REPORT OF 040428

last update on Wed Apr 28 14:39:40 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 any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

- ASA_MS__0PNPDK20040427_202711_000000152026_00214_11290_0098.N1
- ASA_MS__0PNPDK20040427_202831_000000152026_00214_11290_0099.N1

Polarisation	Start Time
V	20040427 202831
H	20040427 202711

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.

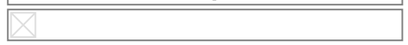
4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

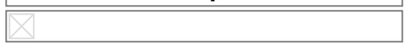
Evolution of cal pulses for GM1



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	-3.574154	0.005515	0.021568
7	P1	-3.298384	0.011040	0.011939
11	P1	-4.627206	0.023955	0.047661
15	P1	-4.975402	0.038890	0.058474
19	P1	-3.353425	0.006126	-0.037985
22	P1	-4.514781	0.014470	0.011611
24	P1	-5.019979	0.014846	0.072652
28	P1	-4.591672	0.013688	-0.003896

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.400377	0.080026	-0.010834

7	P2	-22.875729	0.117418	-0.024939
11	P2	-15.885996	0.142025	0.140730
15	P2	-7.159913	0.089783	0.003911
19	P2	-9.515136	0.155475	0.017413
22	P2	-17.650370	0.096740	0.062758
24	P2	-20.985229	0.105914	0.040601
28	P2	-16.604874	0.080985	-0.002292

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.131890	0.003114	-0.011489
7	P3	-8.131886	0.003114	-0.011515
11	P3	-8.131881	0.003114	-0.011538
15	P3	-8.131875	0.003114	-0.011560
19	P3	-8.131868	0.003114	-0.011585
22	P3	-8.131867	0.003114	-0.011605
24	P3	-8.131862	0.003115	-0.011645
28	P3	-8.131770	0.003114	-0.010982

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	-4.190640	0.098119	-0.060847
7	P1	-3.412371	0.347698	-0.067625
11	P1	-4.651342	0.075467	0.025640
15	P1	-3.616541	0.508842	-0.110442
19	P1	-2.881949	0.080479	-0.066503
22	P1	-4.693514	0.100120	0.000304
24	P1	-7.071635	0.040229	0.035170
28	P1	-6.634962	0.117438	-0.034959

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.604452	0.241282	-0.007150
7	P2	-13.445963	0.187274	0.002699
11	P2	-12.057966	0.148901	0.052839
15	P2	-5.731863	0.025175	-0.054588
19	P2	-6.562503	0.051814	-0.095257
22	P2	-15.011819	0.522261	-0.028154
24	P2	-19.698835	0.043552	0.033715
28	P2	-17.110653	0.061978	-0.059225

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.025963	0.003356	-0.015274
7	P3	-8.026029	0.003360	-0.015303
11	P3	-8.025921	0.003350	-0.015091
15	P3	-8.025950	0.003359	-0.015359
19	P3	-8.025959	0.003361	-0.015384
22	P3	-8.026013	0.003345	-0.015386
24	P3	-8.025993	0.003380	-0.015215
28	P3	-8.025979	0.003382	-0.015398

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	0.000482441
	stdev	2.35870e-07
MEAN Q	mean	0.000486979
	stdev	2.71052e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127702
	stdev	0.00117994
STDEV Q	mean	0.127956
	stdev	0.00119348

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

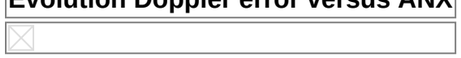
6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

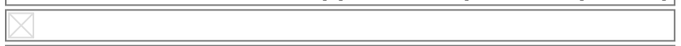
Acsending

Descending

6.3 - Doppler evolution versus ANX for WVS

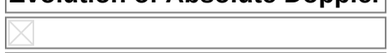
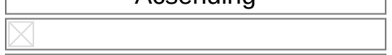
Evolution Doppler error versus ANX


6.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

Acsending

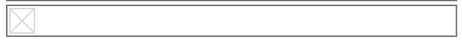
Descending

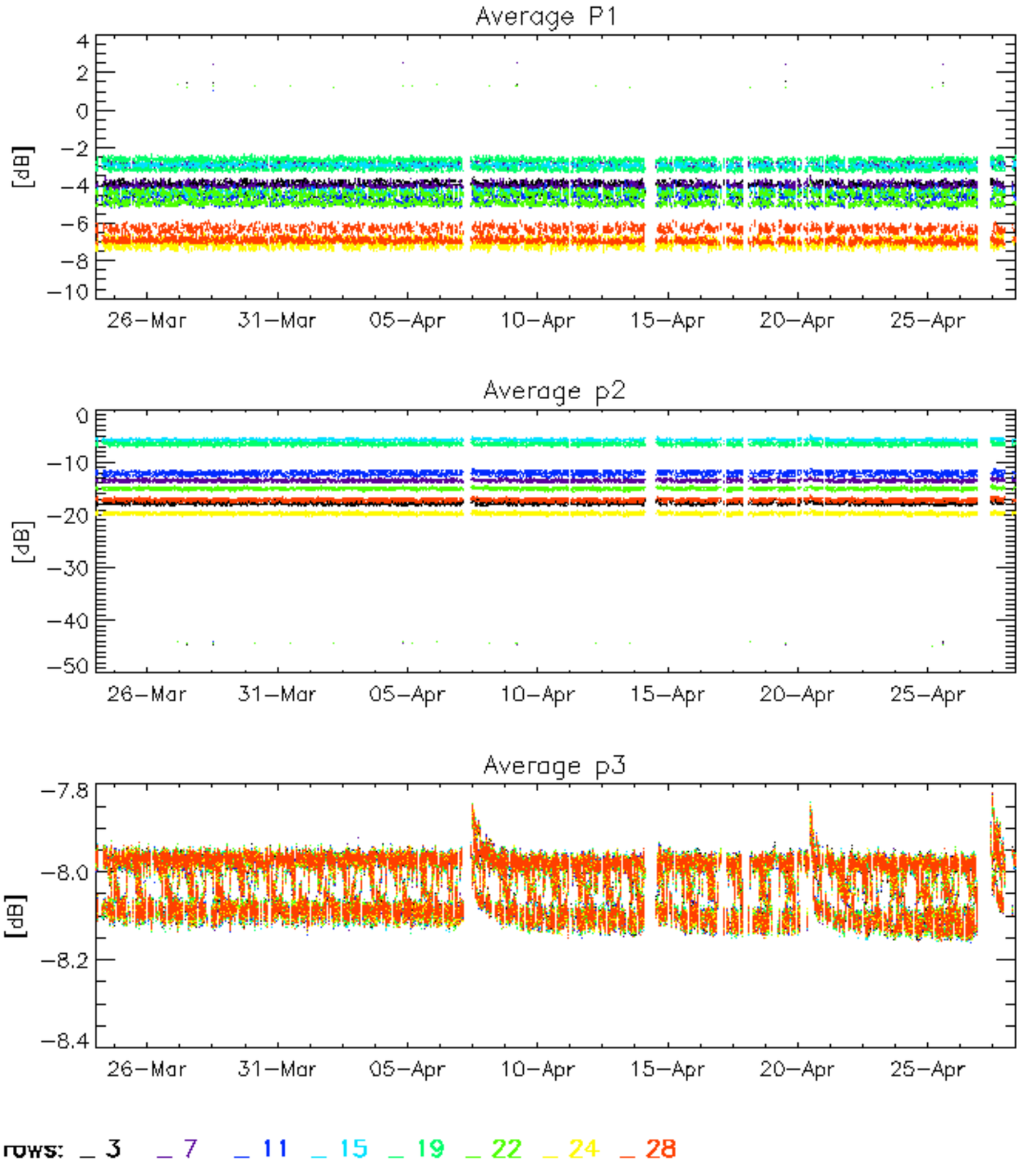
6.5 - Absolute Doppler for GM1

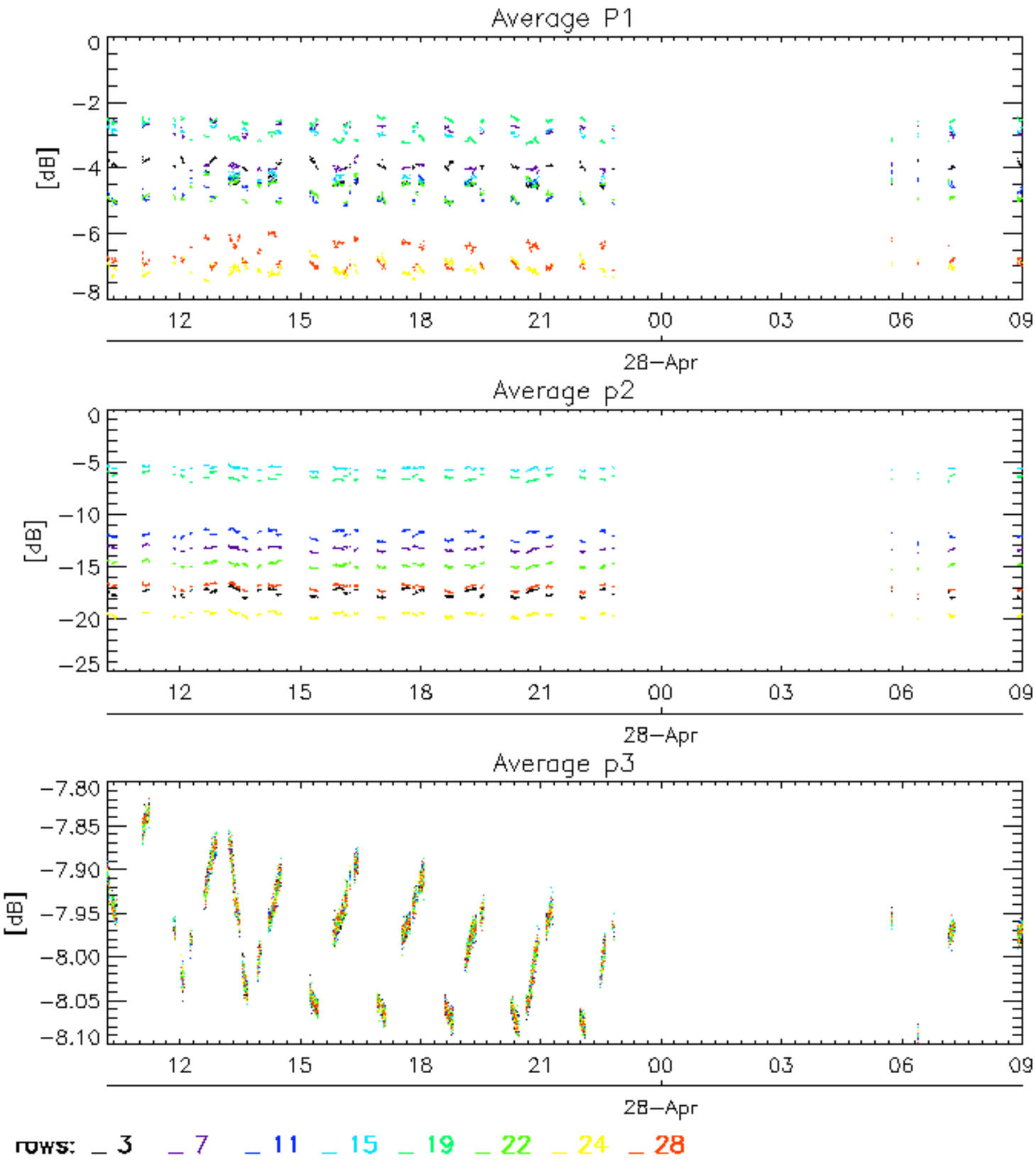
Evolution of Absolute Doppler

Acsending

Descending

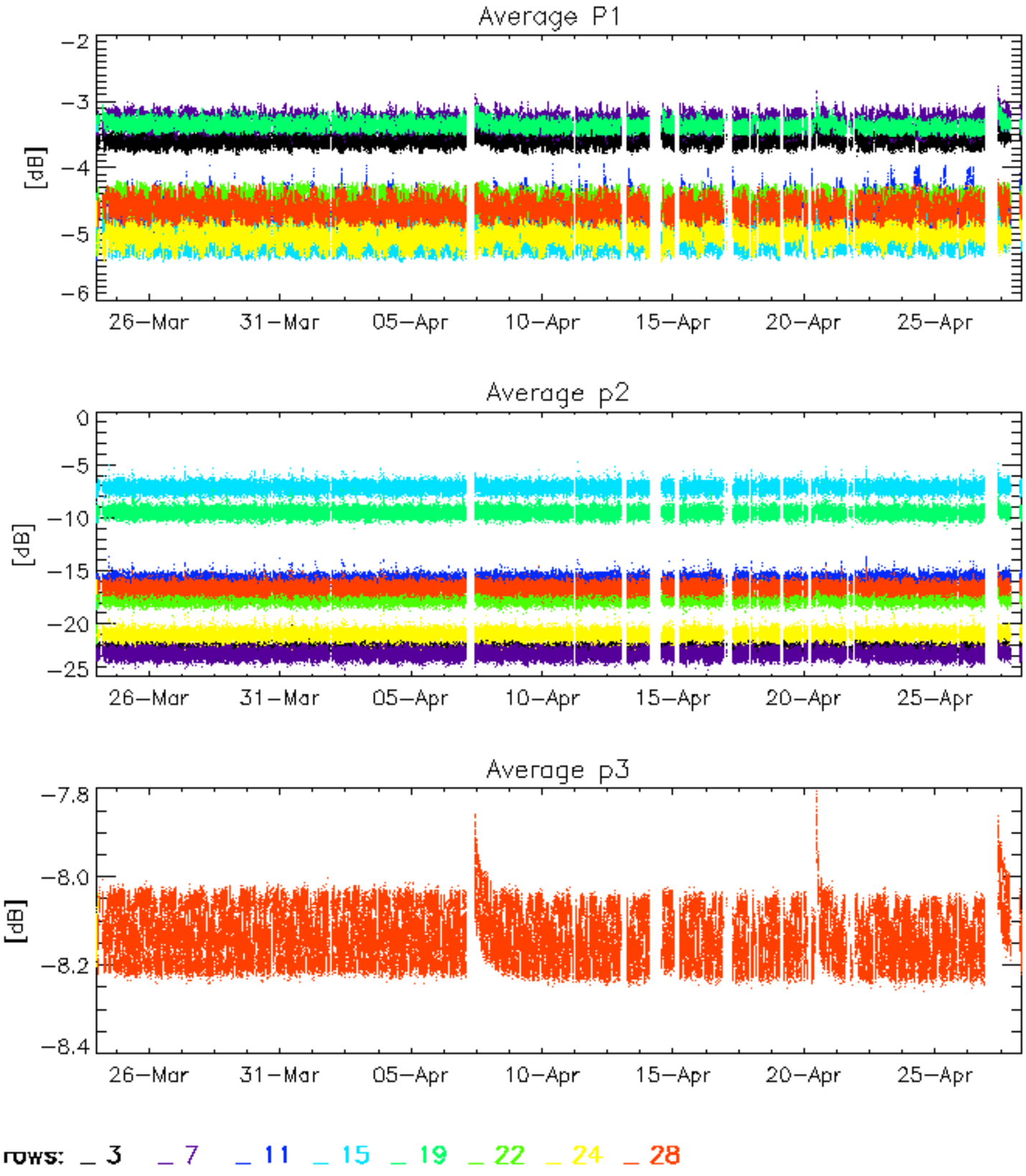
6.6 - Doppler evolution versus ANX for GM1

