PRELIMINARY REPORT OF 050907

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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 2005-09-06 00:00:00 to 2005-09-07 10:50:01

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	24	50	14	2	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	50	14	2	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	24	50	14	2	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	50	14	2	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	35	45	33	7	33
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	35	45	33	7	33
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	35	45	33	7	33
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	35	45	33	7	33

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	20050905 084155
H	20050906 081018

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	-3.300134	0.027521	0.086898
7	P1	-3.182140	0.024116	0.022272
11	P1	-4.731580	0.032880	-0.031866
15	P1	-5.628483	0.049464	-0.021200
19	P1	-3.818187	0.004330	-0.016791
22	P1	-4.618427	0.011815	-0.003294
26	P1	-4.820940	0.029139	0.029175
30	P1	-7.248858	0.044624	-0.017376
3	P1	-15.540515	0.071461	0.011655
7	P1	-15.565899	0.143881	-0.139728
11	P1	-21.818159	0.361096	-0.075491
15	P1	-11.316759	0.123977	-0.086870
19	P1	-14.523627	0.034060	-0.029081
22	P1	-15.527412	0.327781	0.231848
26	P1	-17.233299	0.216886	0.227445
30	P1	-17.885355	0.346632	-0.162761

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.734966	0.087248	0.115716
7	P2	-21.873816	0.102458	0.145599
11	P2	-13.432830	0.114260	0.197564
15	P2	-7.044183	0.094457	0.021468
19	P2	-9.579699	0.098887	0.024621
22	P2	-16.806189	0.101490	0.037279
26	P2	-16.503380	0.101693	0.016865
30	P2	-18.805408	0.089489	-0.003270

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.156813	0.003715	-0.000839
7	P3	-8.156813	0.003715	-0.000839
11	P3	-8.156813	0.003715	-0.000839
15	P3	-8.156813	0.003715	-0.000839
19	P3	-8.156813	0.003715	-0.000839
22	P3	-8.156813	0.003715	-0.000839
26	P3	-8.156818	0.003715	-0.000836
30	P3	-8.156818	0.003715	-0.000836

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	-2.801109	0.093467	0.120783
7	P1	-2.972642	0.066733	0.083576
11	P1	-4.039843	0.026447	-0.034516
15	P1	-3.643407	0.062690	0.038410
19	P1	-3.632273	0.013997	-0.002862
22	P1	-5.710537	0.041015	-0.040256
26	P1	-7.353683	0.040504	0.057567
30	P1	-6.281606	0.078448	0.060881
3	P1	-10.957820	0.053315	-0.032657
7	P1	-10.492553	0.170317	-0.049610
11	P1	-12.664773	0.099131	-0.040221
15	P1	-11.634295	0.122671	-0.129105
19	P1	-15.460831	0.054187	0.035064
22	P1	-25.435663	1.980811	0.219003
26	P1	-15.189479	0.241952	0.159059
30	P1	-20.080971	1.442257	0.189566

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.441561	0.048380	0.141057
7	P2	-21.979628	0.034724	0.076916
11	P2	-9.478830	0.066997	0.177670
15	P2	-5.077334	0.037235	0.042817
19	P2	-6.845007	0.056774	0.052441
22	P2	-7.024400	0.041059	0.048403
26	P2	-23.946611	0.034735	0.026338
30	P2	-21.928024	0.042140	0.027800

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.000377	0.004101	-0.005717
7	P3	-8.000436	0.004101	-0.005610
11	P3	-8.000336	0.004096	-0.005716
15	P3	-8.000343	0.004109	-0.005653
19	P3	-8.000338	0.004100	-0.005665
22	P3	-8.000298	0.004102	-0.005766
26	P3	-8.000215	0.004103	-0.005780
30	P3	-8.000297	0.004098	-0.005625

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

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4.3.2 - Evolution for GM1

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5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000435404
	stdev	2.30987e-07
MEAN Q	mean	0.000463537
	stdev	2.37957e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126573
	stdev	0.00102261
STDEV Q	mean	0.126828
	stdev	0.00103244

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005090[567]
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_1PNPDE20050905_155730_000002332040_00298_18388_4642.N1	1	0
ASA_IMM_1PNPDK20050905_094609_000001432040_00294_18384_3203.N1	0	5
ASA_IMM_1PNPDK20050905_095102_000001162040_00294_18384_3204.N1	0	2
ASA_IMM_1PNPDK20050905_124845_000000872040_00296_18386_3207.N1	1	0
ASA_IMM_1PNPDK20050905_124845_000000872040_00296_18386_3271.N1	1	0
ASA_GM1_1PNPDK20050906_090135_000007122040_00308_18398_4618.N1	0	7
ASA_WSM_1PNPDE20050905_224141_000001532040_00302_18392_7531.N1	0	63
ASA_WSM_1PNPDE20050906_010555_000000862040_00303_18393_7572.N1	0	21
ASA_WSM_1PNPDK20050905_094900_000001282040_00294_18384_3514.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

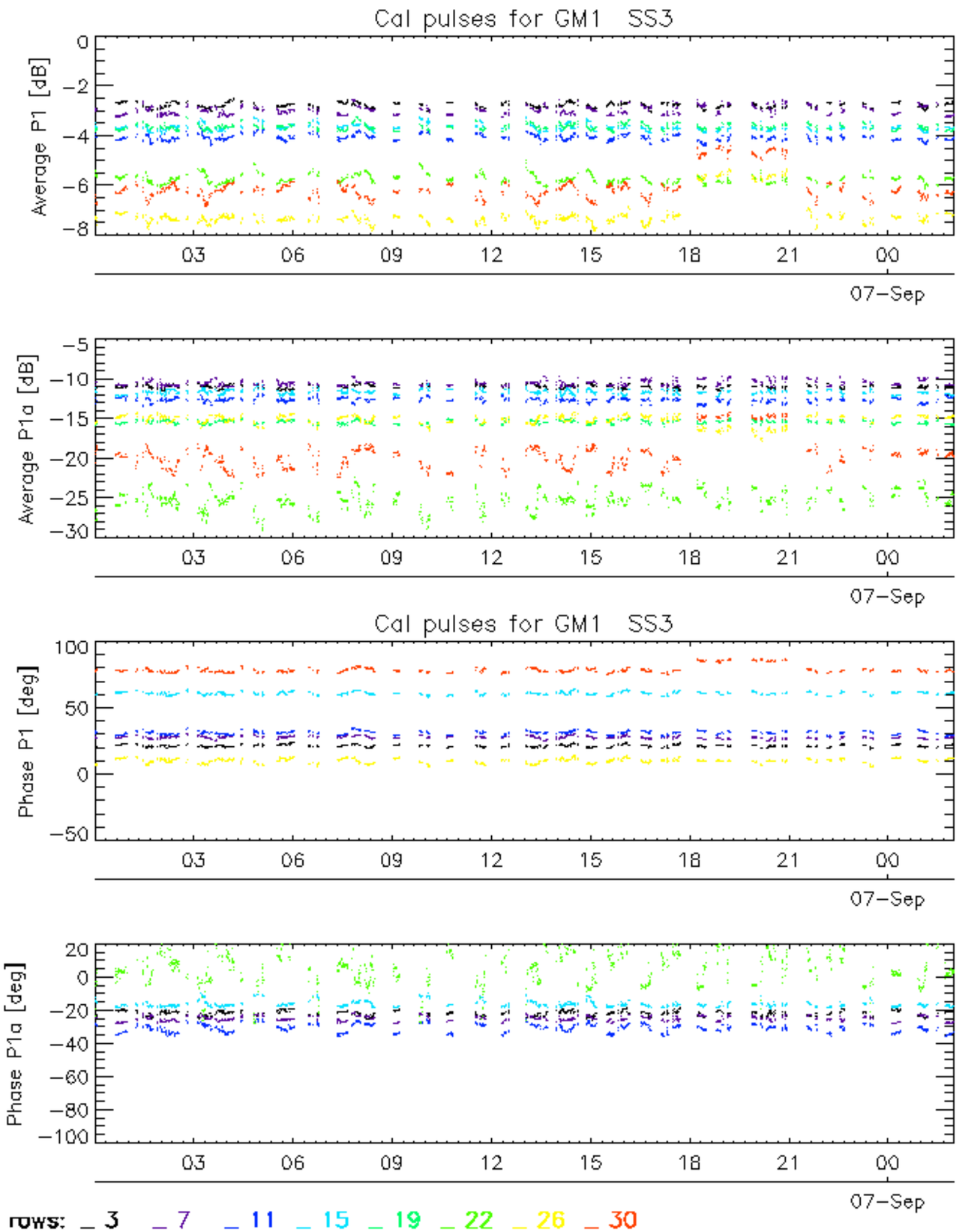
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

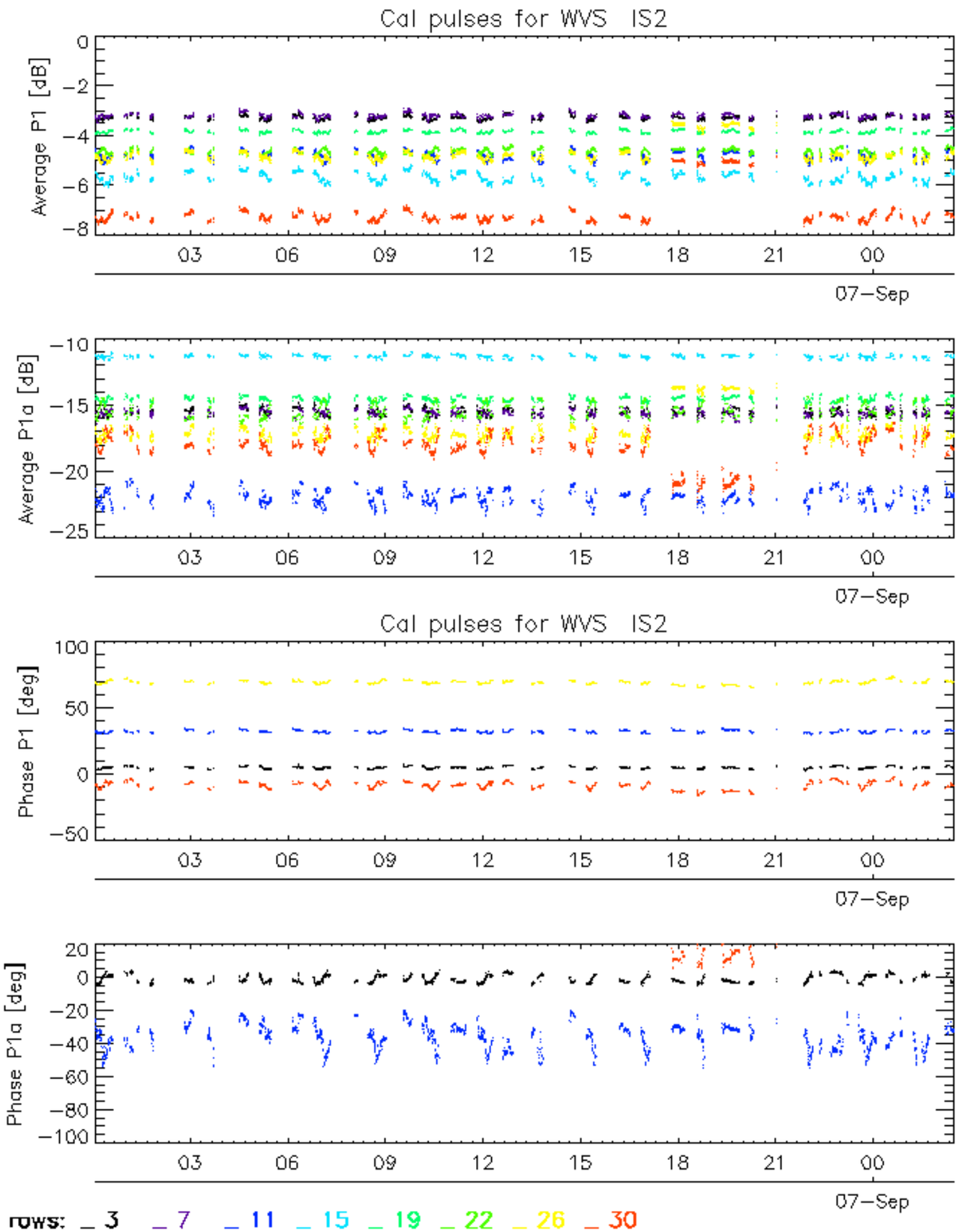
7.5 - Absolute Doppler for GM1

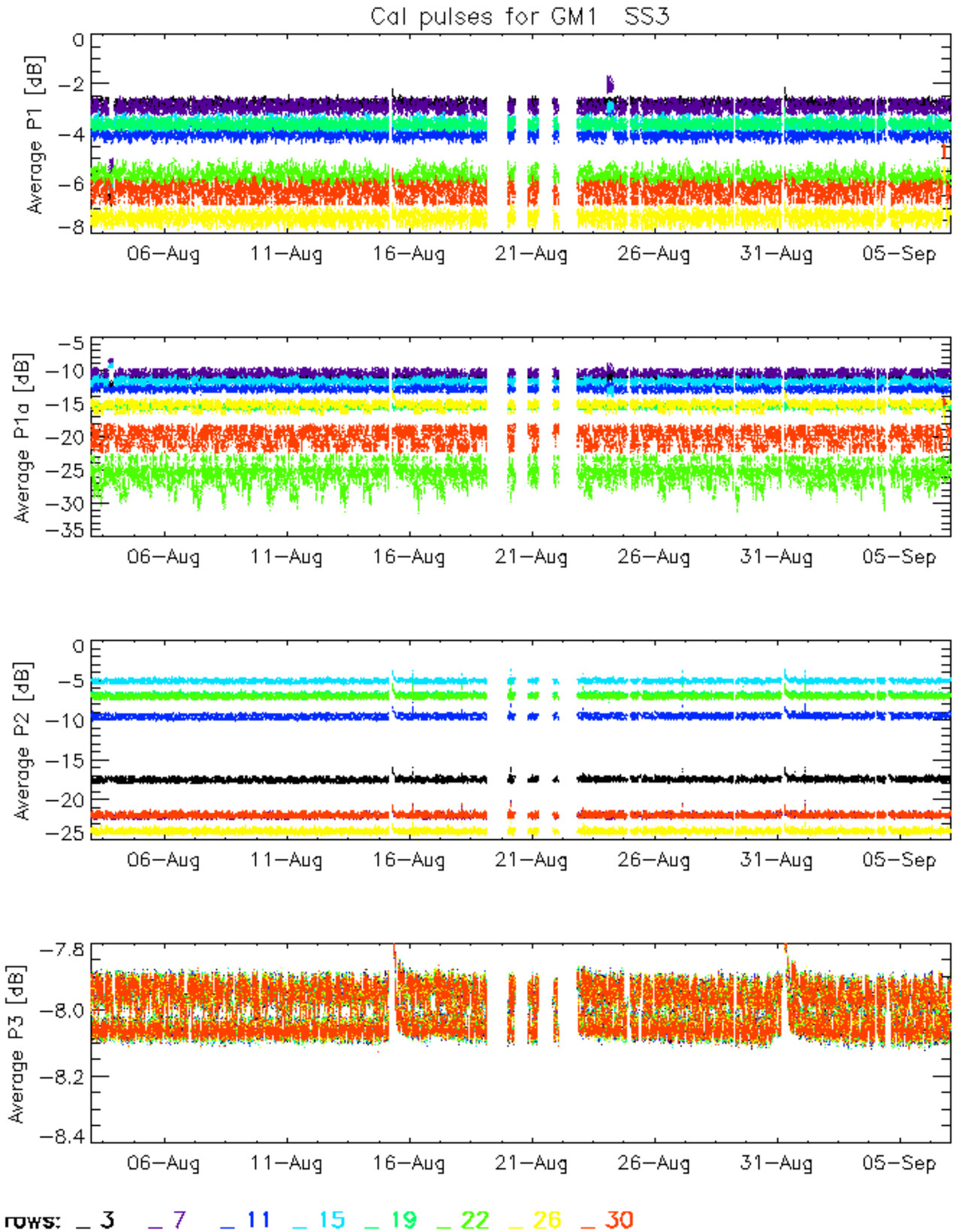
Evolution of Absolute Doppler
Acsending
Descending

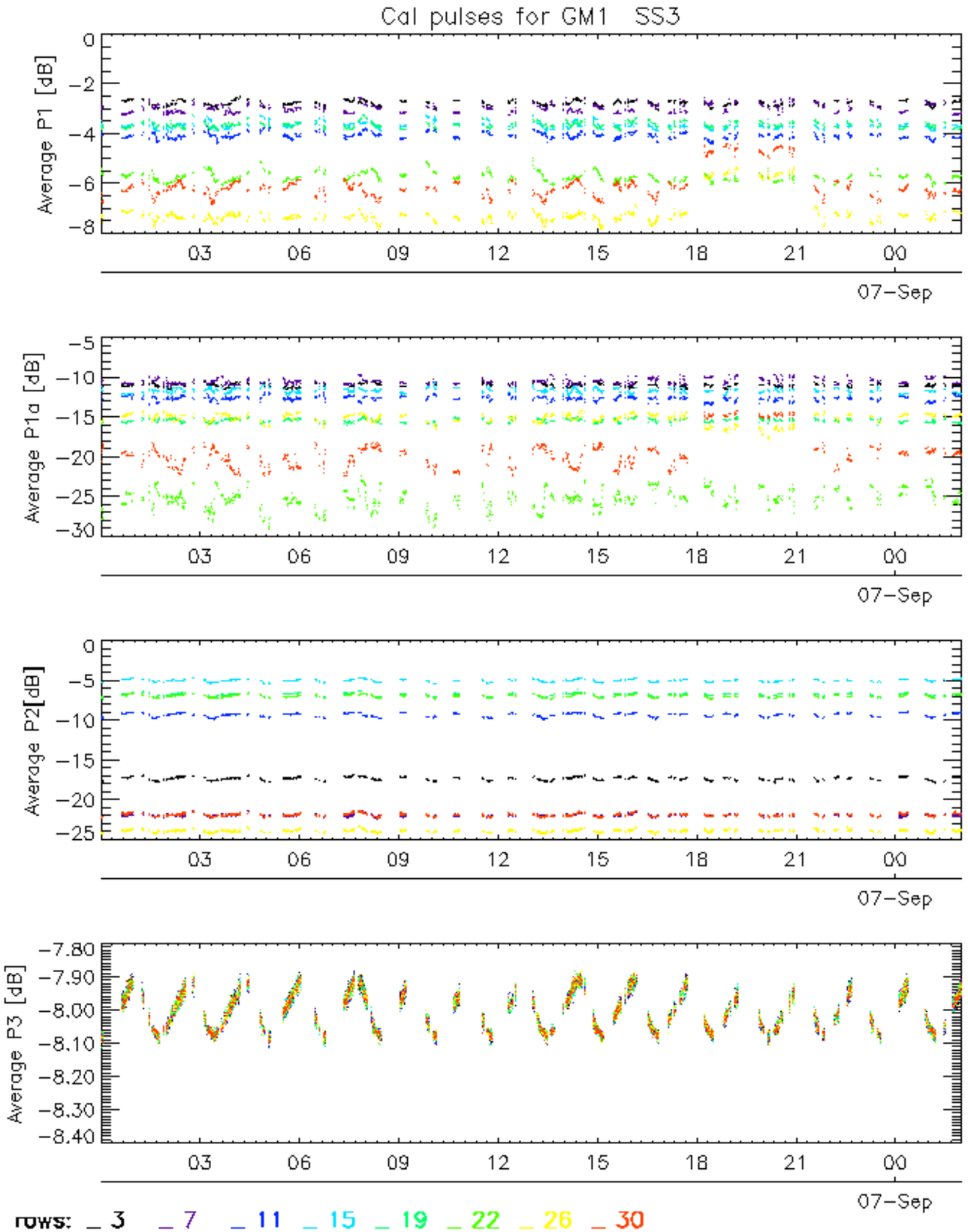
7.6 - Doppler evolution versus ANX for GM1

