PRELIMINARY REPORT OF 050903

last update on Sat Sep 3 10:50:01 GMT 2005

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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 2005-09-02 00:00:00 to 2005-09-03 10:50:01

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	30	54	9	2	1
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	30	54	9	2	1
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	30	54	9	2	1
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	30	54	9	2	1

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	36	57	32	12	42
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	36	57	32	12	42
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	36	57	32	12	42
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	36	57	32	12	42

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	20050902 033423
H	20050901 040600

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	-3.301344	0.027333	0.068416
7	P1	-3.177266	0.024672	0.008219
11	P1	-4.726928	0.033578	-0.014278
15	P1	-5.622511	0.051149	-0.017977
19	P1	-3.814695	0.004281	-0.015452
22	P1	-4.617640	0.011730	0.001410
26	P1	-4.826221	0.022926	0.007714
30	P1	-7.248133	0.026325	-0.074290
3	P1	-15.541635	0.074103	-0.018575
7	P1	-15.555341	0.145447	-0.130515
11	P1	-21.799618	0.357042	-0.049445
15	P1	-11.318304	0.124498	-0.082086
19	P1	-14.517199	0.034946	-0.034519
22	P1	-15.552996	0.330258	0.251210
26	P1	-17.259661	0.175017	0.145636
30	P1	-17.855301	0.304115	-0.107094

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.746462	0.086778	0.121362
7	P2	-21.886061	0.102112	0.152804
11	P2	-13.454427	0.113399	0.195963
15	P2	-7.045108	0.093982	0.035092
19	P2	-9.581745	0.098128	0.030653
22	P2	-16.807524	0.101484	0.044078
26	P2	-16.502506	0.101456	0.016925
30	P2	-18.803740	0.089075	-0.000307

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.155706	0.003533	0.007328
7	P3	-8.155706	0.003533	0.007328
11	P3	-8.155706	0.003533	0.007328
15	P3	-8.155706	0.003533	0.007328
19	P3	-8.155706	0.003533	0.007328
22	P3	-8.155706	0.003533	0.007328
26	P3	-8.155715	0.003533	0.007325
30	P3	-8.155715	0.003533	0.007325

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	-2.801524	0.093091	0.100224
7	P1	-2.973610	0.066025	0.086547
11	P1	-4.034515	0.025941	-0.028809
15	P1	-3.638159	0.062908	0.028874
19	P1	-3.631881	0.013953	-0.004390
22	P1	-5.706221	0.041825	-0.039362
26	P1	-7.362359	0.030259	0.024057
30	P1	-6.294921	0.071848	0.032373
3	P1	-10.948976	0.052529	-0.025827
7	P1	-10.490712	0.168528	-0.006517
11	P1	-12.658305	0.099004	-0.041221
15	P1	-11.629730	0.121453	-0.115581
19	P1	-15.466083	0.055637	0.037717
22	P1	-25.448709	2.008192	0.365562
26	P1	-15.203911	0.237834	0.202825
30	P1	-20.085634	1.346064	0.048442

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.457909	0.048561	0.153743
7	P2	-21.988646	0.035668	0.087186
11	P2	-9.500162	0.068561	0.181328
15	P2	-5.081601	0.038146	0.045984
19	P2	-6.851658	0.059186	0.070128
22	P2	-7.028865	0.041333	0.051860
26	P2	-23.951004	0.035940	0.034212
30	P2	-21.931749	0.042857	0.043289

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.999324	0.004214	-0.001457
7	P3	-7.999380	0.004210	-0.001608
11	P3	-7.999397	0.004206	-0.001495
15	P3	-7.999295	0.004218	-0.001681
19	P3	-7.999373	0.004213	-0.001572
22	P3	-7.999372	0.004211	-0.001489
26	P3	-7.999218	0.004209	-0.001539
30	P3	-7.999241	0.004207	-0.001274

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	0.000438460
	stdev	2.30679e-07
MEAN Q	mean	0.000470234
	stdev	2.38488e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126667
	stdev	0.000998903
STDEV Q	mean	0.126919
	stdev	0.00100816

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005090[123]
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_1PNPDE20050902_155120_000001062040_00254_18344_4314.N1	1	0
ASA_IMM_1PNPDK20050902_124321_000000532040_00253_18343_3026.N1	1	0
ASA_WSM_1PNPDE20050901_230838_000001462040_00245_18335_6942.N1	0	42

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

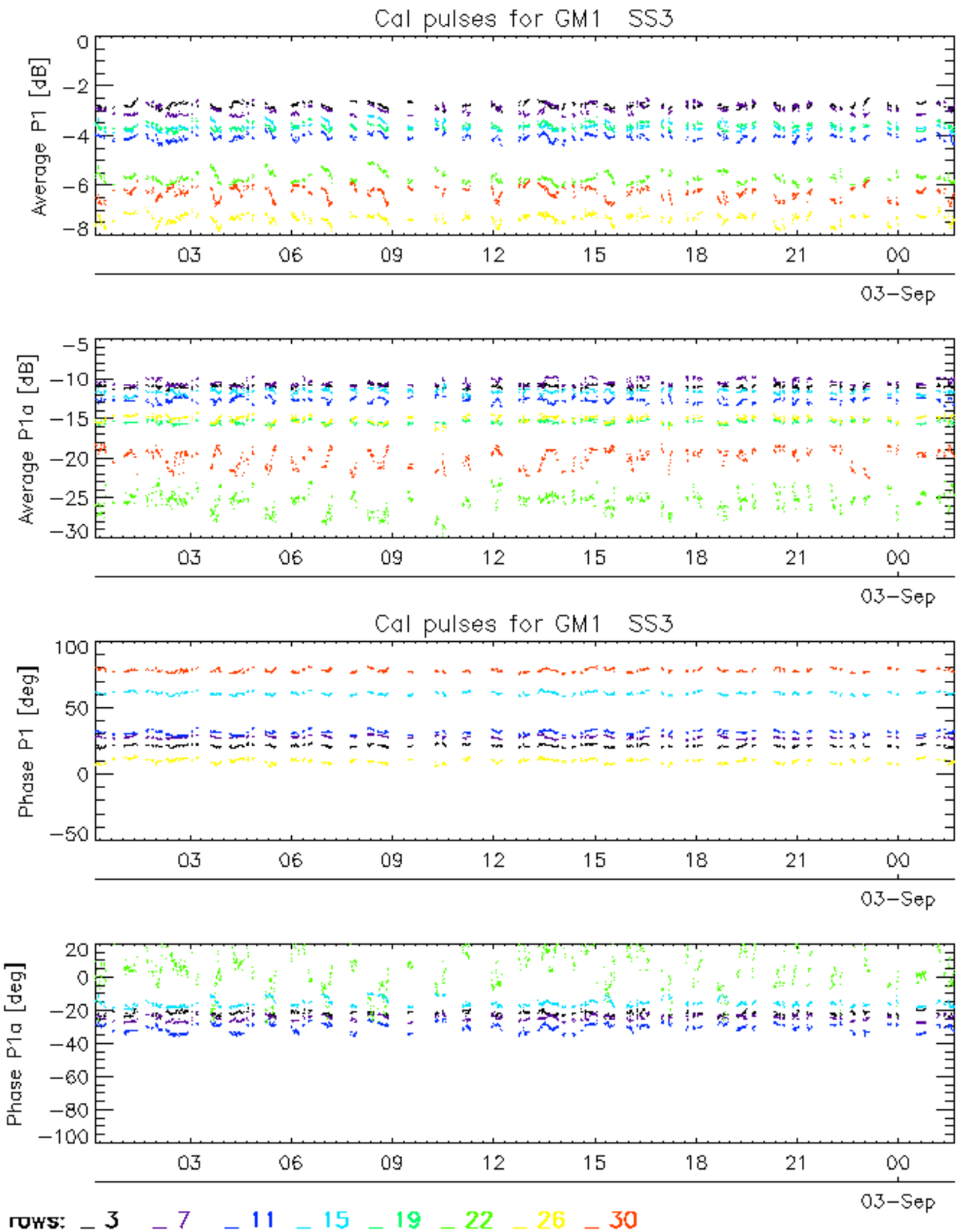
Descending

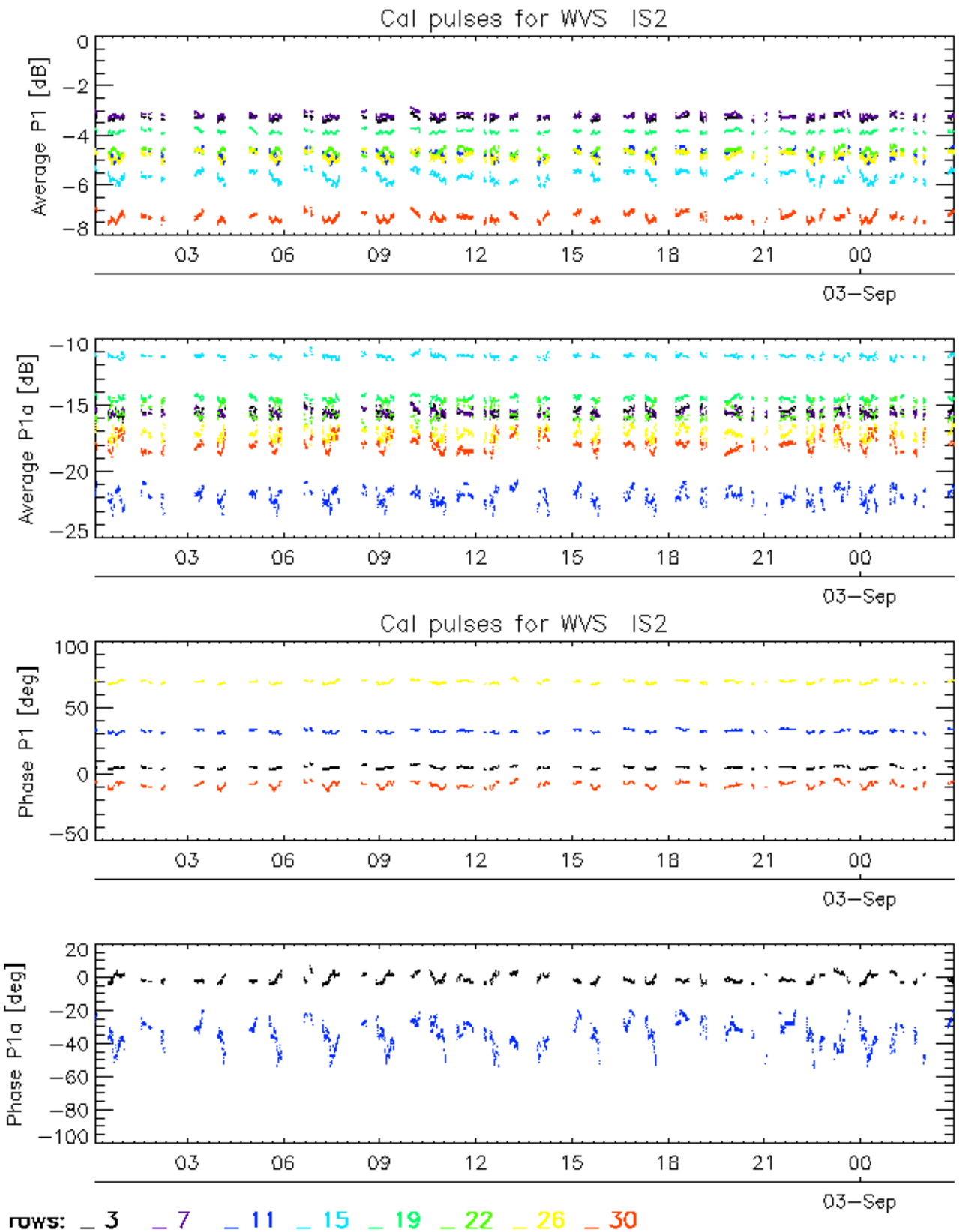
7.5 - Absolute Doppler for GM1

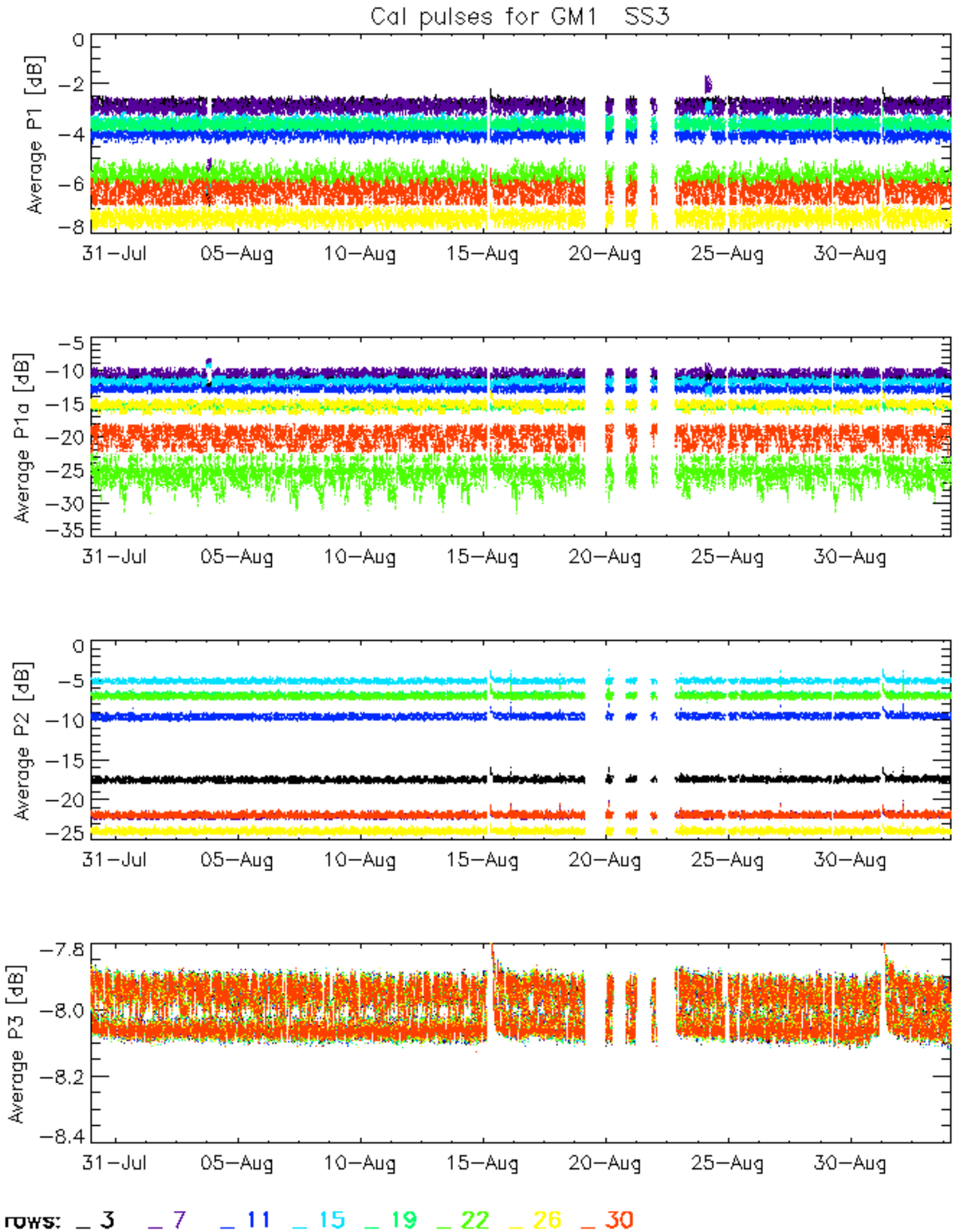
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

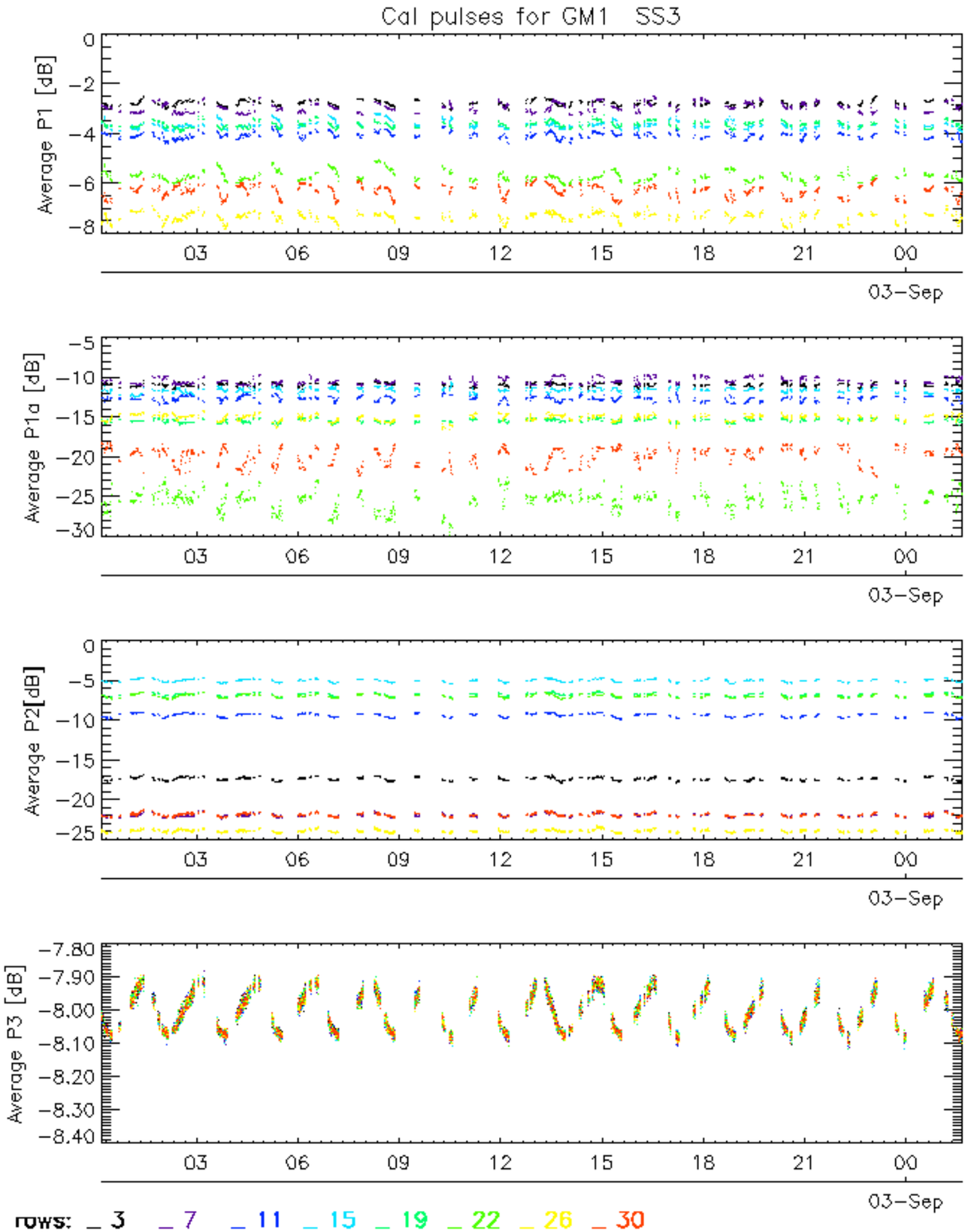
7.6 - Doppler evolution versus ANX for GM1

