PRELIMINARY REPORT OF 050118

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

last update on Tue Jan 18 11:03:10 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 2005-01-17 00:00:00 to 2005-01-18 11:03:10

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	23	44	4	1	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	23	44	4	1	0
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	23	44	4	1	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	23	44	4	1	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	35	18	4	10	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	35	18	4	10	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	35	18	4	10	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	35	18	4	10	4

2.3 - Browse Visual Inspection

No anomalies observed on available browse products

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	20050117 180515
H	20050116 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	-3.424685	0.007260	0.036087
7	P1	-3.084734	0.010938	0.016595
11	P1	-4.647387	0.020711	0.021325
15	P1	-5.648416	0.040424	0.033465
19	P1	-3.663054	0.006155	0.004698
22	P1	-4.571143	0.016659	0.021479
26	P1	-4.941564	0.025779	0.038652
30	P1	-7.128377	0.014294	-0.007495
3	P1	-15.927083	0.104921	0.051558
7	P1	-15.512605	0.102122	0.049388
11	P1	-20.805098	0.308838	-0.045794
15	P1	-11.630711	0.076079	0.054758
19	P1	-14.174238	0.031461	0.010222
22	P1	-16.015114	0.435925	0.147283
26	P1	-17.684200	0.230010	0.119883
30	P1	-17.873672	0.313042	-0.087278

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.309038	0.086426	0.100335
7	P2	-22.499189	0.171851	0.103584
11	P2	-14.774509	0.186786	0.178793
15	P2	-7.140427	0.114540	0.072385
19	P2	-9.728999	0.216915	0.124470
22	P2	-17.113104	0.098473	0.111610

26	P2	-16.523277	0.115734	0.089902
30	P2	-18.940971	0.082938	0.074066

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.201749	0.007026	0.025636
7	P3	-8.201737	0.007027	0.025592
11	P3	-8.201749	0.007026	0.025699
15	P3	-8.201807	0.007028	0.026047
19	P3	-8.201798	0.007028	0.026033
22	P3	-8.201780	0.007026	0.025883
26	P3	-8.201737	0.007027	0.025591
30	P3	-8.201535	0.007015	0.026981

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	-2.821392	0.011749	0.024716
7	P1	-2.954341	0.023849	0.018684
11	P1	-3.944143	0.025604	-0.011948
15	P1	-3.508295	0.029666	-0.019976
19	P1	-3.607677	0.012710	0.004844
22	P1	-5.640625	0.067675	-0.044062
26	P1	-6.545913	0.034140	-0.115749
30	P1	-6.297914	0.044681	-0.013208
3	P1	-10.775523	0.047604	0.011489
7	P1	-10.142220	0.136260	0.015721

11	P1	-12.502460	0.108156	-0.100294
15	P1	-11.751001	0.054961	-0.025450
19	P1	-15.635178	0.046297	0.037938
22	P1	-24.067339	1.871259	0.088086
26	P1	-14.907197	0.359434	0.158655
30	P1	-20.053383	0.871075	0.214297

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.993067	0.036675	0.062608
7	P2	-22.553776	0.034772	0.101723
11	P2	-10.583058	0.038385	0.188659
15	P2	-5.042602	0.025135	0.024698
19	P2	-6.936170	0.037067	0.038039
22	P2	-7.261913	0.028723	0.070497
26	P2	-23.944994	0.019869	0.036416
30	P2	-21.985872	0.025172	0.046574

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.035616	0.002972	0.017646
7	P3	-8.035594	0.002977	0.017359
11	P3	-8.035596	0.002970	0.017273
15	P3	-8.035788	0.002967	0.017364
19	P3	-8.035593	0.002984	0.017091
22	P3	-8.035669	0.002964	0.017562
26	P3	-8.035630	0.002970	0.017420
30	P3	-8.035612	0.002965	0.017367

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	0.000468714
	stdev	2.19968e-07
MEAN Q	mean	0.000545621
	stdev	2.32872e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128605
	stdev	0.000957895
STDEV Q	mean	0.128840
	stdev	0.000968420

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005011[678]
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_1PNPDK20050116_124036_000000362033_00482_15065_7346.N1	1	0
ASA_WSM_1PNPDE20050117_165904_000002202033_00499_15082_0025.N1	0	2

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

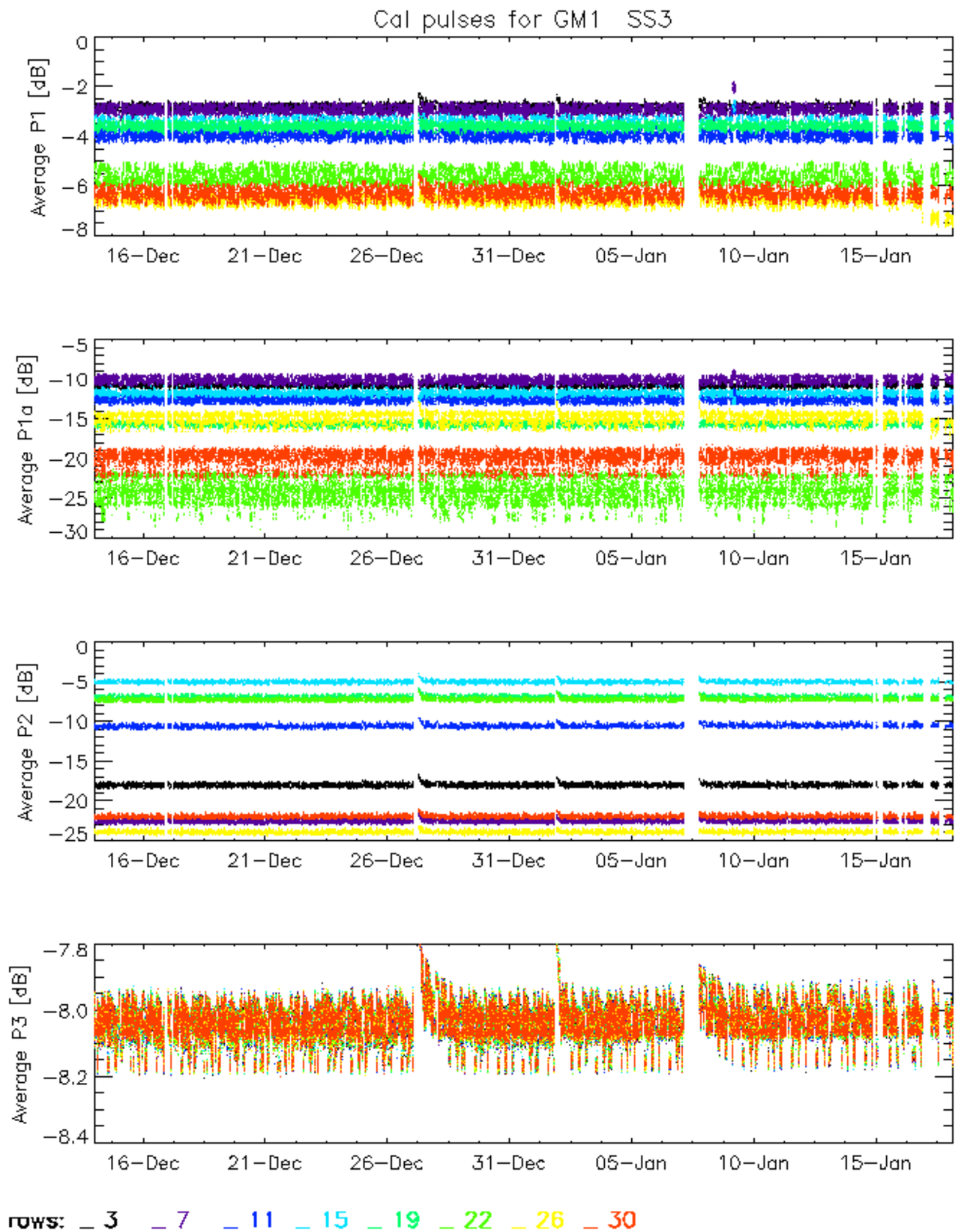
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

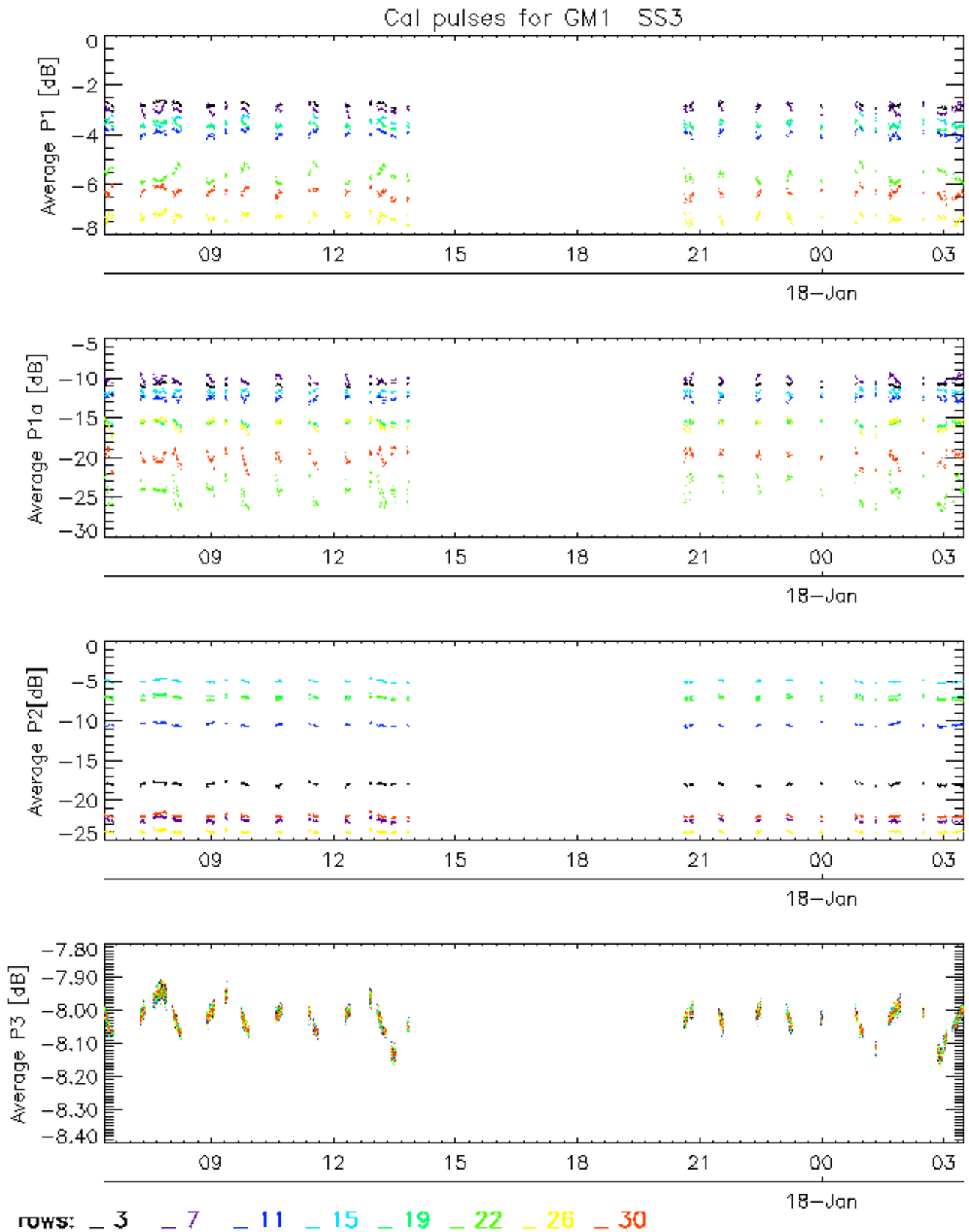
7.5 - Absolute Doppler for GM1

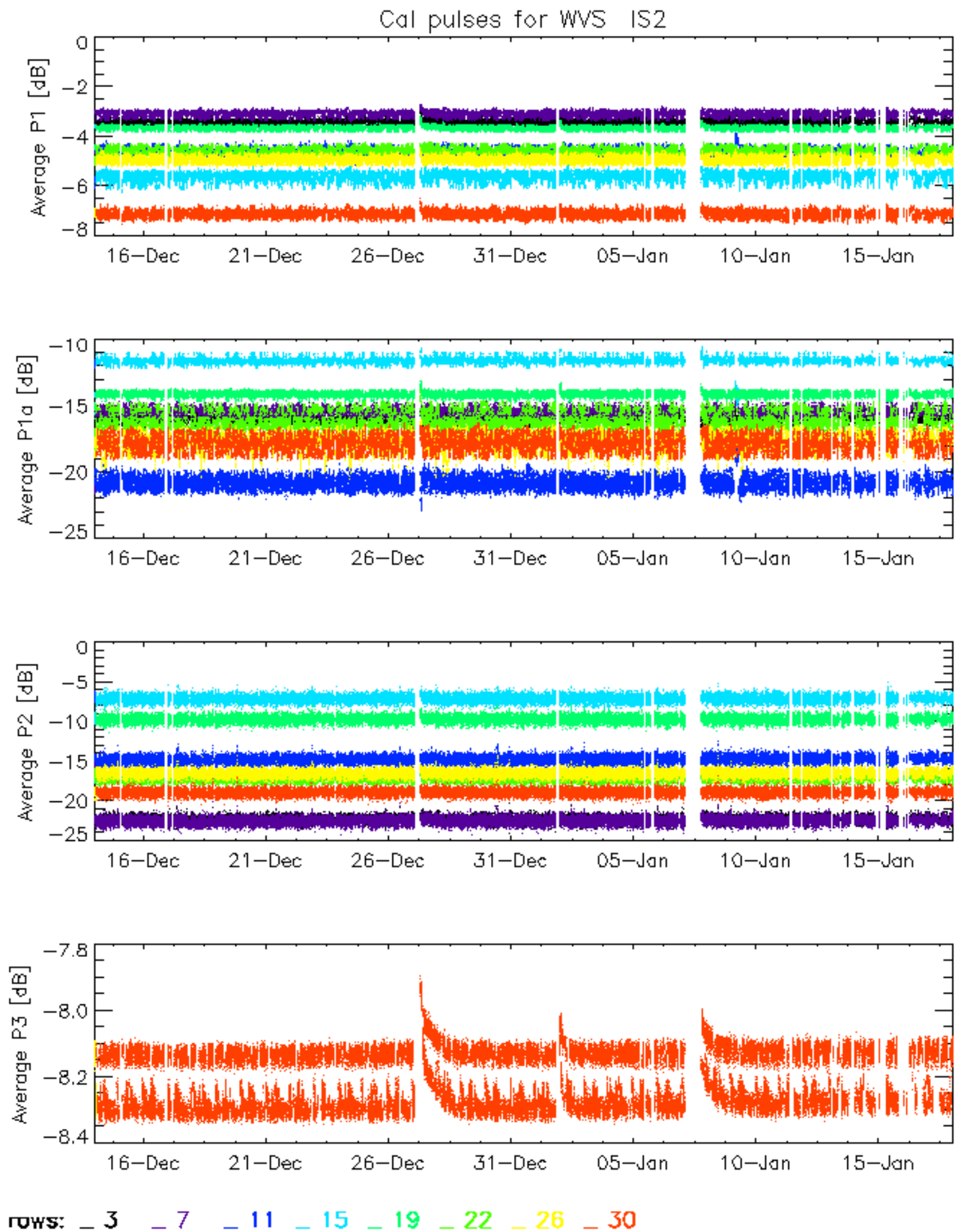
Evolution of Absolute Doppler
Acsending
Descending

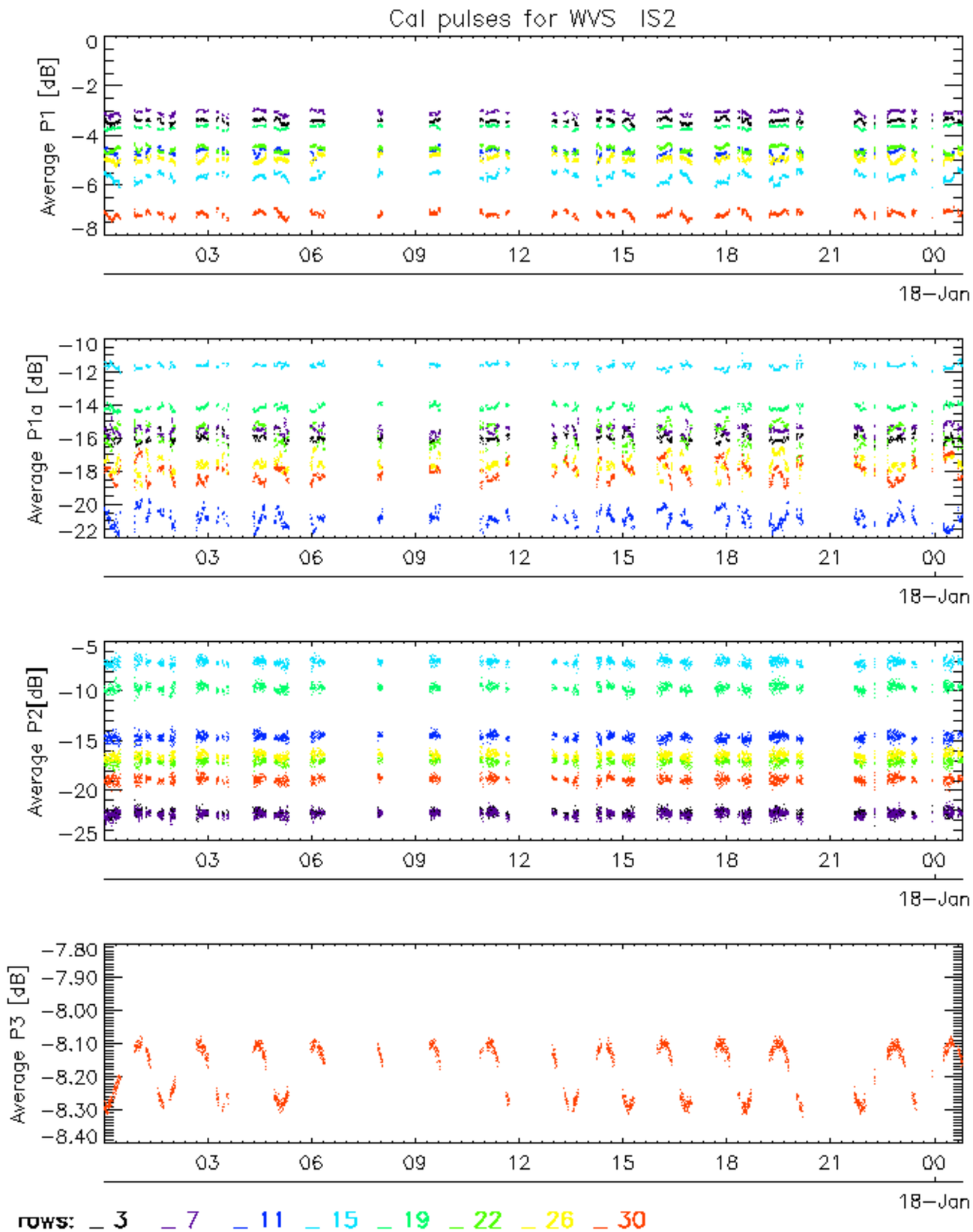
7.6 - Doppler evolution versus ANX for GM1

