PRELIMINARY REPORT OF 060802

last update on Wed Aug 2 16:34:33 GMT 2006

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 2006-08-01 00:00:00 to 2006-08-02 16:34:33

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	36	74	8	6	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	36	74	8	6	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	36	74	8	6	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	36	74	8	6	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	33	56	28	15	81
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	33	56	28	15	81
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	33	56	28	15	81
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	56	28	15	81

2.3 - Browse Visual Inspection

No anomalies observed on available browse products

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	20060731 180519
H	20060801 173342

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	-3.935409	0.011570	-0.028964
7	P1	-3.098568	0.010354	0.013837
11	P1	-4.084063	0.013711	0.004474
15	P1	-6.174198	0.011394	-0.001118
19	P1	-3.407198	0.009920	-0.056810
22	P1	-4.551363	0.010142	-0.026072
26	P1	-3.925506	0.020002	0.022786
30	P1	-5.762908	0.009419	-0.000435
3	P1	-16.516258	0.304280	-0.087620
7	P1	-17.192324	0.103489	-0.004308
11	P1	-16.976446	0.281090	0.056641
15	P1	-13.099667	0.147176	0.086008
19	P1	-14.466640	0.053608	-0.087888
22	P1	-16.006317	0.427035	0.070759
26	P1	-15.115950	0.236567	0.041550
30	P1	-17.100945	0.344943	-0.007626

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.960083	0.087047	0.133267
7	P2	-21.904243	0.103896	0.085496
11	P2	-15.786693	0.120125	0.054047
15	P2	-7.126328	0.098934	0.025263
19	P2	-9.131847	0.090428	0.013463
22	P2	-18.150127	0.085776	0.000189
26	P2	-16.400002	0.092099	-0.008352
30	P2	-19.516432	0.092156	0.044197

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.173783	0.003054	0.004661
7	P3	-8.173783	0.003054	0.004661
11	P3	-8.173783	0.003054	0.004661
15	P3	-8.173783	0.003054	0.004661
19	P3	-8.173783	0.003054	0.004661
22	P3	-8.173783	0.003054	0.004661
26	P3	-8.173783	0.003054	0.004661
30	P3	-8.173783	0.003054	0.004661

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	-3.811039	0.022437	-0.069140
7	P1	-2.556170	0.008001	0.033100
11	P1	-2.855569	0.014256	0.024348
15	P1	-3.573445	0.029050	-0.017637
19	P1	-3.423037	0.024605	-0.027225
22	P1	-5.087106	0.019933	0.028401
26	P1	-5.861338	0.015969	-0.013832
30	P1	-5.196491	0.033114	-0.013120
3	P1	-11.597980	0.077329	-0.107270
7	P1	-9.966223	0.034729	0.039383
11	P1	-10.247058	0.055994	0.002171
15	P1	-10.753458	0.144150	0.048053
19	P1	-15.555592	0.505024	-0.123479
22	P1	-20.915627	1.248942	0.043460

26	P1	-16.276270	0.382304	0.194604
30	P1	-17.926693	0.409830	-0.118844

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.595373	0.071081	0.196374
7	P2	-22.379423	0.123502	0.138431
11	P2	-11.039702	0.041585	0.072780
15	P2	-4.907328	0.045322	0.035493
19	P2	-6.870592	0.040824	0.031654
22	P2	-8.194016	0.036315	0.013378
26	P2	-24.180792	0.060625	0.024156
30	P2	-22.006599	0.049349	0.052869

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.012444	0.003772	0.012900
7	P3	-8.012449	0.003778	0.013120
11	P3	-8.012357	0.003790	0.012529
15	P3	-8.012428	0.003780	0.012681
19	P3	-8.012403	0.003784	0.012635
22	P3	-8.012494	0.003774	0.012512
26	P3	-8.012425	0.003772	0.012718
30	P3	-8.012381	0.003777	0.012688

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	0.000562869
	stdev	1.70366e-07
MEAN Q	mean	0.000535507
	stdev	2.15547e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.137659
	stdev	0.00110982
STDEV Q	mean	0.138019
	stdev	0.00112796

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006080[112]
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_1PNPDE20060802_004523_000001932050_00016_23116_2770.N1	1	0
ASA_IMM_1PNPDE20060802_010204_000000692050_00017_23117_2773.N1	1	0
ASA_WSM_1PNPDE20060801_181151_000000852050_00013_23113_5337.N1	0	8

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)

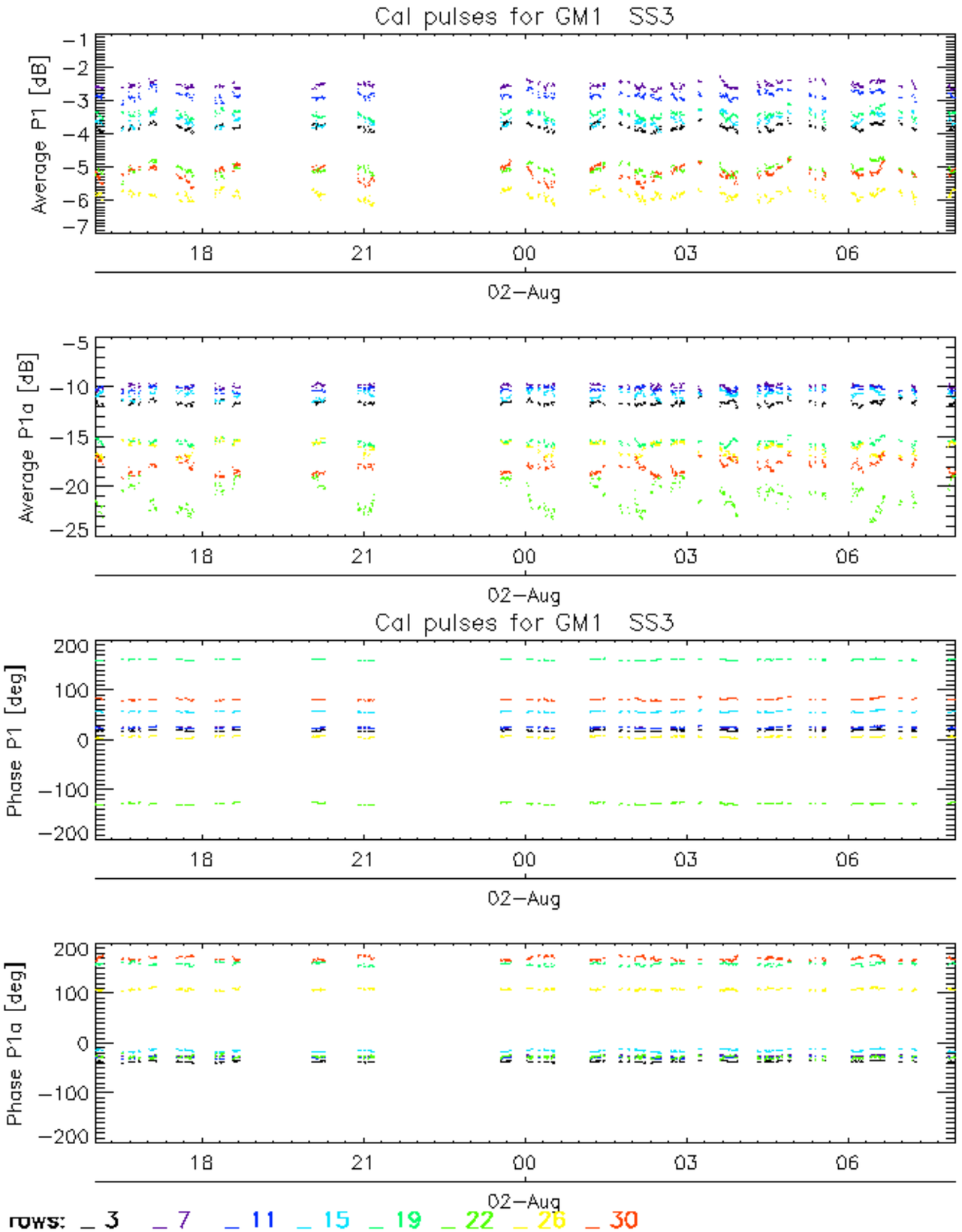
Acsending
Descending

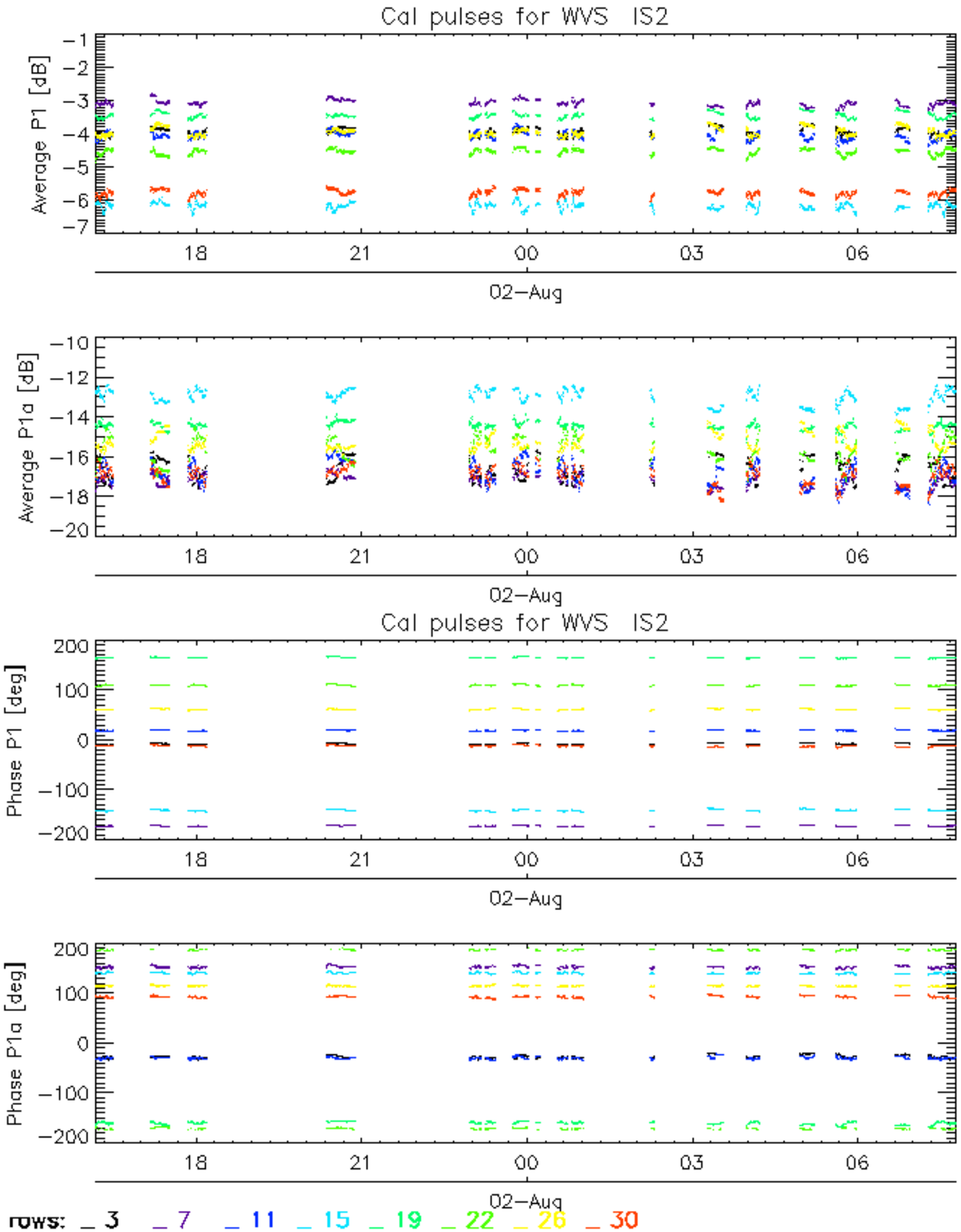
7.5 - Absolute Doppler for GM1

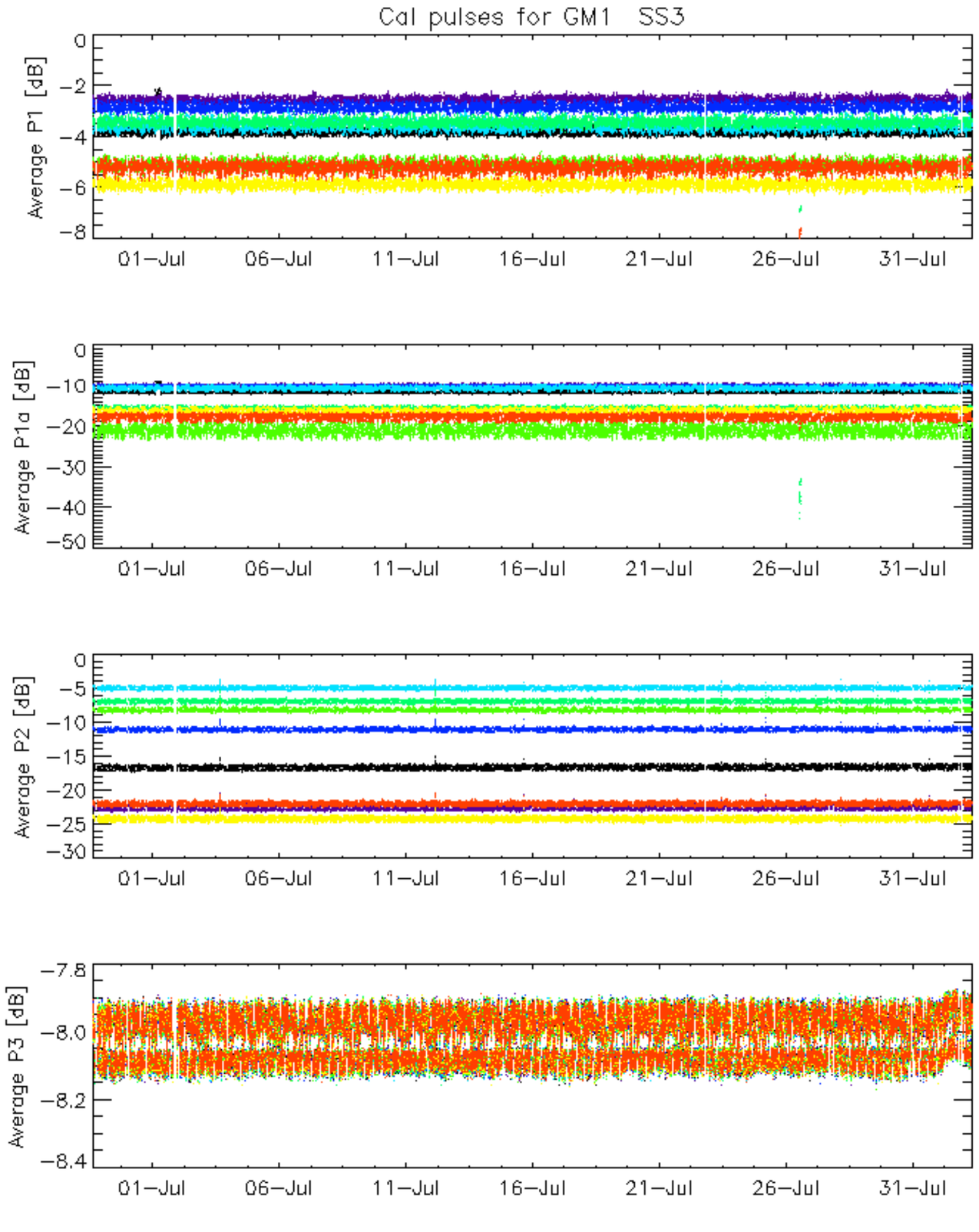
Evolution of Absolute Doppler
Acsending
Descending

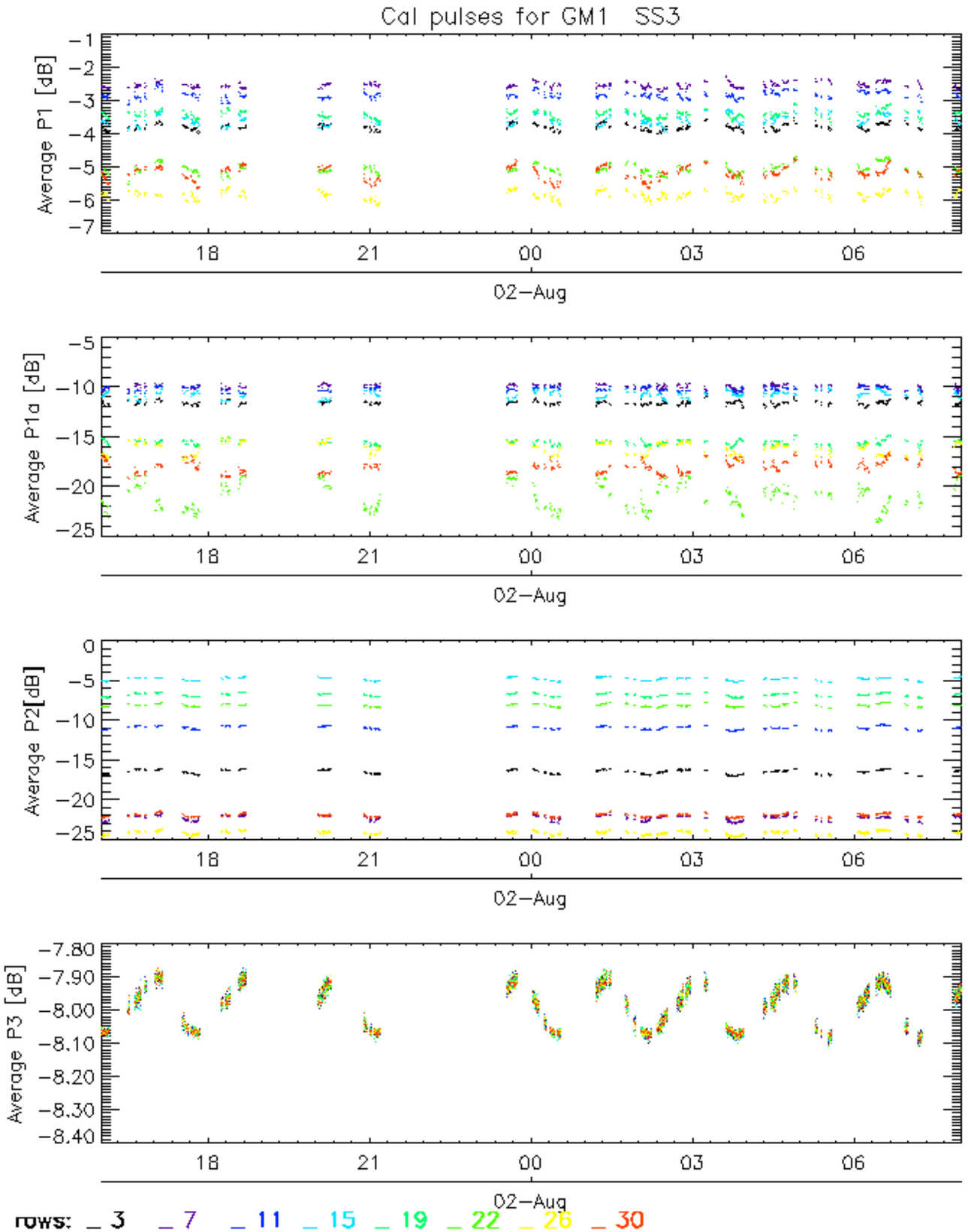
7.6 - Doppler evolution versus ANX for GM1

