PRELIMINARY REPORT OF 050114

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

last update on Fri Jan 14 11:01:50 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 2005-01-13 00:00:00 to 2005-01-14 11:01:50

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	19	2	2	5	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	19	2	2	5	0
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	19	2	2	5	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	19	2	2	5	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	23	33	0	6	5
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	23	33	0	6	5
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	23	33	0	6	5
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	23	33	0	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

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	20050112 071831

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	-3.429204	0.007056	0.033129
7	P1	-3.086067	0.010503	0.015056
11	P1	-4.645140	0.020582	0.013035
15	P1	-5.651109	0.039576	0.035537
19	P1	-3.661695	0.006395	0.003449
22	P1	-4.571129	0.016966	0.016812
26	P1	-4.942512	0.025151	0.045437
30	P1	-7.126307	0.013886	-0.017453
3	P1	-15.932043	0.105810	0.028709
7	P1	-15.516841	0.099926	0.060056
11	P1	-20.799589	0.309742	-0.077321
15	P1	-11.632449	0.076181	0.054275
19	P1	-14.175678	0.033656	0.013719
22	P1	-16.025568	0.448621	0.131385
26	P1	-17.706629	0.241421	0.115162
30	P1	-17.876030	0.318424	-0.049813

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.319548	0.086904	0.097018
7	P2	-22.517424	0.170121	0.102536
11	P2	-14.801501	0.179387	0.180160
15	P2	-7.147190	0.117331	0.065465
19	P2	-9.729015	0.213104	0.106096
22	P2	-17.128040	0.099247	0.107479
26	P2	-16.527132	0.116930	0.082695

30	P2	-18.947557	0.083205	0.061285

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.204700	0.007065	0.027057
7	P3	-8.204683	0.007062	0.026968
11	P3	-8.204669	0.007061	0.026861
15	P3	-8.204629	0.007062	0.026656
19	P3	-8.204637	0.007063	0.026702
22	P3	-8.204698	0.007064	0.027039
26	P3	-8.204685	0.007062	0.026960
30	P3	-8.204293	0.007073	0.028073

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	-2.823968	0.011722	0.013729
7	P1	-2.955796	0.023839	0.007479
11	P1	-3.942590	0.025636	-0.001510
15	P1	-3.507294	0.029588	0.003385
19	P1	-3.609654	0.012797	0.003189
22	P1	-5.638610	0.067682	-0.021521
26	P1	-6.531022	0.025084	-0.037588
30	P1	-6.299492	0.044792	0.014552
3	P1	-10.771042	0.049014	-0.079989
7	P1	-10.139459	0.136257	-0.039994
11	P1	-12.493560	0.109513	-0.082623

15	P1	-11.751071	0.055041	-0.021140
19	P1	-15.639256	0.046799	0.020869
22	P1	-24.084797	1.879160	0.040781
26	P1	-14.920255	0.361408	0.260457
30	P1	-20.066122	0.873393	0.104554

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.001802	0.037201	0.087089
7	P2	-22.565868	0.034473	0.115596
11	P2	-10.602567	0.038077	0.197560
15	P2	-5.047445	0.025596	0.034890
19	P2	-6.942379	0.037409	0.047241
22	P2	-7.271617	0.028889	0.091354
26	P2	-23.948738	0.019738	0.031635
30	P2	-21.992409	0.024835	0.063957

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.037570	0.003016	0.020818
7	P3	-8.037581	0.003018	0.020593
11	P3	-8.037529	0.003015	0.020490
15	P3	-8.037617	0.003011	0.020769
19	P3	-8.037475	0.003023	0.020739
22	P3	-8.037594	0.003013	0.020798
26	P3	-8.037561	0.003015	0.020942
30	P3	-8.037498	0.003006	0.020611

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	0.000466425
	stdev	2.22301e-07
MEAN Q	mean	0.000541482
	stdev	2.35002e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128234
	stdev	0.000963056
STDEV Q	mean	0.128467
	stdev	0.000973422

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005011[234]
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_APM_1PNPDK20050112_084134_000000402033_00422_15005_1270.N1	0	3

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)

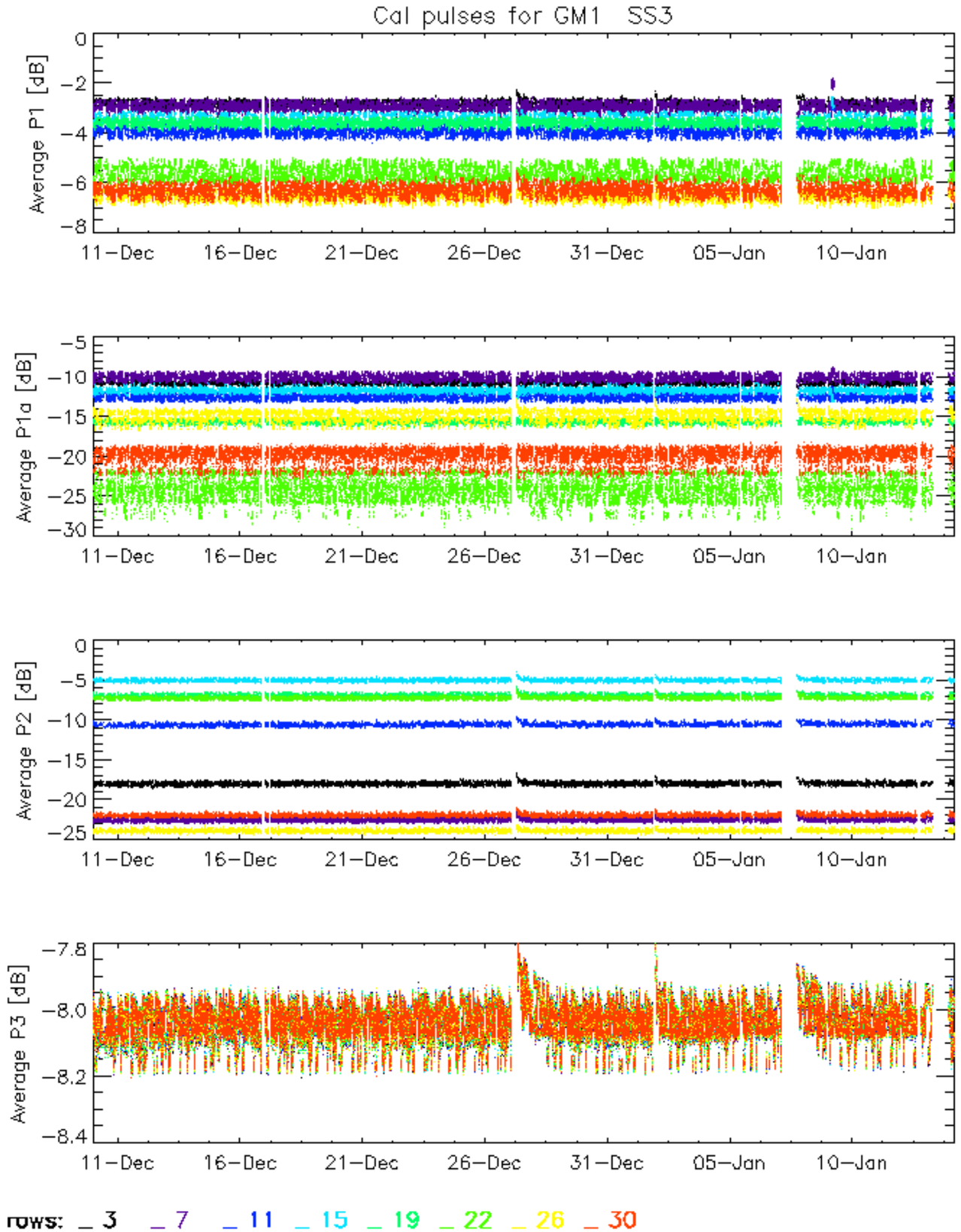
Acsending
Descending

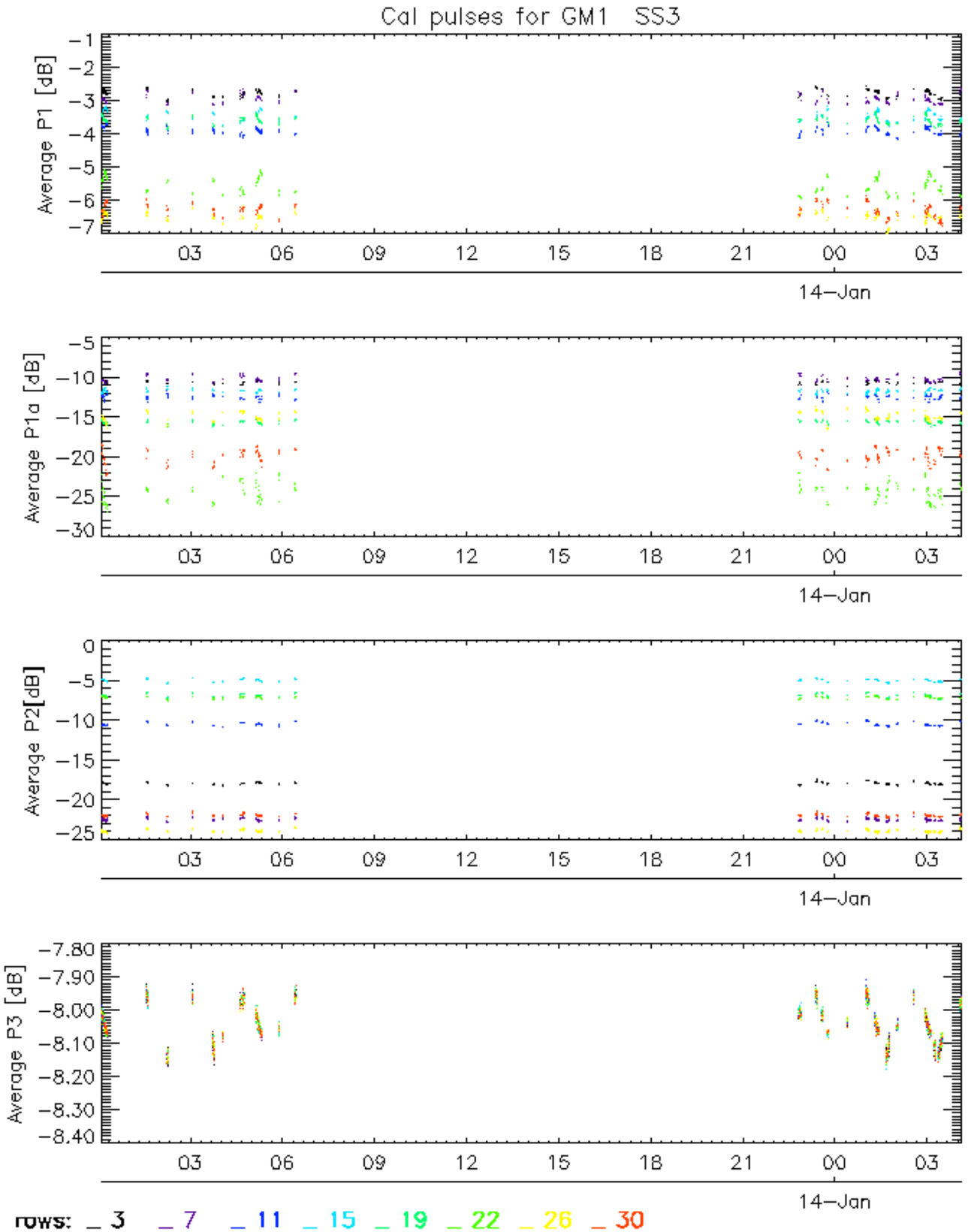
7.5 - Absolute Doppler for GM1

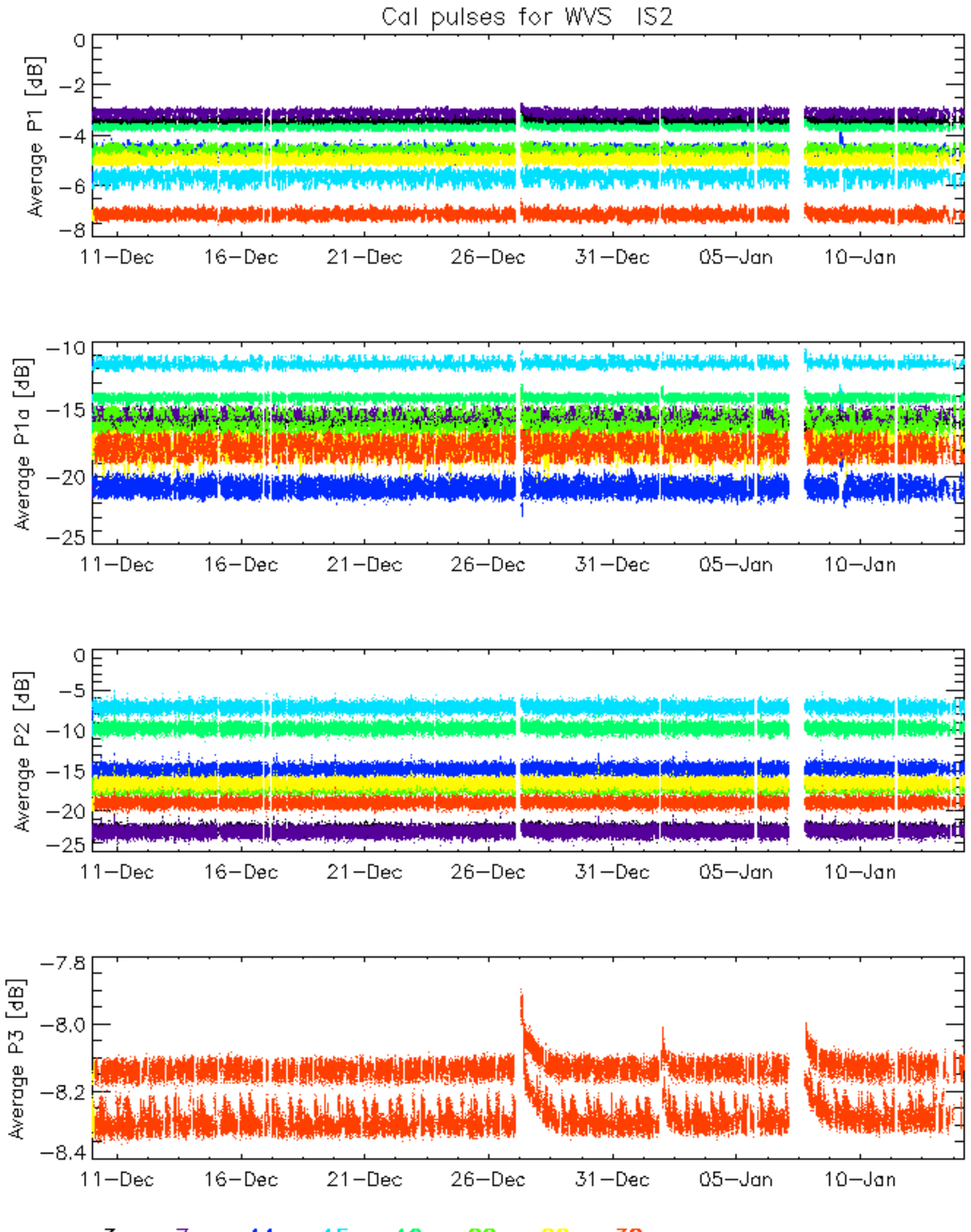
Evolution of Absolute Doppler
Acsending
Descending

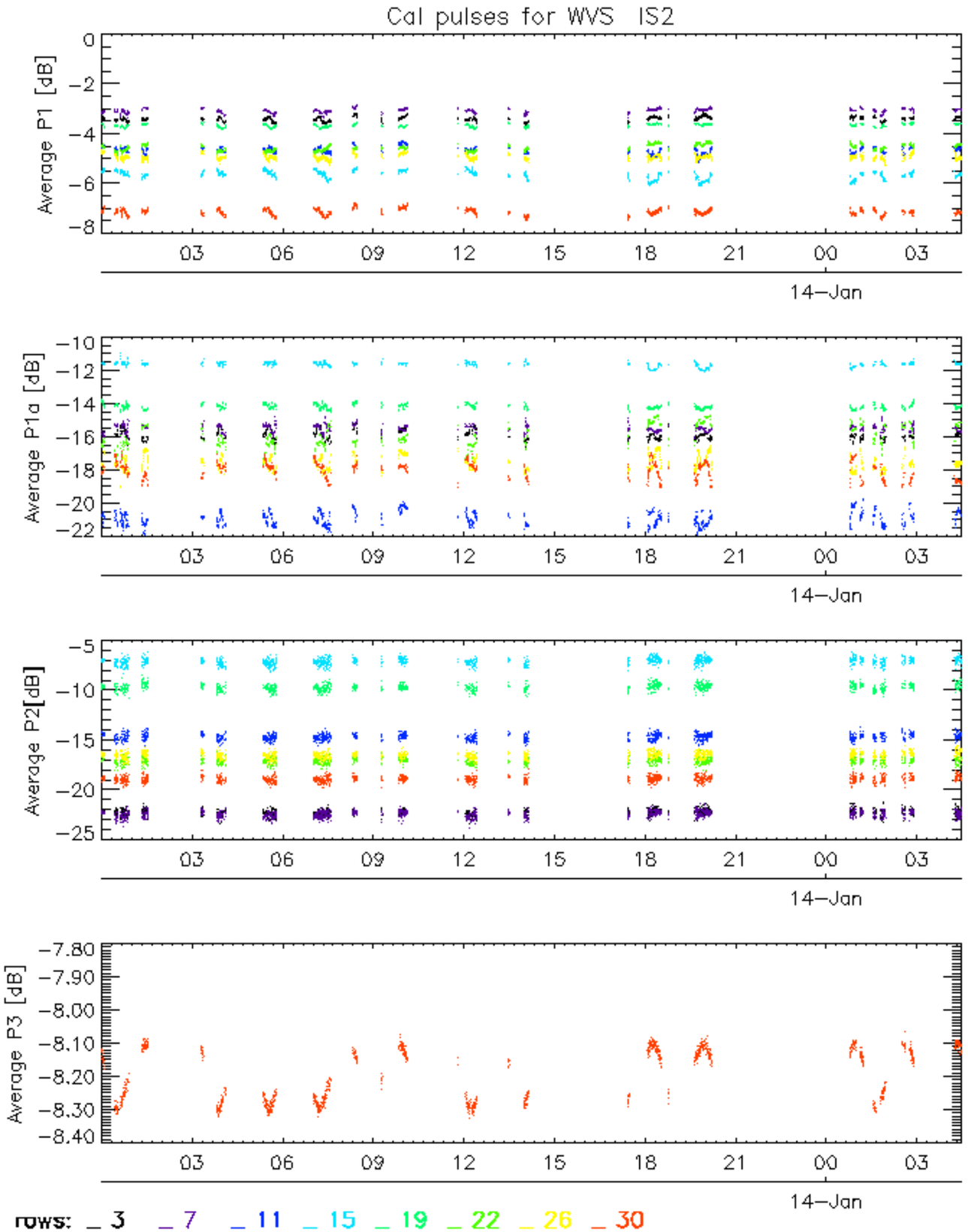
7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

