PRELIMINARY REPORT OF 070401

last update on Sun Apr 1 18:03:33 GMT 2007

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 2007-03-31 00:00:00 to 2007-04-01 18:03:33

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	41	80	0	2	26
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	41	80	0	2	26
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	41	80	0	2	26
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	41	80	0	2	26

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	33	48	66	6	28
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	33	48	66	6	28
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	33	48	66	6	28
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	48	66	6	28

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	20070331 204859
H	20070401 010756

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)
3	P1a	-15.099638	0.129453	0.075658
7	P1a	-17.496347	0.101250	-0.137850
11	P1a	-17.275927	0.351979	-0.051181
15	P1a	-12.889960	0.091456	-0.016336
19	P1a	-15.176567	0.078686	-0.096050
22	P1a	-15.554312	0.550239	-0.532601
26	P1a	-15.089183	0.400625	-0.121284
30	P1a	-17.431246	0.297525	-0.275129

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.746012	0.010848	-0.021874
7	P1	-3.136744	0.008639	-0.012993
11	P1	-4.176321	0.014701	-0.061201
15	P1	-6.374331	0.016767	0.012098
19	P1	-3.775707	0.007754	-0.012823
22	P1	-4.691252	0.039750	-0.120339
26	P1	-3.927386	0.035060	-0.021661
30	P1	-5.929079	0.059236	-0.112992

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.644089	0.093252	0.024908
7	P2	-21.597952	0.083678	0.052865
11	P2	-15.481515	0.103559	0.189258
15	P2	-7.083414	0.094394	-0.041790
19	P2	-9.106132	0.084187	0.004396
22	P2	-18.088821	0.079867	0.043578
26	P2	-16.562027	0.086773	-0.044113
30	P2	-19.311661	0.082849	0.101507

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.232539	0.006647	0.011986
7	P3	-8.232539	0.006647	0.011986
11	P3	-8.232539	0.006647	0.011986
15	P3	-8.232539	0.006647	0.011986
19	P3	-8.232539	0.006647	0.011986
22	P3	-8.232539	0.006647	0.011986
26	P3	-8.232479	0.006649	0.012131
30	P3	-8.232479	0.006649	0.012131

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.101951	0.052103	-0.081267
7	P1a	-10.071198	0.125502	-0.007942
11	P1a	-10.681475	0.061277	-0.021620
15	P1a	-10.926644	0.145150	0.125088
19	P1a	-15.724647	0.072033	-0.131431
22	P1a	-20.949827	1.496535	-0.321564
26	P1a	-15.275437	0.329907	-0.156954
30	P1a	-18.372175	0.666005	0.040796

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.416502	0.038067	-0.051621
7	P1	-2.424263	0.020597	0.006308
11	P1	-2.919096	0.018641	0.018622
15	P1	-3.846671	0.038558	0.003885
19	P1	-3.565210	0.011273	-0.035108
22	P1	-5.026266	0.031260	0.051980
26	P1	-5.964423	0.049557	-0.077984
30	P1	-5.279298	0.030845	-0.038653

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.108538	0.038570	-0.034943
7	P2	-21.961145	0.064257	-0.041410
11	P2	-10.631412	0.034511	0.040352
15	P2	-4.838164	0.033150	-0.052870
19	P2	-6.815856	0.034751	-0.020682
22	P2	-8.079066	0.034752	-0.003838
26	P2	-24.288759	0.043203	0.018977
30	P2	-21.717020	0.046223	0.036782

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.063169	0.004221	-0.013323
7	P3	-8.063097	0.004217	-0.013448
11	P3	-8.063203	0.004214	-0.013555
15	P3	-8.063282	0.004220	-0.013234
19	P3	-8.063205	0.004227	-0.013087
22	P3	-8.063277	0.004219	-0.013725
26	P3	-8.063060	0.004207	-0.013429
30	P3	-8.063178	0.004210	-0.013617

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	0.000635372
	stdev	2.57387e-07
MEAN Q	mean	0.000361907
	stdev	2.75253e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.106057
	stdev	0.00238642
STDEV Q	mean	0.106057
	stdev	0.00244193

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007033[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_1PNPDE20070331_015157_000000532056_00461_26567_3757.N1	1	0
ASA_GM1_1PNPDK20070330_080056_000006582056_00450_26556_0149.N1	0	109
ASA_GM1_1PNPDK20070330_080102_000000782056_00450_26556_9771.N1	0	65
ASA_GM1_1PNPDK20070330_080230_000005612056_00450_26556_9789.N1	0	44
ASA_GM1_1PNPDK20070330_112243_000006222056_00452_26558_0084.N1	0	14
ASA_GM1_1PNPDK20070330_172811_000002892056_00456_26562_0672.N1	0	15
ASA_WSM_1PNPDK20070331_094426_000000852056_00466_26572_1239.N1	0	18

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

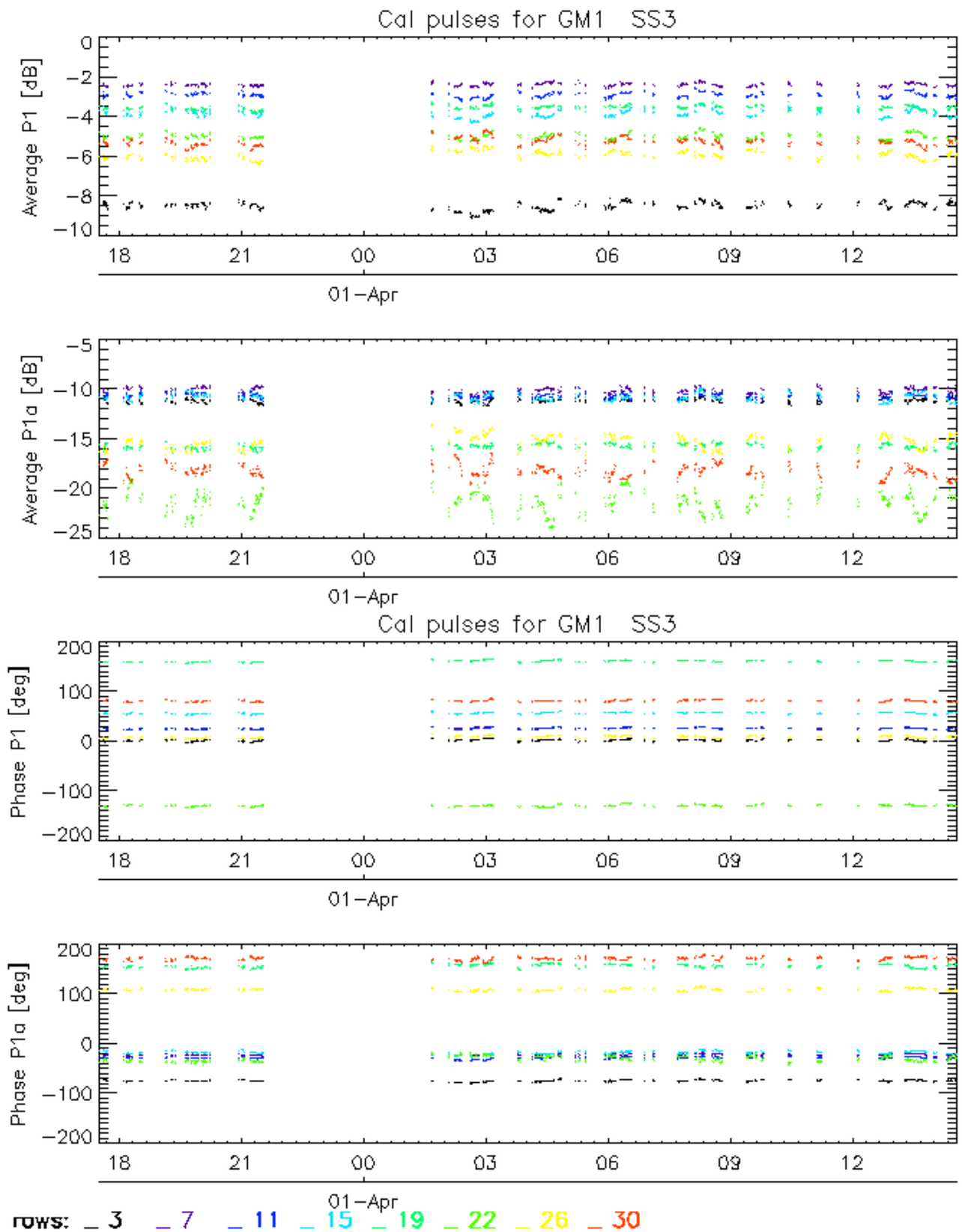
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

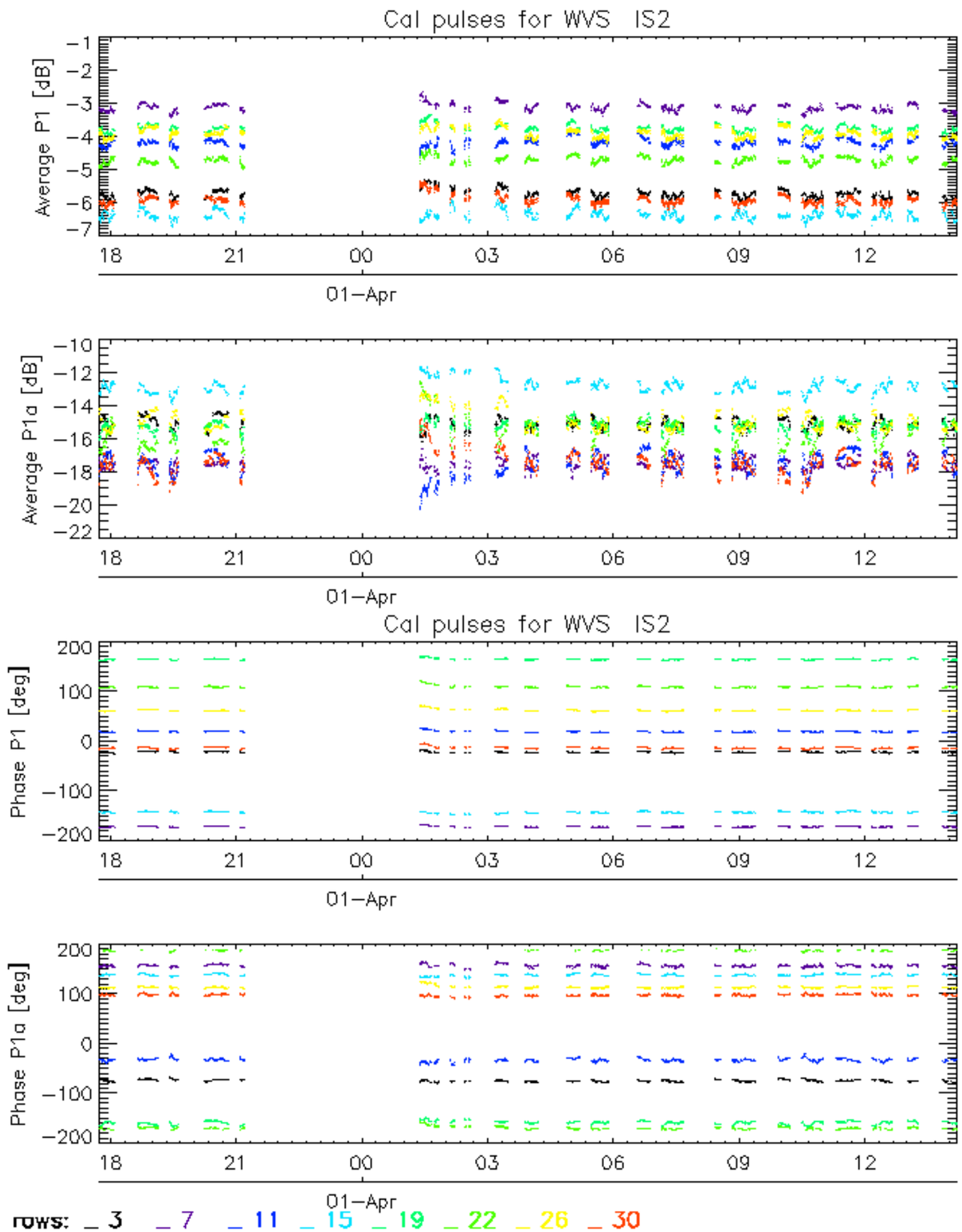
7.5 - Absolute Doppler for GM1

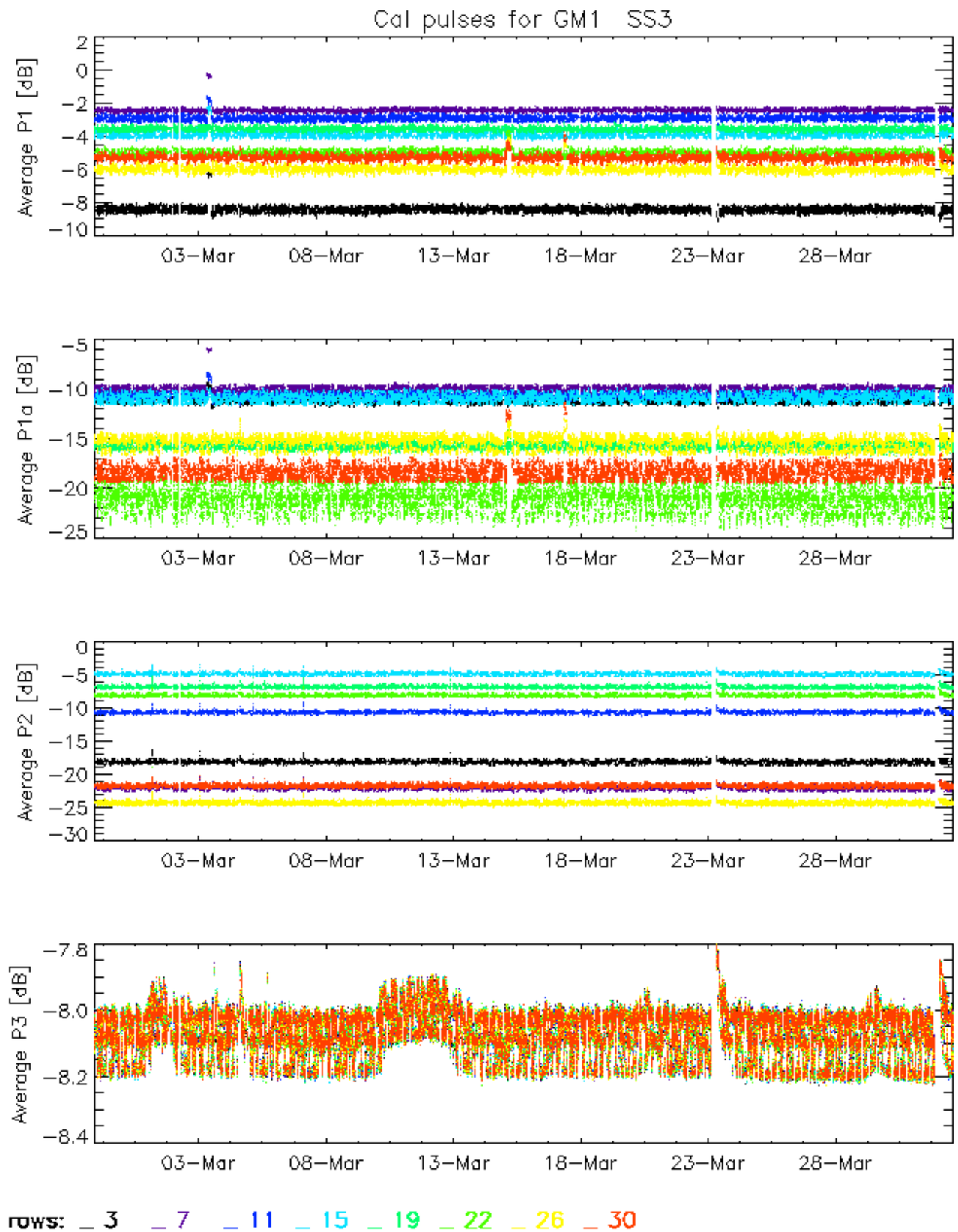
Evolution of Absolute Doppler
Acsending
Descending

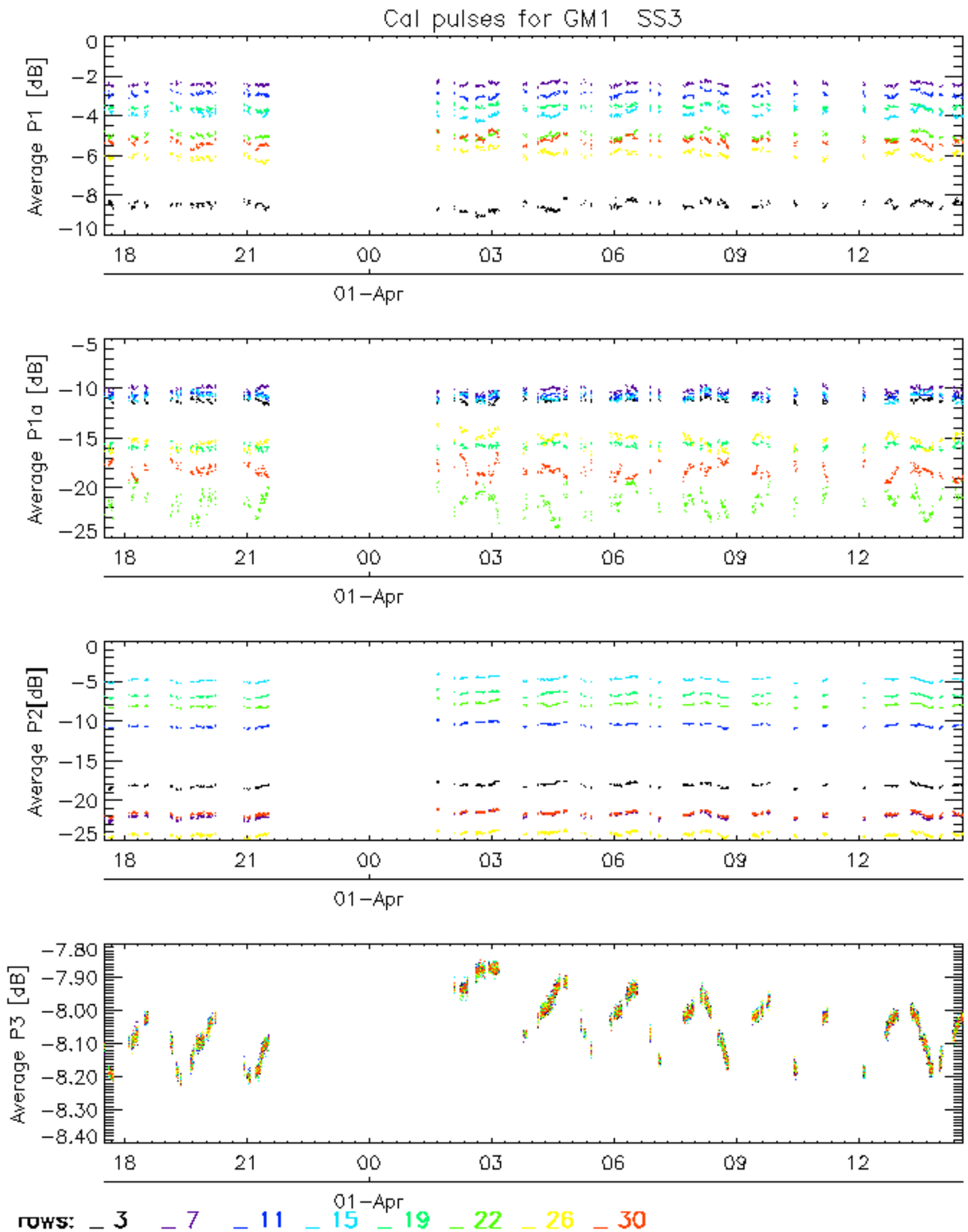
7.6 - Doppler evolution versus ANX for GM1

