PRELIMINARY REPORT OF 050115

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

last update on Sat Jan 15 11:01:55 GMT 2005

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 2005-01-14 00:00:00 to 2005-01-15 11:01:55

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	25	45	3	3	5
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	25	45	3	3	5
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	25	45	3	3	5
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	25	45	3	3	5

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	15	17	1	12	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	15	17	1	12	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	15	17	1	12	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	15	17	1	12	4

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	20050113 100806
H	20050114 143817

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	-3.427942	0.007088	0.031169
7	P1	-3.085764	0.010864	0.016200
11	P1	-4.644277	0.021239	0.014514
15	P1	-5.648054	0.039739	0.034477
19	P1	-3.661911	0.006178	0.002030
22	P1	-4.571093	0.016837	0.015615
26	P1	-4.941892	0.025628	0.047538
30	P1	-7.126244	0.014041	-0.018933
3	P1	-15.928414	0.105819	0.028634
7	P1	-15.516065	0.094828	0.059461
11	P1	-20.802471	0.308374	-0.068161
15	P1	-11.630635	0.076735	0.055042
19	P1	-14.174677	0.032397	0.014285
22	P1	-16.026070	0.444817	0.123299
26	P1	-17.700962	0.240301	0.125720
30	P1	-17.877350	0.313500	-0.034636

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.317352	0.086187	0.096303
7	P2	-22.513742	0.170393	0.102648
11	P2	-14.793899	0.186952	0.178935
15	P2	-7.146136	0.115693	0.068597
19	P2	-9.728896	0.213956	0.110477
22	P2	-17.124189	0.099006	0.109564
26	P2	-16.525911	0.116478	0.080825

30	P2	-18.946602	0.083511	0.055347

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.203828	0.007052	0.025197
7	P3	-8.203823	0.007053	0.025147
11	P3	-8.203823	0.007052	0.025160
15	P3	-8.203862	0.007052	0.025392
19	P3	-8.203899	0.007054	0.025609
22	P3	-8.203876	0.007052	0.025539
26	P3	-8.203848	0.007051	0.025373
30	P3	-8.204206	0.007060	0.023478

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	-2.823598	0.011708	0.018820
7	P1	-2.955326	0.023714	0.012427
11	P1	-3.943477	0.025645	-0.008341
15	P1	-3.507931	0.029659	-0.004872
19	P1	-3.609308	0.012744	0.004371
22	P1	-5.639192	0.067766	-0.031552
26	P1	-6.532497	0.025075	-0.035469
30	P1	-6.299726	0.044680	0.007921
3	P1	-10.772417	0.048318	-0.046613
7	P1	-10.140516	0.136092	-0.017251
11	P1	-12.497595	0.109293	-0.091652

15	P1	-11.751233	0.055018	-0.022348
19	P1	-15.638211	0.046741	0.028147
22	P1	-24.077913	1.884698	0.061889
26	P1	-14.913292	0.357984	0.266135
30	P1	-20.060612	0.871918	0.128678

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.000151	0.037084	0.076461
7	P2	-22.562765	0.034264	0.109722
11	P2	-10.597383	0.038253	0.195438
15	P2	-5.046813	0.025317	0.033723
19	P2	-6.941171	0.037204	0.047184
22	P2	-7.269642	0.028619	0.084067
26	P2	-23.947544	0.019720	0.032326
30	P2	-21.991140	0.024654	0.058634

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.037230	0.002994	0.019532
7	P3	-8.037135	0.002997	0.019279
11	P3	-8.037153	0.002994	0.019012
15	P3	-8.037278	0.002988	0.019152
19	P3	-8.037115	0.003001	0.019105
22	P3	-8.037251	0.002989	0.019478
26	P3	-8.037189	0.002992	0.019388
30	P3	-8.037127	0.002985	0.019113

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	0.000466576
	stdev	2.22074e-07
MEAN Q	mean	0.000541527
	stdev	2.34666e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128276
	stdev	0.000962273
STDEV Q	mean	0.128509
	stdev	0.000972692

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005011[345]
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_IMM_1PNPDE20050113_172400_000000522033_00442_15025_9893.N1	1	0
ASA_GM1_1PNPDK20050114_185920_000003382033_00457_15040_9468.N1	0	19

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

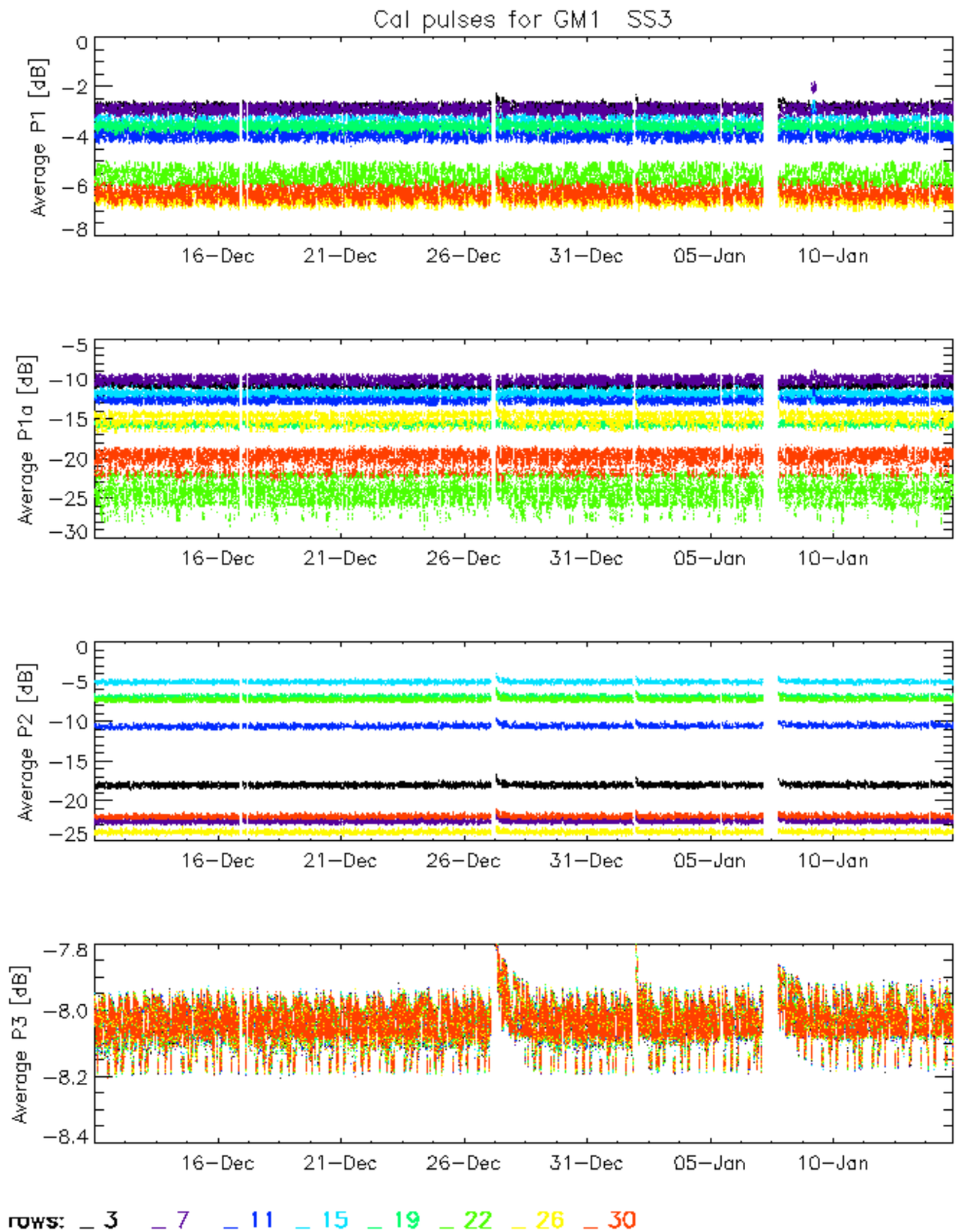
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

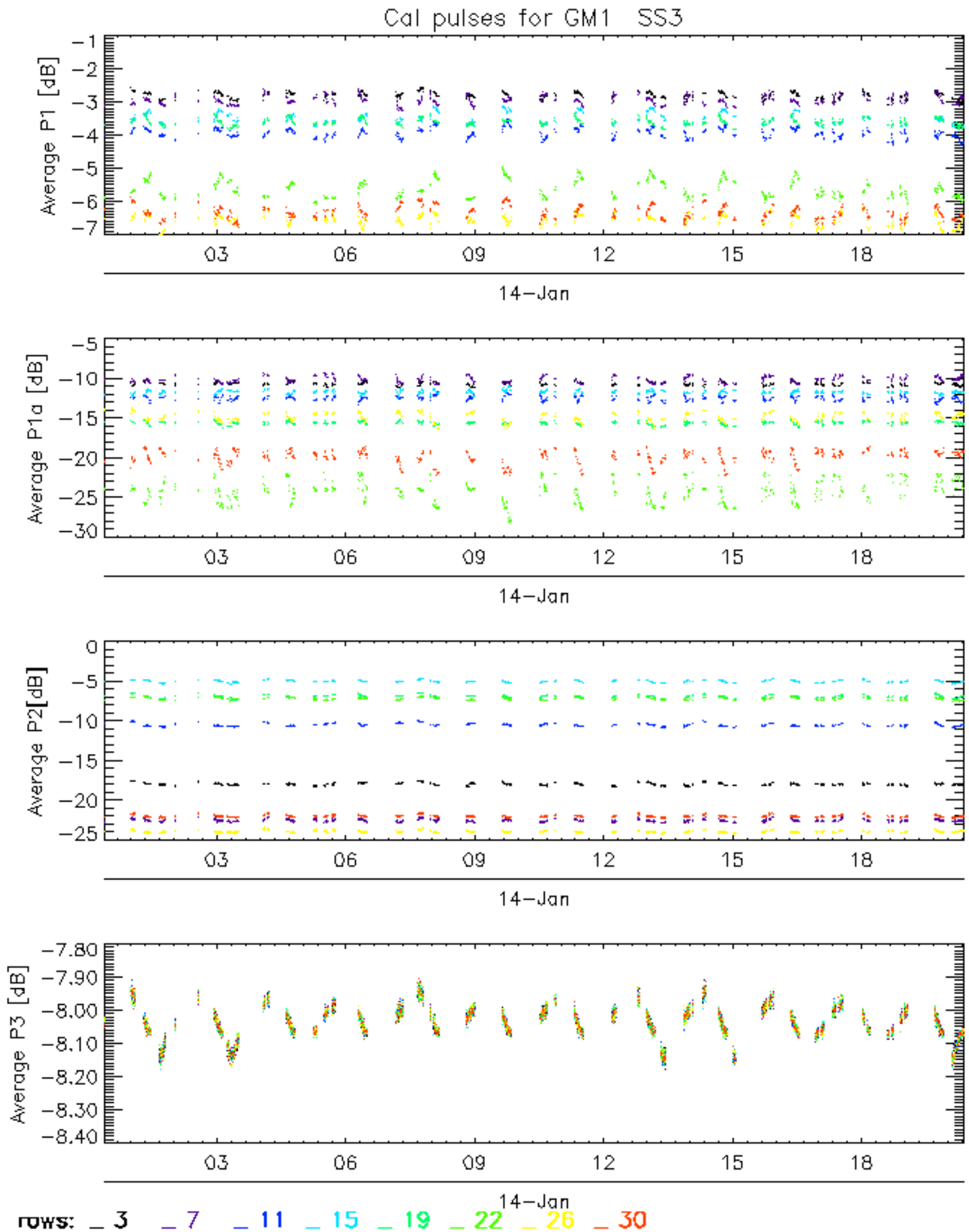
7.5 - Absolute Doppler for GM1

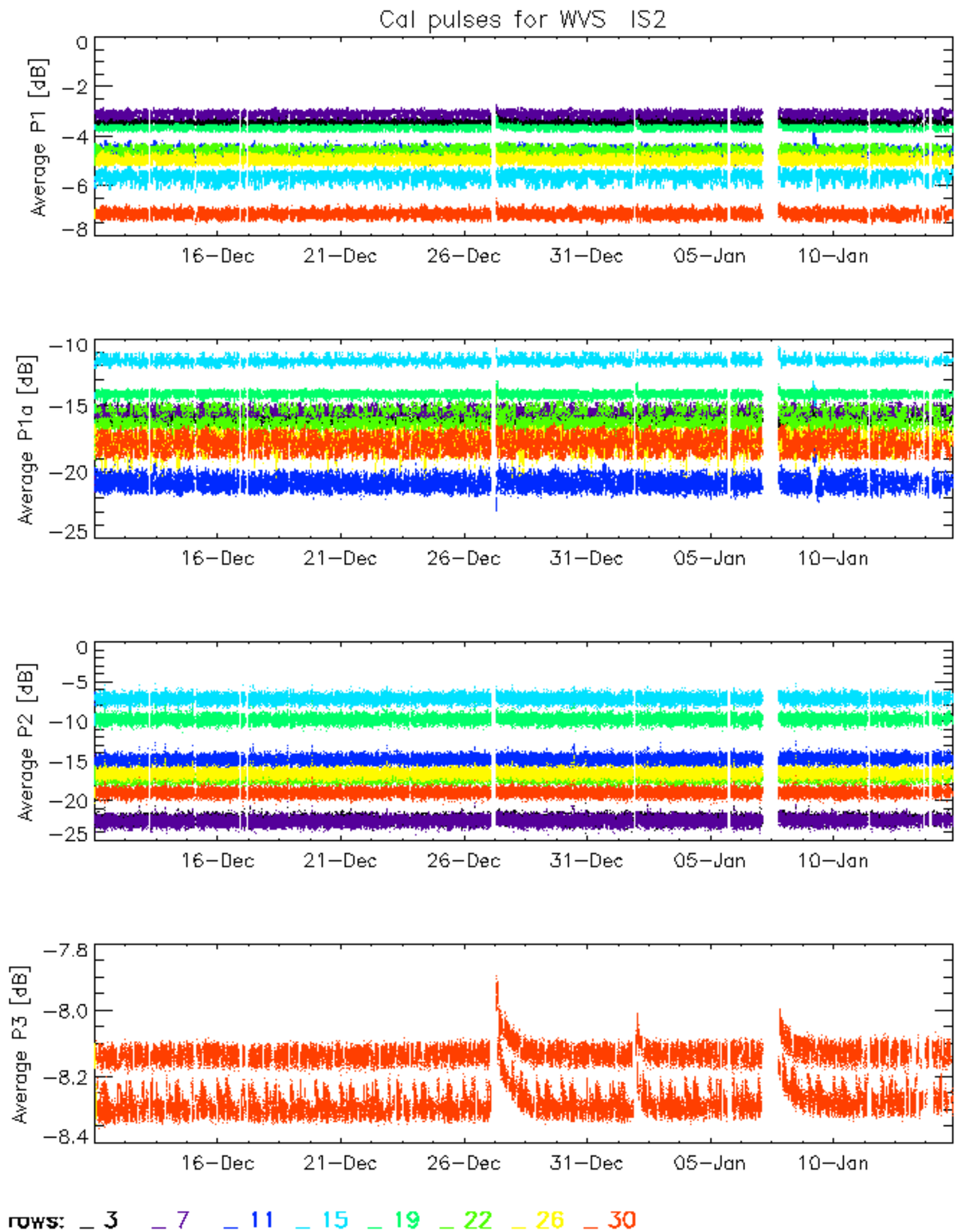
Evolution of Absolute Doppler
Acsending
Descending

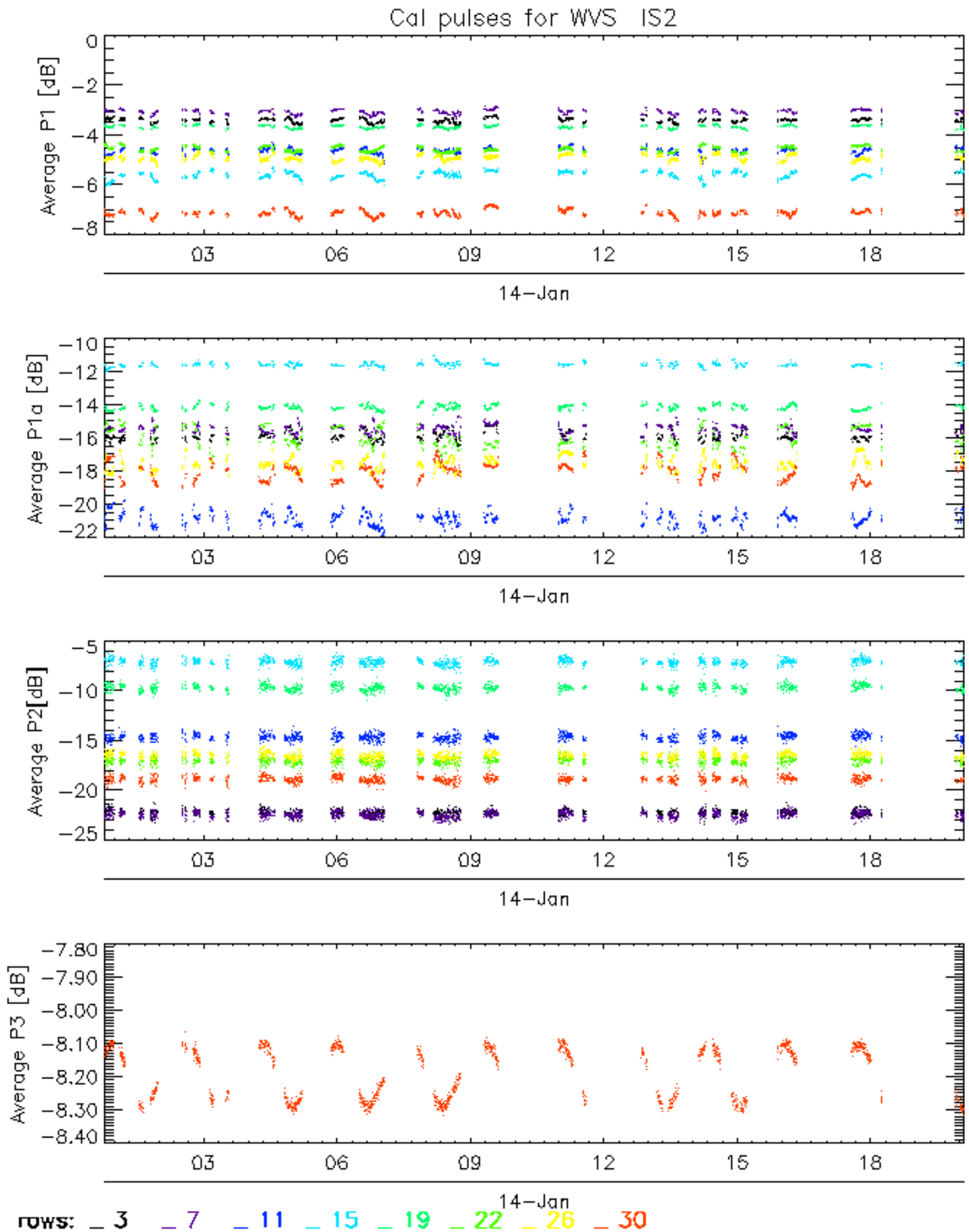
7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

