REPORT OF 041104

last update on Thu Nov 4 14:40:11 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 unavailable from 03-NOV-2004 09.59.30.000 until 03-NOV-2004 10.04.58.000.
Antenna reset due to tile E2 transmit power drop.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products

2.3 - Data Analysis

-Transmit power drop on tile E2, rows 25 to 28.
-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.
The transmit power drop on tile E2 visible in th MS product analysis,
has been solved with an antenna reset.

- ASA_MS__0PNPDK20041103_071837_000000152031_00421_14002_0102.N1

Polarisation	Start Time
V	20041102 042902
H	20041103 071837

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

Transmit power drop on tile E2, rows 25 to 28.
The problem has been solved with the antenna reset.

4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

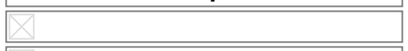
4.1.2 - Evolution for GM1

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	-3.480921	0.006320	0.005860
7	P1	-3.358076	0.012136	-0.010562
11	P1	-4.609565	0.018216	0.038549
15	P1	-5.685484	0.032150	0.061733

19	P1	-3.568796	0.005354	-0.077947
22	P1	-4.577861	0.013282	-0.024514
24	P1	-4.962841	0.009139	0.031794
30	P1	-7.058283	0.016076	-0.022926
3	P1	-16.068785	0.093861	0.090380
7	P1	-14.043173	0.064893	0.018571
11	P1	-20.530516	0.199474	-0.322851
15	P1	-11.703945	0.032010	0.066556
19	P1	-14.028241	0.024890	-0.051781
22	P1	-16.222204	0.383462	-0.099193
24	P1	-14.628562	0.253460	-0.162369
30	P1	-18.028522	0.283362	0.133118

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.365788	0.088744	-0.034040
7	P2	-22.613199	0.127490	0.012034
11	P2	-15.107080	0.121903	0.063759
15	P2	-7.126013	0.106603	-0.042481
19	P2	-9.678114	0.126166	-0.105273
22	P2	-17.272097	0.109083	0.066894
24	P2	-20.799494	0.092536	-0.005563
30	P2	-19.072594	0.085296	0.076070

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.192219	0.005355	-0.022755
7	P3	-8.192217	0.005355	-0.022757
11	P3	-8.192223	0.005355	-0.022715
15	P3	-8.192221	0.005355	-0.022712
19	P3	-8.192221	0.005355	-0.022714
22	P3	-8.192220	0.005355	-0.022712
24	P3	-8.192221	0.005355	-0.022714
30	P3	-8.192181	0.005356	-0.022562

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	-2.818180	0.013883	0.063772
7	P1	-2.963110	0.047495	0.070920
11	P1	-3.892938	0.023454	-0.003148
15	P1	-3.490140	0.025263	0.012168
19	P1	-3.566705	0.013305	-0.087693
22	P1	-5.638109	0.064140	0.072304
24	P1	-3.974112	0.022822	-0.019152
30	P1	-6.240918	0.045253	-0.061694
3	P1	-10.696081	0.091495	0.411541
7	P1	-10.067360	0.167518	0.046706
11	P1	-12.300504	0.129566	-0.150179
15	P1	-11.686475	0.073257	-0.004803
19	P1	-15.610049	0.061077	-0.036561
22	P1	-23.765041	1.704762	-0.438971
24	P1	-18.148771	0.227740	-0.108283
30	P1	-20.303488	1.042576	0.179123

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.045231	0.045568	-0.051149
7	P2	-22.691698	0.063625	0.052818
11	P2	-10.879838	0.044170	0.021181
15	P2	-5.024997	0.028916	-0.046964
19	P2	-6.896733	0.040559	-0.176139
22	P2	-7.391019	0.038301	0.059901
24	P2	-11.149282	0.051869	-0.067012
30	P2	-22.101517	0.036732	0.030586

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.033778	0.003171	-0.022887
7	P3	-8.033651	0.003176	-0.022771
11	P3	-8.033733	0.003164	-0.022661
15	P3	-8.033681	0.003165	-0.022585
19	P3	-8.033712	0.003167	-0.022696
22	P3	-8.033754	0.003170	-0.022912
24	P3	-8.033897	0.003185	-0.022834
30	P3	-8.033753	0.003175	-0.022875

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	0.000477537
	stdev	2.14038e-07
MEAN Q	mean	0.000552225
	stdev	2.32388e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127402
	stdev	0.000922957
STDEV Q	mean	0.127621
	stdev	0.000931962

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

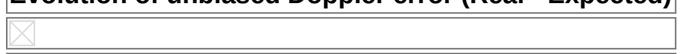
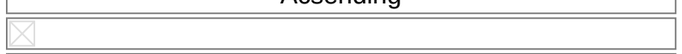
6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
Acsending
Descending

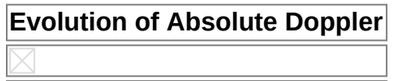
6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


6.4 - Unbiased Doppler Error for GM1

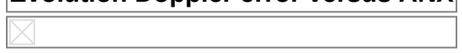
Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

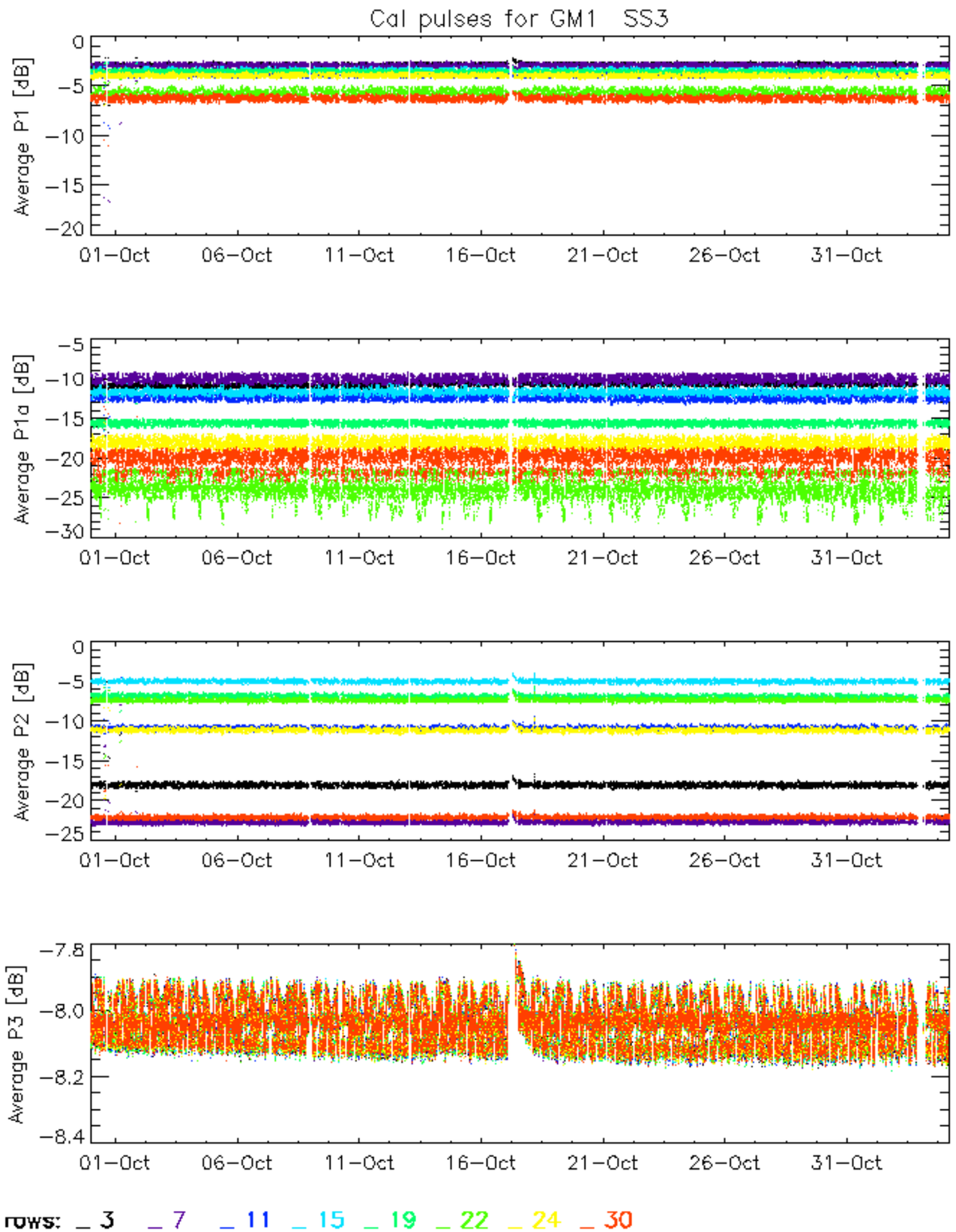
6.5 - Absolute Doppler for GM1

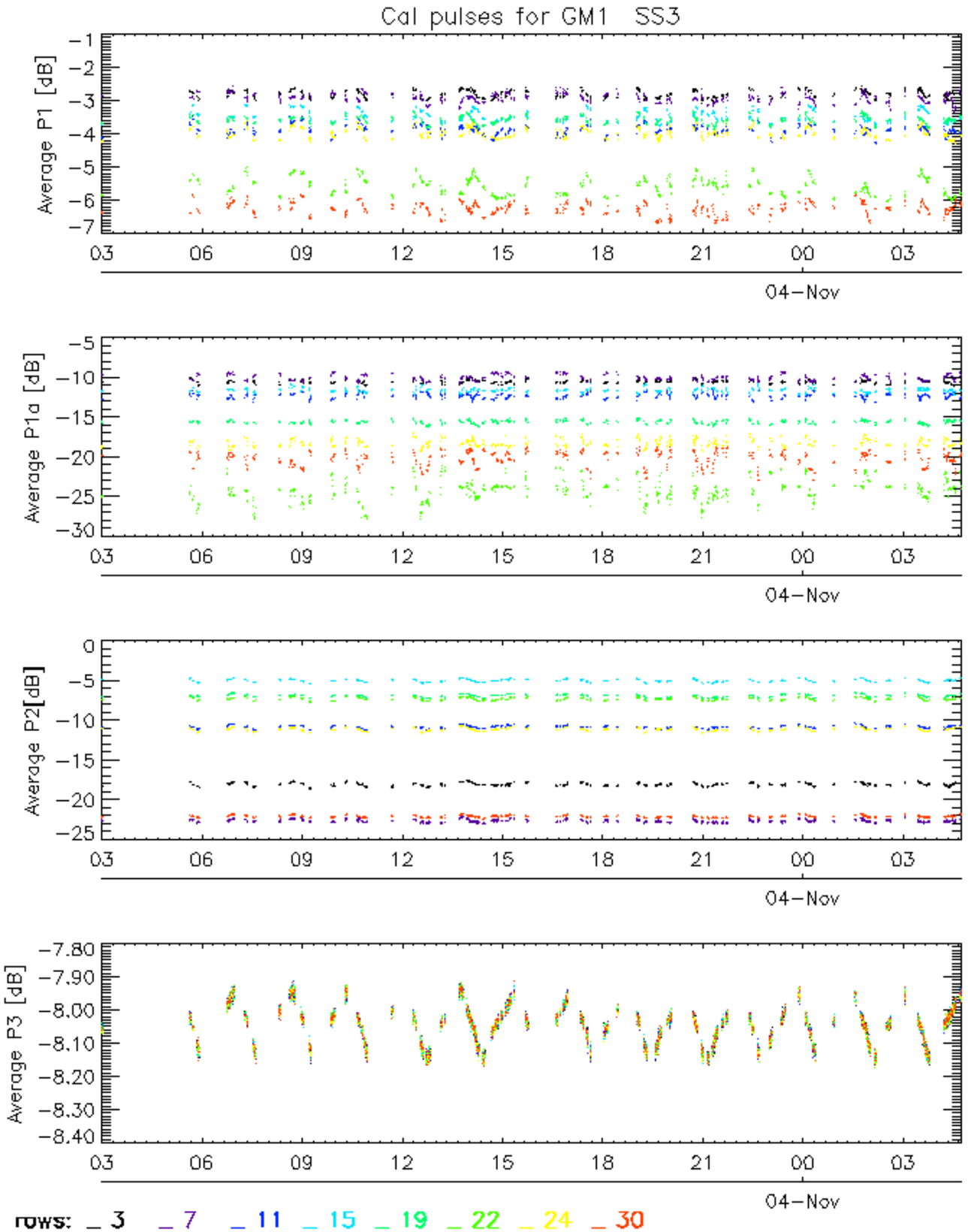
Evolution of Absolute Doppler

Acsending

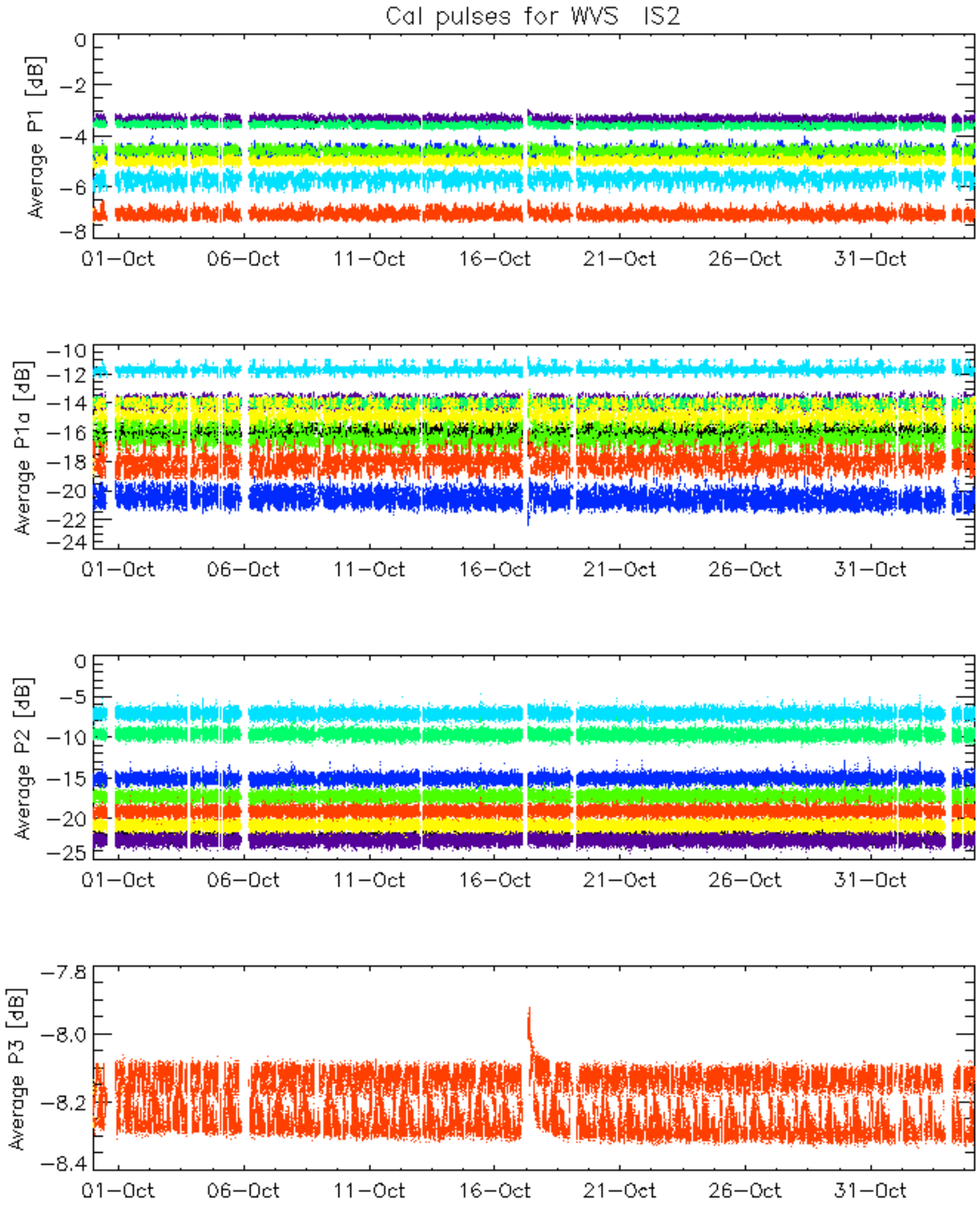
Descending

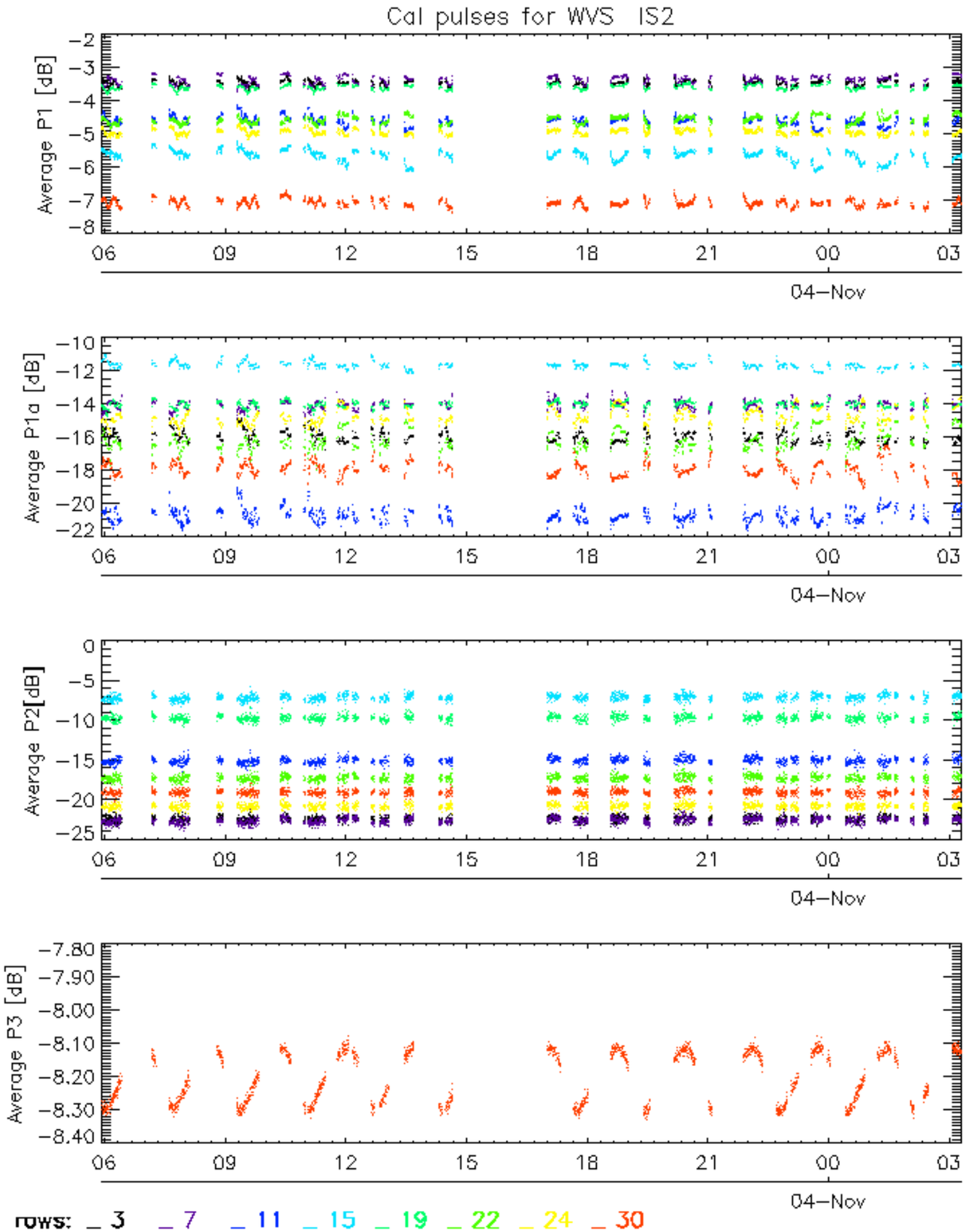
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX



