PRELIMINARY REPORT OF 050401

last update on Fri Apr 1 10:50:01 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 2005-03-31 00:00:00 to 2005-04-01 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	32	53	4	3	2
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	32	53	4	3	2
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	32	53	4	3	2
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	32	53	4	3	2

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	40	40	5	8	4
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	40	40	5	8	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	40	40	5	8	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	40	40	5	8	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

No anomalies observed on available MS products:

Polarisation	Start Time
V	20050401 055512
H	20050331 062649

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	-3.350908	0.013529	0.034834
7	P1	-3.107044	0.008122	-0.038979
11	P1	-4.684284	0.030222	0.052972
15	P1	-5.641583	0.038015	0.064390
19	P1	-3.691127	0.003679	-0.022963
22	P1	-4.521428	0.011869	-0.031142
26	P1	-4.936204	0.017791	0.051355
30	P1	-7.197247	0.018590	-0.000962
3	P1	-15.879086	0.329785	0.276647
7	P1	-15.532771	0.068195	-0.020388
11	P1	-20.992666	0.451701	-0.102375
15	P1	-11.575654	0.047300	0.016655
19	P1	-14.309527	0.024072	-0.022319
22	P1	-15.659012	0.305495	-0.188790
26	P1	-17.620022	0.195010	-0.083641
30	P1	-17.973814	0.436075	0.004611

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.074286	0.080840	0.043875
7	P2	-22.256832	0.093933	0.065057
11	P2	-14.347301	0.109000	0.250506
15	P2	-7.043887	0.089823	-0.027270
19	P2	-9.633666	0.093090	-0.017824
22	P2	-16.905535	0.092761	0.040736
26	P2	-16.443993	0.091728	-0.001768
30	P2	-18.844070	0.083202	0.060270

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.166674	0.004686	-0.000255
7	P3	-8.166674	0.004686	-0.000255
11	P3	-8.166674	0.004686	-0.000255
15	P3	-8.166674	0.004686	-0.000255
19	P3	-8.166674	0.004686	-0.000255
22	P3	-8.166674	0.004686	-0.000255
26	P3	-8.166674	0.004686	-0.000255
30	P3	-8.166674	0.004686	-0.000255

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	-2.713147	0.026230	0.031061
7	P1	-3.022920	0.048828	0.051857
11	P1	-3.984275	0.026891	0.033819
15	P1	-3.556257	0.034930	0.068292
19	P1	-3.602319	0.013565	-0.025445
22	P1	-5.741067	0.035667	0.046092
26	P1	-7.293928	0.025251	-0.002575
30	P1	-6.238197	0.049984	-0.041884
3	P1	-10.709408	0.175684	0.103604
7	P1	-10.336757	0.177269	0.057667
11	P1	-12.530264	0.136912	0.067028
15	P1	-11.736707	0.103406	0.123020
19	P1	-15.573802	0.046575	-0.029930
22	P1	-24.580736	1.207151	-0.317570
26	P1	-15.493132	0.178871	-0.088660
30	P1	-20.205357	1.187323	0.026489

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.779539	0.034556	0.066201
7	P2	-22.343515	0.039783	0.077199
11	P2	-10.139488	0.052958	0.141521
15	P2	-4.987739	0.024557	-0.042332
19	P2	-6.835098	0.036825	-0.022051
22	P2	-7.086384	0.032571	0.029133
26	P2	-23.849928	0.031019	0.001154
30	P2	-21.892199	0.035926	0.012849

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.999189	0.002846	0.001331
7	P3	-7.999300	0.002846	0.000999
11	P3	-7.999195	0.002855	0.000873
15	P3	-7.999274	0.002856	0.001313
19	P3	-7.999213	0.002866	0.001374
22	P3	-7.999283	0.002844	0.000854
26	P3	-7.999222	0.002855	0.001115
30	P3	-7.999115	0.002857	0.000994

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	0.000450969
	stdev	2.28812e-07
MEAN Q	mean	0.000470289
	stdev	2.37074e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127829
	stdev	0.00105674
STDEV Q	mean	0.128080
	stdev	0.00106823

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005033[011]
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_1PNPDK20050330_124602_000000692036_00024_16110_1566.N1	1	0
ASA_WSM_1PNPDE20050331_110510_000001652036_00037_16123_4162.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

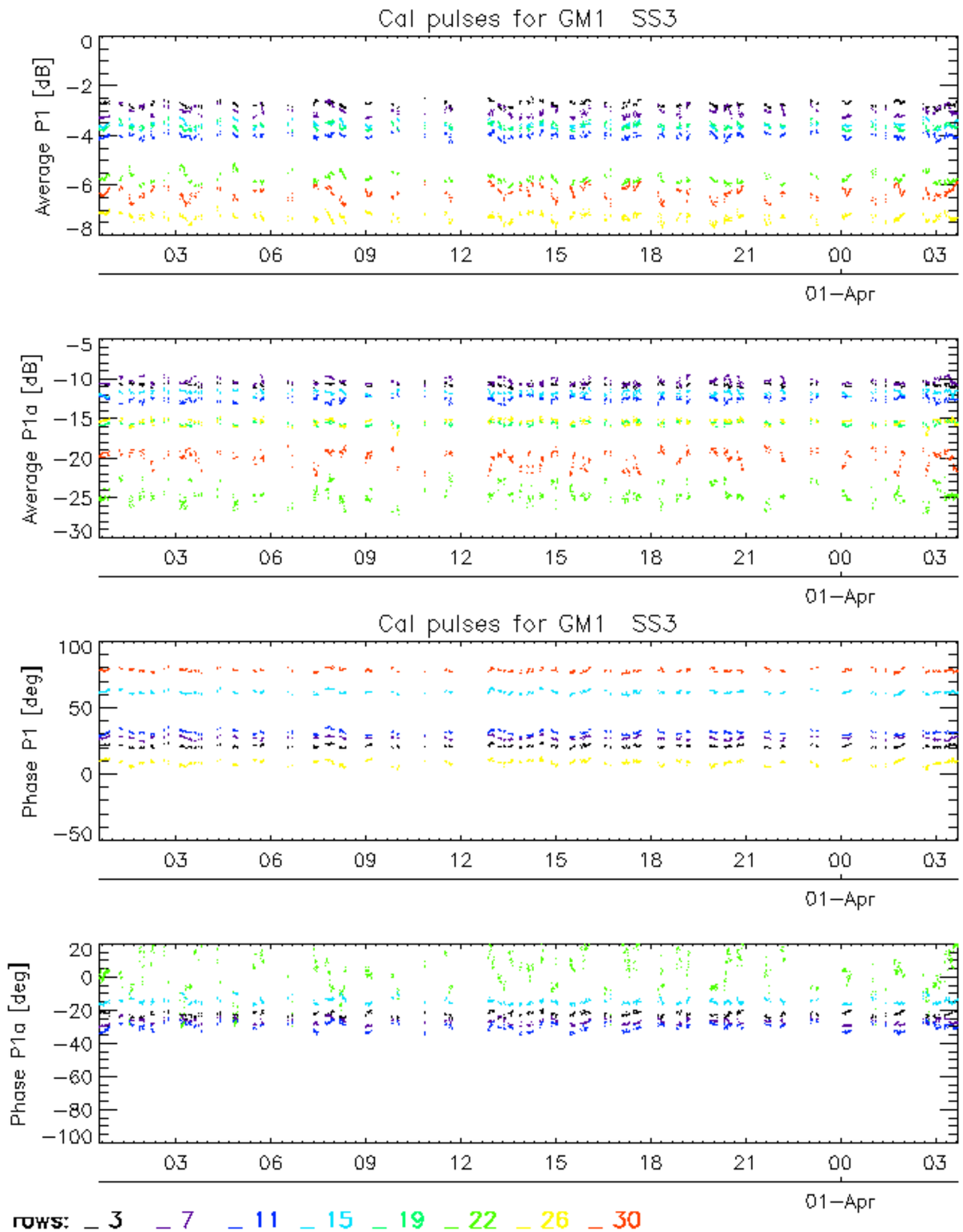
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

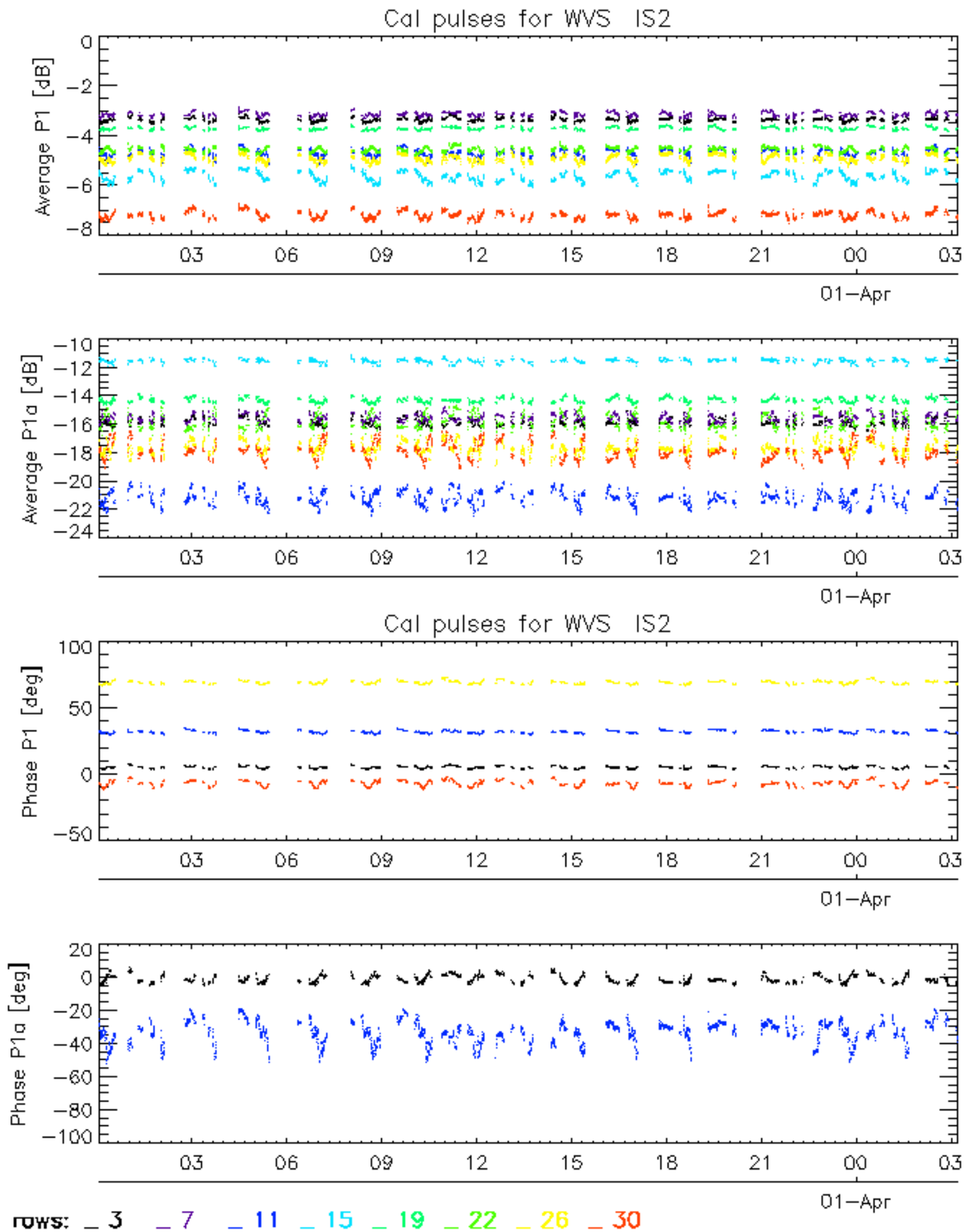
7.5 - Absolute Doppler for GM1

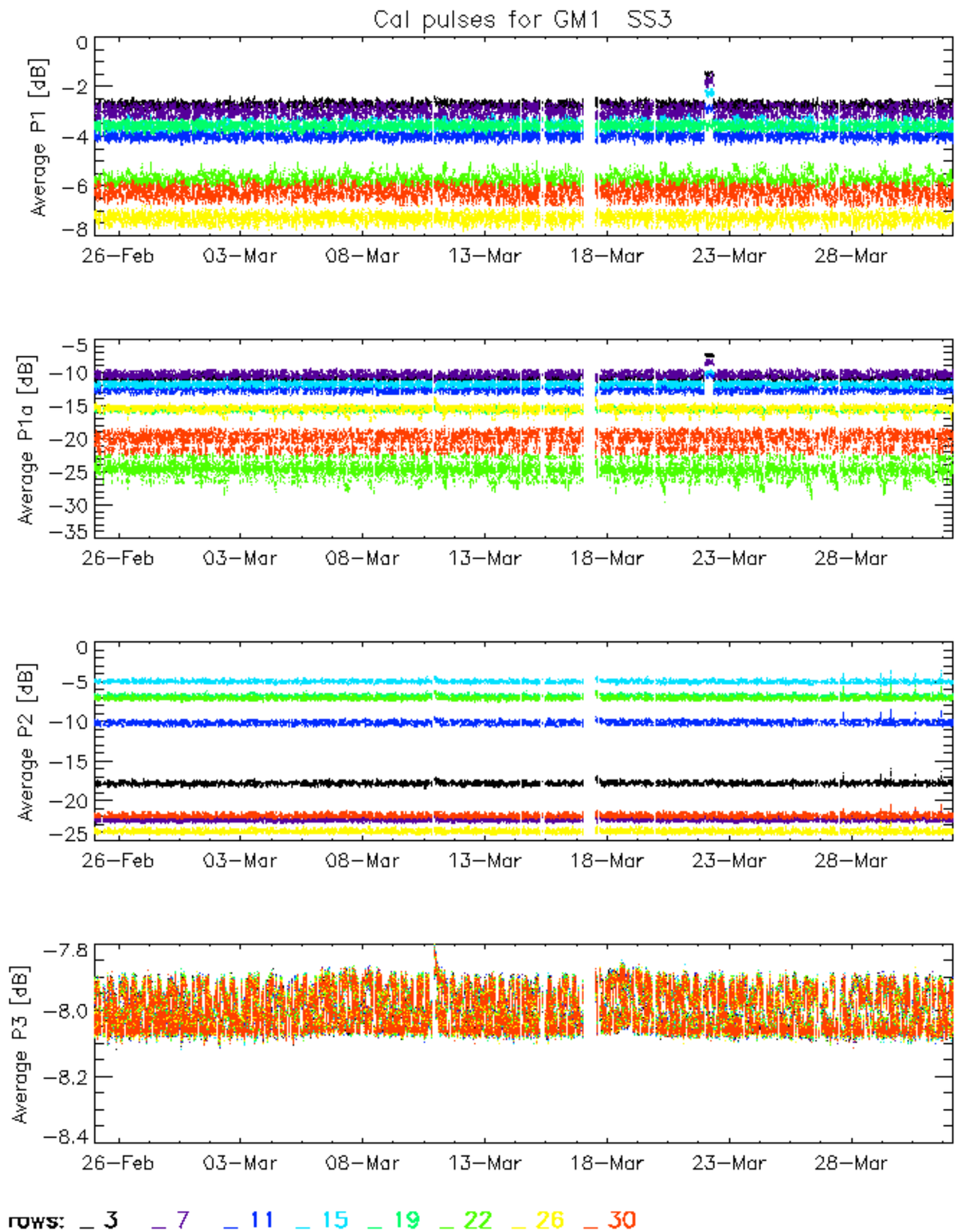
Evolution of Absolute Doppler
Acsending
Descending

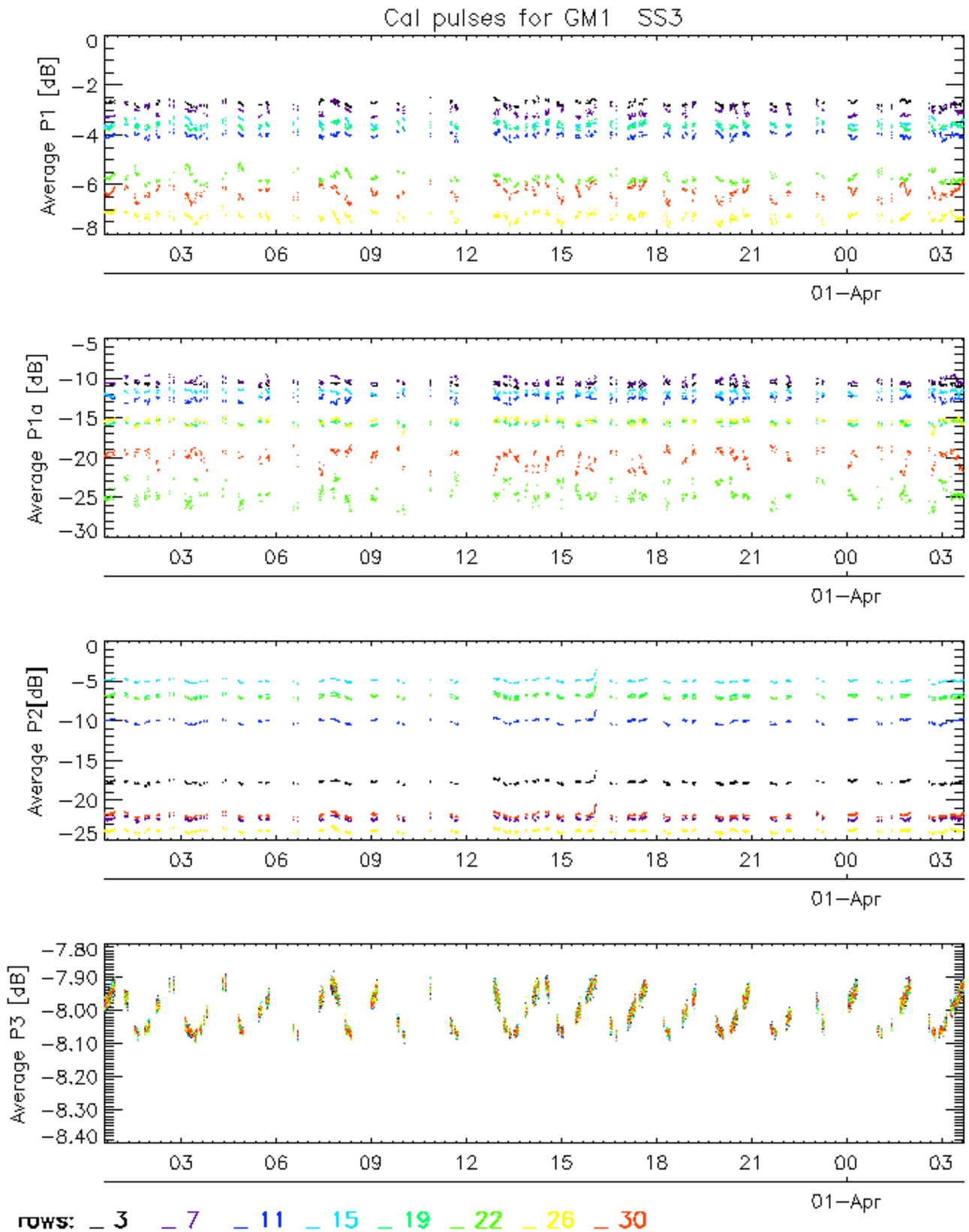
7.6 - Doppler evolution versus ANX for GM1

