PRELIMINARY REPORT OF 050812

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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 2005-08-11 00:00:00 to 2005-08-12 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	29	50	17	8	2
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	29	50	17	8	2
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	29	50	17	8	2
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	29	50	17	8	2

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	31	51	37	11	28
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	31	51	37	11	28
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	31	51	37	11	28
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	31	51	37	11	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	20050811 100811
H	20050810 071836

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	-3.318857	0.027612	-0.010225
7	P1	-3.156466	0.028147	-0.063823
11	P1	-4.710625	0.032975	-0.029598
15	P1	-5.589769	0.051495	-0.064626
19	P1	-3.796165	0.004191	-0.046941
22	P1	-4.639408	0.098348	0.006733
26	P1	-4.850793	0.128519	0.037418
30	P1	-7.243202	0.131257	0.015025
3	P1	-15.550239	0.077449	0.082387
7	P1	-15.515606	0.151362	0.007991
11	P1	-21.737986	0.263281	-0.184917
15	P1	-11.292271	0.070709	0.009369
19	P1	-14.489182	0.036480	-0.049067
22	P1	-15.699235	0.344121	0.153508
26	P1	-17.354891	0.200108	0.198422
30	P1	-17.769114	0.406044	-0.170043

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.819267	0.083432	0.089423
7	P2	-21.976988	0.100507	0.115302
11	P2	-13.570633	0.105817	0.193041
15	P2	-7.071339	0.091258	0.021862
19	P2	-9.590029	0.094476	-0.017510
22	P2	-16.839407	0.096385	0.040274
26	P2	-16.508802	0.097681	-0.017200
30	P2	-18.797728	0.086374	-0.034719

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.157329	0.002537	-0.006370
7	P3	-8.157329	0.002537	-0.006370
11	P3	-8.157329	0.002537	-0.006370
15	P3	-8.157329	0.002537	-0.006370
19	P3	-8.157329	0.002537	-0.006370
22	P3	-8.157329	0.002537	-0.006370
26	P3	-8.157329	0.002537	-0.006370
30	P3	-8.157329	0.002537	-0.006370

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	-2.806646	0.093685	-0.088312
7	P1	-2.971761	0.058677	-0.051544
11	P1	-4.011341	0.016114	-0.049518
15	P1	-3.612388	0.061065	-0.110713
19	P1	-3.632050	0.015780	0.014696
22	P1	-5.691730	0.102335	-0.026978
26	P1	-7.395620	0.175347	0.039735
30	P1	-6.329465	0.099081	0.043631
3	P1	-10.888964	0.052232	-0.218810
7	P1	-10.467186	0.166631	-0.030170
11	P1	-12.641559	0.103757	-0.053368
15	P1	-11.599479	0.097792	0.033950
19	P1	-15.507387	0.068110	0.115714
22	P1	-25.628304	2.895034	0.283400
26	P1	-15.310843	0.313814	0.192666
30	P1	-20.051914	1.263445	-0.025188

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.553028	0.043757	0.144766
7	P2	-22.025774	0.038925	0.047713
11	P2	-9.608009	0.063360	0.186833
15	P2	-5.108468	0.041678	0.037563
19	P2	-6.888974	0.062398	0.047873
22	P2	-7.060712	0.037250	0.044369
26	P2	-23.967384	0.037642	0.019575
30	P2	-21.950069	0.042823	0.013180

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998996	0.004031	-0.002547
7	P3	-7.998888	0.004021	-0.002652
11	P3	-7.998865	0.004036	-0.002800
15	P3	-7.998835	0.004029	-0.002526
19	P3	-7.998927	0.004031	-0.002456
22	P3	-7.998916	0.004020	-0.002237
26	P3	-7.998858	0.004012	-0.002290
30	P3	-7.998857	0.004012	-0.002710

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	0.000461641
	stdev	2.20568e-07
MEAN Q	mean	0.000492062
	stdev	2.34290e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128285
	stdev	0.000987178
STDEV Q	mean	0.128544
	stdev	0.000997320

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005081[012]
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_1PNPDK20050810_063721_000004612039_00421_18010_1358.N1	0	1
ASA_GM1_1PNPDK20050811_110131_000003742039_00438_18027_2062.N1	0	7
ASA_WSM_1PNPDE20050810_202006_000000852039_00429_18018_3923.N1	0	34
ASA_WSM_1PNPDE20050811_012533_000003612039_00432_18021_3986.N1	0	62
ASA_WSM_1PNPDK20050810_114804_000000482039_00424_18013_1644.N1	0	1

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)

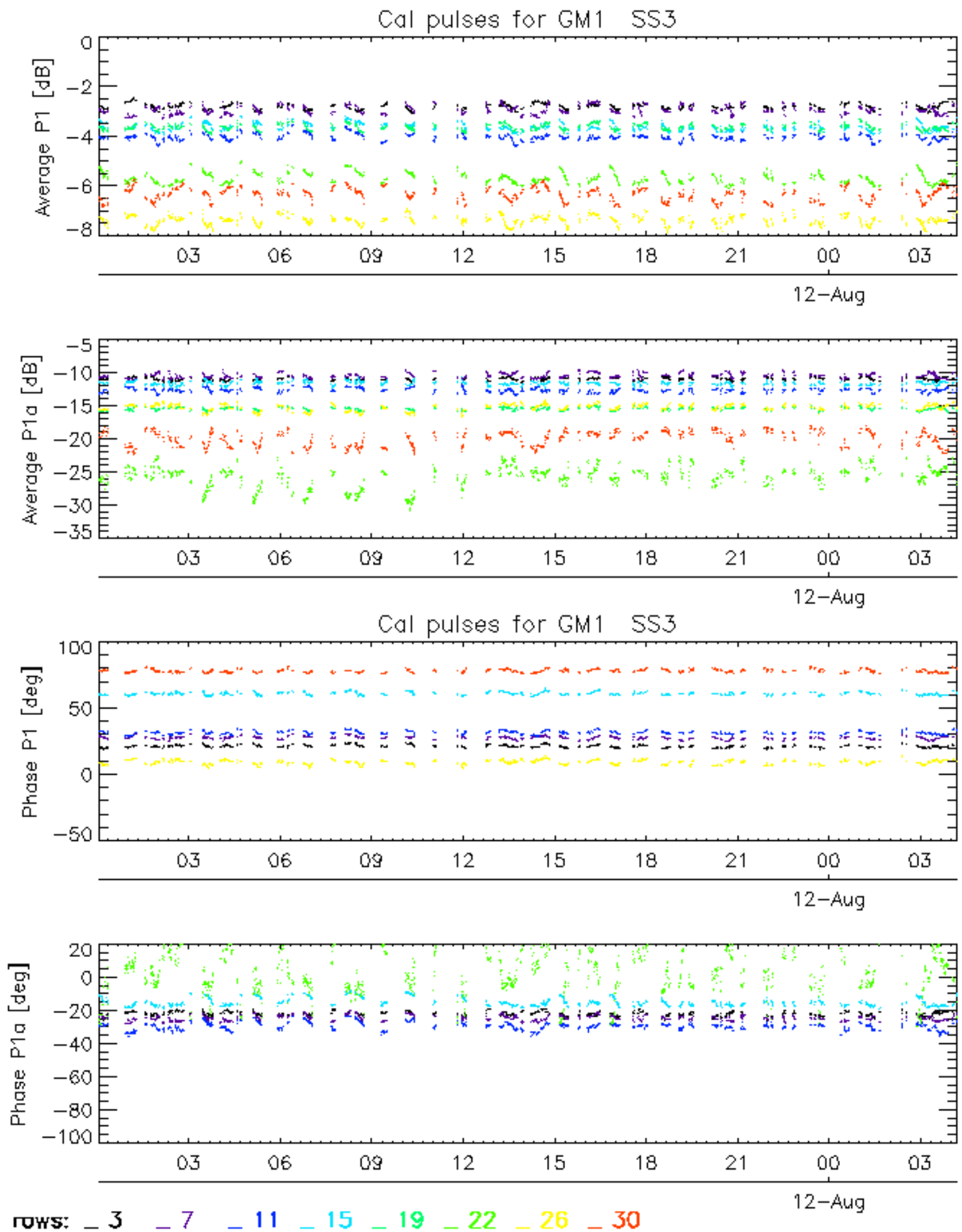
Acsending
Descending

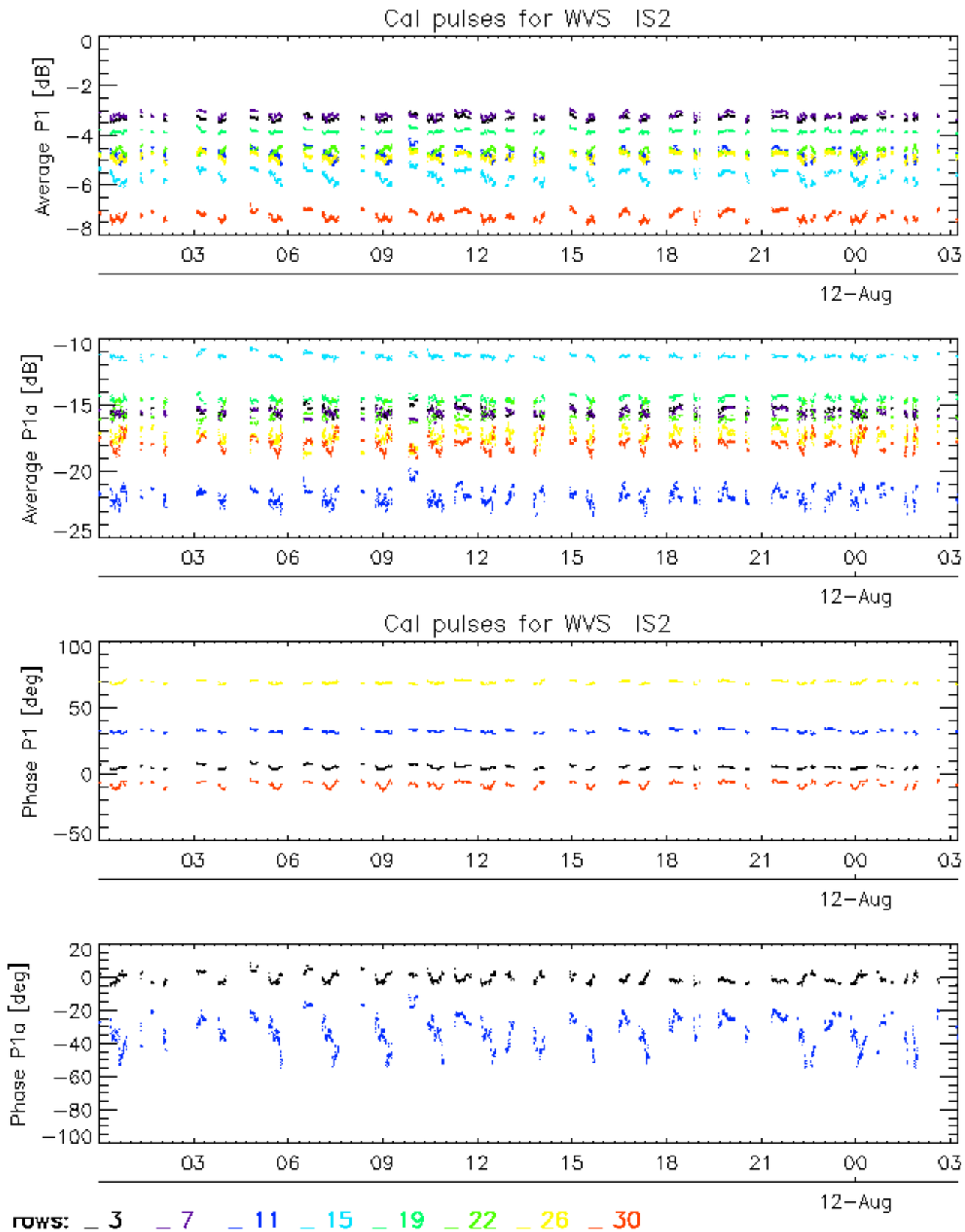
7.5 - Absolute Doppler for GM1

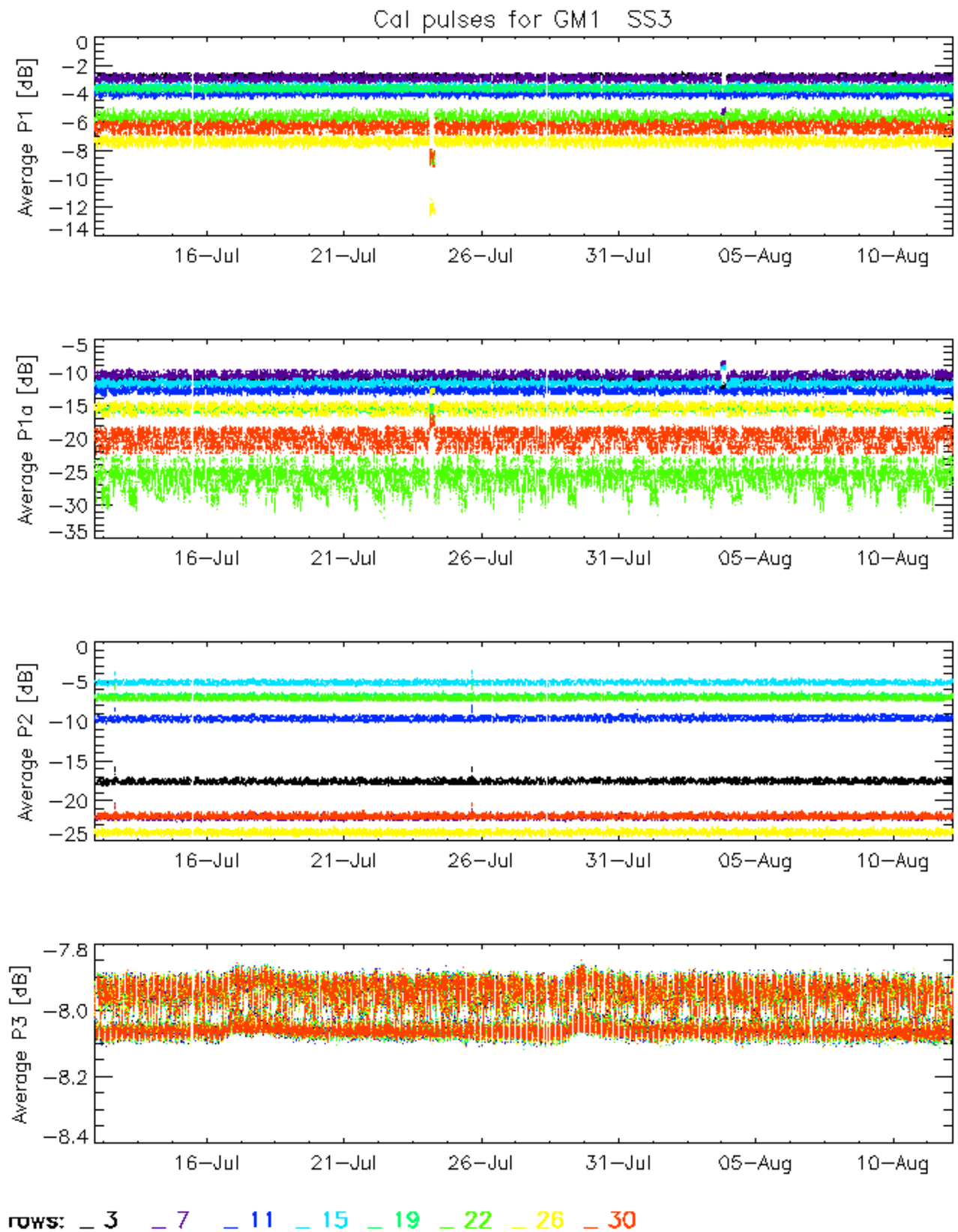
Evolution of Absolute Doppler
Acsending
Descending

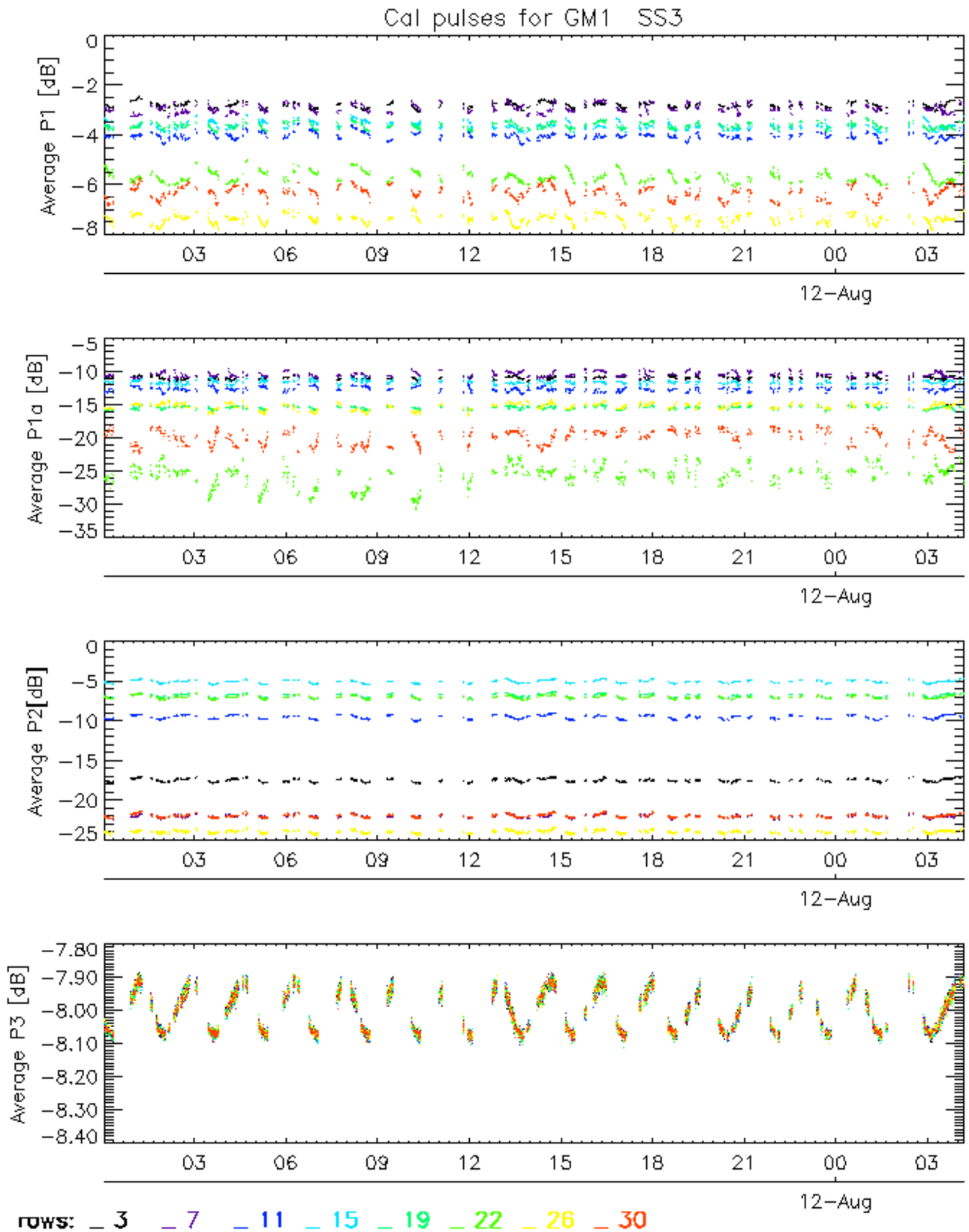
7.6 - Doppler evolution versus ANX for GM1