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

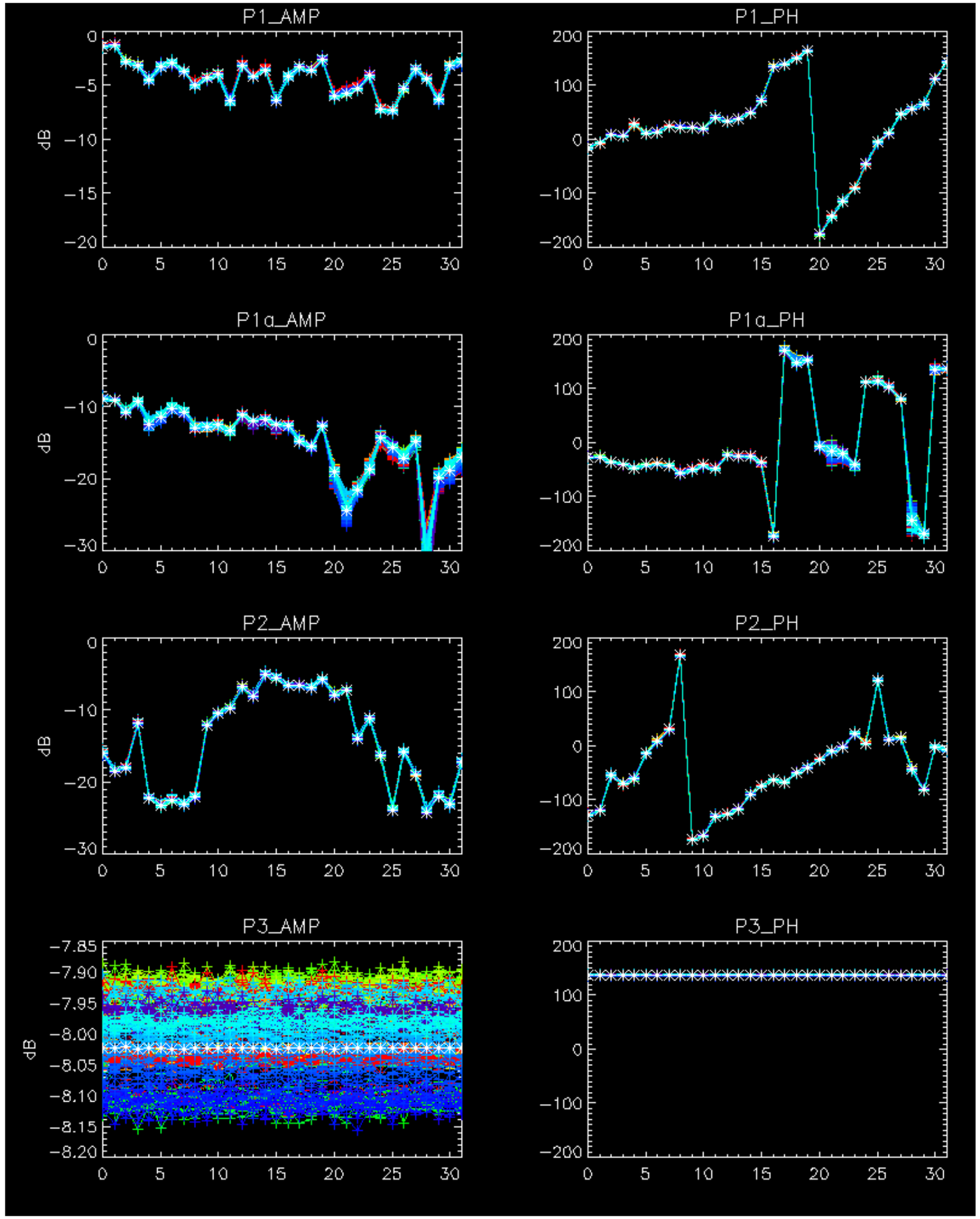

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
09
12
15
18
21
00
03
18−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30

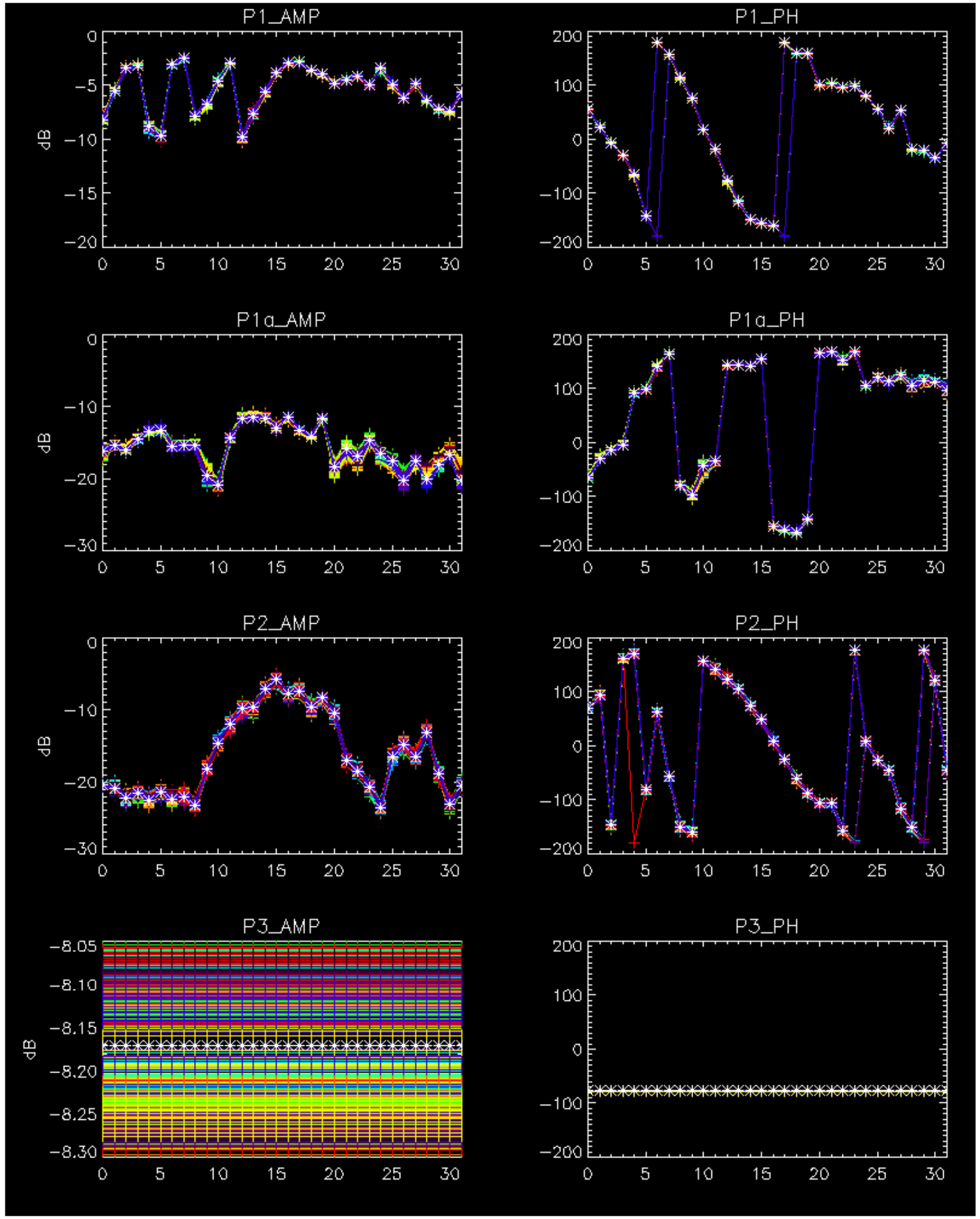

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
03
06
09
12
15
18
21
00
18−Jan
rows: 3 7 11 15 19 22 26 30

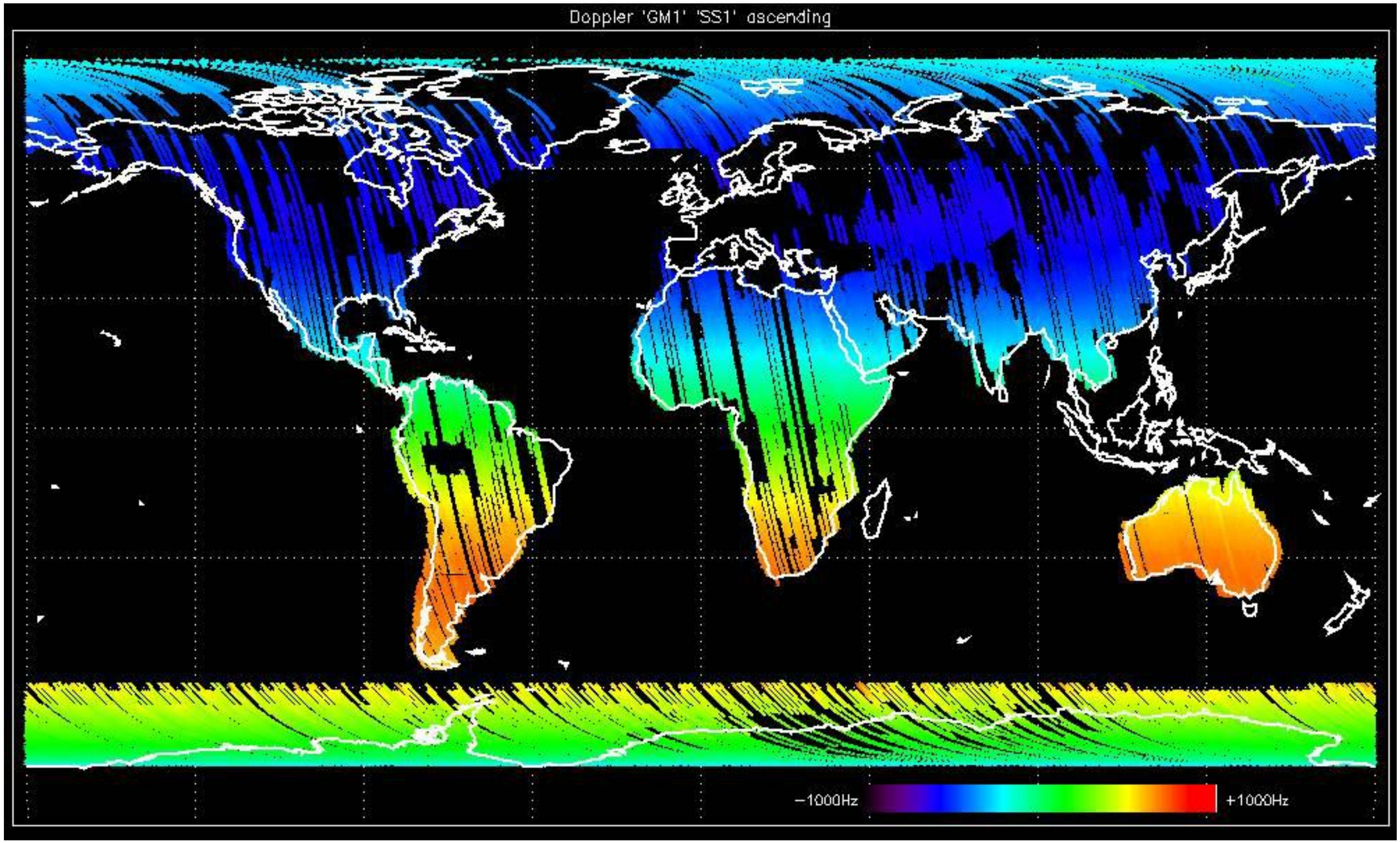
No anomalies observed on available browse products

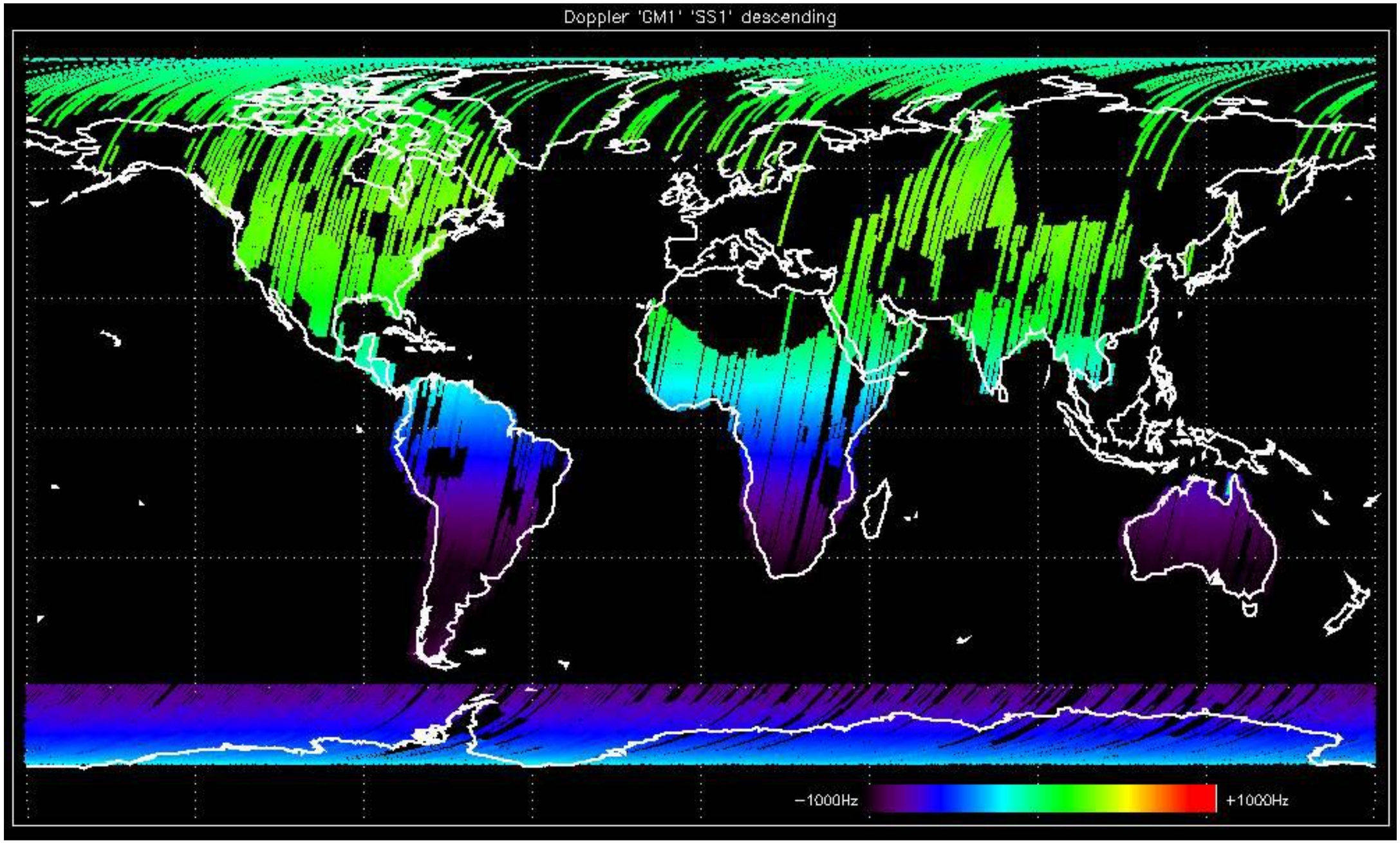
No anomalies observed.

