

REPORT OF 031211

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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

Anomalous P1 gain drop that began on 2003-DEC-10 23:06:24 causes an instrument unavailability on 11-DEC-2003. Precise unavailability start time is TBC.

2.2 - Browse Visual Inspection

Antenna Pattern affected by the P1 pulse gain drop:
- Beam boundaries clearly visible on WSM browse products

2.3 - Data Analysis

Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16).
 The gain drop is row number dependent.
 A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.

3 - Module Stepping Mode

No anomalies observed on available MS products:

- ASA_MS__0PNPDK20031210_195535_000000152022_00228_09300_0067.N1
- ASA_MS__0PNPDK20031210_195655_000000152022_00228_09300_0066.N1

as they were acquired before P1 gain drop.

Polarisation	Start Time
V	20031210 195655
H	20031210 195535

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

Fisrt part of the antenna is affected by a gain drop of P1 cal pulses (row 1 to 16) that began on 2003-DEC-10 23:06:24
 The gain drop is row number dependent.
 A maximum of ~5-6dB drop has been detected for row 13 while row 3 is affected by a drop of 3dB.

4.1 - Daily statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-4.14592	-22.4850	-8.07191
	stdev	0.978362	0.0890283	0.00501848
24	mean	-5.01054	-21.1106	-8.07191
	stdev	0.0130568	0.0769535	0.00501848



4.2 - Cyclic statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-3.76031	-22.5592	-8.14793
	stdev	0.0394969	0.0706057	0.00499774
24	mean	-5.11103	-21.2363	-8.14793
	stdev	0.0142689	0.0643698	0.00499774



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	0.000336846
	stdev	1.08016e-05
MEAN Q	mean	0.000175211
	stdev	1.08041e-05



5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.114432
	stdev	0.00154558
STDEV Q	mean	0.114687
	stdev	0.00156148



5.3 - Gain imbalance I/Q



6 - Wave Doppler Analysis

Non nominal Doppler behaviour

6.1 - Unbiased Doppler Error

Evolution of unbiased Doppler error (Real - Expected)

Ascending
Descending

6.2 - Absolute Doppler

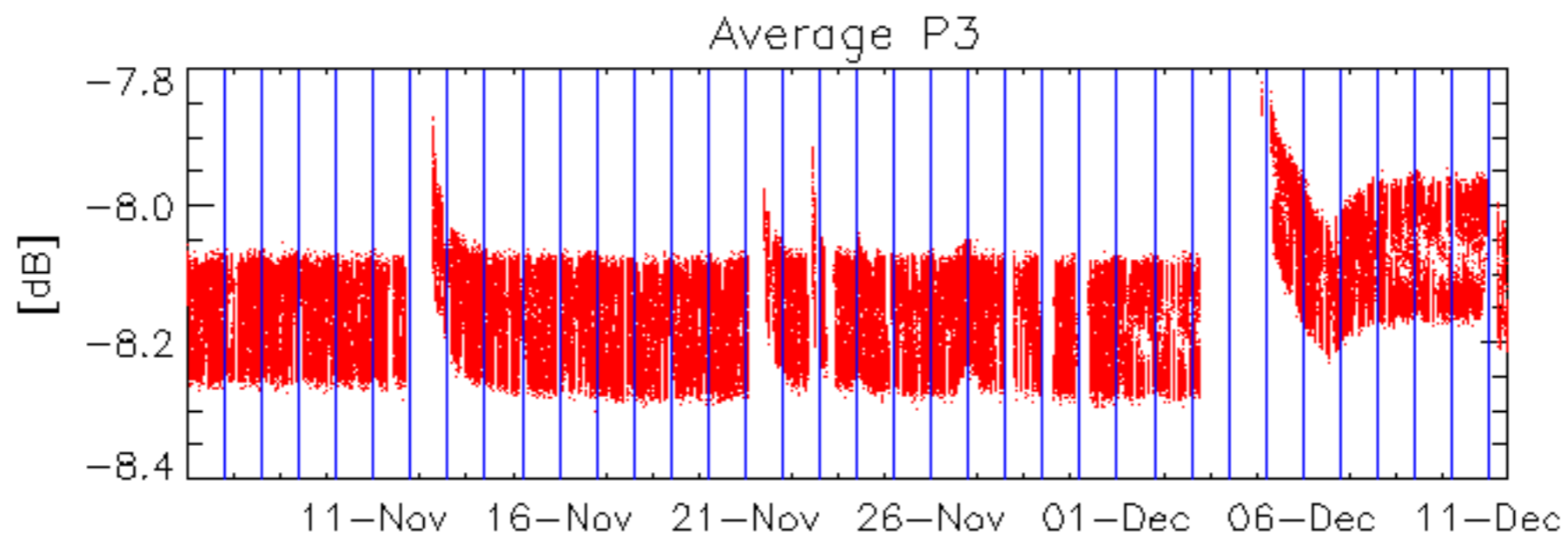
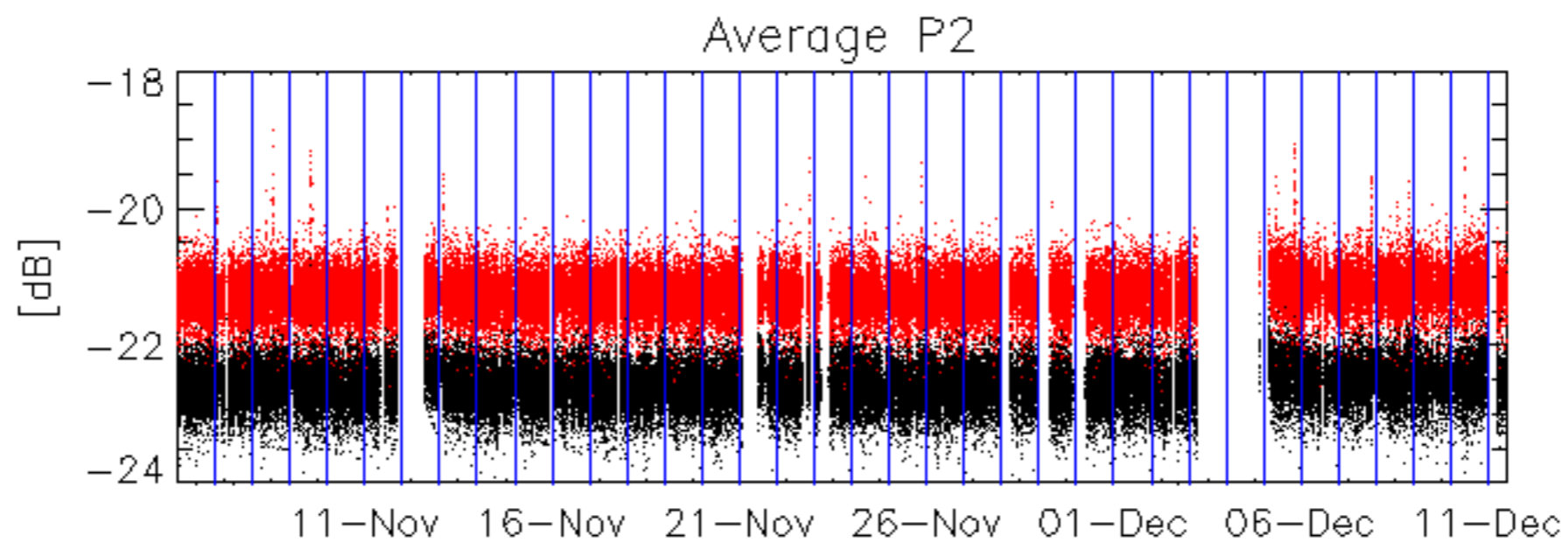
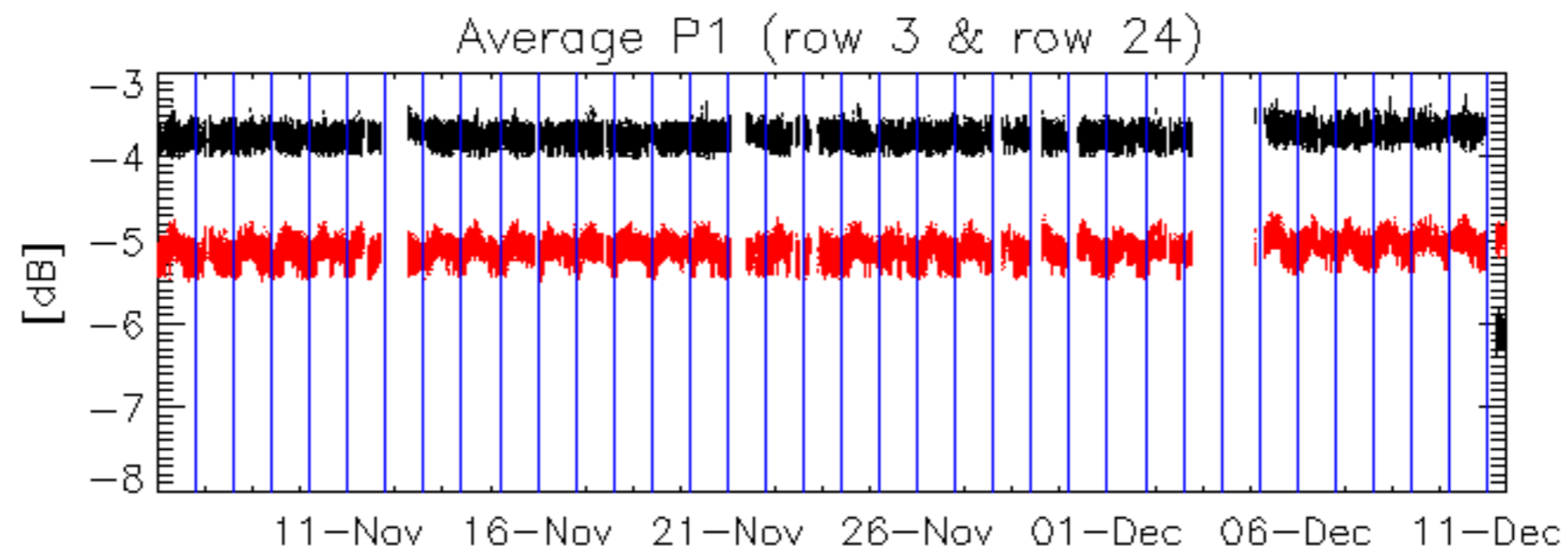
Evolution of Absolute Doppler

