REPORT OF 040706

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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

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	20040705 192416
H	20040704 195553

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.

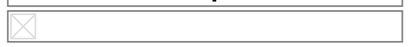
4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

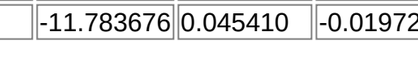
Evolution of cal pulses for GM1



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	-3.496321	0.009753	0.037818
7	P1	-3.329174	0.015124	0.012063
11	P1	-4.546195	0.038003	-0.087208
15	P1	-5.687900	0.058391	-0.076312
19	P1	-3.436308	0.004923	-0.004959
22	P1	-4.558096	0.011385	0.012548
24	P1	-4.919615	0.017609	-0.014423
30	P1	-6.856055	0.023906	-0.053806
3	P1	-16.109835	0.208879	-0.135227
7	P1	-13.990693	0.106447	0.060879
11	P1	-19.907812	0.306769	-0.228561
15	P1	-11.783676	0.045410	-0.019720

19	P1	-13.823264	0.035984	-0.002001
22	P1	-16.490412	0.418676	0.329727
24	P1	-14.662405	0.302594	0.199323
30	P1	-17.690006	0.383024	-0.024530

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.401291	0.083094	0.079857
7	P2	-22.824722	0.127562	0.124070
11	P2	-15.585972	0.143116	0.141380
15	P2	-7.175271	0.098401	0.108301
19	P2	-9.567101	0.158447	0.070717
22	P2	-17.517424	0.108062	0.154900
24	P2	-20.840076	0.088490	0.115682
30	P2	-19.419222	0.079531	0.058523

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.143334	0.001934	0.003021
7	P3	-8.143343	0.001935	0.003060
11	P3	-8.143344	0.001935	0.003061
15	P3	-8.143345	0.001934	0.003041
19	P3	-8.143334	0.001934	0.003015
22	P3	-8.143332	0.001934	0.002990
24	P3	-8.143333	0.001935	0.002977
30	P3	-8.143401	0.001940	0.002281

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	-3.131397	0.132771	0.067166
7	P1	-2.817729	0.070880	-0.064931
11	P1	-3.806493	0.022663	-0.063312
15	P1	-4.258879	1.001663	0.005656
19	P1	-3.359376	0.049242	-0.008252
22	P1	-5.726670	0.042974	-0.037750
24	P1	-4.049568	0.078817	0.002629
30	P1	-6.106988	0.065785	-0.043460
3	P1	-11.010220	0.401189	0.096551
7	P1	-9.776655	0.241717	-0.099605
11	P1	-11.784914	0.167865	-0.072912
15	P1	-11.855956	0.268654	-0.072129
19	P1	-14.997042	0.817217	-0.005671
22	P1	-21.457602	8.592410	0.209121
24	P1	-17.377150	0.297702	0.017016
30	P1	-21.681564	4.282614	0.158822

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.143751	0.043327	0.100193
7	P2	-22.919531	0.029365	0.082735
11	P2	-10.989501	0.223729	0.176700
15	P2	-4.985757	0.044149	0.079640
19	P2	-6.924739	0.042577	0.037957
22	P2	-7.646851	0.027180	0.149807
24	P2	-11.050650	0.073354	0.116427
30	P2	-22.361395	0.088192	0.142079

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.983343	0.003346	0.002217
7	P3	-7.983311	0.003336	0.002237
11	P3	-7.983239	0.003343	0.002266
15	P3	-7.983276	0.003351	0.002512

19	P3	-7.983263	0.003349	0.002553
22	P3	-7.983372	0.003338	0.002482
24	P3	-7.983271	0.003373	0.002219
30	P3	-7.983303	0.003345	0.002338

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	0.000499178
	stdev	2.08227e-07
MEAN Q	mean	0.000549466
	stdev	2.36868e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.130095
	stdev	0.00101877
STDEV Q	mean	0.130345
	stdev	0.00103085

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

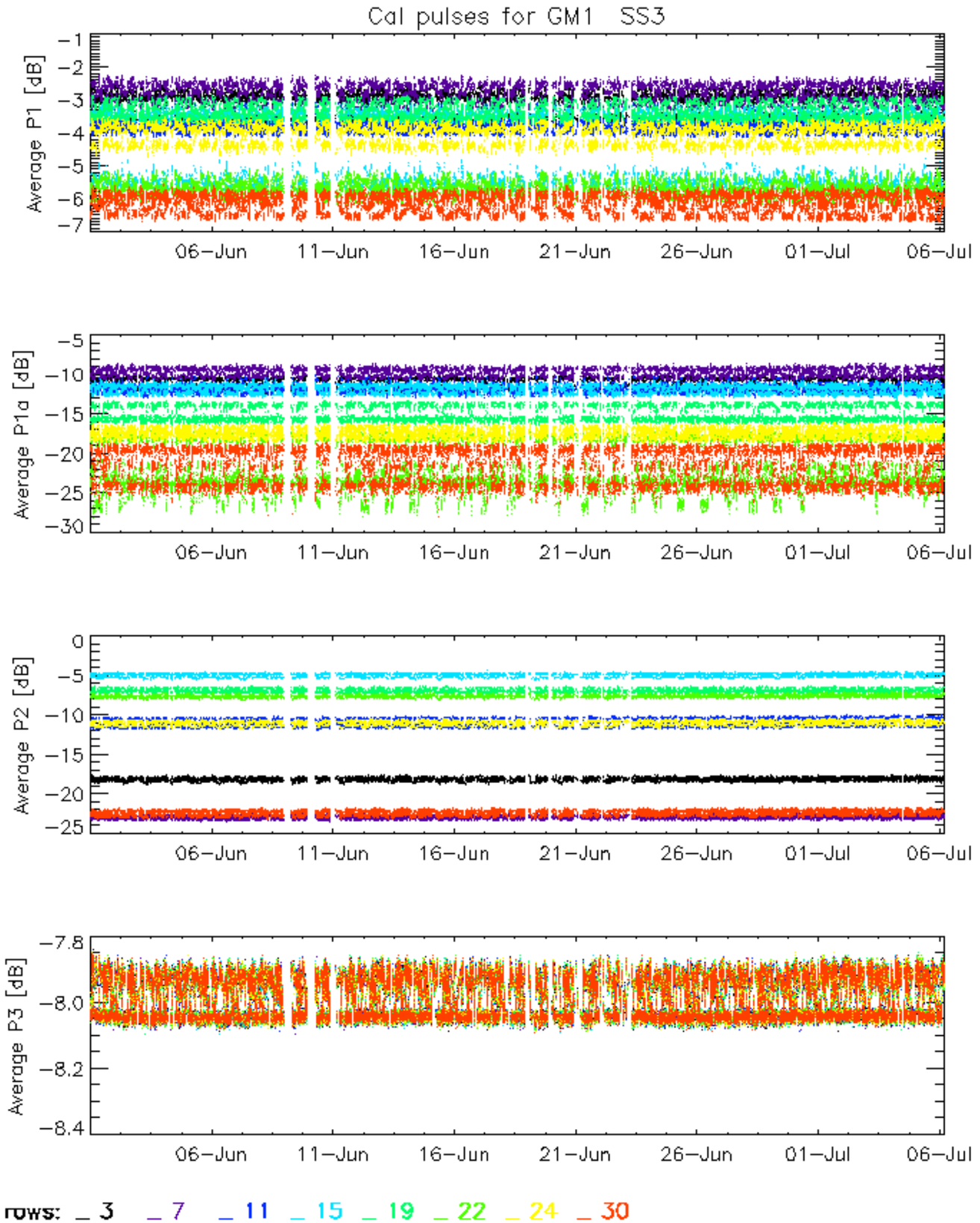
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

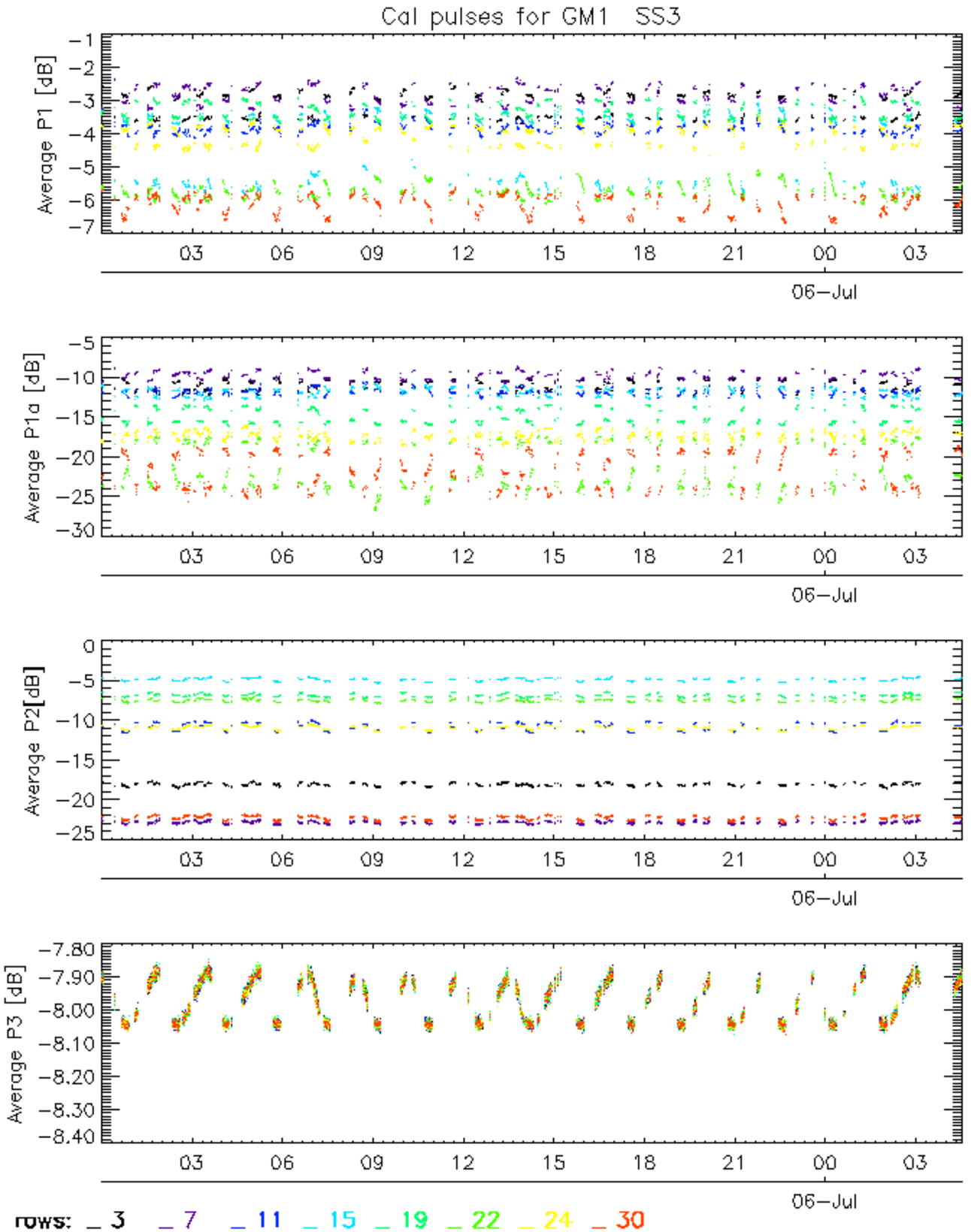
6.5 - Absolute Doppler for GM1

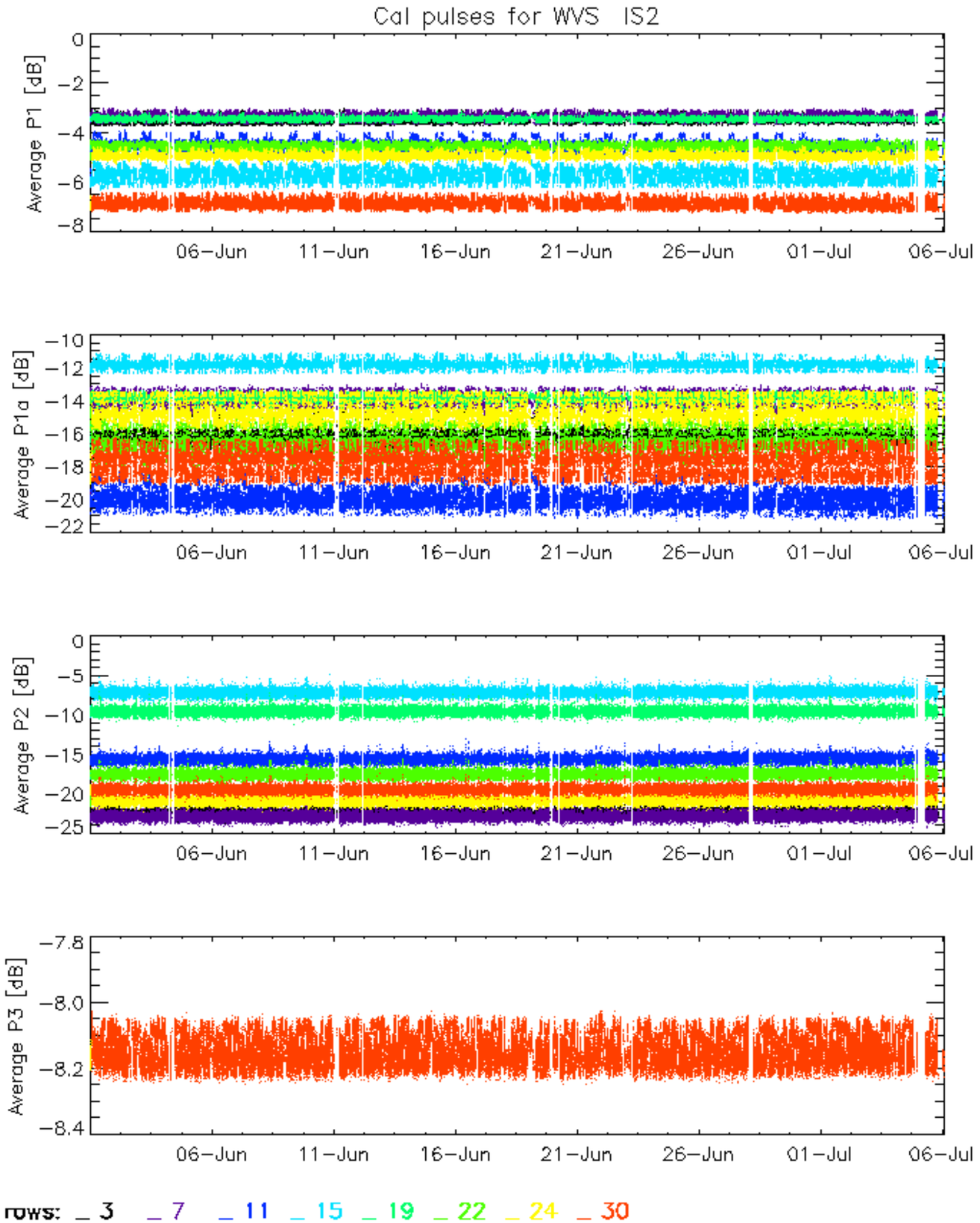
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

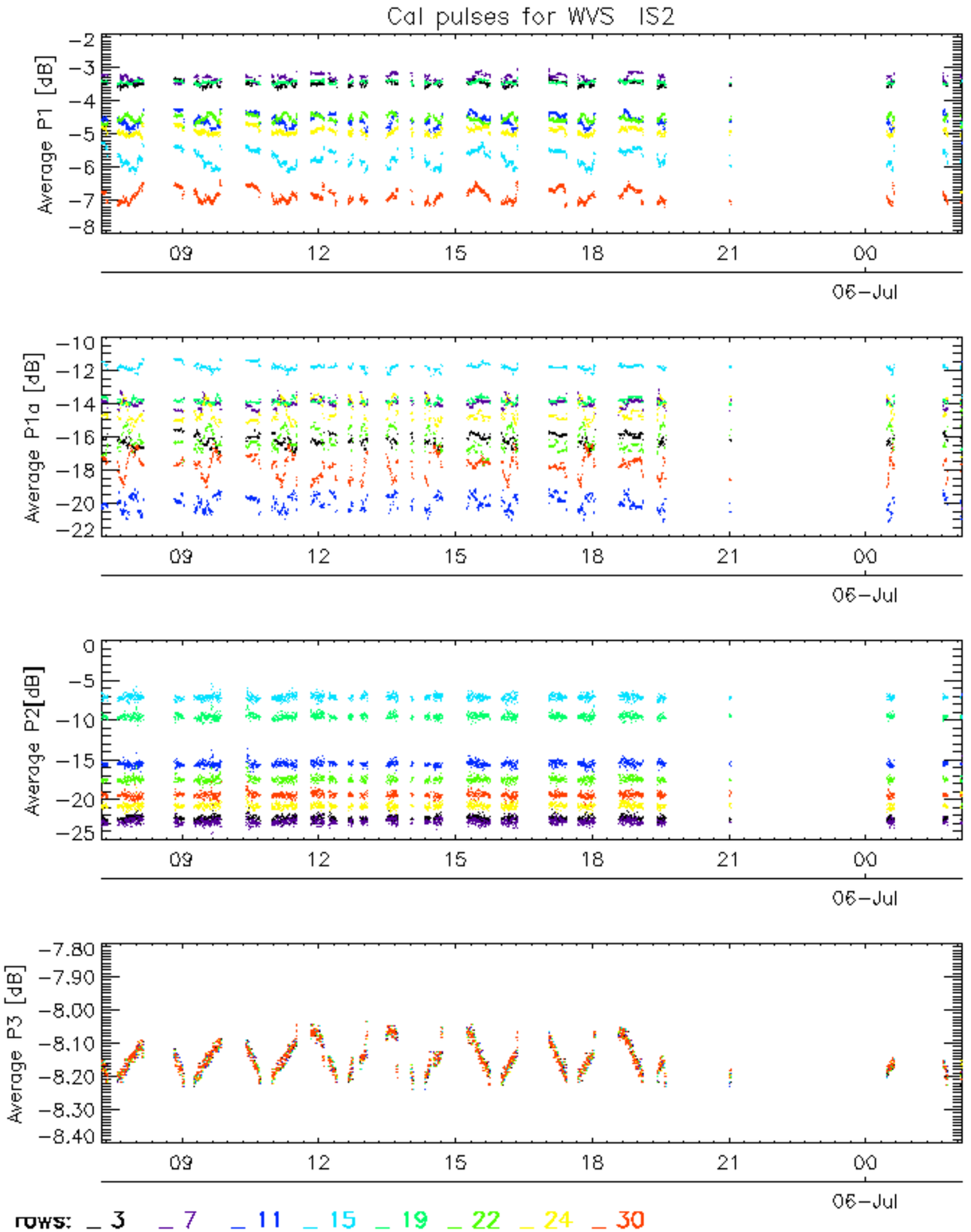
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒

