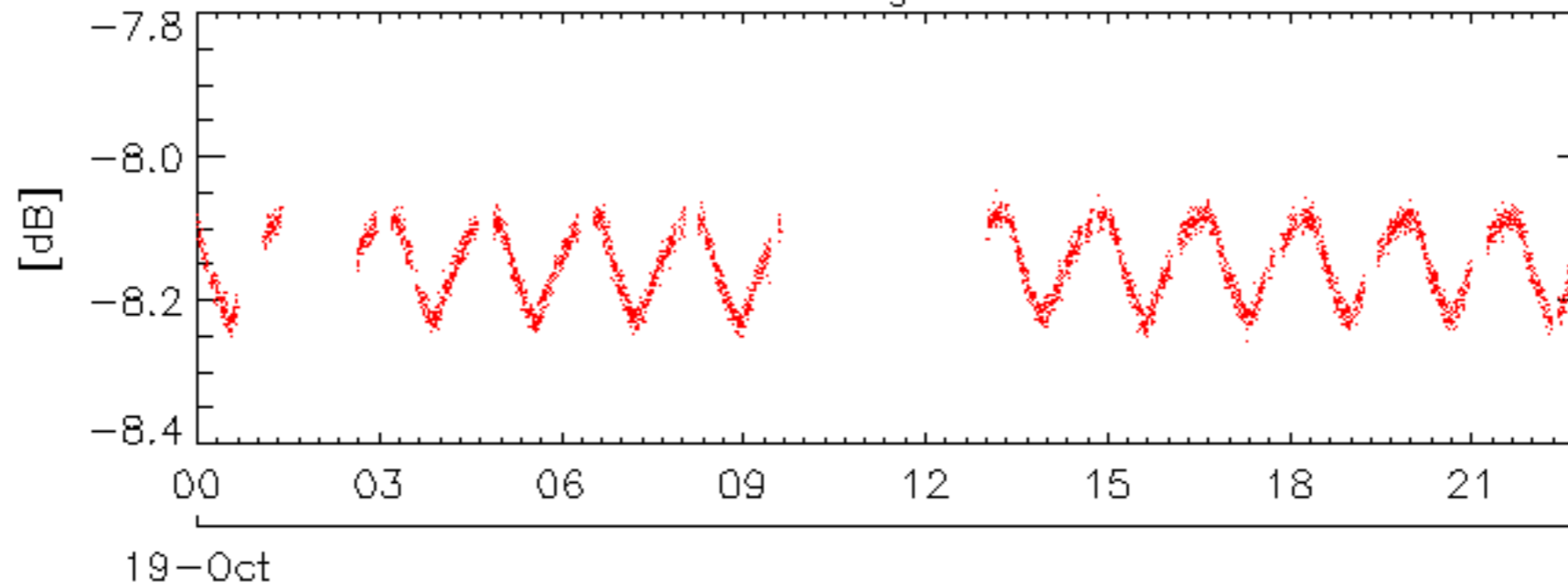
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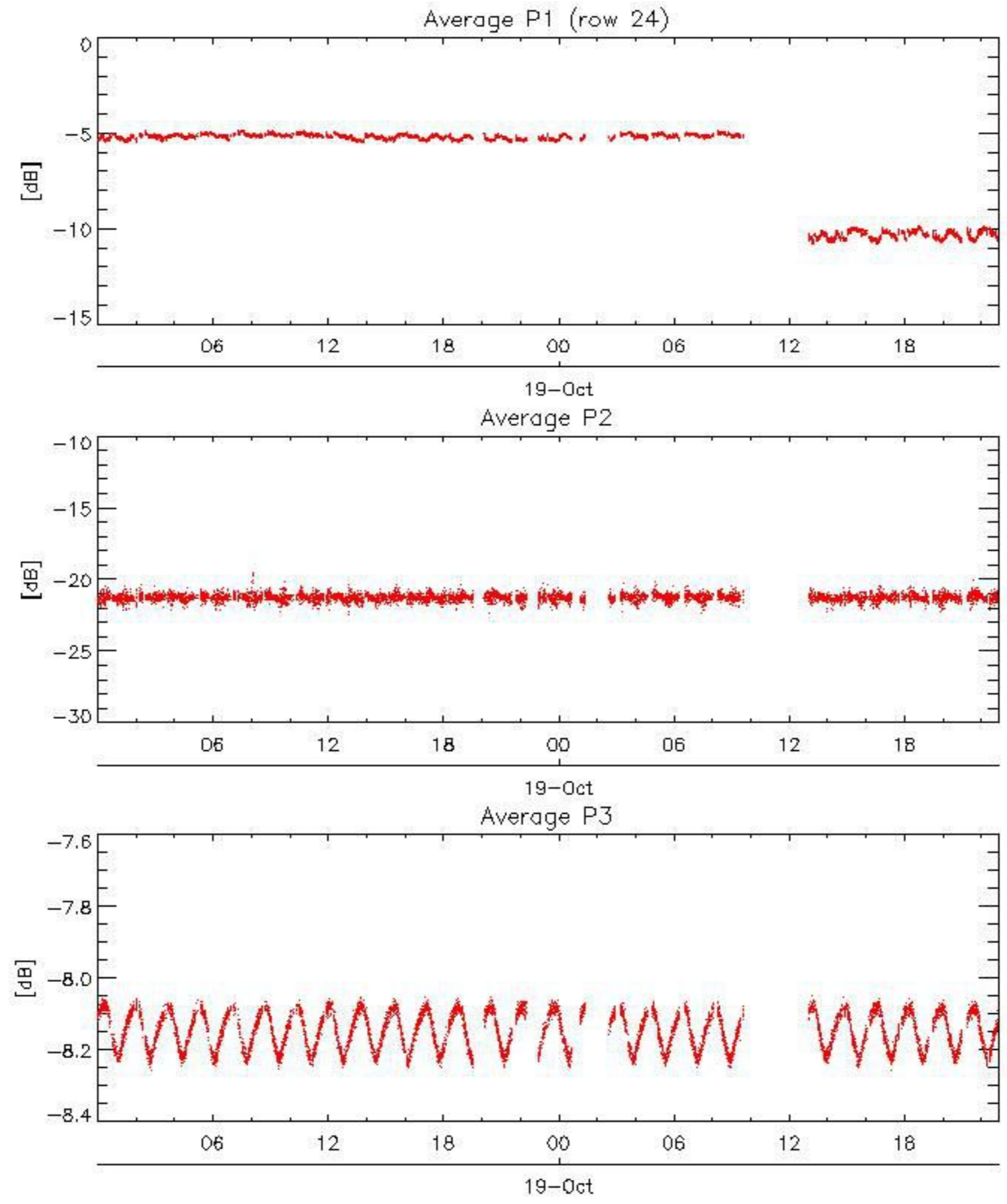


