PRELIMINARY REPORT OF 050809

last update on Tue Aug 9 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 2005-08-08 00:00:00 to 2005-08-09 10:50:01

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	26	39	18	10	20
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	26	39	18	10	20
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	26	39	18	10	20
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	26	39	18	10	20

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	24	46	26	7	43
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	46	26	7	43
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	24	46	26	7	43
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	46	26	7	43

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	20050807 053216
H	20050808 050038

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	-3.320872	0.029646	-0.030786
7	P1	-3.155594	0.029722	-0.078948
11	P1	-4.710136	0.032645	-0.036008
15	P1	-5.588632	0.051830	-0.077716
19	P1	-3.794125	0.004168	-0.045951
22	P1	-4.641466	0.107134	-0.007858
26	P1	-4.853269	0.139386	0.029737
30	P1	-7.244939	0.141575	0.005422
3	P1	-15.553843	0.076366	0.080476
7	P1	-15.509377	0.156787	0.062889
11	P1	-21.731575	0.261298	-0.194823
15	P1	-11.290896	0.074965	0.024366
19	P1	-14.485915	0.036473	-0.038496
22	P1	-15.705837	0.346099	0.151946
26	P1	-17.357506	0.199273	0.242931
30	P1	-17.761292	0.420132	-0.164117

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.823479	0.083718	0.085527
7	P2	-21.980955	0.101104	0.122341
11	P2	-13.576832	0.106278	0.208523
15	P2	-7.071635	0.092059	0.026995
19	P2	-9.589855	0.095001	-0.021583
22	P2	-16.840616	0.097116	0.044442
26	P2	-16.508141	0.098803	-0.016912
30	P2	-18.796669	0.087093	-0.037539

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.156971	0.002516	-0.005296
7	P3	-8.156971	0.002516	-0.005296
11	P3	-8.156971	0.002516	-0.005296
15	P3	-8.156971	0.002516	-0.005296
19	P3	-8.156971	0.002516	-0.005296
22	P3	-8.156971	0.002516	-0.005296
26	P3	-8.156971	0.002516	-0.005296
30	P3	-8.156971	0.002516	-0.005296

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	-2.807301	0.102254	-0.125154
7	P1	-2.972629	0.061988	-0.077987
11	P1	-4.009245	0.015861	-0.049705
15	P1	-3.612069	0.065062	-0.147272
19	P1	-3.630794	0.015940	0.030054
22	P1	-5.693491	0.108090	-0.050914
26	P1	-7.396879	0.190739	0.043384
30	P1	-6.330397	0.102265	0.052276
3	P1	-10.884534	0.053114	-0.260160
7	P1	-10.463004	0.169438	-0.008189
11	P1	-12.641442	0.102768	-0.070389
15	P1	-11.598759	0.100920	0.052912
19	P1	-15.508327	0.068879	0.148918
22	P1	-25.620361	2.951449	0.447776
26	P1	-15.311346	0.321523	0.256184
30	P1	-20.046865	1.261845	0.003278

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.557161	0.043783	0.162843
7	P2	-22.025826	0.039452	0.063372
11	P2	-9.613177	0.063215	0.211719
15	P2	-5.107092	0.042123	0.062236
19	P2	-6.888536	0.062892	0.068908
22	P2	-7.060061	0.037194	0.065843
26	P2	-23.967733	0.037675	0.024036
30	P2	-21.948219	0.043012	0.033616

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998097	0.004067	0.004192
7	P3	-7.997973	0.004060	0.004209
11	P3	-7.997965	0.004072	0.003810
15	P3	-7.997937	0.004066	0.004390
19	P3	-7.998038	0.004067	0.004349
22	P3	-7.998034	0.004055	0.004264
26	P3	-7.998000	0.004049	0.004191
30	P3	-7.997924	0.004051	0.004191

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	0.000468270
	stdev	2.17180e-07
MEAN Q	mean	0.000499004
	stdev	2.31202e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128832
	stdev	0.000979749
STDEV Q	mean	0.129091
	stdev	0.000990218

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005080[789]
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_1PNPDE20050809_003745_000001282039_00403_17992_1934.N1	1	0
ASA_IMM_1PNPDK20050808_090909_000000532039_00394_17983_1173.N1	0	2
ASA_GM1_1PNPDK20050807_144853_000010092039_00383_17972_1742.N1	0	7
ASA_WSM_1PNPDE20050808_020810_000000612039_00389_17978_3490.N1	0	1
ASA_WSM_1PNPDE20050808_020911_000000552039_00389_17978_3492.N1	0	1
ASA_WSM_1PNPDK20050808_092904_000000862039_00394_17983_1477.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)

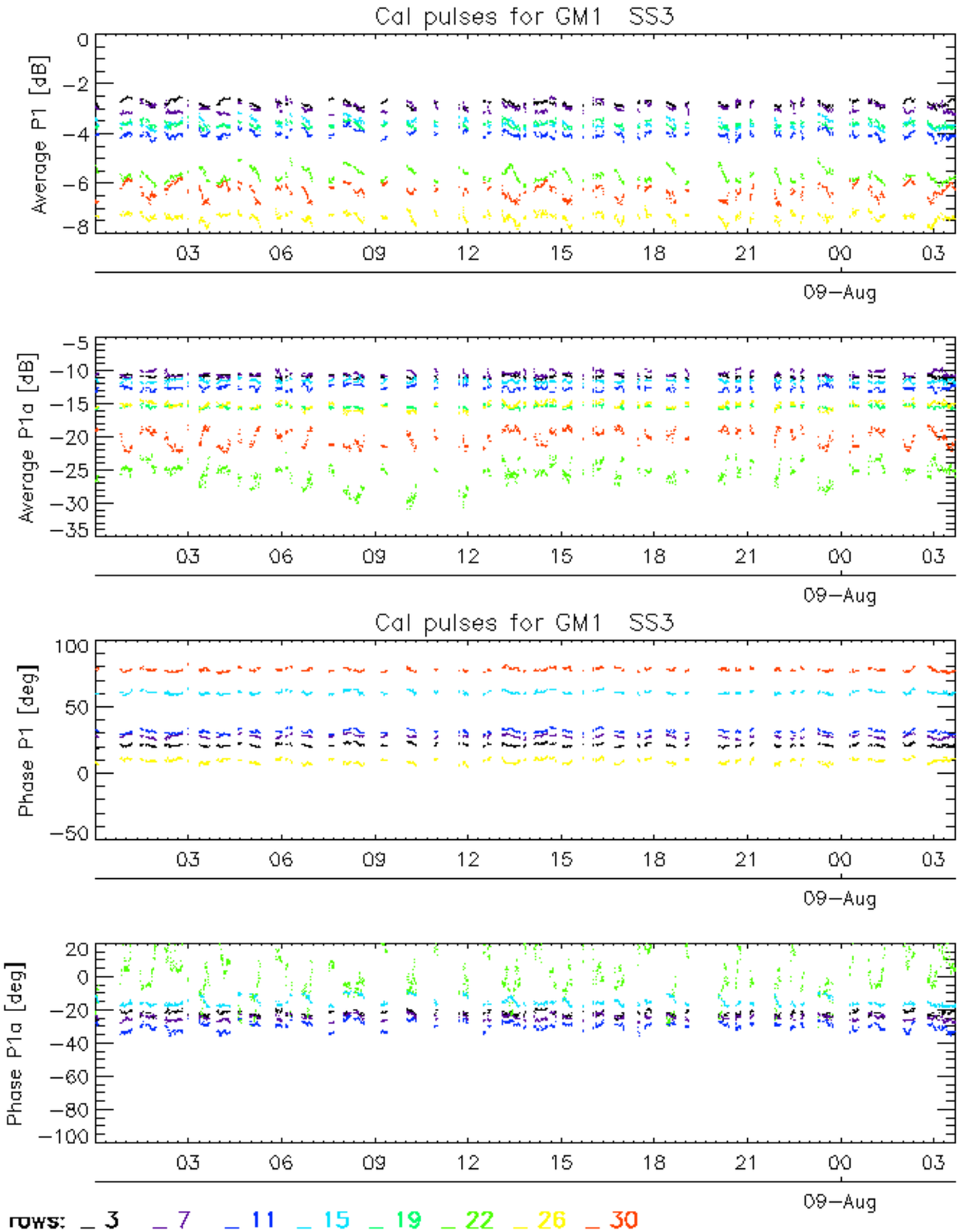
Acsending
Descending

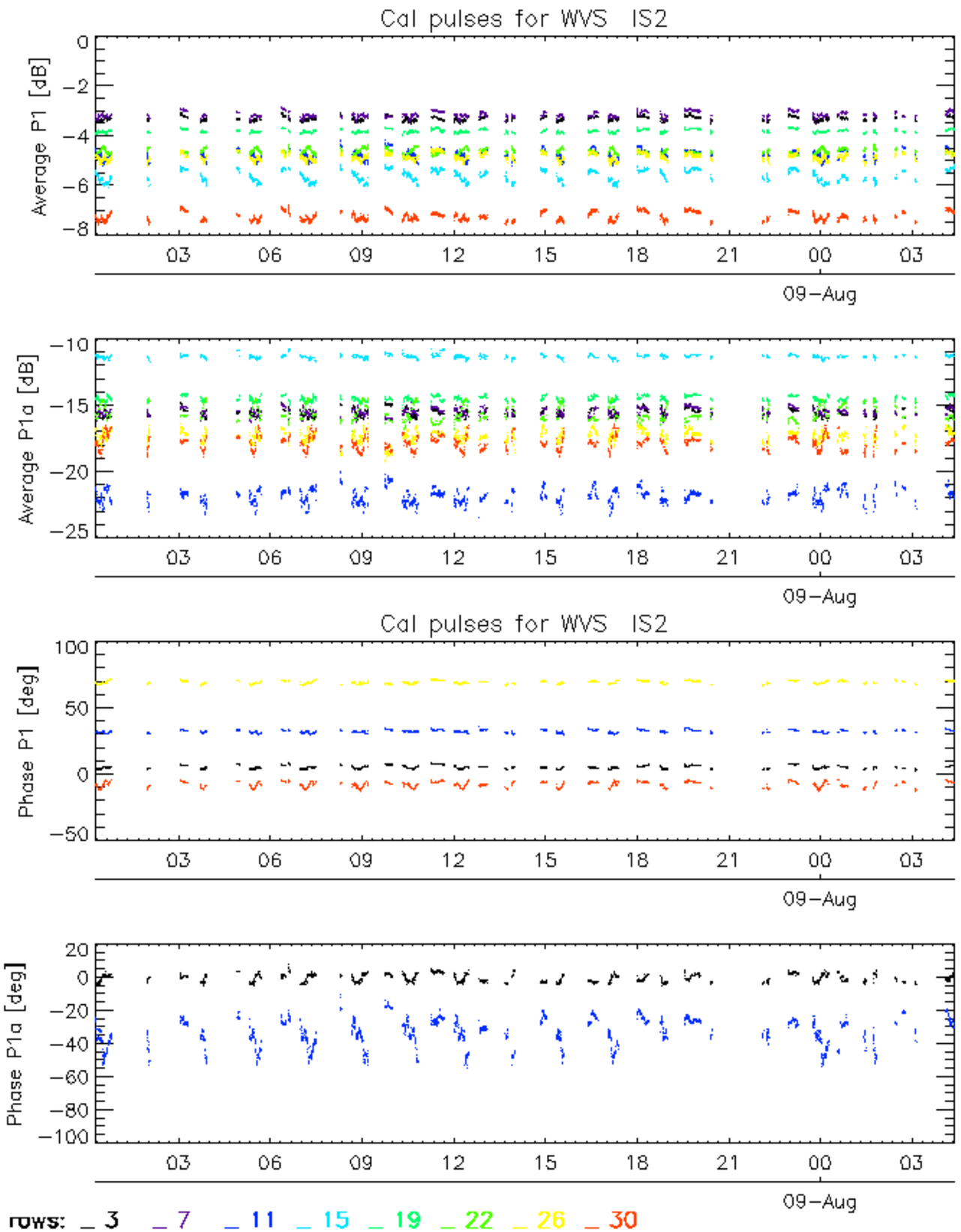
7.5 - Absolute Doppler for GM1

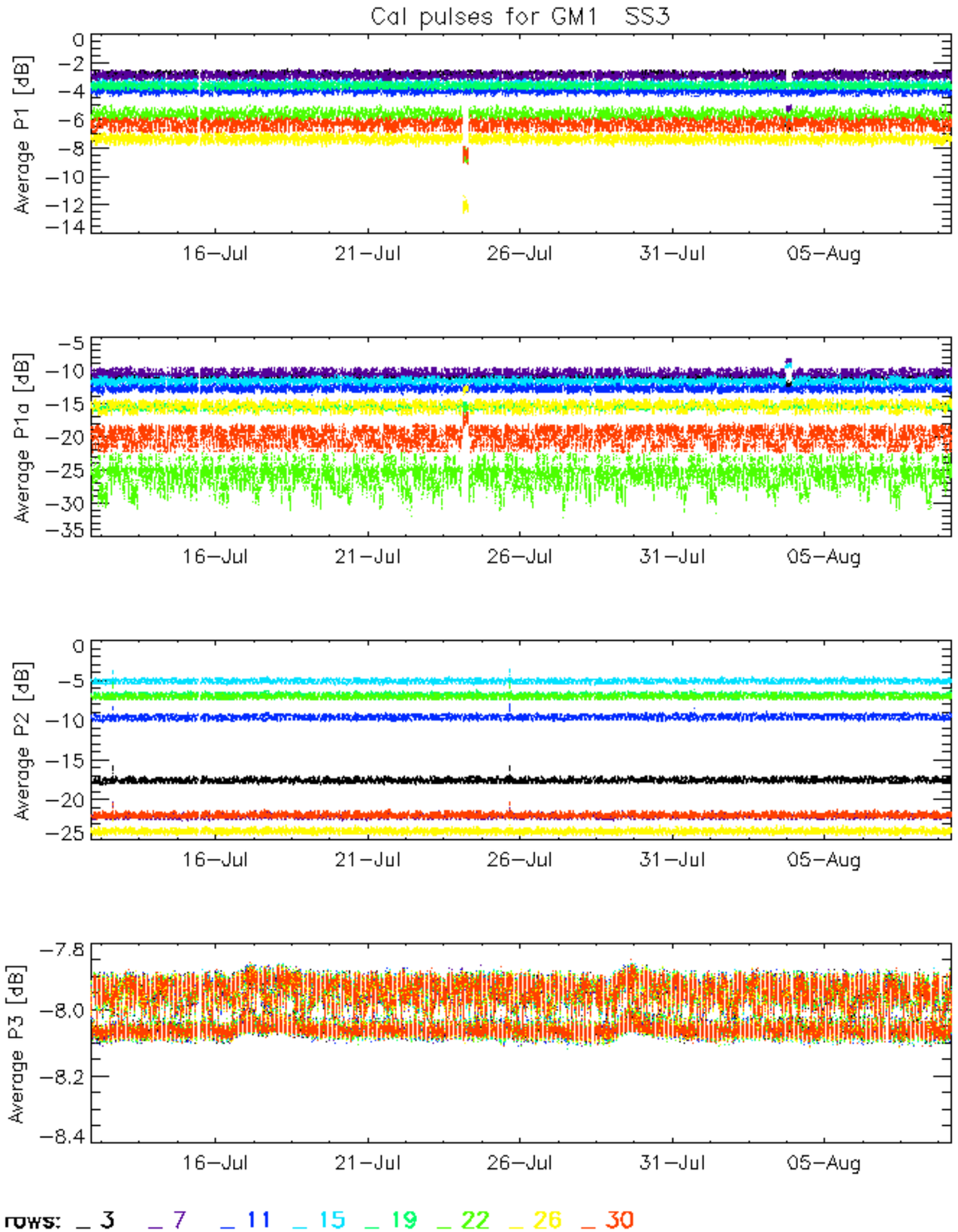
Evolution of Absolute Doppler
Acsending
Descending

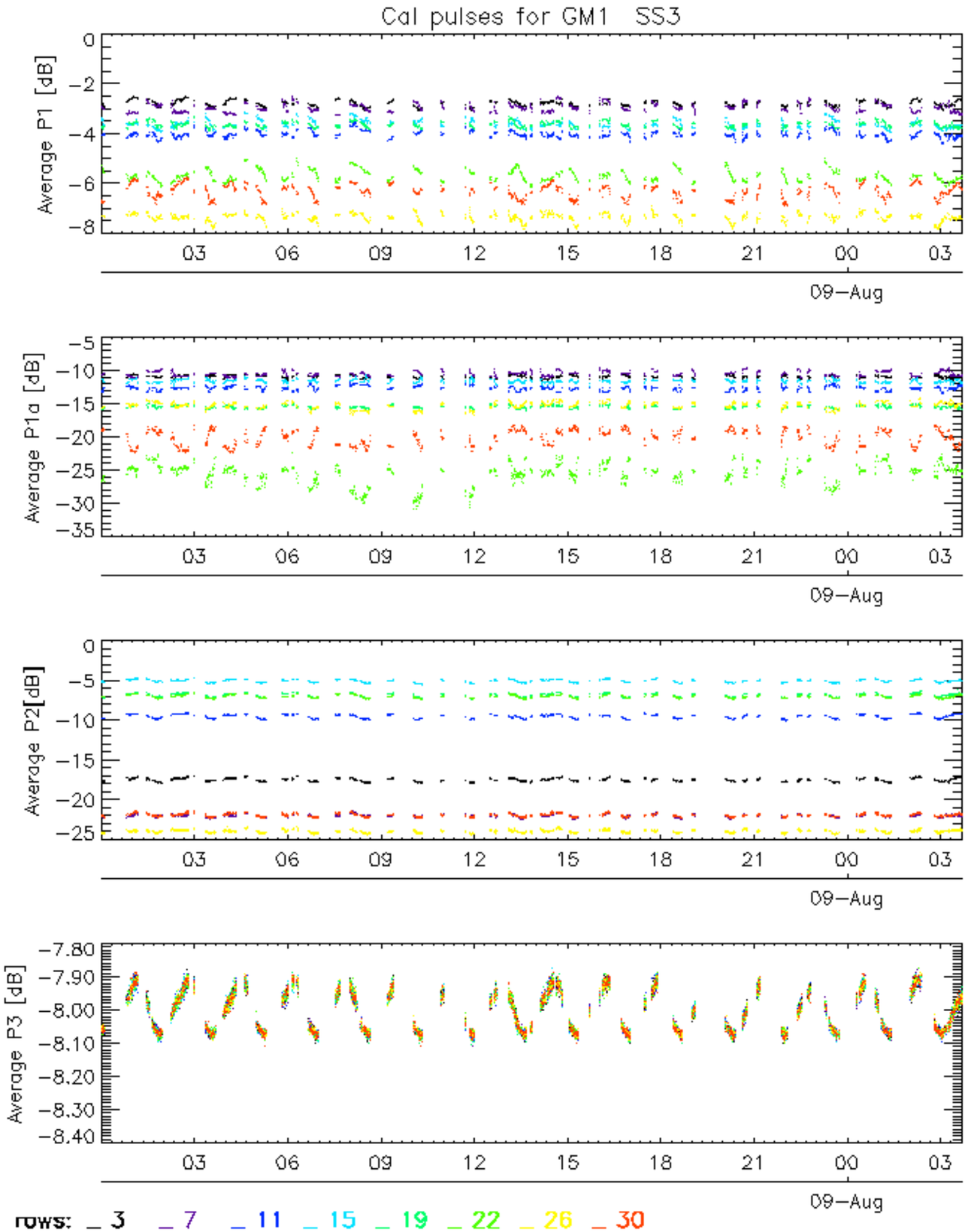
7.6 - Doppler evolution versus ANX for GM1