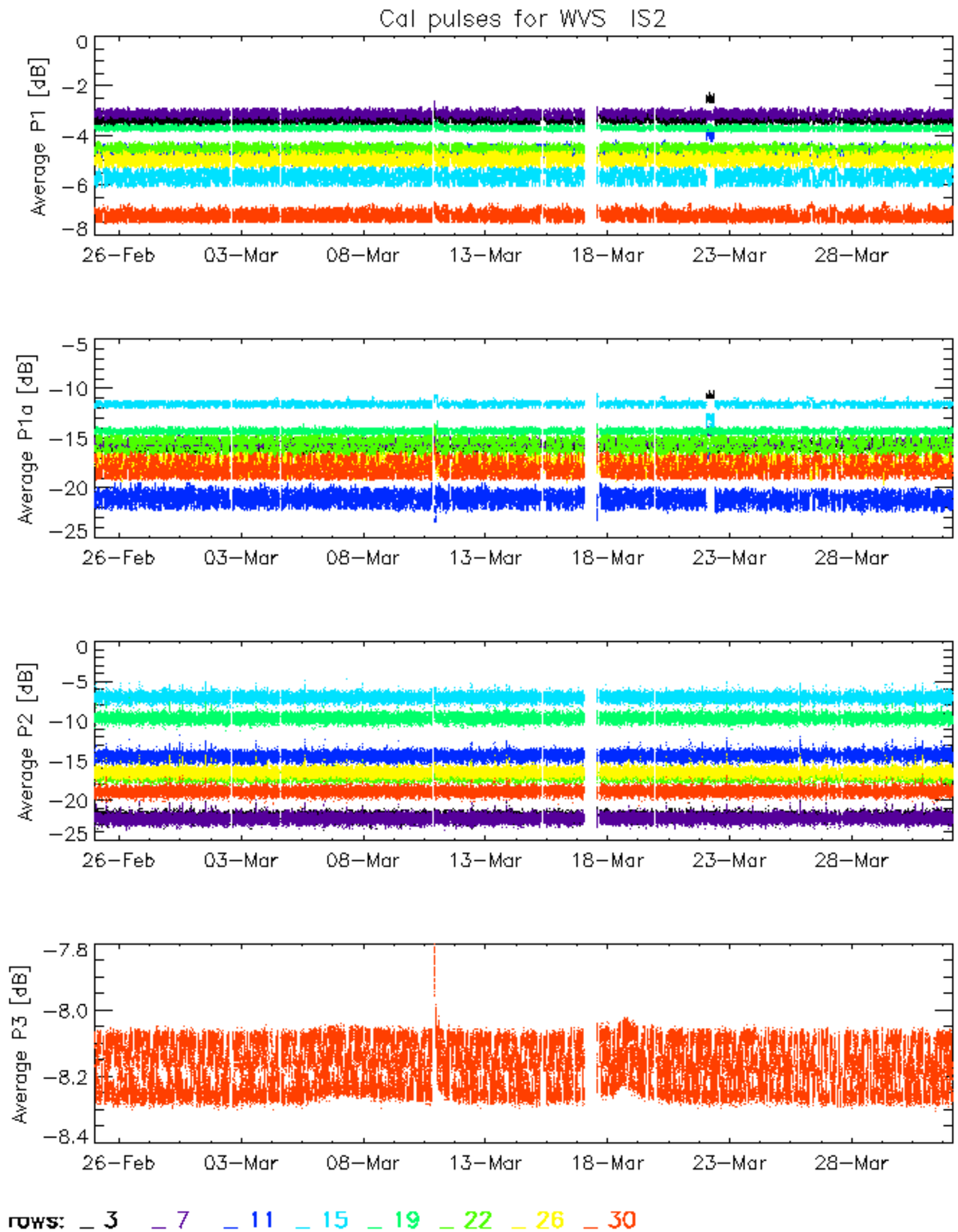
Evolution Doppler error versus ANX

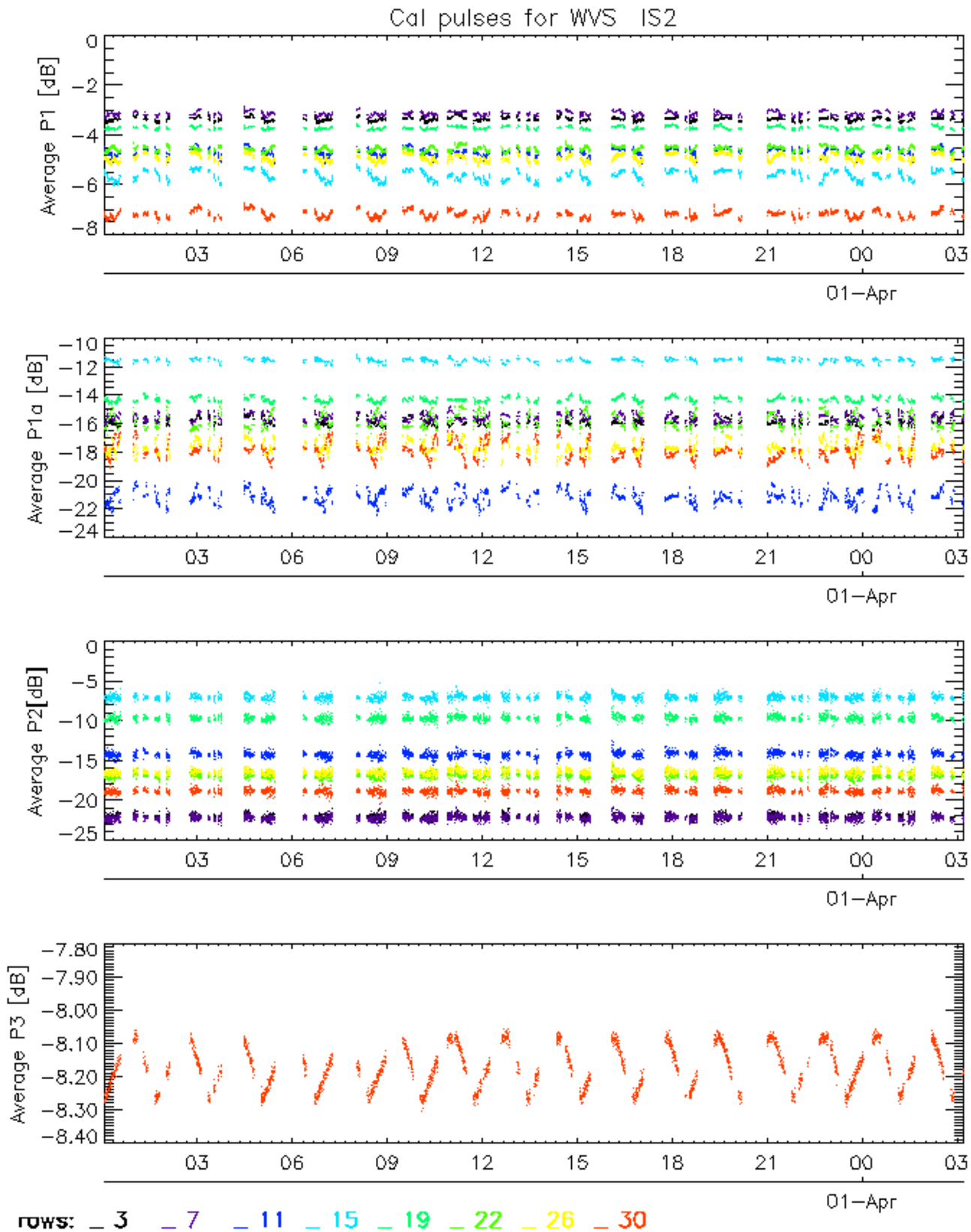

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
01−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
01−Apr
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Cal pulses for WVS IS2
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30

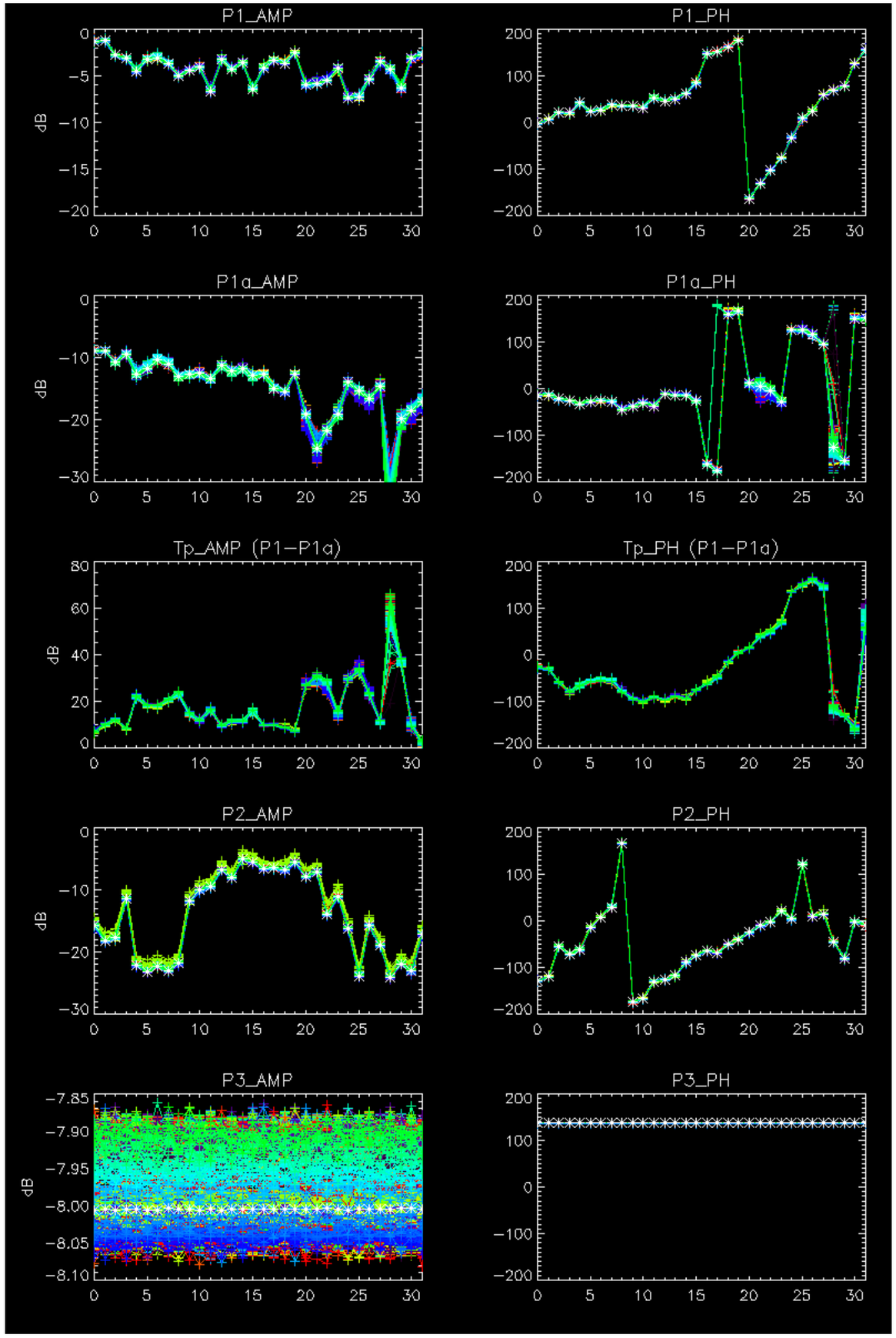

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2 [dB]
Average P3 [dB]
26-Feb
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar
rows: 3 7 11 15 19 22 26 30

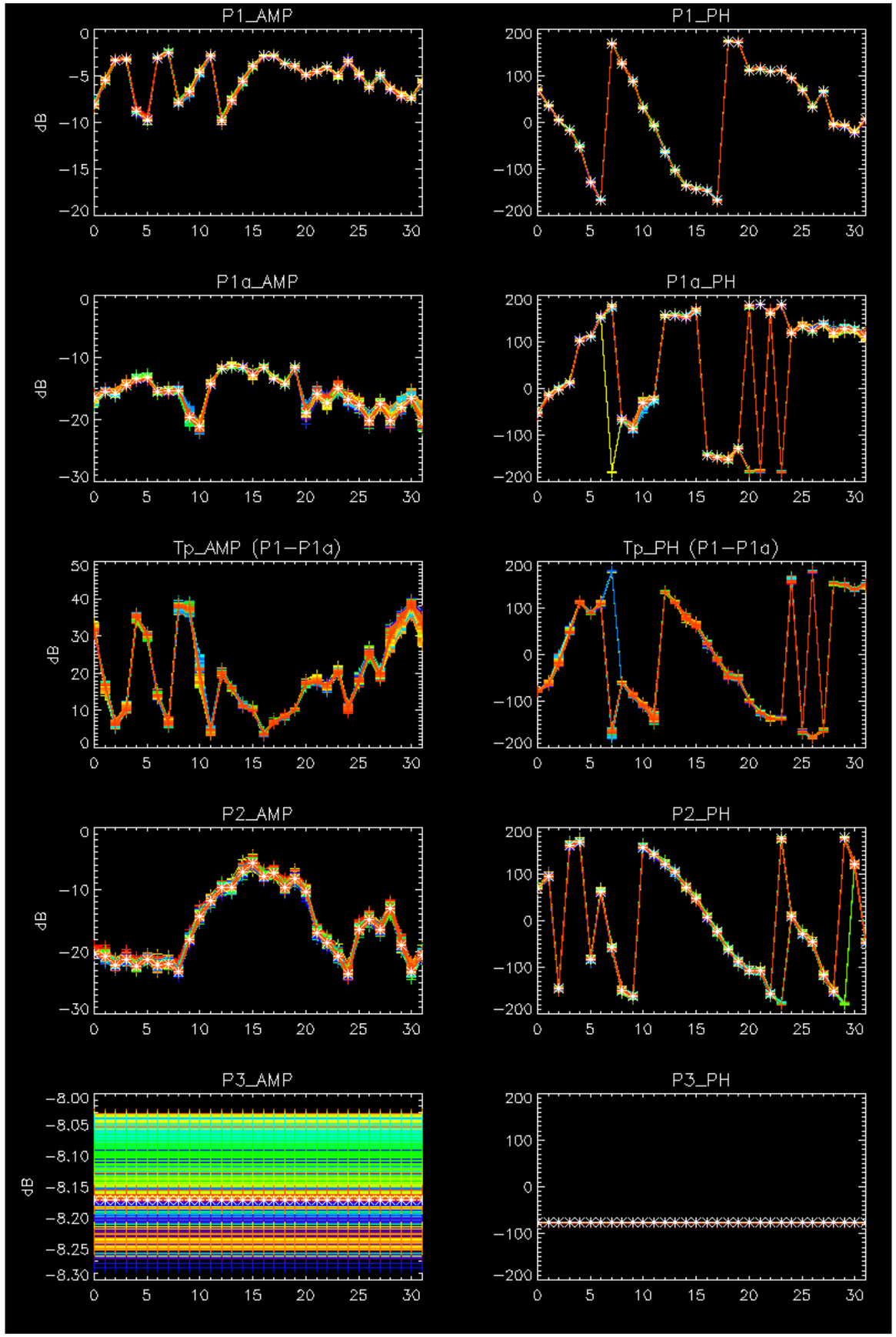

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
03
06
09
12
15
18
21
00
03
01−Apr
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
rows: 3 7 11 15 19 22 26 30

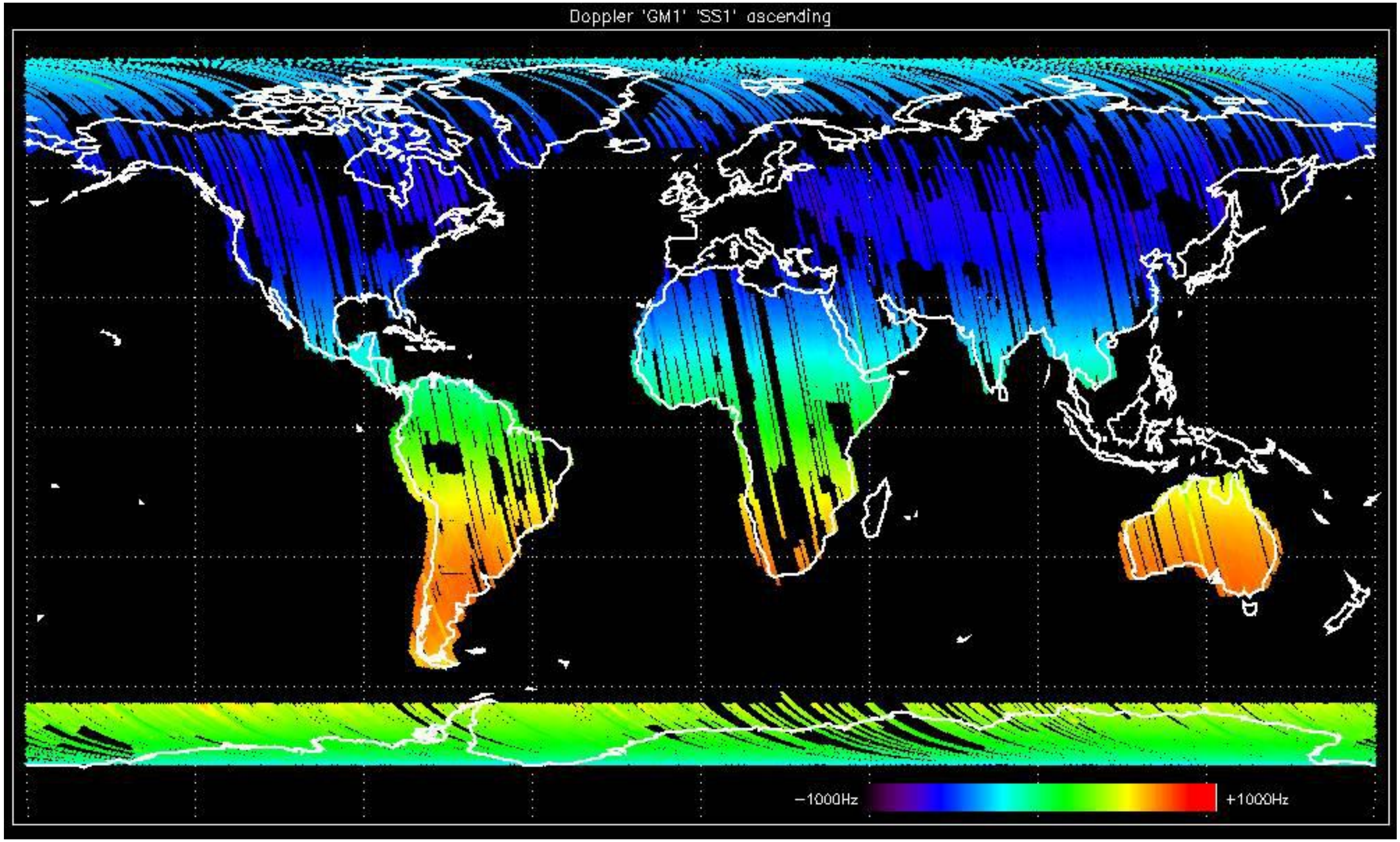

Cal pulses for WVS IS2
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
03
06
09
12
15
18
21
00
03
01−Apr
rows: 3 7 11 15 19 22 26 30

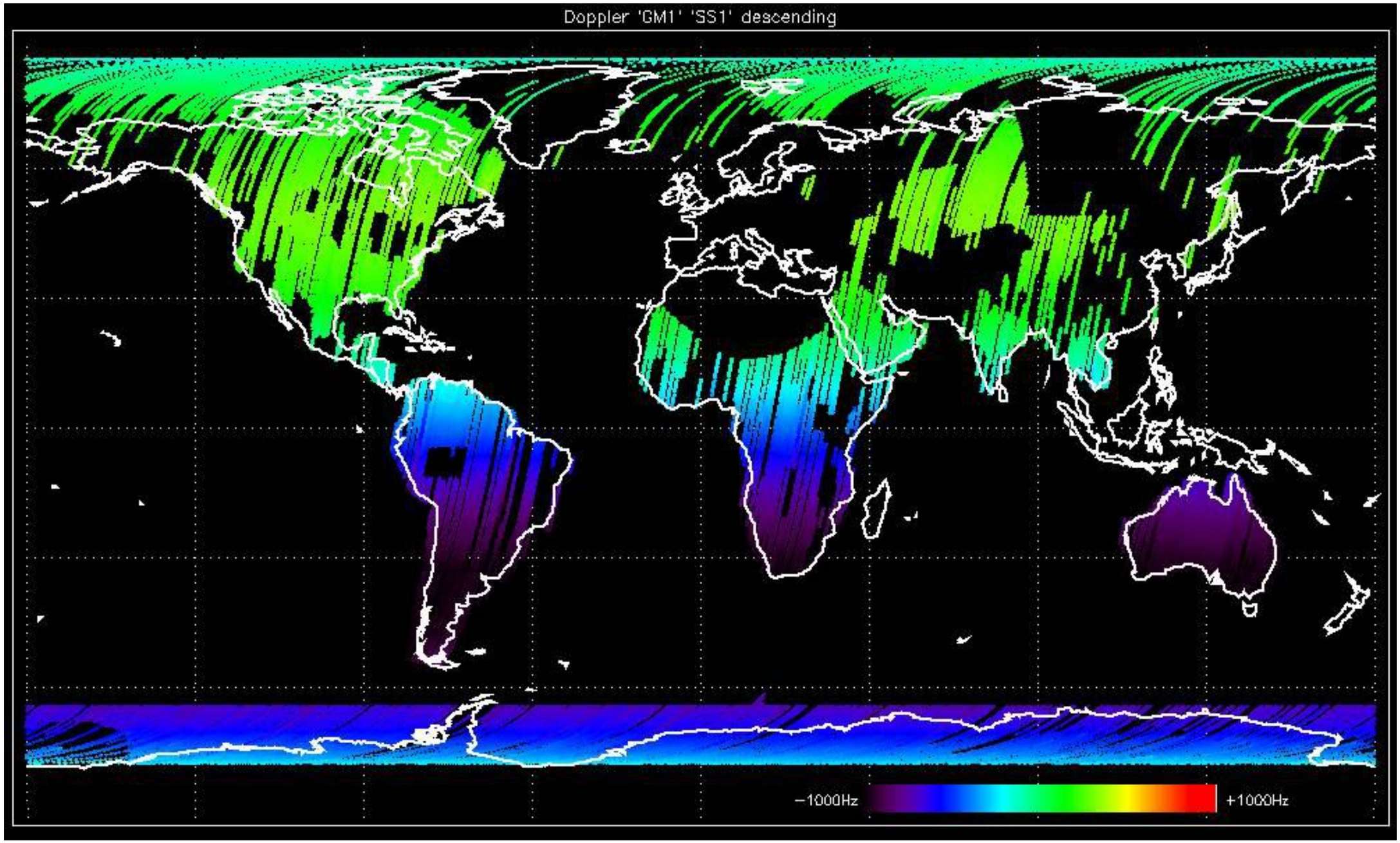
No anomalies observed.