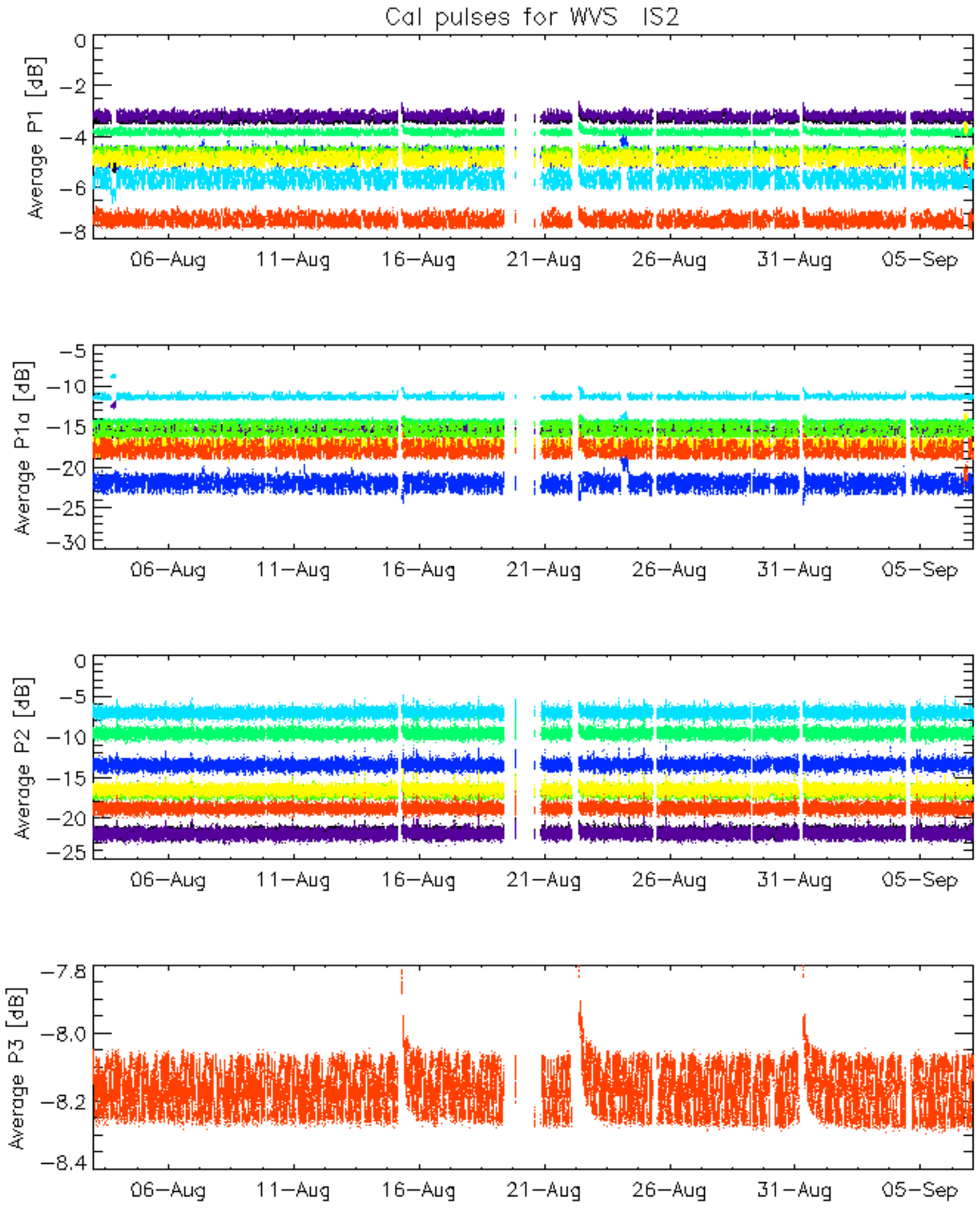
Evolution Doppler error versus ANX

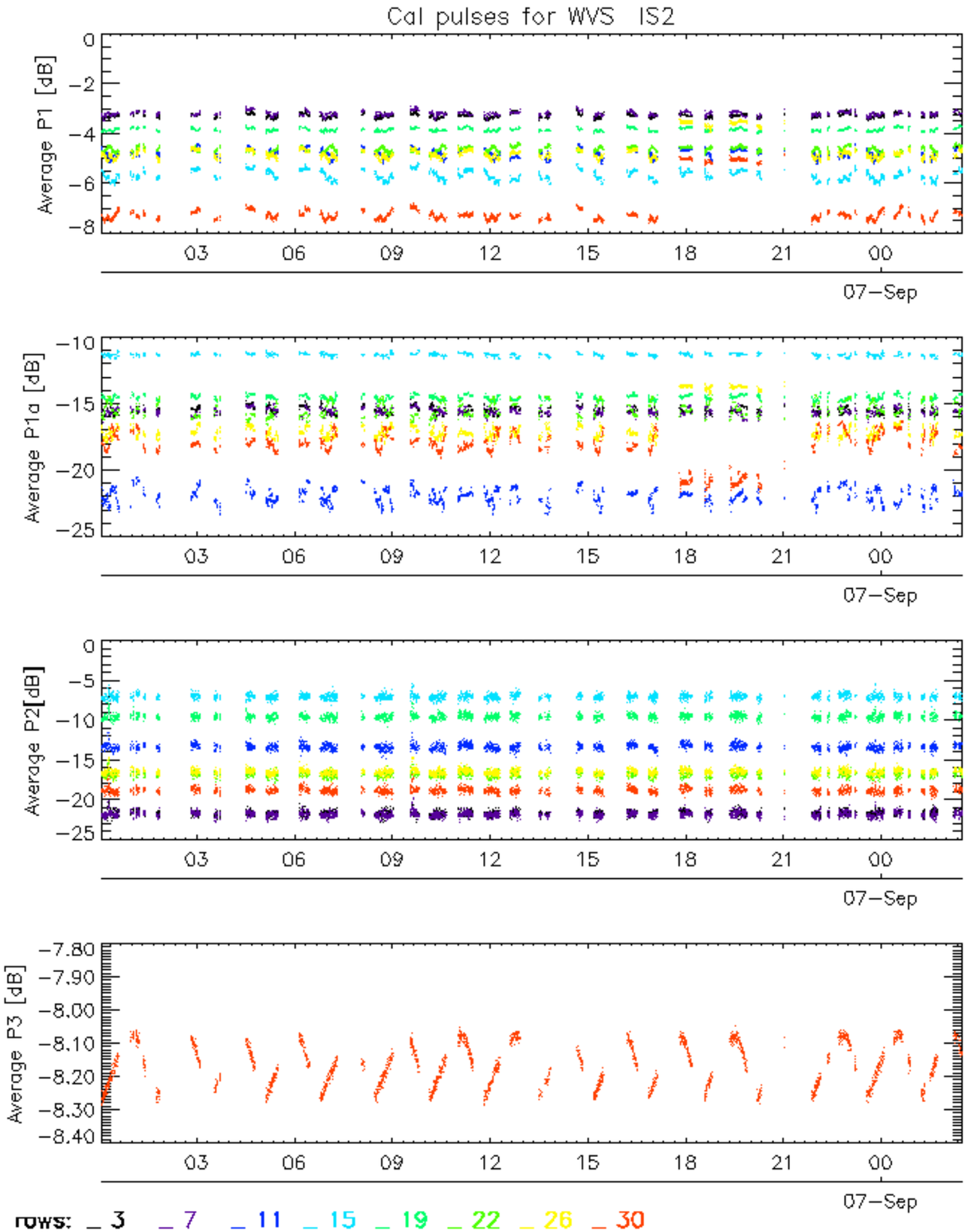

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
07−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


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

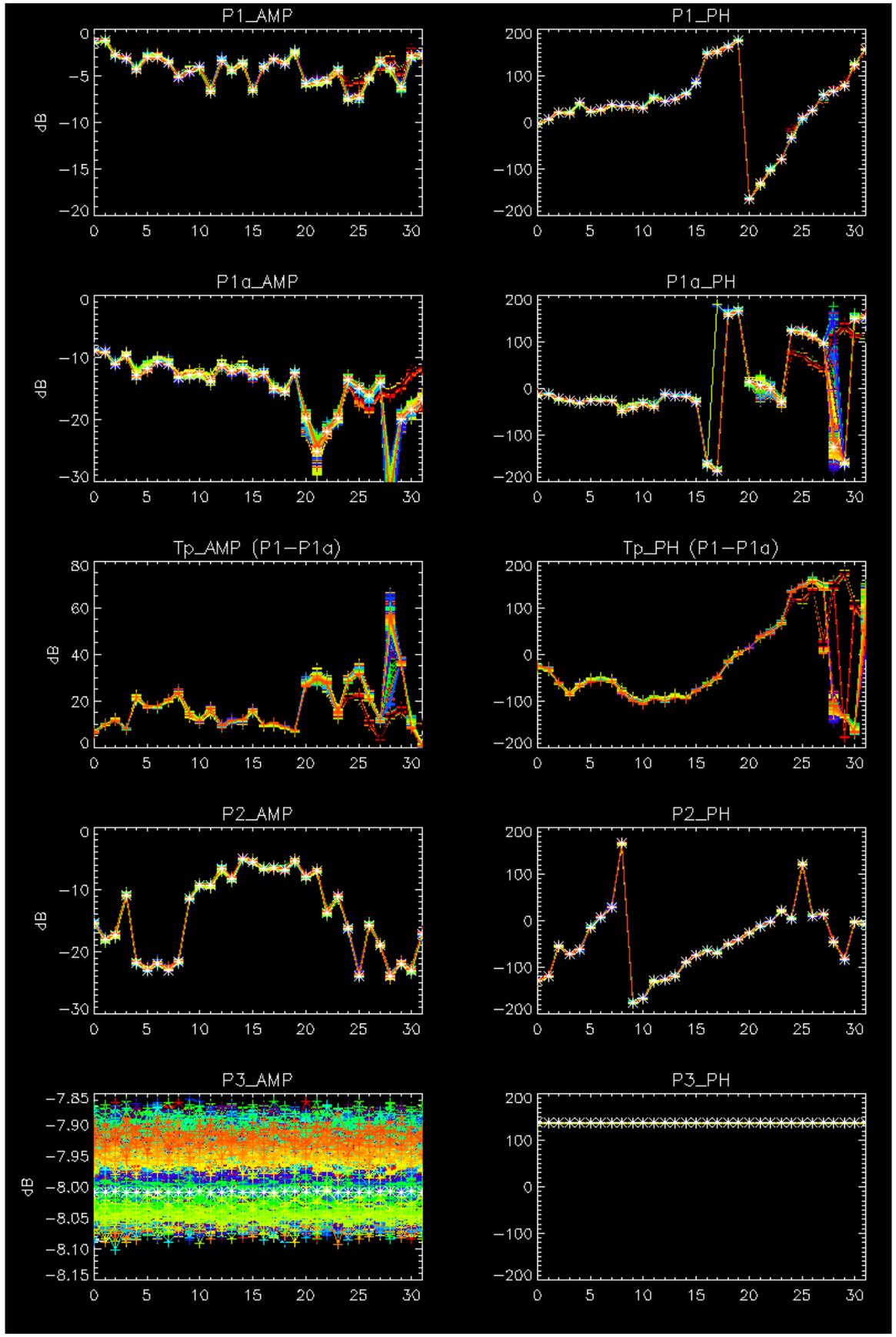

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
06−Aug
11−Aug
16−Aug
21−Aug
26−Aug
31−Aug
05−Sep
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

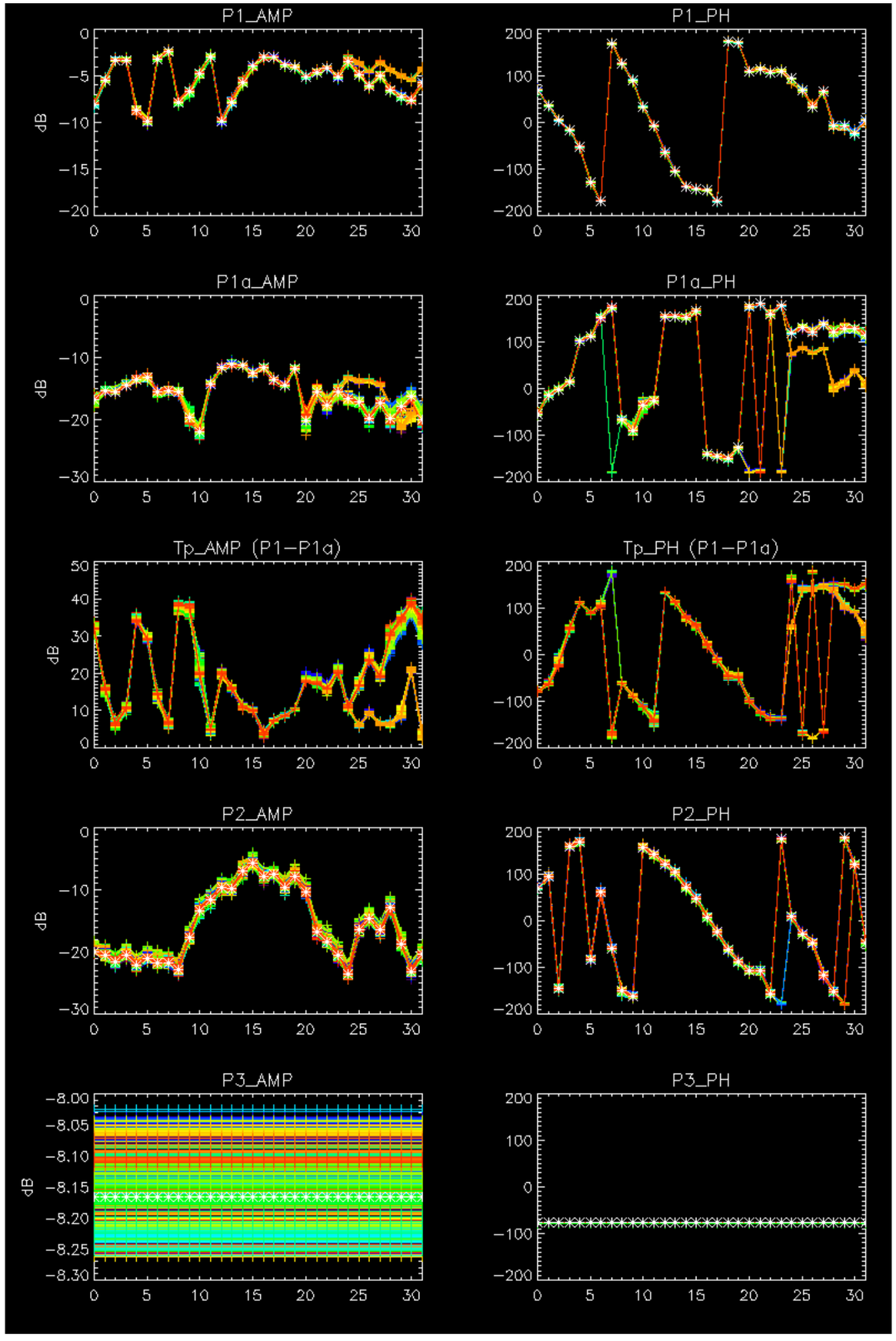

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
07−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
06−Aug
11−Aug
16−Aug
21−Aug
26−Aug
31−Aug
05−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
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
07−Sep
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

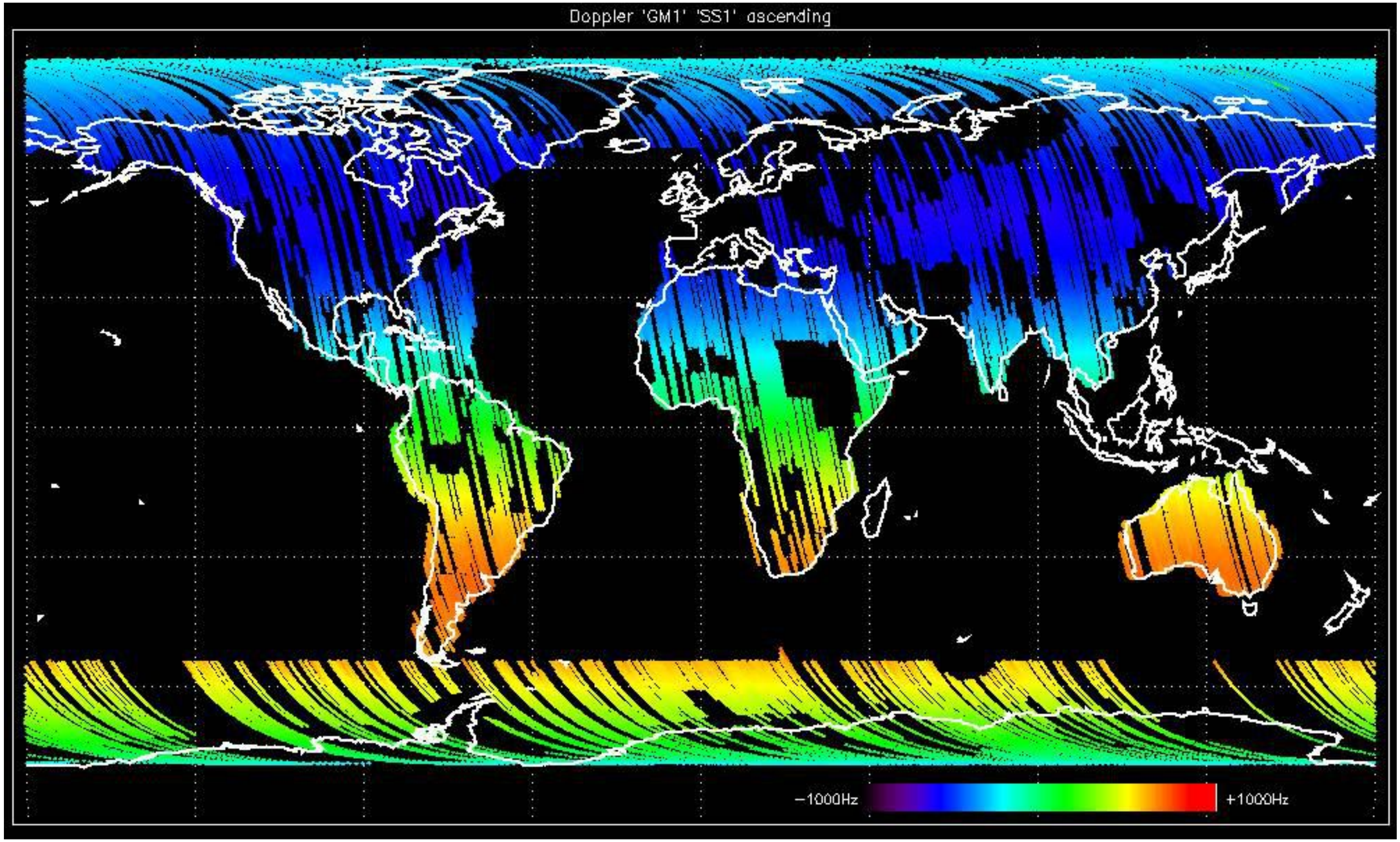
No anomalies observed.