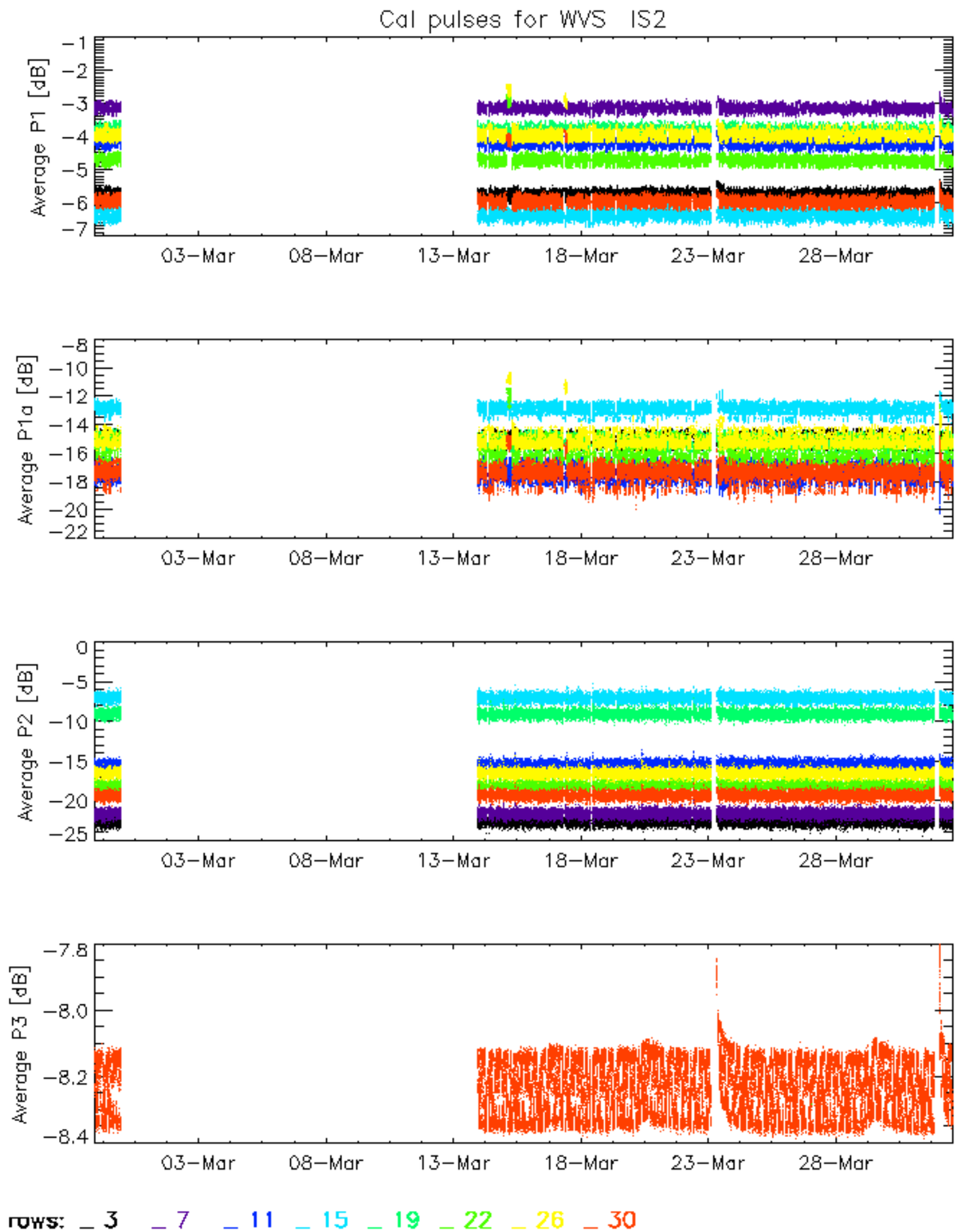
Evolution Doppler error versus ANX

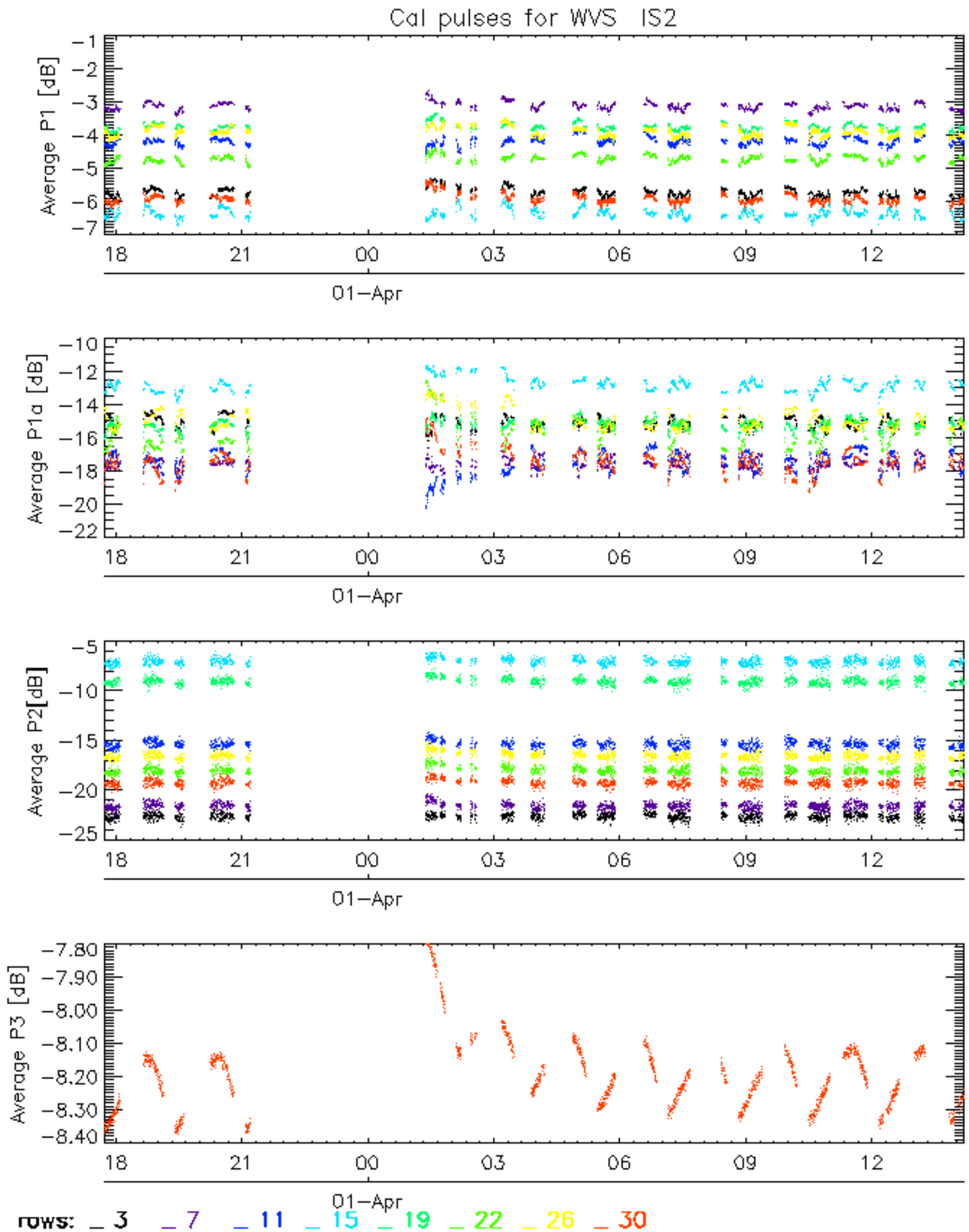

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
12
01−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30


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

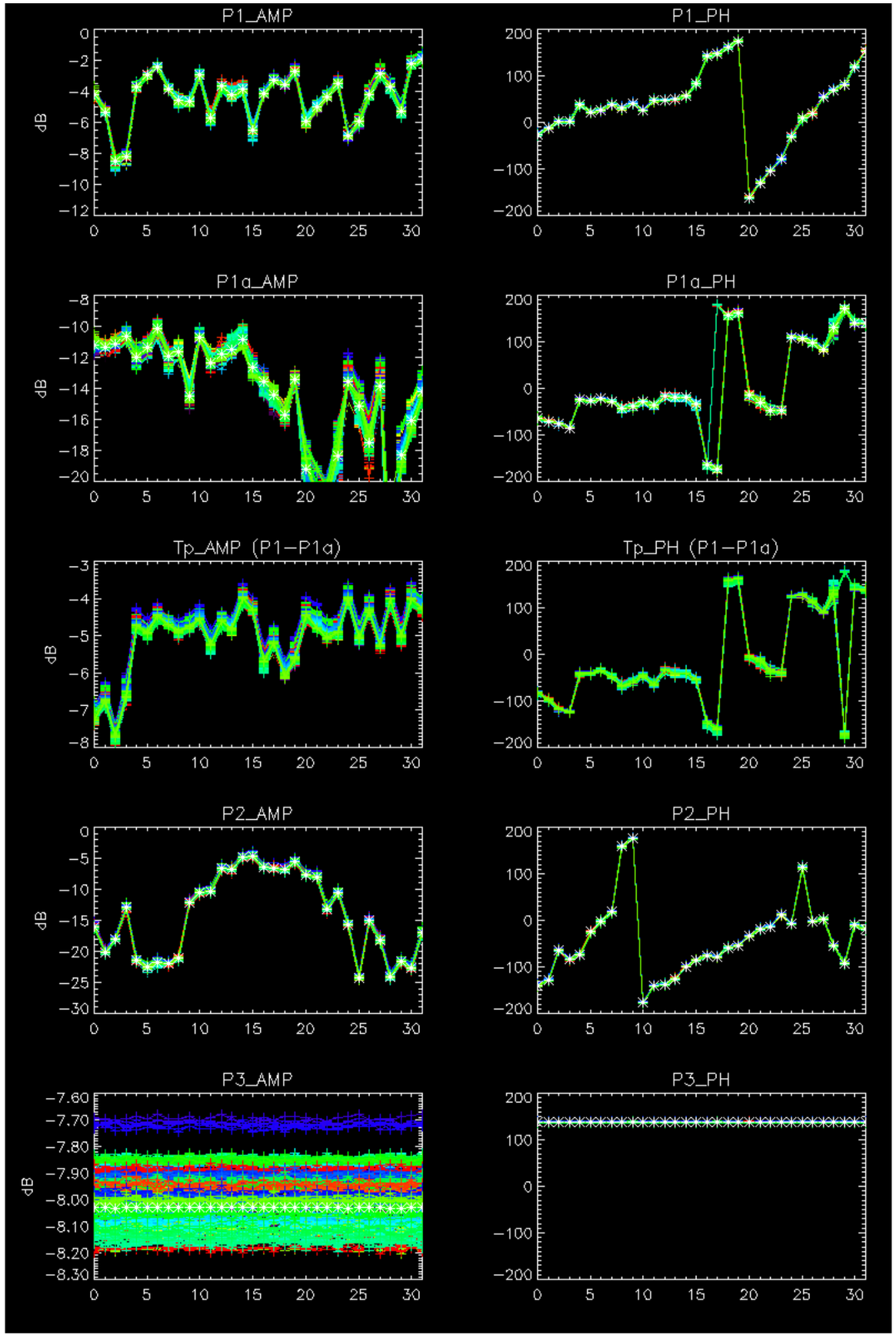

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2 [dB]
Average P3 [dB]
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar
rows: 3 7 11 15 19 22 26 30

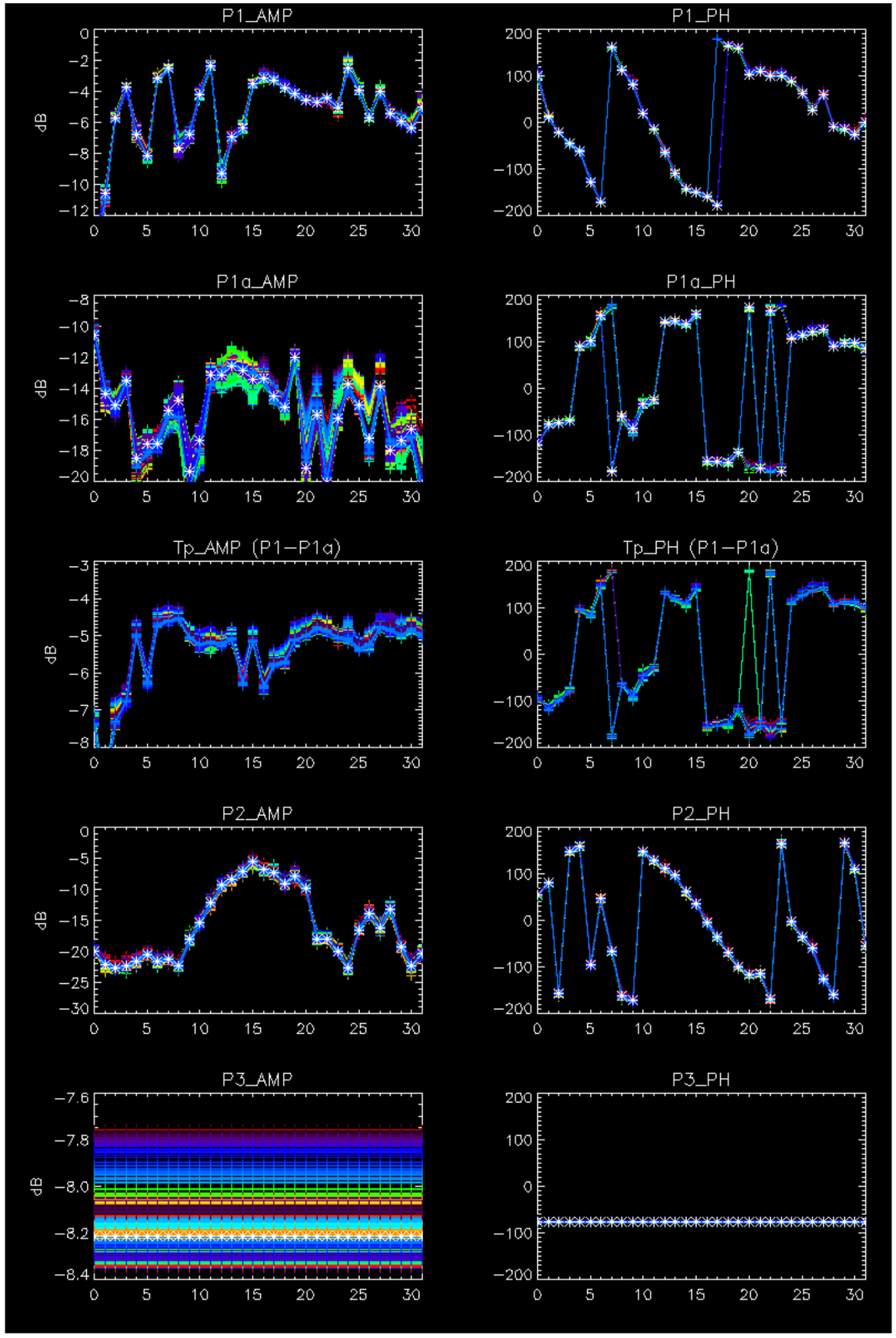

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
12
01−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
Average P1a [dB]
Average P2 [dB]
Average P3 [dB]
03-Mar
08-Mar
13-Mar
18-Mar
23-Mar
28-Mar
rows: 3 7 11 15 19 22 26 30

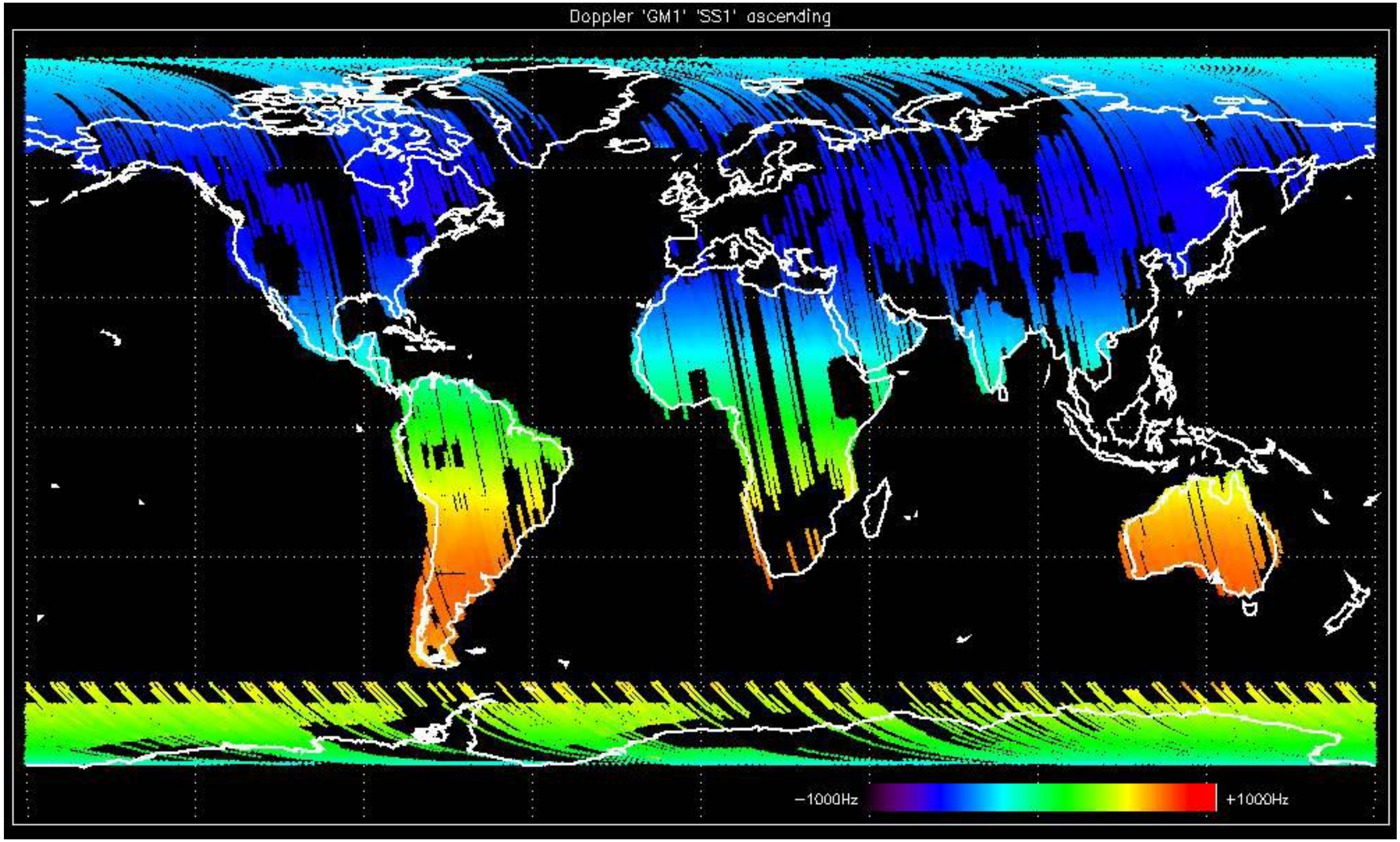

Cal pulses for WVS IS2
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
18
21
00
03
06
09
12
01−Apr
rows: 3 7 11 15 19 22 26 30

