PRELIMINARY REPORT OF 050116

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

last update on Sun Jan 16 11:00:30 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 2005-01-15 00:00:00 to 2005-01-16 11:00:30

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	44	3	2	3
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	24	44	3	2	3
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	24	44	3	2	3
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	44	3	2	3

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	0	0	4	10	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	0	0	4	10	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	0	0	4	10	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	0	0	4	10	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	-3.427166	0.007149	0.030641
7	P1	-3.085168	0.010026	0.009858
11	P1	-4.645151	0.020046	0.022273
15	P1	-5.648217	0.039512	0.042808
19	P1	-3.662511	0.006316	-0.000329
22	P1	-4.571462	0.016821	0.010321
26	P1	-4.942056	0.025198	0.043369
30	P1	-7.127296	0.014168	-0.014963
3	P1	-15.927706	0.105730	0.045387
7	P1	-15.513812	0.095956	0.050620
11	P1	-20.803898	0.316164	-0.052903
15	P1	-11.630542	0.076770	0.064539
19	P1	-14.175177	0.033706	0.015415
22	P1	-16.024549	0.442953	0.090866
26	P1	-17.696098	0.235436	0.104595
30	P1	-17.874990	0.312661	-0.042289

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.314787	0.086371	0.093106
7	P2	-22.509697	0.171576	0.096288
11	P2	-14.787789	0.181654	0.177548
15	P2	-7.144417	0.116456	0.060843
19	P2	-9.728975	0.216418	0.106473
22	P2	-17.120575	0.098935	0.106872
26	P2	-16.525562	0.115956	0.076010

30	P2	-18.945614	0.083561	0.056904

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.203513	0.007037	0.022385
7	P3	-8.203558	0.007040	0.022709
11	P3	-8.203558	0.007041	0.022724
15	P3	-8.203542	0.007038	0.022630
19	P3	-8.203524	0.007036	0.022498
22	P3	-8.203487	0.007037	0.022282
26	P3	-8.203485	0.007037	0.022288
30	P3	-8.203794	0.007048	0.019929

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	-2.822847	0.011706	0.019923
7	P1	-2.954381	0.023717	0.016176
11	P1	-3.943684	0.025540	-0.005177
15	P1	-3.507900	0.029698	-0.007028
19	P1	-3.608390	0.012667	0.004459
22	P1	-5.639251	0.067795	-0.030409
26	P1	-6.532916	0.025158	-0.036147
30	P1	-6.299430	0.044704	0.001875
3	P1	-10.773916	0.048120	-0.016690
7	P1	-10.140014	0.135814	-0.009708
11	P1	-12.500365	0.108687	-0.086205

15	P1	-11.751284	0.054695	-0.017254
19	P1	-15.637191	0.046421	0.030025
22	P1	-24.071062	1.879206	0.050528
26	P1	-14.905922	0.353037	0.239975
30	P1	-20.053888	0.869283	0.138214

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.997330	0.036970	0.066610
7	P2	-22.559328	0.034370	0.106063
11	P2	-10.592848	0.038142	0.189663
15	P2	-5.044861	0.025101	0.027828
19	P2	-6.939004	0.037227	0.040094
22	P2	-7.266580	0.028466	0.077449
26	P2	-23.946348	0.019840	0.031686
30	P2	-21.989153	0.024795	0.052699

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.036646	0.002982	0.018425
7	P3	-8.036551	0.002985	0.018189
11	P3	-8.036567	0.002981	0.017992
15	P3	-8.036721	0.002975	0.018024
19	P3	-8.036527	0.002988	0.017980
22	P3	-8.036694	0.002975	0.018219
26	P3	-8.036641	0.002980	0.018269
30	P3	-8.036572	0.002972	0.018058

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	0.000467338
	stdev	2.21302e-07
MEAN Q	mean	0.000543110
	stdev	2.33737e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128434
	stdev	0.000963576
STDEV Q	mean	0.128668
	stdev	0.000974120

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005011[456]
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_1PNPDK20050115_100814_000002122033_00466_15049_7252.N1	0	2
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

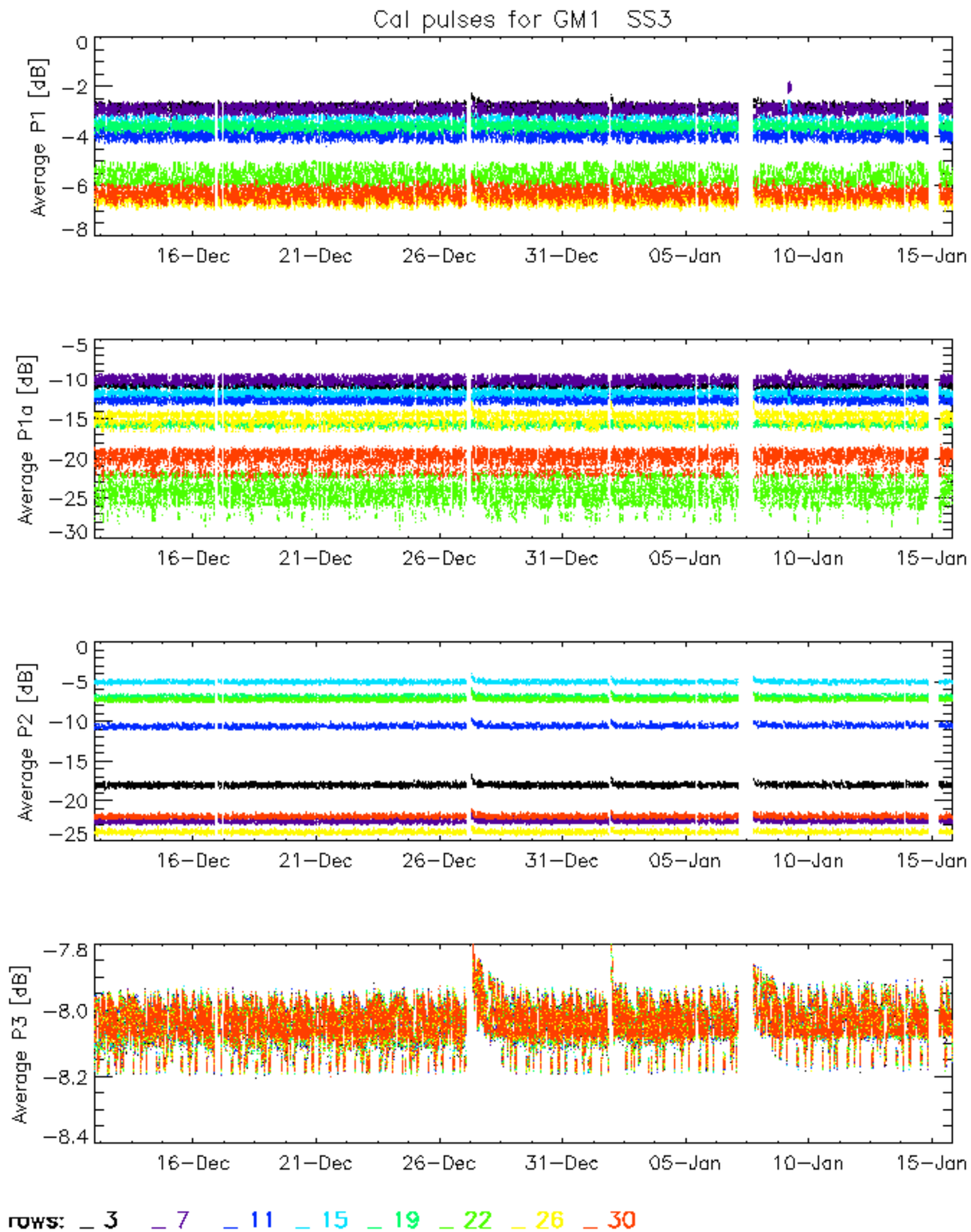
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

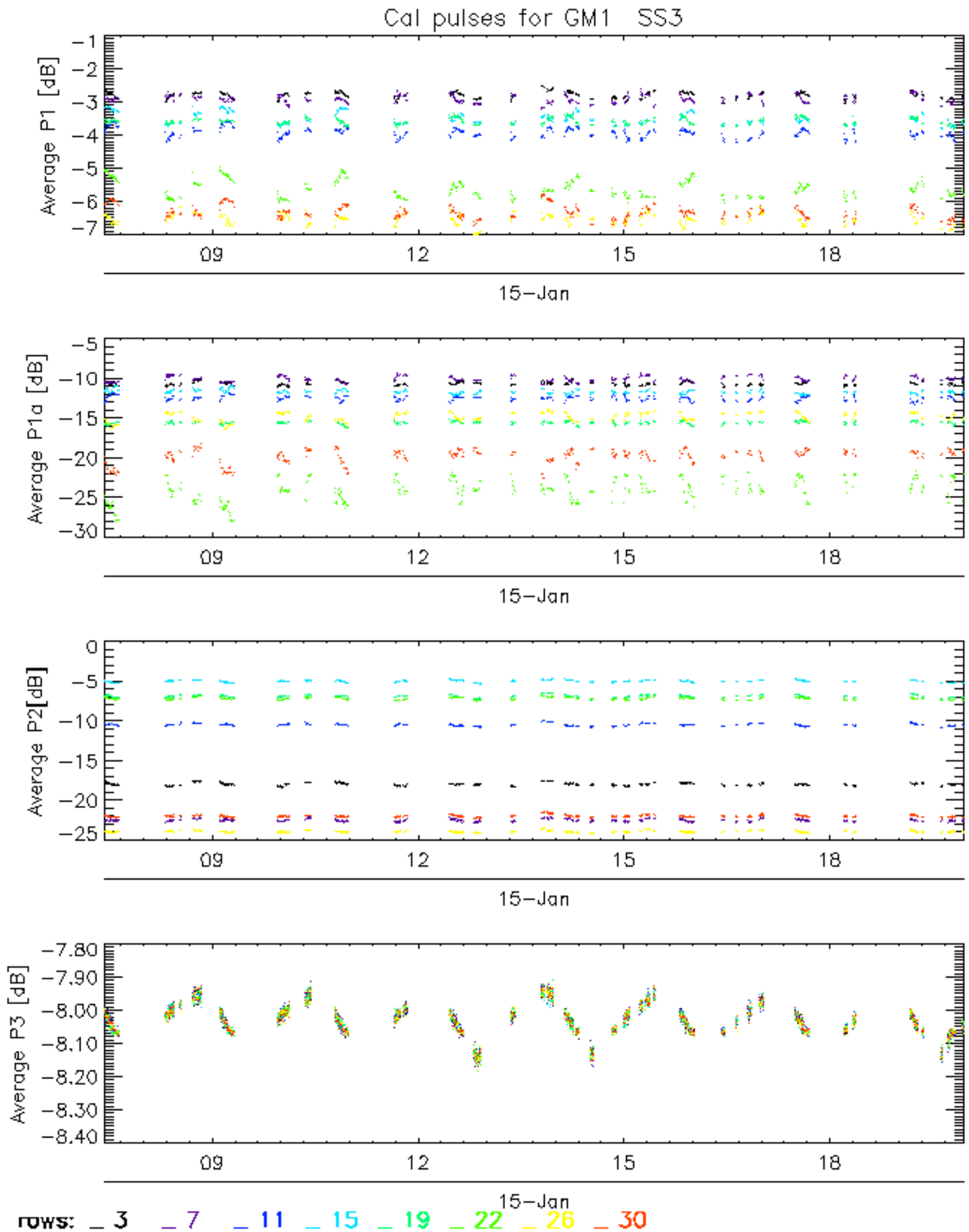
7.5 - Absolute Doppler for GM1

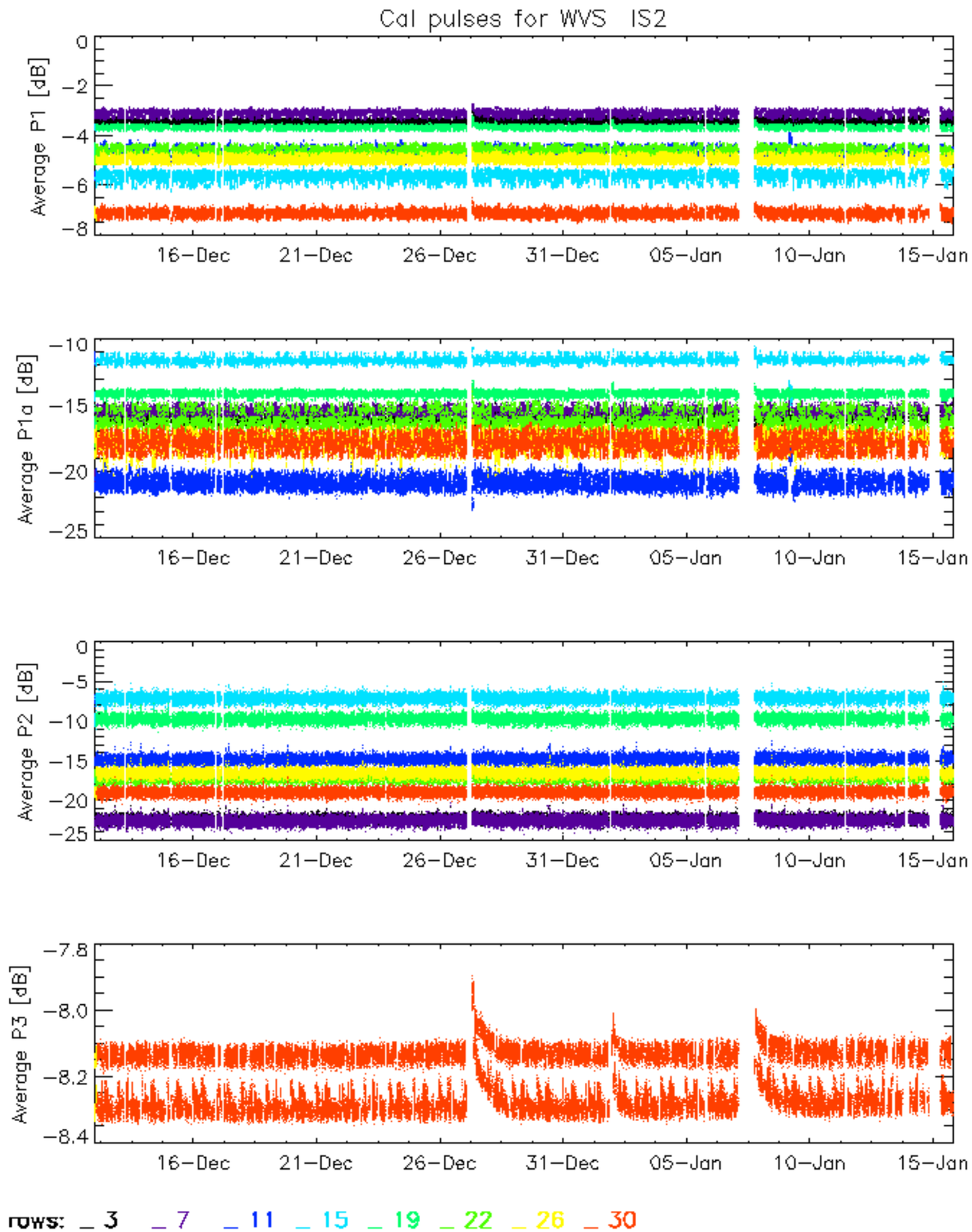
Evolution of Absolute Doppler
Acsending
Descending

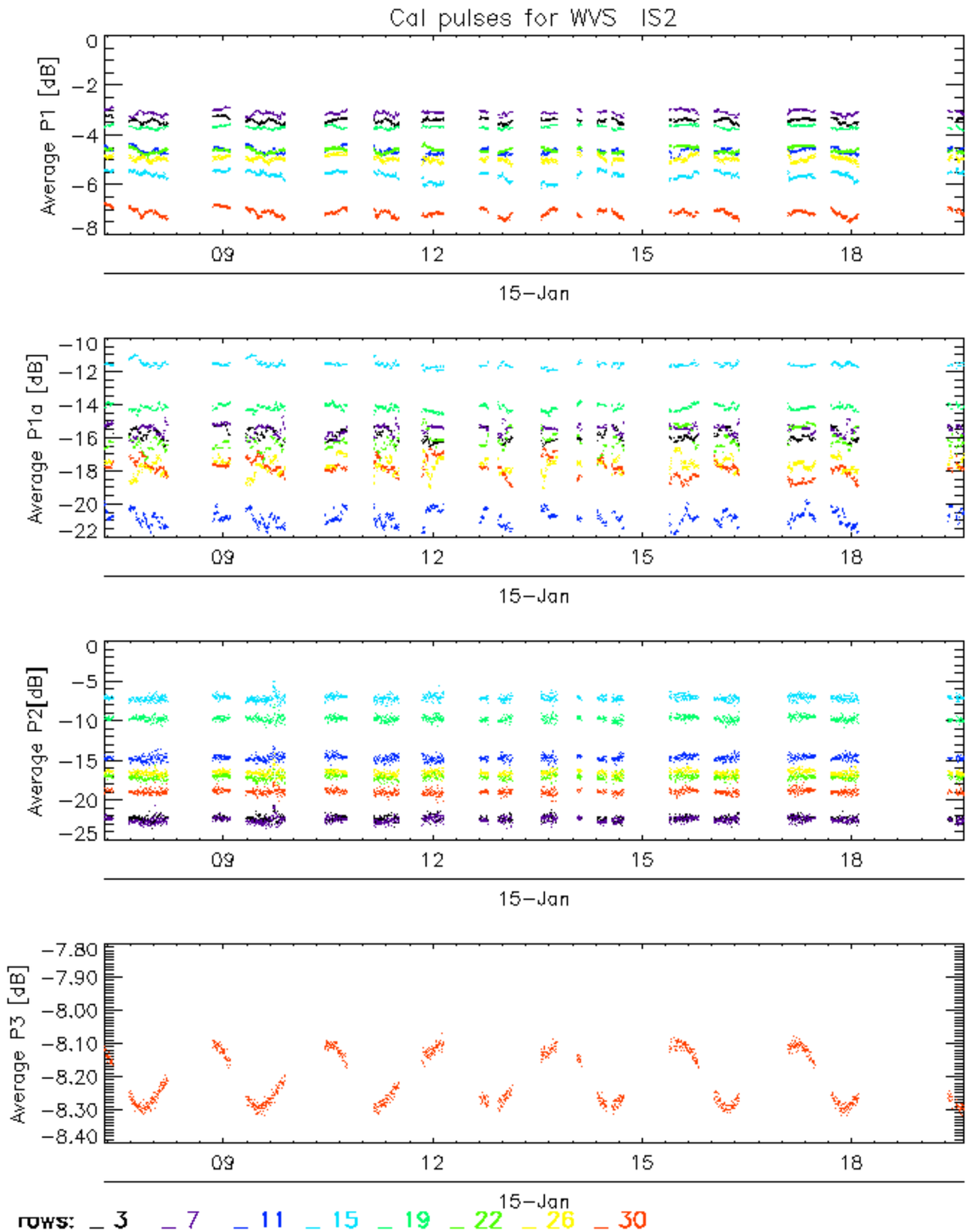
7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