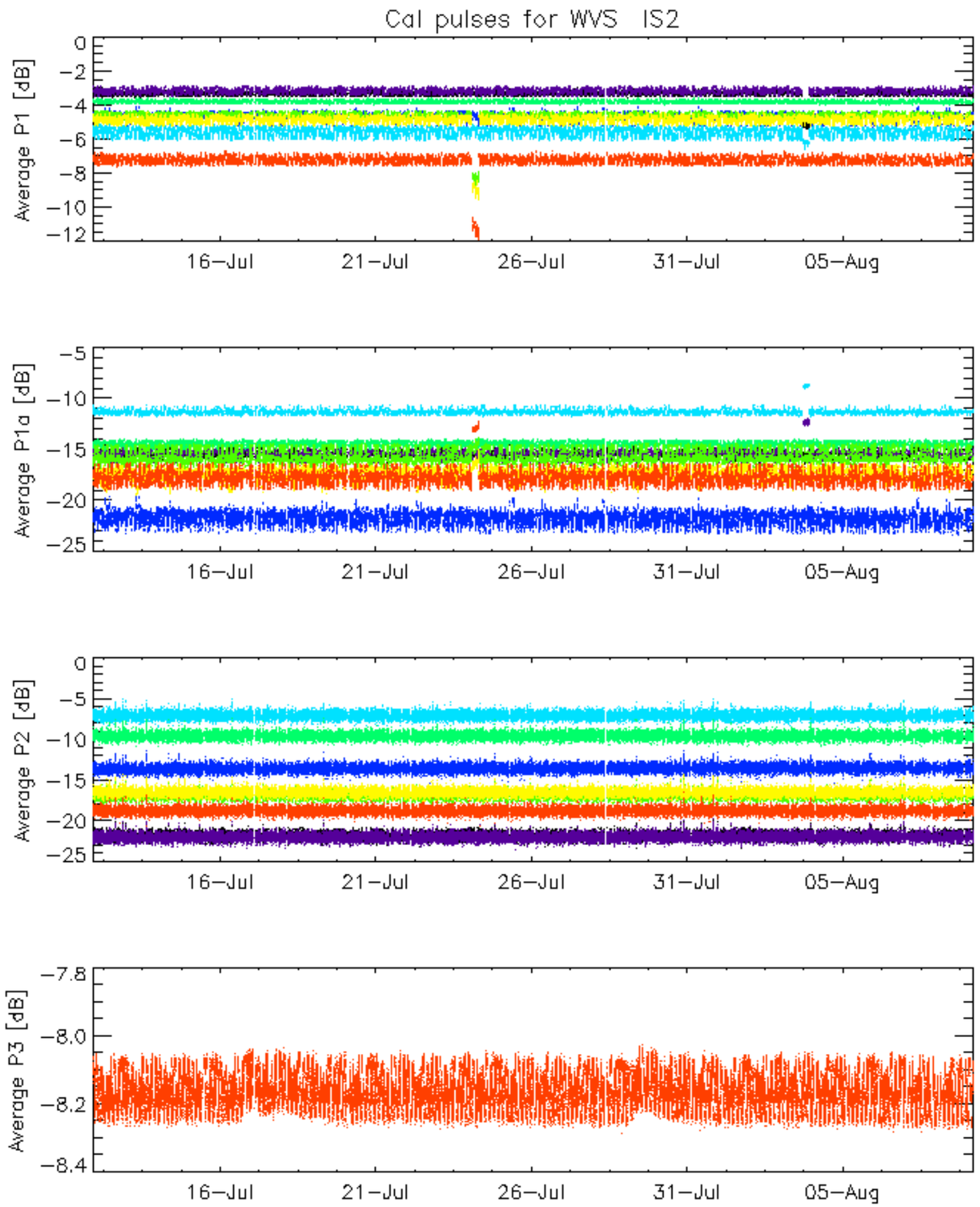
Evolution Doppler error versus ANX

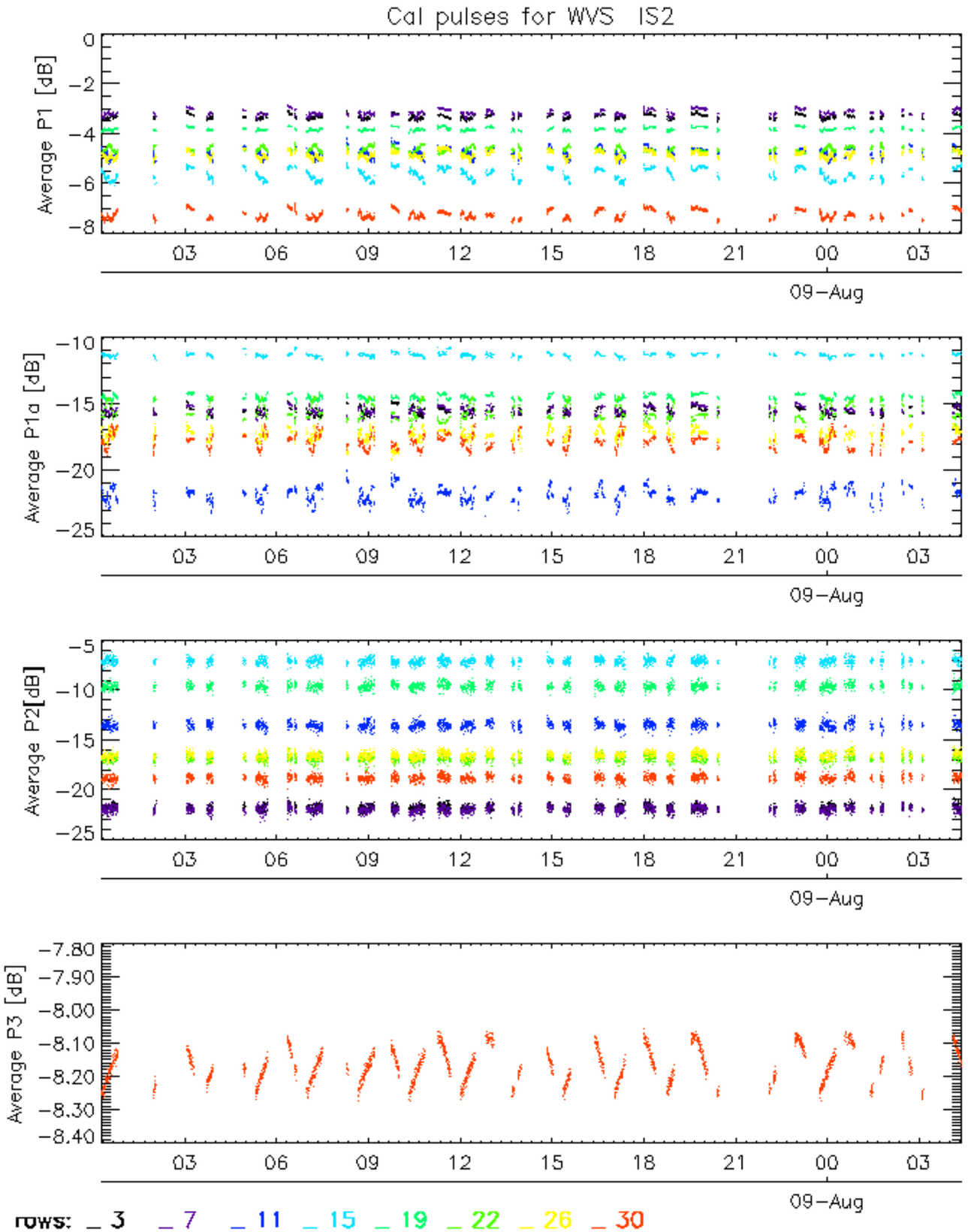

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
09−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


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

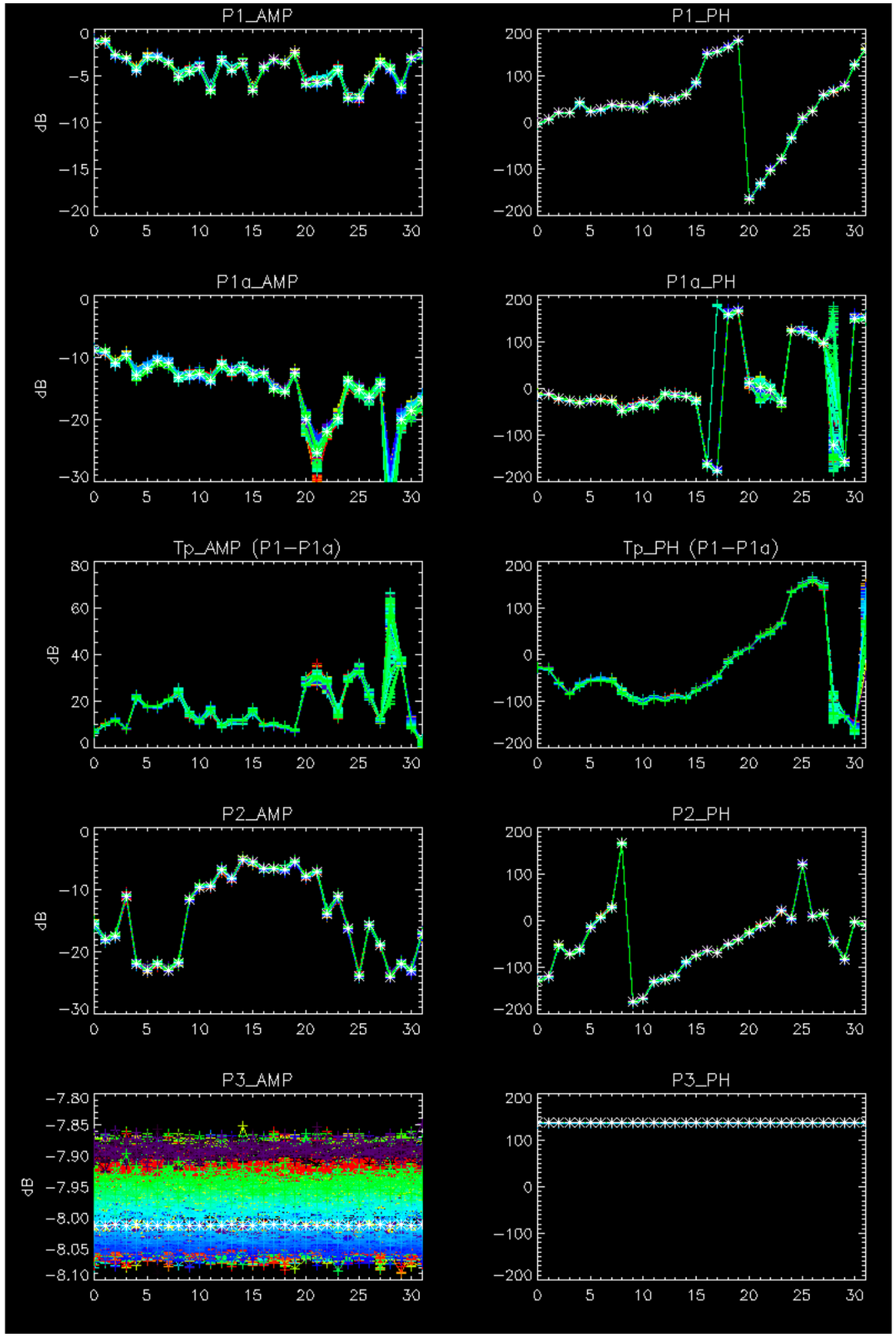

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
Average P2 [dB]
0
−5
−10
−15
−20
−25
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
16−Jul
21−Jul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

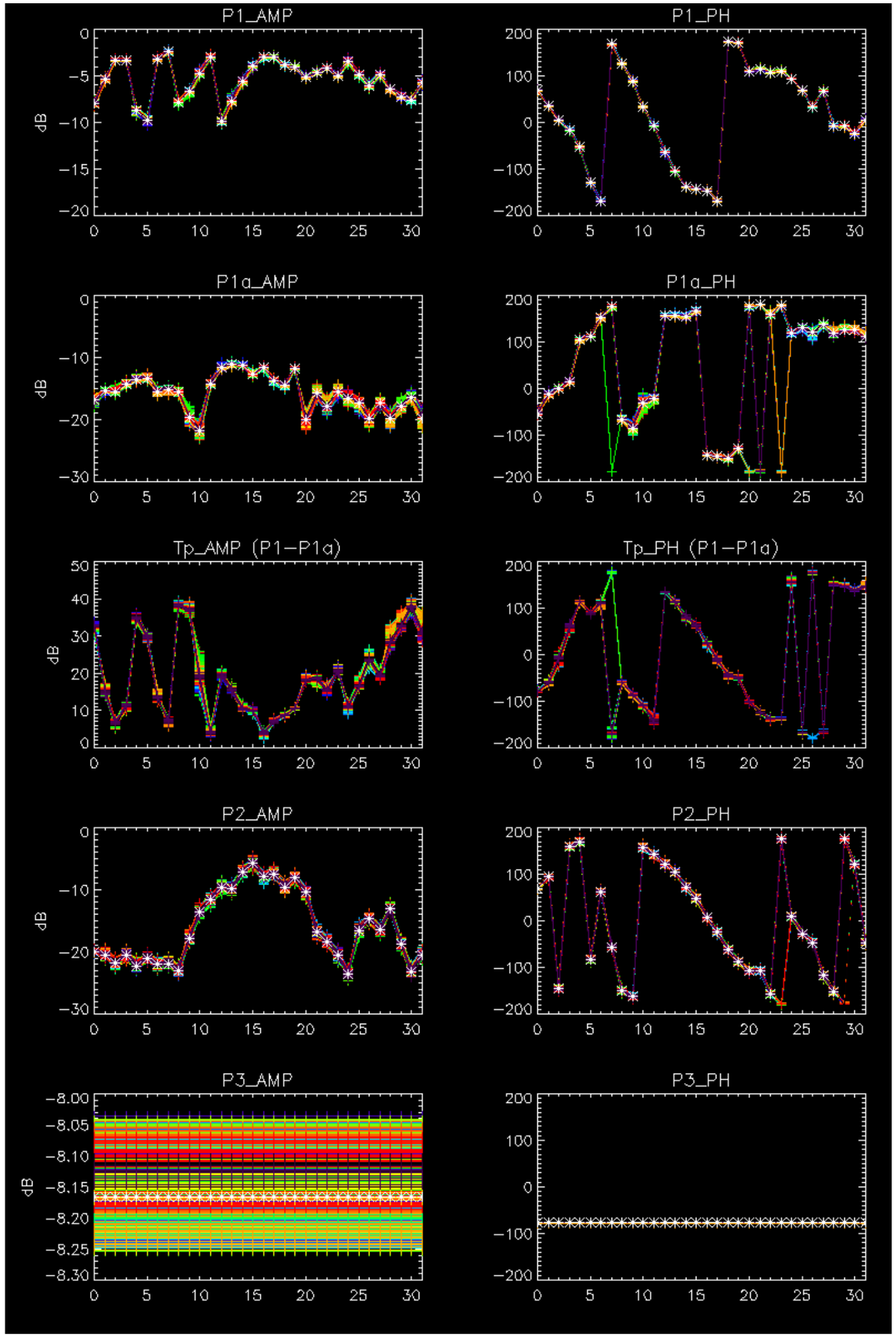

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
09−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
16−Jul
21−Jul
26−Jul
31−Jul
05−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
09−Aug
Average P1a [dB]
−10
−15
−20
−25
Average P2[dB]
−5
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

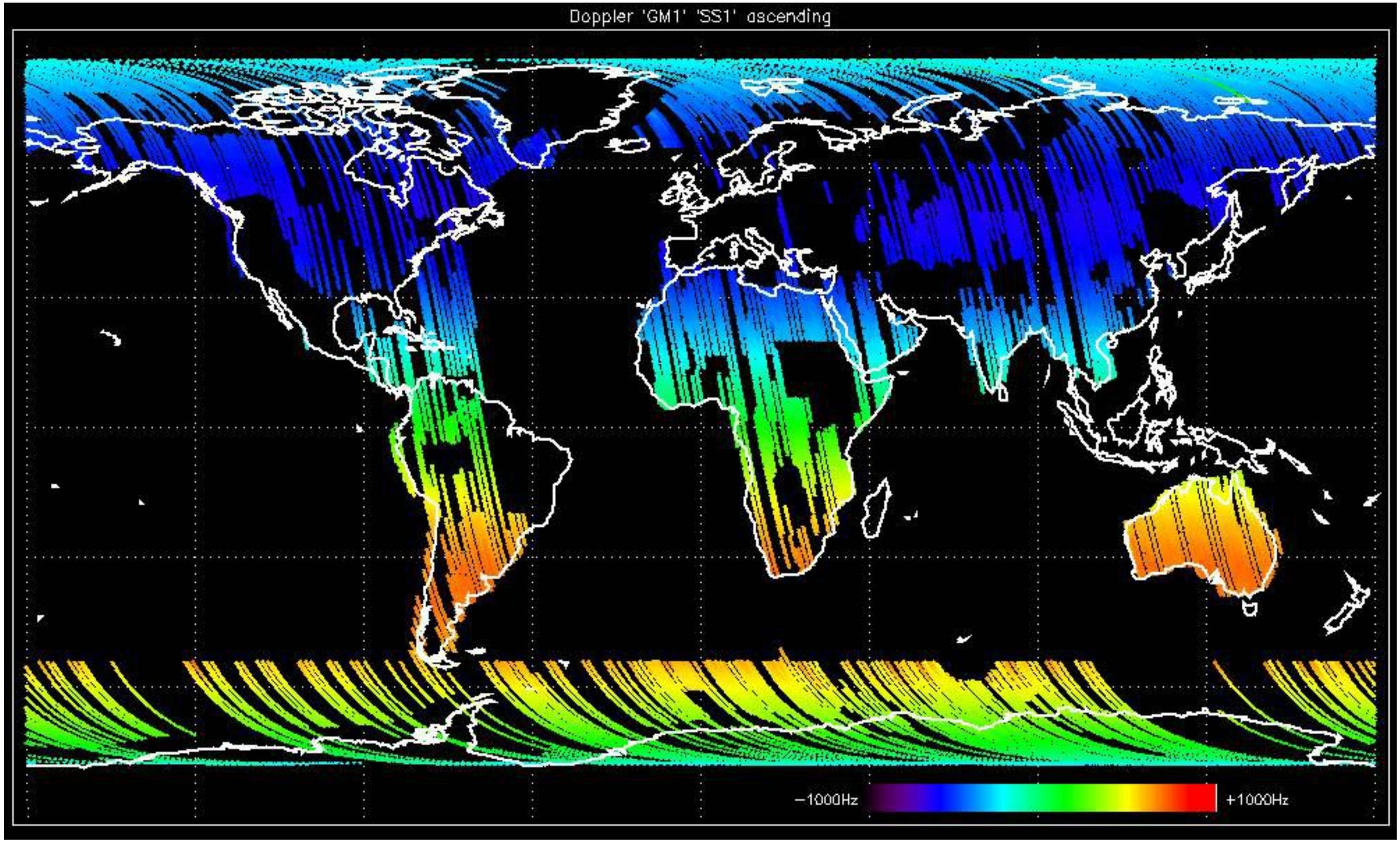
No anomalies observed.

