REPORT OF 040927

last update on Mon Sep 27 14:32:54 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

ASAR was in HEATER/REFUSE Mode owing to all PSU's on tile B4 reported off from 26 Sep 2004 21:24:58.000 to 27 Sep 2004 11:02:04.000

2.2 - Browse Visual Inspection

No anomaly observed from 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 any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

- ASA_MS__0PNPDE20040926_053212_000000152030_00377_13457_0025.N1

Polarisation	Start Time
V	20040926 053212
H	20040925 060349

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.

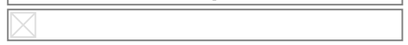
4.1 - Daily statistics

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	-3.468787	0.022673	-0.020486
7	P1	-3.338429	0.022293	-0.003785
11	P1	-4.648750	0.039546	-0.032983
15	P1	-5.763142	0.084178	-0.048033
19	P1	-3.513760	0.079186	-0.029006
22	P1	-4.557898	0.108866	-0.007552
24	P1	-5.001725	0.123626	-0.034380
30	P1	-7.037564	0.148521	-0.109474

3	P1	-16.224703	0.395830	-0.012239
7	P1	-14.013918	0.062729	-0.015495
11	P1	-20.253170	0.241083	-0.098269
15	P1	-11.774884	0.039694	0.029044
19	P1	-14.035157	1.105880	-0.121372
22	P1	-16.036812	0.355635	0.264387
24	P1	-14.466919	0.294669	0.107022
30	P1	-17.952803	0.621624	-0.143827

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.308958	0.085262	0.009274
7	P2	-22.601192	0.116801	0.037232
11	P2	-15.212643	0.134359	0.129577
15	P2	-7.061607	0.097103	0.019277
19	P2	-9.567258	0.139767	0.039621
22	P2	-17.312111	0.108056	0.073253
24	P2	-20.762156	0.088599	-0.030195
30	P2	-19.171593	0.082144	0.099044

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.154571	0.003098	-0.008662
7	P3	-8.154572	0.003098	-0.008667
11	P3	-8.154569	0.003098	-0.008675
15	P3	-8.154566	0.003098	-0.008688
19	P3	-8.154567	0.003098	-0.008696
22	P3	-8.154567	0.003098	-0.008701
24	P3	-8.154569	0.003098	-0.008707
30	P3	-8.154572	0.003098	-0.009175

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	-2.831107	0.047327	-0.061406
7	P1	-3.030195	0.082675	-0.037438
11	P1	-3.889588	0.063158	-0.041100
15	P1	-3.535034	0.079662	-0.020454
19	P1	-3.521633	0.098484	-0.054297
22	P1	-5.730991	0.124995	-0.023038
24	P1	-3.961221	0.055339	-0.066989
30	P1	-6.210627	0.097703	0.007802
3	P1	-10.827514	0.164684	-0.344267
7	P1	-10.115404	0.145250	-0.016437
11	P1	-12.167735	0.106527	-0.012886
15	P1	-11.683146	0.074407	-0.062286
19	P1	-15.735414	2.084380	-0.080131
22	P1	-23.345987	1.505934	0.082995
24	P1	-17.975573	0.358010	-0.170218
30	P1	-20.412014	1.274305	0.030129

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.986456	0.046621	0.037457
7	P2	-22.735767	0.038277	0.058292
11	P2	-10.917217	0.058834	0.143081
15	P2	-4.961216	0.029258	0.004180
19	P2	-6.773505	0.043936	0.010496
22	P2	-7.420185	0.036244	0.072280
24	P2	-11.060067	0.041403	-0.000957
30	P2	-22.144634	0.026830	0.077122

P3 Cyclic statistics

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

3	P3	-8.005396	0.003049	-0.007304
7	P3	-8.005424	0.003045	-0.007320
11	P3	-8.005463	0.003044	-0.007601
15	P3	-8.005516	0.003038	-0.007430
19	P3	-8.005474	0.003047	-0.007489
22	P3	-8.005507	0.003044	-0.007367
24	P3	-8.005526	0.003070	-0.007430
30	P3	-8.005382	0.003048	-0.007621

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	0.000469374
	stdev	2.18053e-07
MEAN Q	mean	0.000538827
	stdev	2.35062e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127275
	stdev	0.000954701

STDEV Q	mean	0.127494
	stdev	0.000964072

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

No anomaly 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

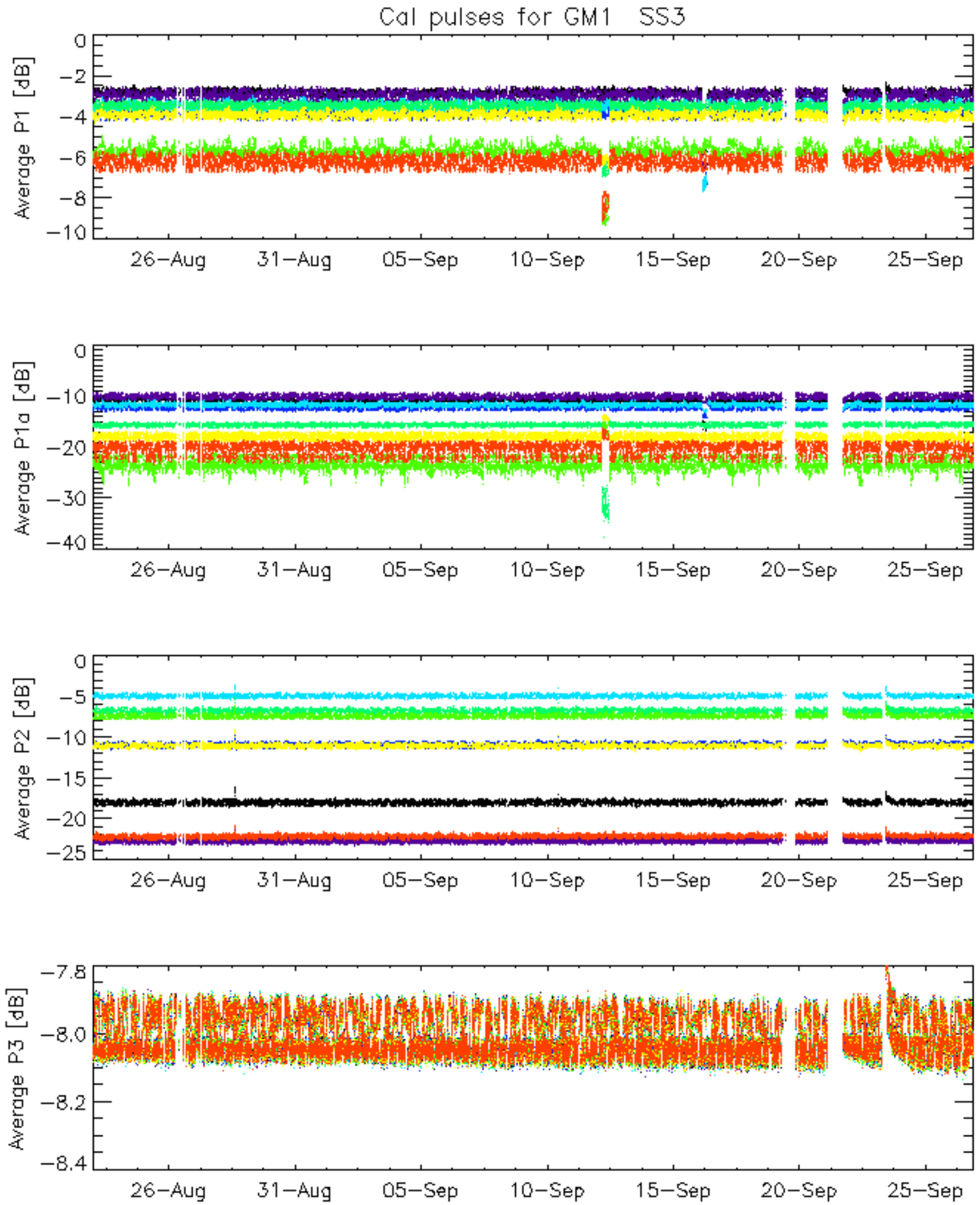
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

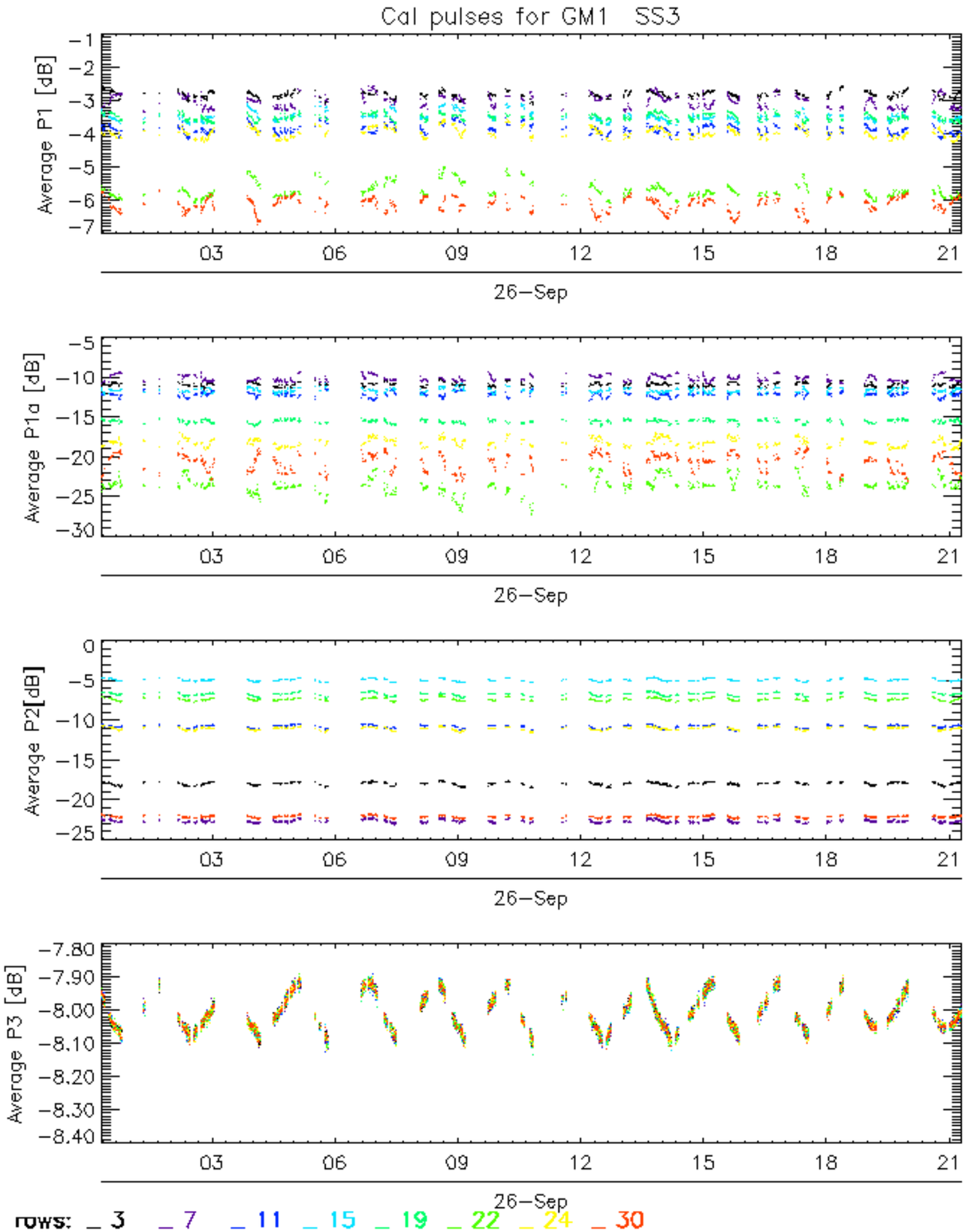
6.5 - Absolute Doppler for GM1

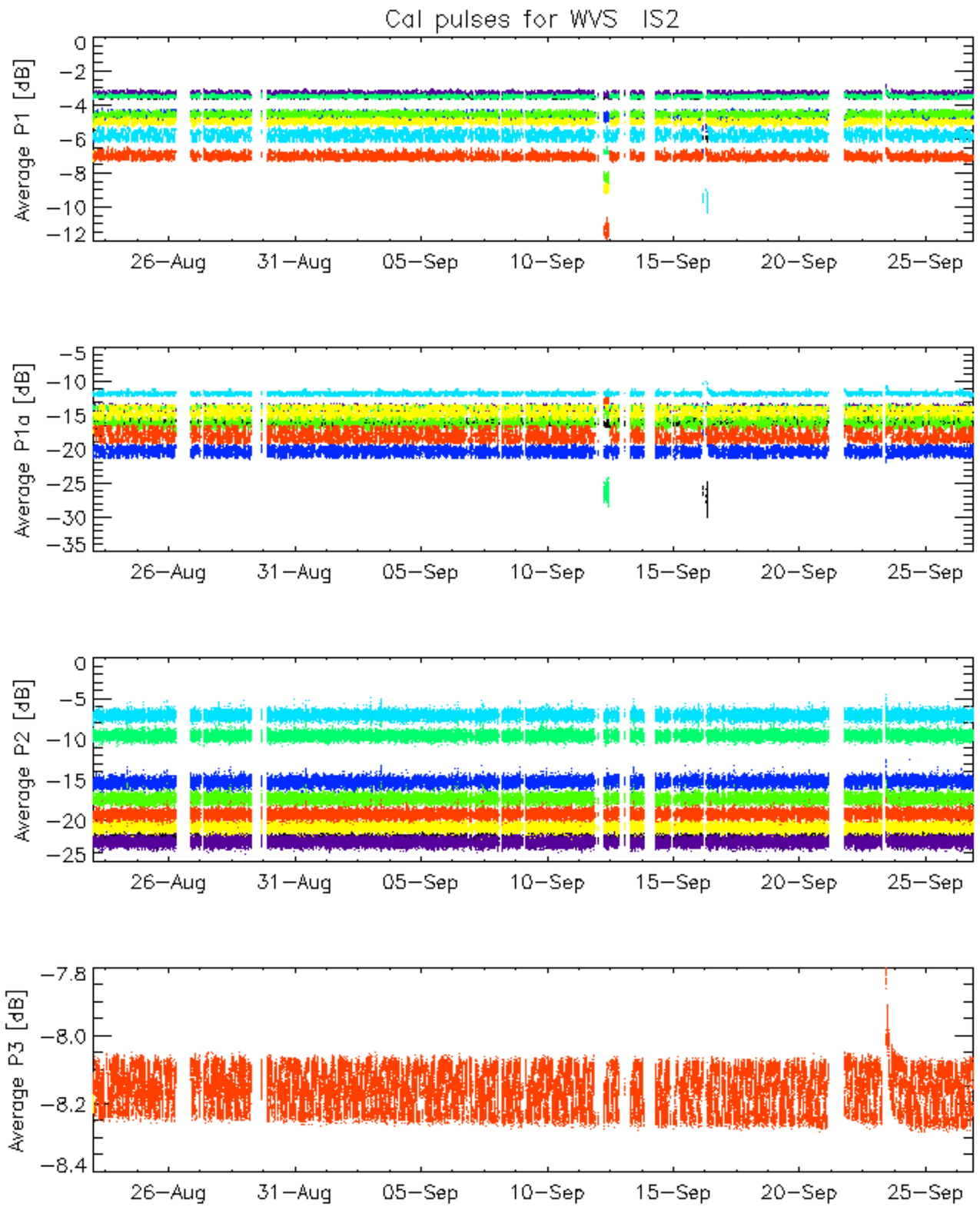
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

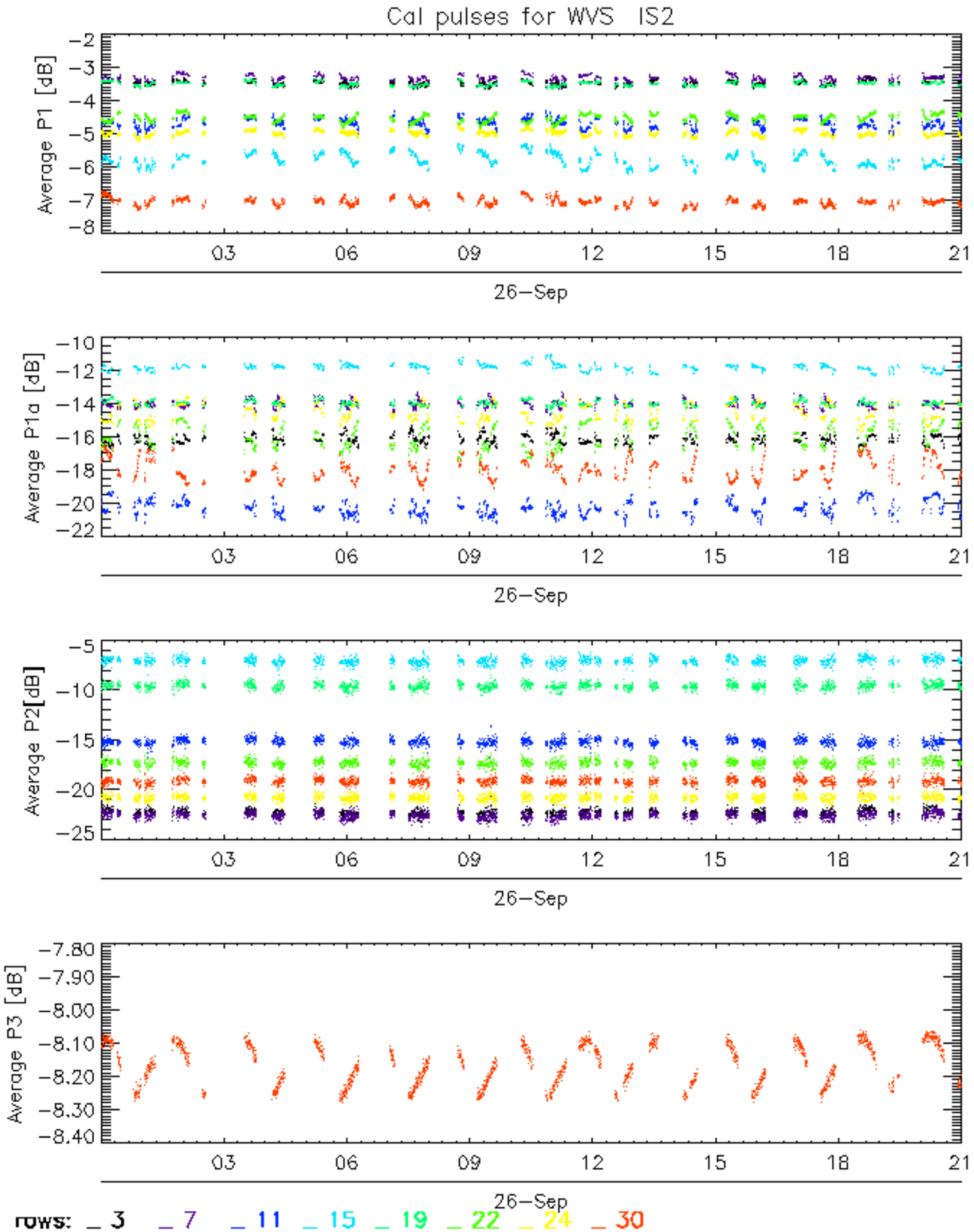
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒


Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
Average P1a [dB]
0
−10
−20
−30
−40
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

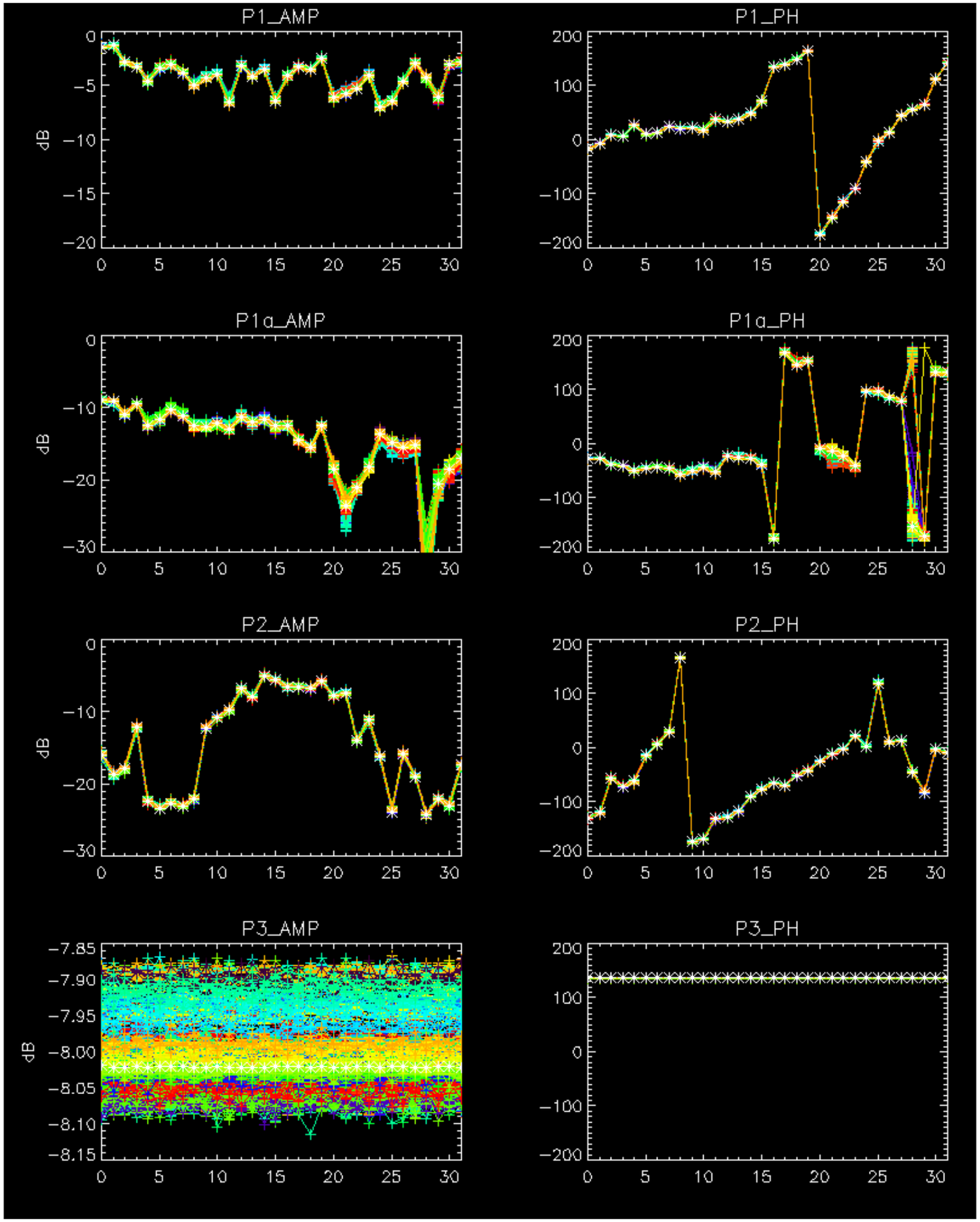

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
26−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
0
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

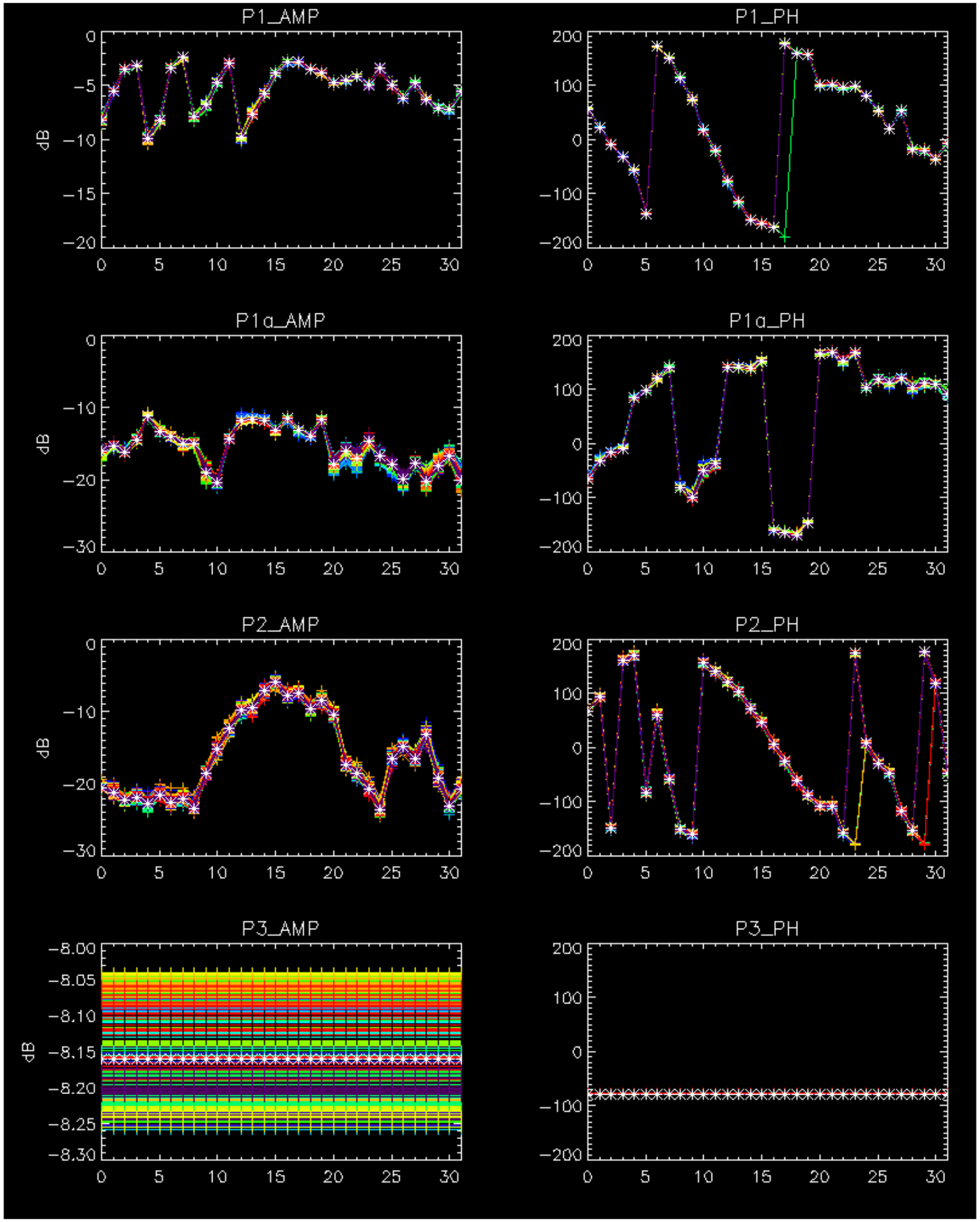

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


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

No anomaly observed from browse visual inspection.

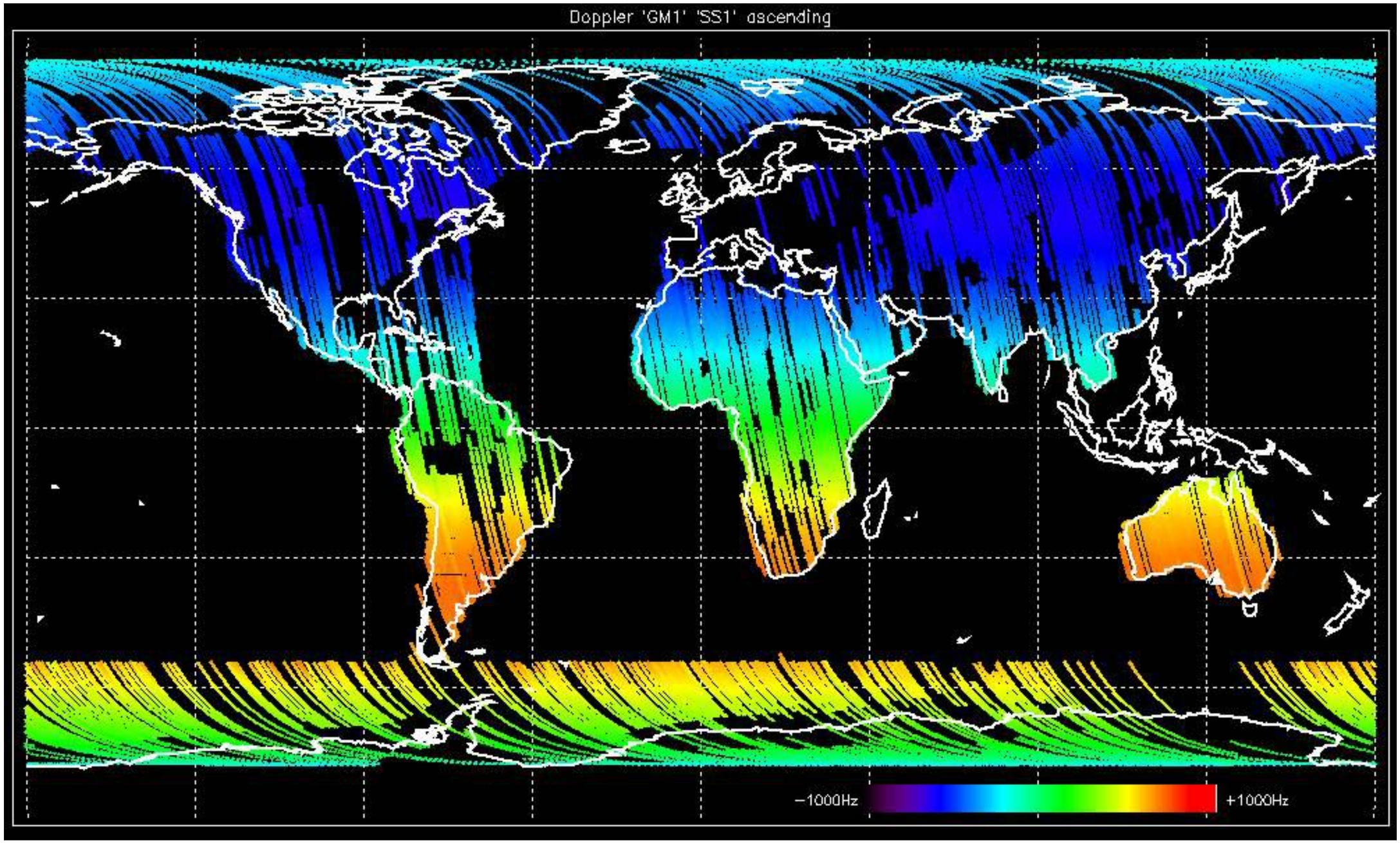
No anomalies observed.

