REPORT OF 041101

last update on Tue Nov 2 07:40:26 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

ASAR was unavailable from 01-Nov-2004 05:00:40.000 to 05:01:40.000 UTC
Day of Year = 306
Orbit = 13972
Anx Offset = 4053.375 to 4113.375 seconds
Impact of anomaly visible in timelines of the daily report of the 02-NOV-2004

2.2 - Browse Visual Inspection

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	20041029 063531
H	20041030 060354

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.

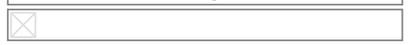
4.1 - Daily statistics

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

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.476915	0.006886	-0.021257
7	P1	-3.352793	0.012298	-0.035016
11	P1	-4.612222	0.018803	0.045528
15	P1	-5.691019	0.033000	0.060633
19	P1	-3.558932	0.005998	-0.103940
22	P1	-4.570437	0.013653	-0.055357
24	P1	-4.963170	0.008329	0.024897
30	P1	-7.053683	0.016616	-0.034735

3	P1	-16.079338	0.093349	0.096301
7	P1	-14.040853	0.066909	0.008991
11	P1	-20.492559	0.211477	-0.371403
15	P1	-11.705696	0.033072	0.046230
19	P1	-14.020823	0.024352	-0.067009
22	P1	-16.191322	0.395967	-0.237607
24	P1	-14.604273	0.255437	-0.221865
30	P1	-18.031338	0.304318	0.074474

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.354771	0.089764	-0.078184
7	P2	-22.605028	0.126685	-0.037522
11	P2	-15.110350	0.121607	0.051807
15	P2	-7.113137	0.106819	-0.100413
19	P2	-9.663054	0.123279	-0.163000
22	P2	-17.271320	0.107950	0.040796
24	P2	-20.793428	0.092881	-0.036322
30	P2	-19.075037	0.084563	0.067825

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.185213	0.005970	-0.052478
7	P3	-8.185212	0.005970	-0.052478
11	P3	-8.185211	0.005971	-0.052479
15	P3	-8.185210	0.005971	-0.052480
19	P3	-8.185210	0.005971	-0.052480
22	P3	-8.185209	0.005970	-0.052478
24	P3	-8.185210	0.005971	-0.052479
30	P3	-8.185397	0.005899	-0.050958

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-2.817880	0.014132	0.049020
7	P1	-2.966537	0.048740	0.076212
11	P1	-3.892802	0.022838	-0.026609
15	P1	-3.490358	0.024250	0.000621
19	P1	-3.559277	0.013726	-0.115692
22	P1	-5.644649	0.062458	0.075162
24	P1	-3.972152	0.022749	-0.018255
30	P1	-6.231668	0.046542	-0.089021
3	P1	-10.719937	0.093654	0.448945
7	P1	-10.067251	0.169266	0.059179
11	P1	-12.290690	0.128944	-0.200543
15	P1	-11.686373	0.073331	-0.005070
19	P1	-15.603291	0.061332	-0.056904
22	P1	-23.720282	1.628927	-0.395299
24	P1	-18.146374	0.229119	-0.071271
30	P1	-20.312775	1.050877	0.269005

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.034388	0.047990	-0.100365
7	P2	-22.690535	0.064579	0.010554
11	P2	-10.872683	0.047039	-0.021240
15	P2	-5.015719	0.030168	-0.088727
19	P2	-6.877285	0.043398	-0.224332
22	P2	-7.389764	0.039729	0.012062
24	P2	-11.137848	0.053939	-0.121687
30	P2	-22.101051	0.037478	0.010587

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

3	P3	-8.028008	0.003739	-0.047970
7	P3	-8.027908	0.003743	-0.047912
11	P3	-8.027989	0.003732	-0.047797
15	P3	-8.027912	0.003731	-0.047720
19	P3	-8.027893	0.003735	-0.047753
22	P3	-8.027988	0.003734	-0.048013
24	P3	-8.028120	0.003753	-0.047955
30	P3	-8.027981	0.003744	-0.047989

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	0.000477597
	stdev	2.14337e-07
MEAN Q	mean	0.000551951
	stdev	2.33048e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127186
	stdev	0.000923490

STDEV Q	mean	0.127402
	stdev	0.000932391

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

Preliminary report.The data is not yet controled

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

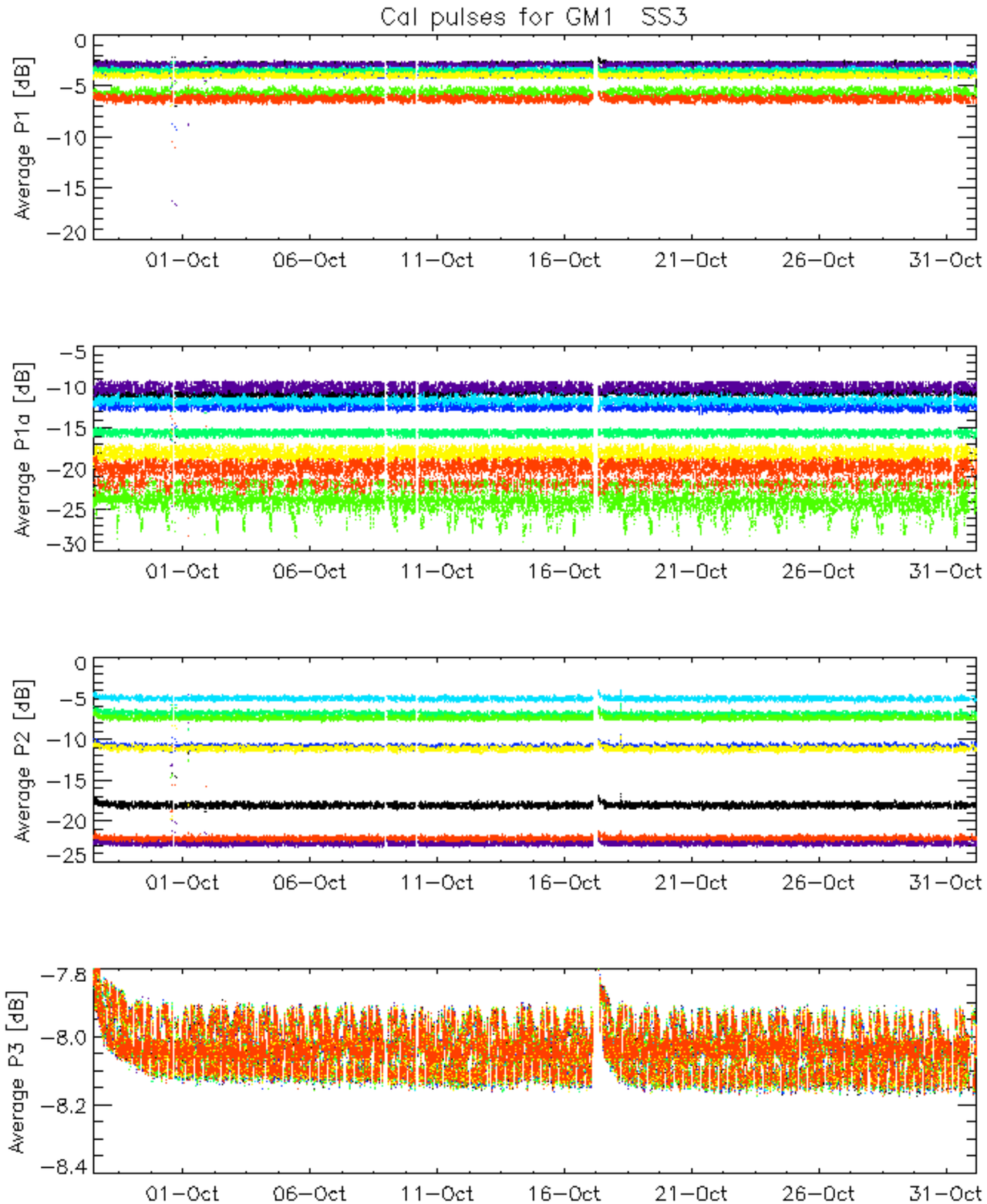
Evolution of Absolute Doppler

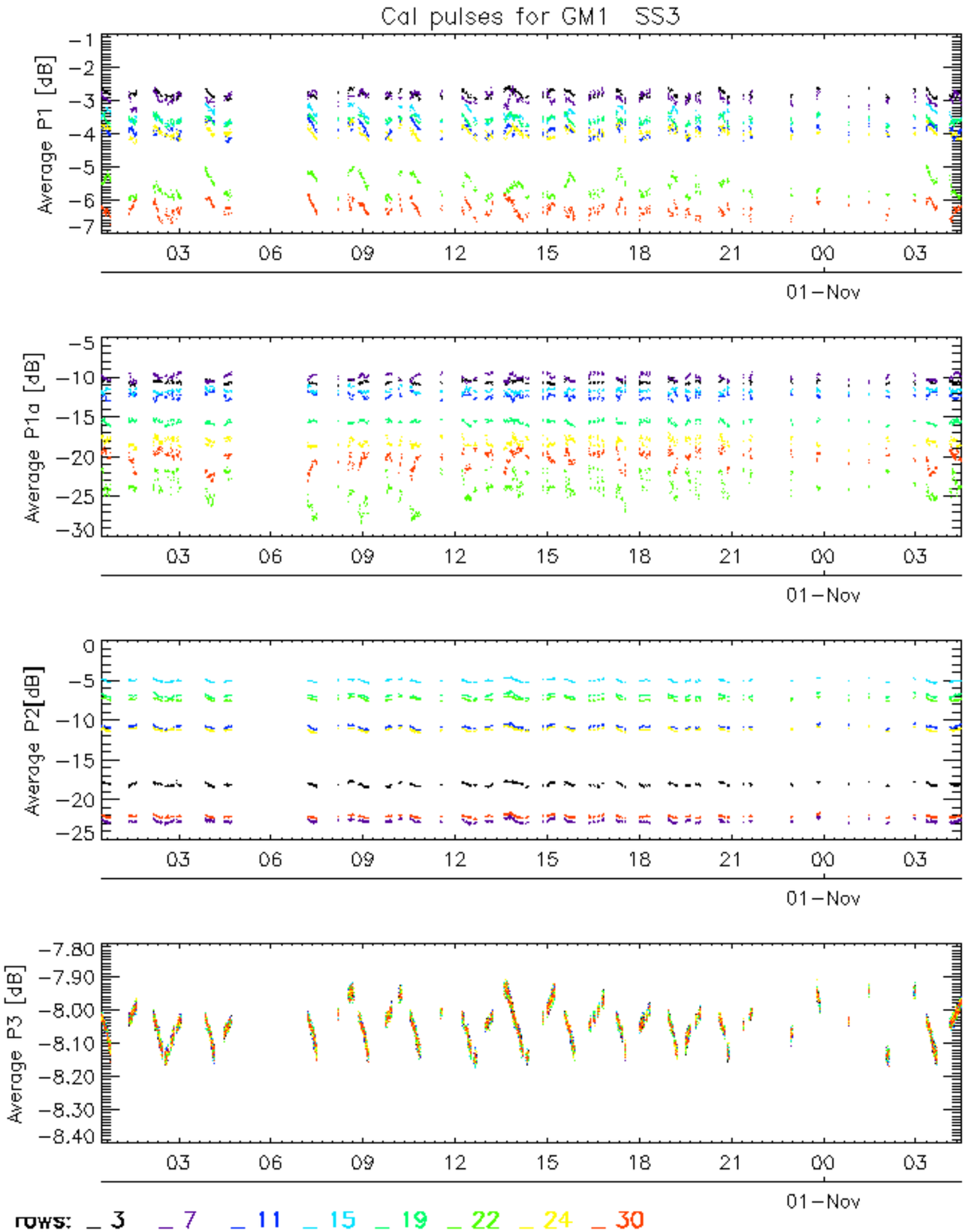
Acsending

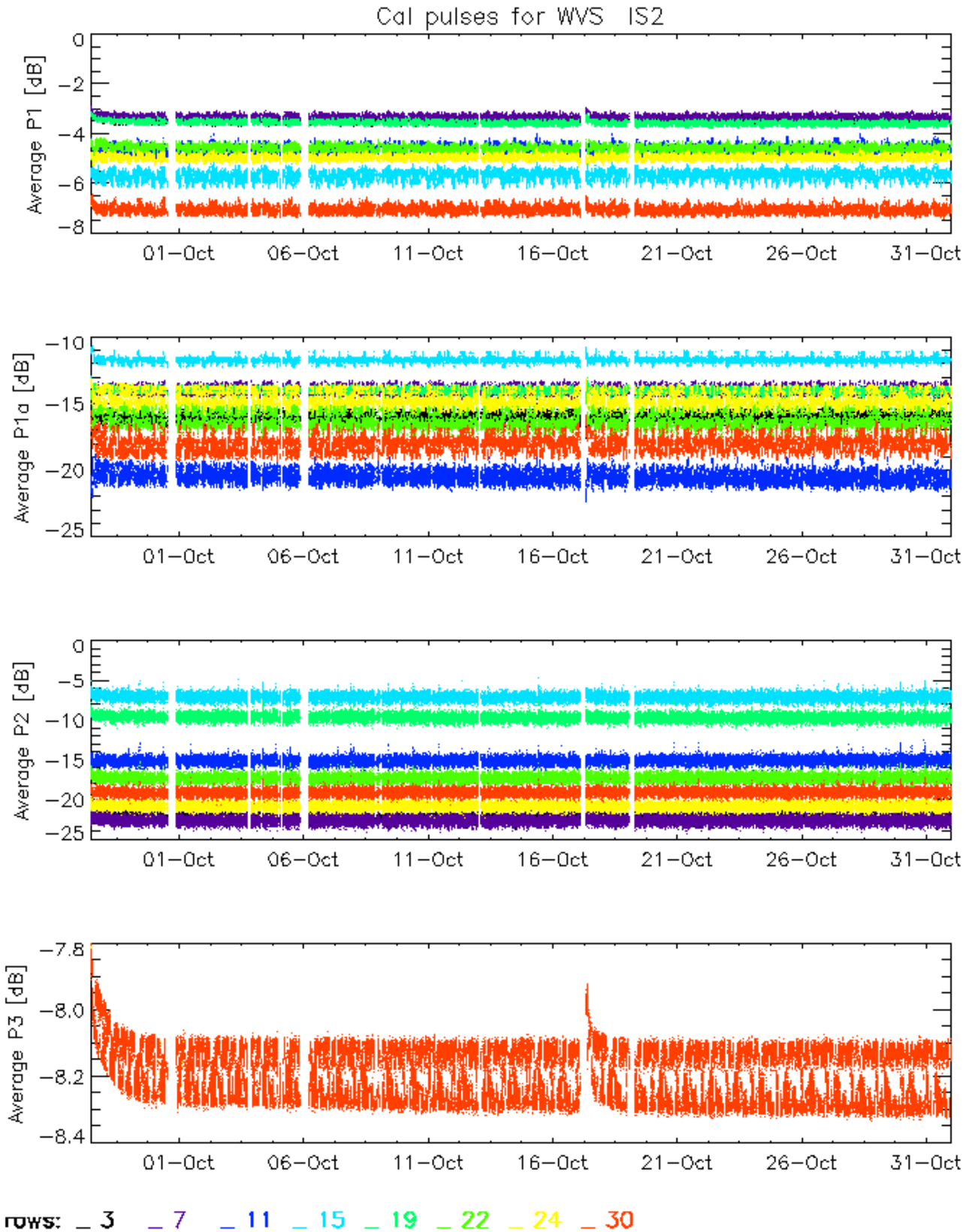
Descending

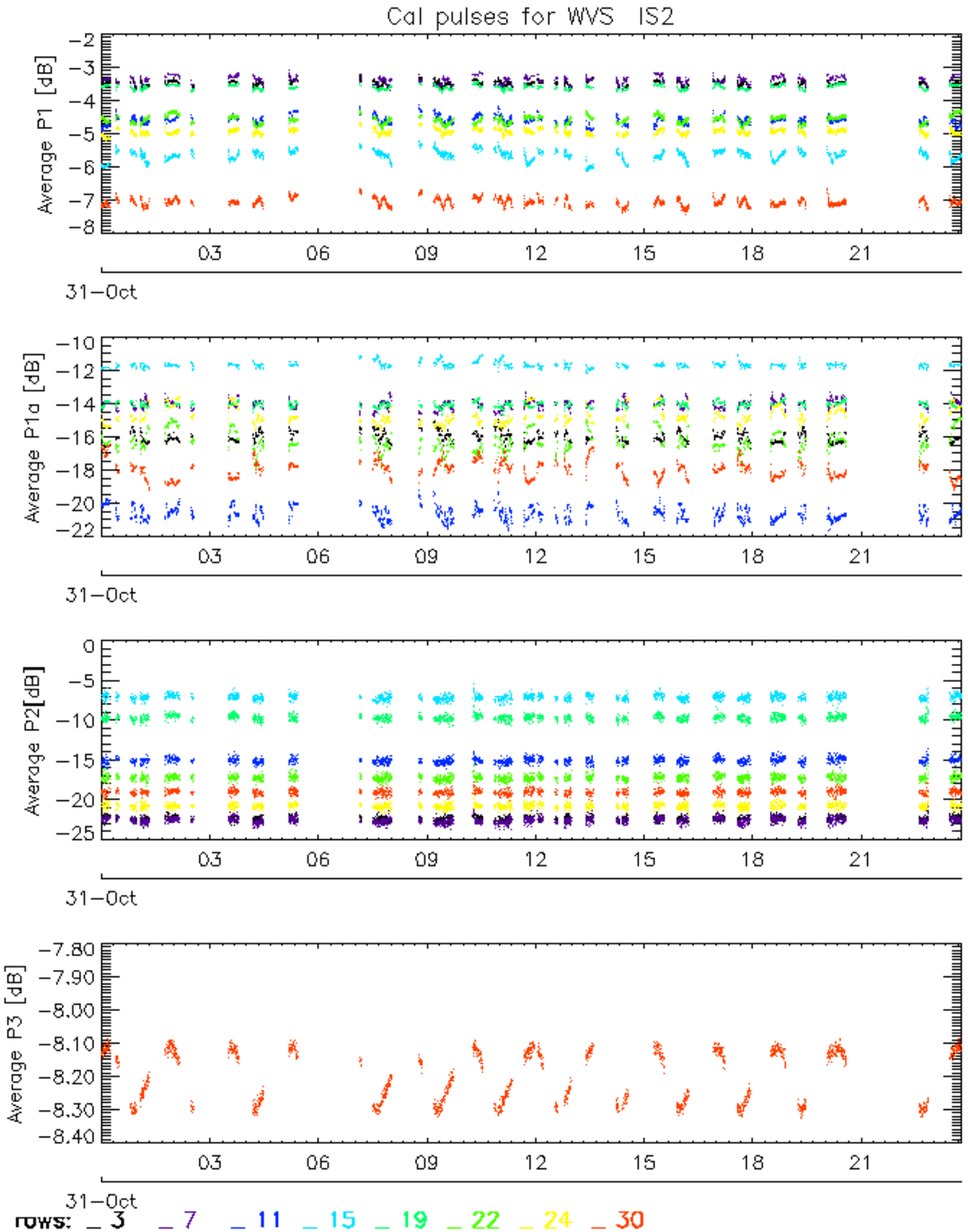
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