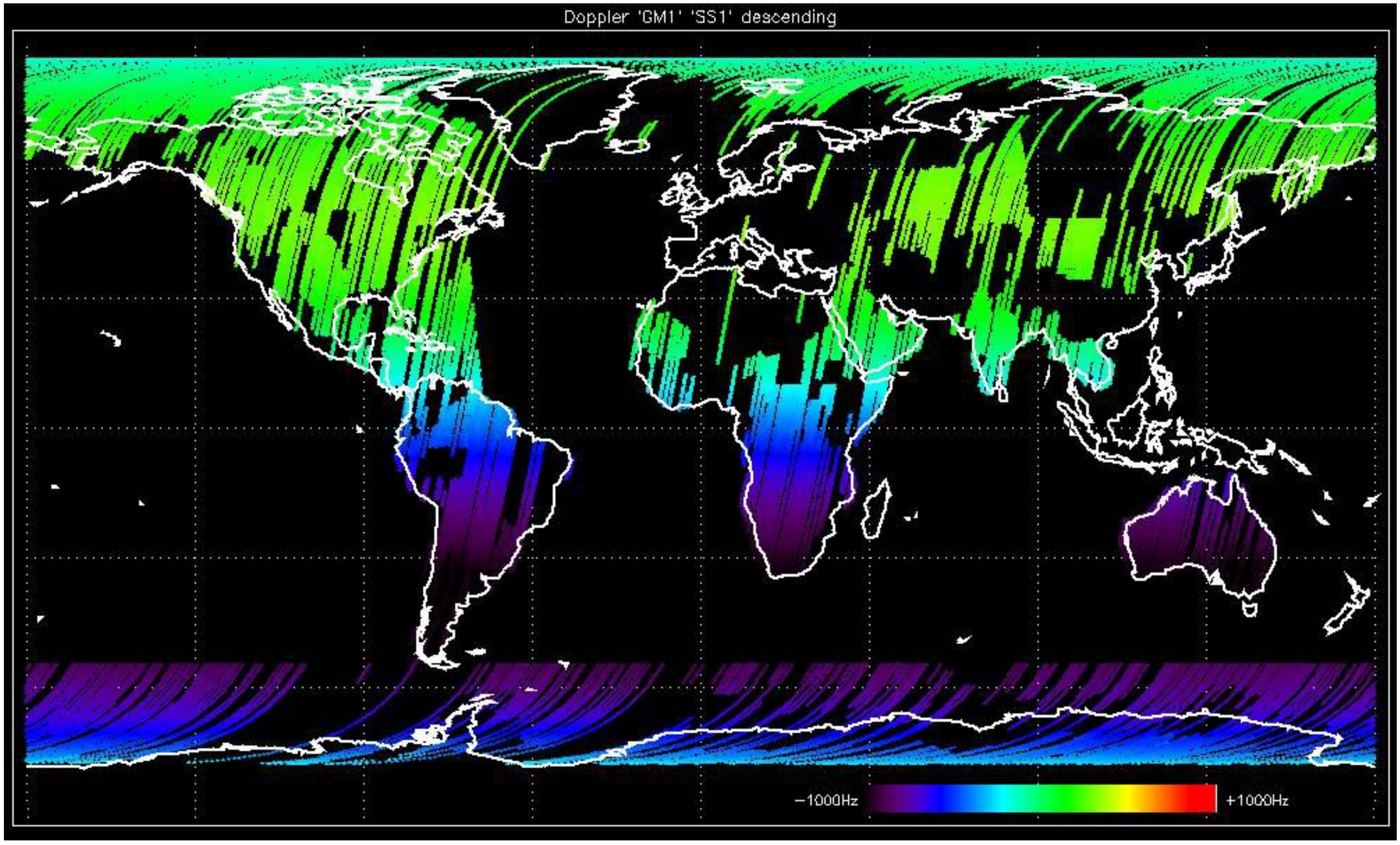

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

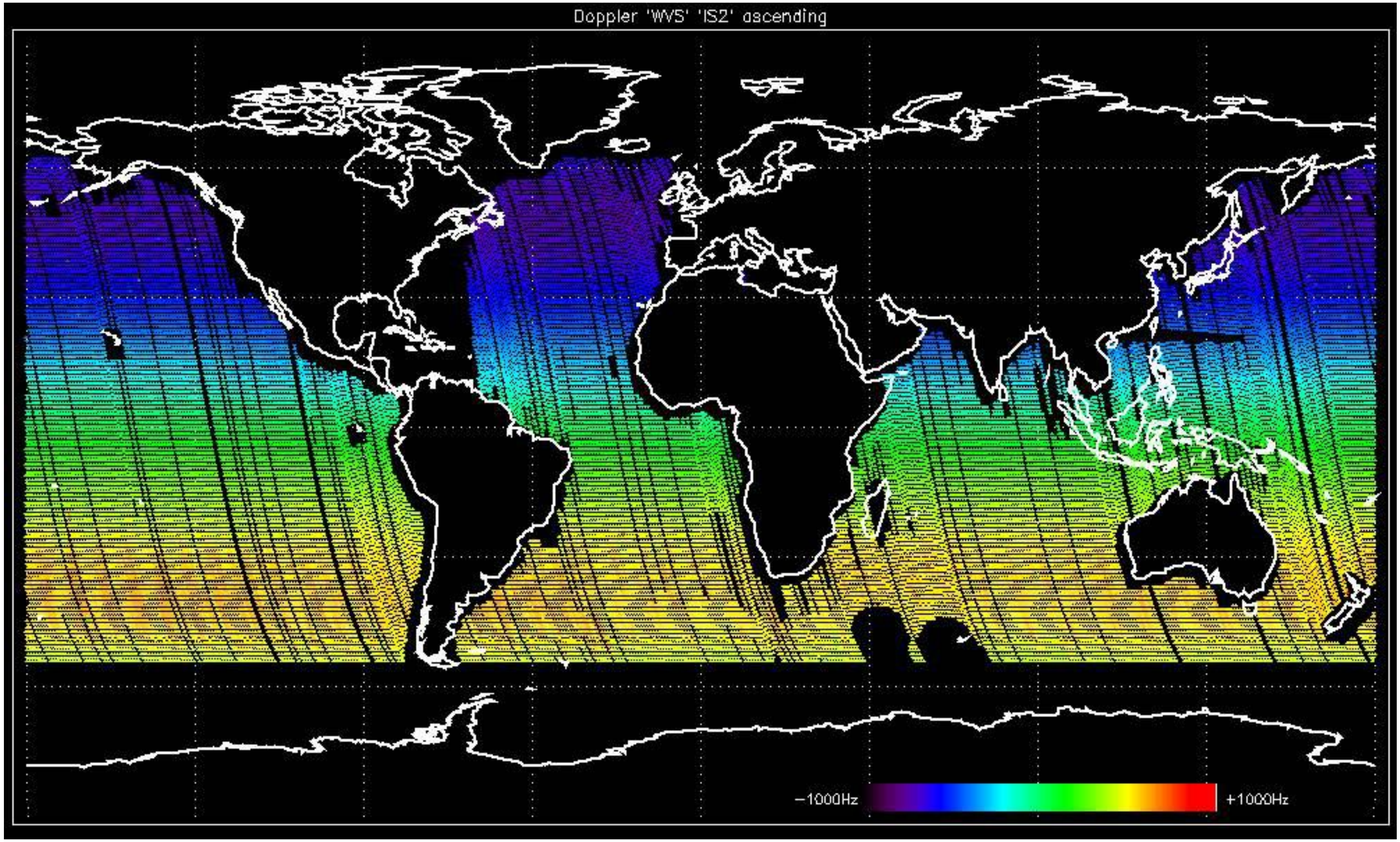

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

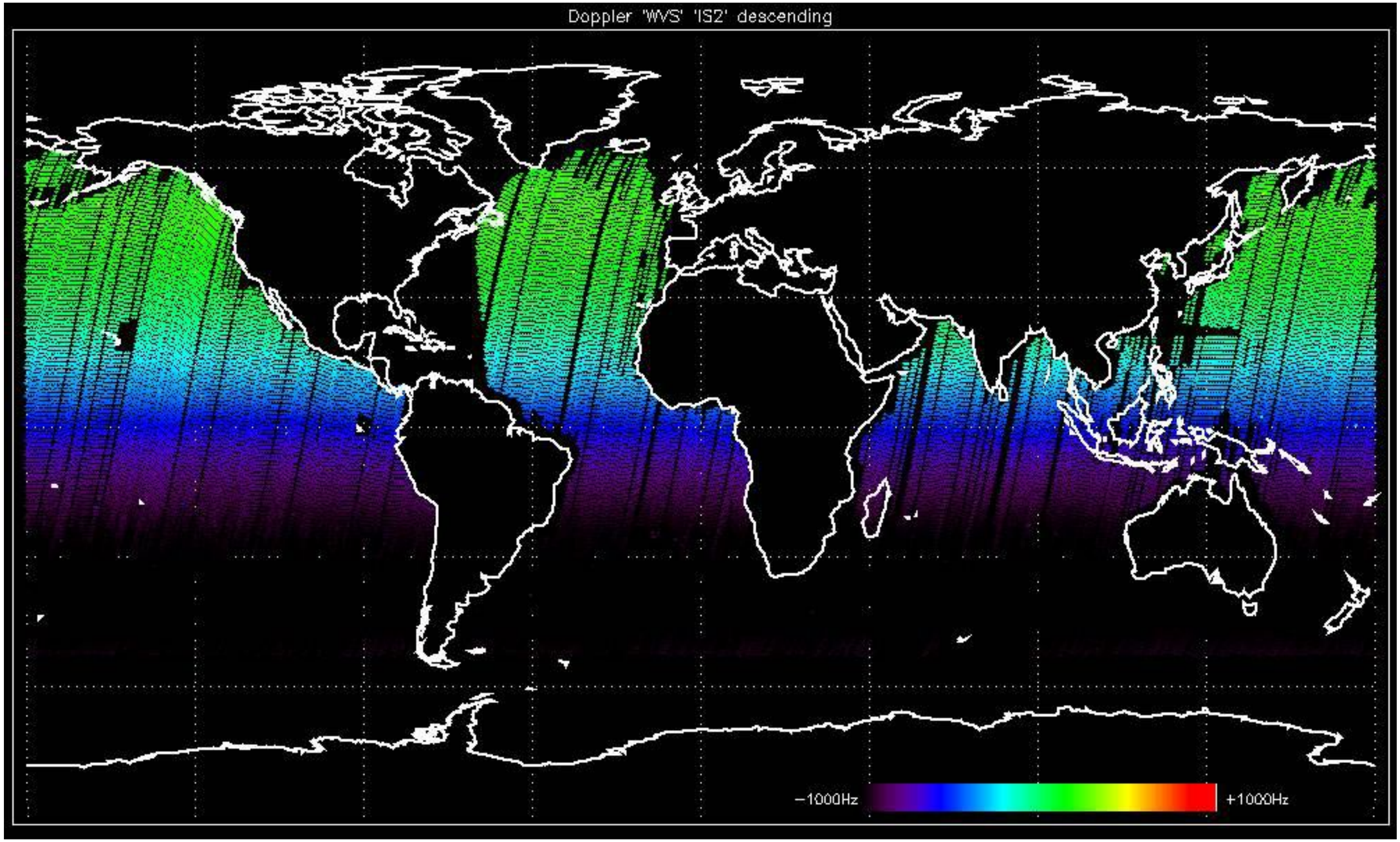
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

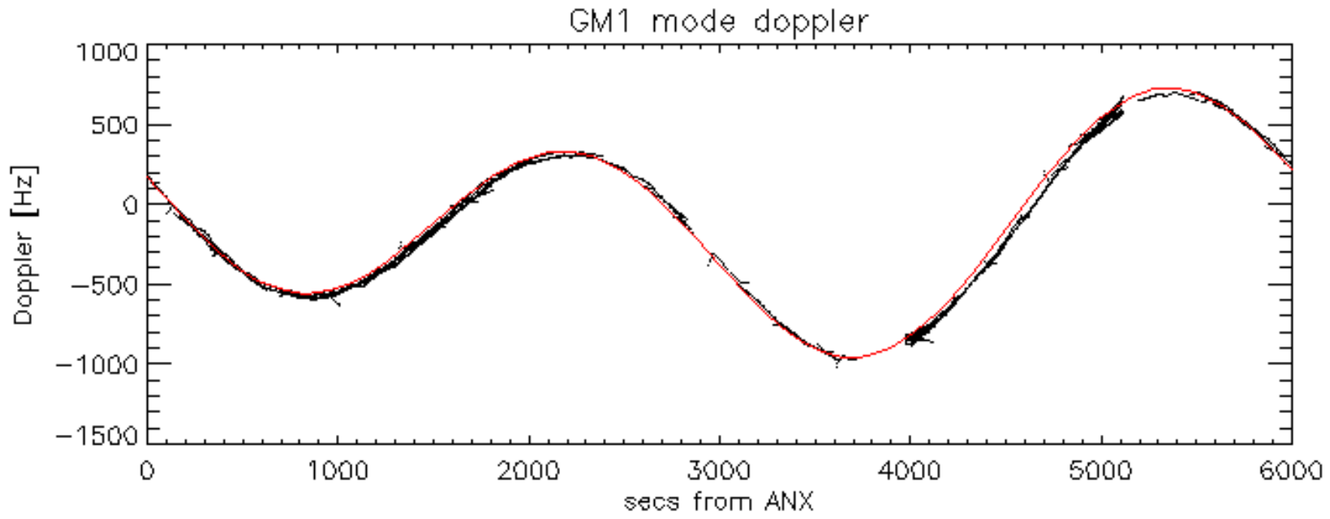
Preliminary report.The data is not yet controled

