PRELIMINARY REPORT OF 041226

ATTENTION: This report is automatically generated no comments are provided on data analysis

last update on Sun Dec 26 11:01:02 GMT 2004

1. Introduction
2. Summary
    - Instrument Unavailability
    - Auxiliary files used
    - Browse Visual Inspection
    - Module Stepping Results
    - Data Analysis
3. Module Stepping
4. Internal Calibration pulses
    - Daily statistics
    - Cyclic statistics
    - cal pulses monitoring (all rows)
5. Raw Data Statistics
    - raw data mean I and Q
    - raw data stdev I and Q
    - raw gain imbalance
6. Wave Doppler analysis
    - Unbiased Doppler Error for WVS
    - Absolute Doppler for WVS
    - Doppler evolution versus ANX for WVS
    - Unbiased Doppler Error for GM1
    - Absolute Doppler for GM1
    - Doppler evolution versus ANX for GM1

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 - Auxiliary files

Summary of the auxiliary files used from 2004-12-25 00:00:00 to 2004-12-26 11:01:03

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	28	53	3	3	2
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	28	53	3	3	2
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	28	53	3	3	2
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	28	53	3	3	2

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	42	42	4	4	3
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	42	42	4	4	3
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	42	42	4	4	3
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	42	42	4	4	3

2.3 - Browse Visual Inspection

2.4 - 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	20041225 064402
H	20041224 071539

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
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☒

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1
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☒

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	-3.459387	0.028873	0.030384
7	P1	-3.099387	0.025063	0.016625
11	P1	-4.643636	0.046660	-0.034374
15	P1	-5.664441	0.038466	-0.031984
19	P1	-3.649289	0.005775	-0.038609
22	P1	-4.576944	0.017110	0.002922
26	P1	-4.937101	0.024231	0.004200
30	P1	-7.110343	0.013656	-0.050745
3	P1	-15.951996	0.114768	0.059891
7	P1	-15.511486	0.167291	0.021998
11	P1	-20.735216	0.534354	-0.237359
15	P1	-11.623225	0.094863	-0.019168
19	P1	-14.150866	0.029667	-0.061812
22	P1	-16.102798	0.468969	0.141151
26	P1	-17.769361	0.262498	0.114059
30	P1	-17.899109	0.306680	0.009177

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.359486	0.085404	0.019884
7	P2	-22.581169	0.167860	0.034268
11	P2	-14.913973	0.177544	0.143400
15	P2	-7.168200	0.115833	0.033588
19	P2	-9.731593	0.204328	0.061646
22	P2	-17.182930	0.098396	0.051160
26	P2	-16.530960	0.114404	-0.002373

30	P2	-18.978800	0.082461	0.062935

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.210561	0.006955	-0.019055
7	P3	-8.210545	0.006953	-0.019132
11	P3	-8.210525	0.006953	-0.019263
15	P3	-8.210524	0.006954	-0.019248
19	P3	-8.210565	0.006957	-0.019005
22	P3	-8.210505	0.006955	-0.019393
26	P3	-8.210501	0.006955	-0.019418
30	P3	-8.210266	0.006956	-0.017915

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1
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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	-2.848995	0.111458	-0.003906
7	P1	-2.979122	0.064747	0.021473
11	P1	-3.944945	0.048856	-0.018963
15	P1	-3.519281	0.079031	0.001321
19	P1	-3.606521	0.012837	-0.027081
22	P1	-5.615387	0.069306	-0.036062
26	P1	-6.510844	0.023278	-0.054095
30	P1	-6.303771	0.043214	-0.034754
3	P1	-10.692151	0.058848	-0.206081
7	P1	-10.114960	0.156691	-0.062341
11	P1	-12.421641	0.200100	-0.115811

15	P1	-11.725745	0.099201	-0.029654
19	P1	-15.638129	0.048783	-0.036449
22	P1	-24.127855	2.109446	0.023425
26	P1	-15.060518	0.385577	0.154591
30	P1	-20.133041	0.928479	0.138771

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.038464	0.035408	0.044777
7	P2	-22.625408	0.029629	0.080445
11	P2	-10.705147	0.032897	0.166239
15	P2	-5.063890	0.023799	-0.004077
19	P2	-6.966256	0.033768	-0.002320
22	P2	-7.313013	0.025843	0.048977
26	P2	-23.961355	0.018333	-0.020939
30	P2	-22.034887	0.019701	0.078339

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.043824	0.002613	-0.013819
7	P3	-8.043828	0.002621	-0.013467
11	P3	-8.043804	0.002607	-0.013380
15	P3	-8.043797	0.002616	-0.014105
19	P3	-8.043900	0.002620	-0.013709
22	P3	-8.043853	0.002622	-0.013832
26	P3	-8.043966	0.002609	-0.013795
30	P3	-8.043777	0.002602	-0.013686

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

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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	0.000440195
	stdev	2.40477e-07
MEAN Q	mean	0.000505038
	stdev	2.51755e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.125791
	stdev	0.000988355
STDEV Q	mean	0.126027
	stdev	0.000997480

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
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6.4 - Unbiased Doppler Error for GM1

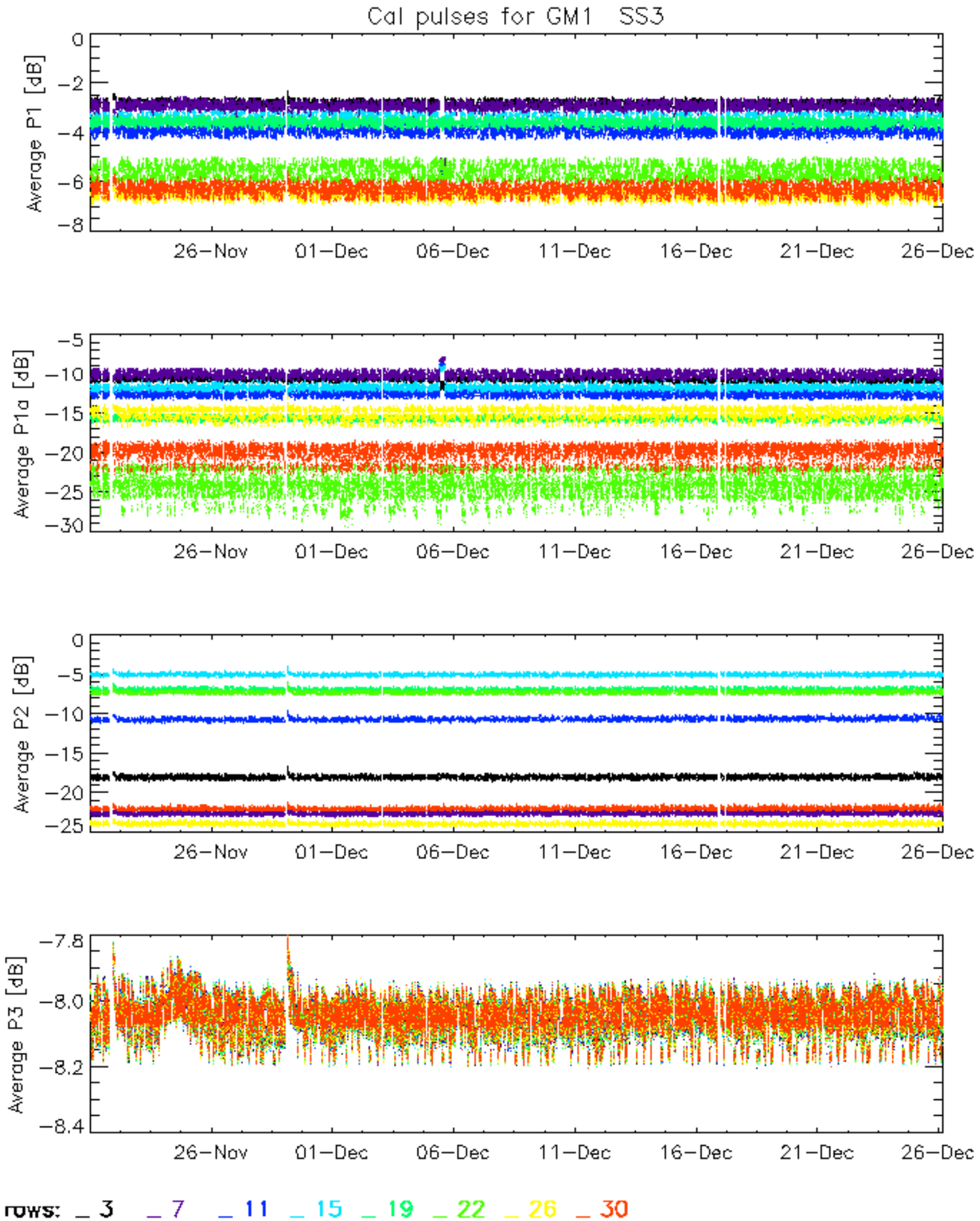
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

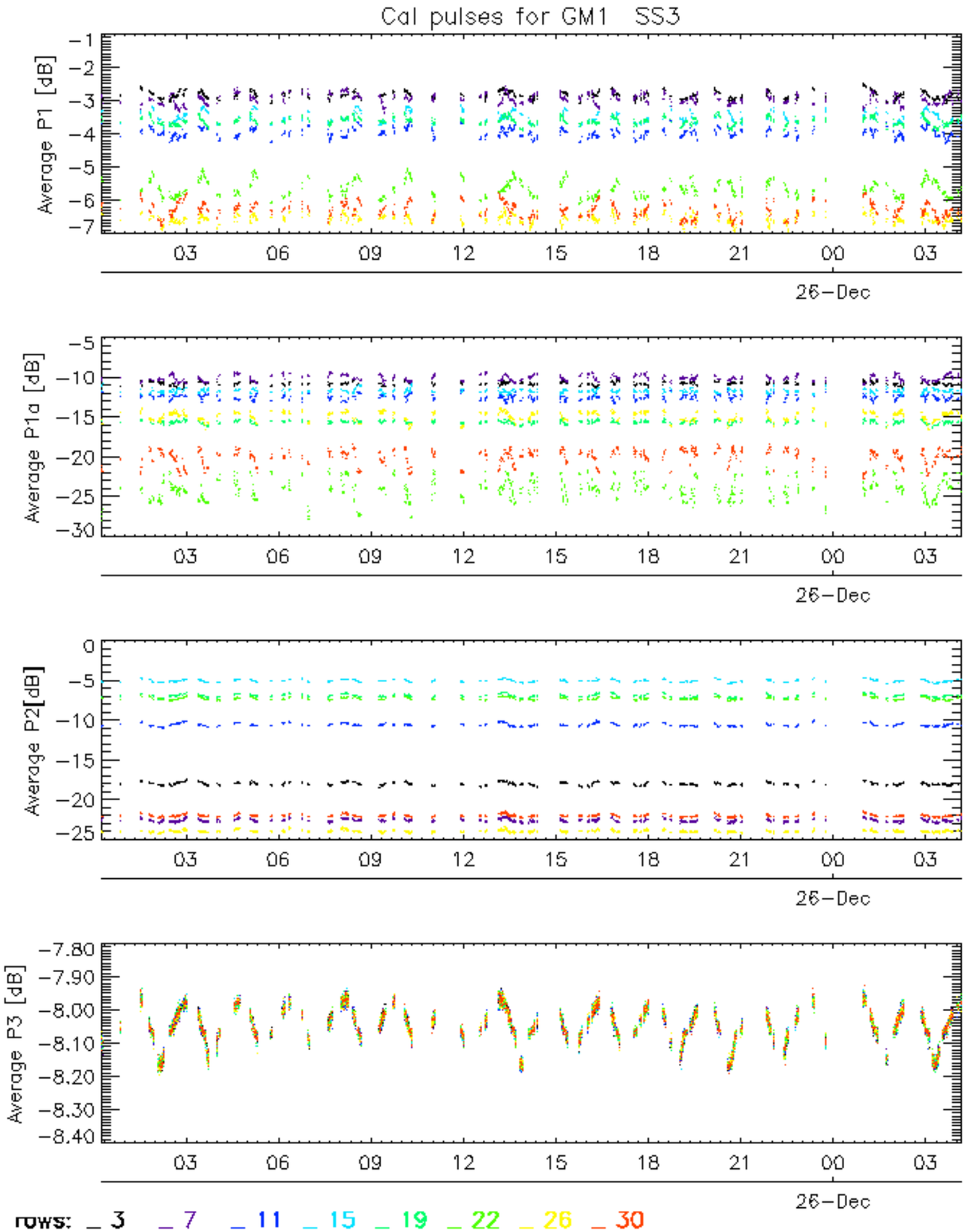
6.5 - Absolute Doppler for GM1

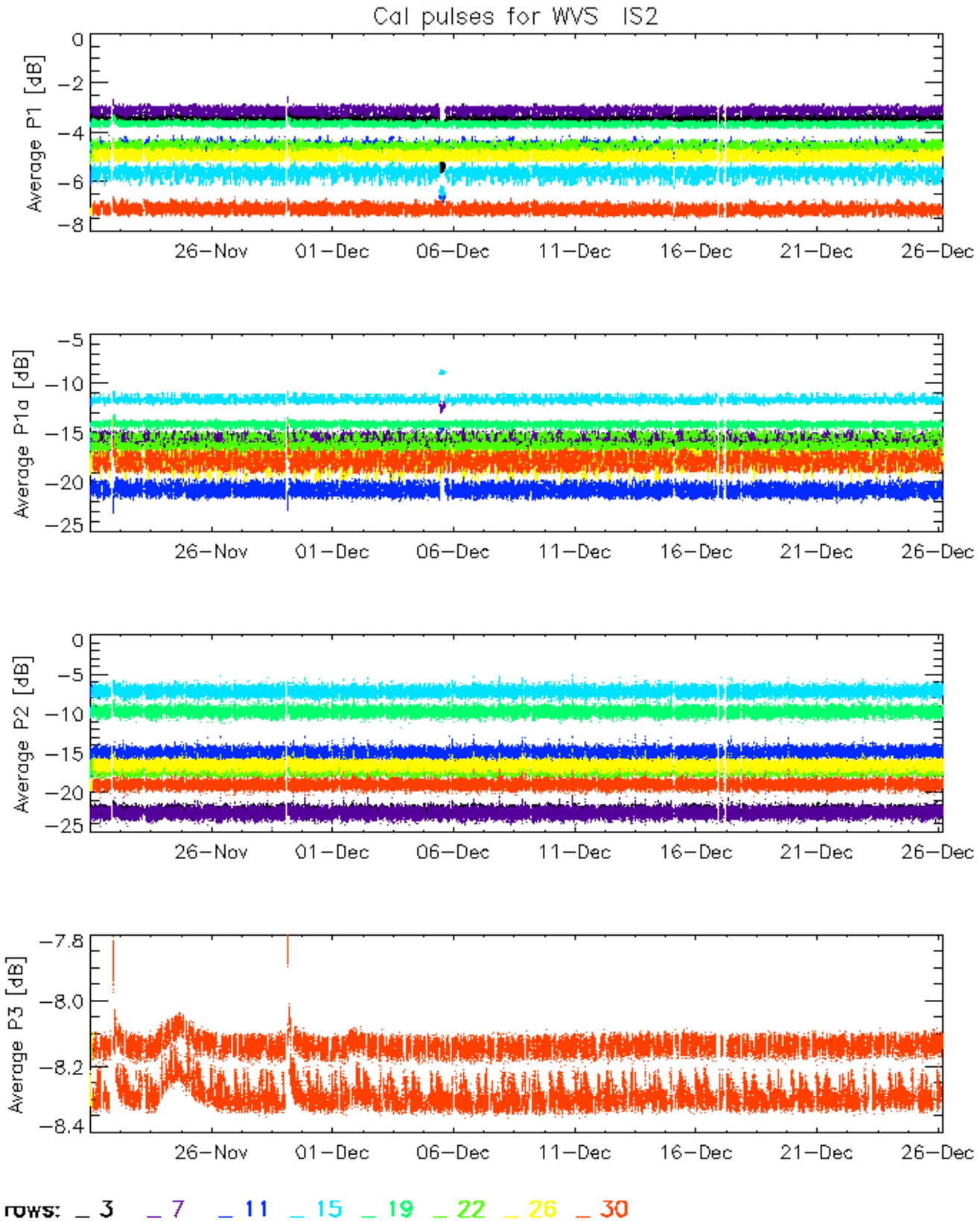
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

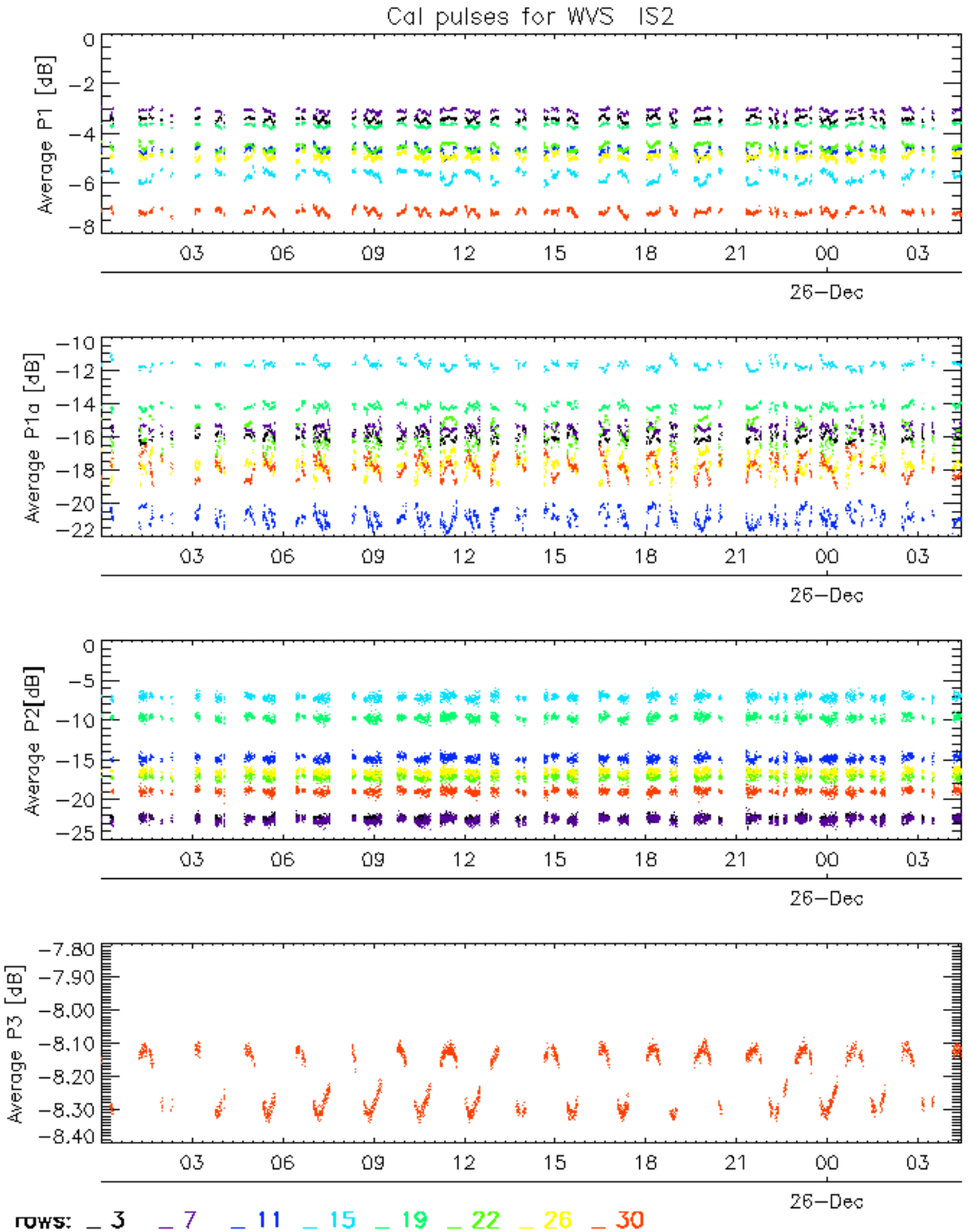
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