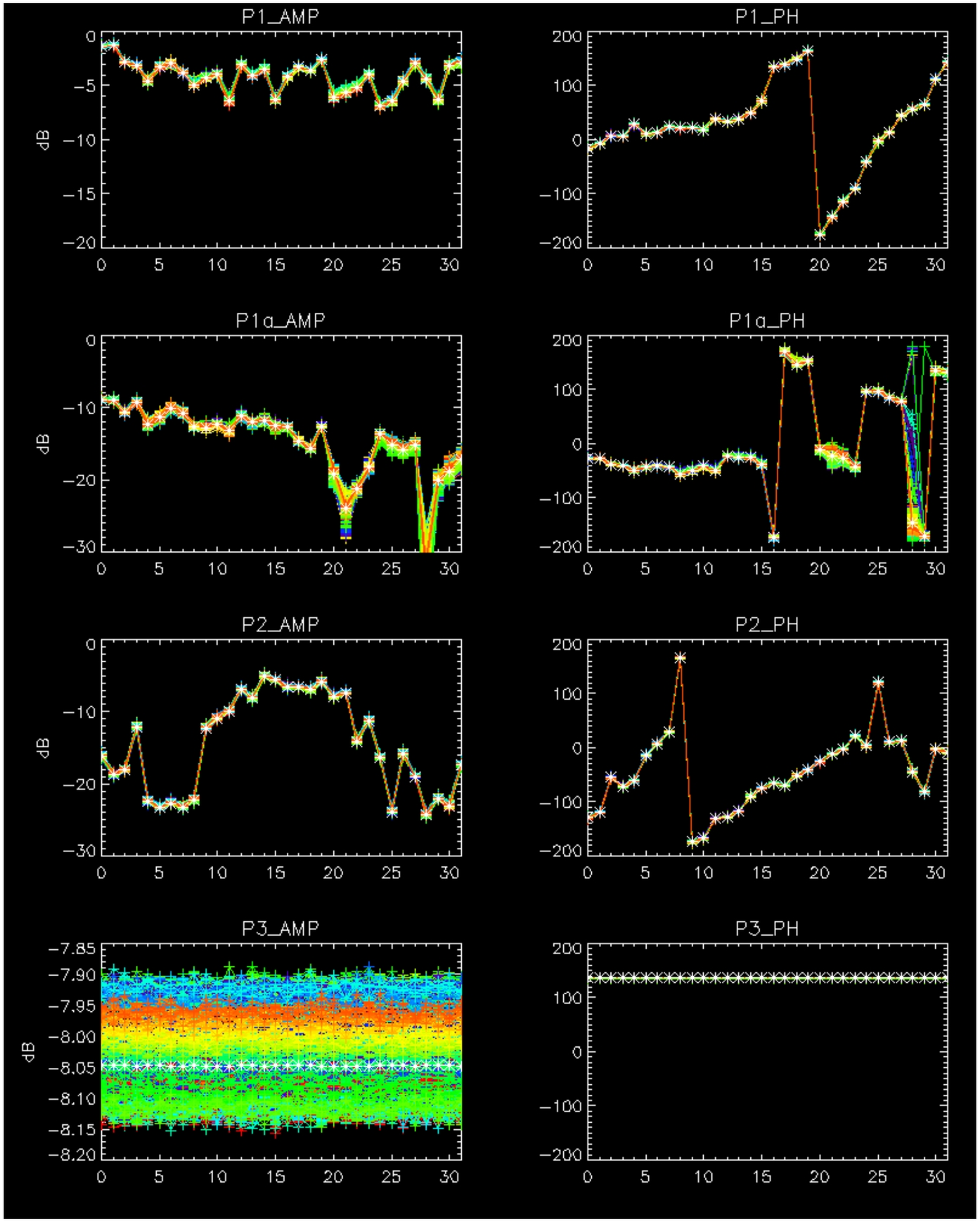


Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

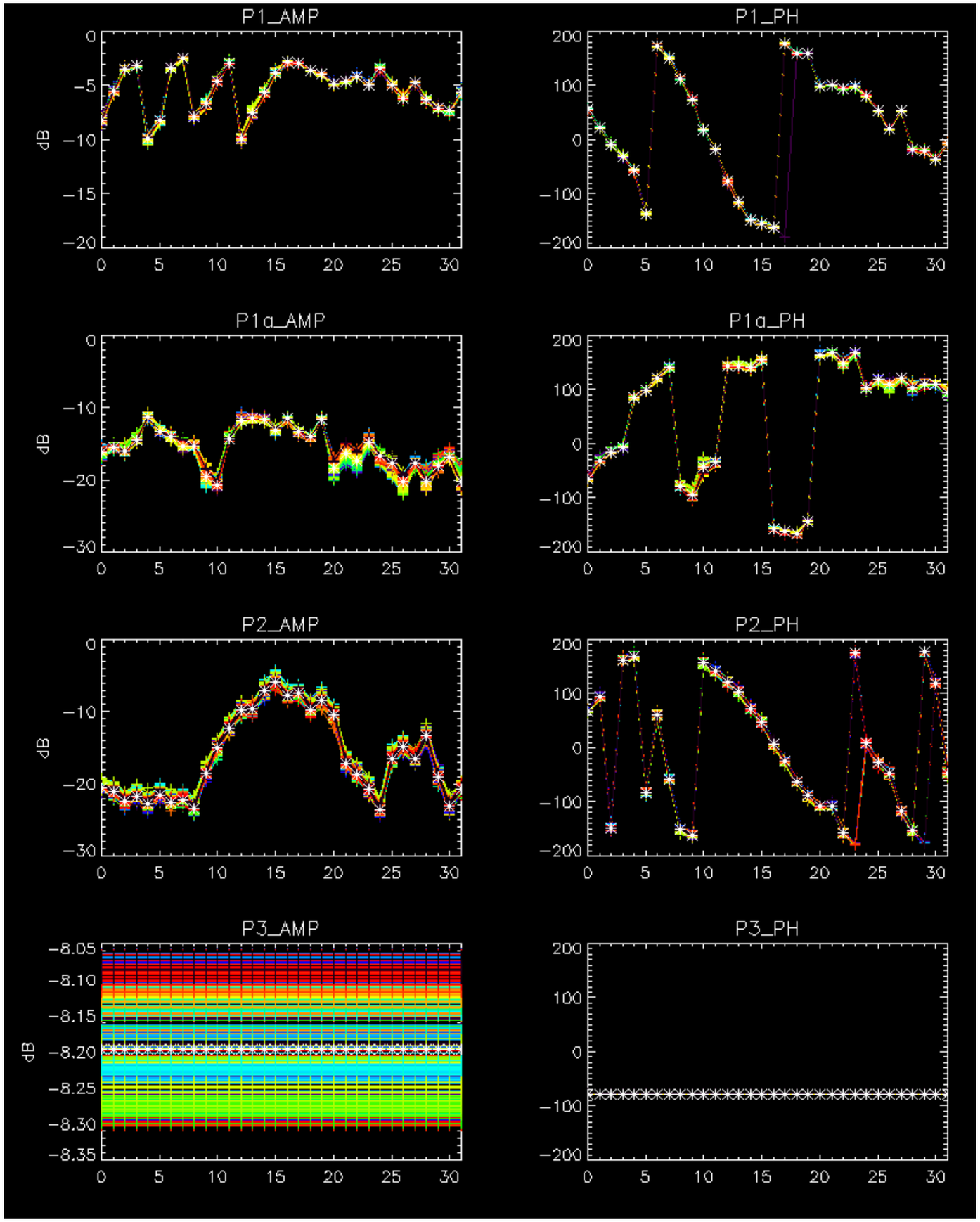

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
01−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
01−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
01−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
03
01−Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
03
06
09
12
15
18
21
31−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2[dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 24 30

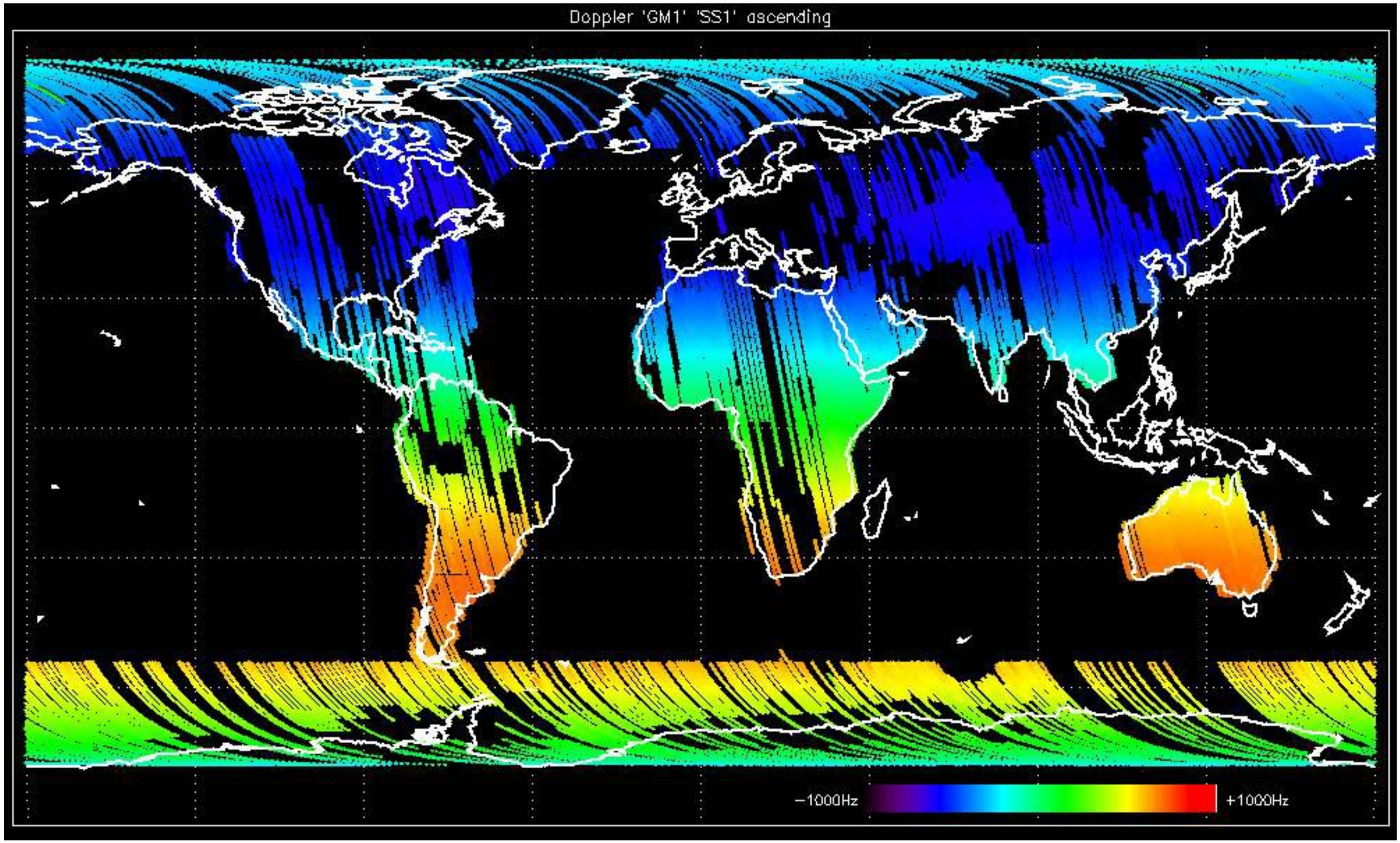
No anomalies observed.

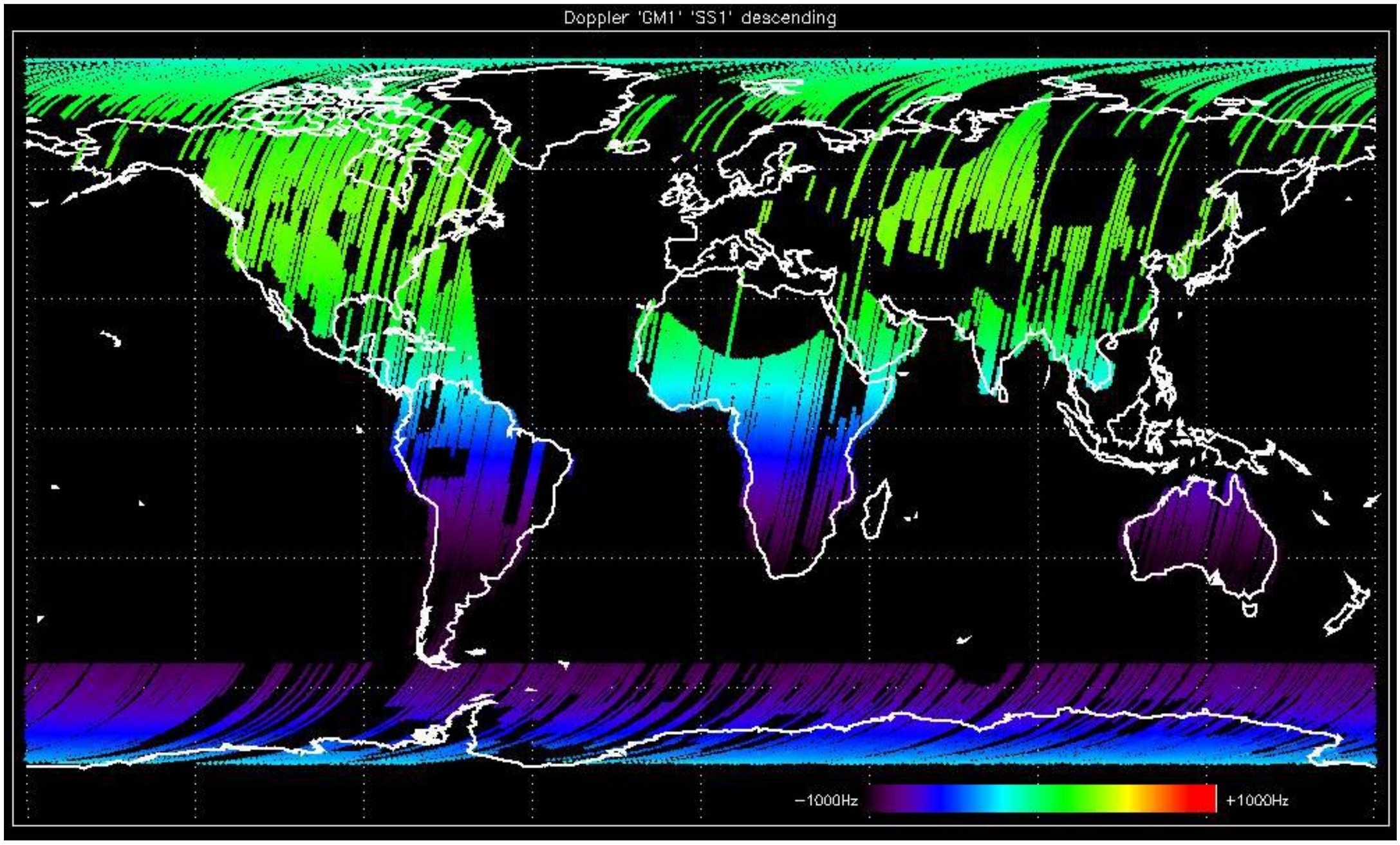

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
−8.15
−8.20
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

