REPORT OF 041115

last update on Mon Nov 15 15:34:14 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	20041114 095348
H	20041113 084448

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
☒	☒
☒	☒
☒	☒
☒	☒

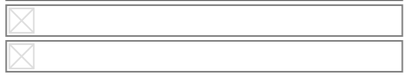
4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

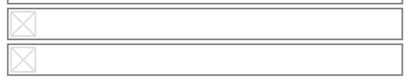
4.1.1 - Evolution for WVS

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	-3.476042	0.006521	0.015083
7	P1	-3.361495	0.012859	-0.006150
11	P1	-4.600538	0.016701	0.001085
15	P1	-5.665572	0.029404	0.024337
19	P1	-3.589474	0.005269	-0.044496
22	P1	-4.583920	0.014245	0.003414
26	P1	-4.862074	0.061286	0.036703
30	P1	-7.063691	0.015566	-0.040775
3	P1	-16.036701	0.101870	0.087130

7	P1	-14.043610	0.068023	0.004260
11	P1	-20.608282	0.202358	-0.245905
15	P1	-11.680496	0.035071	0.059541
19	P1	-14.044633	0.026660	-0.072509
22	P1	-16.246632	0.383392	0.088415
26	P1	-17.704889	0.707139	0.175785
30	P1	-17.985260	0.271850	0.090055

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.372480	0.089548	-0.015417
7	P2	-22.612892	0.134937	-0.010738
11	P2	-15.083228	0.126296	0.070215
15	P2	-7.143487	0.109127	-0.044892
19	P2	-9.708943	0.130186	0.003746
22	P2	-17.253733	0.104768	0.039406
26	P2	-16.502960	0.111378	-0.019126
30	P2	-19.056545	0.084524	0.023008

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.197416	0.006038	-0.022992
7	P3	-8.197414	0.006038	-0.022992
11	P3	-8.197411	0.006038	-0.022994
15	P3	-8.197408	0.006038	-0.023000
19	P3	-8.197408	0.006038	-0.023001
22	P3	-8.197407	0.006039	-0.023022
26	P3	-8.197406	0.006039	-0.023034
30	P3	-8.197461	0.006042	-0.023240

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	-2.803469	0.011347	-0.011577
7	P1	-2.952733	0.024118	0.005594
11	P1	-3.894399	0.022222	-0.012711
15	P1	-3.485183	0.026607	-0.001584
19	P1	-3.589376	0.011963	-0.006544
22	P1	-5.616376	0.066909	0.035915
26	P1	-6.411411	0.079686	0.043056
30	P1	-6.253615	0.041754	-0.057347
3	P1	-10.602850	0.054784	0.007596
7	P1	-10.073598	0.136800	-0.026361
11	P1	-12.334022	0.118565	-0.100518
15	P1	-11.695075	0.065401	-0.082807
19	P1	-15.617638	0.054428	-0.007886
22	P1	-23.918045	1.958683	-0.448894
26	P1	-15.123687	0.473937	-0.003527
30	P1	-20.286327	1.023336	-0.006612

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.054983	0.043000	-0.028619
7	P2	-22.681190	0.033753	0.023228
11	P2	-10.867447	0.038968	0.040031
15	P2	-5.040970	0.030594	-0.050259
19	P2	-6.945473	0.037825	-0.070203
22	P2	-7.371221	0.031029	0.052603
26	P2	-23.930016	0.025222	-0.058017
30	P2	-22.094828	0.020381	0.002929

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.038825	0.003551	-0.020928

7	P3	-8.038724	0.003560	-0.020941
11	P3	-8.038803	0.003557	-0.020861
15	P3	-8.038745	0.003551	-0.021010
19	P3	-8.038760	0.003551	-0.021017
22	P3	-8.038882	0.003550	-0.021341
26	P3	-8.038852	0.003537	-0.020590
30	P3	-8.038804	0.003562	-0.021009

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	0.000465618
	stdev	2.21143e-07
MEAN Q	mean	0.000540969
	stdev	2.37301e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126413
	stdev	0.000934180
STDEV Q	mean	0.126631

stdev	0.000942383

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

No anomalies observed in Doppler evolution.
Doppler 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

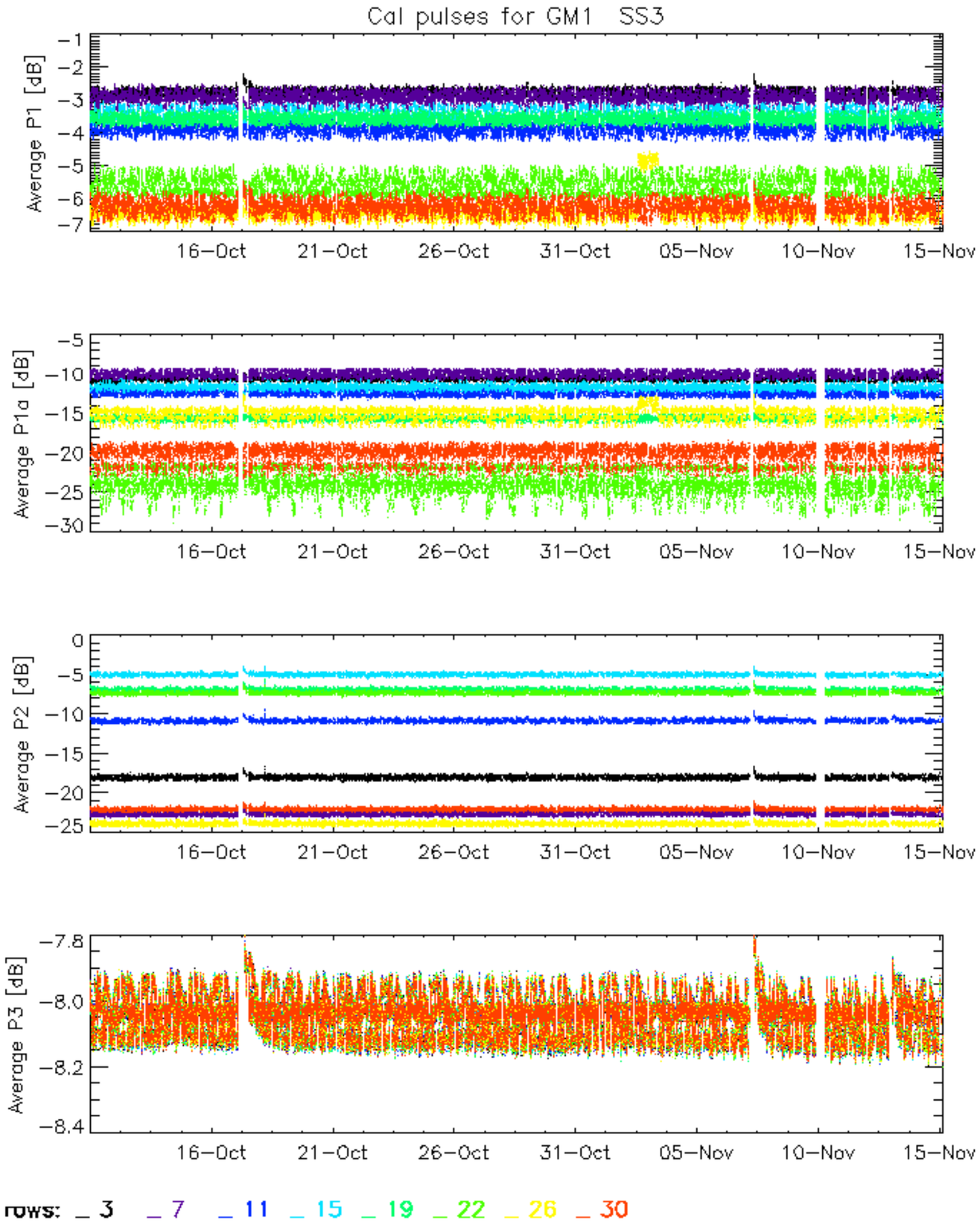
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

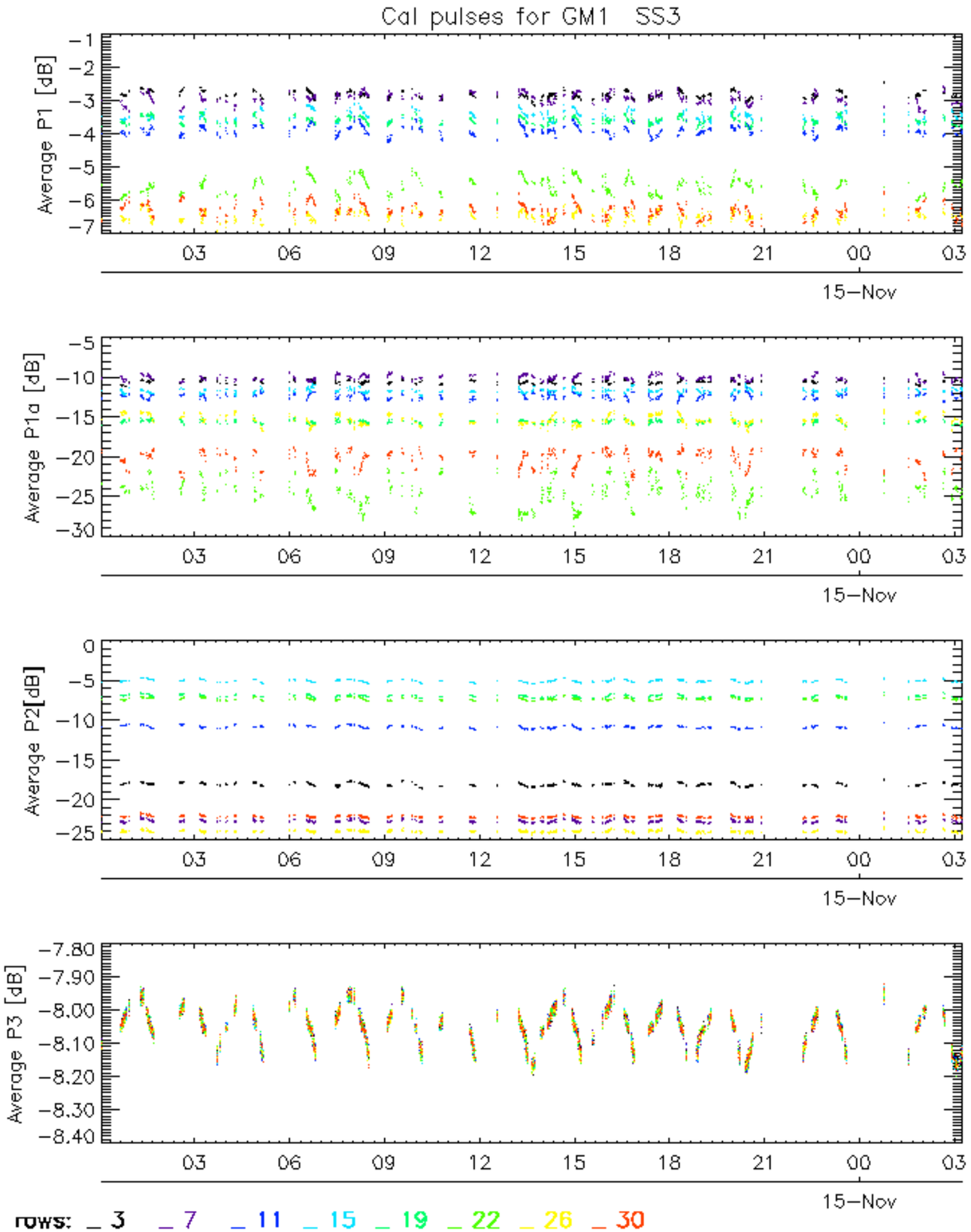
6.5 - Absolute Doppler for GM1

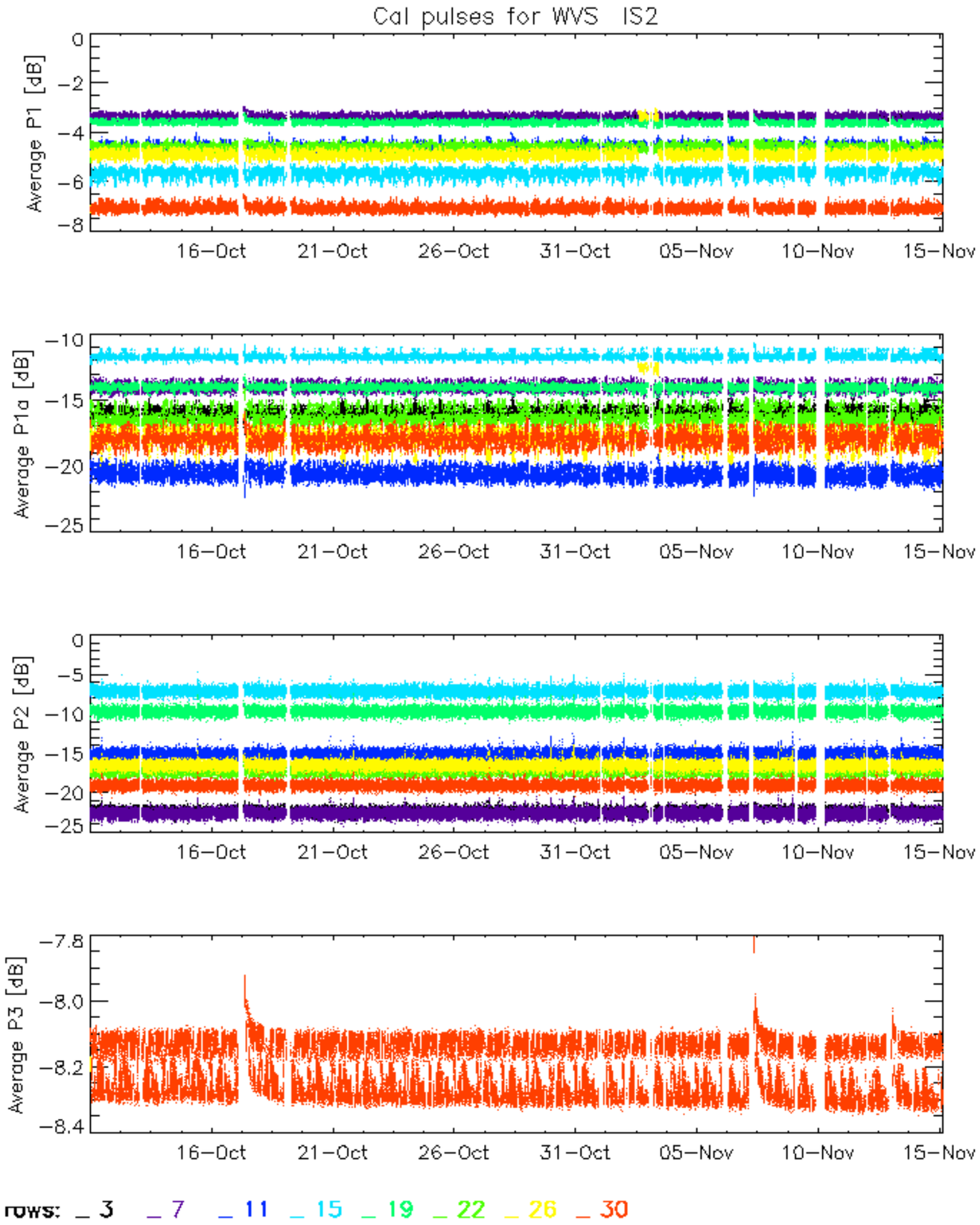
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

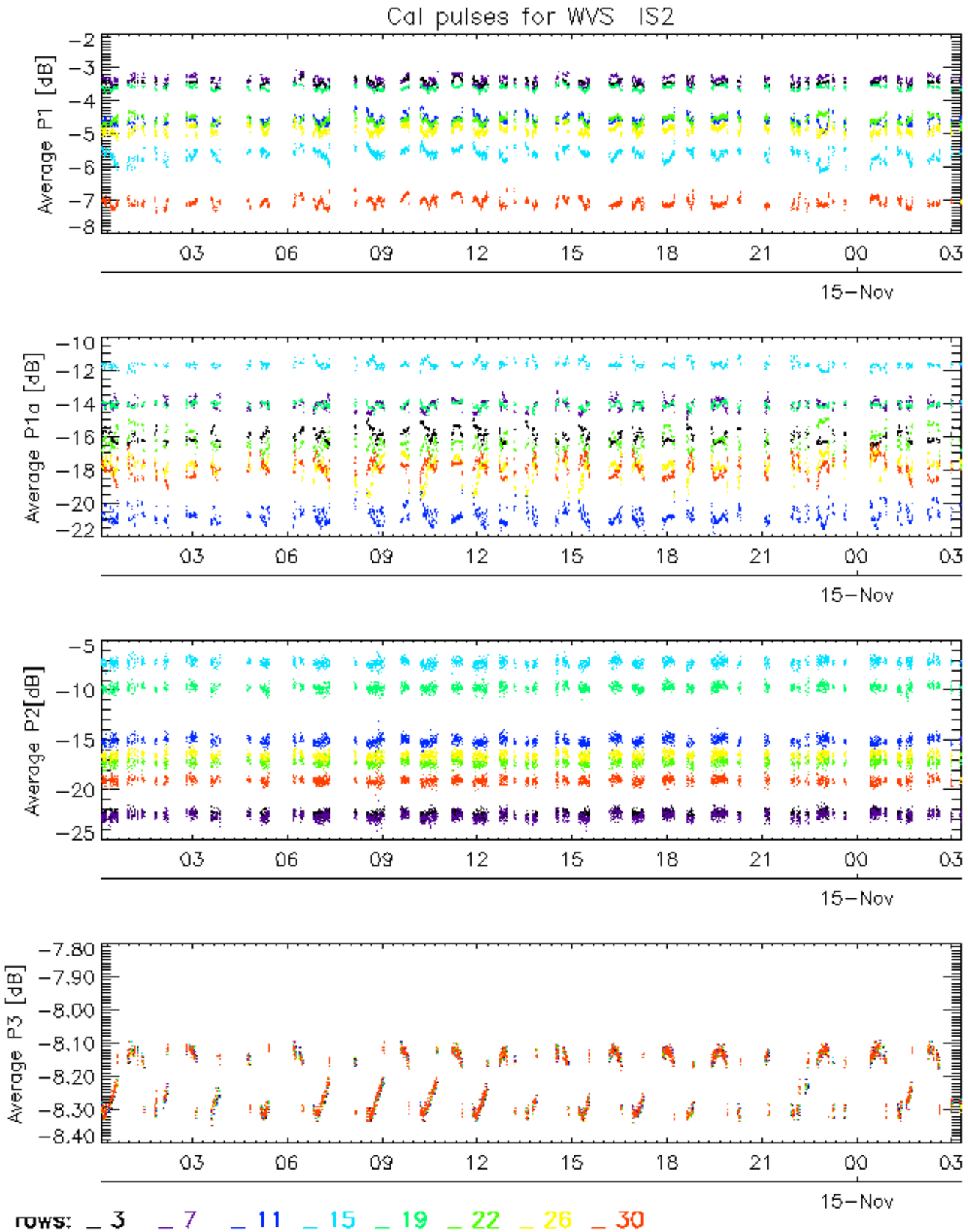
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