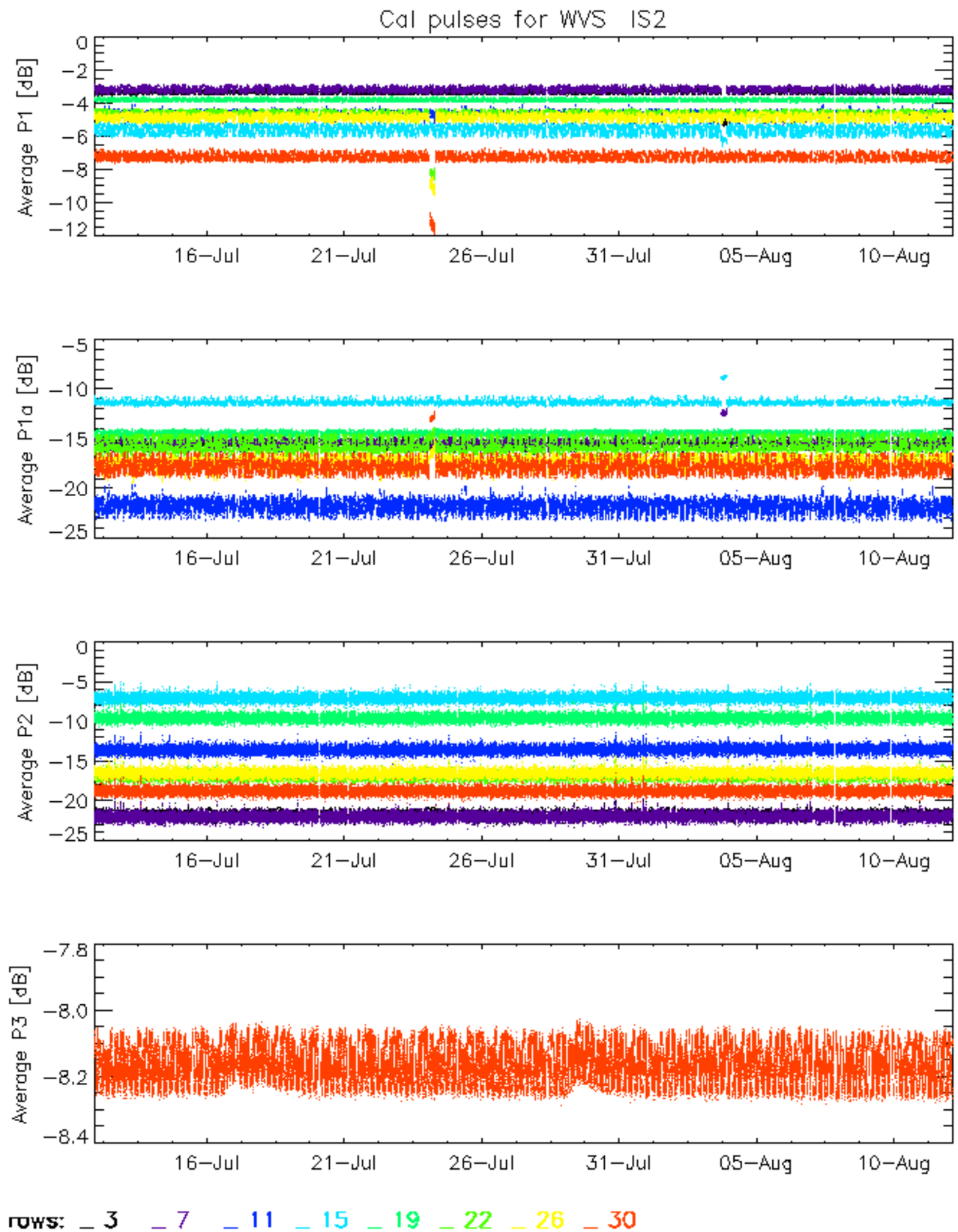
Evolution Doppler error versus ANX

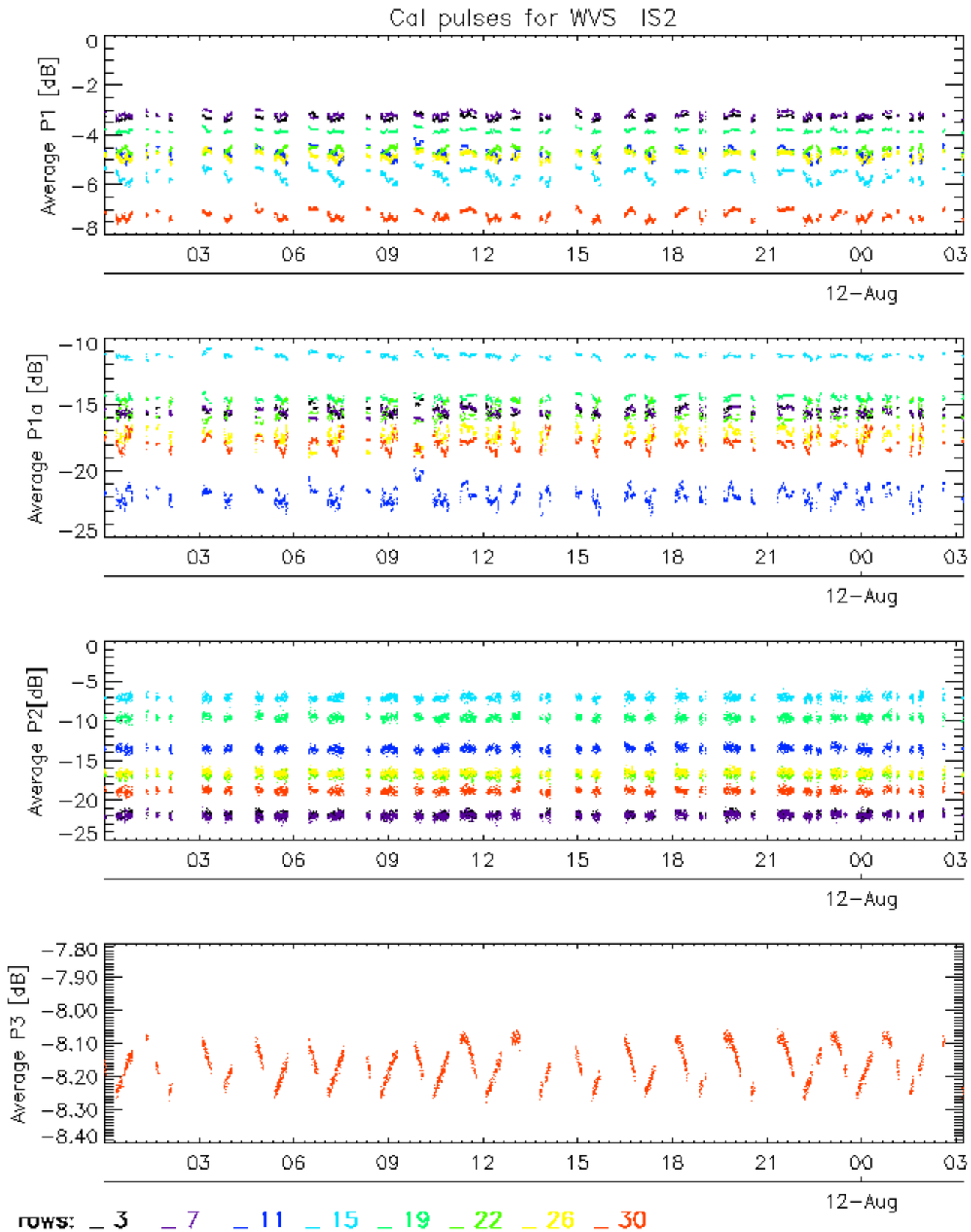

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
12−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
12−Aug
Average P1a [dB]
−10
−15
−20
−25
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

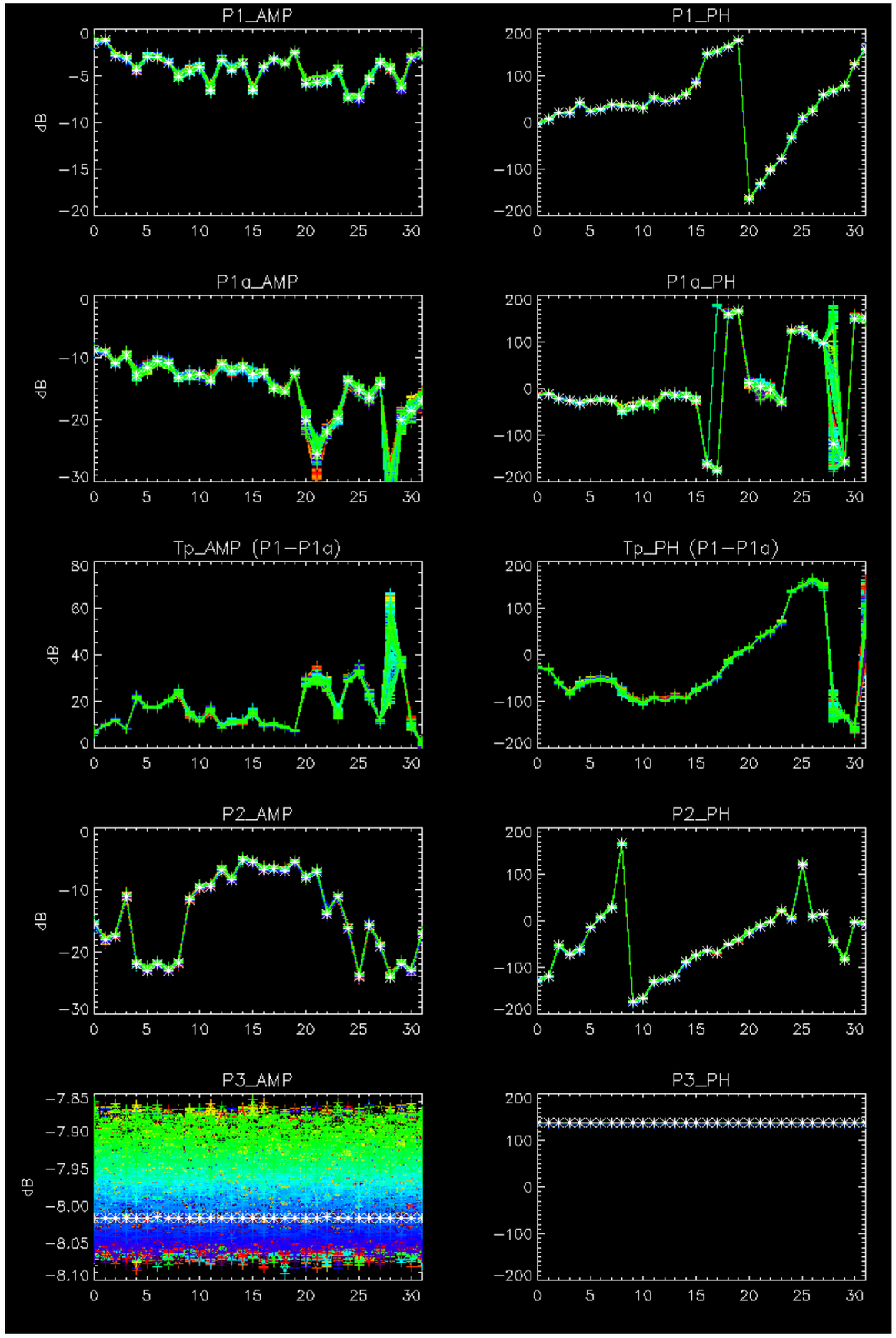

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

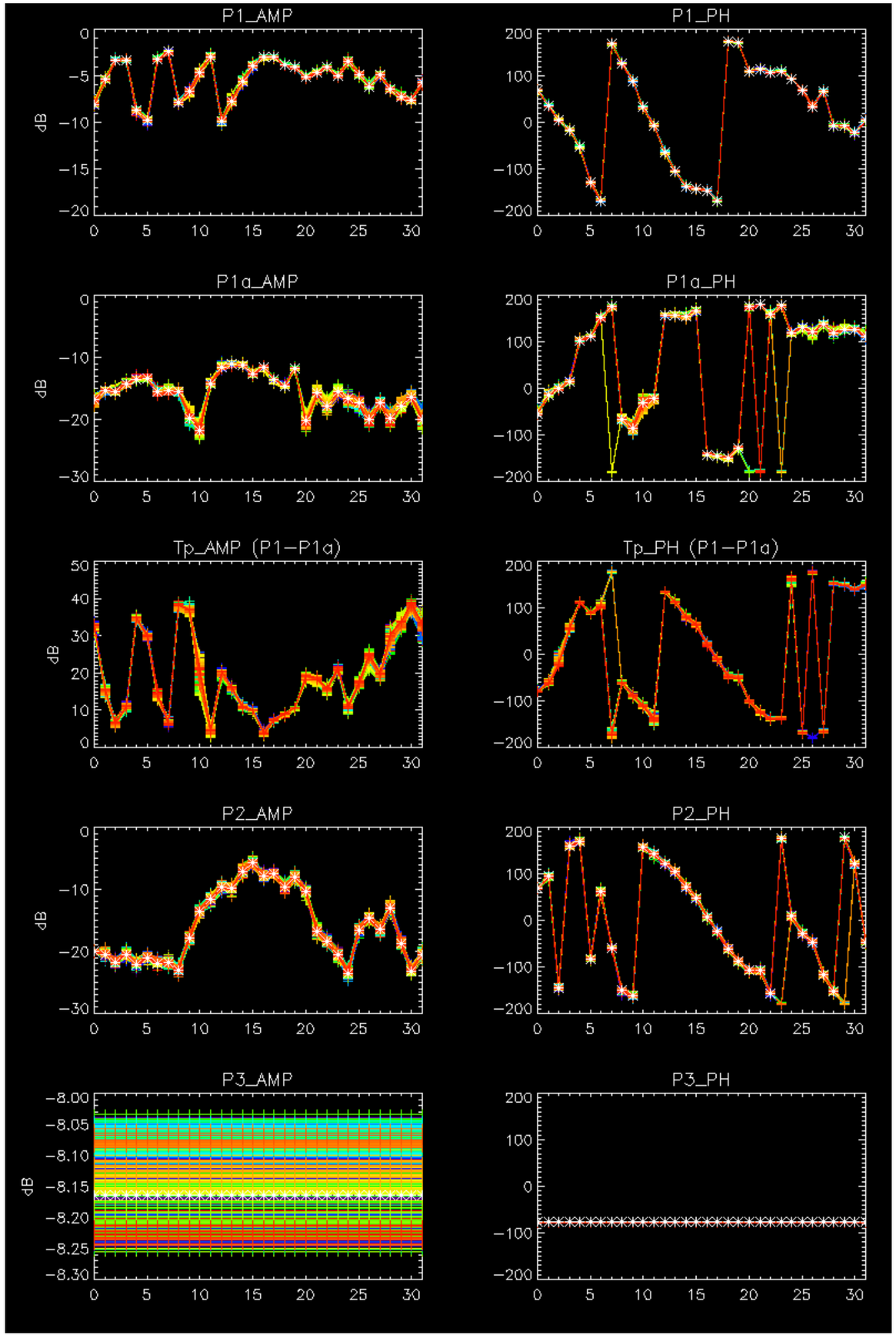

Cal pulses for GM1 SS3
Average P1 [dB]
Average P1a [dB]
Average P2[dB]
Average P3 [dB]
03
06
09
12
15
18
21
00
03
12−Aug
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

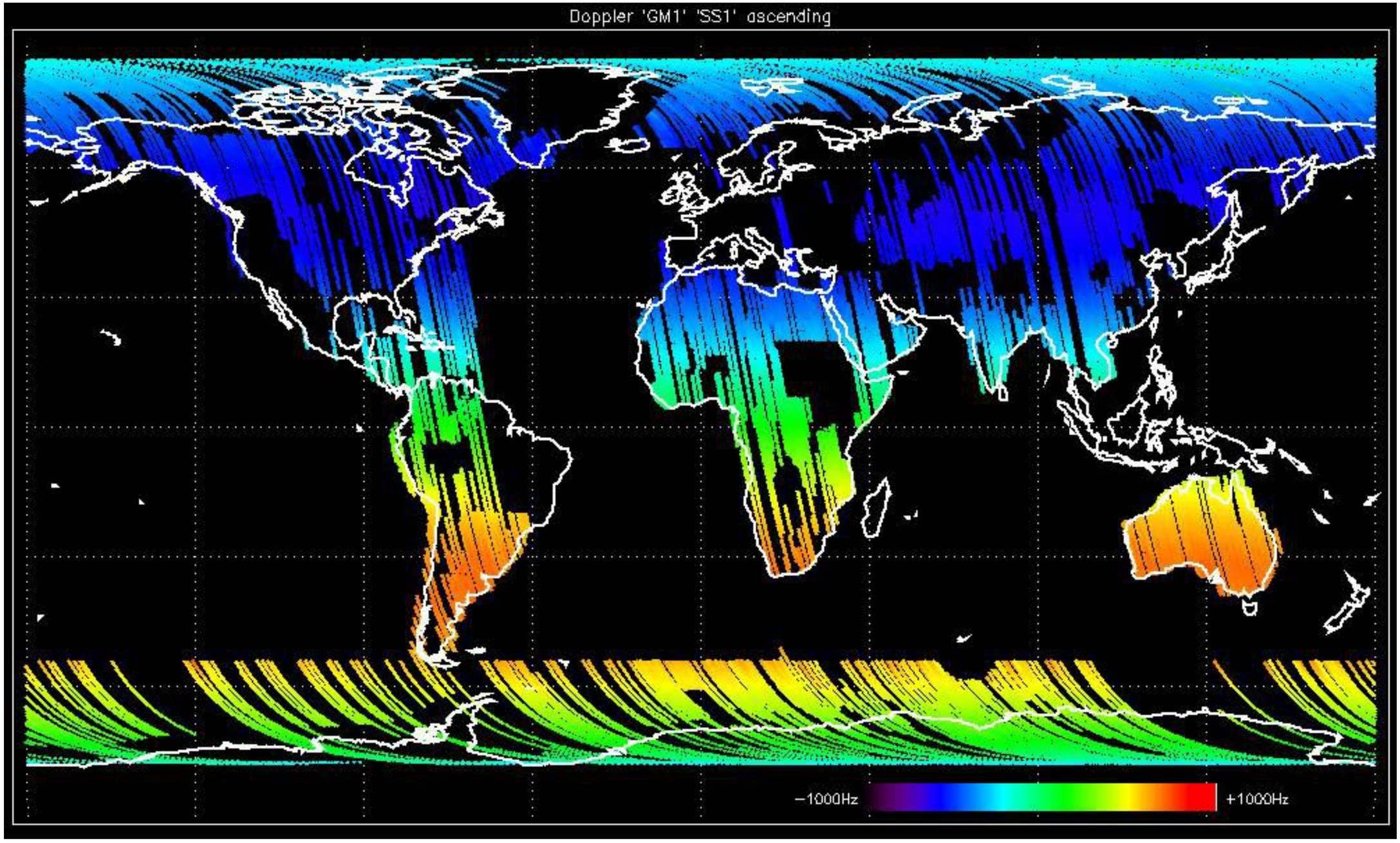

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
12−Aug
Average P1a [dB]
−10
−15
−20
−25
Average P2[dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30

