PRELIMINARY REPORT OF 061006

last update on Fri Oct 6 16:41:07 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 2006-10-05 00:00:00 to 2006-10-06 16:41:07

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

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	42	75	24	11	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	42	75	24	11	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	42	75	24	11	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	42	75	24	11	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	24	43	10	4	5
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	24	43	10	4	5
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	24	43	10	4	5
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	24	43	10	4	5

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	20061005 100808
H	20061004 071833

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	-3.943331	0.010415	-0.001353
7	P1	-3.073979	0.010879	-0.014981
11	P1	-4.077740	0.021719	-0.047992
15	P1	-6.193461	0.015976	-0.019607
19	P1	-3.552112	0.051856	0.043820
22	P1	-4.596730	0.010737	-0.031002
26	P1	-3.965750	0.022652	-0.030854
30	P1	-5.835988	0.148330	0.072936
3	P1	-16.616209	0.234142	-0.026228
7	P1	-17.120834	0.109641	-0.046602
11	P1	-16.886234	0.380934	-0.325989
15	P1	-12.860864	0.108786	0.082808
19	P1	-14.691989	0.479772	0.163741
22	P1	-15.673993	0.476199	0.114018
26	P1	-15.173374	0.246887	0.210886
30	P1	-16.952442	0.397609	-0.131088

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.816954	0.085492	-0.018553
7	P2	-21.817888	0.097085	0.123157
11	P2	-15.744054	0.108411	0.029708
15	P2	-7.086071	0.103543	0.047823
19	P2	-9.126618	0.094459	0.004312
22	P2	-18.130777	0.091235	-0.011873
26	P2	-16.424658	0.098321	-0.007789
30	P2	-19.469158	0.092037	0.020172

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.191086	0.006201	-0.017315
7	P3	-8.191086	0.006201	-0.017315
11	P3	-8.191086	0.006201	-0.017315
15	P3	-8.191086	0.006201	-0.017315
19	P3	-8.191086	0.006201	-0.017315
22	P3	-8.191086	0.006201	-0.017315
26	P3	-8.191072	0.006203	-0.017346
30	P3	-8.191072	0.006203	-0.017346

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	-3.871393	0.017807	-0.056795
7	P1	-2.545499	0.044757	-0.004522
11	P1	-2.897189	0.021491	-0.034385
15	P1	-3.677992	0.033653	-0.066827
19	P1	-3.478396	0.081322	0.093936
22	P1	-5.106212	0.021702	0.030190
26	P1	-5.876482	0.030068	-0.038935
30	P1	-5.219038	0.074703	0.065798
3	P1	-11.667642	0.063900	-0.109100
7	P1	-10.027772	0.083262	-0.070670
11	P1	-10.381767	0.072500	-0.083158
15	P1	-10.870138	0.159819	-0.059854
19	P1	-15.701775	3.708587	0.817312
22	P1	-20.938368	1.262740	-0.275884
26	P1	-15.876811	0.368296	0.195424
30	P1	-18.096327	0.459212	0.100278

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.384987	0.059001	0.068036
7	P2	-22.141079	0.150262	0.177494
11	P2	-10.885841	0.052242	0.067830
15	P2	-4.857449	0.034270	0.012584
19	P2	-6.839253	0.039078	0.061618
22	P2	-8.159214	0.049042	-0.003085
26	P2	-24.180309	0.083714	-0.014810
30	P2	-21.956444	0.054363	0.028615

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.039981	0.003748	-0.022190
7	P3	-8.039860	0.003743	-0.022617
11	P3	-8.039973	0.003745	-0.022720
15	P3	-8.039931	0.003761	-0.022645
19	P3	-8.039943	0.003765	-0.022705
22	P3	-8.040055	0.003744	-0.022336
26	P3	-8.039959	0.003759	-0.022470
30	P3	-8.039865	0.003740	-0.022152

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	0.000561962
	stdev	1.67938e-07
MEAN Q	mean	0.000526308
	stdev	2.15769e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.137828
	stdev	0.00112488
STDEV Q	mean	0.138191
	stdev	0.00114247

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006100[456]
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_1PNPDE20061005_003434_000001152051_00431_24032_6859.N1	1	0

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

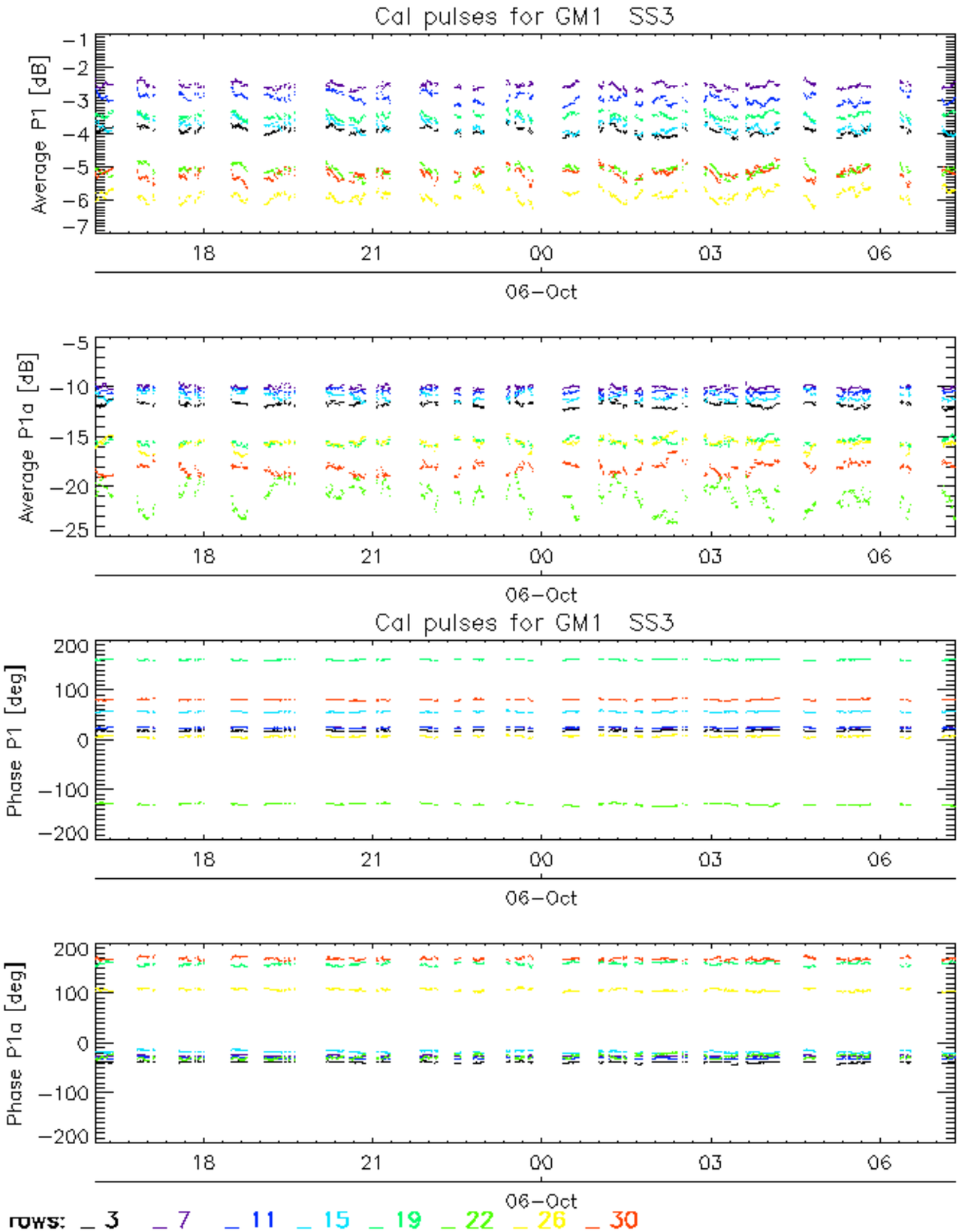
Descending

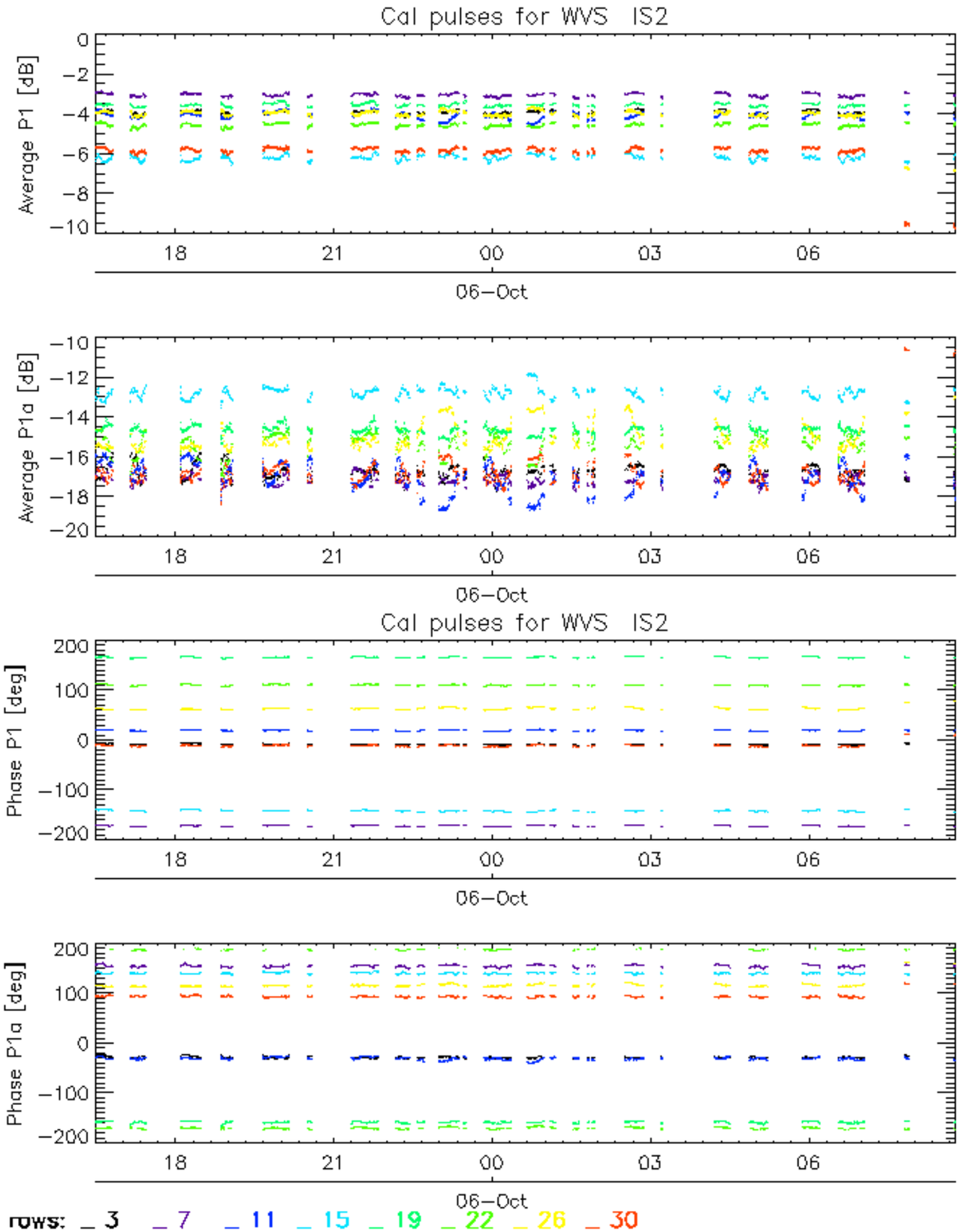
7.5 - Absolute Doppler for GM1

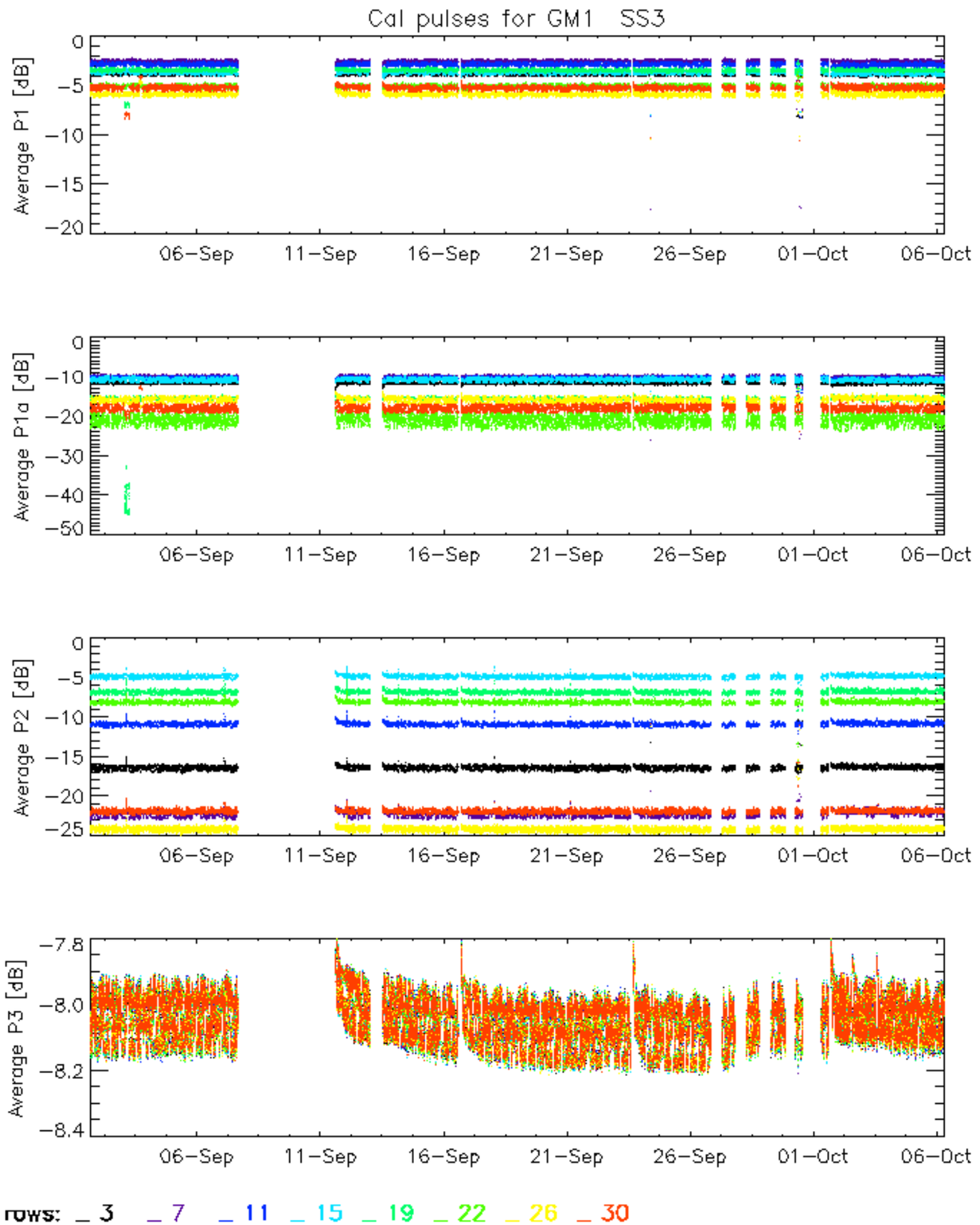
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

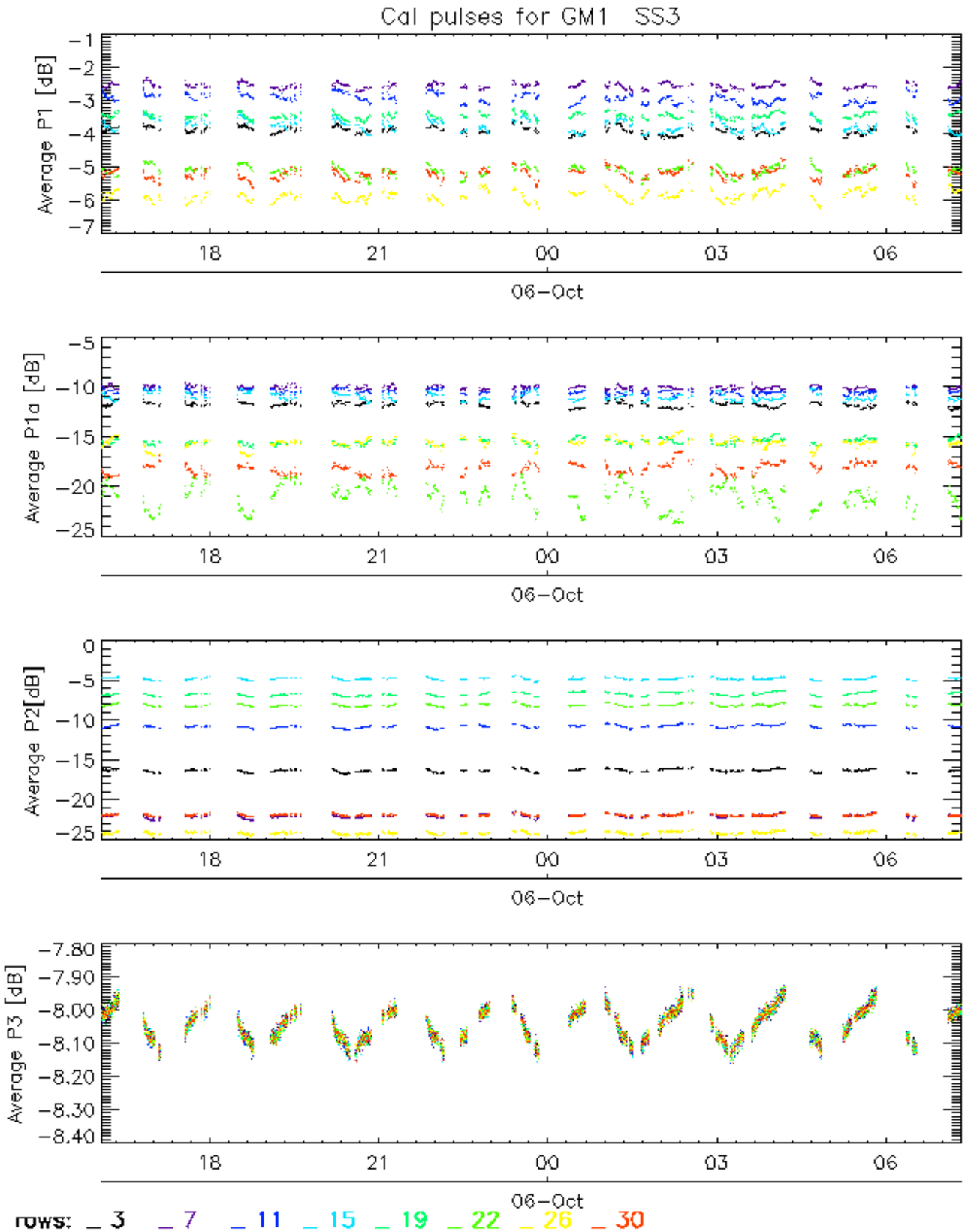
7.6 - Doppler evolution versus ANX for GM1