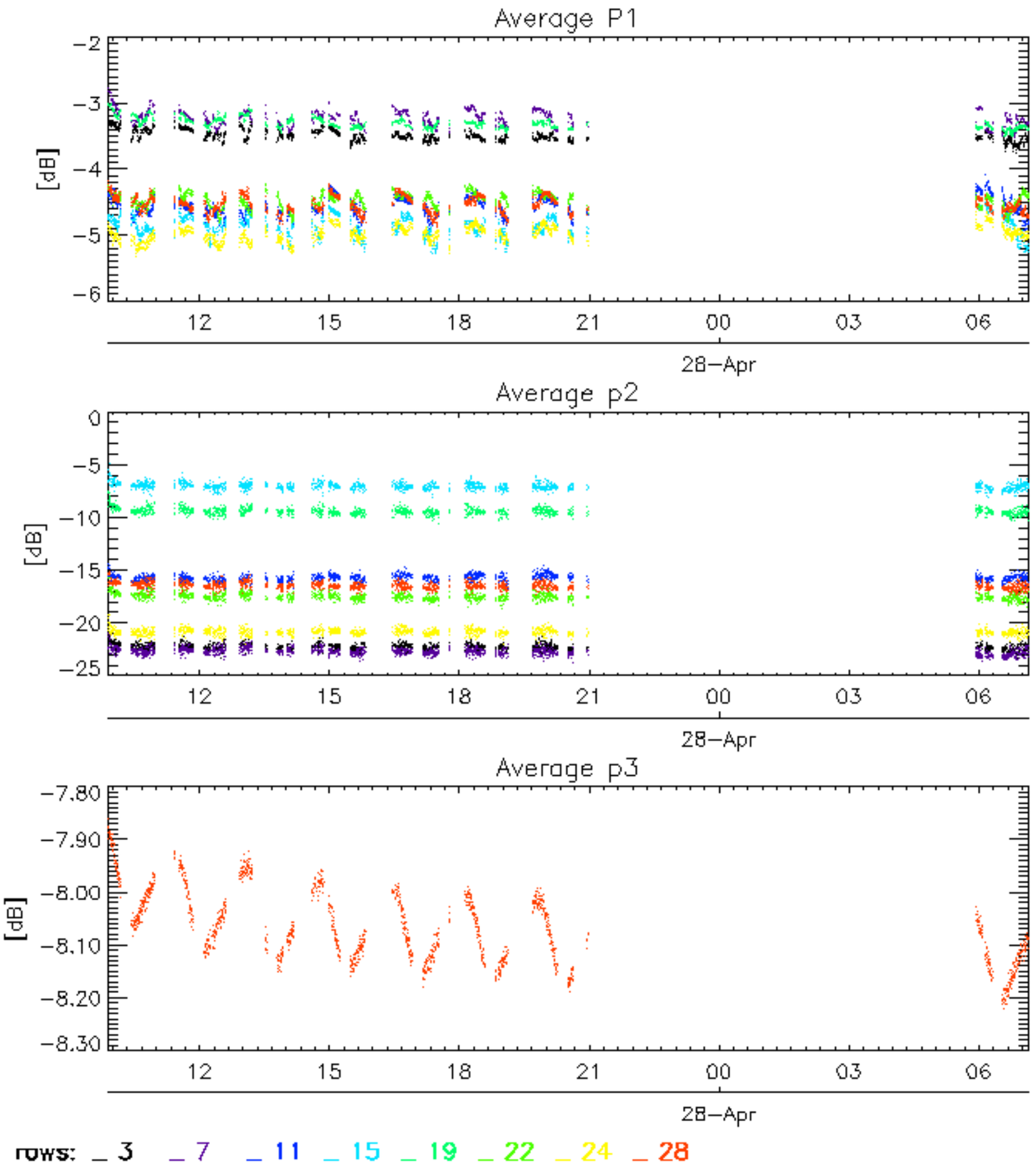
Evolution Doppler error versus ANX




Average P1
[dB]
4
2
0
−2
−4
−6
−8
−10
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
Average p2
[dB]
0
−10
−20
−30
−40
−50
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
Average p3
[dB]
−7.8
−8.0
−8.2
−8.4
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28

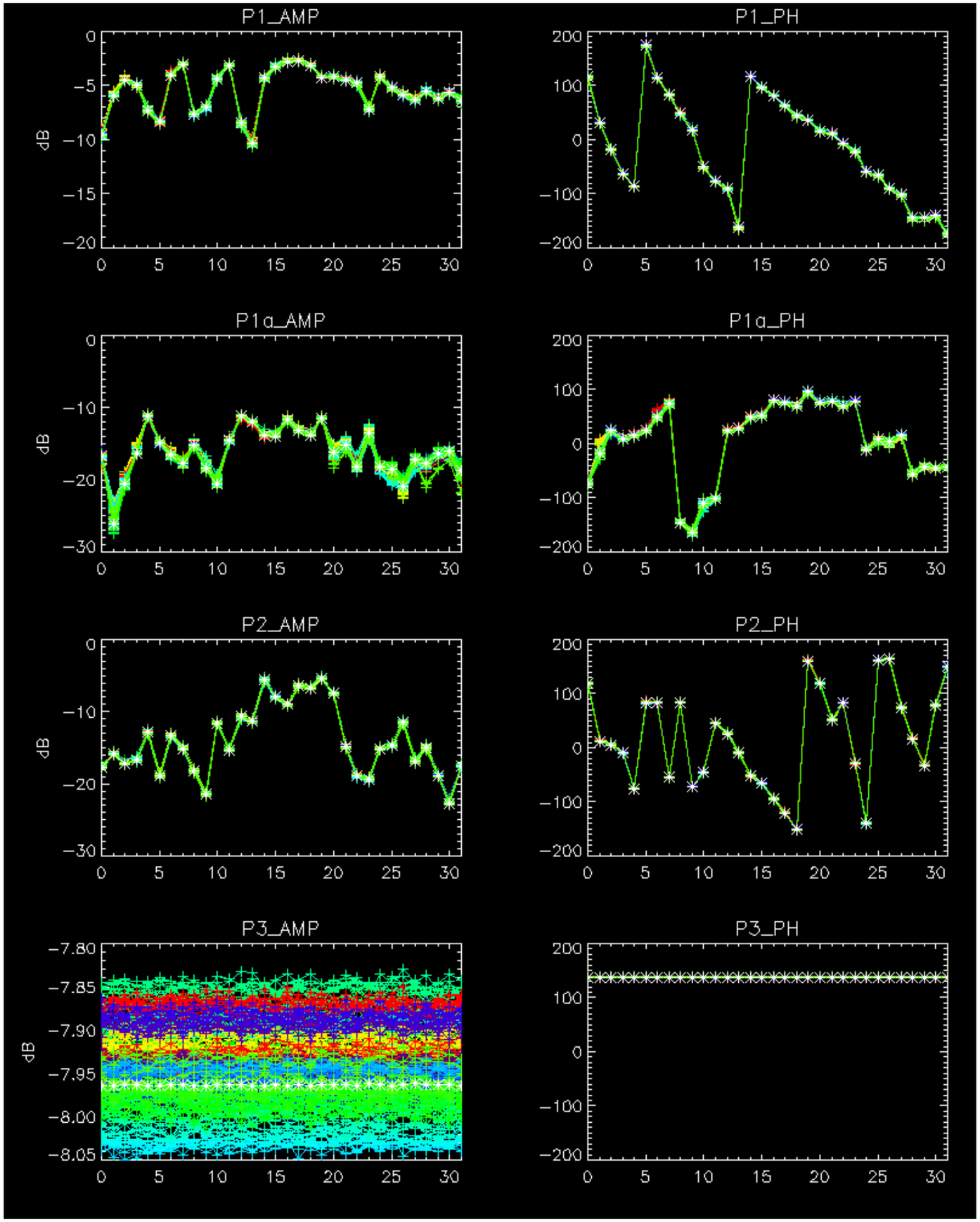

Average P1
[dB]
0
−2
−4
−6
−8
12
15
18
21
00
03
06
09
28−Apr
Average p2
[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
00
03
06
09
28−Apr
Average p3
[dB]
−7.80
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
12
15
18
21
00
03
06
09
28−Apr
rows: 3 7 11 15 19 22 24 28

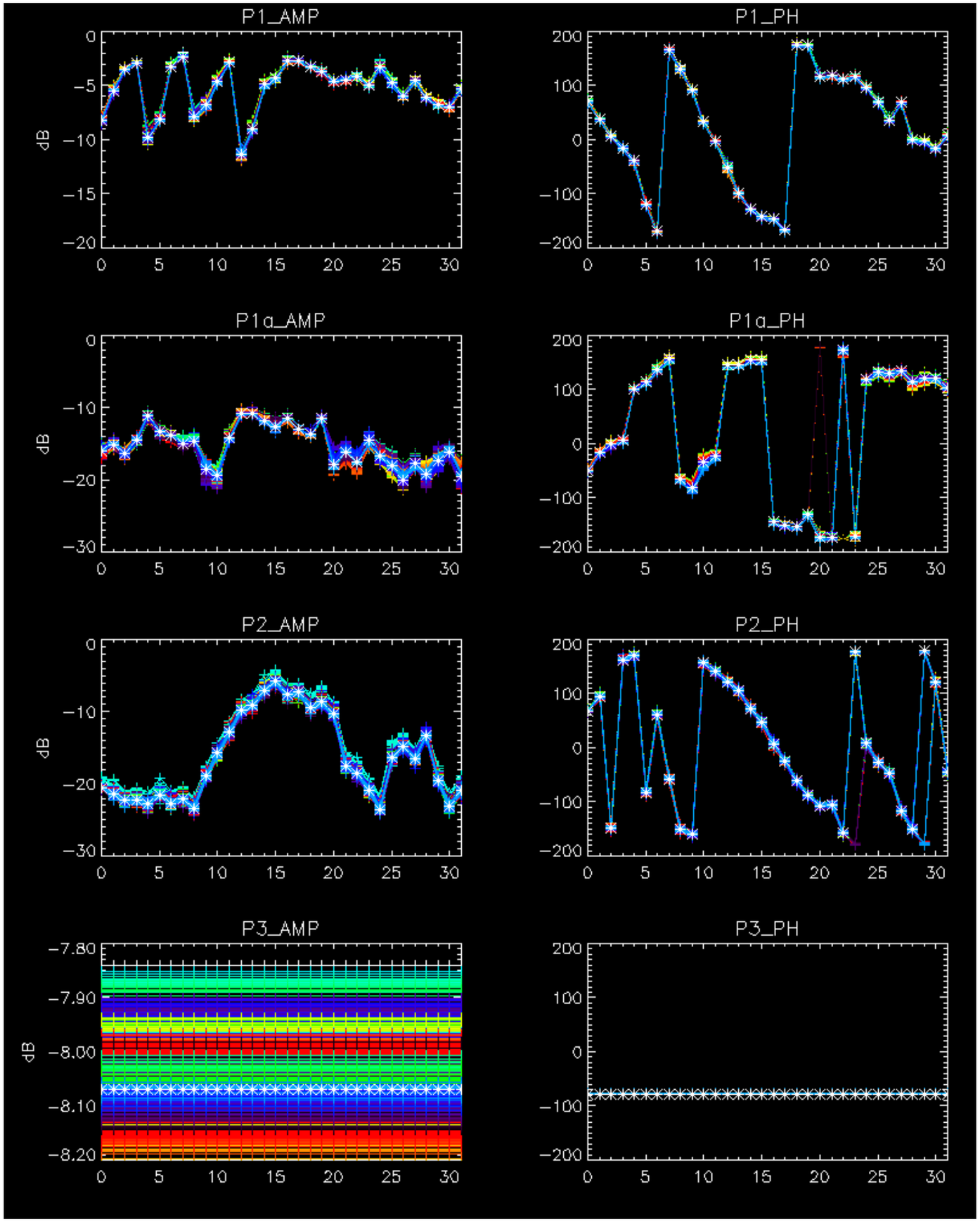

Average P1
[dB]
−2
−3
−4
−5
−6
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
Average p2
[dB]
0
−5
−10
−15
−20
−25
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
Average p3
[dB]
−7.8
−8.0
−8.2
−8.4
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28


Average P1
[dB]
−2
−3
−4
−5
−6
12
15
18
21
00
03
06
28−Apr
Average p2
[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
00
03
06
28−Apr
Average p3
[dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
12
15
18
21
00
03
06
28−Apr
rows: 3 7 11 15 19 22 24 28

No anomalies observed on available browse products.

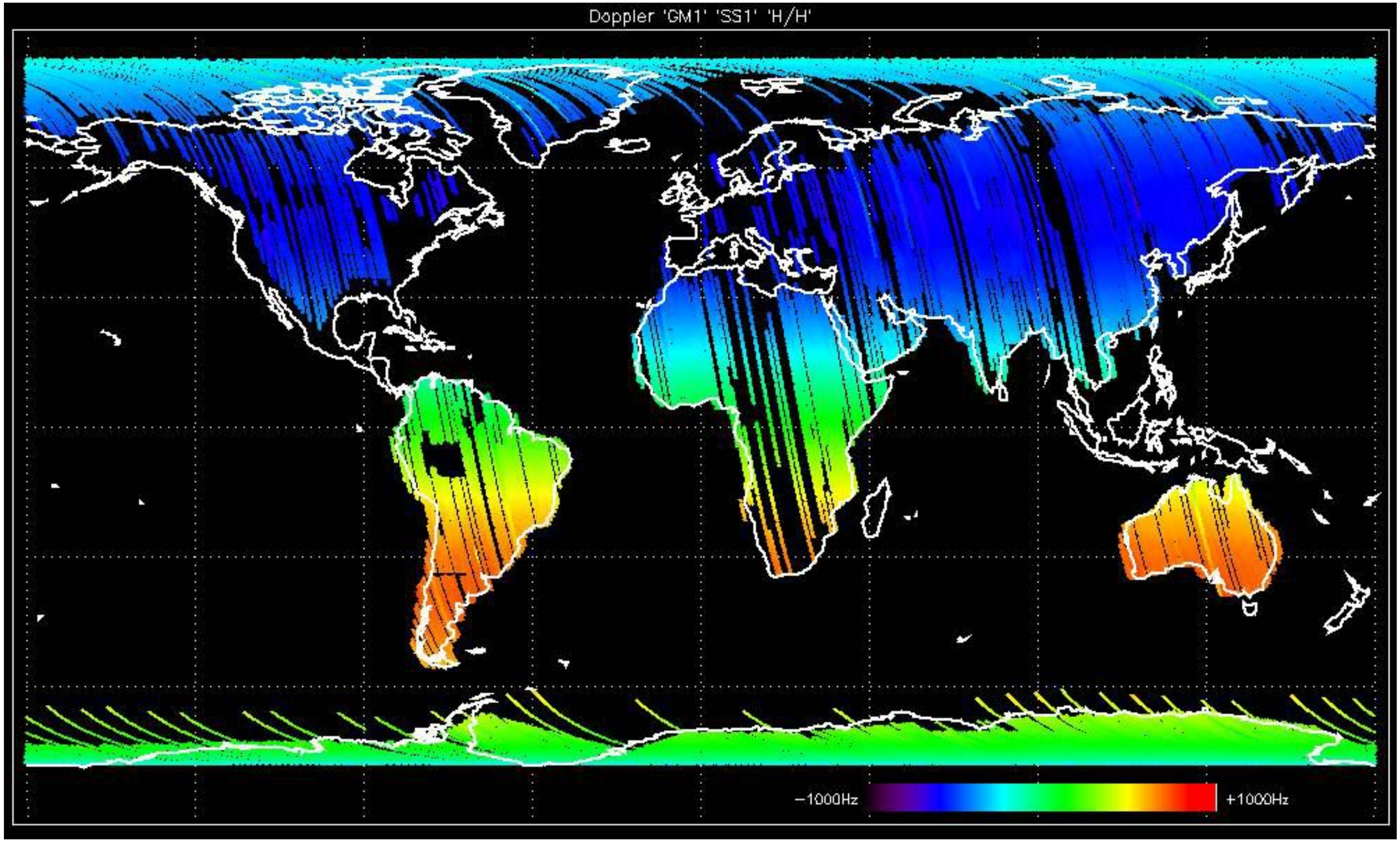
No anomalies observed.