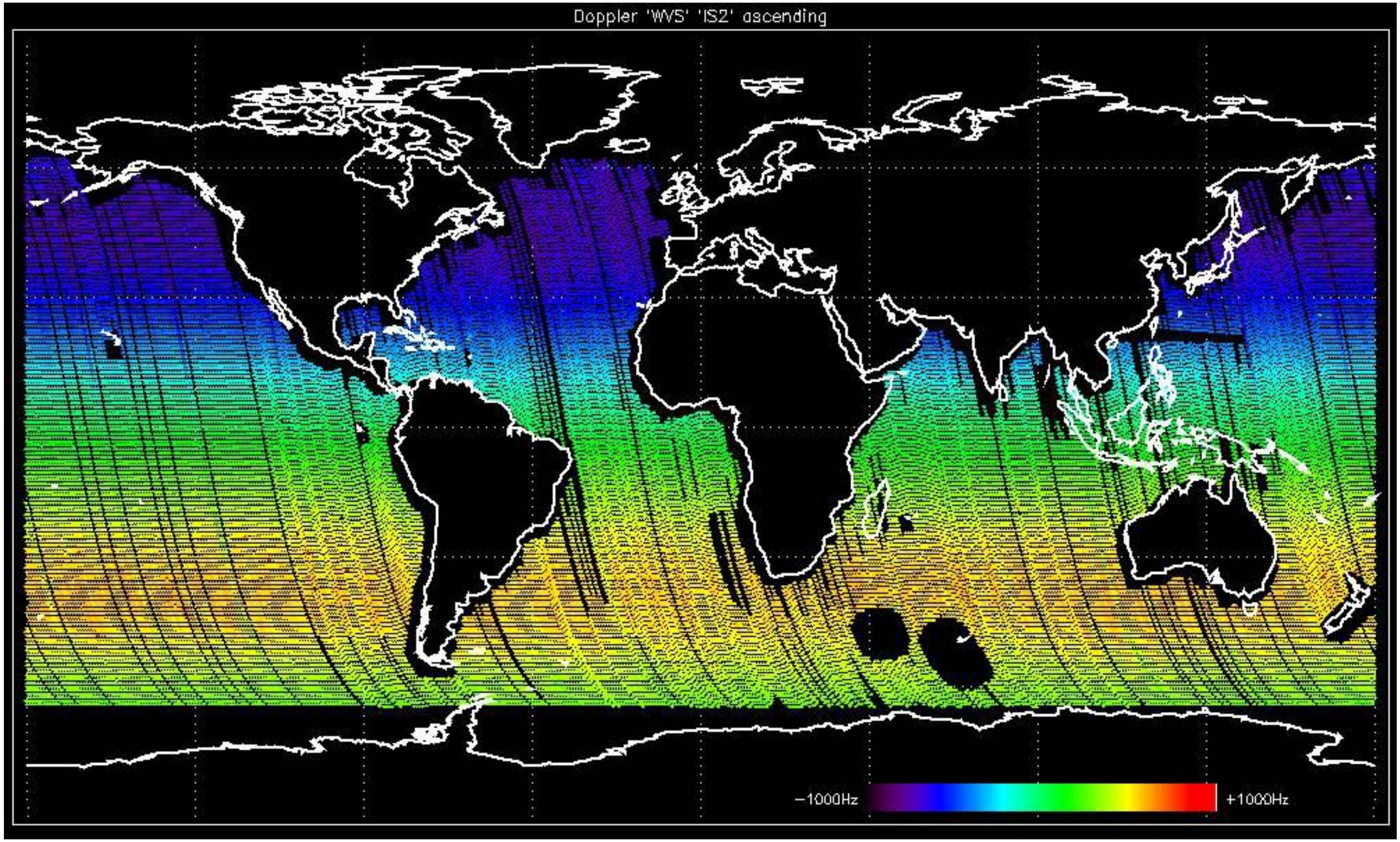

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

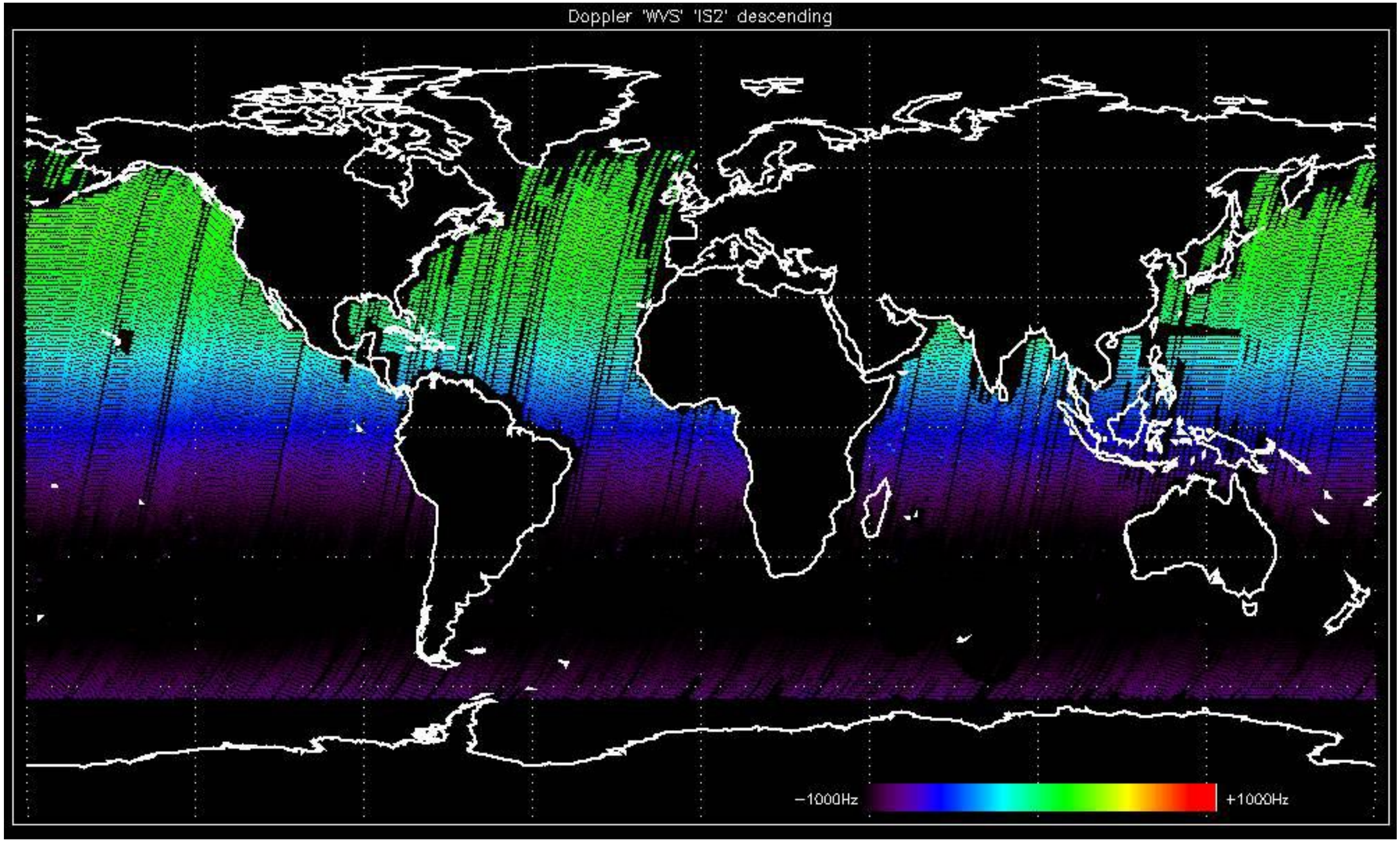

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

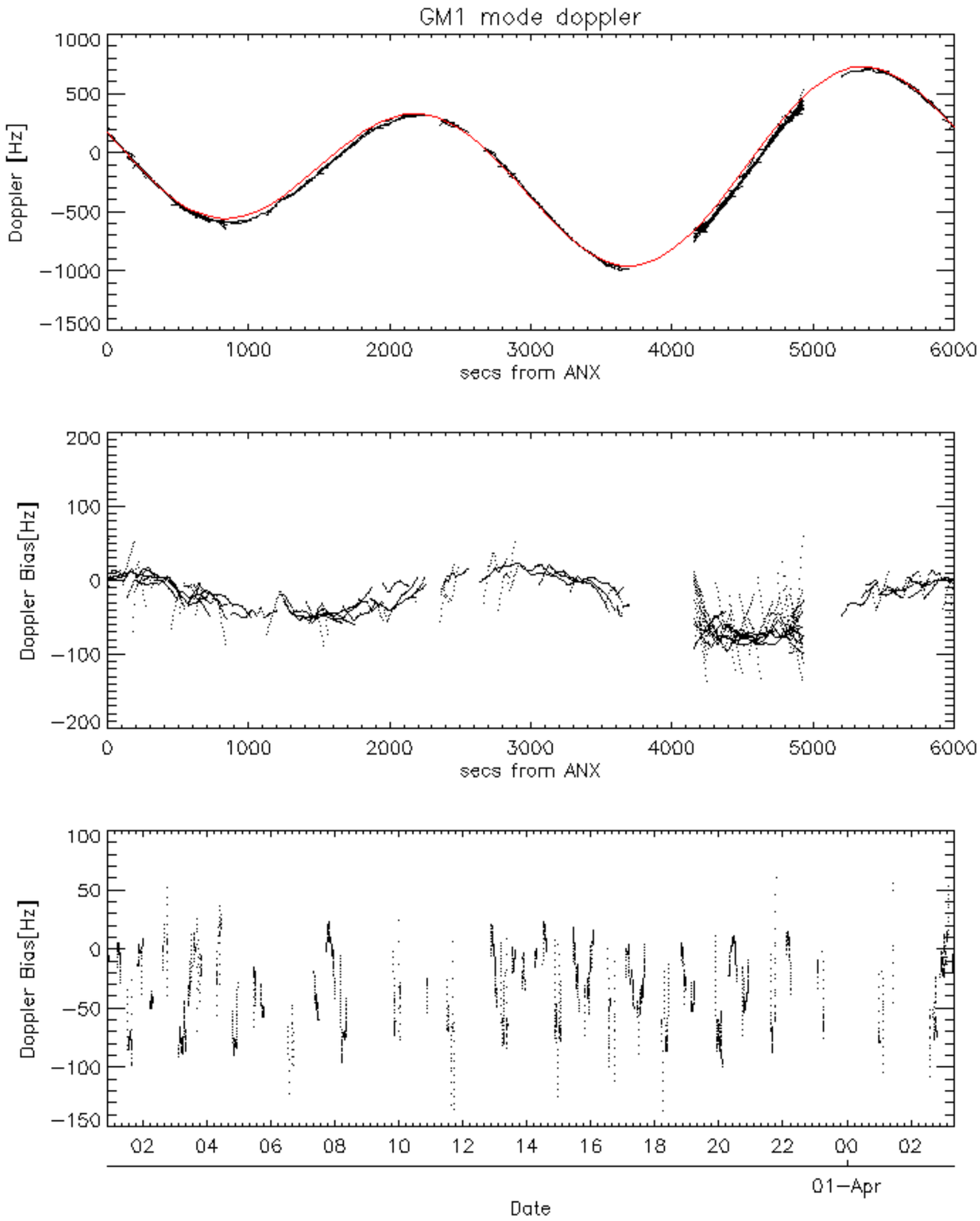
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