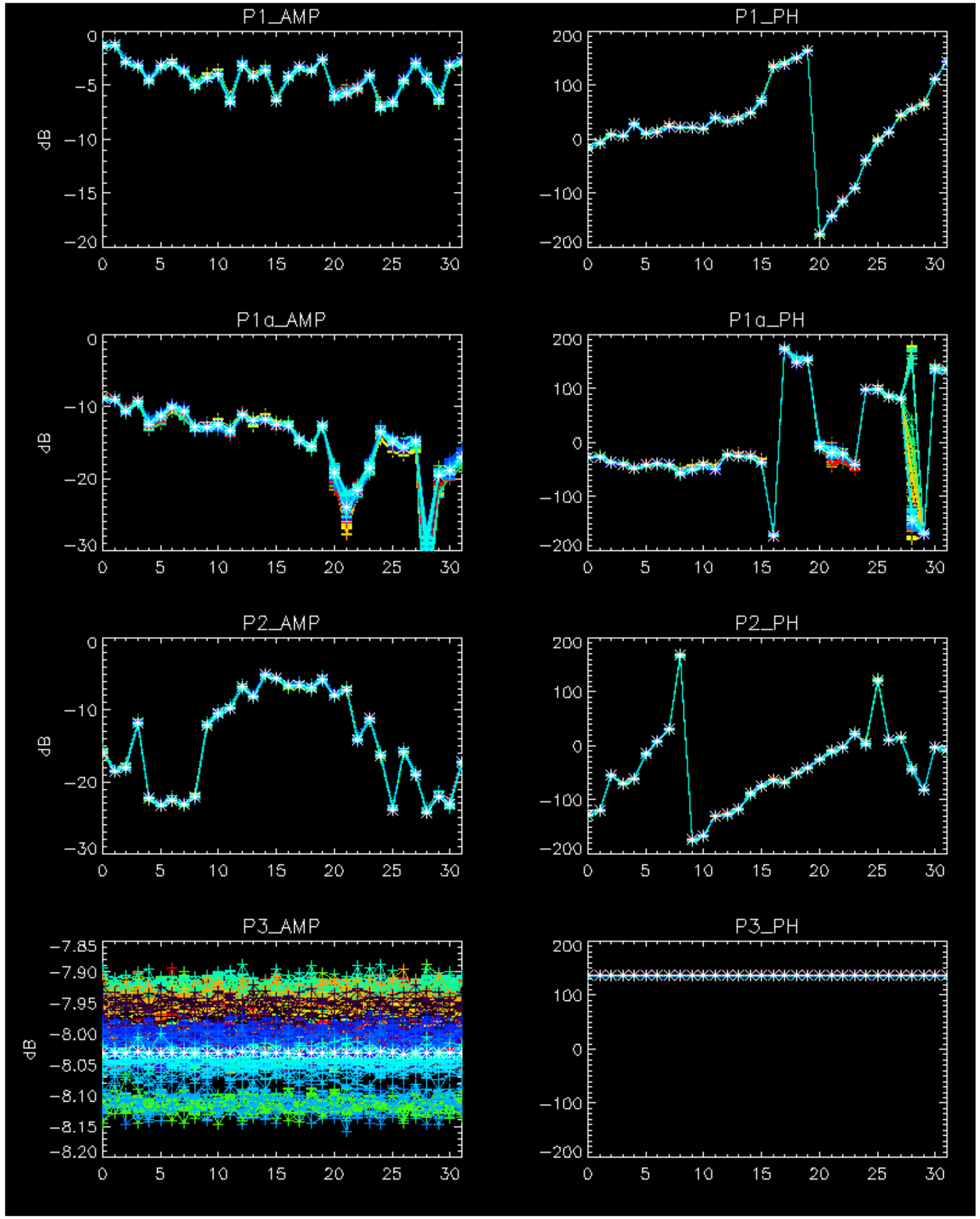

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

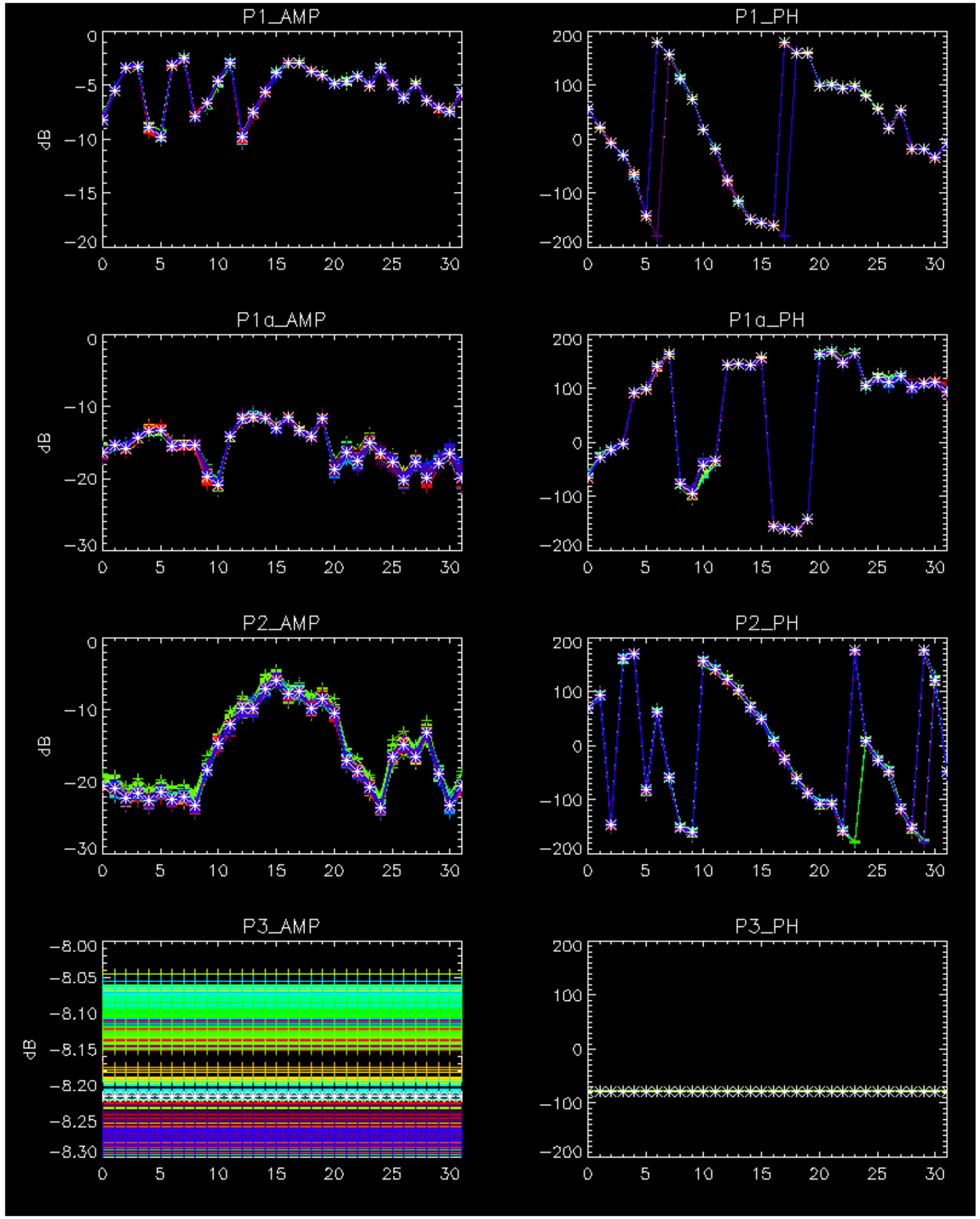

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
09
12
15
18
15-Jan
rows: 3 7 11 15 19 22 26 30


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
15−Jan
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

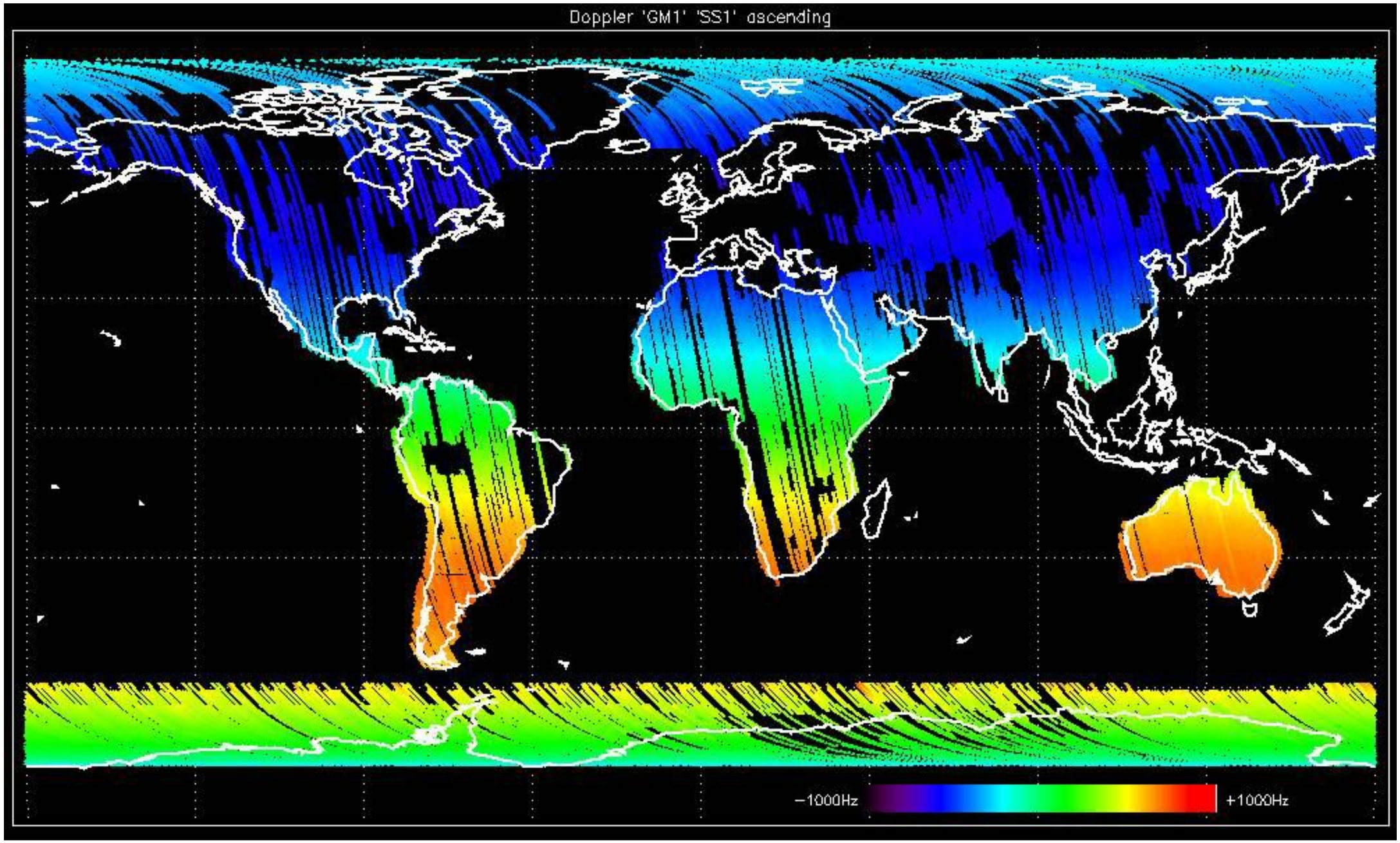

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
09
12
15
18
15−Jan
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
09
12
15
18
15−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
09
12
15
18
15−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
09
12
15
18
15−Jan
rows: 3 7 11 15 19 22 26 30

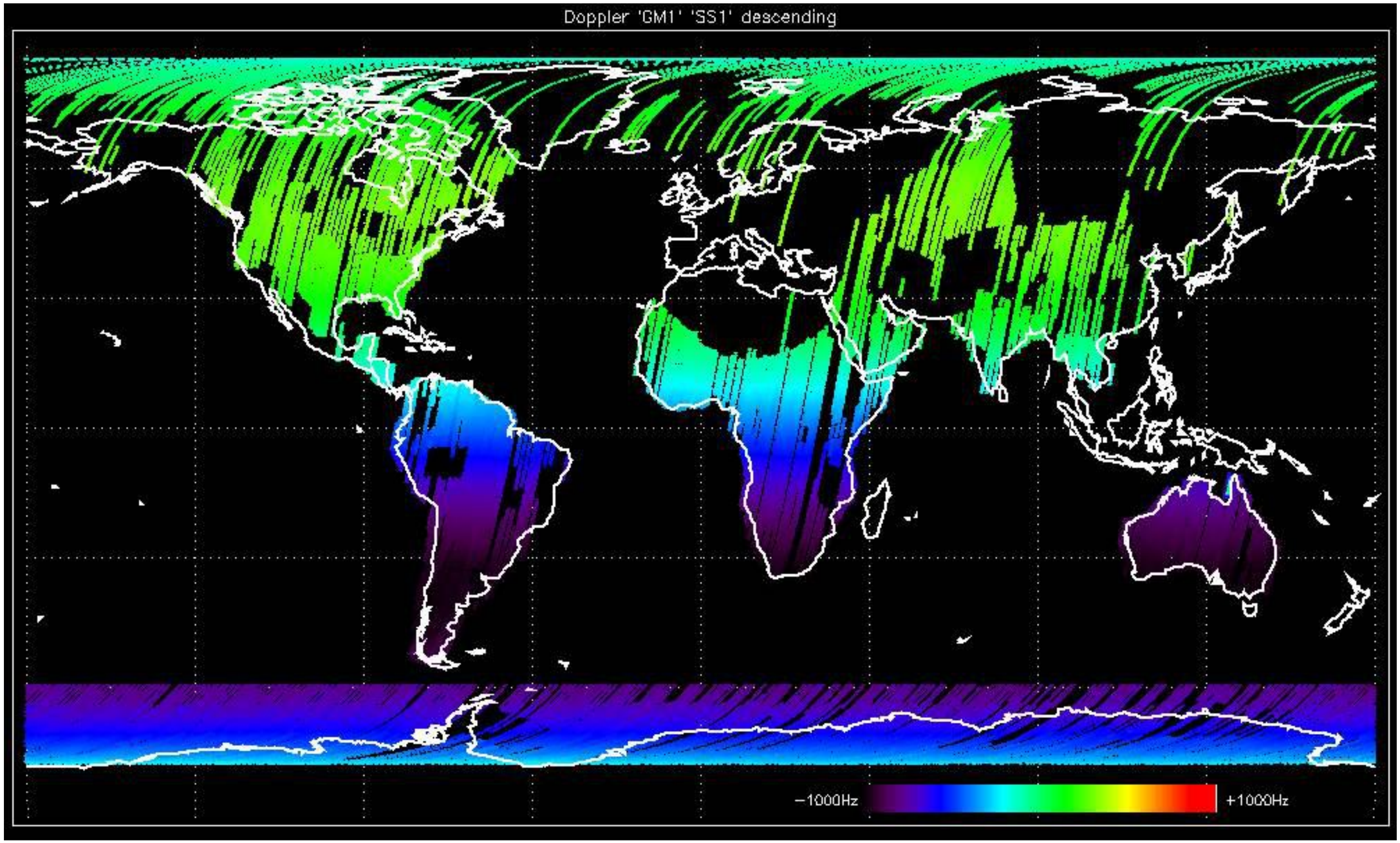
No anomalies observed.

