REPORT OF 031208

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

No unavailabilies during the reported period.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products

2.3 - Data Analysis

-Anomalous behaviour detected on calibration pulses after unavailability recovery.
P3 pulse shows a small gain increase of 0.1dB on all rows comparing nominal values.

Trend seems to stabilised since 08-dec-2003 (TBC).

-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 to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

Polarisation	Start Time
V	20031207 195111
H	20031207 194951

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

row	stat	AveP1	AveP2	AveP3

3	mean	-3.69302	-22.4761	-8.08223
	stdev	0.00632253	0.0702901	0.00349684
24	mean	-5.06951	-21.1408	-8.08223
	stdev	0.0130660	0.0643985	0.00349684

4.2 - Cyclic statistics

row	stat	AveP1	AveP2	AveP3
3	mean	-3.75502	-22.5617	-8.15355
	stdev	0.00716565	0.0693698	0.00435656
24	mean	-5.12183	-21.2439	-8.15355
	stdev	0.0137145	0.0631268	0.00435656

4.3 - cal pulses monitoring (all rows)

4.4 - Detailed anomaly analysis

Evolution of row 3 pulses since the last 35 days

Evolution of P1 pulse since the last 10 days

Evolution of P2 pulse since the last 10 days

Evolution of P3 pulse since the last 10 days

5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000333481
	stdev	1.05626e-05
MEAN Q	mean	0.000165059
	stdev	1.05607e-05

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.113664
	stdev	0.00154286
STDEV Q	mean	0.113919
	stdev	0.00155878

5.3 - Gain imbalance I/Q

6 - Wave Doppler Analysis

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

6.1 - Unbiased Doppler Error

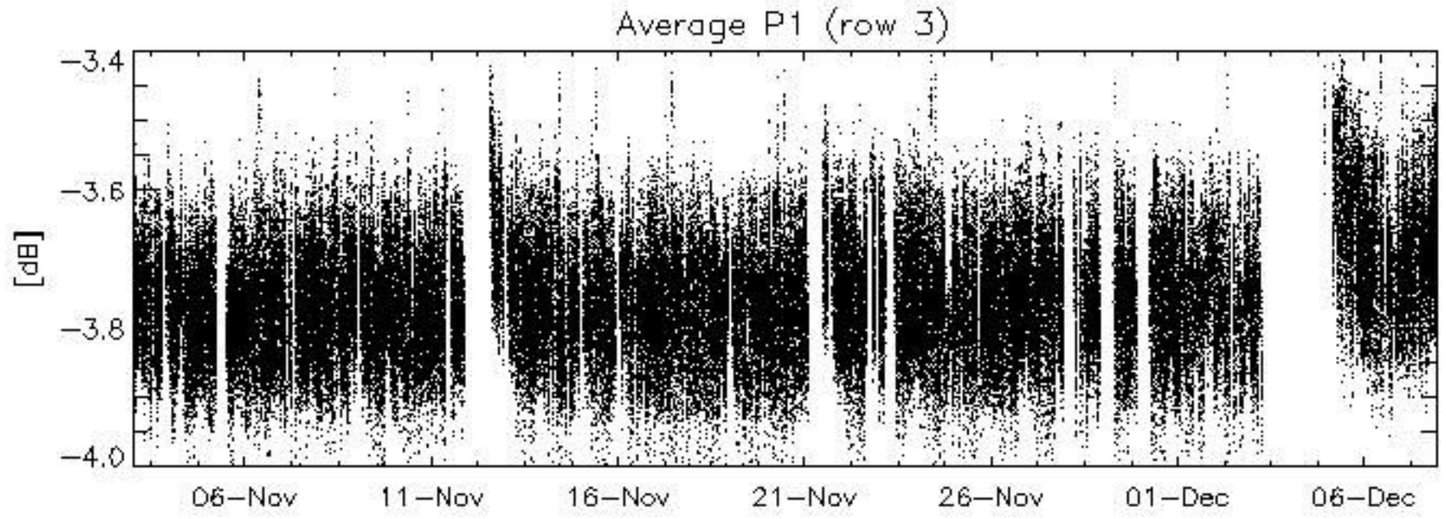
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

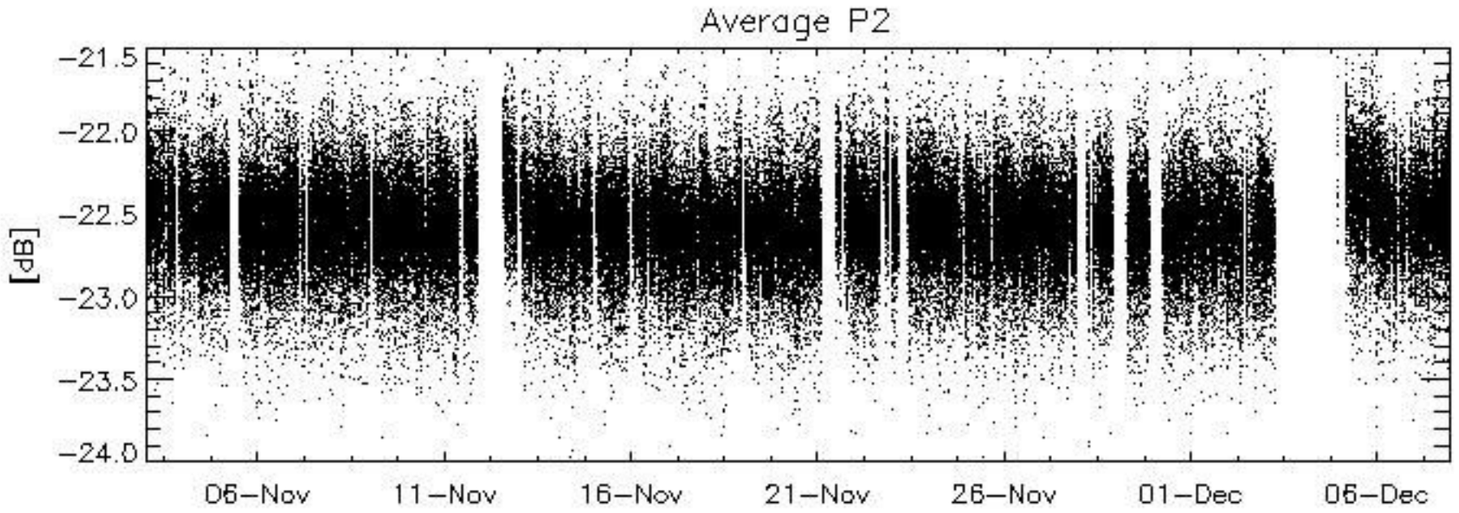
6.2 - Absolute Doppler

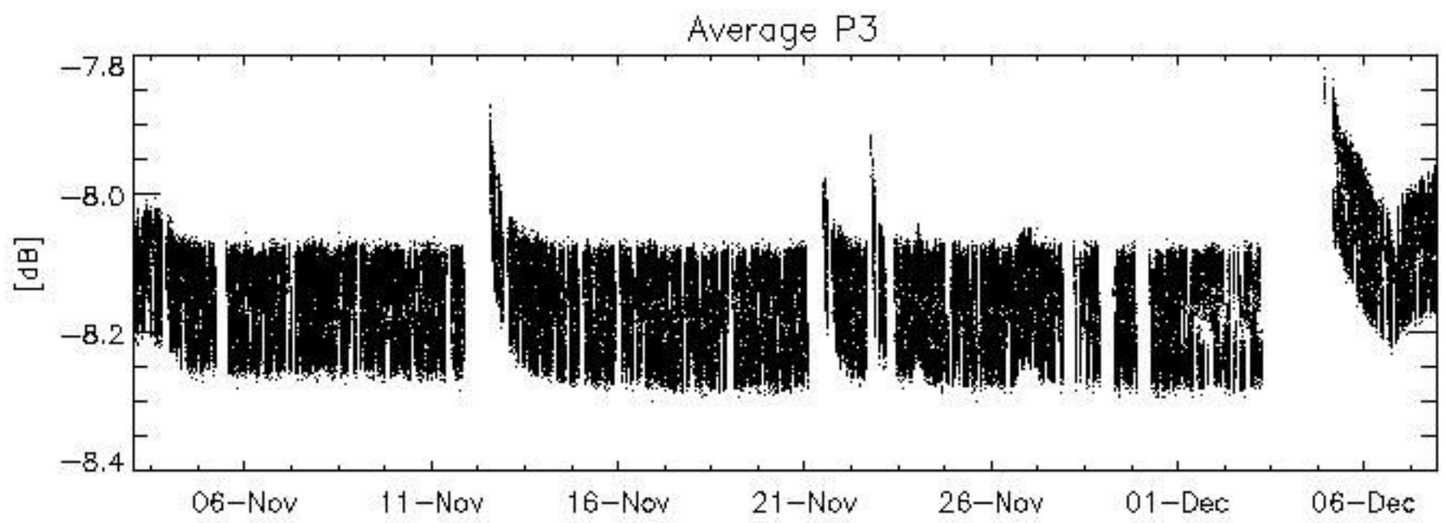
Evolution of Absolute Doppler
Acsending
Descending

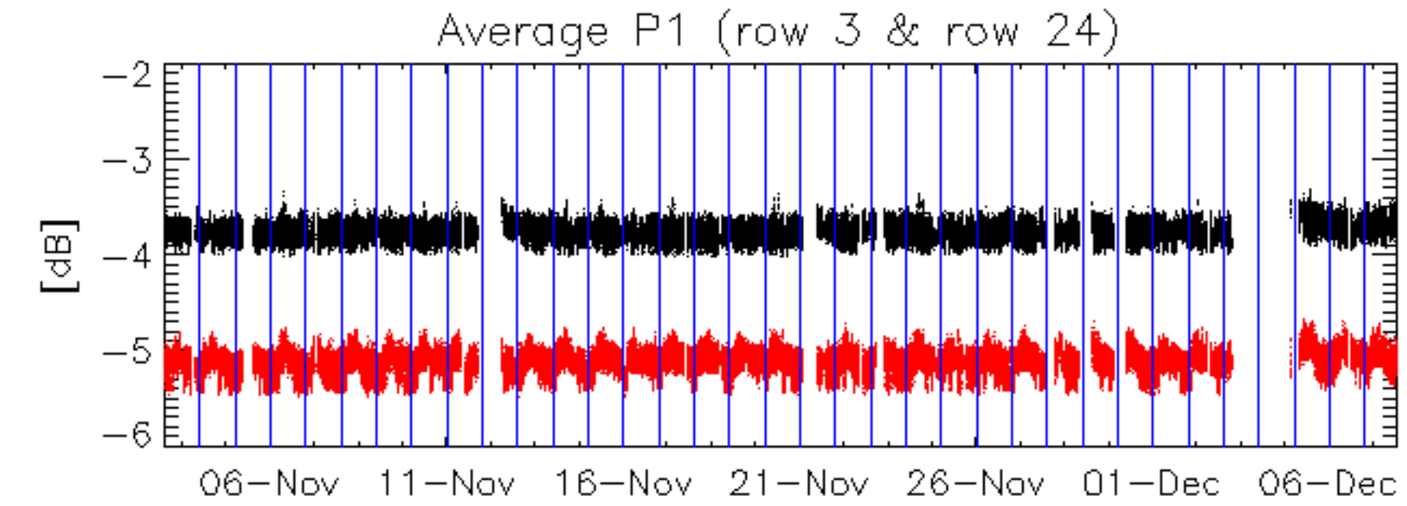
6.3 - Doppler evolution versus ANX

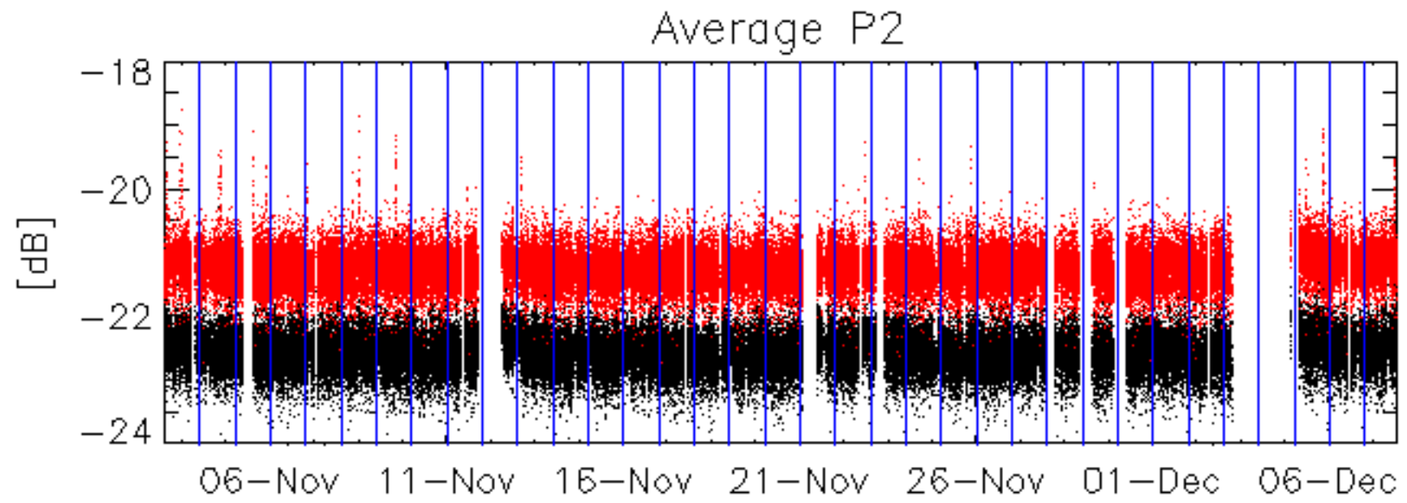
Evolution Doppler error versus ANX

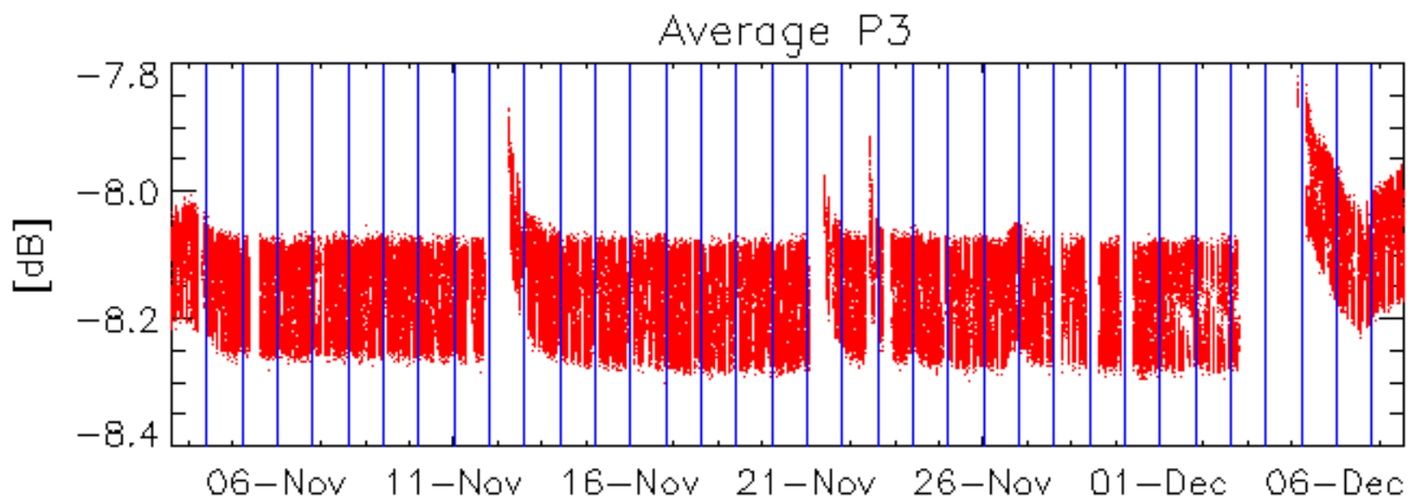

Average P1 (row 3)
[dB]
−3.4
−3.6
−3.8
−4.0
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec