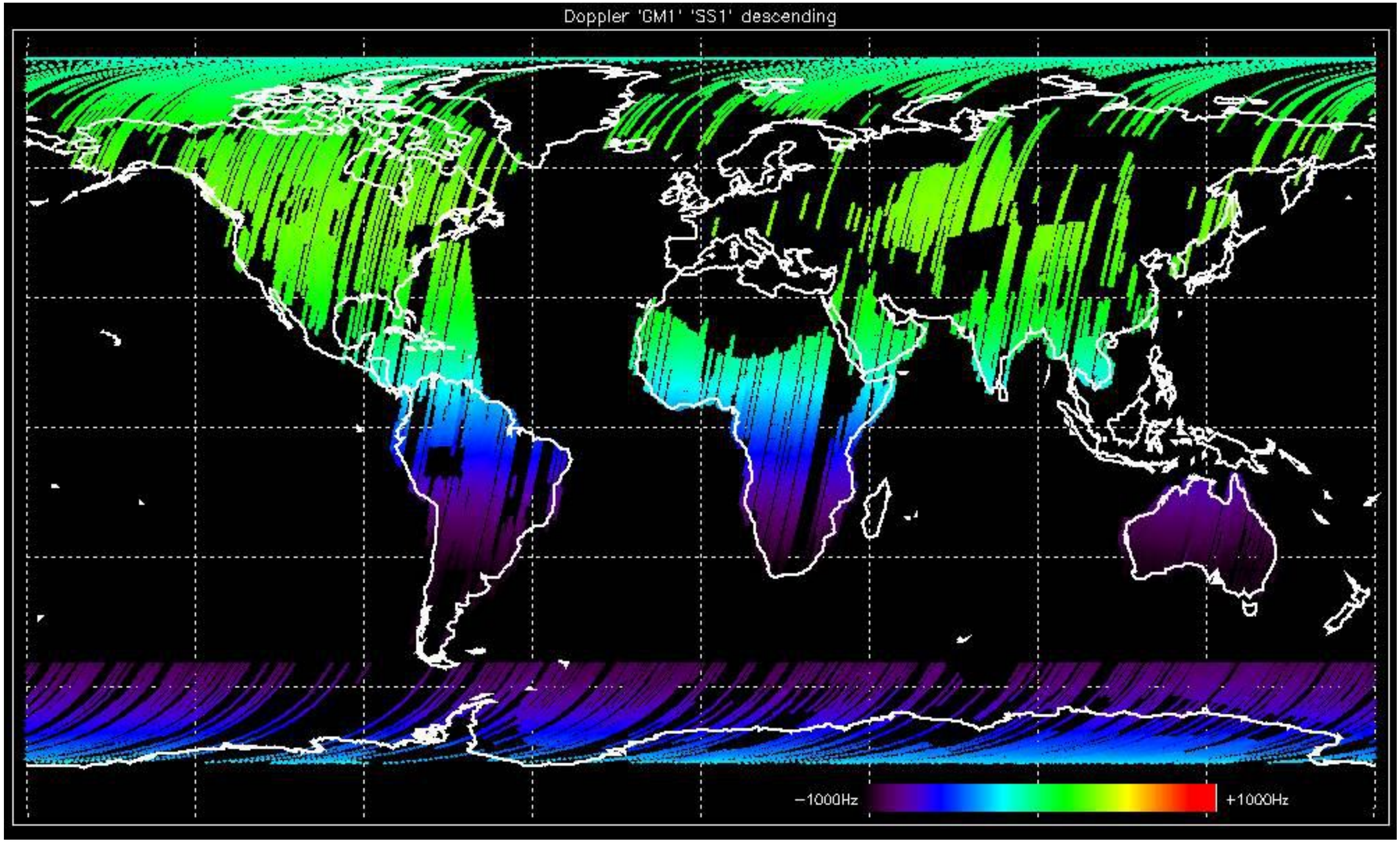

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

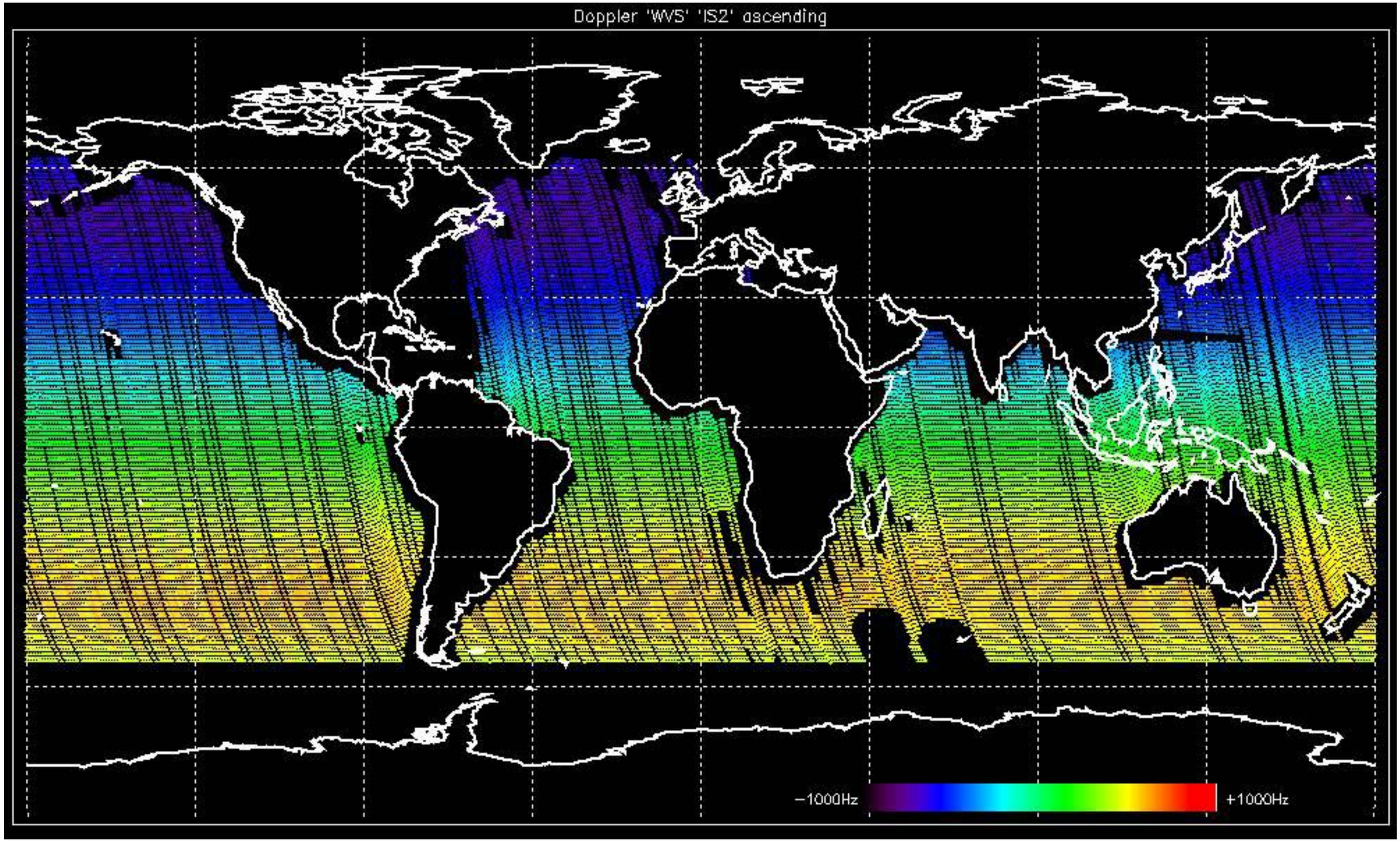

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
−8.30
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

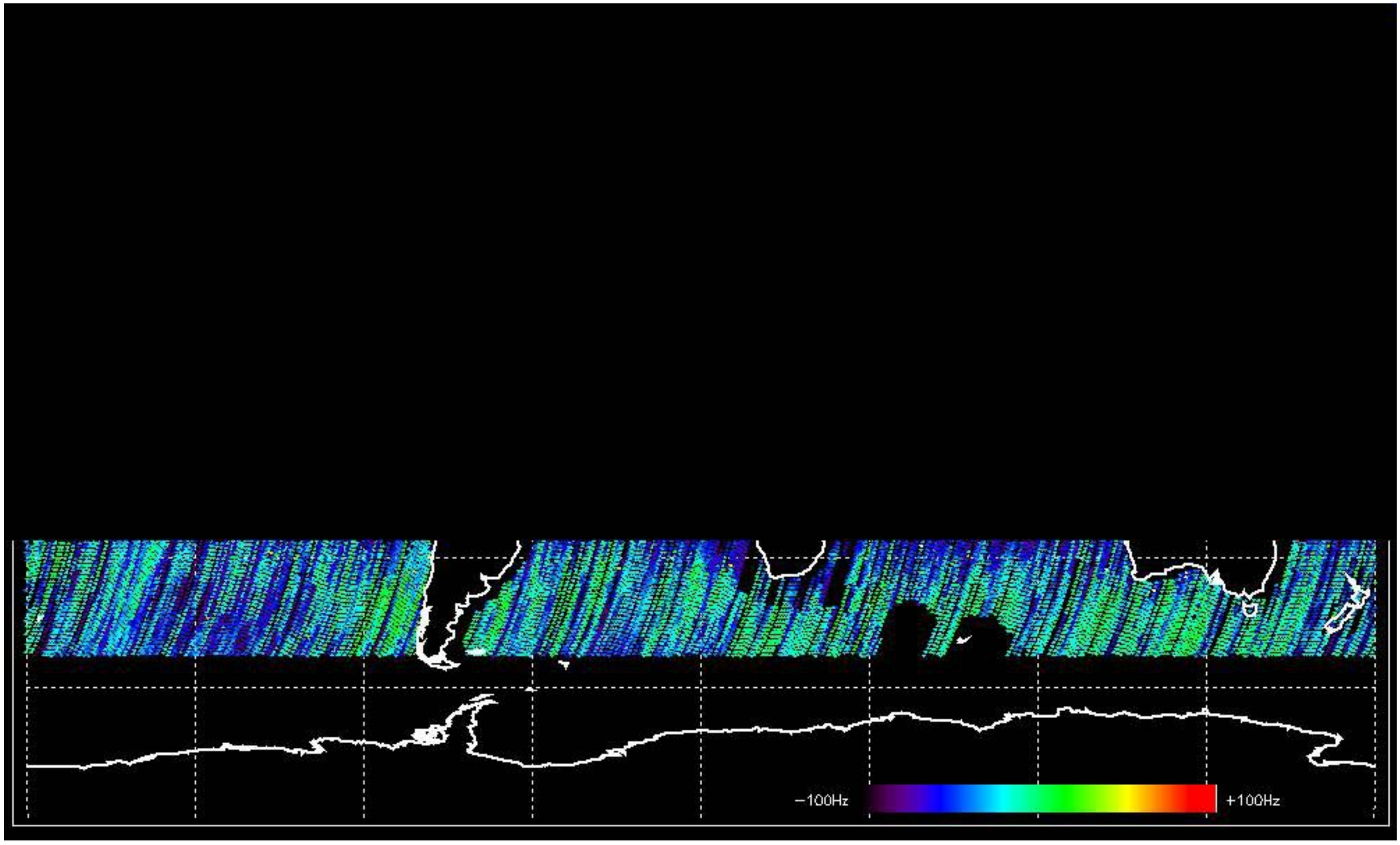
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

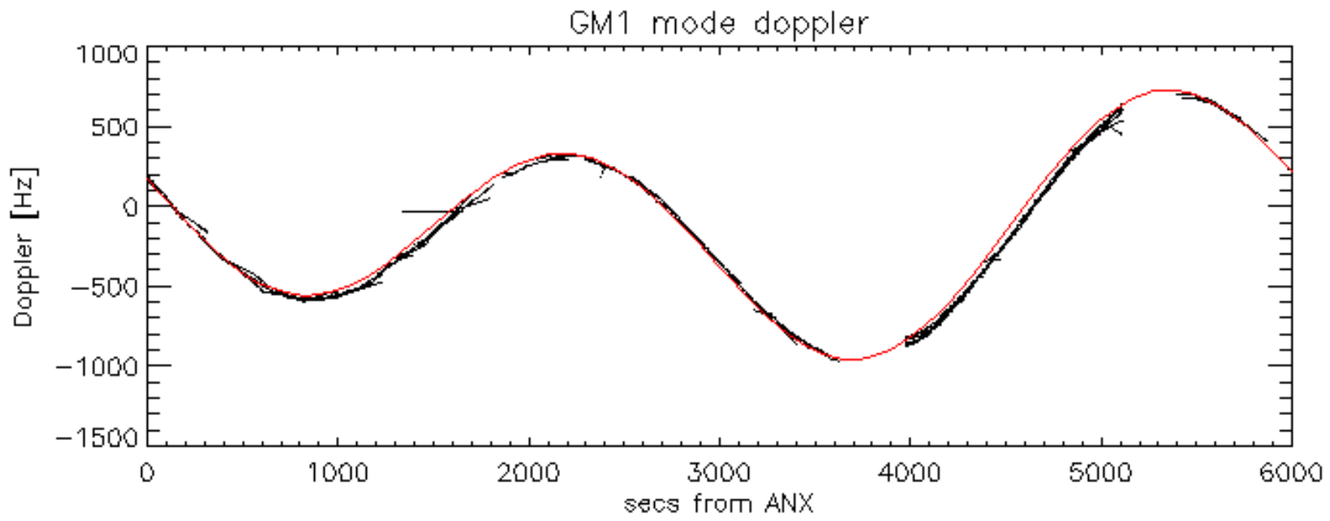
No anomaly observed in DOppler evolution.
Doppler analysis performed over the last 35 days.