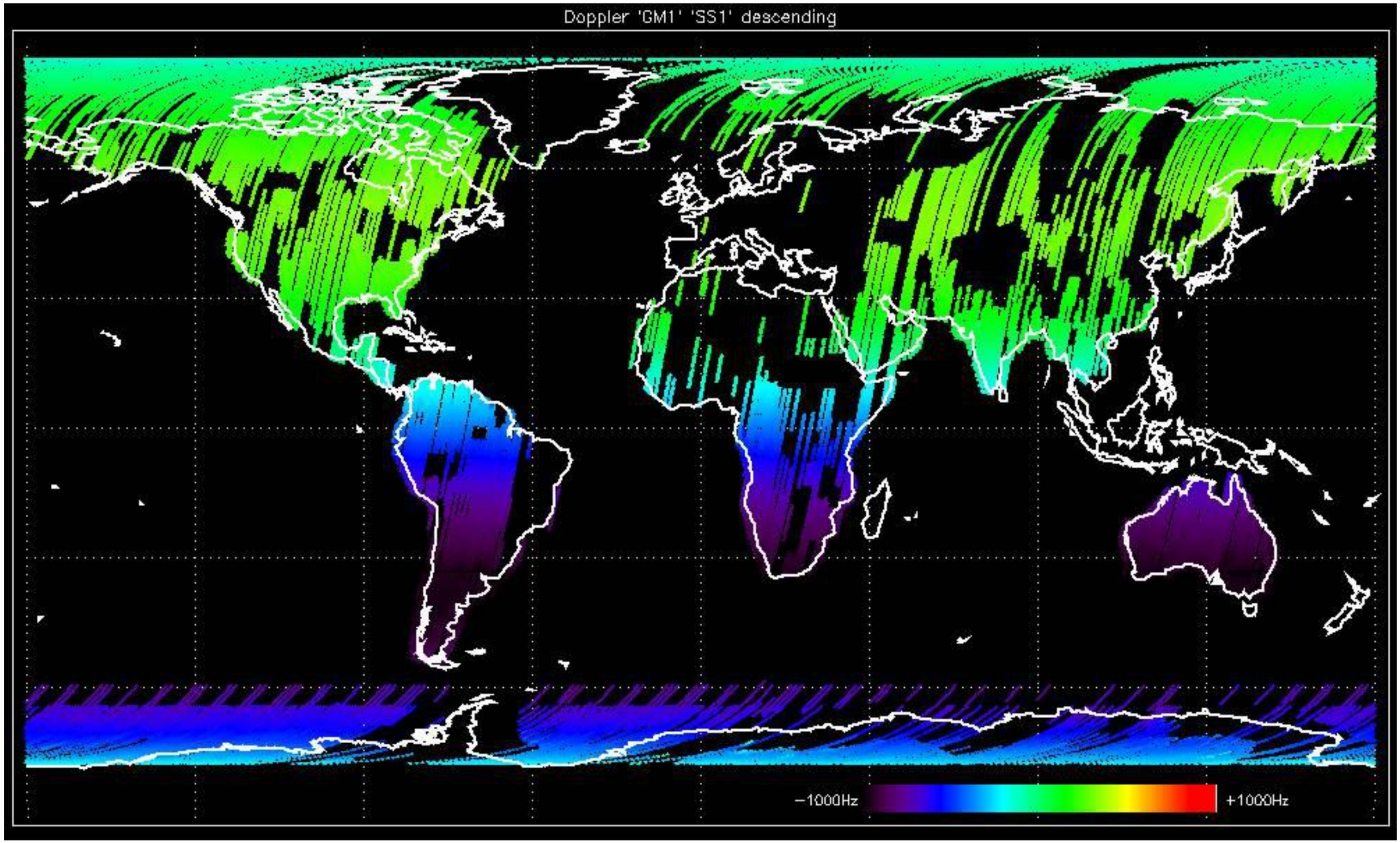
No anomalies observed.

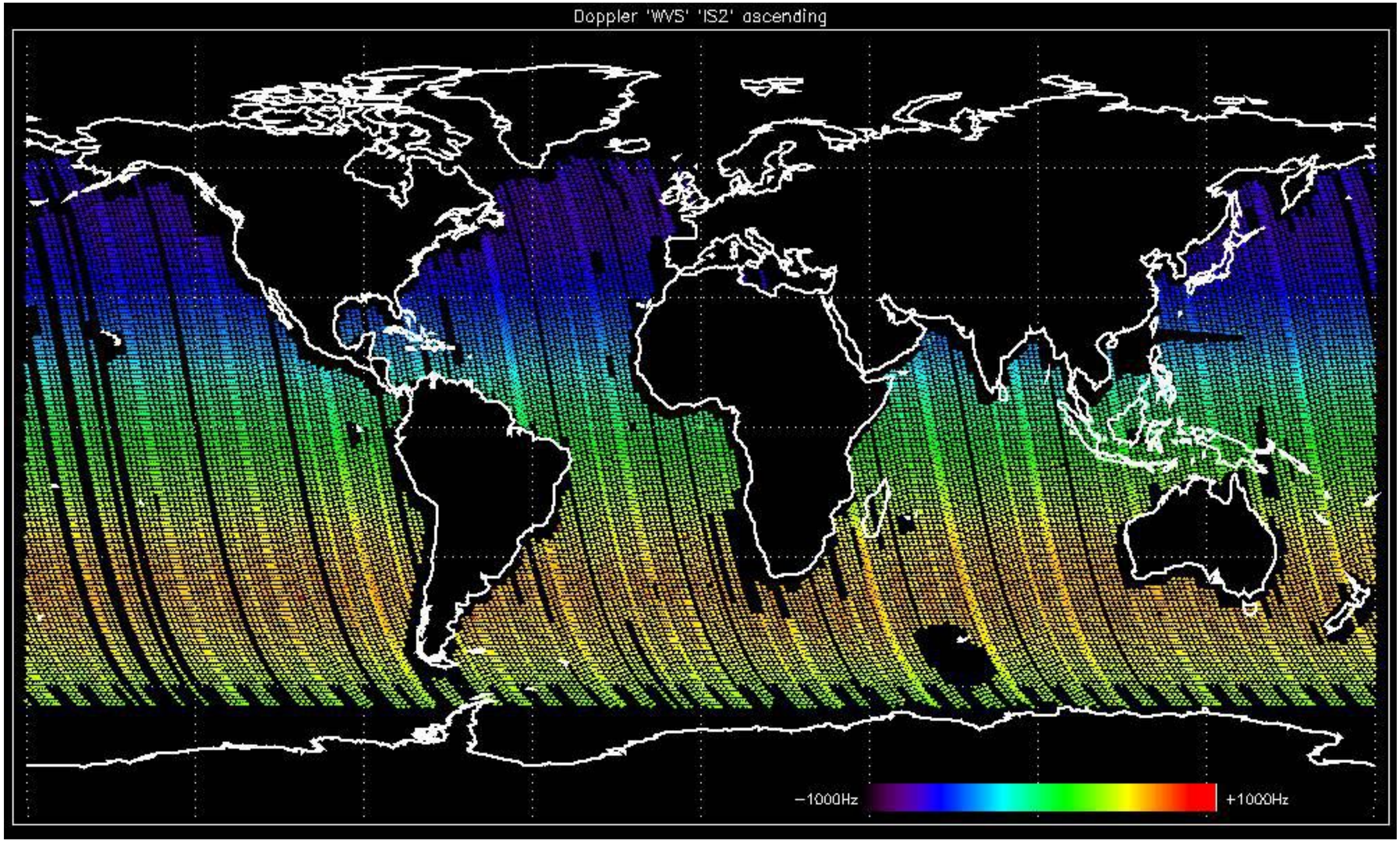

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

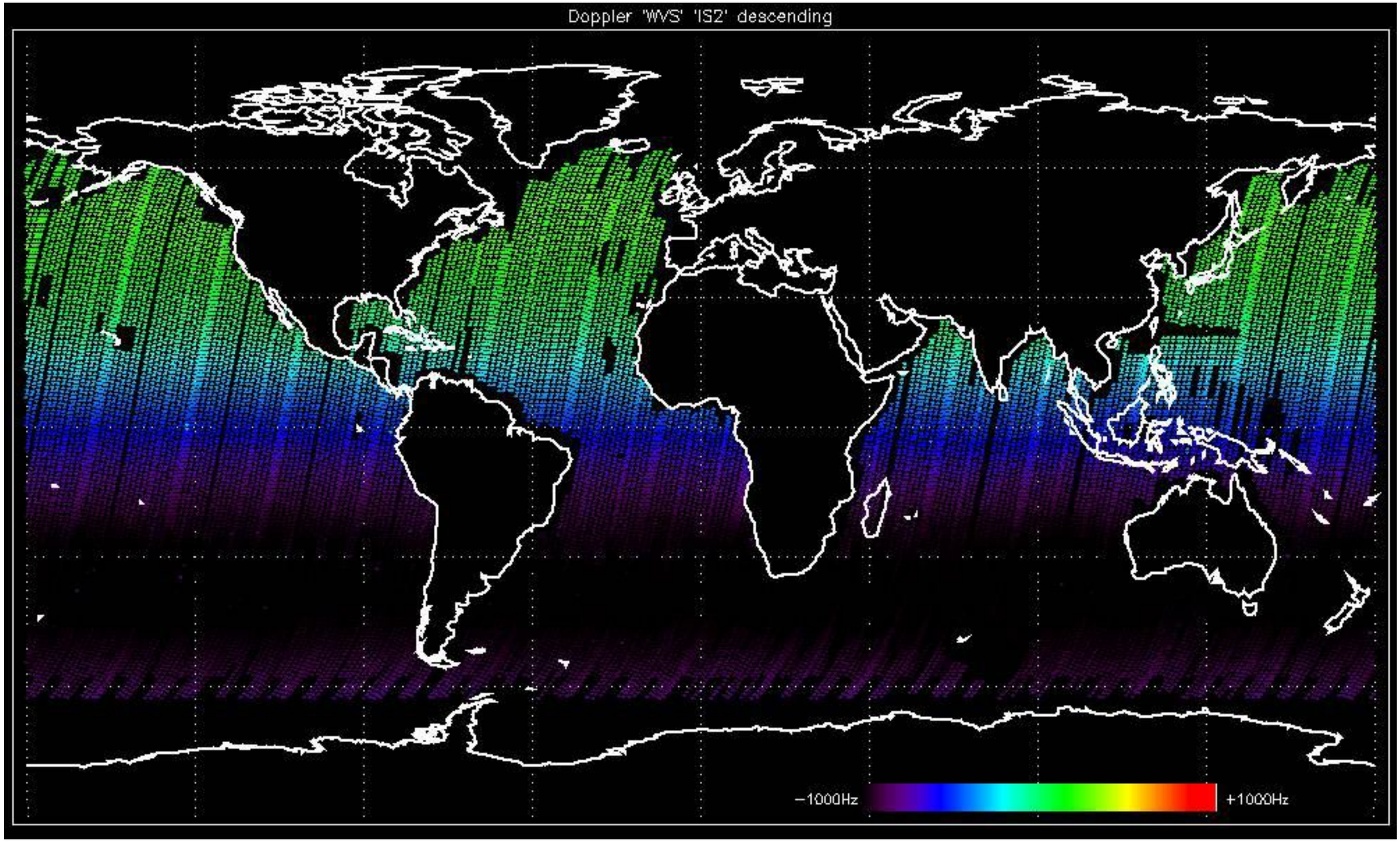

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

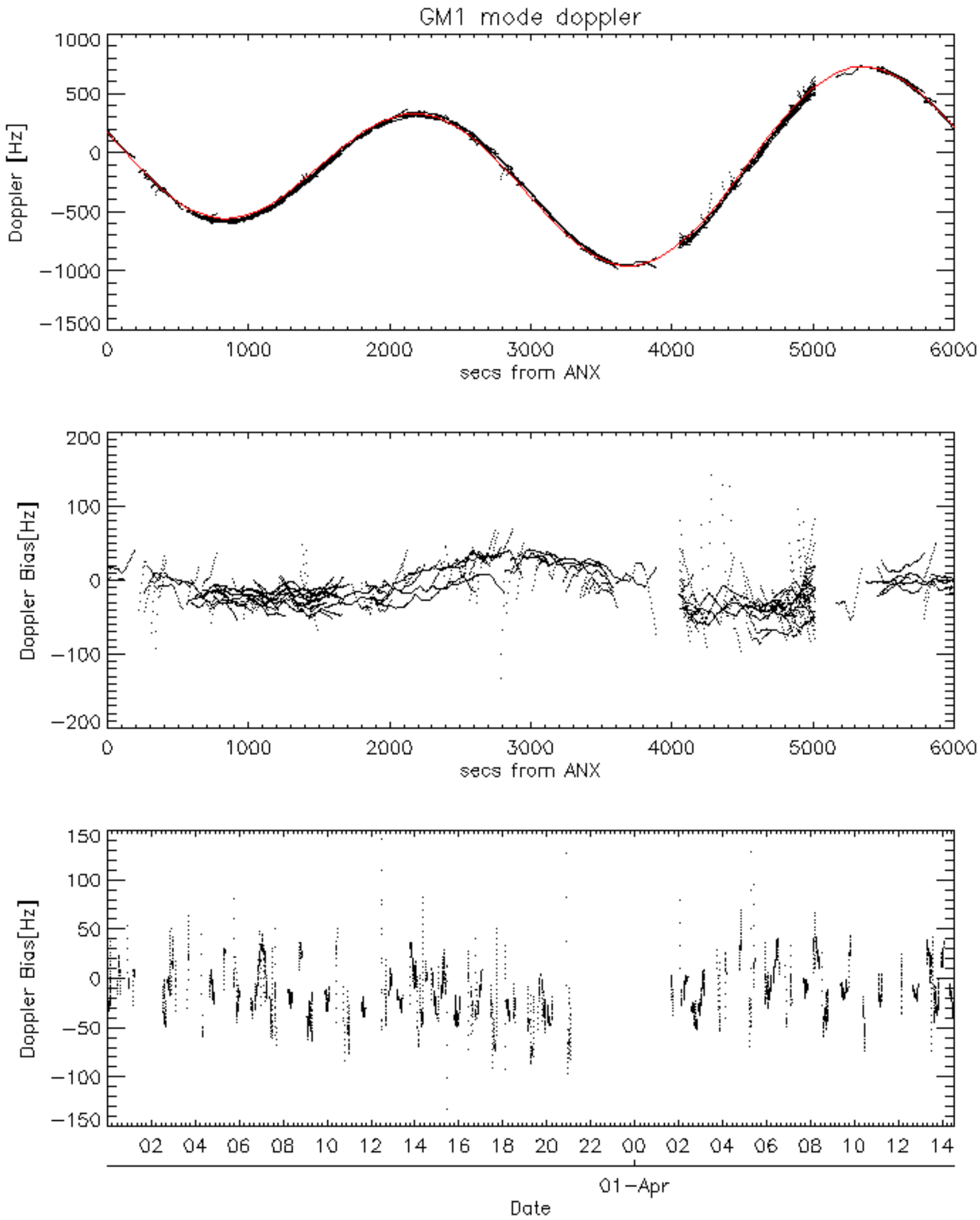
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