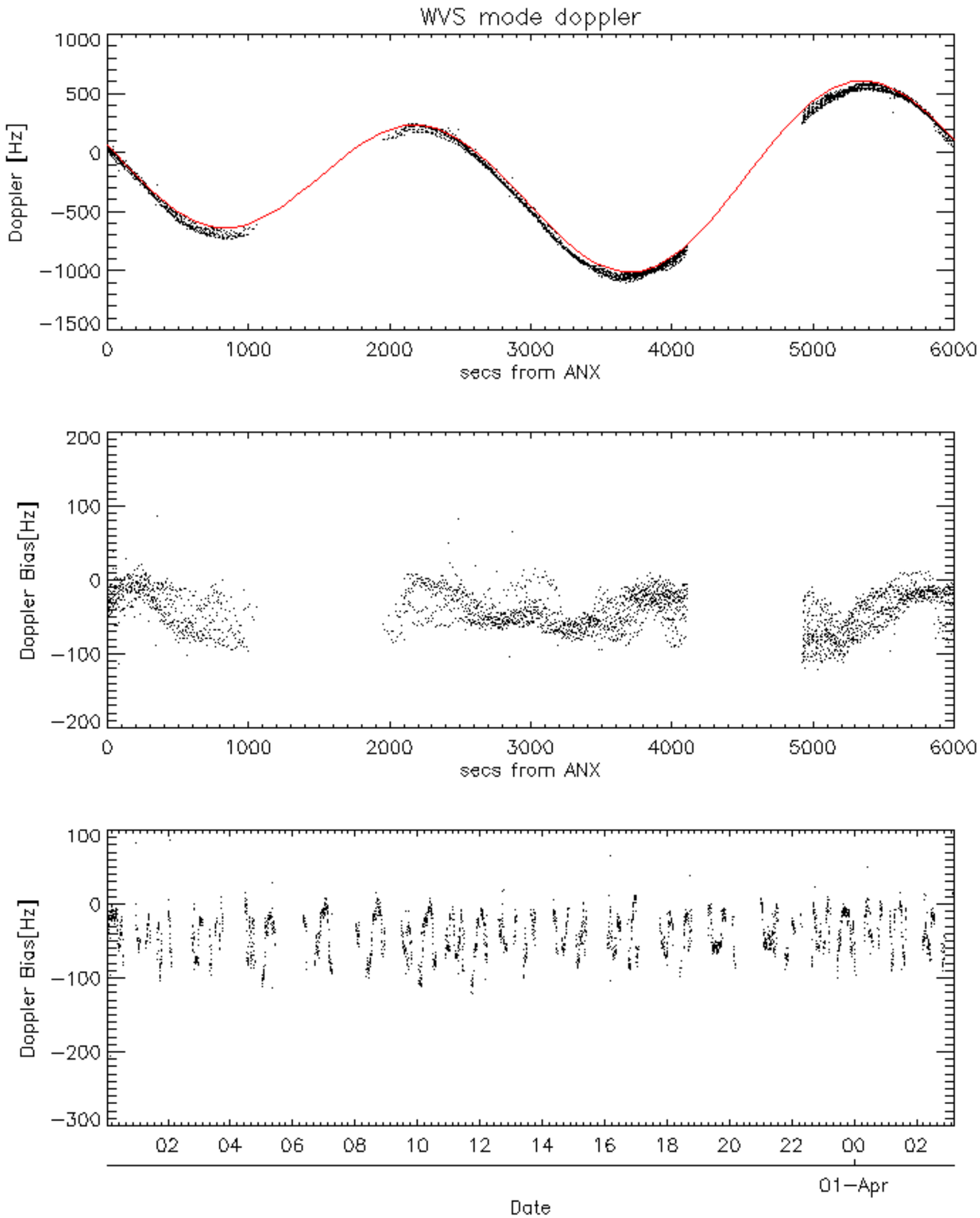

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

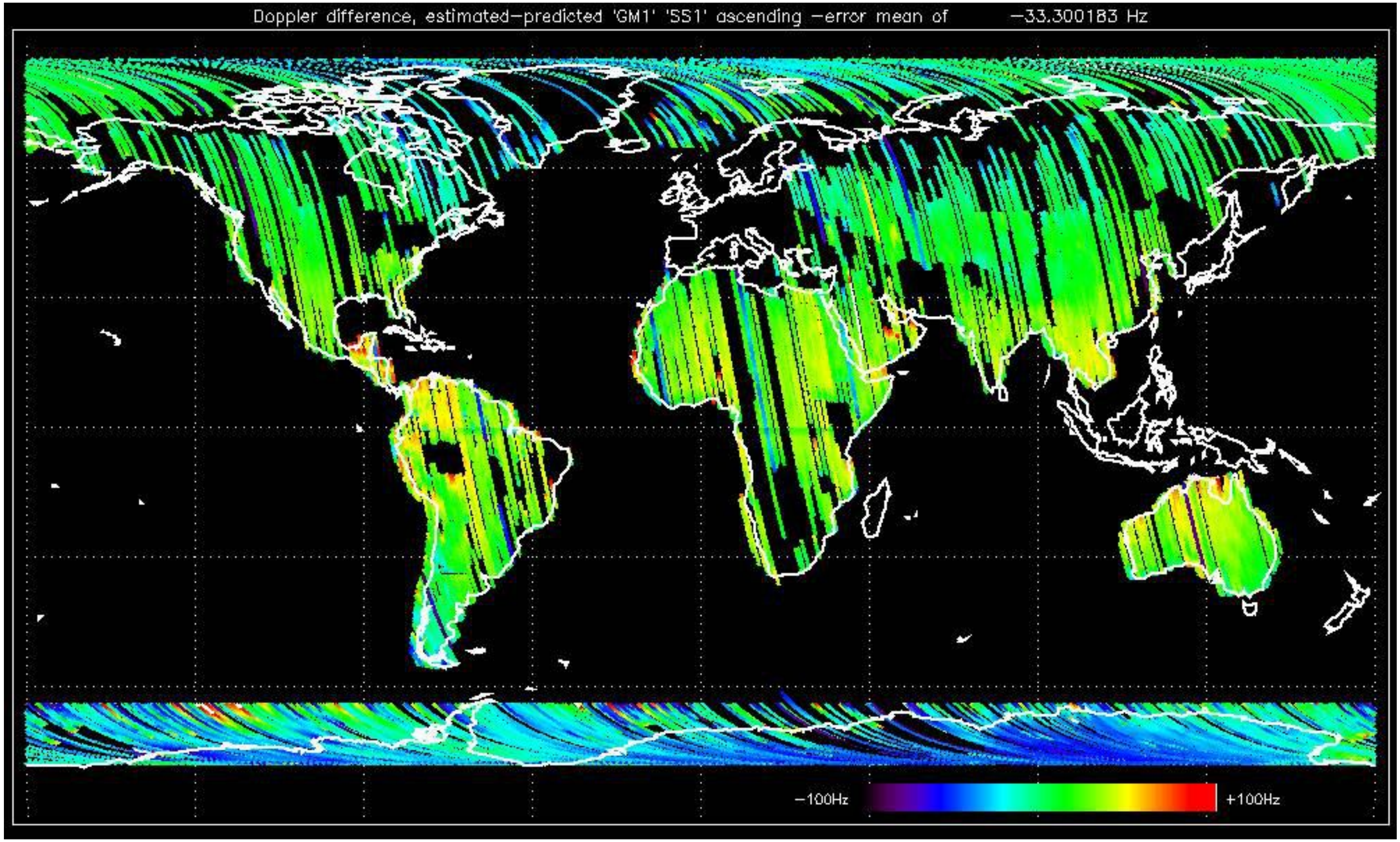

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

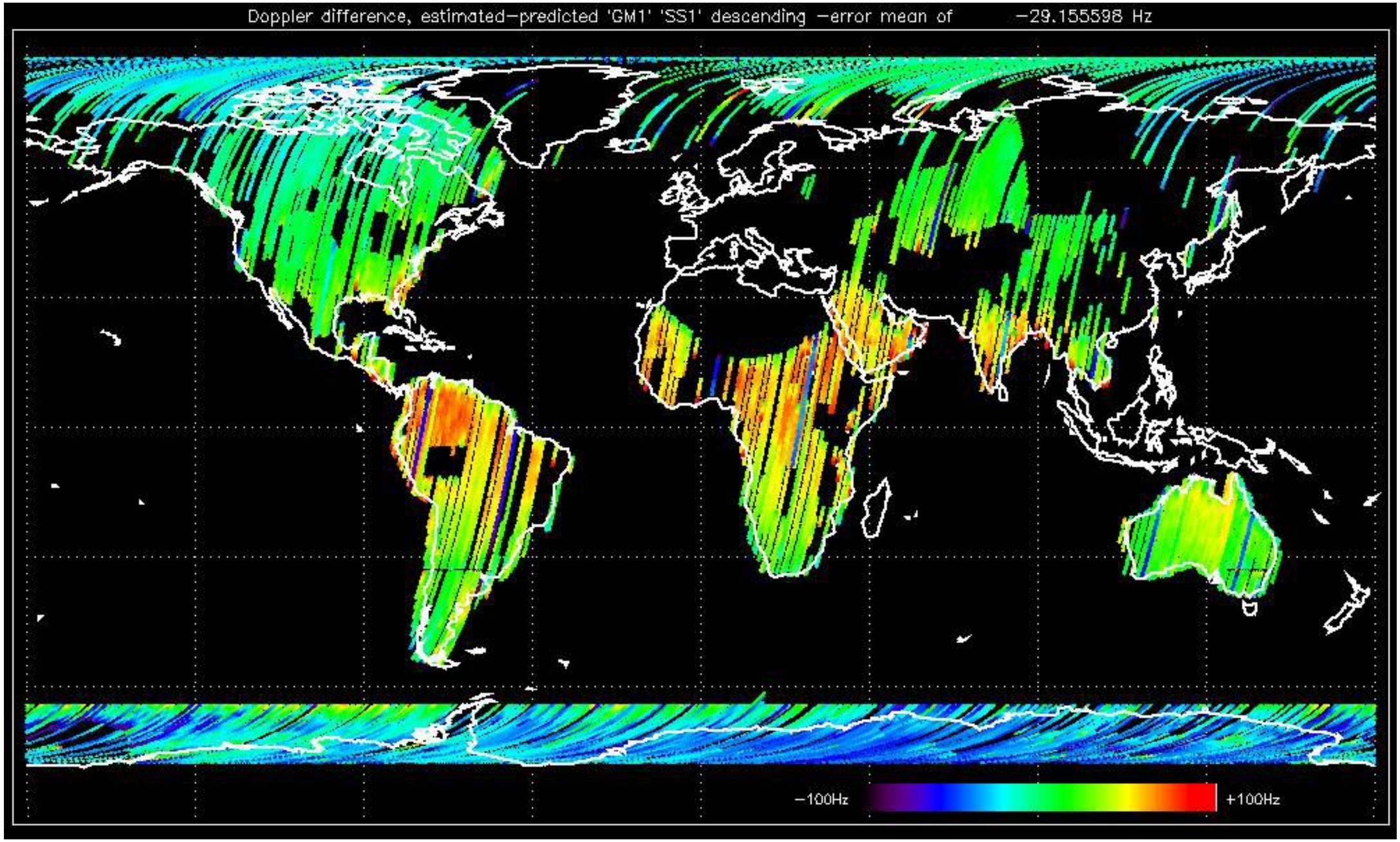

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

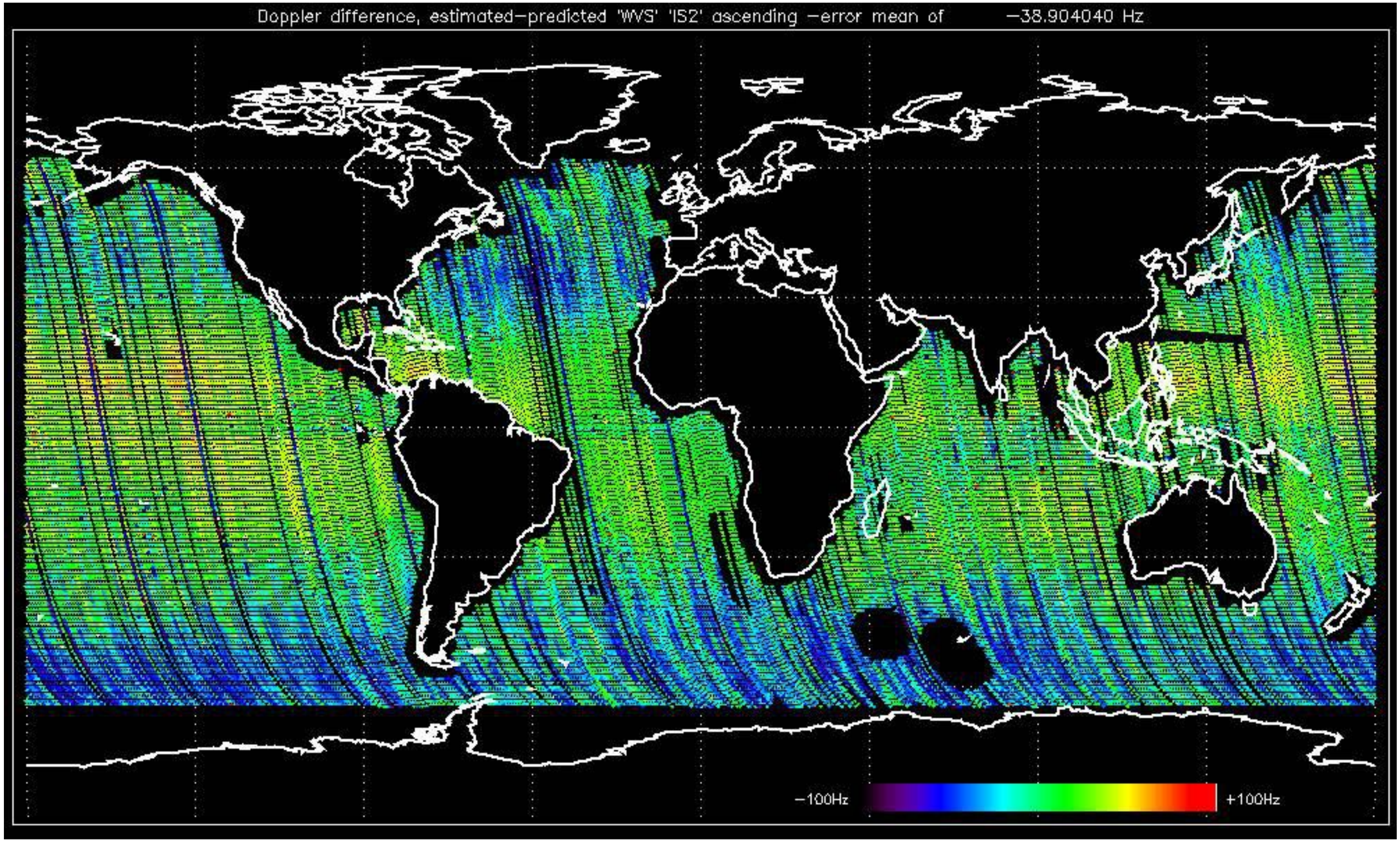

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

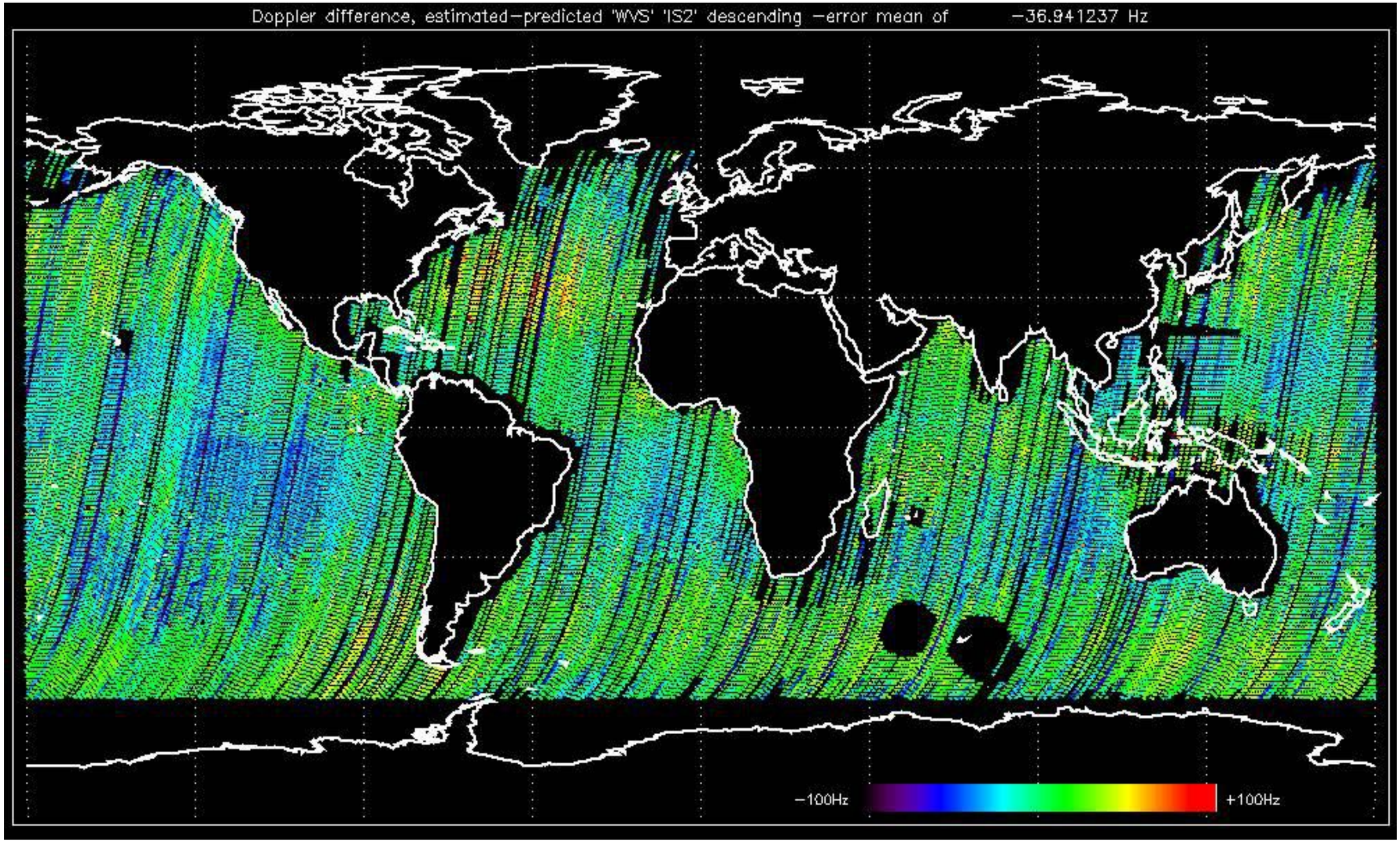

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
01−Apr
Date


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]
100
0
−100
−200
−300
02
04
06
08
10
12
14
16
18
20
22
00
02
01−Apr
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.300183 Hz
−100Hz
+100Hz

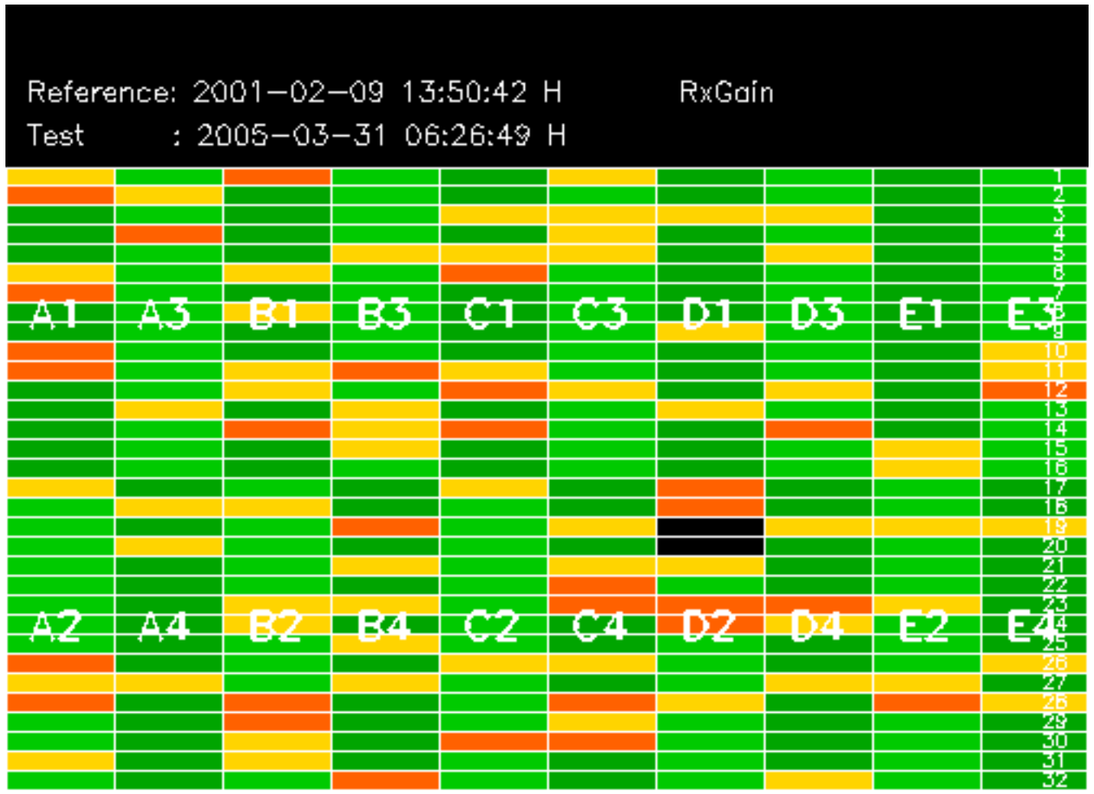

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -29.155598 Hz
-100Hz
+100Hz

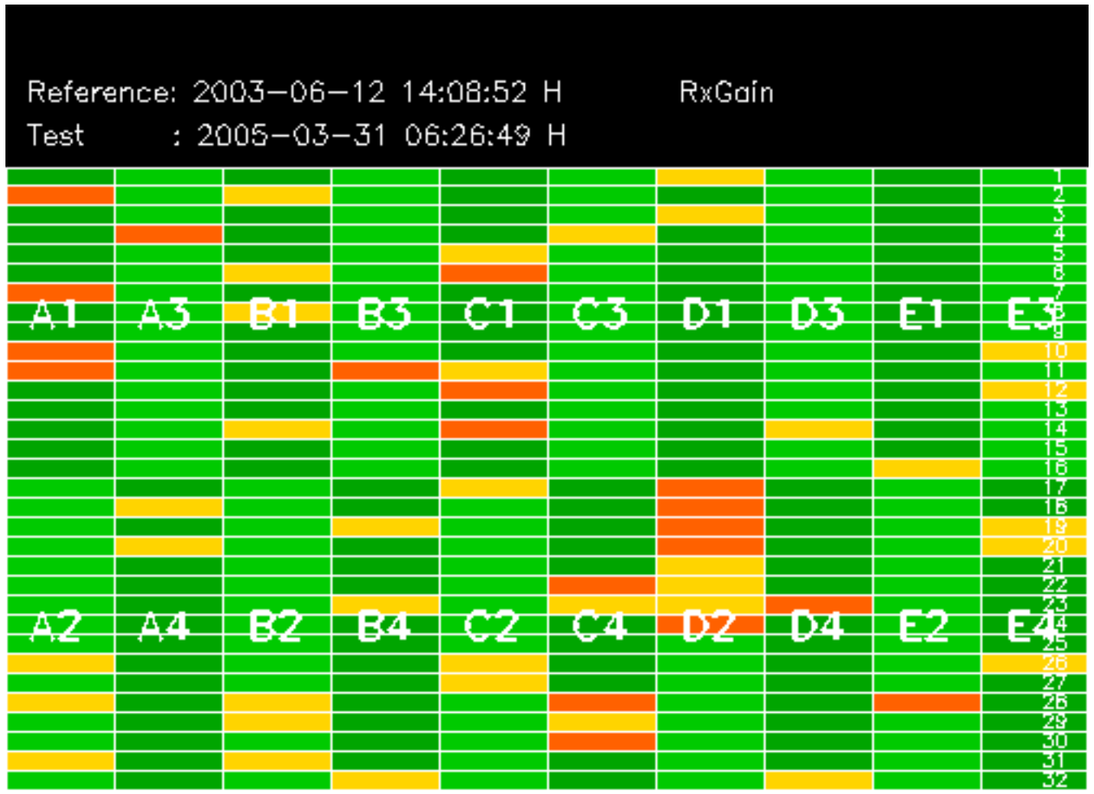

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −38.904040 Hz
−100Hz
+100Hz

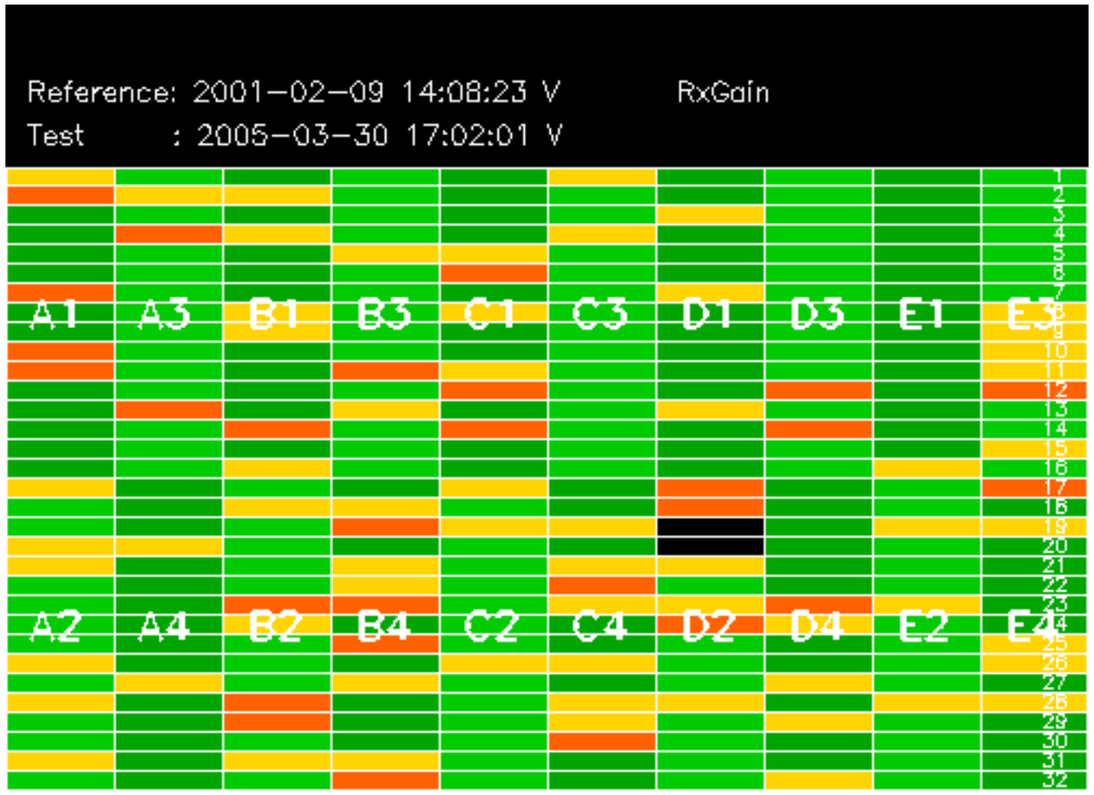

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.941237 Hz
−100Hz
+100Hz

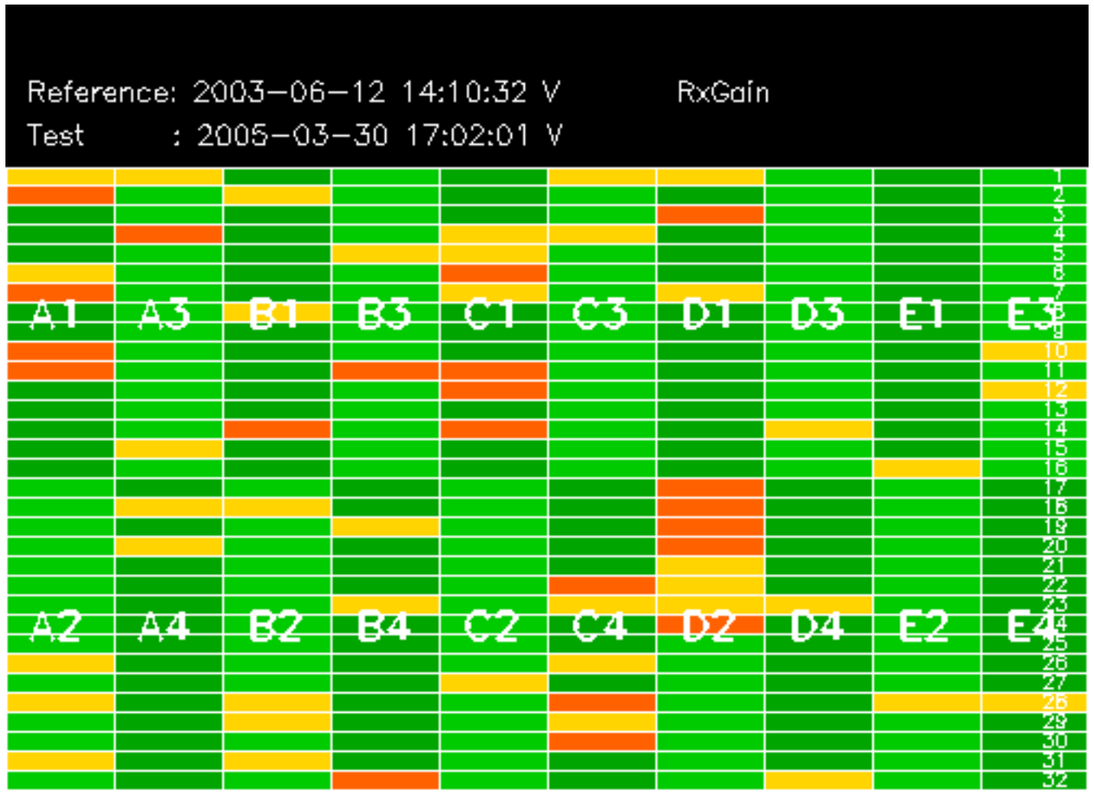
No anomalies observed on available MS products:

No anomalies observed.