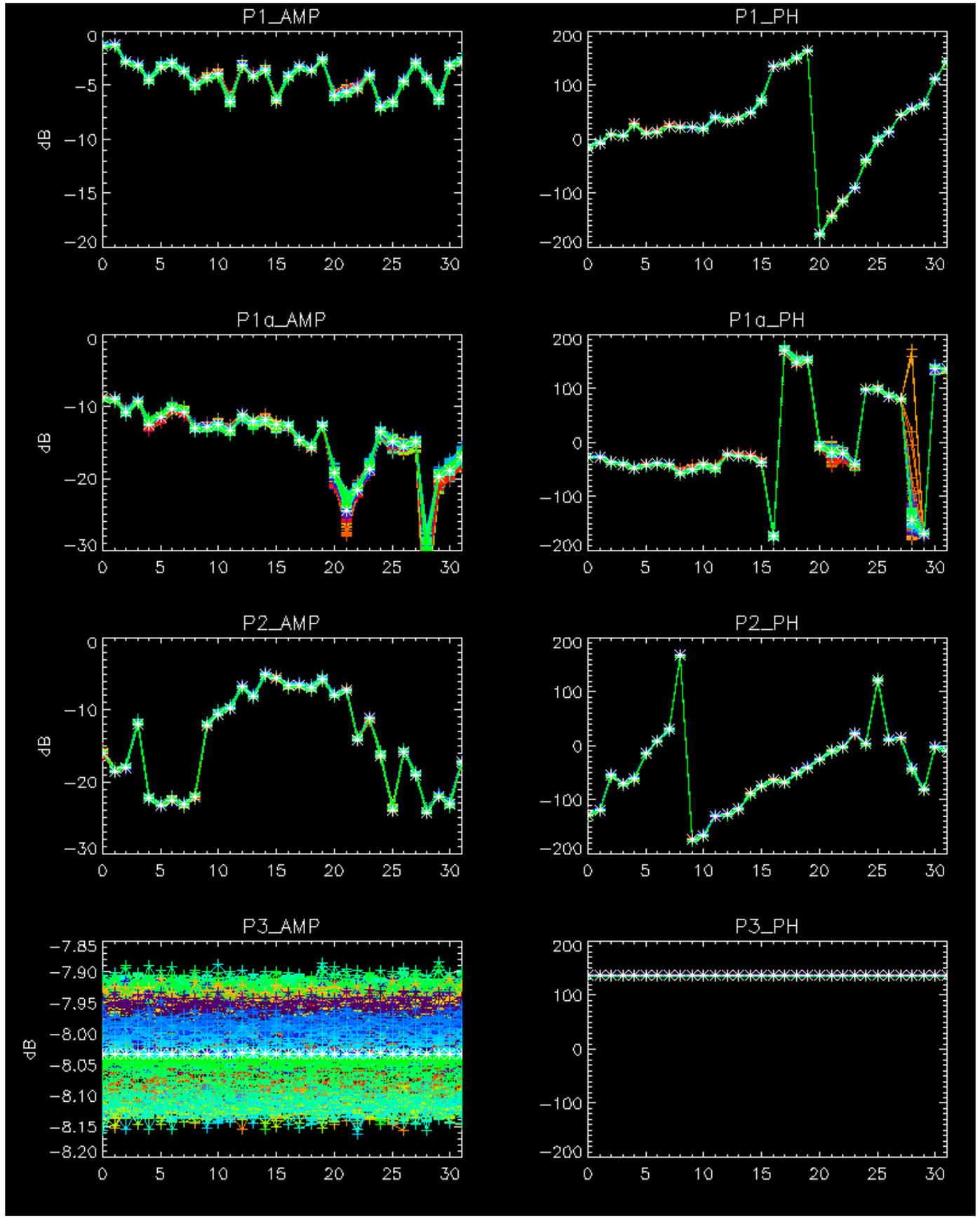

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

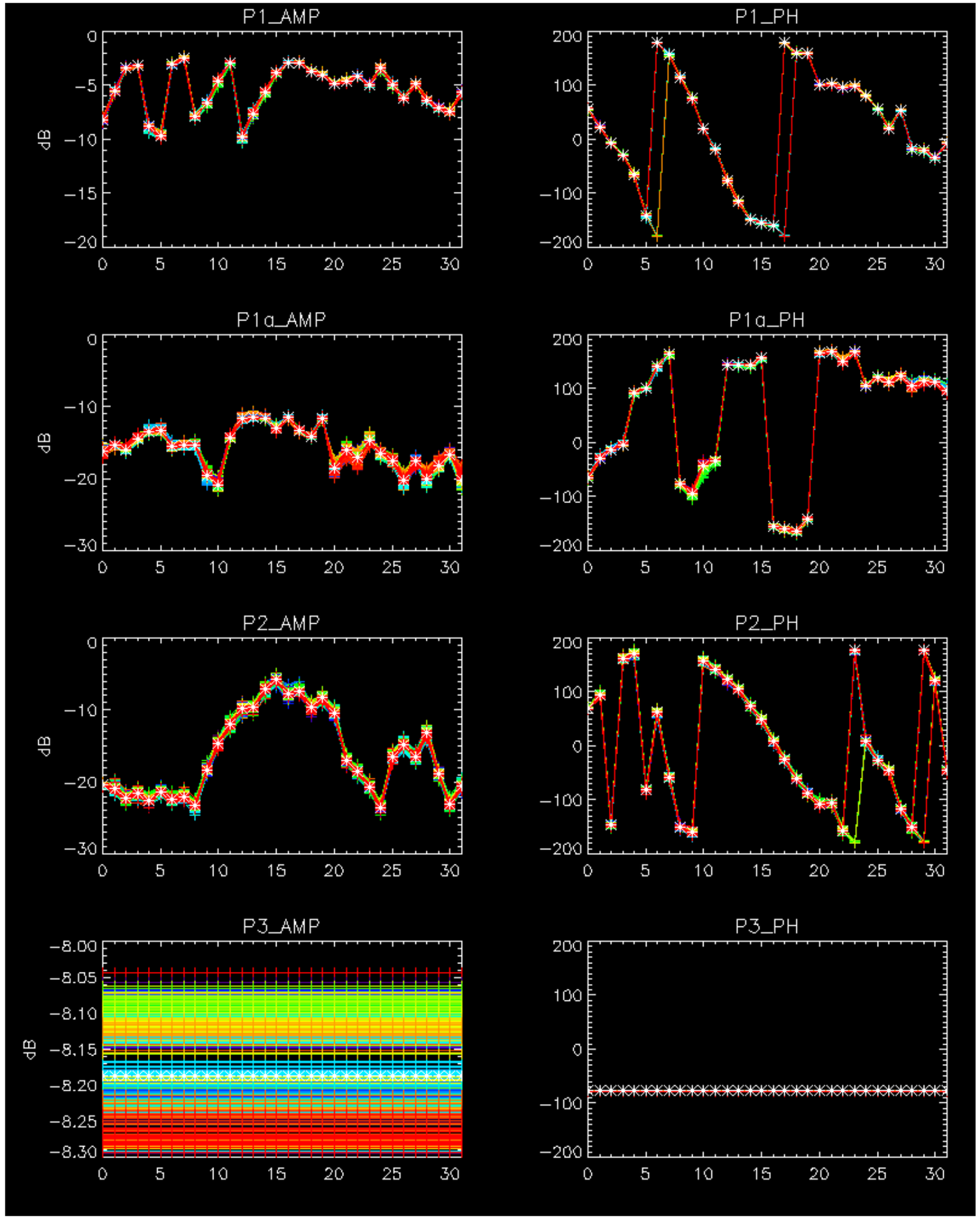

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
03
06
09
12
15
18
14-Jan
rows: 3 7 11 15 19 22 26 30


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

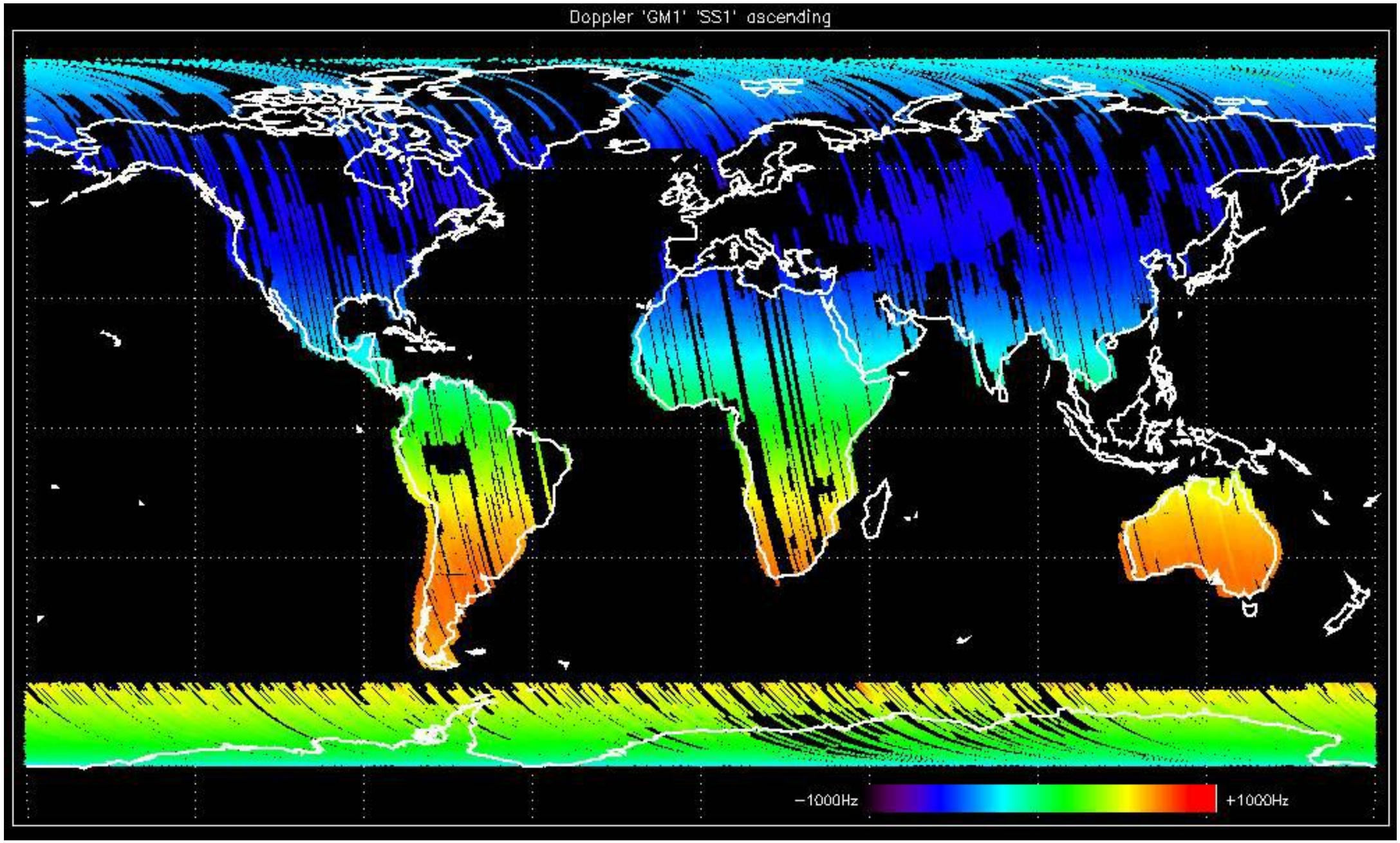

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
14−Jan
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
03
06
09
12
15
18
14−Jan
Average P2[dB]
−5
−10
−15
−20
−25
03
06
09
12
15
18
14−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
14−Jan
rows: 3 7 11 15 19 22 26 30

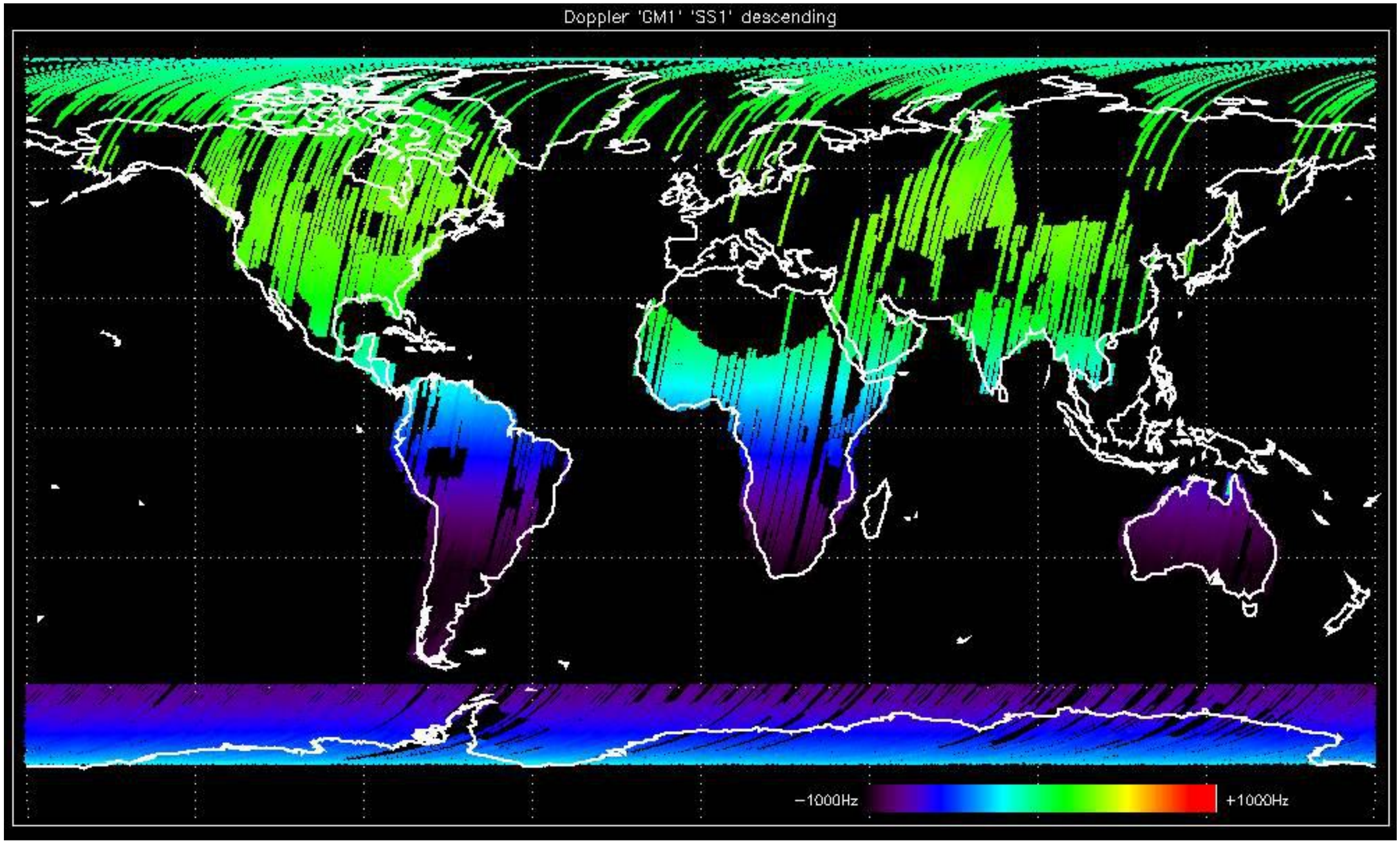
No anomalies observed.