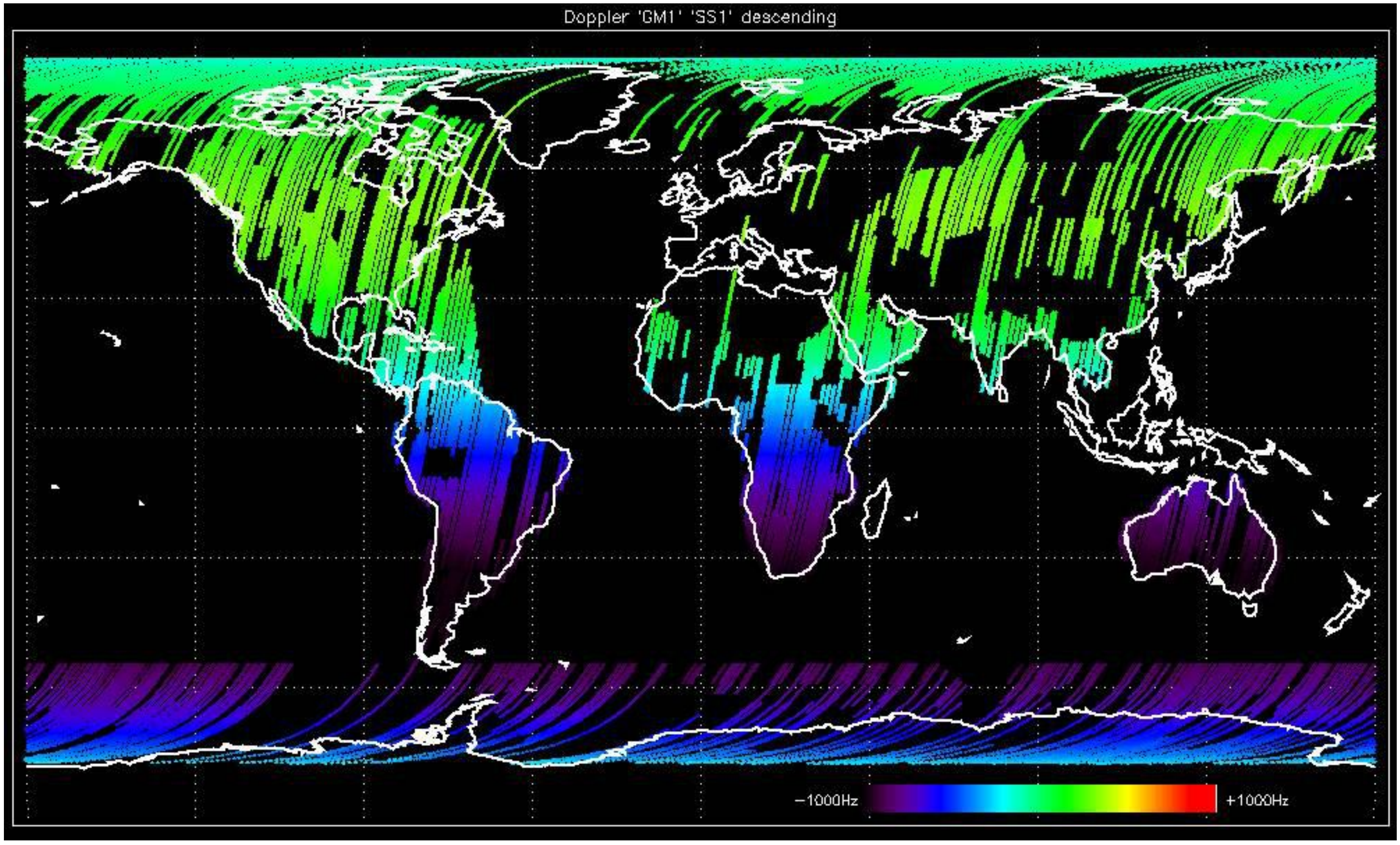

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

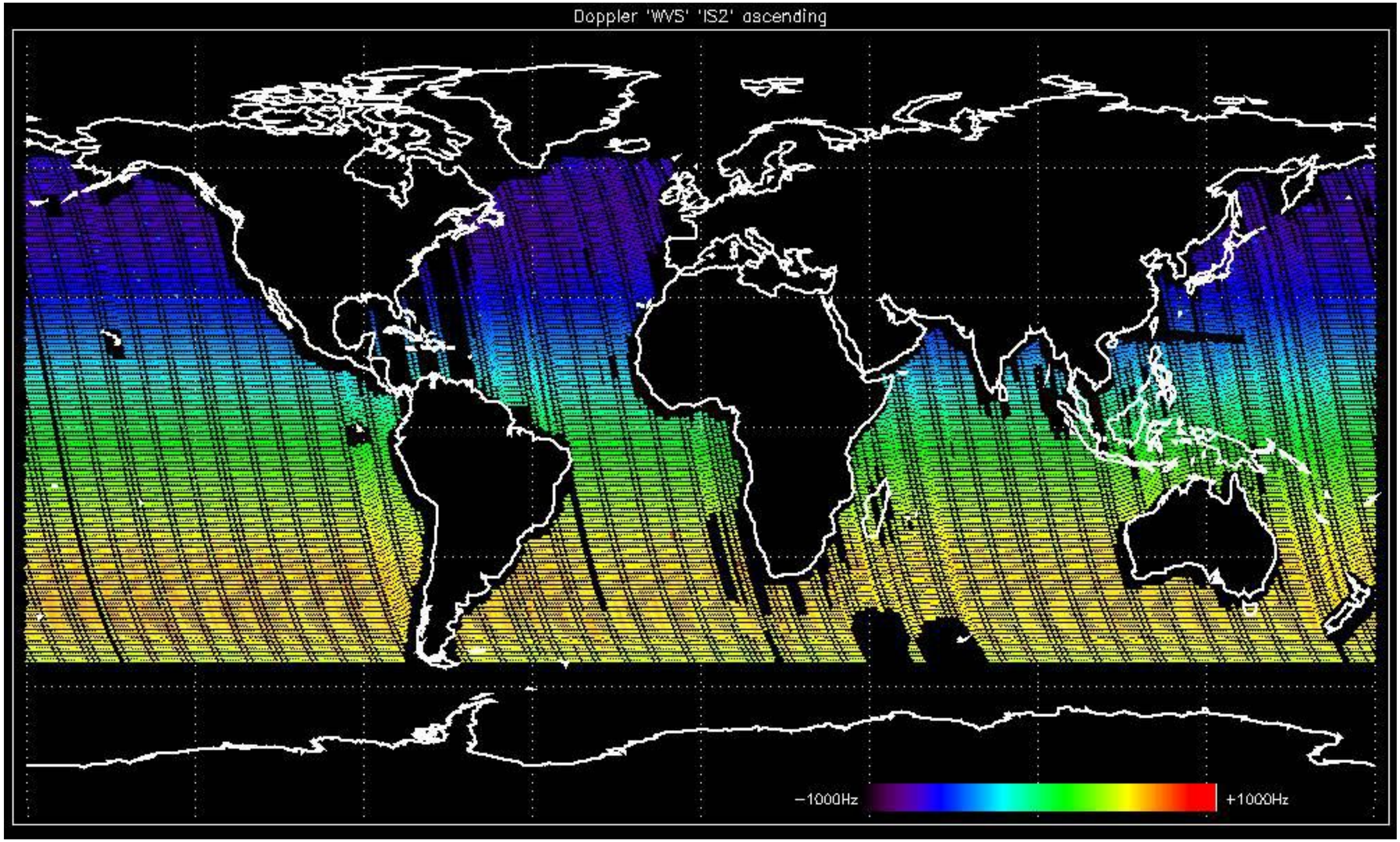

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

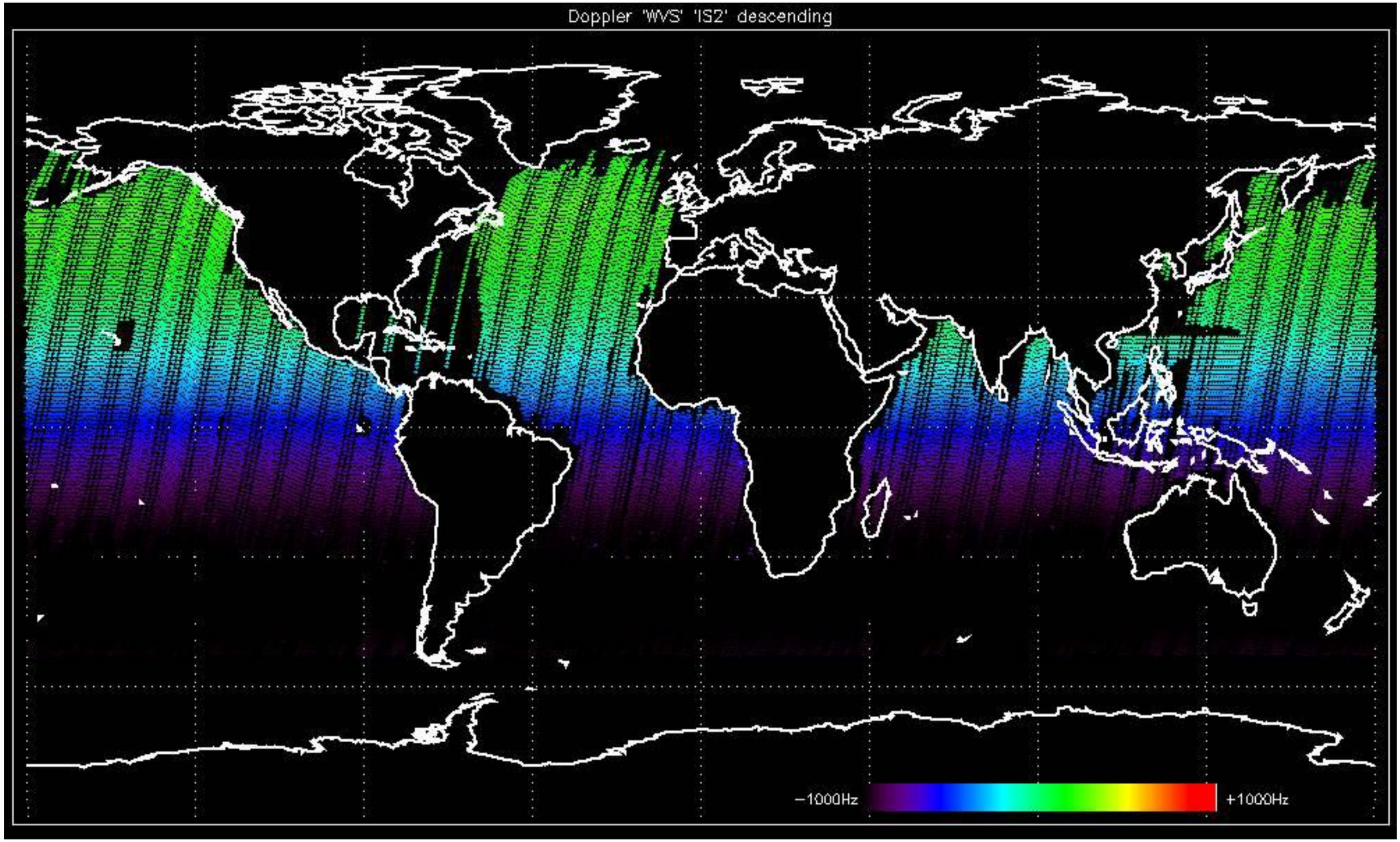
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

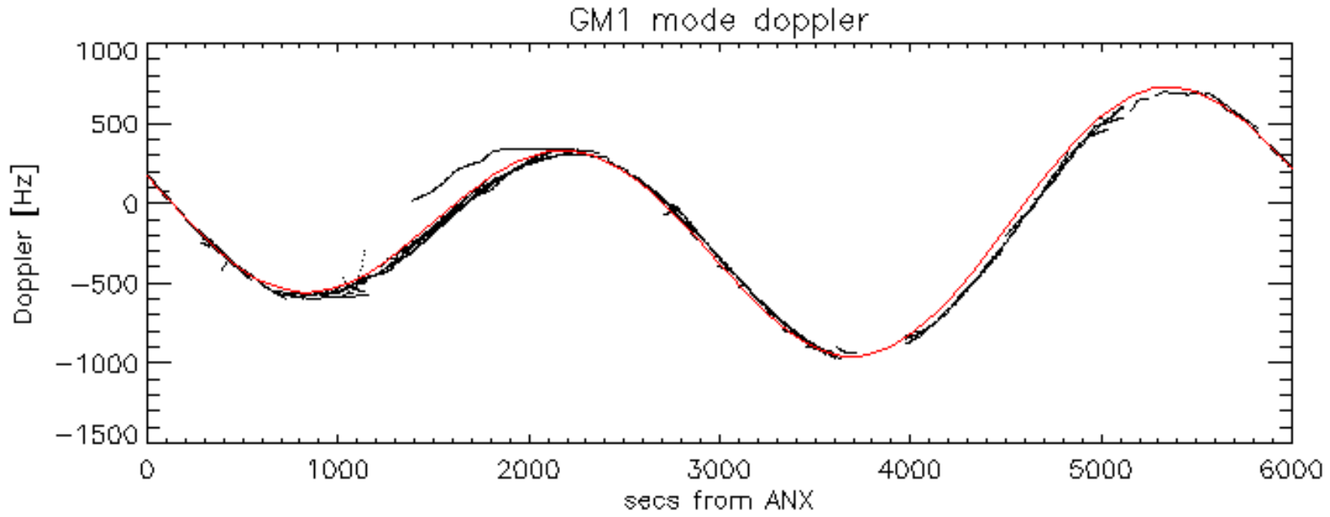
Preliminary report.The data is not yet controled