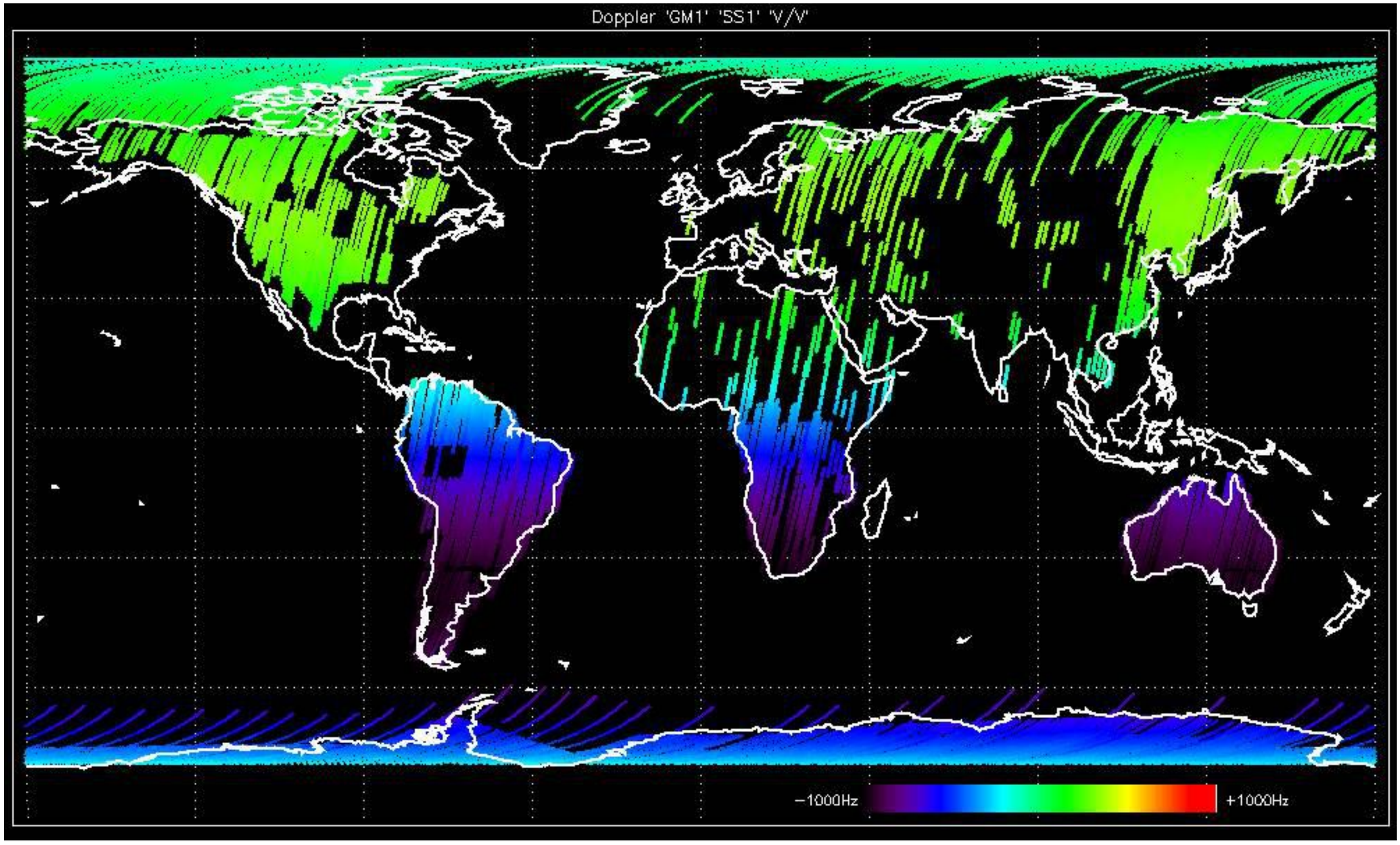

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.80
−7.85
−7.90
−7.95
−8.00
−8.05
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

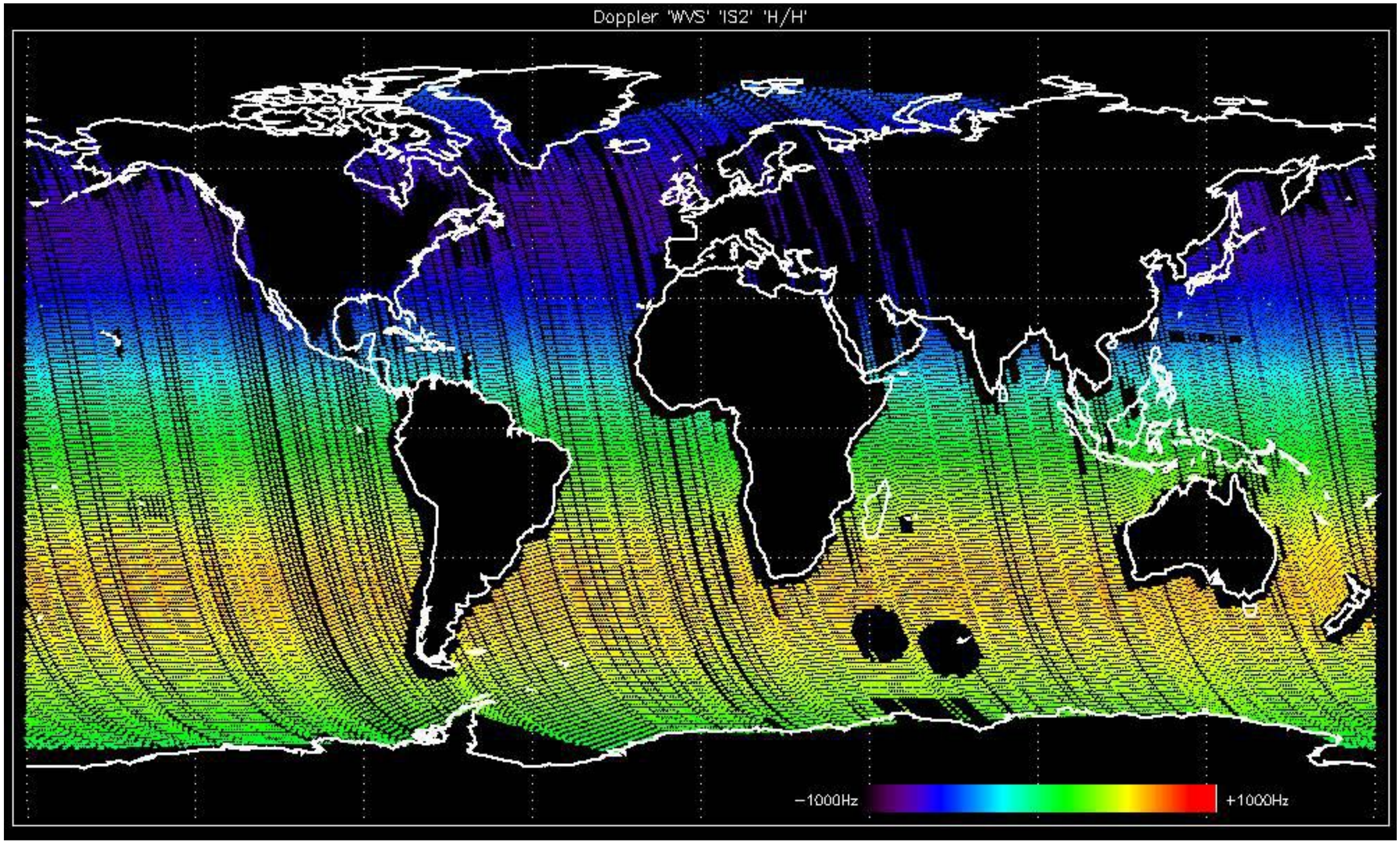

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.80
−7.90
−8.00
−8.10
−8.20
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

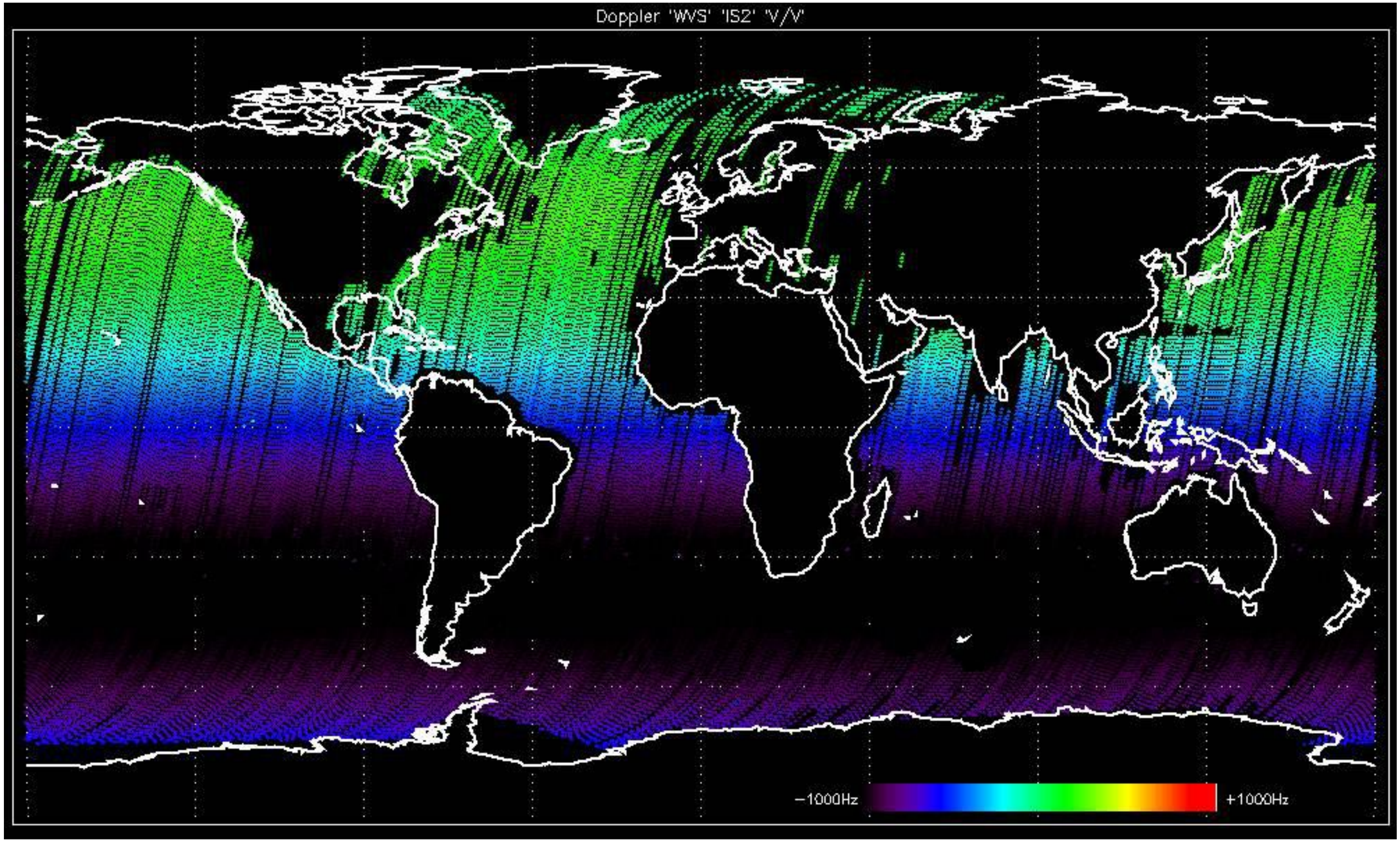
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

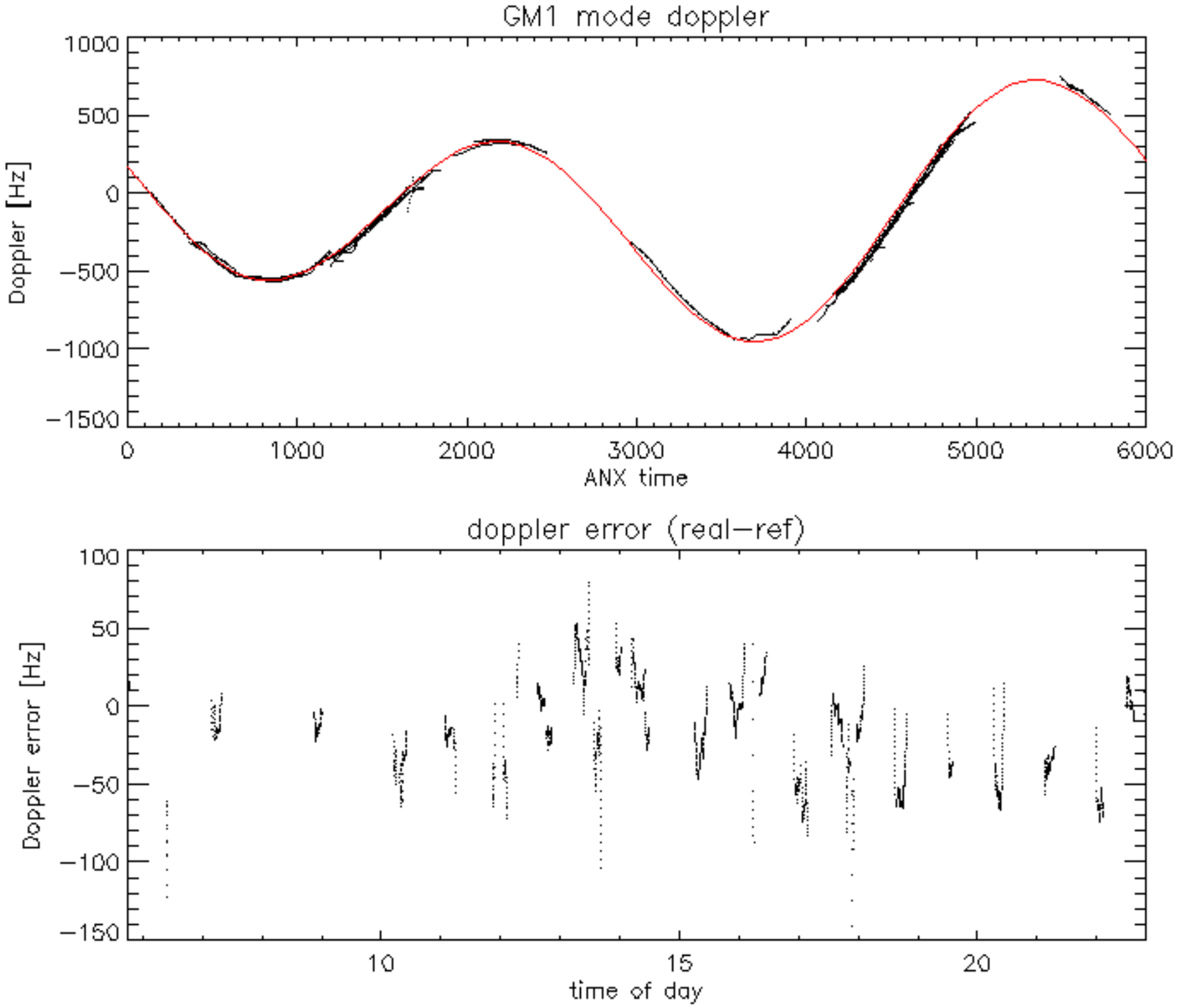
No anomalies observed in Doppler evolution.
Analysis performed over the last 35 days.