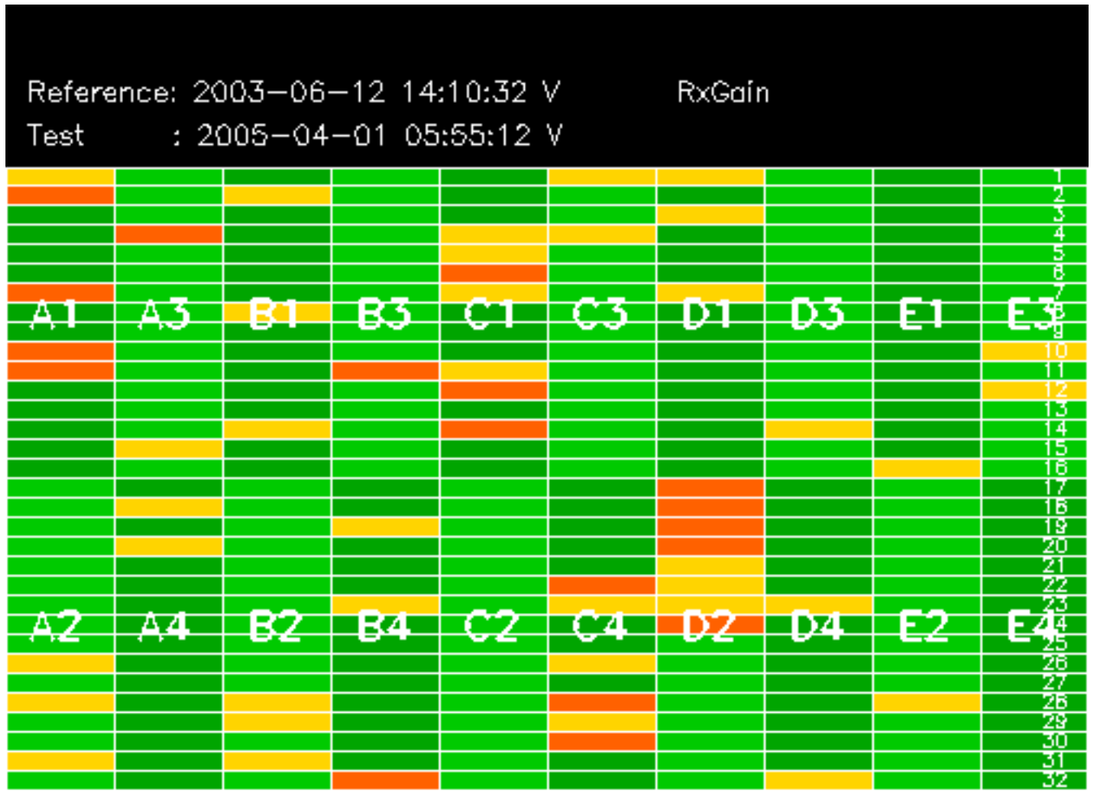

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

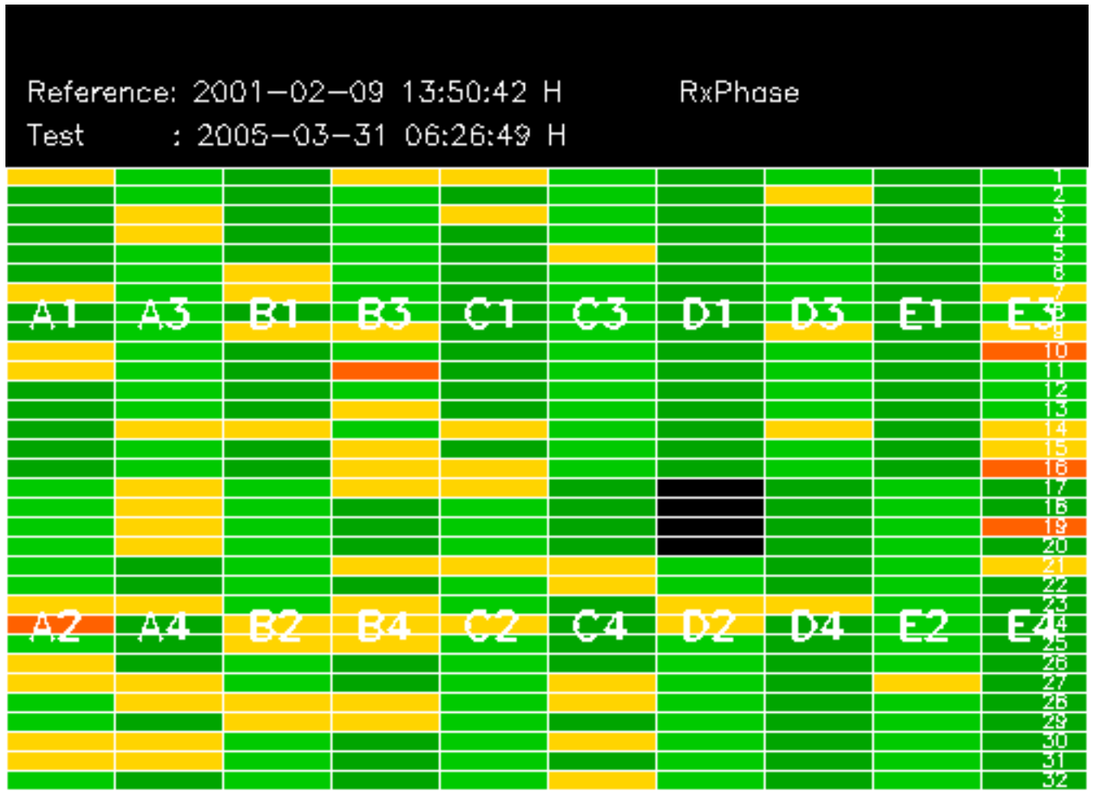

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

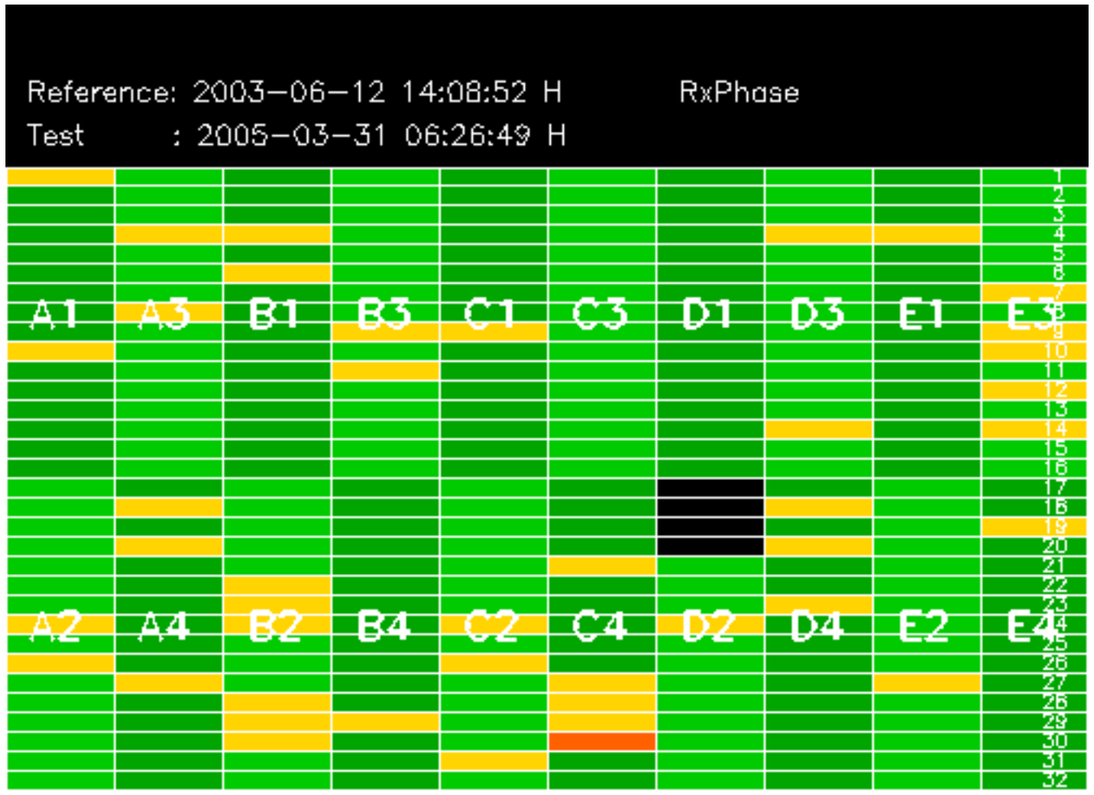

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

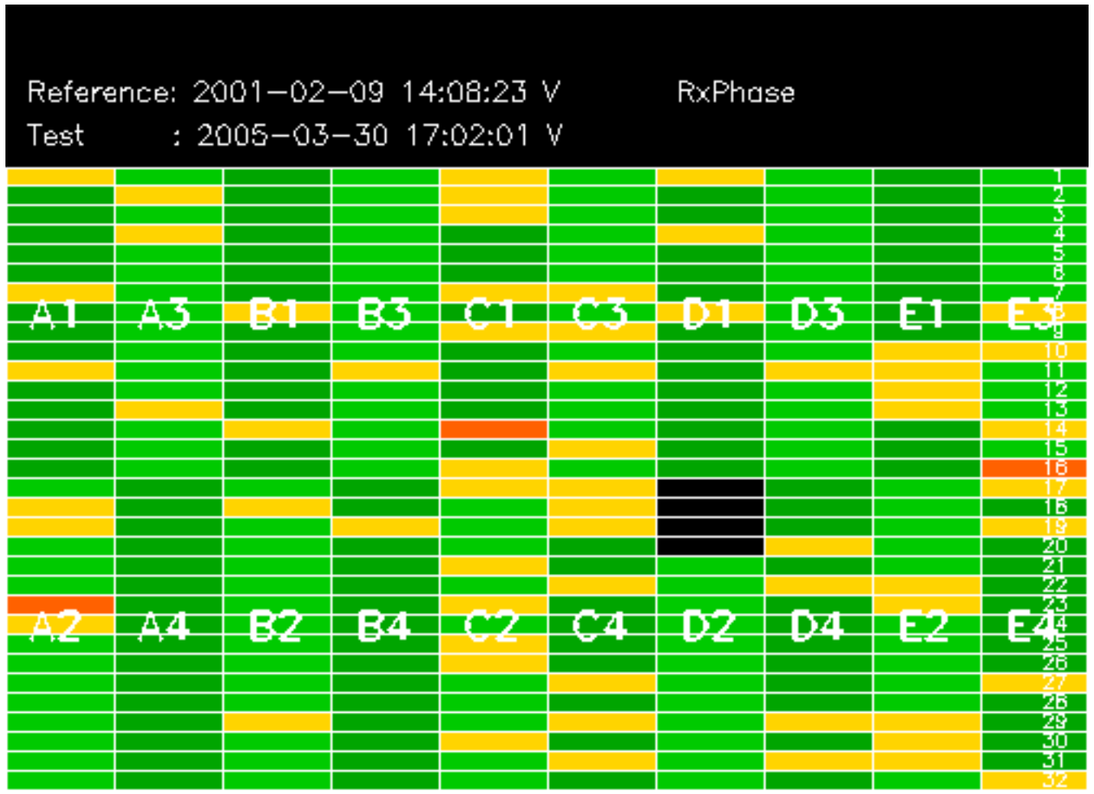

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

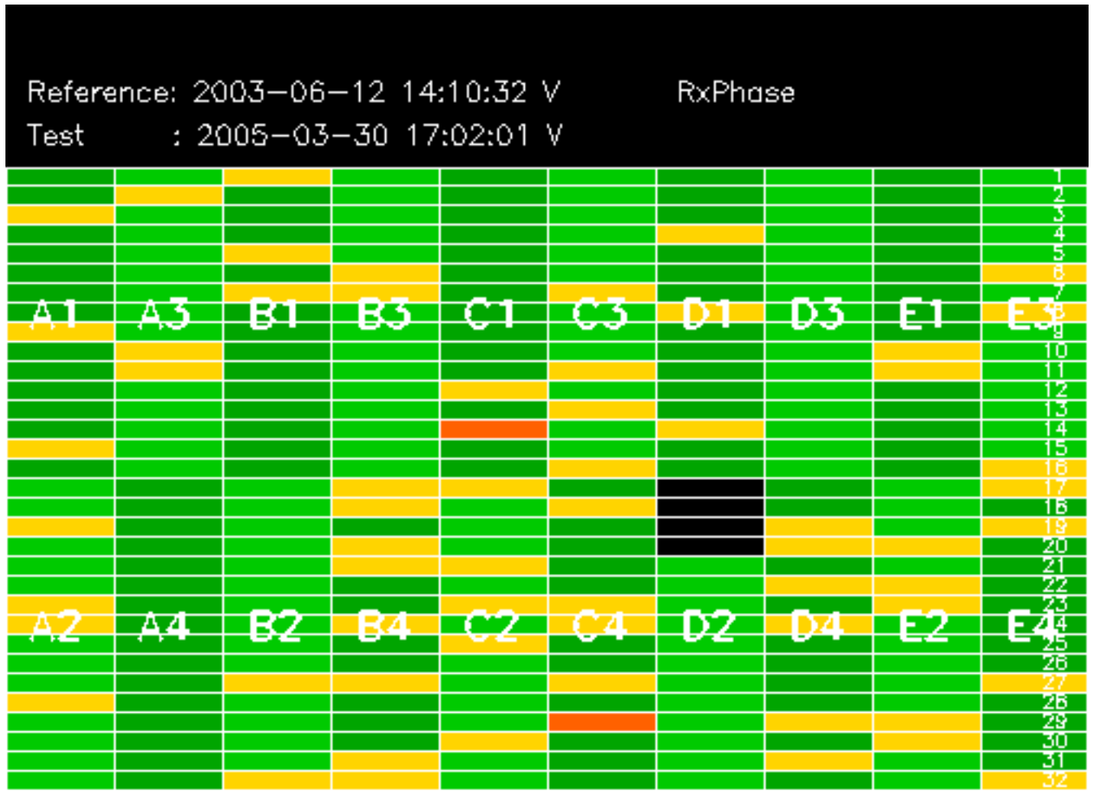

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

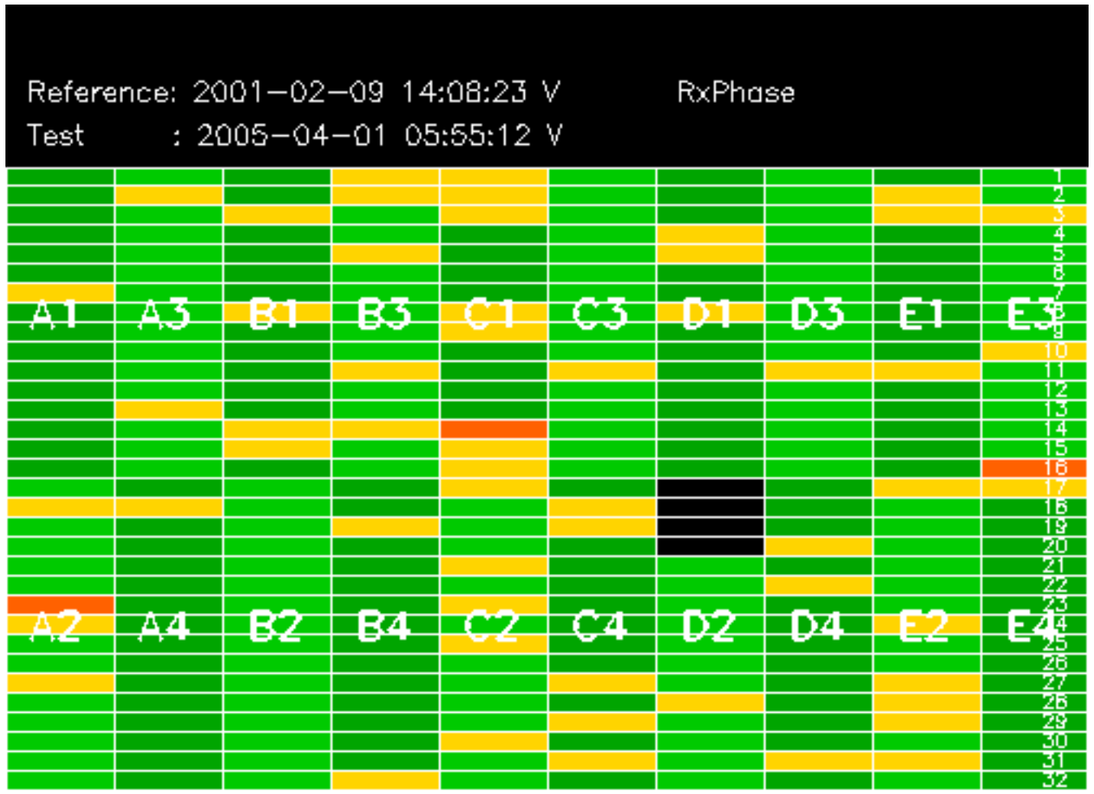

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

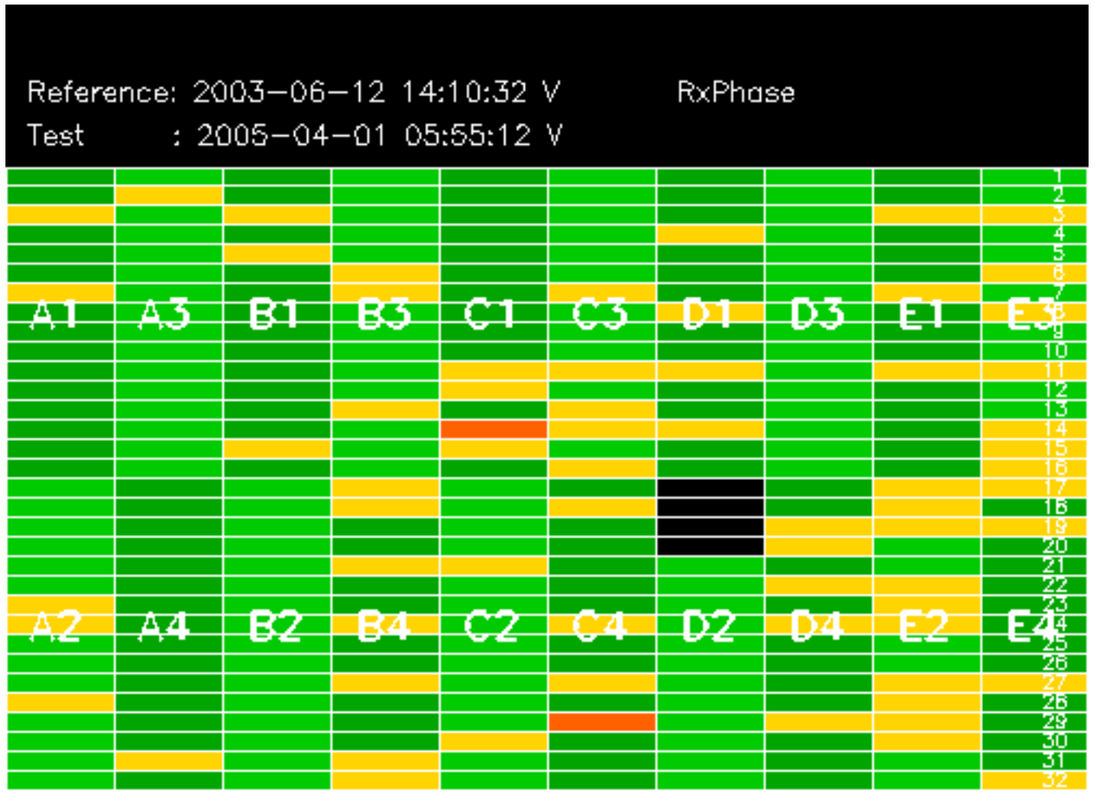

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

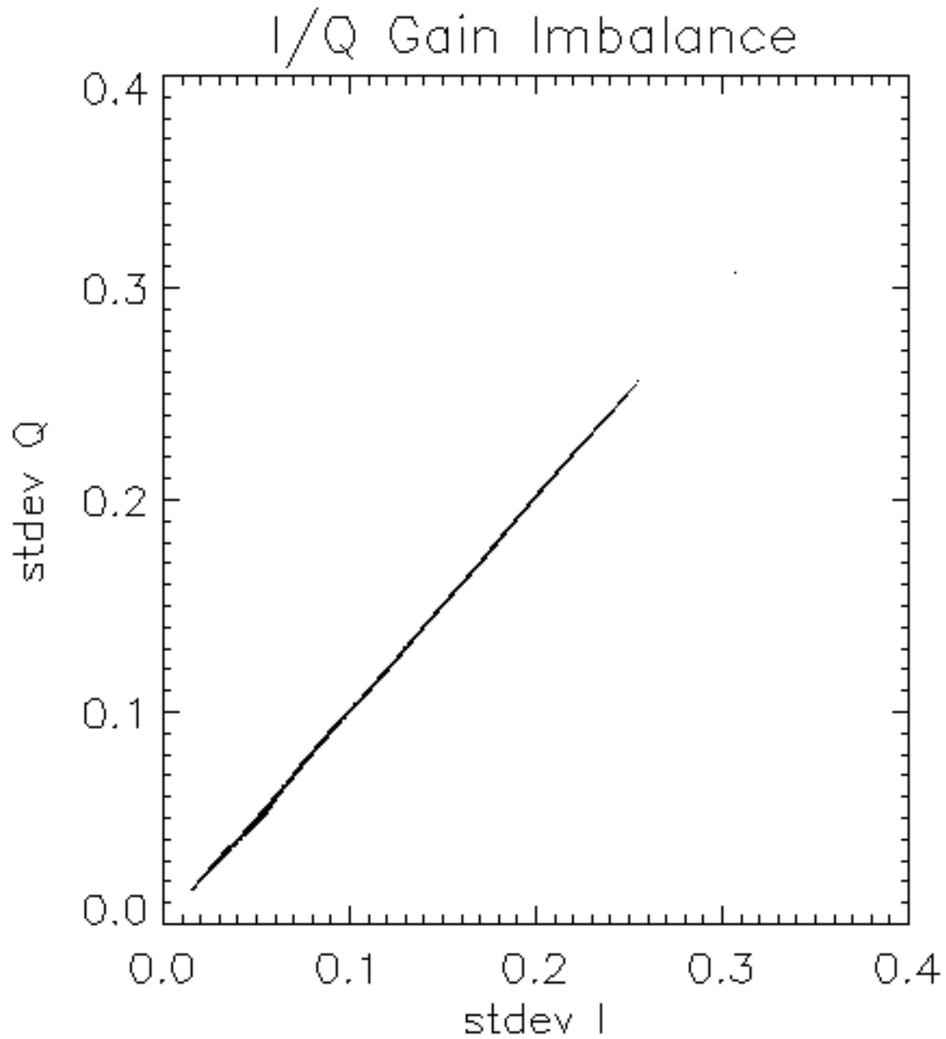

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

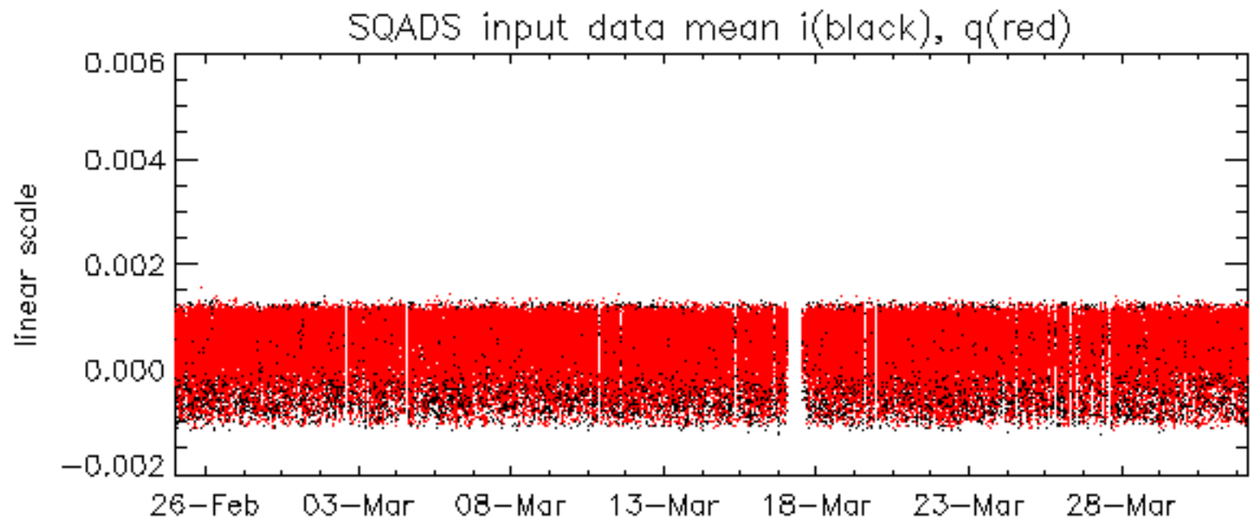

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