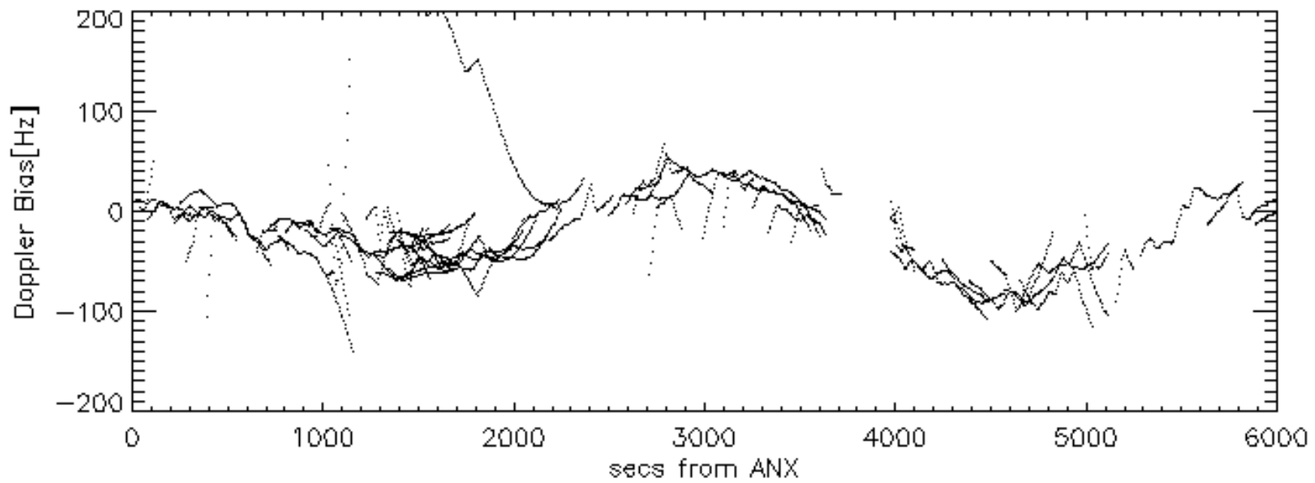

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

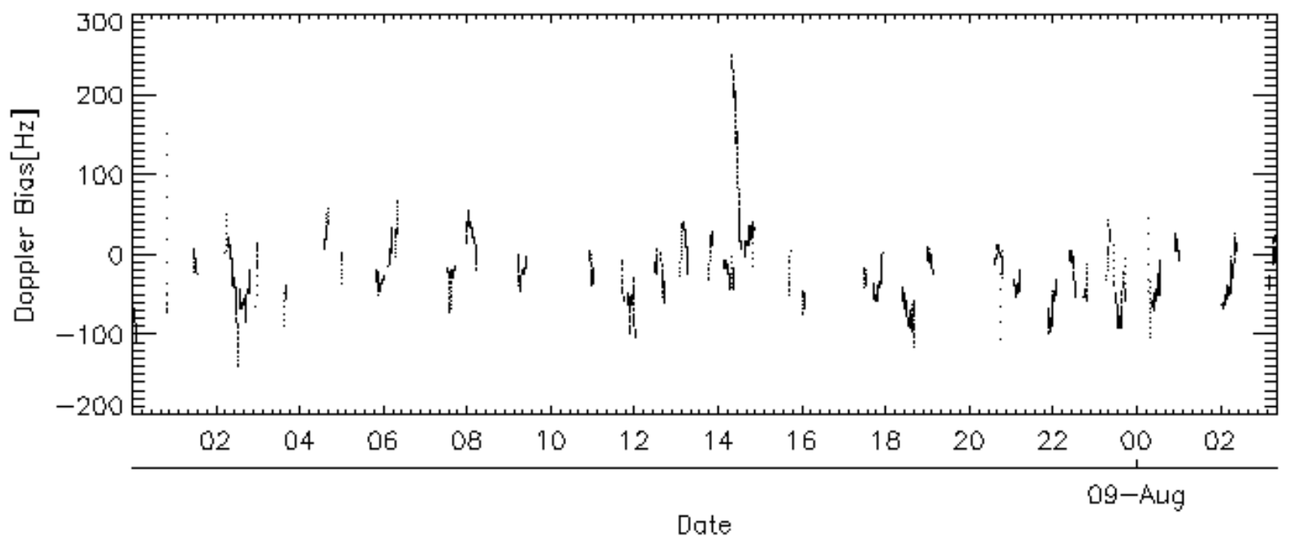

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

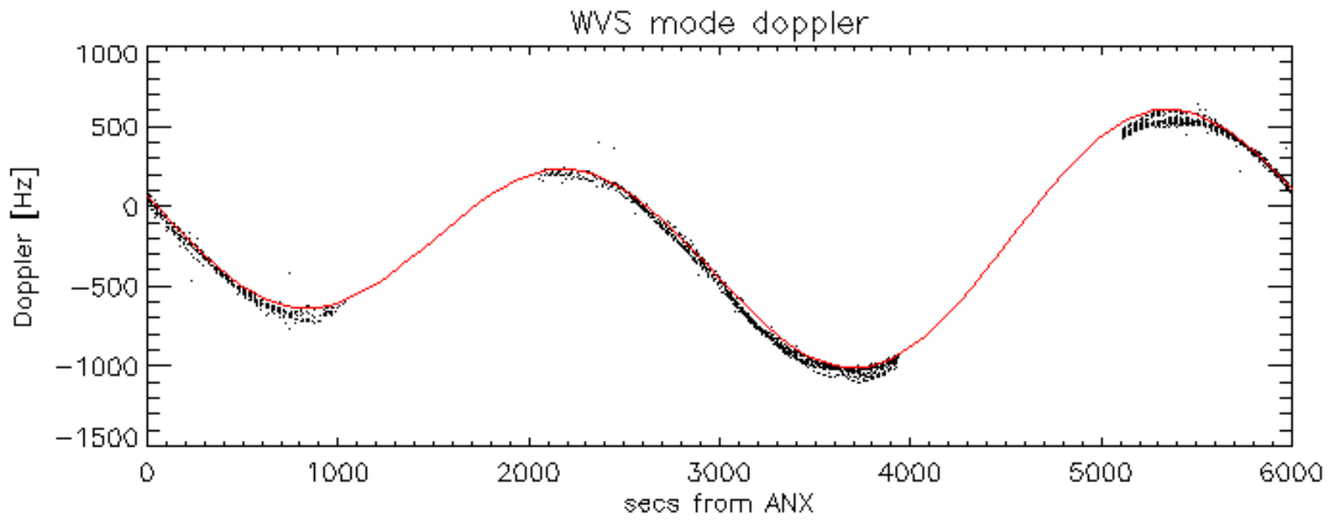

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

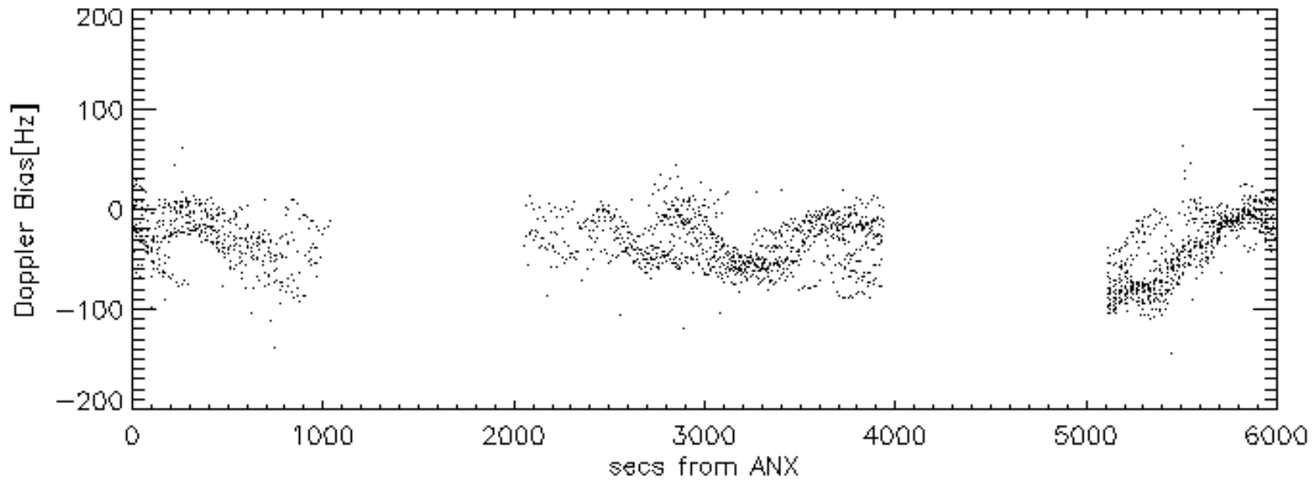

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

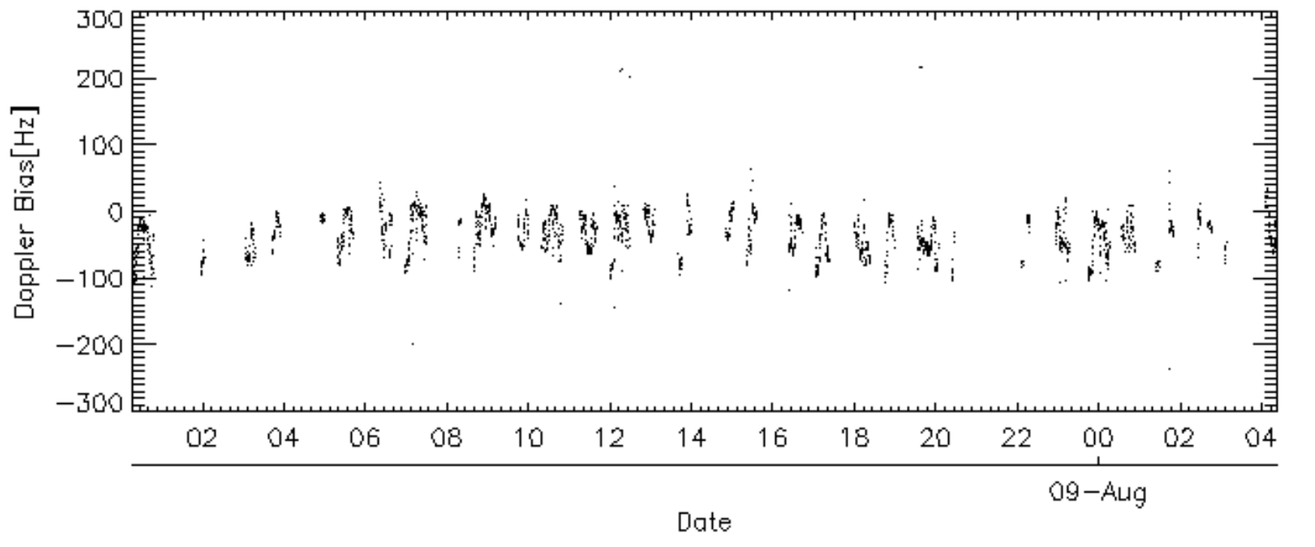

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

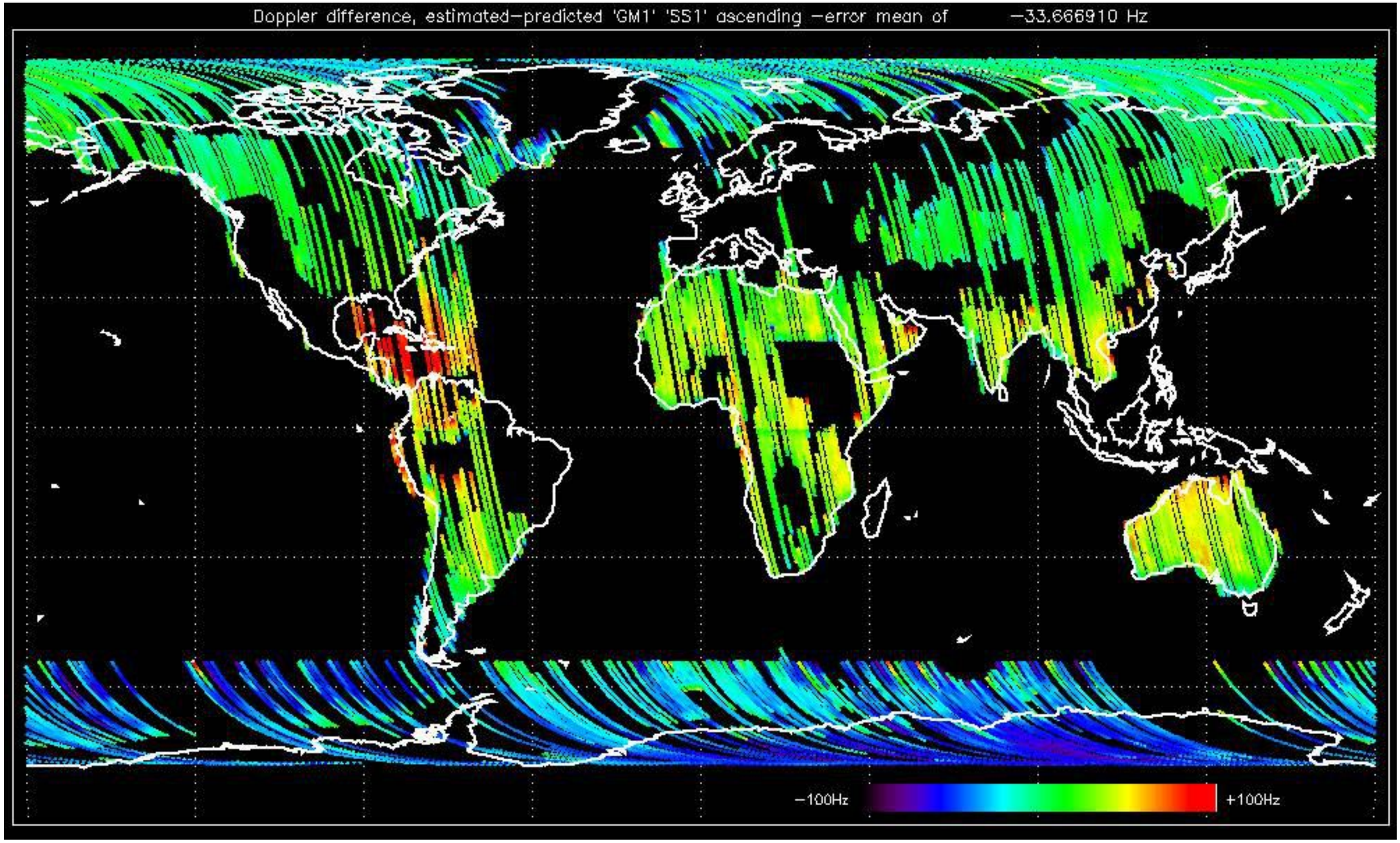

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

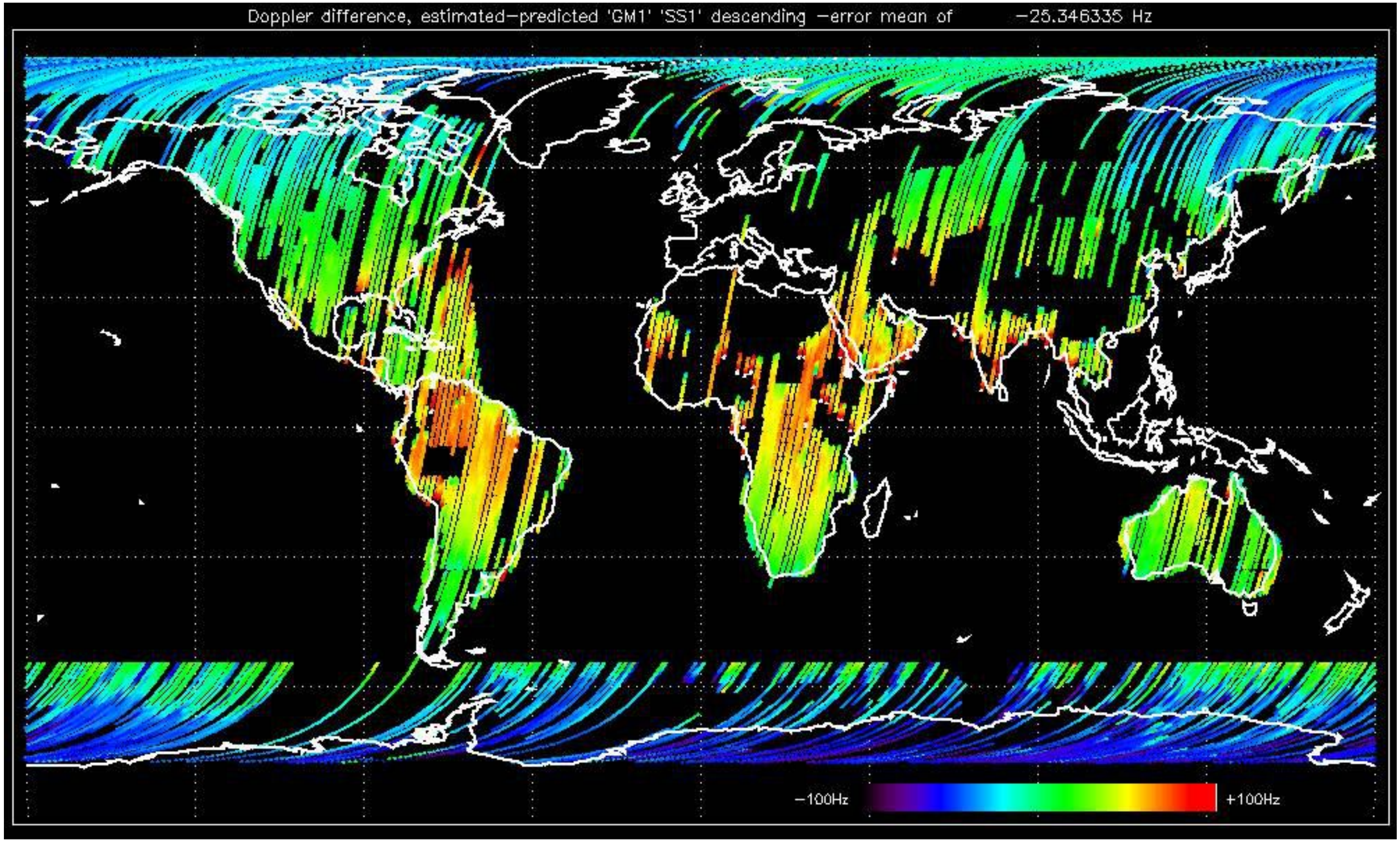

Doppler Bias[Hz]
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
09−Aug
Date