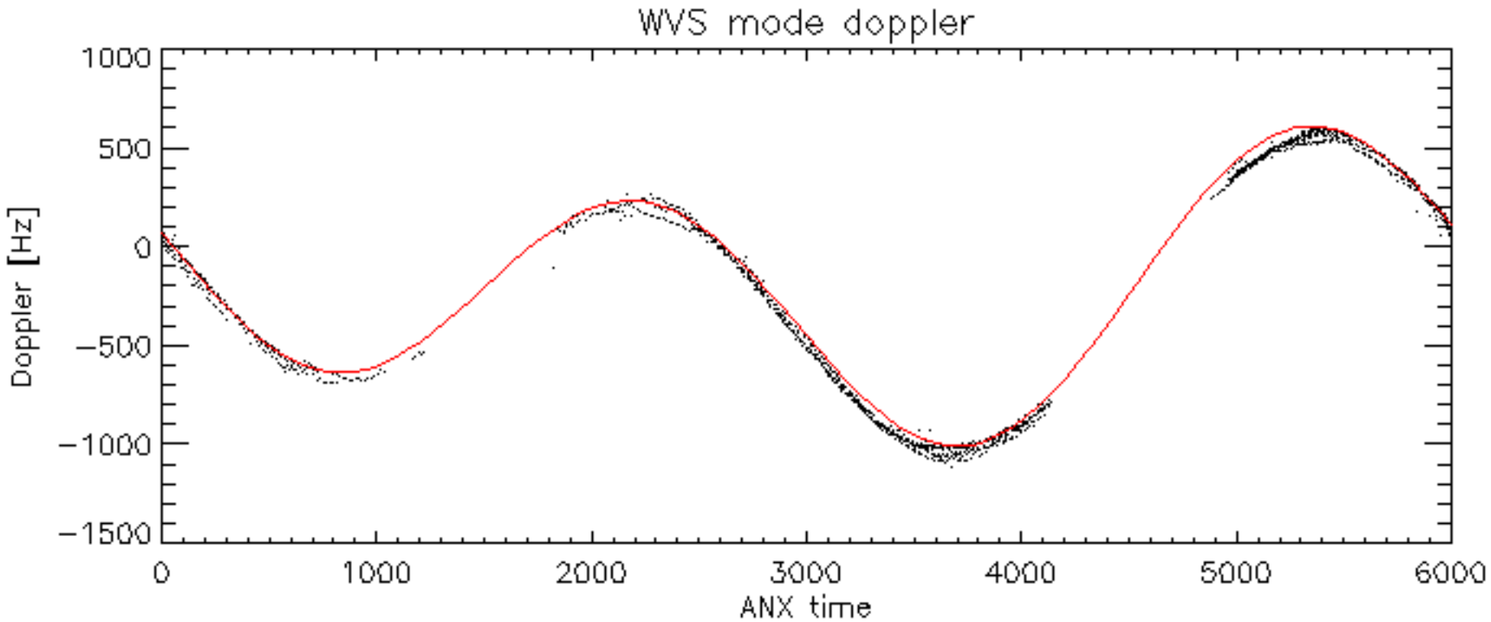

Doppler 'GM1' 'SS1' 'H/H'
−1000Hz
+1000Hz

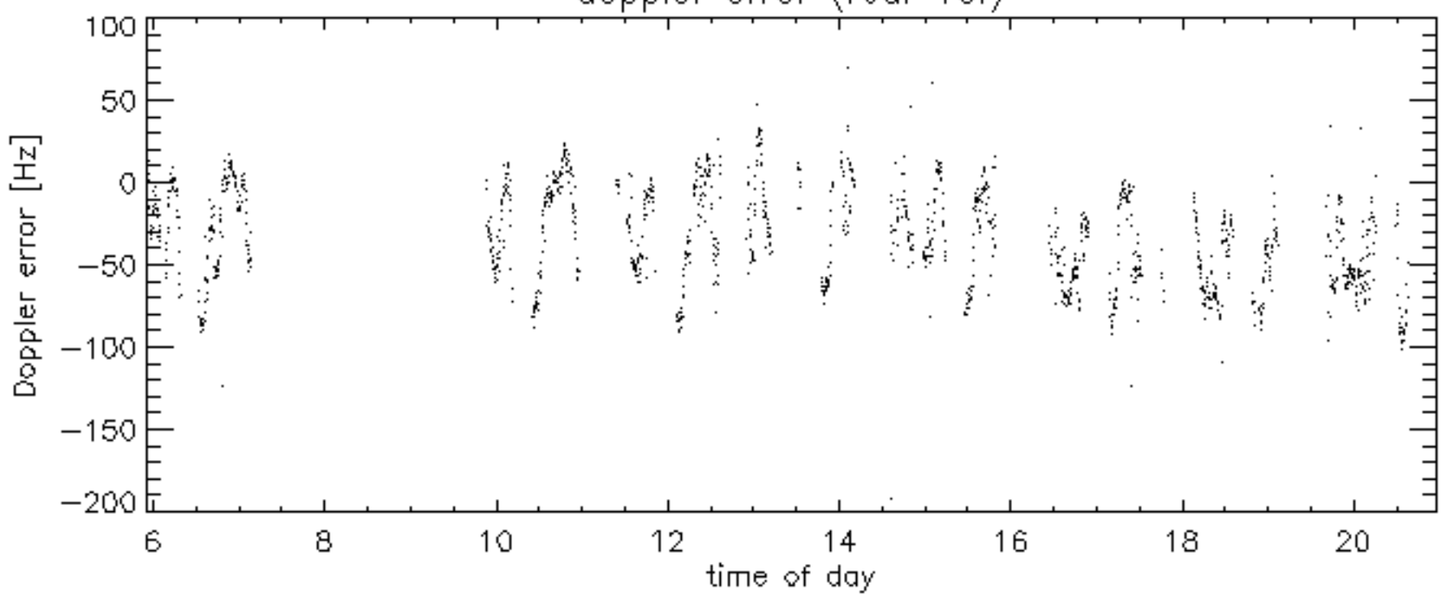

Doppler 'GM1' 'SS1' 'V/V'
−1000Hz
+1000Hz

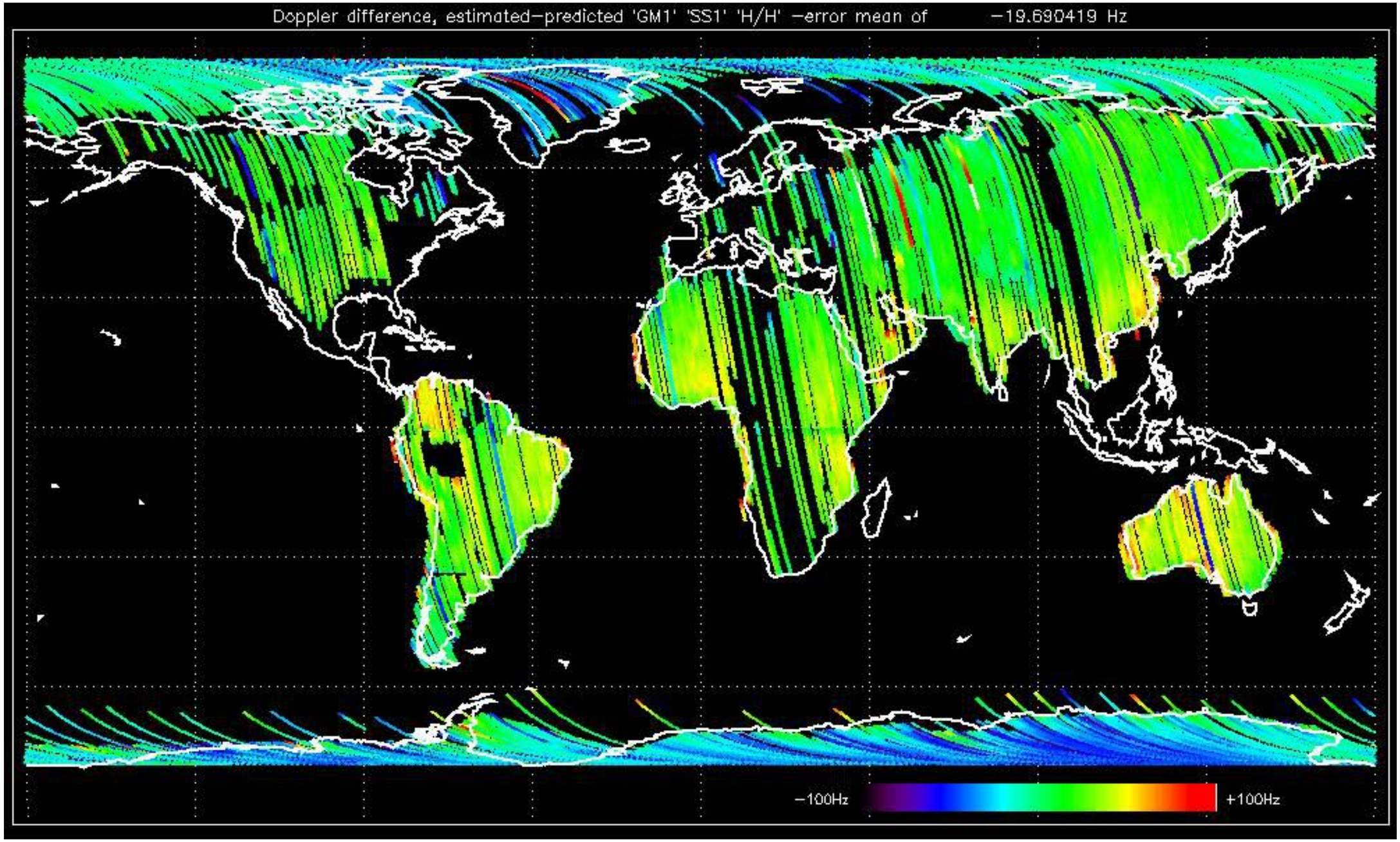

Doppler 'WVS' 'IS2' 'H/H'
−1000Hz
+1000Hz

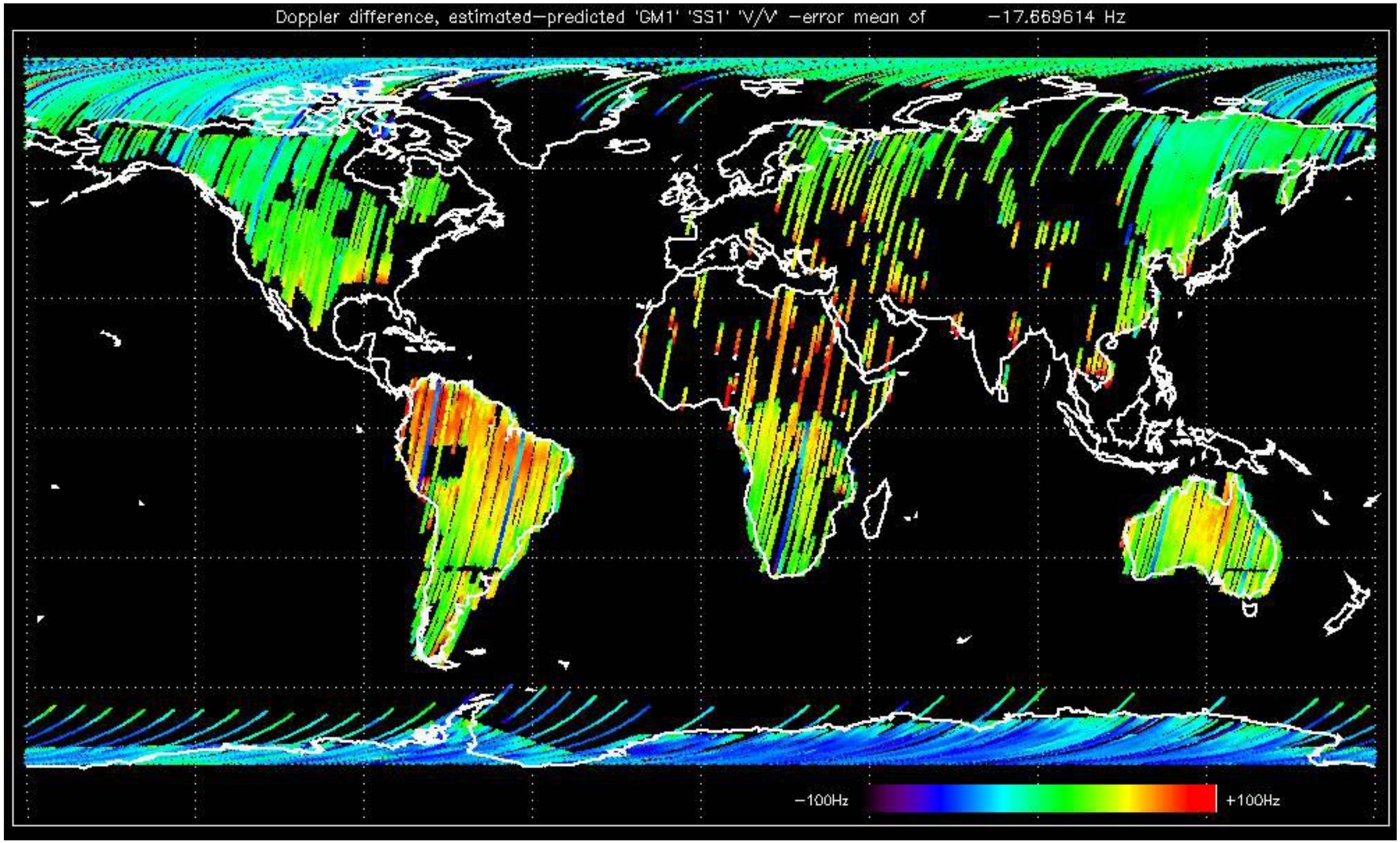

Doppler 'WVS' 'IS2' 'V/V'
−1000Hz
+1000Hz

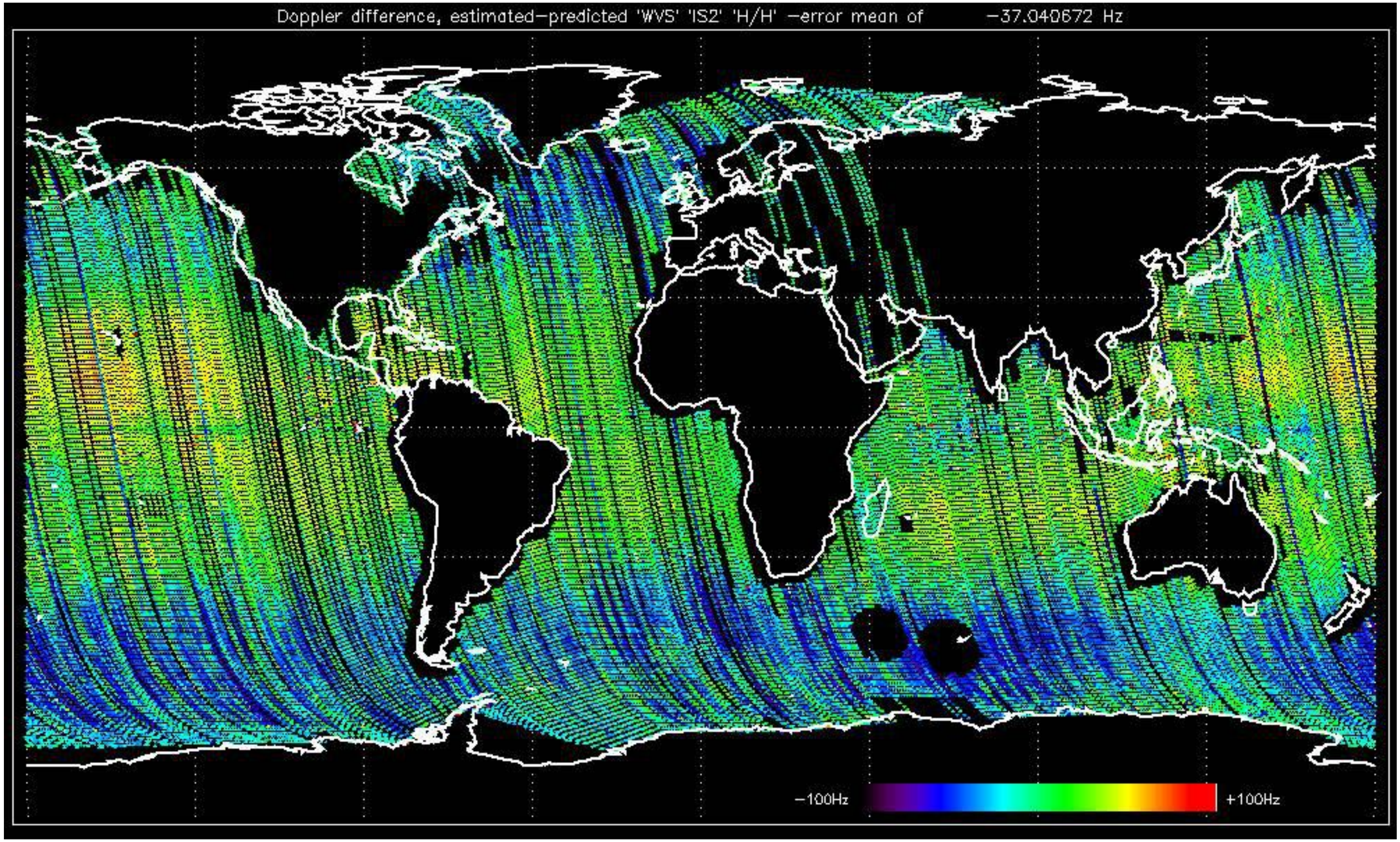

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
100
50
0
−50
−100
−150
10
15
20
time of day

