REPORT OF 040514

last update on Fri May 14 13:14:50 GMT 2004

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 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	20040513 203020
H	20040512 210056

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.

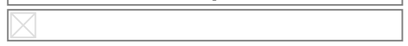
4.1 - Daily statistics

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	-3.598047	0.086060	0.006215
7	P1	-3.327732	0.063315	-0.033217
11	P1	-4.592791	0.032936	0.102297
15	P1	-4.927866	0.044698	0.131125
19	P1	-3.374945	0.005182	-0.029175
22	P1	-4.522066	0.013438	-0.033726
24	P1	-4.976481	0.014303	0.103192
28	P1	-4.591905	0.013734	0.006510

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.418436	0.081920	-0.041992
7	P2	-22.889614	0.113038	-0.032565

11	P2	-15.807364	0.121627	0.155375
15	P2	-7.176424	0.093156	-0.041407
19	P2	-9.531549	0.124602	-0.024383
22	P2	-17.637535	0.093128	0.047659
24	P2	-20.950693	0.096371	0.066664
28	P2	-16.611073	0.084165	0.005961

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.137873	0.002986	-0.000080
7	P3	-8.137877	0.002986	-0.000086
11	P3	-8.137874	0.002986	-0.000093
15	P3	-8.137873	0.002986	-0.000094
19	P3	-8.137872	0.002986	-0.000101
22	P3	-8.137871	0.002986	-0.000106
24	P3	-8.137873	0.002986	-0.000111
28	P3	-8.137859	0.002986	-0.000209

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	-3.238916	0.312147	0.110932
7	P1	-2.877045	0.265416	-0.058219
11	P1	-3.805229	0.021848	0.069643
15	P1	-3.990688	0.358549	0.280773
19	P1	-3.279693	0.058110	-0.144731
22	P1	-5.776694	0.045832	0.170743
24	P1	-4.053205	0.084586	0.090214
28	P1	-2.906490	0.064840	-0.099235

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.136002	0.040638	-0.075756
7	P2	-22.990856	0.027299	0.001675
11	P2	-11.083436	0.198505	-0.173507
15	P2	-4.955403	0.033575	-0.125659
19	P2	-6.862613	0.033933	-0.089623
22	P2	-7.714177	0.027198	-0.033716
24	P2	-11.041881	0.061810	-0.126936
28	P2	-19.041288	0.024370	-0.041736

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.974285	0.003632	-0.015067
7	P3	-7.974319	0.003635	-0.014852
11	P3	-7.974195	0.003629	-0.014690
15	P3	-7.974199	0.003641	-0.014892
19	P3	-7.974290	0.003629	-0.014851
22	P3	-7.974467	0.003612	-0.014665
24	P3	-7.974141	0.003649	-0.014654
28	P3	-7.974200	0.003648	-0.015290

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	0.000491671
	stdev	2.22639e-07
MEAN Q	mean	0.000519644
	stdev	2.56312e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128470
	stdev	0.00107022
STDEV Q	mean	0.128709
	stdev	0.00108293

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)

Acsending

Descending

6.2 - Absolute Doppler for WVS

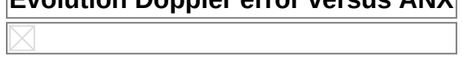
Evolution of Absolute Doppler

Acsending

Descending

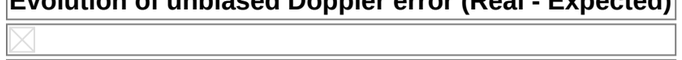
6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX



6.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

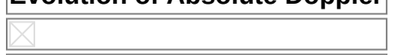


Acsending

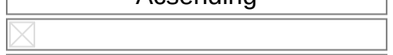
Descending

6.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler



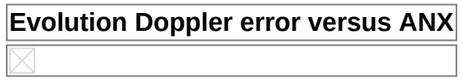
Acsending

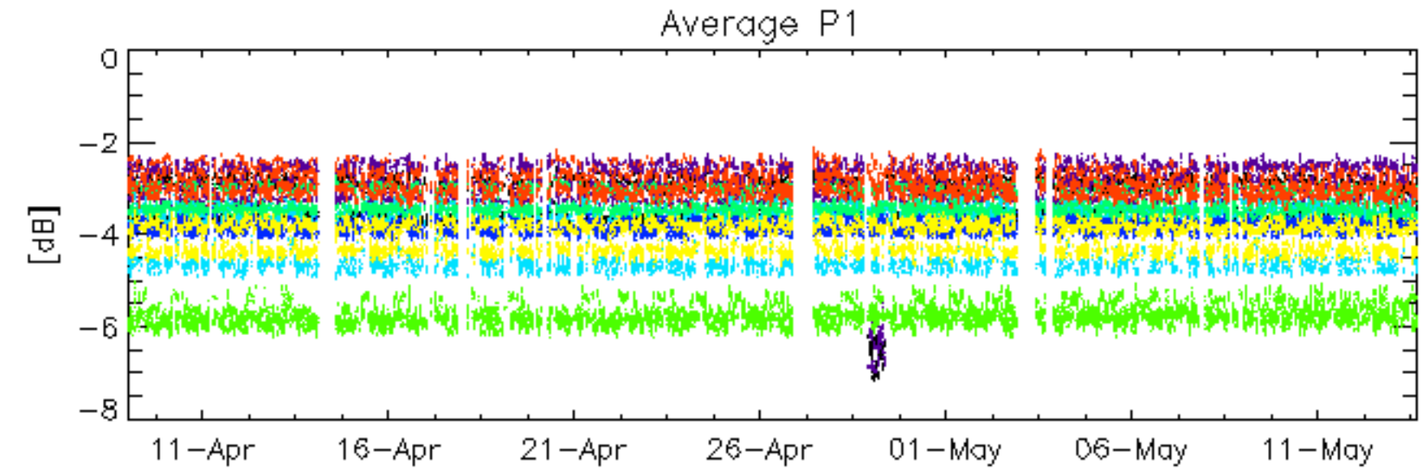


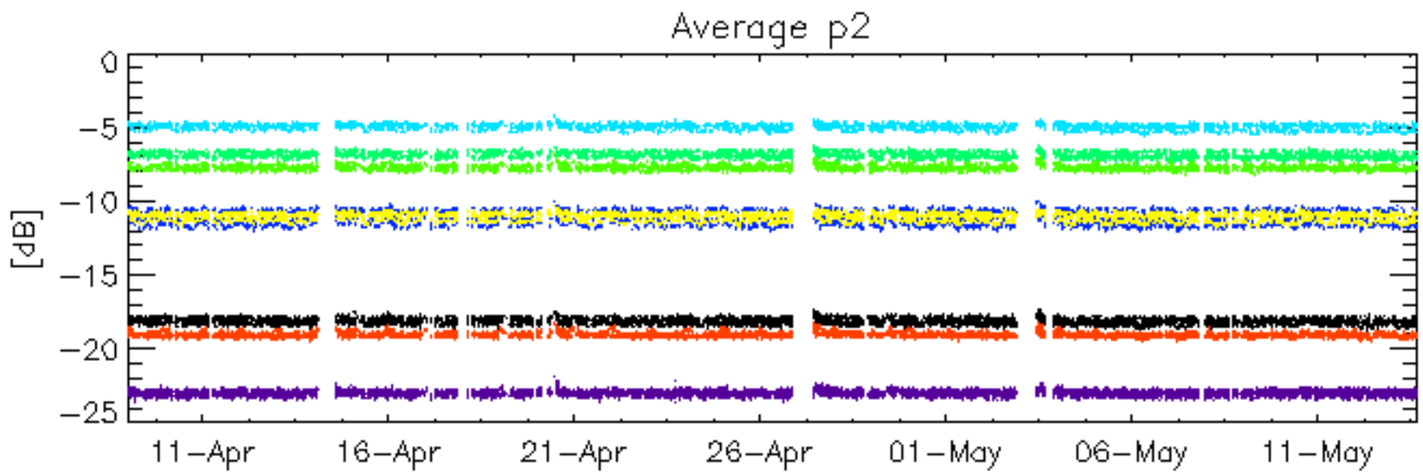
Descending

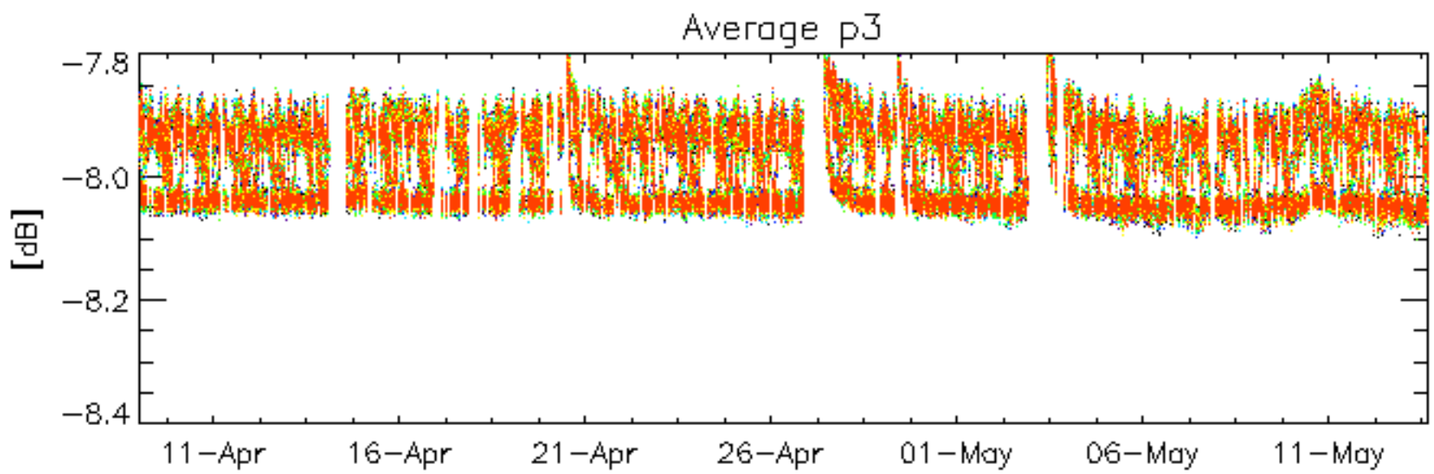
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