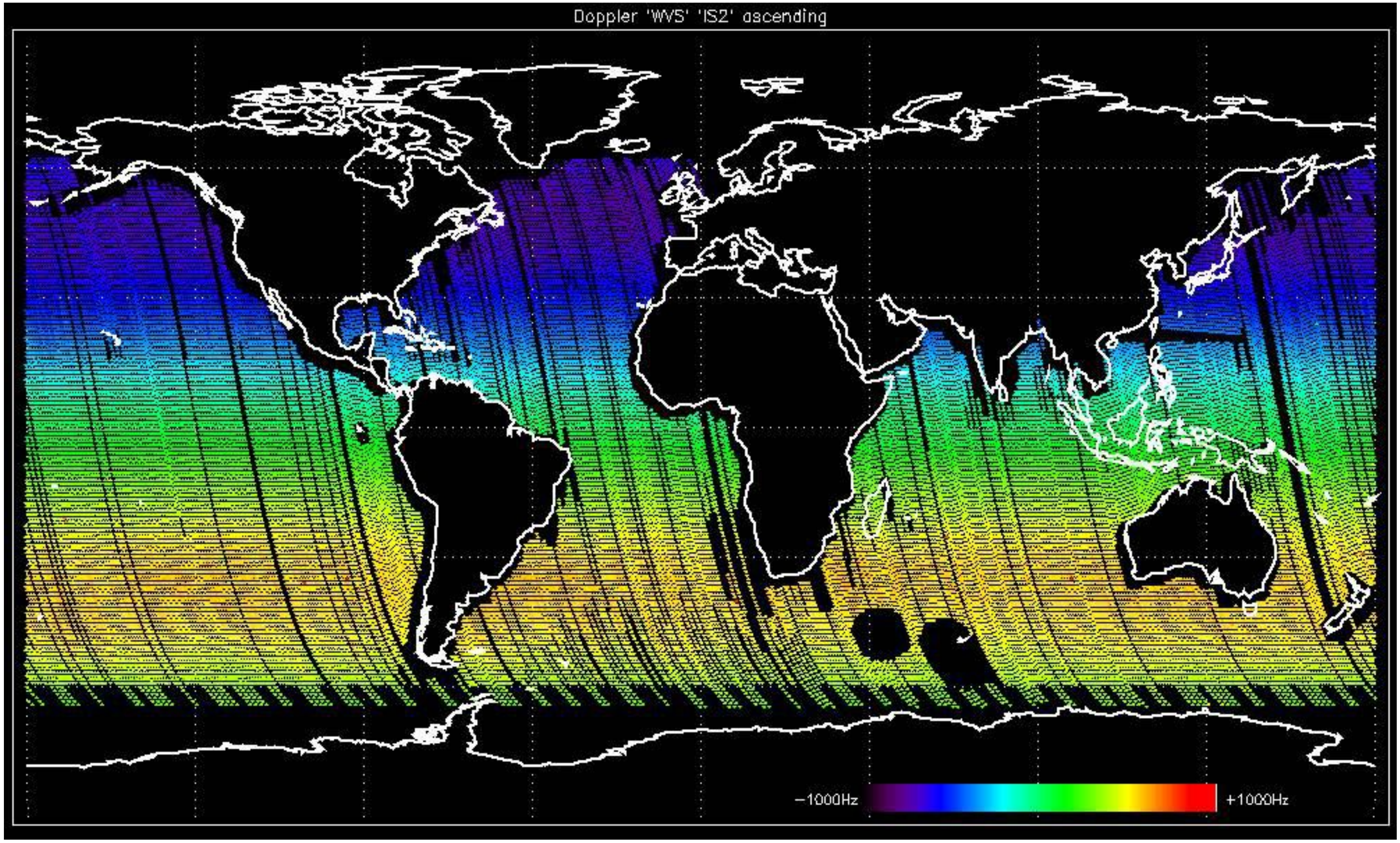

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

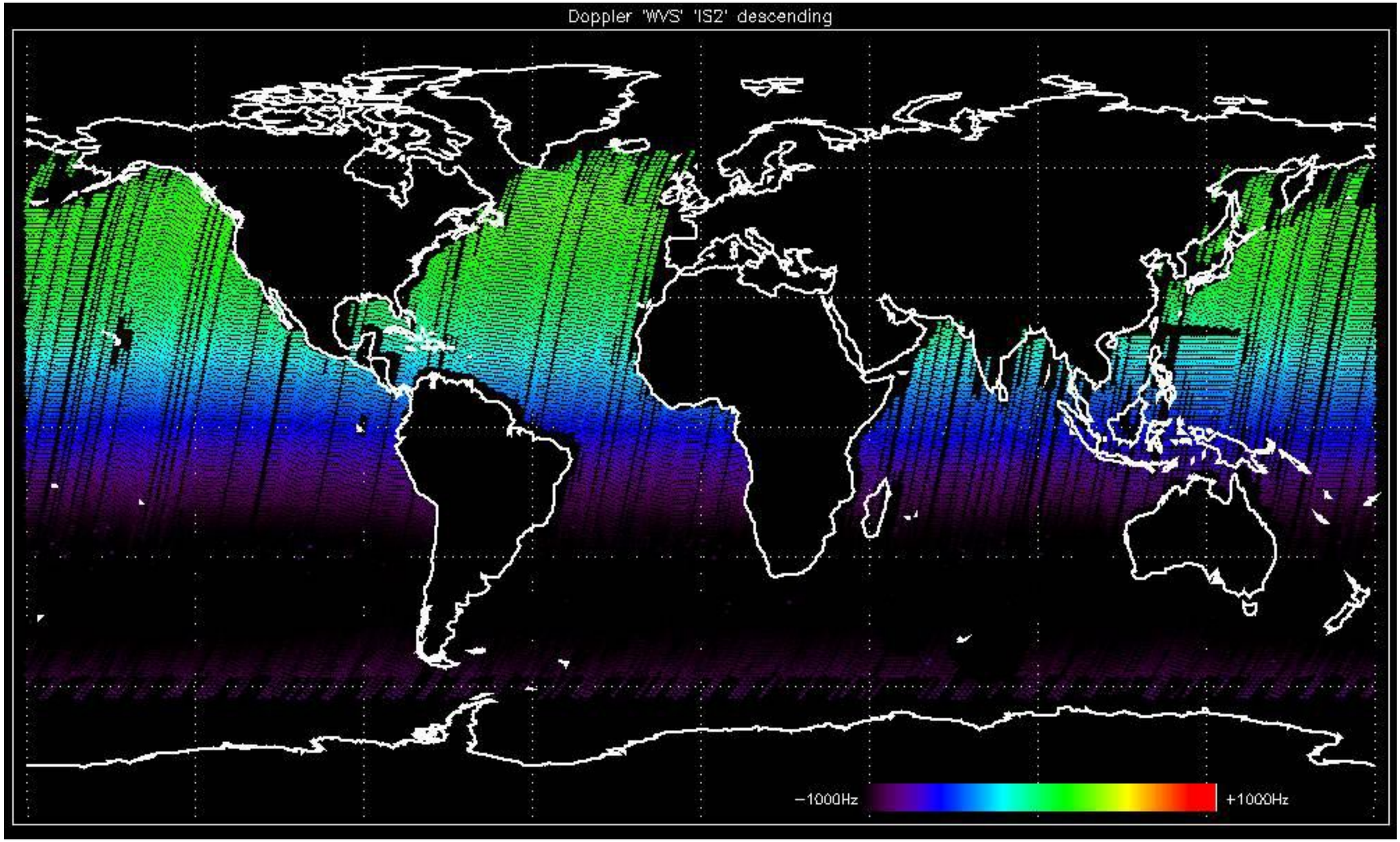

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

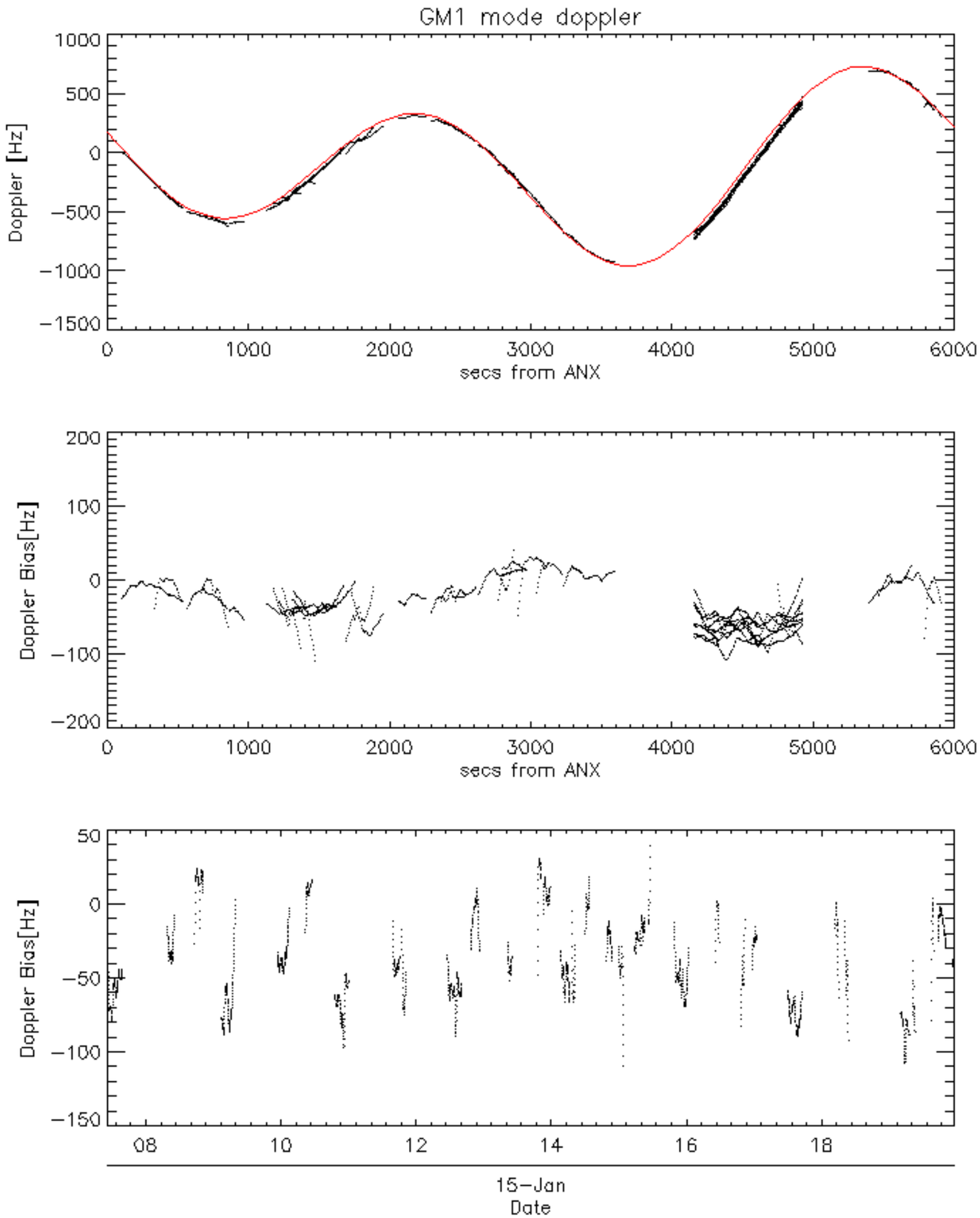
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