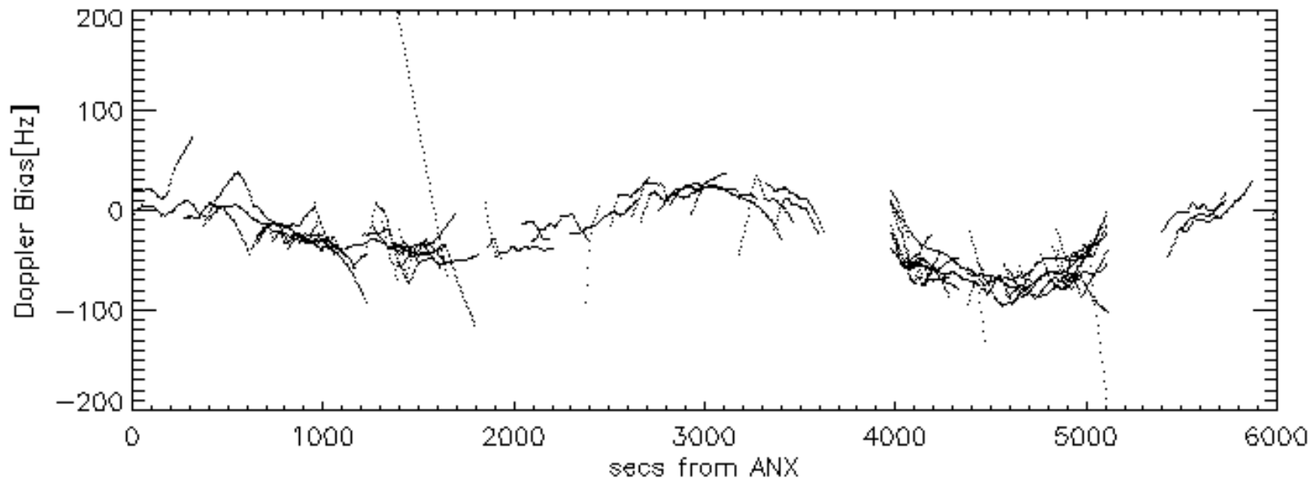

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

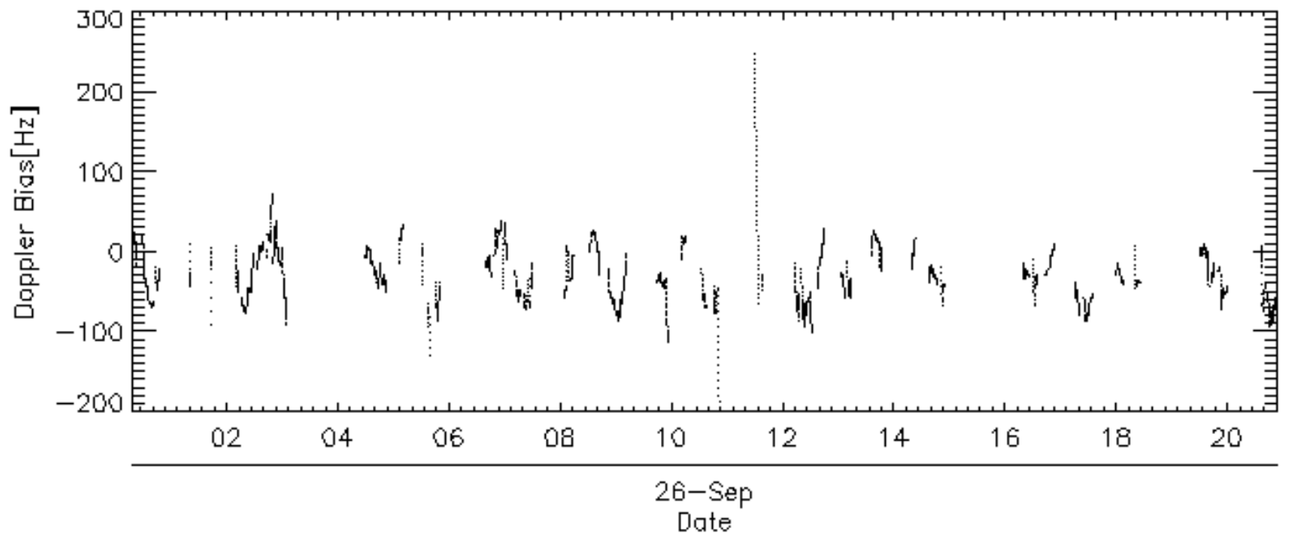

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

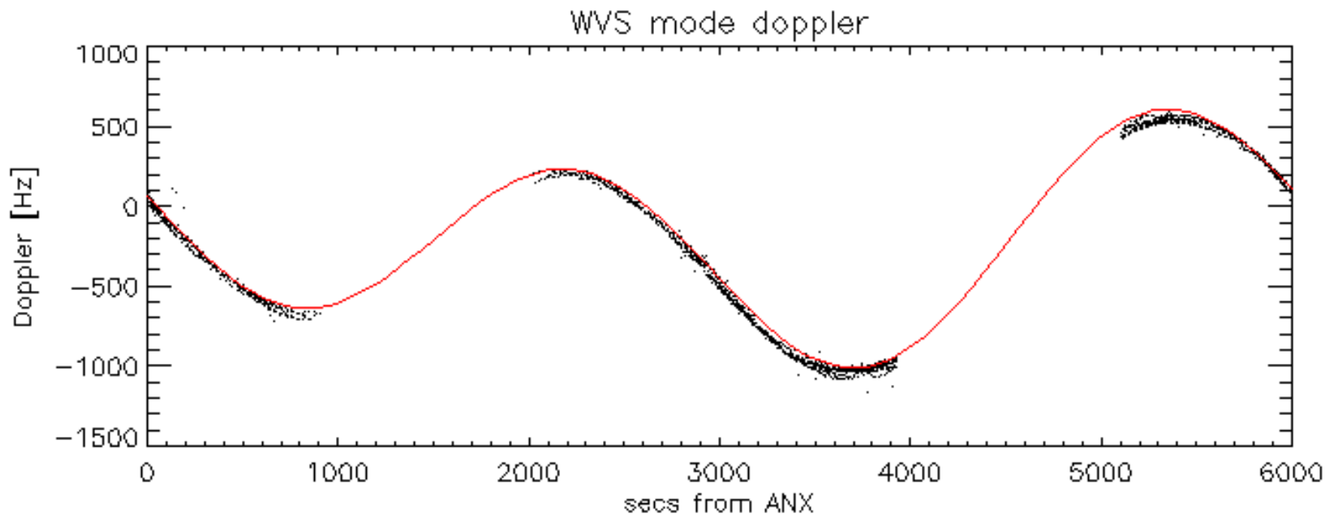

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

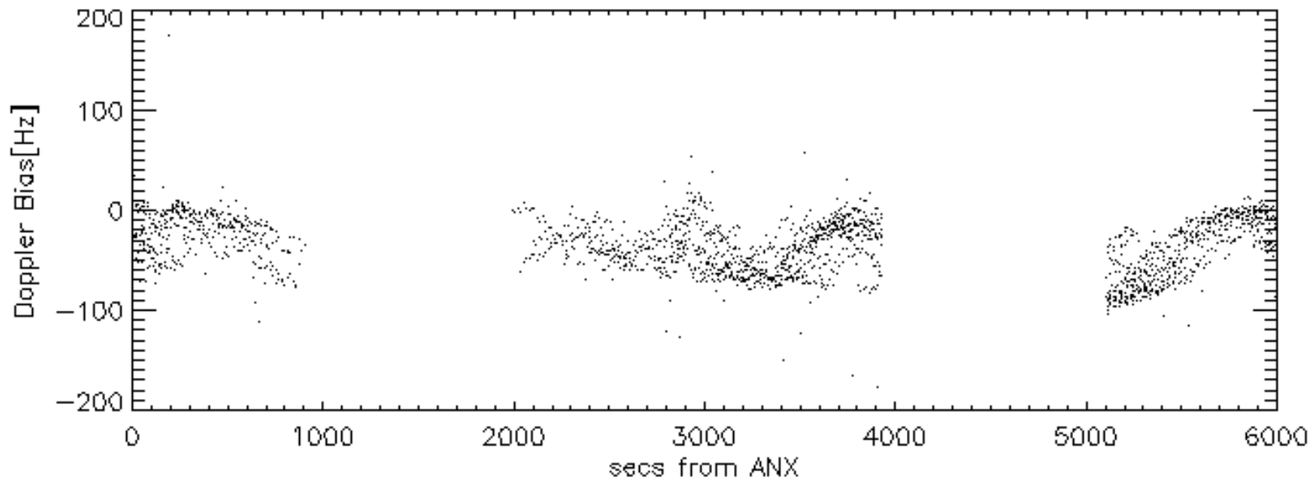

−100Hz
+100Hz

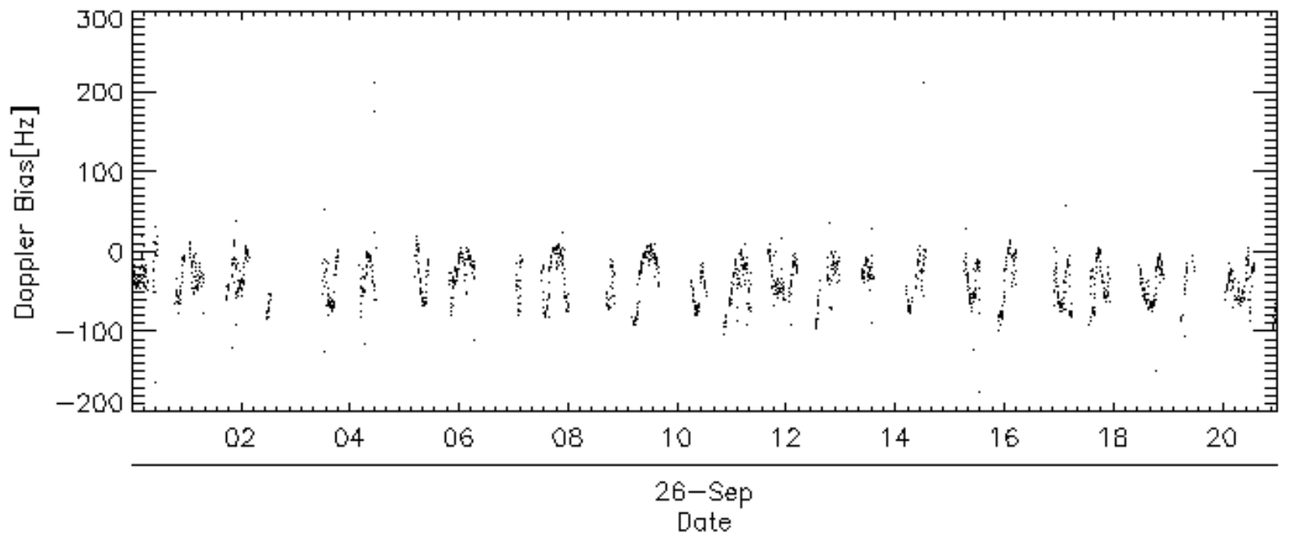

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

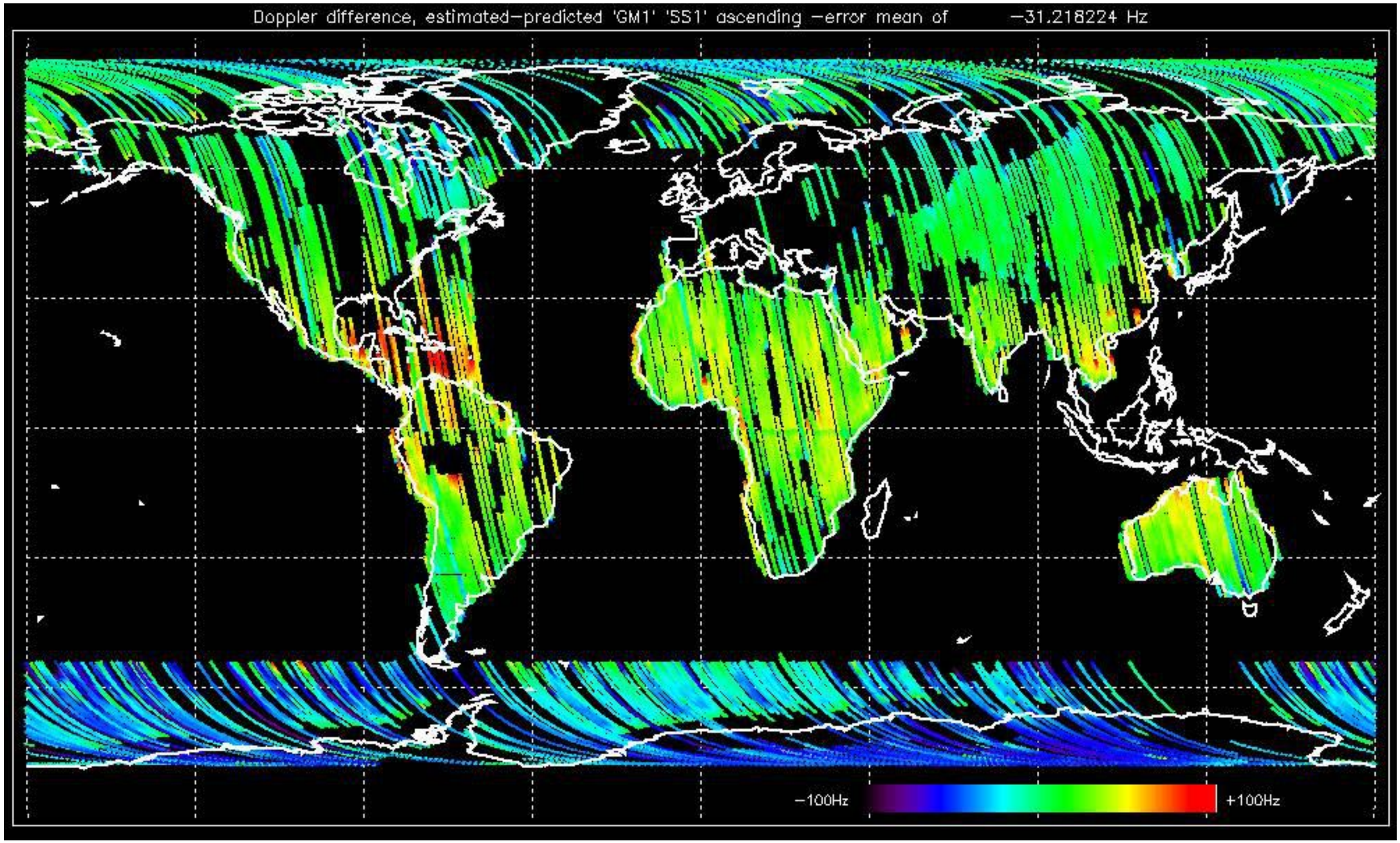

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

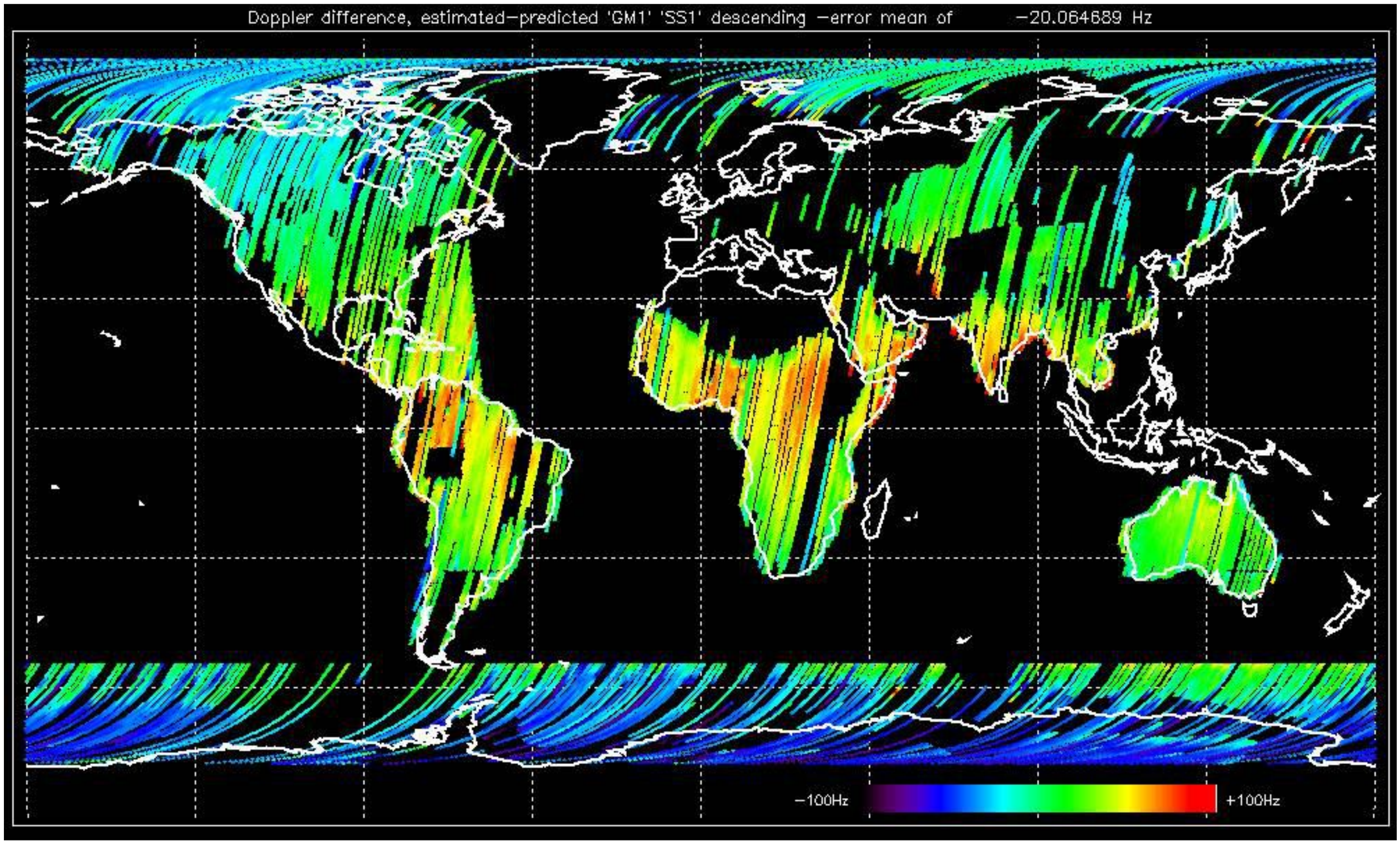

Doppler Bias[Hz]
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
26−Sep
Date

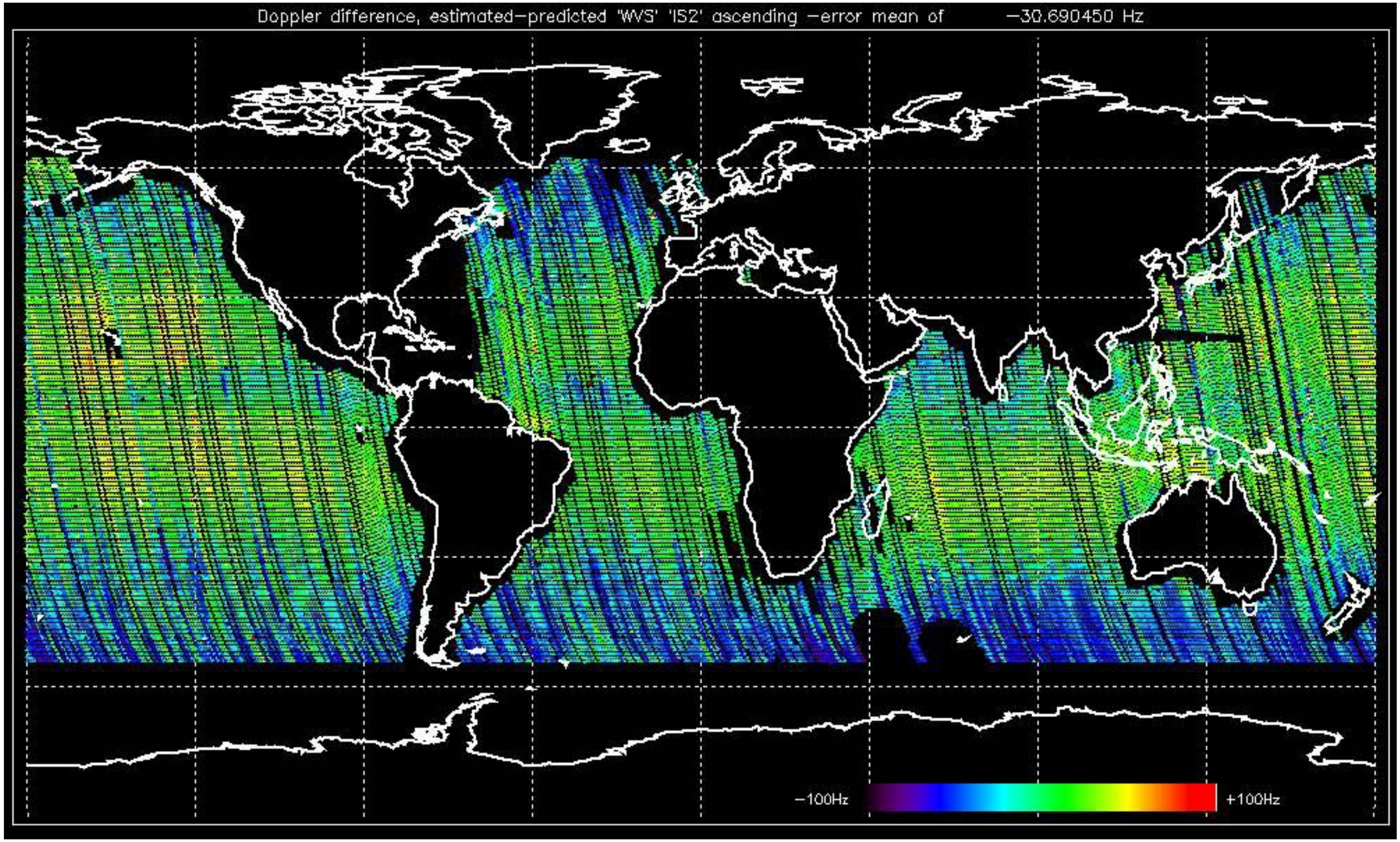

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

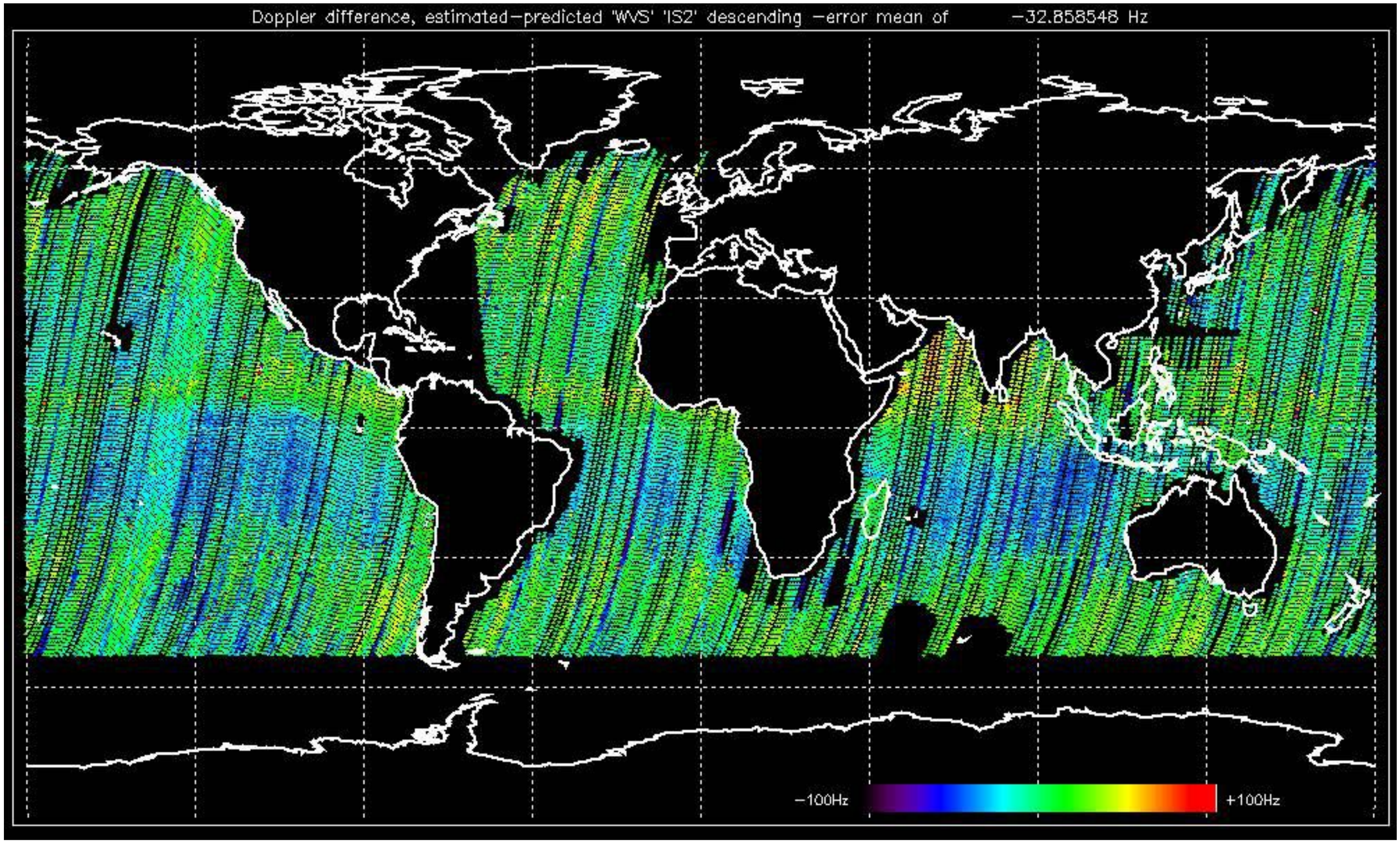

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −31.218224 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −20.064689 Hz
−100Hz
+100Hz