Average P2
[dB]
−21.5
−22.0
−22.5
−23.0
−23.5
−24.0
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

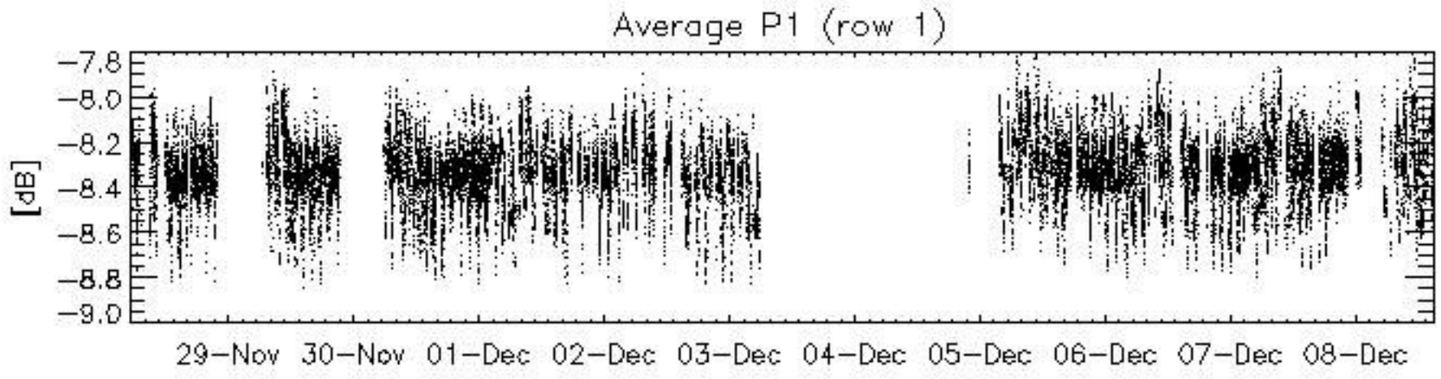

Average P3
[dB]
−7.8
−8.0
−8.2
−8.4
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

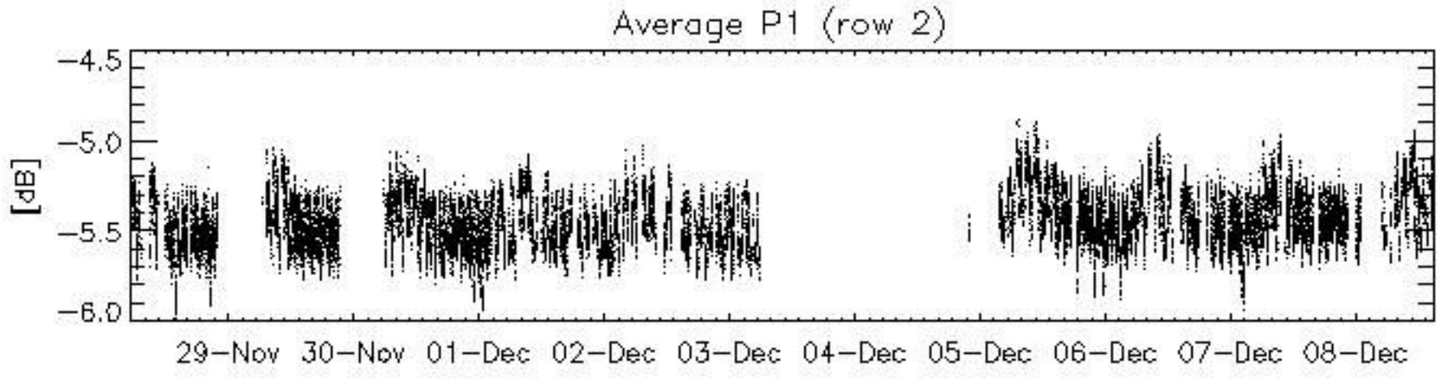

Average P1 (row 3 & row 24)
[dB]
−2
−3
−4
−5
−6
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

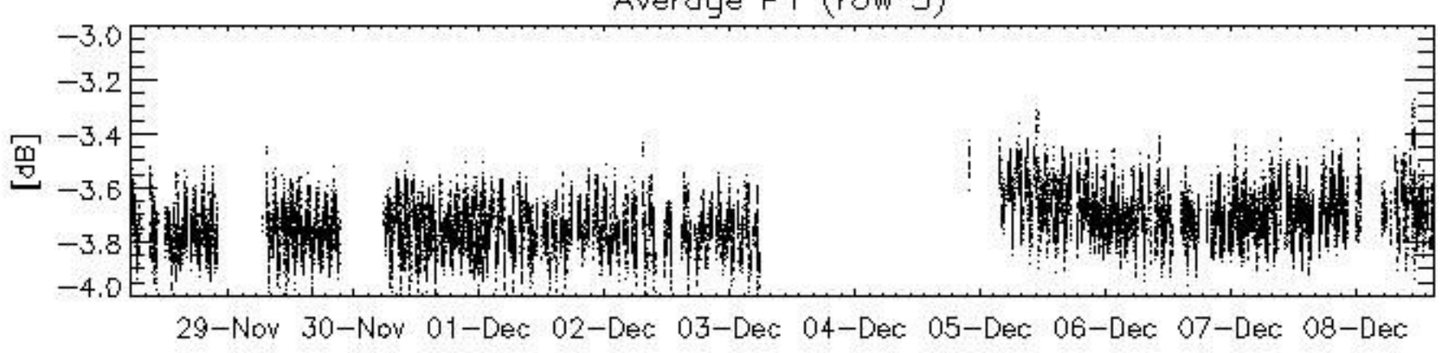

Average P2
[dB]
−18
−20
−22
−24
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

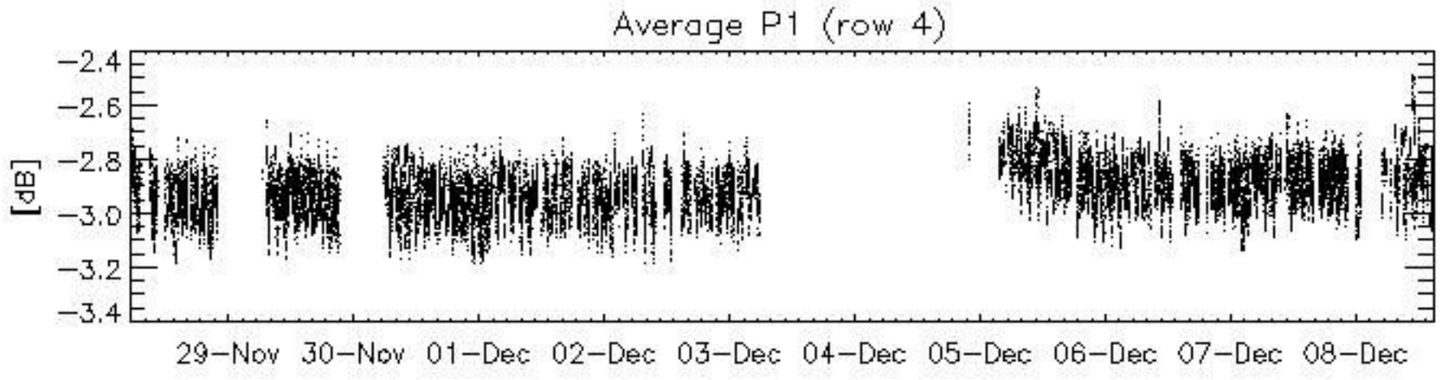

Average P3
[dB]
−7.8
−8.0
−8.2
−8.4
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

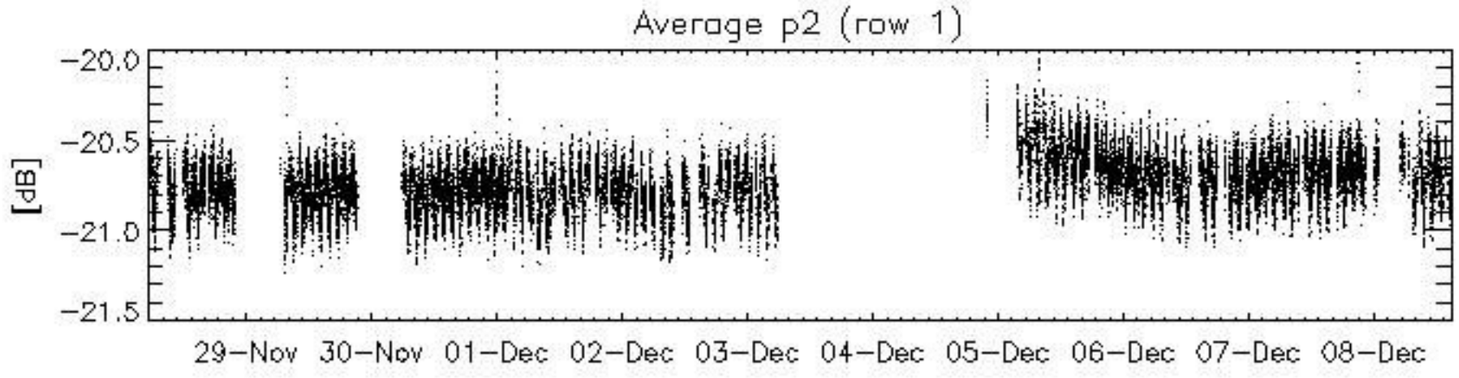
Average P1 (row 3 & row 24)
[dB]
−2
−4
−6
−8
−10
−12
03
06
09
12
15
18
21
07−Dec
Average P2
[dB]
−18
−20
−22
−24
03
06
09
12
15
18
21
07−Dec
Average P3
[dB]
−7.8
−8.0
−8.2
−8.4
03
06
09
12
15
18
21
07−Dec

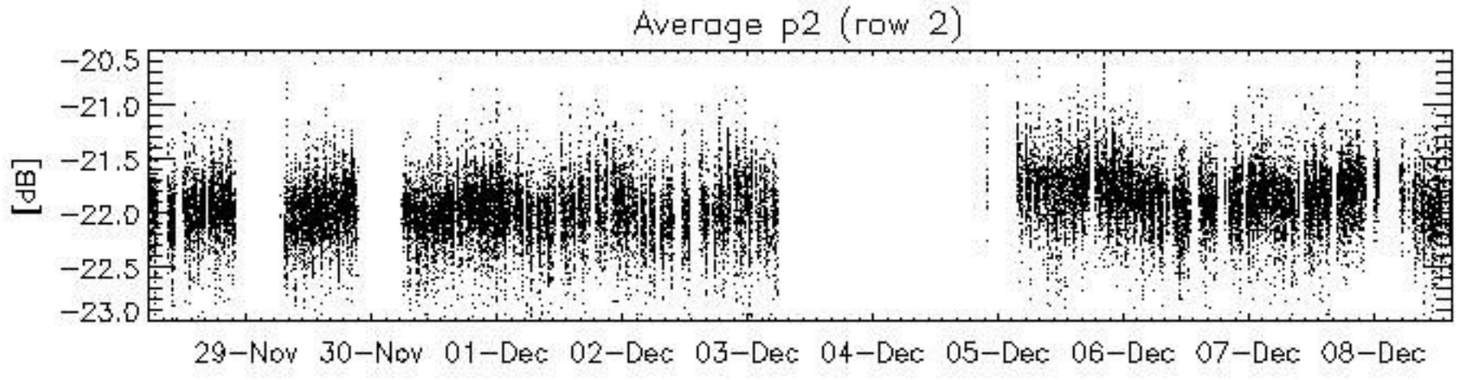

Average P1 (row 1)
[dB]
−7.8
−8.0
−8.2
−8.4
−8.6
−8.8
−9.0
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

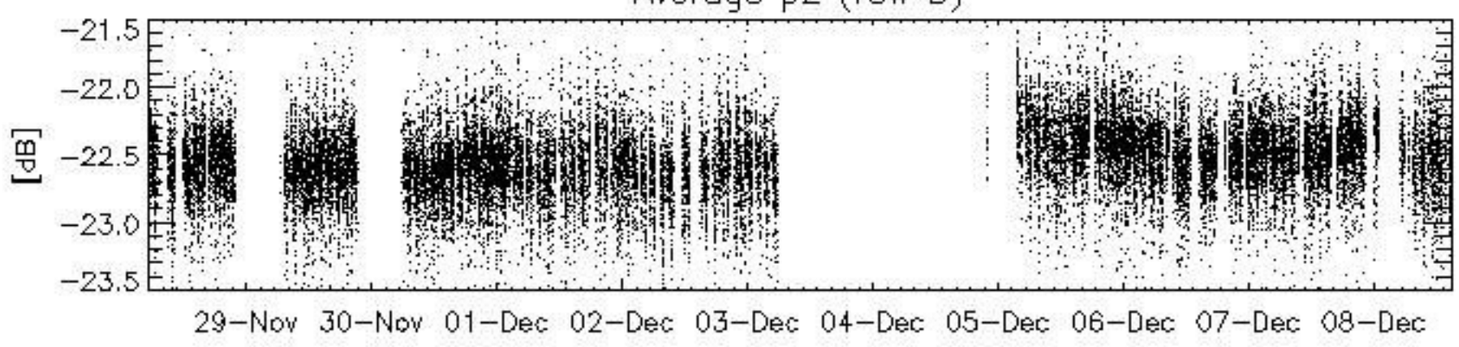

Average P1 (row 2)
[dB]
−4.5
−5.0
−5.5
−6.0
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

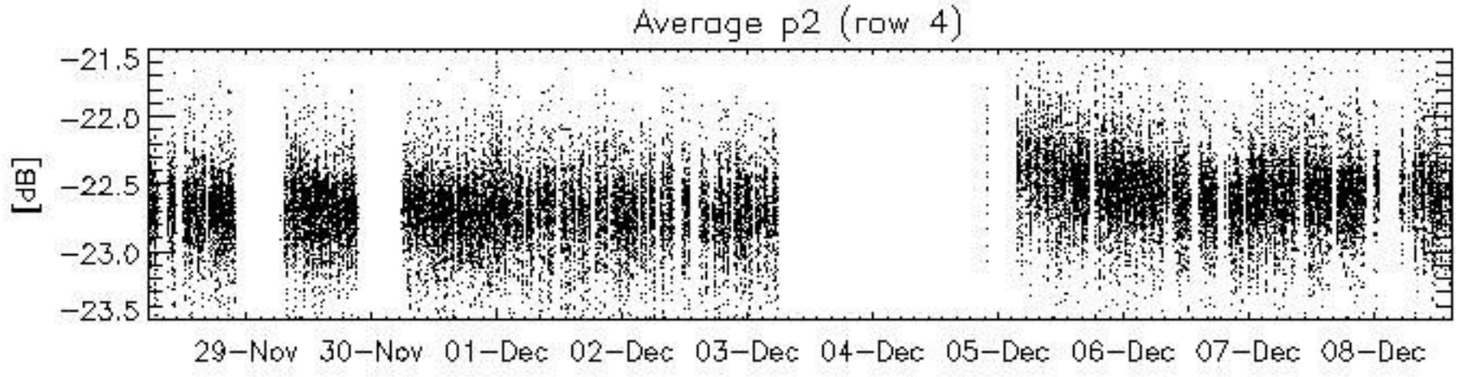

Average P1 (row 3)
[dB]
−3.0
−3.2
−3.4
−3.6
−3.8
−4.0
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