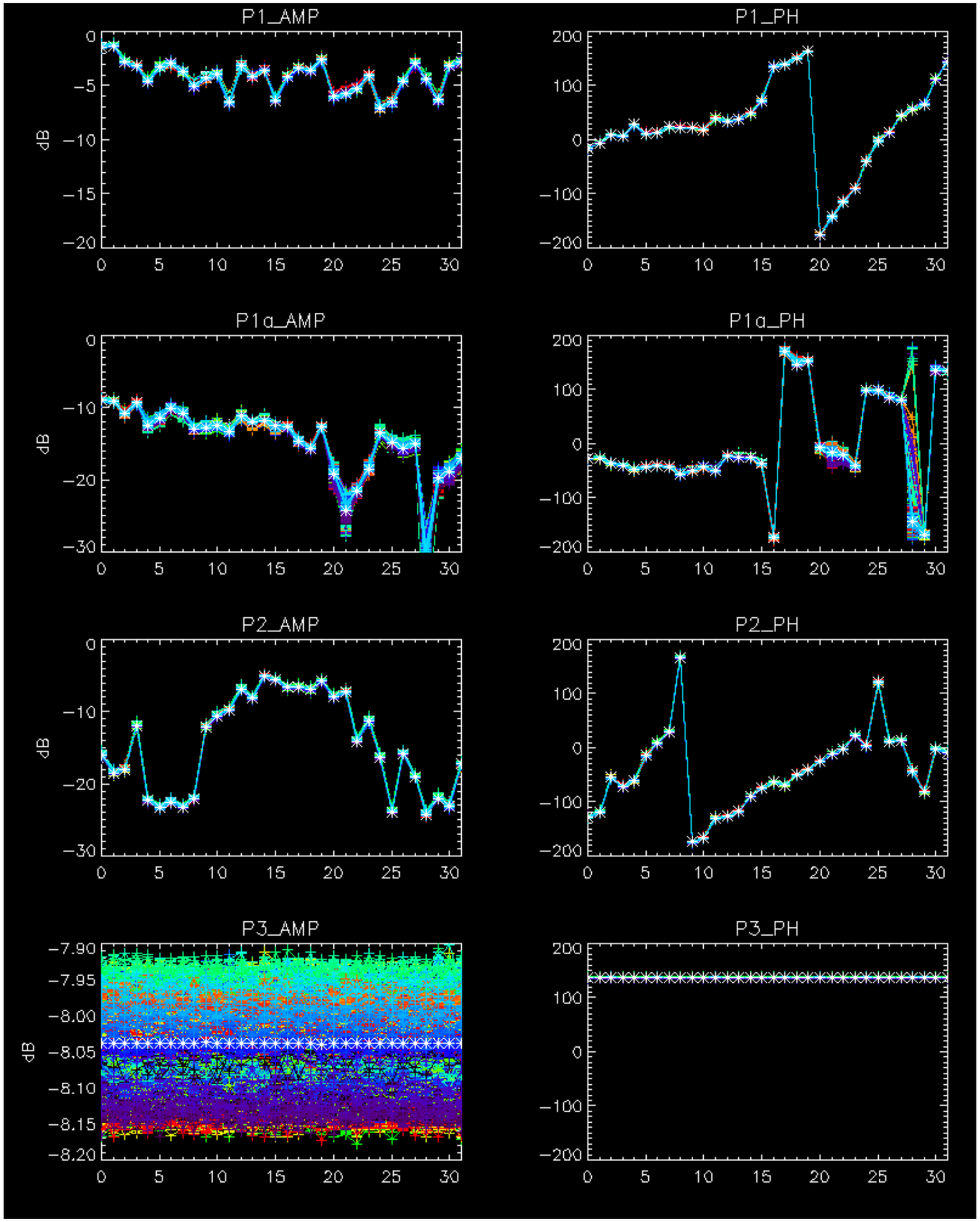

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Nov
01−Dec
06−Dec
11−Dec
16−Dec
21−Dec
26−Dec
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

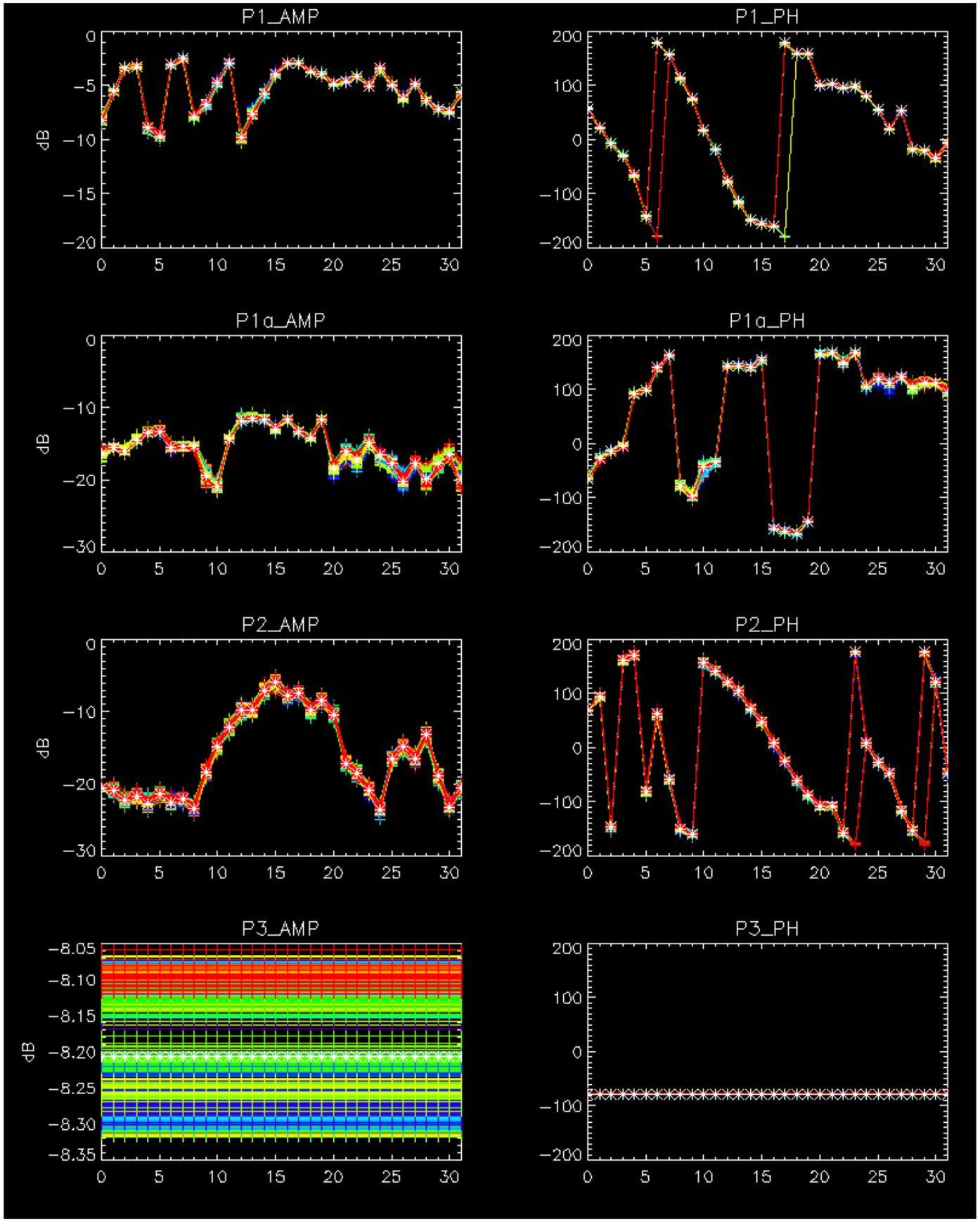

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
26−Dec
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
26−Dec
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
26−Dec
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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


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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
26−Dec
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2[dB]
−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 _ 26 _ 30

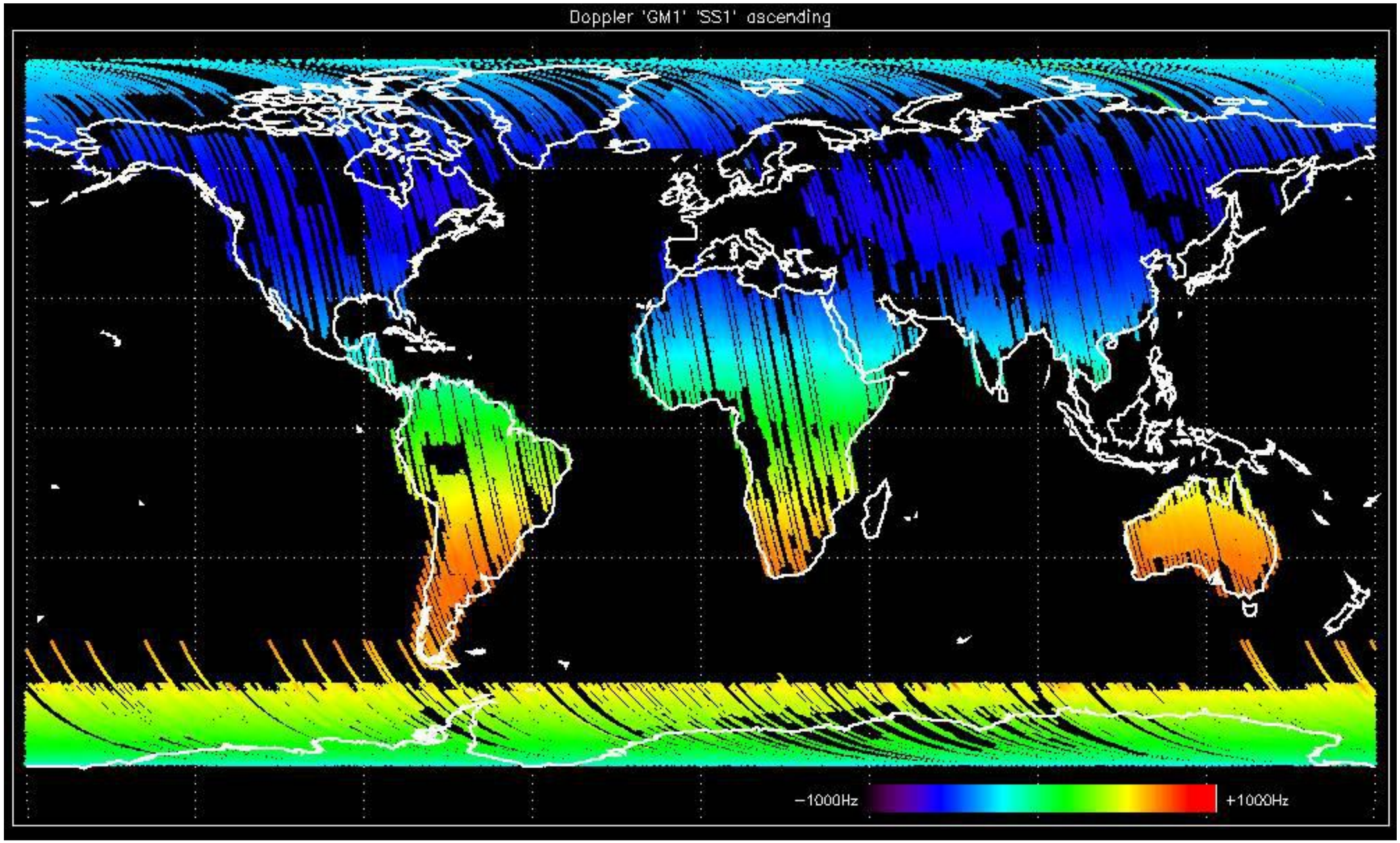
No anomalies observed.

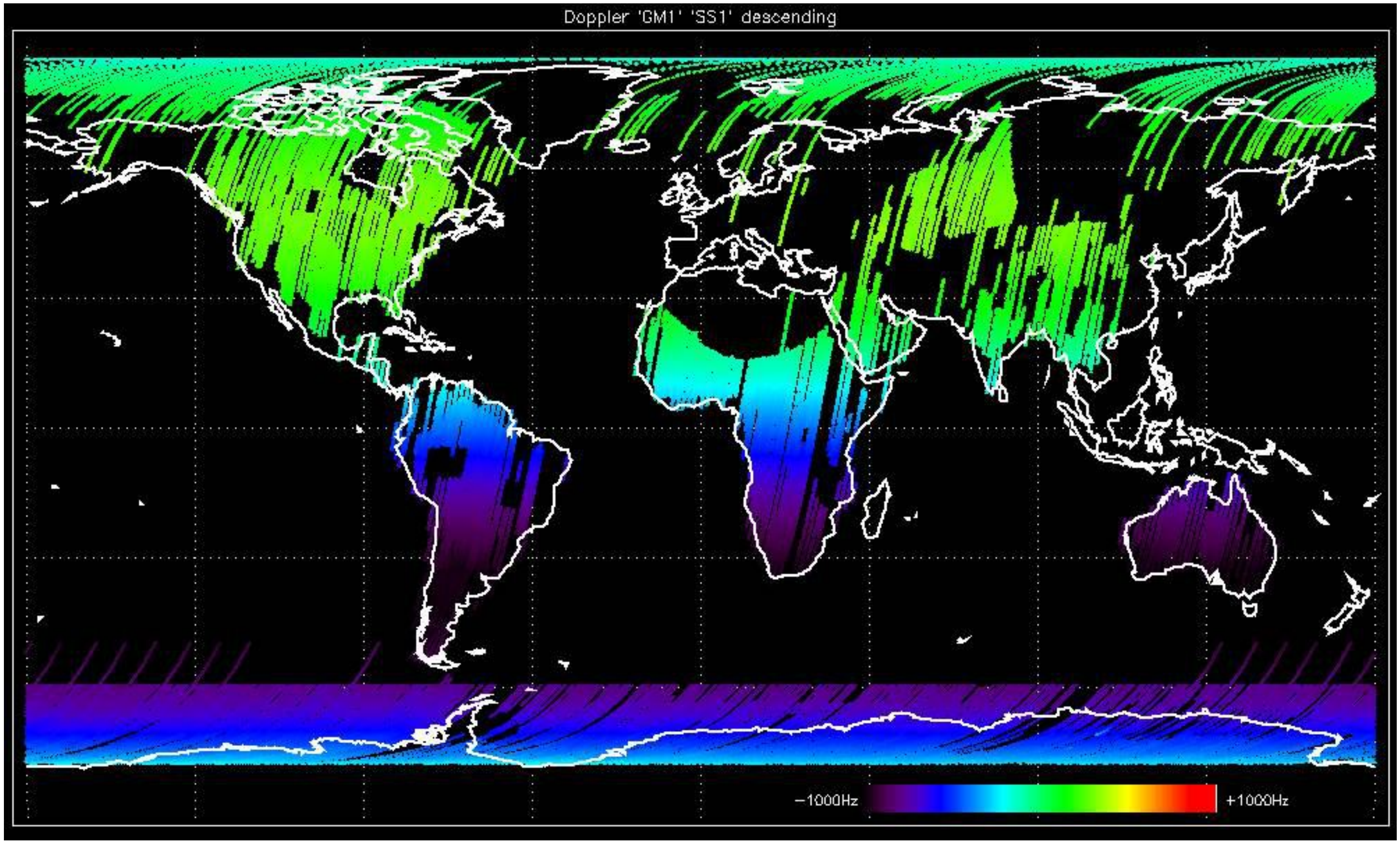

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.90
−7.95
−8.00
−8.05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

