REPORT OF 040629

last update on Tue Jun 29 13:53:13 GMT 2004

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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

No anomalies observed on available browse products.

2.3 - Data Analysis

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

3 - Module Stepping Mode

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

- ASA_MS__0PNPDK20040628_194422_000000152028_00099_12177_0006.N1

Polarisation	Start Time
V	20040627 201600
H	20040628 194422

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.

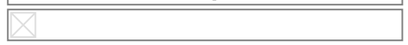
4.1 - Daily statistics

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	-3.504197	0.010817	0.050743
7	P1	-3.328262	0.015439	-0.015858
11	P1	-4.533799	0.038752	-0.010036
15	P1	-5.681628	0.059202	-0.003901
19	P1	-3.432928	0.005110	-0.018764
22	P1	-4.558373	0.011140	0.015224
24	P1	-4.914222	0.016101	0.018018
30	P1	-6.848797	0.023229	-0.028589

3	P1	-16.095118	0.222994	0.038484
7	P1	-13.996103	0.106772	-0.012893
11	P1	-19.866522	0.309938	-0.207757
15	P1	-11.782418	0.046190	0.031265
19	P1	-13.818404	0.039493	-0.043548
22	P1	-16.544146	0.423610	0.185828
24	P1	-14.685320	0.304965	0.113246
30	P1	-17.688030	0.376421	-0.110707

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.415216	0.082366	0.053126
7	P2	-22.850540	0.124616	0.073931
11	P2	-15.617792	0.138895	0.127824
15	P2	-7.189131	0.097590	0.056960
19	P2	-9.567828	0.148594	0.053127
22	P2	-17.540588	0.105949	0.135980
24	P2	-20.863508	0.088245	0.083104
30	P2	-19.430836	0.080012	0.083387

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.143445	0.002002	-0.001358
7	P3	-8.143446	0.002002	-0.001350
11	P3	-8.143452	0.002002	-0.001334
15	P3	-8.143469	0.002002	-0.001266
19	P3	-8.143476	0.002002	-0.001235
22	P3	-8.143482	0.002002	-0.001200
24	P3	-8.143480	0.002002	-0.001216
30	P3	-8.143538	0.001999	-0.001544

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	-3.142403	0.134058	0.032774
7	P1	-2.809468	0.071152	-0.018332
11	P1	-3.794275	0.022485	-0.029817
15	P1	-4.258392	1.012341	0.001639
19	P1	-3.357805	0.049096	-0.015417
22	P1	-5.721899	0.043940	-0.013247
24	P1	-4.050328	0.079379	-0.019313
30	P1	-6.100852	0.062830	-0.016988
3	P1	-11.023679	0.420806	0.034300
7	P1	-9.765099	0.243928	-0.036958
11	P1	-11.767553	0.168397	-0.049344
15	P1	-11.841587	0.275232	-0.038006
19	P1	-14.997031	0.816654	-0.015757
22	P1	-21.500774	8.930609	0.028976
24	P1	-17.381538	0.288483	-0.080521
30	P1	-21.708439	4.155931	-0.046270

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.160601	0.043003	0.041776
7	P2	-22.940666	0.029370	0.075754
11	P2	-11.029836	0.219689	0.133275
15	P2	-5.002888	0.044400	0.031757
19	P2	-6.932731	0.043186	0.006297
22	P2	-7.677671	0.024148	0.094704
24	P2	-11.074225	0.073300	0.057556
30	P2	-22.393557	0.092813	0.110285

P3 Cyclic statistics

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

3	P3	-7.984668	0.003315	-0.003467
7	P3	-7.984596	0.003304	-0.003516
11	P3	-7.984612	0.003310	-0.003319
15	P3	-7.984674	0.003305	-0.003166
19	P3	-7.984549	0.003313	-0.003403
22	P3	-7.984741	0.003304	-0.003282
24	P3	-7.984547	0.003332	-0.003741
30	P3	-7.984604	0.003306	-0.003305

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	0.000499870
	stdev	2.07319e-07
MEAN Q	mean	0.000551328
	stdev	2.35566e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.130137
	stdev	0.00100882

STDEV Q	mean	0.130384
	stdev	0.00102104

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

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

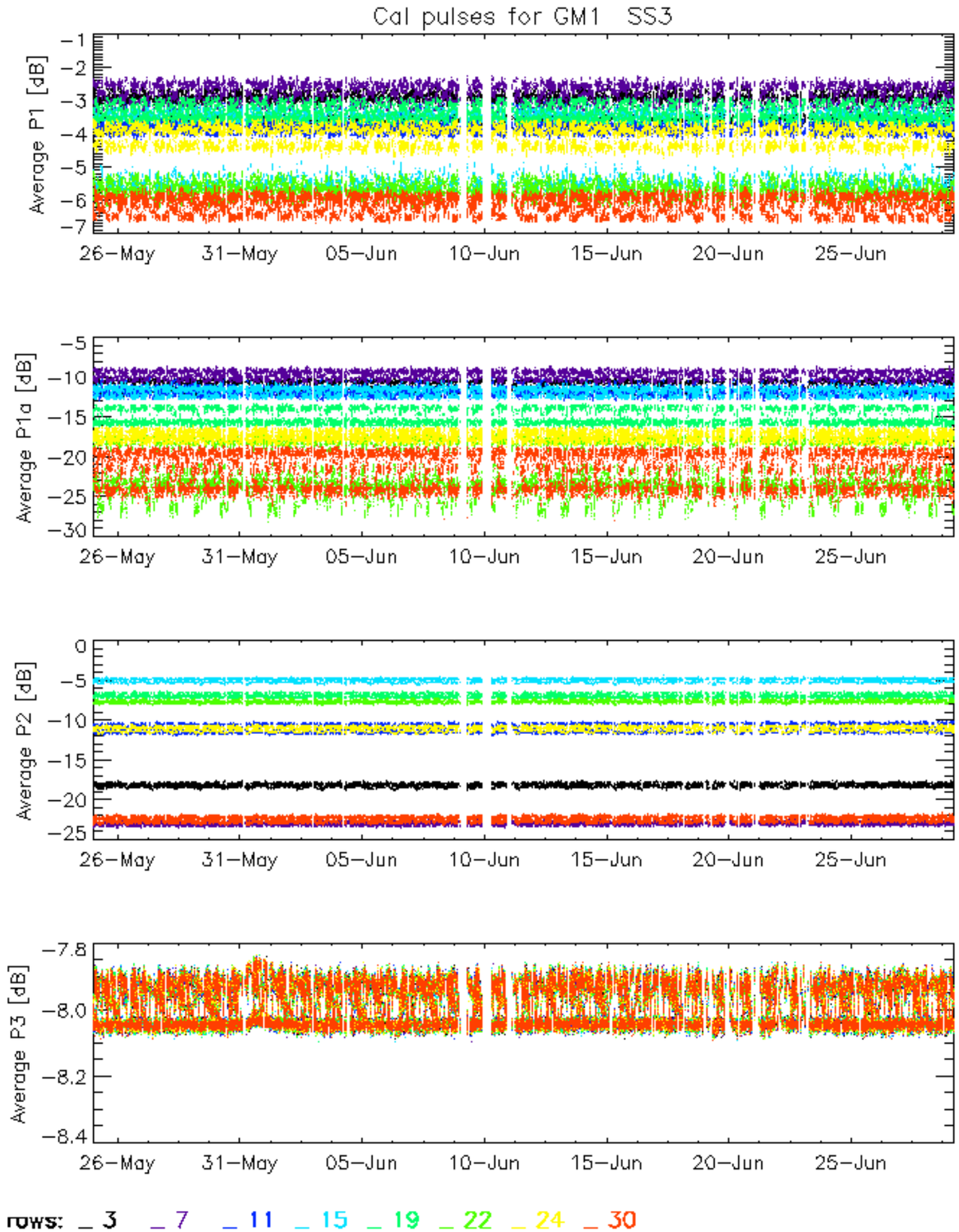
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

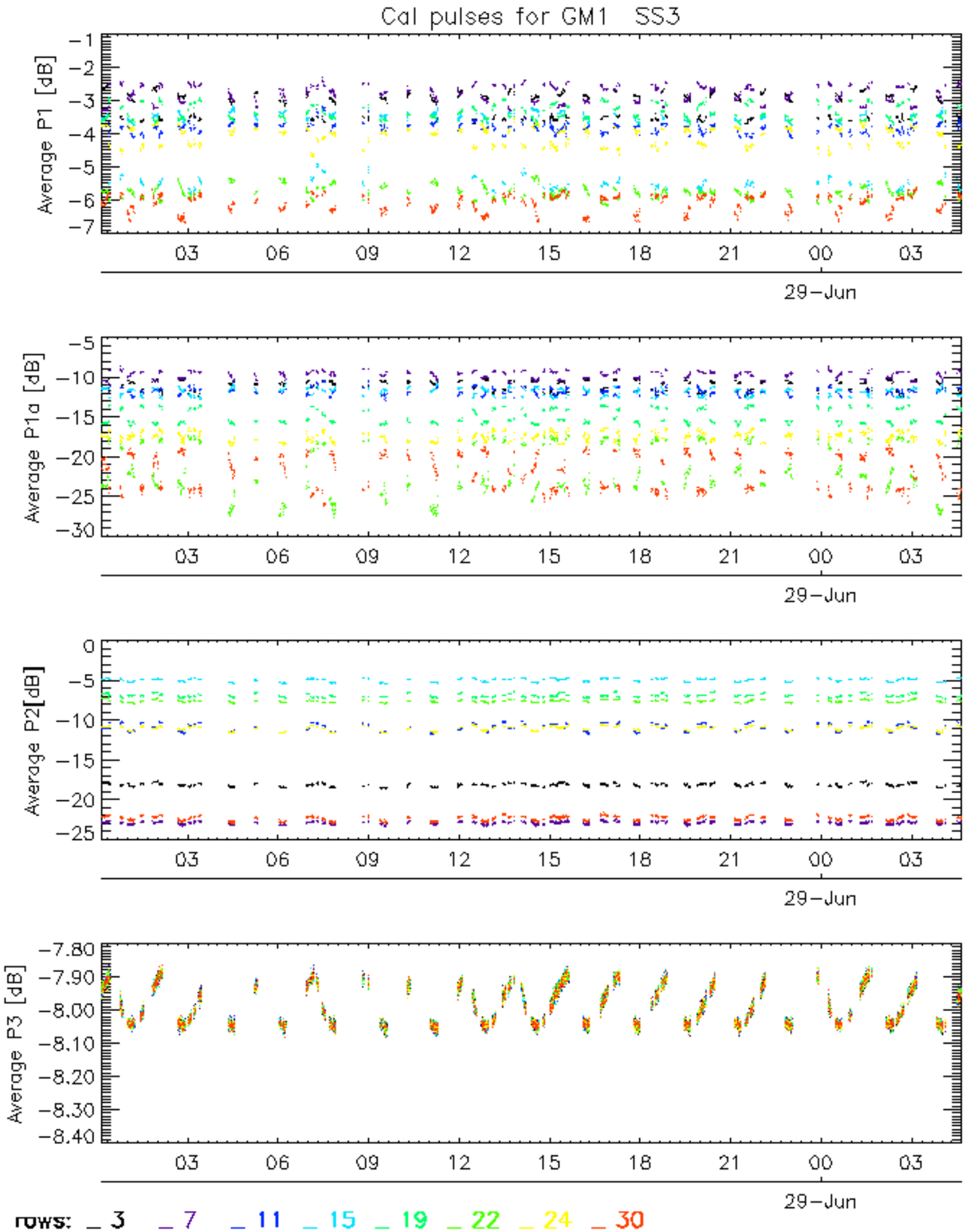
6.5 - Absolute Doppler for GM1

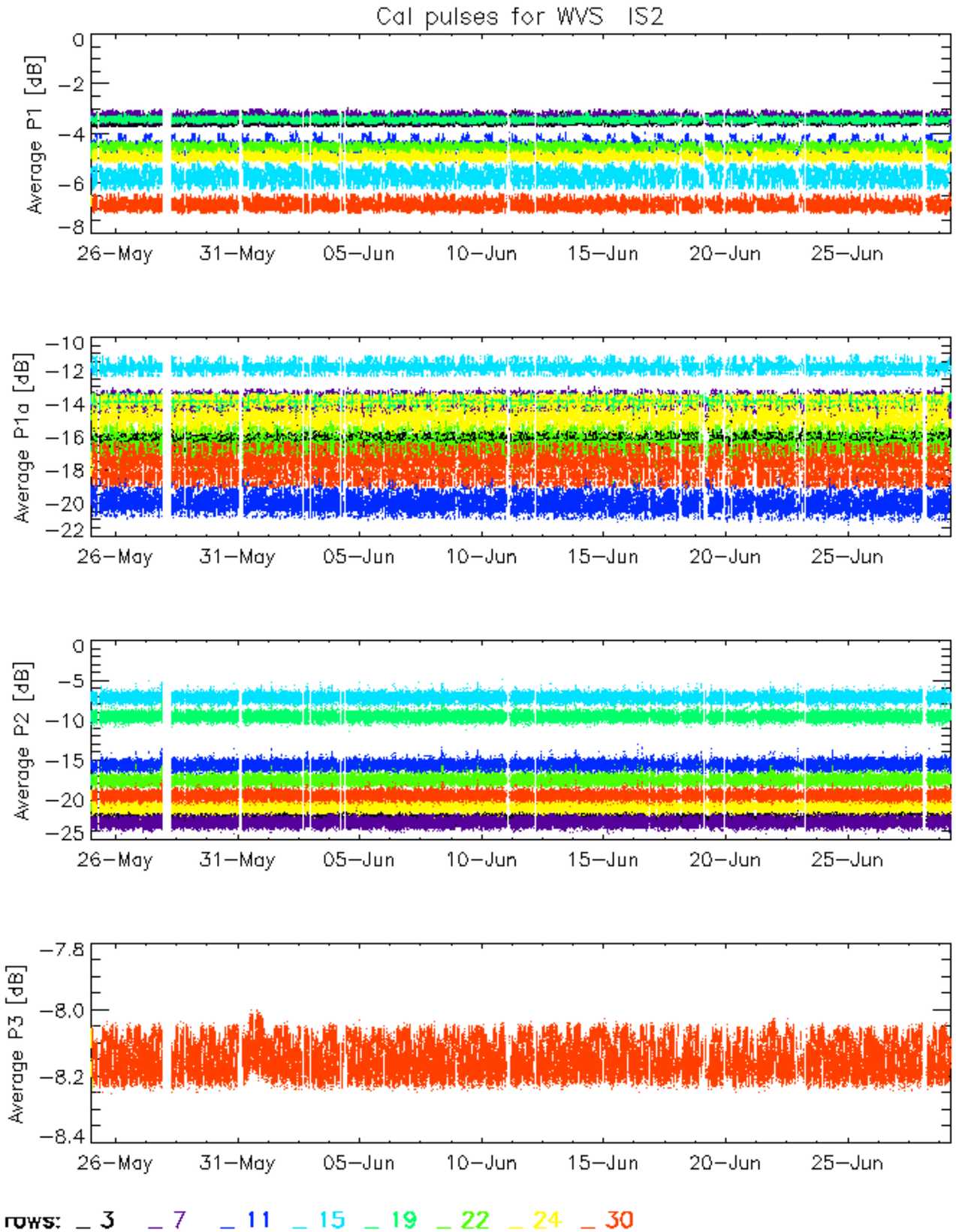
Evolution of Absolute Doppler
Acsending
Descending

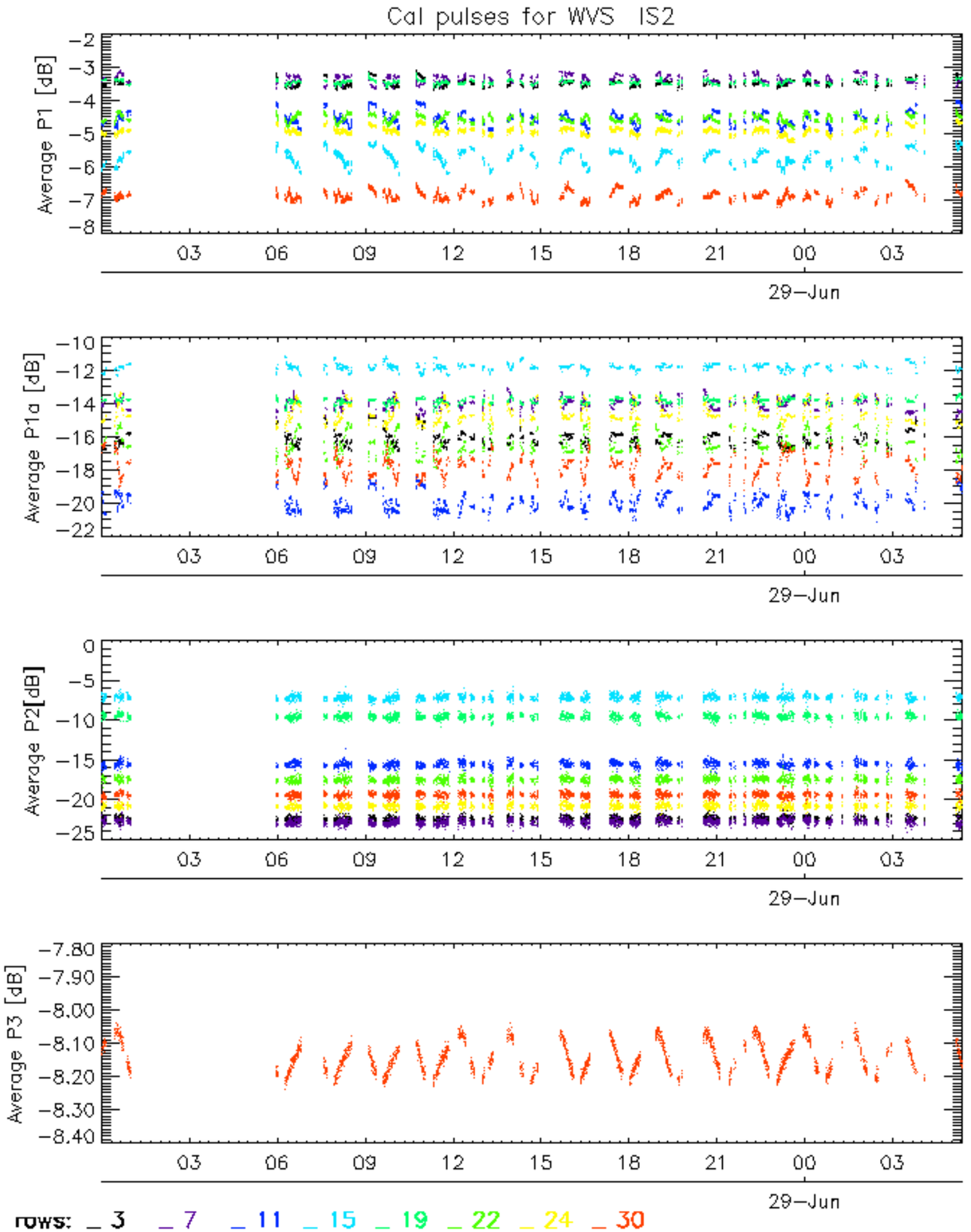
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun
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