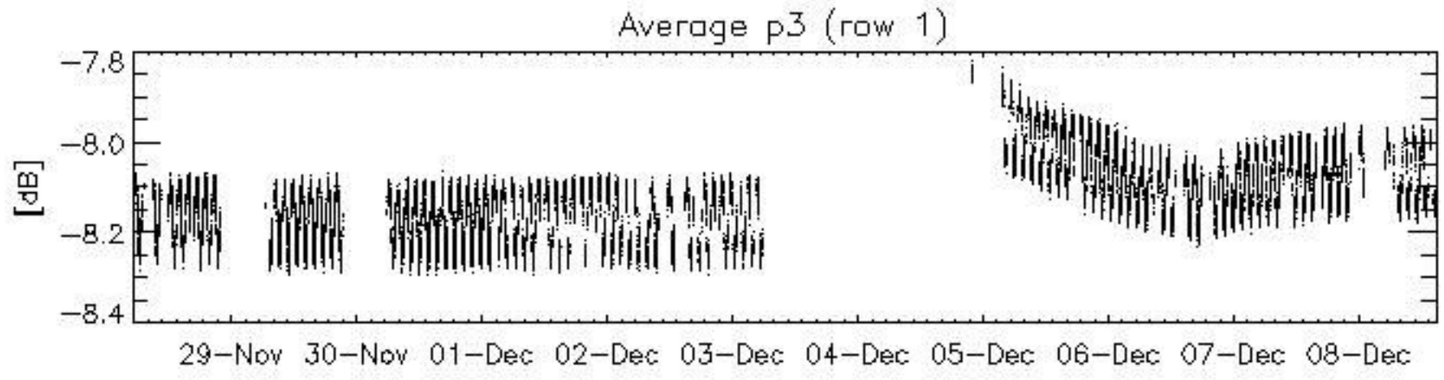

Average P1 (row 4)
[dB]
−2.4
−2.6
−2.8
−3.0
−3.2
−3.4
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

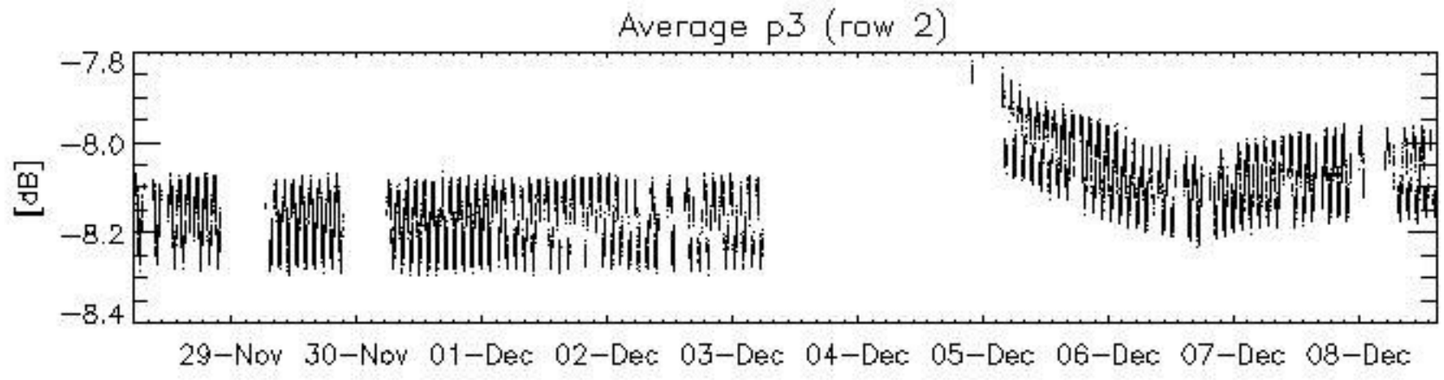

Average p2 (row 1)
[dB]
−20.0
−20.5
−21.0
−21.5
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

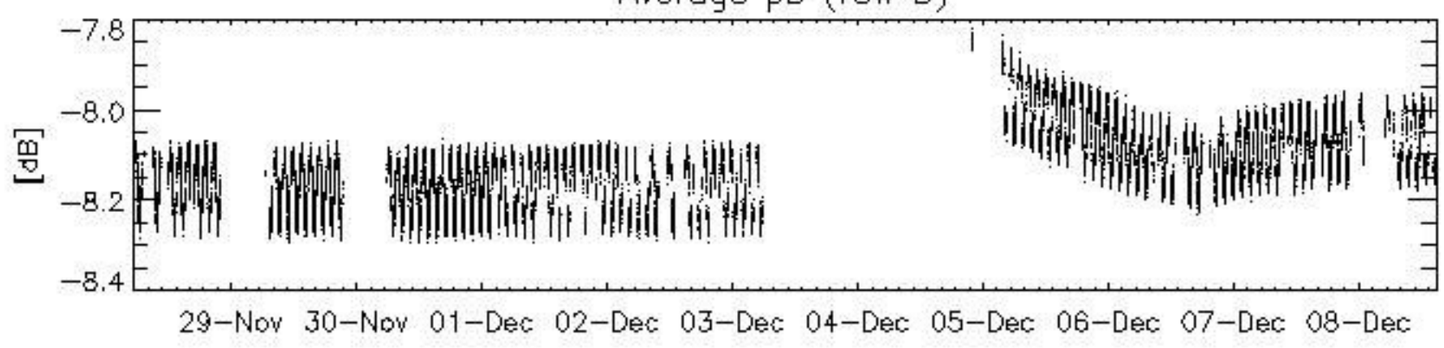

Average p2 (row 2)
[dB]
−20.5
−21.0
−21.5
−22.0
−22.5
−23.0
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

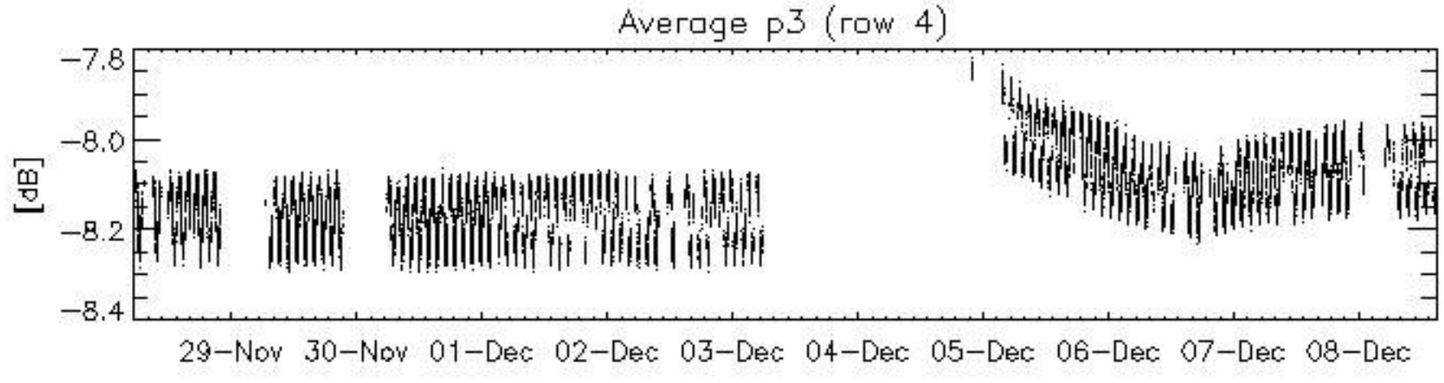

Average p2 (row 3)
[dB]
−21.5
−22.0
−22.5
−23.0
−23.5
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec


Average p2 (row 4)
[dB]
−21.5
−22.0
−22.5
−23.0
−23.5
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec


Average p3 (row 1)
[dB]
−7.8
−8.0
−8.2
−8.4
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

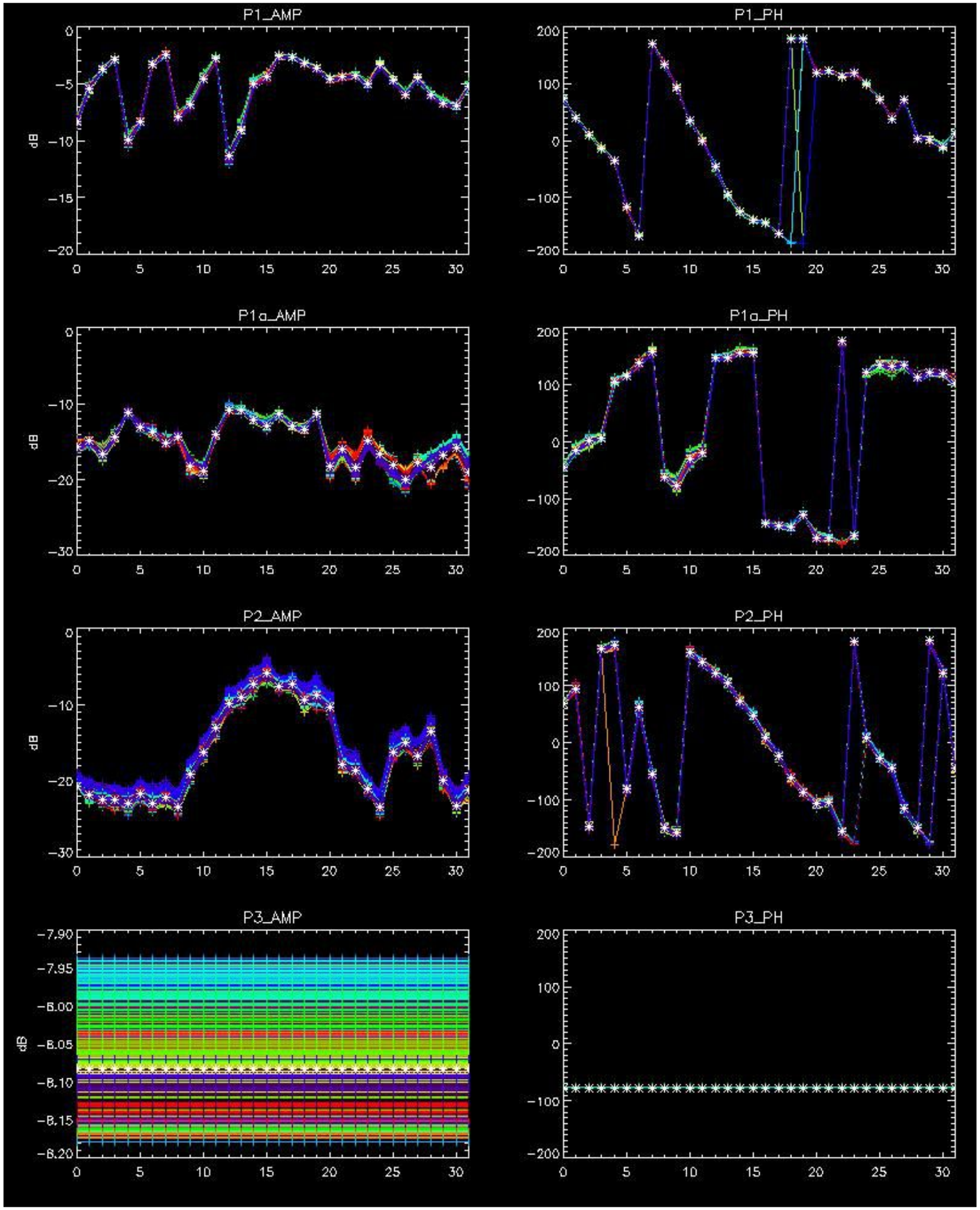

Average p3 (row 2)
[dB]
−7.8
−8.0
−8.2
−8.4
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec


Average p3 (row 3)
[dB]
−7.8
−8.0
−8.2
−8.4
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec


Average p3 (row 4)
[dB]
−7.8
−8.0
−8.2
−8.4
29−Nov 30−Nov 01−Dec 02−Dec 03−Dec 04−Dec 05−Dec 06−Dec 07−Dec 08−Dec

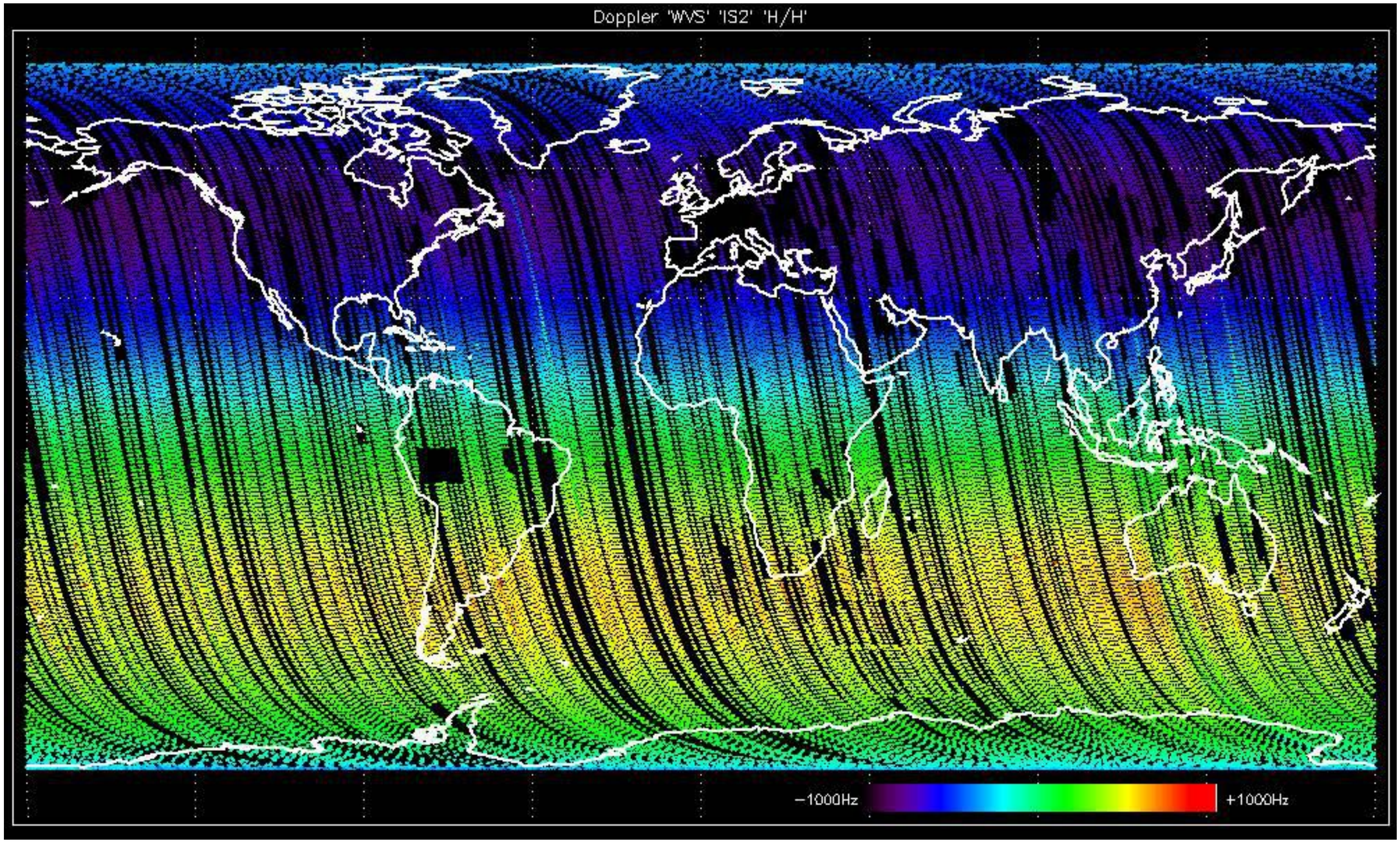
No anomalies observed on available browse products