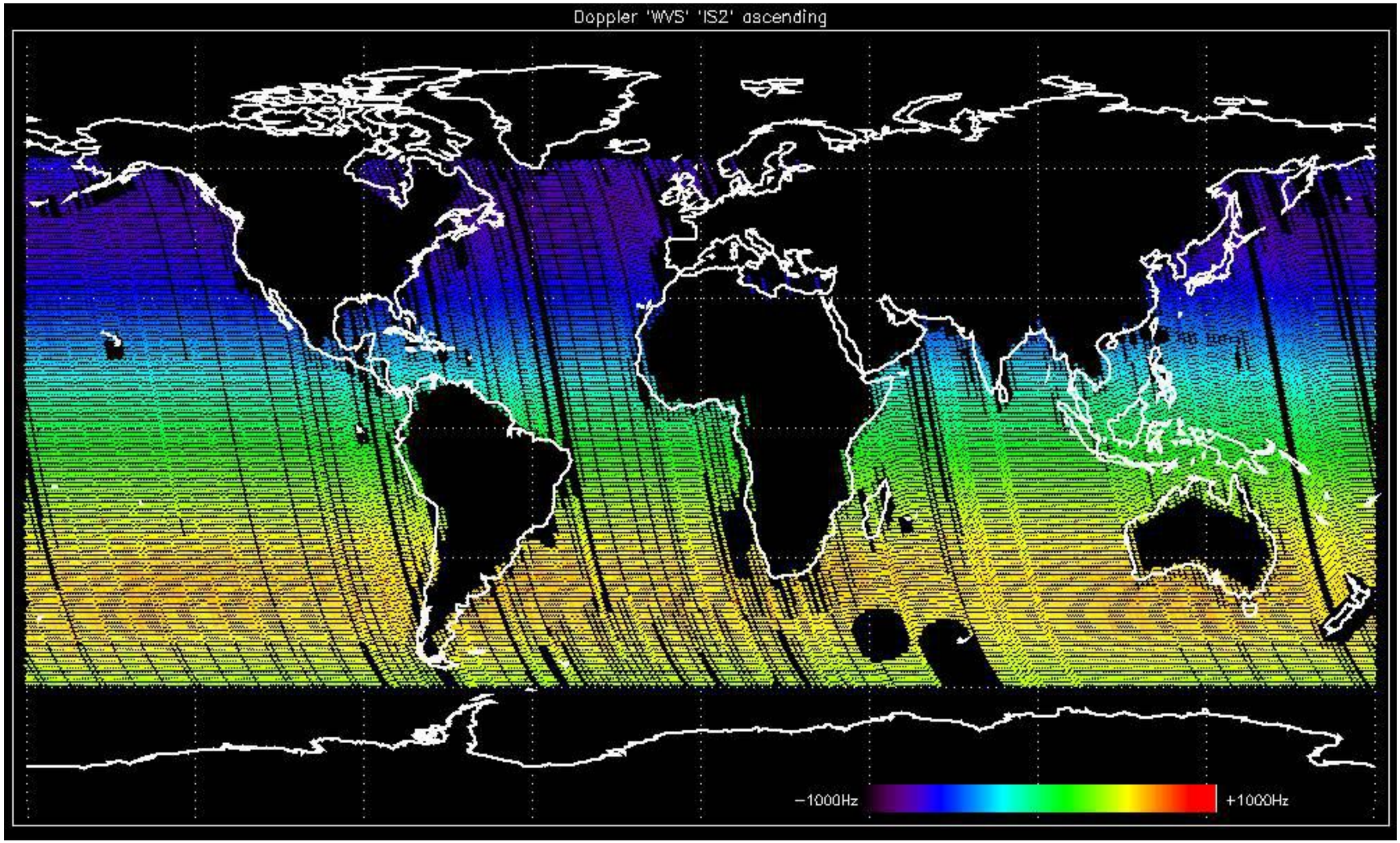

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20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

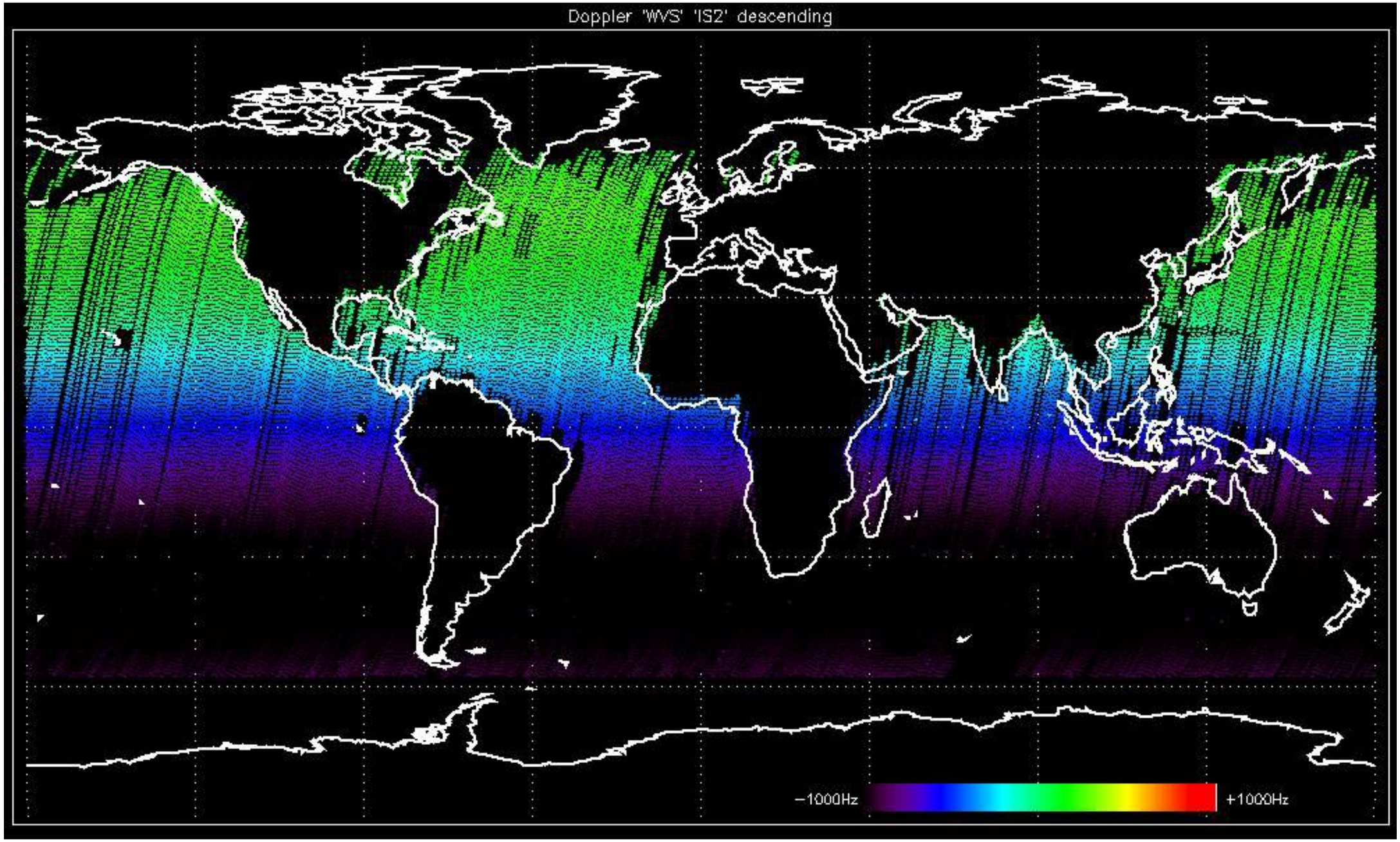
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

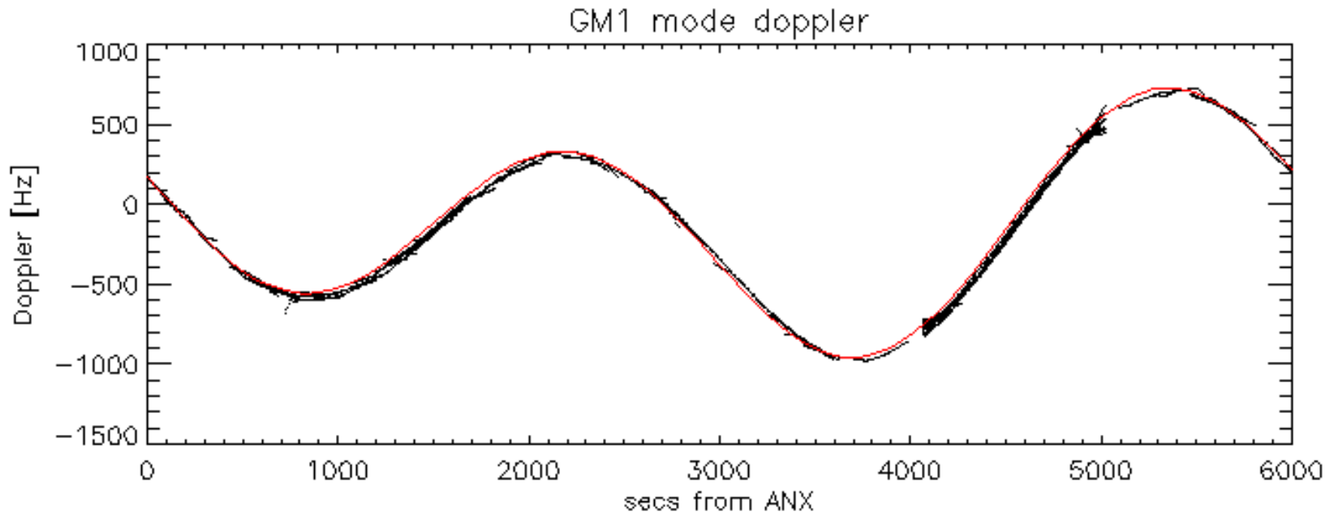
Preliminary report.The data is not yet controled