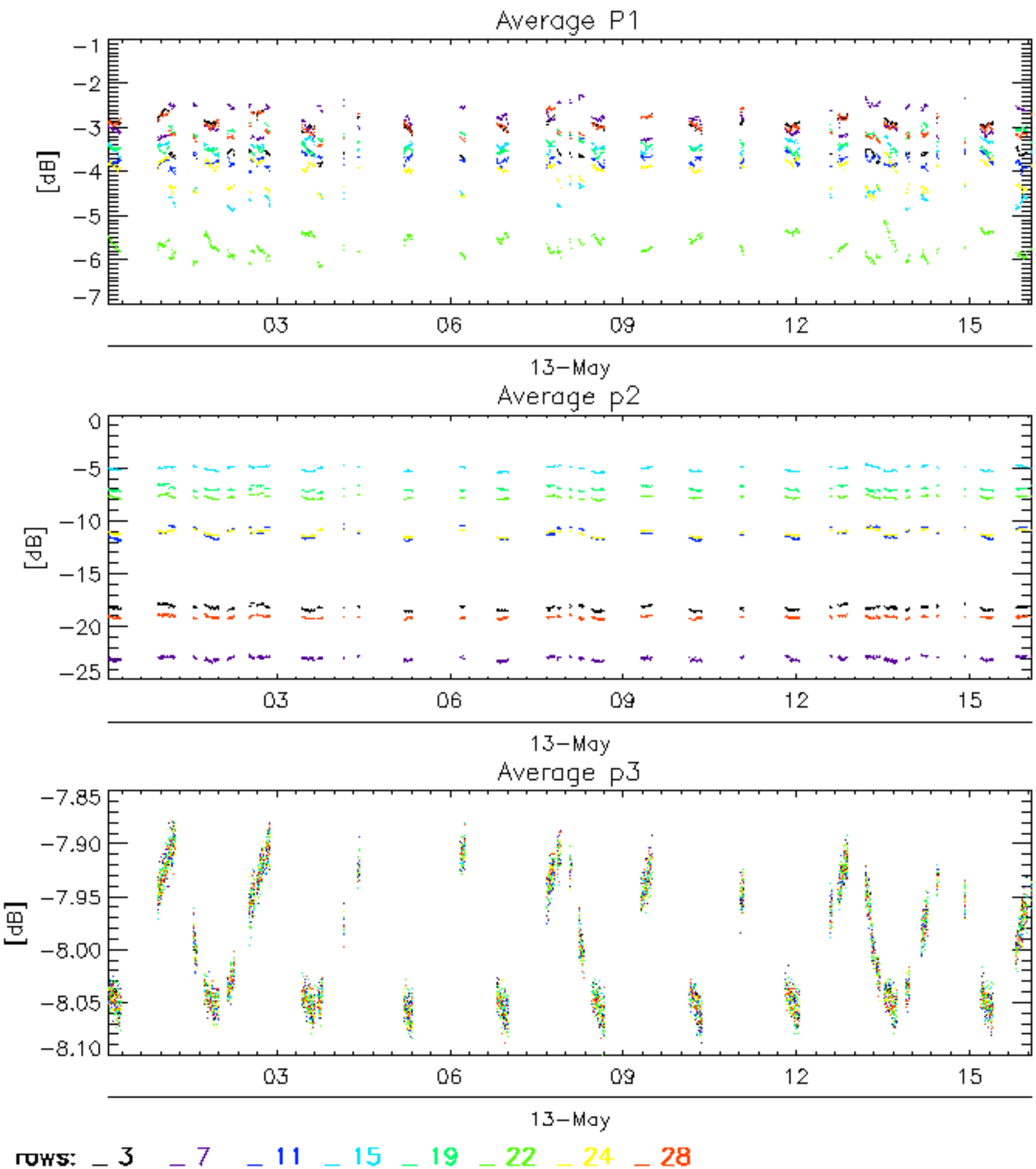


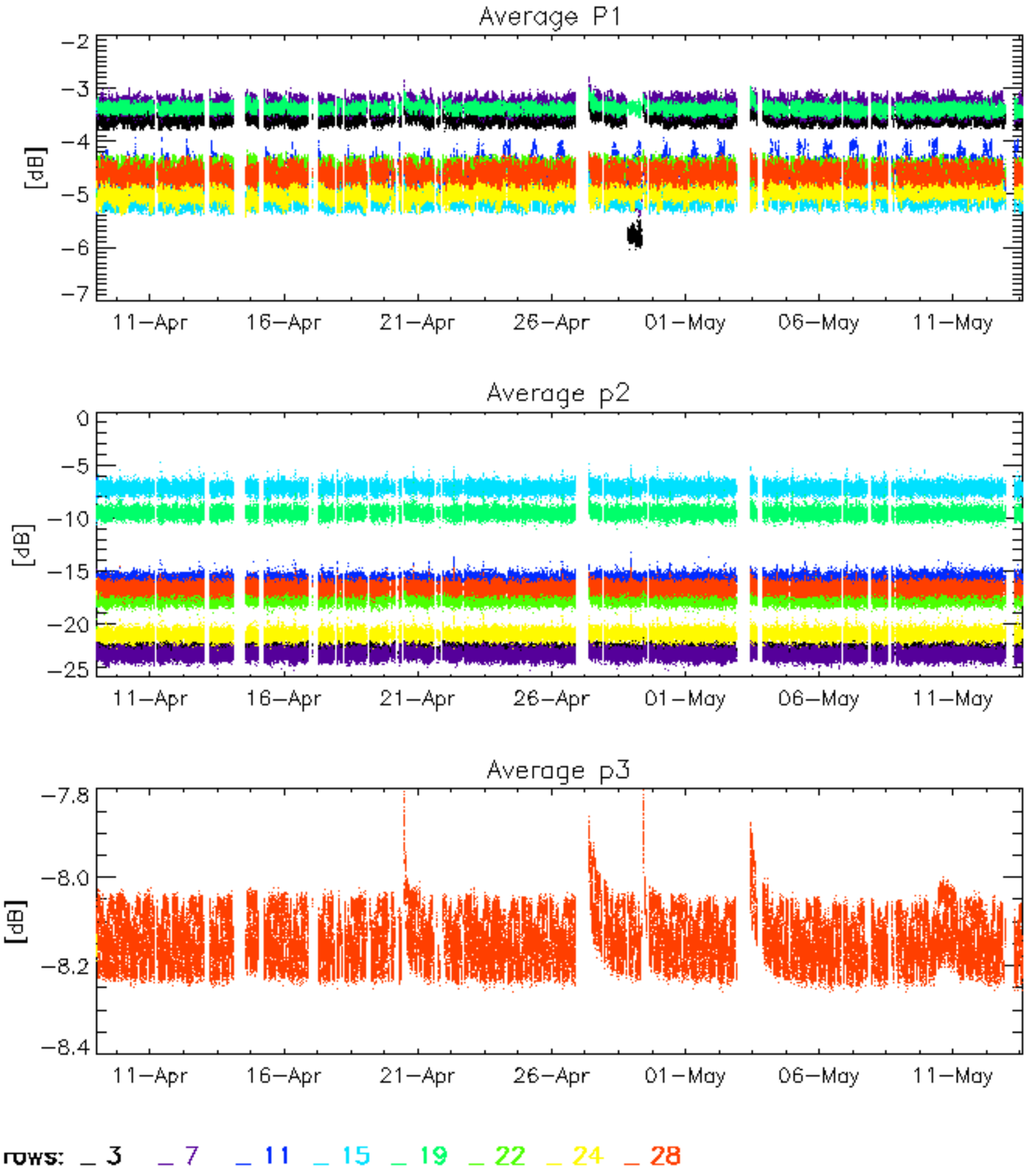


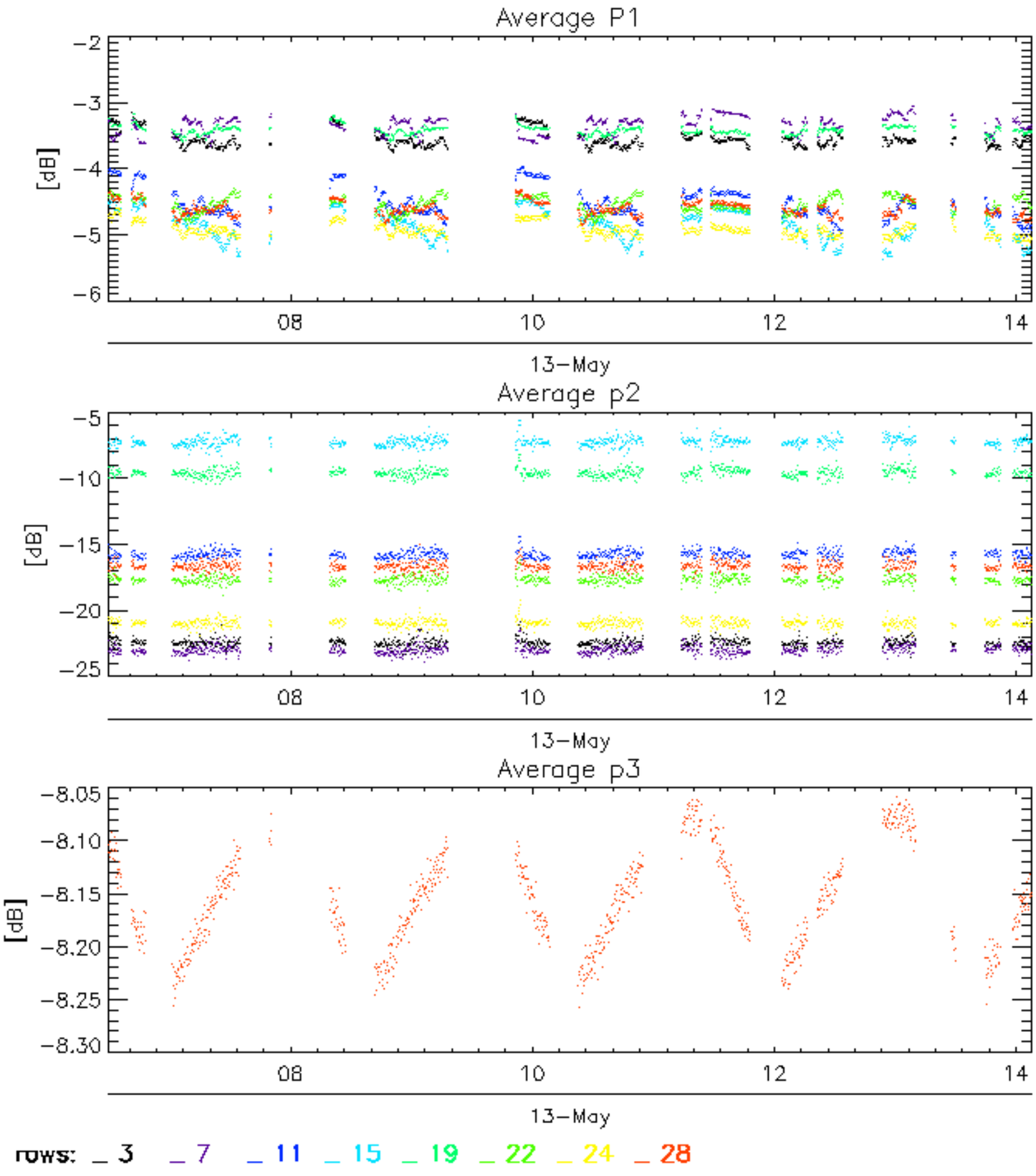




rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28

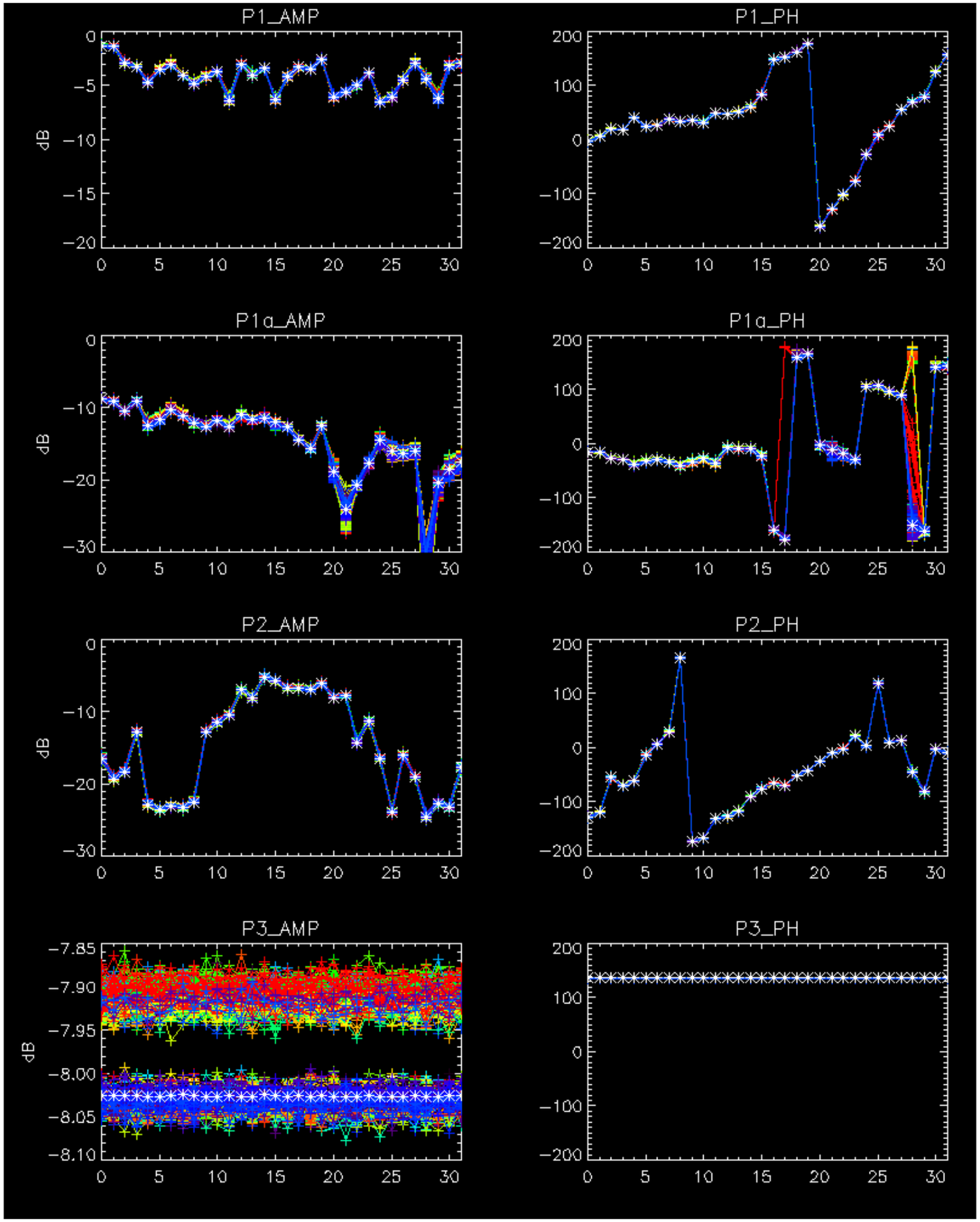

Average P1
[dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
13−May
Average p2
[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
13−May
Average p3
[dB]
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
03
06
09
12
15
13−May
rows: 3 7 11 15 19 22 24 28

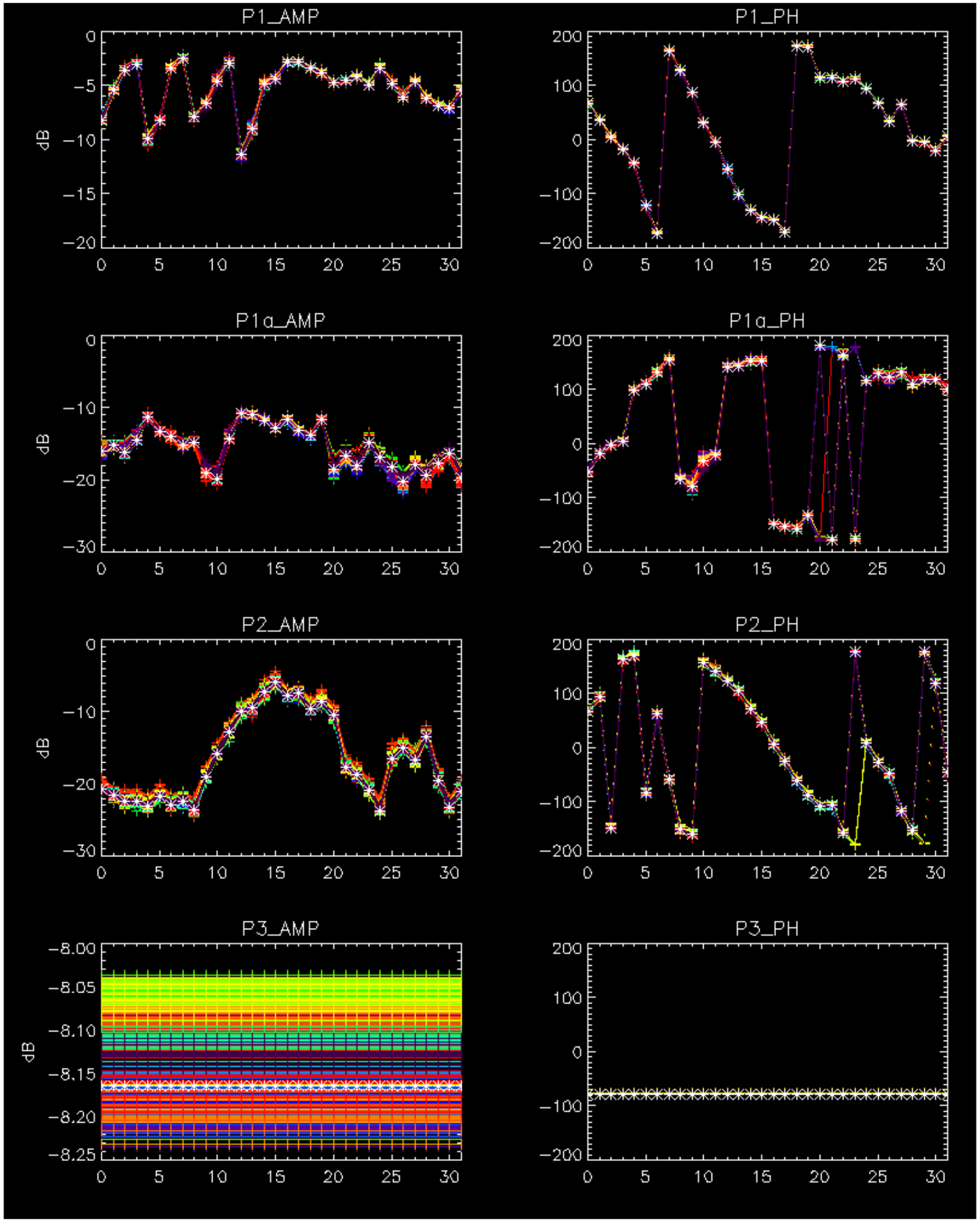

Average P1
[dB]
−2
−3
−4
−5
−6
−7
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
Average p2
[dB]
0
−5
−10
−15
−20
−25
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
Average p3
[dB]
−7.8
−8.0
−8.2
−8.4
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28


Average P1
[dB]
−2
−3
−4
−5
−6
08
10
12
14
13−May
Average p2
[dB]
−5
−10
−15
−20
−25
08
10
12
14
13−May
Average p3
[dB]
−8.05
−8.10
−8.15
−8.20
−8.25
−8.30
08
10
12
14
13−May
rows: 3 7 11 15 19 22 24 28

No anomalies observed on available browse products

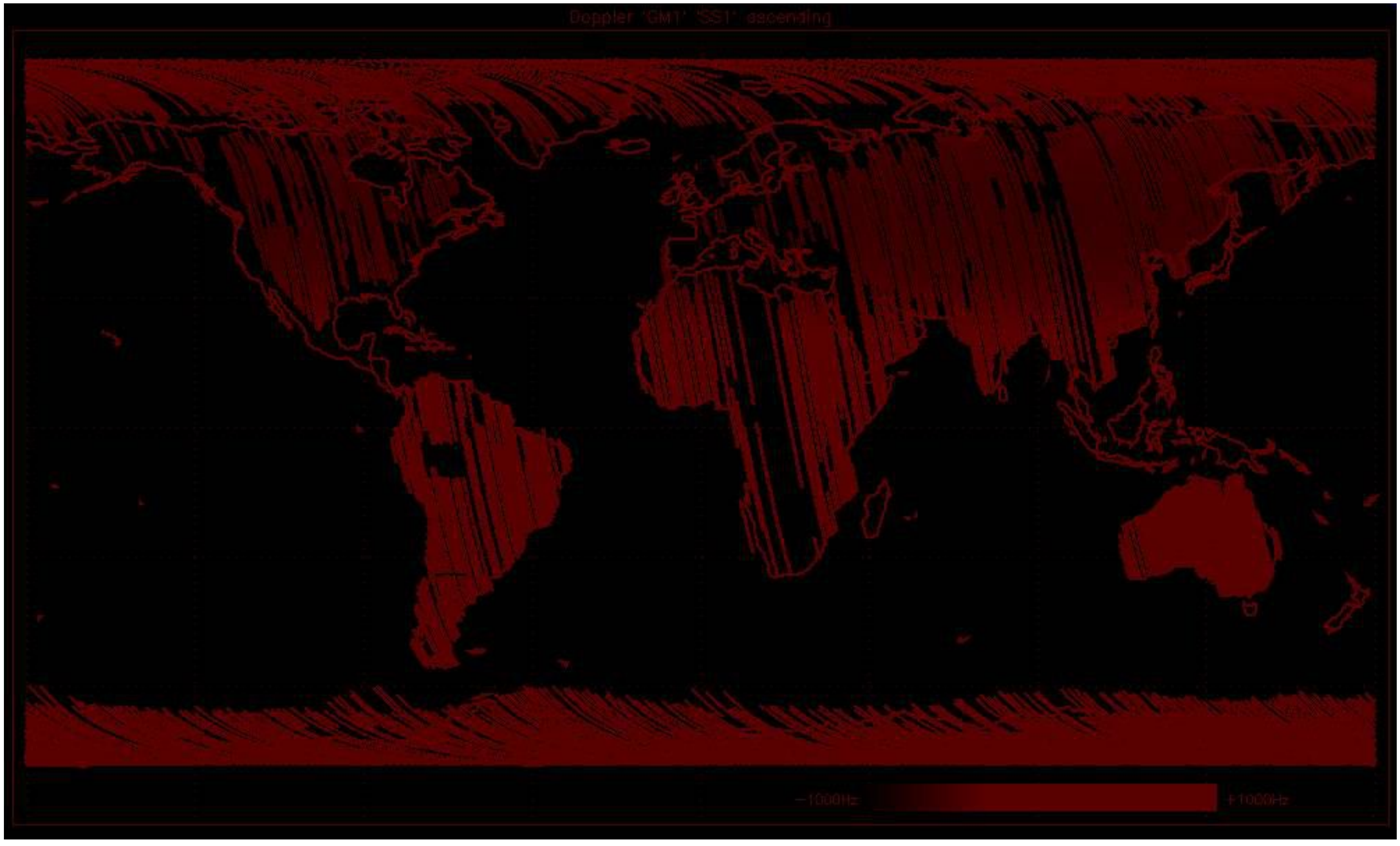
No anomalies observed.