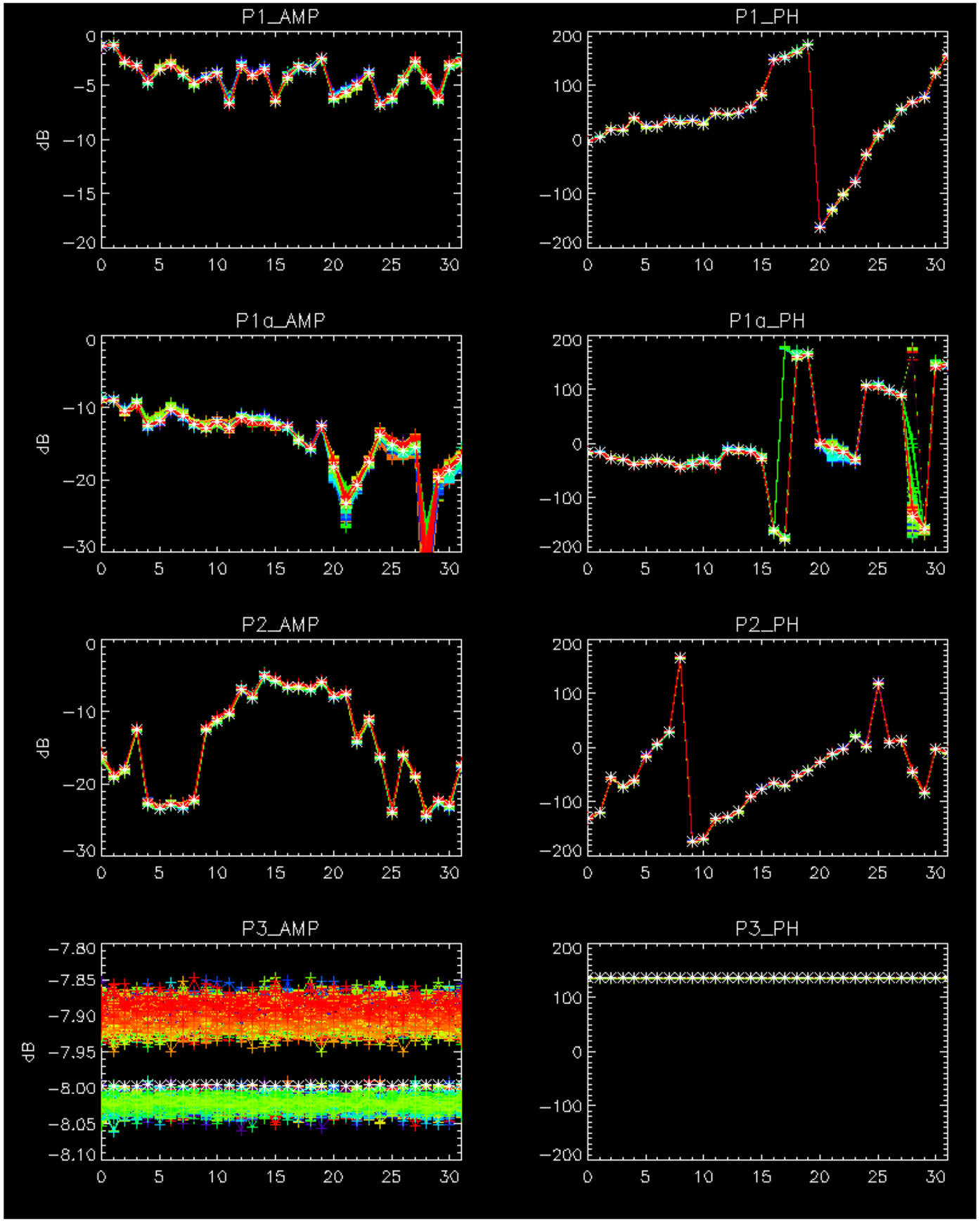

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

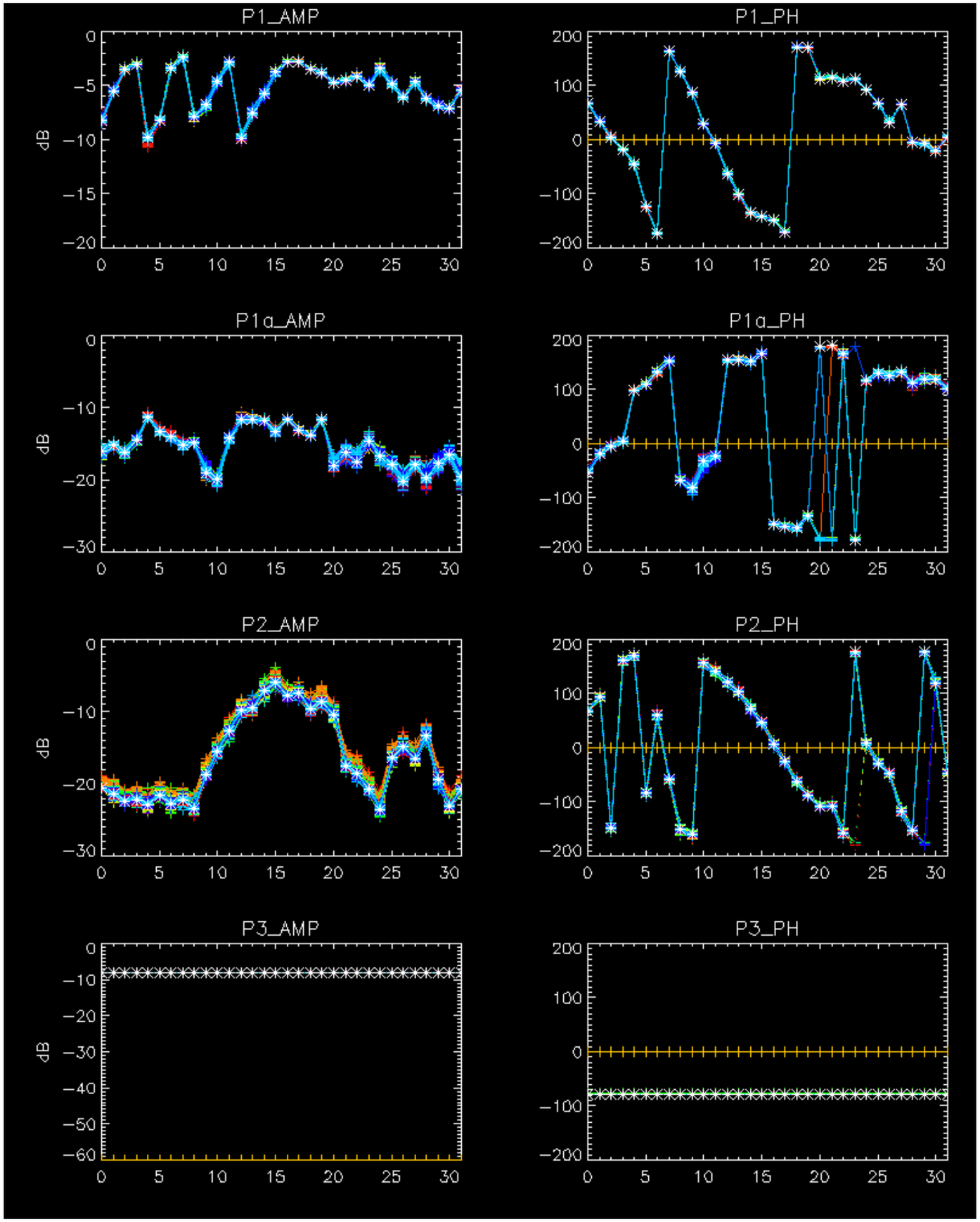

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
06−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
06−Jul
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
06−Jul
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
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
09
12
15
18
21
00
06−Jul
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
09
12
15
18
21
00
06−Jul
Average P2[dB]
0
−5
−10
−15
−20
−25
09
12
15
18
21
00
06−Jul
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
09
12
15
18
21
00
06−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

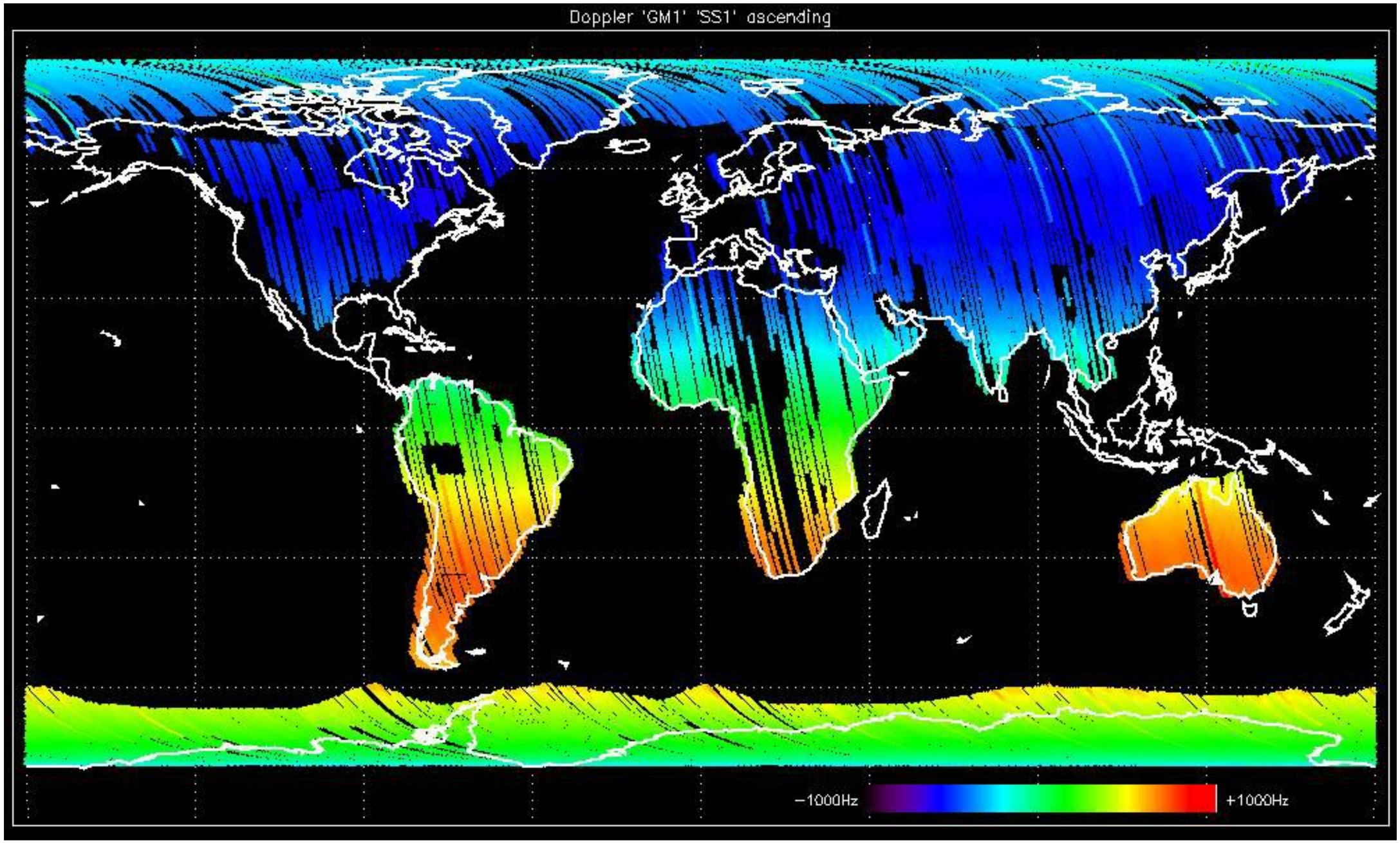
No anomalies observed.

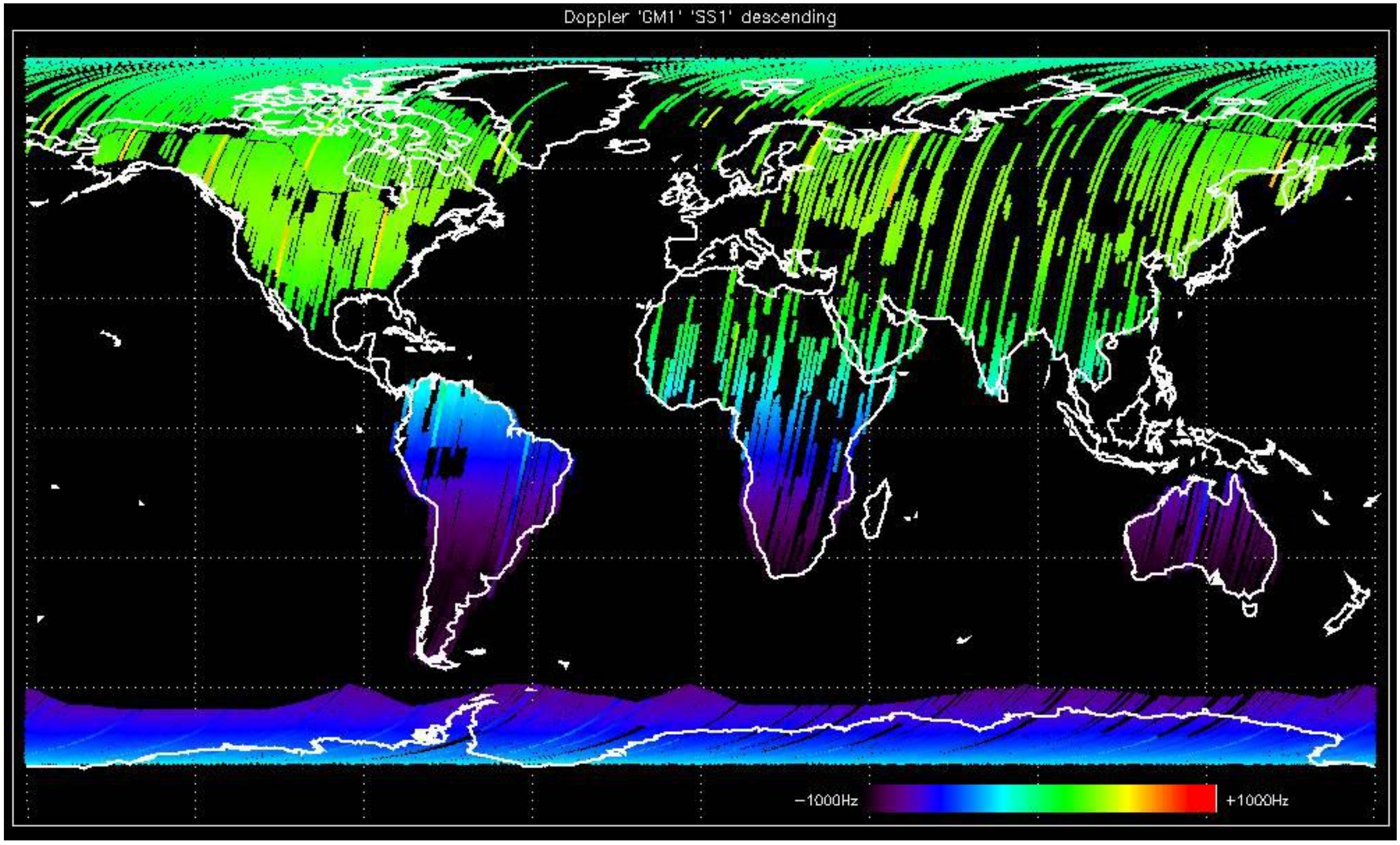

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.80
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

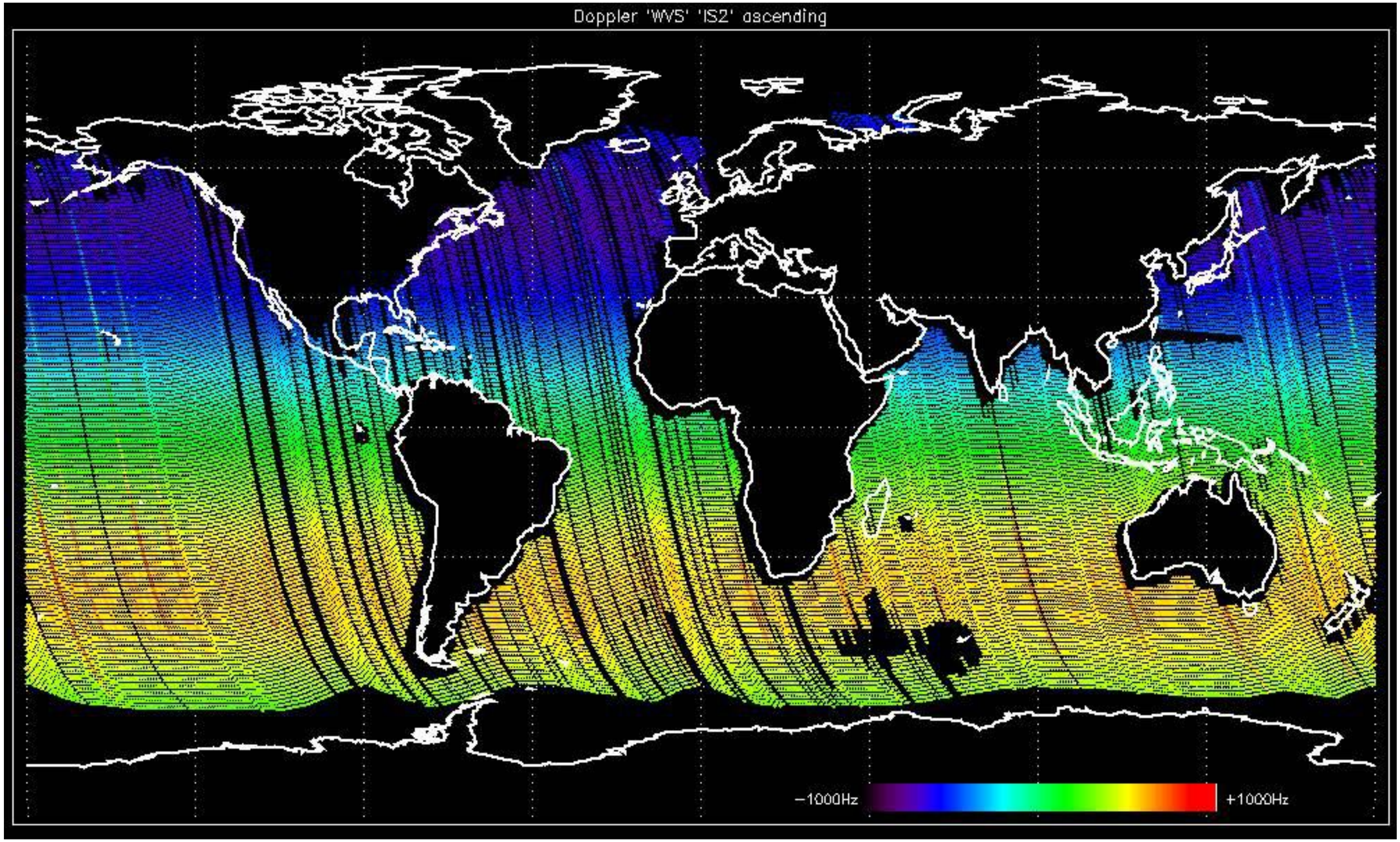

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
0
−10
−20
−30
−40
−50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

