PRELIMINARY REPORT OF 050222

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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 - Auxiliary files

Summary of the auxiliary files used from 2005-02-21 00:00:00 to 2005-02-22 10:50:01

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**

ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	29	25	4	0	5
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	29	25	4	0	5
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	29	25	4	0	5
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	29	25	4	0	5

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	39	46	6	6	5
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	39	46	6	6	5
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	39	46	6	6	5
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	39	46	6	6	5

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

No anomalies observed on available MS products:

Polarisation	Start Time
V	20050221 180515
H	20050220 183652

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	-3.382730	0.008610	0.045992
7	P1	-3.082024	0.007773	-0.005599
11	P1	-4.676797	0.019666	-0.032193
15	P1	-5.651624	0.030528	0.000076
19	P1	-3.666493	0.004199	-0.005172
22	P1	-4.540713	0.013732	0.050335
26	P1	-4.942719	0.014102	-0.008690
30	P1	-7.162834	0.017470	-0.035317
3	P1	-15.933469	0.087799	-0.120049
7	P1	-15.513814	0.059559	0.008326
11	P1	-20.904480	0.255933	-0.084959
15	P1	-11.584415	0.029462	0.035830
19	P1	-14.210686	0.025916	-0.107462
22	P1	-15.804864	0.348957	0.252047
26	P1	-17.601305	0.227585	-0.000277
30	P1	-17.925278	0.408617	-0.039792

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.162891	0.085396	0.147047
7	P2	-22.357695	0.104445	0.138251
11	P2	-14.568610	0.102115	0.189100
15	P2	-7.077295	0.094747	0.059552
19	P2	-9.668417	0.093760	0.059769
22	P2	-16.981850	0.094158	0.112820
26	P2	-16.465811	0.091655	0.052372
30	P2	-18.897055	0.079342	0.042298

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.173707	0.005765	0.030852
7	P3	-8.173707	0.005765	0.030852
11	P3	-8.173707	0.005765	0.030852
15	P3	-8.173707	0.005765	0.030852
19	P3	-8.173707	0.005765	0.030852
22	P3	-8.173707	0.005765	0.030852
26	P3	-8.173607	0.005764	0.030626
30	P3	-8.173607	0.005764	0.030626

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	-2.765269	0.019810	0.081453
7	P1	-2.987192	0.078665	-0.038718
11	P1	-3.969933	0.023921	-0.037449
15	P1	-3.544326	0.023272	-0.041827
19	P1	-3.592550	0.014193	0.017018
22	P1	-5.713071	0.053824	-0.073178
26	P1	-7.308941	0.031374	0.059640
30	P1	-6.249131	0.041920	0.068670
3	P1	-10.756065	0.093824	0.017315
7	P1	-10.214802	0.196443	-0.146926
11	P1	-12.560837	0.128587	-0.032555
15	P1	-11.753470	0.082707	0.021281
19	P1	-15.577350	0.055233	0.021440
22	P1	-24.240433	1.411724	-0.360454
26	P1	-15.577923	0.237196	0.220521
30	P1	-20.118807	0.944422	-0.269766

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.876051	0.047337	0.134101
7	P2	-22.419920	0.131461	0.065279
11	P2	-10.342970	0.056374	0.245322
15	P2	-4.995465	0.021016	0.044497
19	P2	-6.859335	0.031452	0.079745
22	P2	-7.161984	0.051870	0.119194
26	P2	-23.869709	0.099724	0.036892
30	P2	-21.933983	0.060416	0.049816

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.006697	0.002605	0.030417
7	P3	-8.006753	0.002617	0.030798
11	P3	-8.006709	0.002624	0.030623
15	P3	-8.006683	0.002614	0.030197
19	P3	-8.006737	0.002630	0.030825
22	P3	-8.006730	0.002617	0.030834
26	P3	-8.006611	0.002617	0.030336
30	P3	-8.006734	0.002619	0.030182

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	0.000467468
	stdev	2.17467e-07
MEAN Q	mean	0.000537539
	stdev	2.30310e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128731
	stdev	0.000971140
STDEV Q	mean	0.128971
	stdev	0.000981572

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005022[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_GM1_1PNPDK20050220_170523_000002532034_00484_15568_2863.N1	0	8
ASA_GM1_1PNPDK20050221_063357_000000962034_00492_15576_2899.N1	0	8

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

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

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
☒
Acsending
☒
Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX
☒

7.4 - Unbiased Doppler Error for GM1

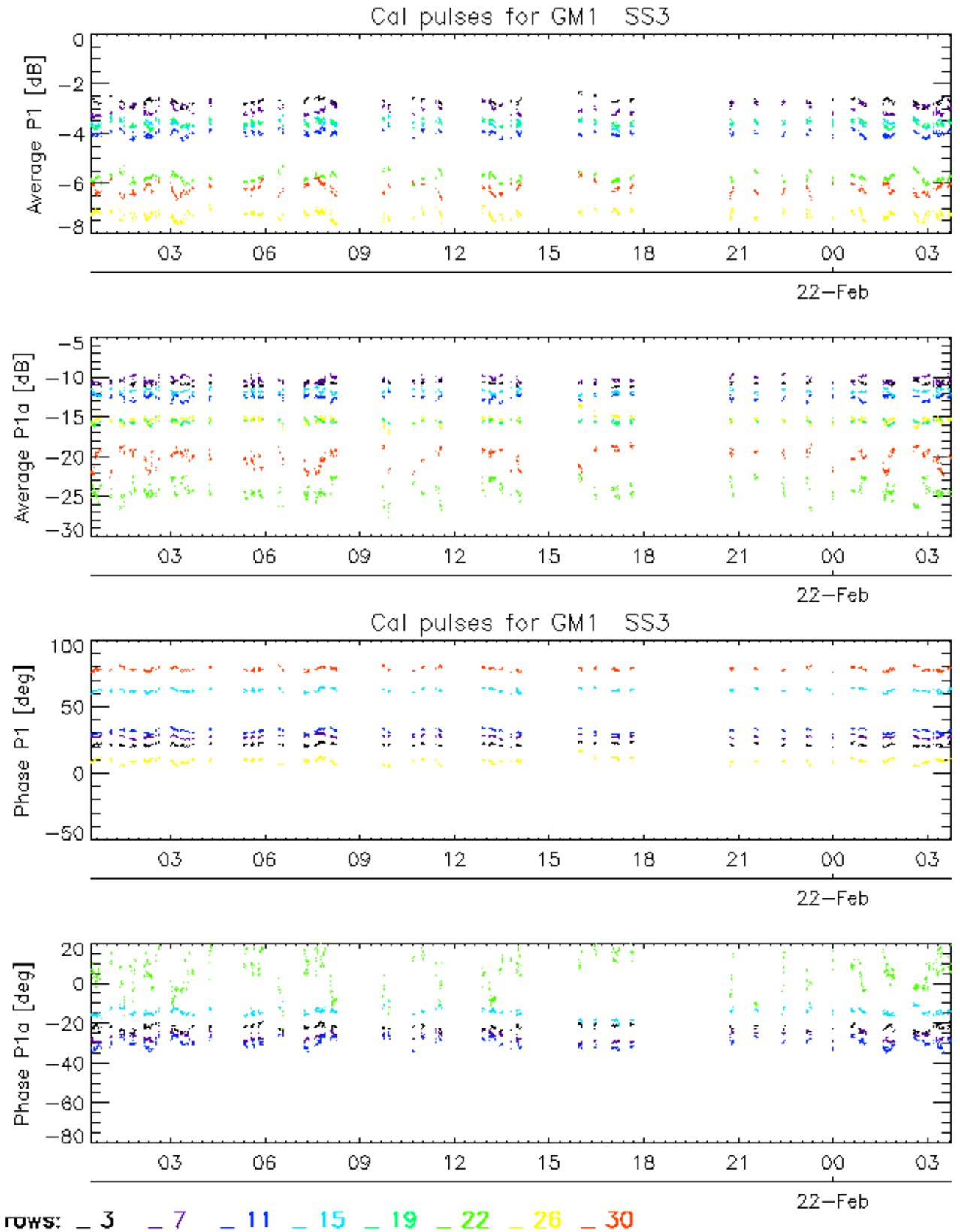
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

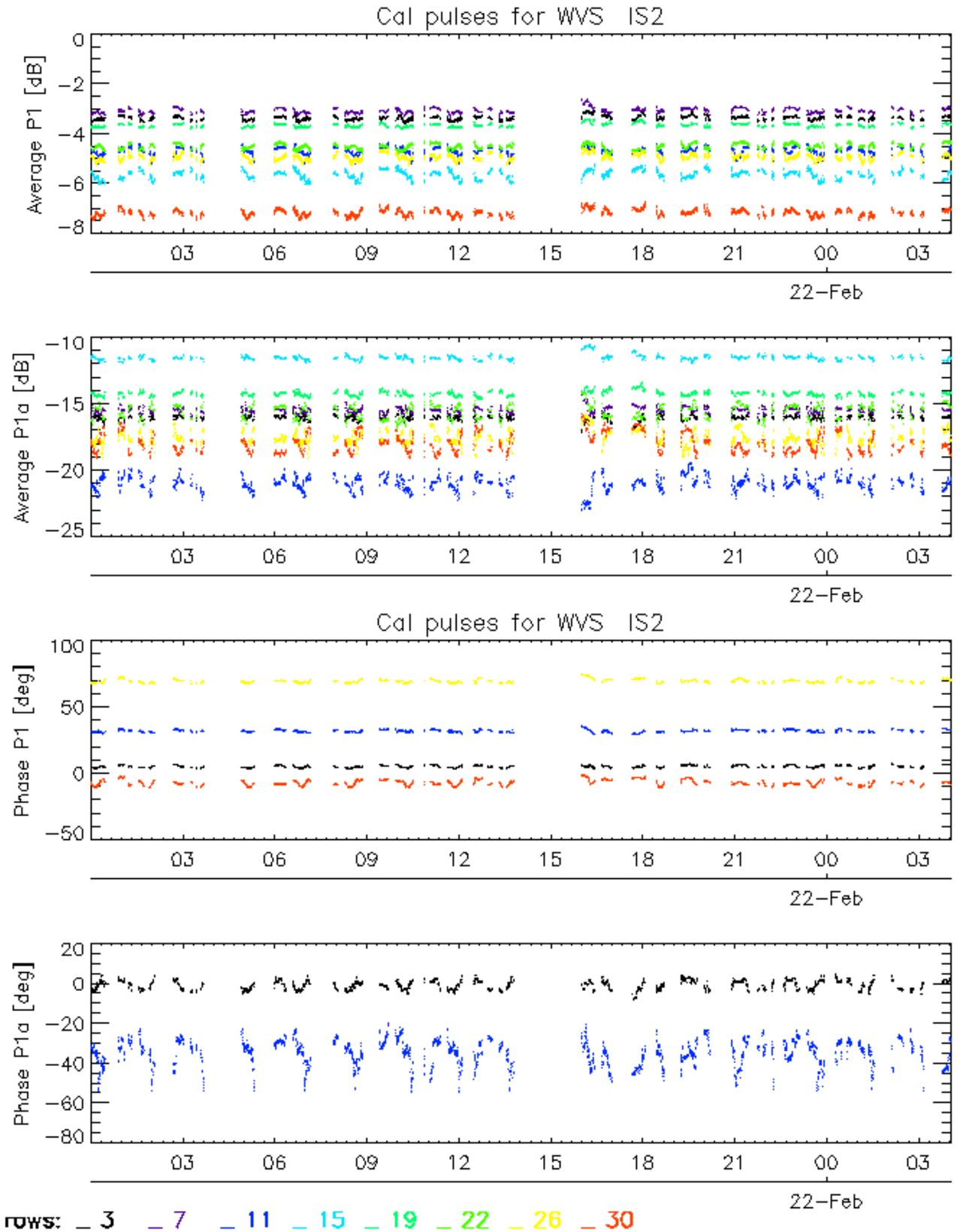
7.5 - Absolute Doppler for GM1

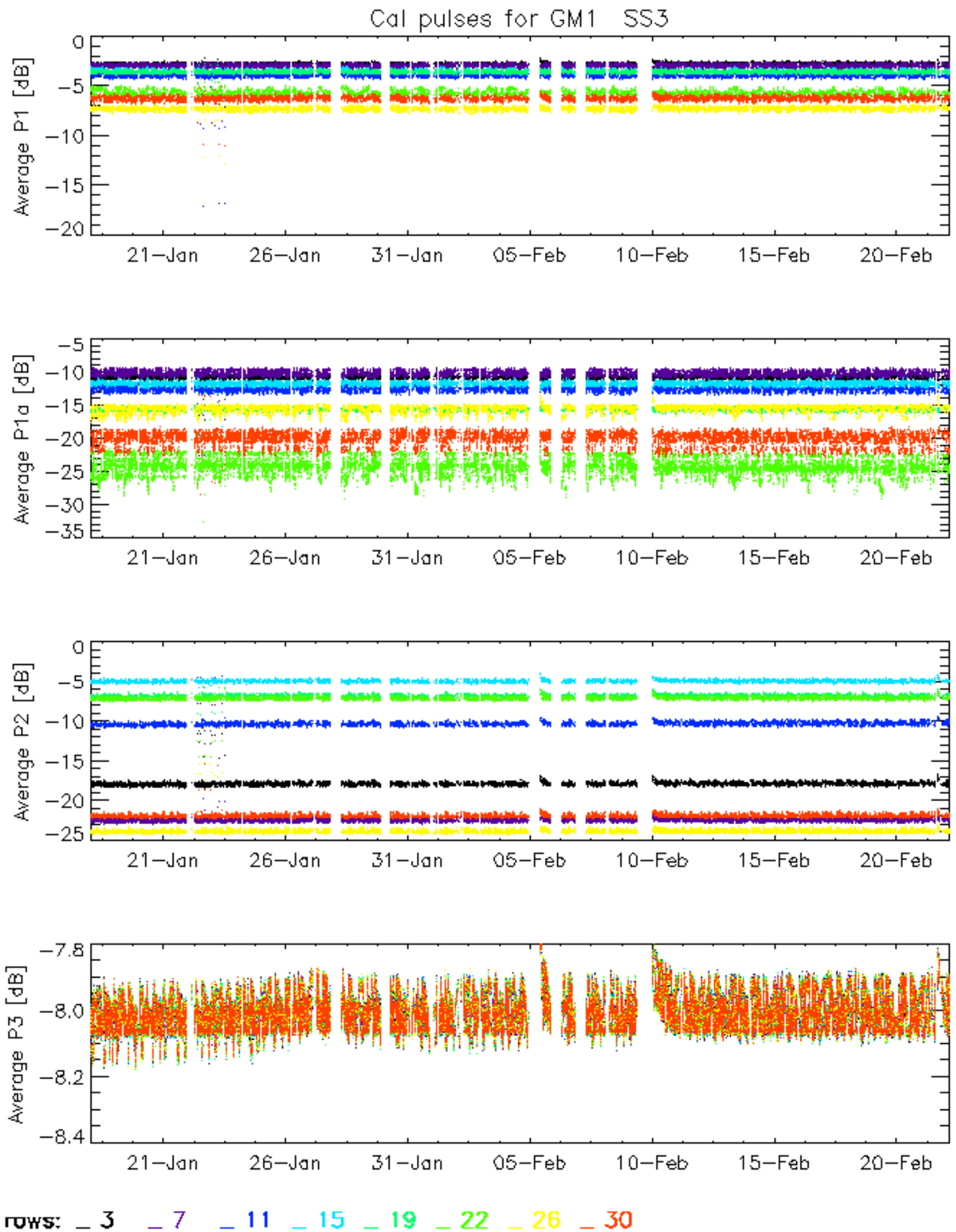
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

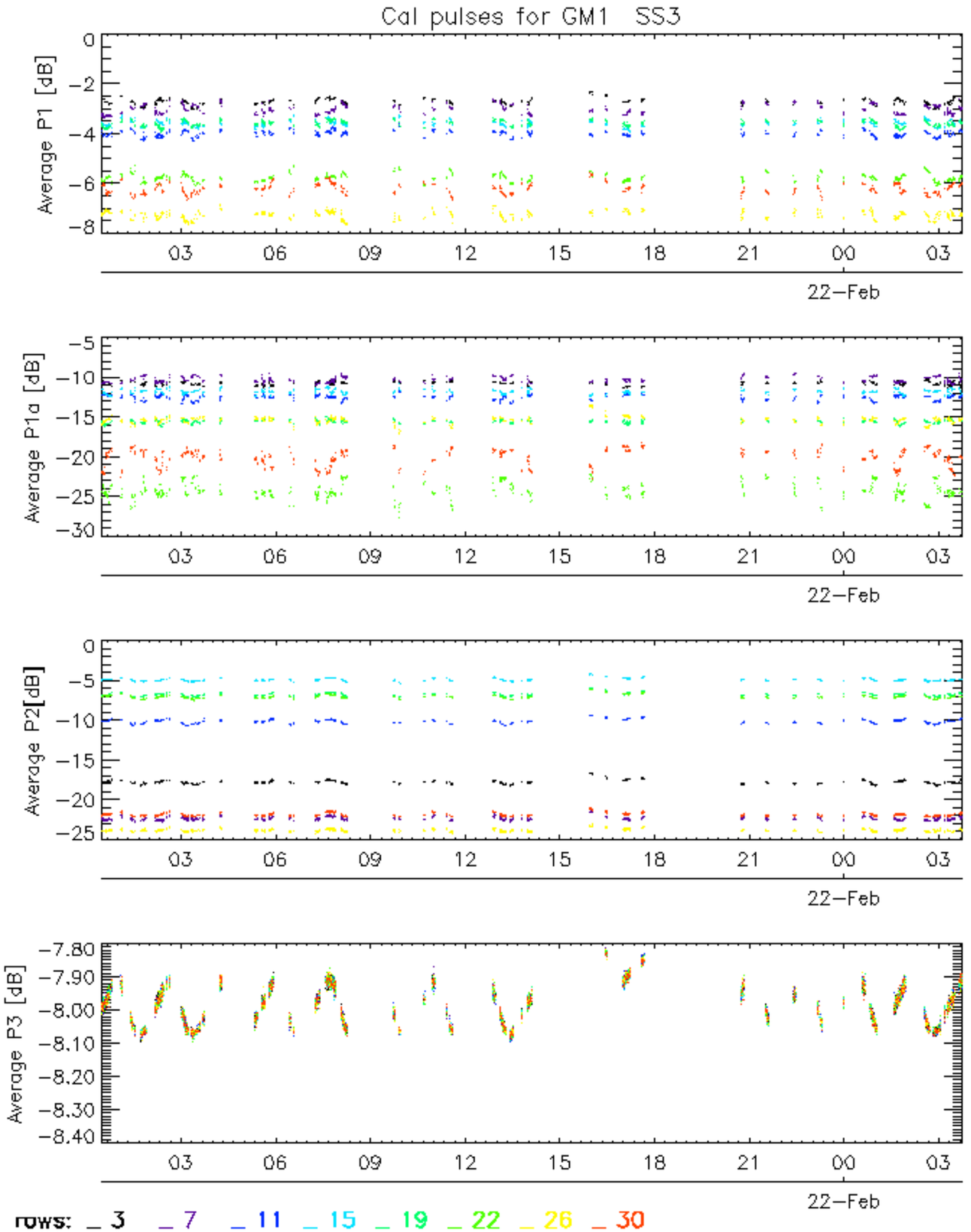
7.6 - Doppler evolution versus ANX for GM1