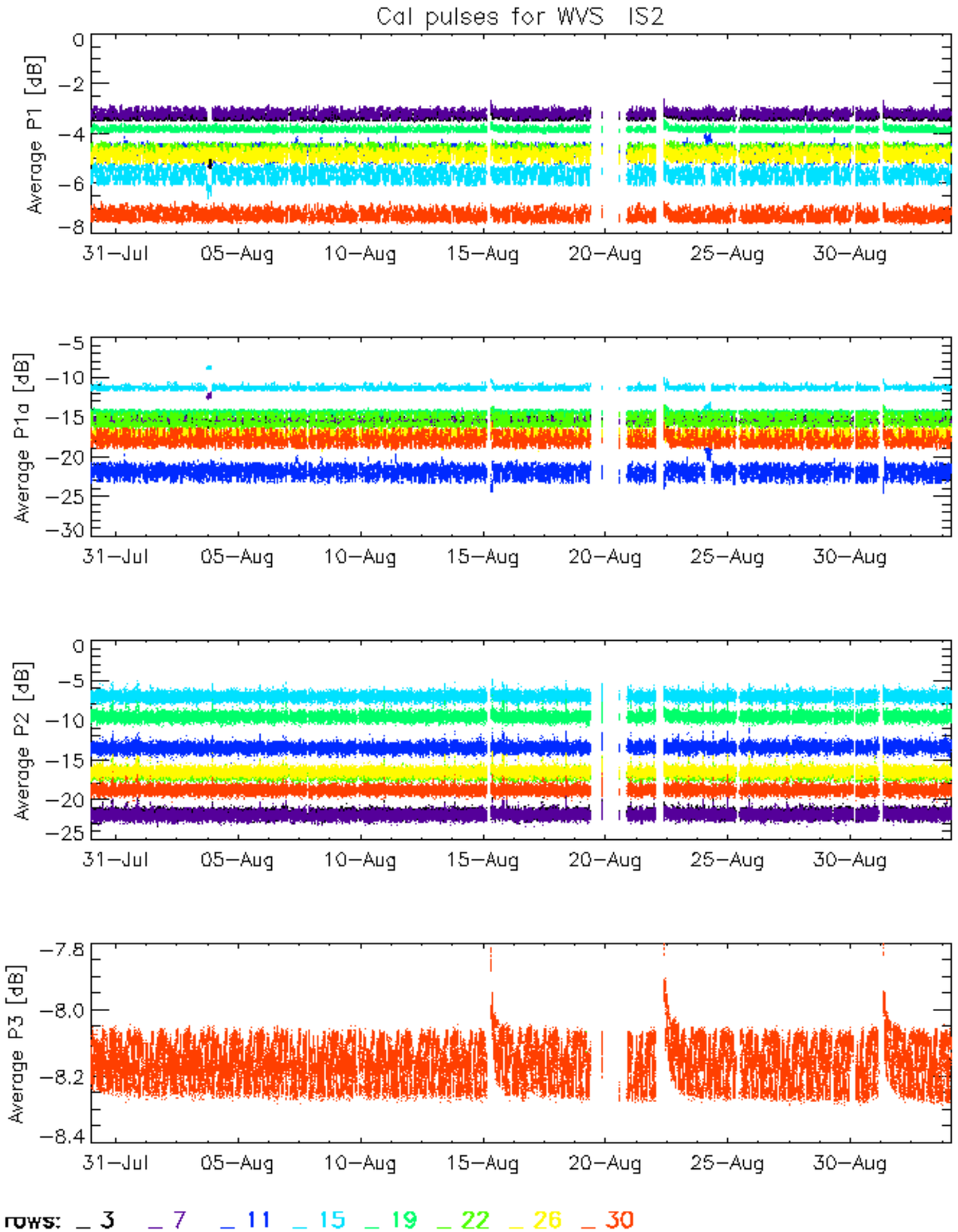
Evolution Doppler error versus ANX
☒

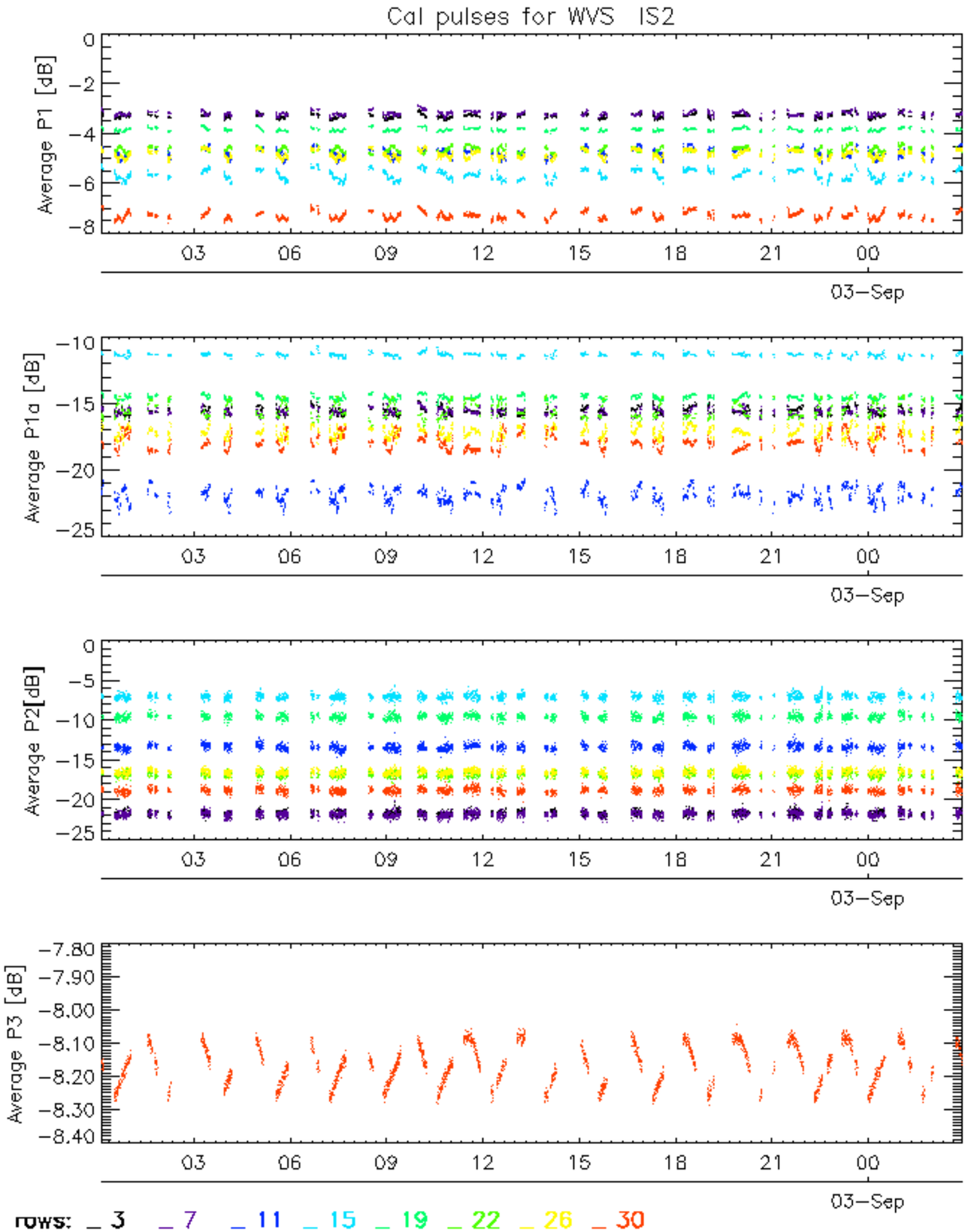

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


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

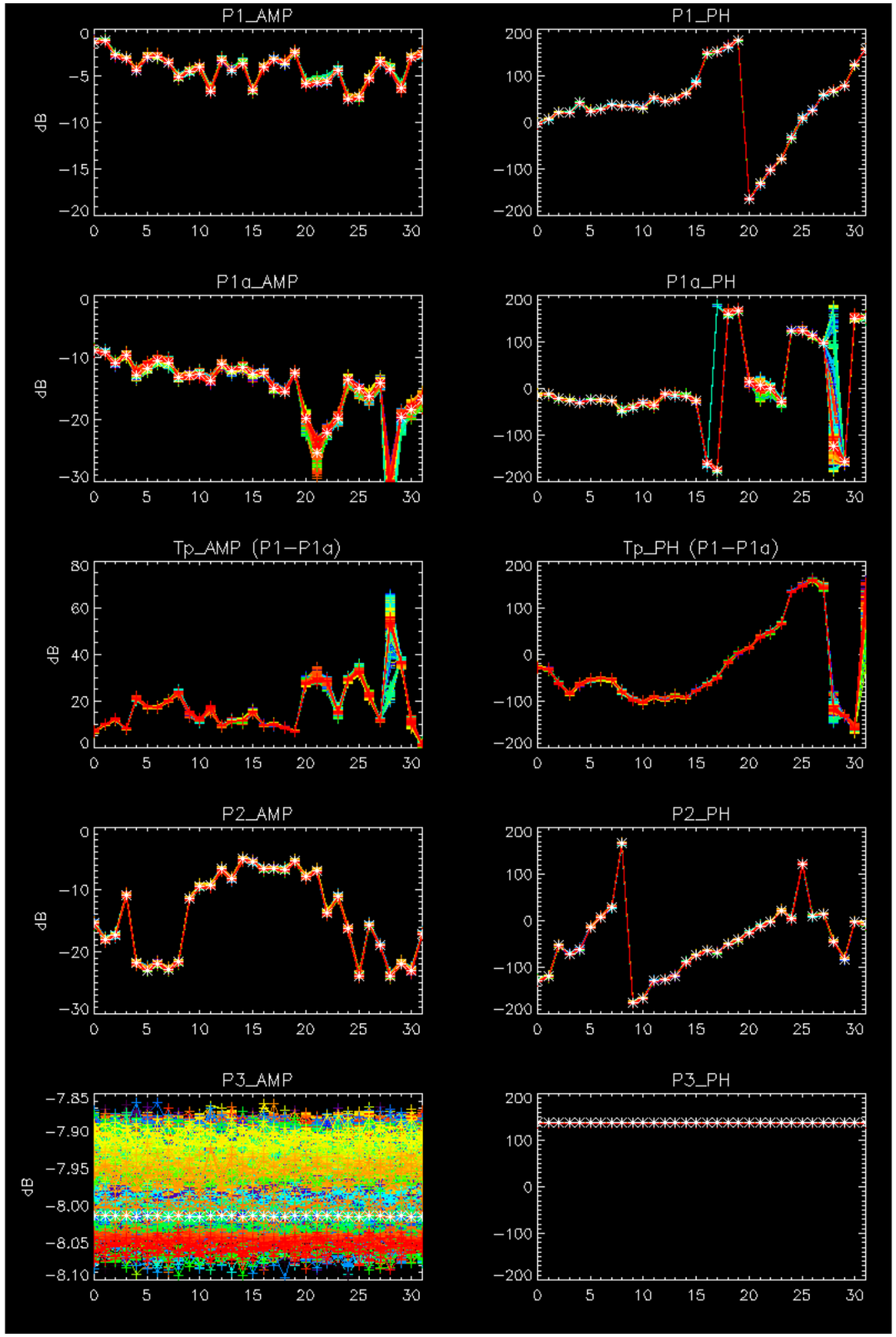

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

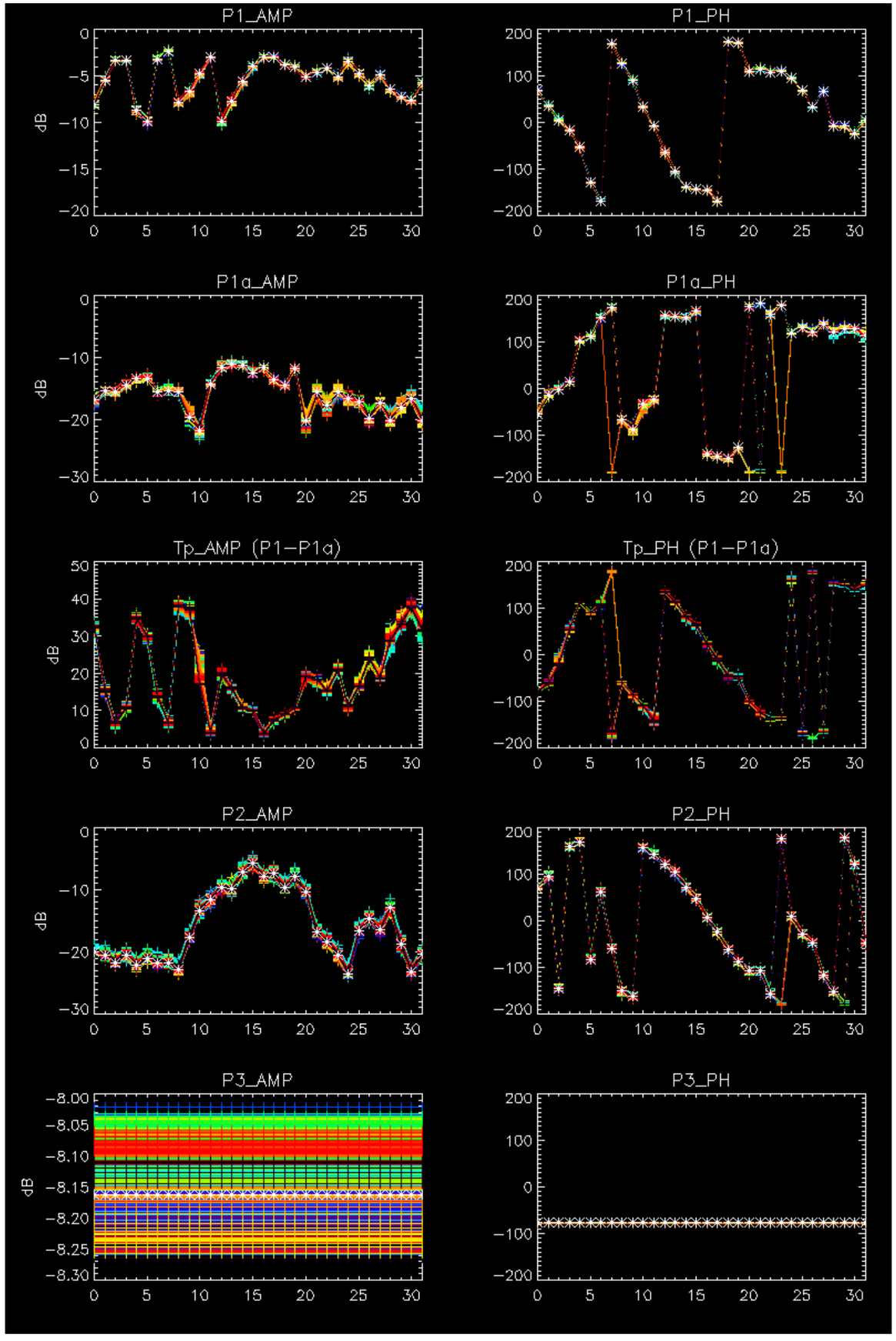

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
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
03−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

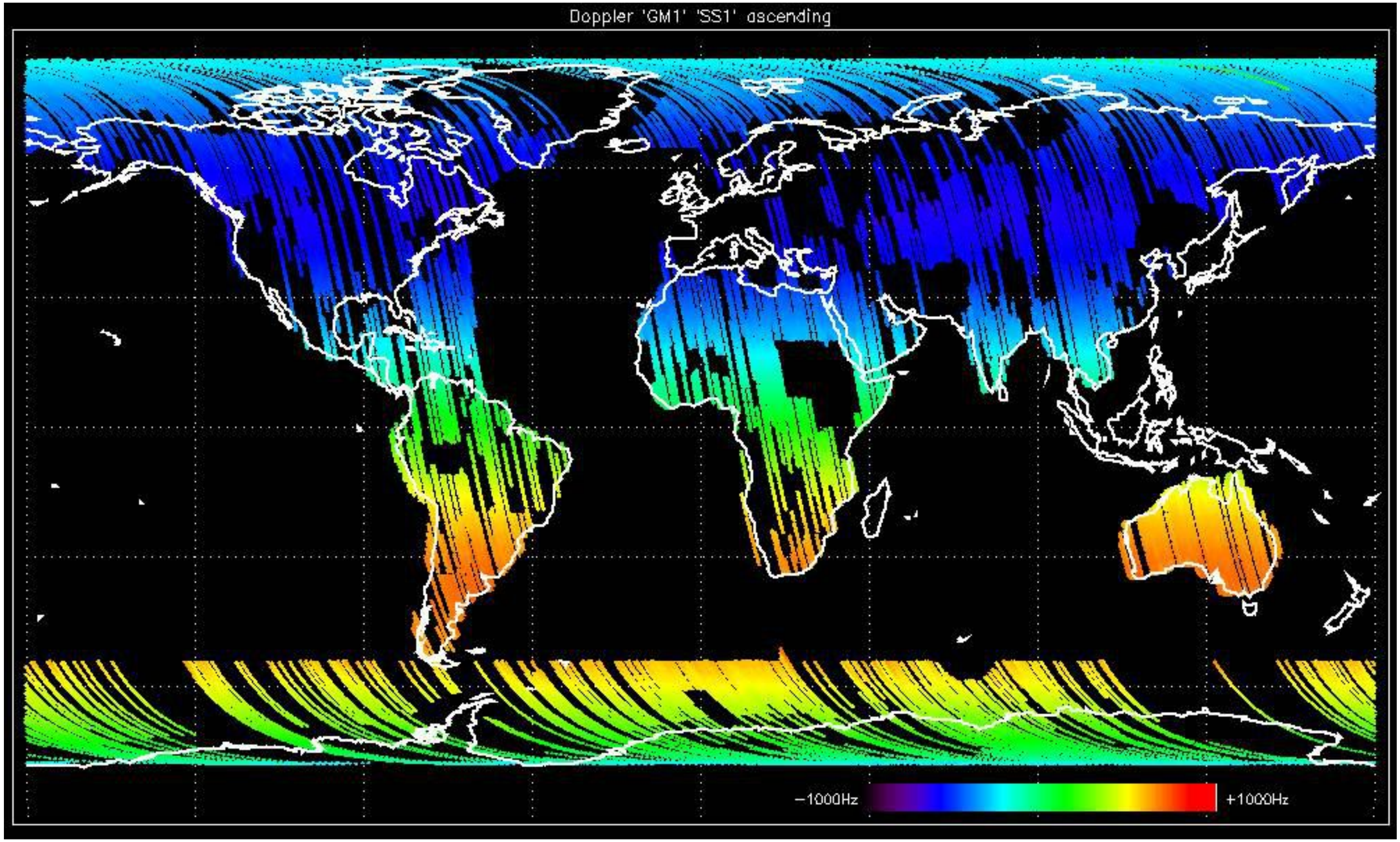
No anomalies observed.