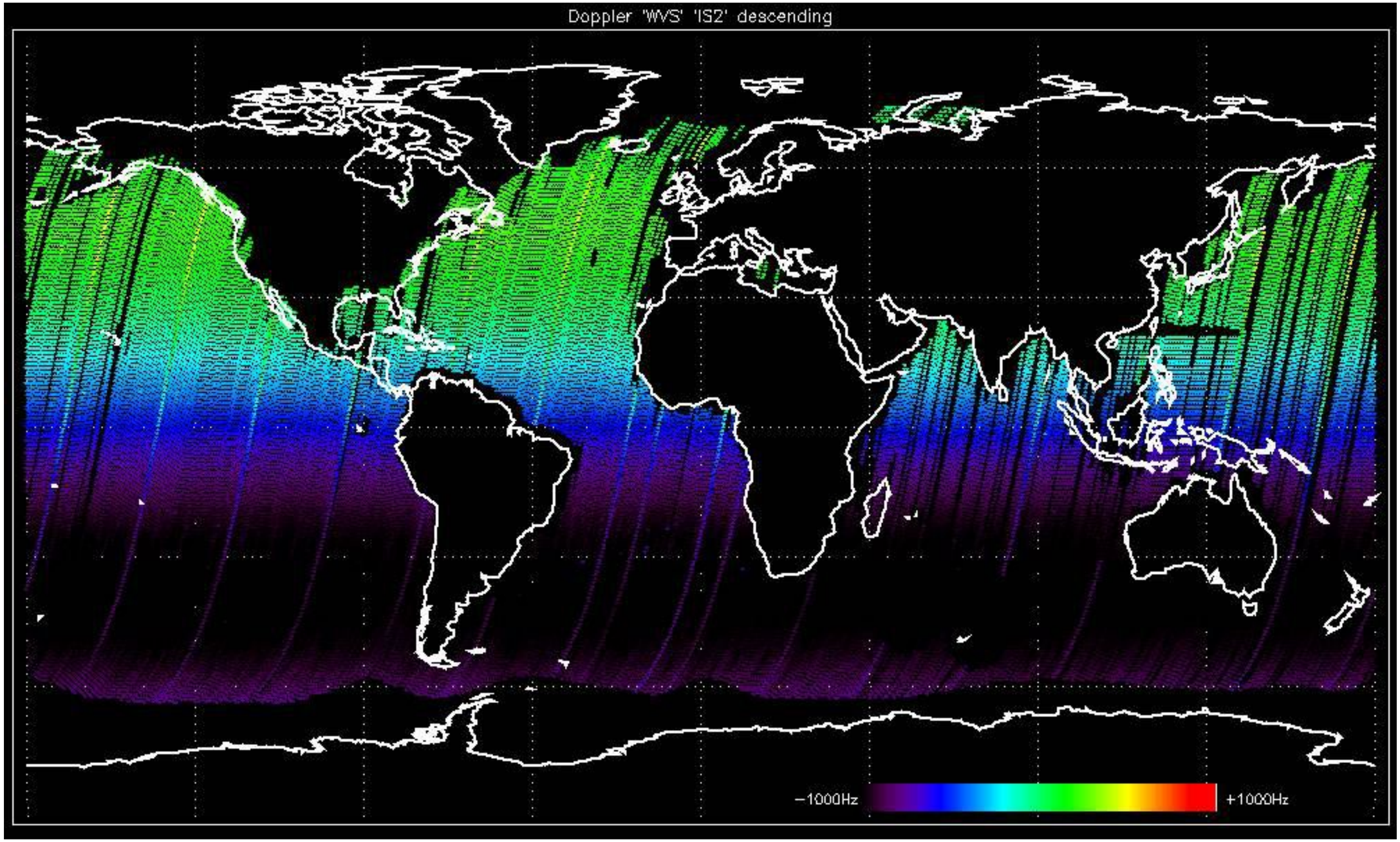
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

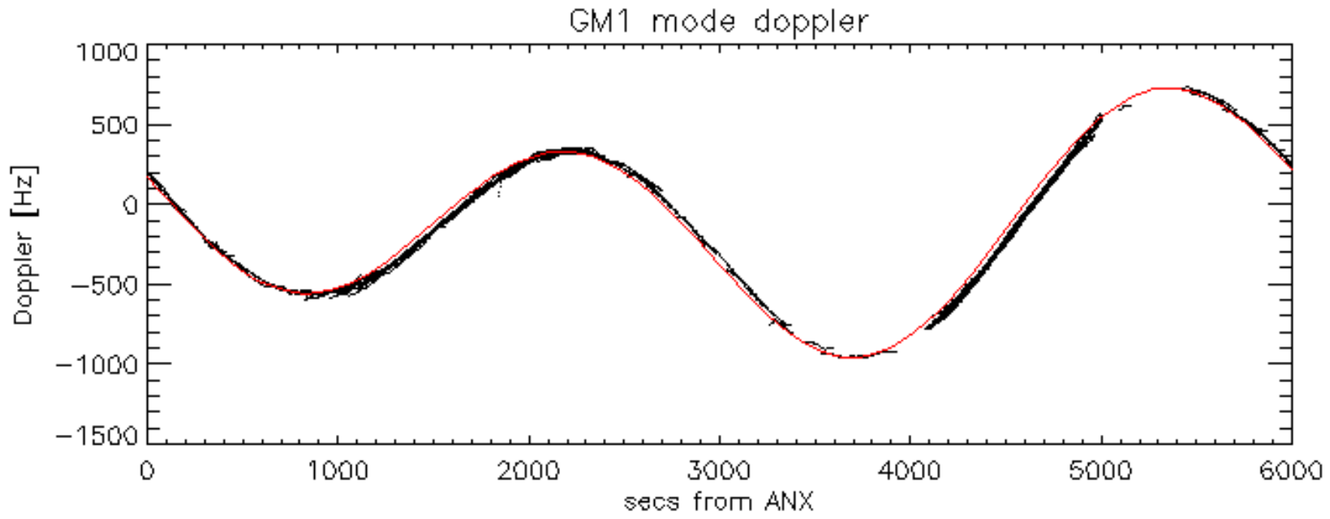
Preliminary report.The data is not yet controled