Cal pulses for GM1 SS3
Average P1 [dB]
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

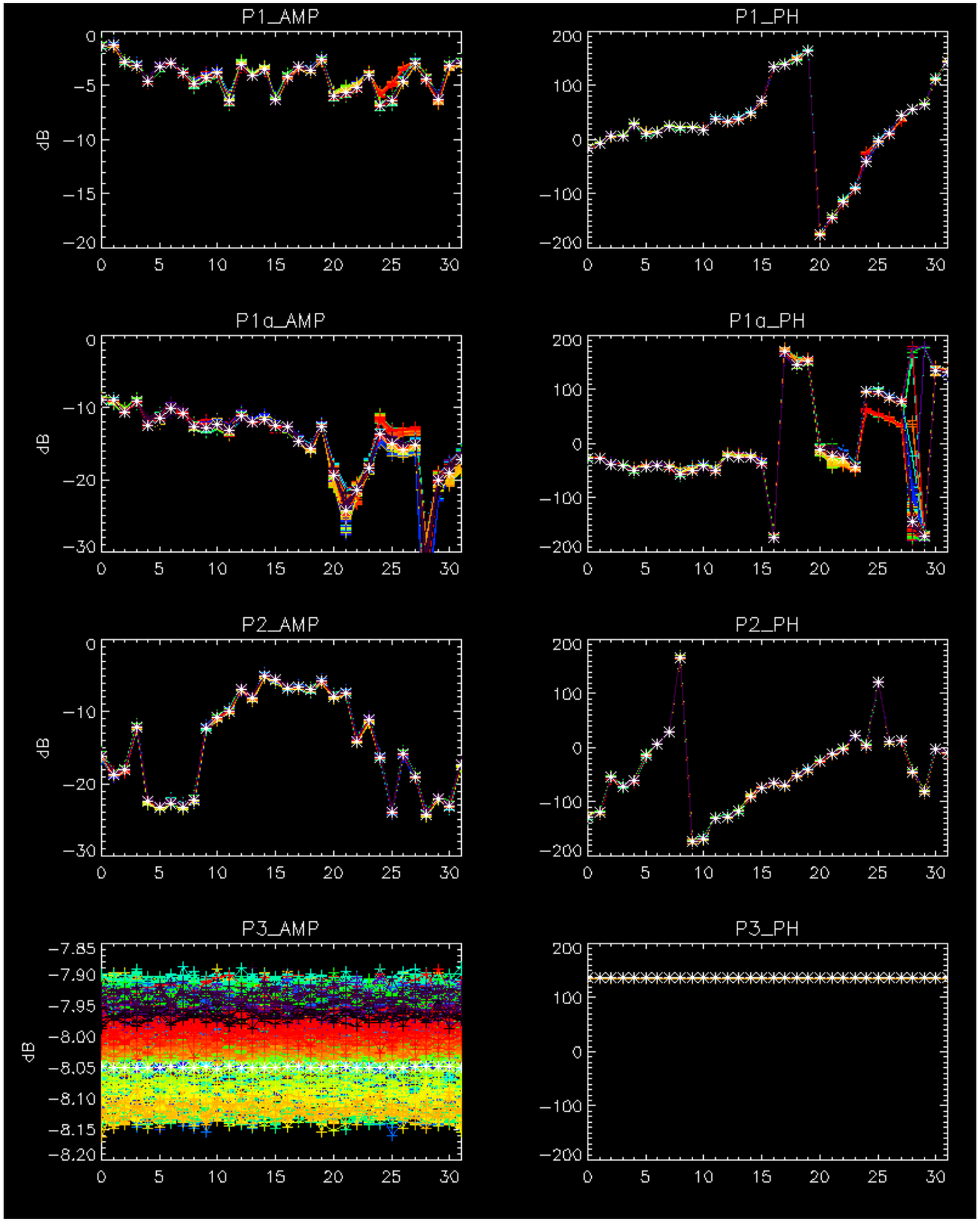

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
04−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
04−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
04−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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

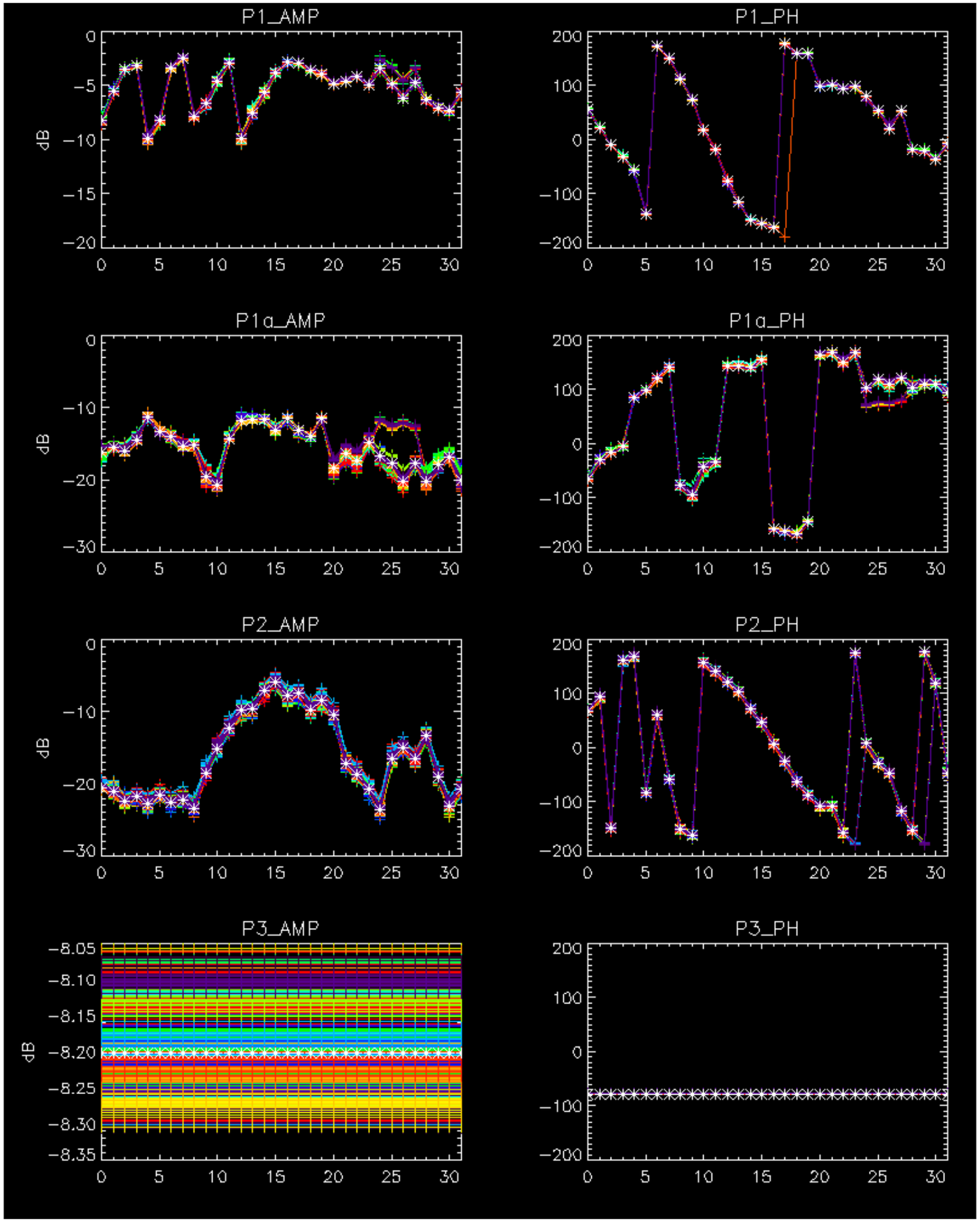

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 24 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
06
09
12
15
18
21
00
03
04−Nov
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 on available browse products

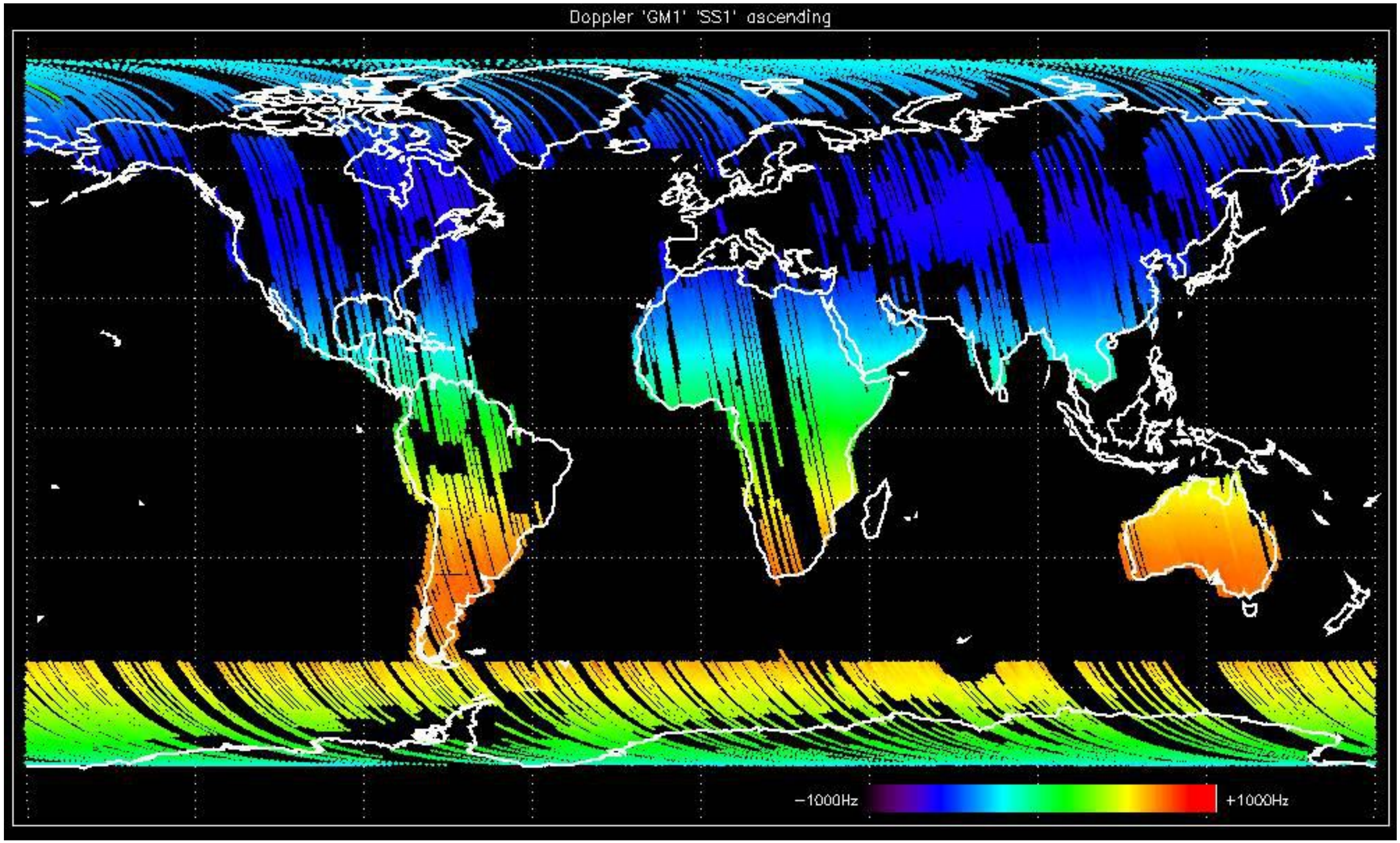
Transmit power drop on tile E2, rows 25 to 28.
The problem has been solved with the antenna reset.