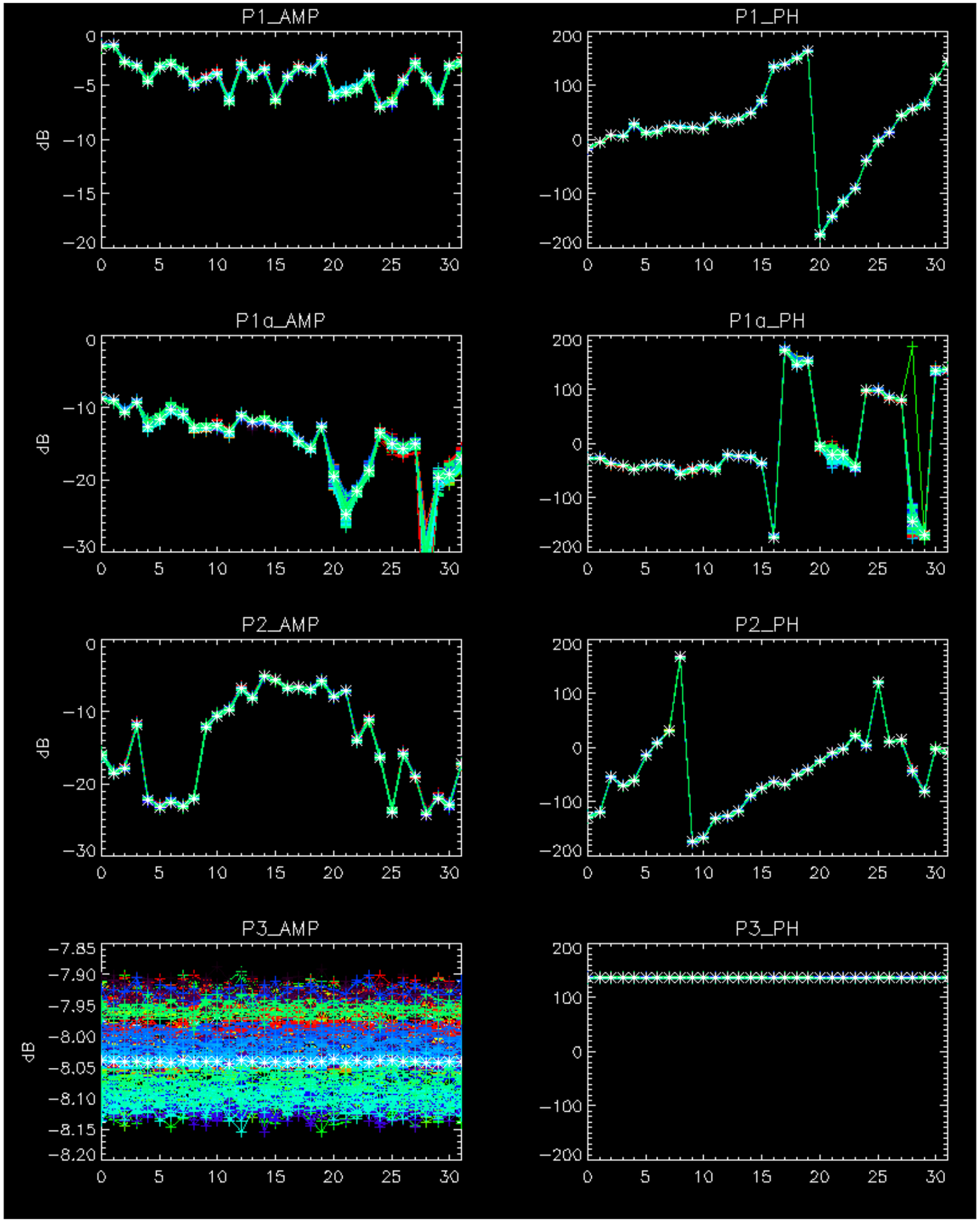

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
11−Dec
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

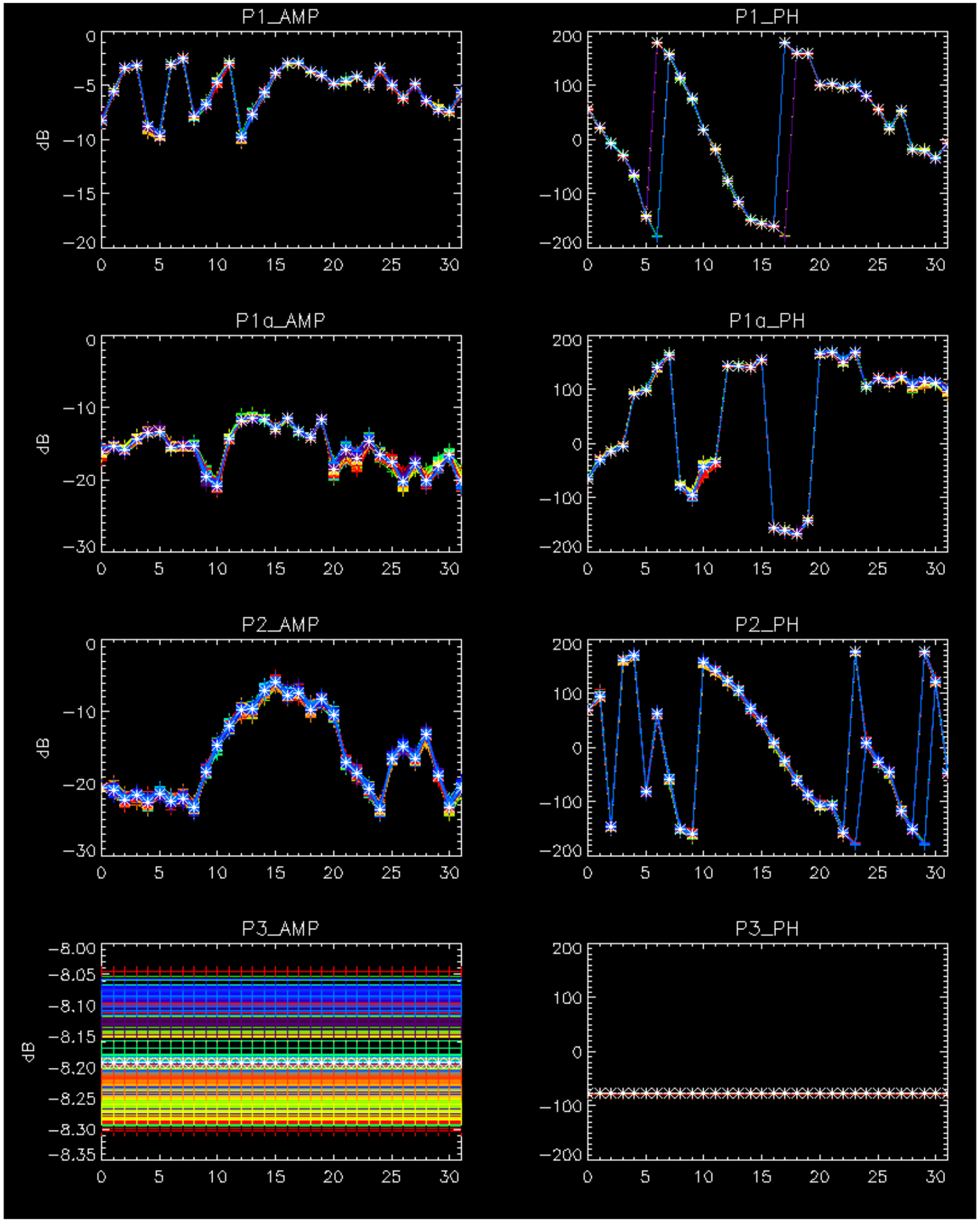

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
14–Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
0
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
11−Dec
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
21
00
03
14−Jan
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

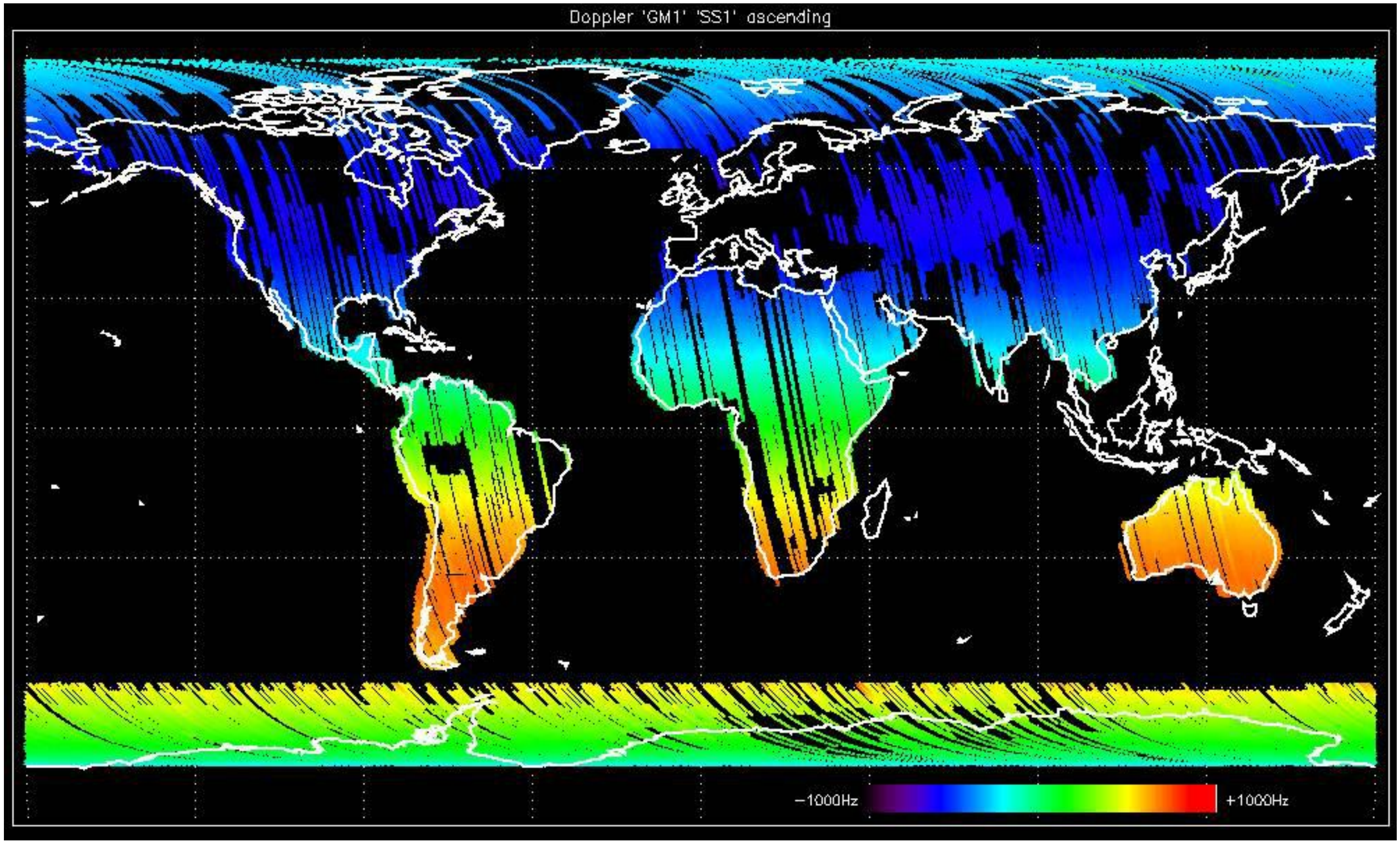
No anomalies observed.

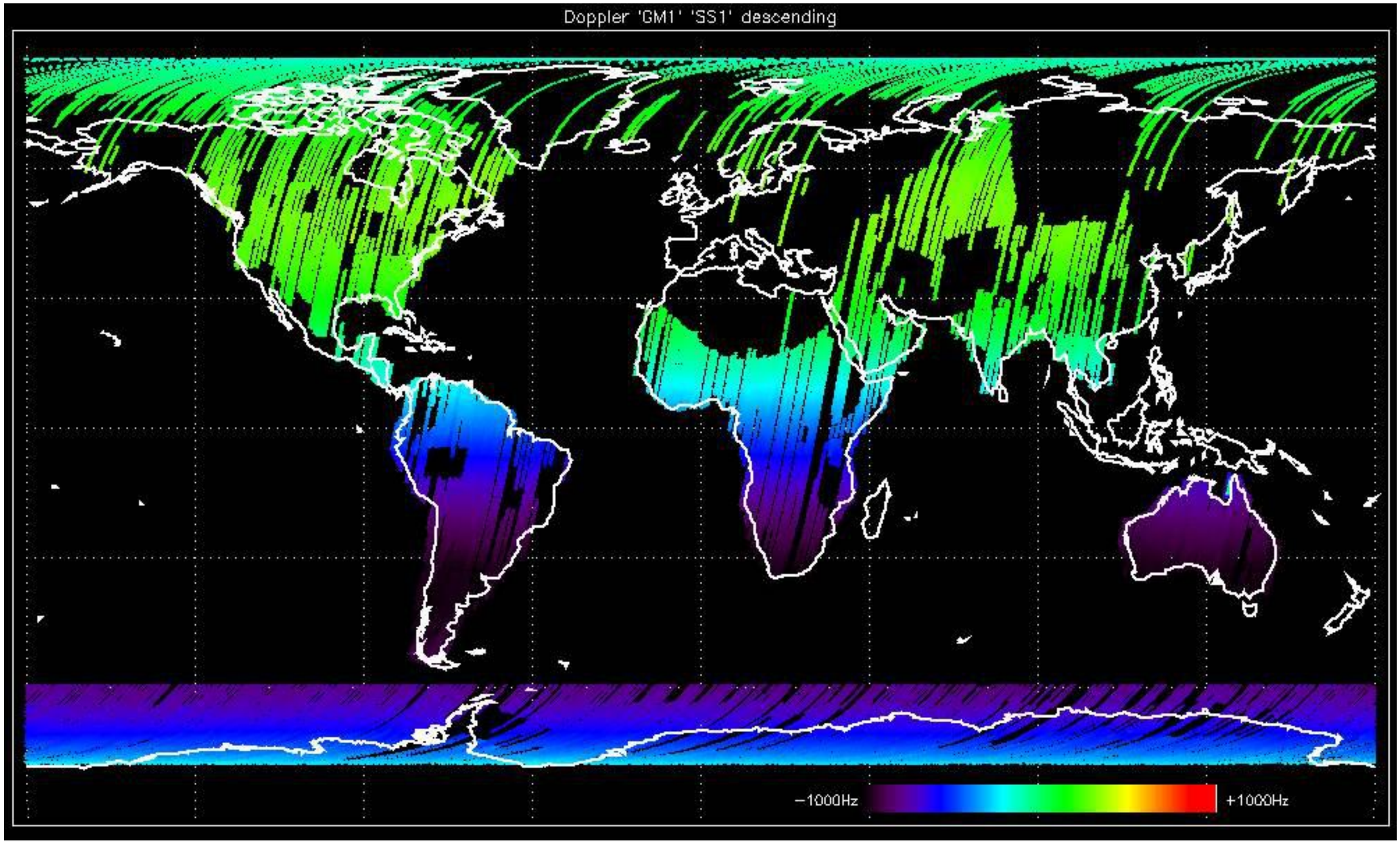

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

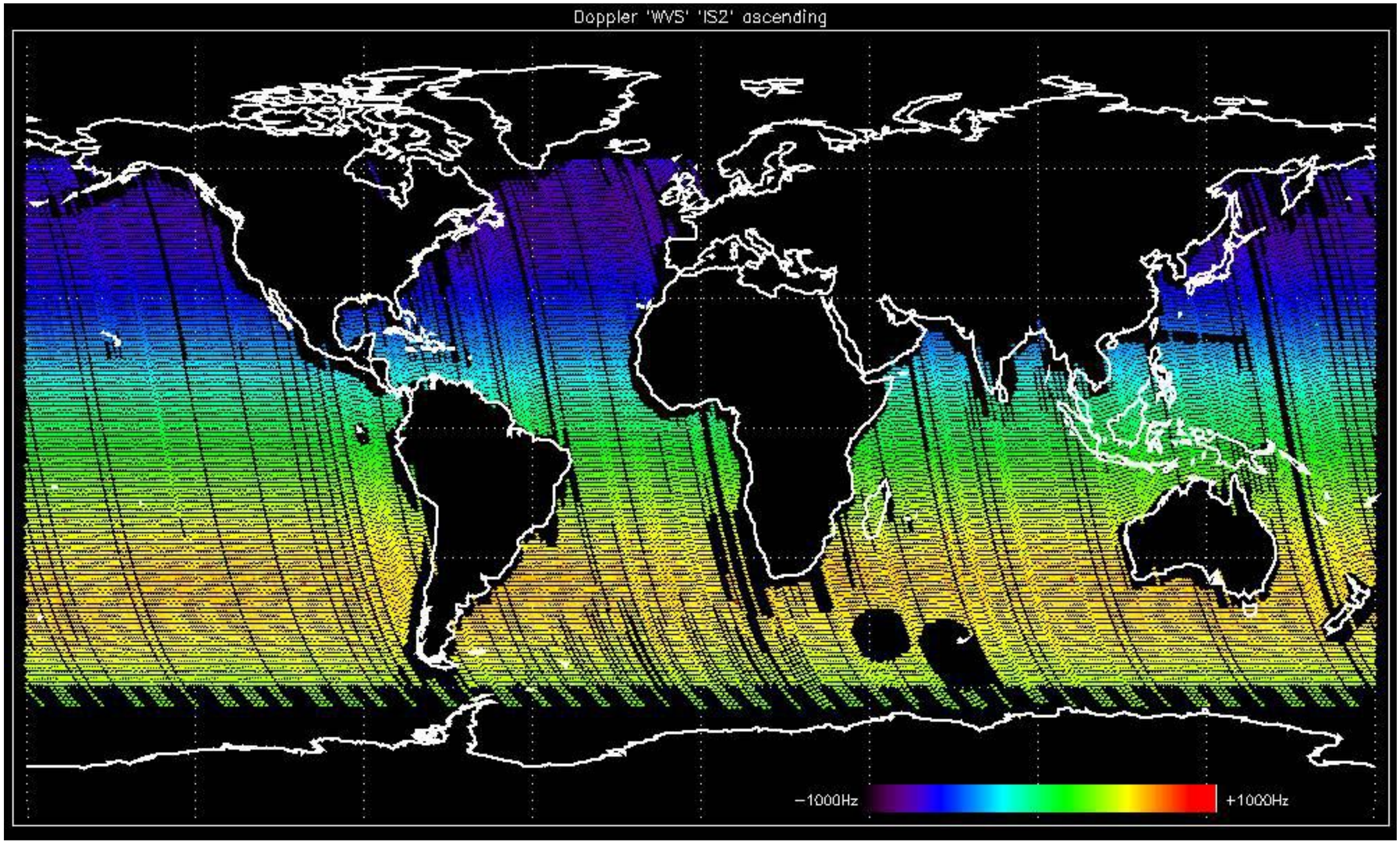

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15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