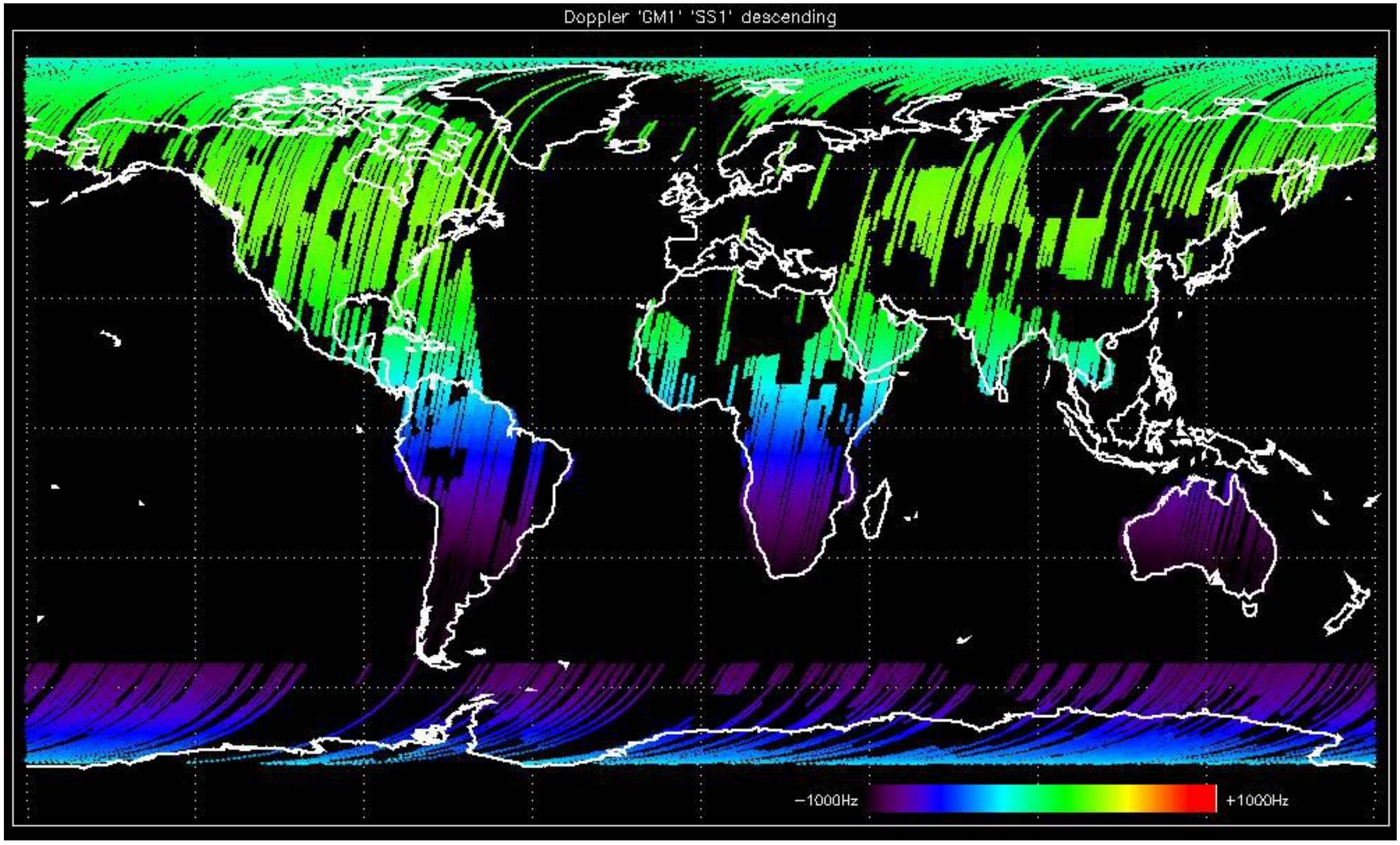

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

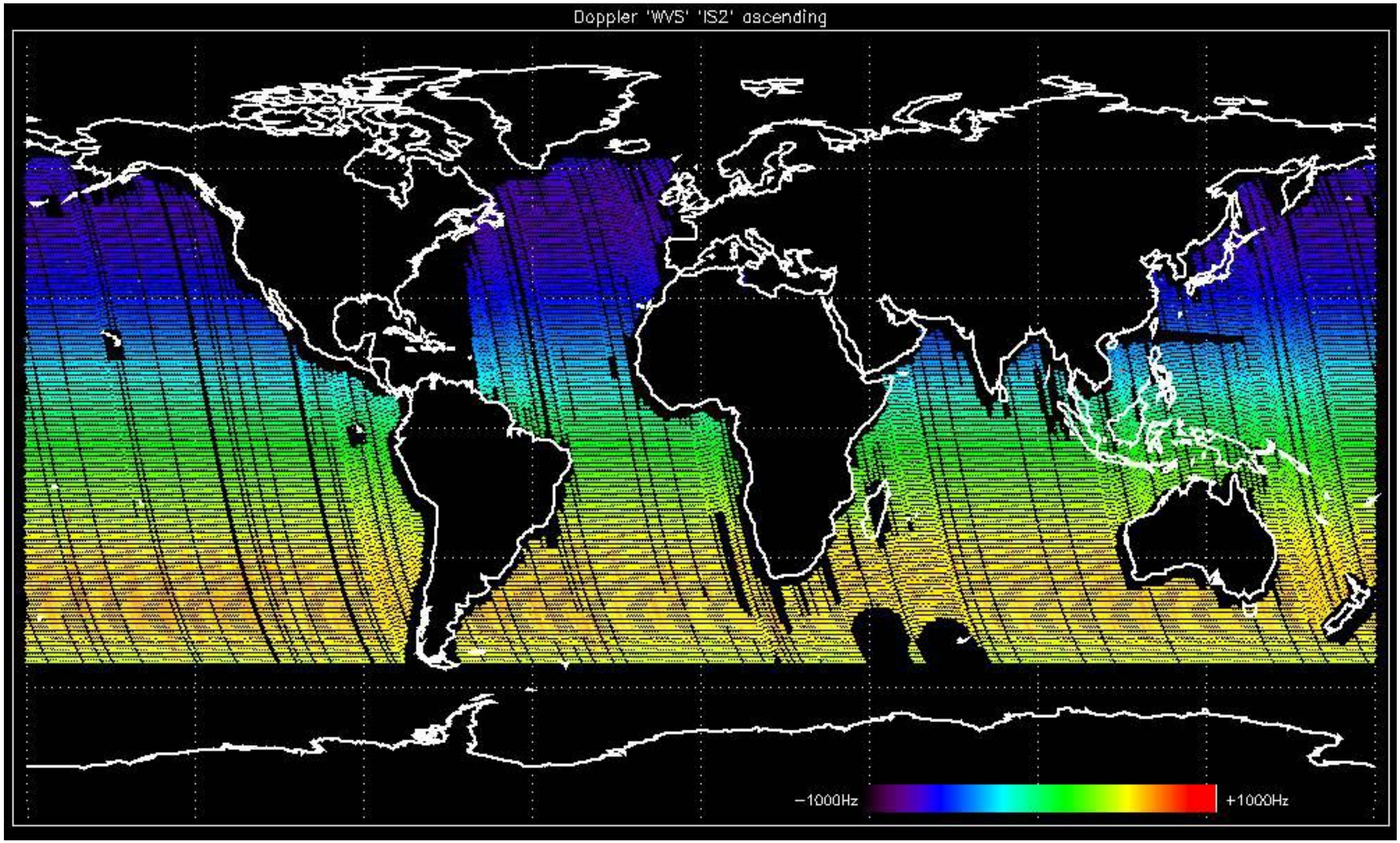

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

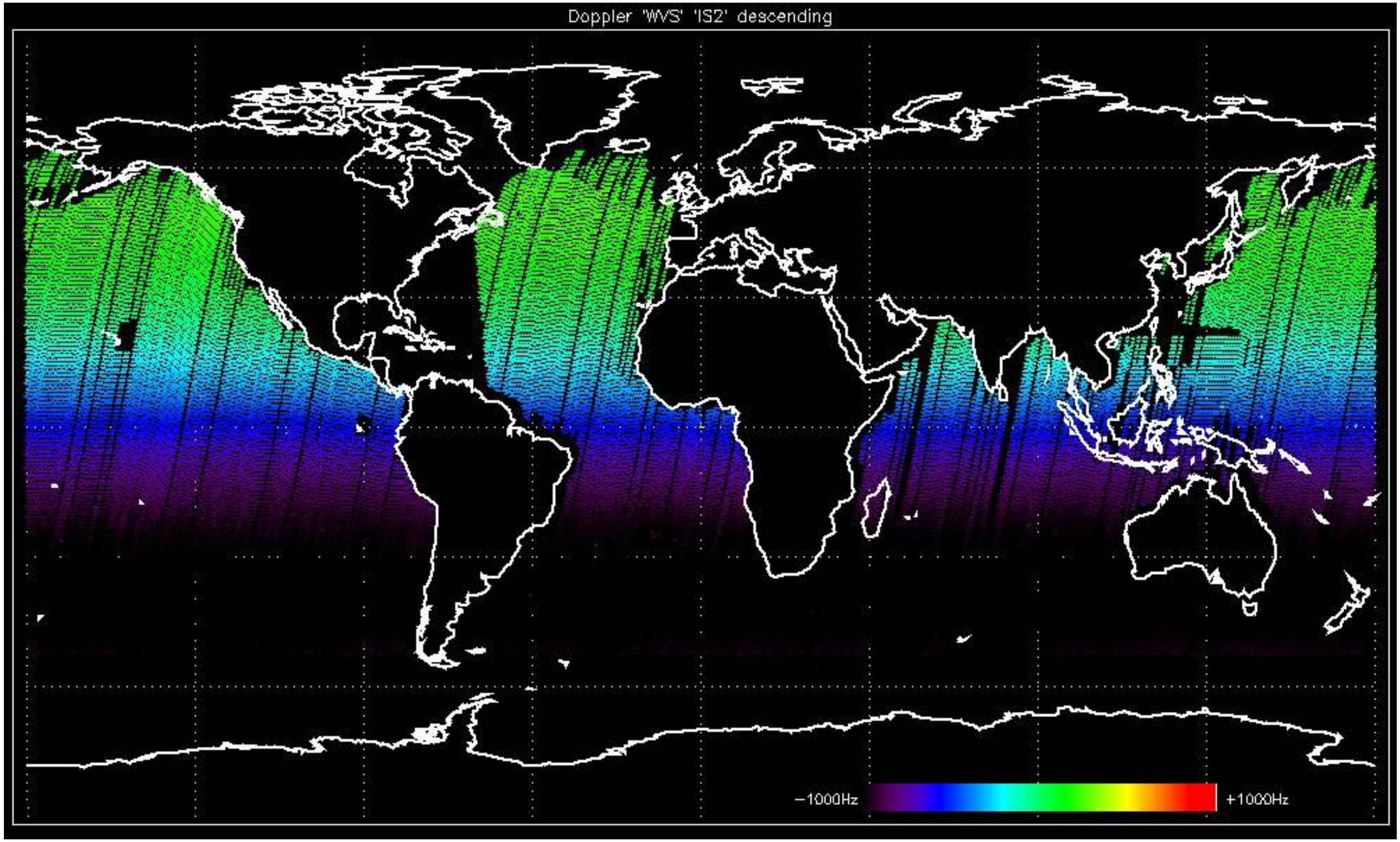
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

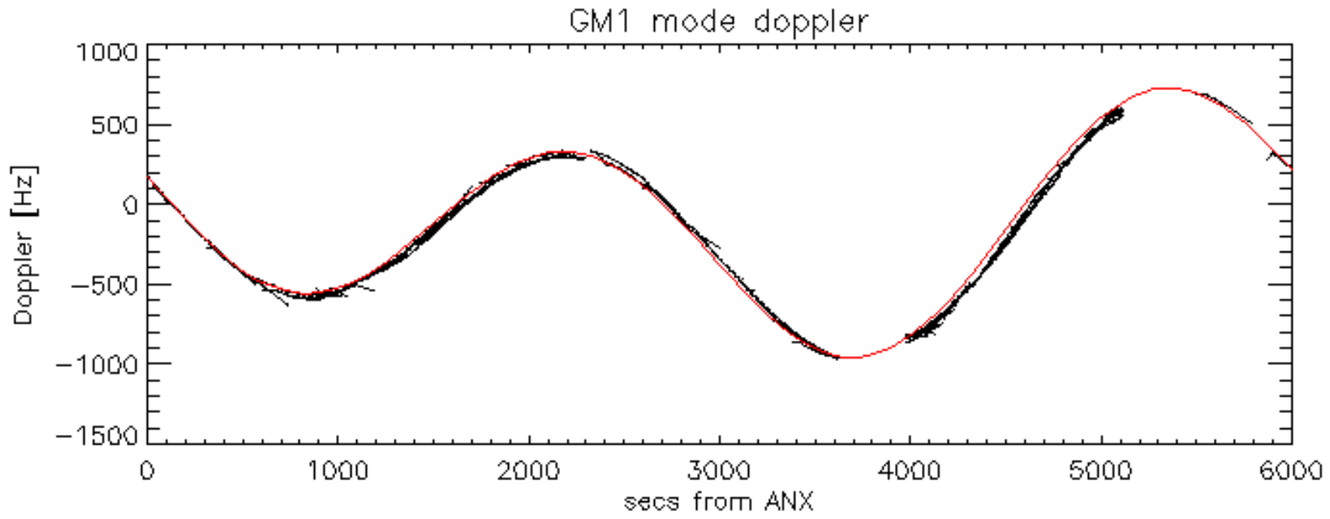
Preliminary report.The data is not yet controled