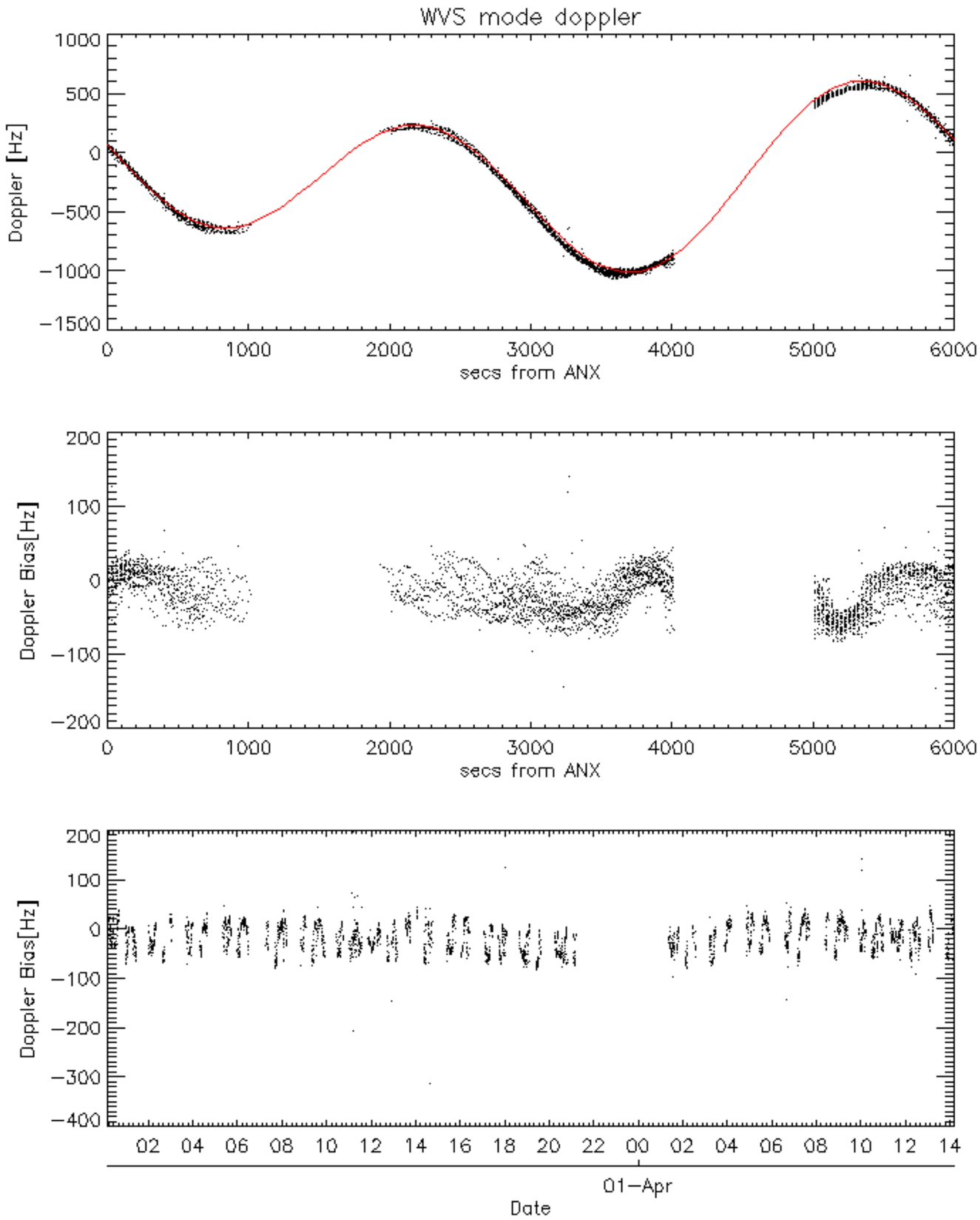

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

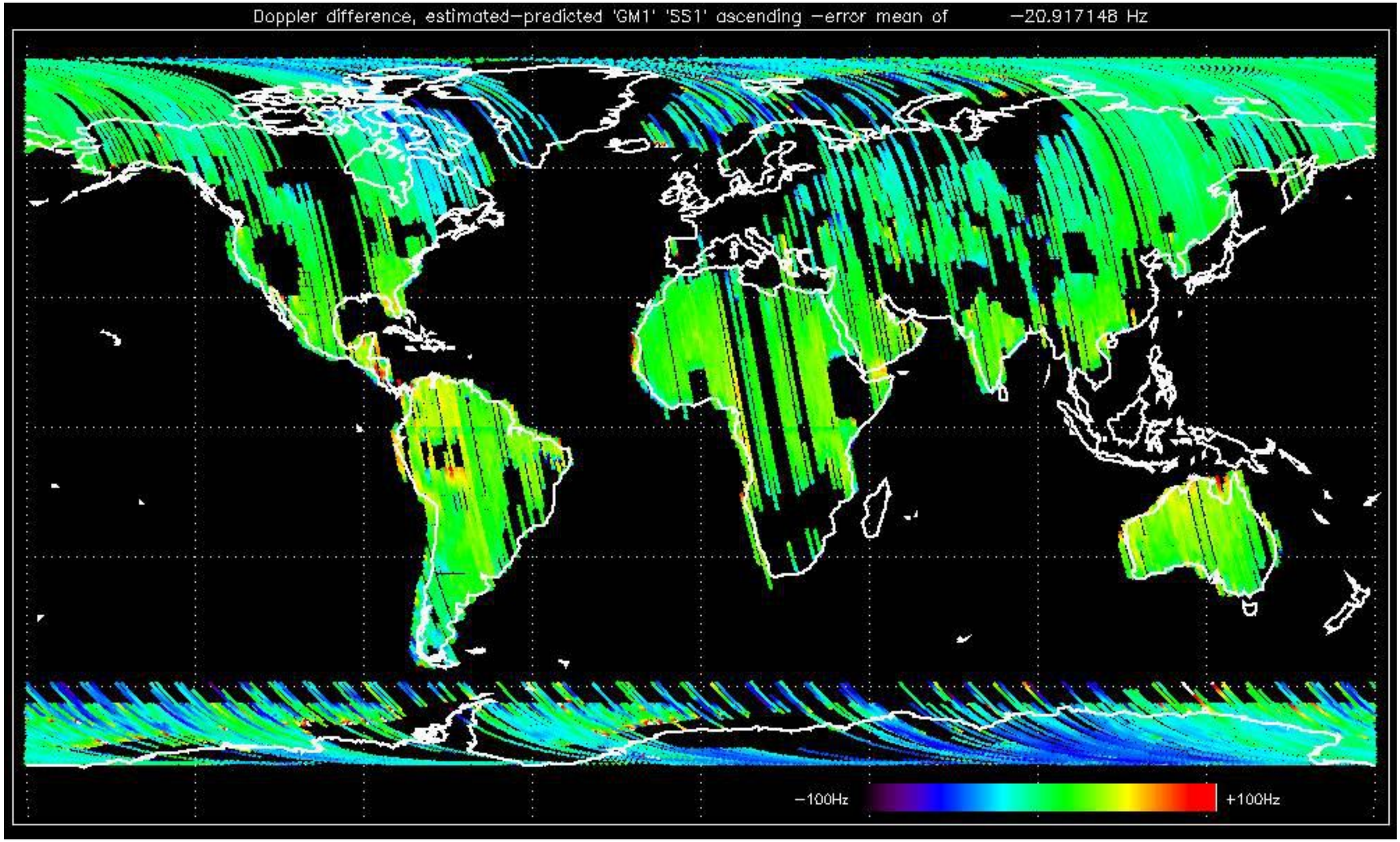

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

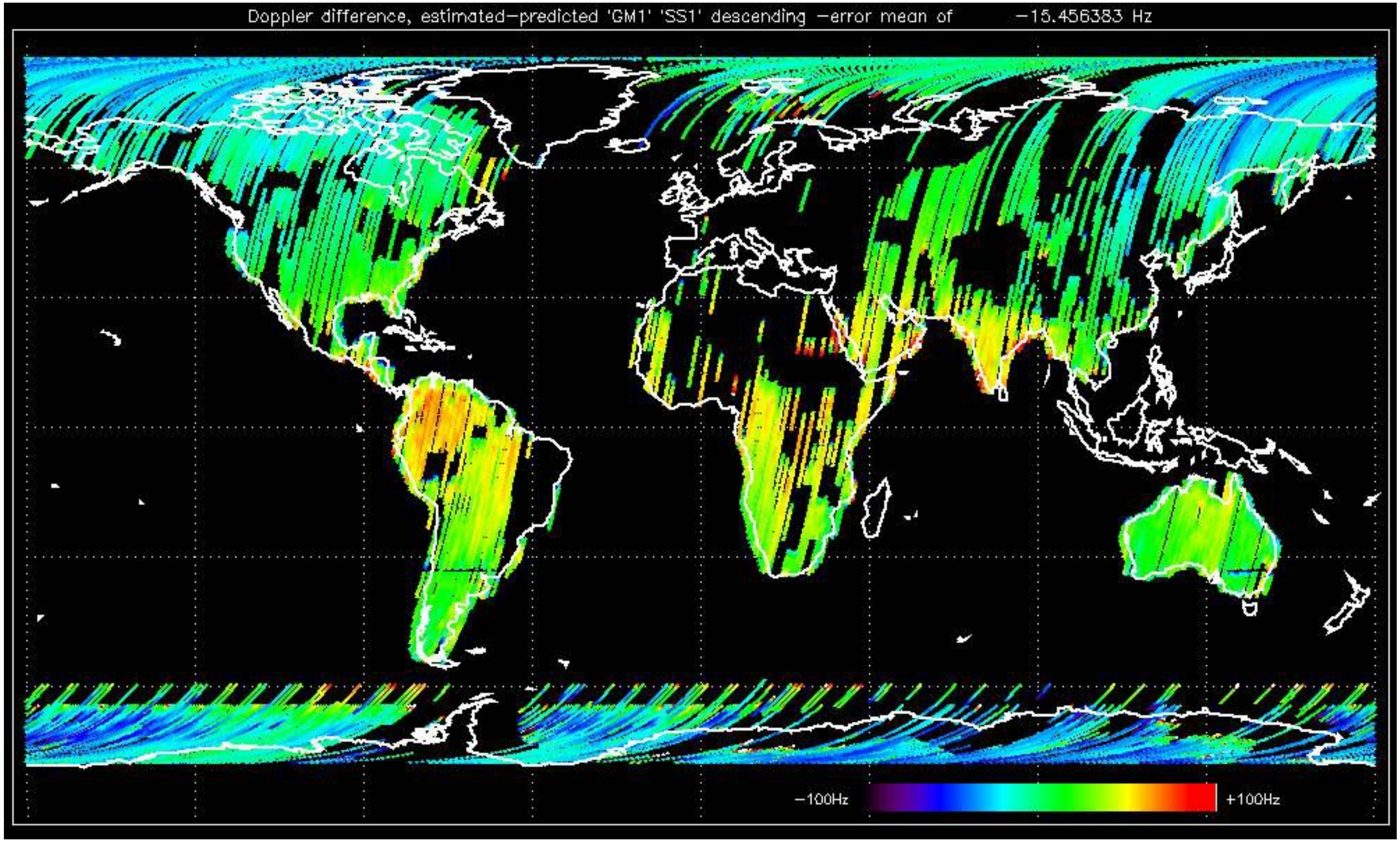

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

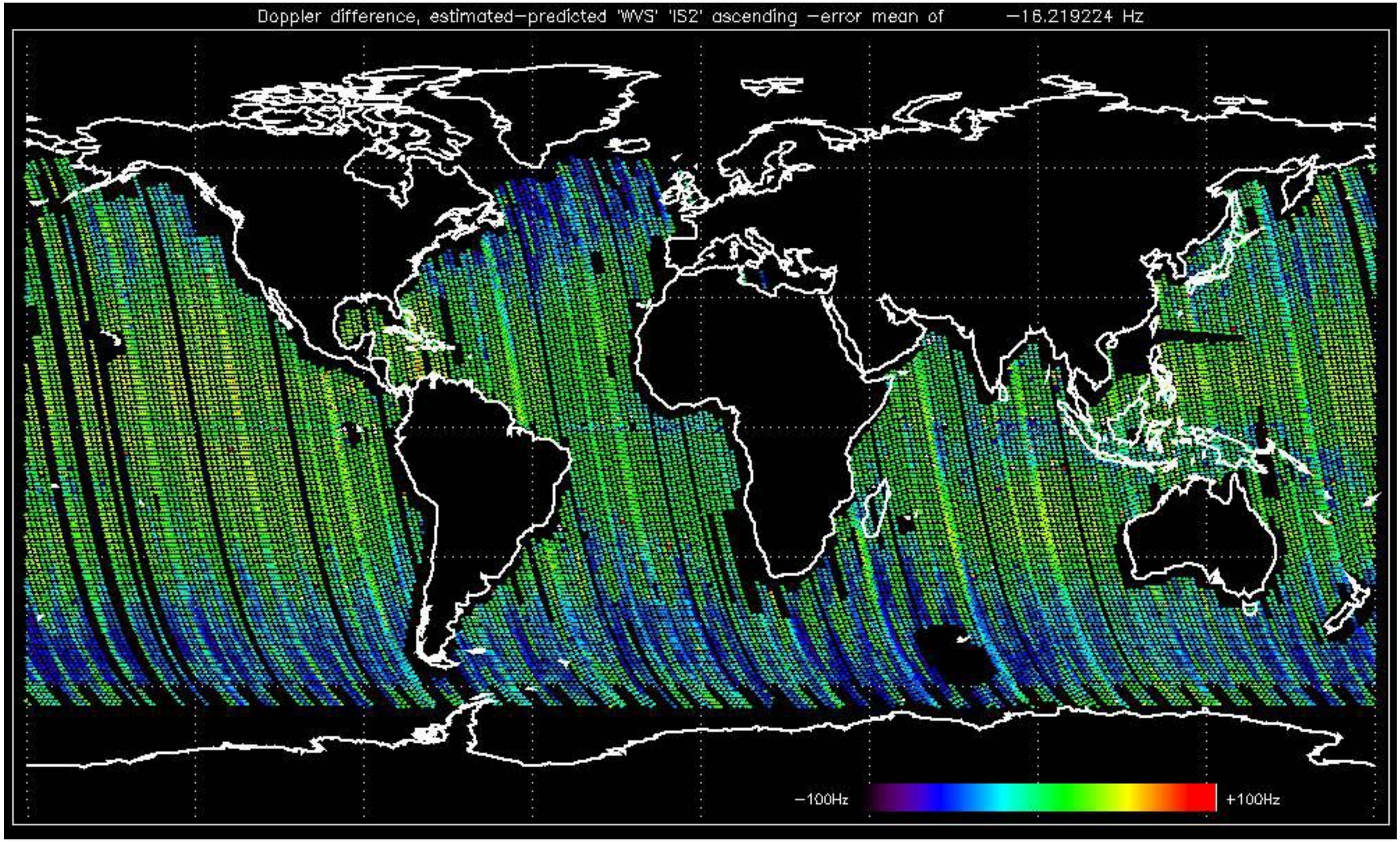

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

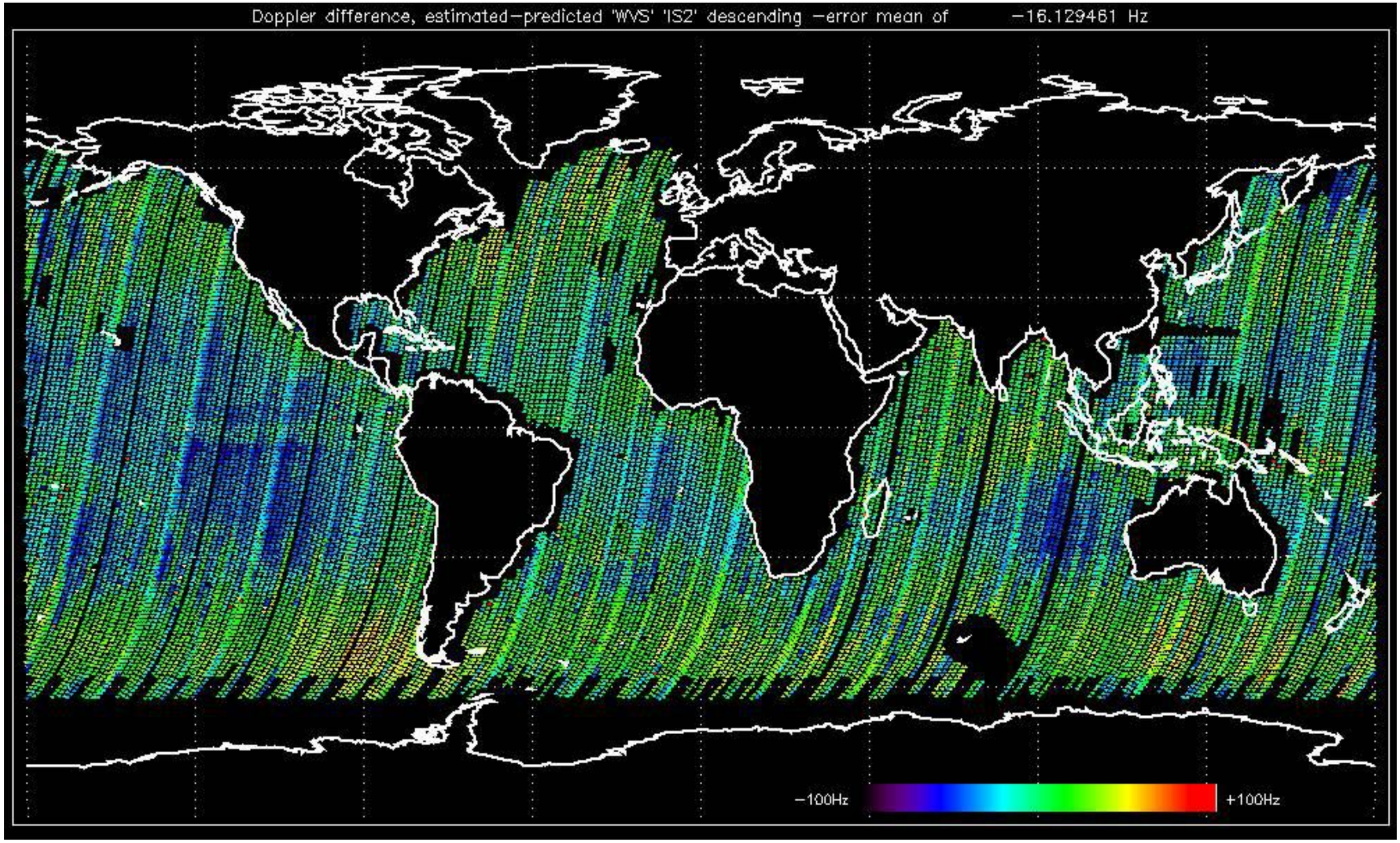

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02 04 06 08 10 12 14 16 18 20 22 00 02 04 06 08 10 12 14
01−Apr
Date


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
secs from ANX
Doppler Bias[Hz]
−300
−400
02 04 06 08 10 12 14 16 18 20 22 00 02 04 06 08 10 12 14
01−Apr
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −20.917148 Hz
−100Hz
+100Hz