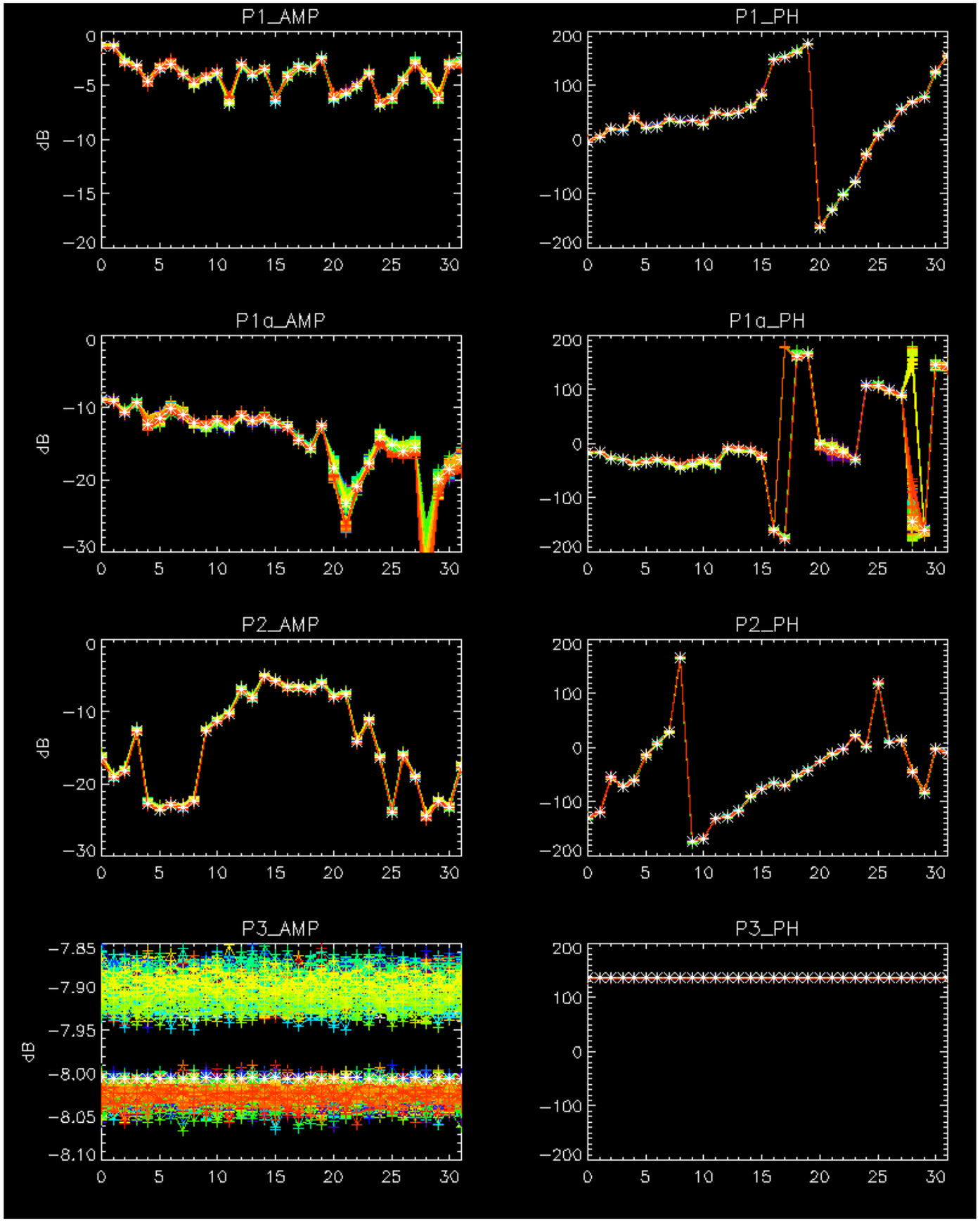

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
29−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
29−Jun
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
29−Jun
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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

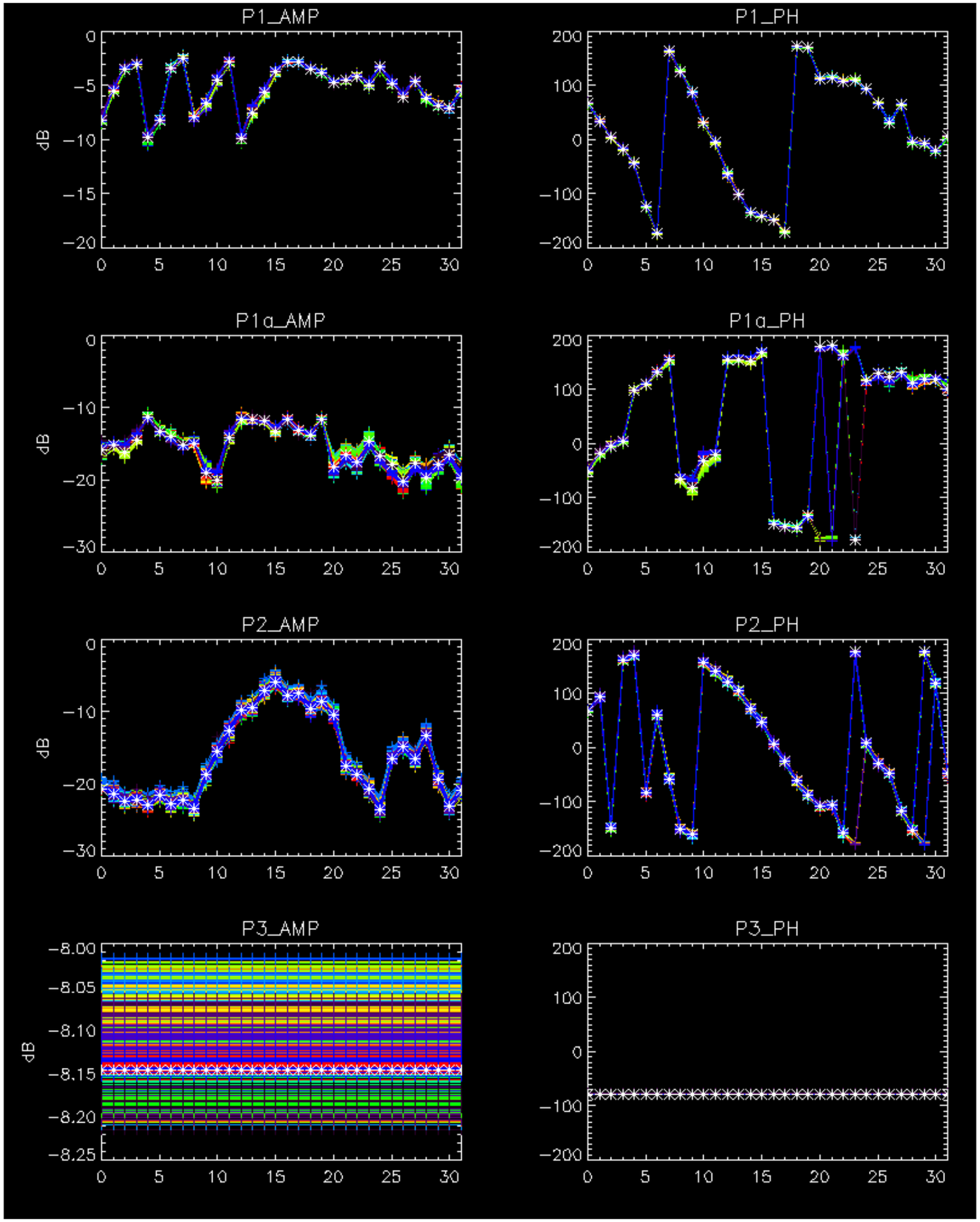

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
03
06
09
12
15
18
21
00
03
29−Jun
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
03
06
09
12
15
18
21
00
03
29−Jun
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
29−Jun
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
29−Jun
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

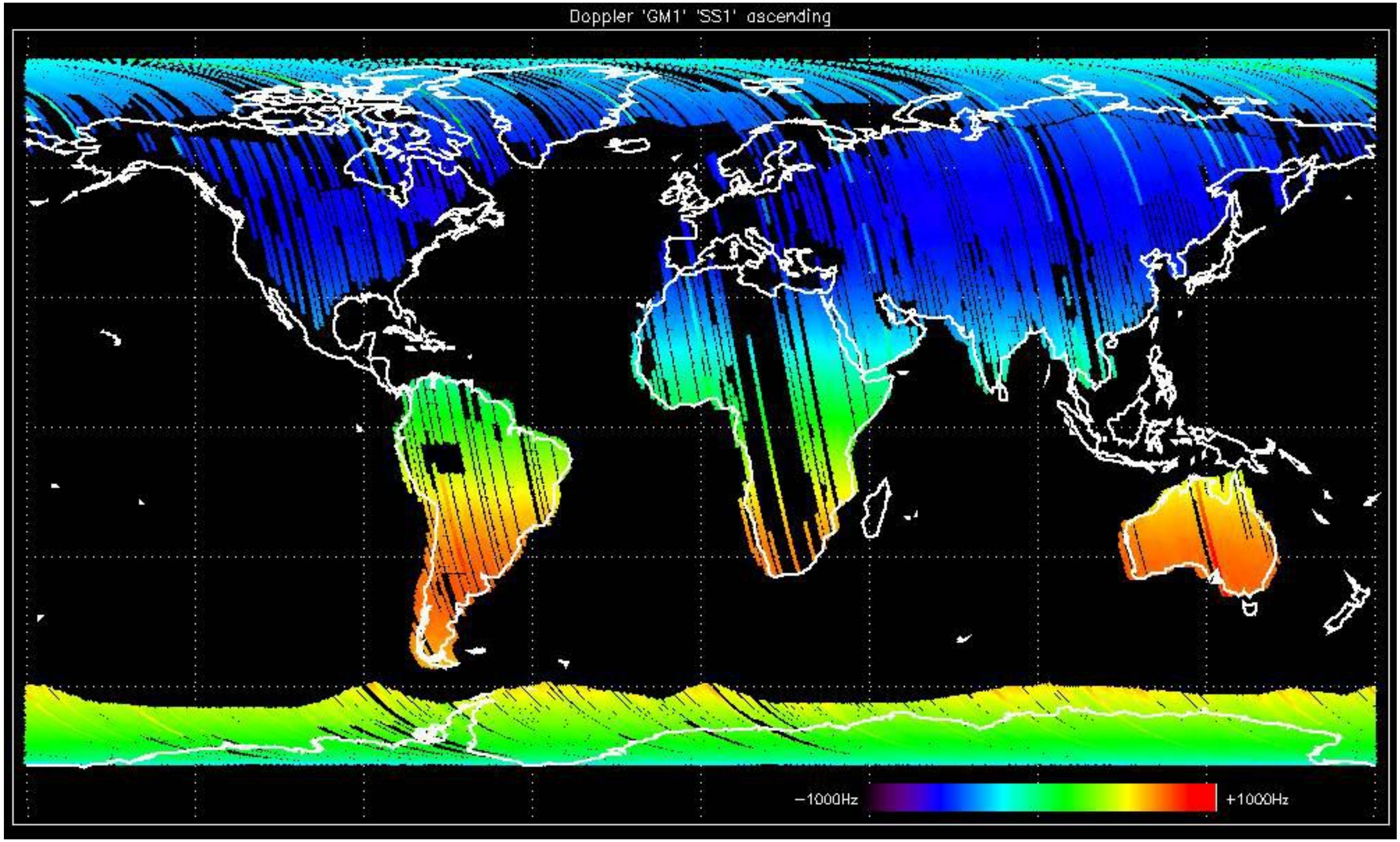
No anomalies observed on available browse products.

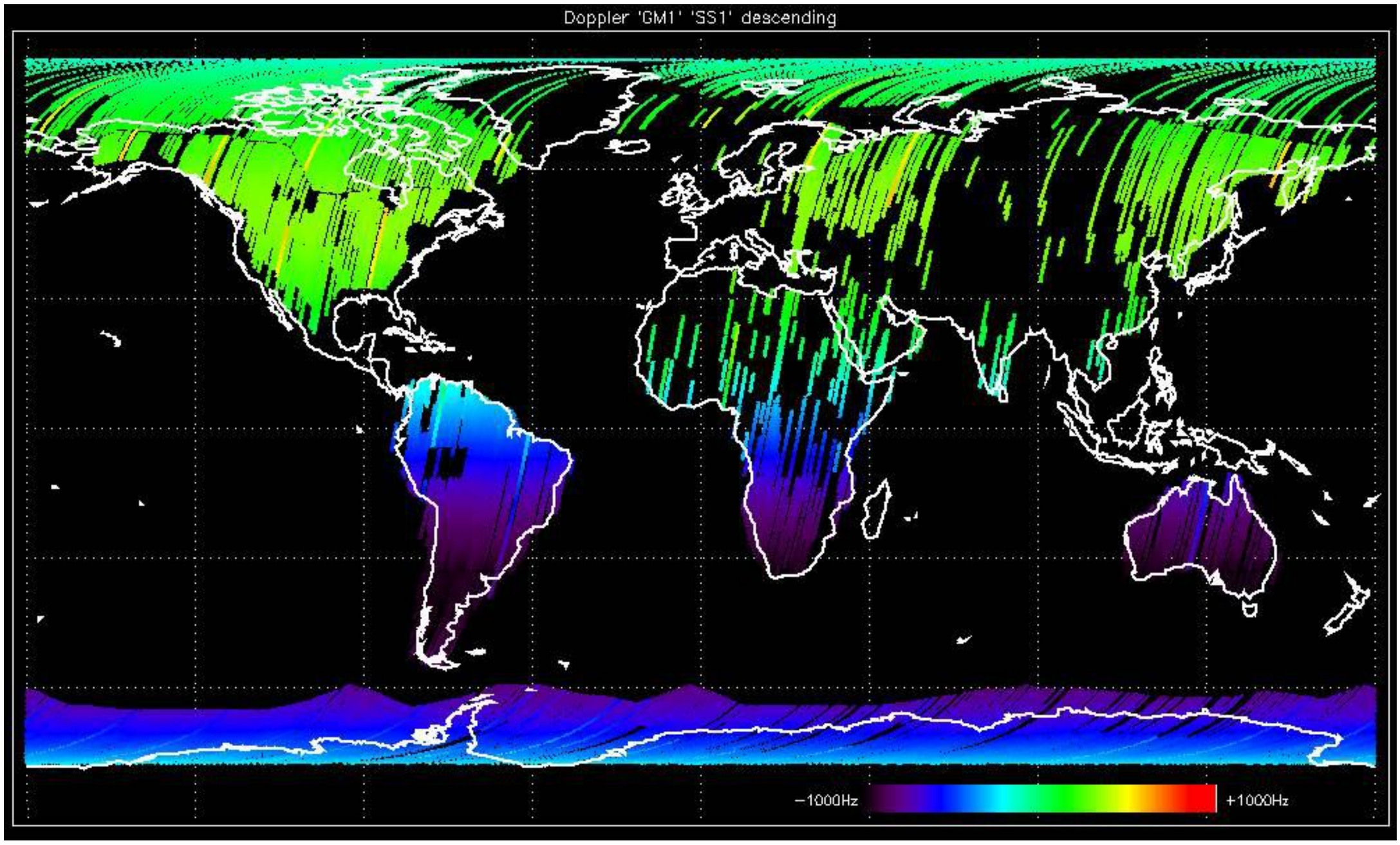
No anomalies observed.