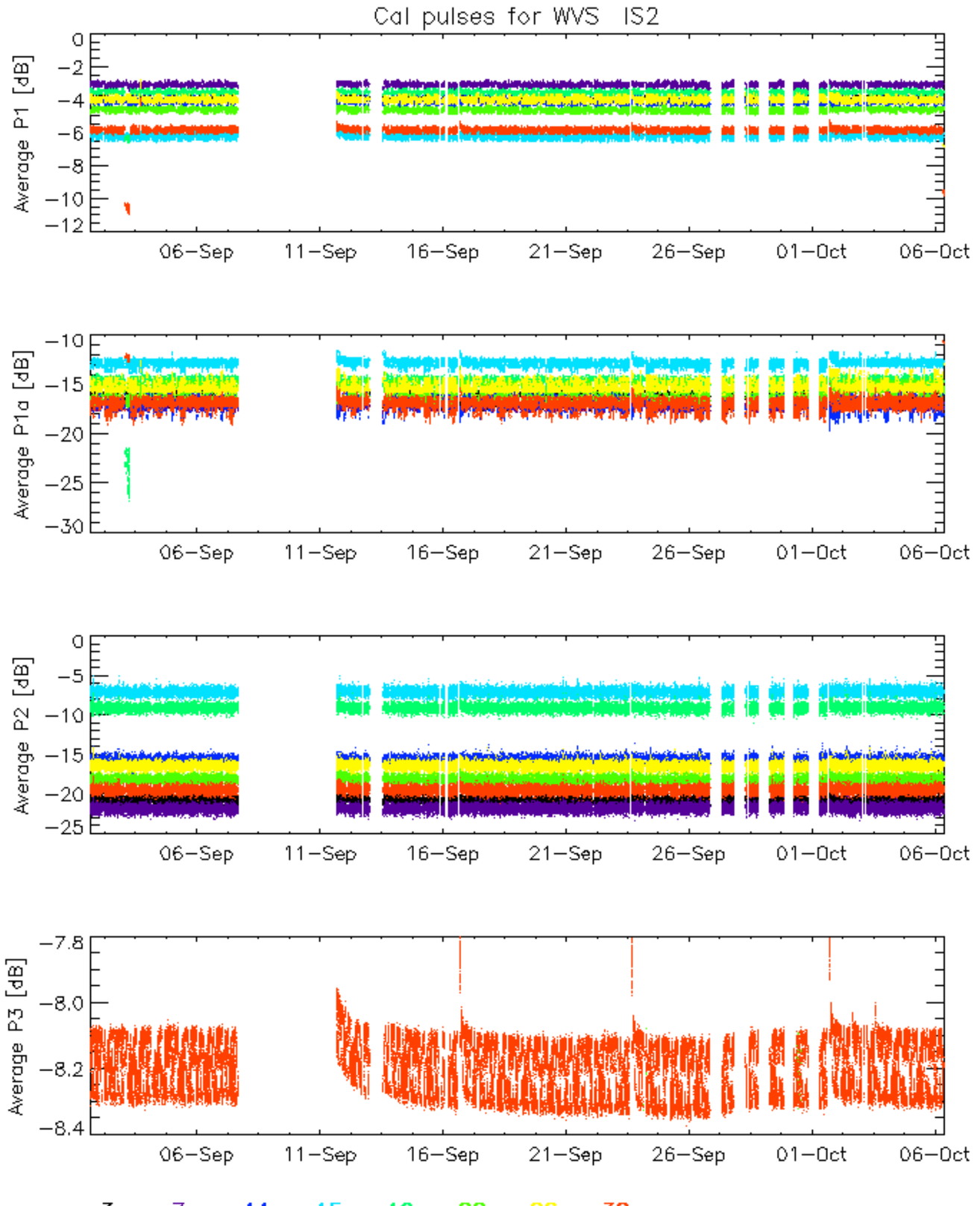
Evolution Doppler error versus ANX
☒

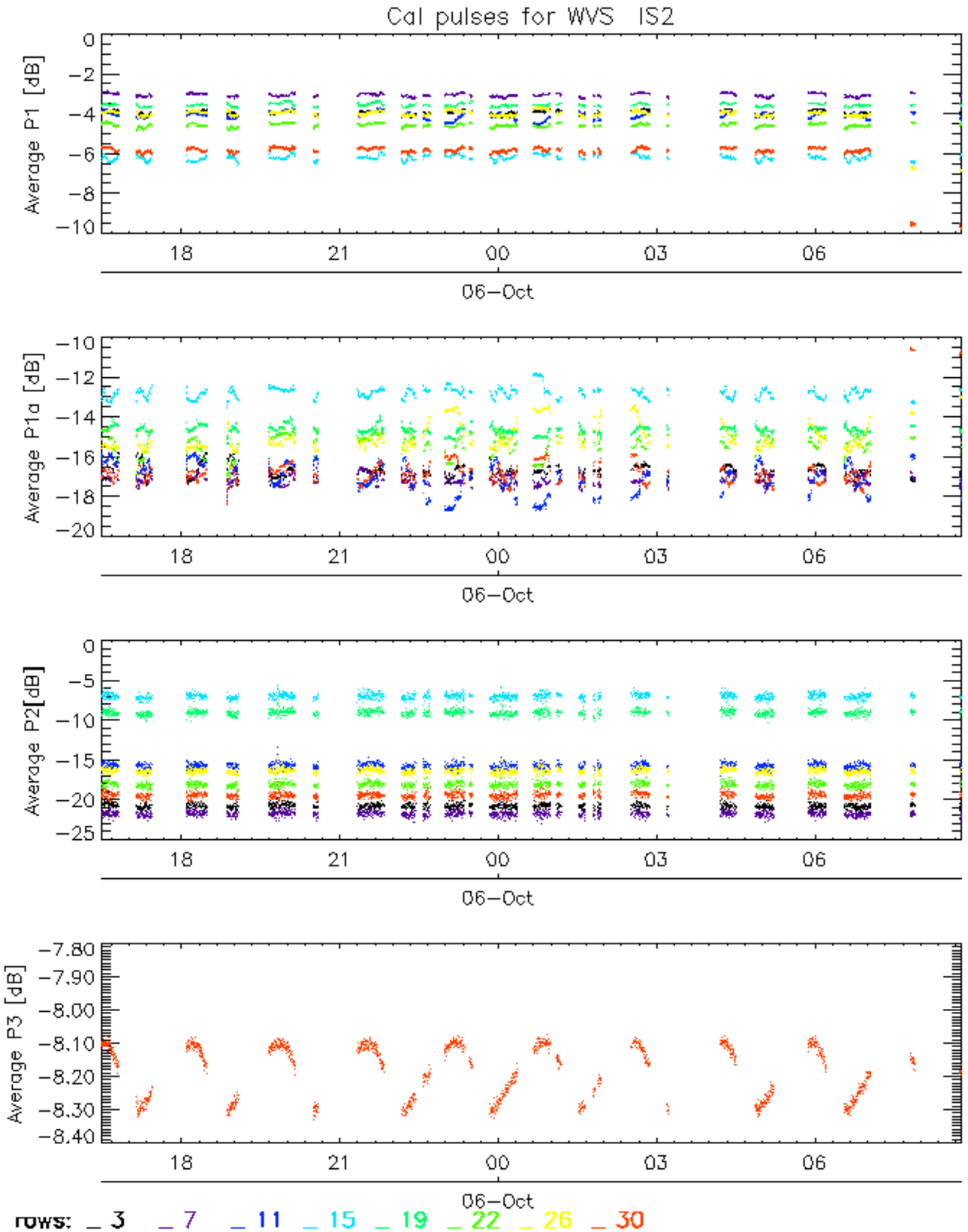

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
06−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
06−Oct
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
06−Oct
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
06−Oct
rows: _ 3 _ 7 _ 11 _ 15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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
06−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
06−Oct
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
06−Oct
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
06−Oct
rows: 3 7 11 15 19 22 26 30

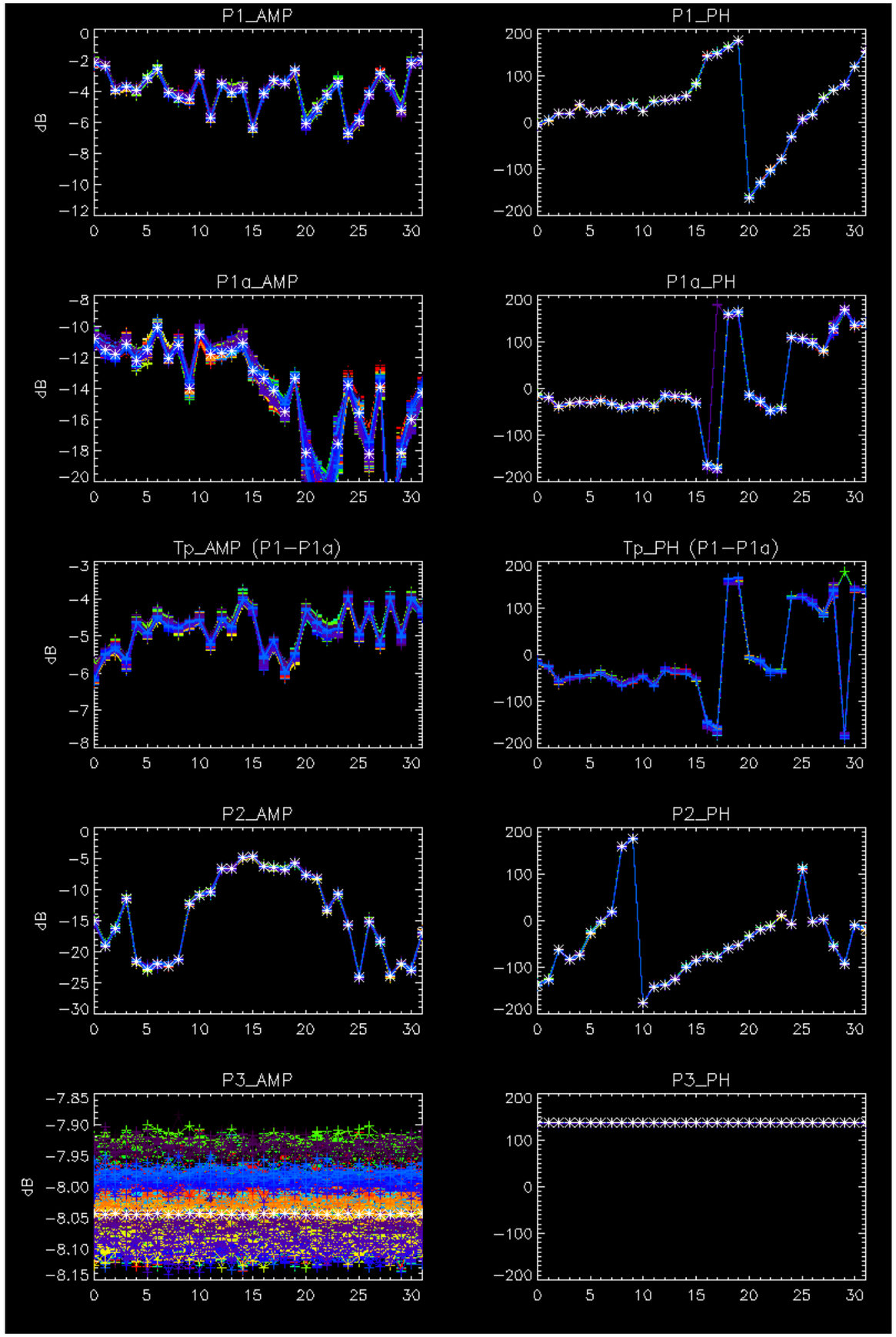

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

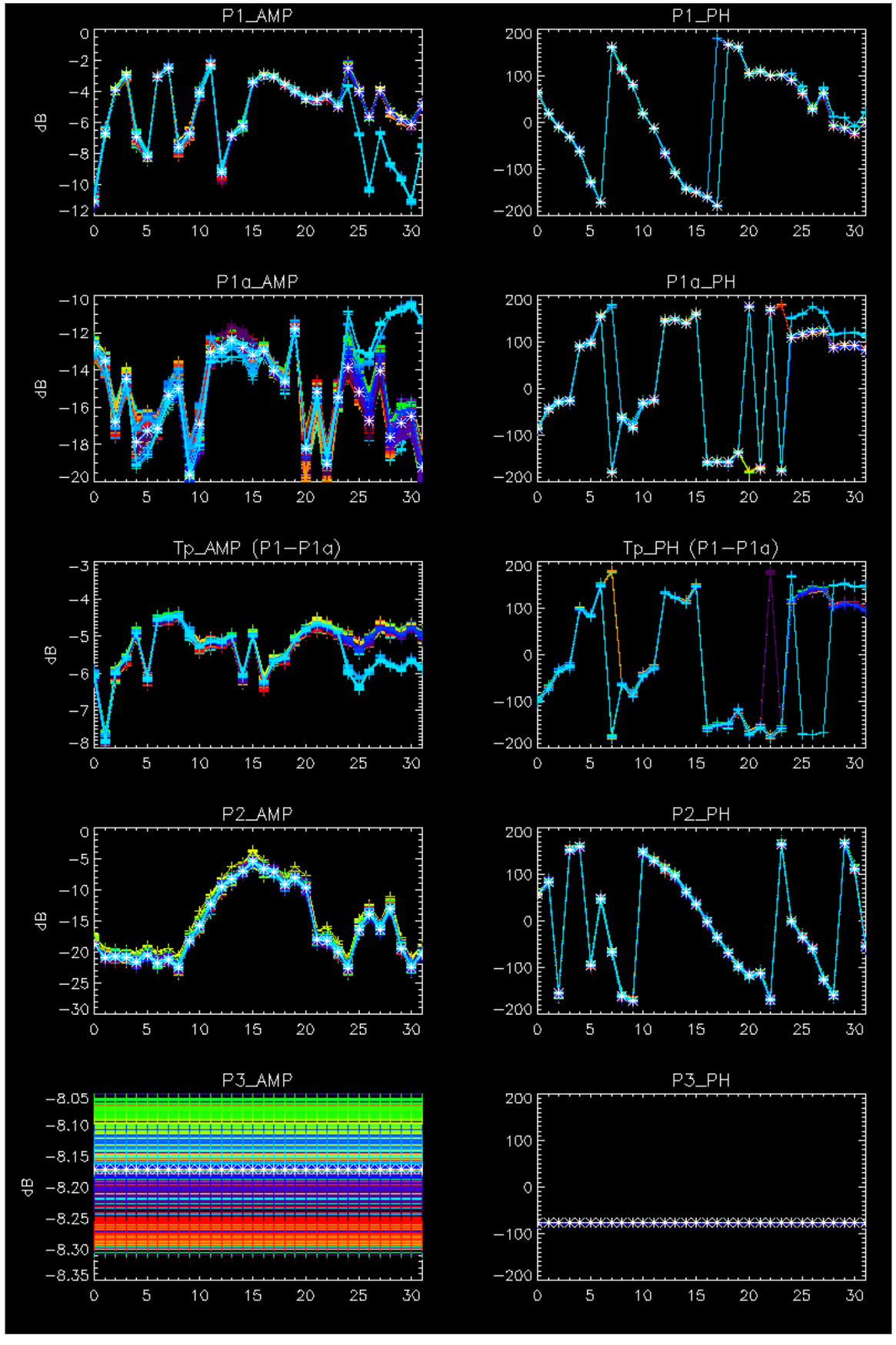

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
06−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
06−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
06−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
06−Oct
rows: _ 3 _ 7 _ 11 _ 15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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
Average P1a [dB]
−10
−15
−20
−25
−30
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]
0
−2
−4
−6
−8
−10
18
21
00
03
06
06−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
06−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
06−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
06−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

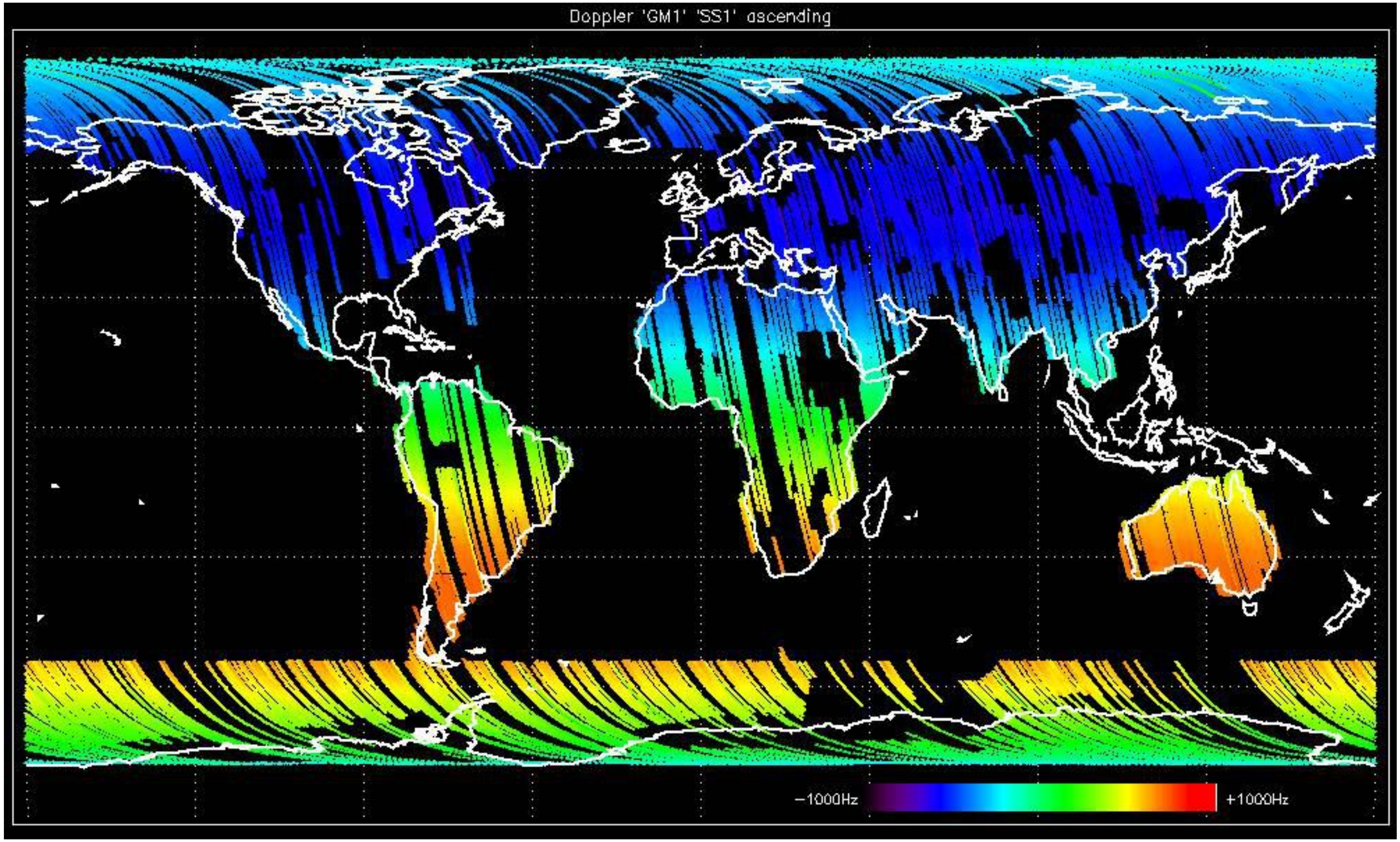
No anomalies observed.