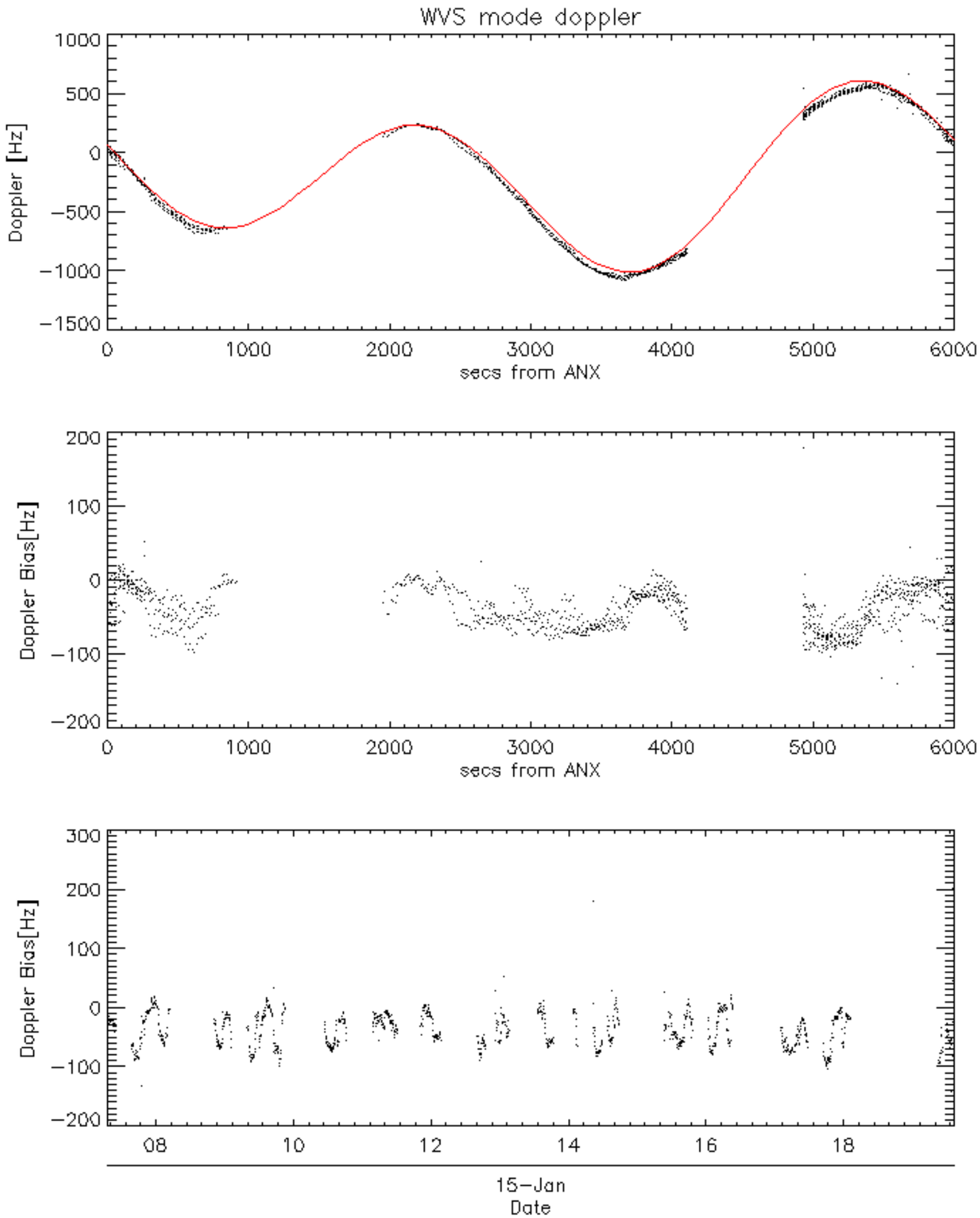

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

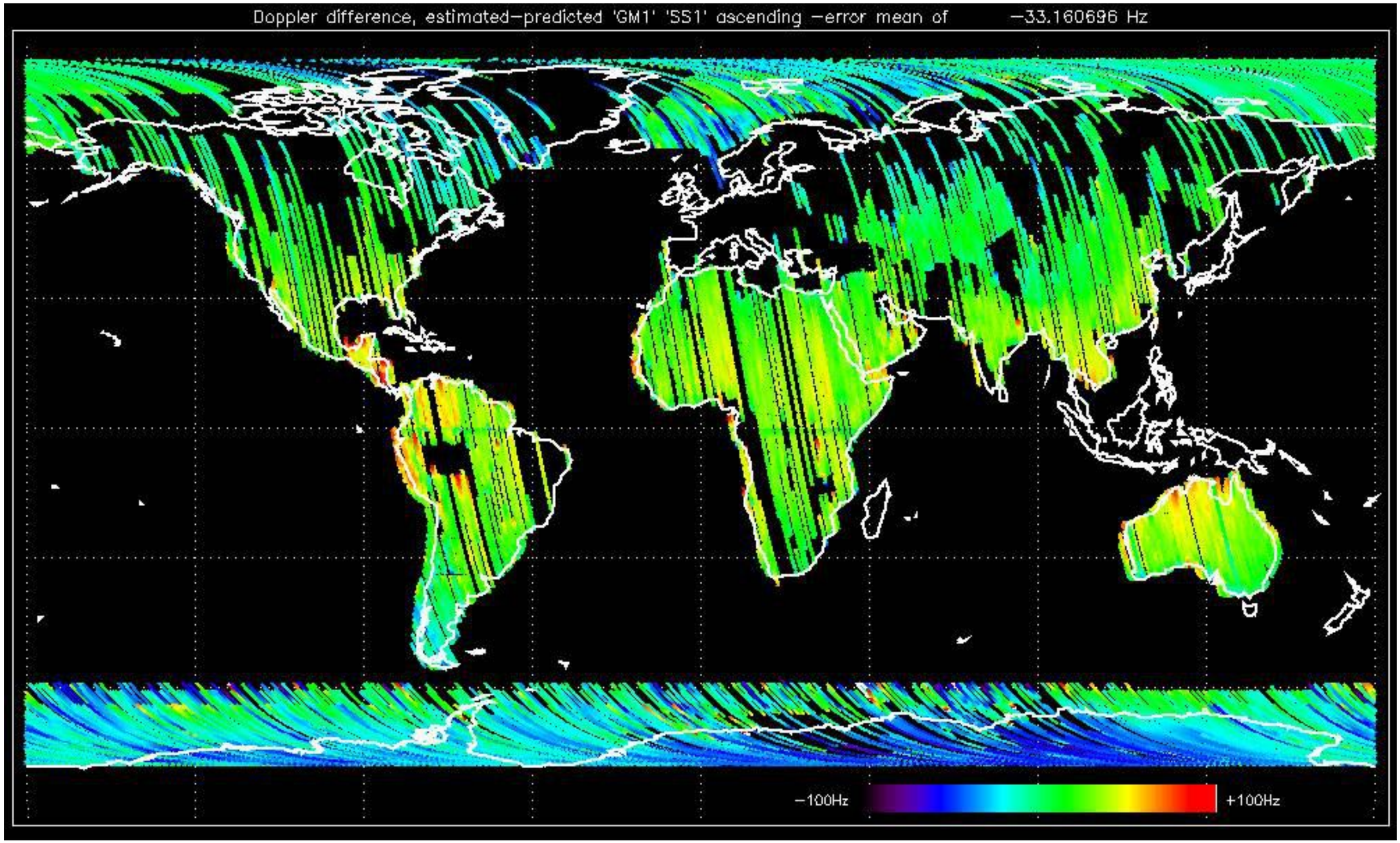

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

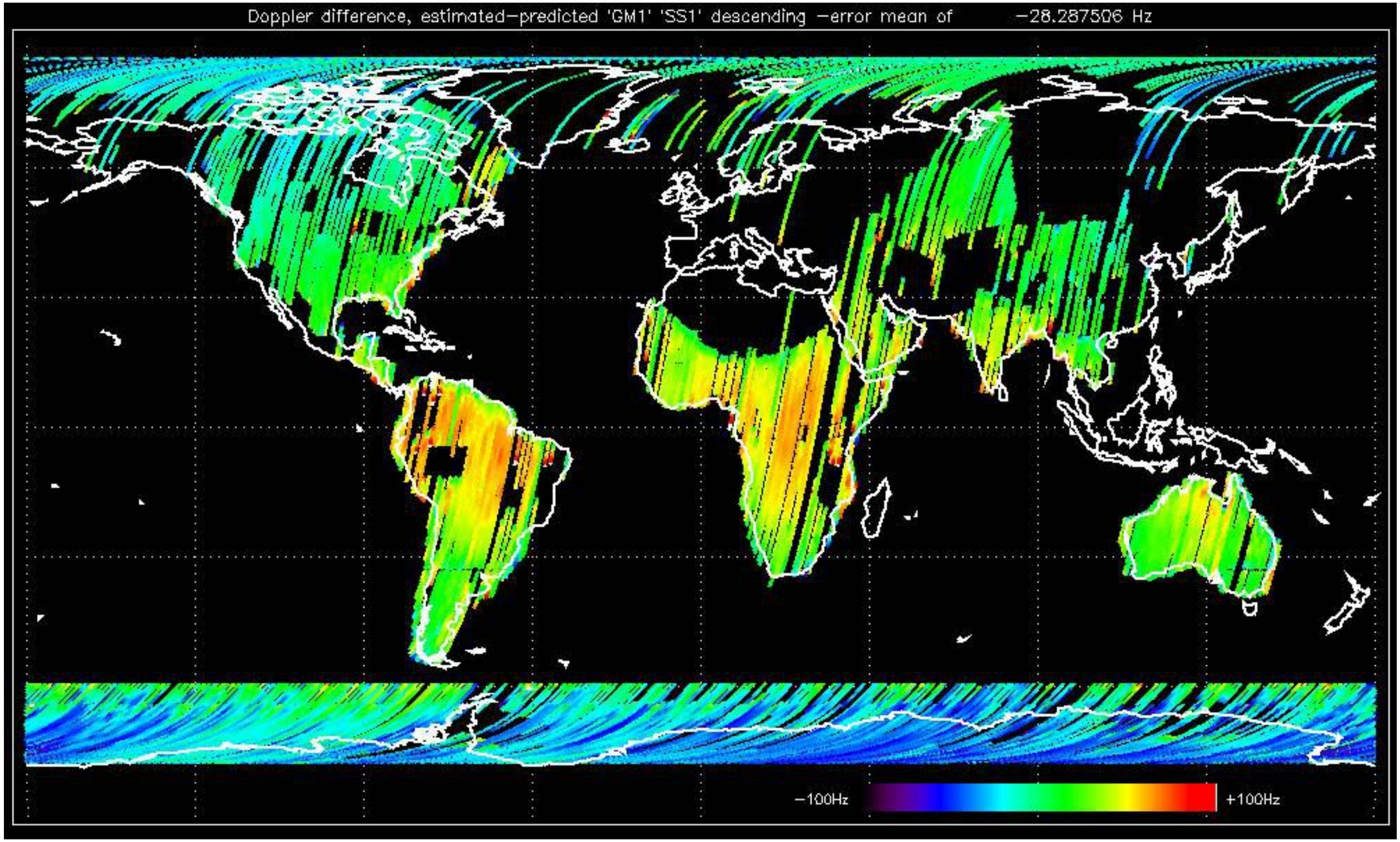

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

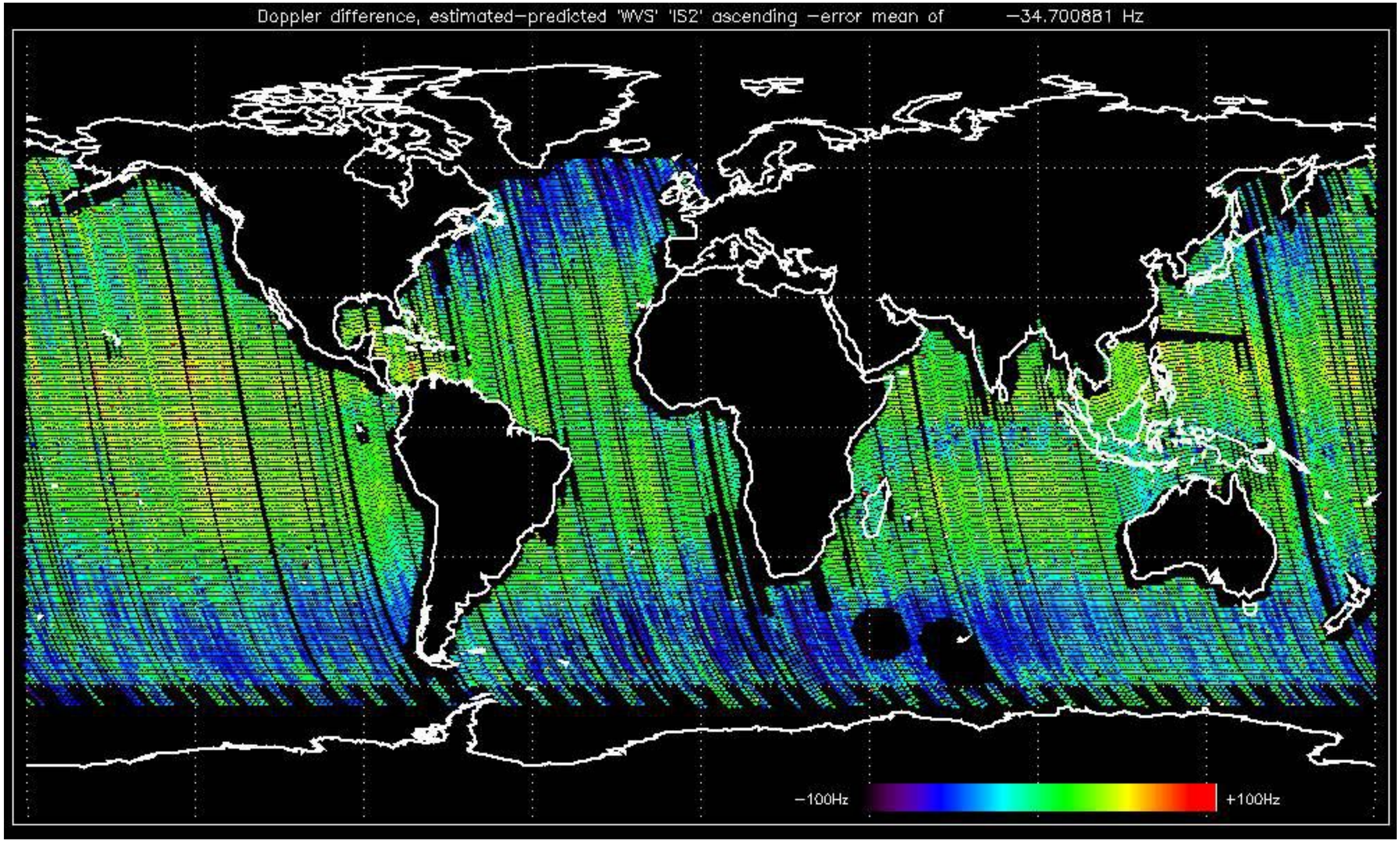

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

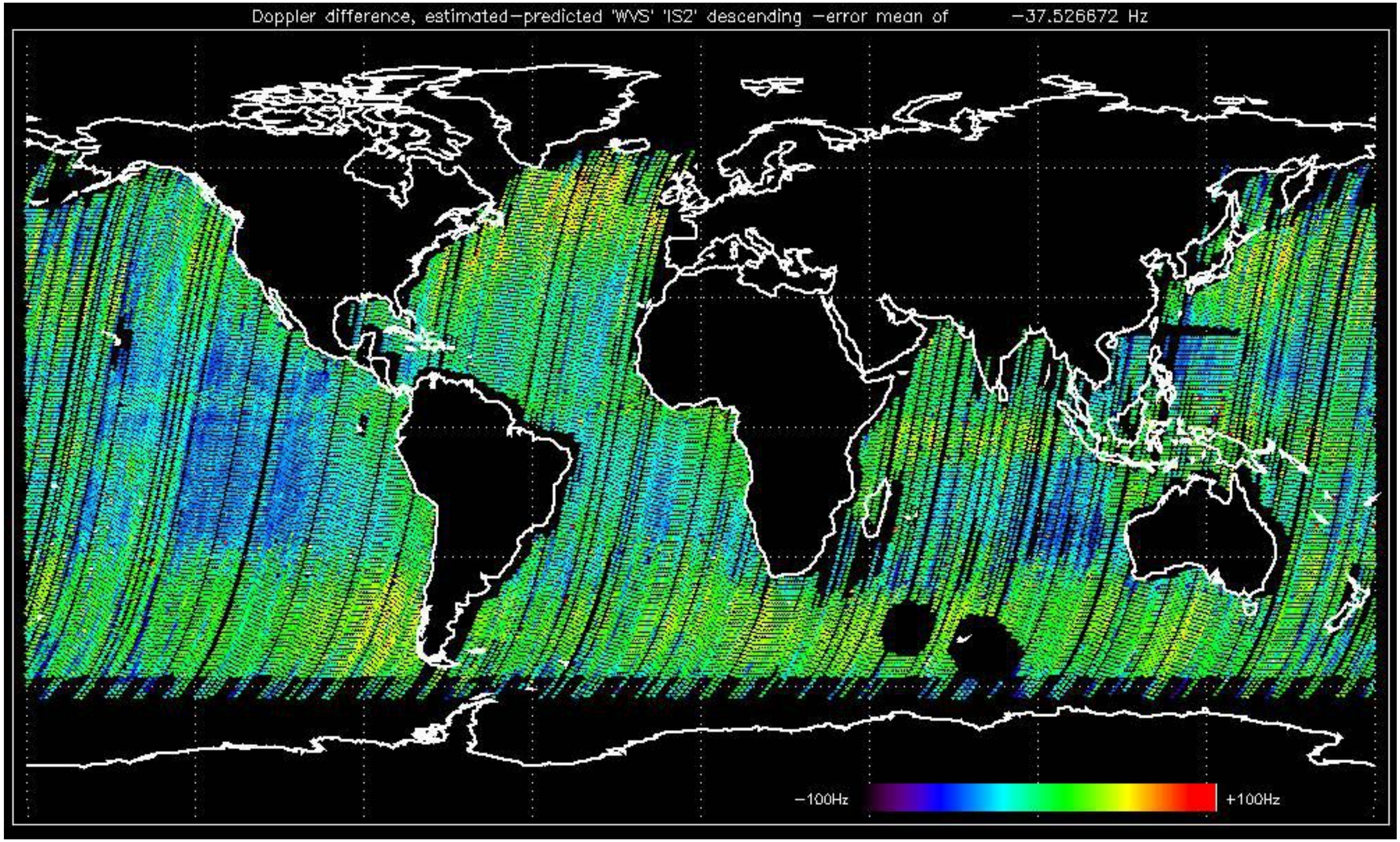

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
50
0
−50
−100
−150
08
10
12
14
16
18
15−Jan
Date


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]
300
200
100
0
−100
−200
08
10
12
14
16
18
15−Jan
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.160696 Hz
−100Hz
+100Hz