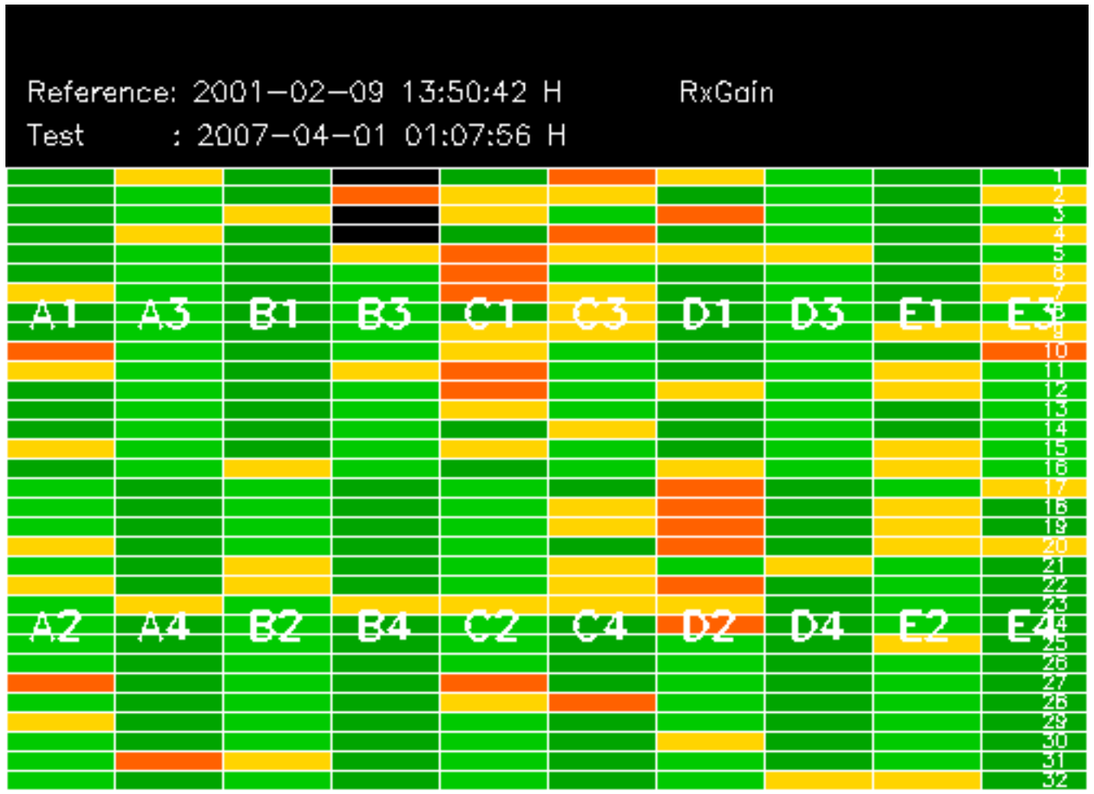

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -15.456383 Hz
-100Hz
+100Hz

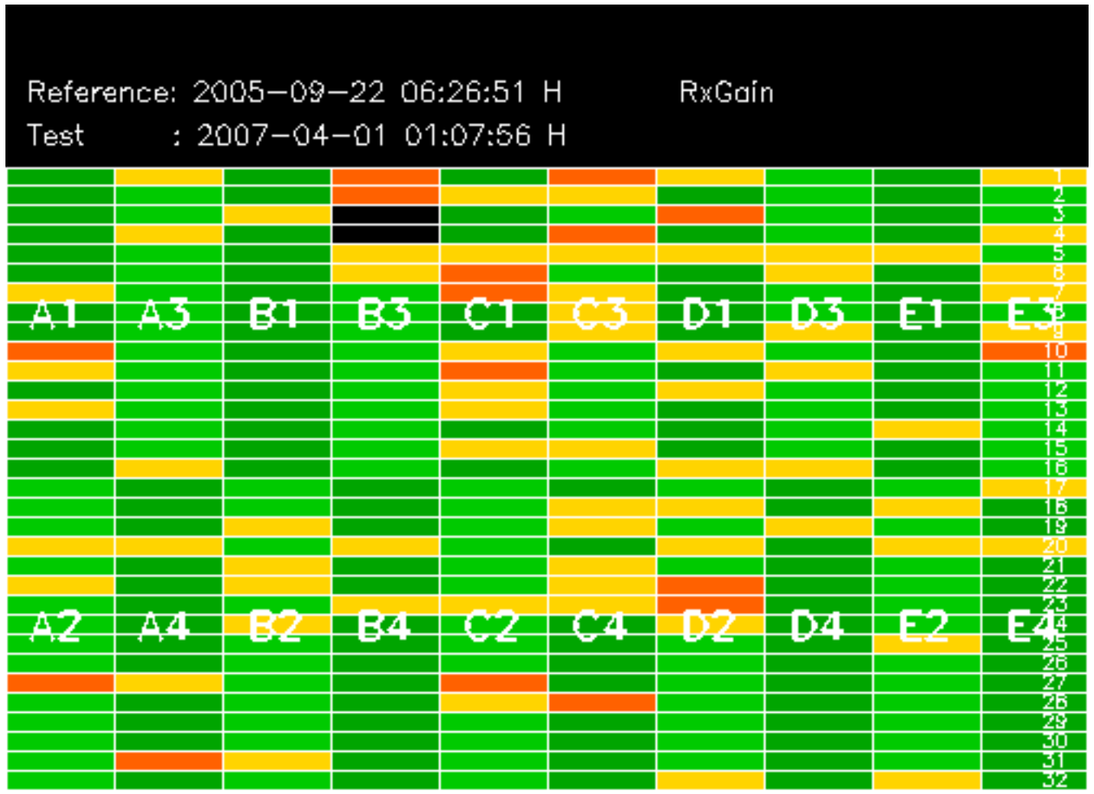

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −16.219224 Hz
−100Hz
+100Hz

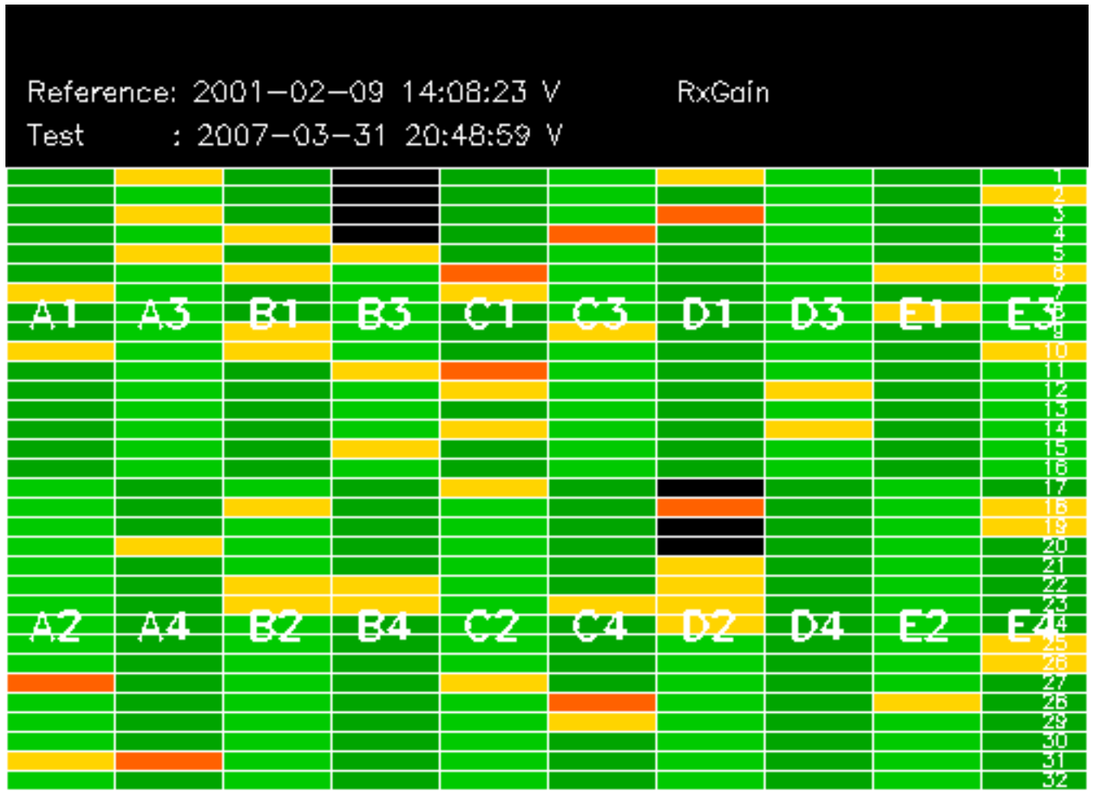

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −16.129461 Hz
−100Hz
+100Hz

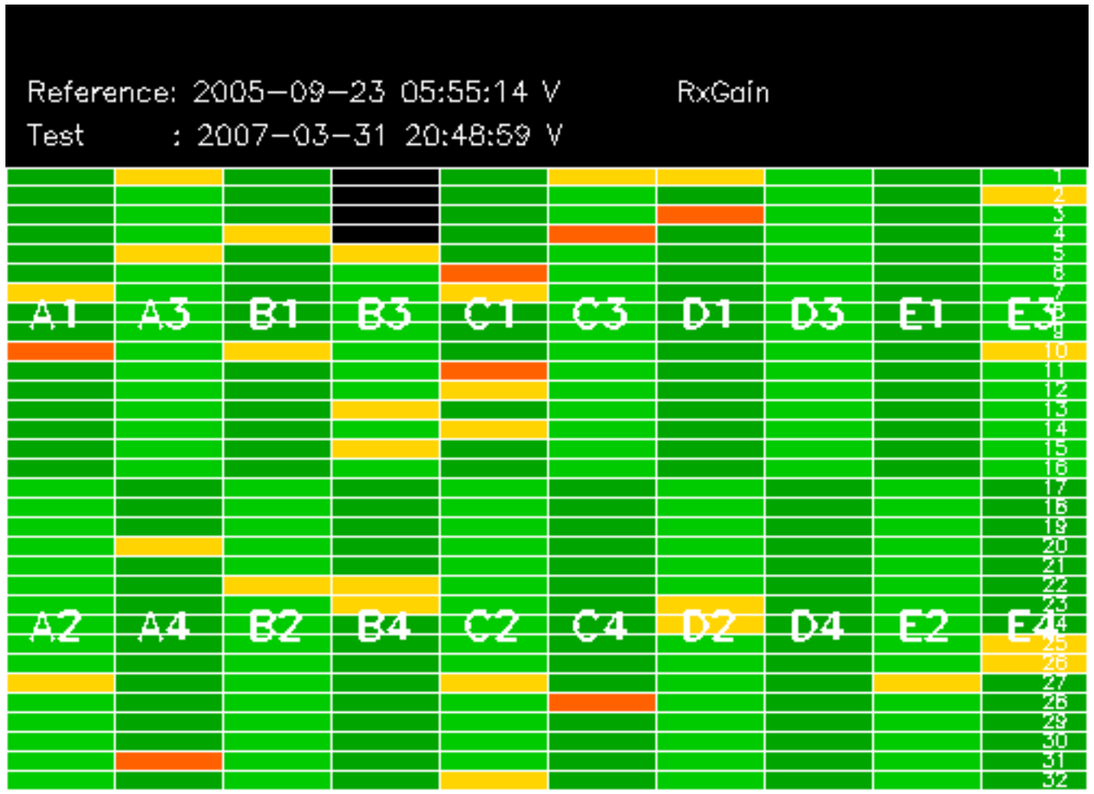
No anomalies observed on available MS products:

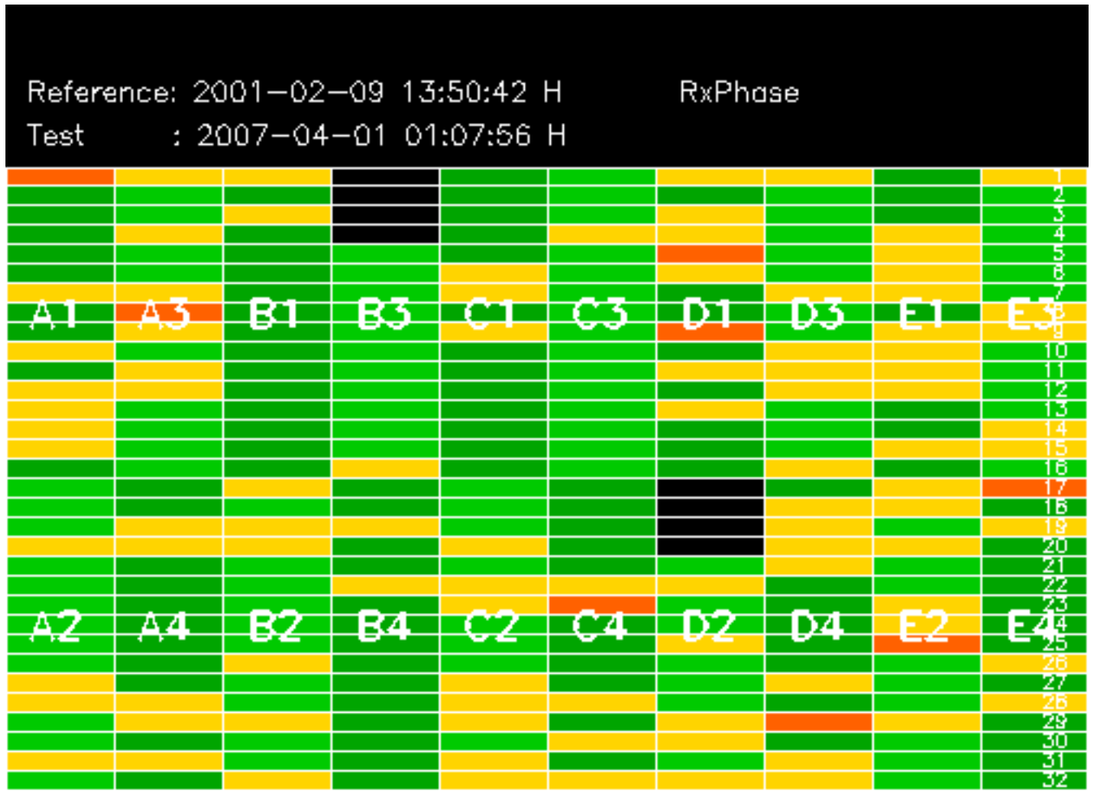
No anomalies observed.

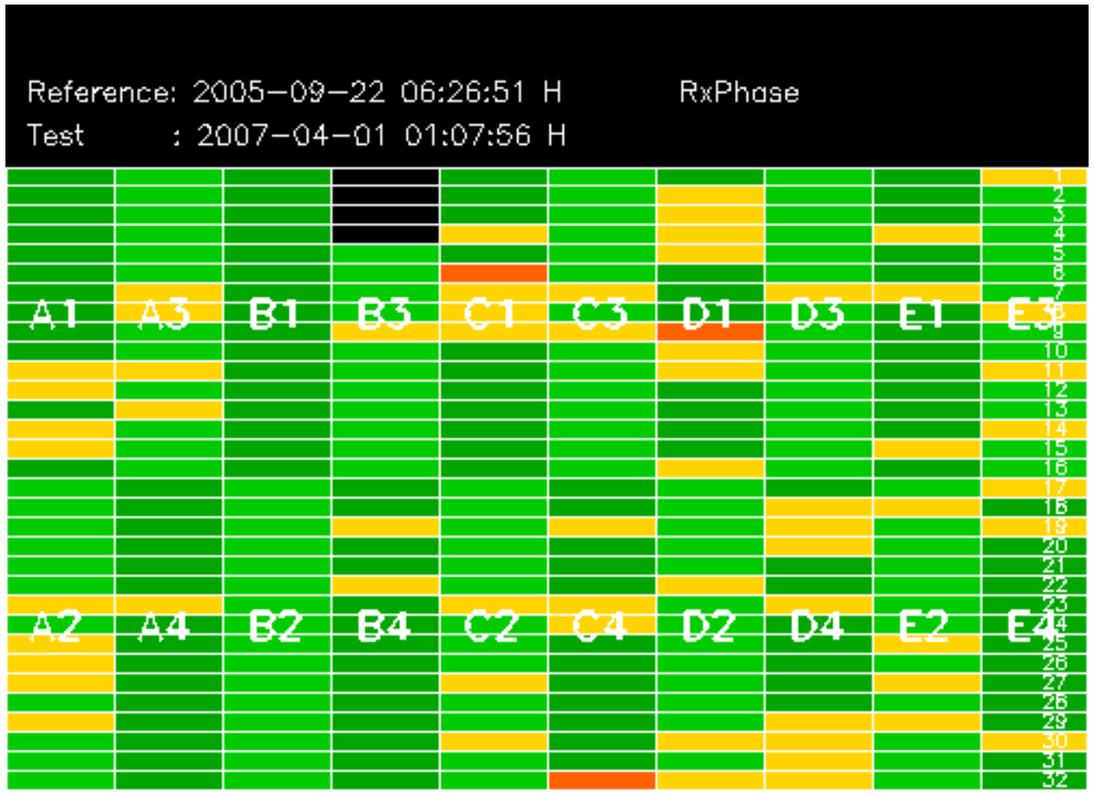

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

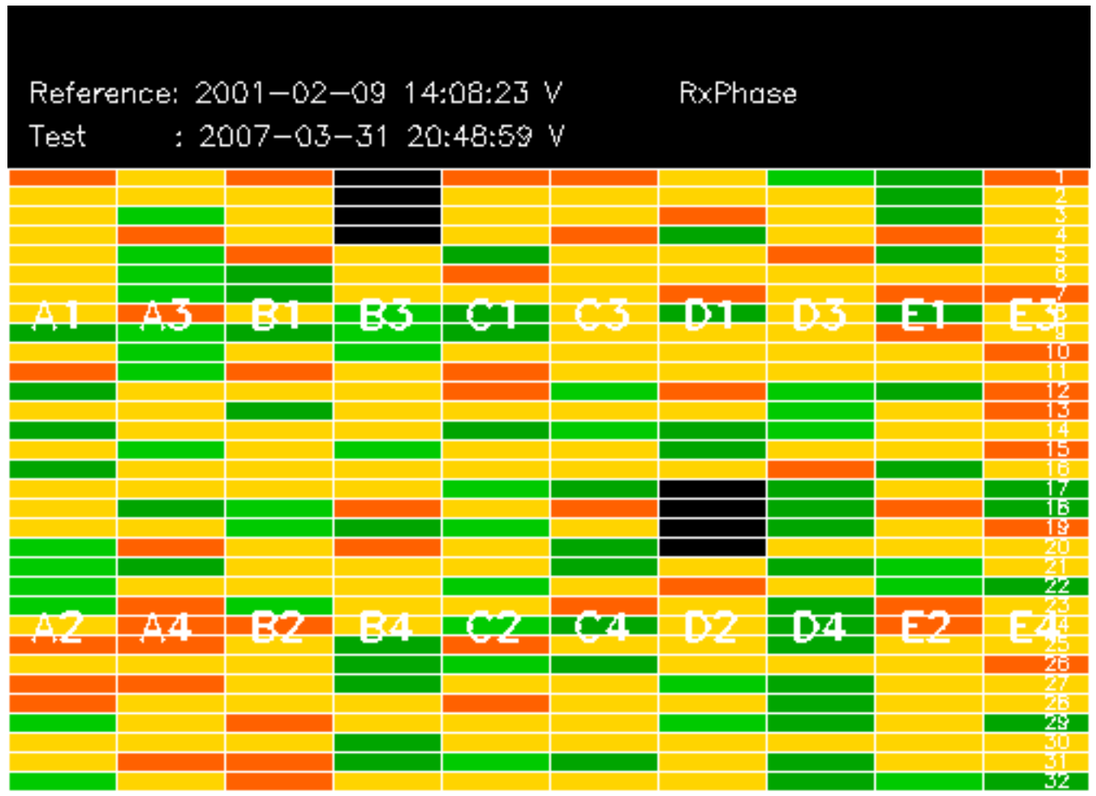

Reference: 2005-09-22 06:26:51 H
RxGain
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

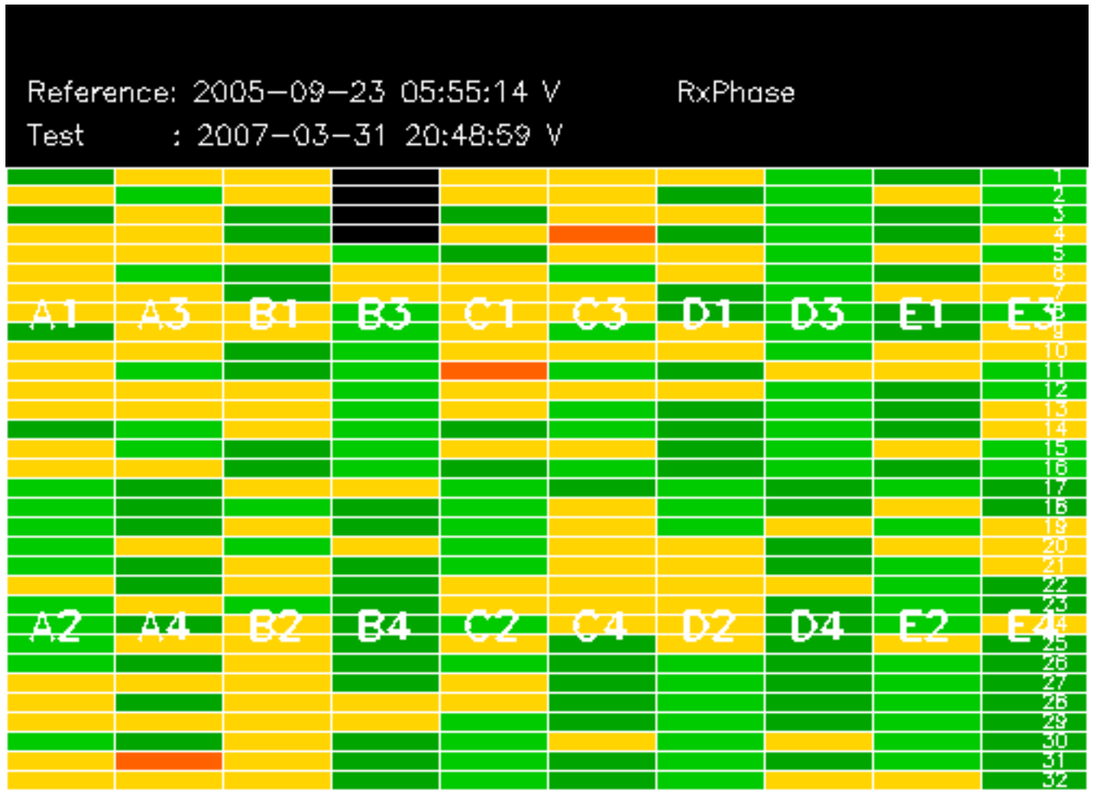

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

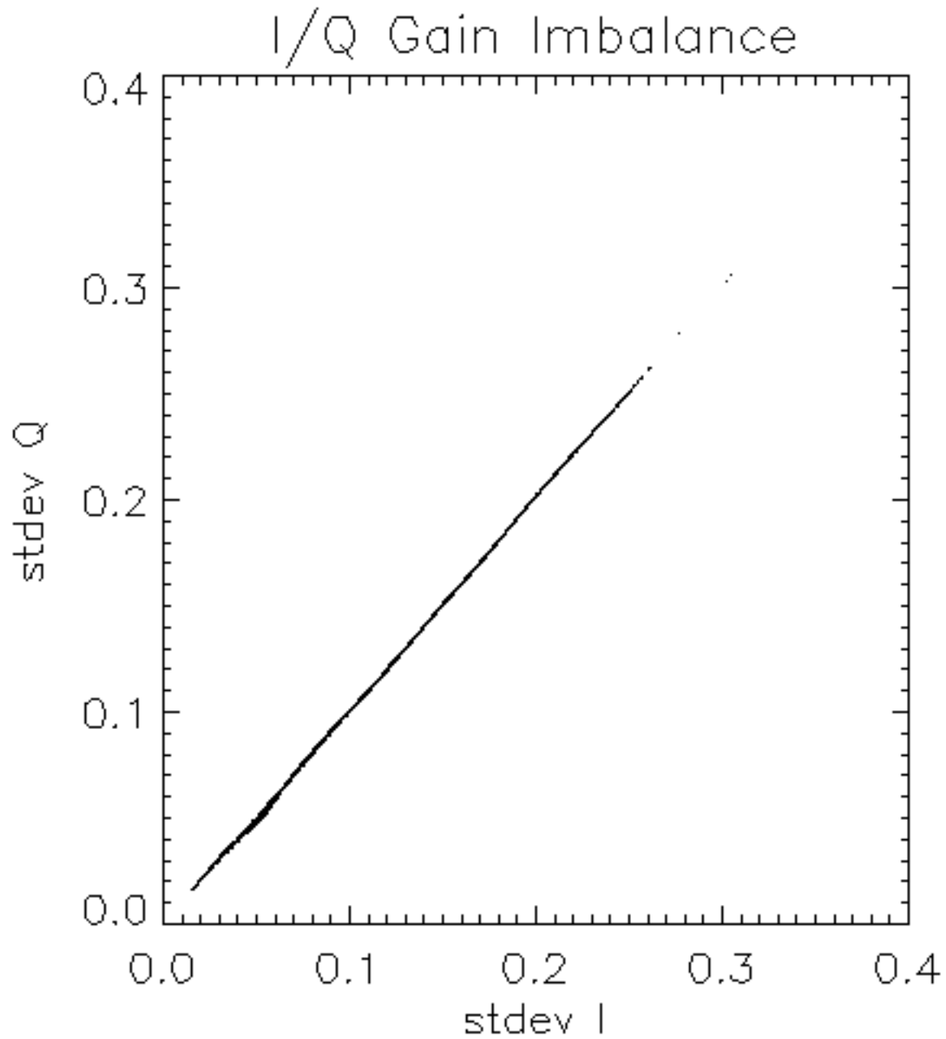

Reference: 2005-09-23 05:55:14 V
RxGain
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