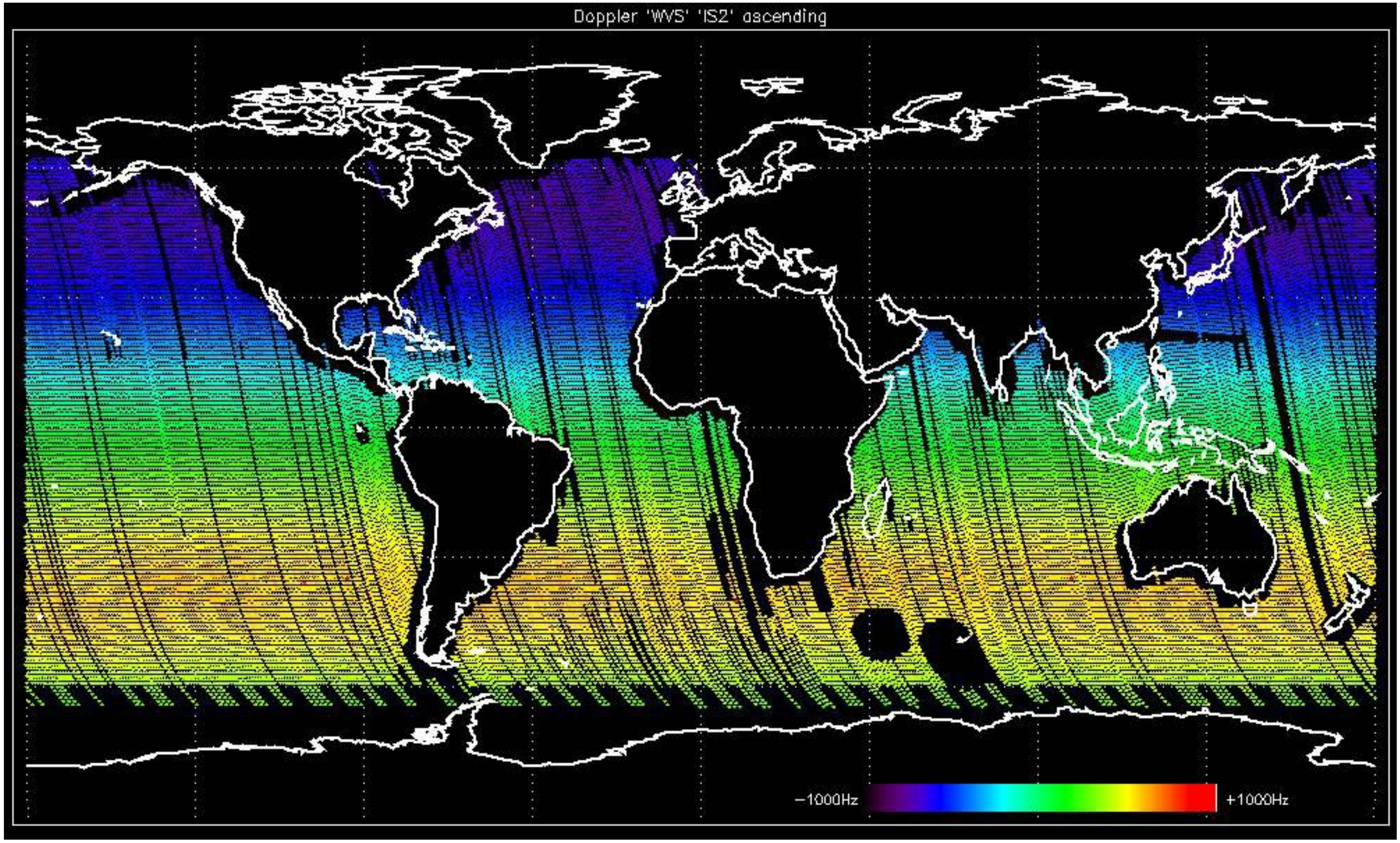

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

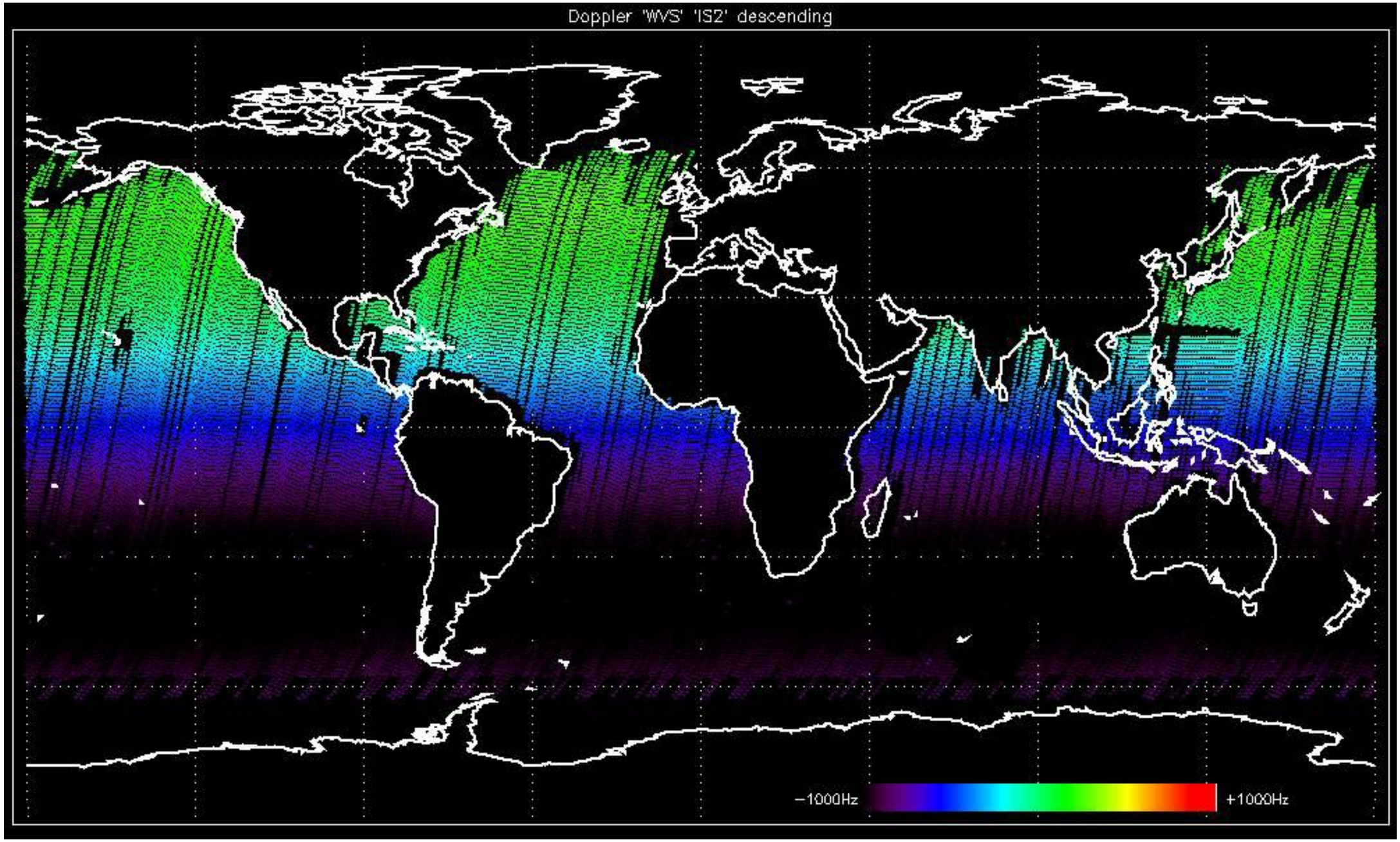

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

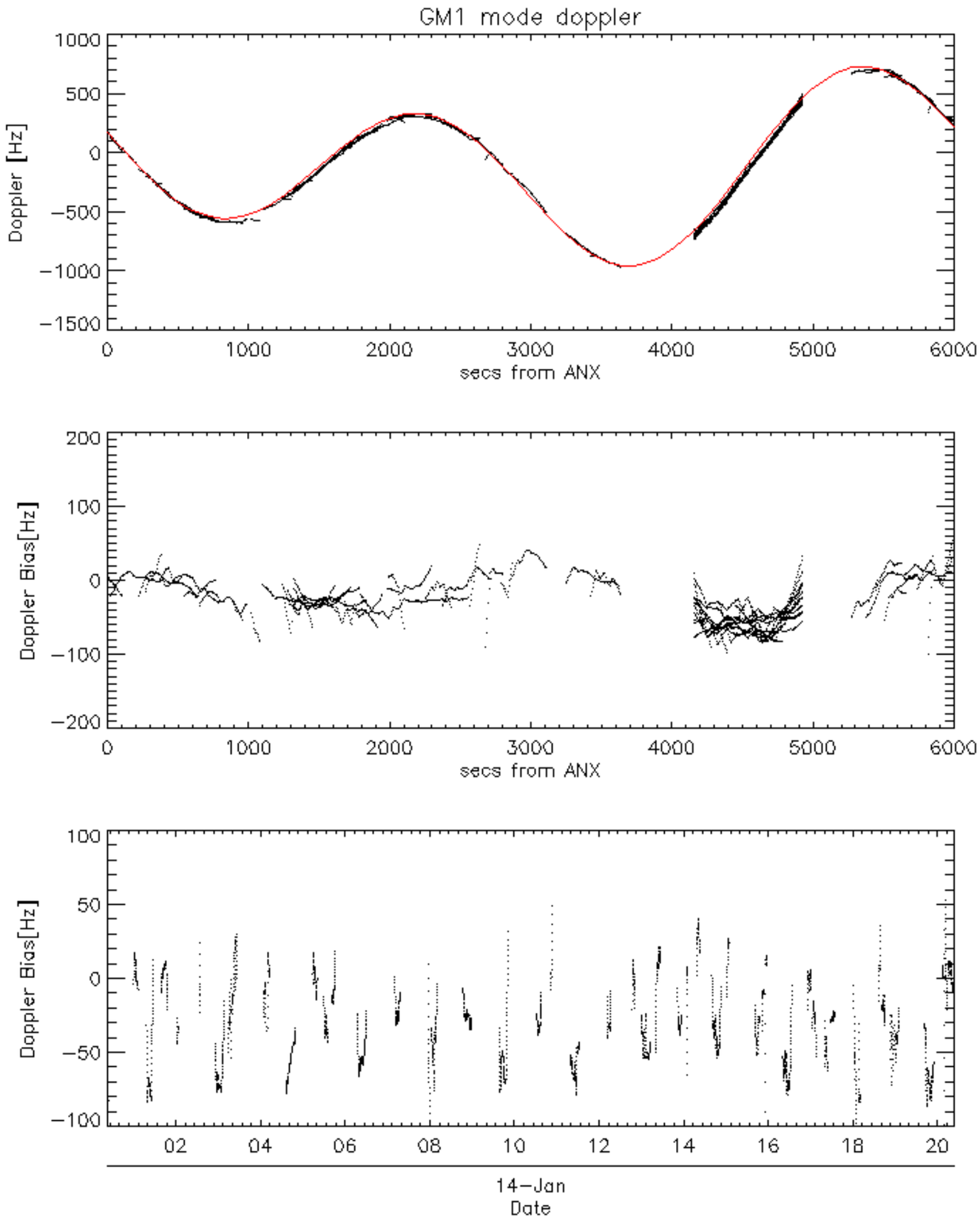
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