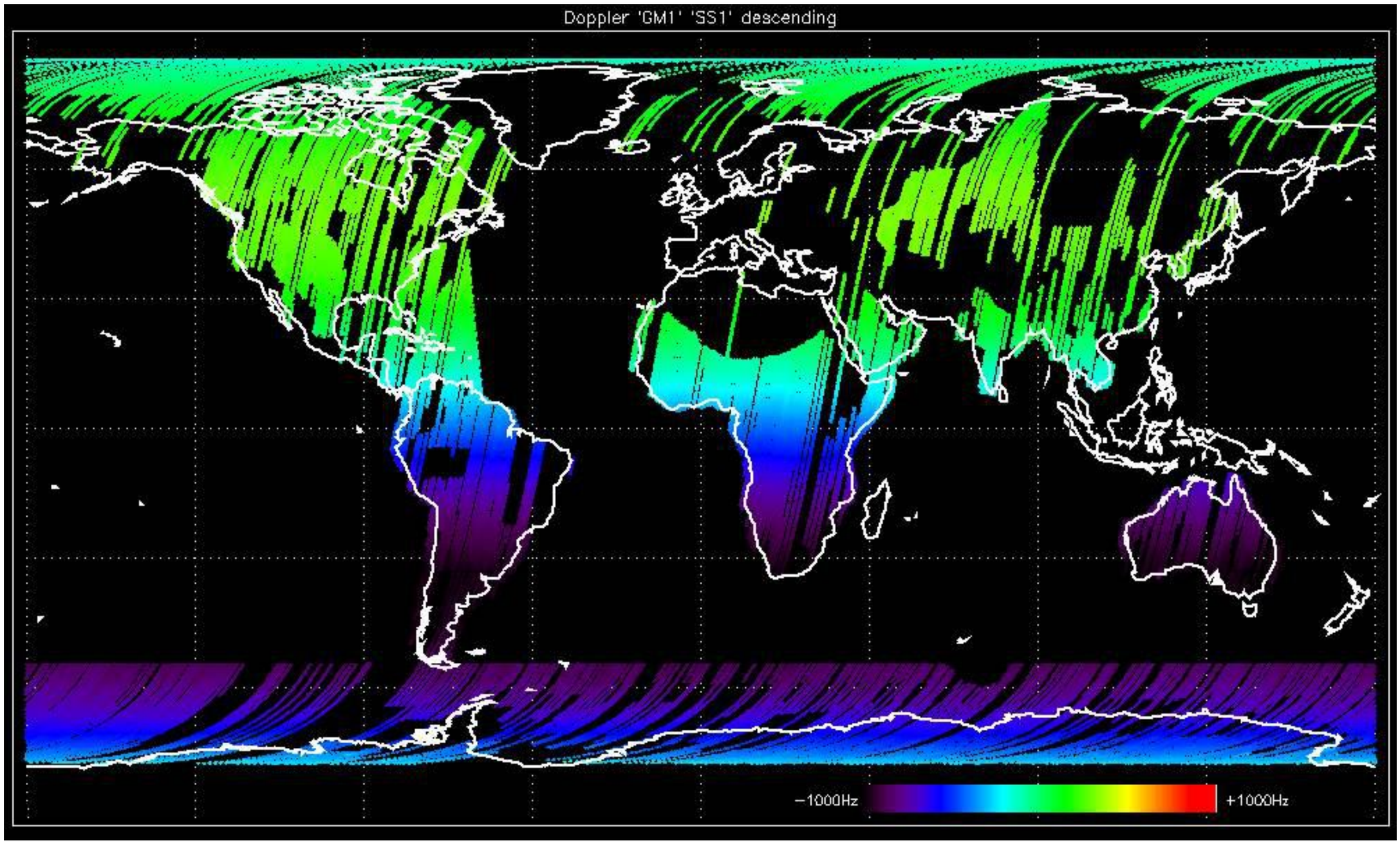

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

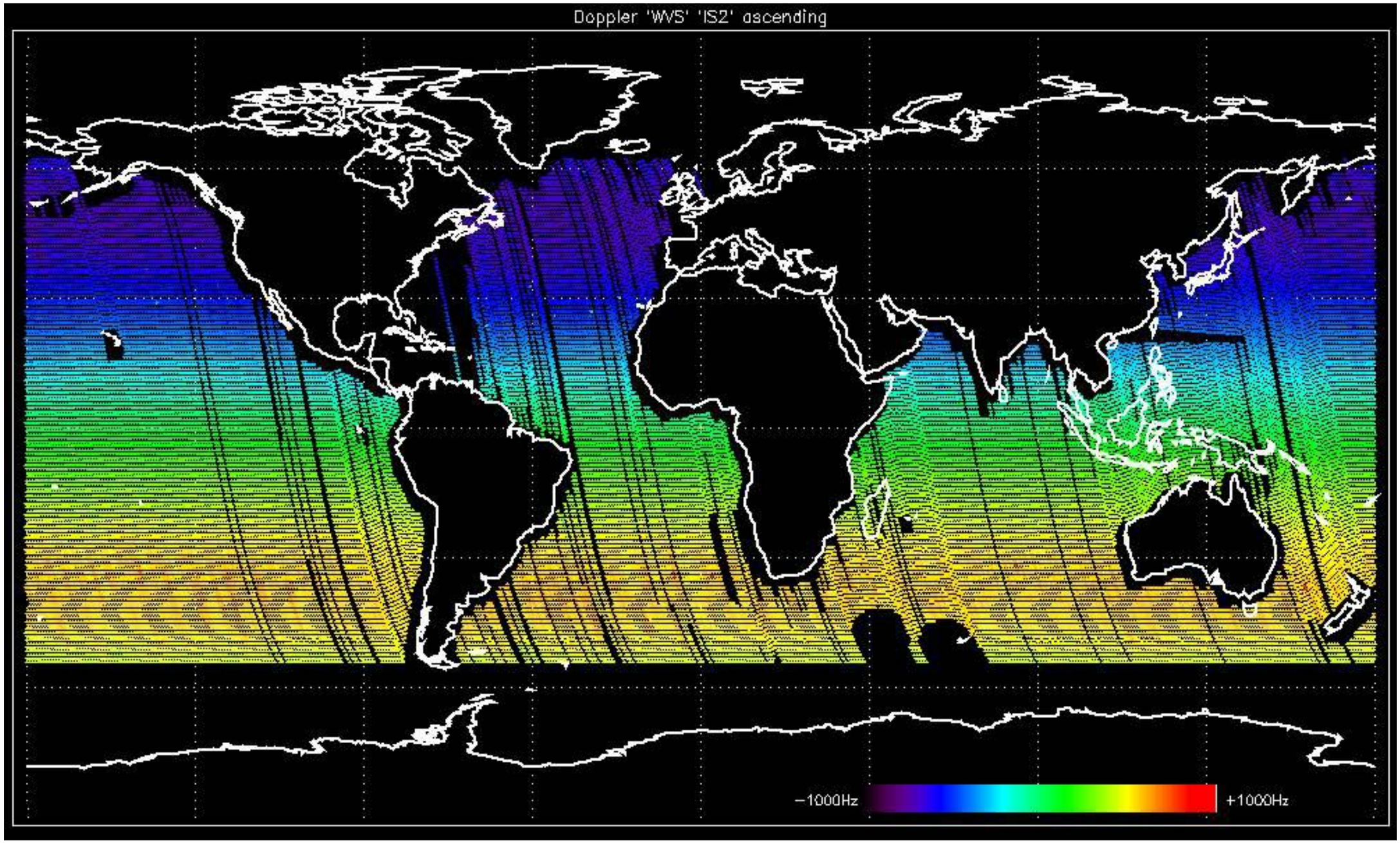

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20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

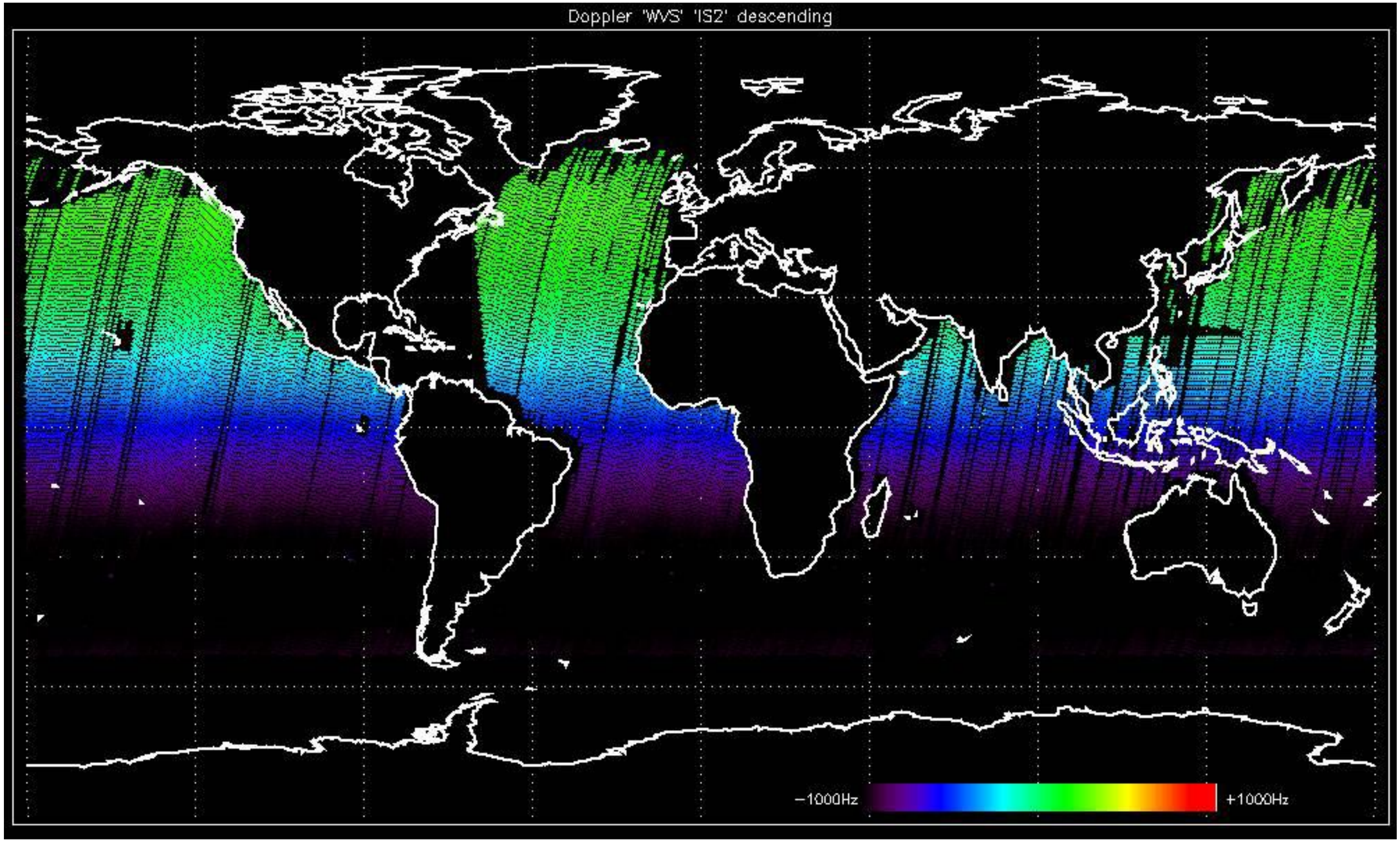
-Transmit power drop on tile E2, rows 25 to 28.
-Stable raw data statistics.
-Nominal Doppler behavior.

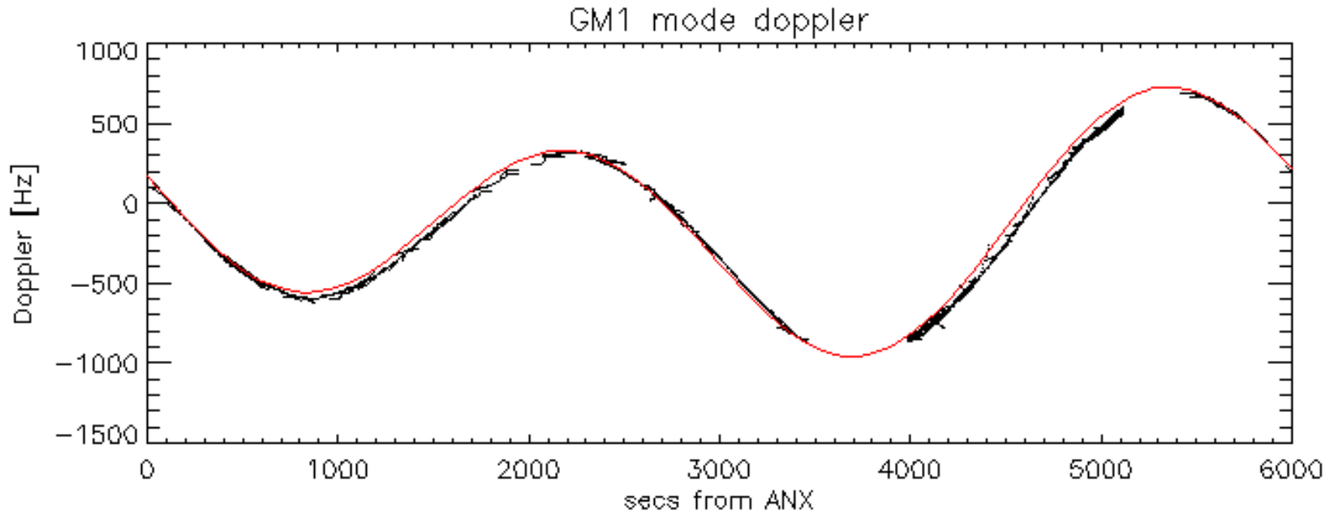
No anomalies observed in Doppler evolution.
Doppler analysis performed over the last 35 days.