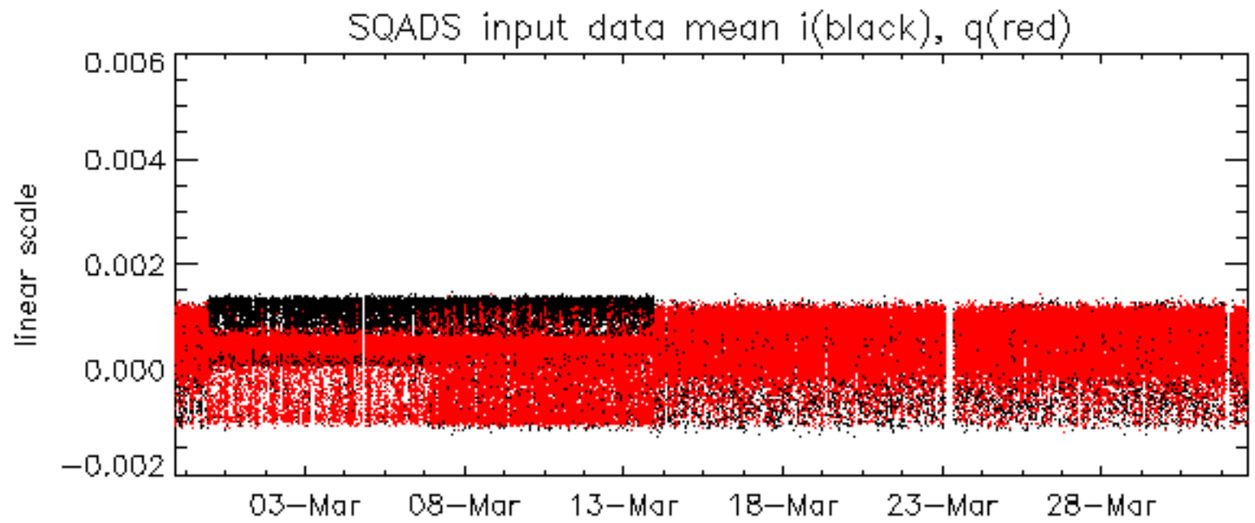

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

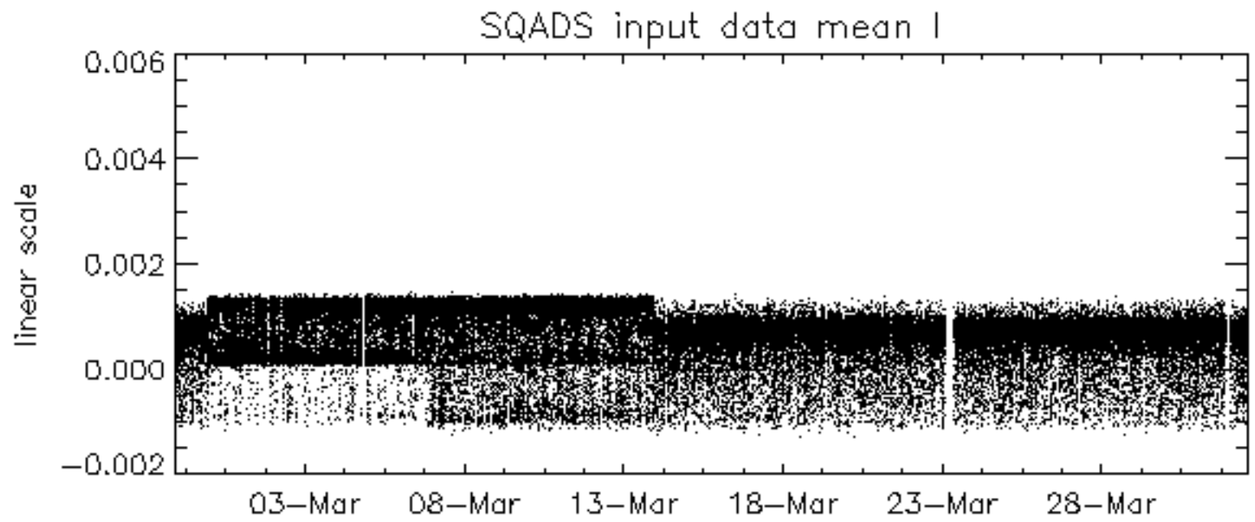

Reference: 2005-09-22 06:26:51 H
RxPhase
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

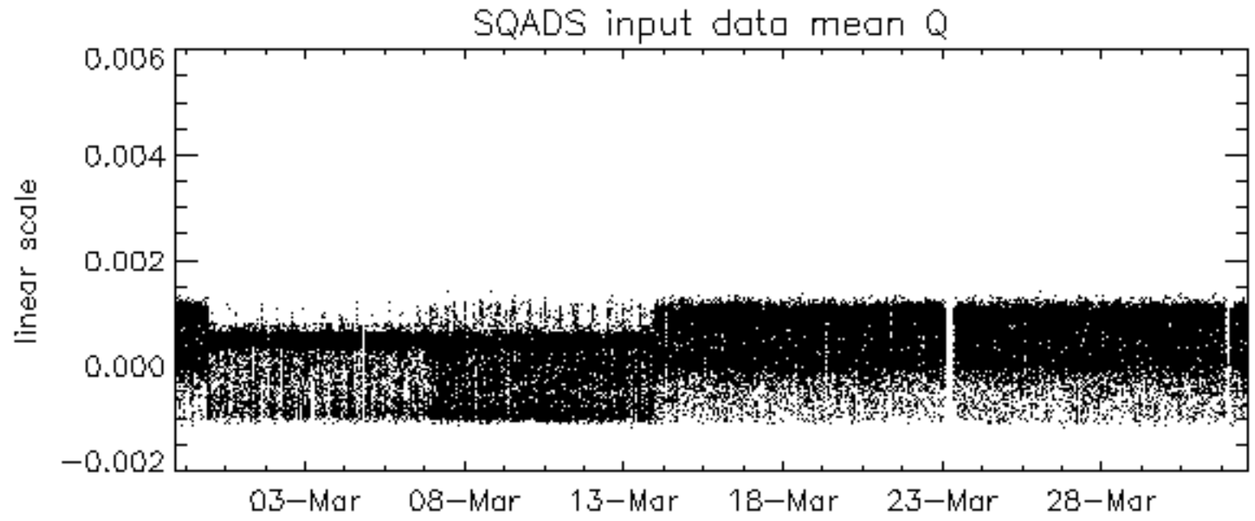

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

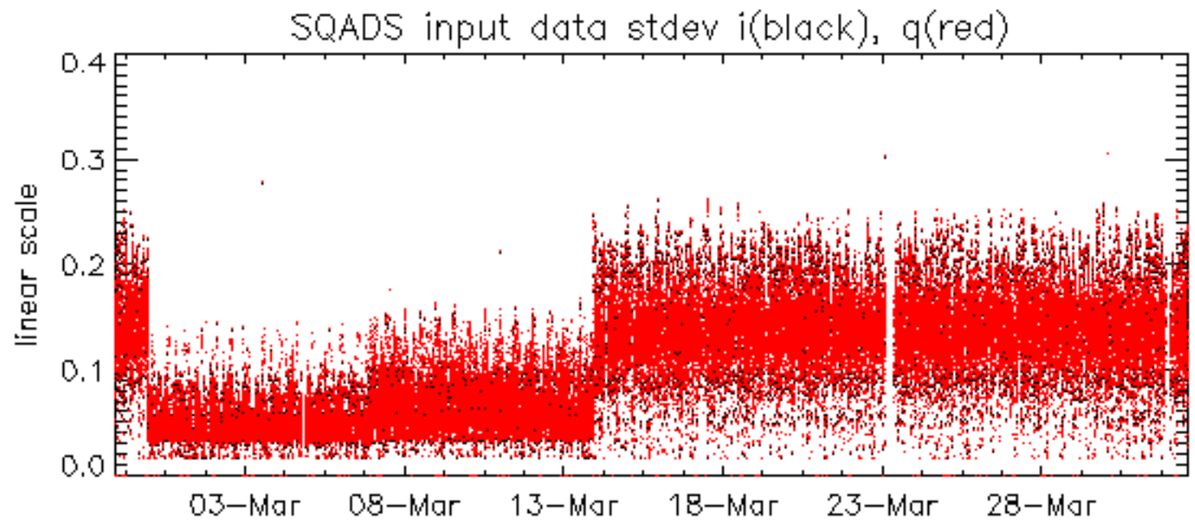

Reference: 2005-09-23 05:55:14 V
RxPhase
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