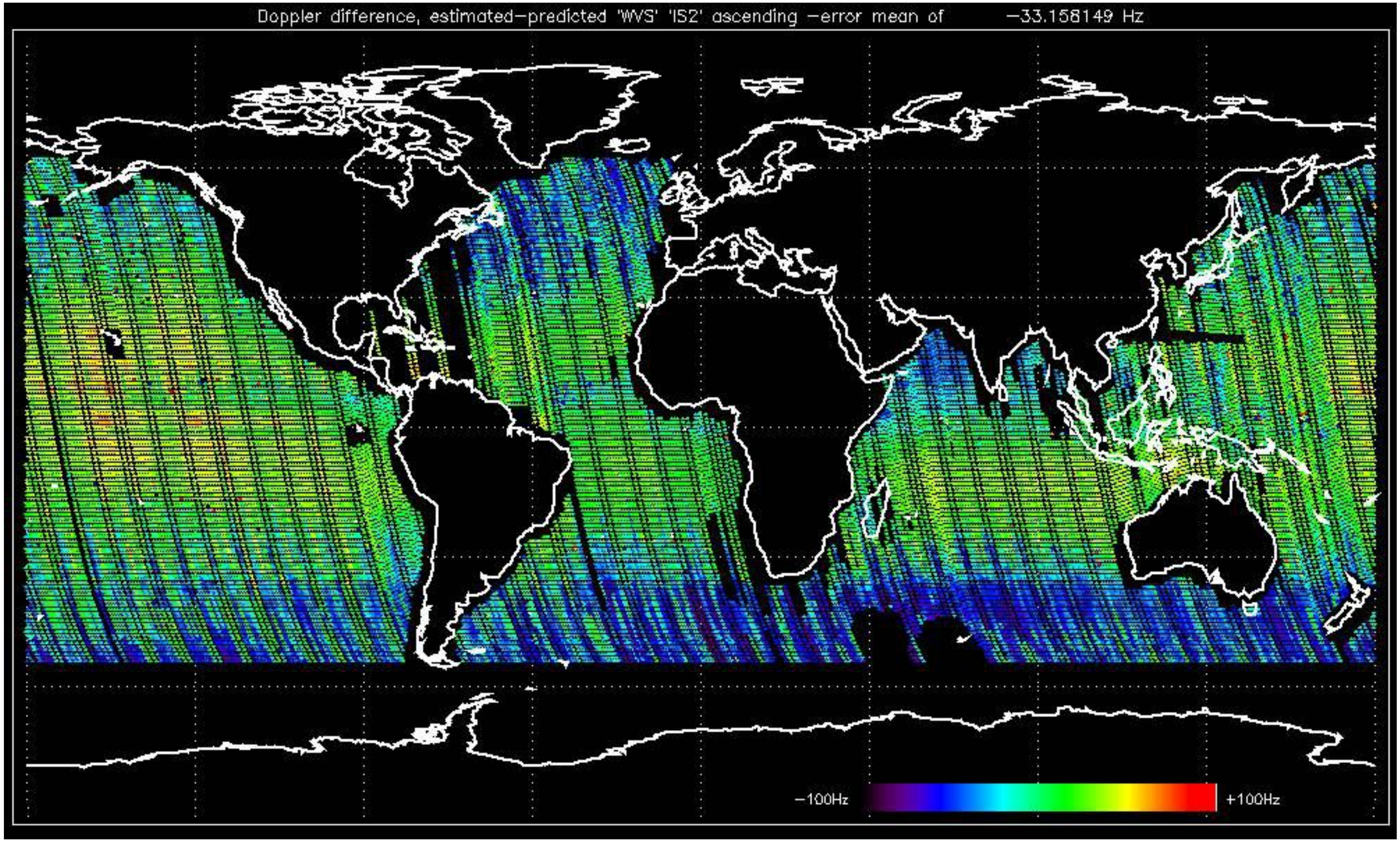

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

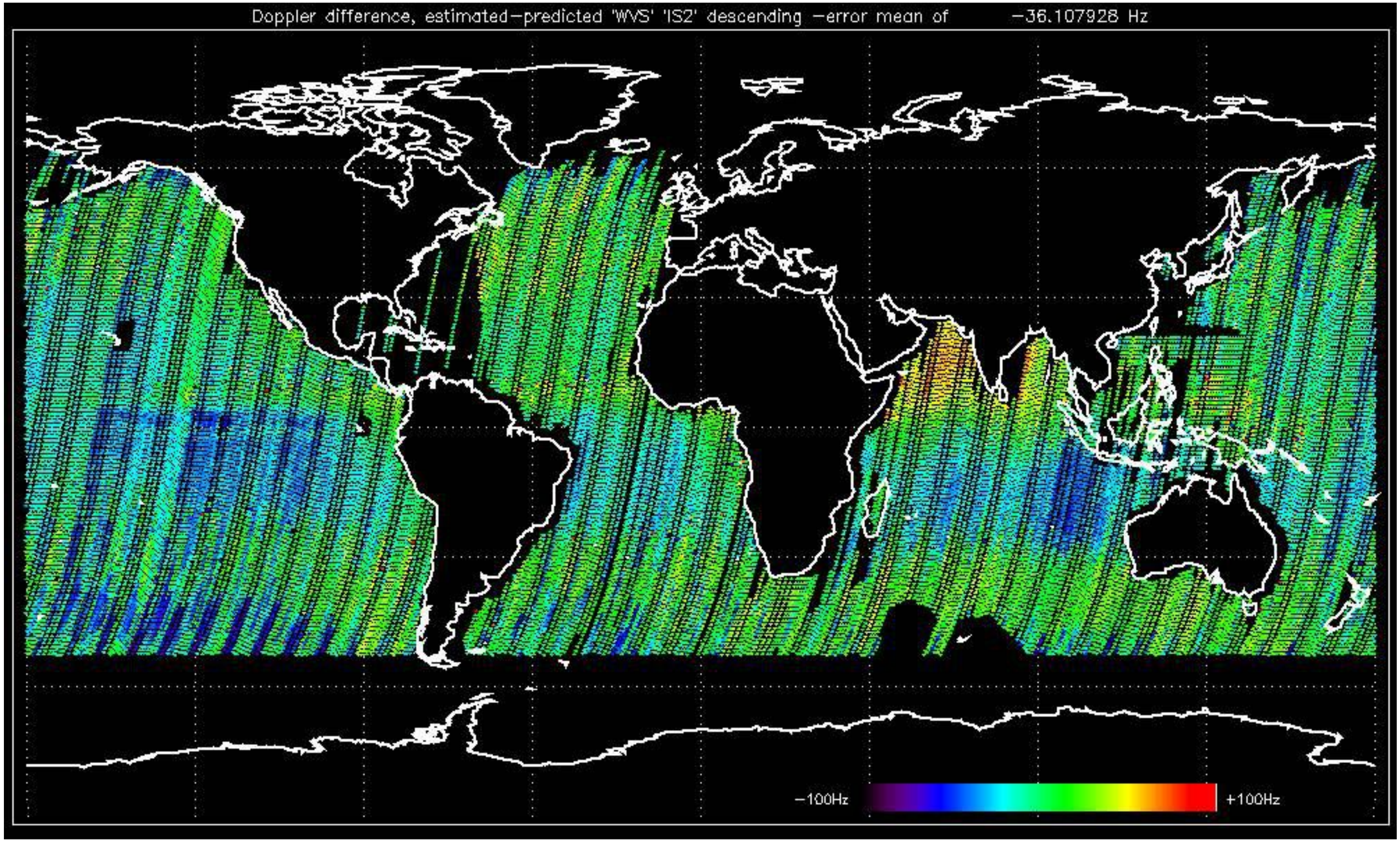

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
300
200
100
0
−100
−200
−300
02
04
06
08
10
12
14
16
18
20
22
00
02
04
09−Aug
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.666910 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −25.346335 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −33.158149 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.107928 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-08-08 05:00:38 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
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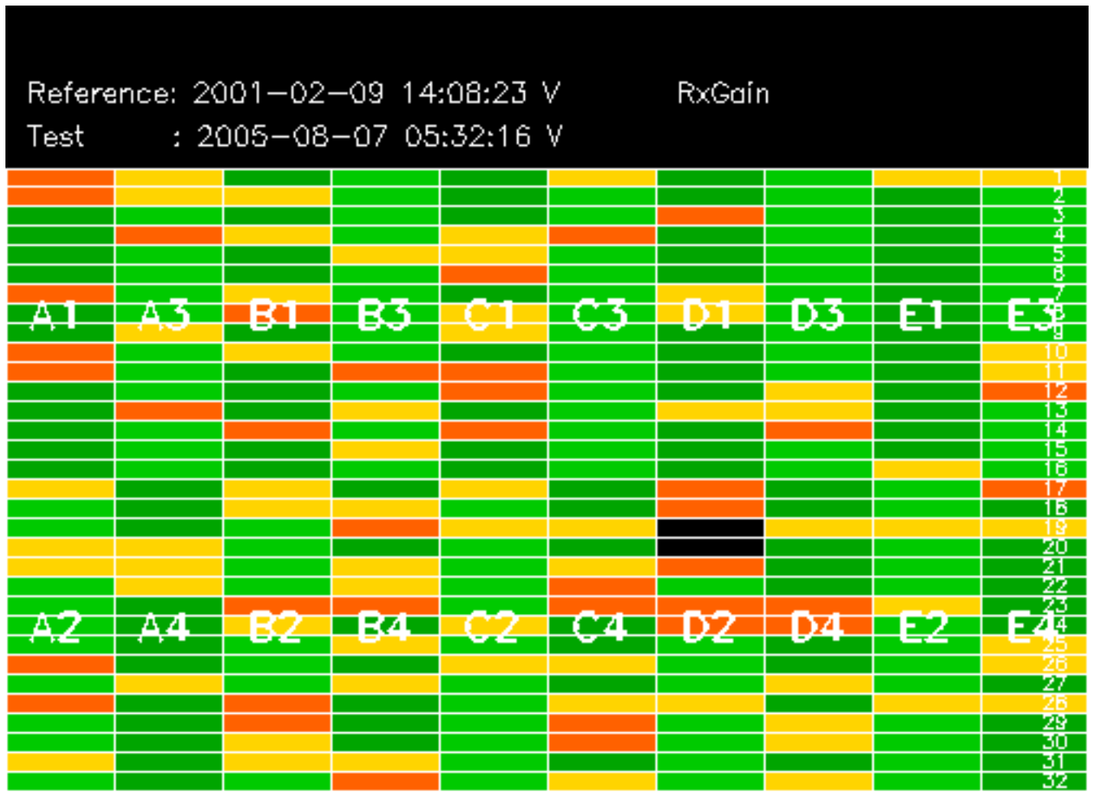
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-08-08 05:00:38 H
RxGain
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
Test : 2005-08-07 05:32:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
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8
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27
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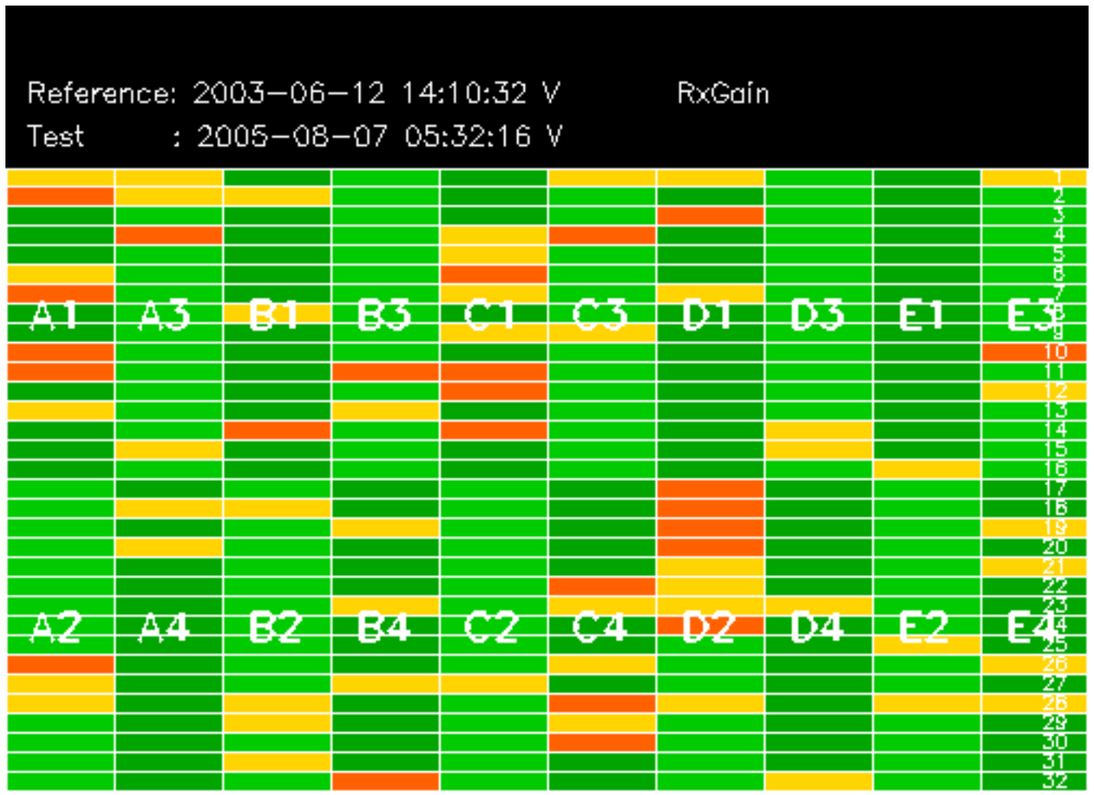
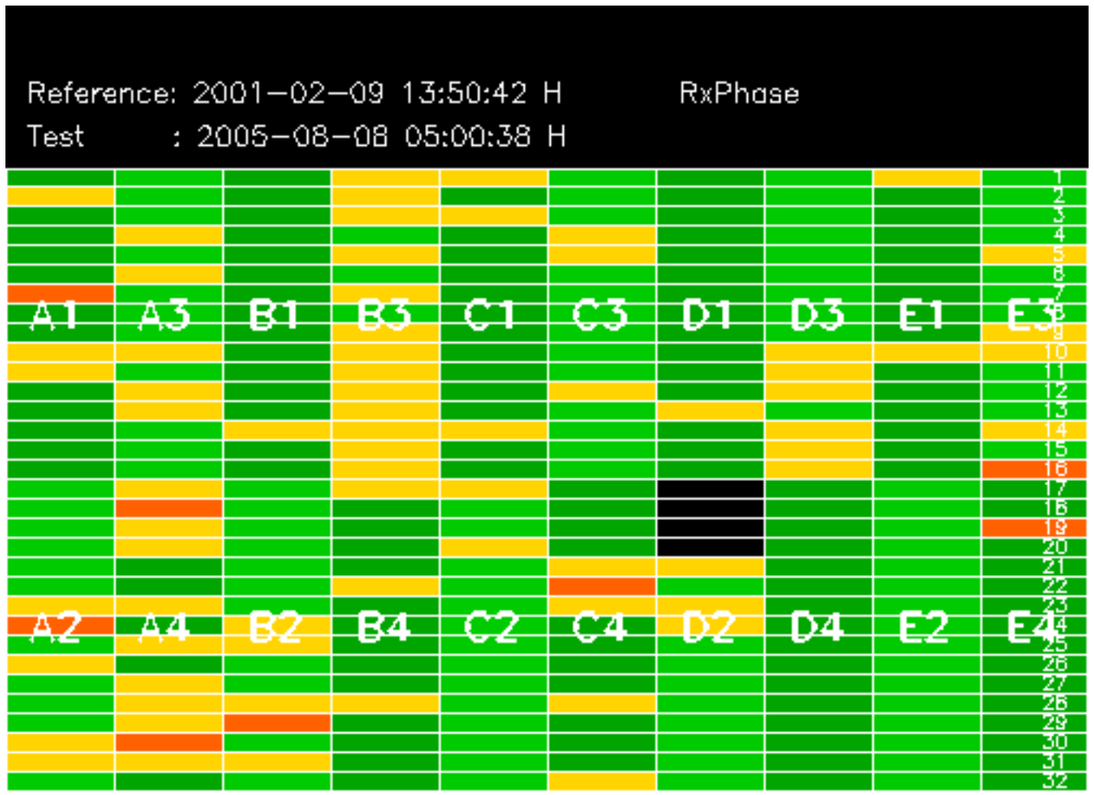
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-08-07 05:32:16 V
RxGain
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 : 2005-08-08 05:00:38 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
Test : 2005-08-08 05:00:38 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
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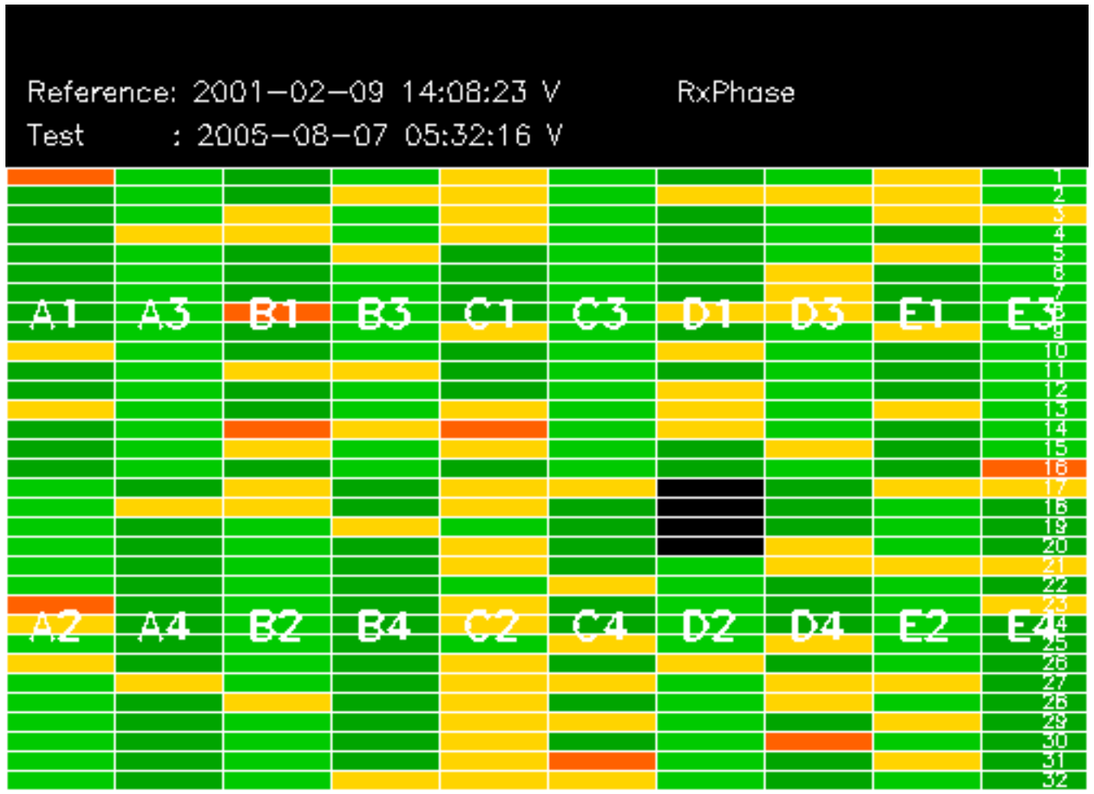
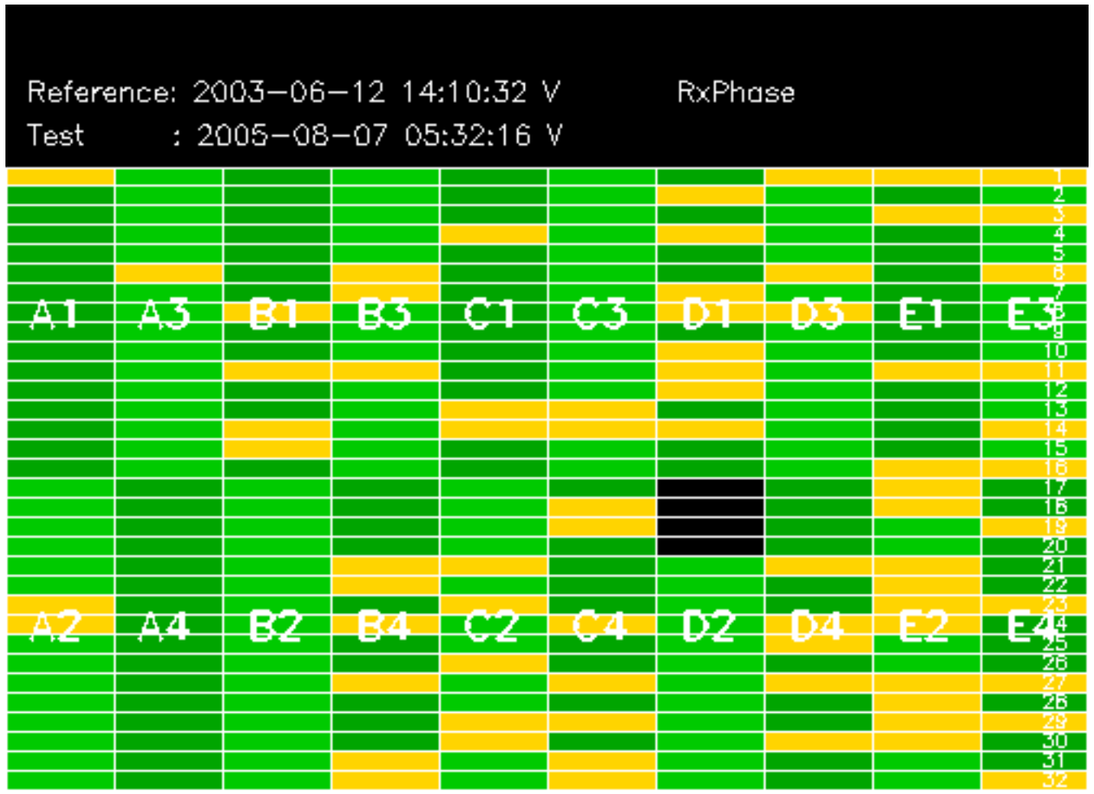
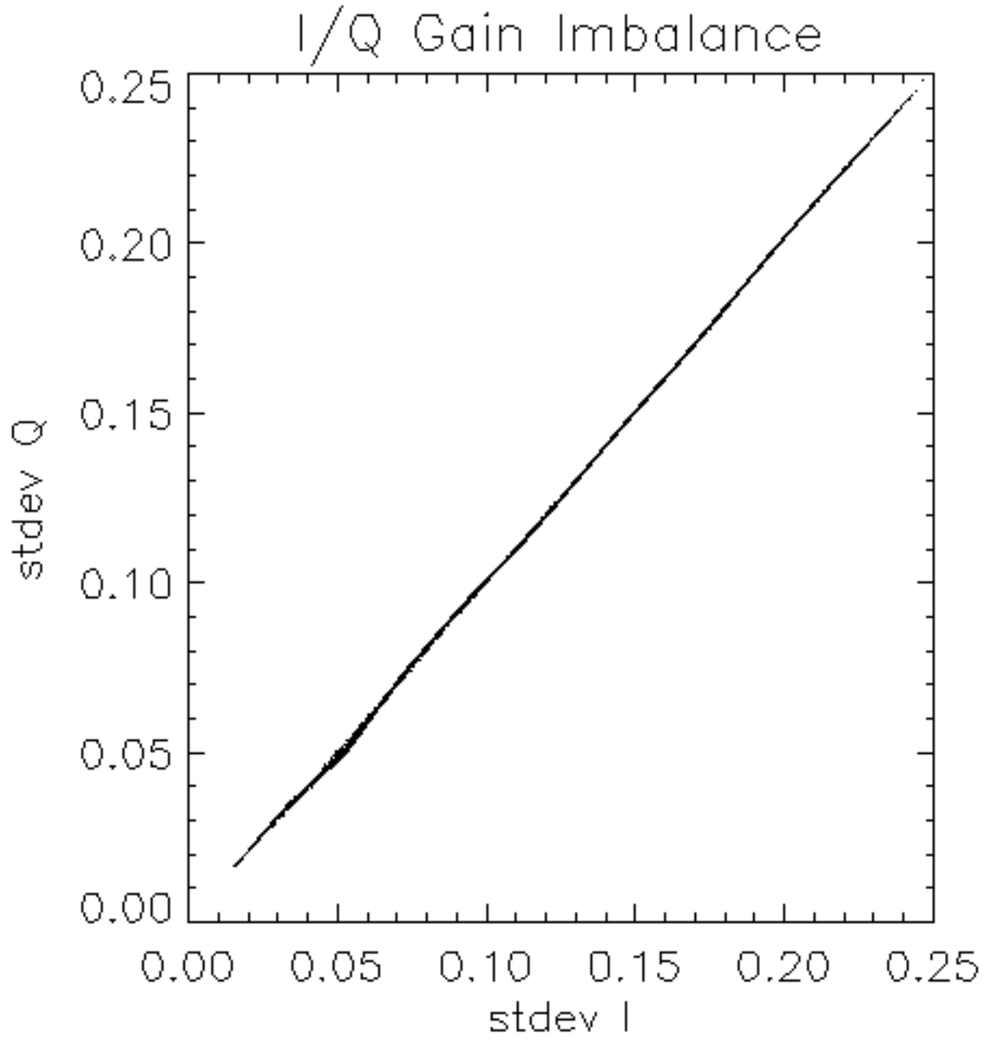
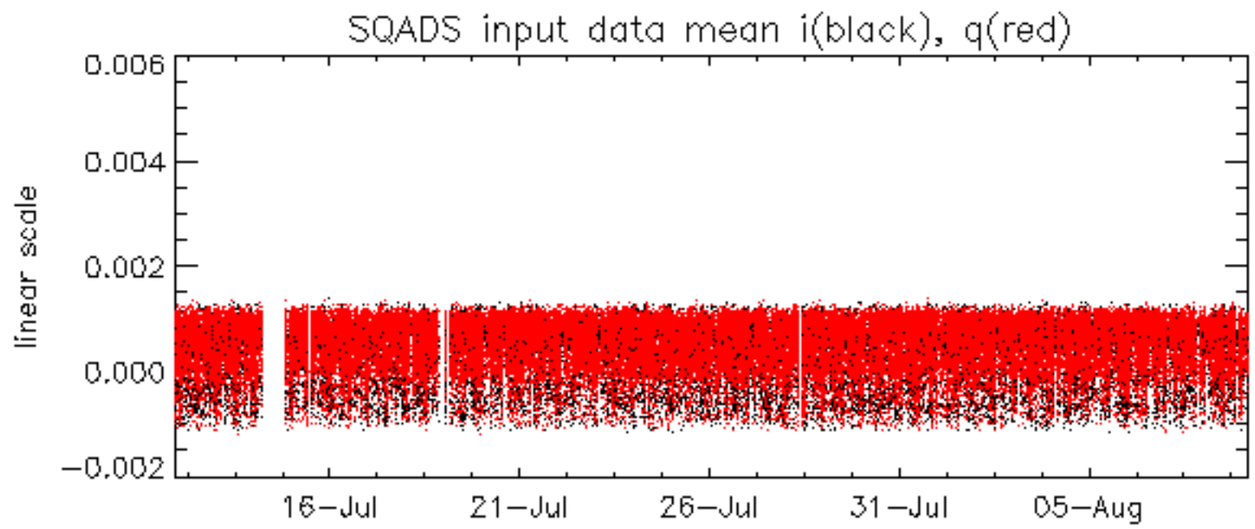
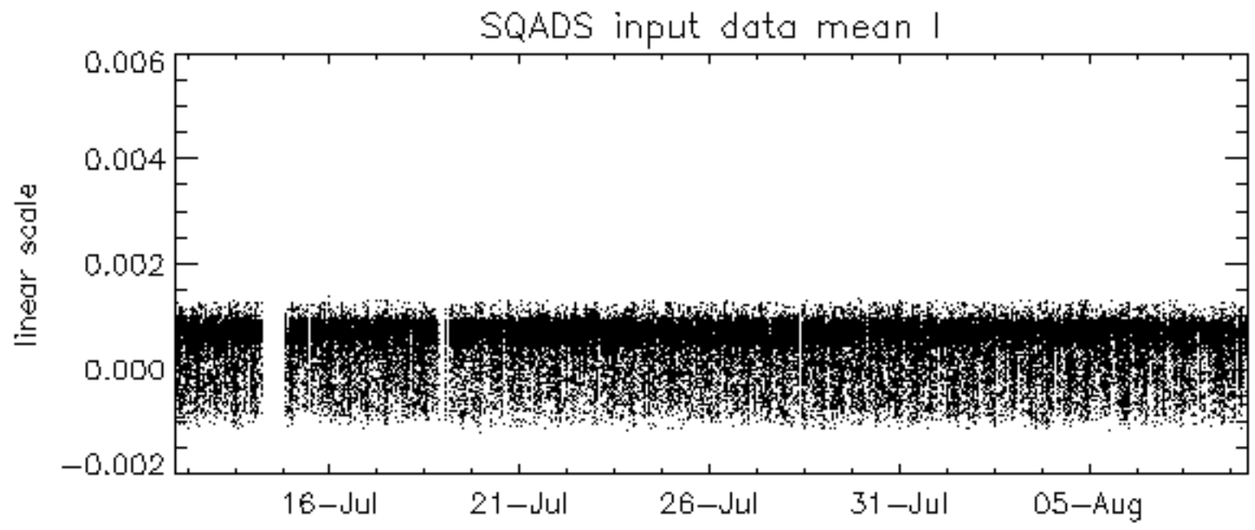
31
32