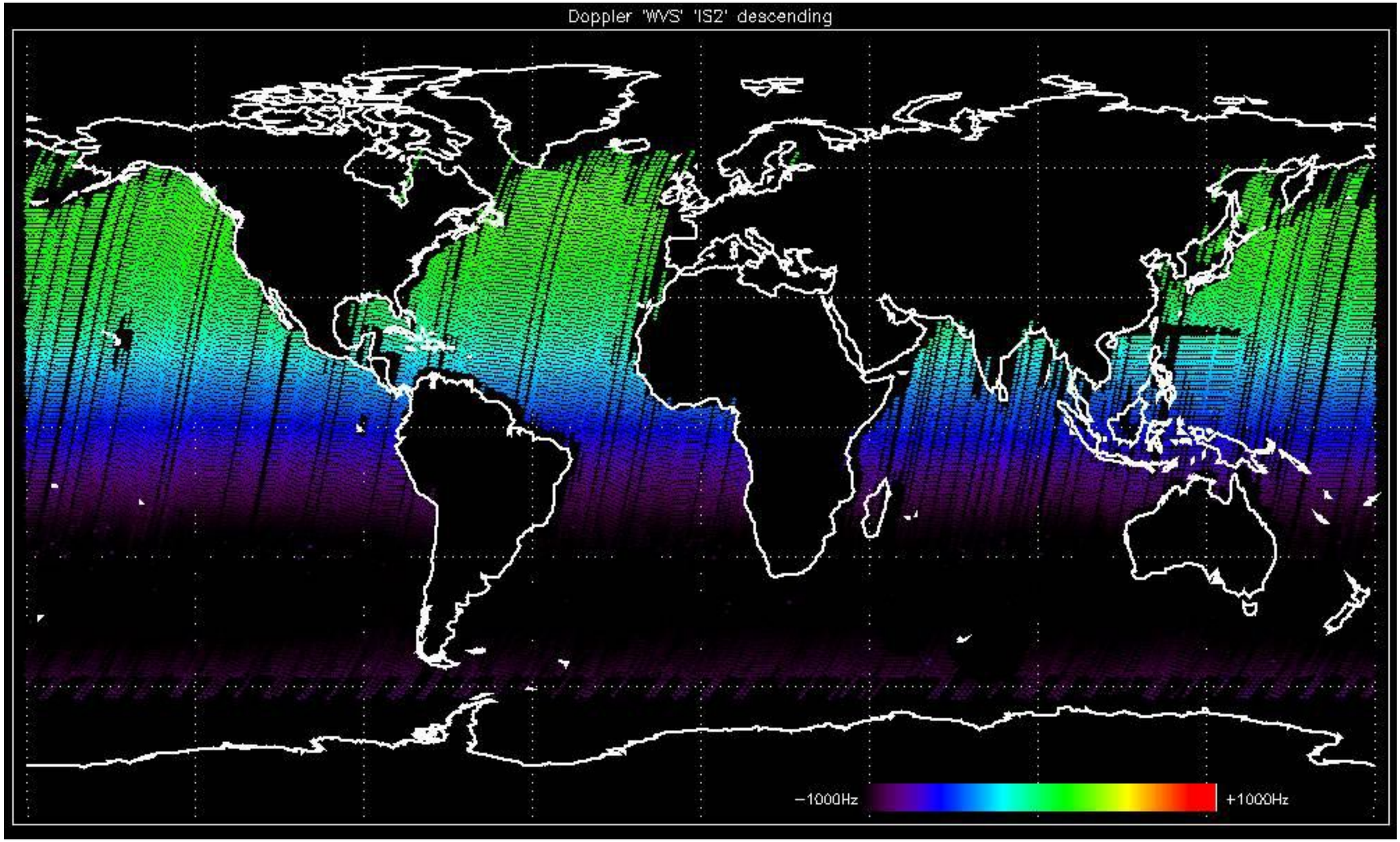
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

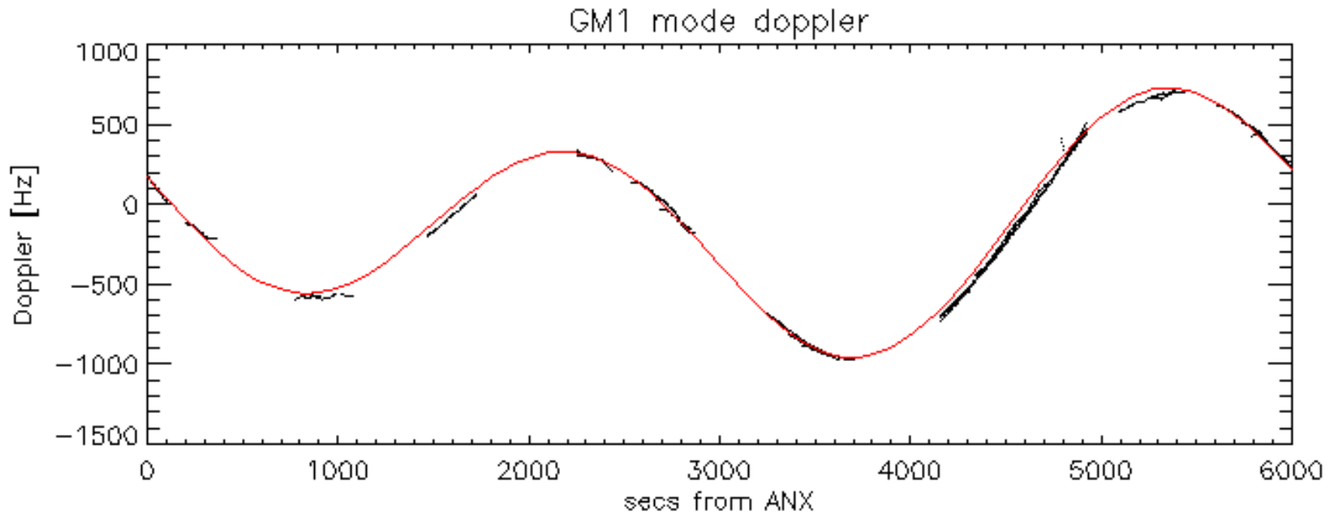
Preliminary report.The data is not yet controled