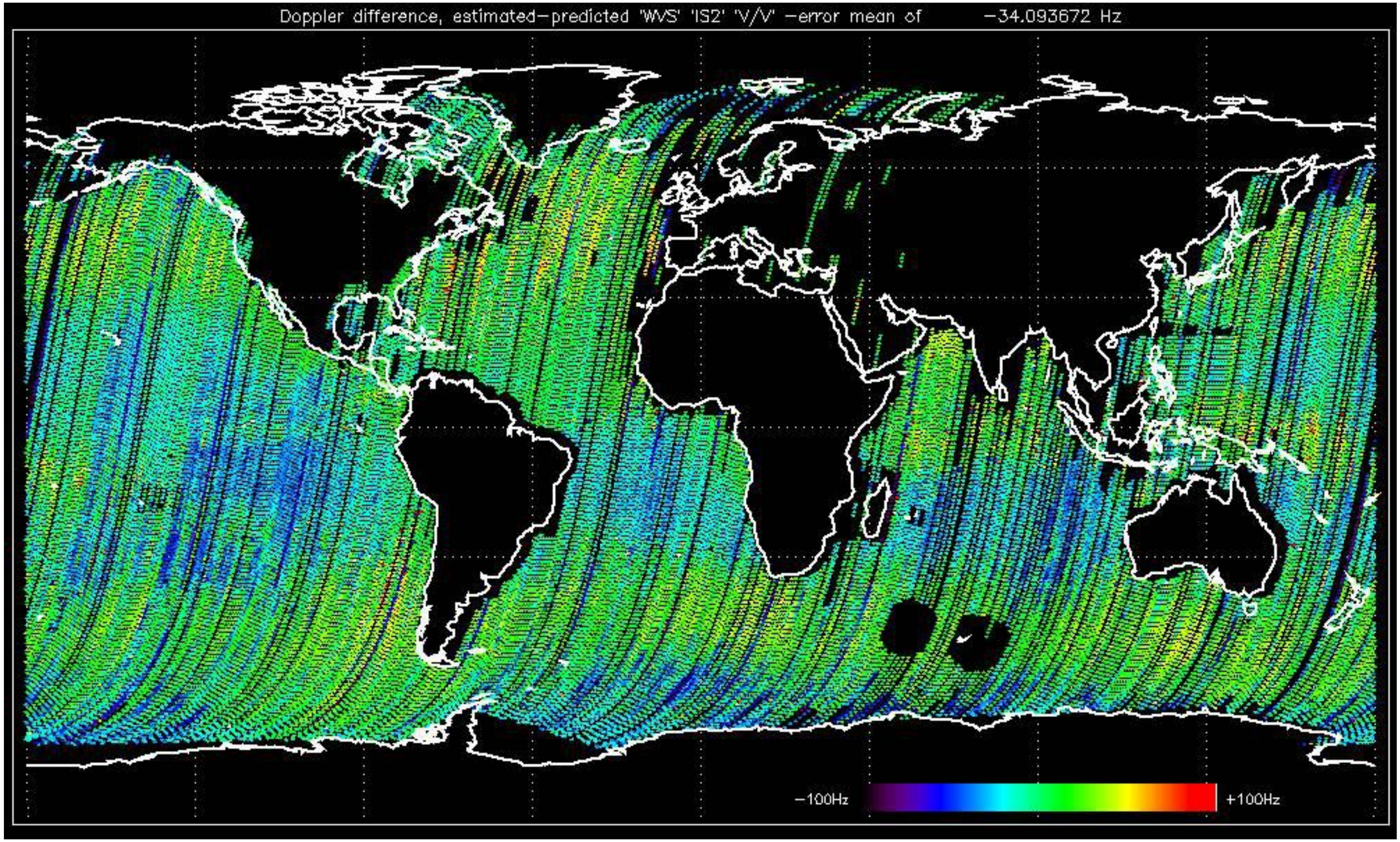

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time


doppler error (real−ref)
Doppler error [Hz]
100
50
0
−50
−100
−150
−200
6
8
10
12
14
16
18
20
time of day


Doppler difference, estimated−predicted 'GM1' 'SS1' 'H/H' −error mean of −19.690419 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' 'V/V −error mean of −17.669614 Hz
−100Hz
+100Hz

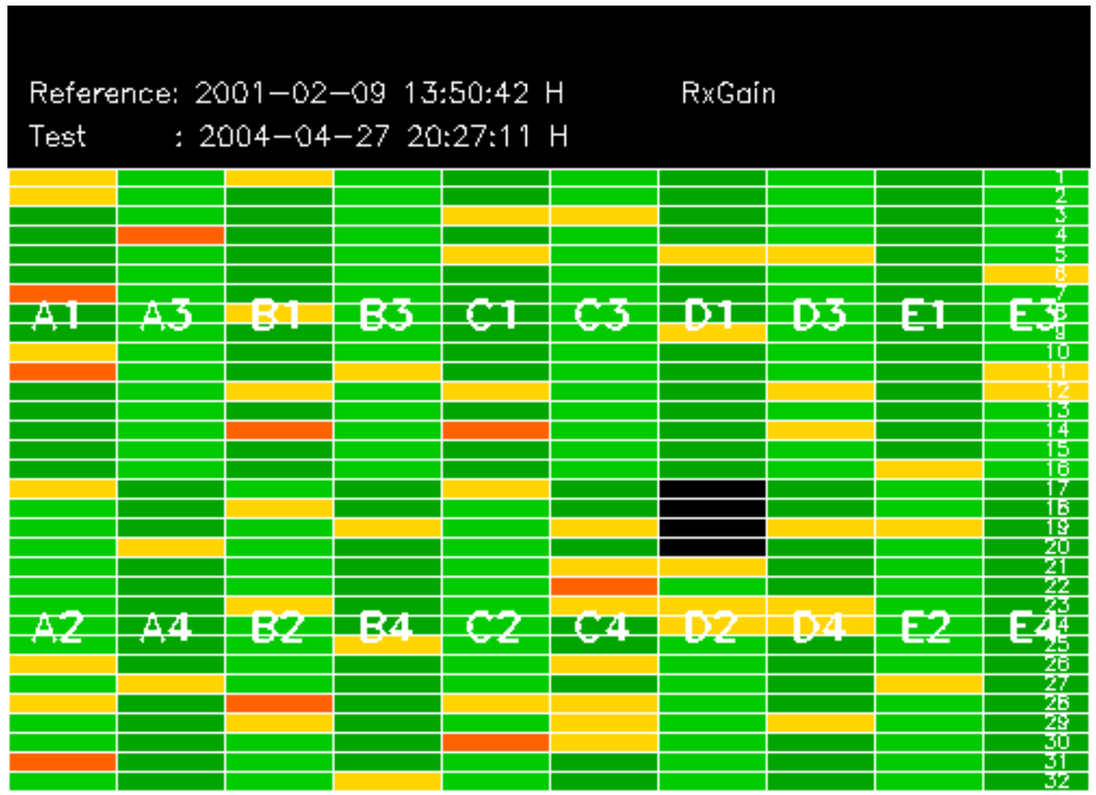

Doppler difference, estimated-predicted 'WVS' 'IS2' 'H/H' -error mean of -37.040672 Hz
-100Hz
+100Hz

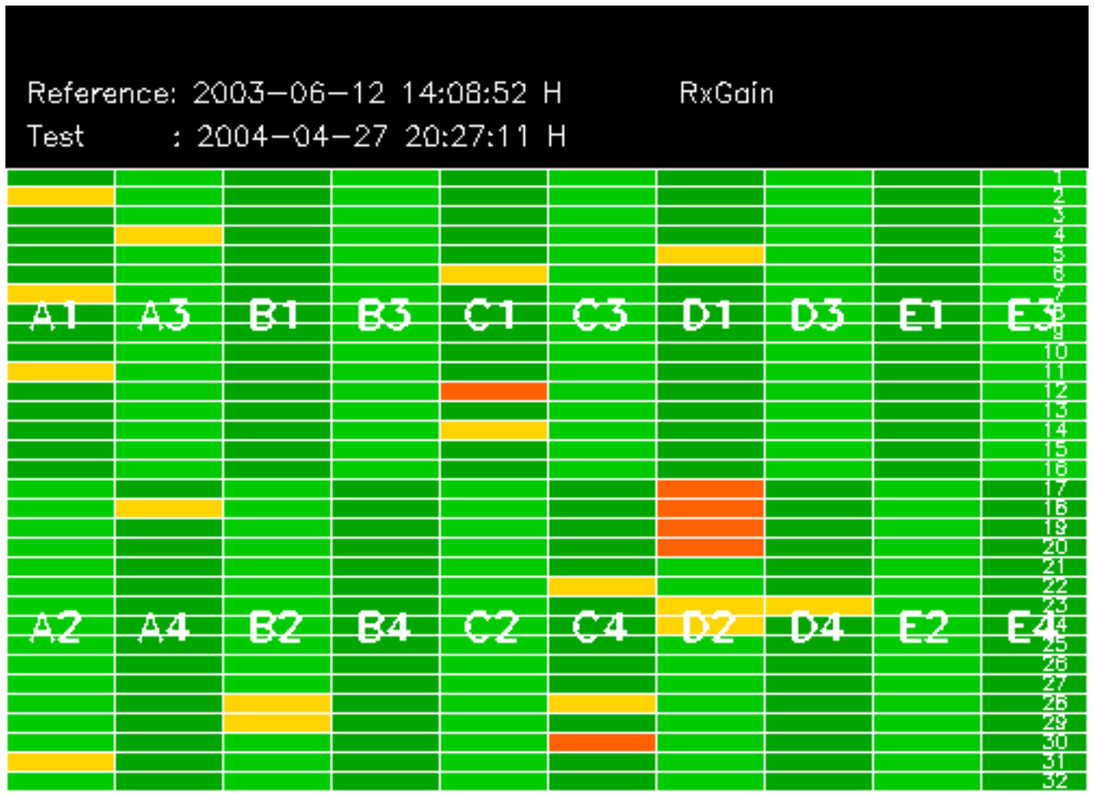

Doppler difference, estimated−predicted 'WVS' 'IS2' 'V/V' −error mean of −34.093672 Hz
−100Hz
+100Hz

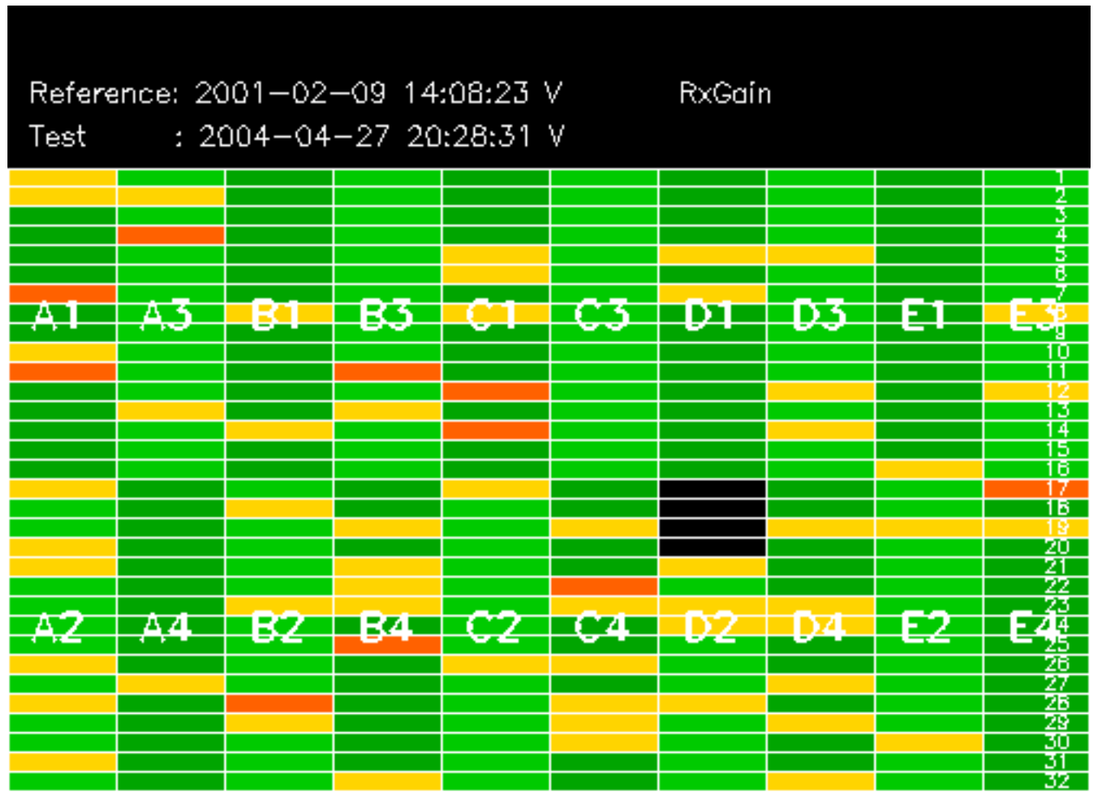
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

- ASA_MS__0PNPDK20040427_202711_000000152026_00214_11290_0098.N1
- ASA_MS__0PNPDK20040427_202831_000000152026_00214_11290_0099.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2004-04-27 20:27:11 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 : 2004-04-27 20:27:11 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
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2004-04-27 20:28:31 V
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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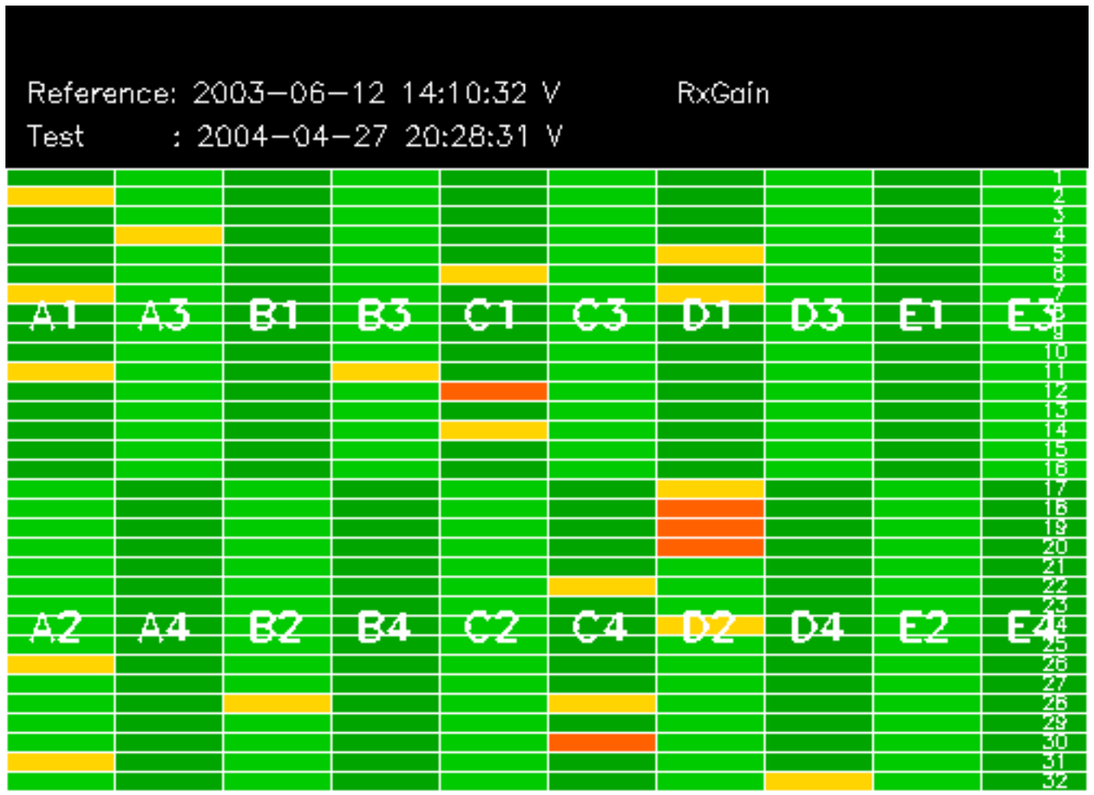
Reference: 2003-06-12 14:10:32 V
Test : 2004-04-27 20:28:31 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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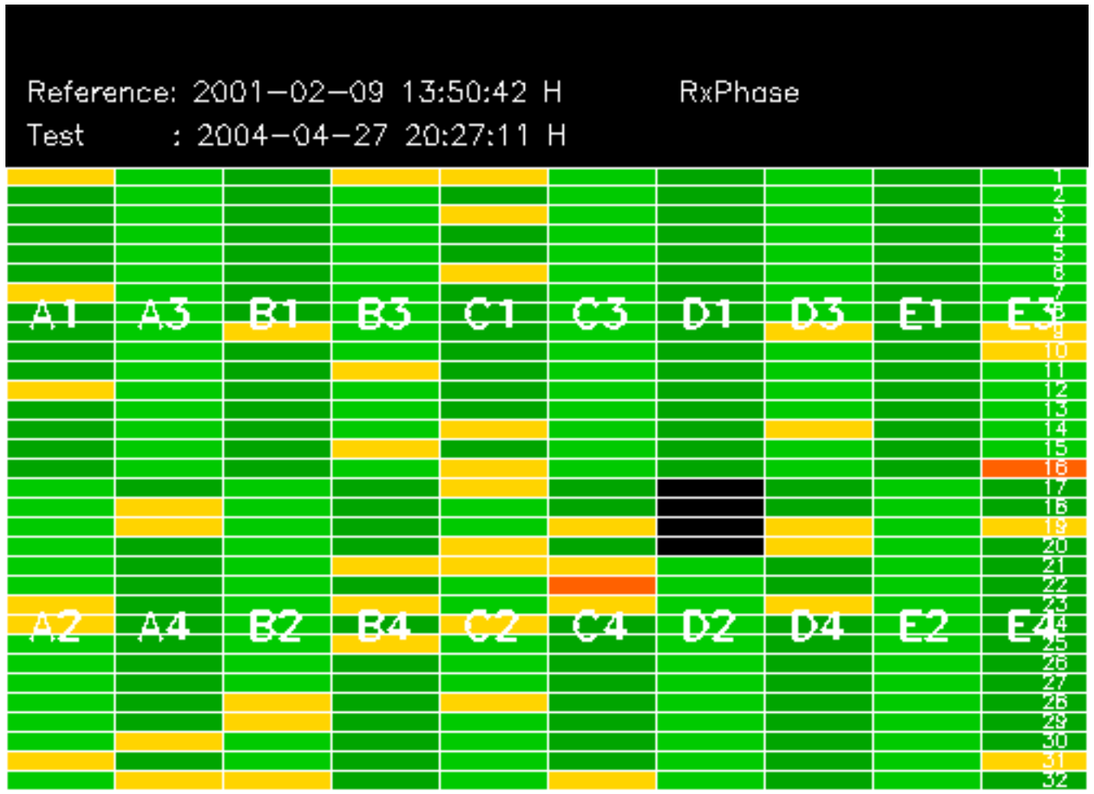
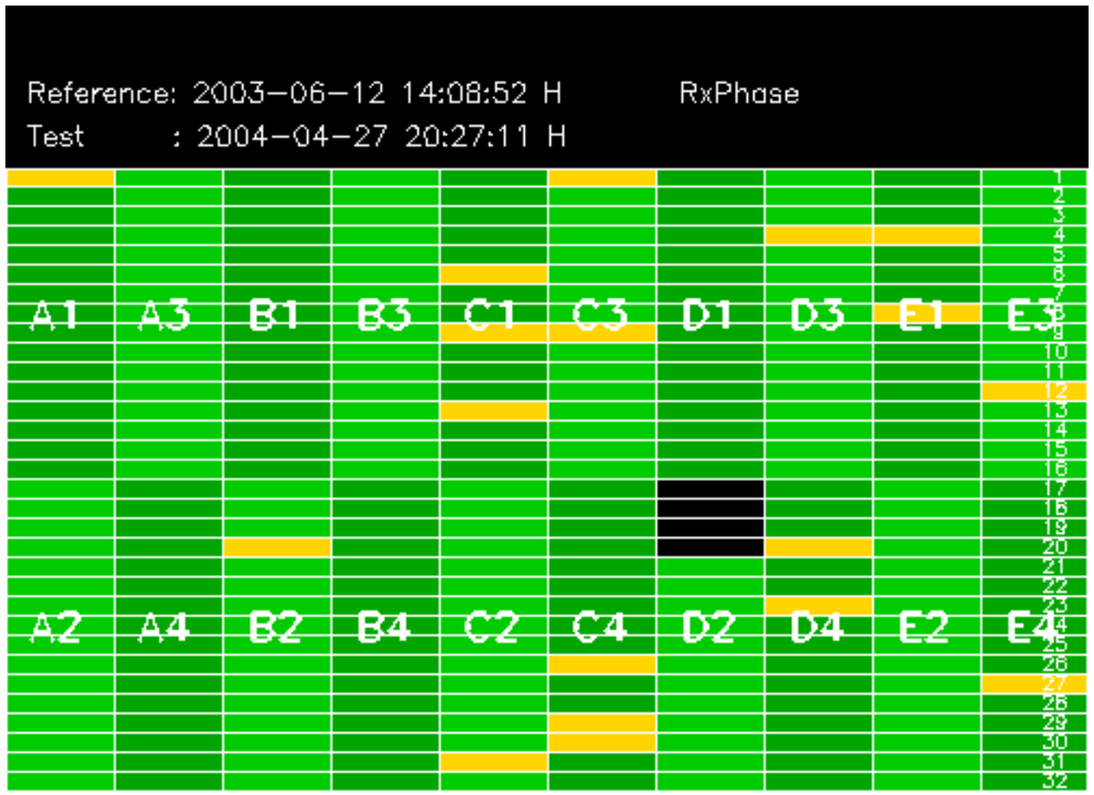