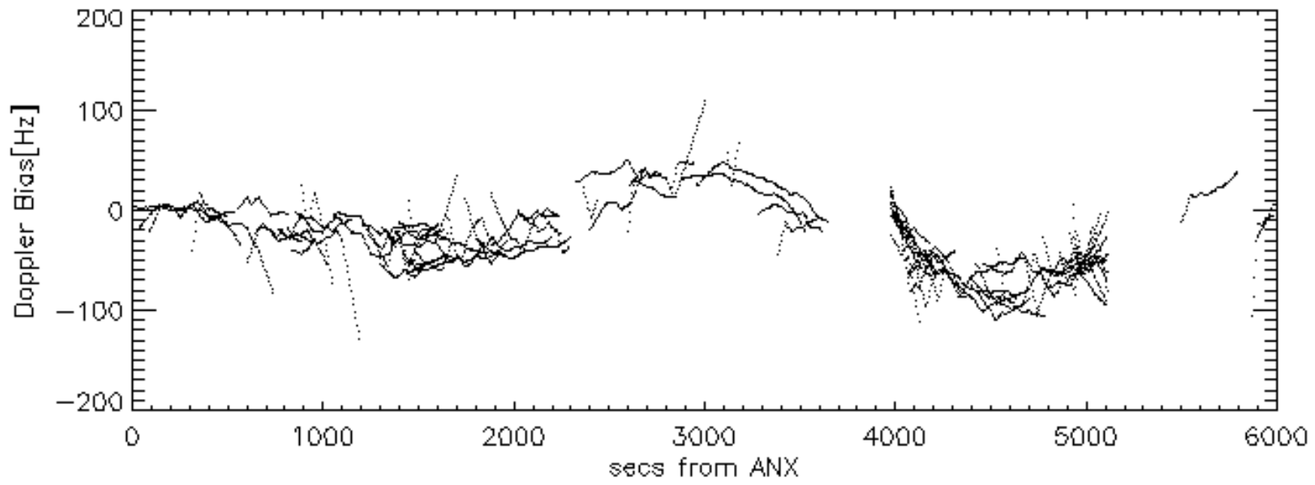

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

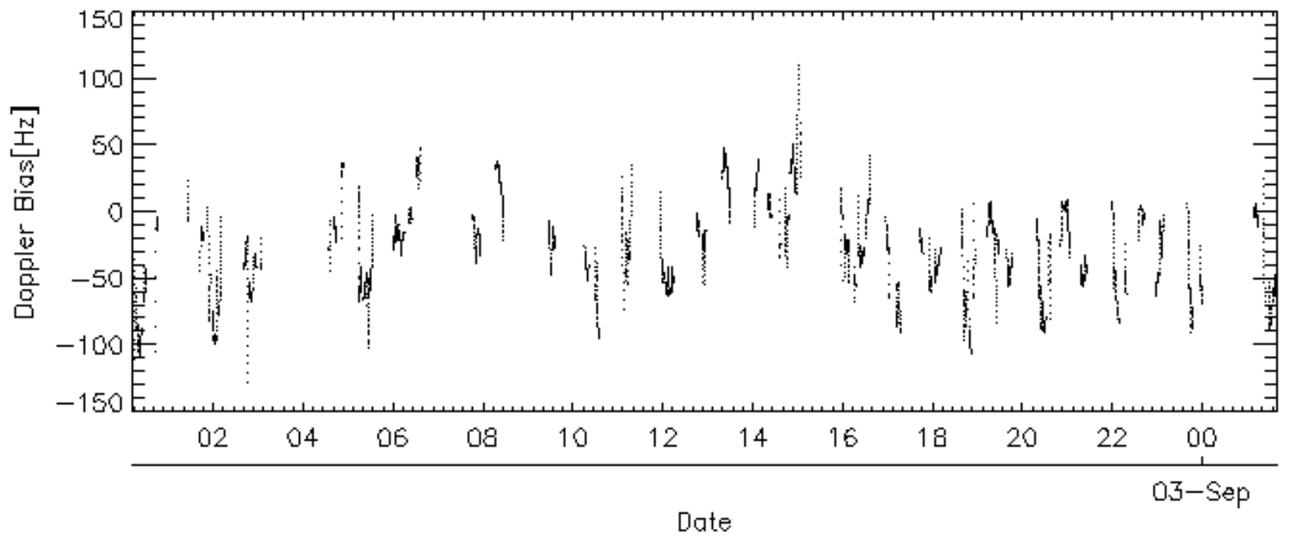

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

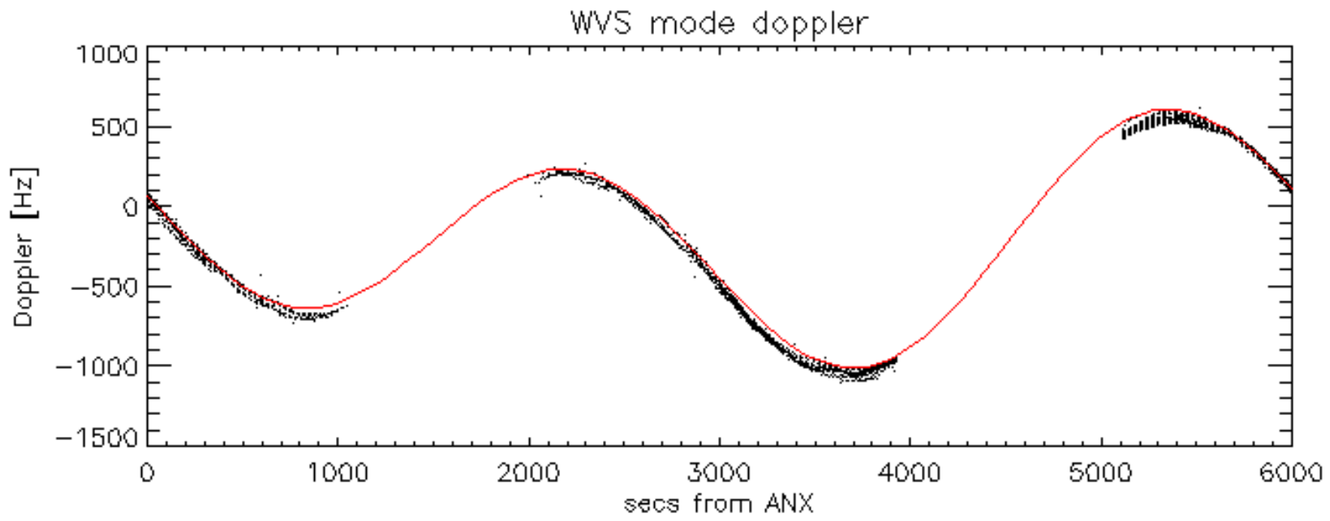

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

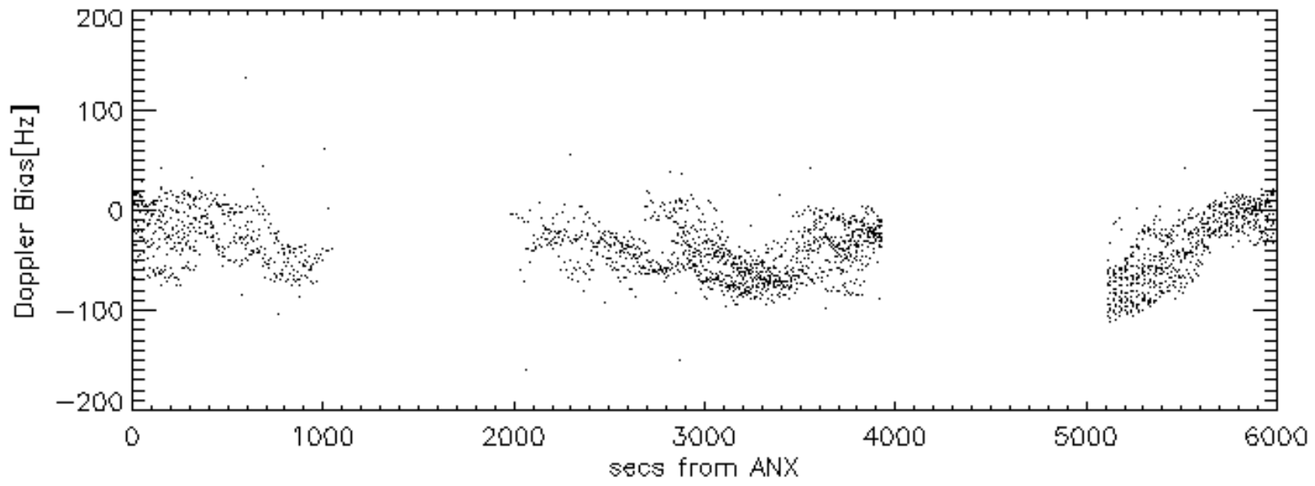

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

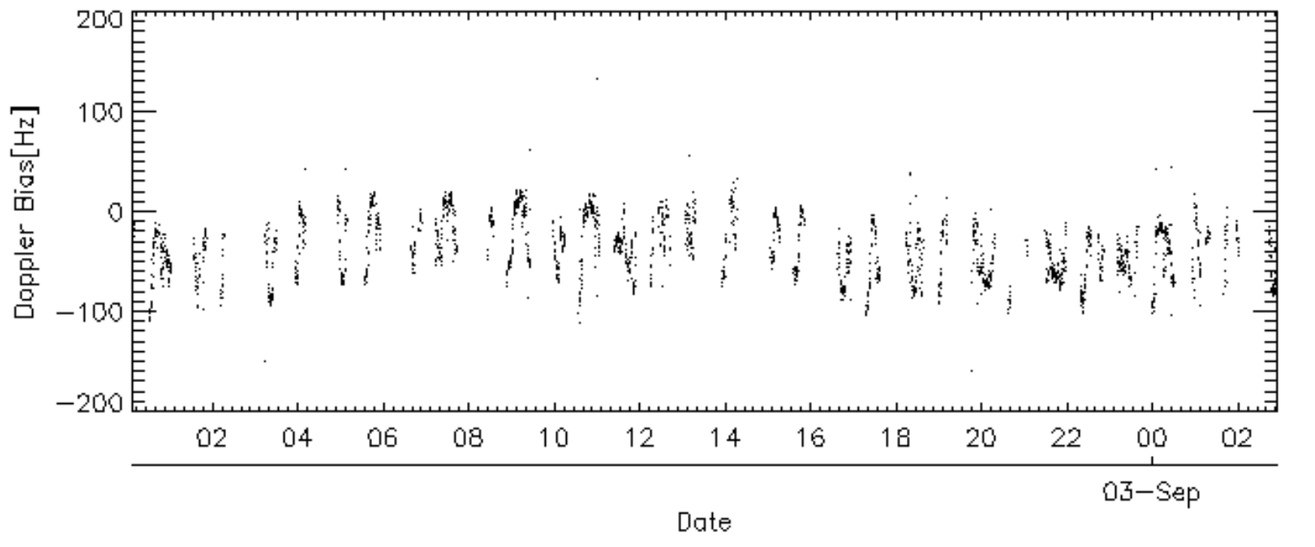

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

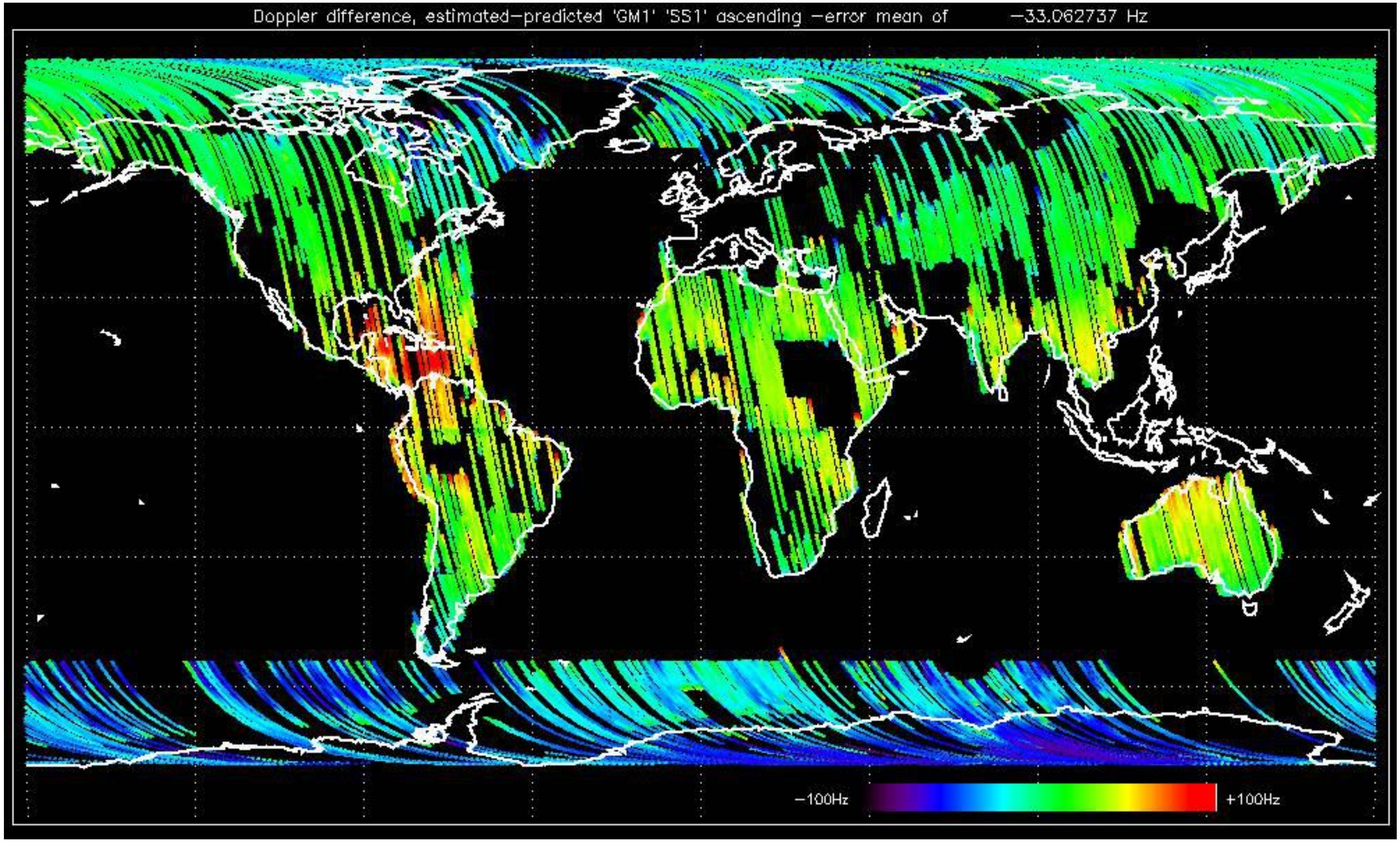

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

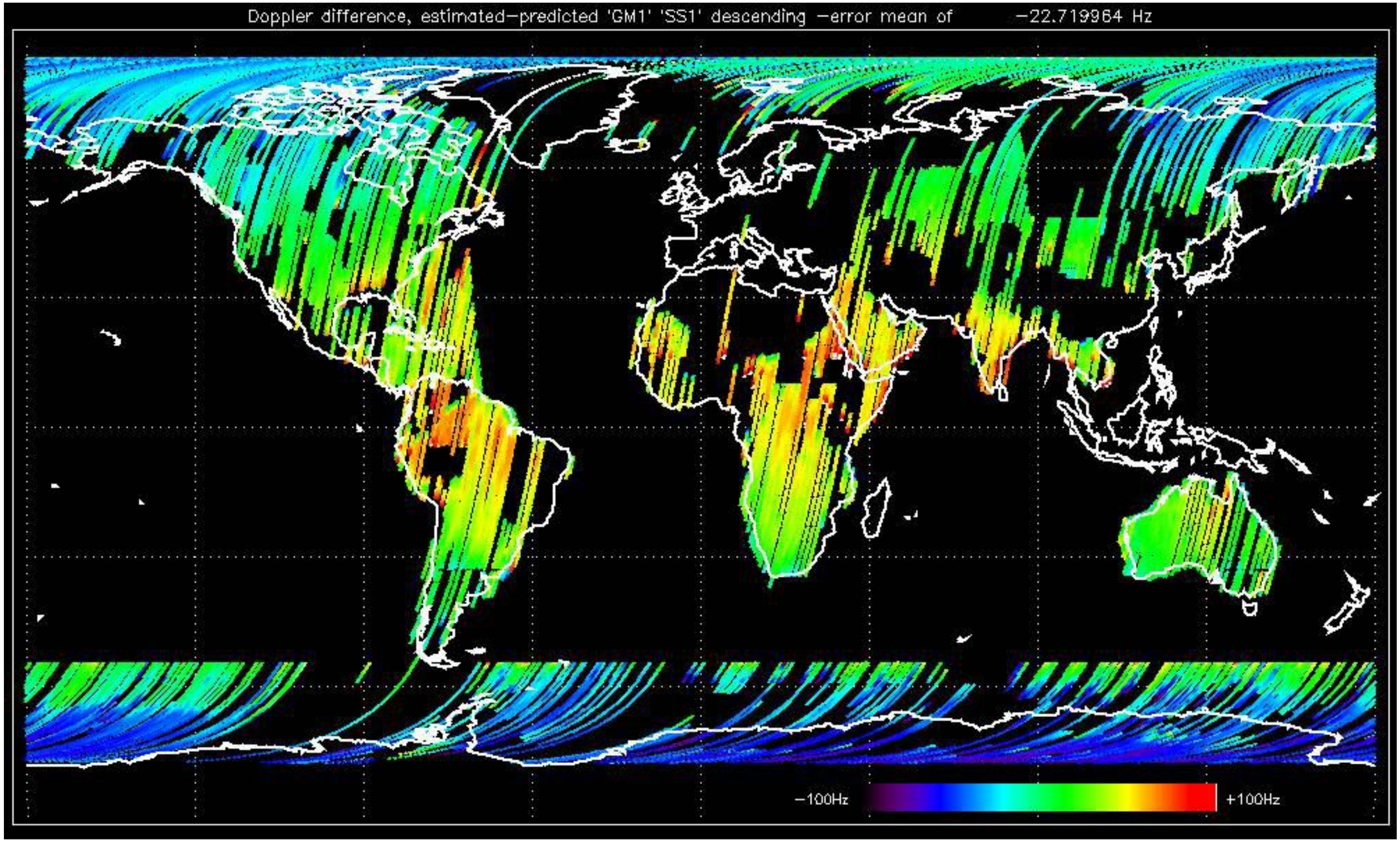

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
03−Sep
Date

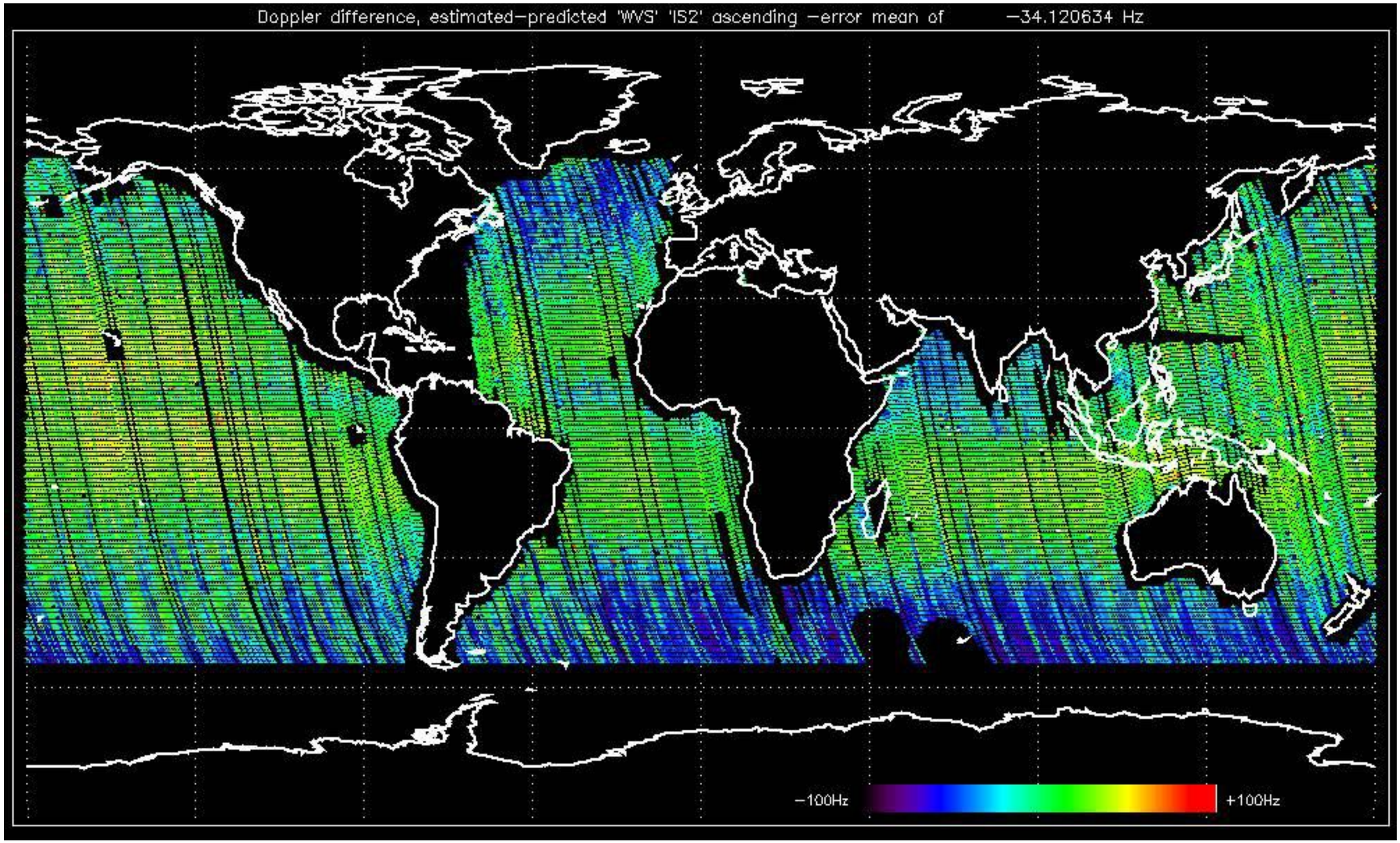

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

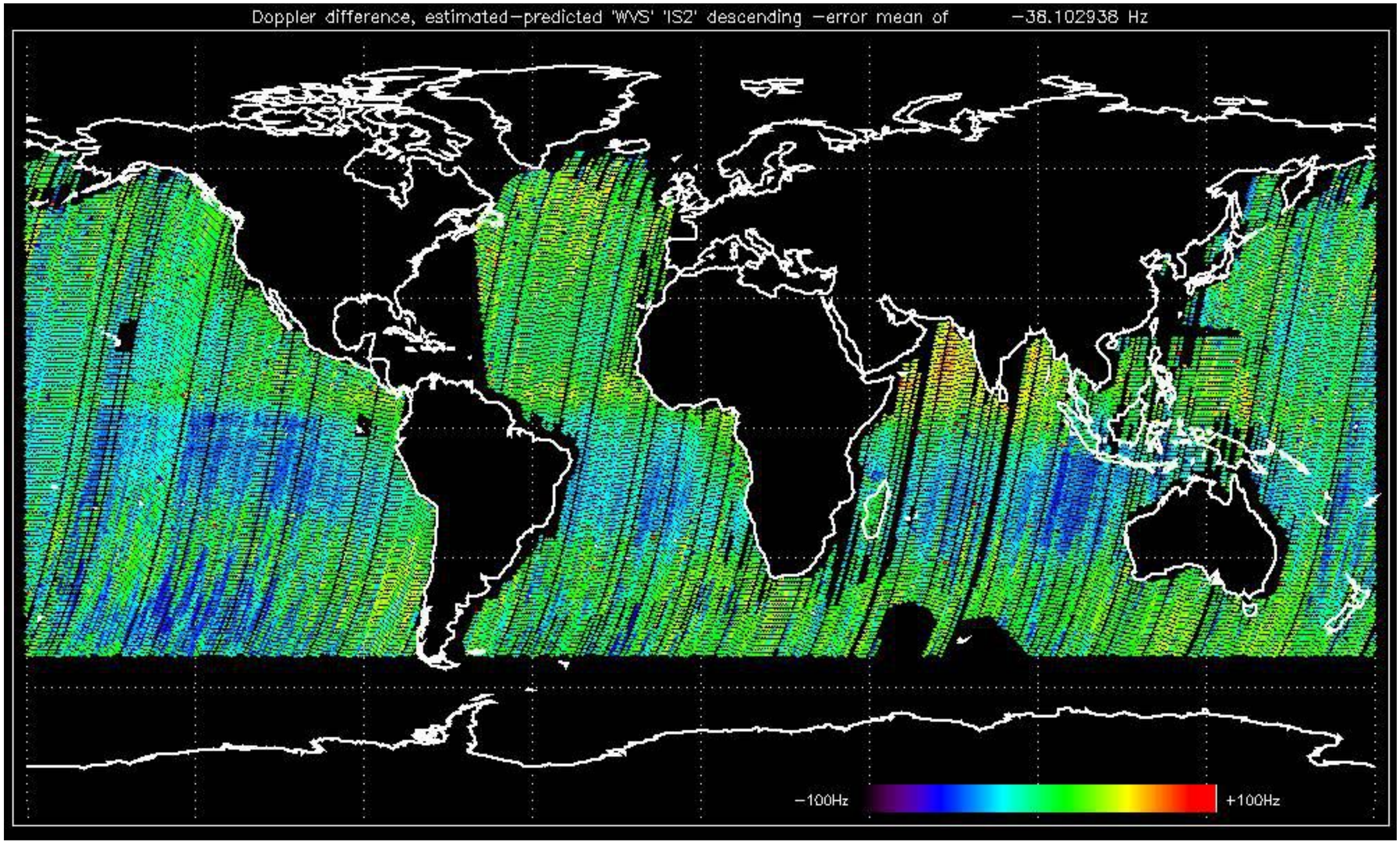

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.062737 Hz
−100Hz
+100Hz

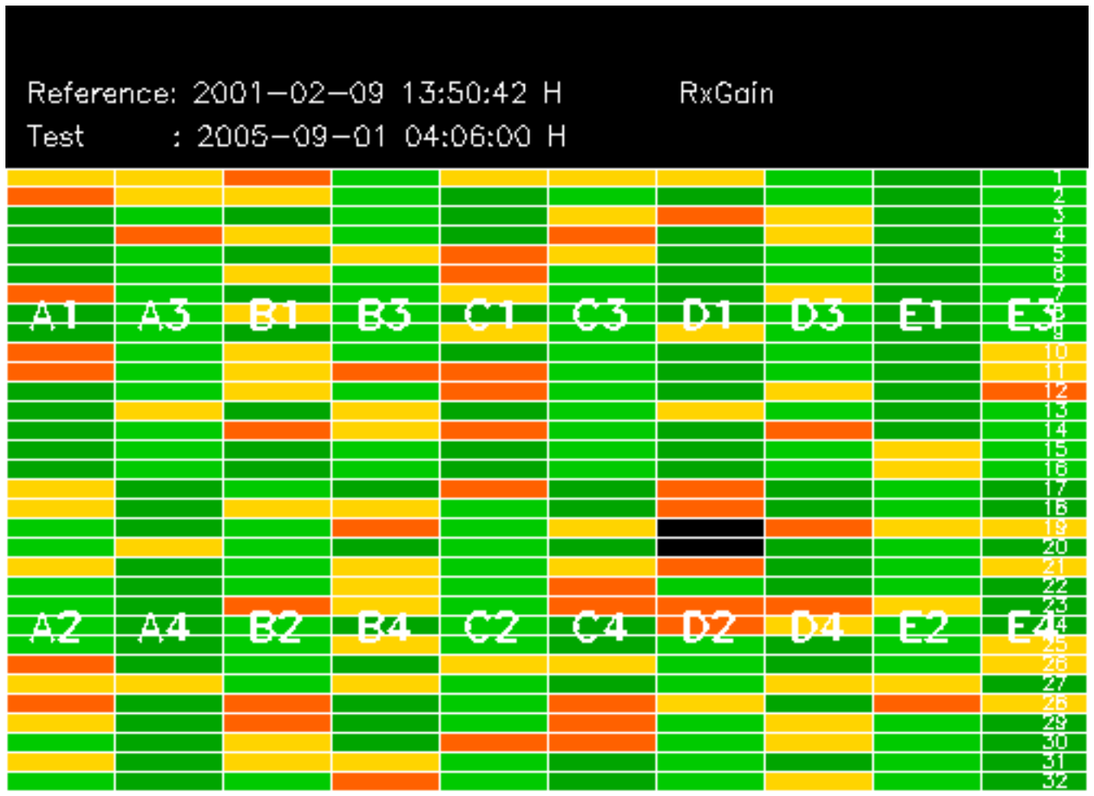

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −22.719964 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.120634 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −38.102938 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-09-01 04:06:00 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