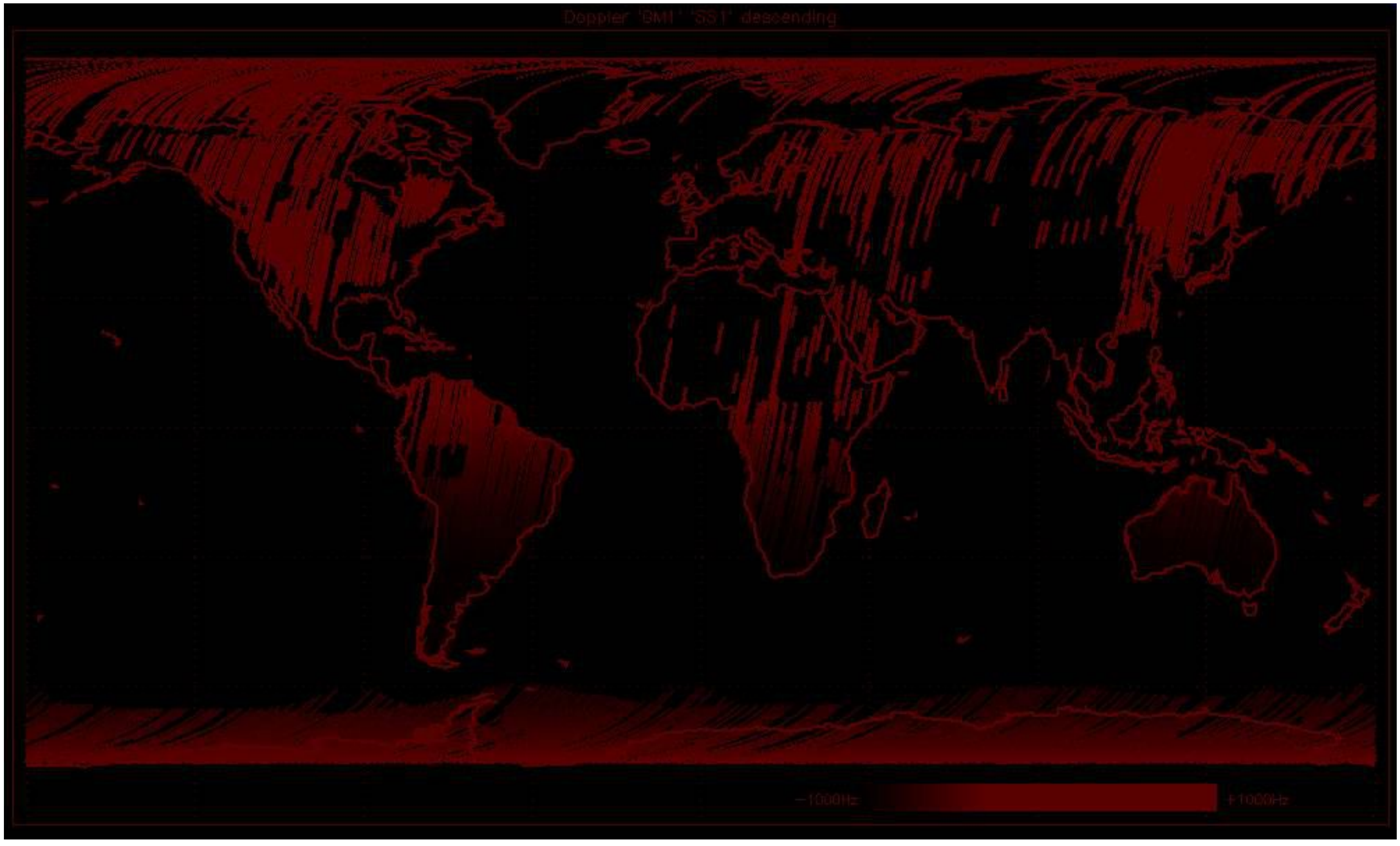

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

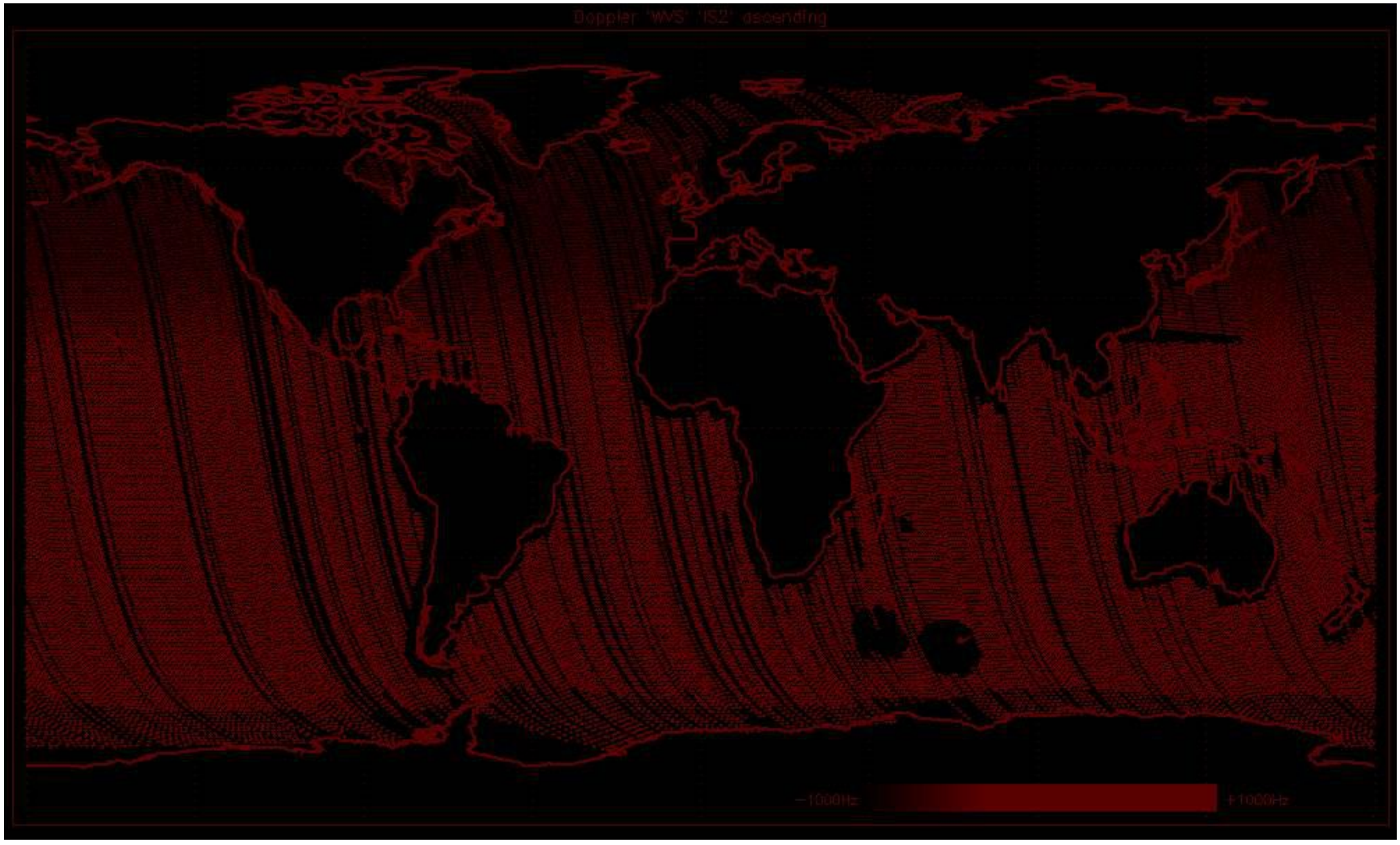

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

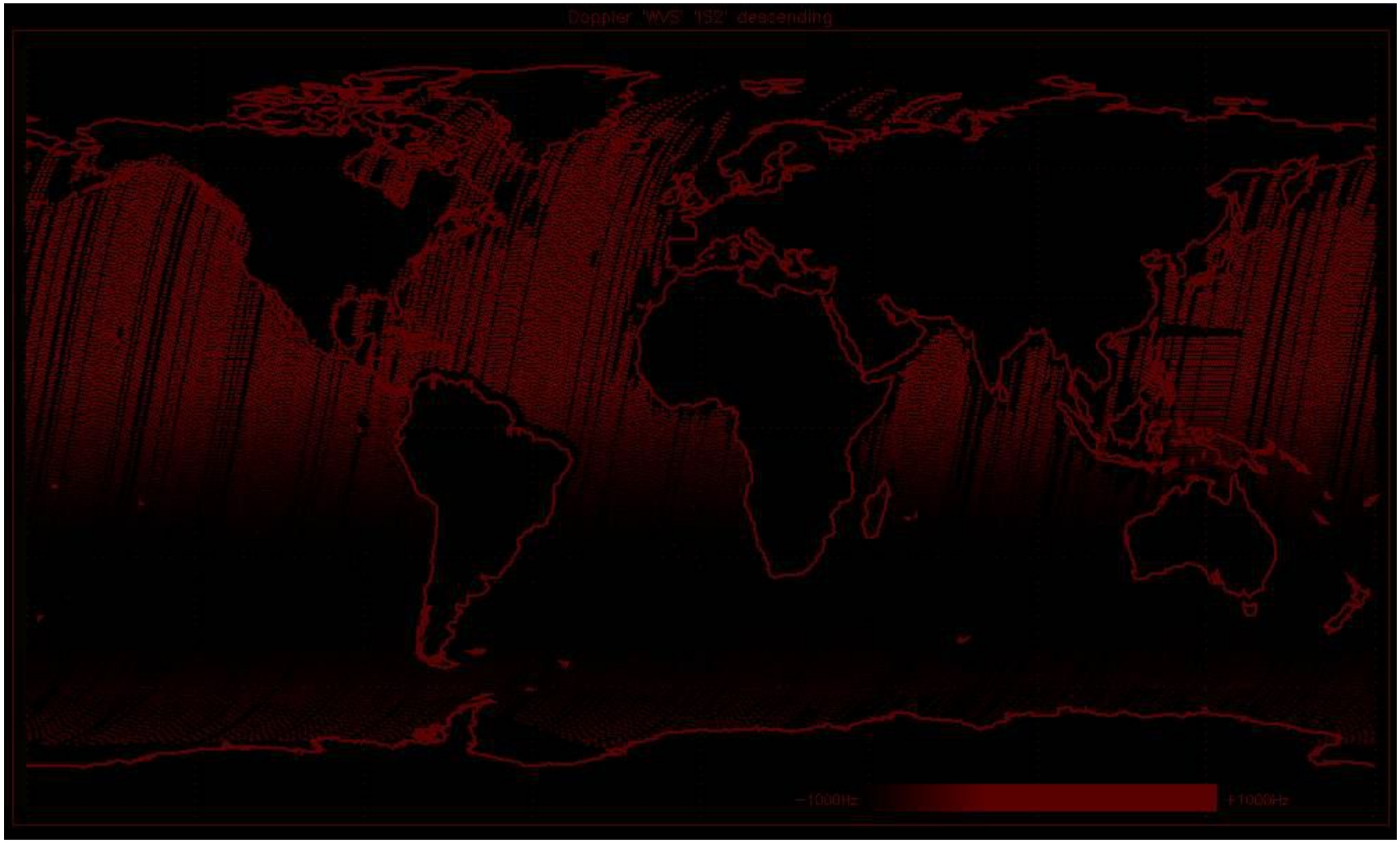
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

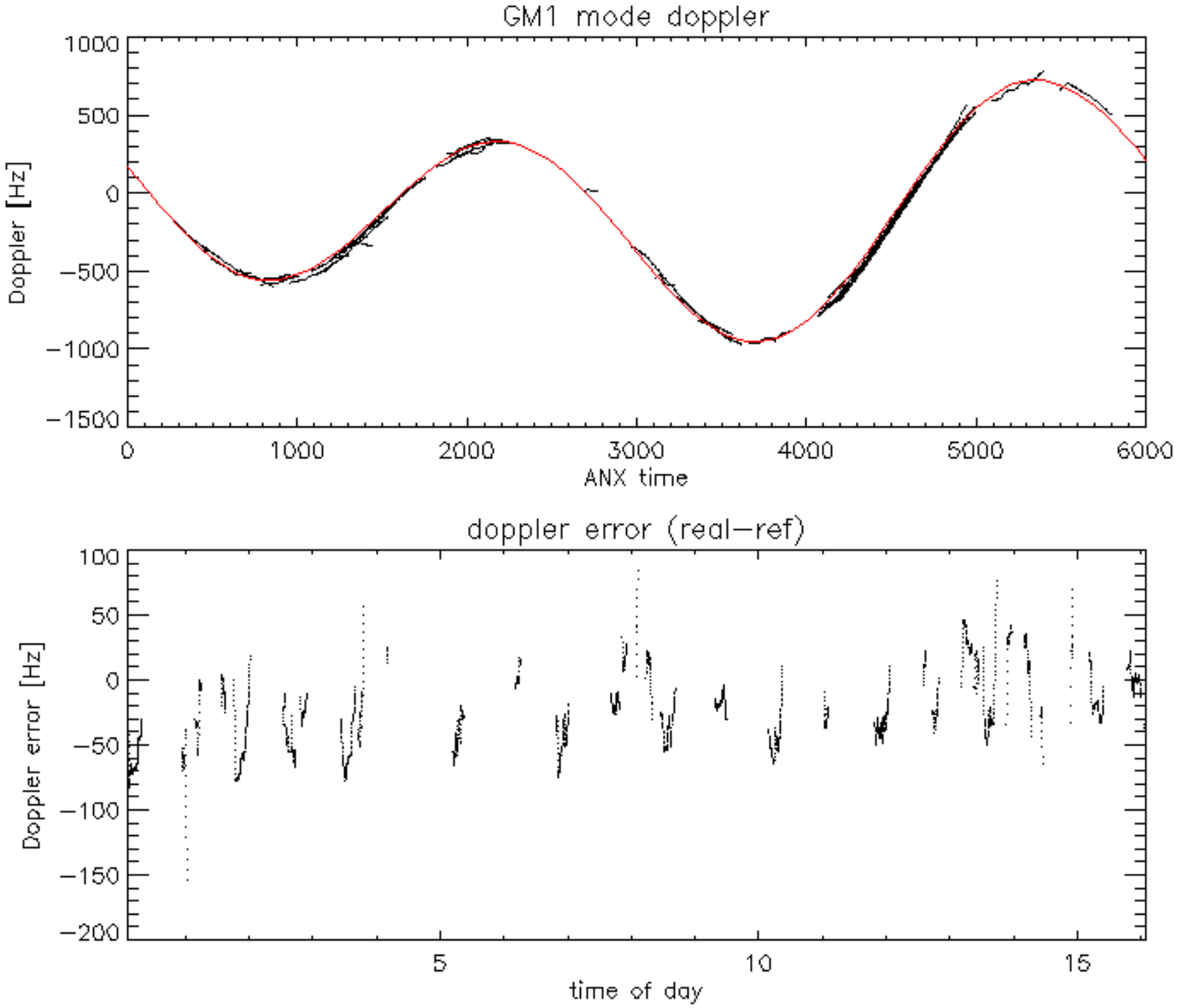
No anomalies observed in Doppler evolution.
Analysis performed over the last 35 days.