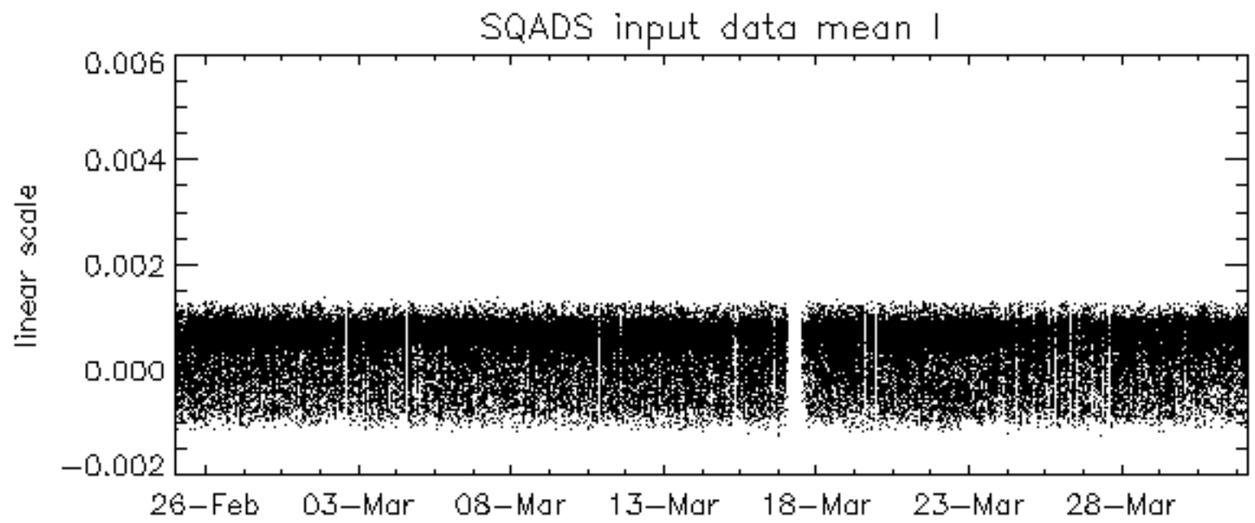

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

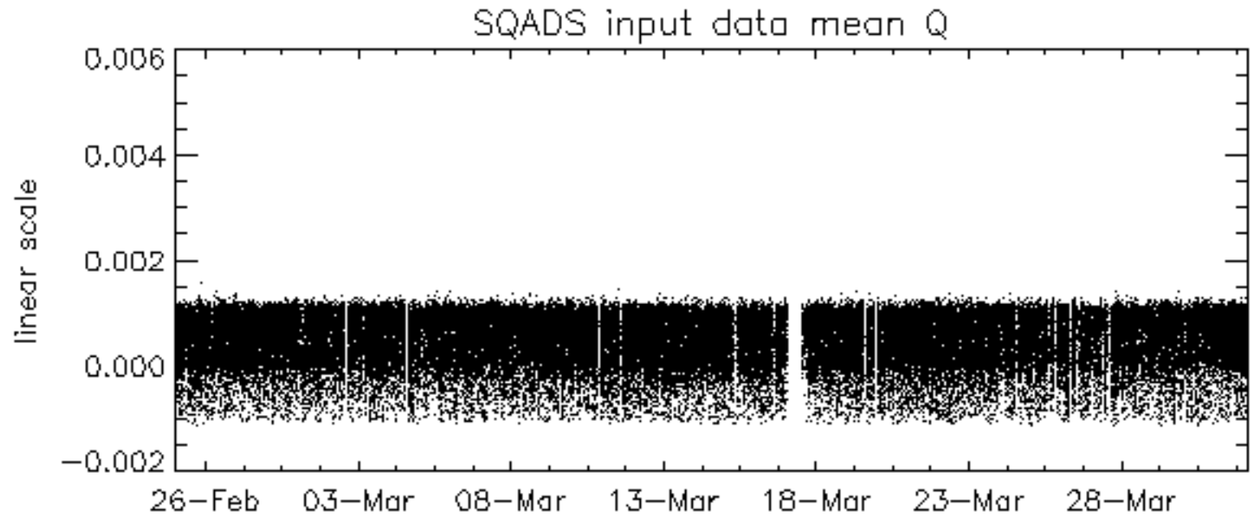

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

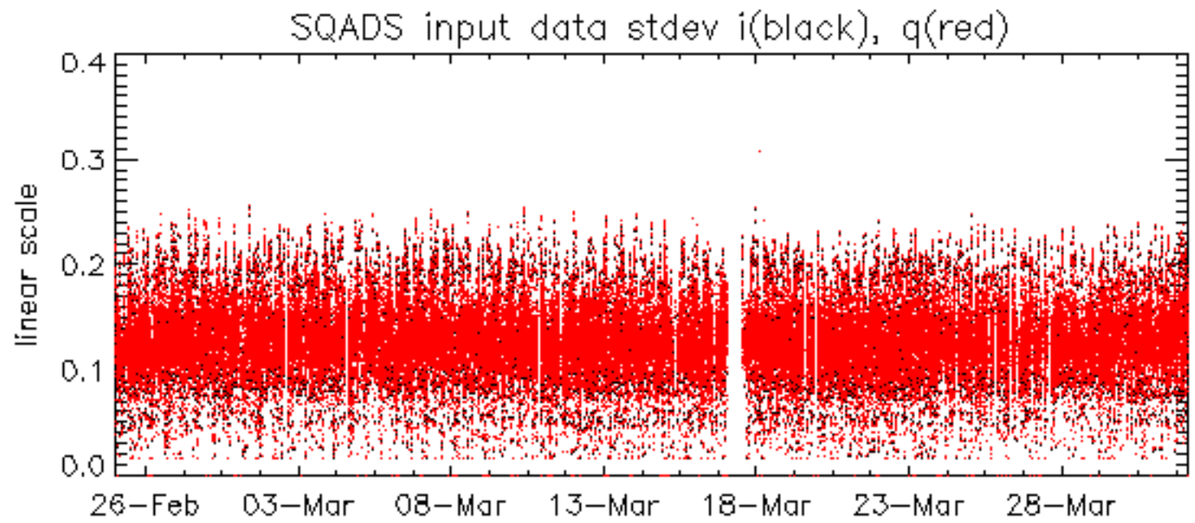

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

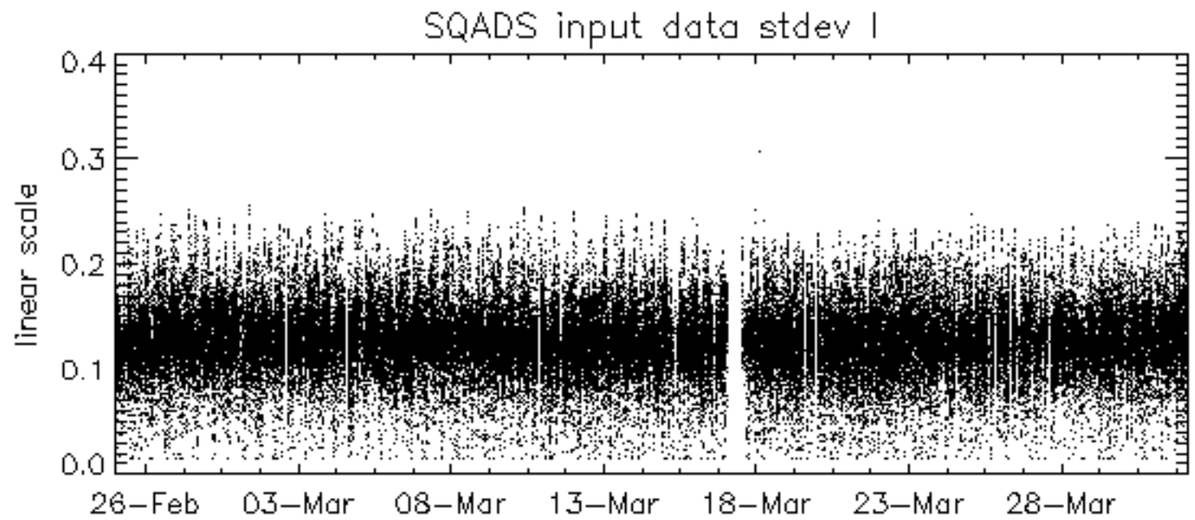

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

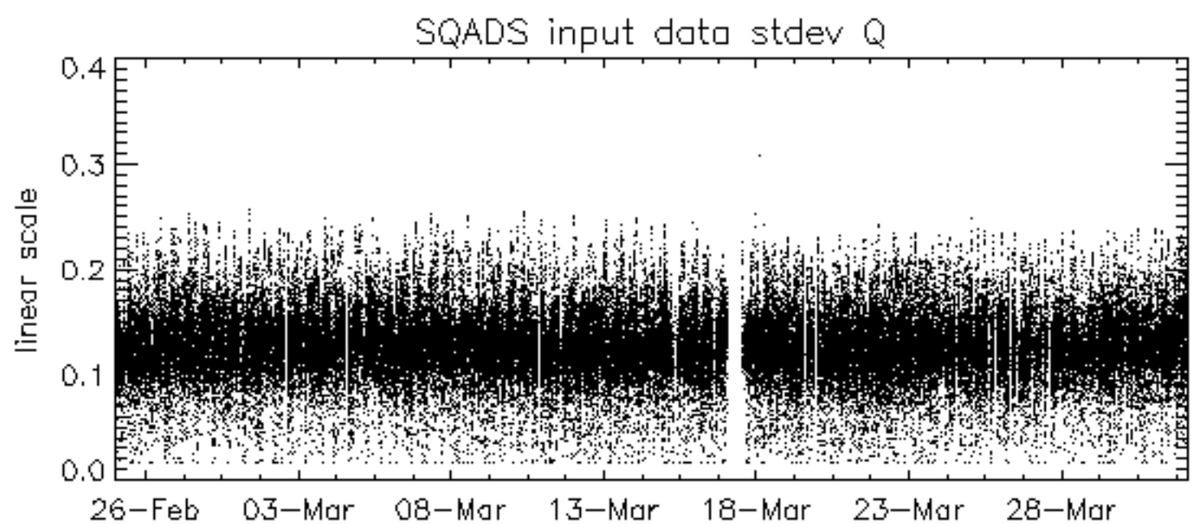

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

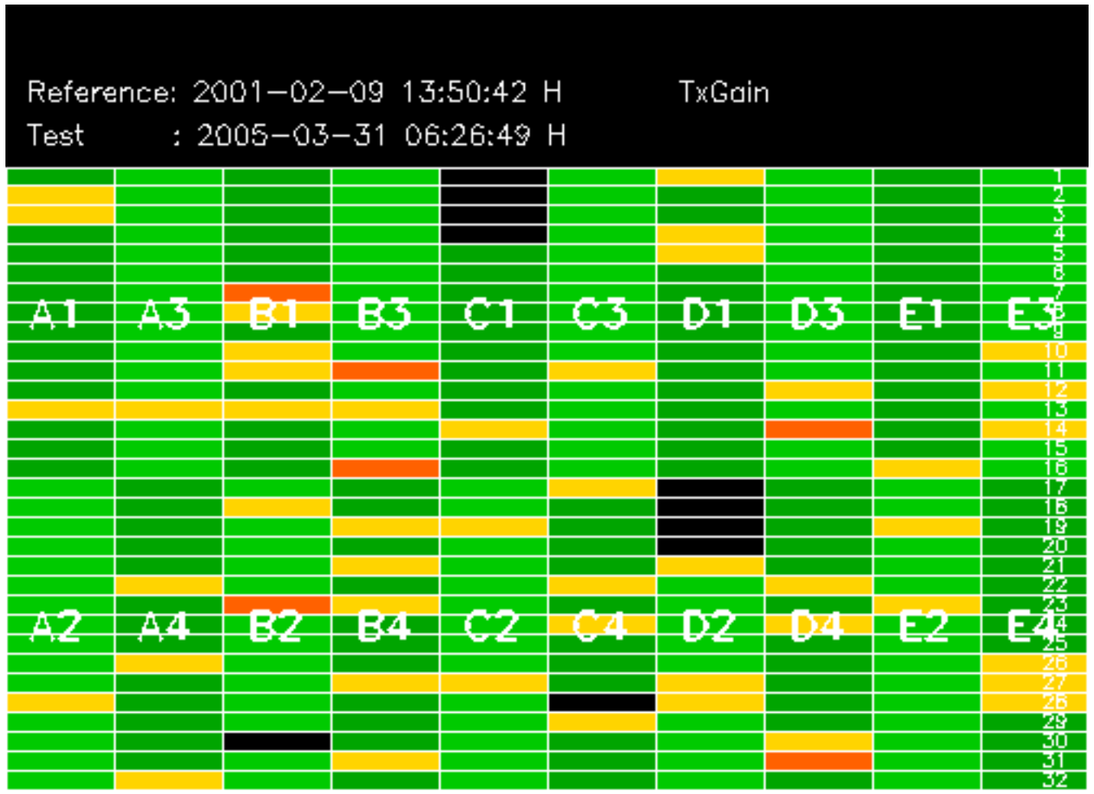

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

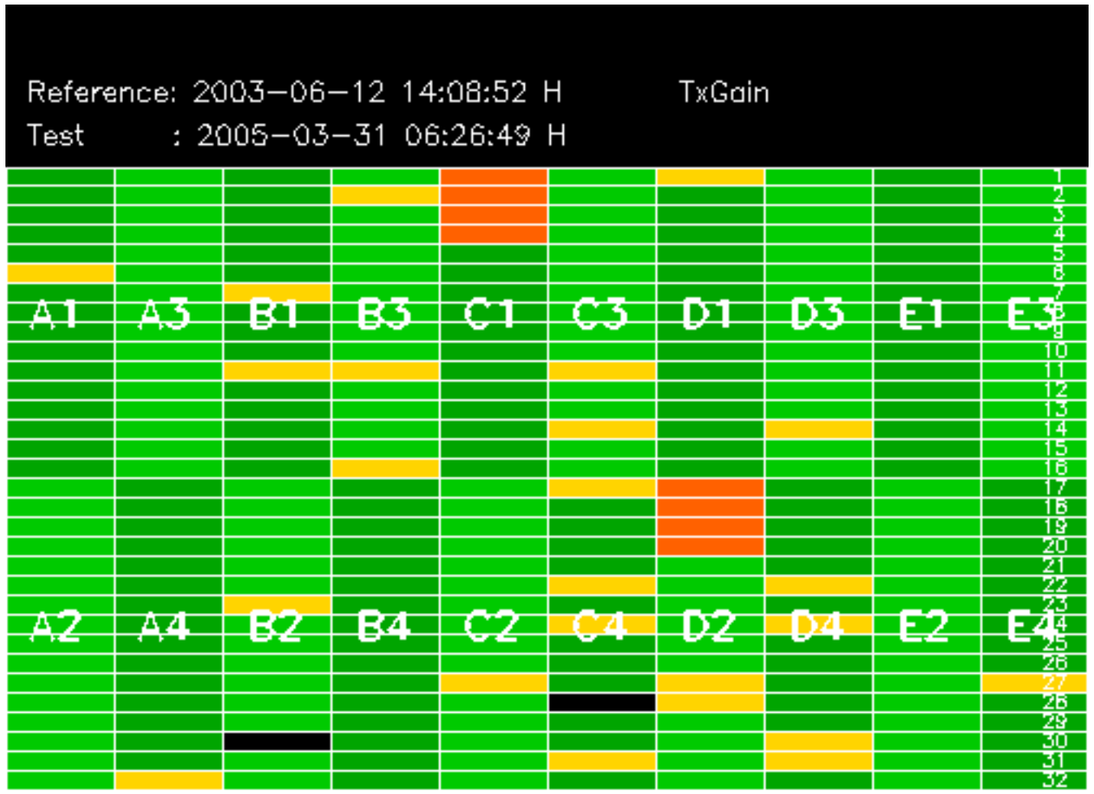

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

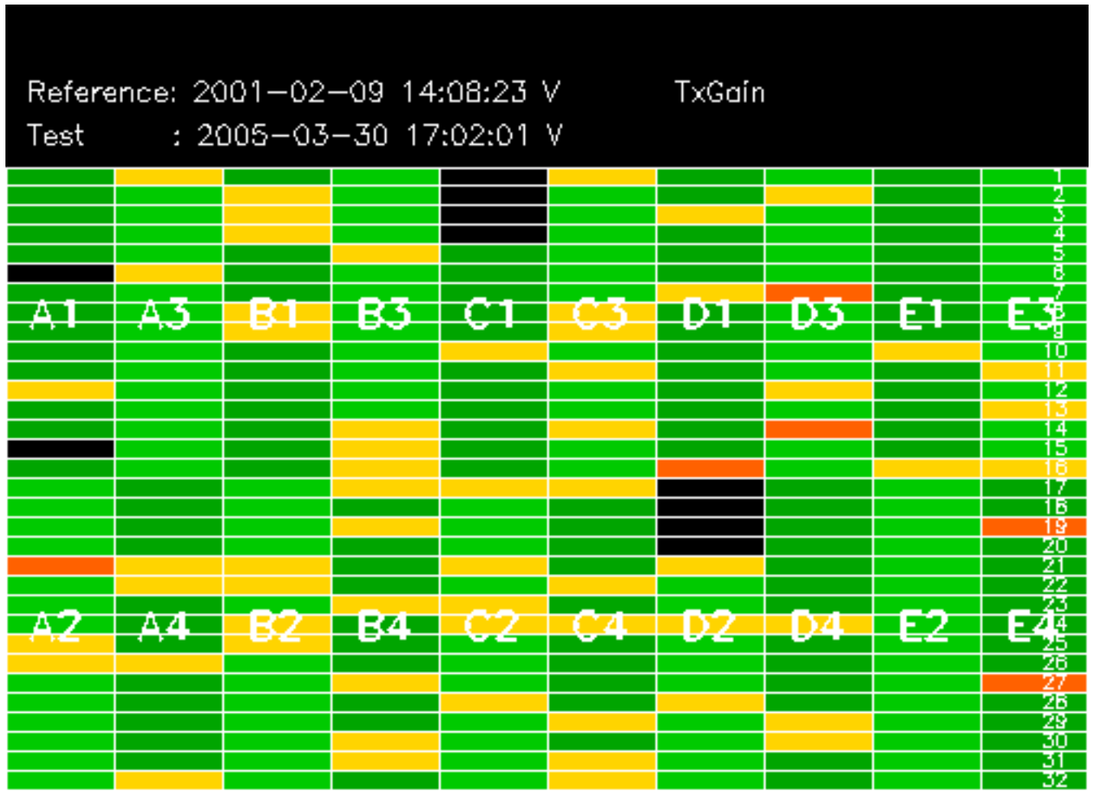

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26-Feb
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar