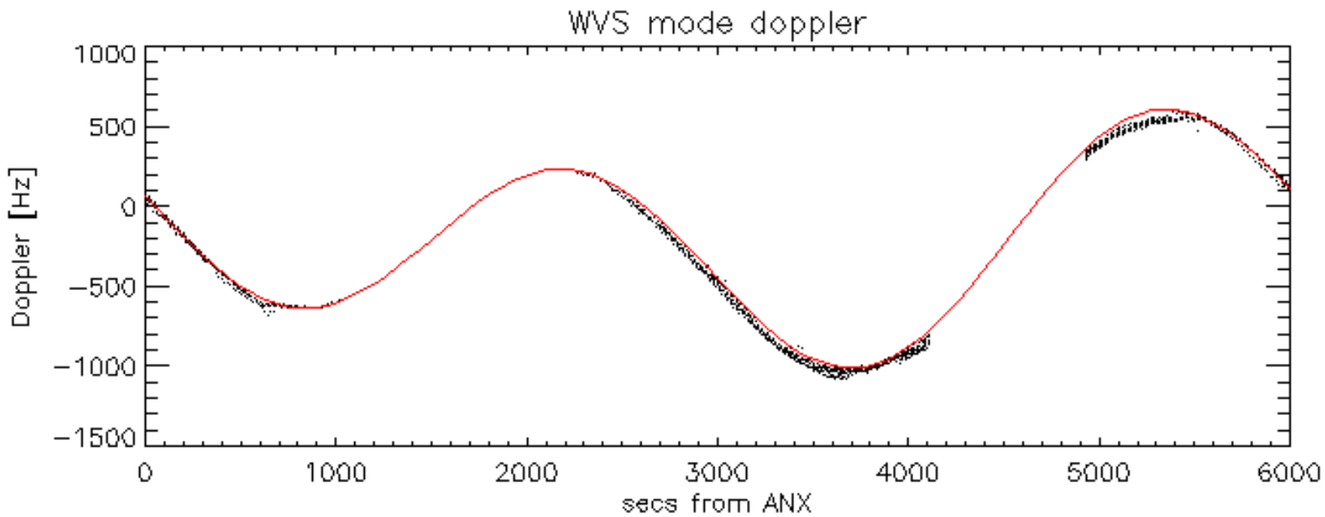

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

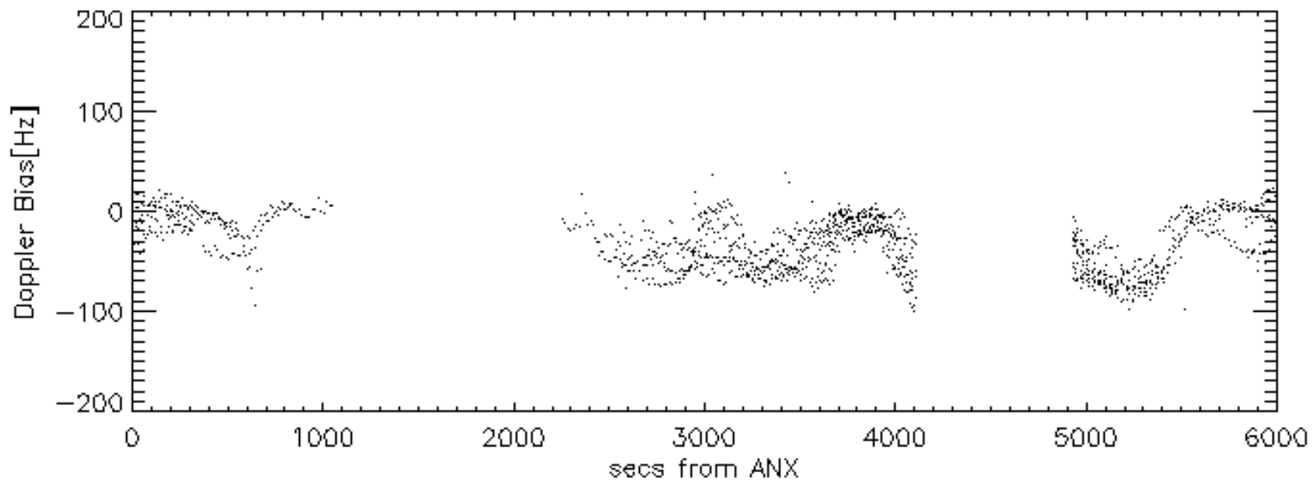

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

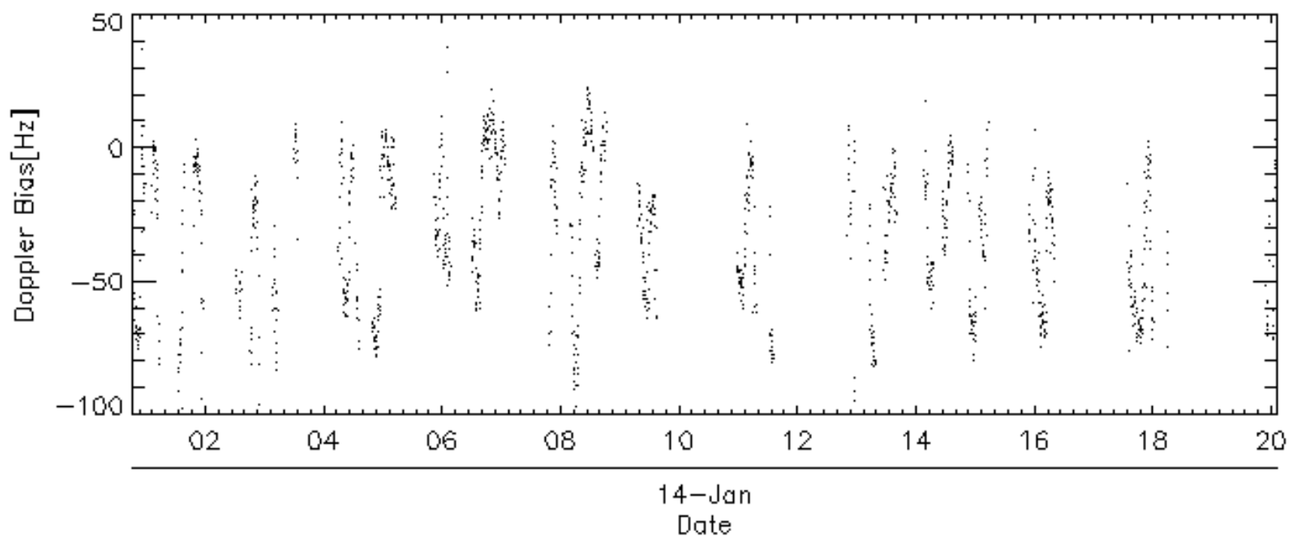

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

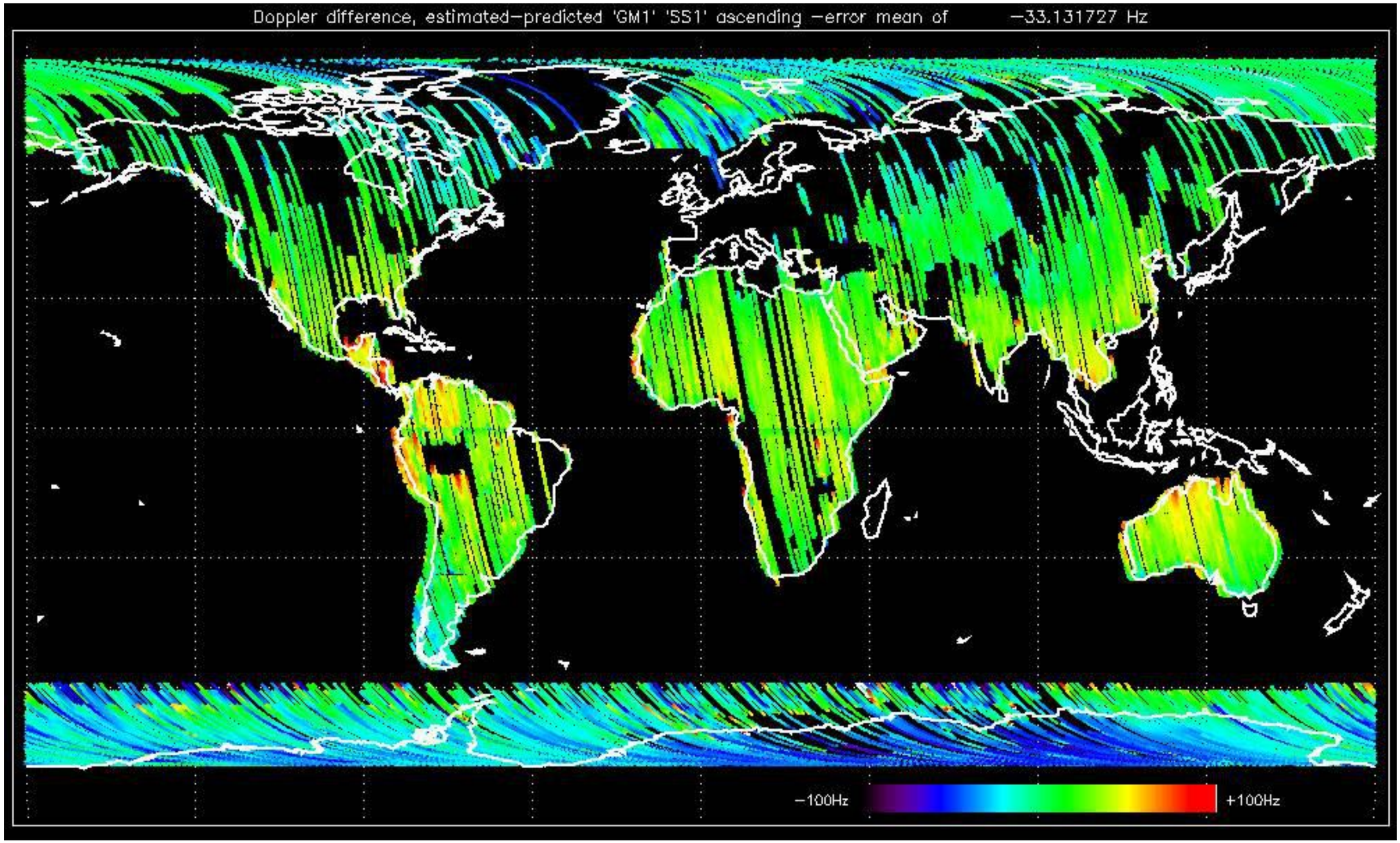

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

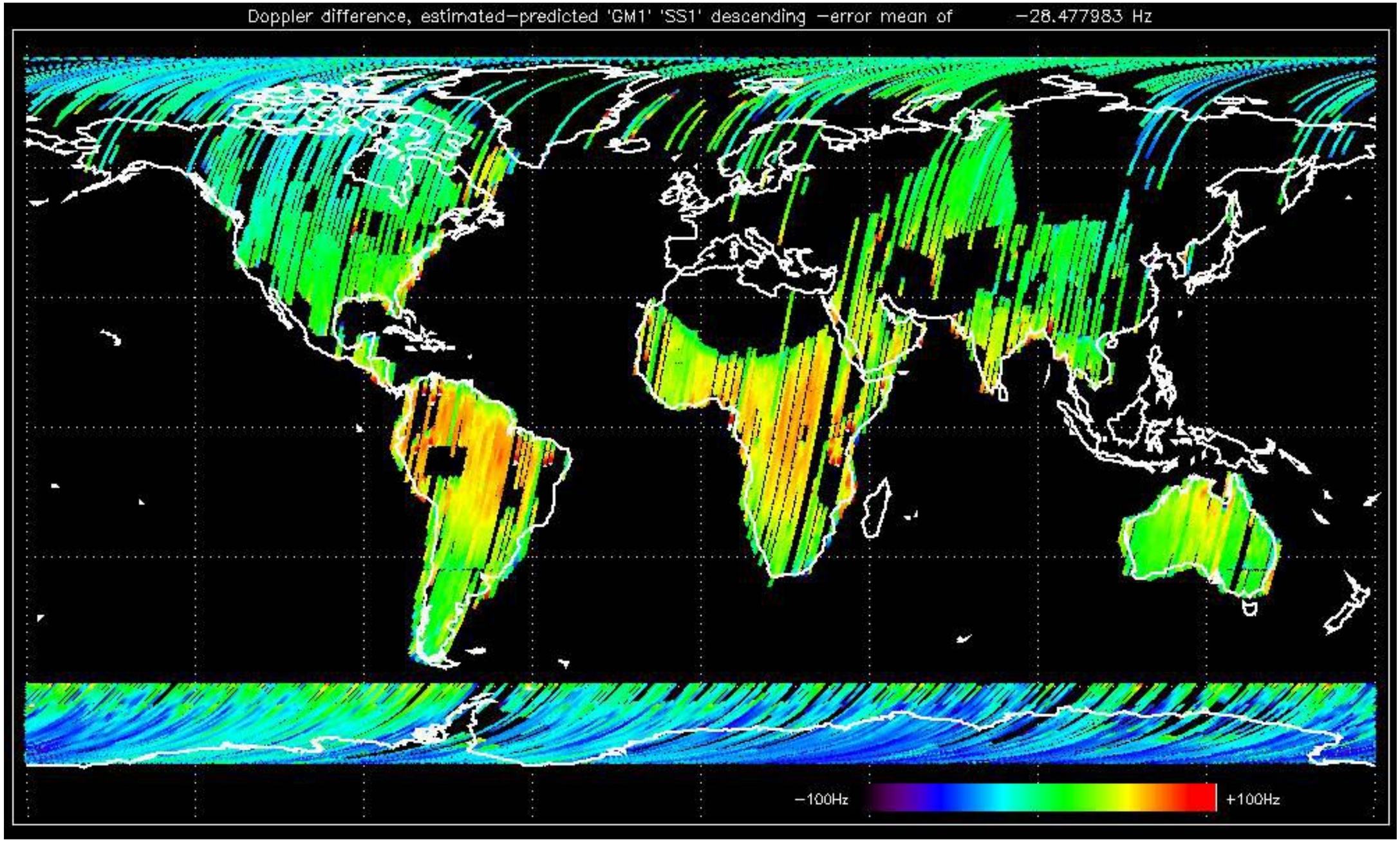

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
14−Jan
Date

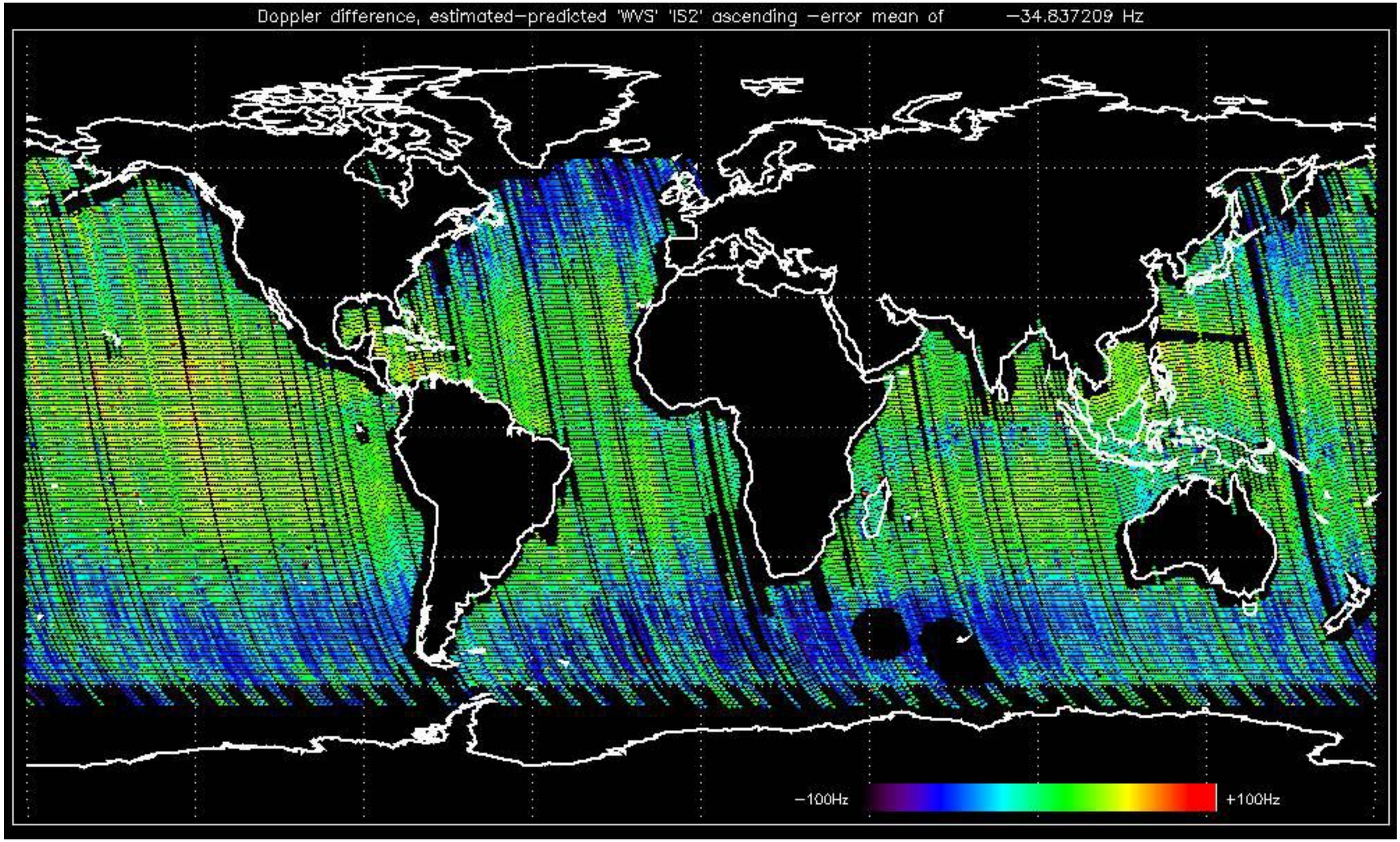

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

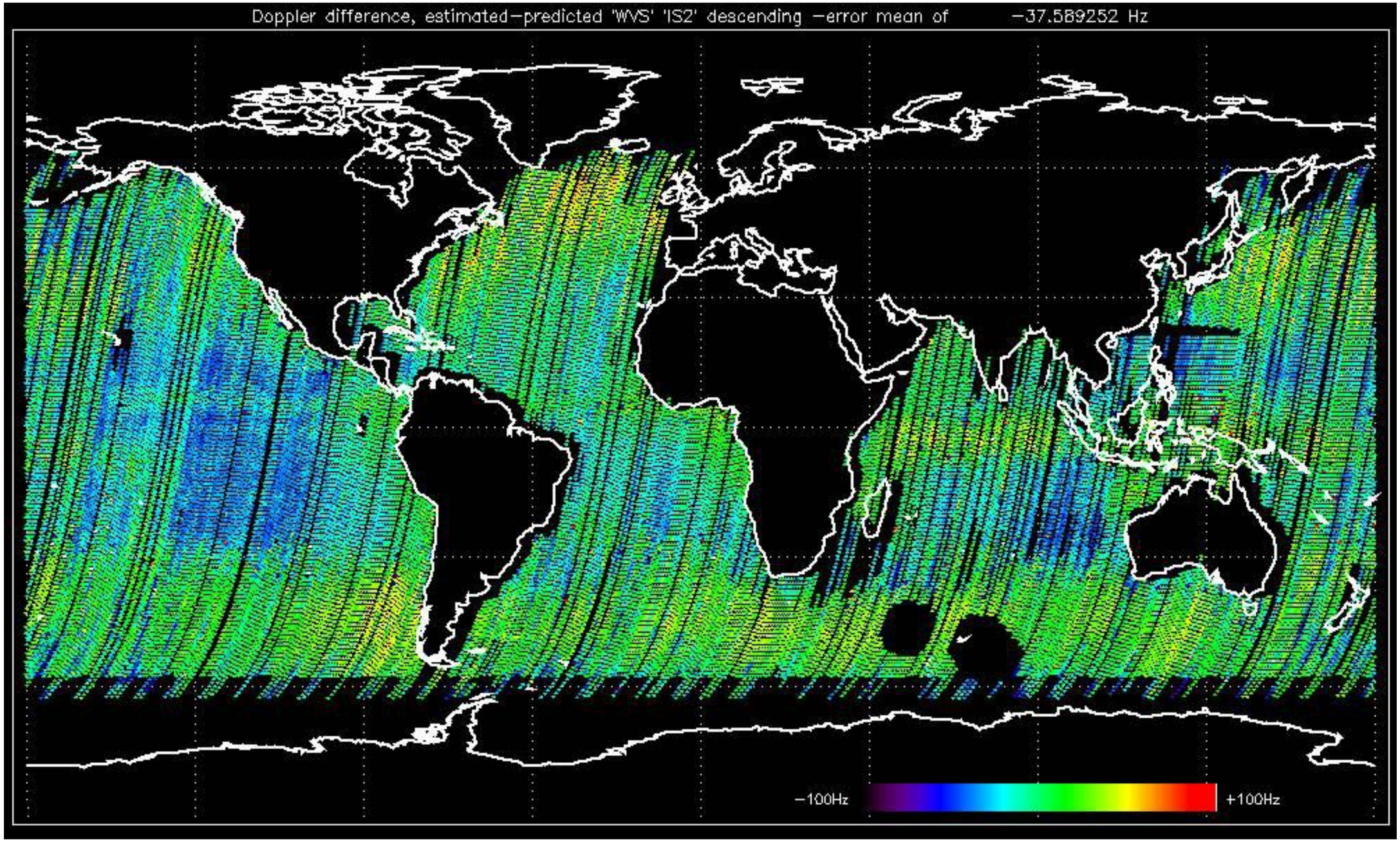