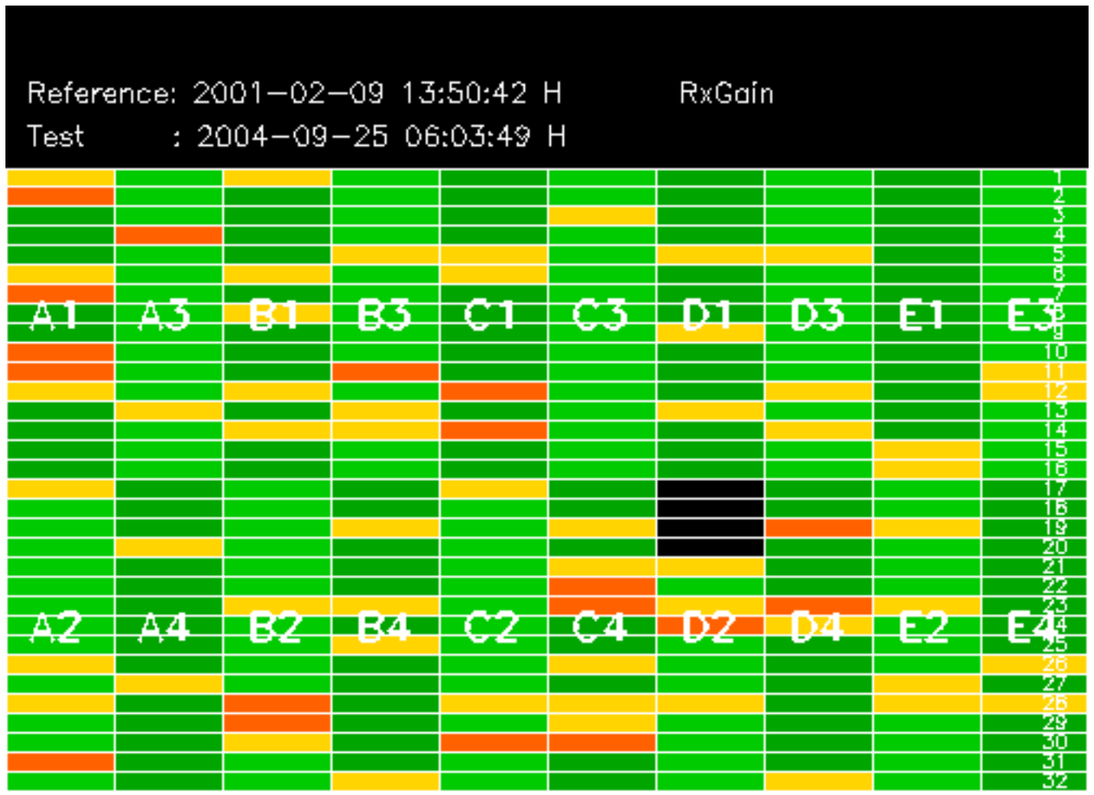

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −30.690450 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −32.858548 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__0PNPDE20040926_053212_000000152030_00377_13457_0025.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2004-09-25 06:03:49 H
RxGain
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
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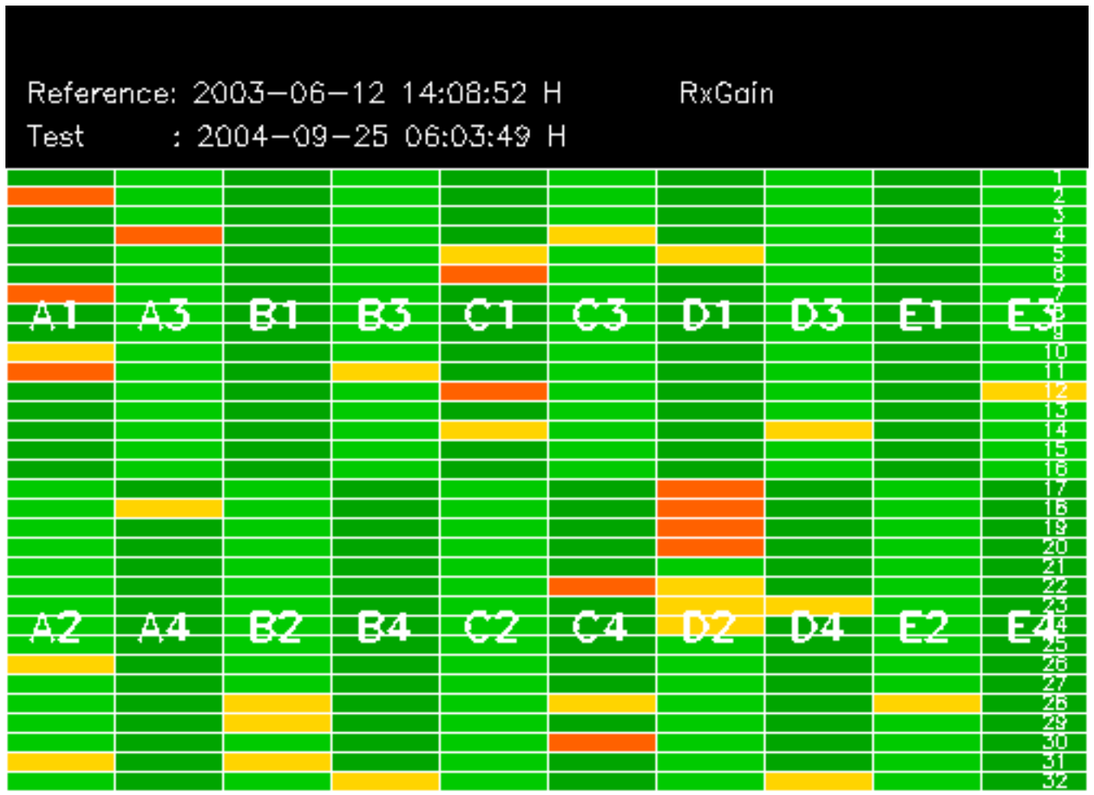
Reference: 2003-06-12 14:08:52 H
Test : 2004-09-25 06:03:49 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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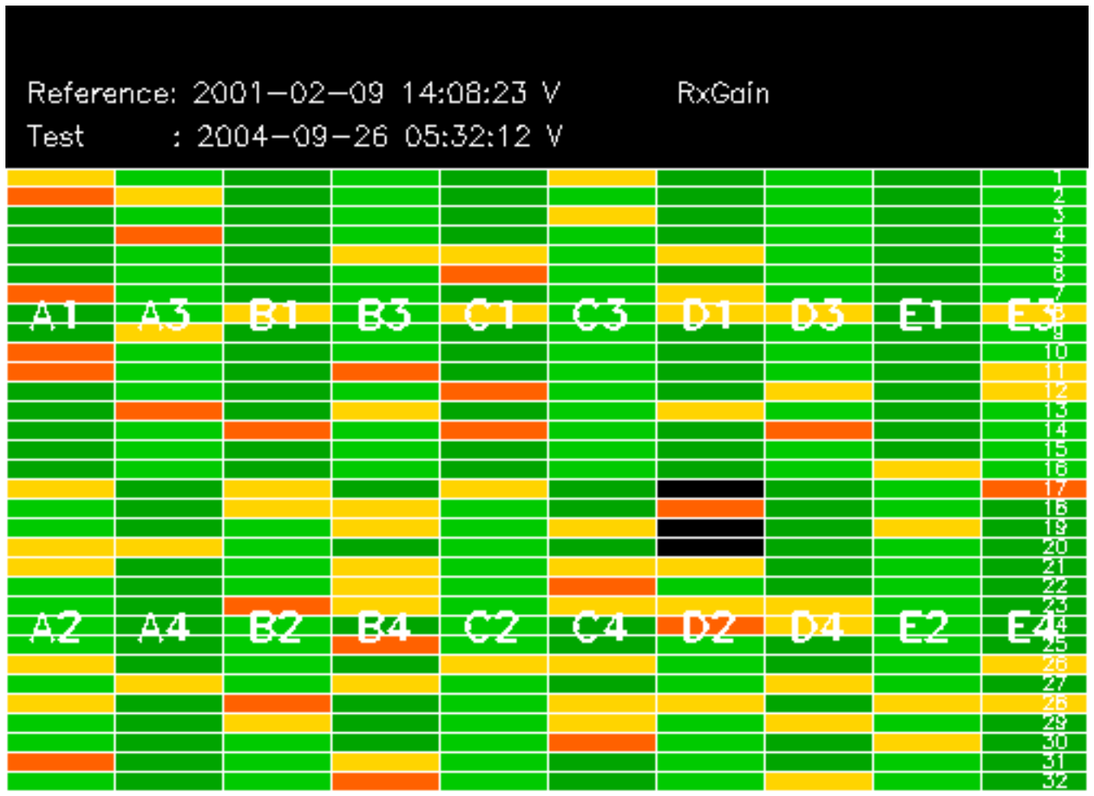
Reference: 2001-02-09 14:08:23 V
Test : 2004-09-26 05:32:12 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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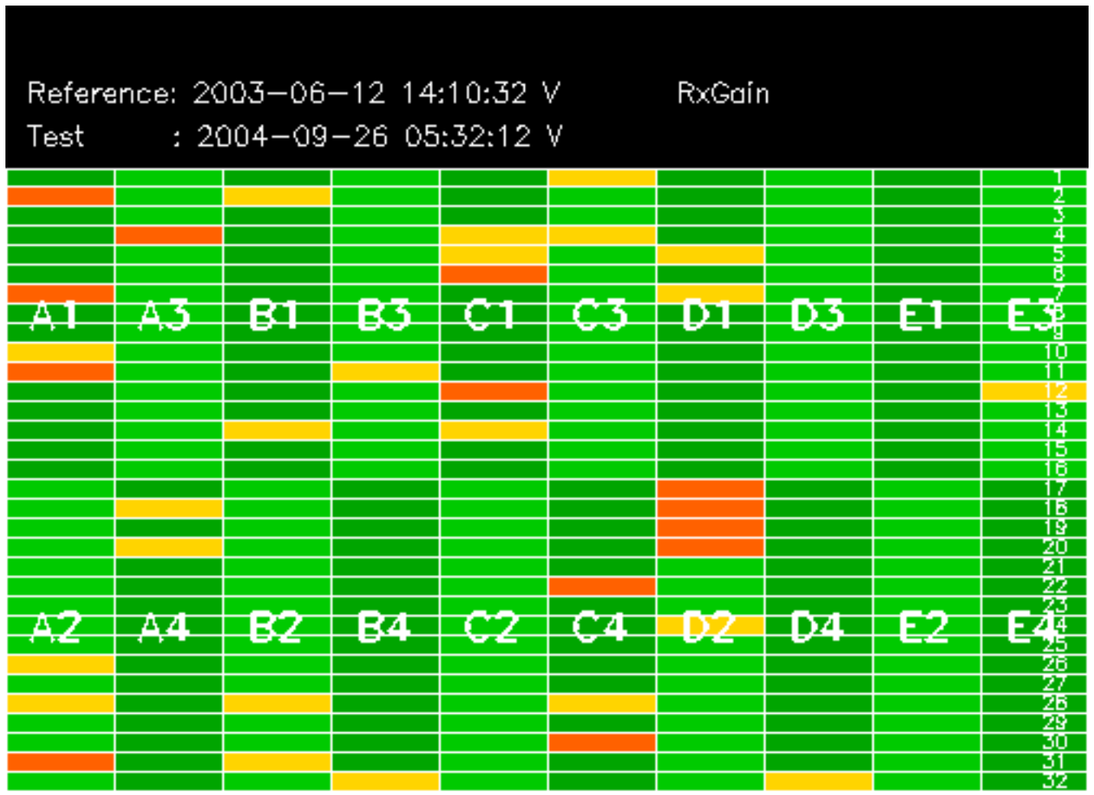
Reference: 2003-06-12 14:10:32 V
Test : 2004-09-26 05:32:12 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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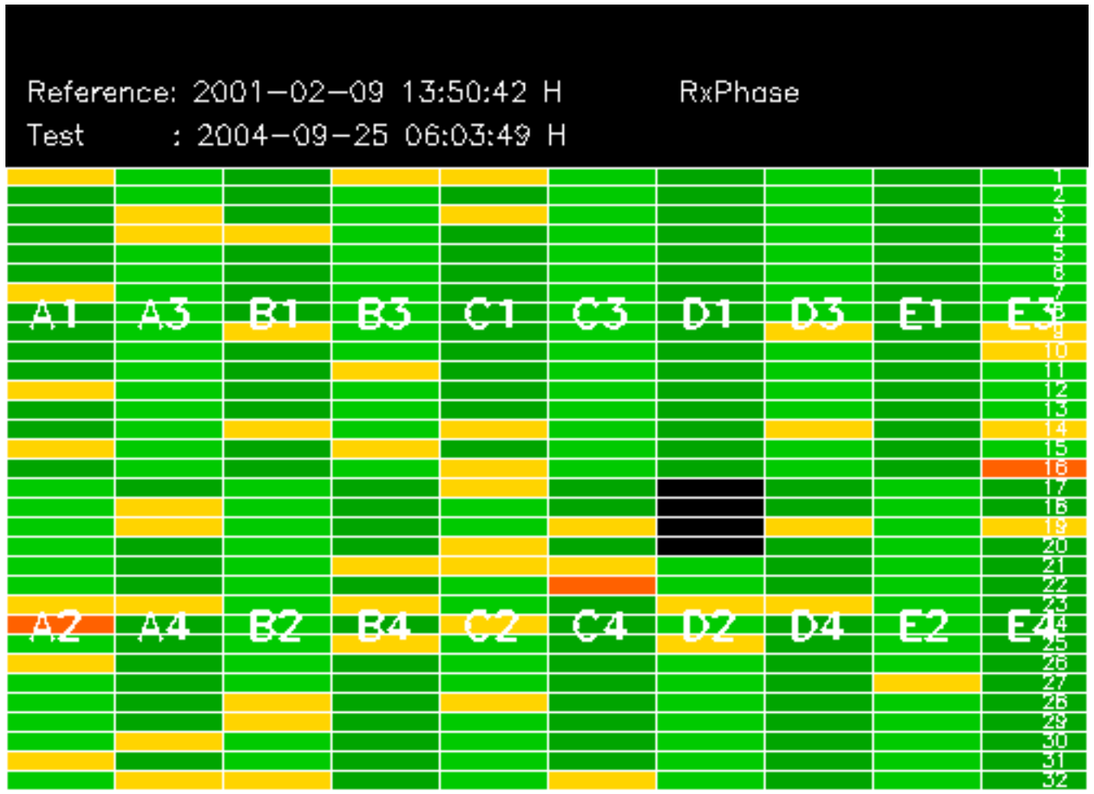
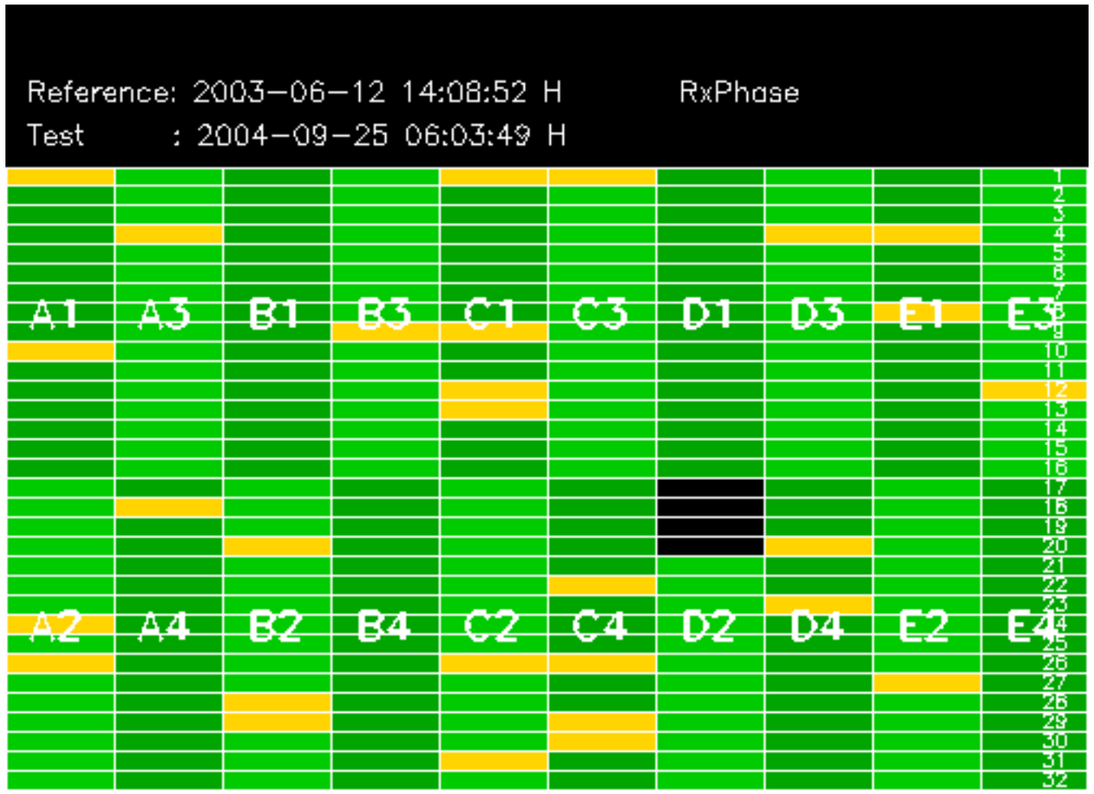