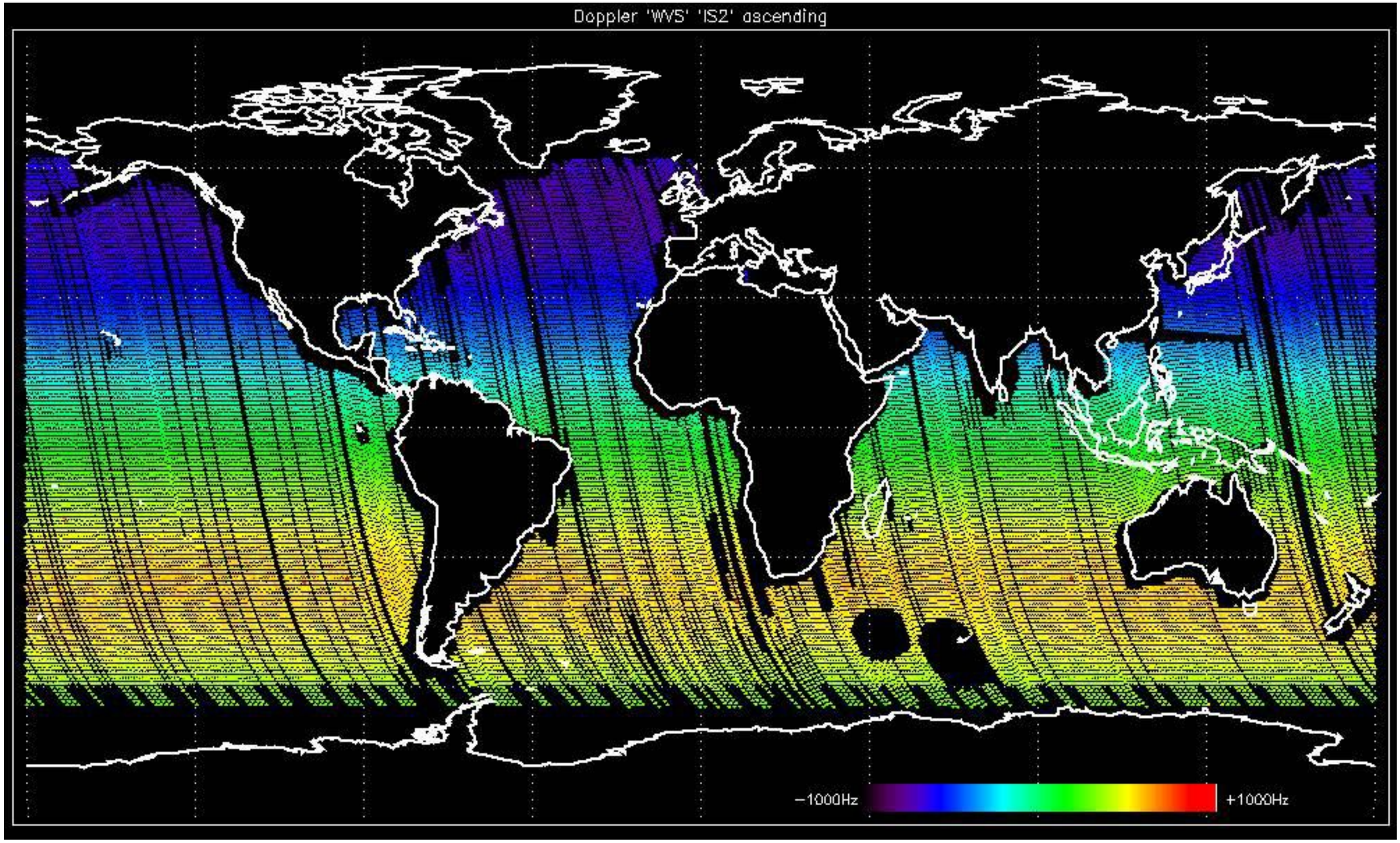

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

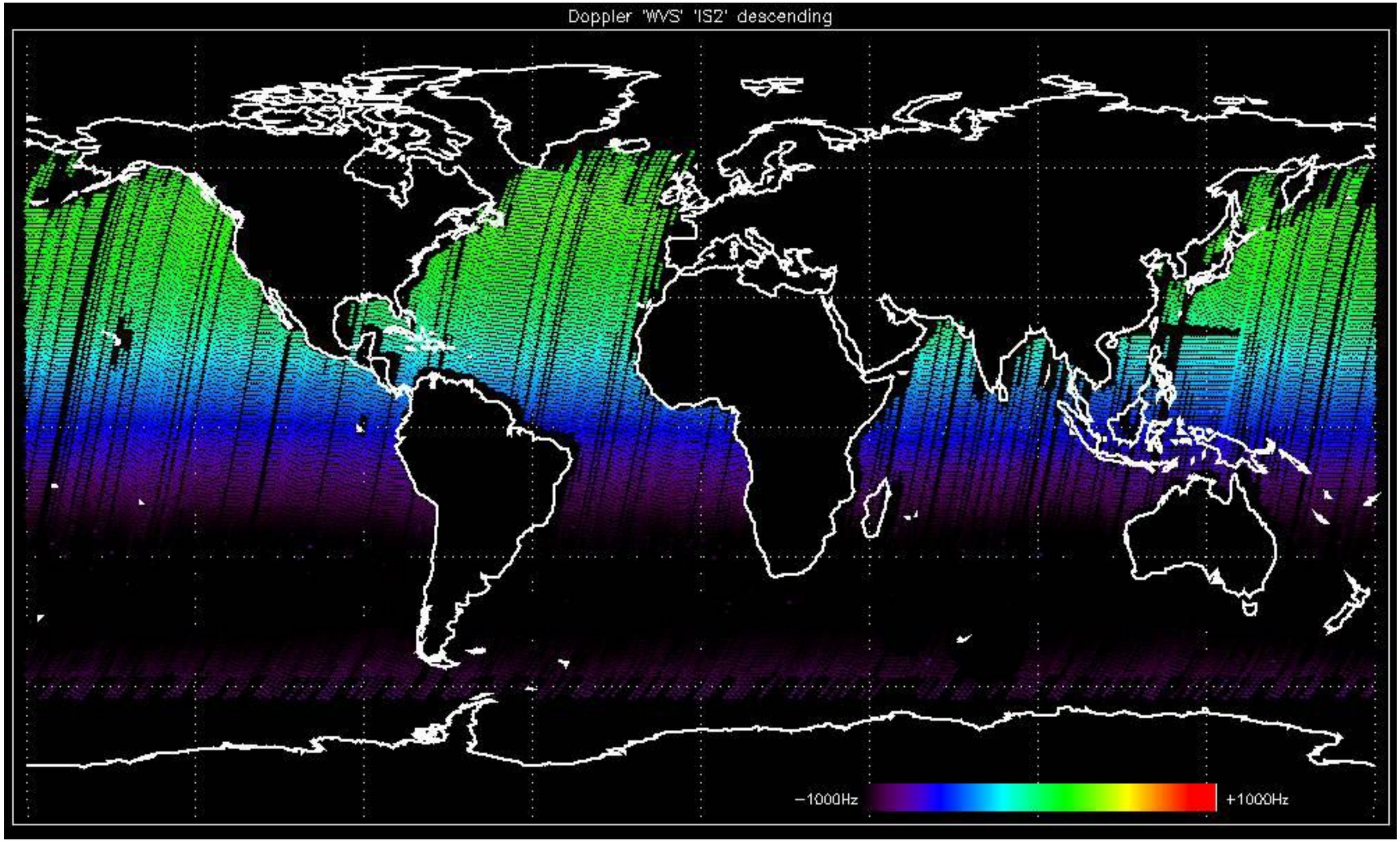

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

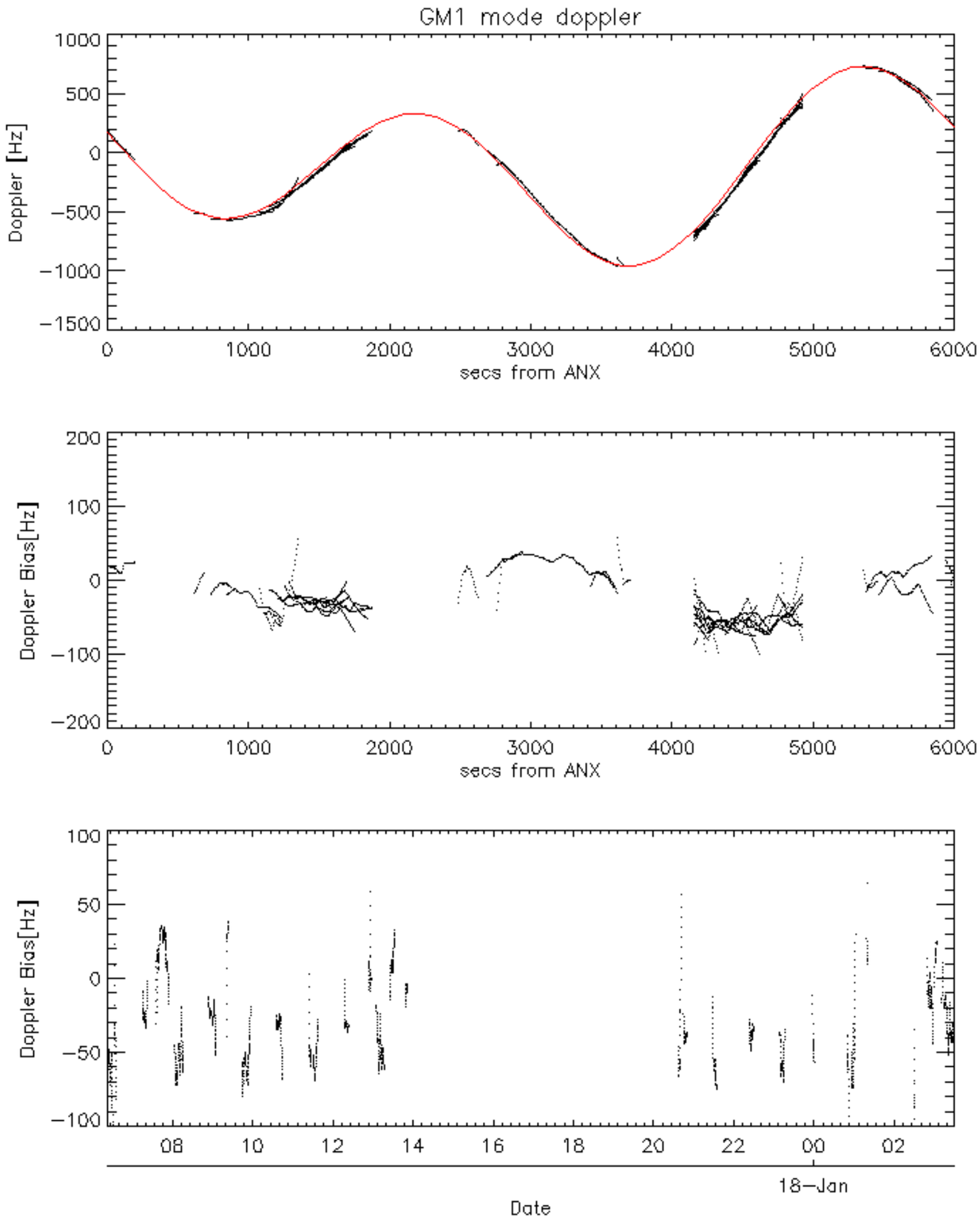
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