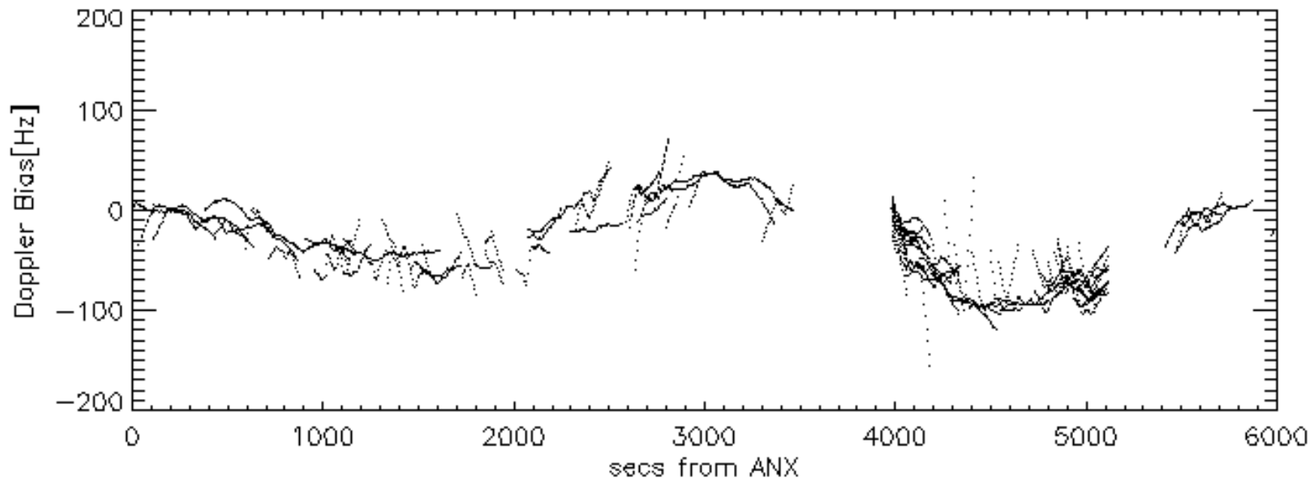

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

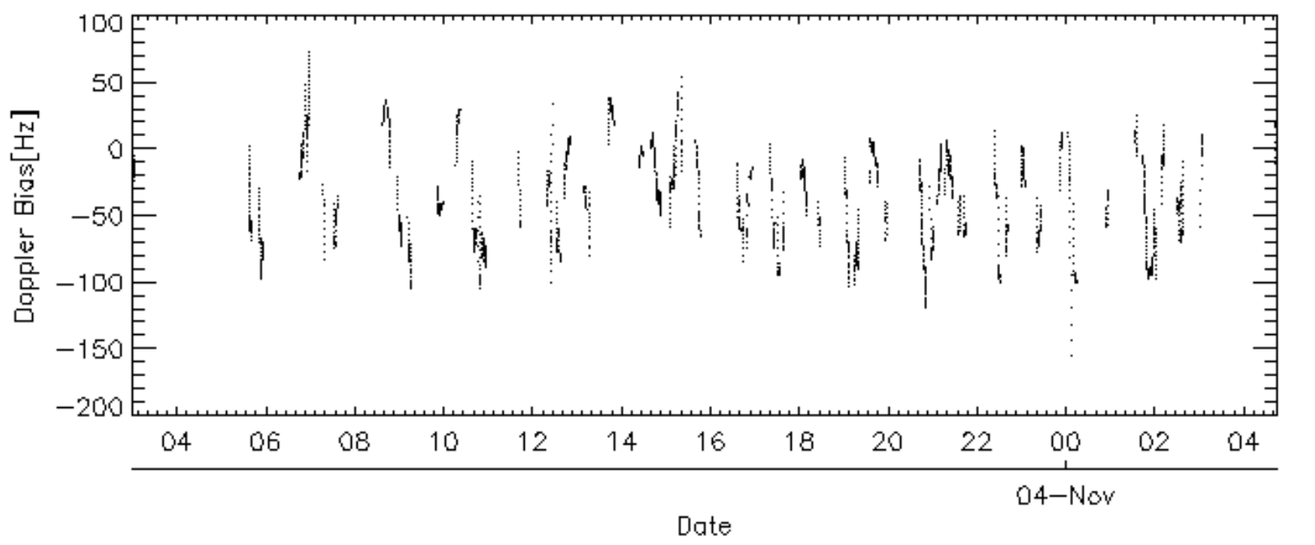

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

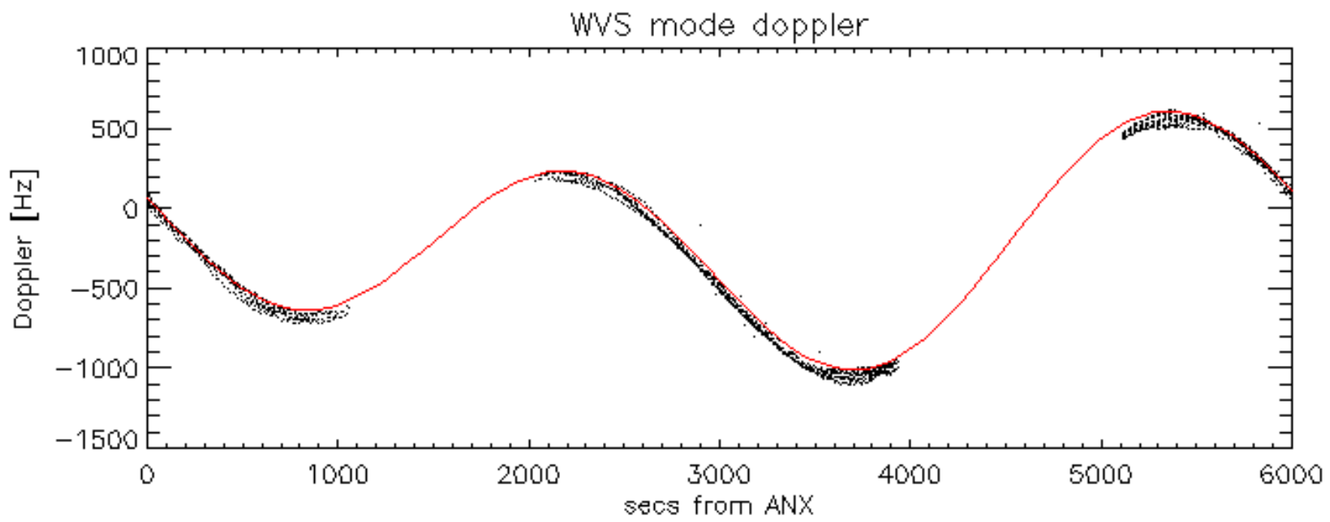

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

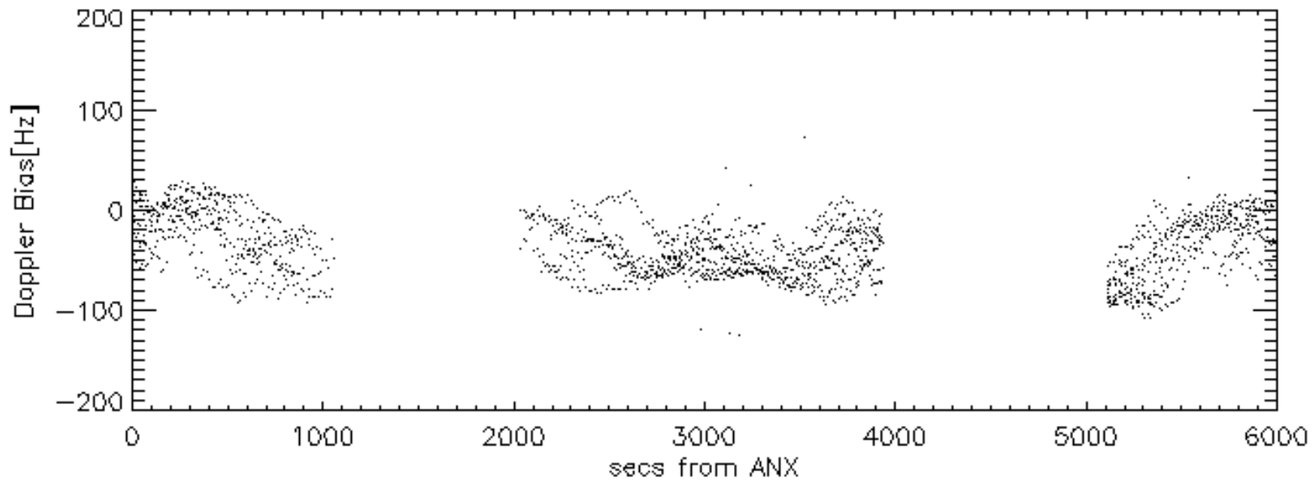

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

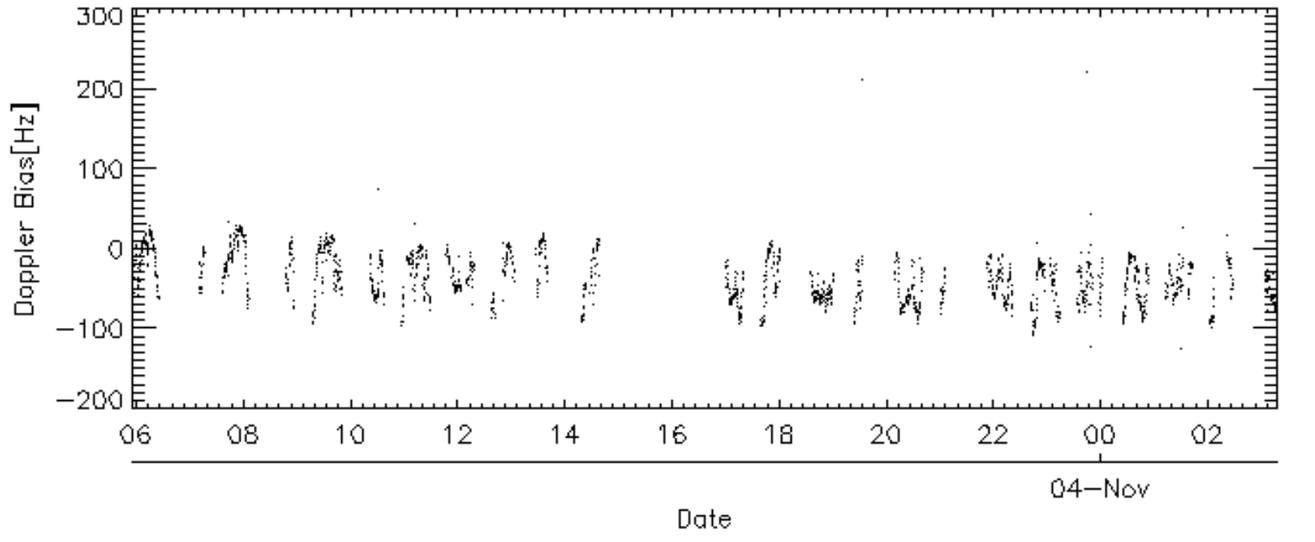

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

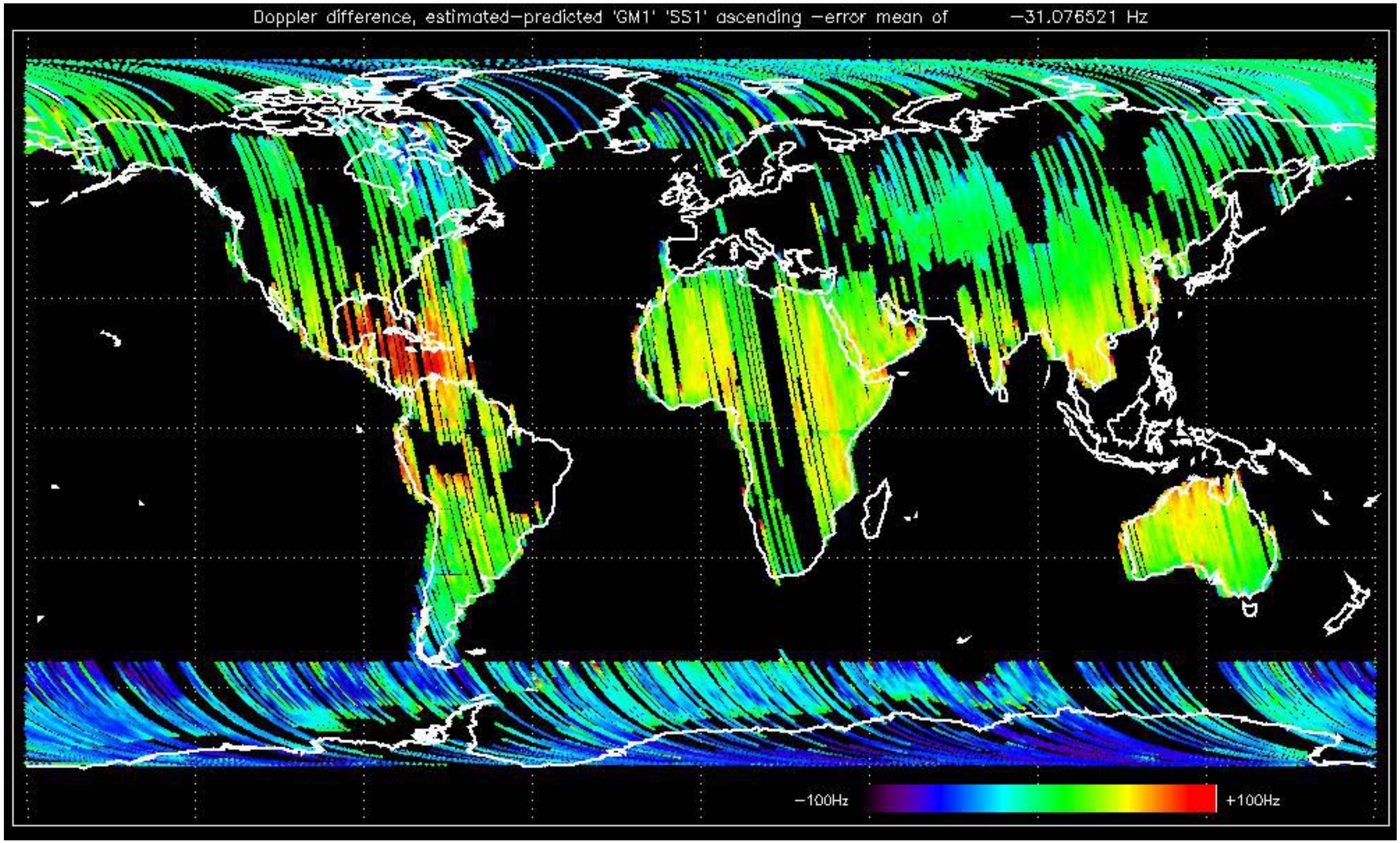

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

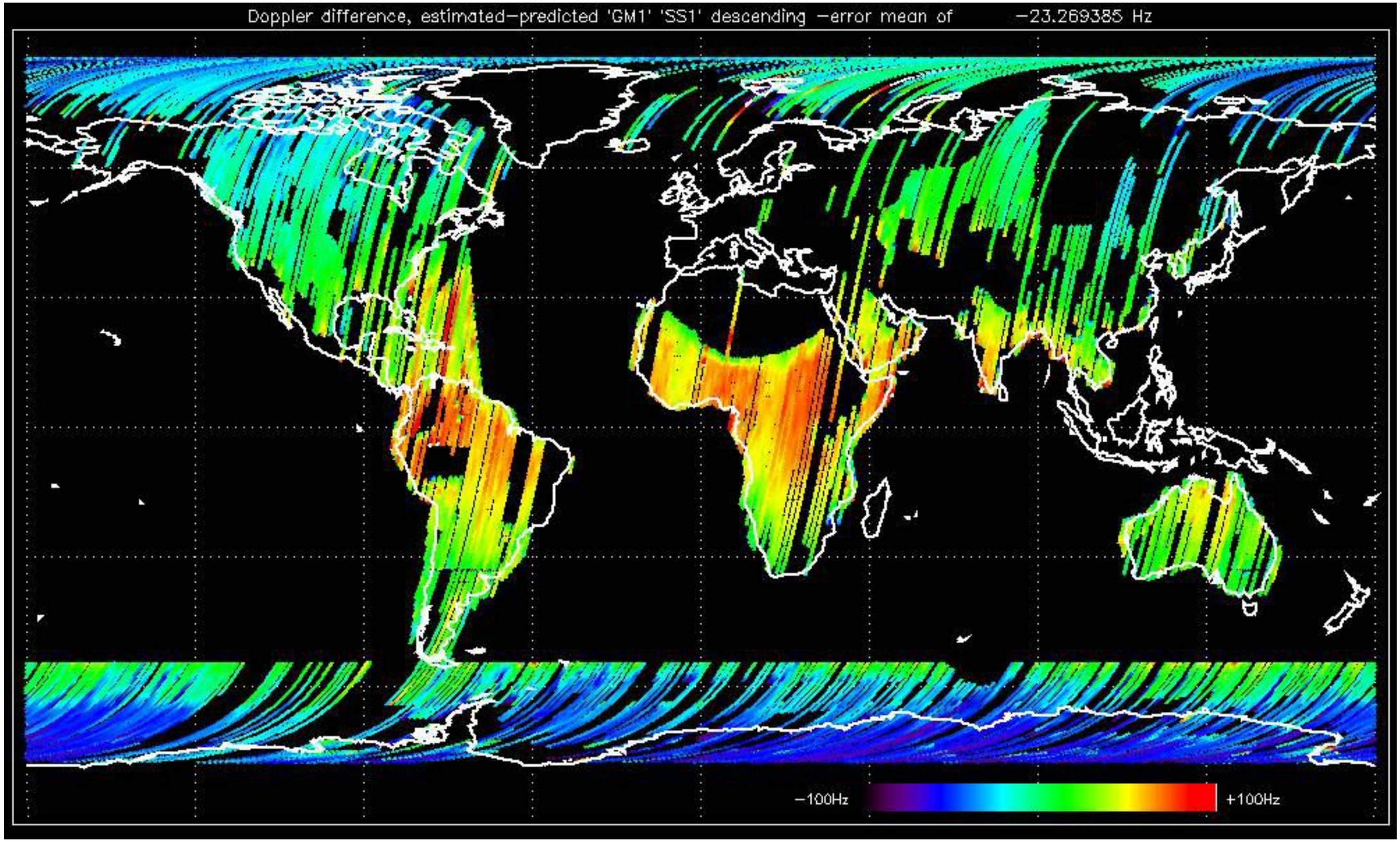

Doppler Bias[Hz]
100
50
0
−50
−100
−150
−200
04
06
08
10
12
14
16
18
20
22
00
02
04
04−Nov
Date

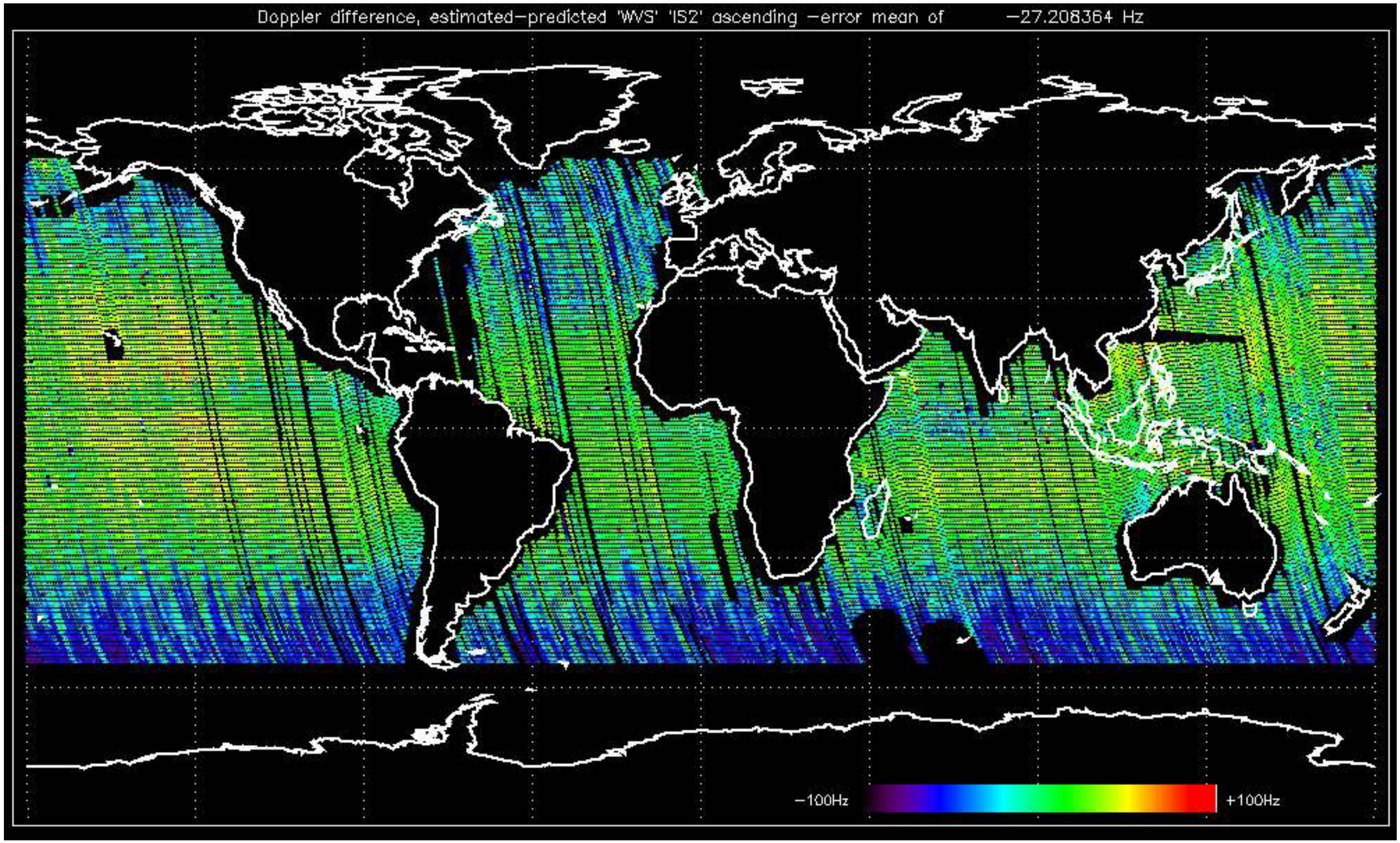

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

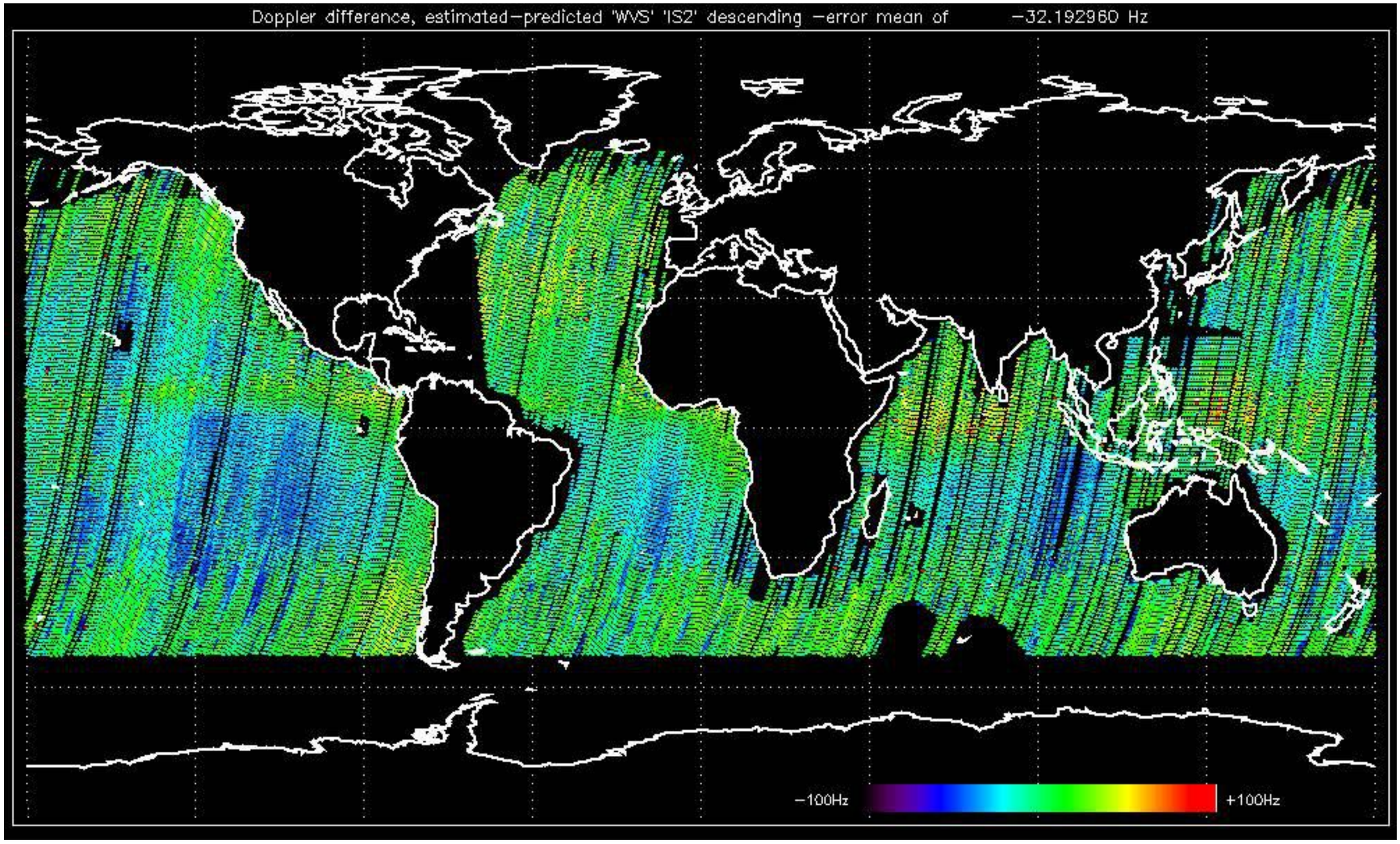

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
300
200
100
0
−100
−200
06
08
10
12
14
16
18
20
22
00
02
04−Nov
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −31.076521 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.269385 Hz
−100Hz
+100Hz