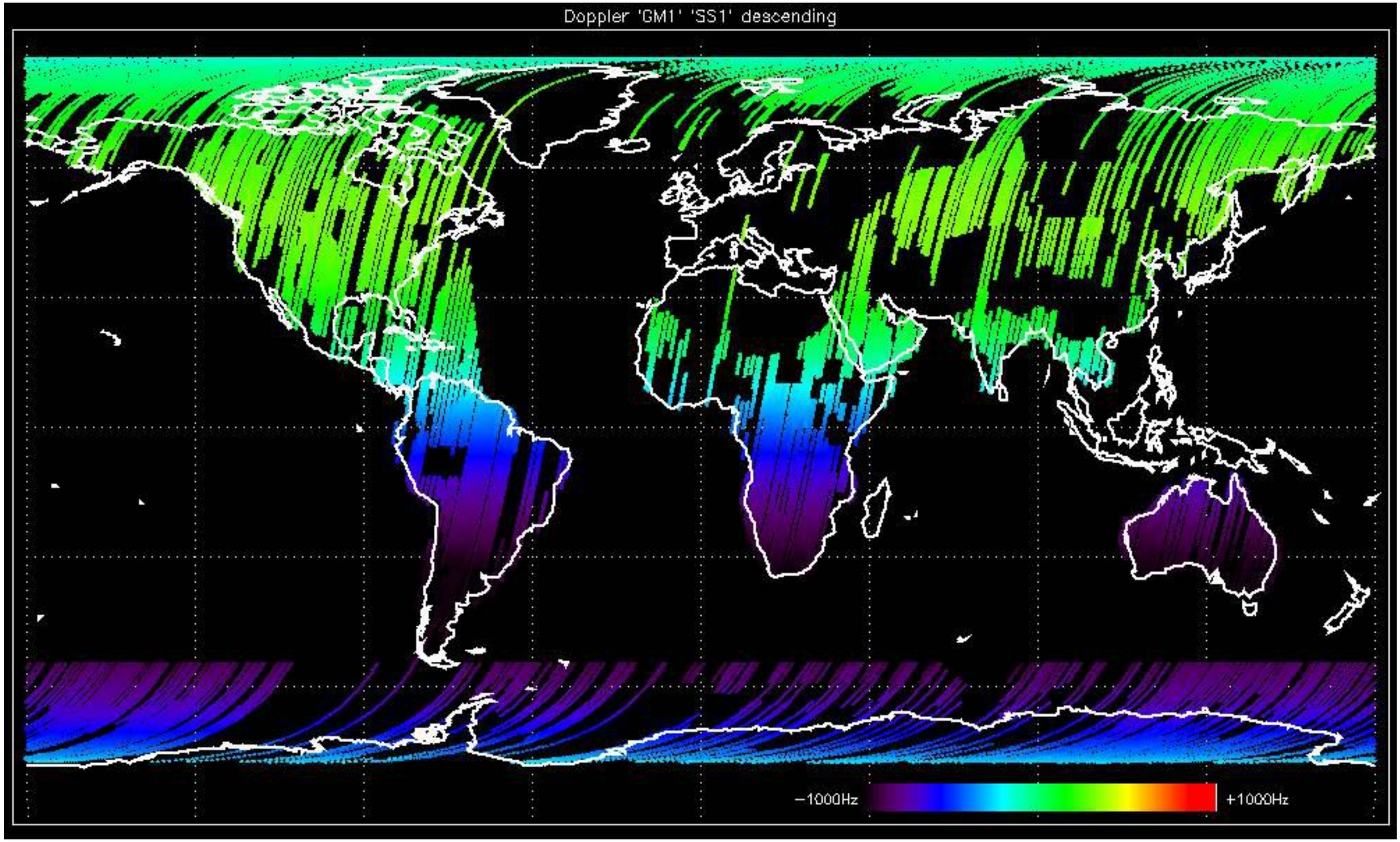
No anomalies observed.

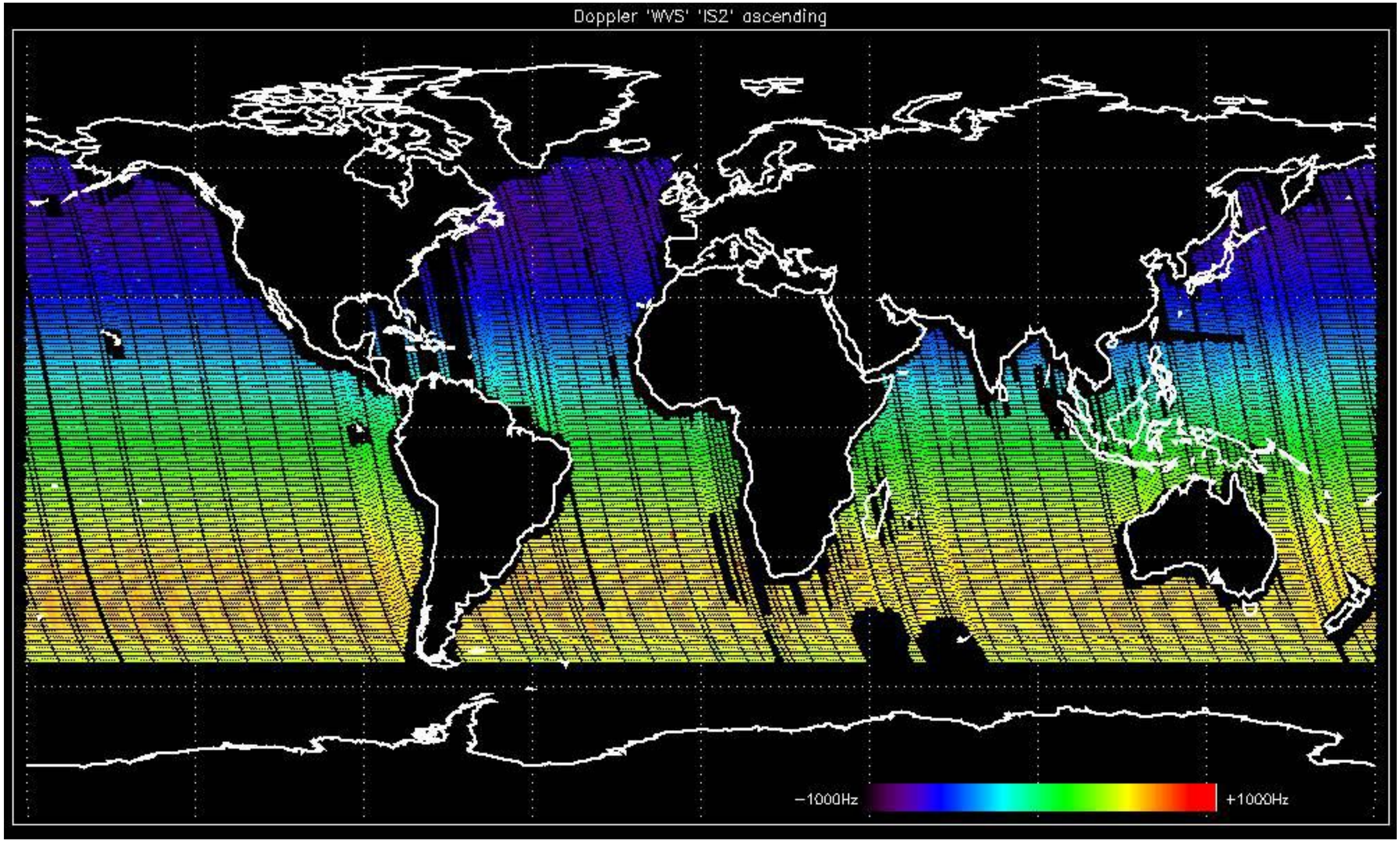

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

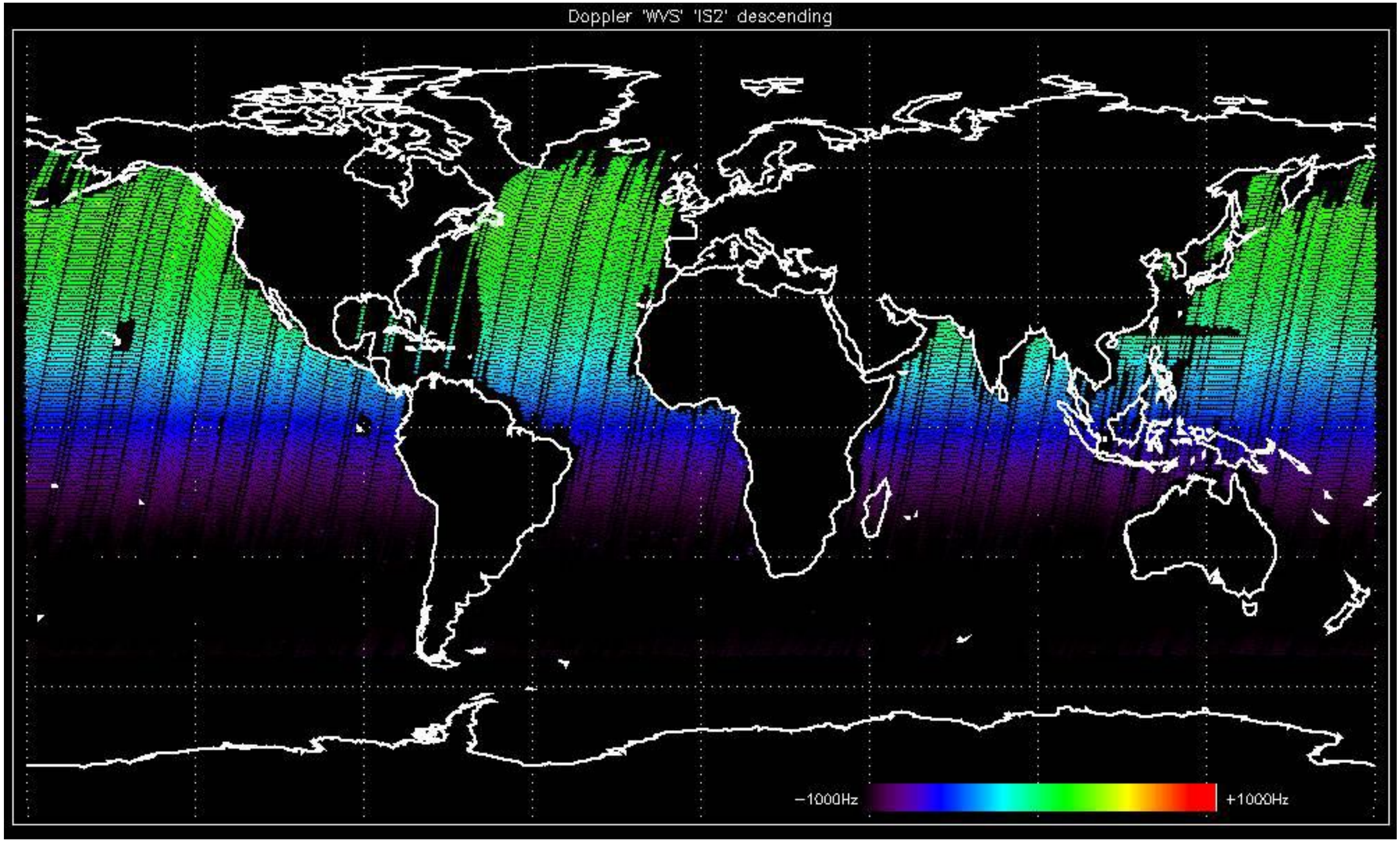

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

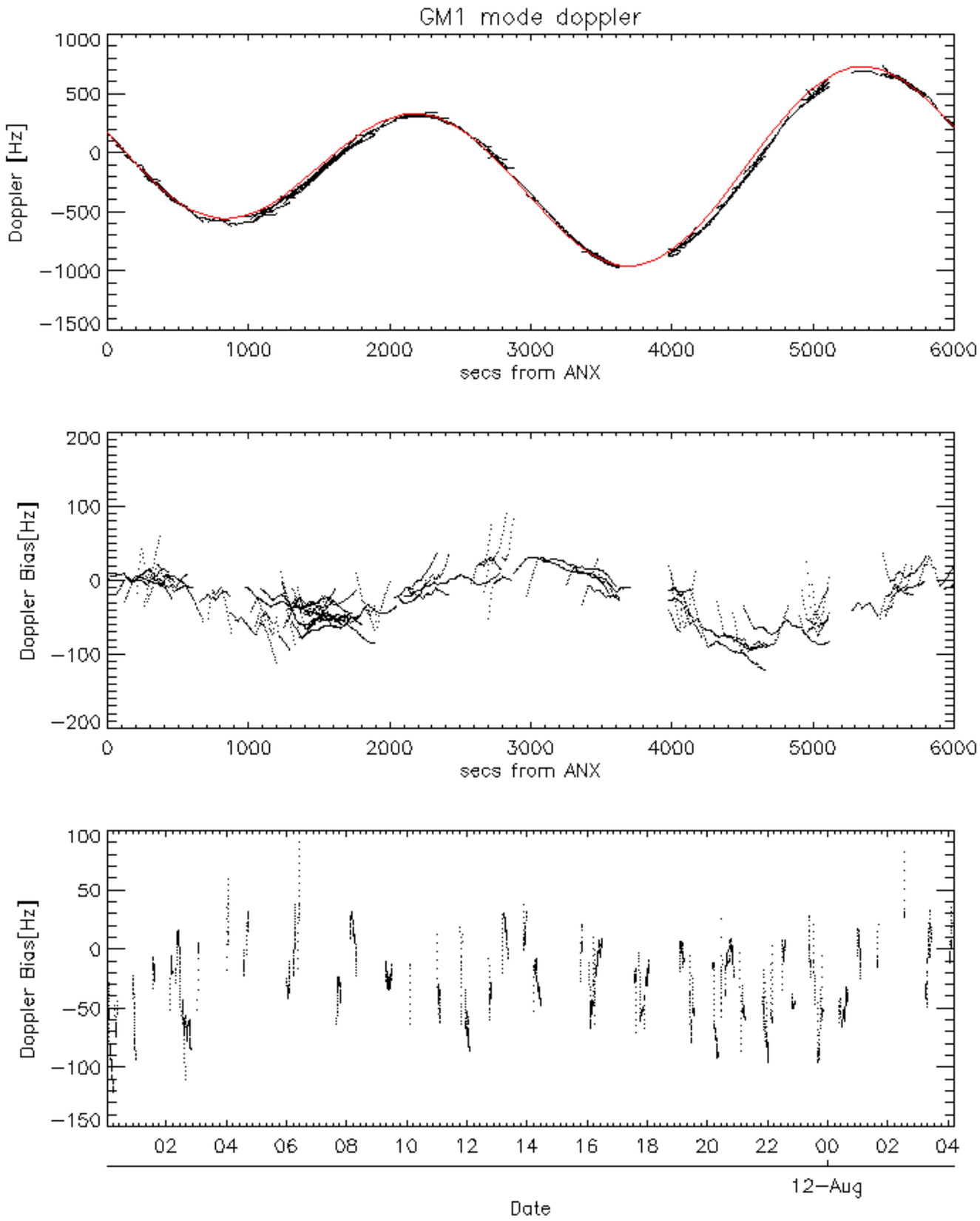
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