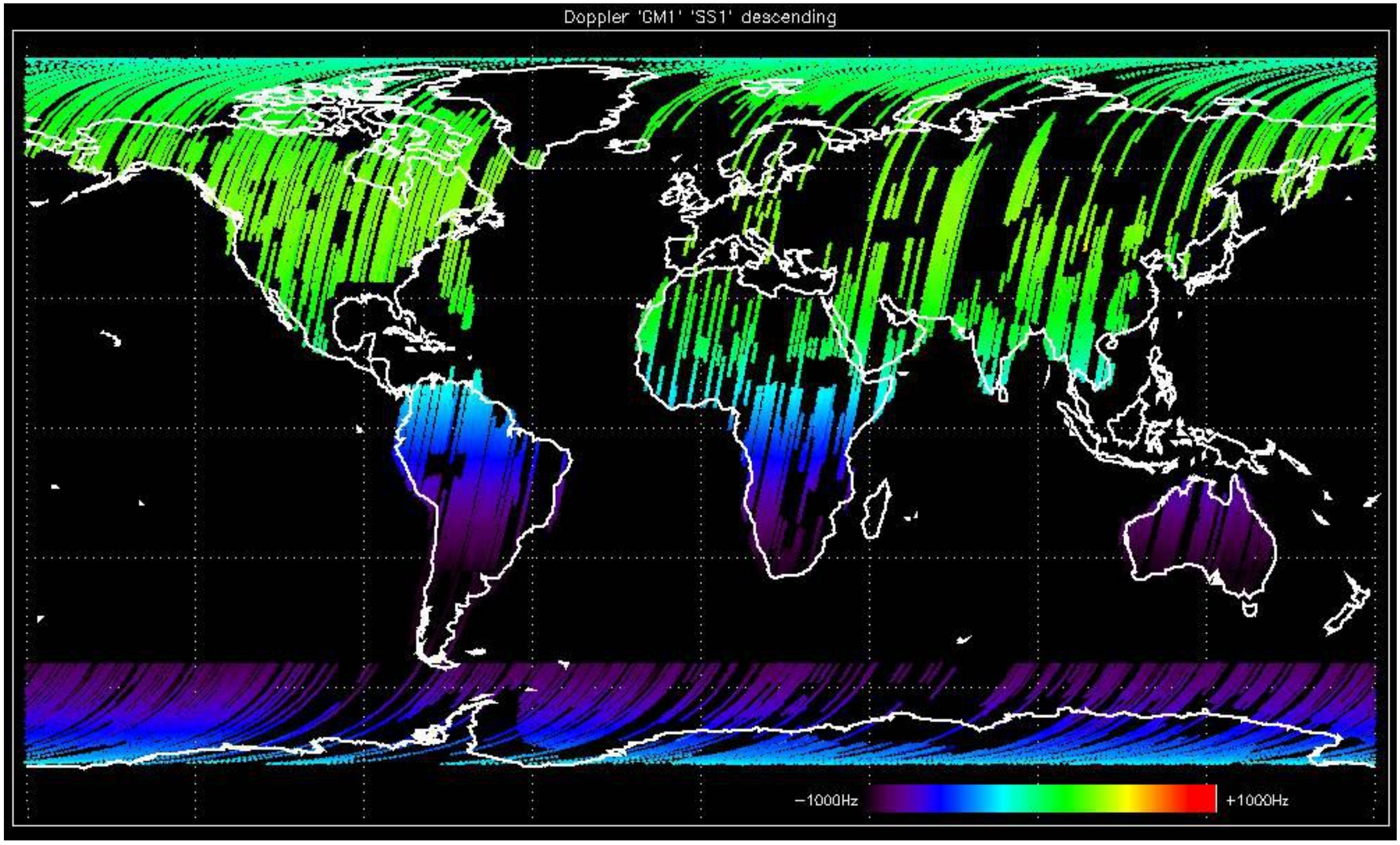

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

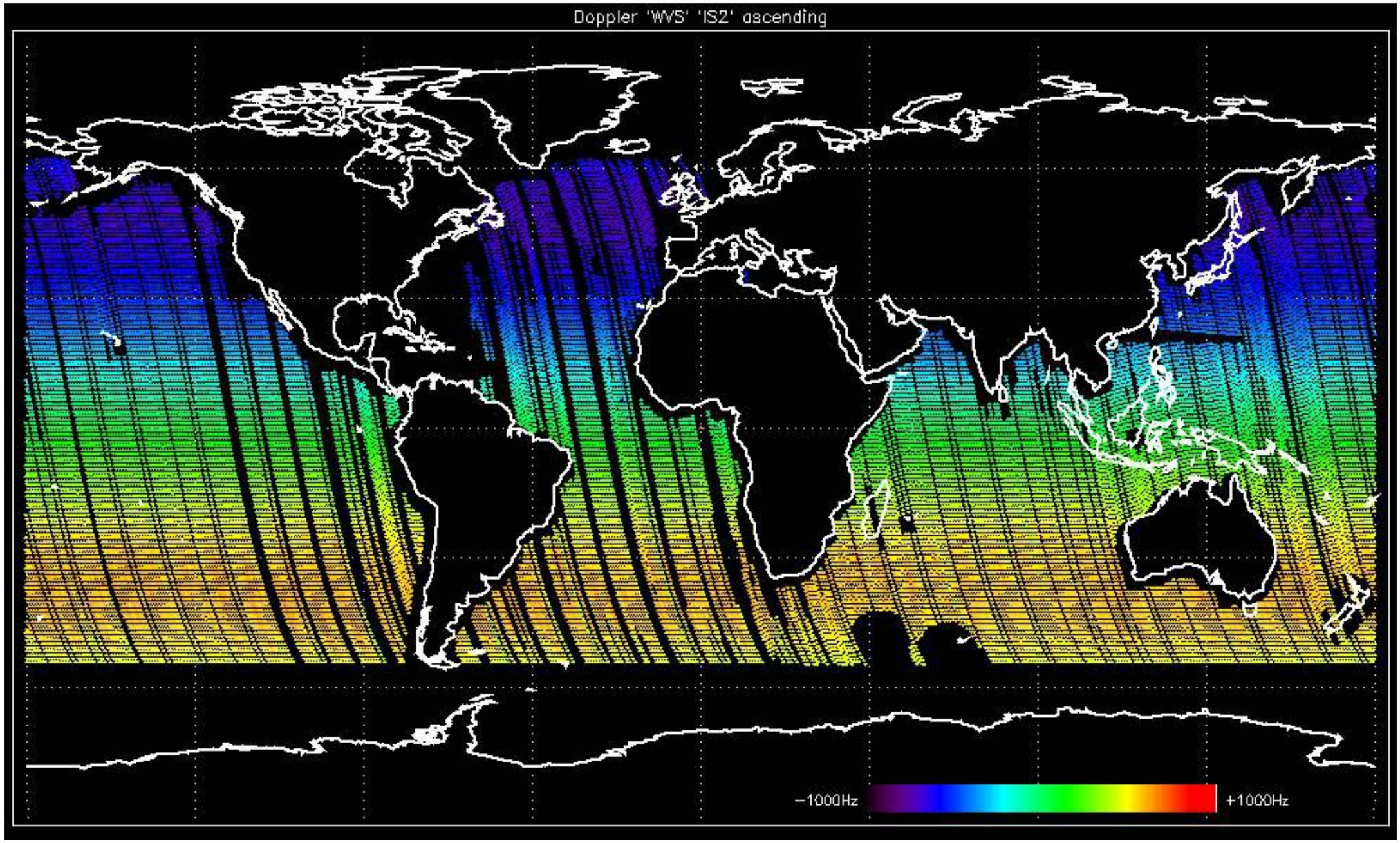

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

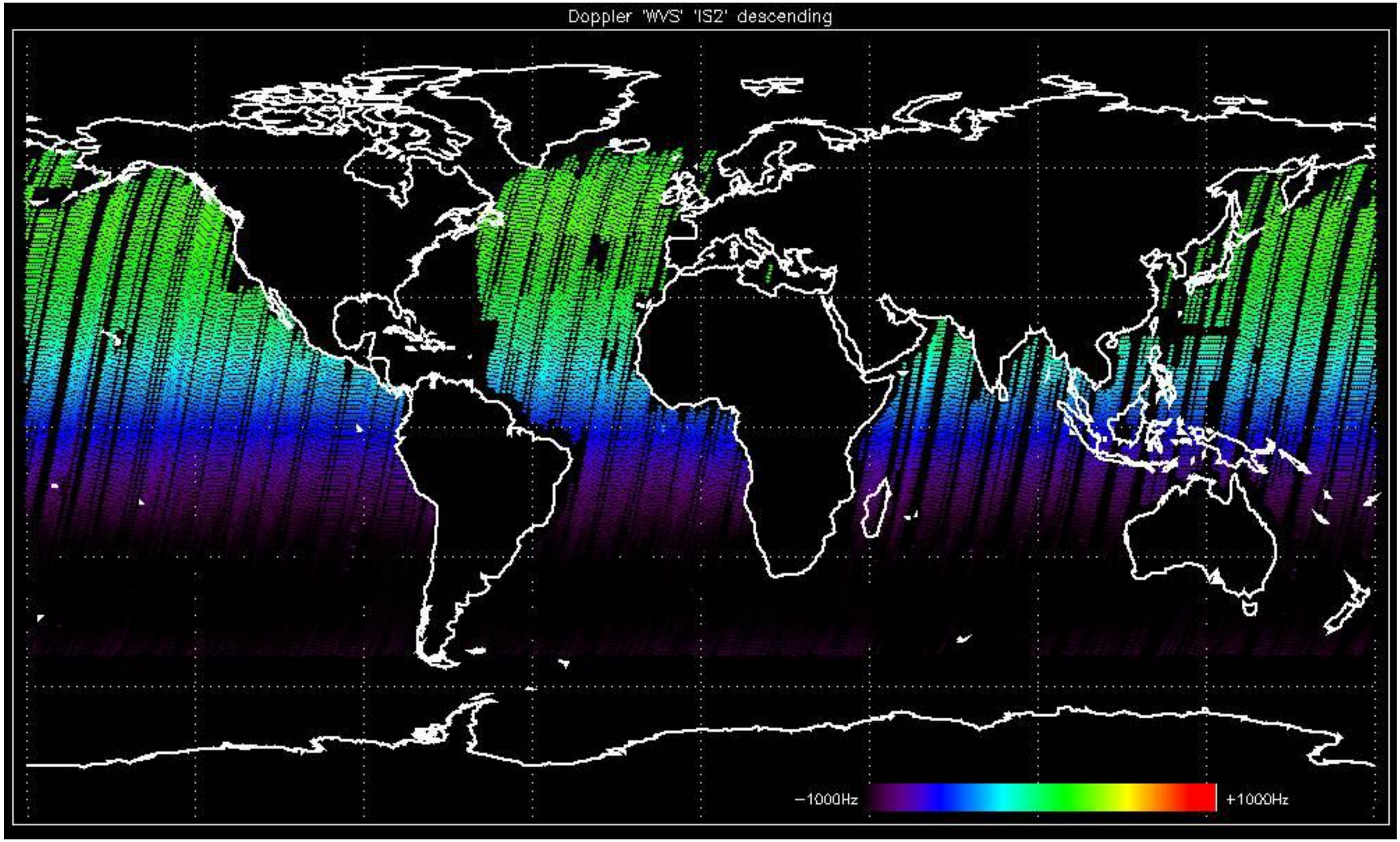
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

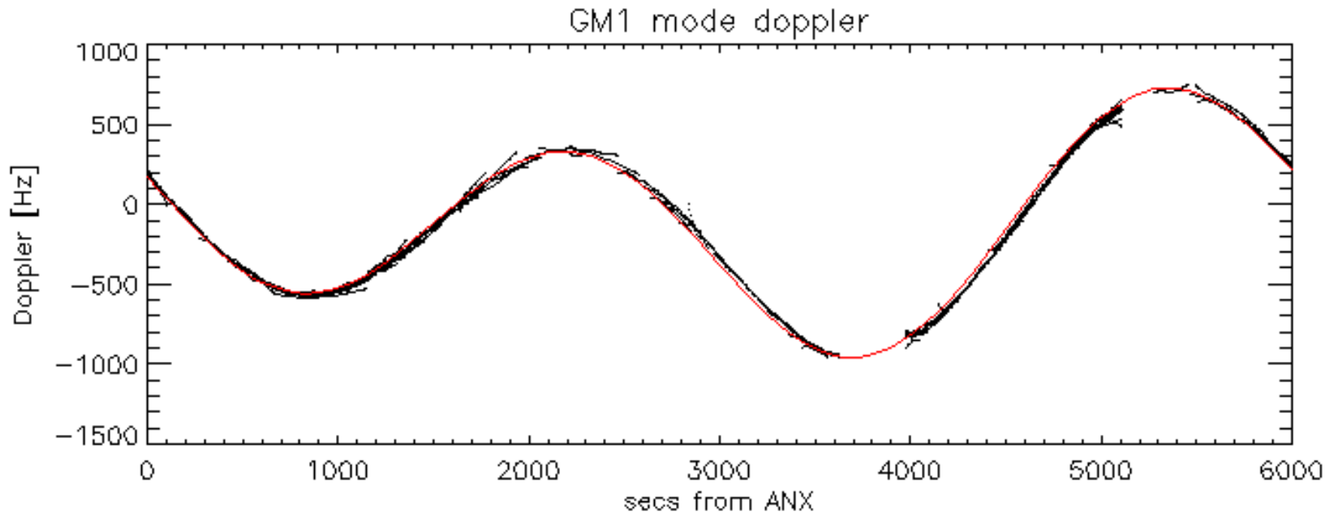
Preliminary report.The data is not yet controled