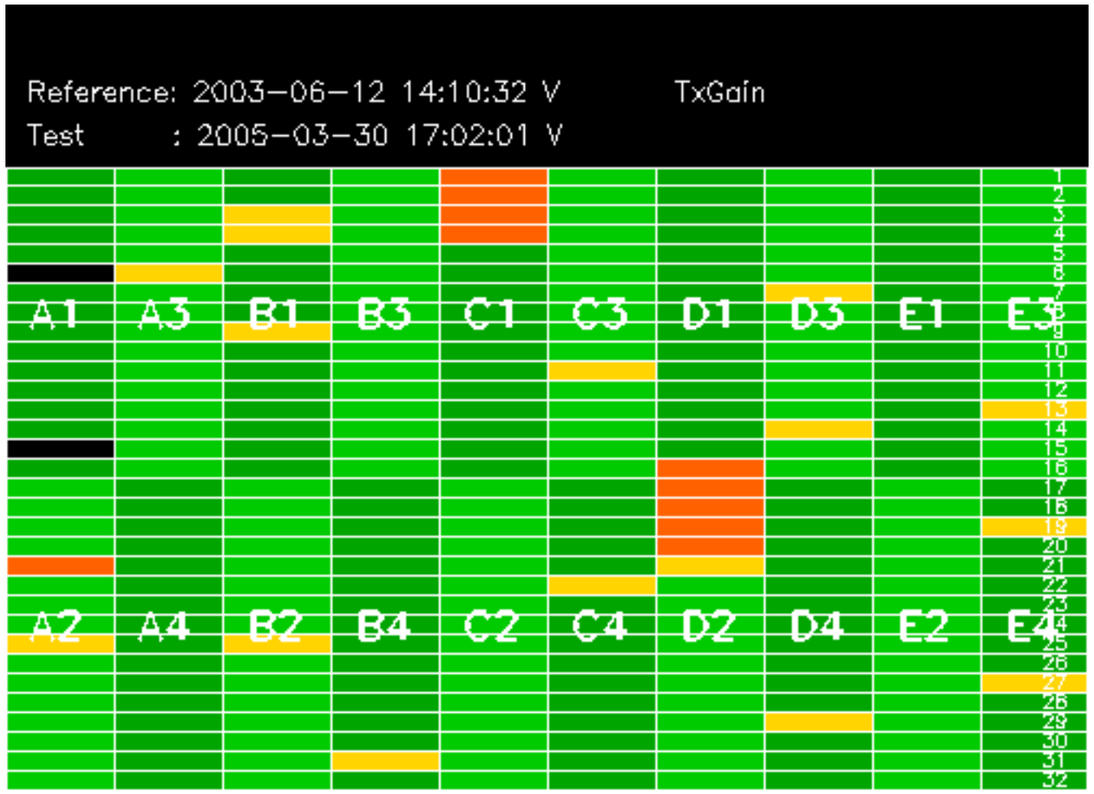

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26-Feb
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar

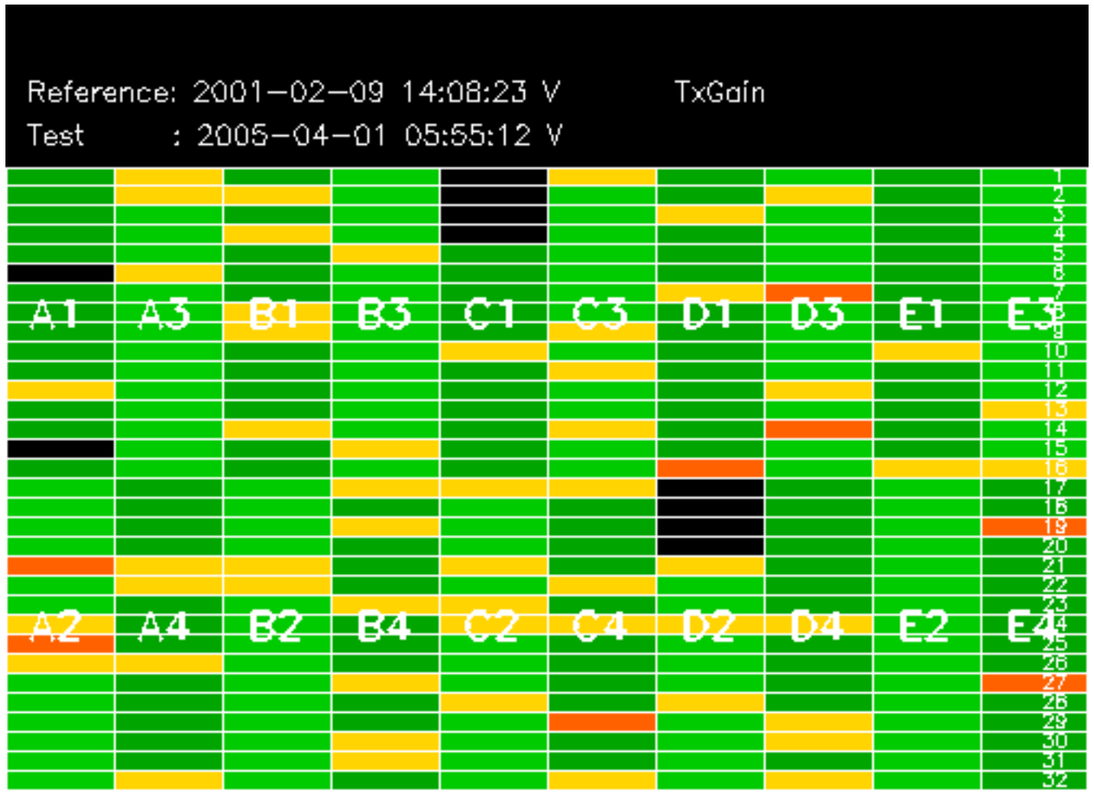

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26-Feb
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar

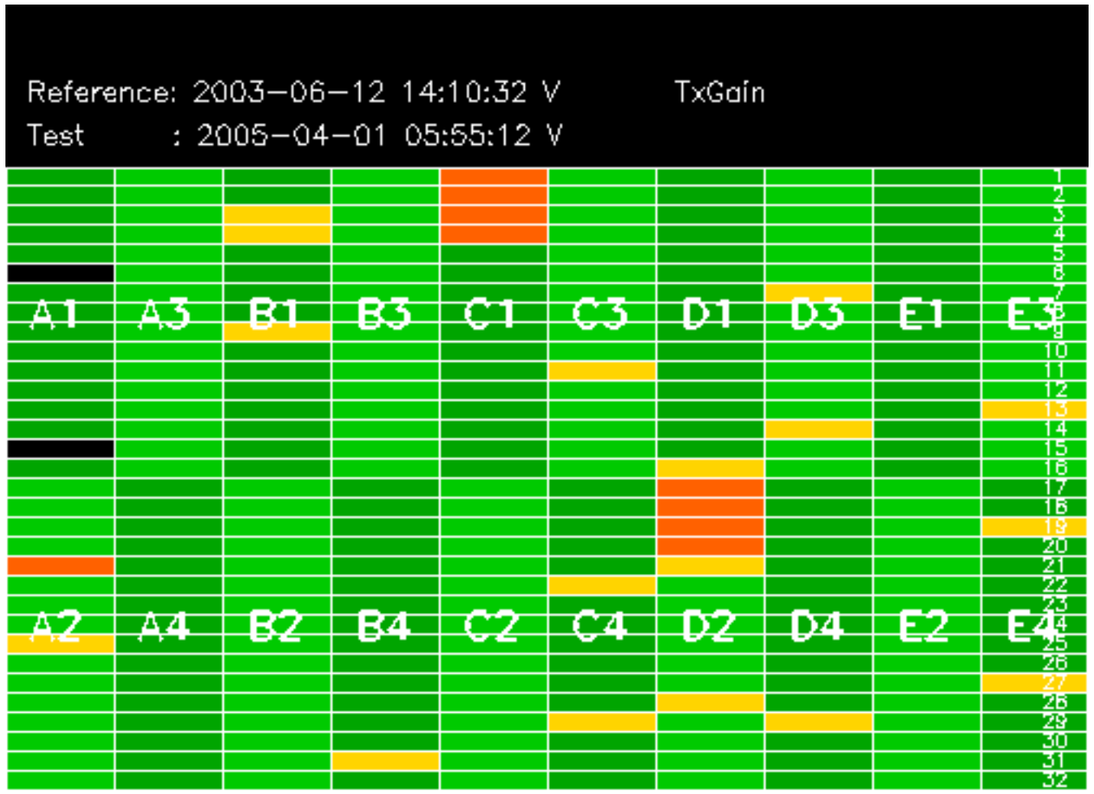

Reference: 2001-02-09 13:50:42 H
TxGain
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
TxGain
Test : 2005-03-31 06:26:49 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 : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

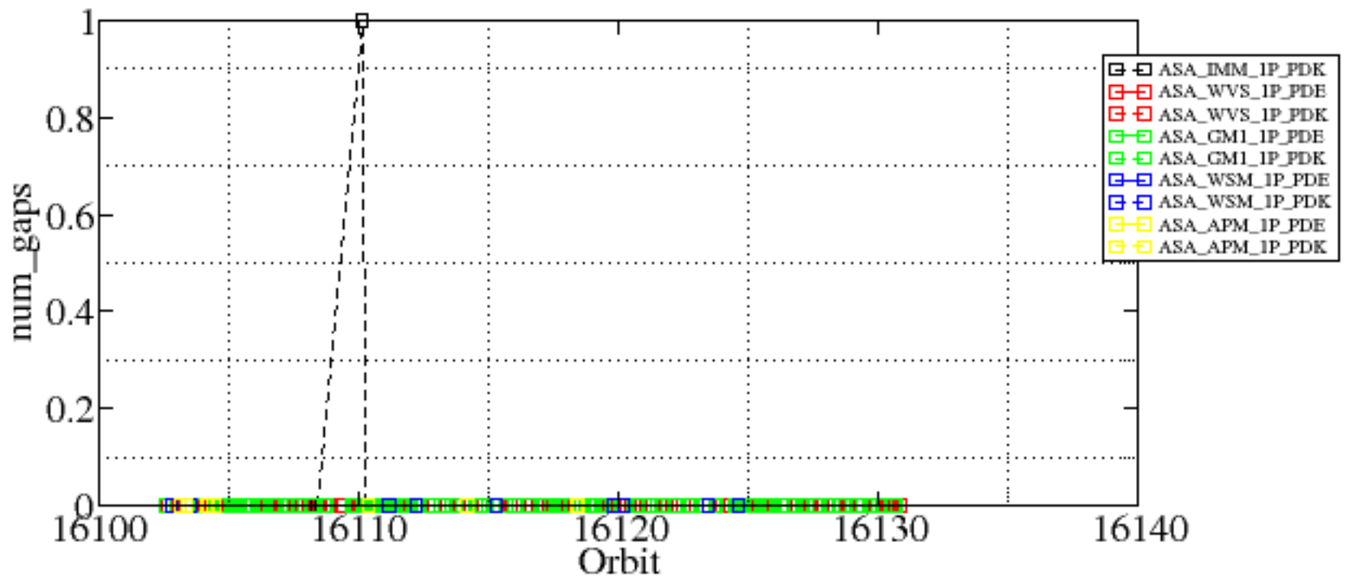

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

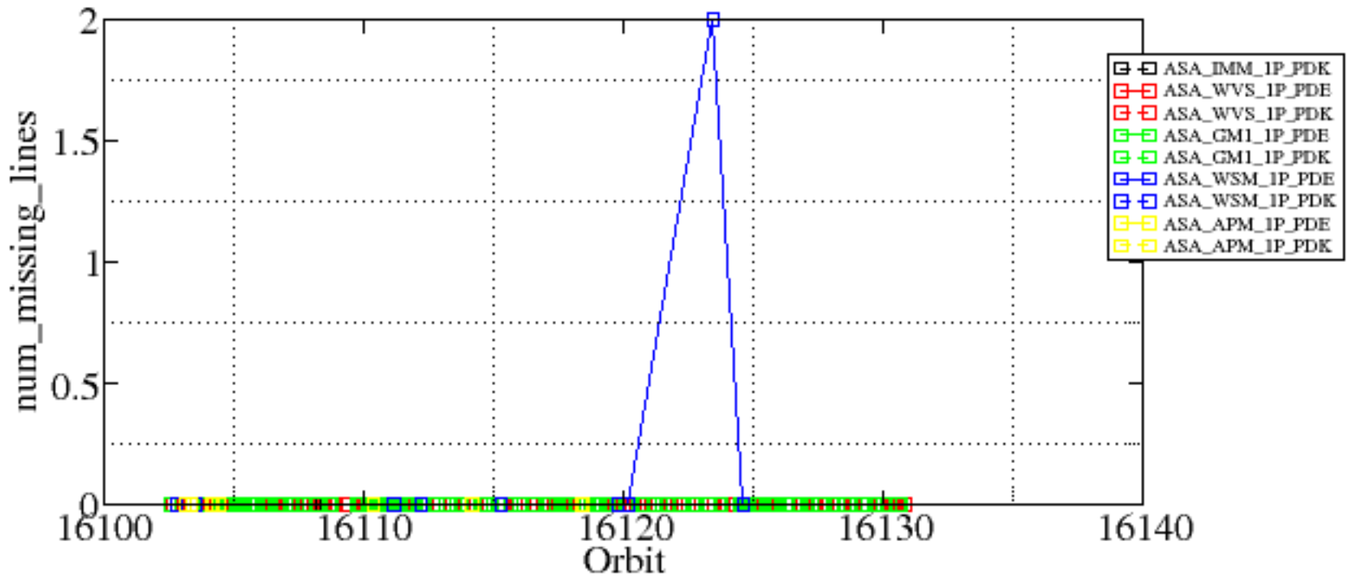

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

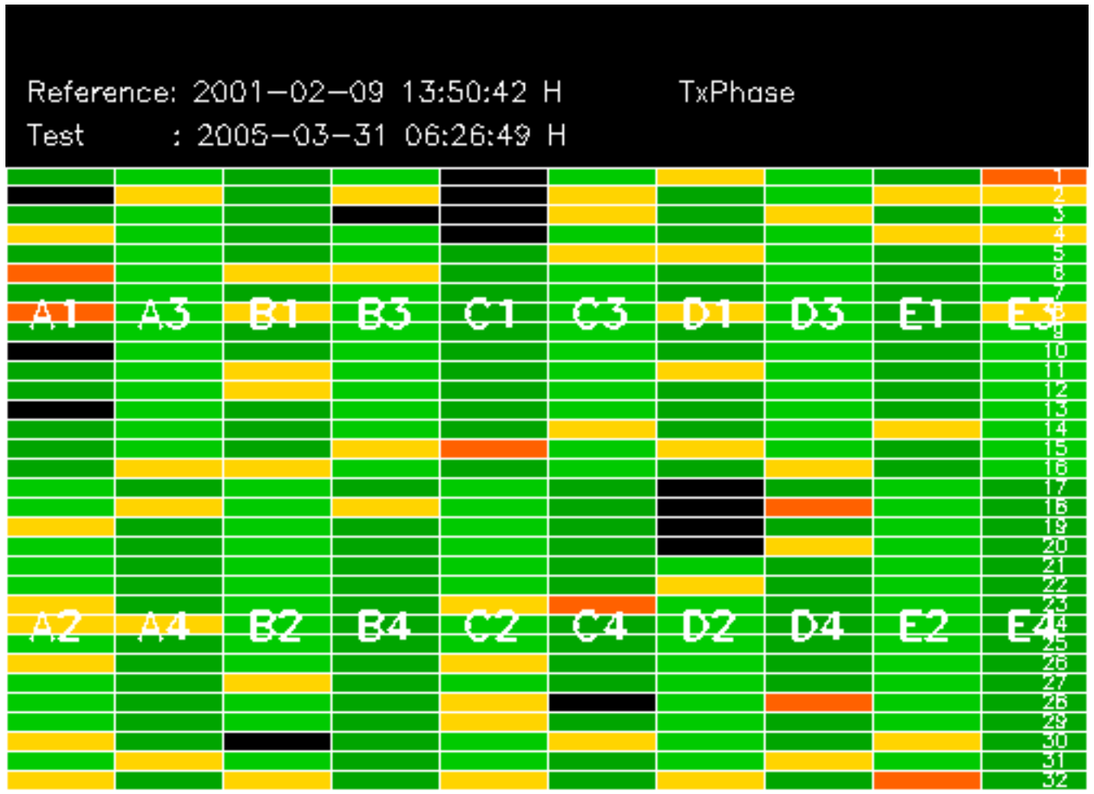

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

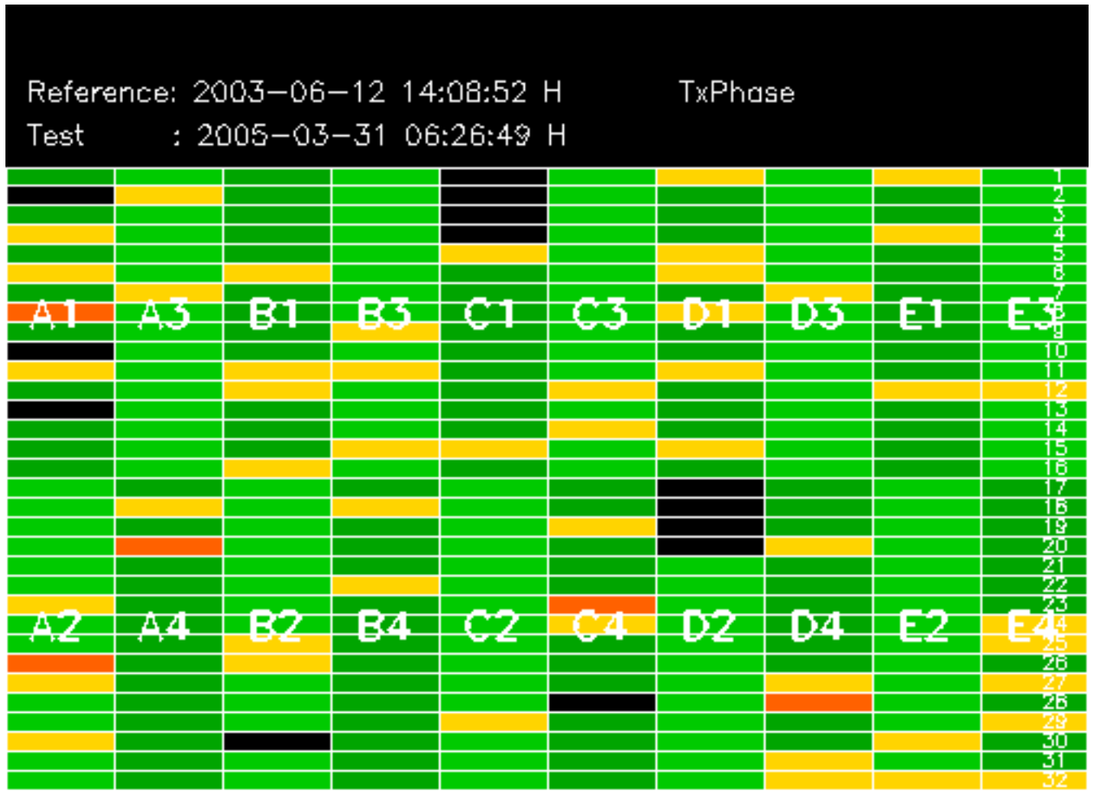
Summary of analysis for the last 3 days 2005033[011]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

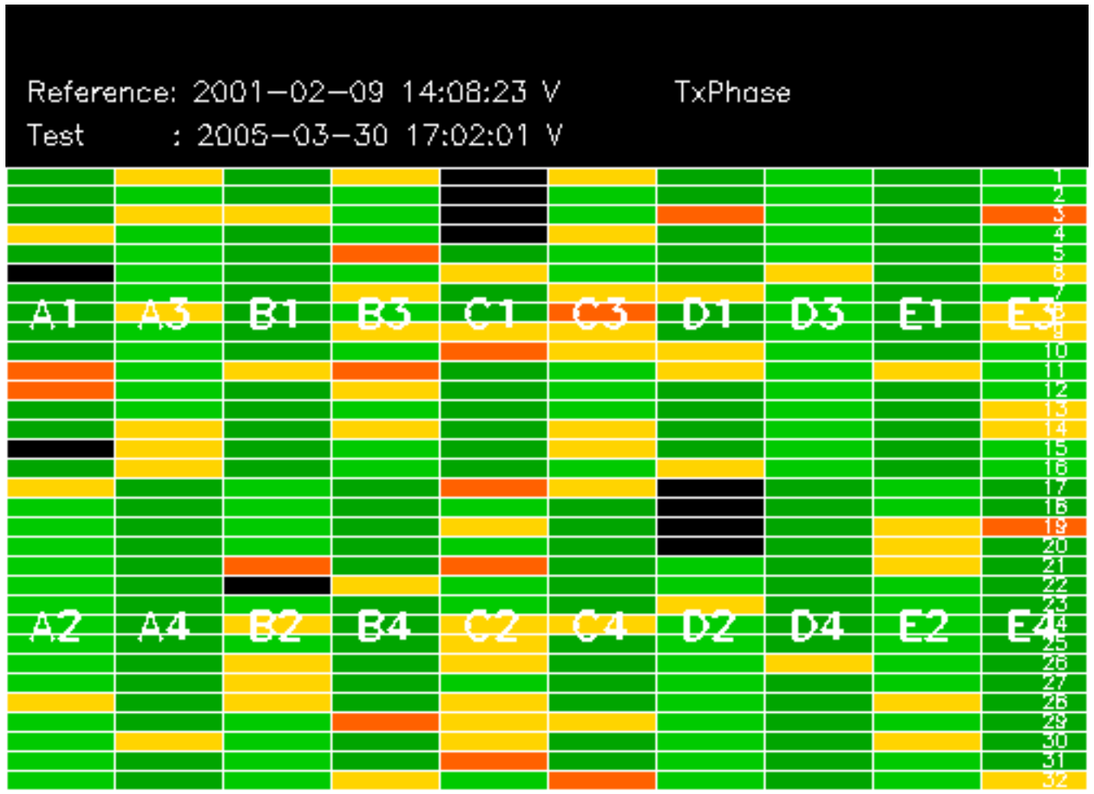
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050330_124602_000000692036_00024_16110_1566.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050331_110510_000001652036_00037_16123_4162.N1 </td> <td>0 </td> <td>2 </td></tr>
</table>