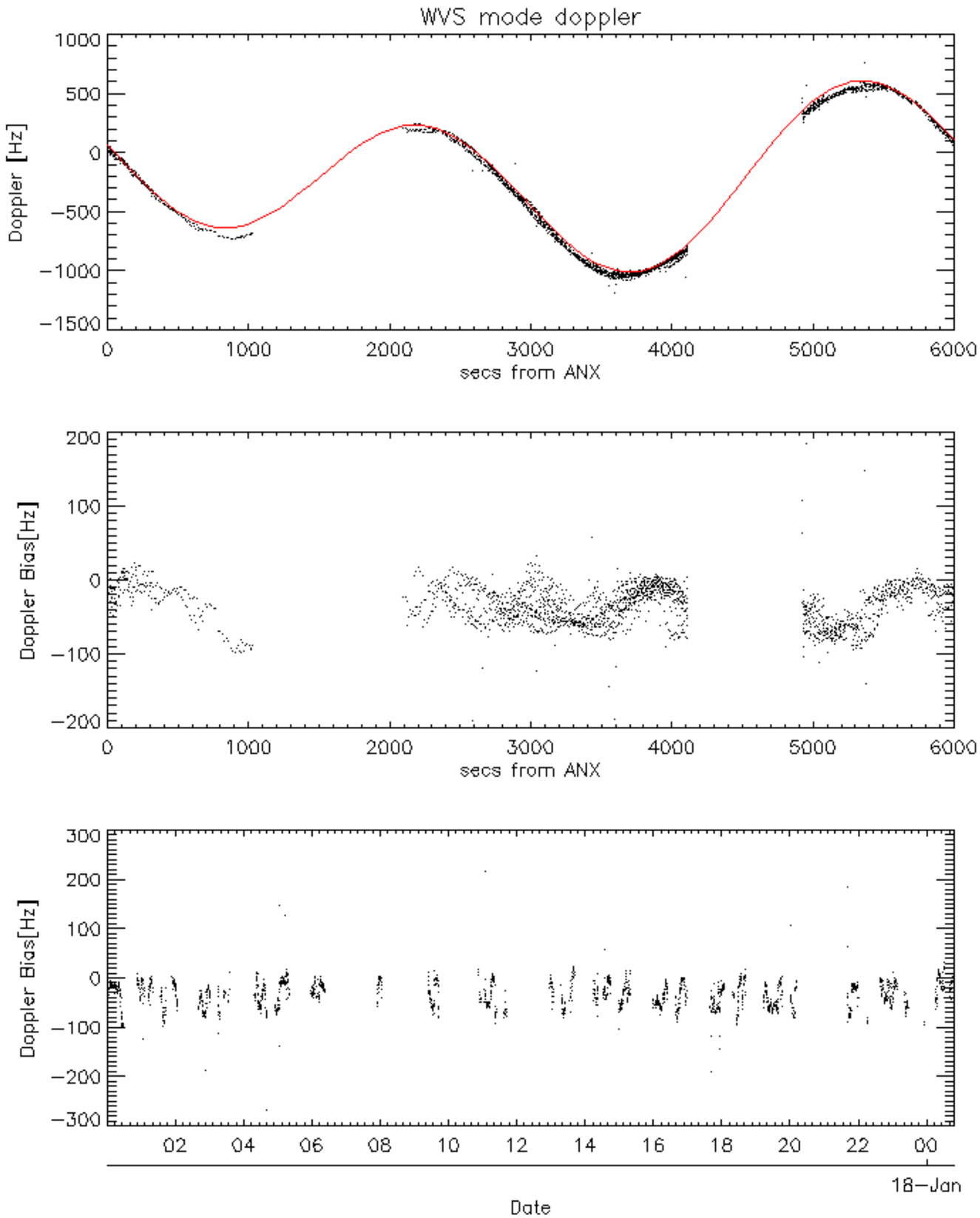

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

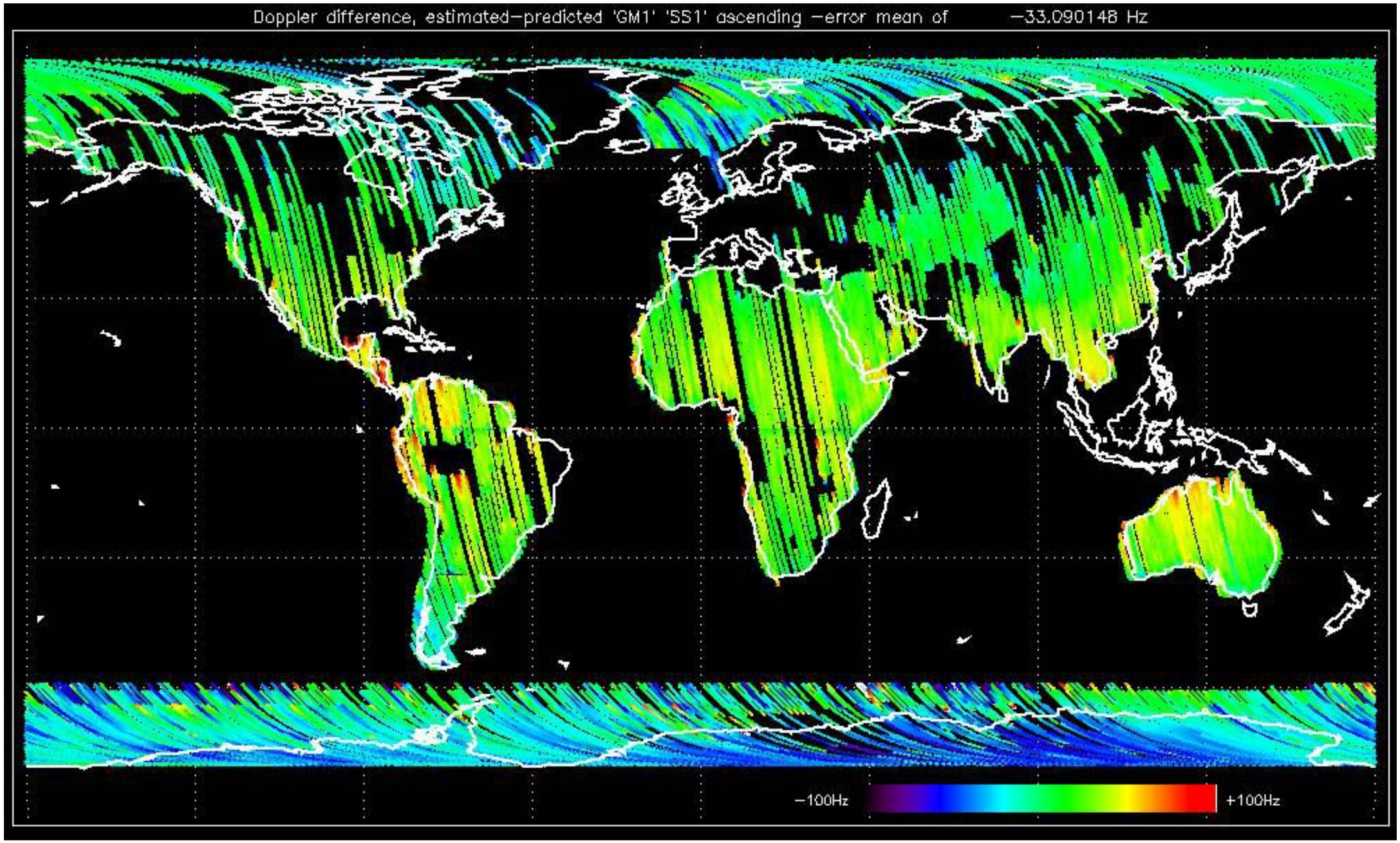

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

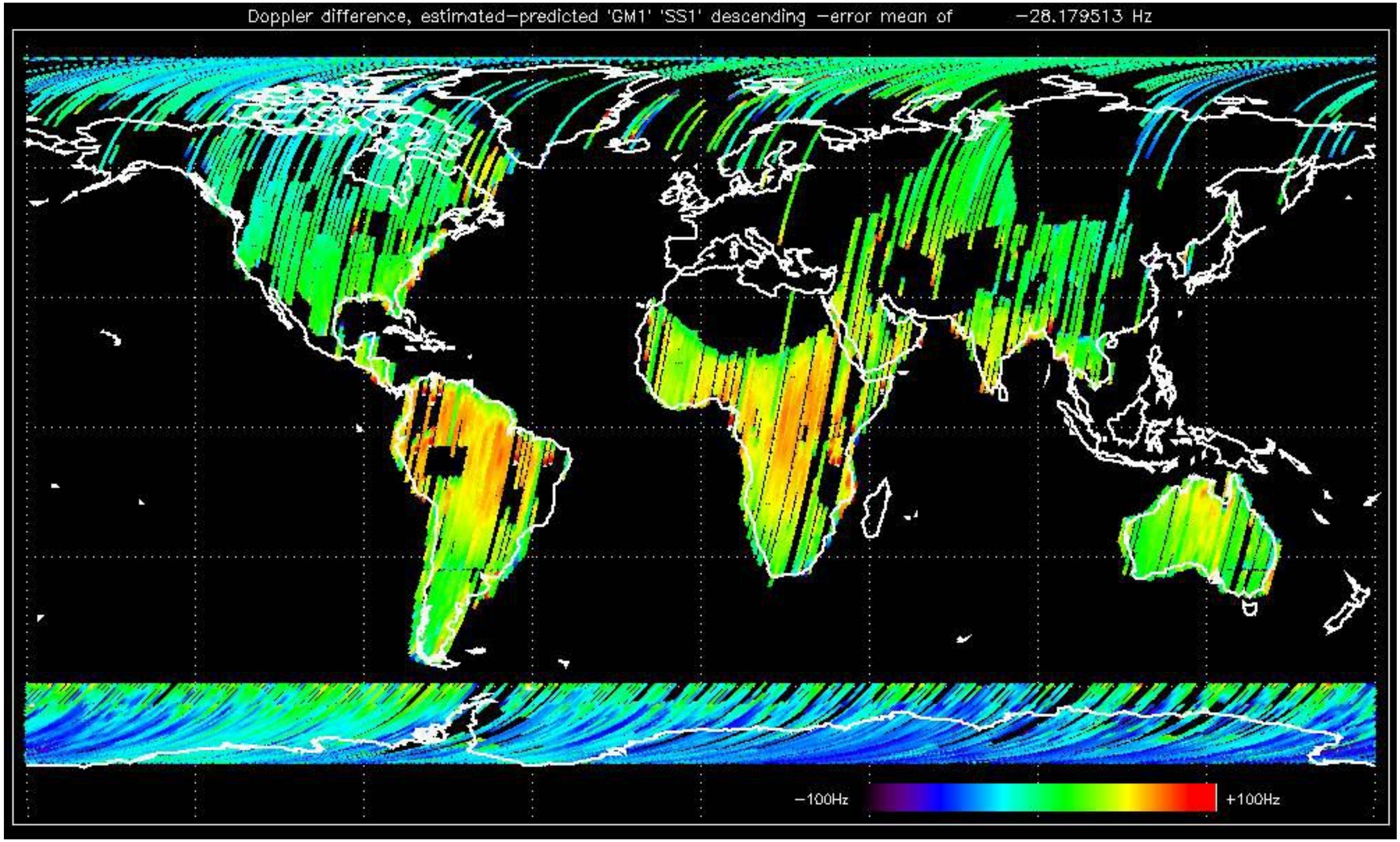

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

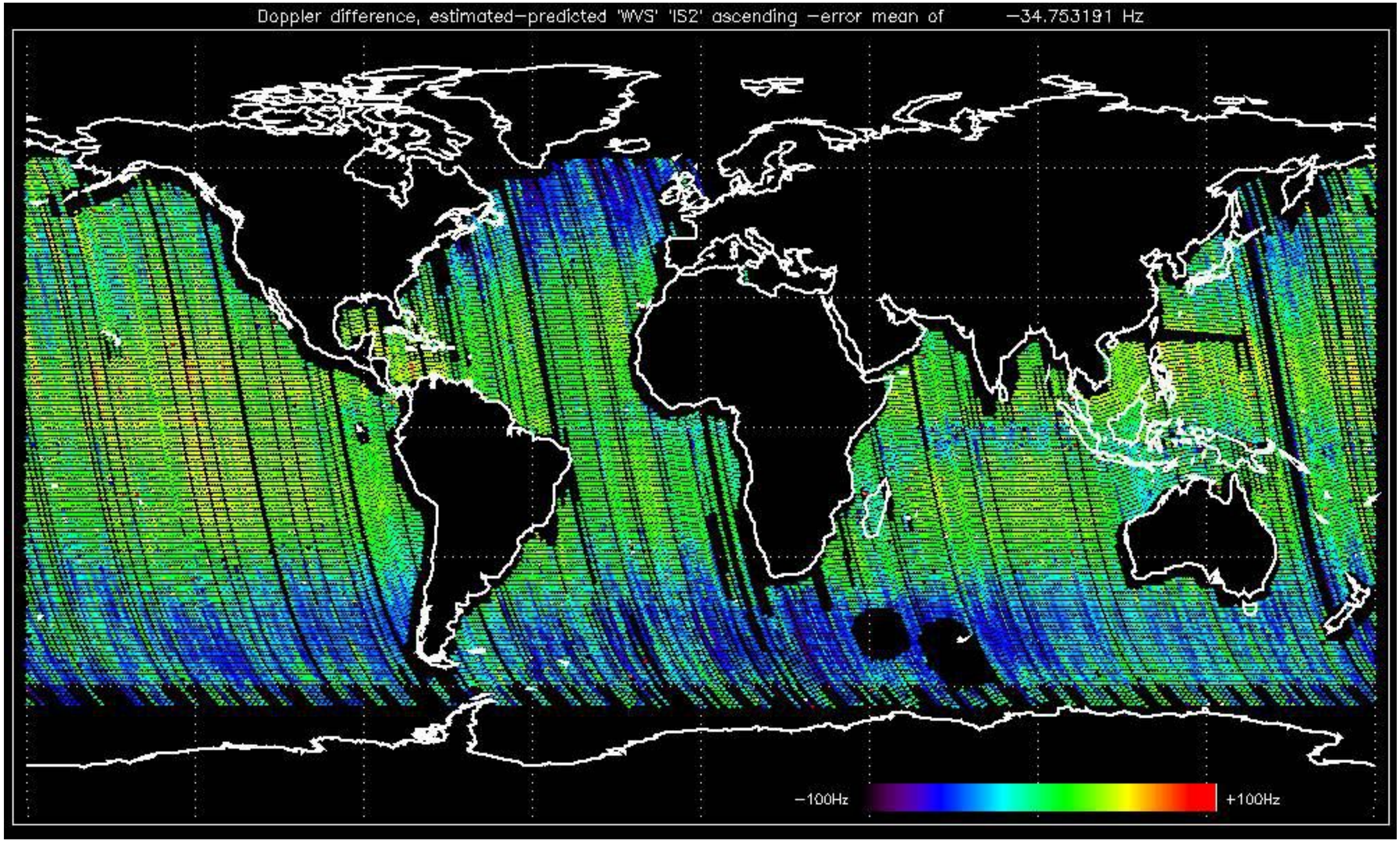

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

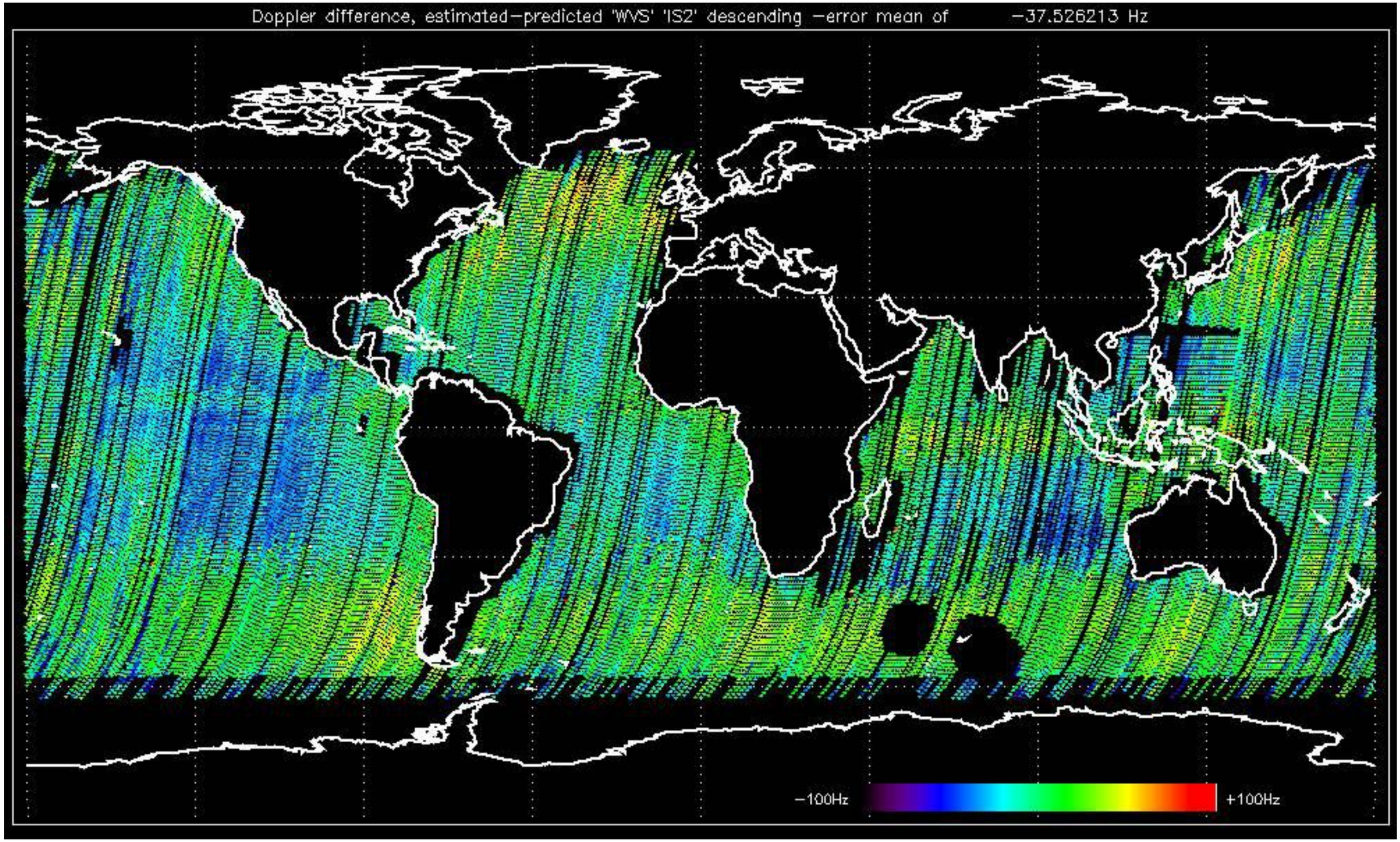

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
08
10
12
14
16
18
20
22
00
02
18−Jan
Date


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
−300
02
04
06
08
10
12
14
16
18
20
22
00
18−Jan
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.090148 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.179513 Hz
-100Hz
+100Hz