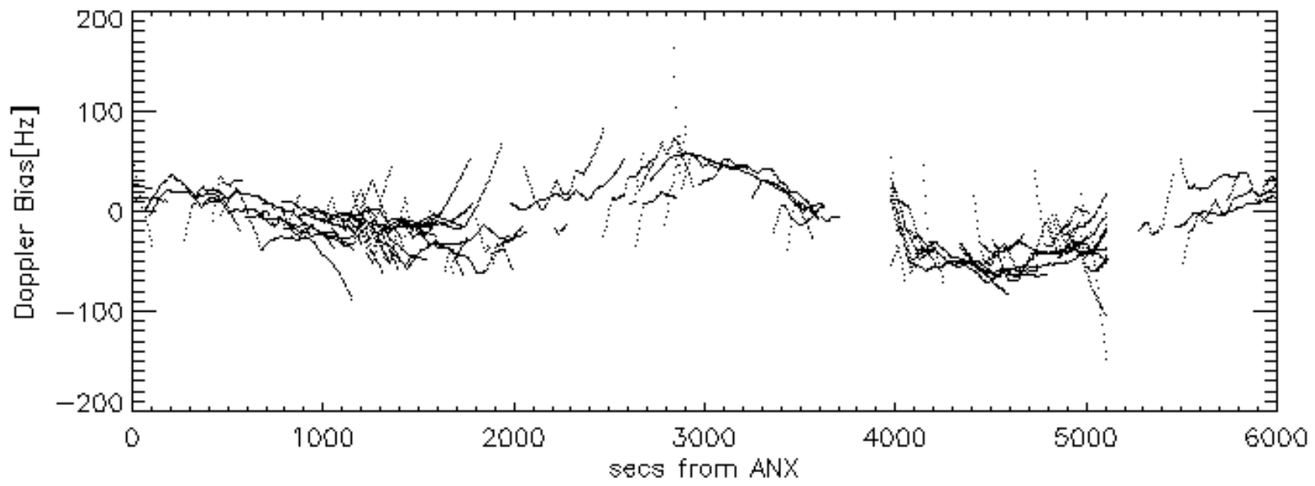

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

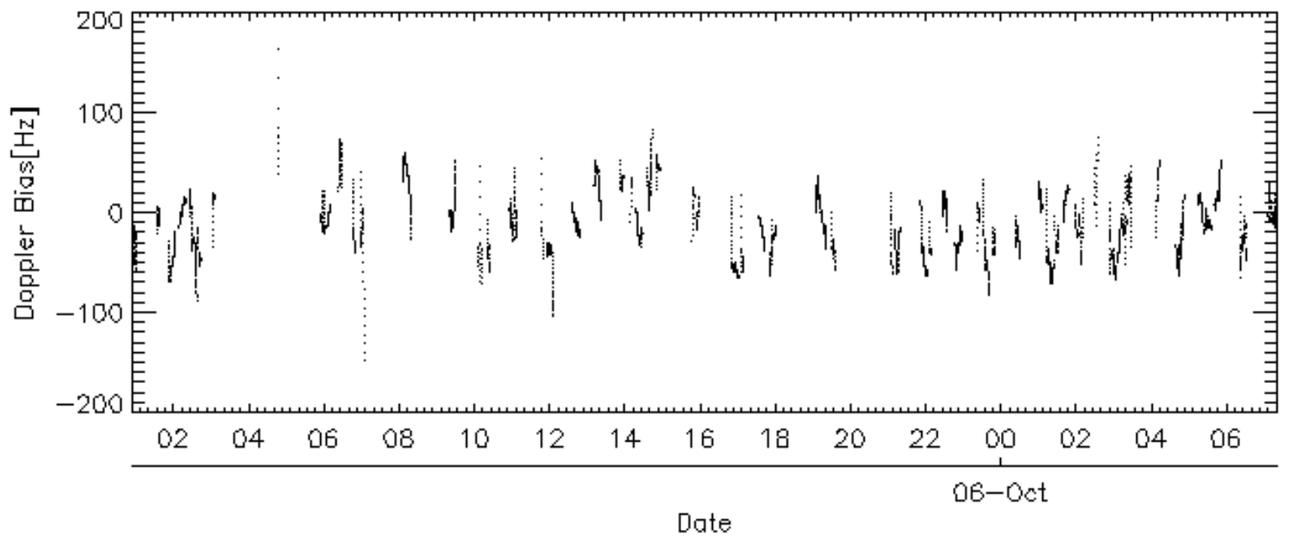

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

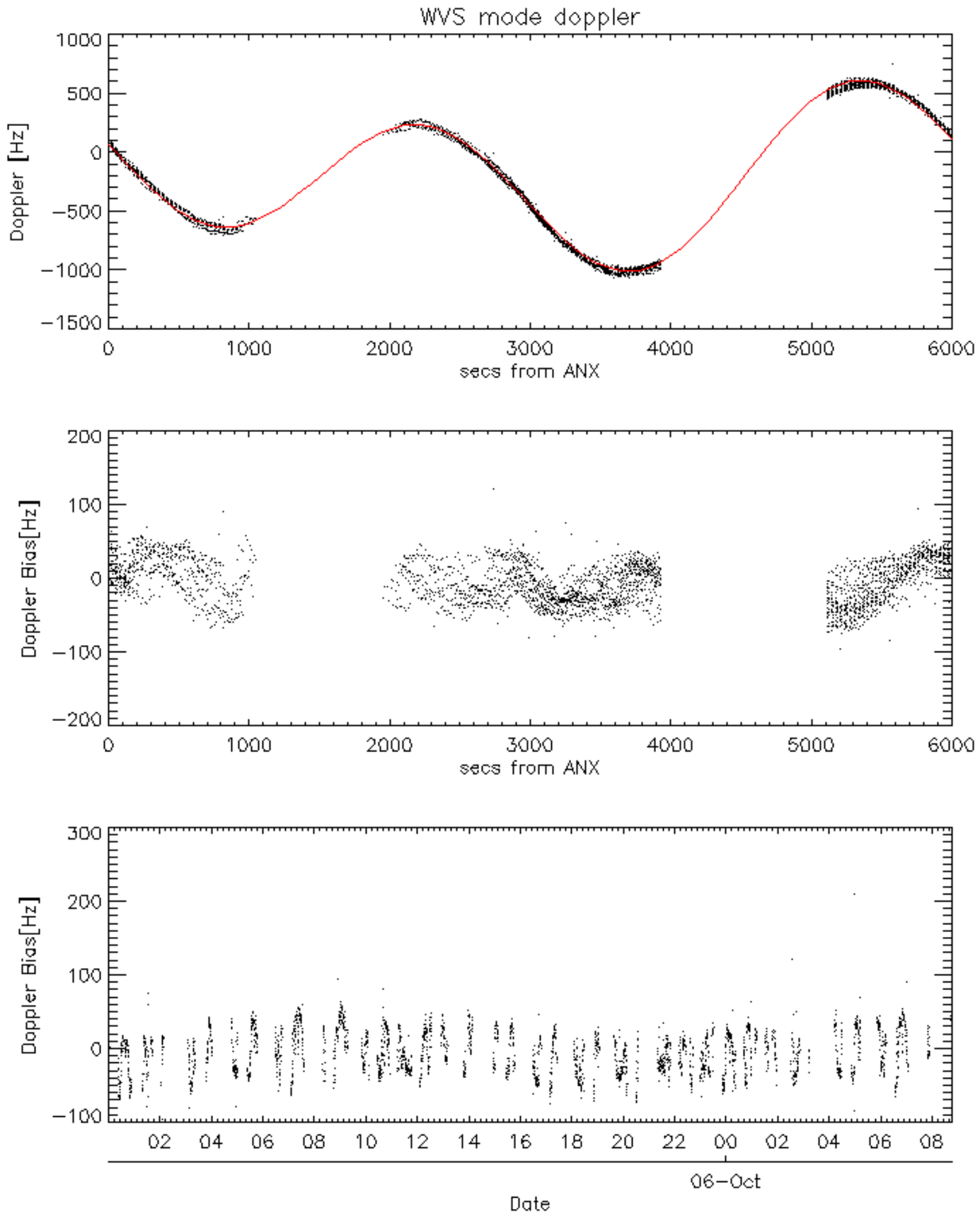

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

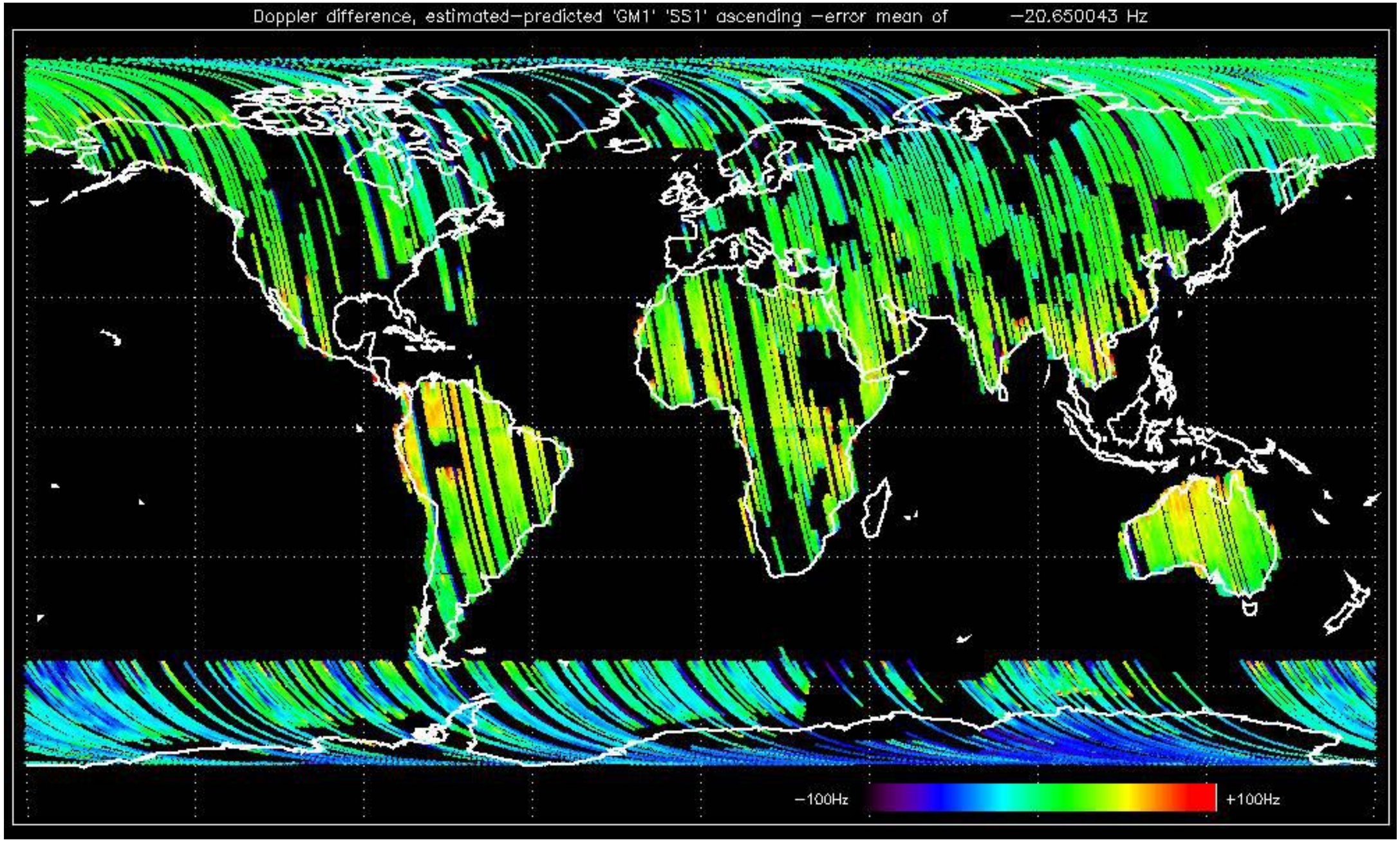

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

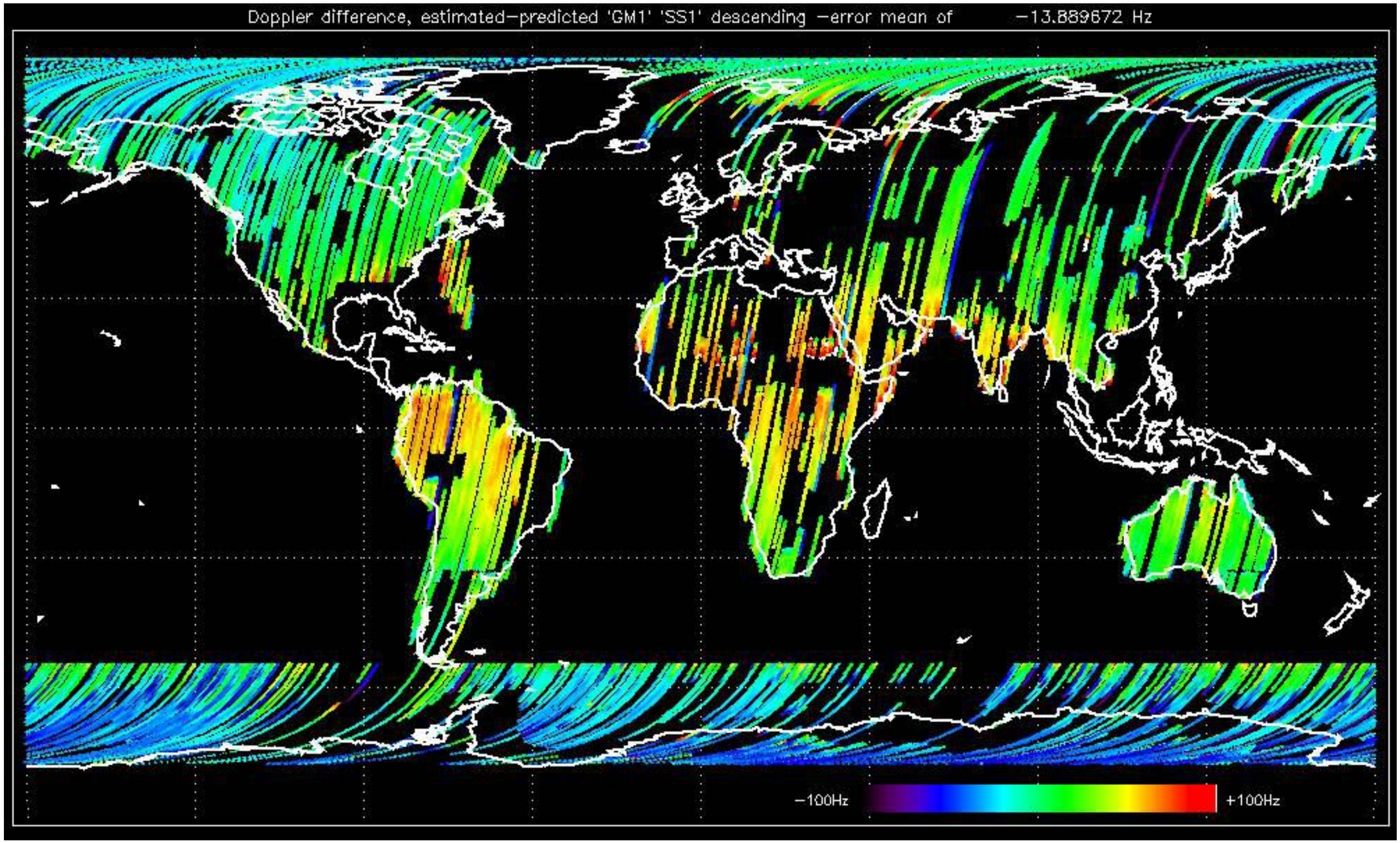

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

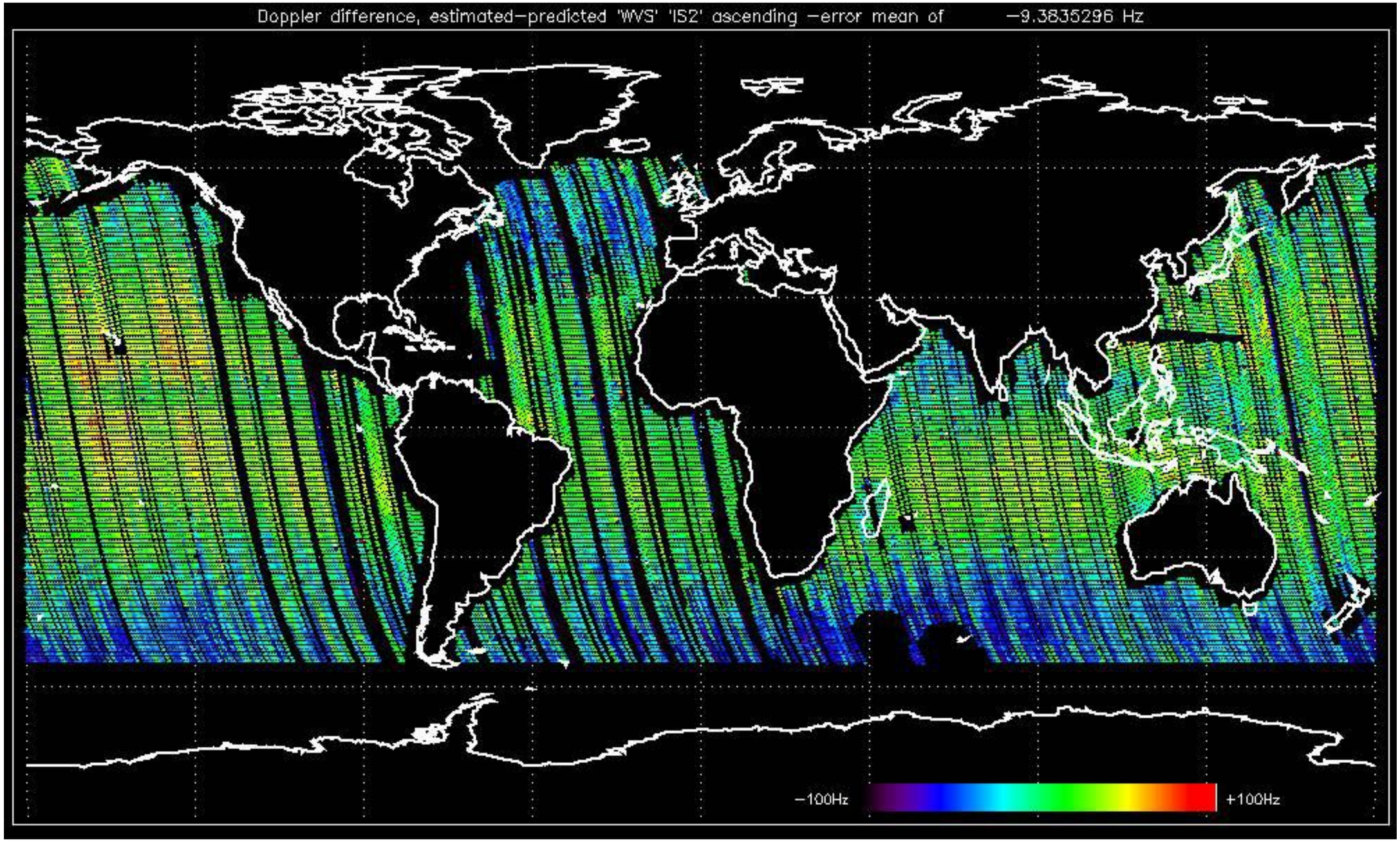

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

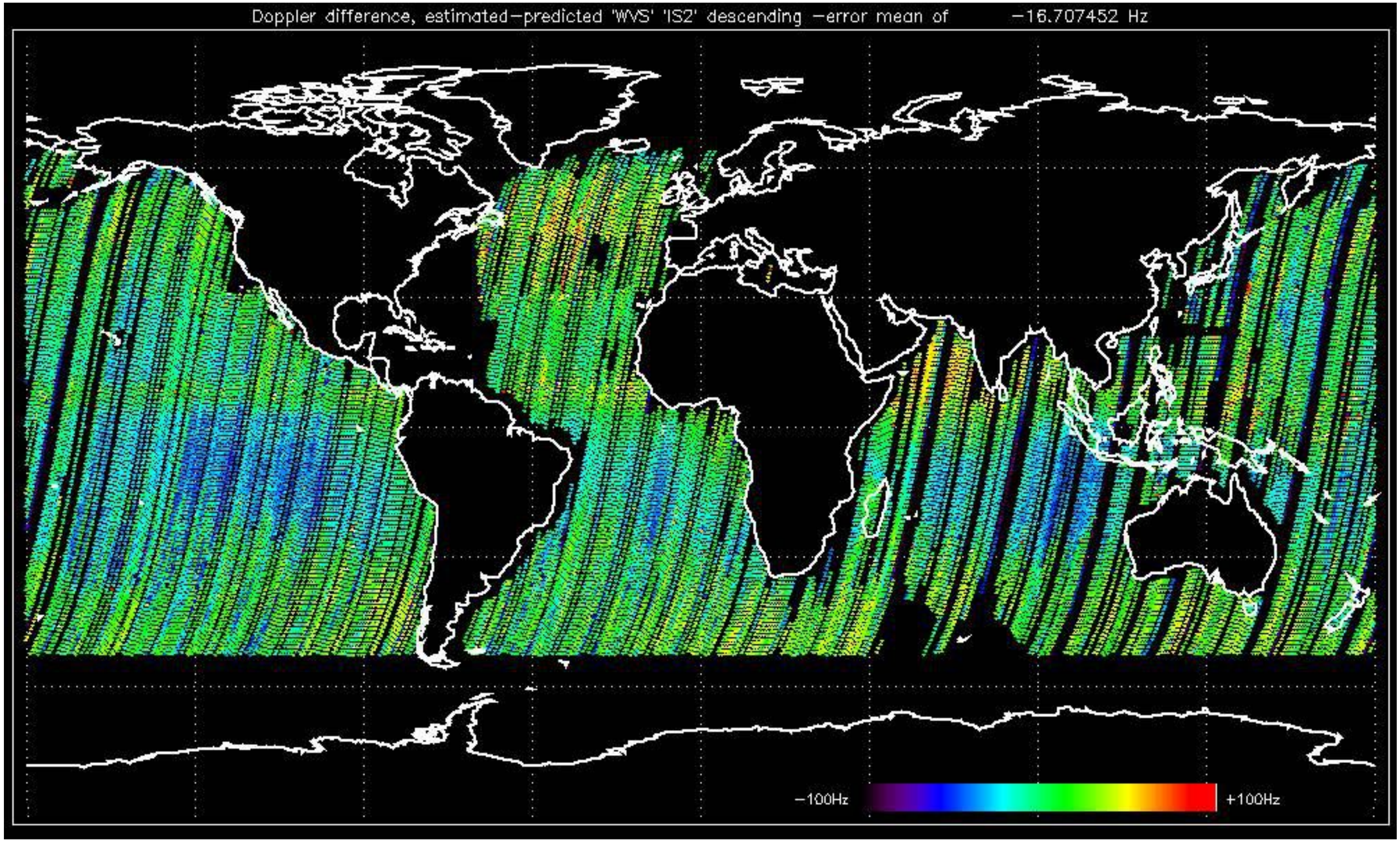

Doppler Bias[Hz]
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
06−Oct
Date