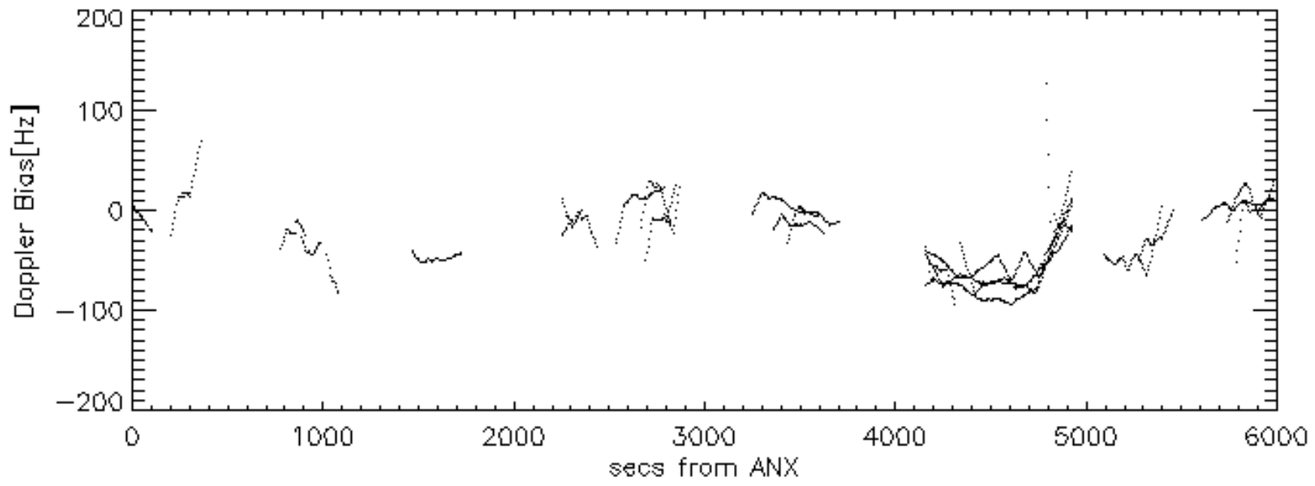

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

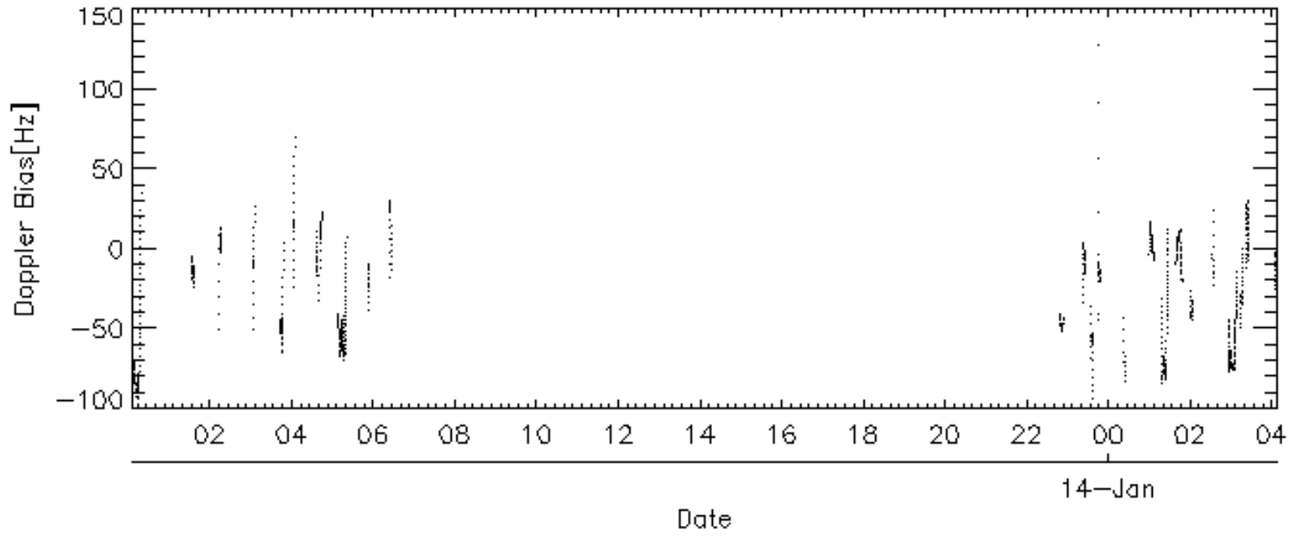

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

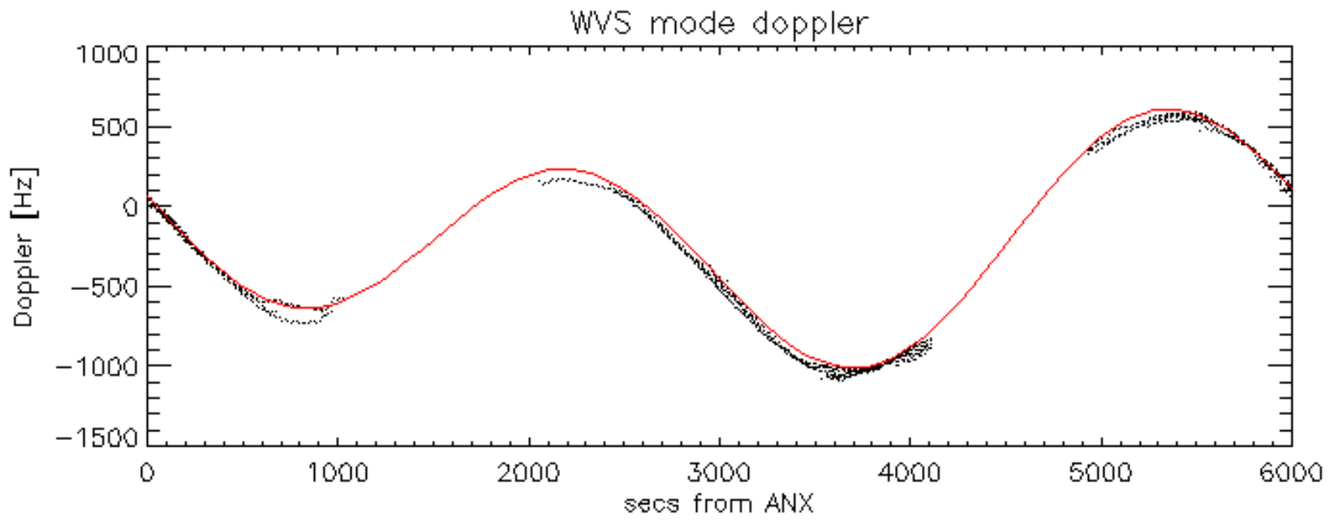

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

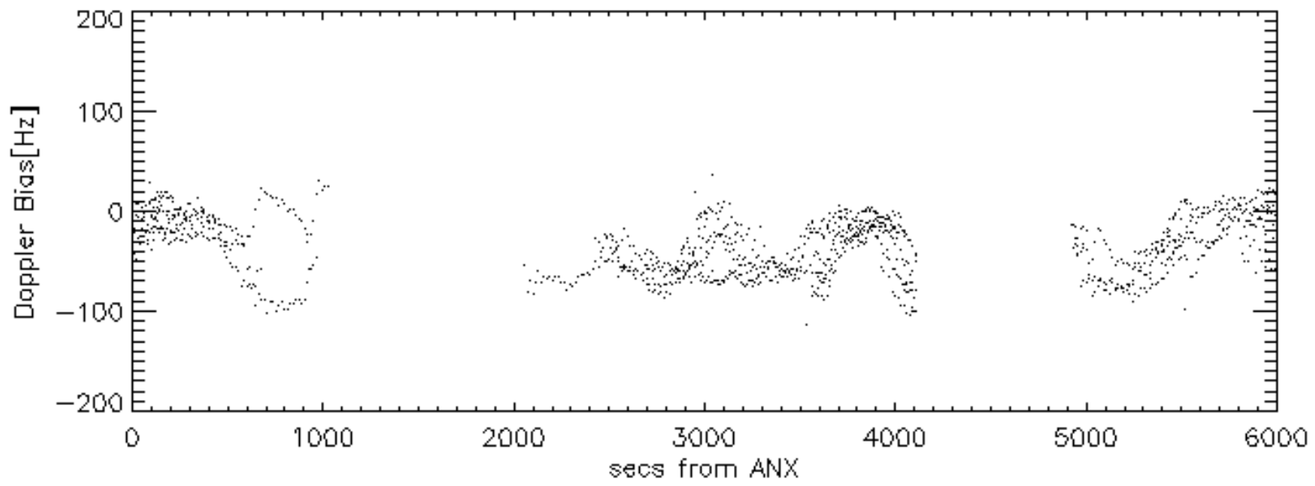

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

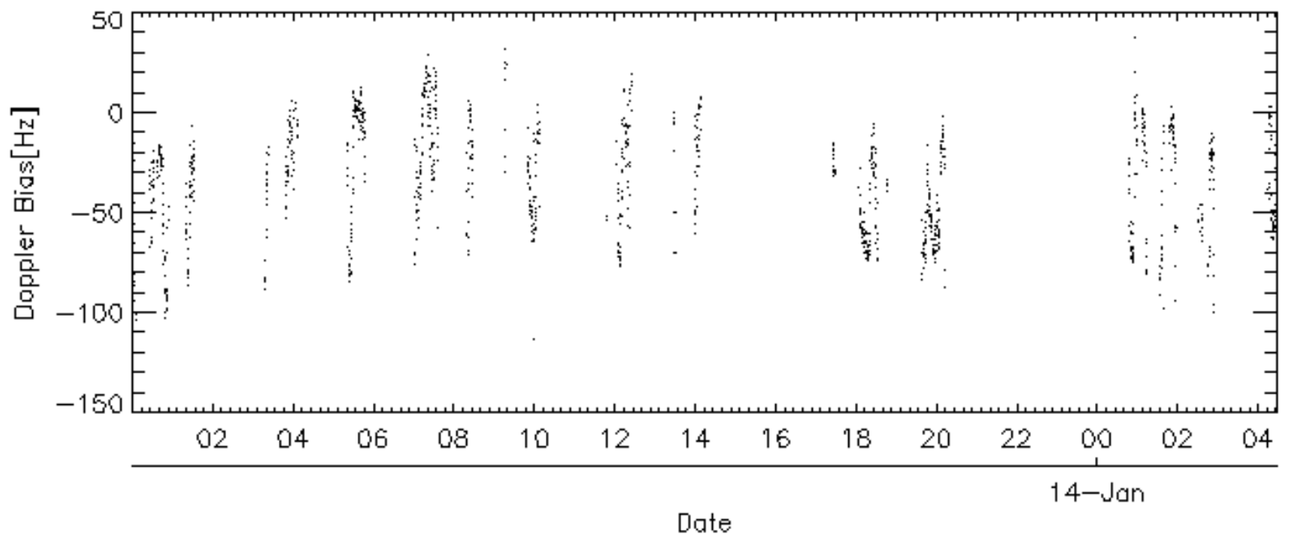

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

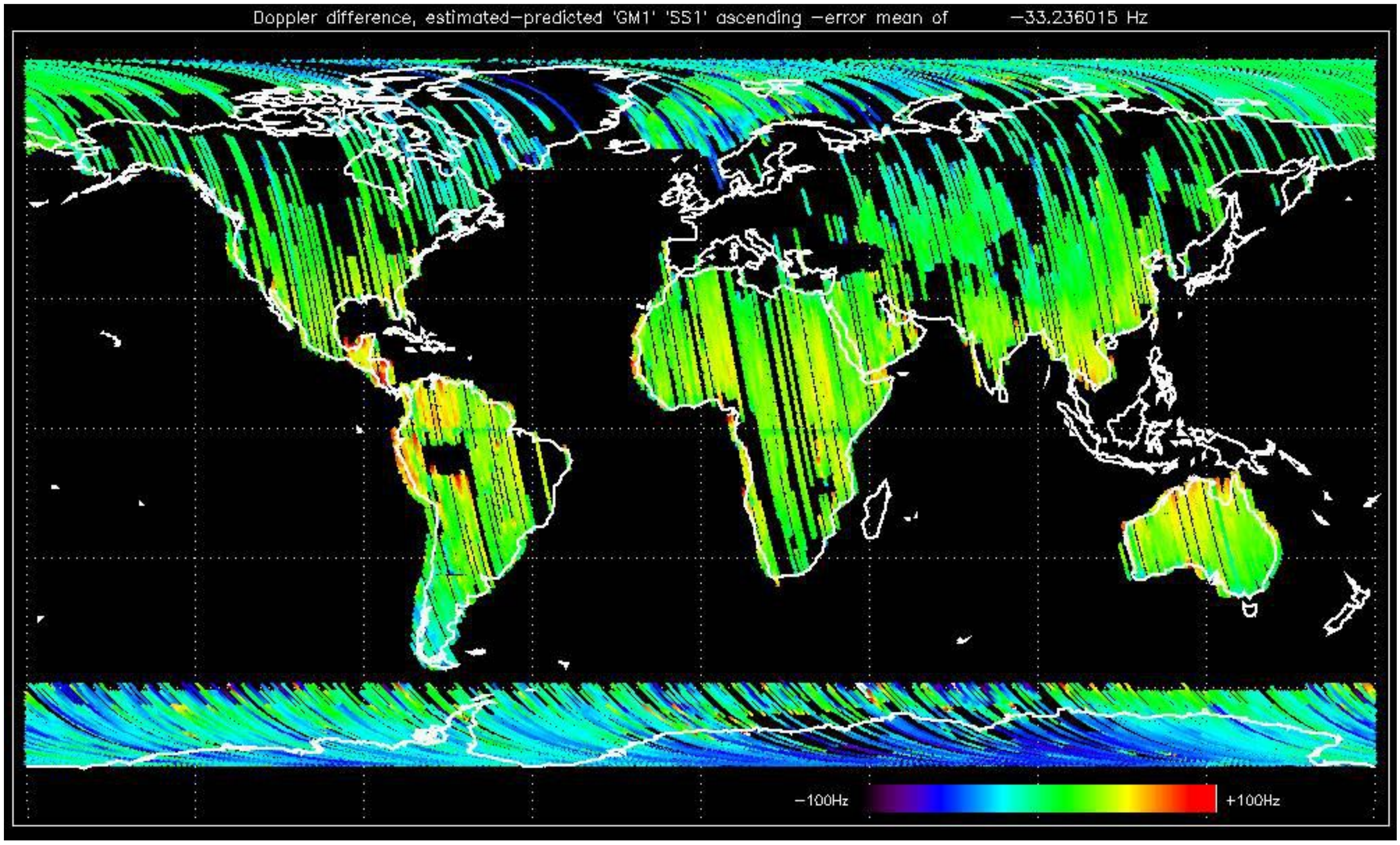

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

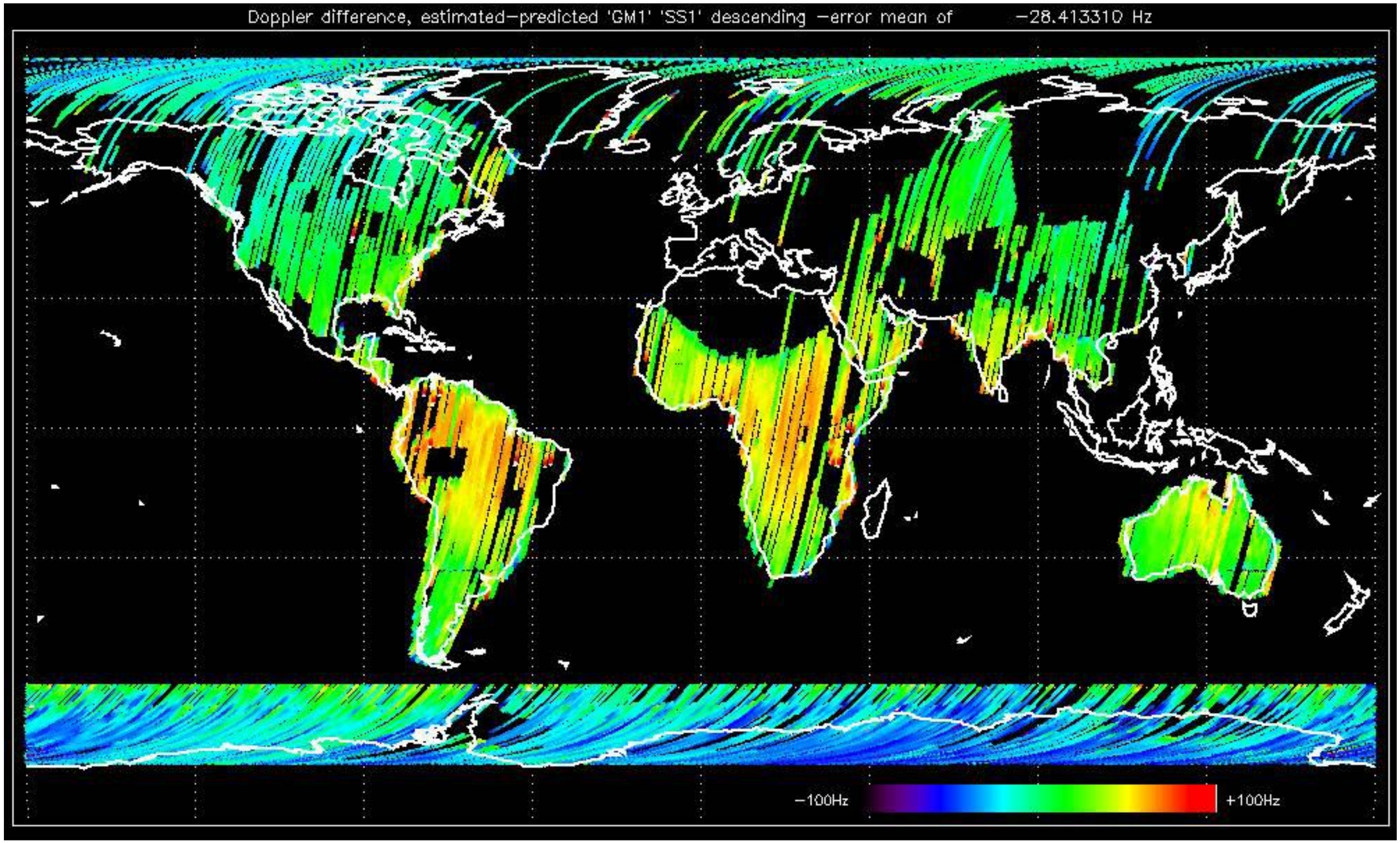

Doppler Bias[Hz]
150
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
02
04
14−Jan
Date