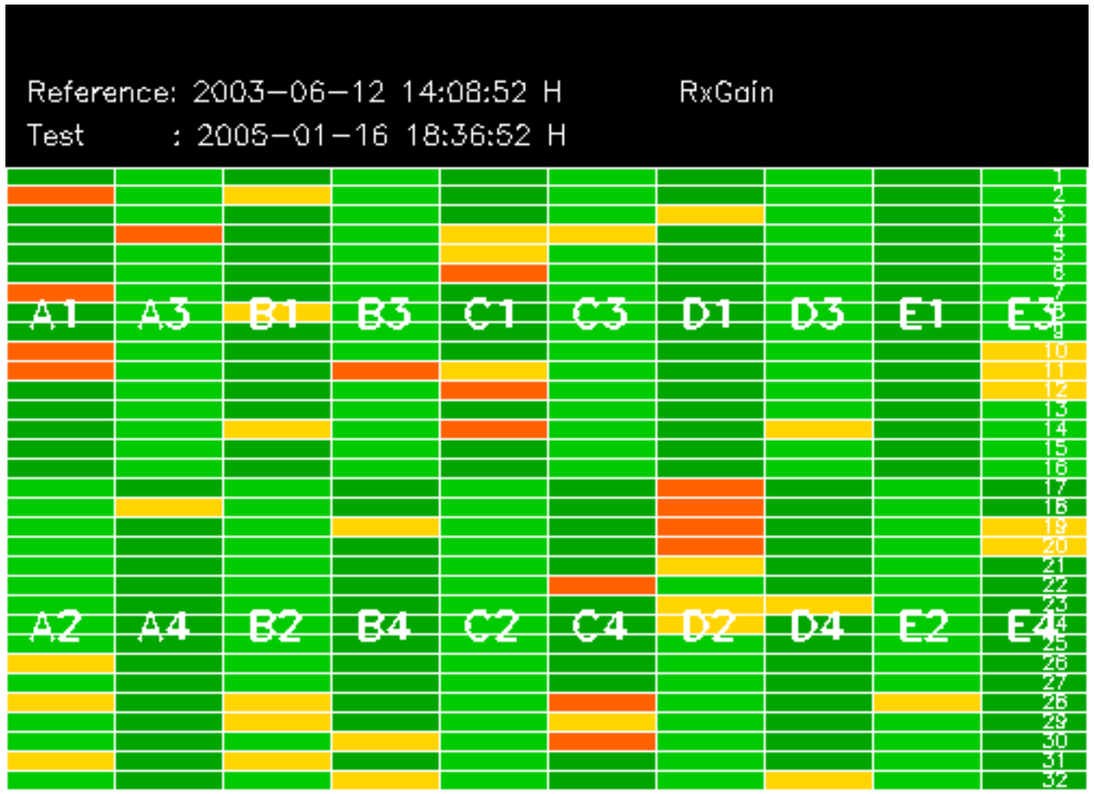

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.753191 Hz
−100Hz
+100Hz

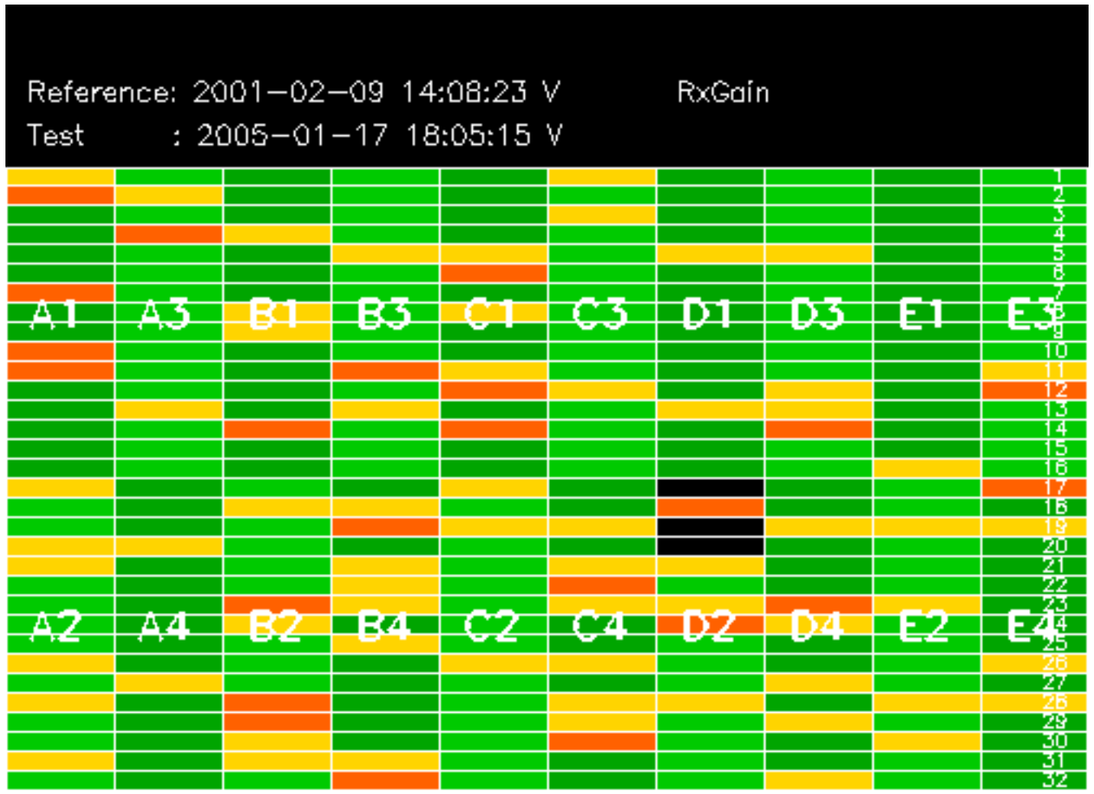

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.526213 Hz
−100Hz
+100Hz

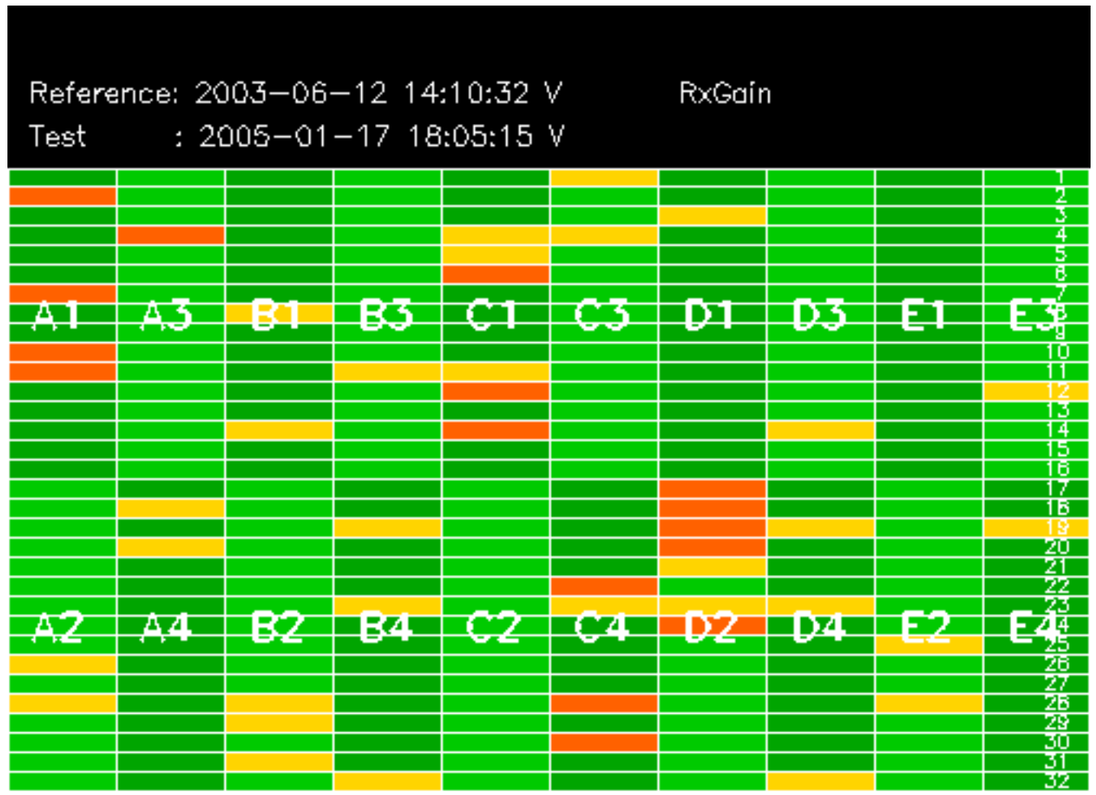
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

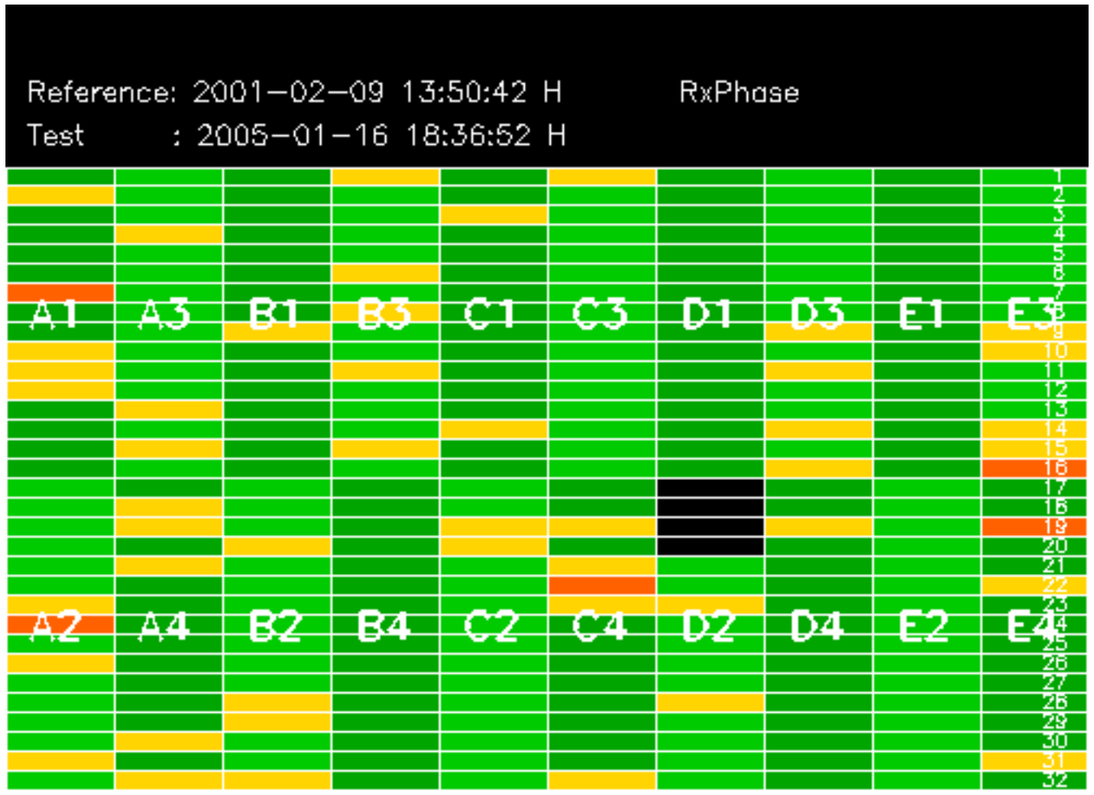
No anomalies observed.