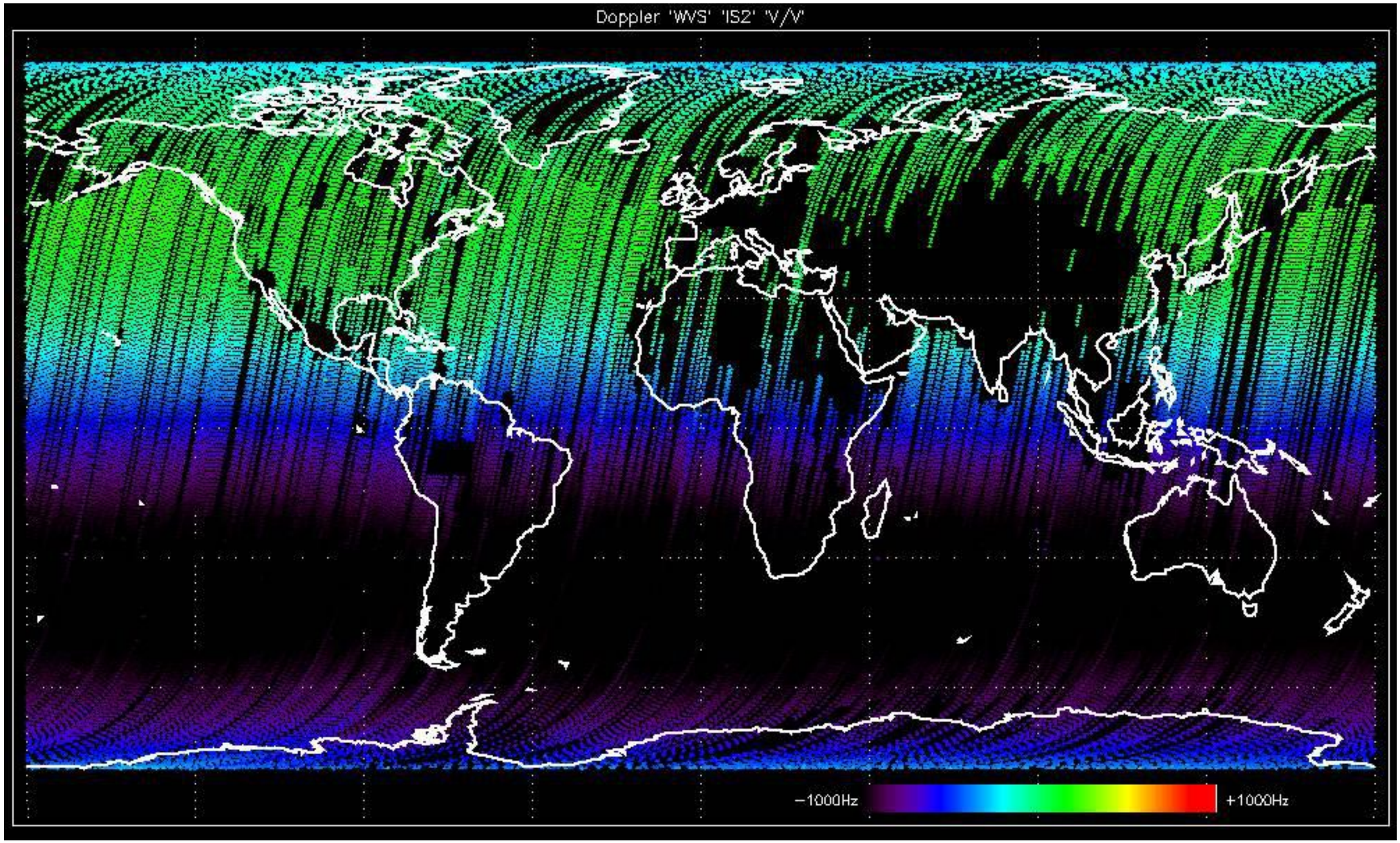
No anomalies observed.

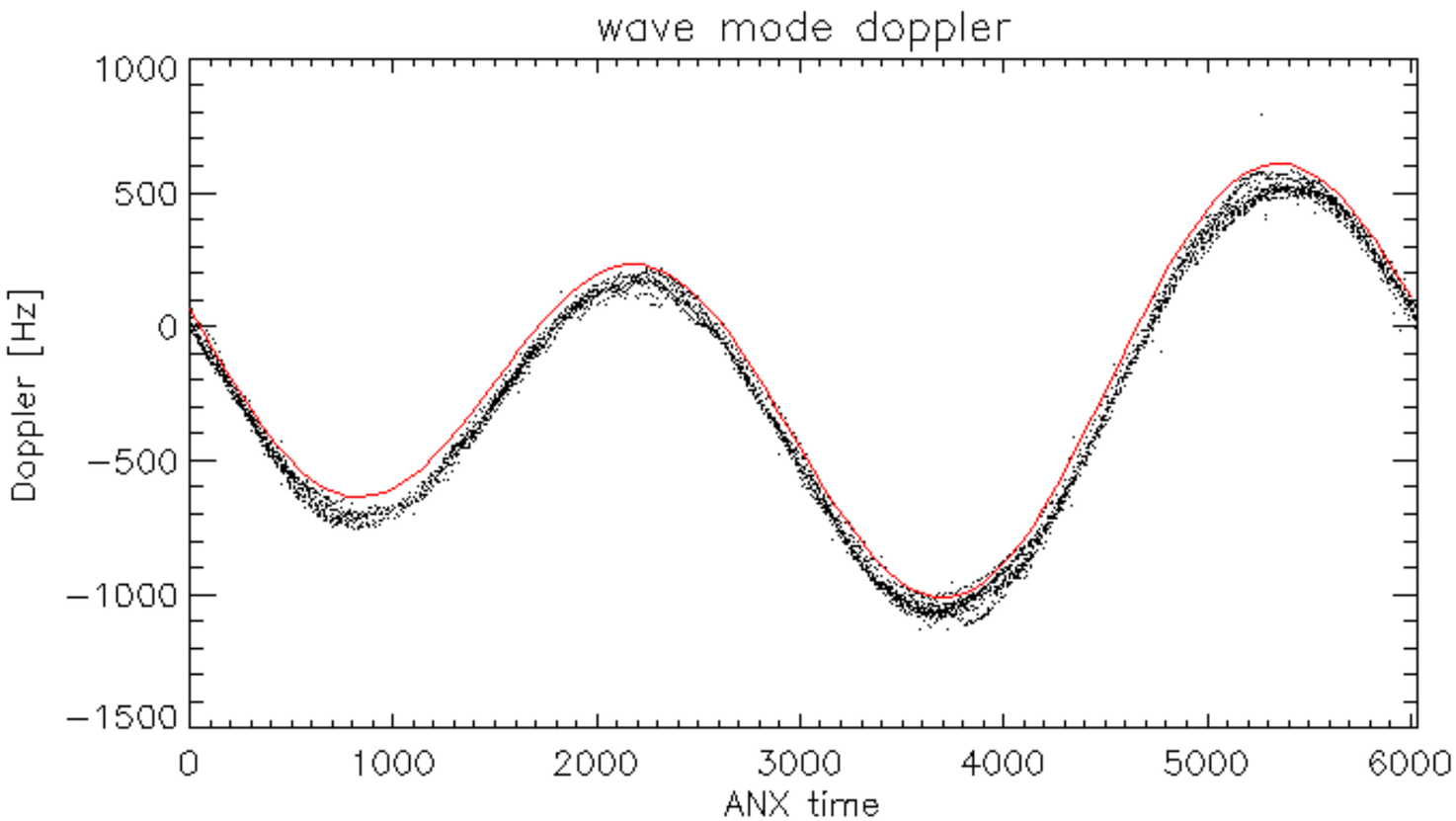

P1_AMP
P1_PH
P1a_AMP
P1a_PH
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

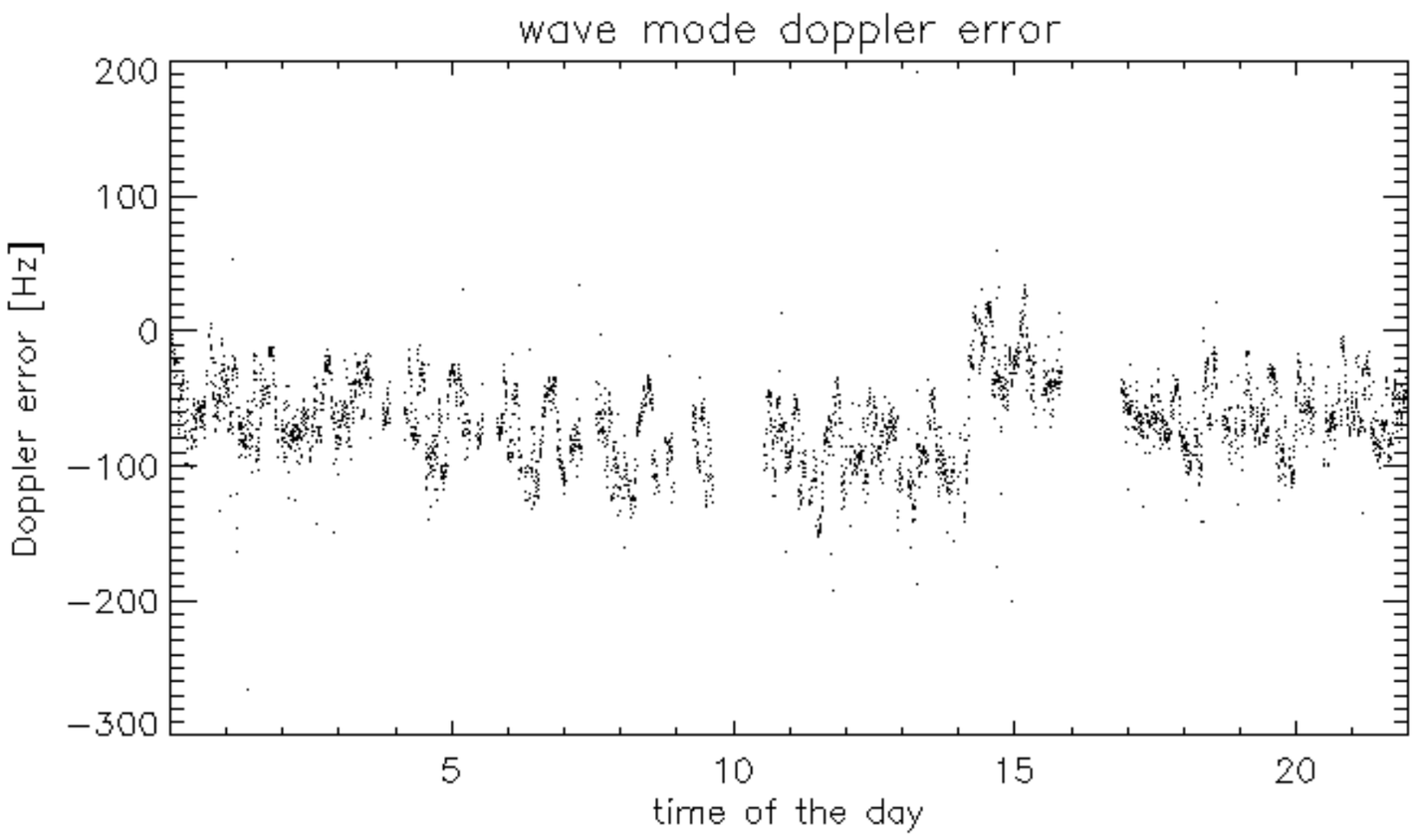
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

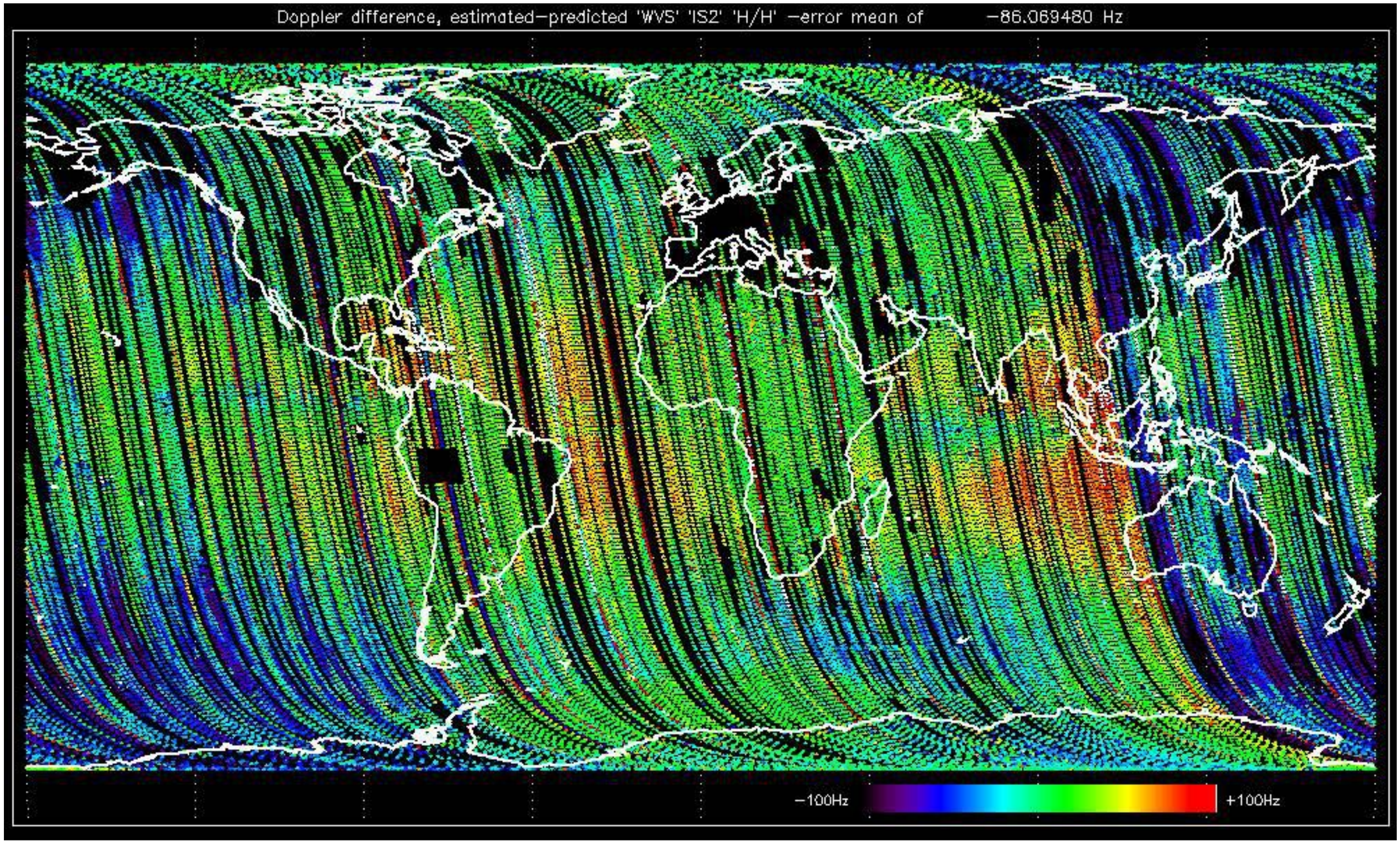
No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