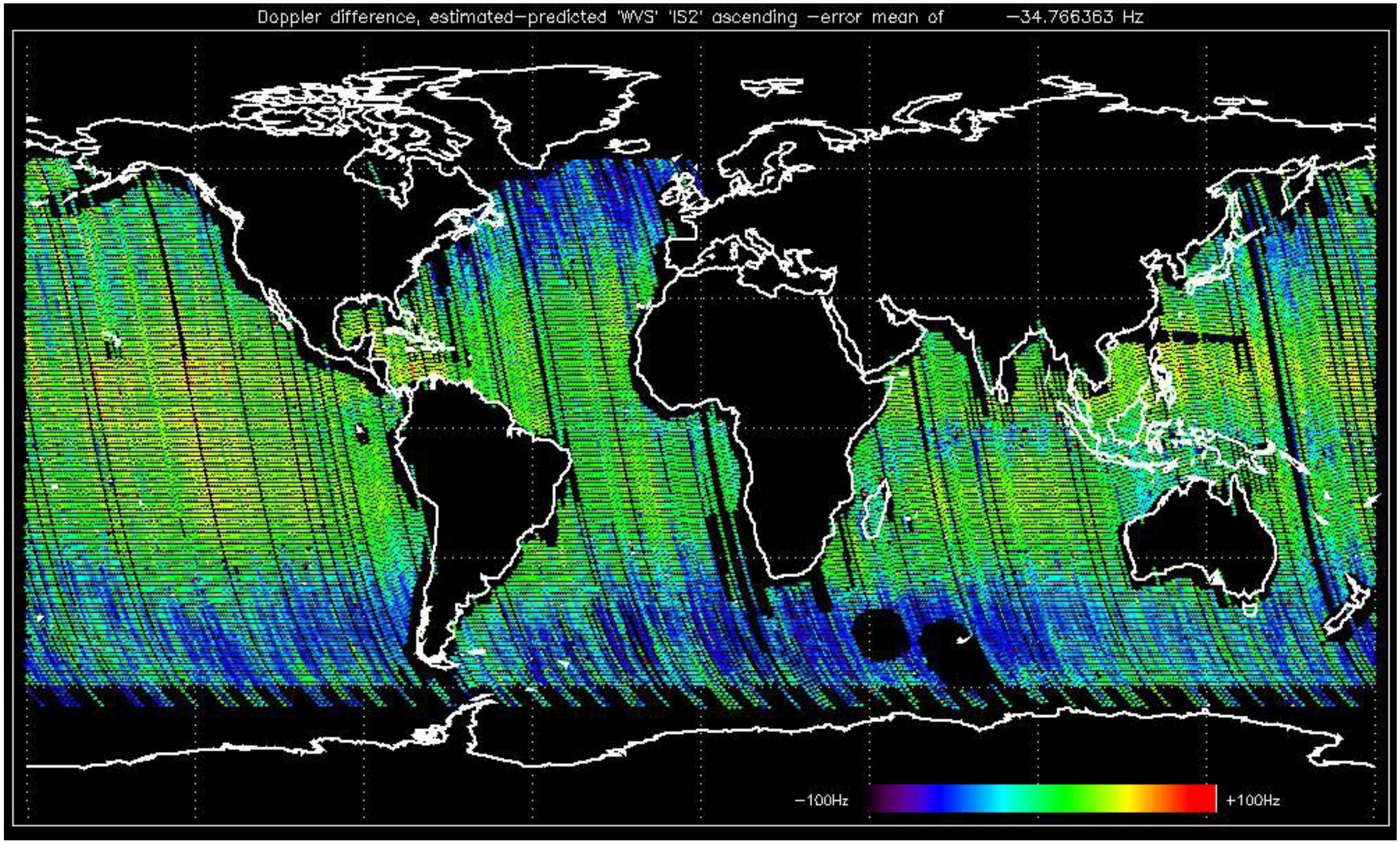

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

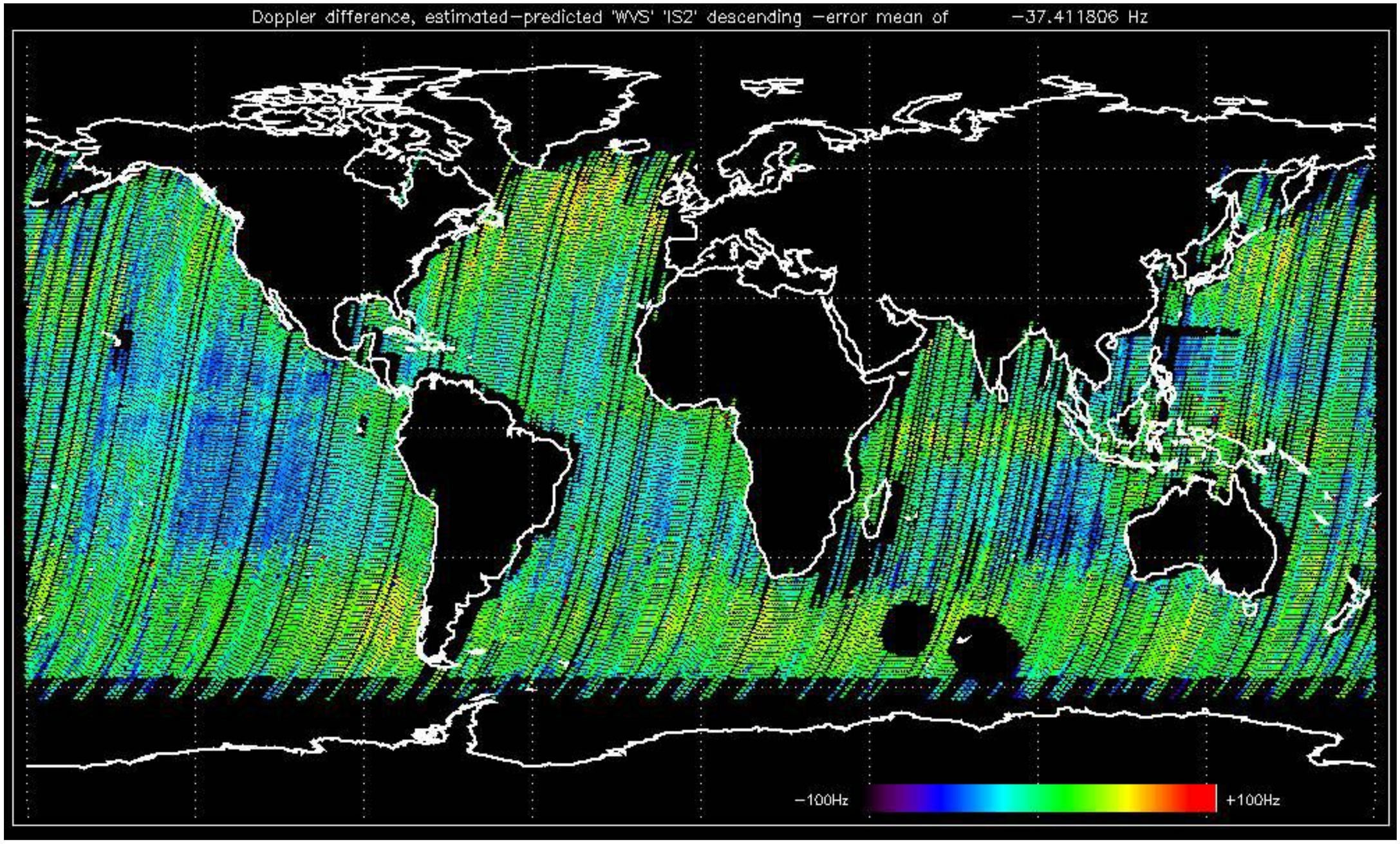

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.236015 Hz
−100Hz
+100Hz

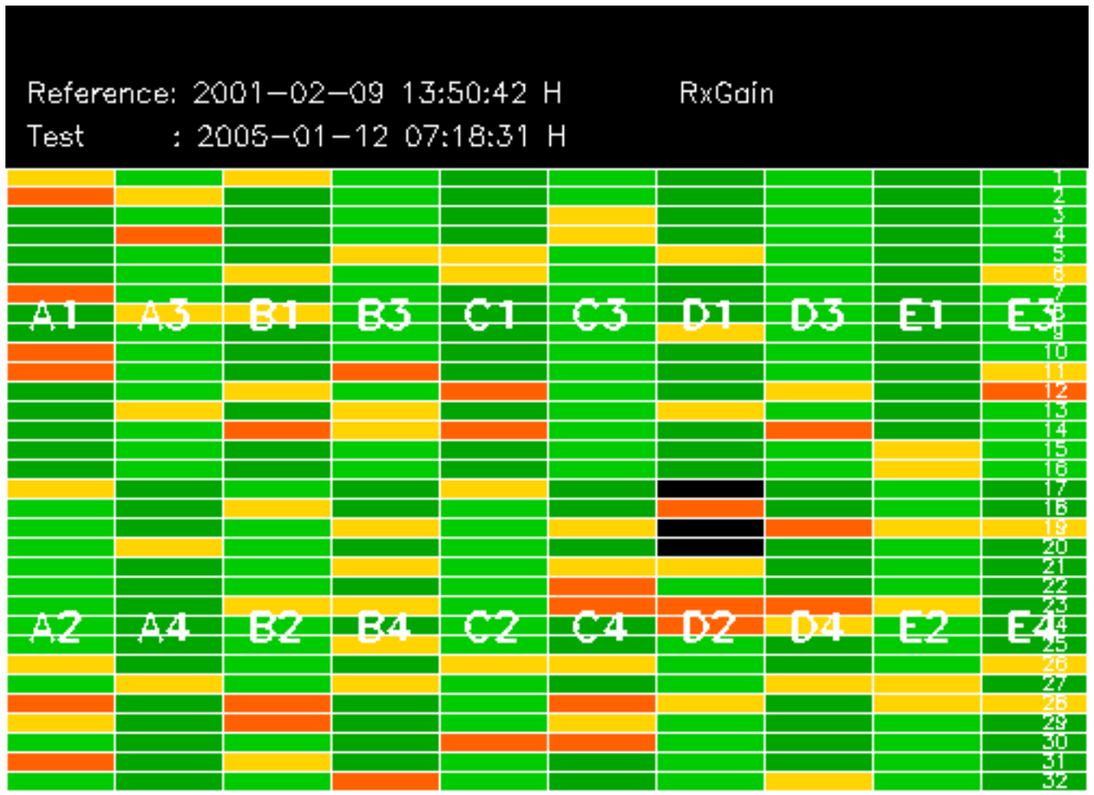

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.413310 Hz
-100Hz
+100Hz

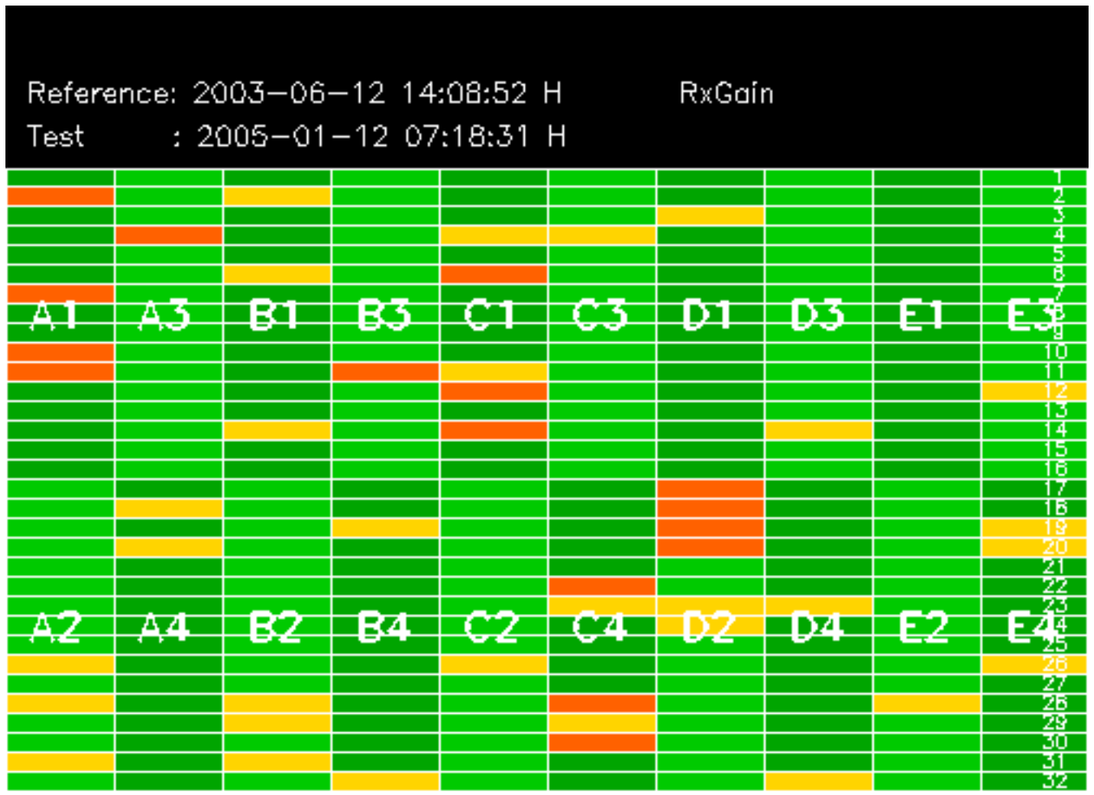

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.766363 Hz
−100Hz
+100Hz

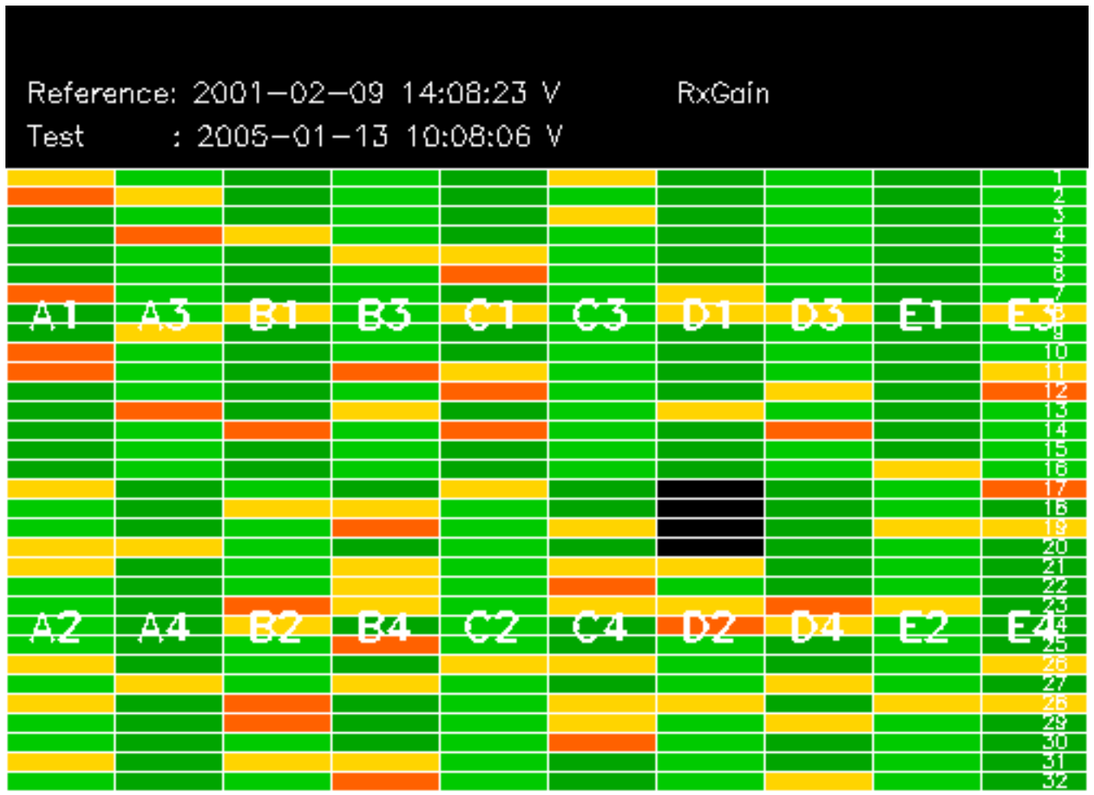

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.411806 Hz
−100Hz
+100Hz

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
Test : 2005-01-12 07:18:31 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 : 2005-01-12 07:18:31 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 : 2005-01-13 10:08:06 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
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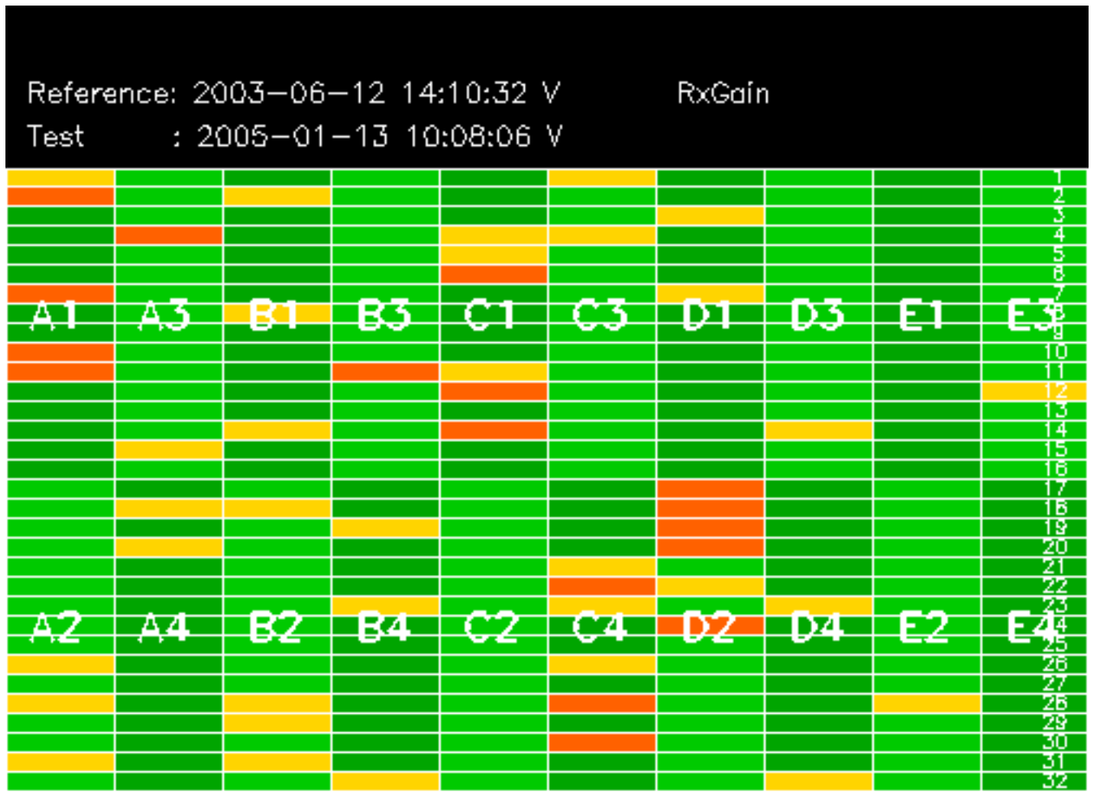
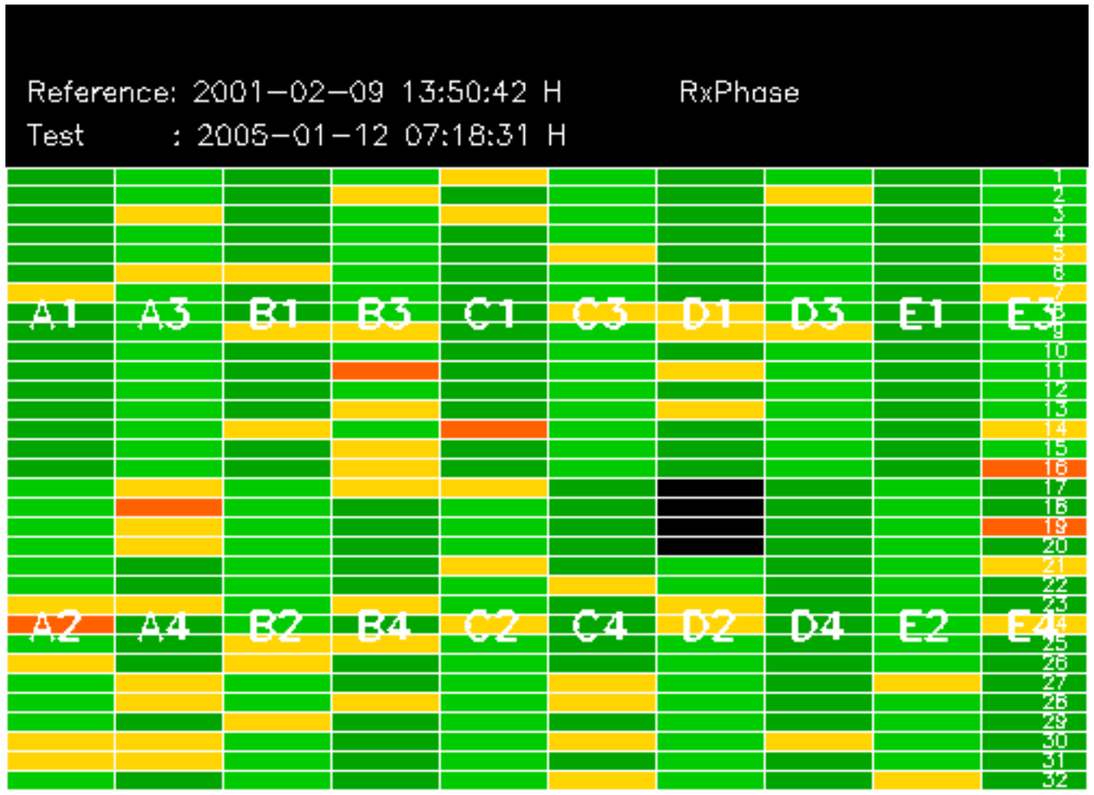

Reference: 2003-06-12 14:10:32 V
Test : 2005-01-13 10:08:06 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-01-12 07:18:31 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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3
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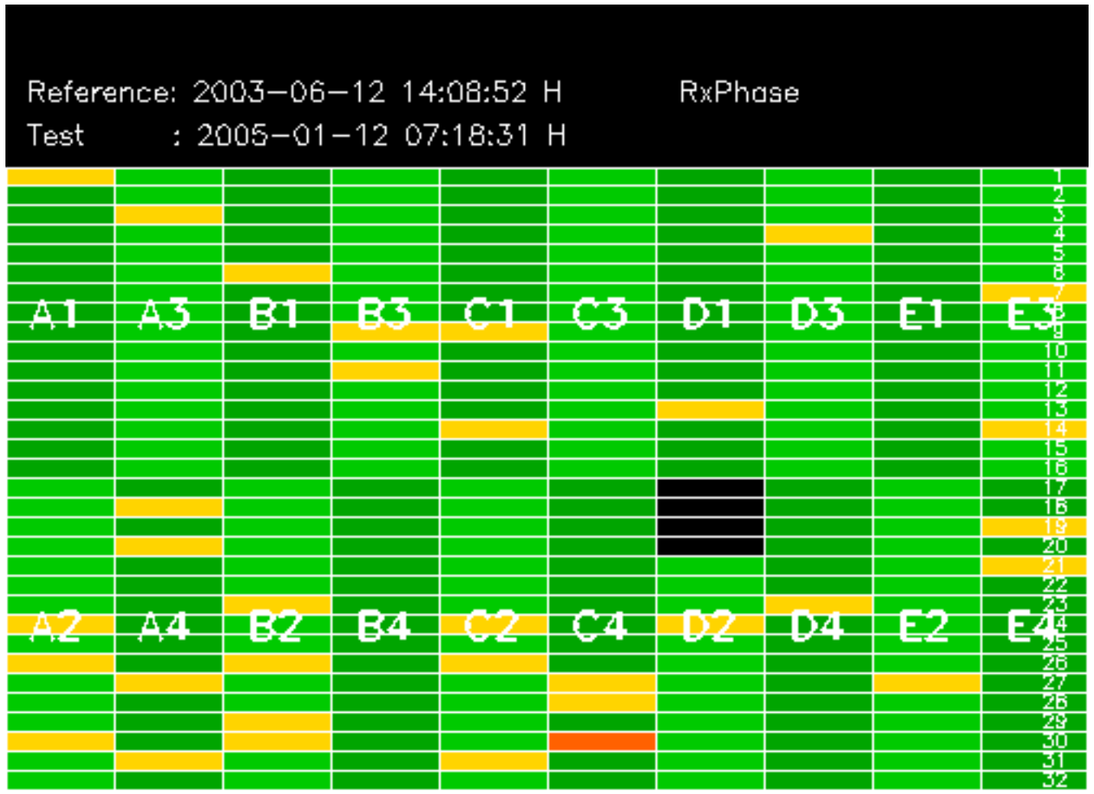
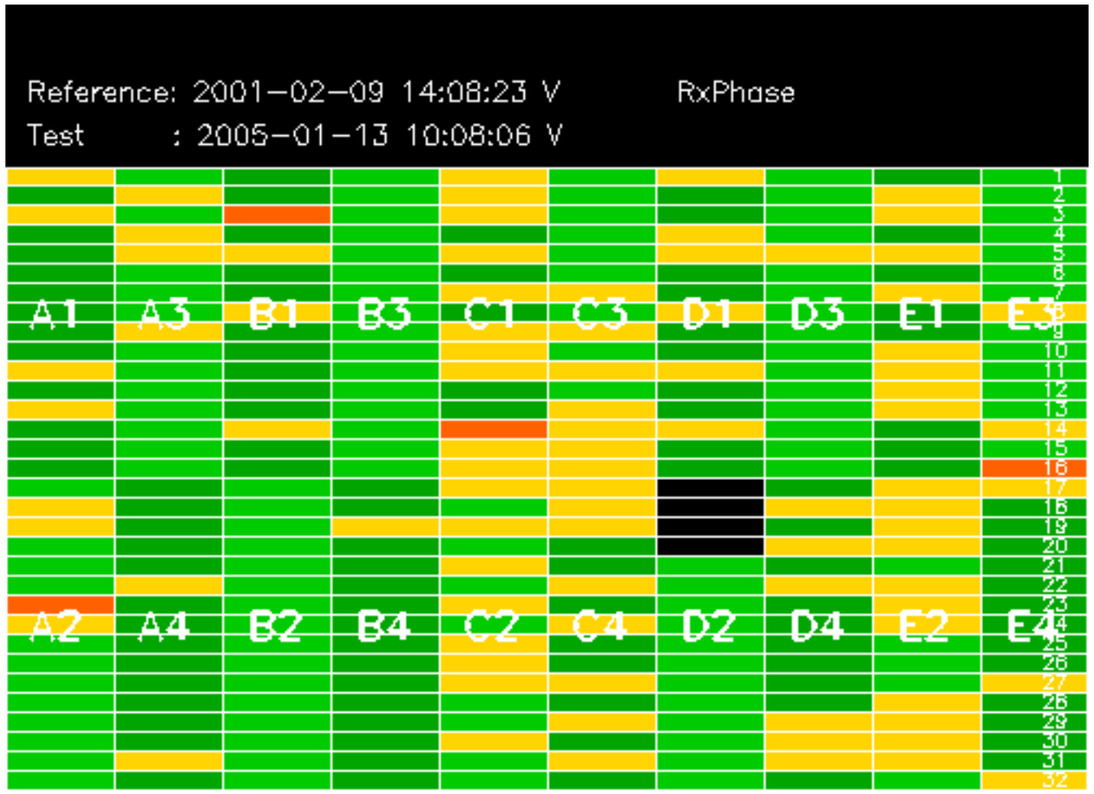
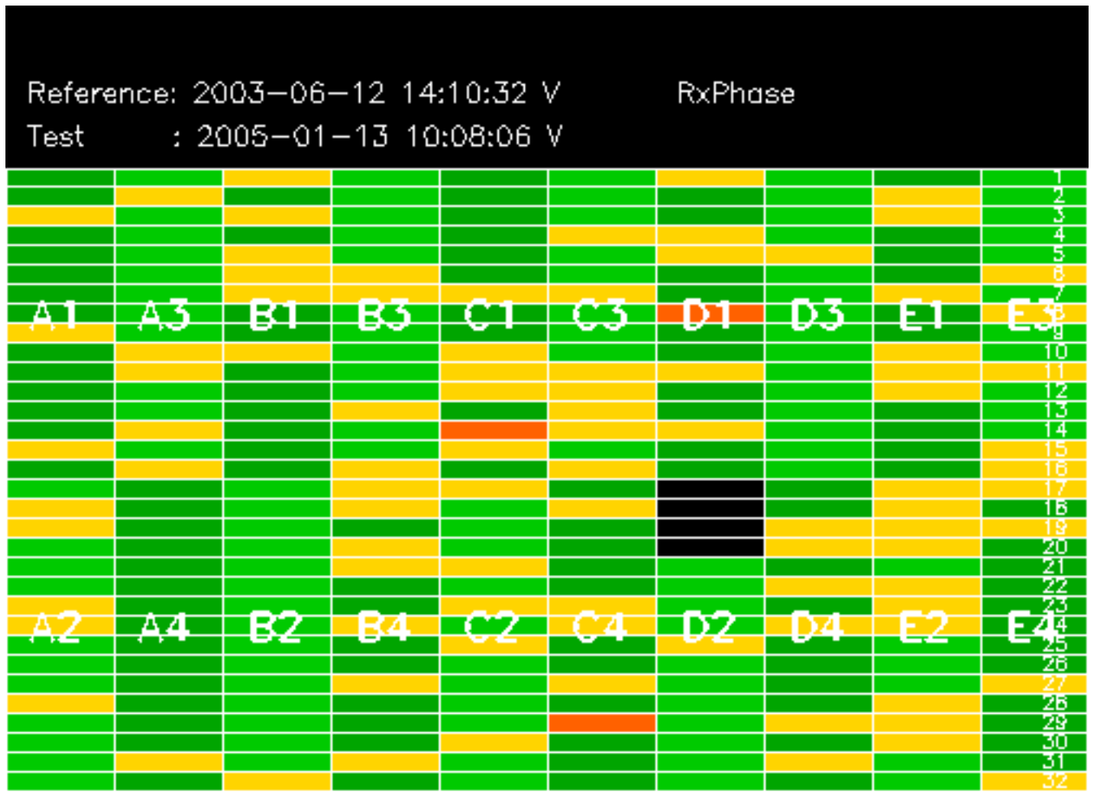
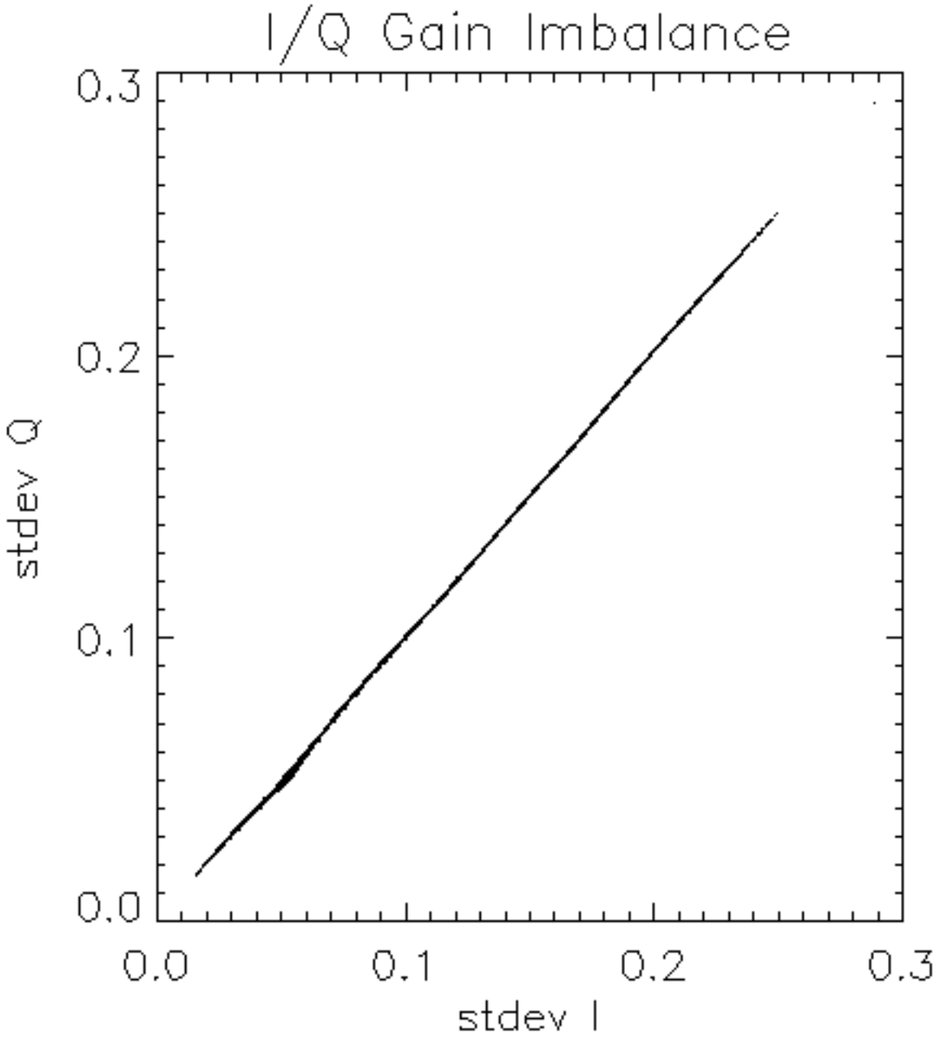
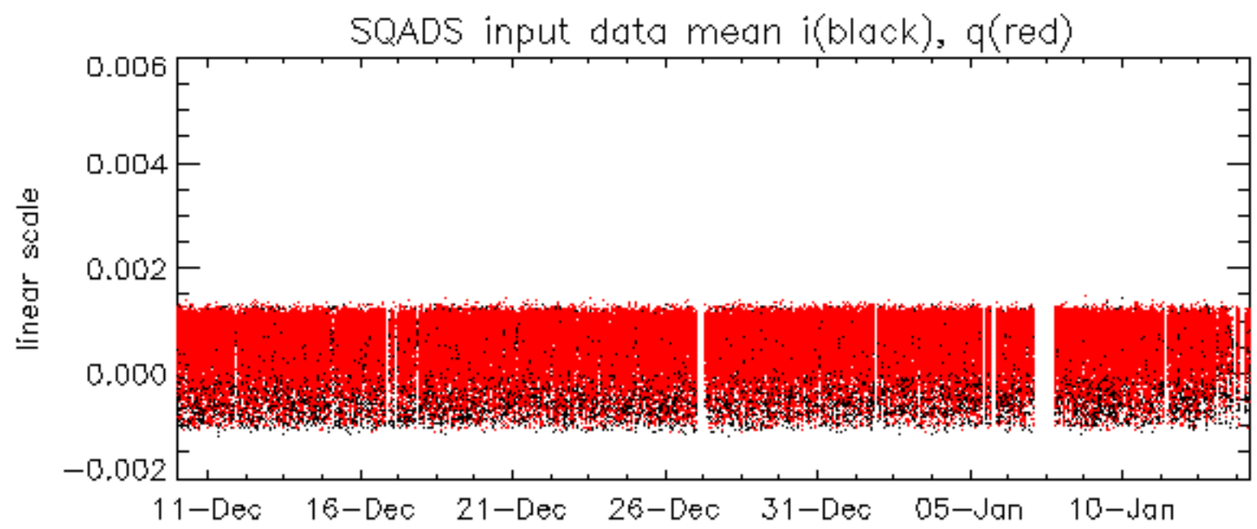
32