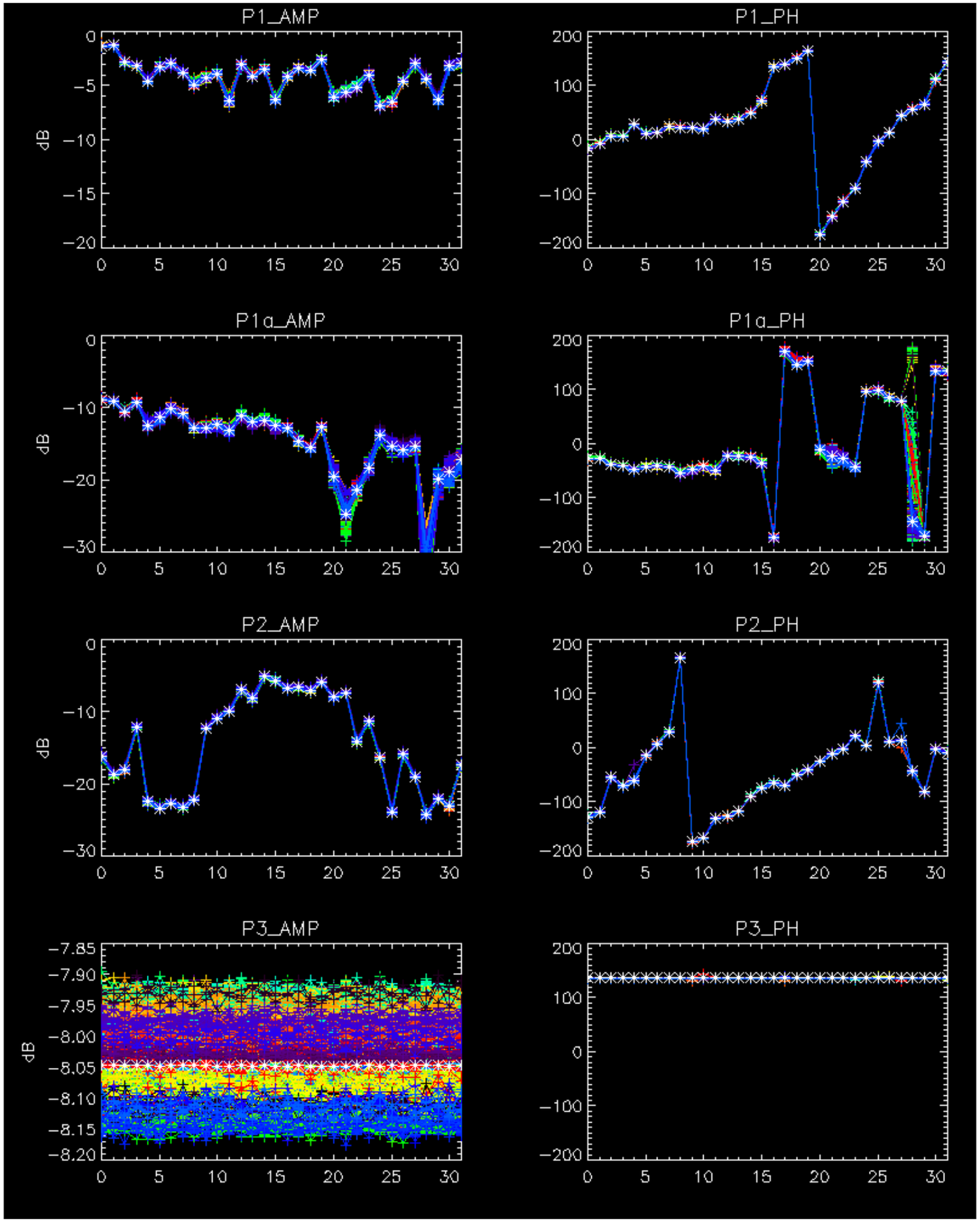

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
15−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
15−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
15−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
03
15−Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

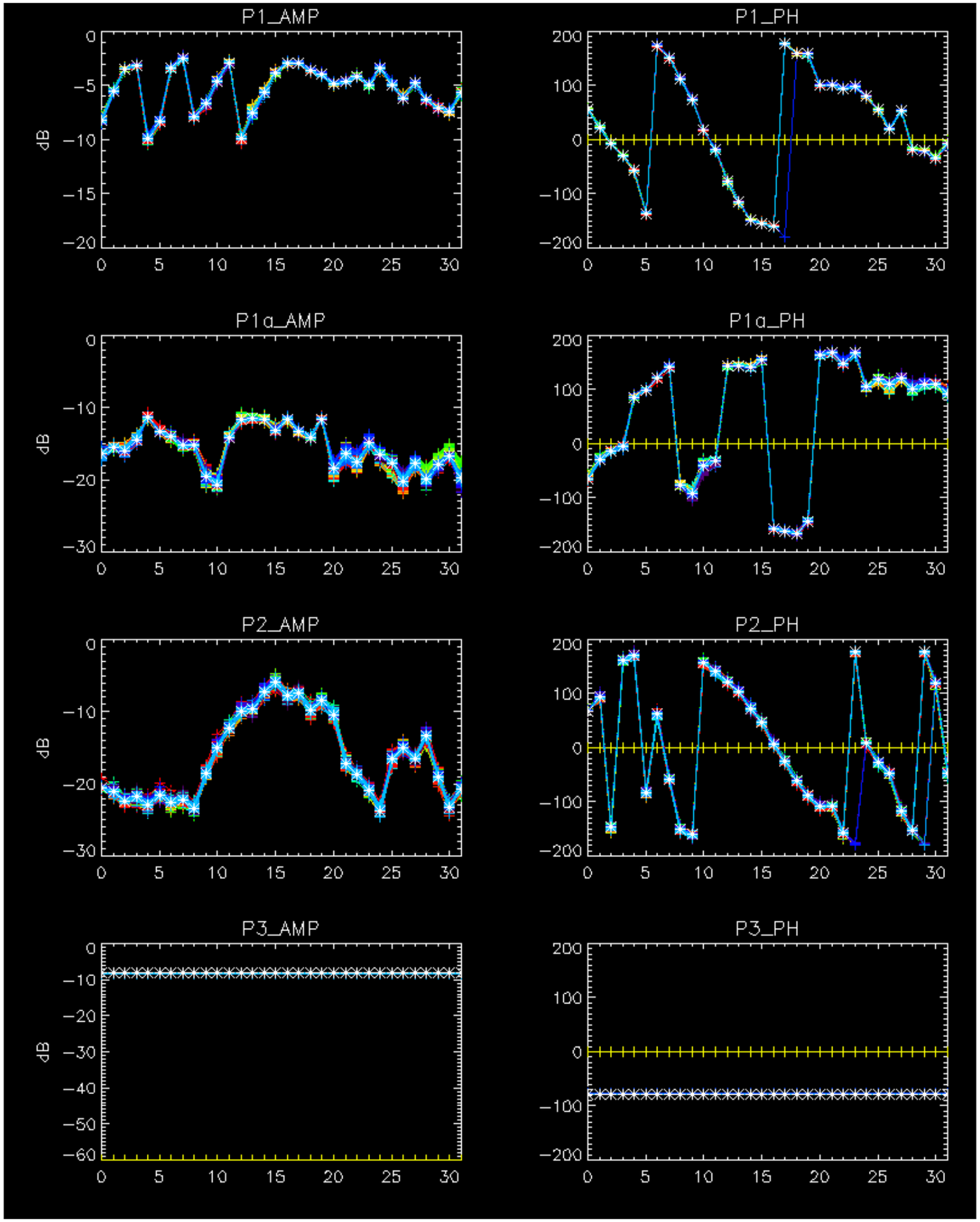

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
−5
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
03
06
09
12
15
18
21
00
03
15−Nov
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
03
06
09
12
15
18
21
00
03
15−Nov
Average P2[dB]
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
15−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
15−Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No anomalies observed on available browse products

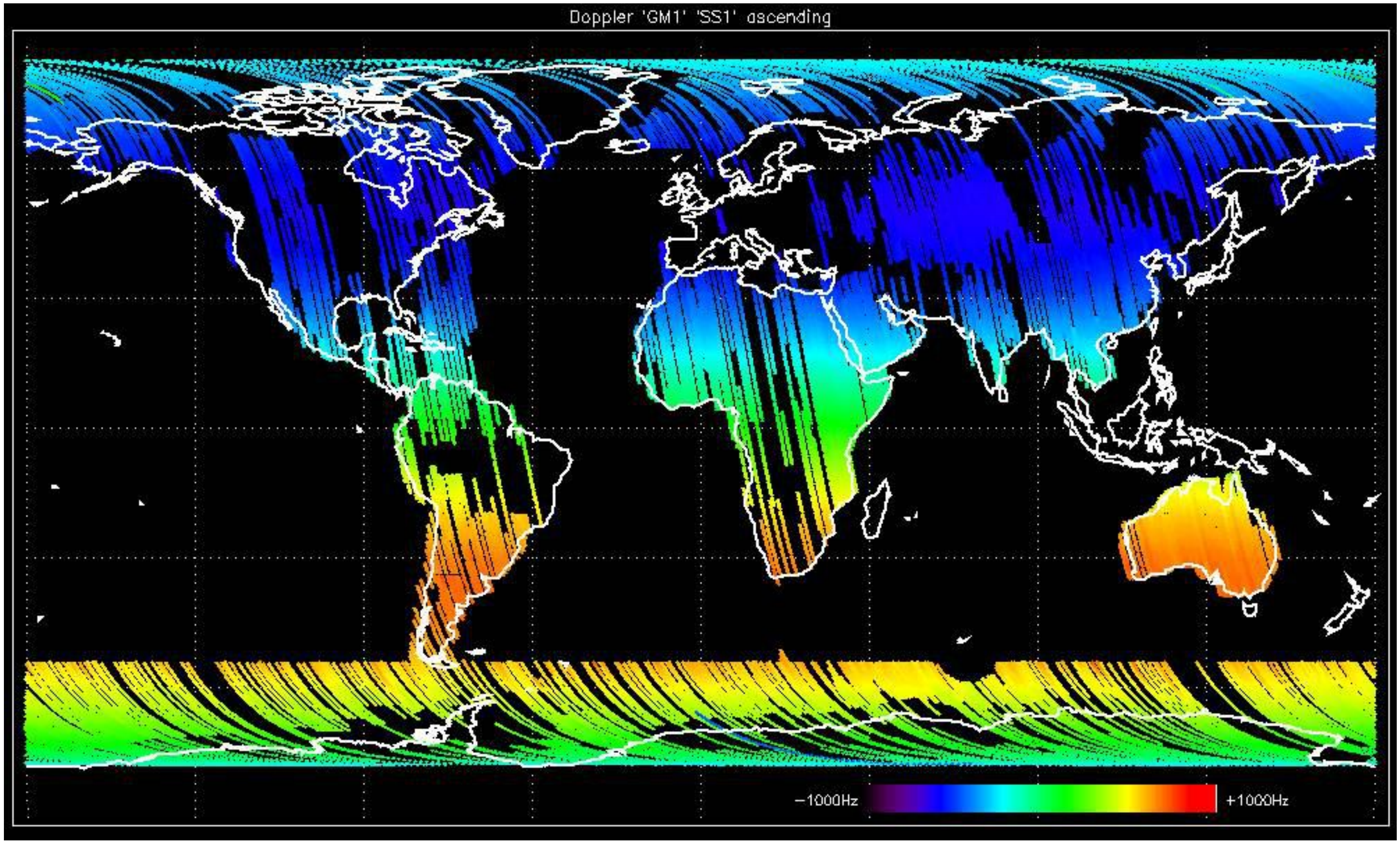
No anomalies observed.

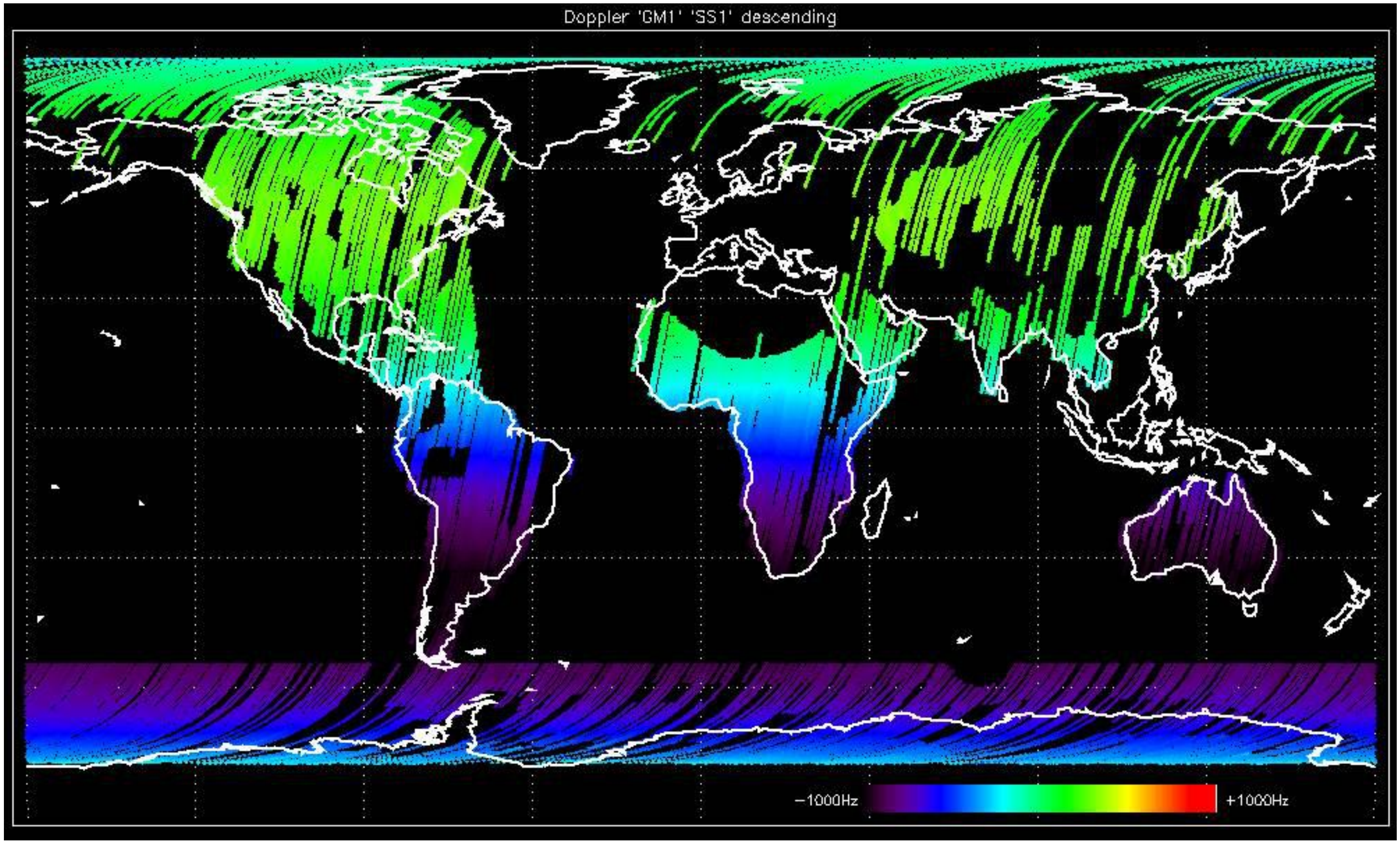

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

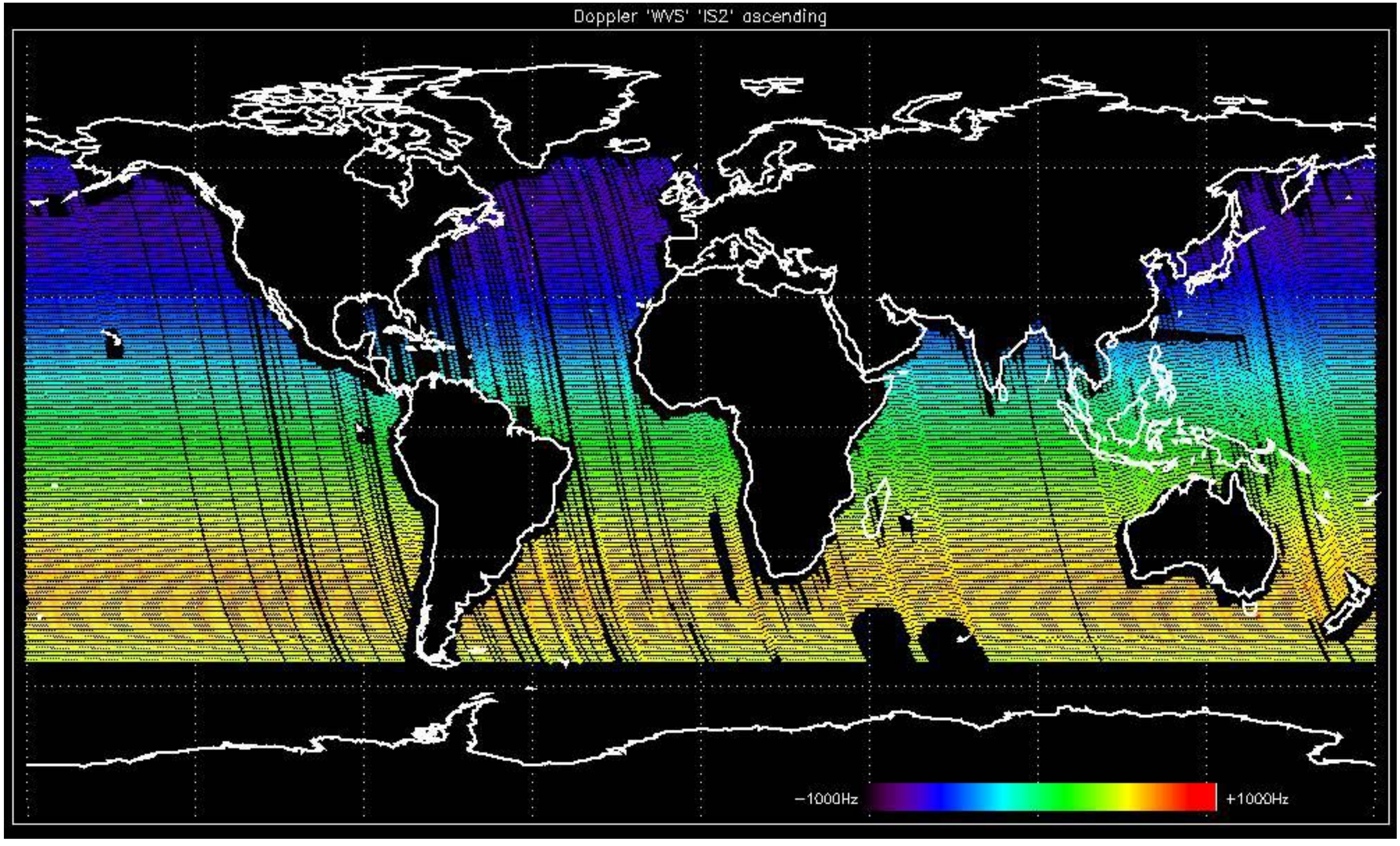

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
0
−10
−20
−30
−40
−50
−60
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