Ascending
Descending

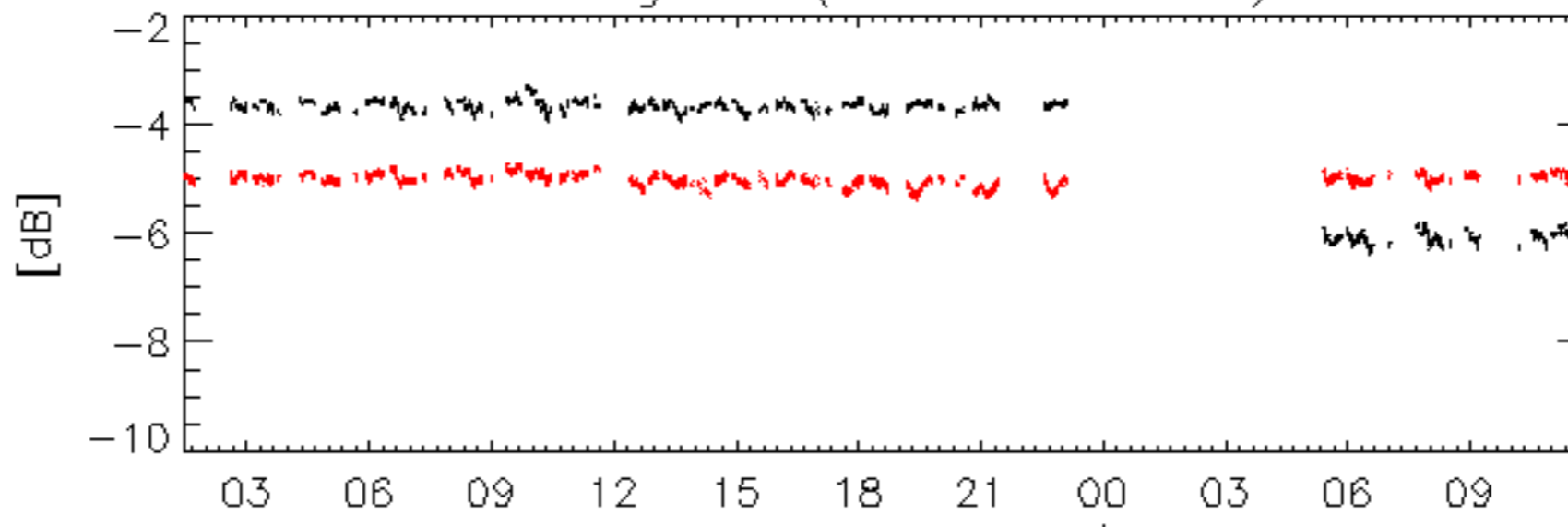
6.3 - Doppler evolution versus ANX

Evolution Doppler error versus ANX

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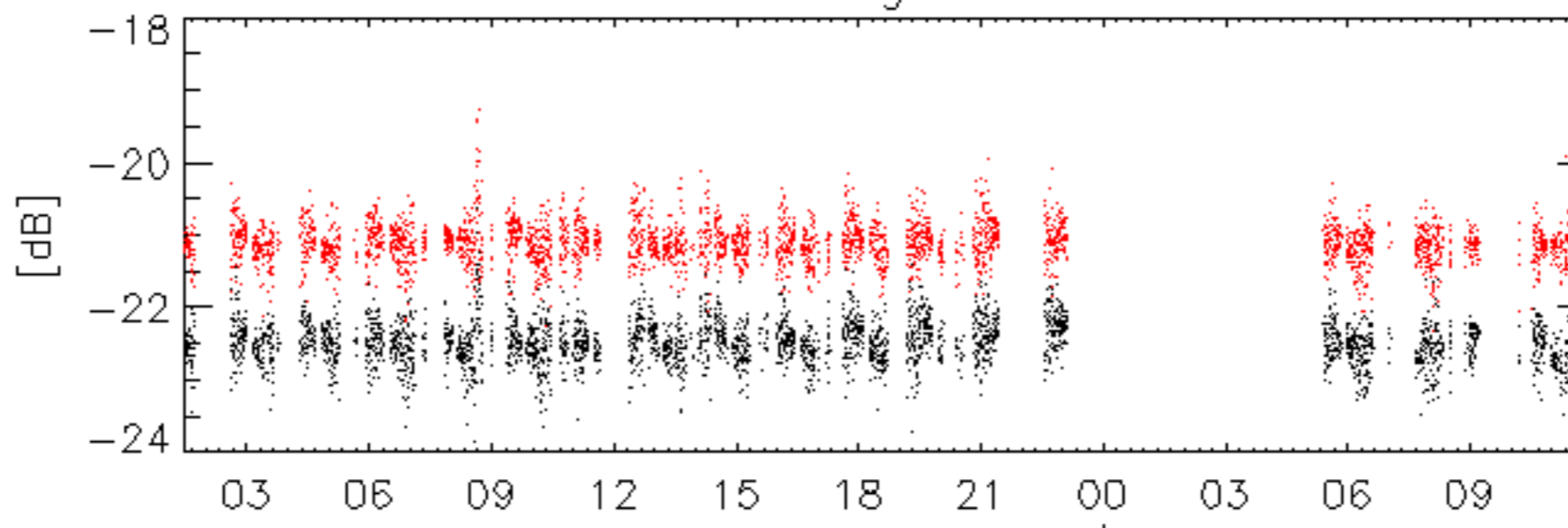


Average P1 (row 3 & row 24)