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −20.650043 Hz
−100Hz
+100Hz

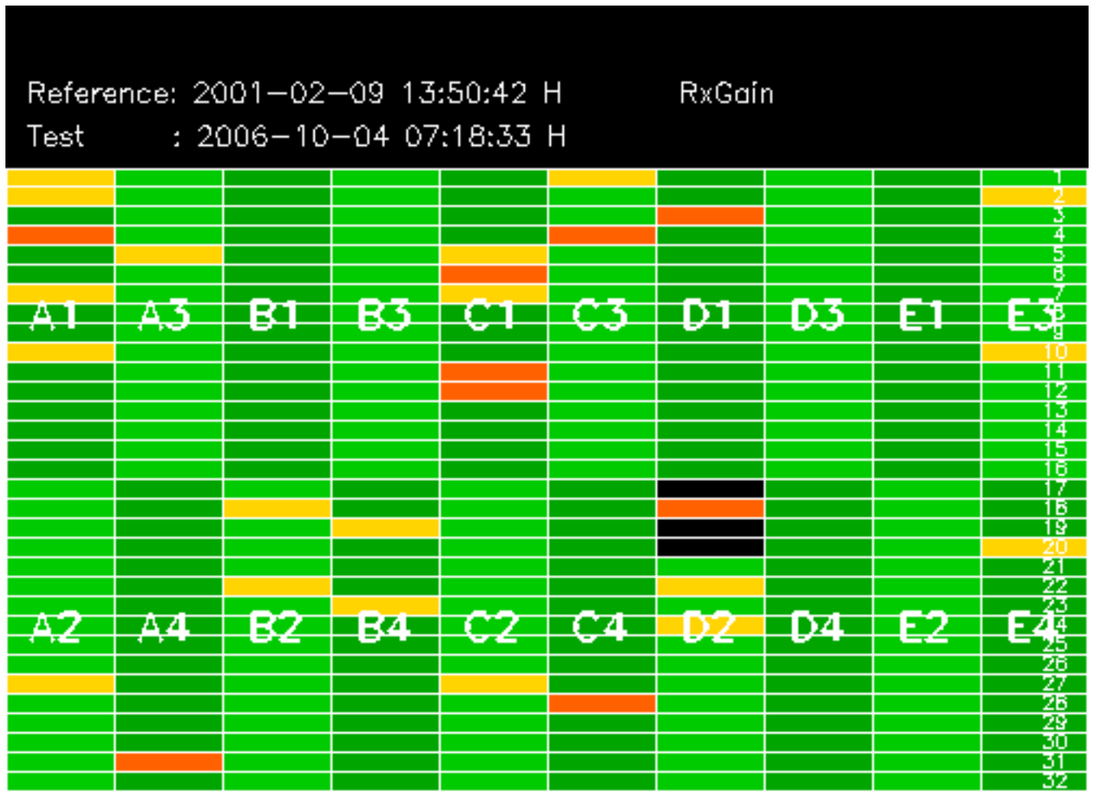

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −13.889672 Hz
−100Hz
+100Hz

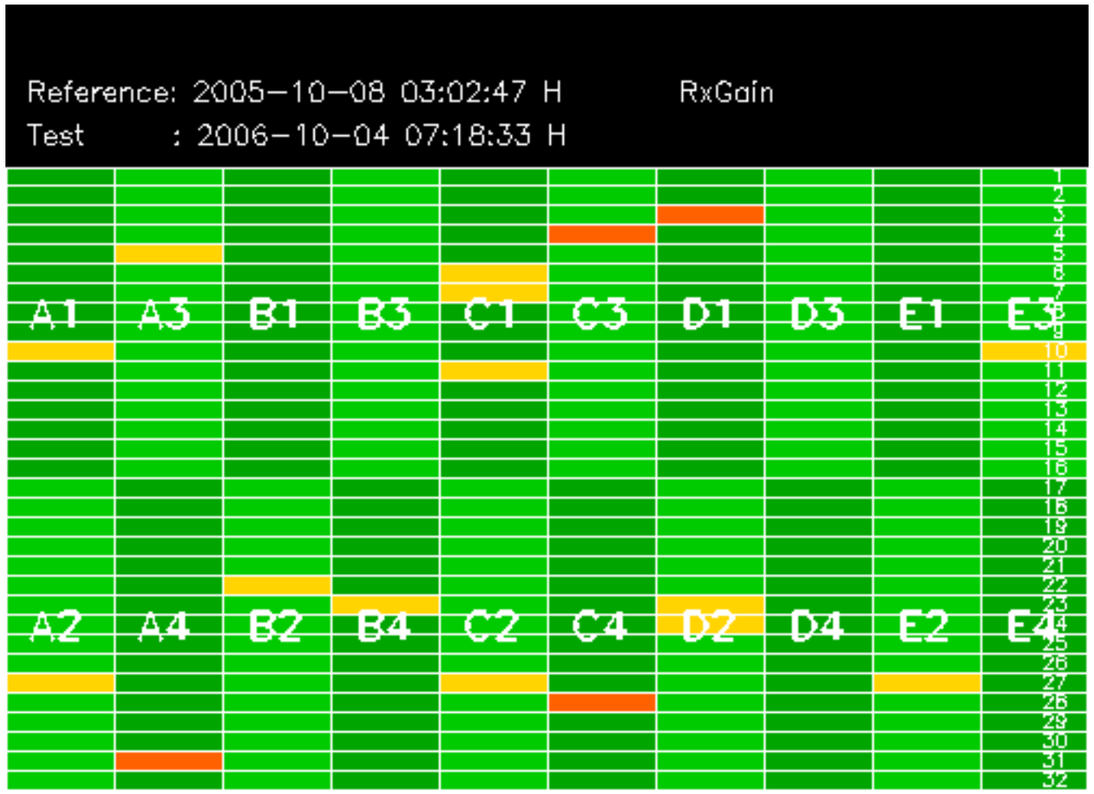

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −9.3835296 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −16.707452 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-04 07:18:33 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 : 2006-10-04 07:18:33 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
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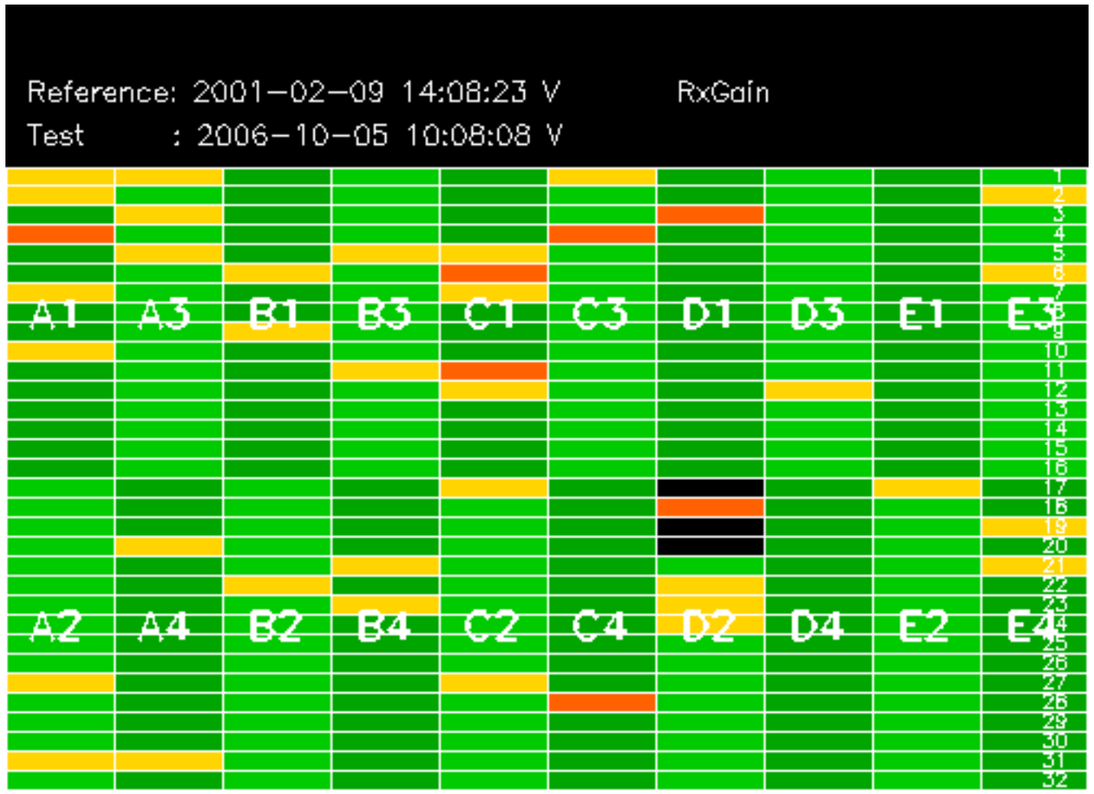
Reference: 2001-02-09 14:08:23 V
Test : 2006-10-05 10:08:08 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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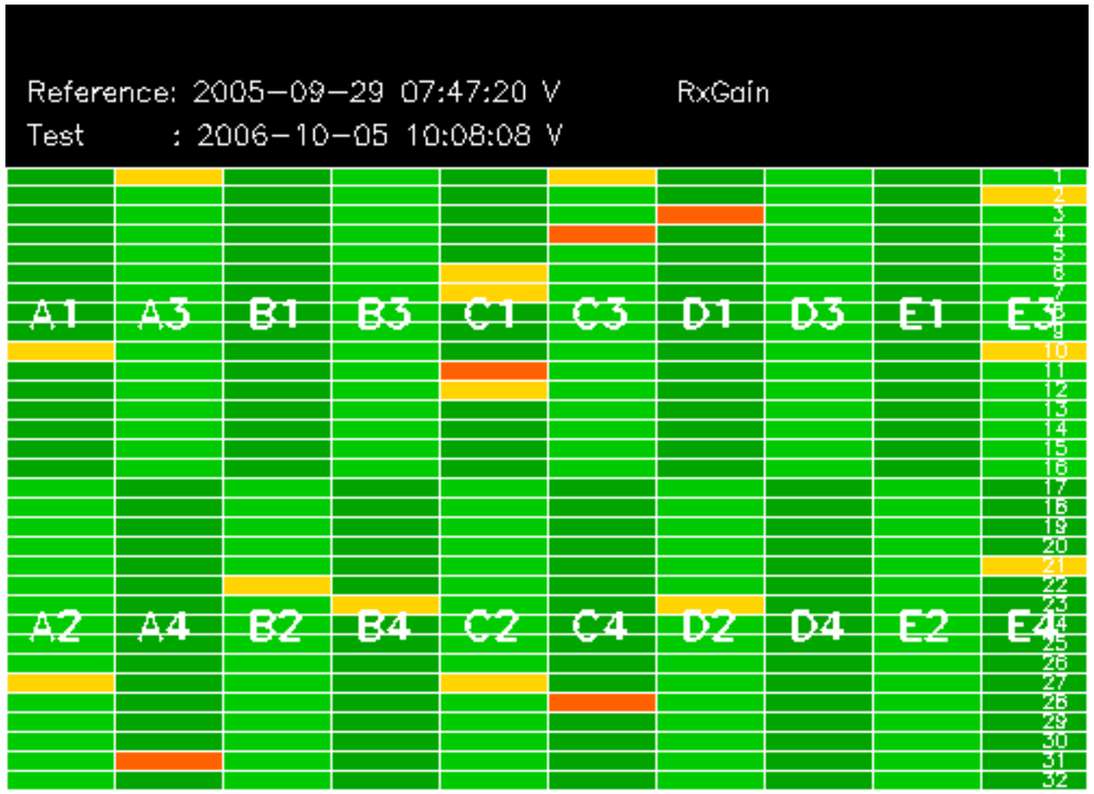
Reference: 2005-09-29 07:47:20 V
Test : 2006-10-05 10:08:08 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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8
9
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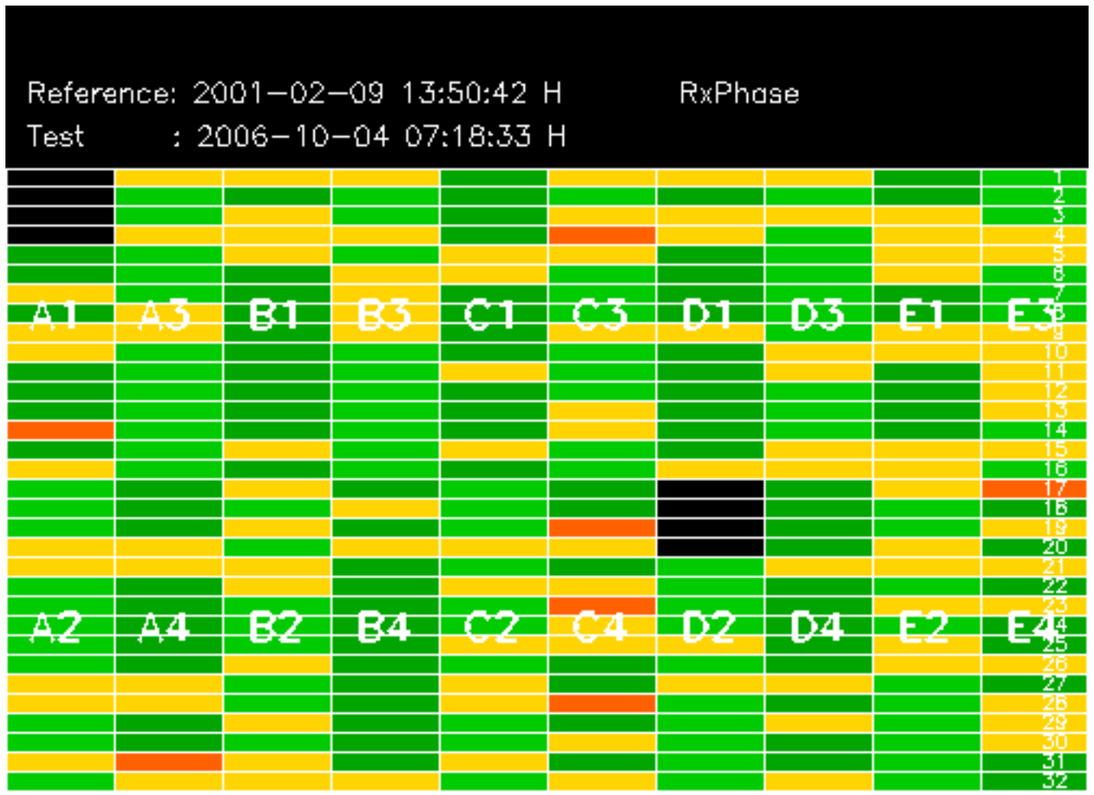
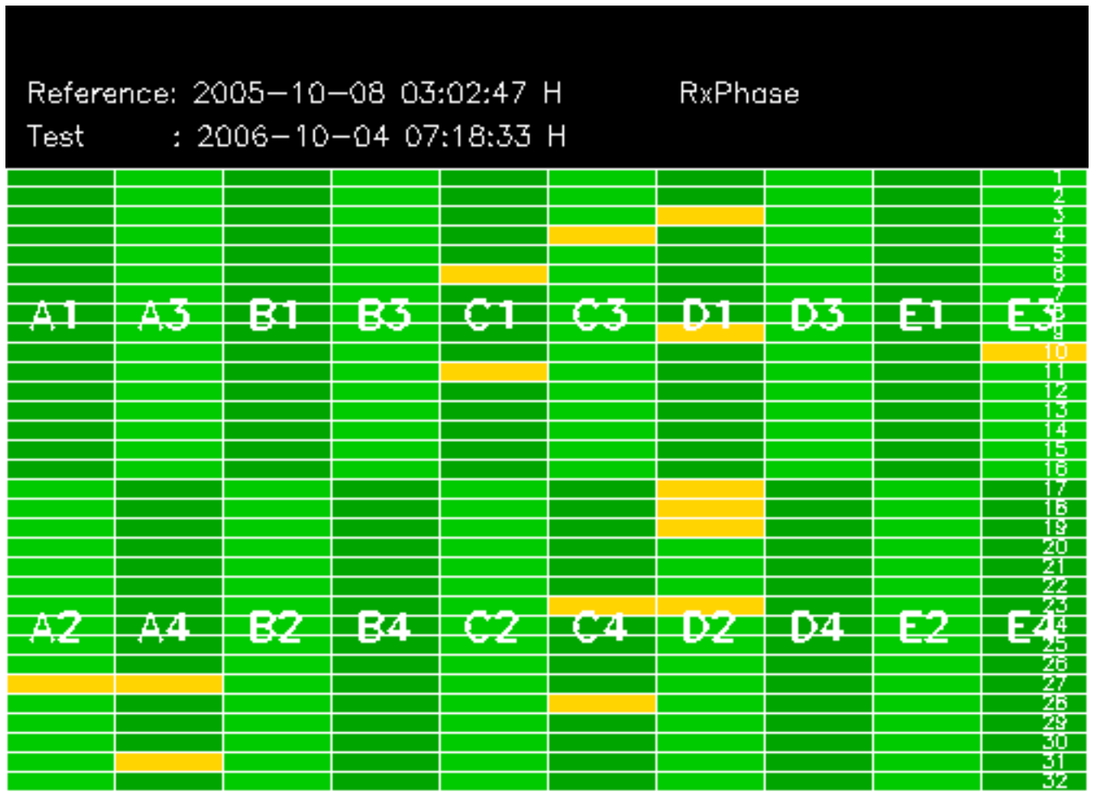
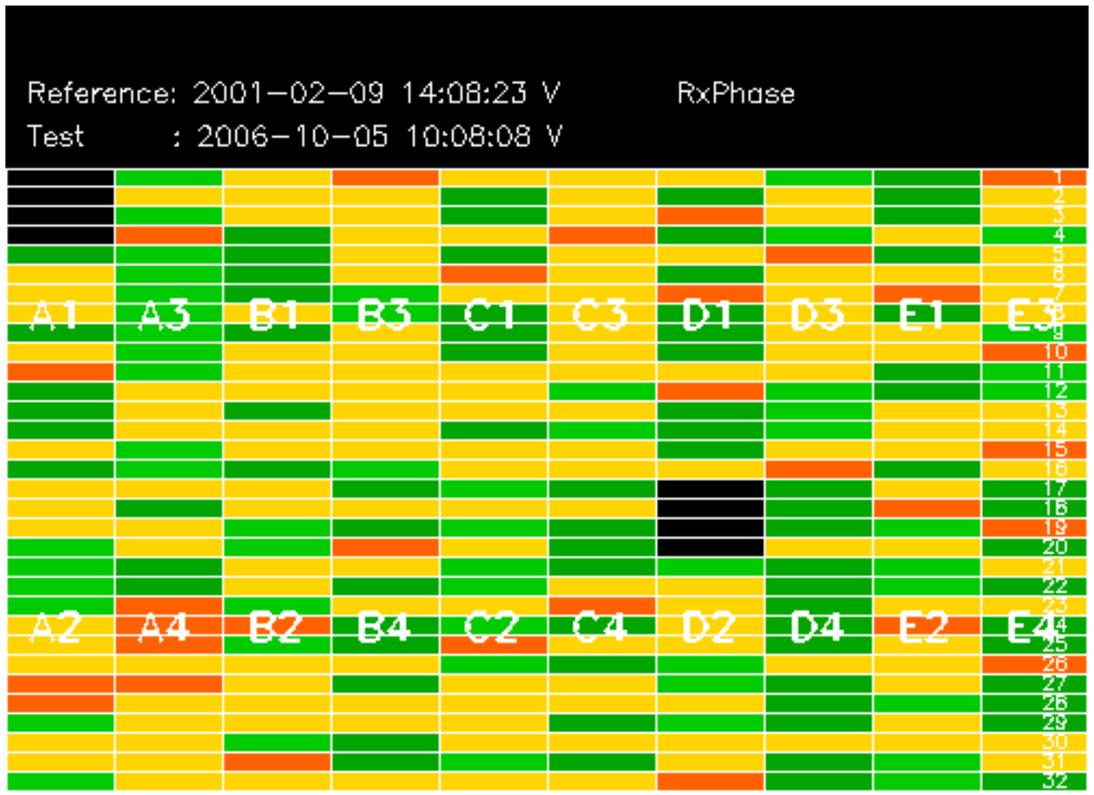
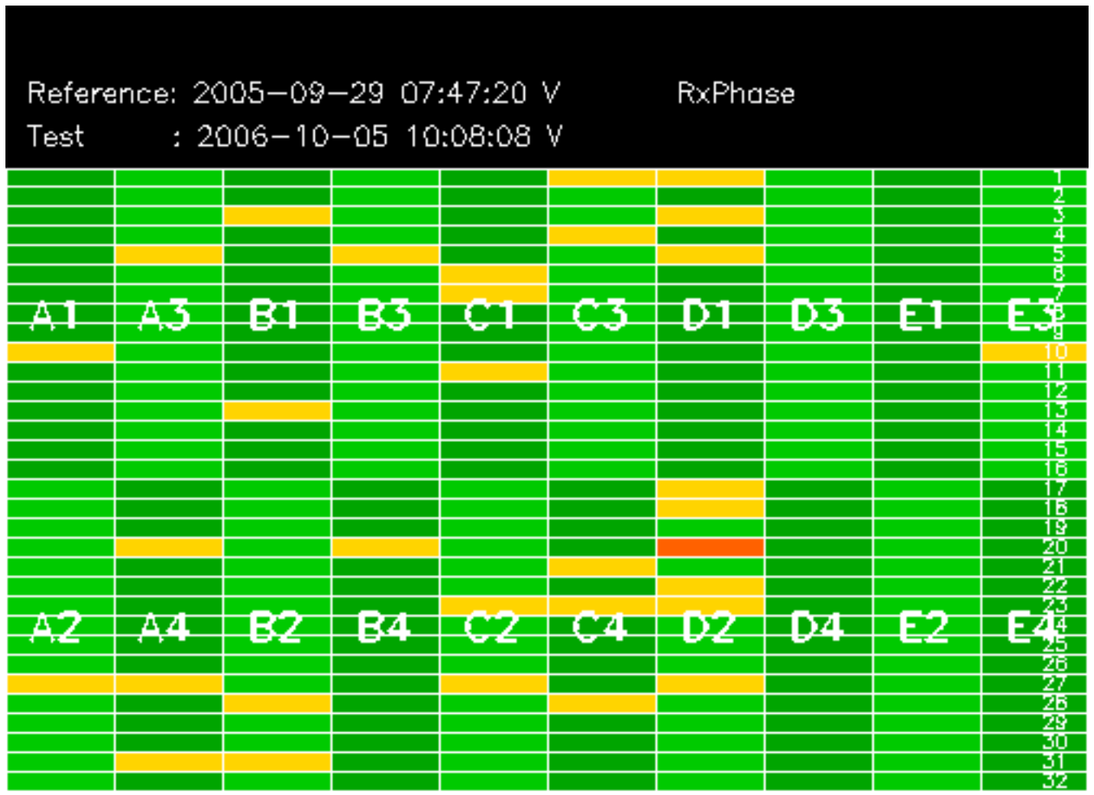
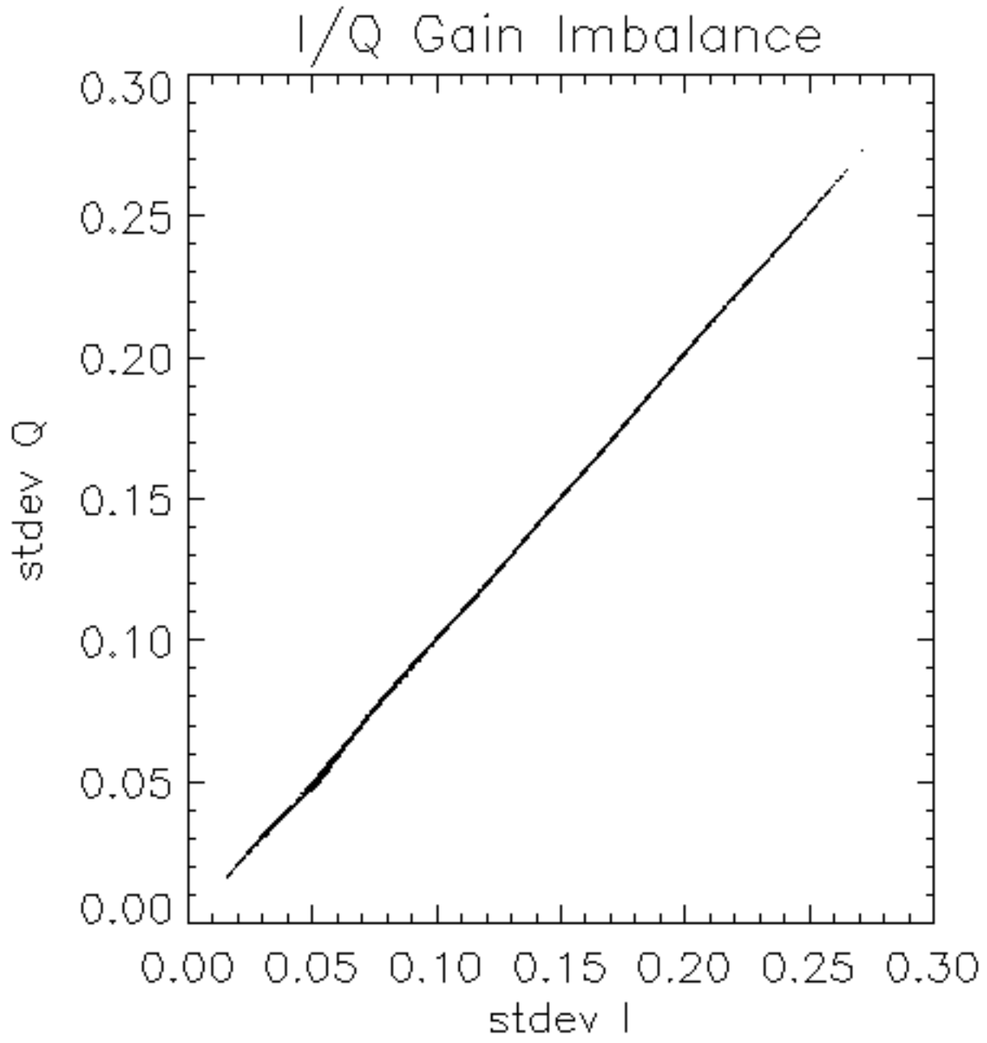
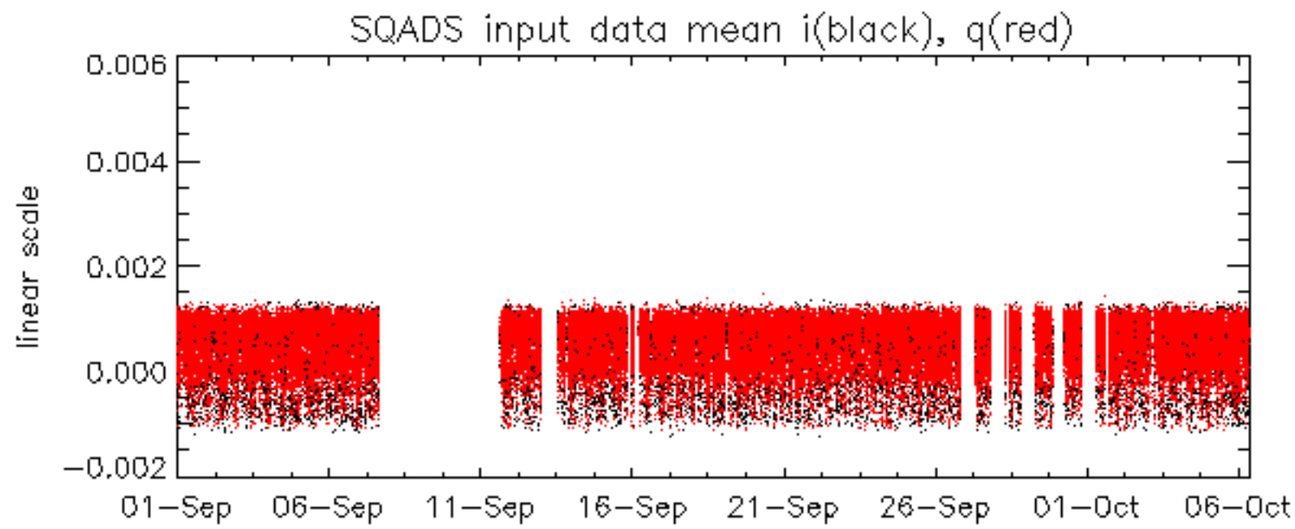