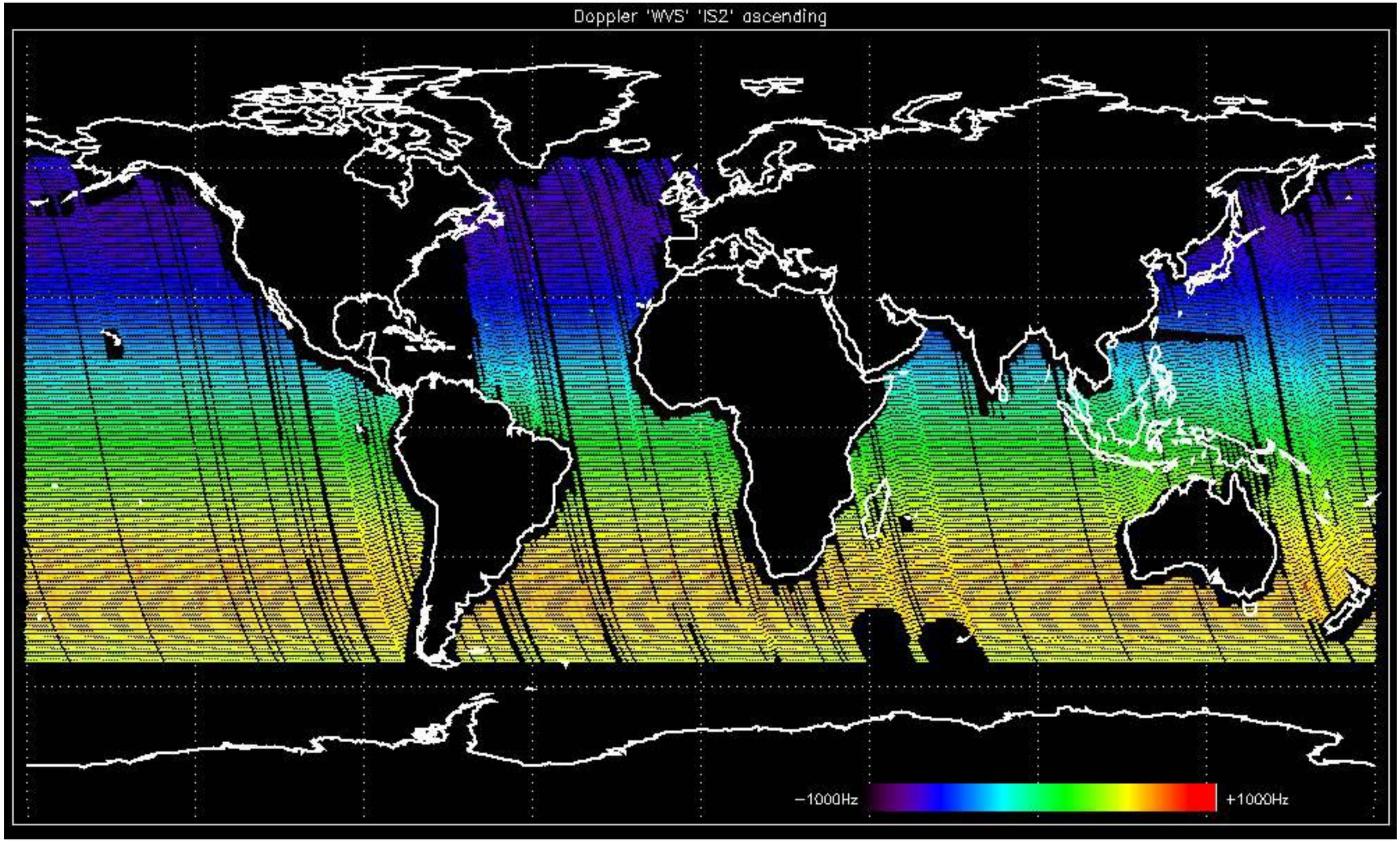

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20
−8.25
−8.30
−8.35
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

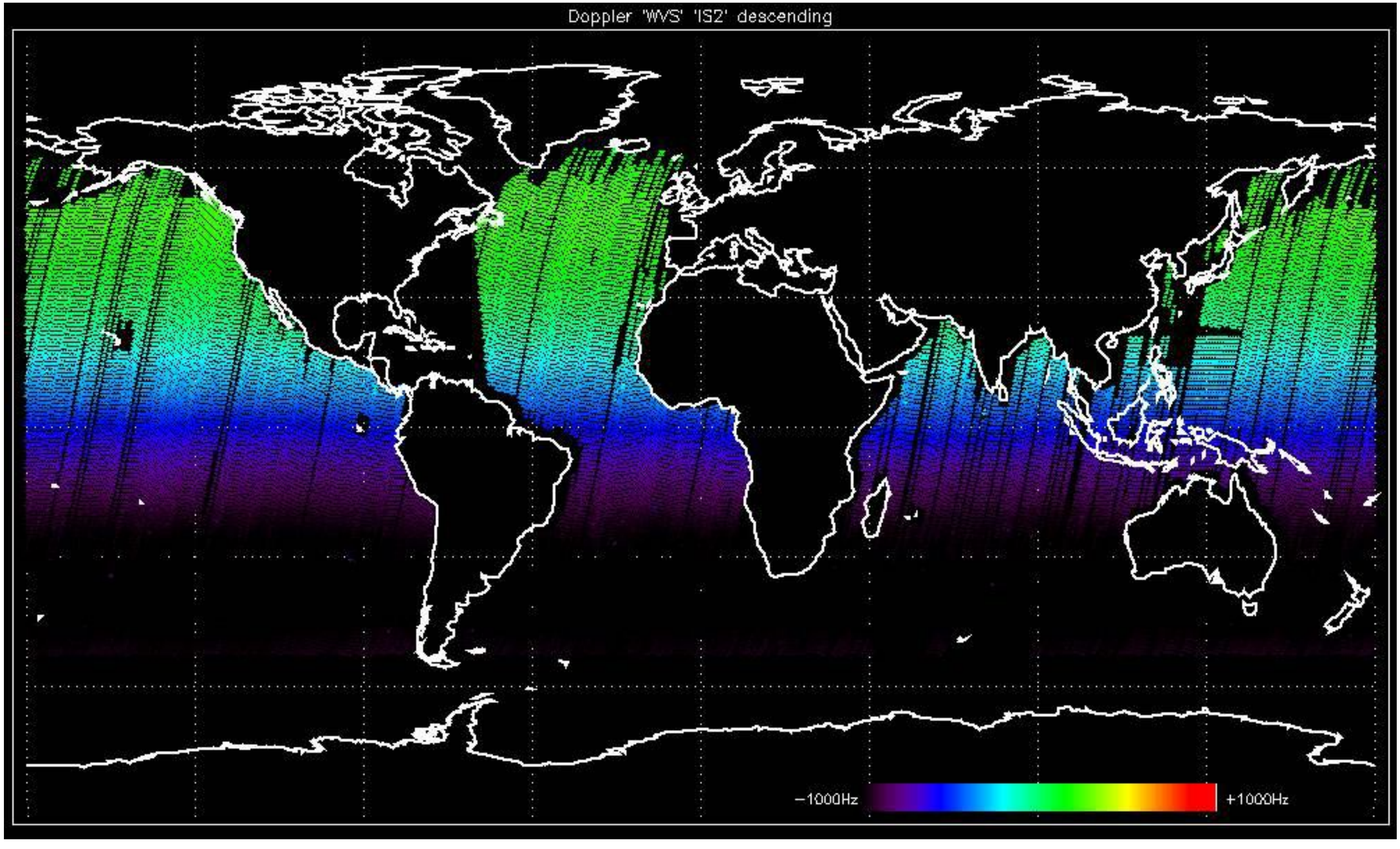
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

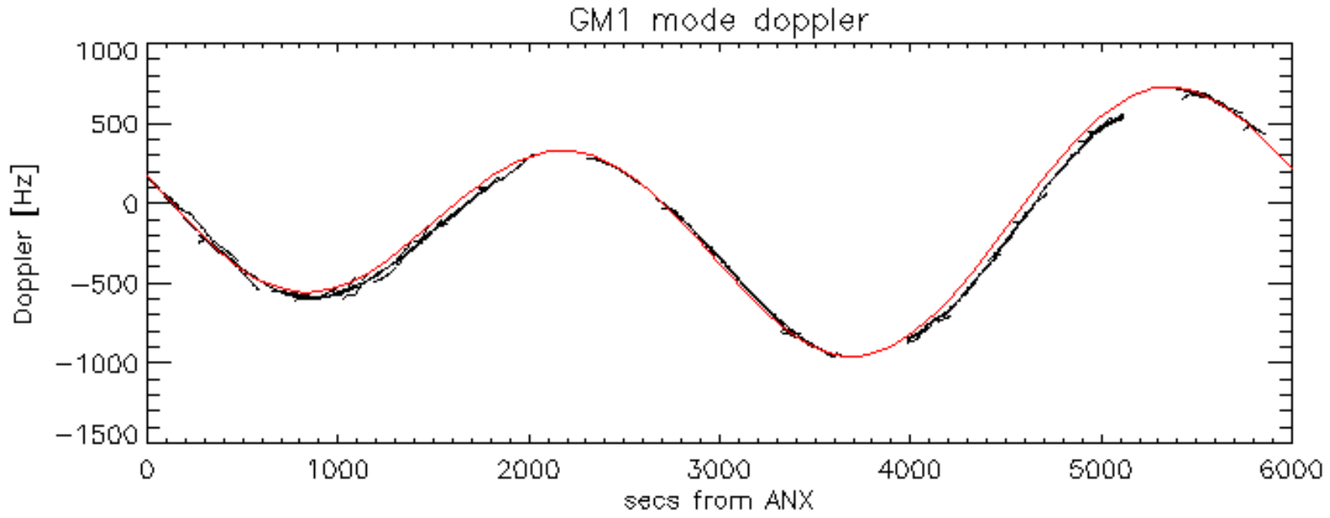
Preliminary report.The data is not yet controled