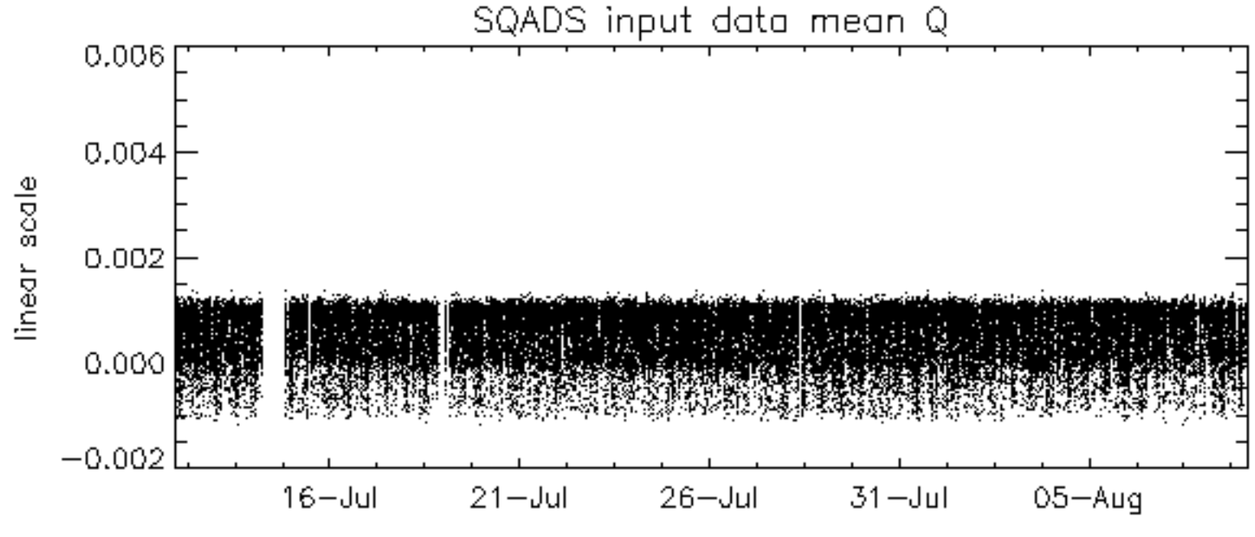

Reference: 2001-02-09 14:08:23 V
Test : 2005-08-07 05:32:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

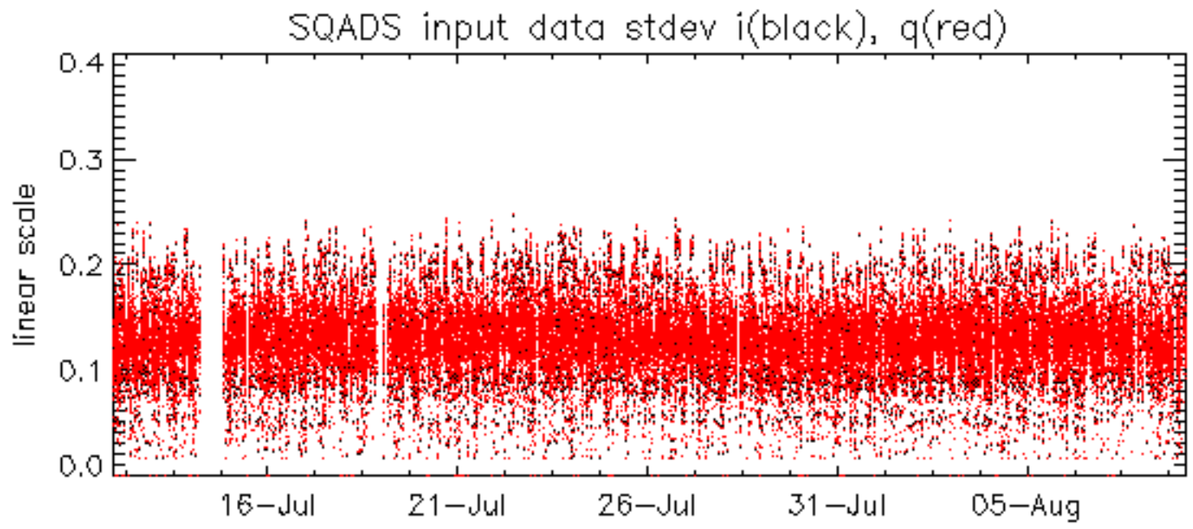

Reference: 2003-06-12 14:10:32 V
Test : 2005-08-07 05:32:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