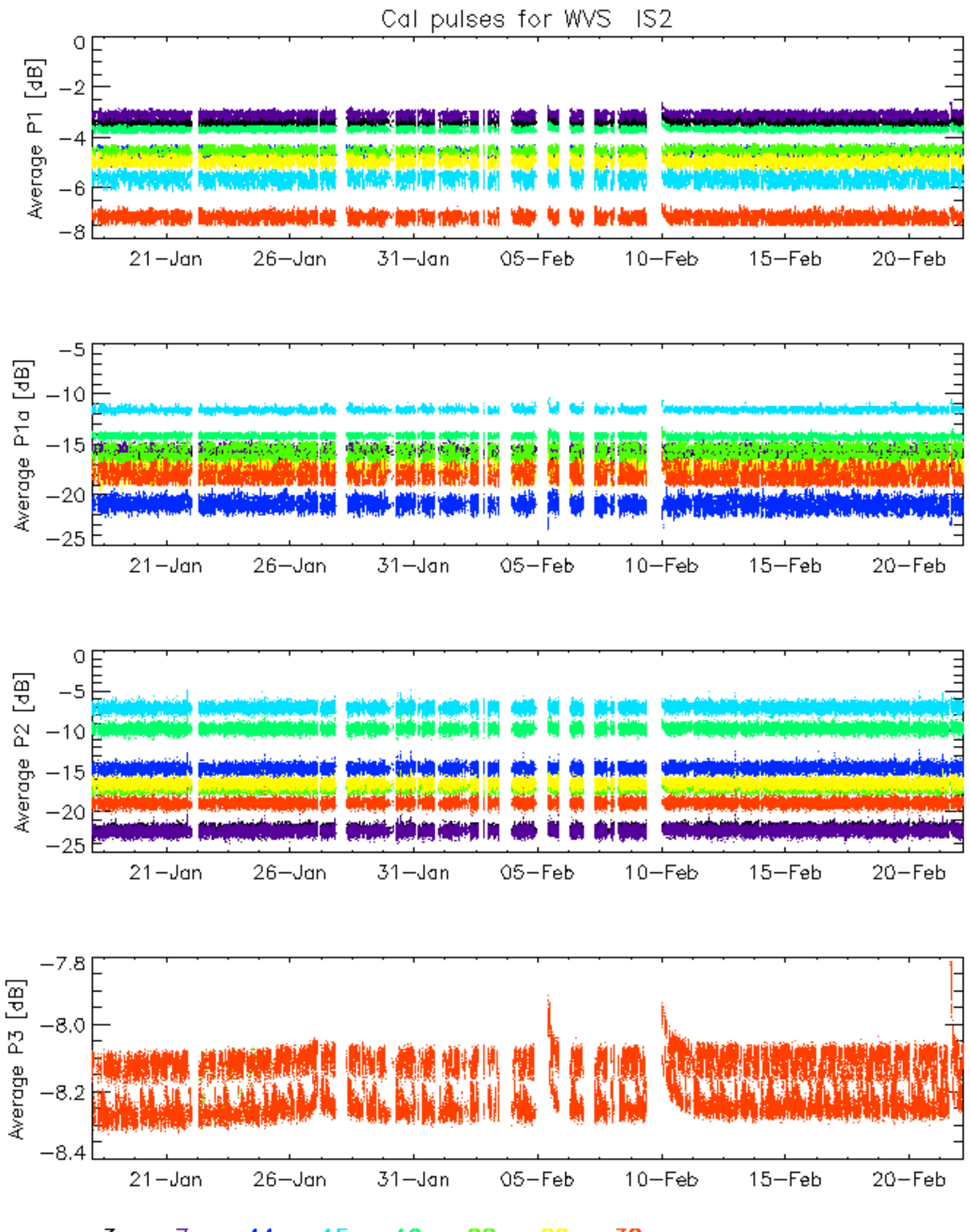
Evolution Doppler error versus ANX
☒

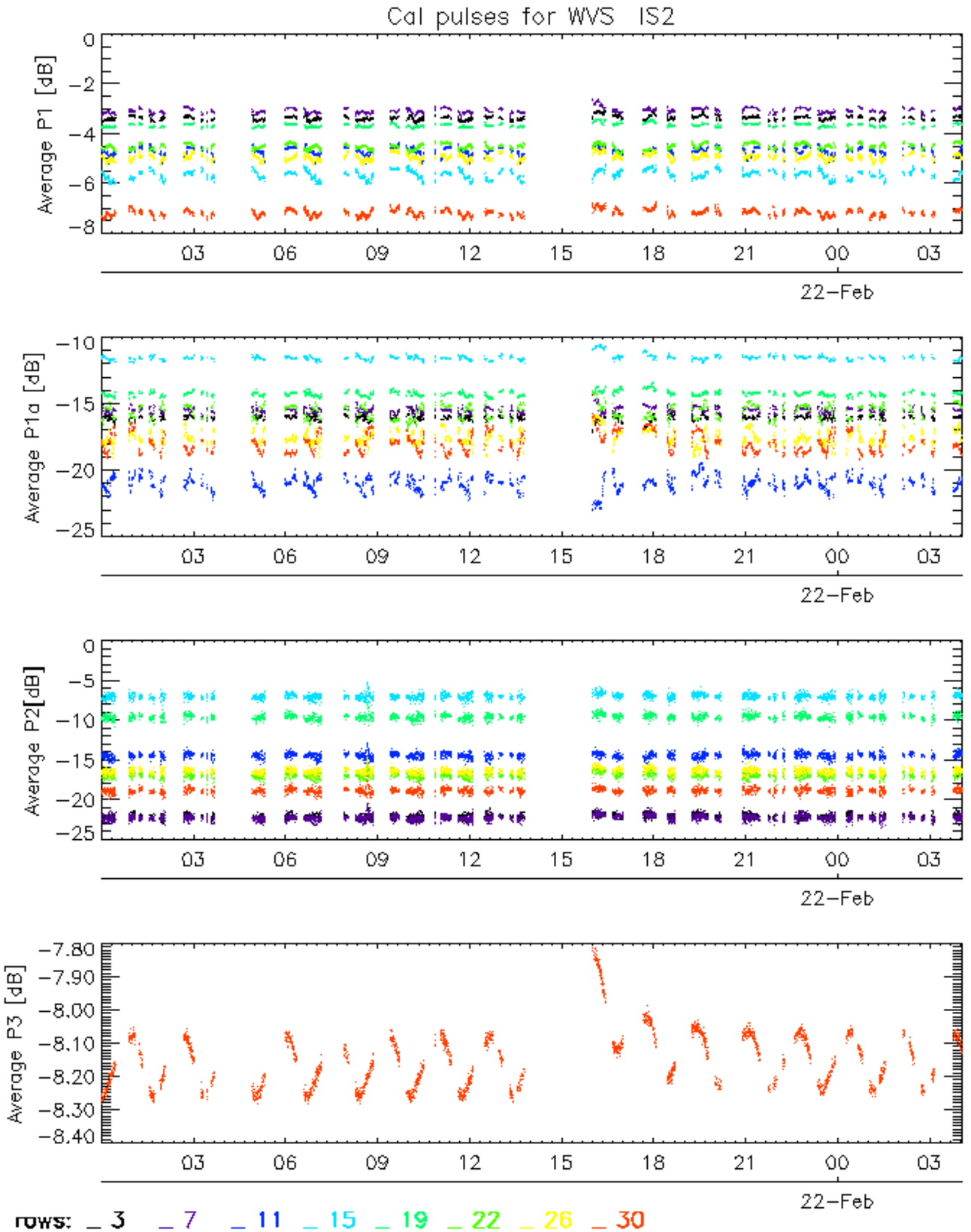

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
22−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
22−Feb
Average P1a [dB]
−10
−15
−20
−25
Cal pulses for WVS IS2
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
rows: 3 7 11 15 19 22 26 30

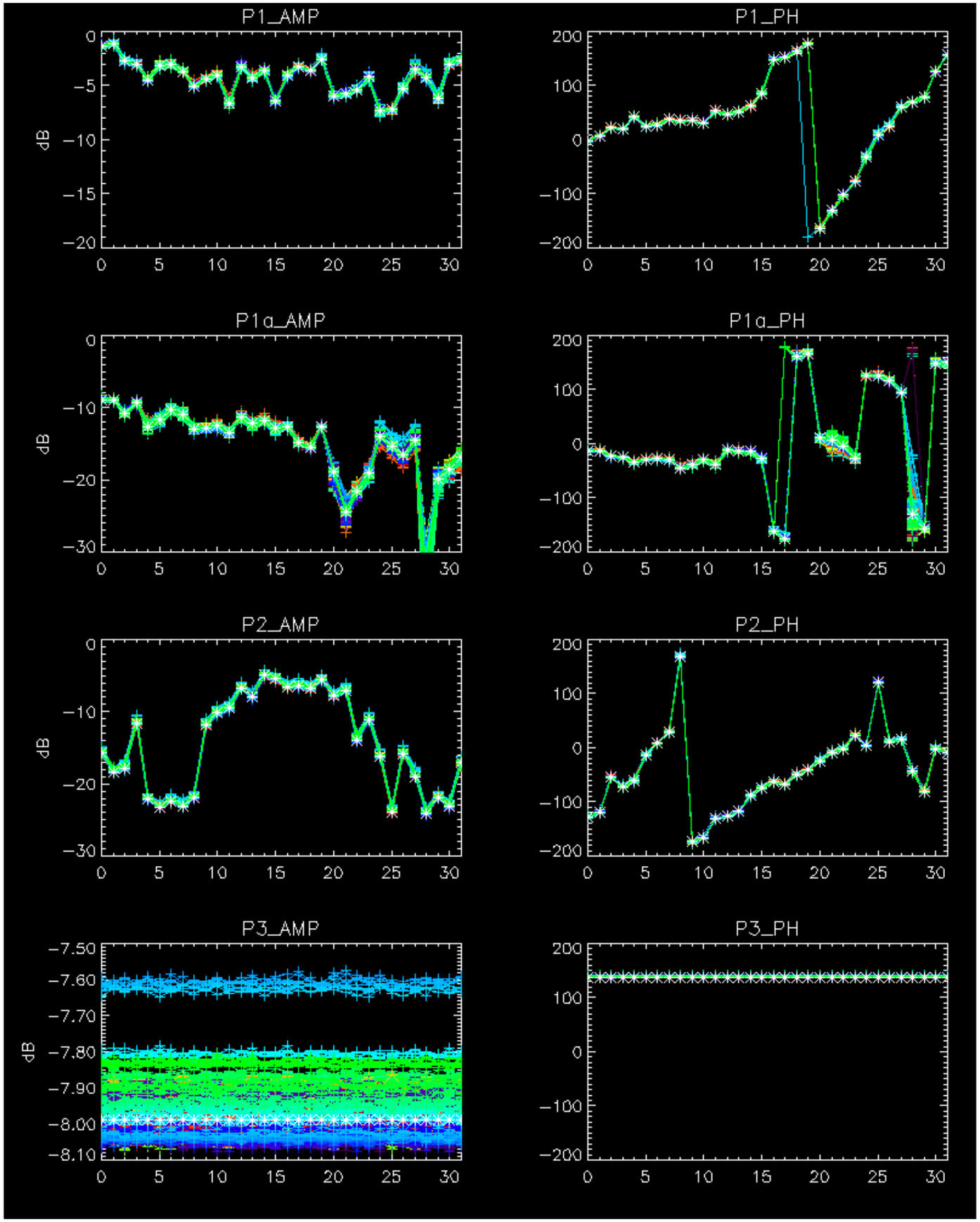

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

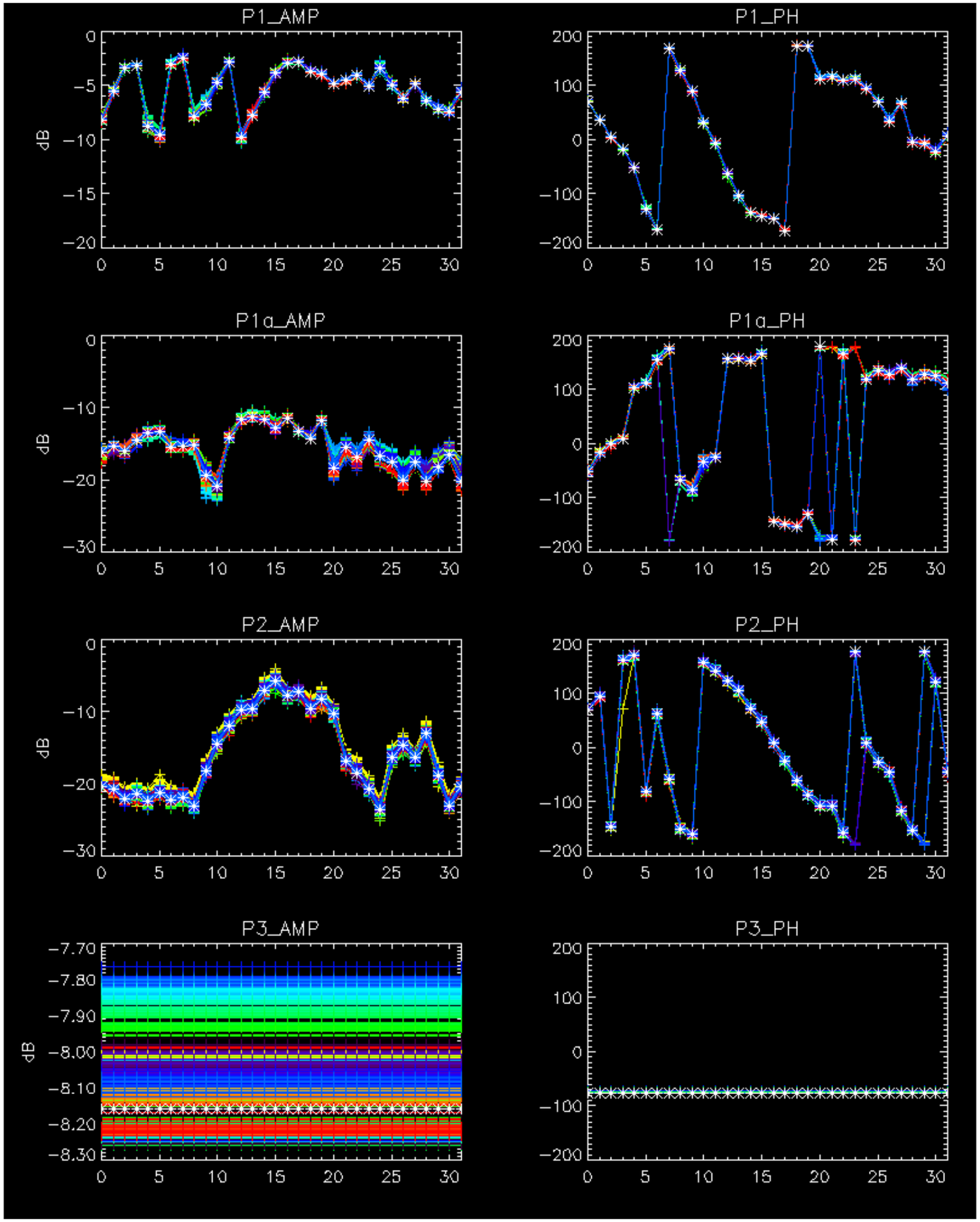

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
22−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb
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
22−Feb
Average P1a [dB]
−10
−15
−20
−25
Average P2[dB]
−5
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

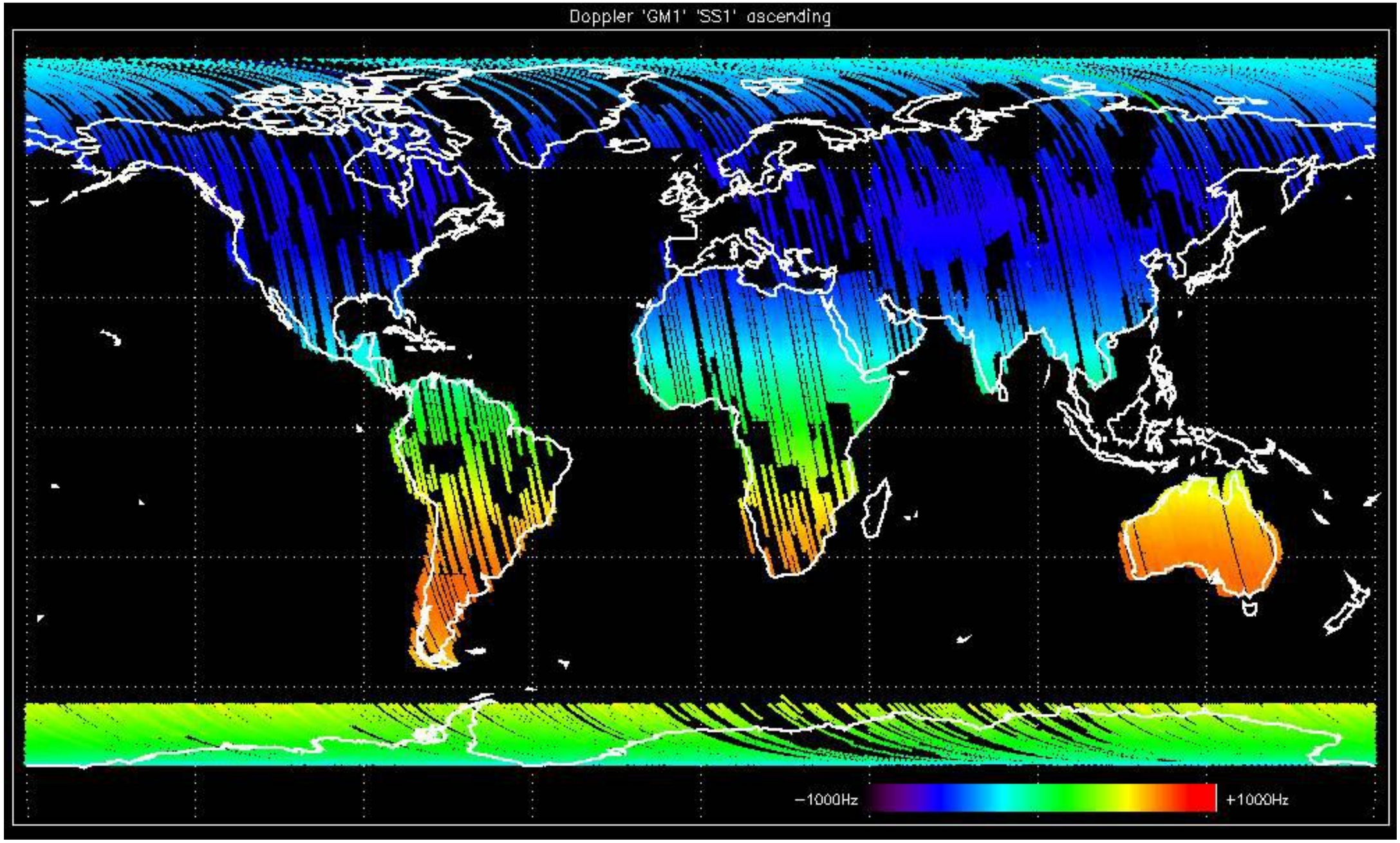
No anomalies observed.

