PRELIMINARY REPORT OF 061003

last update on Tue Oct 3 16:38:16 GMT 2006

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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 2006-10-02 00:00:00 to 2006-10-03 16:38:16

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	46	71	12	11	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	46	71	12	11	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	46	71	12	11	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	46	71	12	11	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	14	41	2	1	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	14	41	2	1	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	14	41	2	1	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	14	41	2	1	0

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	20060929 063526
H	20061002 050035

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	-3.943270	0.010337	-0.004998
7	P1	-3.073378	0.011176	-0.027390
11	P1	-4.075158	0.020736	-0.072313
15	P1	-6.190621	0.015888	-0.028139
19	P1	-3.545950	0.052498	0.011589
22	P1	-4.595524	0.011013	-0.061277
26	P1	-3.959864	0.019108	-0.017190
30	P1	-5.829993	0.142111	0.043330
3	P1	-16.604441	0.244766	0.054798
7	P1	-17.122639	0.111408	-0.075727
11	P1	-16.858170	0.368317	-0.296725
15	P1	-12.875672	0.111597	0.040363
19	P1	-14.684048	0.484948	0.049325
22	P1	-15.710029	0.483152	-0.132701
26	P1	-15.193256	0.229475	0.197985
30	P1	-16.968170	0.384157	-0.191793

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.817570	0.085441	-0.023121
7	P2	-21.825579	0.096863	0.113658
11	P2	-15.743279	0.108823	0.034580
15	P2	-7.091521	0.102814	0.003389
19	P2	-9.127949	0.094348	-0.027757
22	P2	-18.131903	0.091016	-0.042604
26	P2	-16.426134	0.098079	-0.046924
30	P2	-19.470627	0.092114	0.012458

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.189650	0.006054	-0.029995
7	P3	-8.189650	0.006054	-0.029995
11	P3	-8.189650	0.006054	-0.029995
15	P3	-8.189650	0.006054	-0.029995
19	P3	-8.189650	0.006054	-0.029995
22	P3	-8.189650	0.006054	-0.029995
26	P3	-8.189634	0.006056	-0.030055
30	P3	-8.189634	0.006056	-0.030055

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	-3.864556	0.017680	-0.060552
7	P1	-2.544726	0.045933	-0.007399
11	P1	-2.890965	0.021456	-0.026968
15	P1	-3.665574	0.033135	-0.042208
19	P1	-3.478118	0.083607	0.051465
22	P1	-5.105065	0.021591	0.037458
26	P1	-5.879185	0.028703	-0.055184
30	P1	-5.219468	0.076361	0.030685
3	P1	-11.658515	0.062119	-0.102567
7	P1	-10.018926	0.085812	-0.086544
11	P1	-10.369297	0.073127	-0.072229
15	P1	-10.854304	0.160098	0.007473
19	P1	-15.713449	3.817668	0.586600
22	P1	-20.920778	1.267078	-0.266174
26	P1	-15.910799	0.373430	0.066893
30	P1	-18.096863	0.473503	0.139257

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.395689	0.061850	0.039893
7	P2	-22.163805	0.154905	0.123279
11	P2	-10.897916	0.052406	0.015550
15	P2	-4.863043	0.035337	-0.016678
19	P2	-6.847877	0.038632	0.017860
22	P2	-8.164589	0.049321	-0.038391
26	P2	-24.180384	0.087276	-0.035656
30	P2	-21.960924	0.056259	0.007541

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.038082	0.003908	-0.037588
7	P3	-8.037982	0.003910	-0.037772
11	P3	-8.037966	0.003921	-0.038314
15	P3	-8.037890	0.003929	-0.037998
19	P3	-8.038011	0.003937	-0.038122
22	P3	-8.038116	0.003914	-0.037753
26	P3	-8.038023	0.003933	-0.037916
30	P3	-8.038005	0.003910	-0.037919

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	0.000560368
	stdev	1.68805e-07
MEAN Q	mean	0.000525343
	stdev	2.16069e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.137693
	stdev	0.00113197
STDEV Q	mean	0.138056
	stdev	0.00114973