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14
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16
17
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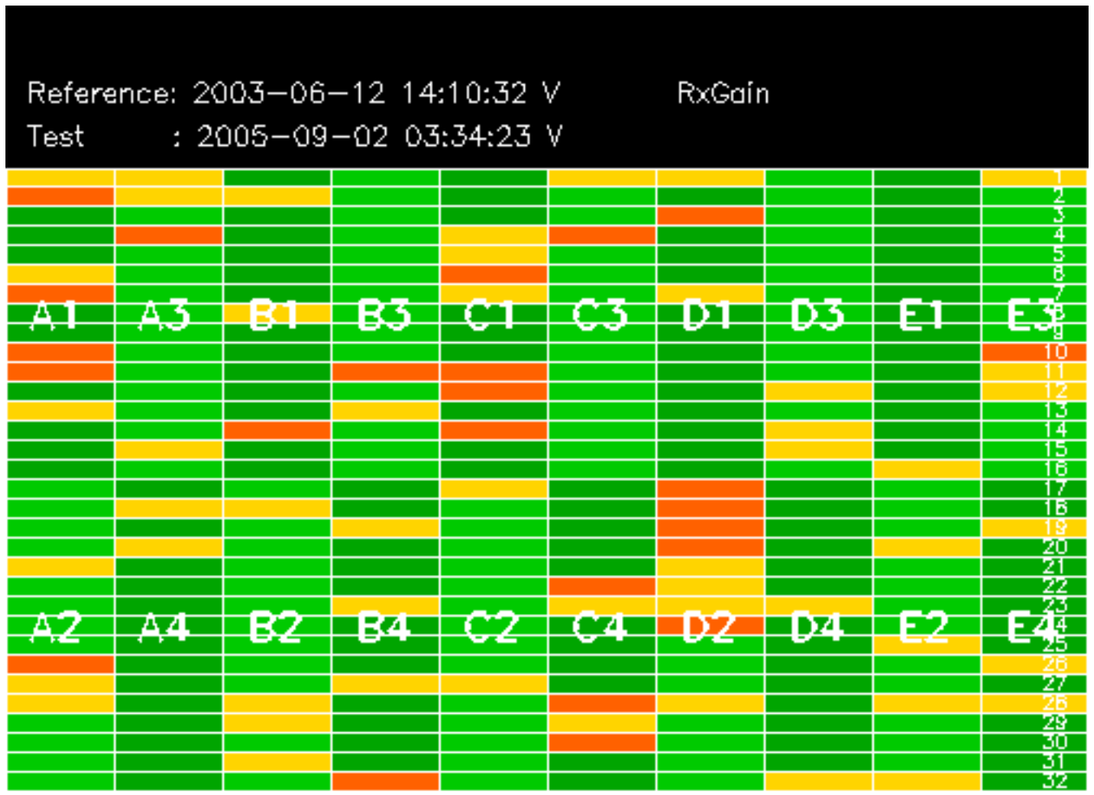
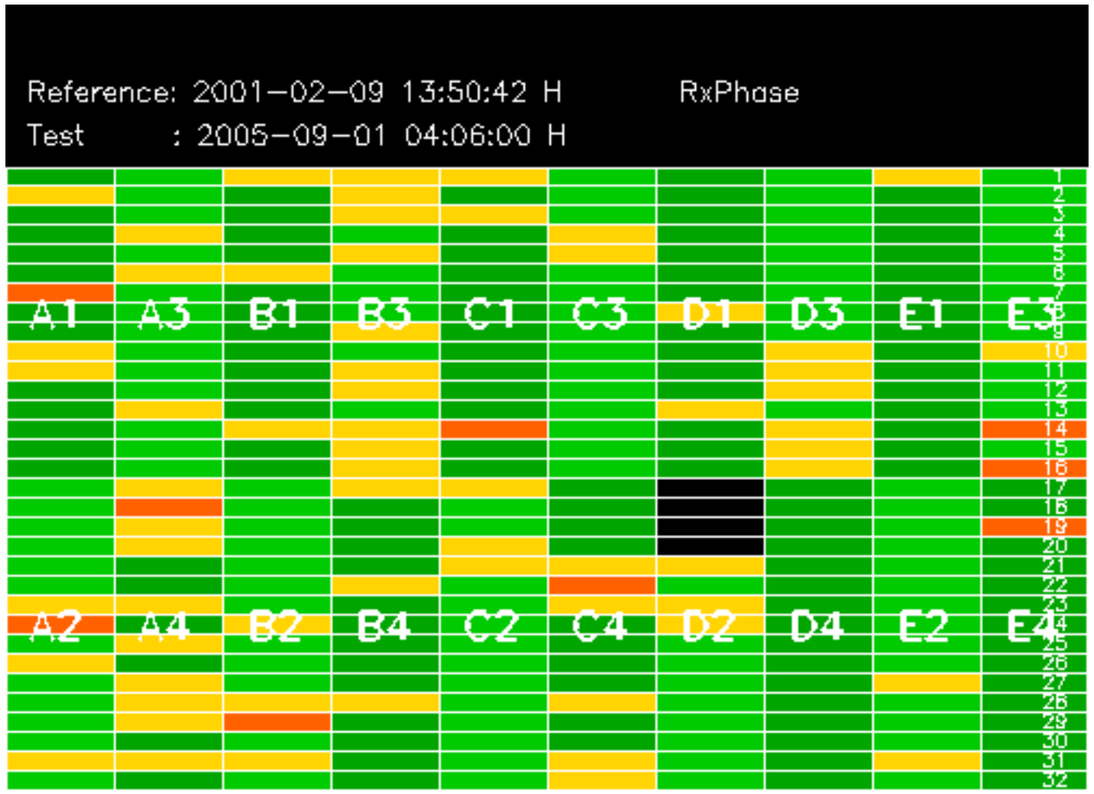
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Reference: 2003-06-12 14:08:52 H
Test : 2005-09-01 04:06:00 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 : 2005-09-02 03:34:23 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 : 2005-09-02 03:34:23 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 : 2005-09-01 04:06:00 H
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
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-09-01 04:06:00 H
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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22
23
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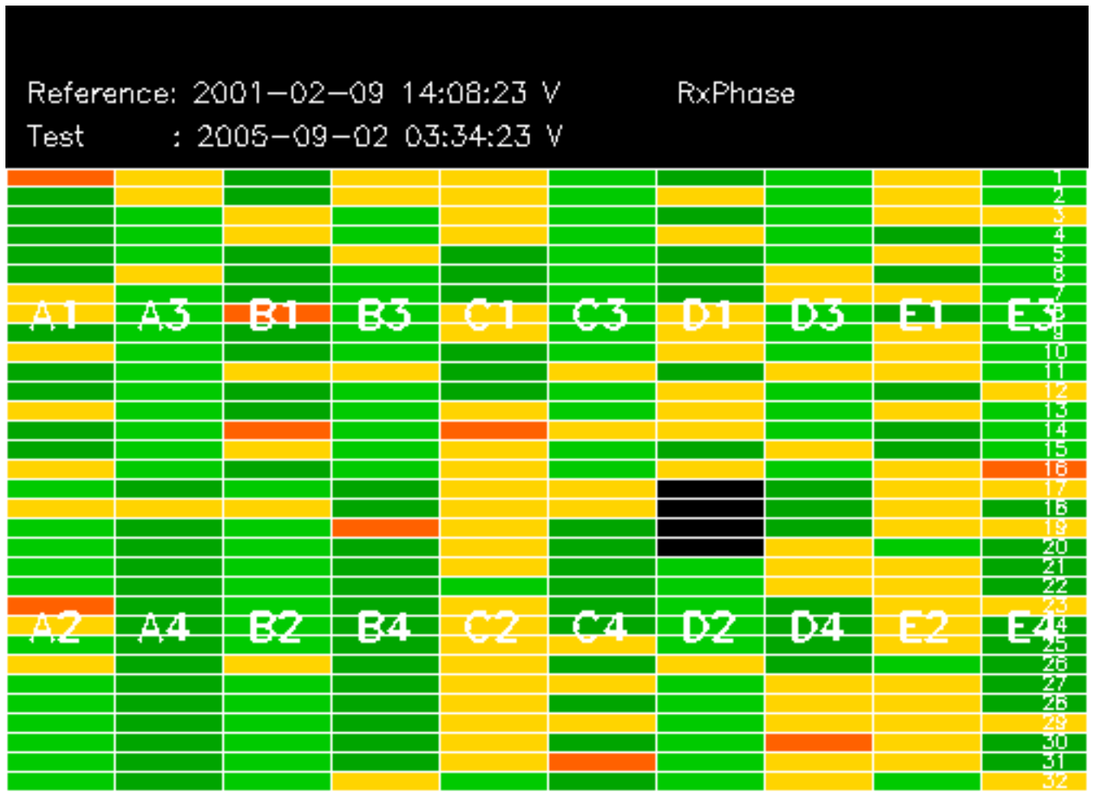
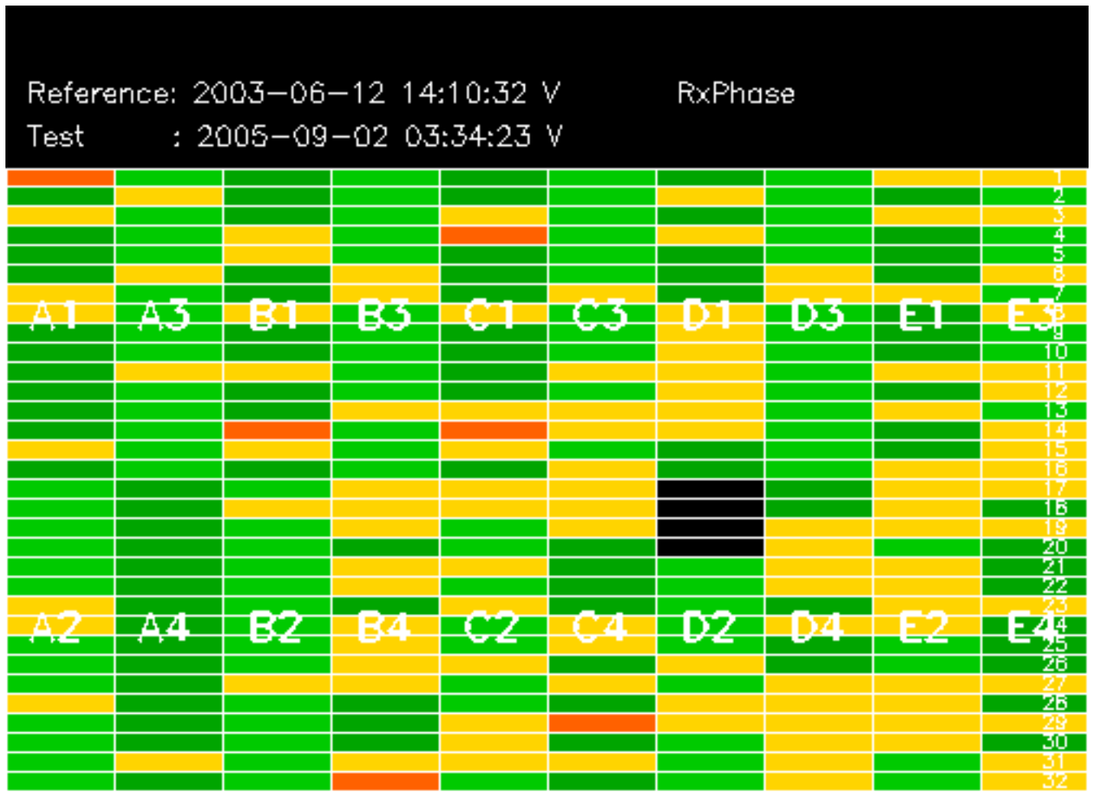
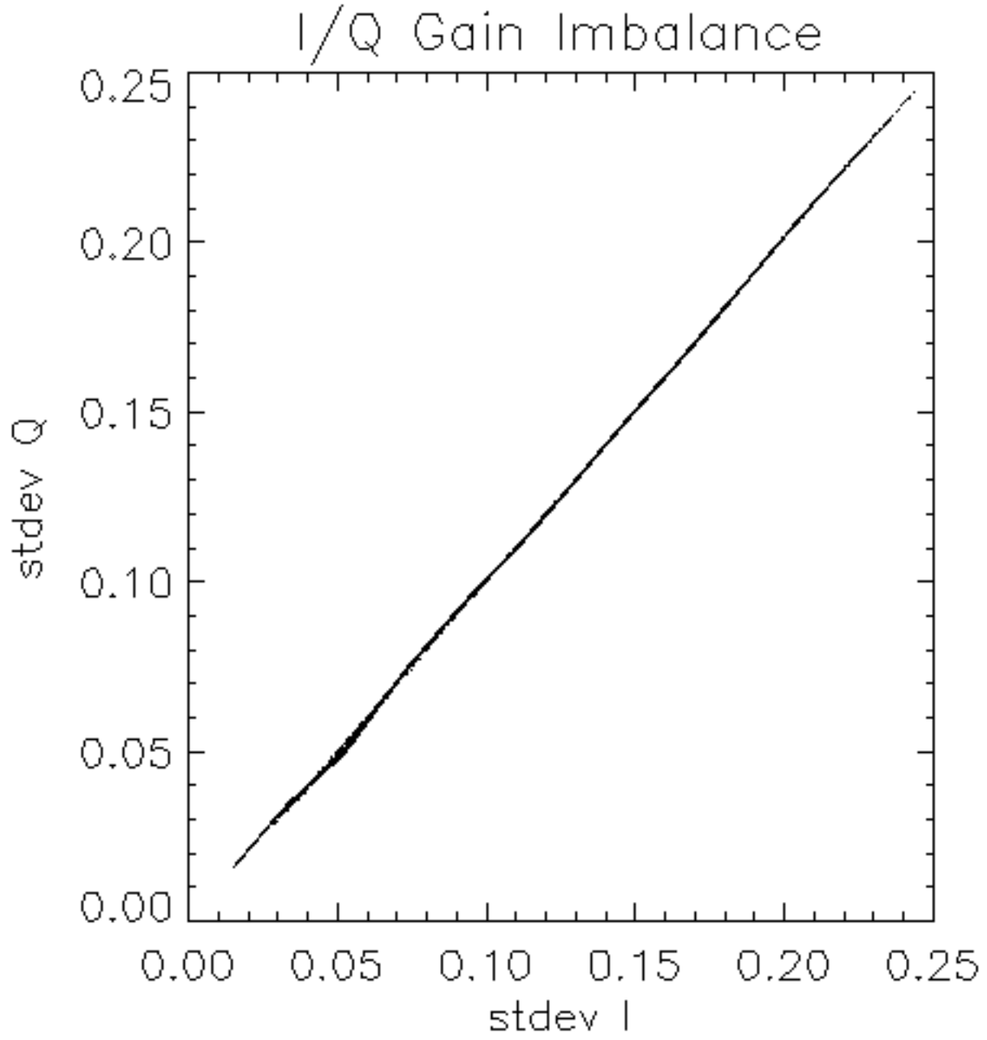
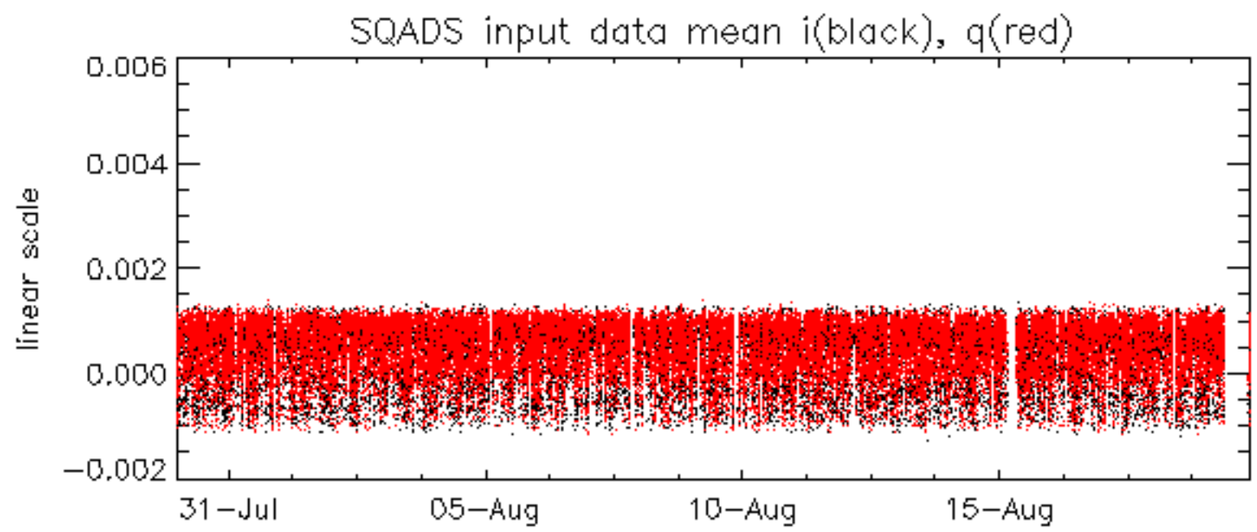
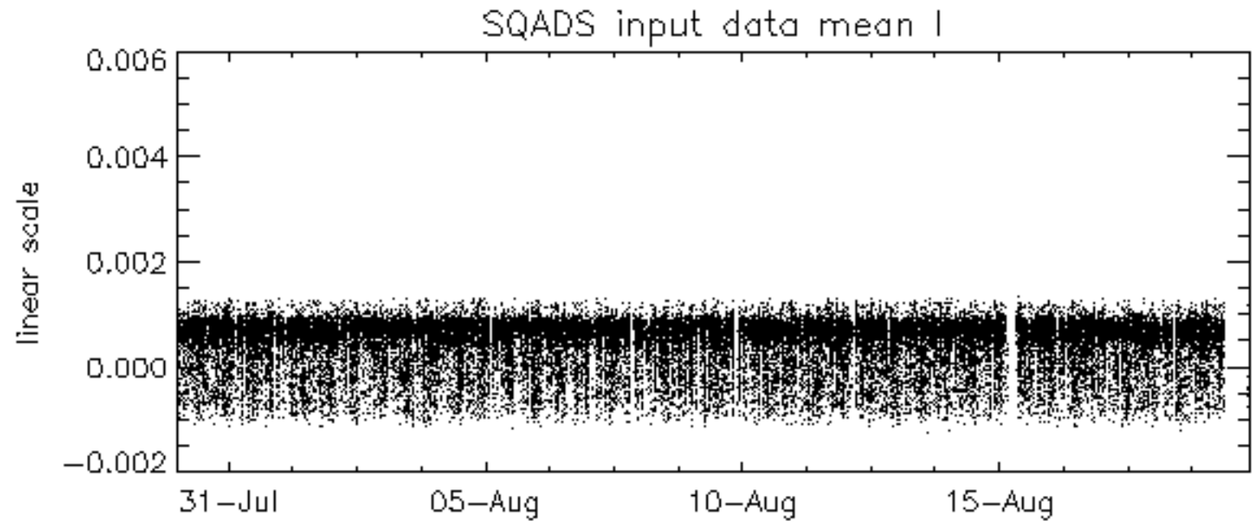
29
30
31
32