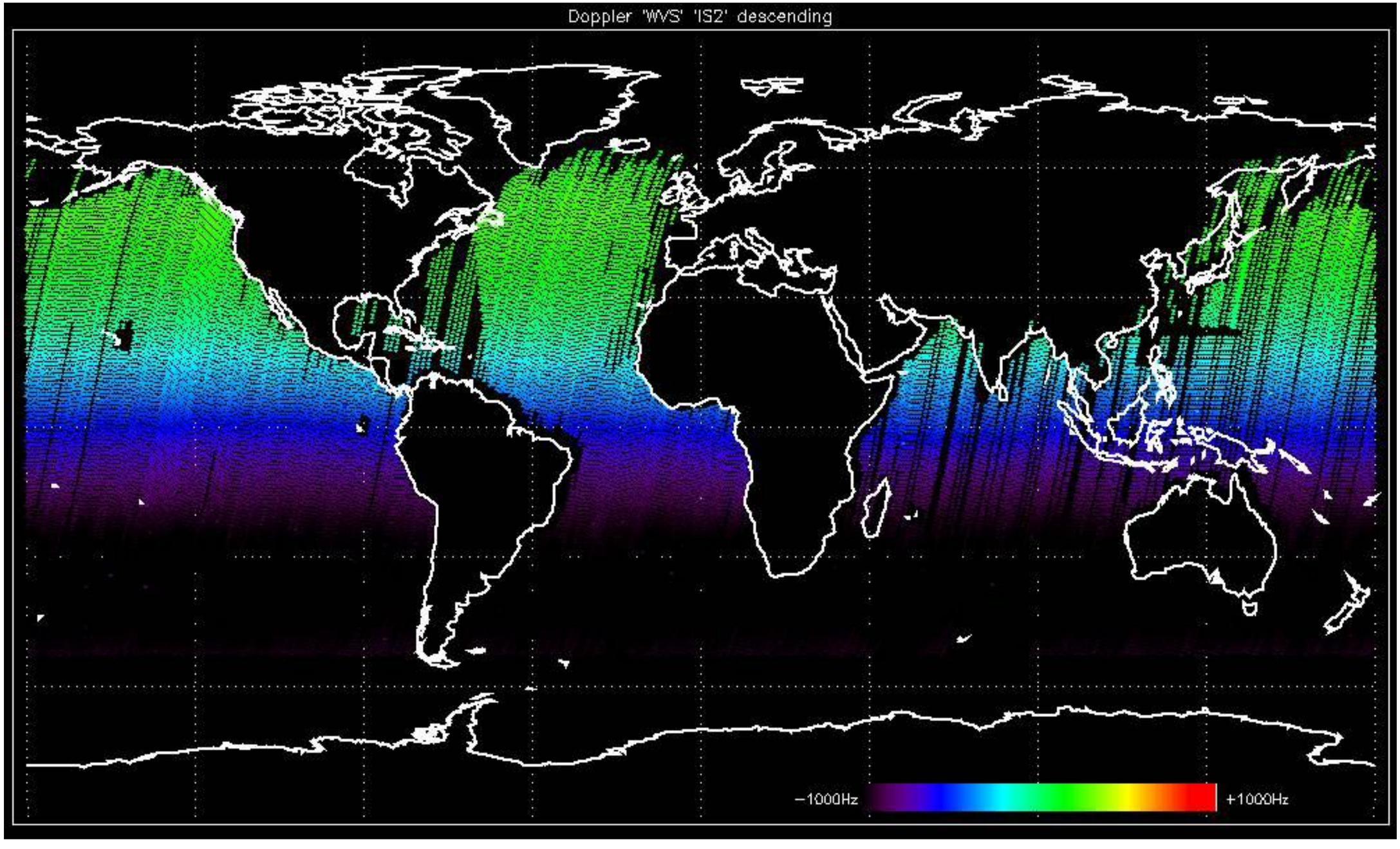
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

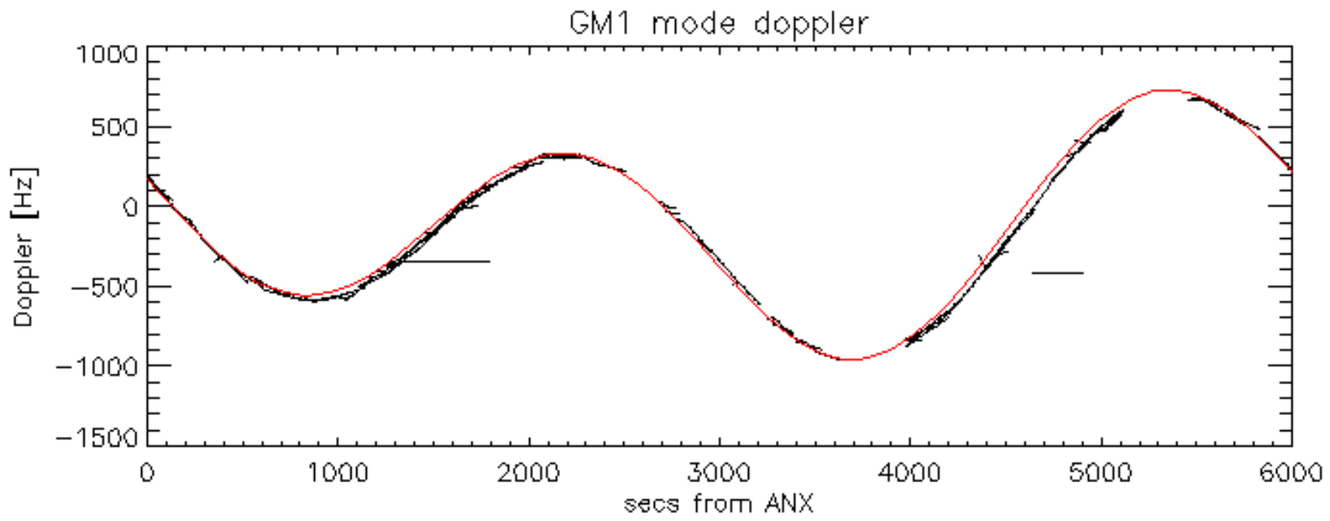
No anomalies observed in Doppler evolution.
Doppler analysis performed over the last 35 days.