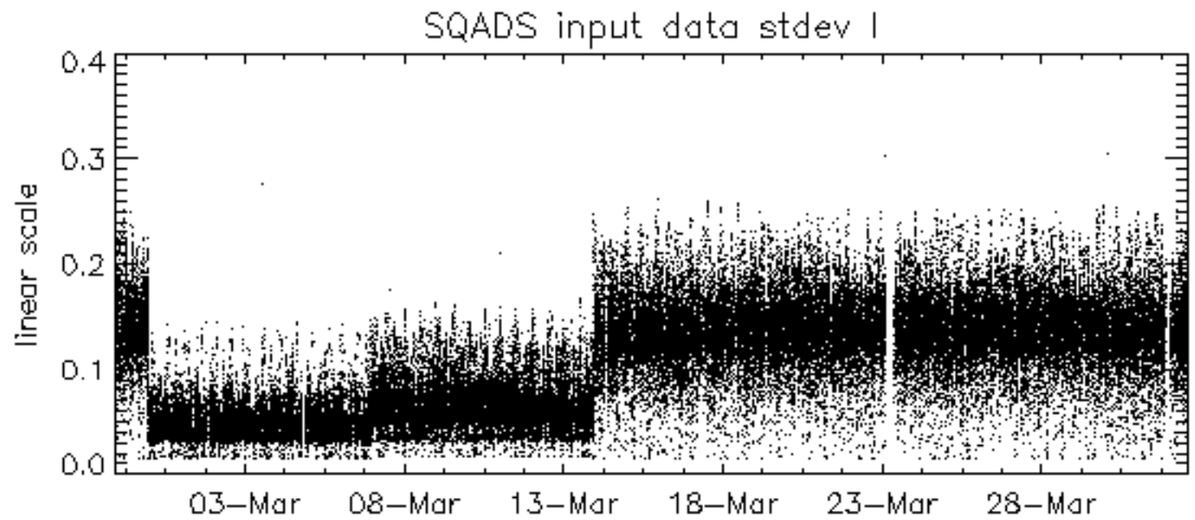

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

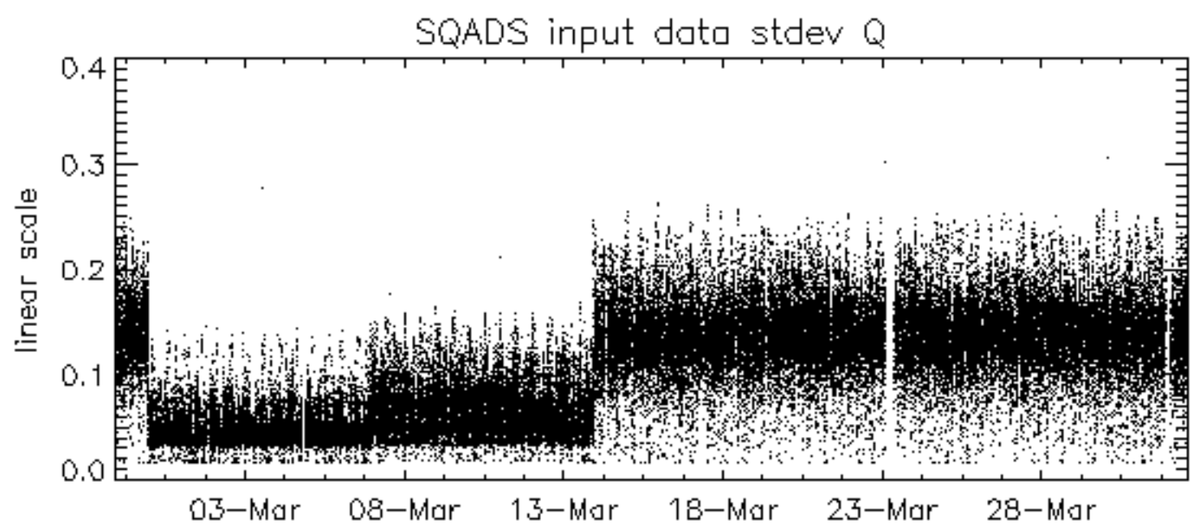

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

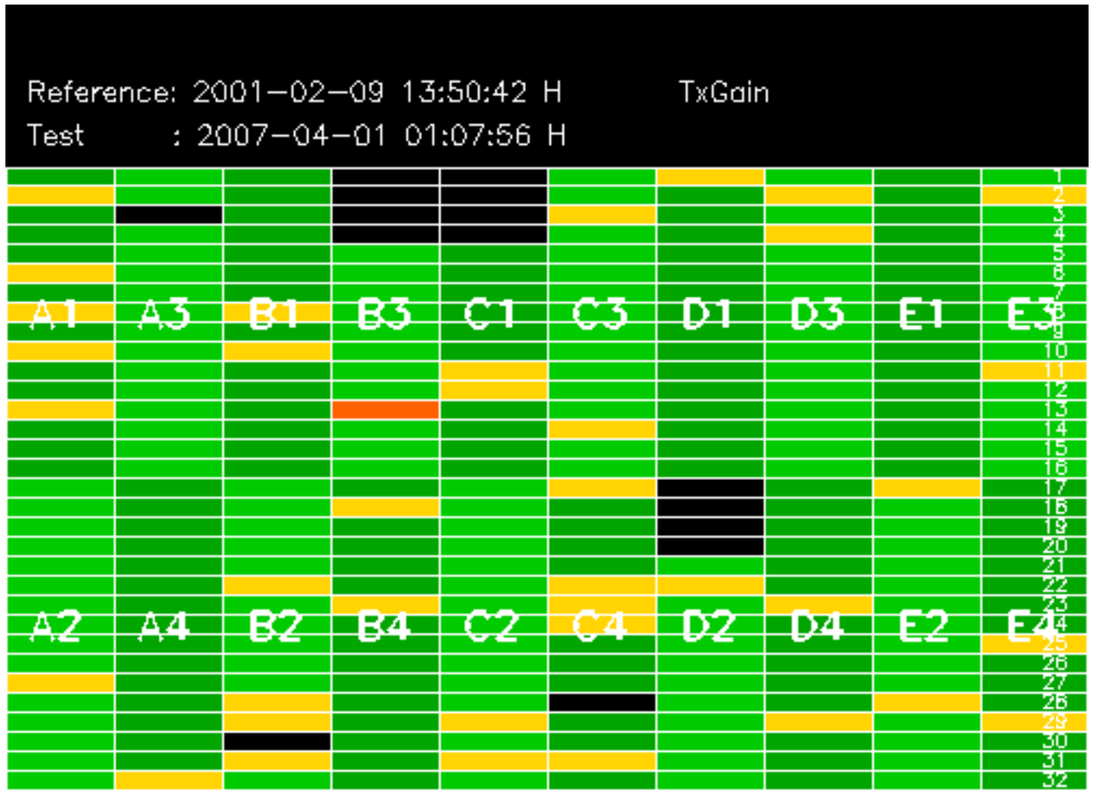

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

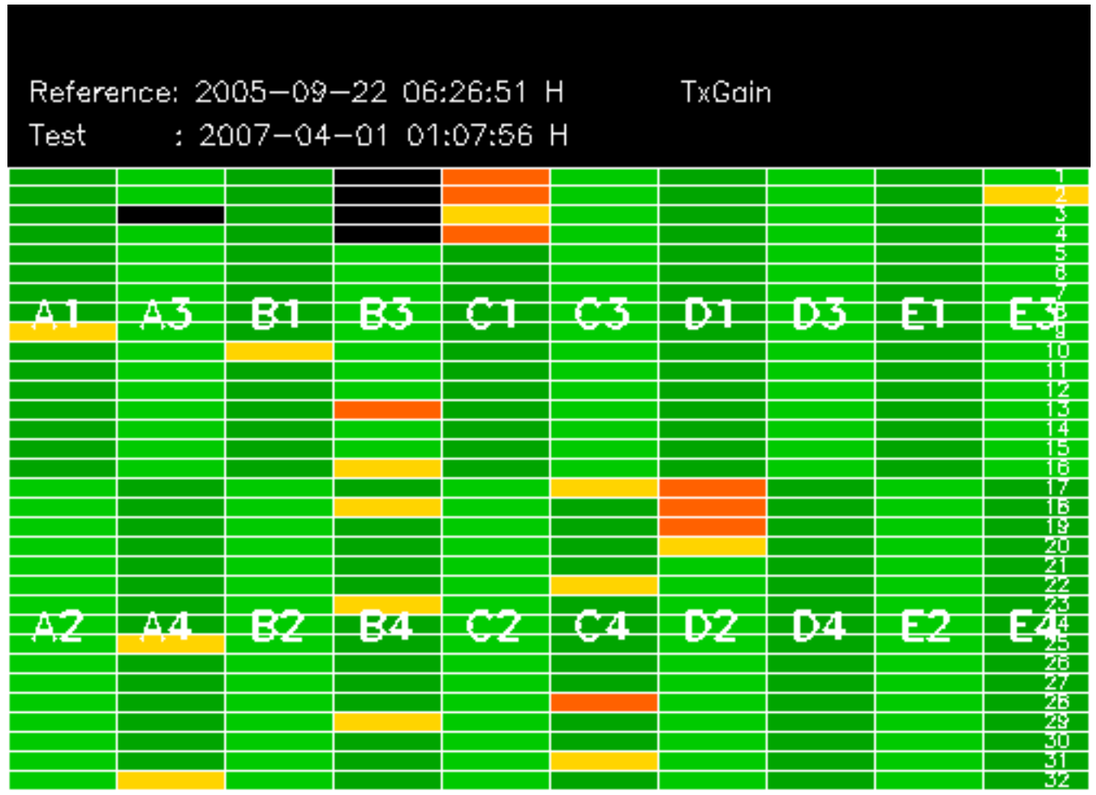

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar

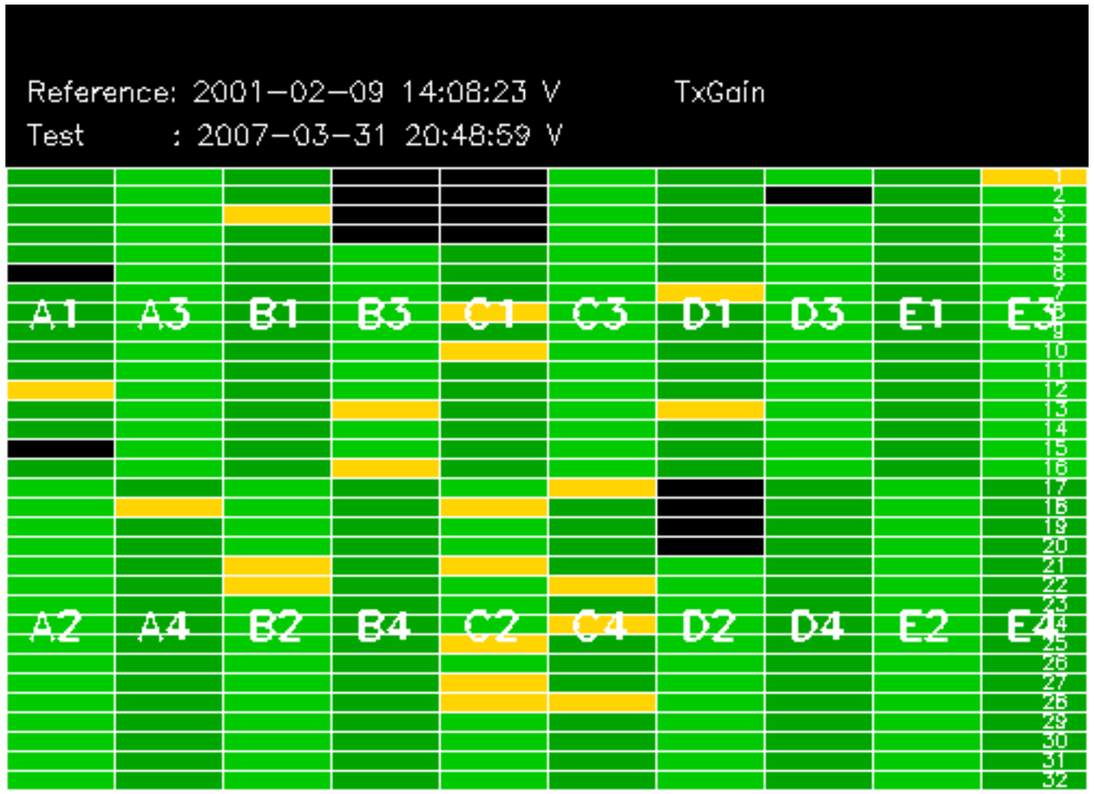

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
03–Mar
08–Mar
13–Mar
18–Mar
23–Mar
28–Mar

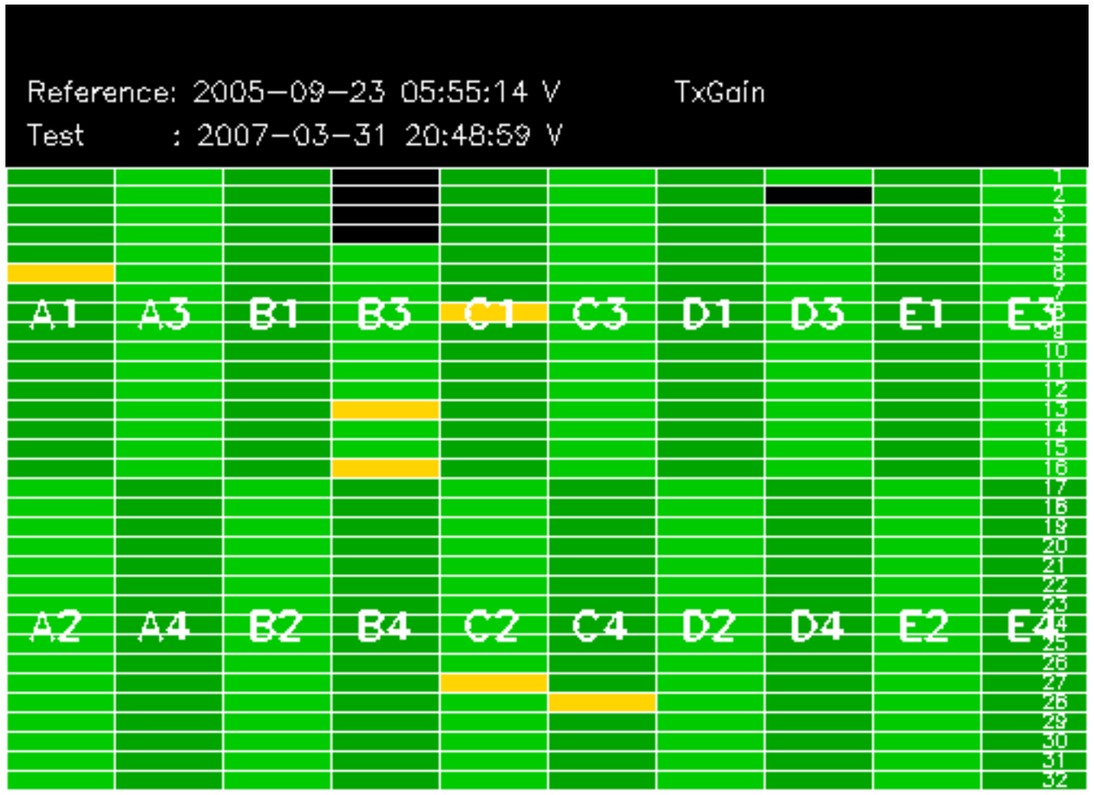

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
03–Mar
08–Mar
13–Mar
18–Mar
23–Mar
28–Mar


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


Reference: 2001-02-09 13:50:42 H
TxGain
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

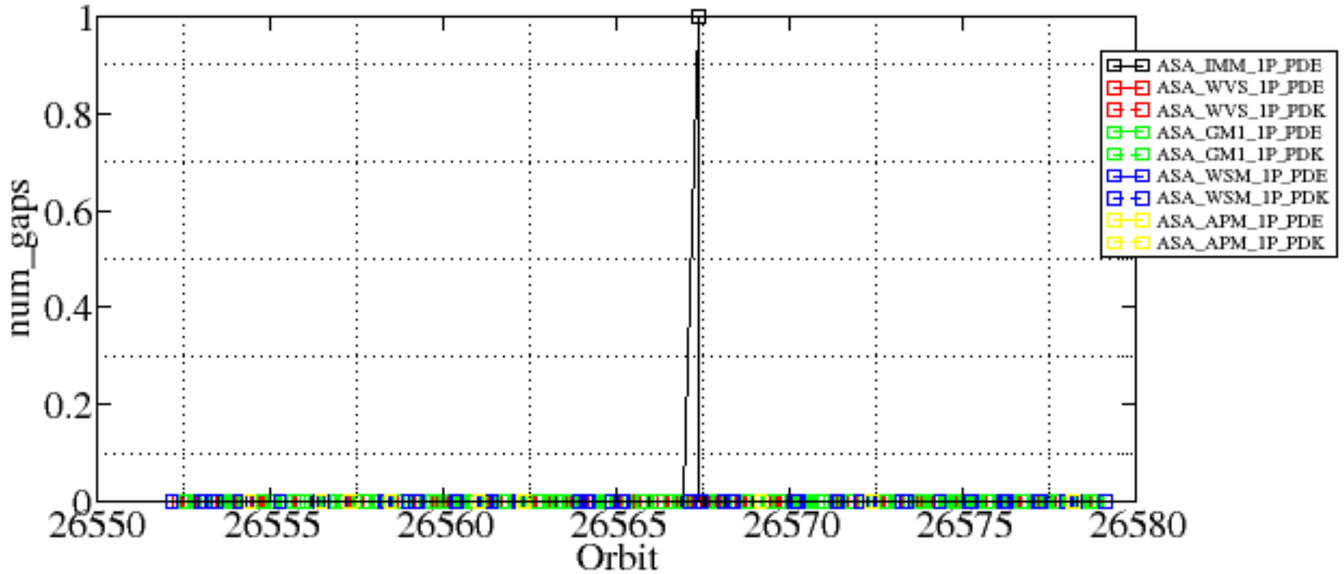

Reference: 2005-09-22 06:26:51 H
TxGain
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

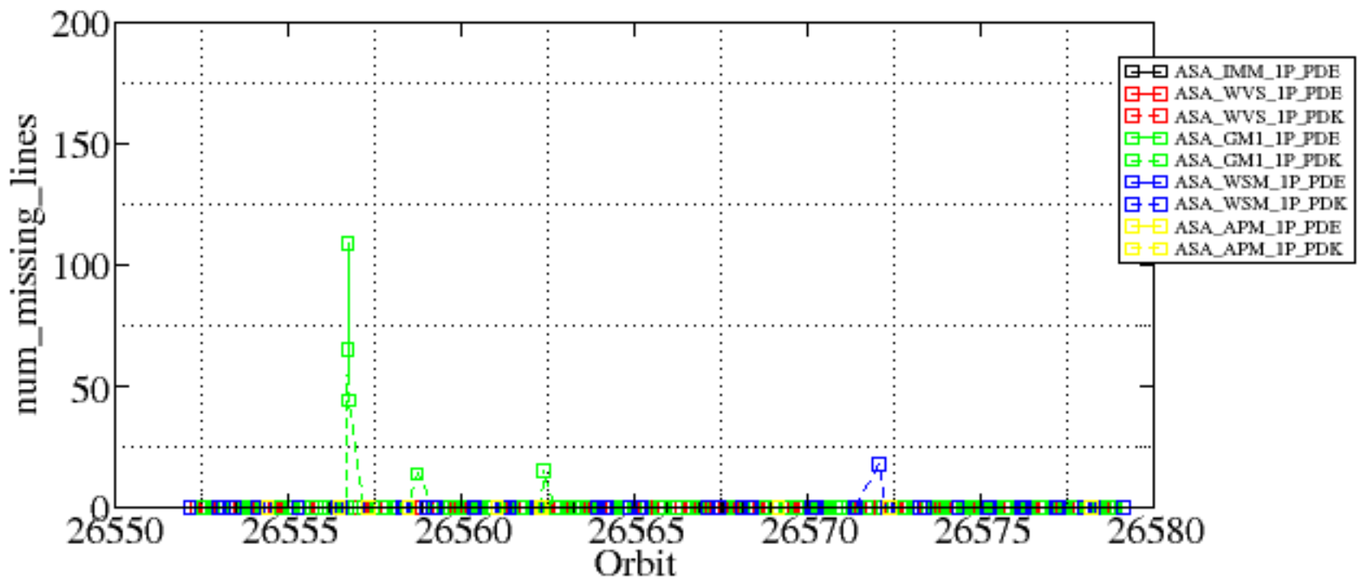

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

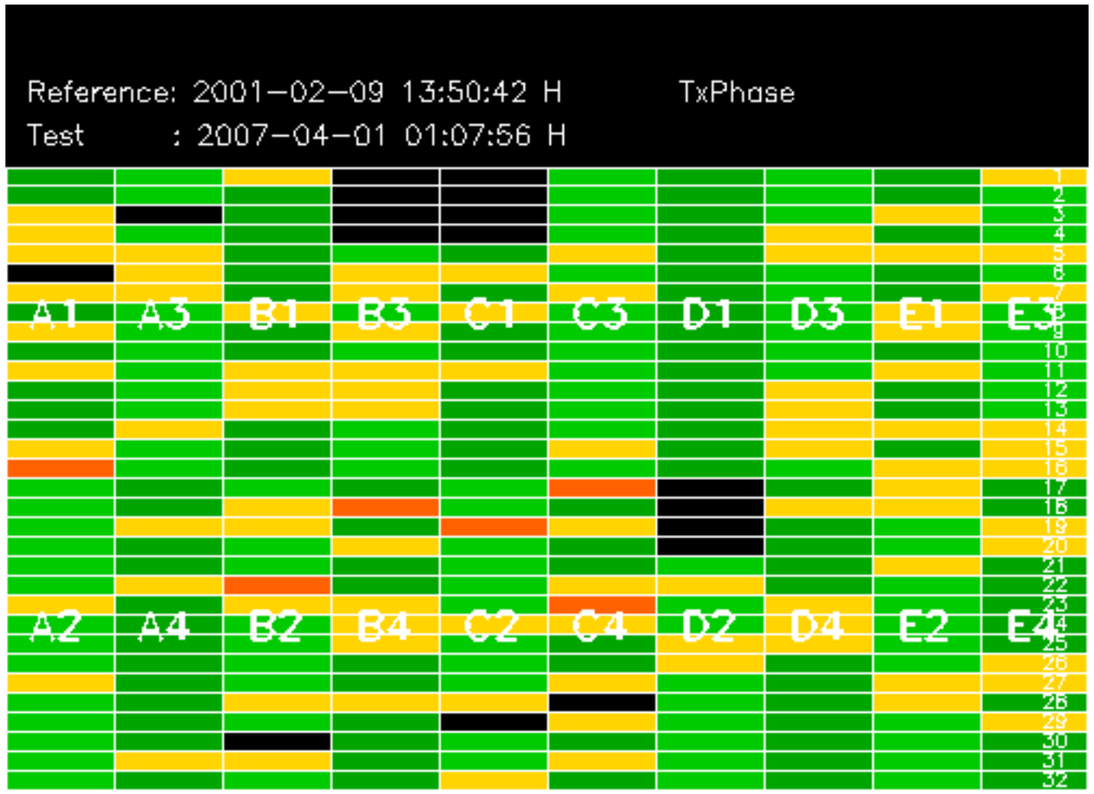

Reference: 2005-09-23 05:55:14 V
TxGain
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

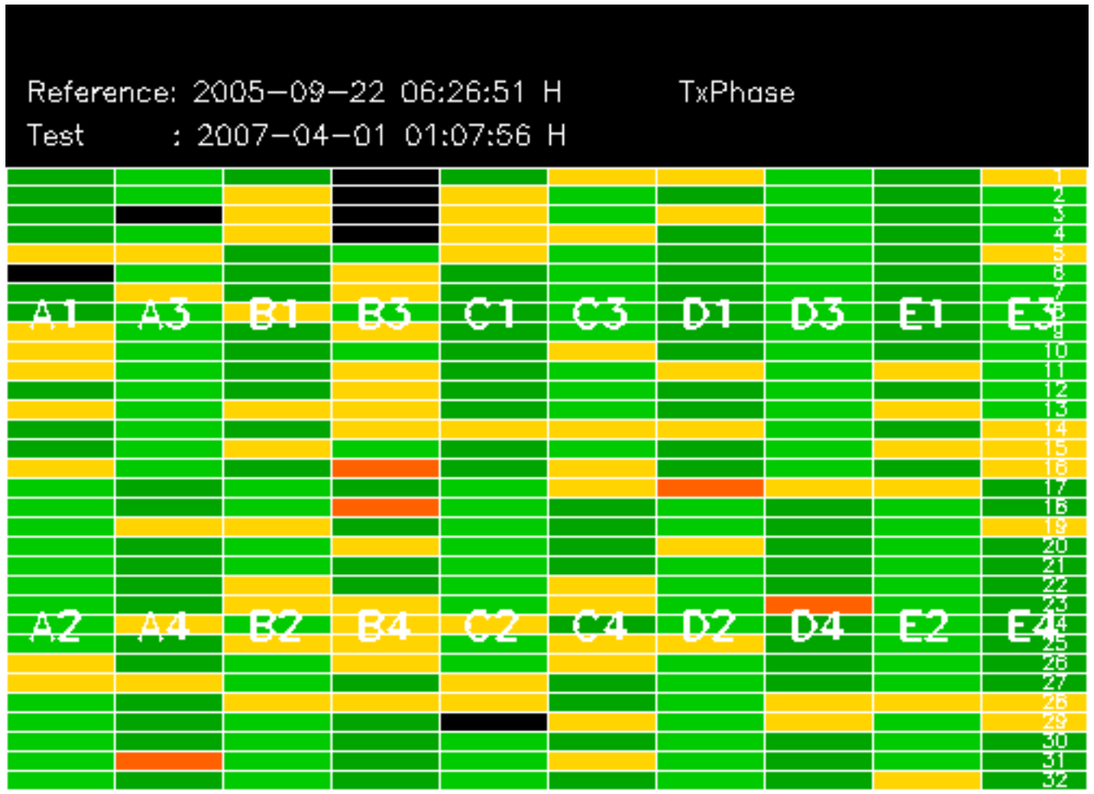
Summary of analysis for the last 3 days 2007033[011]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

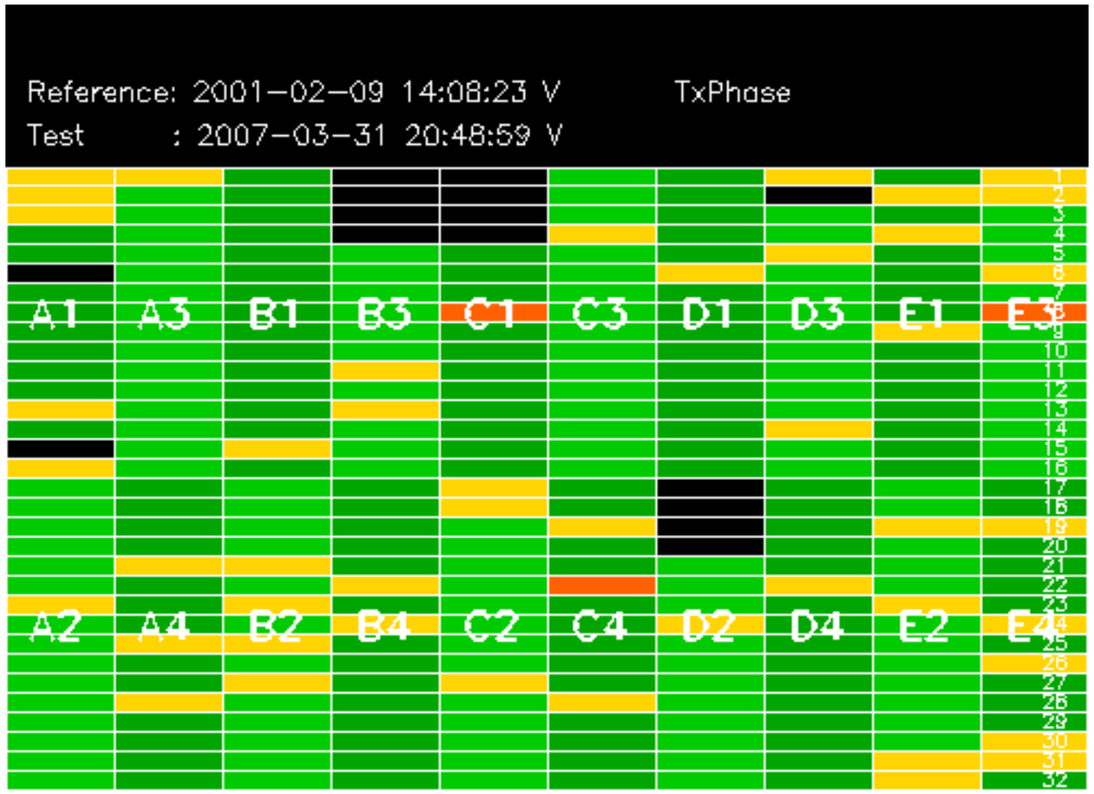
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20070331_015157_000000532056_00461_26567_3757.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070330_080056_000006582056_00450_26556_0149.N1 </td> <td>0 </td> <td>109 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070330_080102_000000782056_00450_26556_9771.N1 </td> <td>0 </td> <td>65 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070330_080230_000005612056_00450_26556_9789.N1 </td> <td>0 </td> <td>44 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070330_112243_000006222056_00452_26558_0084.N1 </td> <td>0 </td> <td>14 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070330_172811_000002892056_00456_26562_0672.N1 </td> <td>0 </td> <td>15 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20070331_094426_000000852056_00466_26572_1239.N1 </td> <td>0 </td> <td>18 </td></tr>
</table>