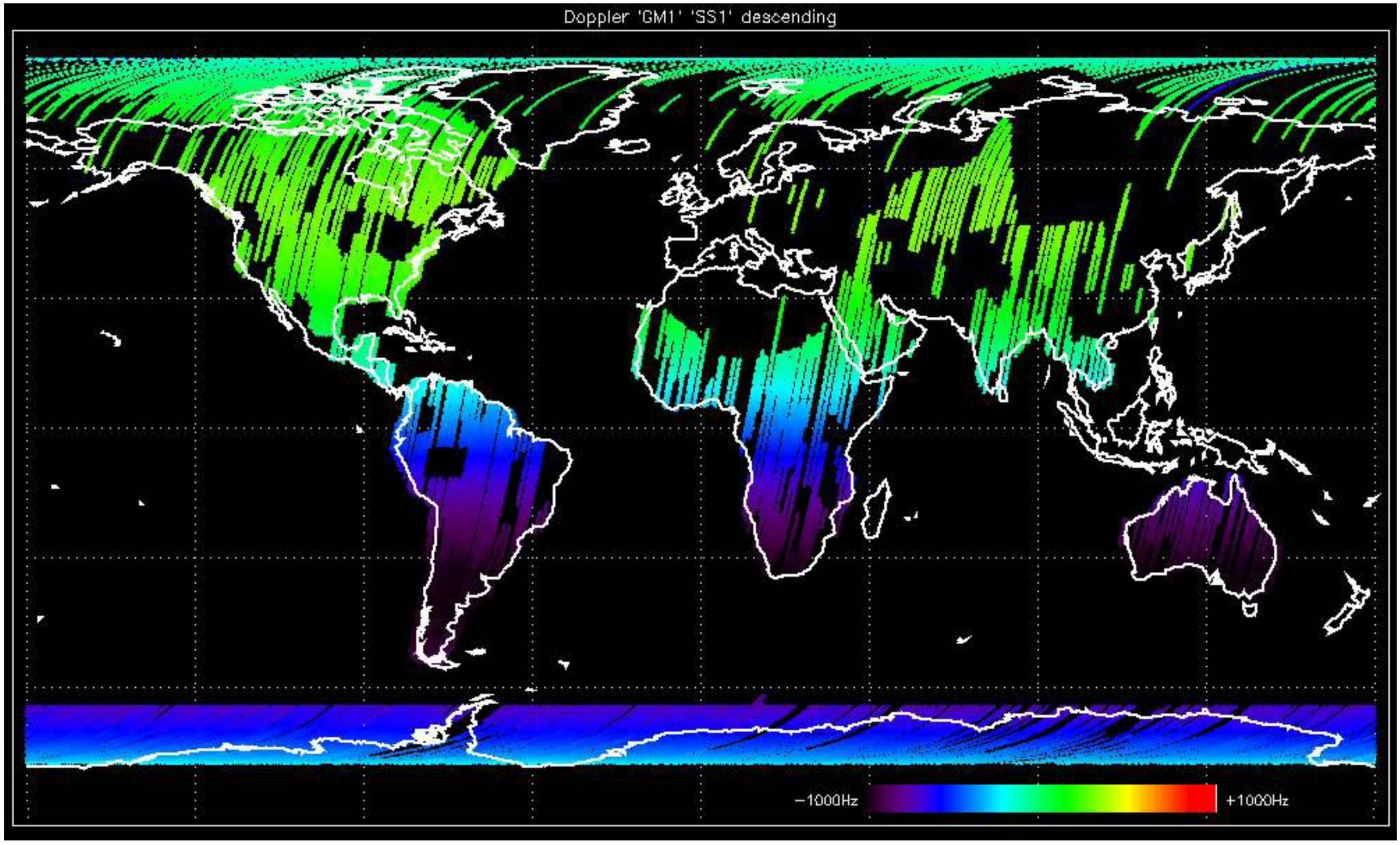

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.50
−7.60
−7.70
−7.80
−7.90
−8.00
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

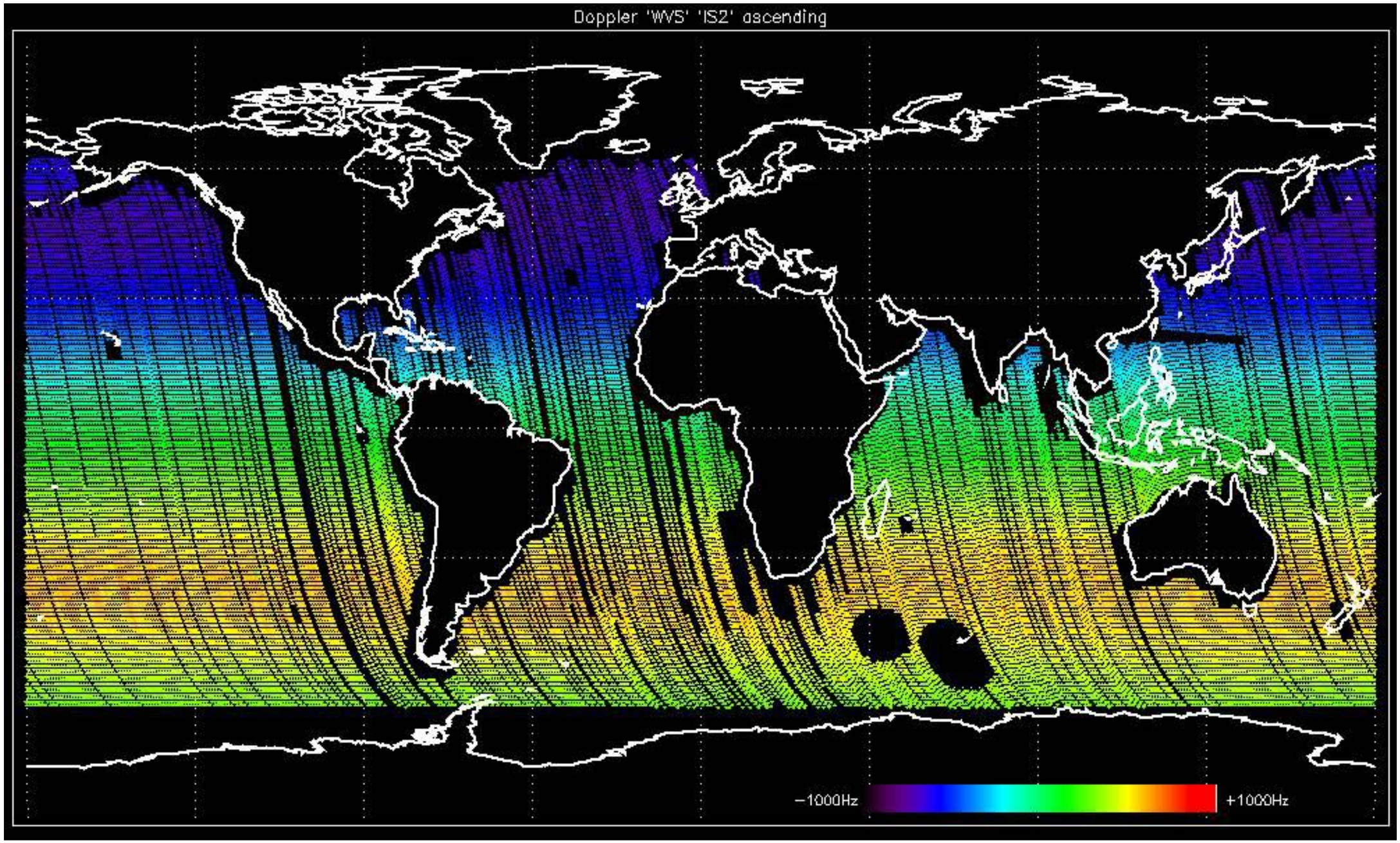

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.70
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

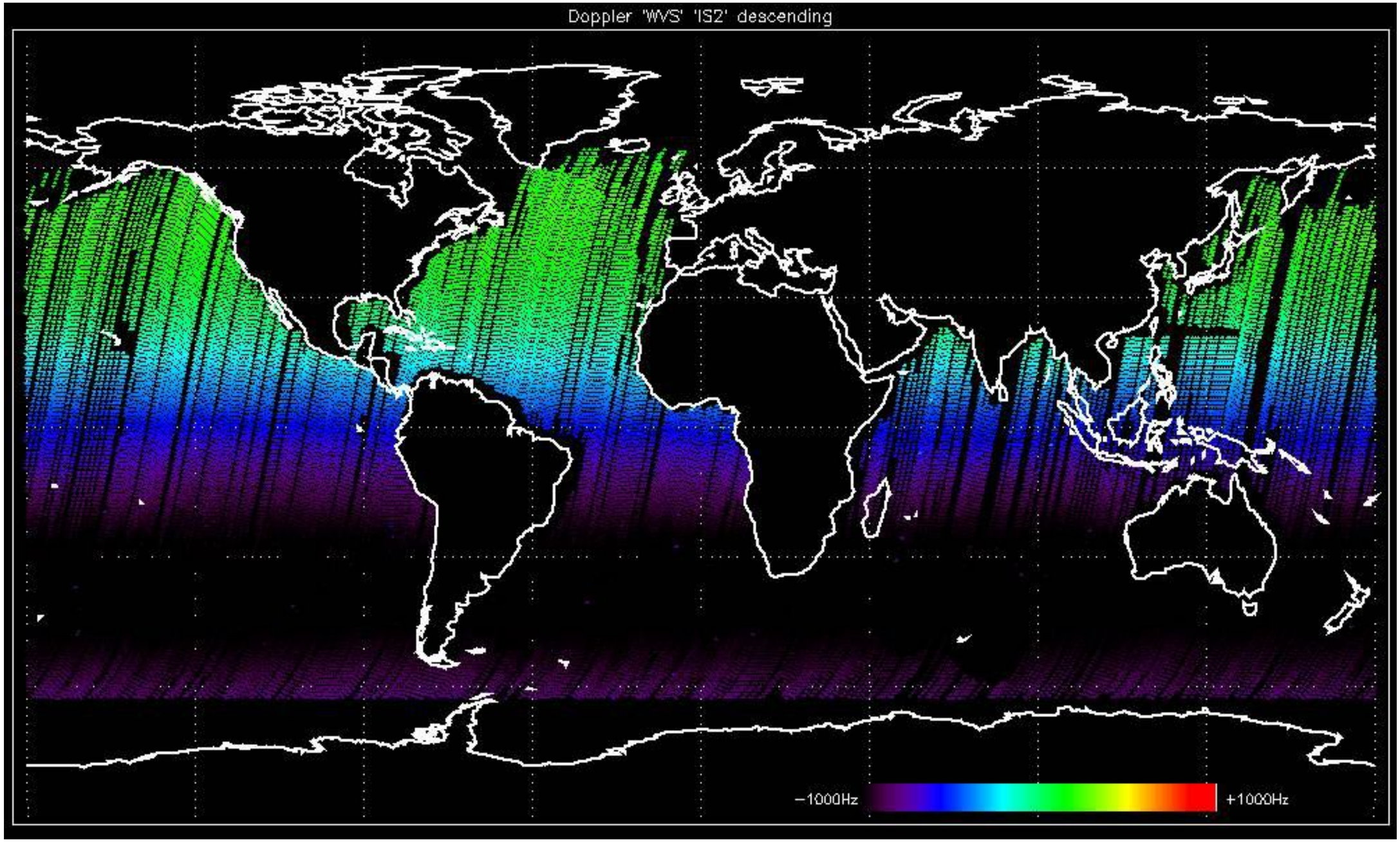
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

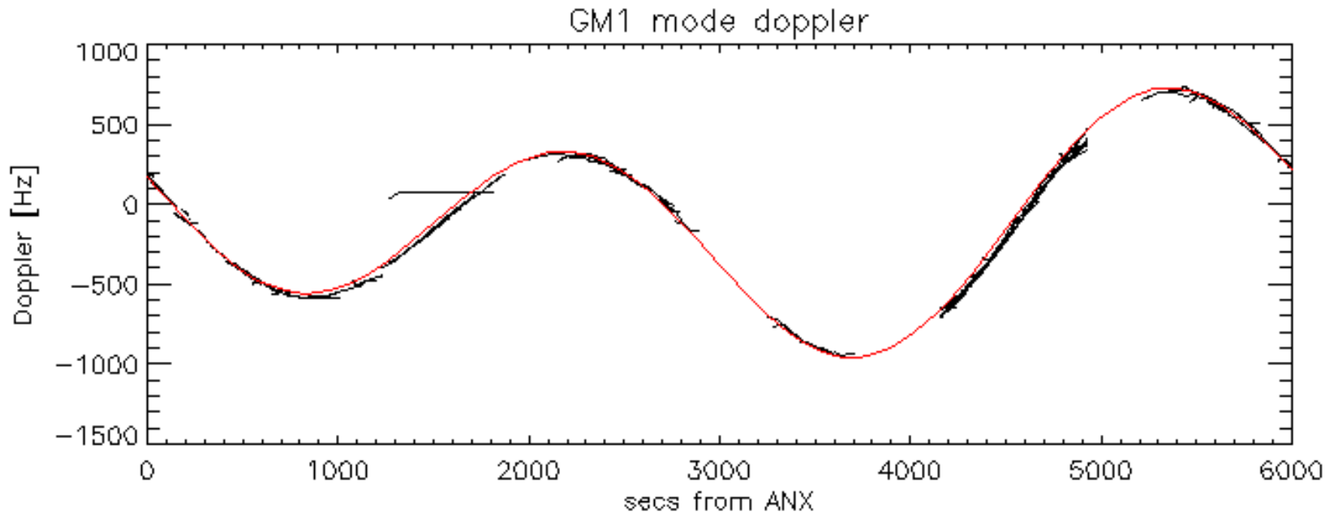
Preliminary report.The data is not yet controled