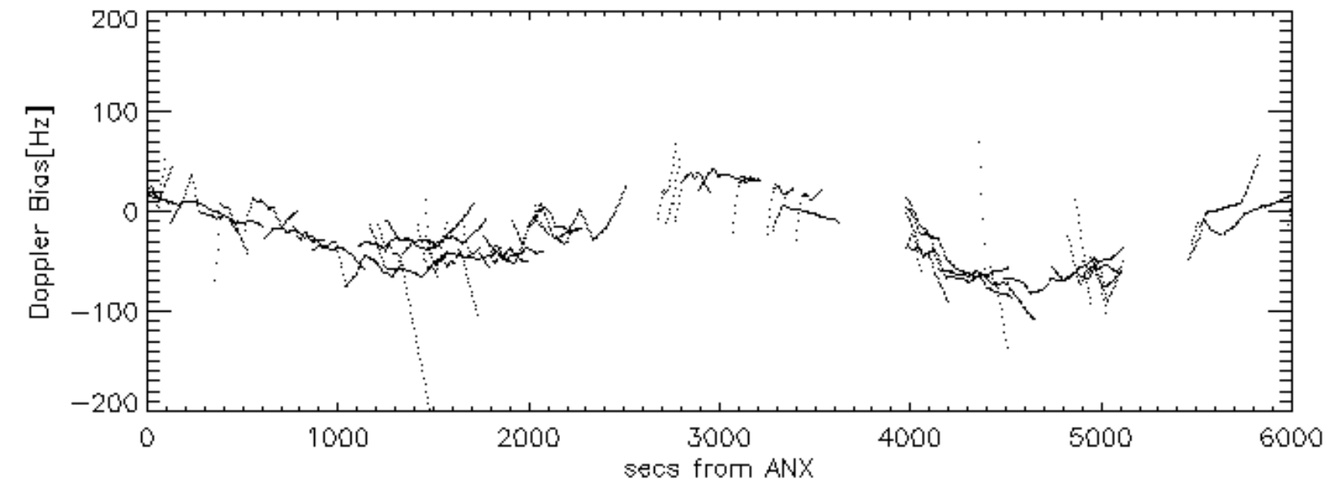

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

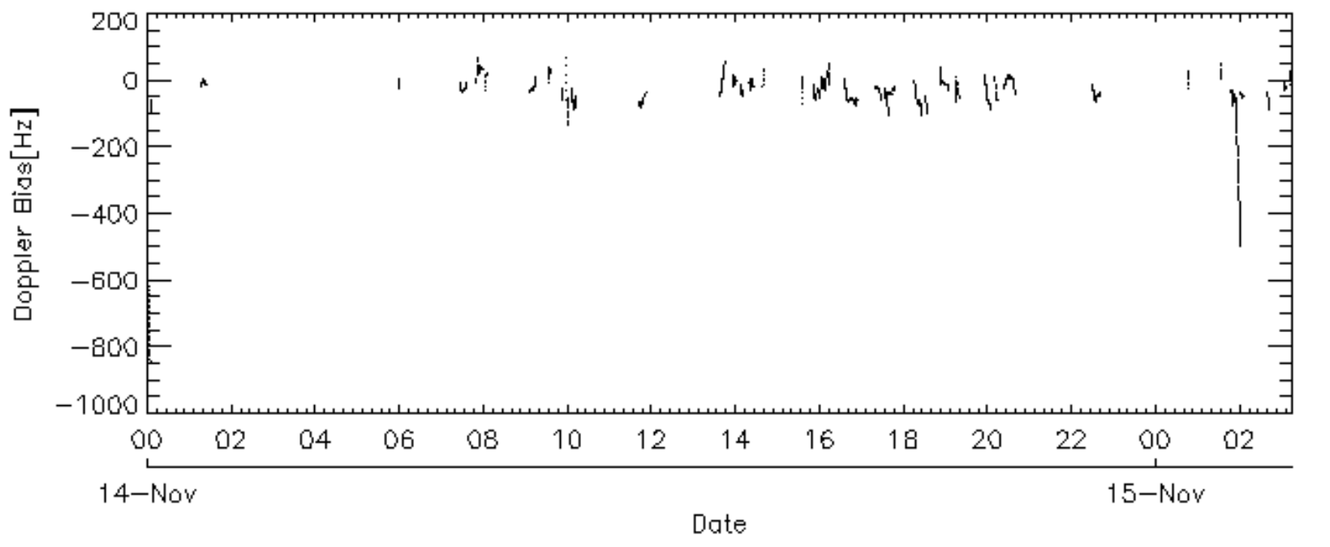

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

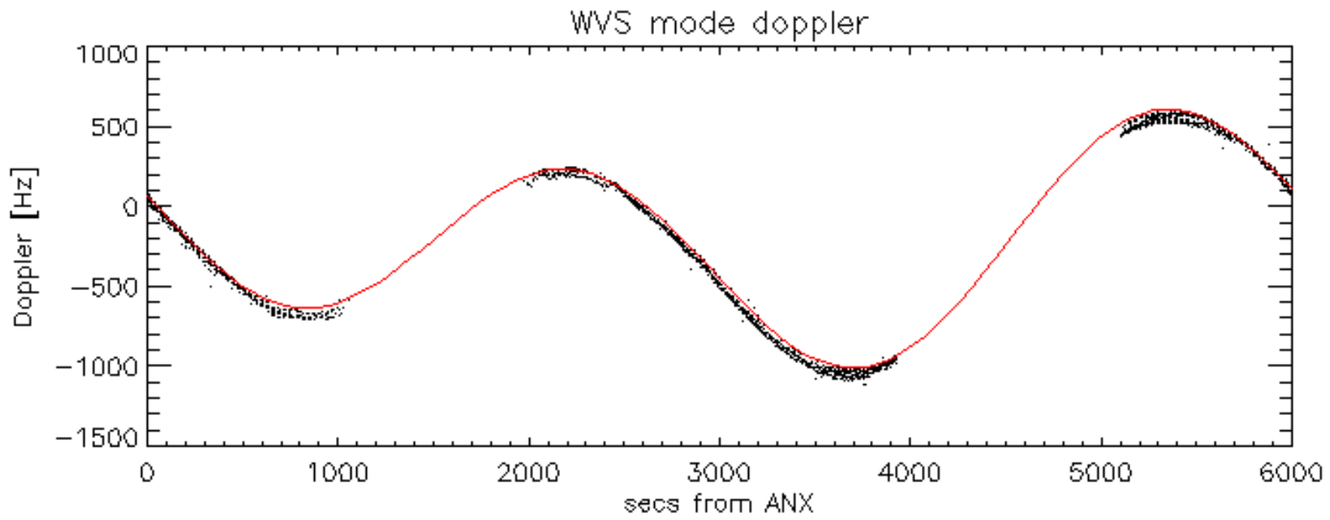

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

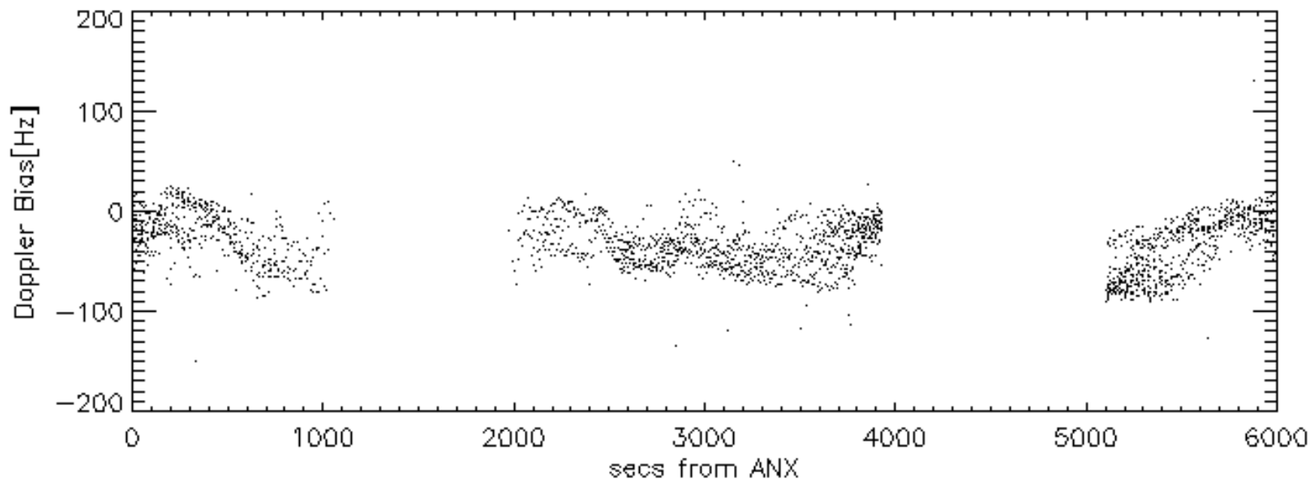

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

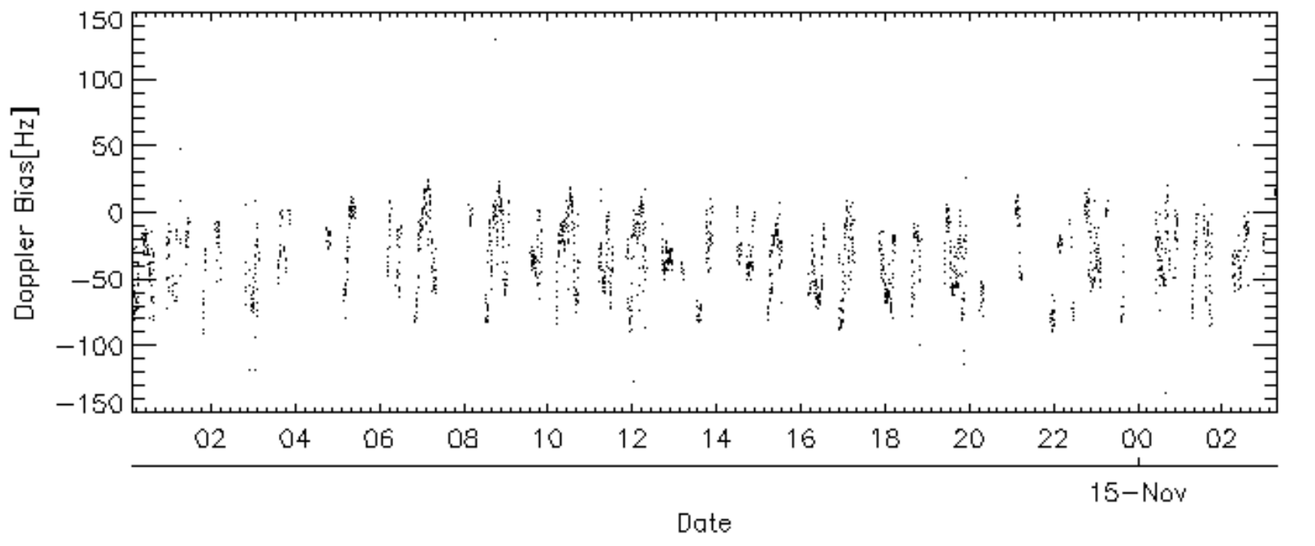

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

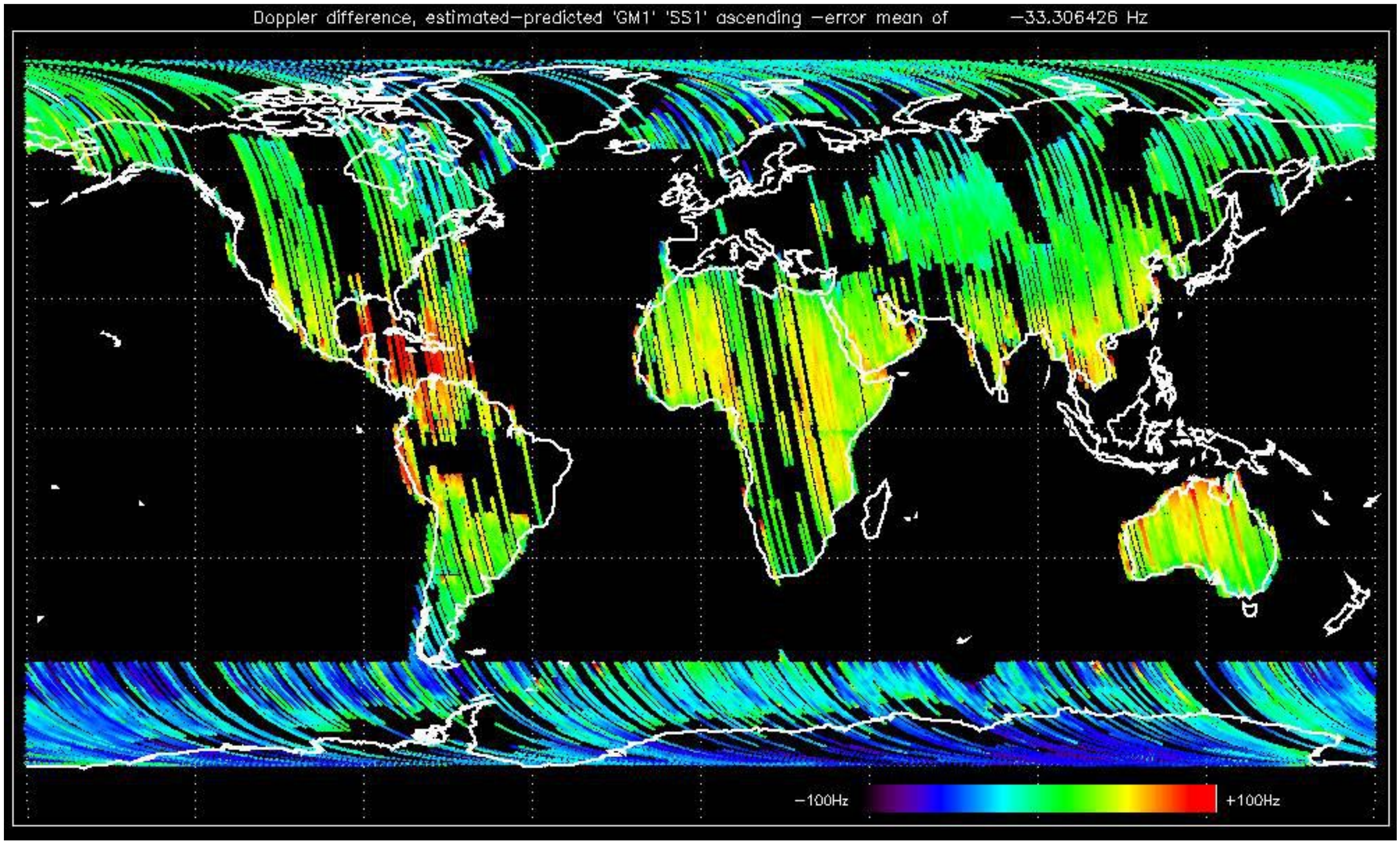

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

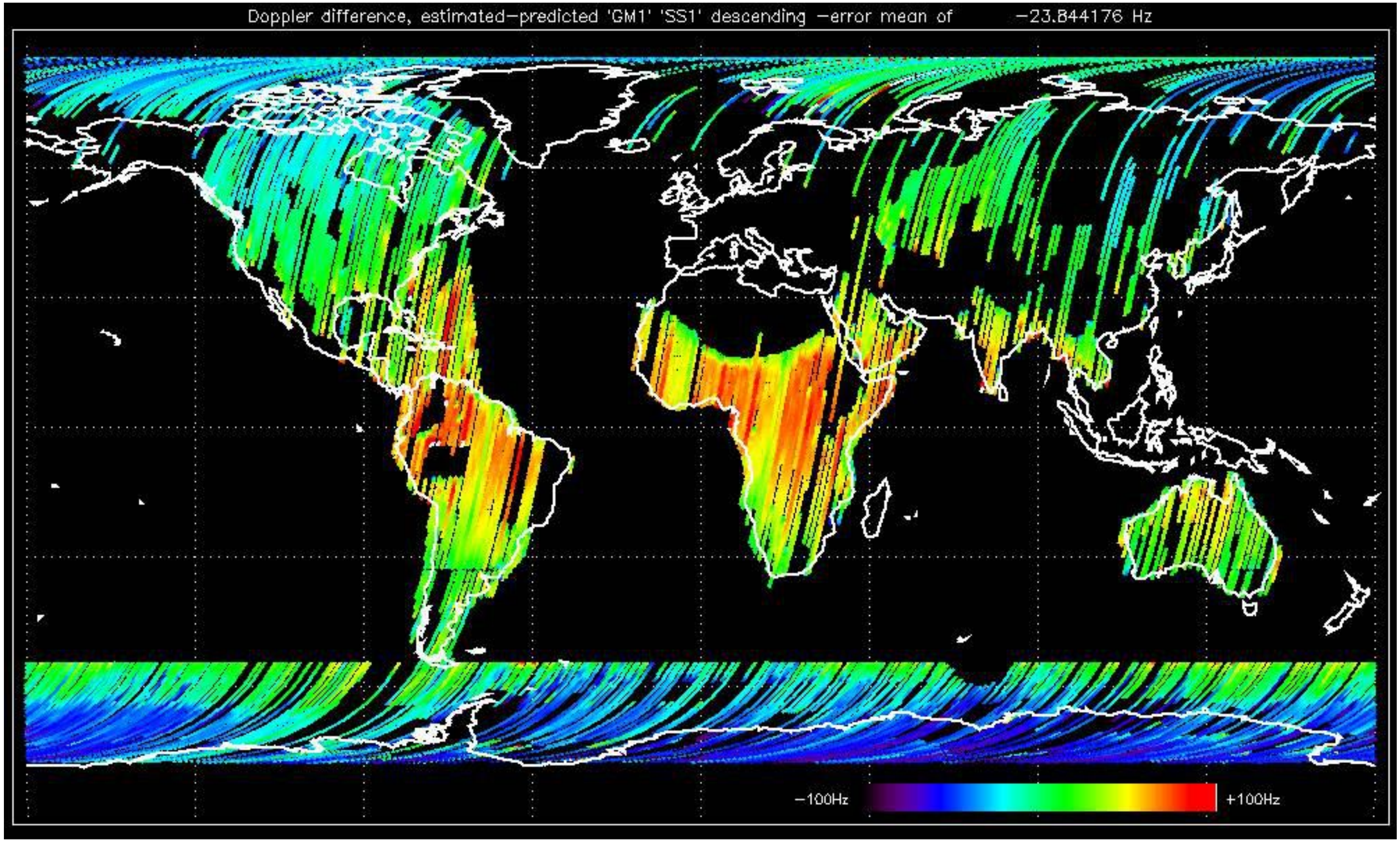

Doppler Bias[Hz]
200
0
−200
−400
−600
−800
−1000
00
02
04
06
08
10
12
14
16
18
20
22
00
02
14−Nov
15−Nov
Date