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.131727 Hz
−100Hz
+100Hz

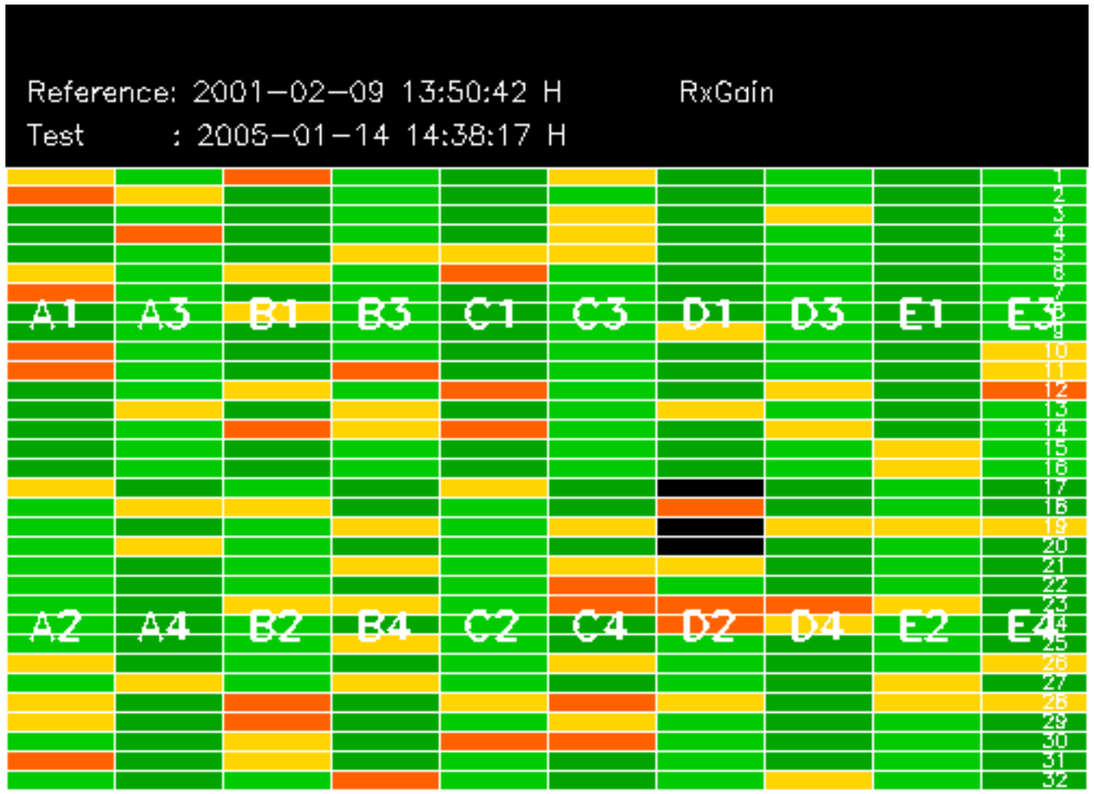

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.477983 Hz
-100Hz
+100Hz

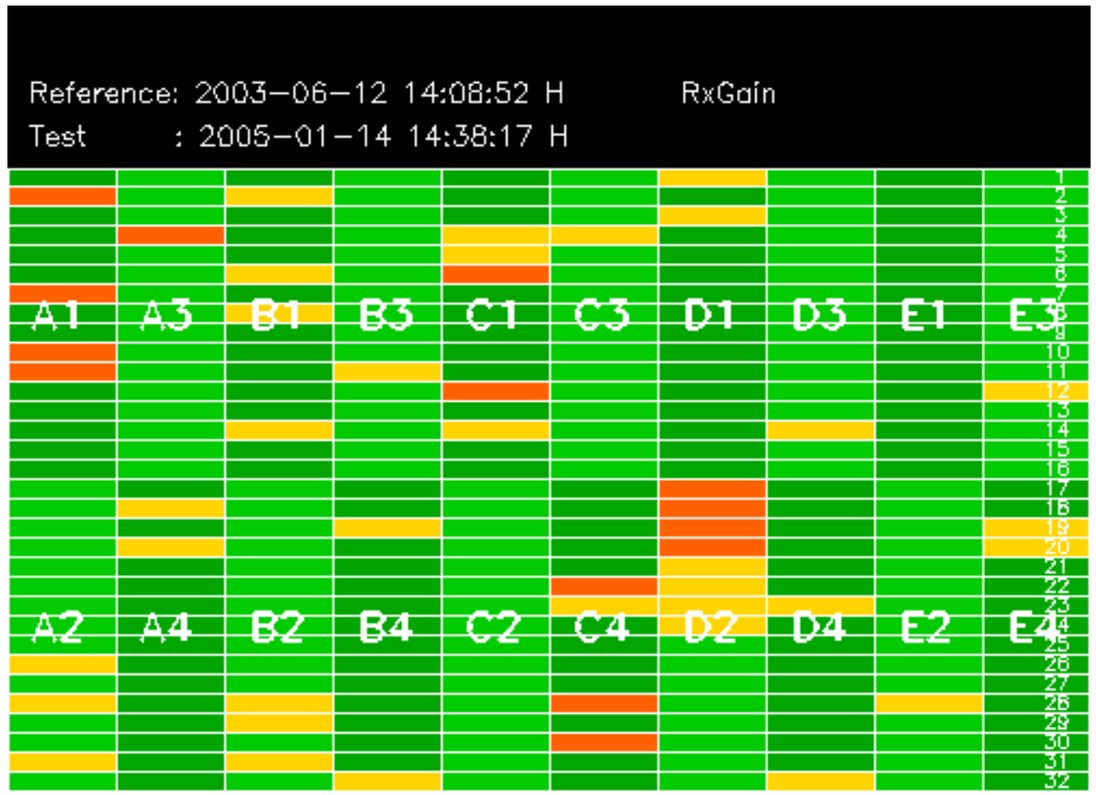

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.837209 Hz
−100Hz
+100Hz

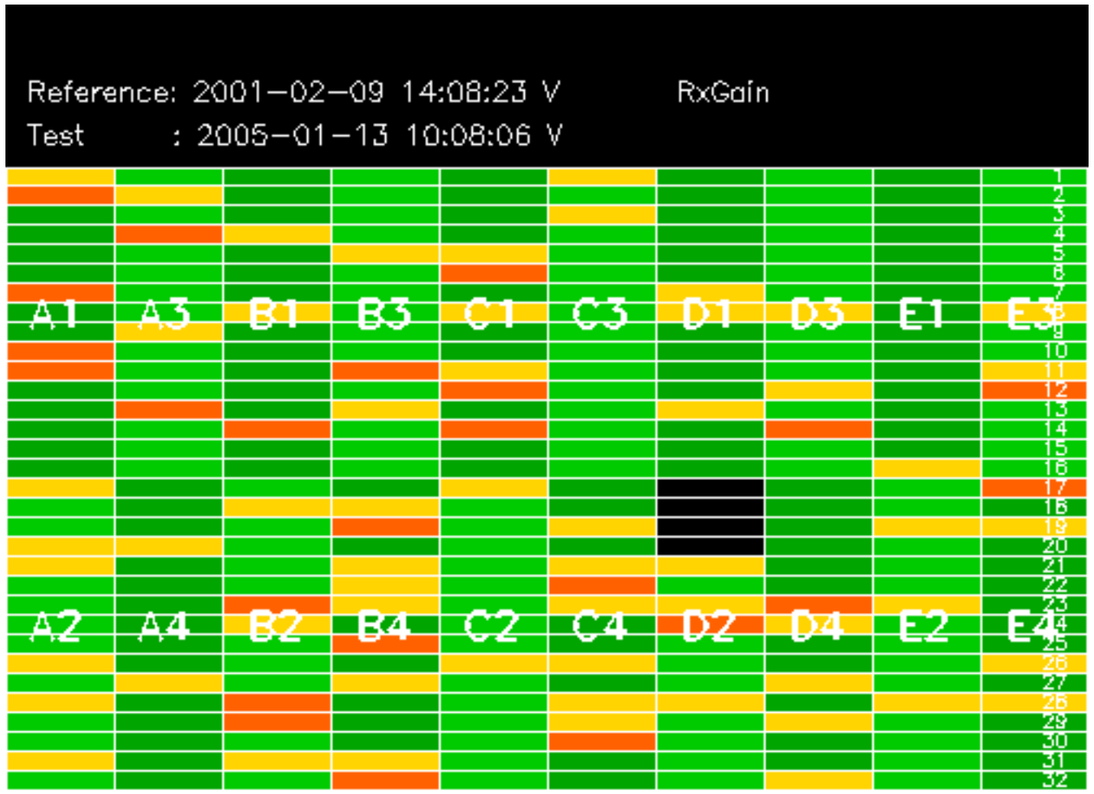

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.589252 Hz
−100Hz
+100Hz

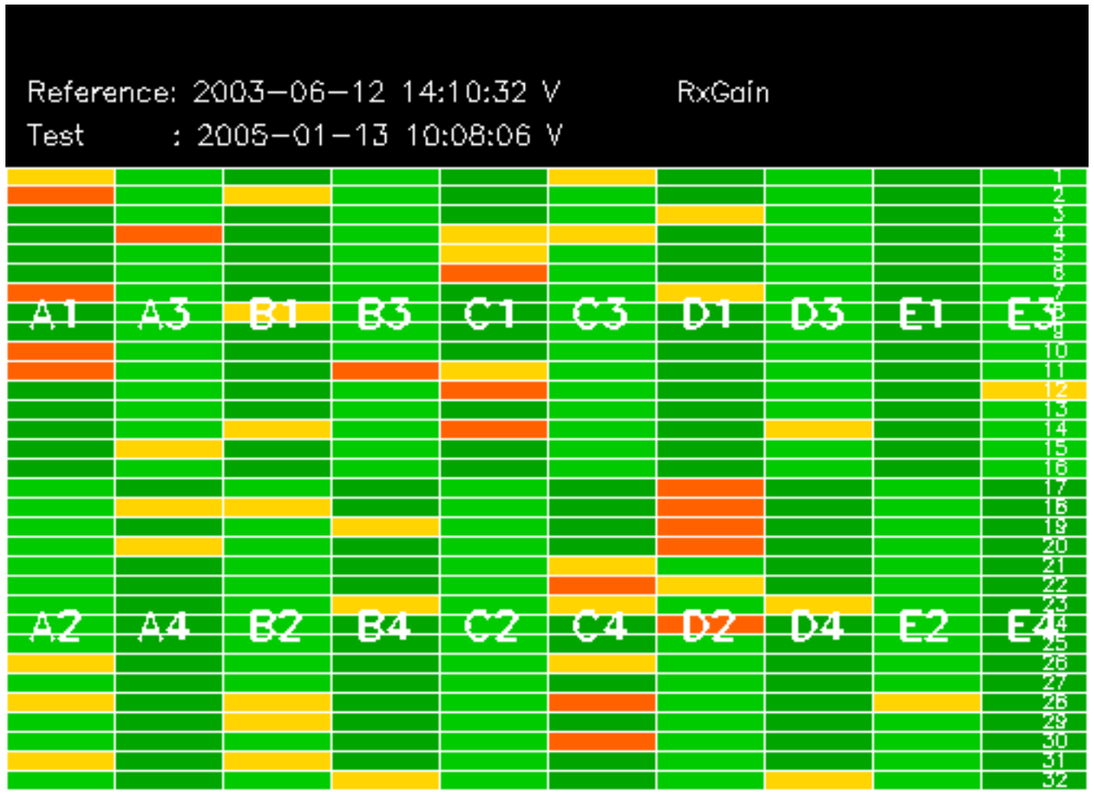
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

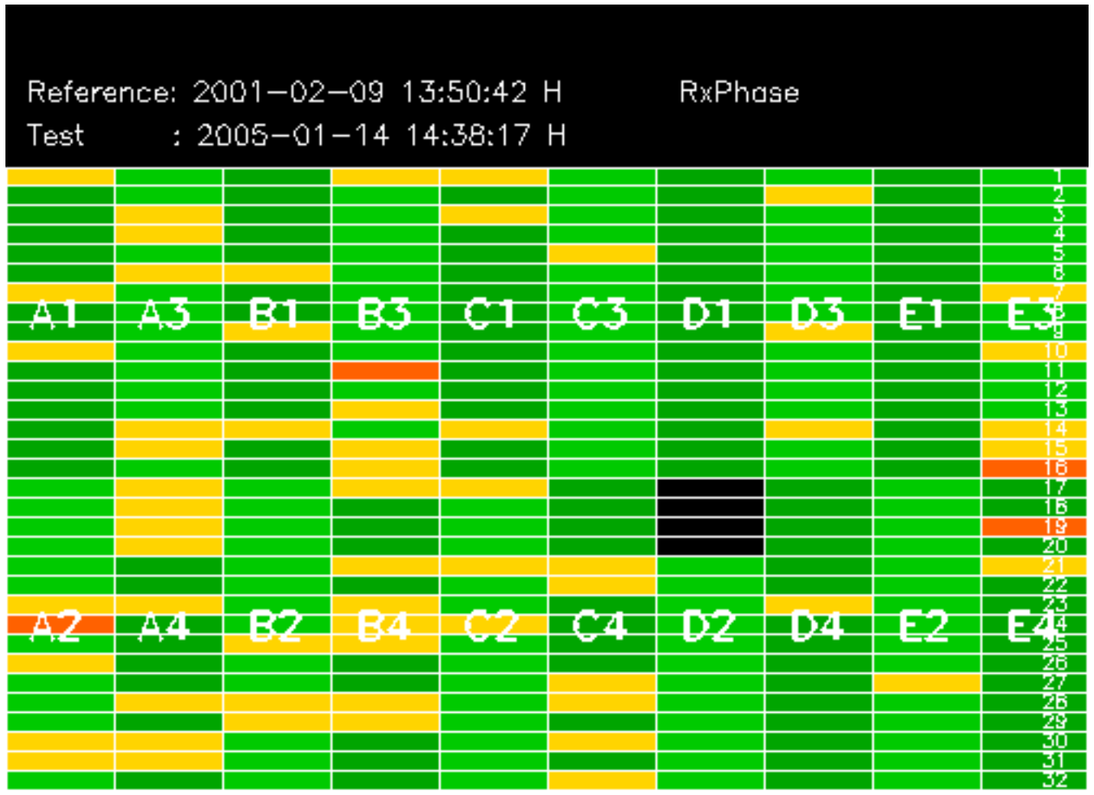
No anomalies observed.