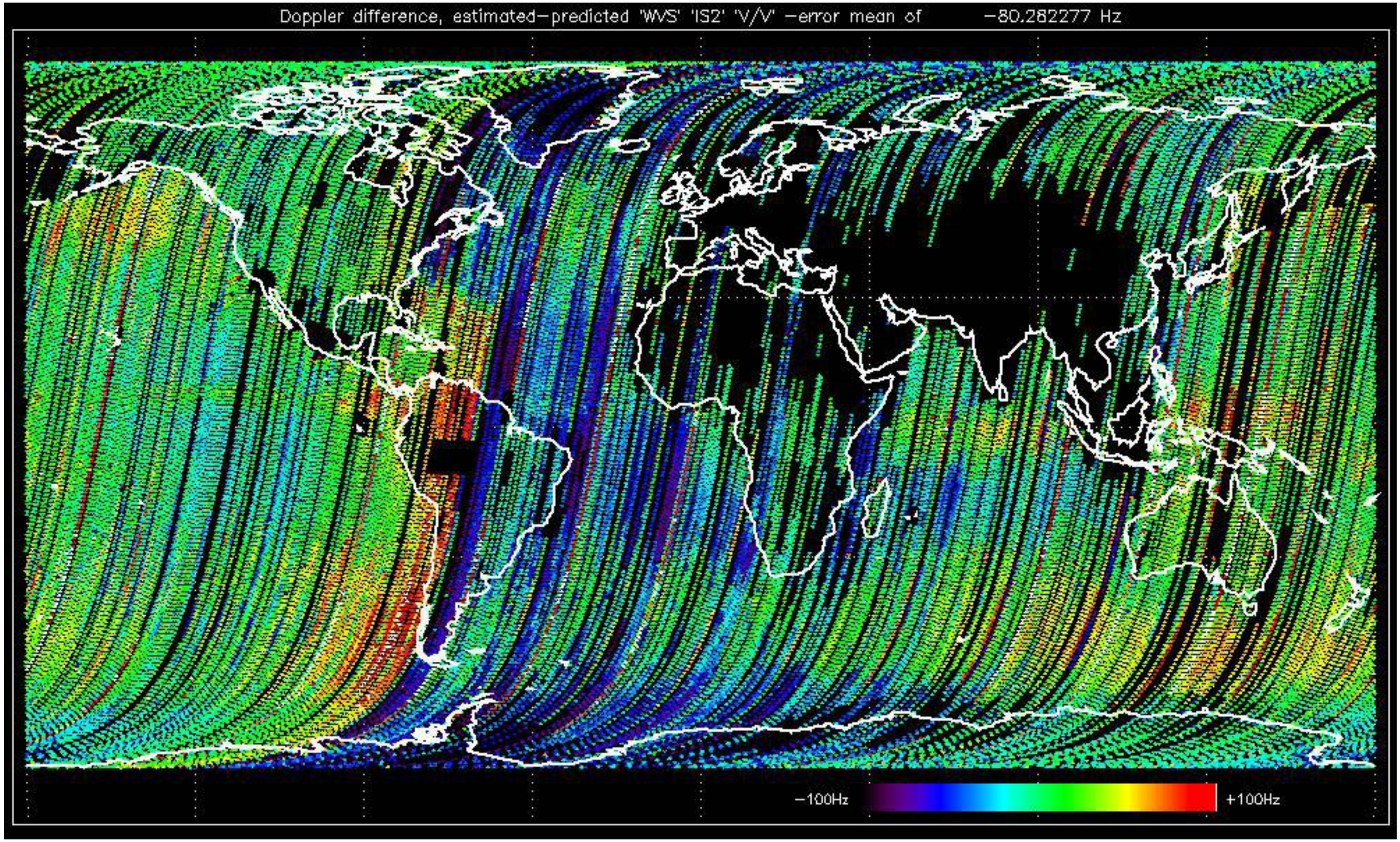

Doppler 'WVS' 'IS2' 'H/H'
−1000Hz
+1000Hz


Doppler 'WVS' 'IS2' 'V/V'
−1000Hz
+1000Hz


wave mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time

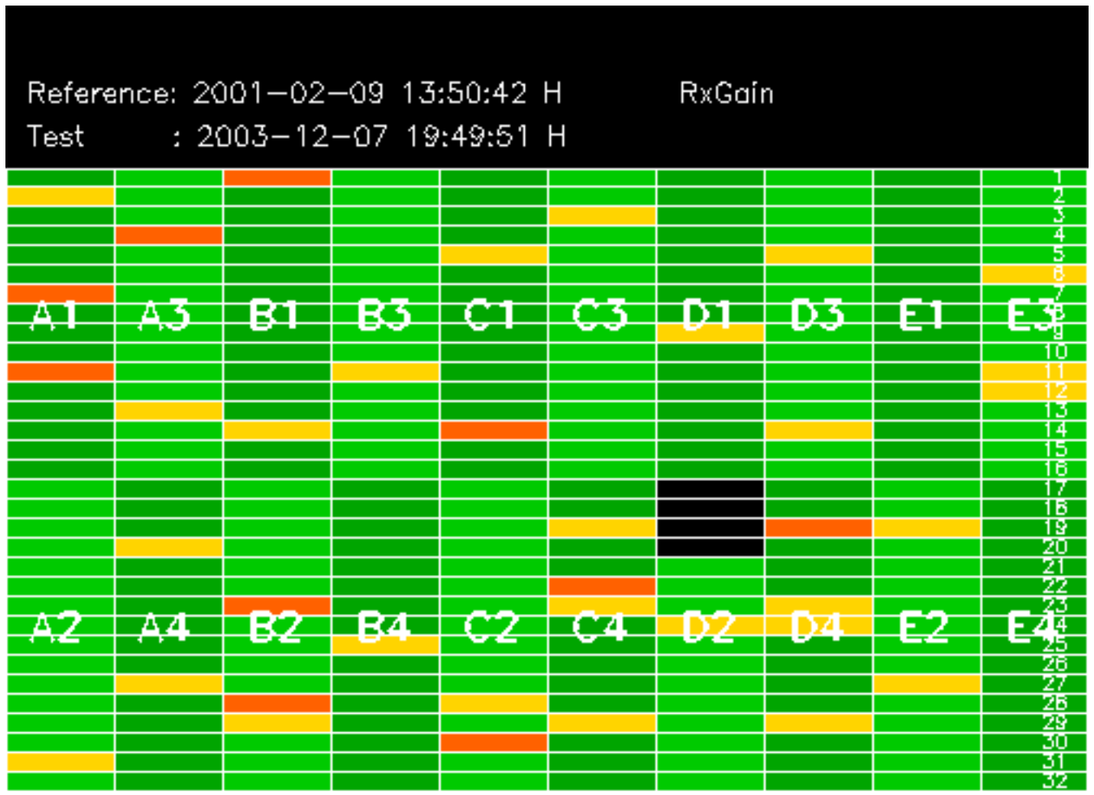

wave mode doppler error
Doppler error [Hz]
200
100
0
−100
−200
−300
5
10
15
20
time of the day

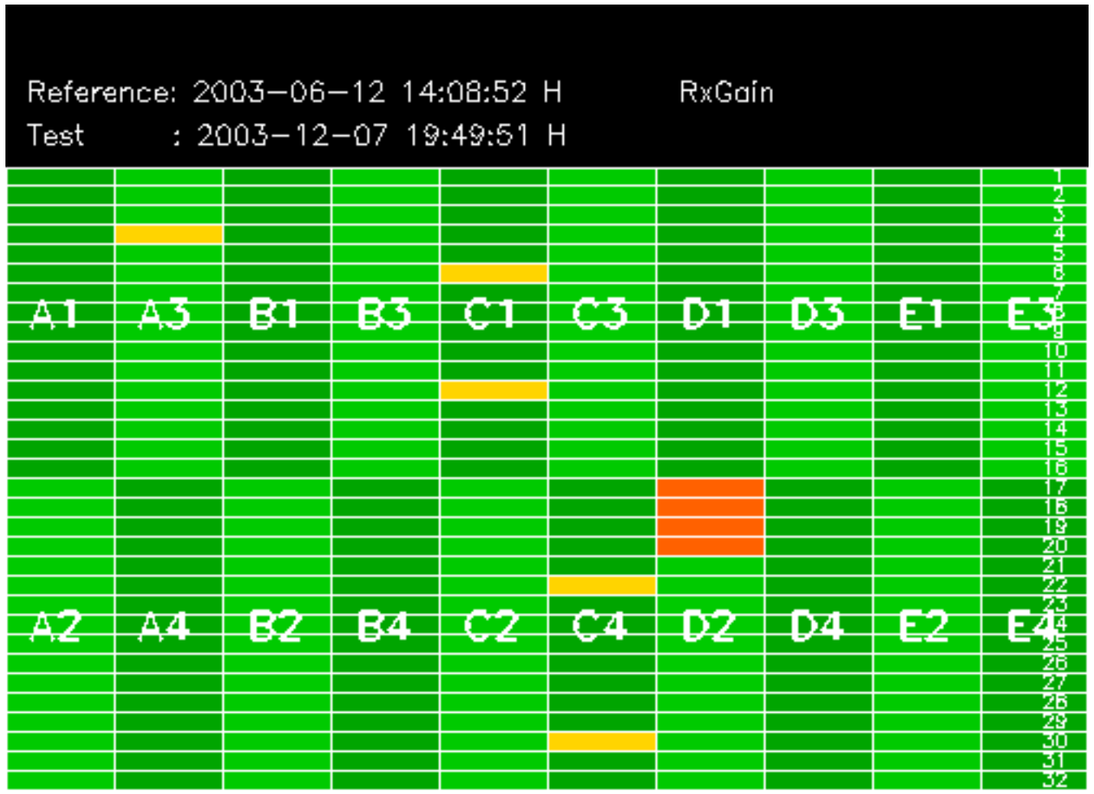

Doppler difference, estimated−predicted 'WVS' 'IS2' 'H/H' −error mean of −86.069480 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' 'V/V' −error mean of −80.282277 Hz
−100Hz
+100Hz

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and
to identify modules foe which calibration offsets are to be applied.
No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2003-12-07 19:49:51 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2003-12-07 19:49:51 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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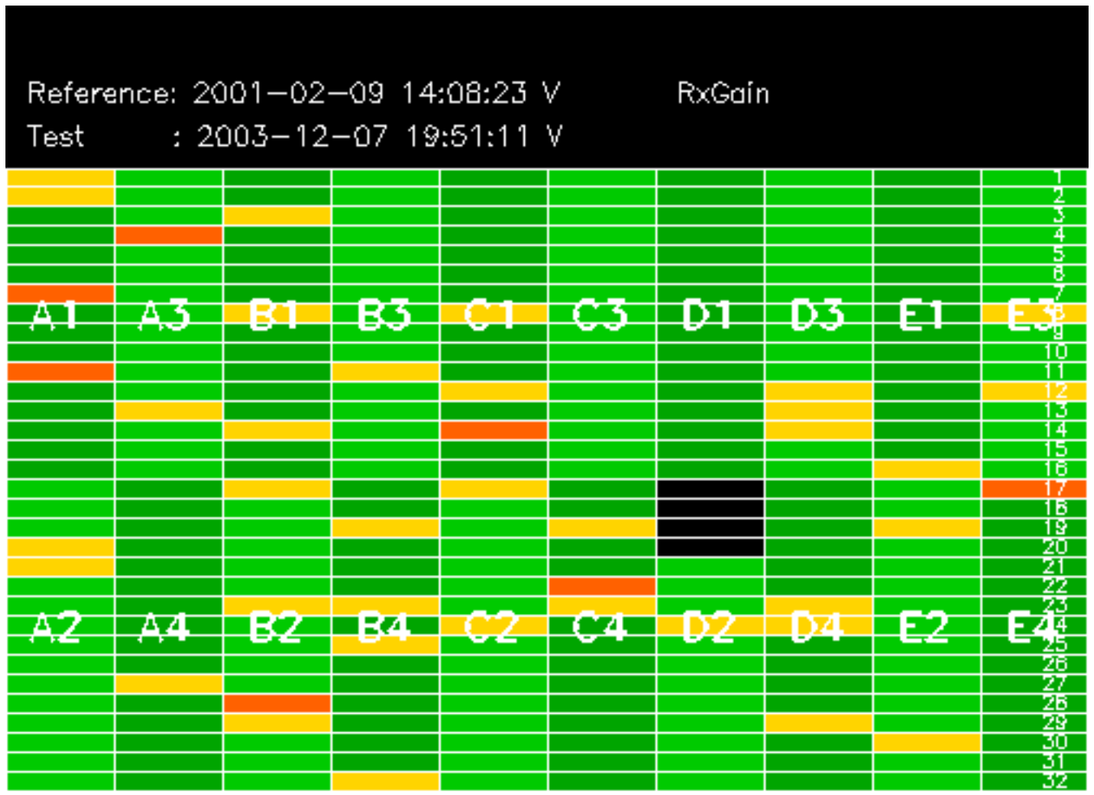
Reference: 2001-02-09 14:08:23 V
Test : 2003-12-07 19:51:11 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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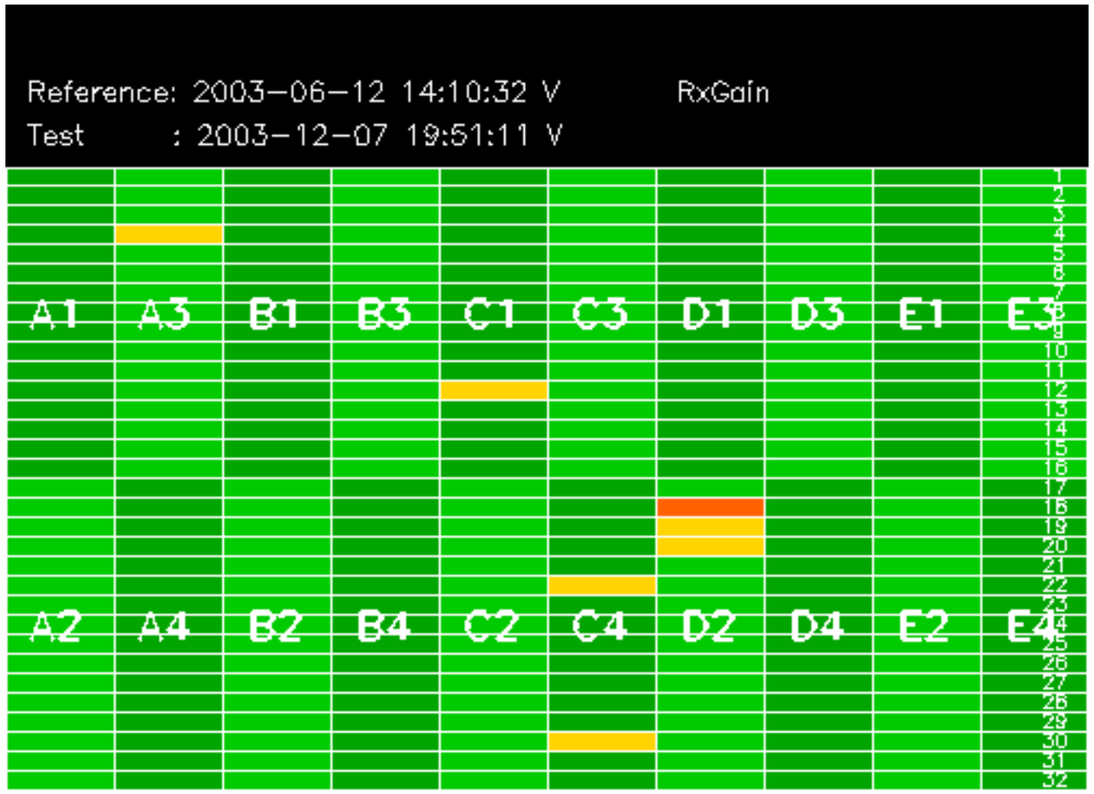
Reference: 2003-06-12 14:10:32 V
Test : 2003-12-07 19:51:11 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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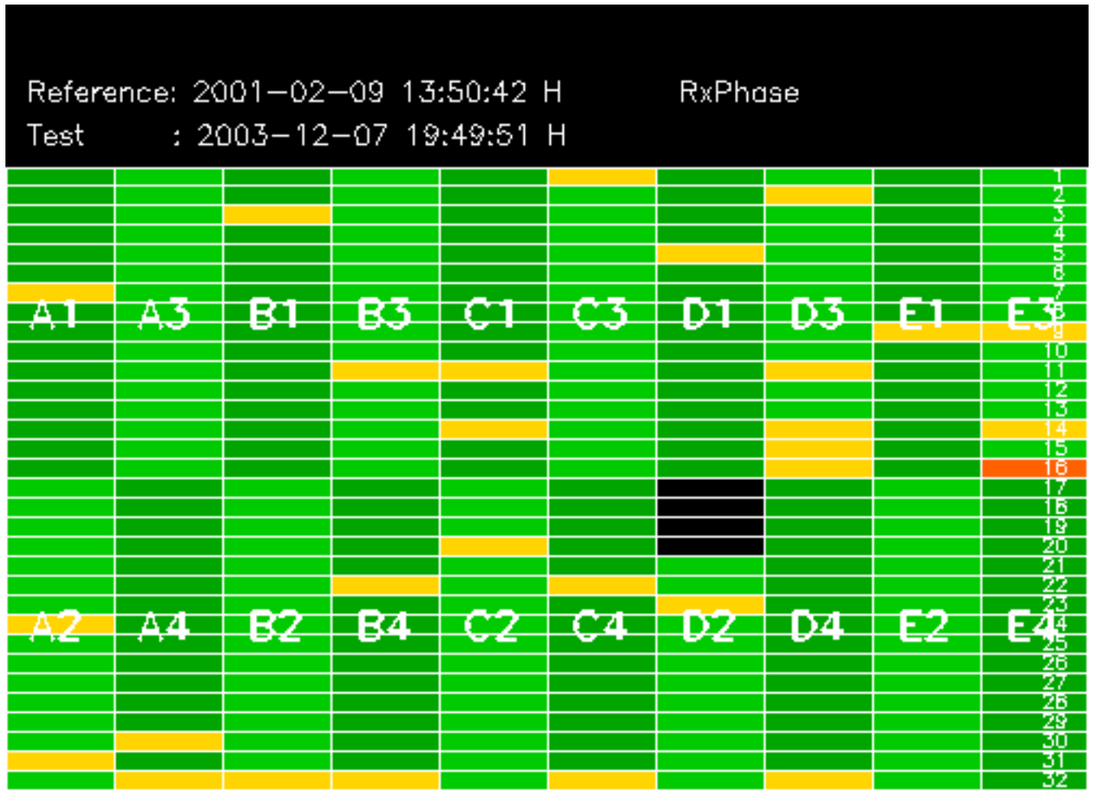
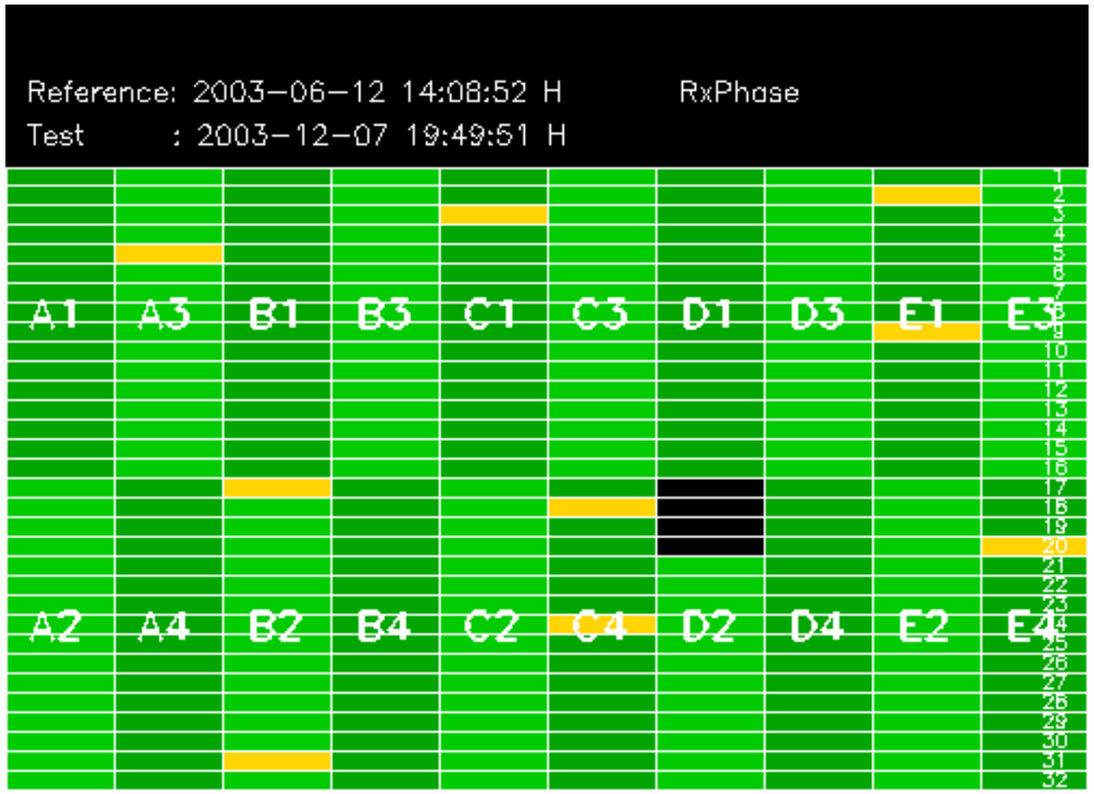