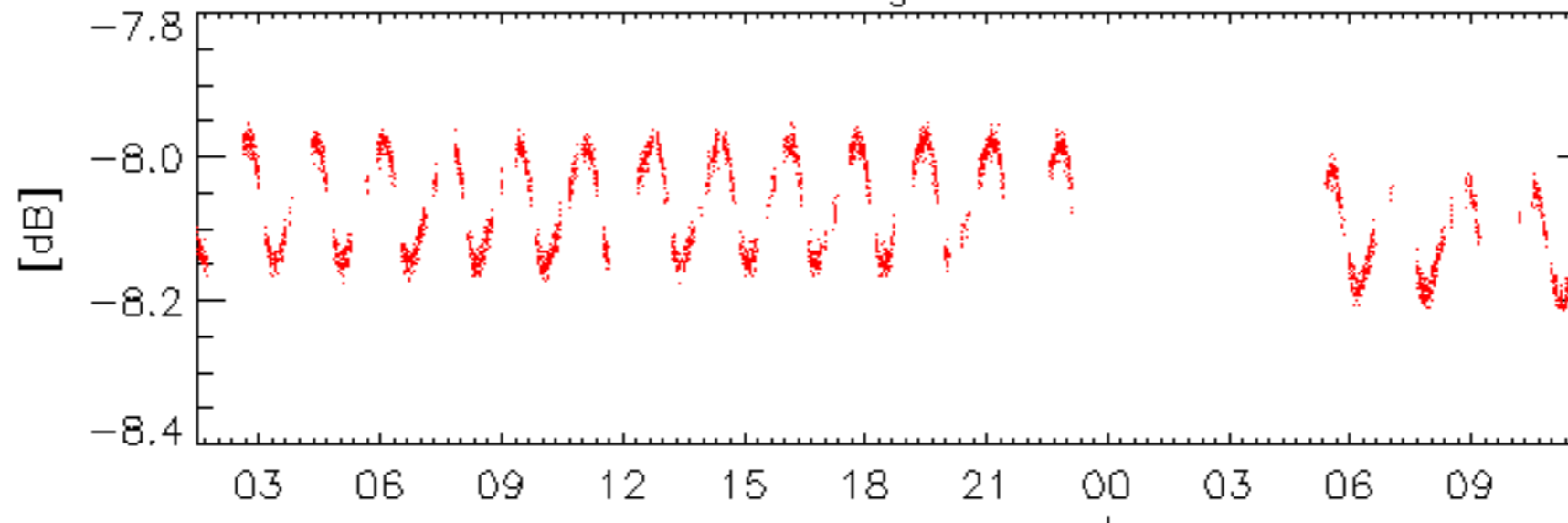
11-Dec

Average P2



11-Dec

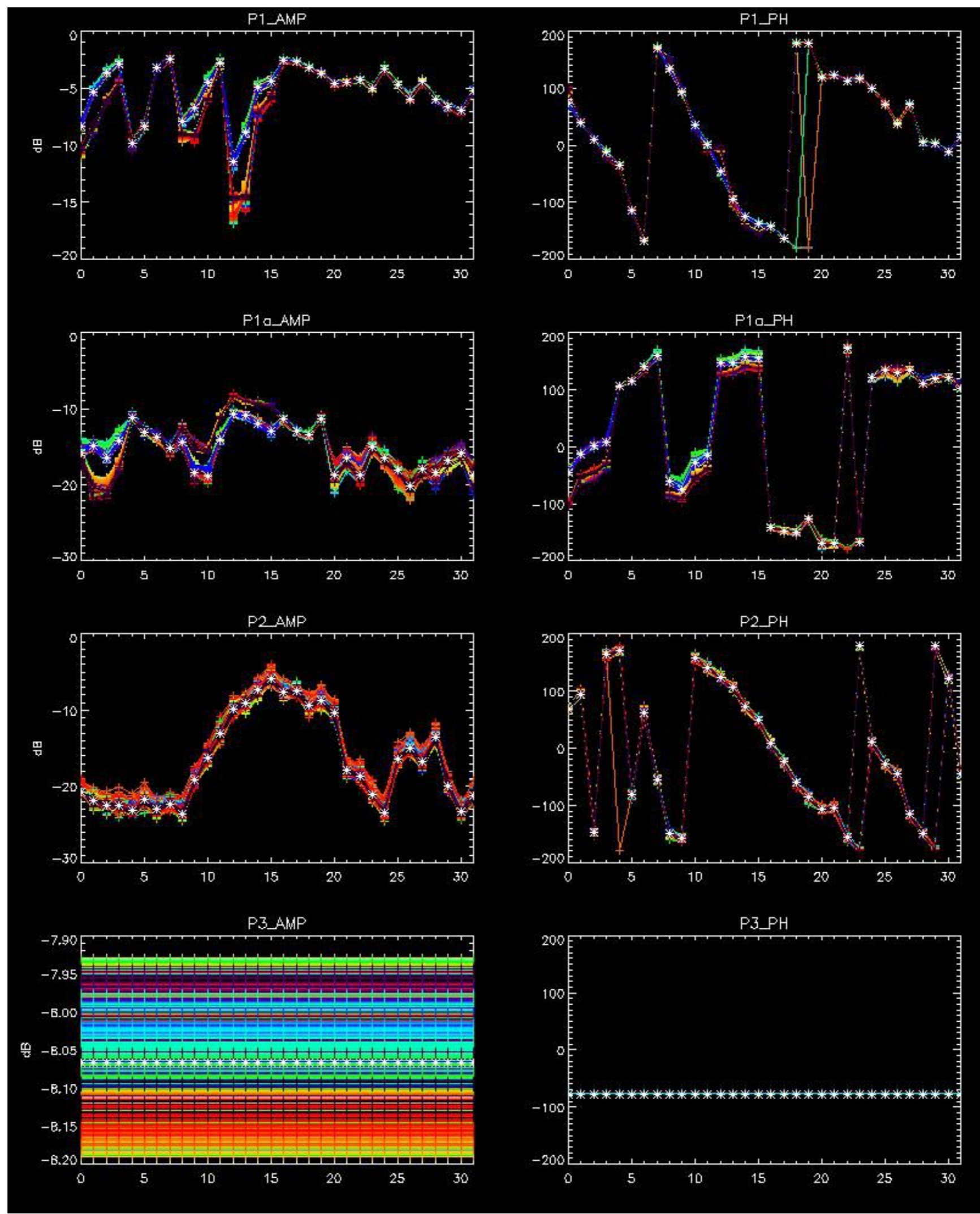
Average P3



11-Dec

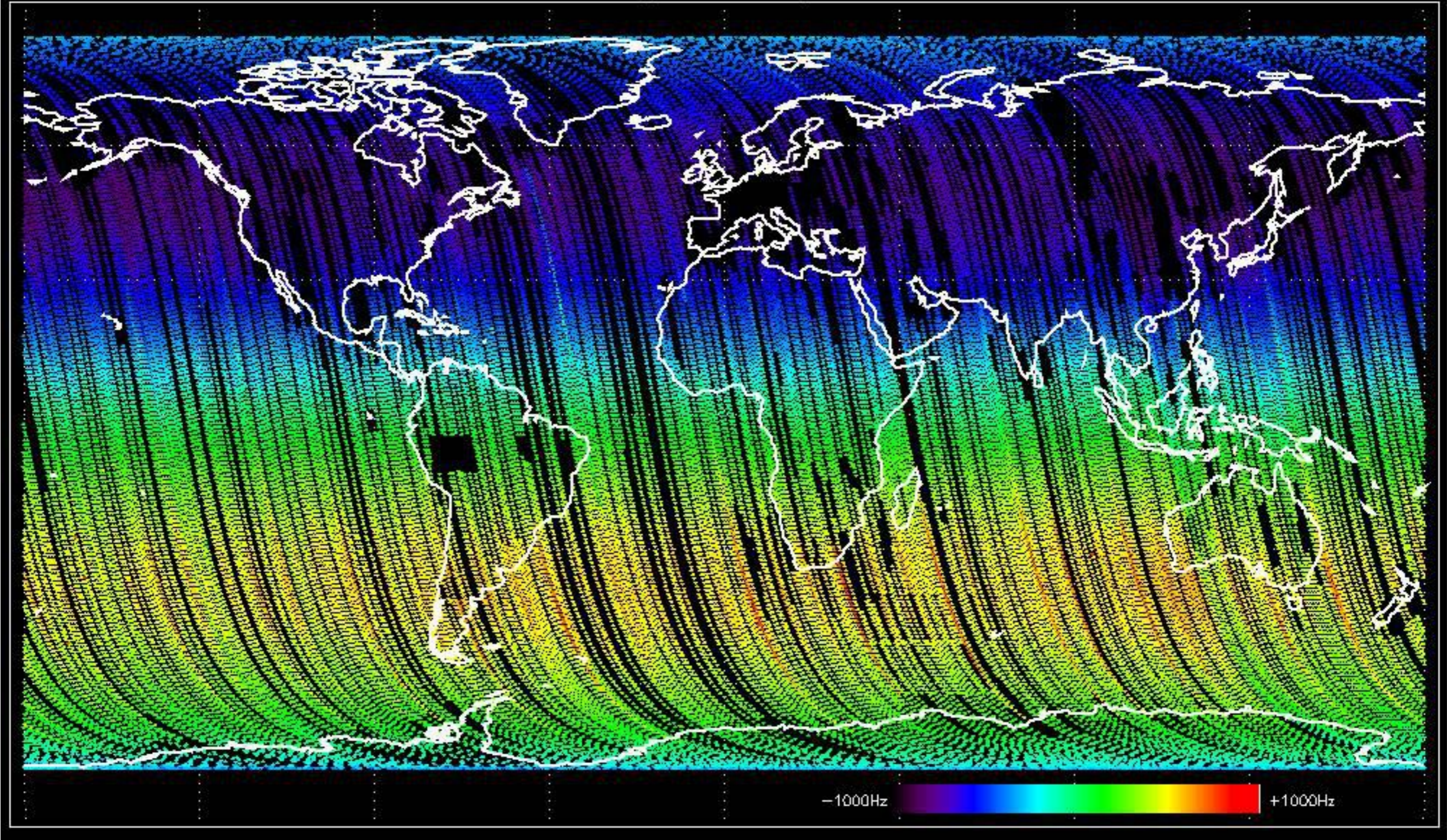
Antenna Pattern affected by the P1 pulse gain drop:
- Beam boundaries clearly visible on WSM browse products