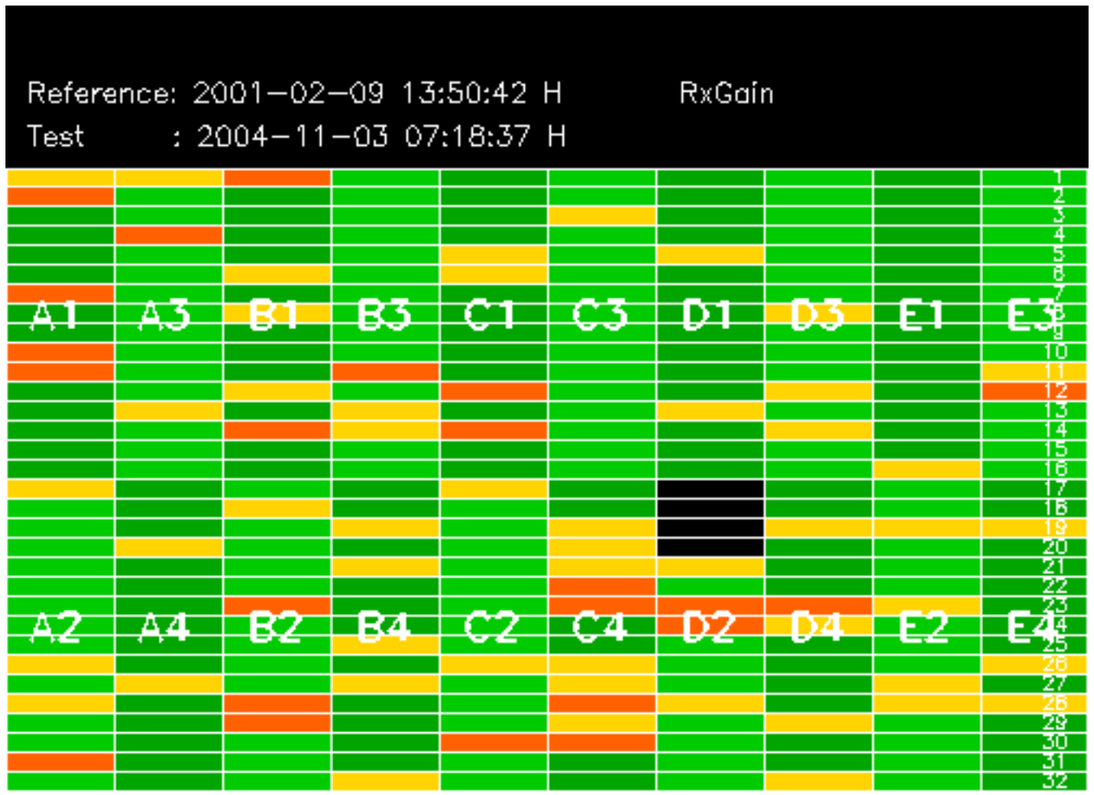

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −27.208364 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −32.192960 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.
The transmit power drop on tile E2 visible in th MS product analysis,
has been solved with an antenna reset.

- ASA_MS__0PNPDK20041103_071837_000000152031_00421_14002_0102.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2004-11-03 07:18:37 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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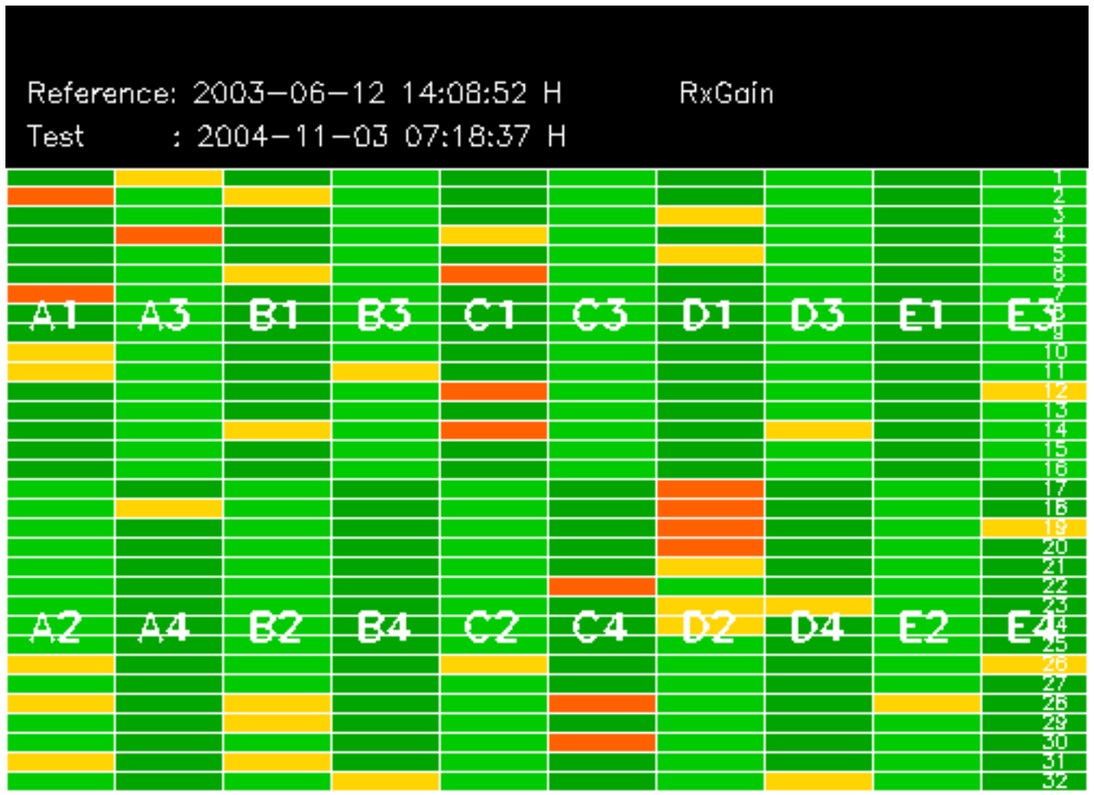
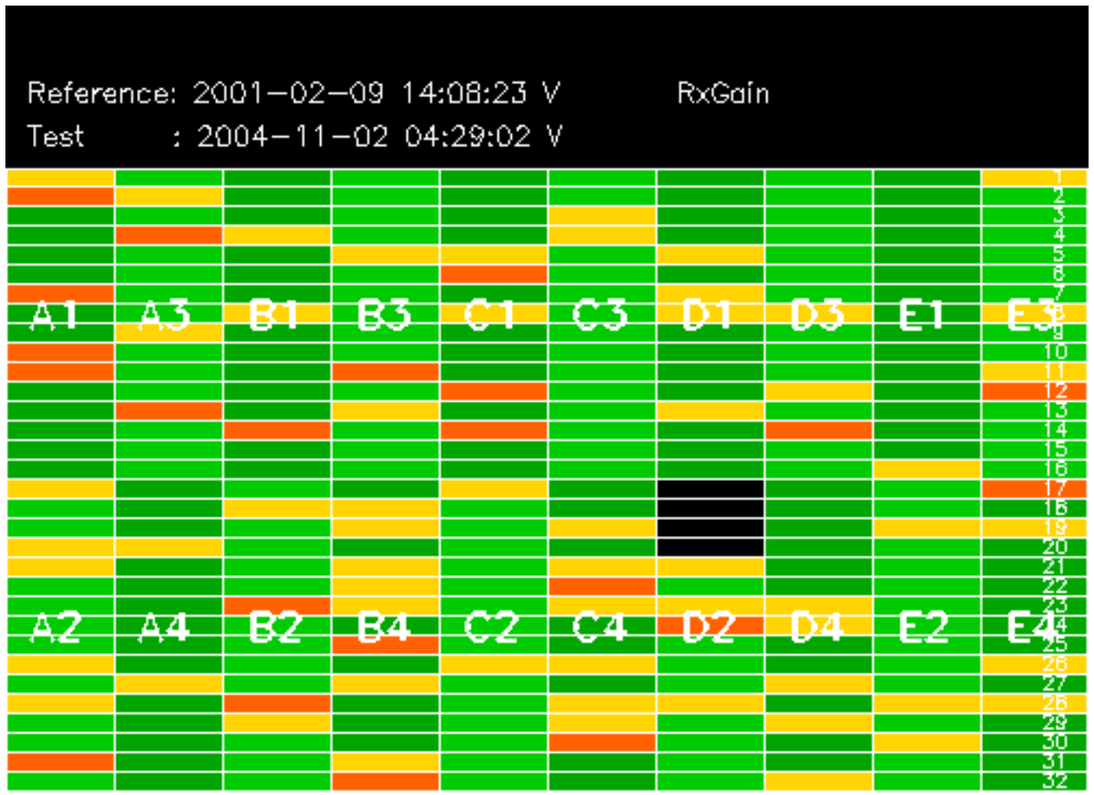