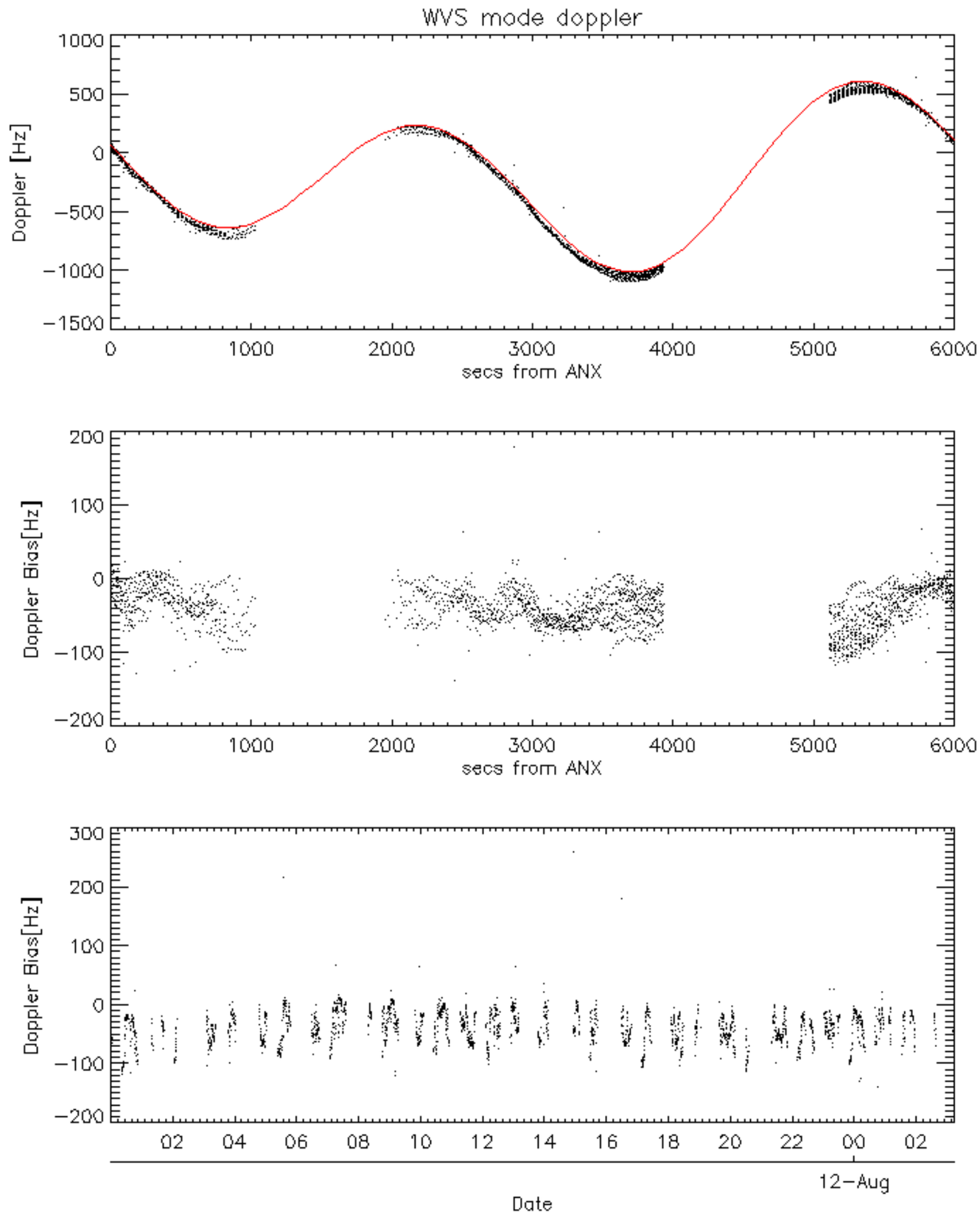

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

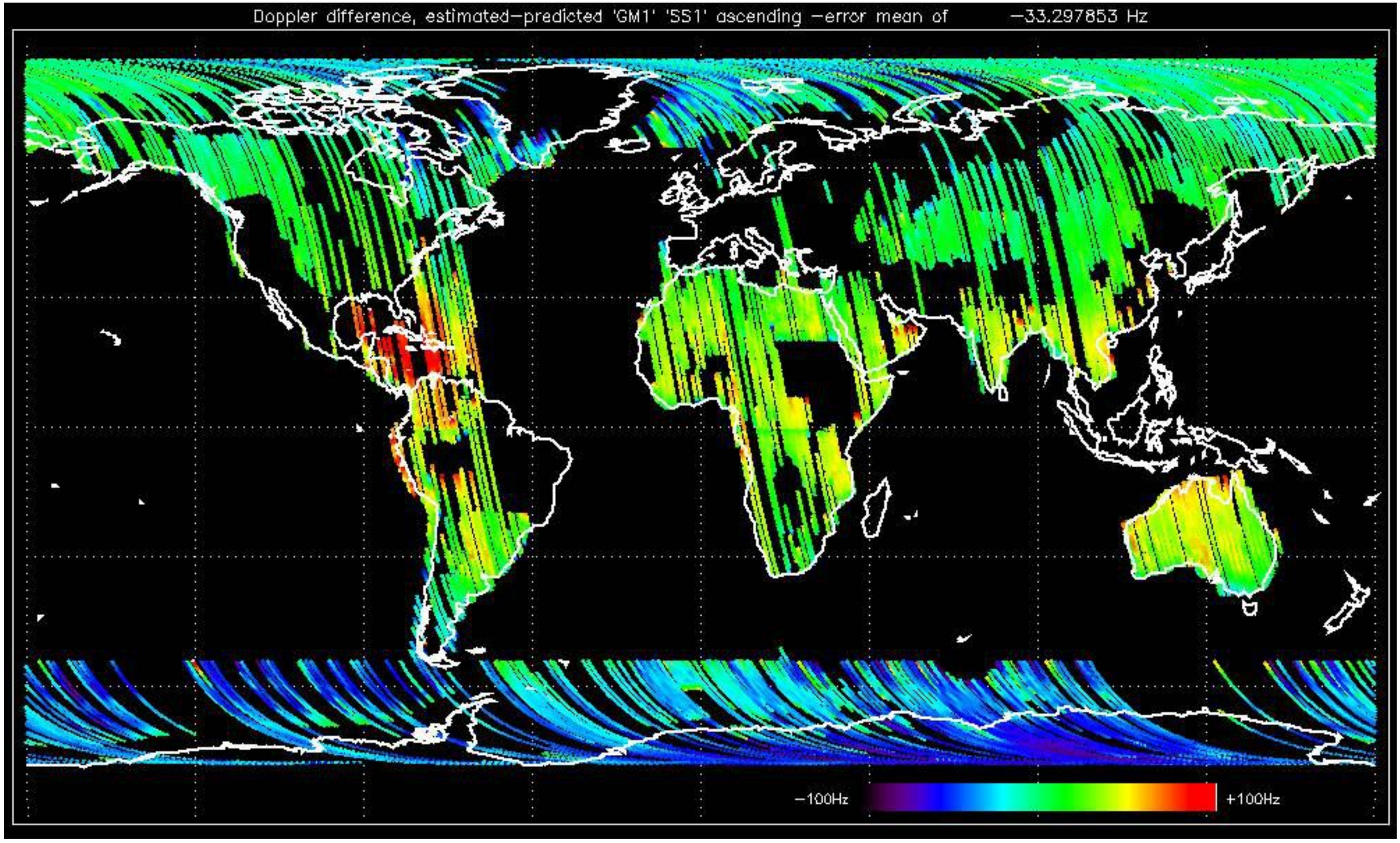

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

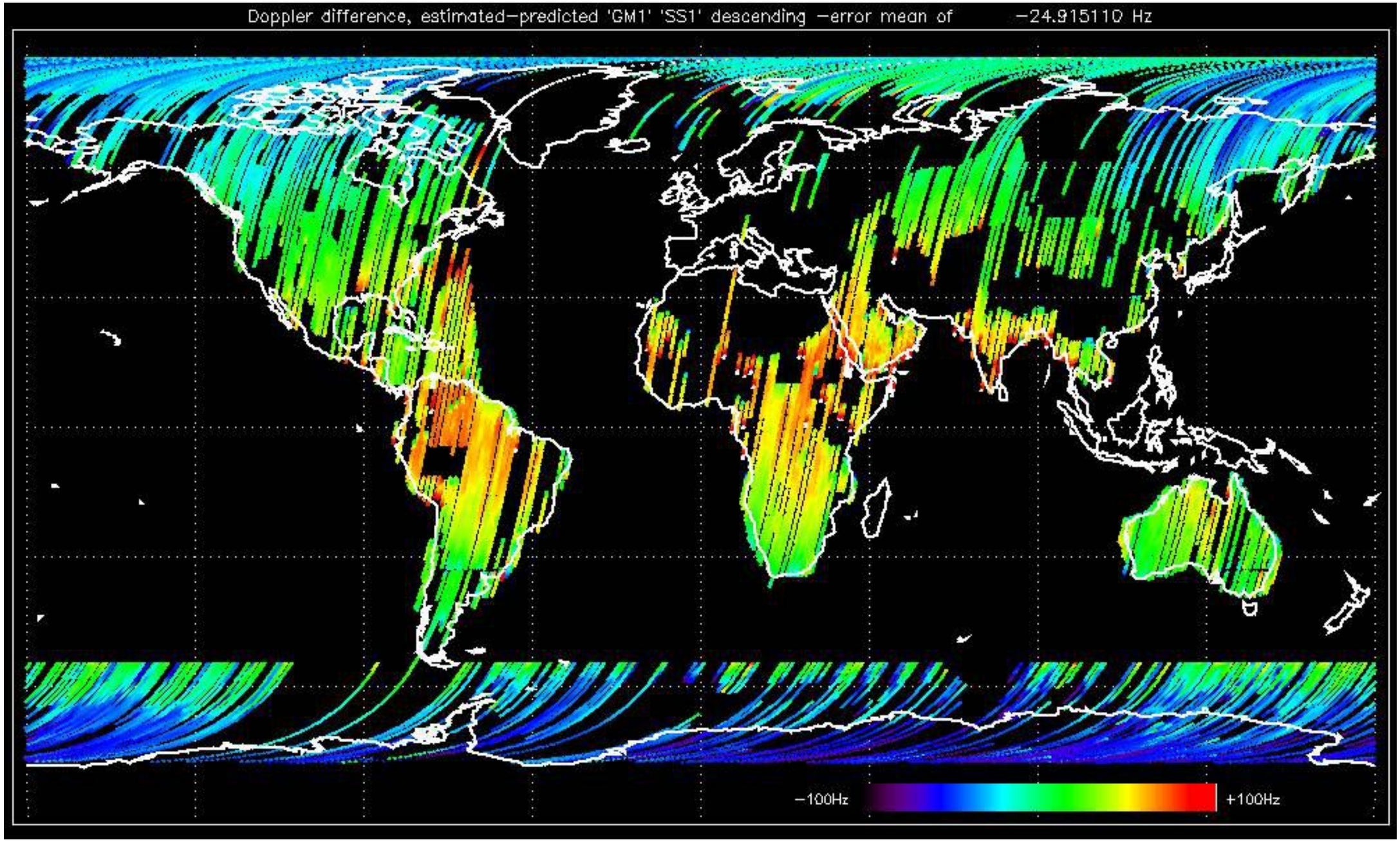

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

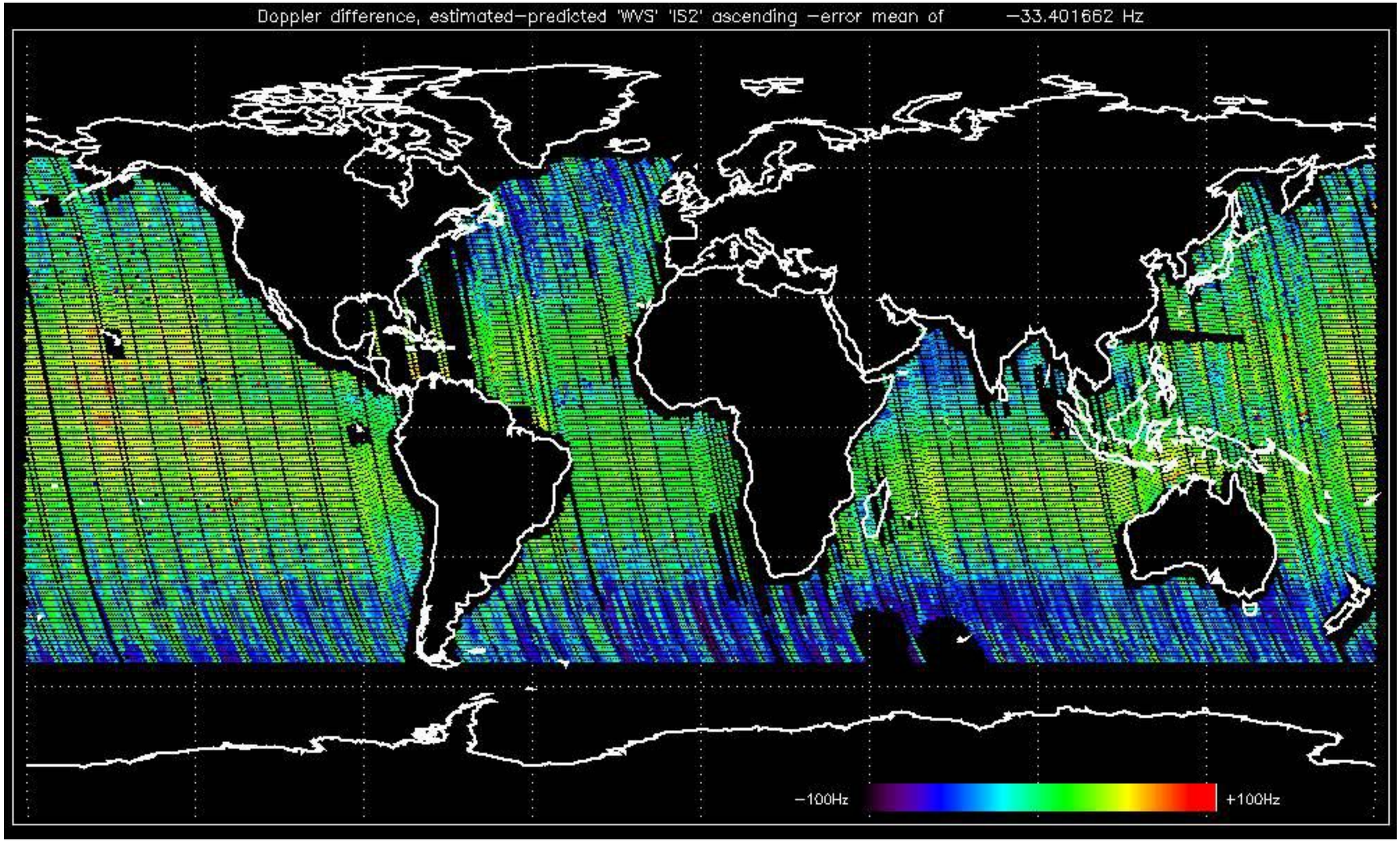

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

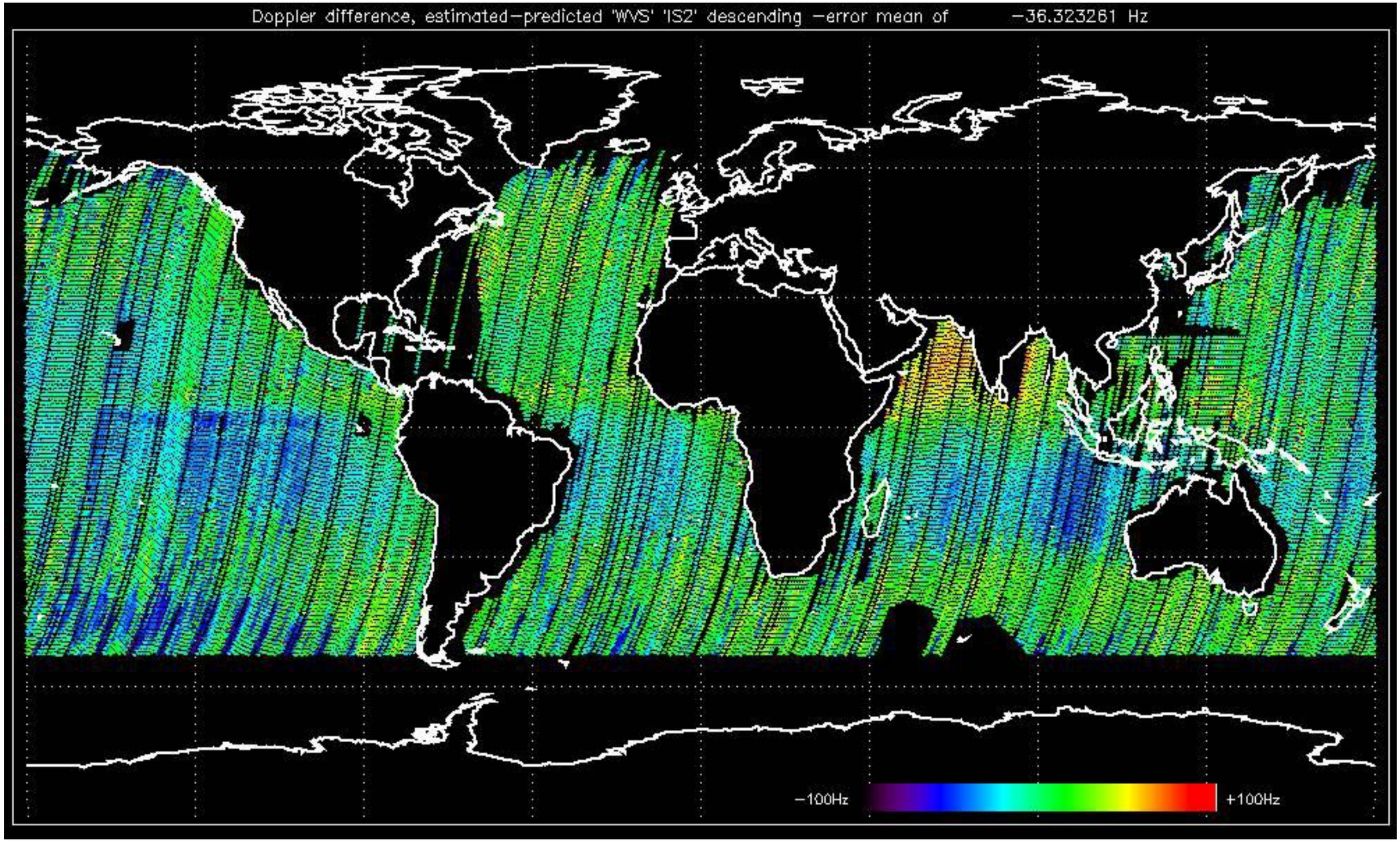

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
12−Aug
Date


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.297853 Hz
−100Hz
+100Hz

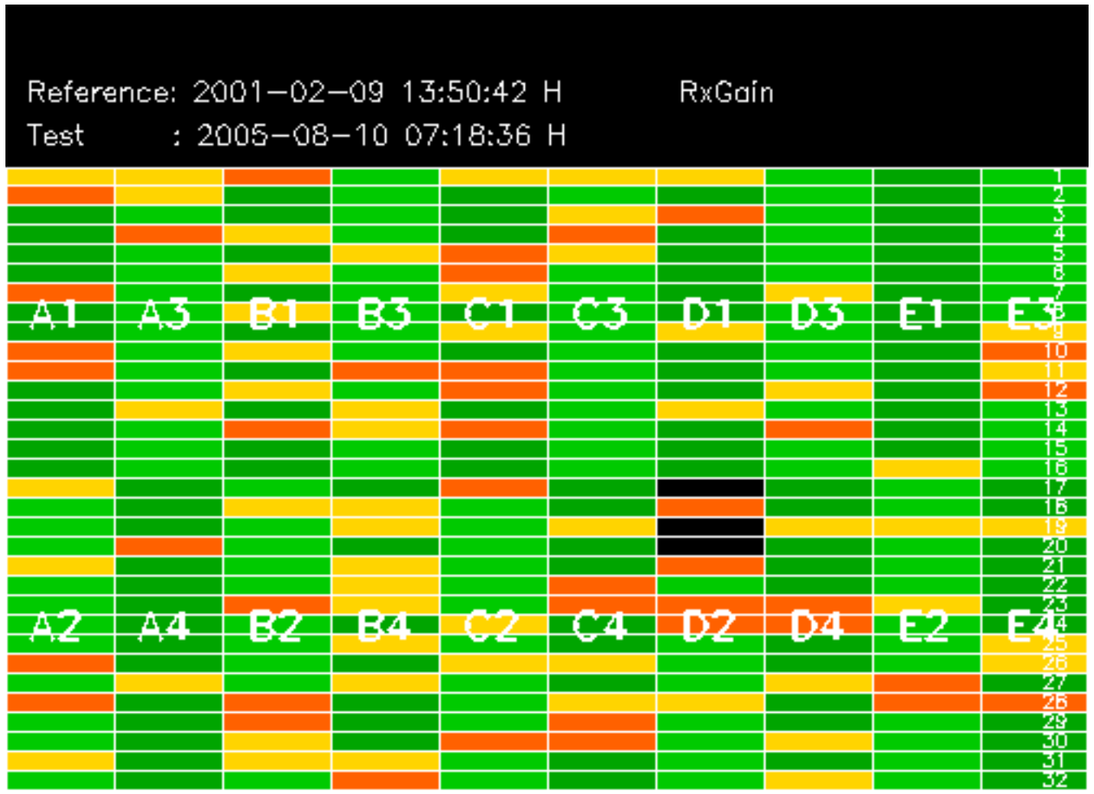

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -24.915110 Hz
-100Hz
+100Hz

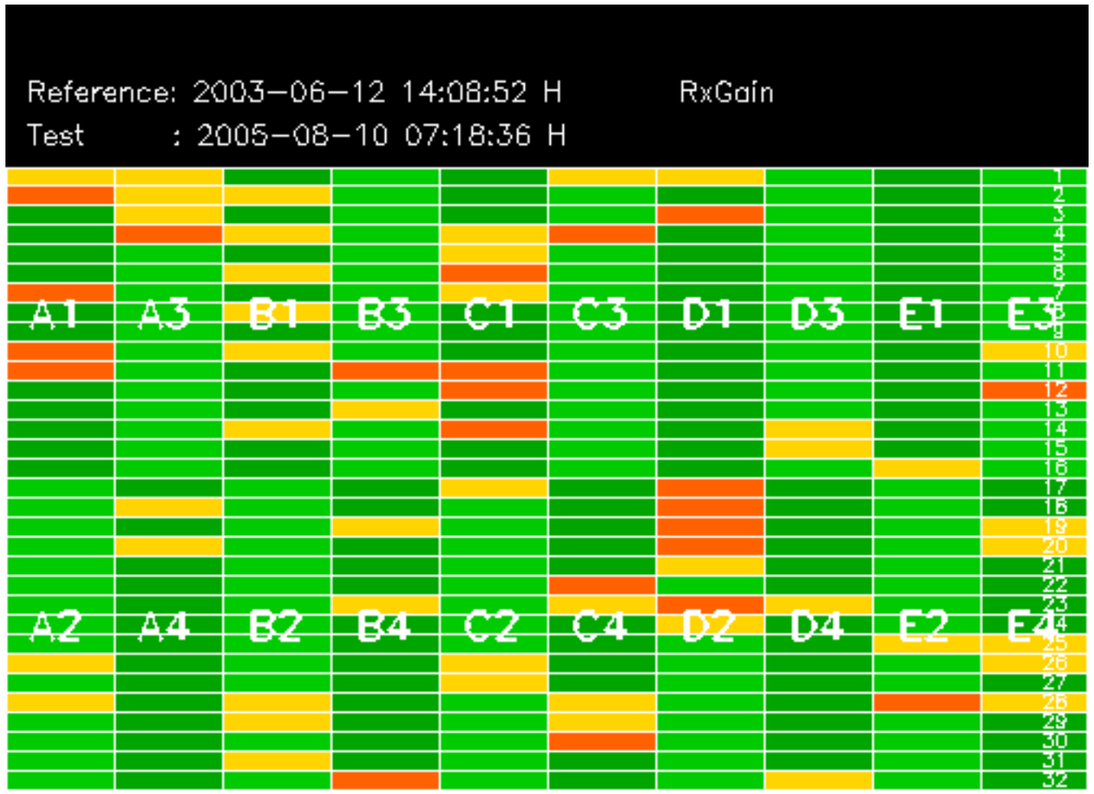