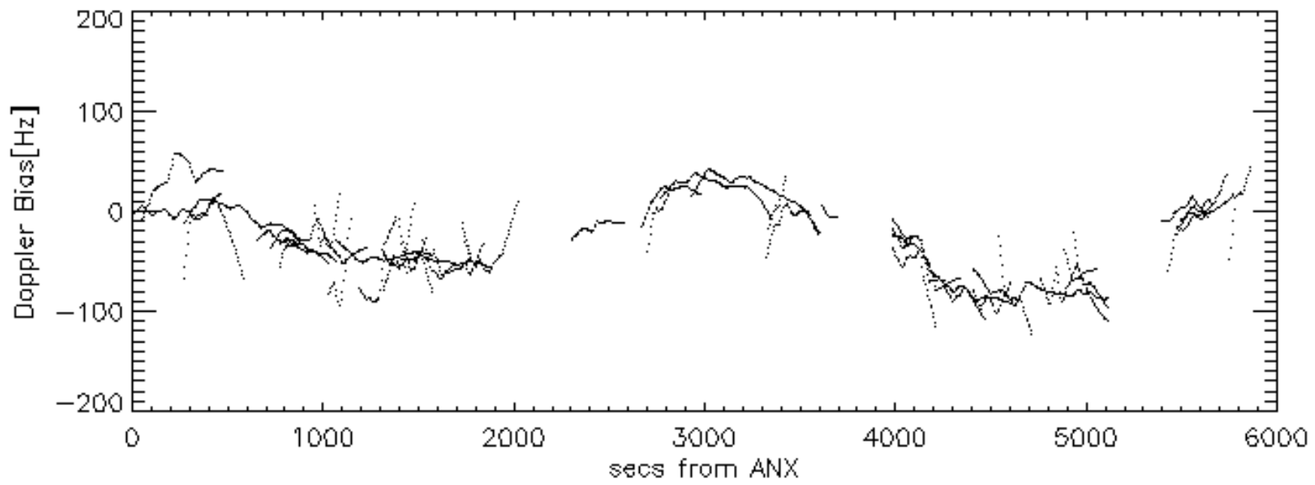

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

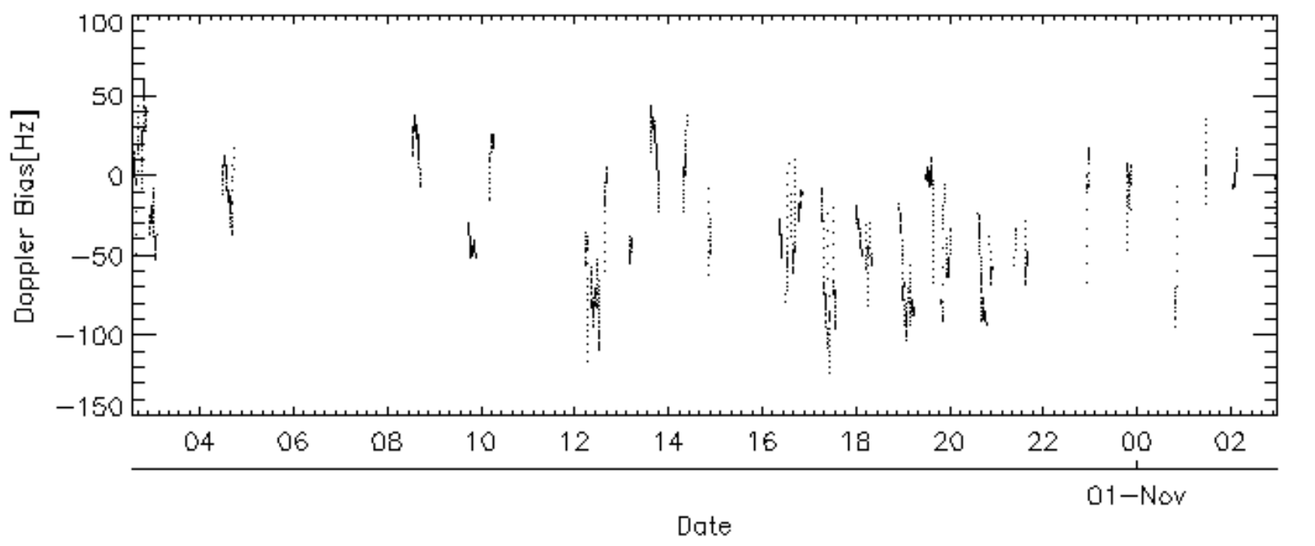

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

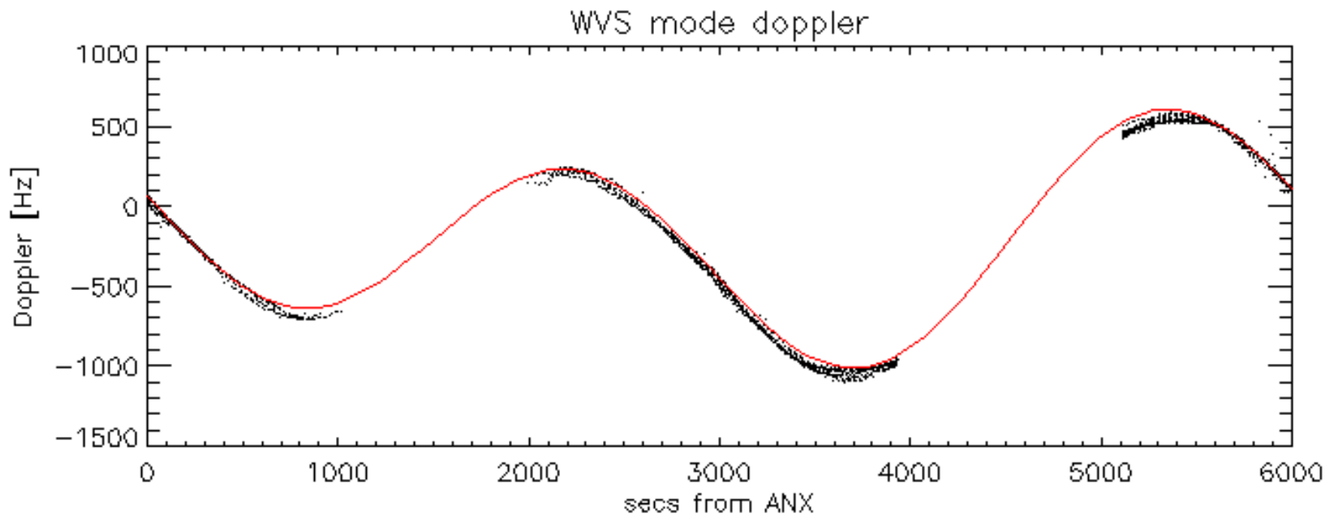

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

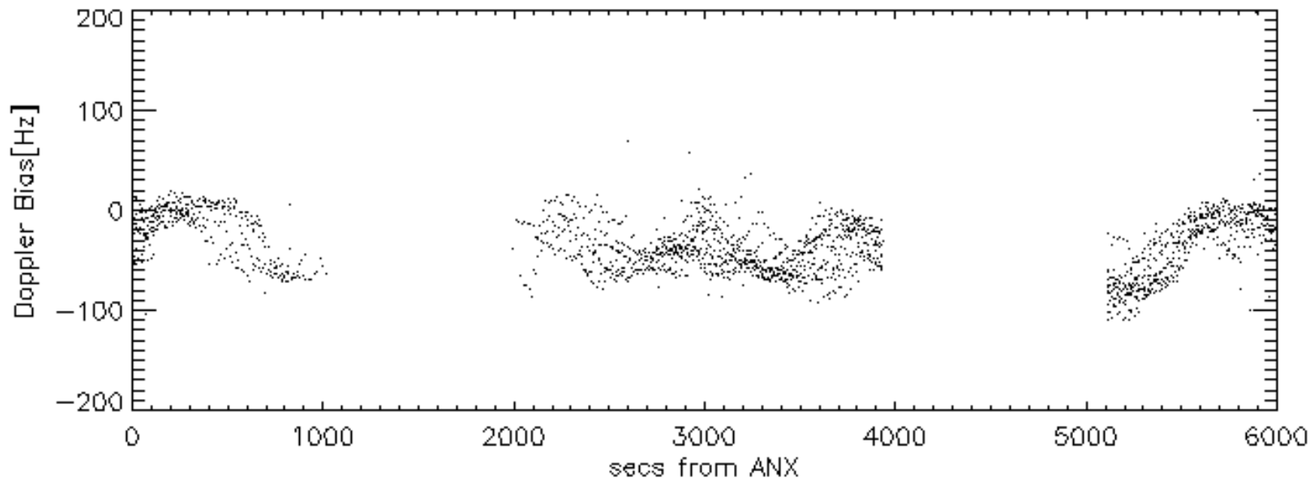

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

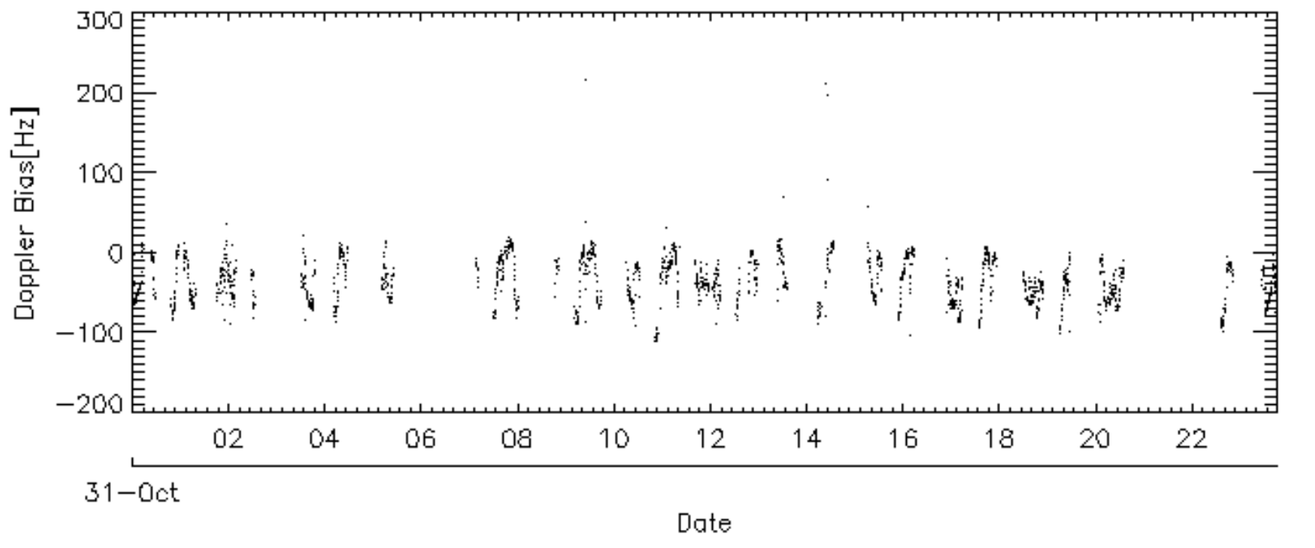

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

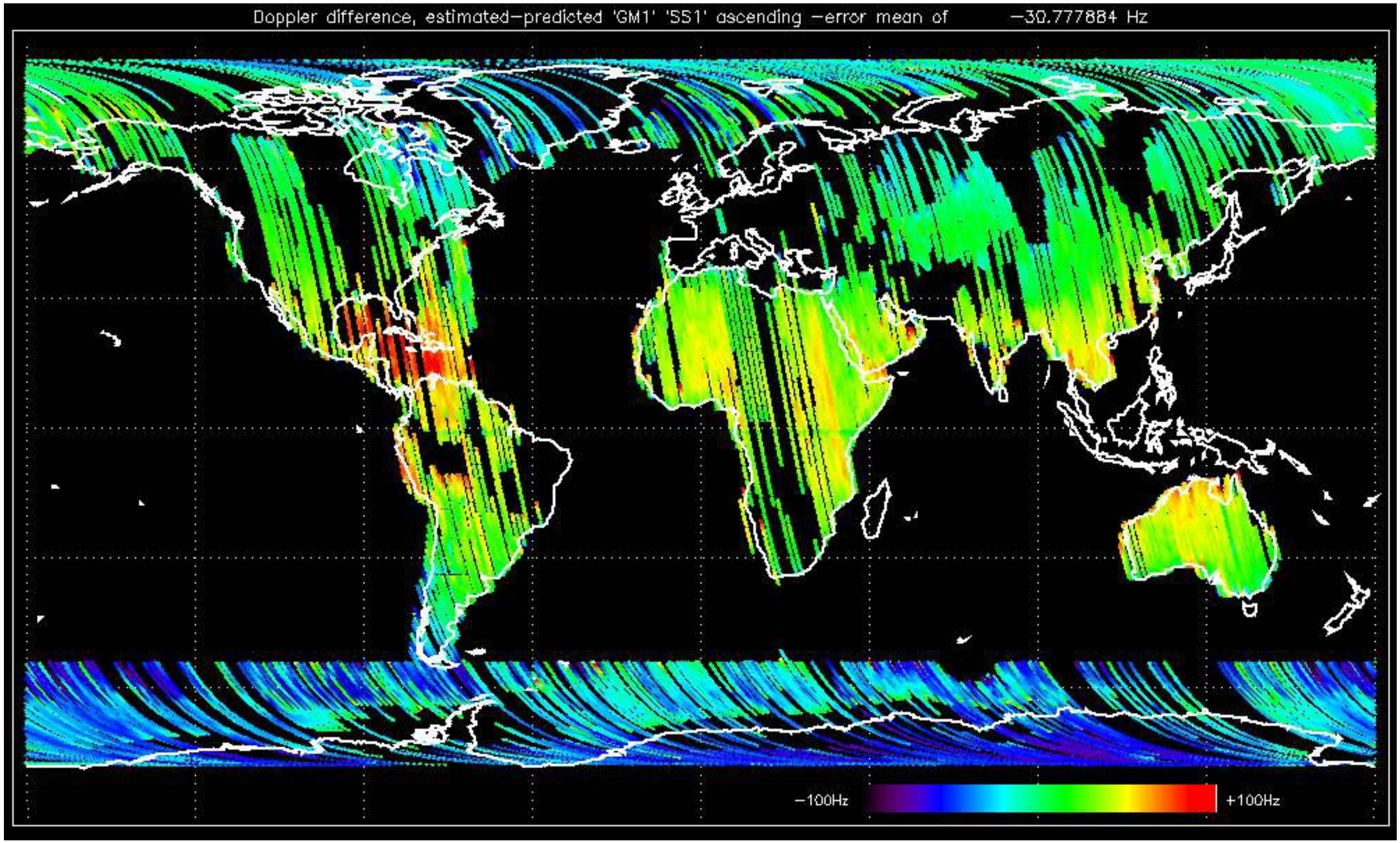

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

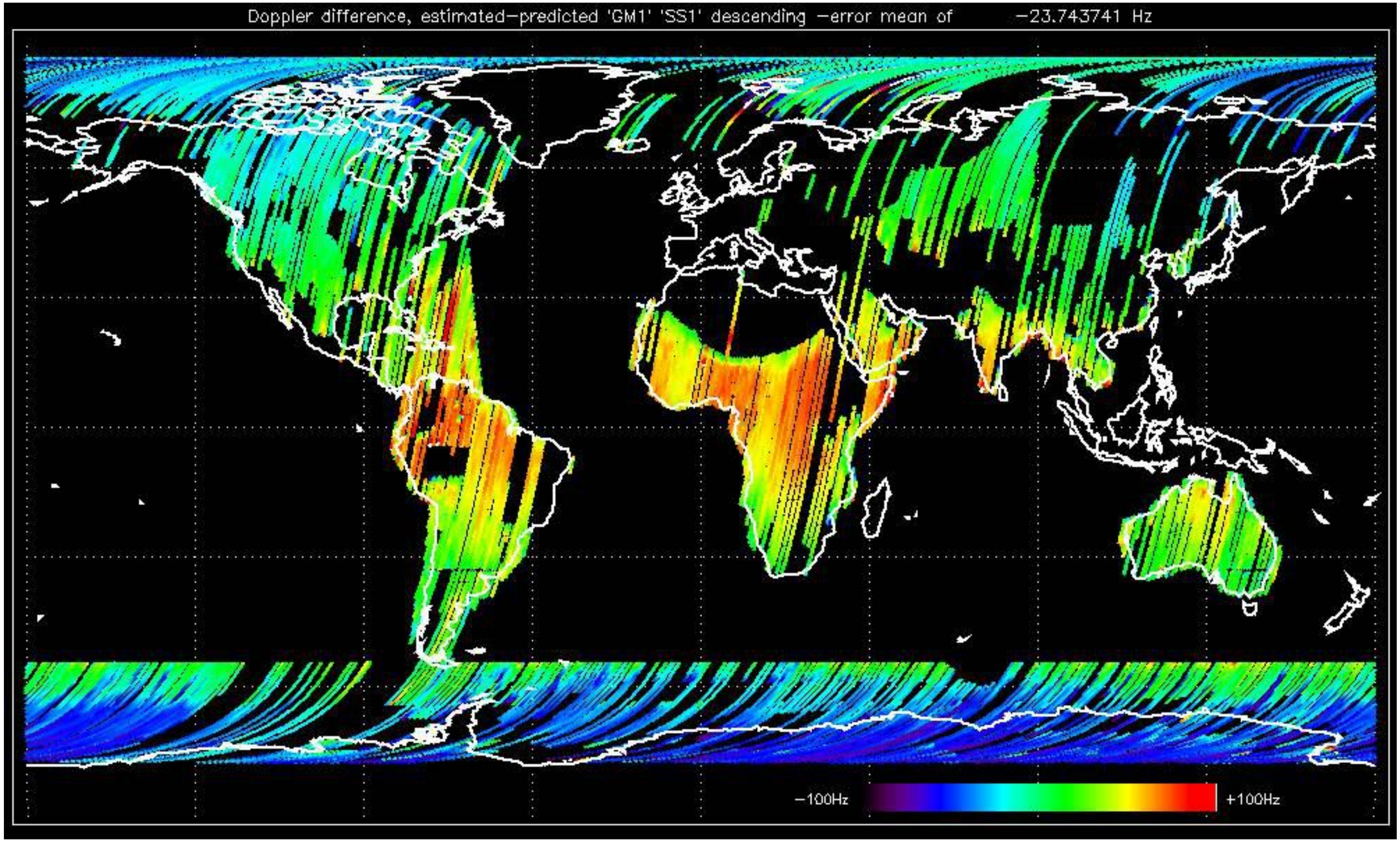

Doppler Bias[Hz]
100
50
0
−50
−100
−150
04
06
08
10
12
14
16
18
20
22
00
02
01−Nov
Date

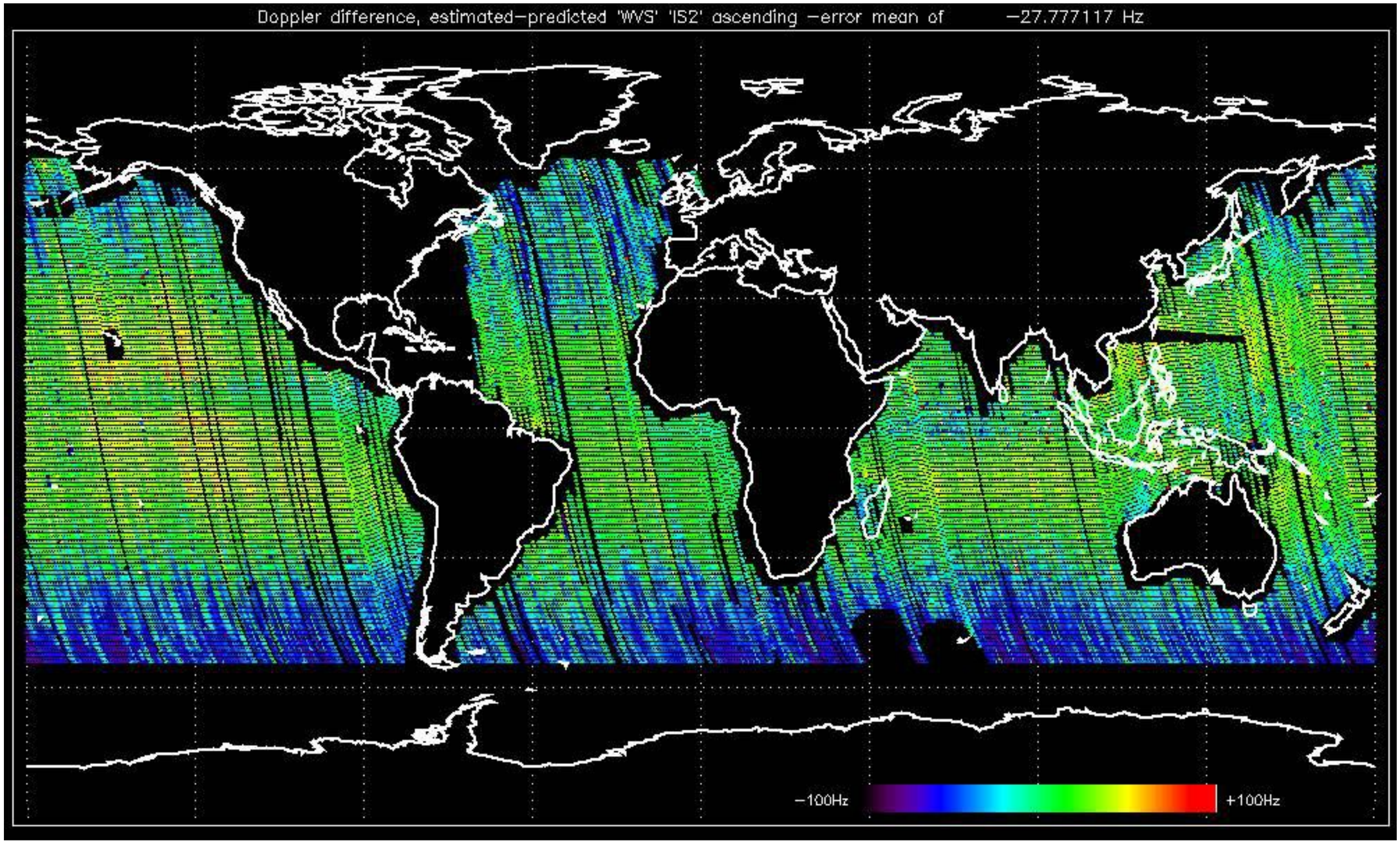

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

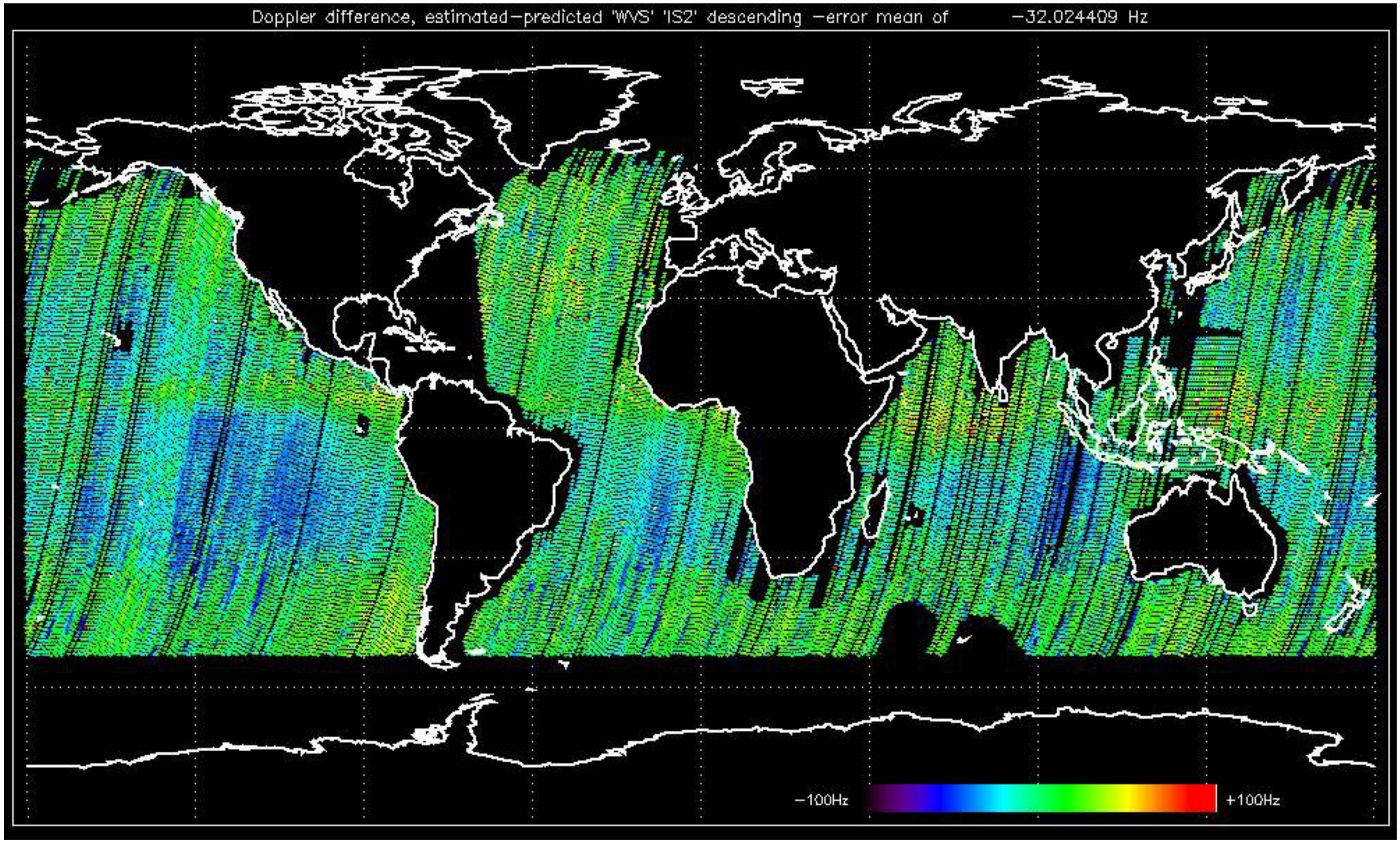

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
31−Oct
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −30.777884 Hz
−100Hz
+100Hz