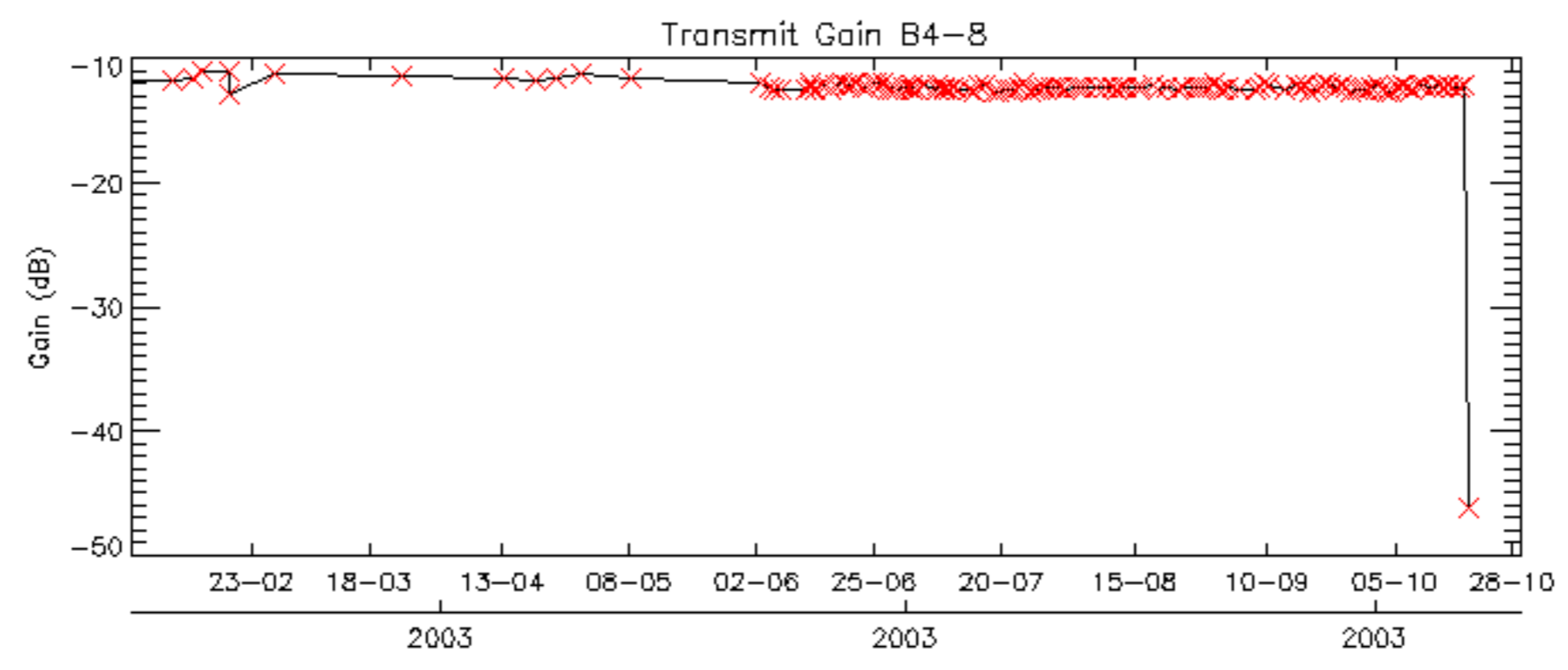
Average P2



Average P3

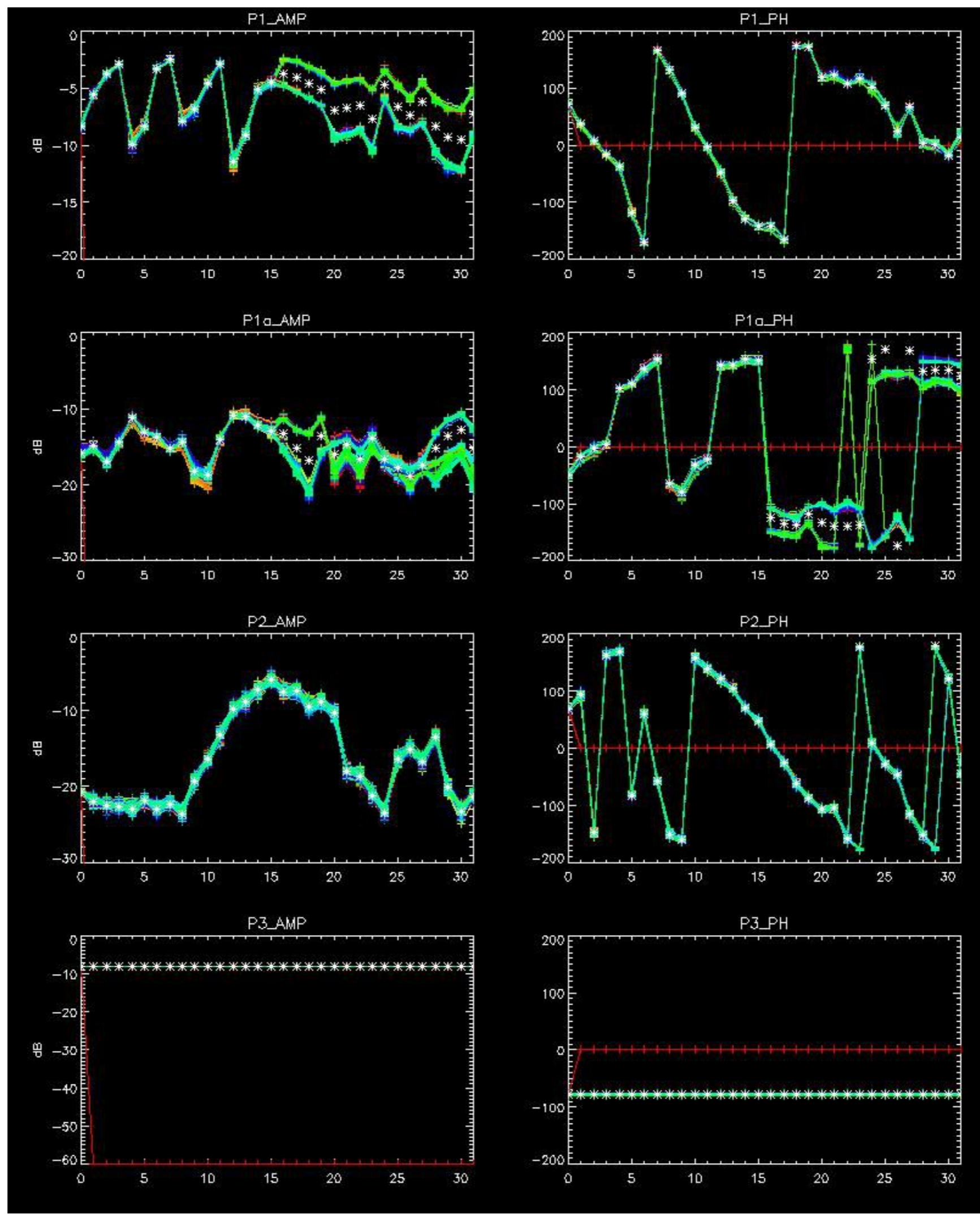






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No anomalies observed.

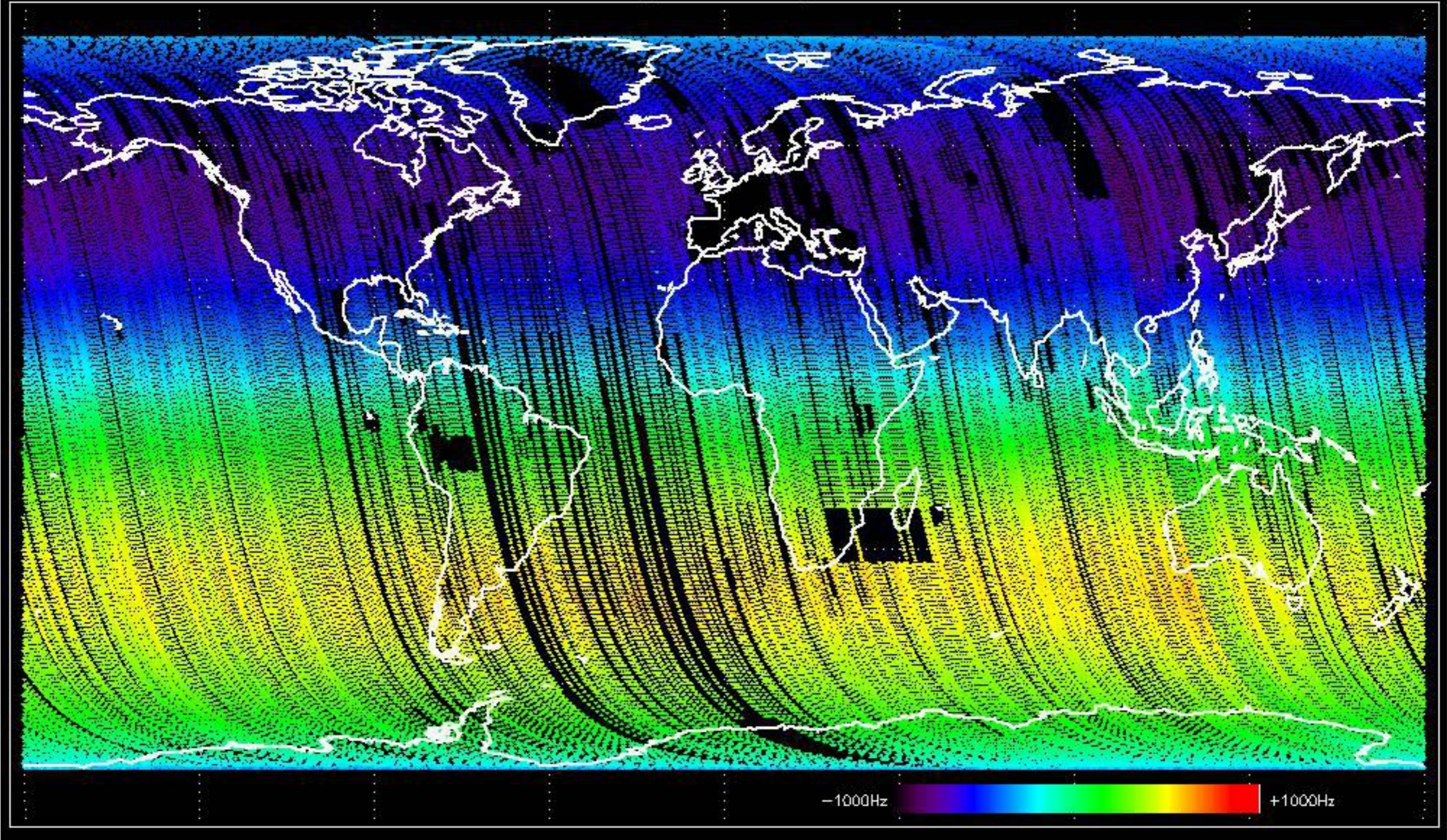


-P1 and P1A pulses present high variation on amplitude [till 5dB] depending on the row number.  
-Nominal Doppler behavior.