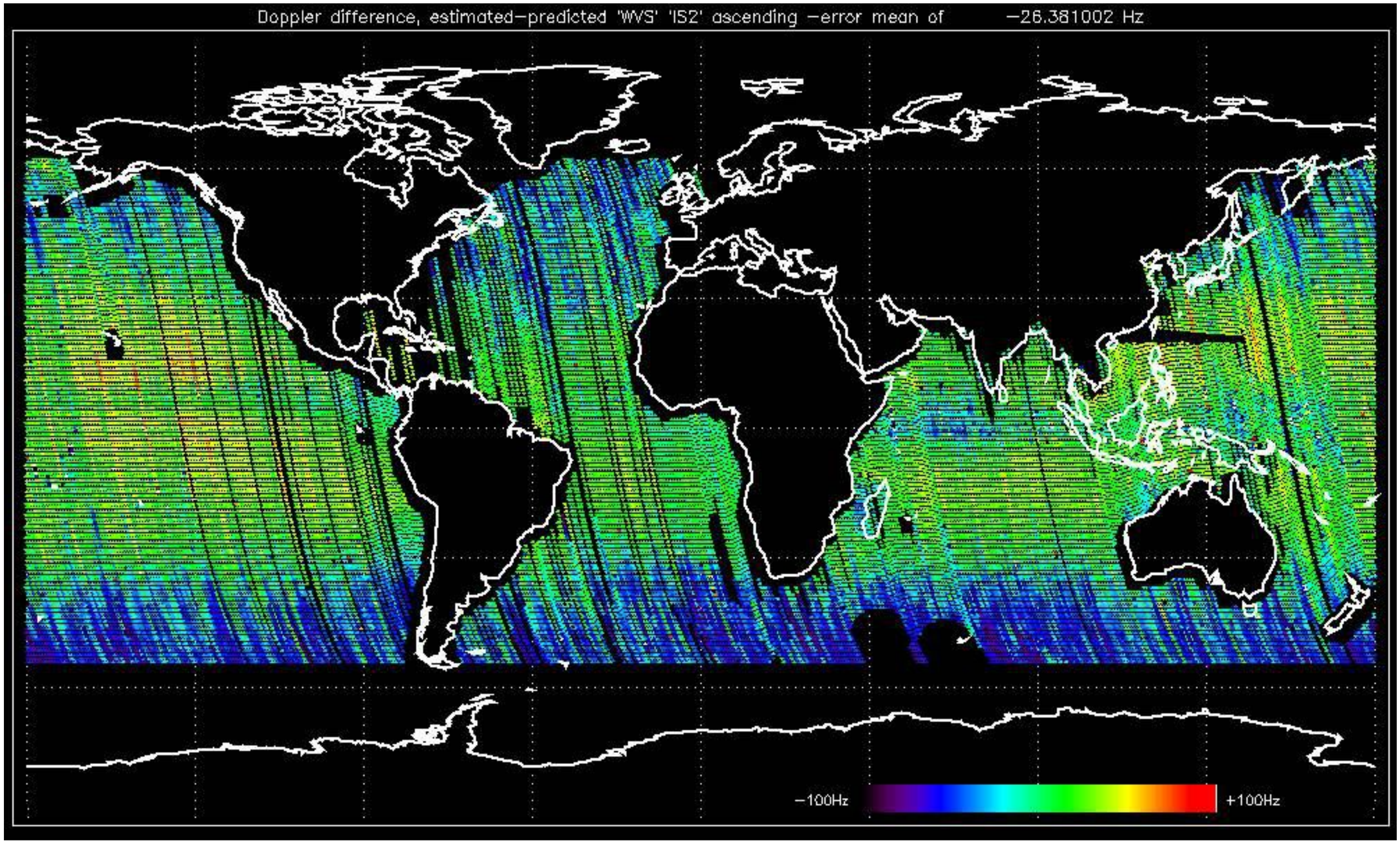

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

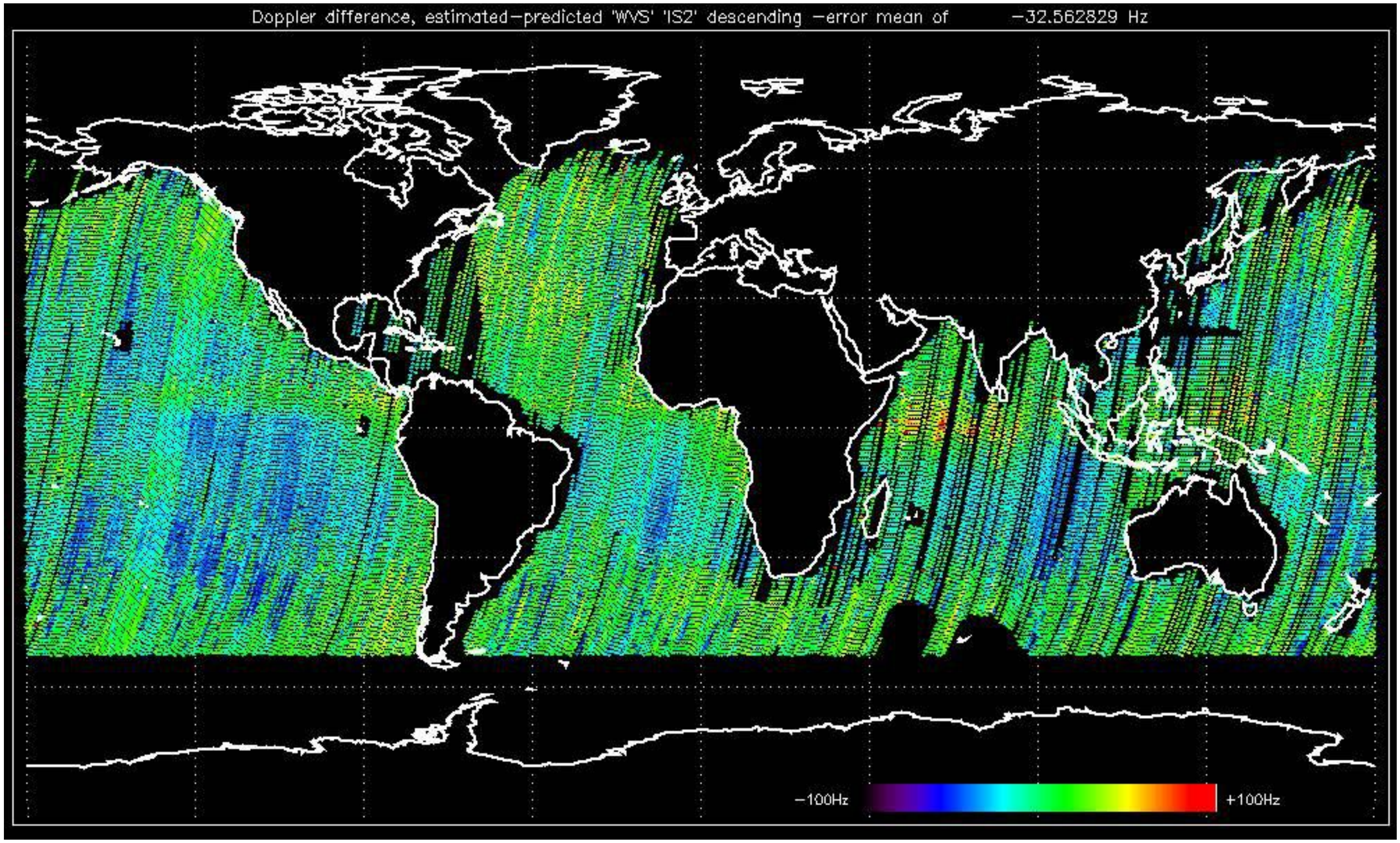

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.306426 Hz
−100Hz
+100Hz

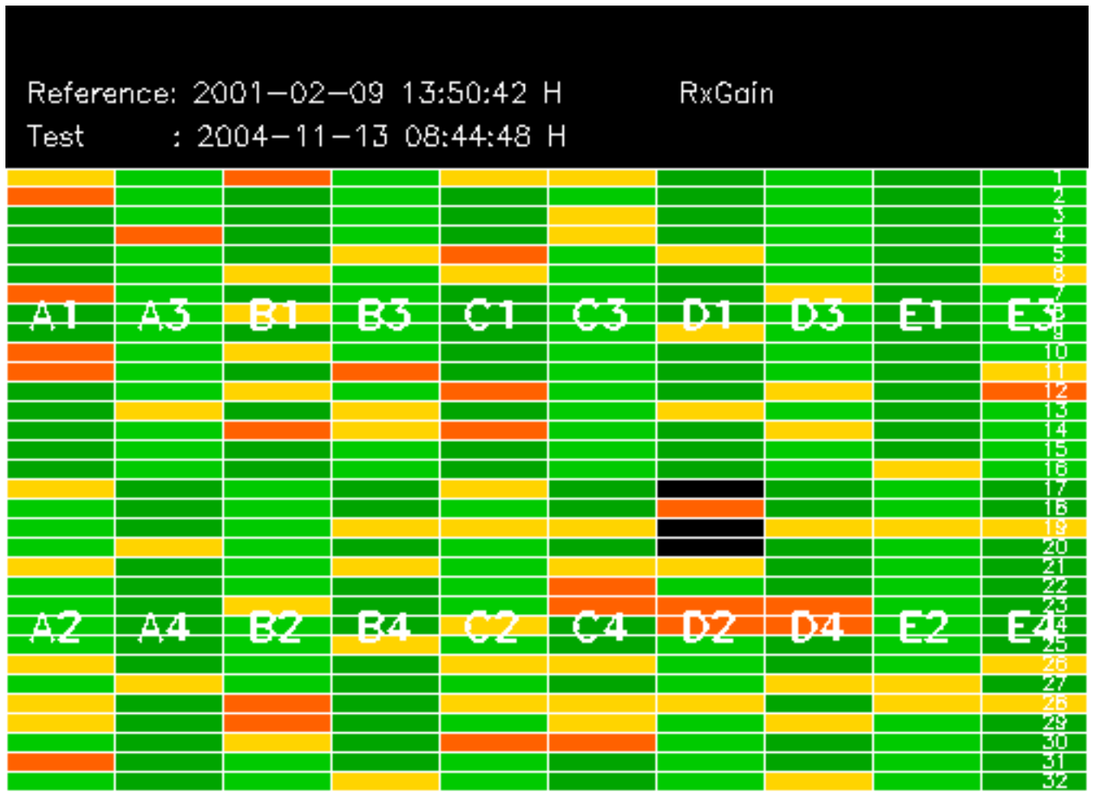

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -23.844176 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −26.381002 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −32.562829 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 : 2004-11-13 08:44:48 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
16
17
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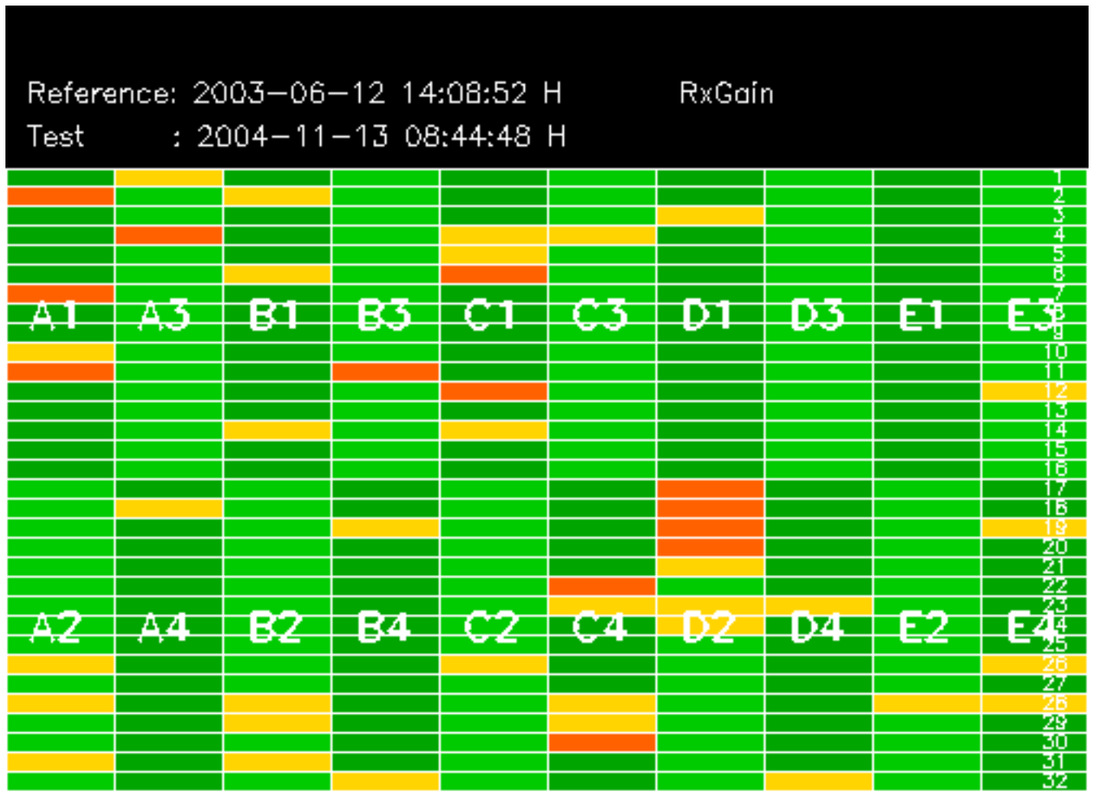
Reference: 2003-06-12 14:08:52 H
Test : 2004-11-13 08:44:48 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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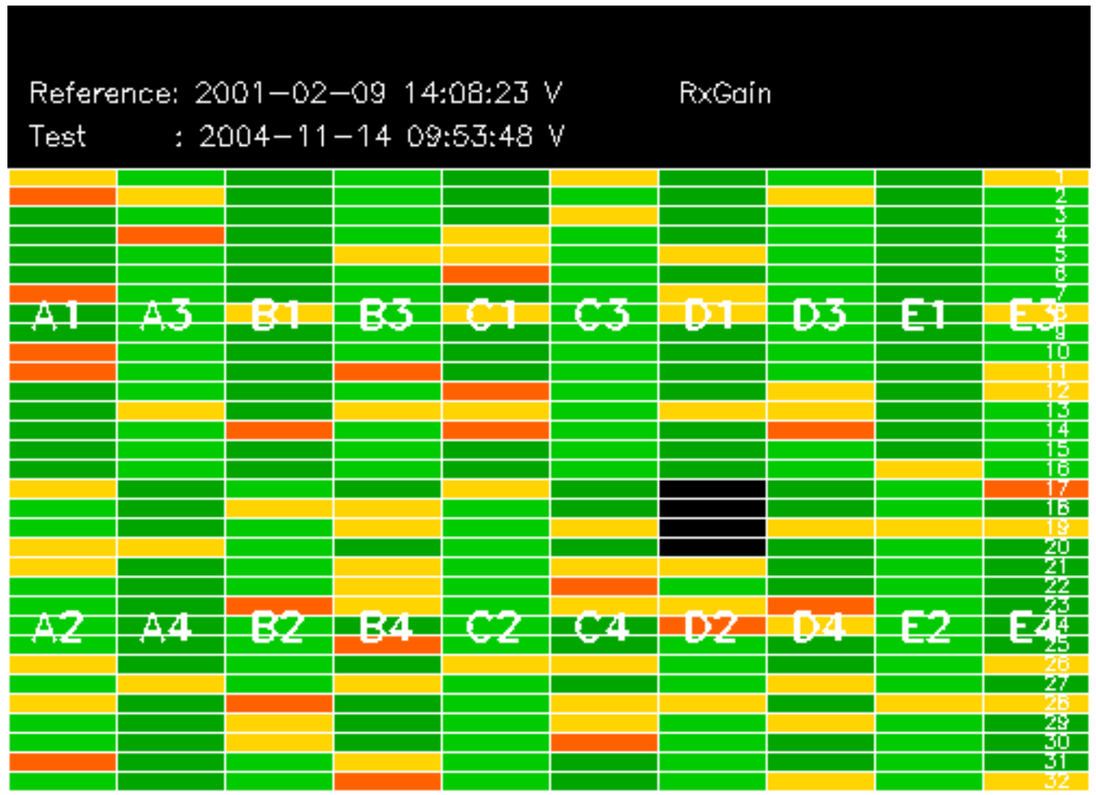
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-14 09:53:48 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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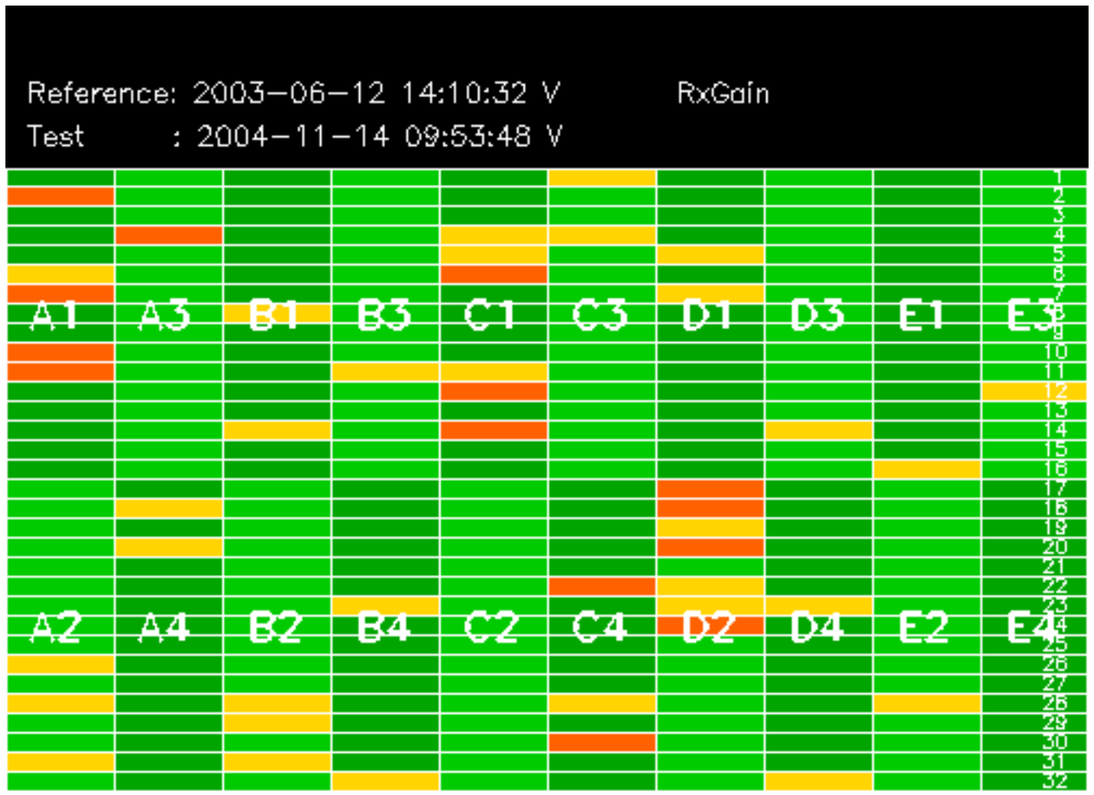
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-14 09:53:48 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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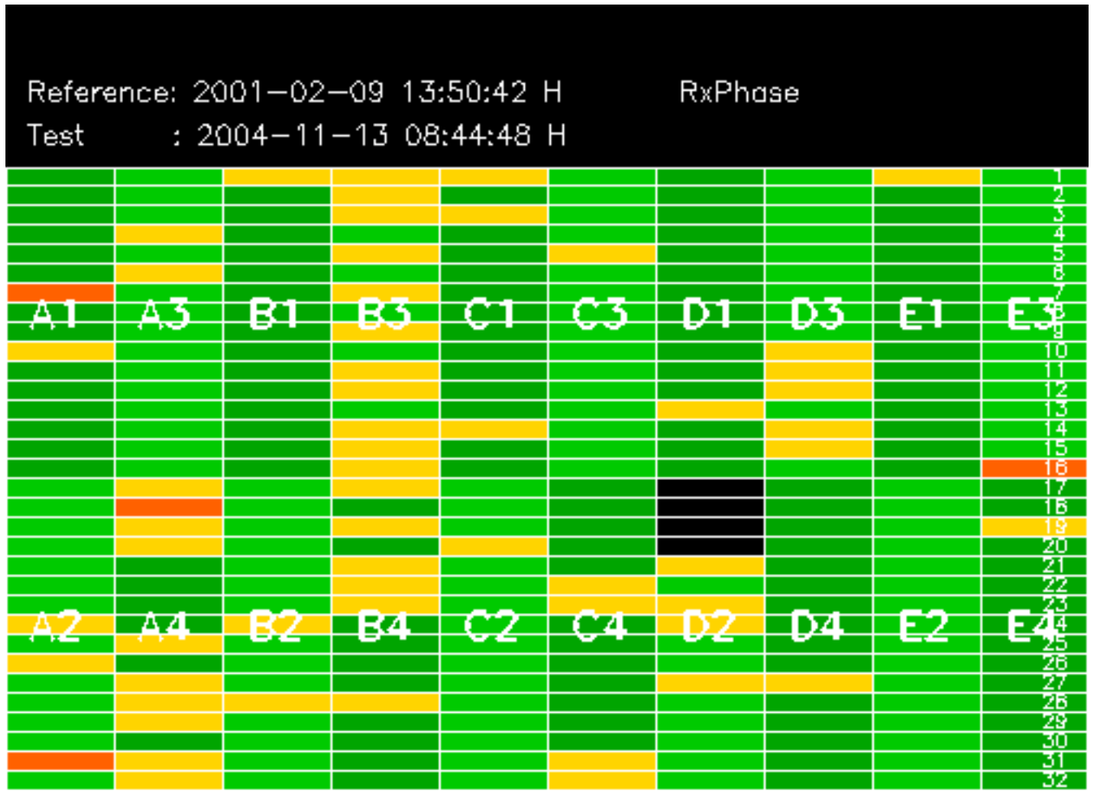
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-11-13 08:44:48 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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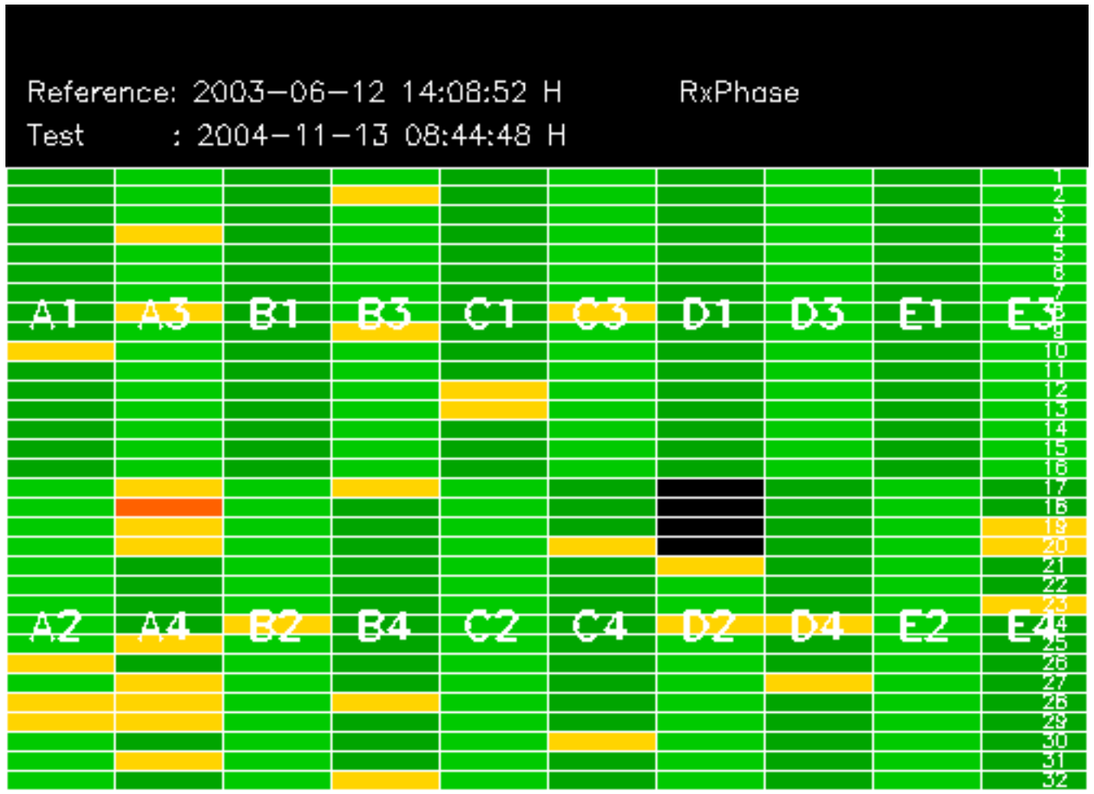
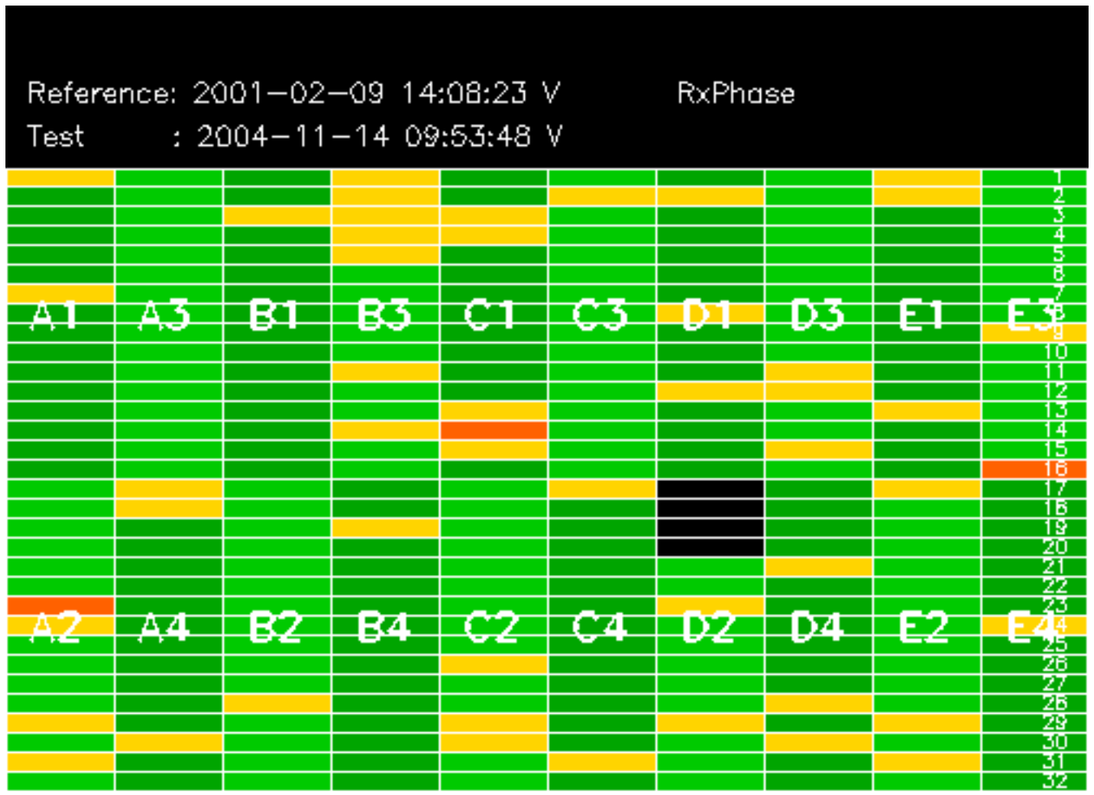