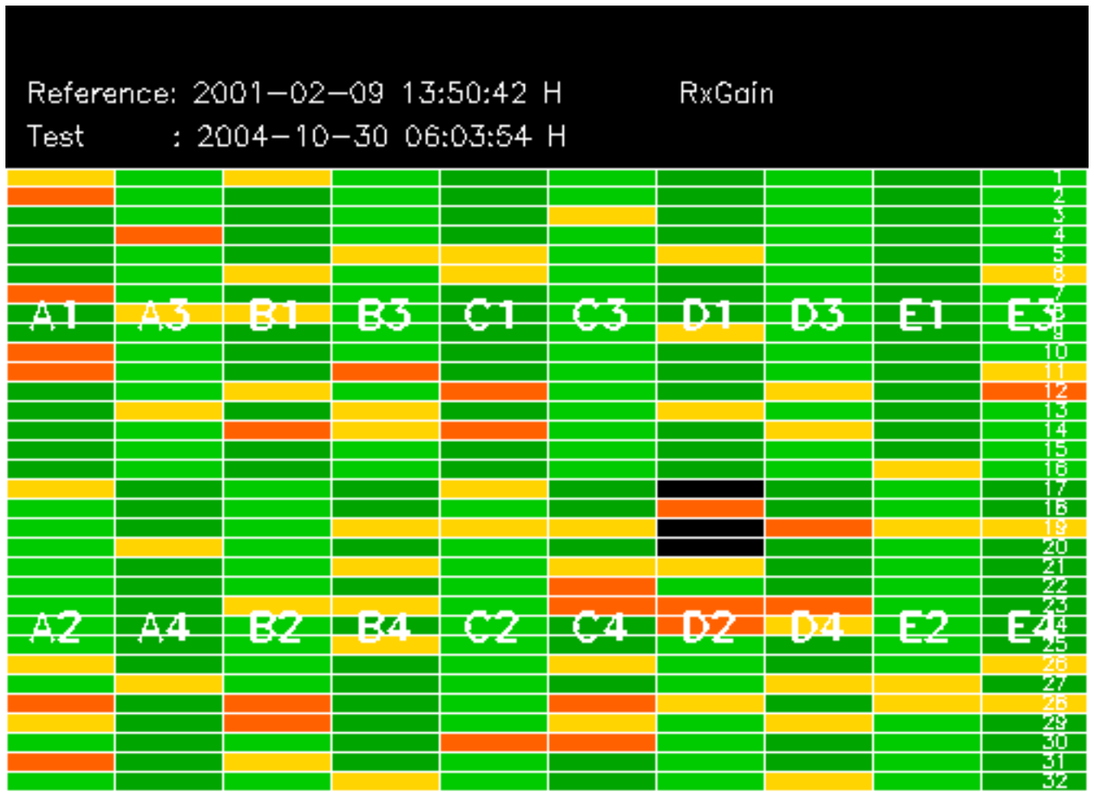

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.743741 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −27.777117 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −32.024409 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
RxGain
Test : 2004-10-30 06:03:54 H
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
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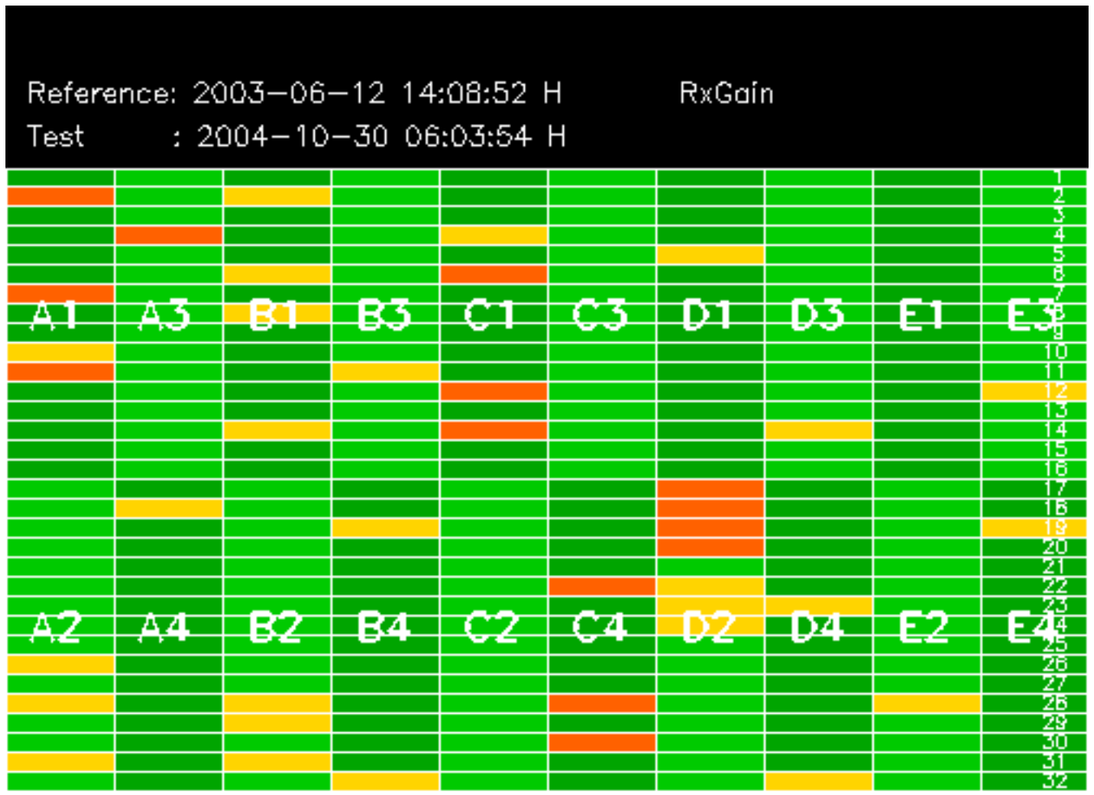
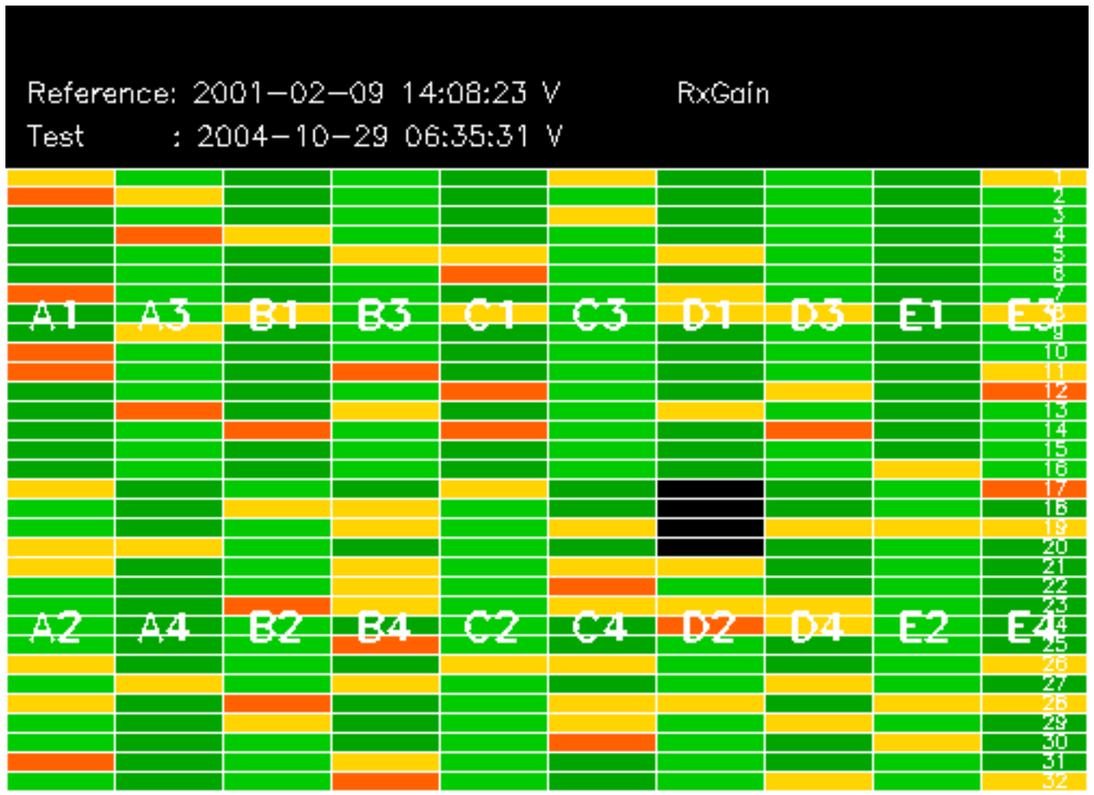
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2004-10-30 06:03:54 H
RxGain
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 : 2004-10-29 06:35:31 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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31
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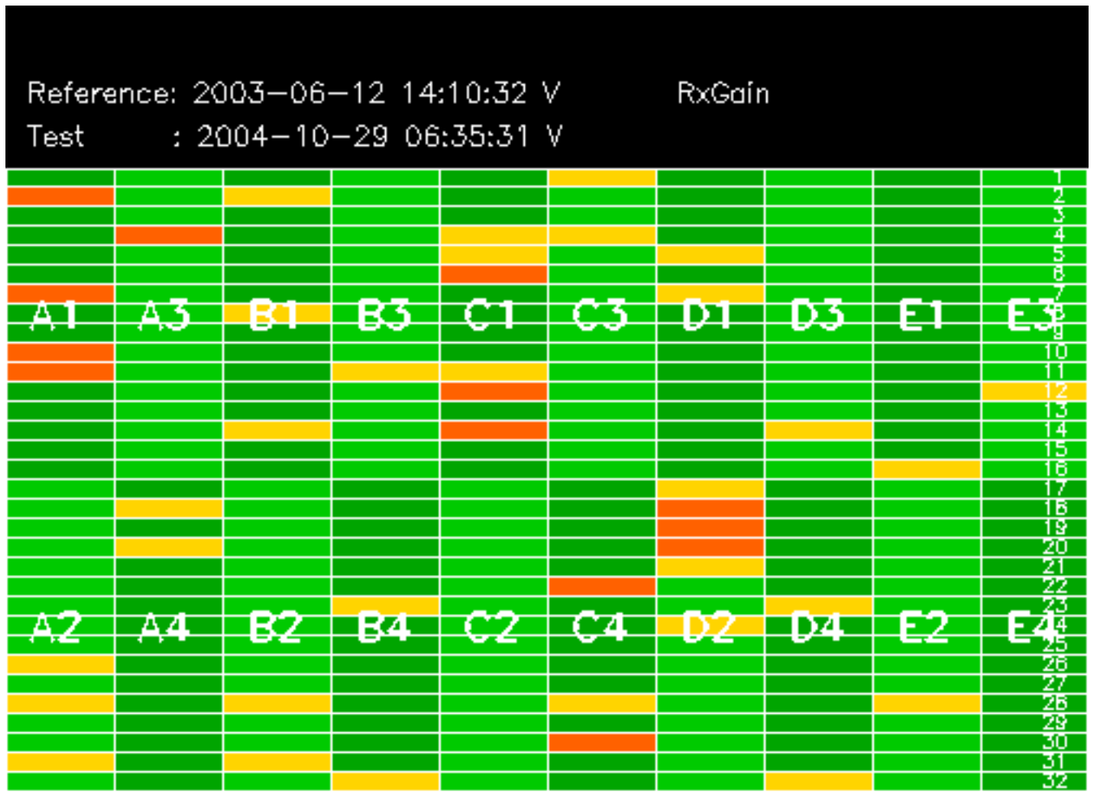
Reference: 2003-06-12 14:10:32 V
Test : 2004-10-29 06:35:31 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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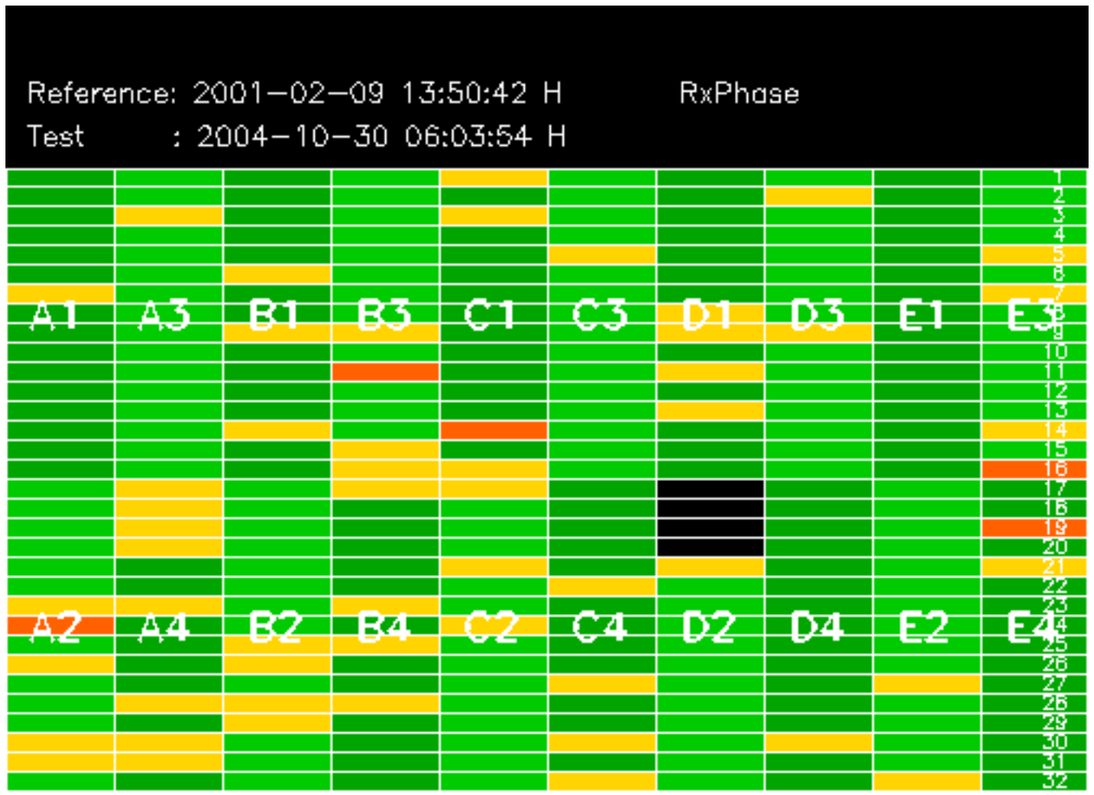
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-10-30 06:03:54 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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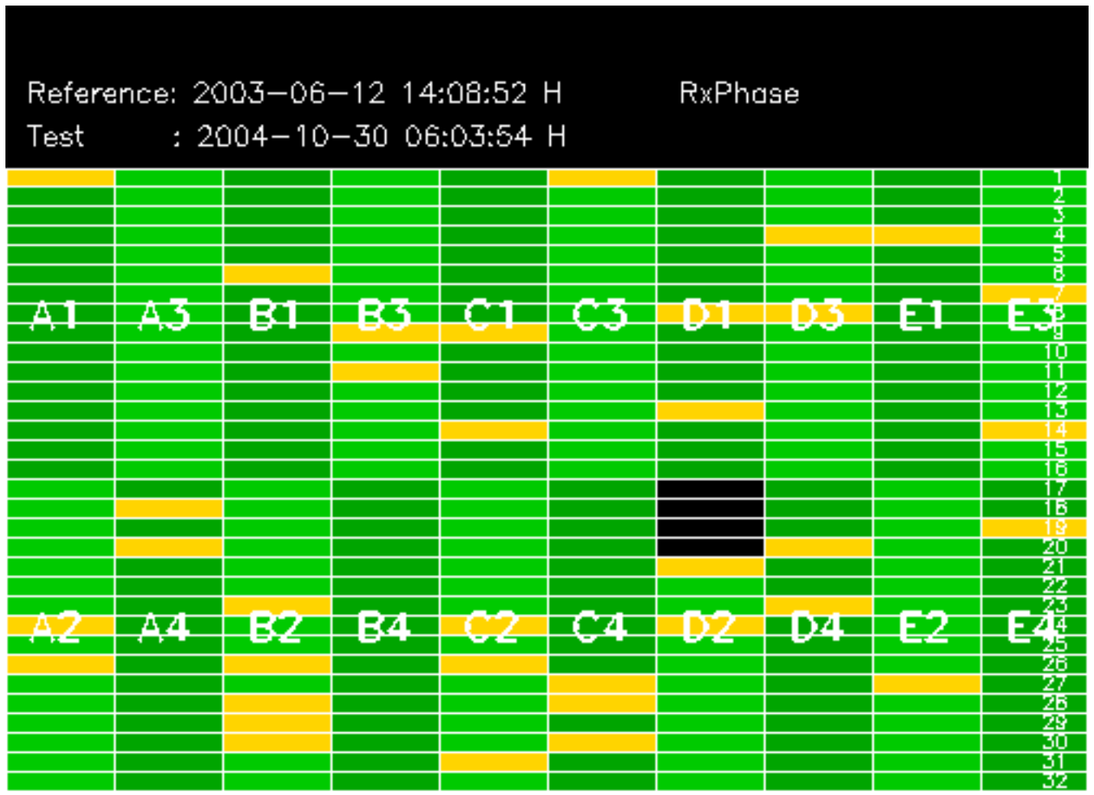
Reference: 2003-06-12 14:08:52 H
Test : 2004-10-30 06:03:54 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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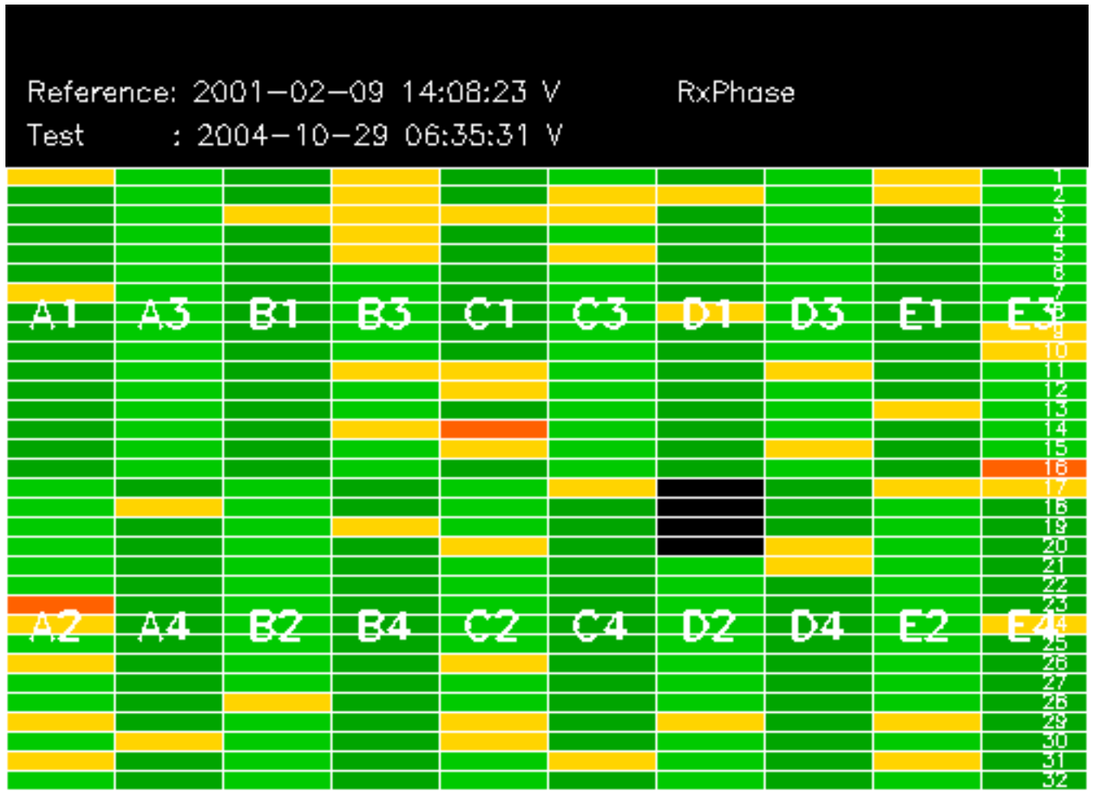
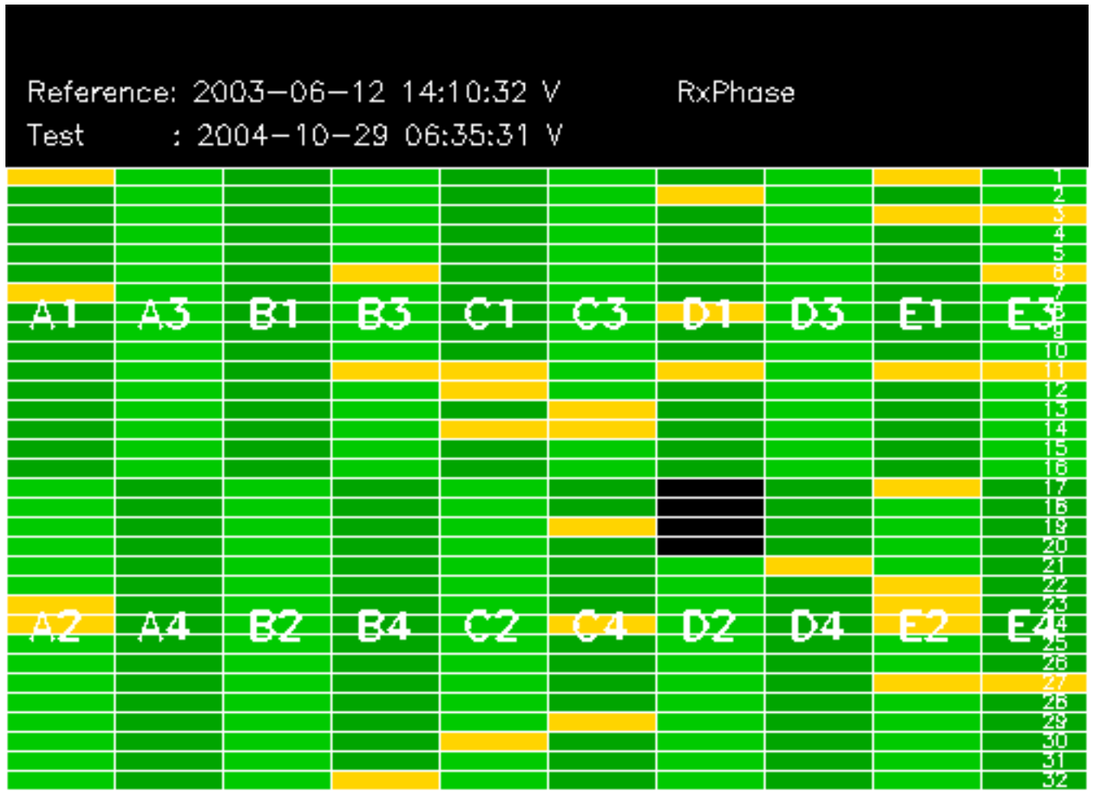
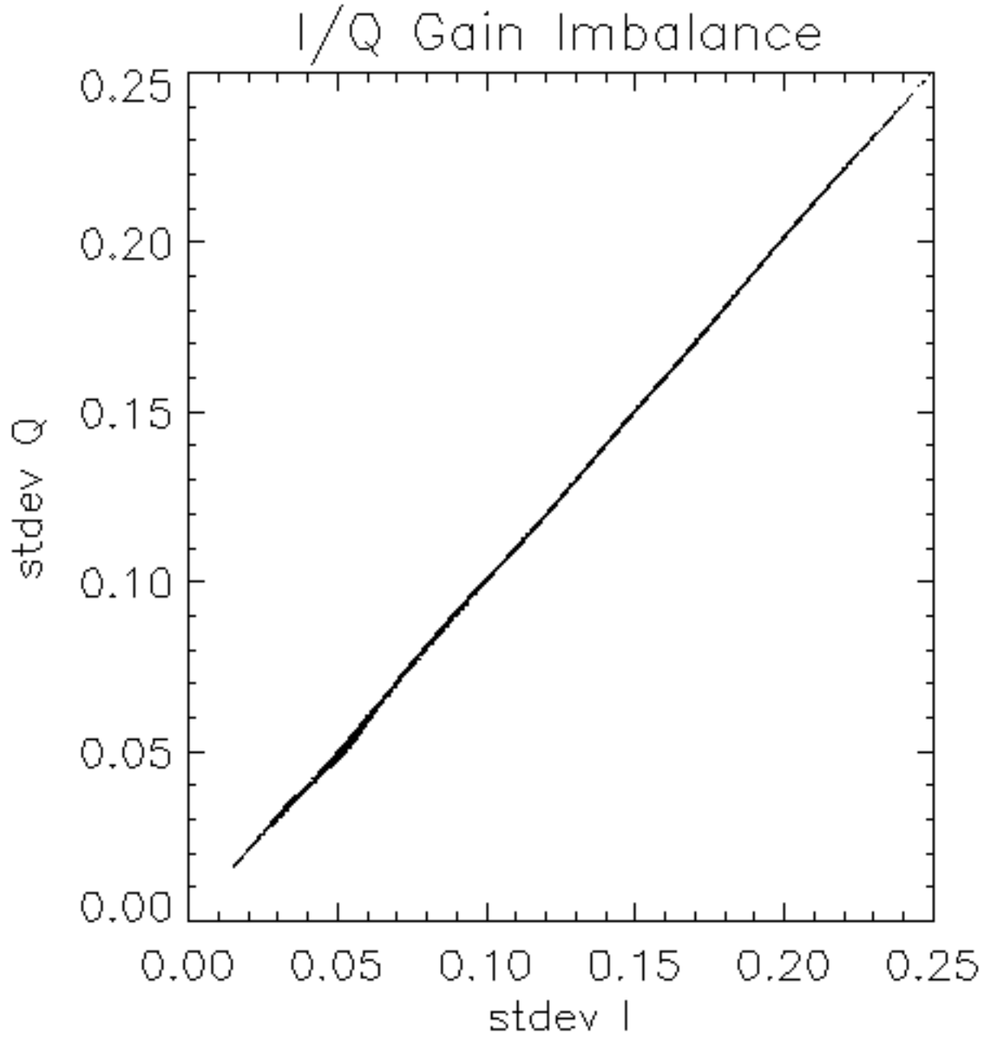
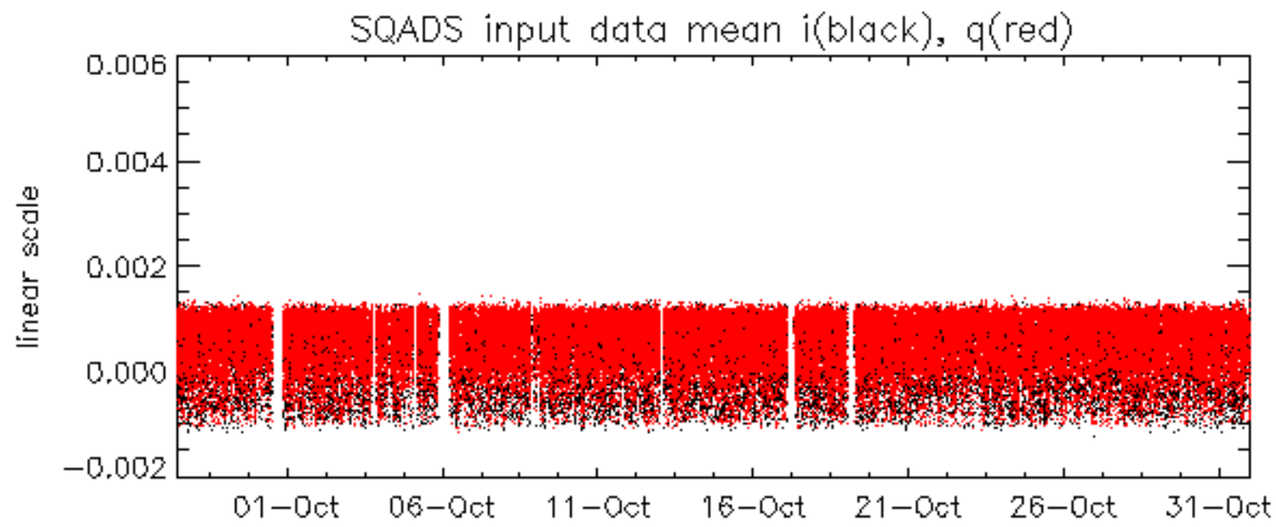
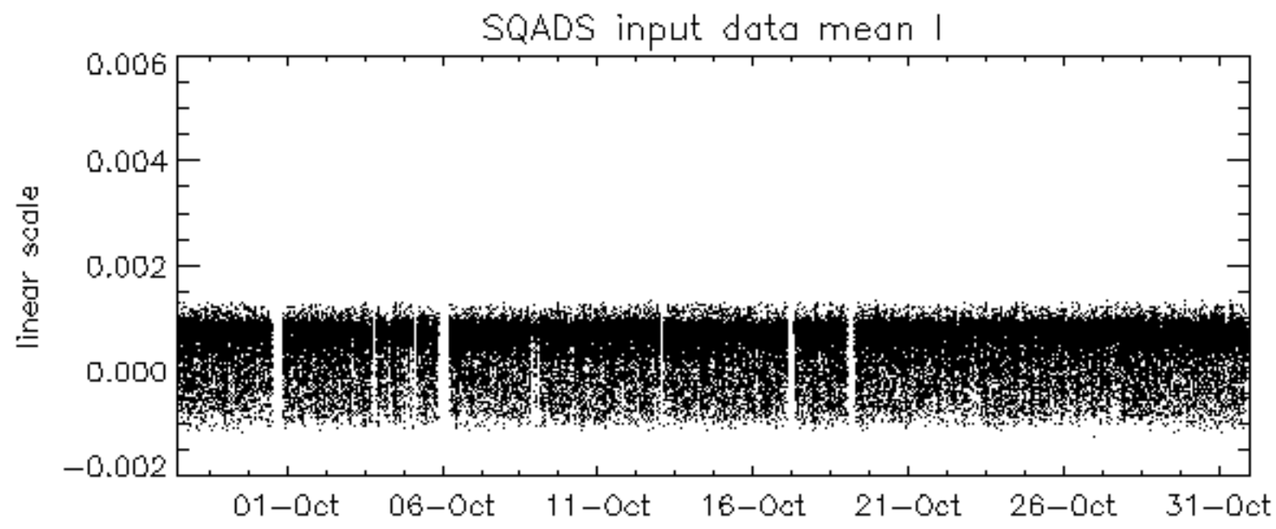
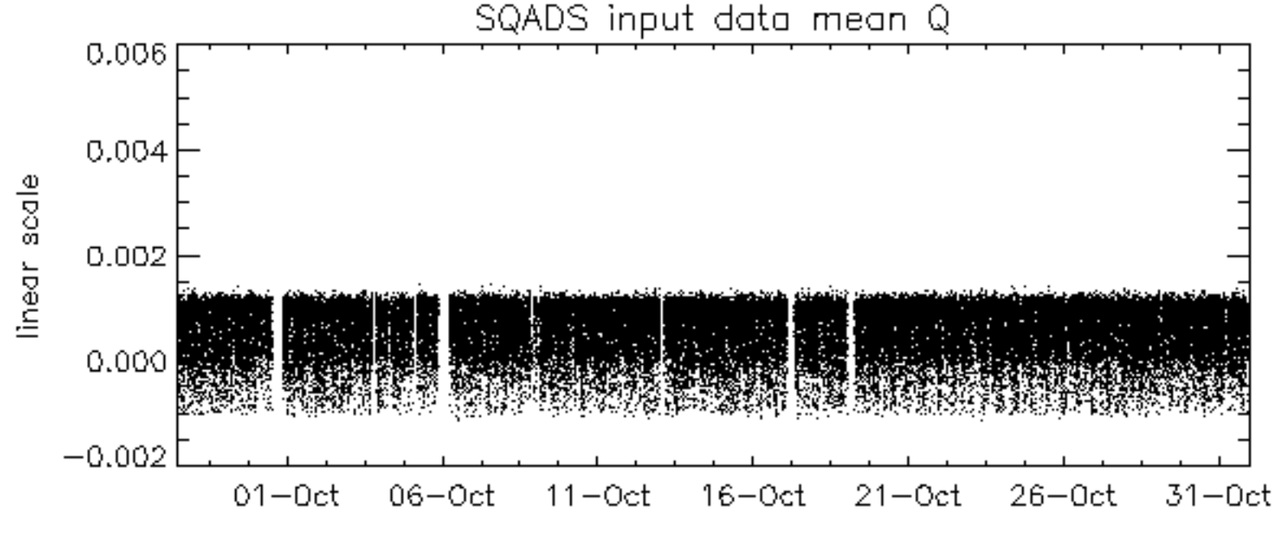