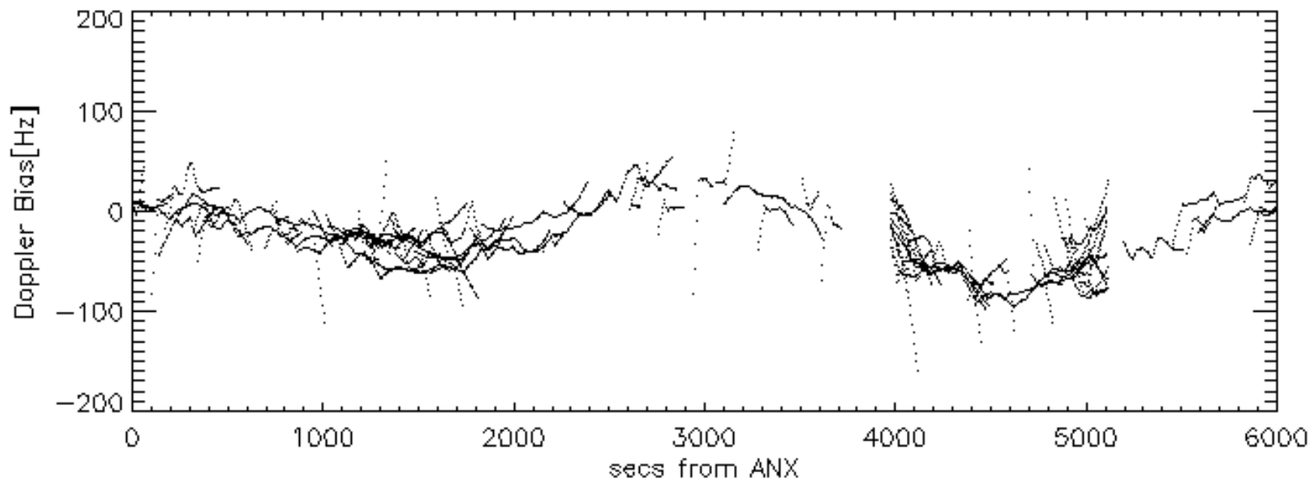

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

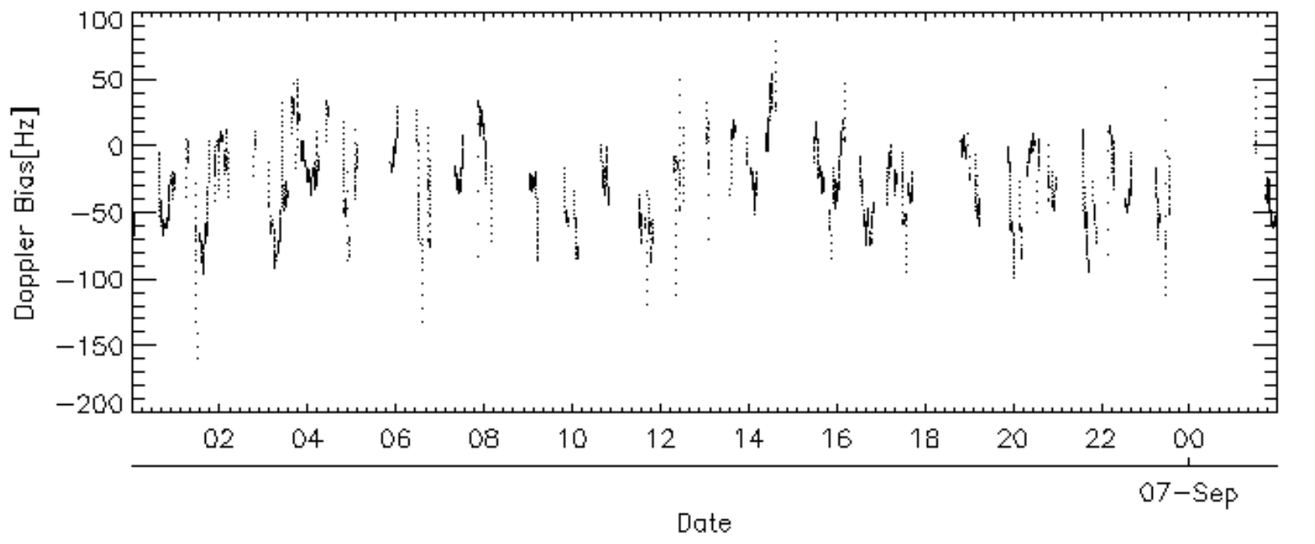

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

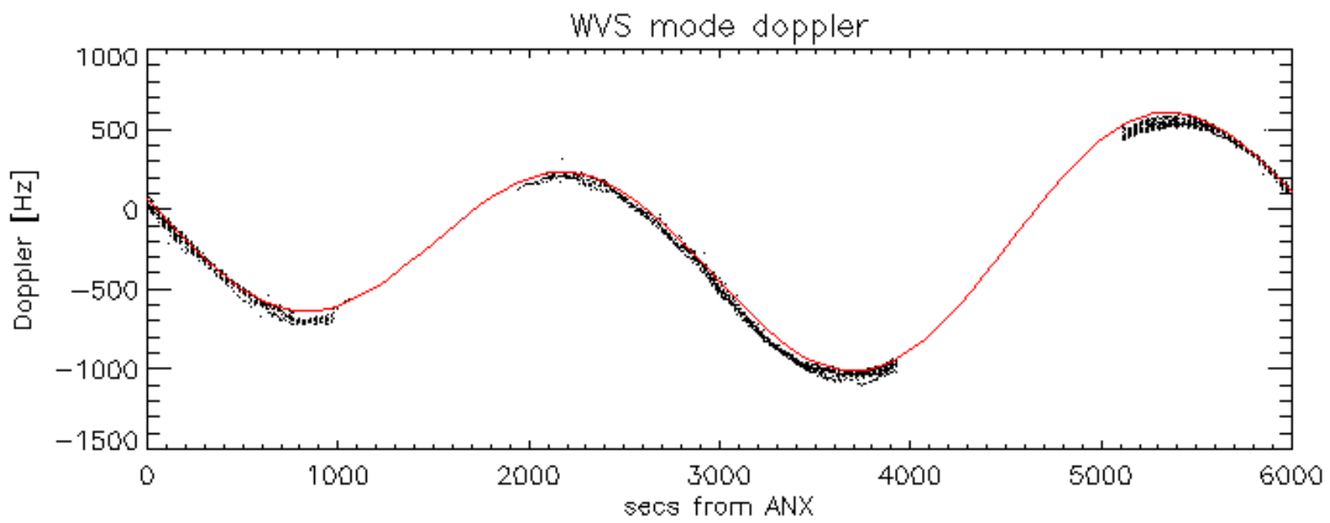

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

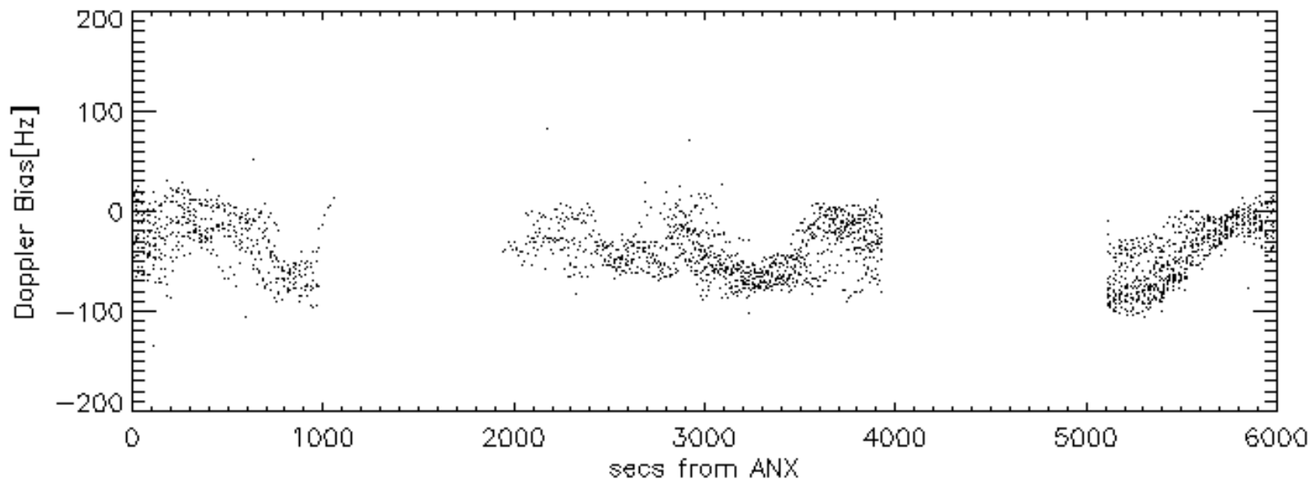

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

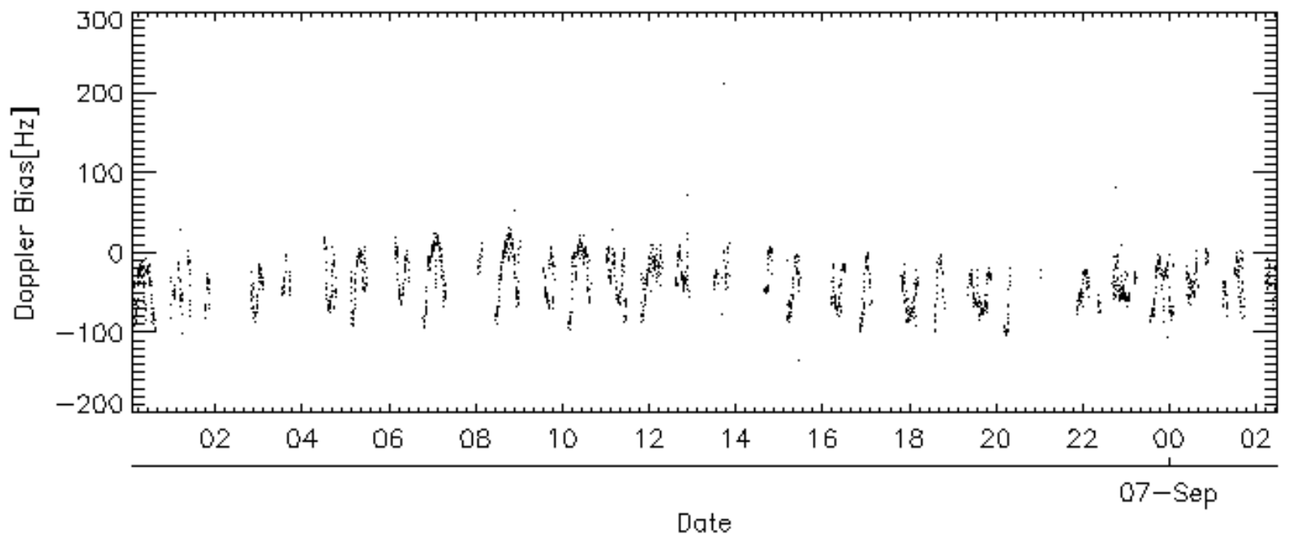

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

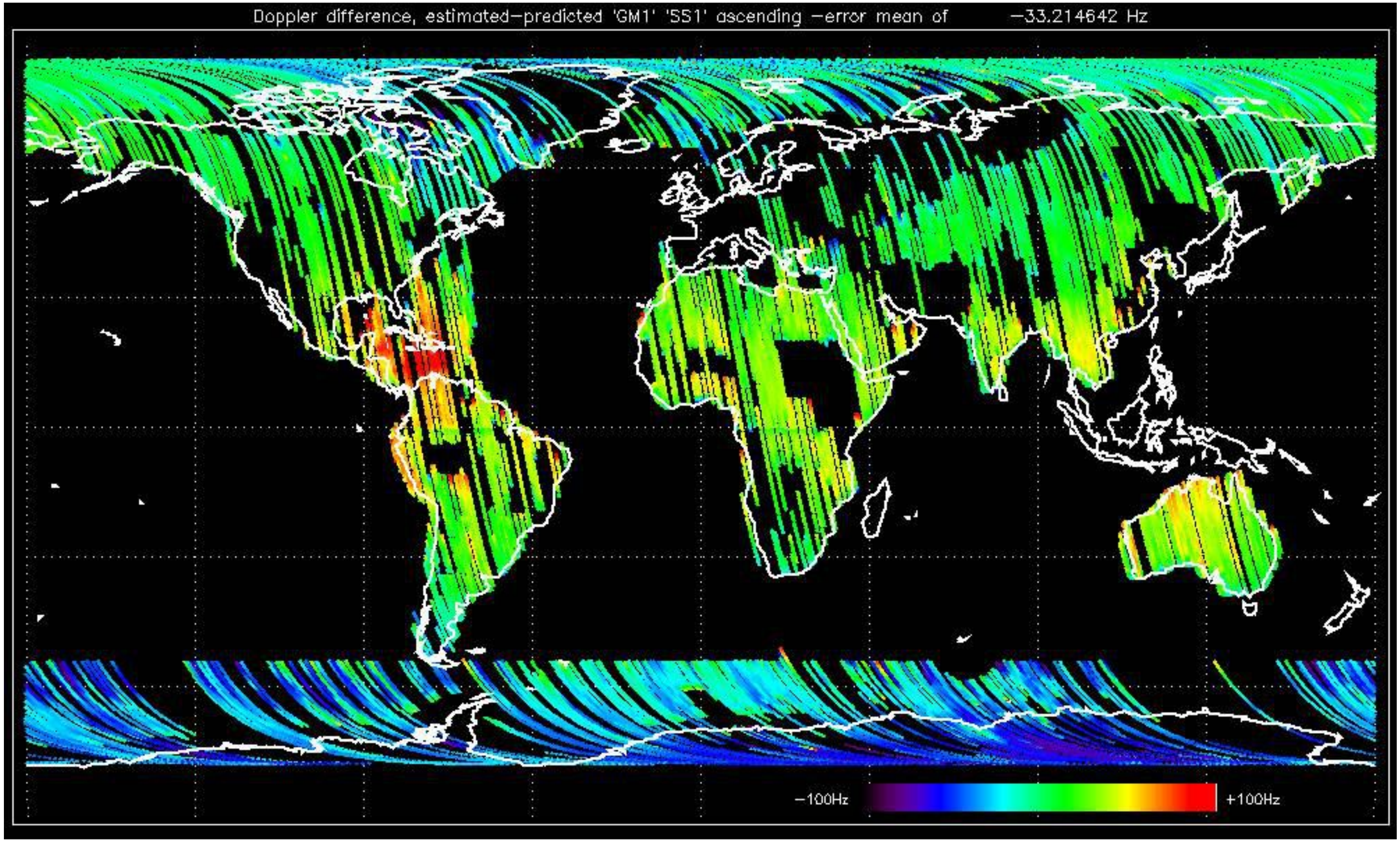

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

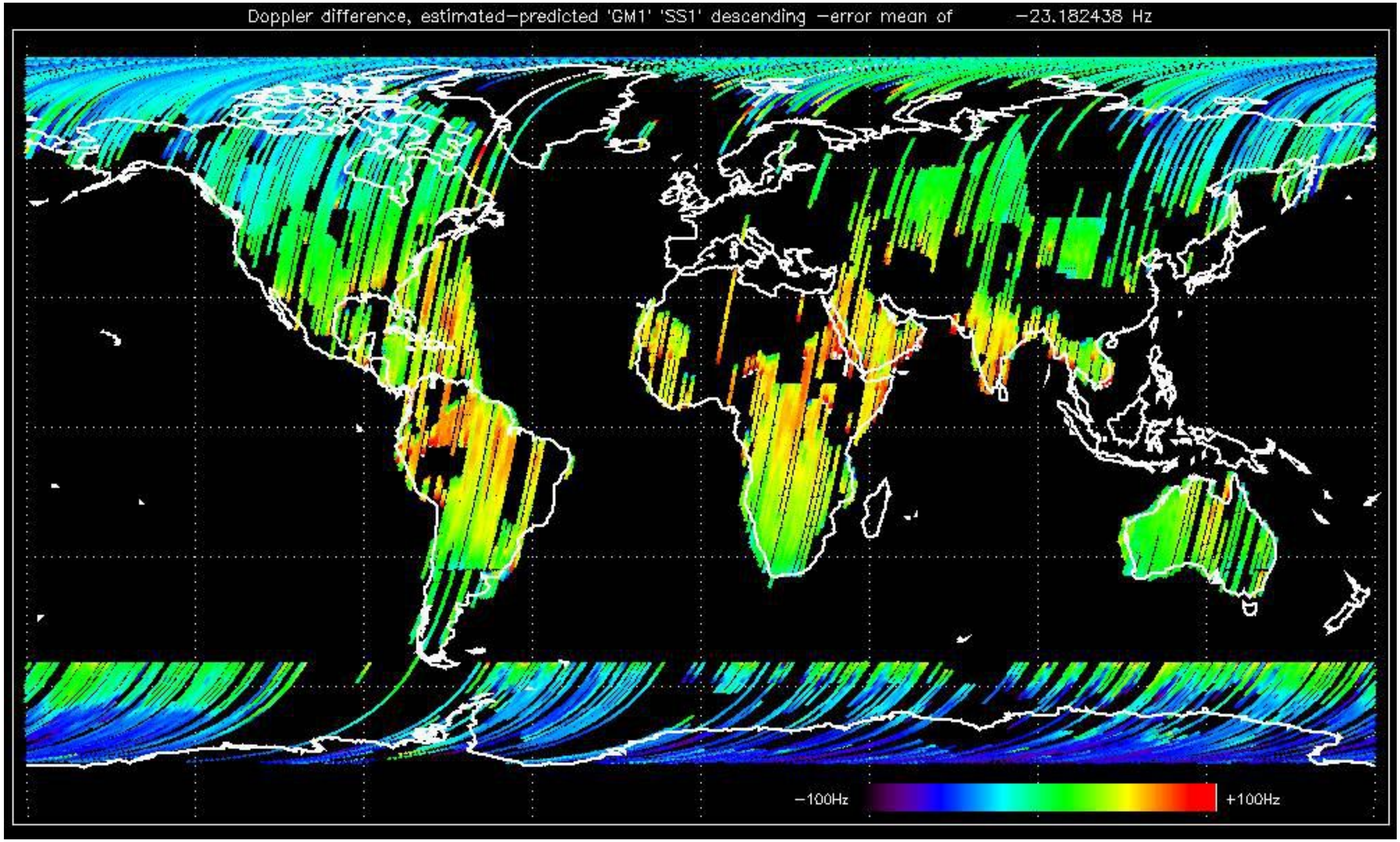

Doppler Bias[Hz]
100
50
0
−50
−100
−150
−200
02
04
06
08
10
12
14
16
18
20
22
00
07−Sep
Date