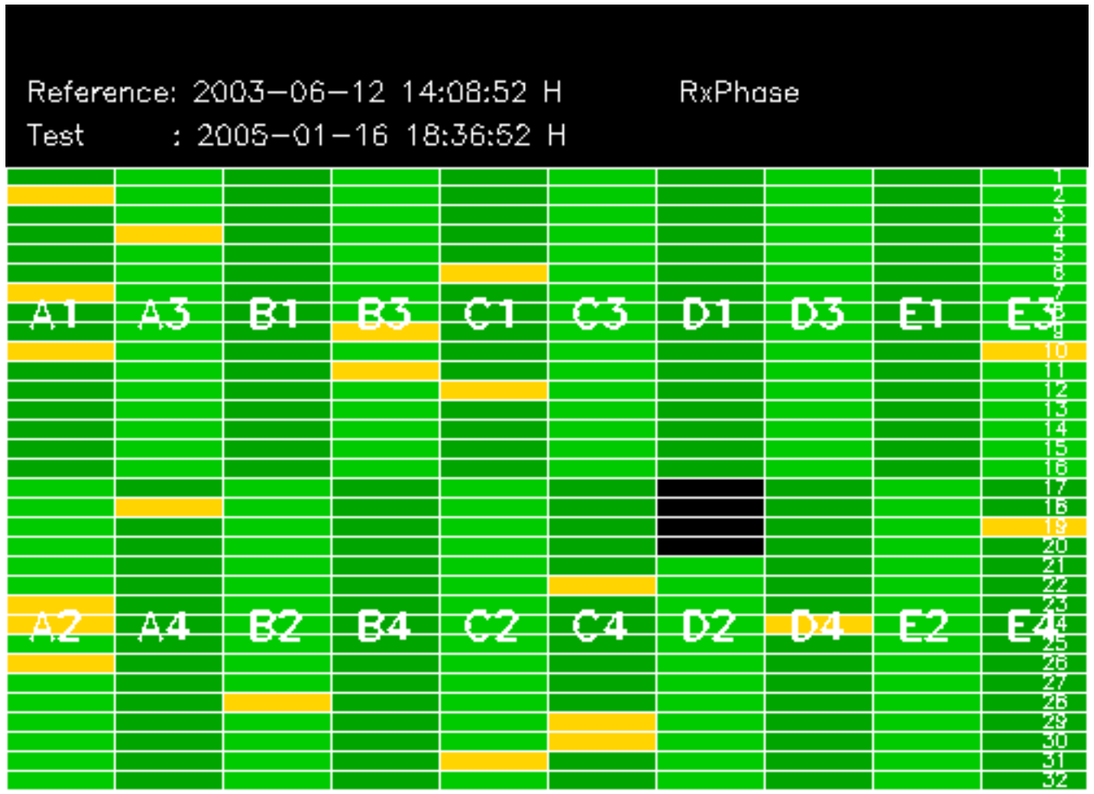

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

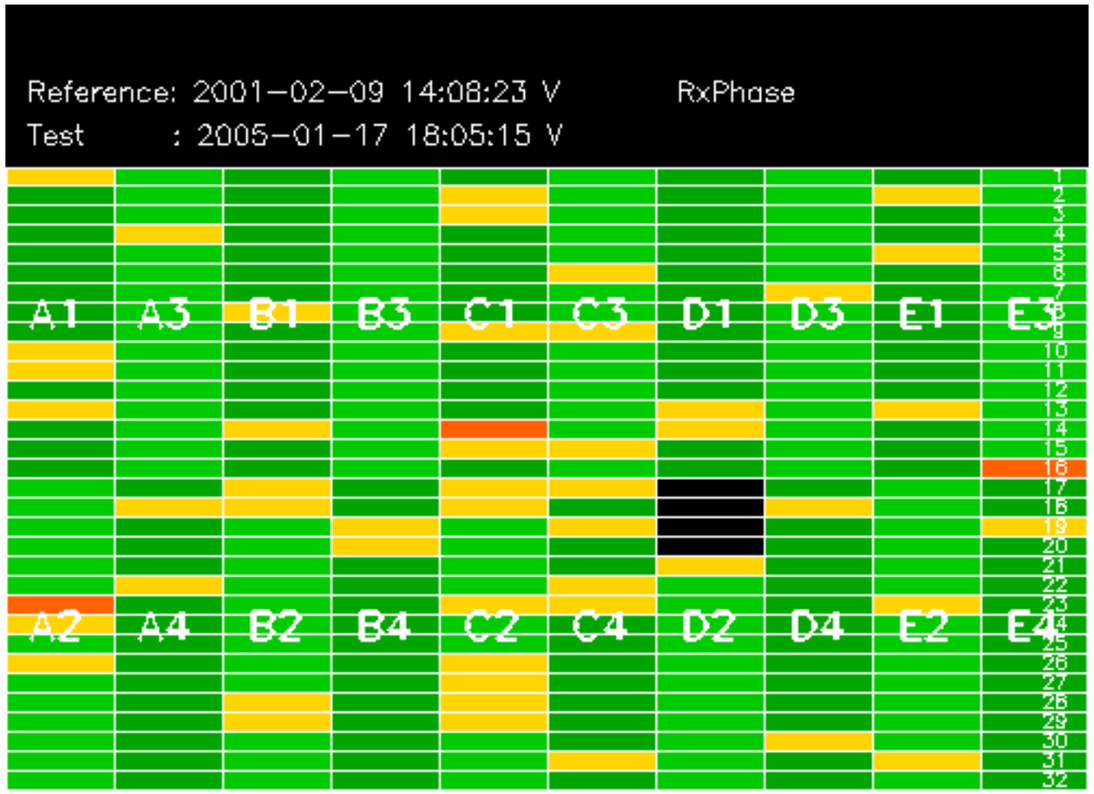

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

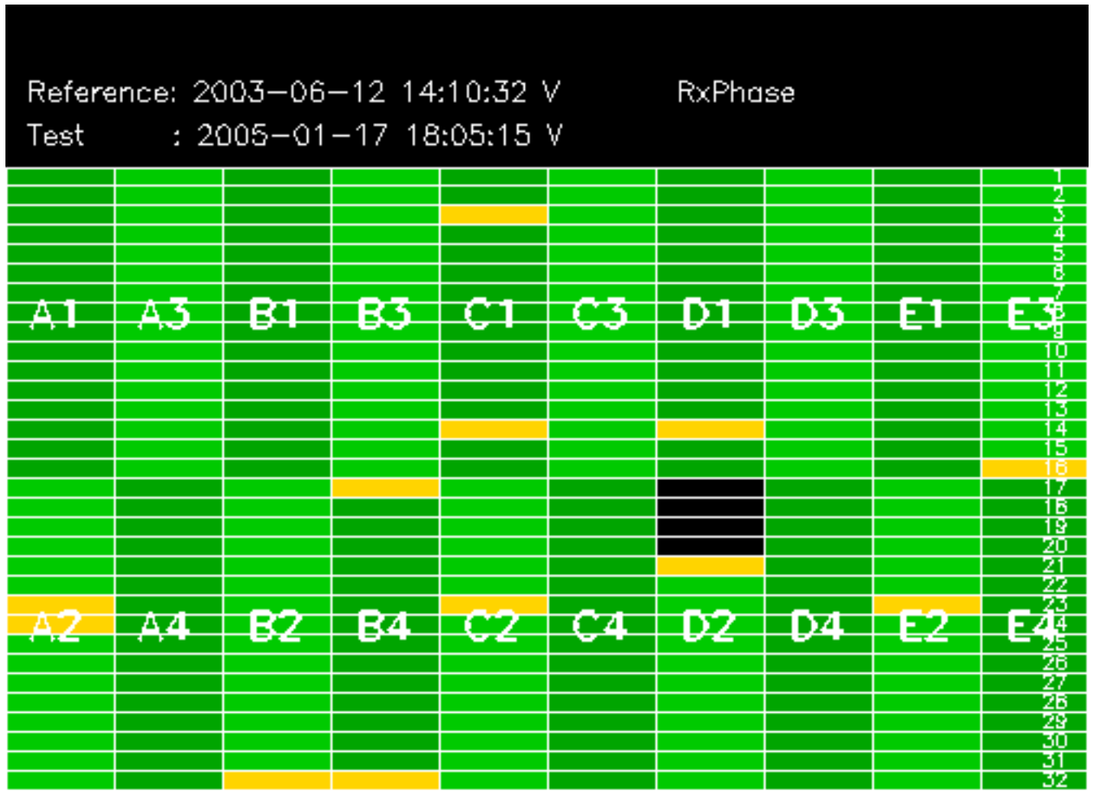

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

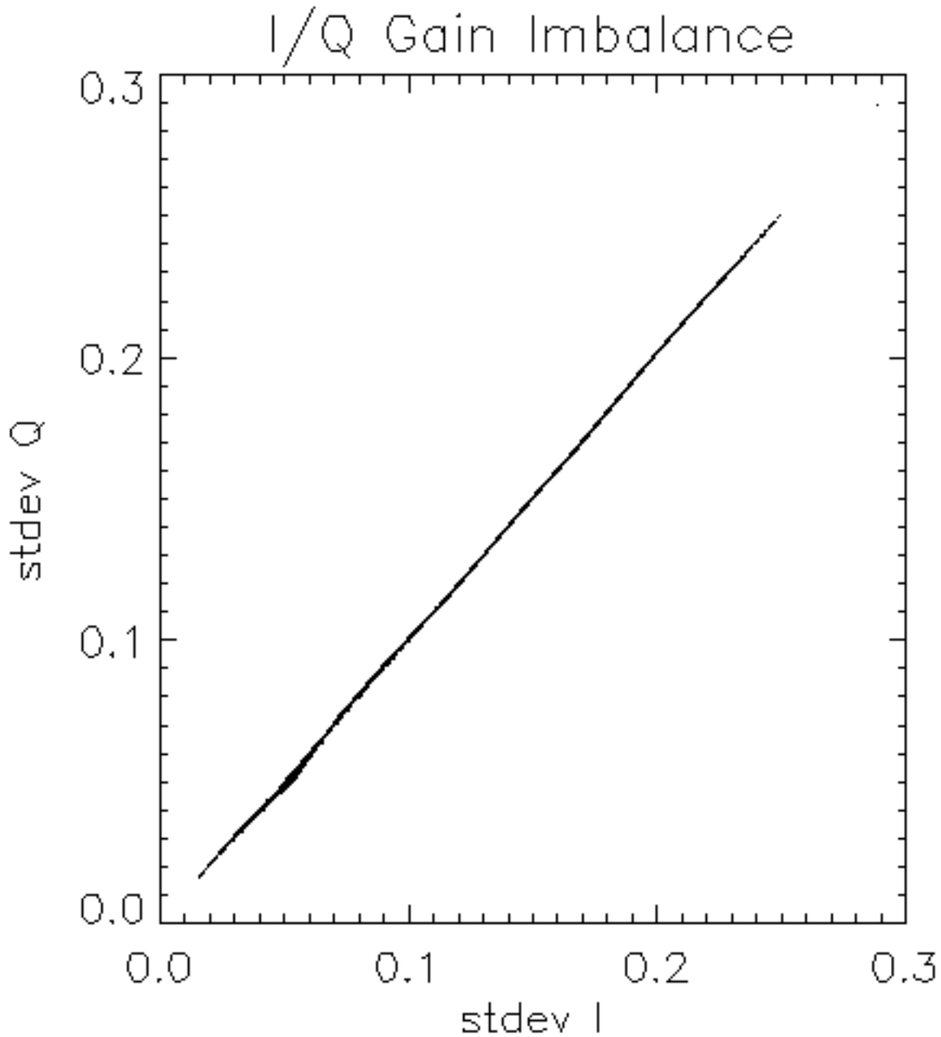

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

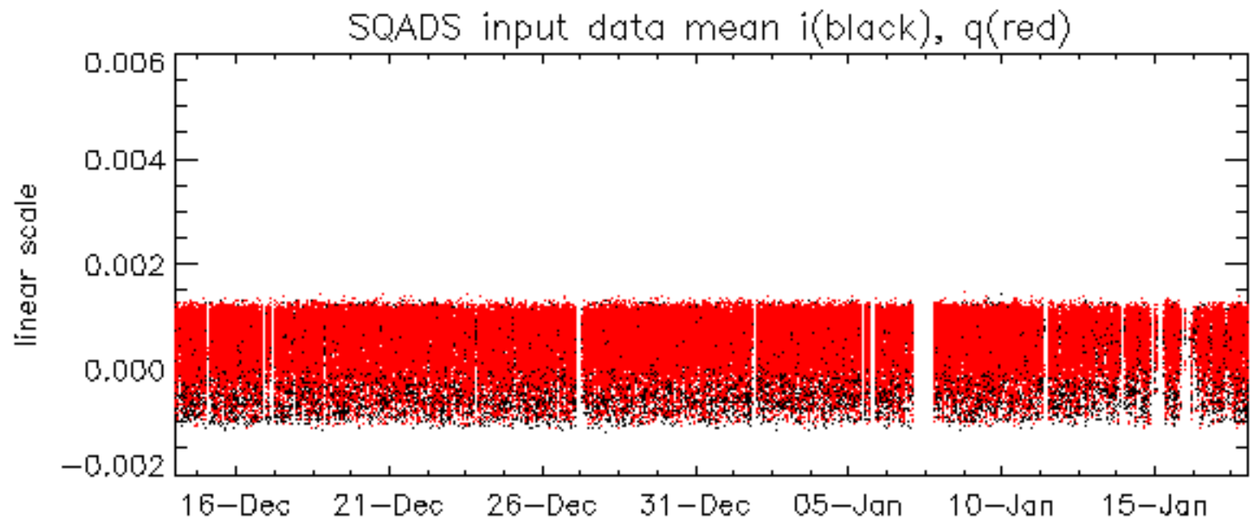

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

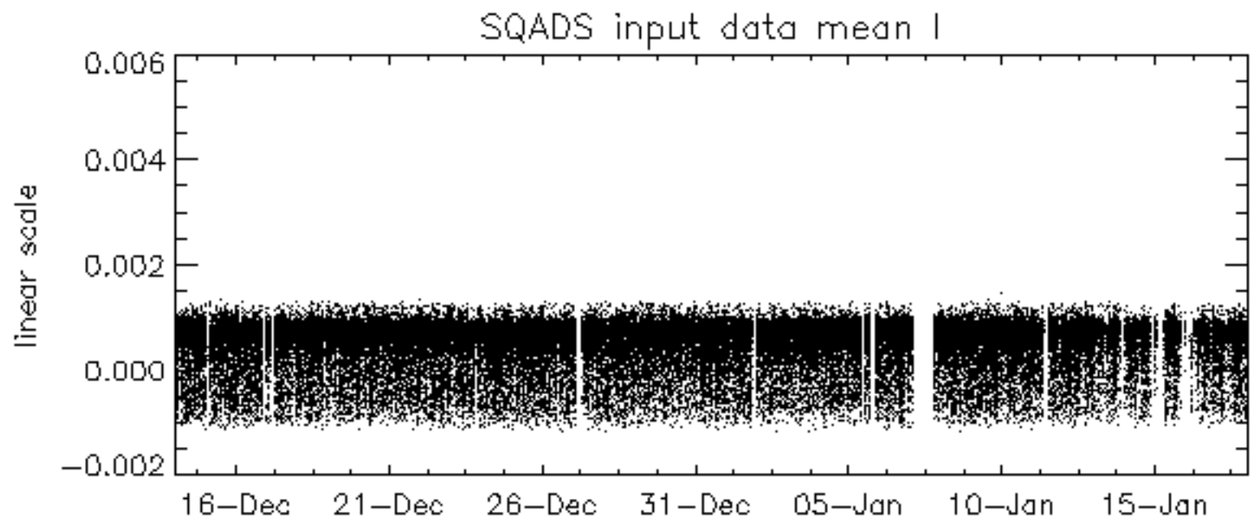

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

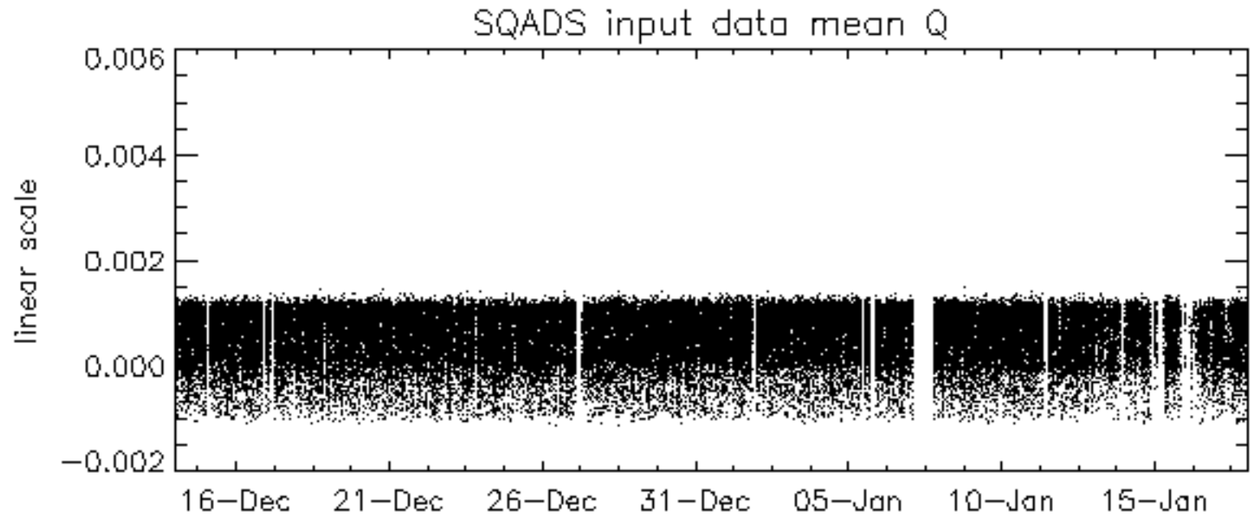

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

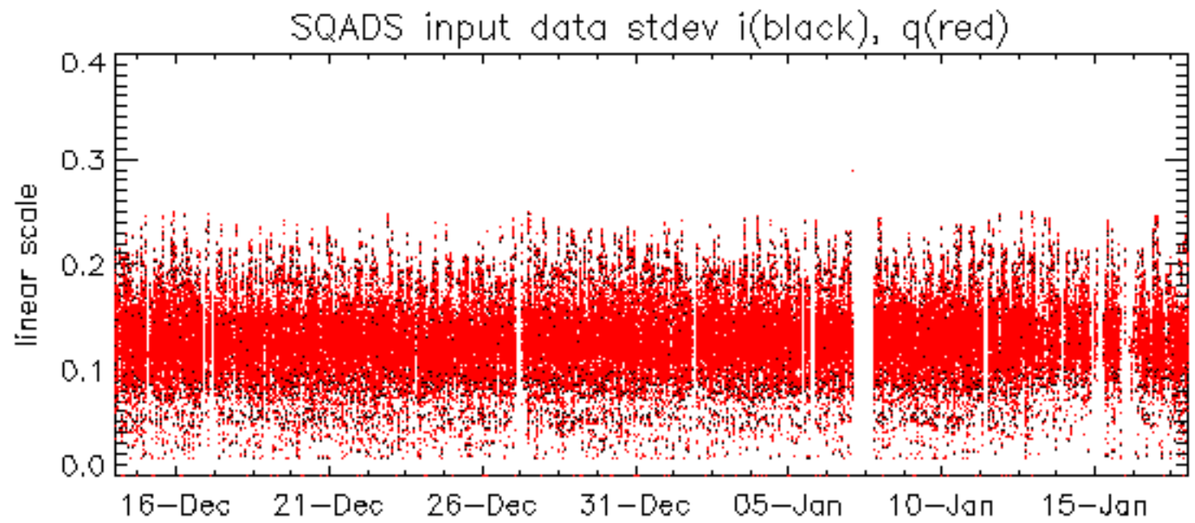

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

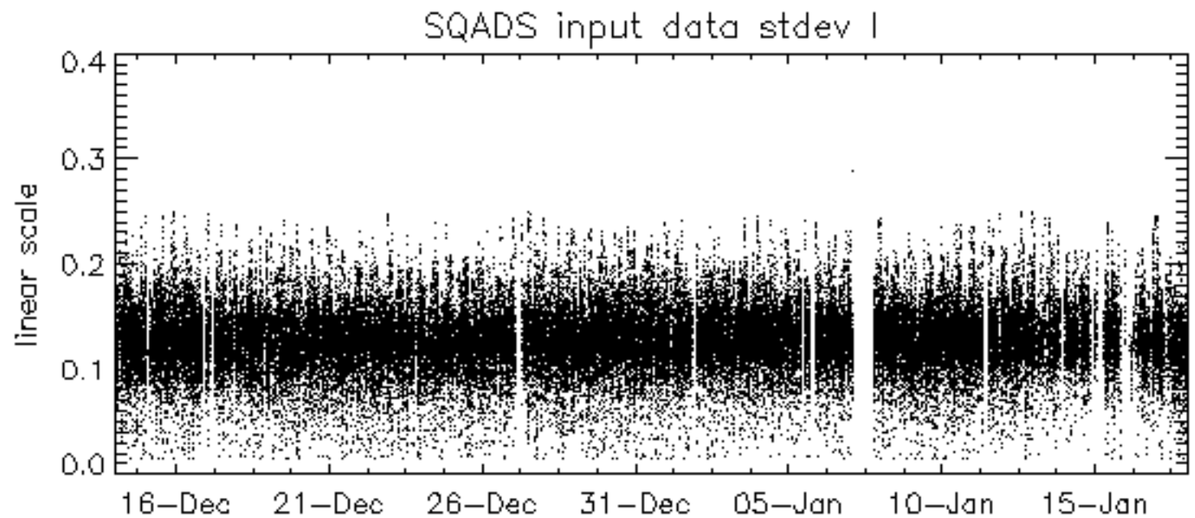

I/Q Gain Imbalance
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
stdev I

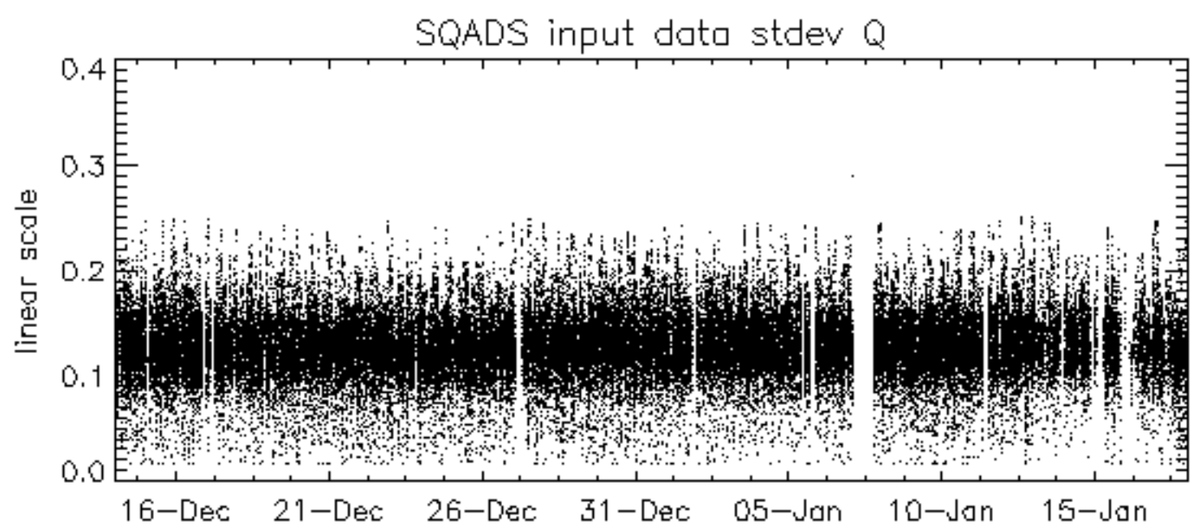

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