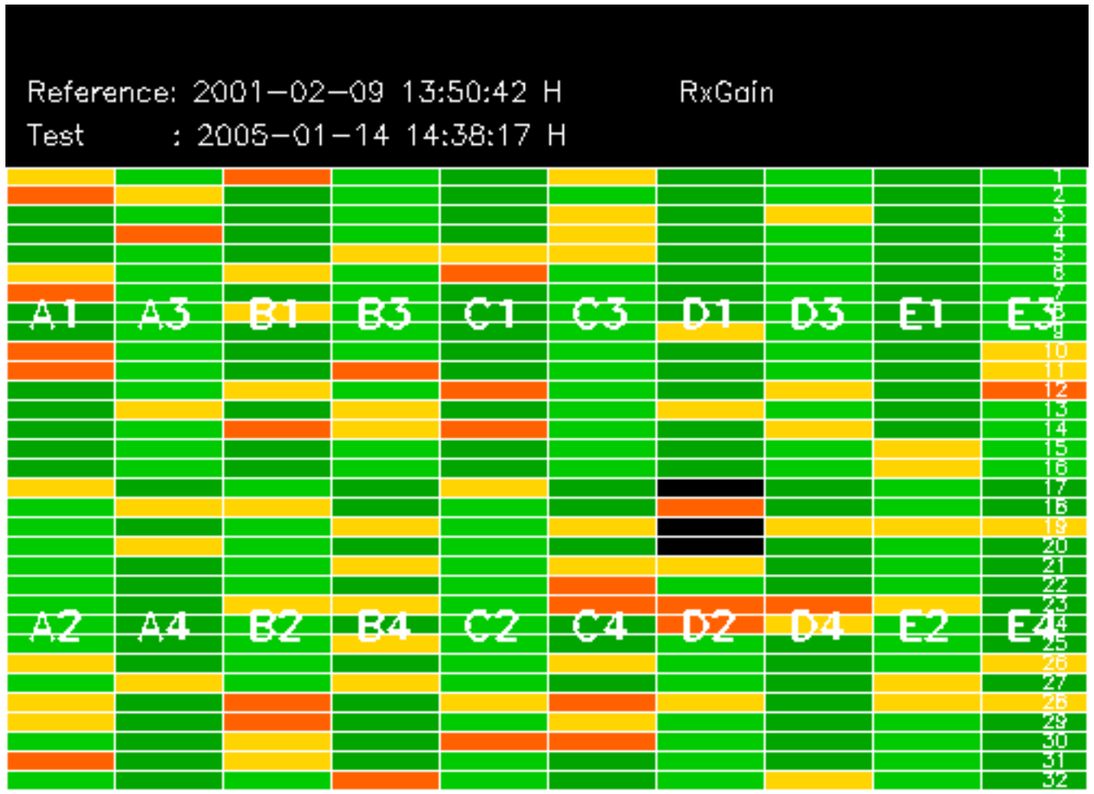

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.287506 Hz
-100Hz
+100Hz

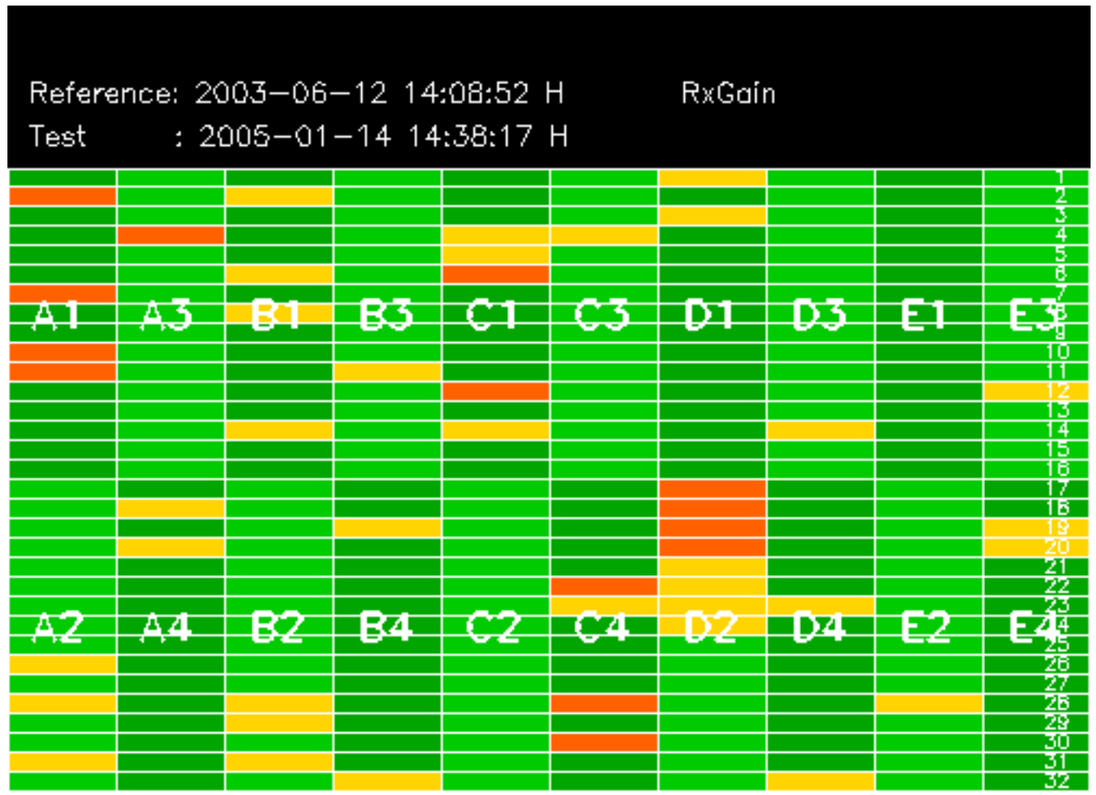

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.700881 Hz
−100Hz
+100Hz

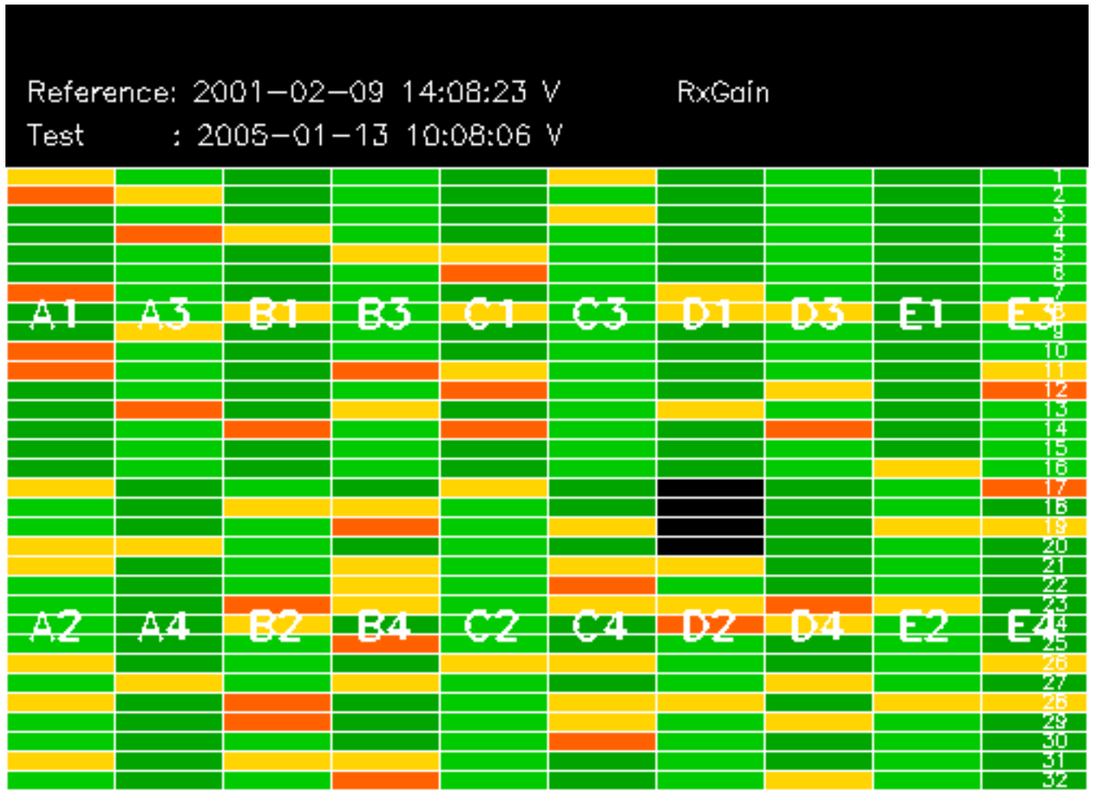

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.526672 Hz
−100Hz
+100Hz

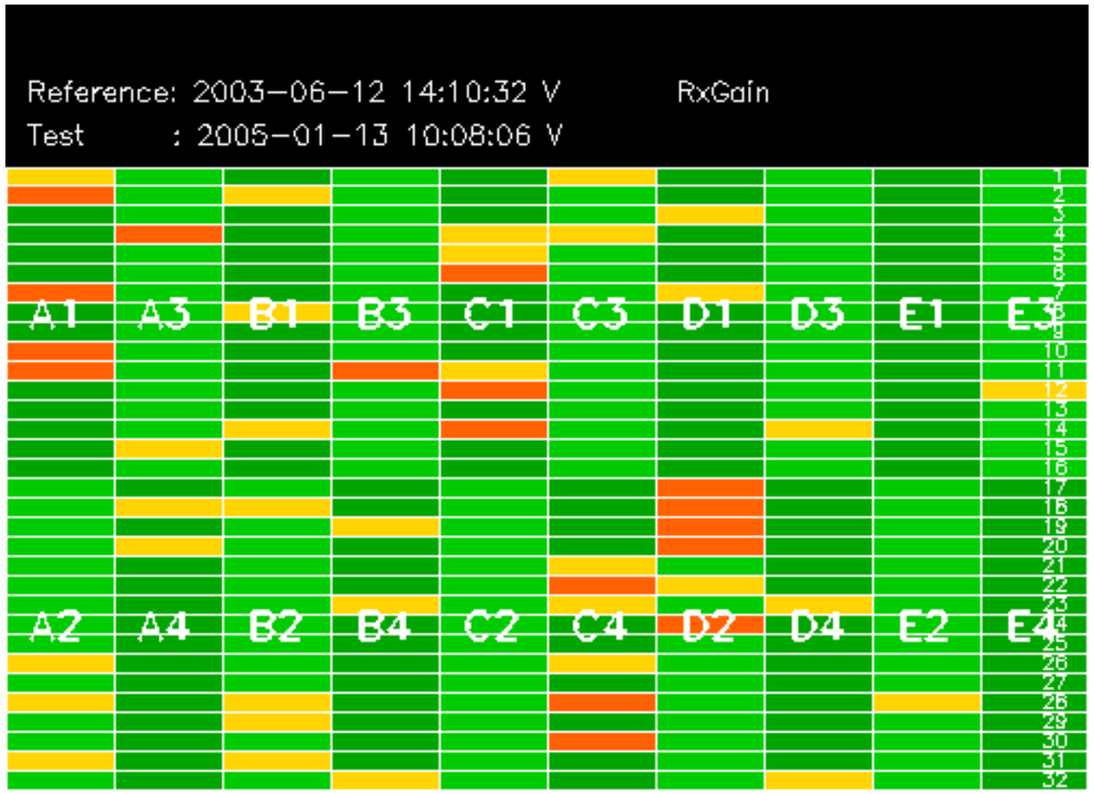
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

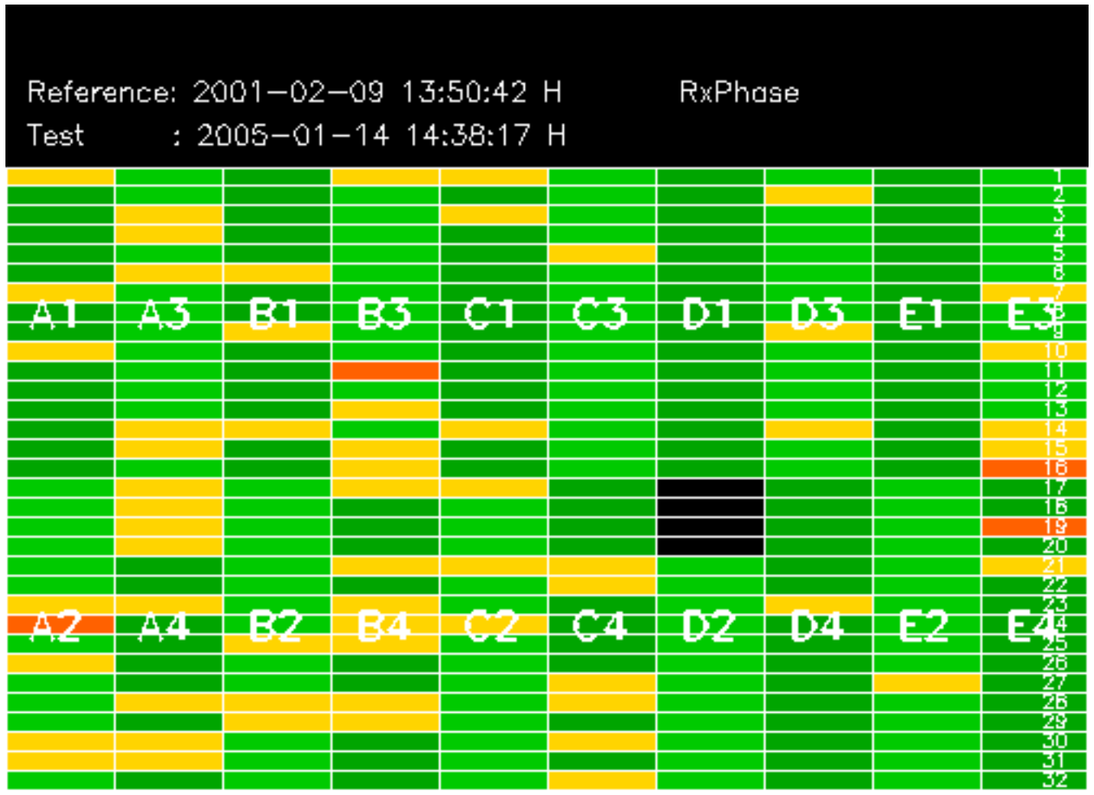
No anomalies observed.