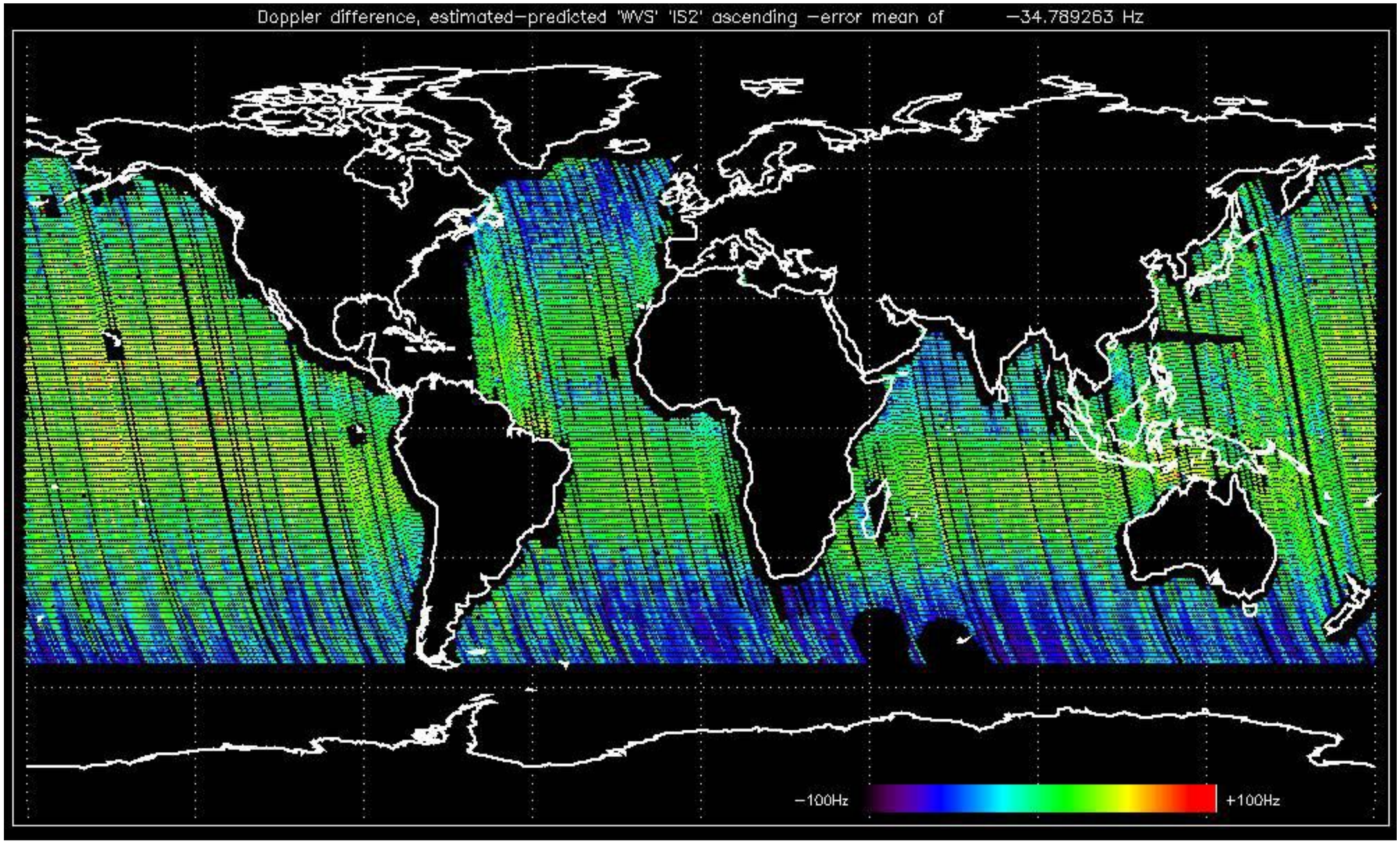

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

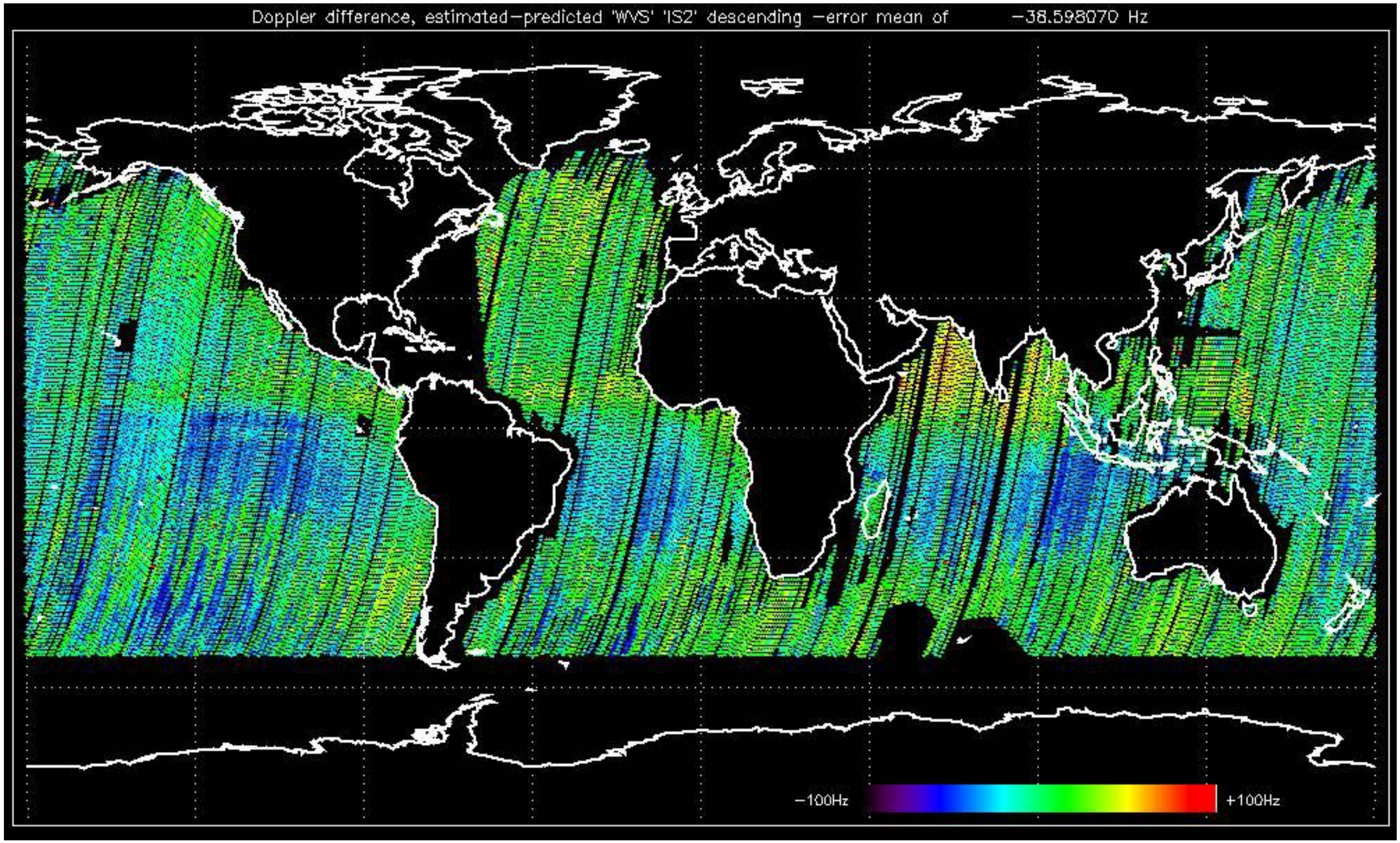

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.214642 Hz
−100Hz
+100Hz

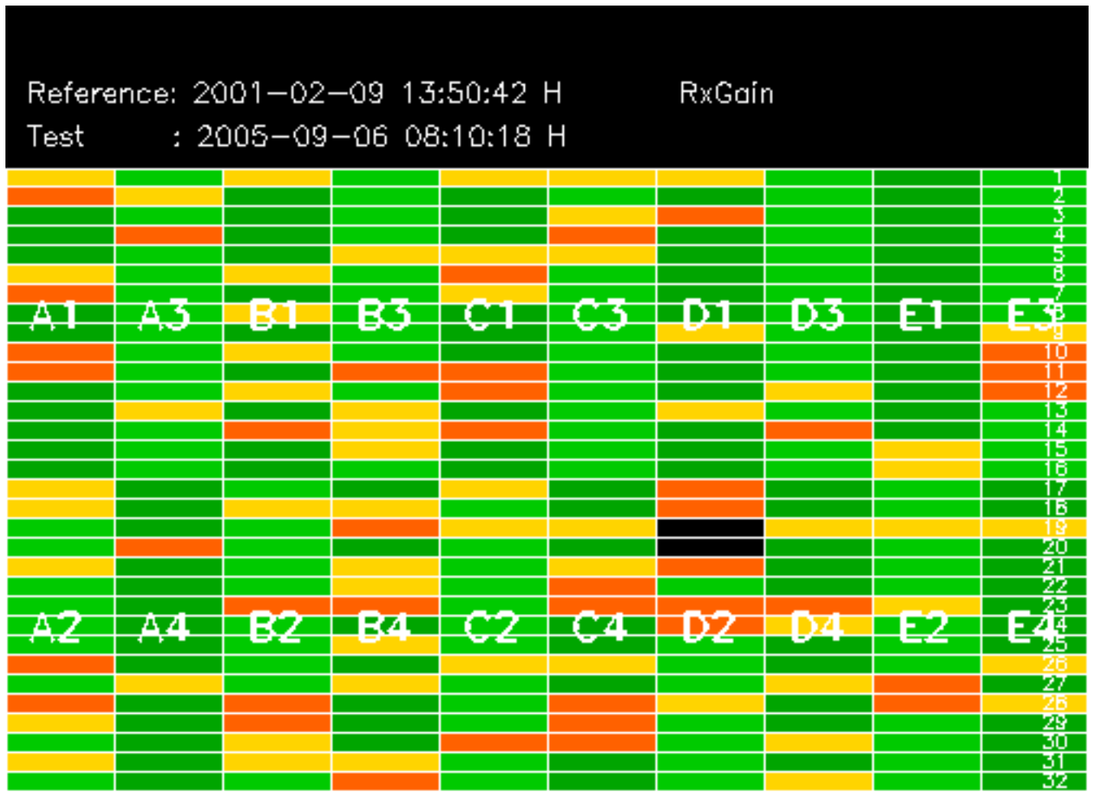

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.182438 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.789263 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −38.598070 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-09-06 08:10:18 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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9
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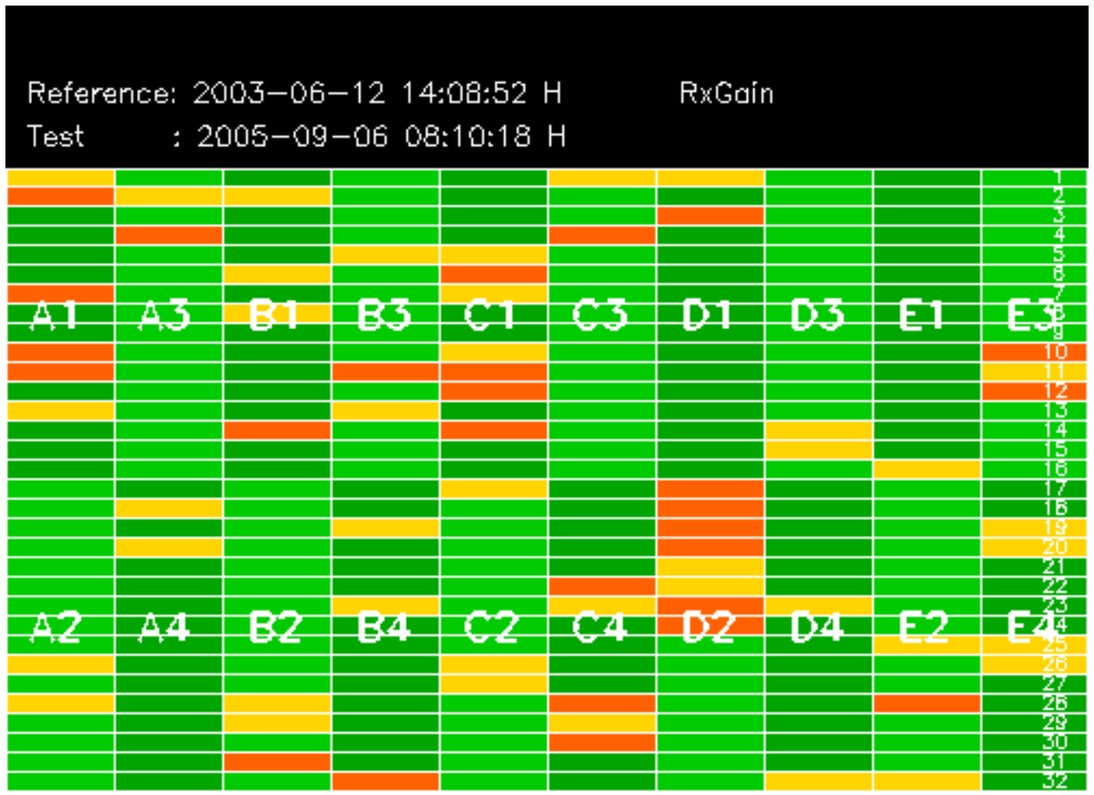
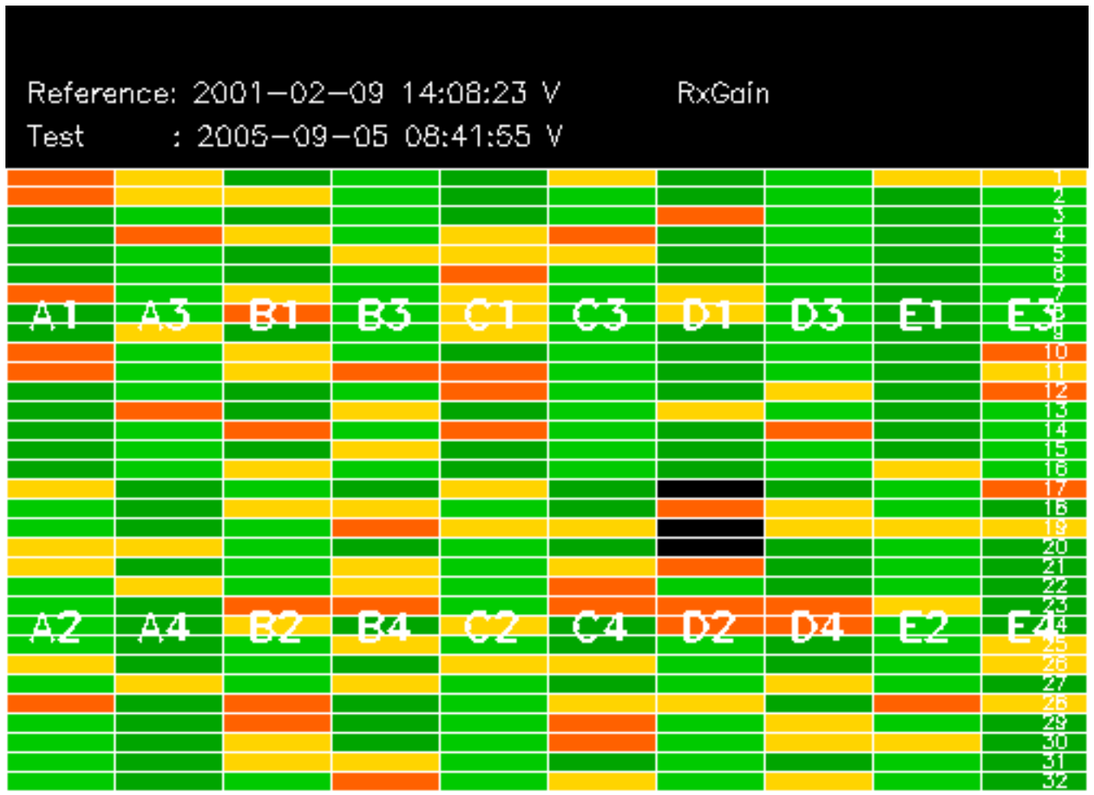
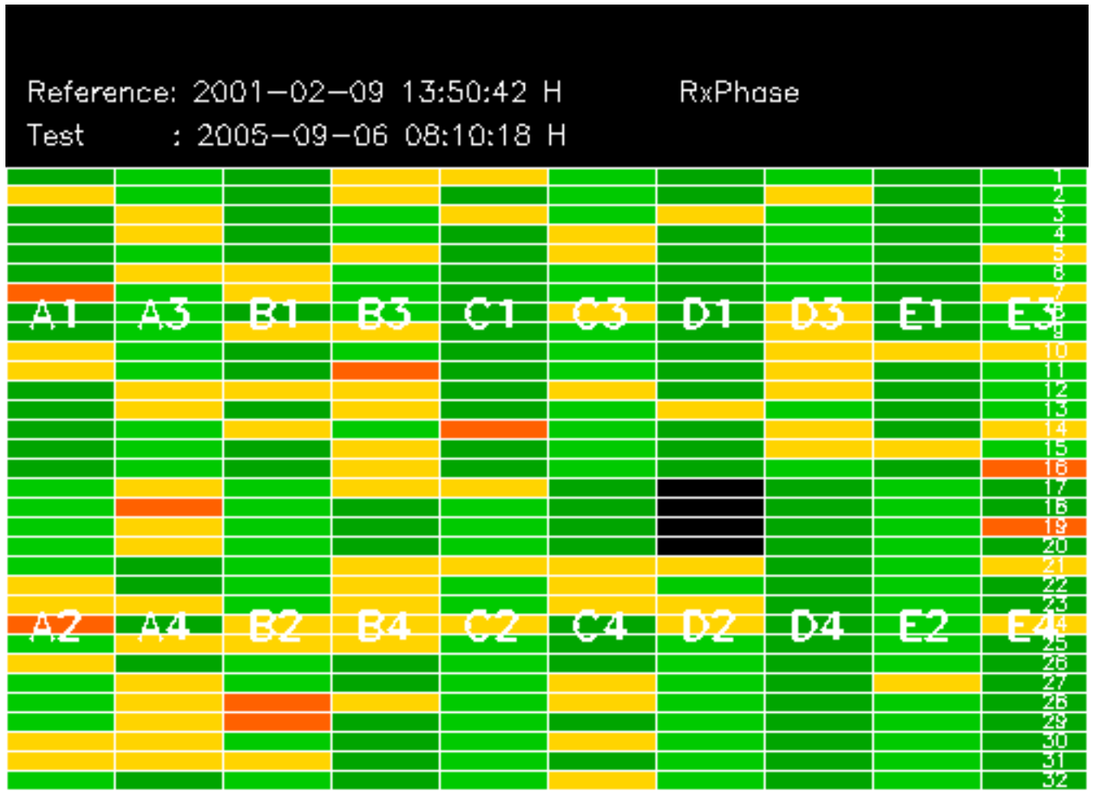