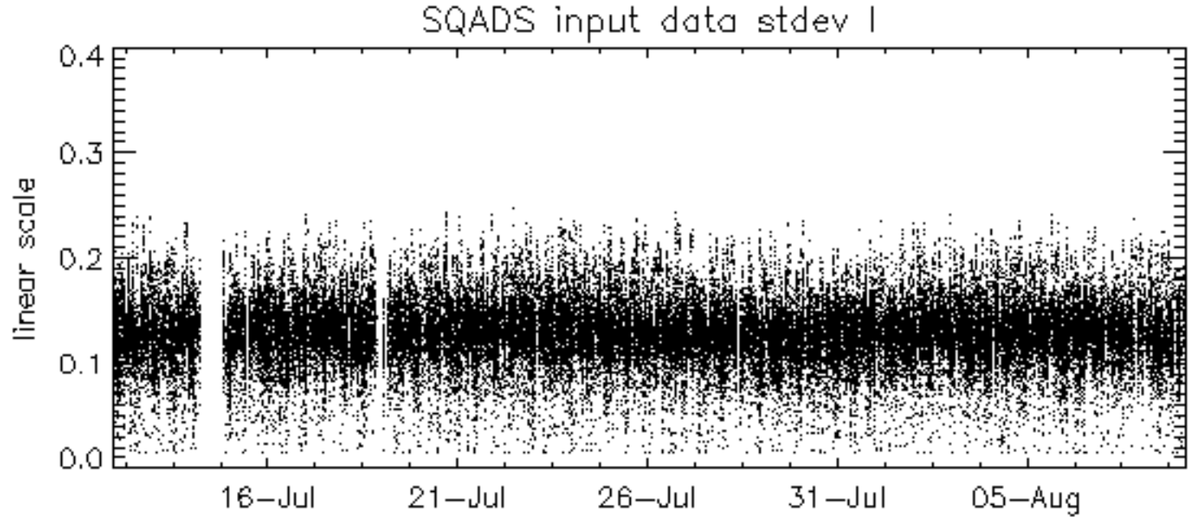

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

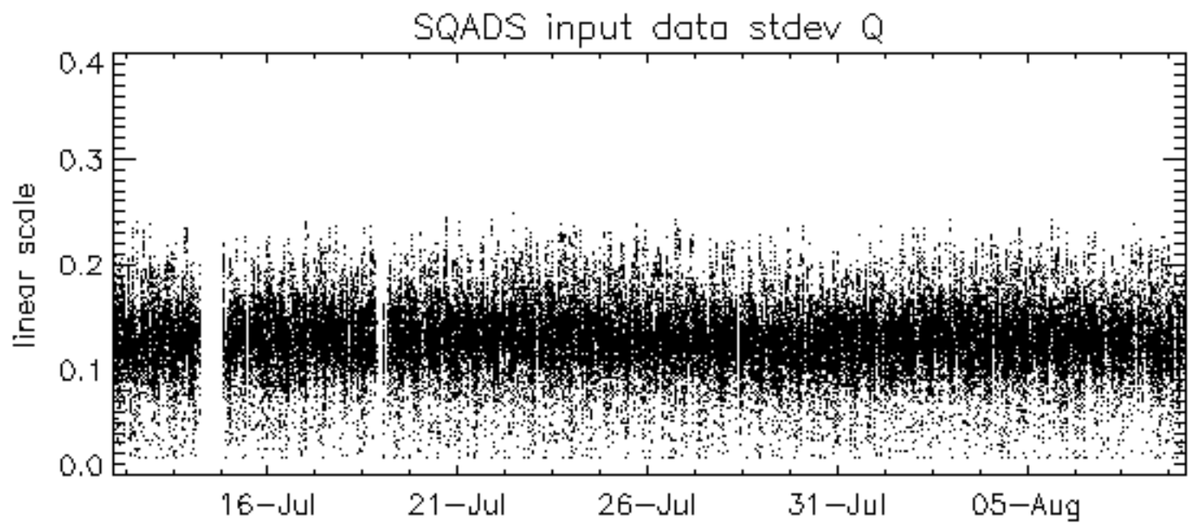

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug

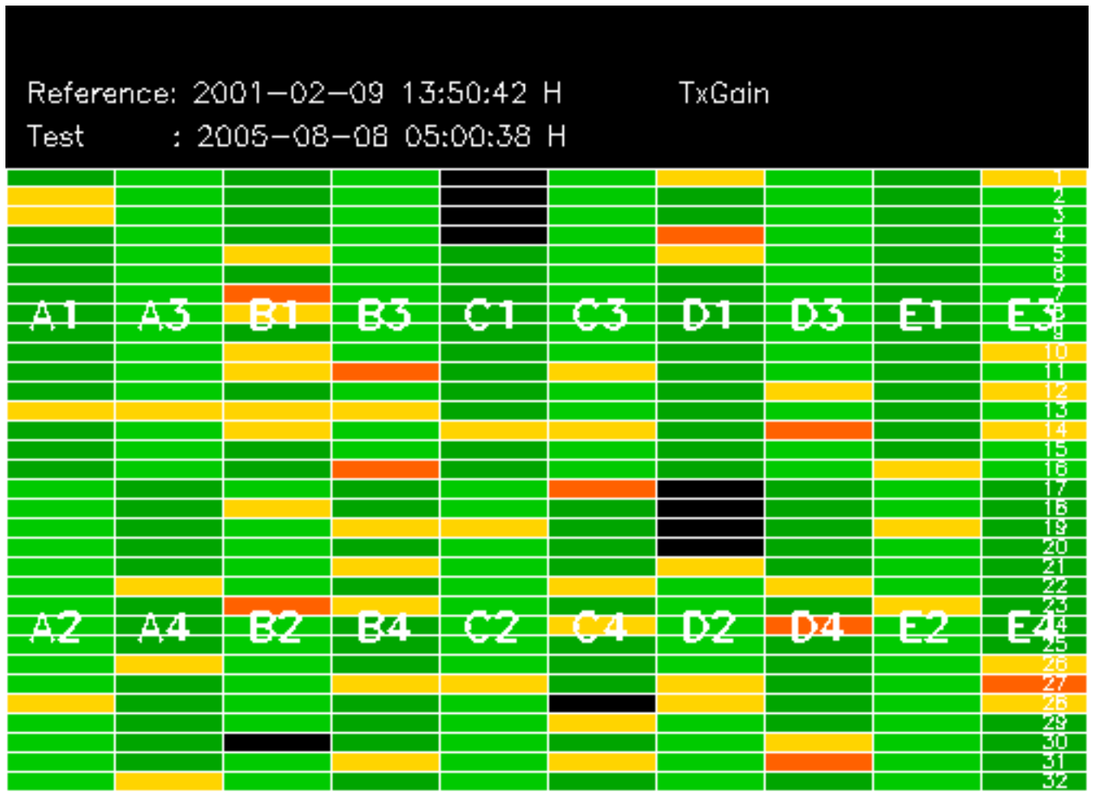

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-08-08 05:00:38 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
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9
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17
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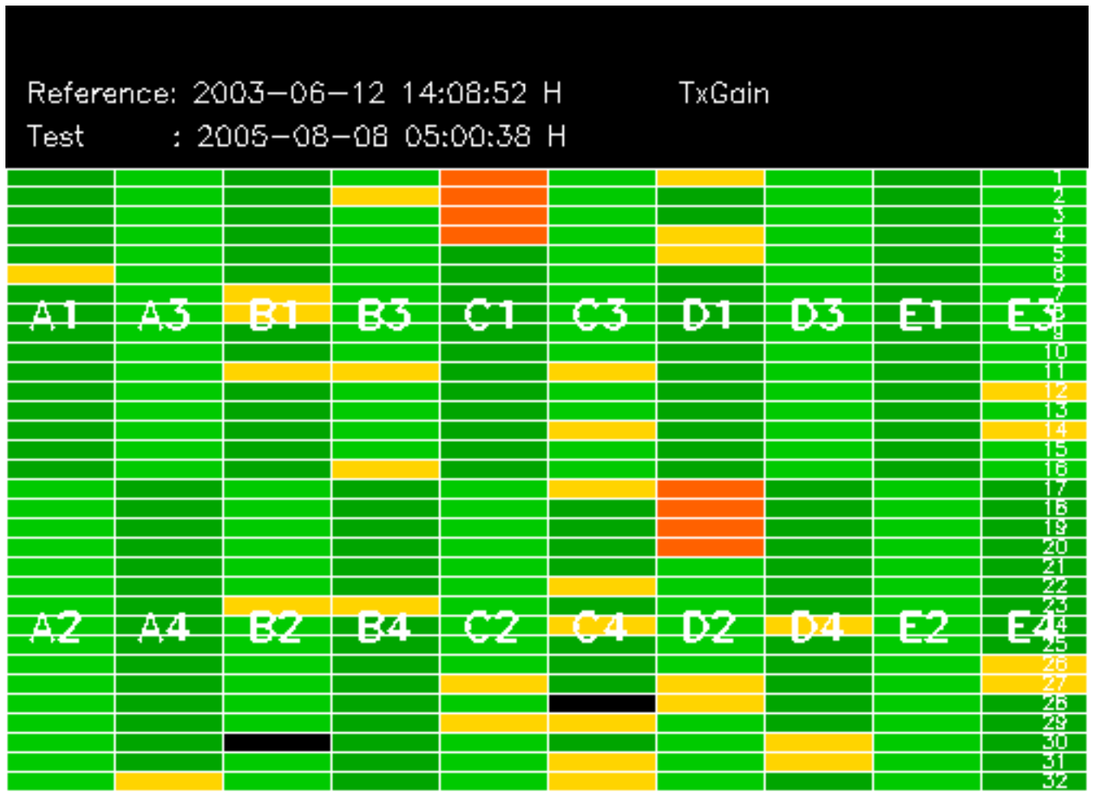
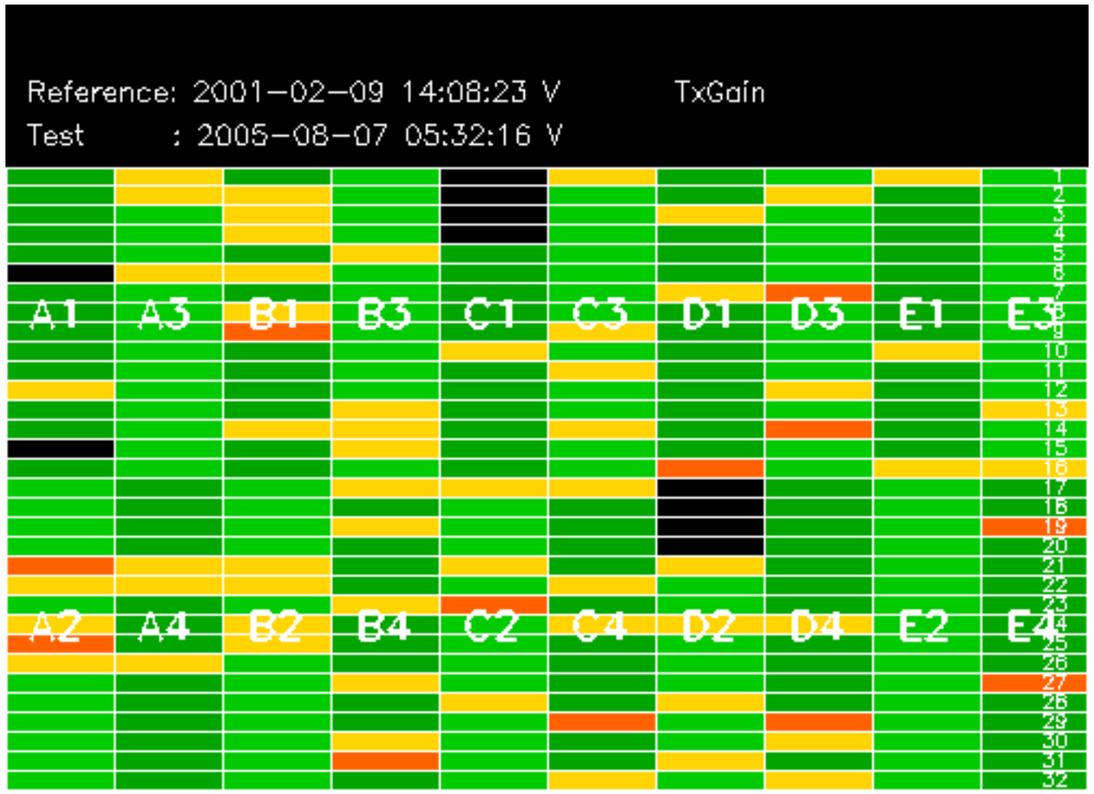
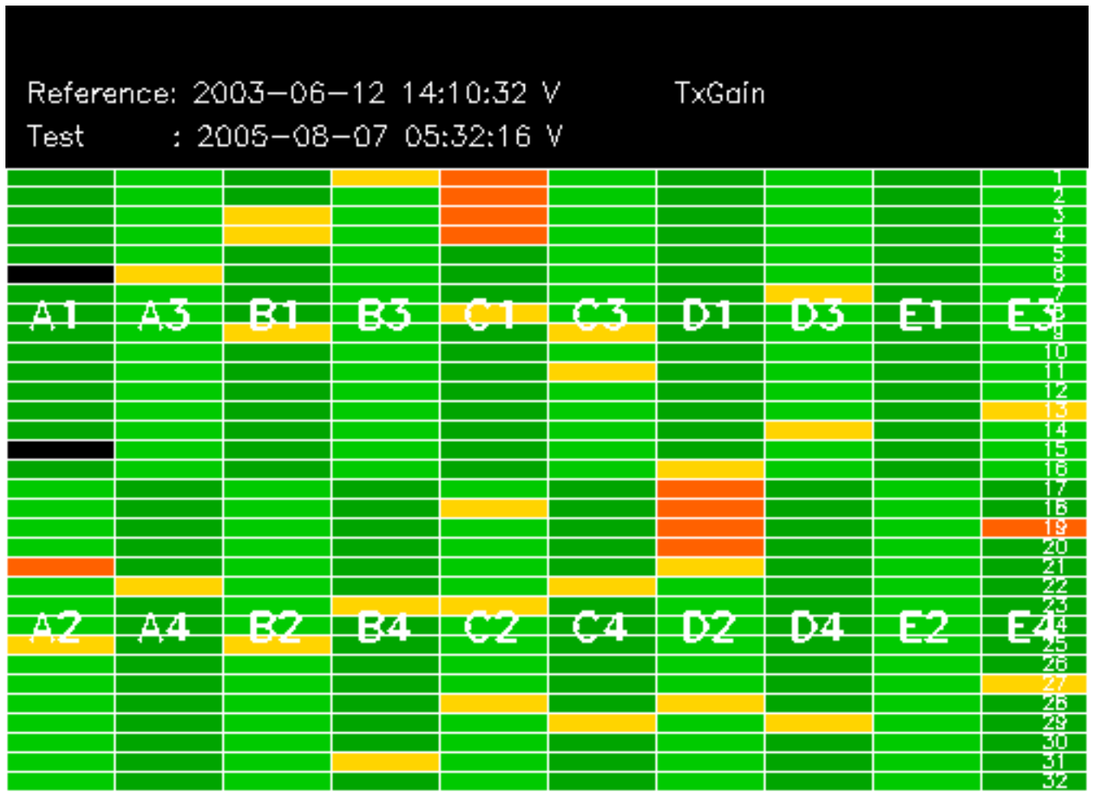

Reference: 2003-06-12 14:08:52 H
Test : 2005-08-08 05:00:38 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-08-07 05:32:16 V
TxGain
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
Test : 2005-08-07 05:32:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
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8
9
10
11
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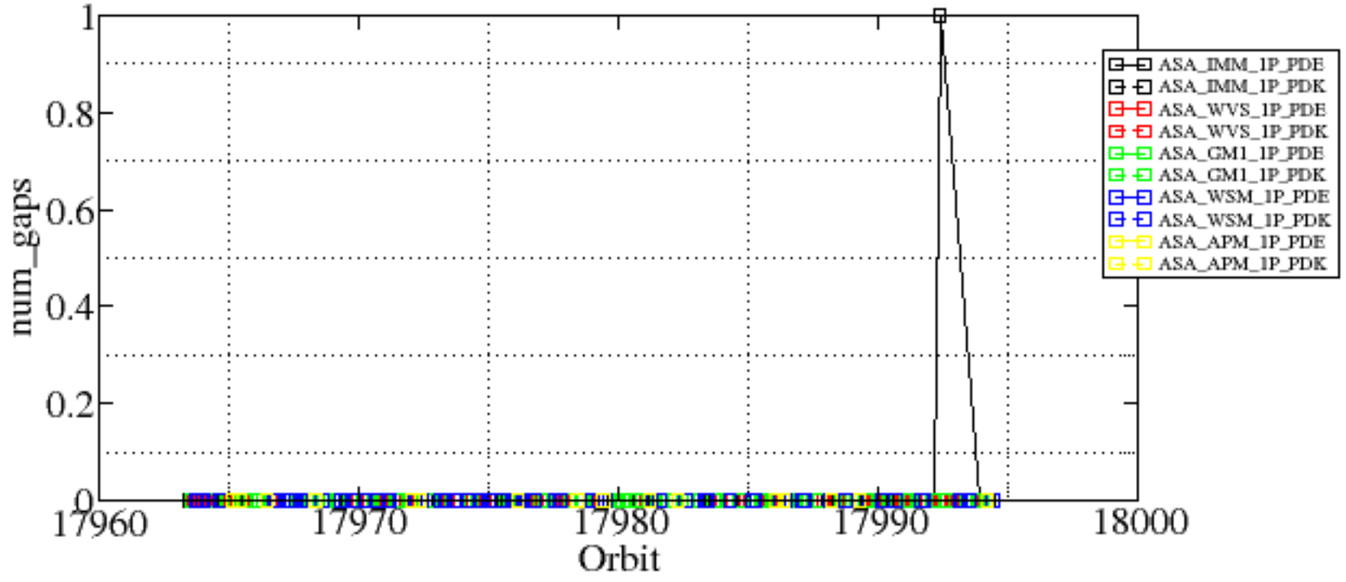
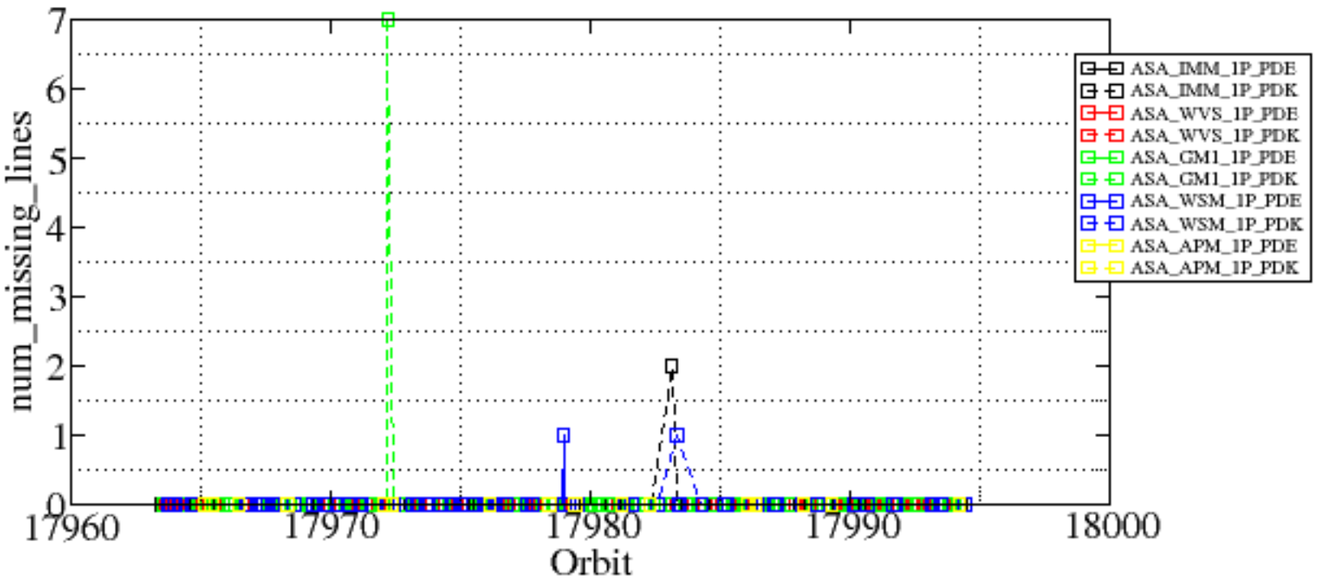
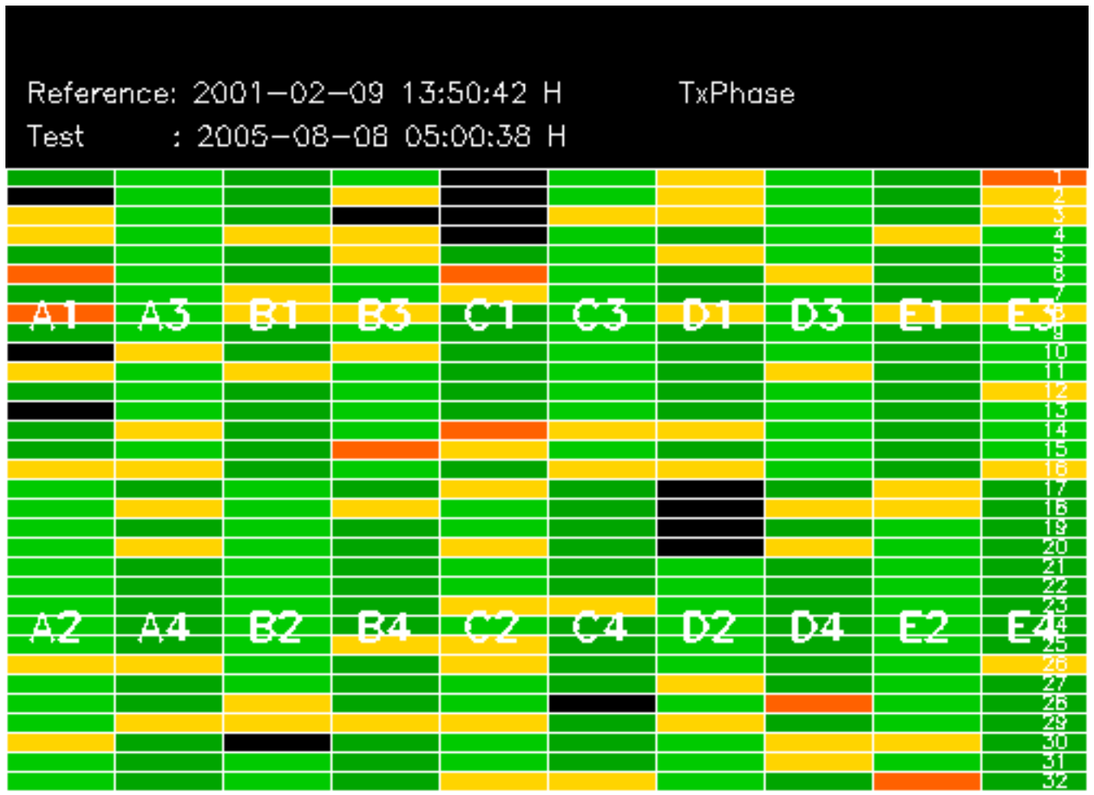
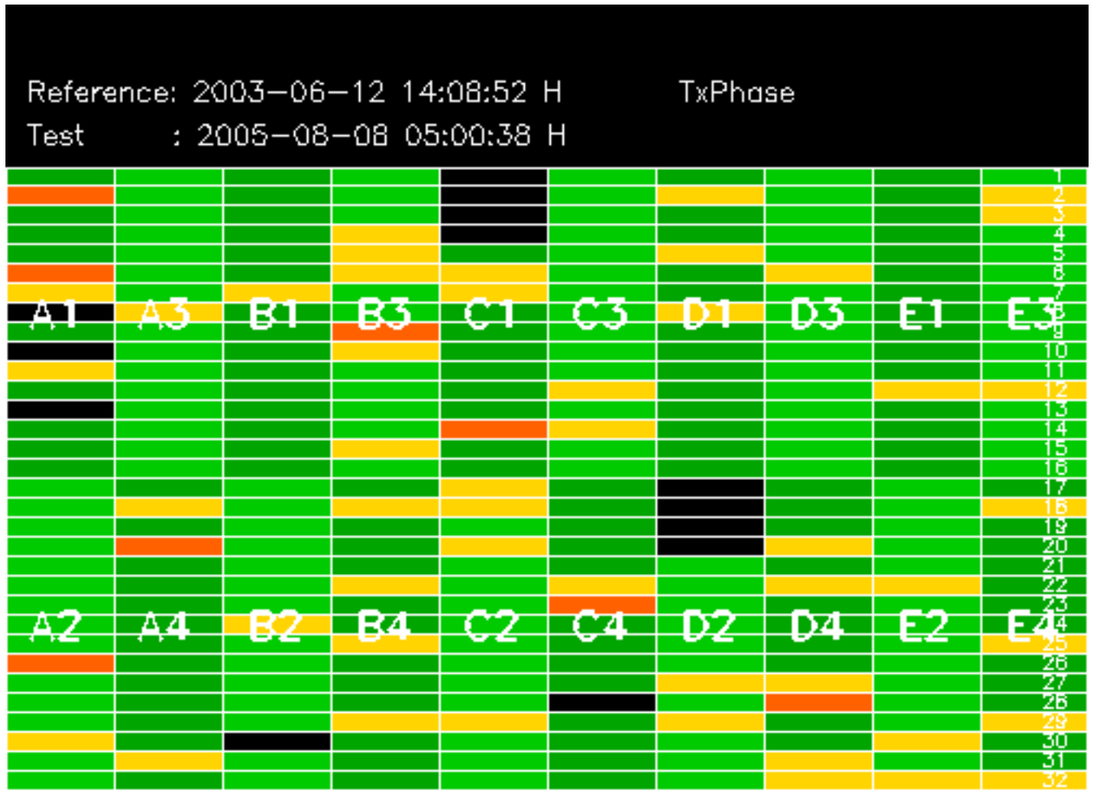
31
32

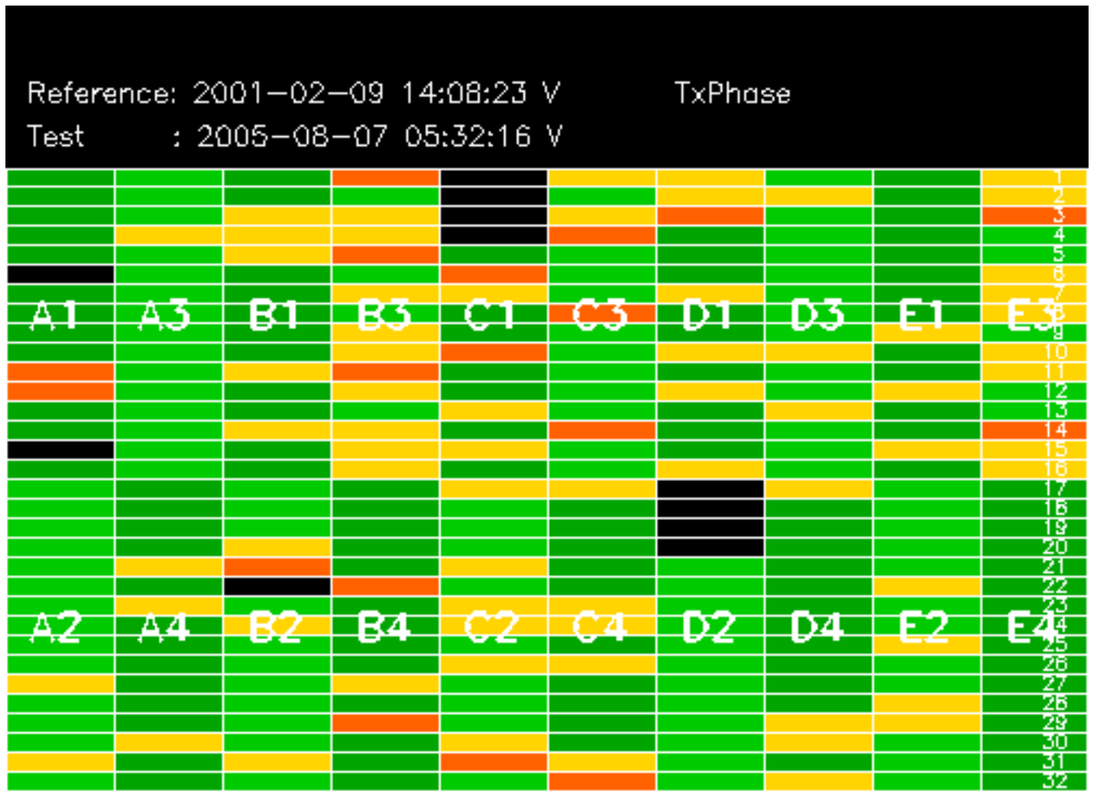
Summary of analysis for the last 3 days 2005080[789]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20050809_003745_000001282039_00403_17992_1934.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050808_090909_000000532039_00394_17983_1173.N1 </td> <td>0 </td> <td>2 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050807_144853_000010092039_00383_17972_1742.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050808_020810_000000612039_00389_17978_3490.N1 </td> <td>0 </td> <td>1 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050808_020911_000000552039_00389_17978_3492.N1 </td> <td>0 </td> <td>1 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20050808_092904_000000862039_00394_17983_1477.N1 </td> <td>0 </td> <td>1 </td></tr>
</table>