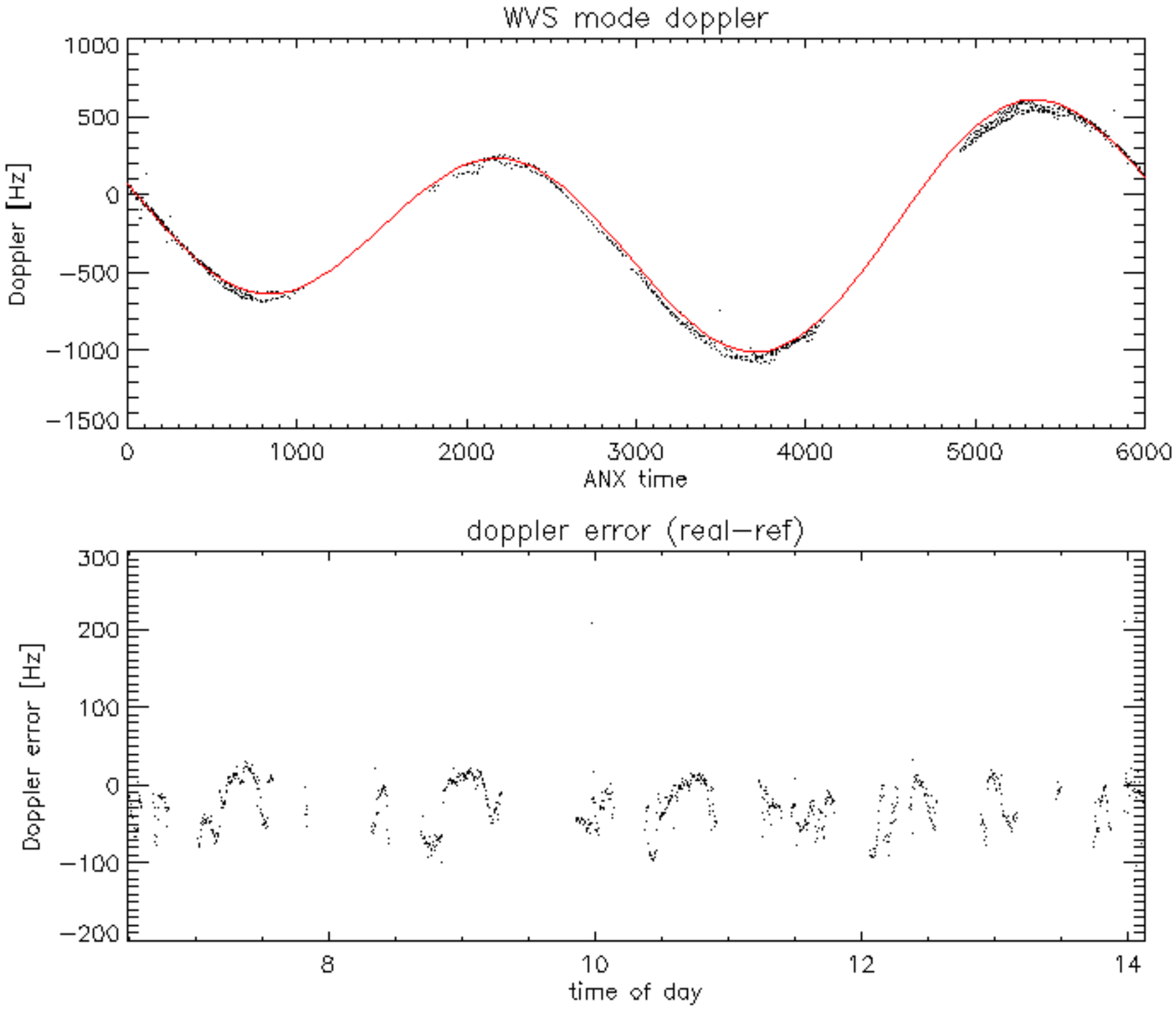

Doppler 'GMT' 'SST' ascending
−1000Hz
+1000Hz

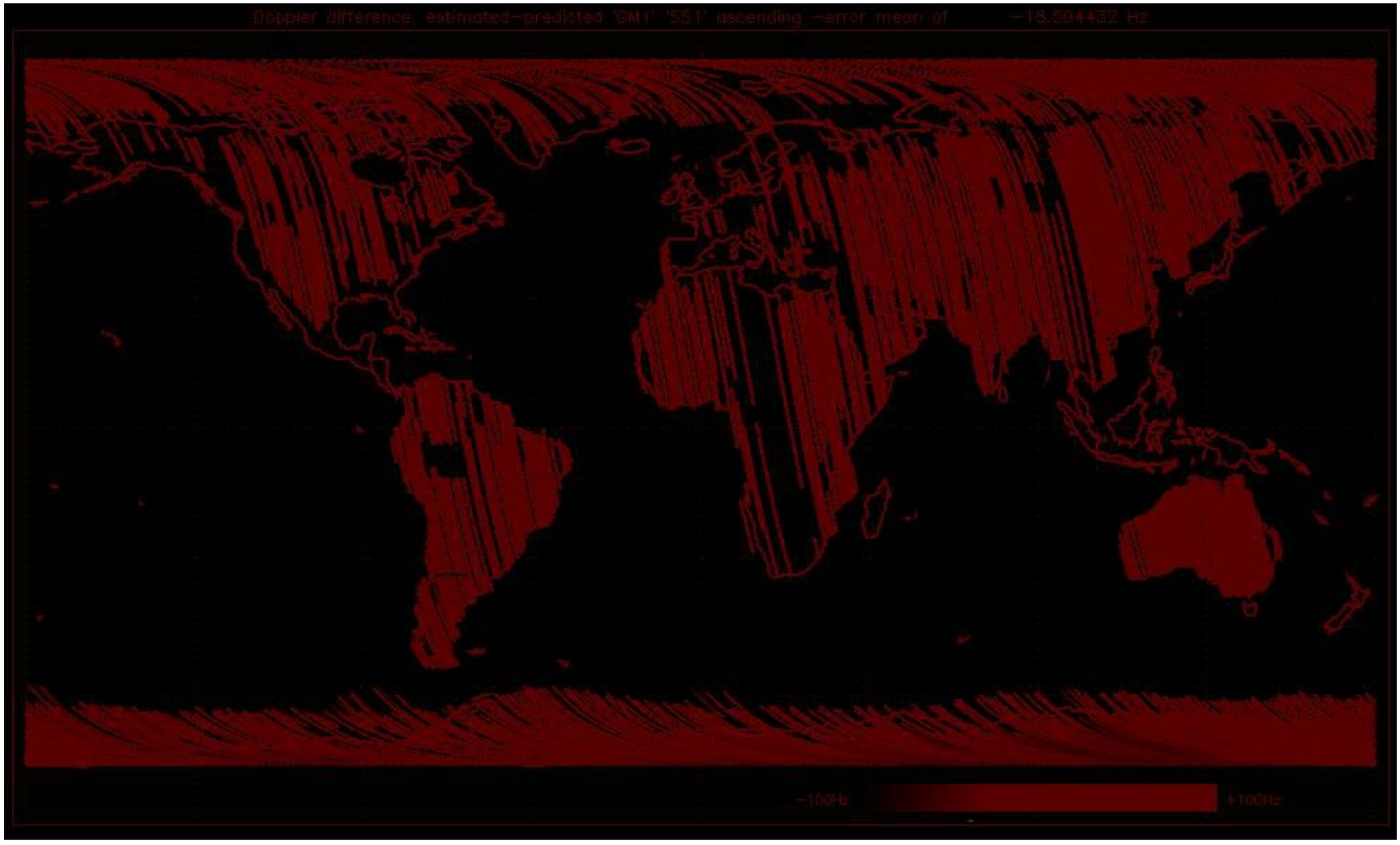

Doppler 'BM1' '531' descending
−1000Hz
+1000Hz

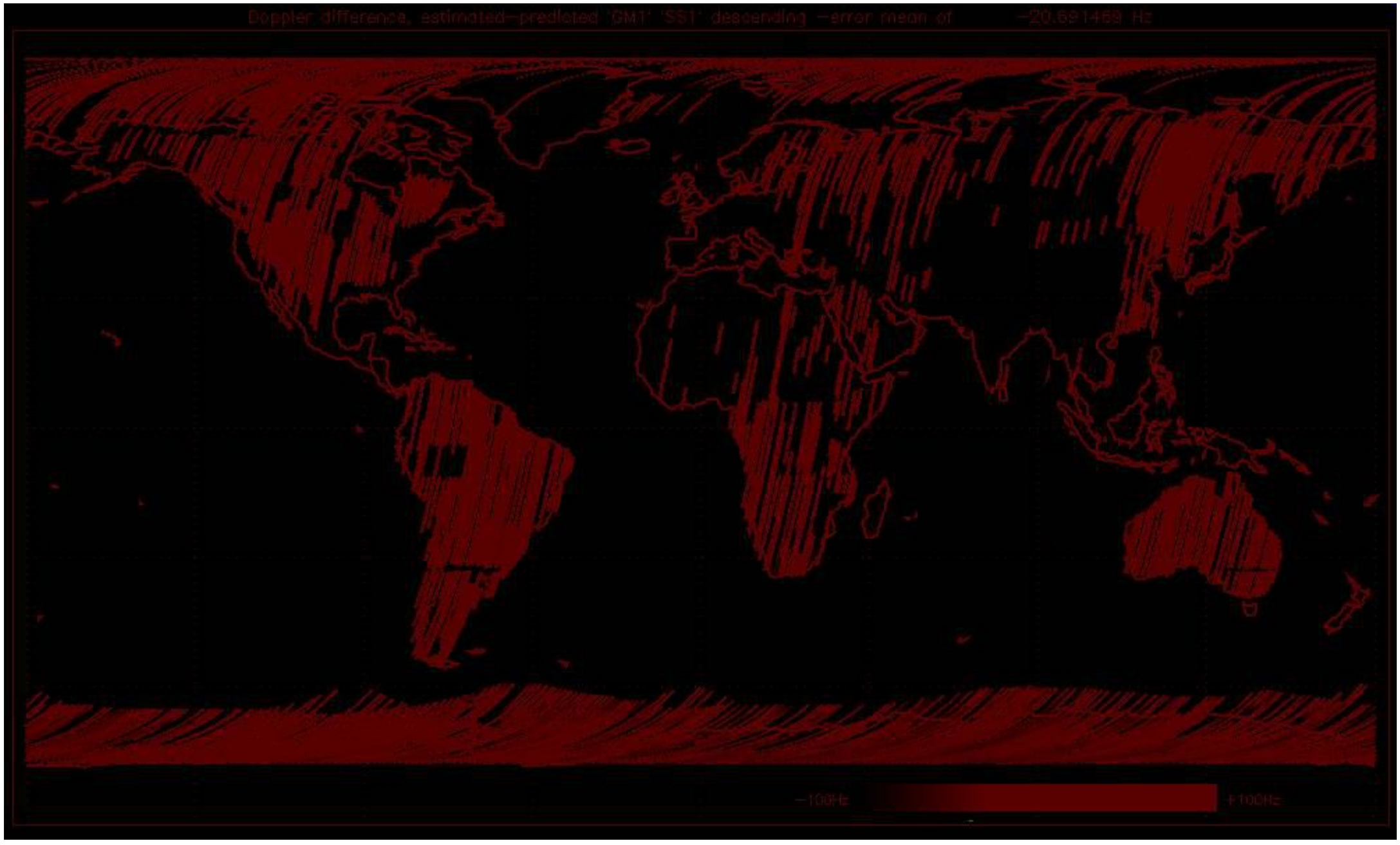

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

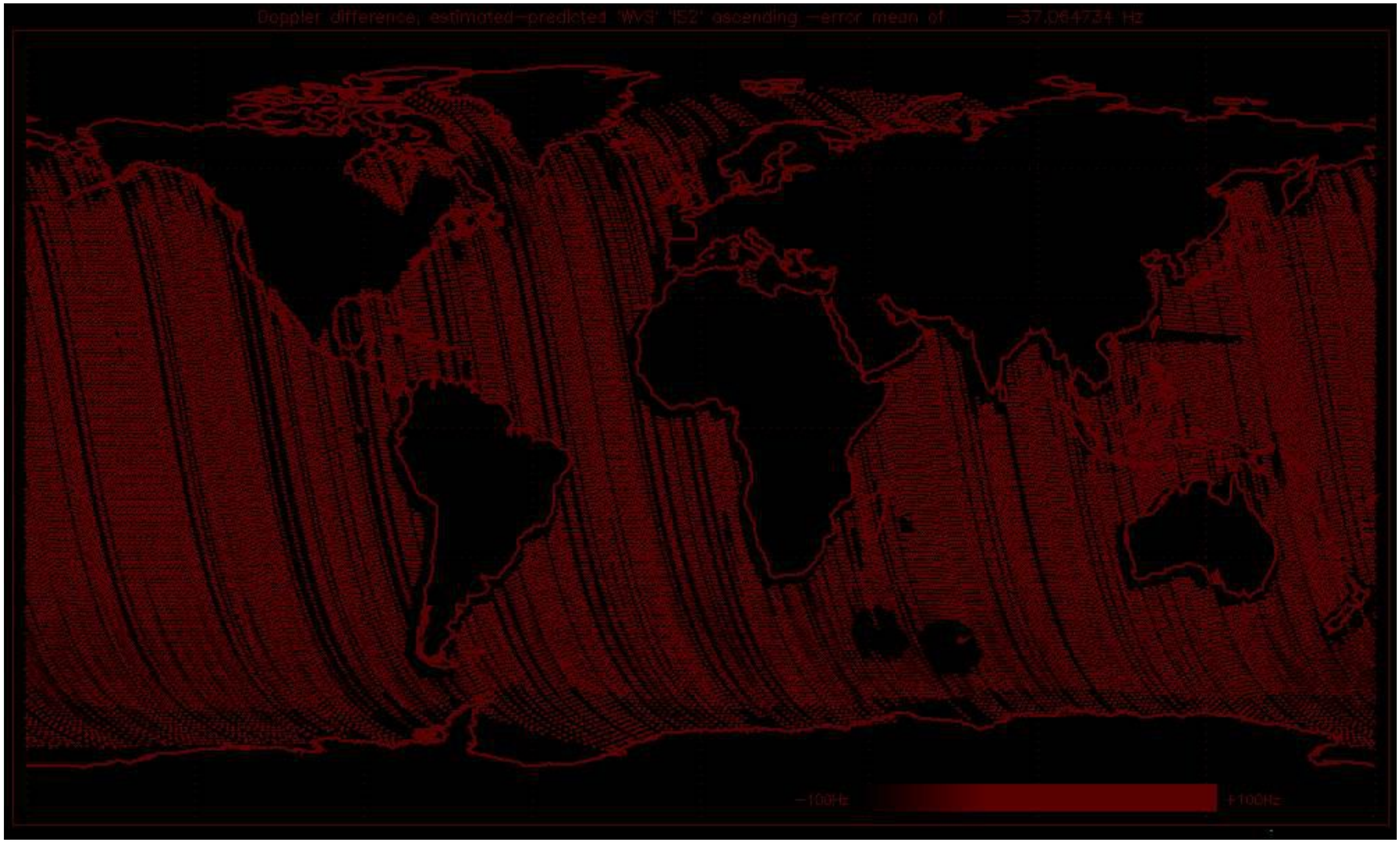

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

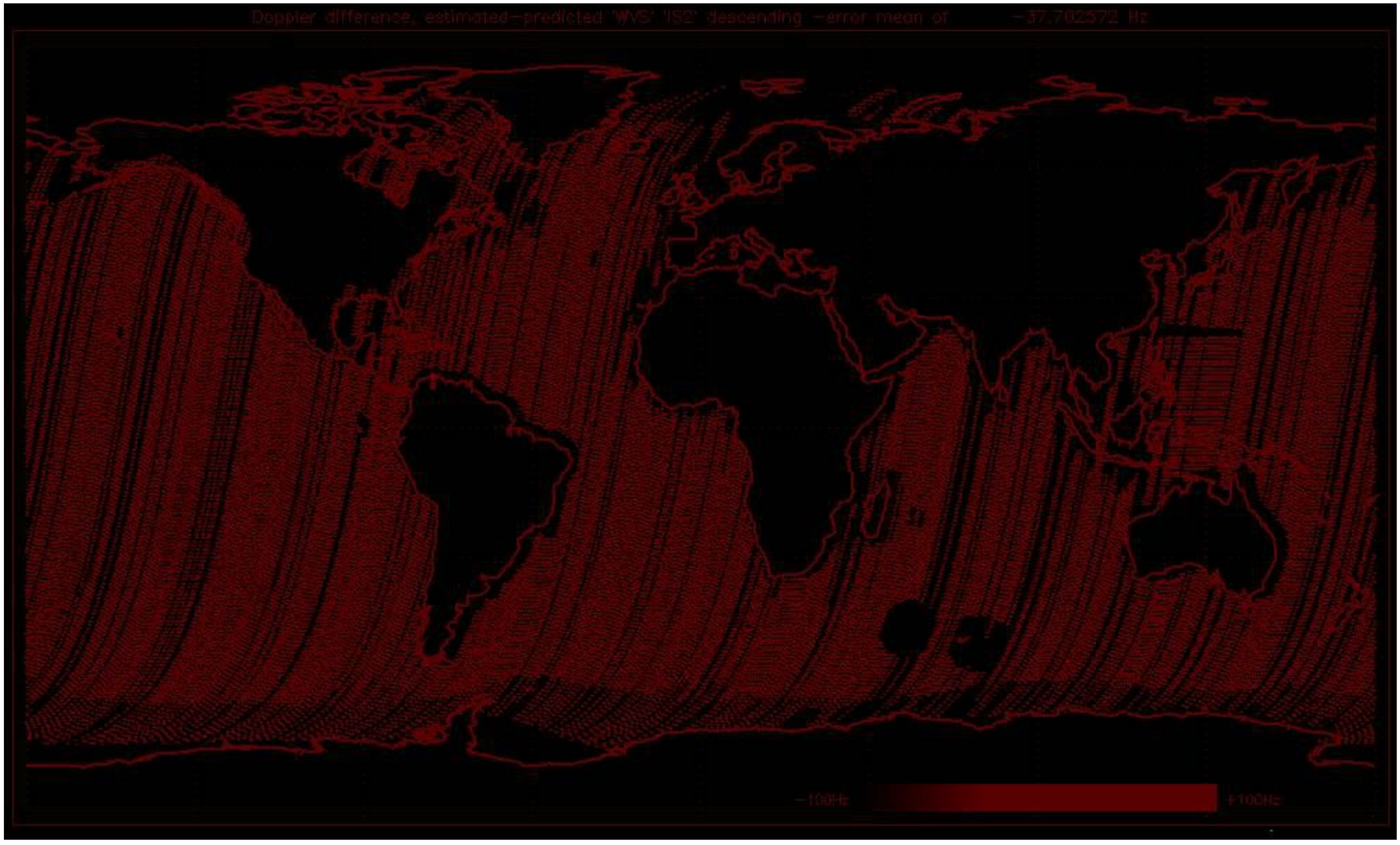

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
100
50
0
−50
−100
−150
−200
5
10
15
time of day


WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
300
200
100
0
−100
−200
8
10
12
14
time of day


Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -18.5944432 Hz
-100Hz
+100Hz

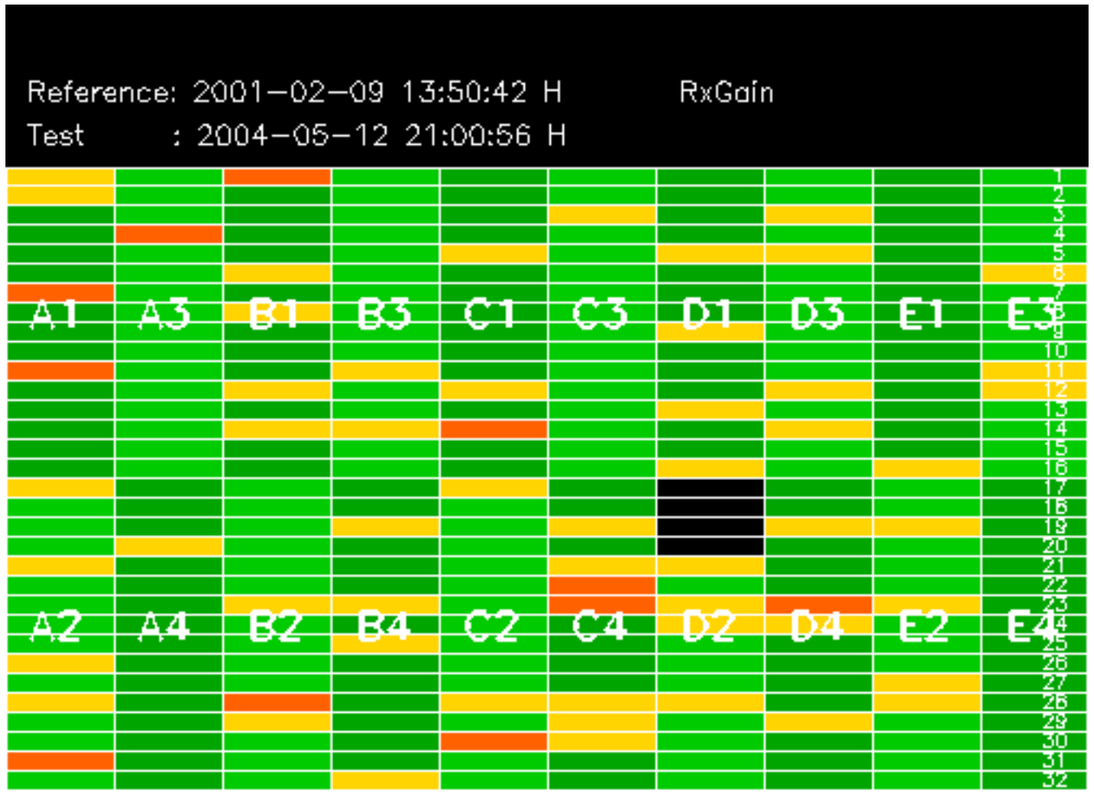

Doppler difference, estimated-predicted GM1' 'SST' descending -error mean of -20.6914659 Hz
-100Hz
+100Hz