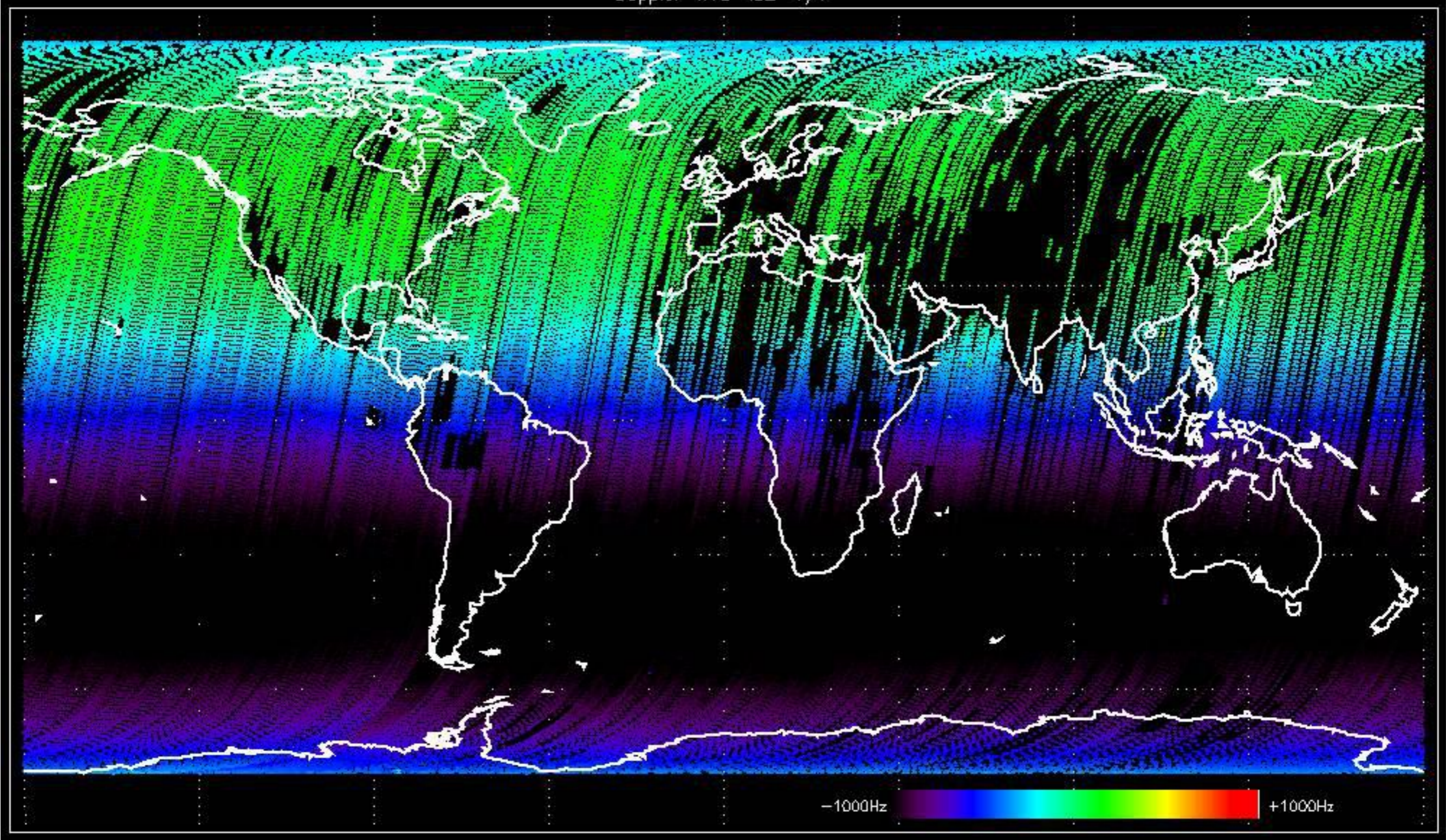
No anomalies observed Doppler evolution.  
Doppler analysis performed over the last 60 days