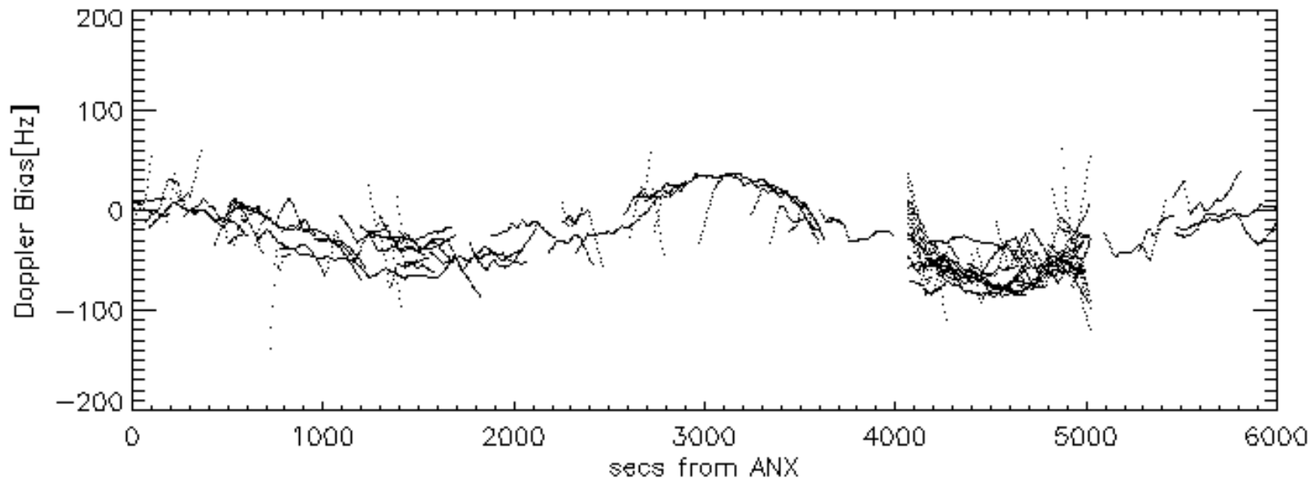

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

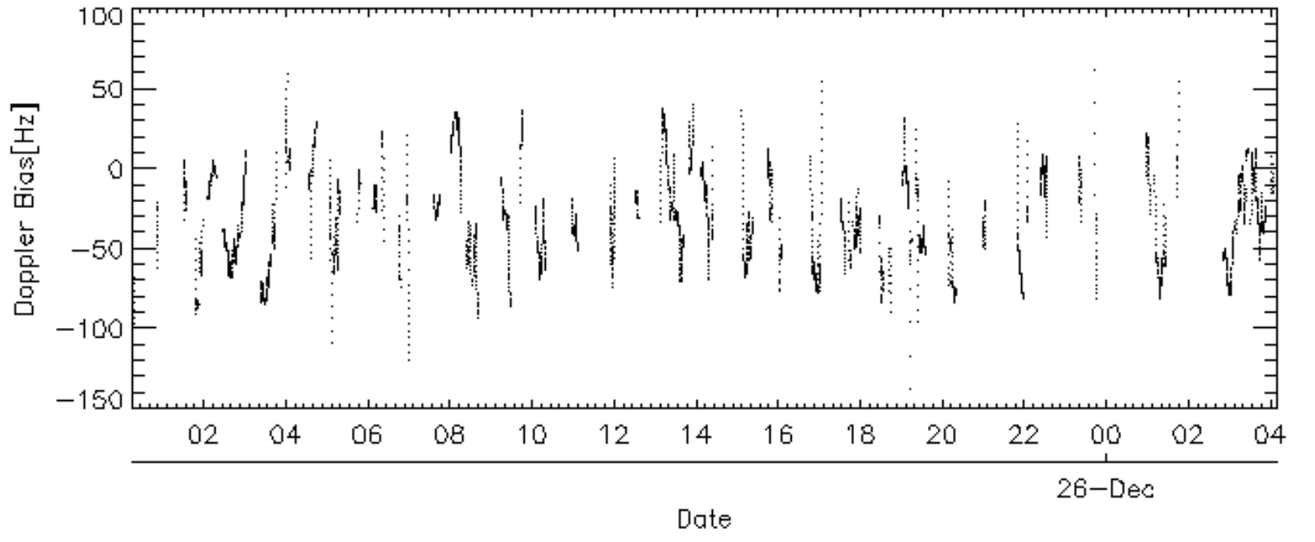

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

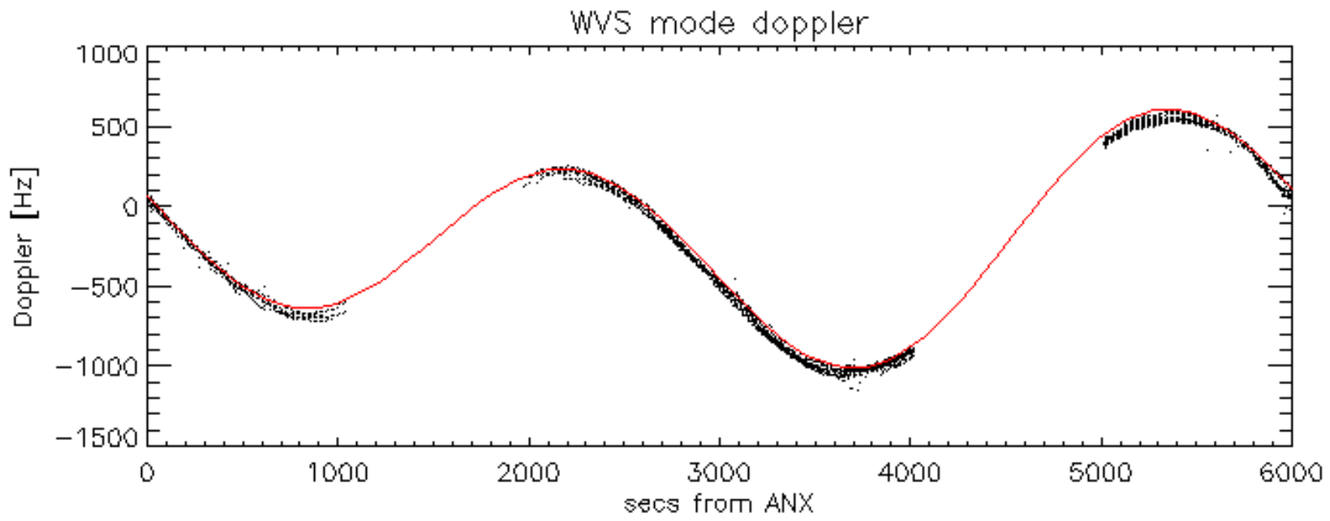

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

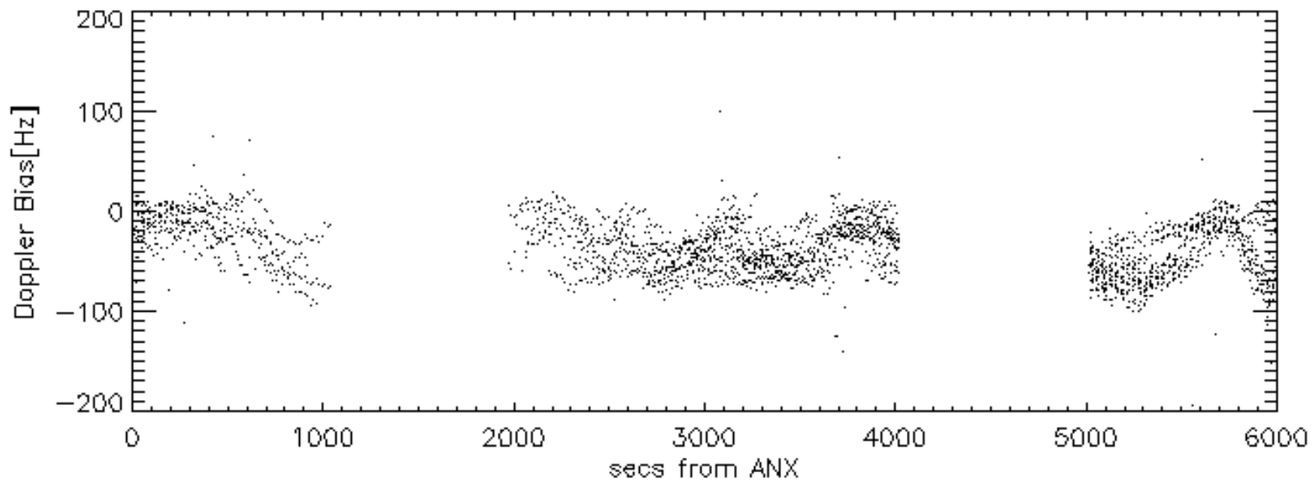

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

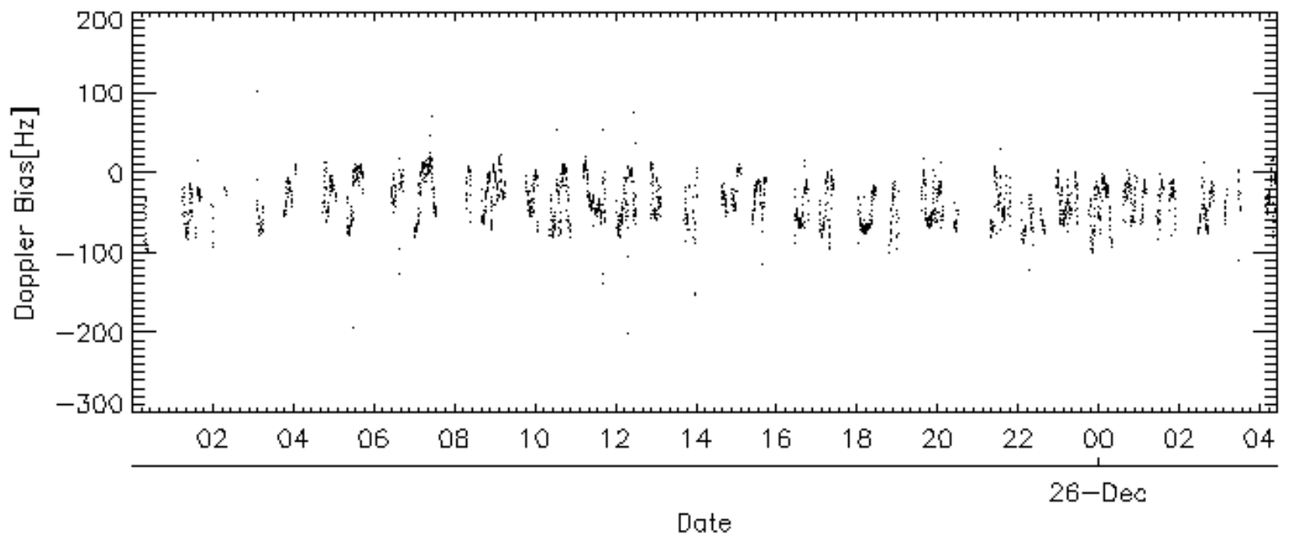

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

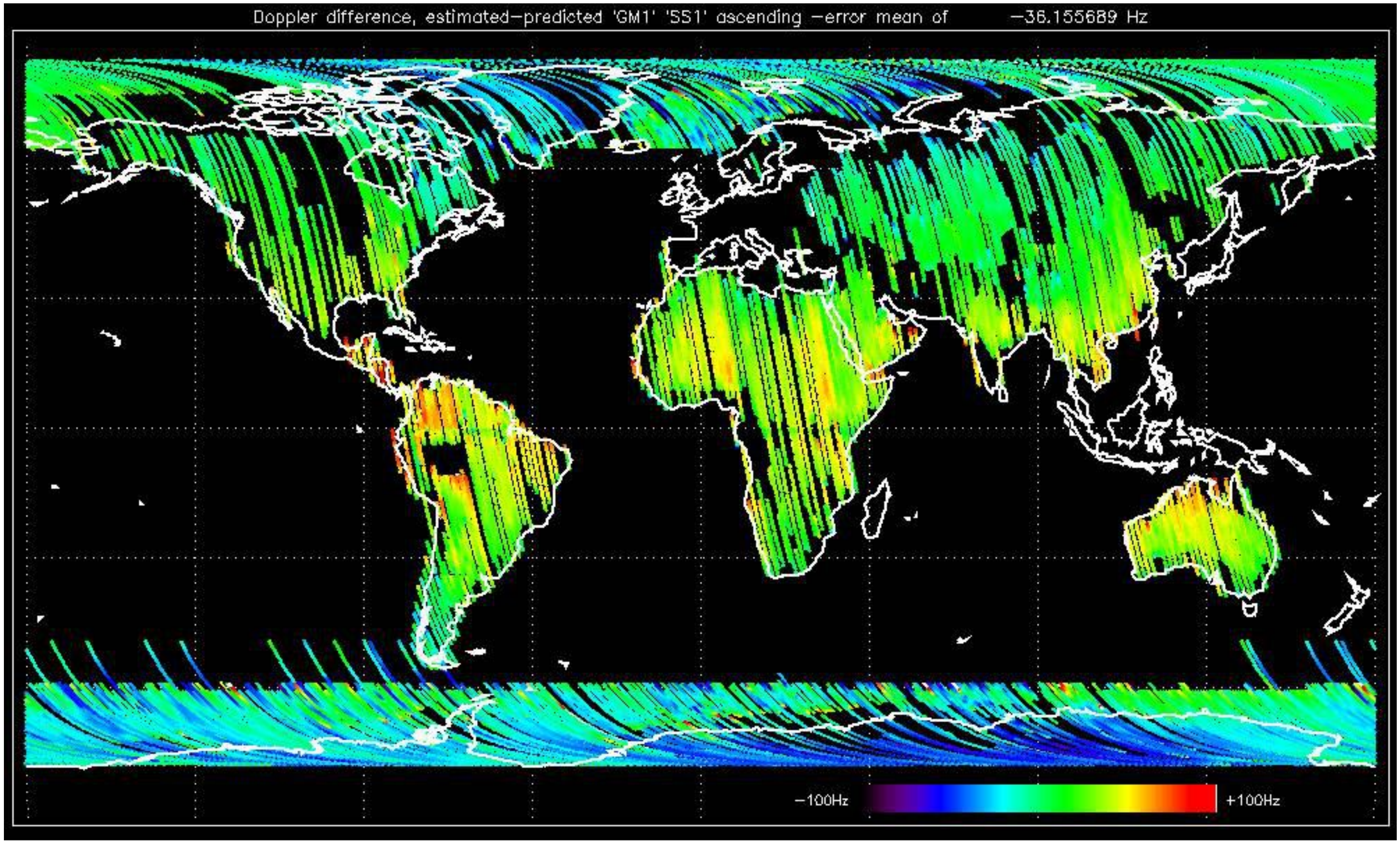

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

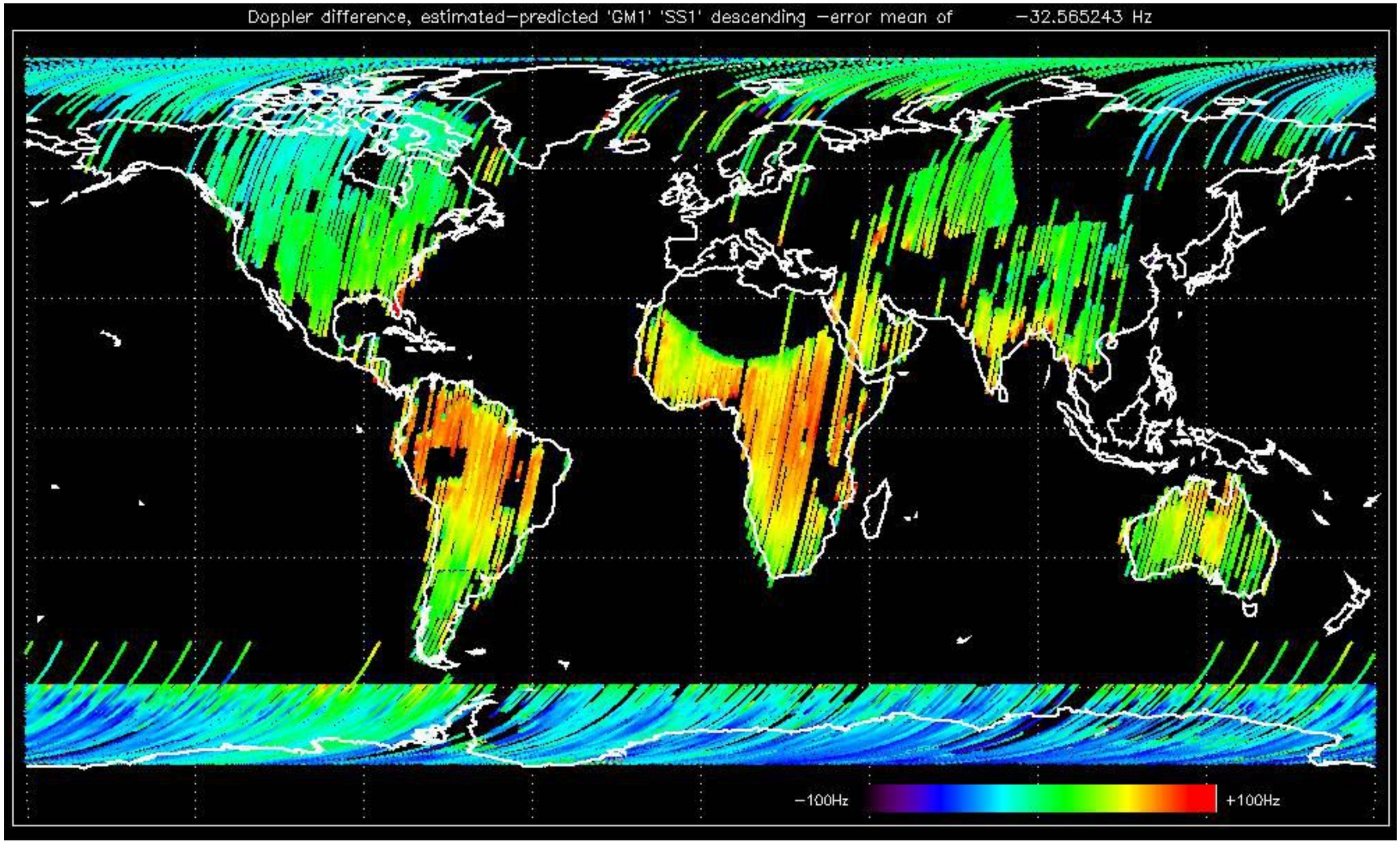

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
26−Dec
Date

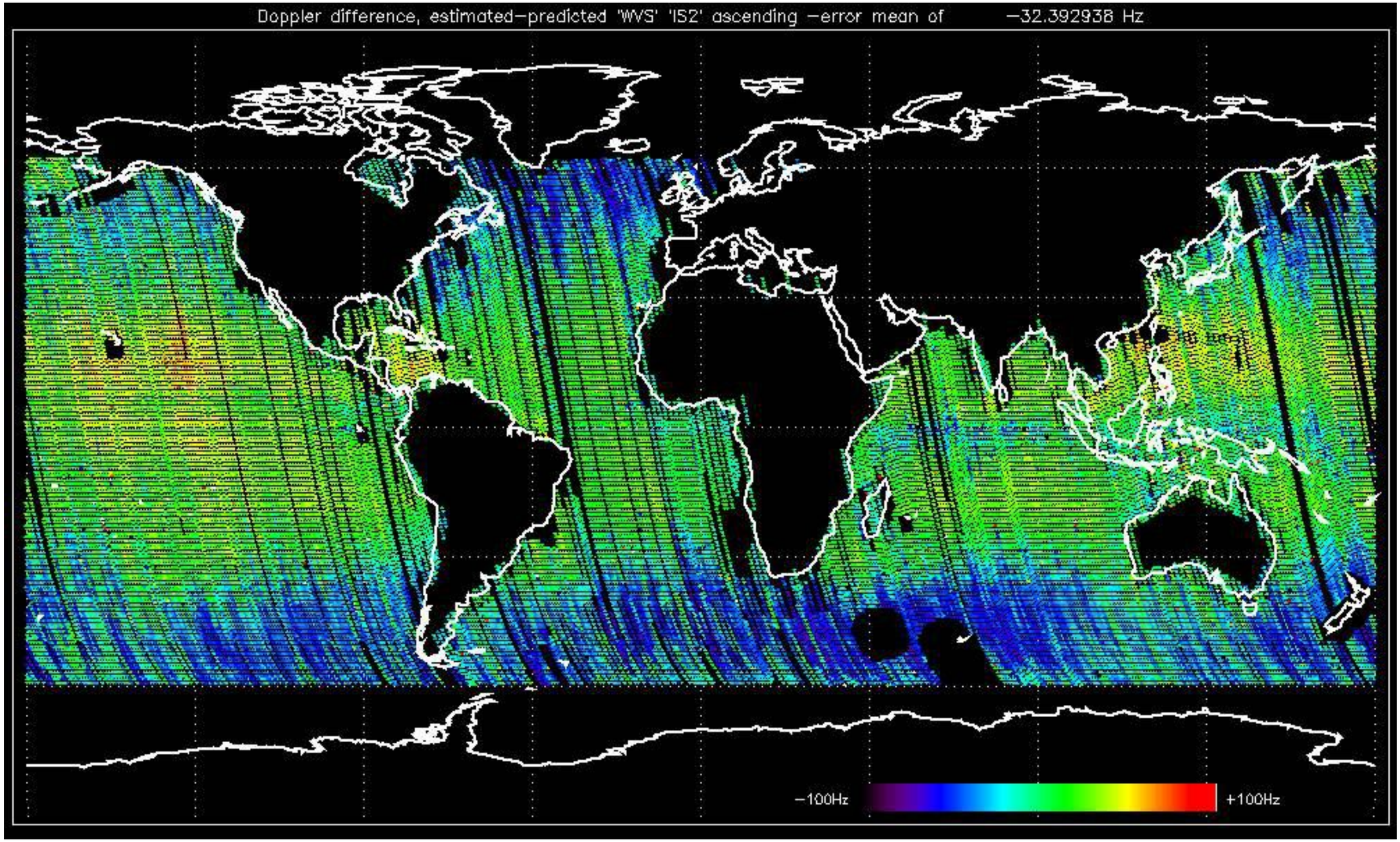

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

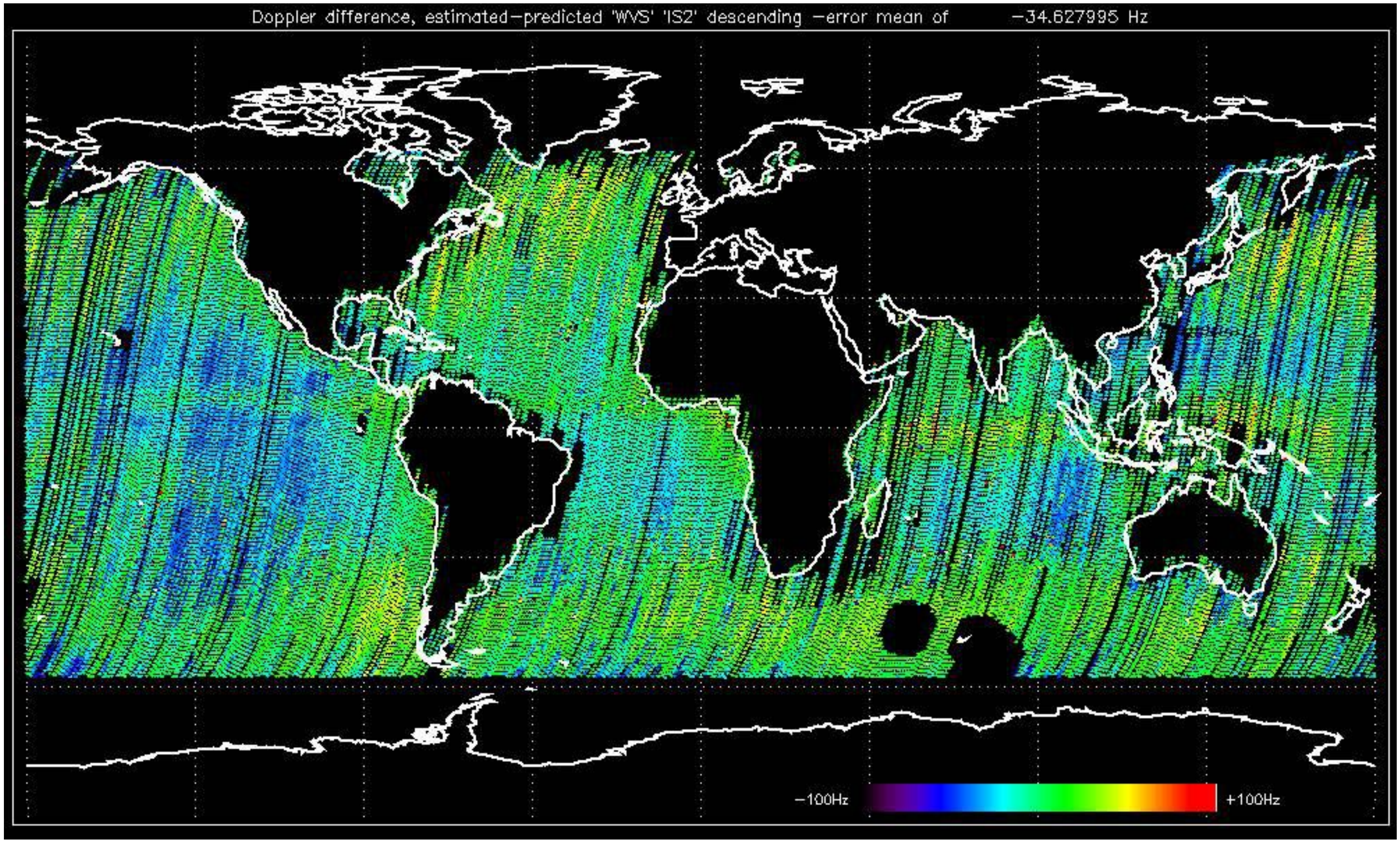

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −36.155689 Hz
−100Hz
+100Hz

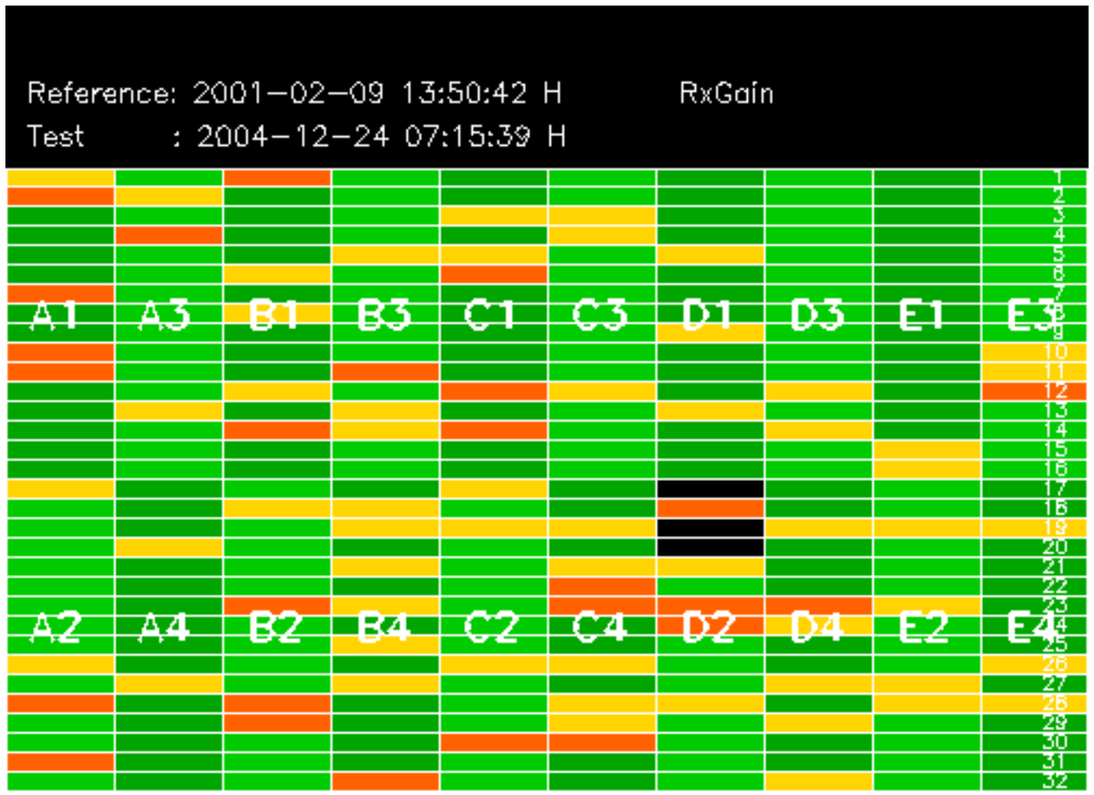

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -32.565243 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.392938 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −34.627995 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 : 2004-12-24 07:15:39 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