Reference: 2003-06-12 14:08:52 H
Test : 2005-09-06 08:10:18 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-09-05 08:41:55 V
RxGain
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 : 2005-09-05 08:41:55 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
Test : 2005-09-06 08:10:18 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
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8
9
10
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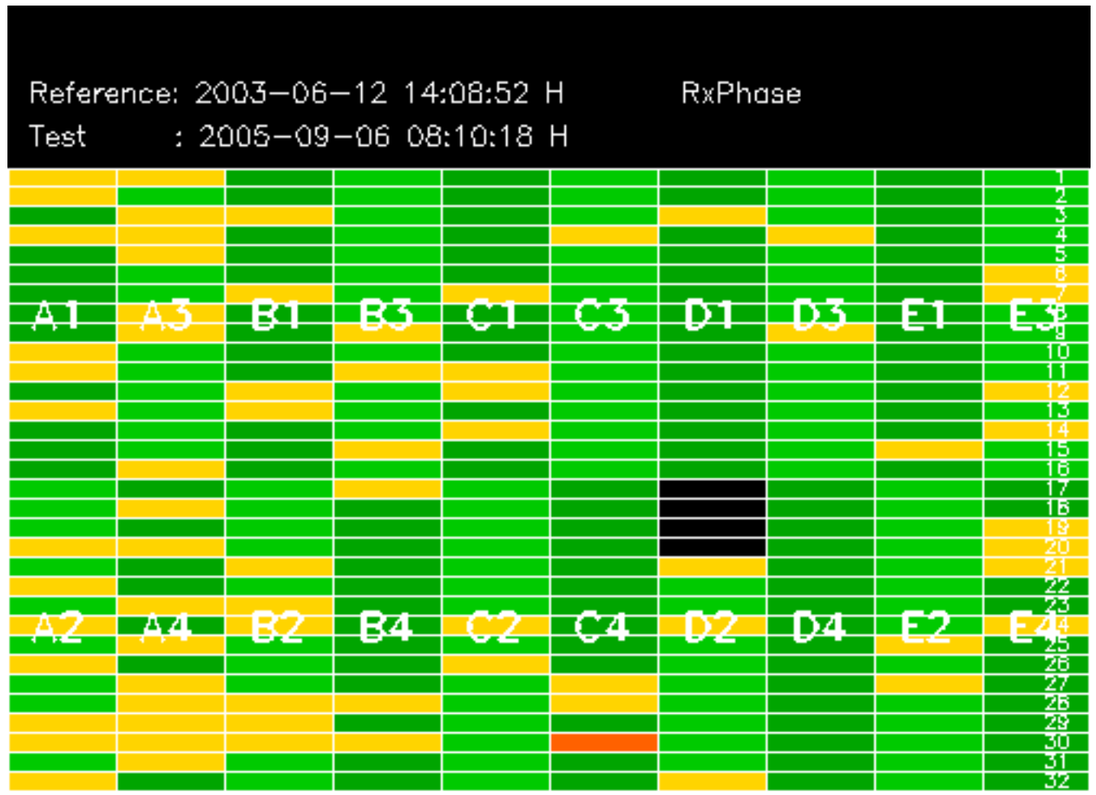
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-09-06 08:10:18 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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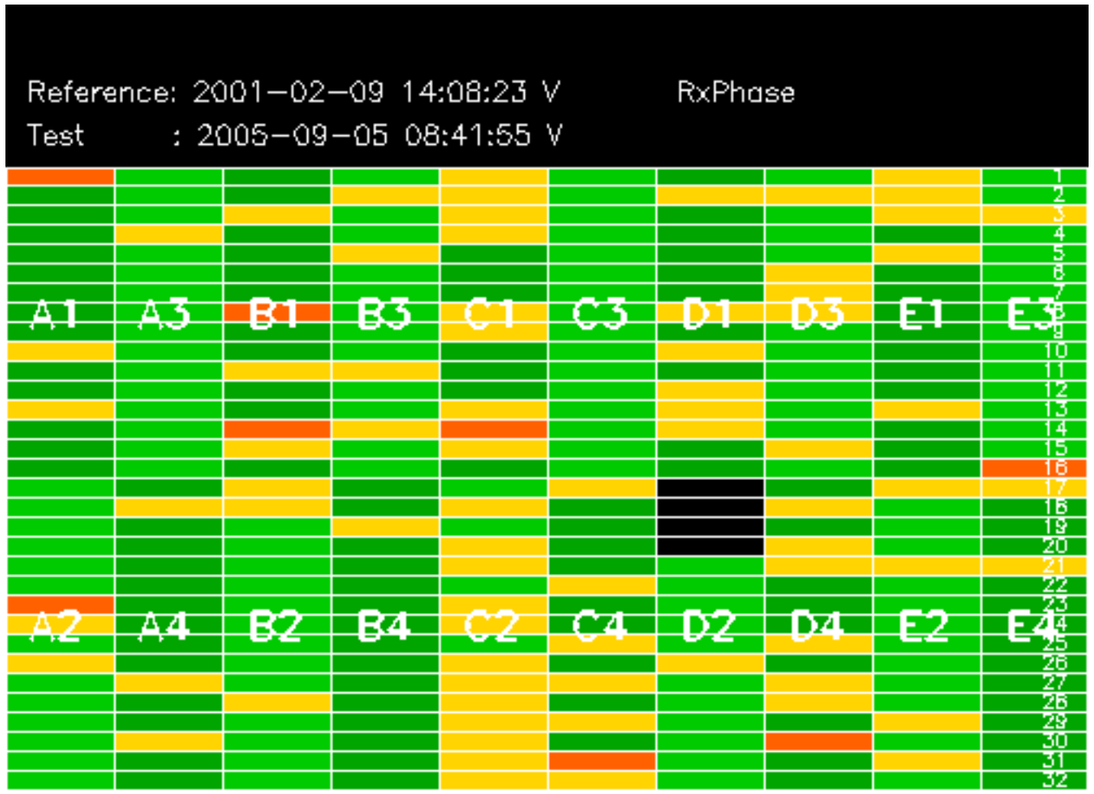
Reference: 2001-02-09 14:08:23 V
Test : 2005-09-05 08:41:55 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
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8
9
10
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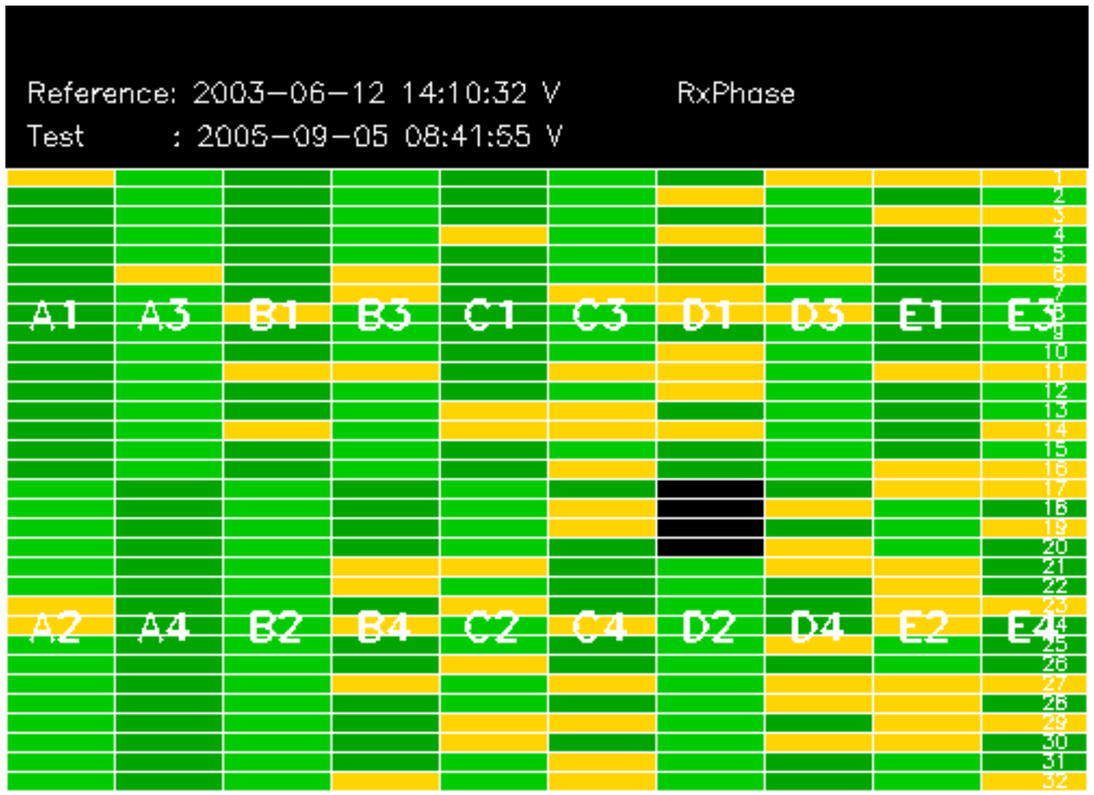
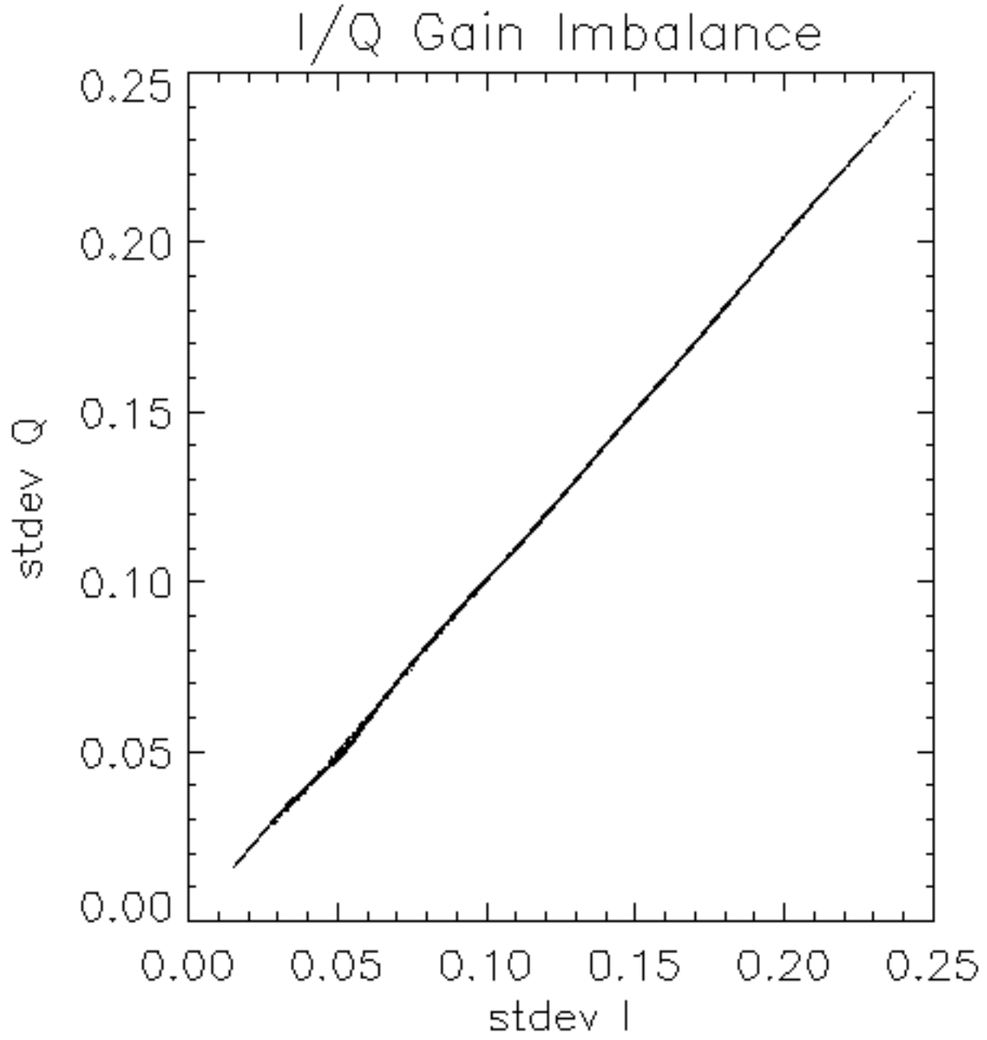
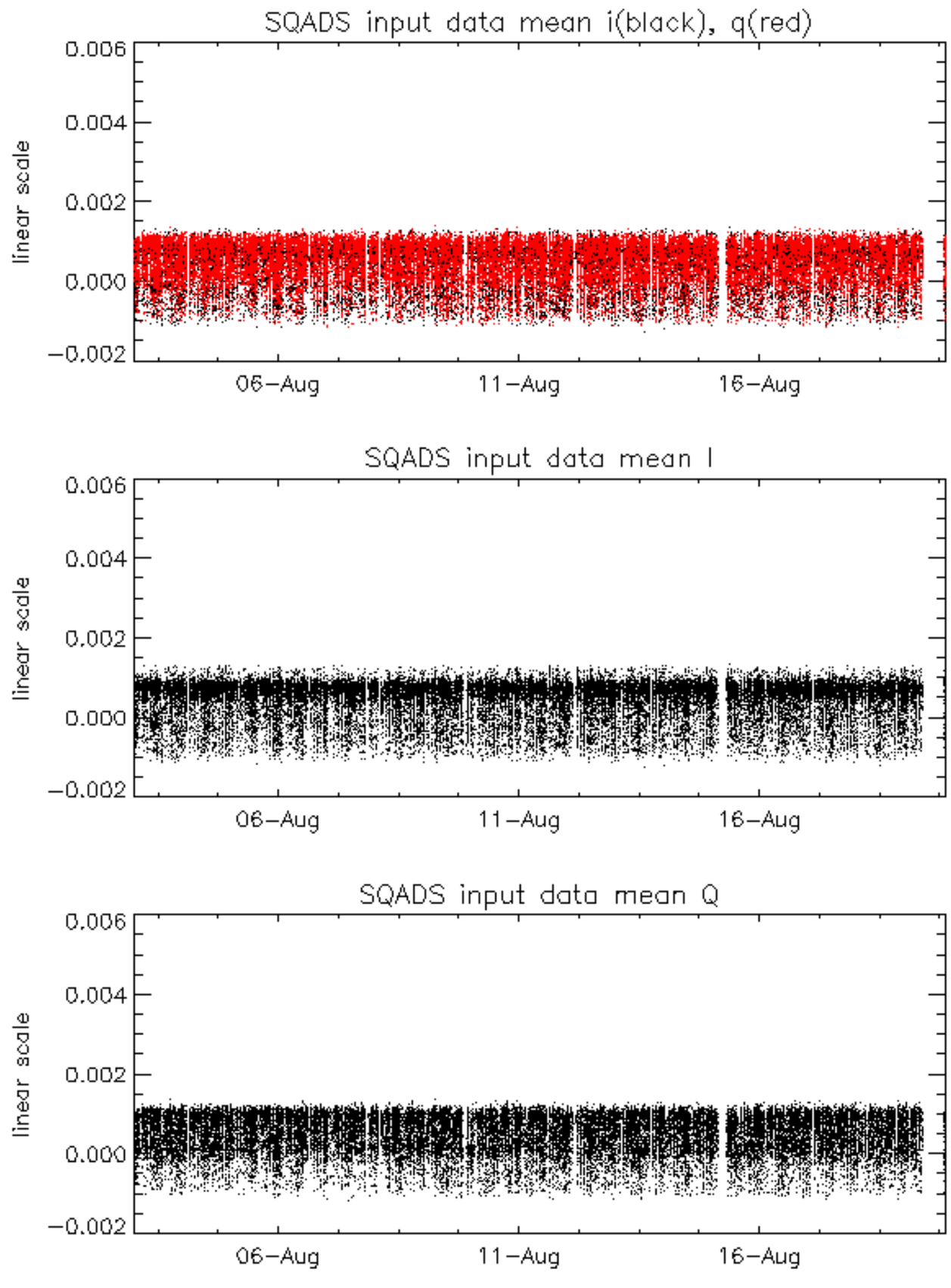
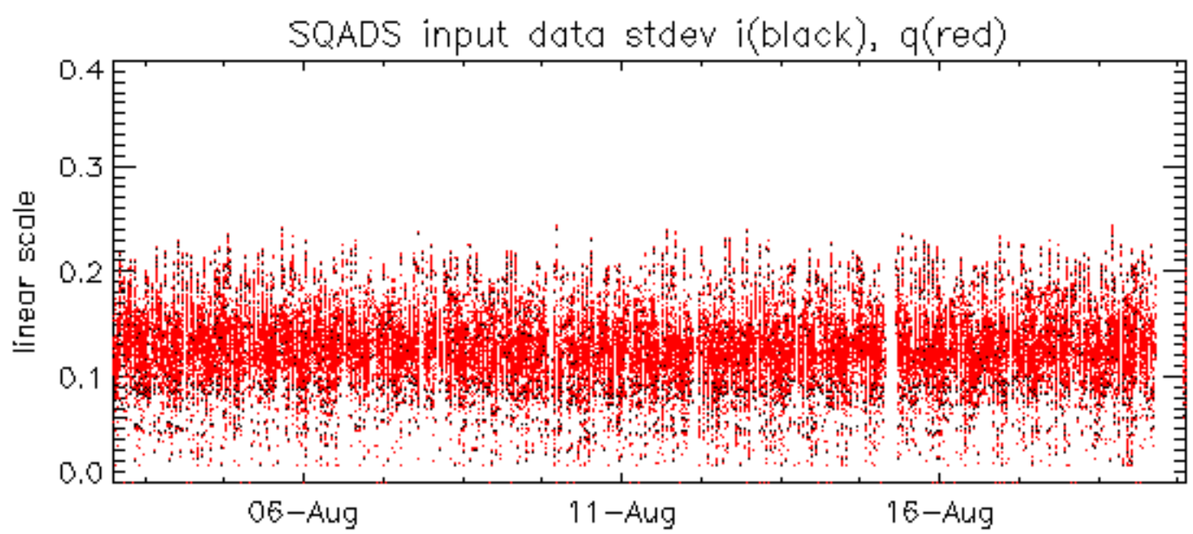
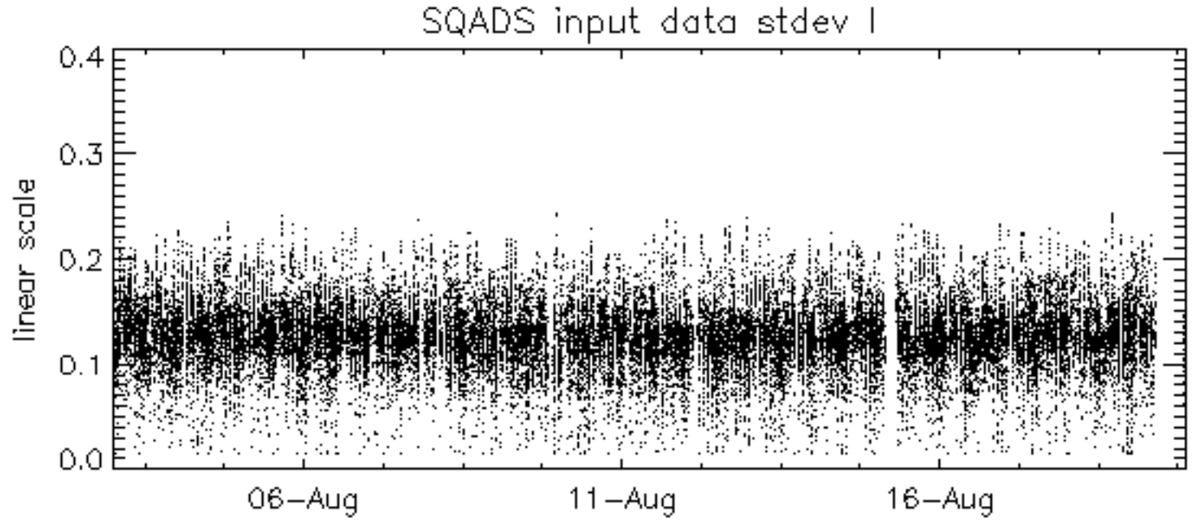
32

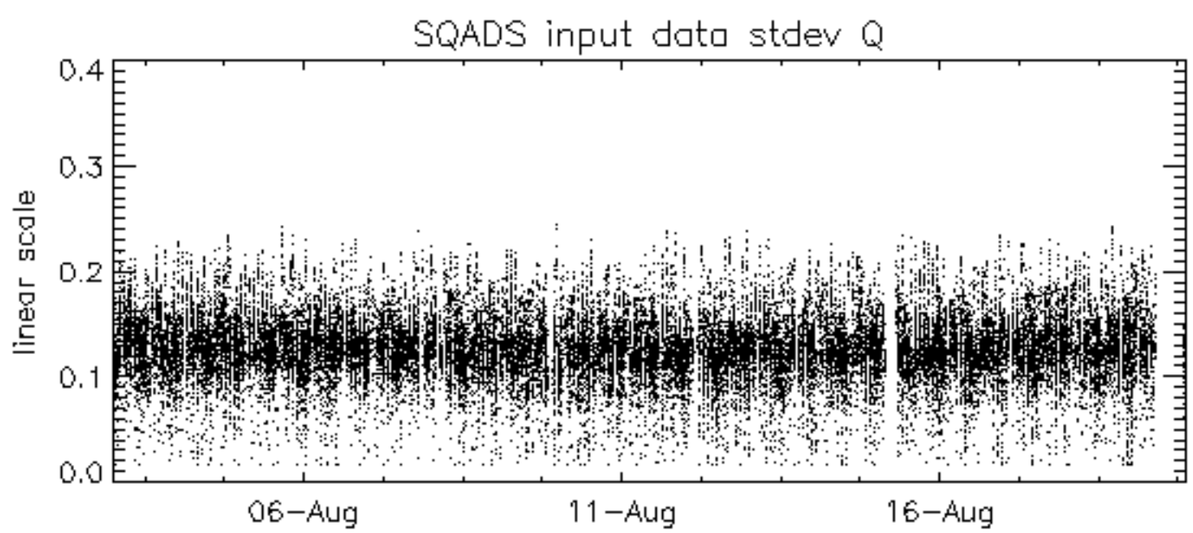

Reference: 2003-06-12 14:10:32 V
Test : 2005-09-05 08:41:55 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

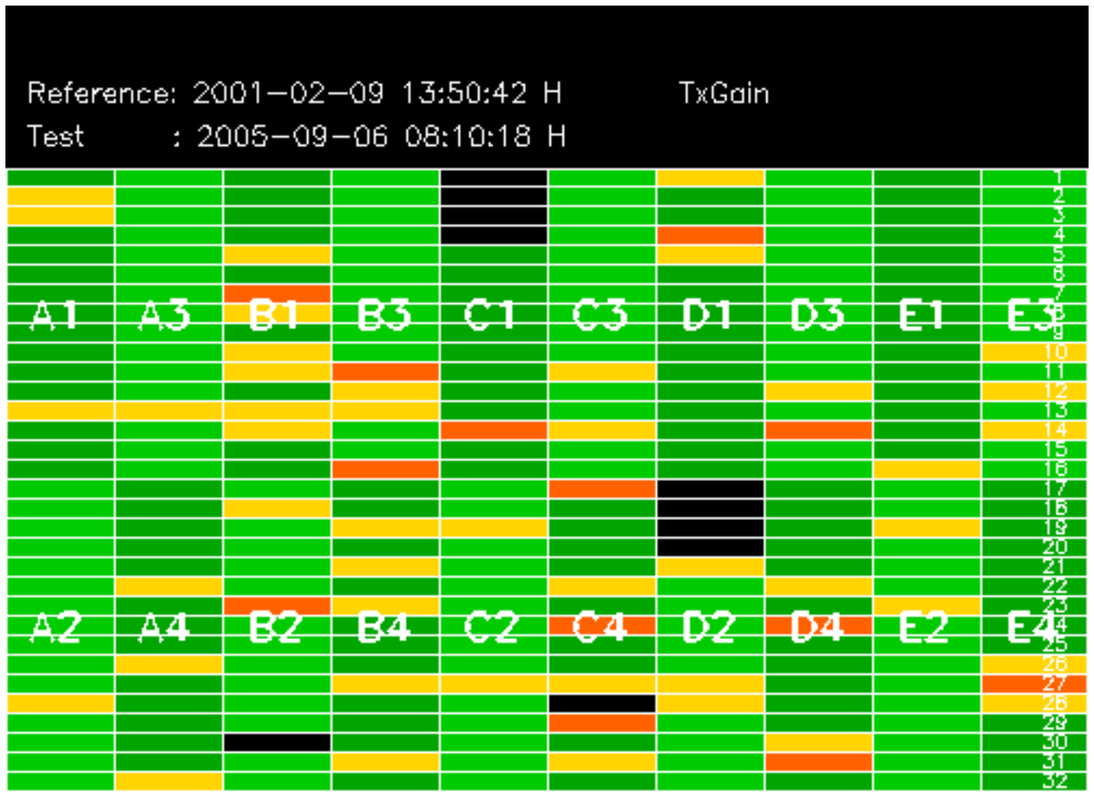

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I


SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Aug
11−Aug
16−Aug
SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Aug
11−Aug
16−Aug
SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Aug
11−Aug
16−Aug