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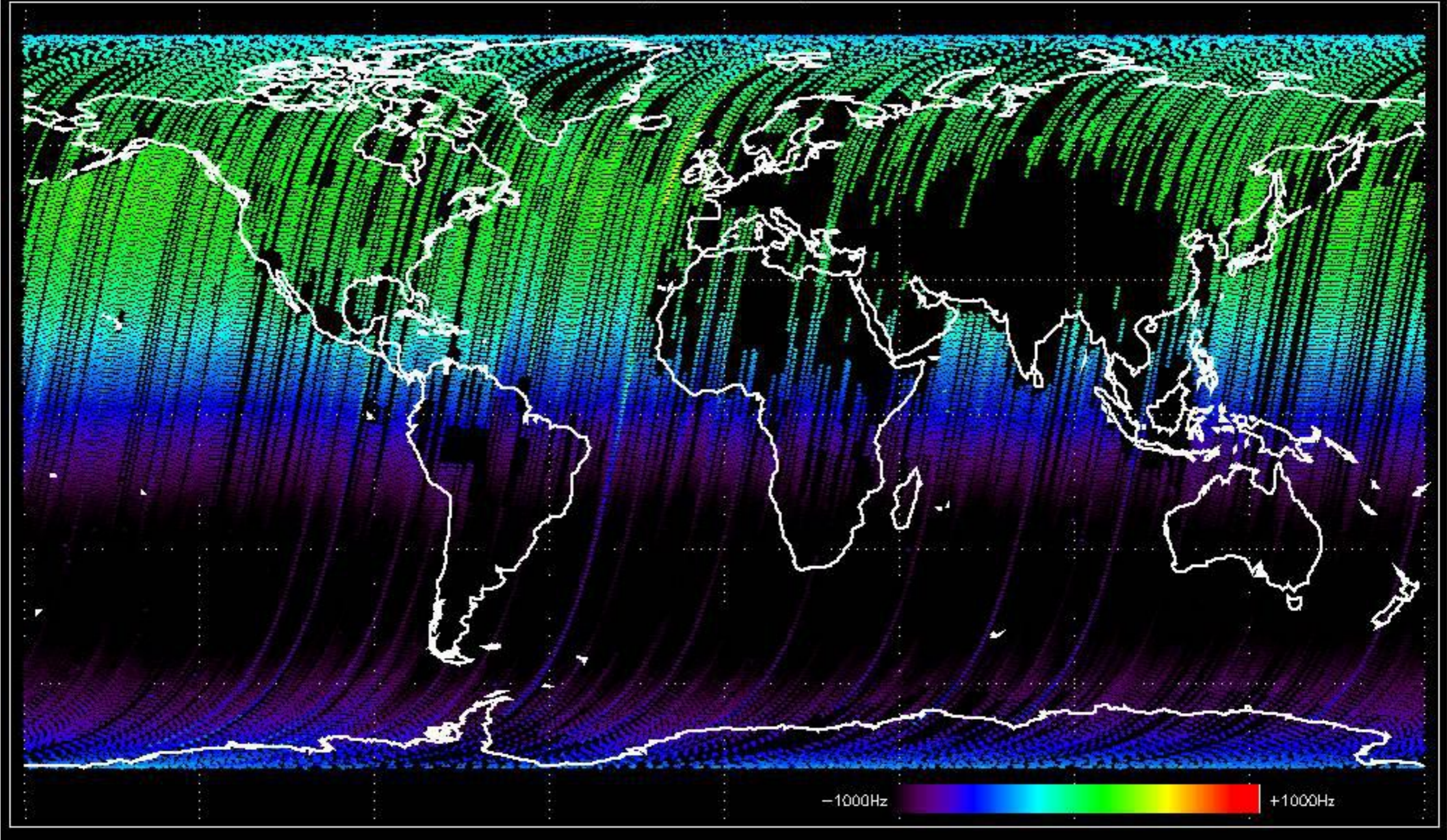


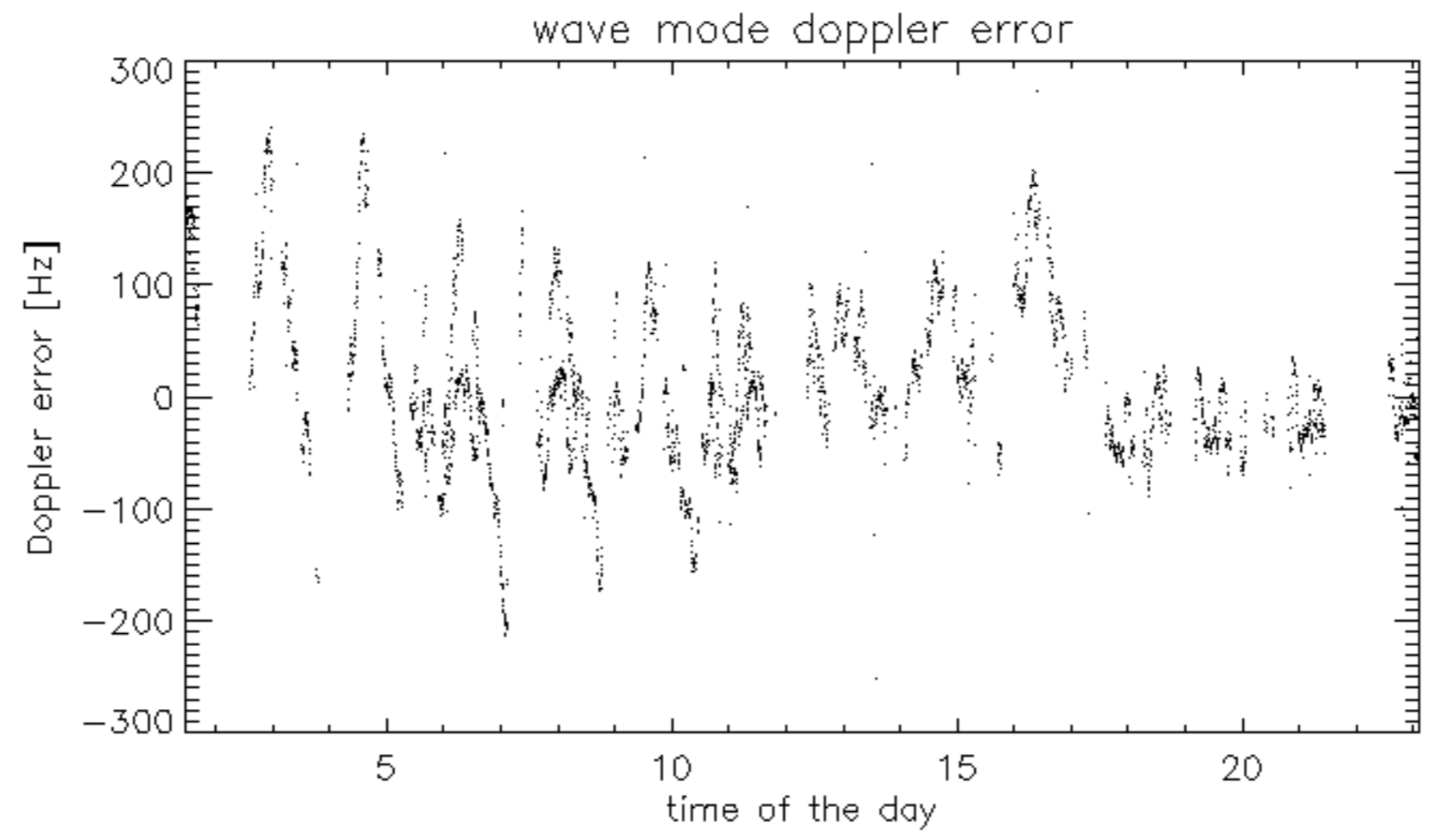
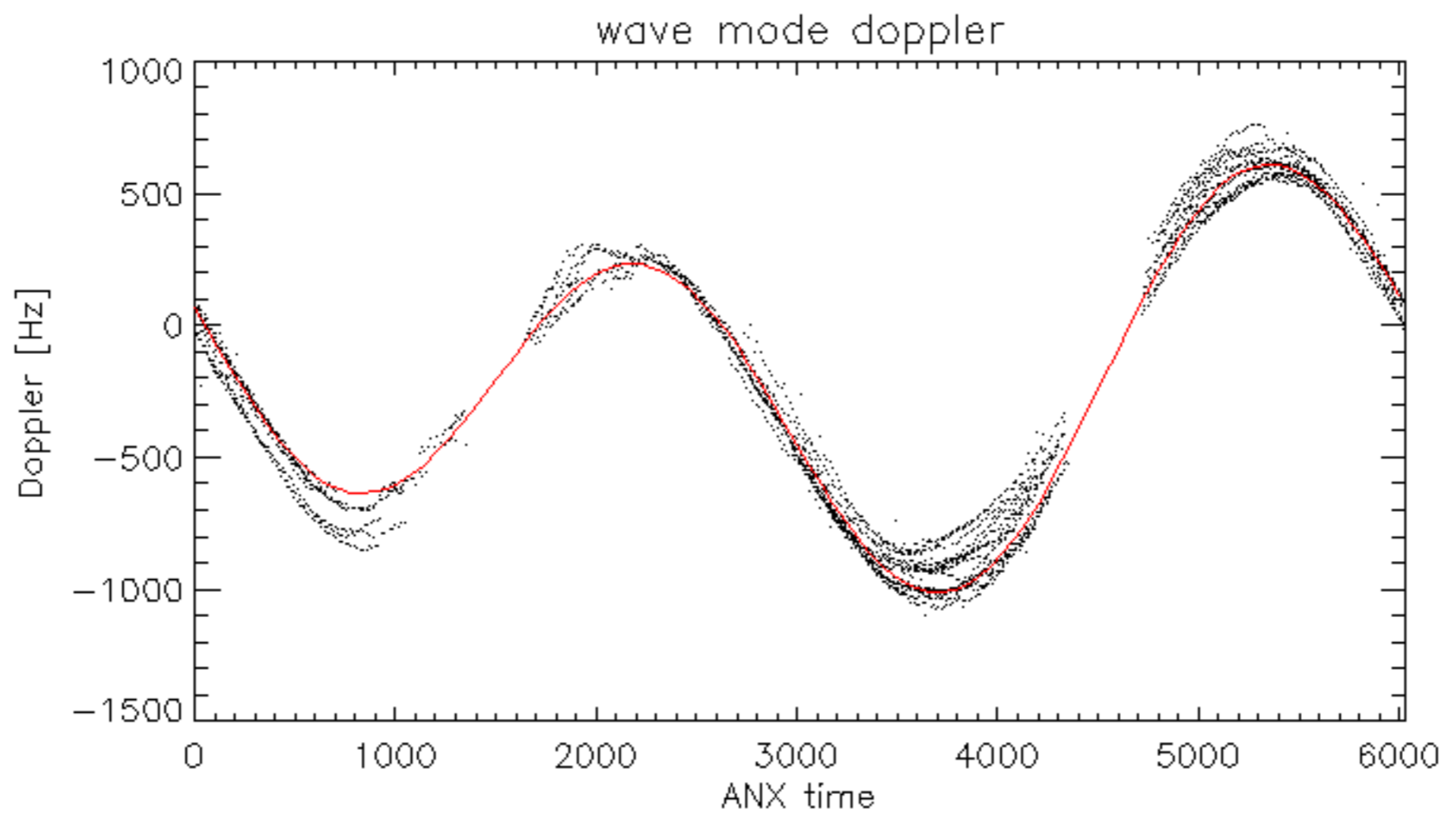
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Doppler 'WVS' 'IS2' 'H/H'