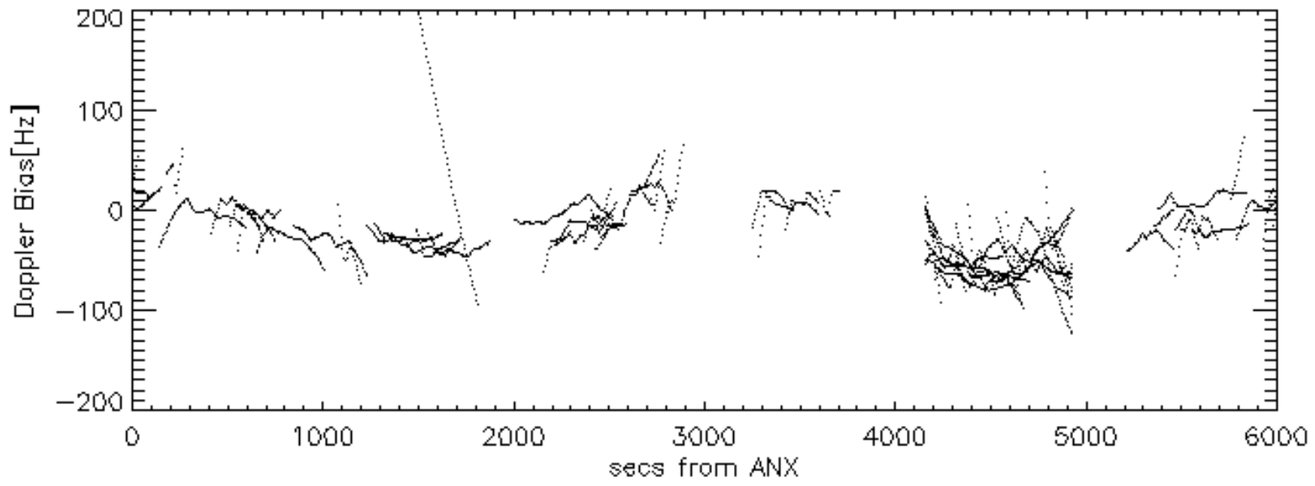

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

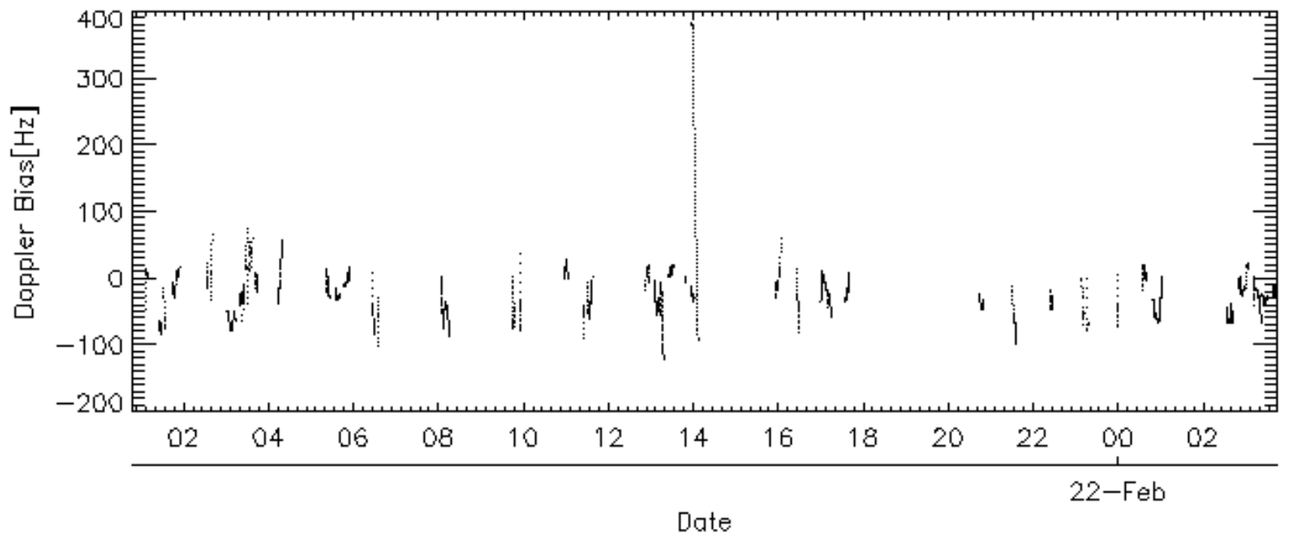

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

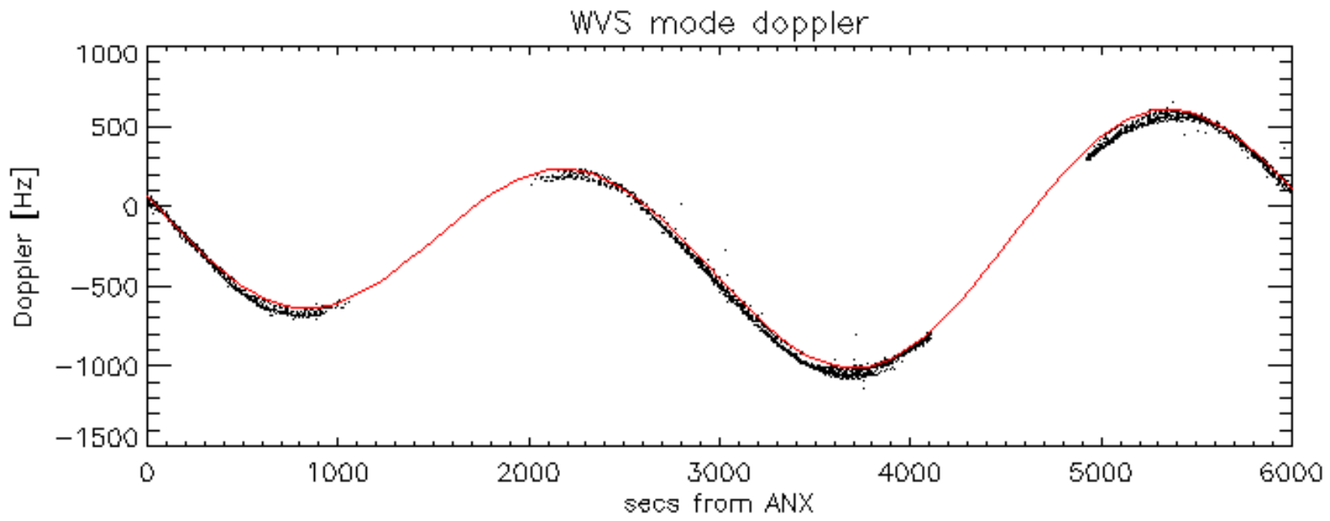

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

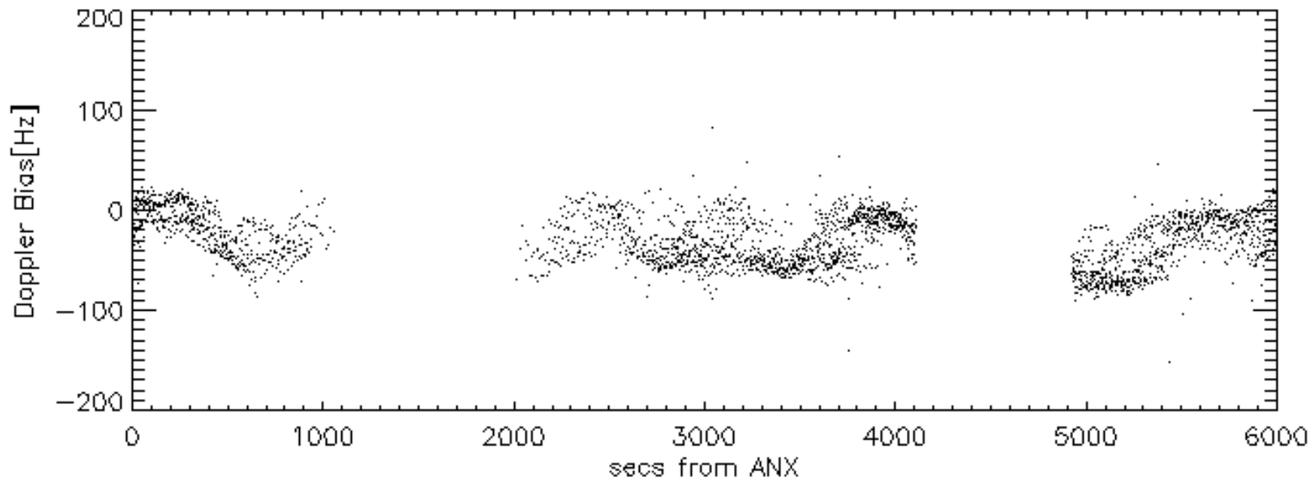

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

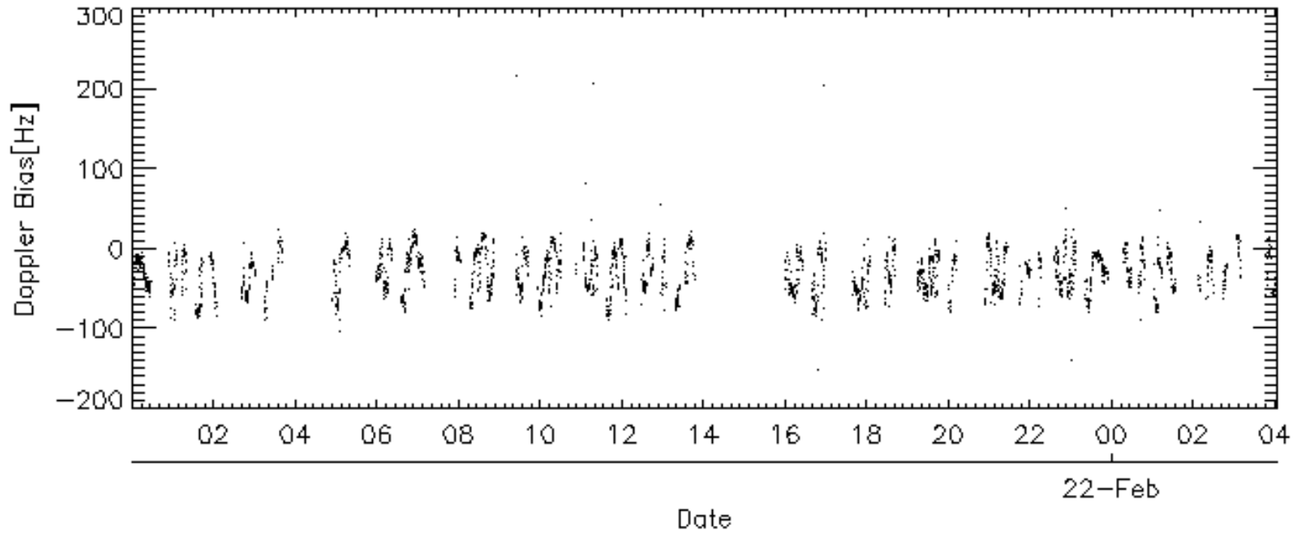

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

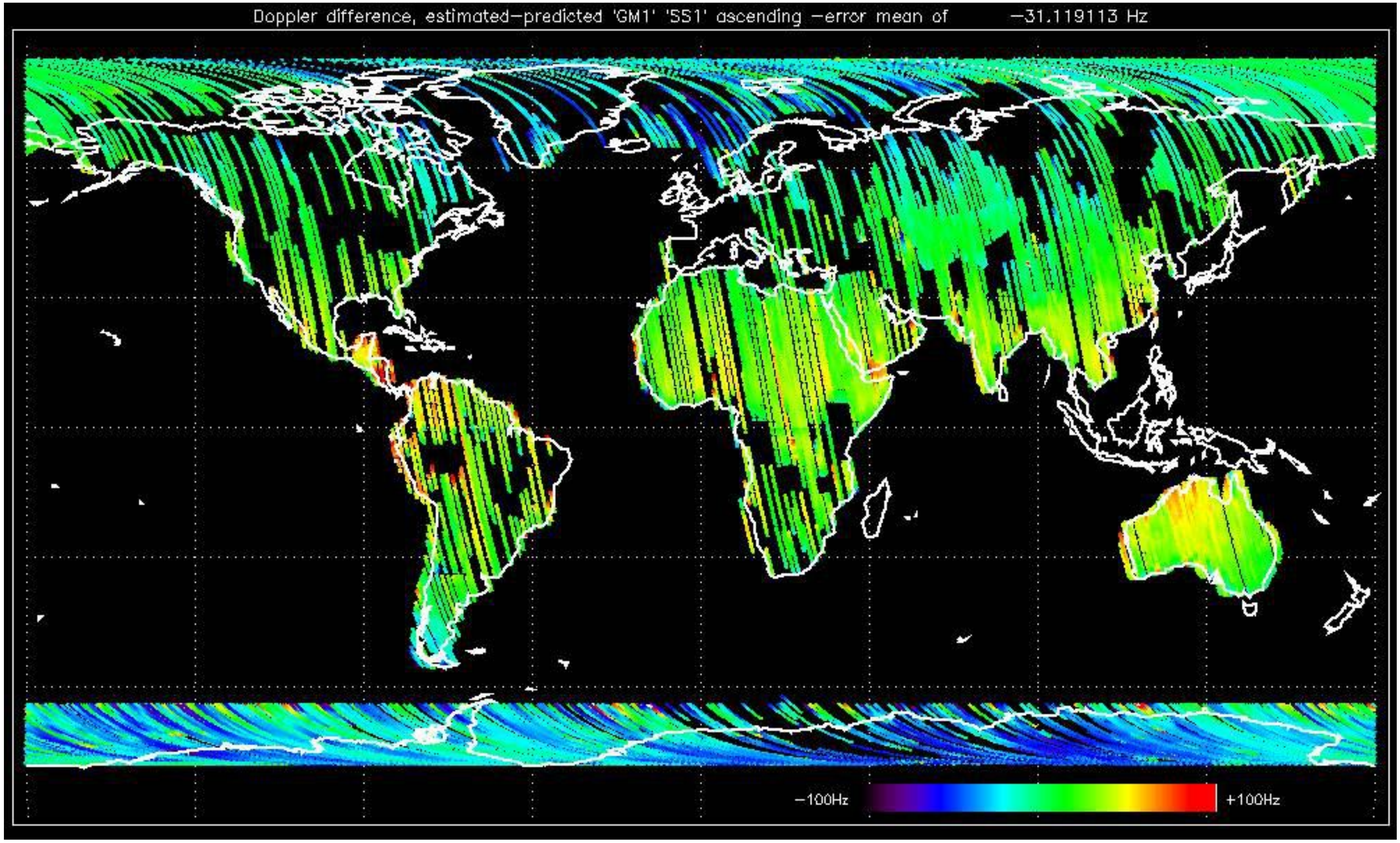

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

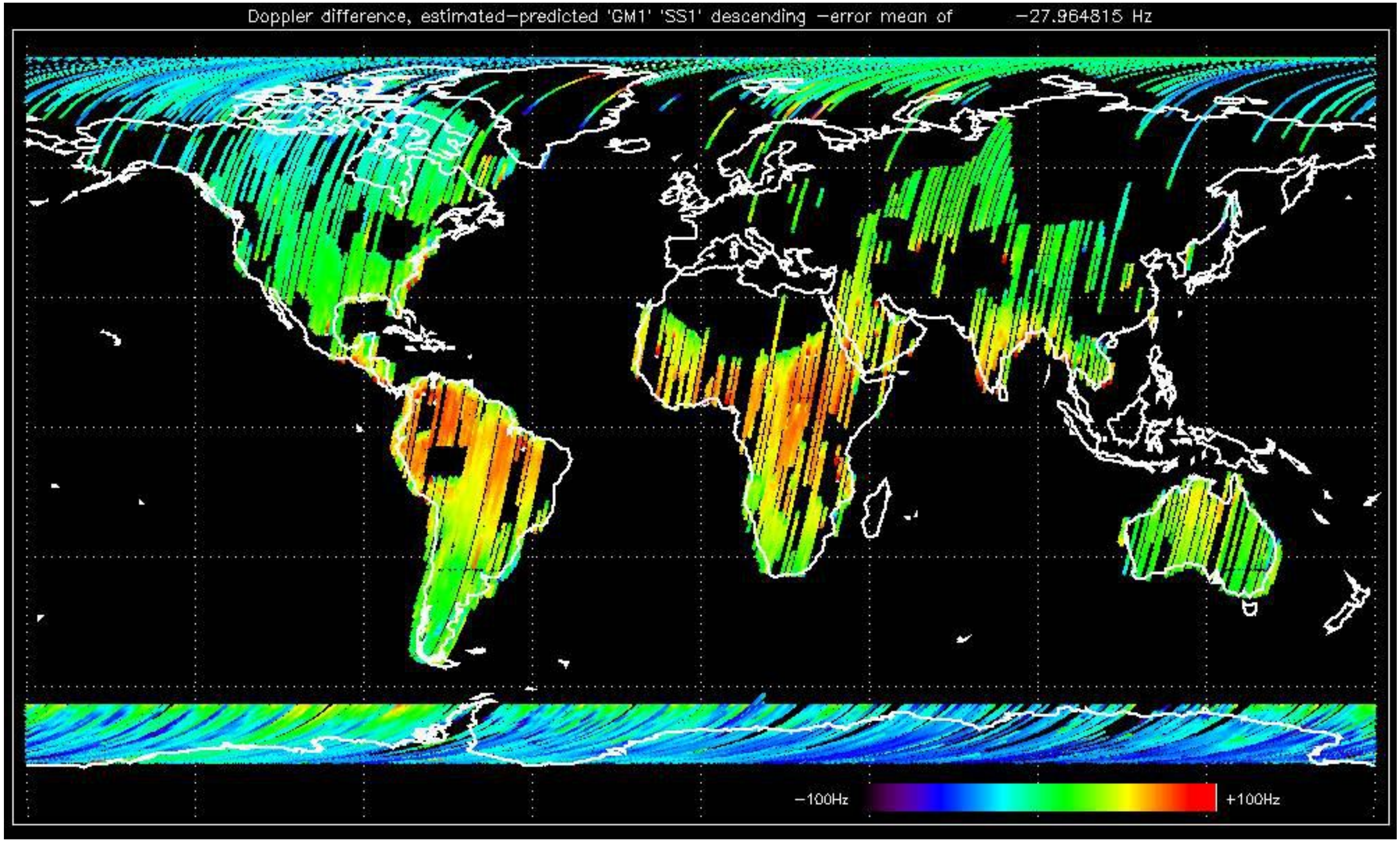

Doppler Bias[Hz]
400
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
22−Feb
Date

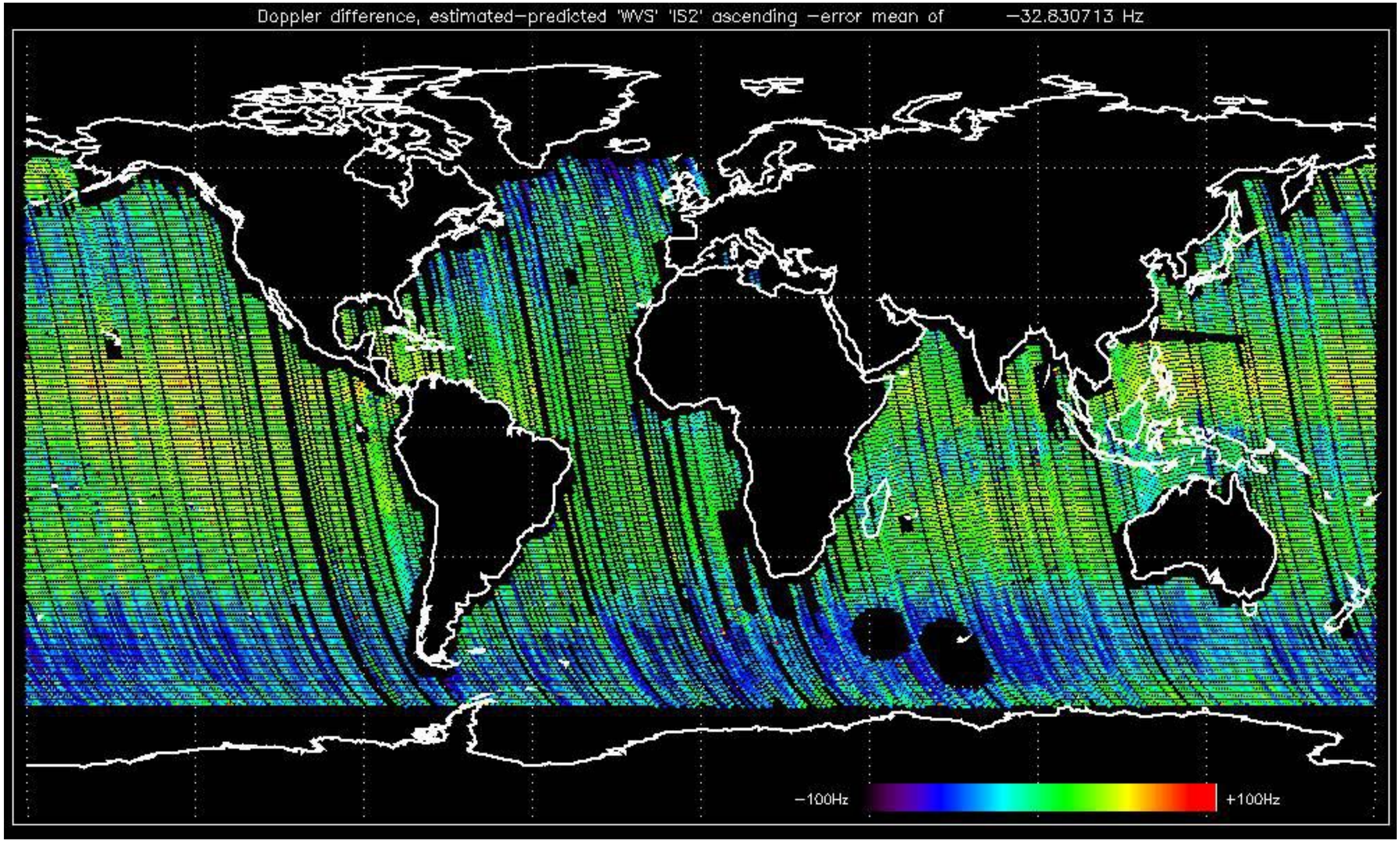

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

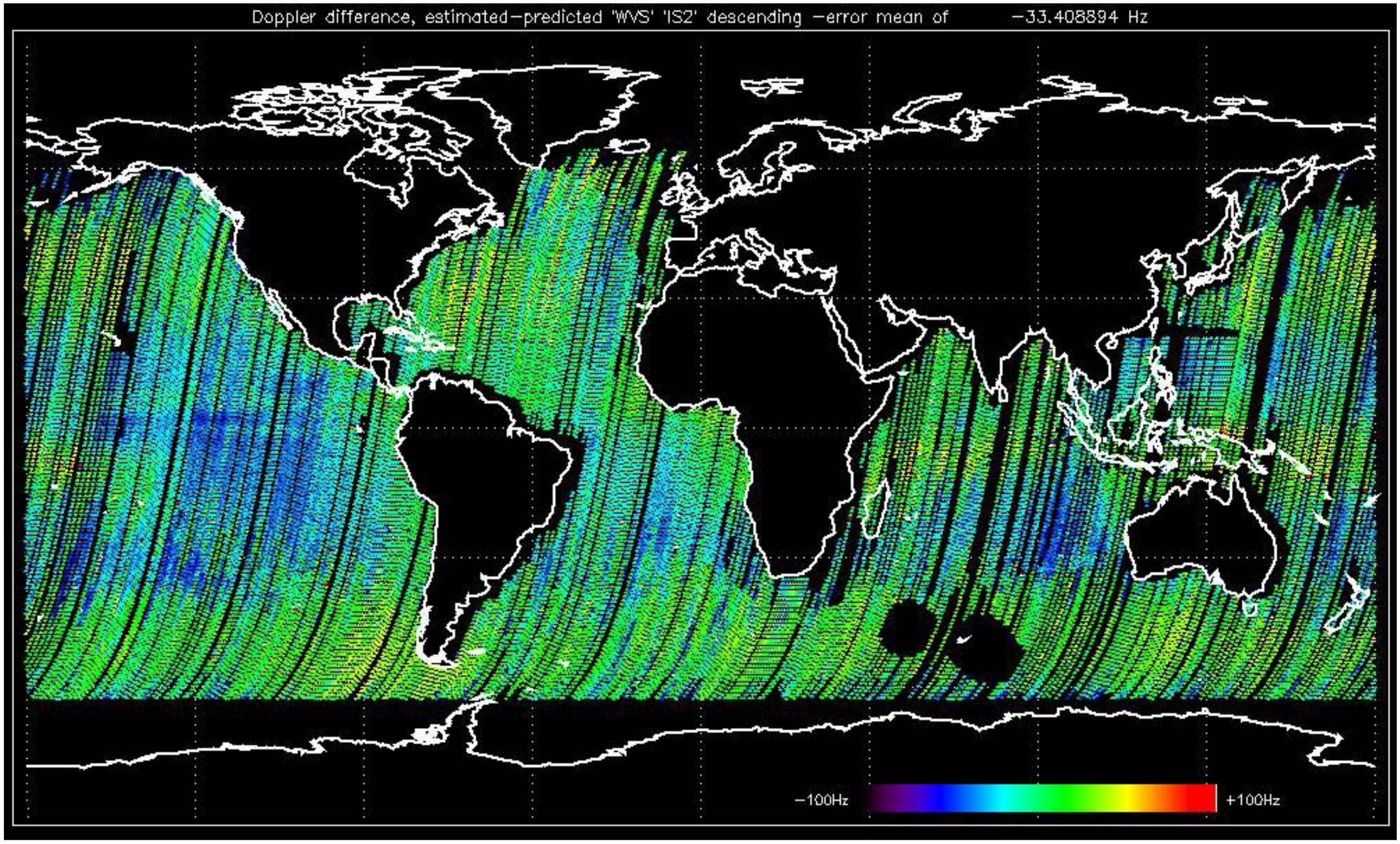

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −31.119113 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -27.964815 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.830713 Hz
−100Hz
+100Hz