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
06-Aug
11-Aug
16-Aug


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06-Aug
11-Aug
16-Aug


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06-Aug
11-Aug
16-Aug


Reference: 2001-02-09 13:50:42 H
Test : 2005-09-06 08:10:18 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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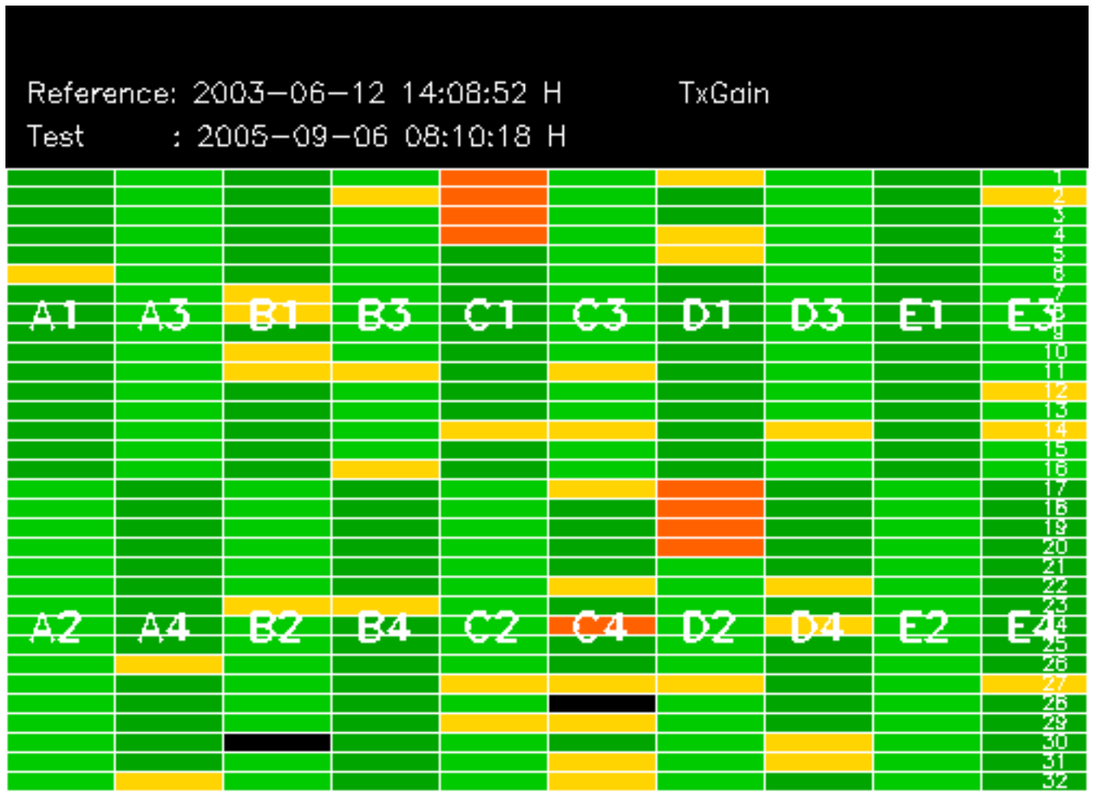
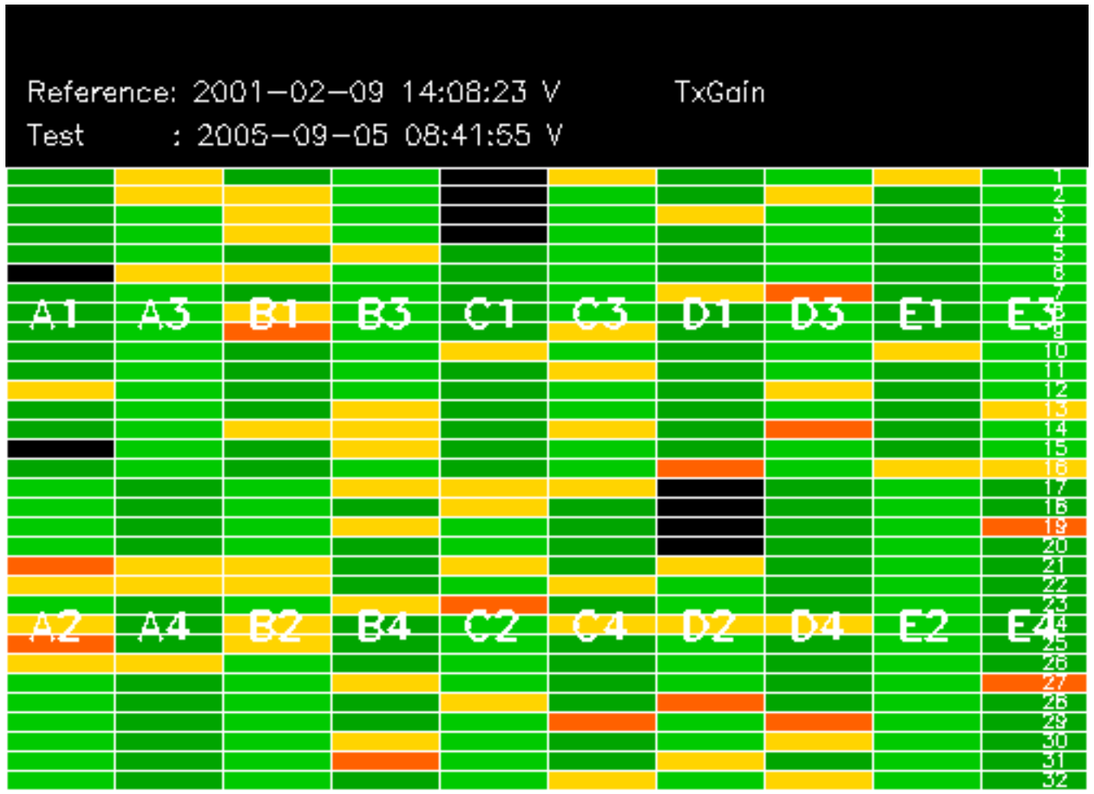

Reference: 2003-06-12 14:08:52 H
Test : 2005-09-06 08:10:18 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-09-05 08:41:55 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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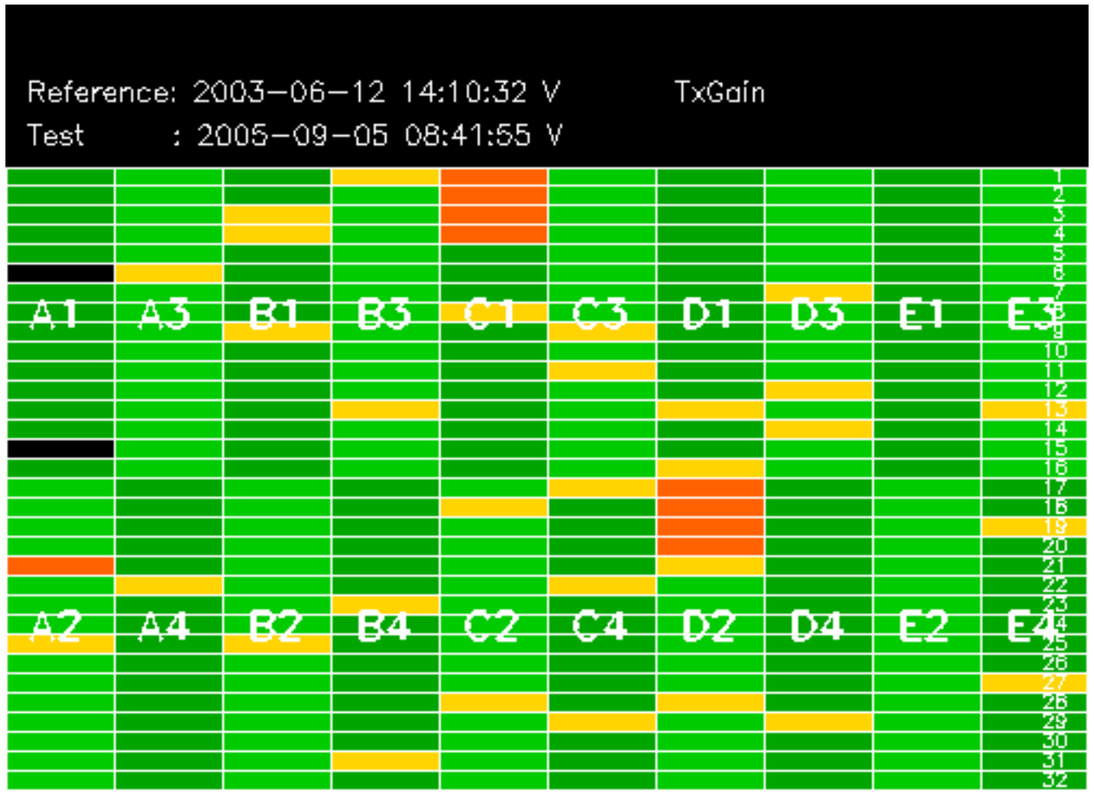
Reference: 2003-06-12 14:10:32 V
Test : 2005-09-05 08:41:55 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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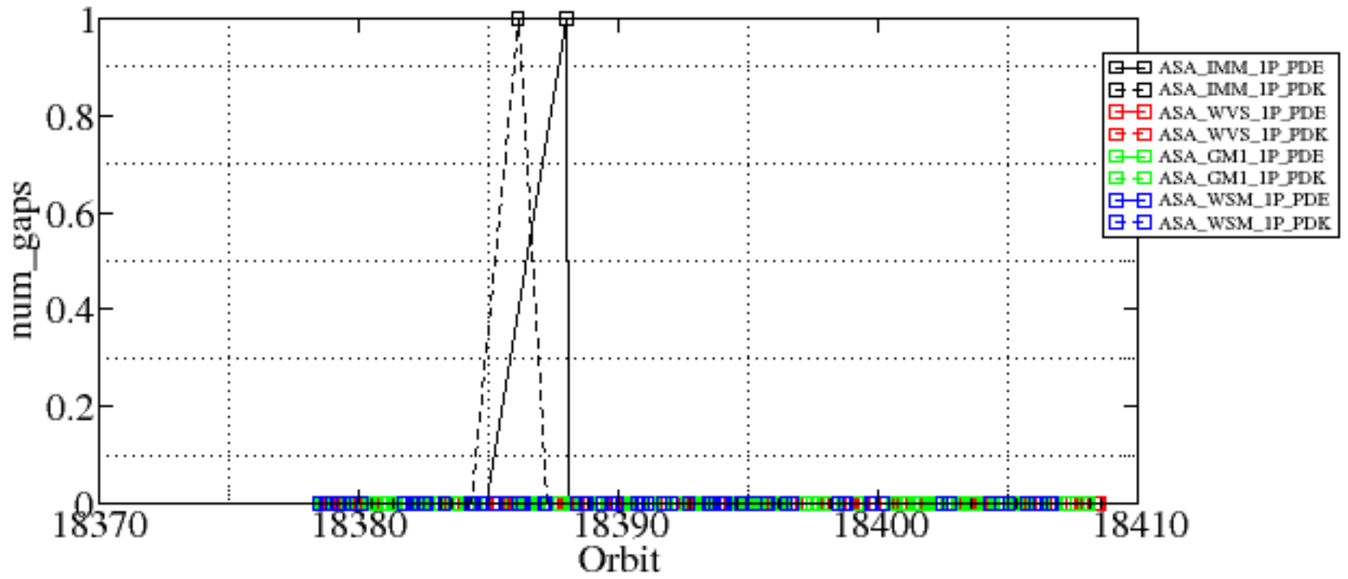
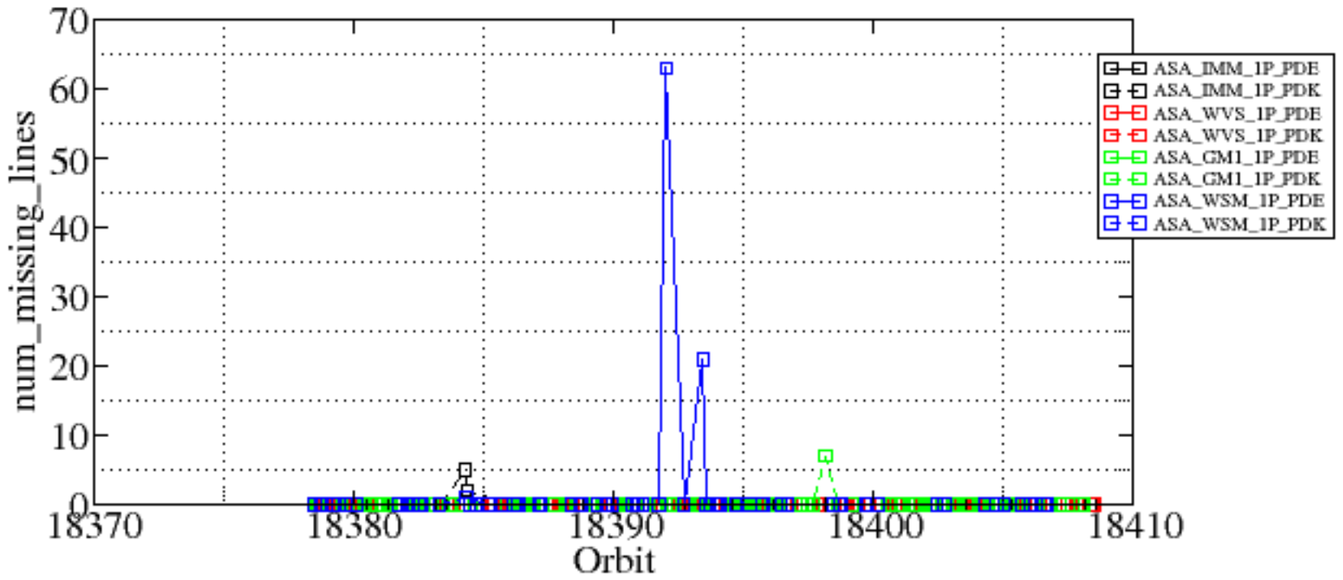
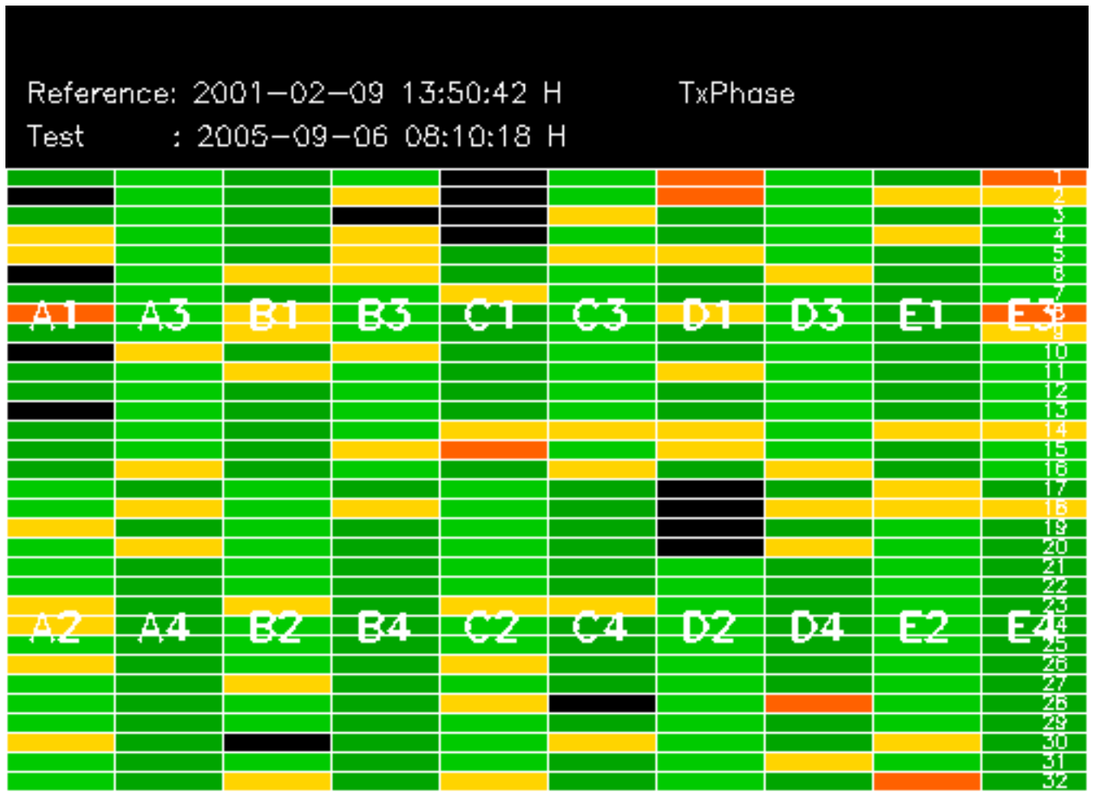
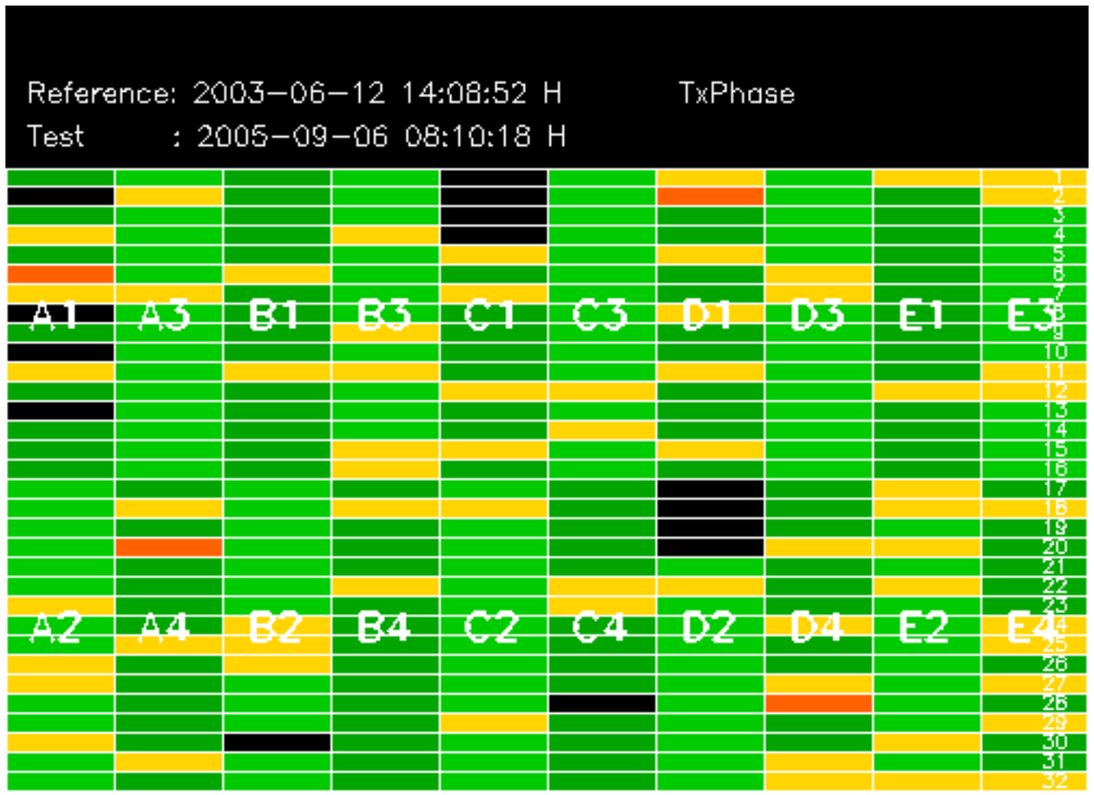
32

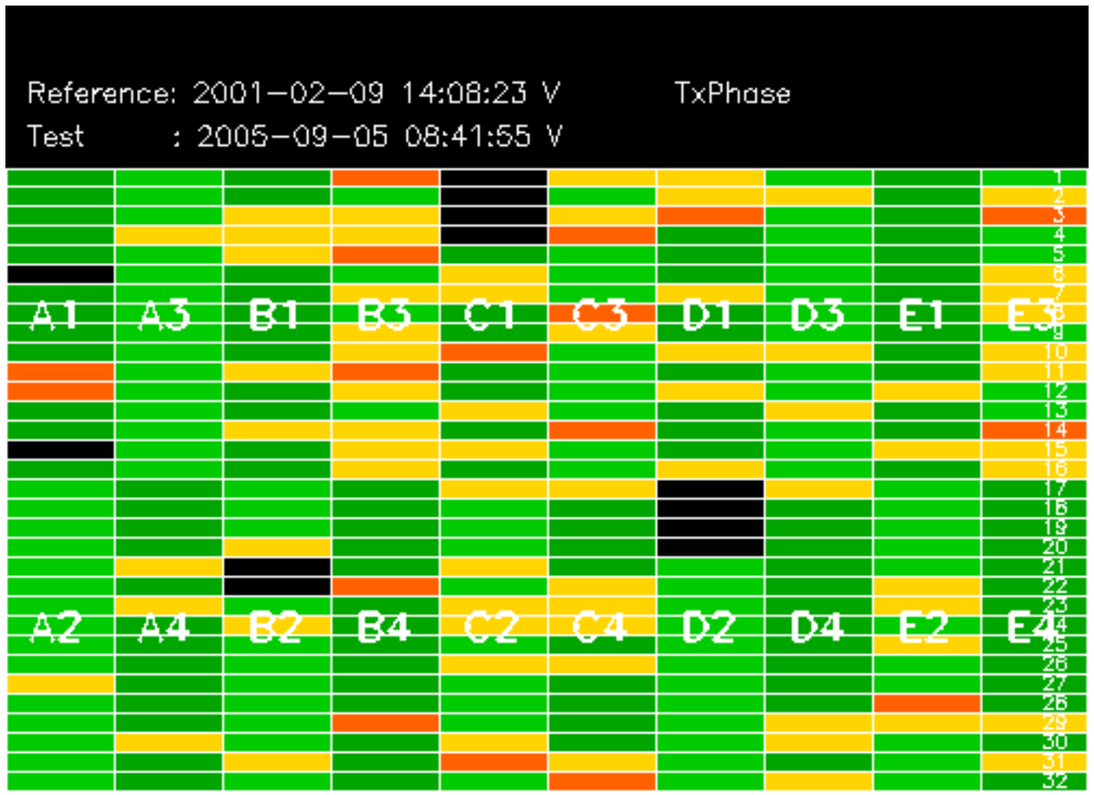
Summary of analysis for the last 3 days 2005090[567]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20050905_155730_000002332040_00298_18388_4642.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050905_094609_000001432040_00294_18384_3203.N1 </td> <td>0 </td> <td>5 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050905_095102_000001162040_00294_18384_3204.N1 </td> <td>0 </td> <td>2 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050905_124845_000000872040_00296_18386_3207.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050905_124845_000000872040_00296_18386_3271.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050906_090135_000007122040_00308_18398_4618.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050905_224141_000001532040_00302_18392_7531.N1 </td> <td>0 </td> <td>63 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050906_010555_000000862040_00303_18393_7572.N1 </td> <td>0 </td> <td>21 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20050905_094900_000001282040_00294_18384_3514.N1 </td> <td>0 </td> <td>1 </td></tr>
</table>