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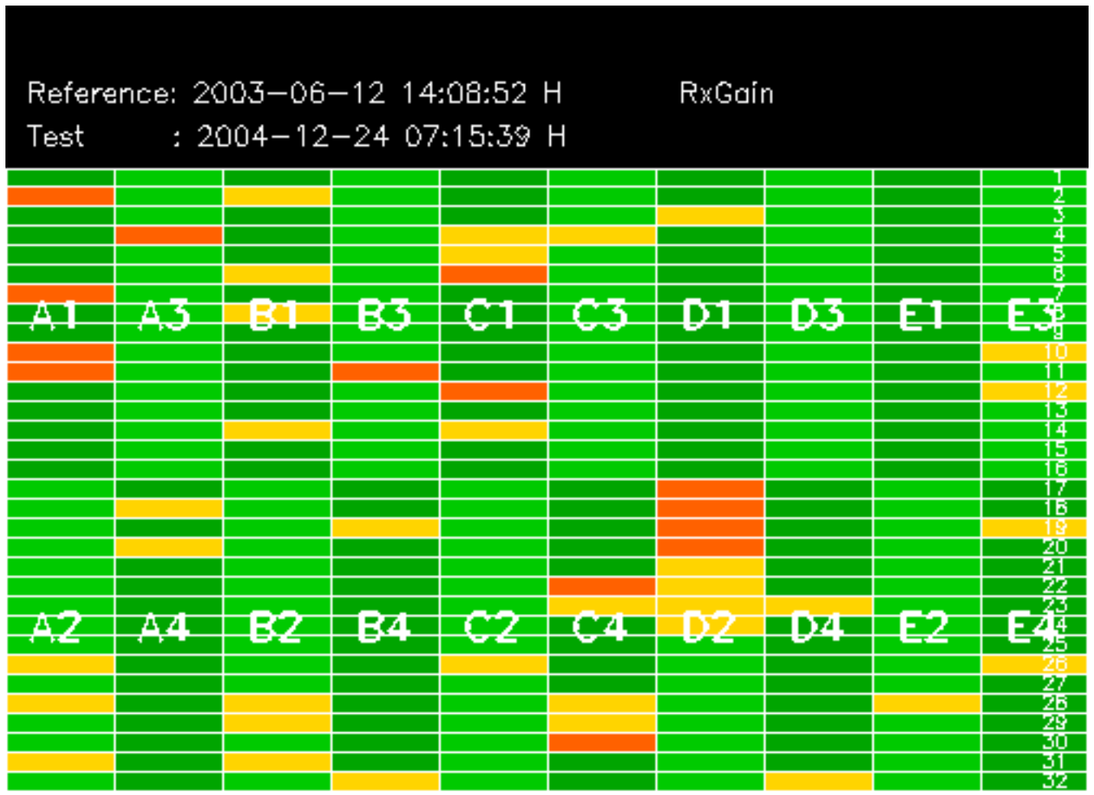
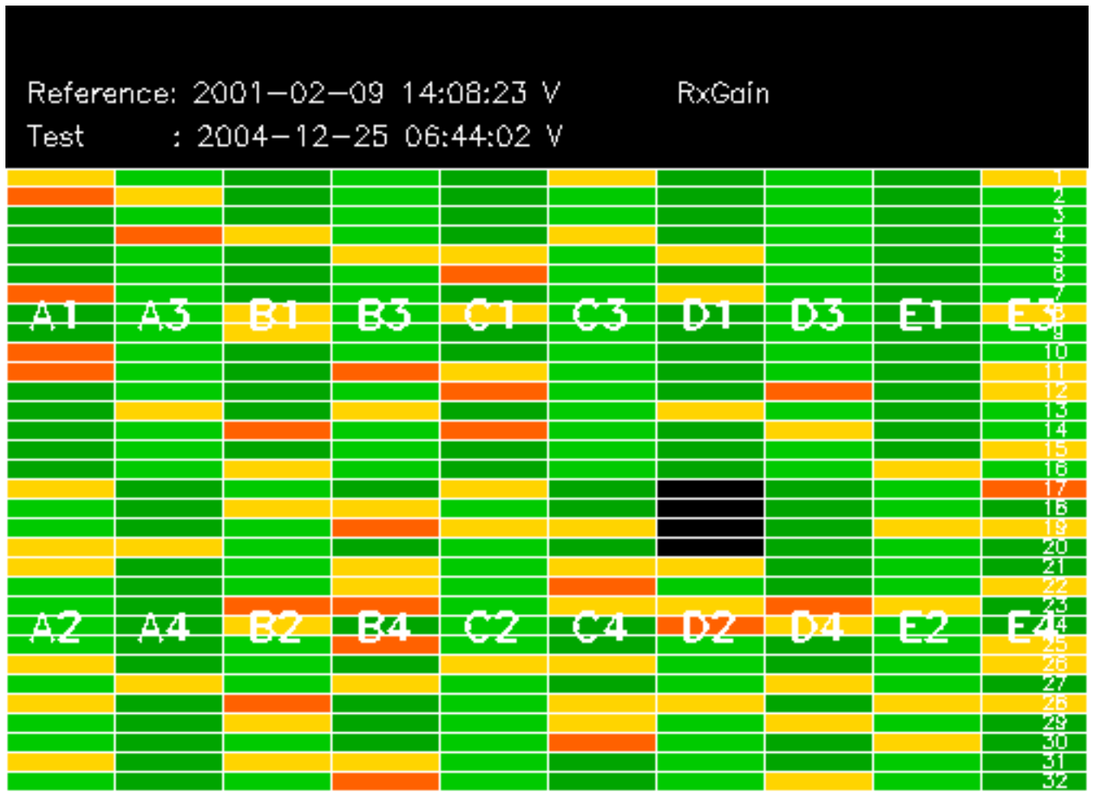
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2004-12-24 07:15:39 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 : 2004-12-25 06:44:02 V
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
12
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14
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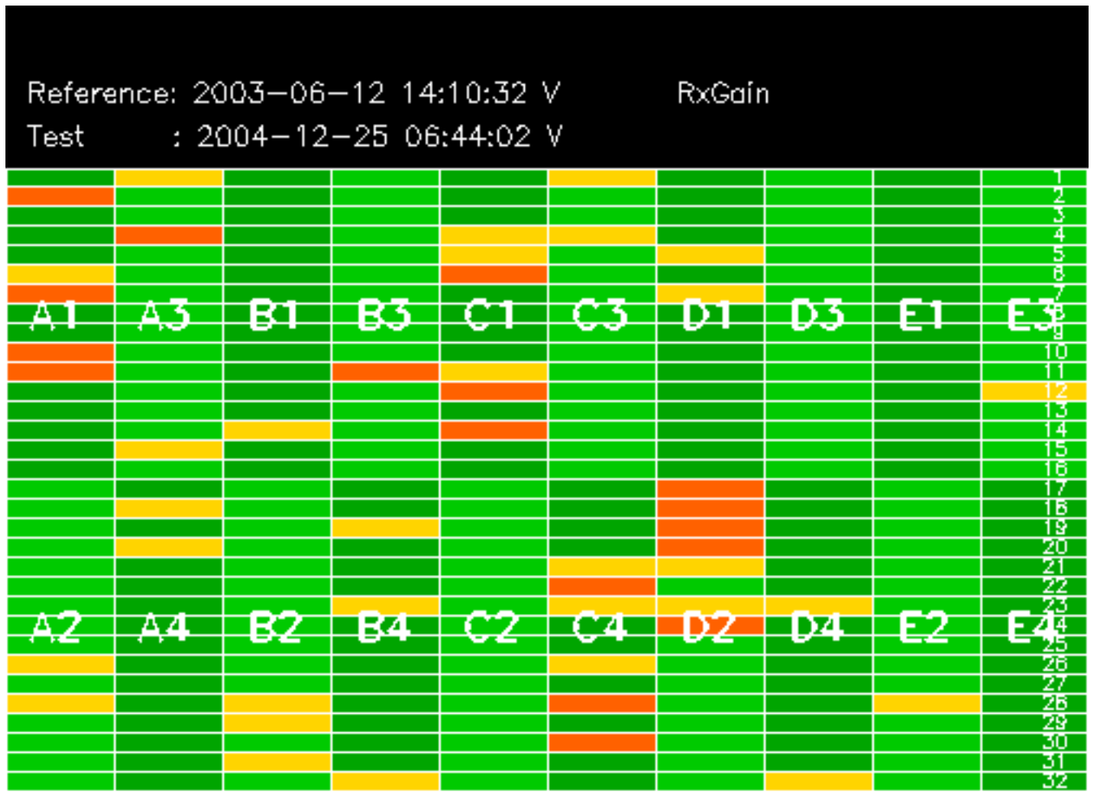
Reference: 2003-06-12 14:10:32 V
Test : 2004-12-25 06:44:02 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
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14
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16
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22
23
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26
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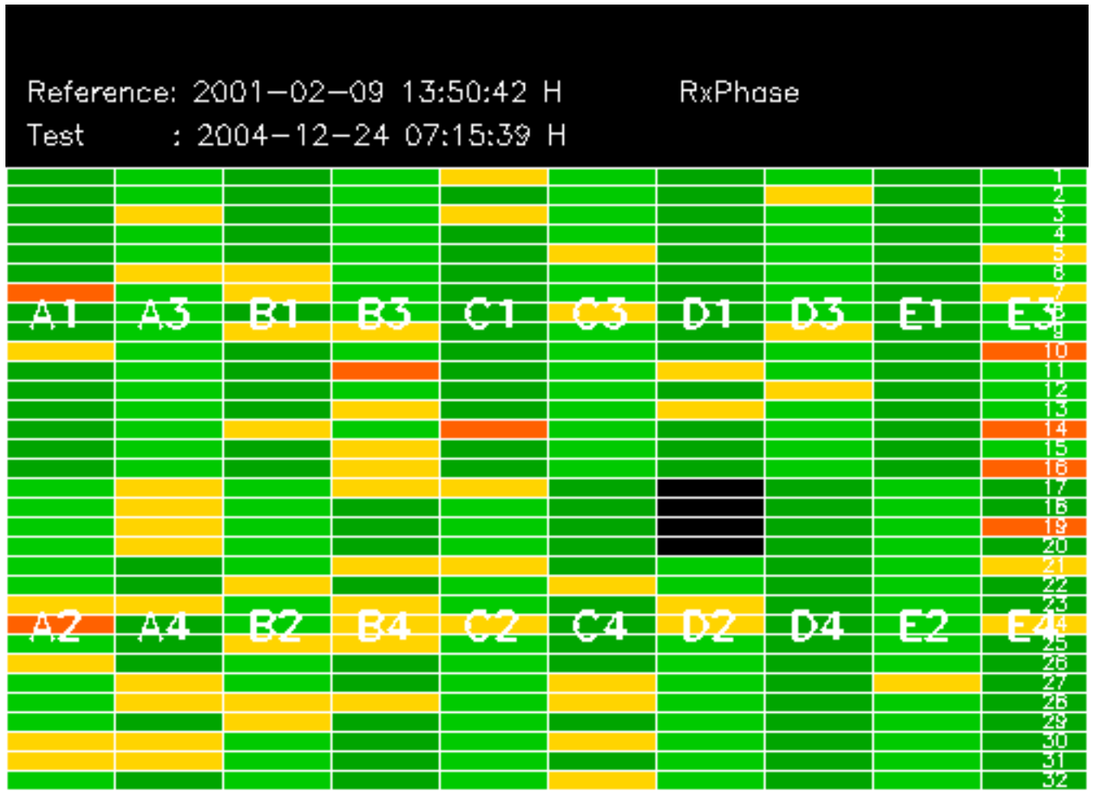
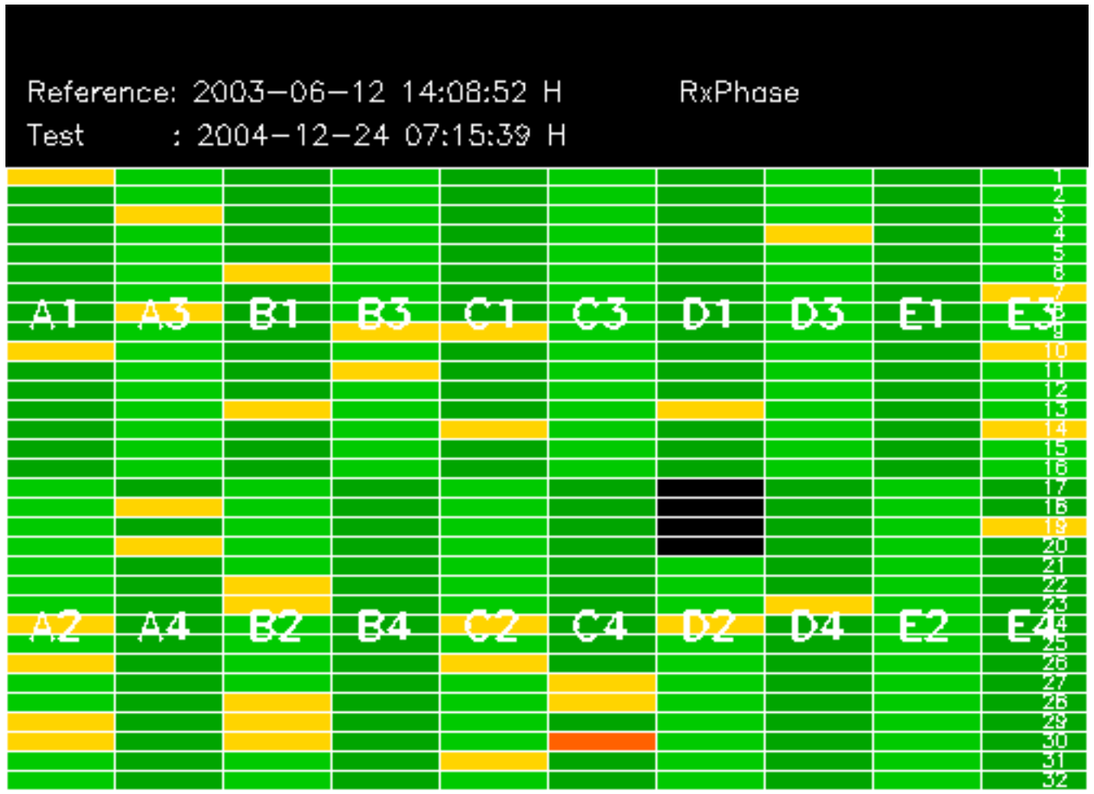
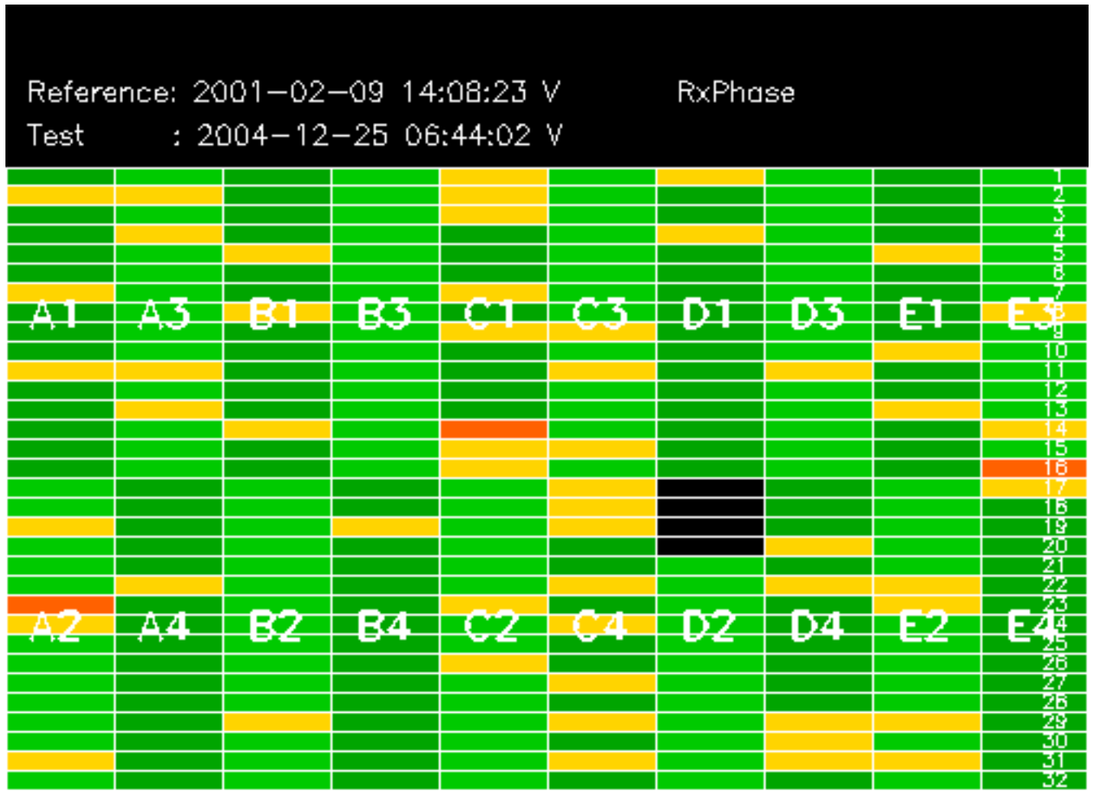
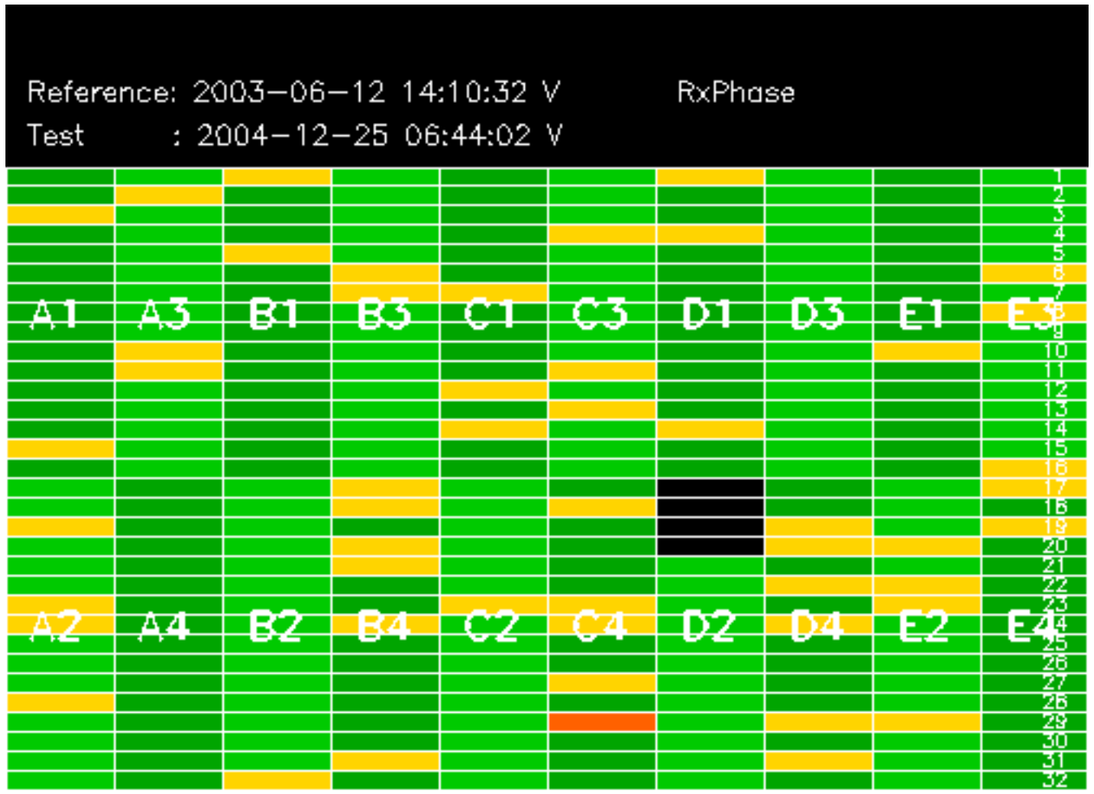
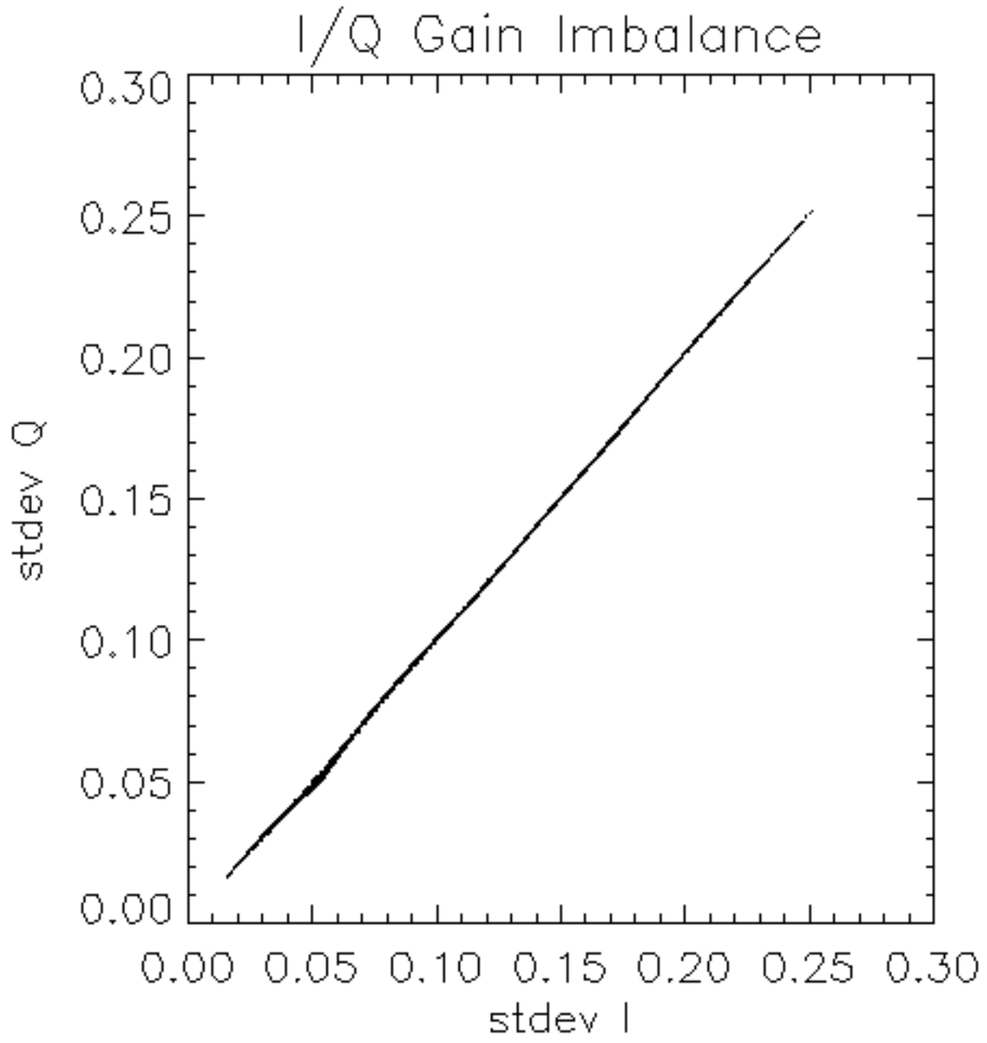
29
30
31
32