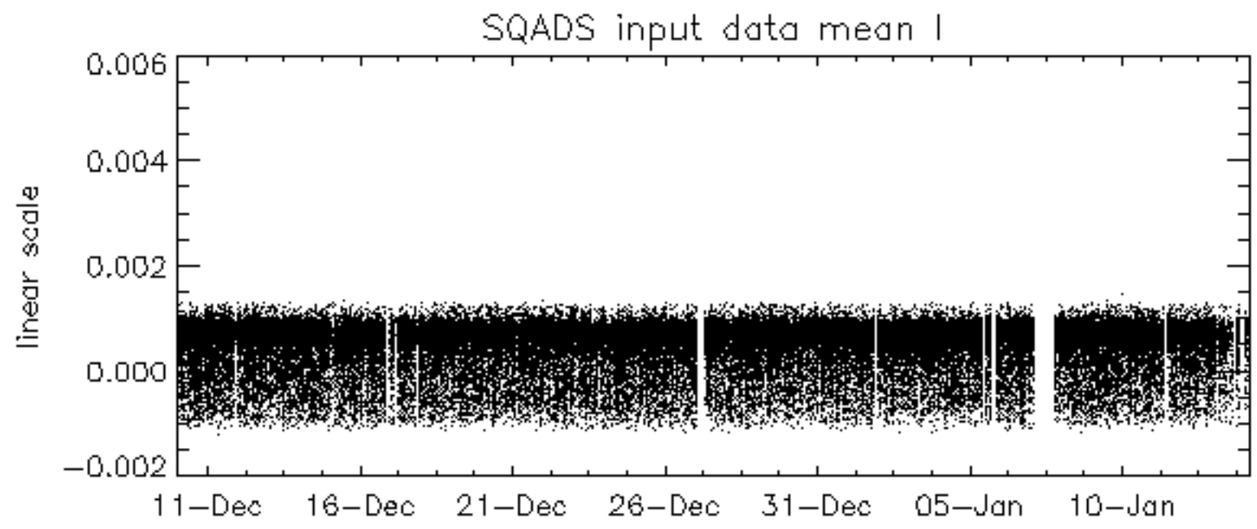

Reference: 2003-06-12 14:08:52 H
Test : 2005-01-12 07:18:31 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

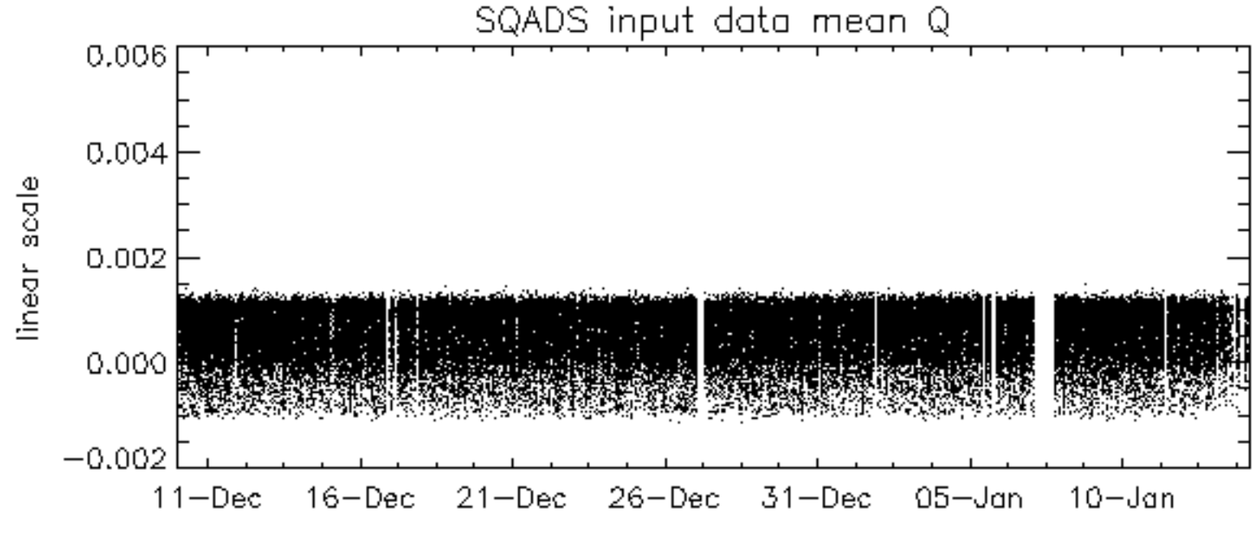

Reference: 2001-02-09 14:08:23 V
Test : 2005-01-13 10:08:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

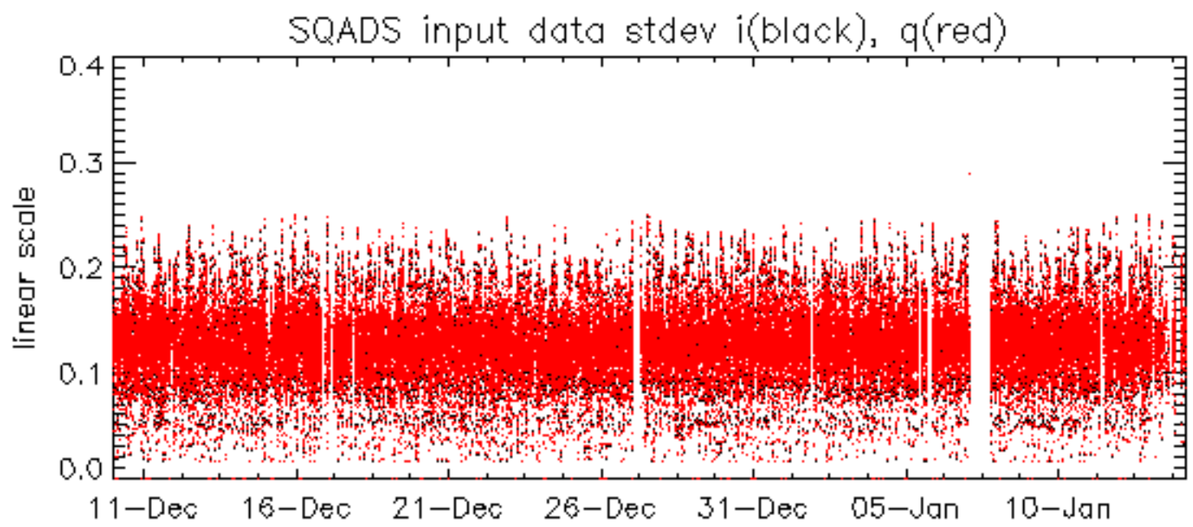

Reference: 2003-06-12 14:10:32 V
Test : 2005-01-13 10:08:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

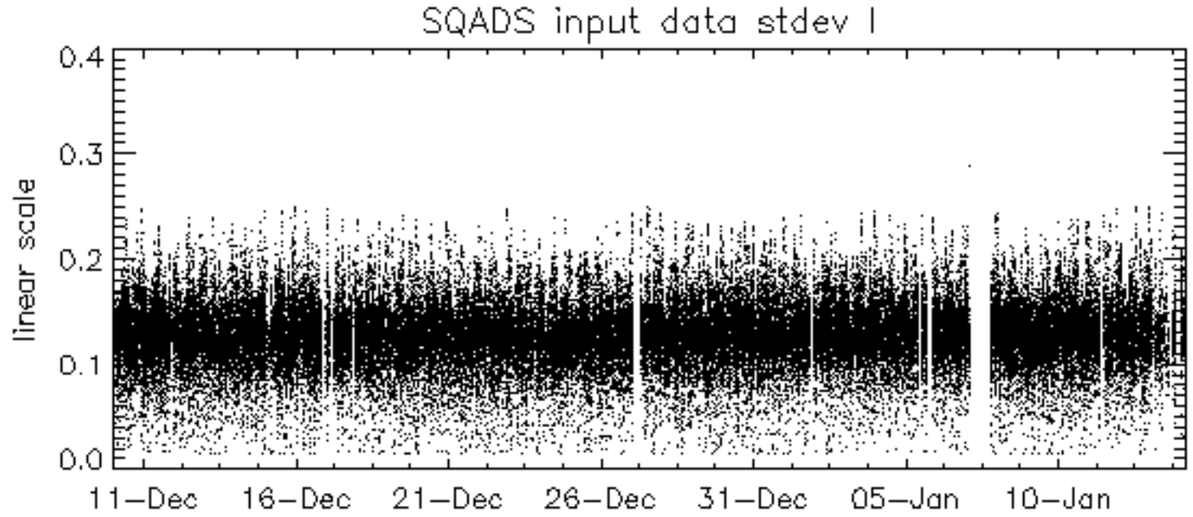

I/Q Gain Imbalance
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
stdev I

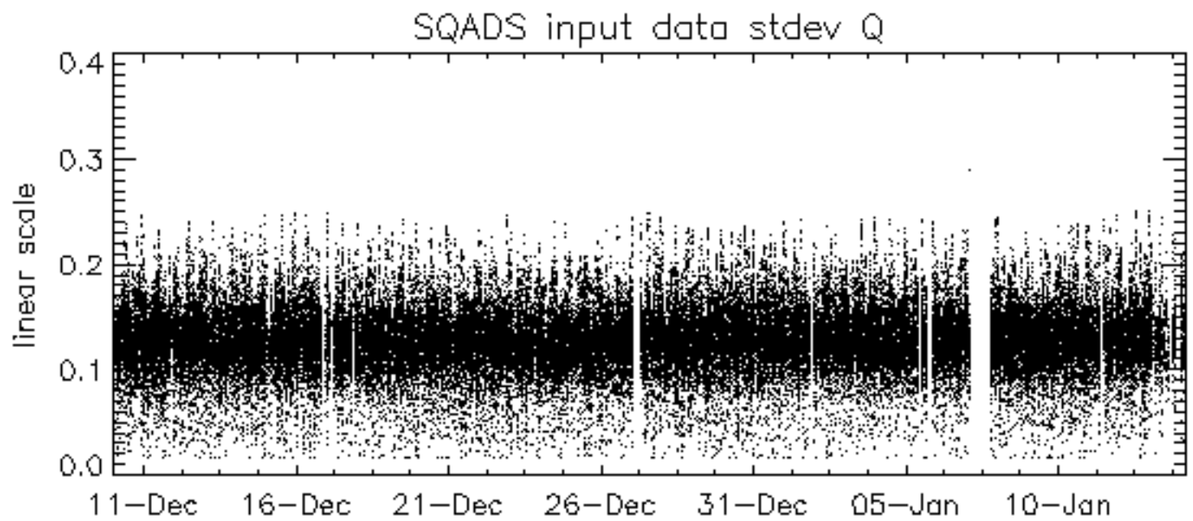

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Dec
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan

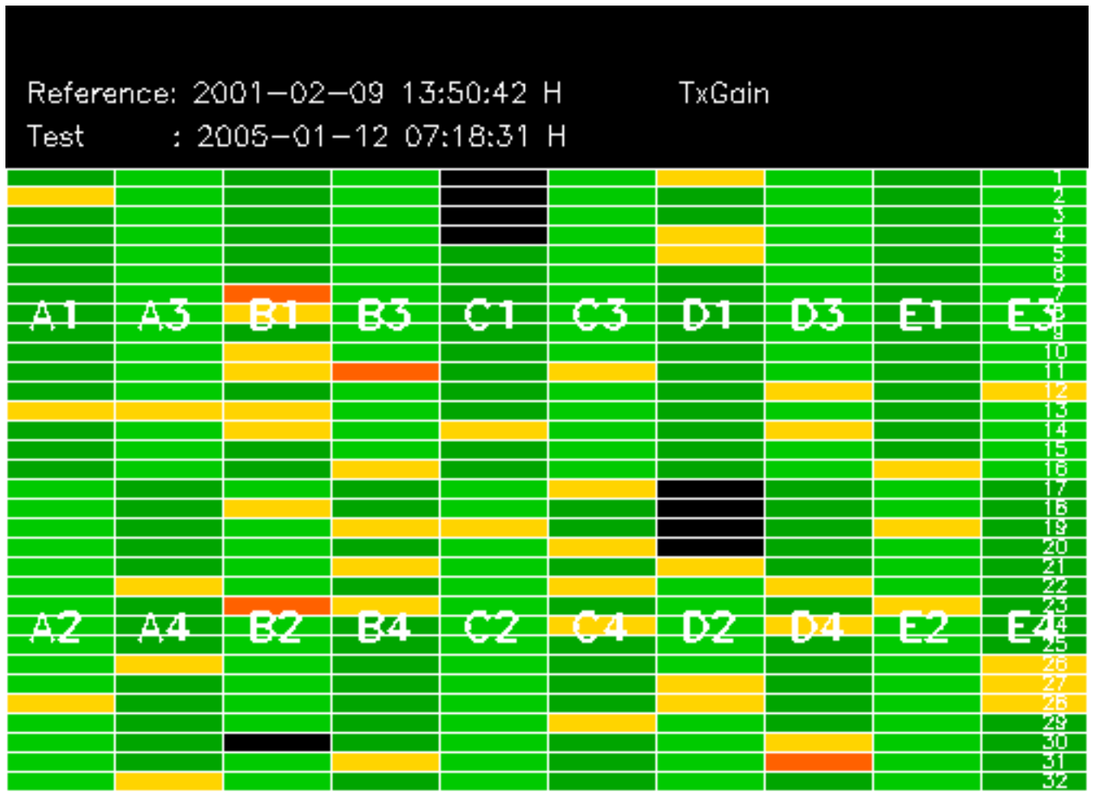

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Dec
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-01-12 07:18:31 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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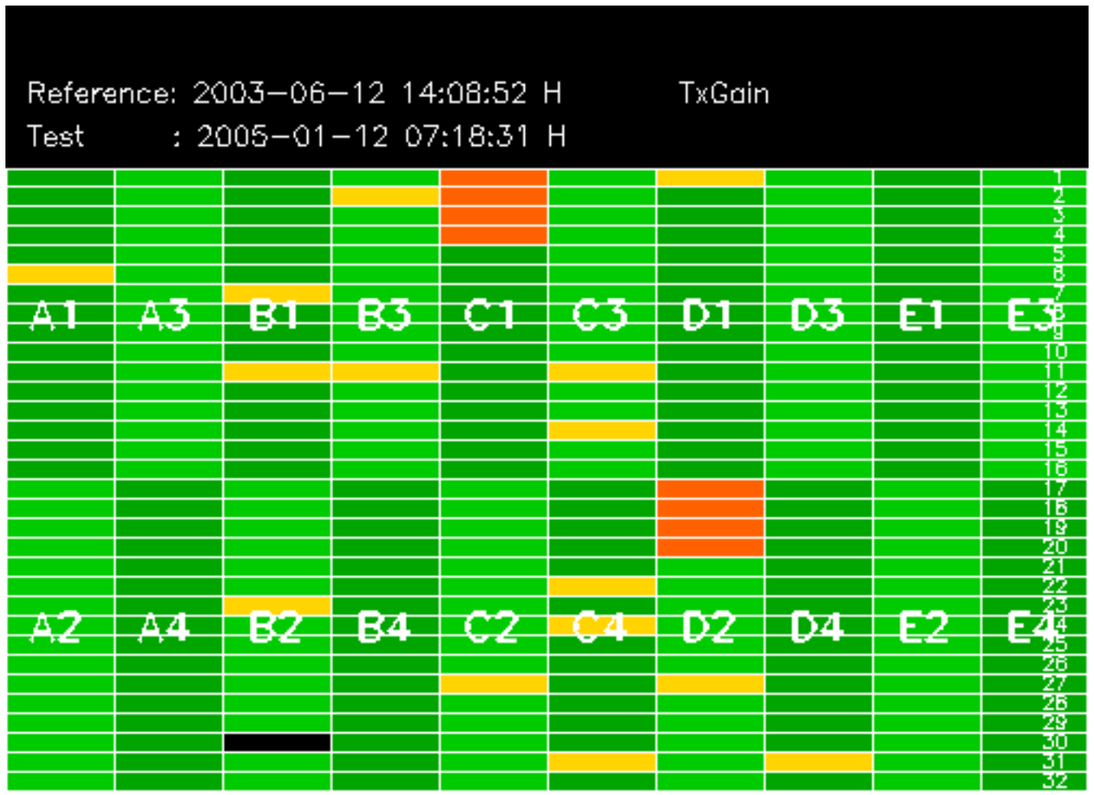
Reference: 2003-06-12 14:08:52 H
Test : 2005-01-12 07:18:31 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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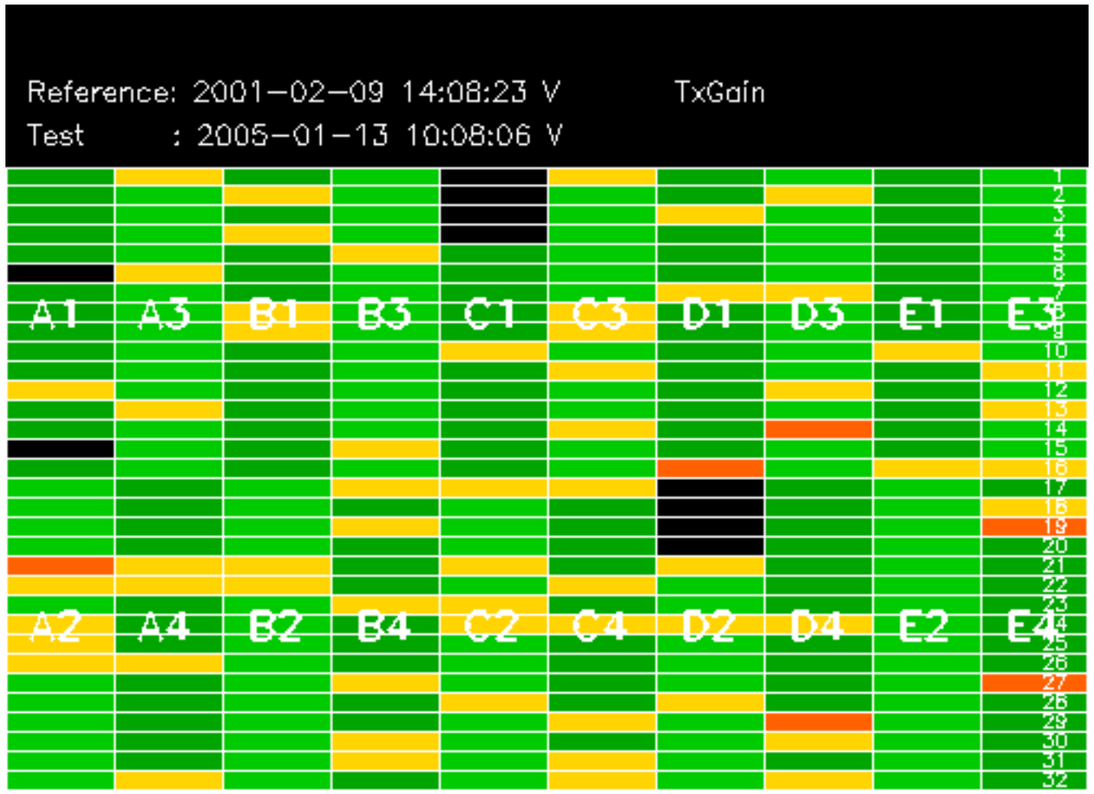
Reference: 2001-02-09 14:08:23 V
Test : 2005-01-13 10:08:06 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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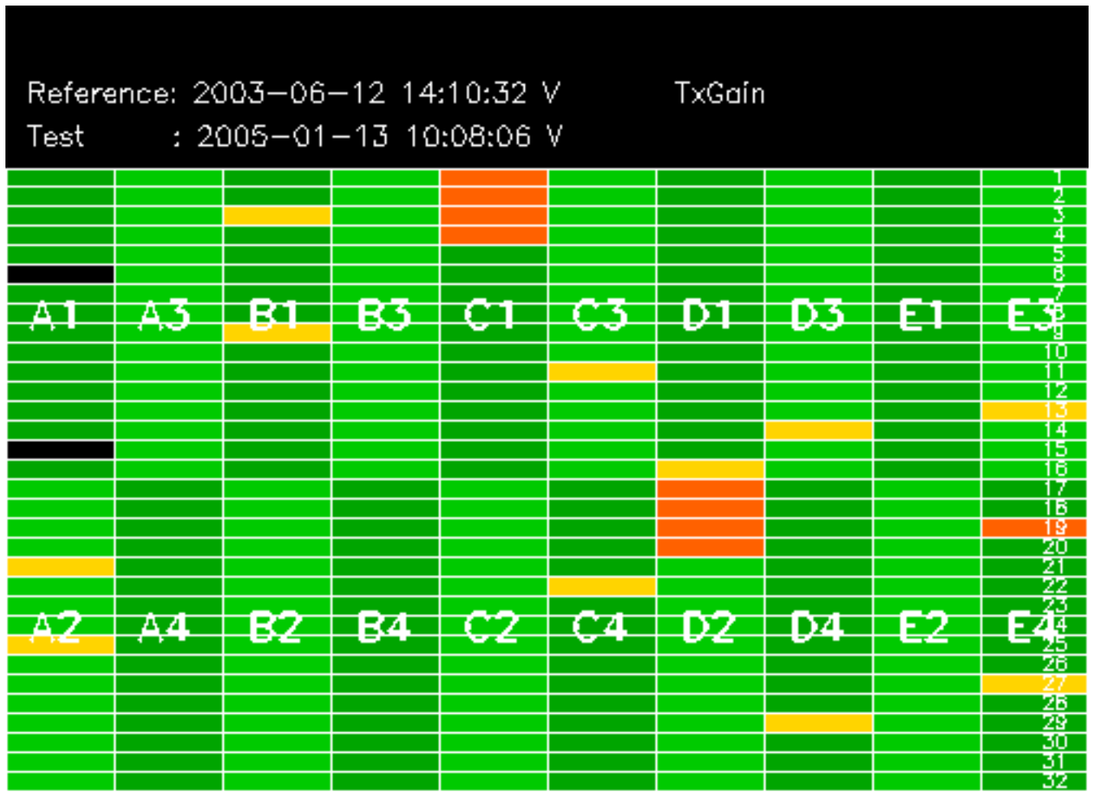
Reference: 2003-06-12 14:10:32 V
Test : 2005-01-13 10:08:06 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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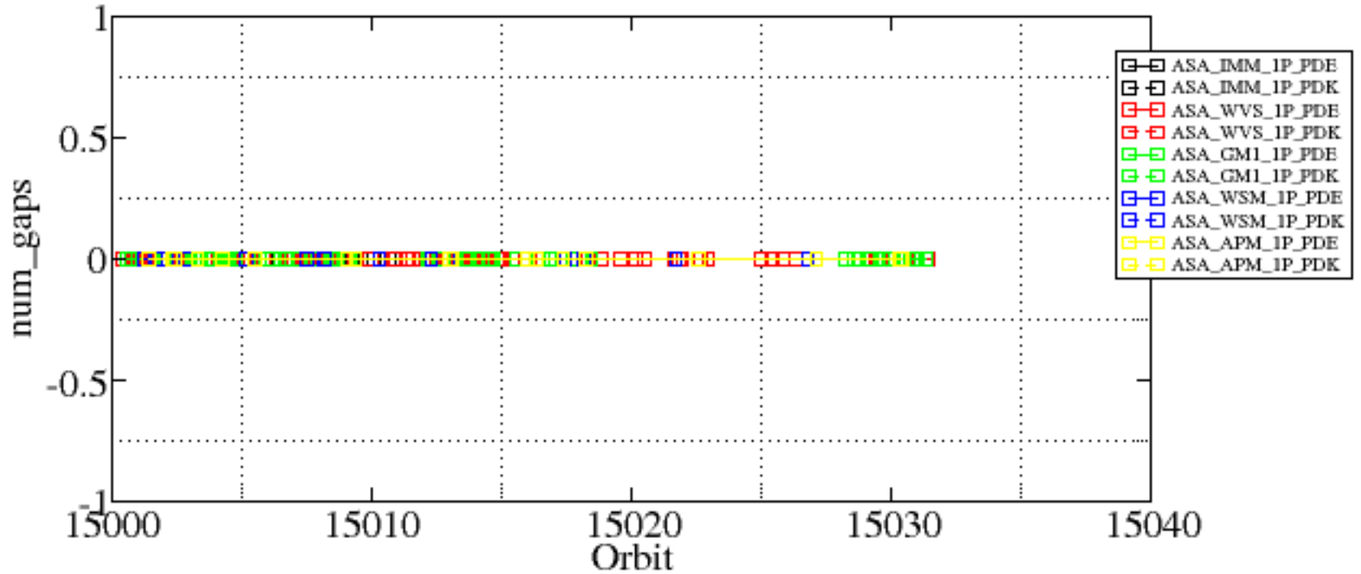
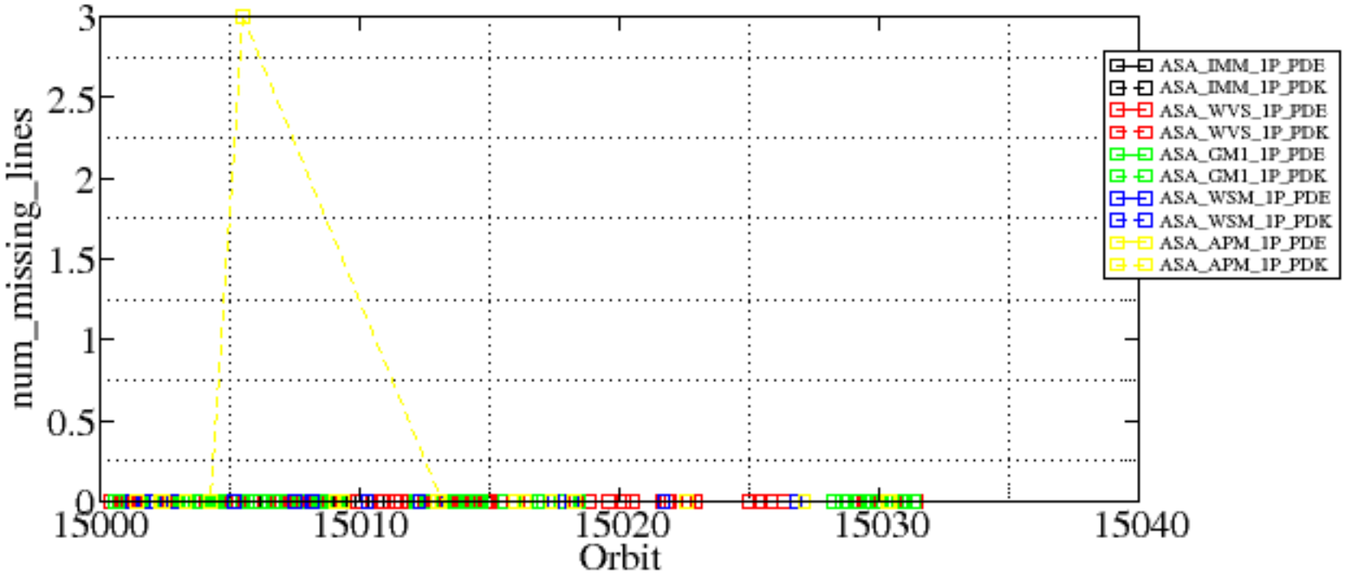
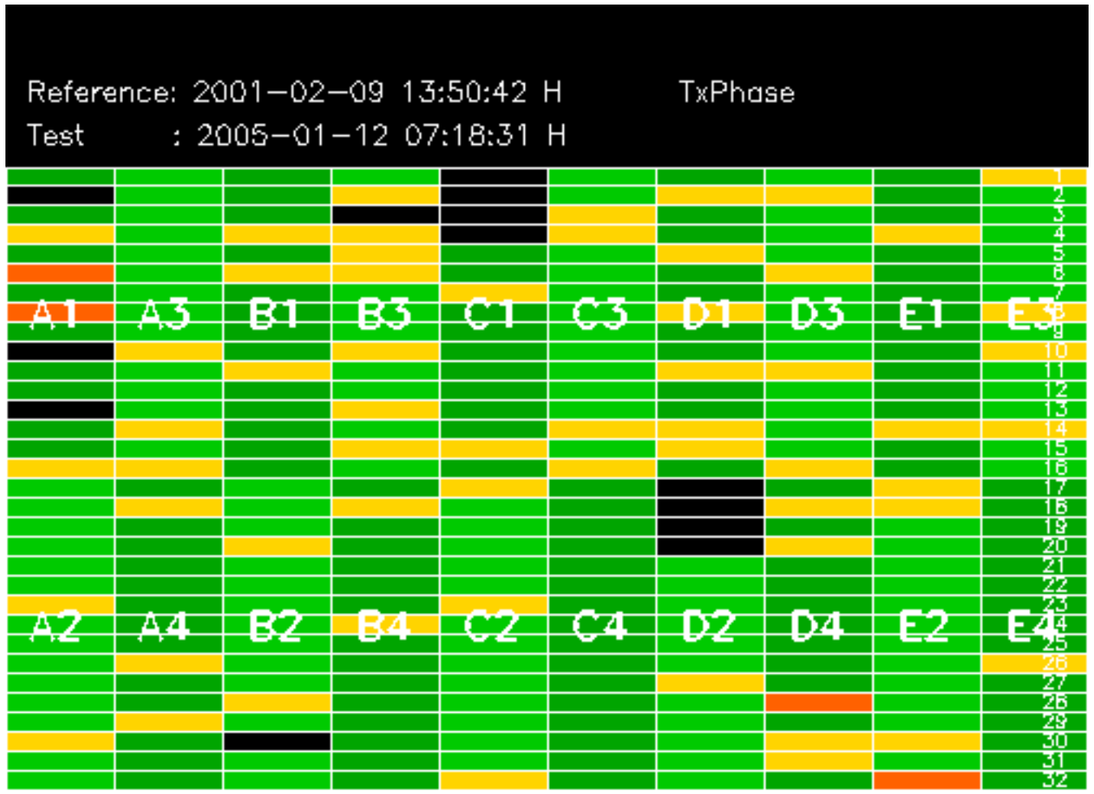
Summary of analysis for the last 3 days 2005011[234]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename   </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_APM_1PNPDK20050112_084134_000000402033_00422_15005_1270.N1 </td> <td>0   </td> <td>3   </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
15000
15010
15020
15030
15040
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
3
2.5
2
1.5
1
0.5
0
15000
15010
15020
15030
15040
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