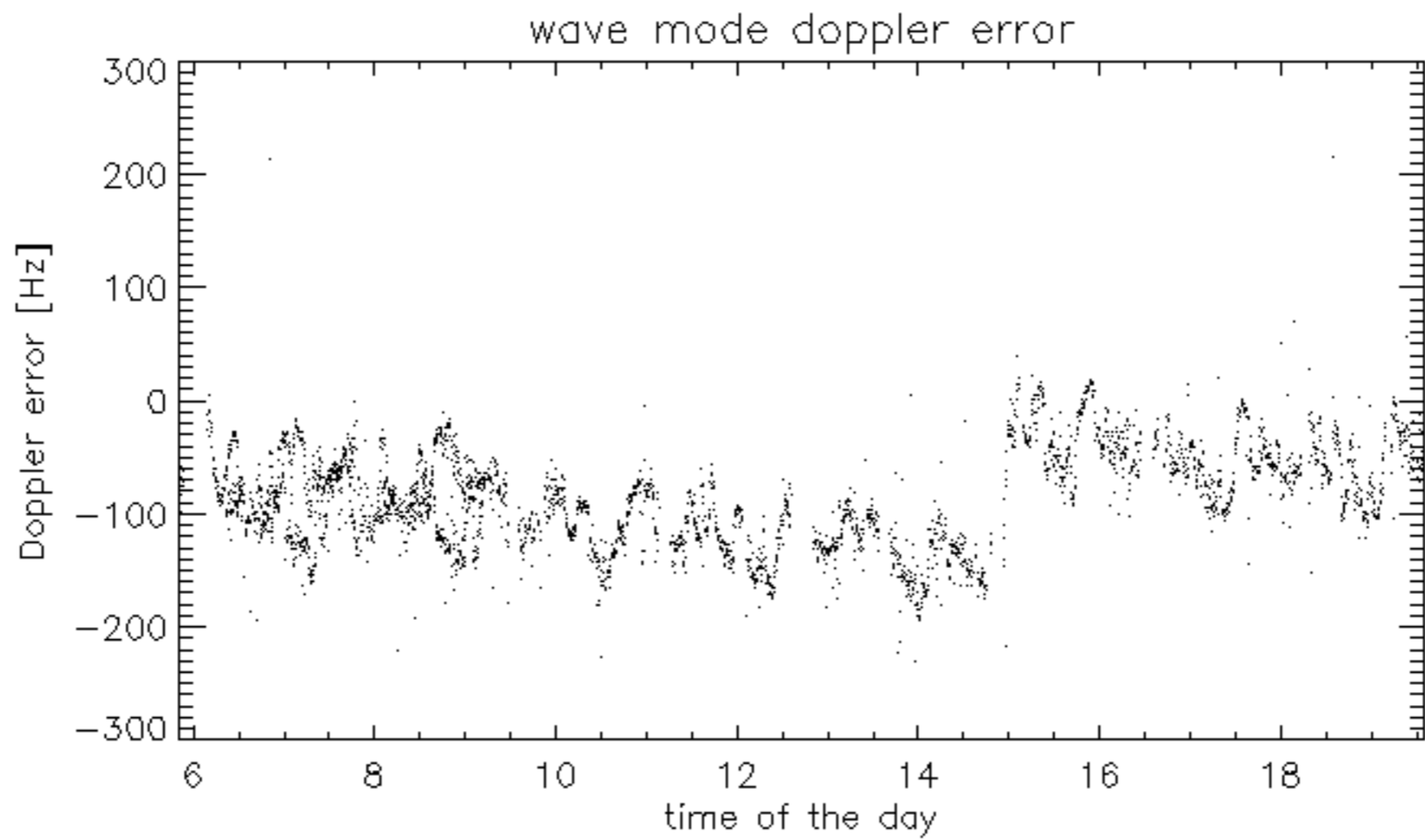
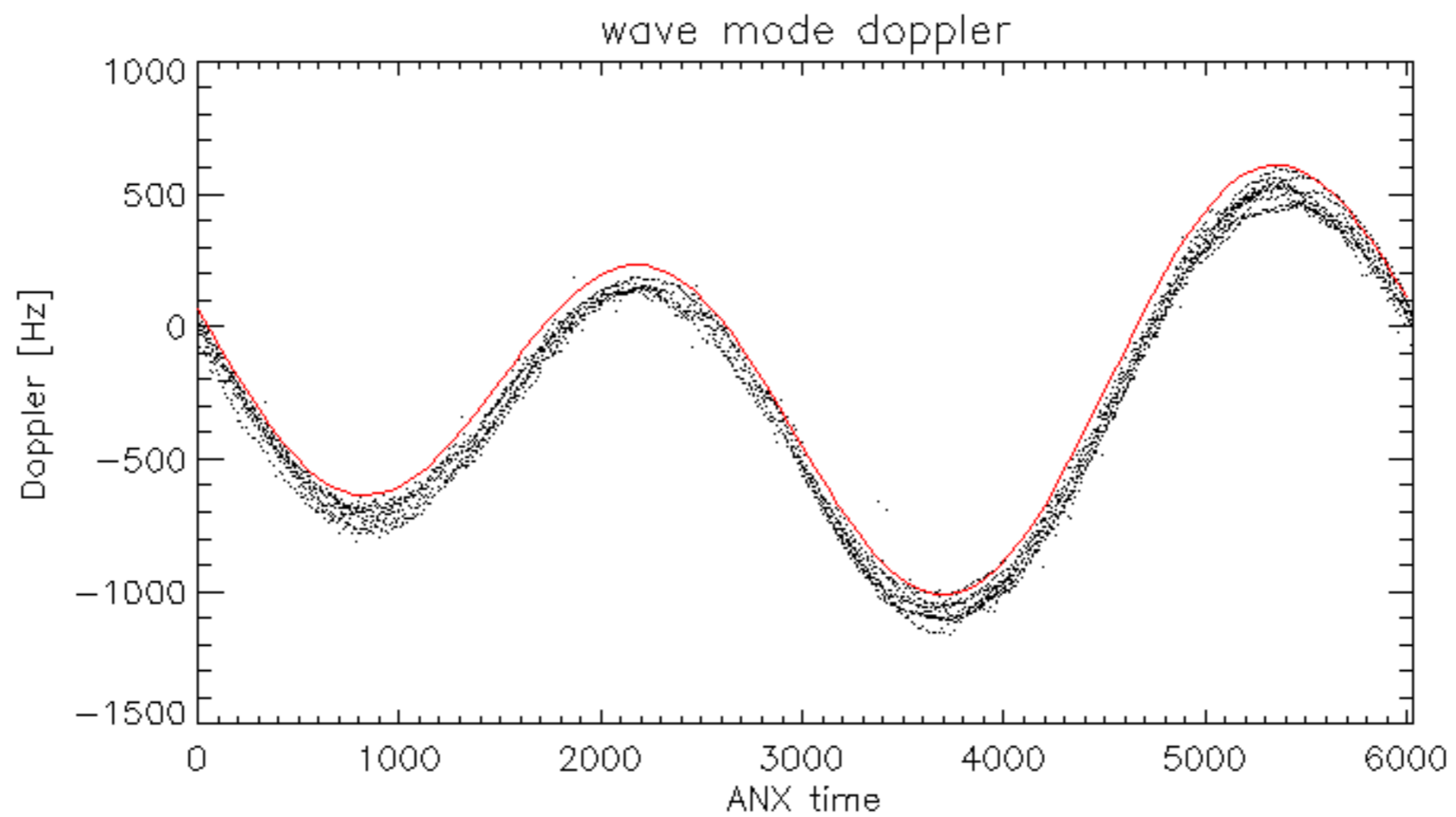


Doppler 'WVS' 'IS2' 'H/H'

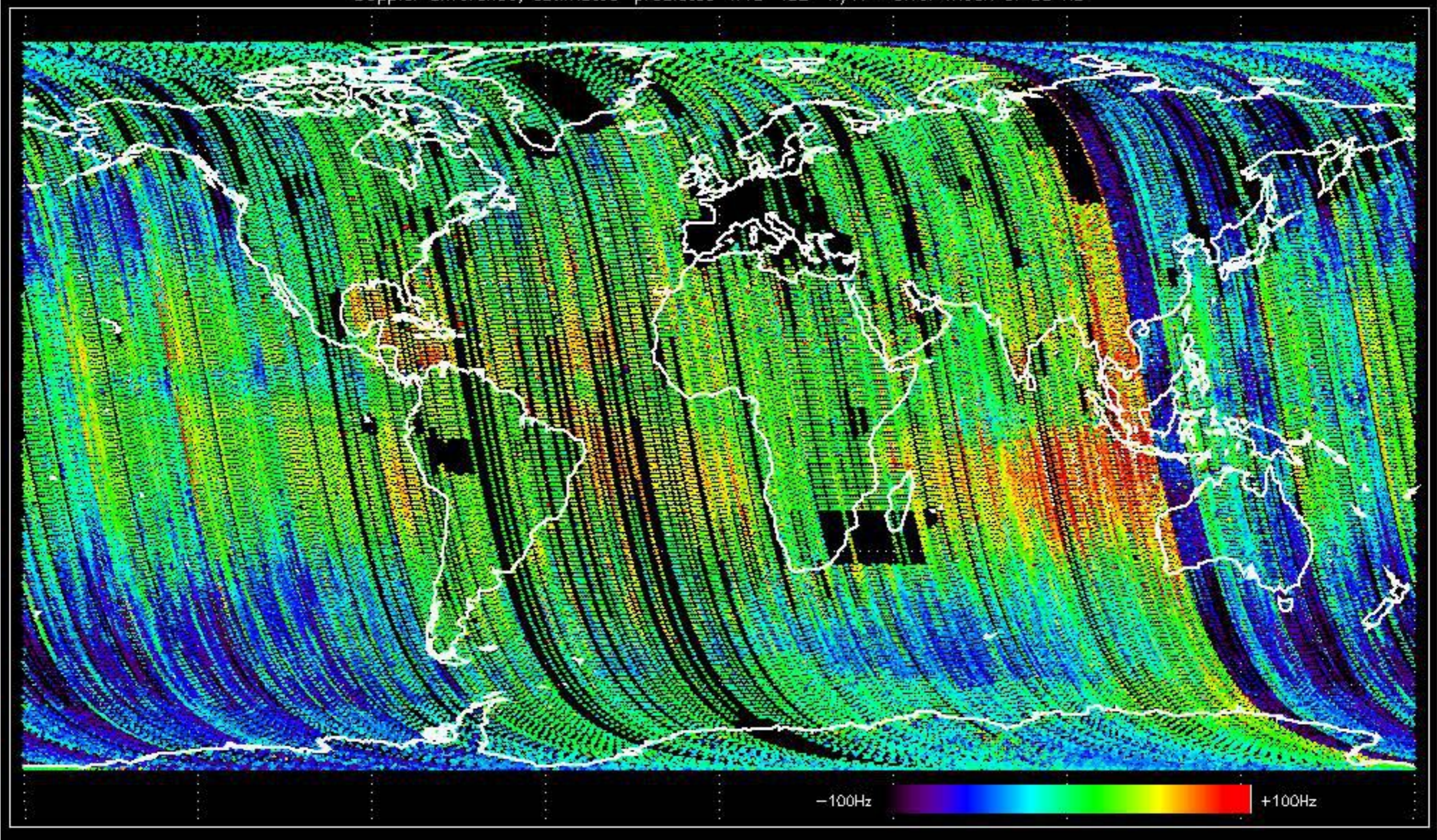


Doppler 'WVS' 'IS2' 'V/V'