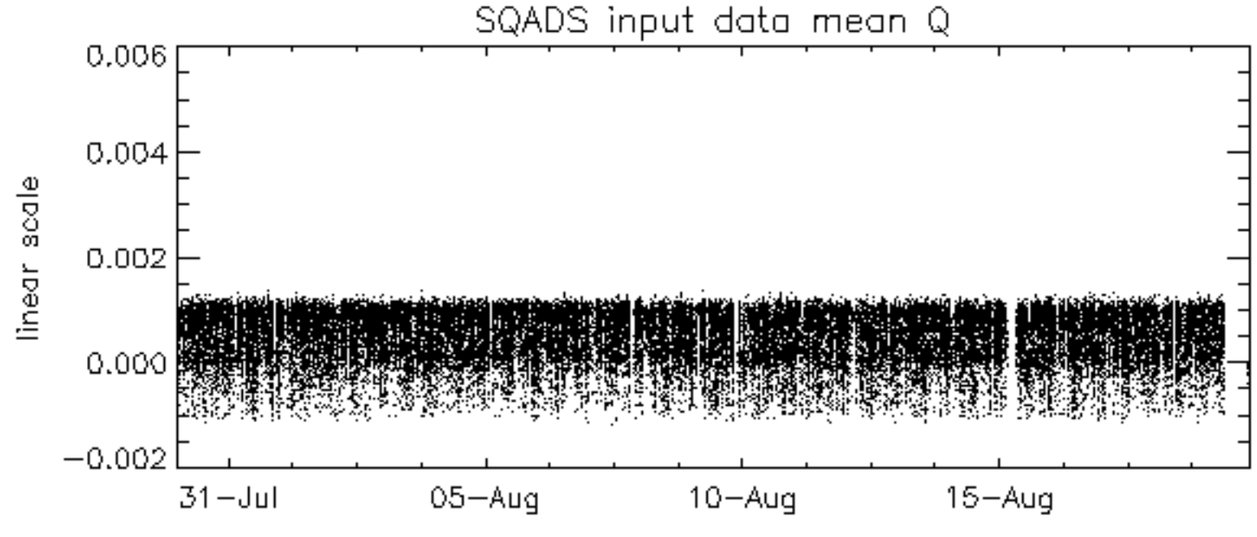

Reference: 2001-02-09 14:08:23 V
Test : 2005-09-02 03:34:23 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

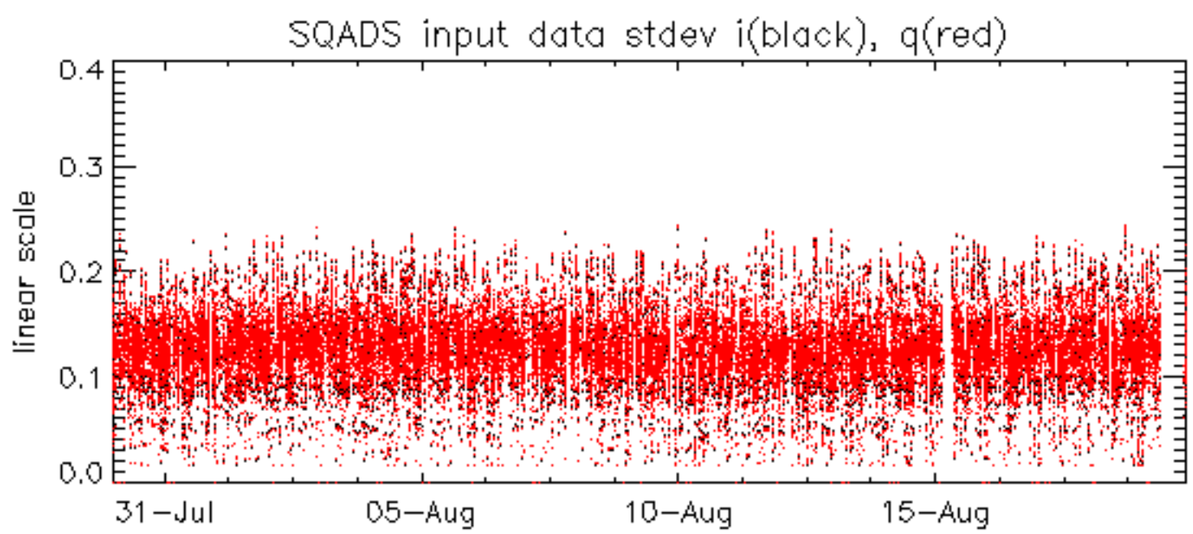

Reference: 2003-06-12 14:10:32 V
Test : 2005-09-02 03:34:23 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

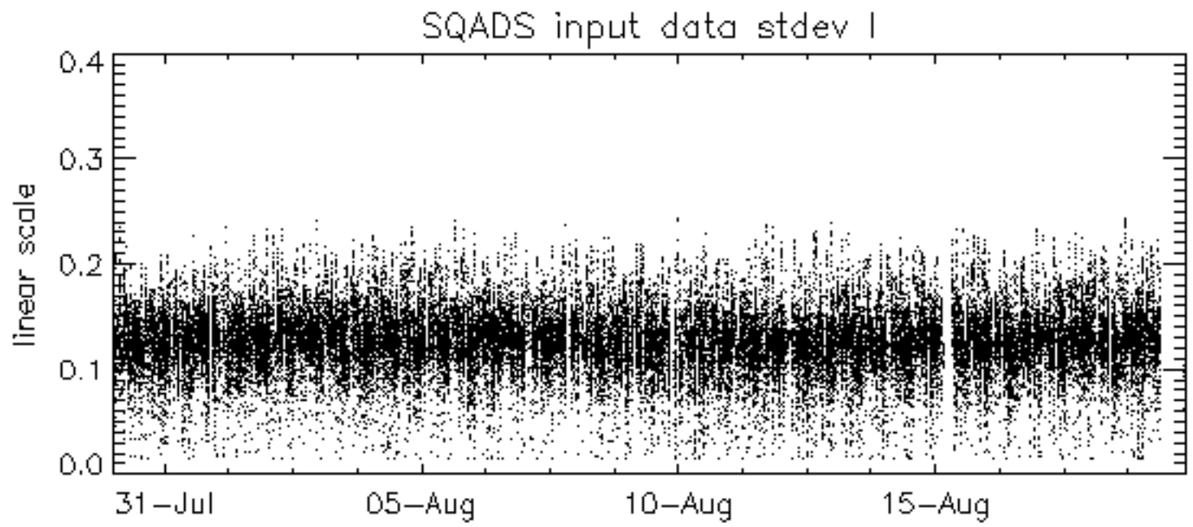

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

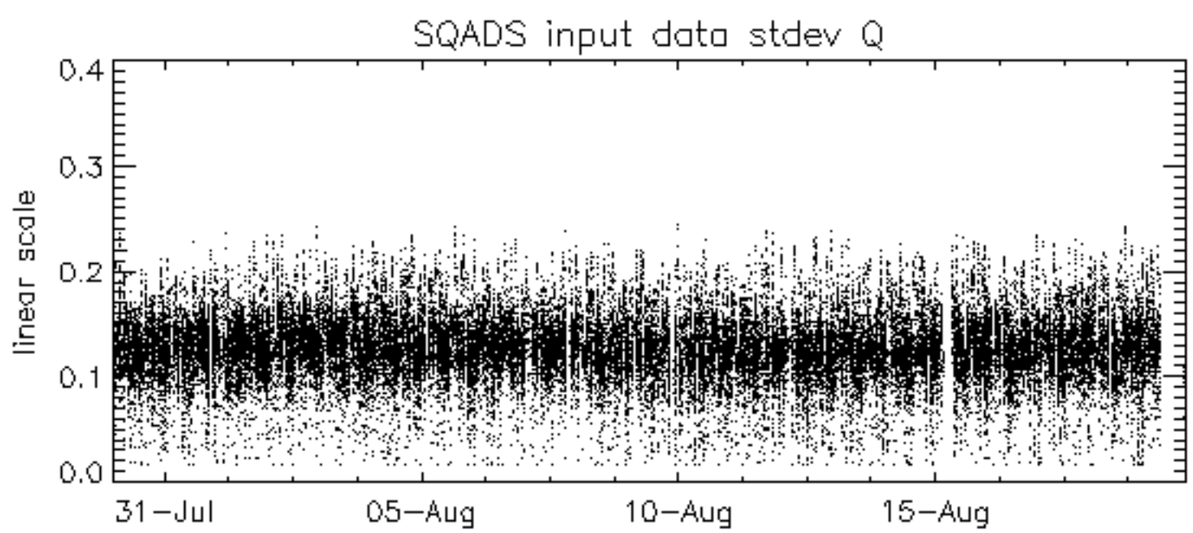

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug

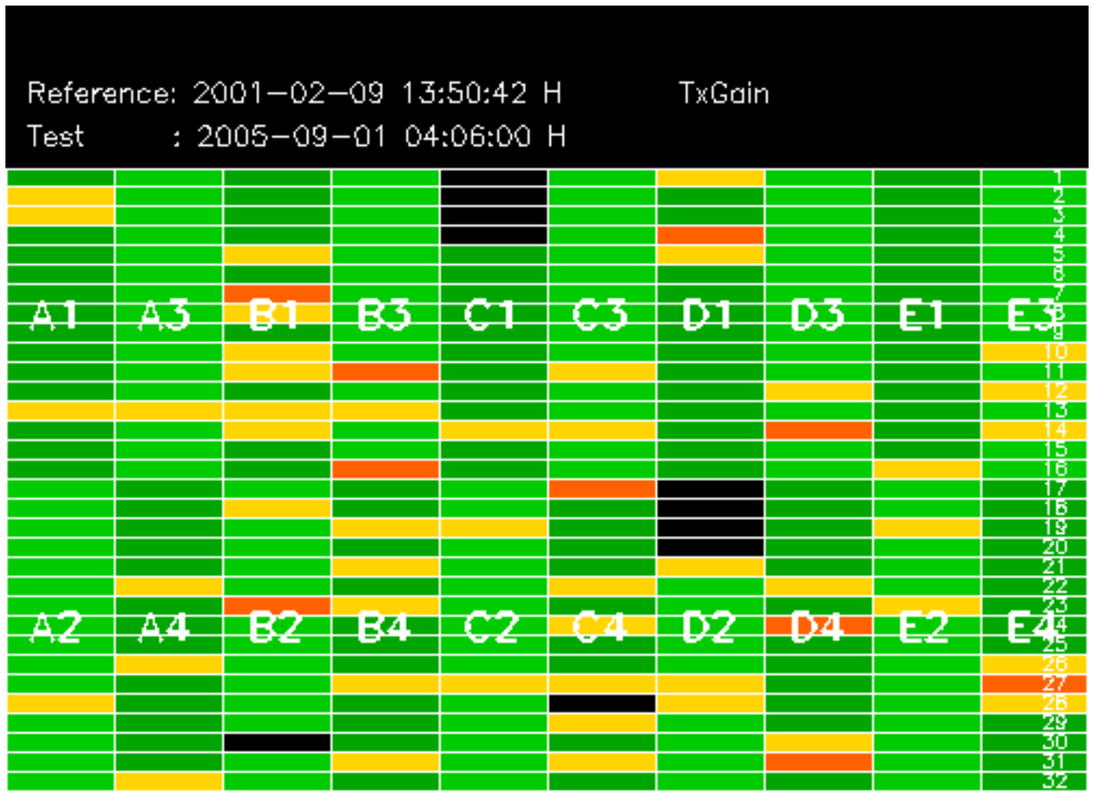

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug


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


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
31-Jul
05-Aug
10-Aug
15-Aug