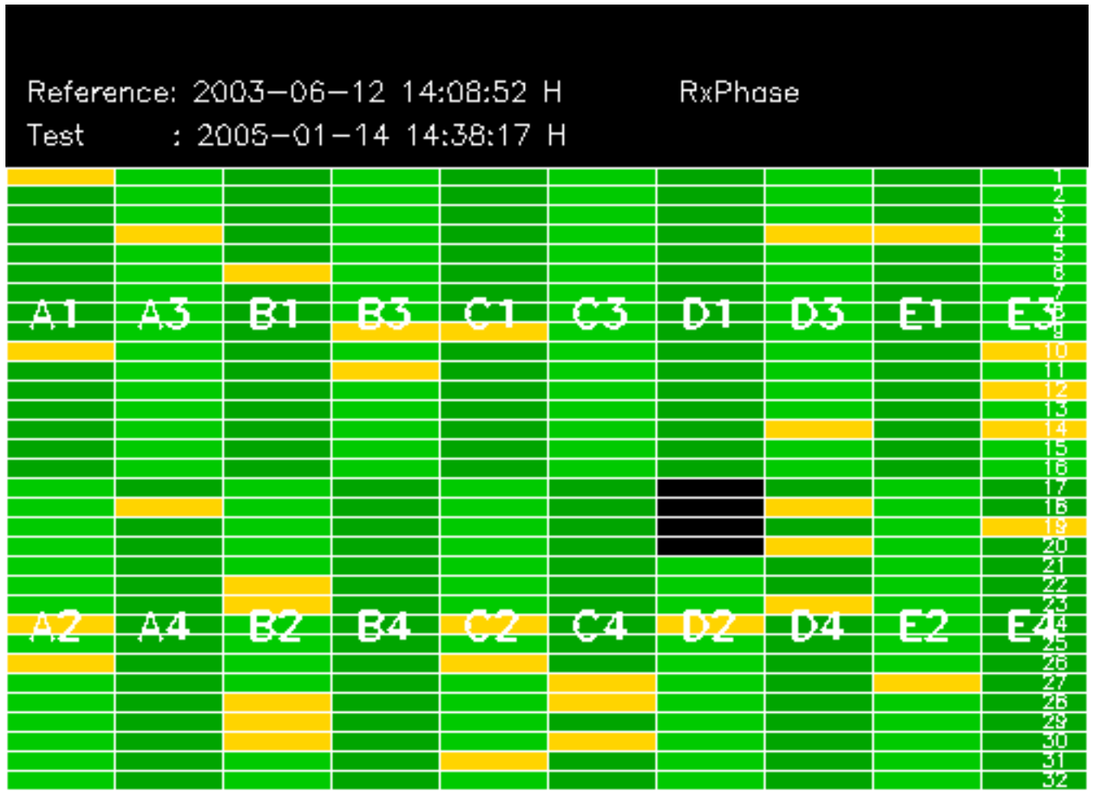

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

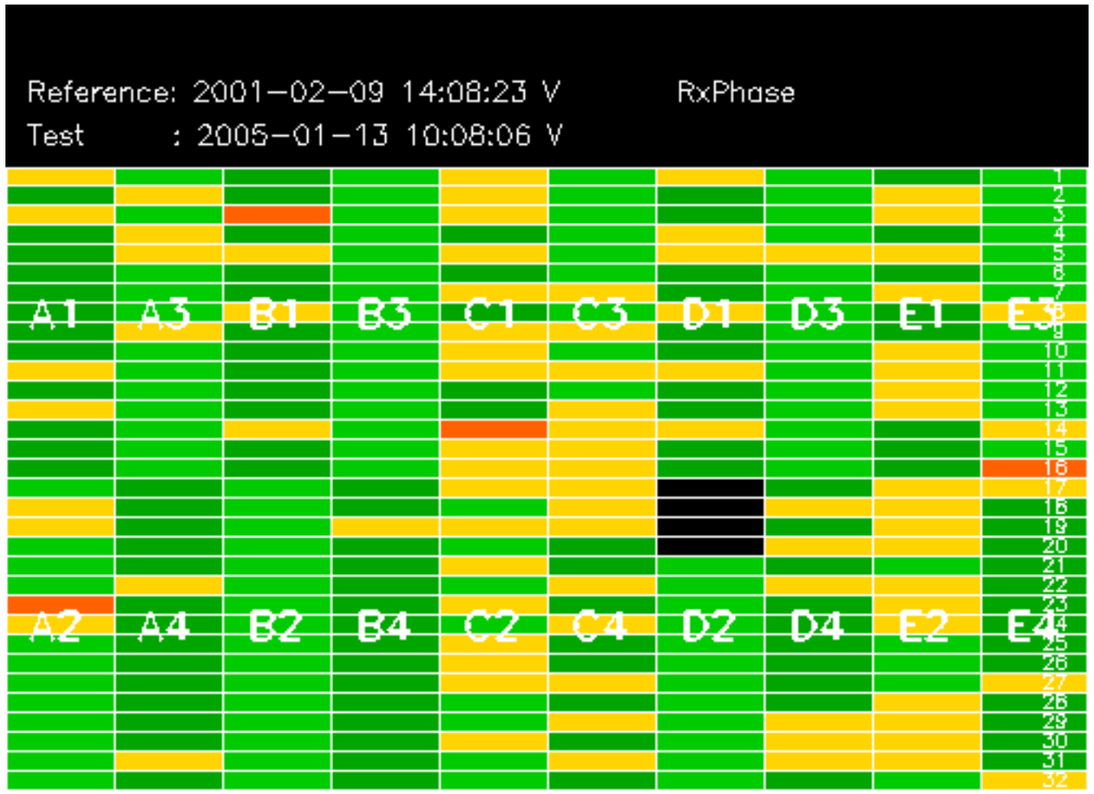

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

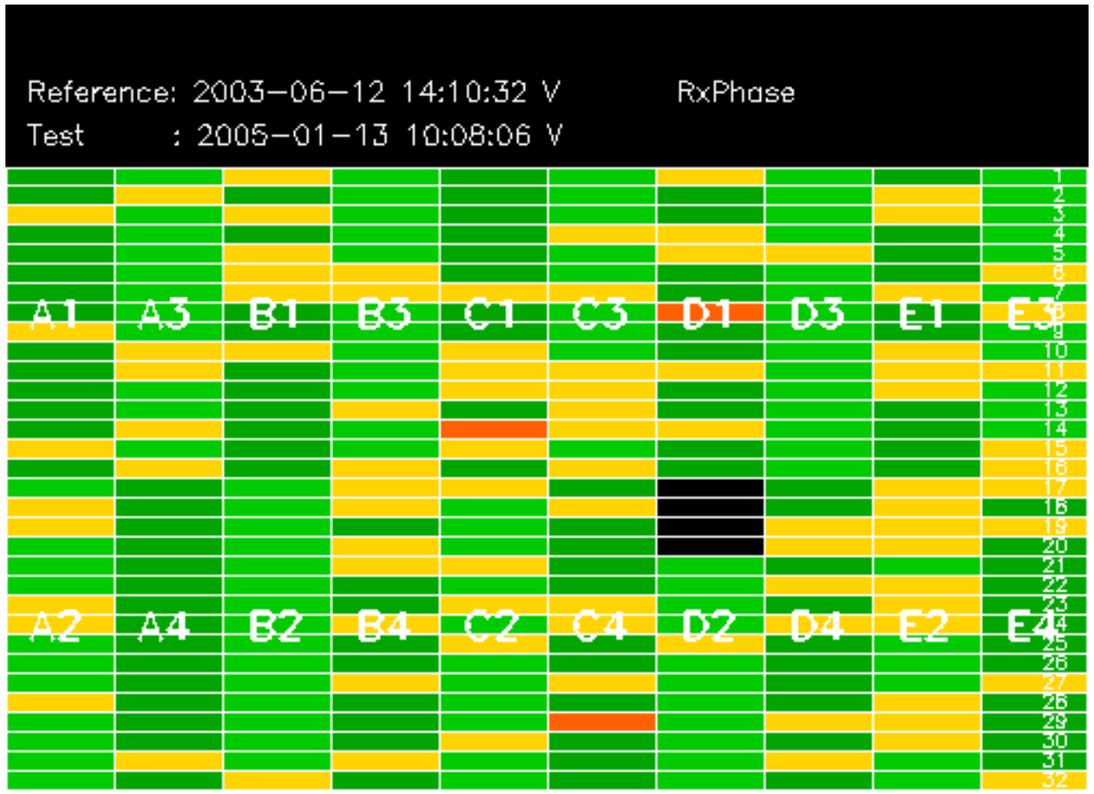

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

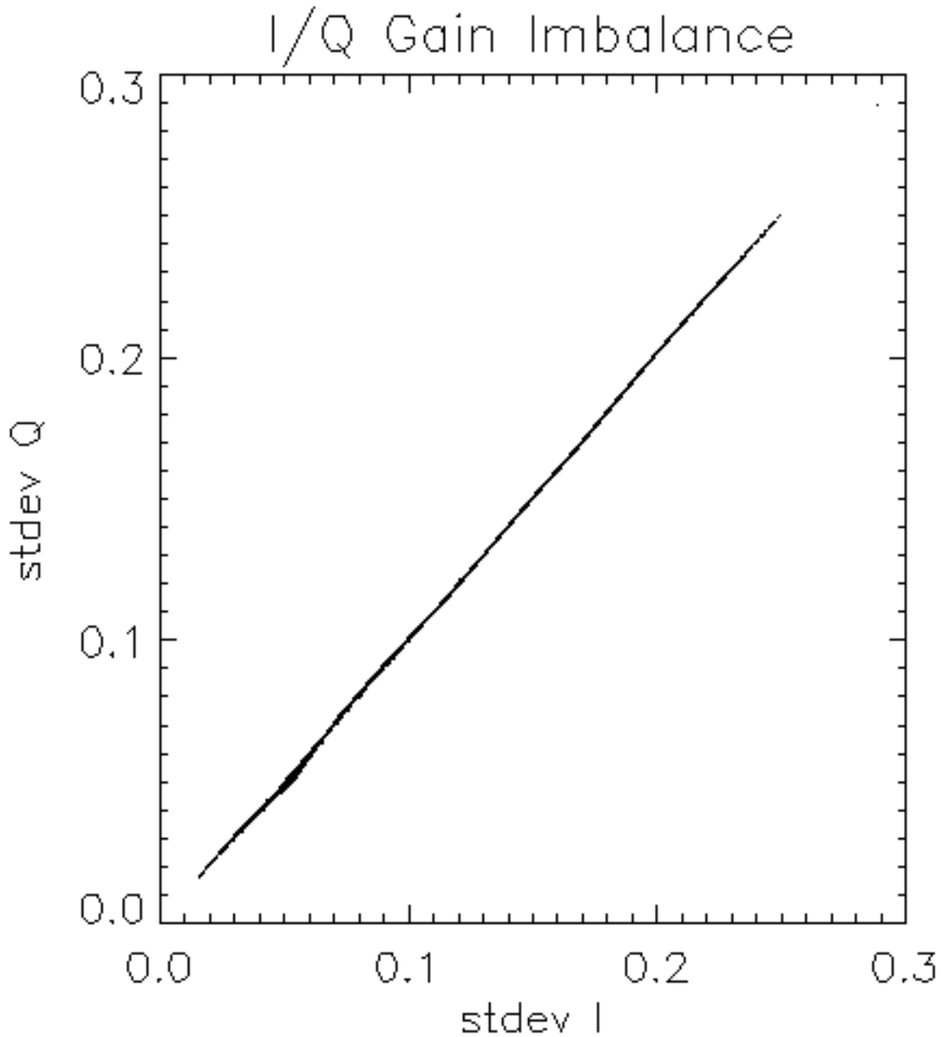

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

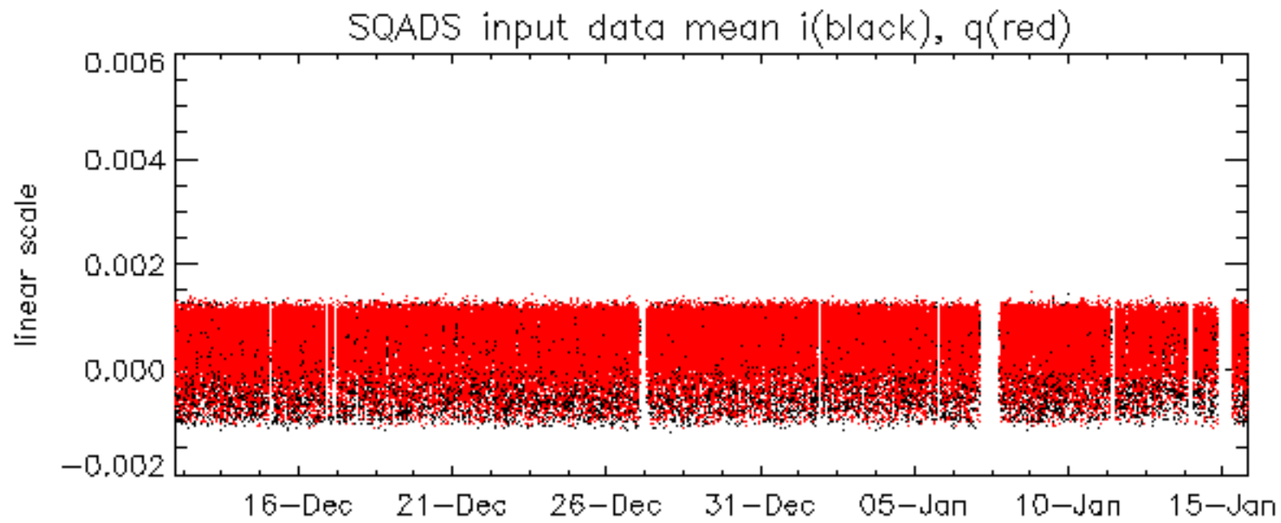

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

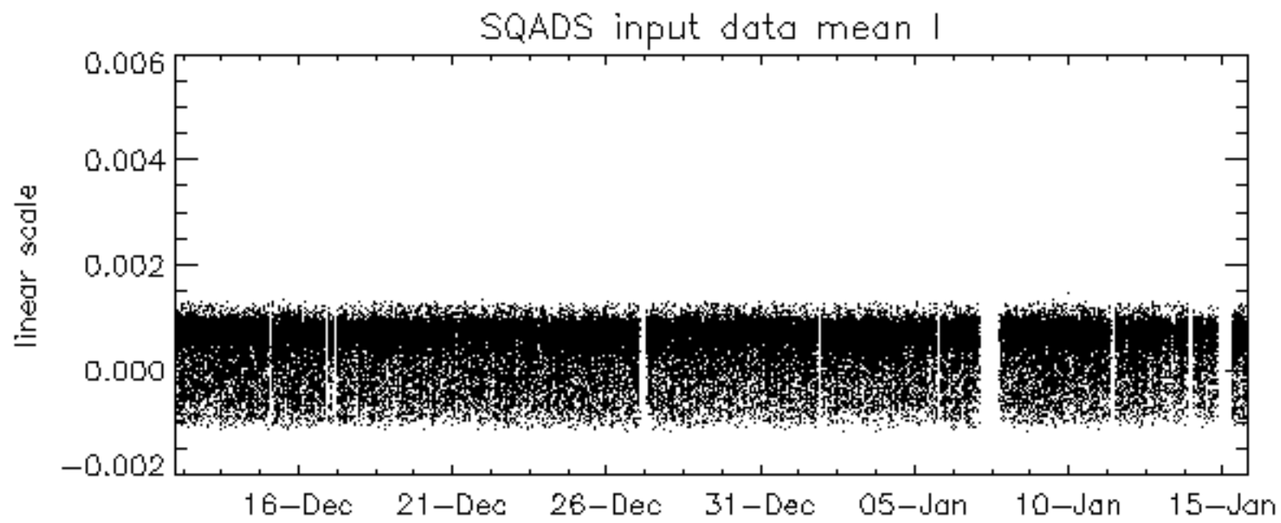

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

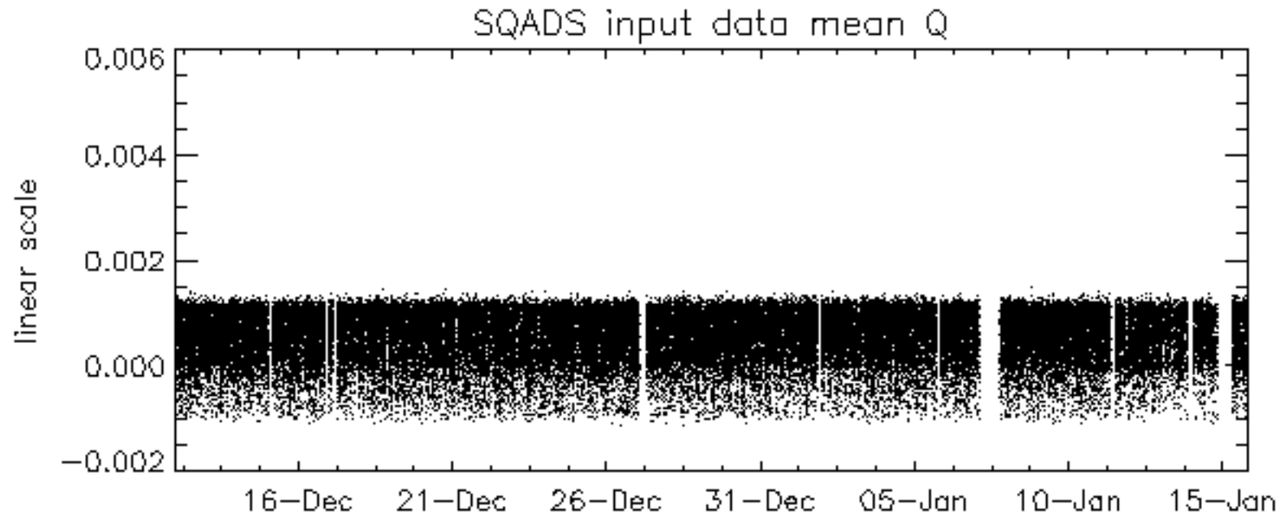

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

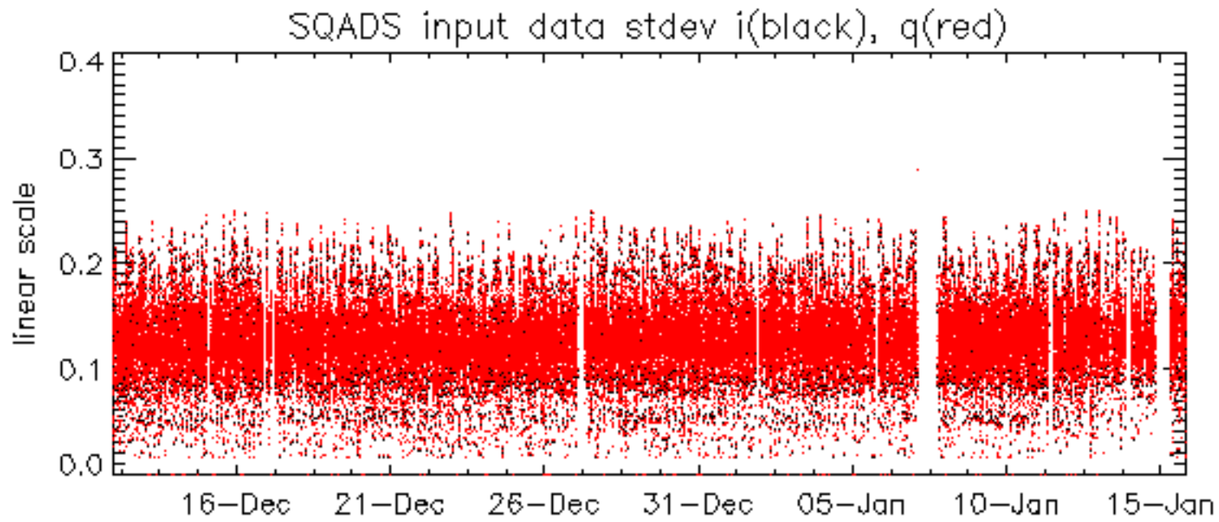

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

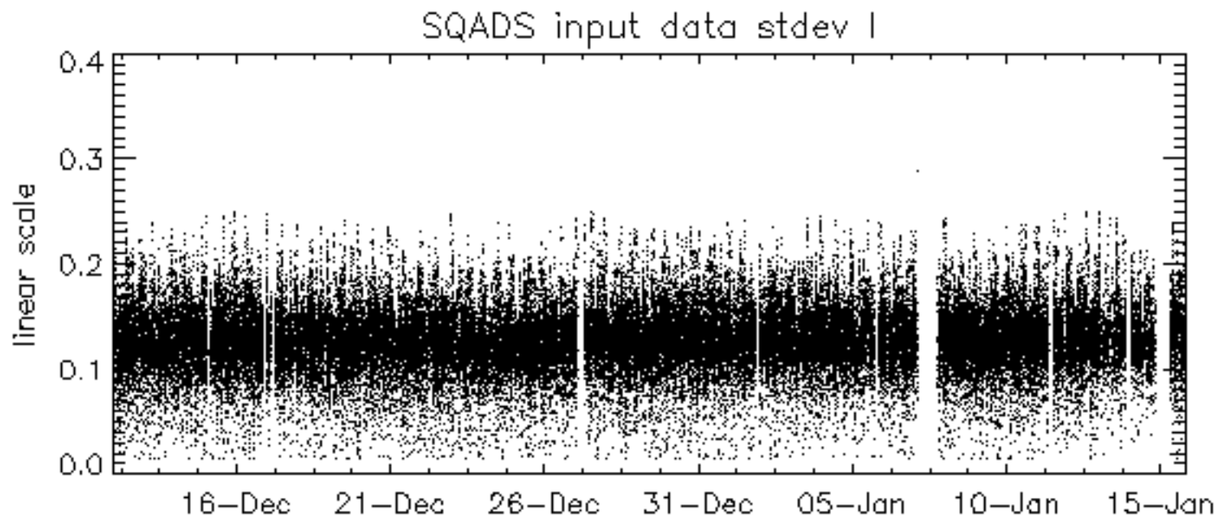

I/Q Gain Imbalance
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
stdev I

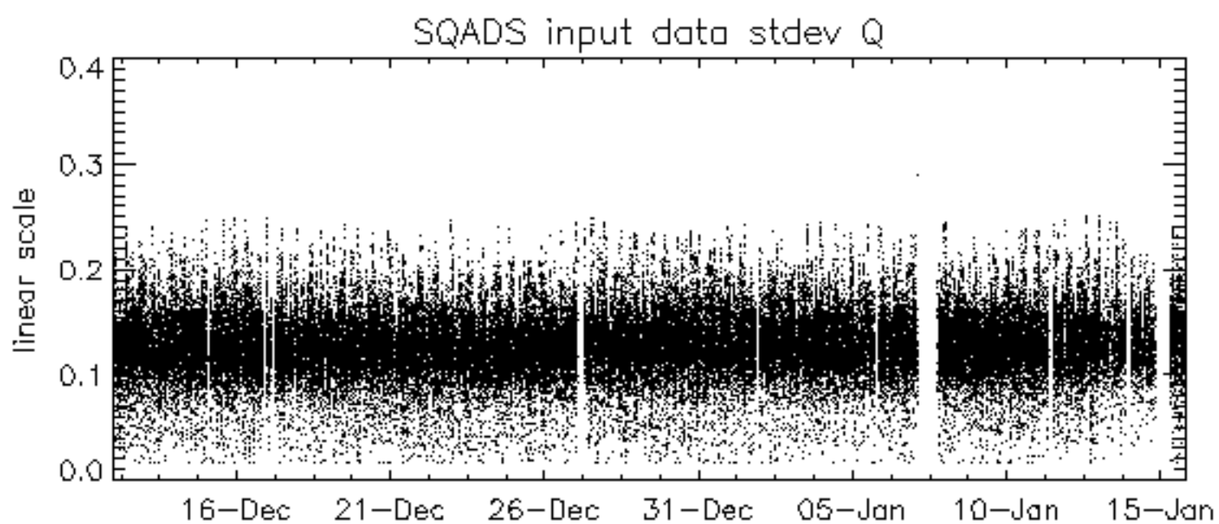

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