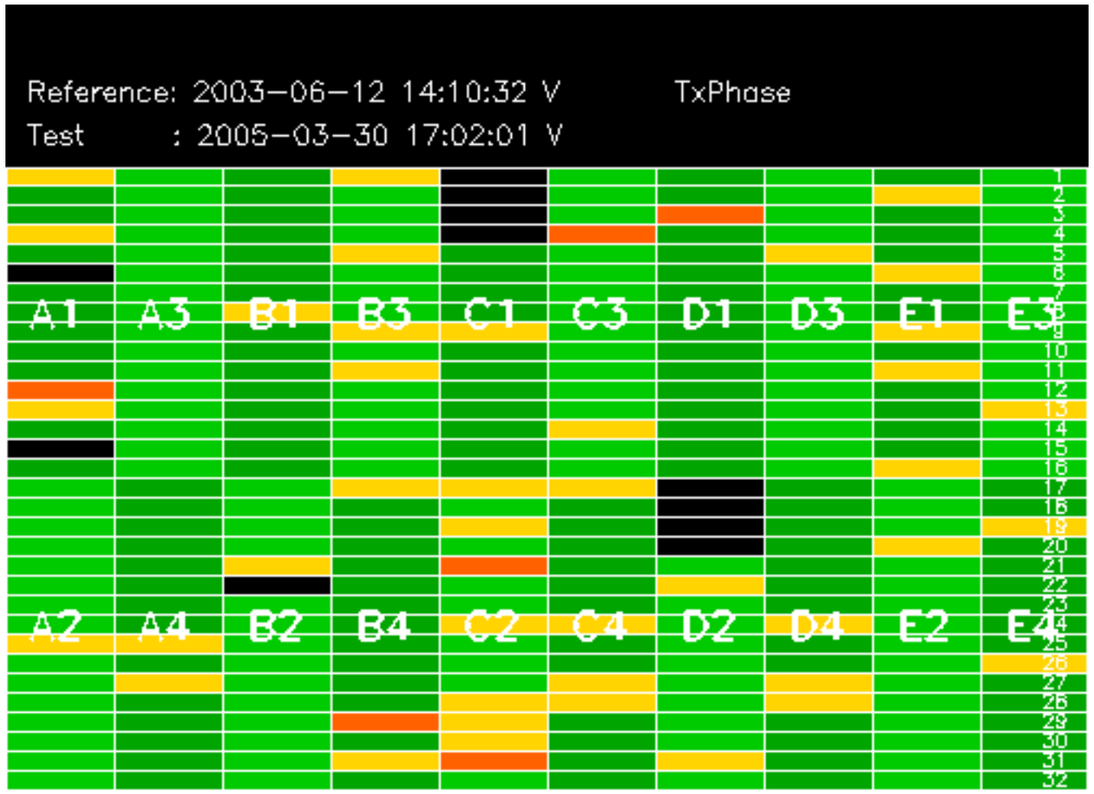

1
0.8
0.6
0.4
0.2
0
num_gaps
16100
16110
16120
16130
16140
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

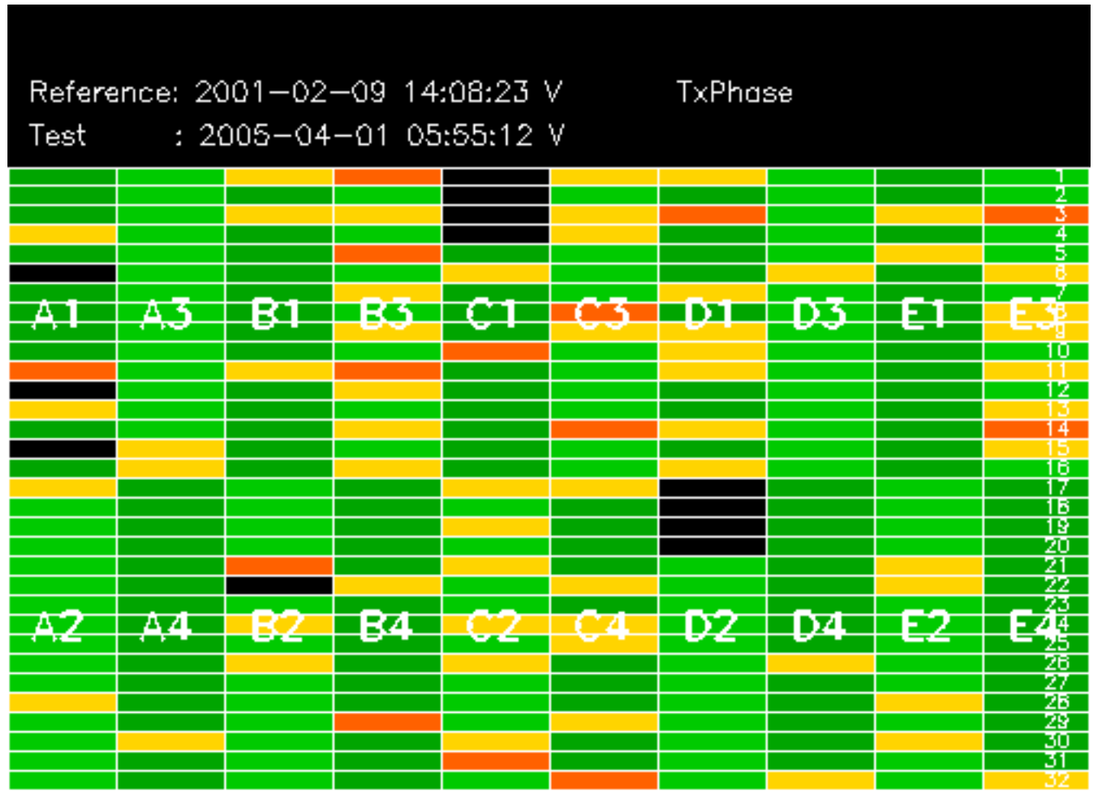

num_missing_lines
Orbit
0
0.5
1
1.5
2
16100
16110
16120
16130
16140
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

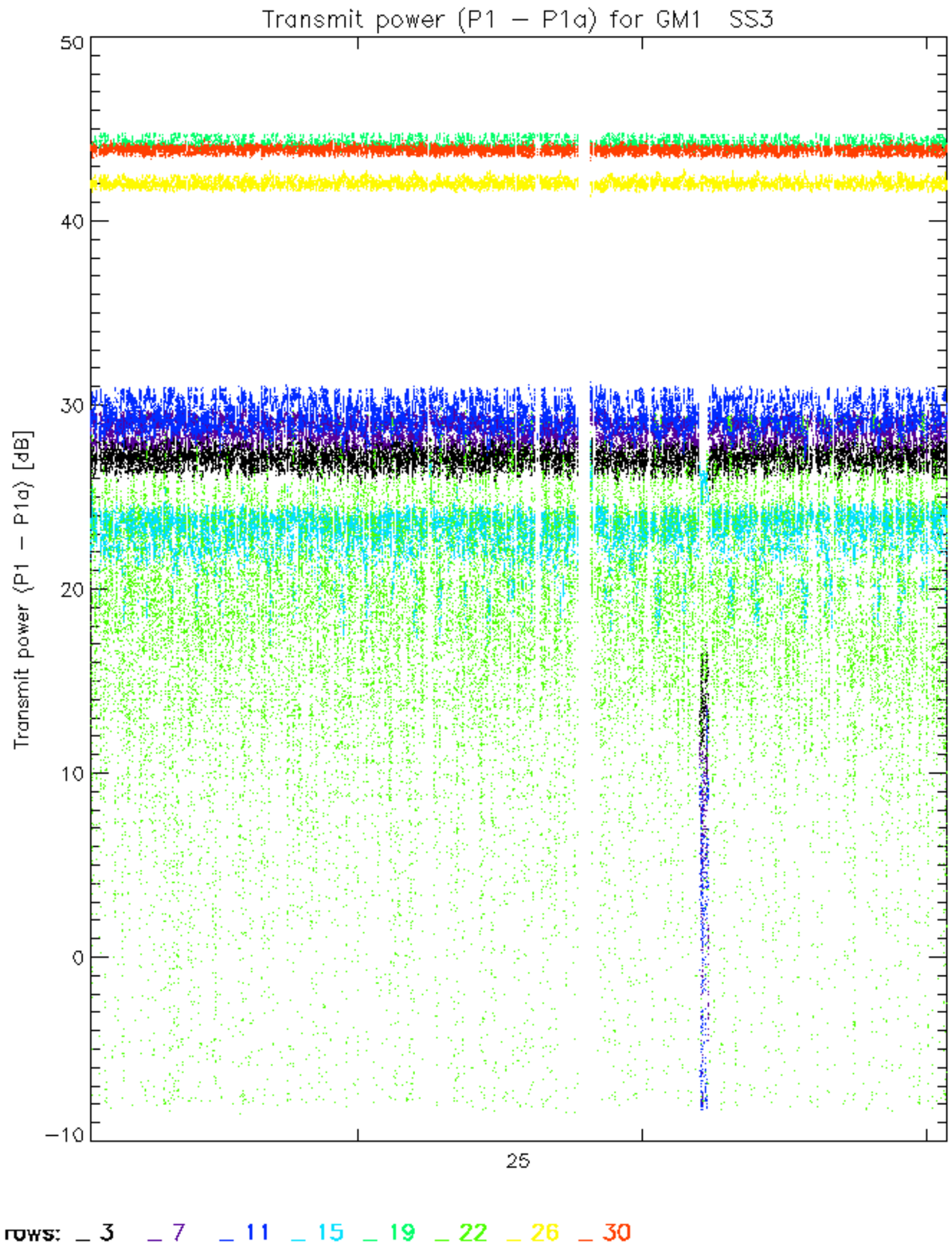

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-03-31 06:26:49 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

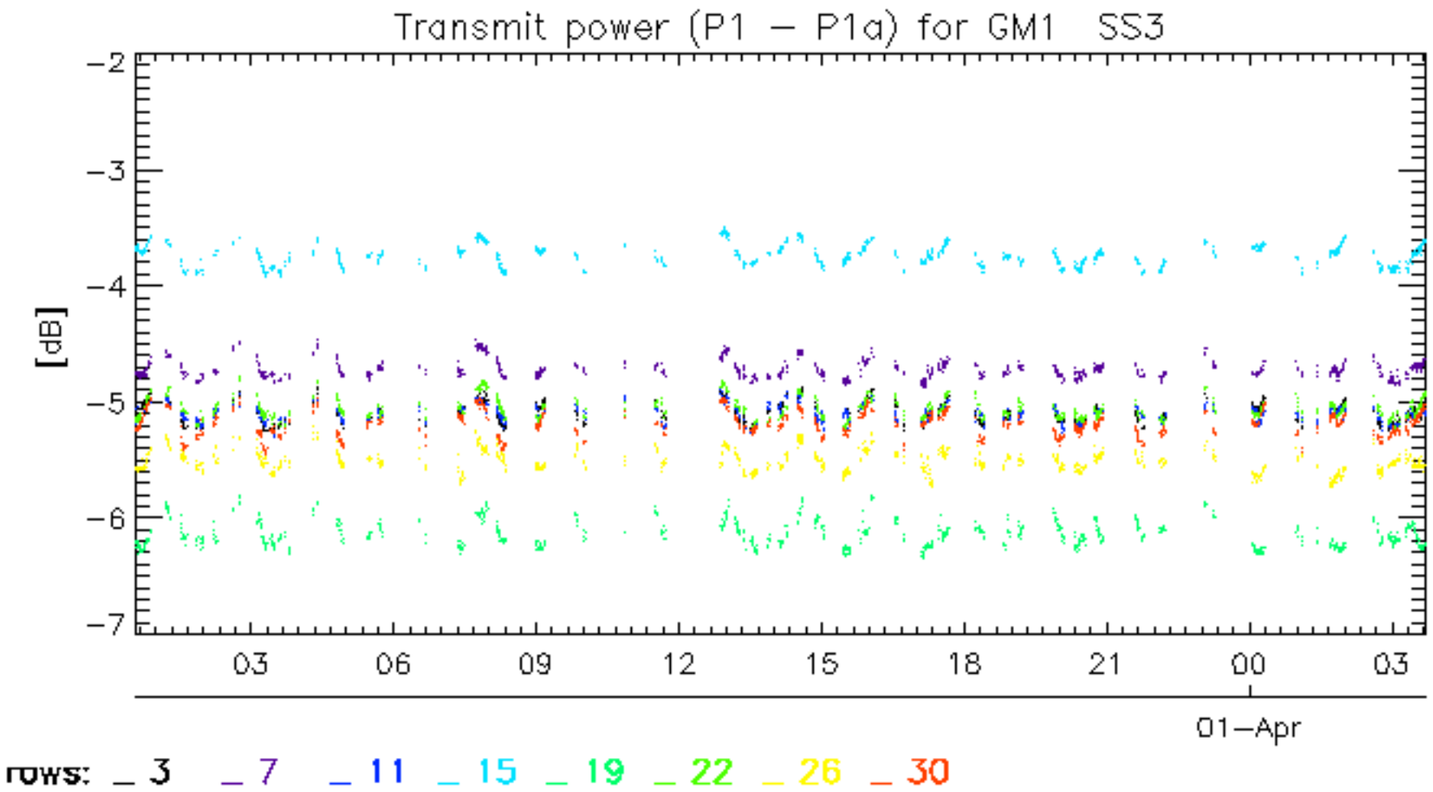

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

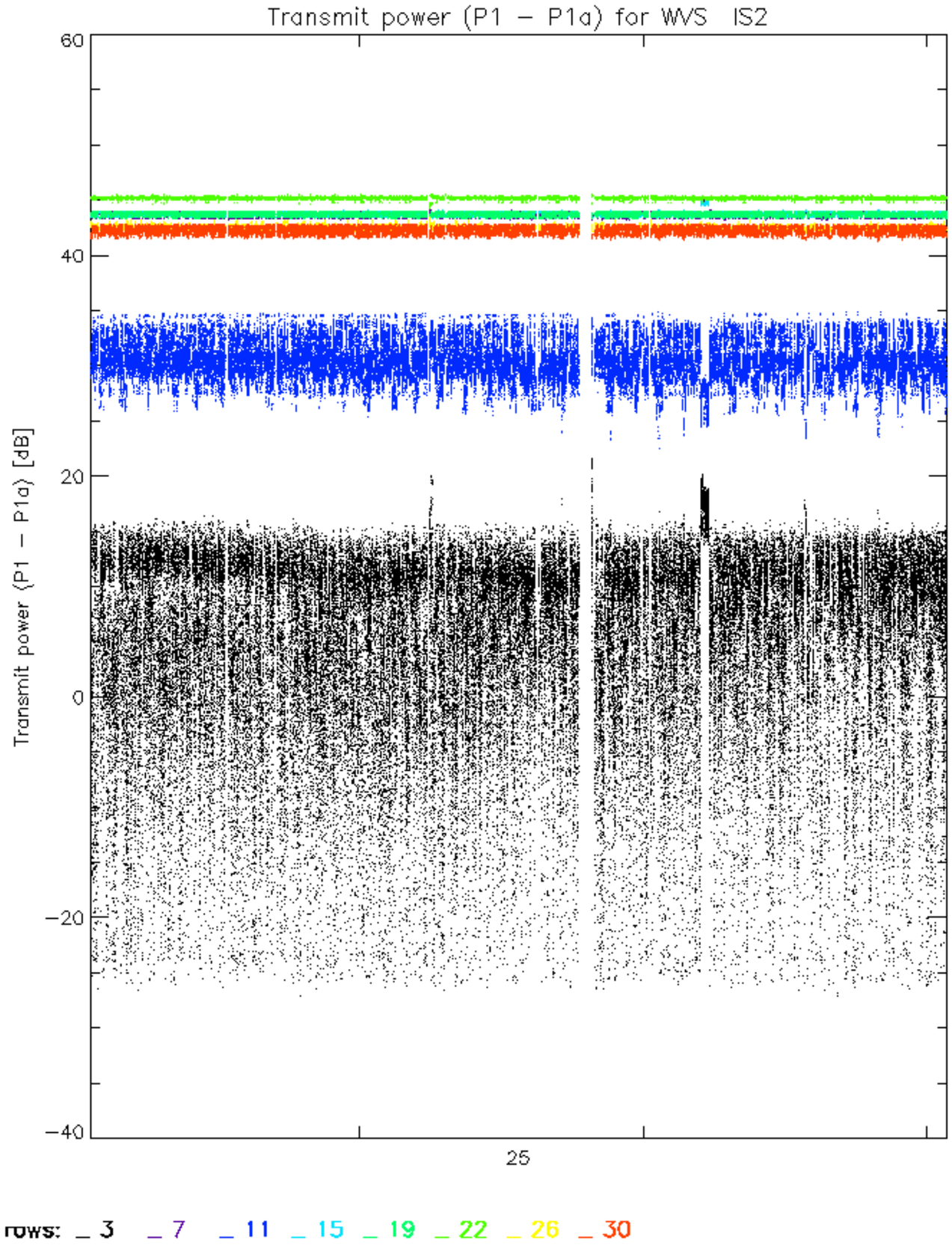

Reference: 2003-06-12 14:10:32 V
TxPhase
Test : 2005-03-30 17:02:01 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

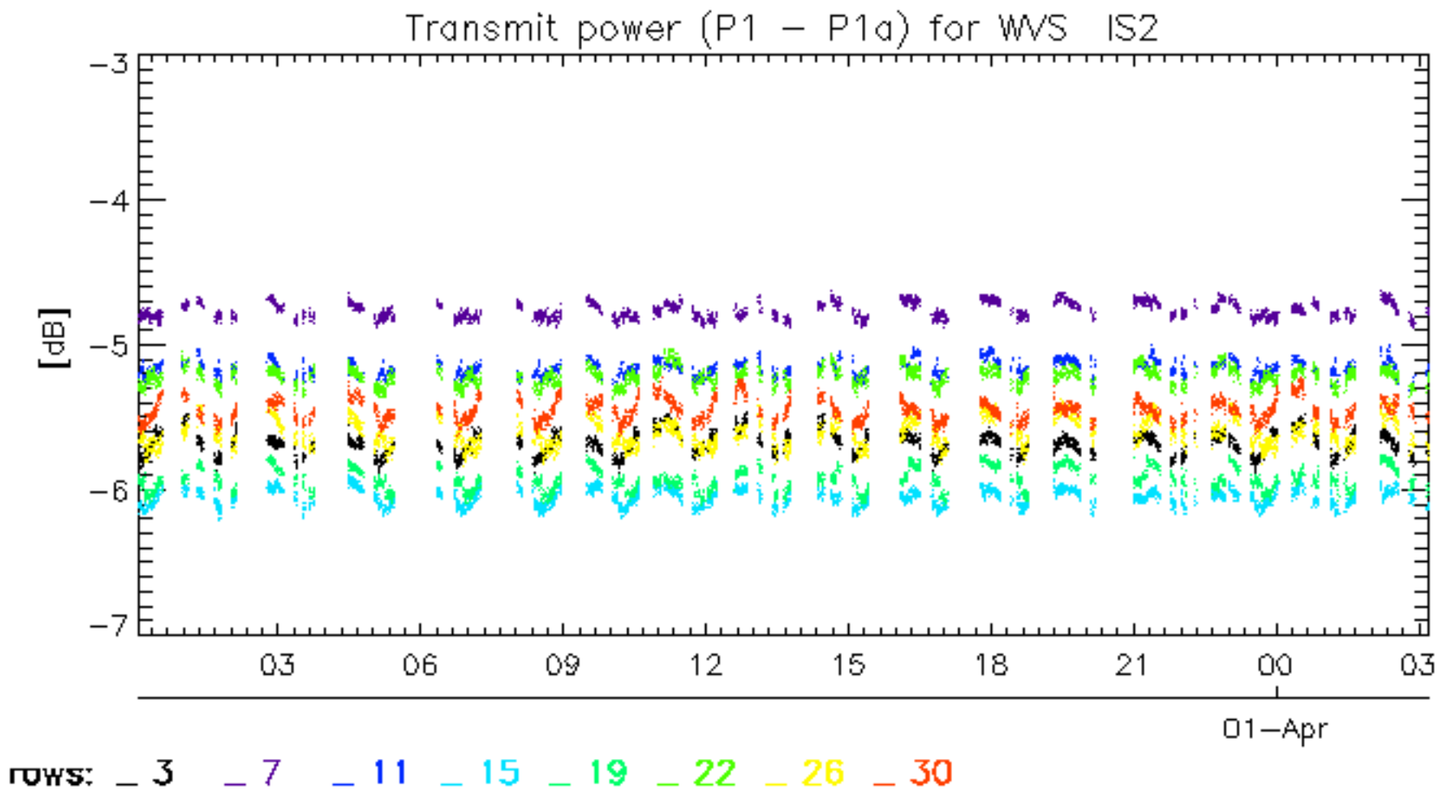

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-04-01 05:55:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
TxPhase
Test : 2005-04-01 05:55:12 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
25
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
01–Apr
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 − P1a) for WVS IS2
Transmit power (P1 − P1a) [dB]
60
40
20
0
−20
−40
25
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
01–Apr
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.