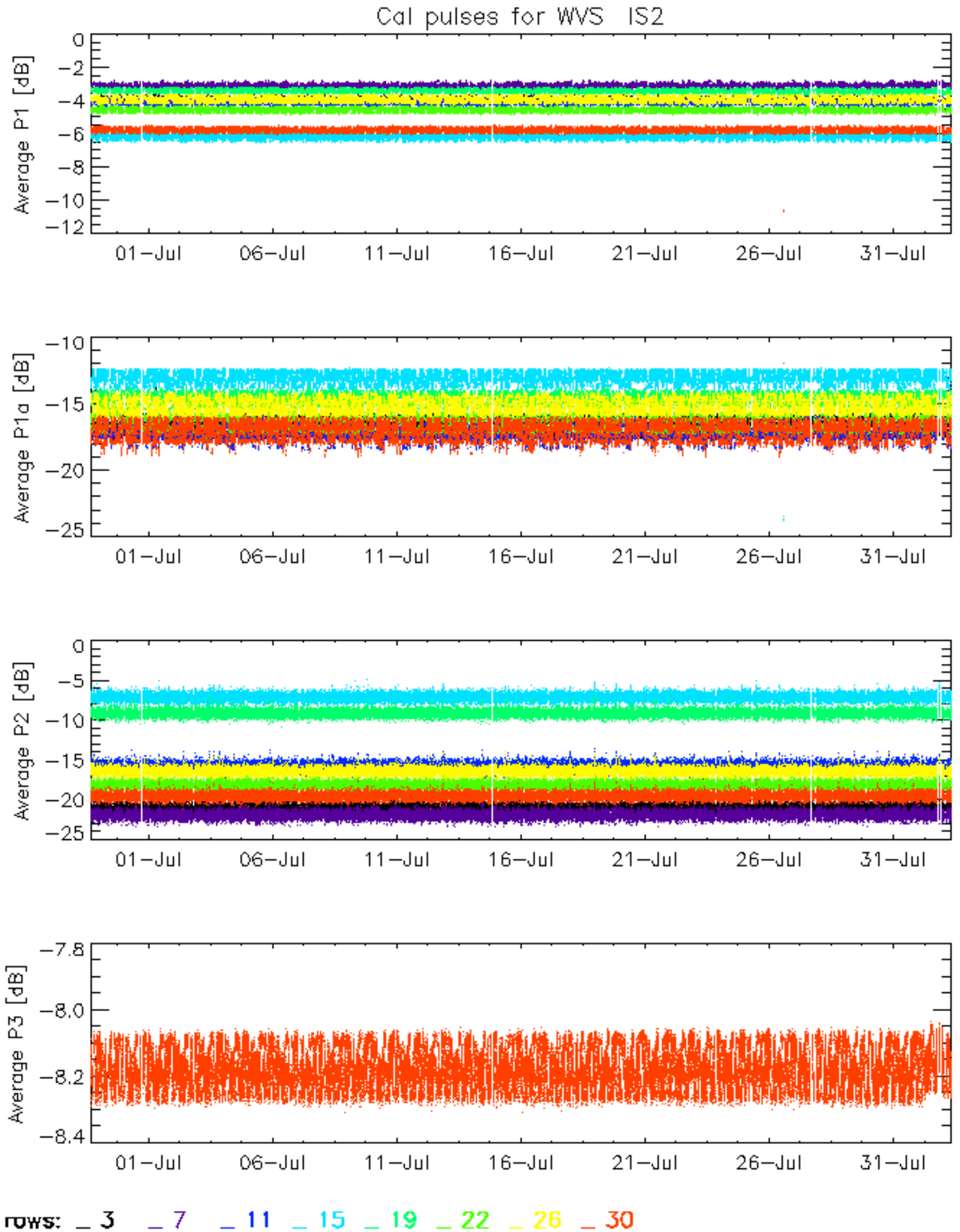
Evolution Doppler error versus ANX

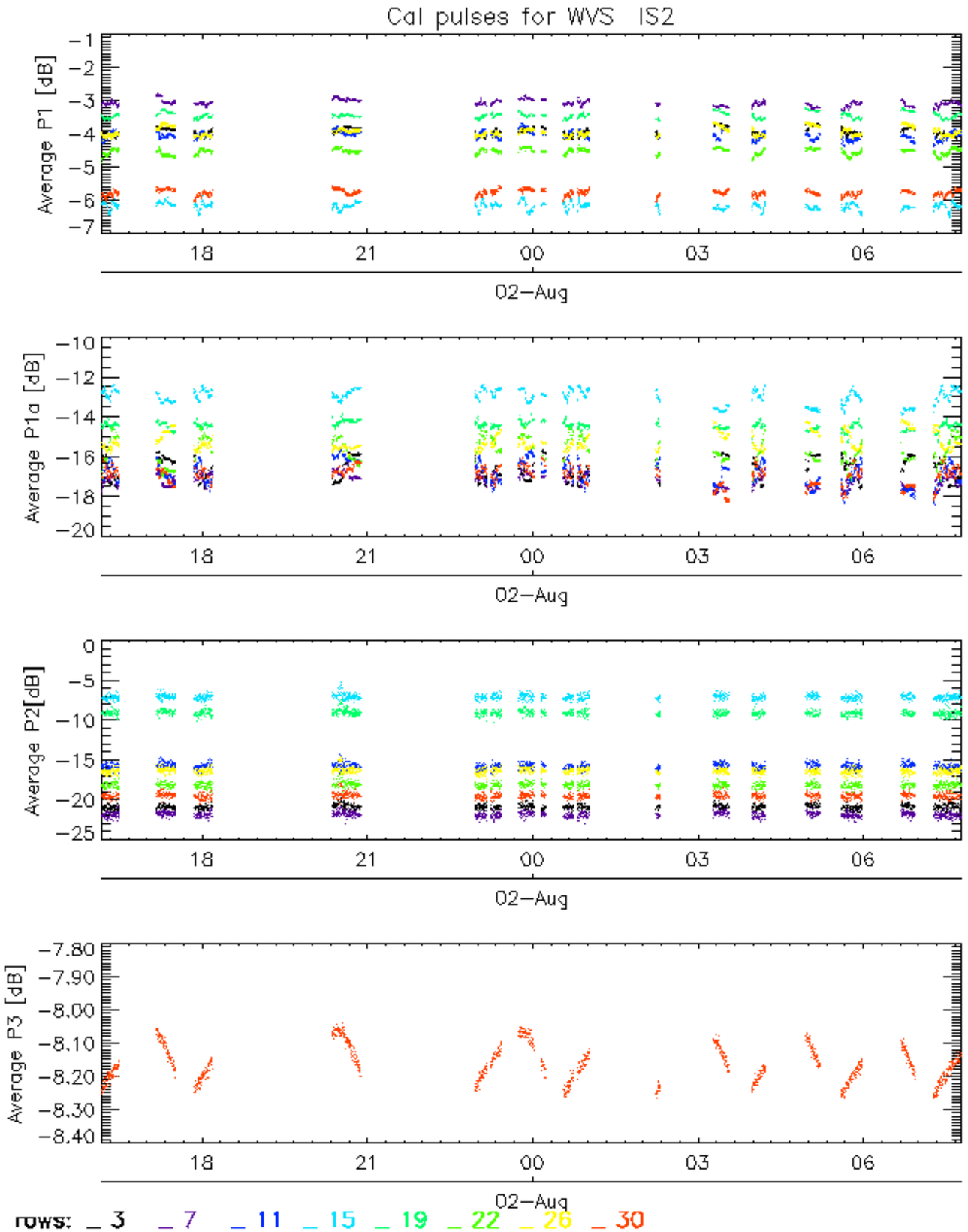

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
02−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
02−Aug
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
02−Aug
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
02−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
02−Aug
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
02−Aug
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
02−Aug
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
02−Aug
rows: 3 7 11 15 19 22 26 30


Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

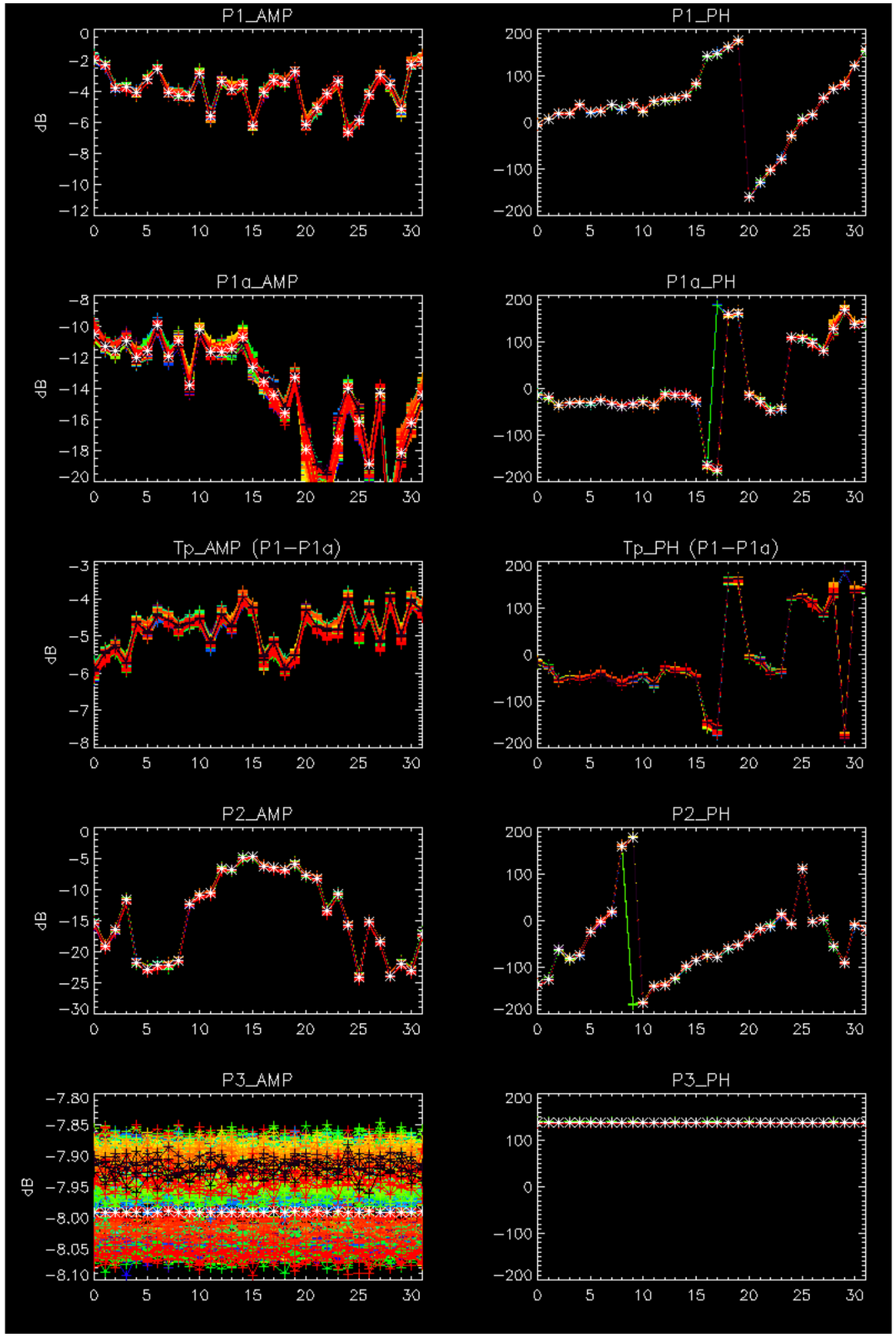

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
02−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
02−Aug
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
02−Aug
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
02−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

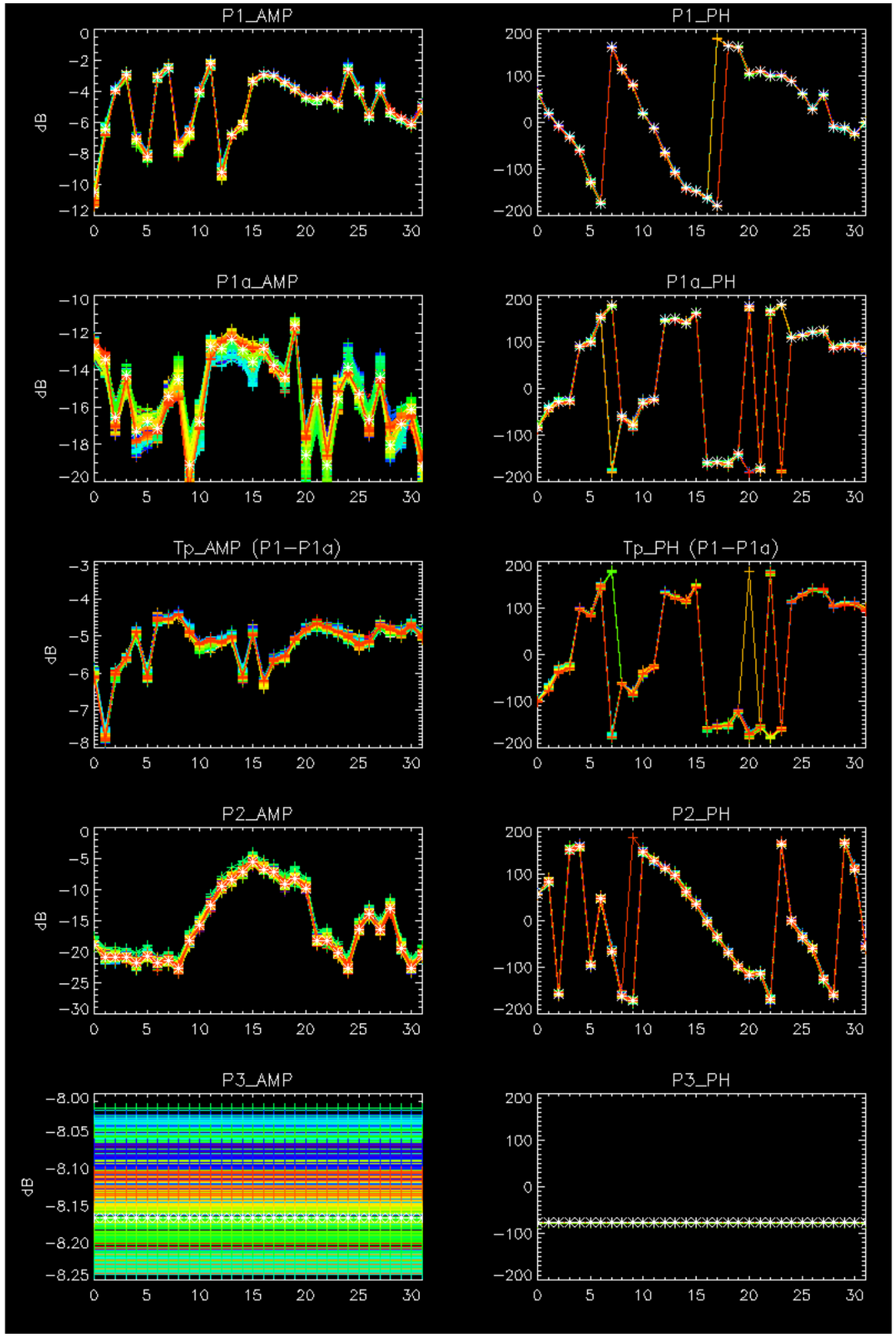

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
02−Aug
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
02−Aug
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
02−Aug
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
02−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No anomalies observed on available browse products

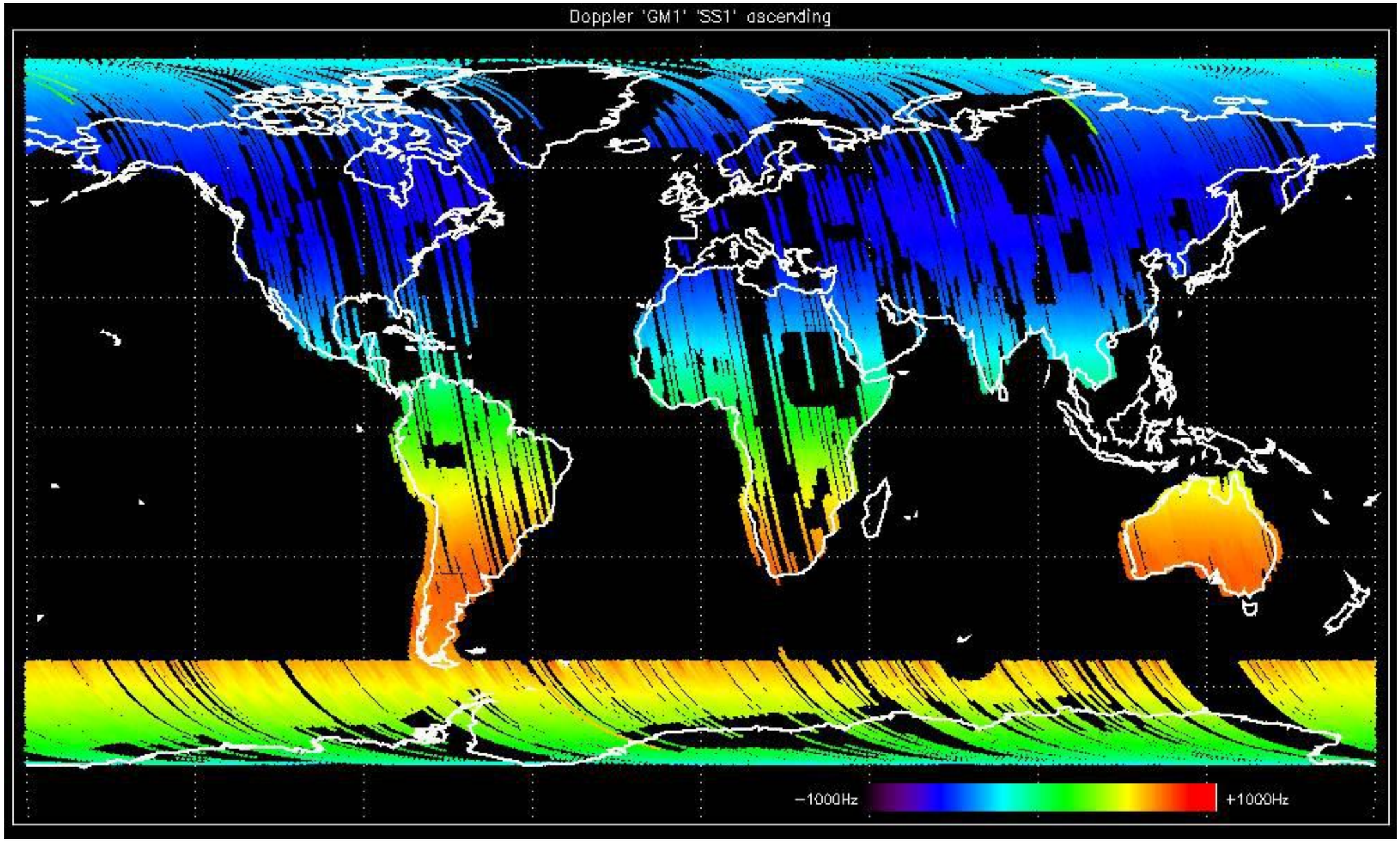
No anomalies observed.