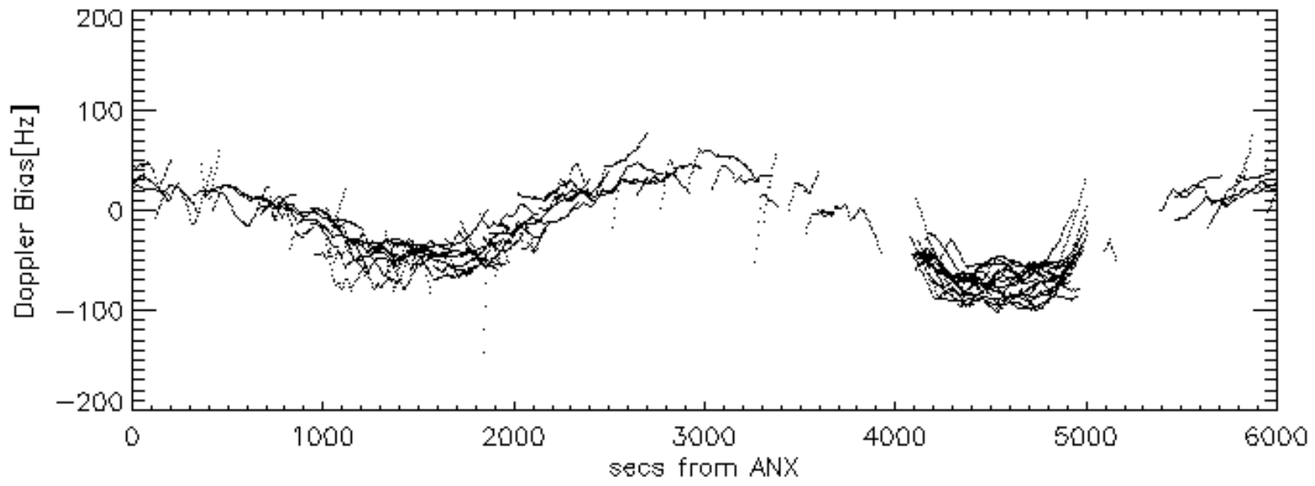

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

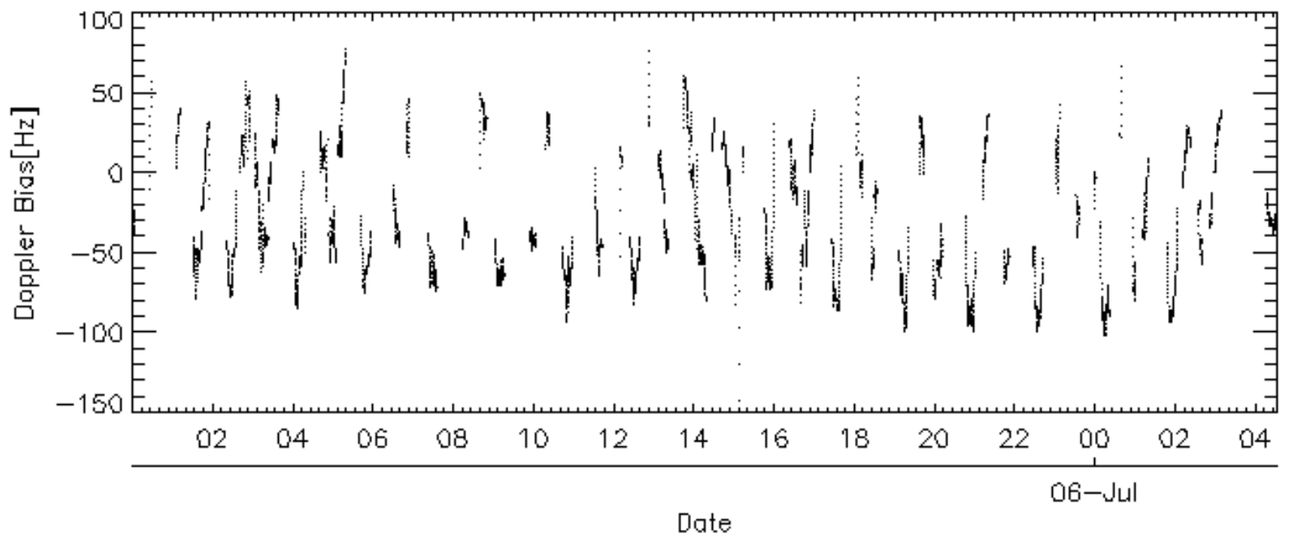

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

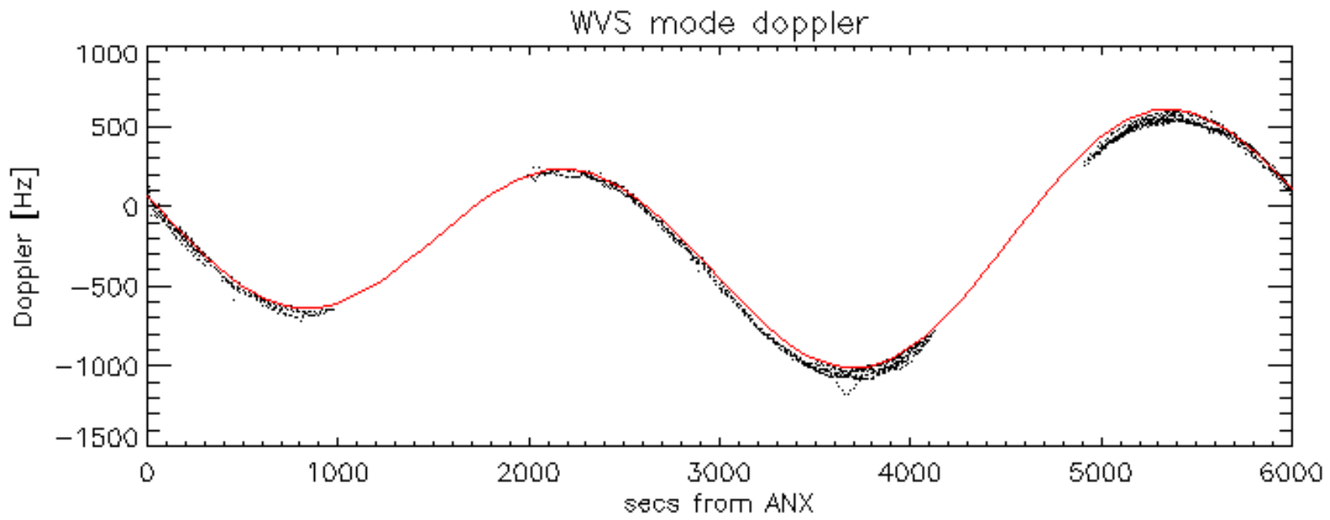

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

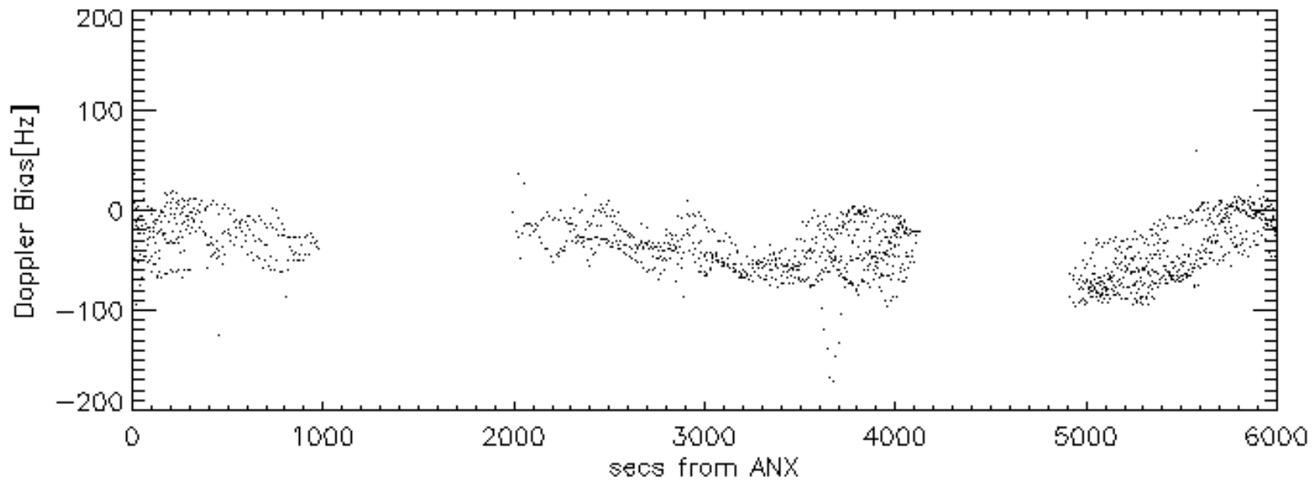

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

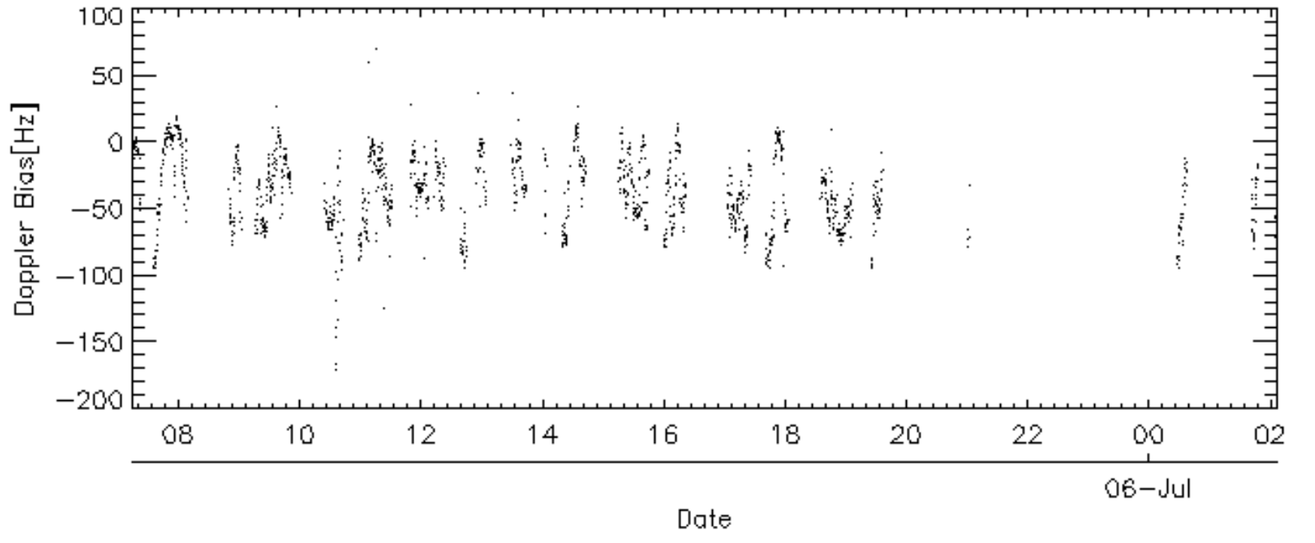

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

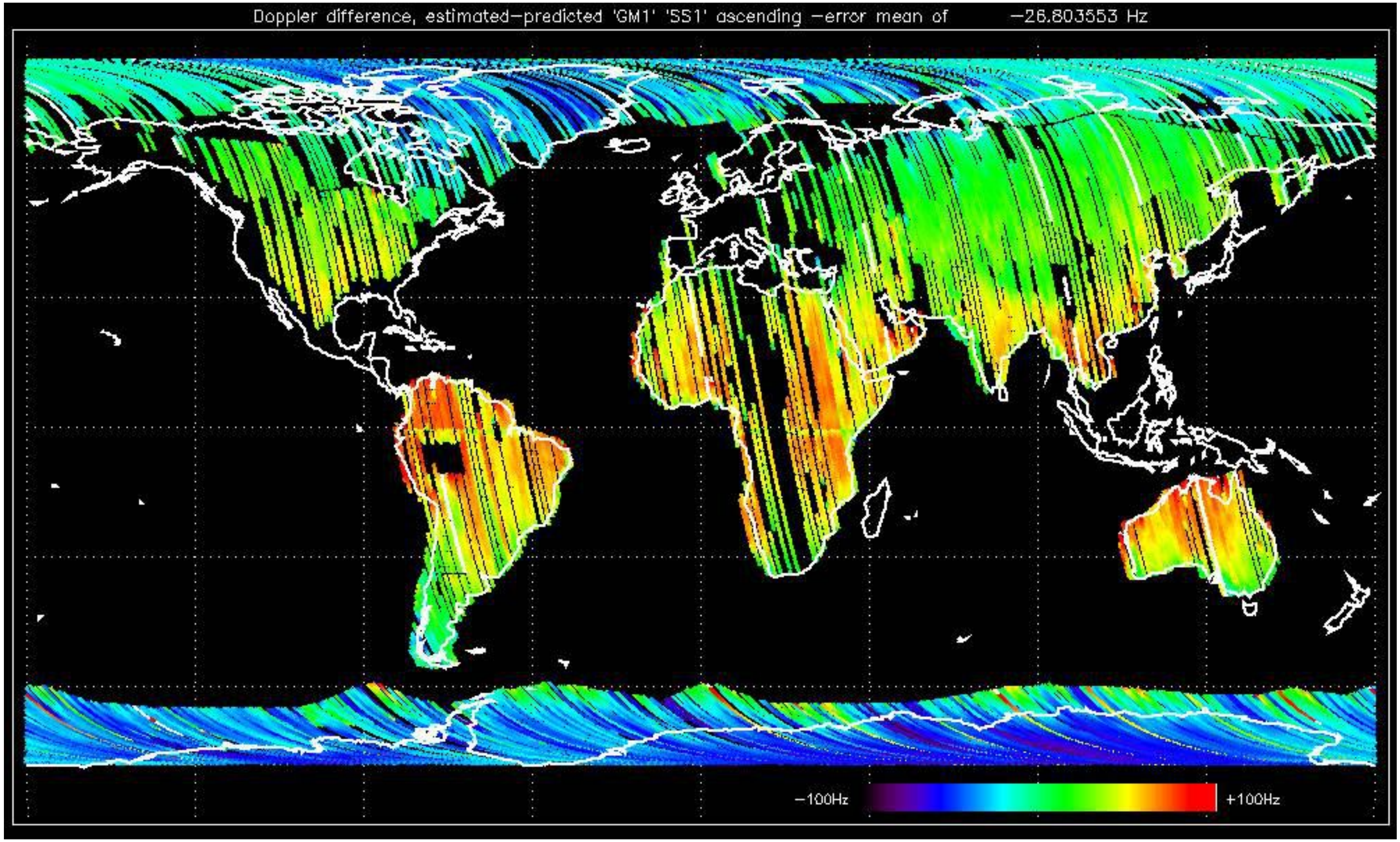

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

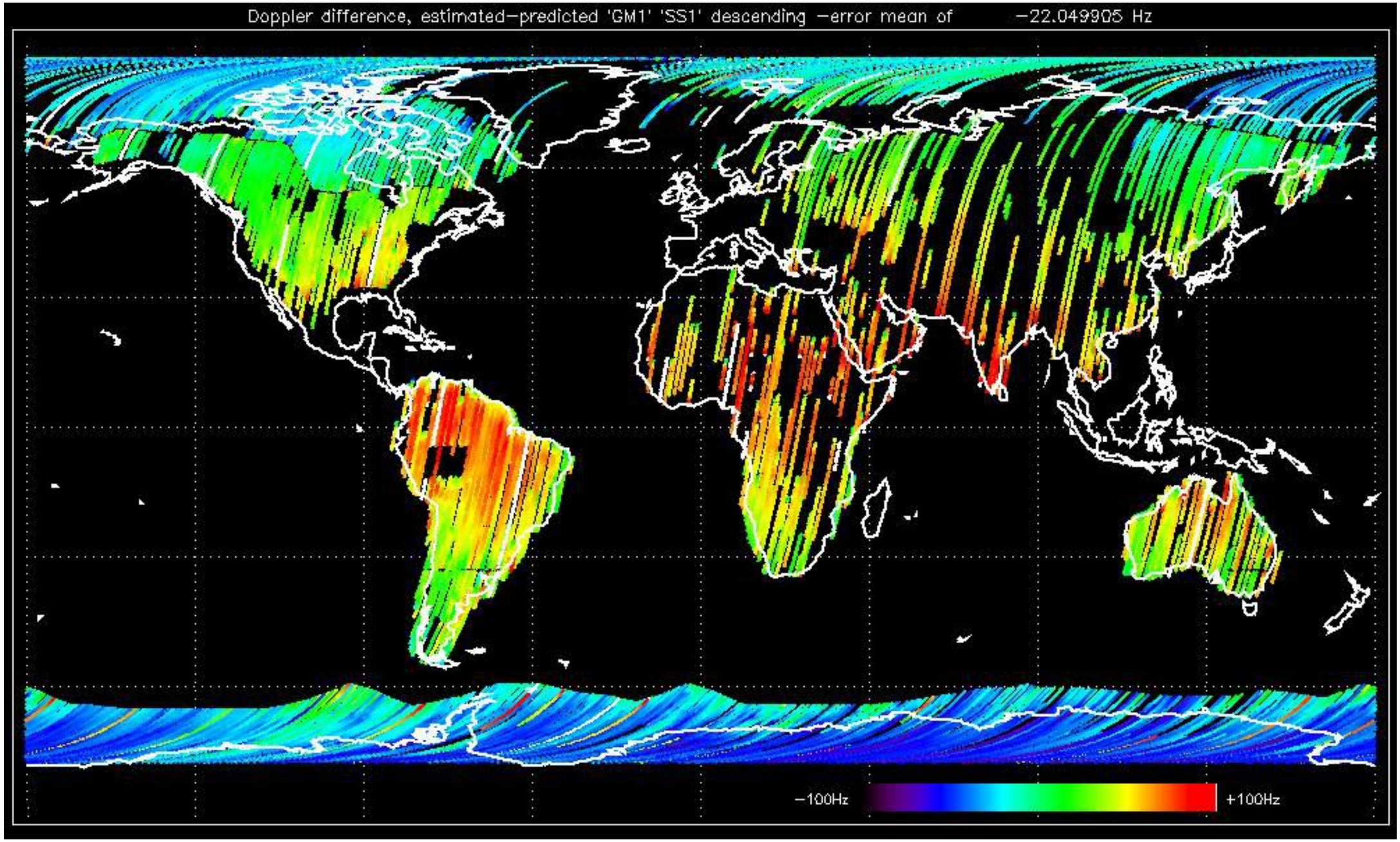

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06−Jul
Date

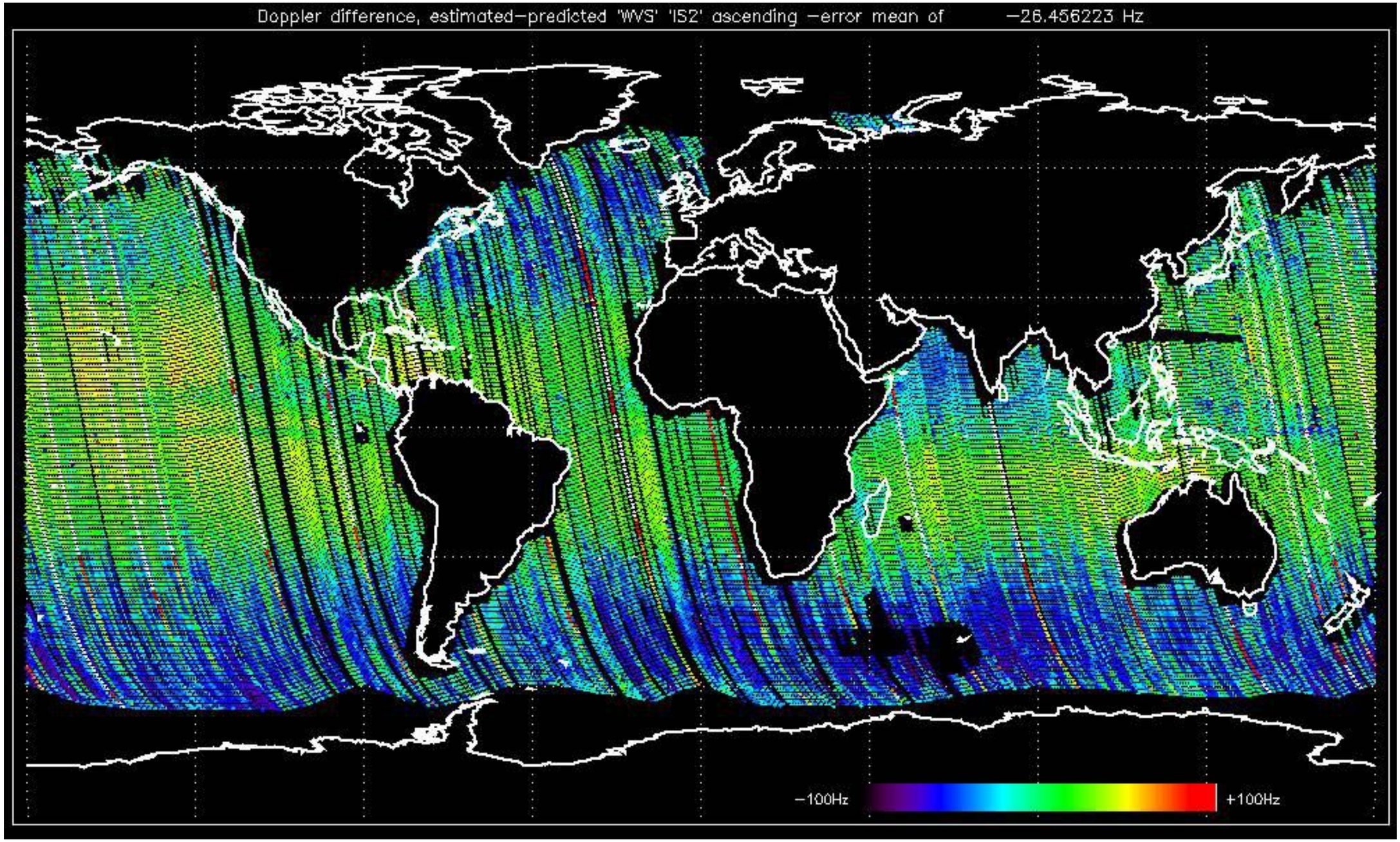

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

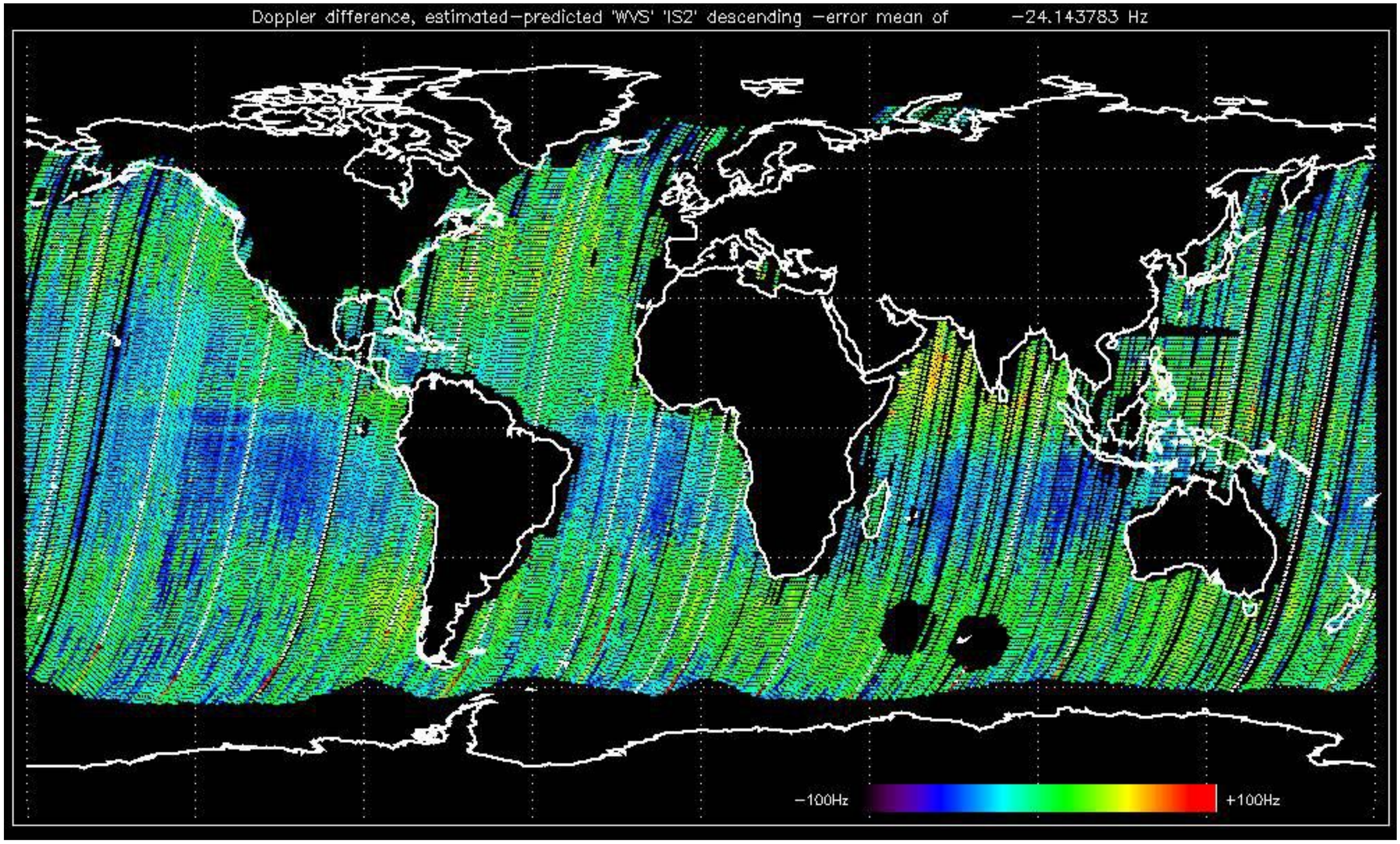

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −26.803553 Hz
−100Hz
+100Hz

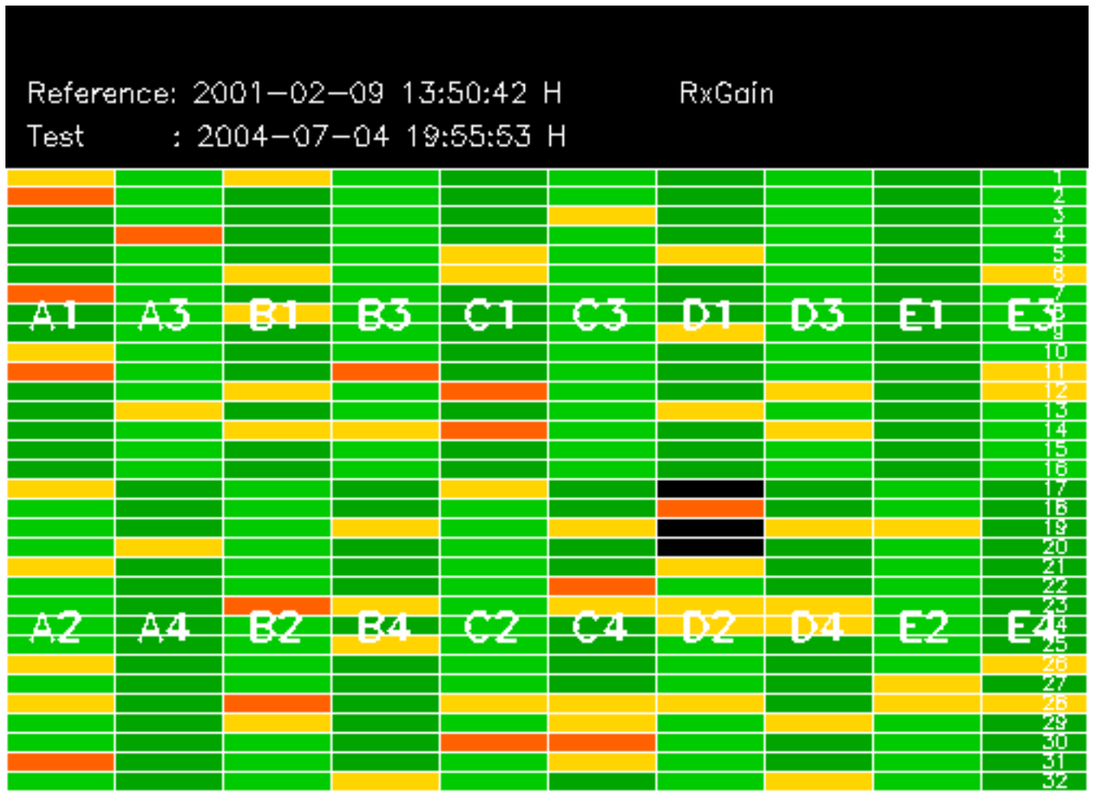