Reference: 2003-06-12 14:08:52 H
Test : 2004-11-03 07:18:37 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-11-02 04:29:02 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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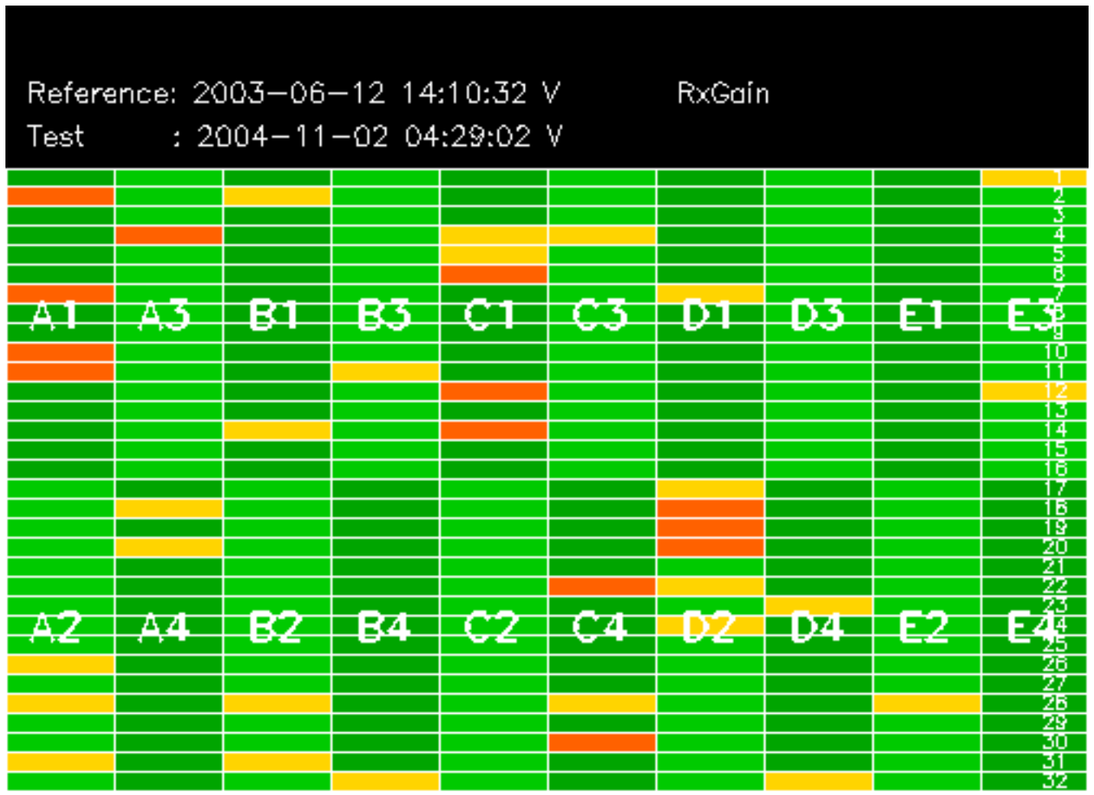
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-02 04:29:02 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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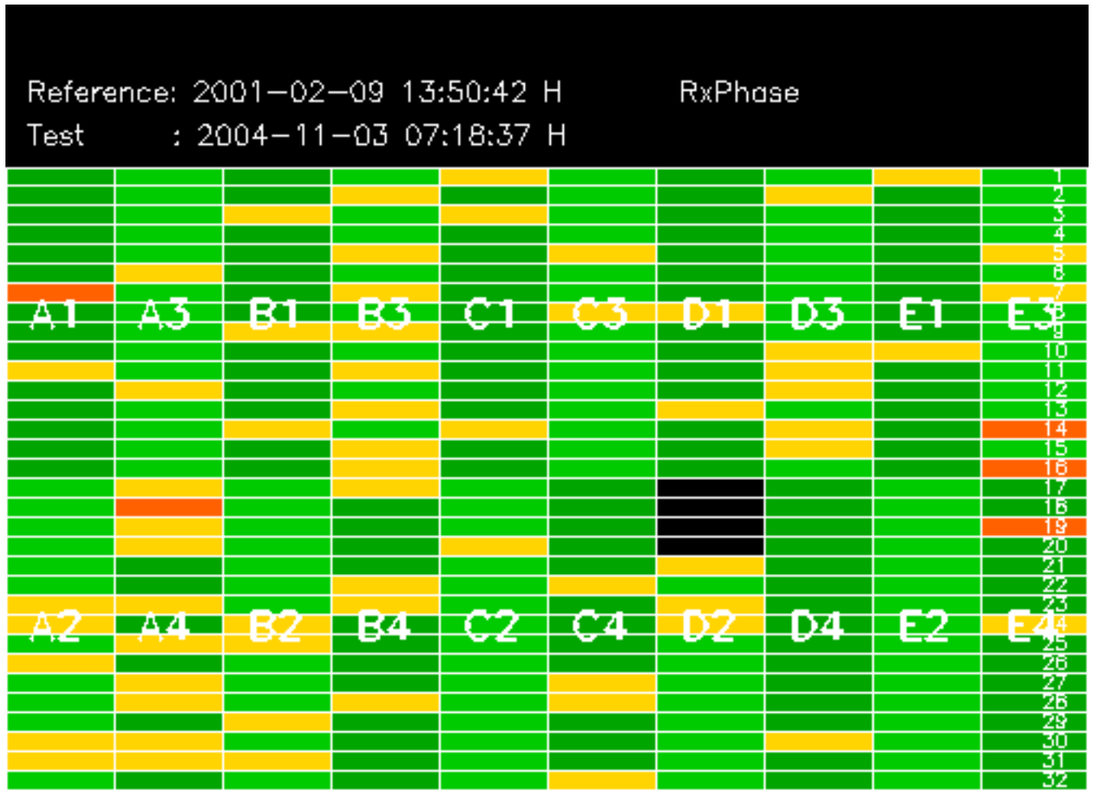
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-11-03 07:18:37 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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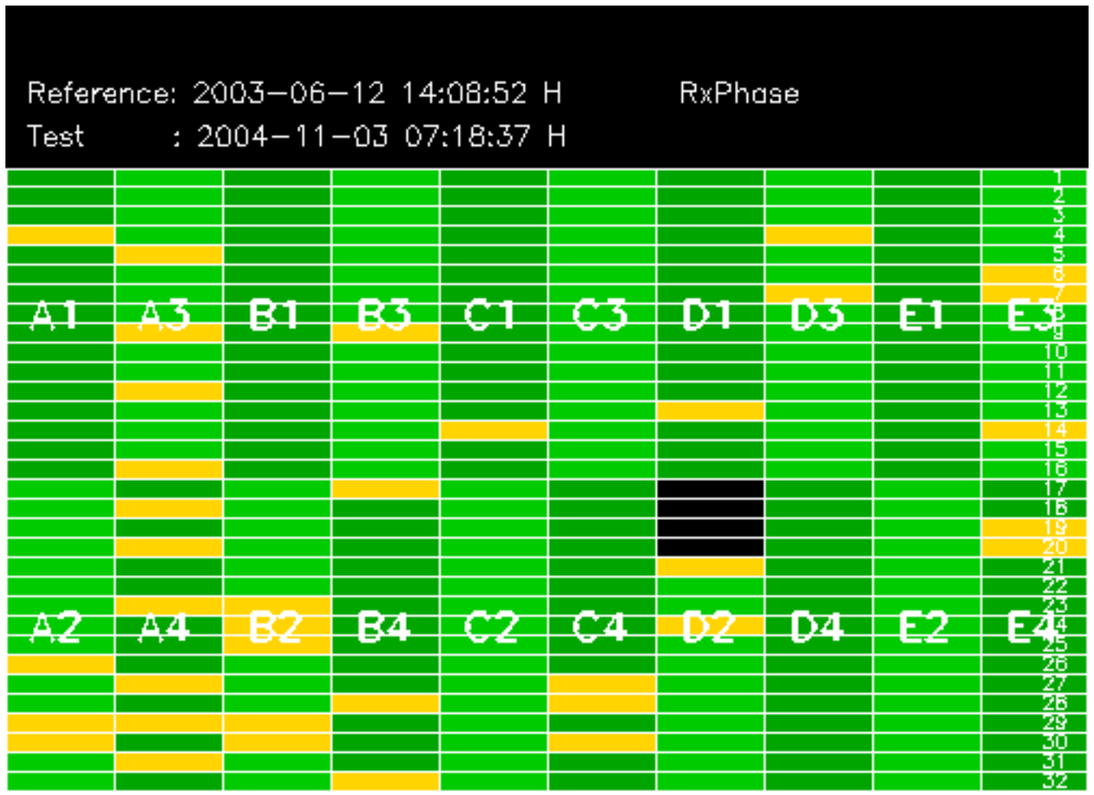
Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2004-11-03 07:18:37 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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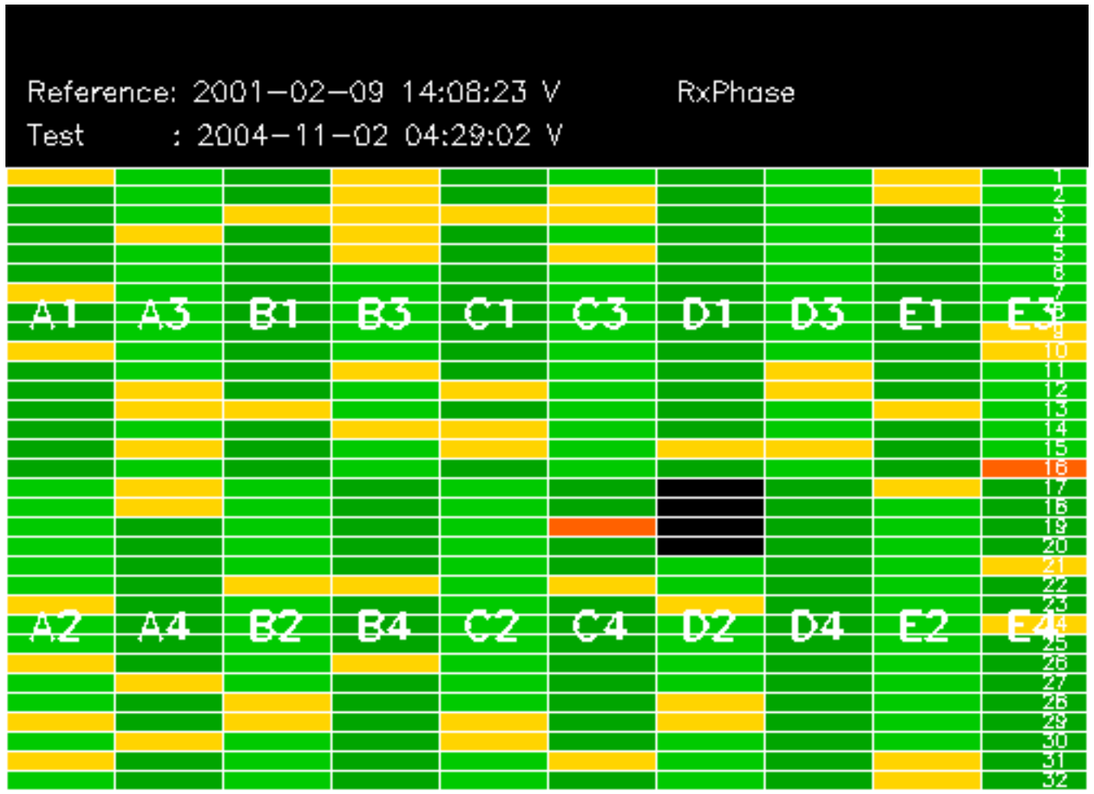
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-02 04:29:02 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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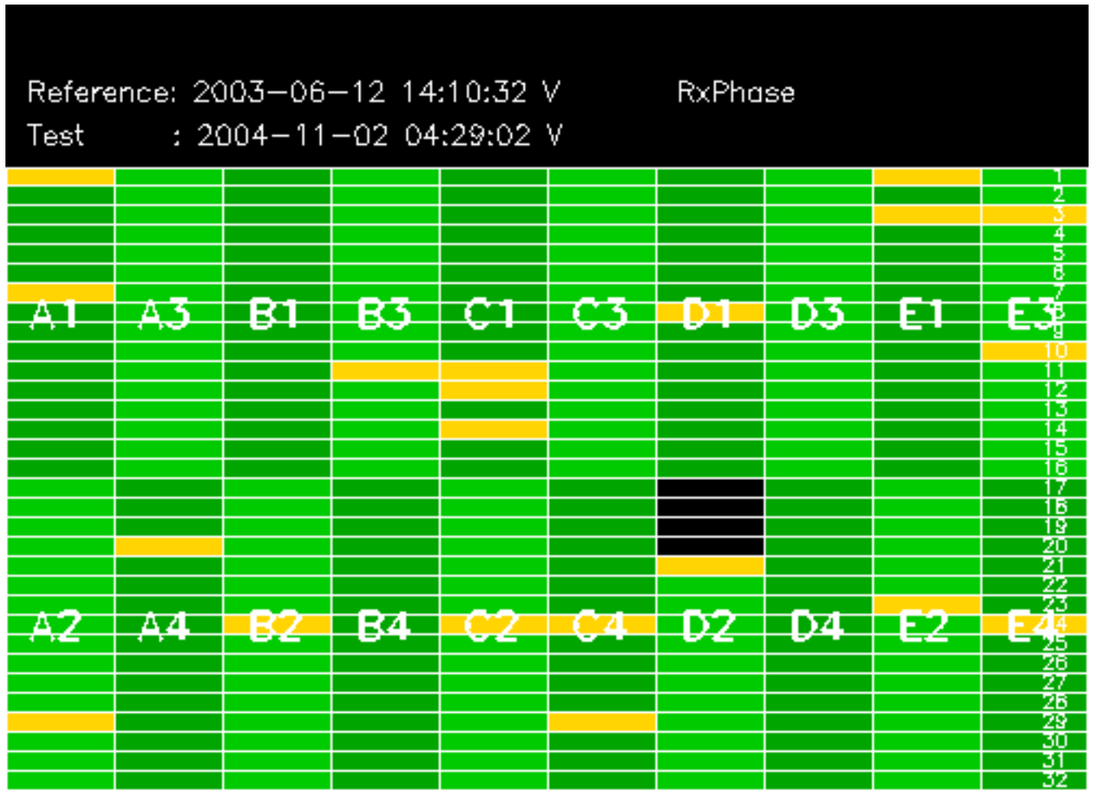
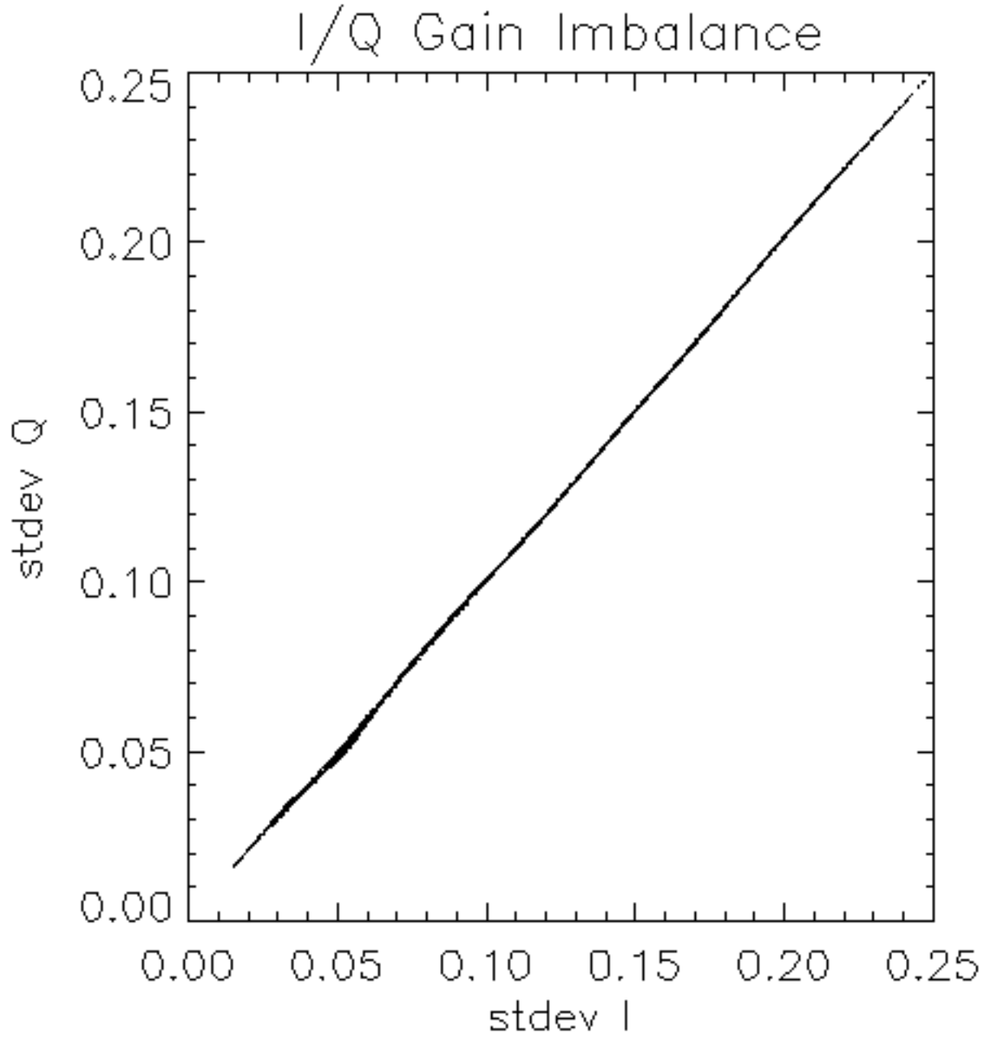
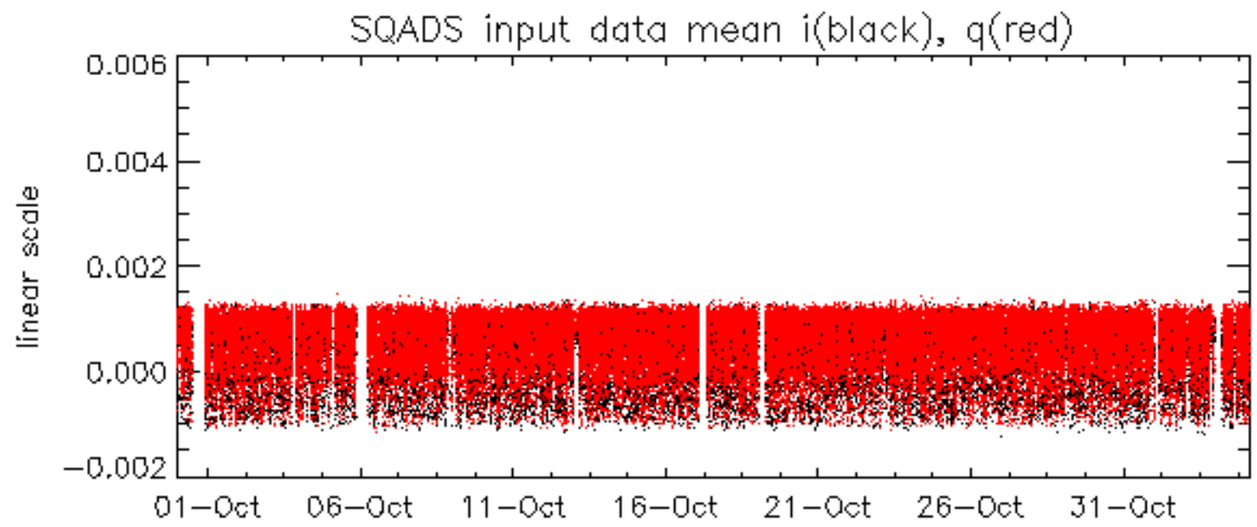
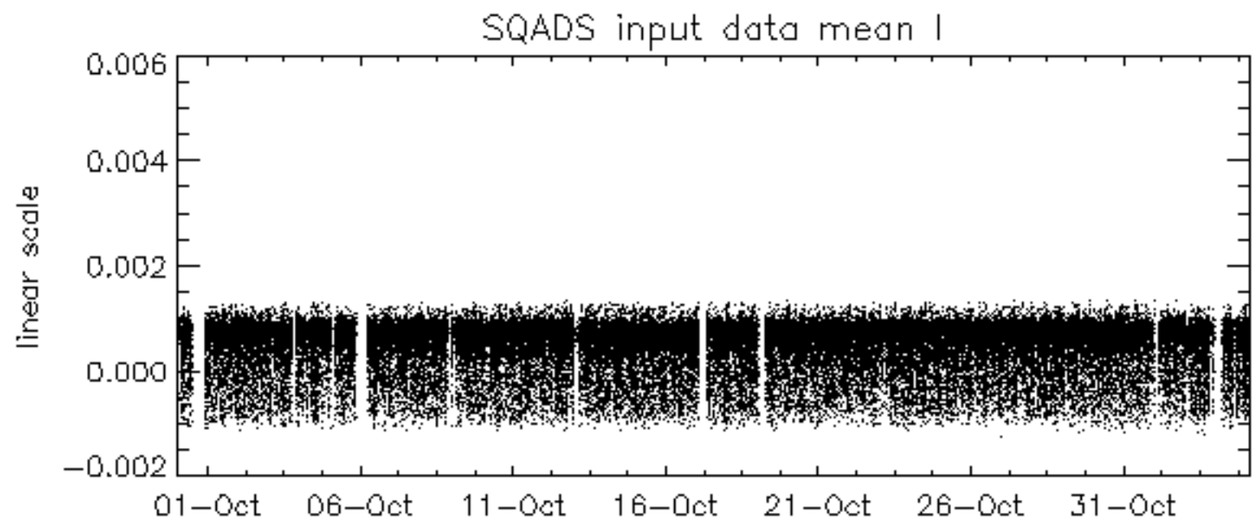
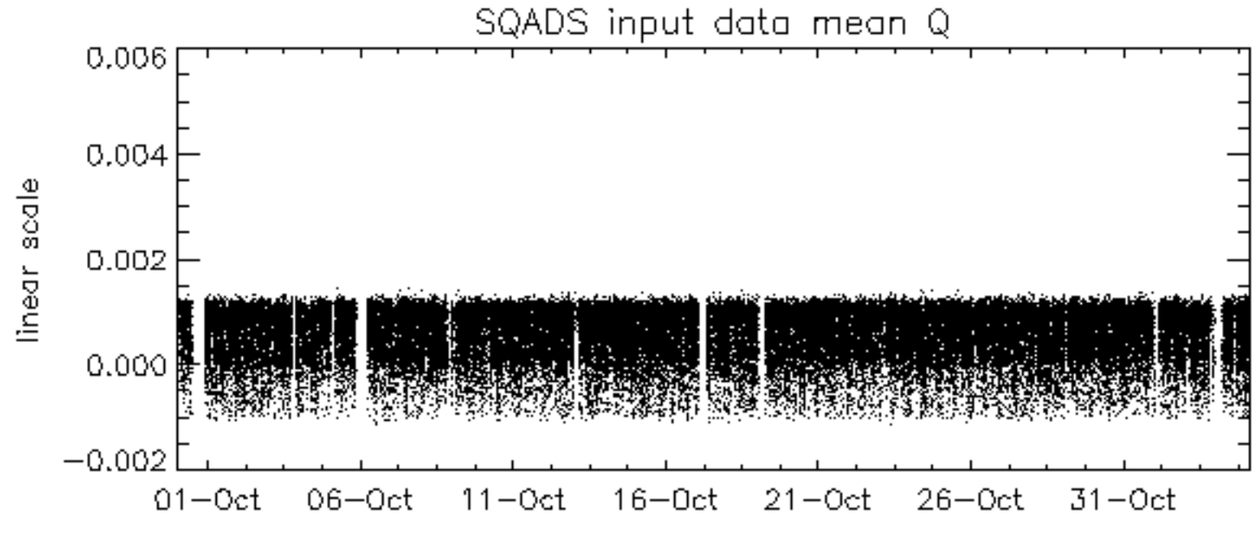
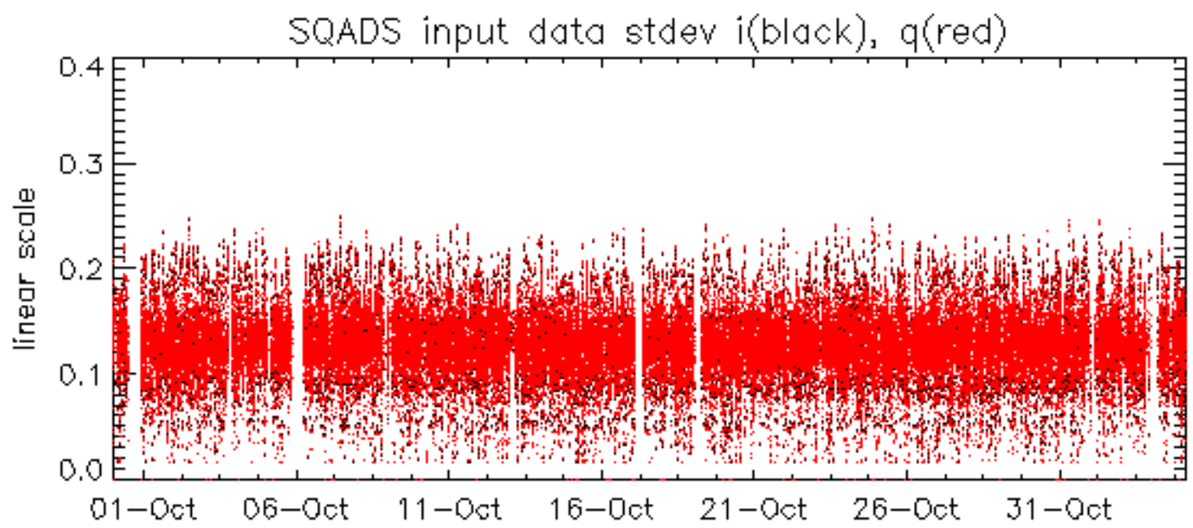

Reference: 2003-06-12 14:10:32 V
Test : 2004-11-02 04:29:02 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