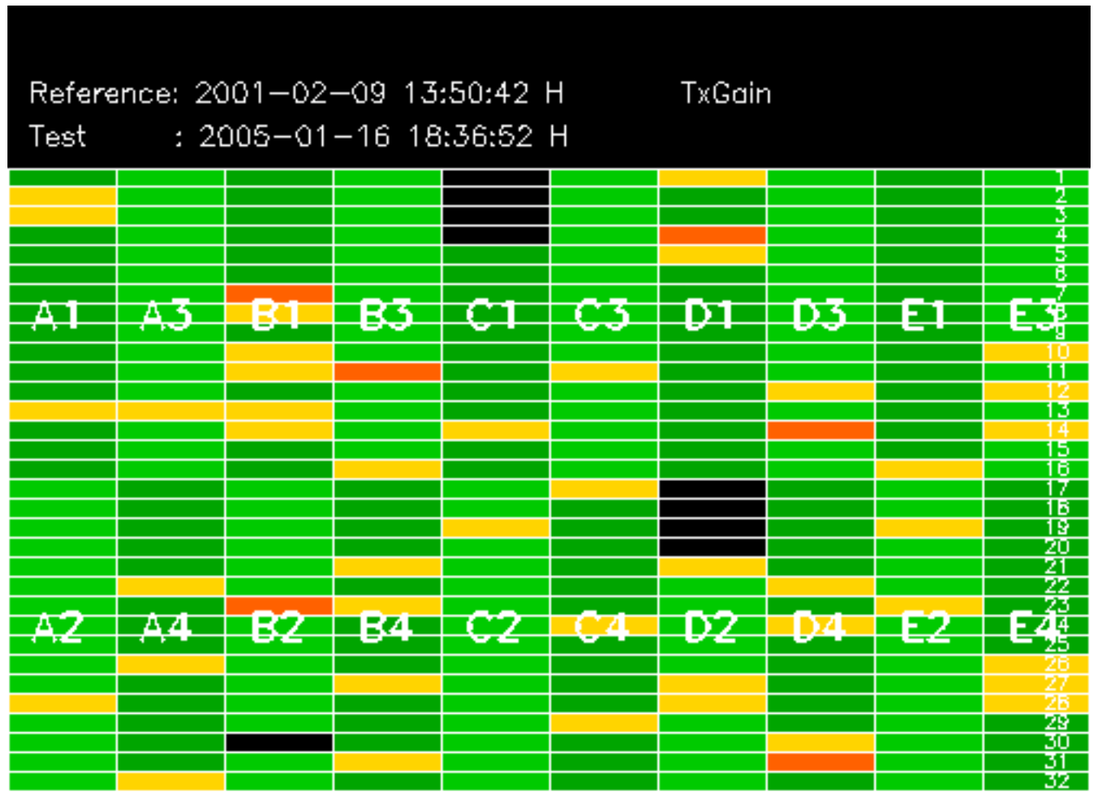

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

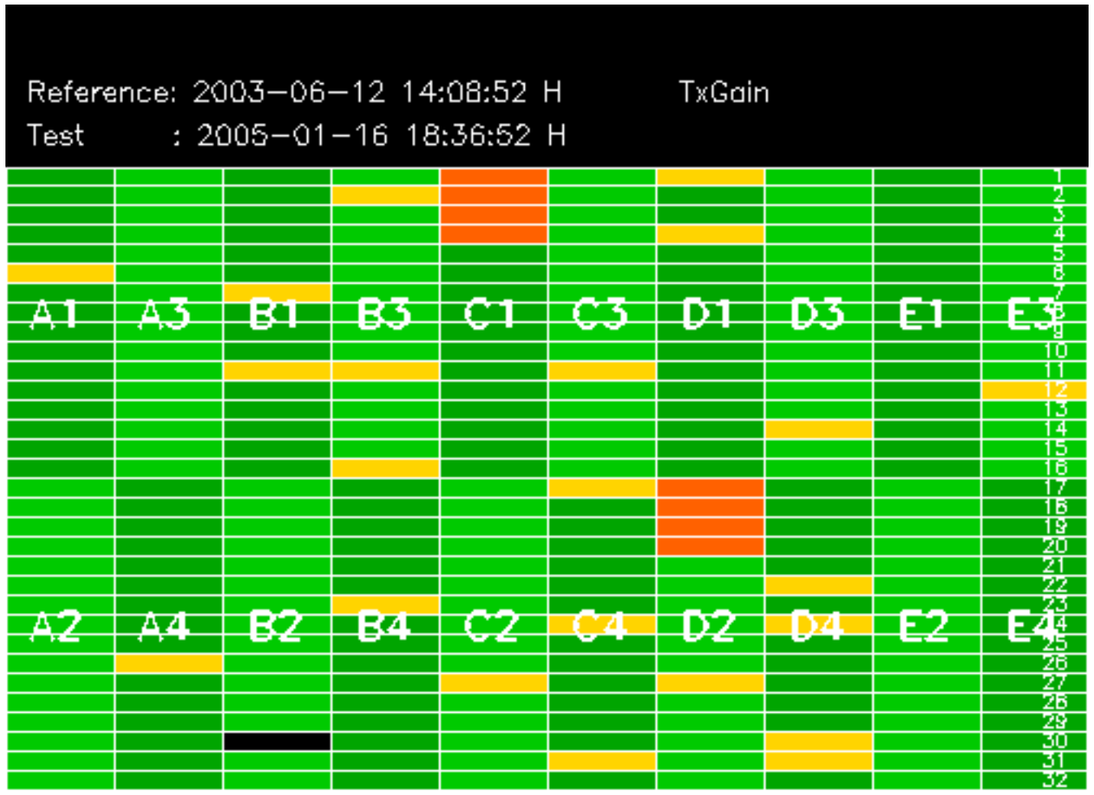

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

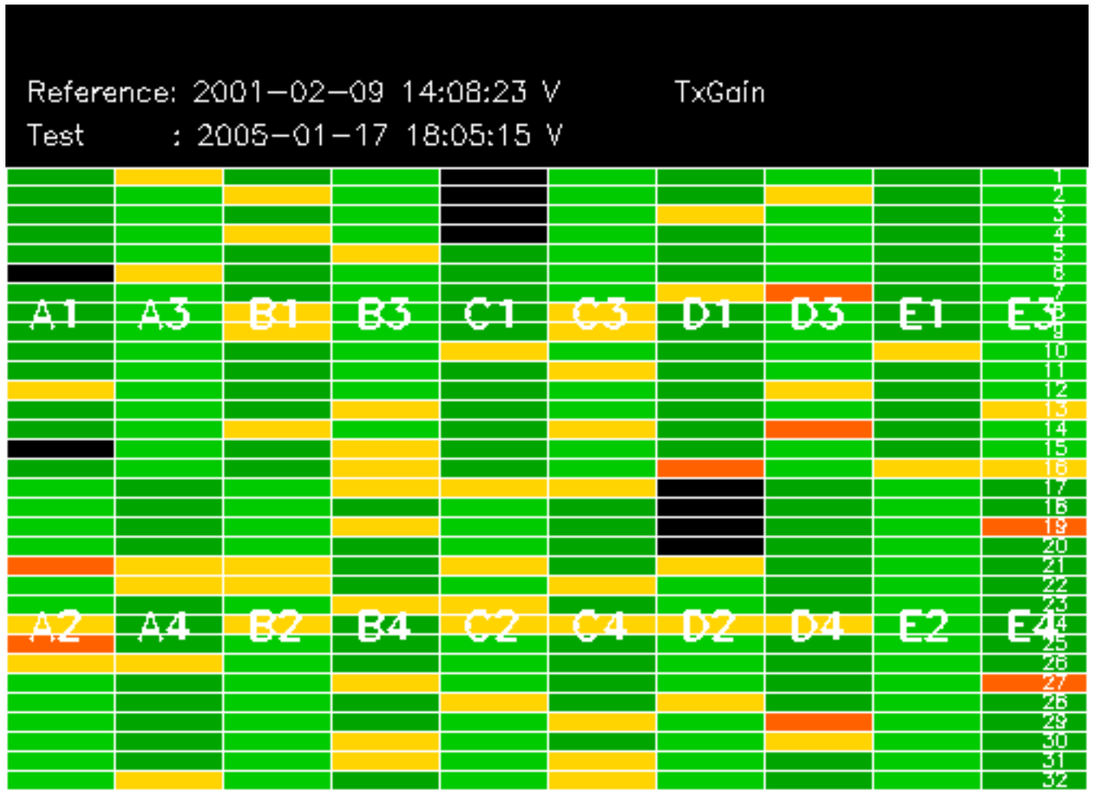

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan
15-Jan

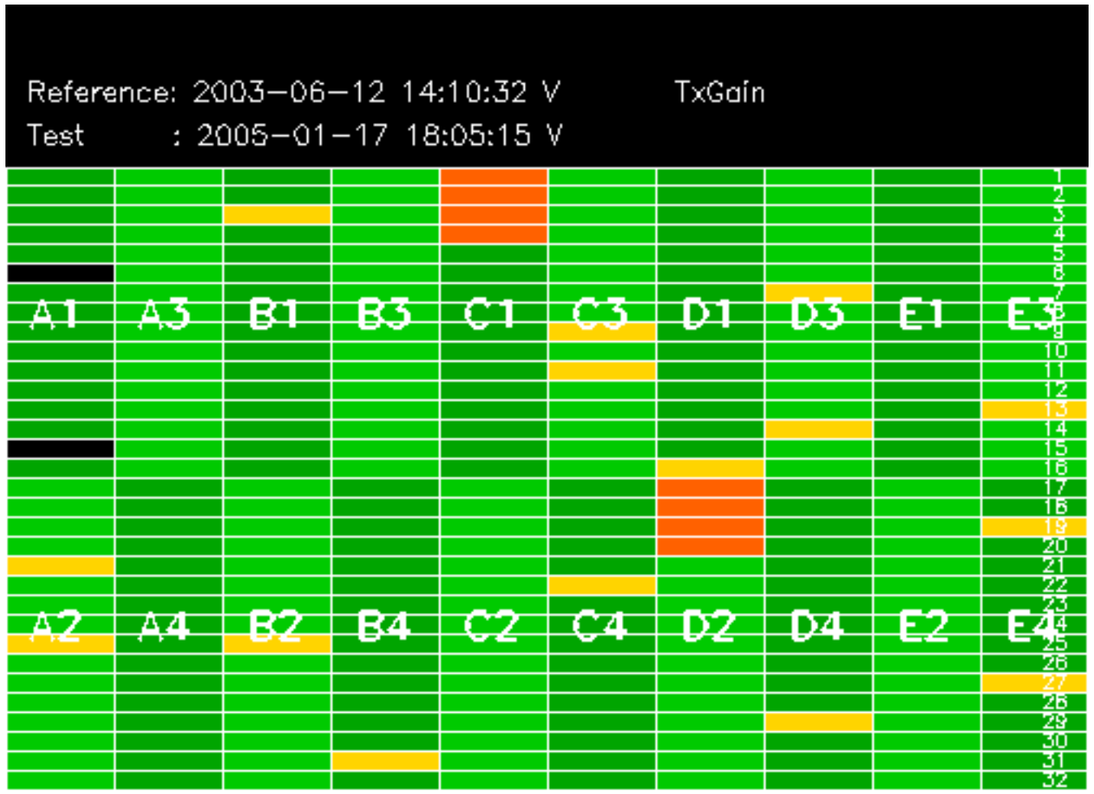

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16-Dec
21-Dec
26-Dec
31-Dec
05-Jan
10-Jan
15-Jan


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 : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

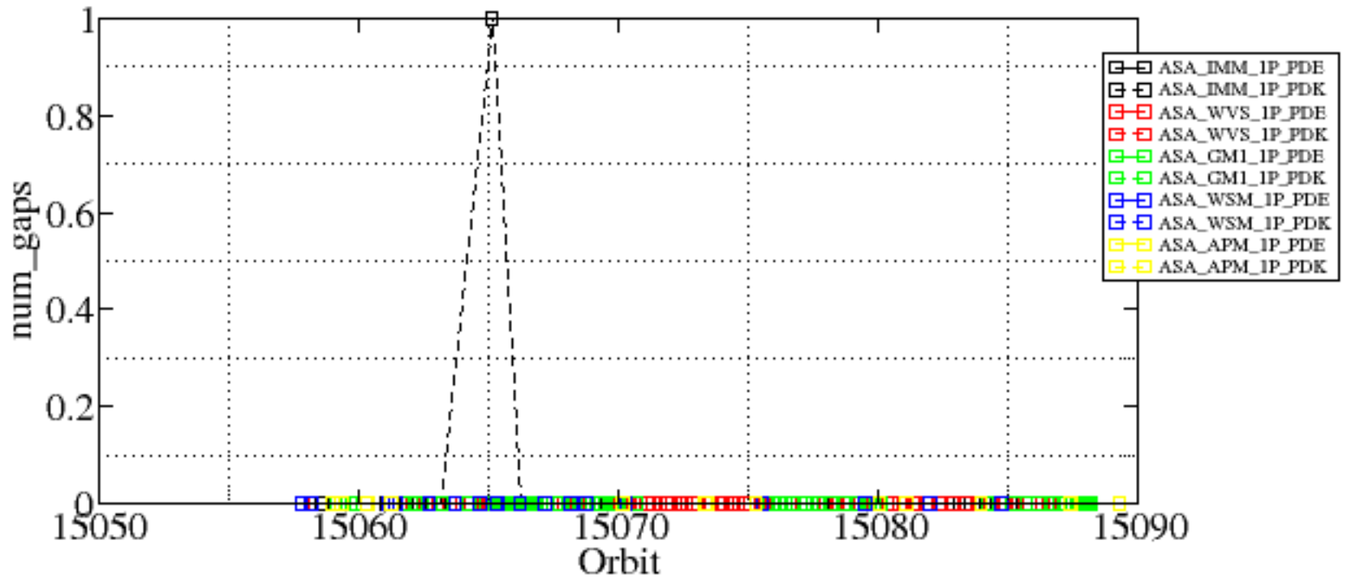

Reference: 2003-06-12 14:08:52 H
TxGain
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

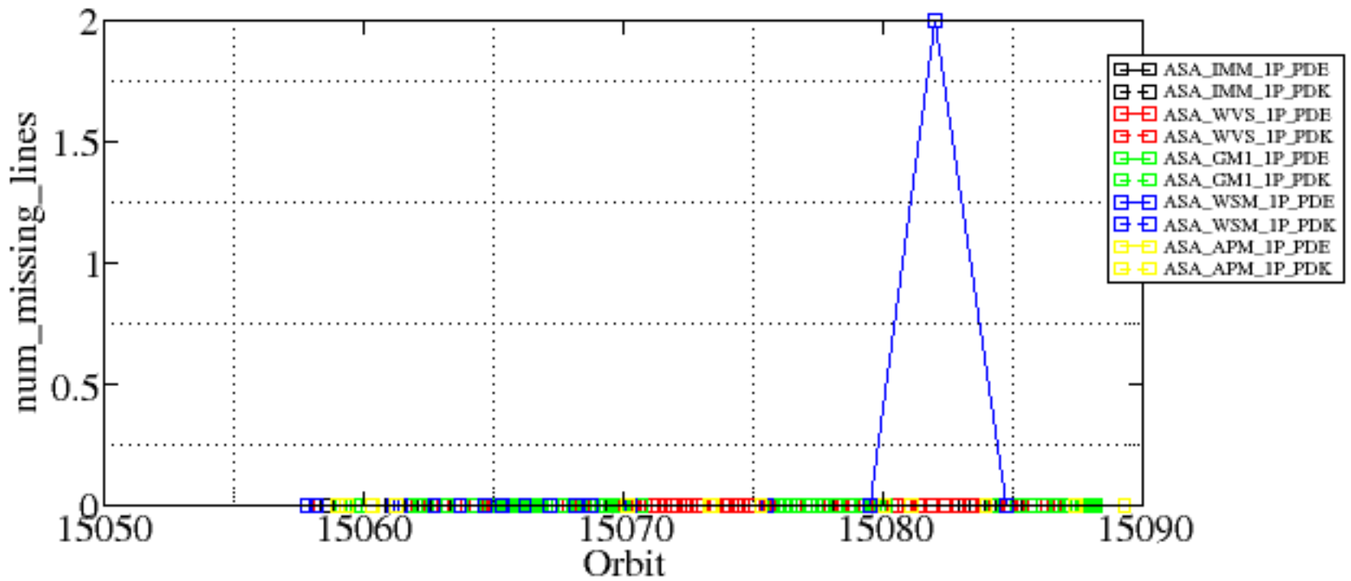

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

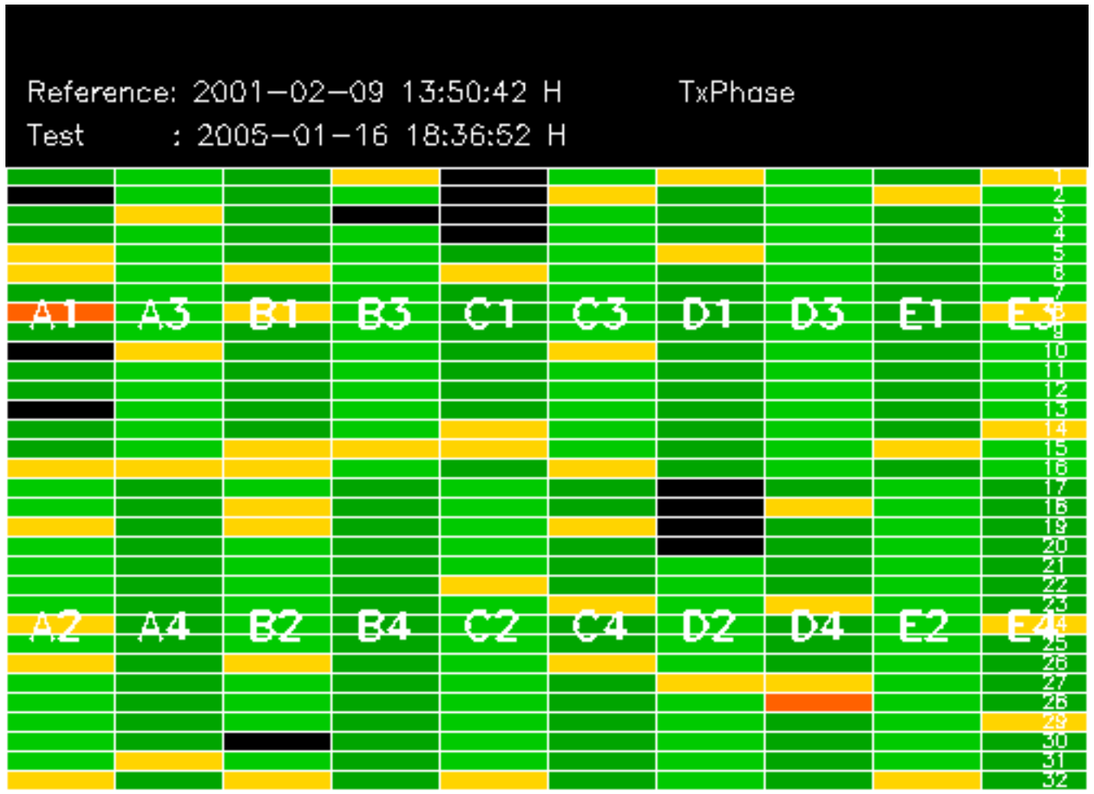

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

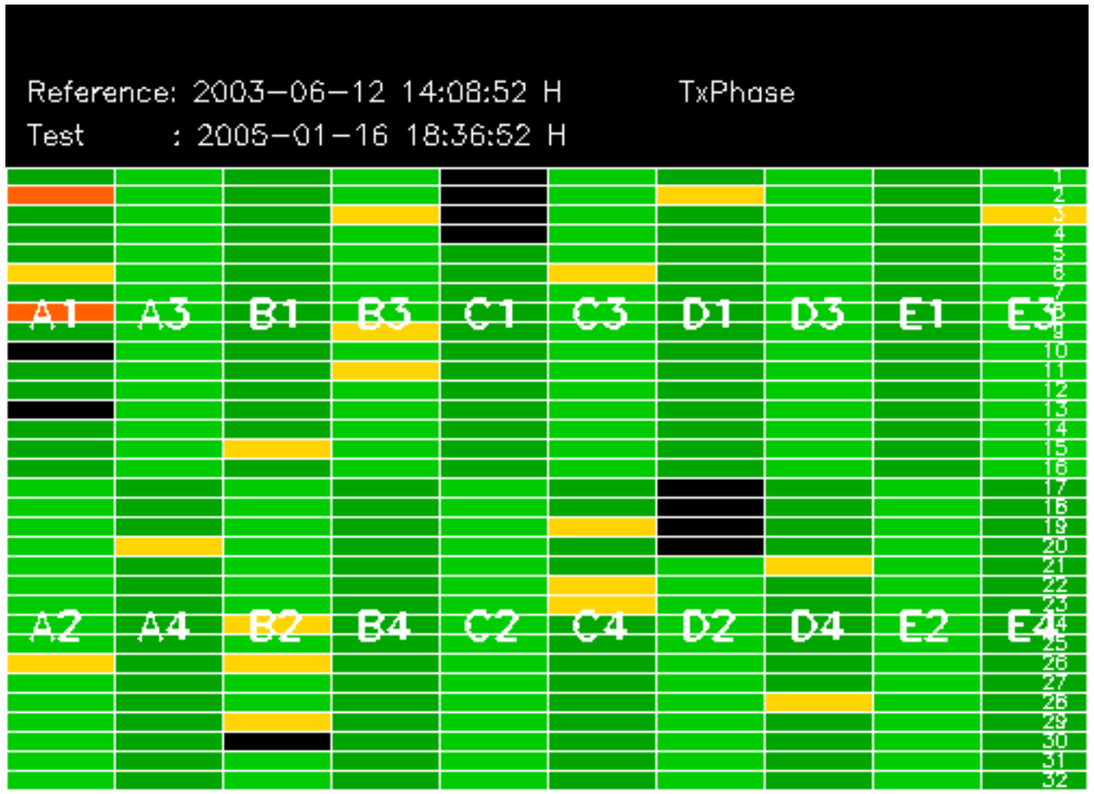
Summary of analysis for the last 3 days 2005011[678]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