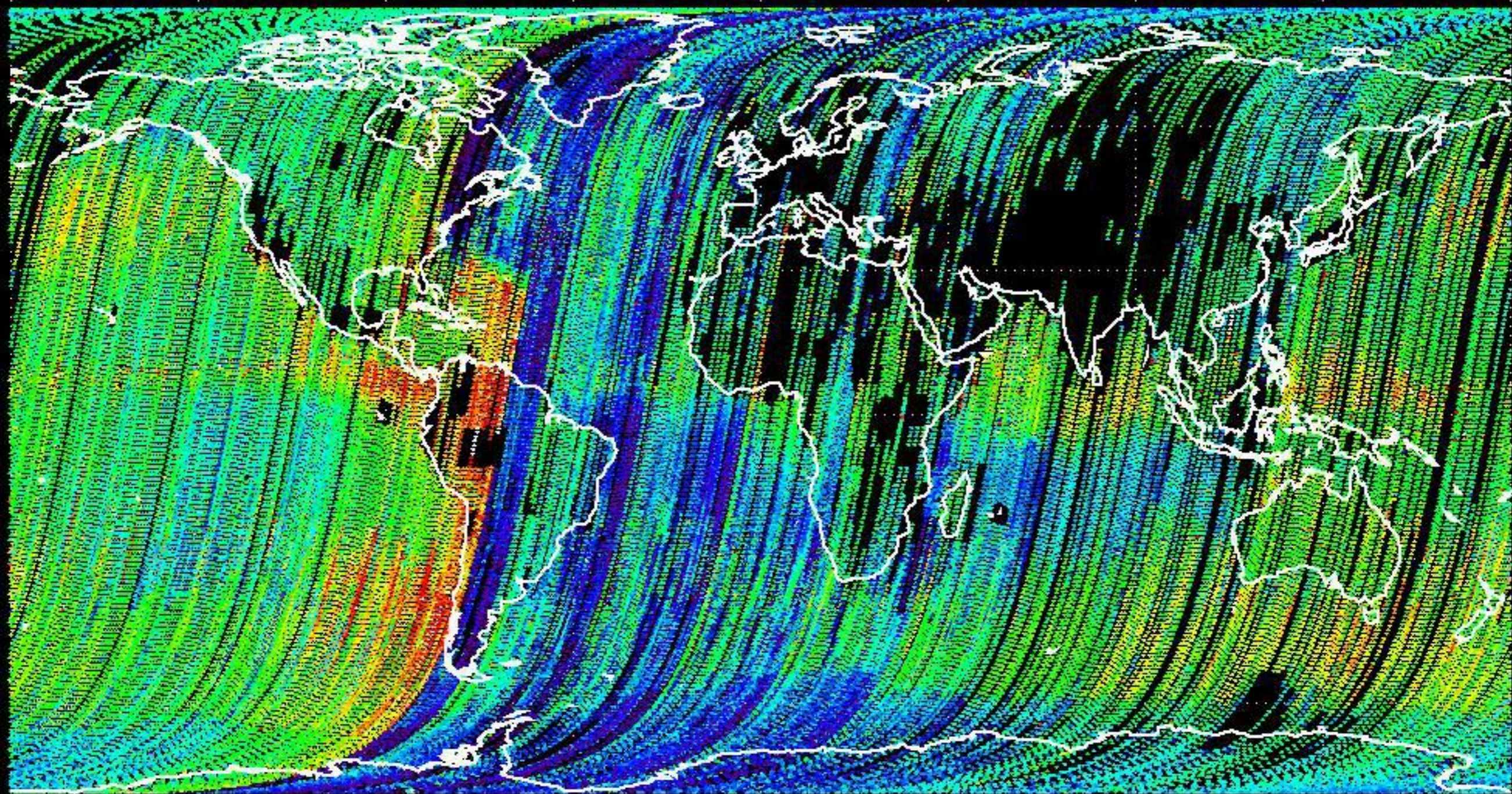




Doppler difference, estimated-predicted 'WVS' 'IS2' 'H/H' -error mean of 53 Hz



Doppler difference, estimated-predicted 'WS' 'IS2' 'V/V' -error mean of 53 Hz



-100Hz

+100Hz

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No anomalies observed.