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −33.401662 Hz
−100Hz
+100Hz

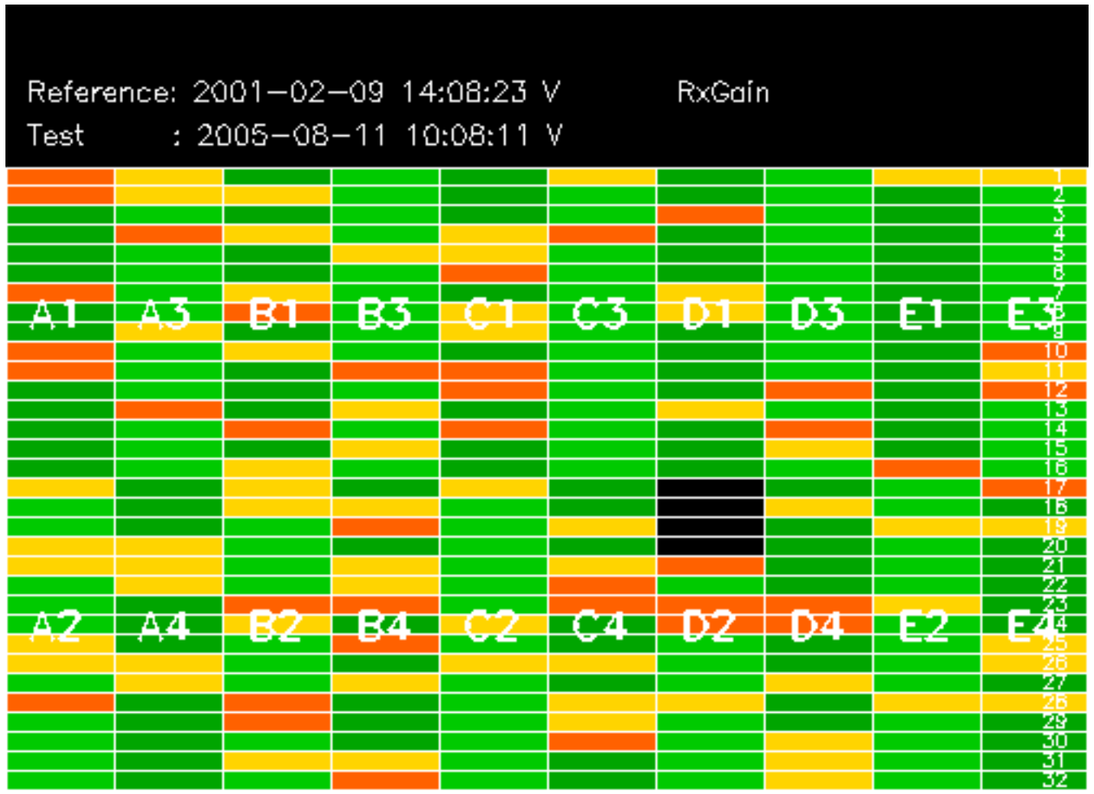

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.323261 Hz
−100Hz
+100Hz

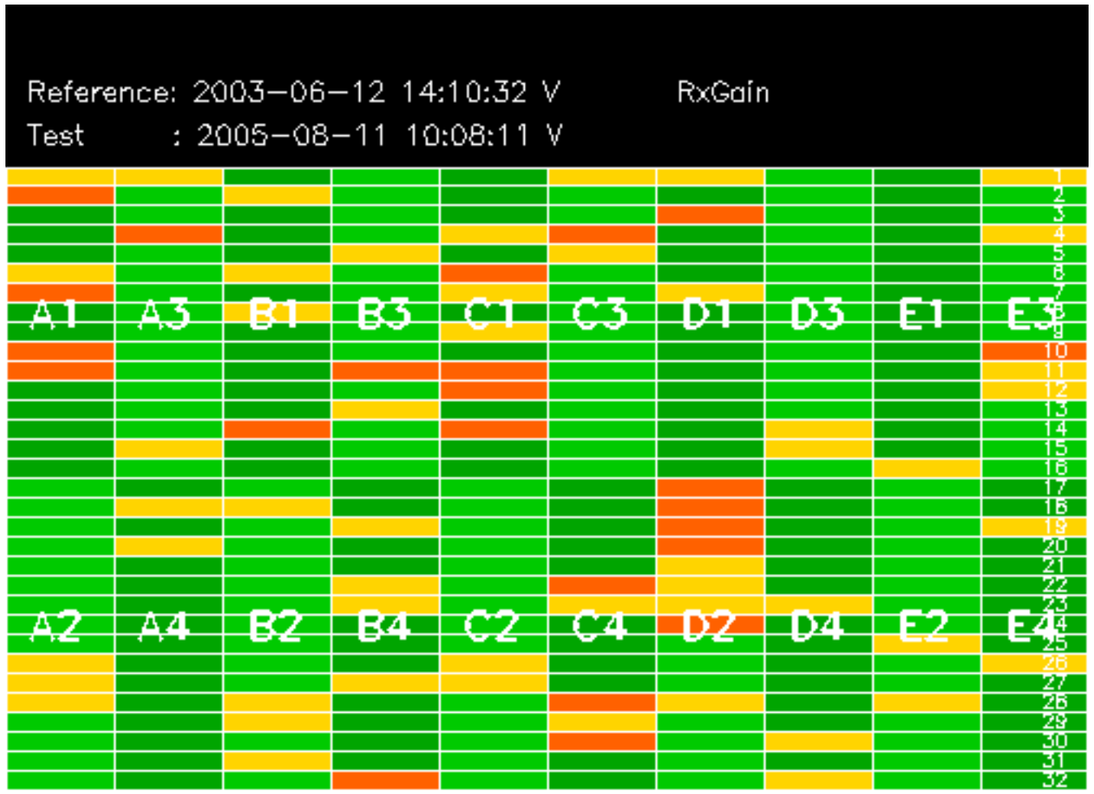
No anomalies observed on available MS products:

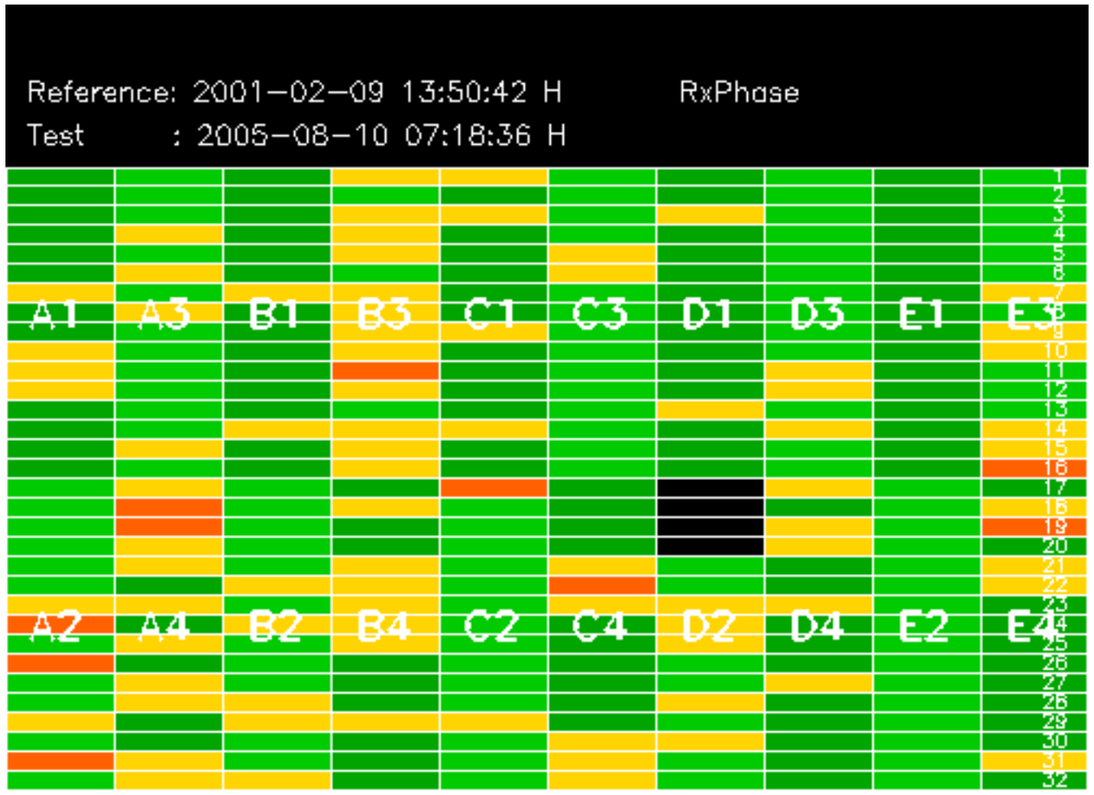
No anomalies observed.

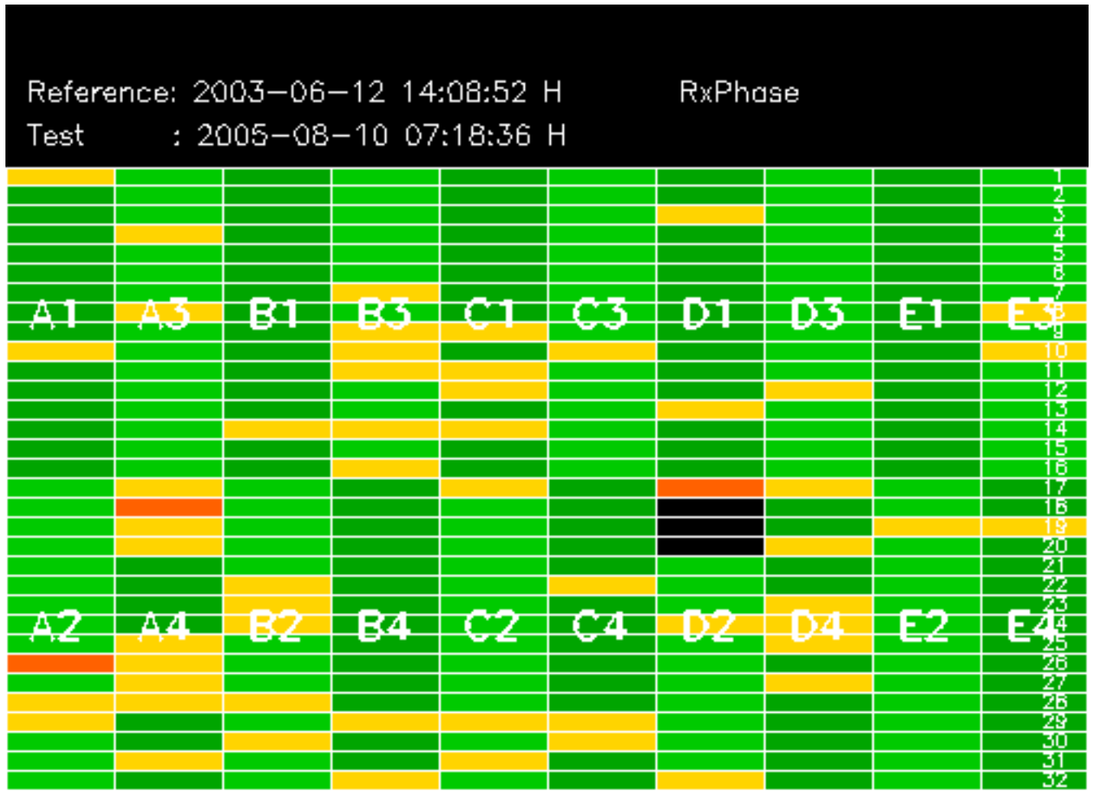

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

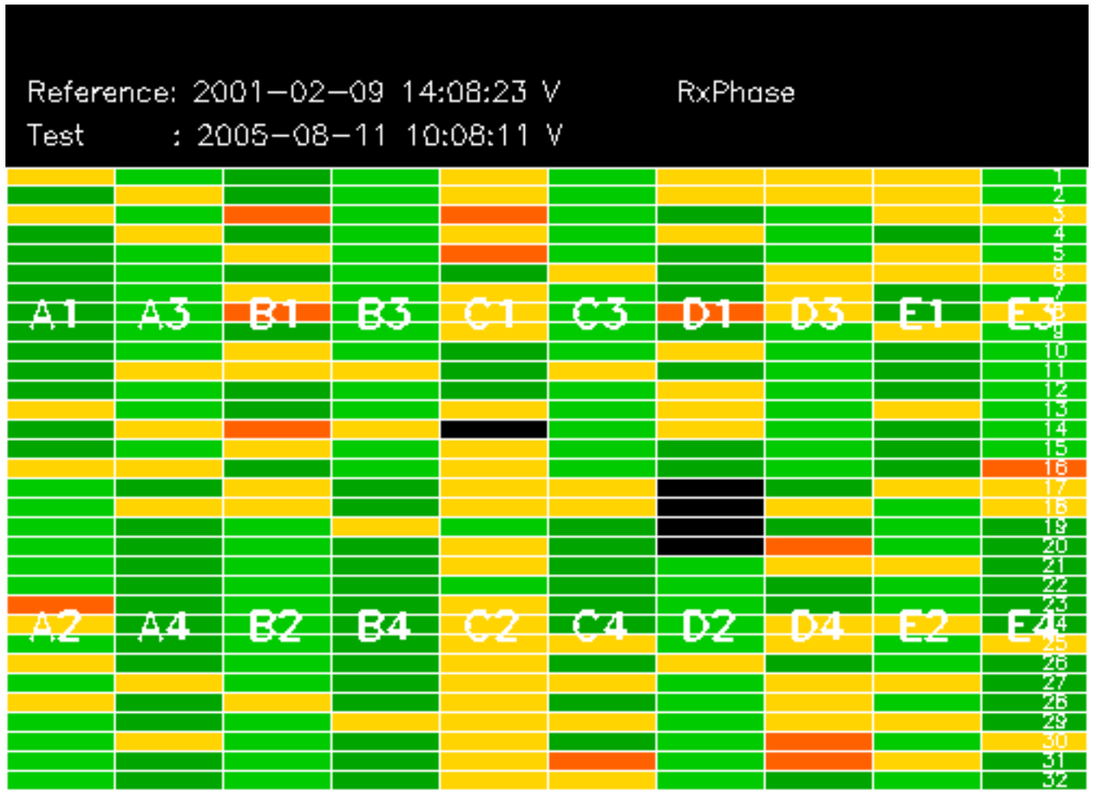

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

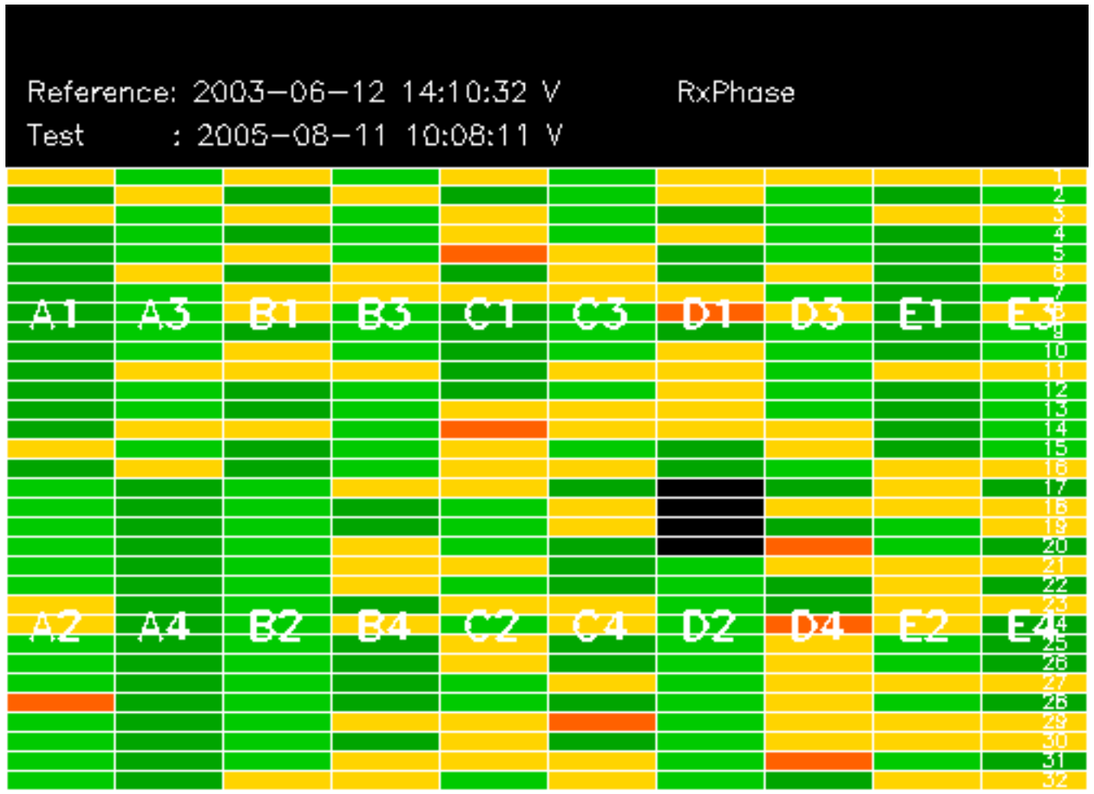

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

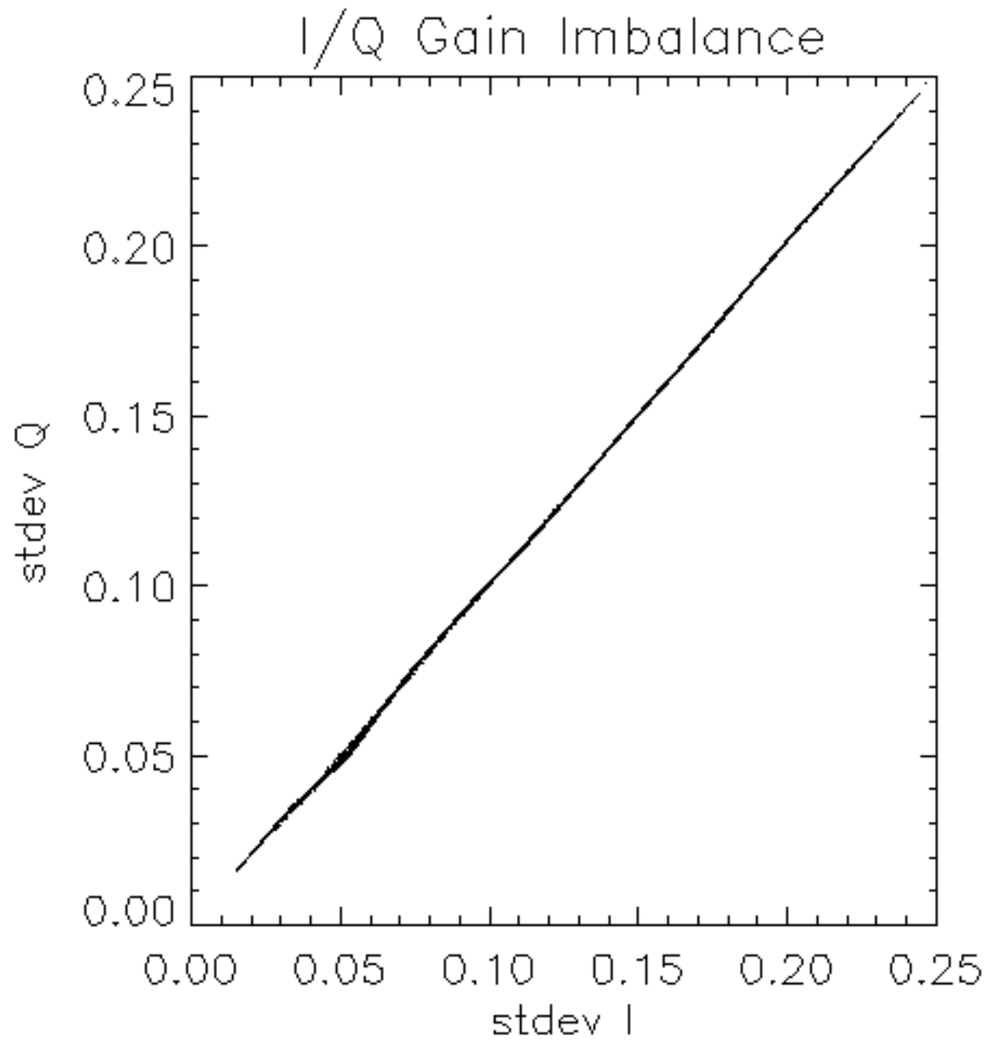

Reference: 2003-06-12 14:10:32 V
RxGain
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