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-10-04 07:18:33 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

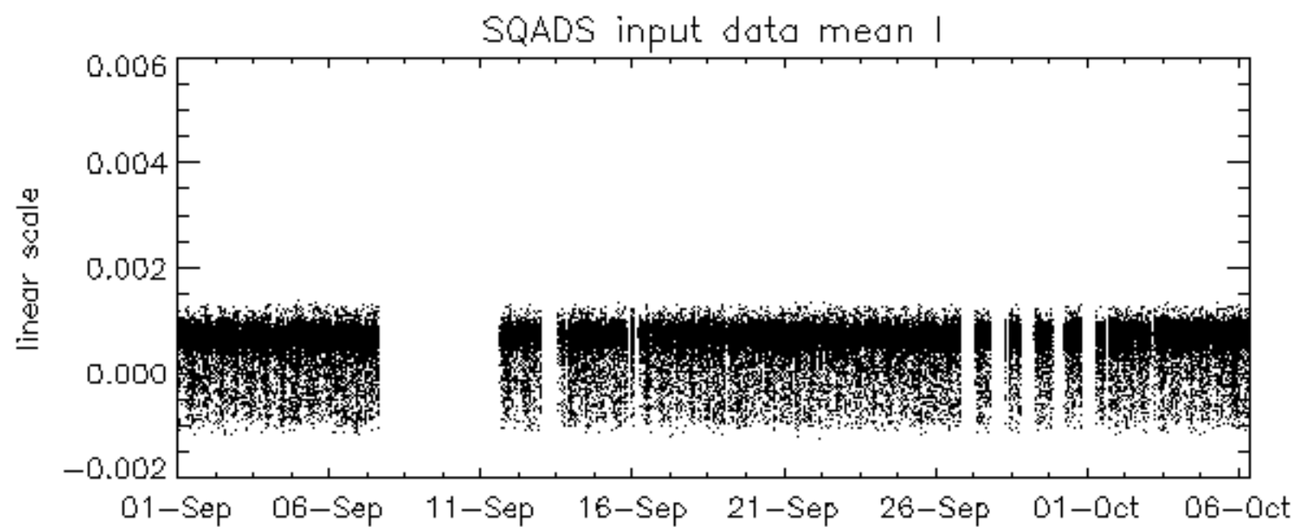

Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-10-04 07:18:33 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

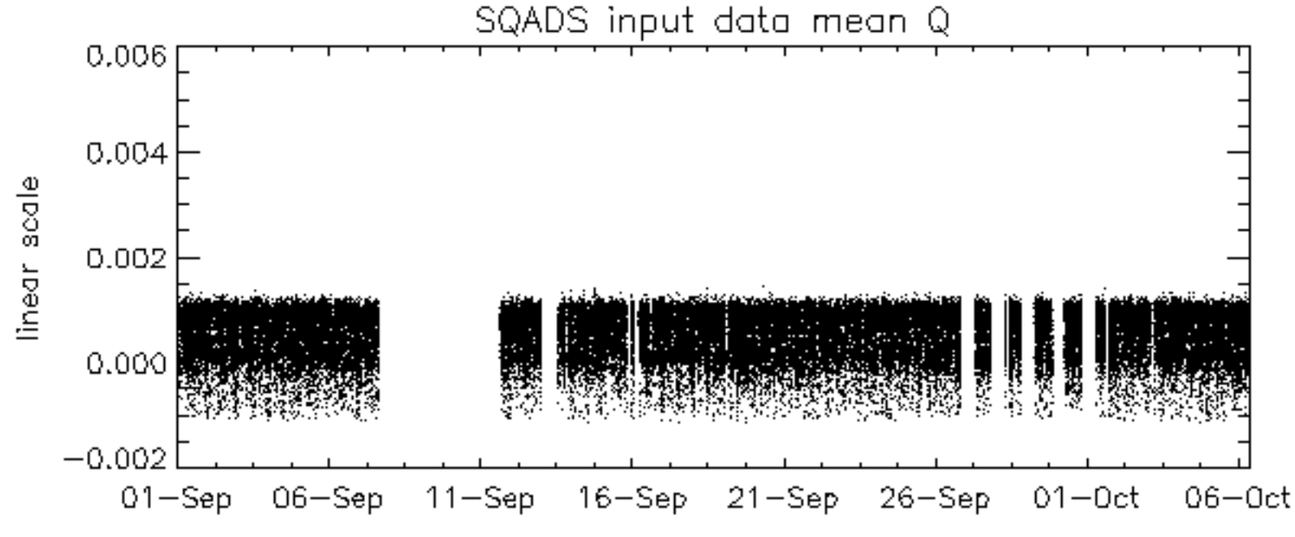

Reference: 2001-02-09 14:08:23 V
Test : 2006-10-05 10:08:08 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

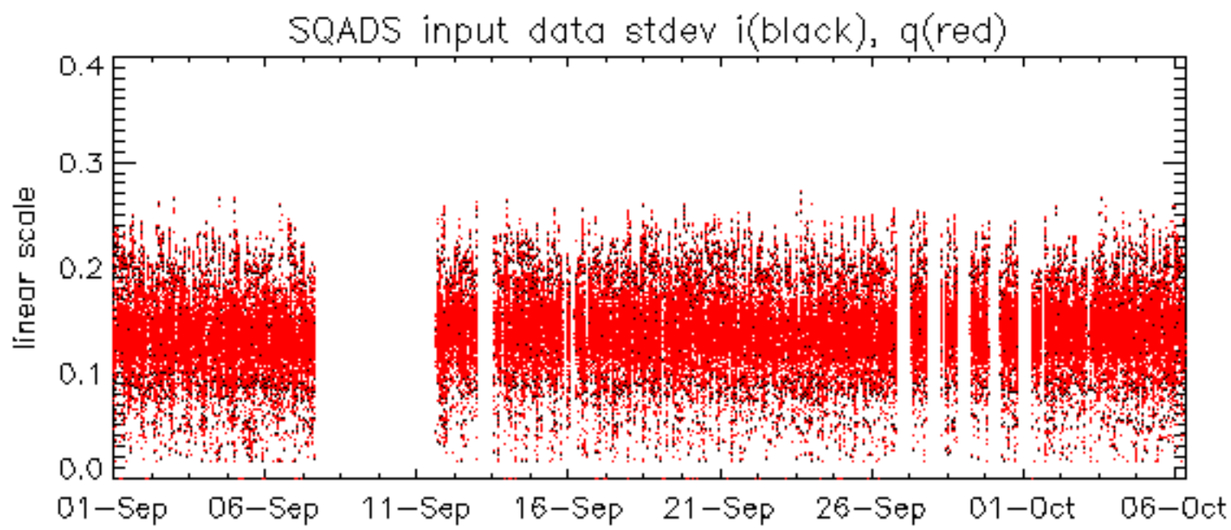

Reference: 2005-09-29 07:47:20 V
Test : 2006-10-05 10:08:08 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

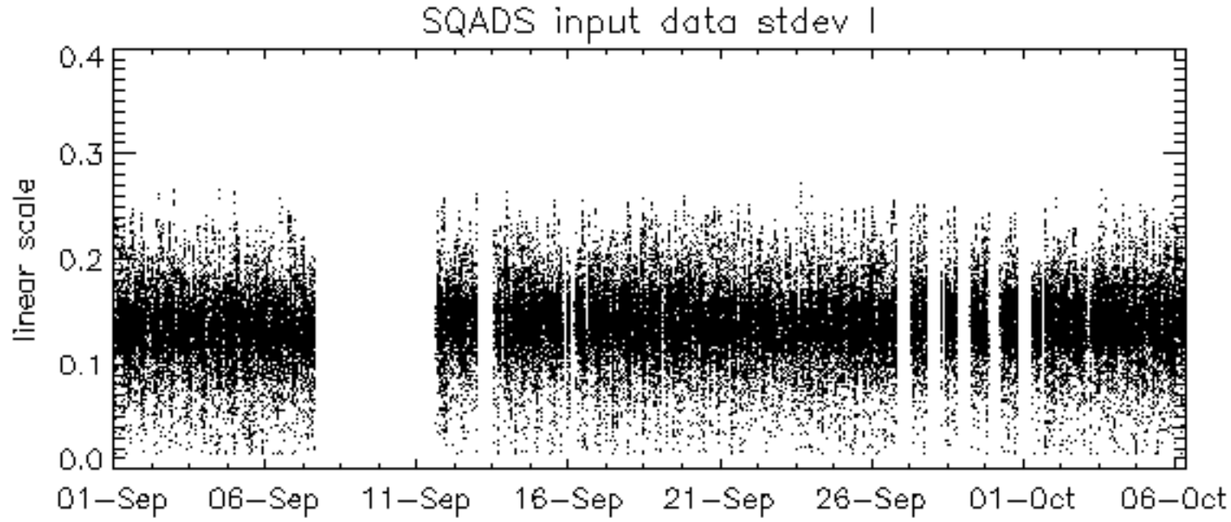

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

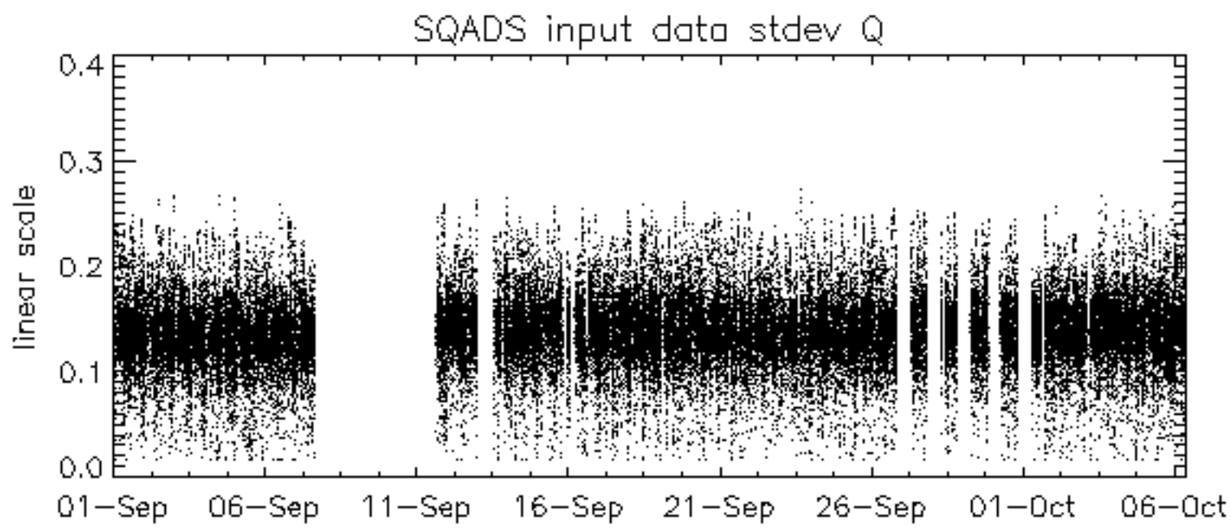

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Sep
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct

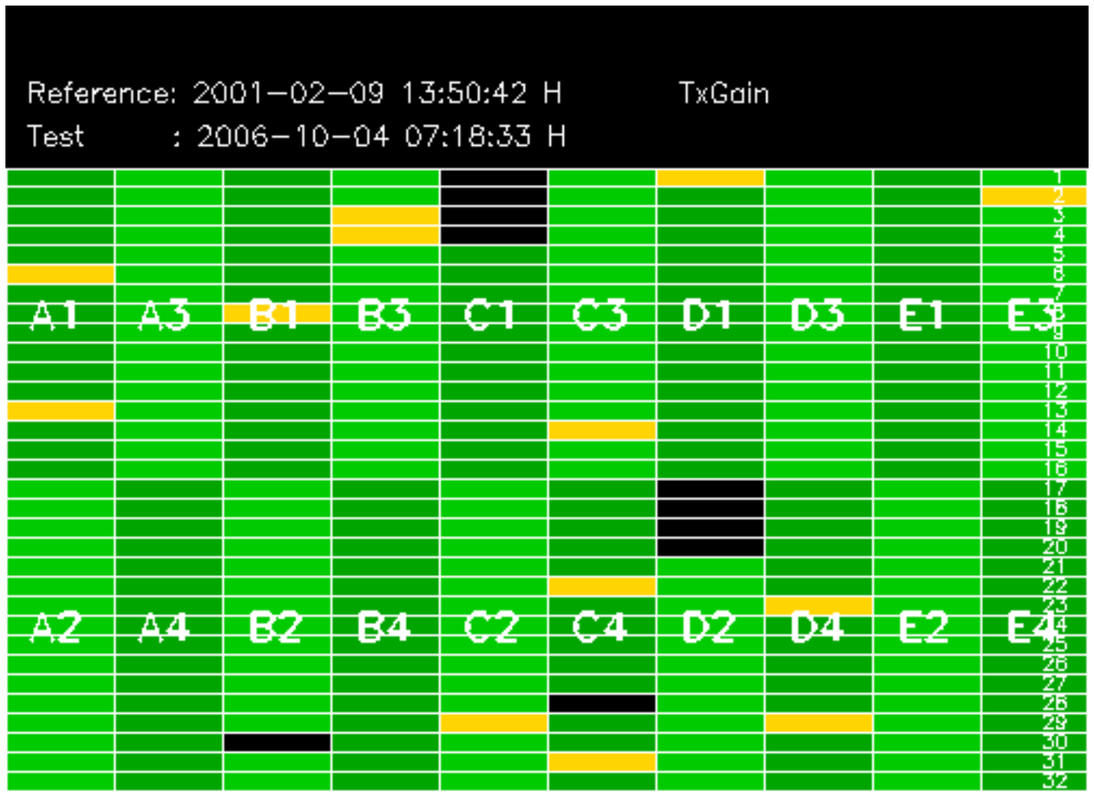

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
01−Sep
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct