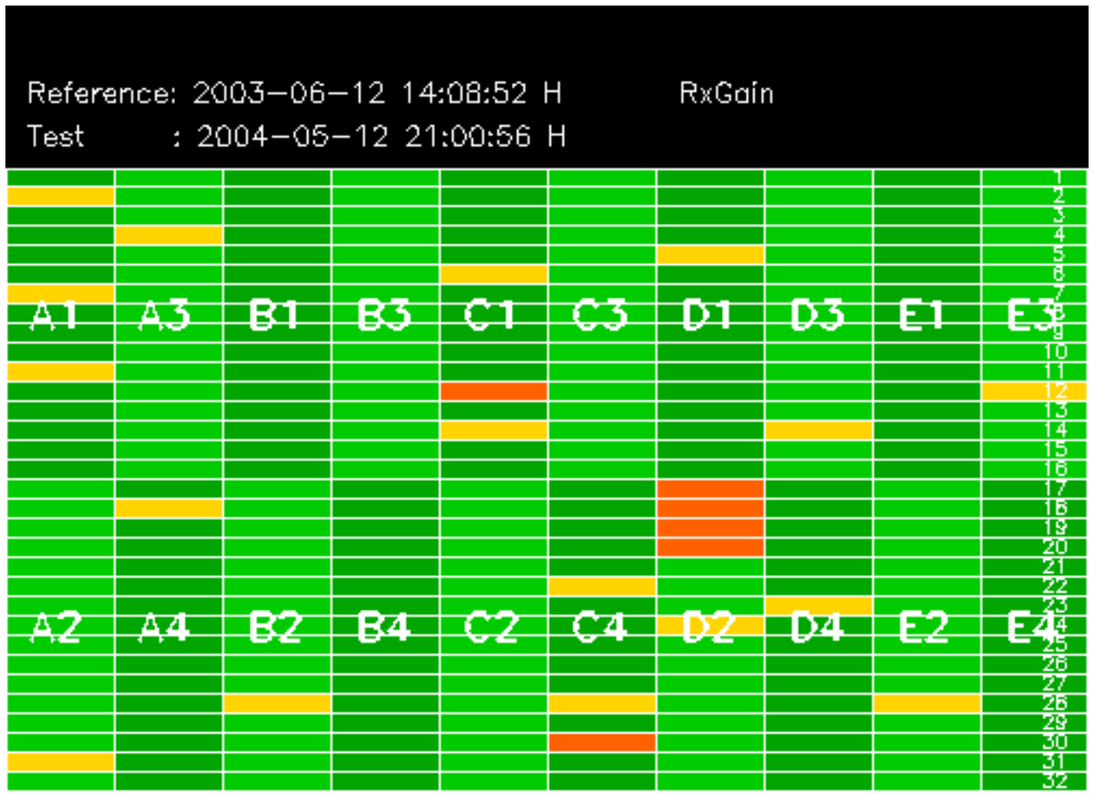

Doppler difference, estimated–predicted 'WV3' 'IS2' ascending –error mean of –37.064734 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -37.702572 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 for 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
Test : 2004-05-12 21:00:56 H
RxGain
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 : 2004-05-12 21:00:56 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
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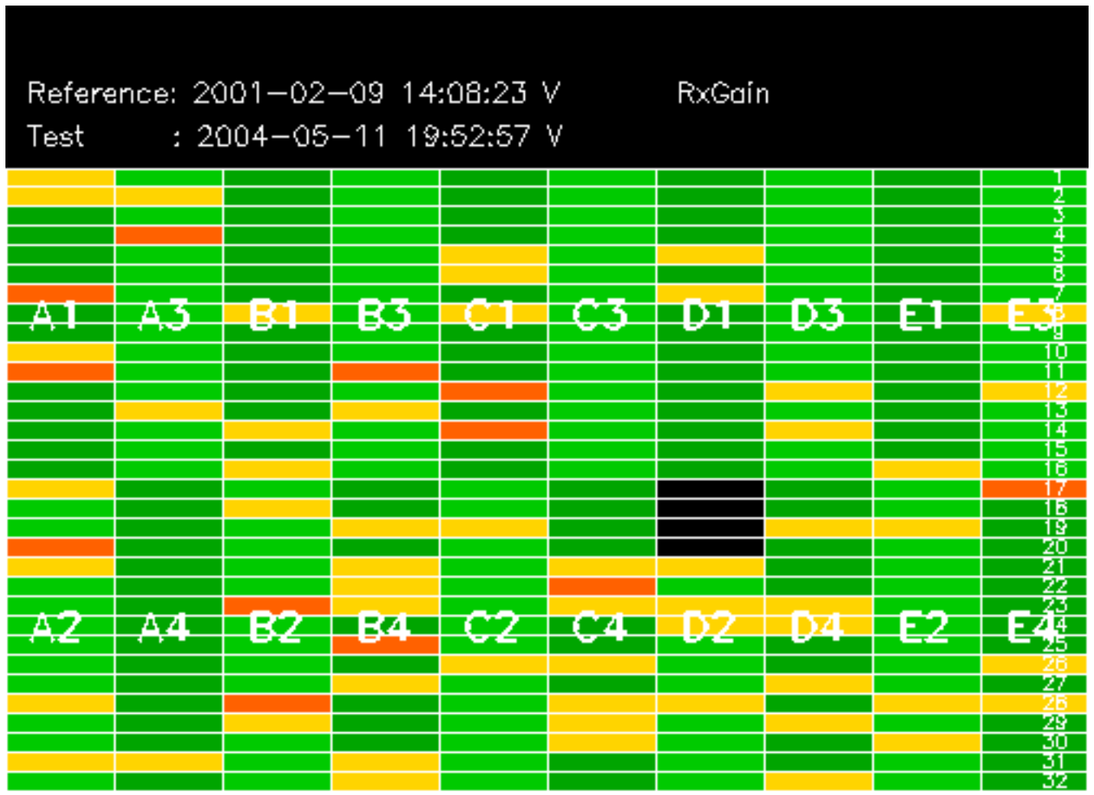
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2004-05-11 19:52:57 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
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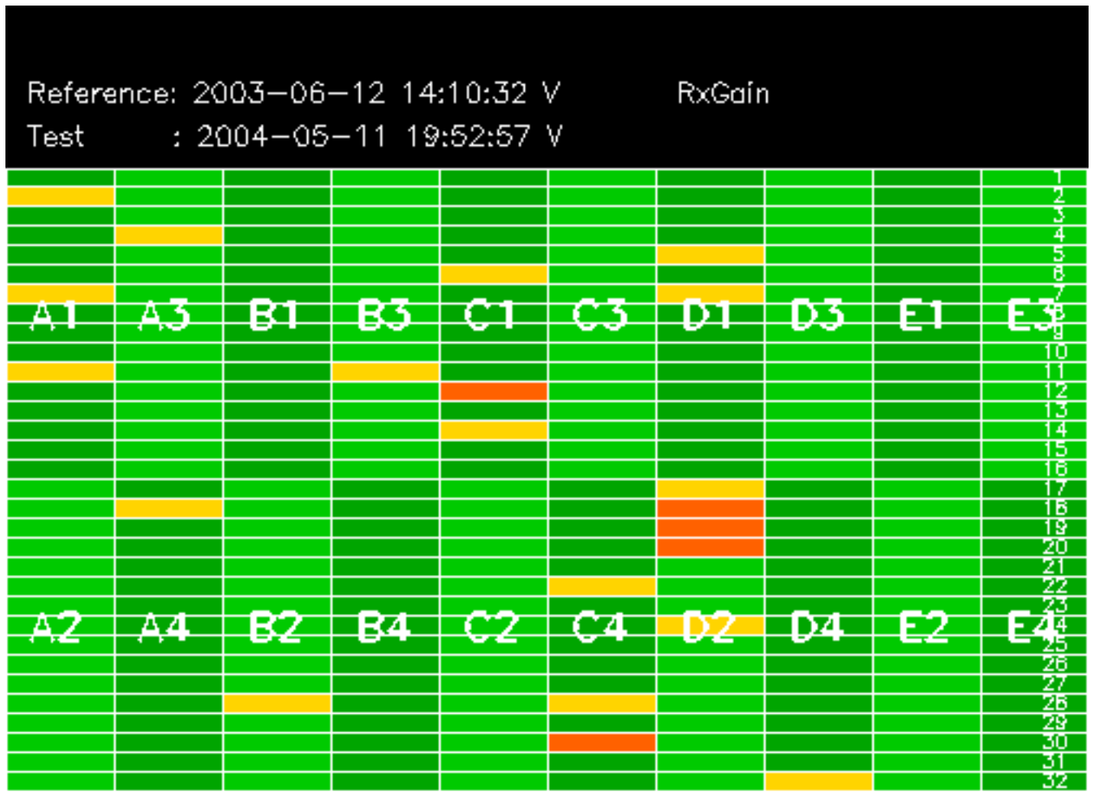
32


Reference: 2003-06-12 14:10:32 V
Test : 2004-05-11 19:52:57 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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D4
E2
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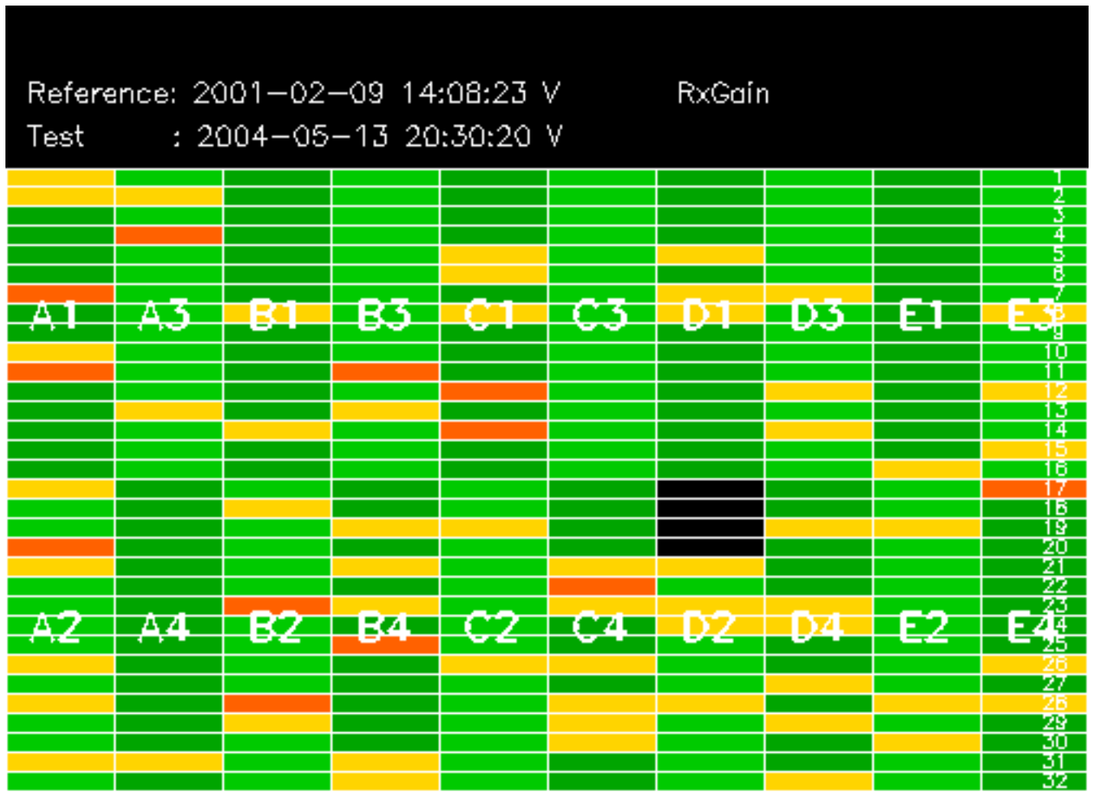
Reference: 2001-02-09 14:08:23 V
Test : 2004-05-13 20:30:20 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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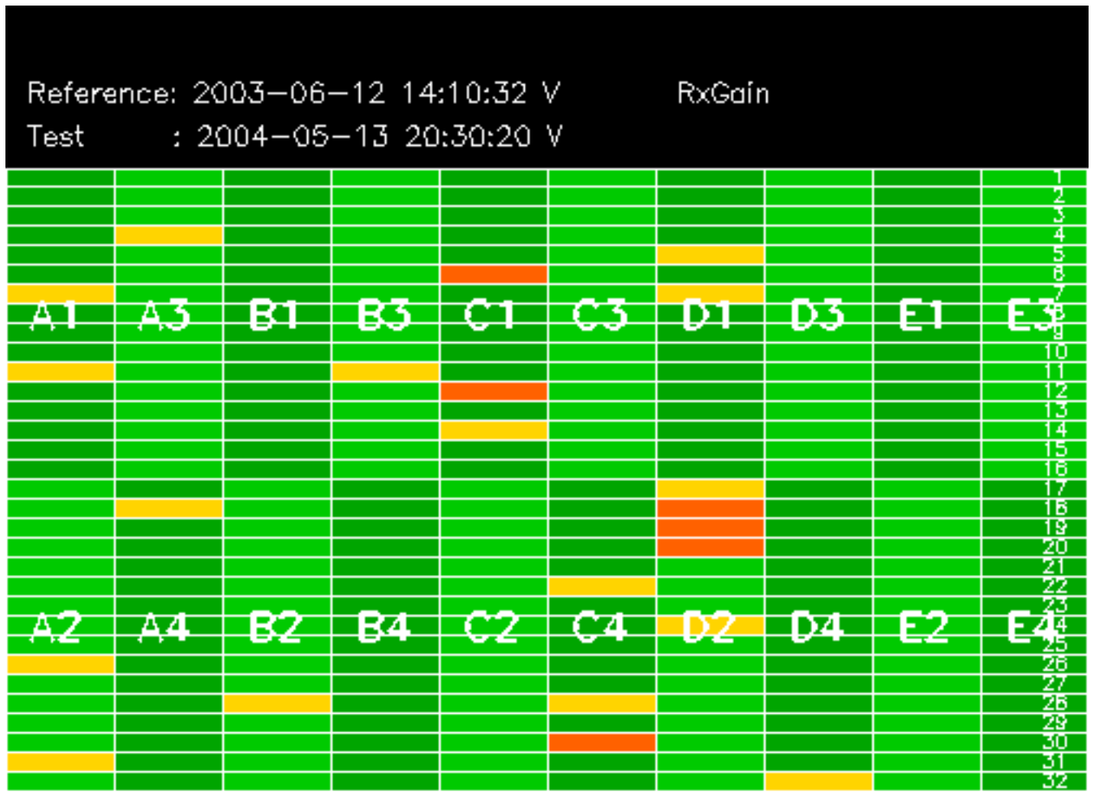
Reference: 2003-06-12 14:10:32 V
Test : 2004-05-13 20:30:20 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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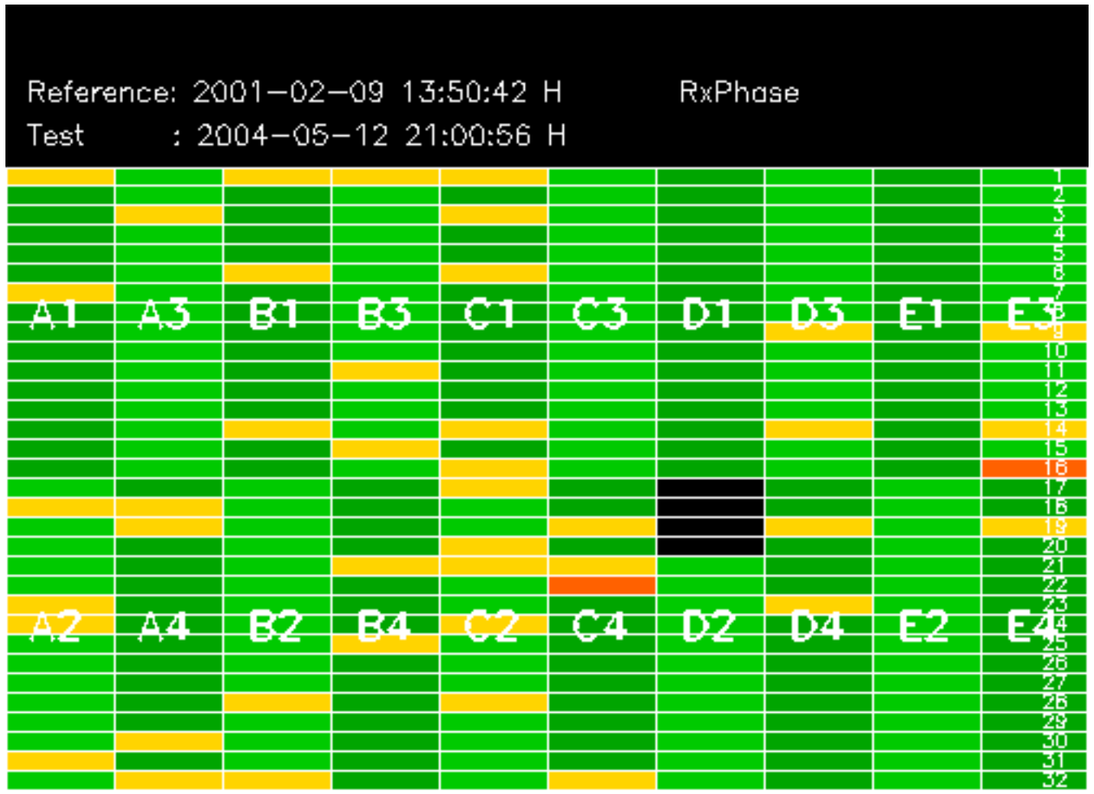
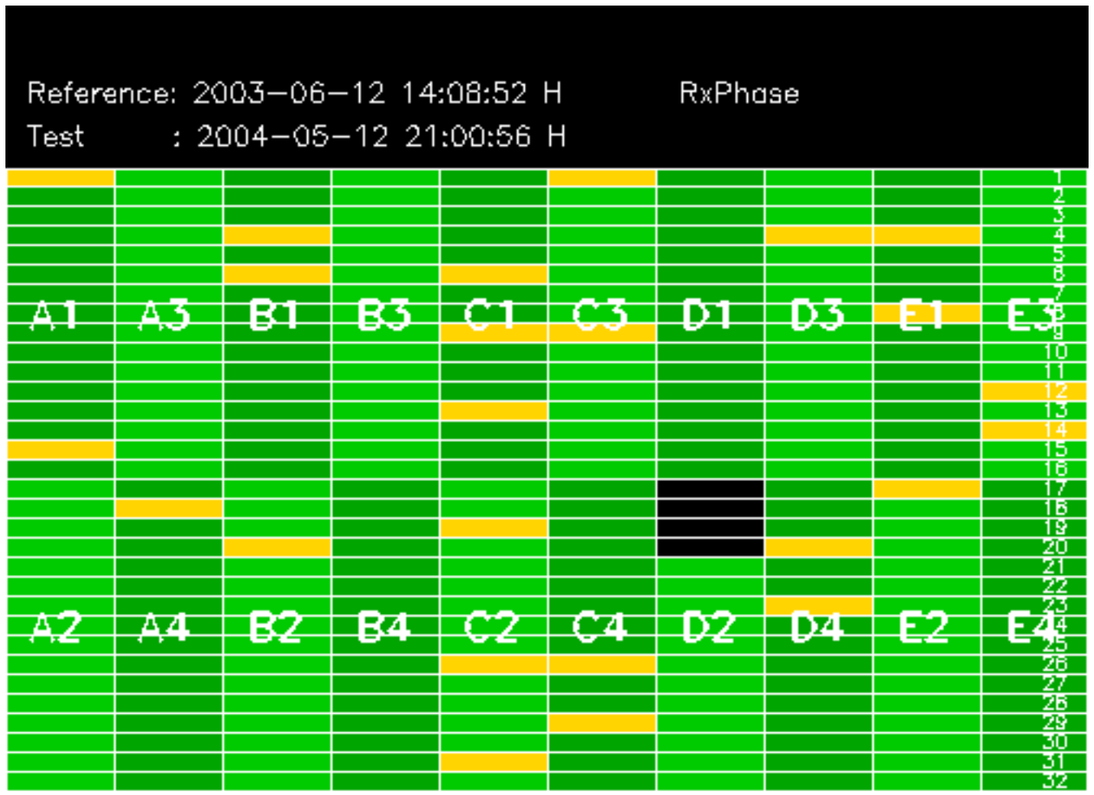