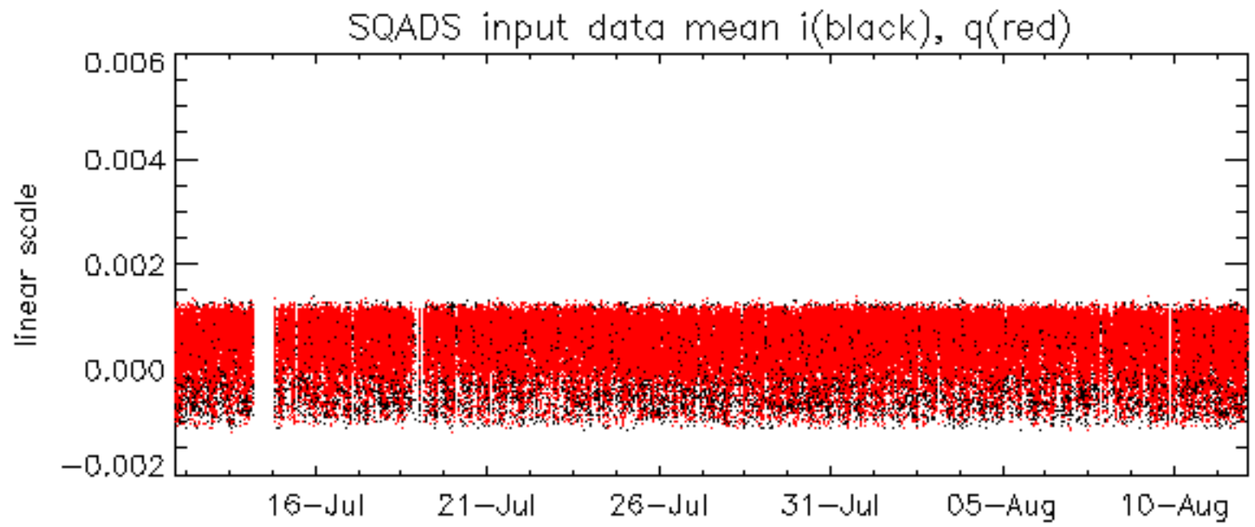

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

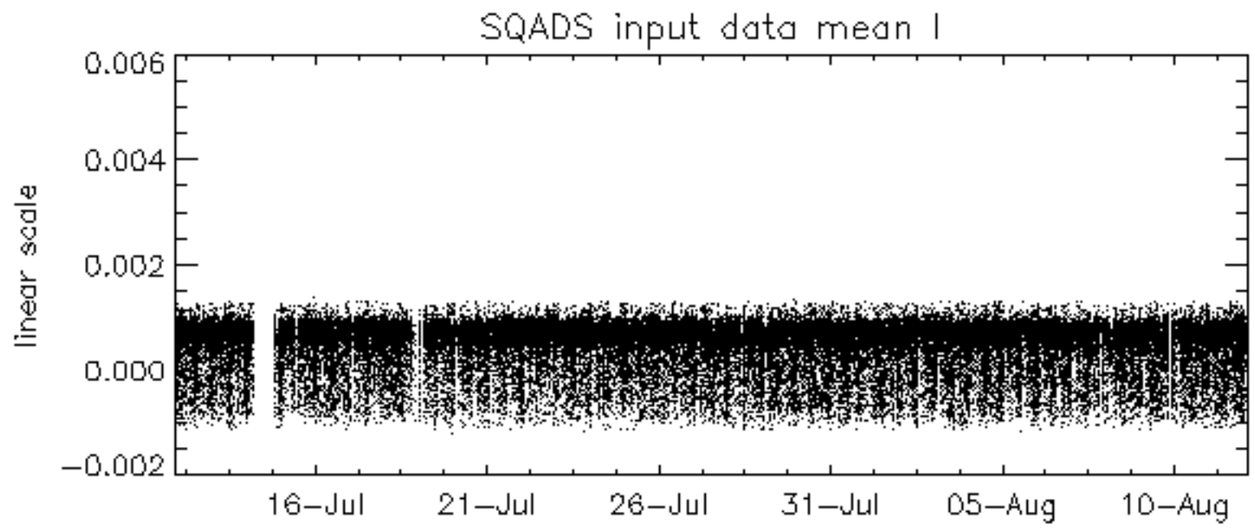

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

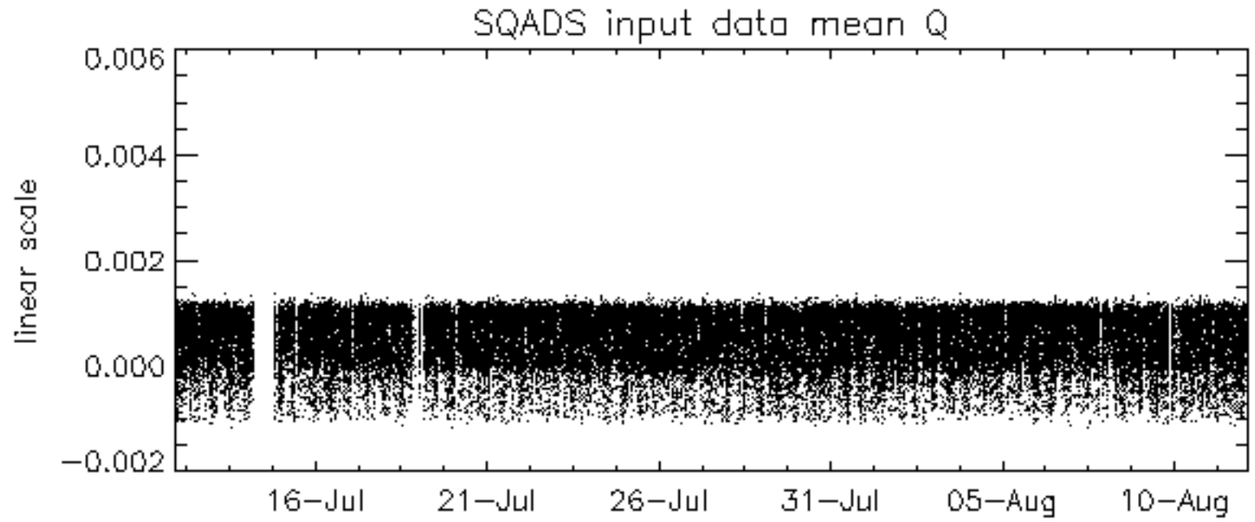

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

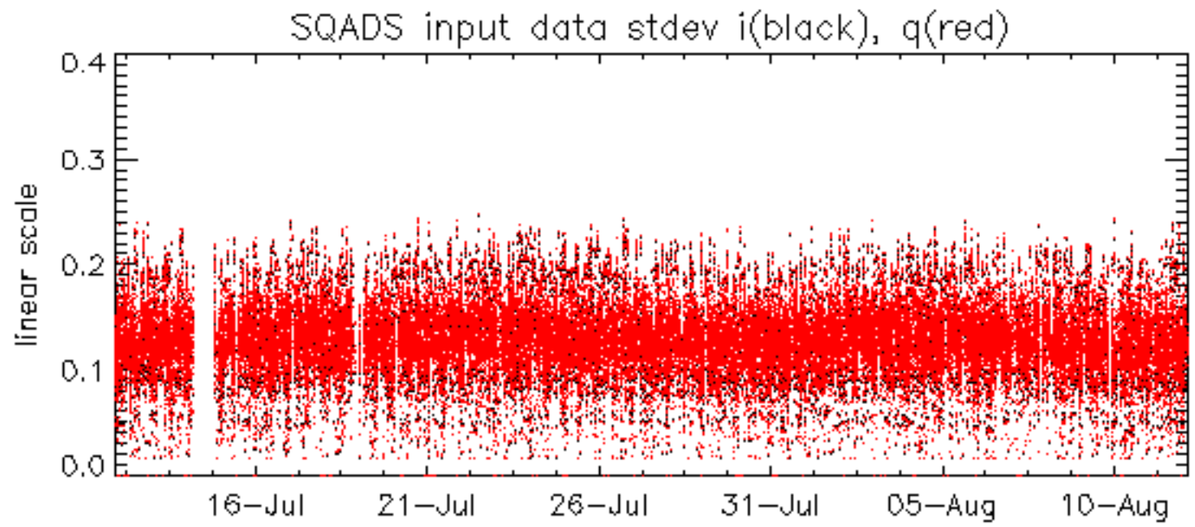

Reference: 2003-06-12 14:10:32 V
RxPhase
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