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
31-Jul
05-Aug
10-Aug
15-Aug


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
31-Jul
05-Aug
10-Aug
15-Aug


Reference: 2001-02-09 13:50:42 H
Test : 2005-09-01 04:06:00 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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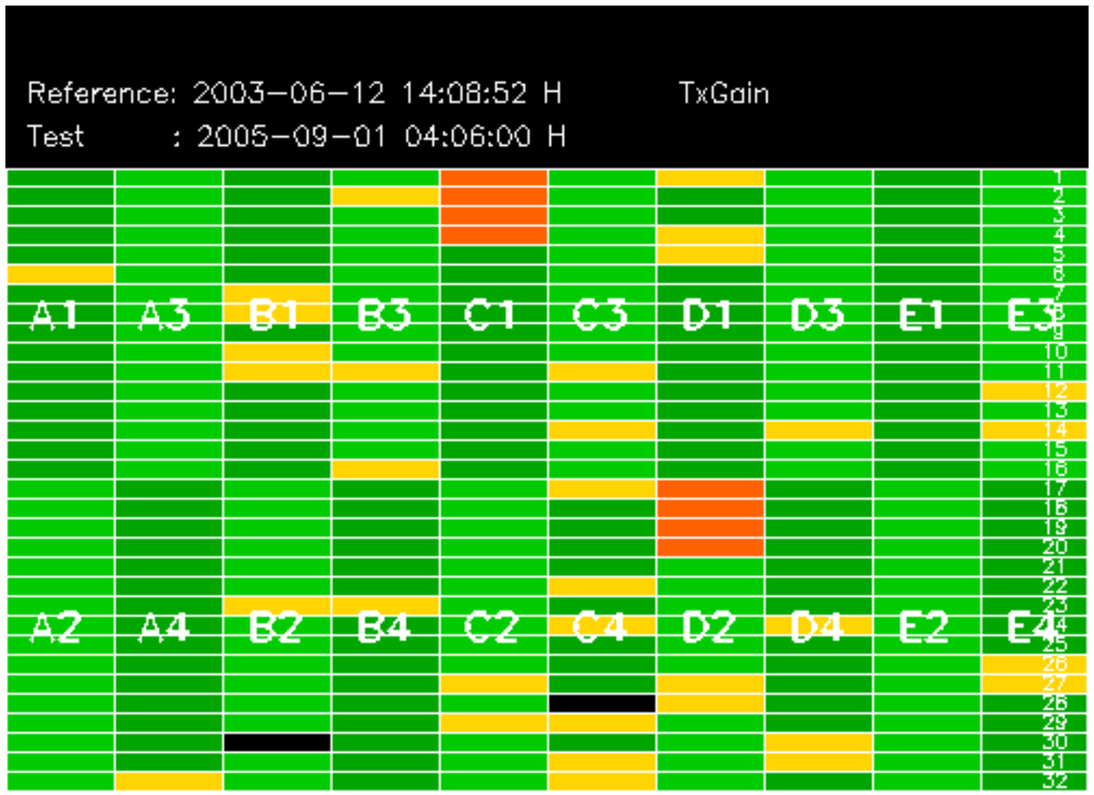
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-09-01 04:06:00 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
5
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8
9
10
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12
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14
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16
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18
19
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21
22
23
24
25
26
27
28
29
30
31
32

Reference: 2001-02-09 14:08:23 V
Test : 2005-09-02 03:34:23 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 : 2005-09-02 03:34:23 V
TxGain
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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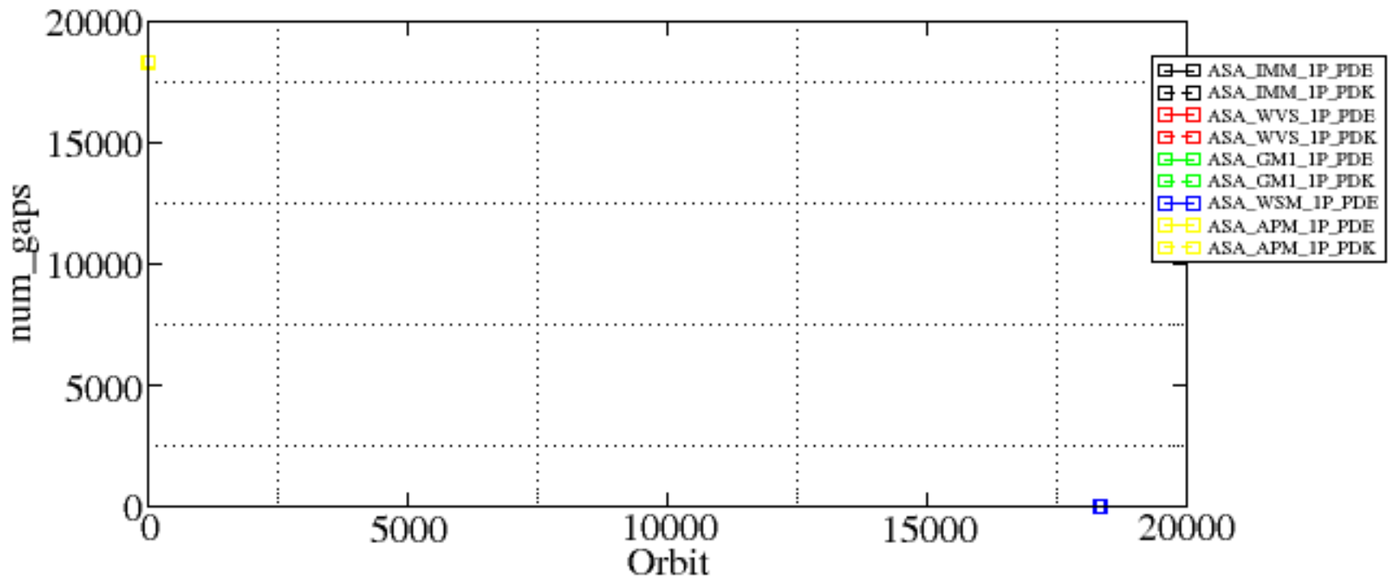
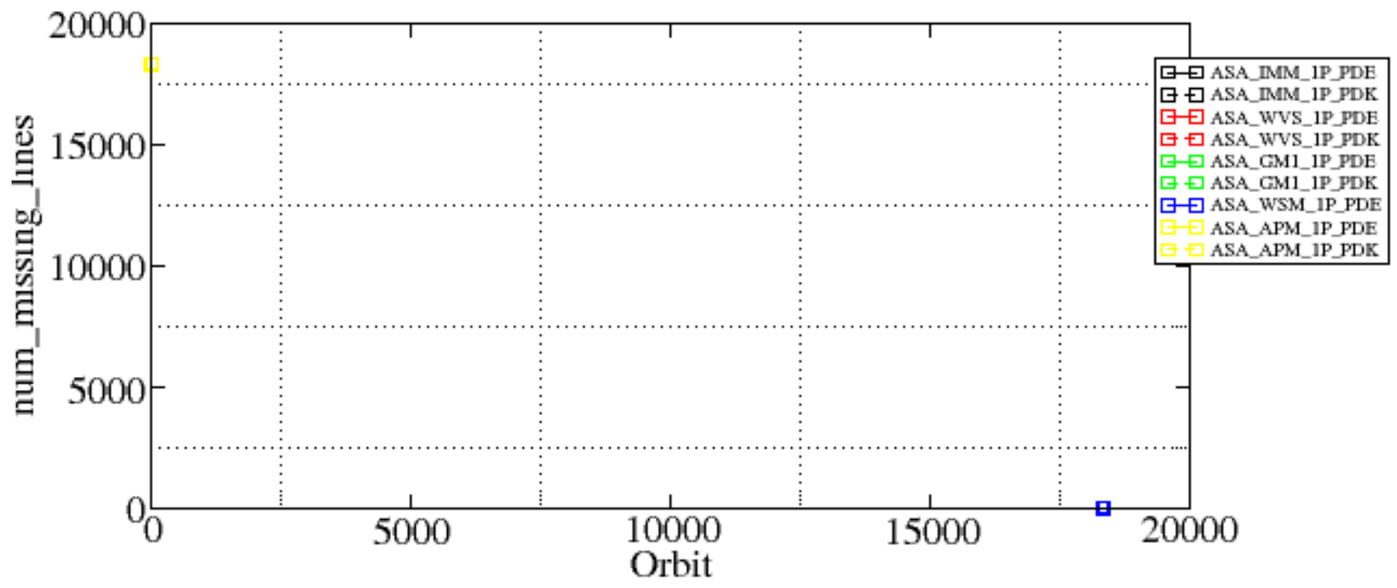
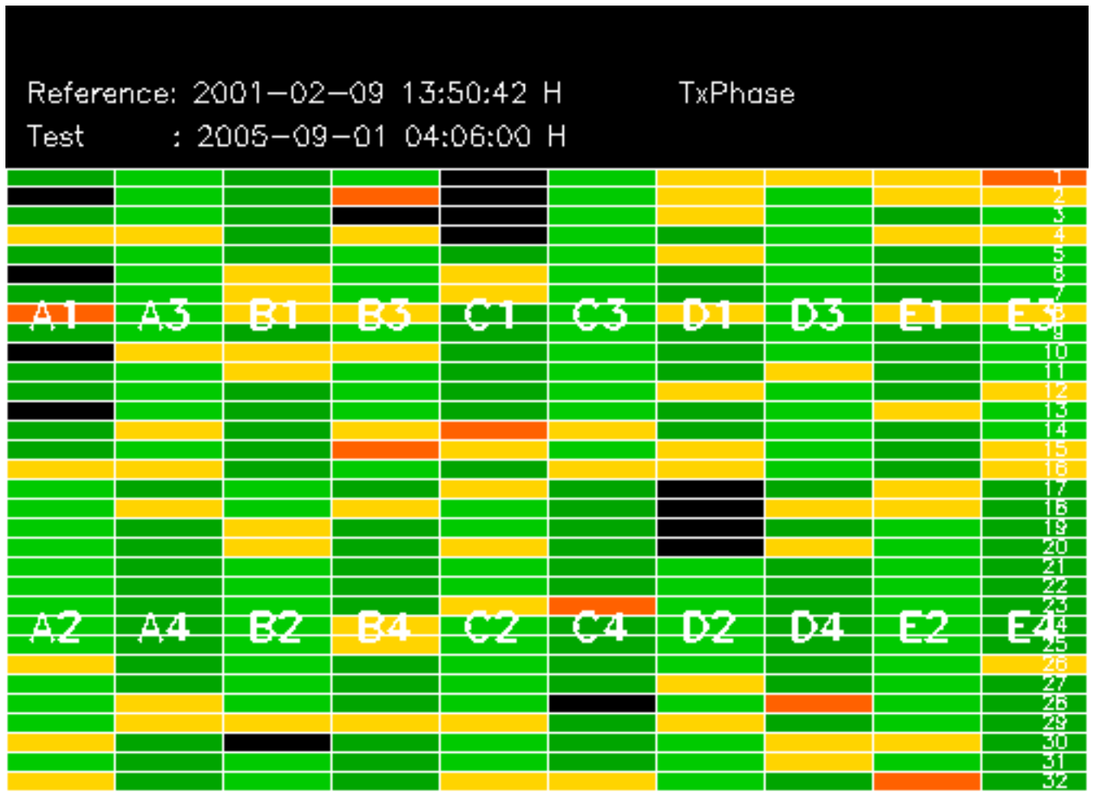
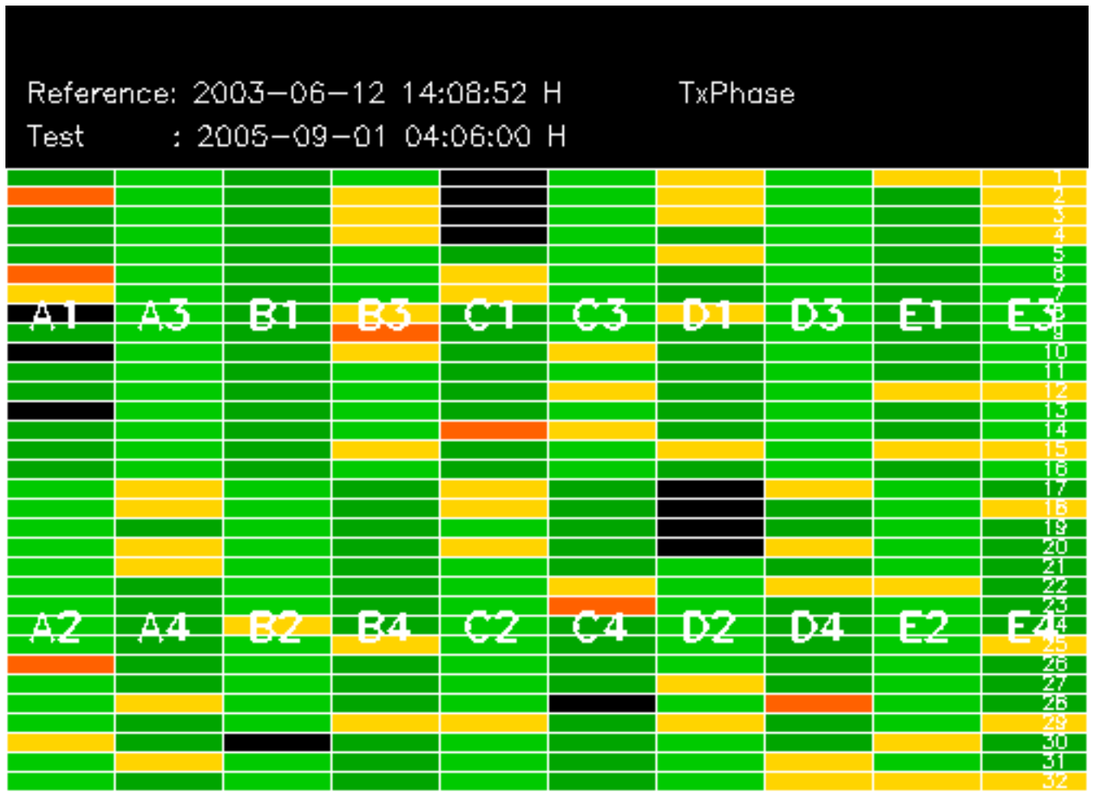
32

Summary of analysis for the last 3 days 2005090[123]
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_1PNPDE20050902_155120_000001062040_00254_18344_4314.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20050902_124321_000000532040_00253_18343_3026.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050901_230838_000001462040_00245_18335_6942.N1 </td> <td>0 </td> <td>42 </td></tr>
</table>