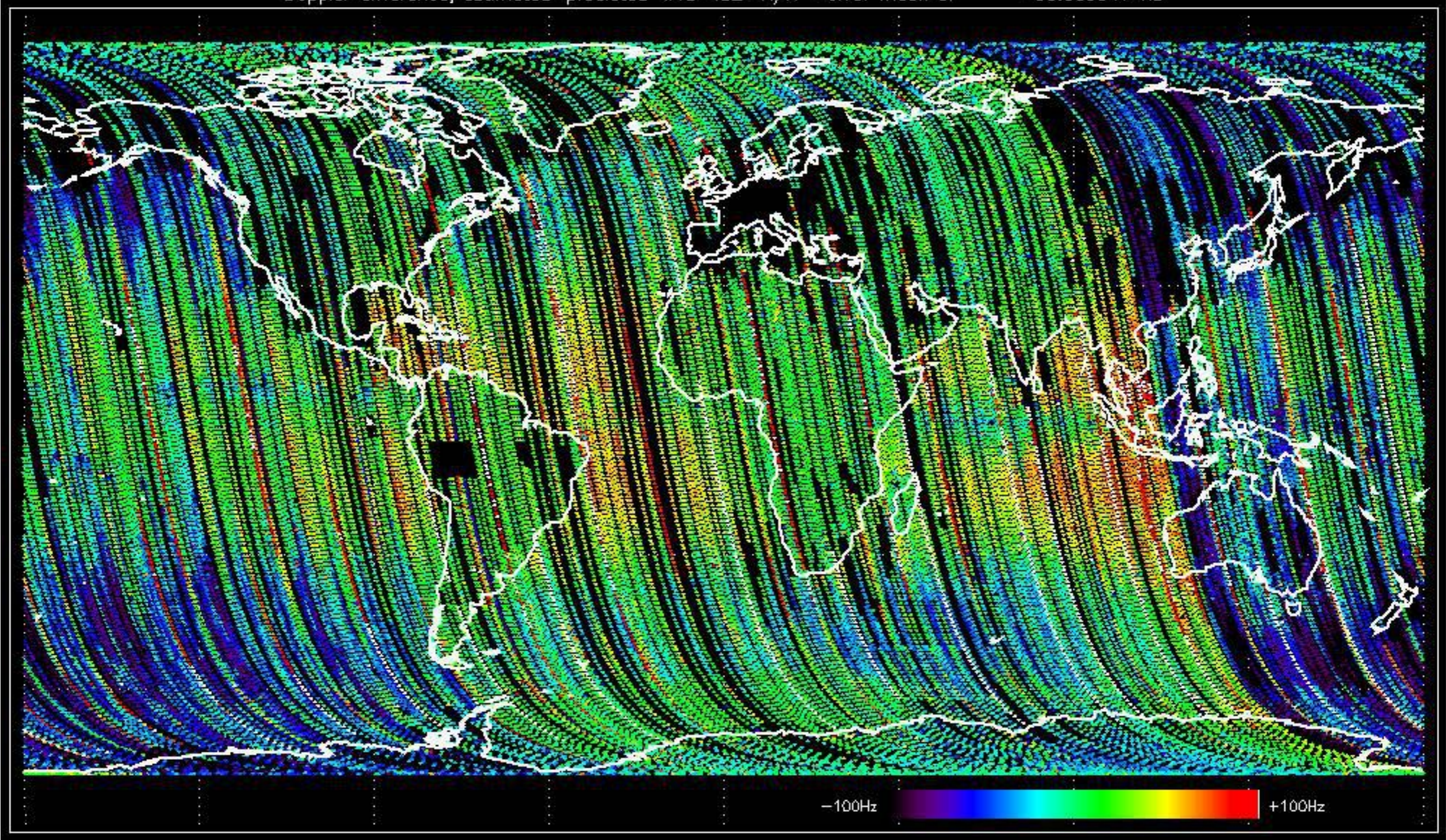


Doppler 'WVS' 'IS2' 'V/V'

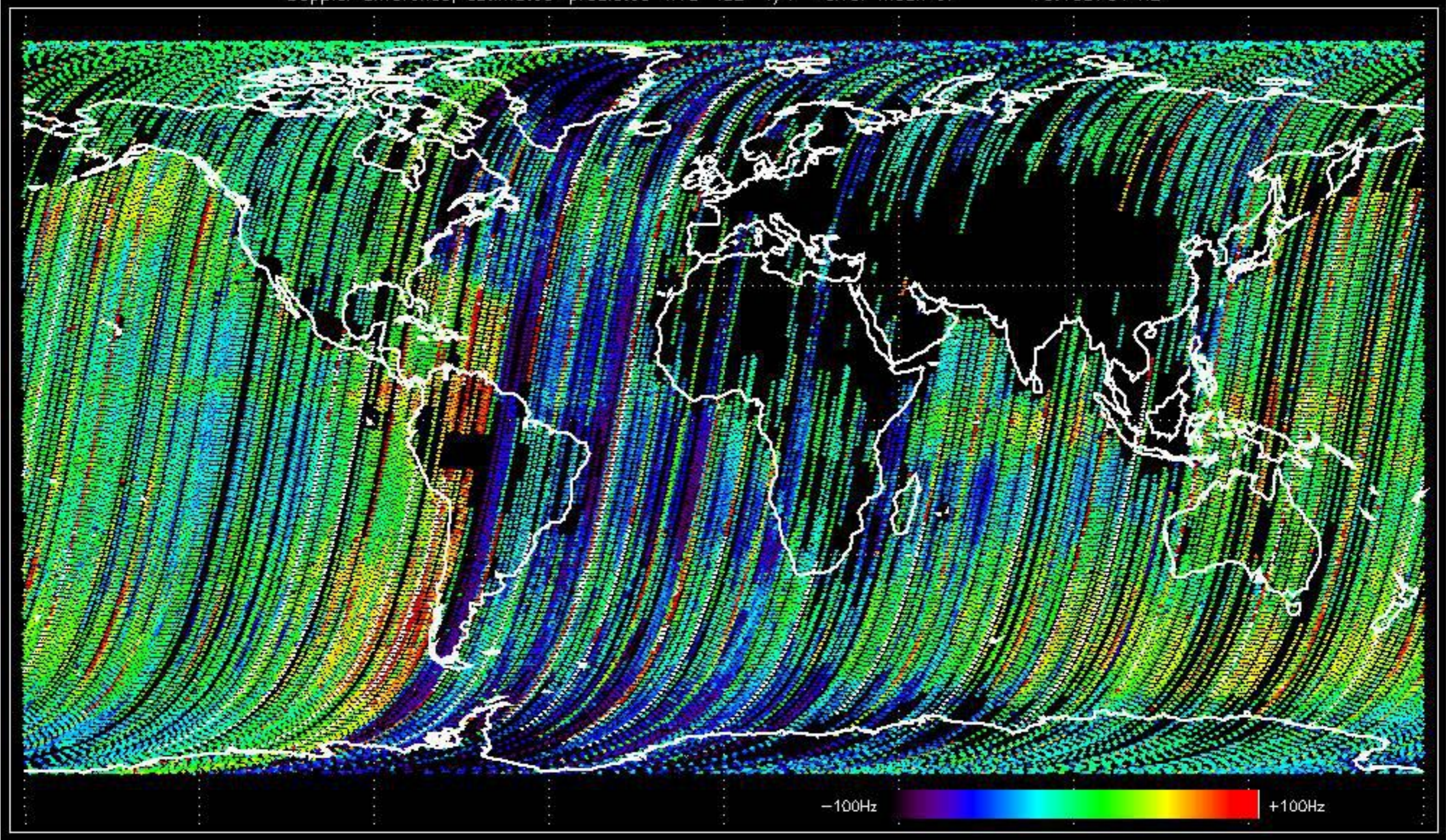




Doppler difference, estimated-predicted 'WVS' 'IS2' 'H/H' -error mean of -80.609047 Hz