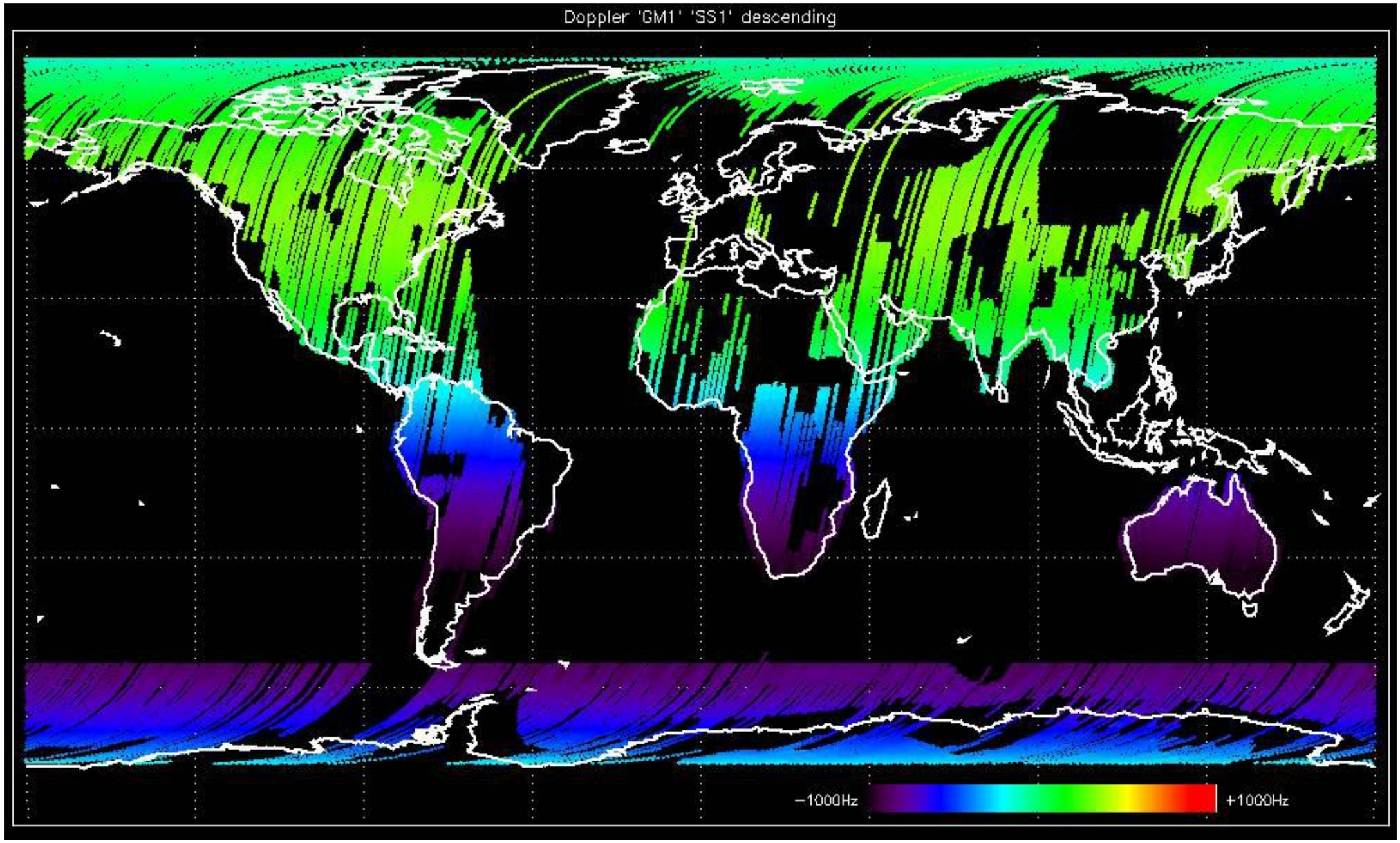

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

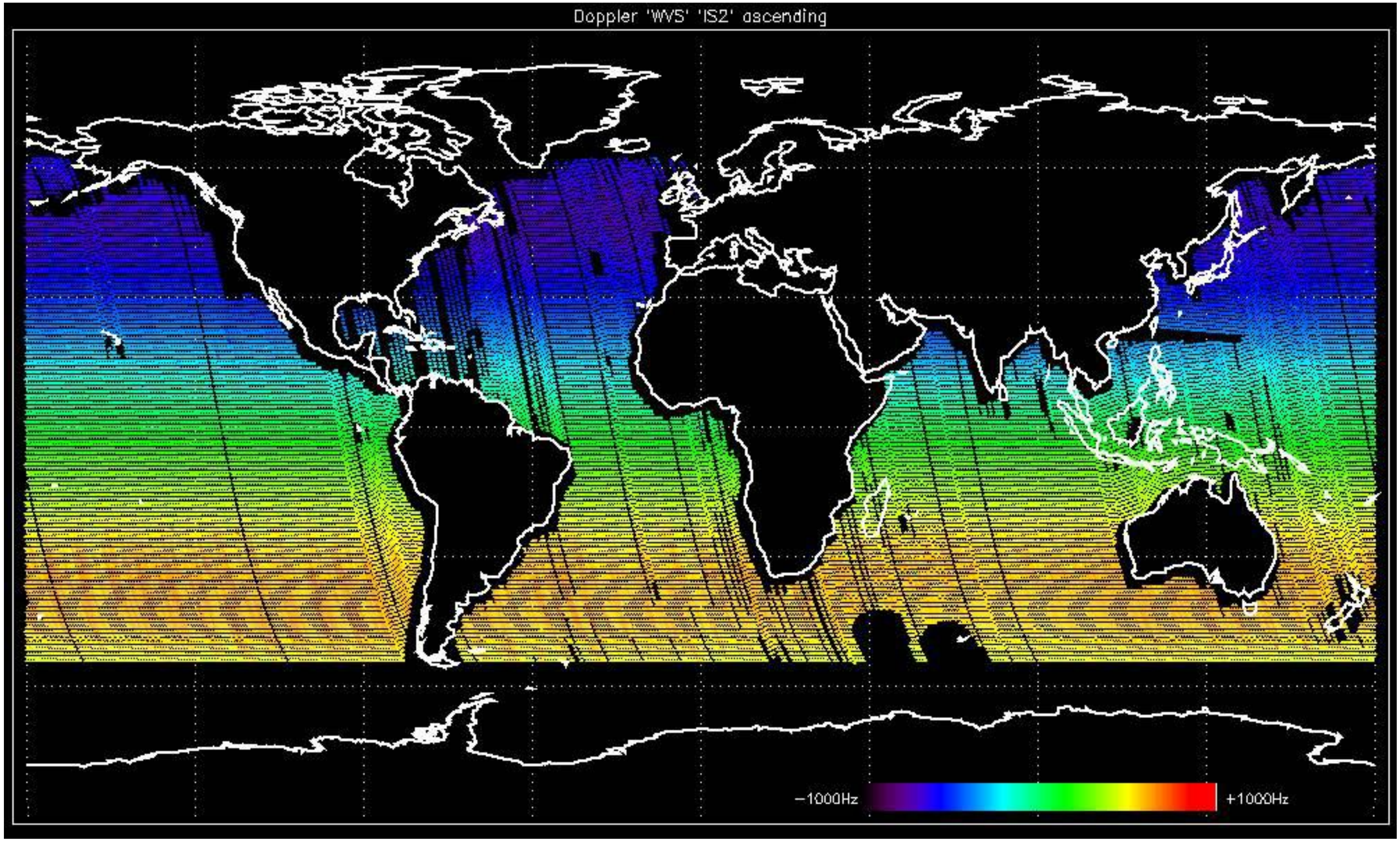

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

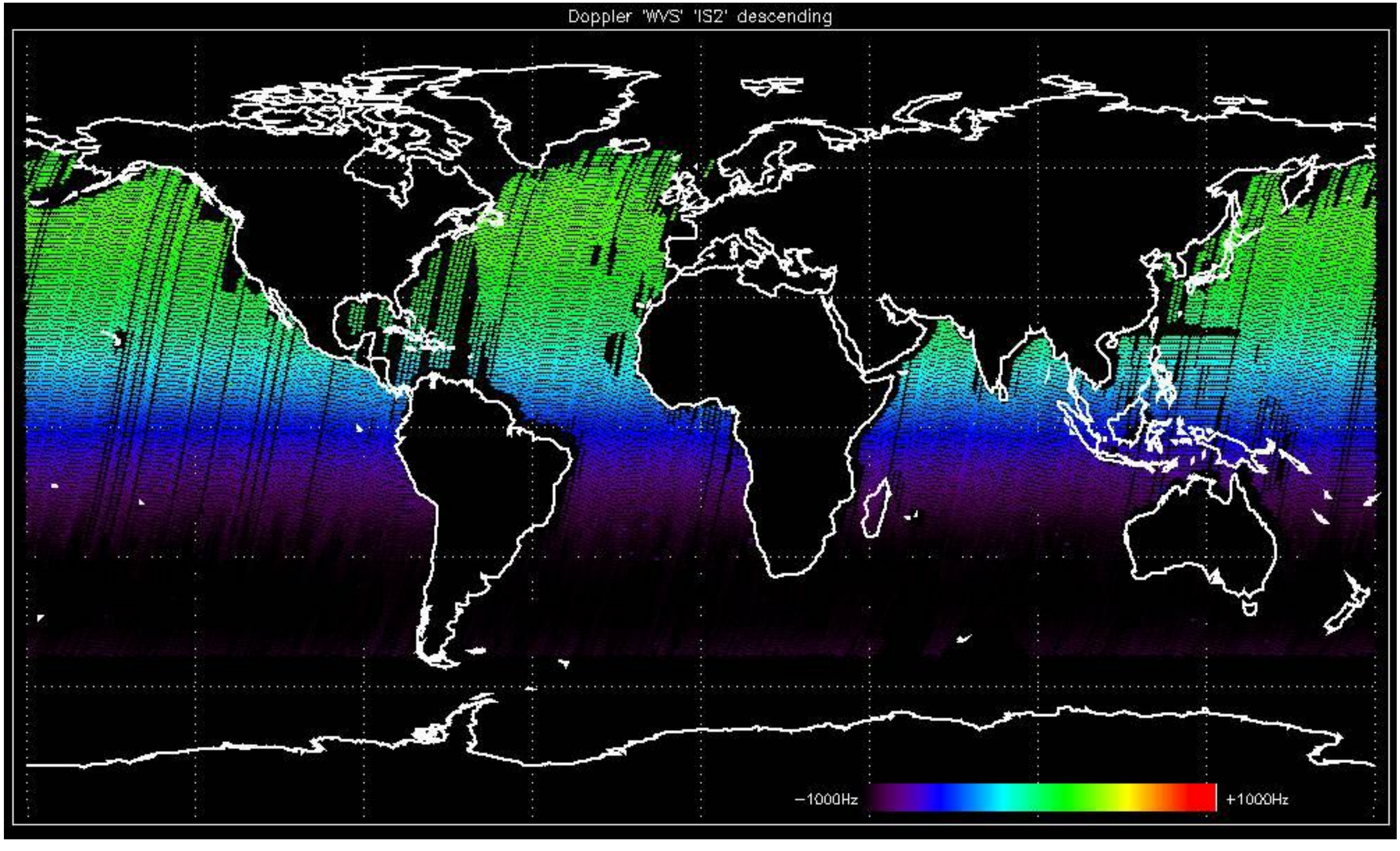
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

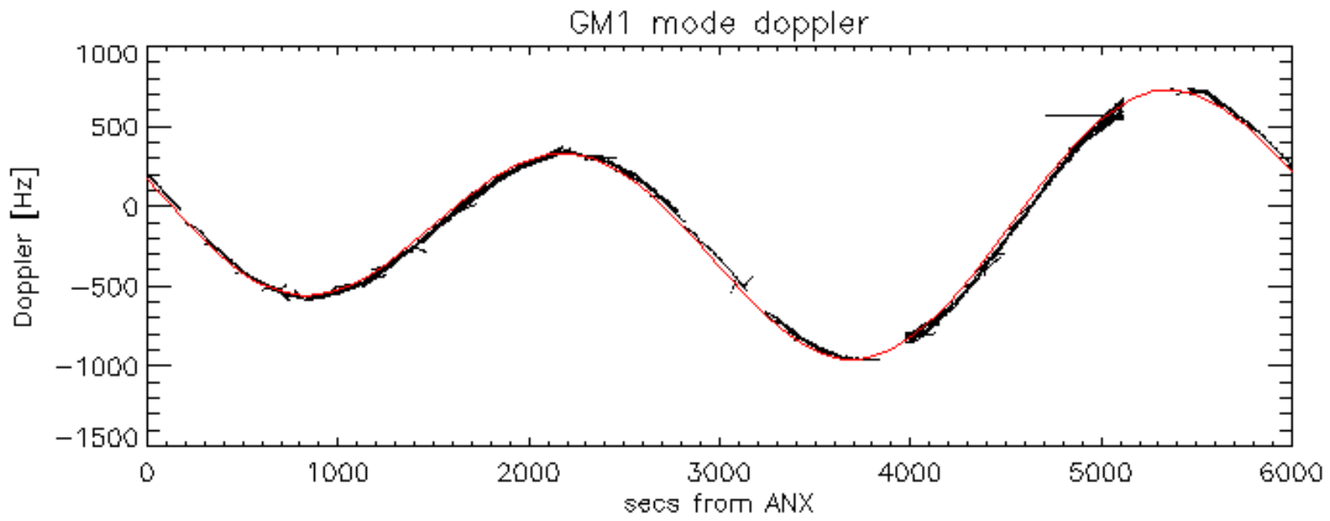
Preliminary report.The data is not yet controled