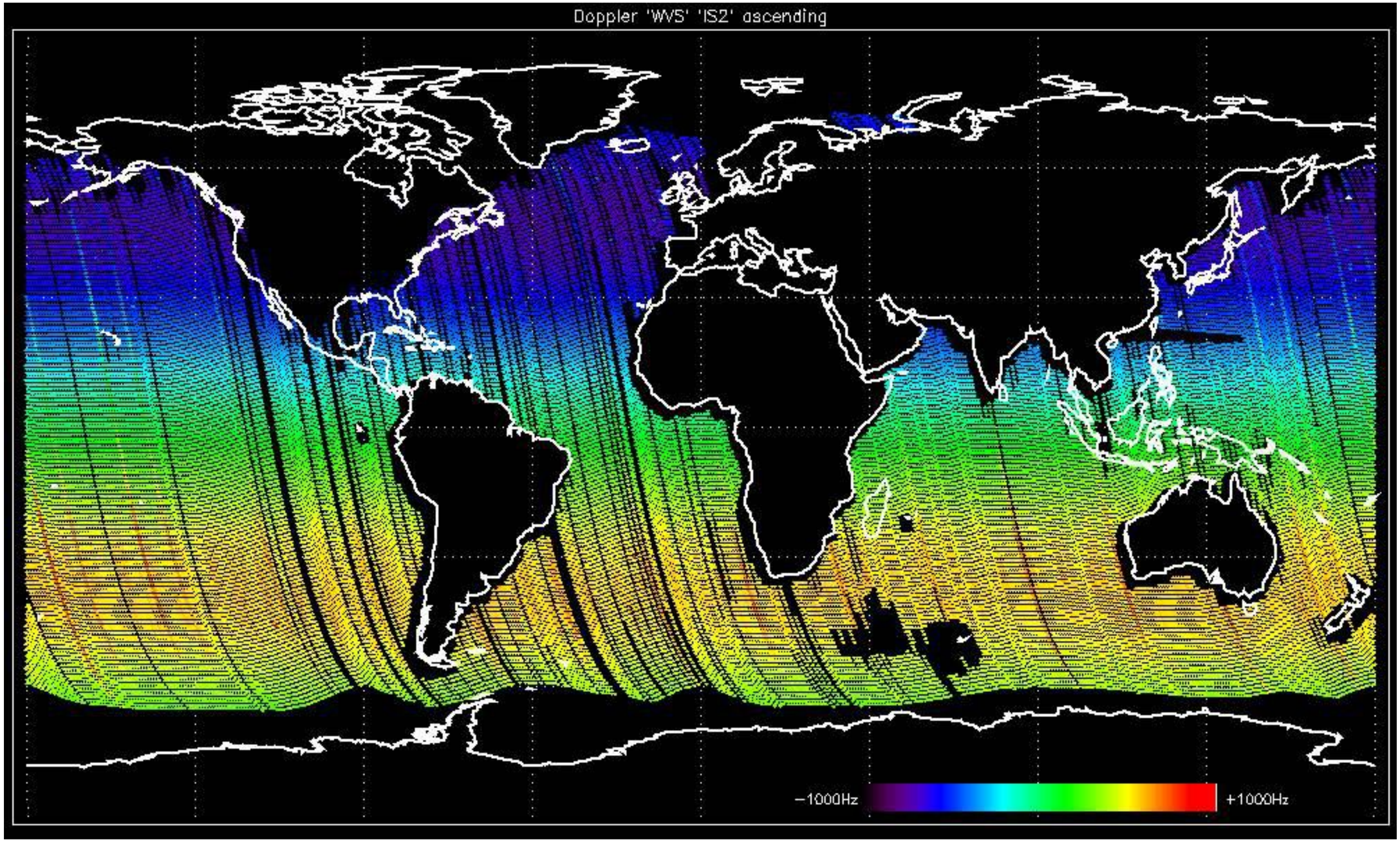

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

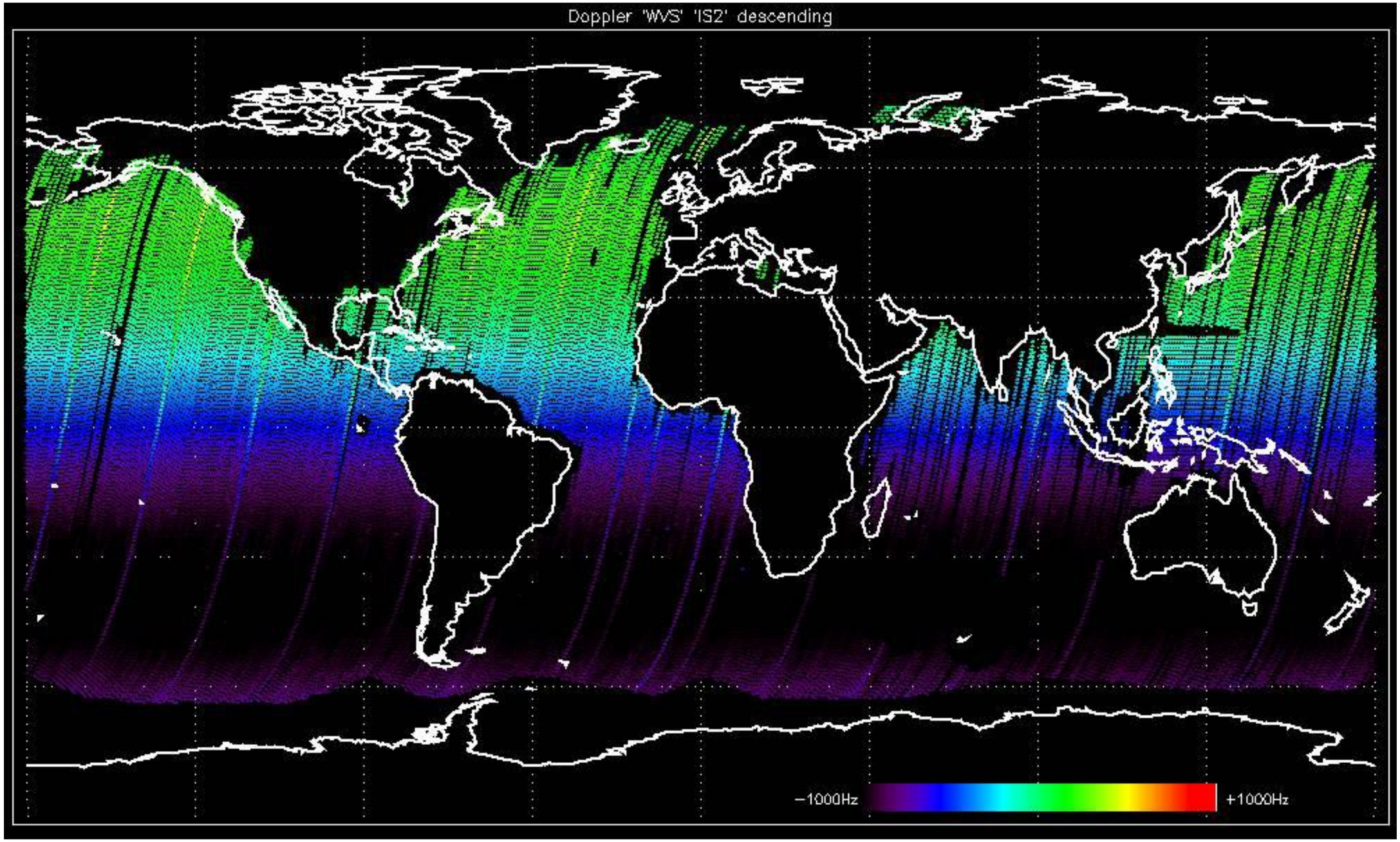

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

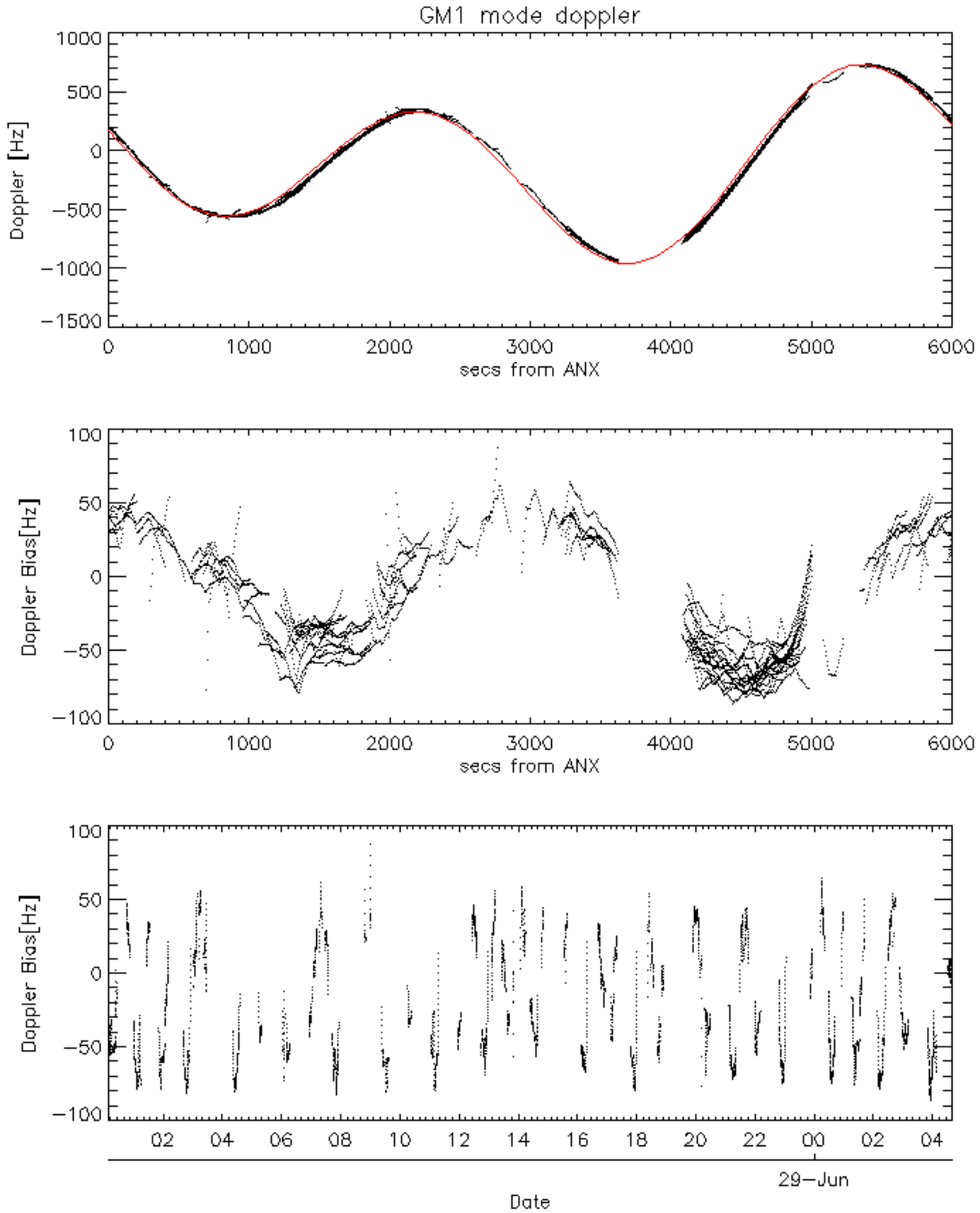
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