num_gaps
Orbit
0
5000
10000
15000
20000
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_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
Orbit
0
5000
10000
15000
20000
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_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-09-01 04:06:00 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 : 2005-09-01 04:06:00 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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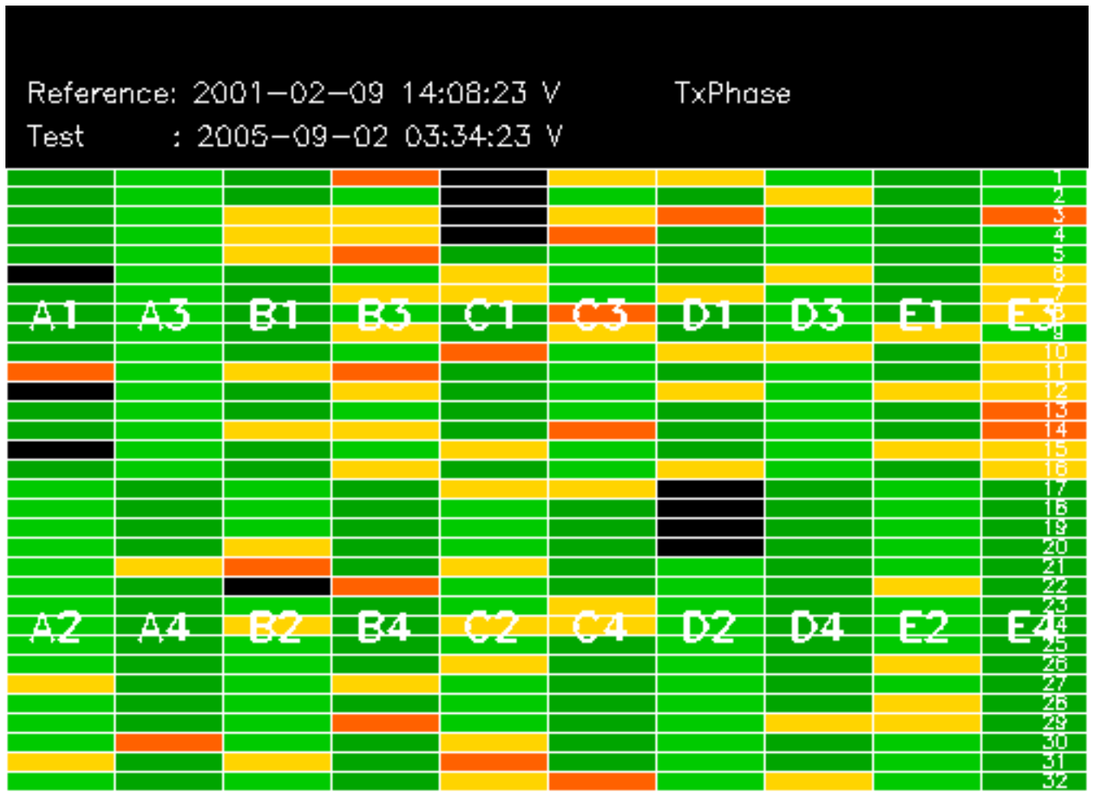
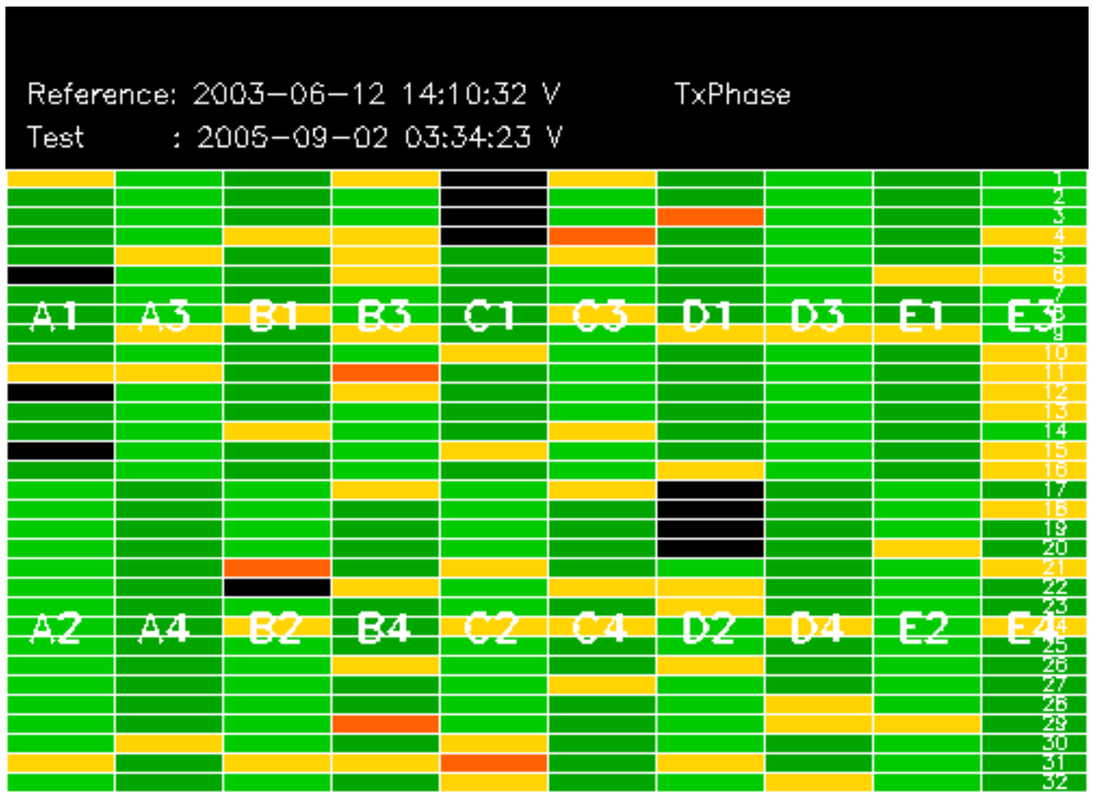
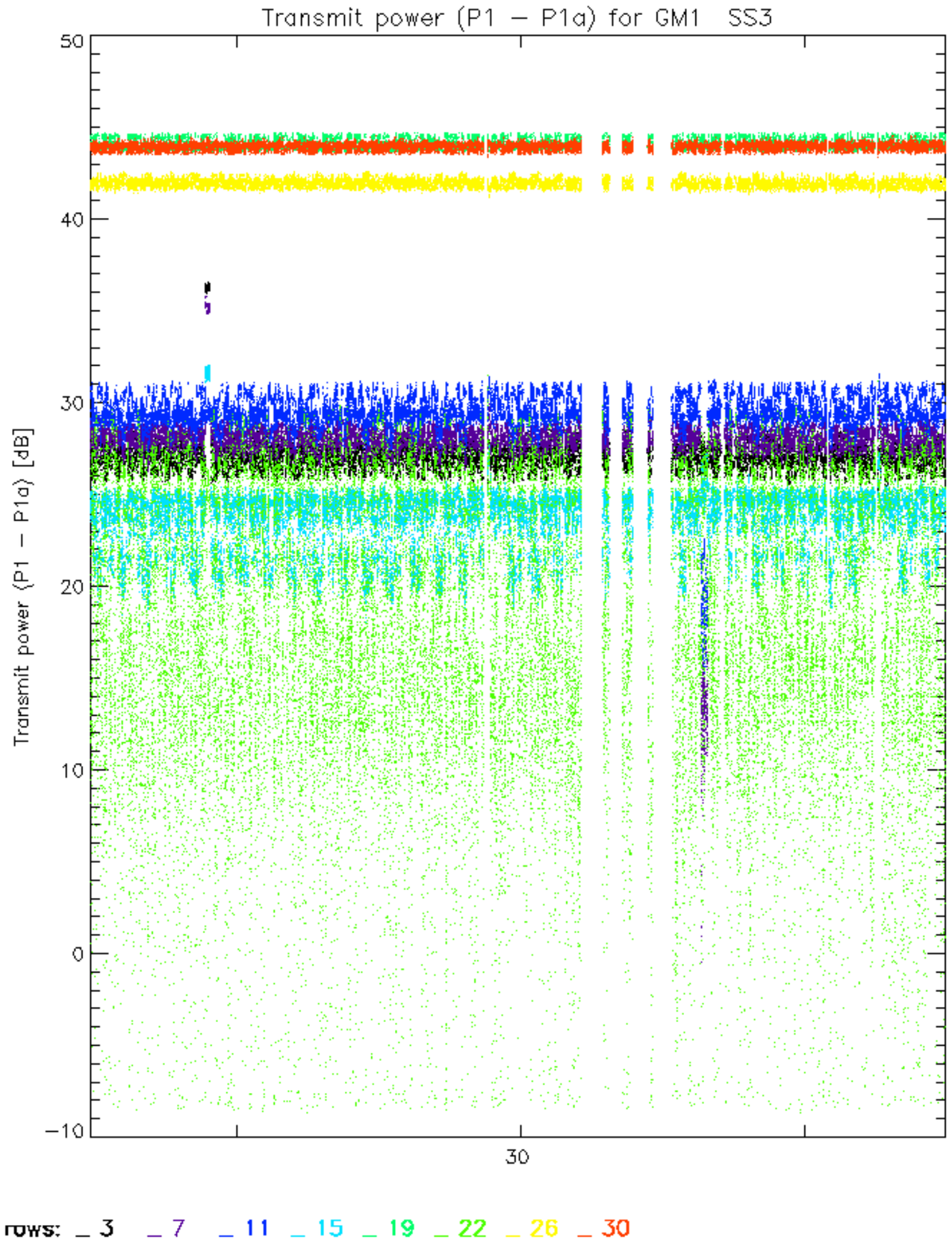
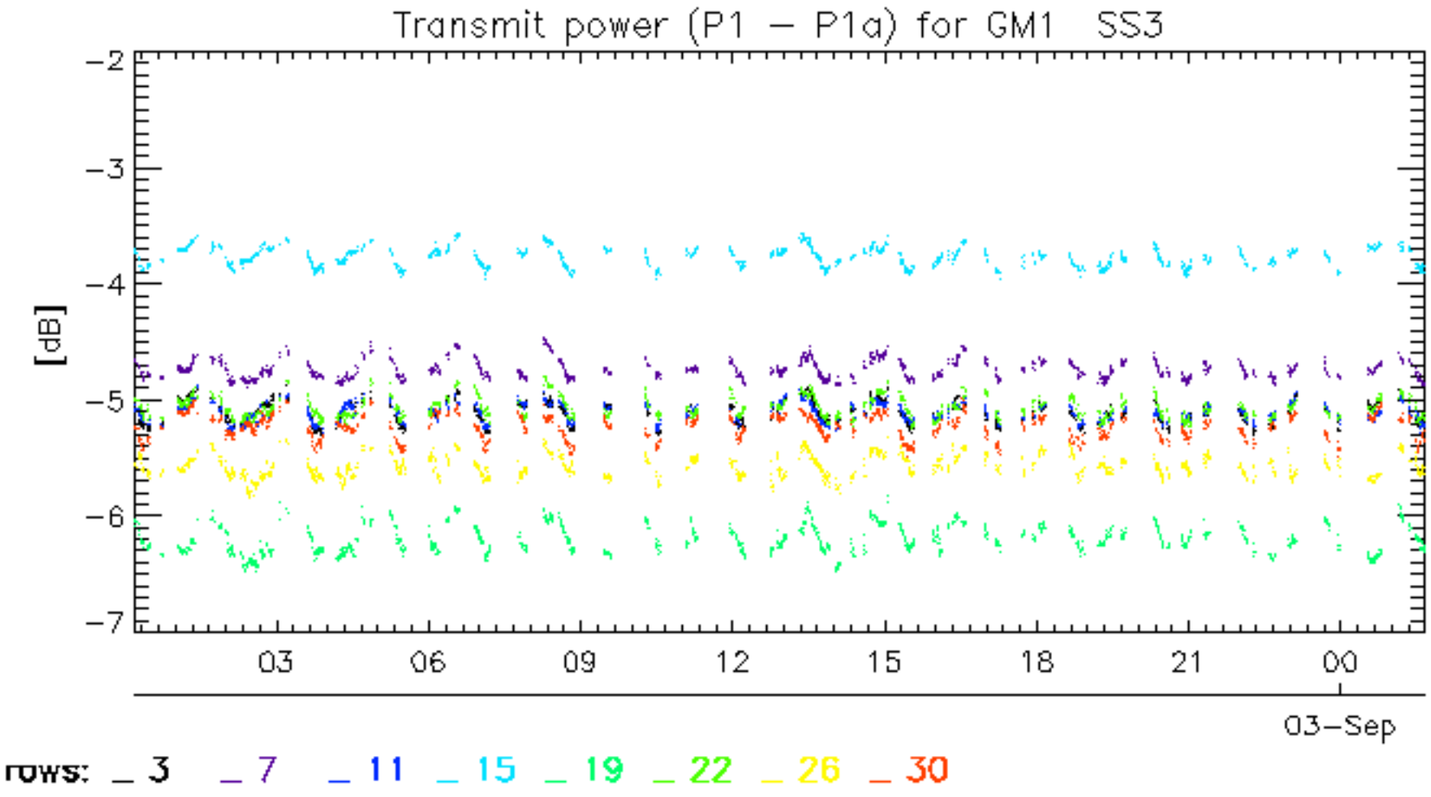
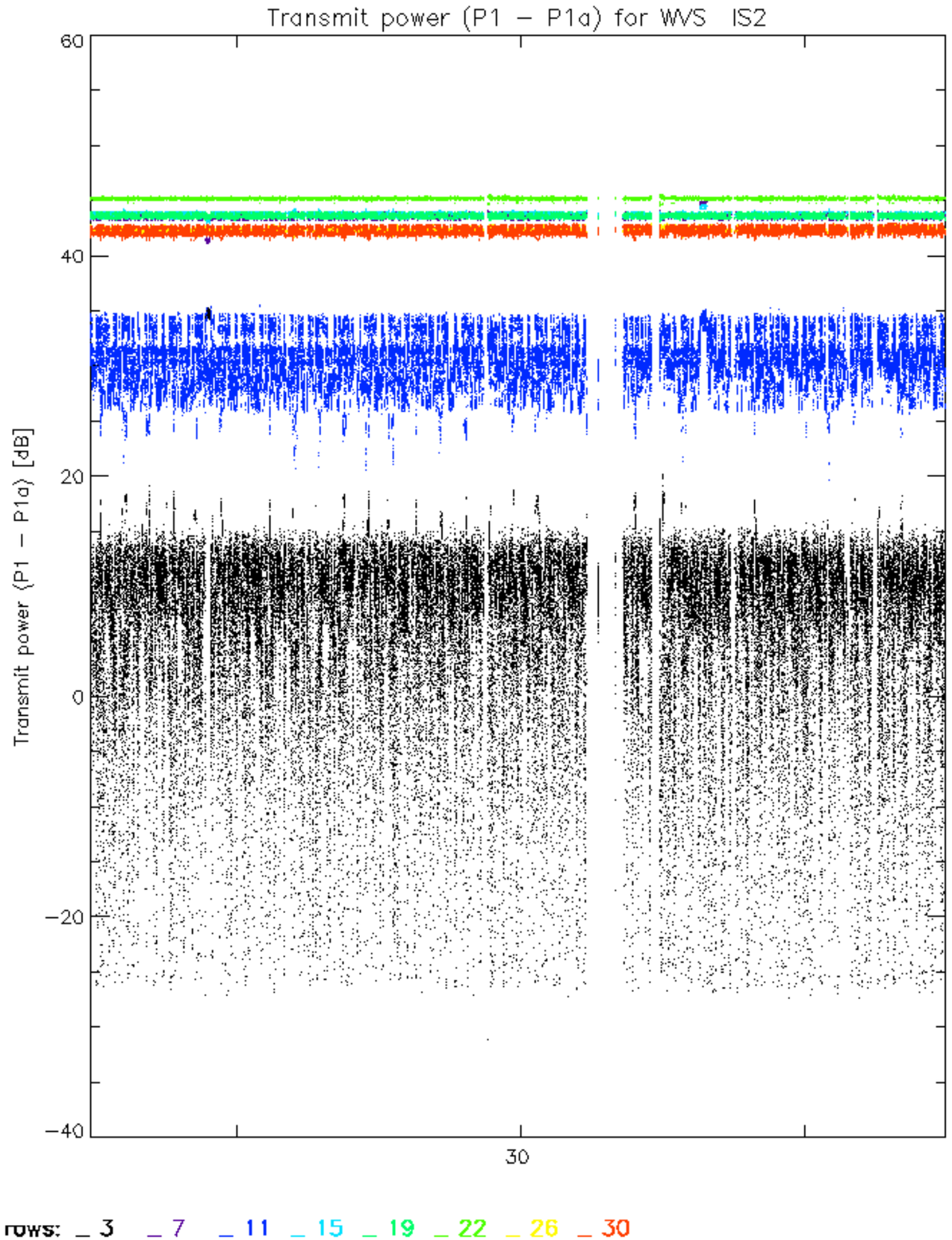
31
32

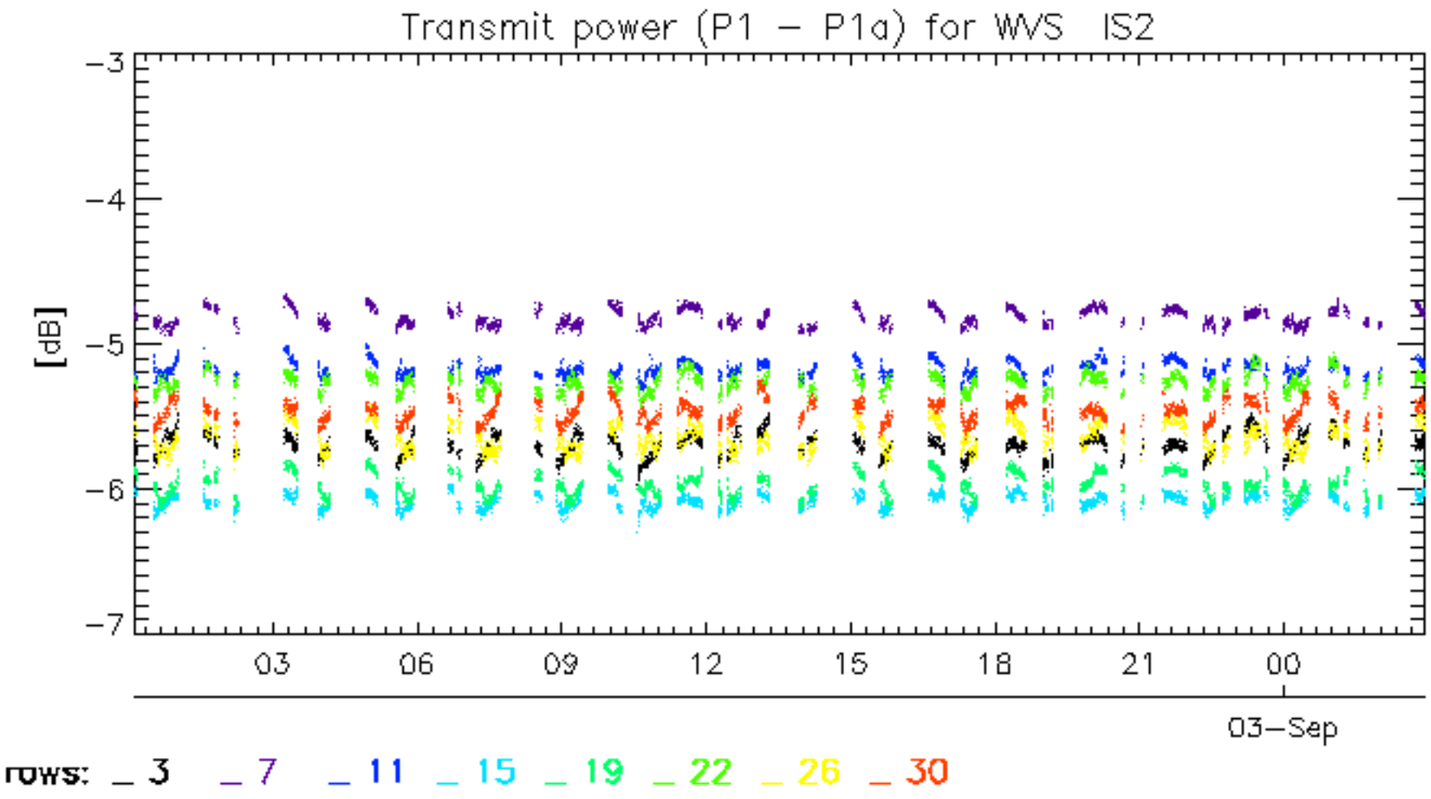

Reference: 2001-02-09 14:08:23 V
Test : 2005-09-02 03:34:23 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-09-02 03:34:23 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
30
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–Sep
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
30
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–Sep
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.