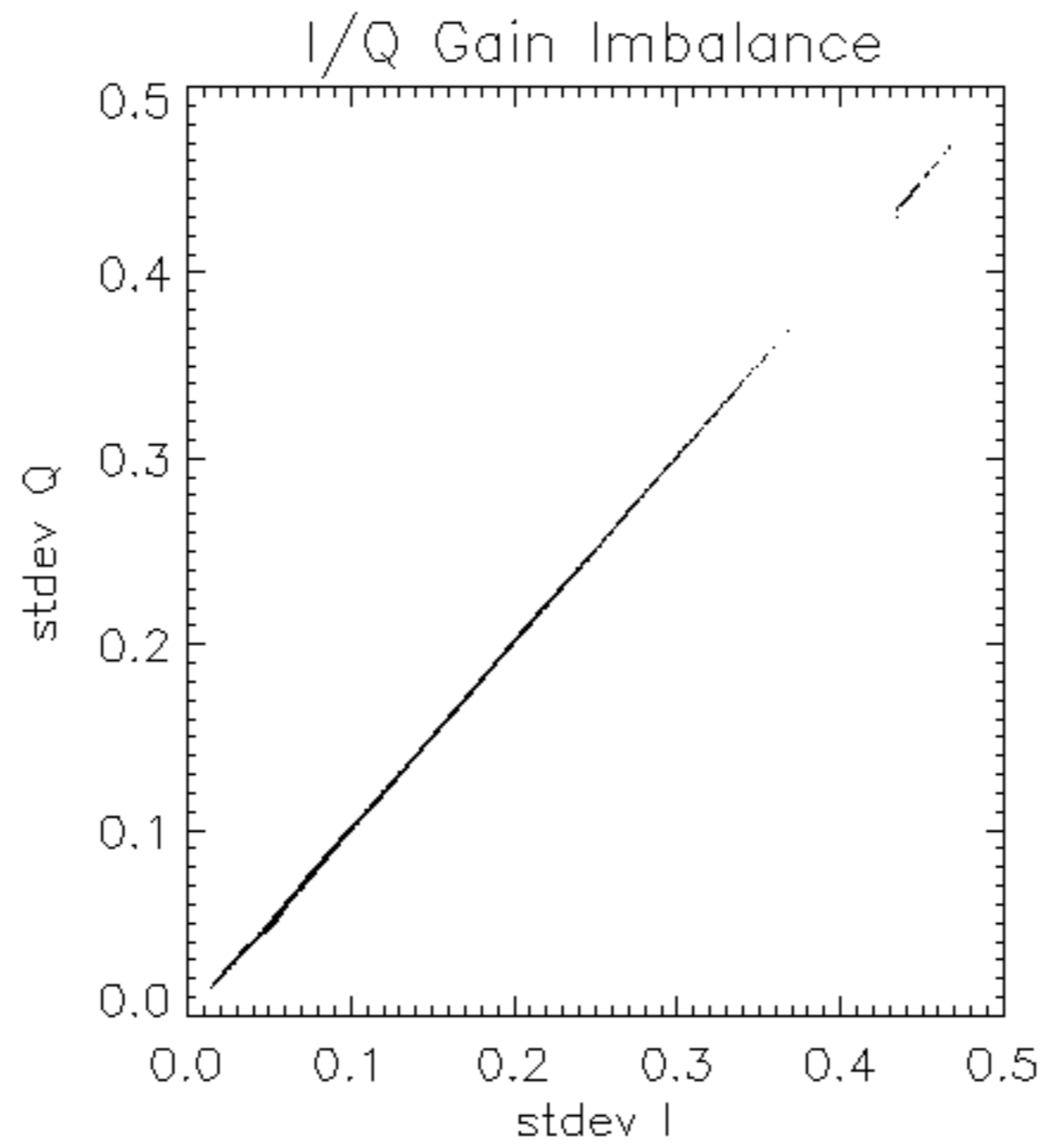
Doppler difference, estimated-predicted 'WVS' 'IS2' 'V/V' -error mean of -73.165704 Hz

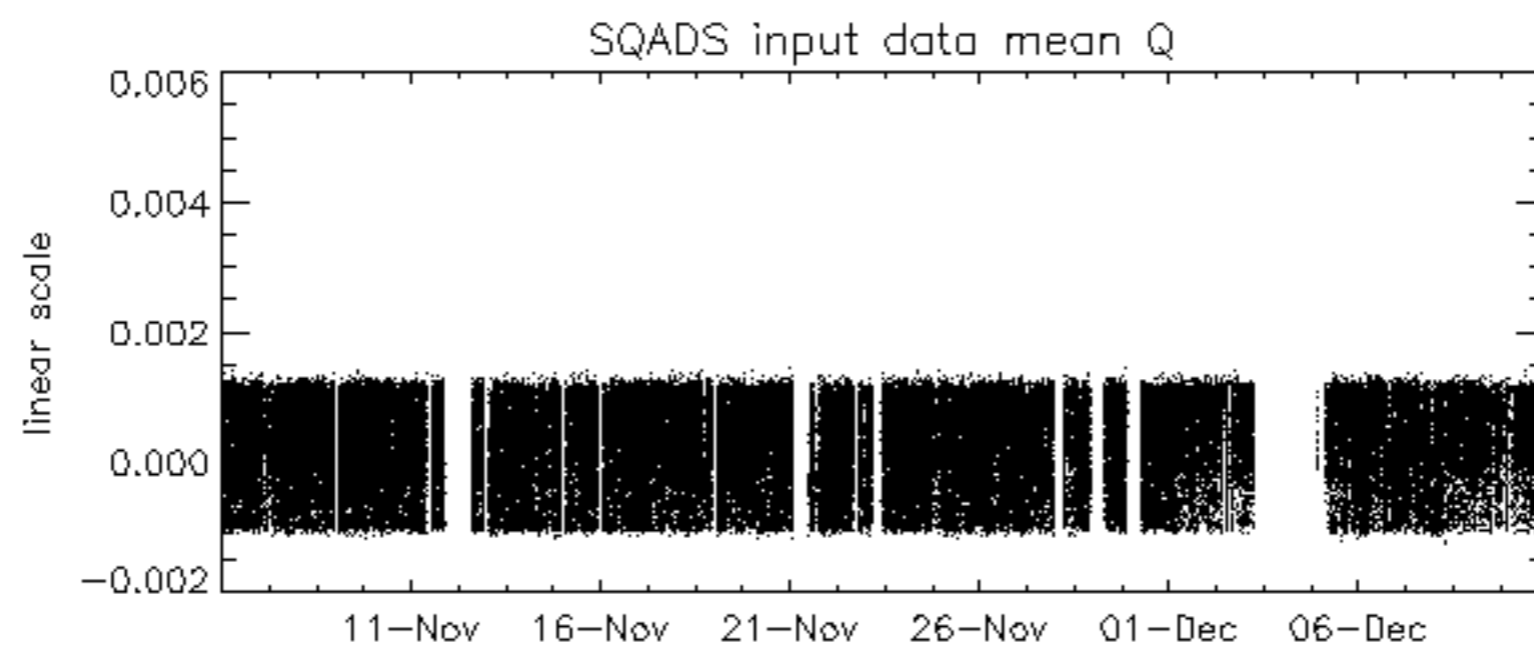
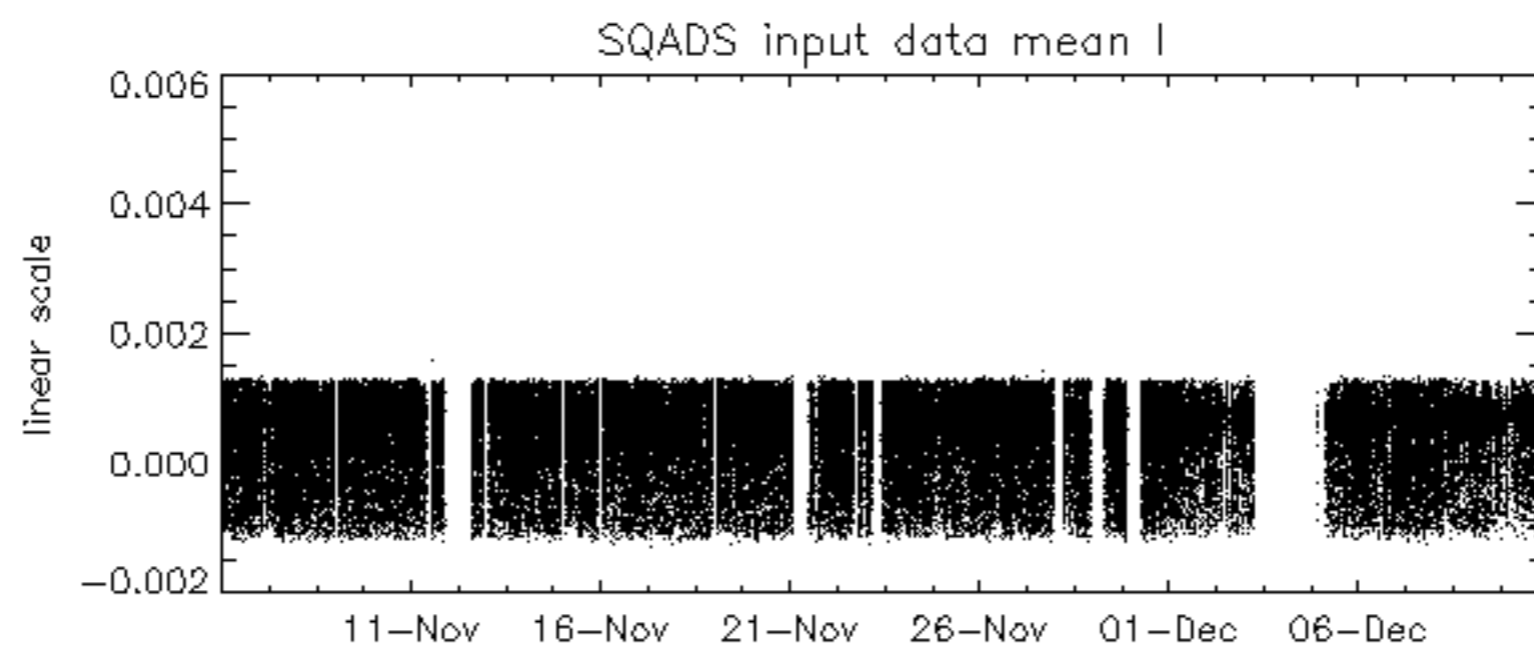
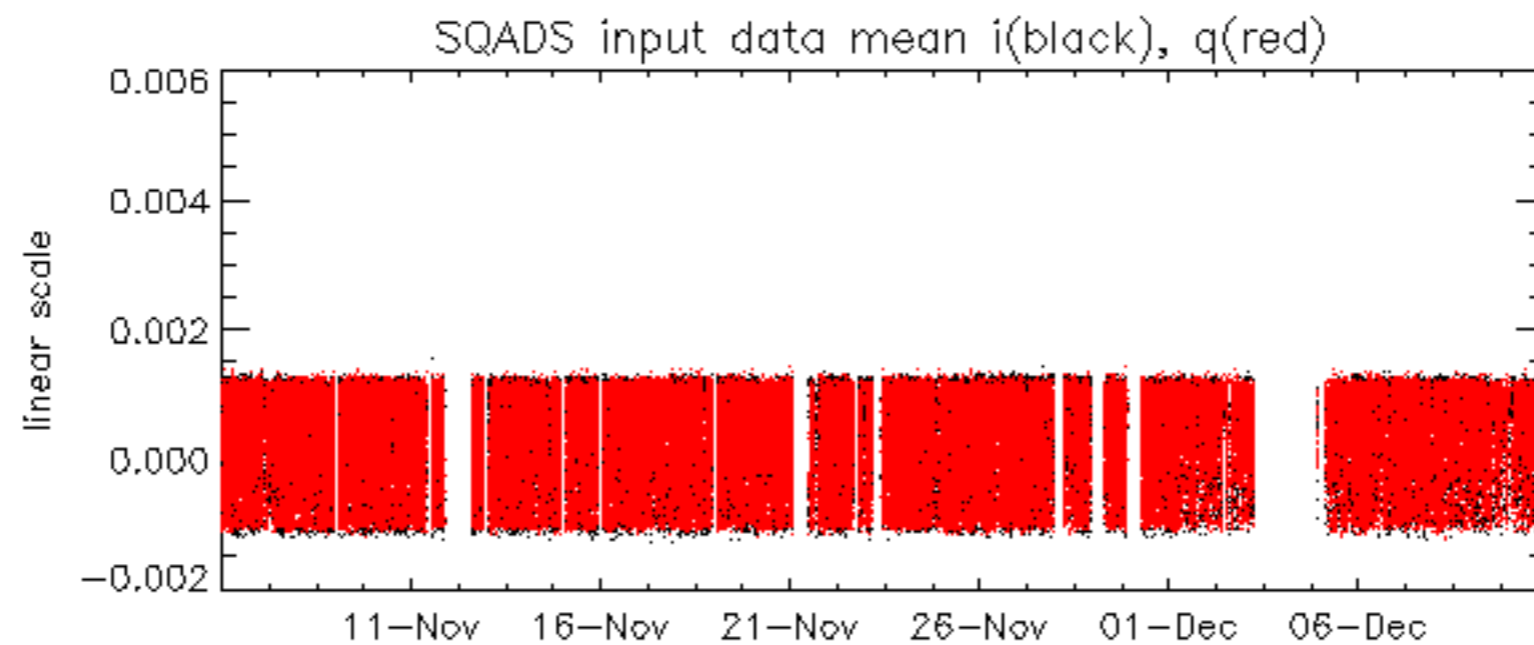