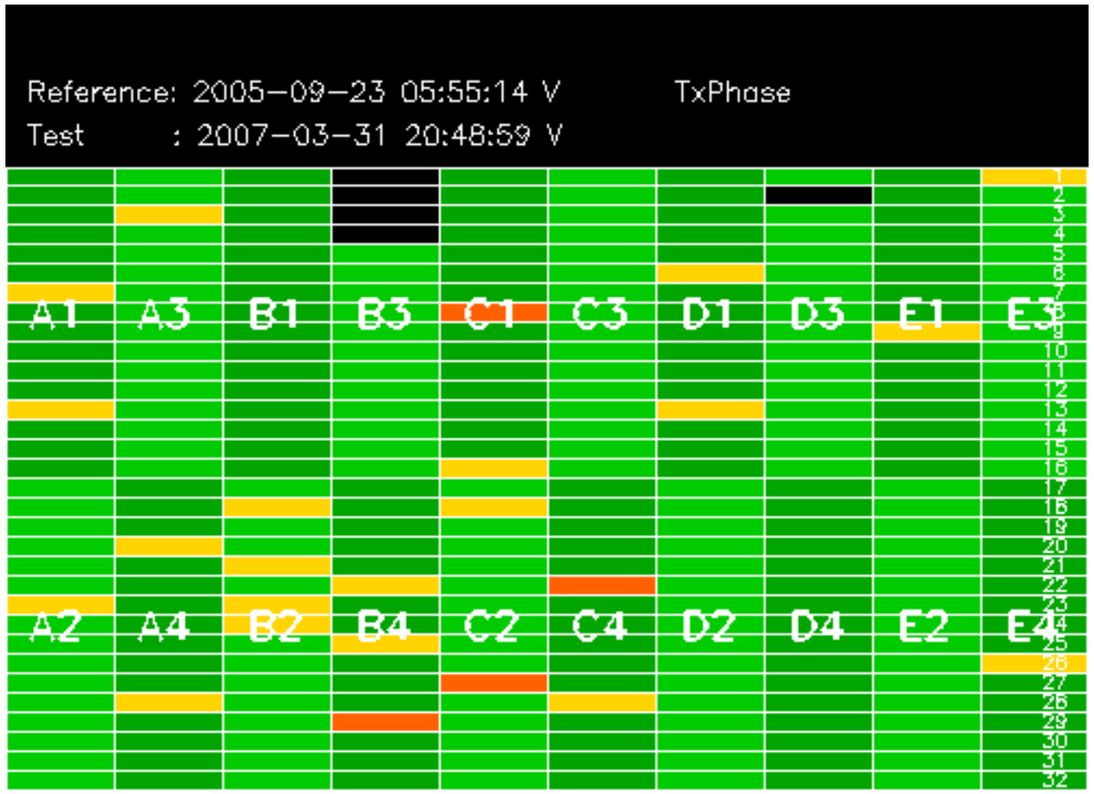

num_gaps
Orbit
1
0.8
0.6
0.4
0.2
0
26550
26555
26560
26565
26570
26575
26580
ASA_IMM_1P_PDE
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

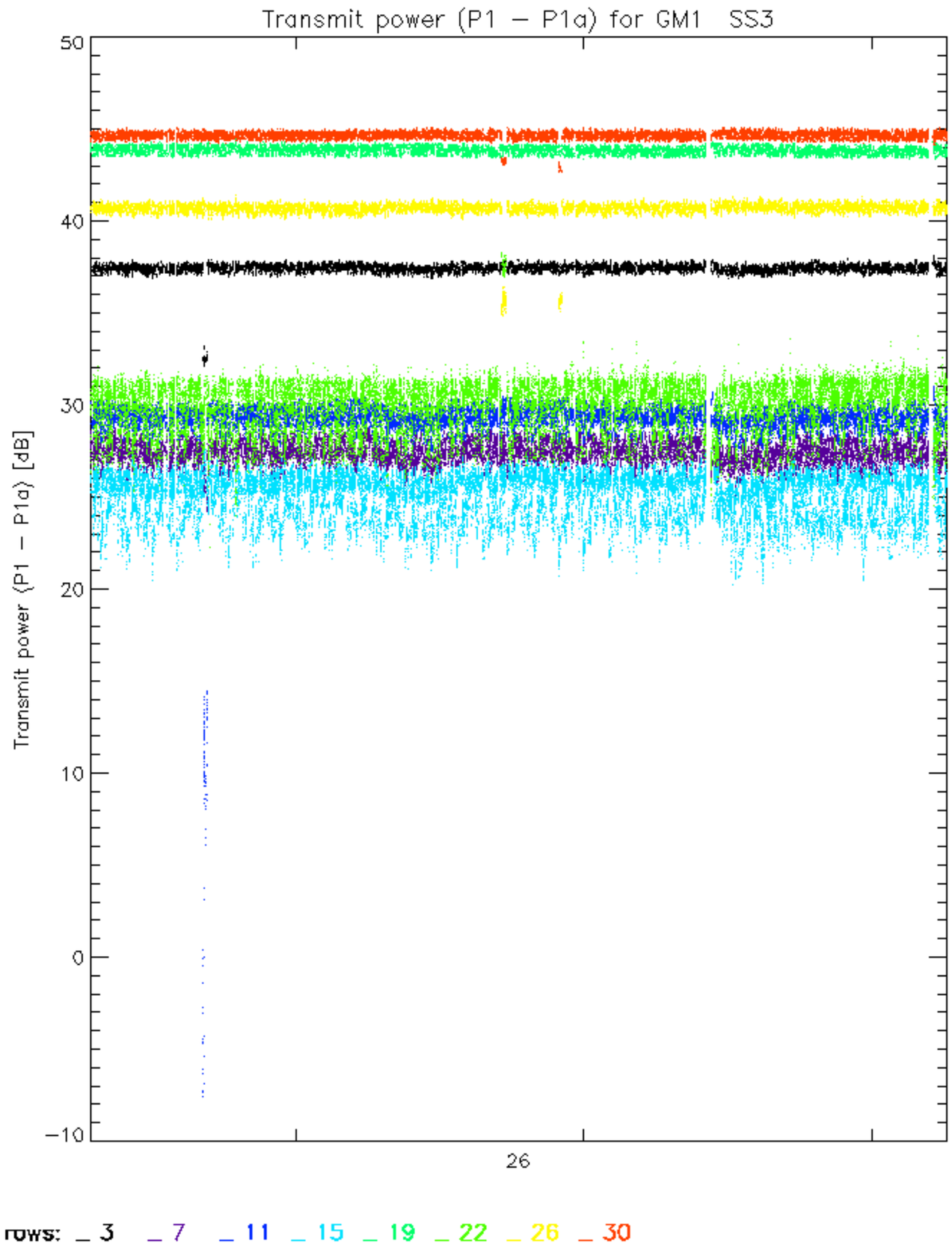

200
150
100
50
0
num_missing_lines
26550
26555
26560
26565
26570
26575
26580
Orbit
ASA_IMM_1P_PDE
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

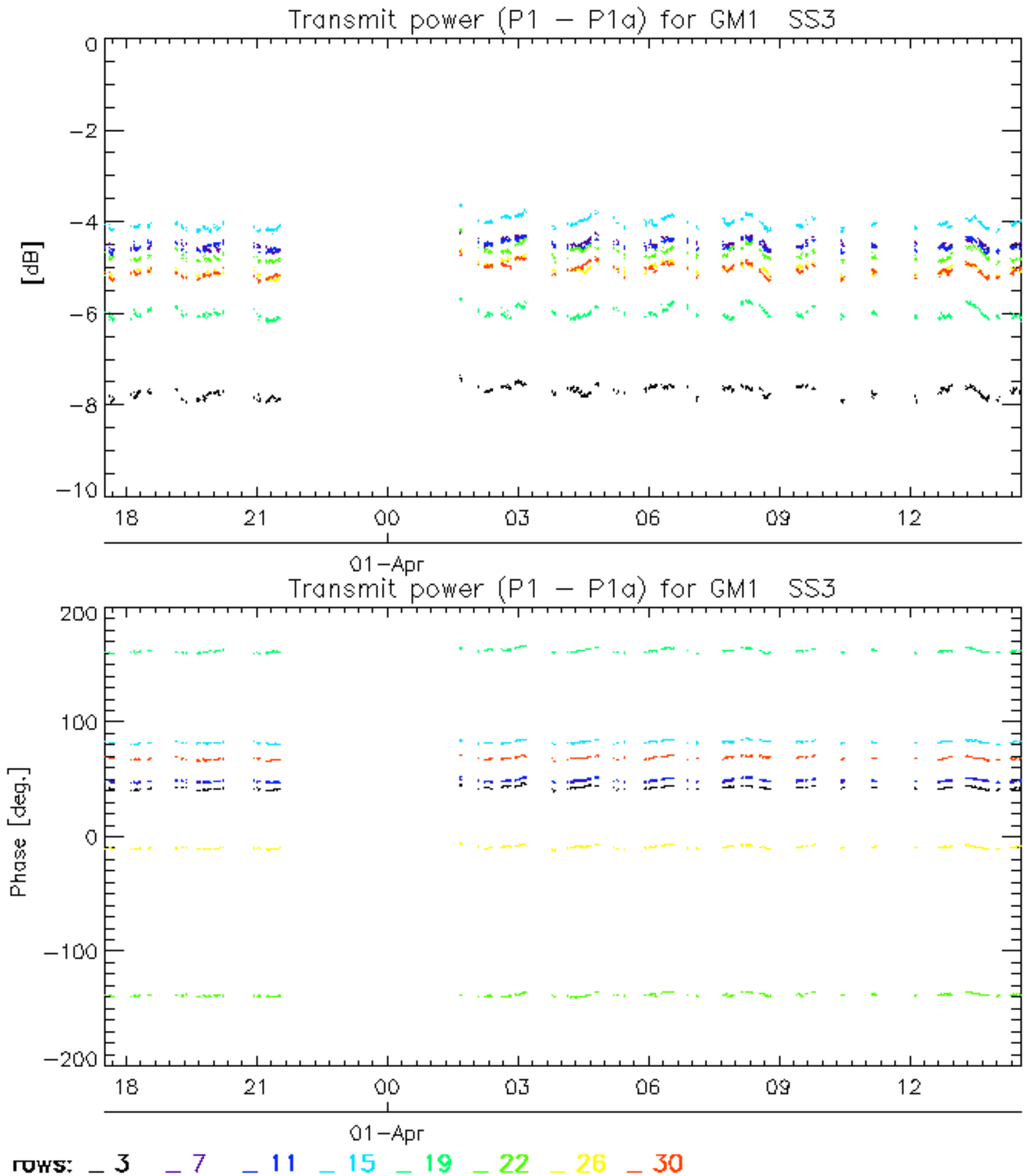

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

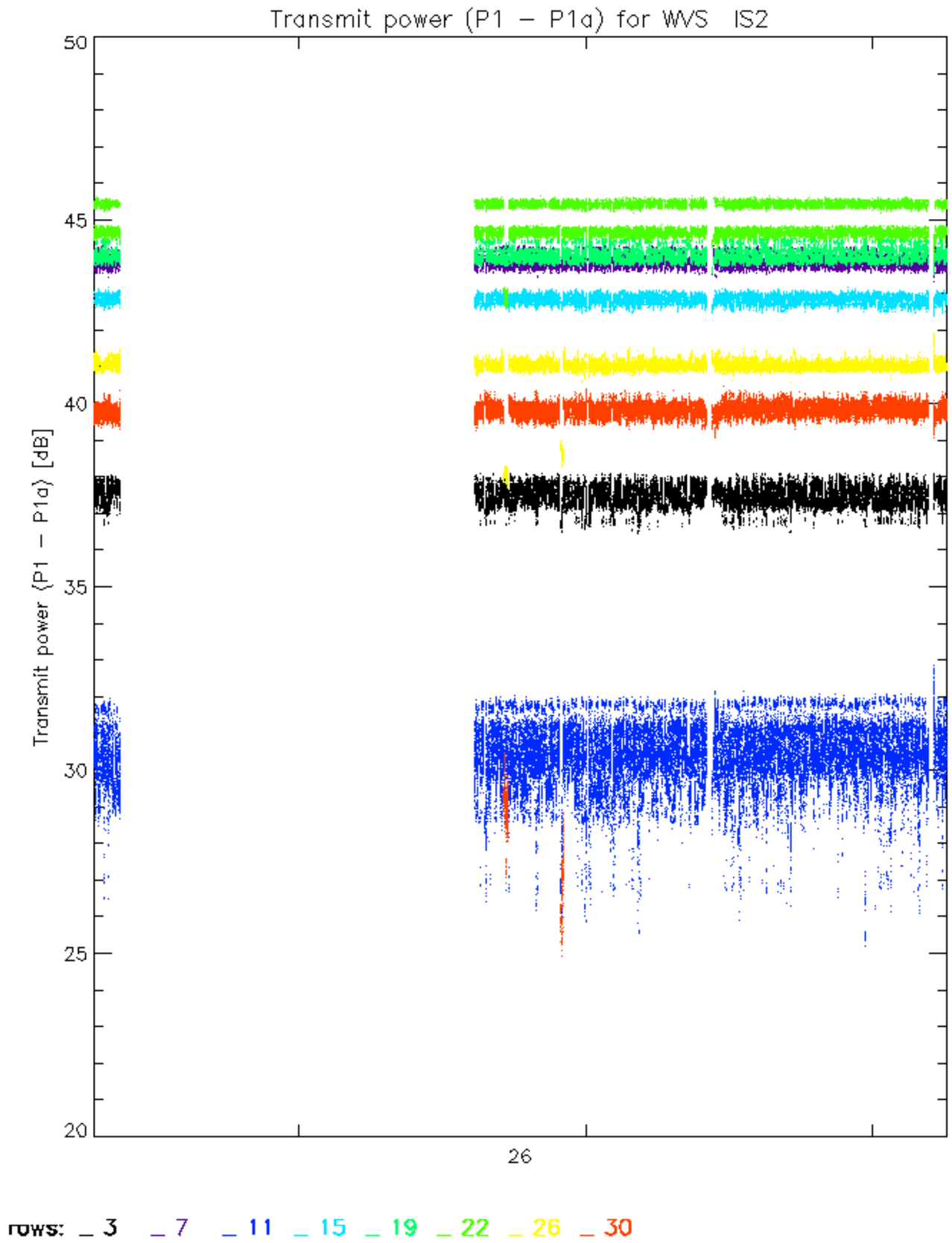

Reference: 2005-09-22 06:26:51 H
TxPhase
Test : 2007-04-01 01:07:56 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

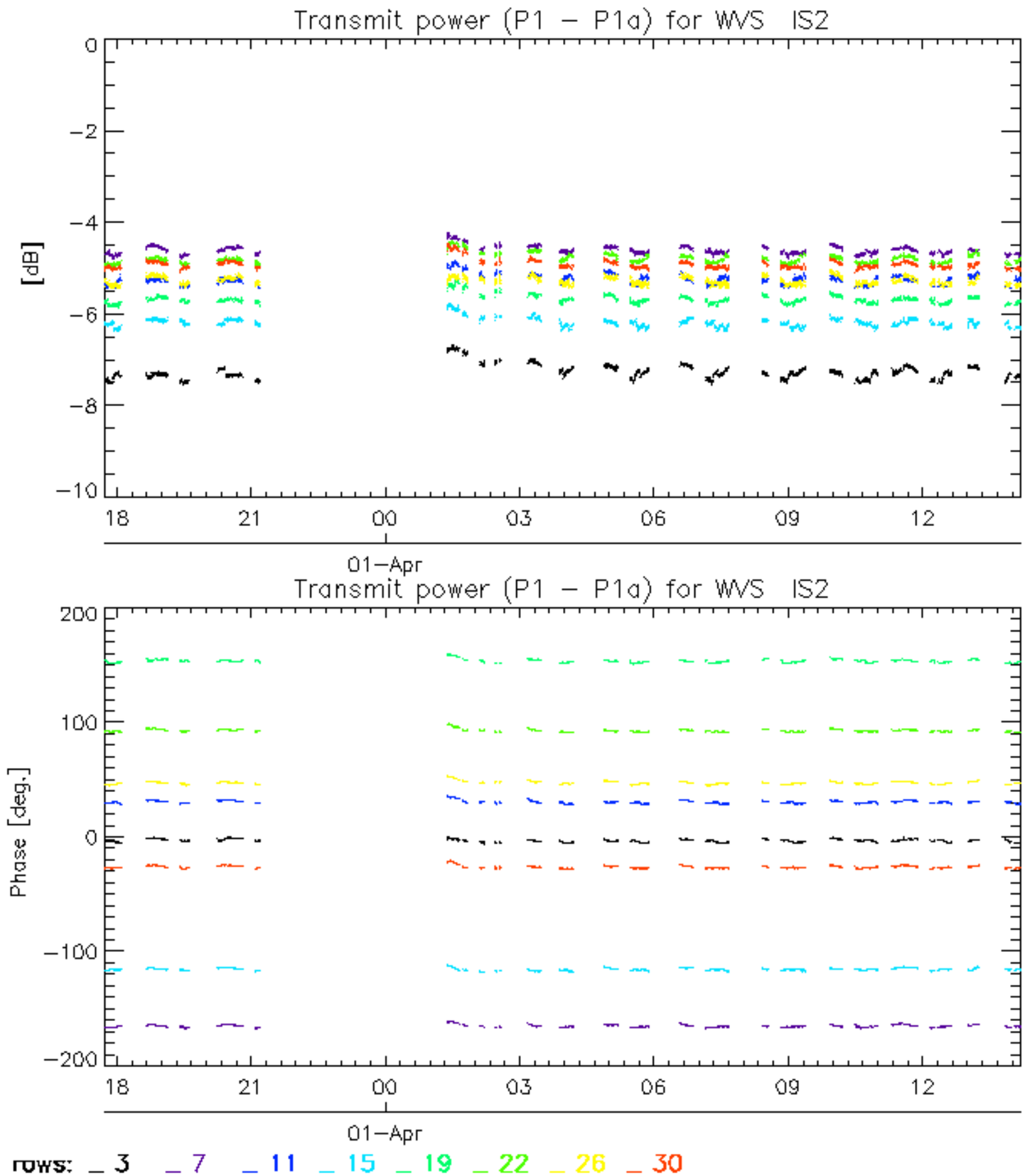

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2007-03-31 20:48:59 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
TxPhase
Test : 2007-03-31 20:48:59 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
26
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
12
01−Apr
Transmit power (P1 – P1a) for GM1 SS3
Phase [deg.]
200
100
0
−100
−200
18
21
00
03
06
09
12
01−Apr
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
50
45
40
35
30
25
20
26
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
12
01−Apr
Transmit power (P1 – P1a) for WVS IS2
Phase [deg.]
200
100
0
−100
−200
18
21
00
03
06
09
12
01−Apr
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.