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2004-11-13 08:44:48 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2004-11-14 09:53:48 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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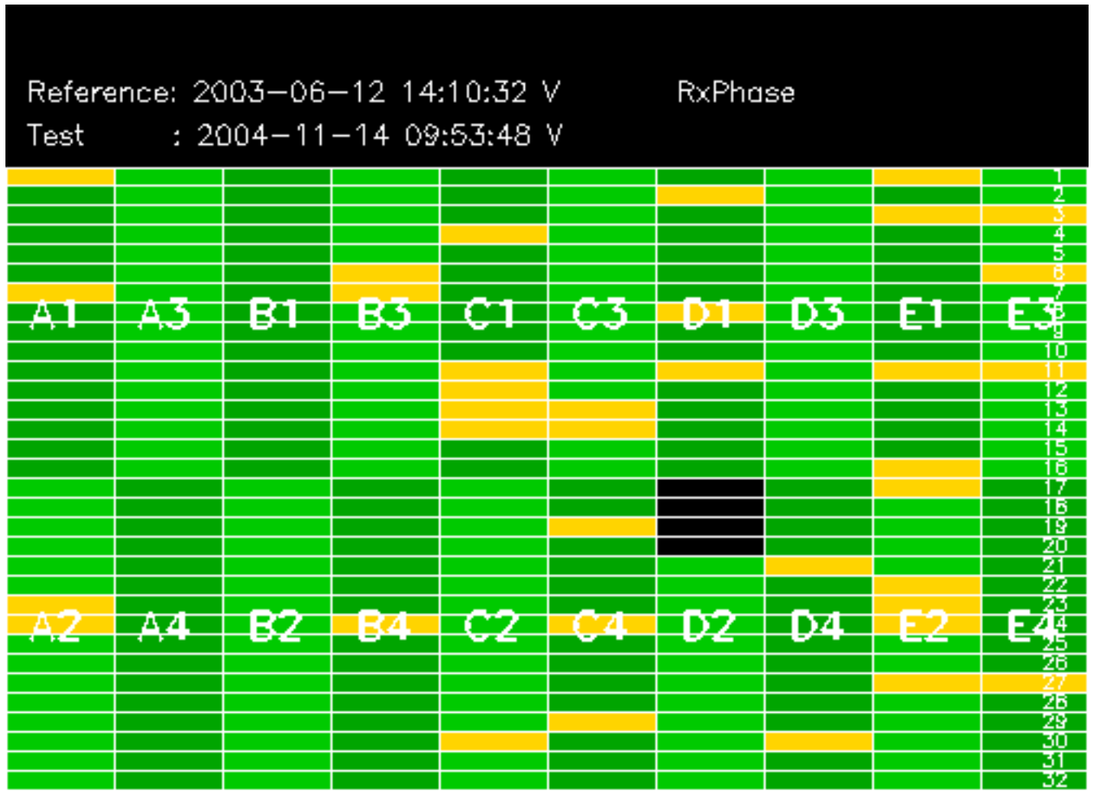
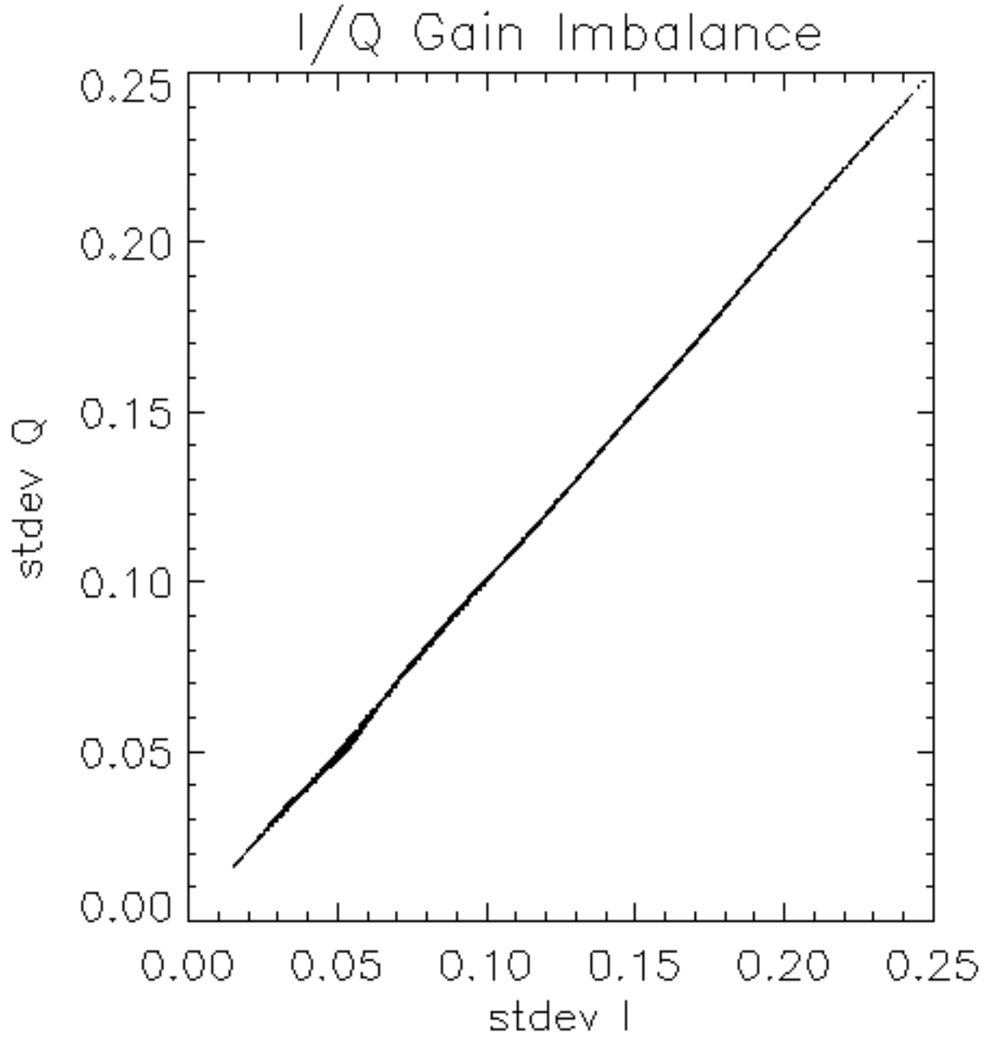
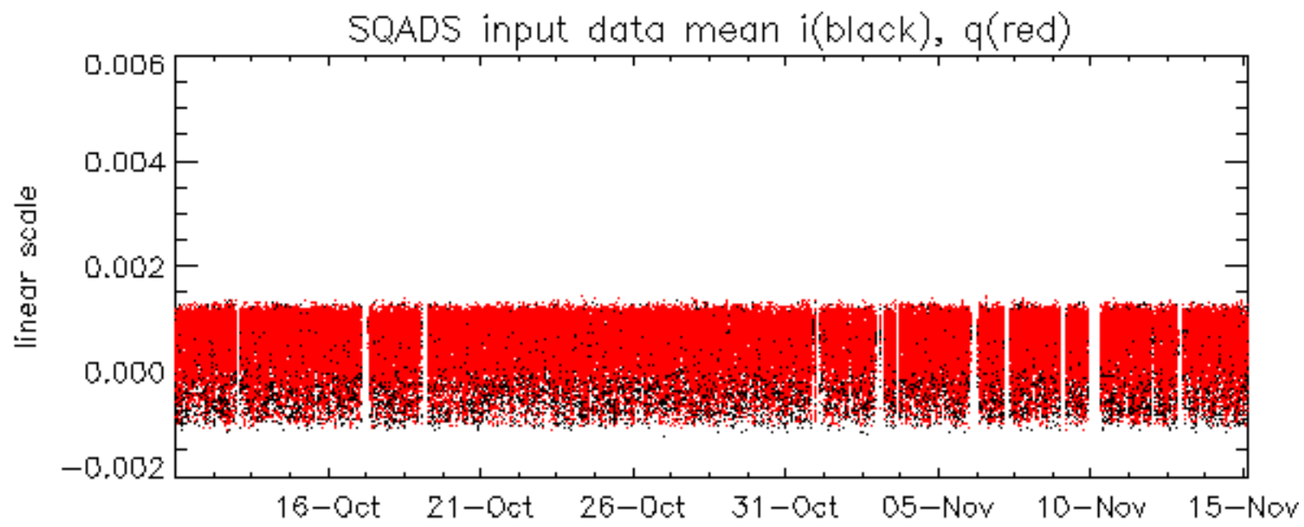
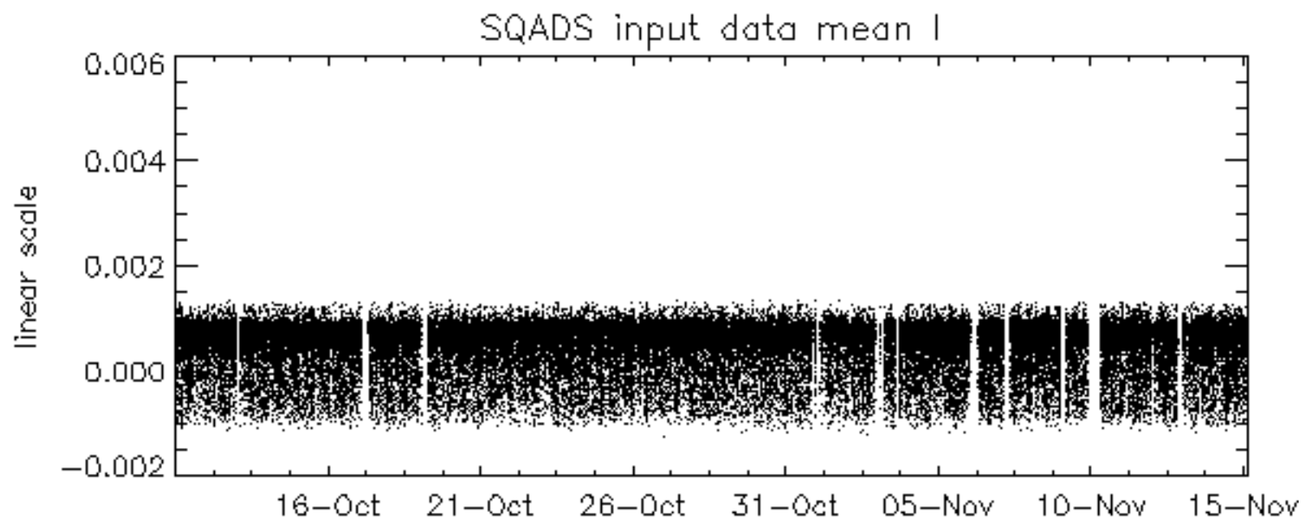
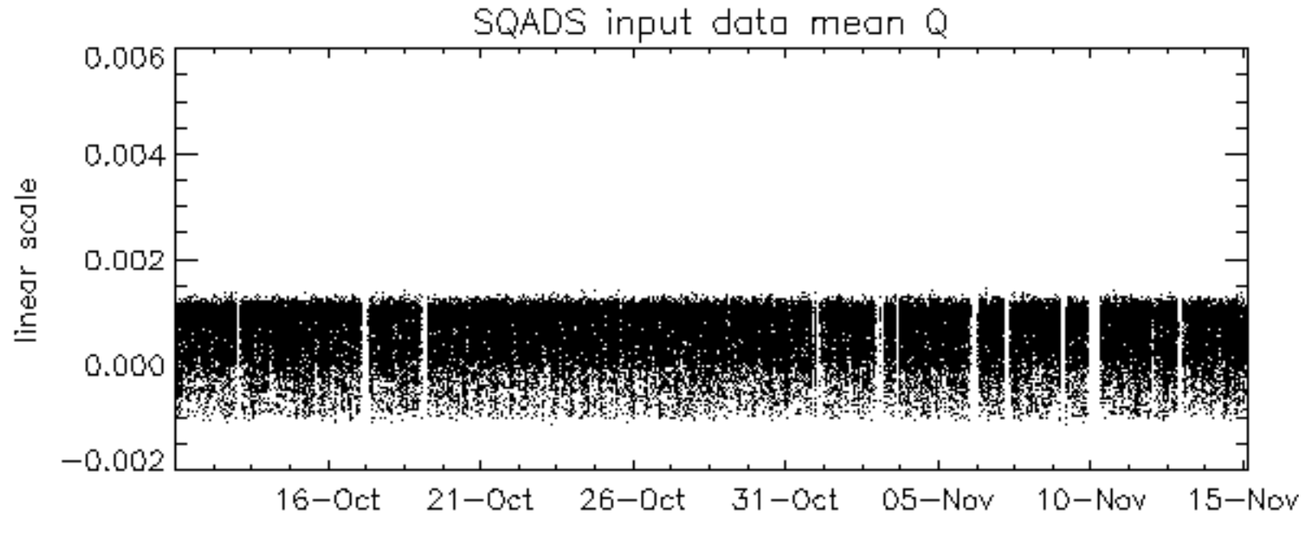
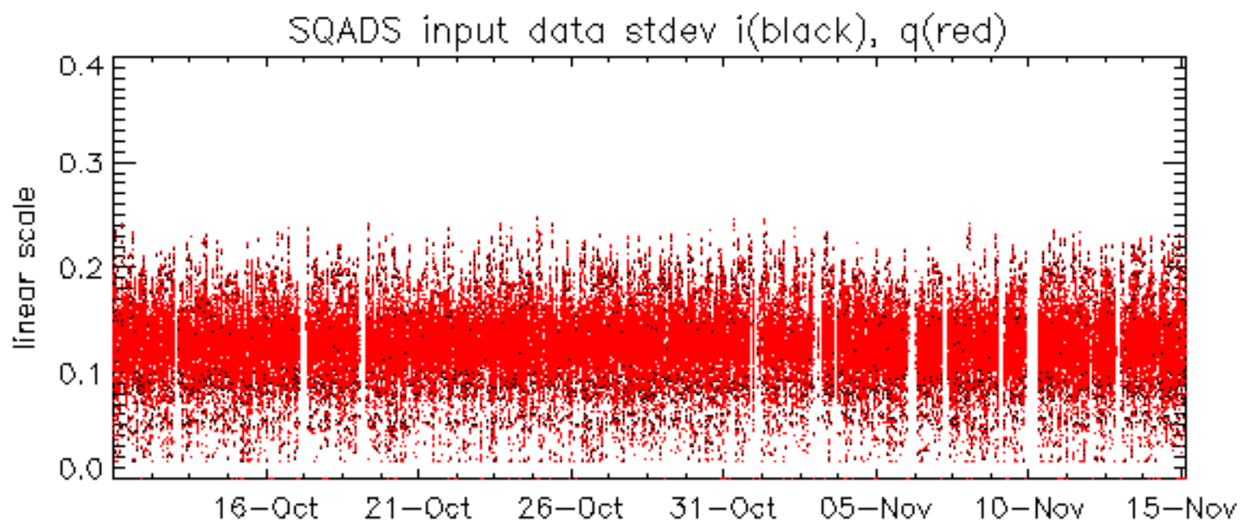

Reference: 2003-06-12 14:10:32 V
Test : 2004-11-14 09:53:48 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