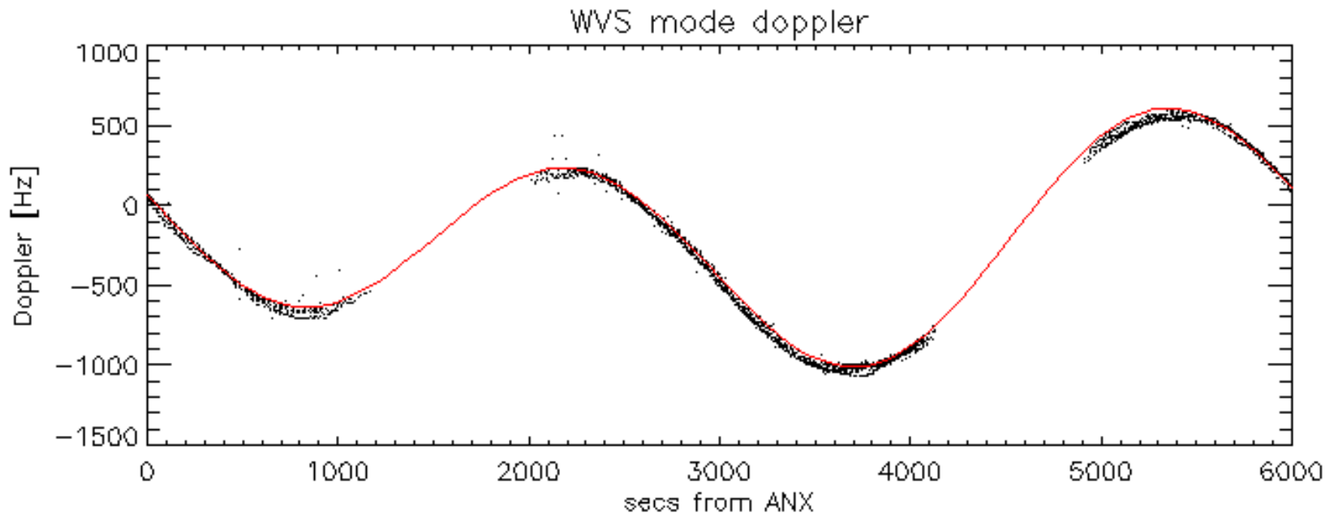

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

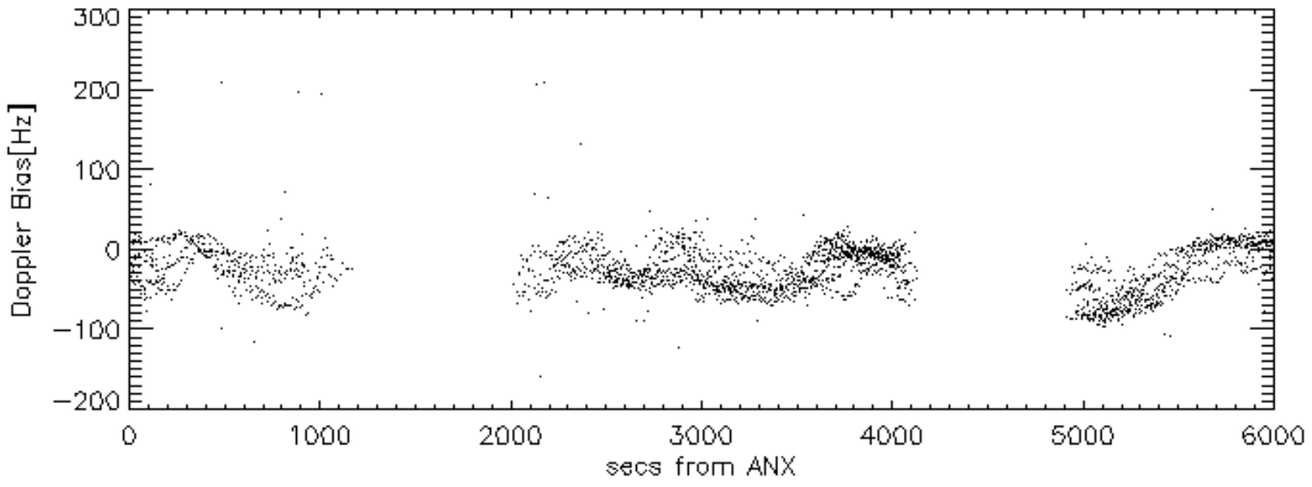

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

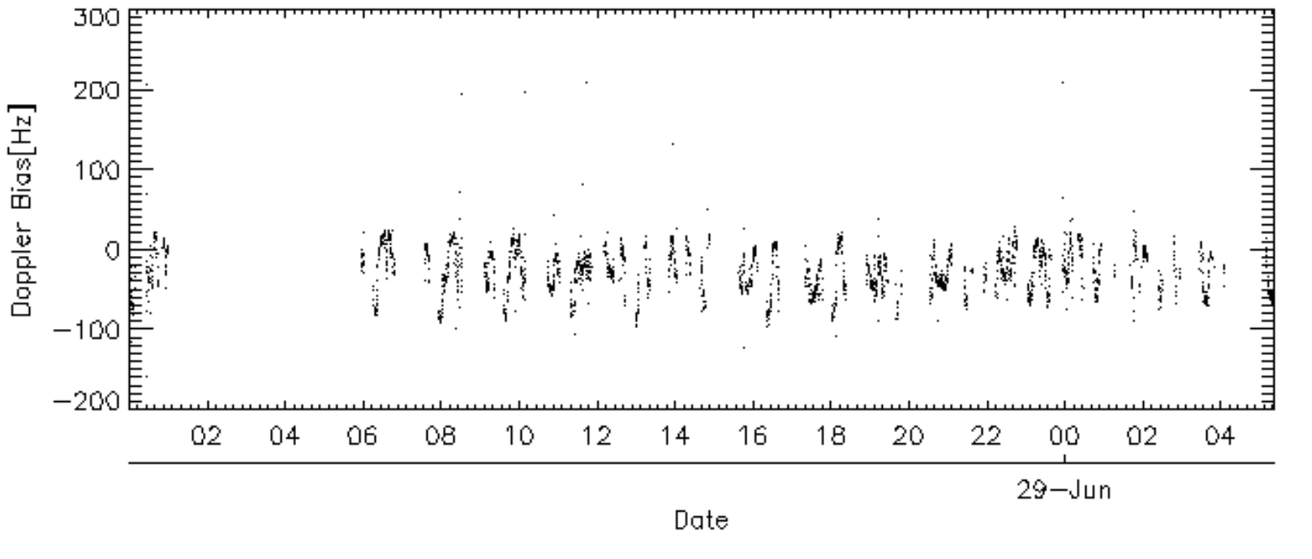

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

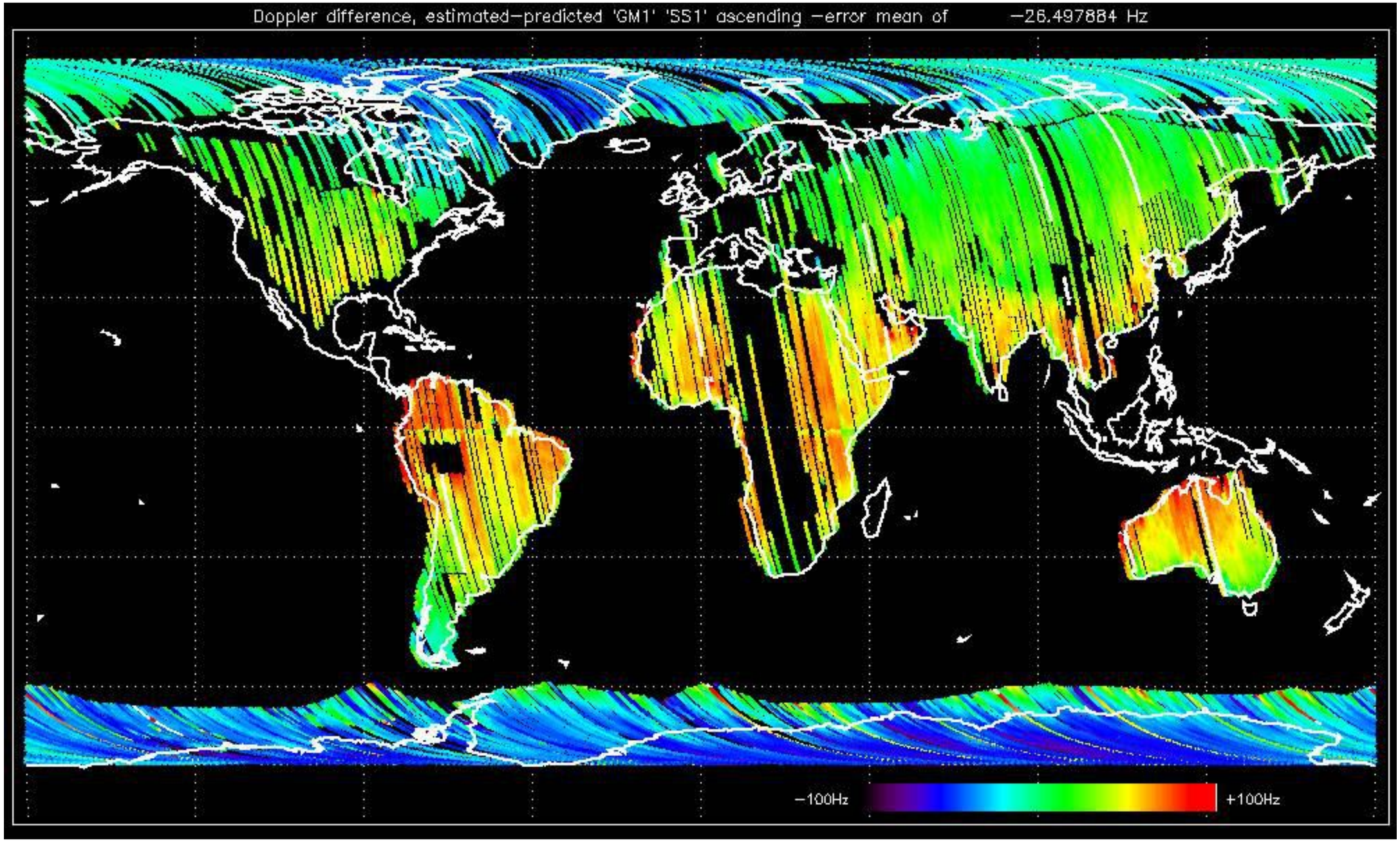

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

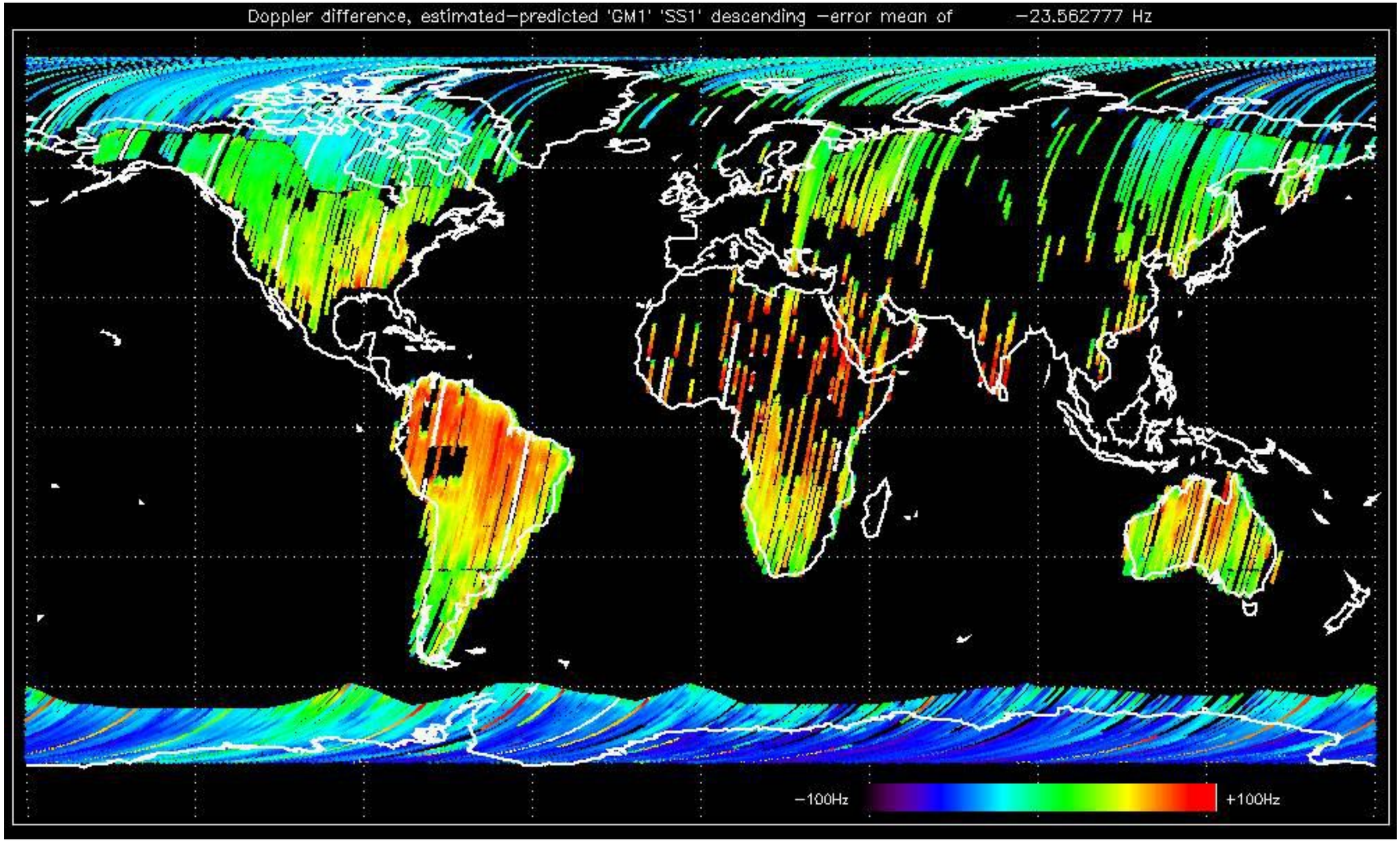

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
02
04
29−Jun
Date

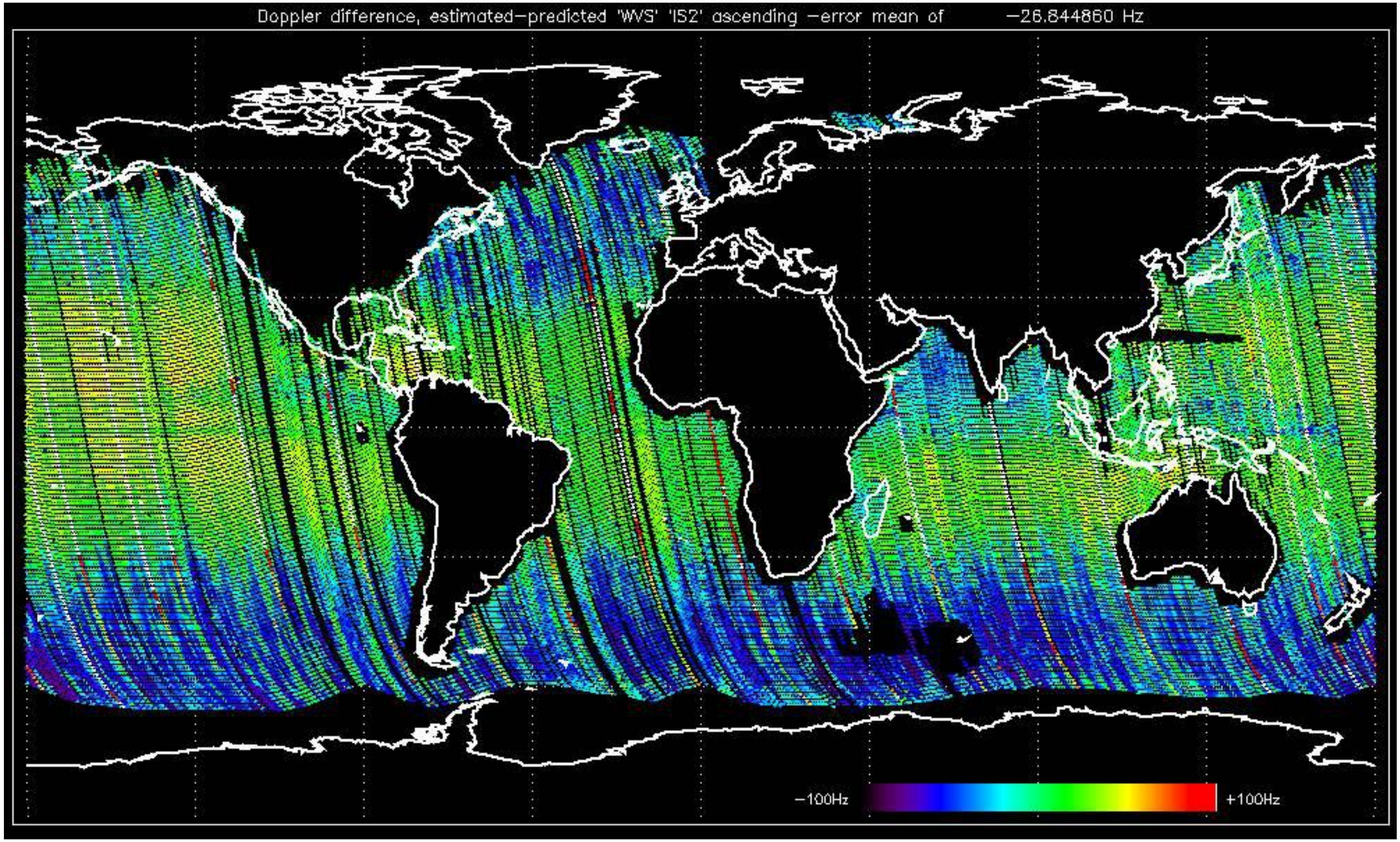

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

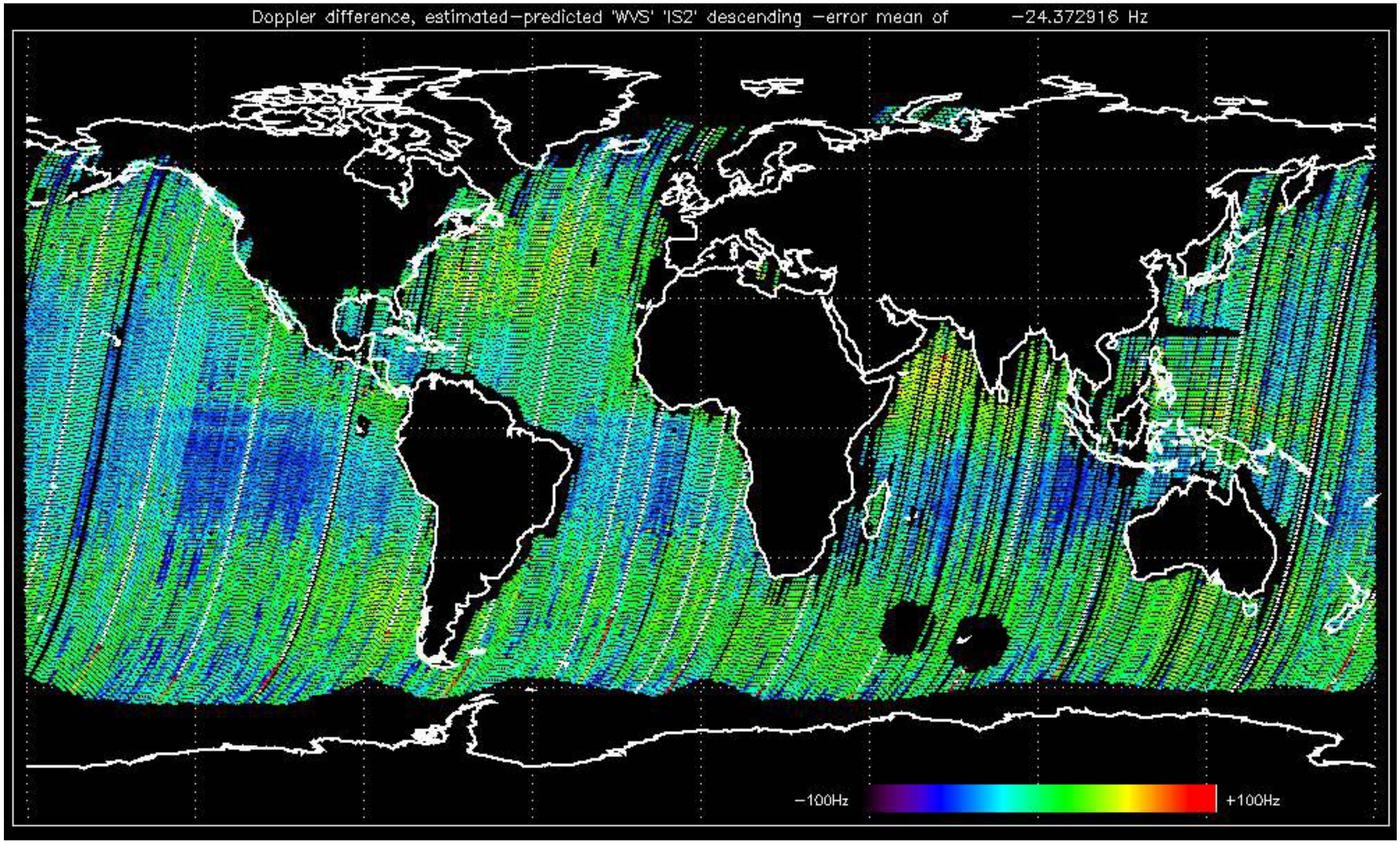

Doppler Bias[Hz]
300
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −26.497884 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.562777 Hz
−100Hz
+100Hz

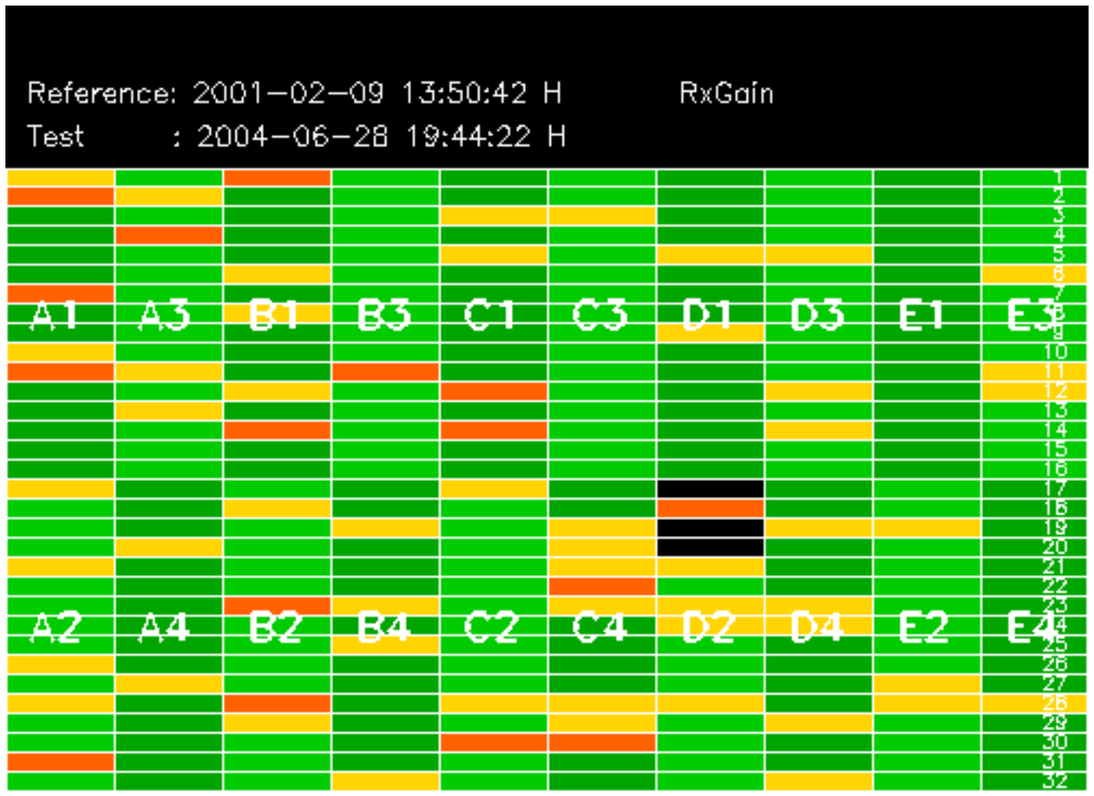

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −26.844860 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −24.372916 Hz
−100Hz
+100Hz