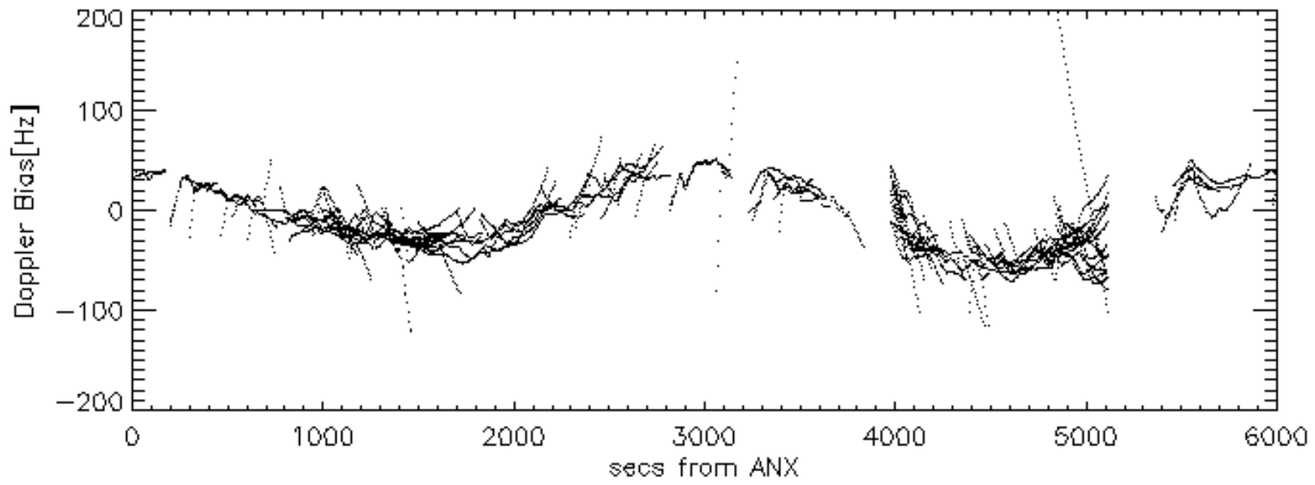

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

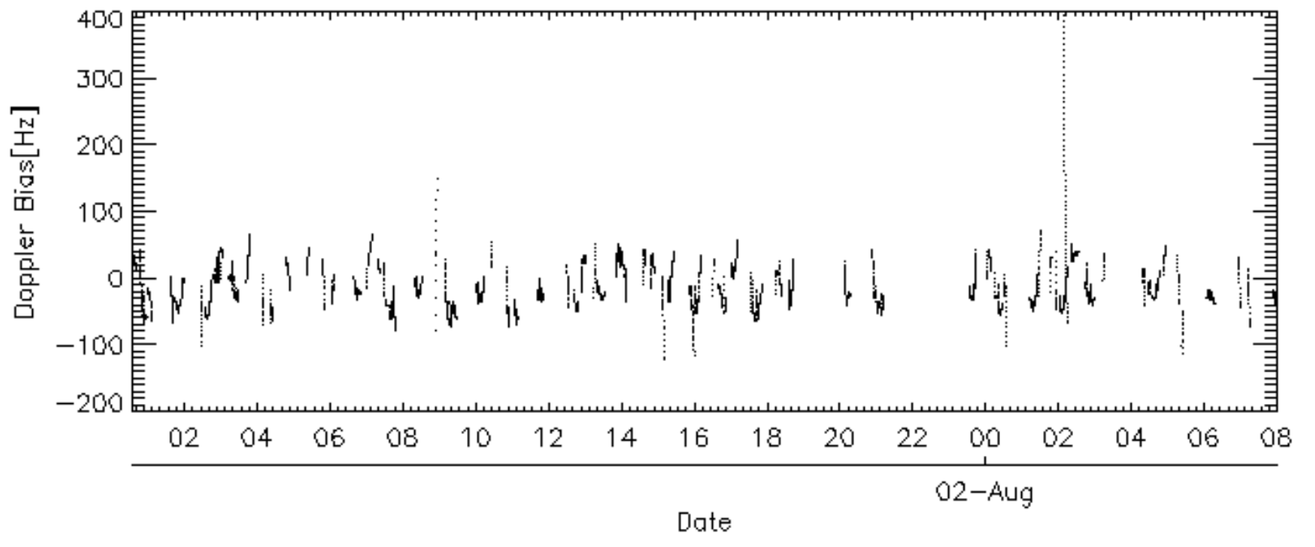

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

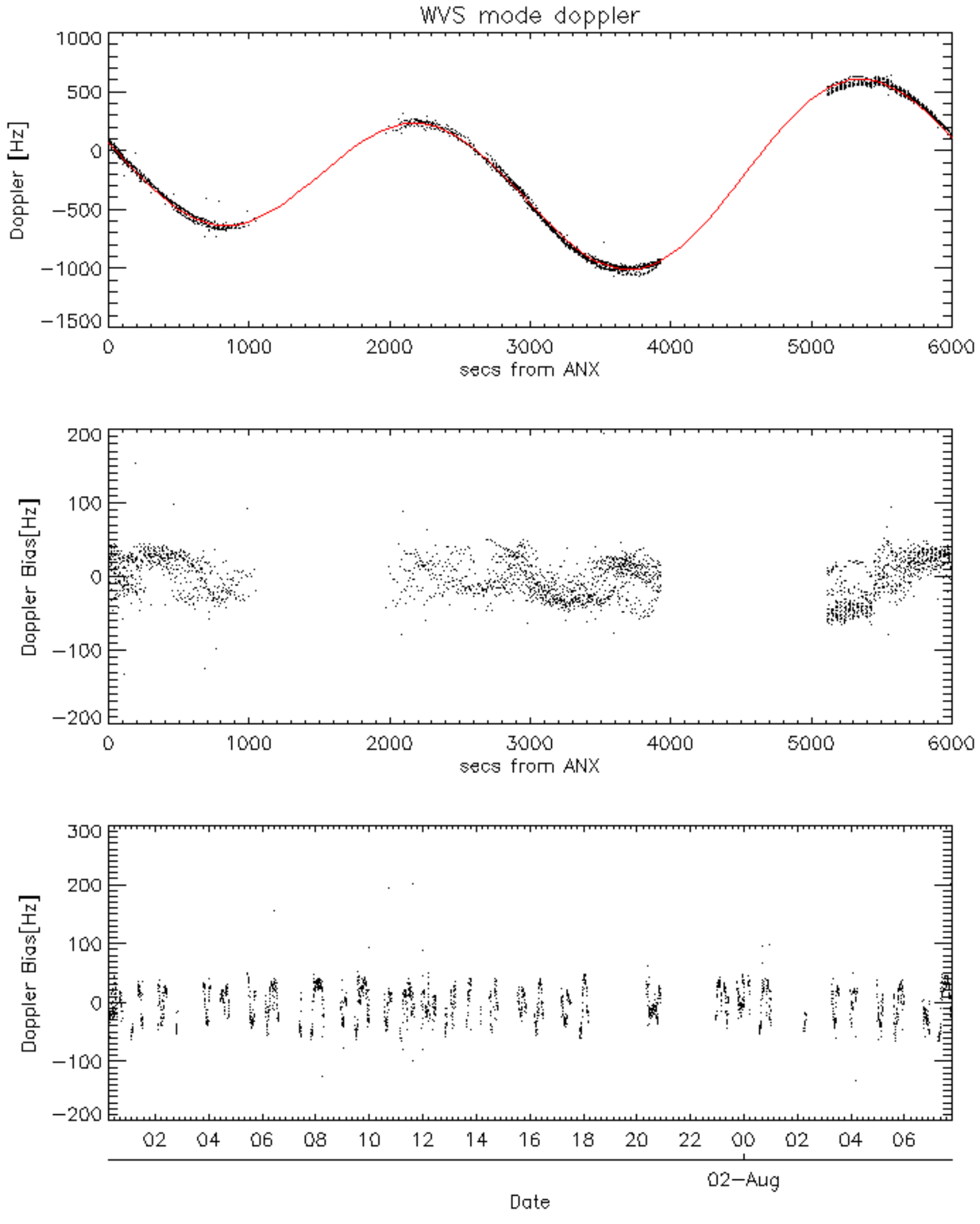

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

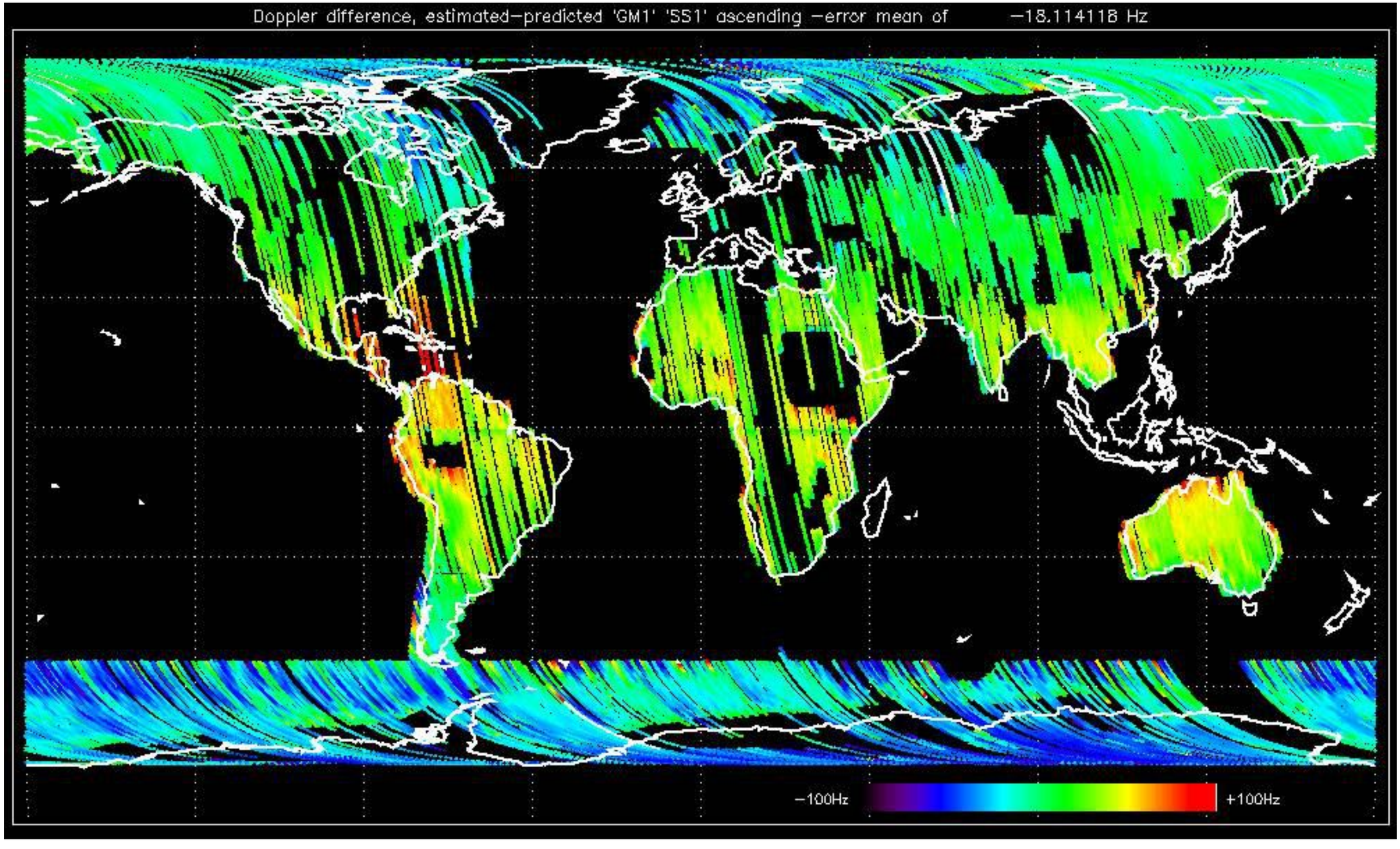

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

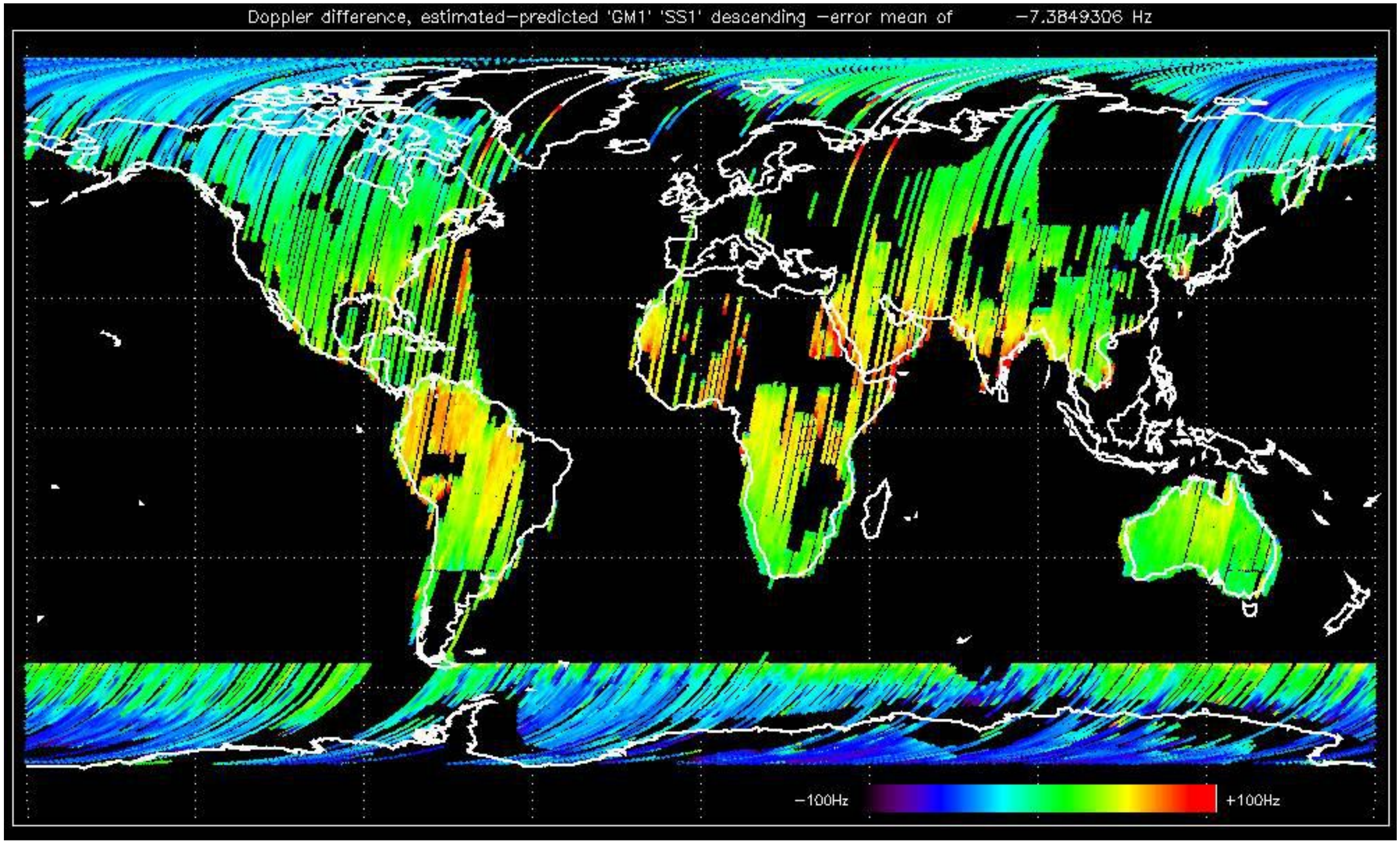

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

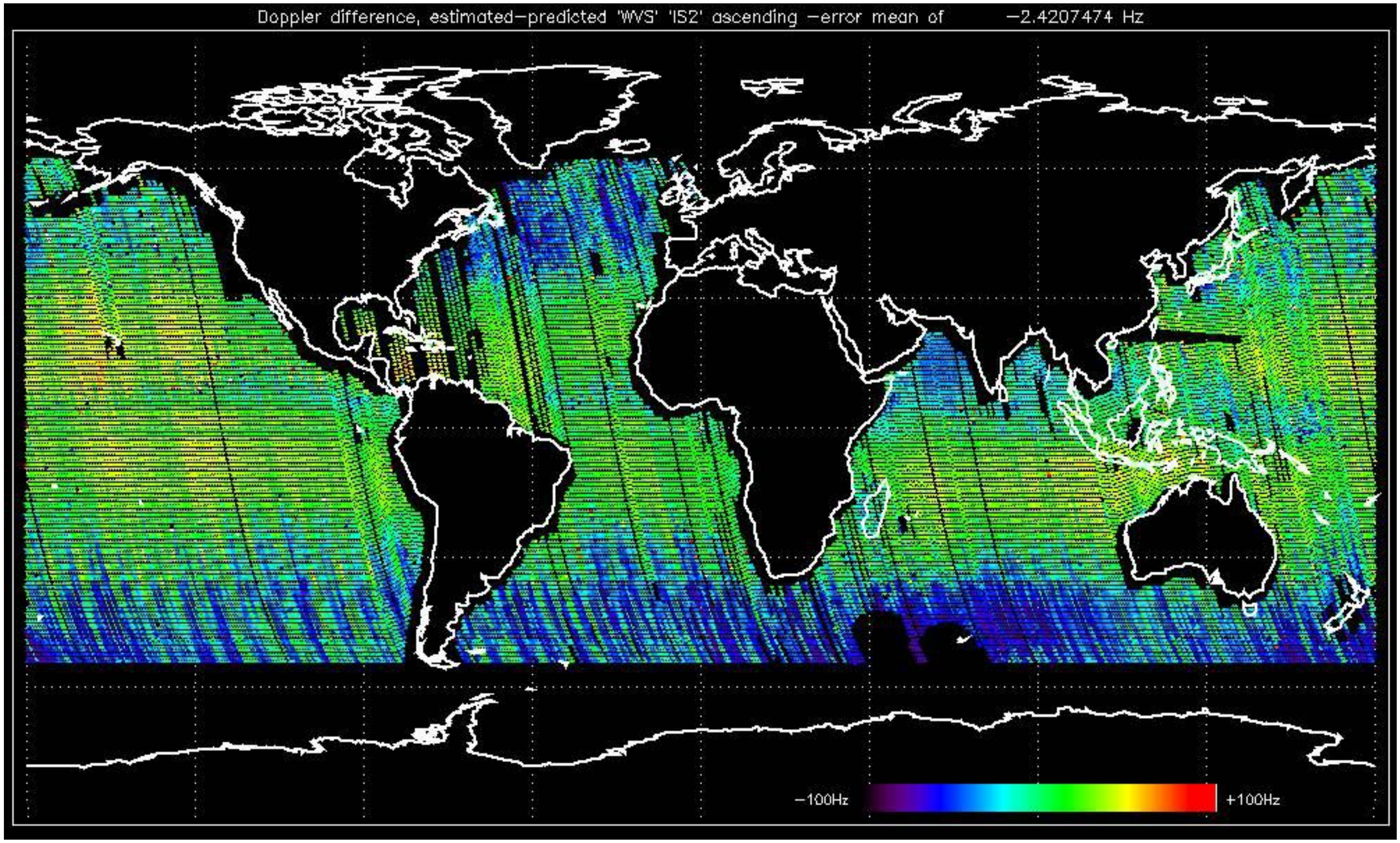

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

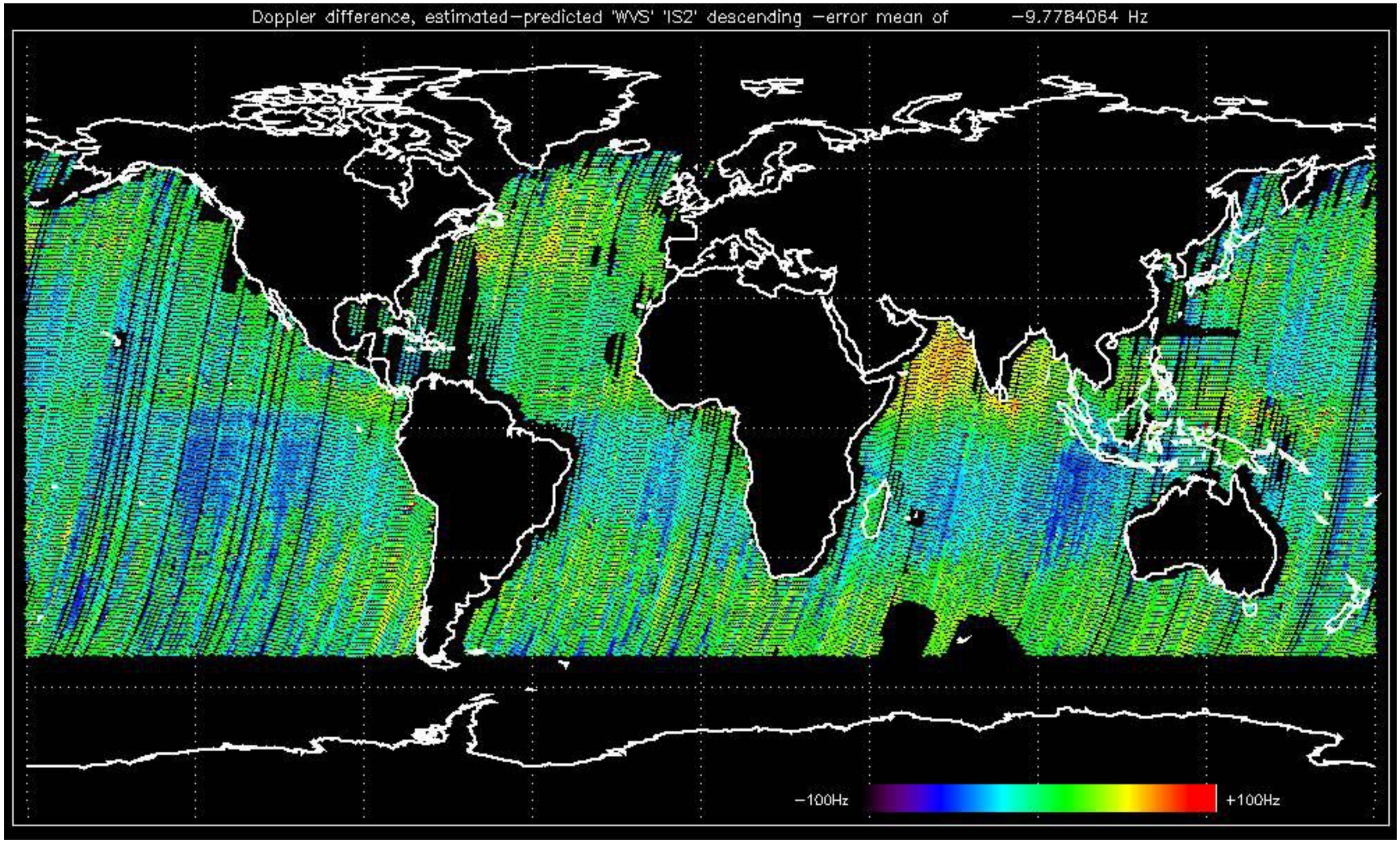

Doppler Bias[Hz]
400
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
02−Aug
Date


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
04
06
02−Aug
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −18.114118 Hz
−100Hz
+100Hz