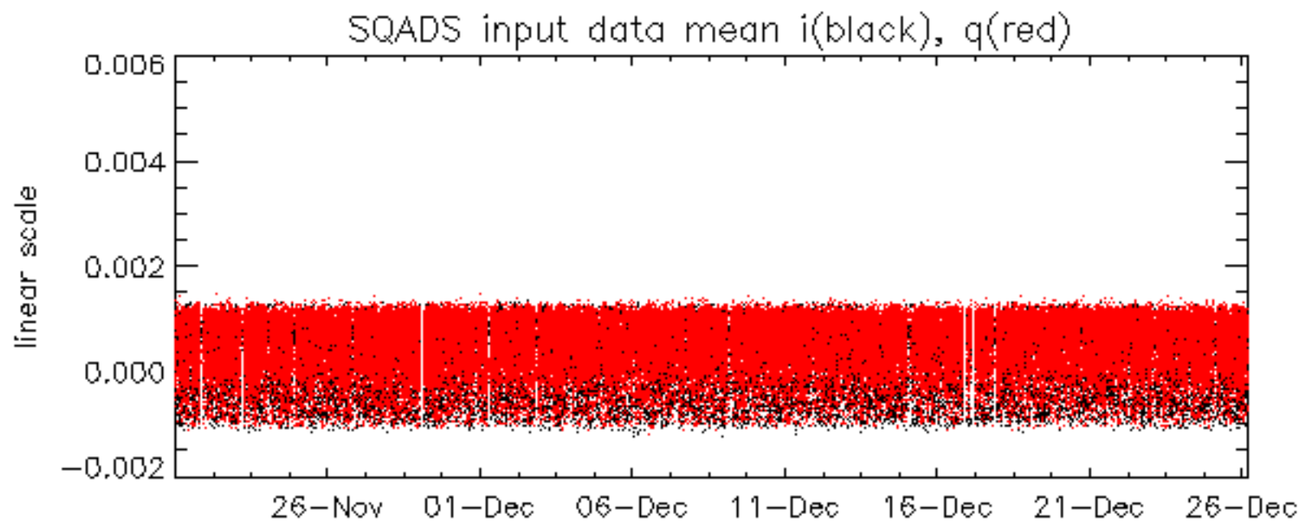

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-12-24 07:15:39 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

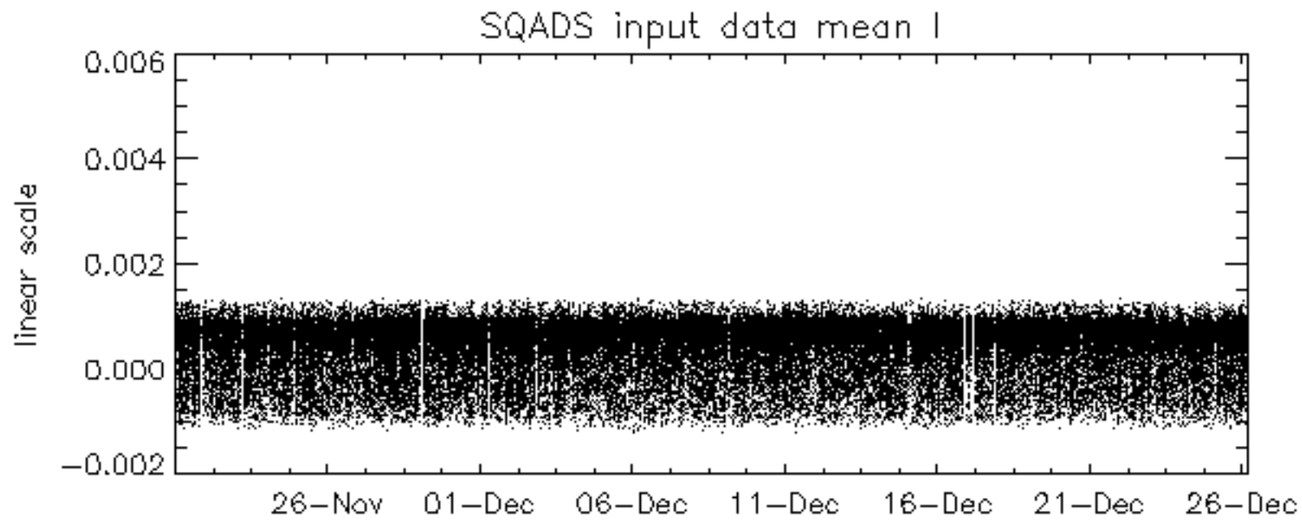

Reference: 2003-06-12 14:08:52 H
Test : 2004-12-24 07:15:39 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

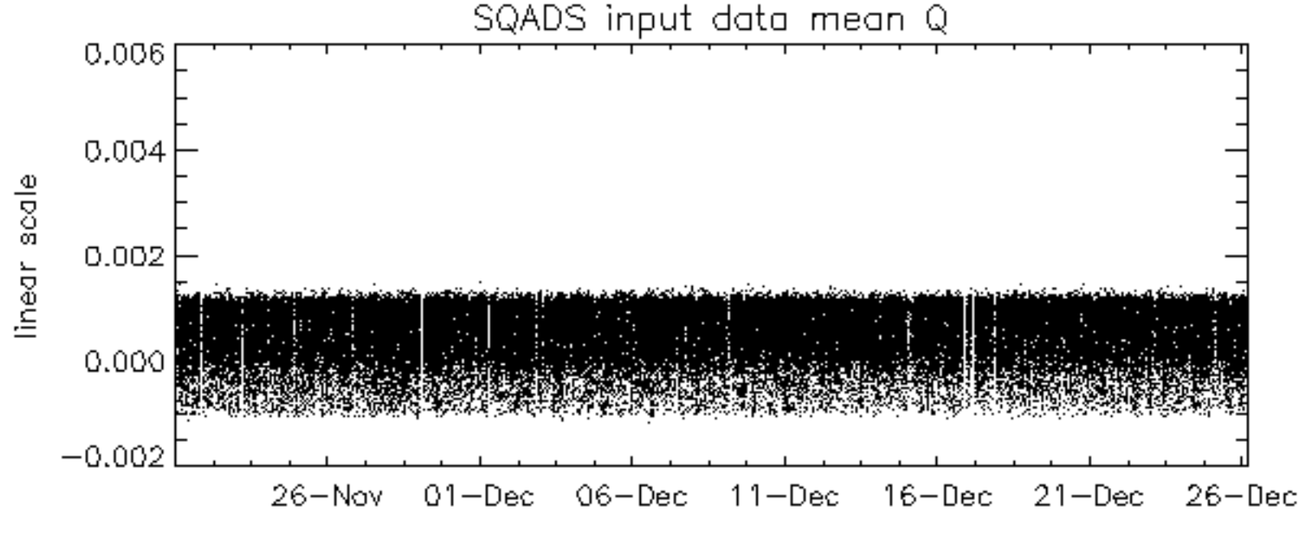

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2004-12-25 06:44:02 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

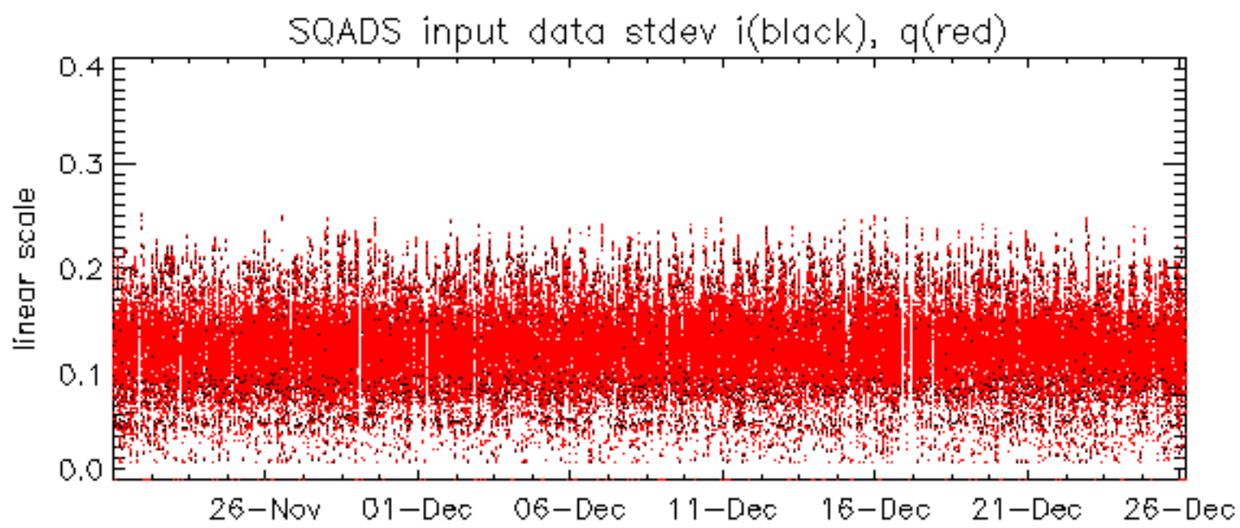

Reference: 2003-06-12 14:10:32 V
Test : 2004-12-25 06:44:02 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

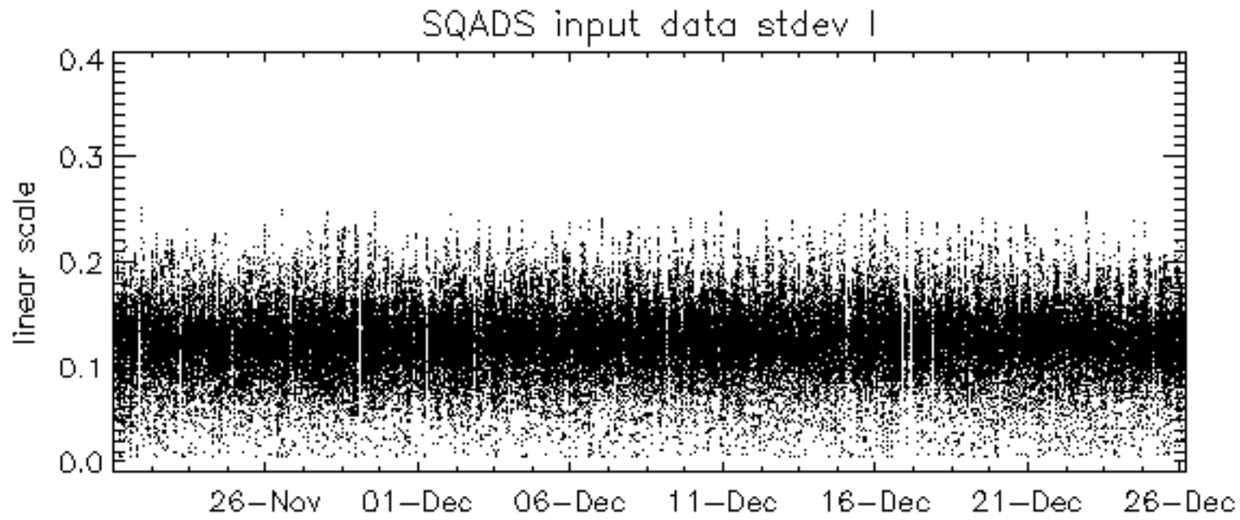

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

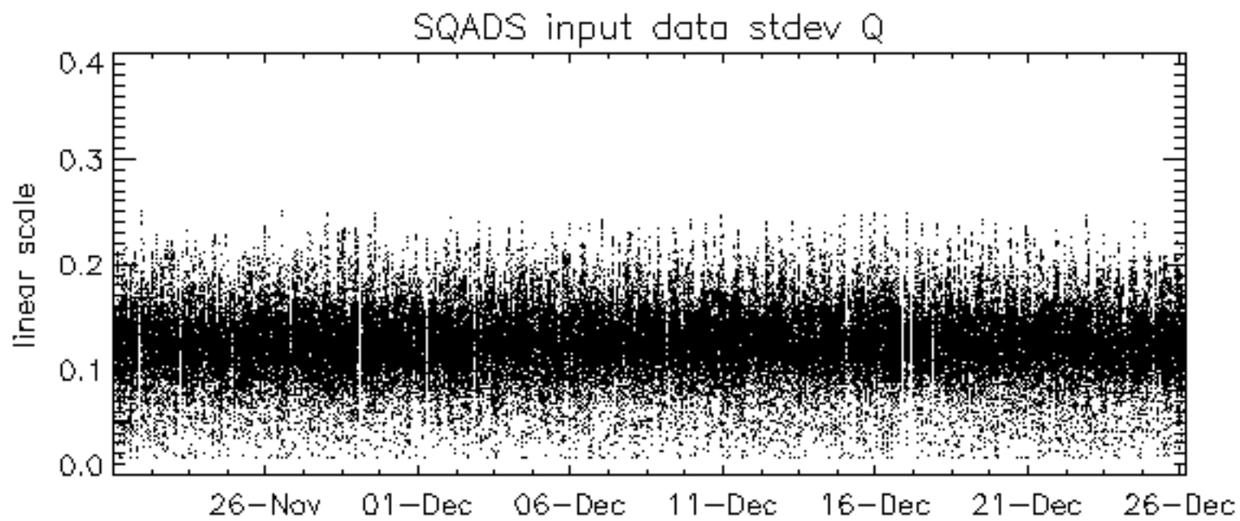

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Nov
01−Dec
06−Dec
11−Dec
16−Dec
21−Dec
26−Dec