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


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
01−Sep
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
01−Sep
06−Sep
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-04 07:18:33 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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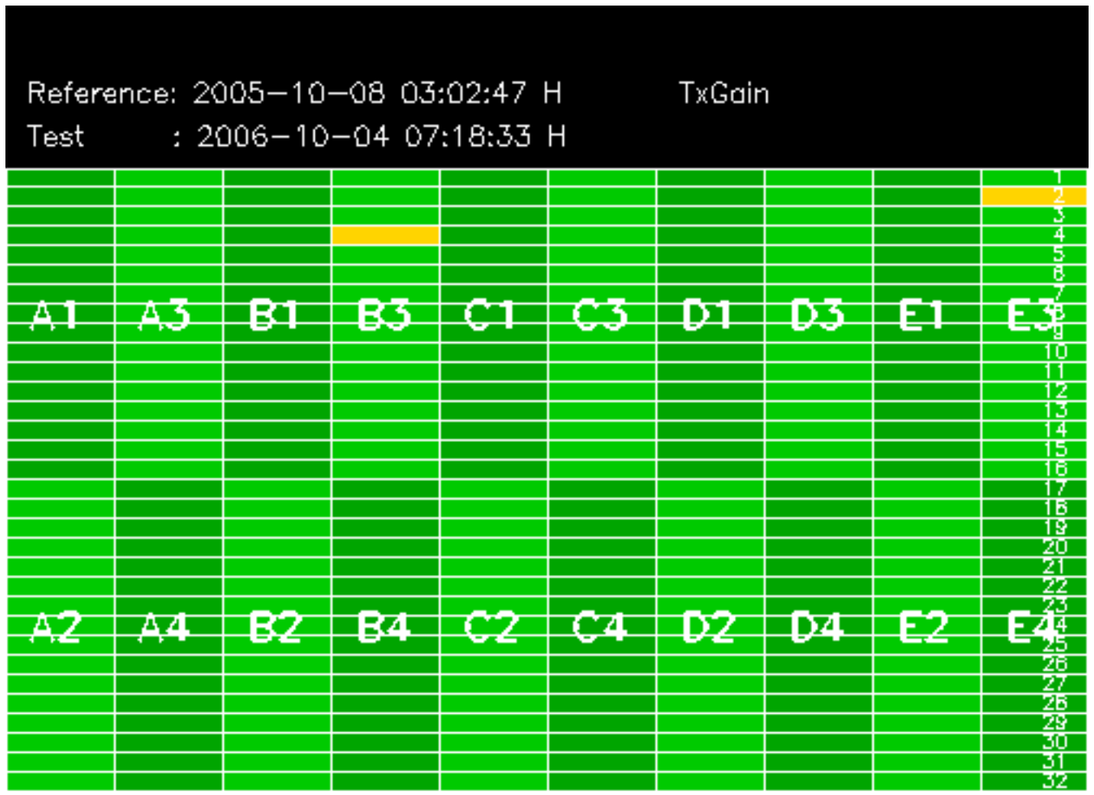
Reference: 2005-10-08 03:02:47 H
Test : 2006-10-04 07:18:33 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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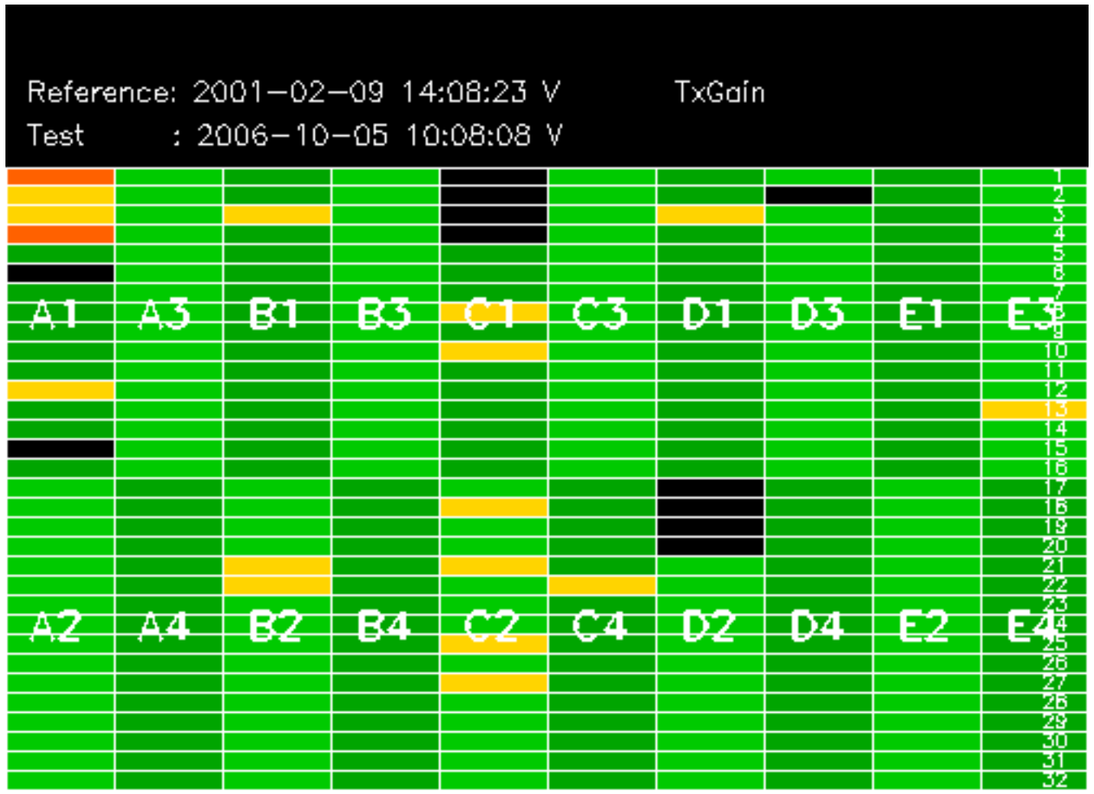
Reference: 2001-02-09 14:08:23 V
Test : 2006-10-05 10:08:08 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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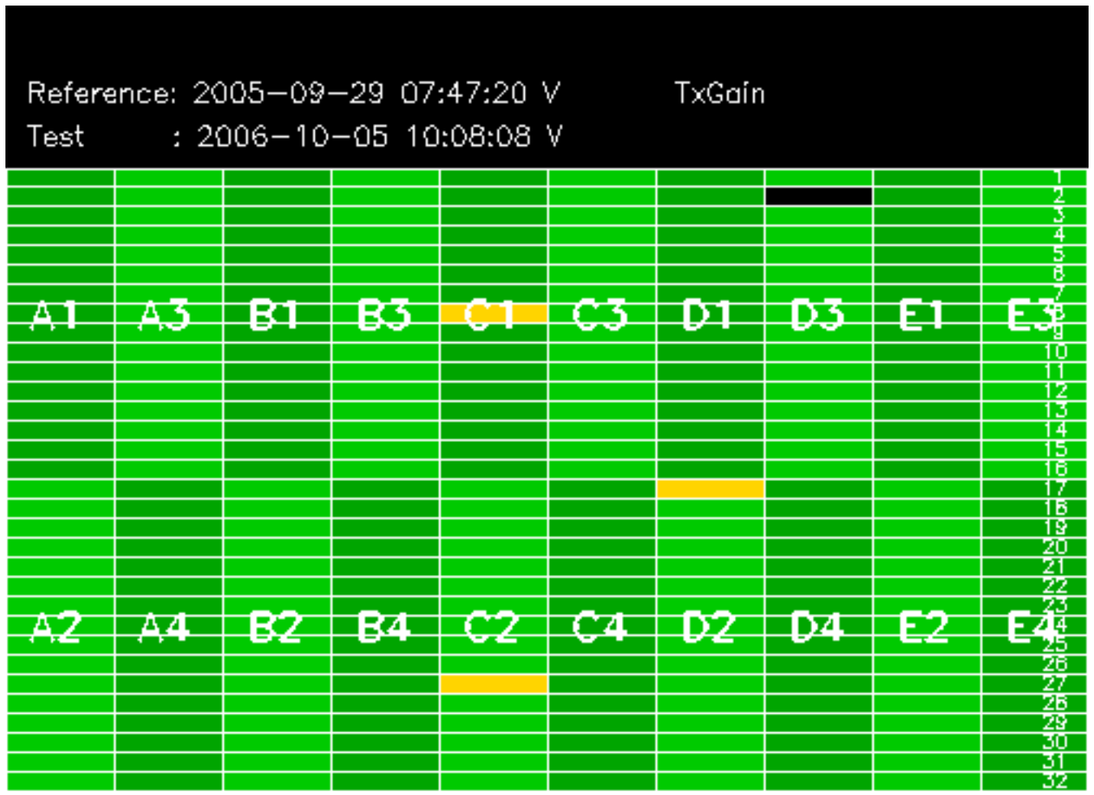
Reference: 2005-09-29 07:47:20 V
Test : 2006-10-05 10:08:08 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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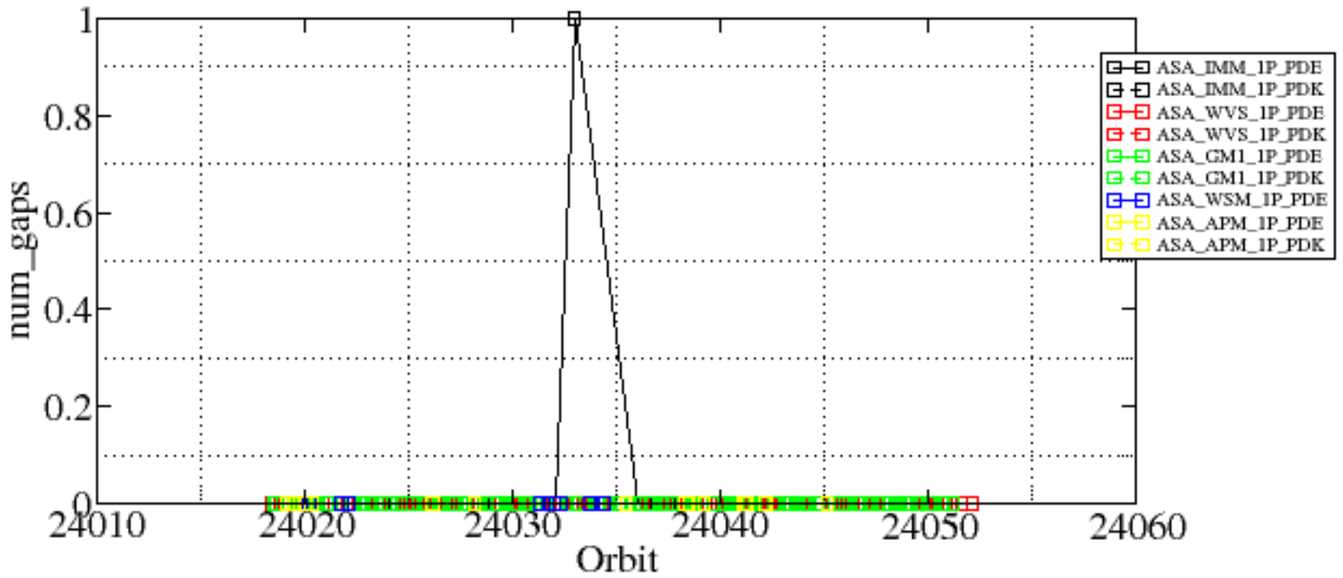
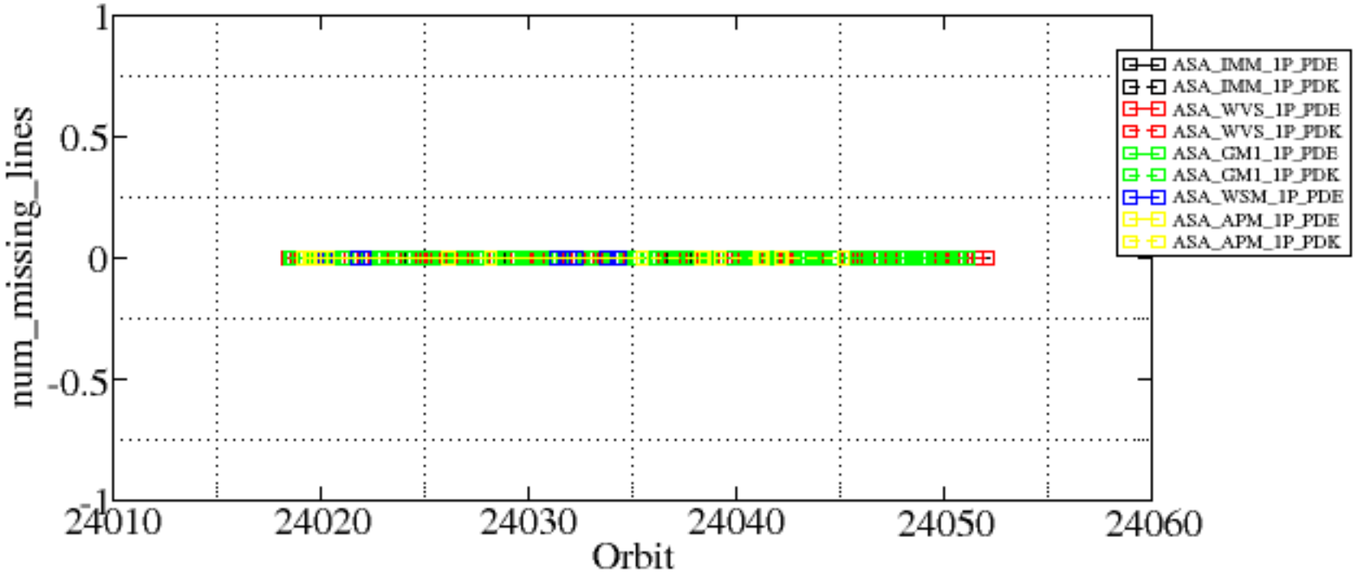
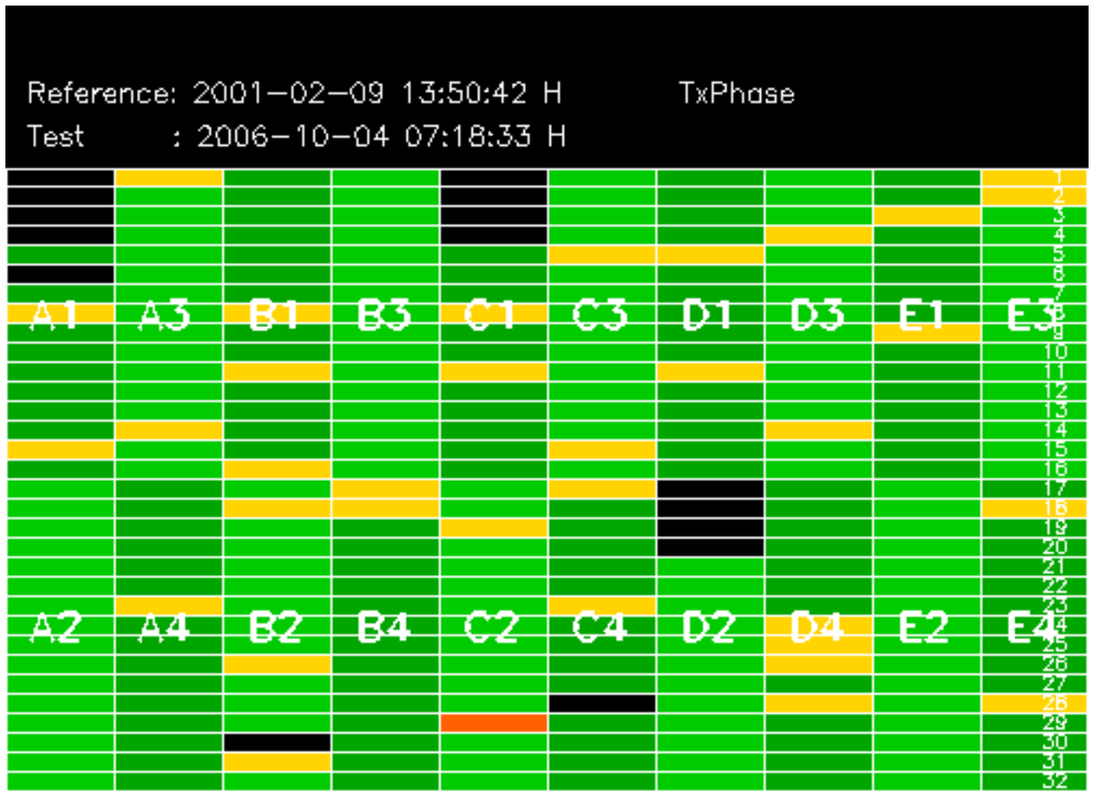
Summary of analysis for the last 3 days 2006100[456]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20061005_003434_000001152051_00431_24032_6859.N1 </td> <td>1 </td> <td>0 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
24010
24020
24030
24040
24050
24060