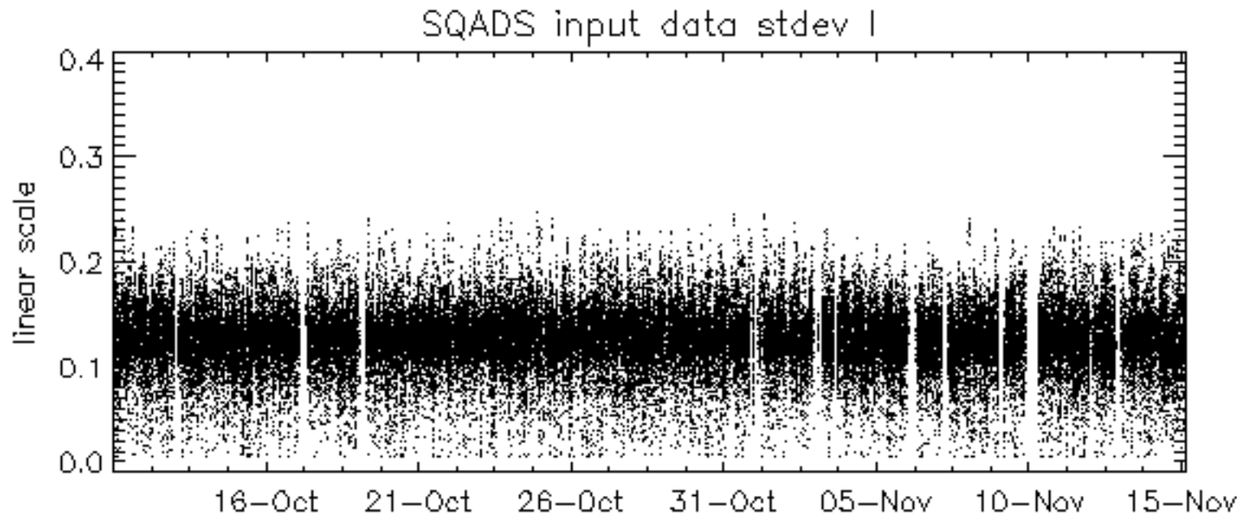

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

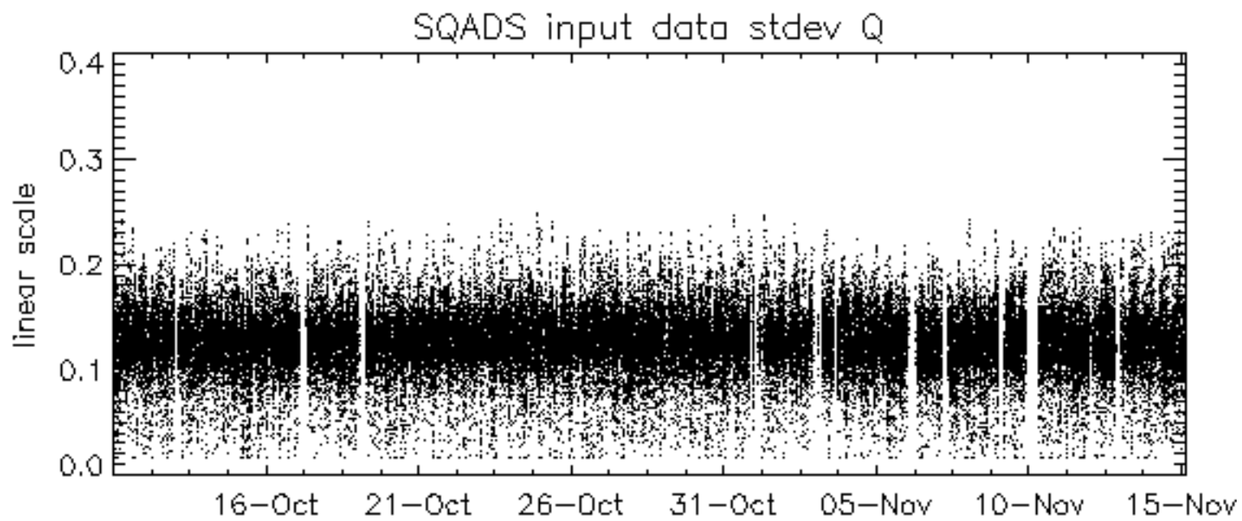

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov

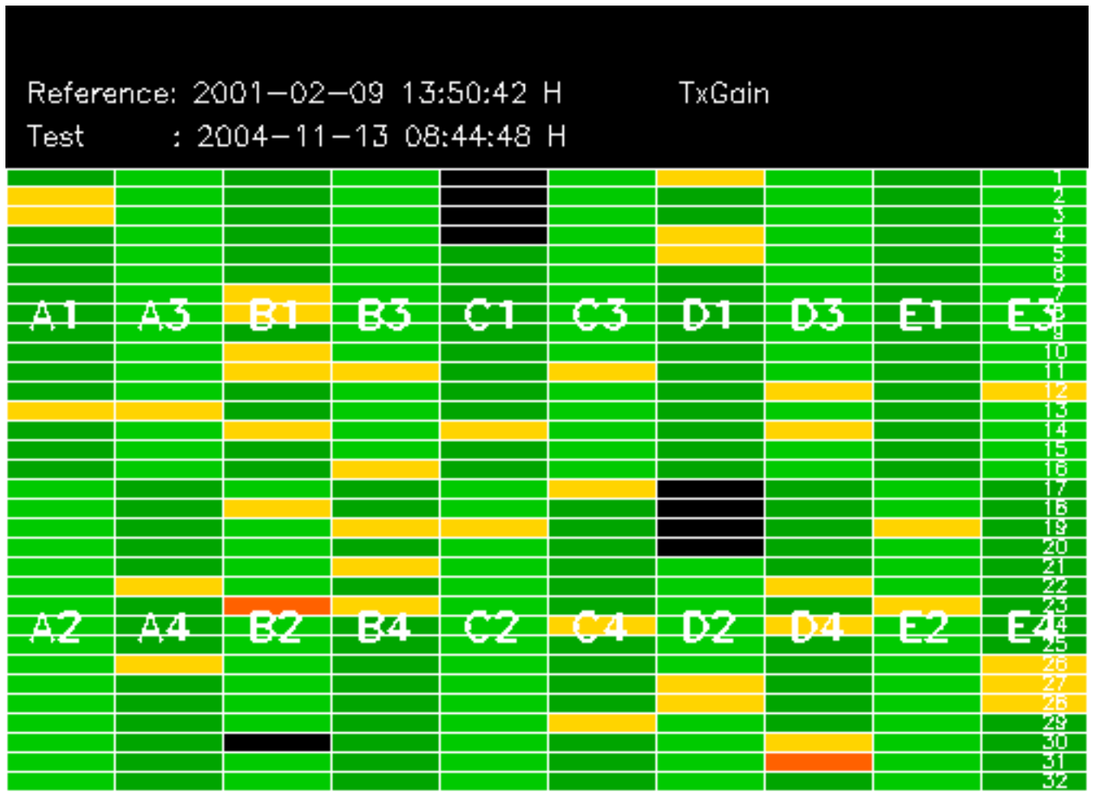

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


Reference: 2001-02-09 13:50:42 H
Test : 2004-11-13 08:44:48 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
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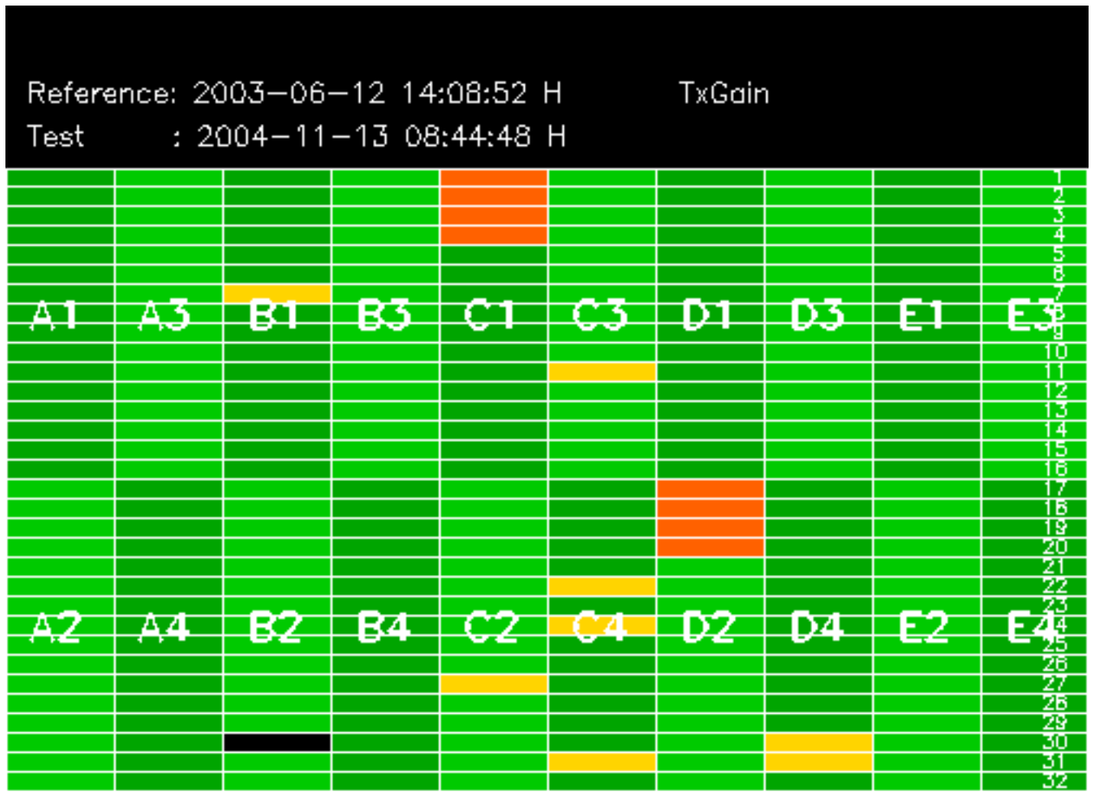
Reference: 2003-06-12 14:08:52 H
Test : 2004-11-13 08:44:48 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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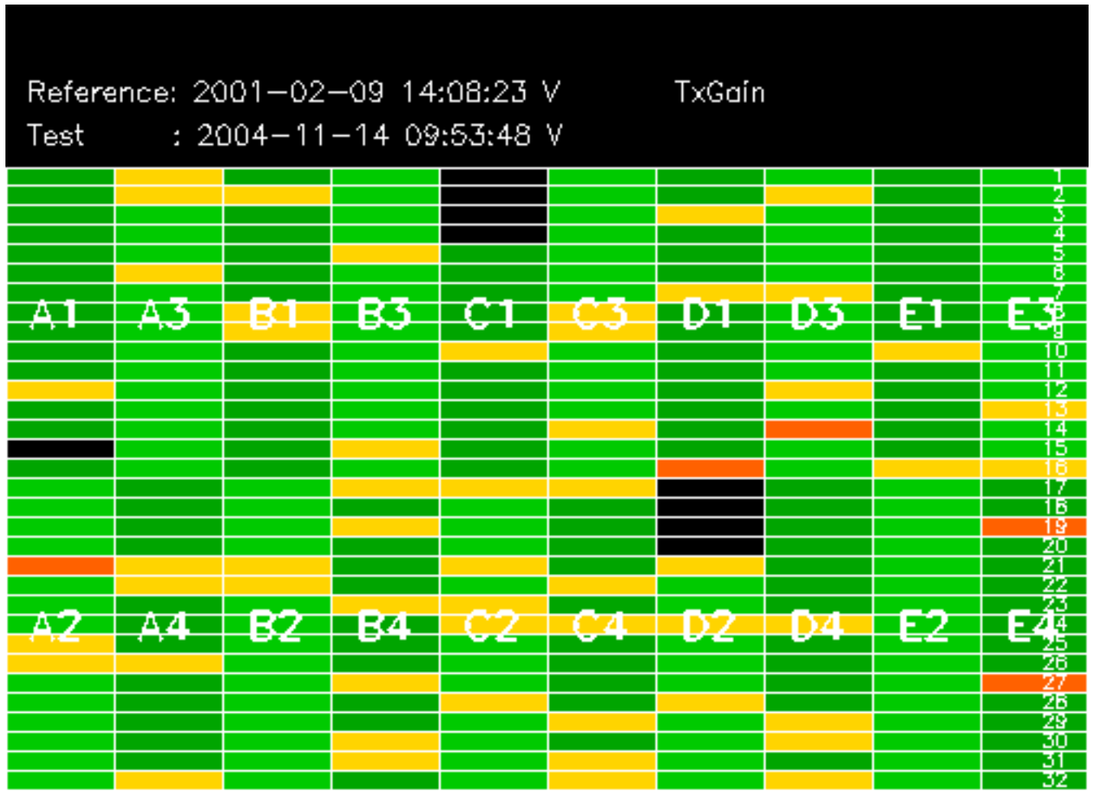
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-14 09:53:48 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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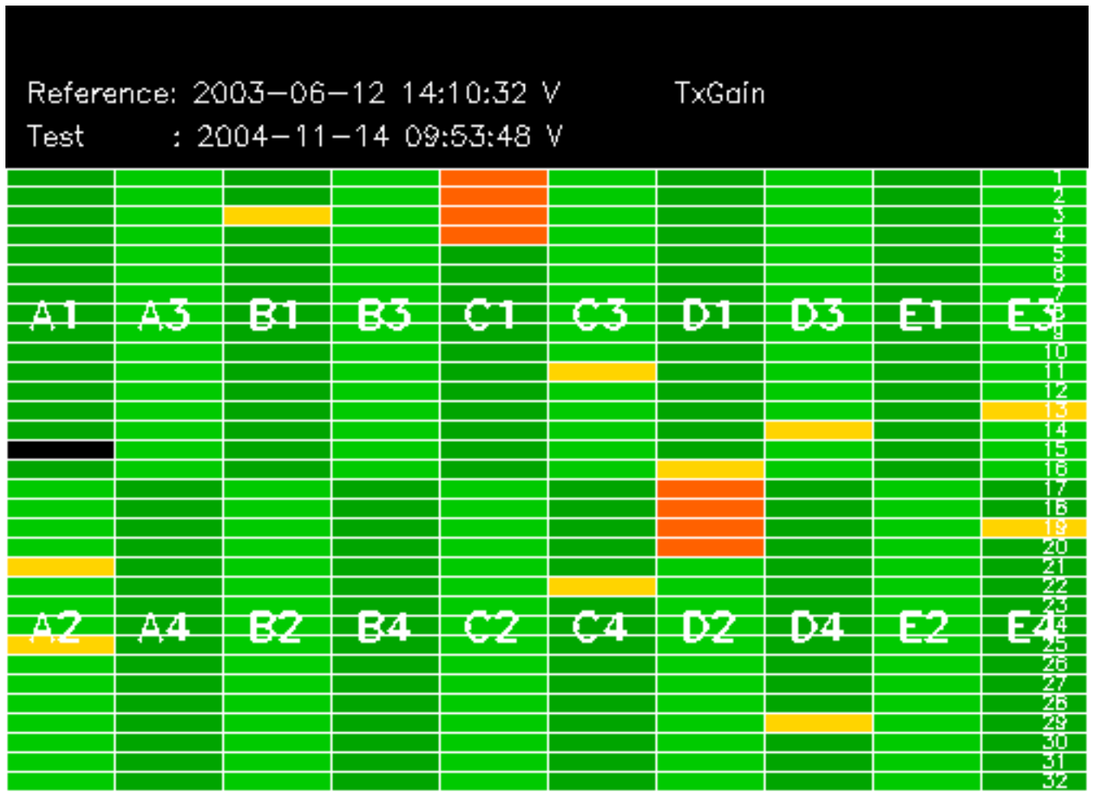
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-14 09:53:48 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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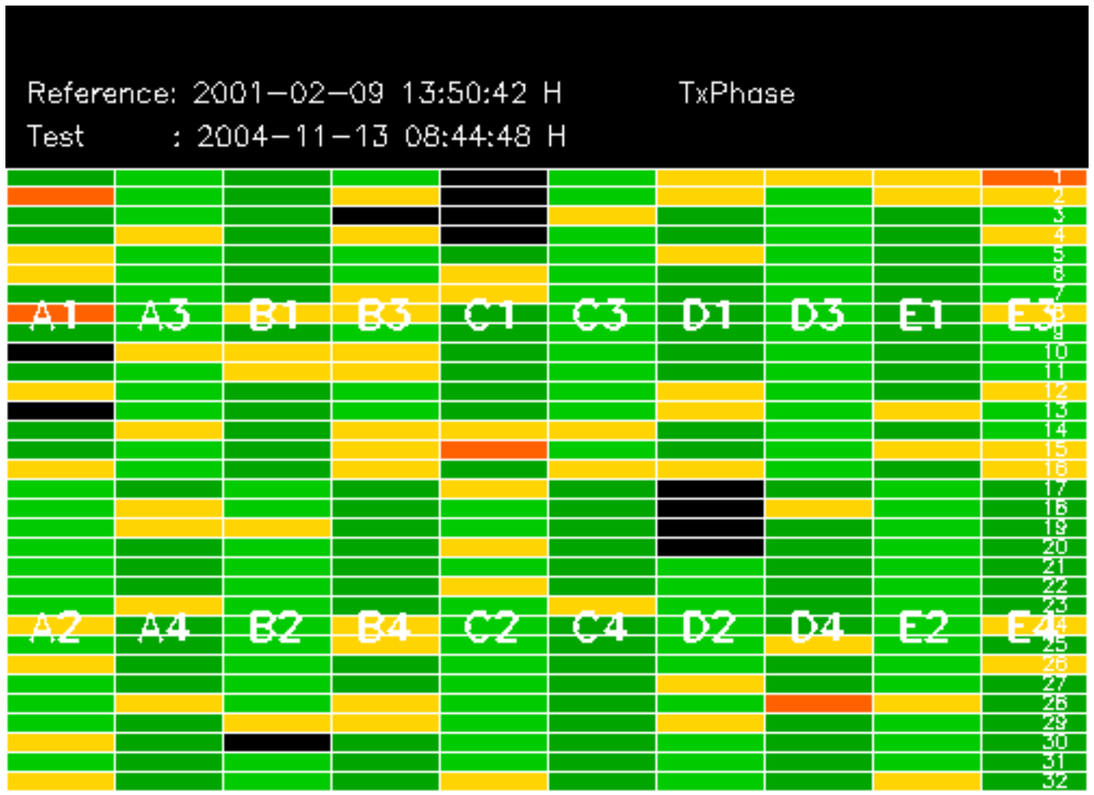
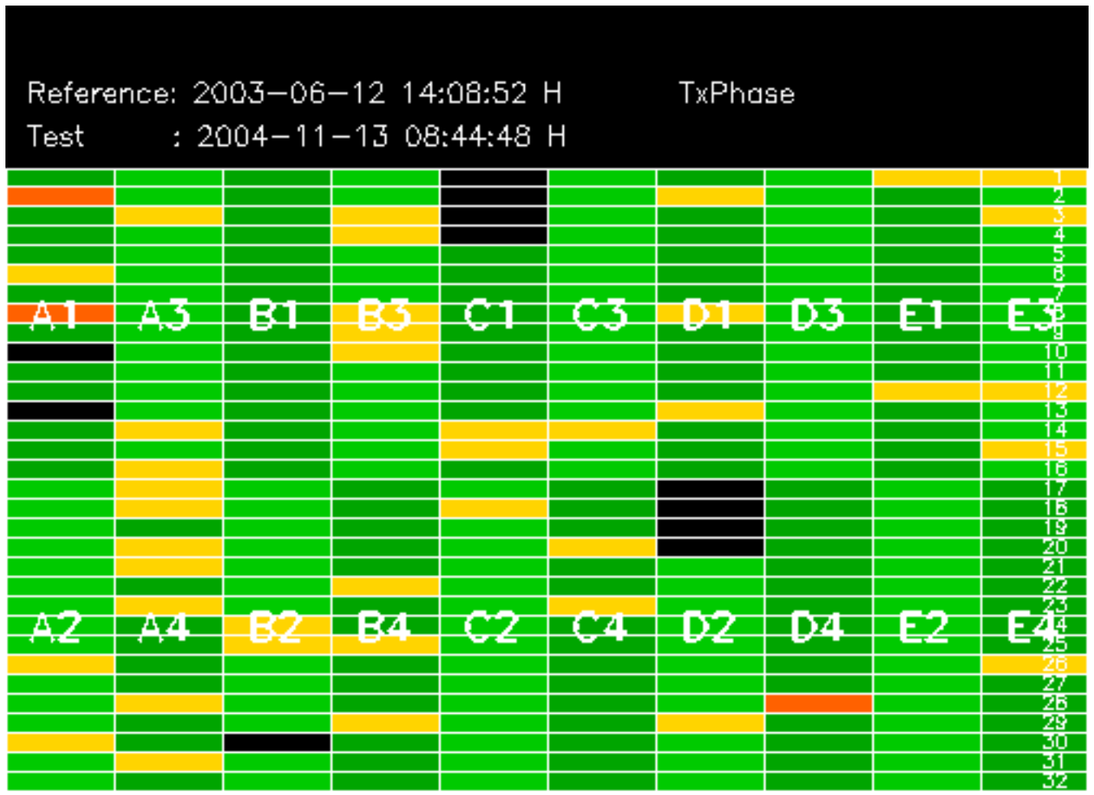