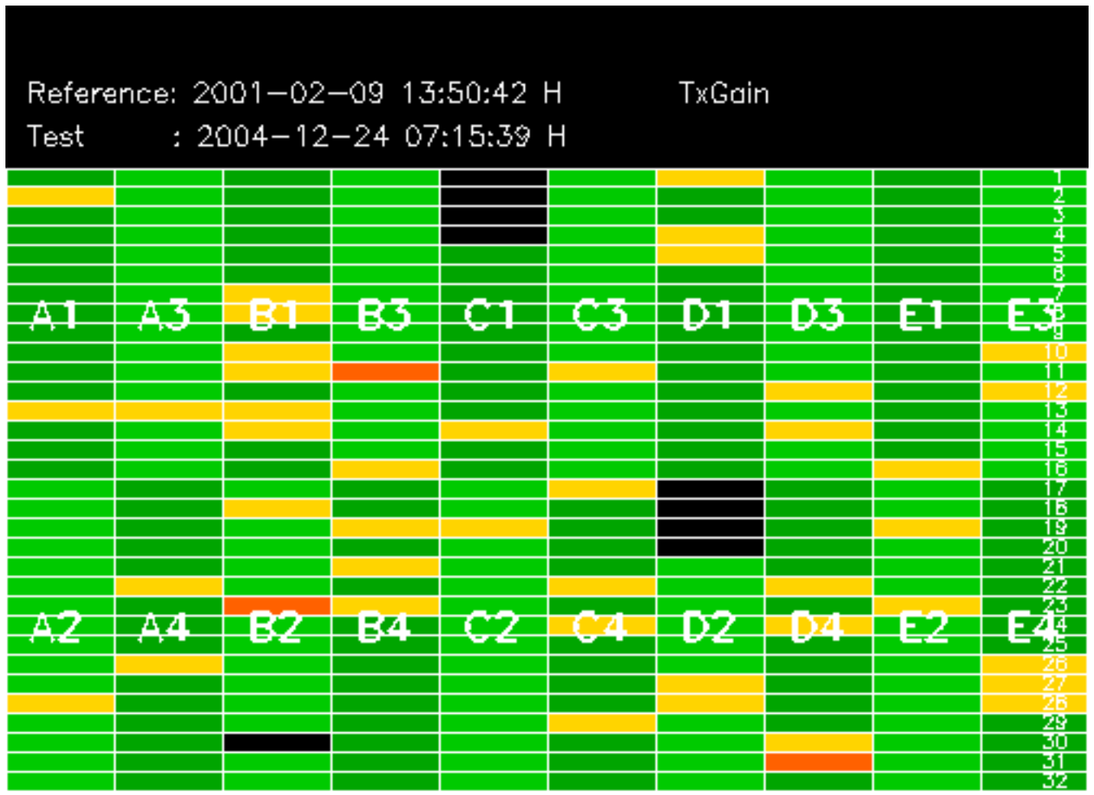

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Nov
01−Dec
06−Dec
11−Dec
16−Dec
21−Dec
26−Dec

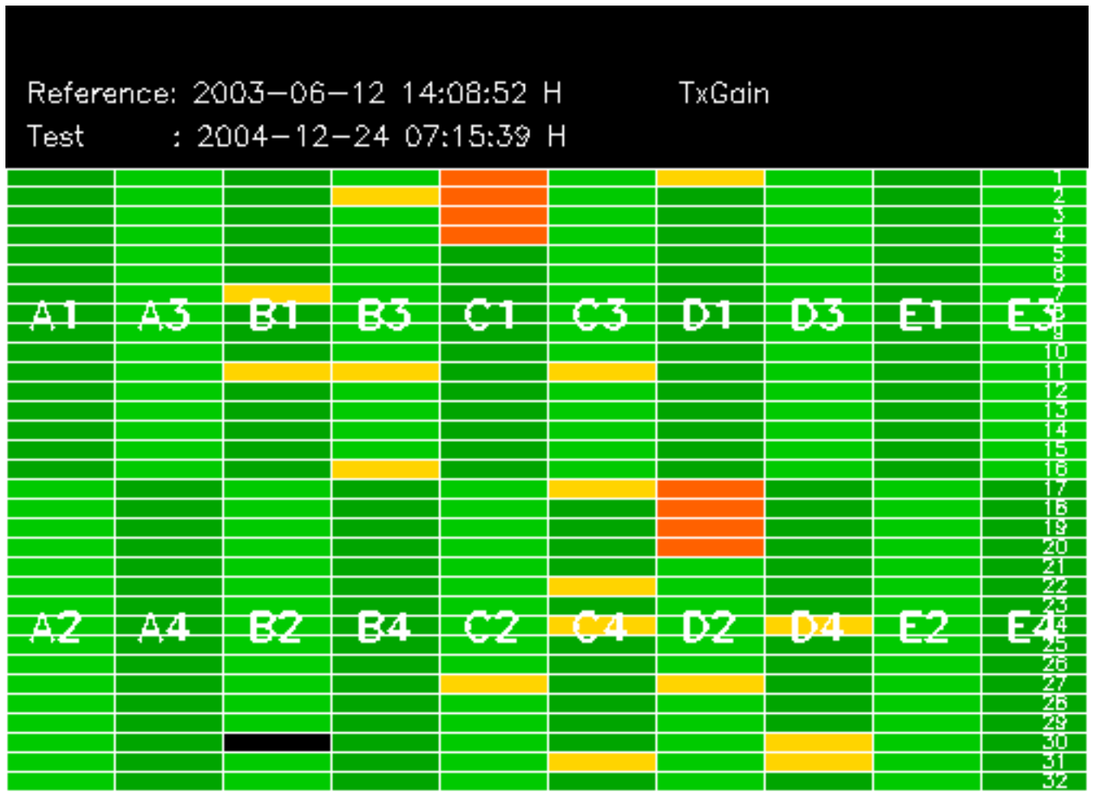

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Nov
01−Dec
06−Dec
11−Dec
16−Dec
21−Dec
26−Dec


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26-Nov
01-Dec
06-Dec
11-Dec
16-Dec
21-Dec
26-Dec


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26-Nov
01-Dec
06-Dec
11-Dec
16-Dec
21-Dec
26-Dec


Reference: 2001-02-09 13:50:42 H
Test : 2004-12-24 07:15:39 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 : 2004-12-24 07:15:39 H
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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29
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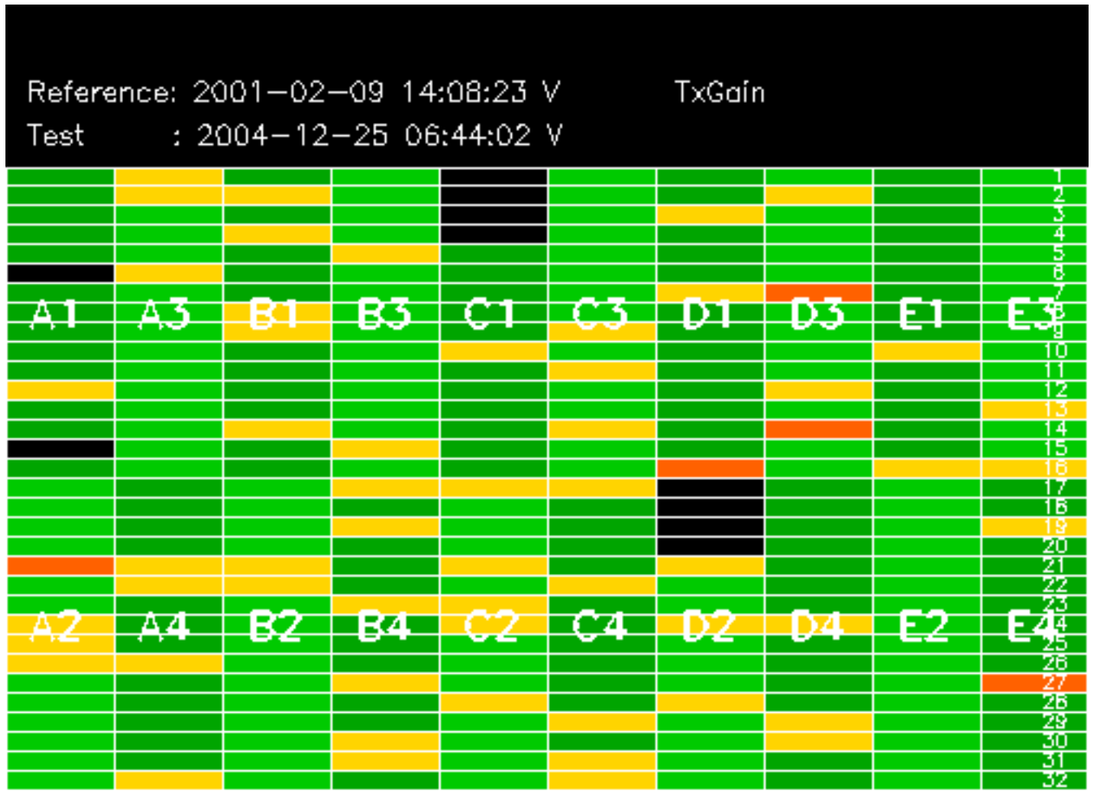
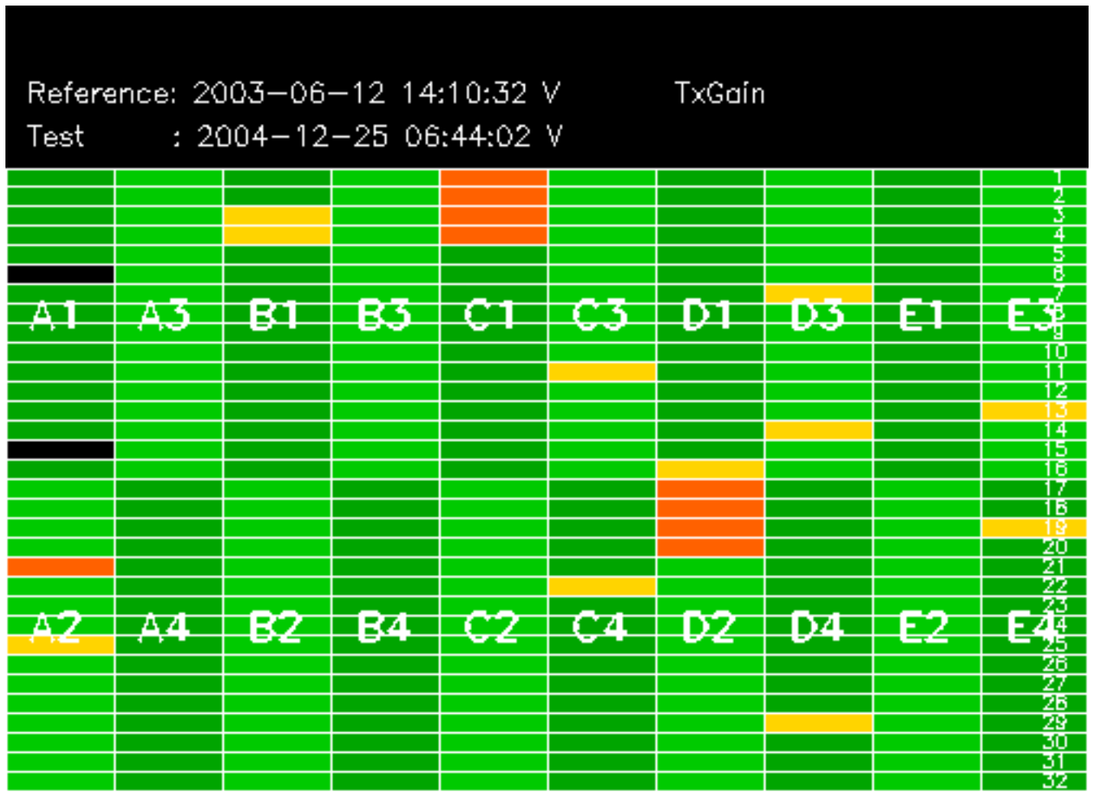
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2004-12-25 06:44:02 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 : 2004-12-25 06:44:02 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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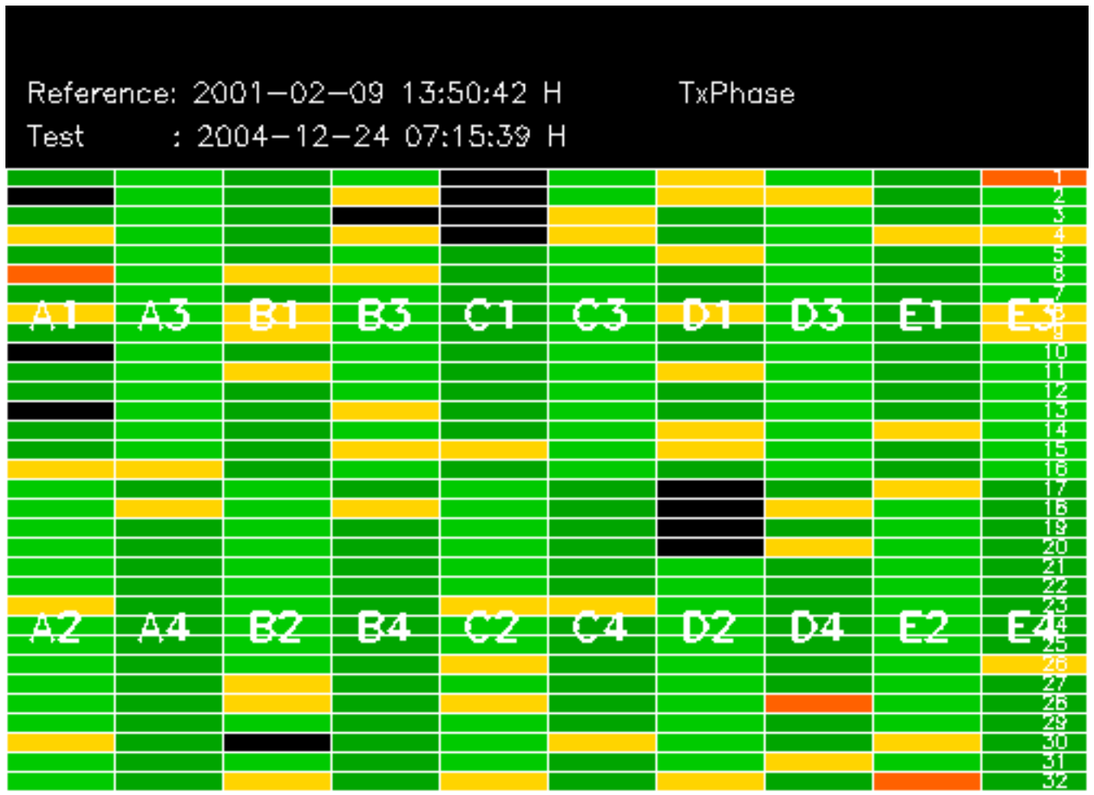
29
30
31
32