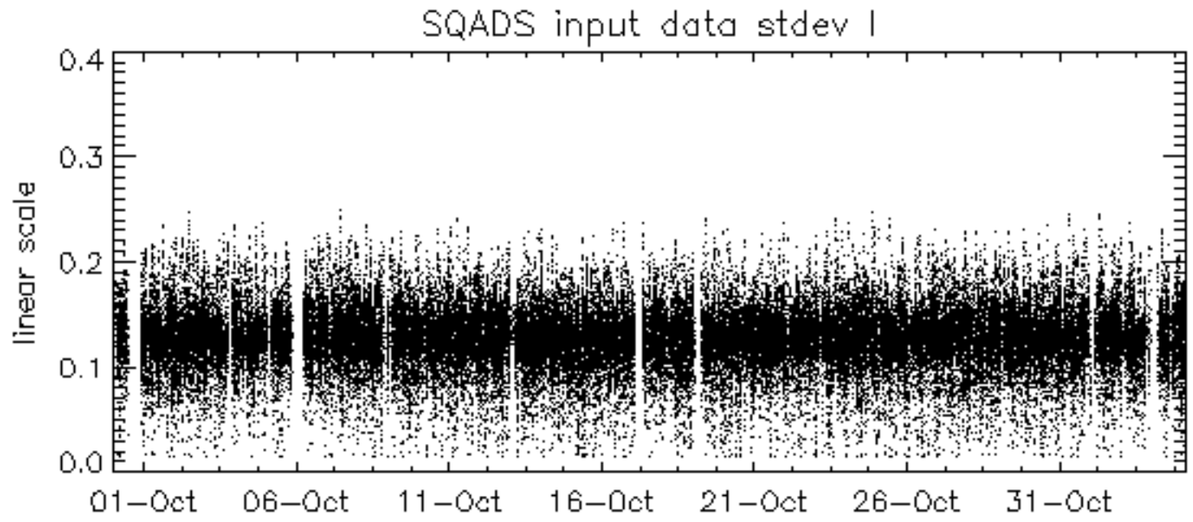

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

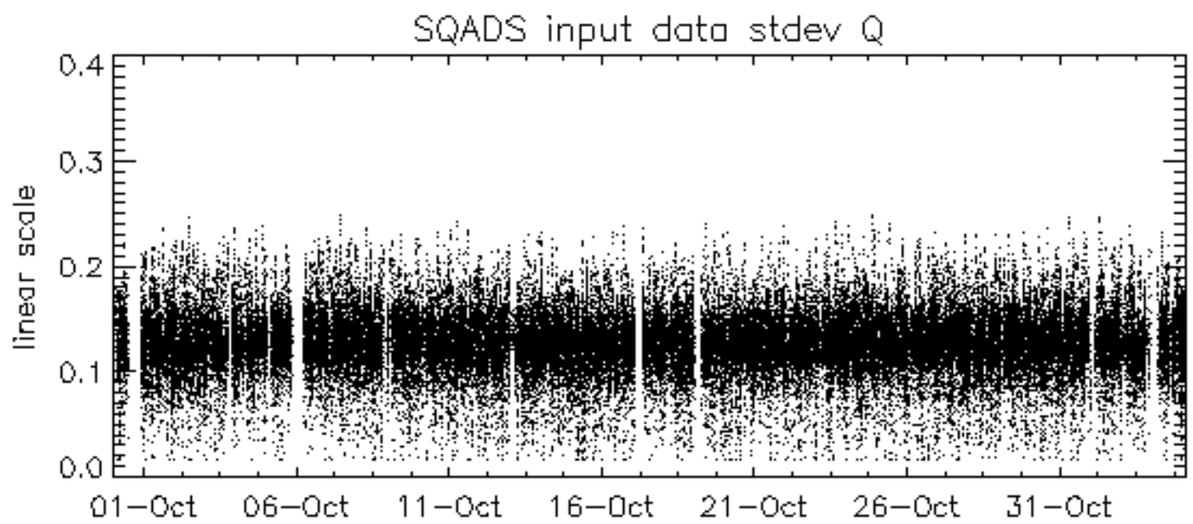

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct

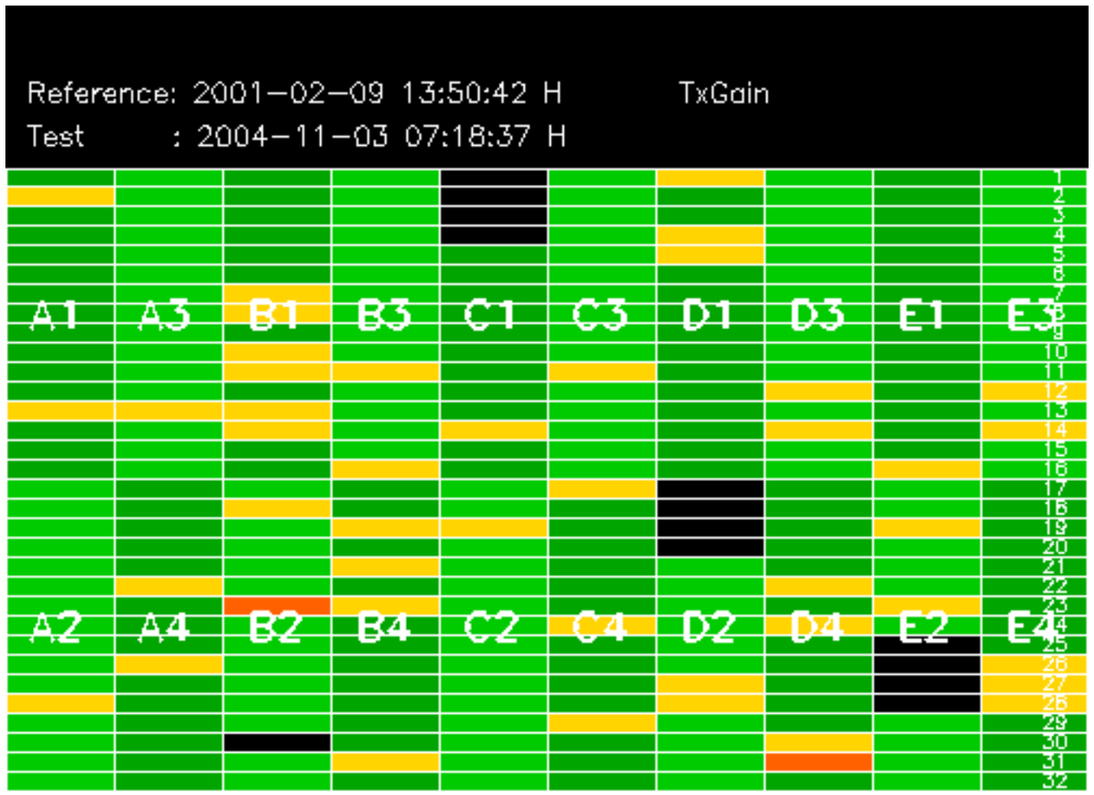

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct

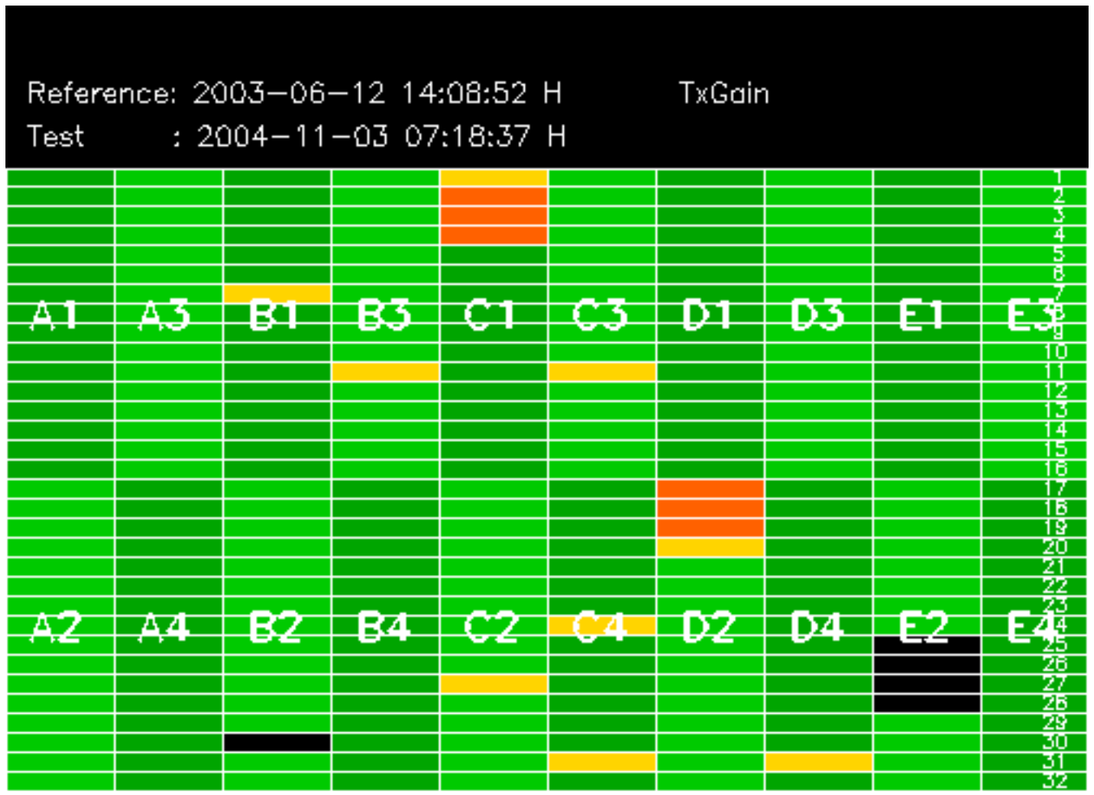

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
26−Oct
31−Oct


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 : 2004-11-03 07:18:37 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 : 2004-11-03 07:18:37 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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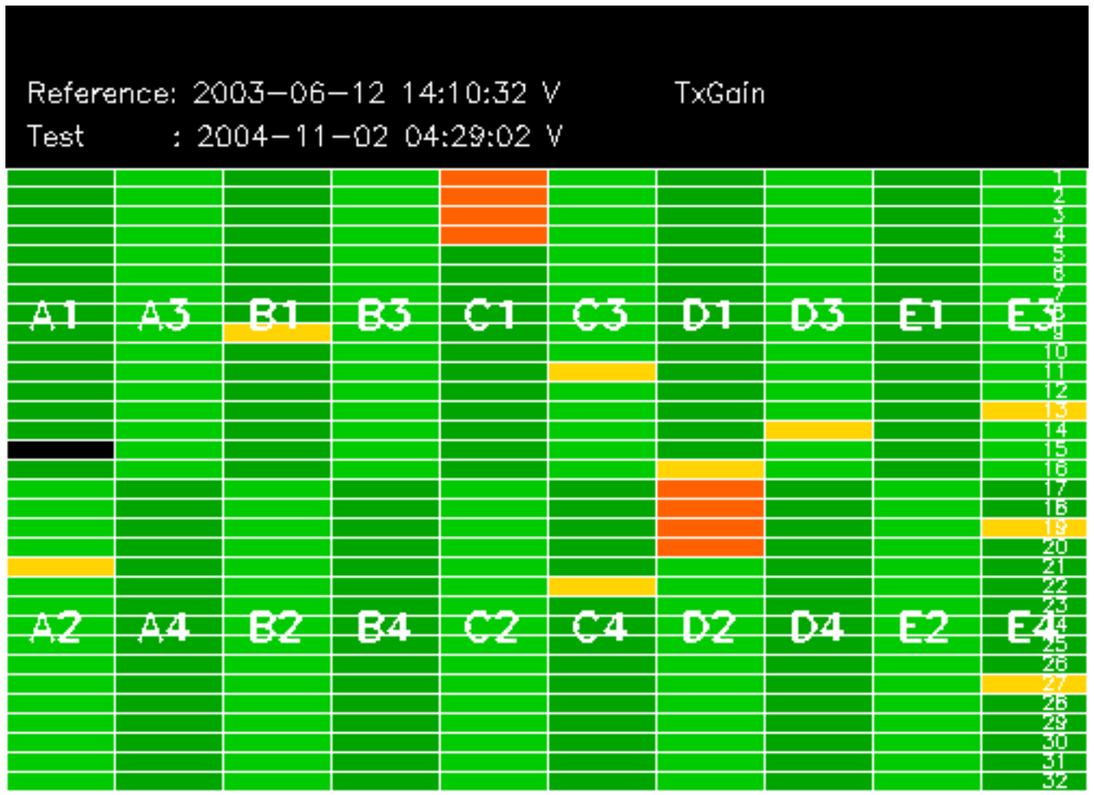
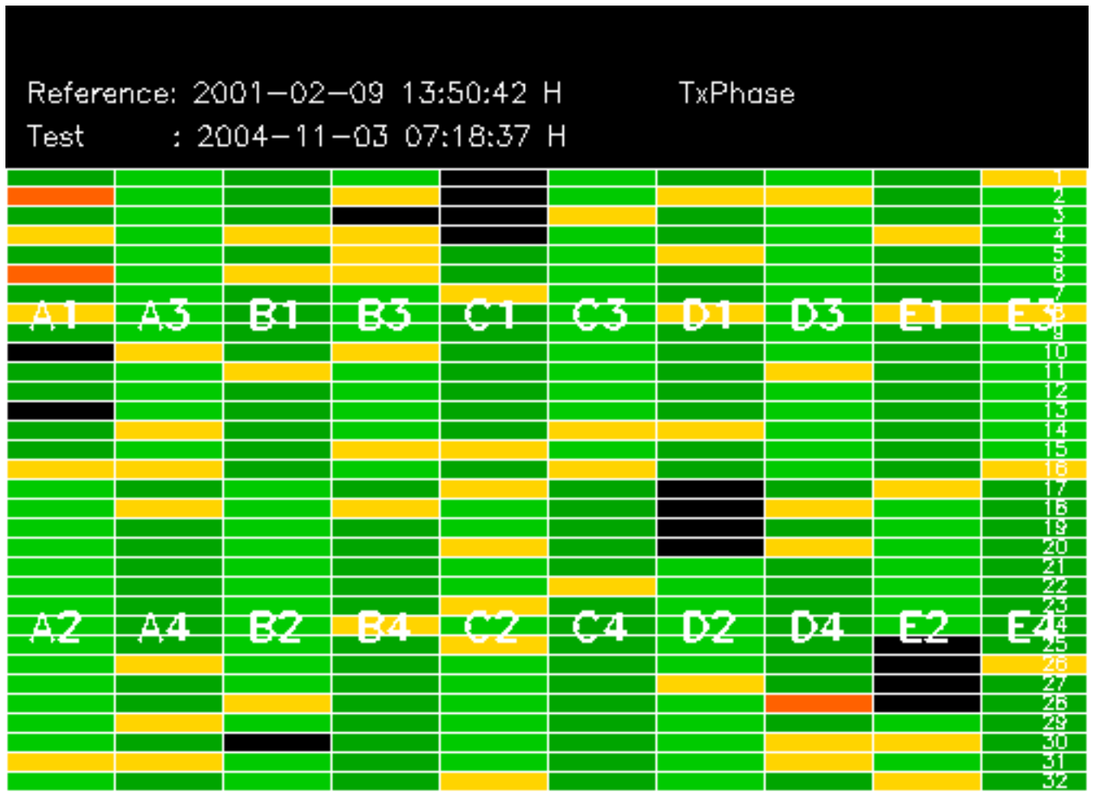
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-02 04:29:02 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-11-02 04:29:02 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 : 2004-11-03 07:18:37 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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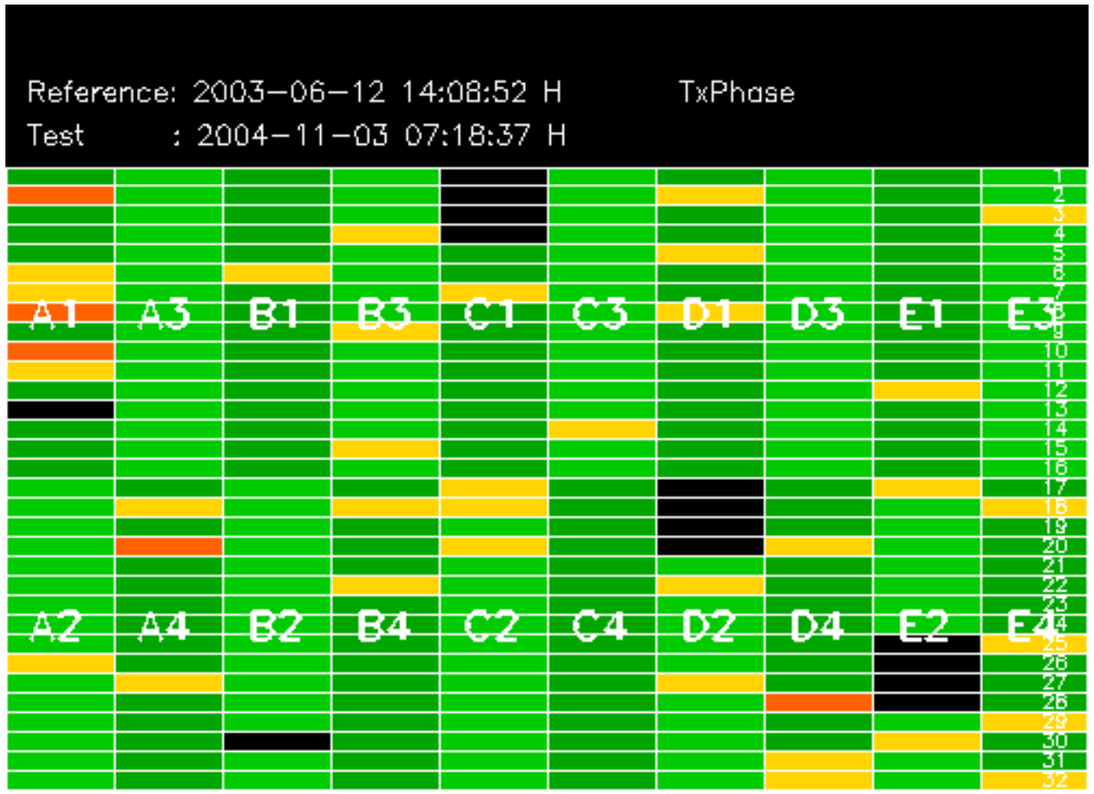
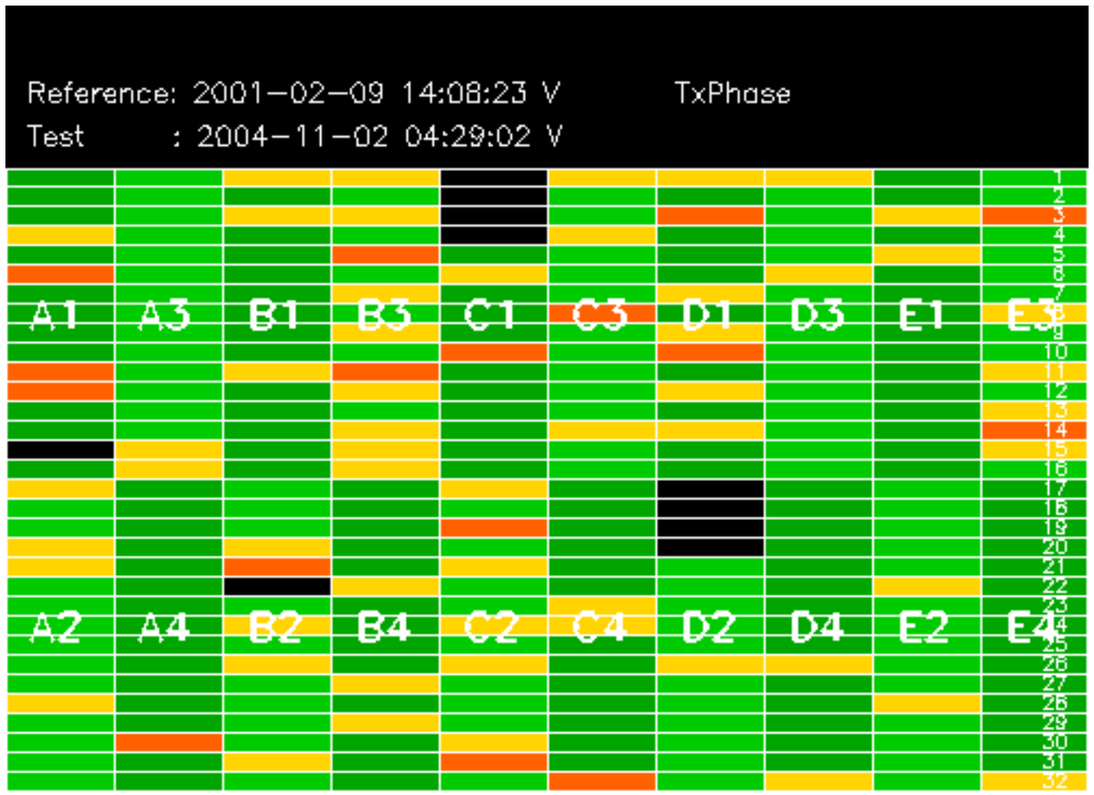
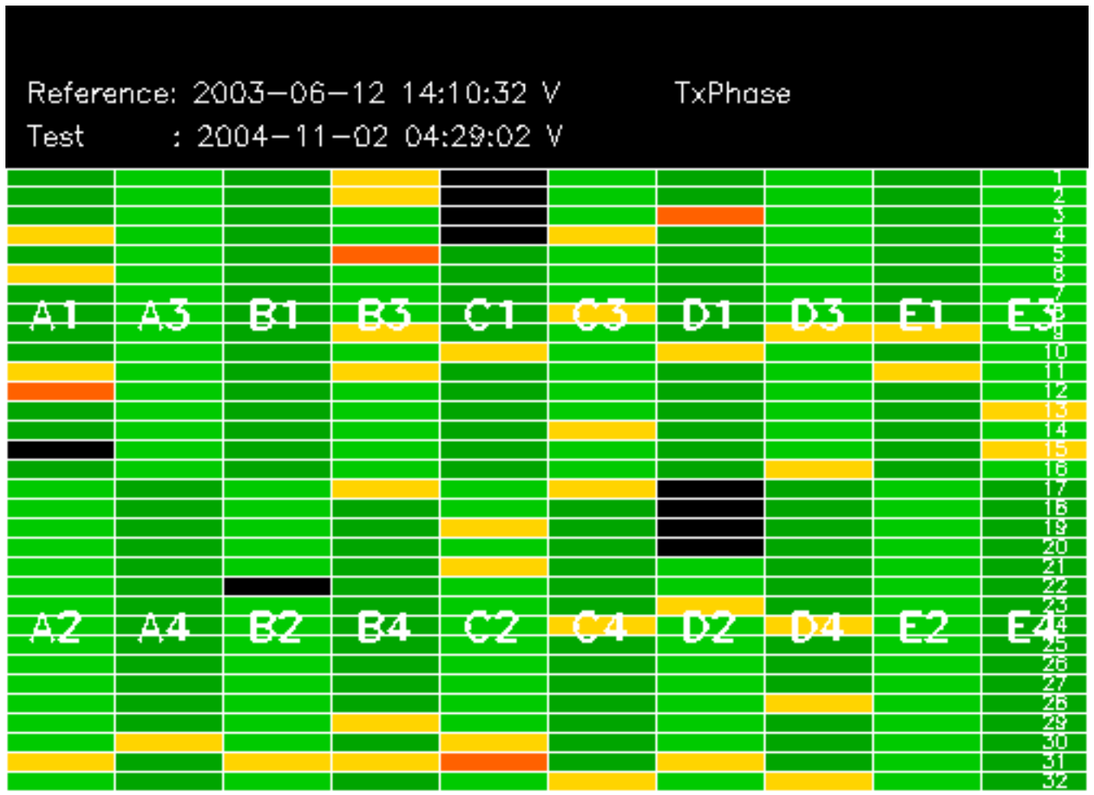