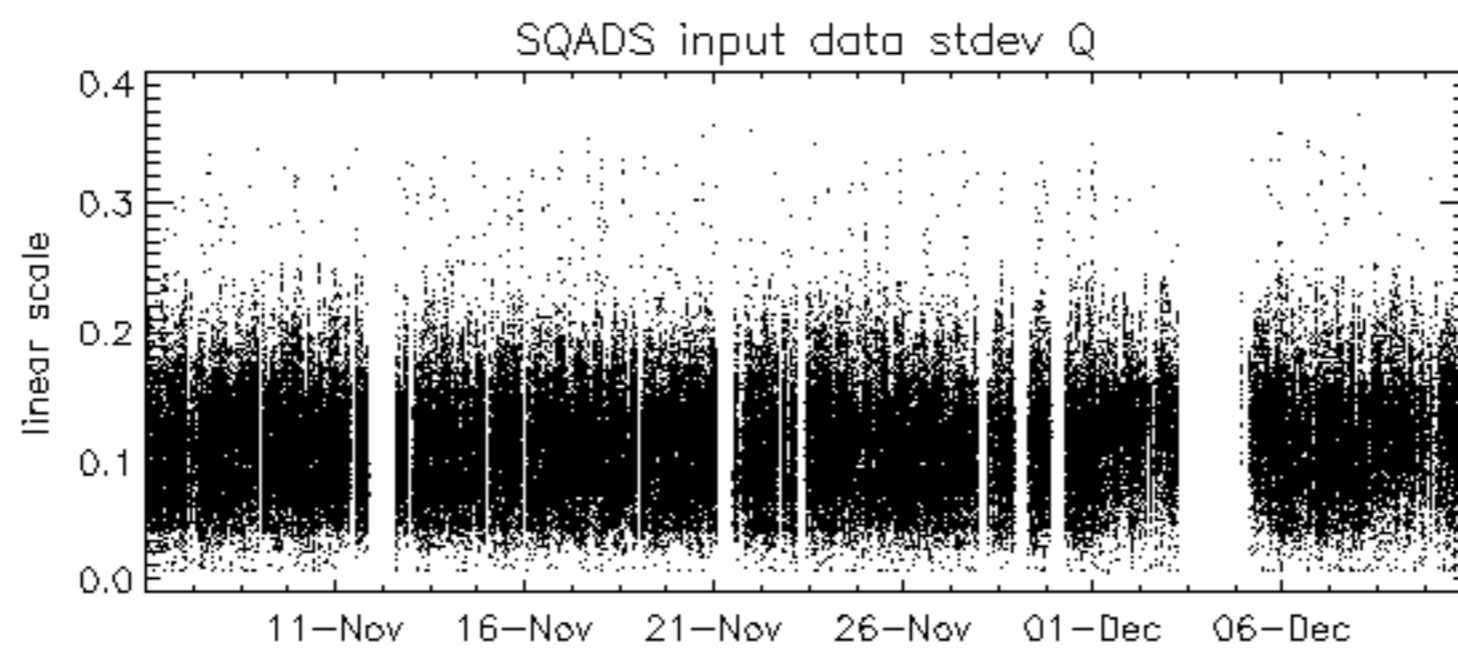
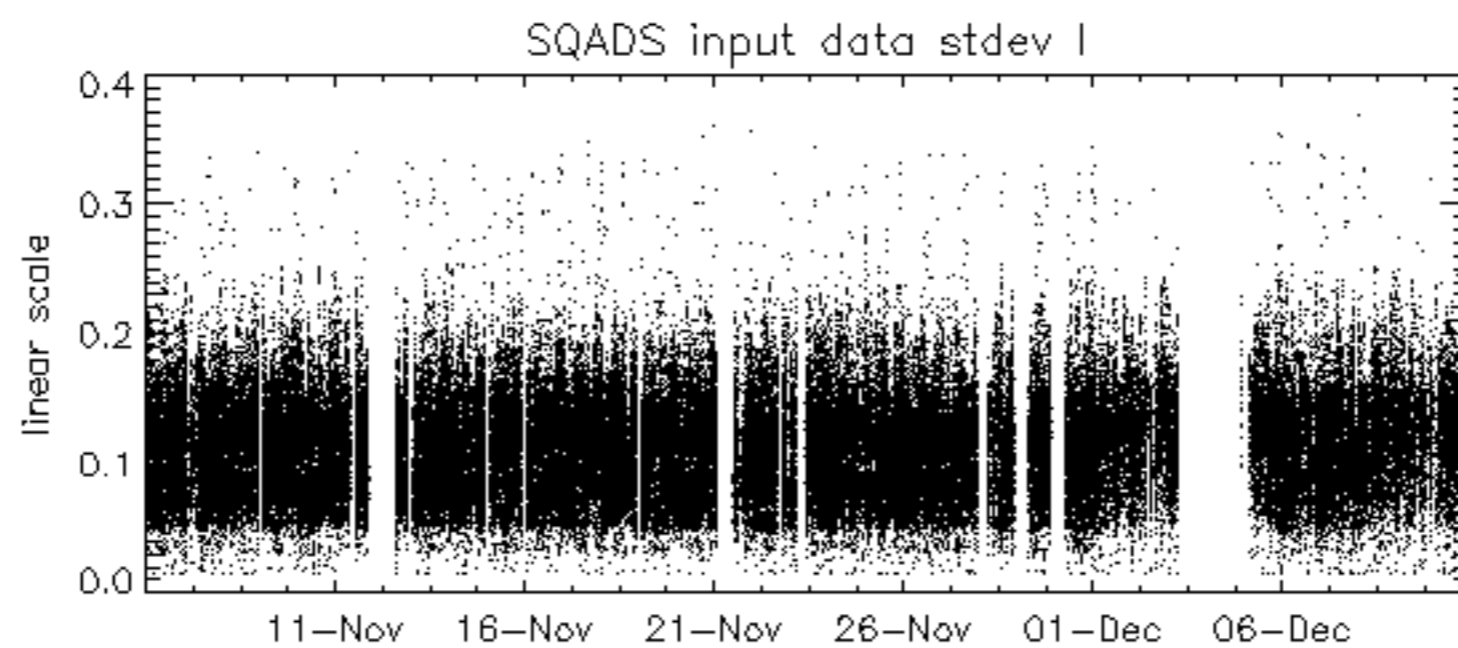
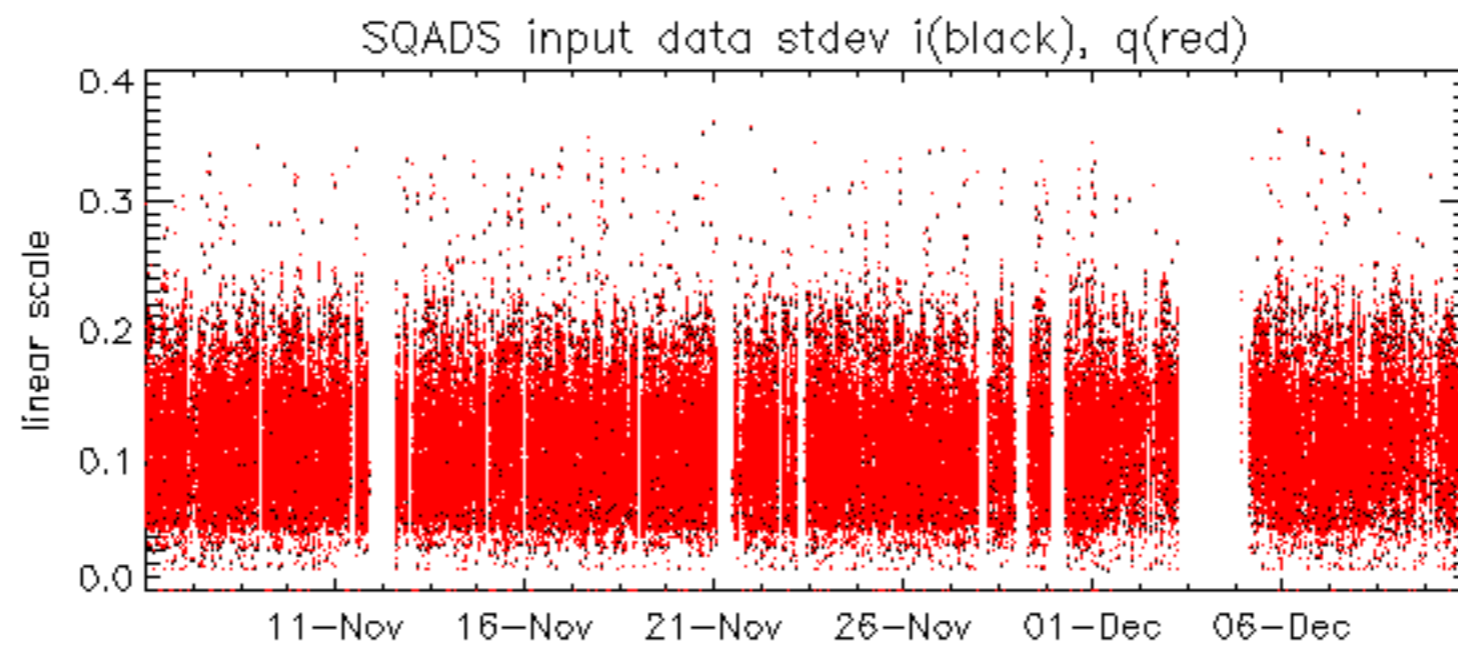
No anomalies observed on available MS products:

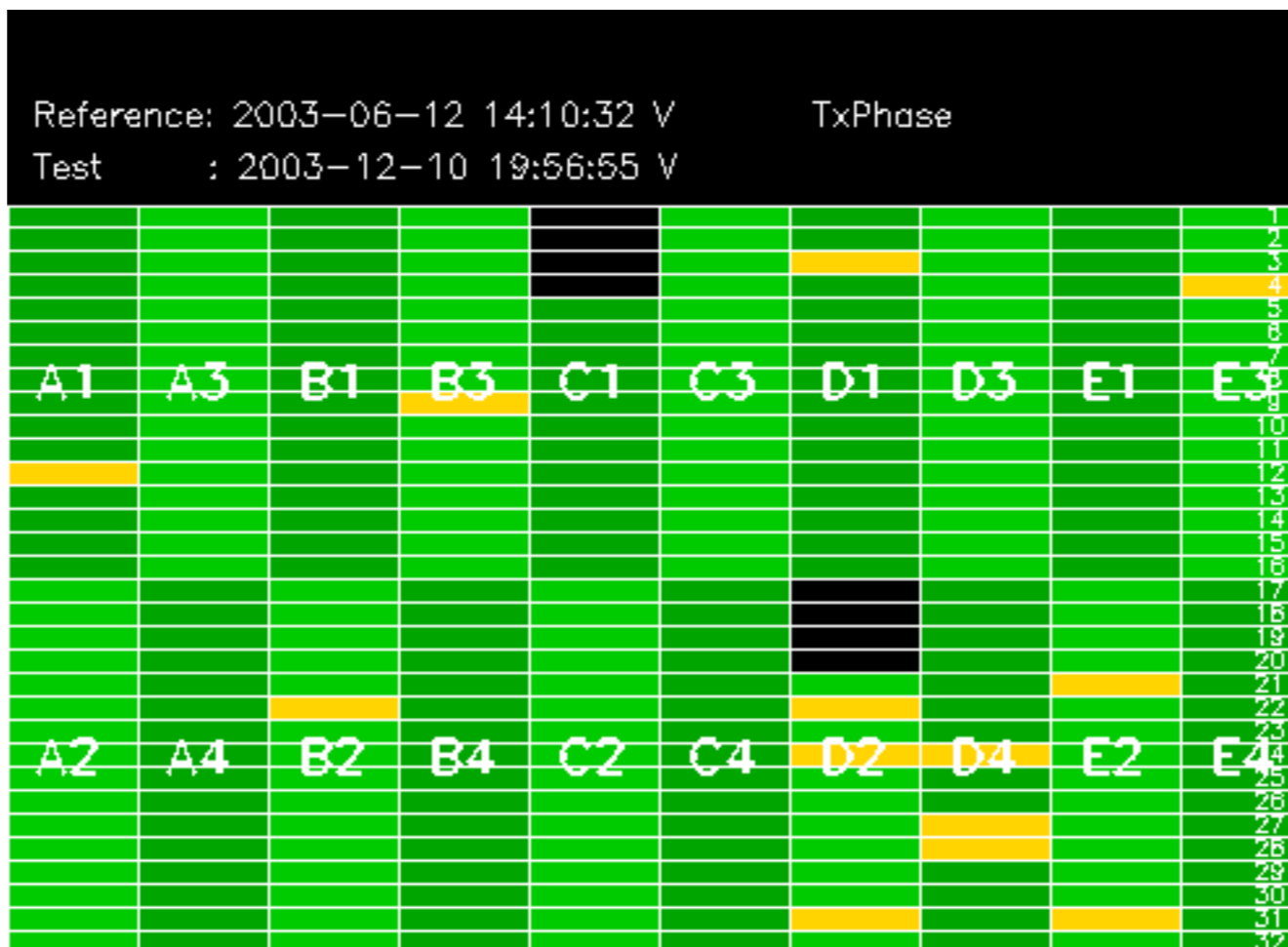
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- as they were acquired before P1 gain drop.

No anomalies observed.









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