Reference: 2001-02-09 13:50:42 H
Test : 2004-11-13 08:44:48 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-11-13 08:44:48 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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B4
C2
C4
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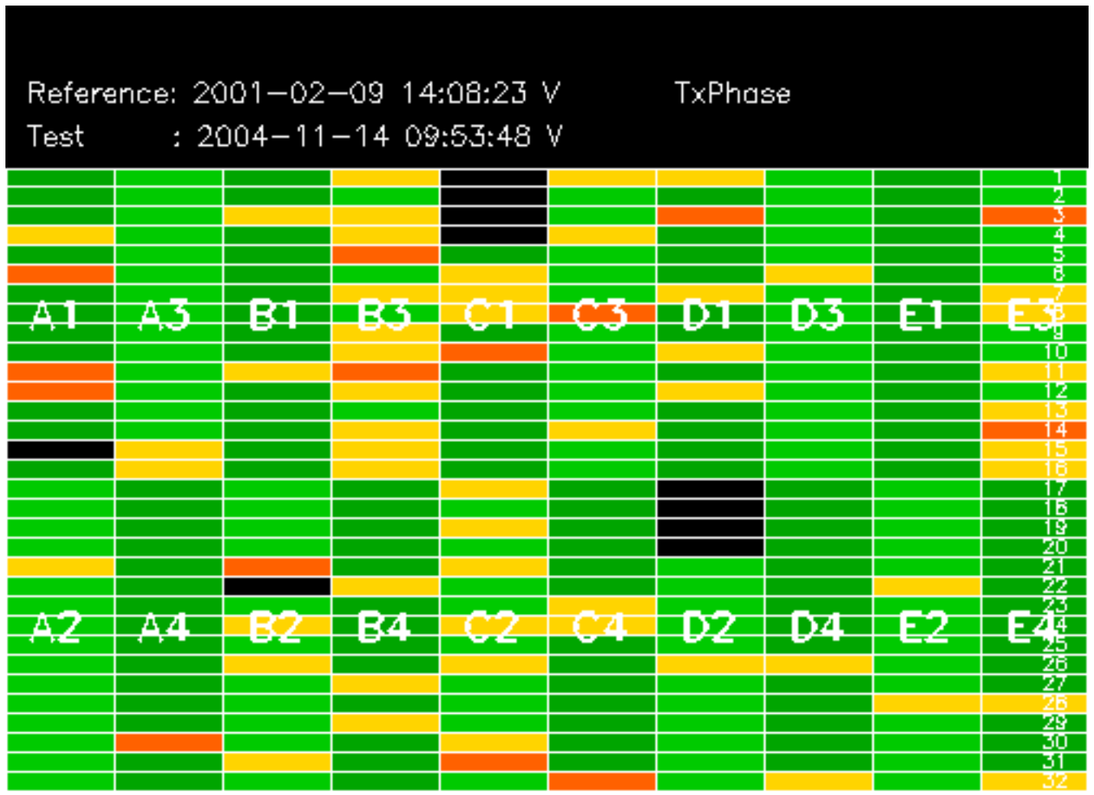
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-14 09:53:48 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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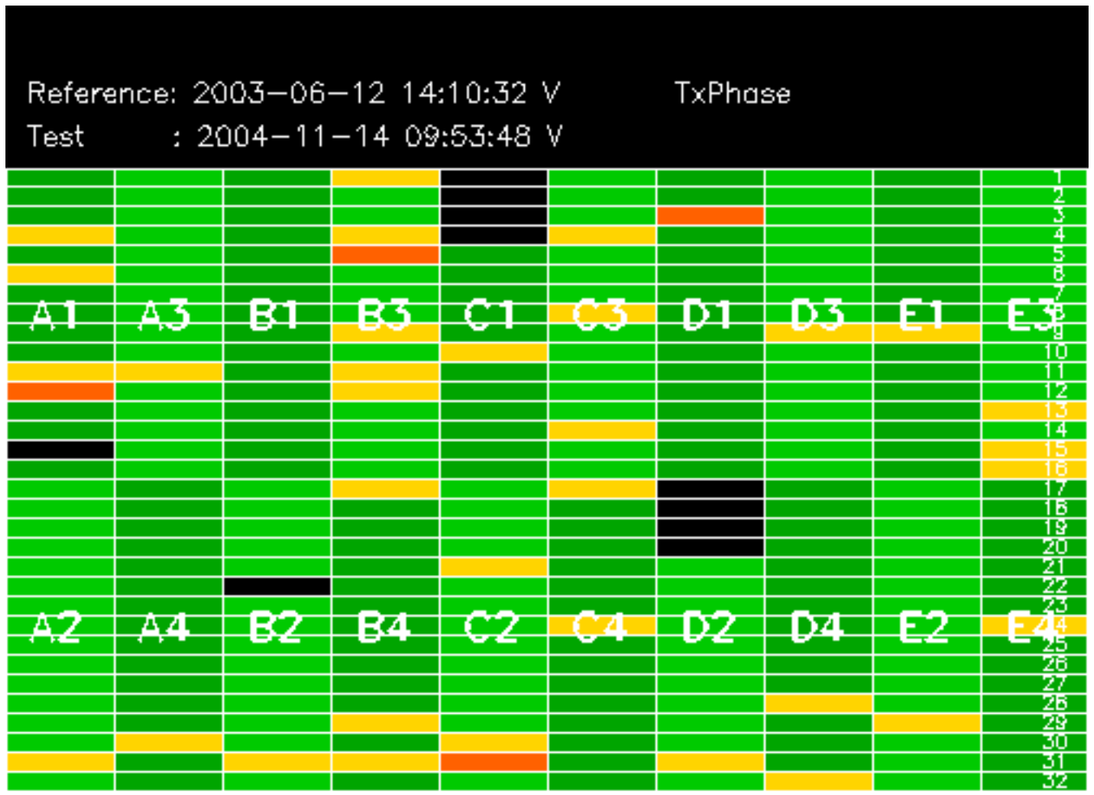
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-14 09:53:48 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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D4
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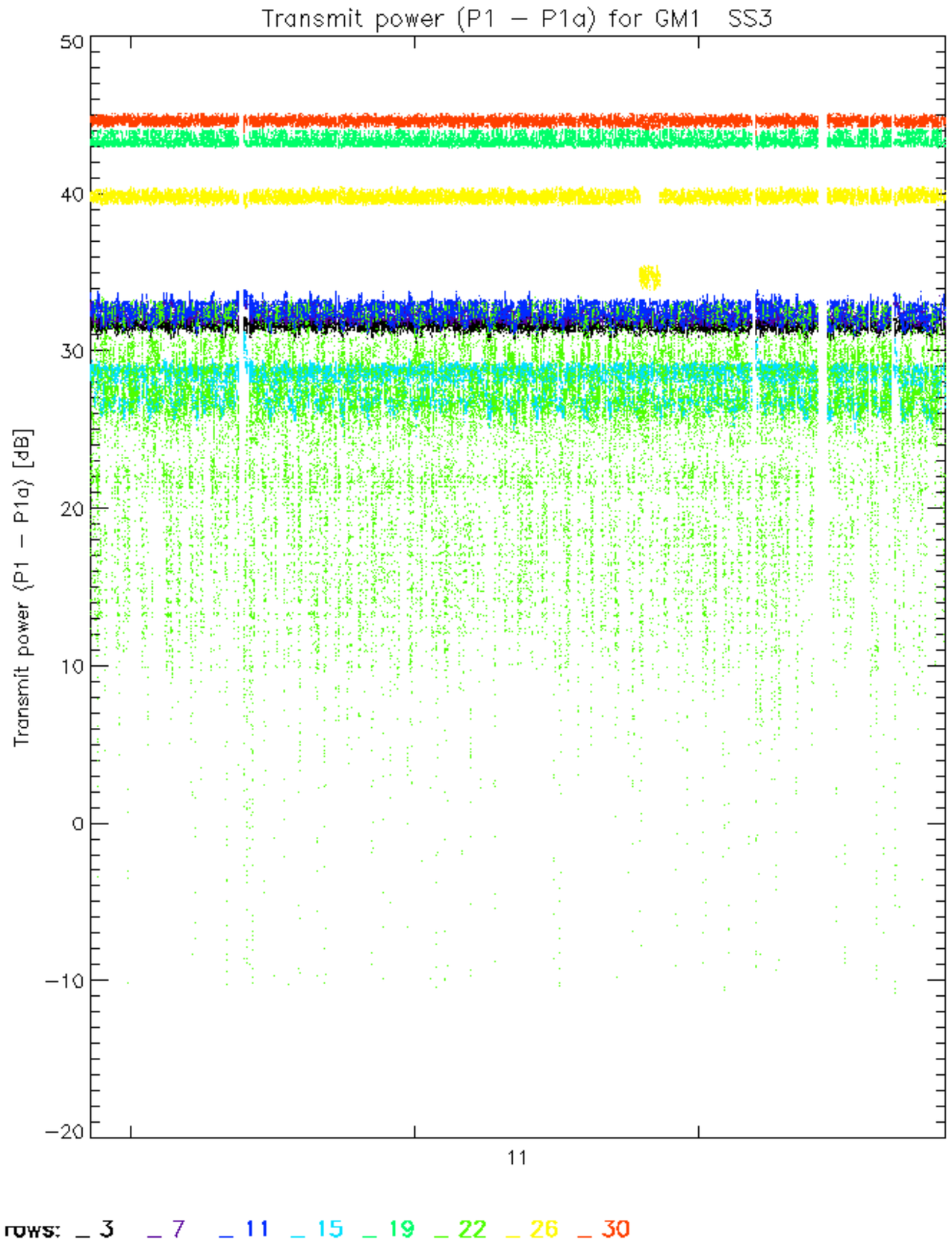
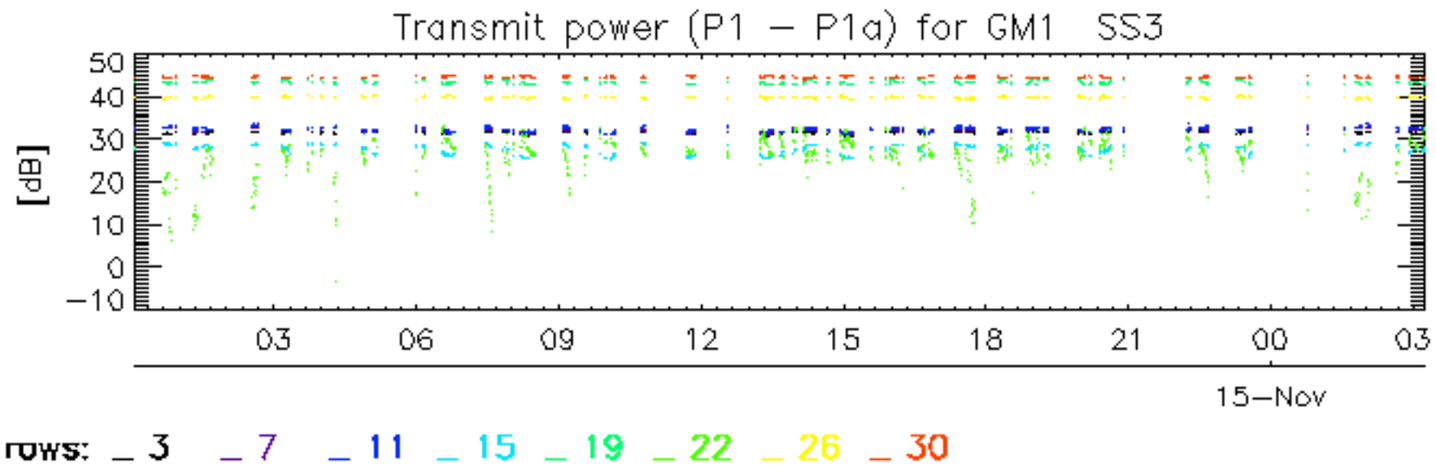
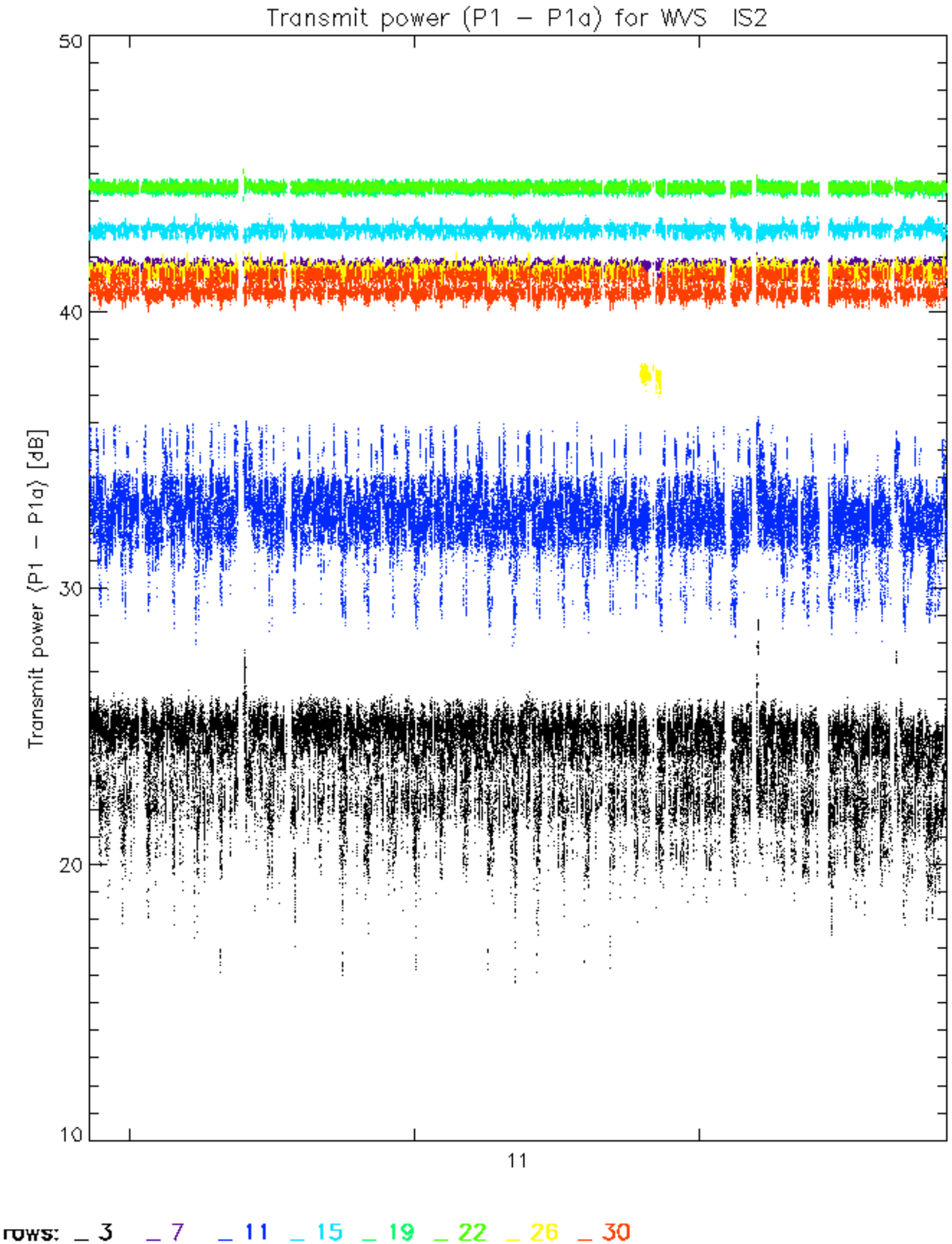
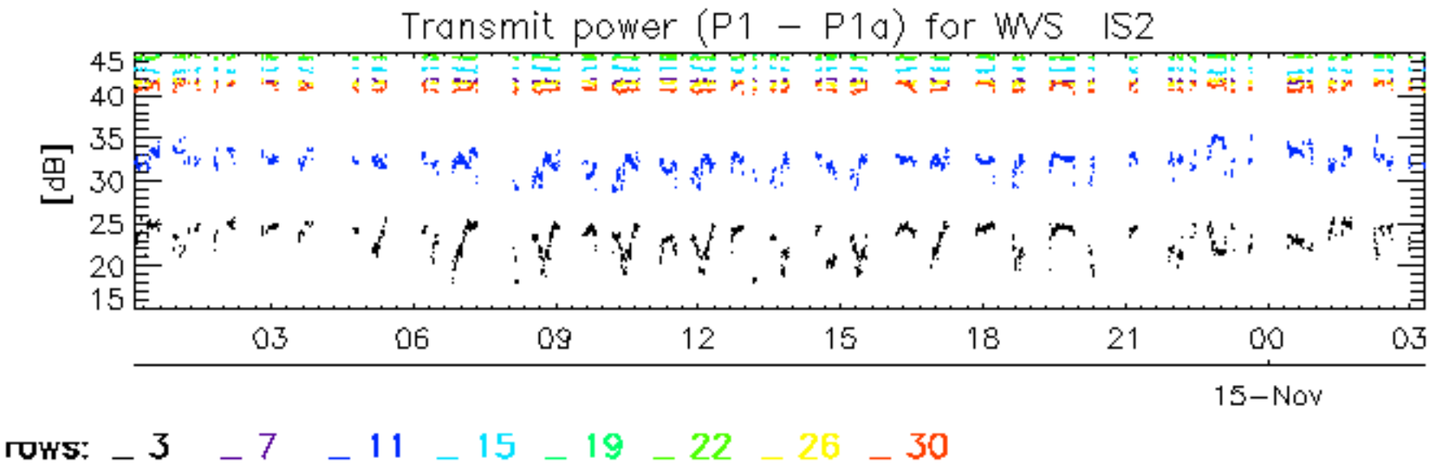

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
11
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
03
06
09
12
15
18
21
00
03
15–Nov
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
11
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
45
40
35
30
25
20
15
03
06
09
12
15
18
21
00
03
15–Nov
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.