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

- ASA_MS__0PNPDK20040628_194422_000000152028_00099_12177_0006.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2004-06-28 19:44:22 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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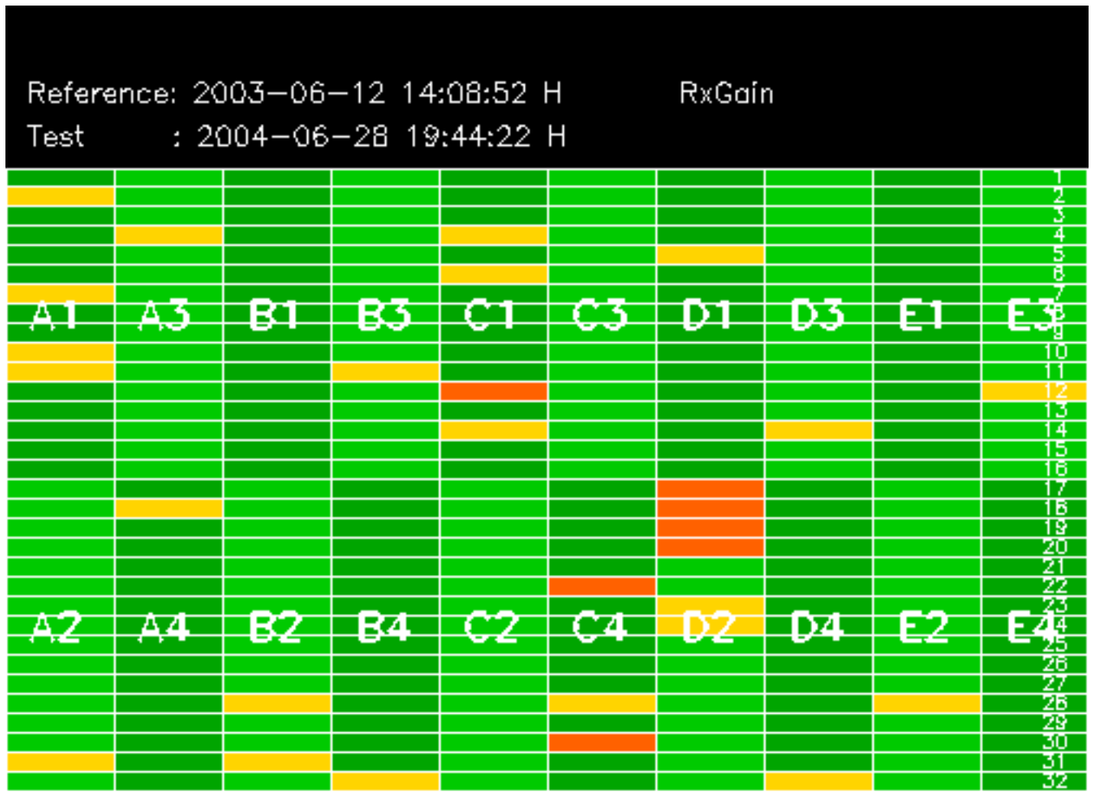
Reference: 2003-06-12 14:08:52 H
Test : 2004-06-28 19:44:22 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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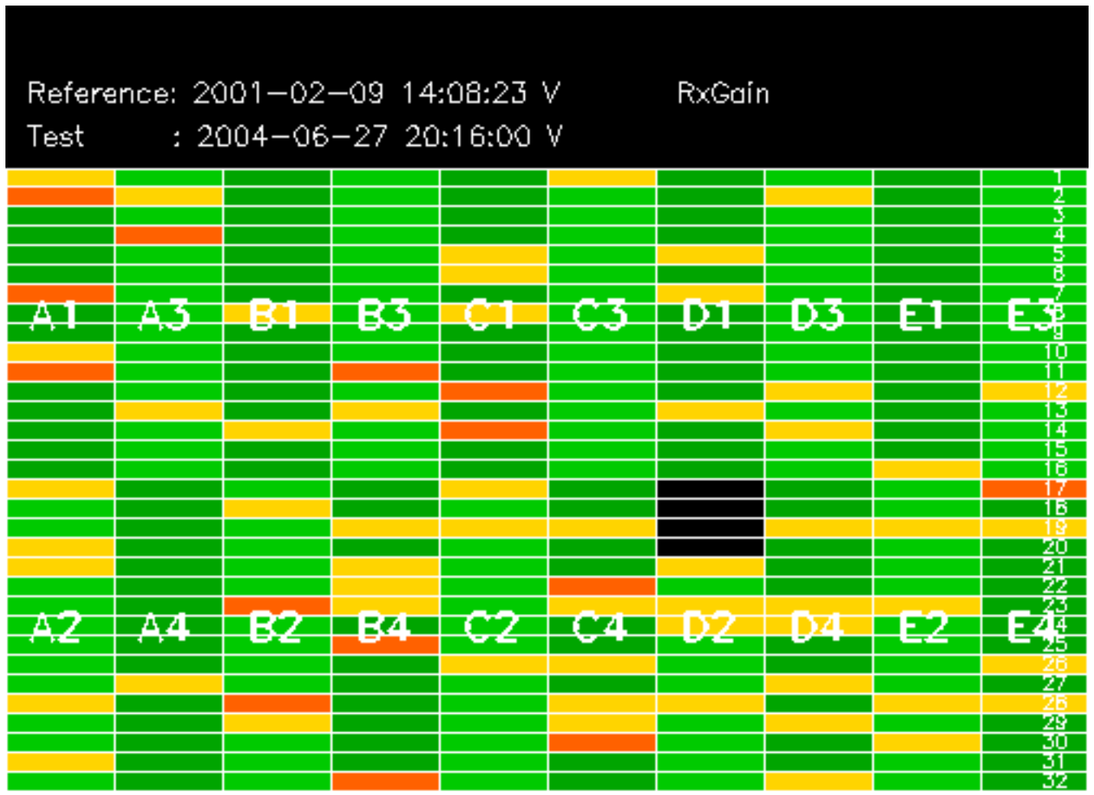
Reference: 2001-02-09 14:08:23 V
Test : 2004-06-27 20:16:00 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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9
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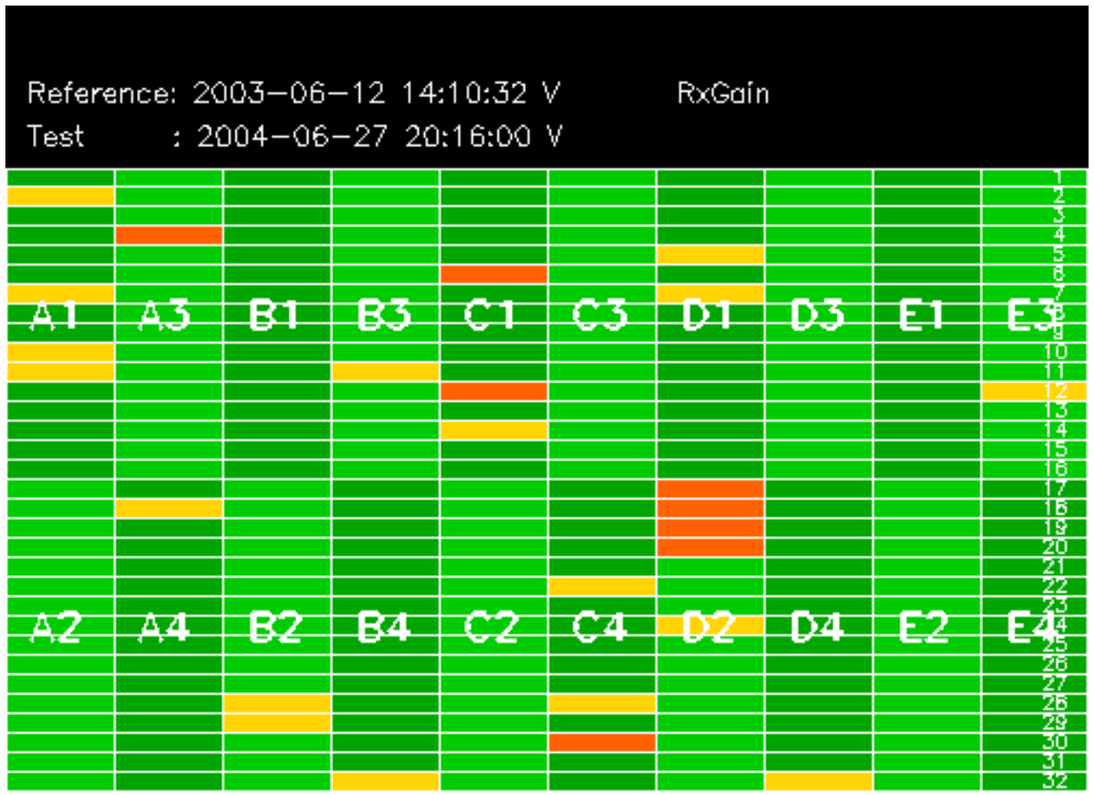
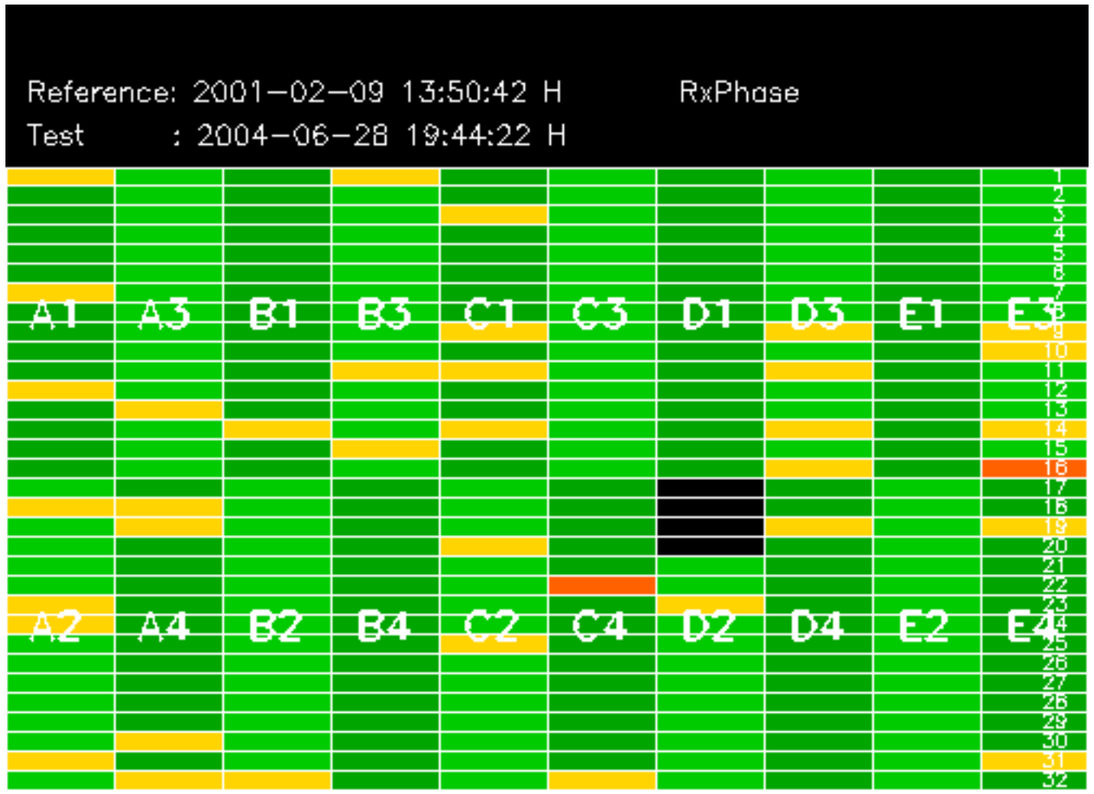
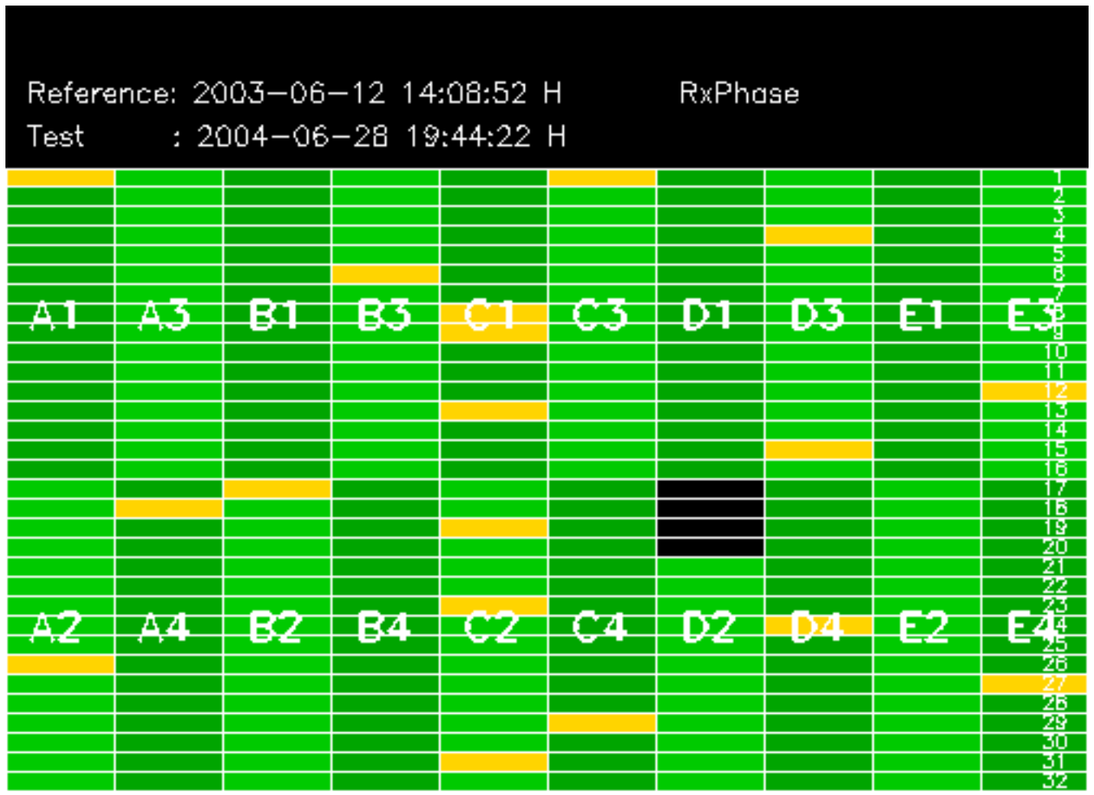