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-09-25 06:03:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-09-25 06:03:49 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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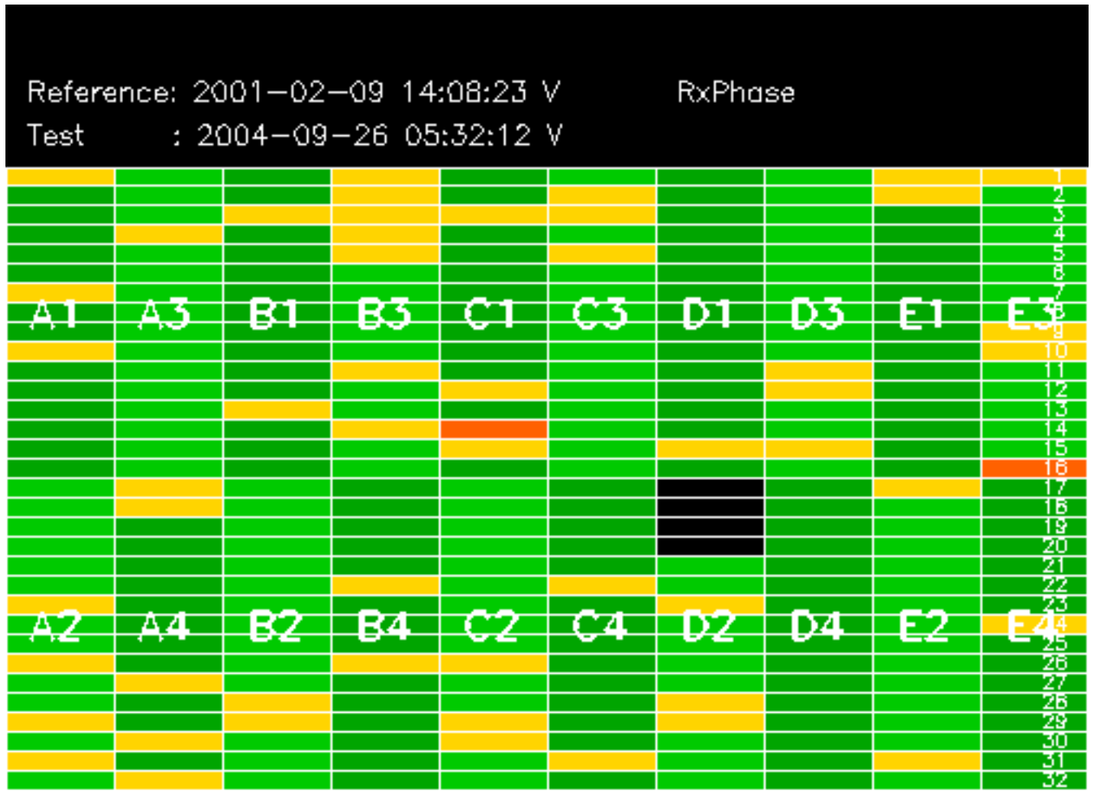
Reference: 2001-02-09 14:08:23 V
Test : 2004-09-26 05:32:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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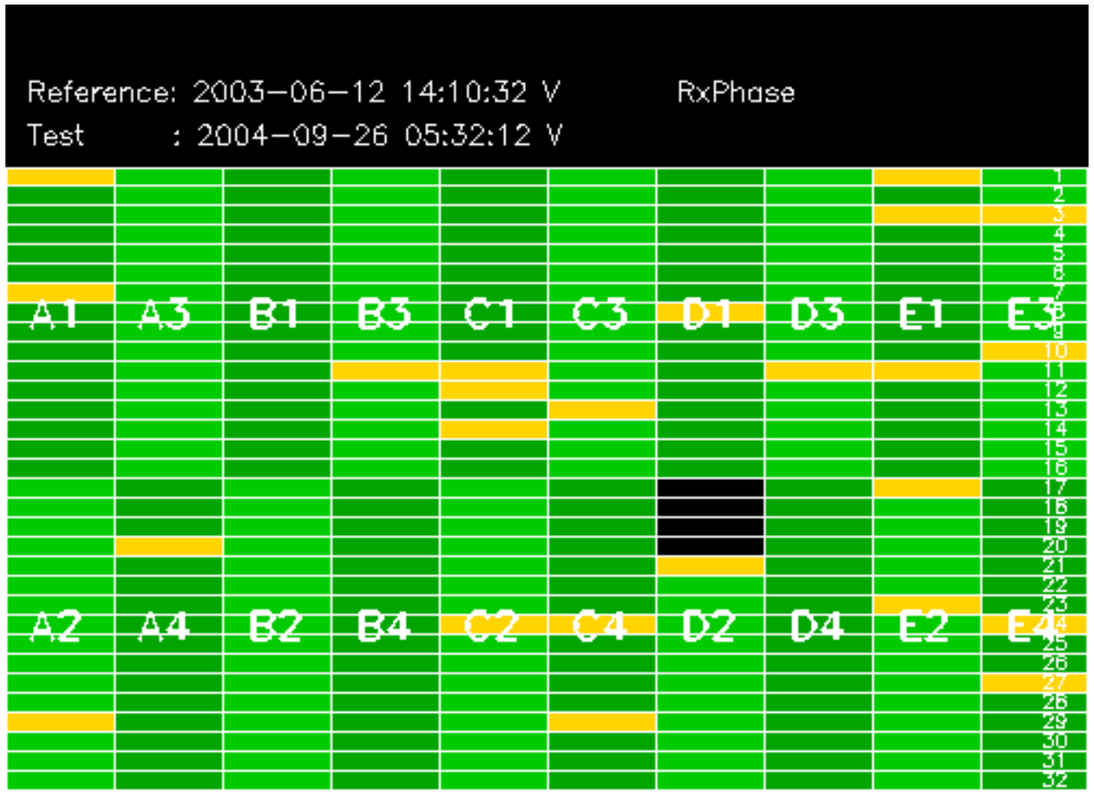
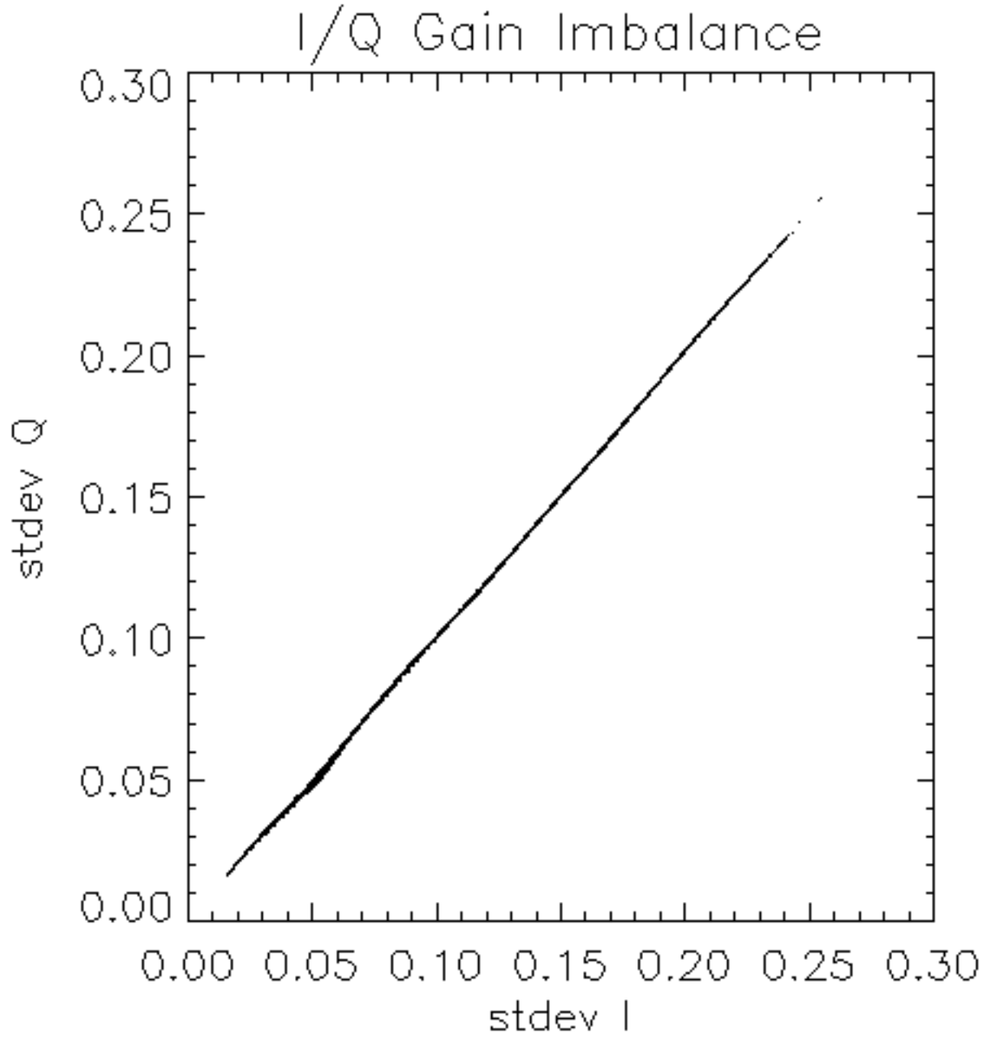
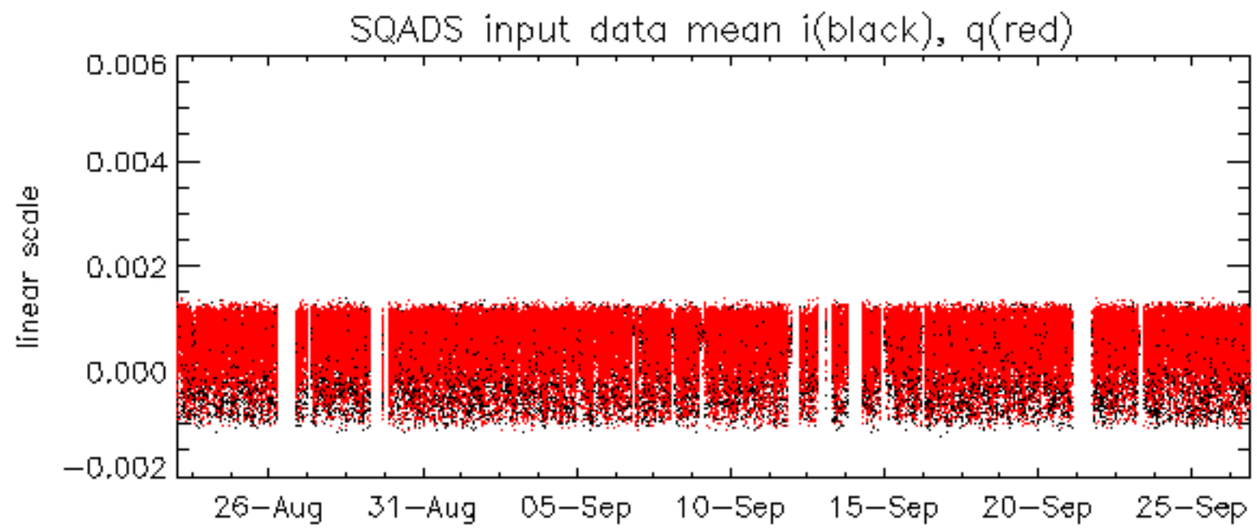
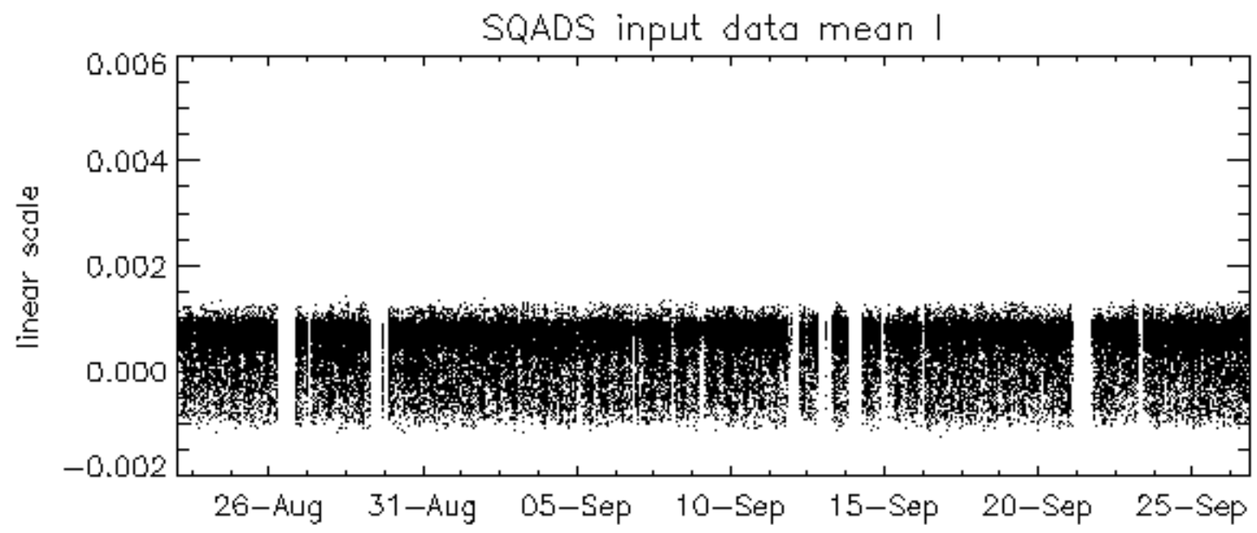
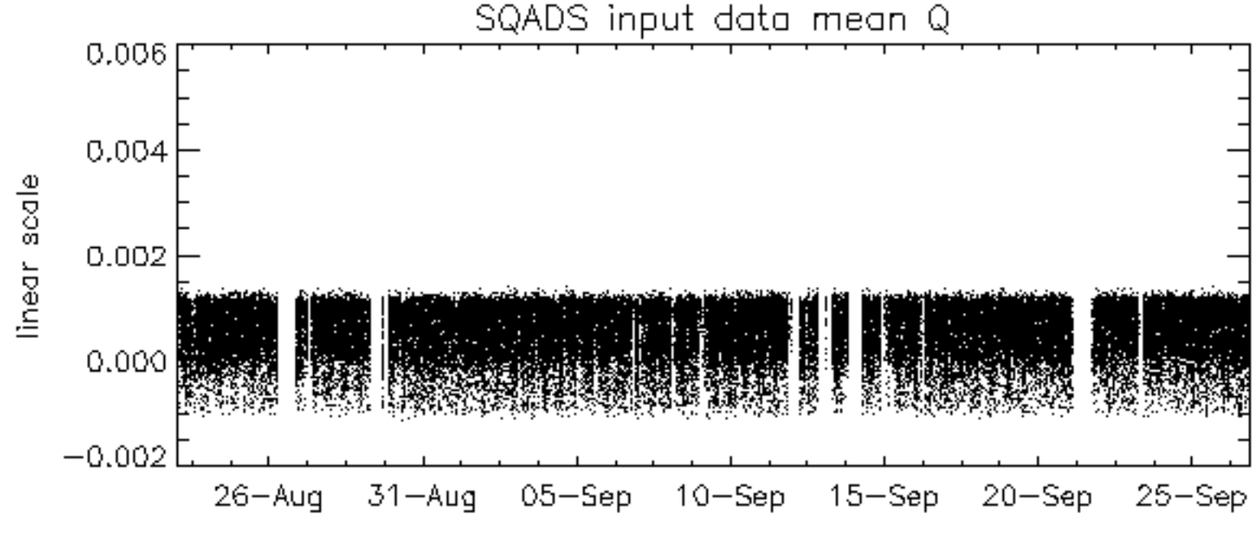
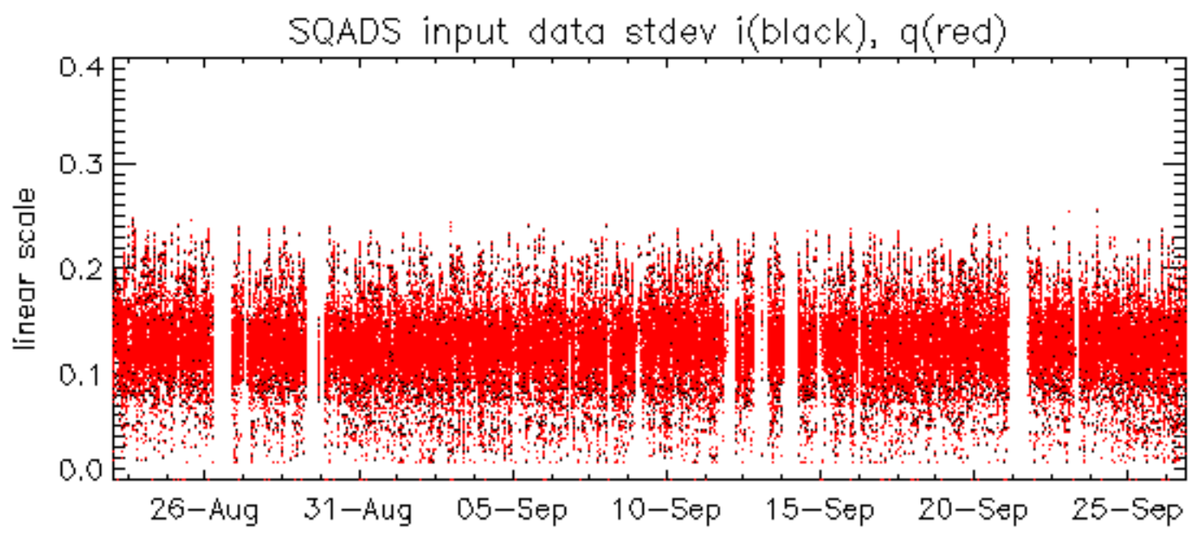