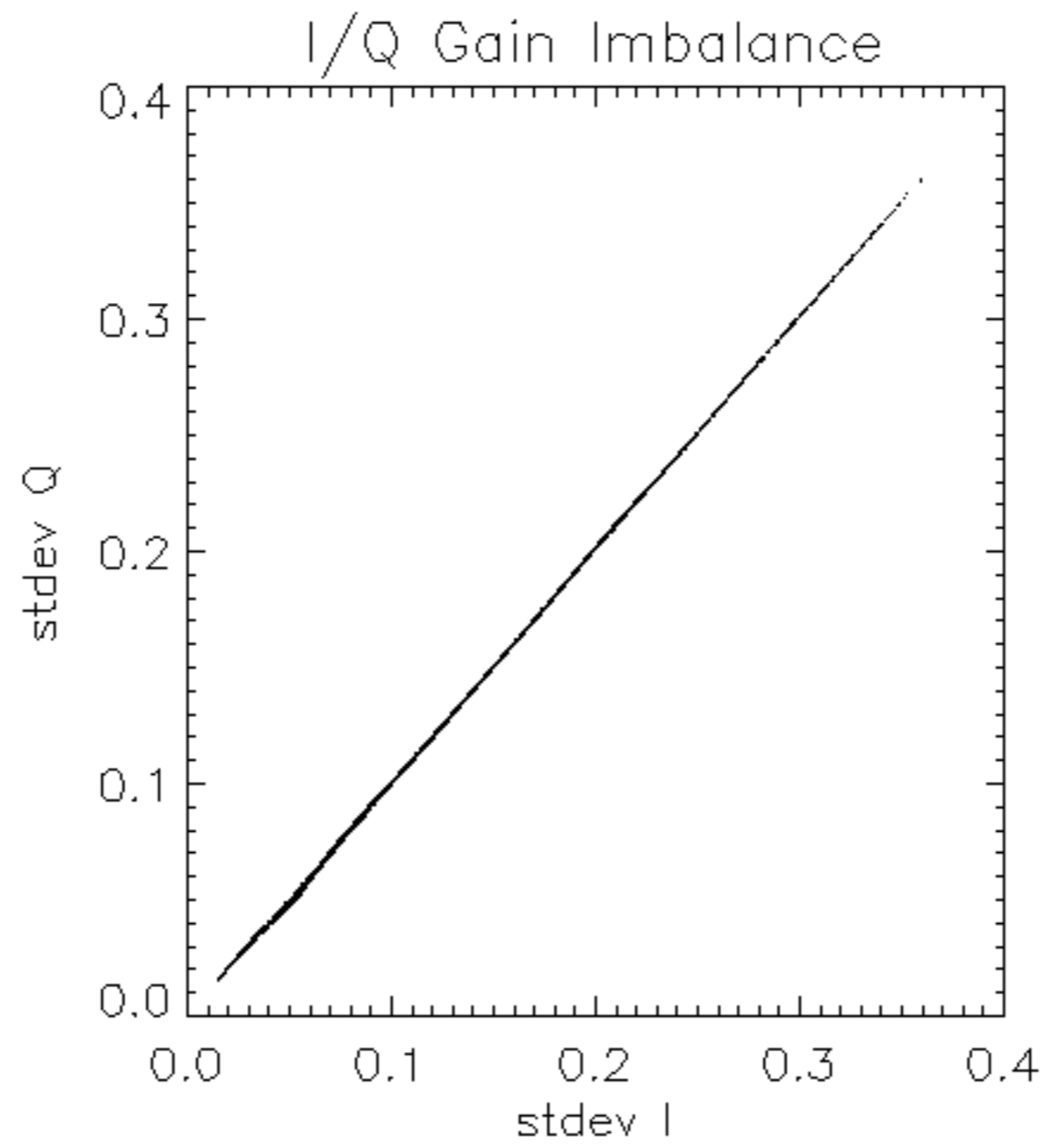




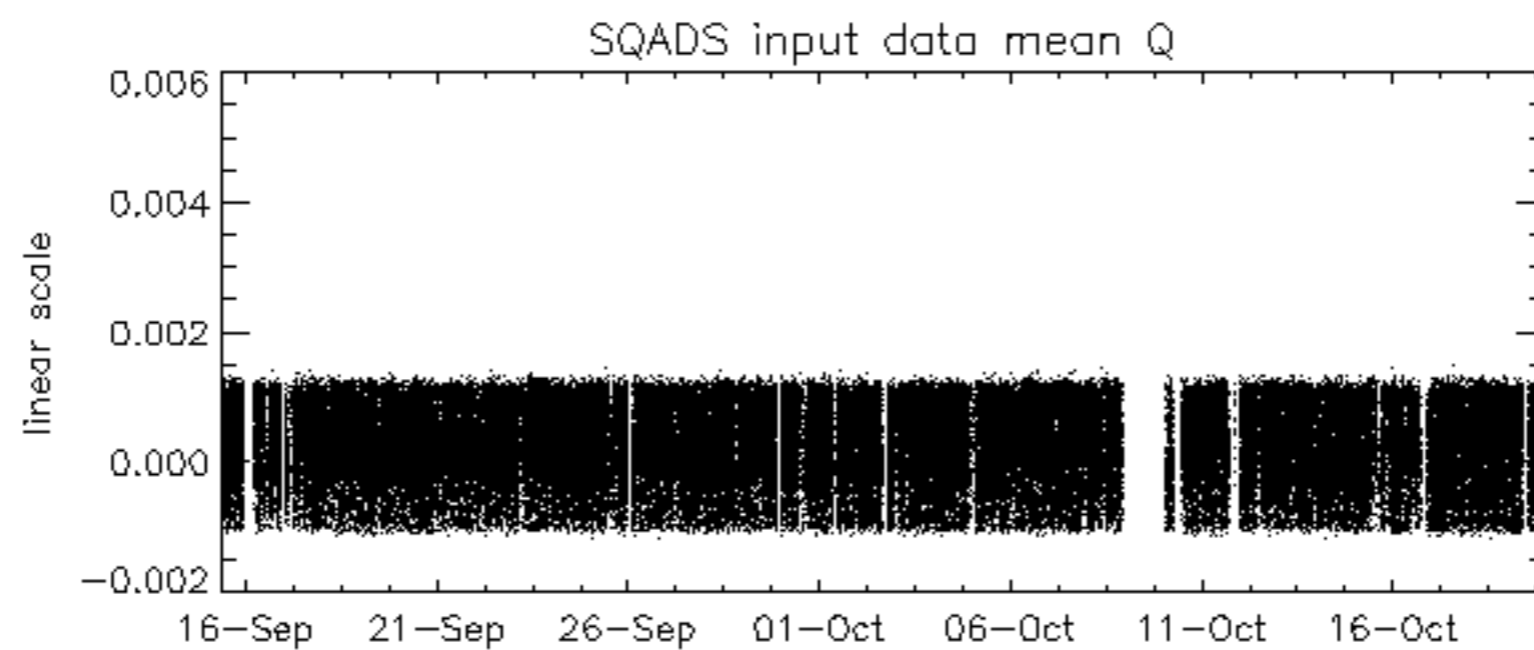
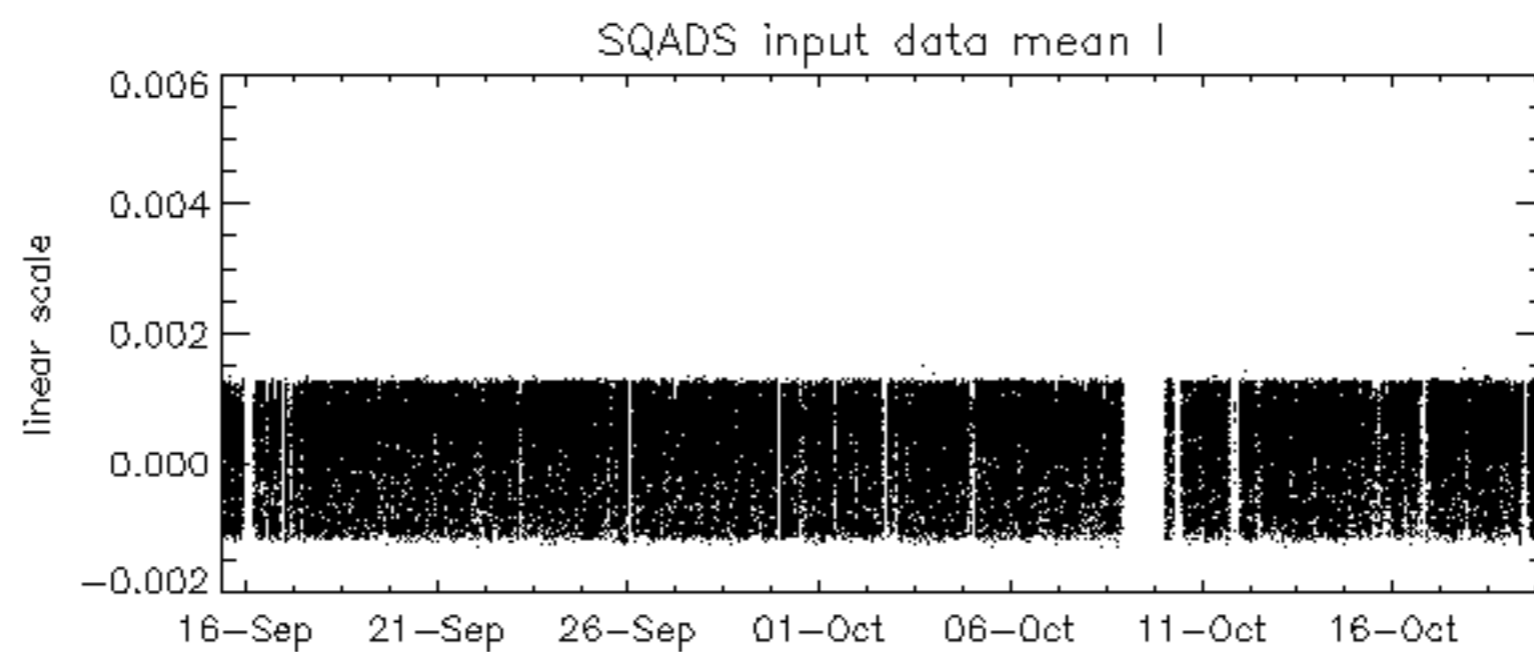
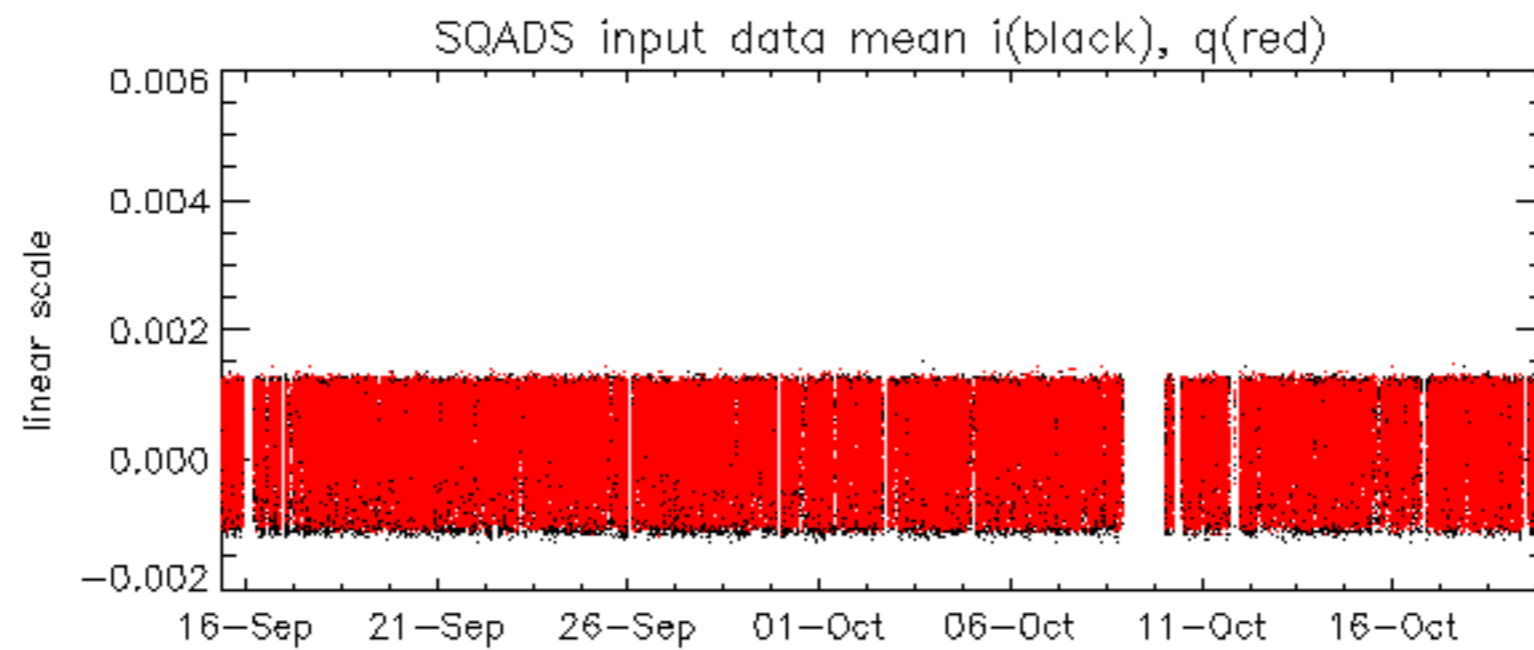