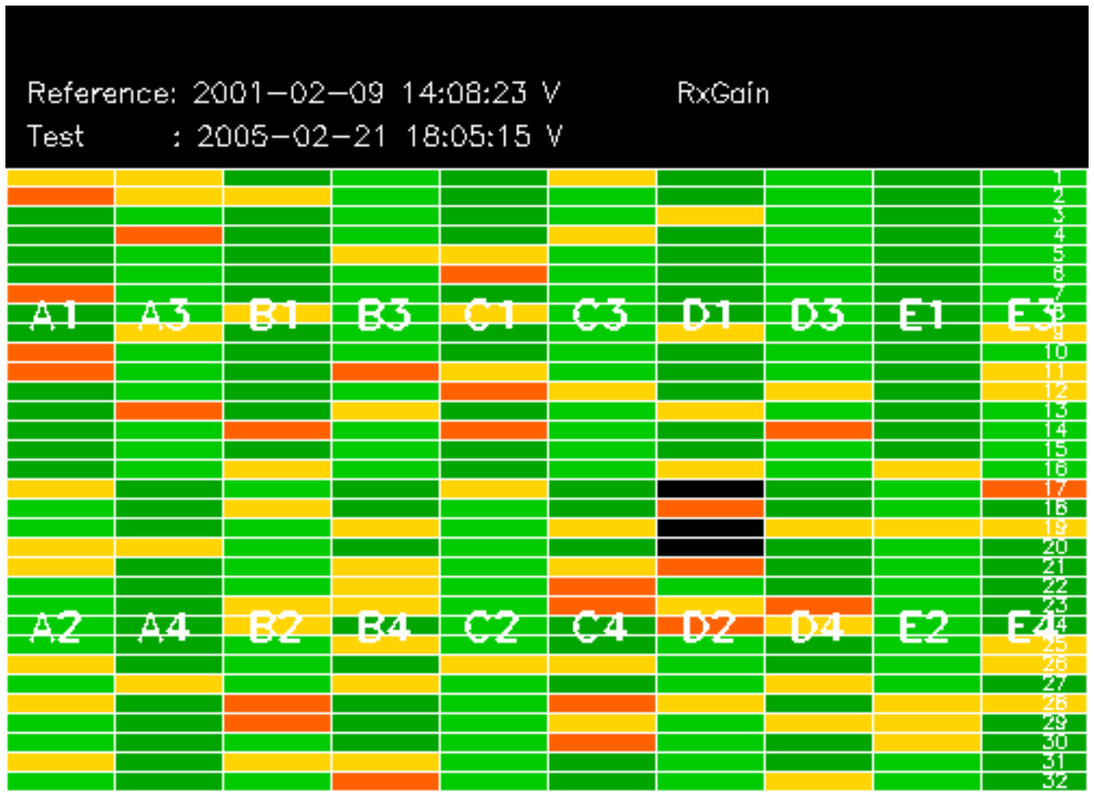

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −33.408894 Hz
−100Hz
+100Hz

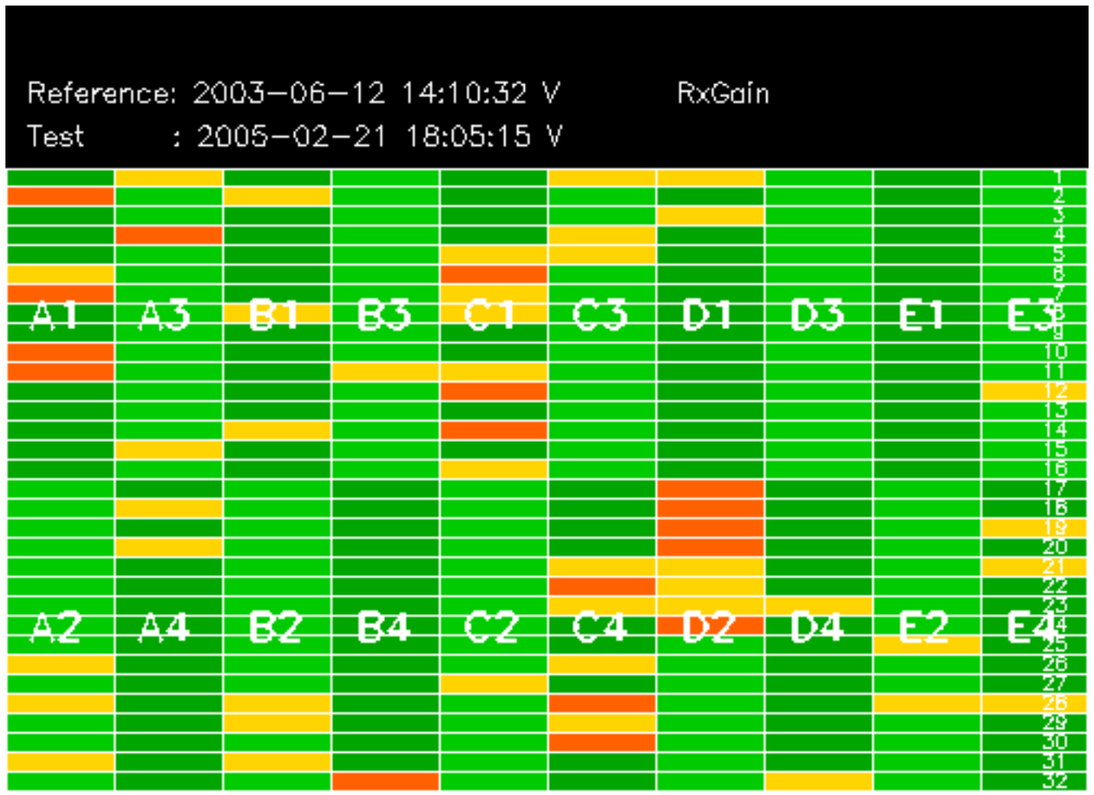
No anomalies observed on available MS products:

No anomalies observed.

Reference: 2001-02-09 13:50:42 H
Test : 2005-02-20 18:36:52 H
RxGain
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 : 2005-02-20 18:36:52 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
RxGain
Test : 2005-02-21 18:05:15 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 : 2005-02-21 18:05:15 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
13
14
15
16
17
18
19
20
21
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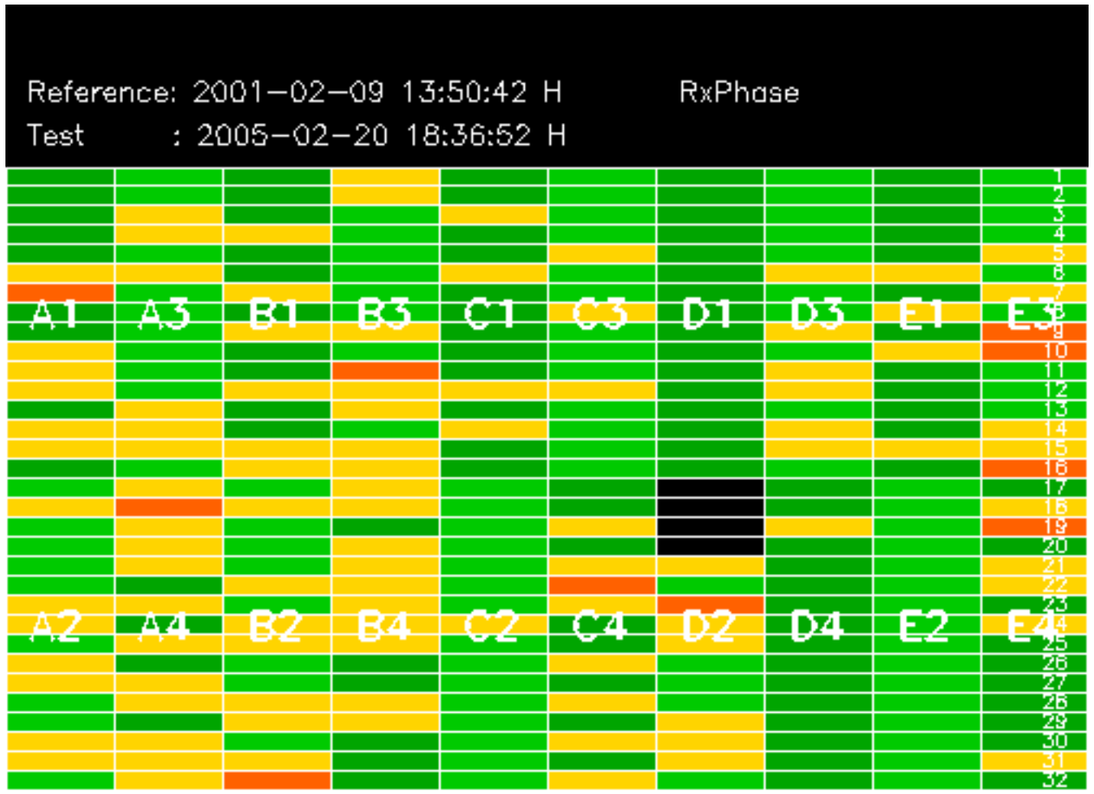
23
24
25
26
27
28
29
30
31
32


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-02-20 18:36:52 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
13
14
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16
17
18
19
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21
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23
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25
26
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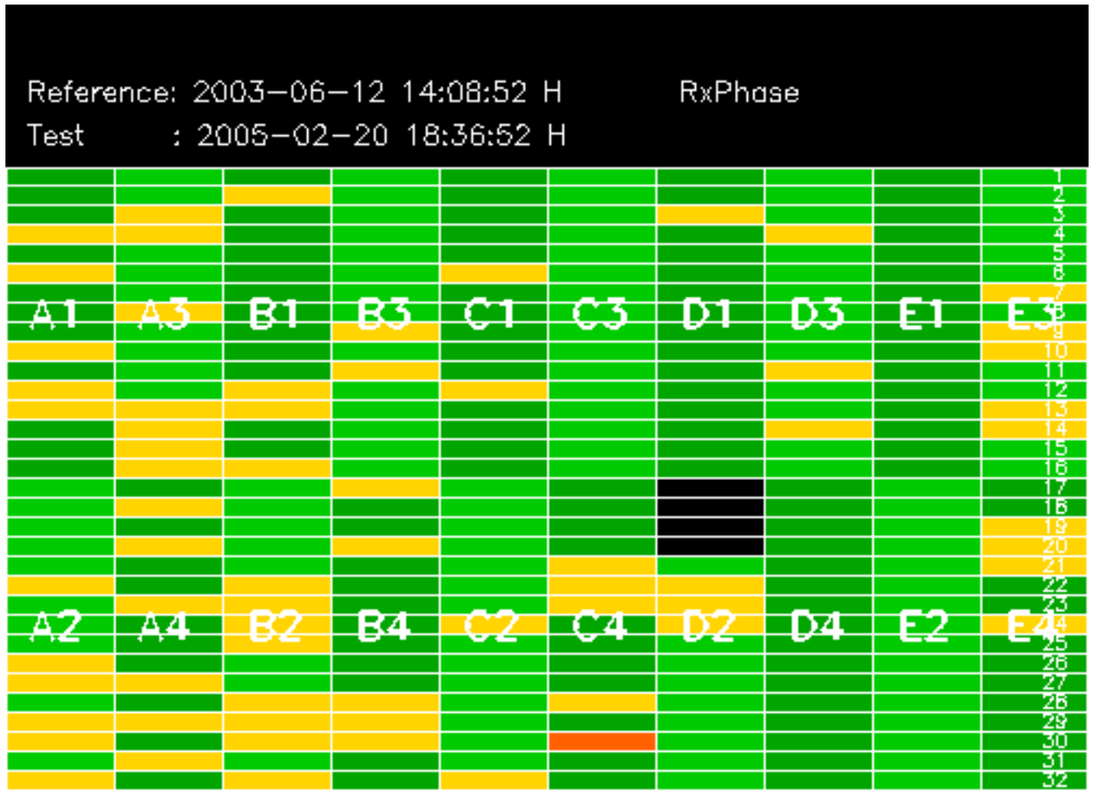
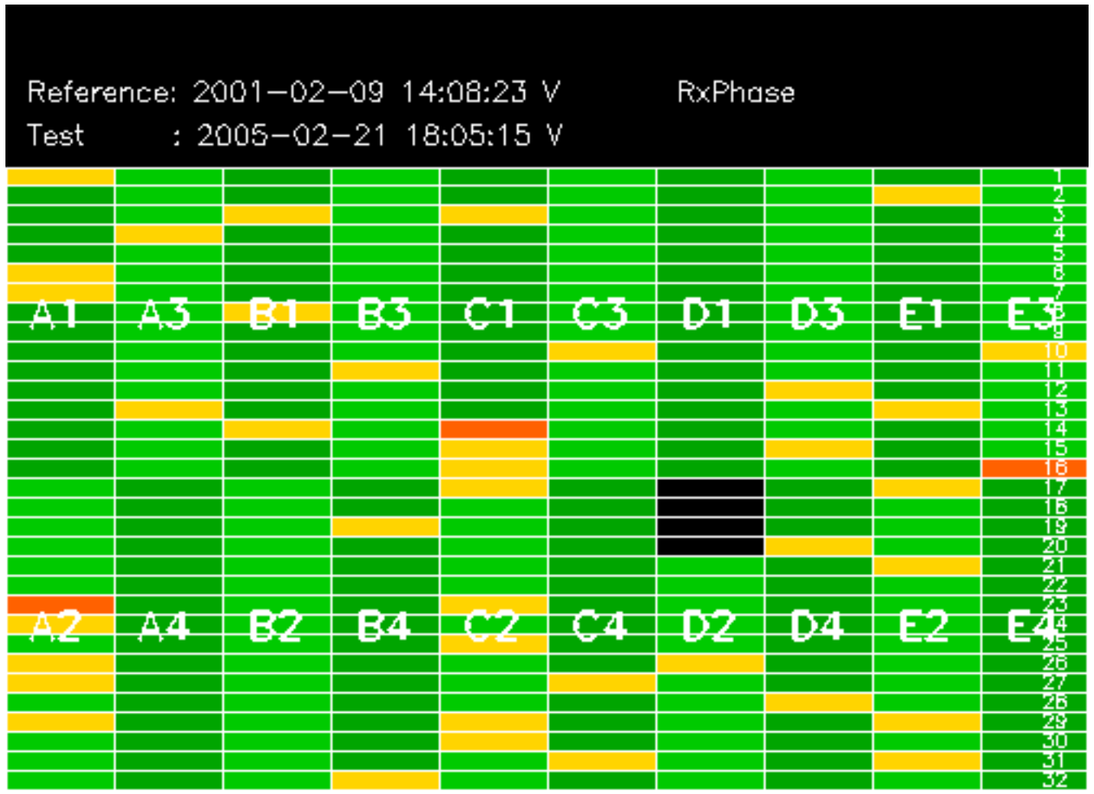
29
30
31
32


Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-02-20 18:36:52 H
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 : 2005-02-21 18:05:15 V
RxPhase
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
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12
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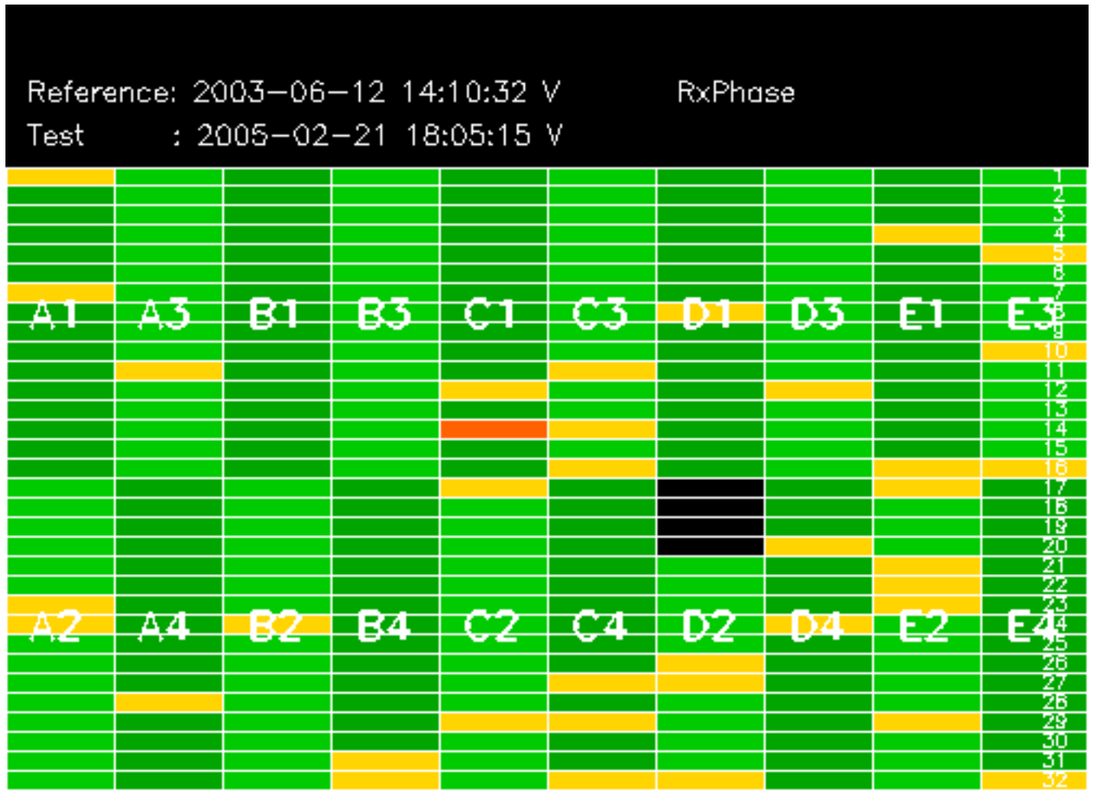
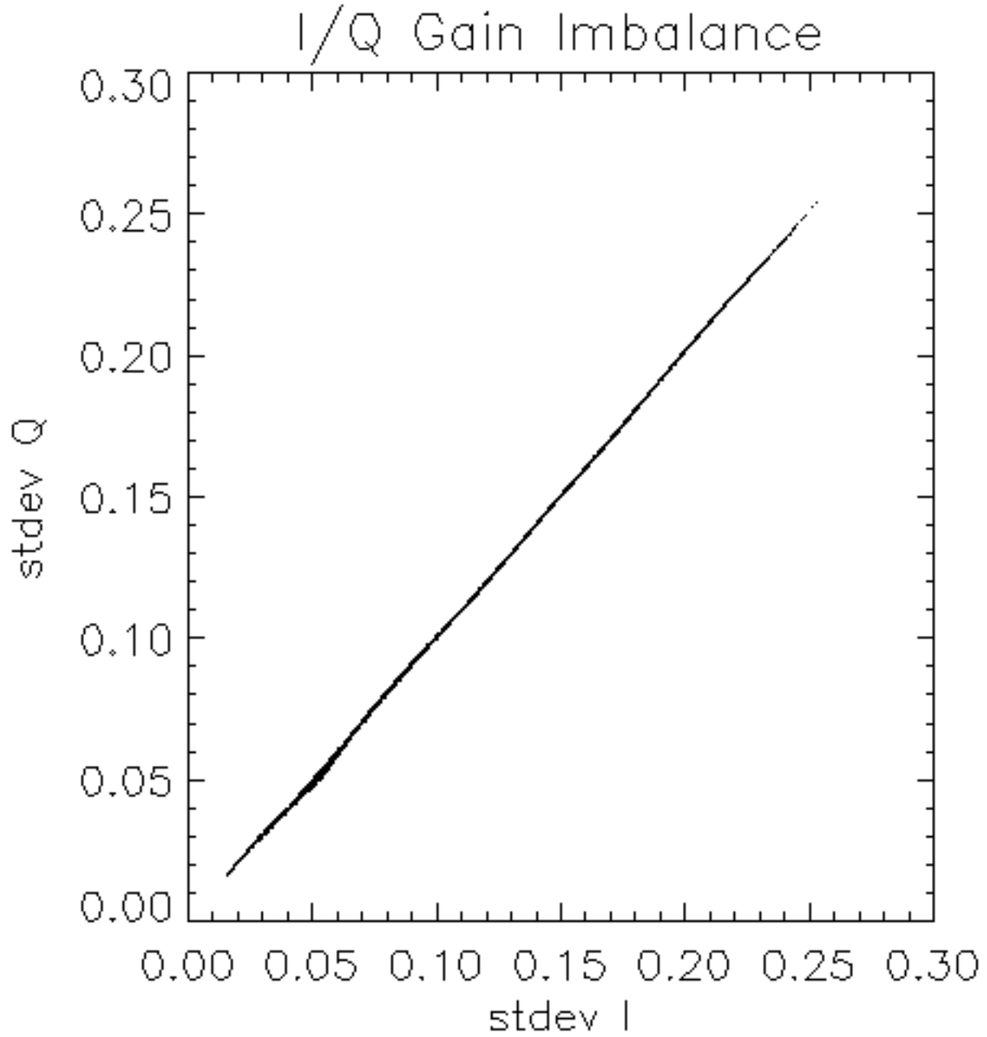
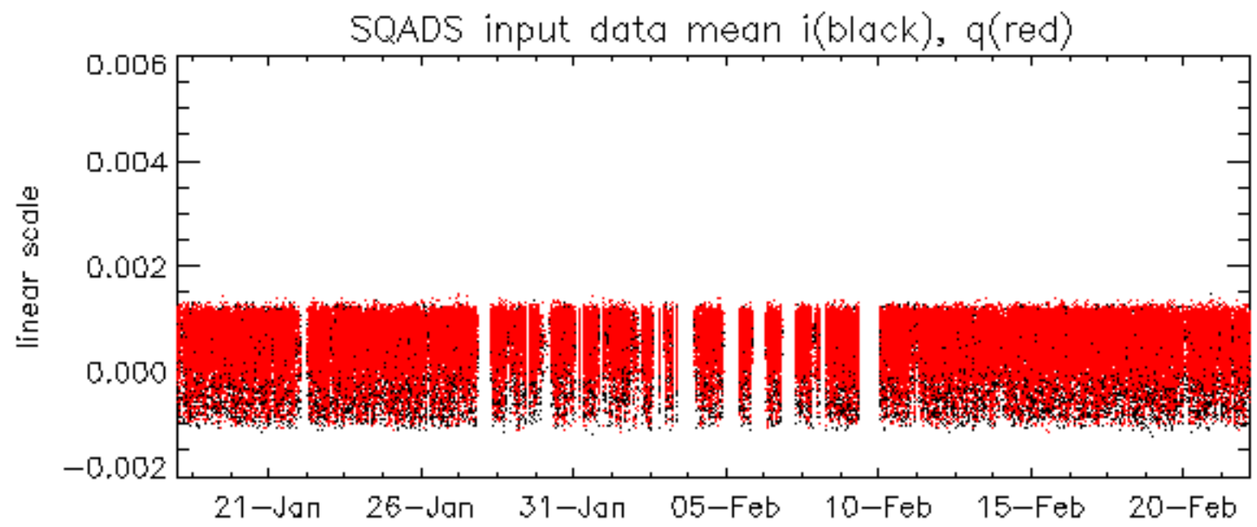
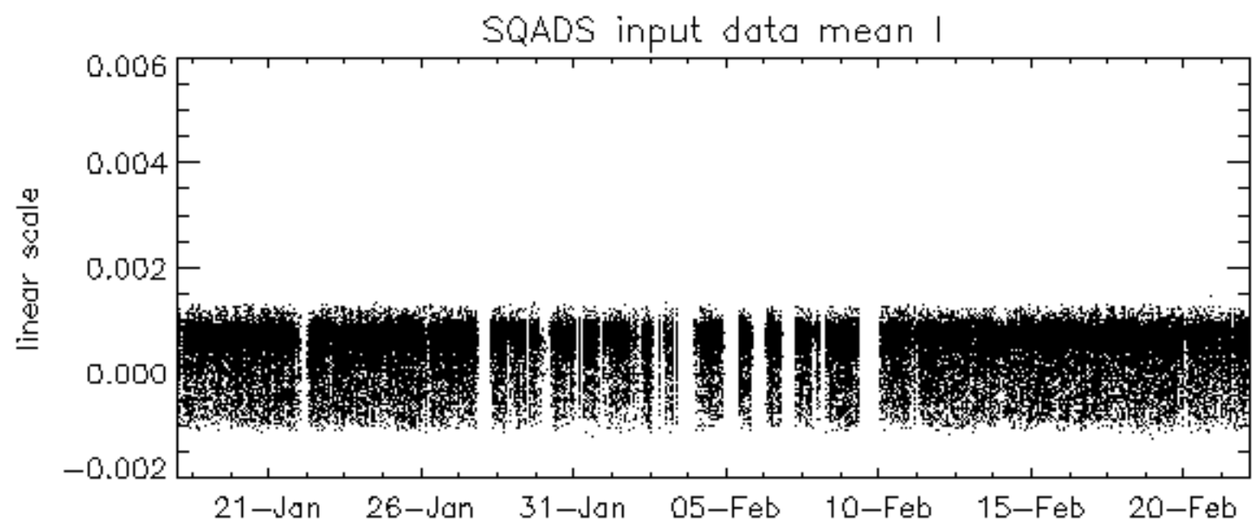
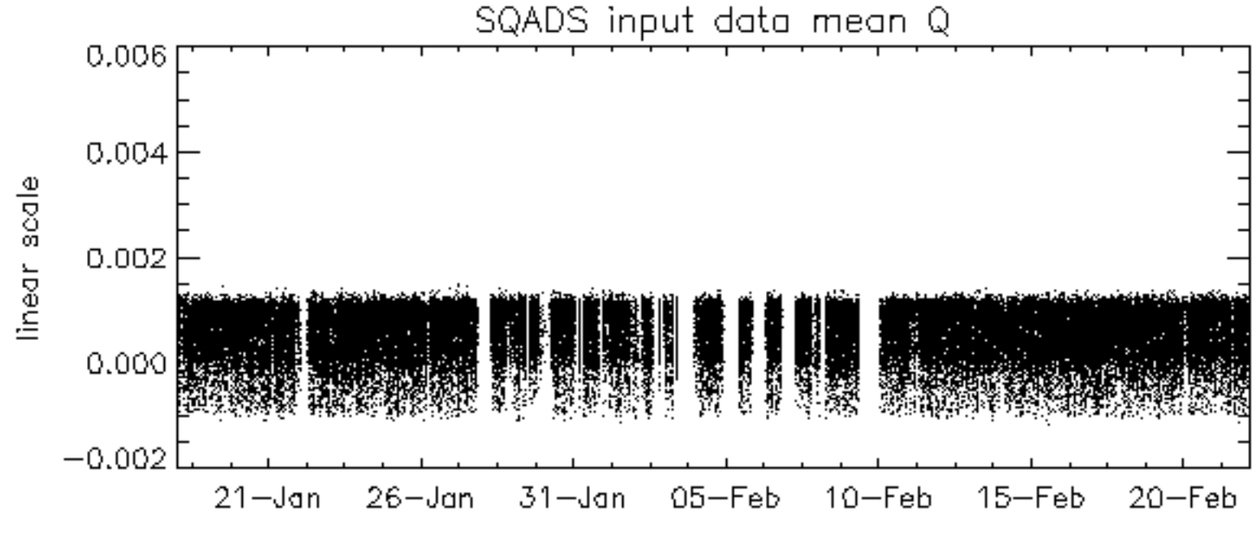
31
32

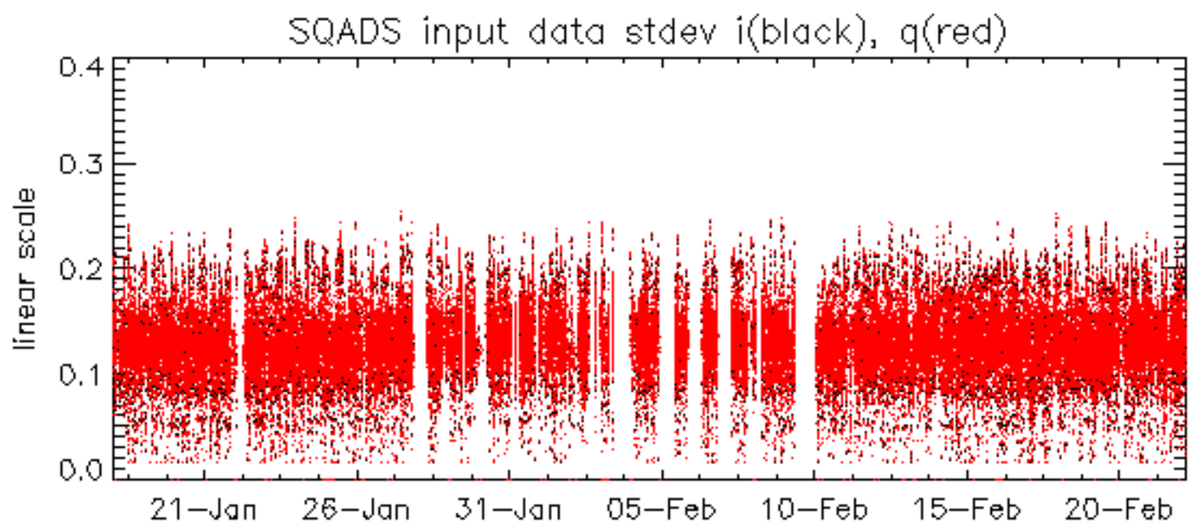

Reference: 2003-06-12 14:10:32 V
Test : 2005-02-21 18:05:15 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