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-29 06:35:31 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

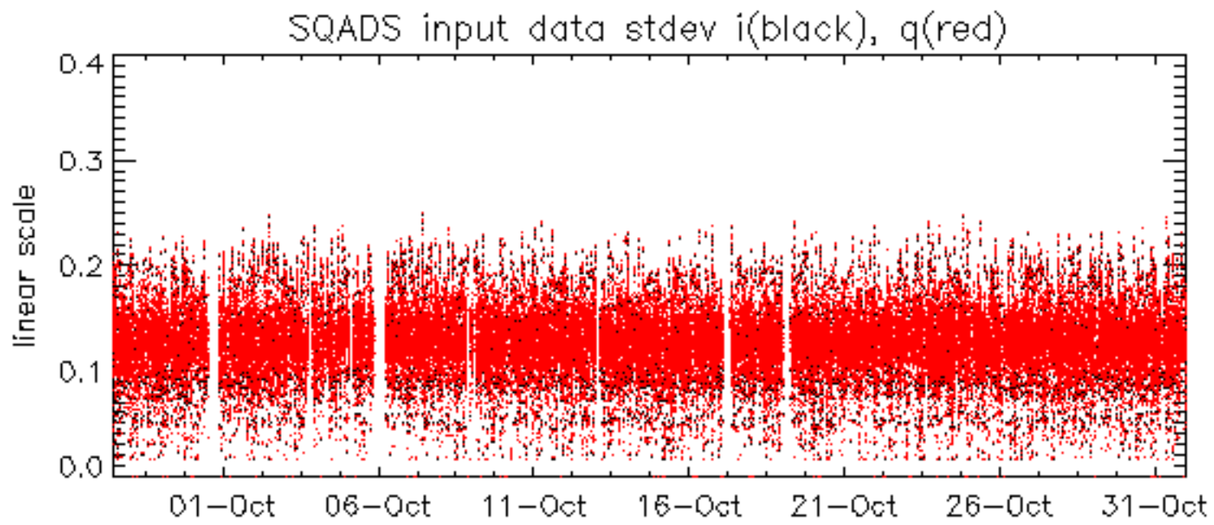

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-29 06:35:31 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