Reference: 2003-06-12 14:10:32 V
Test : 2004-09-26 05:32:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

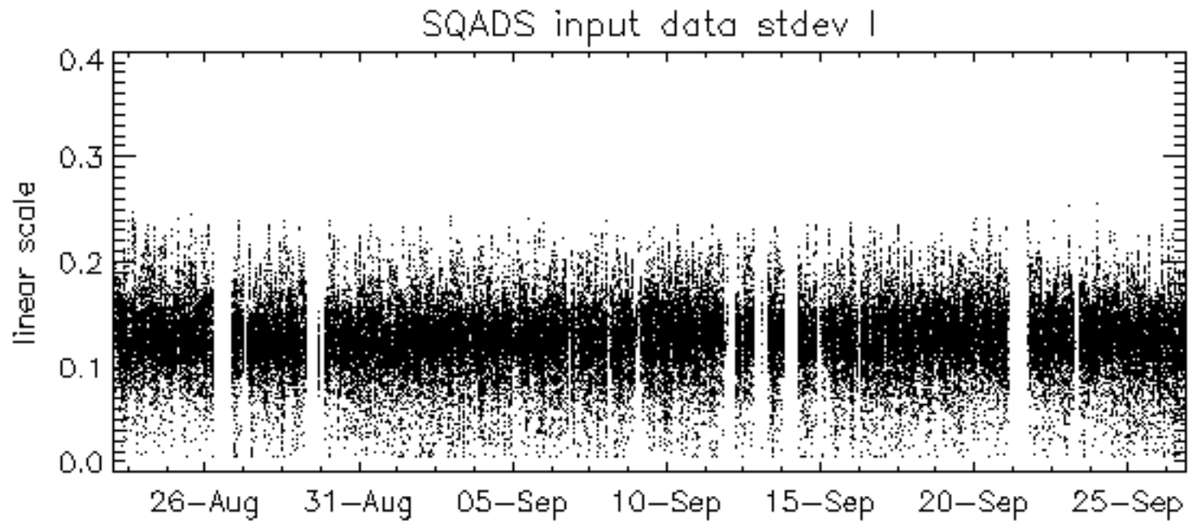

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

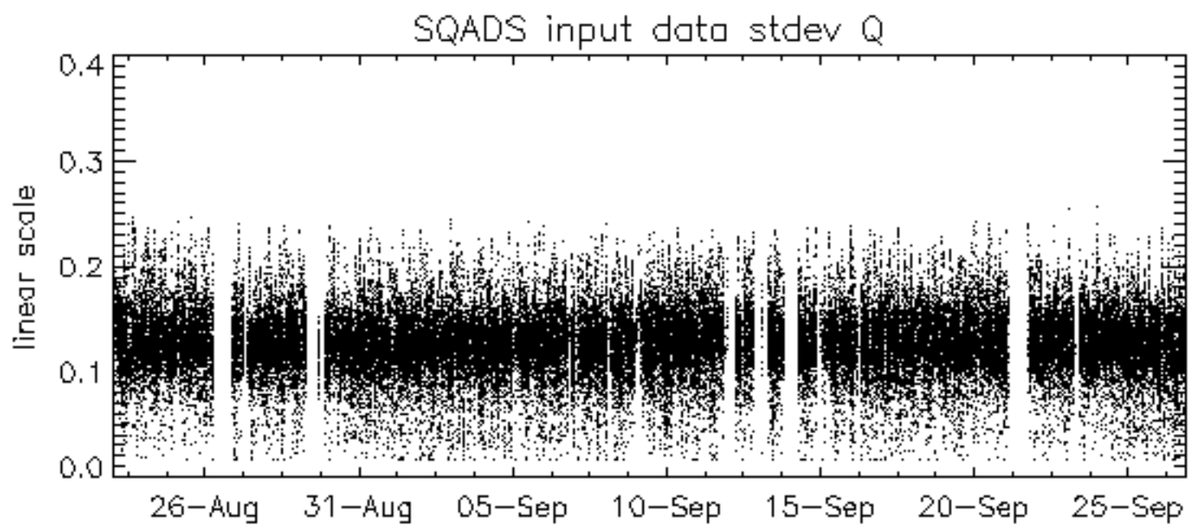

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep

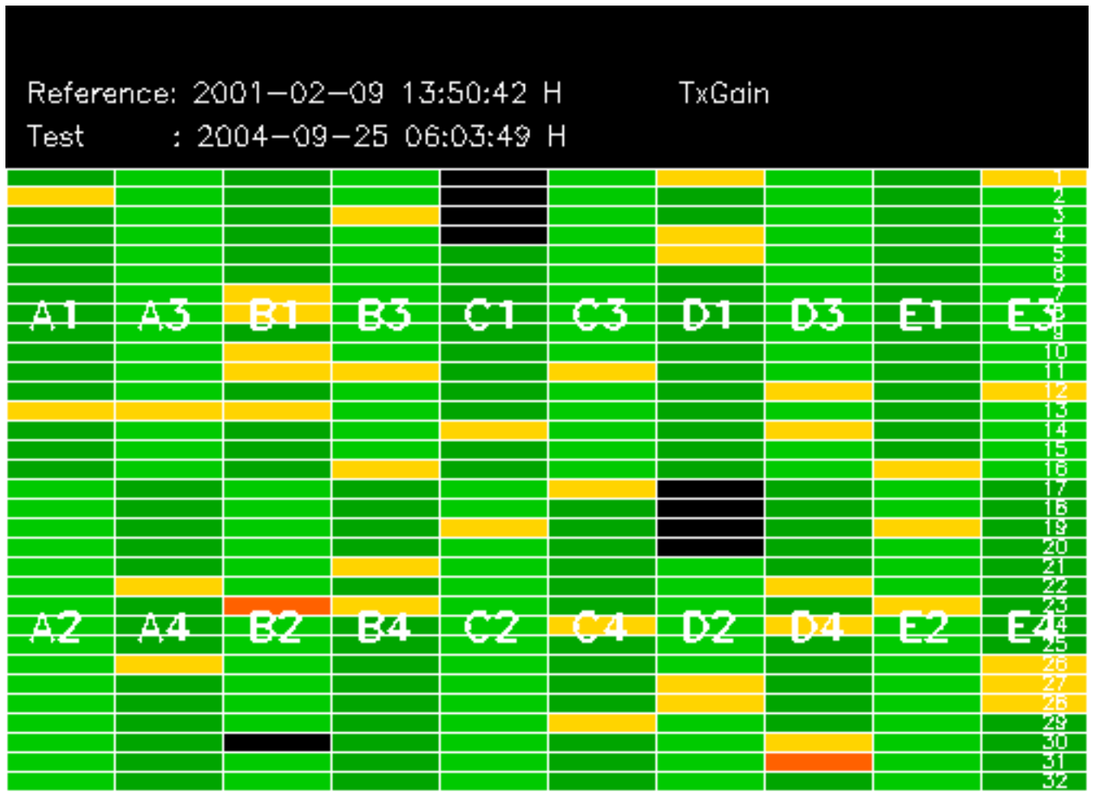

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep


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


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26−Aug
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep


Reference: 2001-02-09 13:50:42 H
Test : 2004-09-25 06:03:49 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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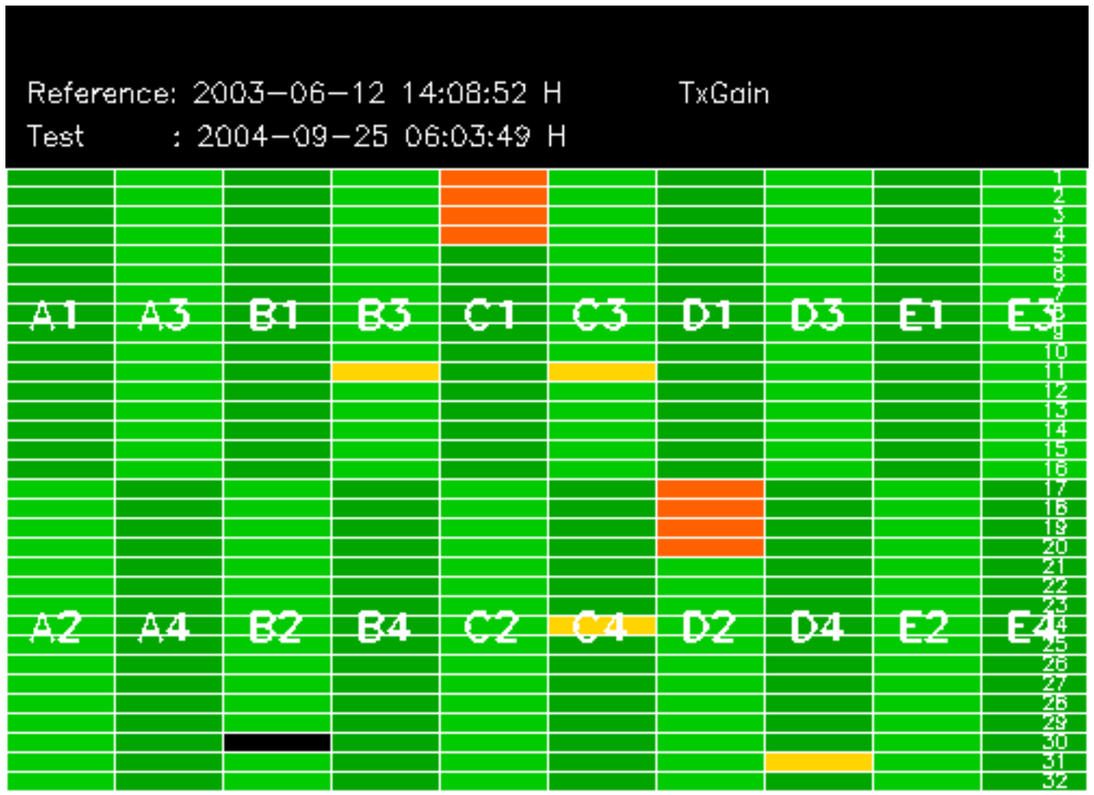
32


Reference: 2003-06-12 14:08:52 H
Test : 2004-09-25 06:03:49 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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32


Reference: 2001-02-09 14:08:23 V
Test : 2004-09-26 05:32:12 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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10
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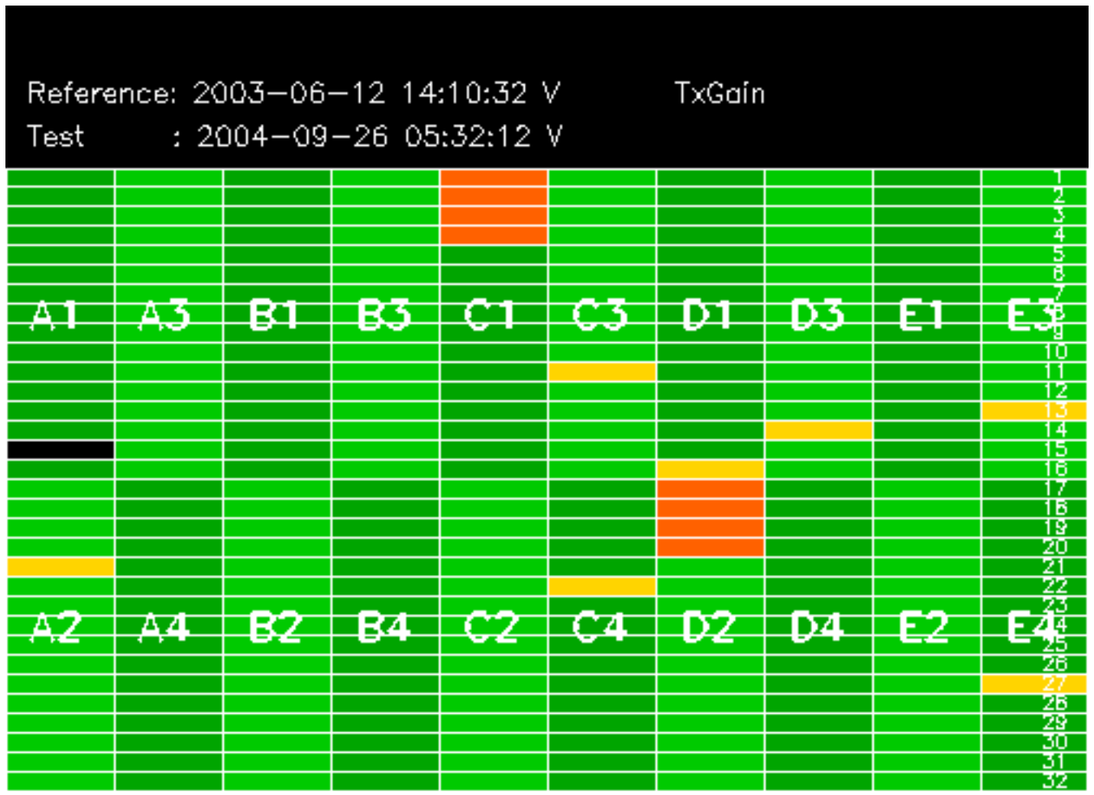
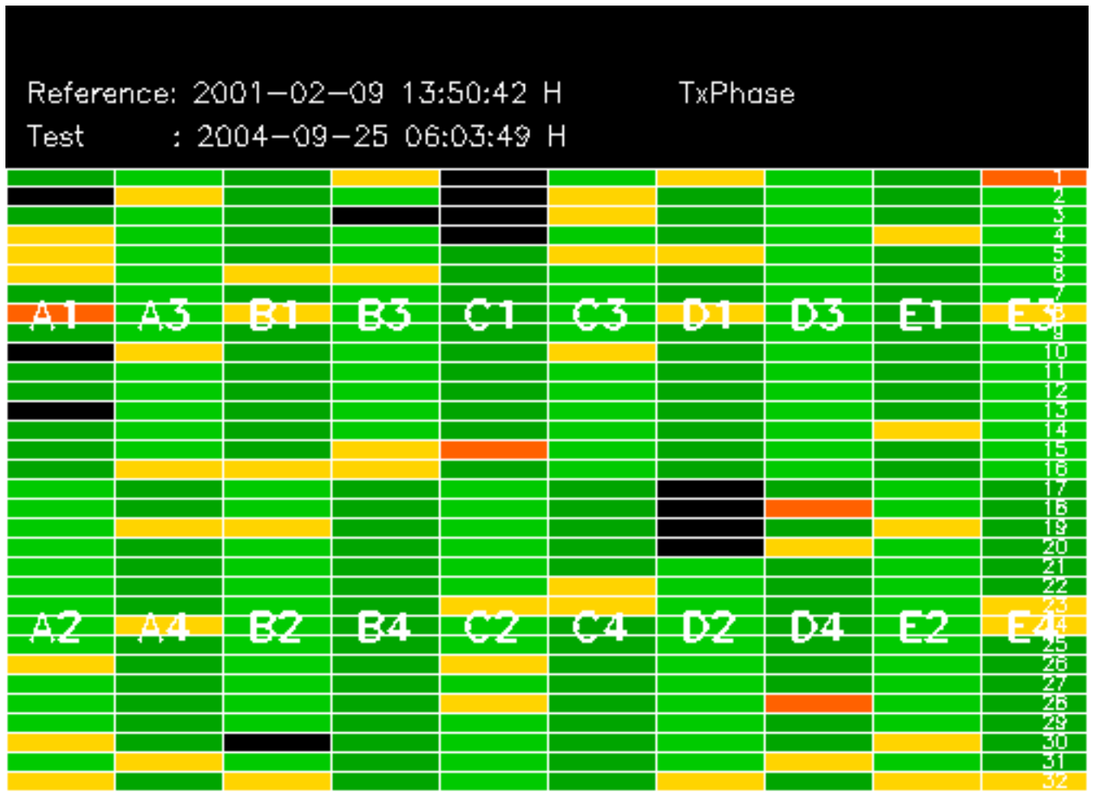
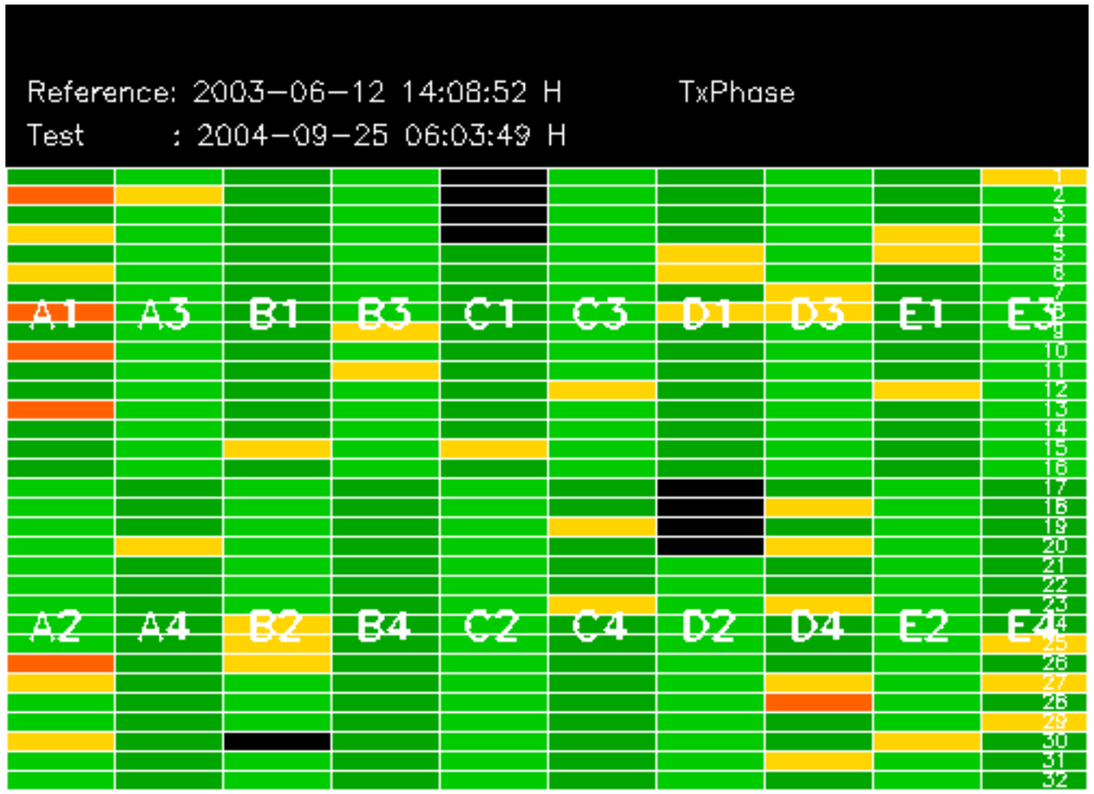
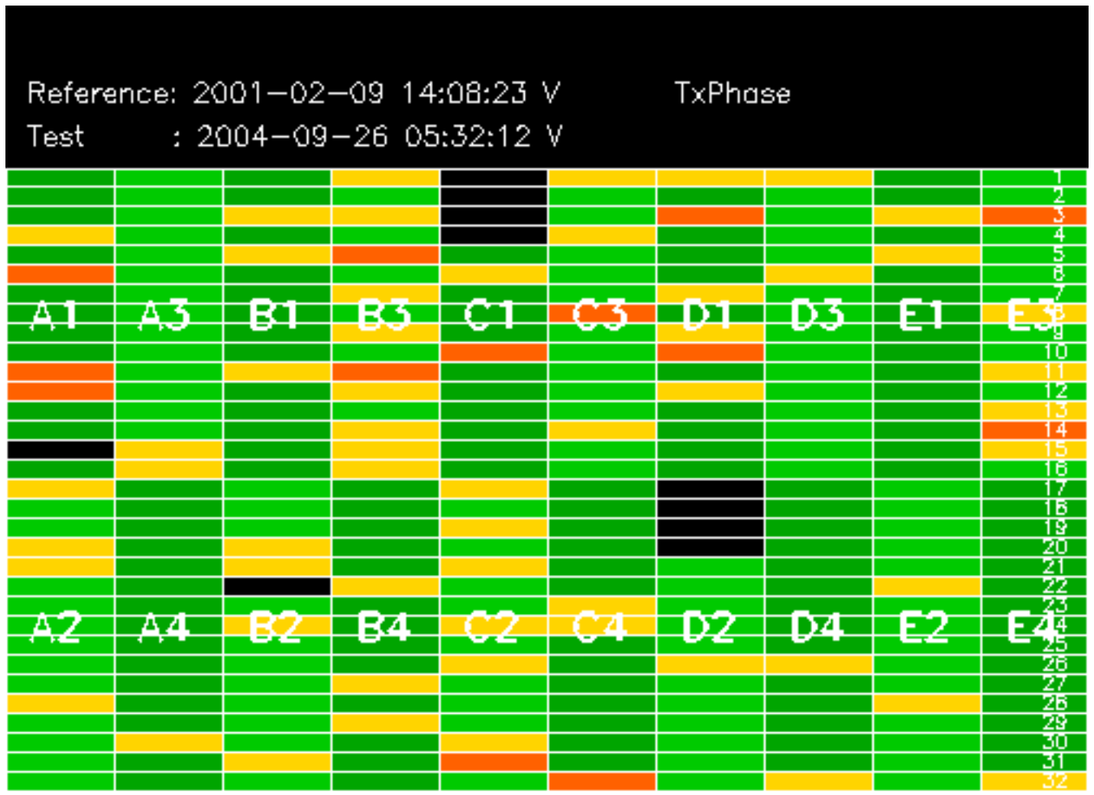