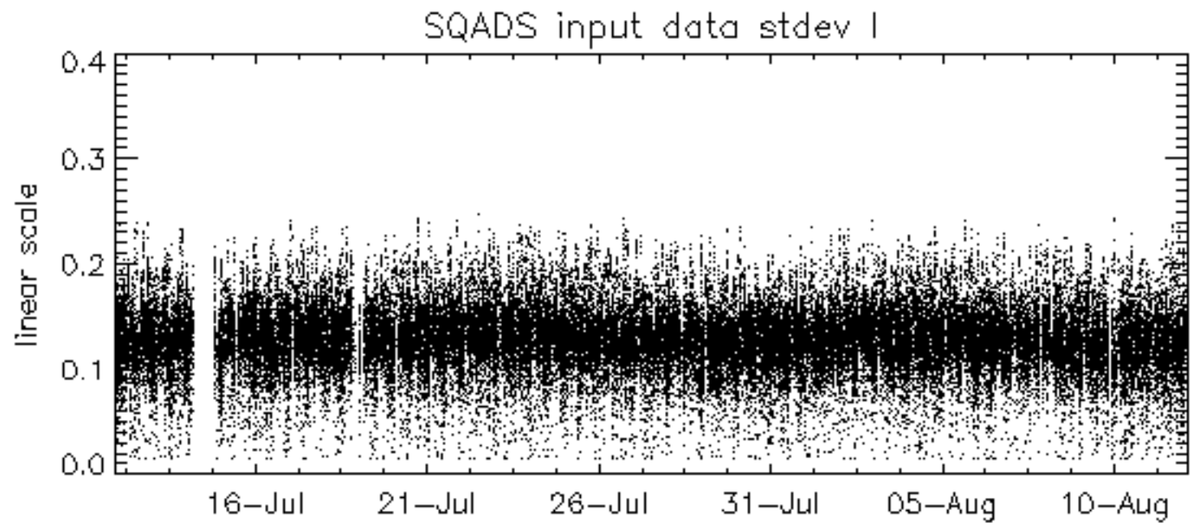

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

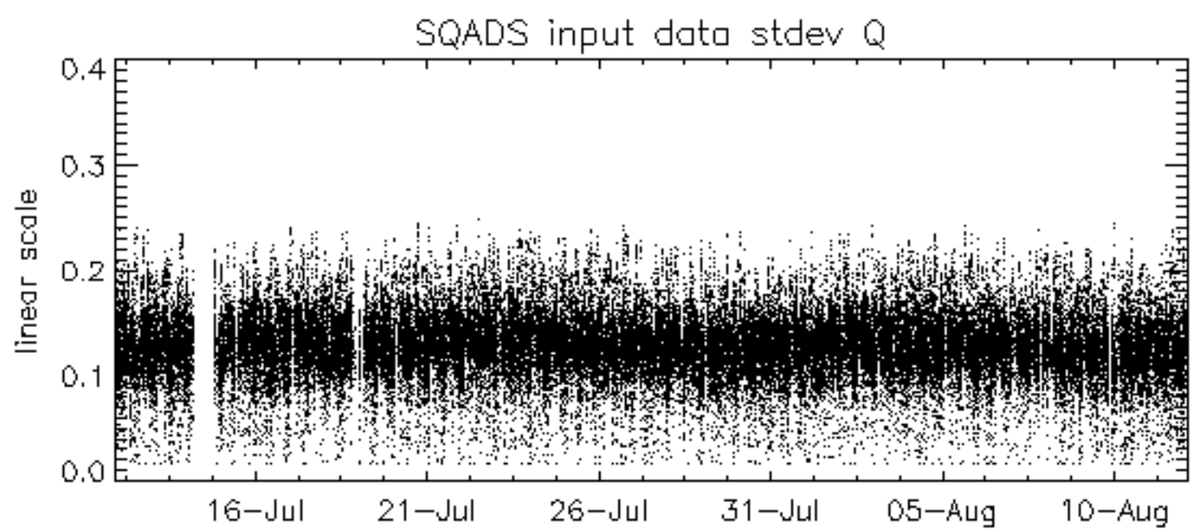

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug

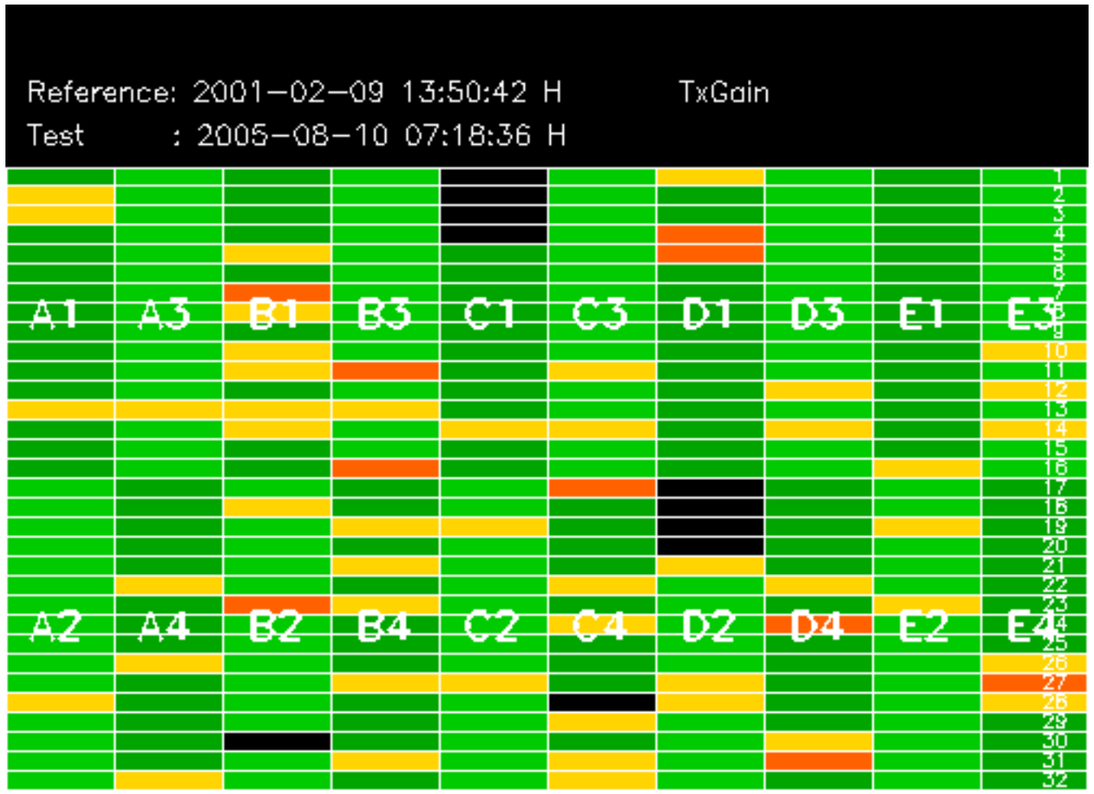

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug

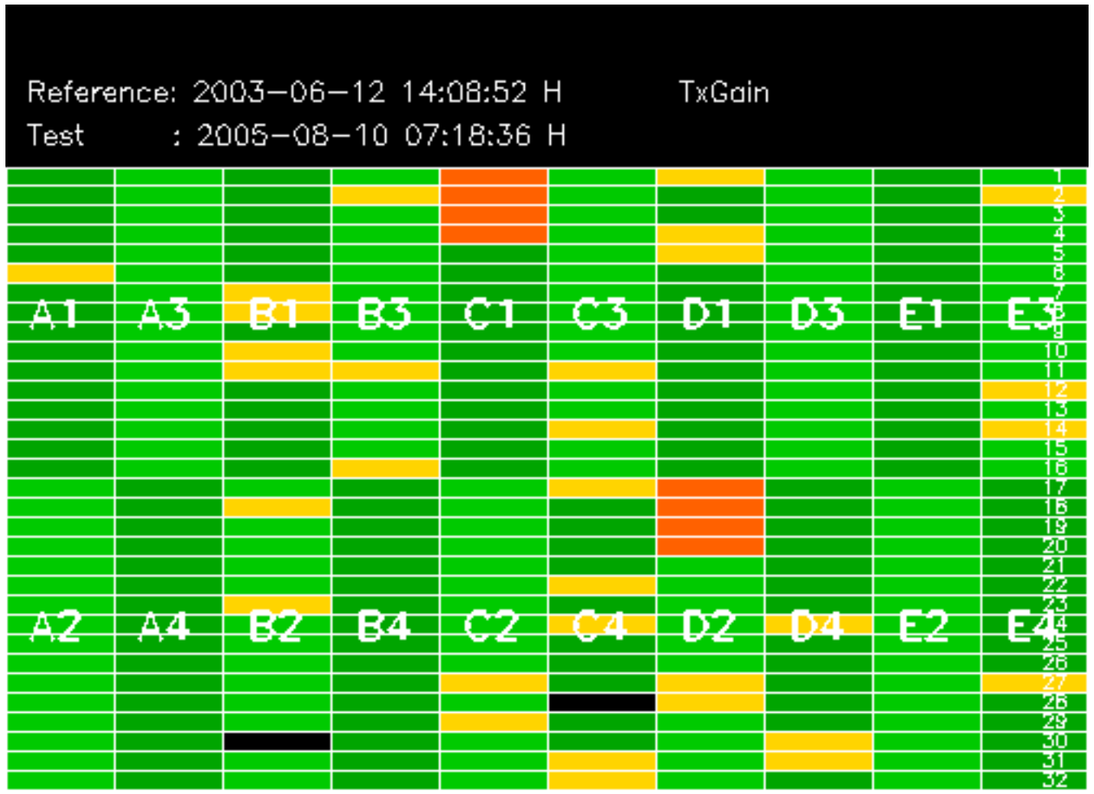

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug

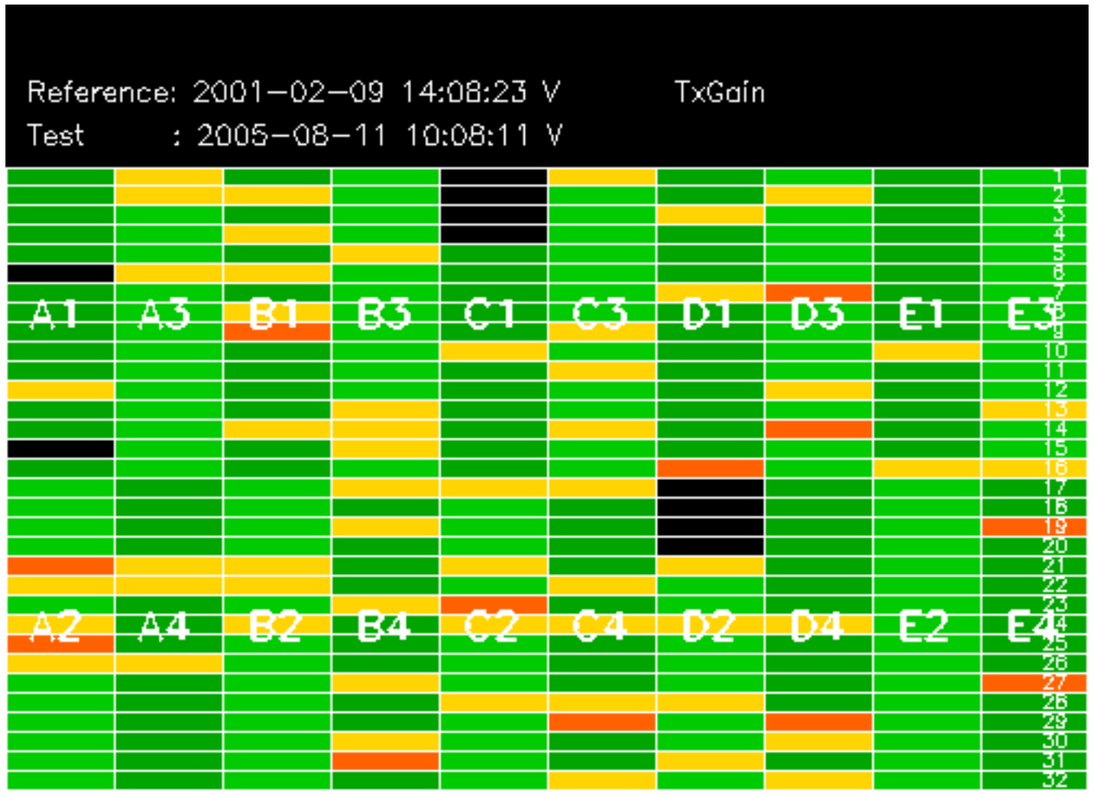

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16–Jul
21–Jul
26–Jul
31–Jul
05–Aug
10–Aug

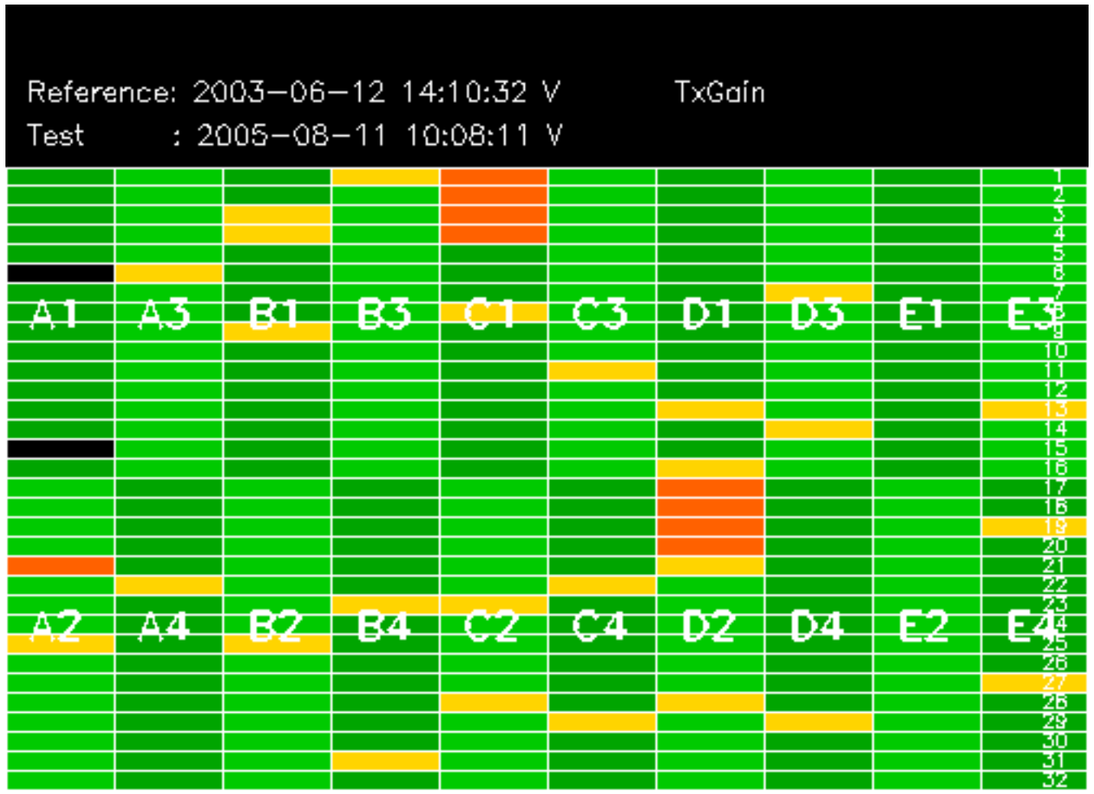

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16–Jul
21–Jul
26–Jul
31–Jul
05–Aug
10–Aug


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
16–Jul
21–Jul
26–Jul
31–Jul
05–Aug
10–Aug


Reference: 2001-02-09 13:50:42 H
TxGain
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

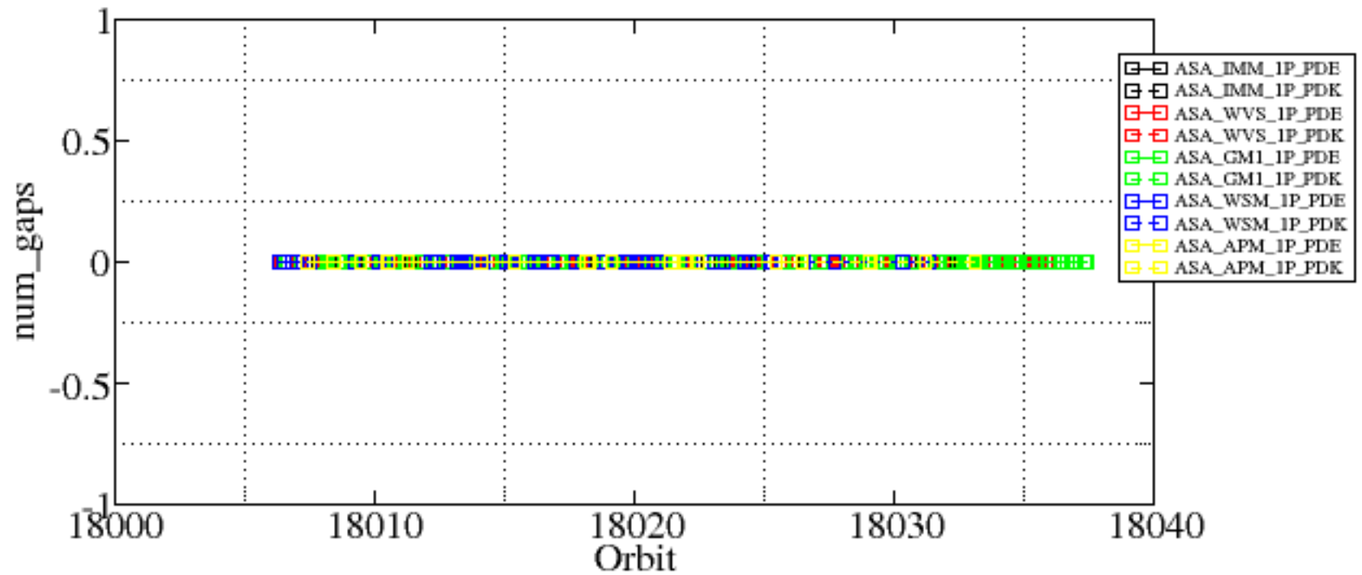

Reference: 2003-06-12 14:08:52 H
TxGain
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

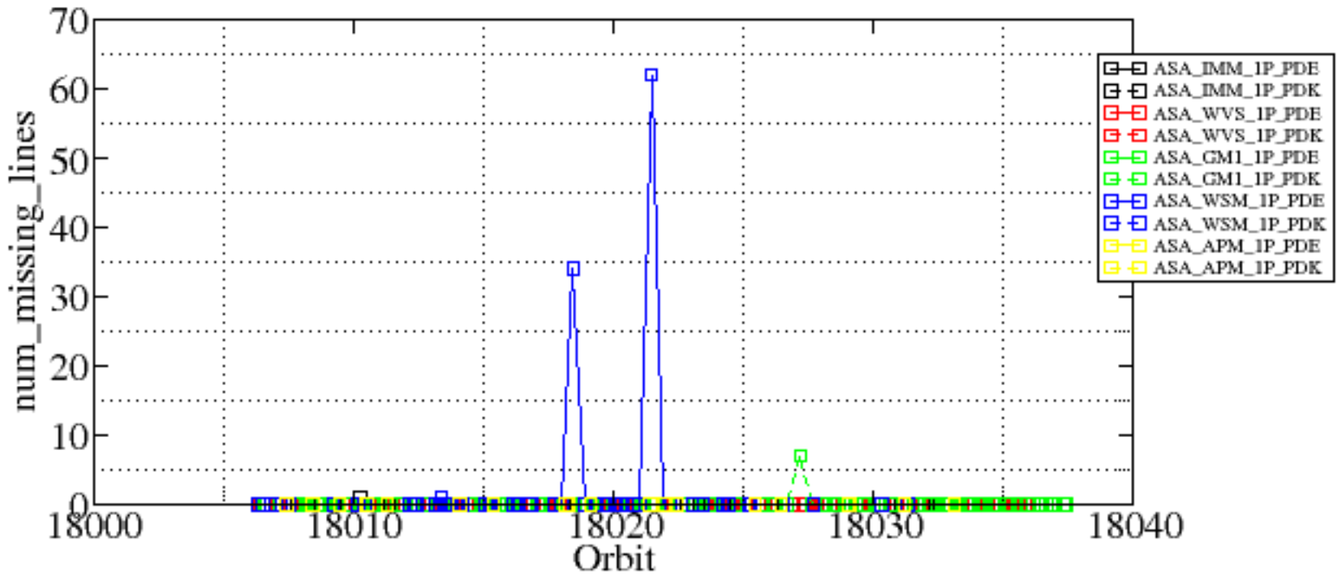

Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

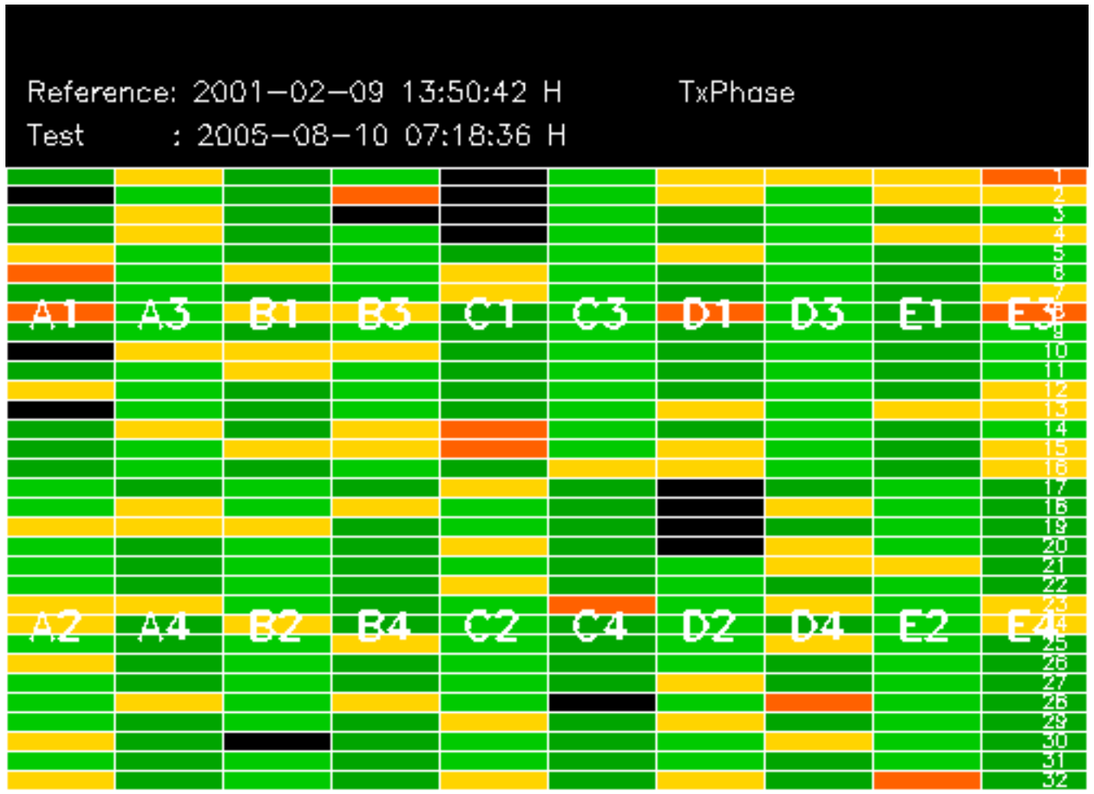

Reference: 2003-06-12 14:10:32 V
TxGain
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

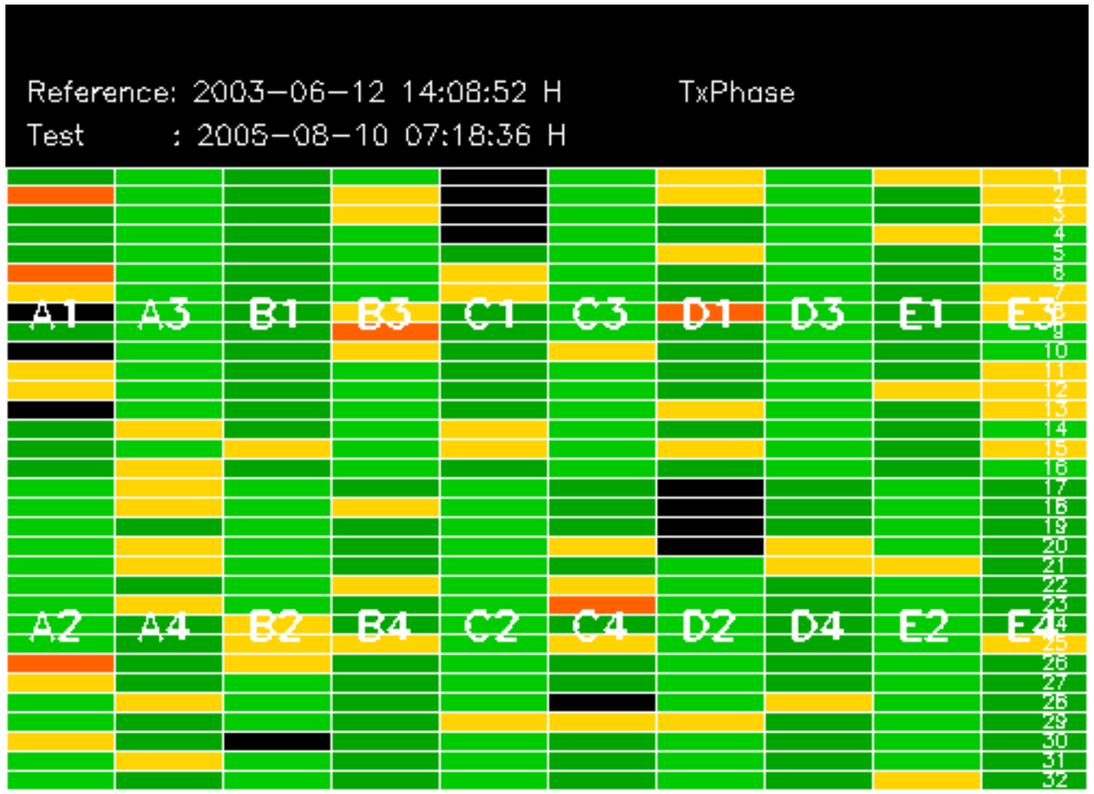
Summary of analysis for the last 3 days 2005081[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

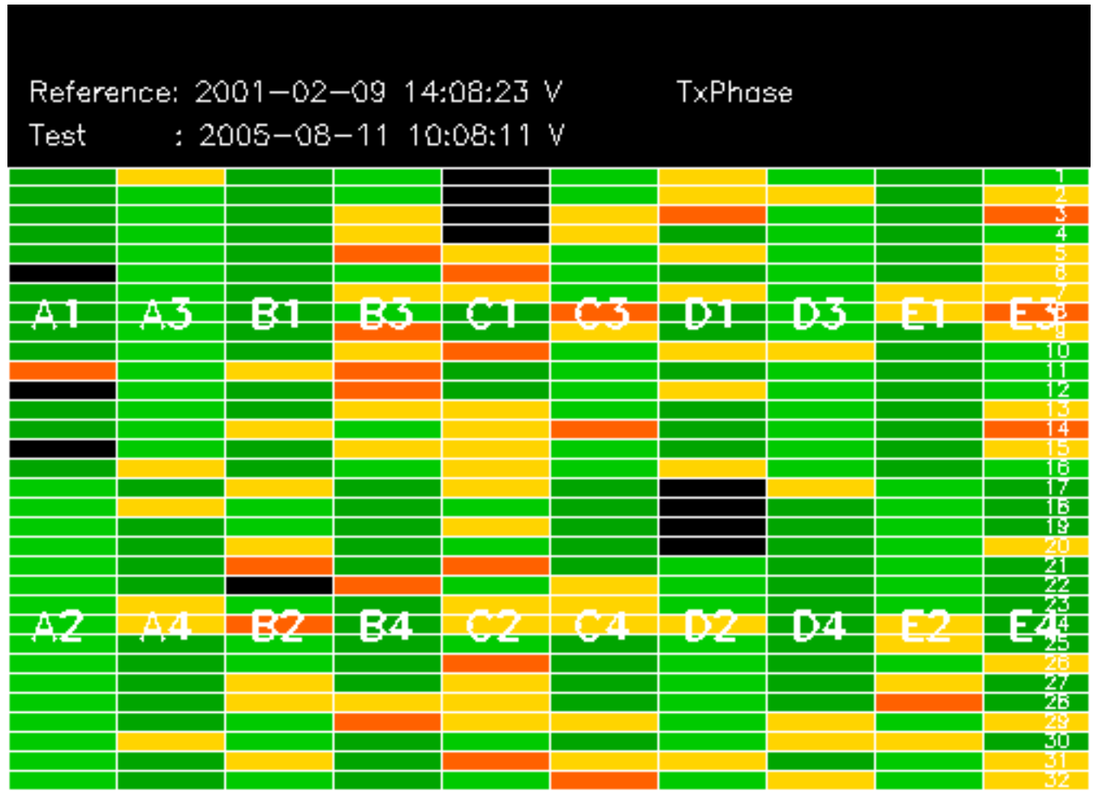
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050810_063721_000004612039_00421_18010_1358.N1 </td> <td>0 </td> <td>1 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050811_110131_000003742039_00438_18027_2062.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050810_202006_000000852039_00429_18018_3923.N1 </td> <td>0 </td> <td>34 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050811_012533_000003612039_00432_18021_3986.N1 </td> <td>0 </td> <td>62 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20050810_114804_000000482039_00424_18013_1644.N1 </td> <td>0 </td> <td>1 </td></tr>
</table>