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2003-12-07 19:49:51 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2003-12-07 19:49:51 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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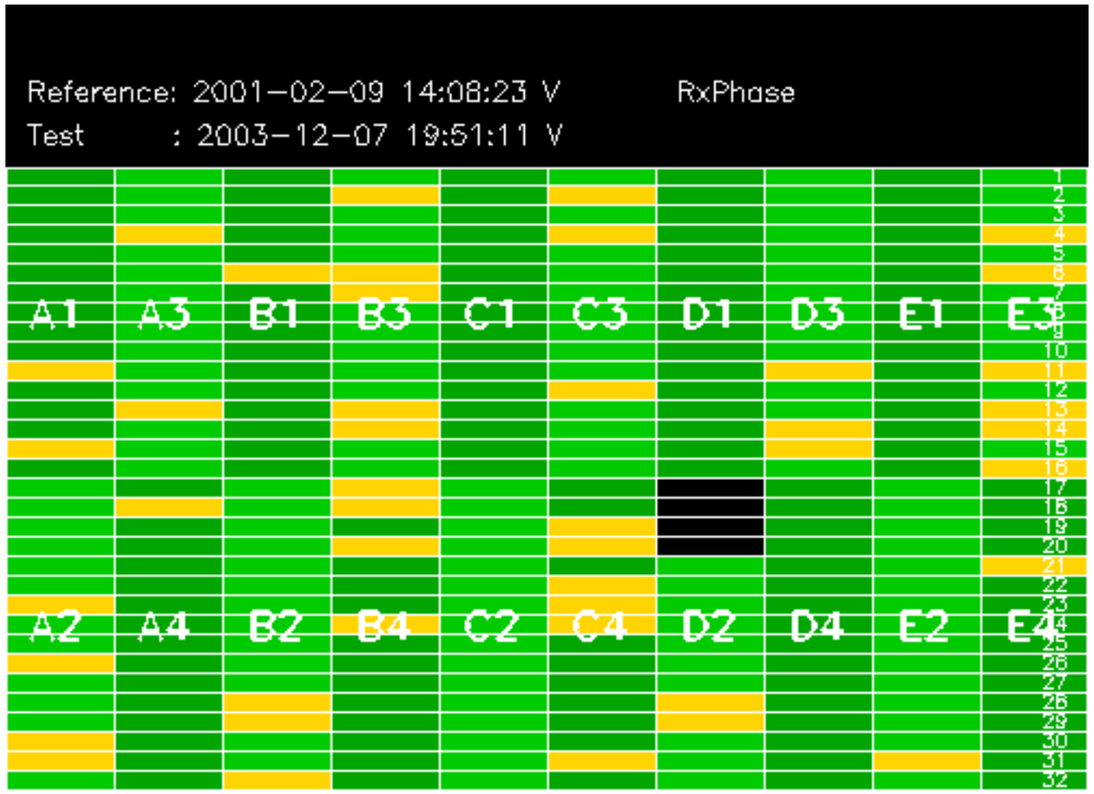
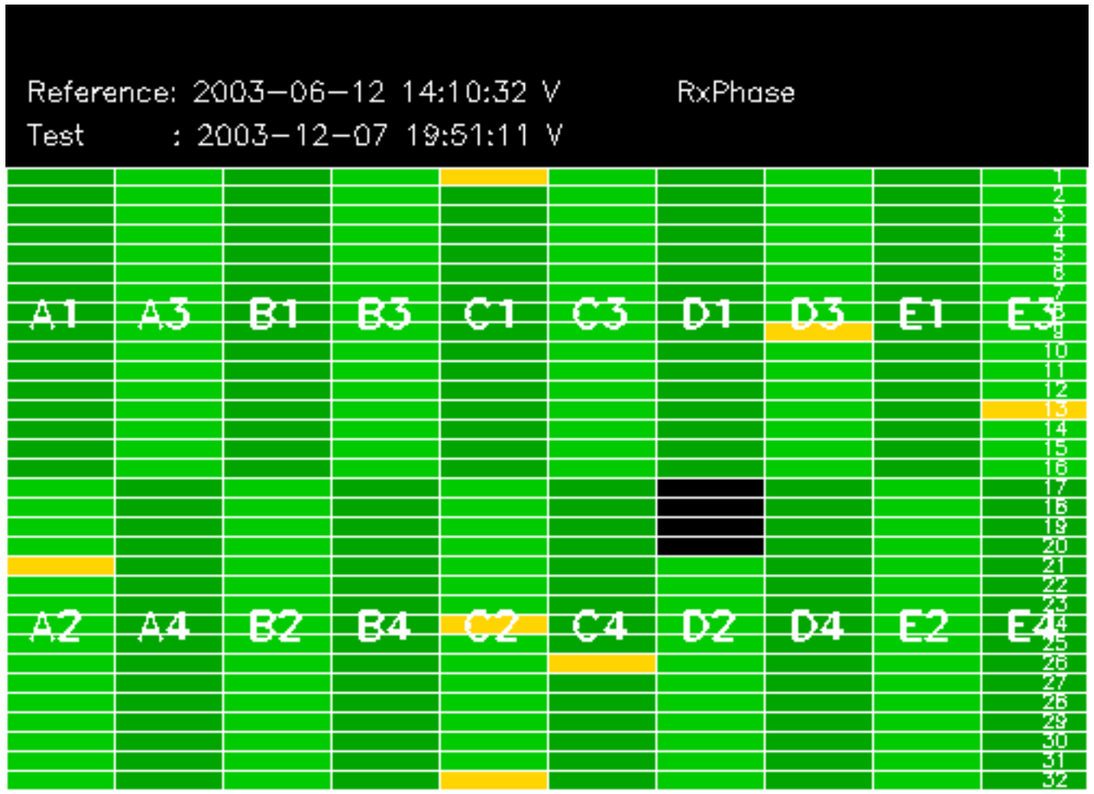

Reference: 2001-02-09 14:08:23 V
Test : 2003-12-07 19:51:11 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2003-12-07 19:51:11 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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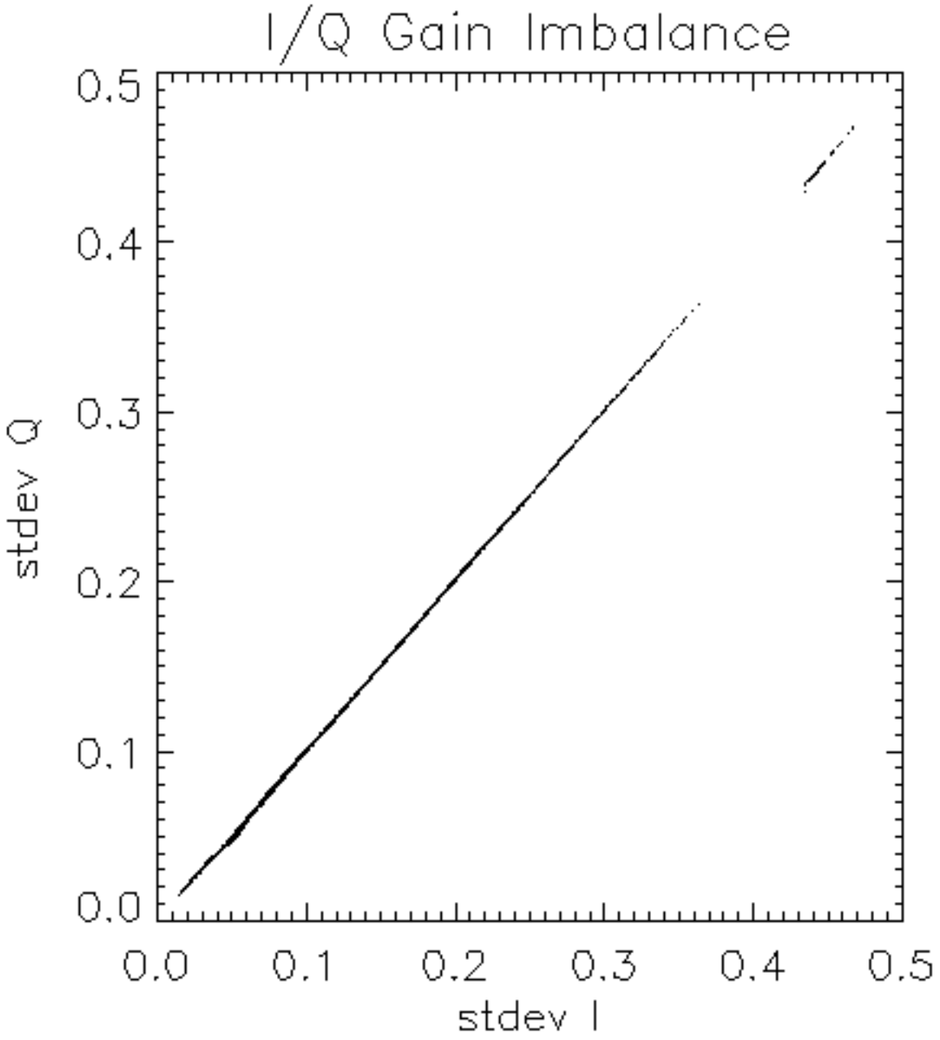
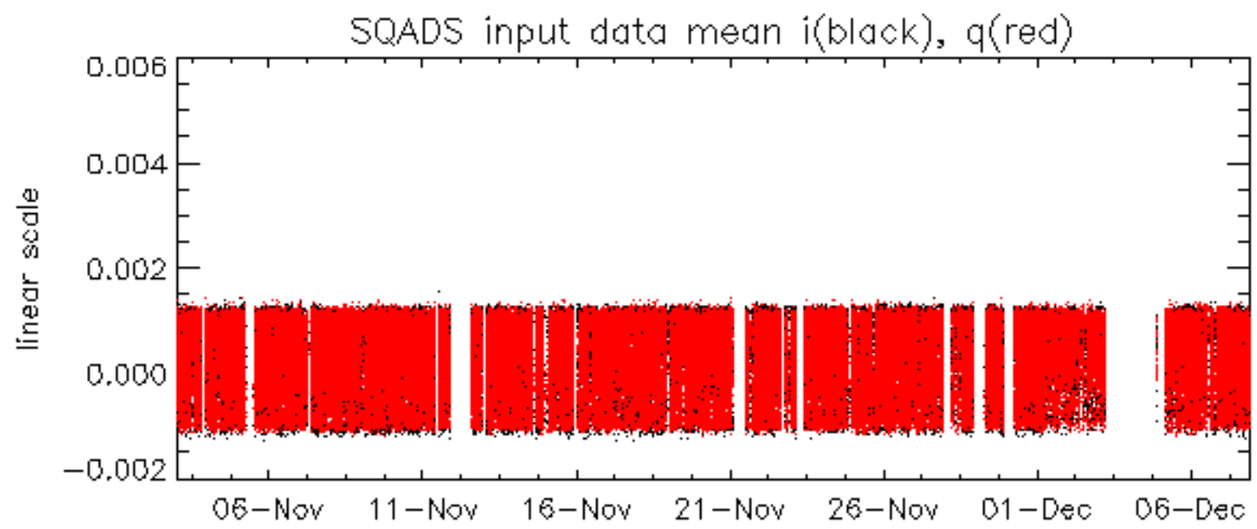
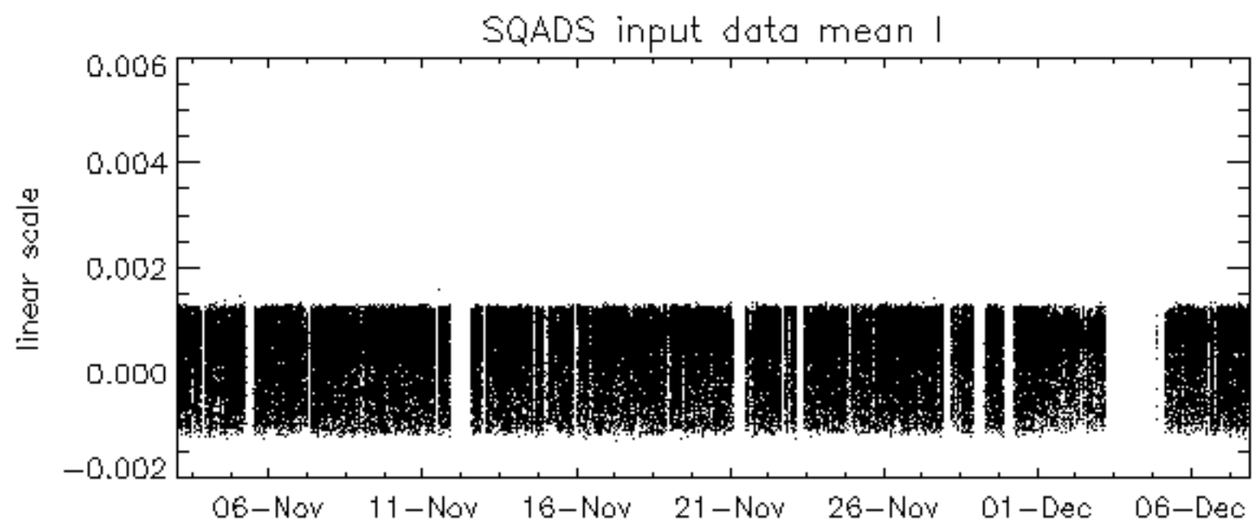
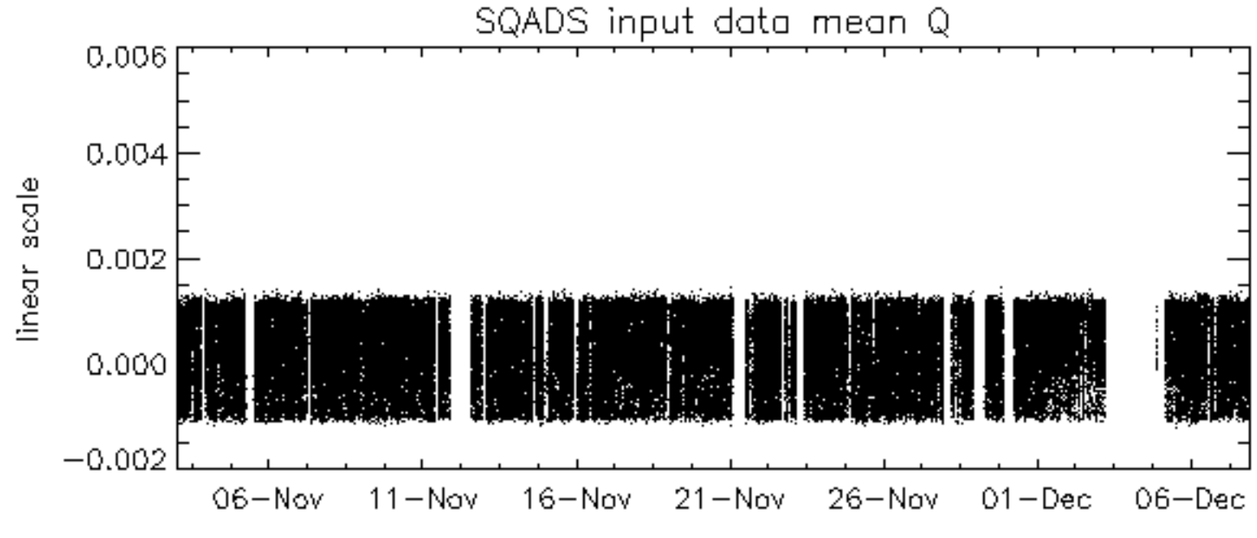
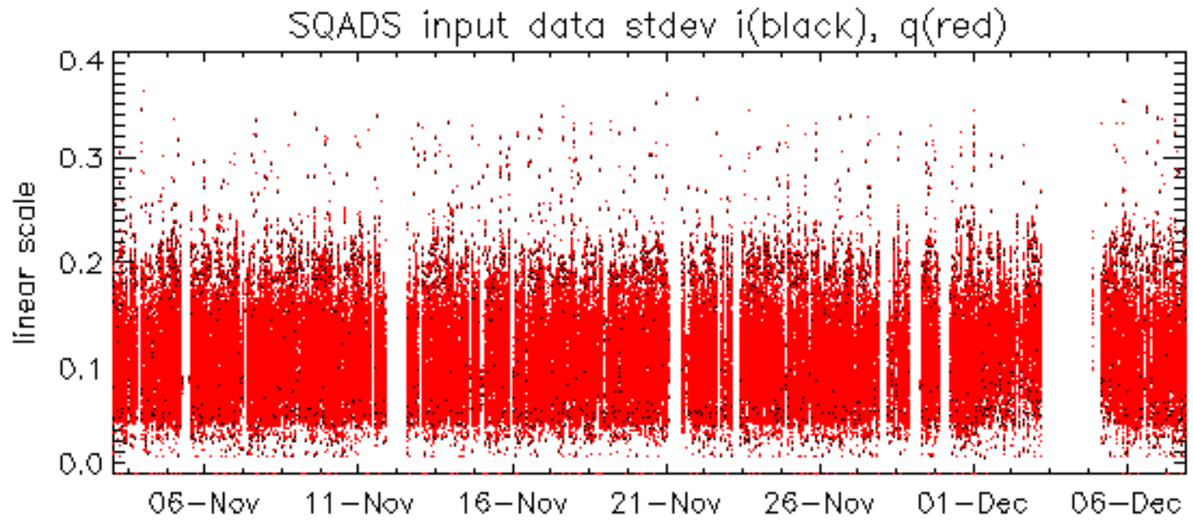
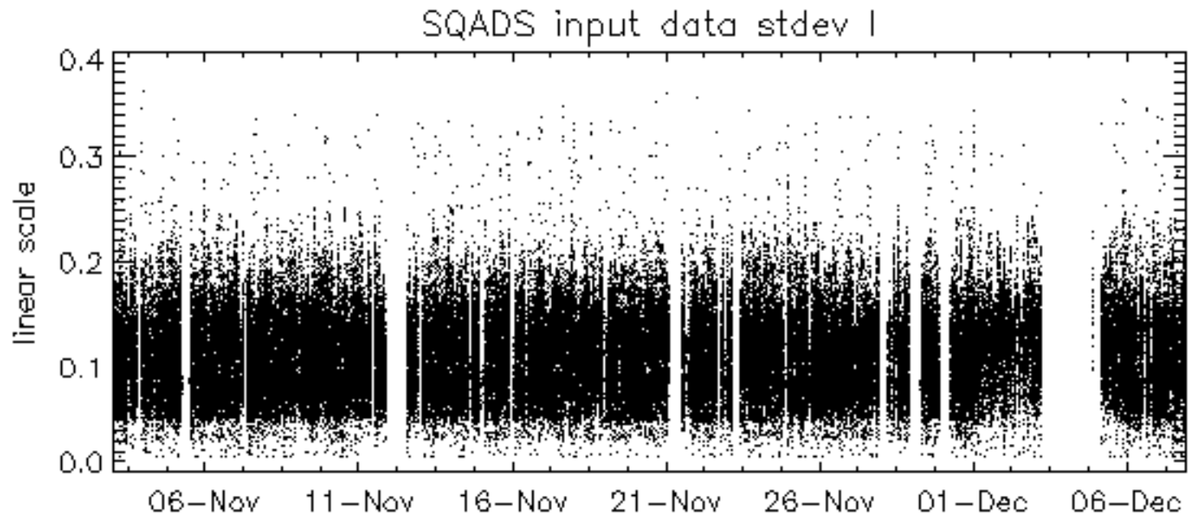