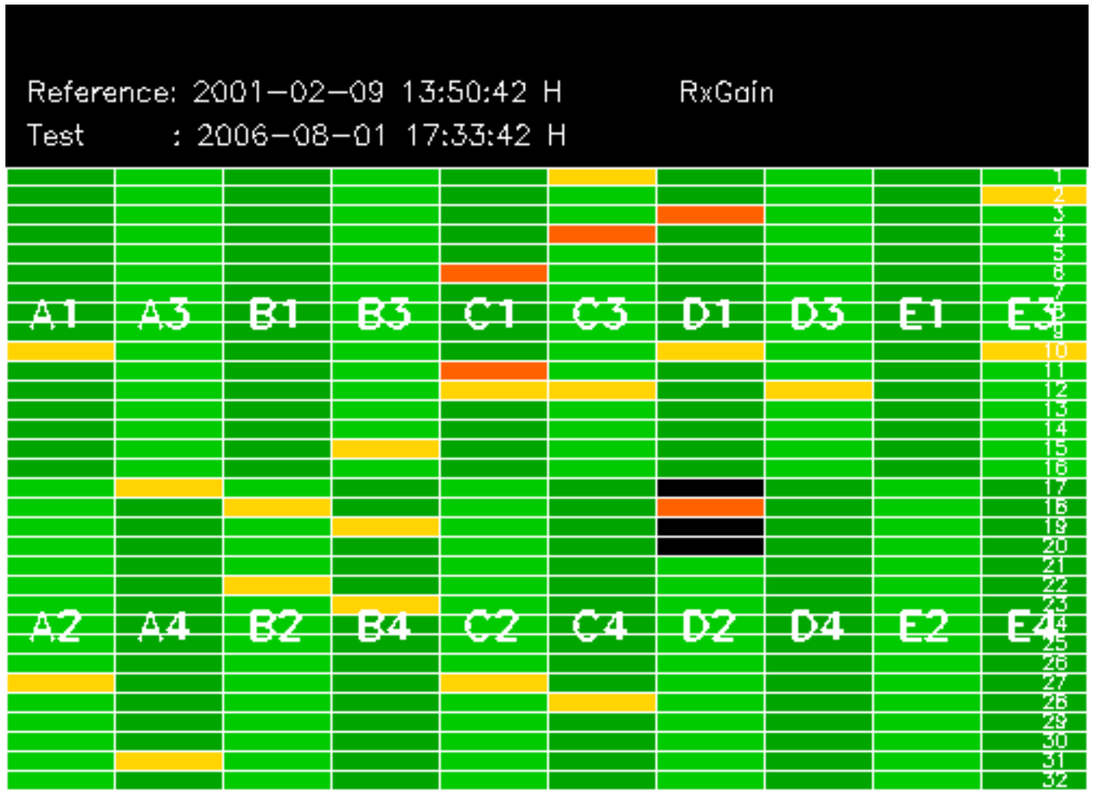

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −7.3849306 Hz
−100Hz
+100Hz

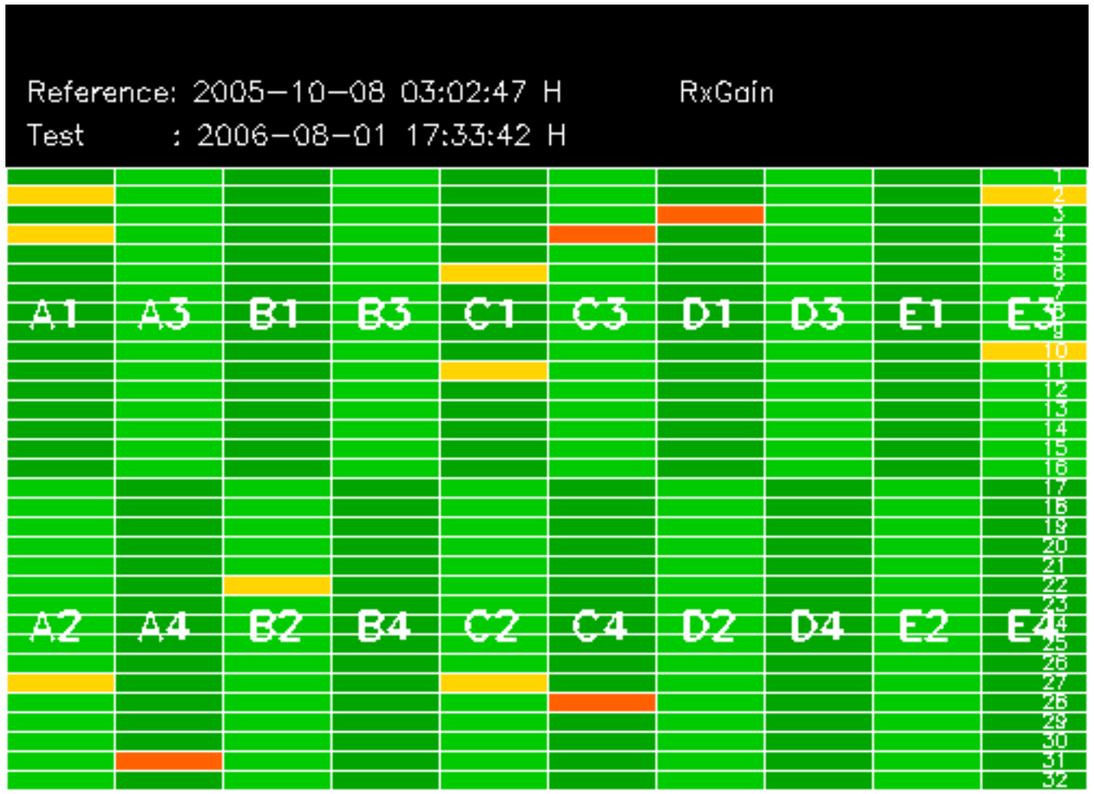

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −2.4207474 Hz
−100Hz
+100Hz

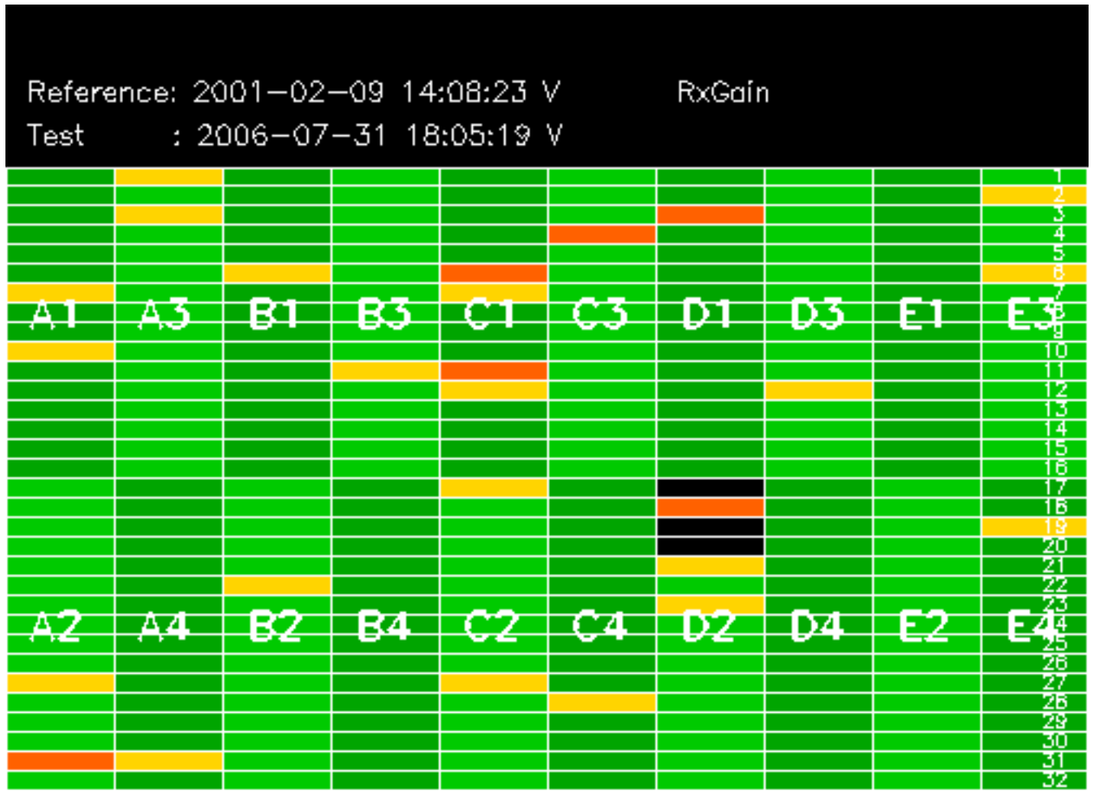

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −9.7784064 Hz
−100Hz
+100Hz

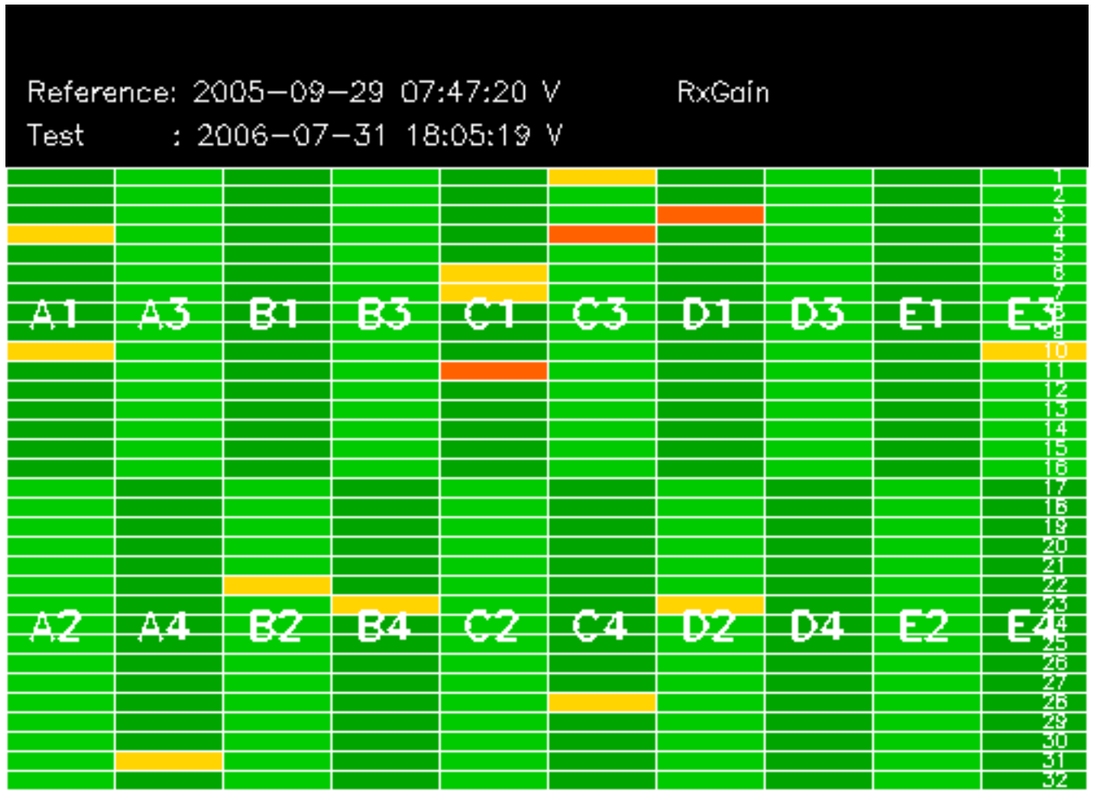
No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-08-01 17:33:42 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-08-01 17:33:42 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 : 2006-07-31 18:05:19 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-07-31 18:05:19 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
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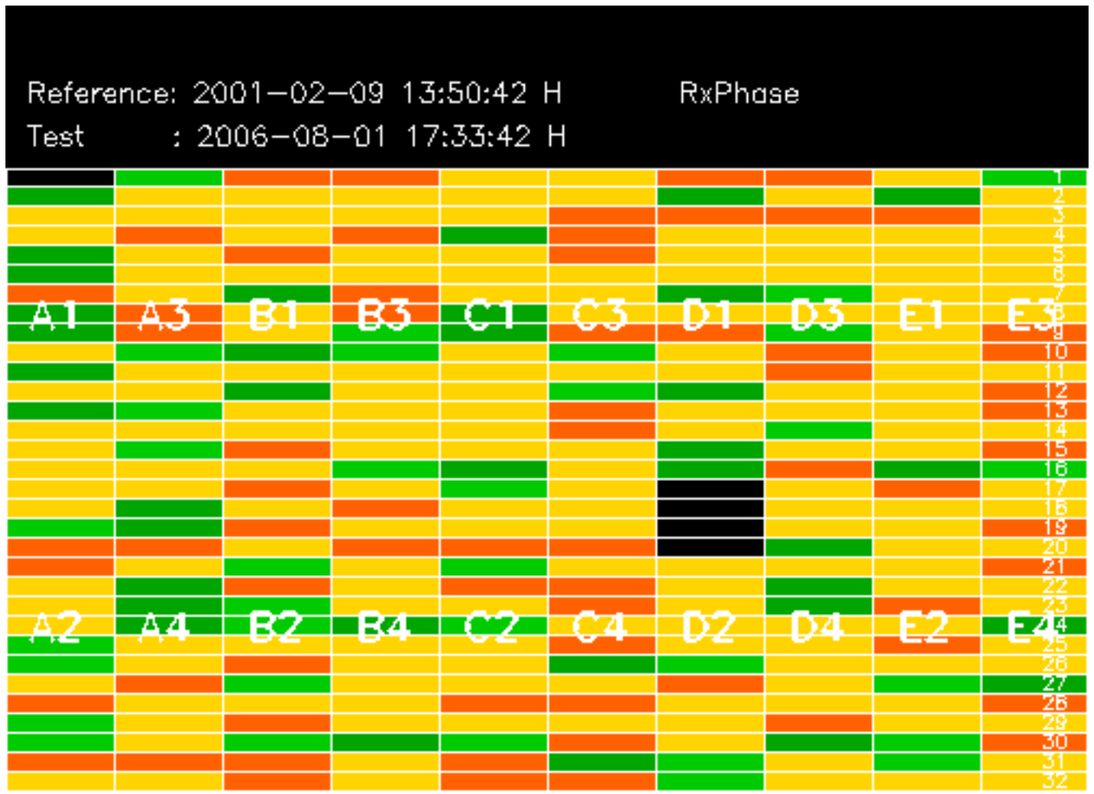
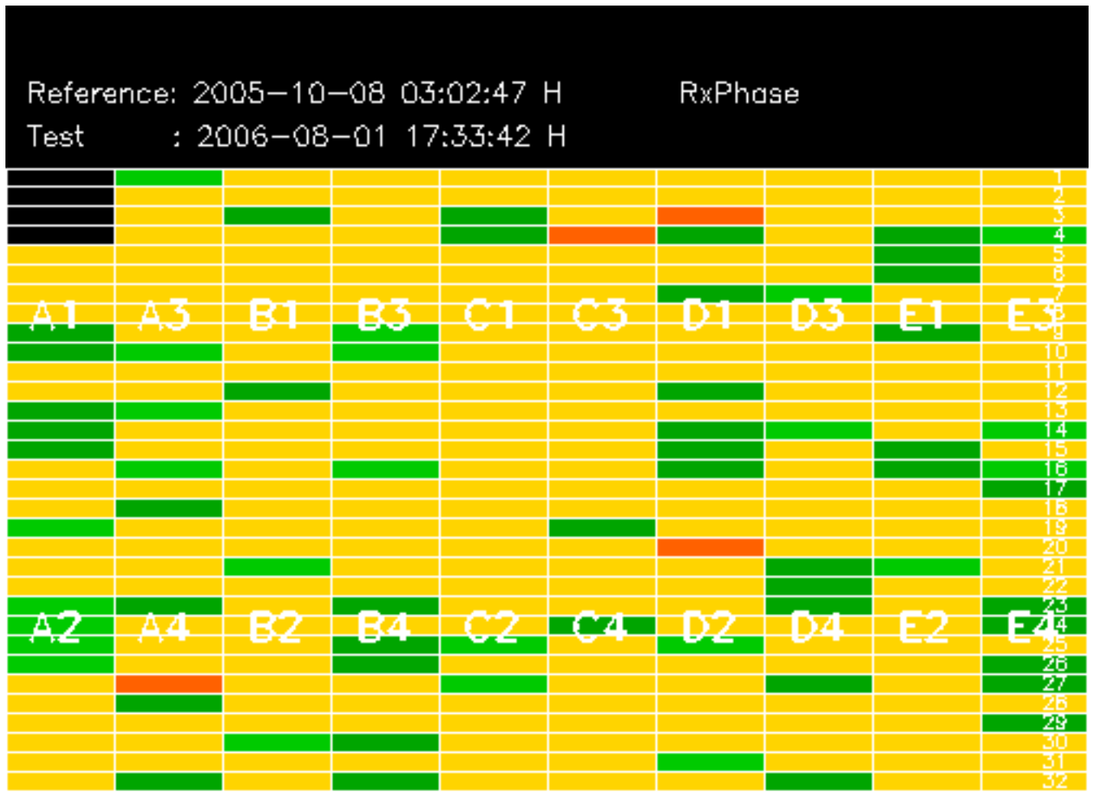
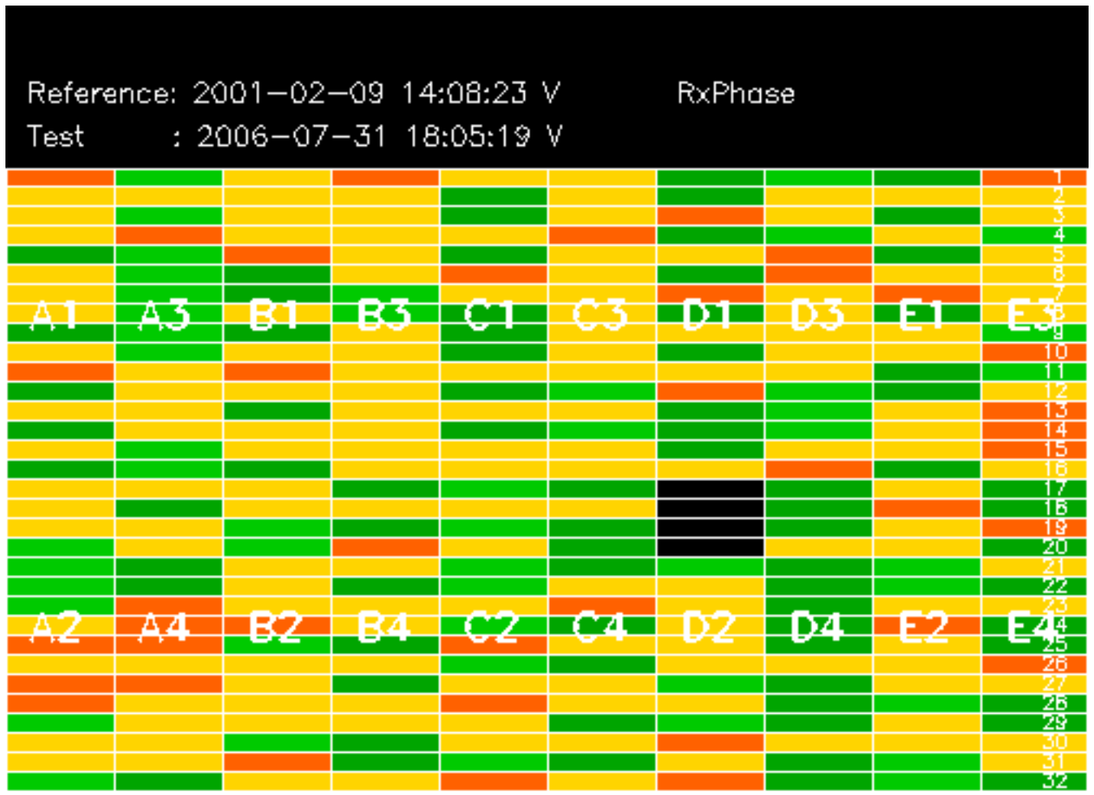
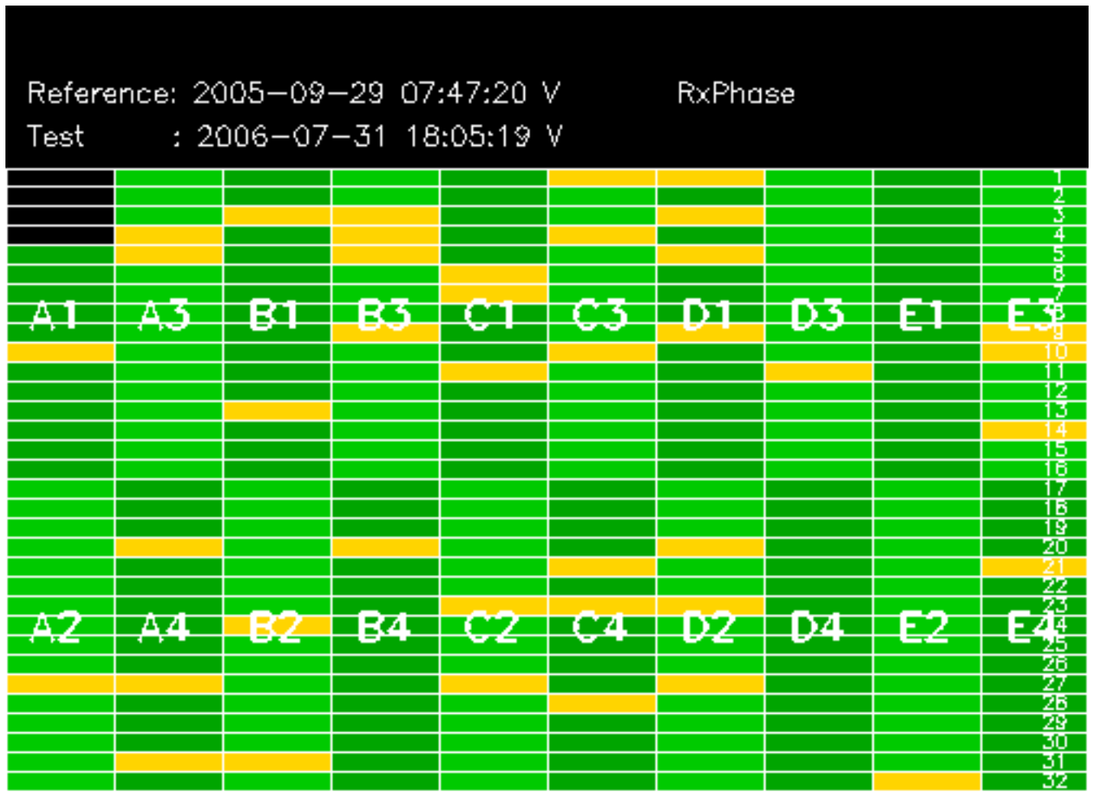