Reference: 2003-06-12 14:10:32 V
Test : 2004-09-26 05:32:12 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-09-25 06:03:49 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 : 2004-09-25 06:03:49 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 : 2004-09-26 05:32:12 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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31
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Reference: 2003-06-12 14:10:32 V
Test : 2004-09-26 05:32:12 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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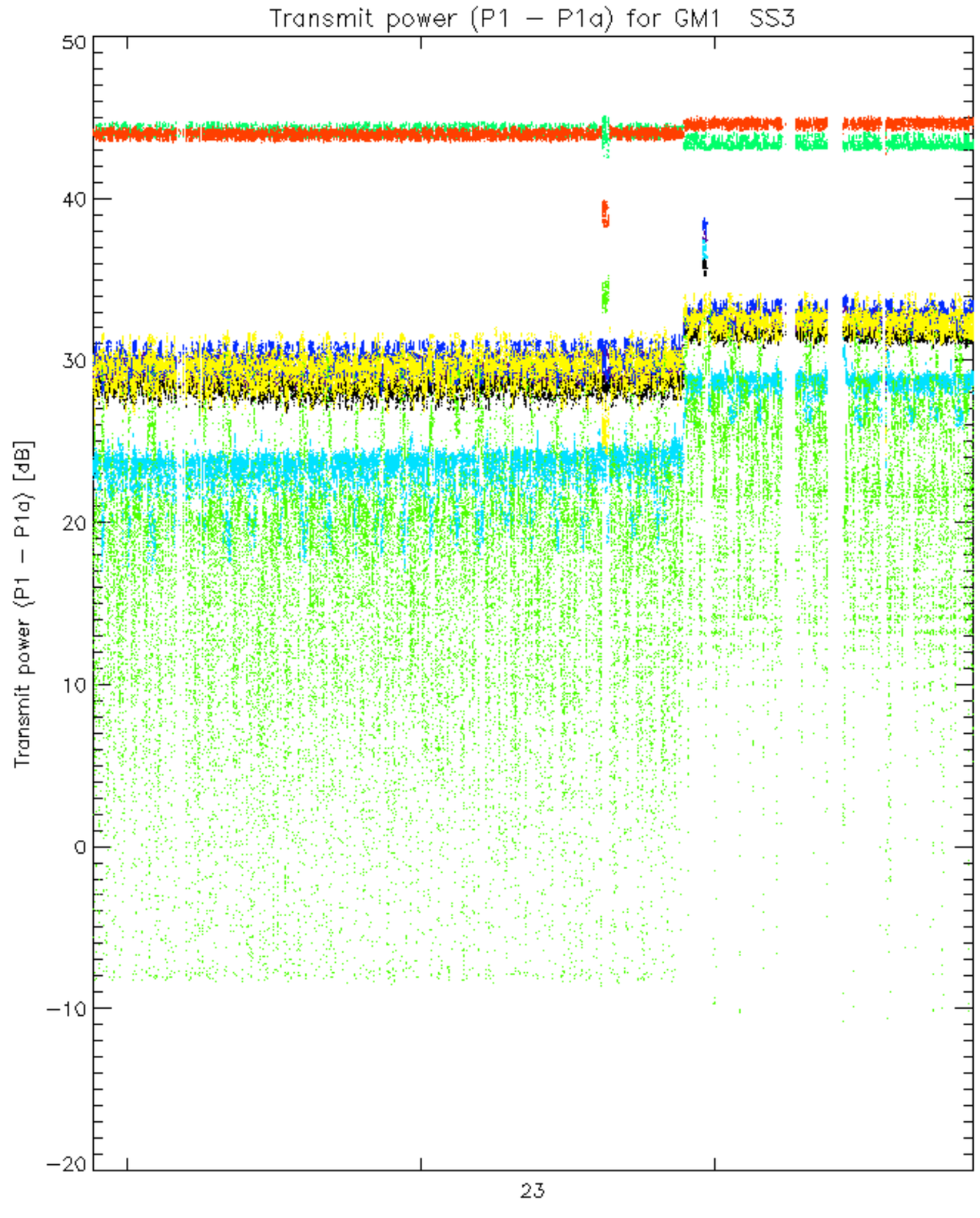
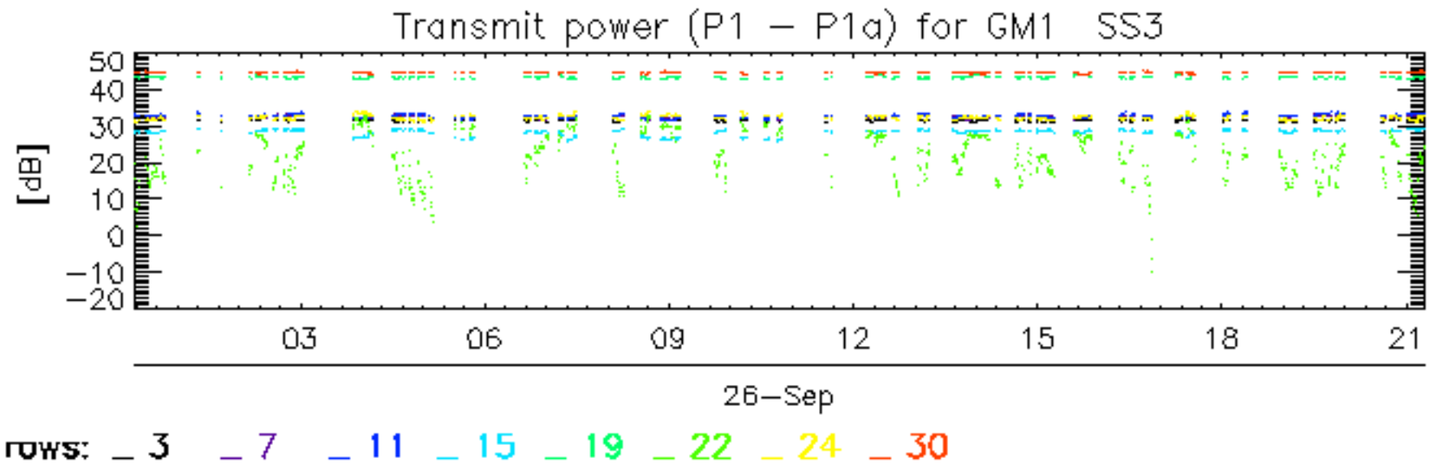
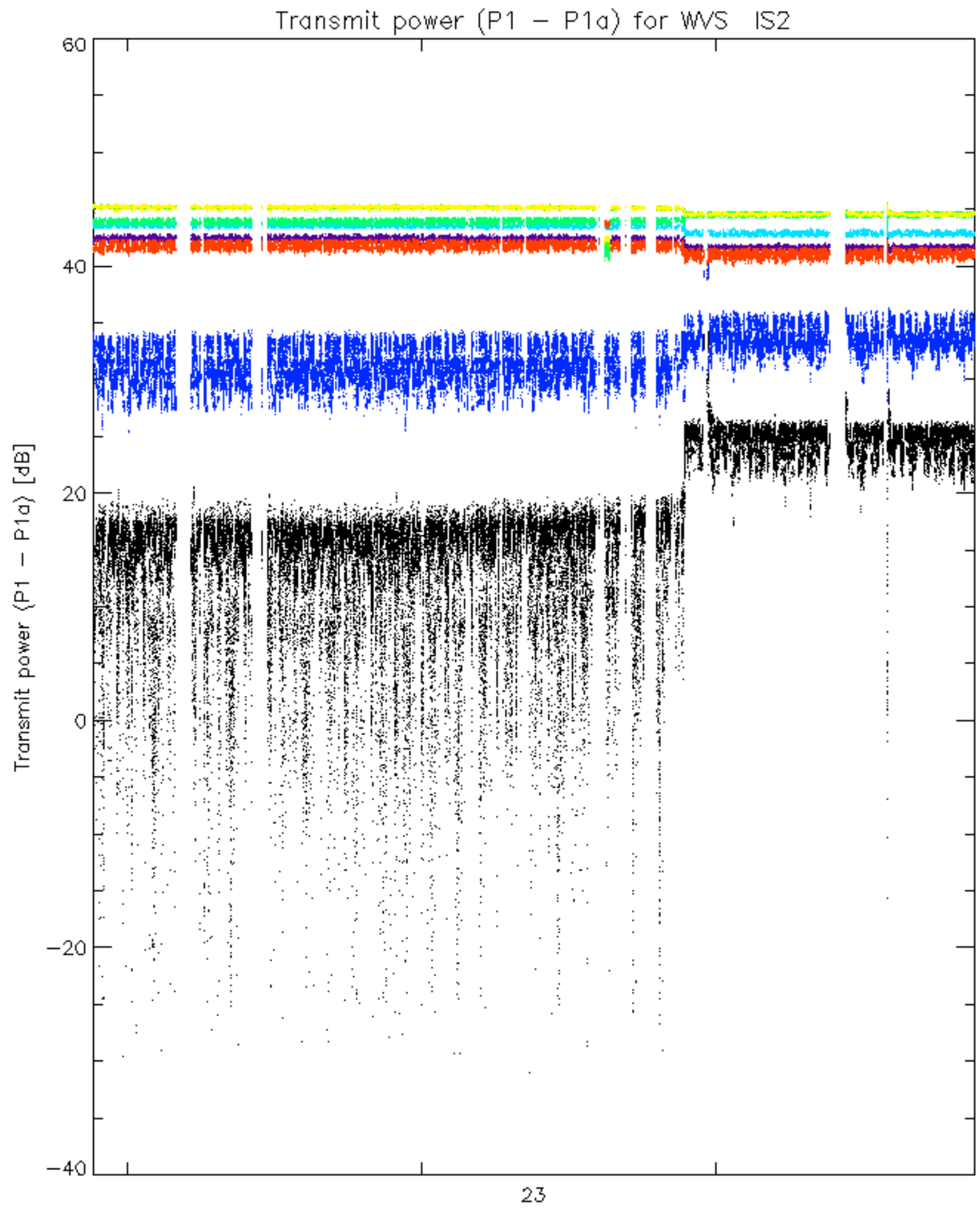
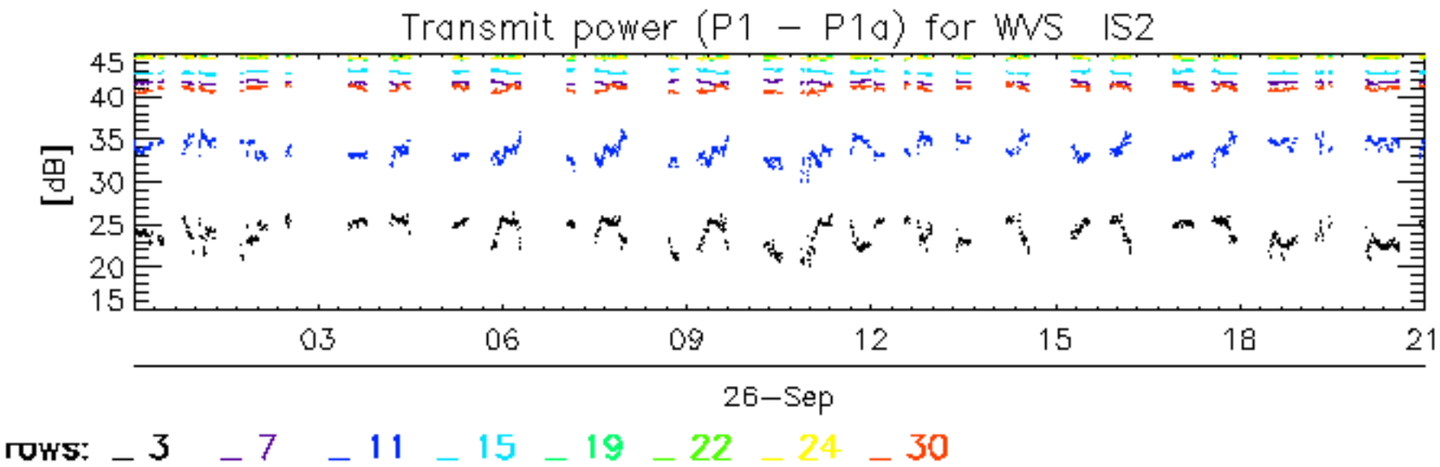

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
23
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
−20
03
06
09
12
15
18
21
26–Sep
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
23
rows: 3 7 11 15 19 22 24 30


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

ASAR was in HEATER/REFUSE Mode owing to all PSU's on tile B4 reported off from 26 Sep 2004 21:24:58.000 to 27 Sep 2004 11:02:04.000