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −22.049905 Hz
−100Hz
+100Hz

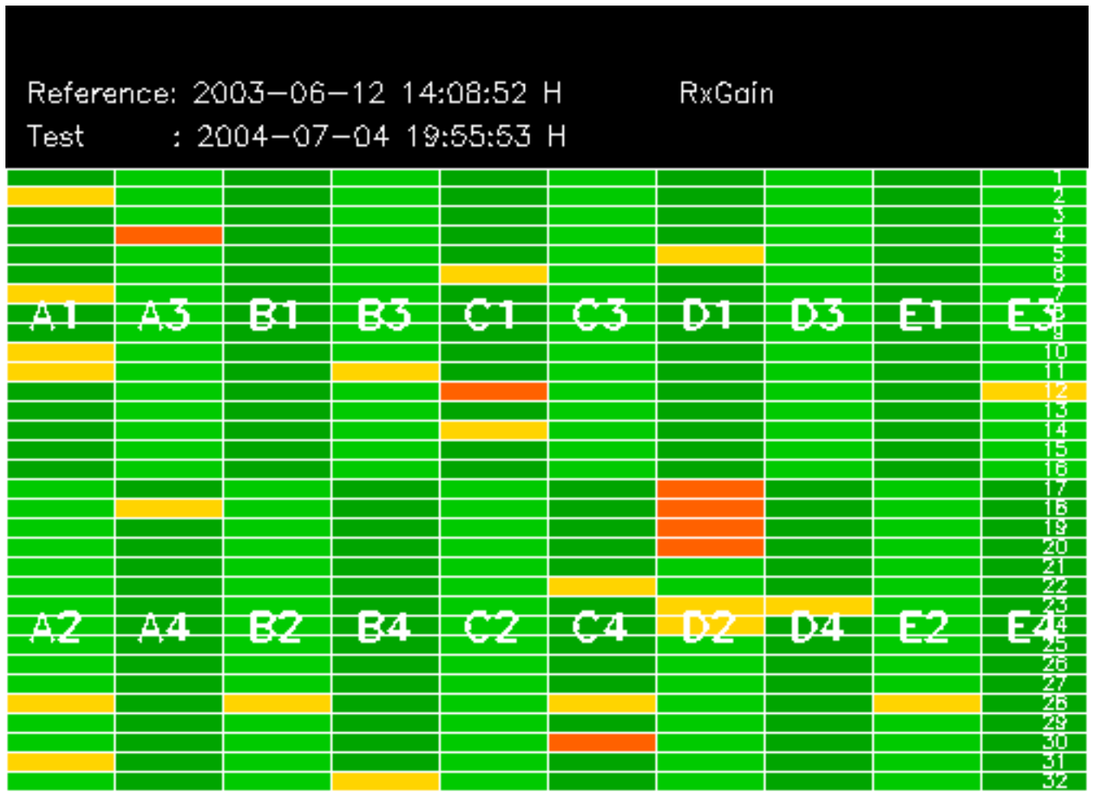

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −26.456223 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −24.143783 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 : 2004-07-04 19:55:53 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-07-04 19:55:53 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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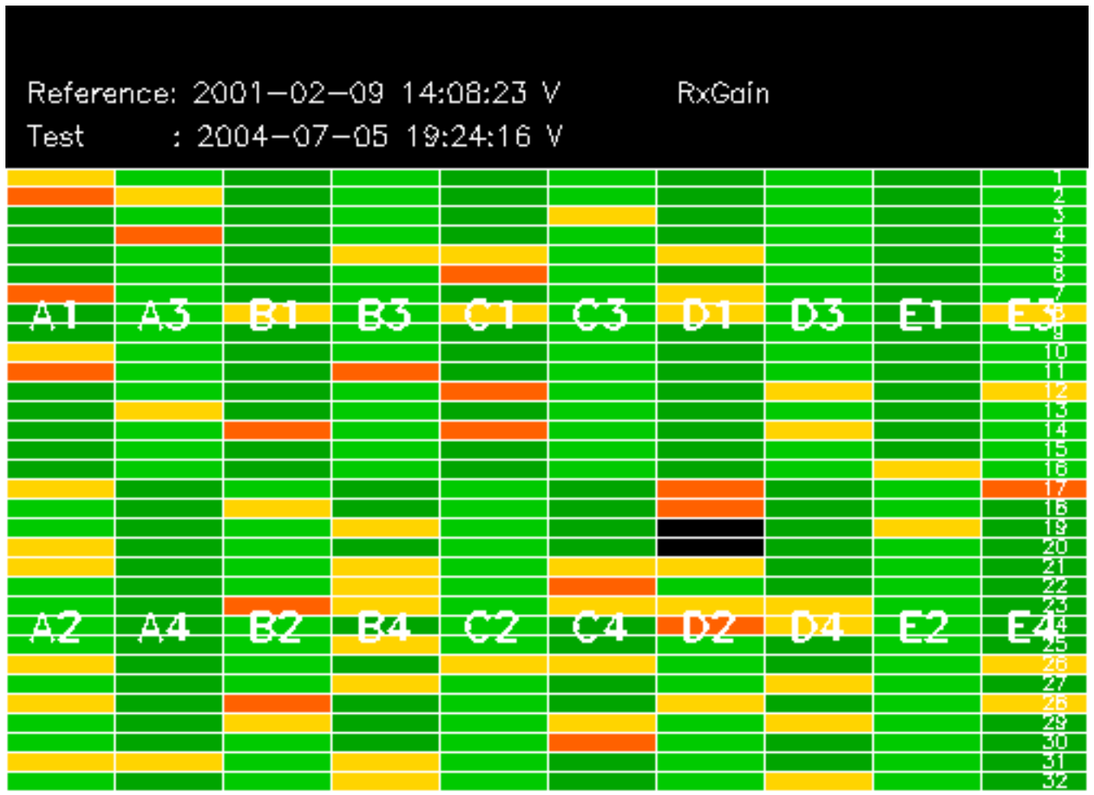
Reference: 2001-02-09 14:08:23 V
Test : 2004-07-05 19:24:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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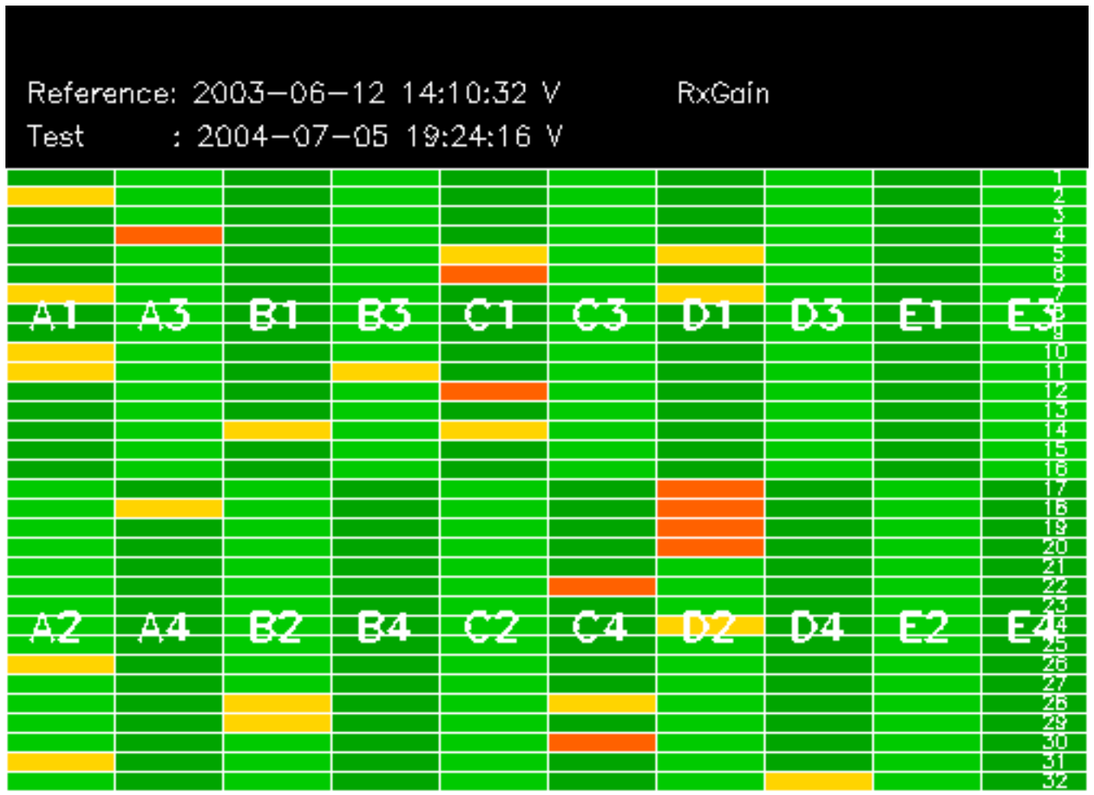
Reference: 2003-06-12 14:10:32 V
Test : 2004-07-05 19:24:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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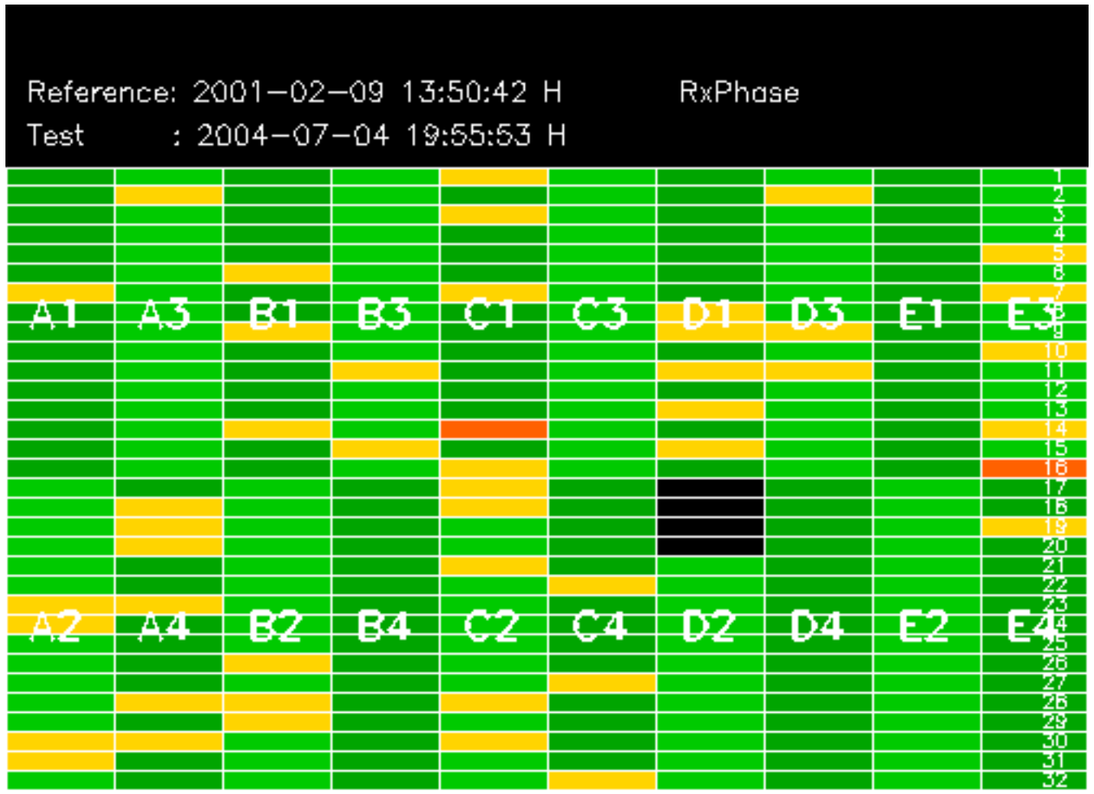
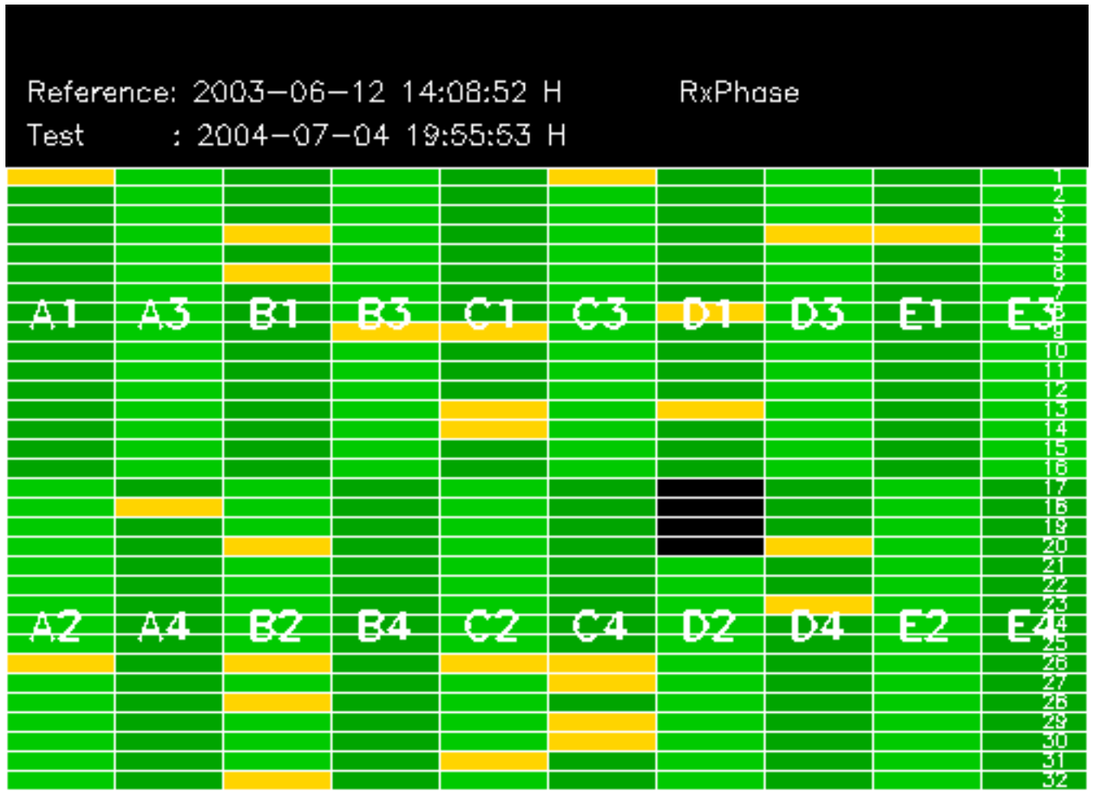