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-08-01 17:33:42 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-08-01 17:33:42 H
RxPhase
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 : 2006-07-31 18:05:19 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-07-31 18:05:19 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
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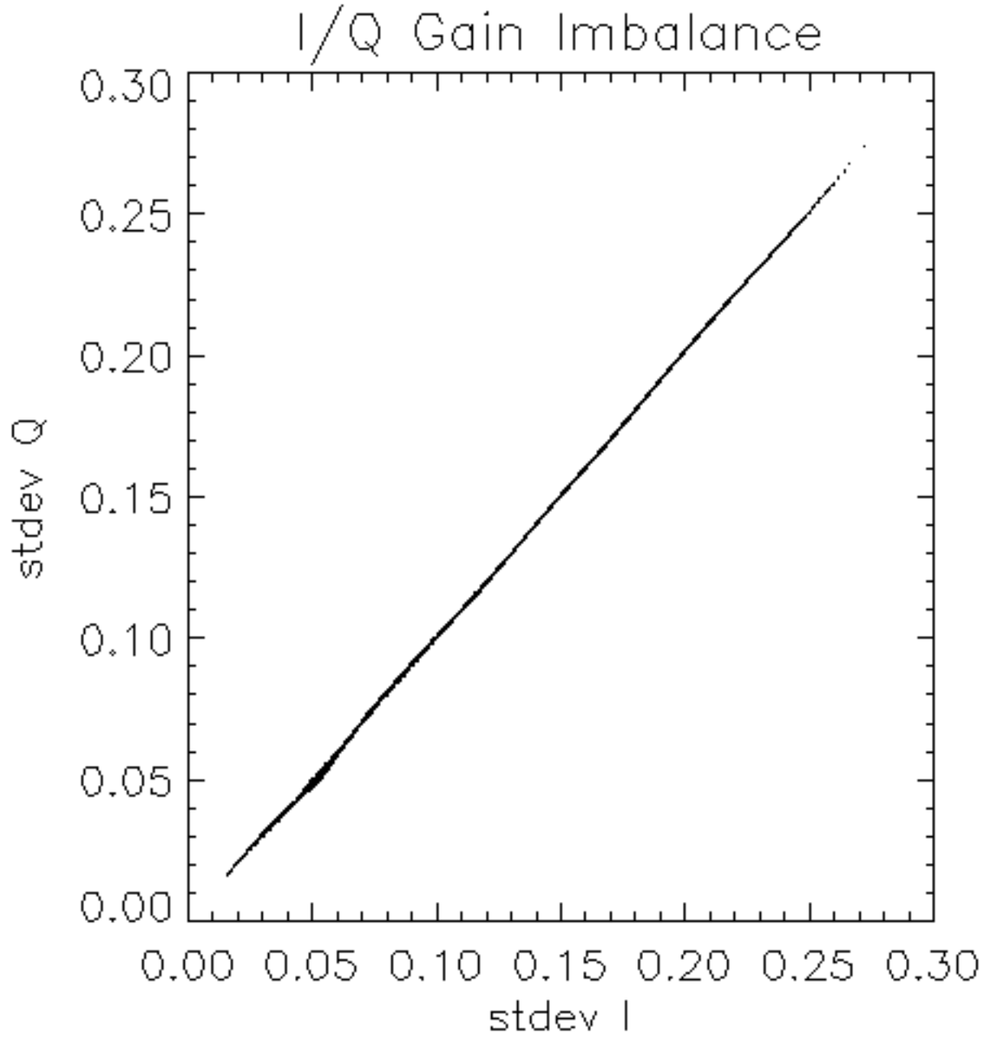
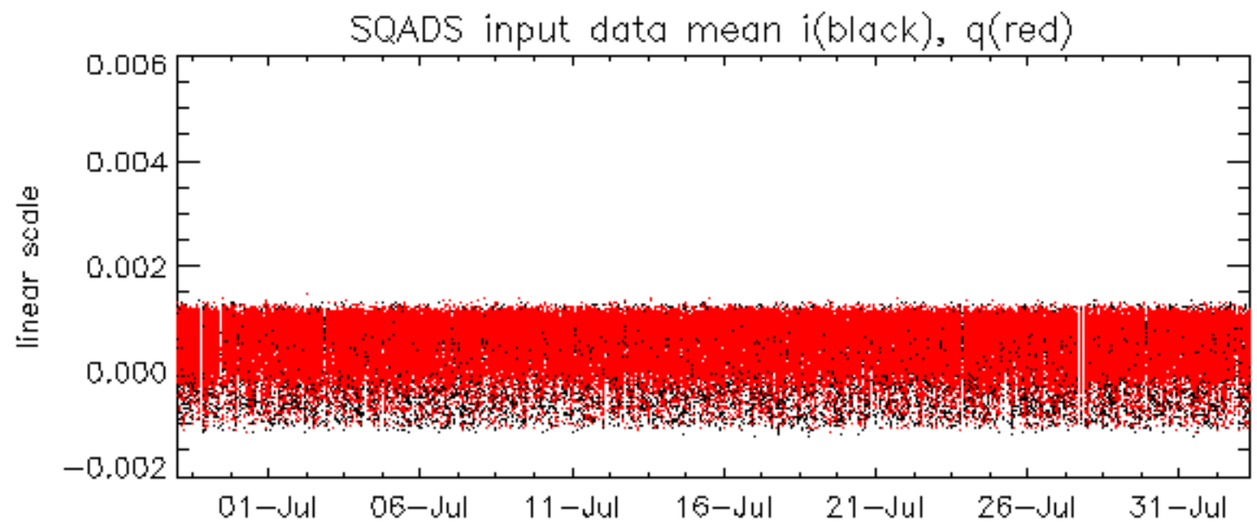
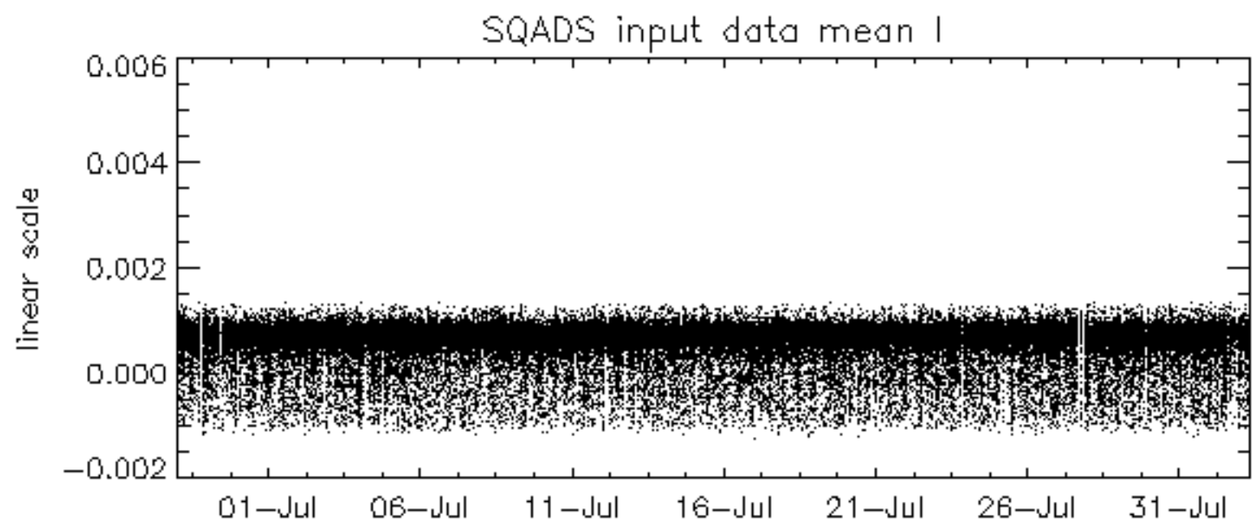
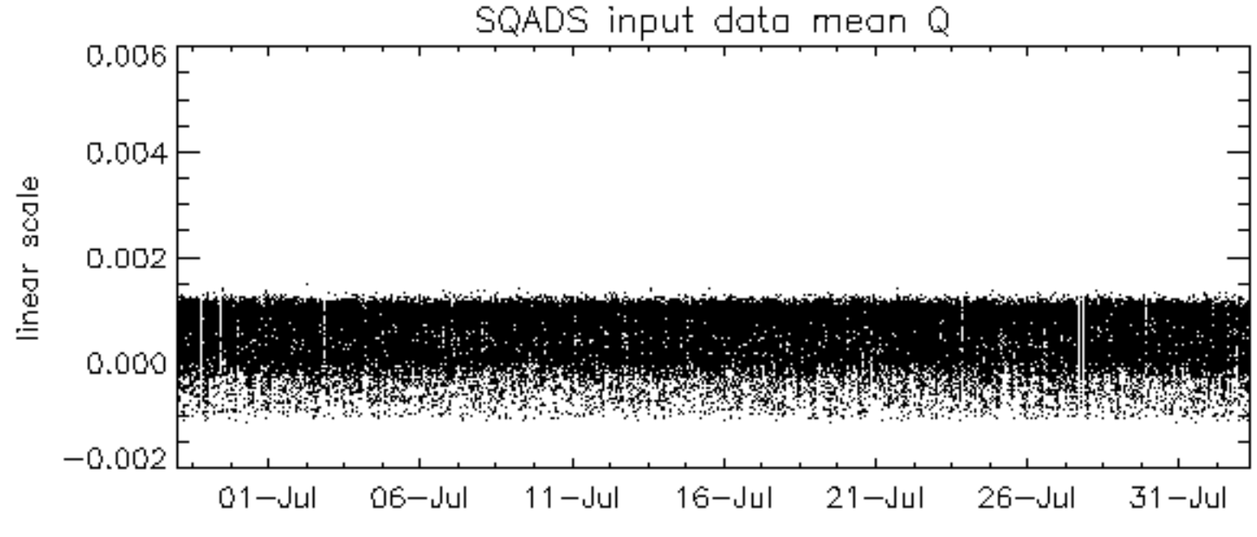
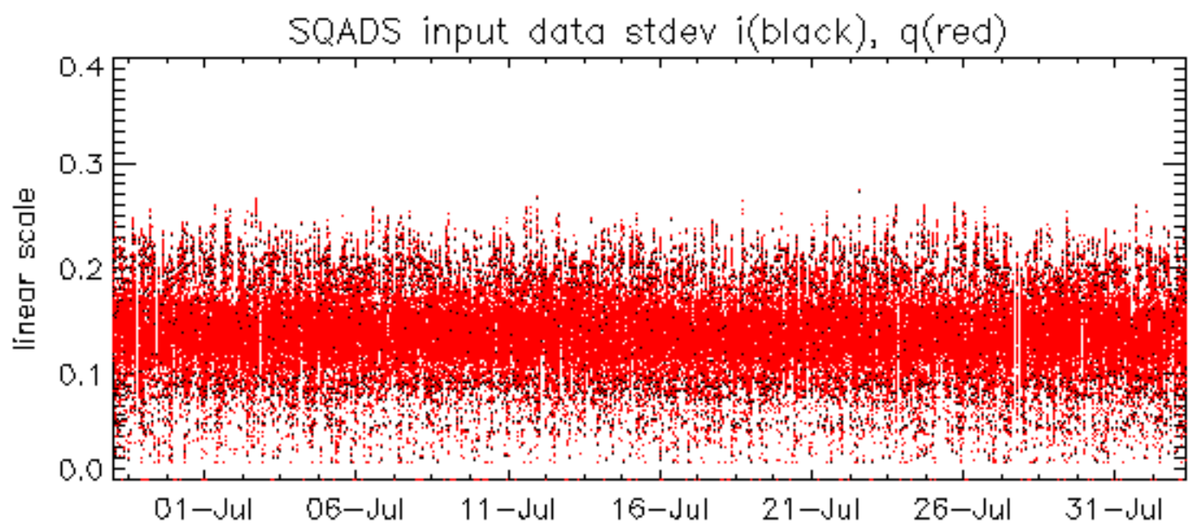
32

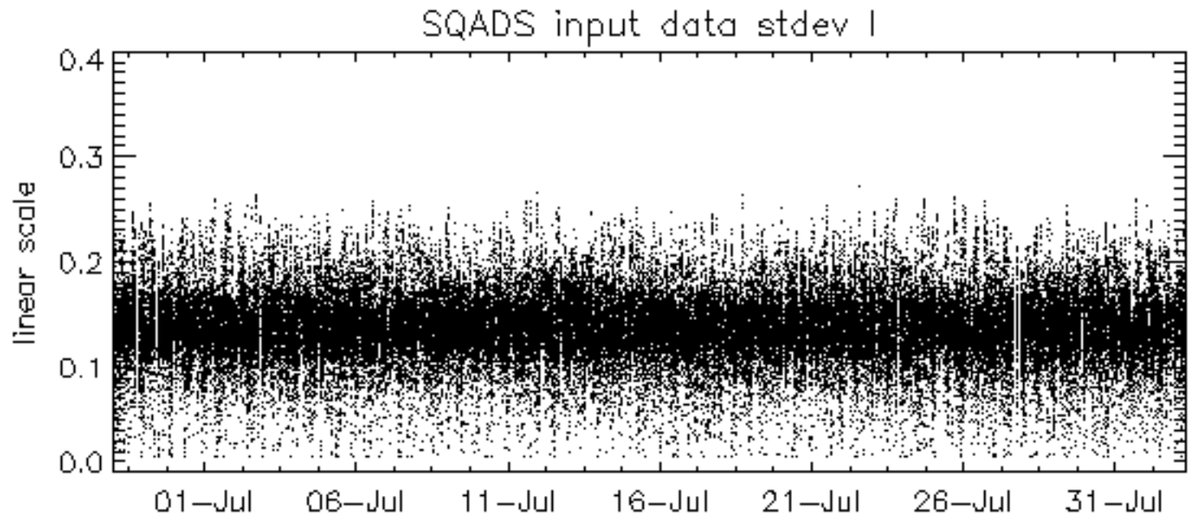

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

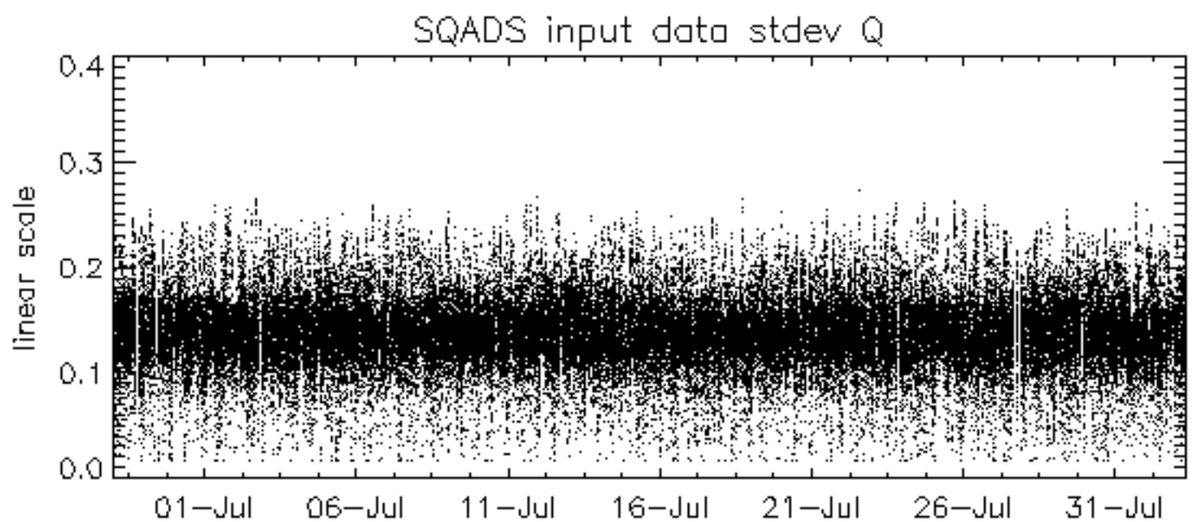

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul

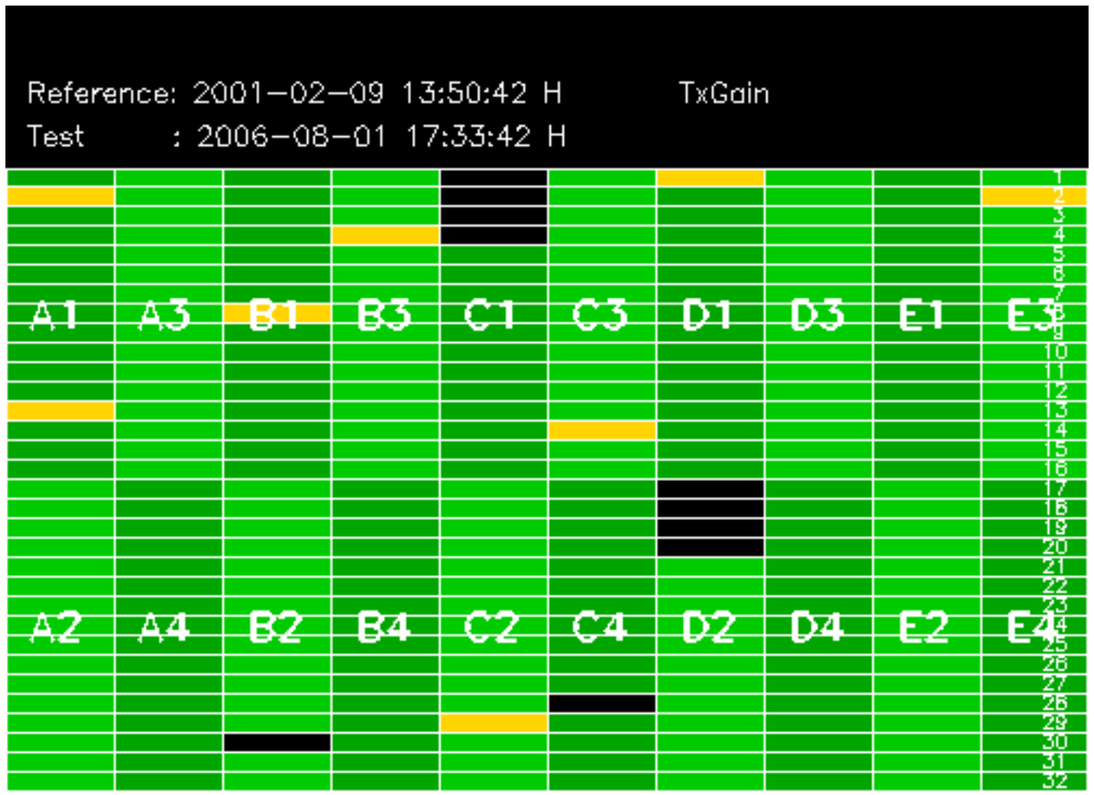

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
01–Jul
06–Jul
11–Jul
16–Jul
21–Jul
26–Jul
31–Jul


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
01–Jul
06–Jul
11–Jul
16–Jul
21–Jul
26–Jul
31–Jul