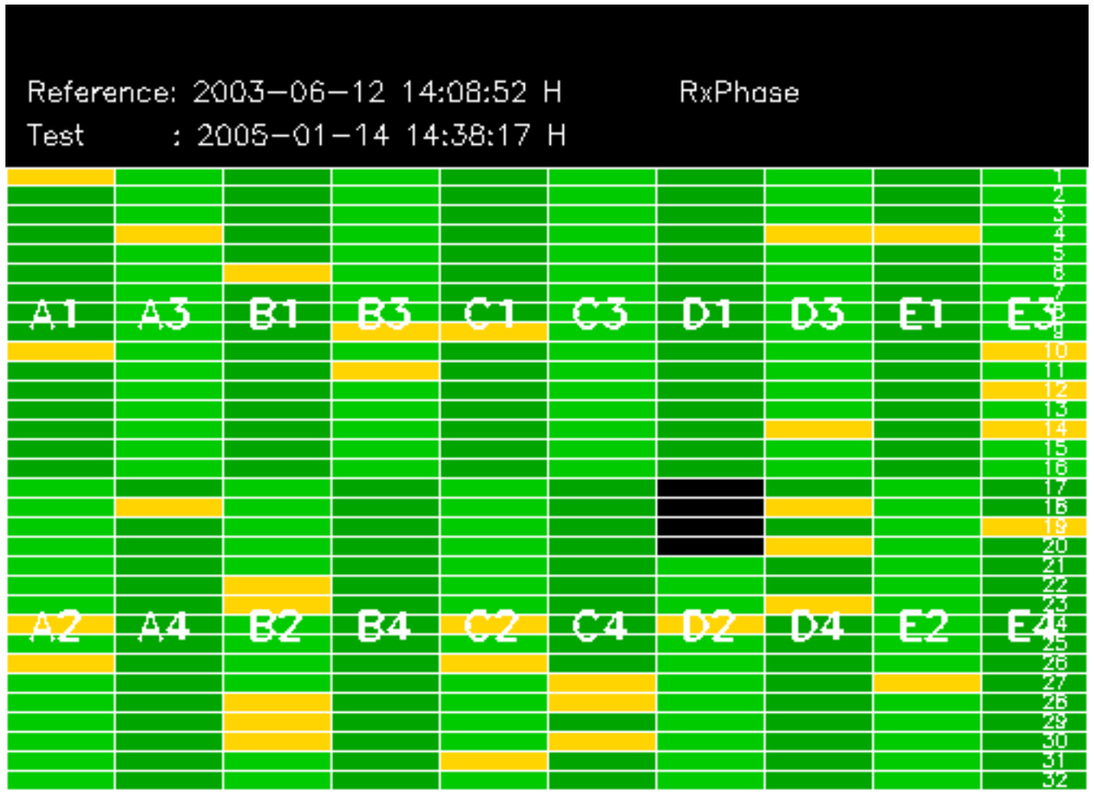

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

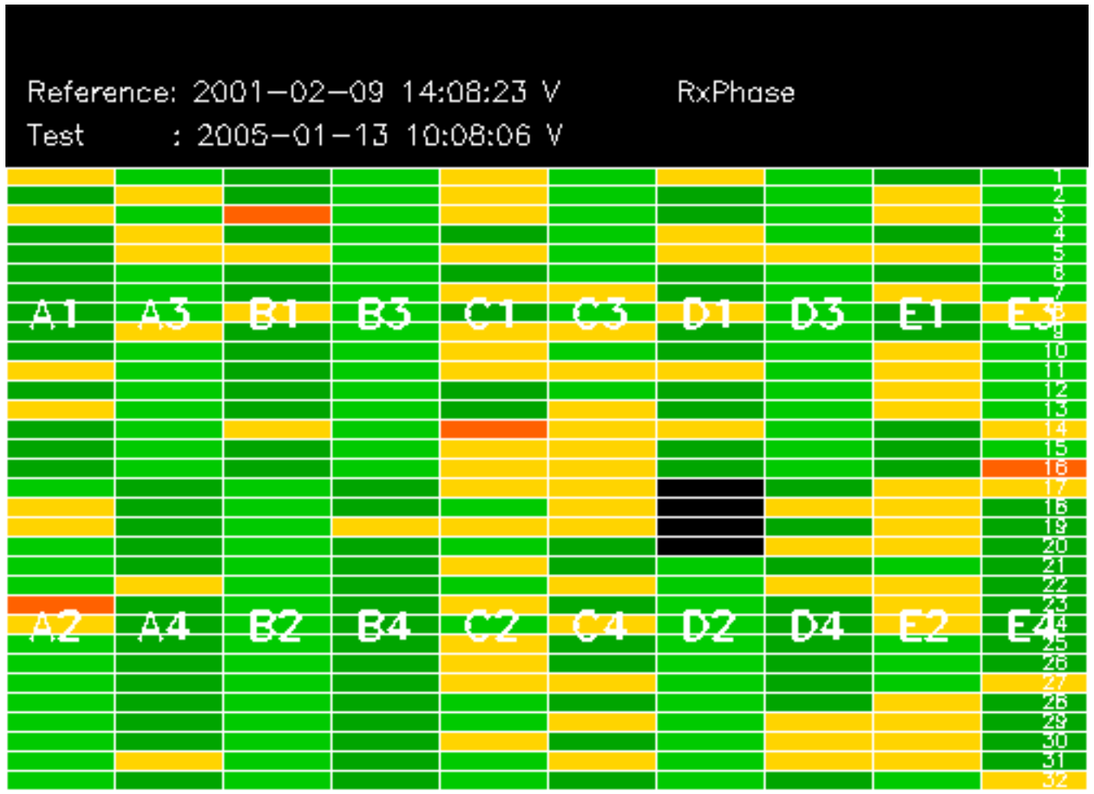

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

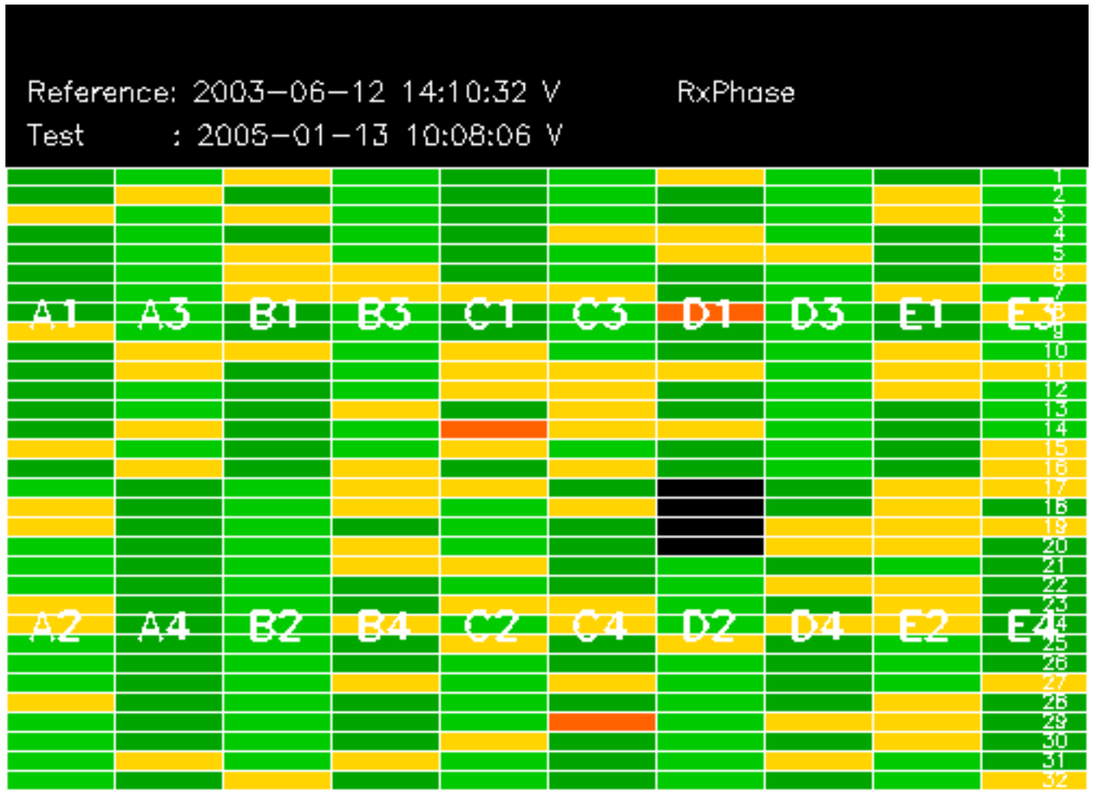

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

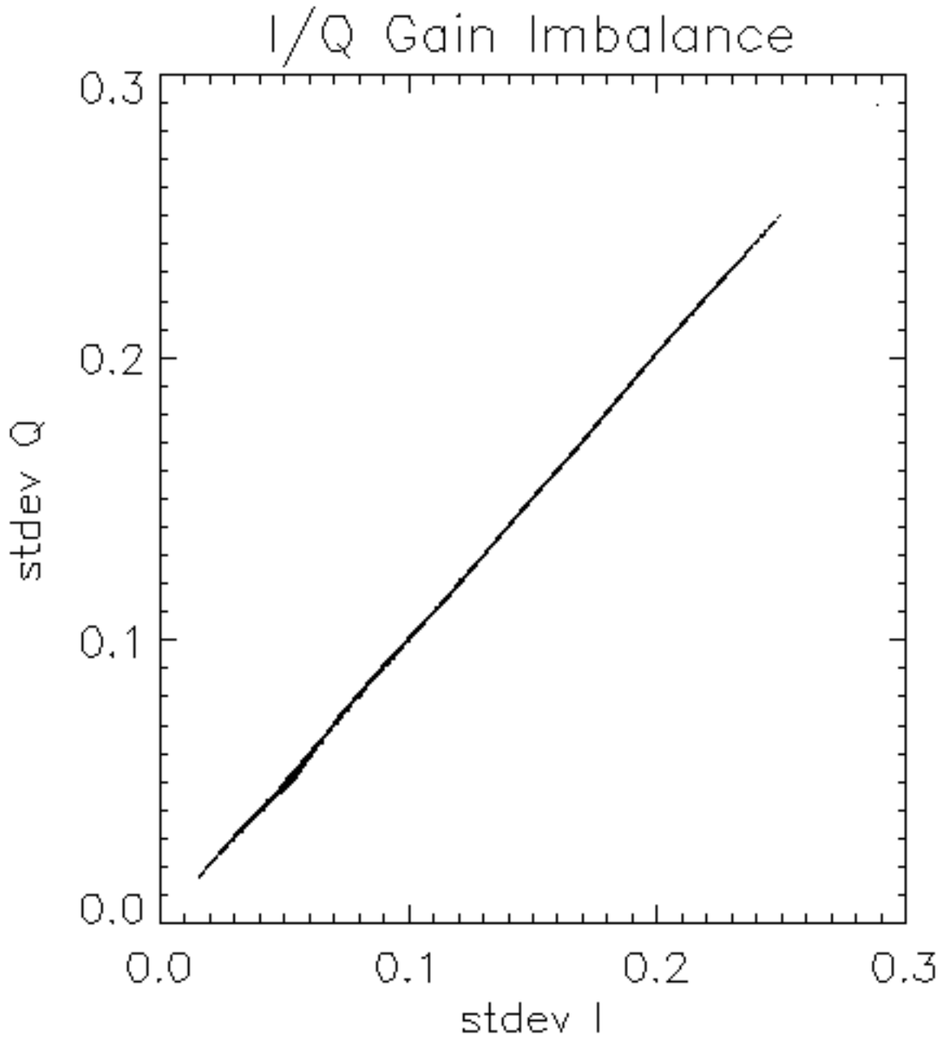

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

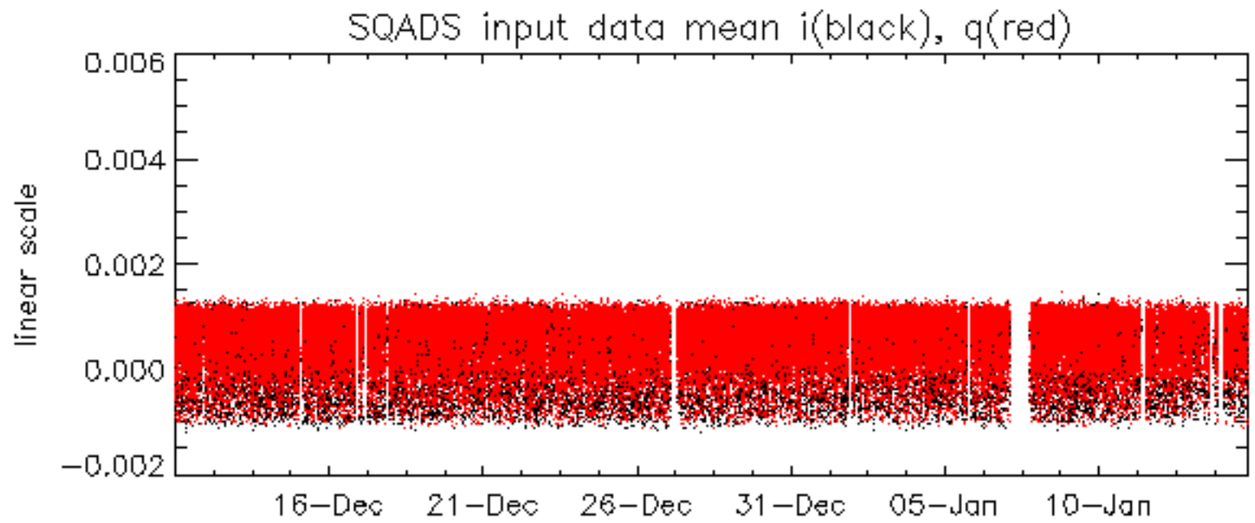

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

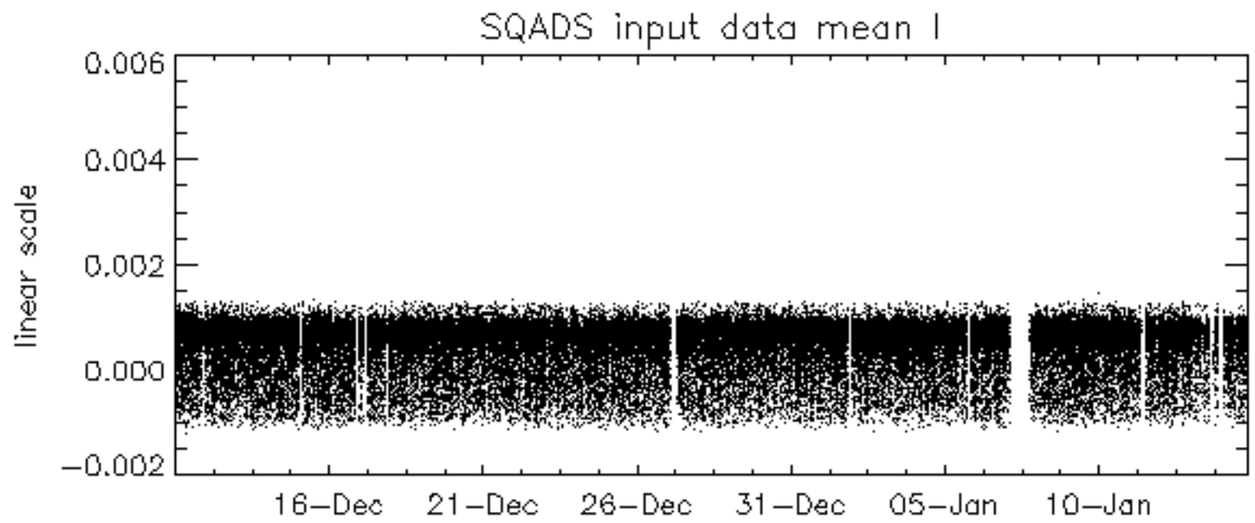

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

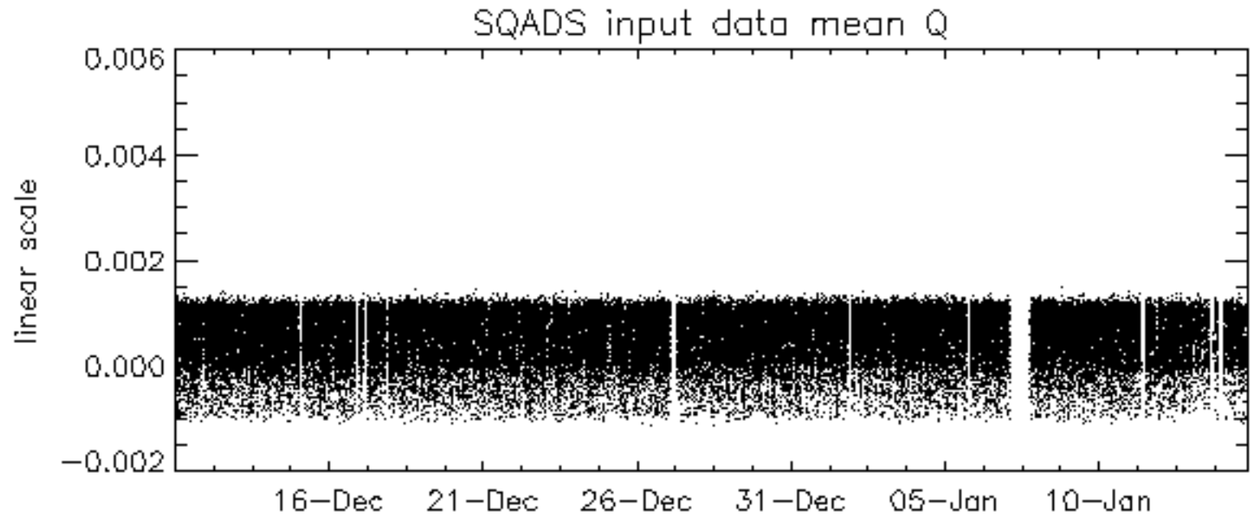

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

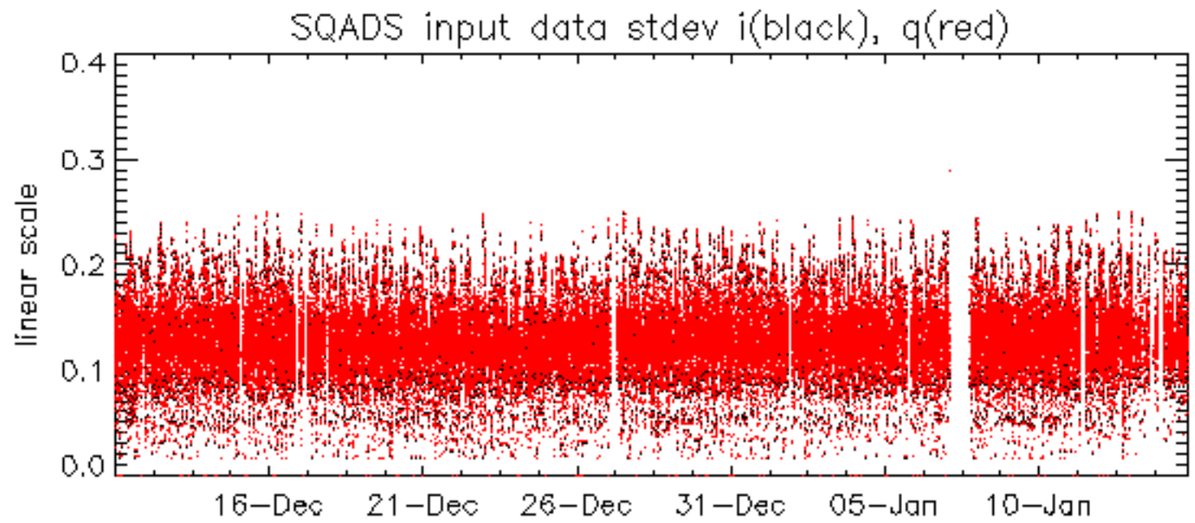

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

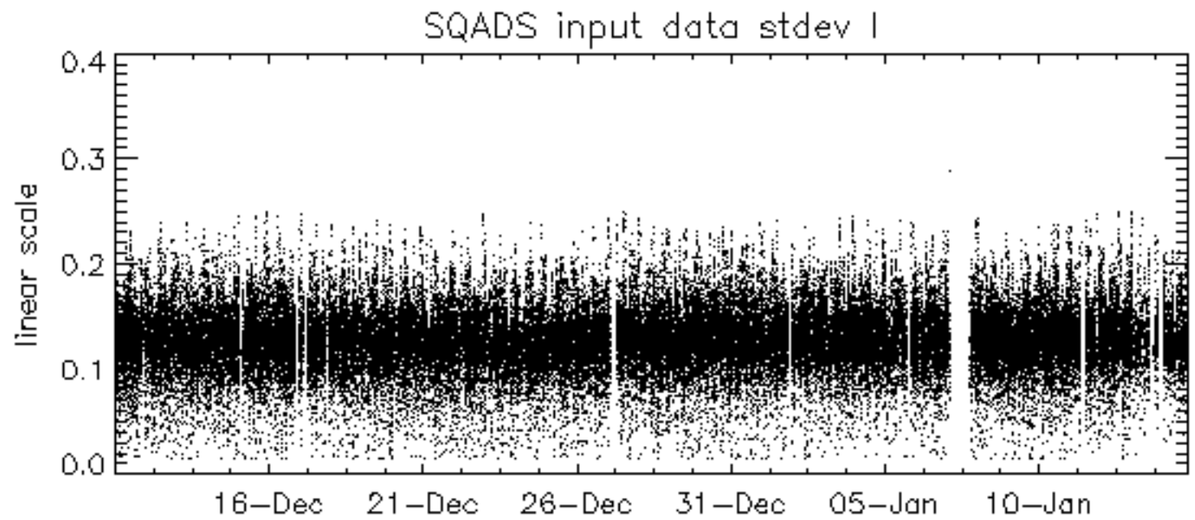