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-07-04 19:55:53 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-07-04 19:55:53 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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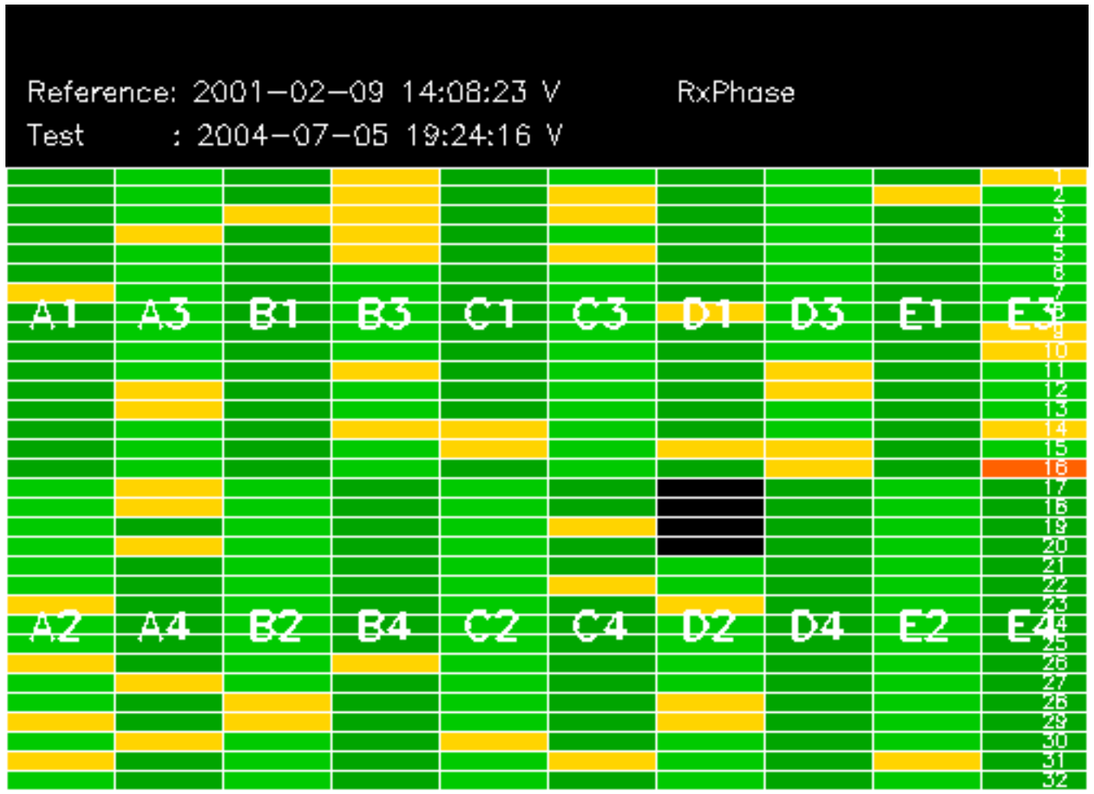
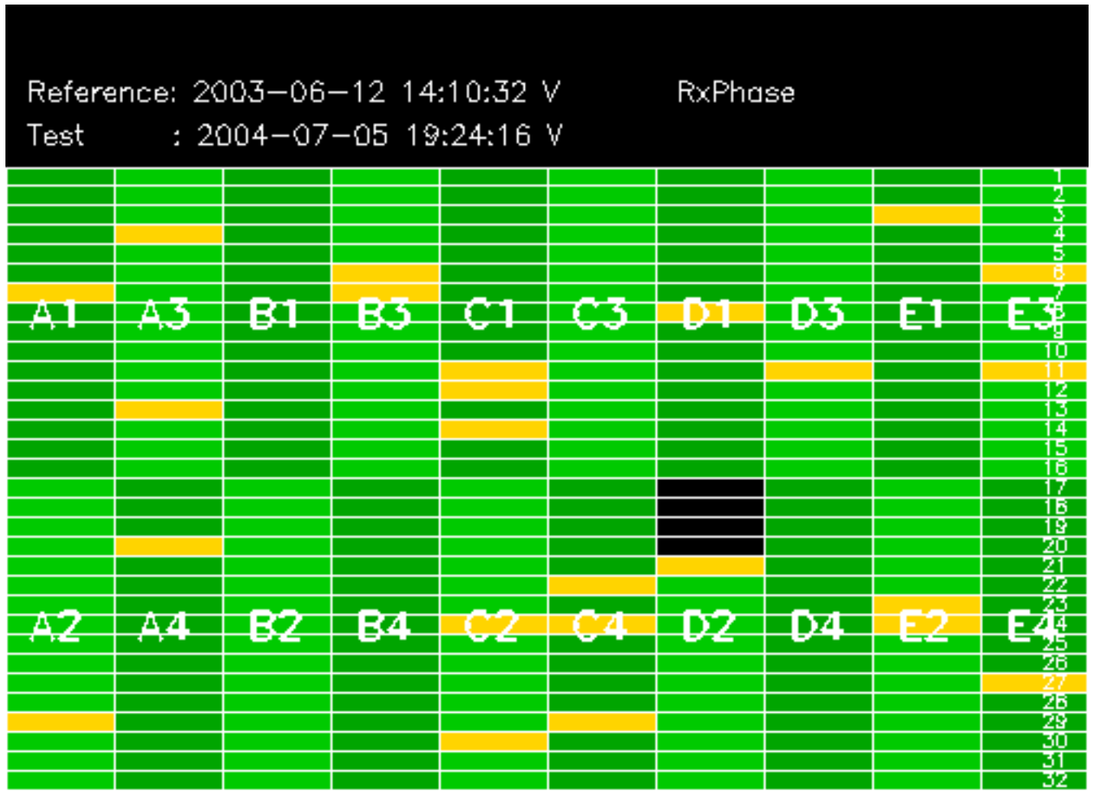
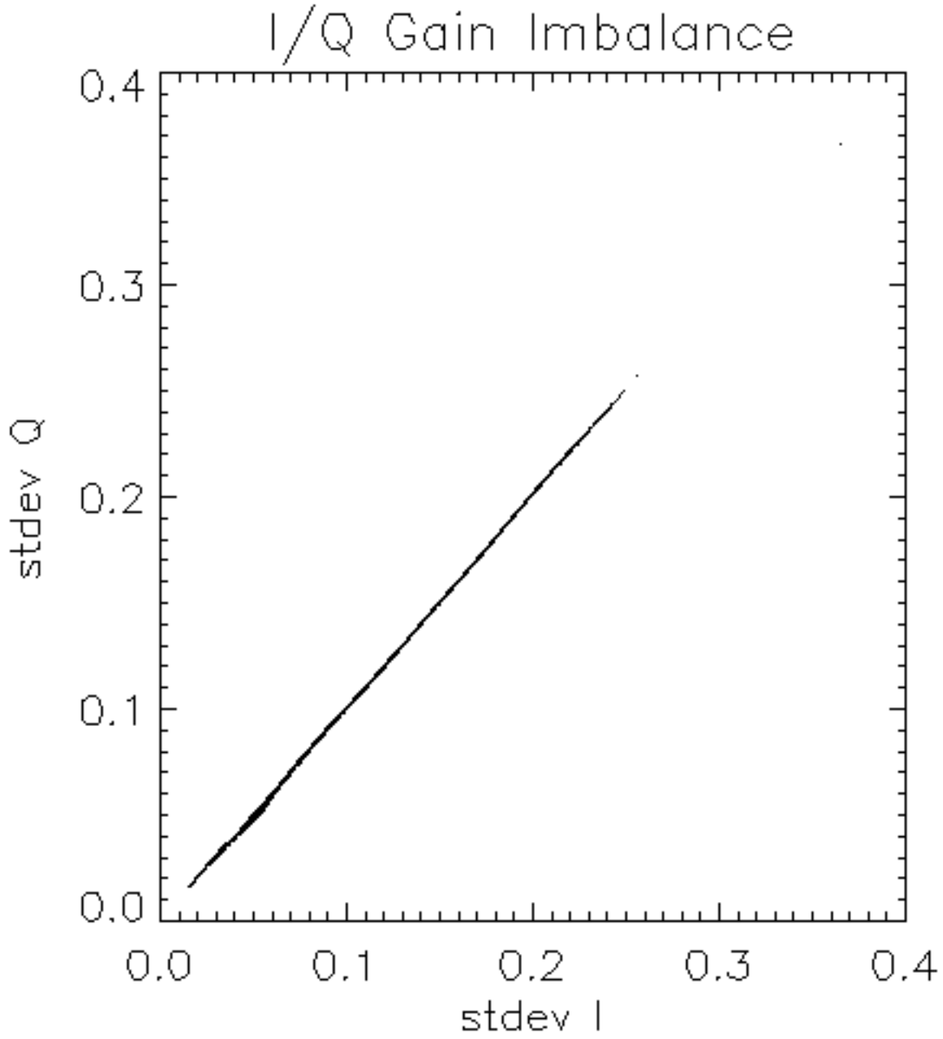
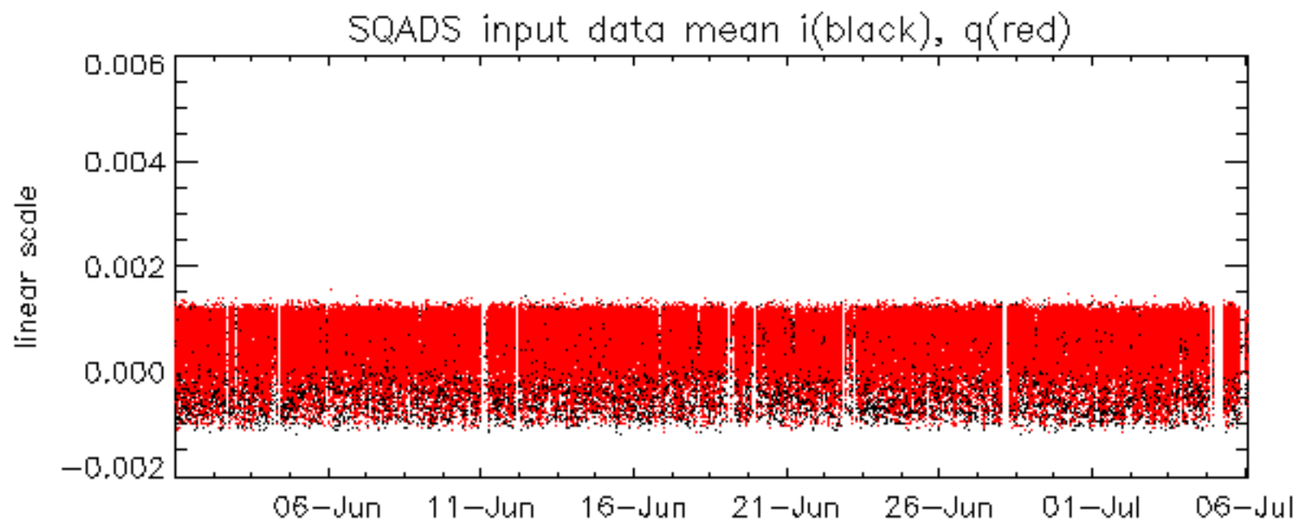
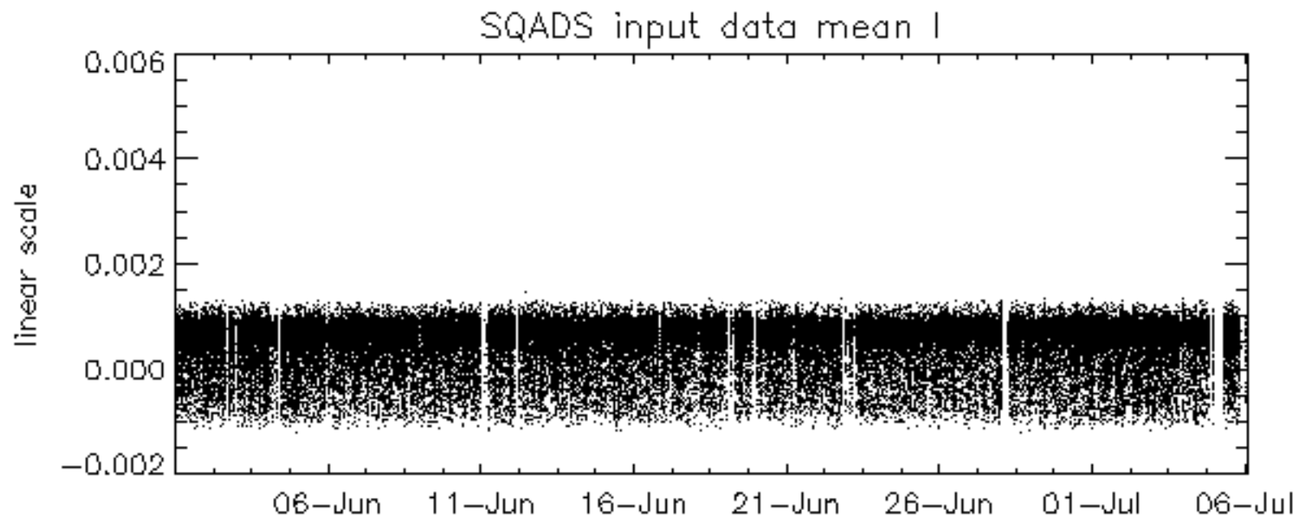
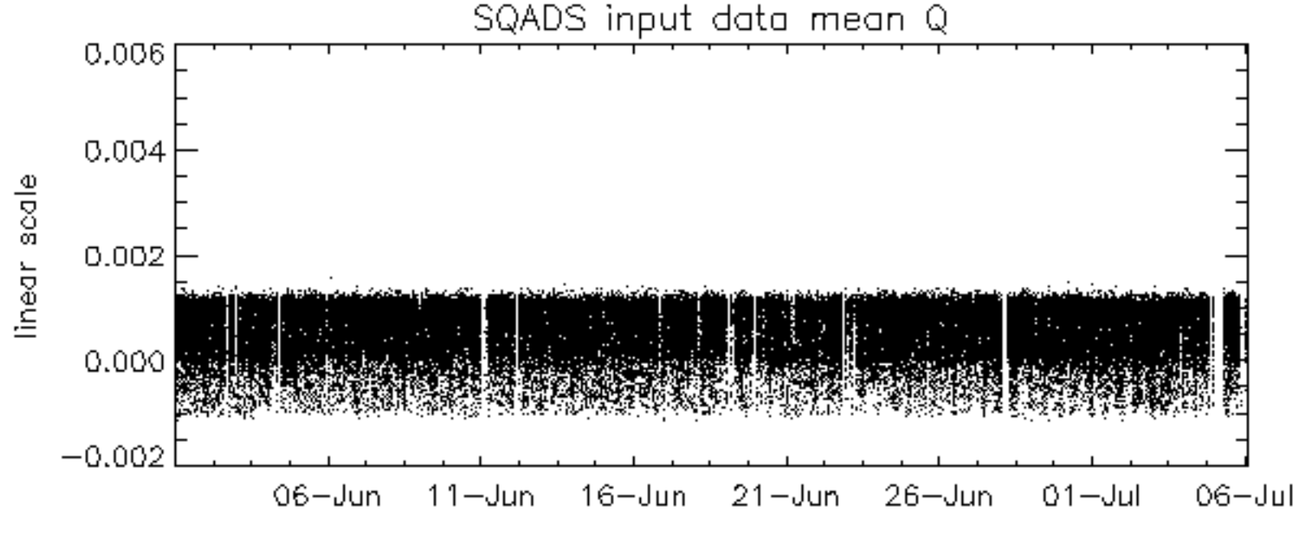

Reference: 2001-02-09 14:08:23 V
Test : 2004-07-05 19:24:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

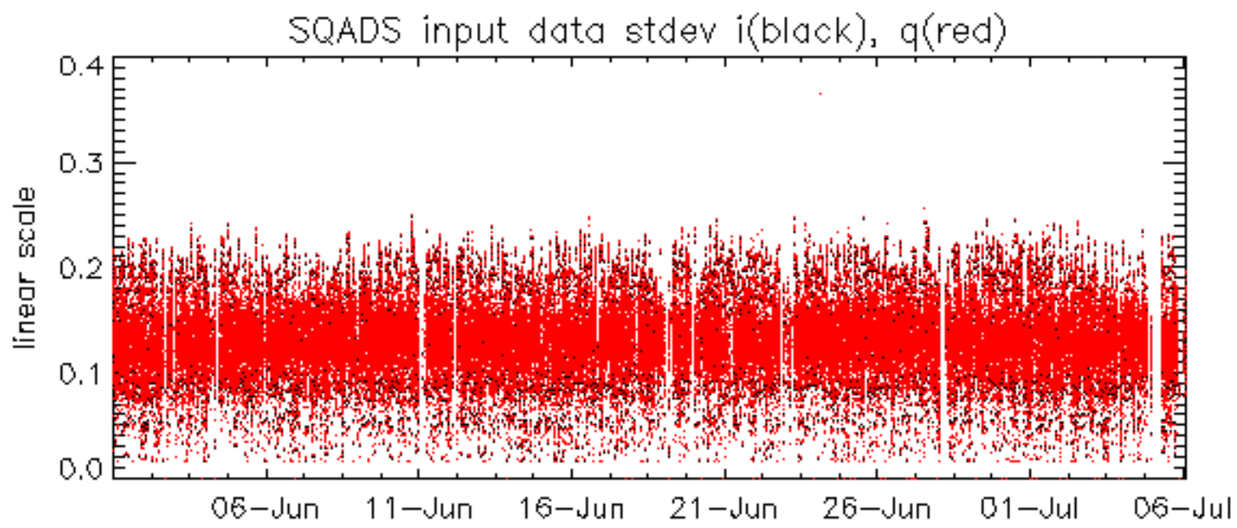

Reference: 2003-06-12 14:10:32 V
Test : 2004-07-05 19:24:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