Reference: 2001-02-09 13:50:42 H
Test : 2006-08-01 17:33:42 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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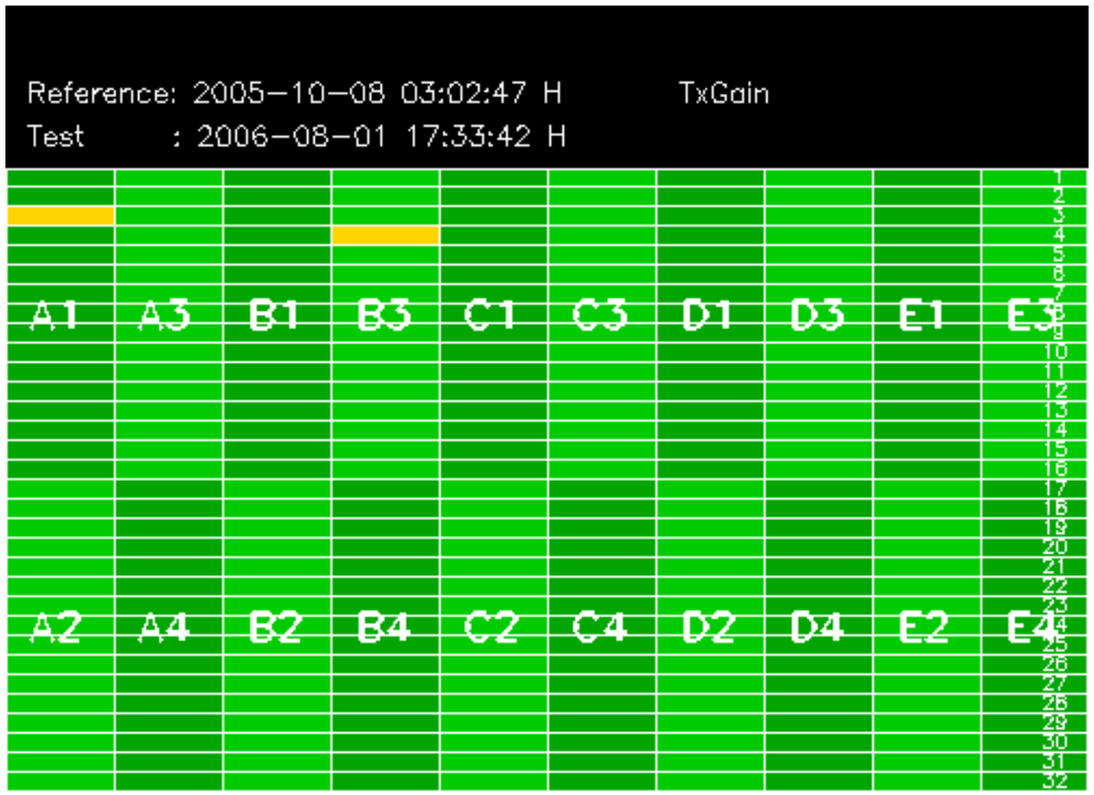
Reference: 2005-10-08 03:02:47 H
Test : 2006-08-01 17:33:42 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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3
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9
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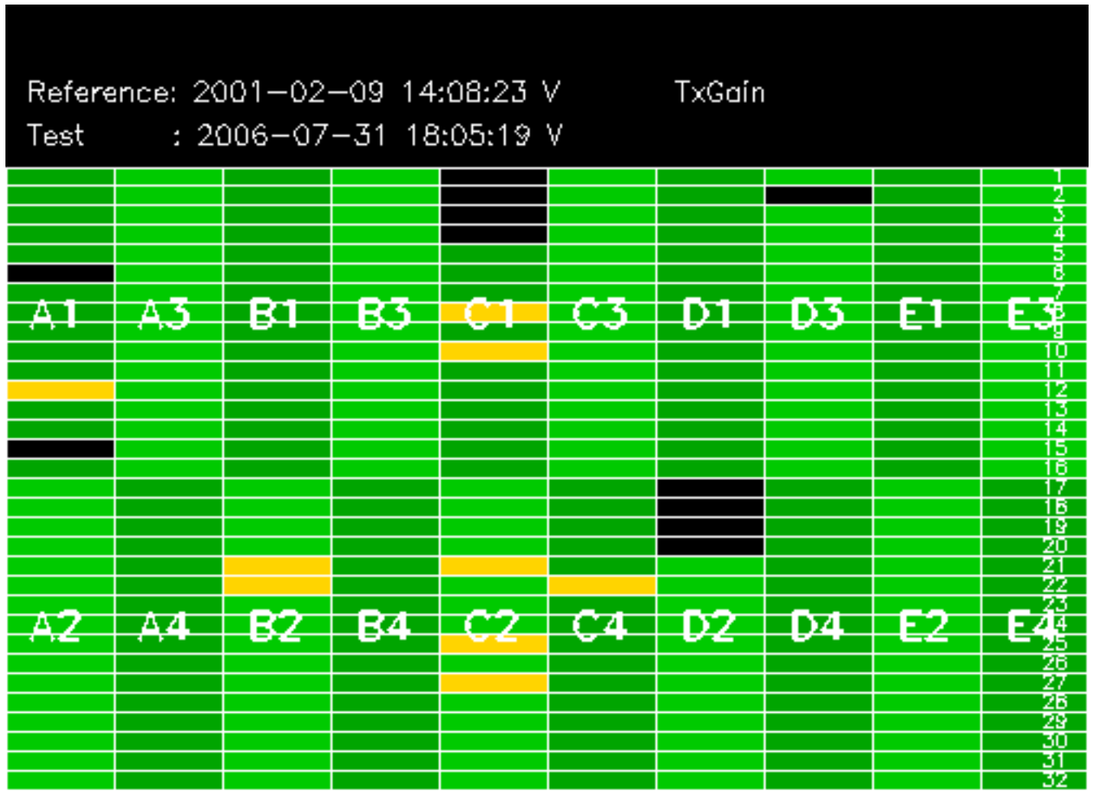
Reference: 2001-02-09 14:08:23 V
Test : 2006-07-31 18:05:19 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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9
10
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28
29
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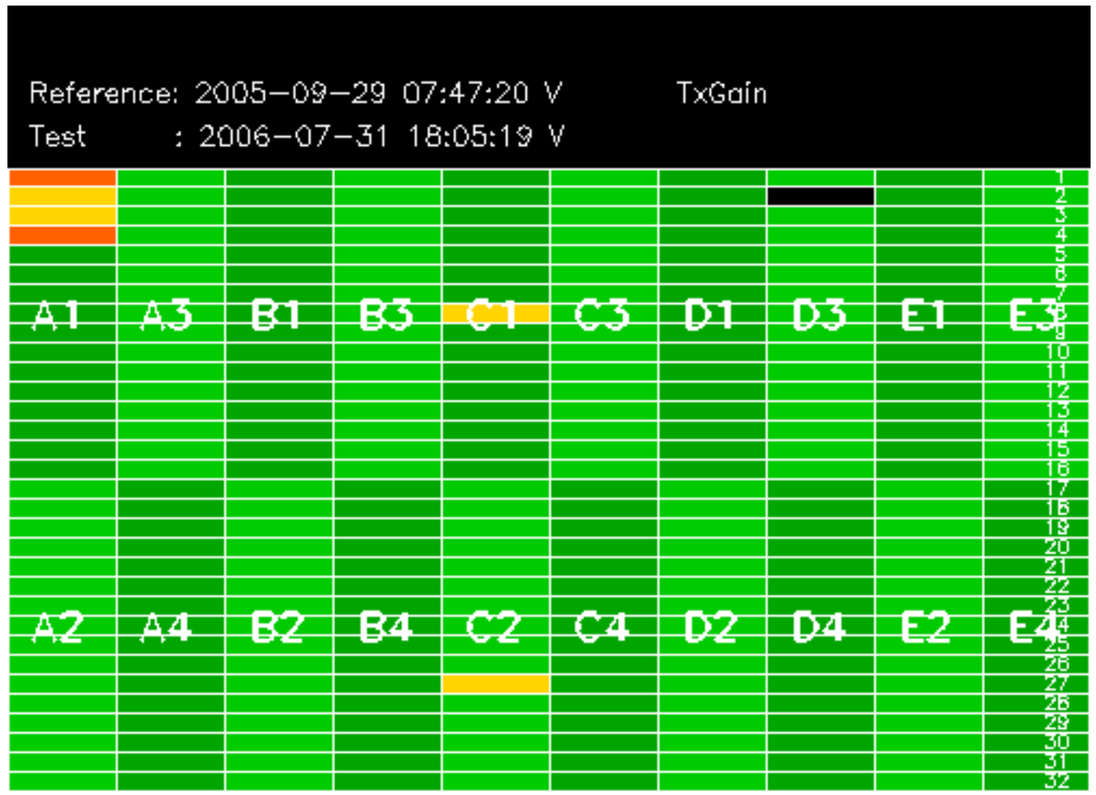
Reference: 2005-09-29 07:47:20 V
Test : 2006-07-31 18:05:19 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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3
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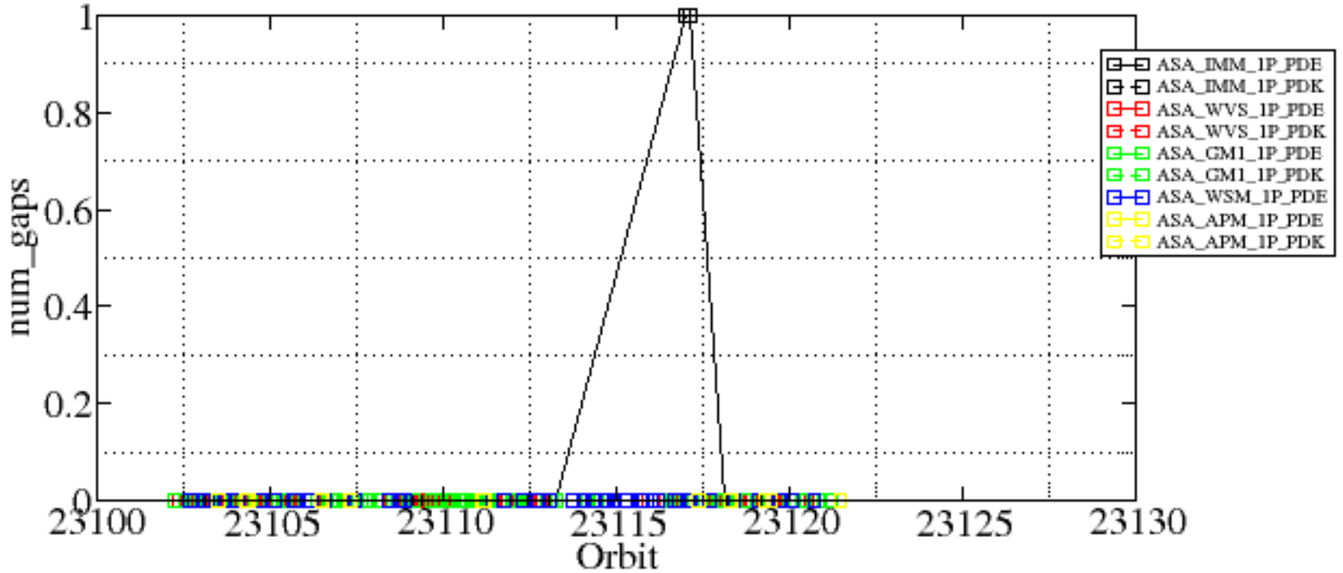
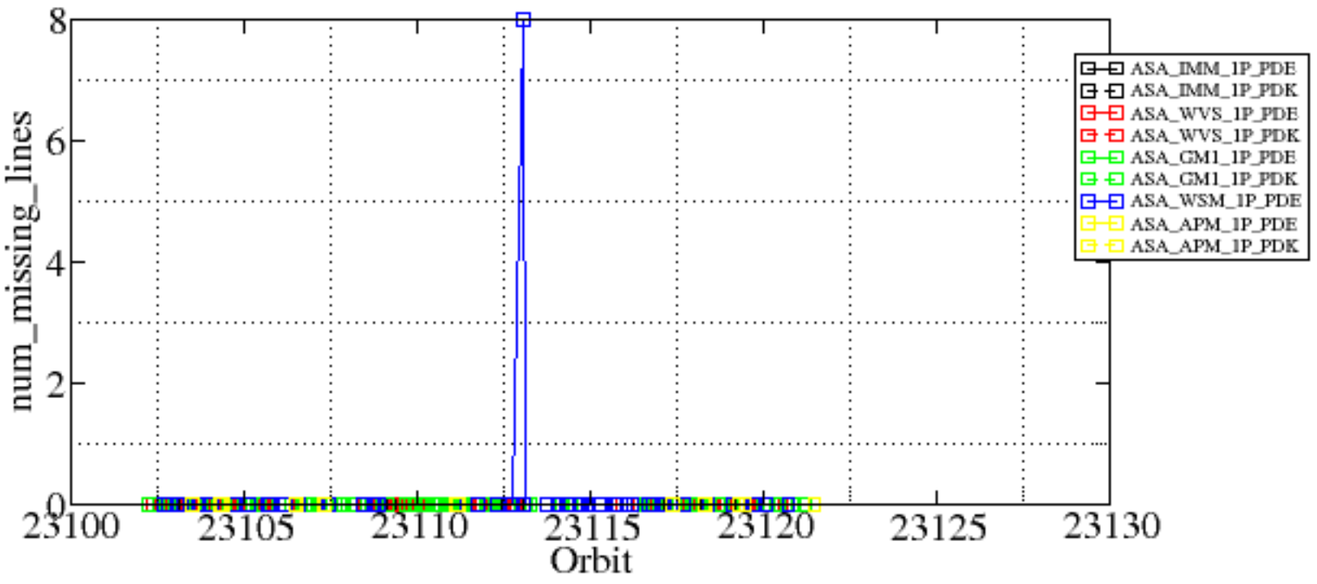
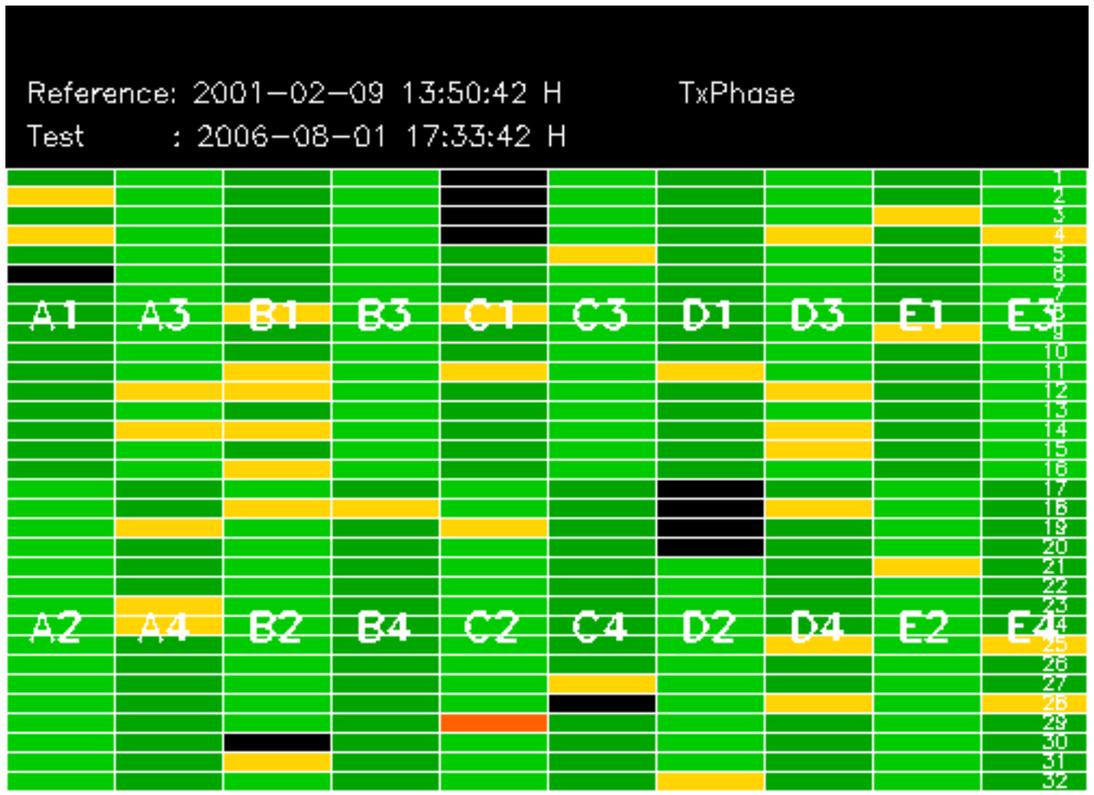
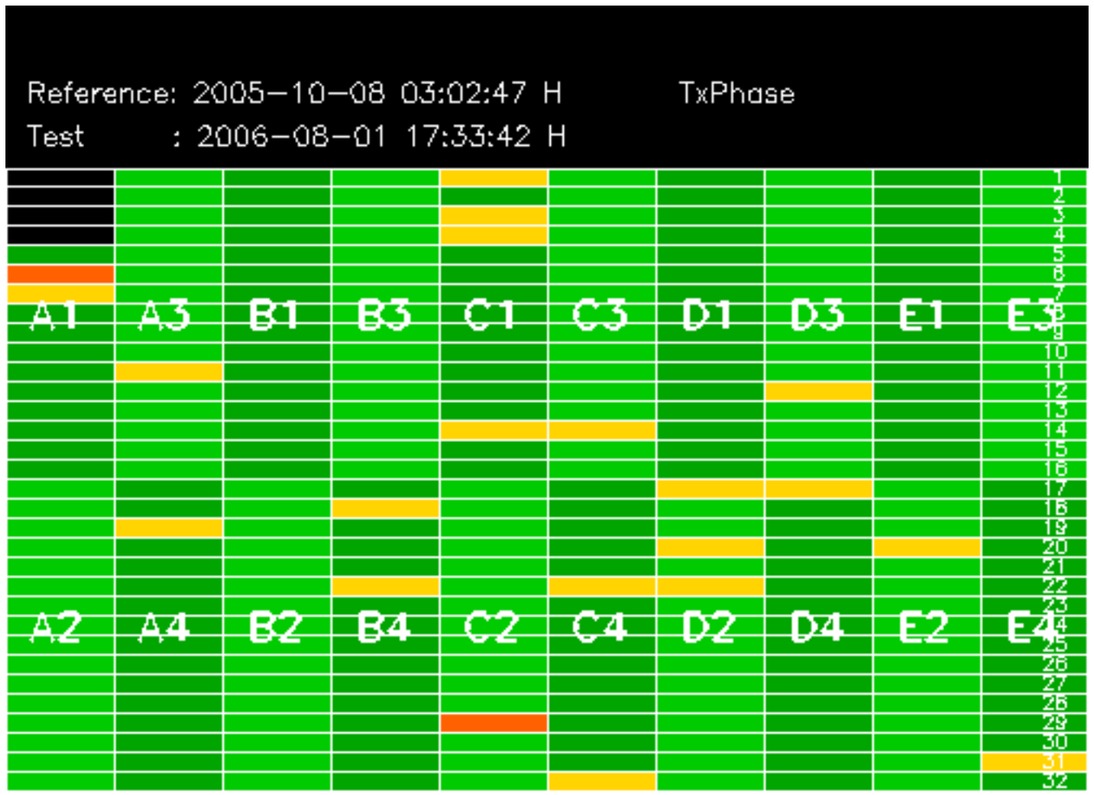
31
32

Summary of analysis for the last 3 days 2006080[112]
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_1PNPDE20060802_004523_000001932050_00016_23116_2770.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDE20060802_010204_000000692050_00017_23117_2773.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060801_181151_000000852050_00013_23113_5337.N1 </td> <td>0 </td> <td>8 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
23100
23105
23110
23115
23120
23125
23130
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_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
8
6
4
2
0
23100
23105
23110
23115
23120
23125
23130
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_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2006-08-01 17:33:42 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
TxPhase
Test : 2006-08-01 17:33:42 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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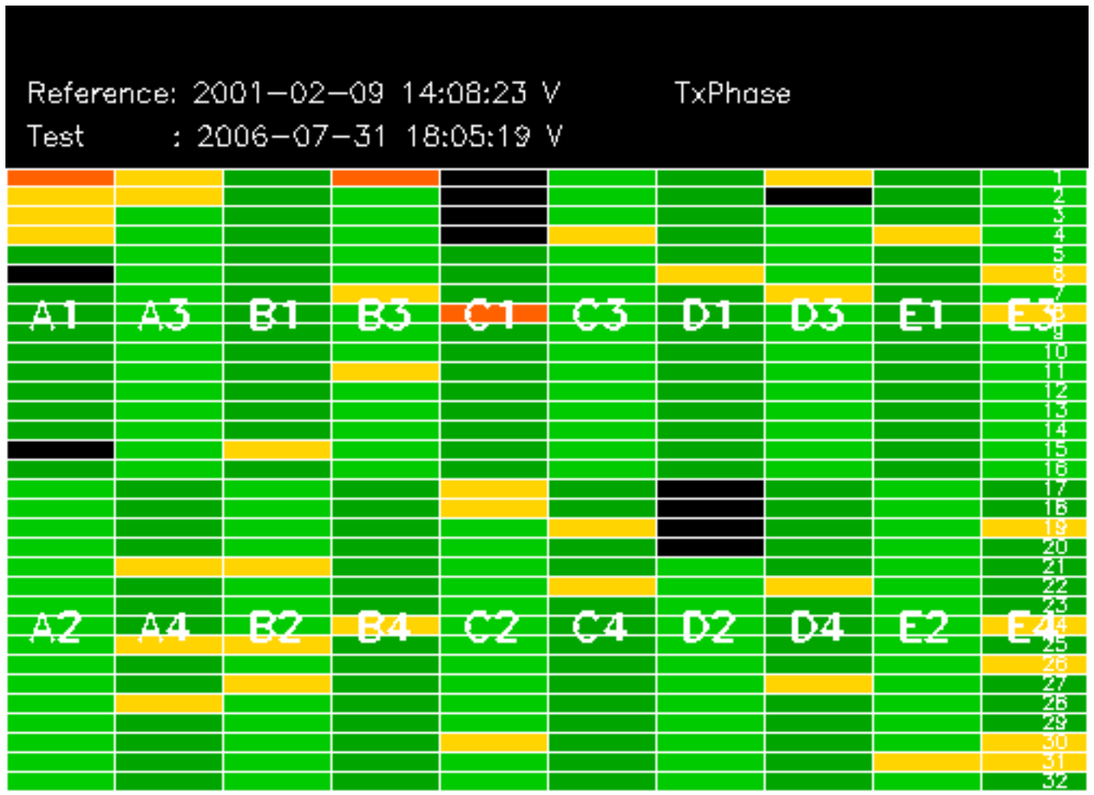
32