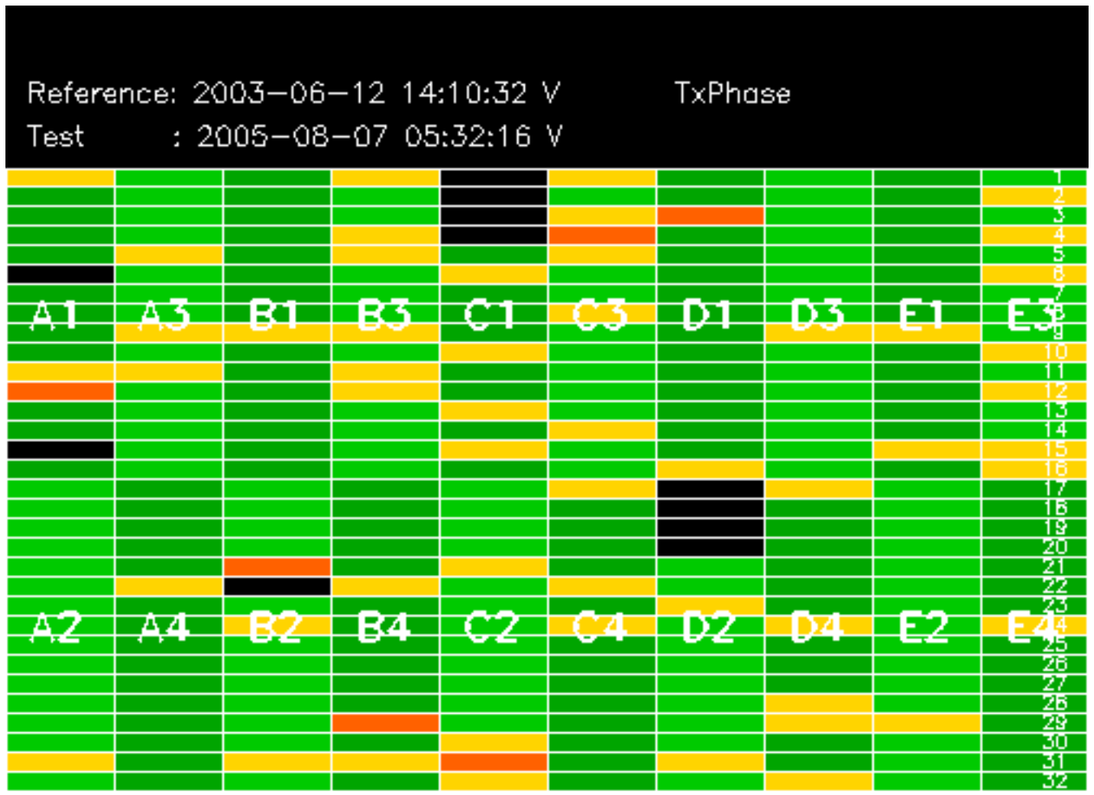

num_gaps
Orbit
1
0.8
0.6
0.4
0.2
0
17960
17970
17980
17990
18000
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

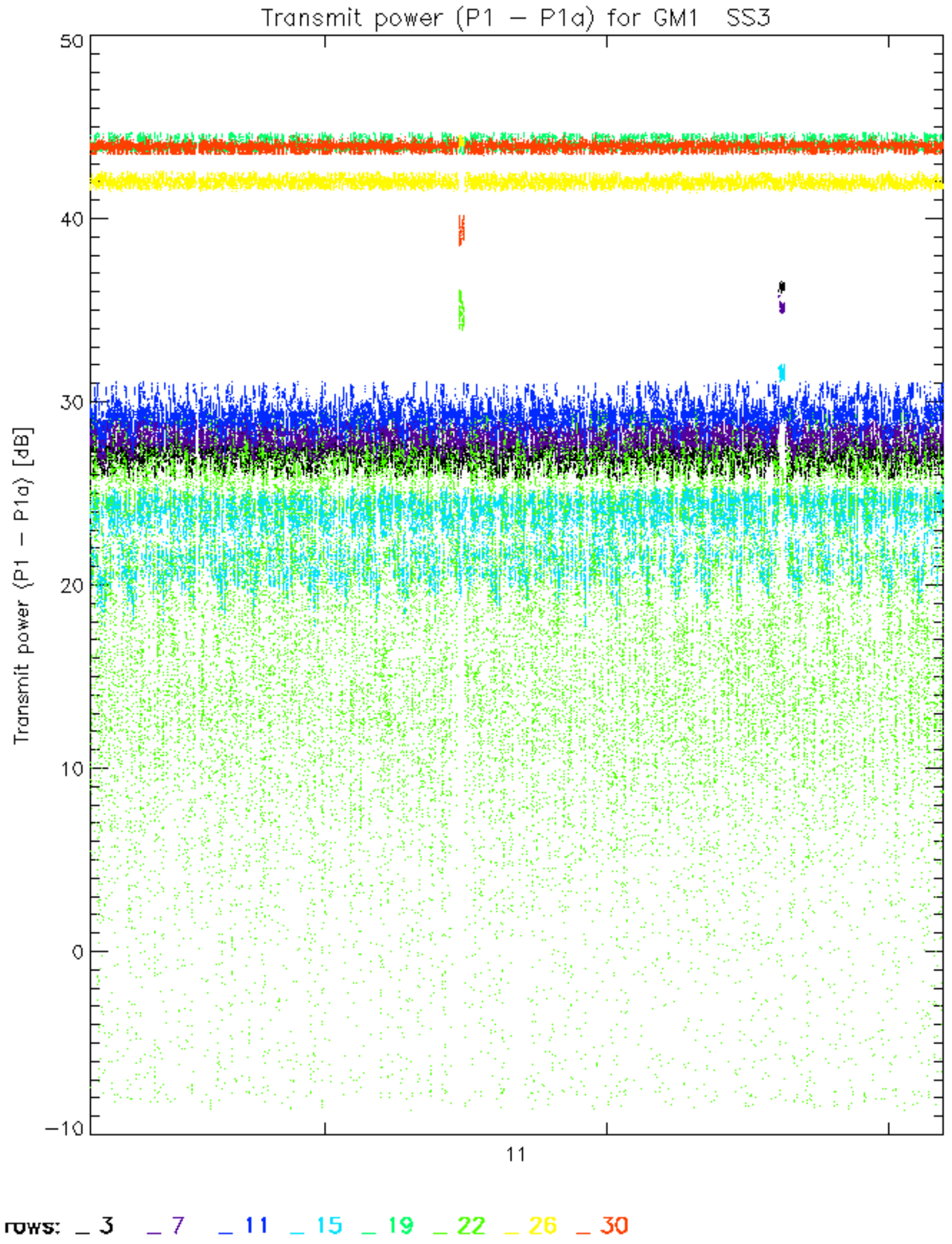

num_missing_lines
Orbit
0
1
2
3
4
5
6
7
17960
17970
17980
17990
18000
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

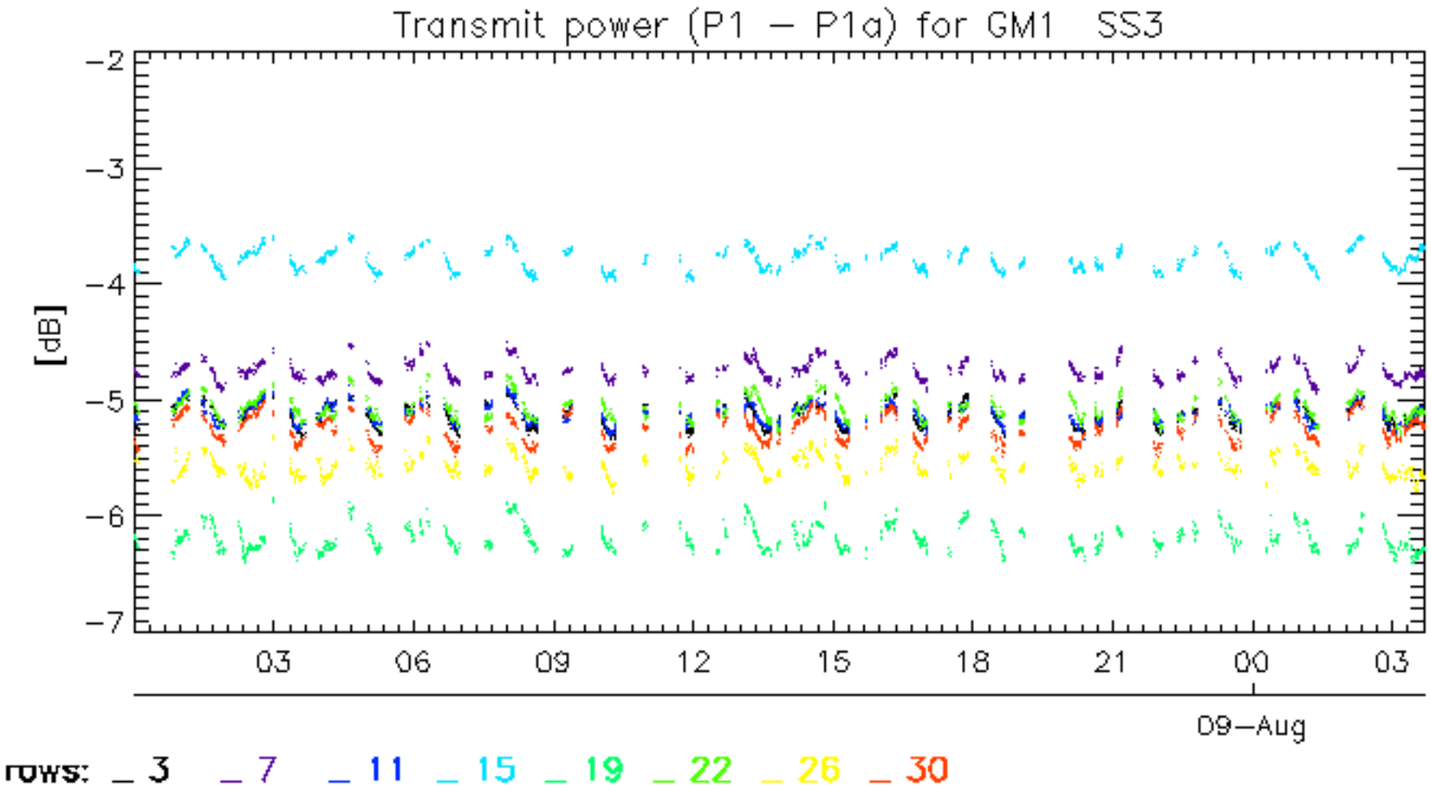

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-08-08 05:00:38 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

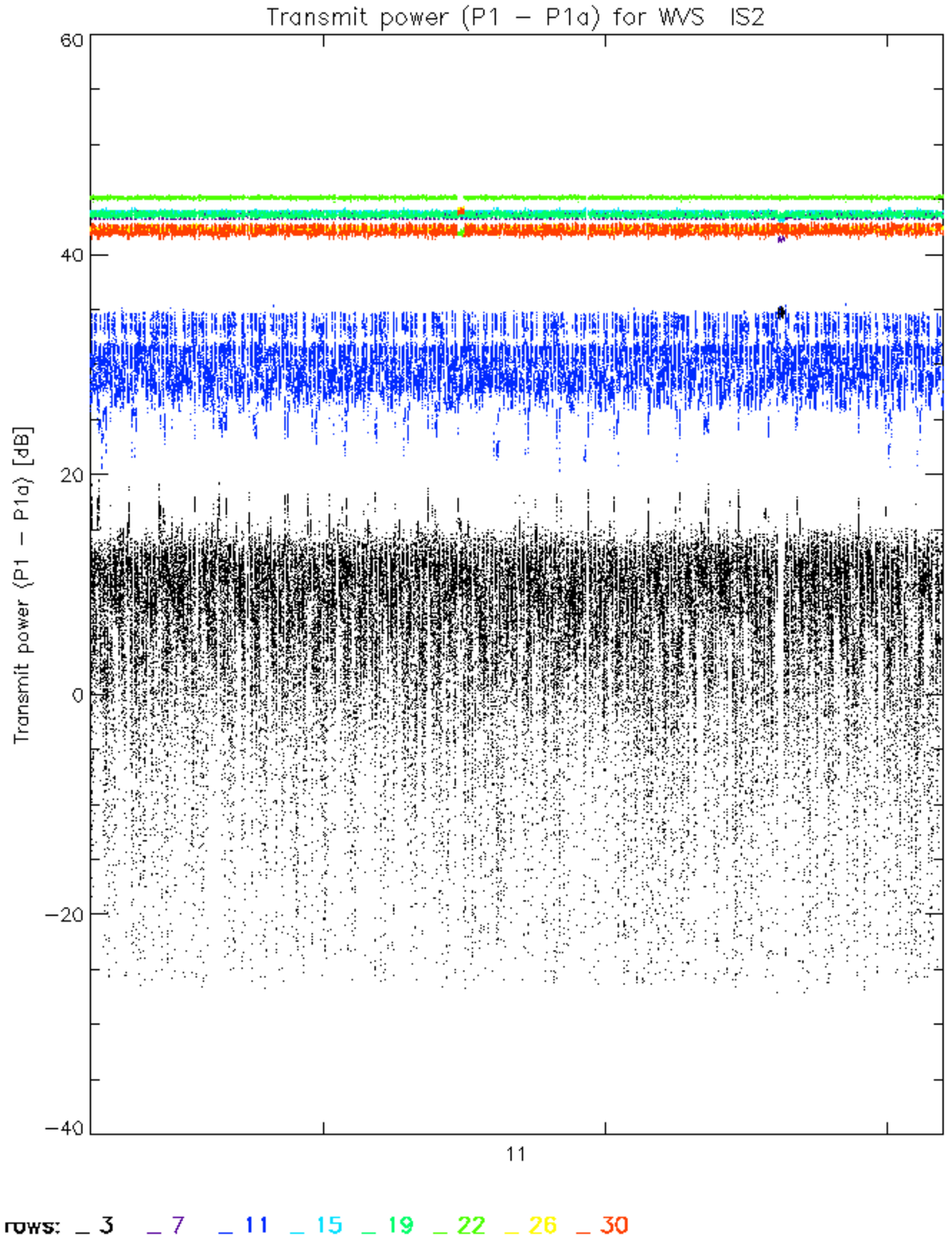

Reference: 2003-06-12 14:08:52 H
Test : 2005-08-08 05:00:38 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

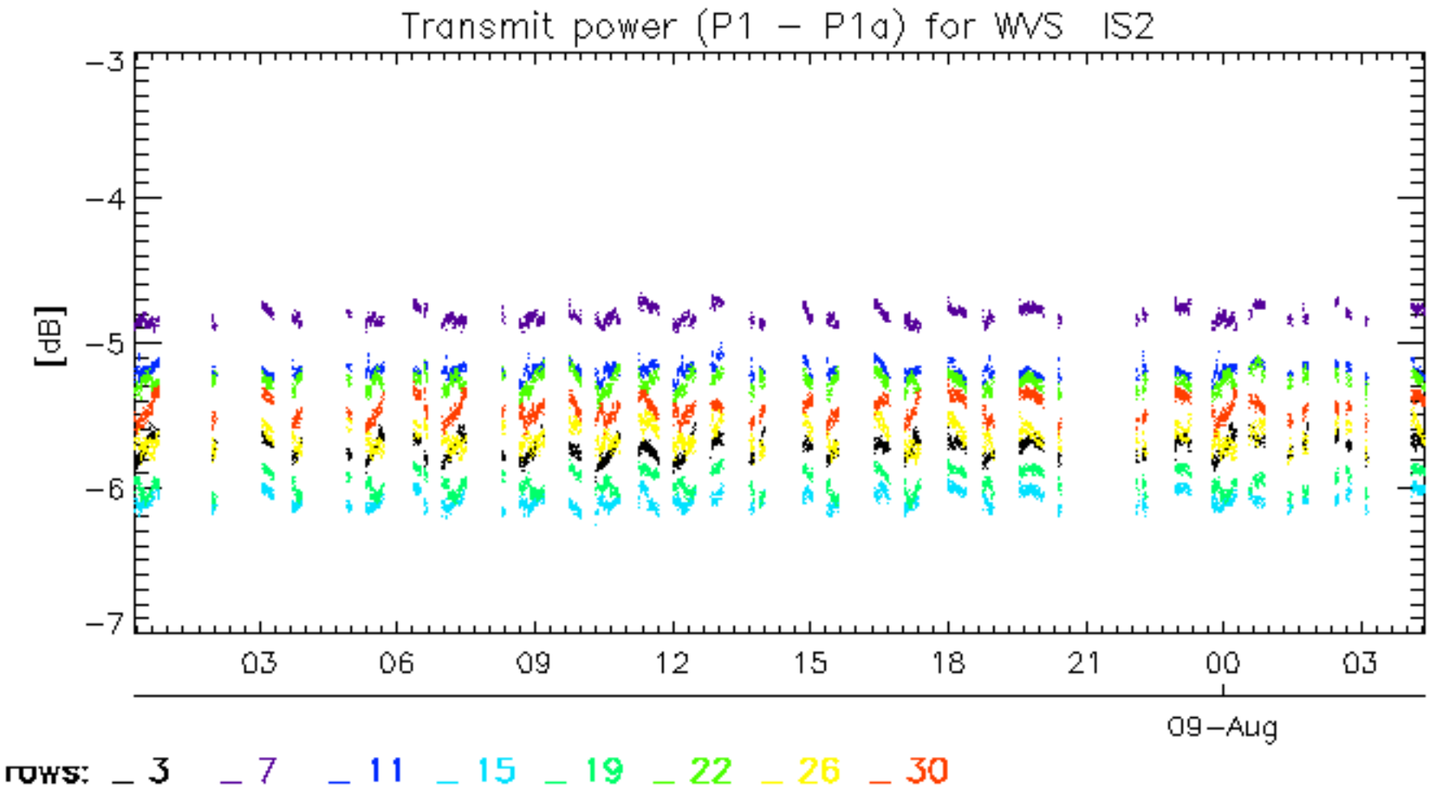

Reference: 2001-02-09 14:08:23 V
Test : 2005-08-07 05:32:16 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-08-07 05:32:16 V
TxPhase
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
09–Aug
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.