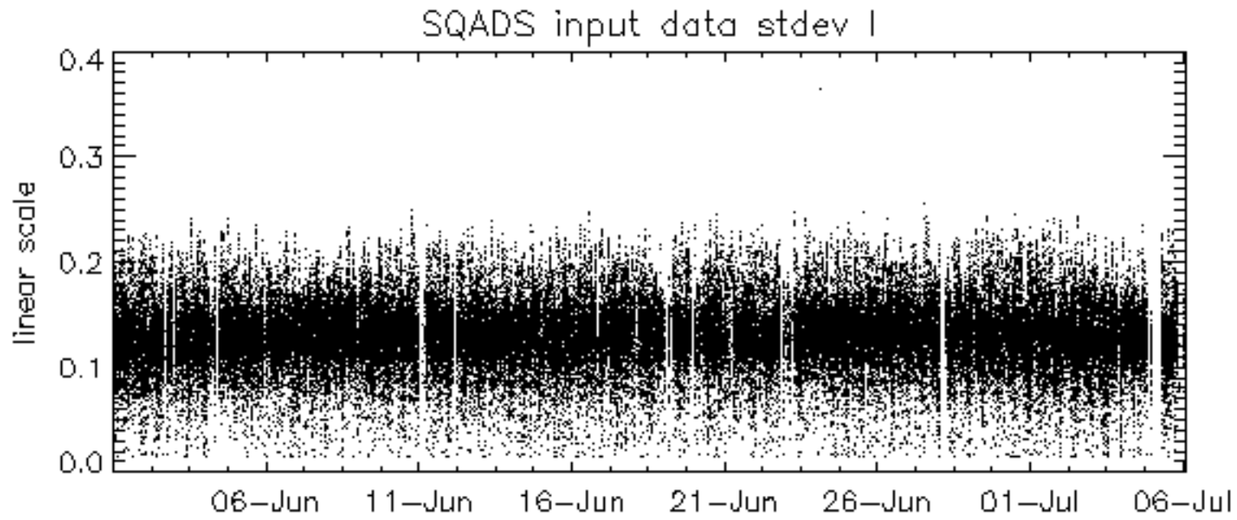

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

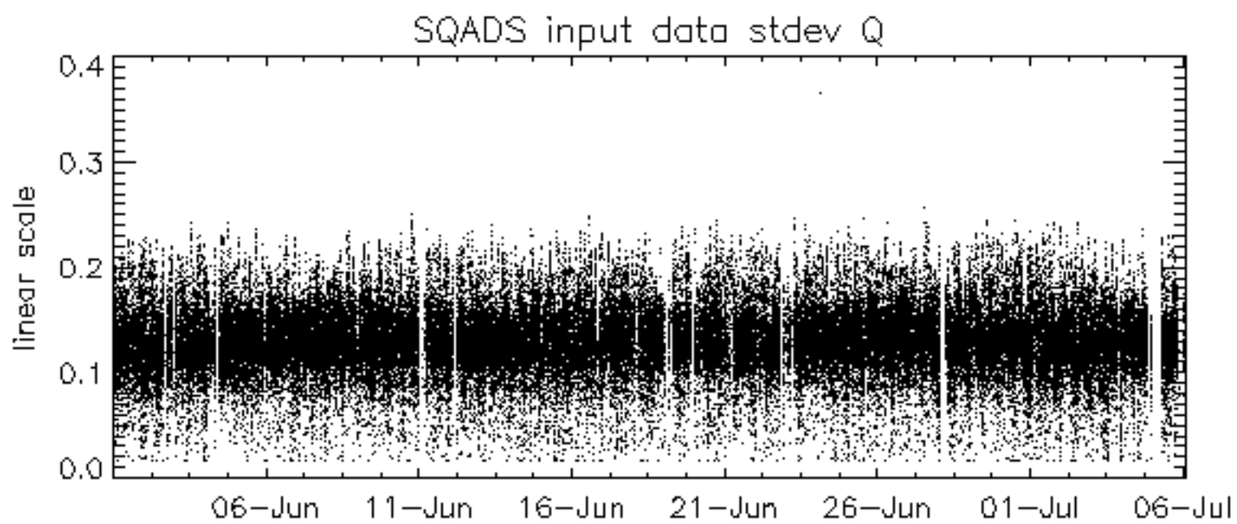

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul

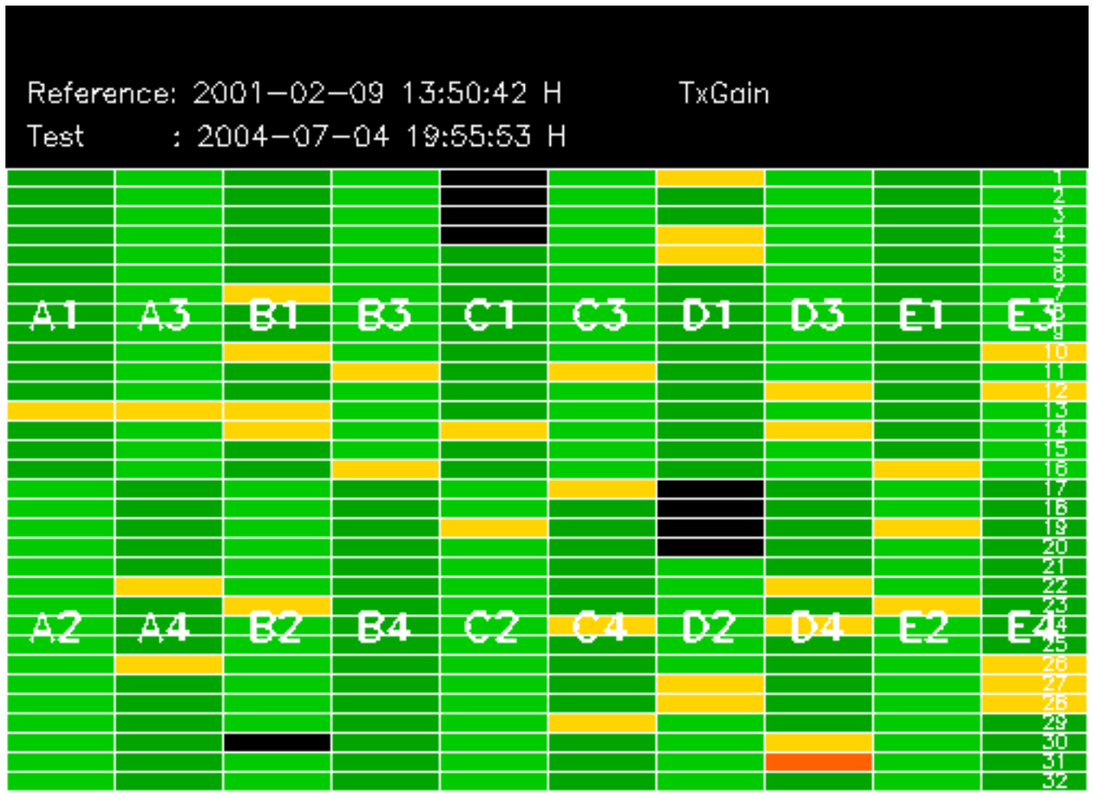

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul

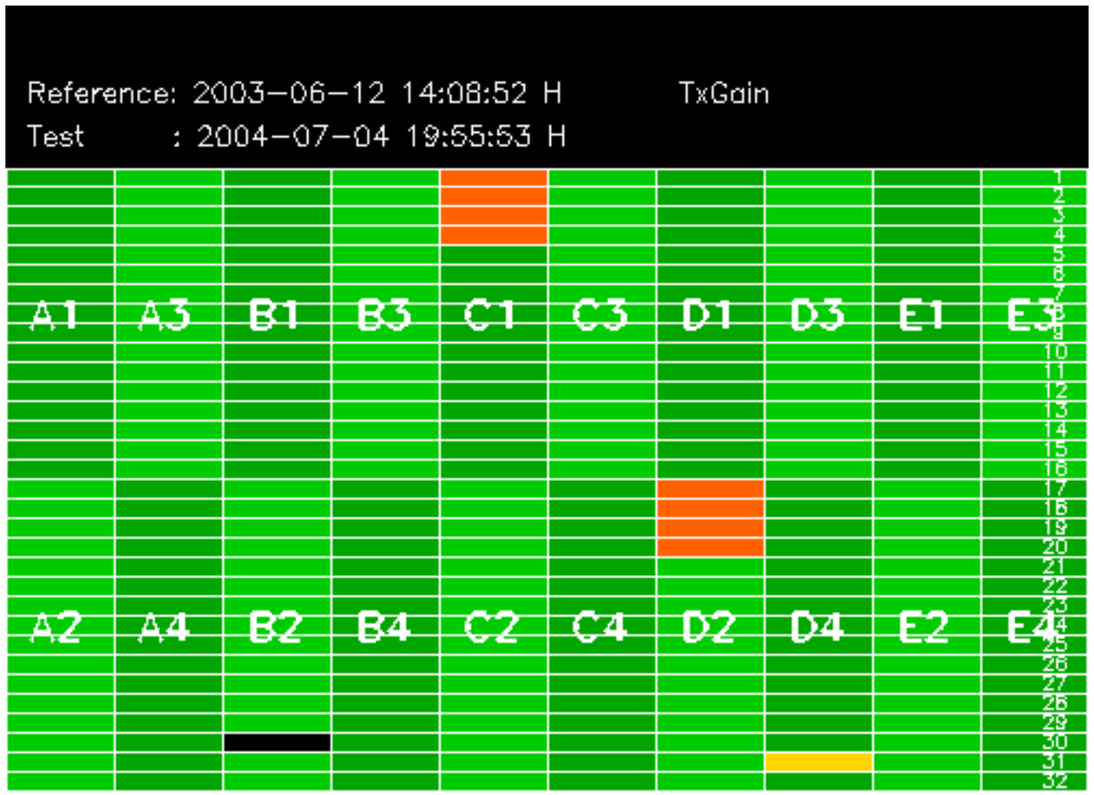

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06–Jun
11–Jun
16–Jun
21–Jun
26–Jun
01–Jul
06–Jul


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06–Jun
11–Jun
16–Jun
21–Jun
26–Jun
01–Jul
06–Jul


Reference: 2001-02-09 13:50:42 H
Test : 2004-07-04 19:55:53 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 : 2004-07-04 19:55:53 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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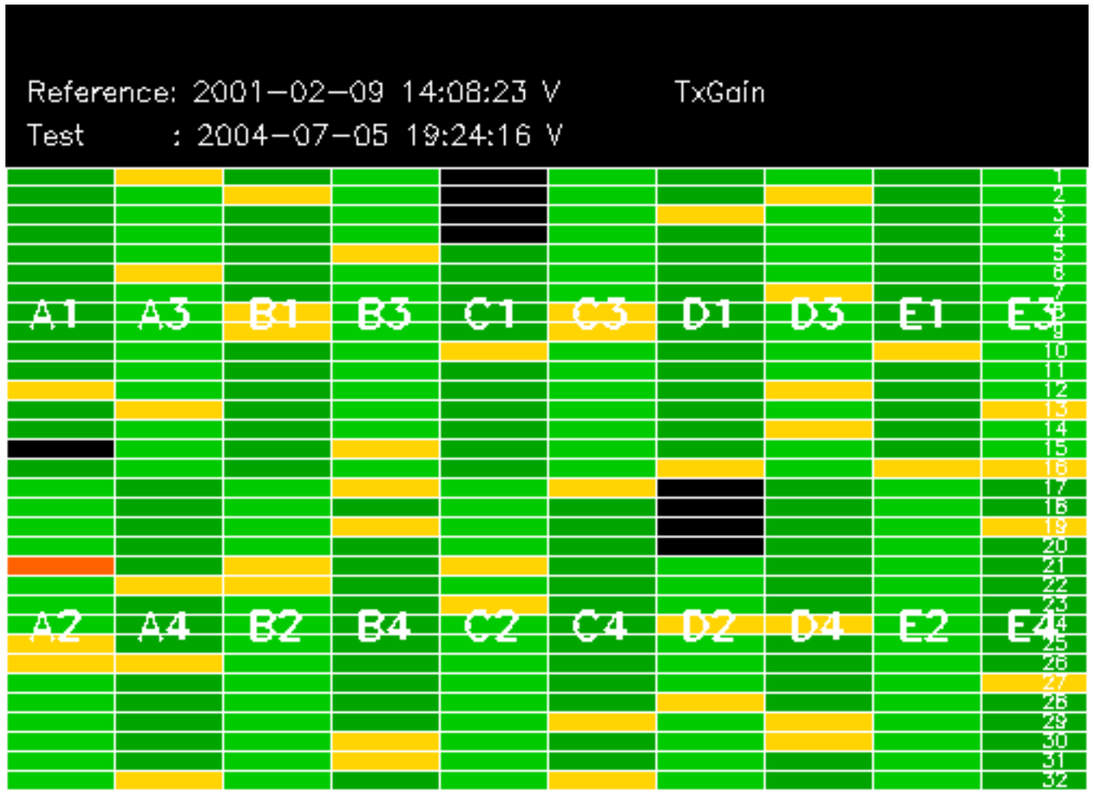
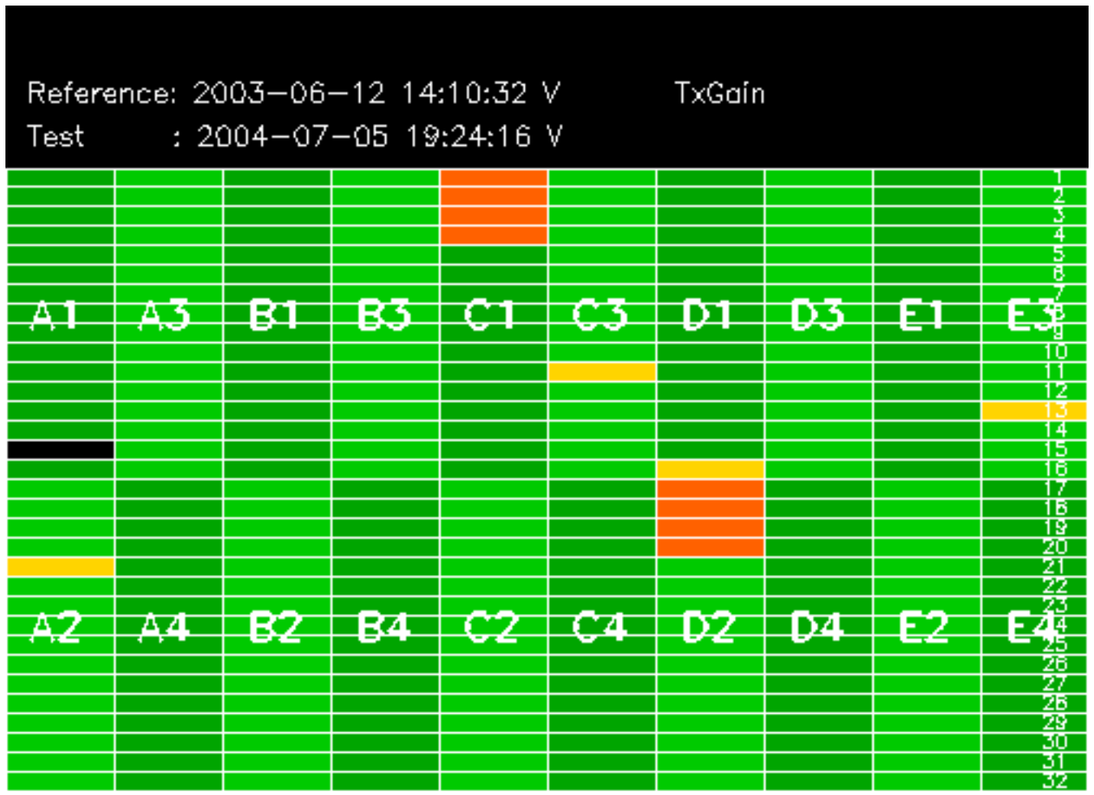

Reference: 2001-02-09 14:08:23 V
Test : 2004-07-05 19:24:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-07-05 19:24:16 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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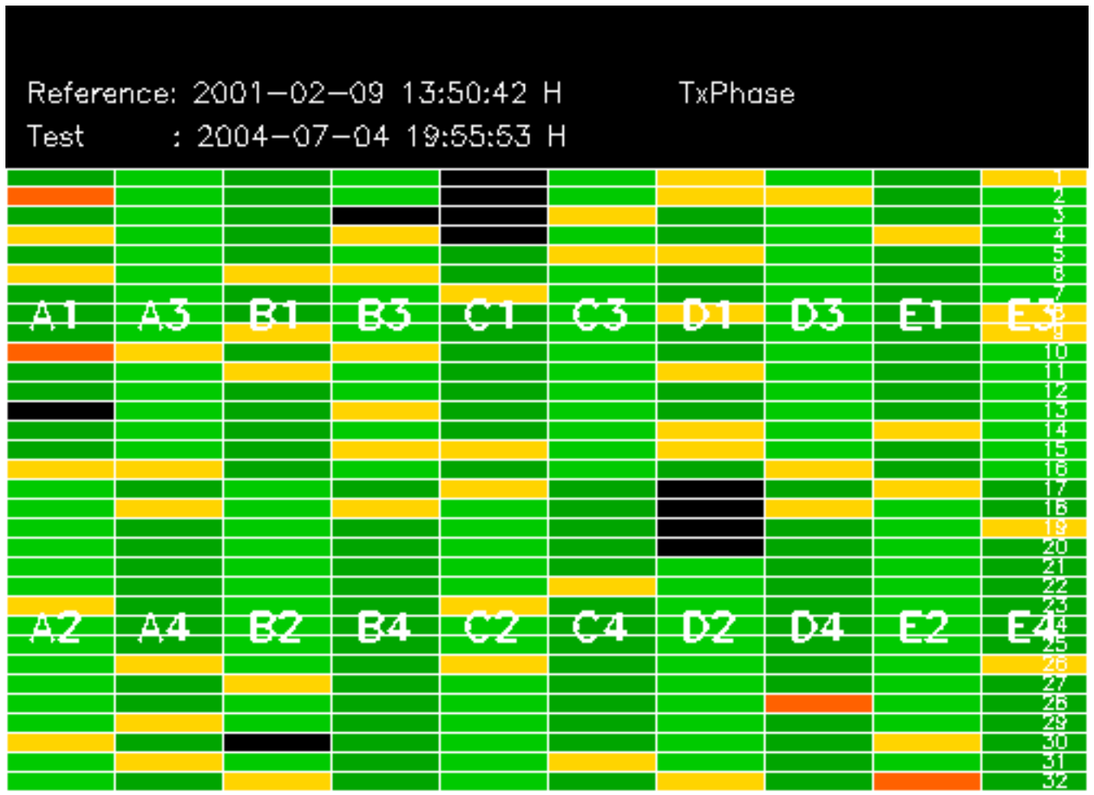
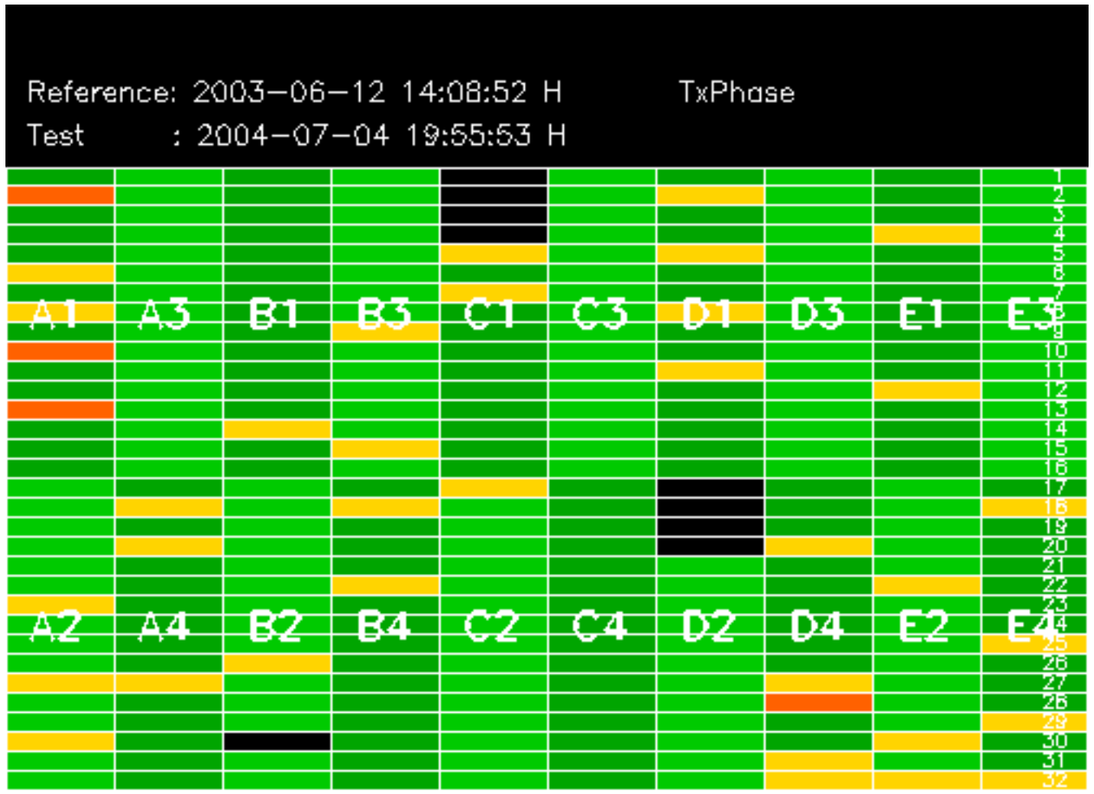
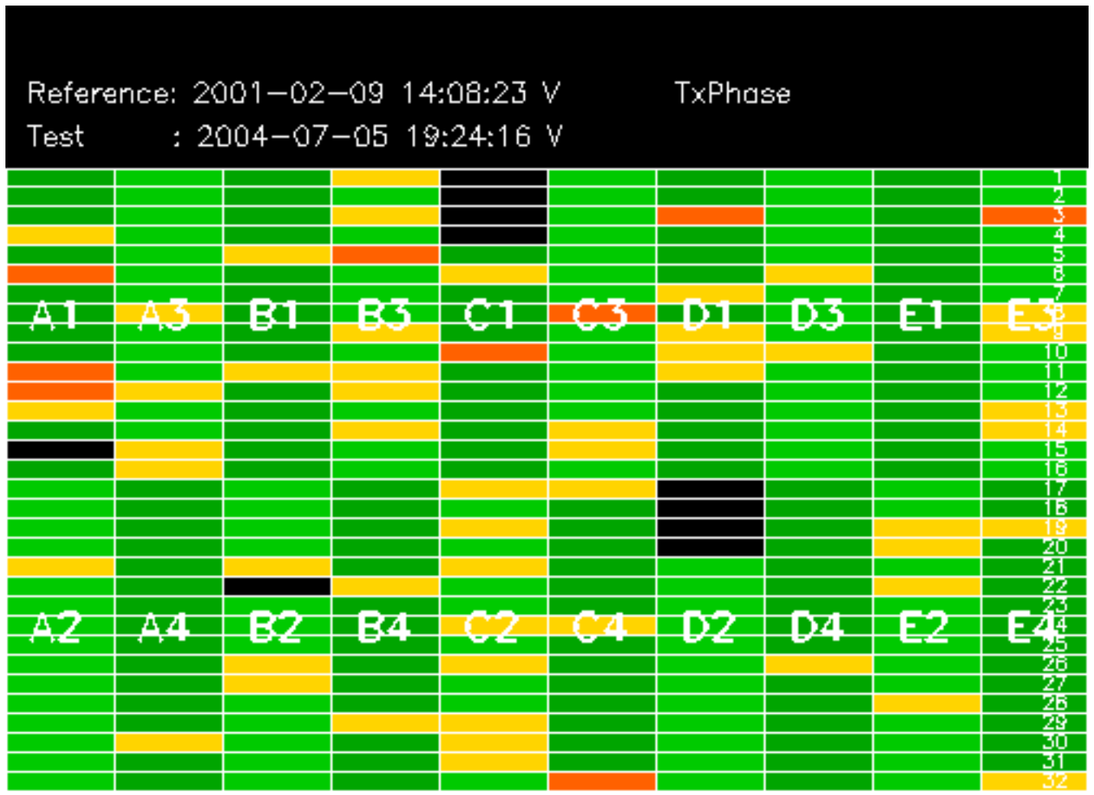