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-12-24 07:15:39 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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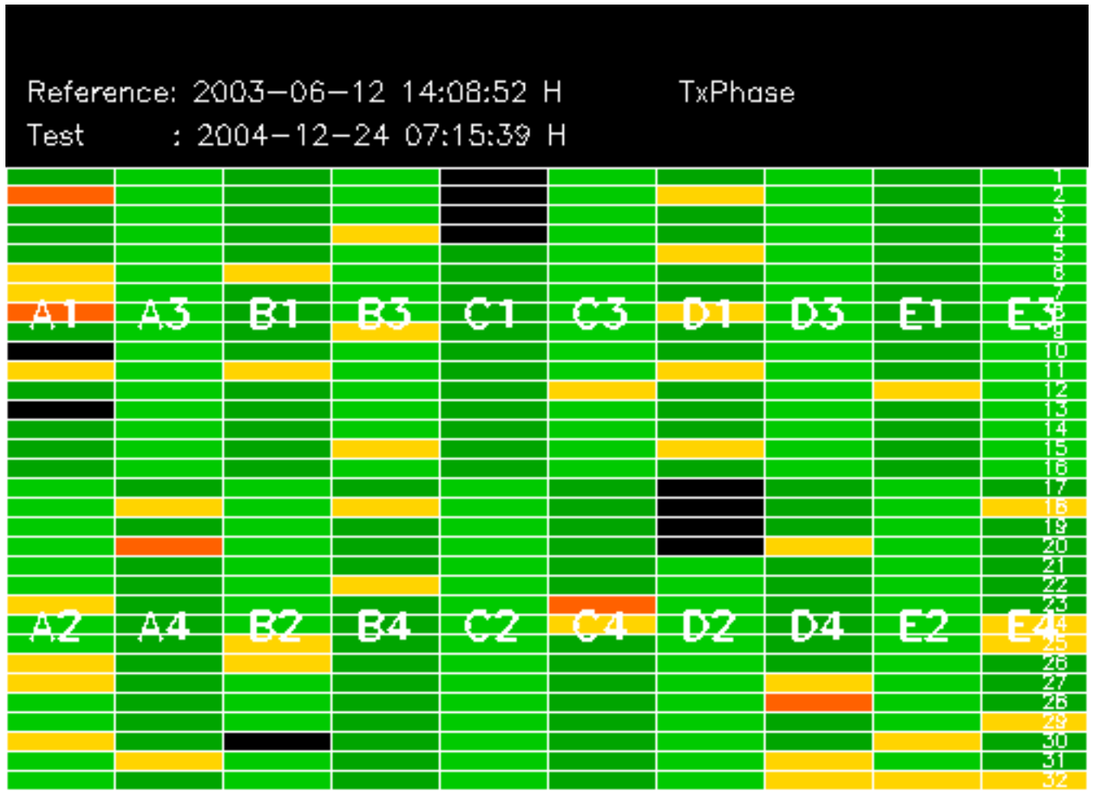
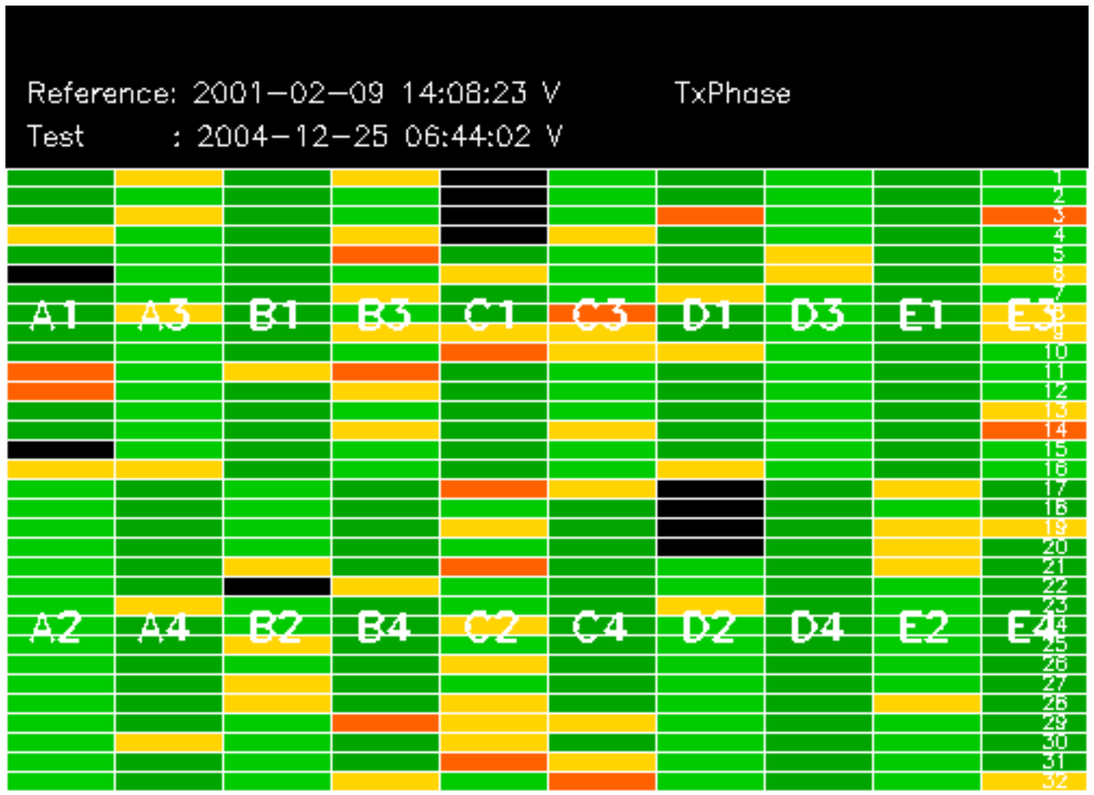
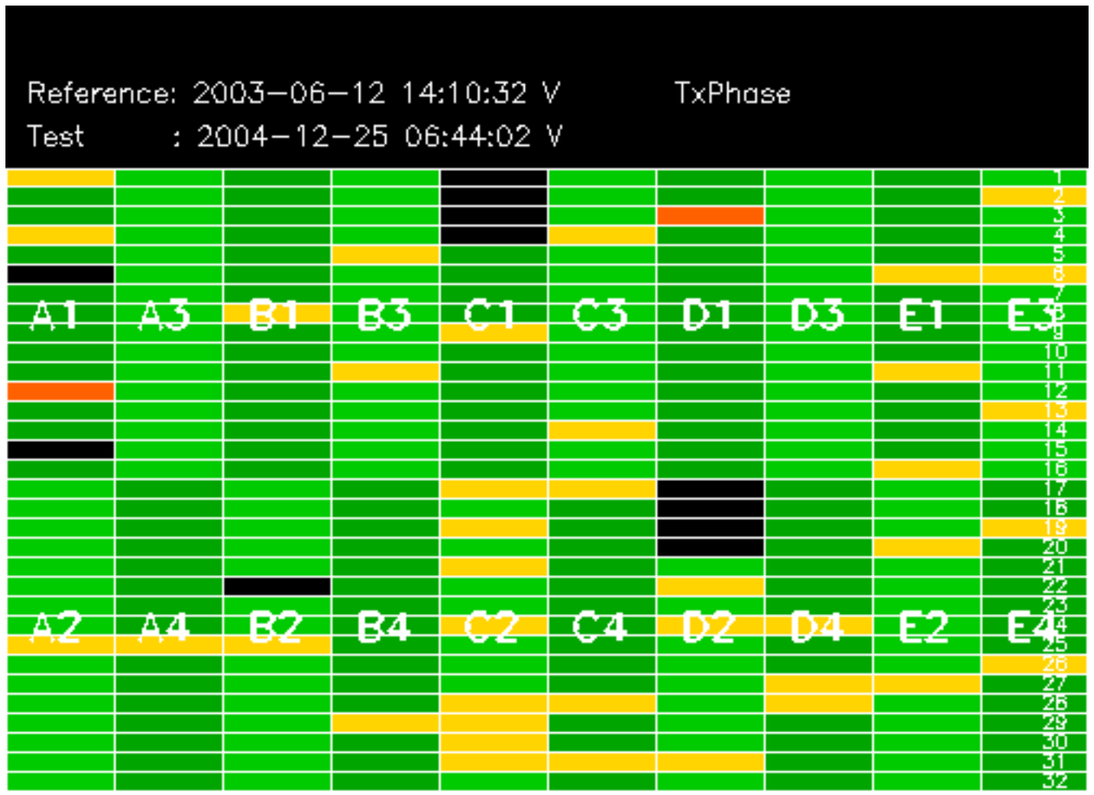
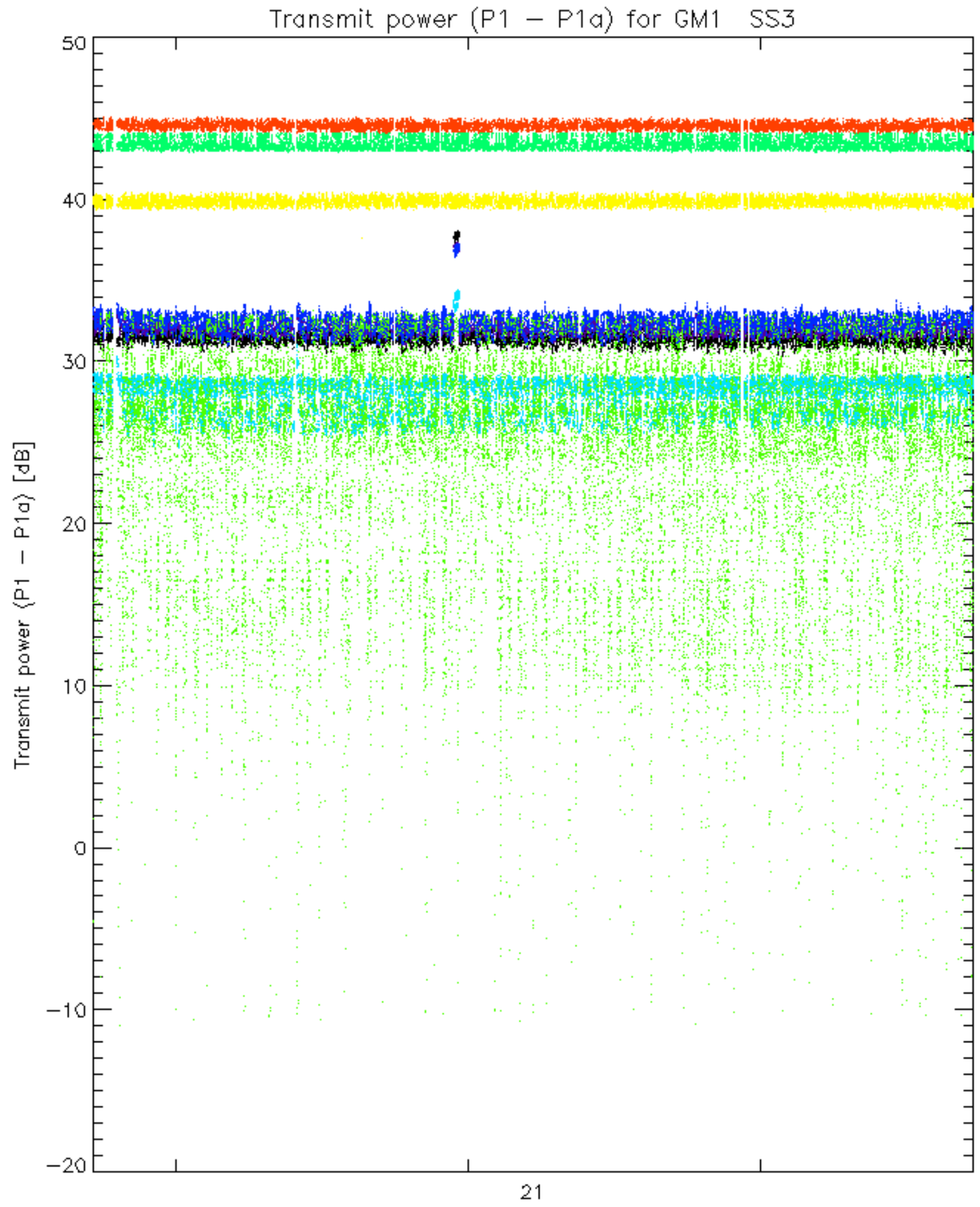
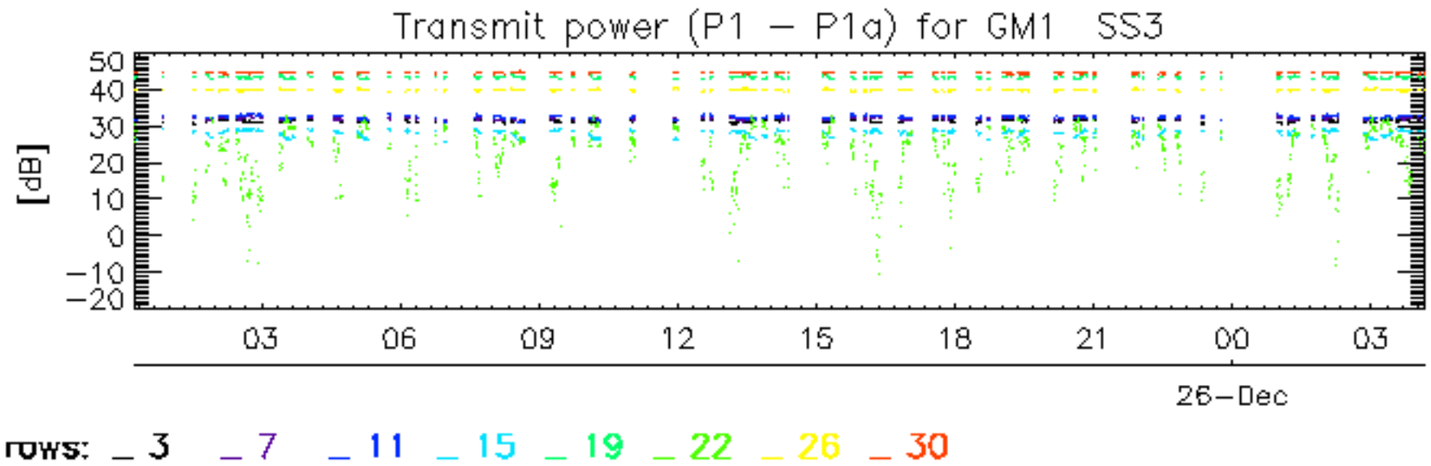
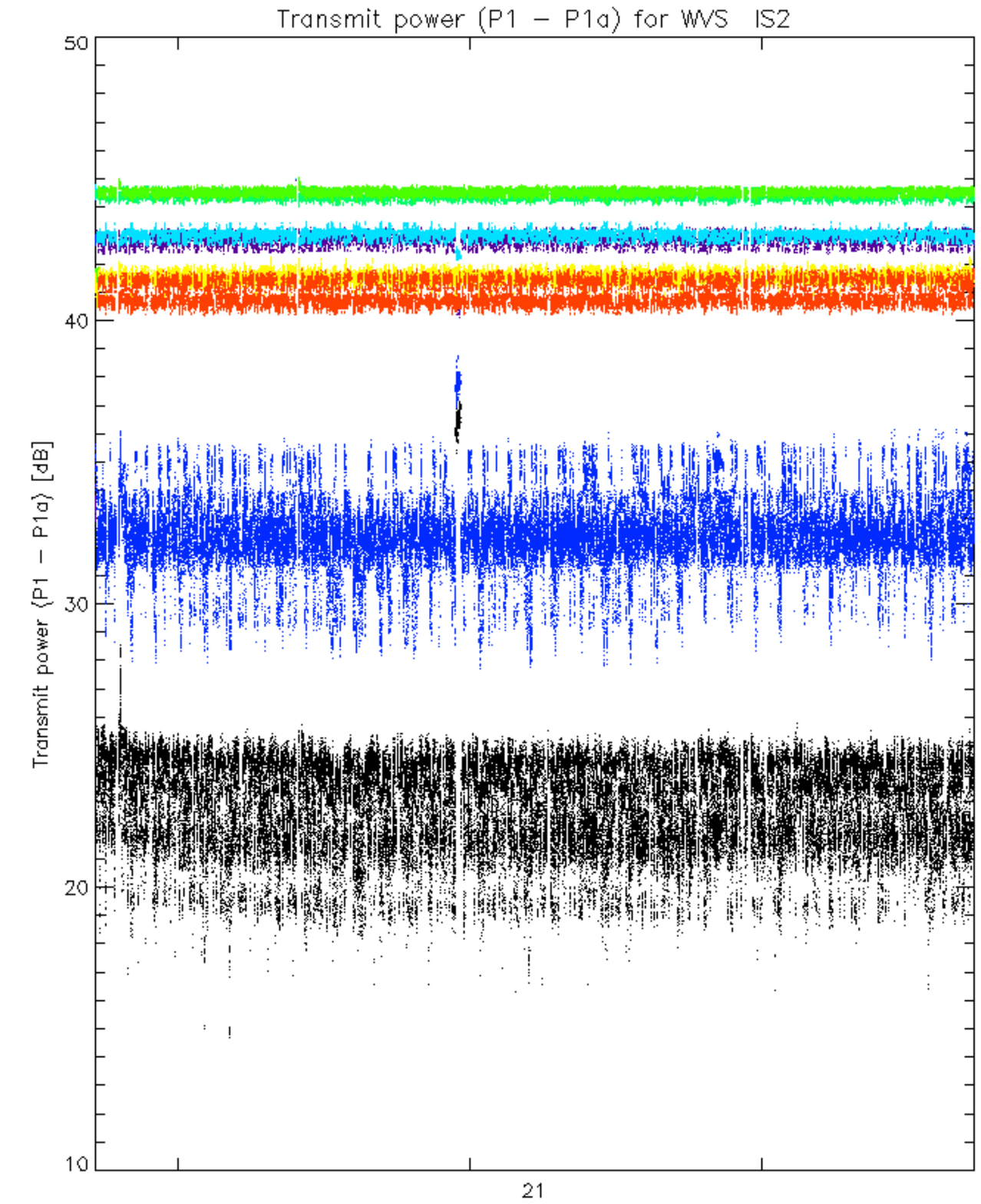

Reference: 2003-06-12 14:08:52 H
Test : 2004-12-24 07:15:39 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

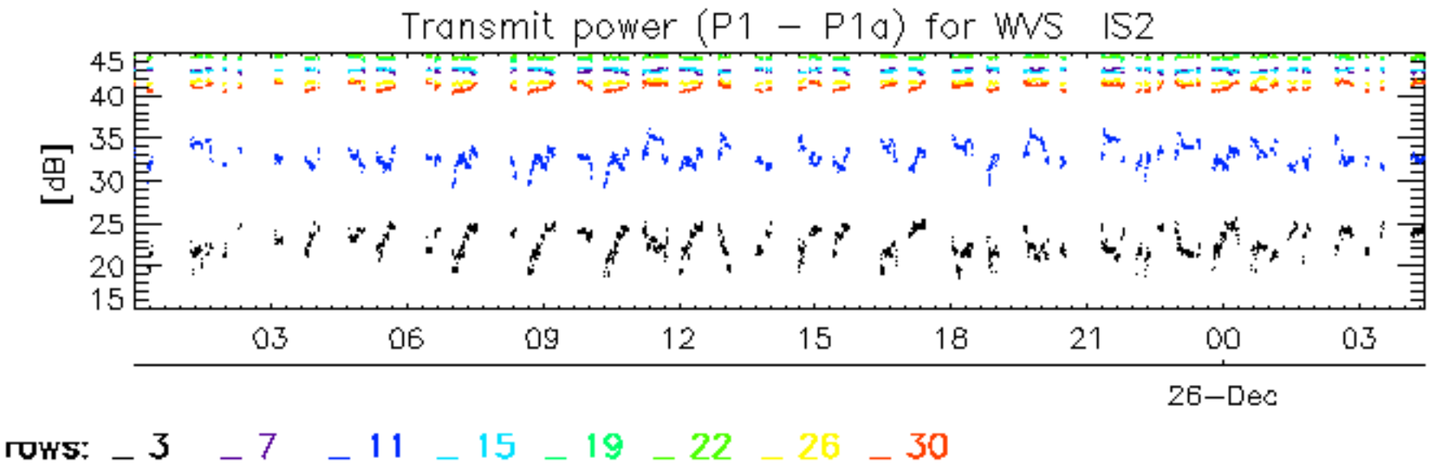

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-12-25 06:44:02 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-12-25 06:44:02 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
−20
21
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
50
40
30
20
10
Transmit power ⟨P1 – P1a⟩ [dB]
21
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

No unavailabilities during the reported period.