Reference: 2001-02-09 13:50:42 H
Test : 2004-04-27 20:27:11 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-04-27 20:27:11 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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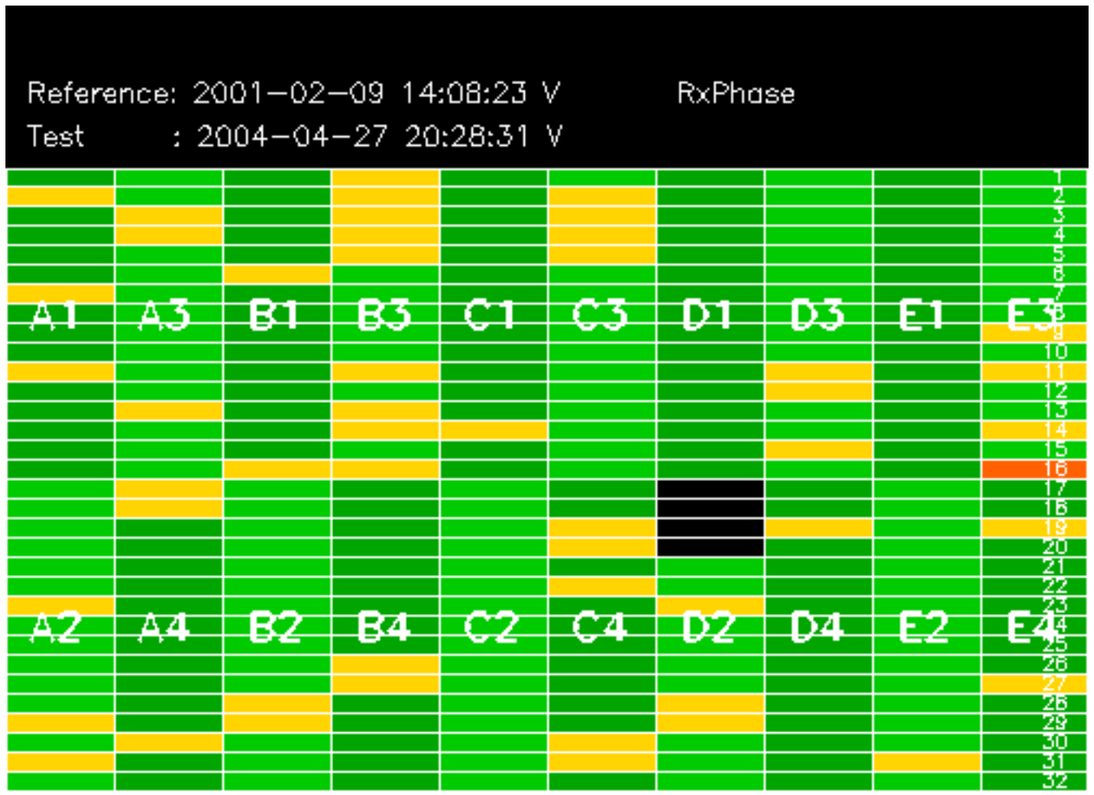
Reference: 2001-02-09 14:08:23 V
Test : 2004-04-27 20:28:31 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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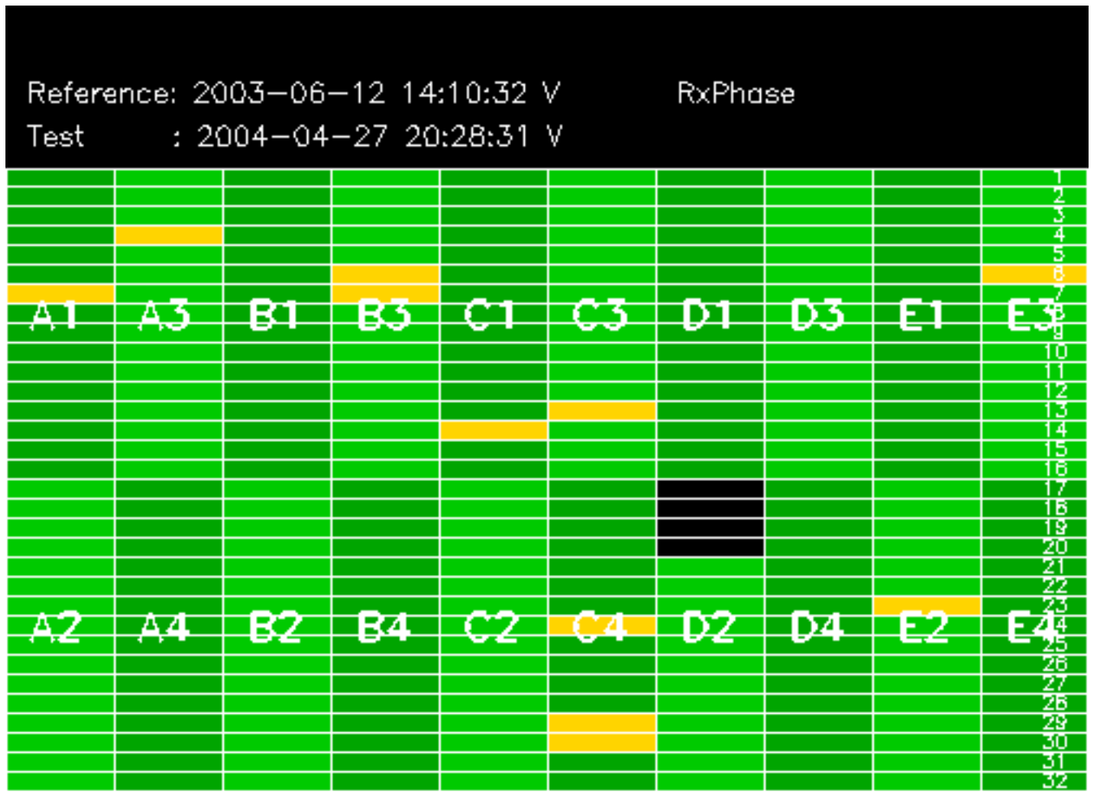
Reference: 2003-06-12 14:10:32 V
Test : 2004-04-27 20:28:31 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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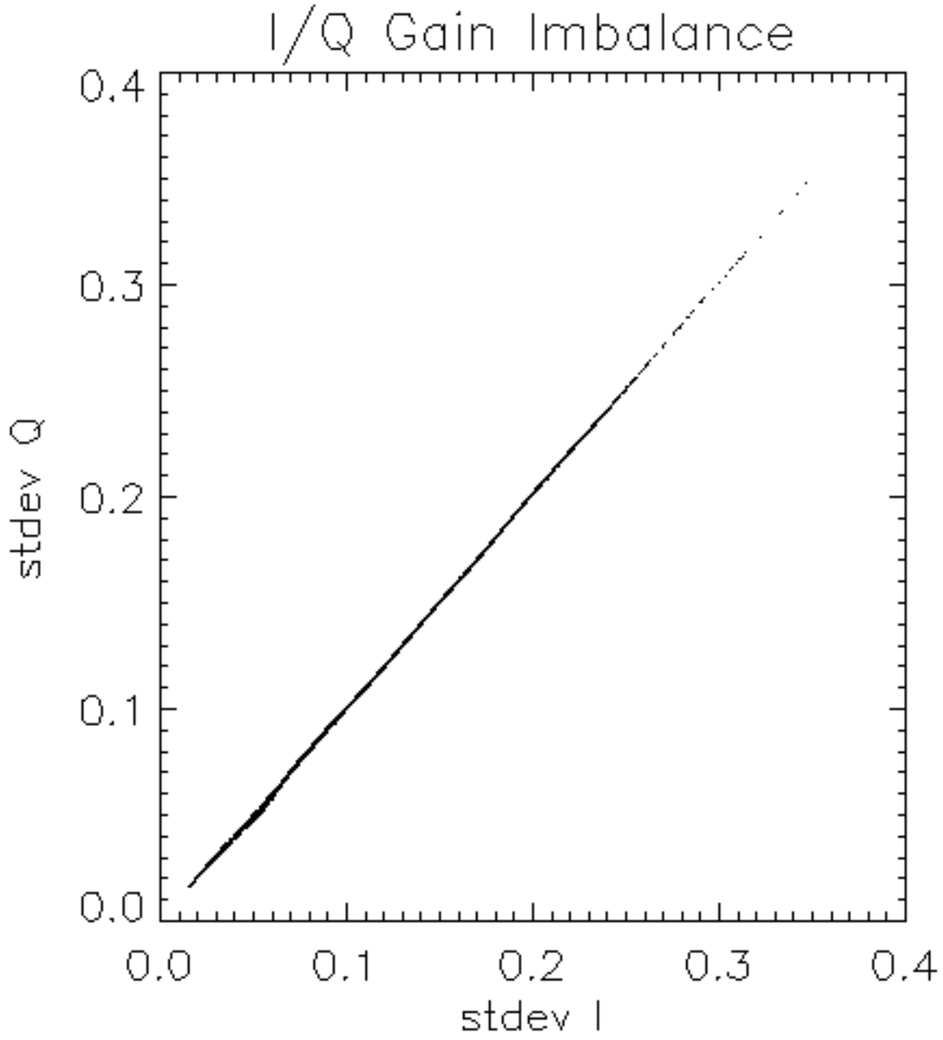
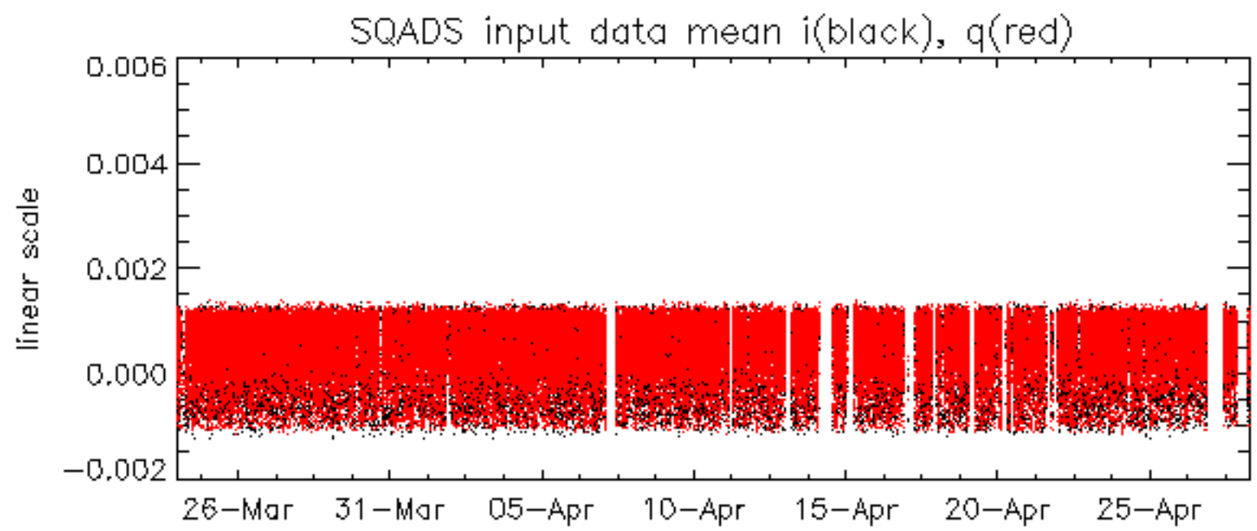
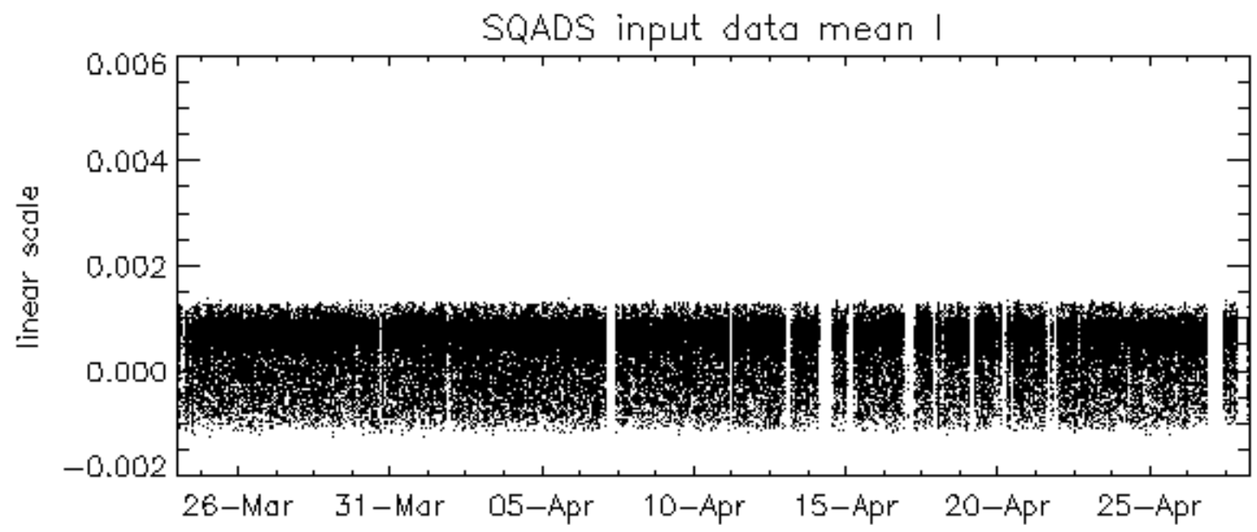
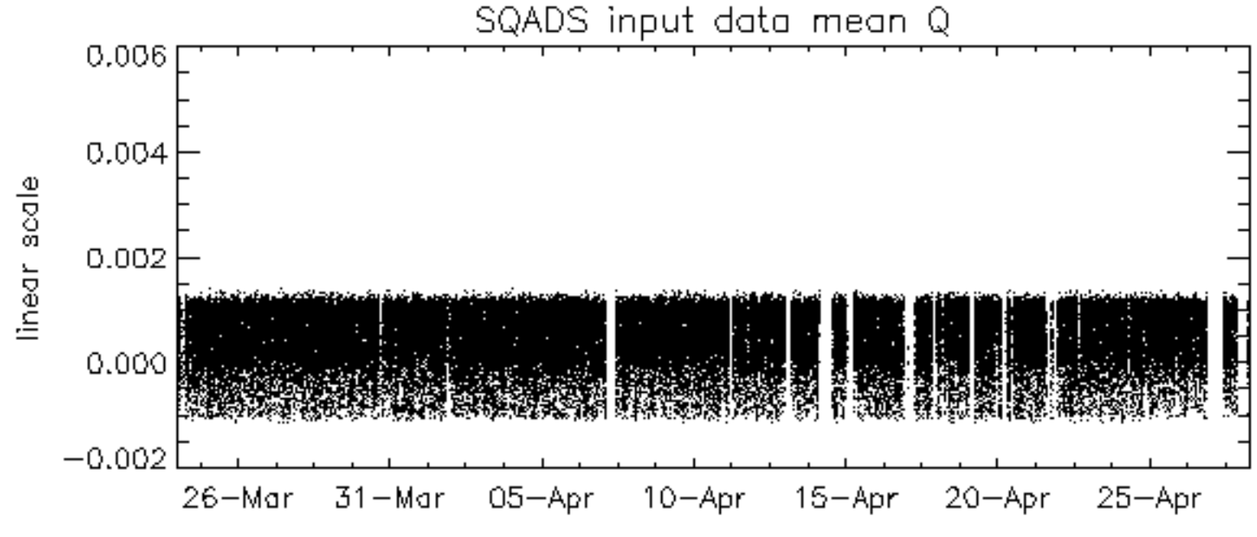
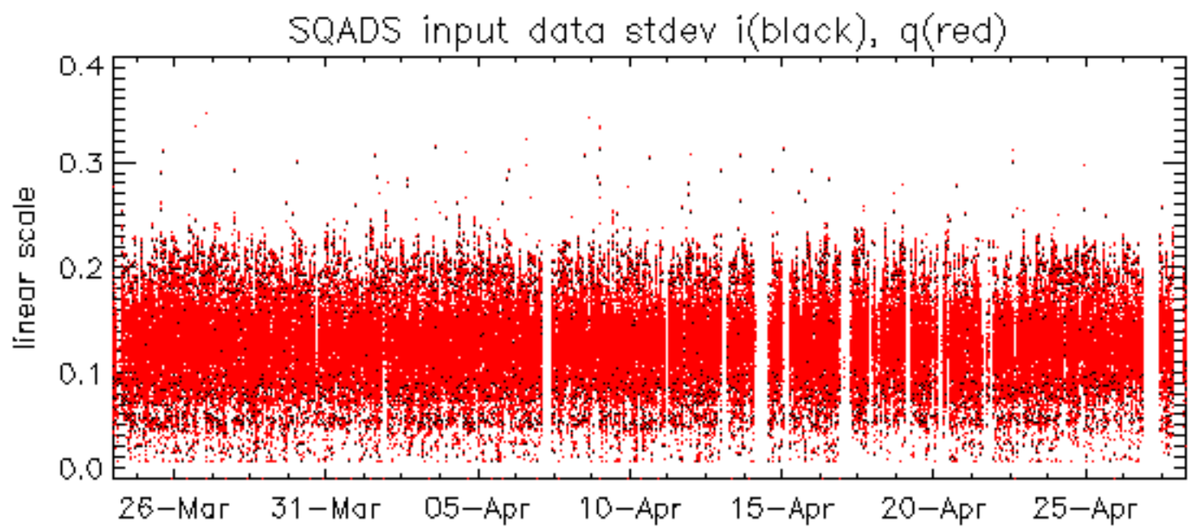
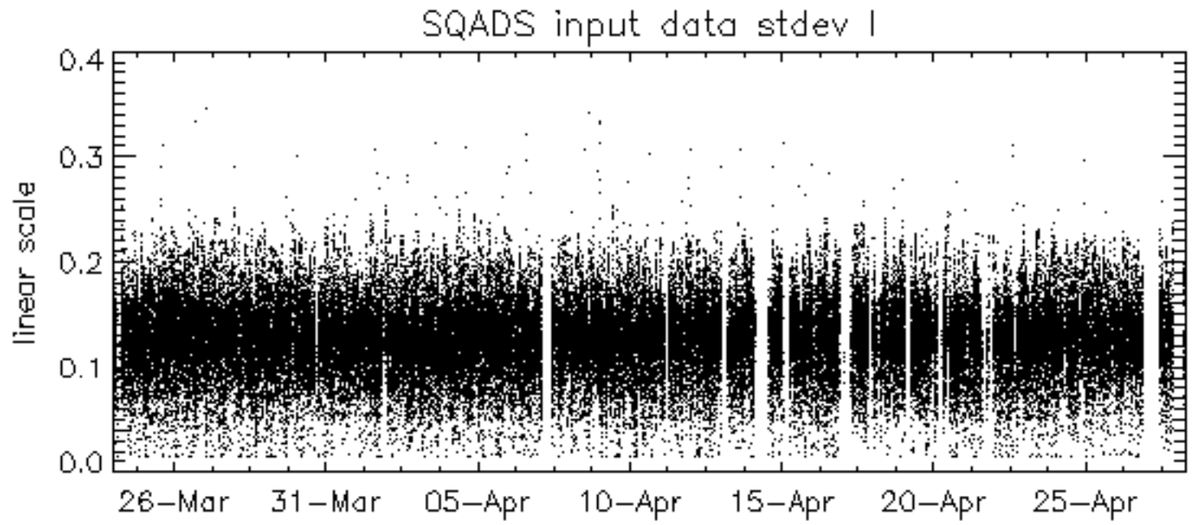