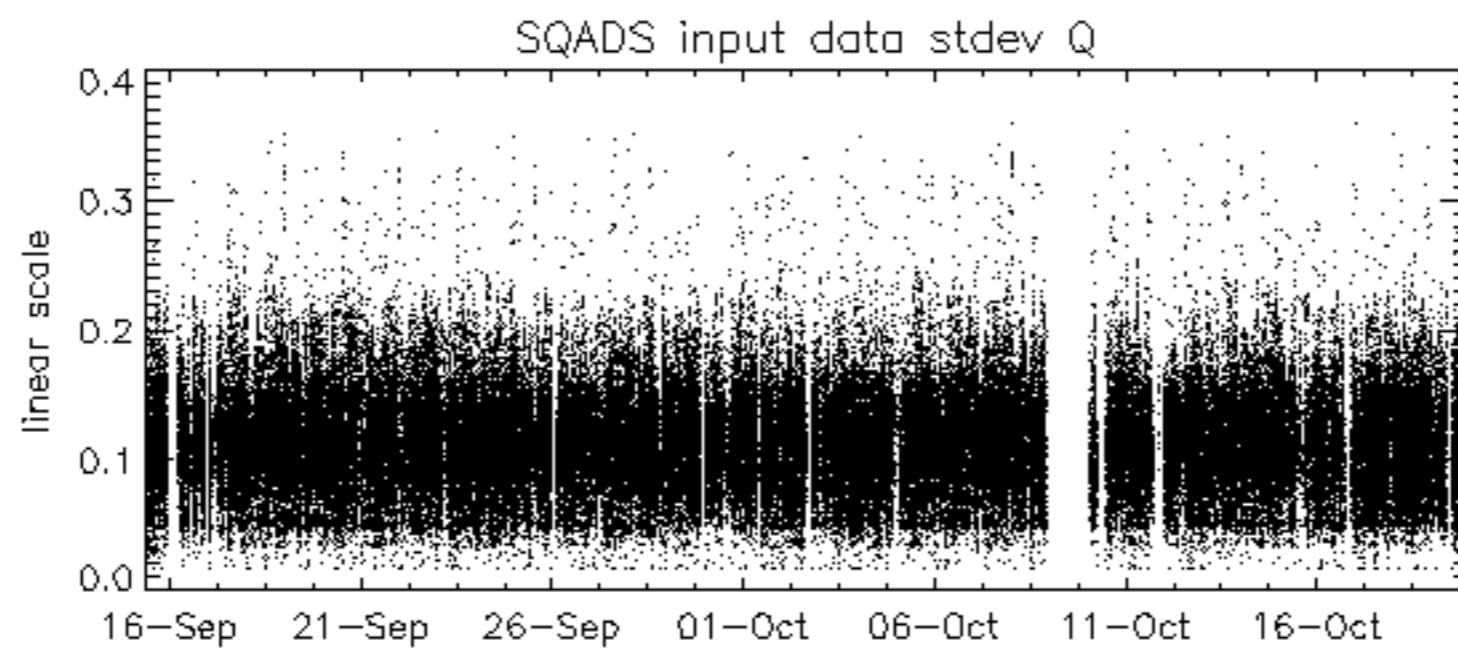
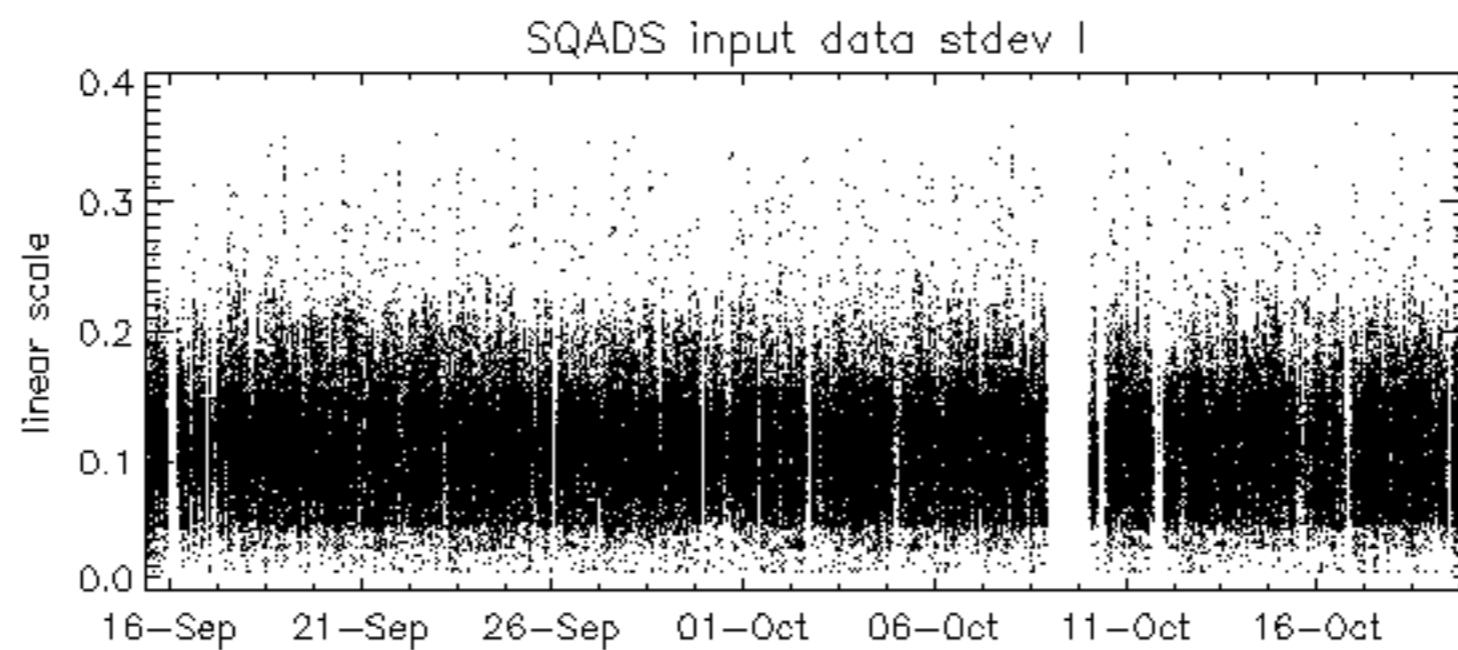
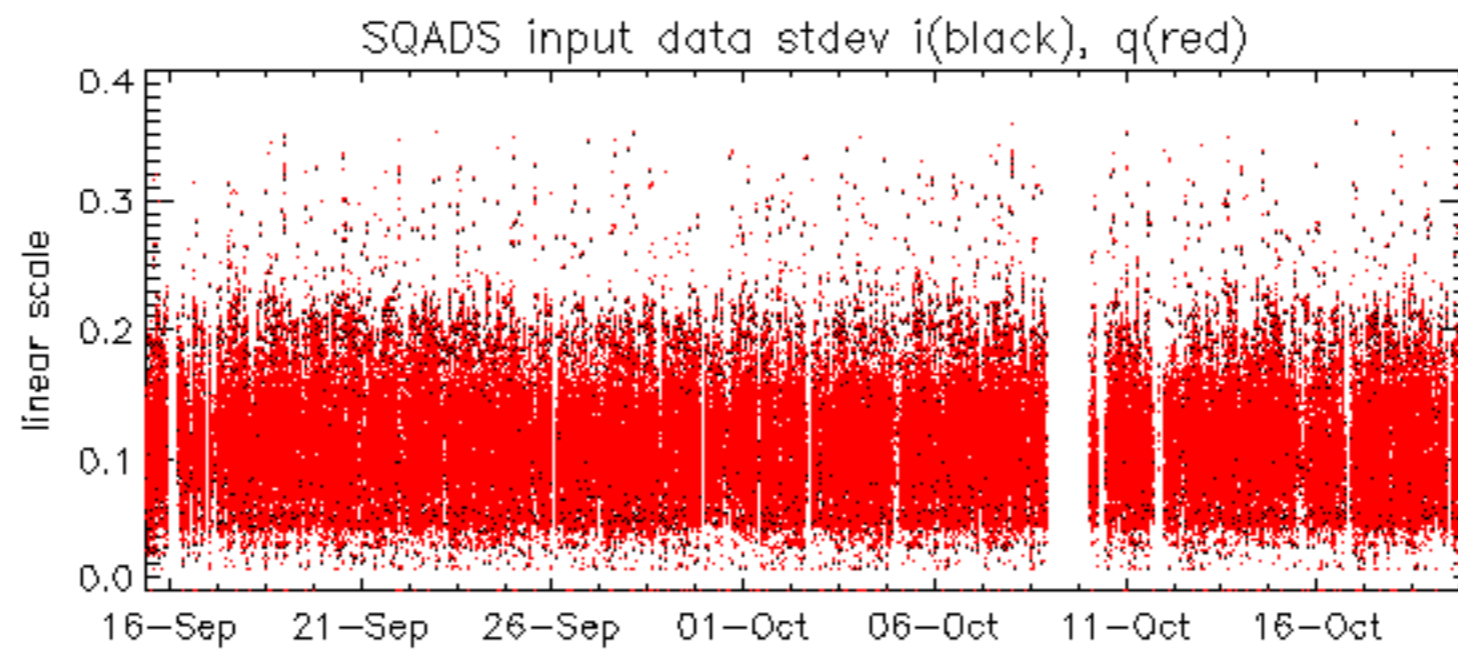