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-05-12 21:00:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-05-12 21:00:56 H
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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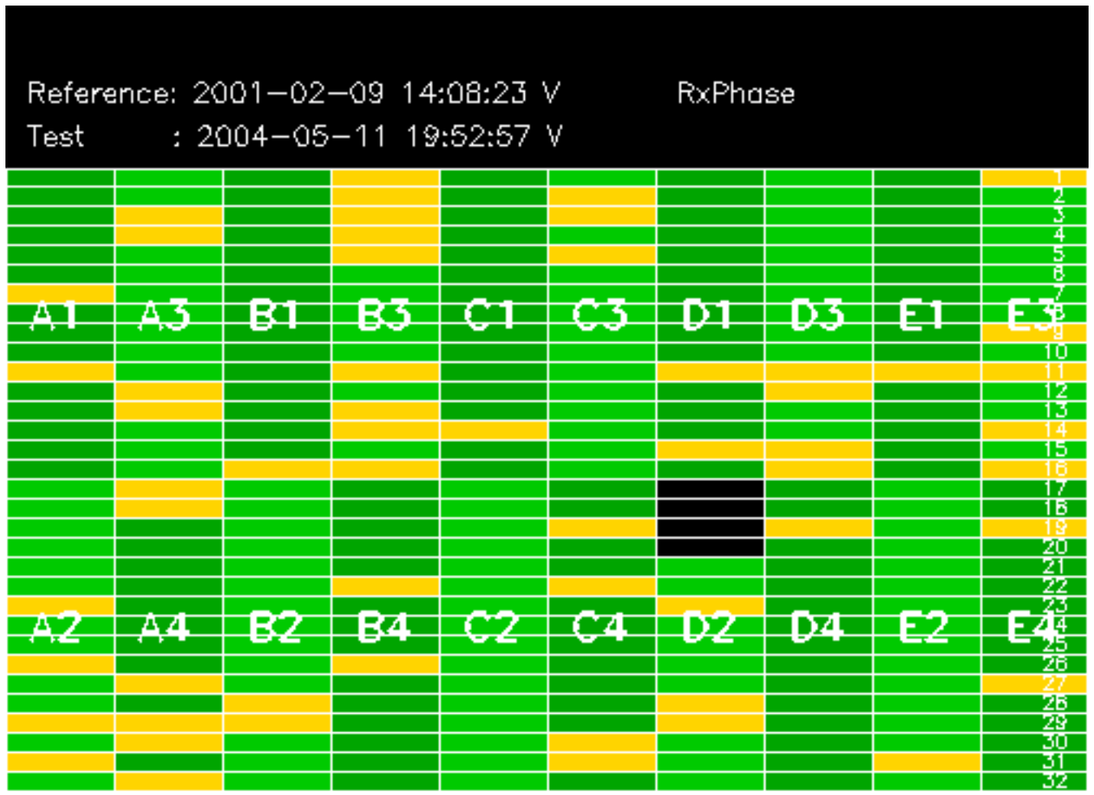
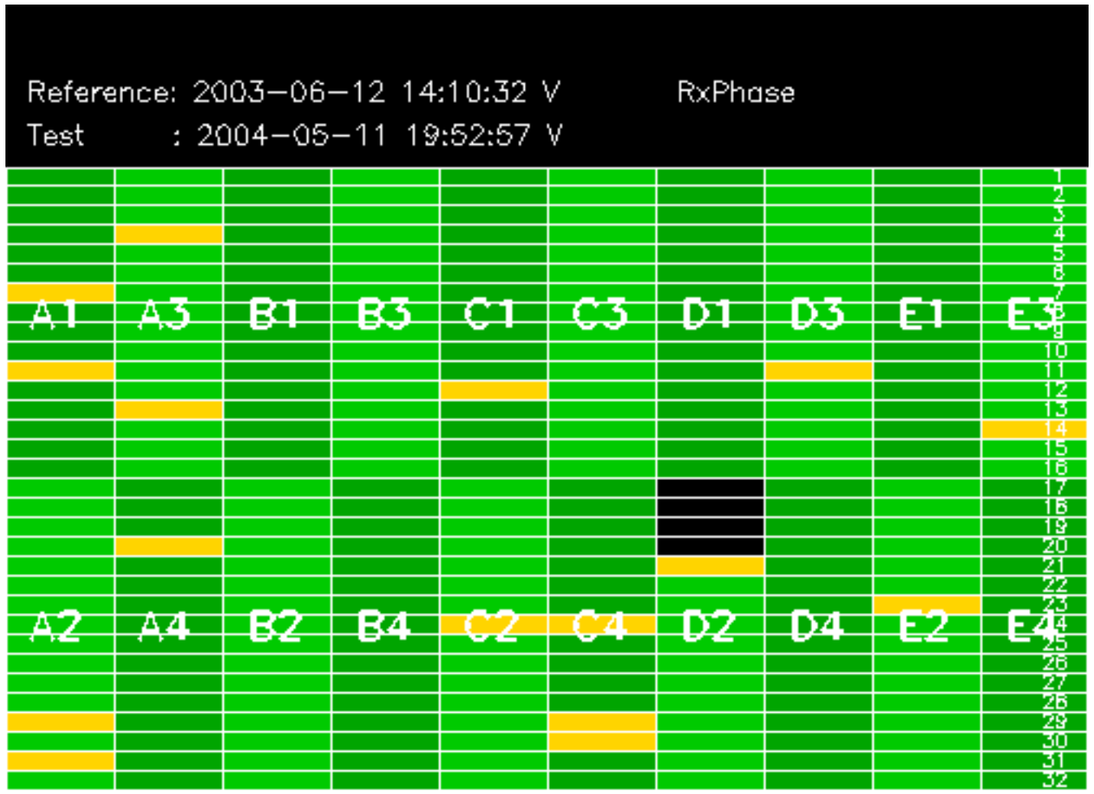

Reference: 2001-02-09 14:08:23 V
Test : 2004-05-11 19:52:57 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-05-11 19:52:57 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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D4
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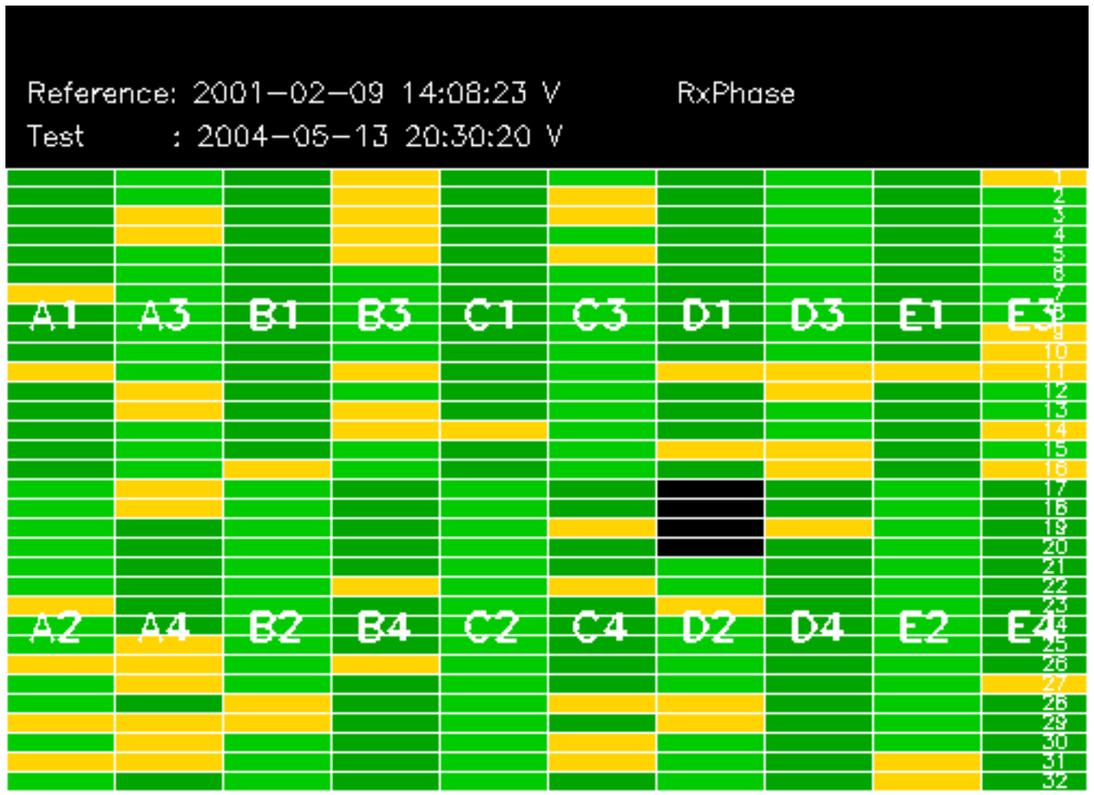
Reference: 2001-02-09 14:08:23 V
Test : 2004-05-13 20:30:20 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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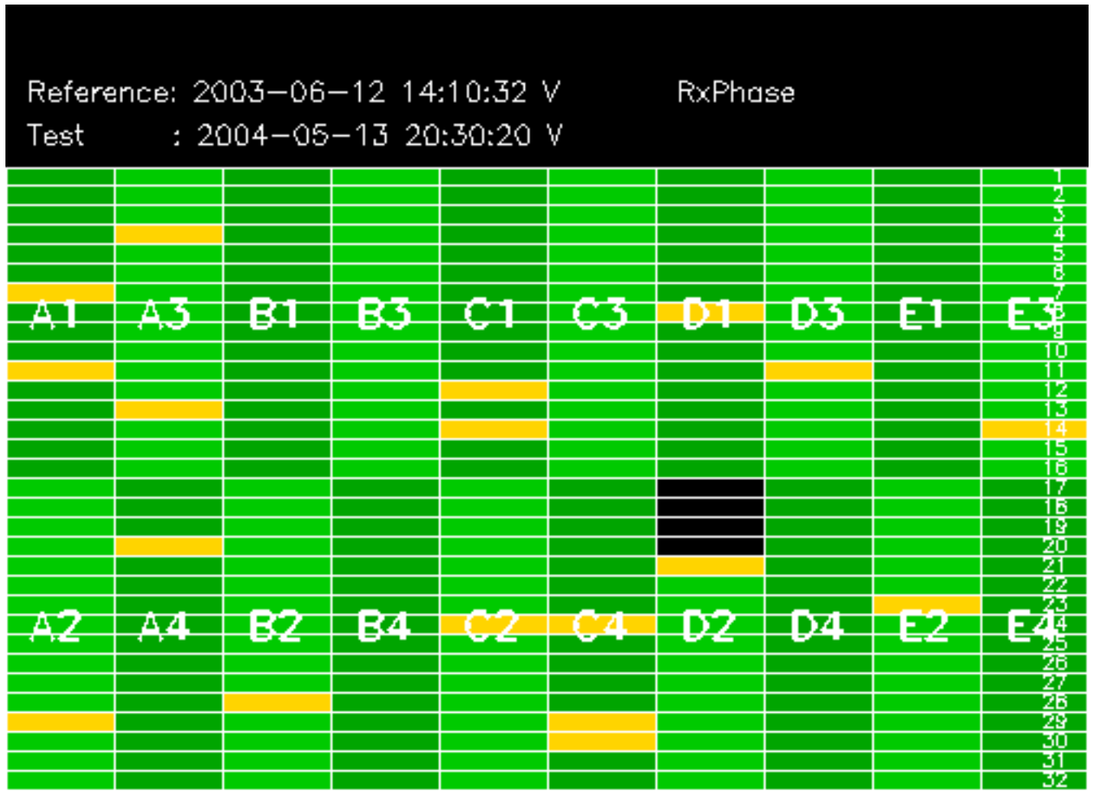
Reference: 2003-06-12 14:10:32 V
Test : 2004-05-13 20:30:20 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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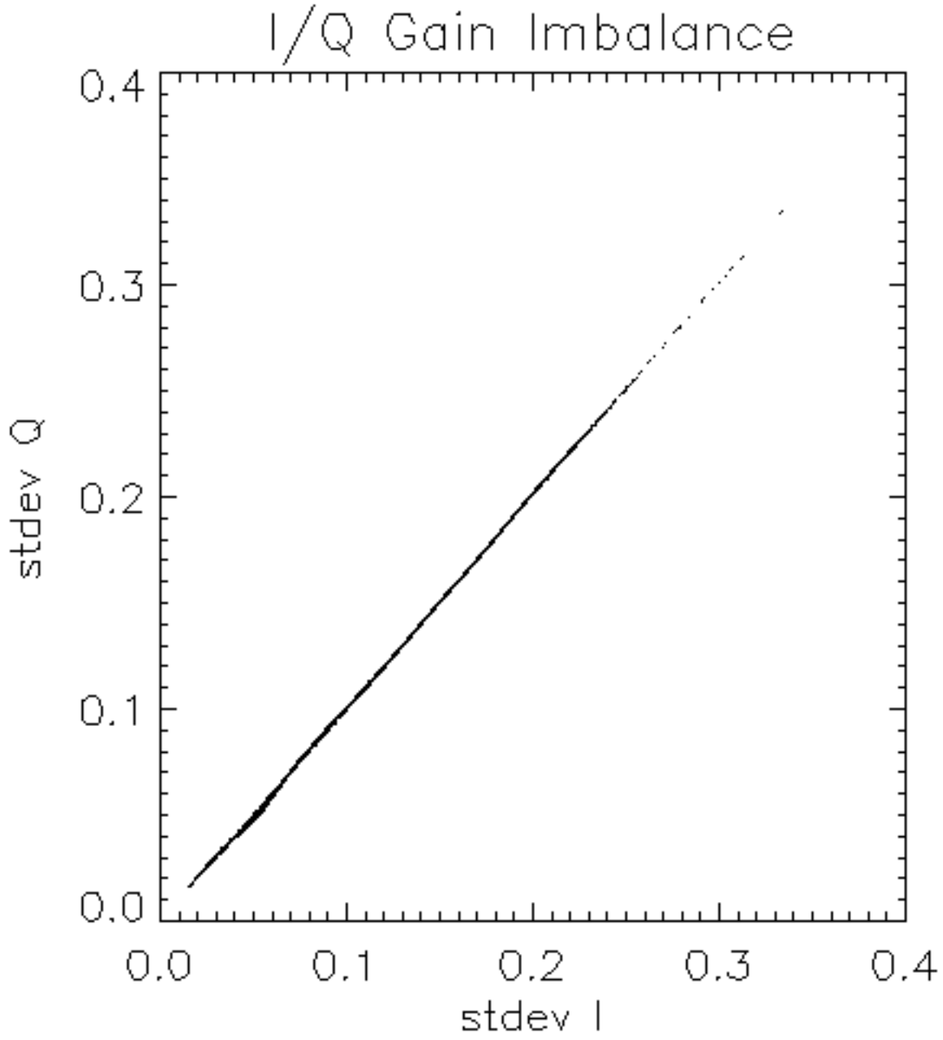
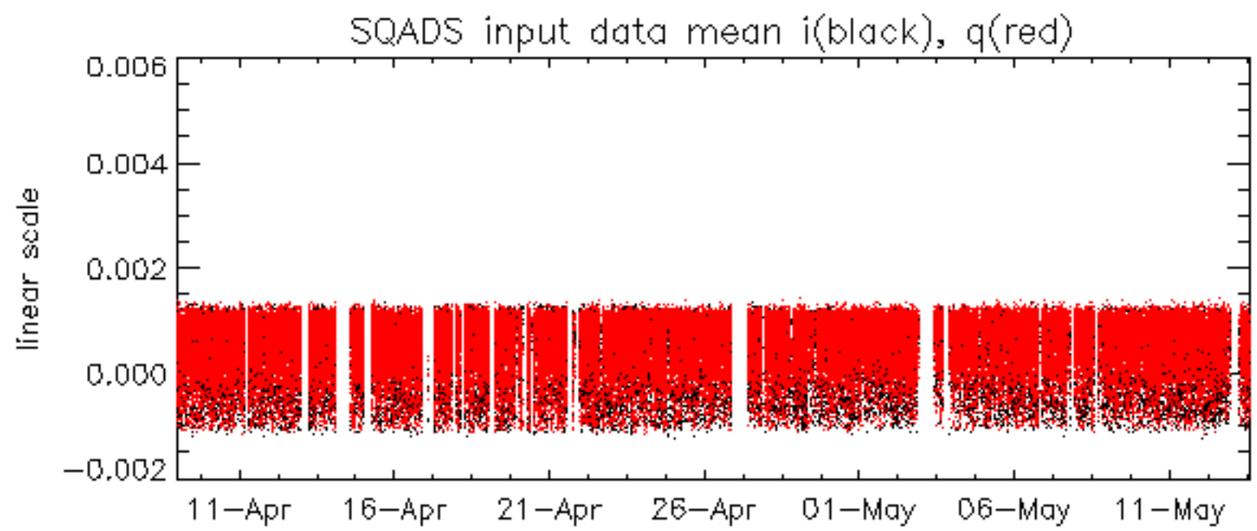
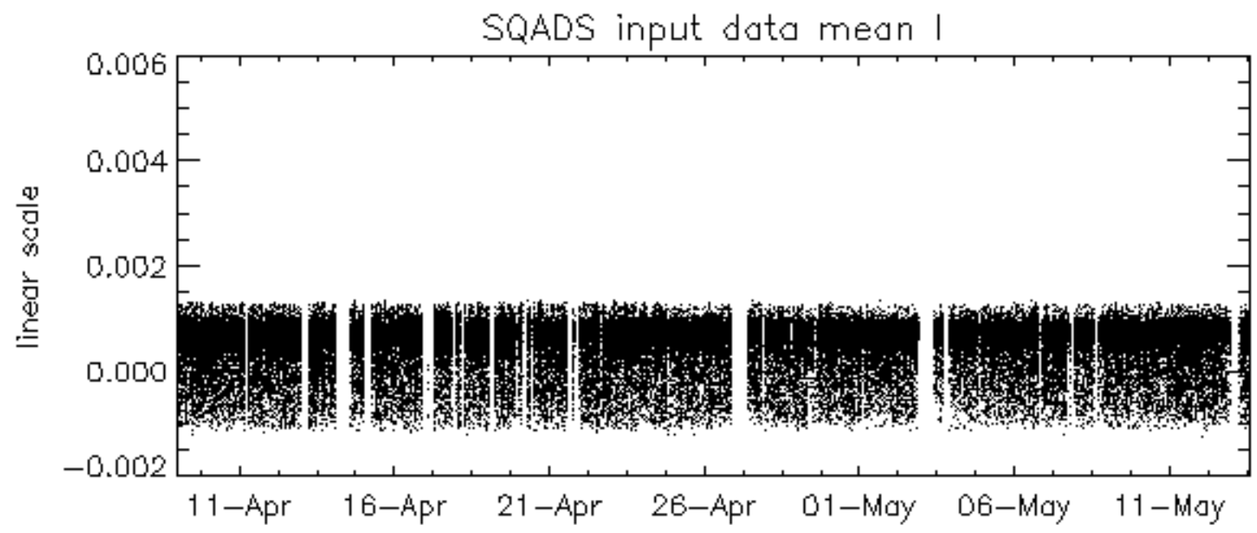
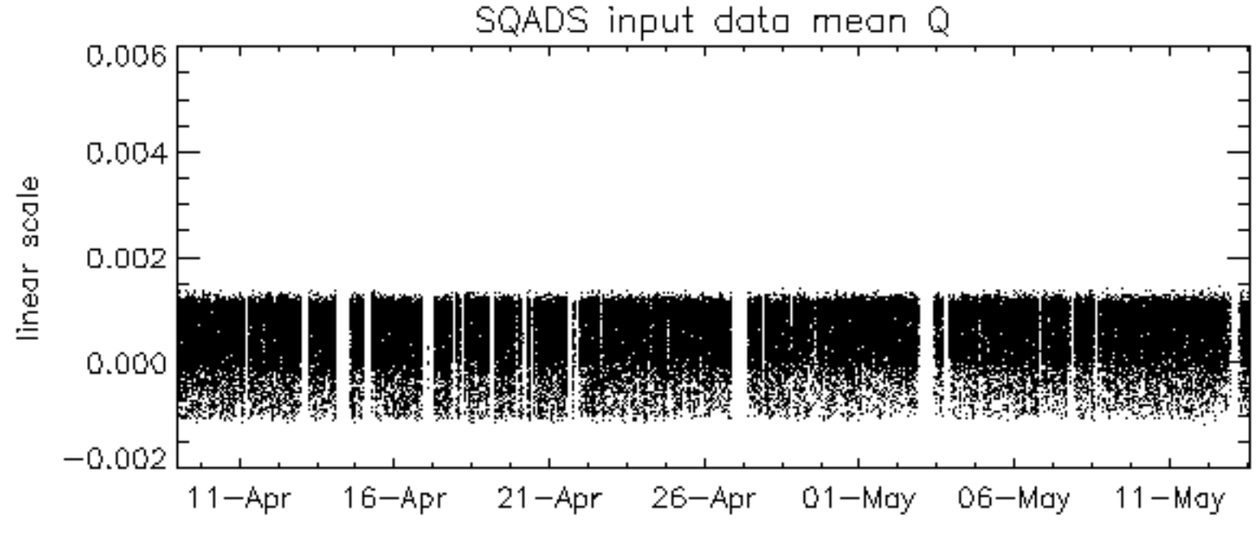
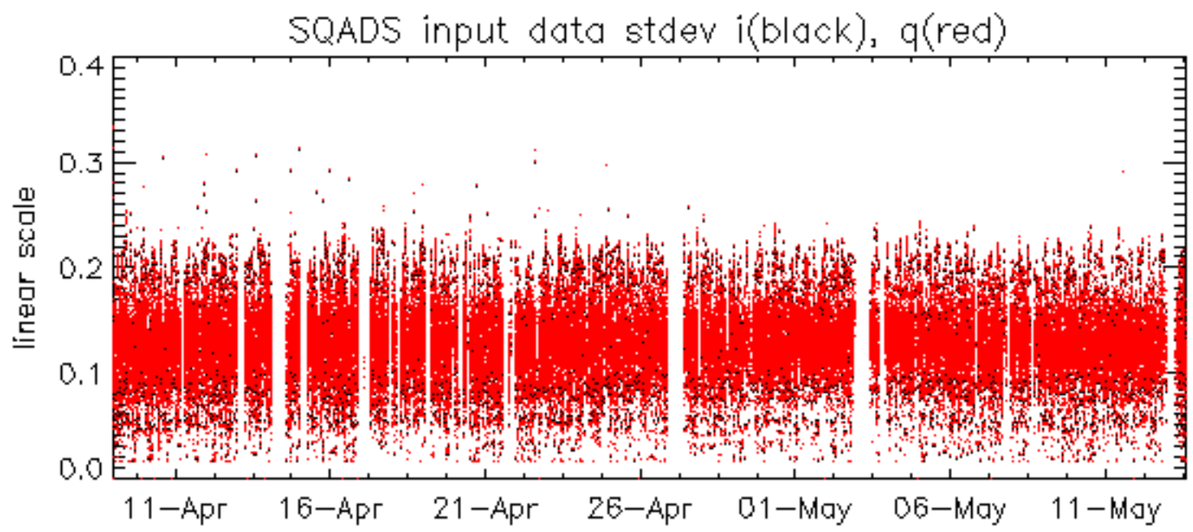
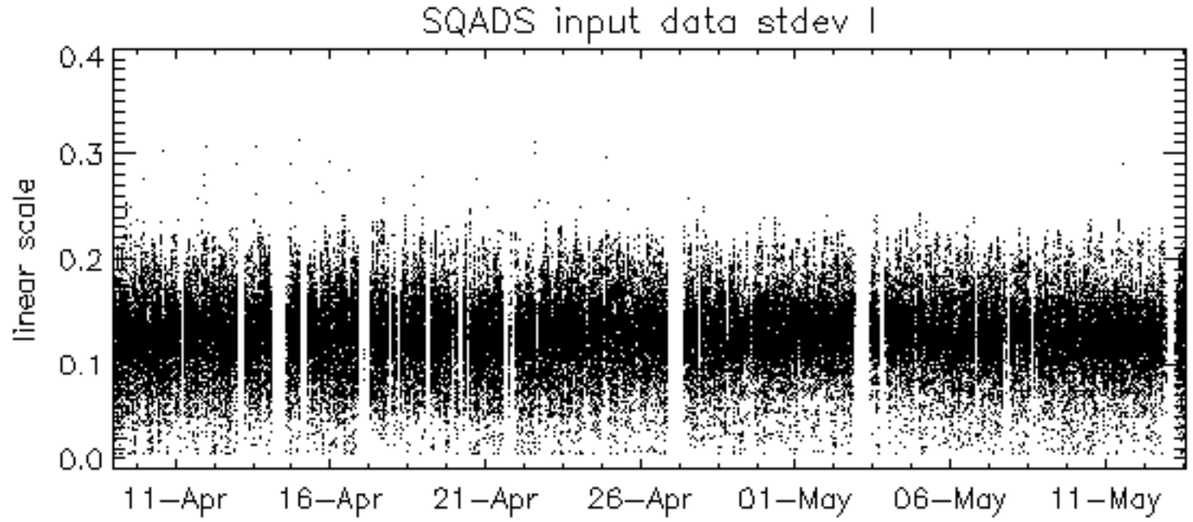