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-07-04 19:55:53 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-07-04 19:55:53 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 : 2004-07-05 19:24:16 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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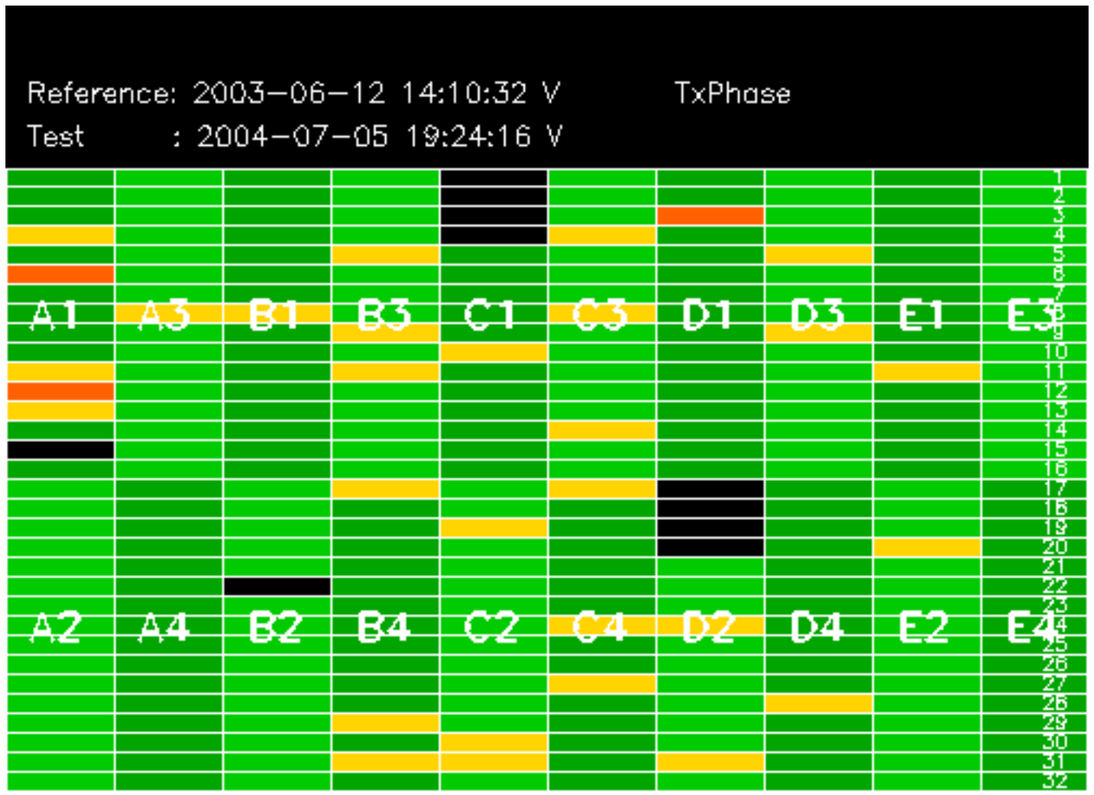
Reference: 2003-06-12 14:10:32 V
Test : 2004-07-05 19:24:16 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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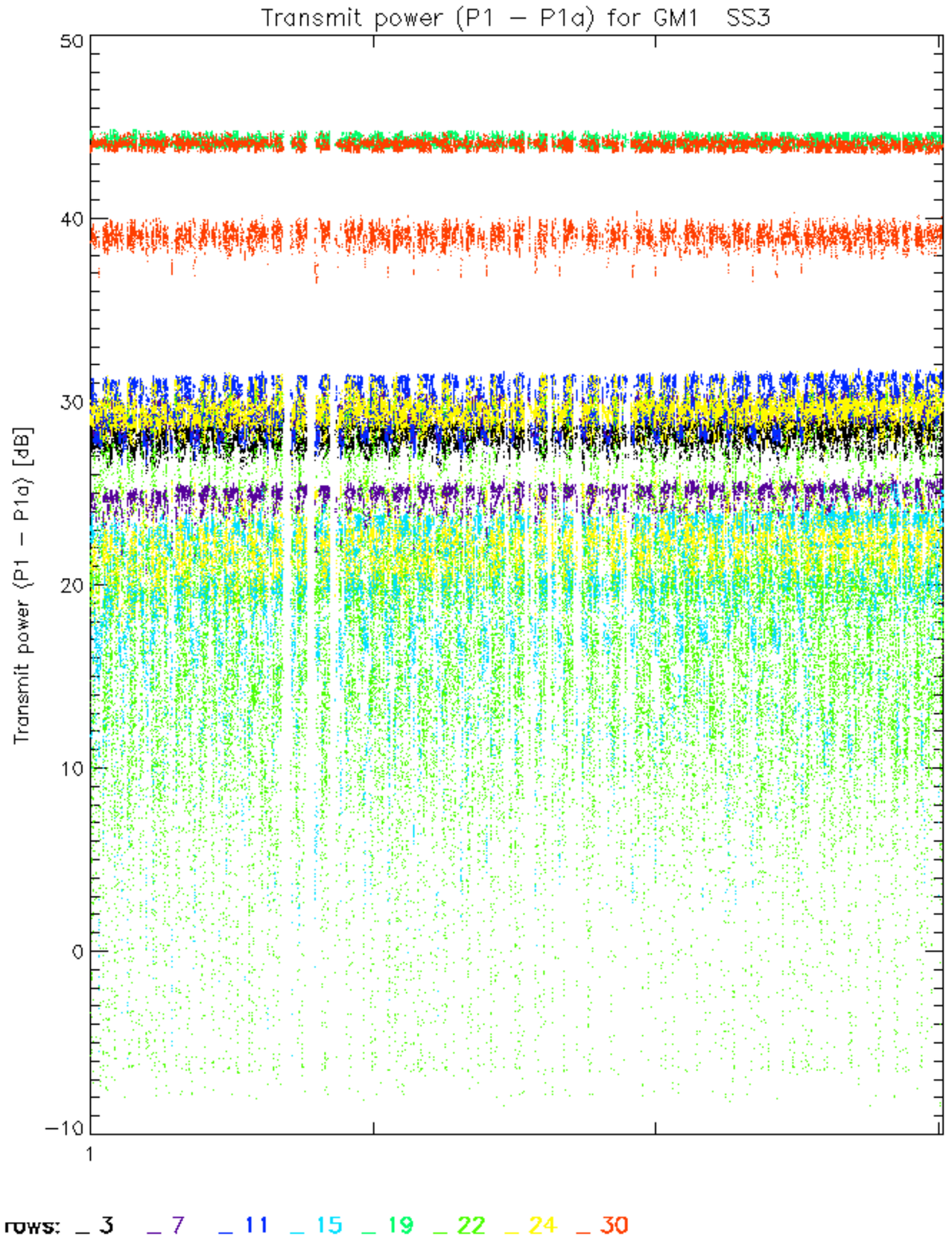
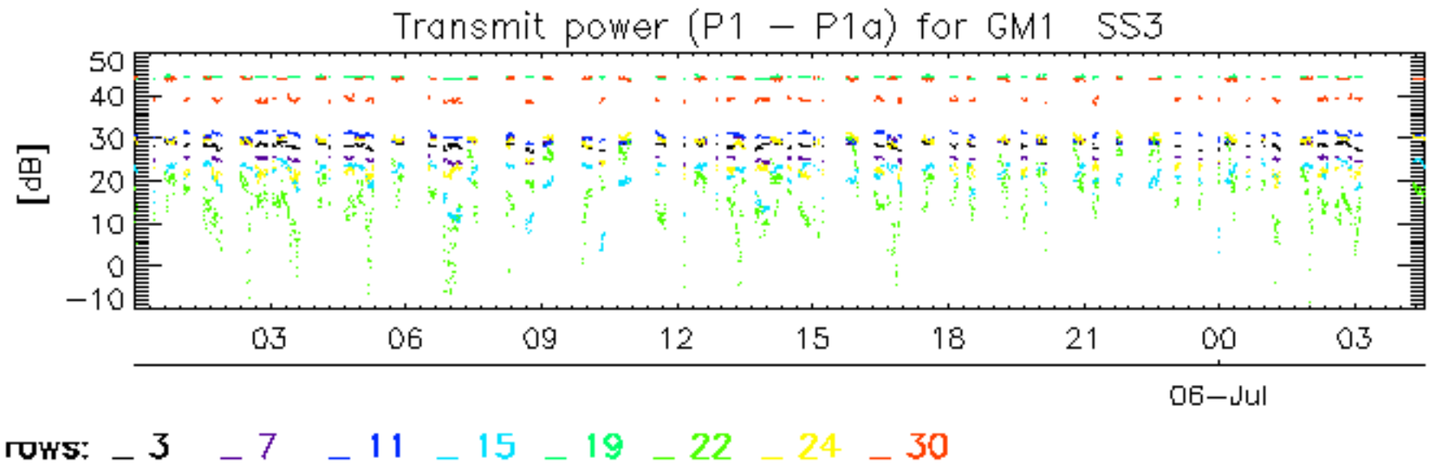
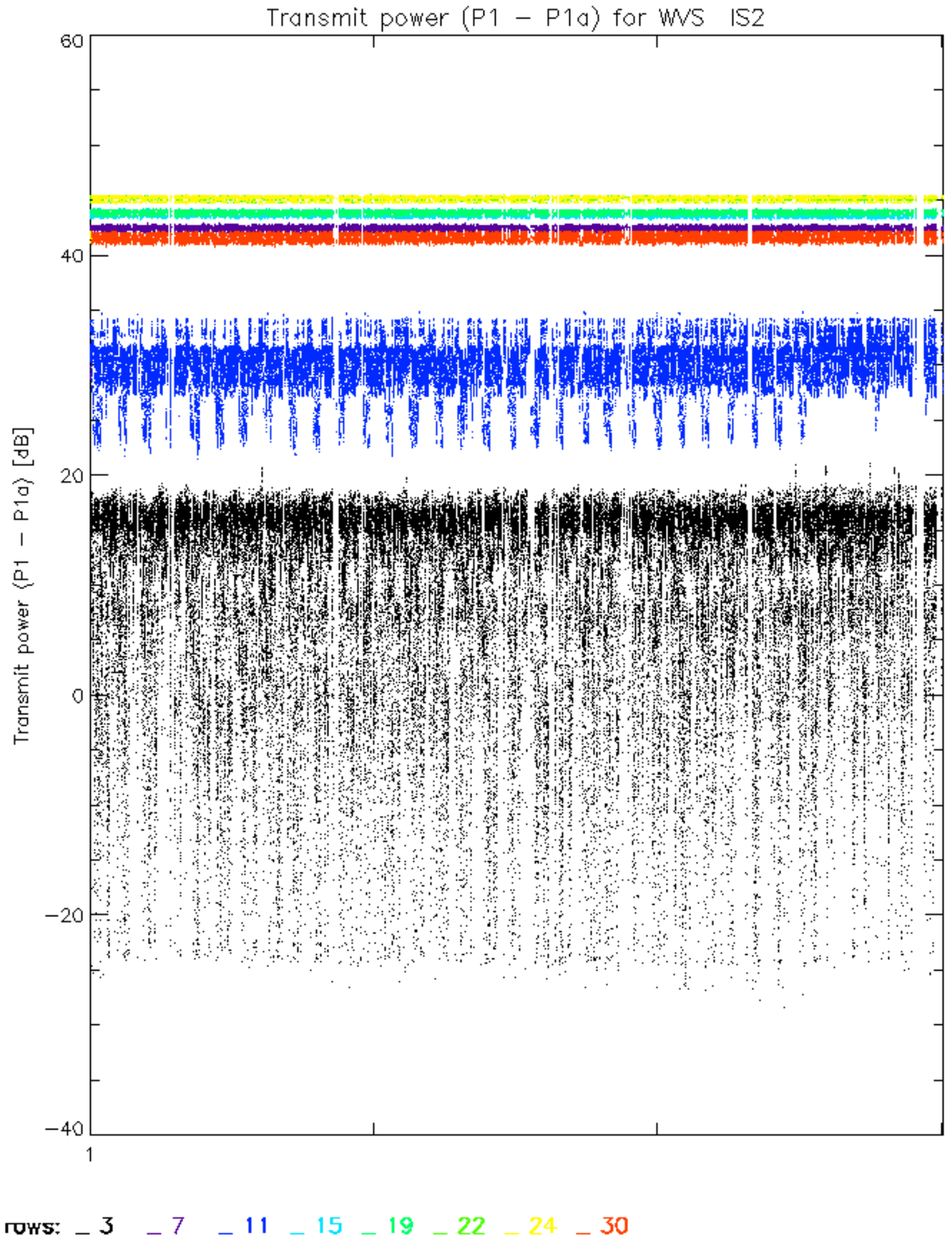
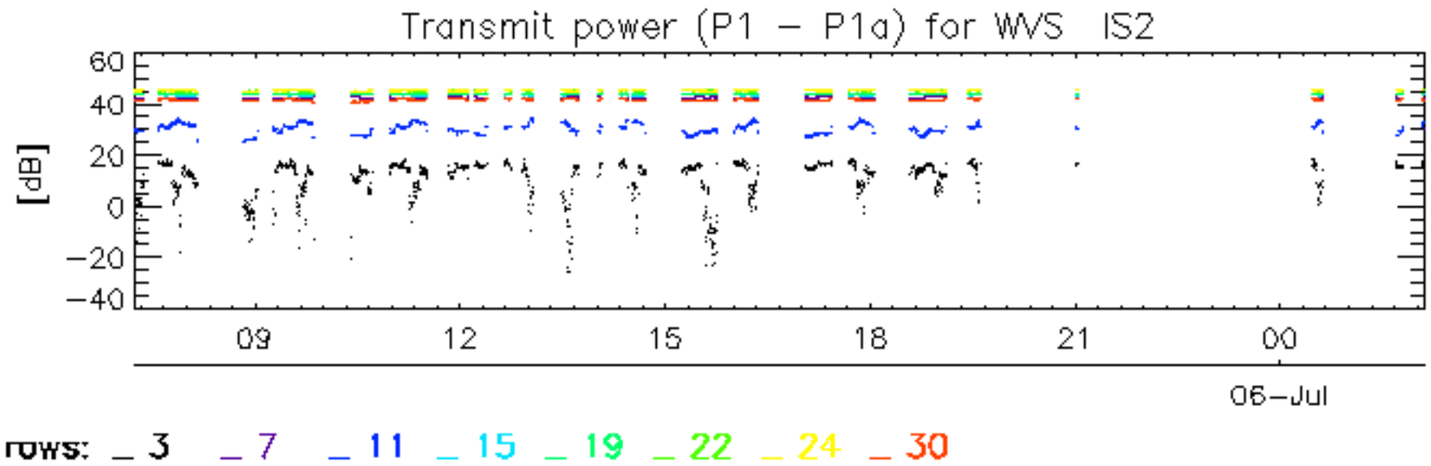

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
1
rows: 3 7 11 15 19 22 24 30


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


Transmit power (P1 – P1a) for WVS IS2
Transmit power ⟨P1 – P1a⟩ [dB]
60
40
20
0
−20
−40
1
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
60
40
20
0
−20
−40
09
12
15
18
21
00
06–Jul
rows: 3 7 11 15 19 22 24 30

No unavailabilities during the reported period.