Reference: 2003-06-12 14:10:32 V
Test : 2004-06-27 20:16:00 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-06-28 19:44:22 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 : 2004-06-28 19:44:22 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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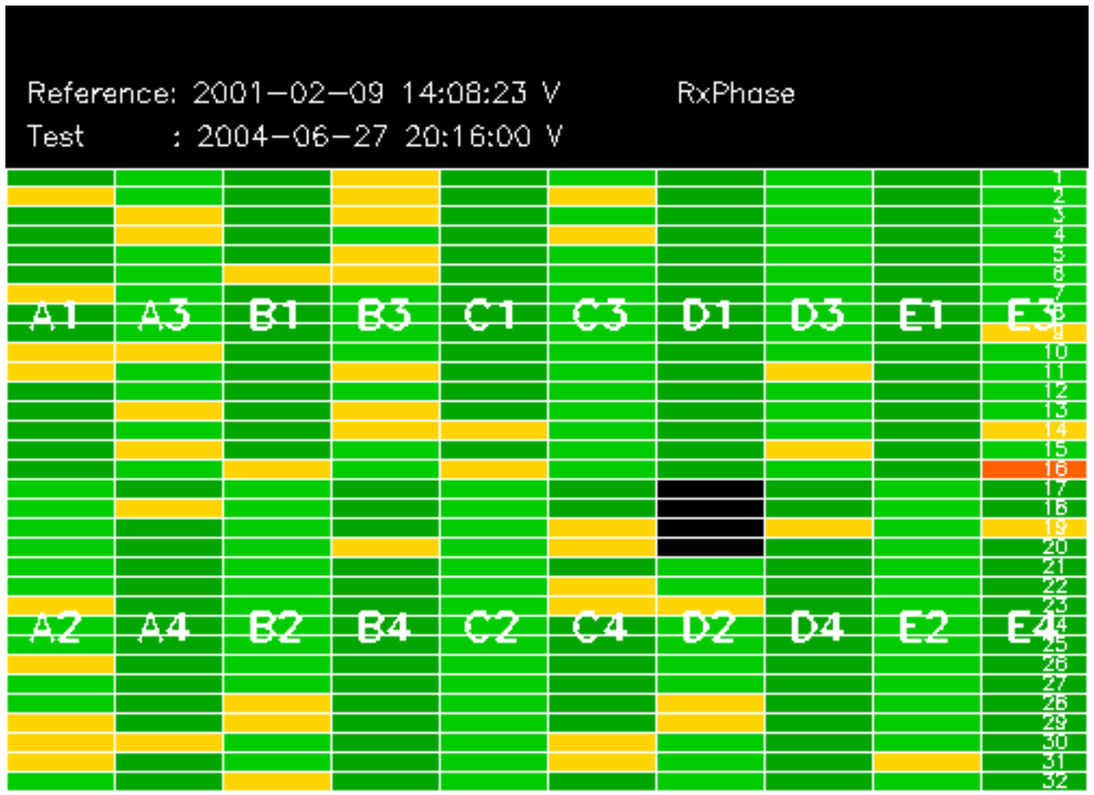
Reference: 2001-02-09 14:08:23 V
Test : 2004-06-27 20:16:00 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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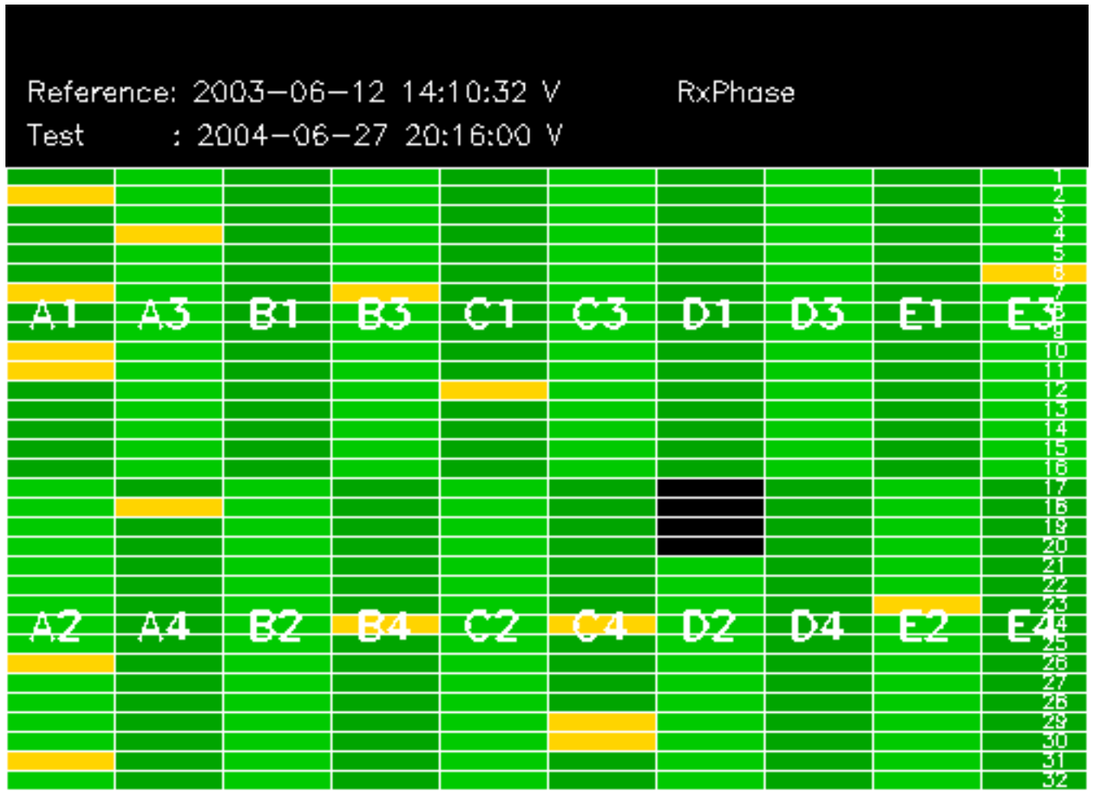
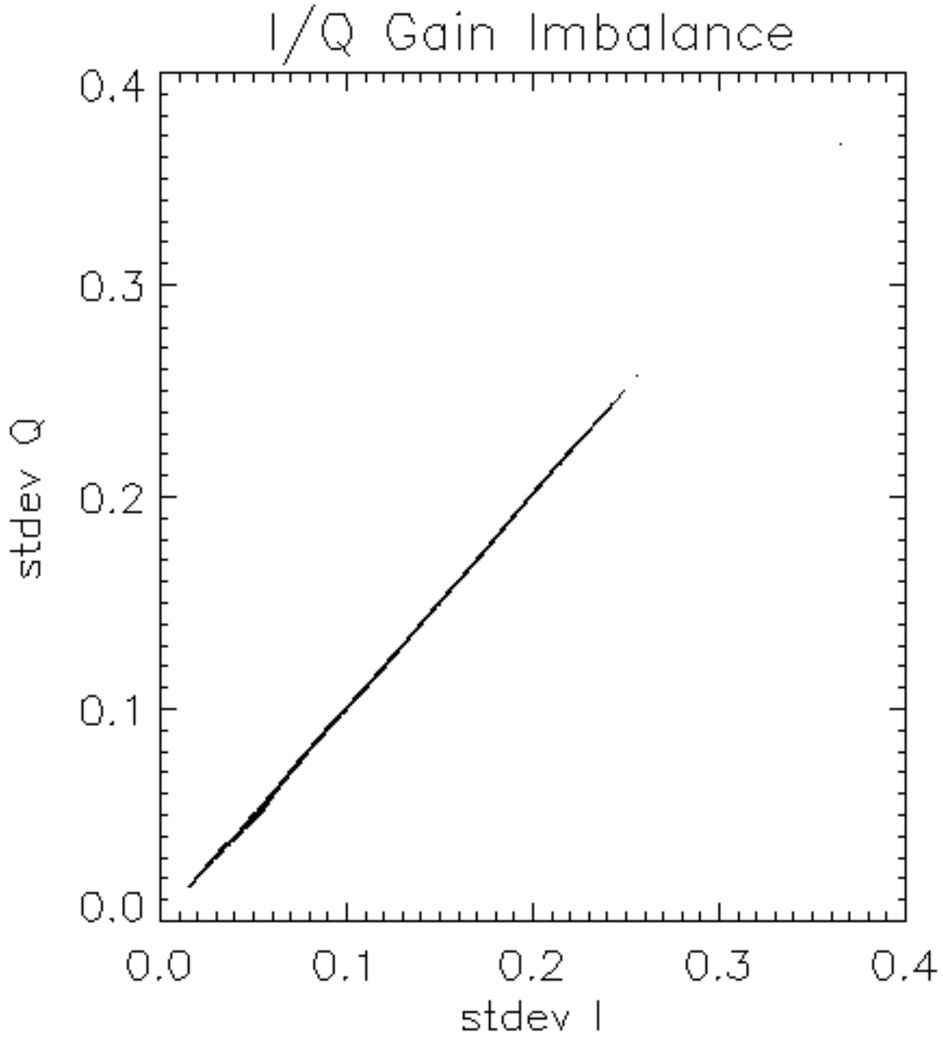
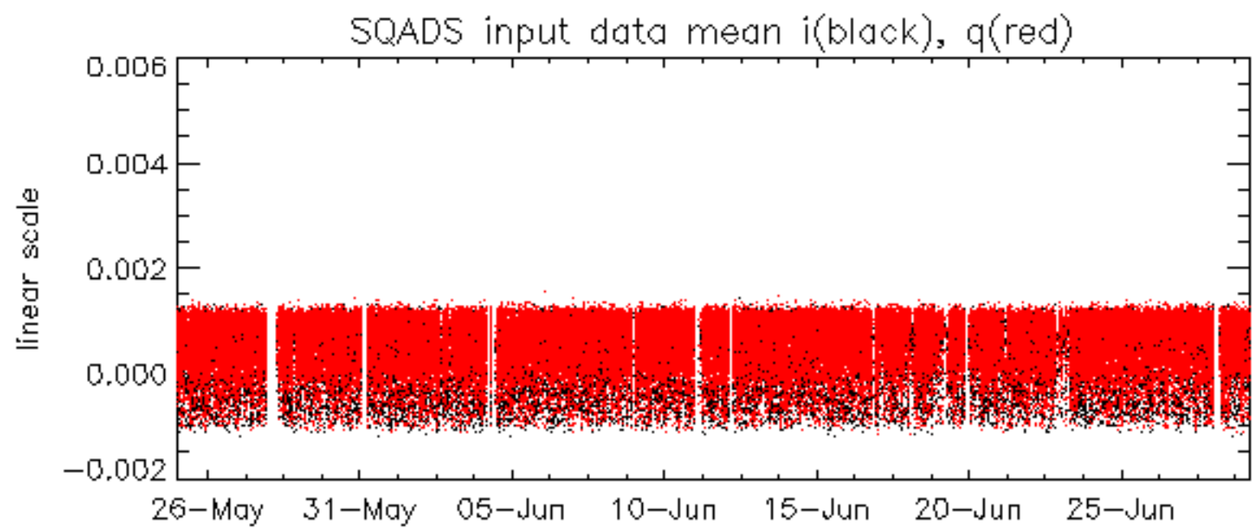
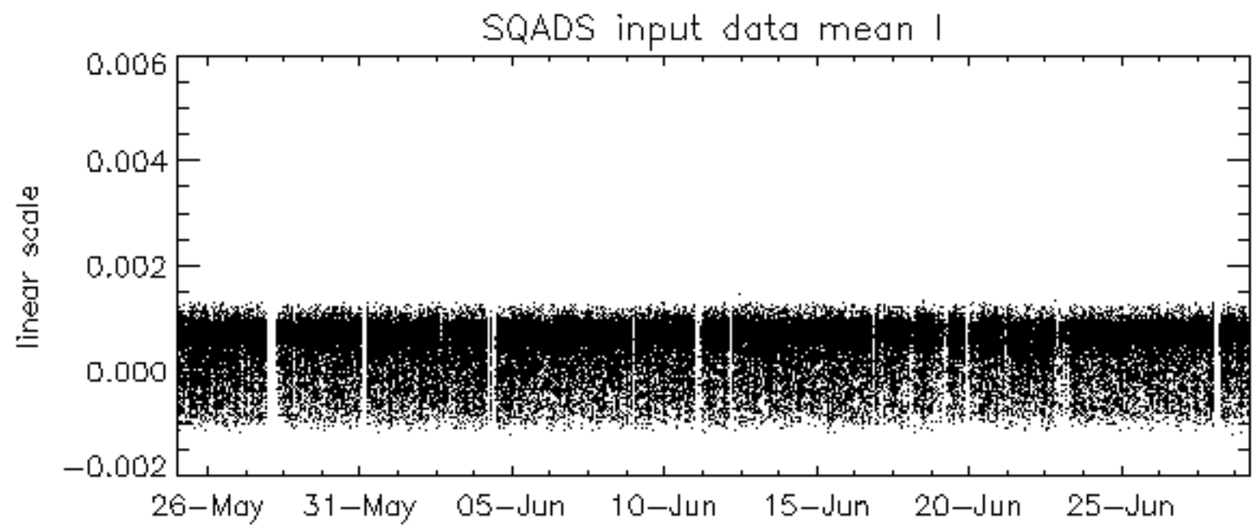
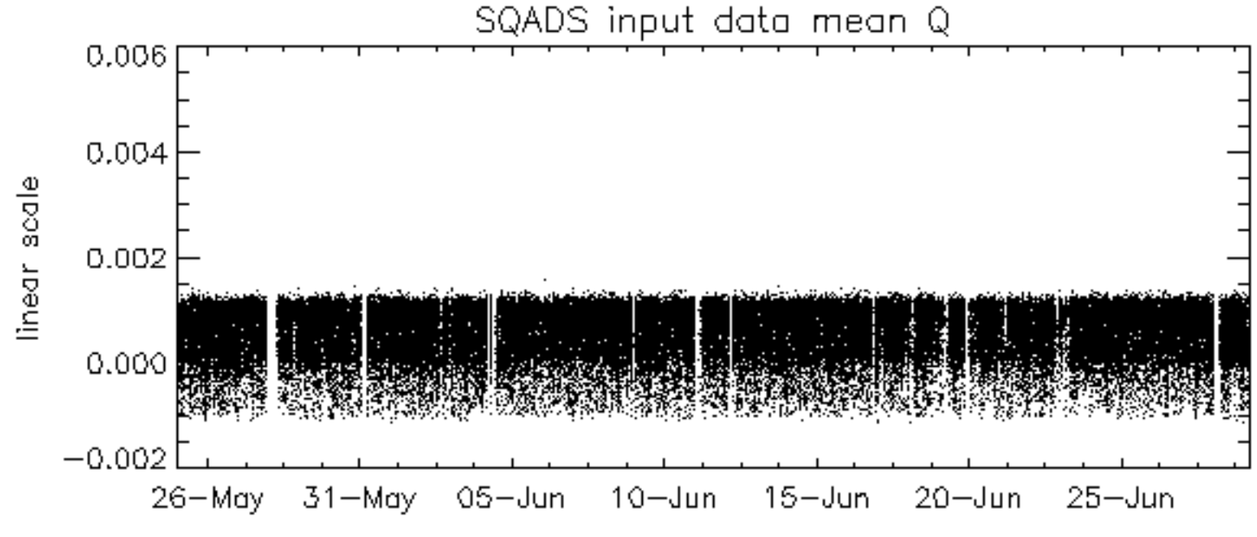
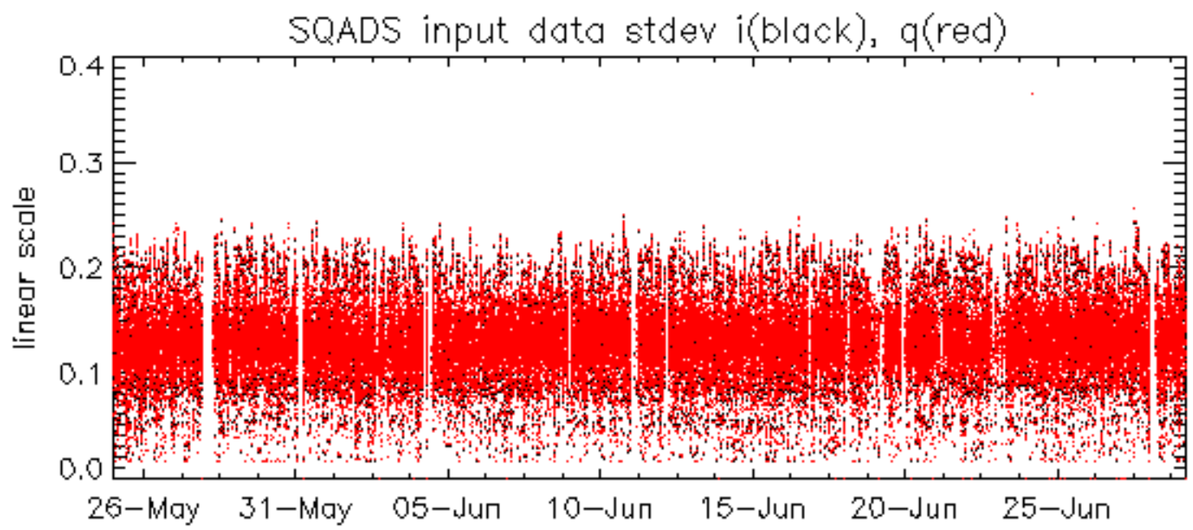

Reference: 2003-06-12 14:10:32 V
Test : 2004-06-27 20:16:00 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