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4
0.5

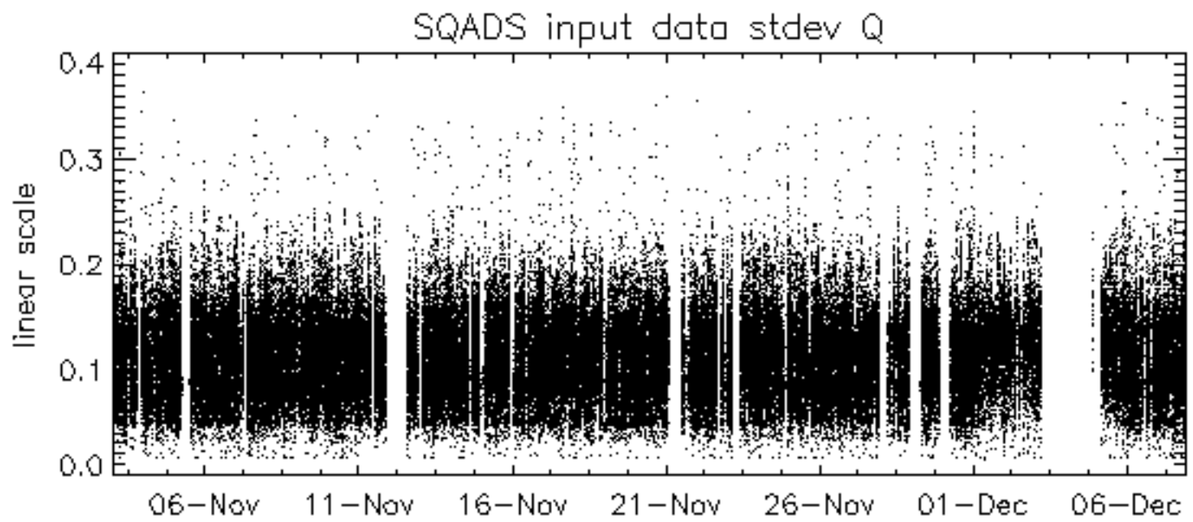

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

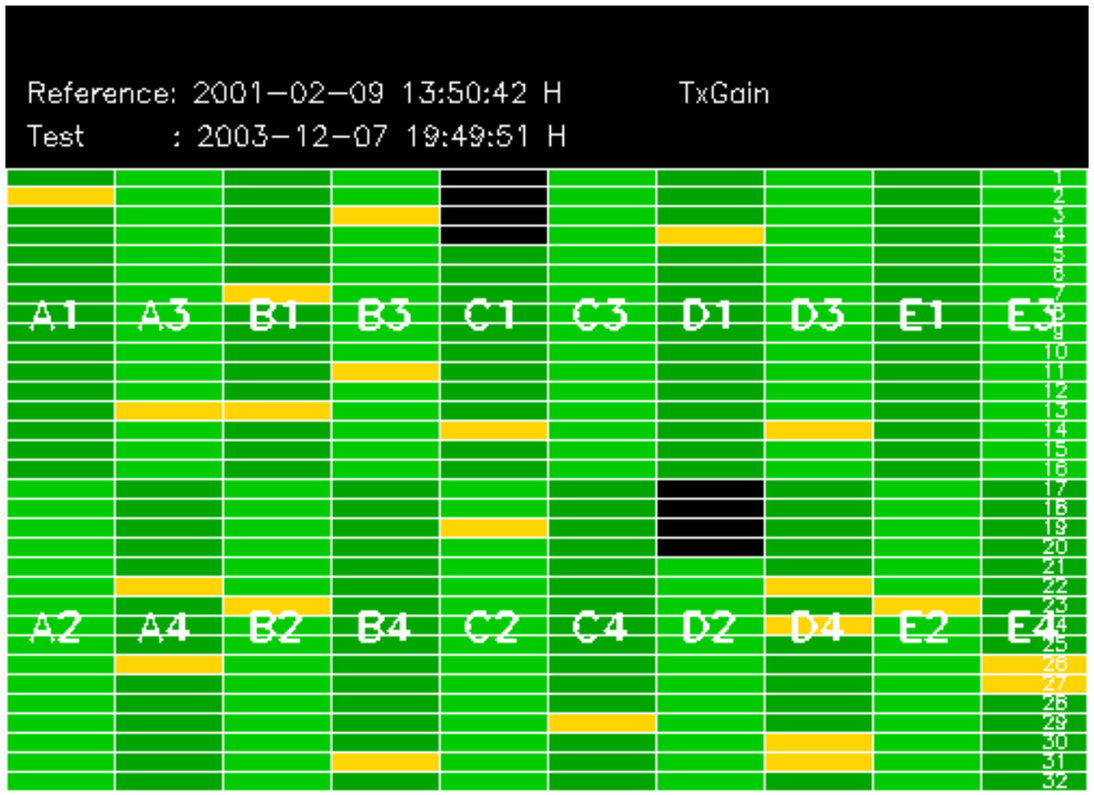

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec

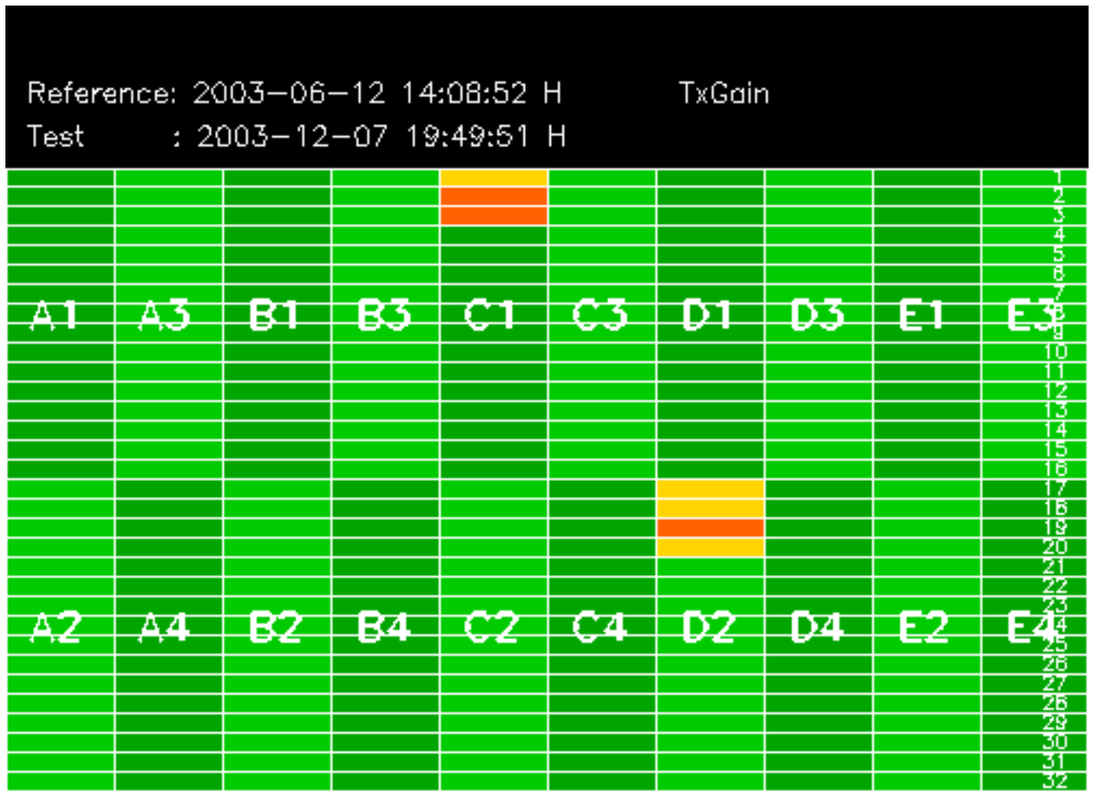

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06−Nov
11−Nov
16−Nov
21−Nov
26−Nov
01−Dec
06−Dec