I/Q Gain Imbalance
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
stdev I

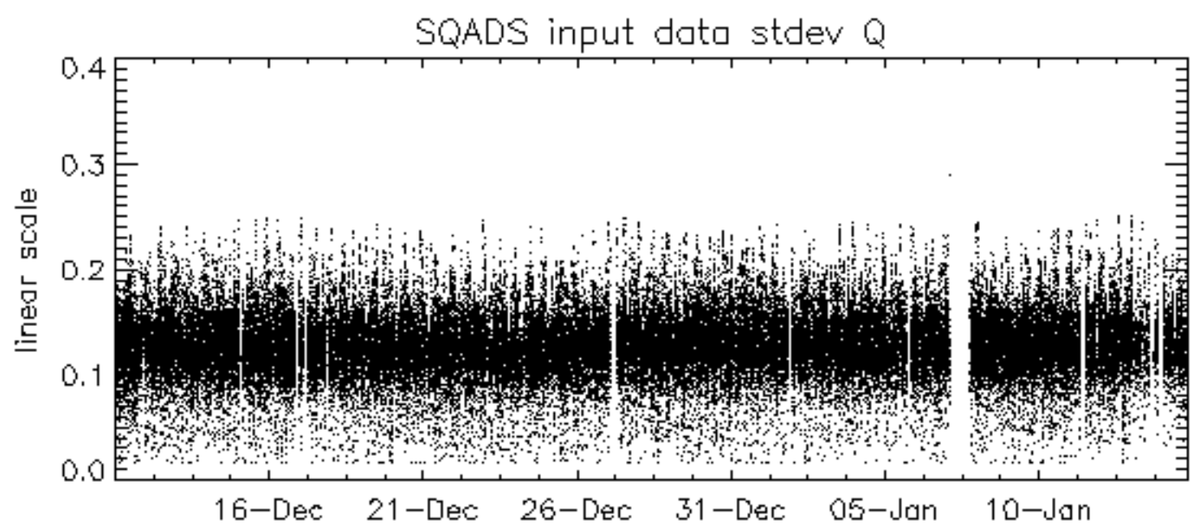

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan

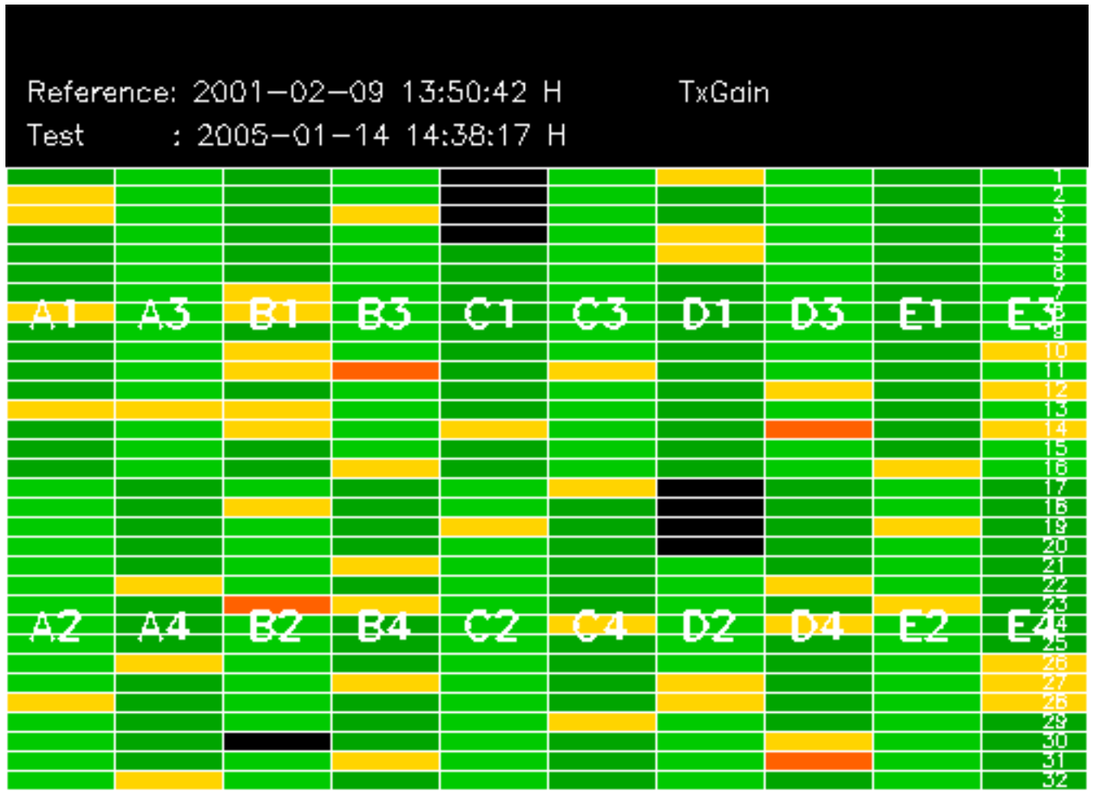

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan

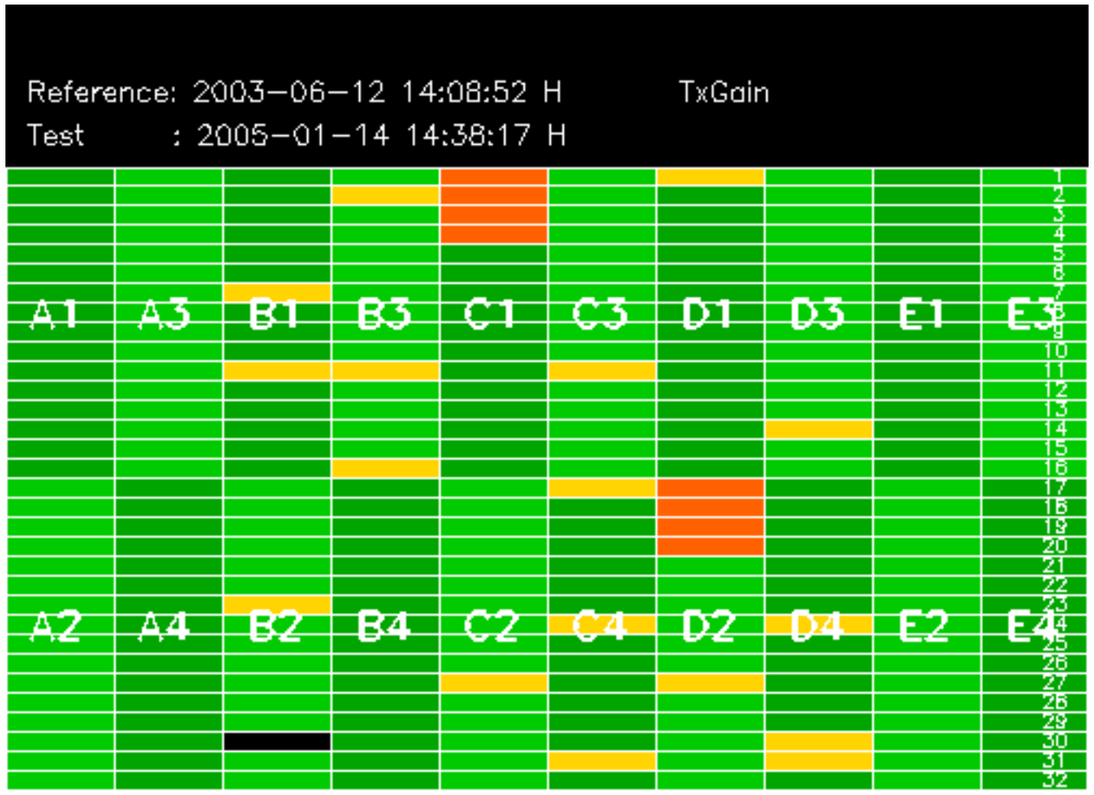

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan

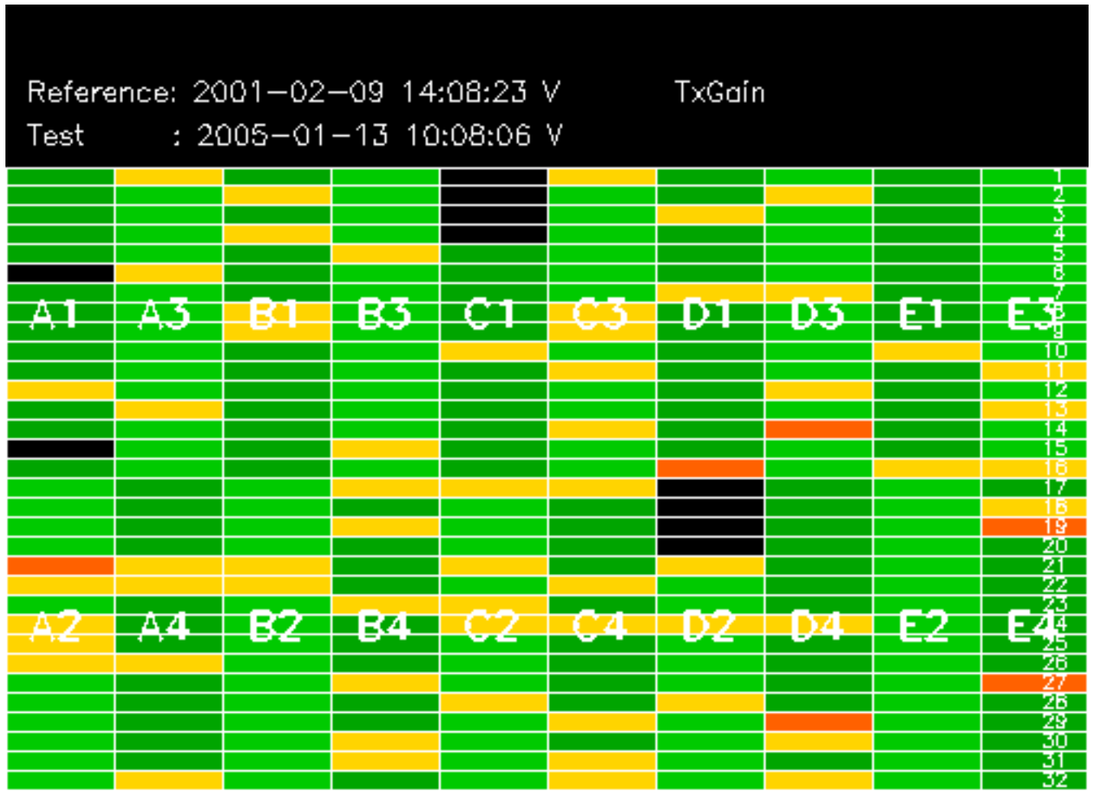

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan

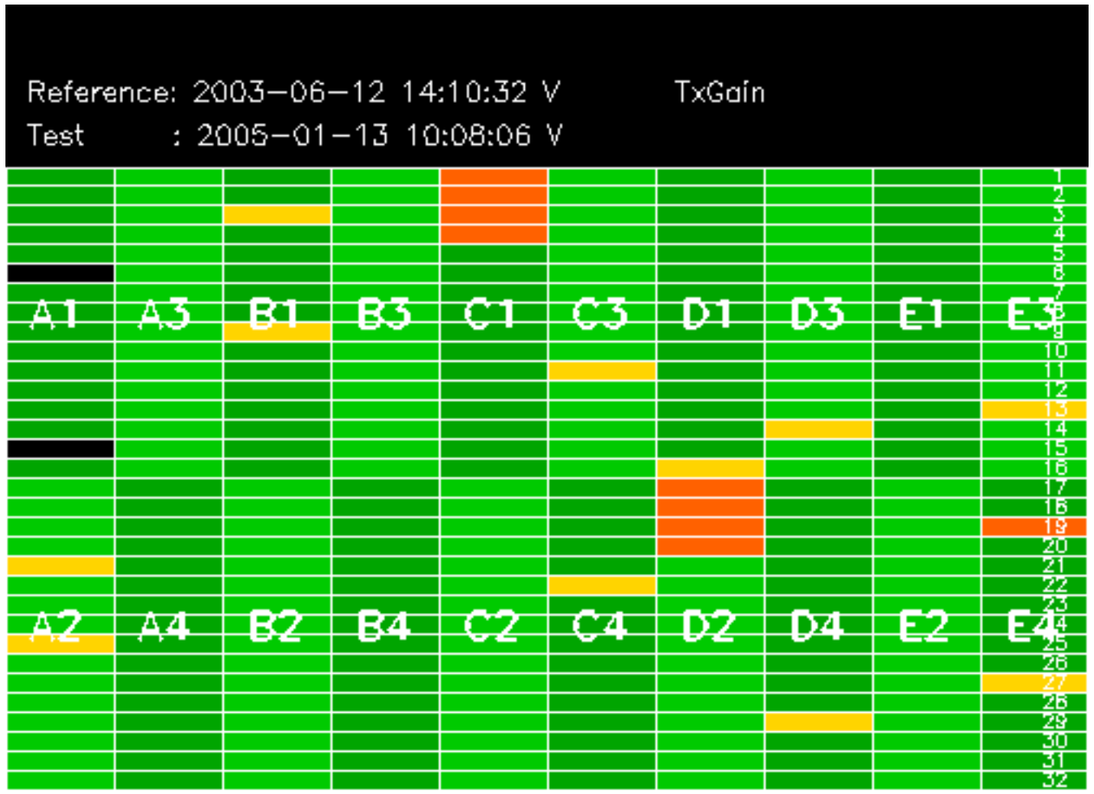

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan


Reference: 2001-02-09 13:50:42 H
TxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

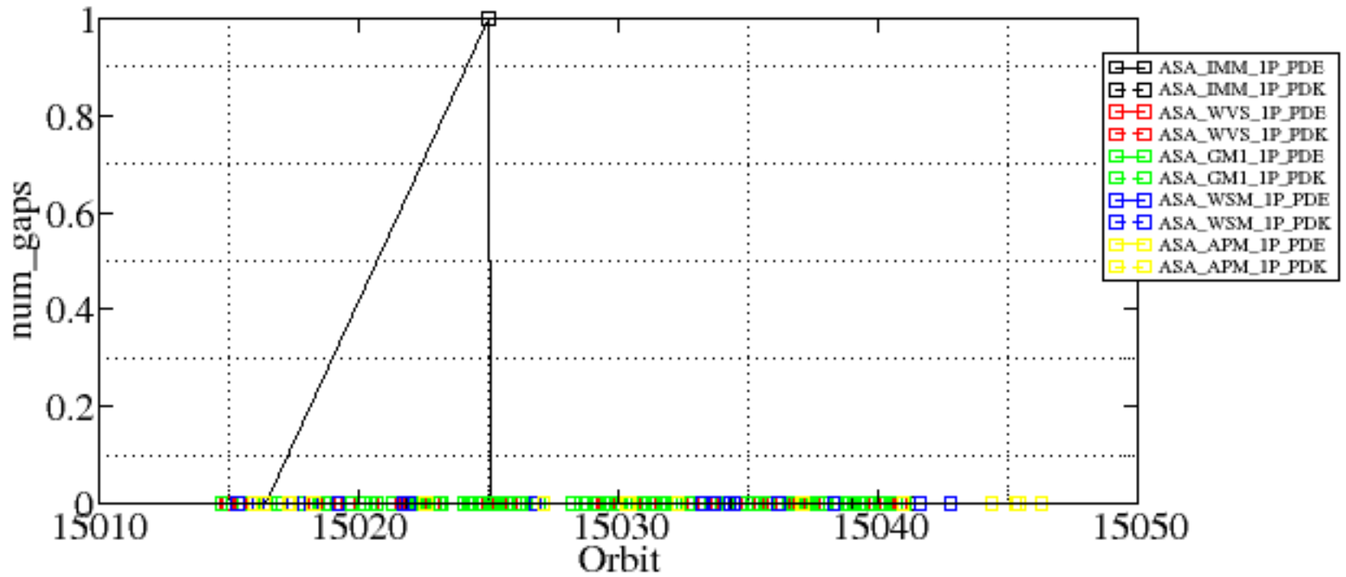

Reference: 2003-06-12 14:08:52 H
TxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