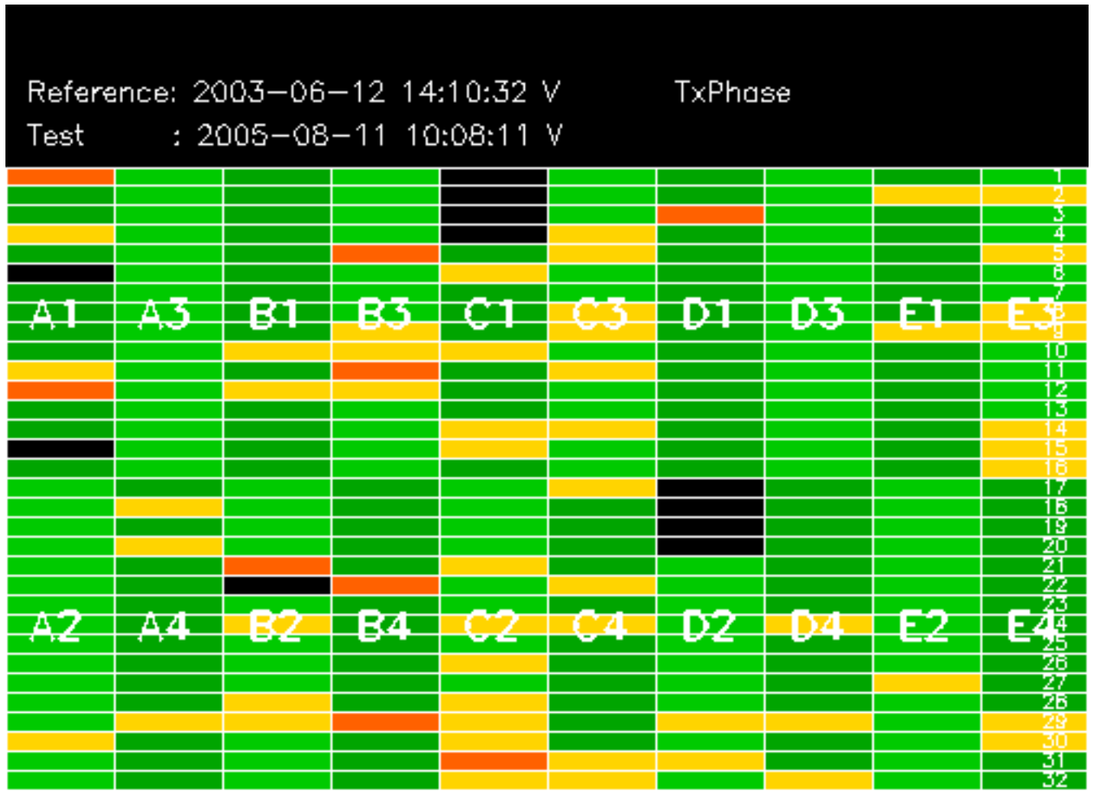

1
0.5
0
-0.5
-1
num_gaps
18000
18010
18020
18030
18040
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

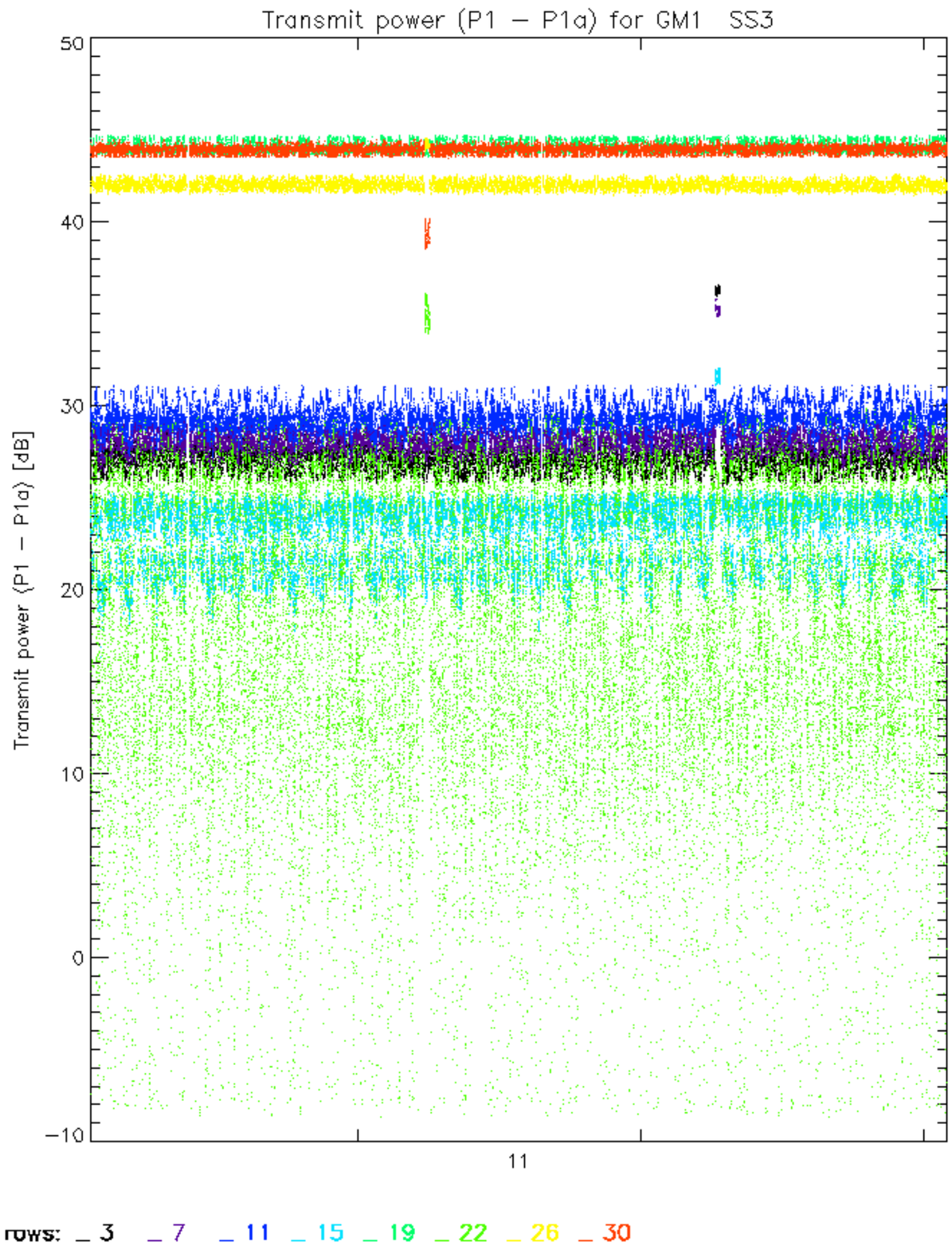

num_missing_lines
Orbit
70
60
50
40
30
20
10
0
18000
18010
18020
18030
18040
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

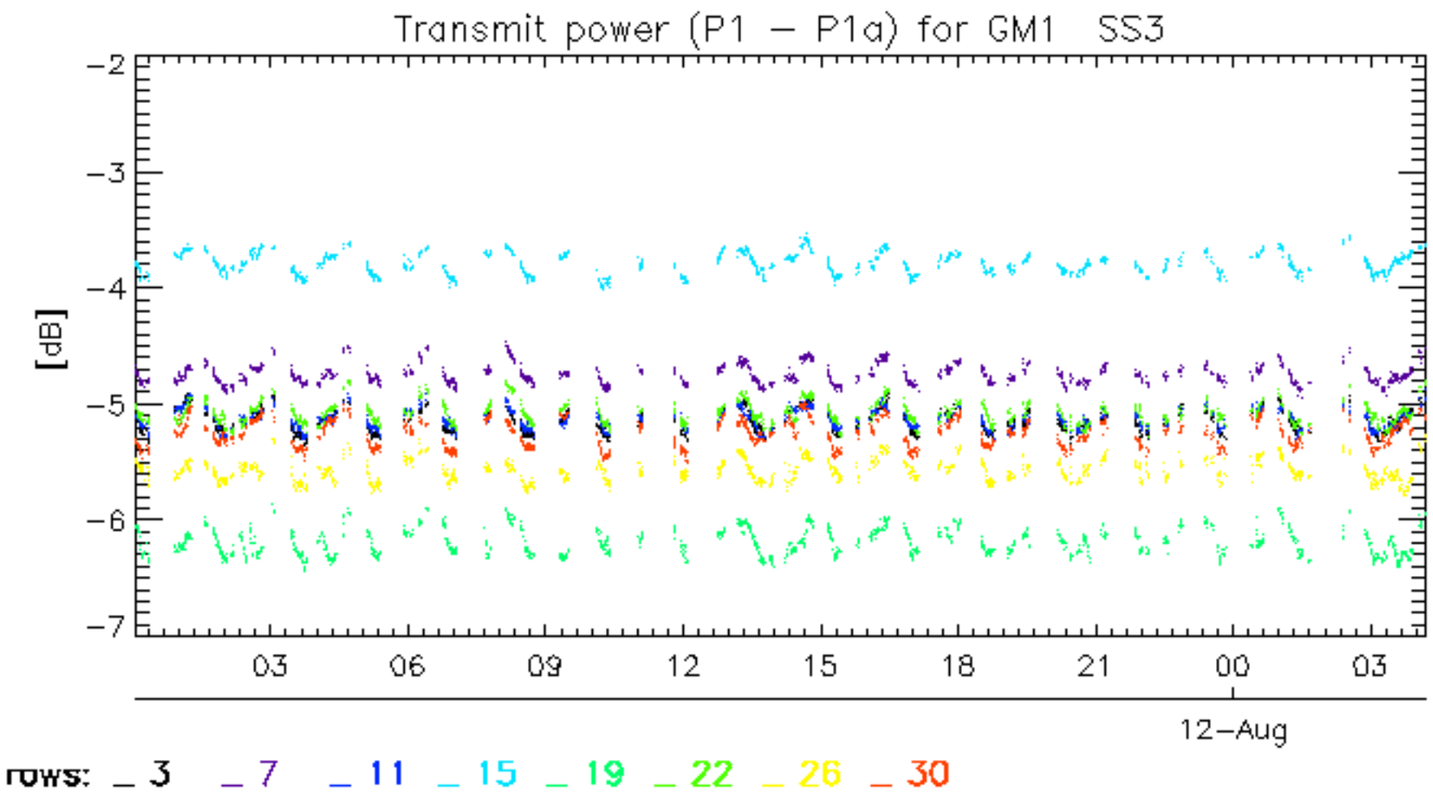

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

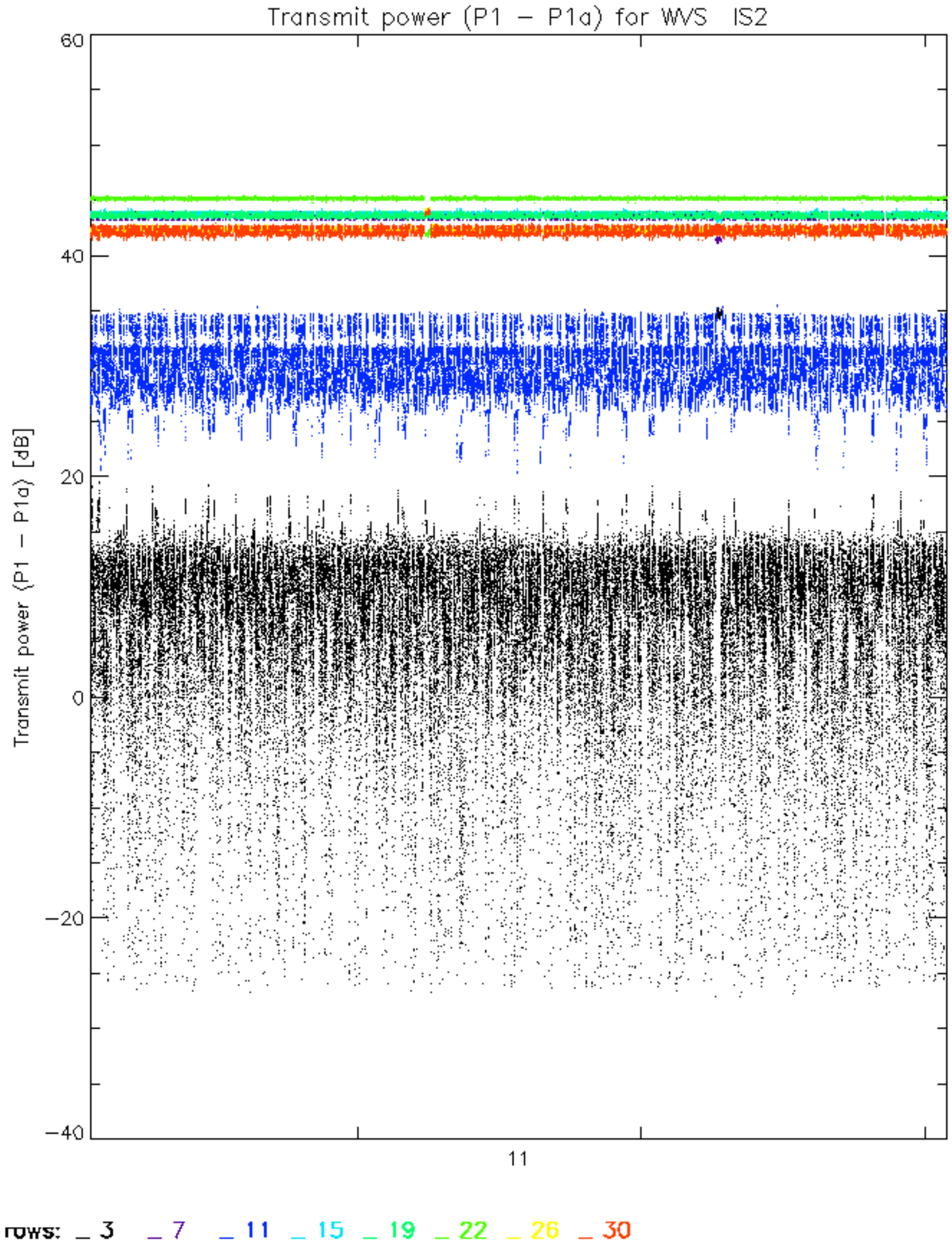

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-08-10 07:18:36 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

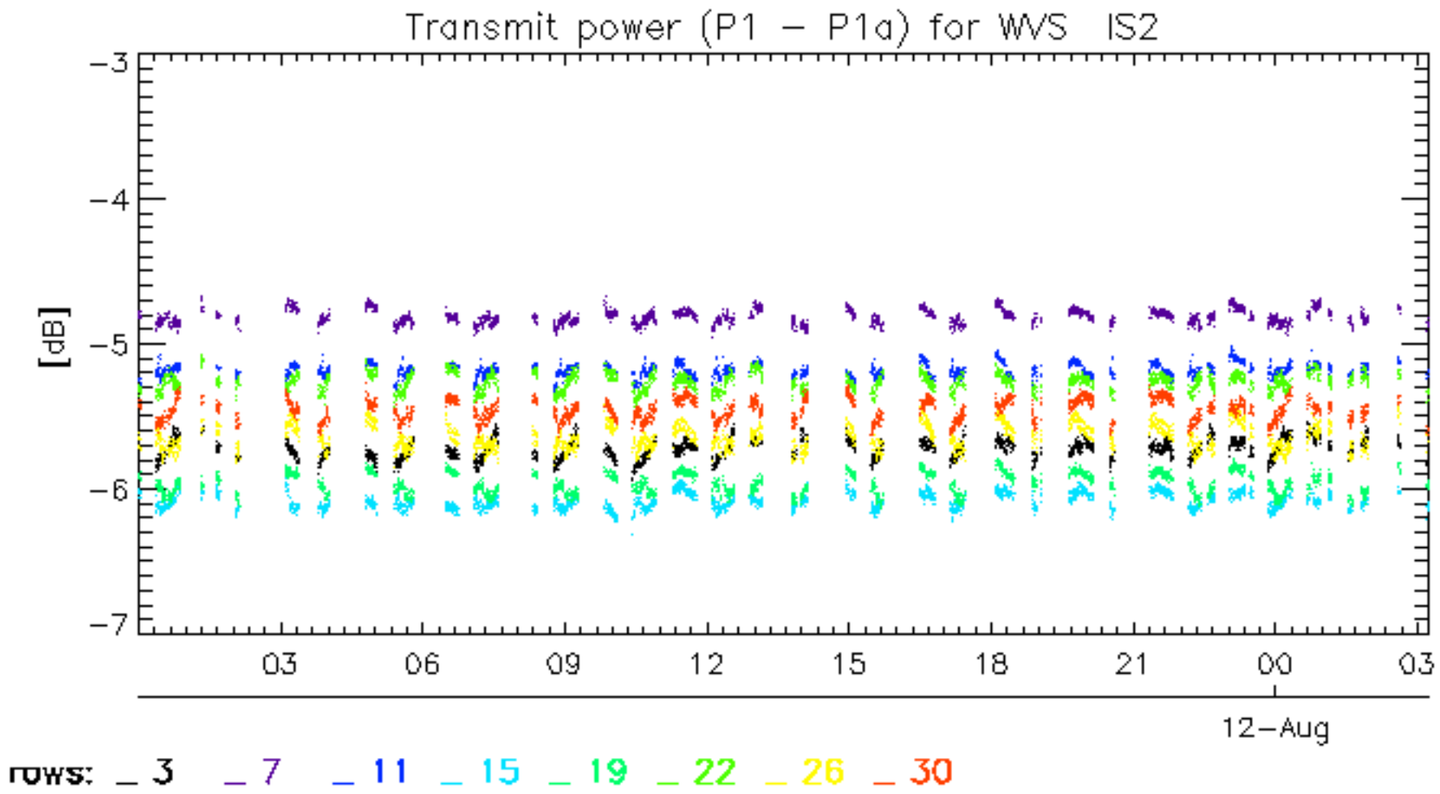

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-08-11 10:08:11 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
TxPhase
Test : 2005-08-11 10:08:11 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
11
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
12–Aug
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
11
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
12−Aug
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.