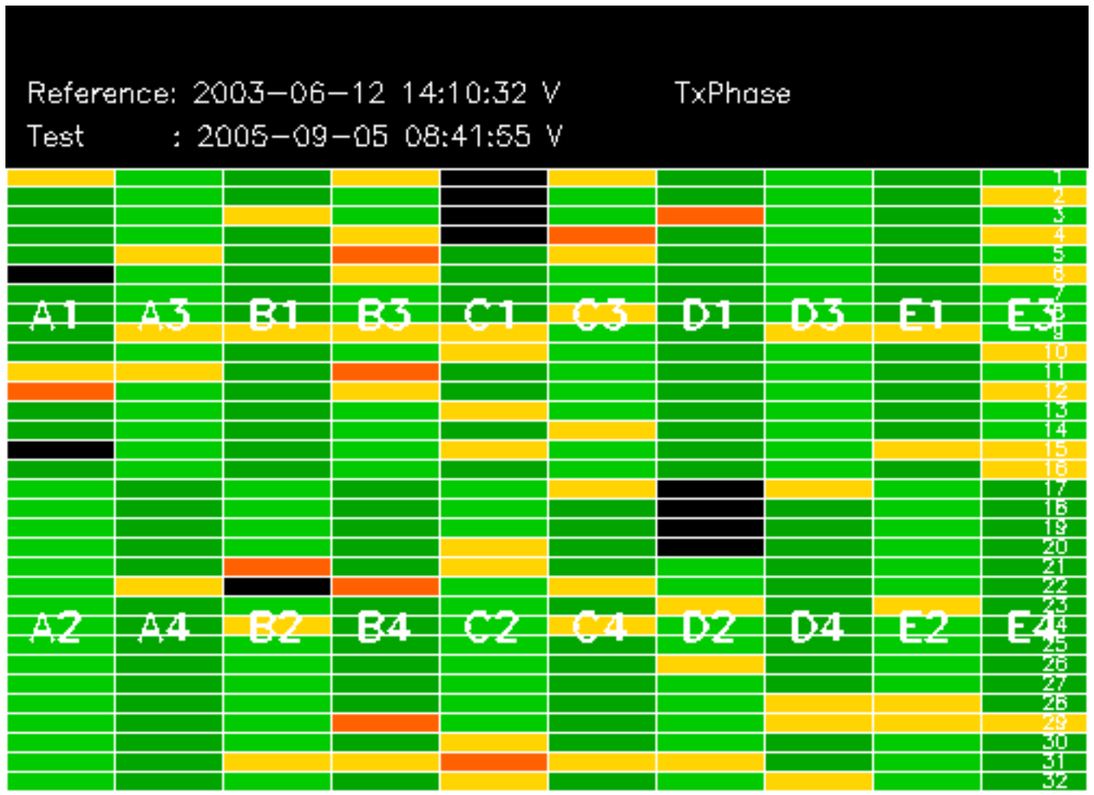

num_gaps
1
0.8
0.6
0.4
0.2
0
18370
18380
18390
18400
18410
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK

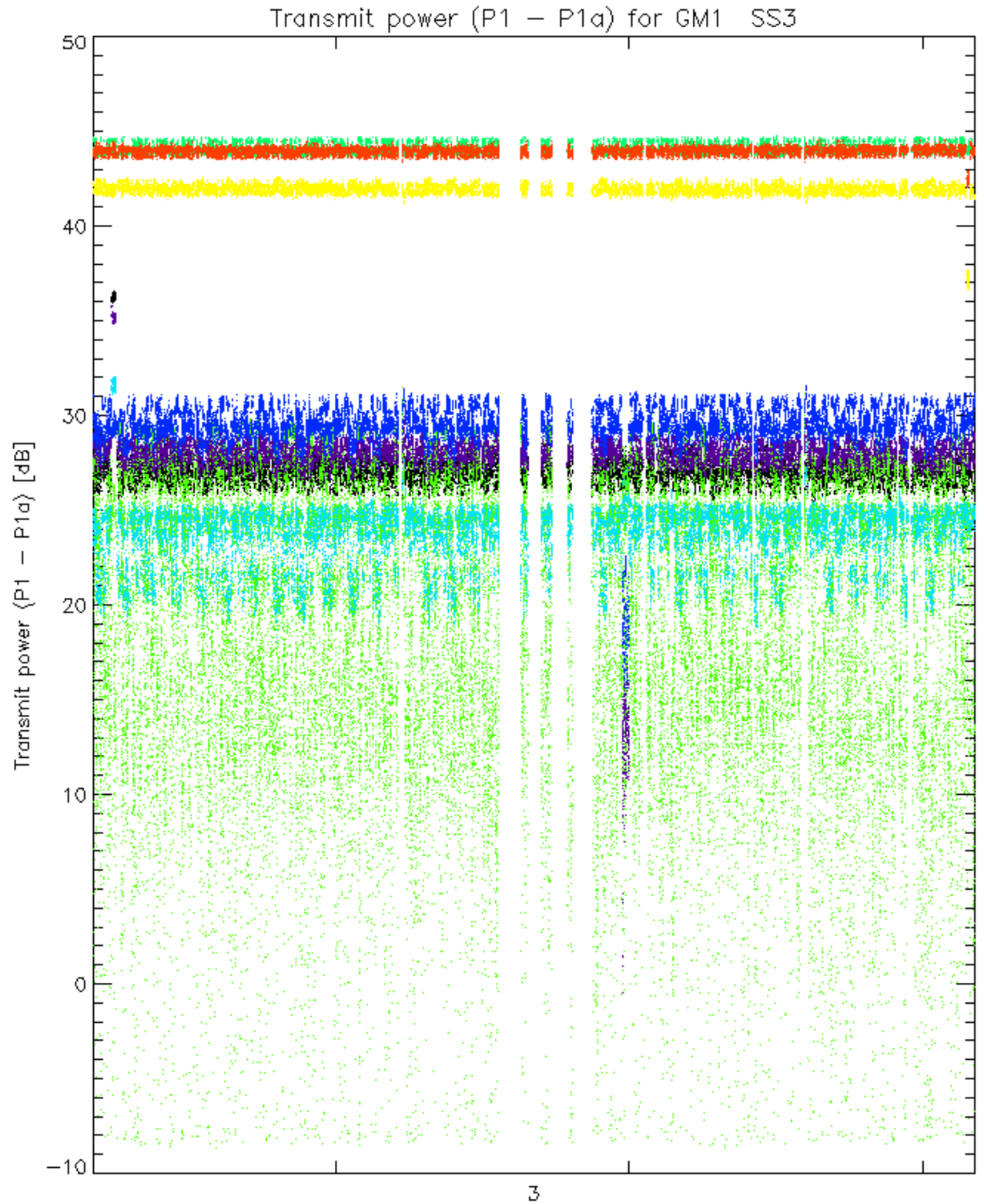

num_missing_lines
70
60
50
40
30
20
10
0
18370
18380
18390
18400
18410
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK

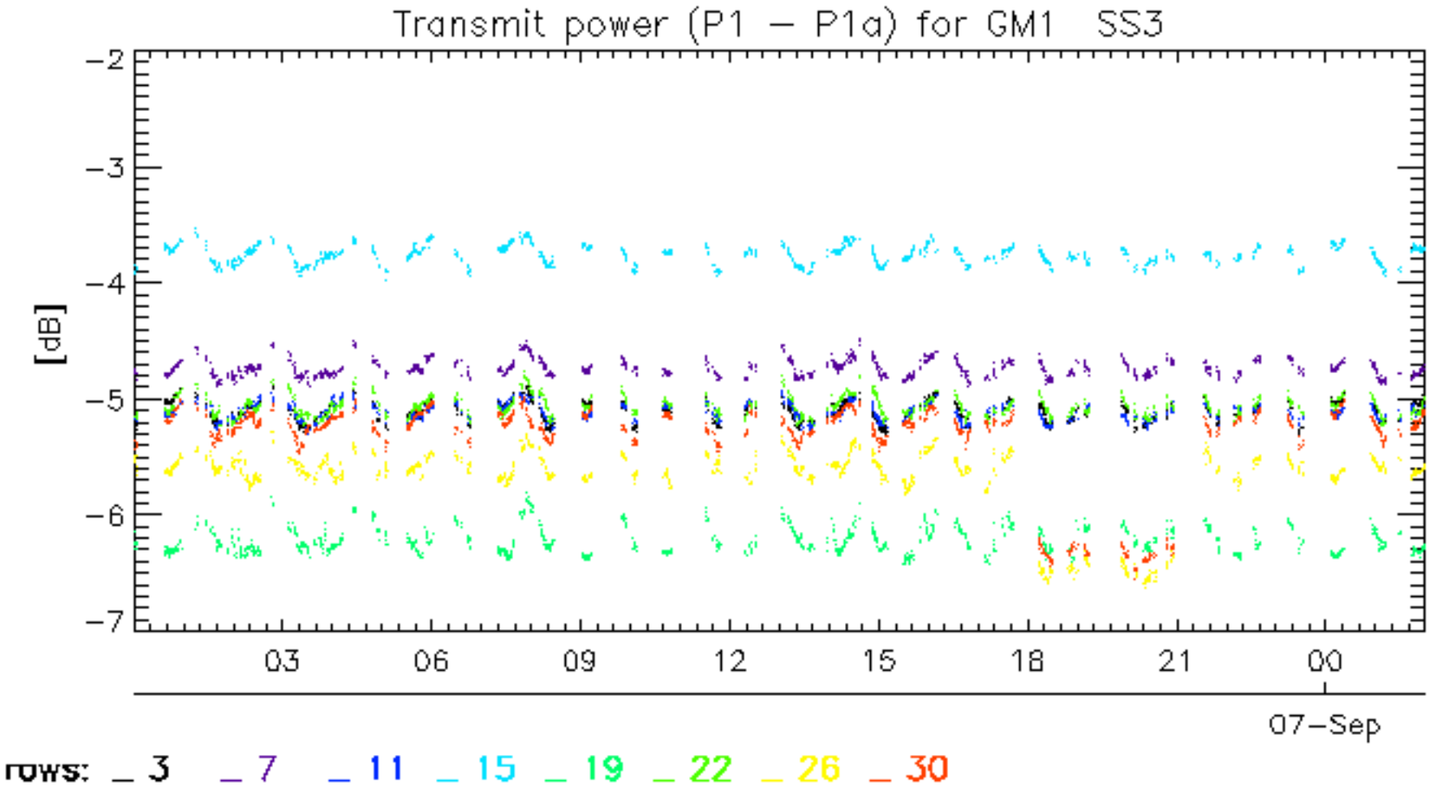

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-09-06 08:10:18 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

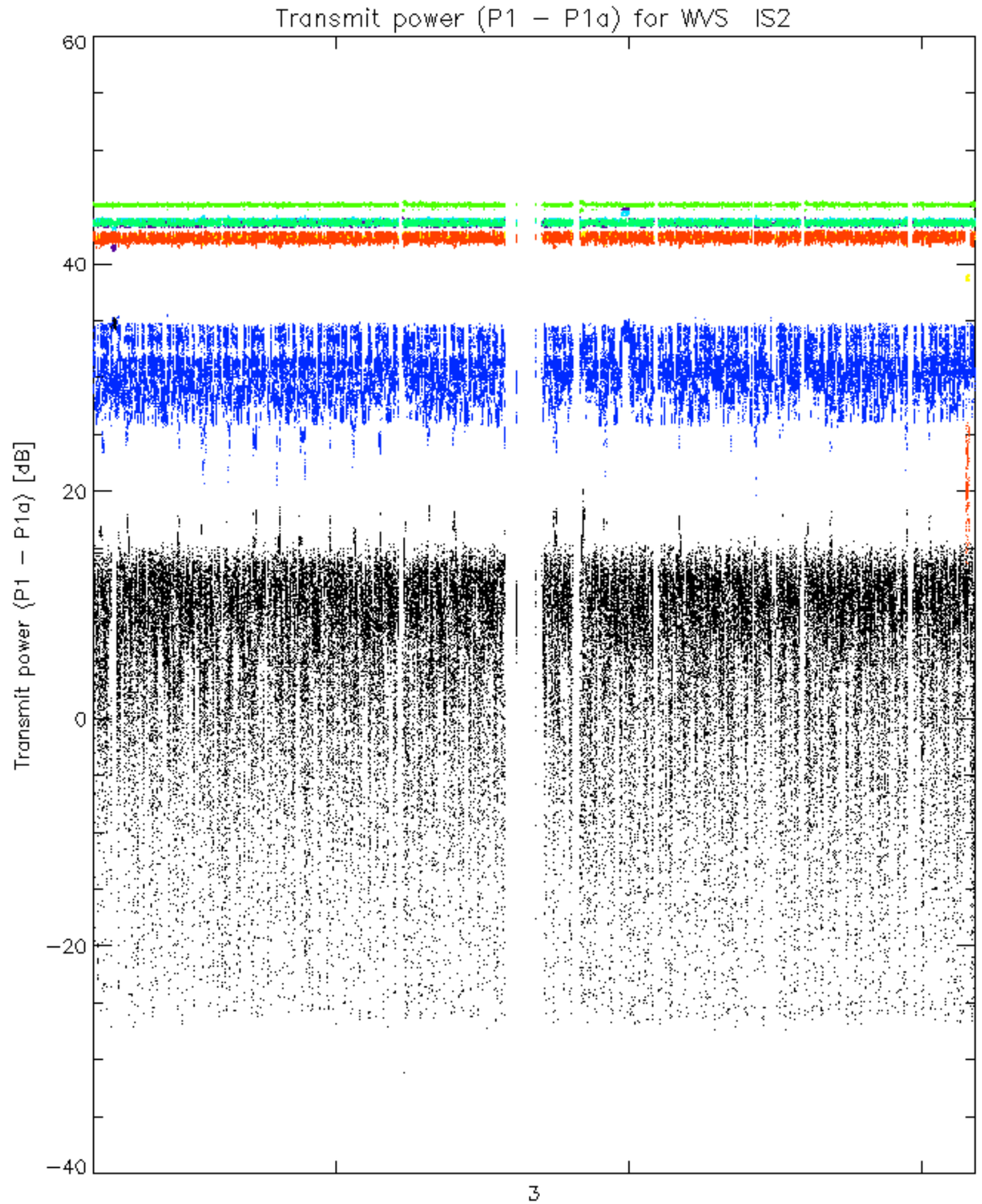

Reference: 2003-06-12 14:08:52 H
Test : 2005-09-06 08:10:18 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

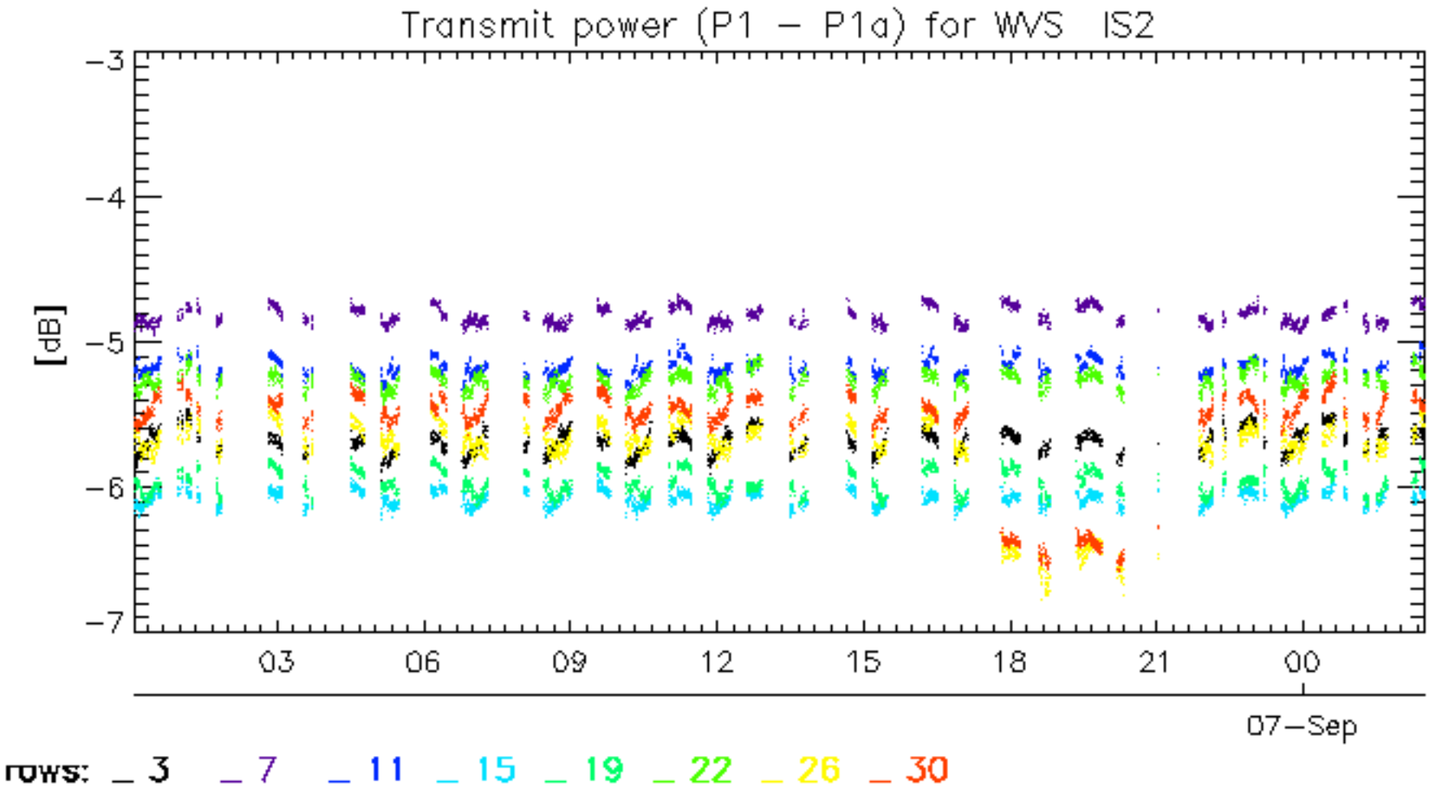

Reference: 2001-02-09 14:08:23 V
Test : 2005-09-05 08:41:55 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-09-05 08:41:55 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
3
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
07–Sep
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]
3
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
07—Sep
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.