Reference: 2001-02-09 13:50:42 H
Test : 2003-12-07 19:49:51 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2003-12-07 19:49:51 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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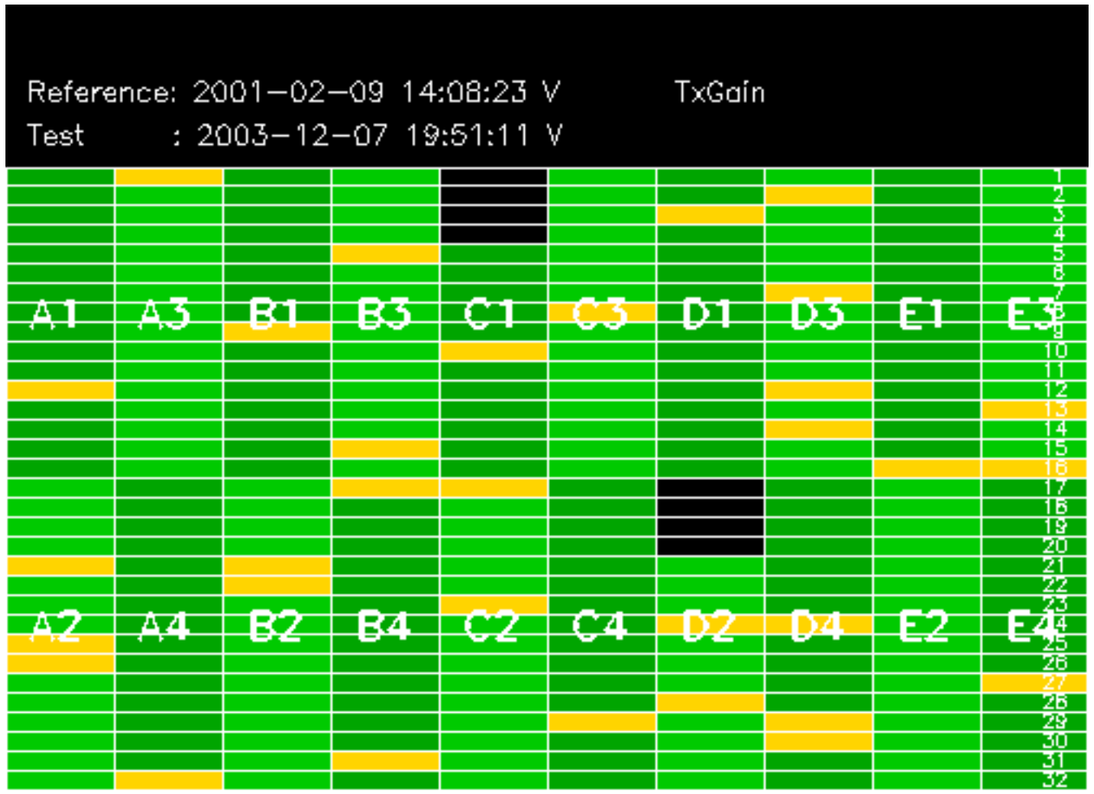
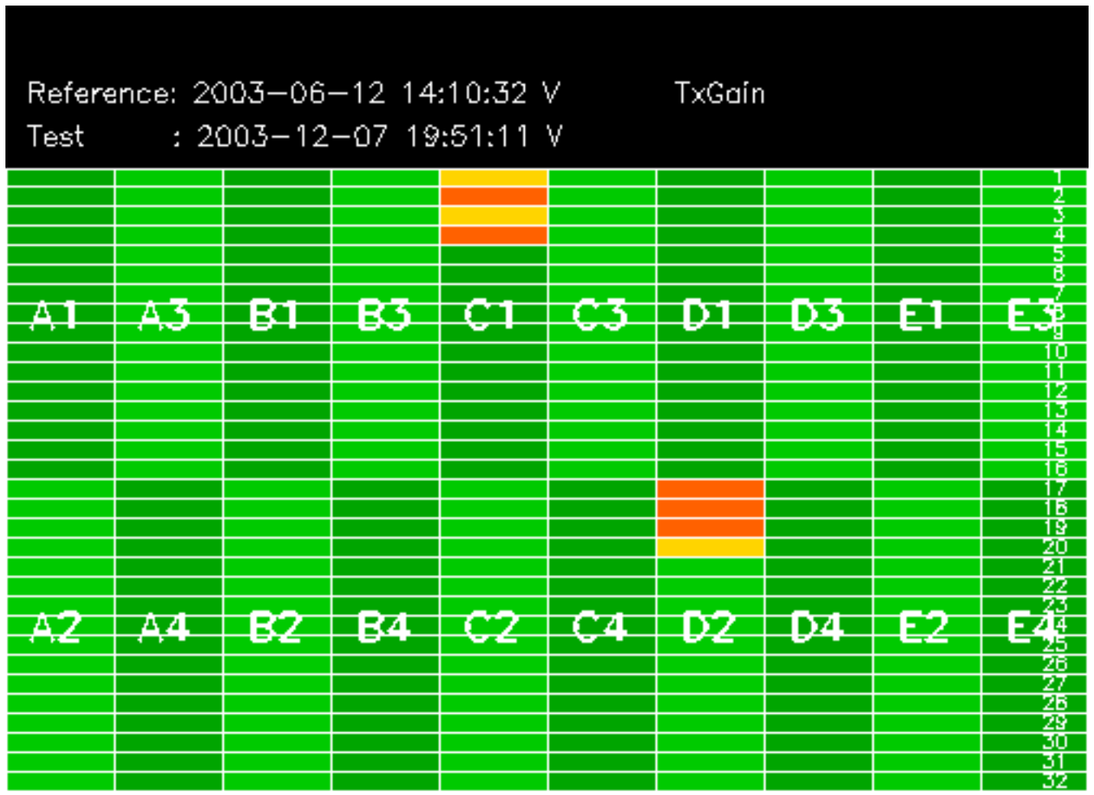

Reference: 2001-02-09 14:08:23 V
Test : 2003-12-07 19:51:11 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2003-12-07 19:51:11 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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B4
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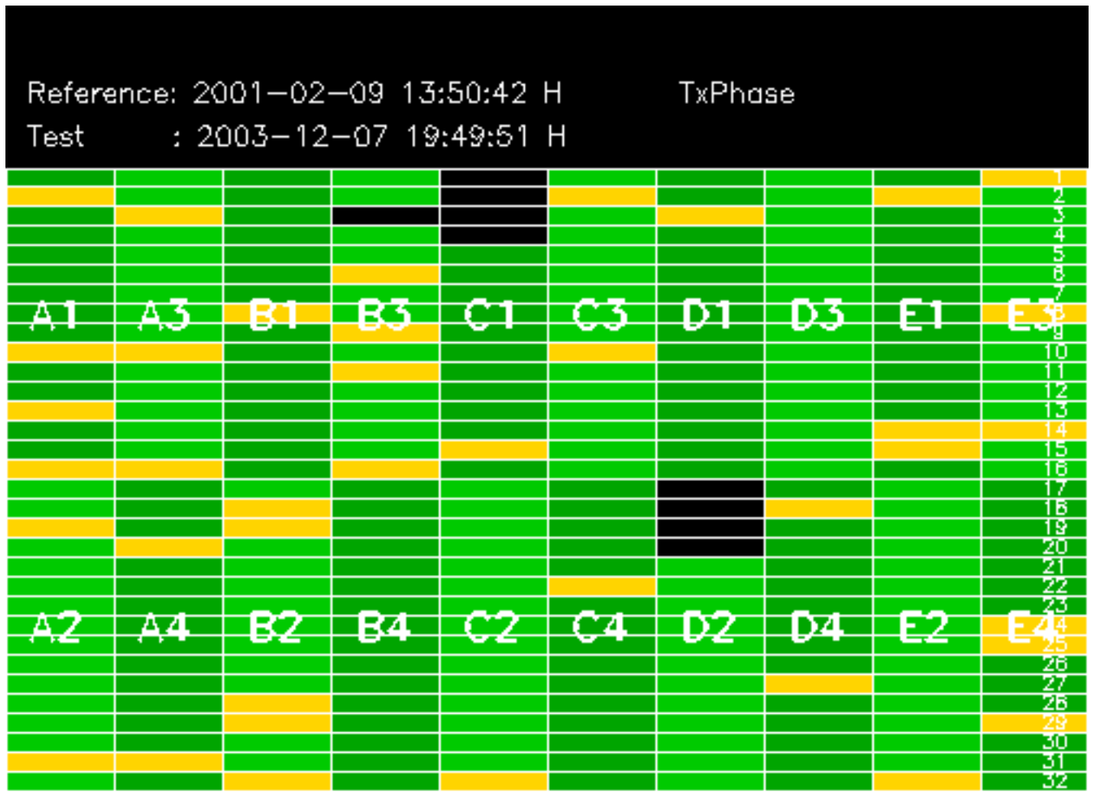
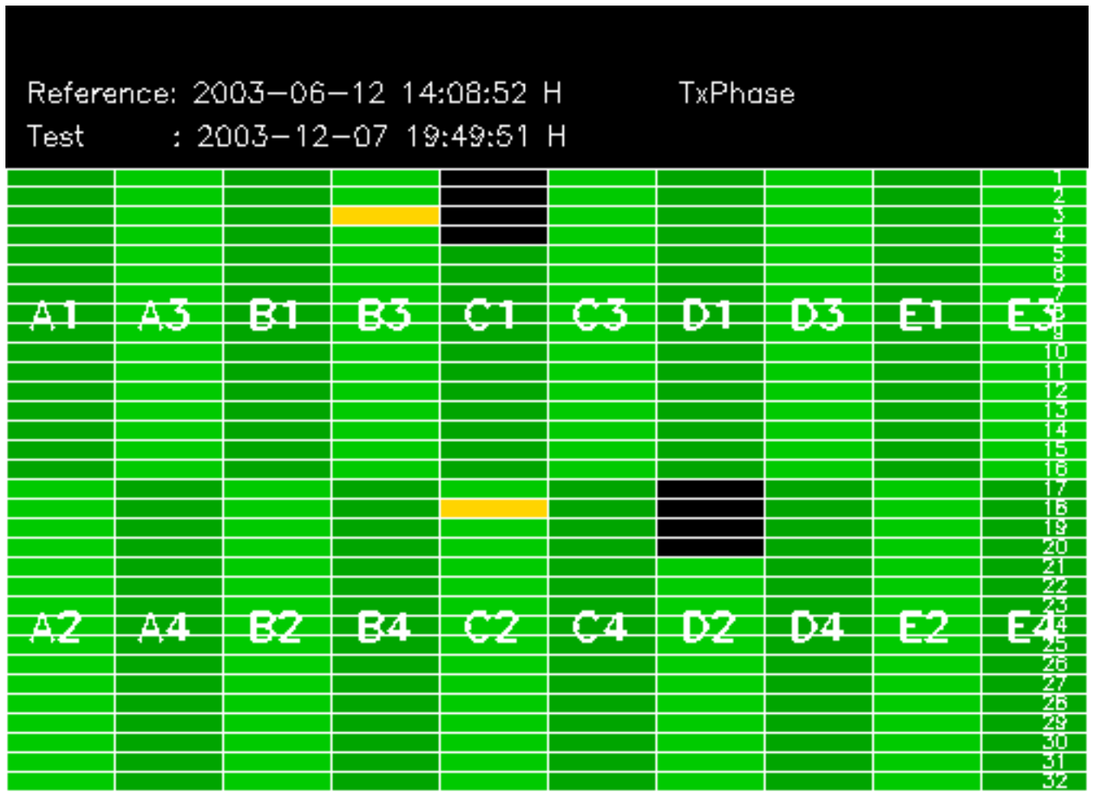

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2003-12-07 19:49:51 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2003-12-07 19:49:51 H
TxPhase
A1
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C1
C3
D1
D3
E1
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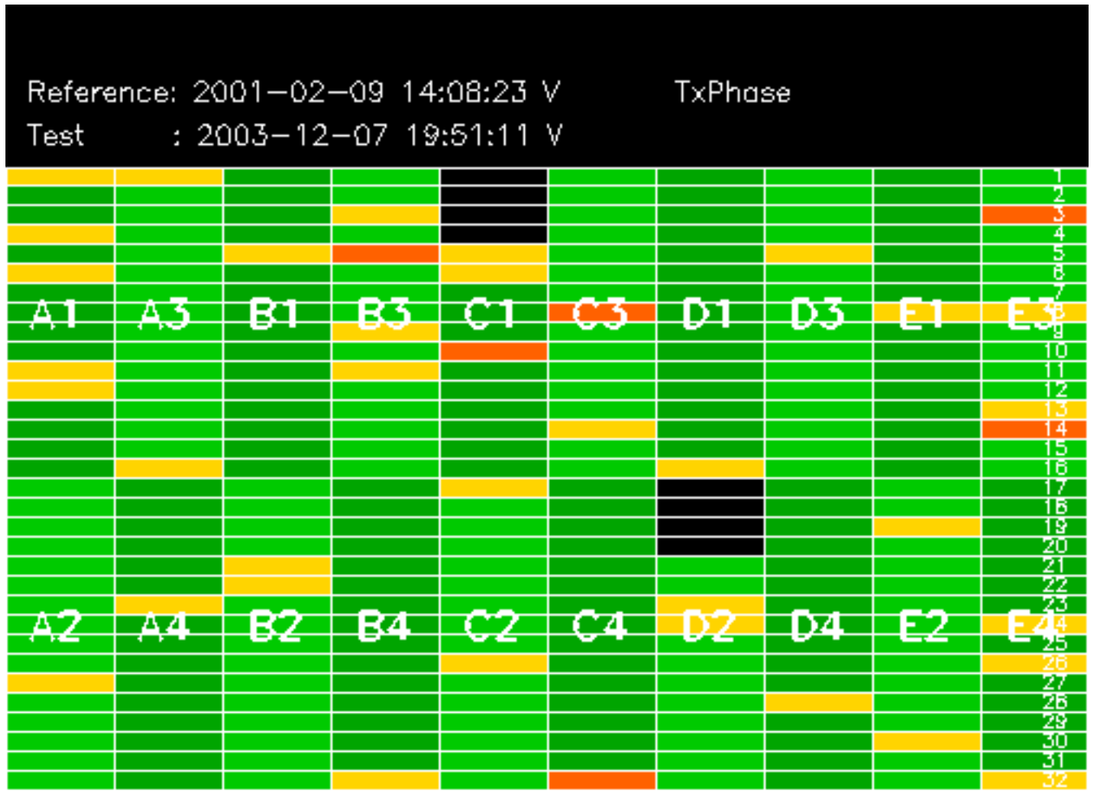
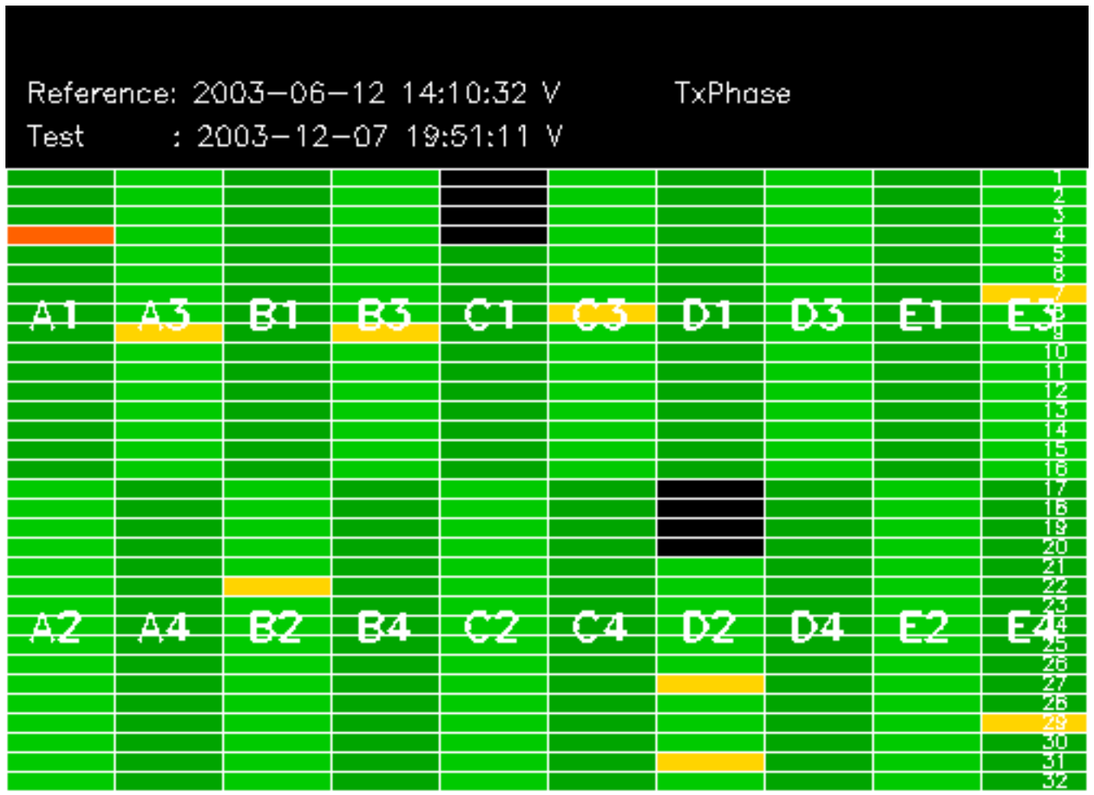

Reference: 2001-02-09 14:08:23 V
Test : 2003-12-07 19:51:11 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2003-12-07 19:51:11 V
TxPhase
A1
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B1
B3
C1
C3
D1
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No unavailabilies during the reported period.