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4

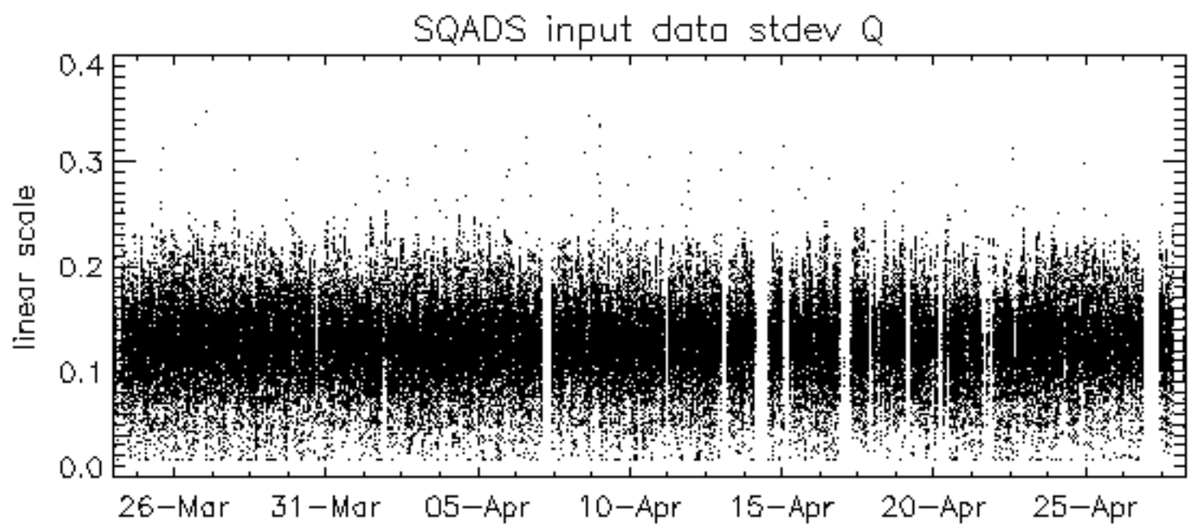

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr

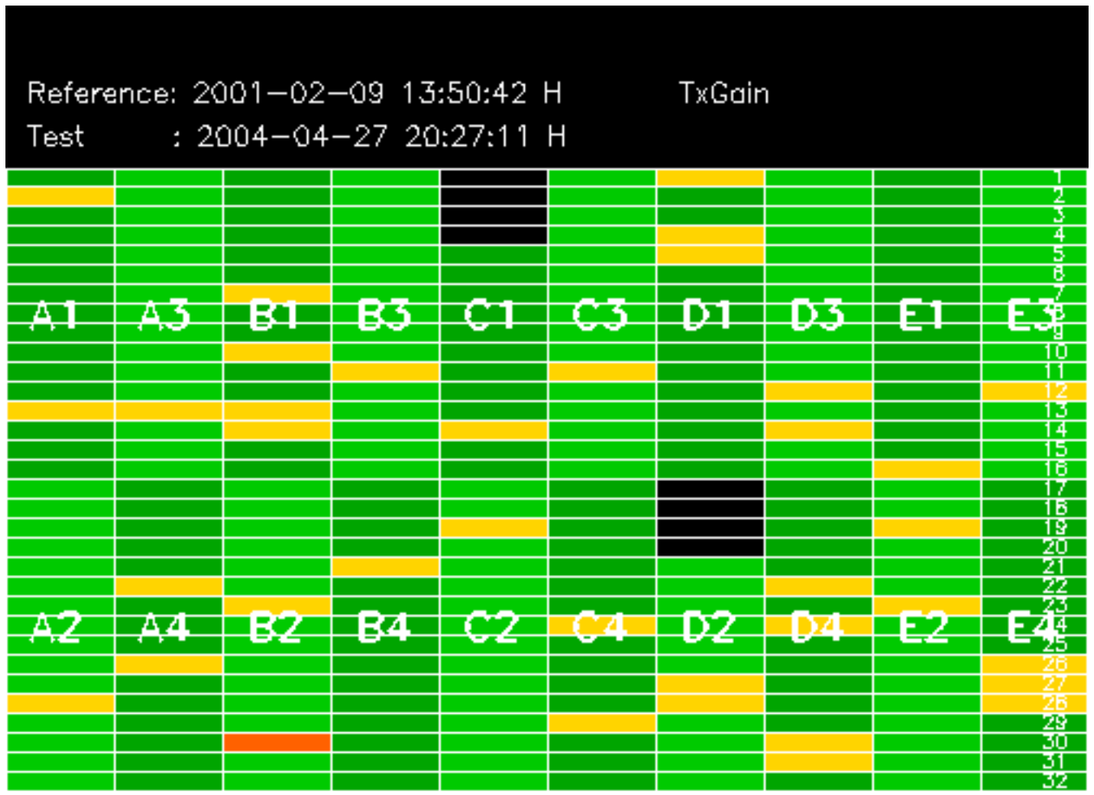

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr

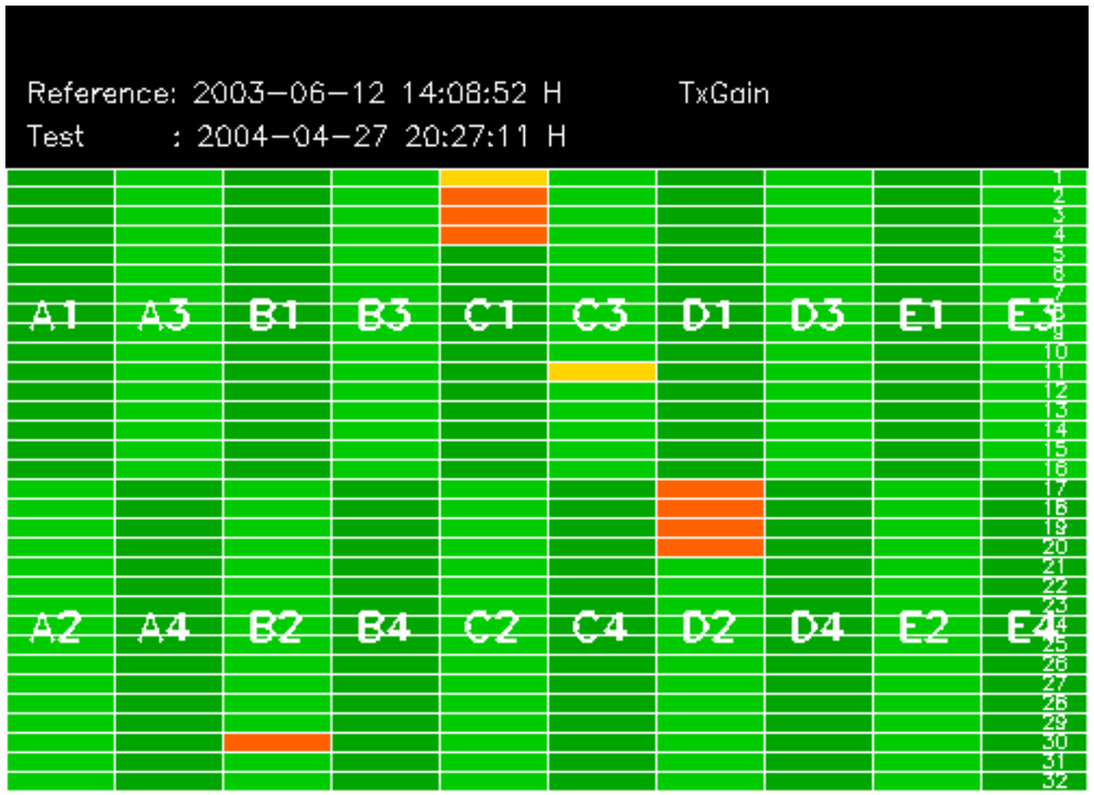

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26-Mar
31-Mar
05-Apr
10-Apr
15-Apr
20-Apr
25-Apr


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26-Mar
31-Mar
05-Apr
10-Apr
15-Apr
20-Apr
25-Apr


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26-Mar
31-Mar
05-Apr
10-Apr
15-Apr
20-Apr
25-Apr