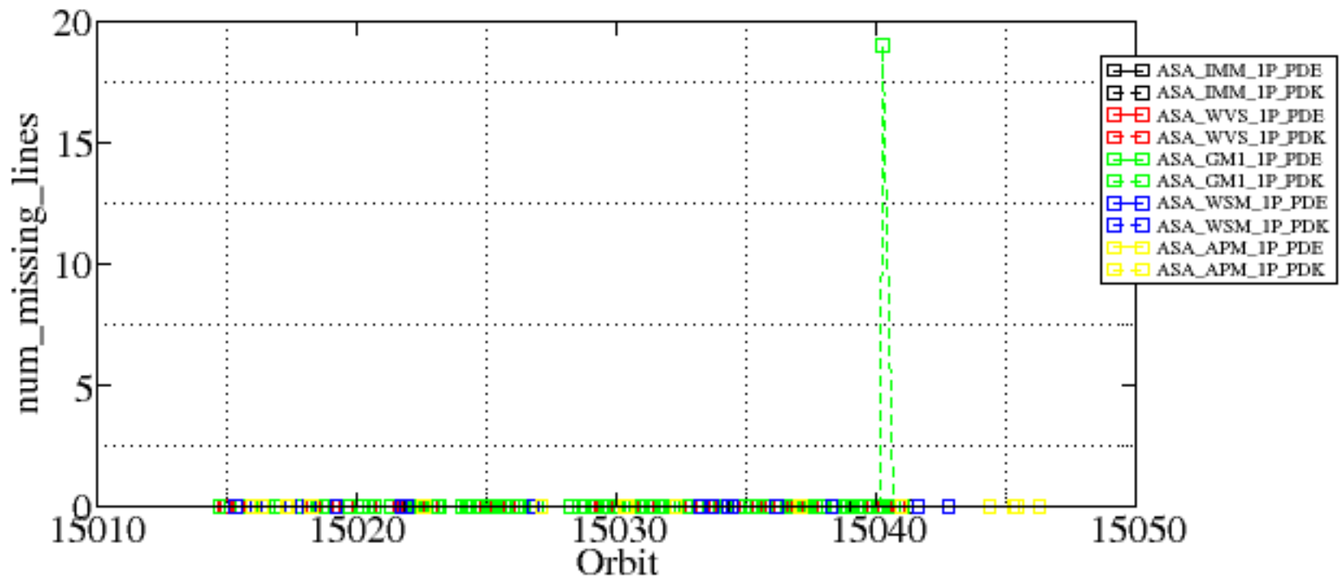

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

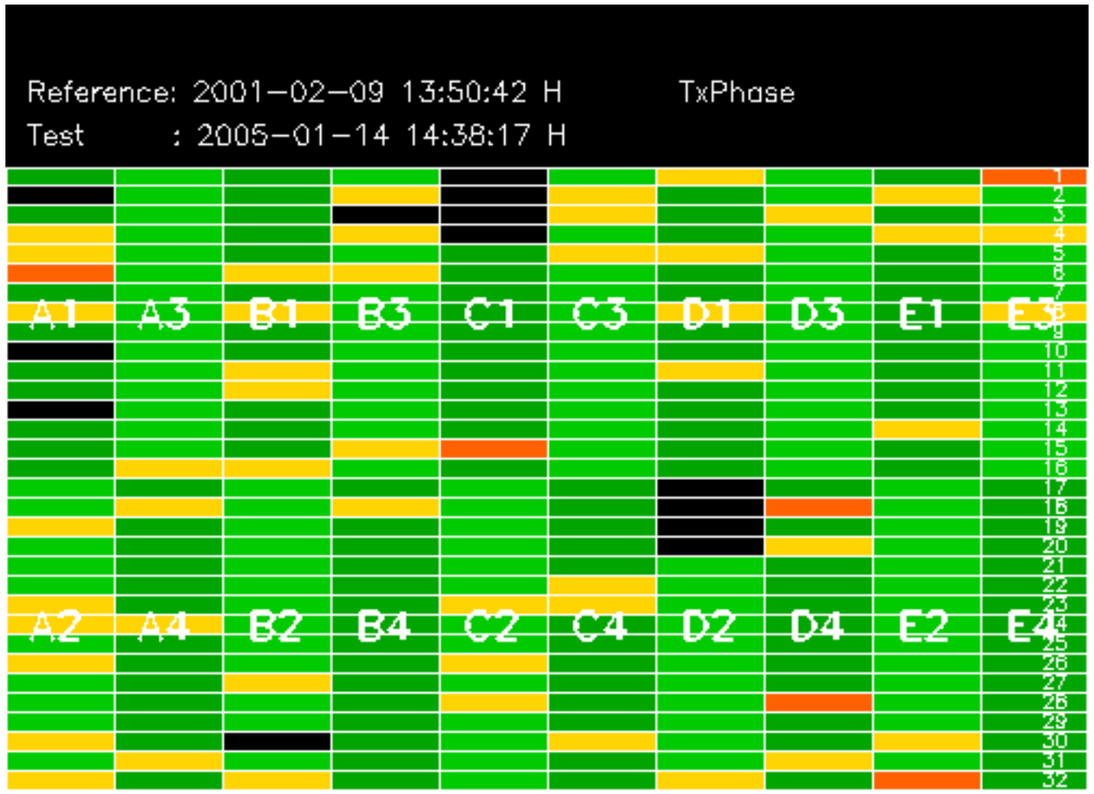

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

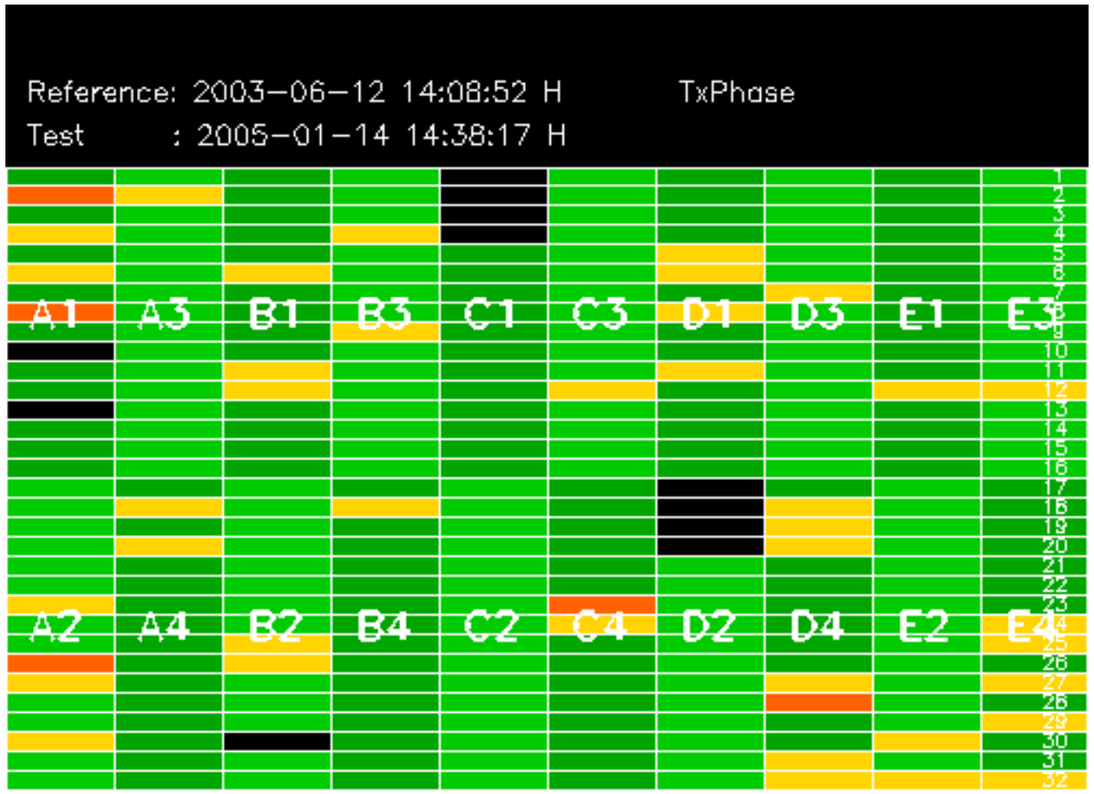
Summary of analysis for the last 3 days 2005011[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

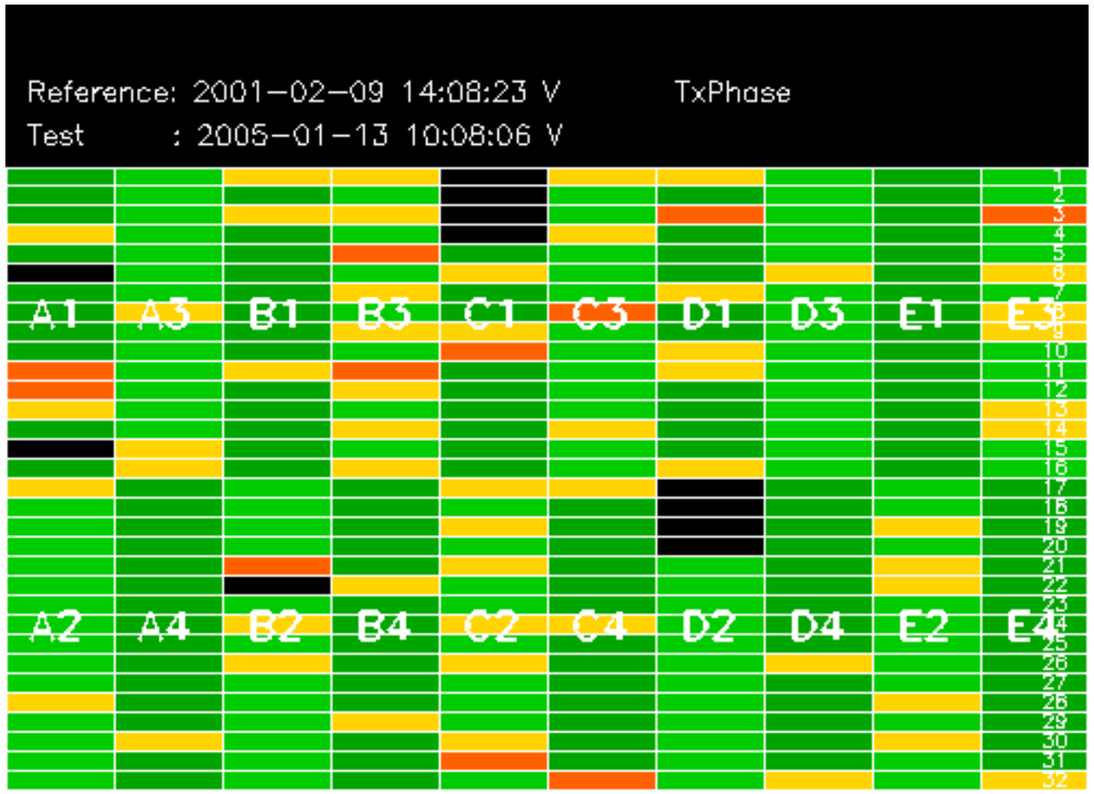
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20050113_172400_000000522033_00442_15025_9893.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050114_185920_000003382033_00457_15040_9468.N1 </td> <td>0 </td> <td>19 </td></tr>
</table>


num_gaps
Orbit
1
0.8
0.6
0.4
0.2
0
15010
15020
15030
15040
15050
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

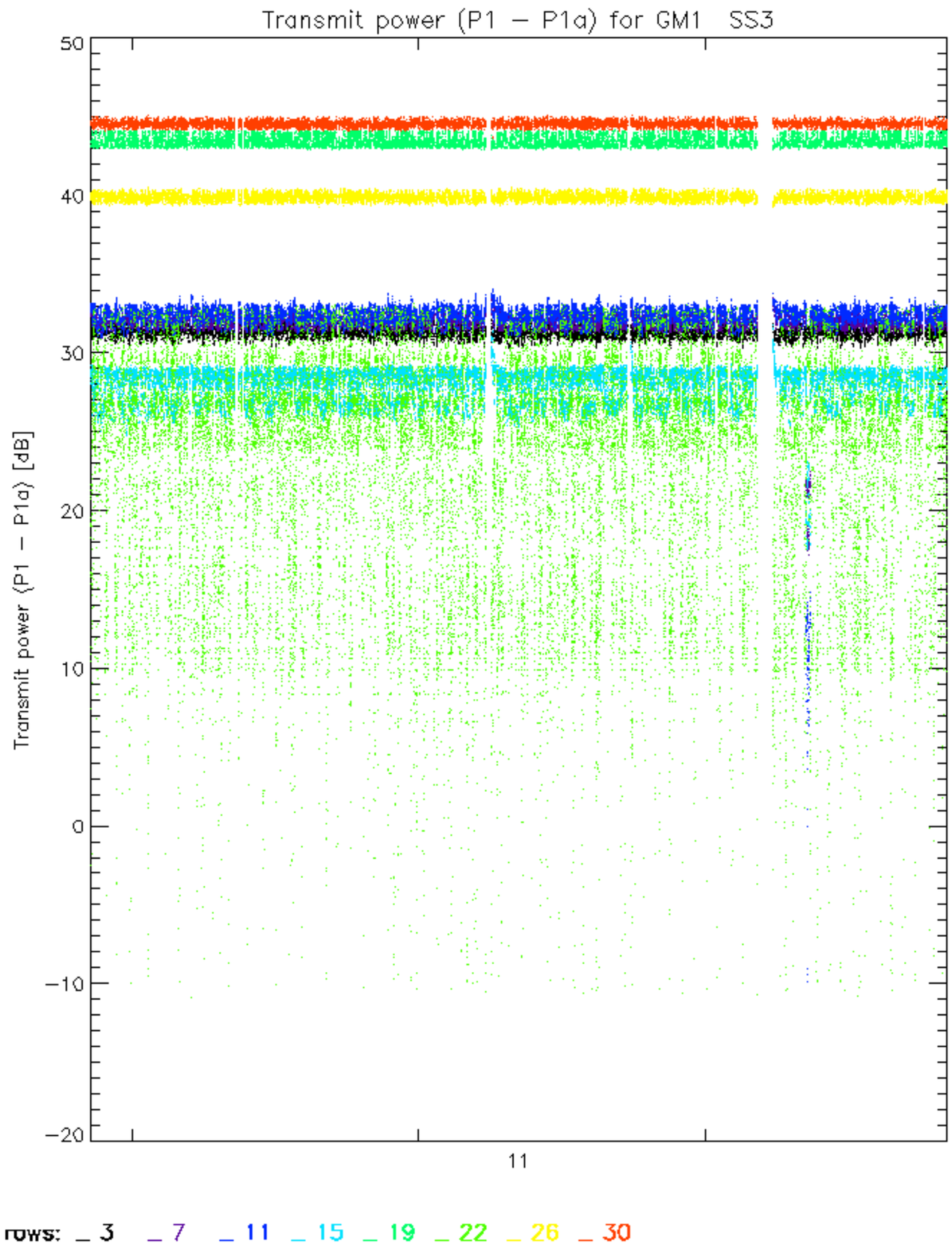

num_missing_lines
Orbit
0
5
10
15
20
15010
15020
15030
15040
15050
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

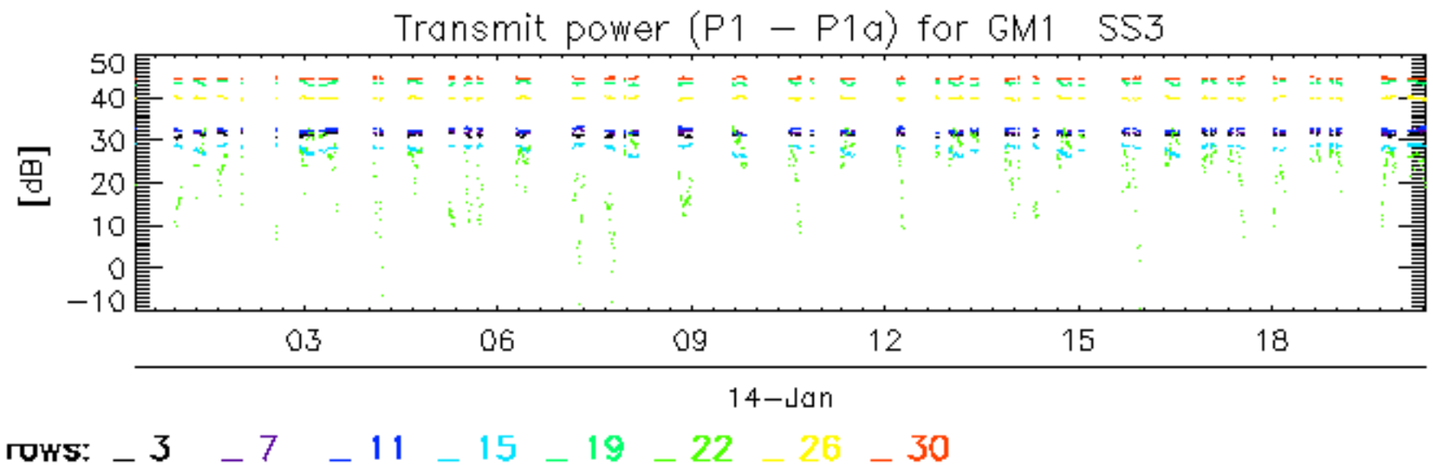

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

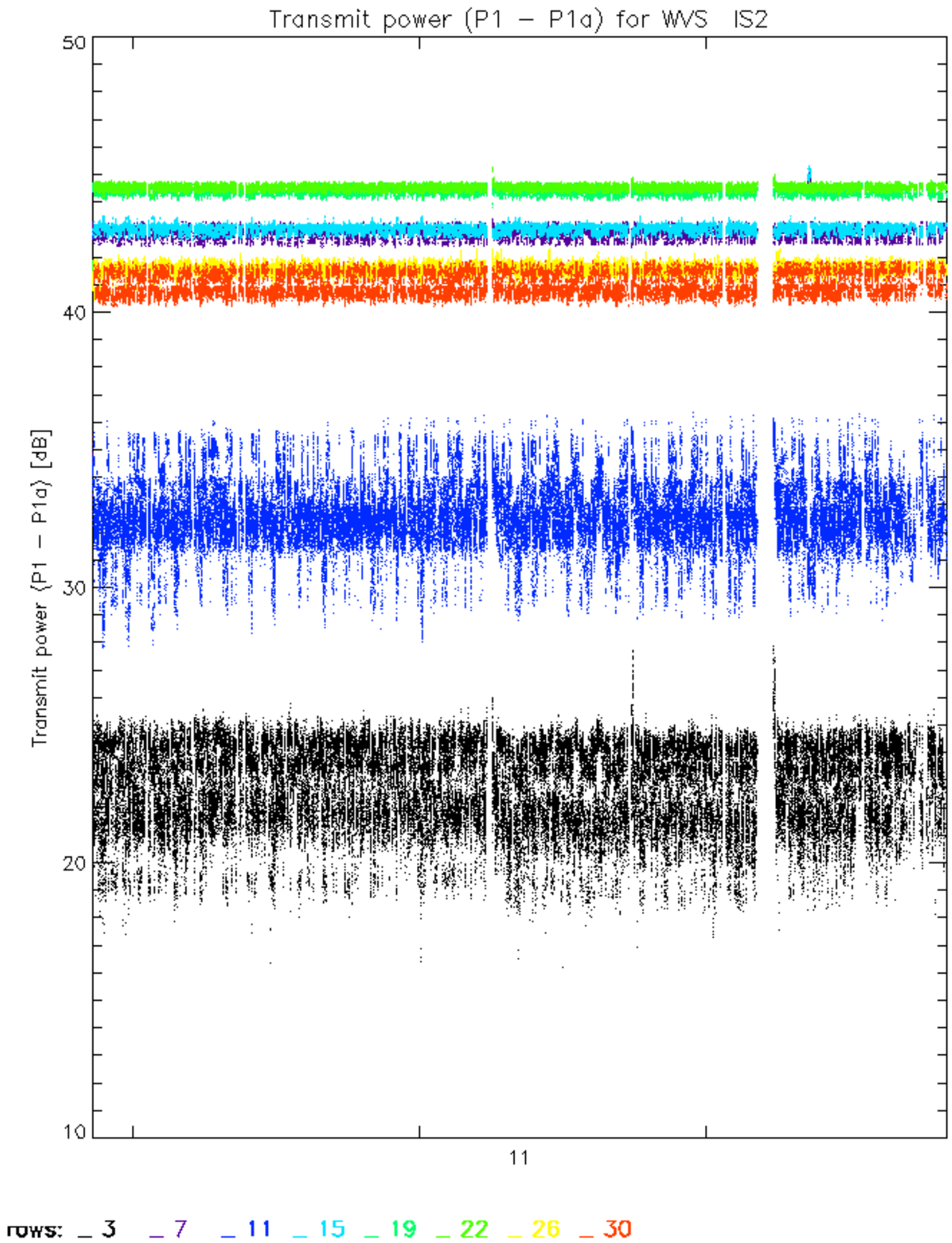

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

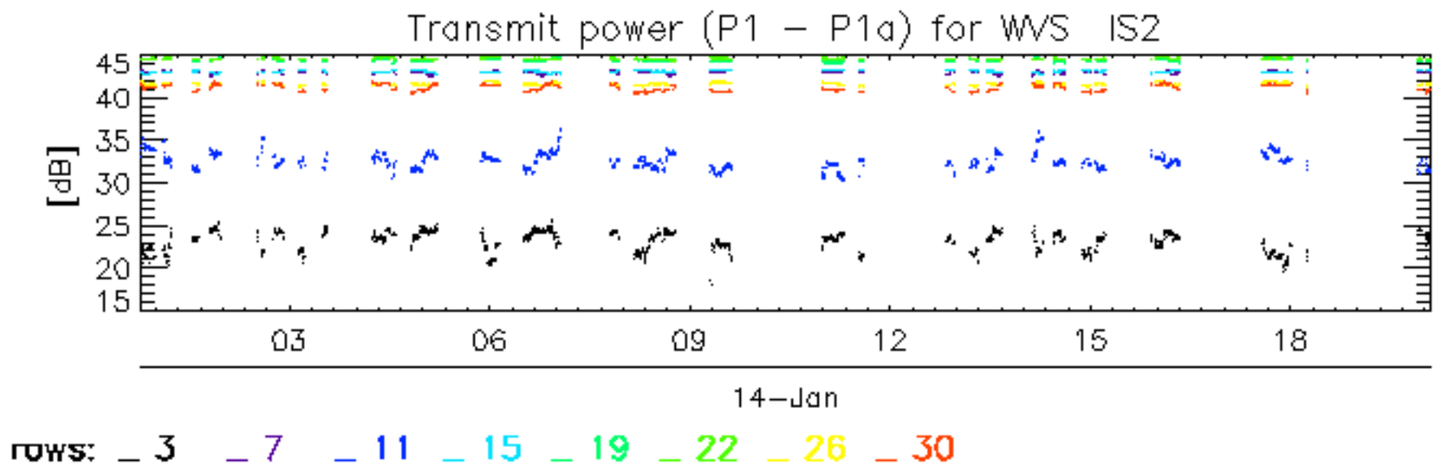

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
TxPhase
Test : 2005-01-13 10:08:06 V
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
11
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
14–Jan
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.