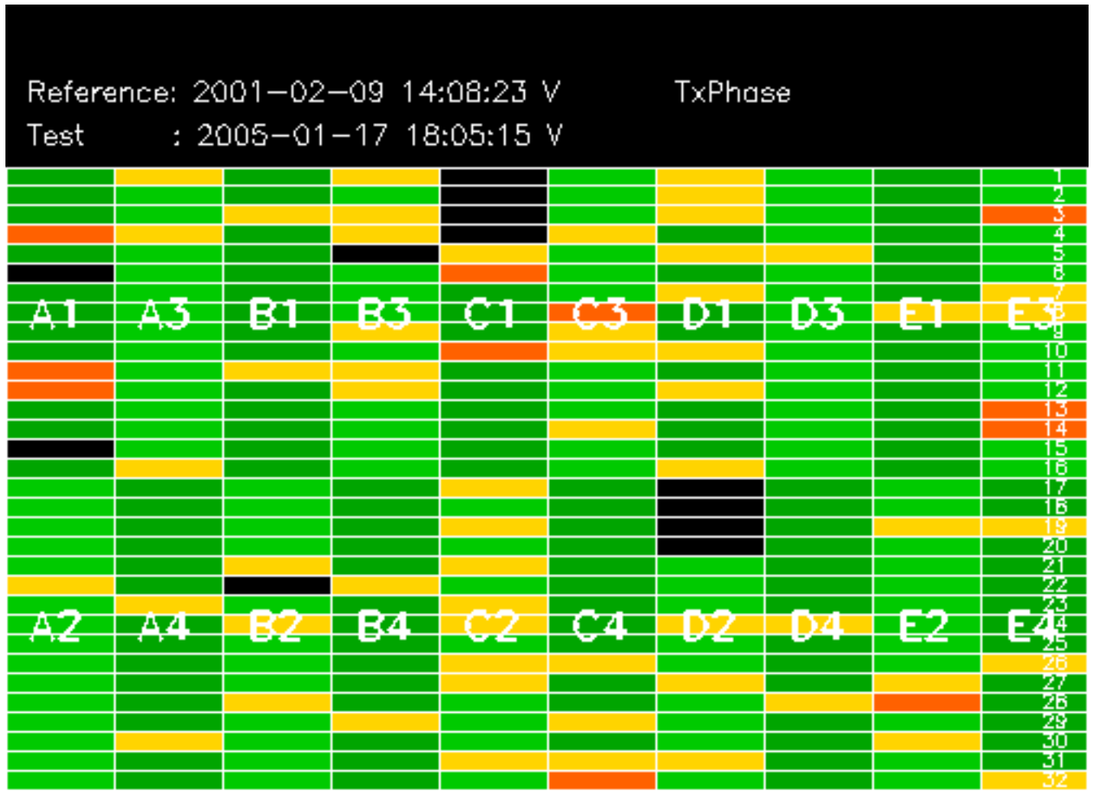
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050116_124036_000000362033_00482_15065_7346.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050117_165904_000002202033_00499_15082_0025.N1 </td> <td>0 </td> <td>2 </td></tr>
</table>

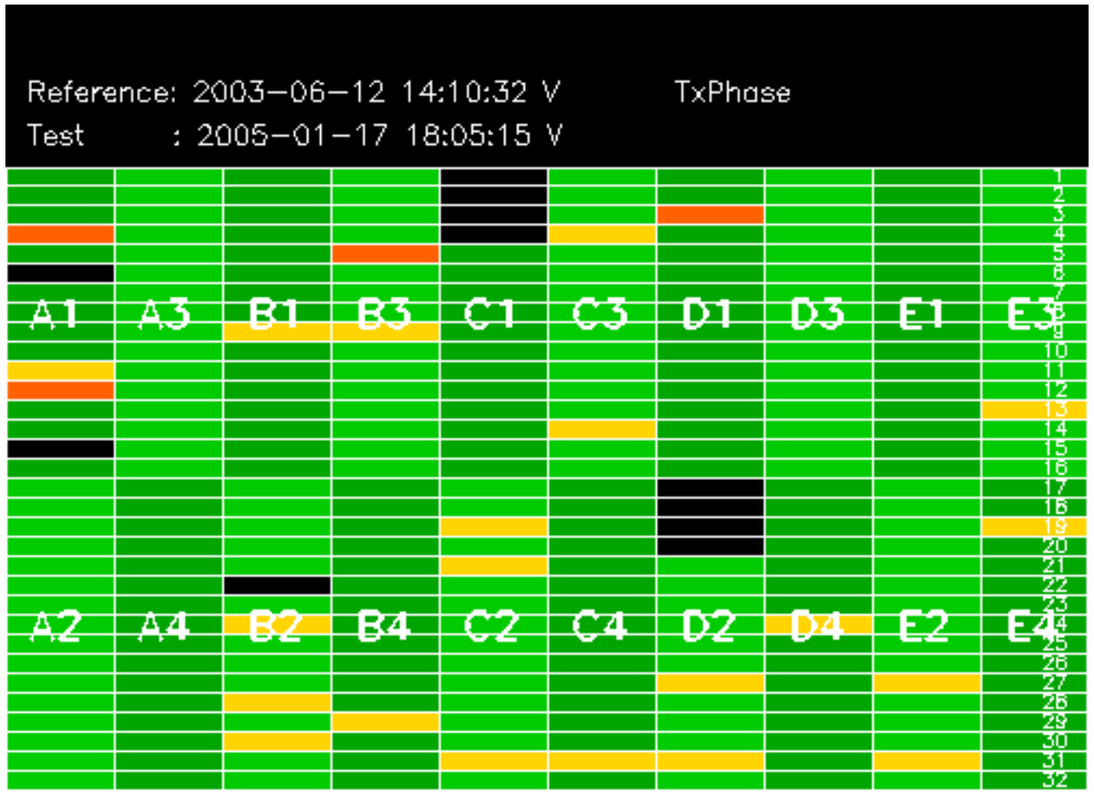

num_gaps
Orbit
0
0.2
0.4
0.6
0.8
1
15050
15060
15070
15080
15090
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

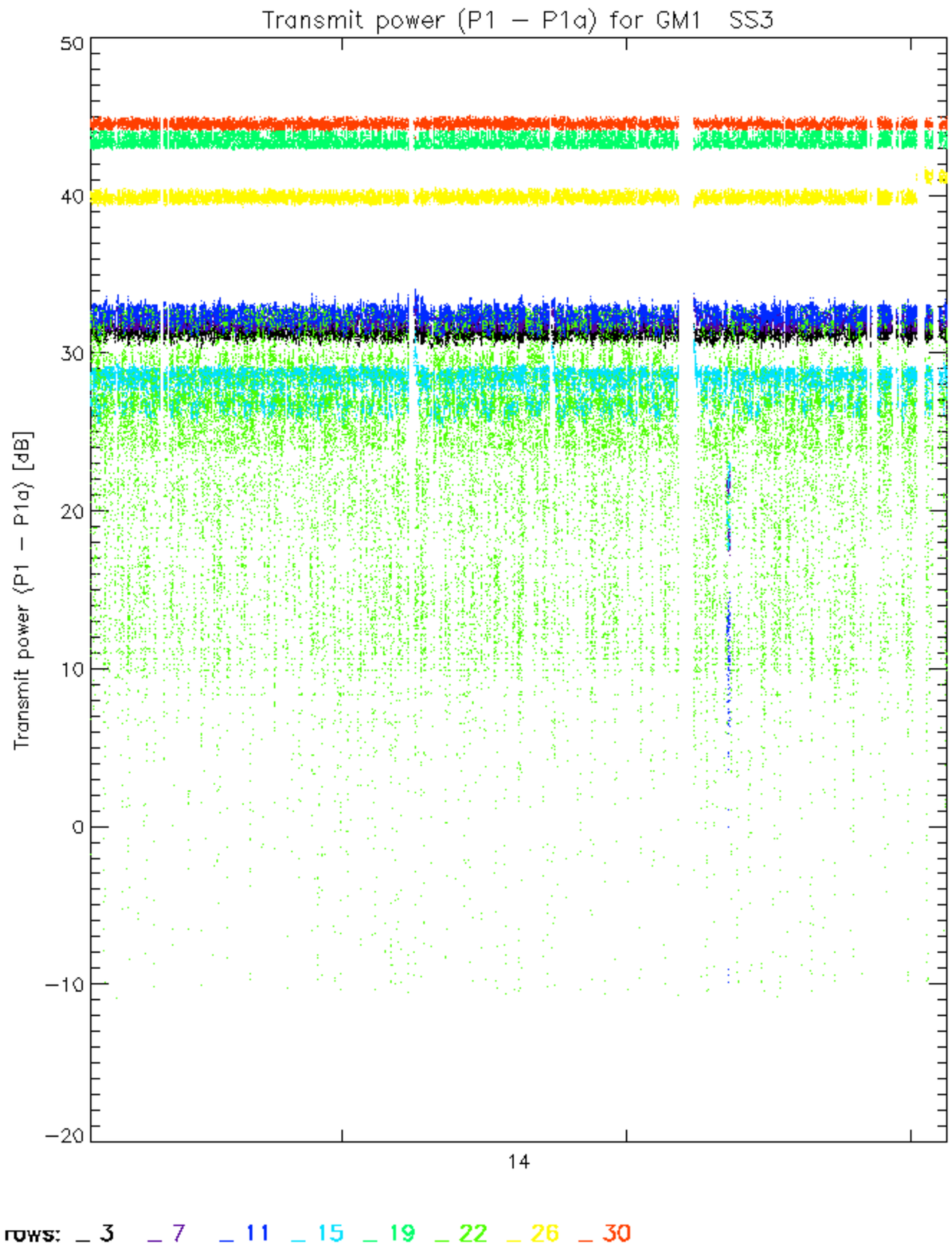

num_missing_lines
Orbit
2
1.5
1
0.5
0
15050
15060
15070
15080
15090
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

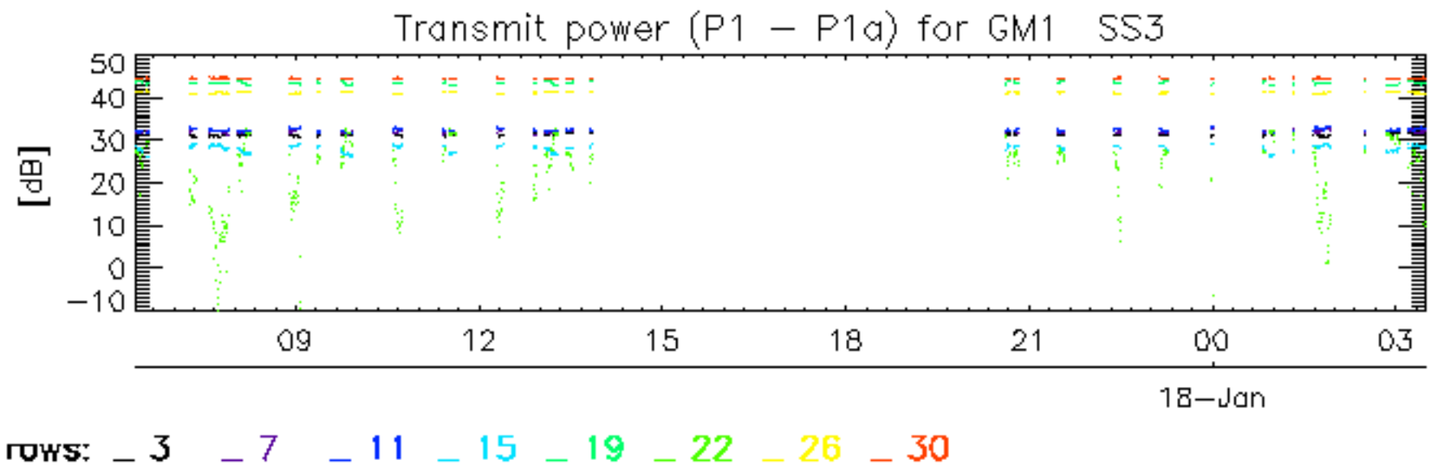

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

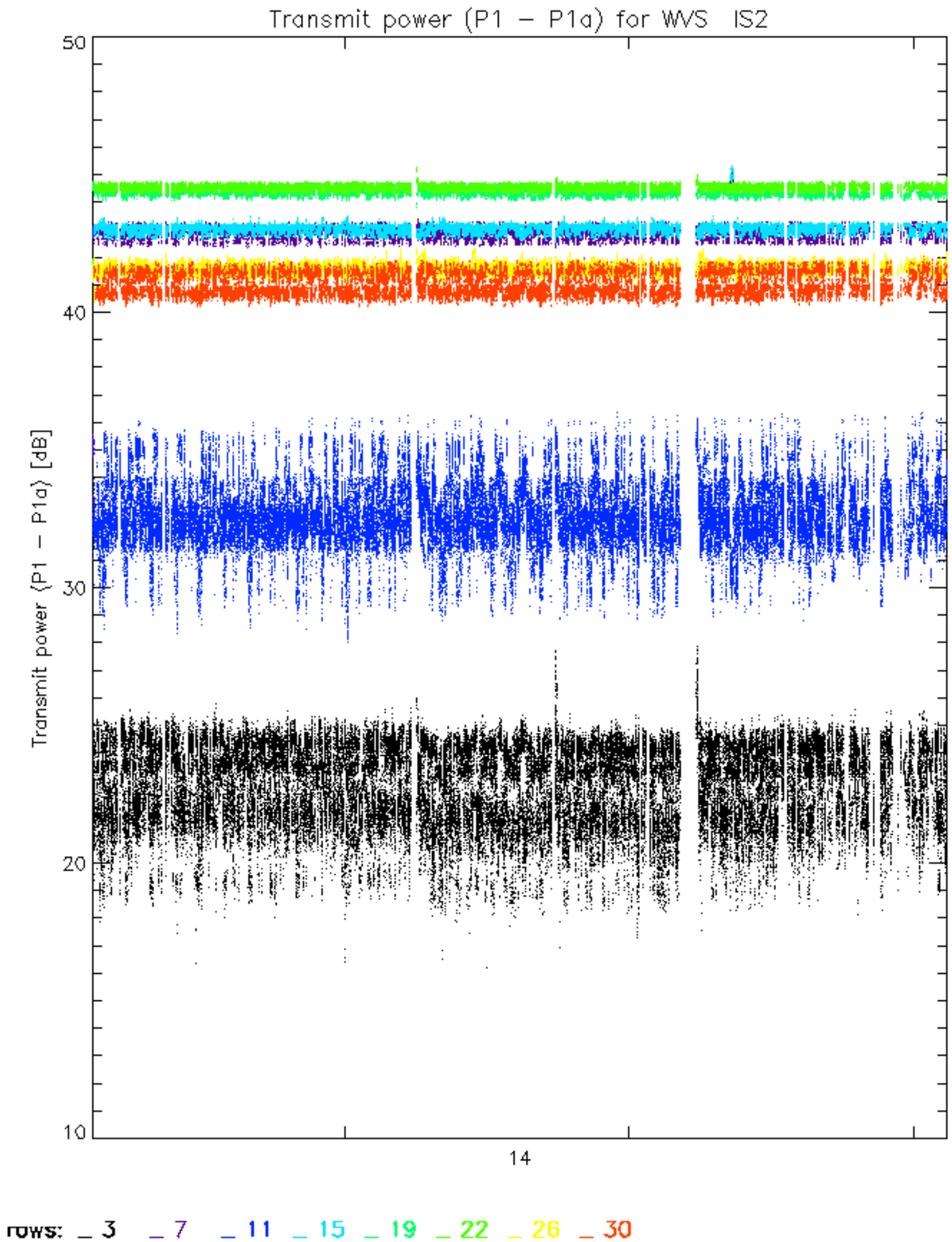

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-01-16 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

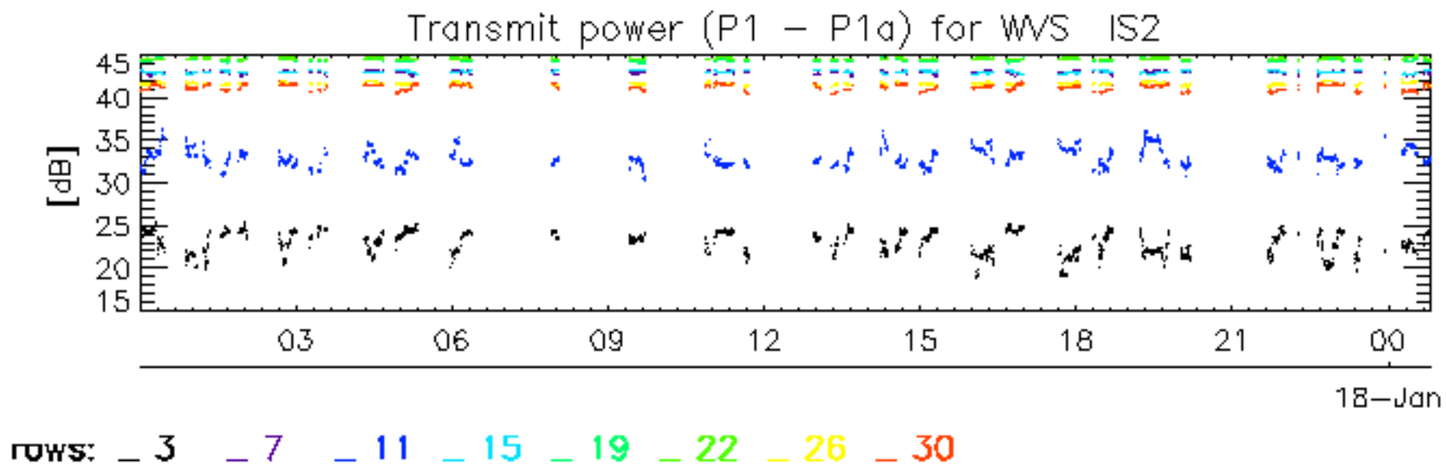

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-01-17 18:05:15 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
TxPhase
Test : 2005-01-17 18:05:15 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
14
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
21
00
03
18–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
14
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
18–Jan
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.