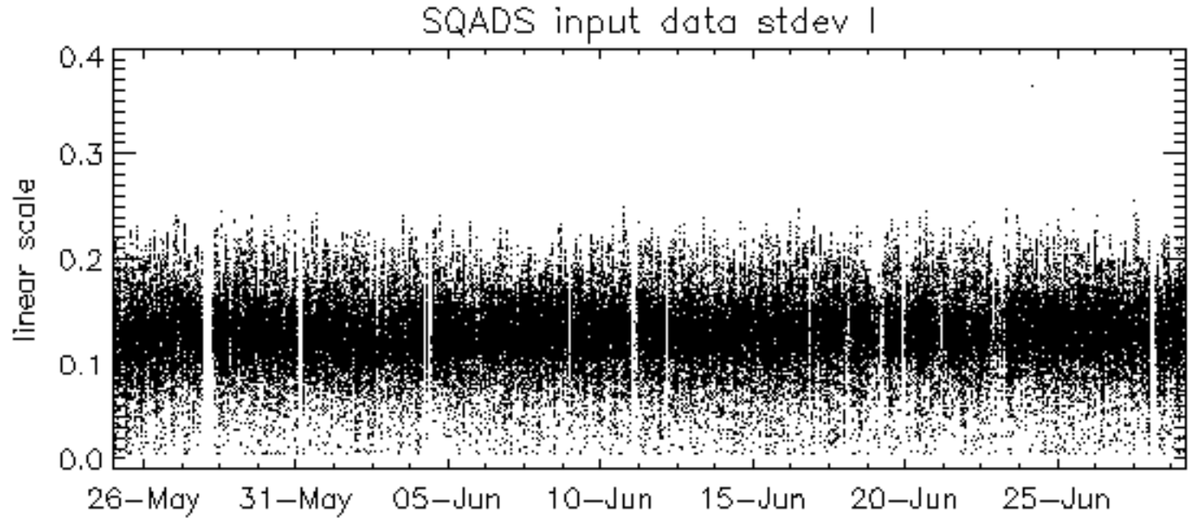

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

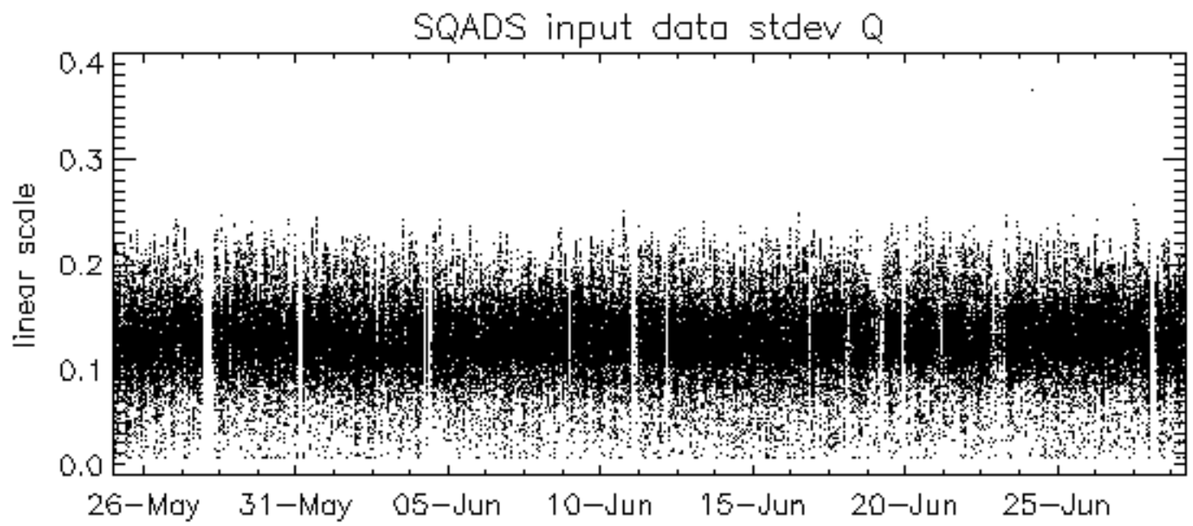

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun

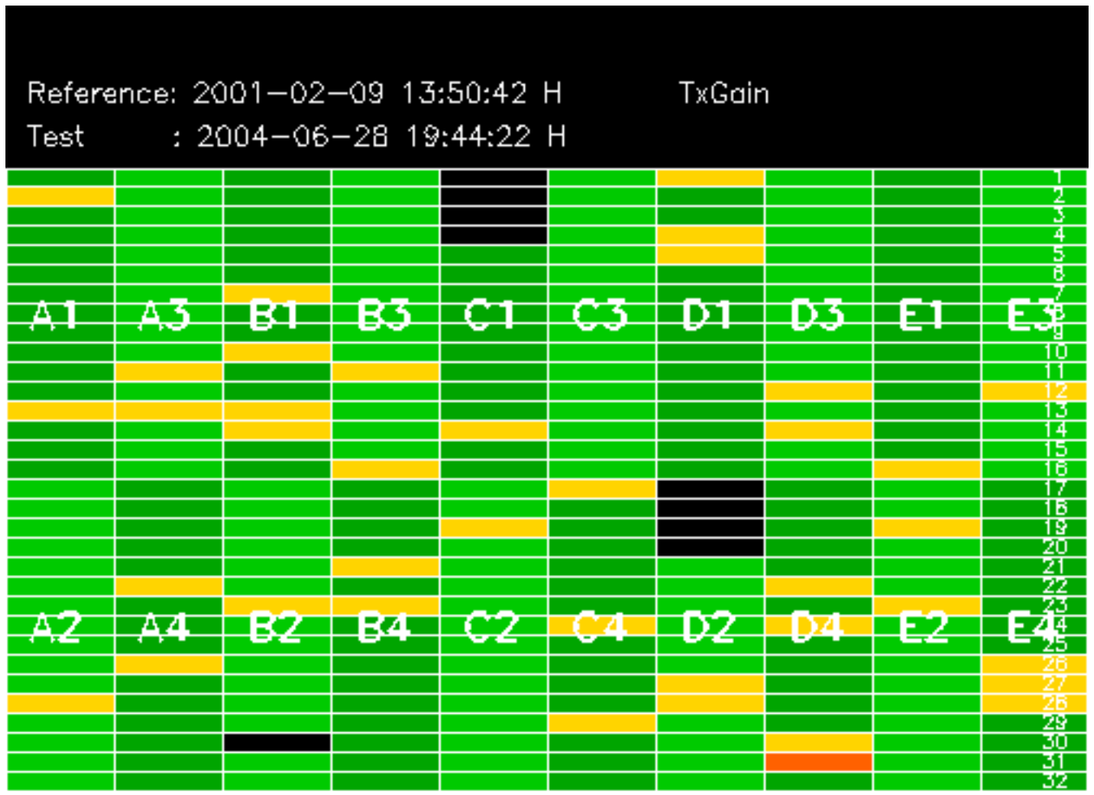

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun

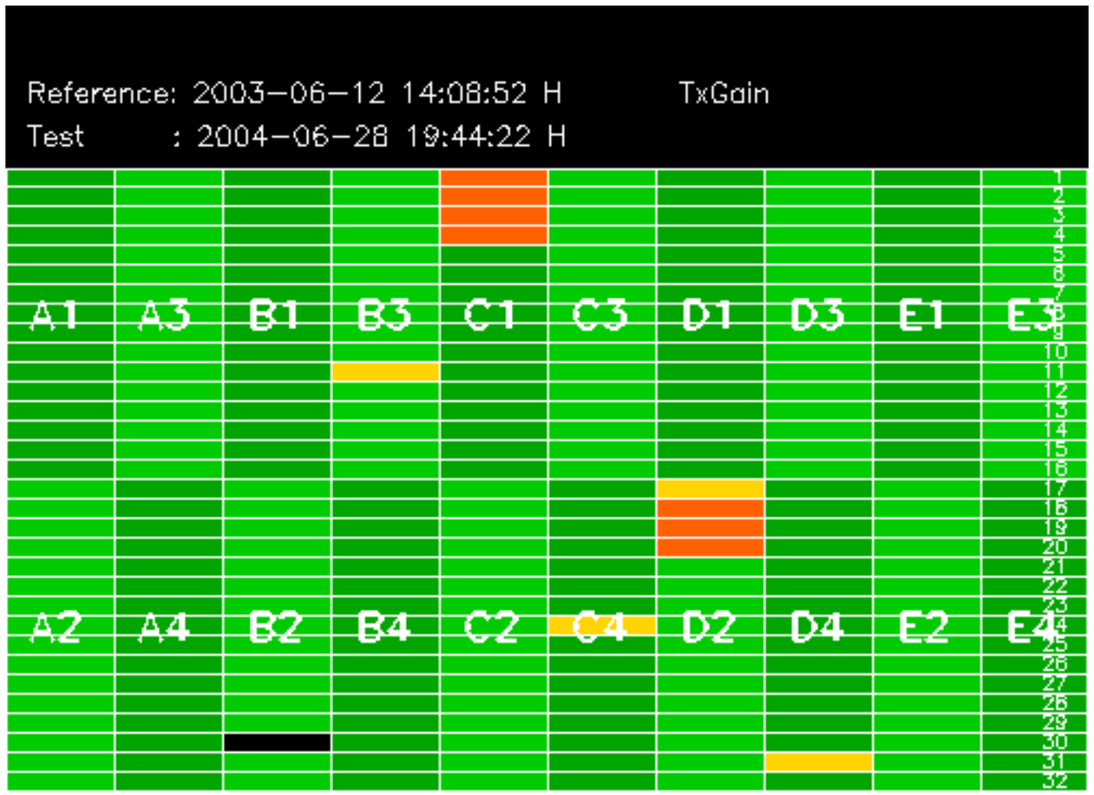

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26–May
31–May
05–Jun
10–Jun
15–Jun
20–Jun
25–Jun


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26–May
31–May
05–Jun
10–Jun
15–Jun
20–Jun
25–Jun


Reference: 2001-02-09 13:50:42 H
Test : 2004-06-28 19:44:22 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 : 2004-06-28 19:44:22 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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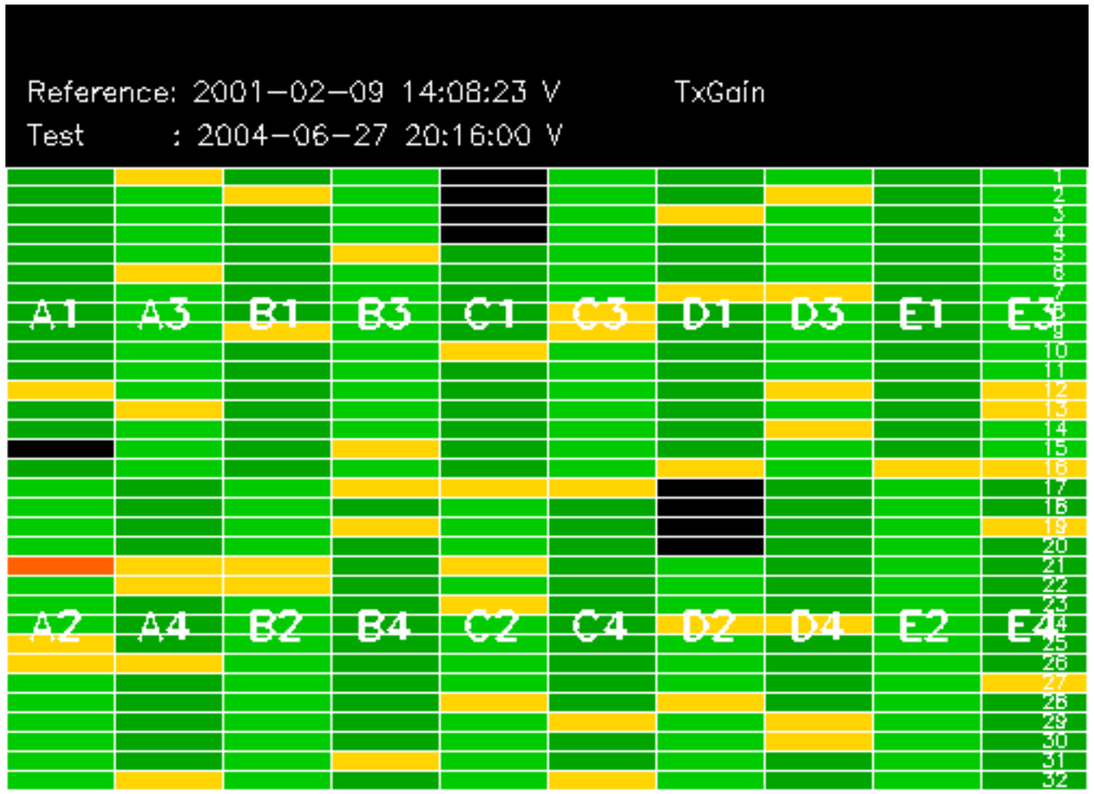
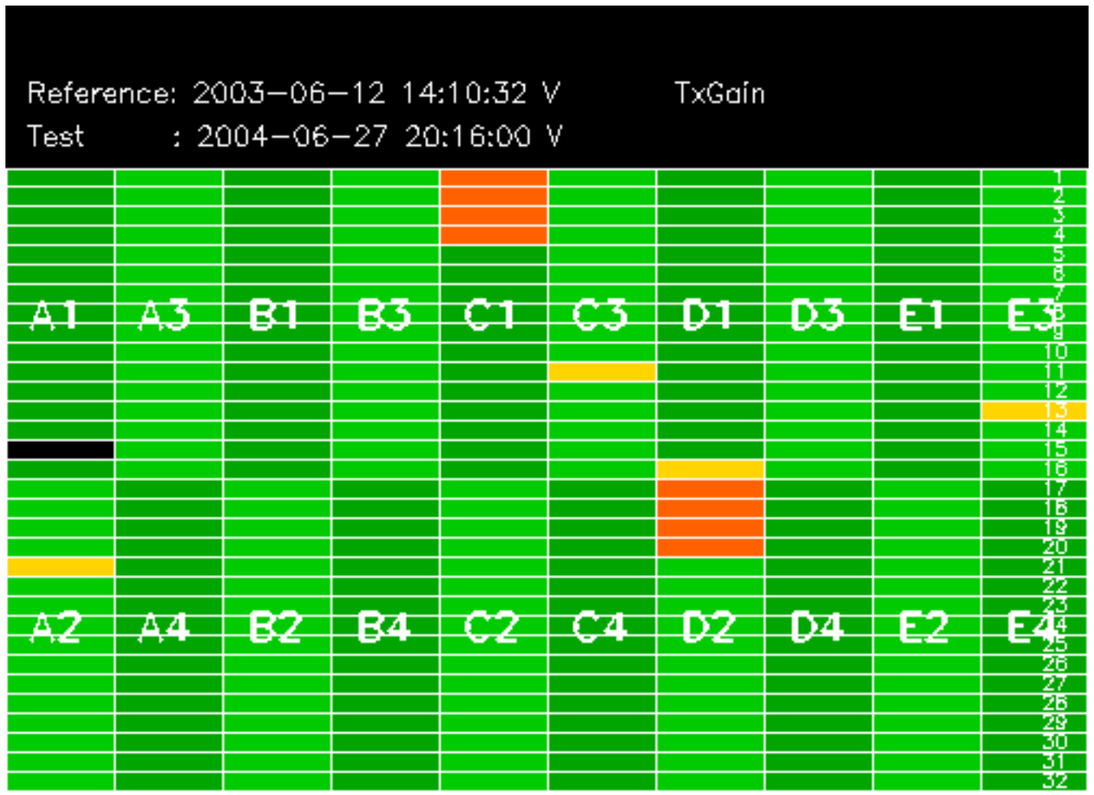
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2004-06-27 20:16:00 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 : 2004-06-27 20:16:00 V
TxGain
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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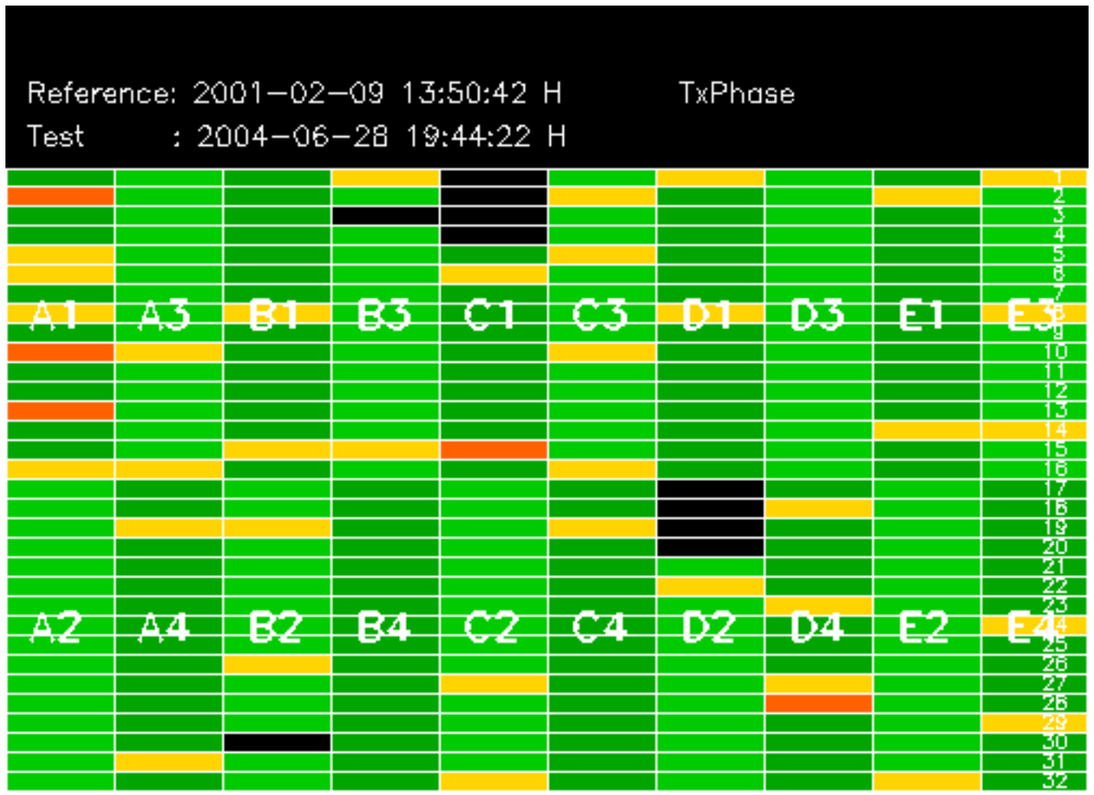
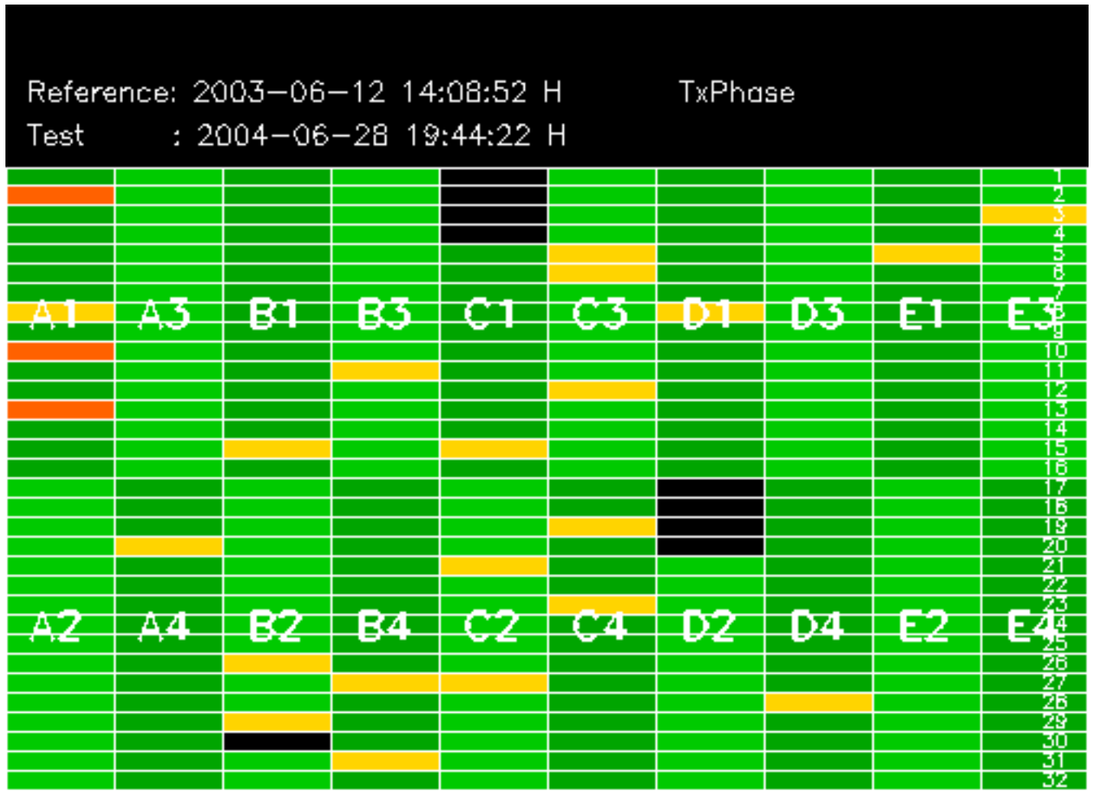
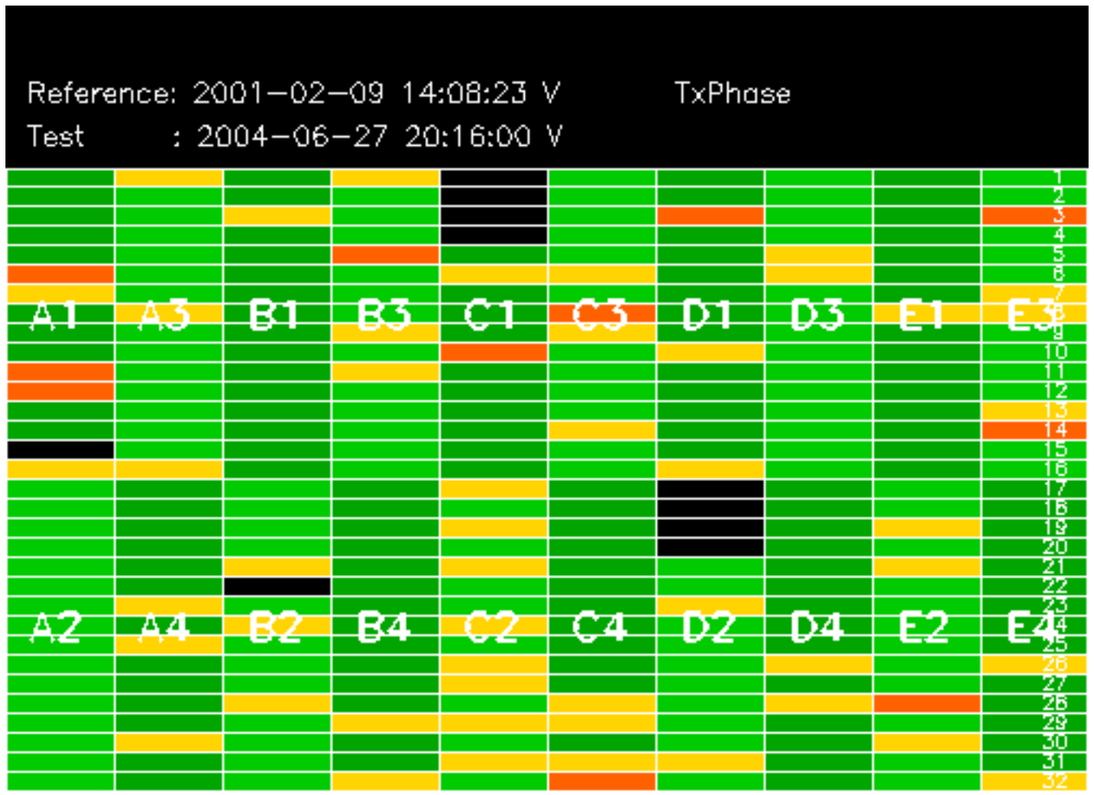
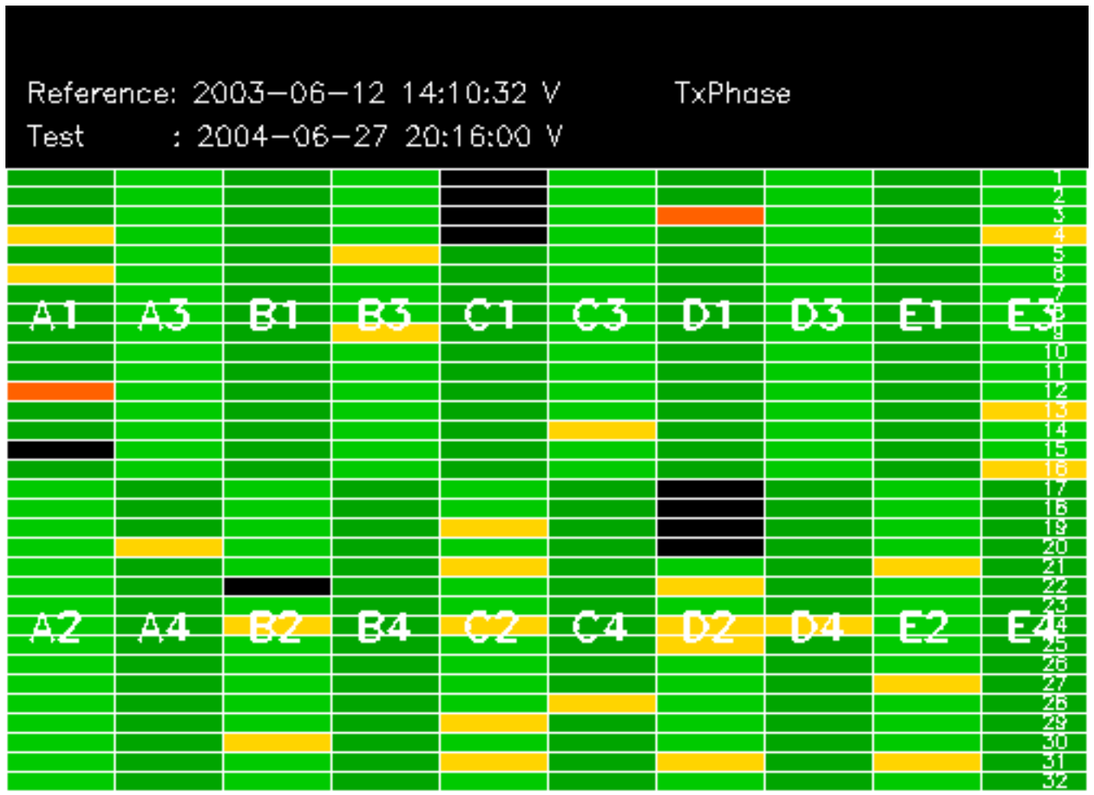
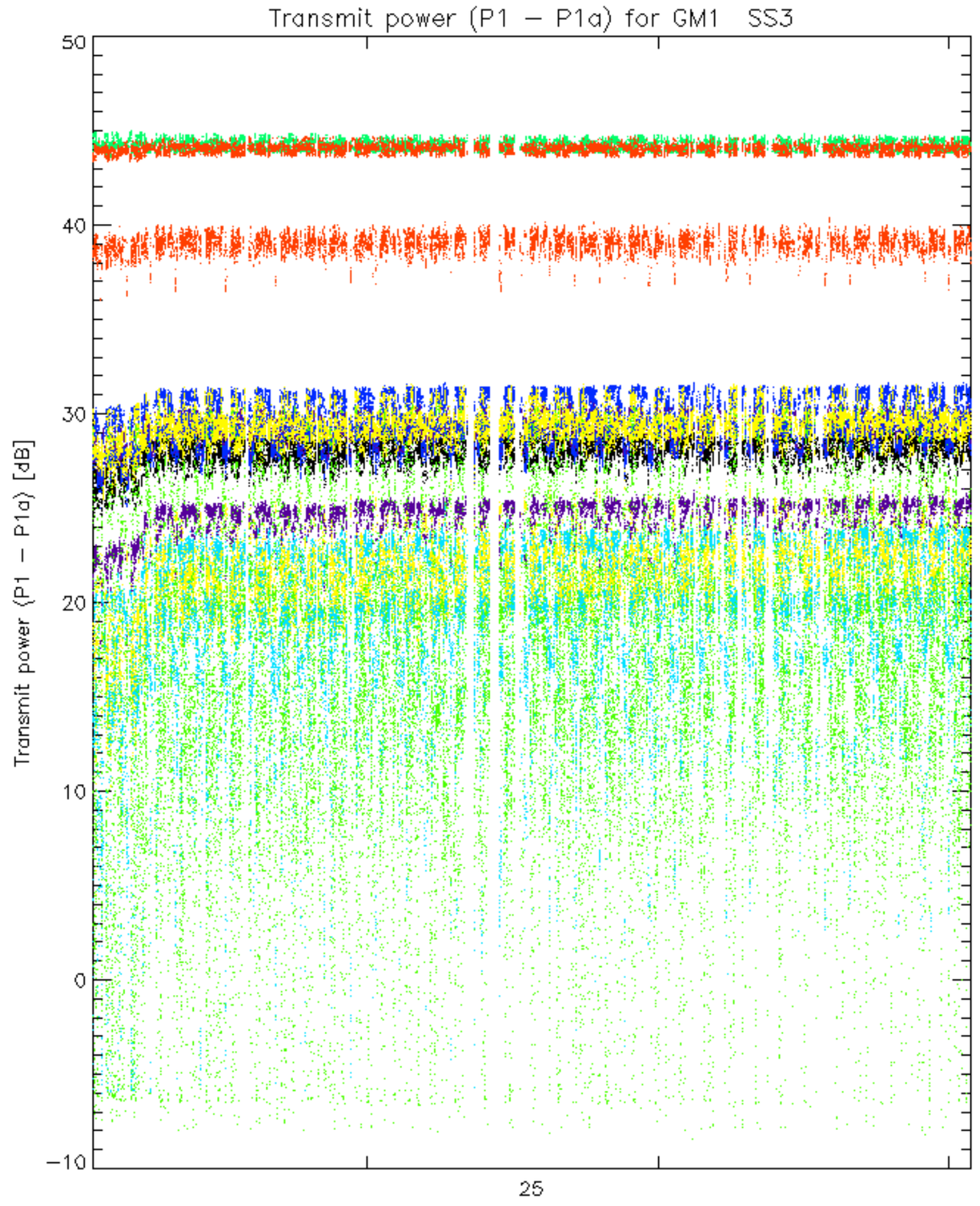
30
31
32