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
1
0.5
0
-0.5
-1
24010
24020
24030
24040
24050
24060
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 : 2006-10-04 07:18:33 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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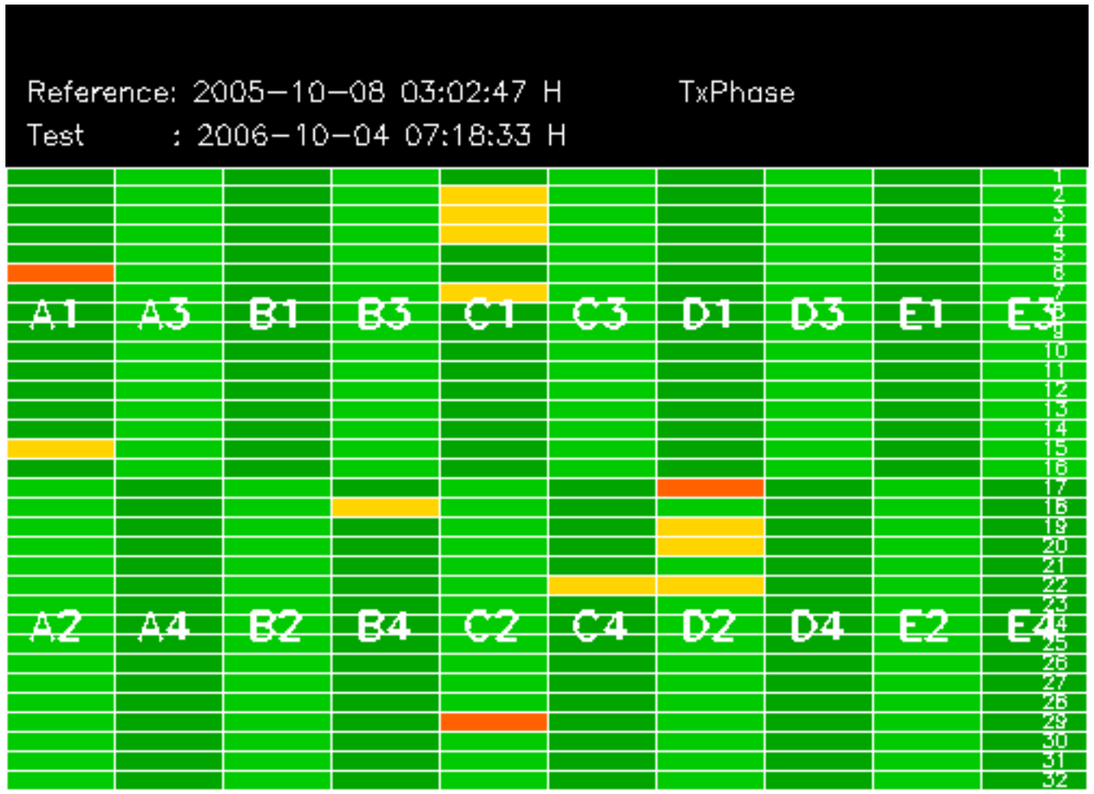
Reference: 2005-10-08 03:02:47 H
Test : 2006-10-04 07:18:33 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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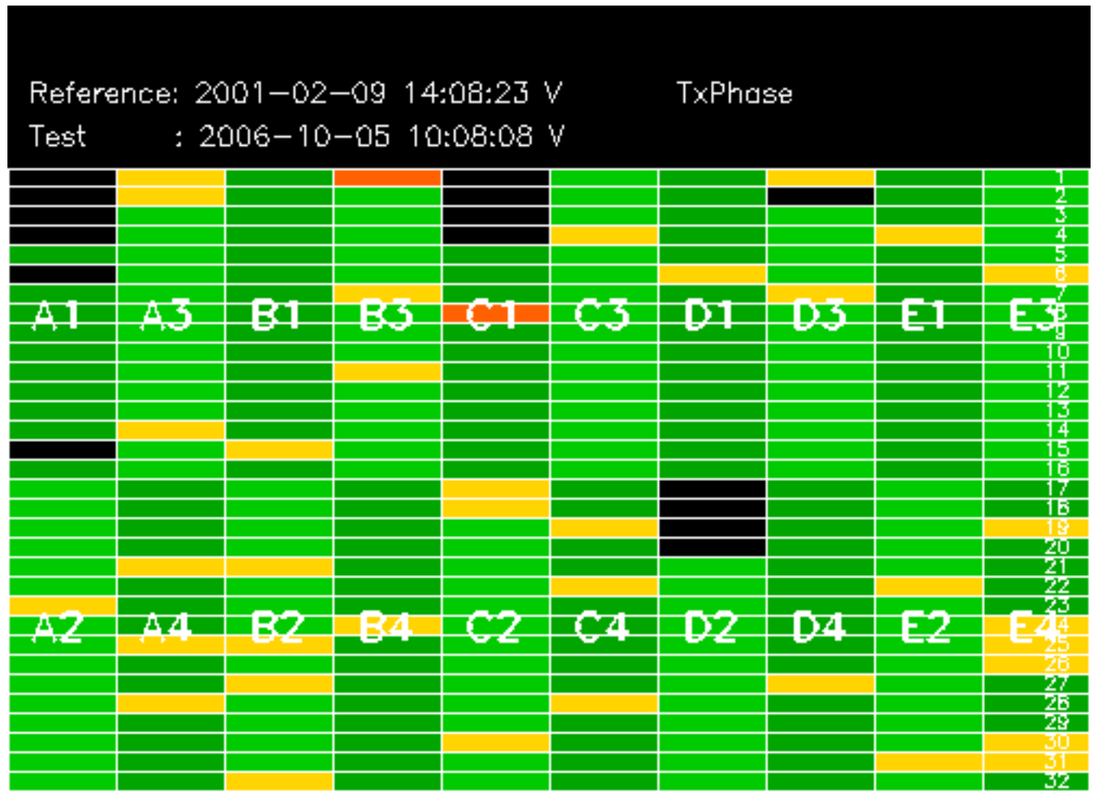
Reference: 2001-02-09 14:08:23 V
Test : 2006-10-05 10:08:08 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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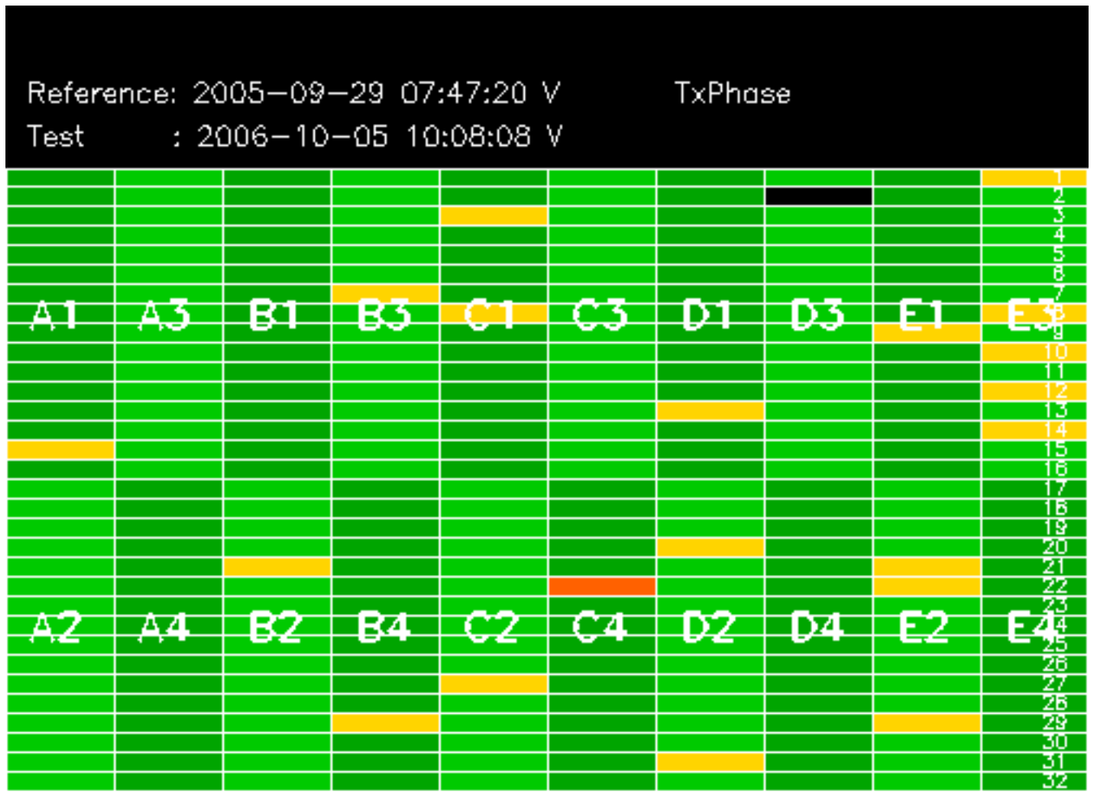
Reference: 2005-09-29 07:47:20 V
Test : 2006-10-05 10:08:08 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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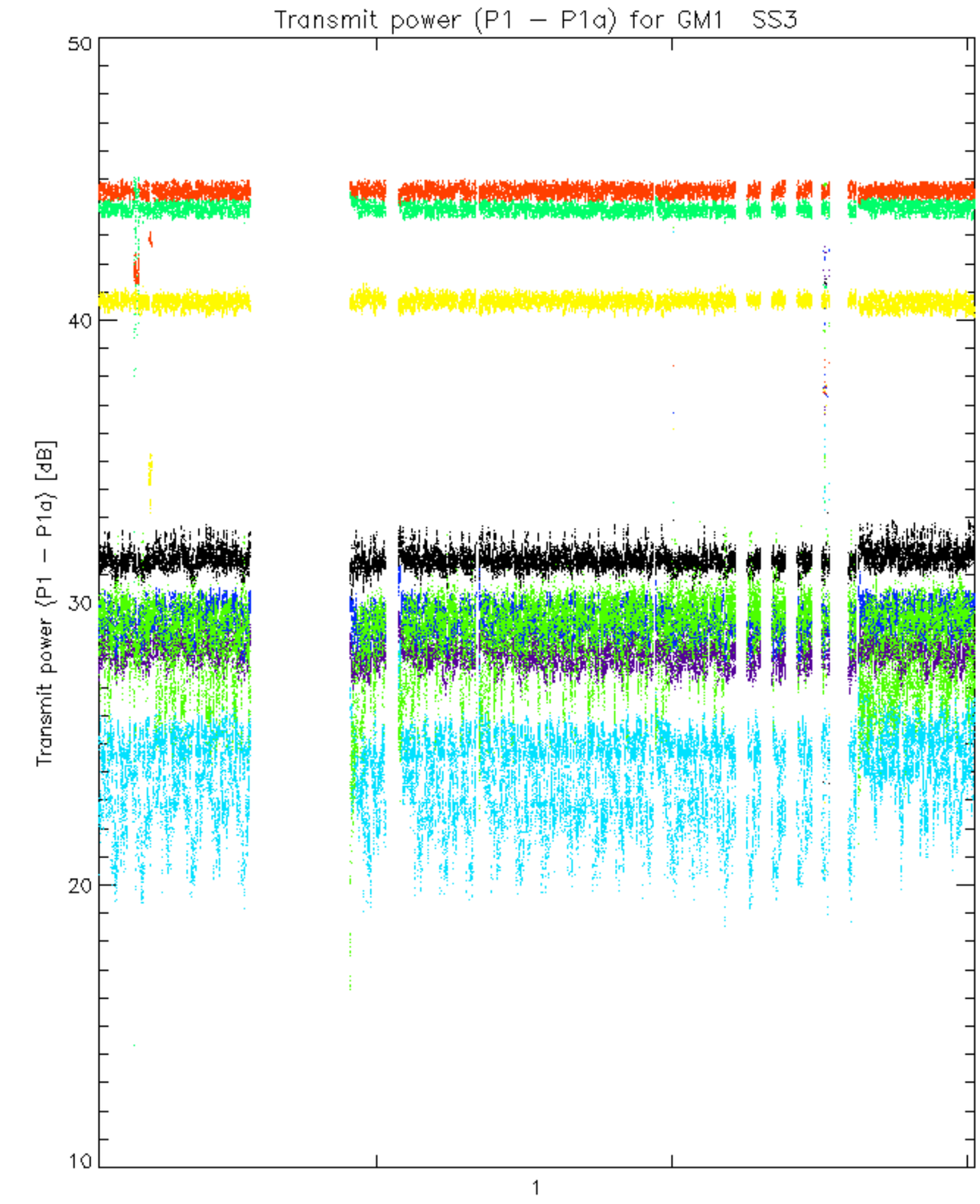
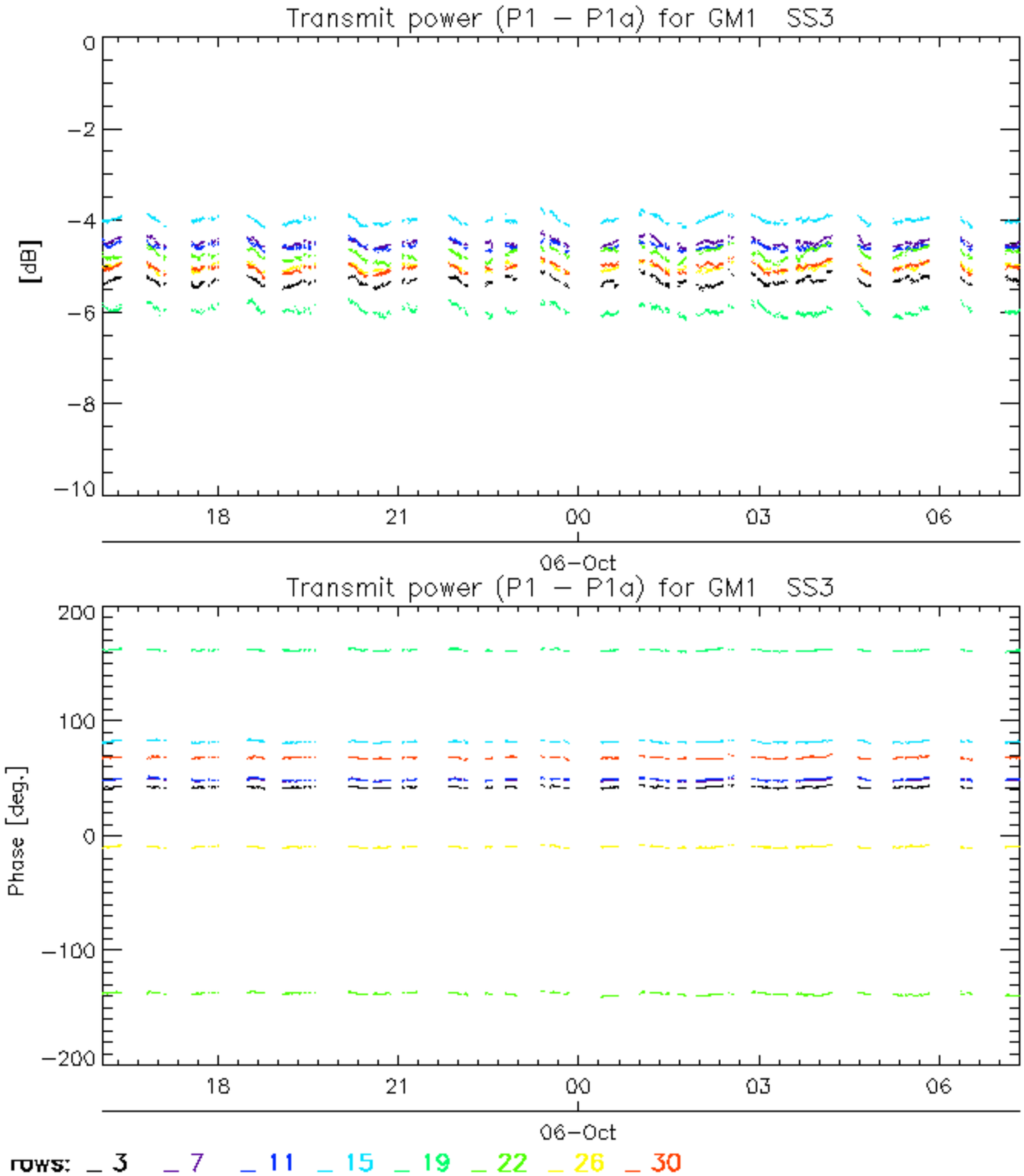
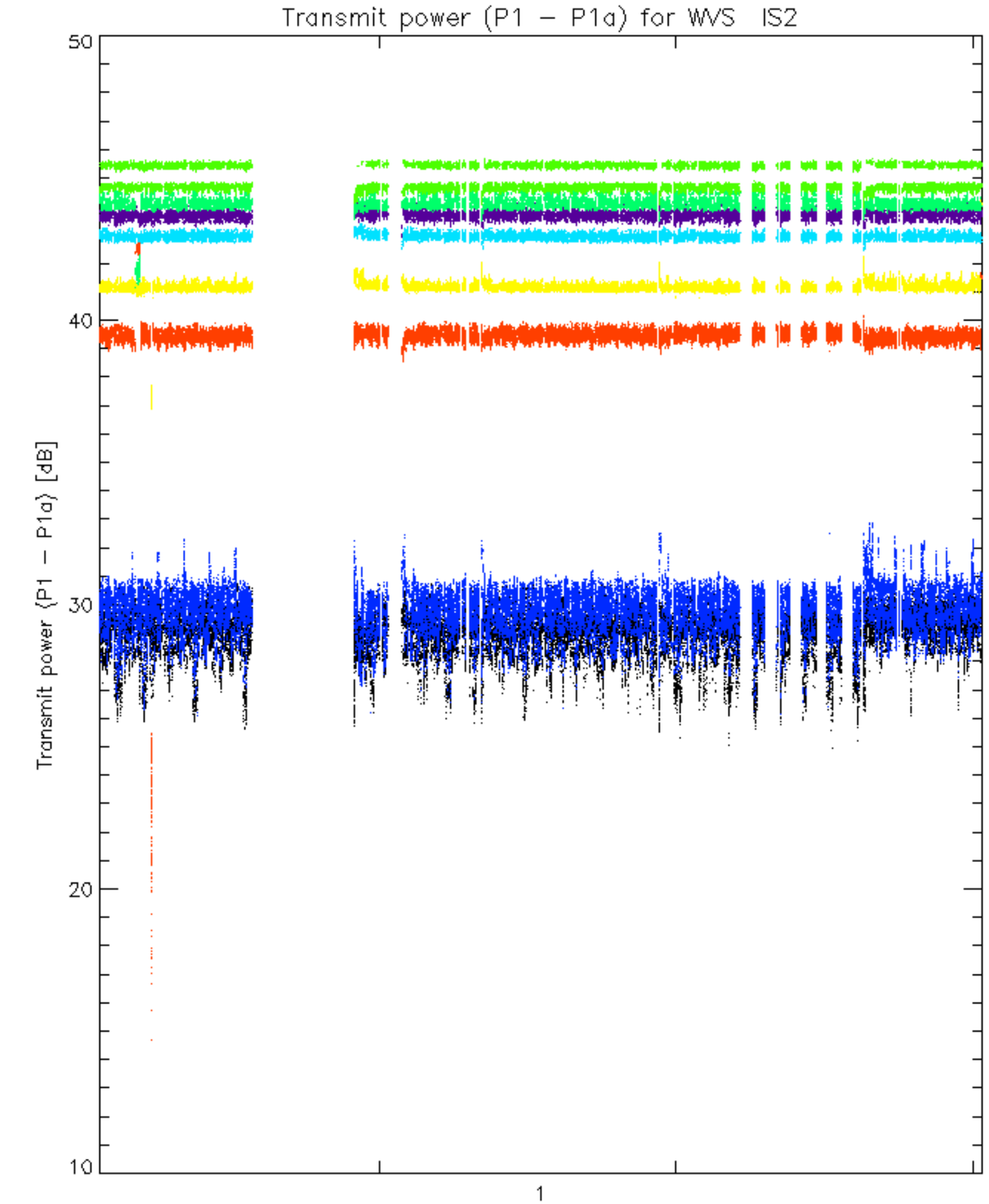
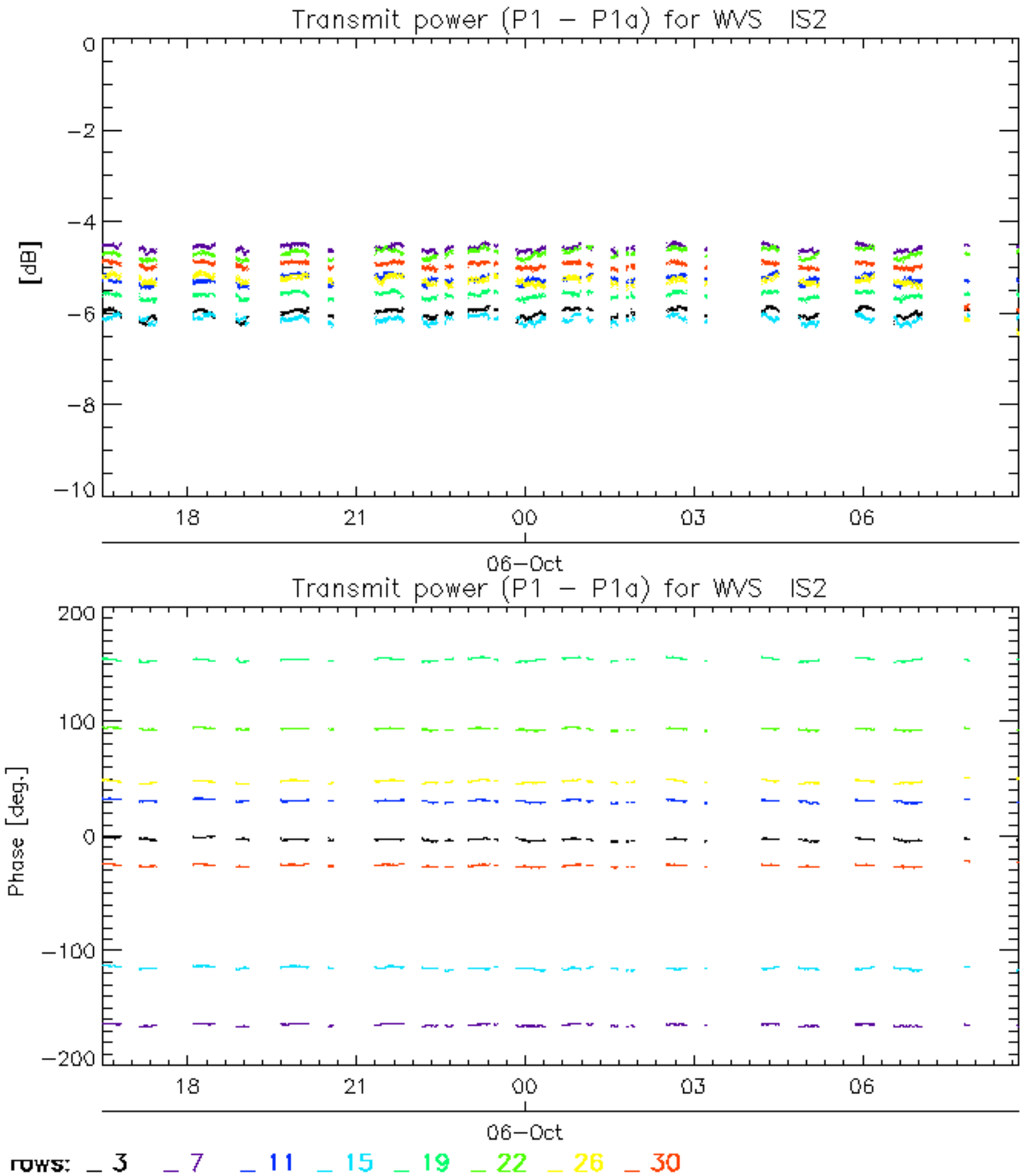

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
1
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
50
40
30
20
10
1
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
06–Oct
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
06–Oct
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.