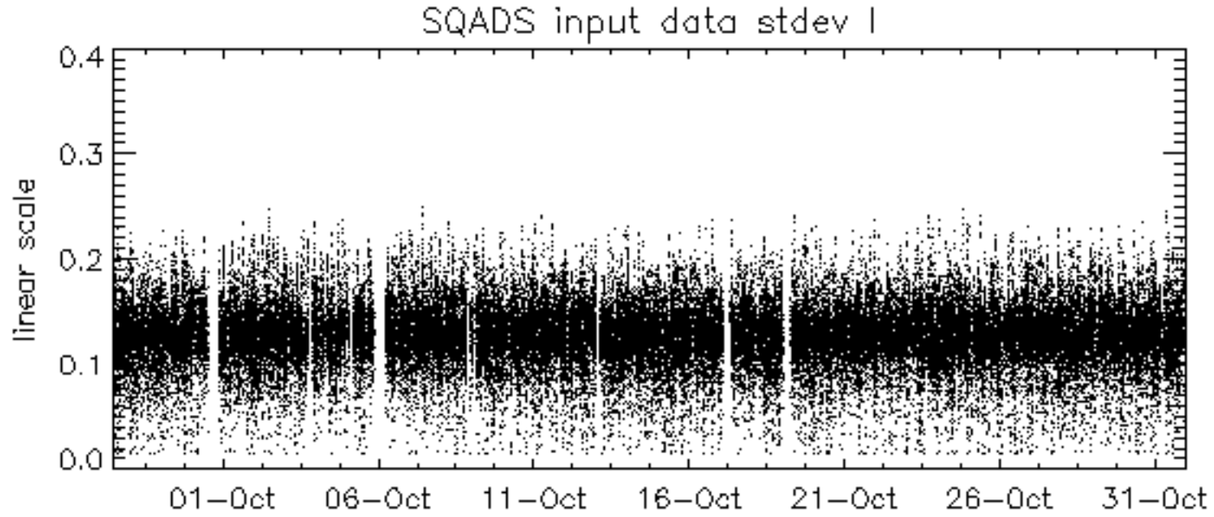

I/Q Gain Imbalance
stdev Q
stdev I
0.00
0.05
0.10
0.15
0.20
0.25

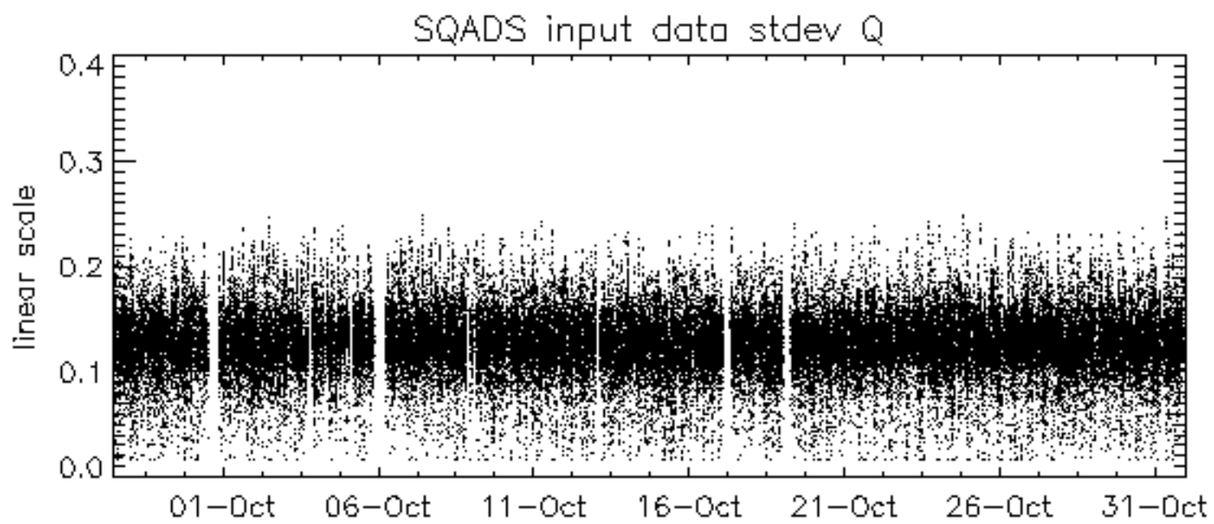

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct

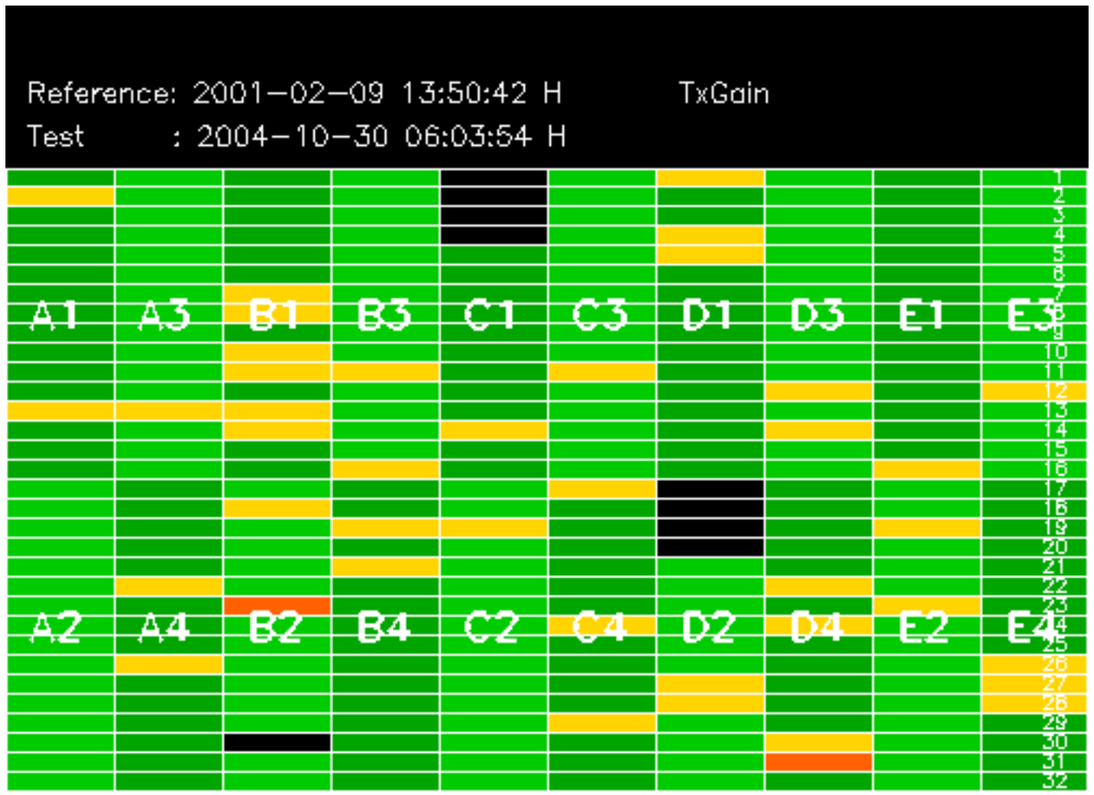

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct

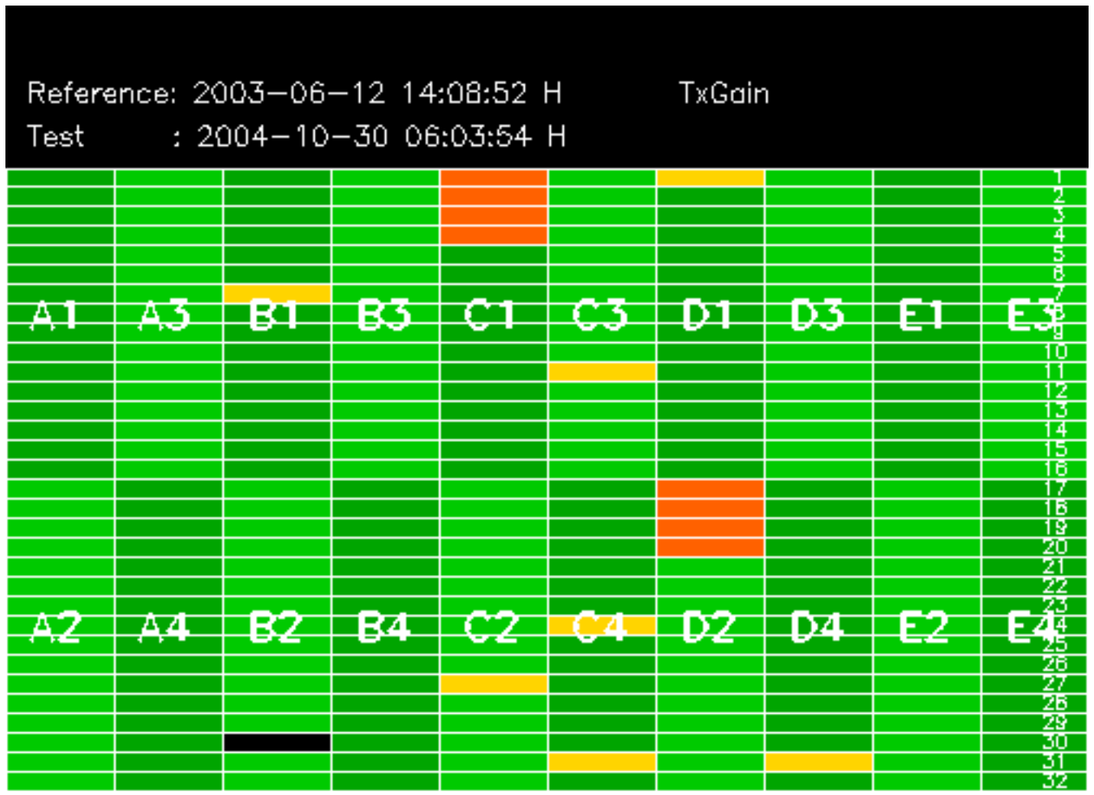

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2004-10-30 06:03:54 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 : 2004-10-30 06:03:54 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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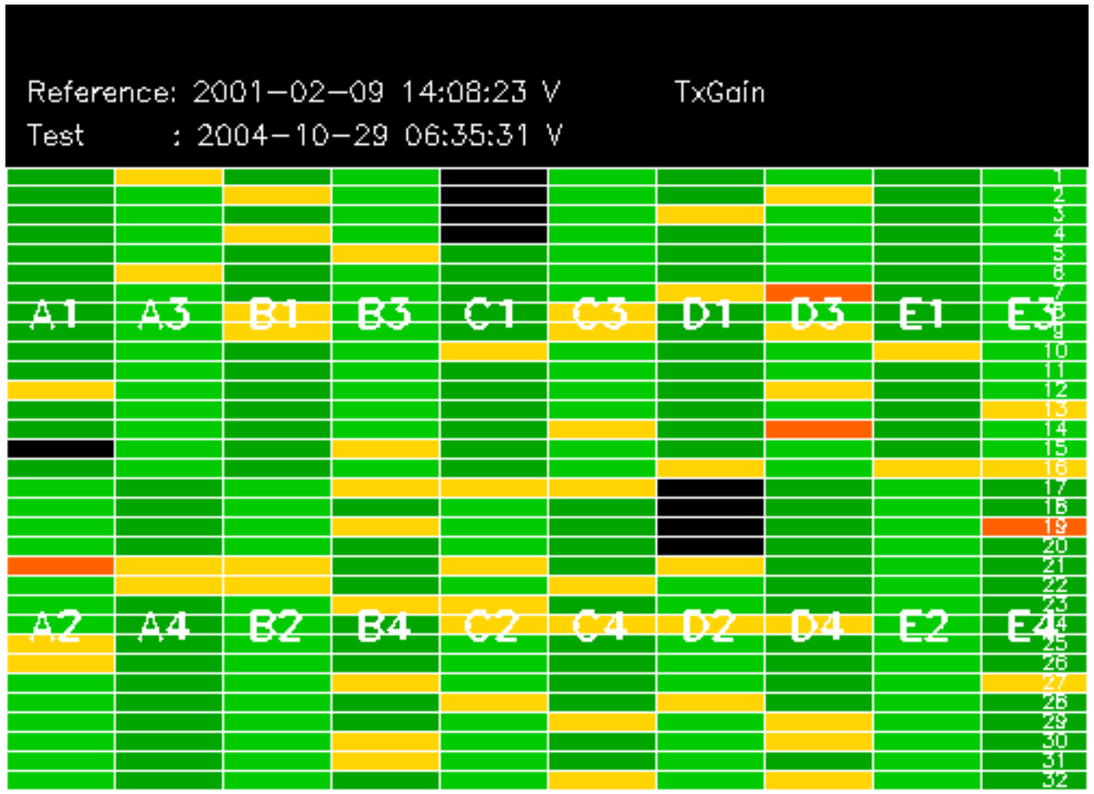
Reference: 2001-02-09 14:08:23 V
Test : 2004-10-29 06:35:31 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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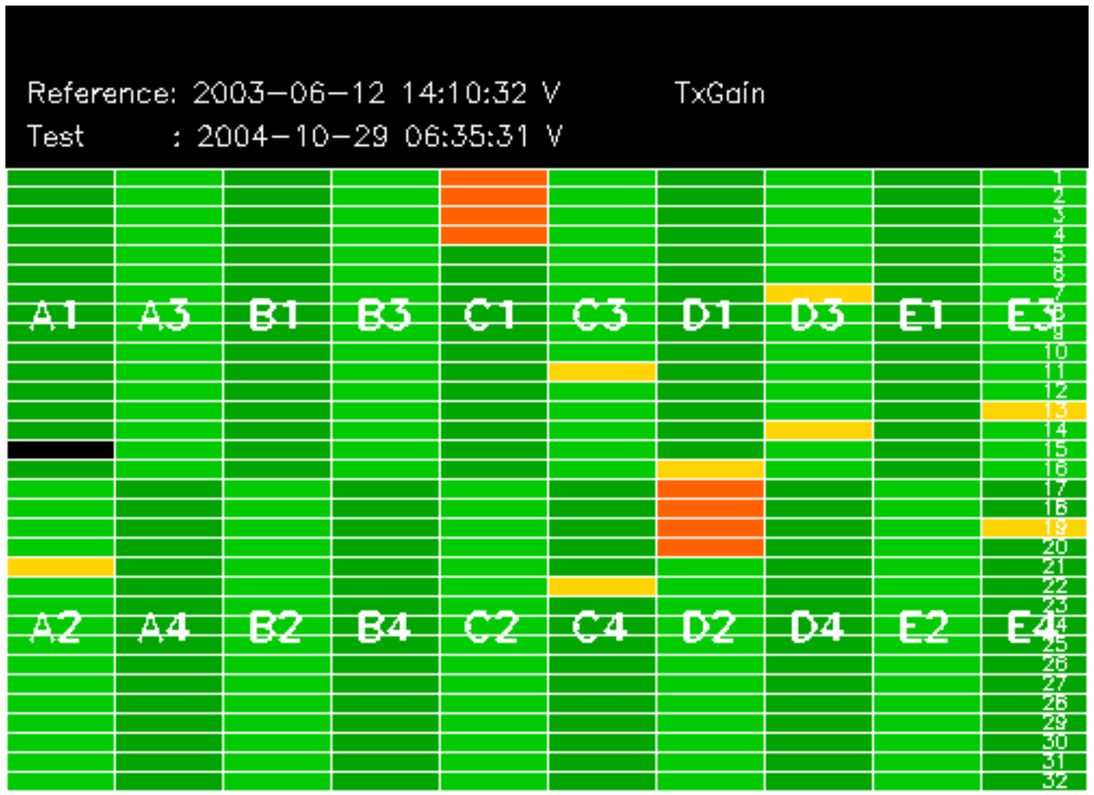
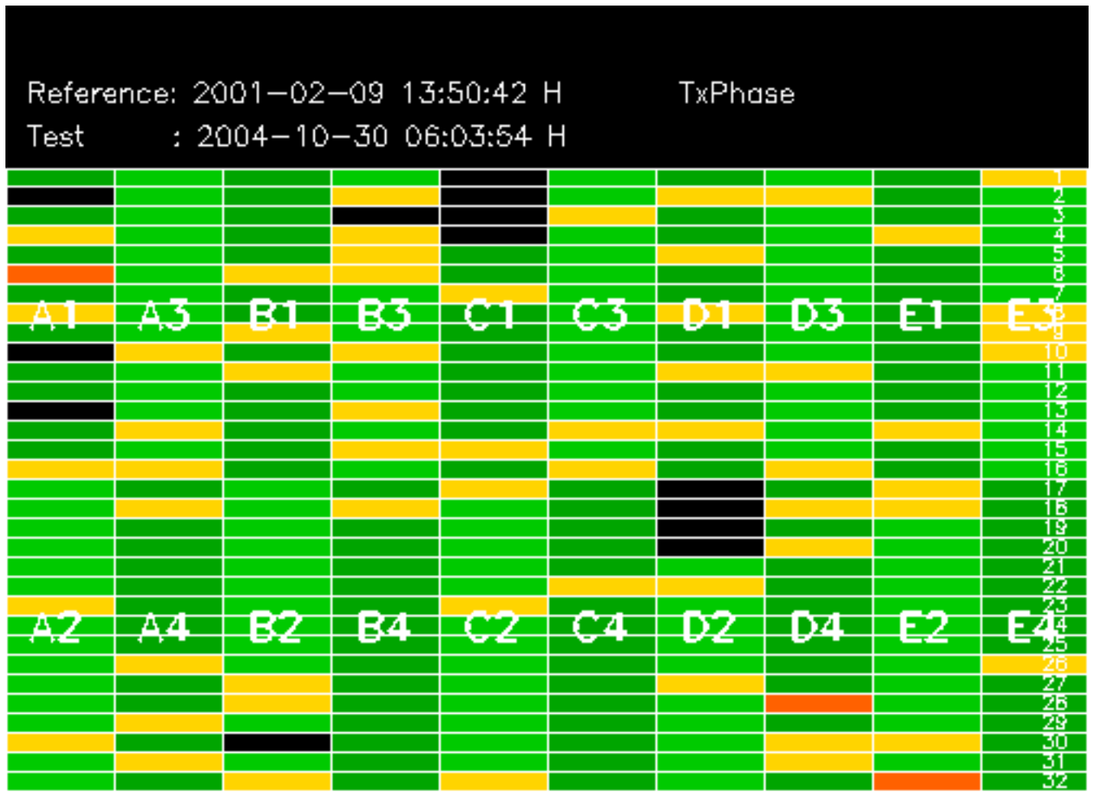