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-01-12 07:18:31 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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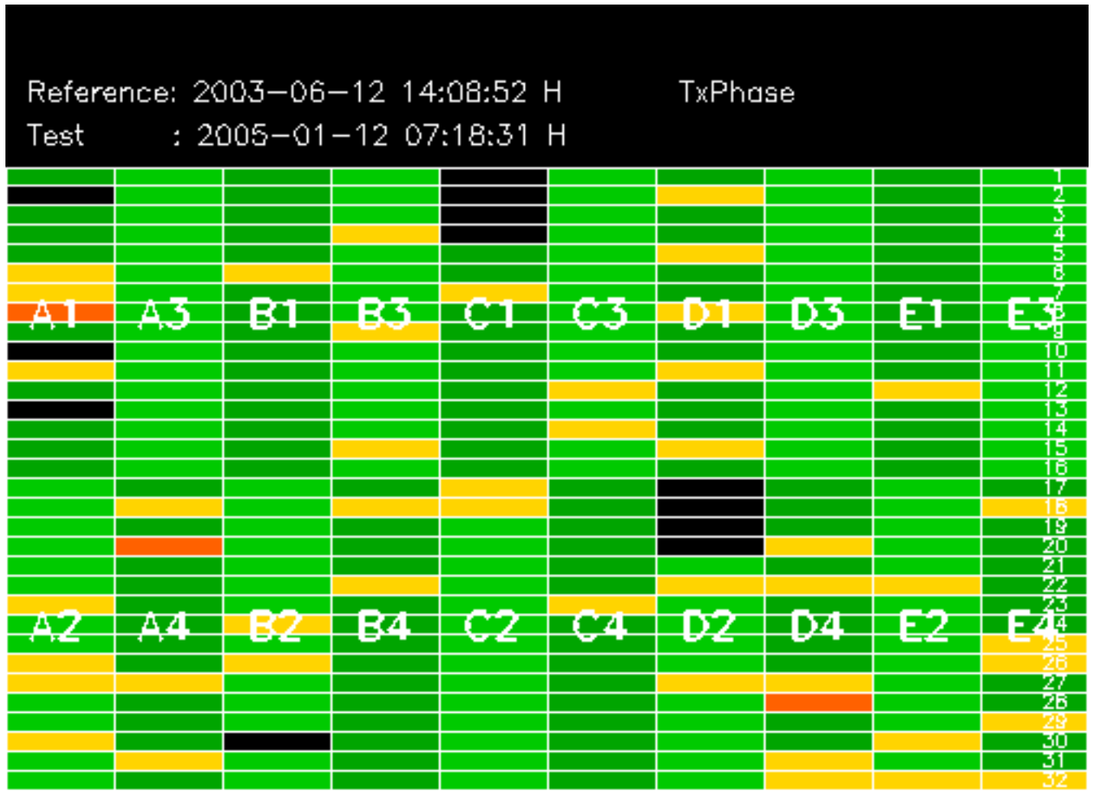
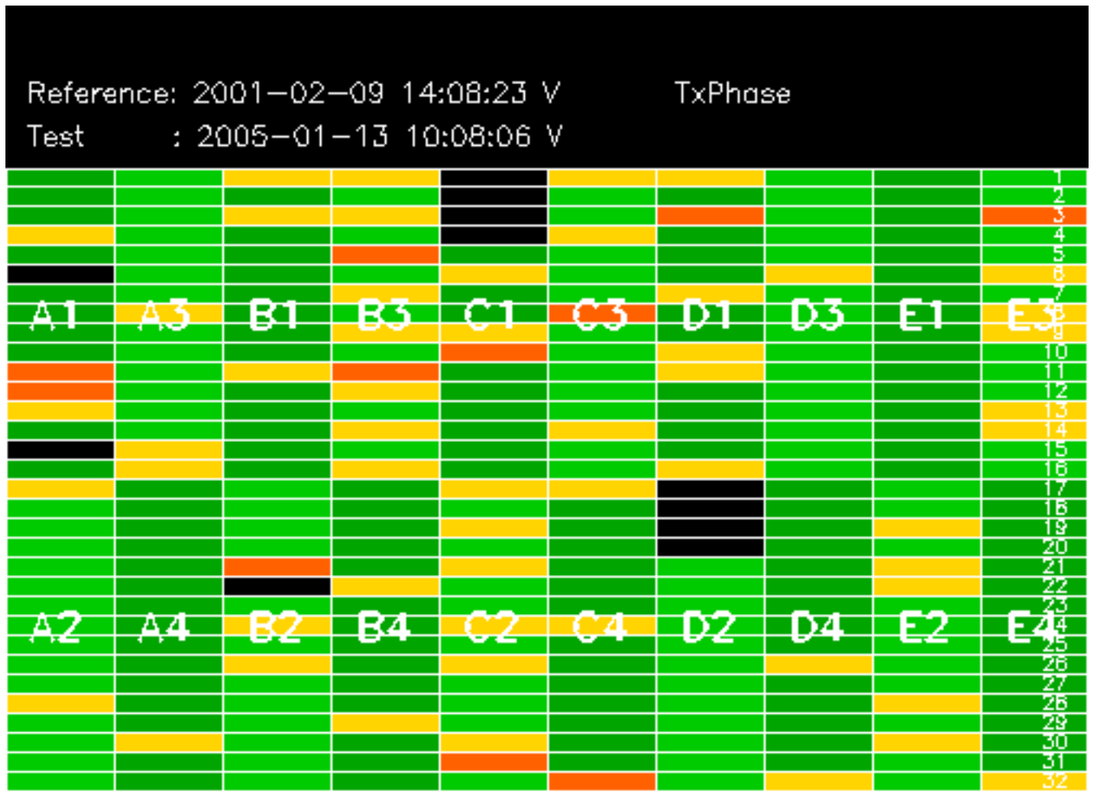

Reference: 2003-06-12 14:08:52 H
Test : 2005-01-12 07:18:31 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


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


Reference: 2003-06-12 14:10:32 V
Test : 2005-01-13 10:08:06 V
TxPhase
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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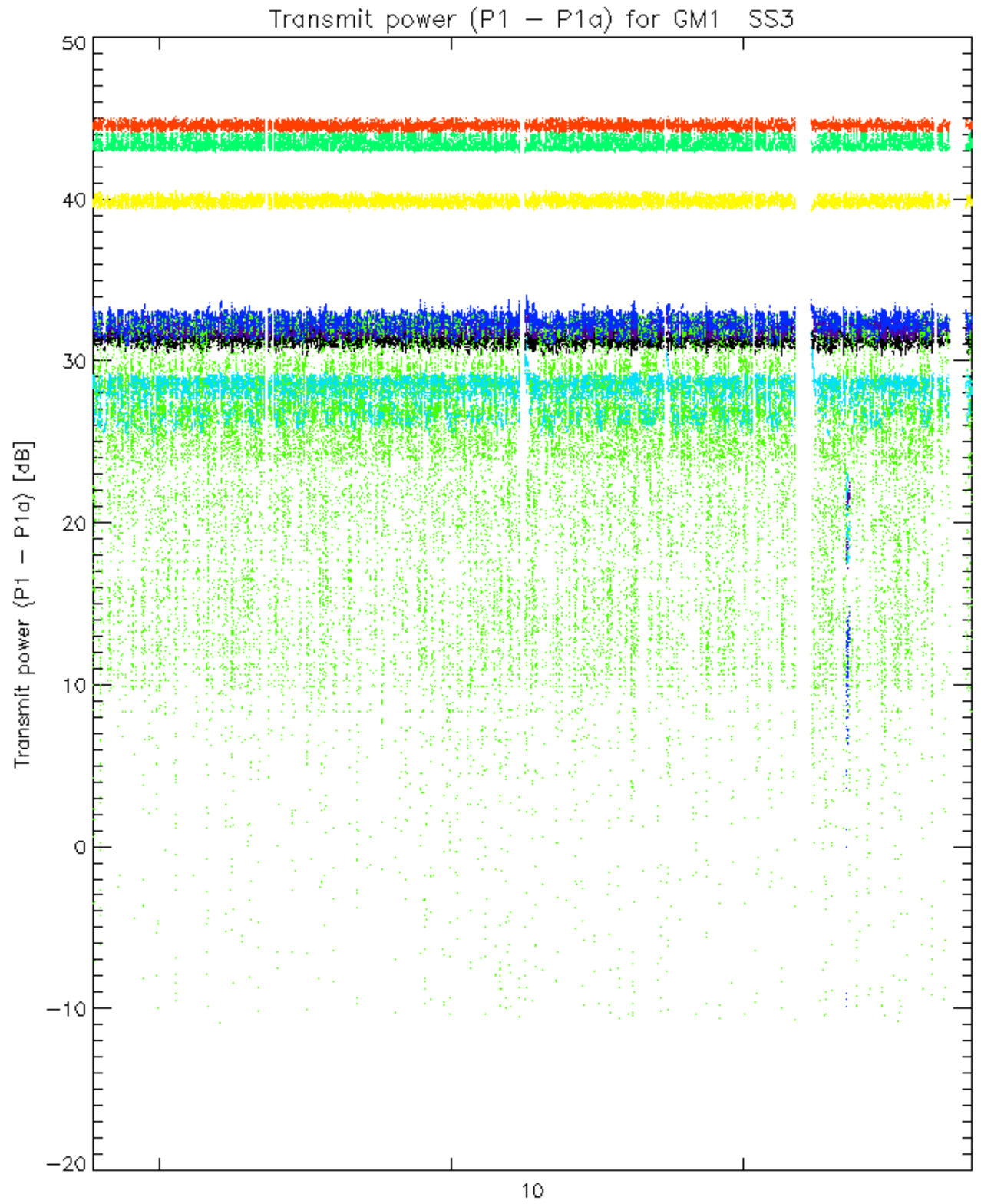
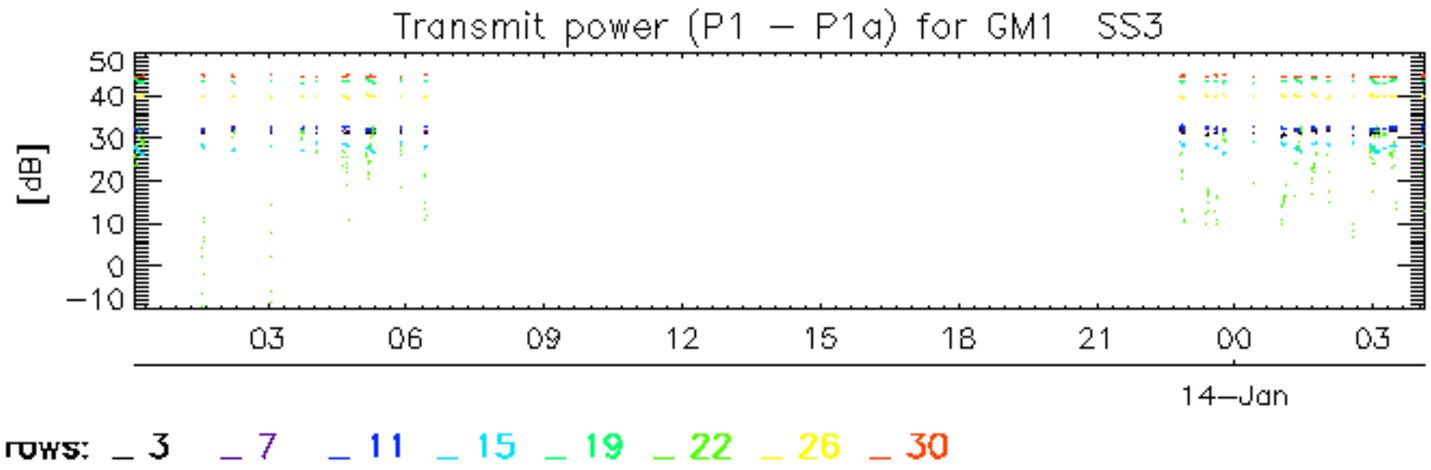
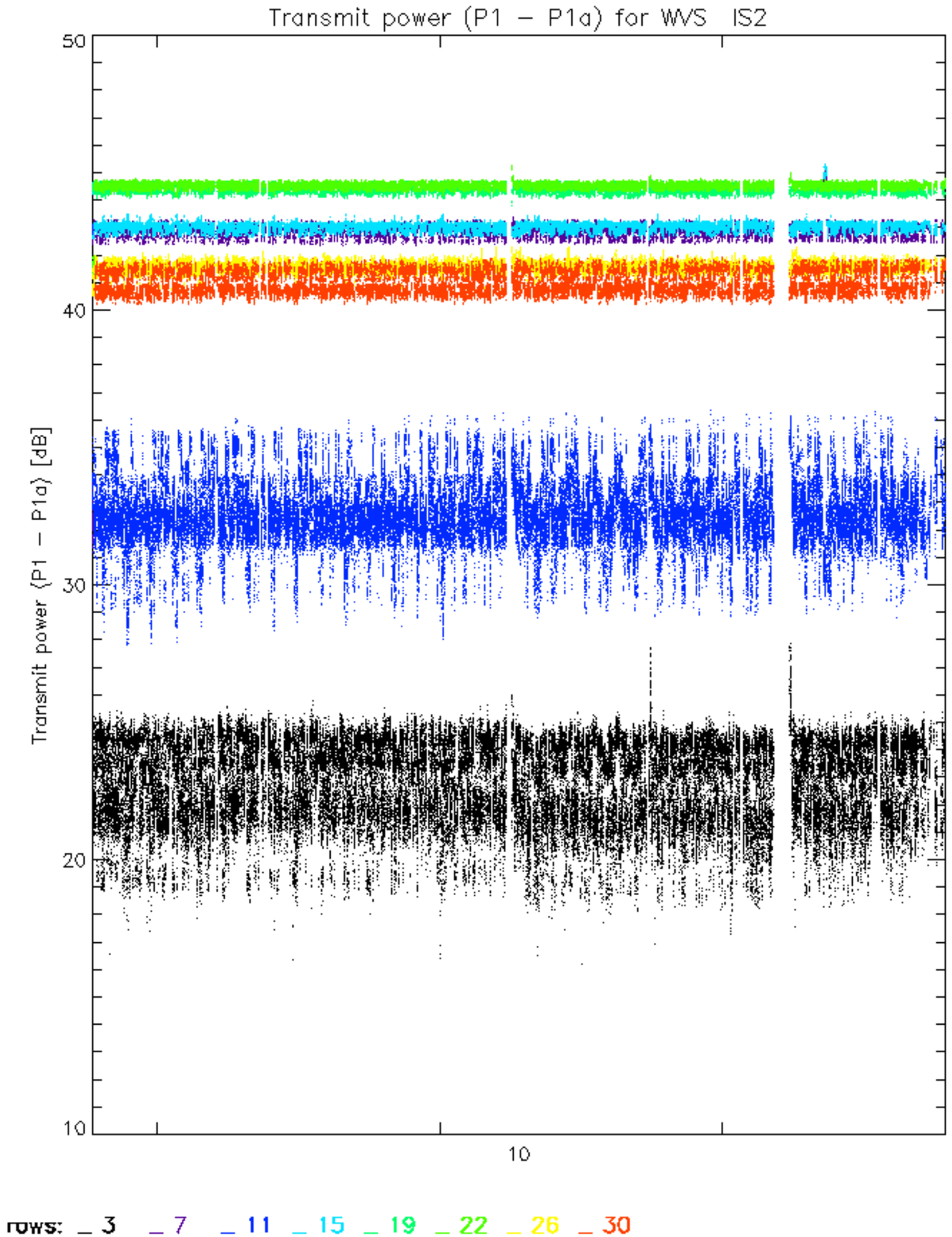
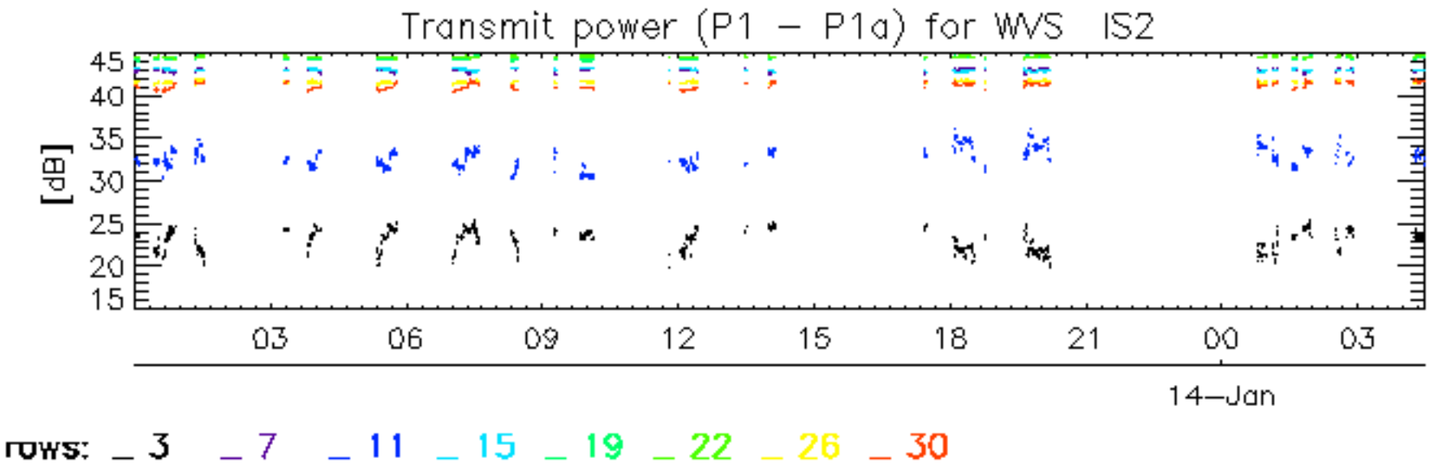

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
10
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.