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

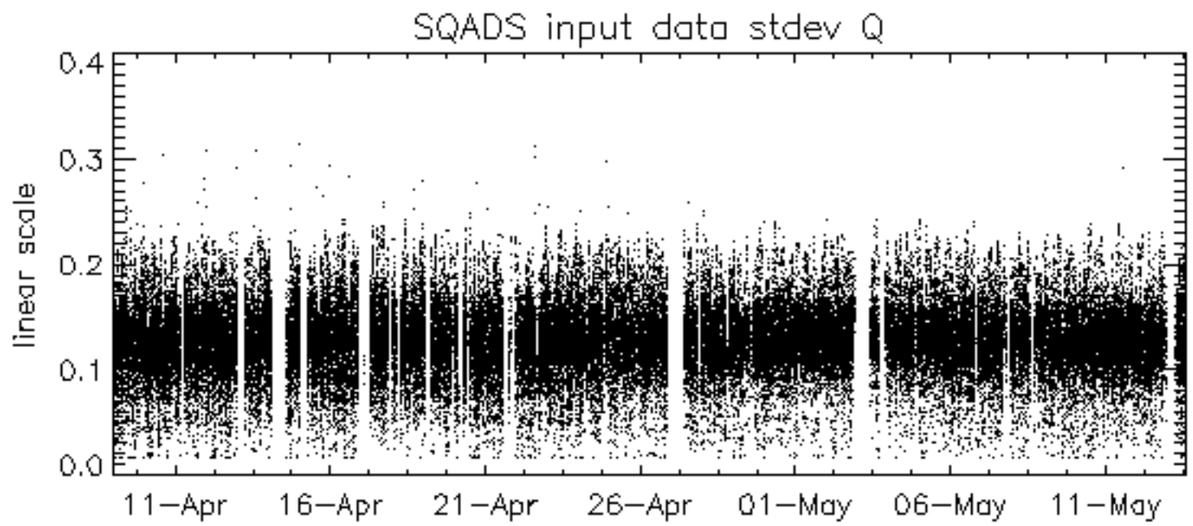

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May

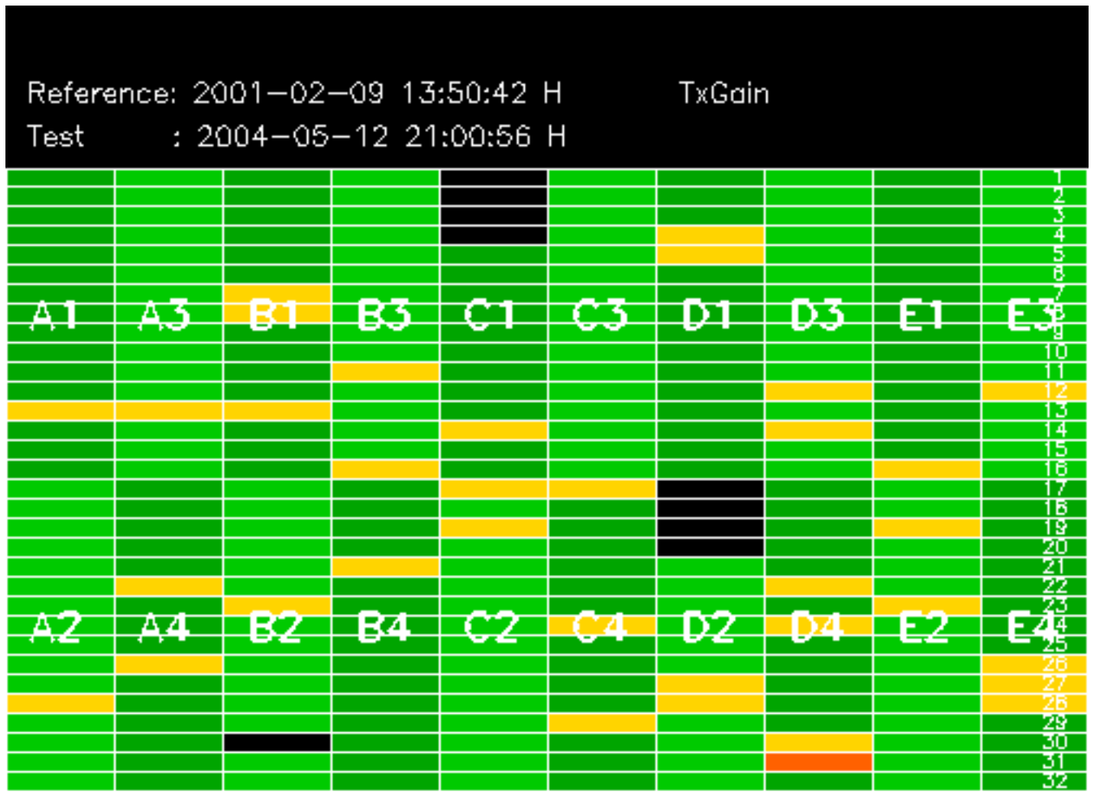

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2004-05-12 21:00:56 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
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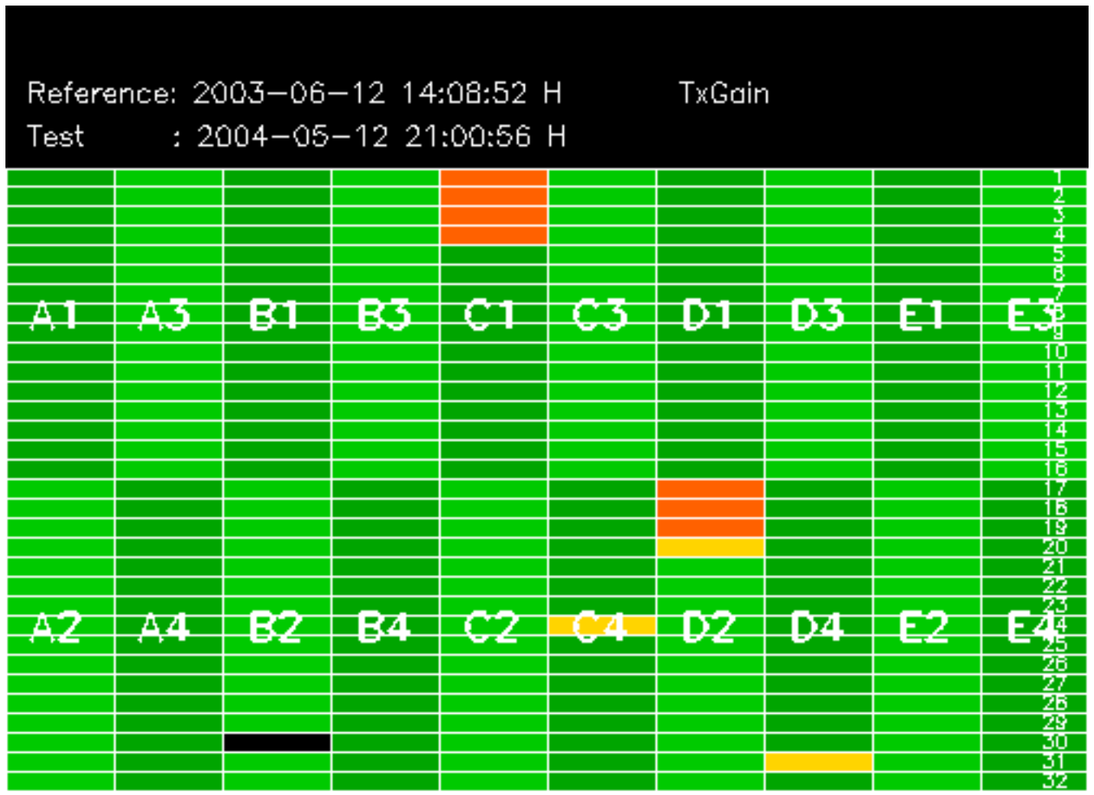
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-05-12 21:00:56 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
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Reference: 2001-02-09 14:08:23 V
Test : 2004-05-11 19:52:57 V
TxGain
A1
A3
B1
B3
C1
C3
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D3
E1
E3
A2
A4
B2
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C2
C4
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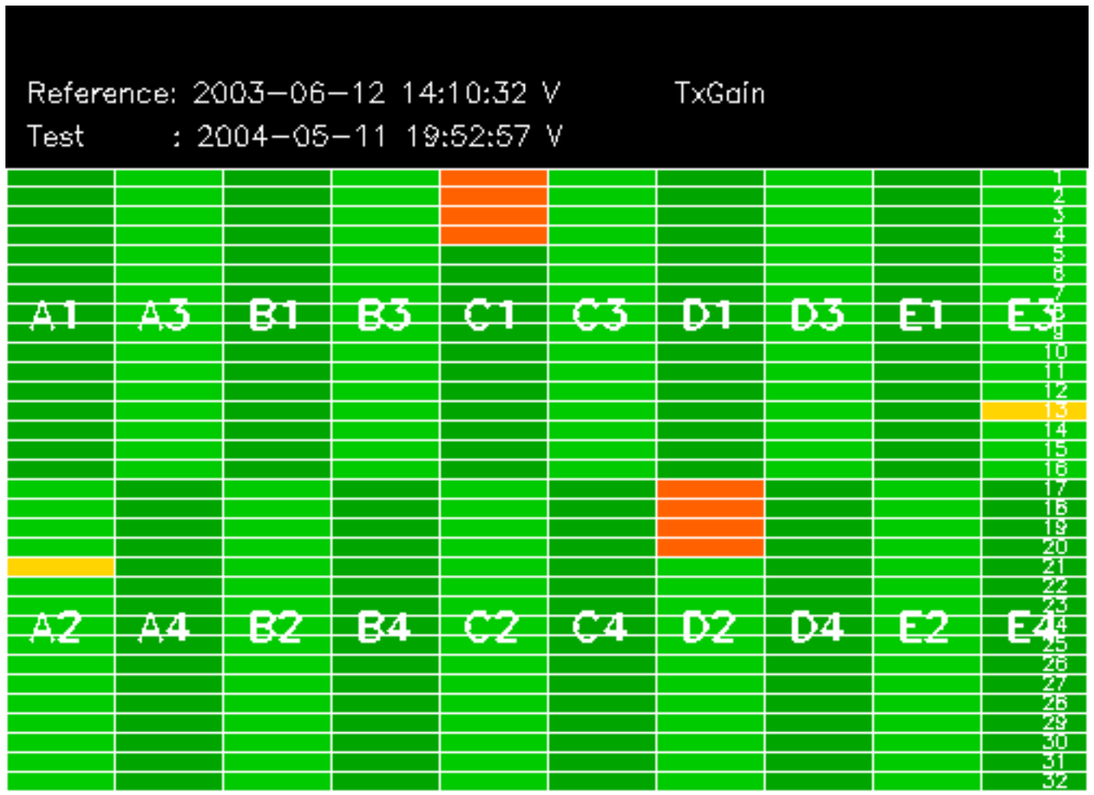
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-05-11 19:52:57 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-05-13 20:30:20 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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C2
C4
D2
D4
E2
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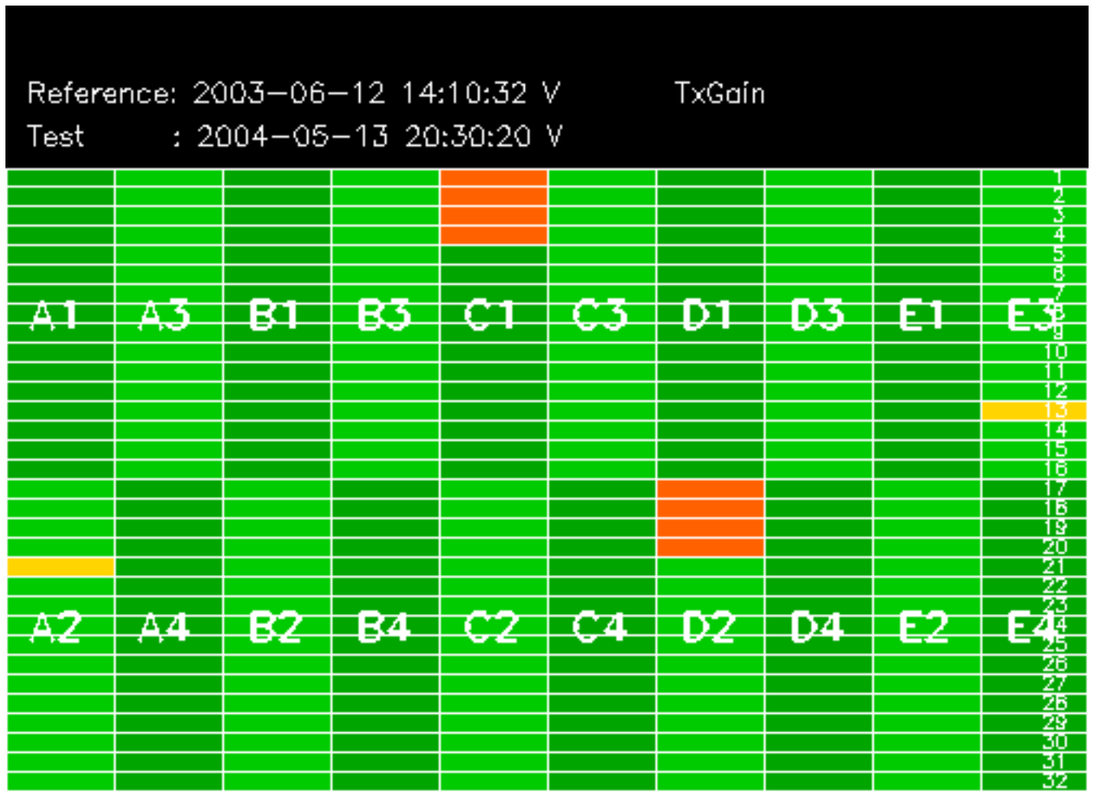
Reference: 2003-06-12 14:10:32 V
Test : 2004-05-13 20:30:20 V
TxGain
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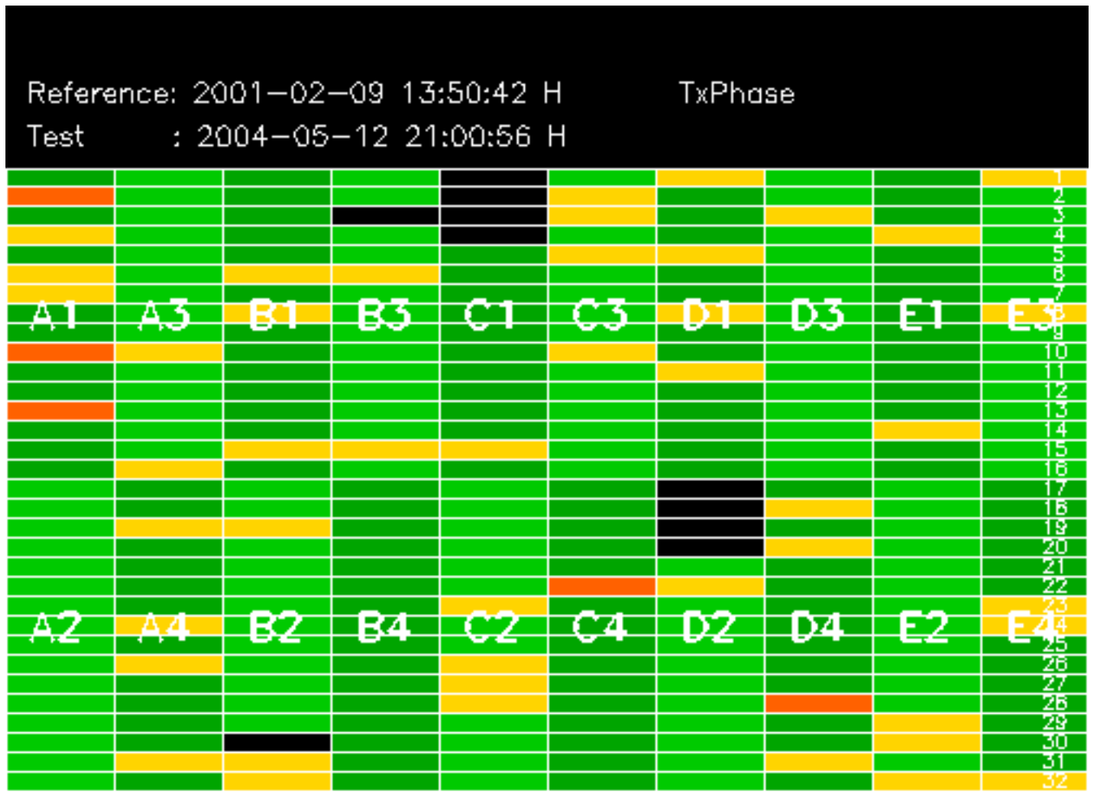
Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-05-12 21:00:56 H
A1
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E1
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C4
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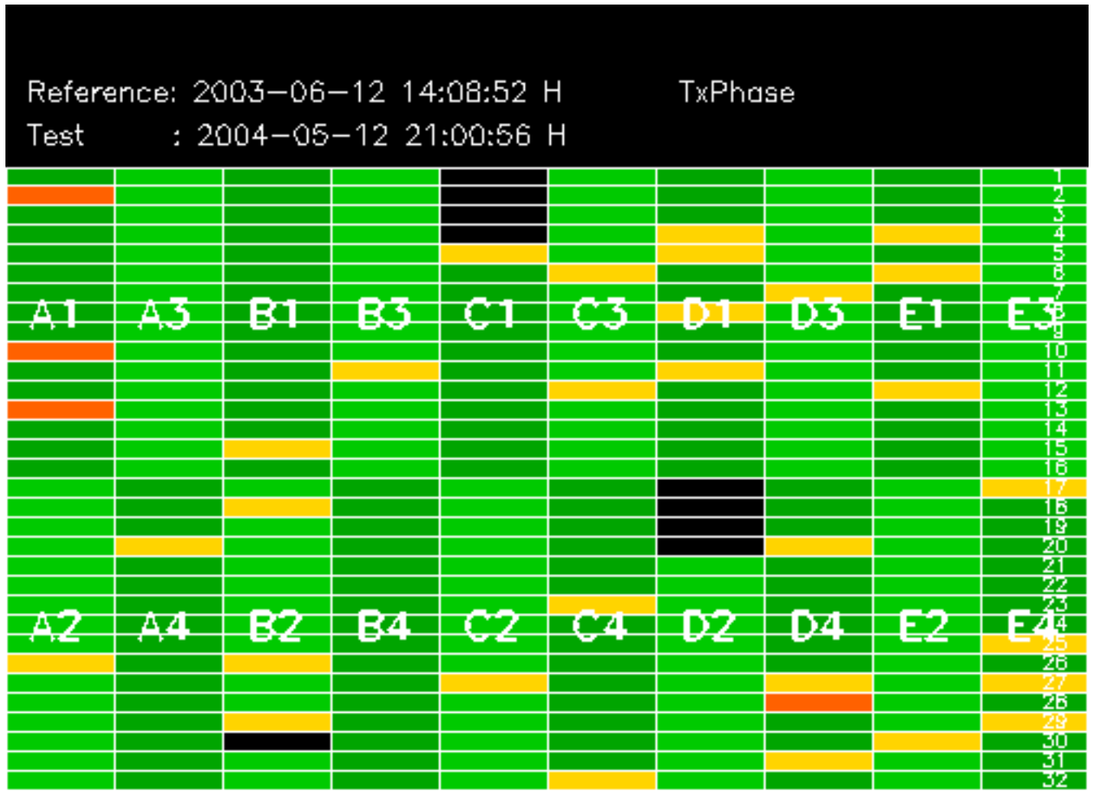
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-05-12 21:00:56 H
TxPhase
A1
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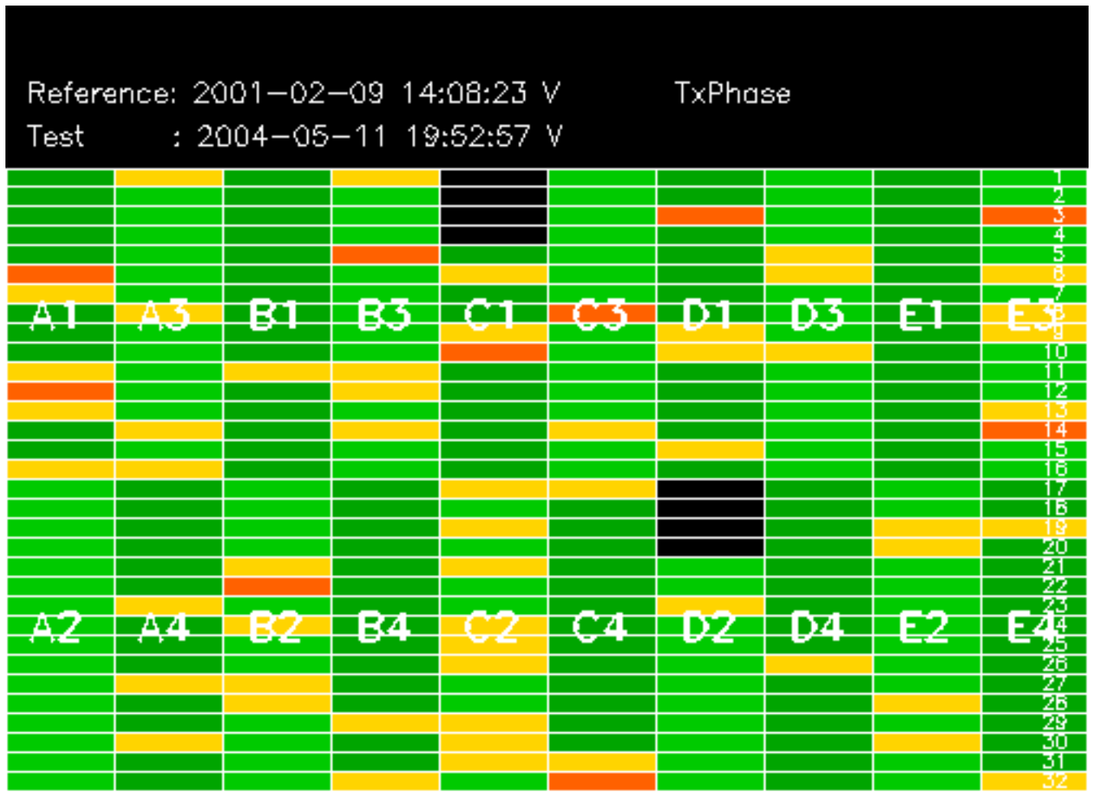
Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-05-11 19:52:57 V
A1
A3
B1
B3
C1
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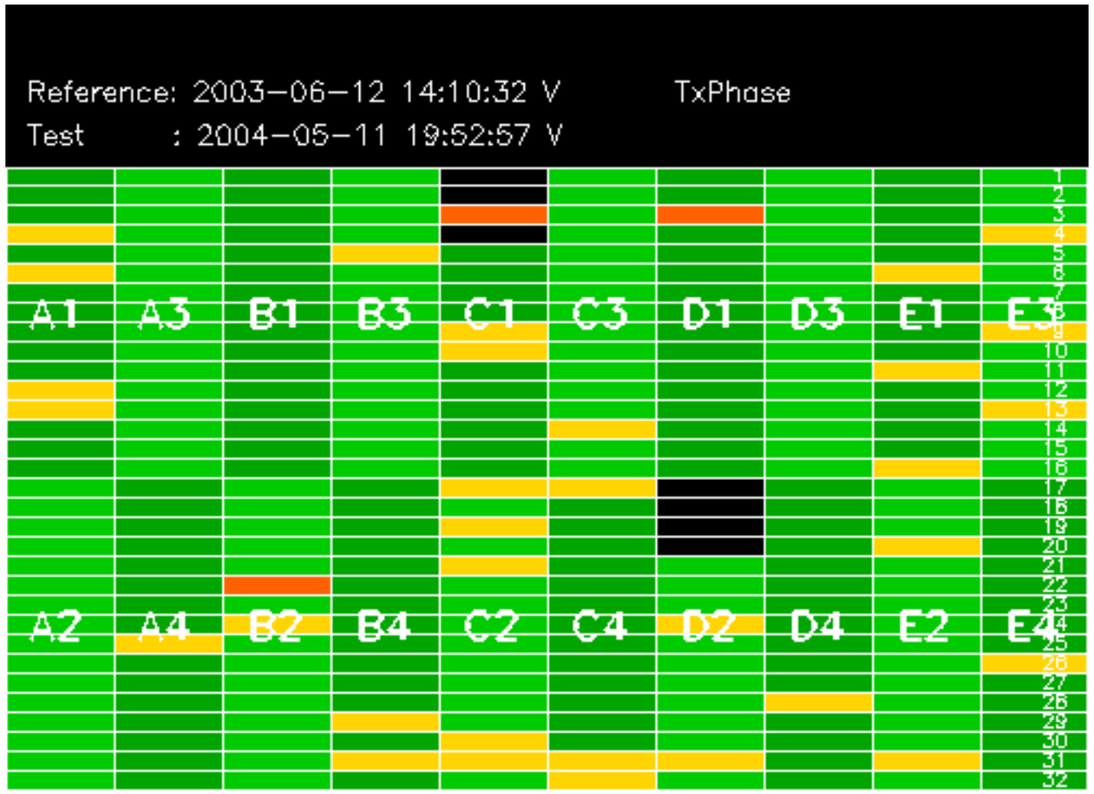
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-05-11 19:52:57 V
TxPhase
A1
A3
B1
B3
C1
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A4
B2
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C2
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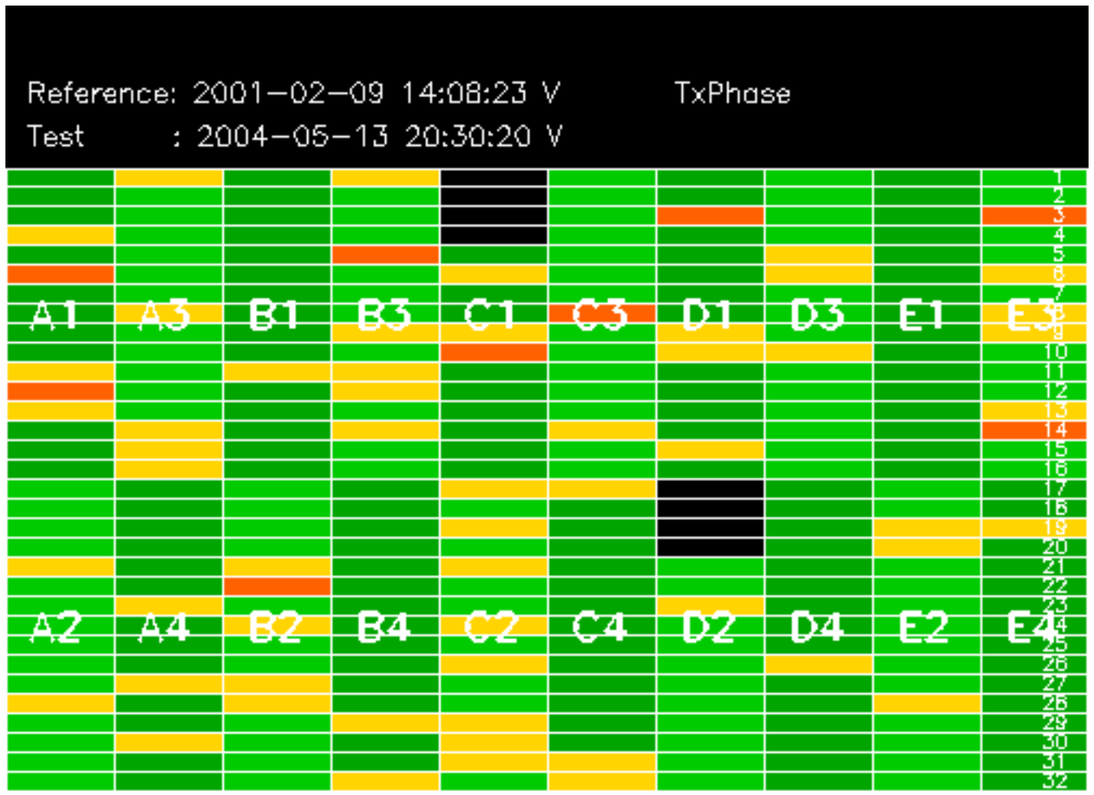
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-05-13 20:30:20 V
TxPhase
A1
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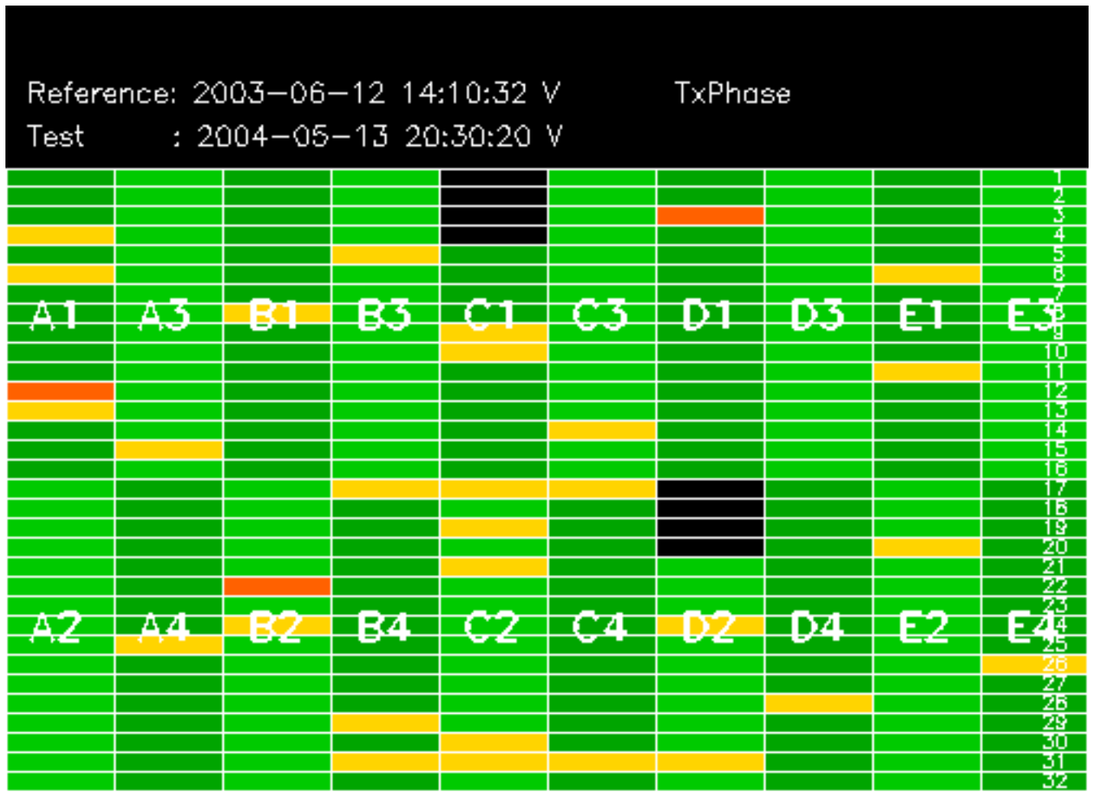
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-05-13 20:30:20 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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No unavailabilities during the reported period.