Reference: 2003-06-12 14:08:52 H
Test : 2004-11-03 07:18:37 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-11-02 04:29:02 V
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 : 2004-11-02 04:29:02 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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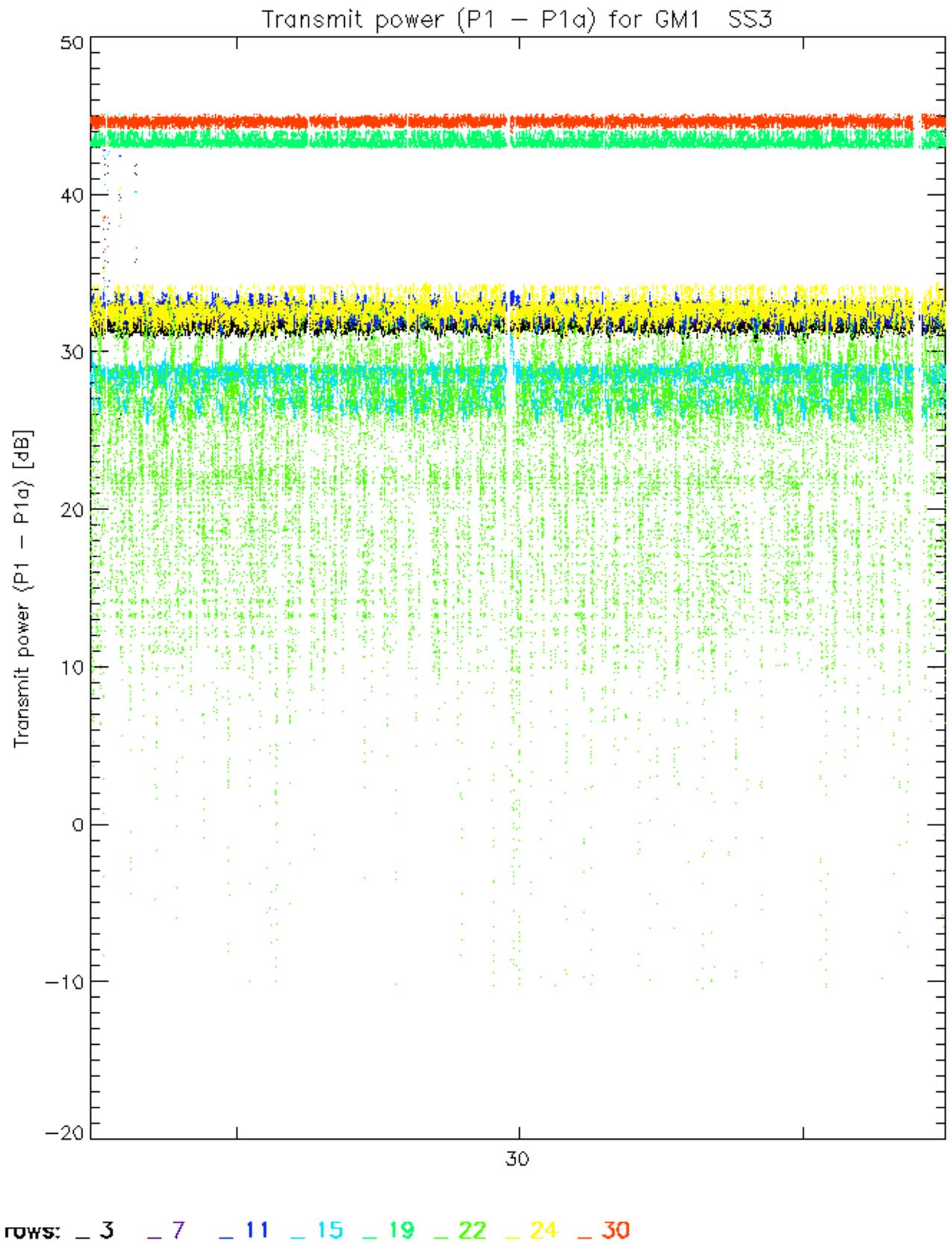
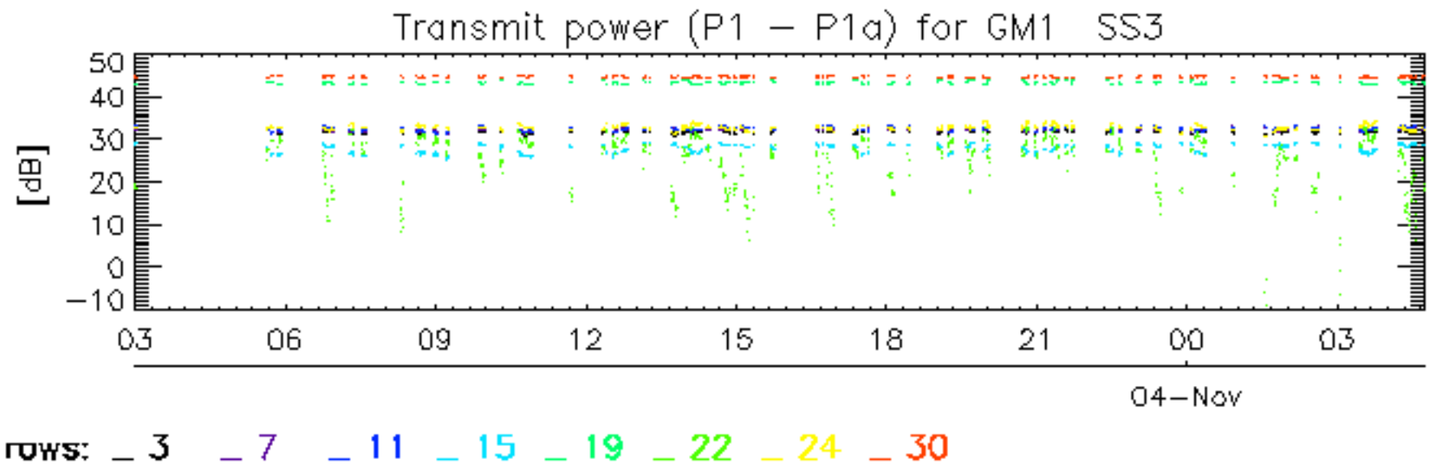
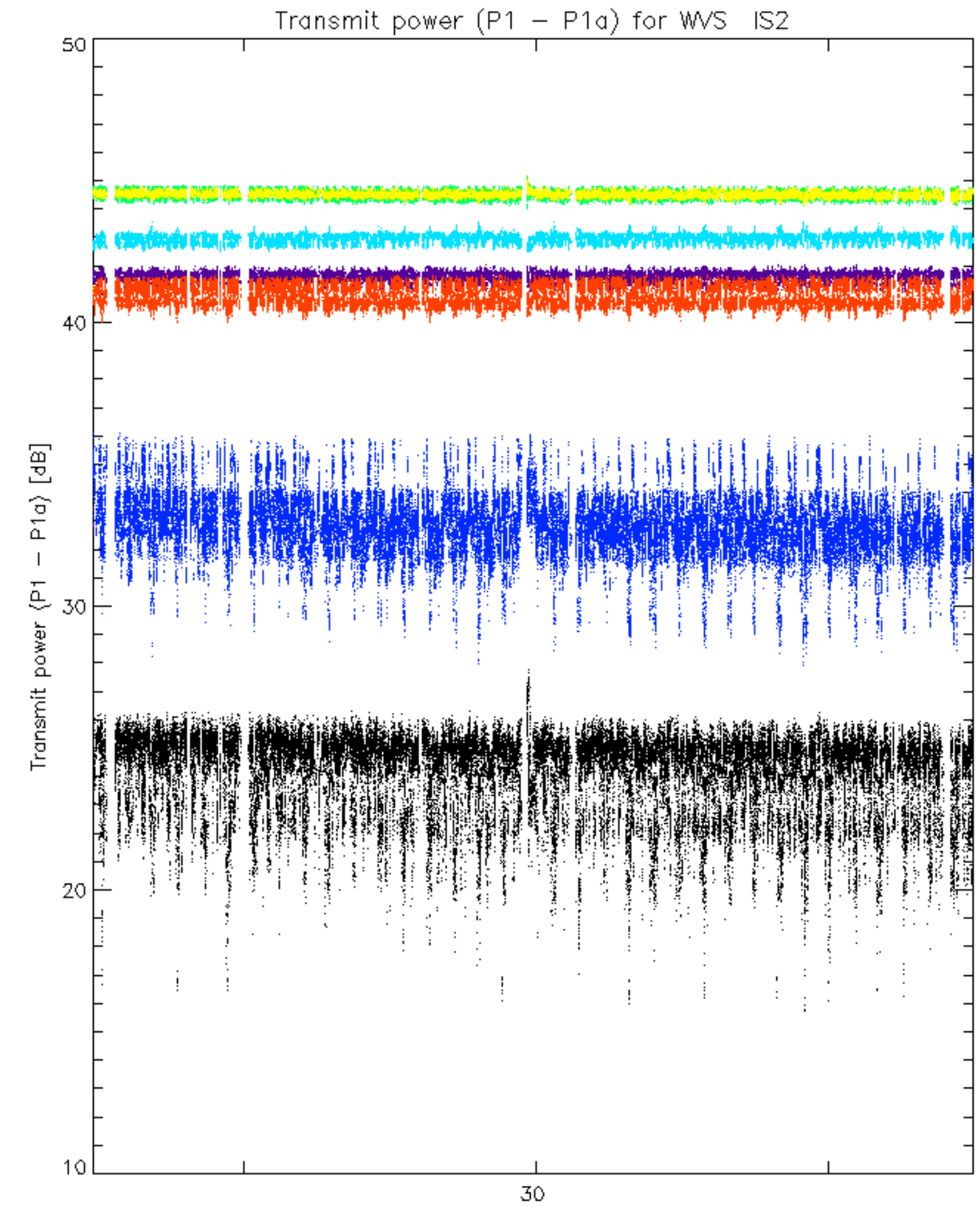
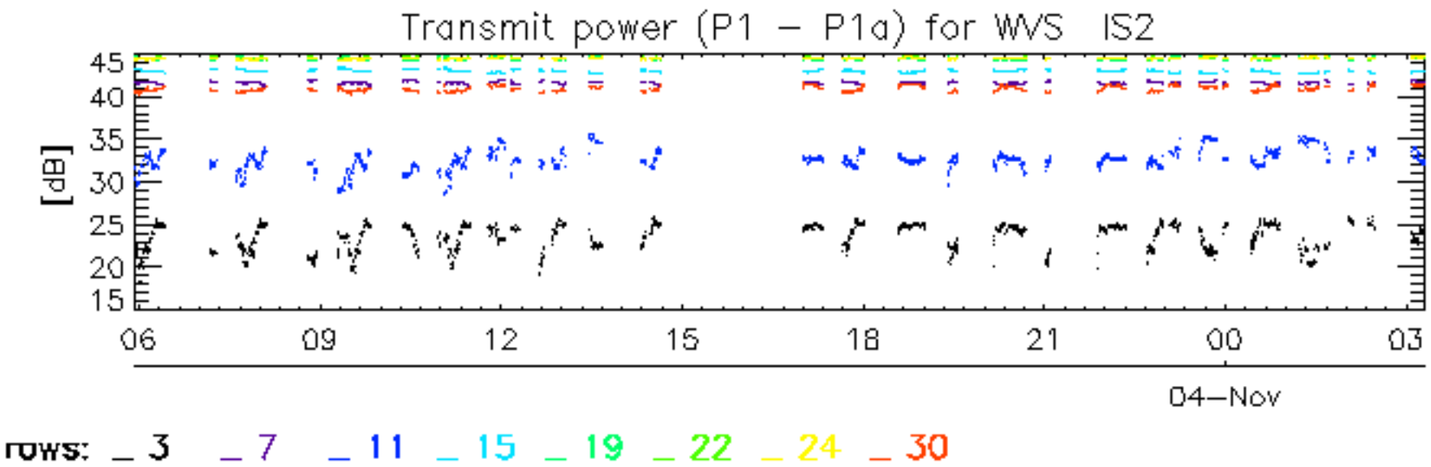

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
30
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
03
06
09
12
15
18
21
00
03
04–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
30
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
45
40
35
30
25
20
15
06
09
12
15
18
21
00
03
04–Nov
rows: 3 7 11 15 19 22 24 30

ASAR unavailable from 03-NOV-2004 09.59.30.000 until 03-NOV-2004 10.04.58.000.
Antenna reset due to tile E2 transmit power drop.