Reference: 2001-02-09 13:50:42 H
Test : 2004-04-27 20:27:11 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 : 2004-04-27 20:27:11 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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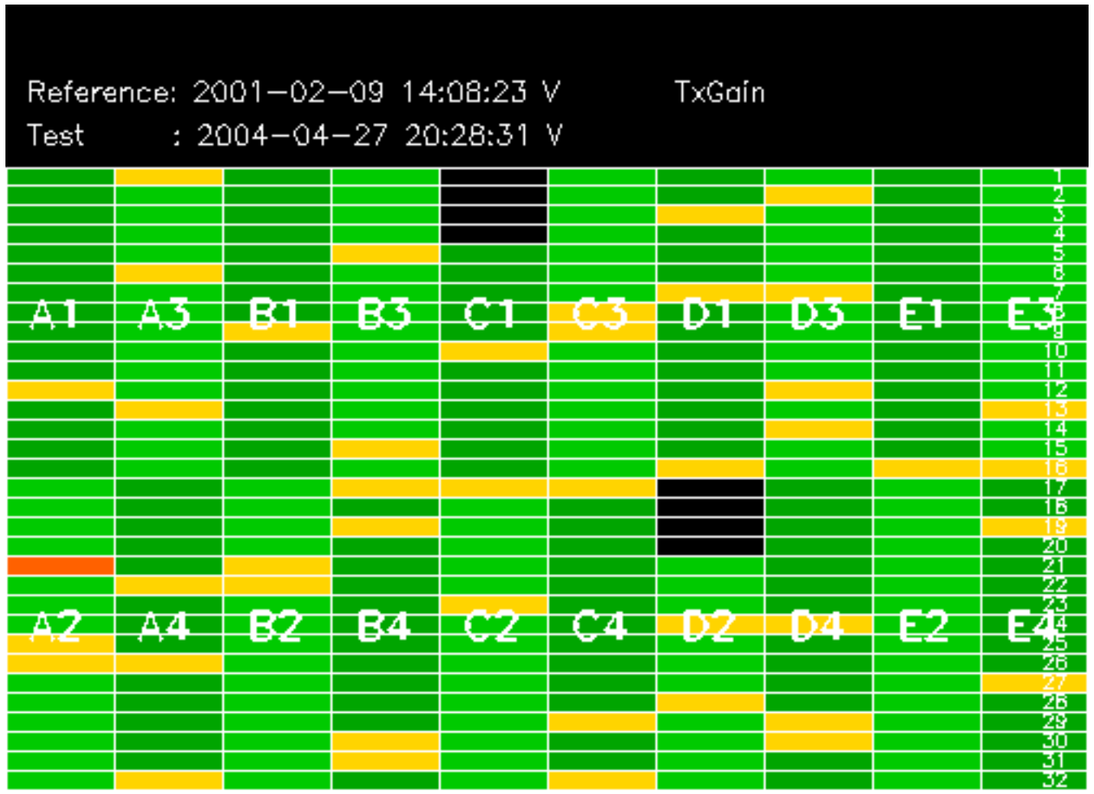
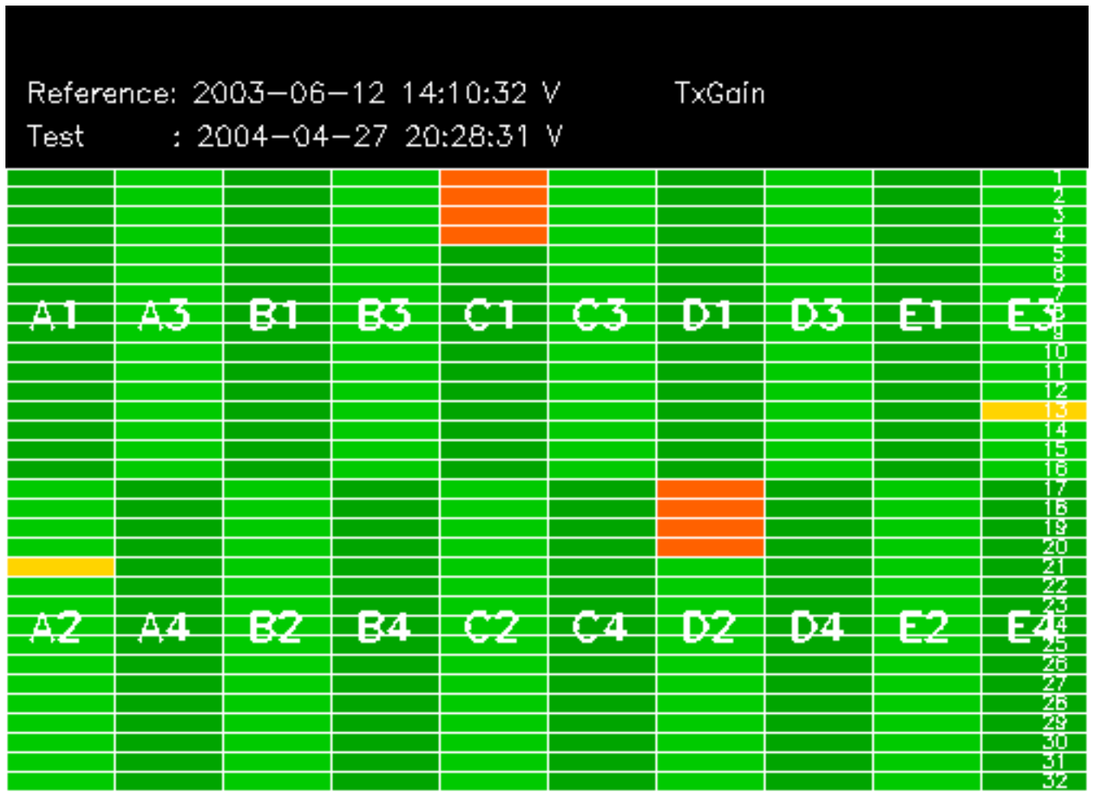

Reference: 2001-02-09 14:08:23 V
Test : 2004-04-27 20:28:31 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-04-27 20:28:31 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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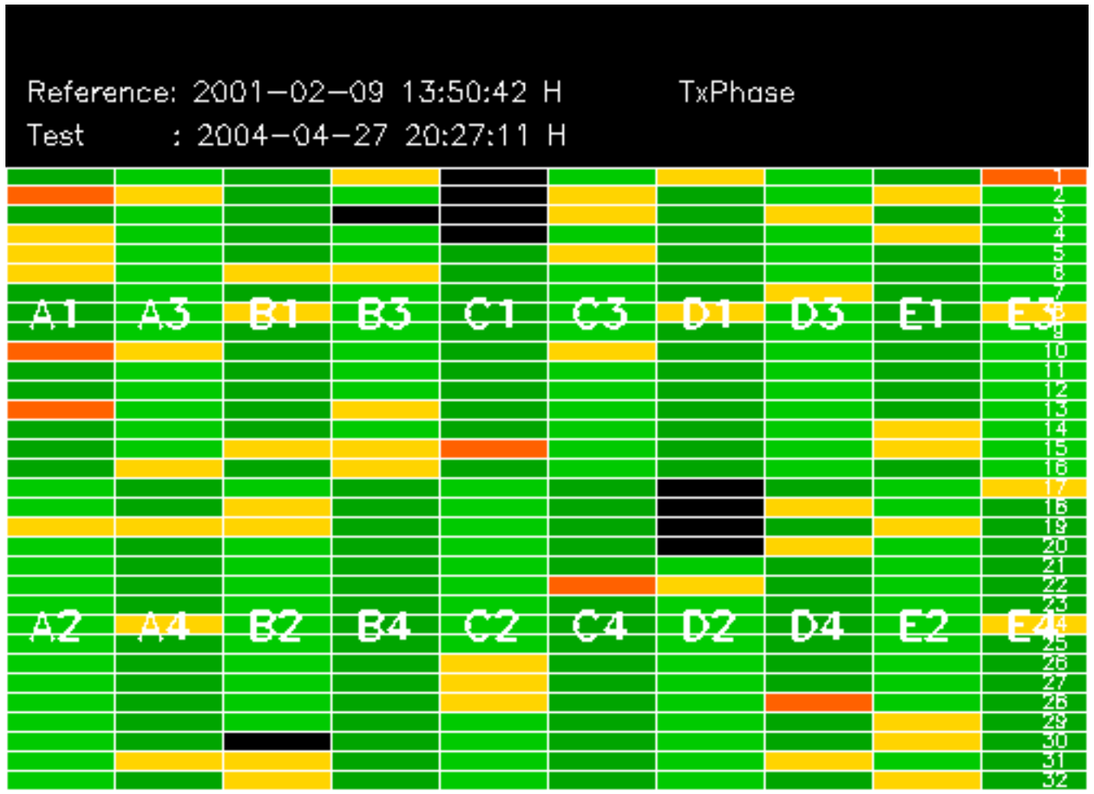
Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-04-27 20:27:11 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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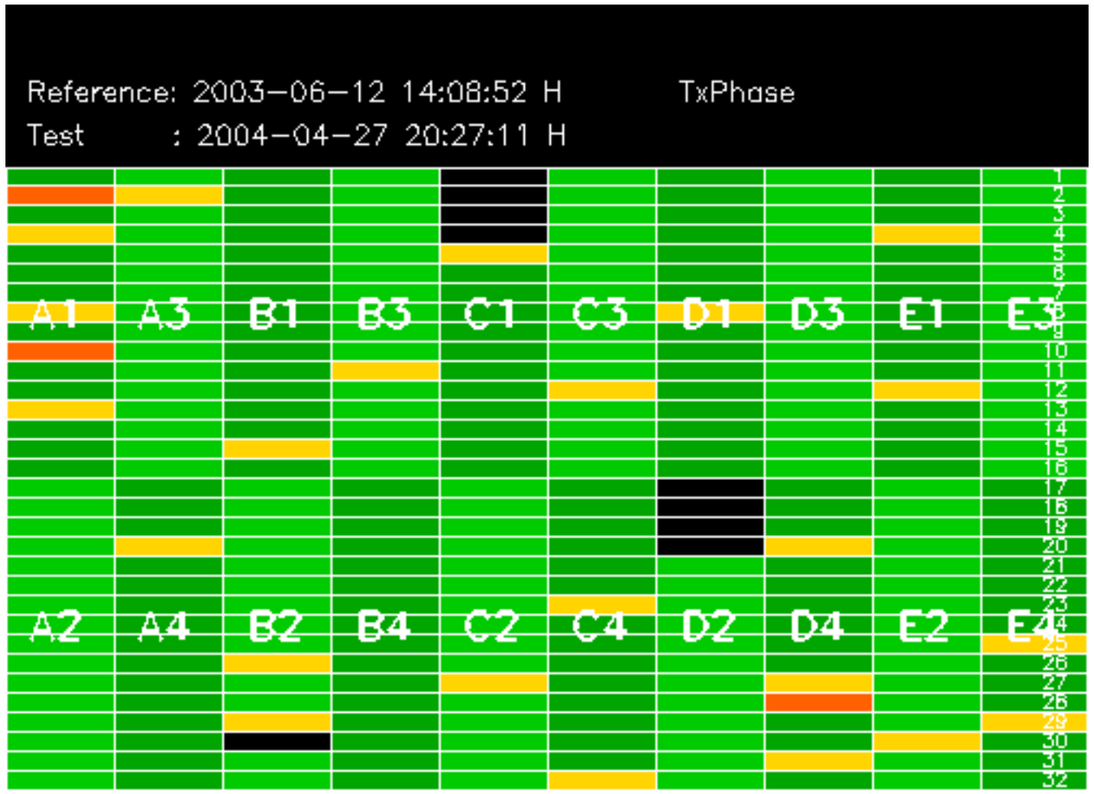
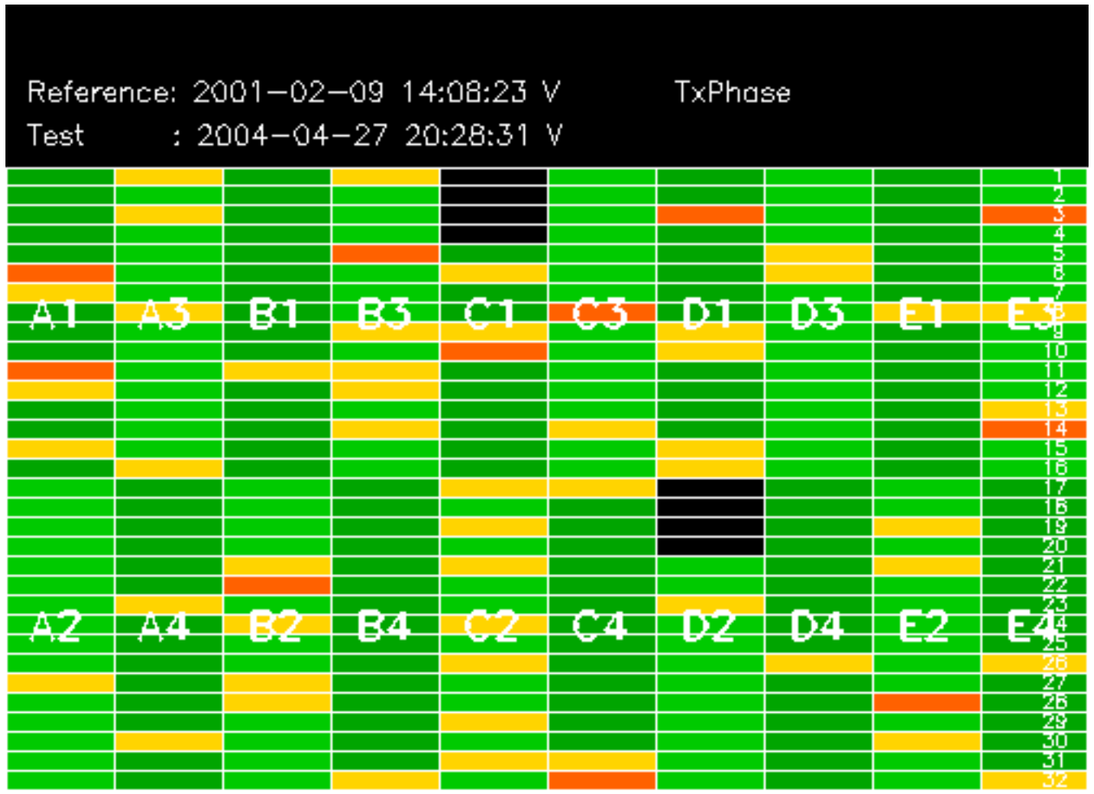
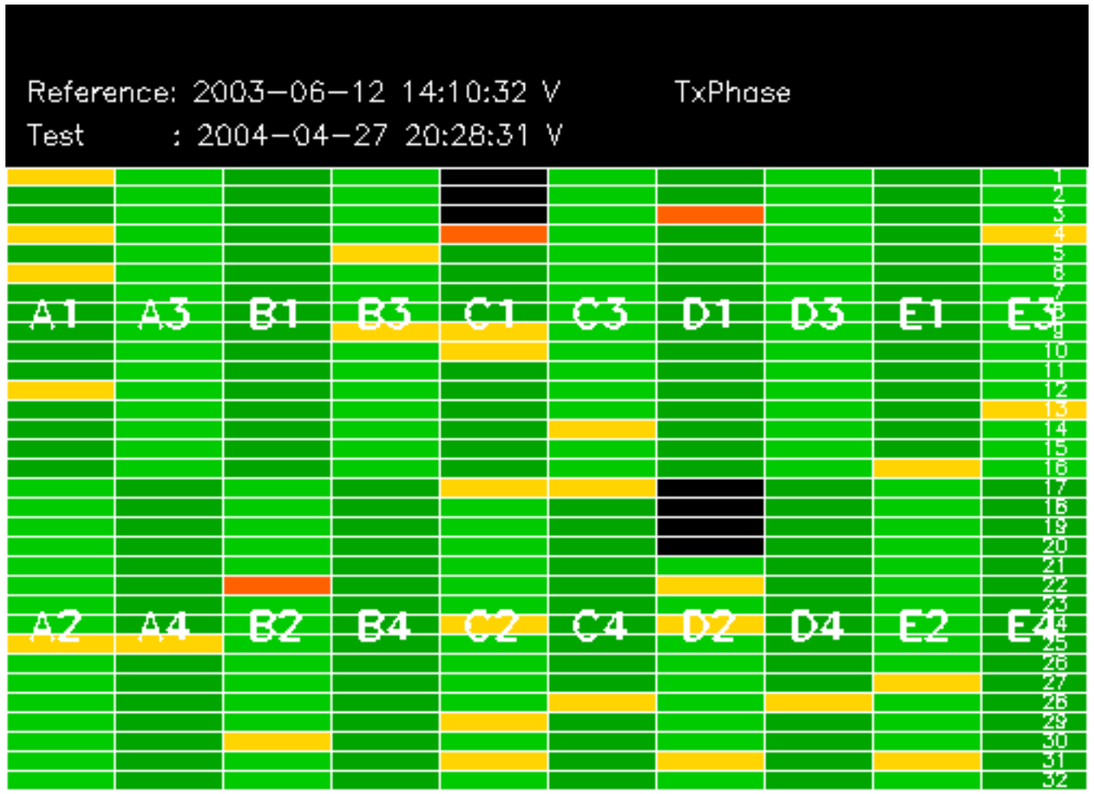

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2004-04-27 20:27:11 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-04-27 20:28:31 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 : 2004-04-27 20:28:31 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

No unavailabilities during the reported period.