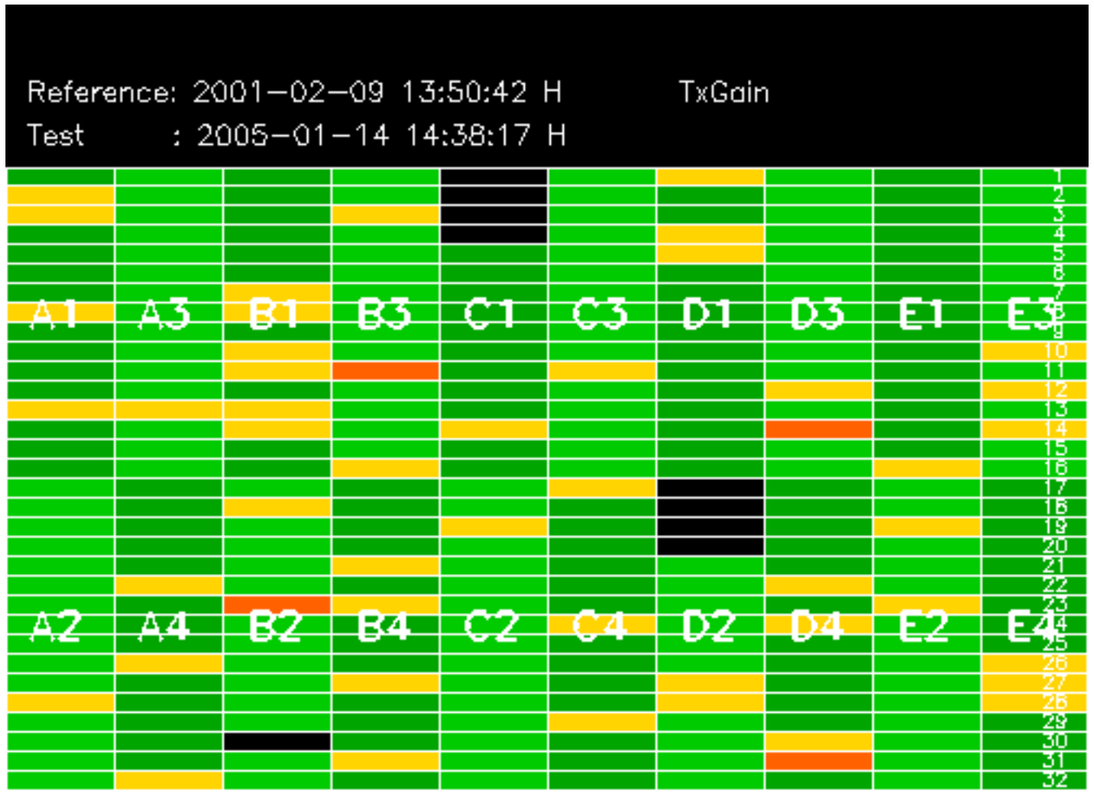

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

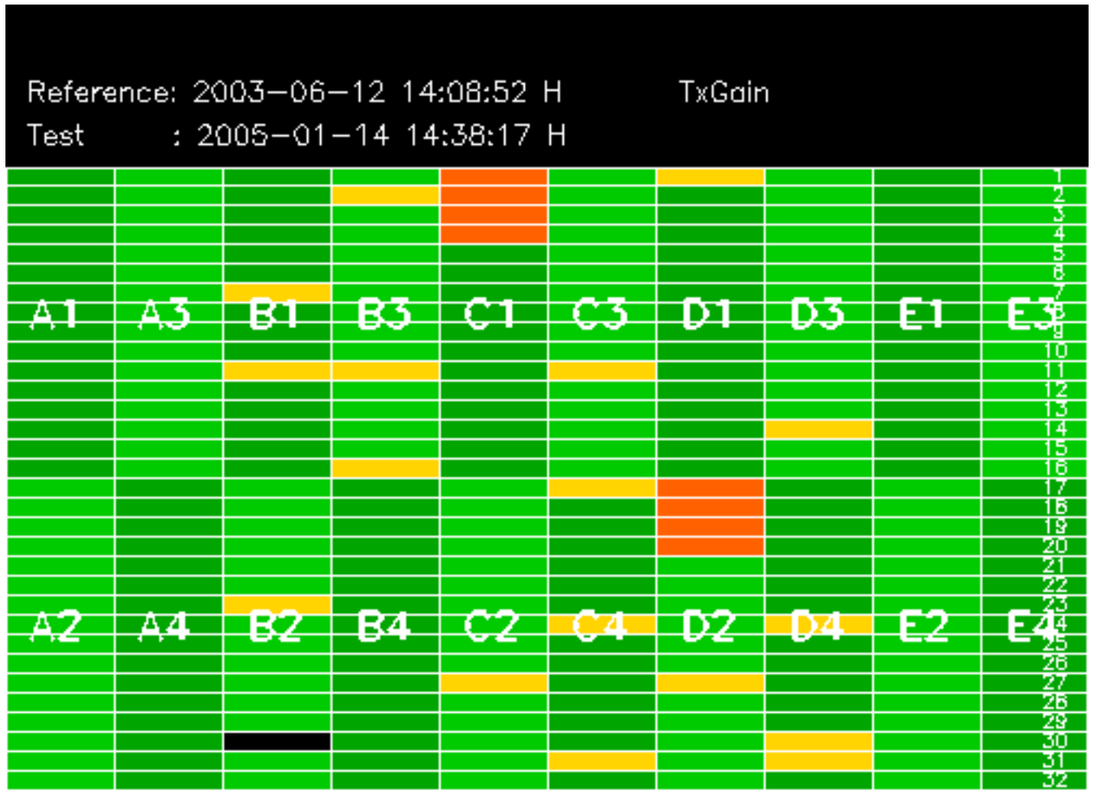

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

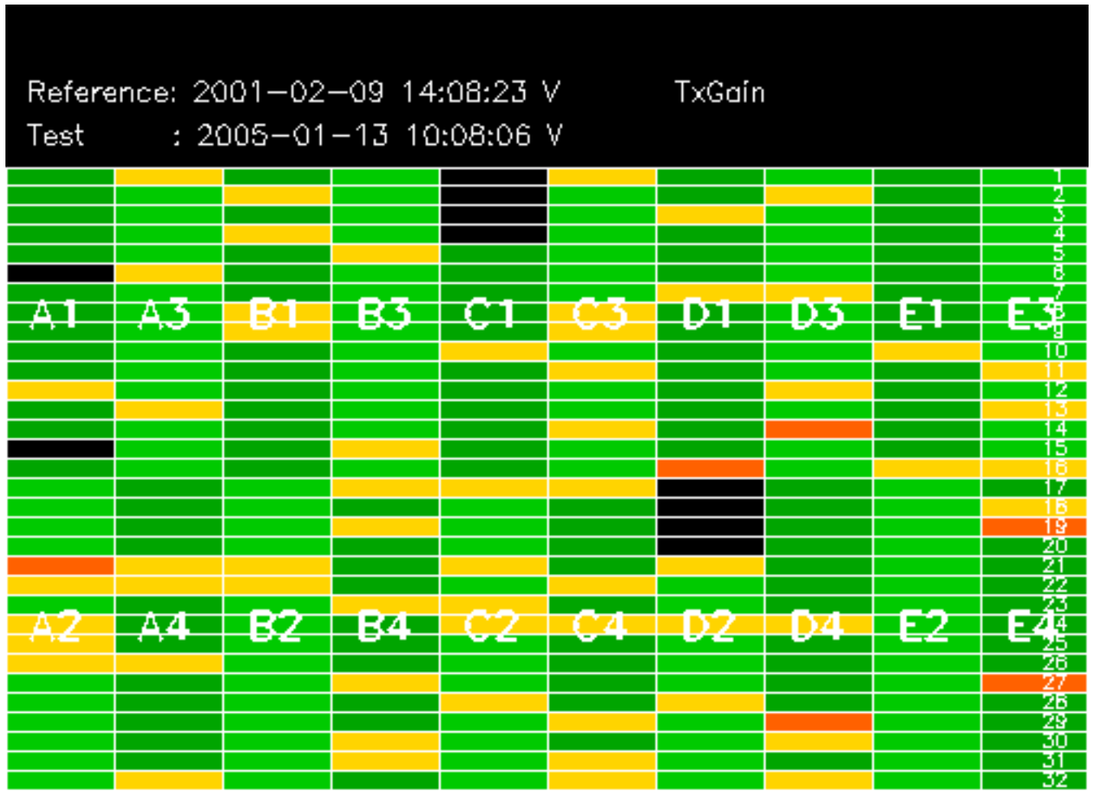

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan
15-Jan

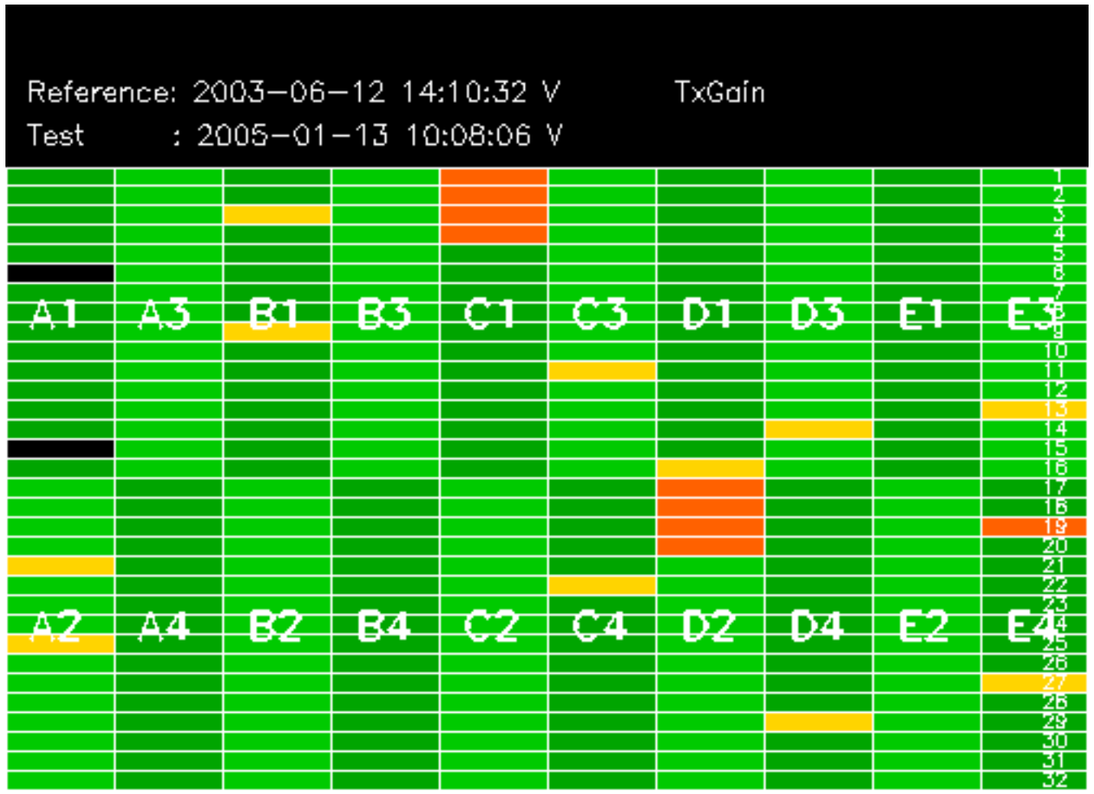

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan
15-Jan


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
15-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

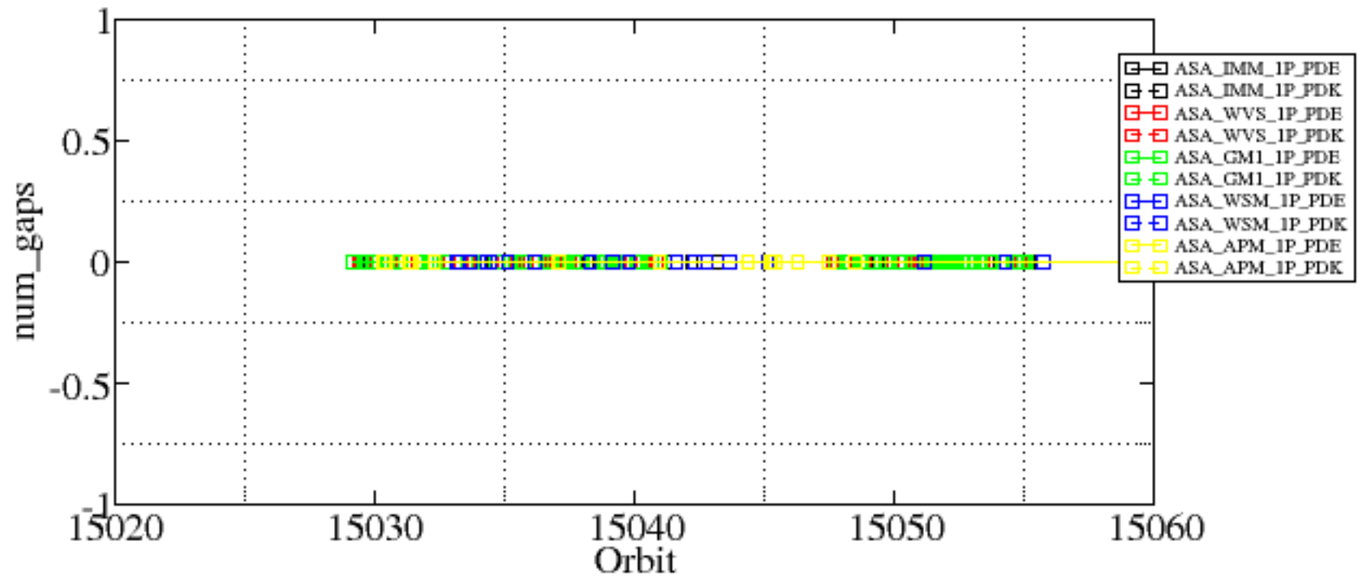

Reference: 2003-06-12 14:08:52 H
TxGain
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

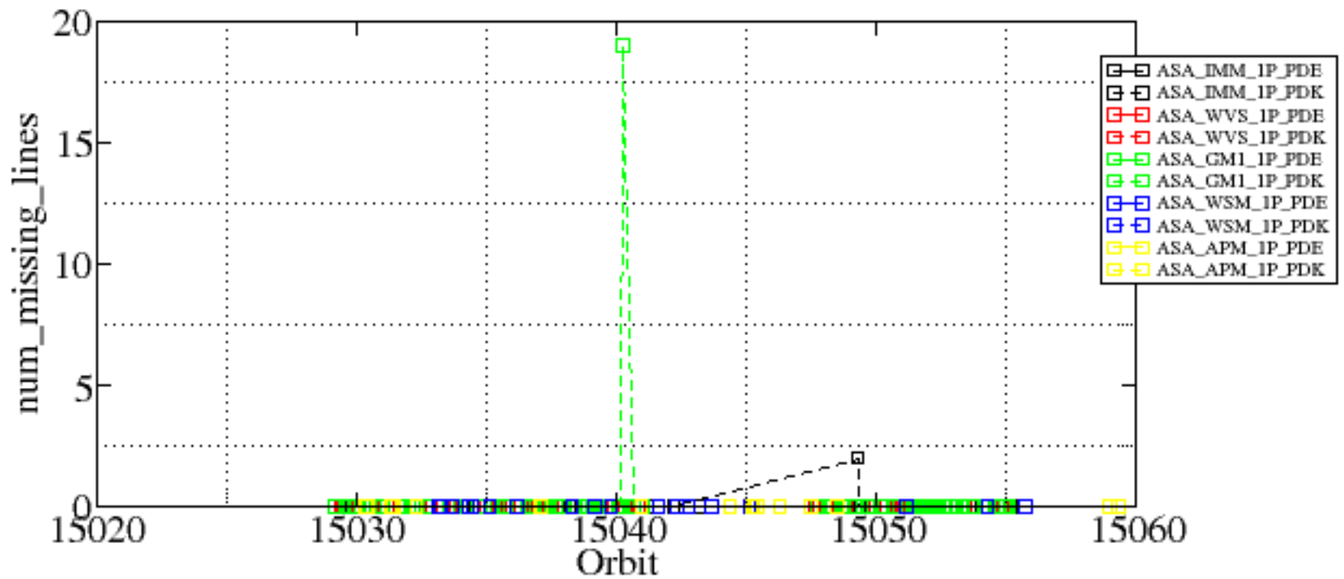

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

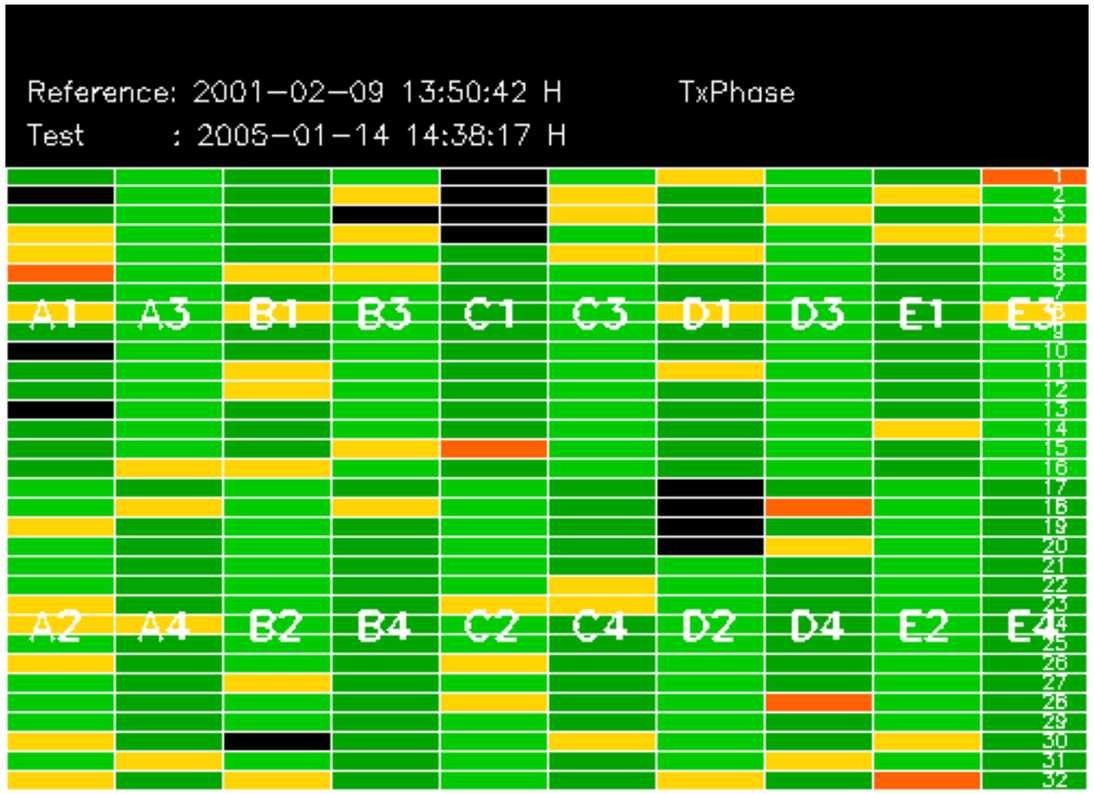

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

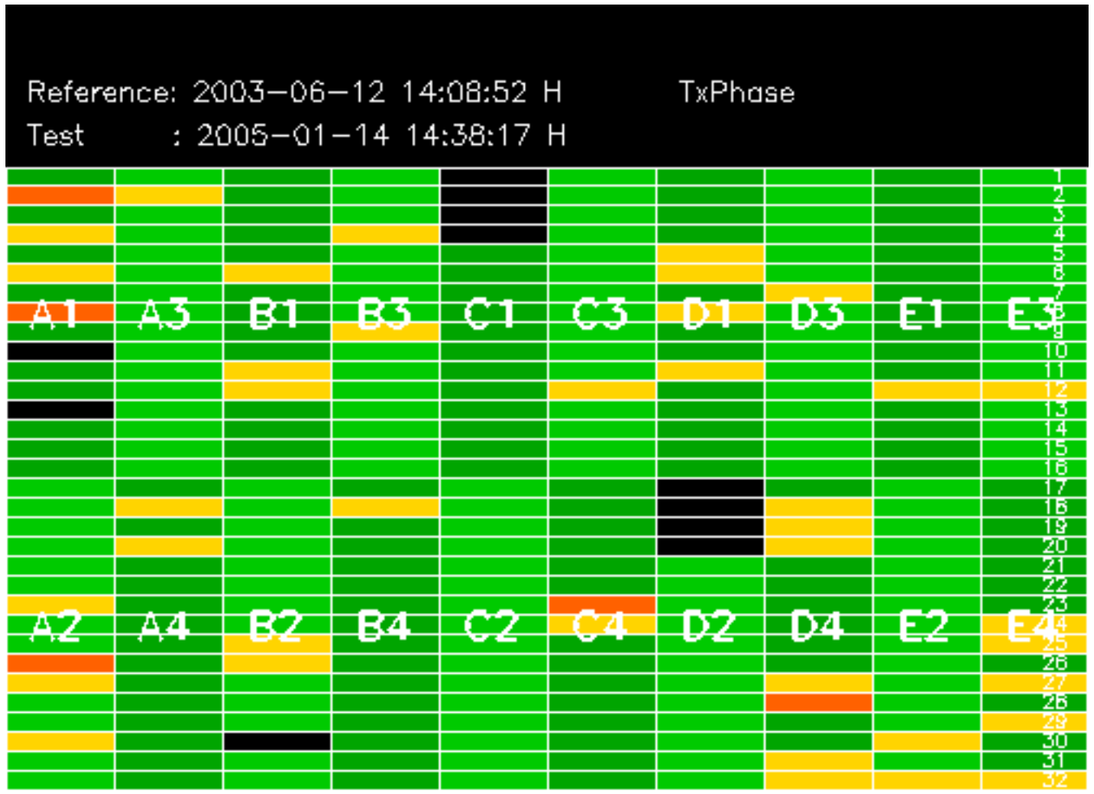
Summary of analysis for the last 3 days 2005011[456]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