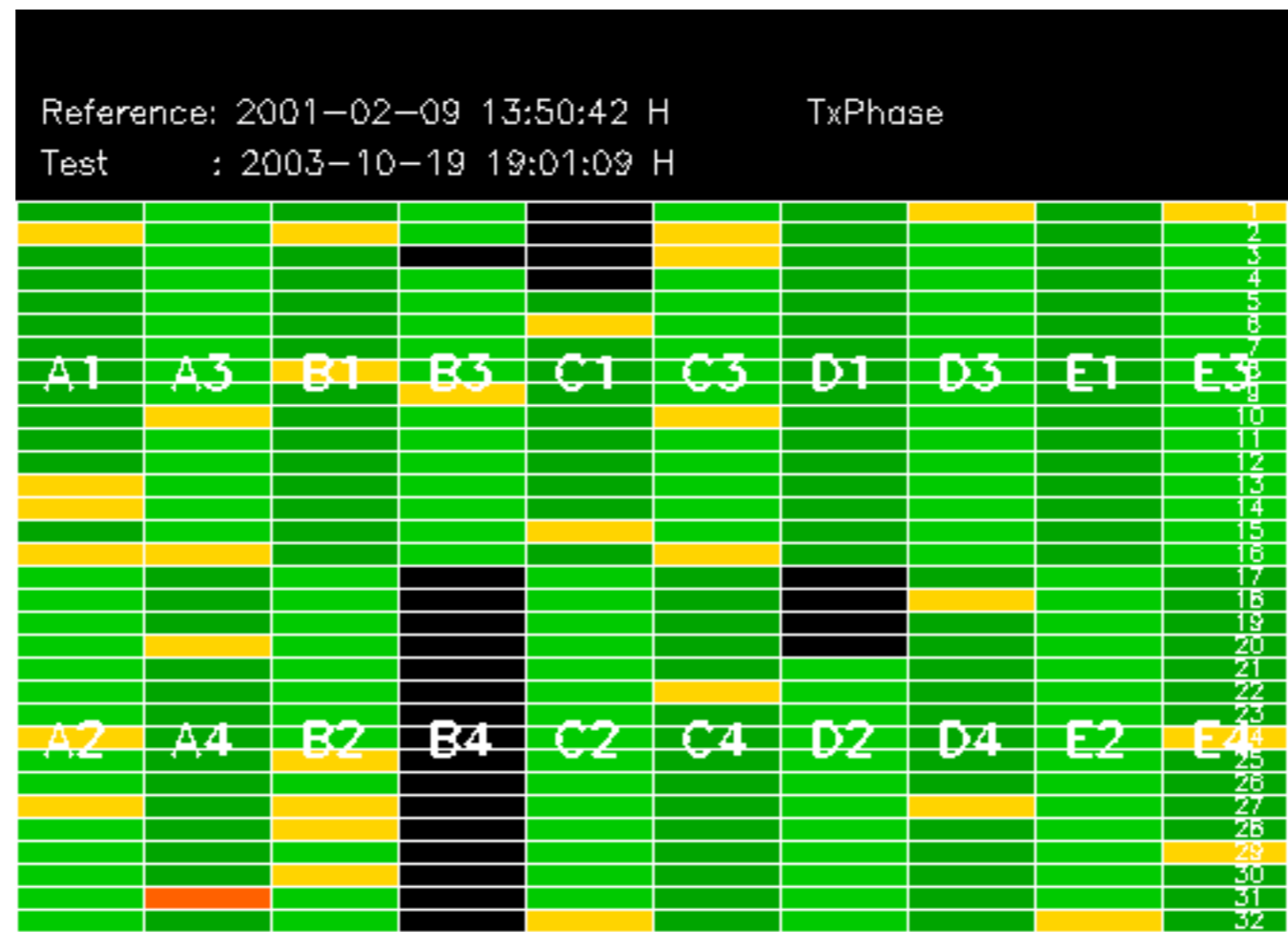


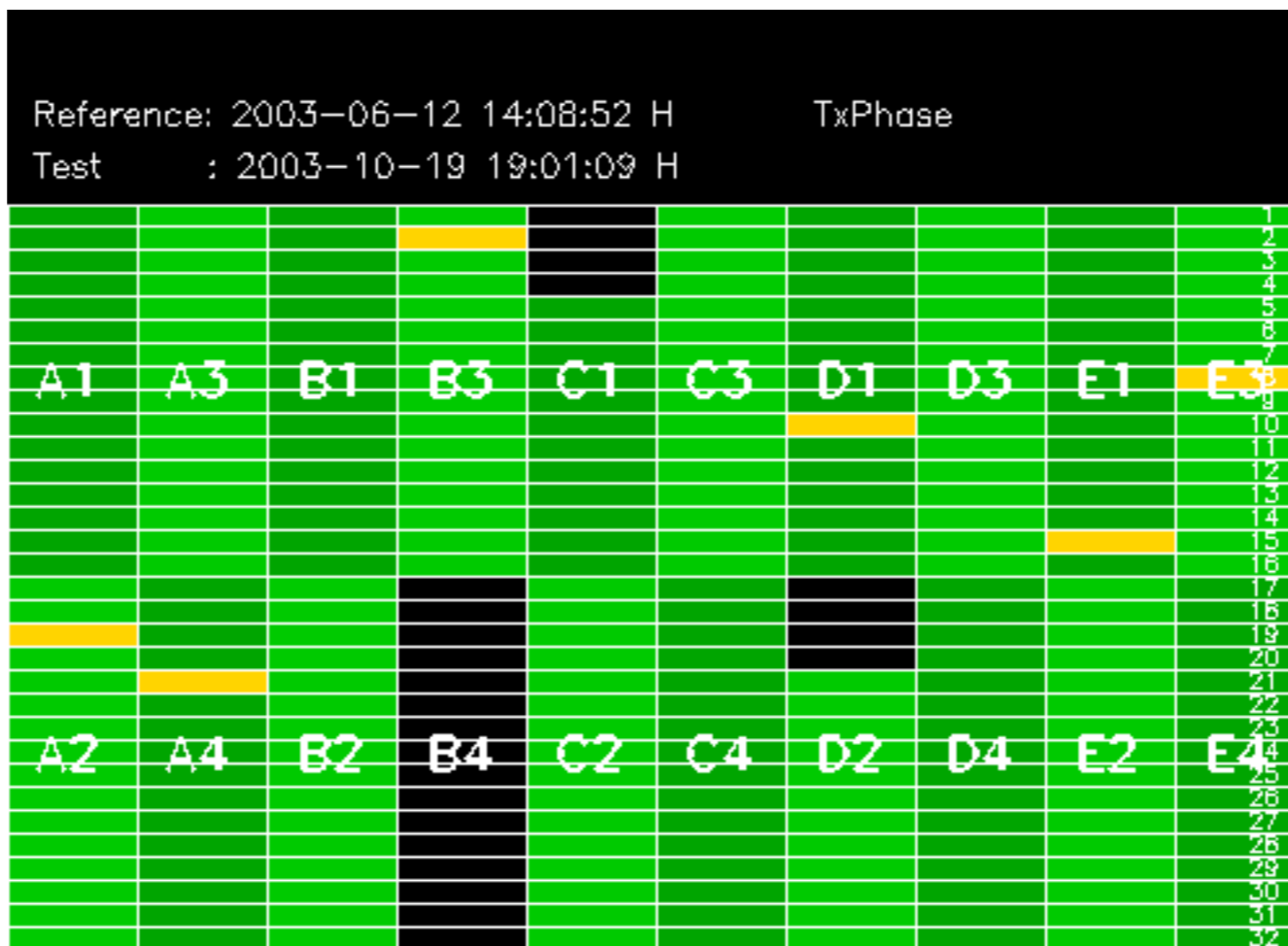


















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