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-29 06:35:31 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-10-30 06:03:54 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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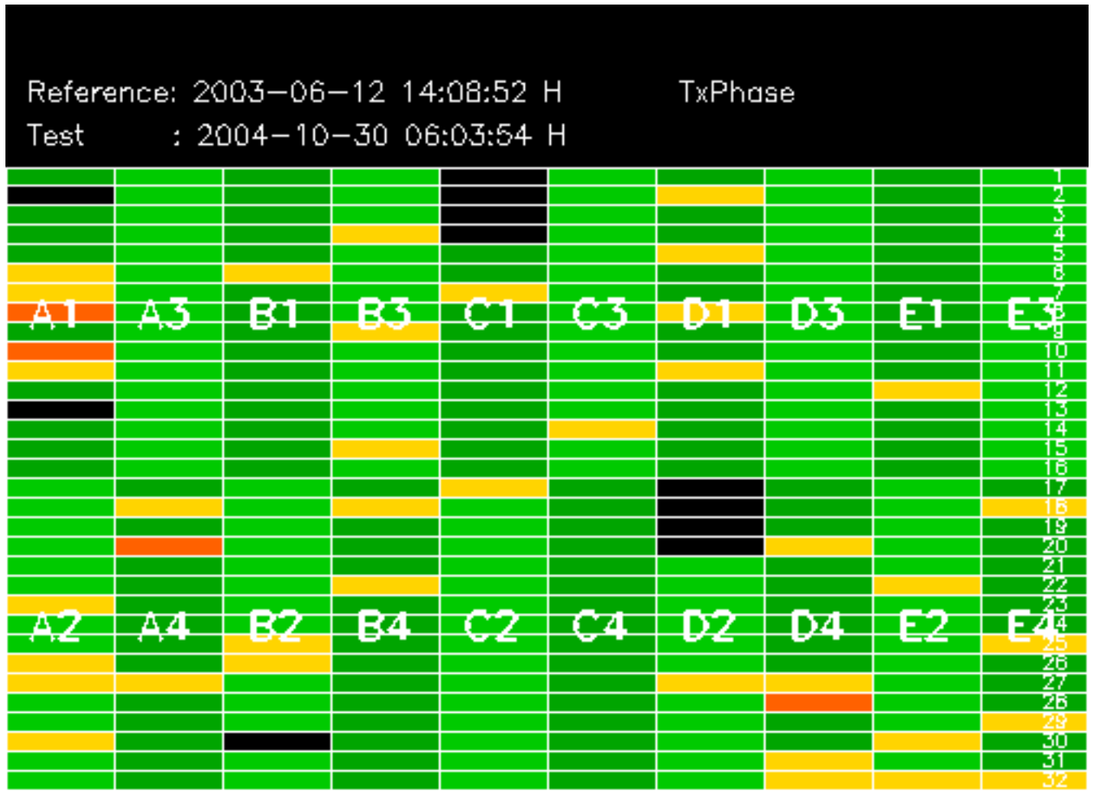
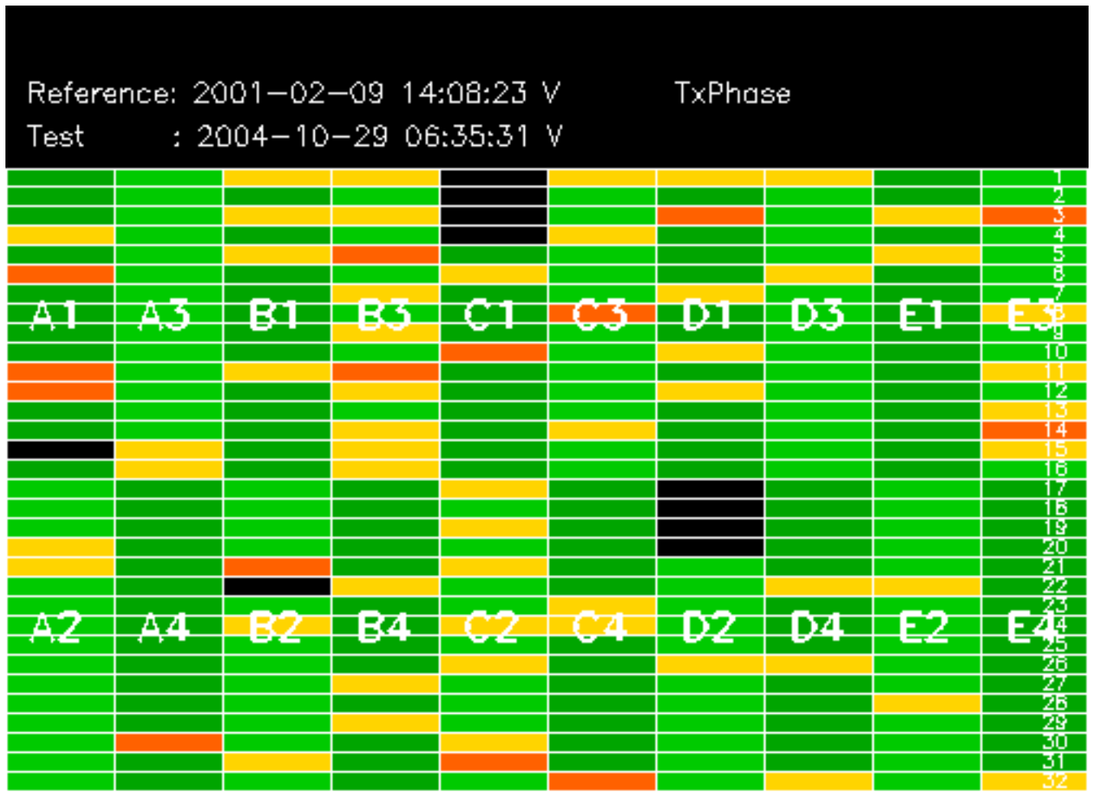

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-30 06:03:54 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-10-29 06:35:31 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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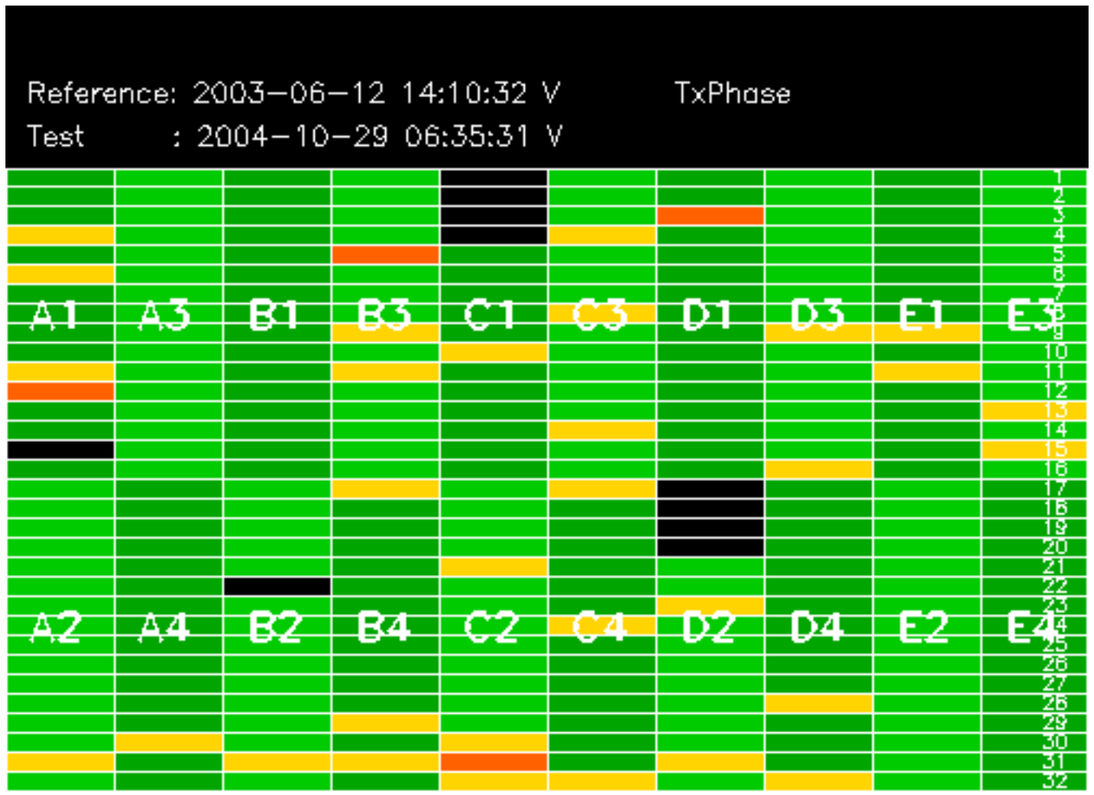
Reference: 2003-06-12 14:10:32 V
Test : 2004-10-29 06:35:31 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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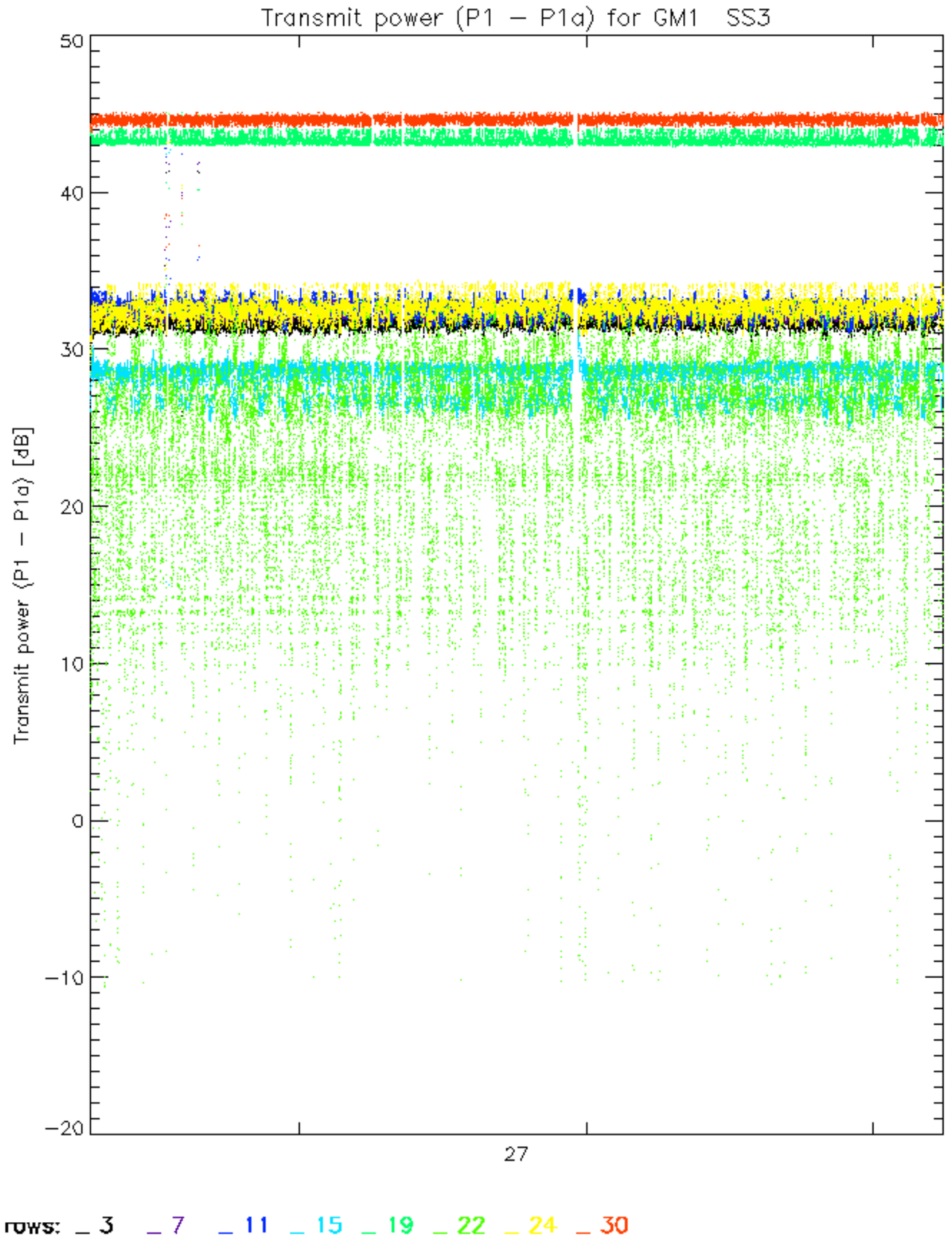
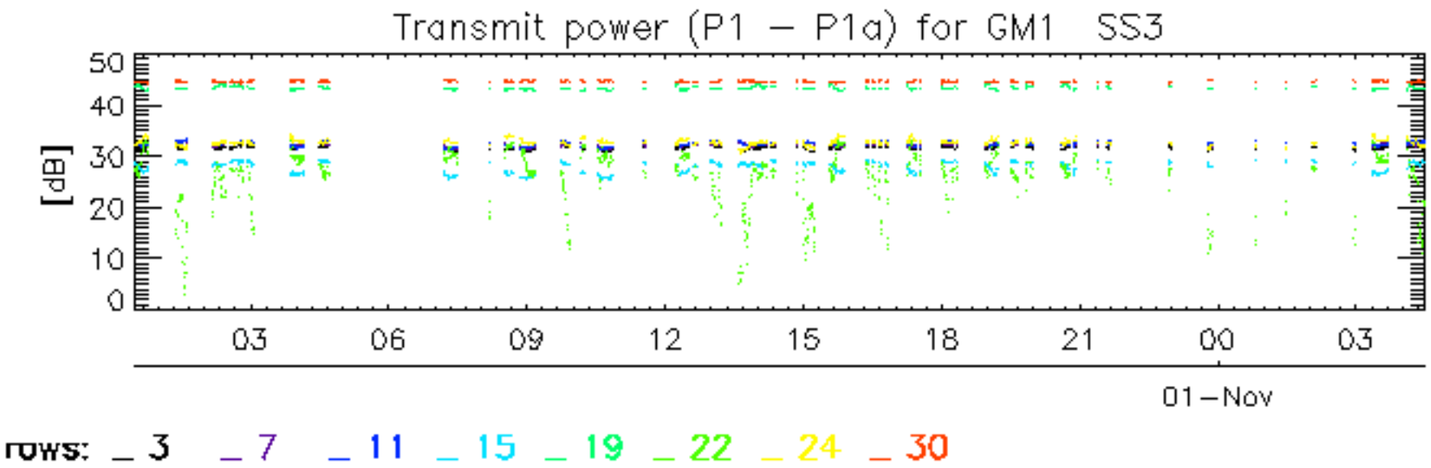
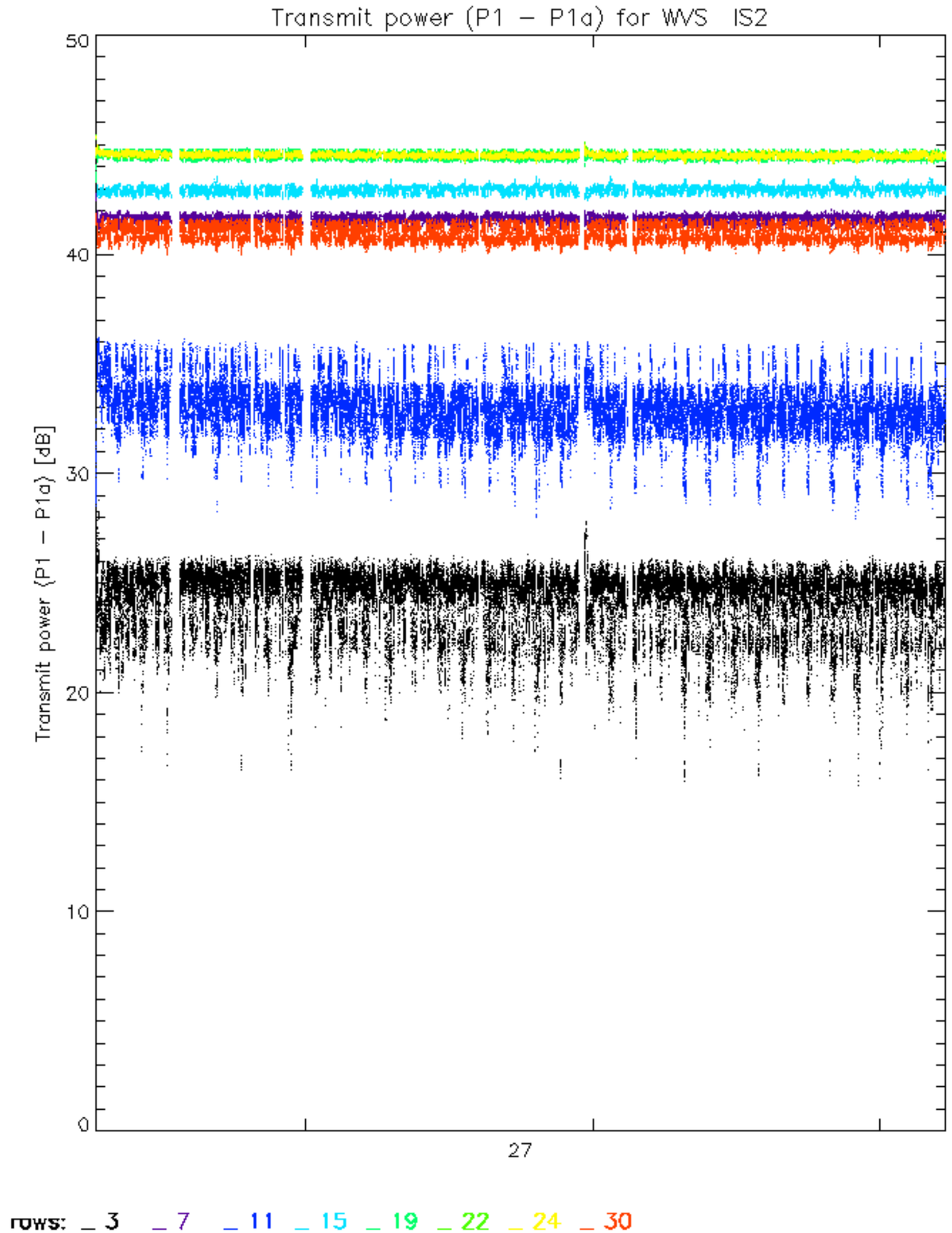
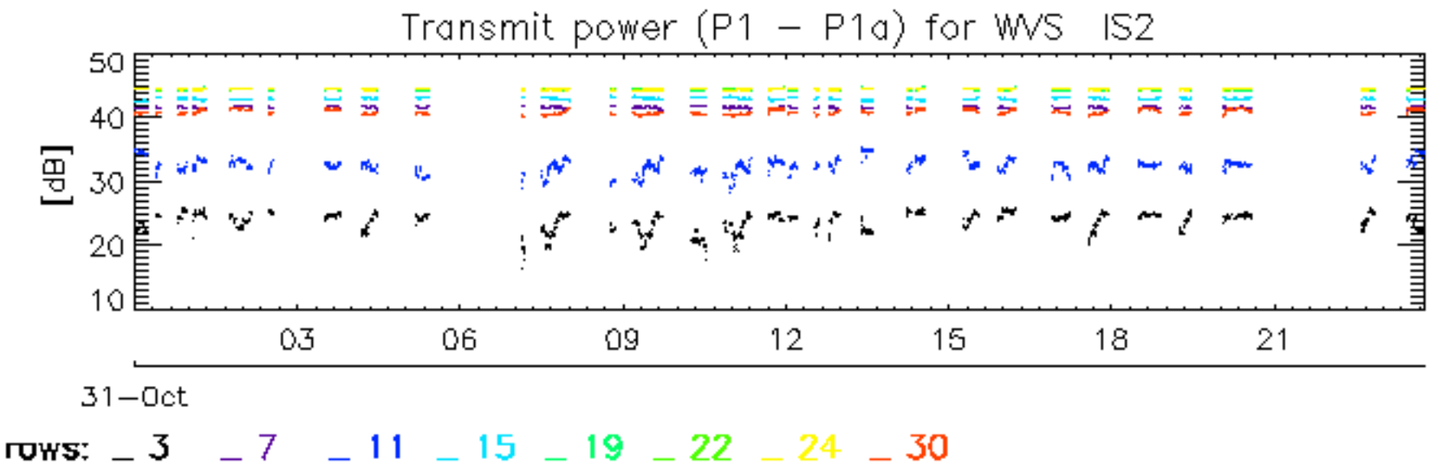

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
27
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
03
06
09
12
15
18
21
00
03
01–Nov
rows: 3
7
11
15
19
22
24
30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
27
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
50
40
30
20
10
03
06
09
12
15
18
21
31–Oct
rows: 3 7 11 15 19 22 24 30

ASAR was unavailable from 01-Nov-2004 05:00:40.000 to 05:01:40.000 UTC
Day of Year = 306
Orbit = 13972
Anx Offset = 4053.375 to 4113.375 seconds
Impact of anomaly visible in timelines of the daily report of the 02-NOV-2004