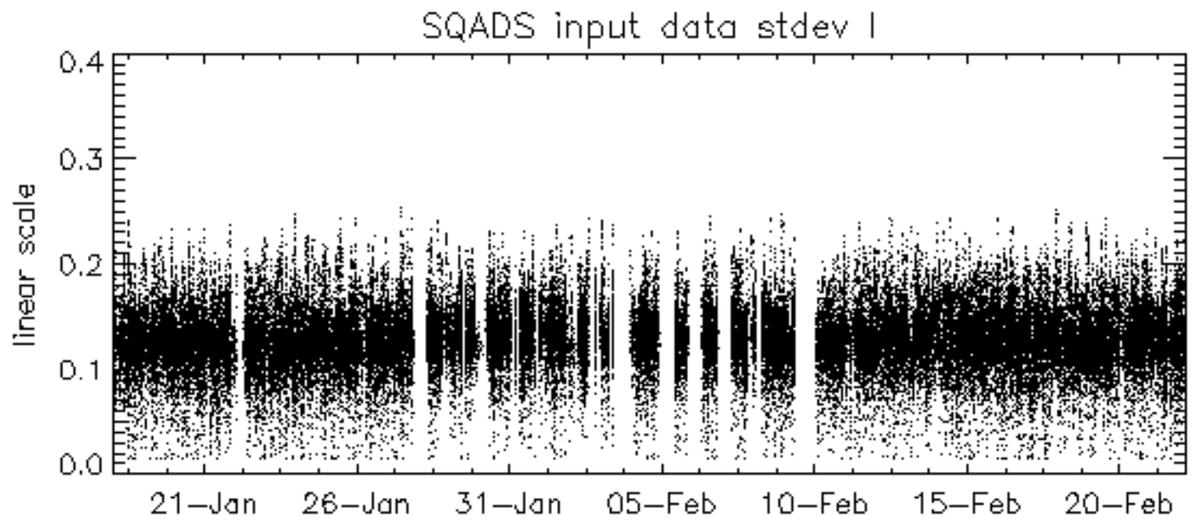

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

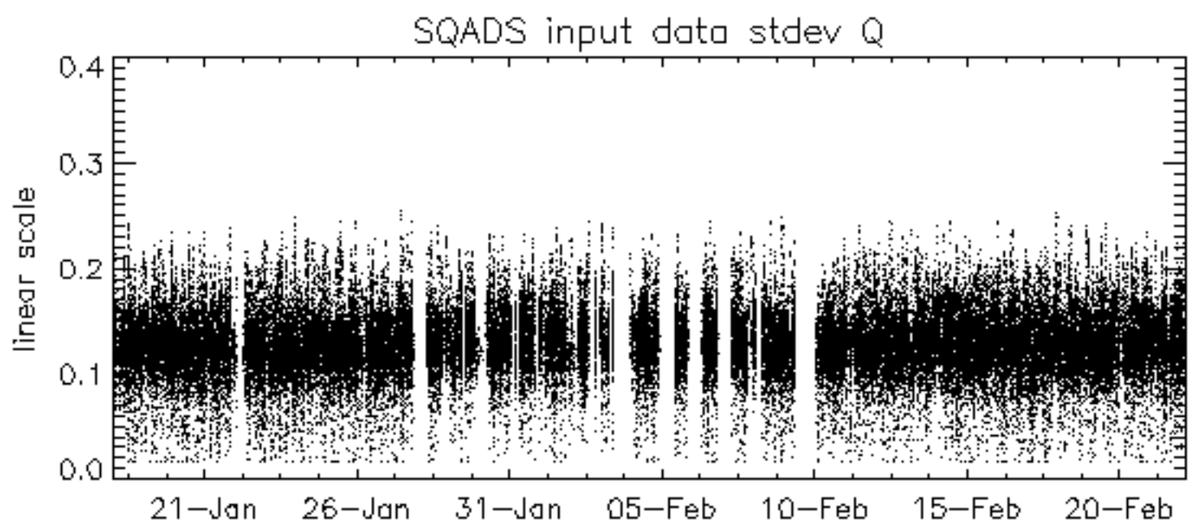

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

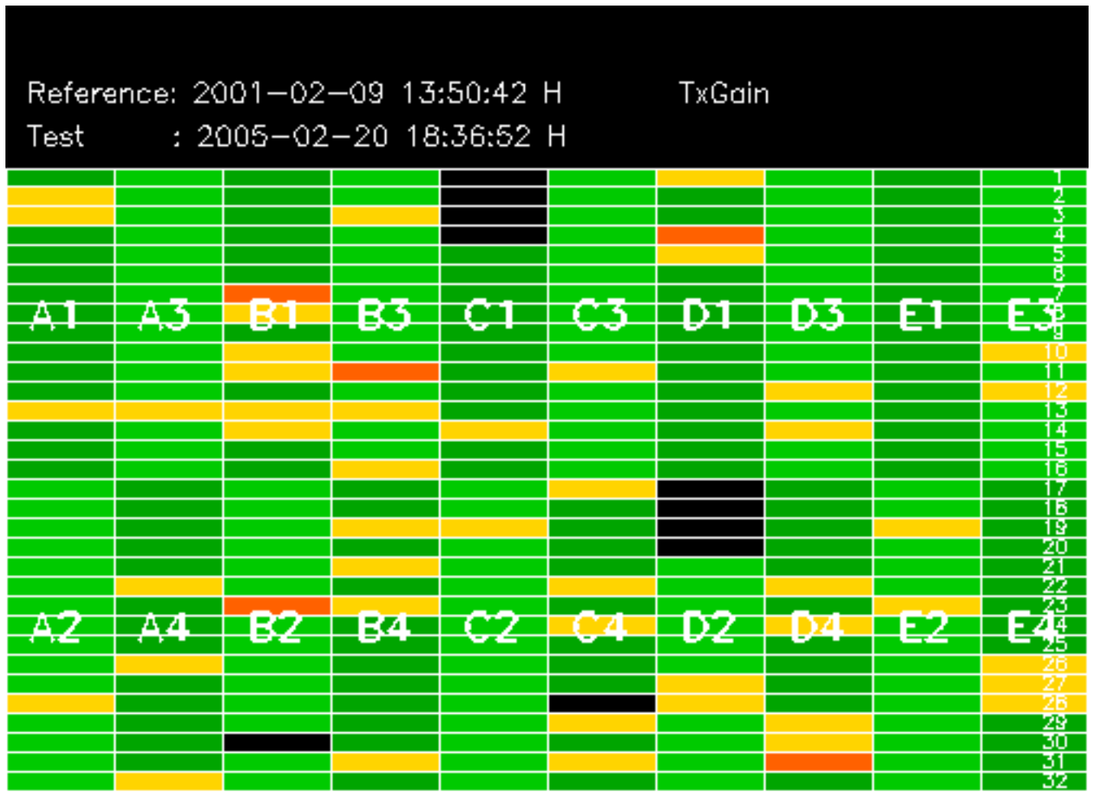

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

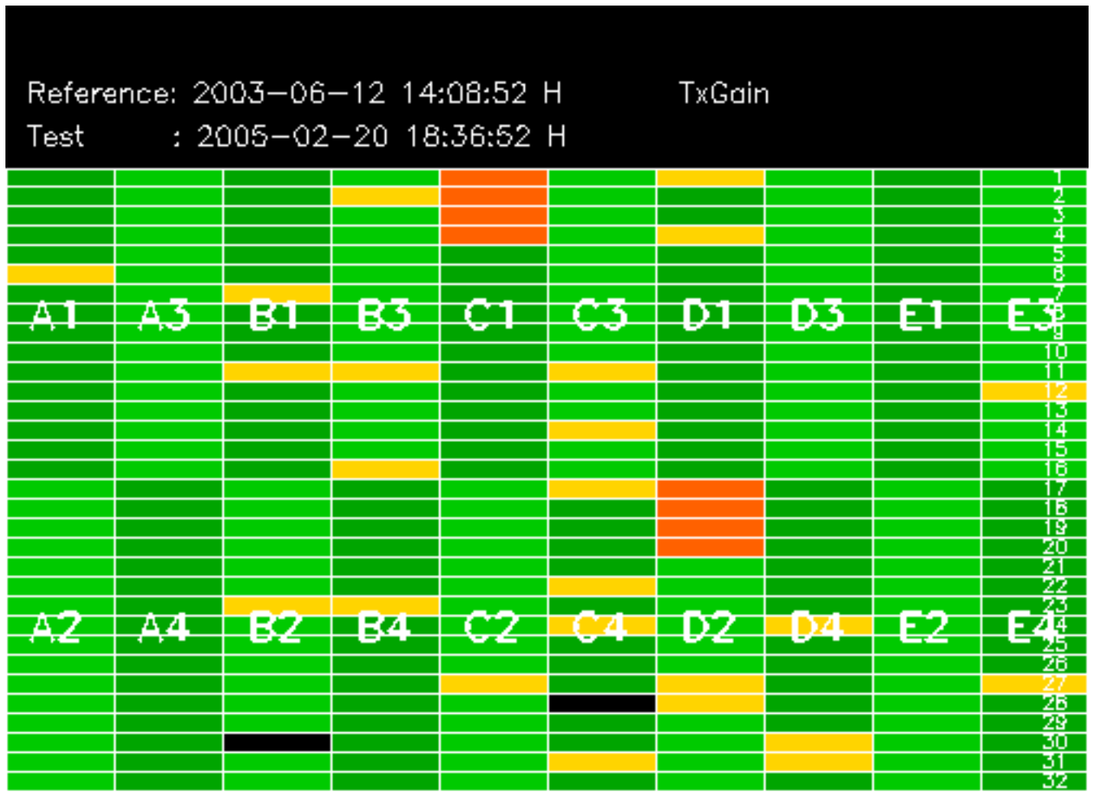

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

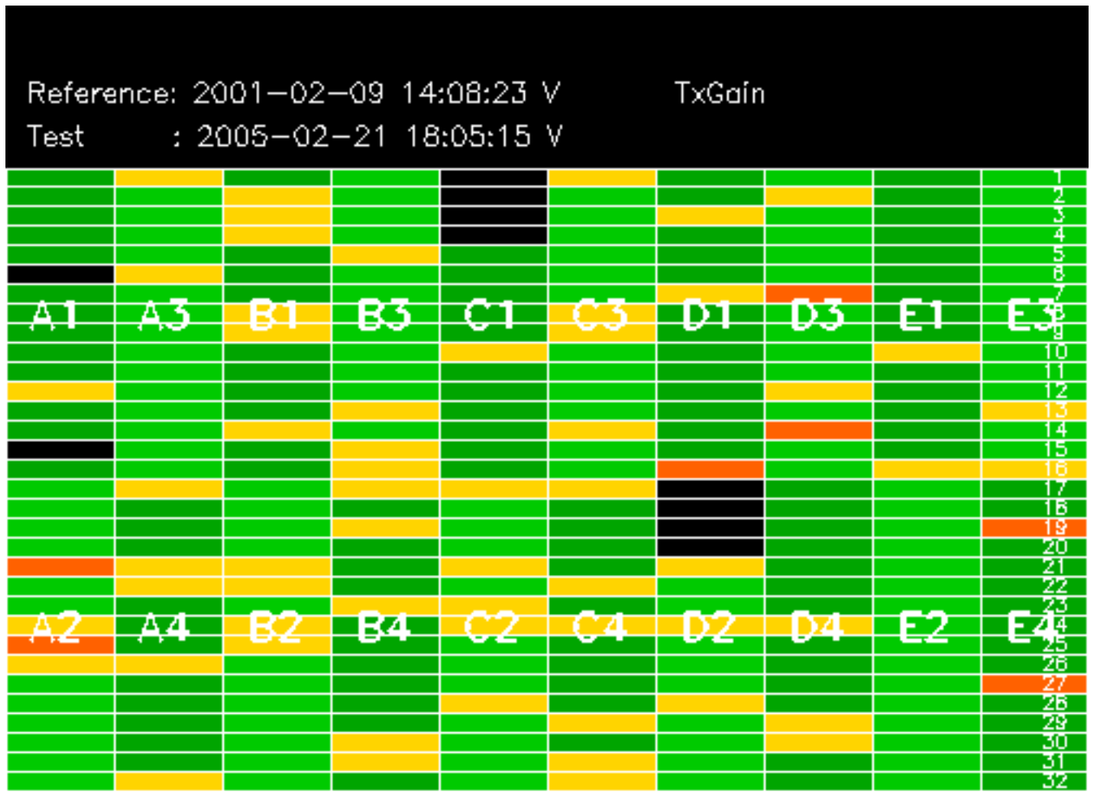

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb


Reference: 2001-02-09 13:50:42 H
Test : 2005-02-20 18:36:52 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 : 2005-02-20 18:36:52 H
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 14:08:23 V
Test : 2005-02-21 18:05:15 V
TxGain
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
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14
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17
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21
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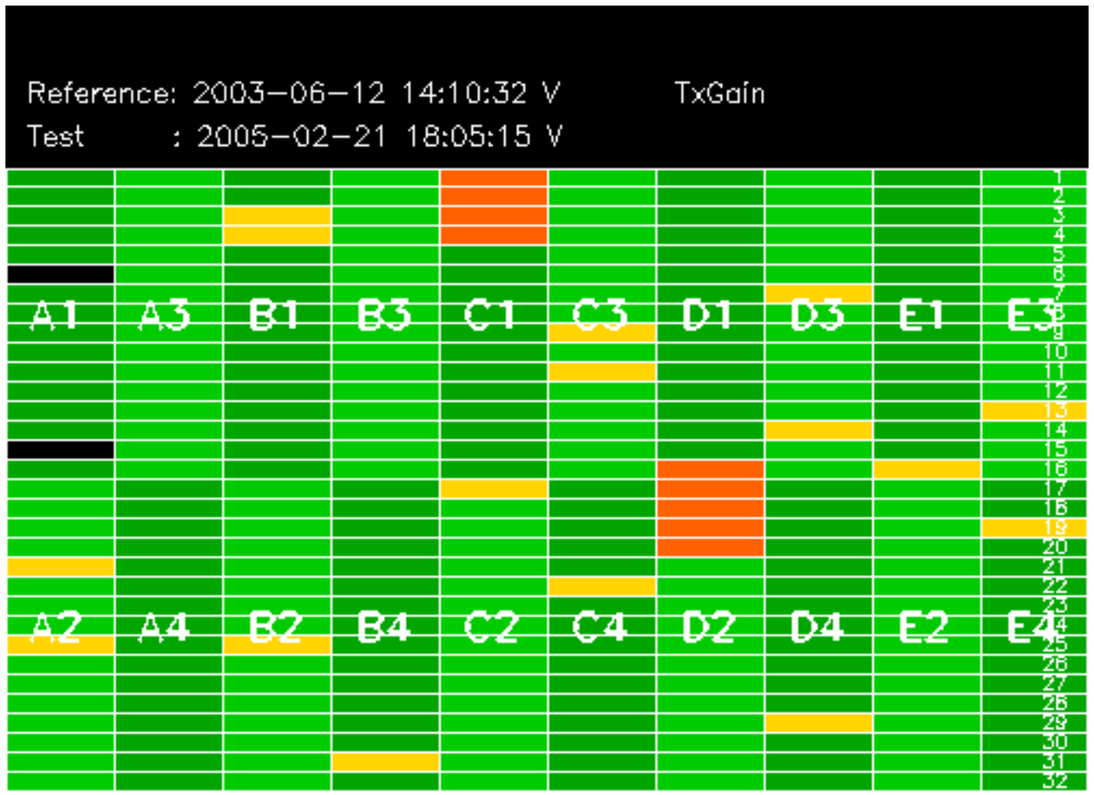
26
27
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-02-21 18:05:15 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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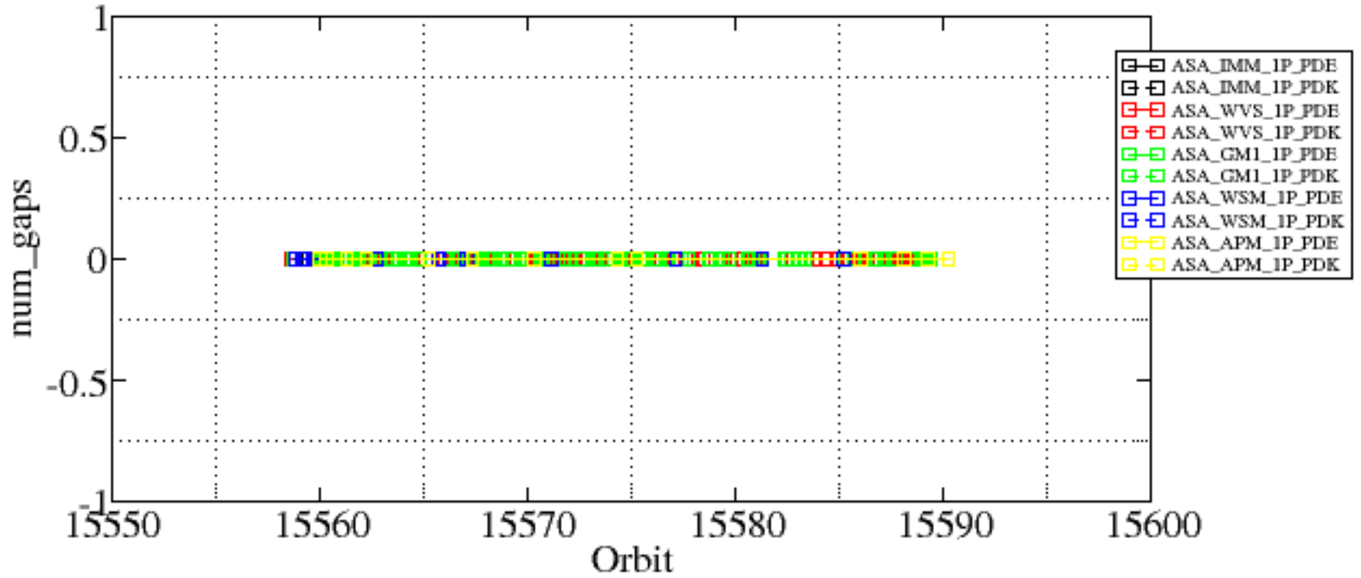
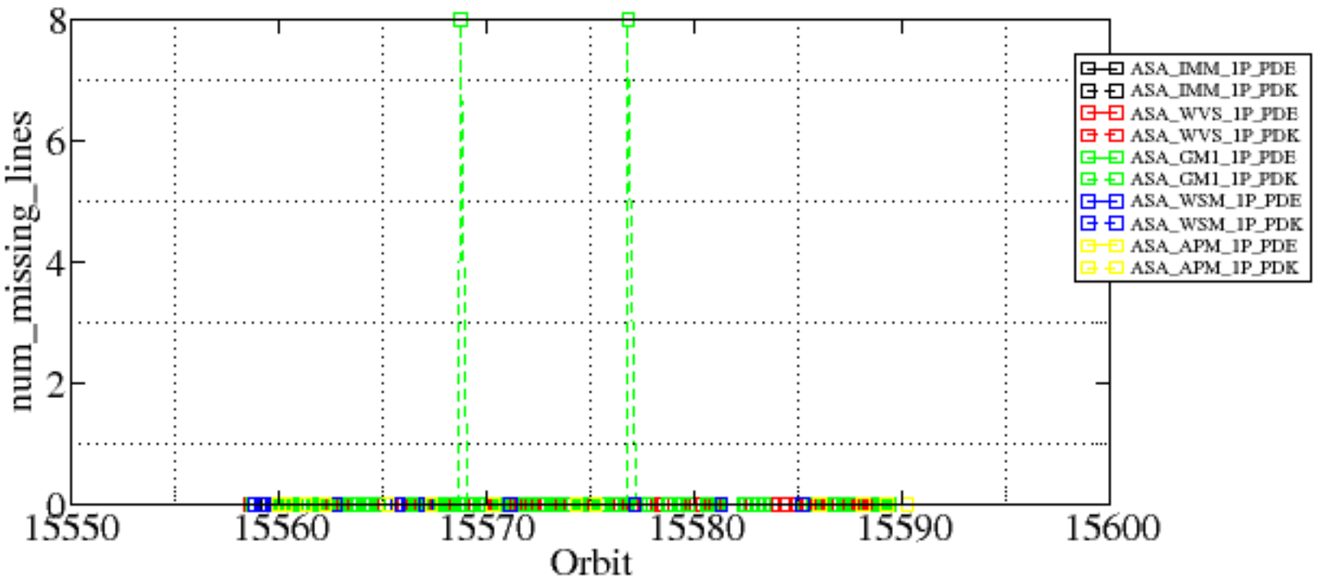
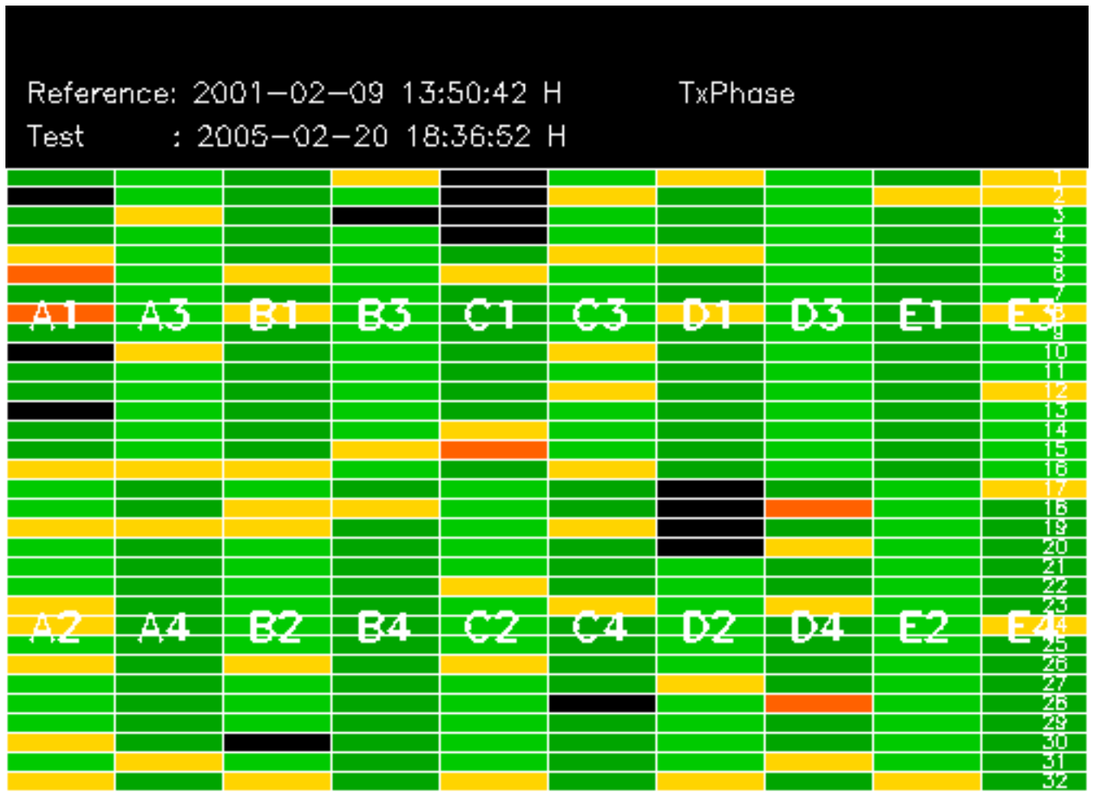
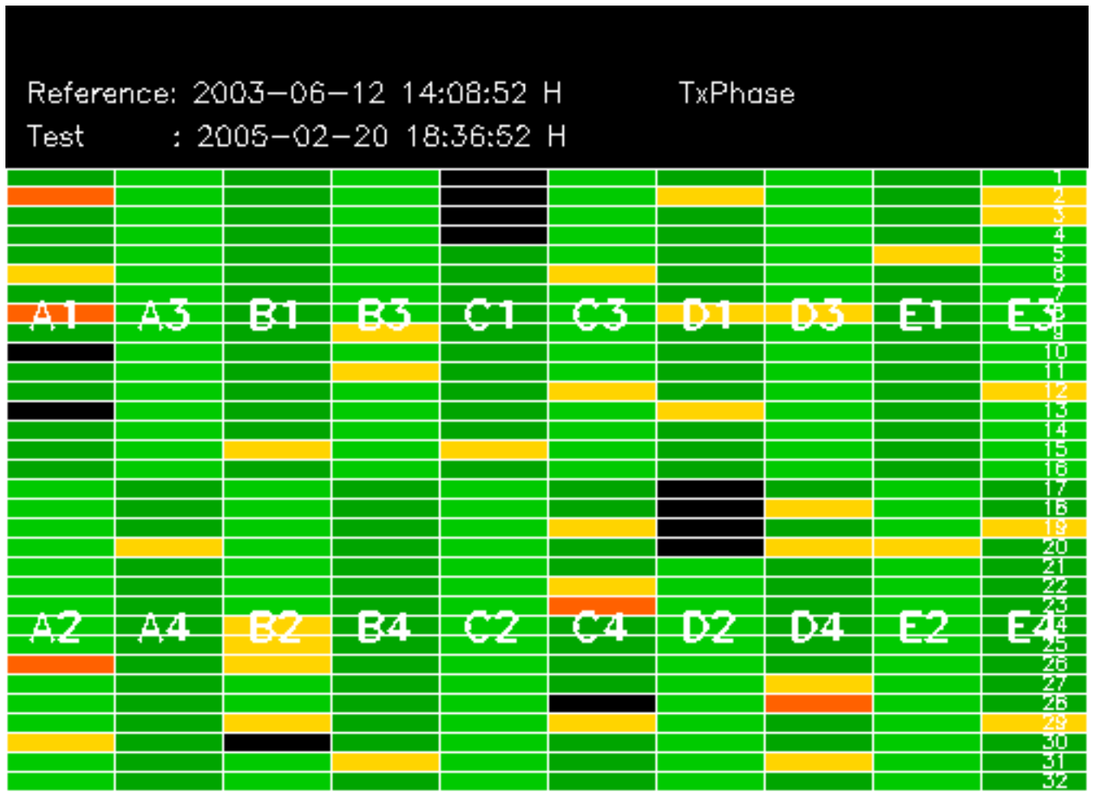
32