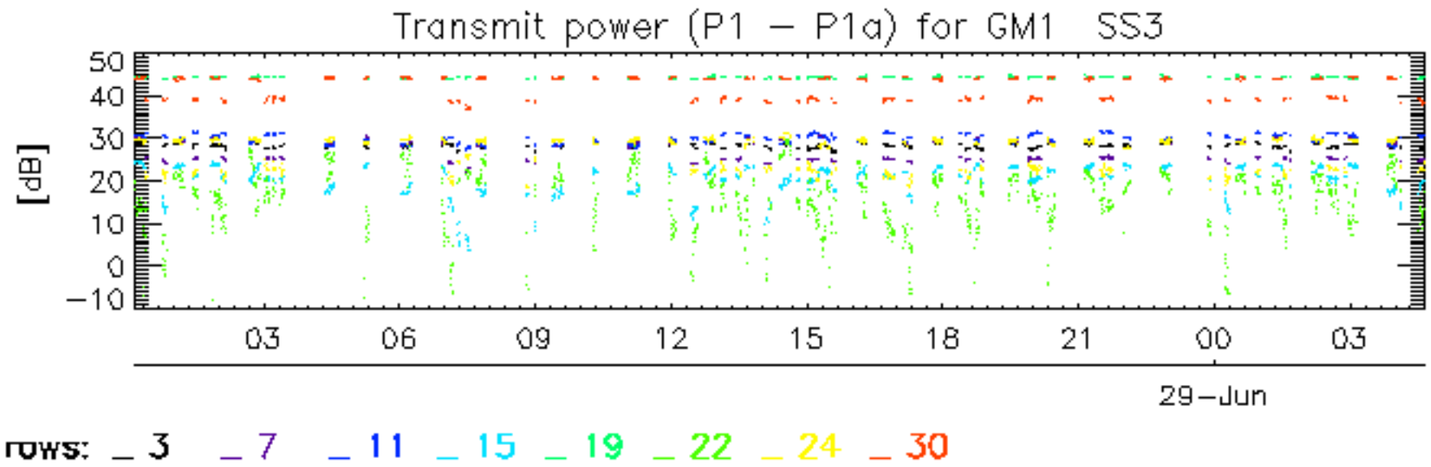

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-06-28 19:44:22 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

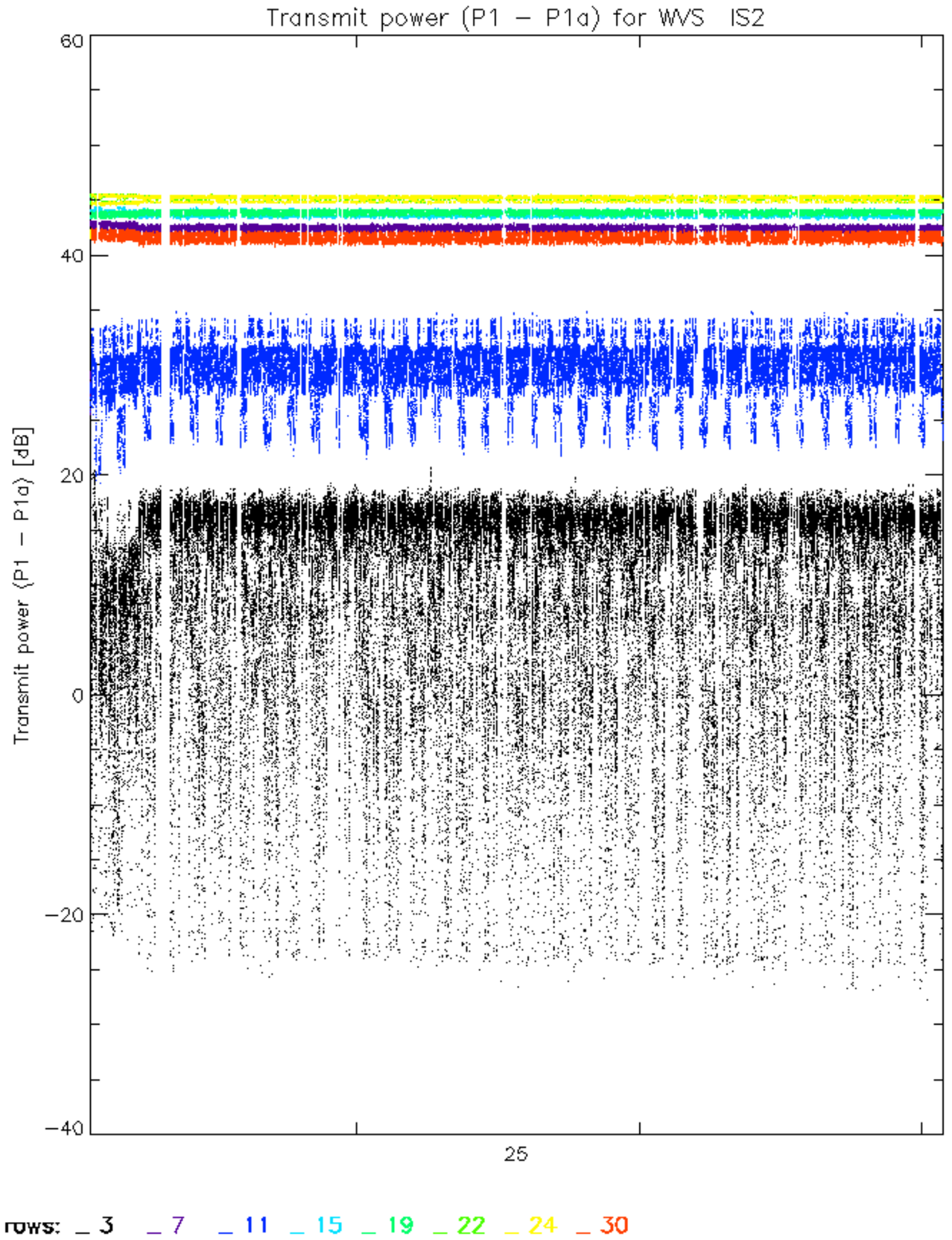

Reference: 2003-06-12 14:08:52 H
Test : 2004-06-28 19:44:22 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

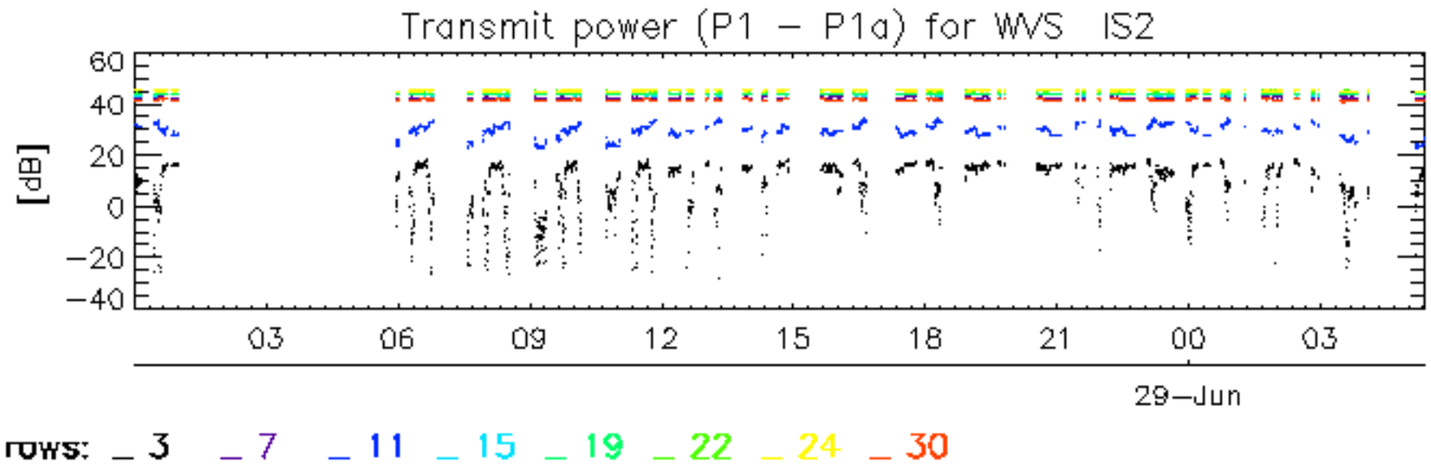

Reference: 2001-02-09 14:08:23 V
Test : 2004-06-27 20:16:00 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-06-27 20:16:00 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
−10
25
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
29–Jun
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
25
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Transmit power (P1 − P1a) for WVS IS2
[dB]
60
40
20
0
−20
−40
03
06
09
12
15
18
21
00
03
29−Jun
rows: 3 7 11 15 19 22 24 30

No unavailabilities during the reported period.