Reference: 2001-02-09 14:08:23 V
Test : 2006-07-31 18:05:19 V
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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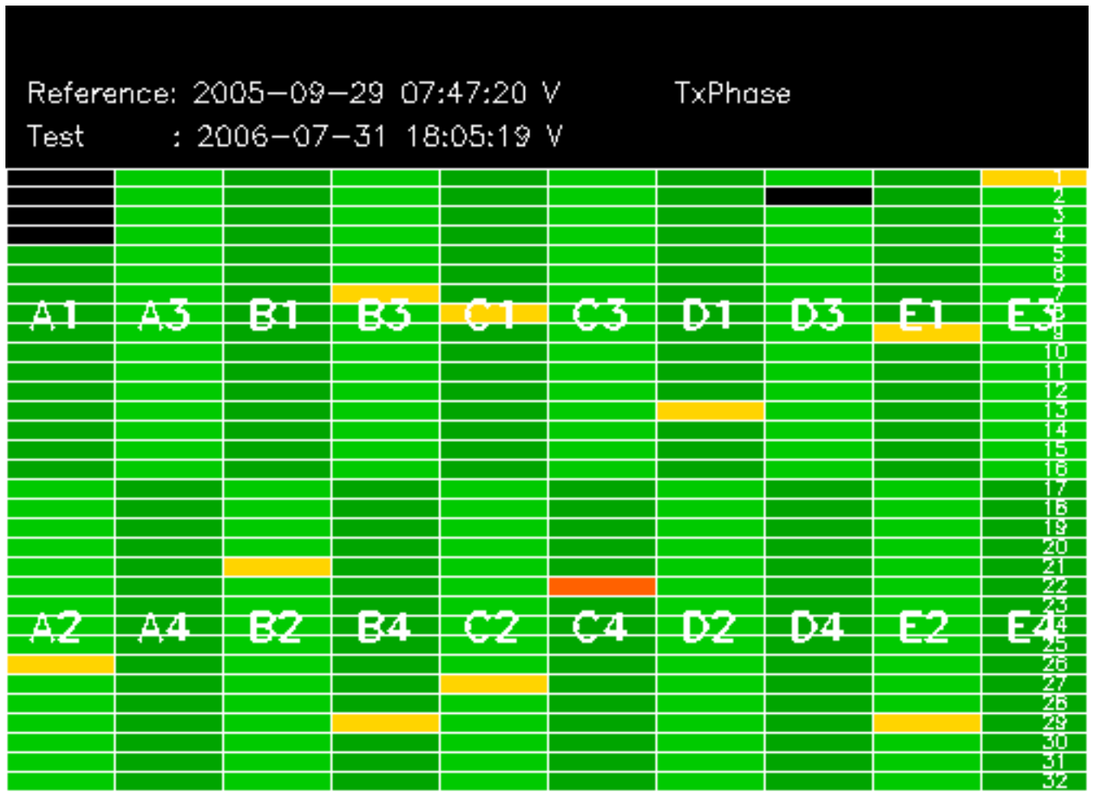
Reference: 2005-09-29 07:47:20 V
Test : 2006-07-31 18:05:19 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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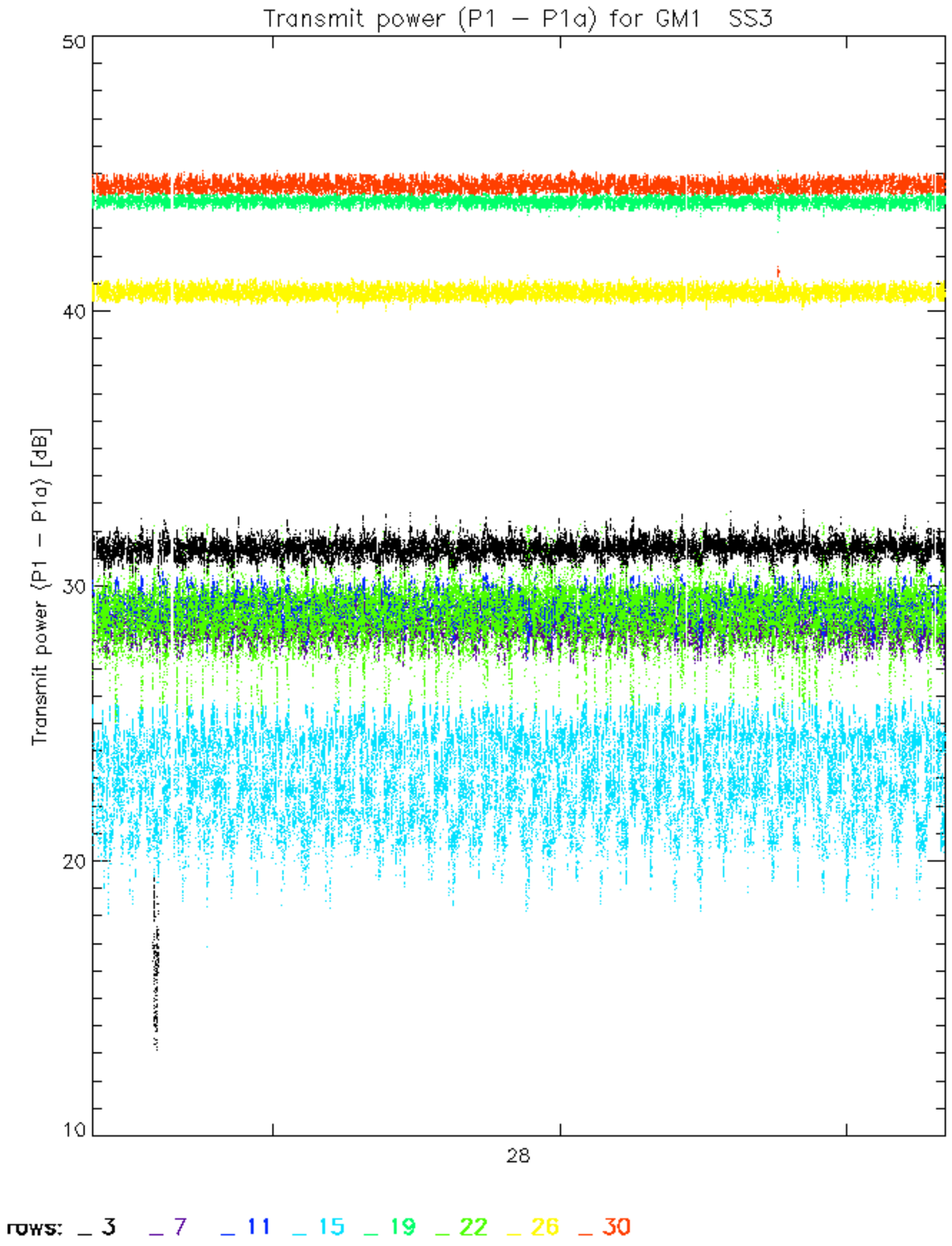
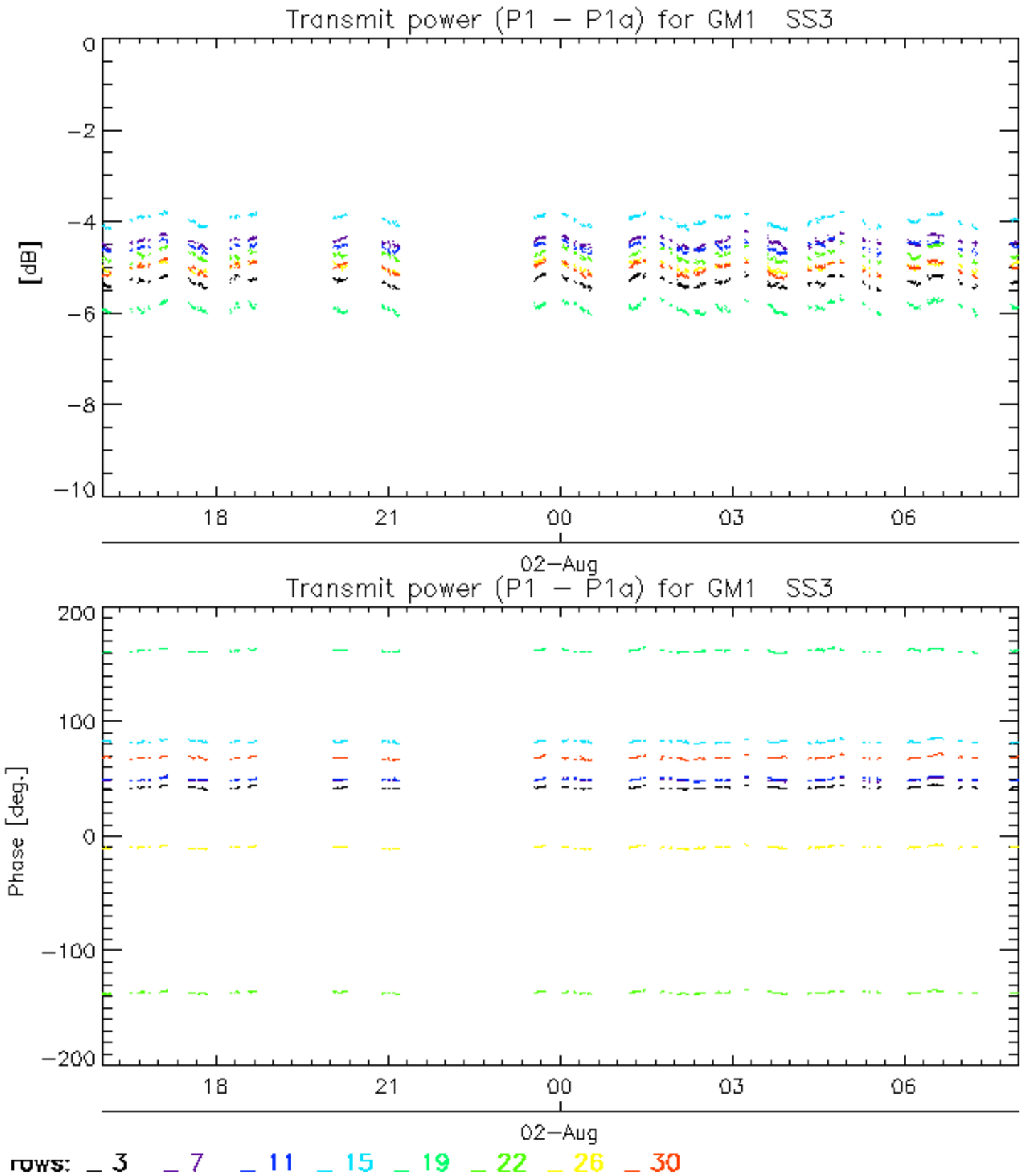
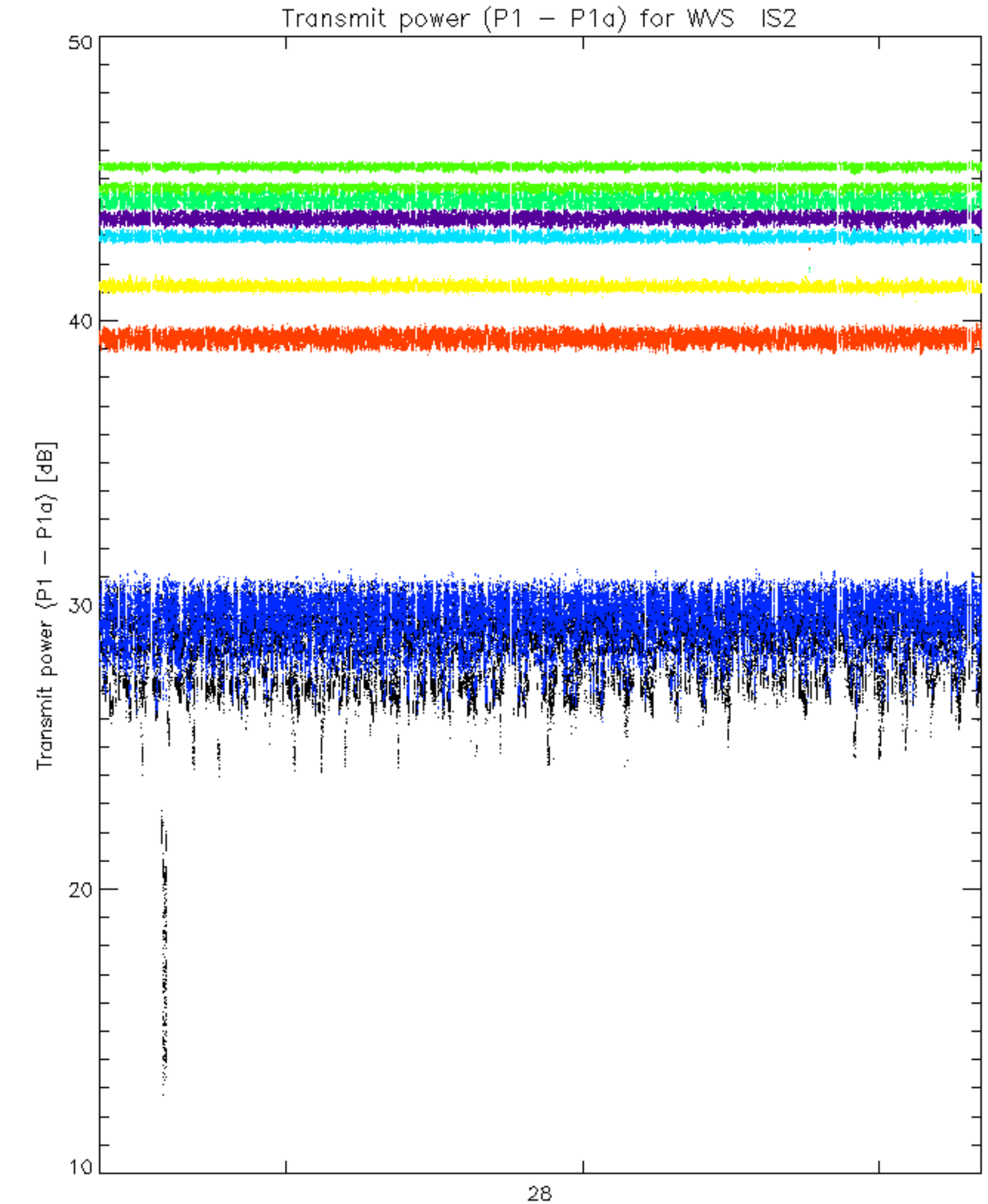
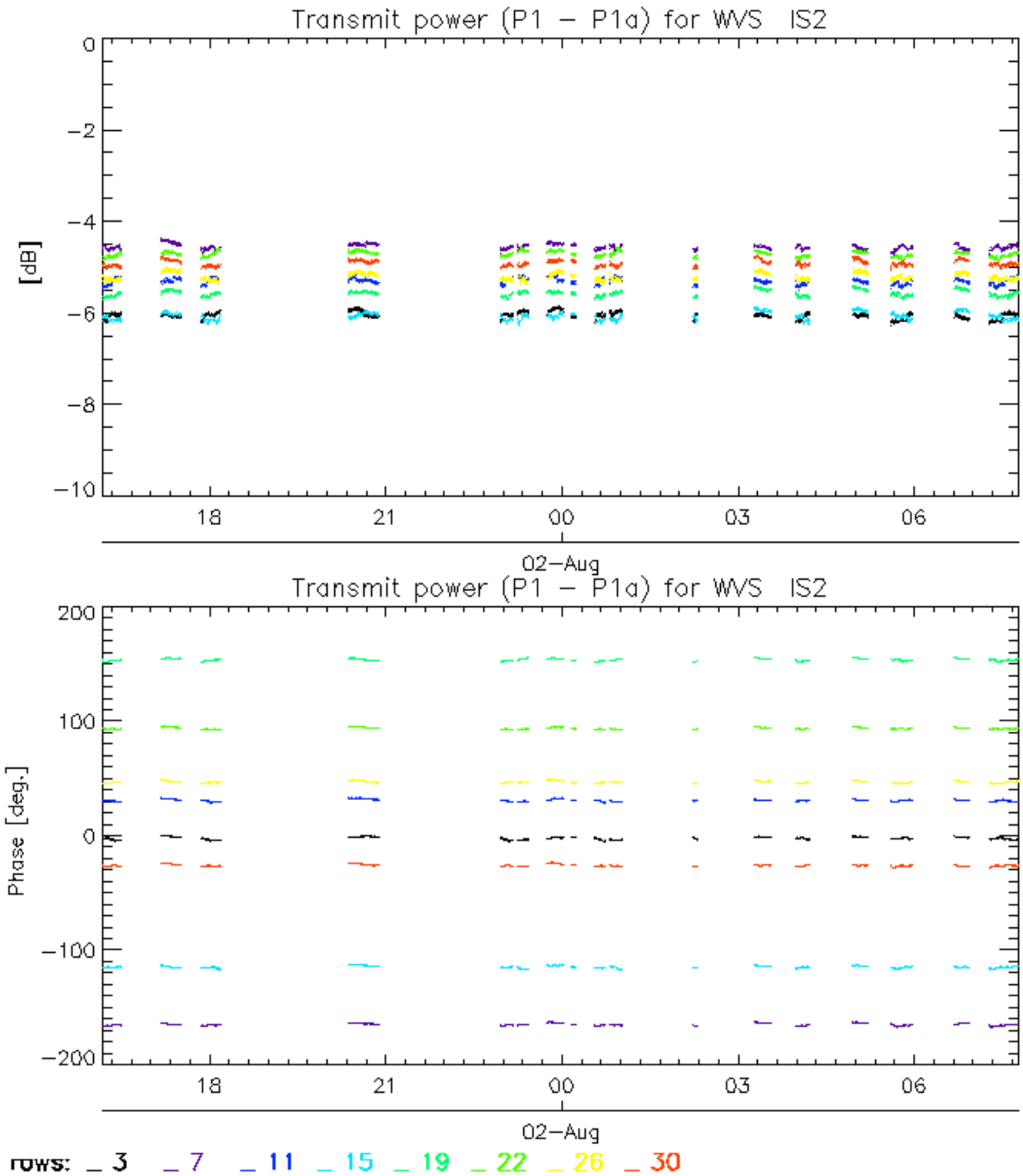

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
28
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
50
40
30
20
10
28
Transmit power (P1 – P1a) [dB]
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

No unavailabilities during the reported period.