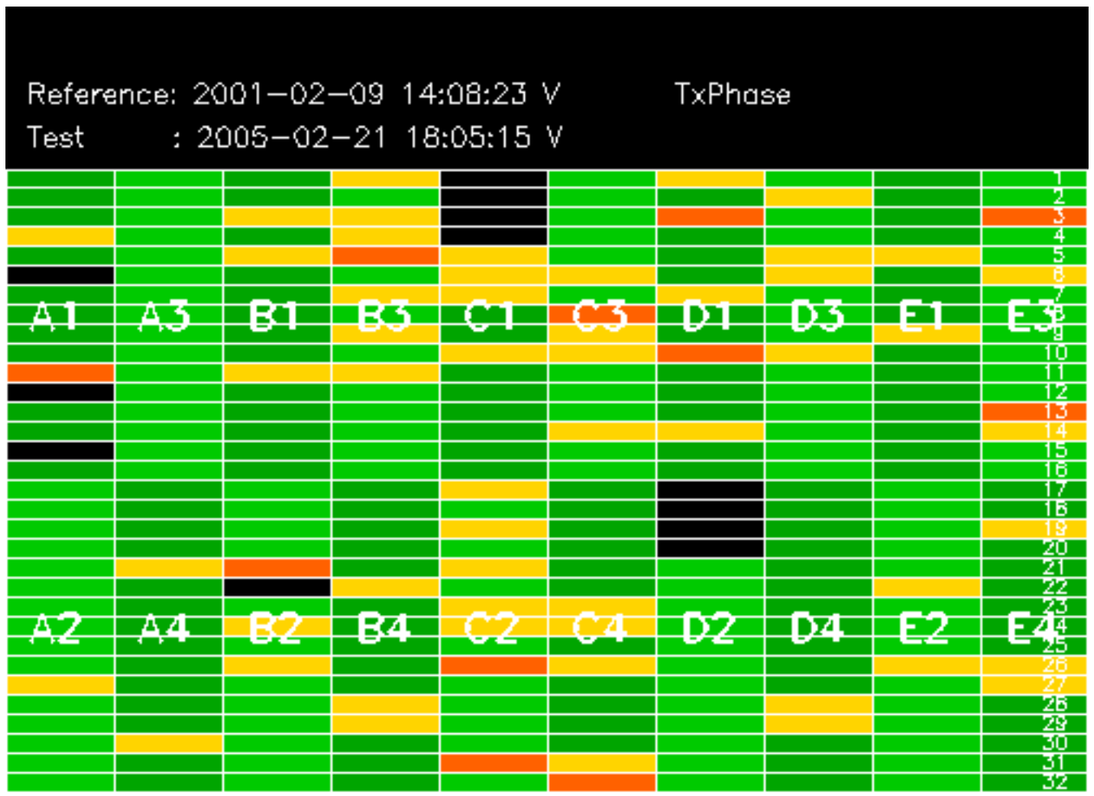
Summary of analysis for the last 3 days 2005022[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_GM1_1PNPDK20050220_170523_000002532034_00484_15568_2863.N1 </td> <td>0 </td> <td>8 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050221_063357_000000962034_00492_15576_2899.N1 </td> <td>0 </td> <td>8 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
15550
15560
15570
15580
15590
15600
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
Orbit
0
2
4
6
8
15550
15560
15570
15580
15590
15600
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-02-20 18:36:52 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 : 2005-02-20 18:36:52 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 : 2005-02-21 18:05:15 V
TxPhase
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
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9
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12
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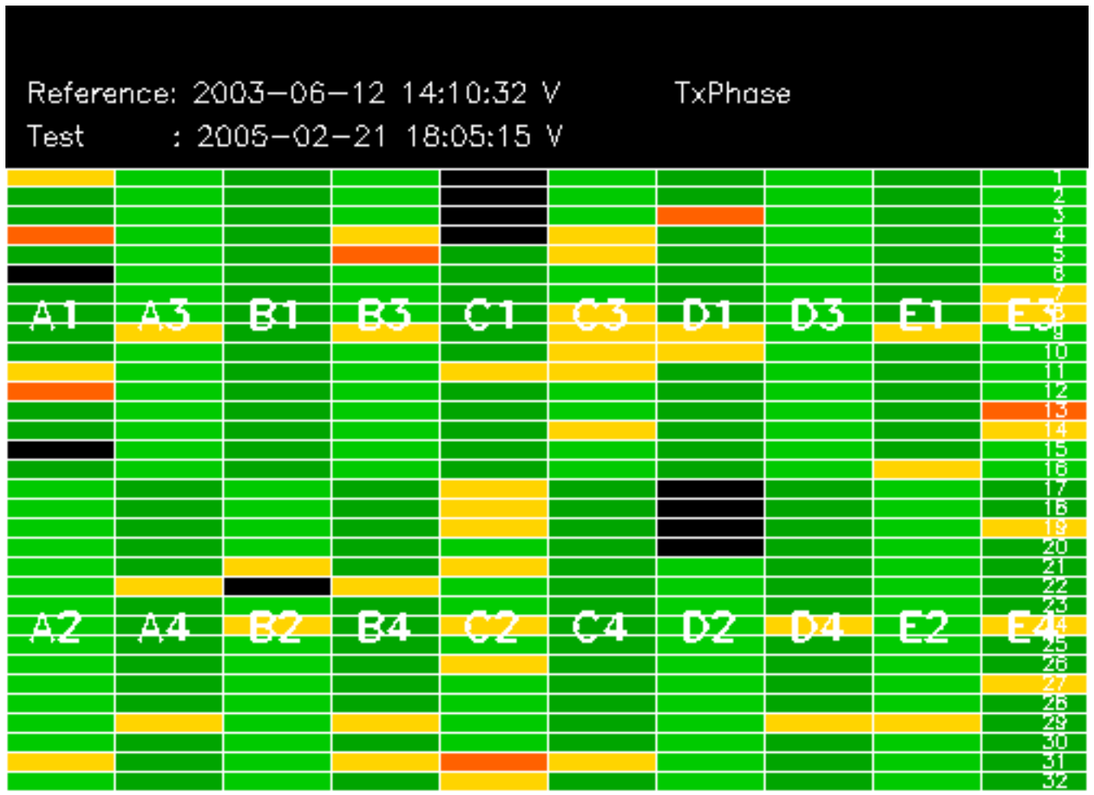
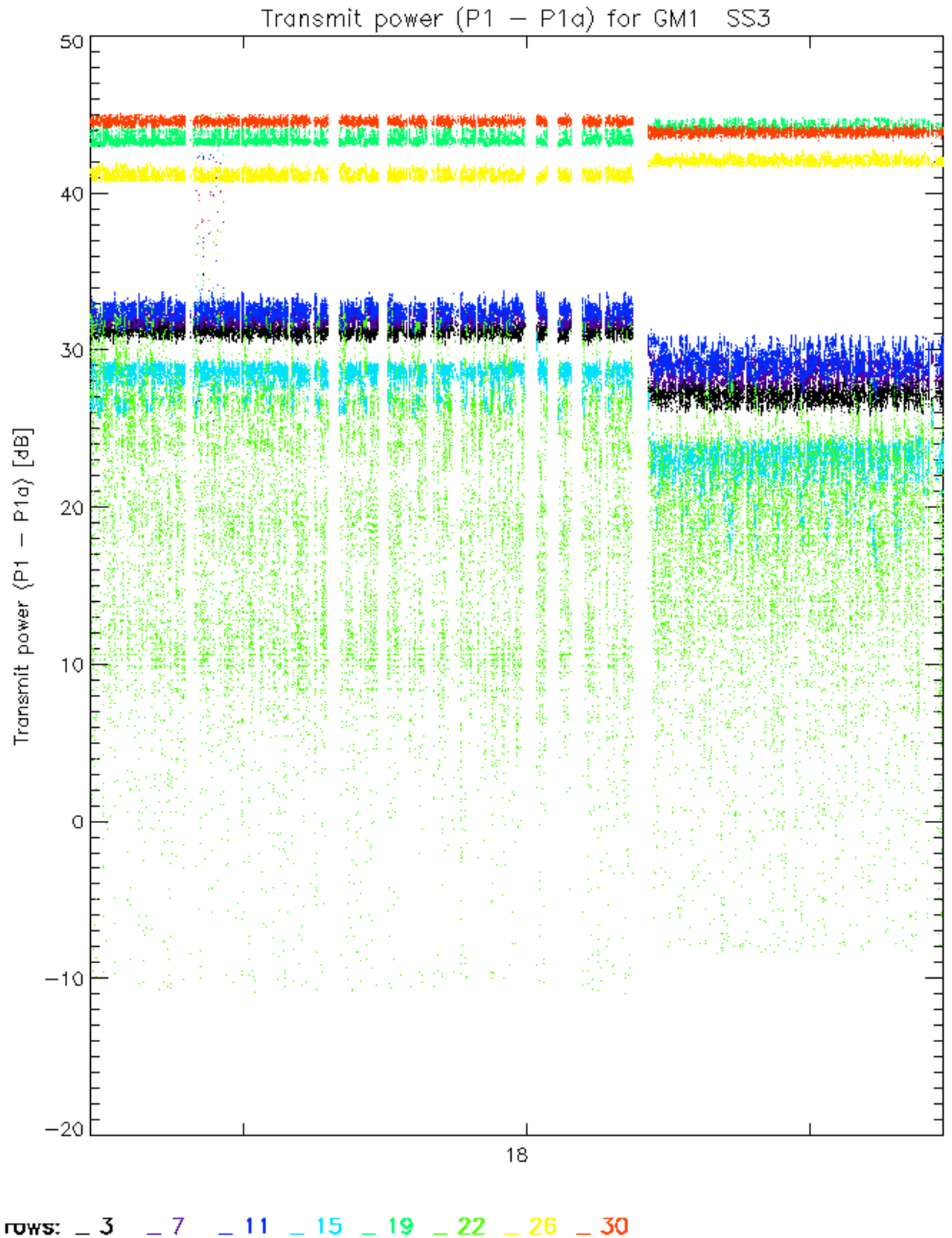
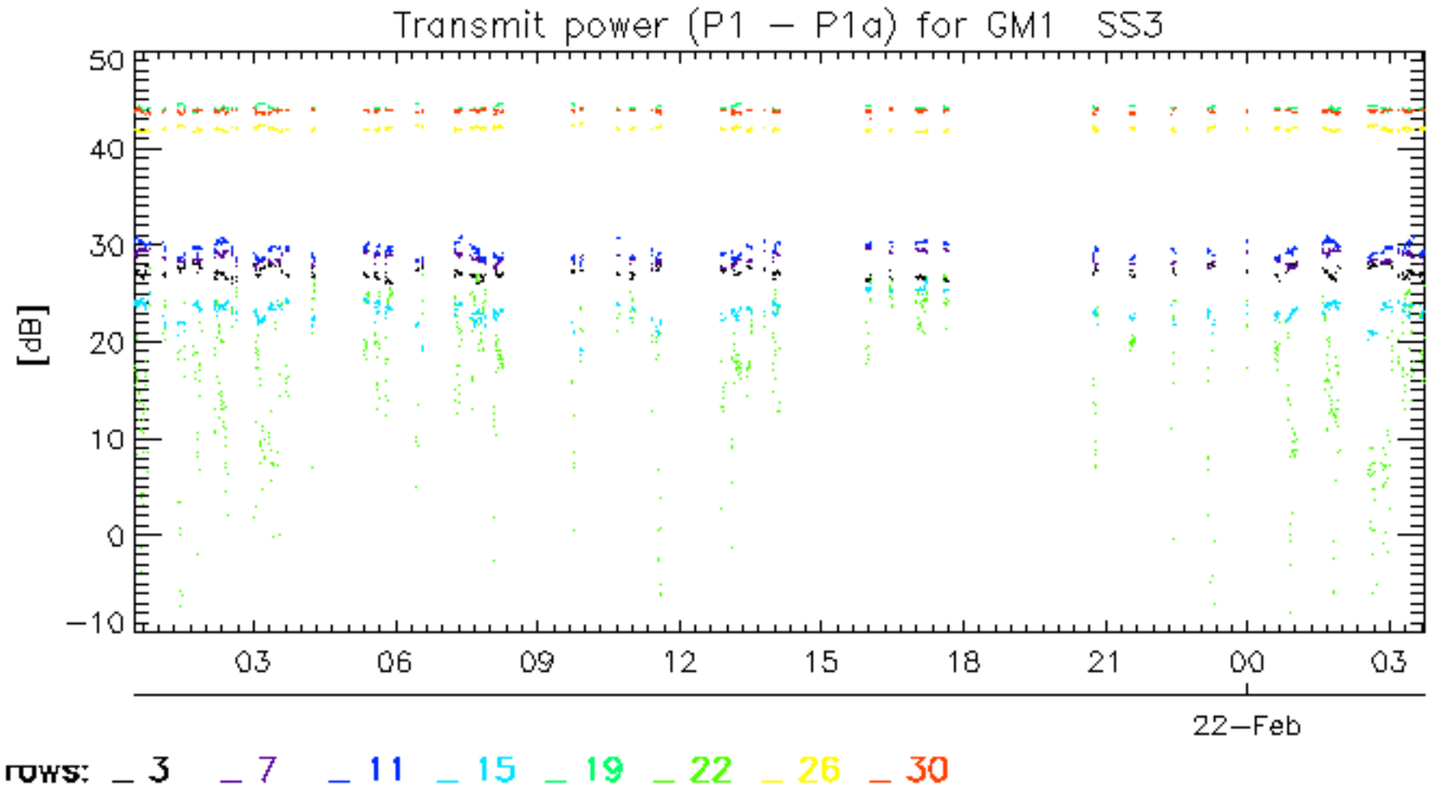
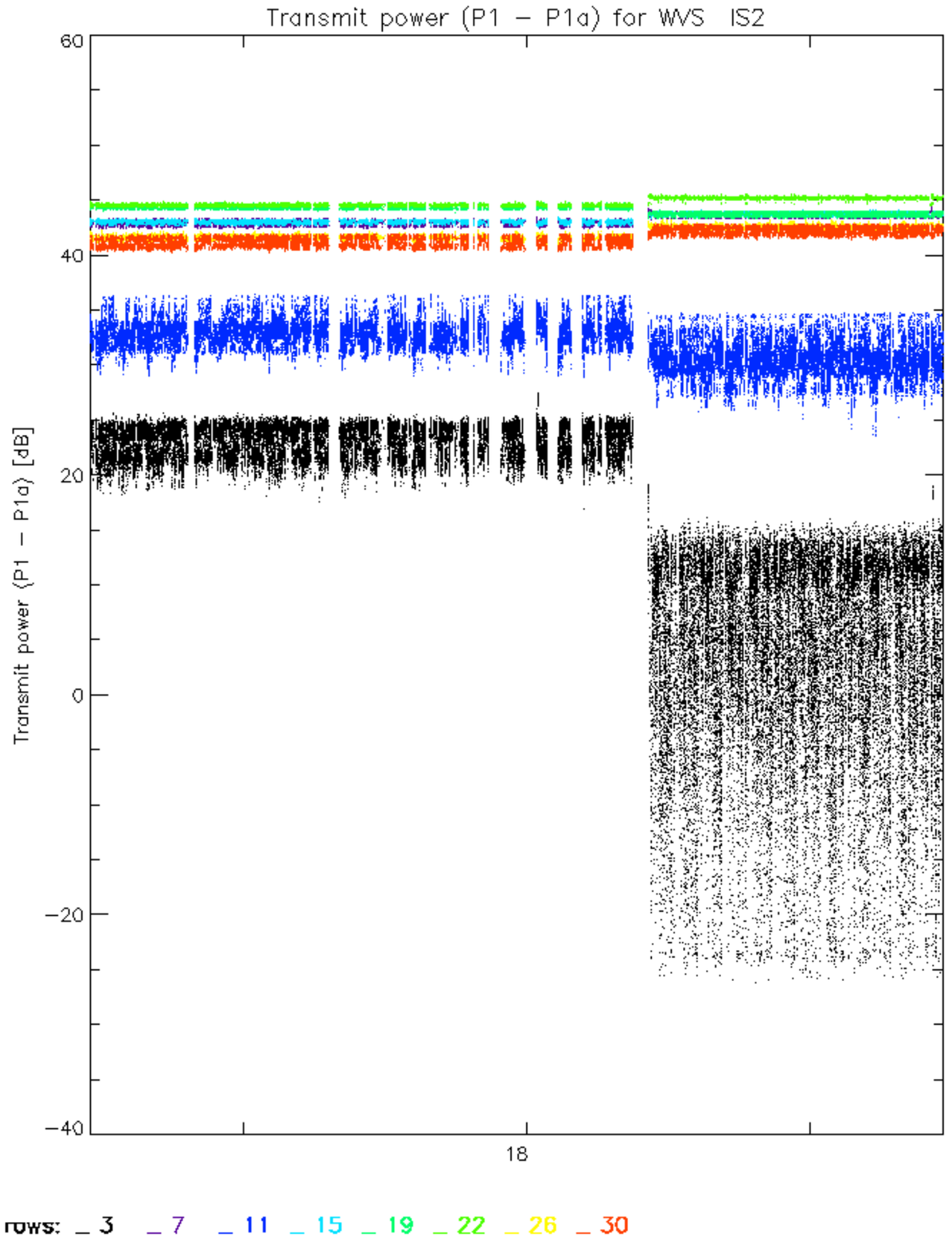
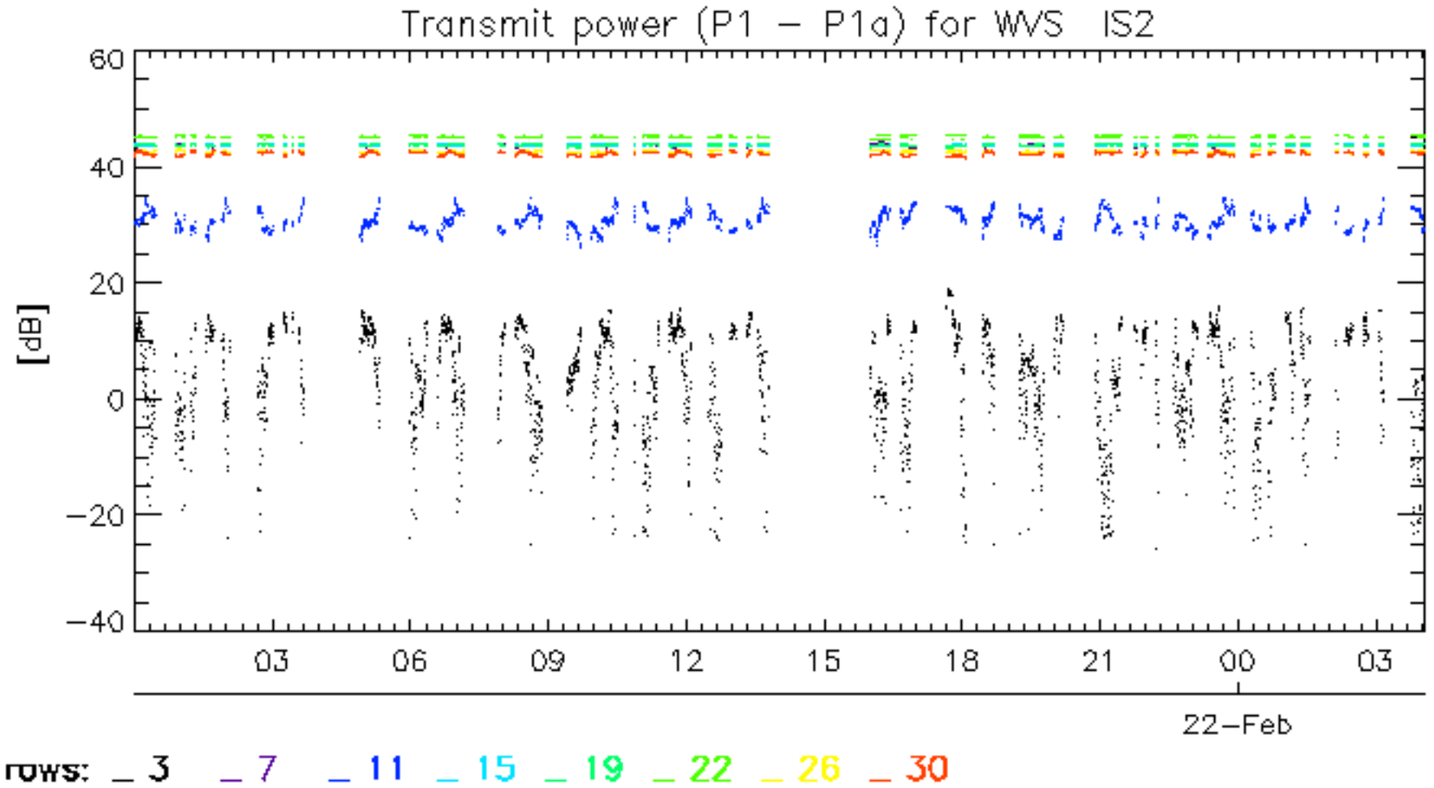
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-02-21 18:05:15 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
18
rows: 3 7 11 15 19 22 26 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
22–Feb
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 − P1a) for WVS IS2
Transmit power (P1 − P1a) [dB]
60
40
20
0
−20
−40
18
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
60
40
20
0
−20
−40
[dB]
03
06
09
12
15
18
21
00
03
22−Feb
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.