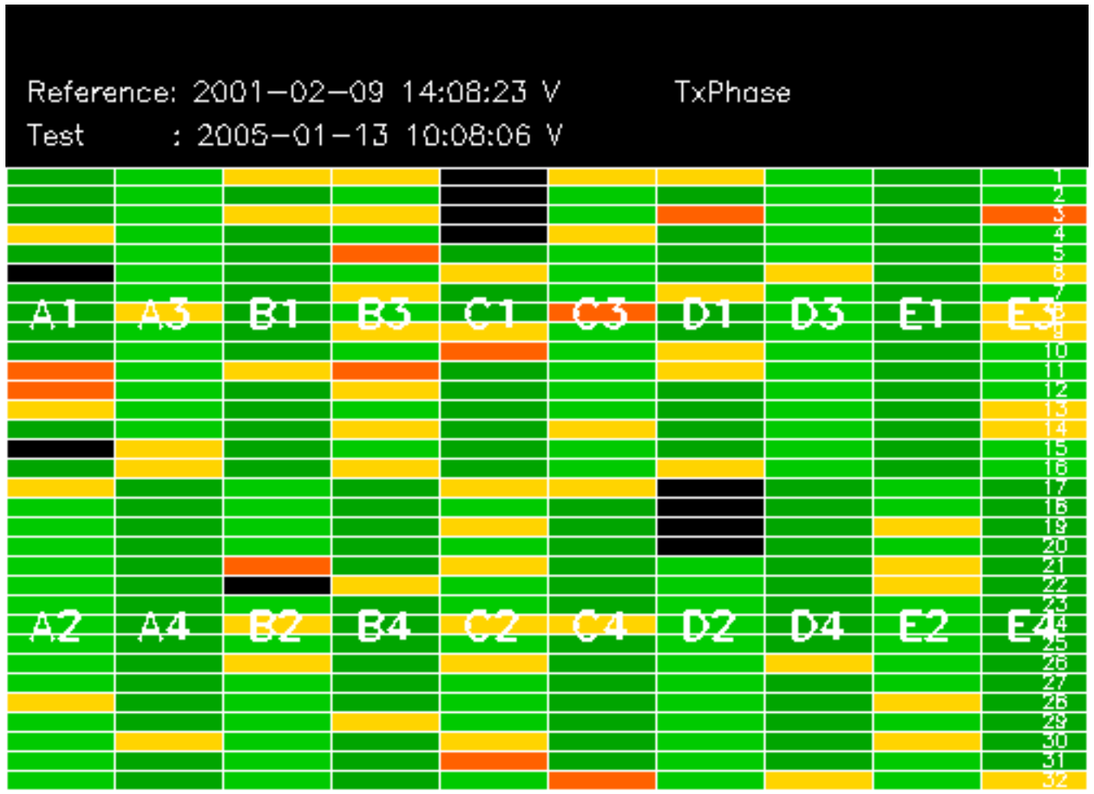
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050115_100814_000002122033_00466_15049_7252.N1 </td> <td>0 </td> <td>2 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050114_185920_000003382033_00457_15040_9468.N1 </td> <td>0 </td> <td>19 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
15020
15030
15040
15050
15060
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

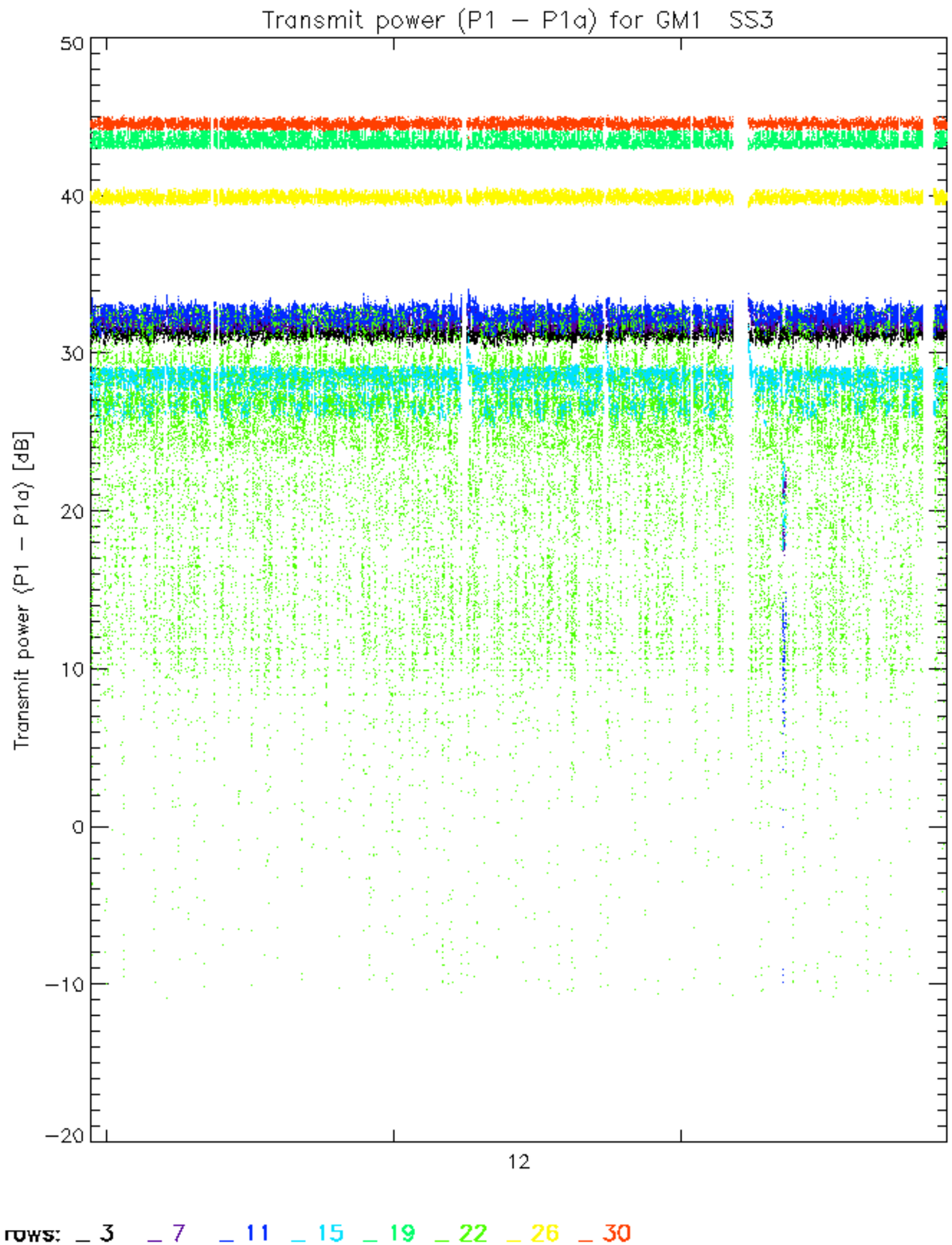

num_missing_lines
Orbit
0
5
10
15
20
15020
15030
15040
15050
15060
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

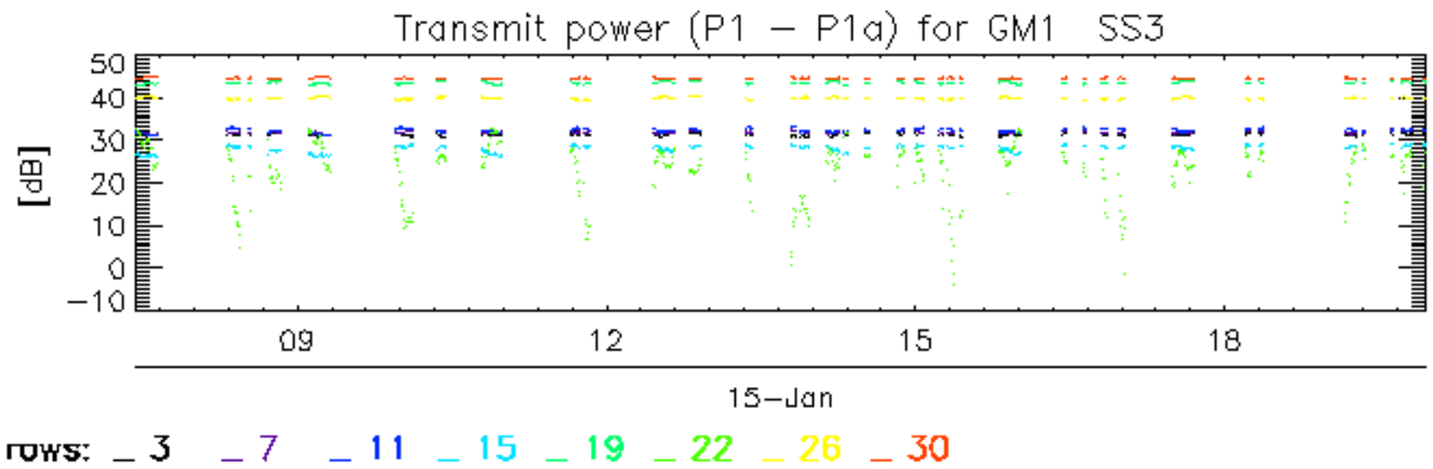

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

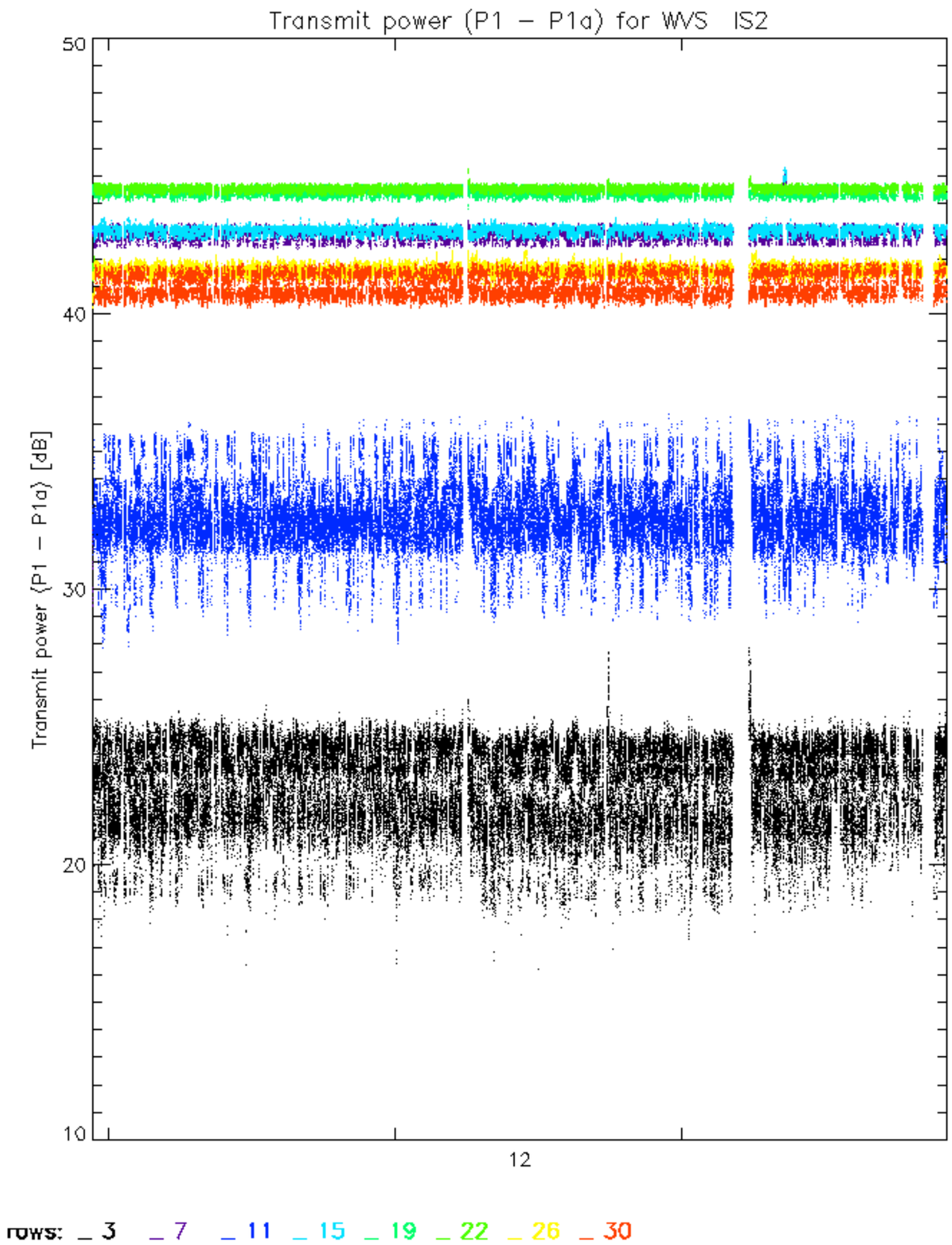

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-01-14 14:38:17 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

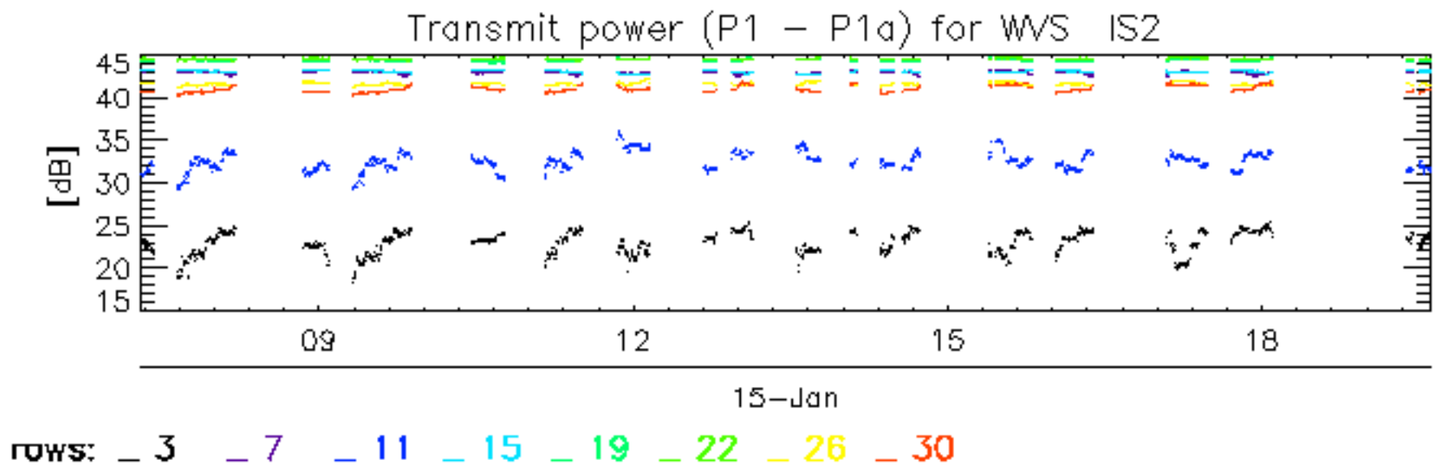

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-01-13 10:08:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


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
12
rows: 3 7 11 15 19 22 26 30


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


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

No unavailabilities during the reported period.