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006100[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_GM1_1PNPDK20061001_203613_000011362051_00386_23987_5550.N1	0	15

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

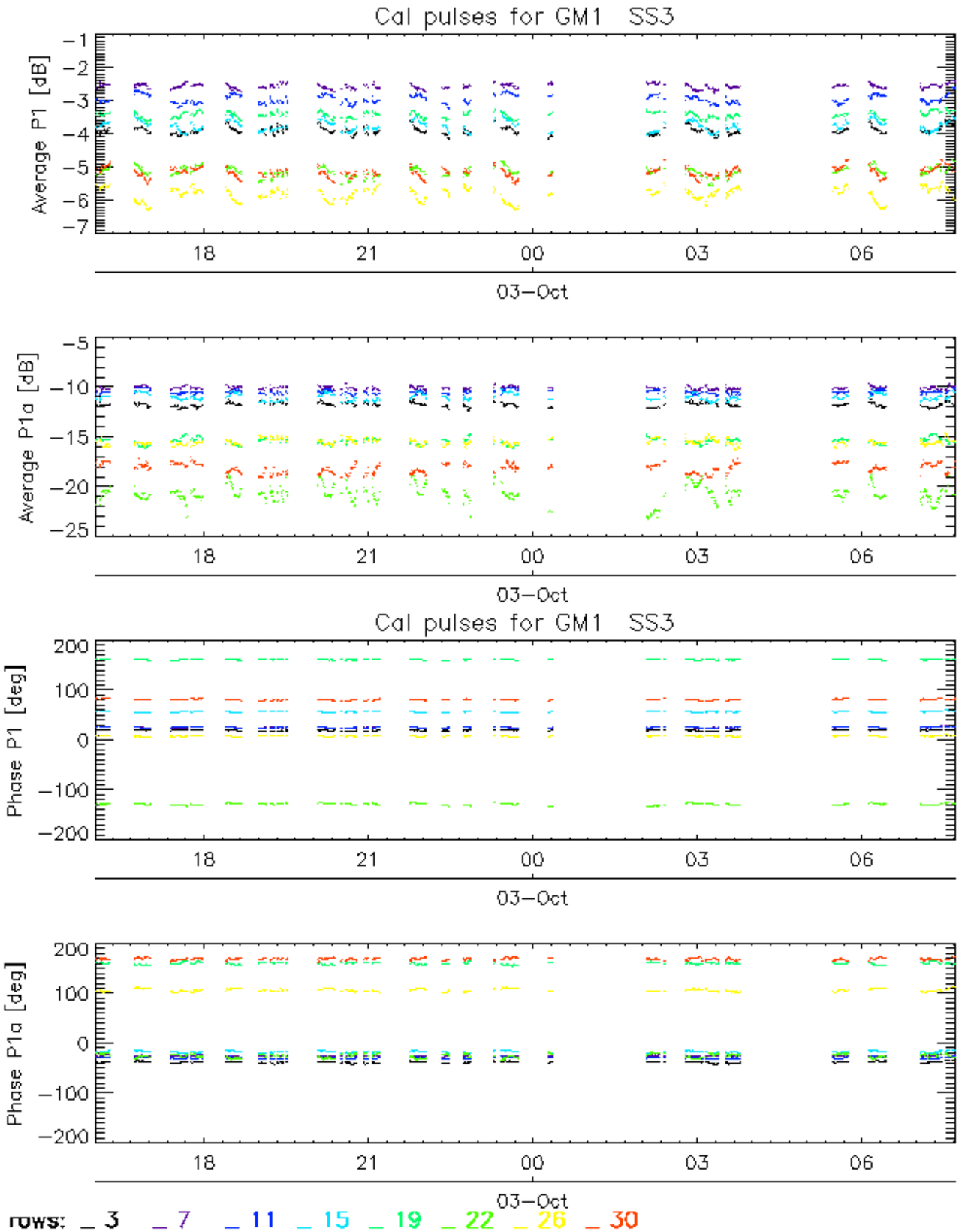
Descending

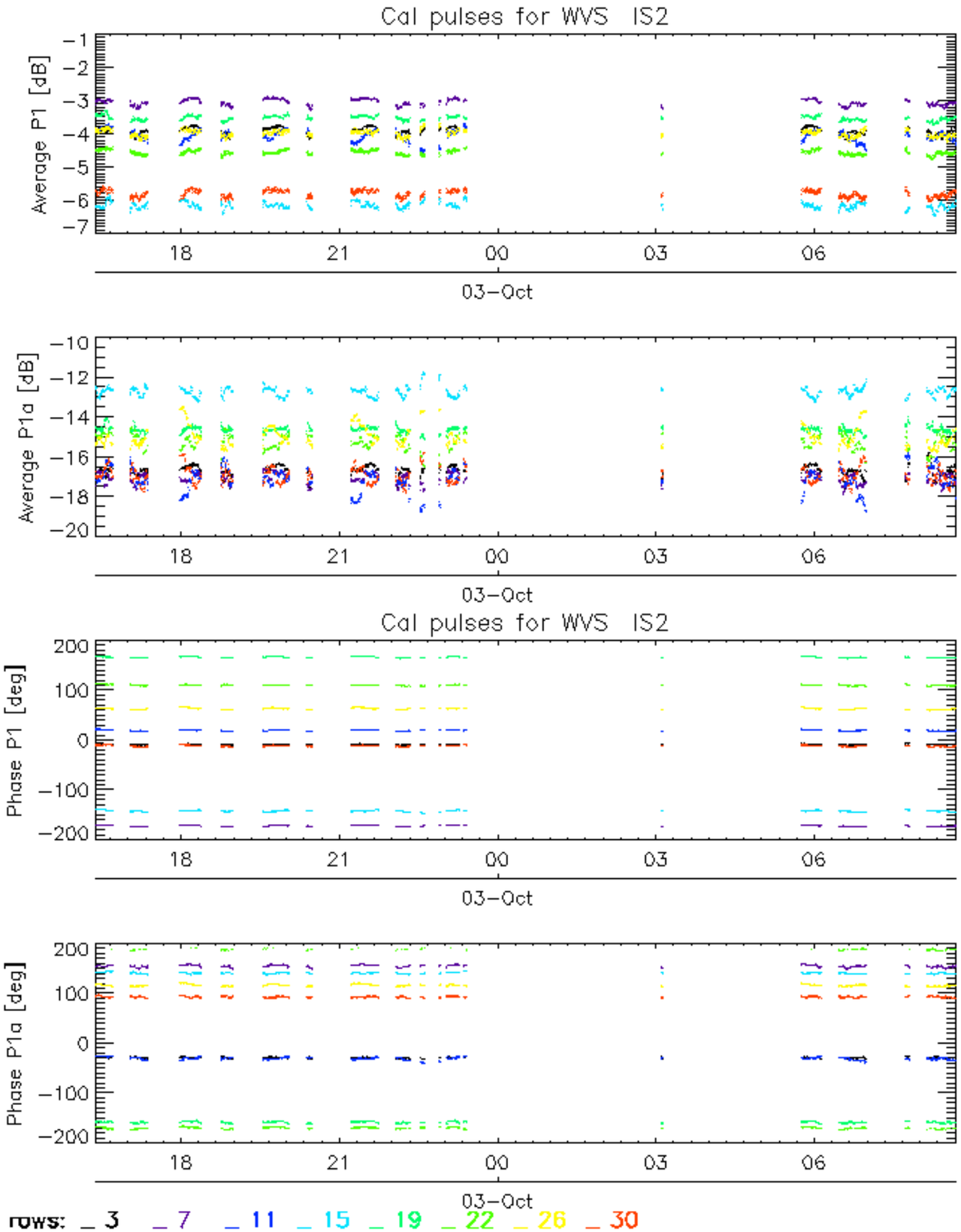
7.5 - Absolute Doppler for GM1

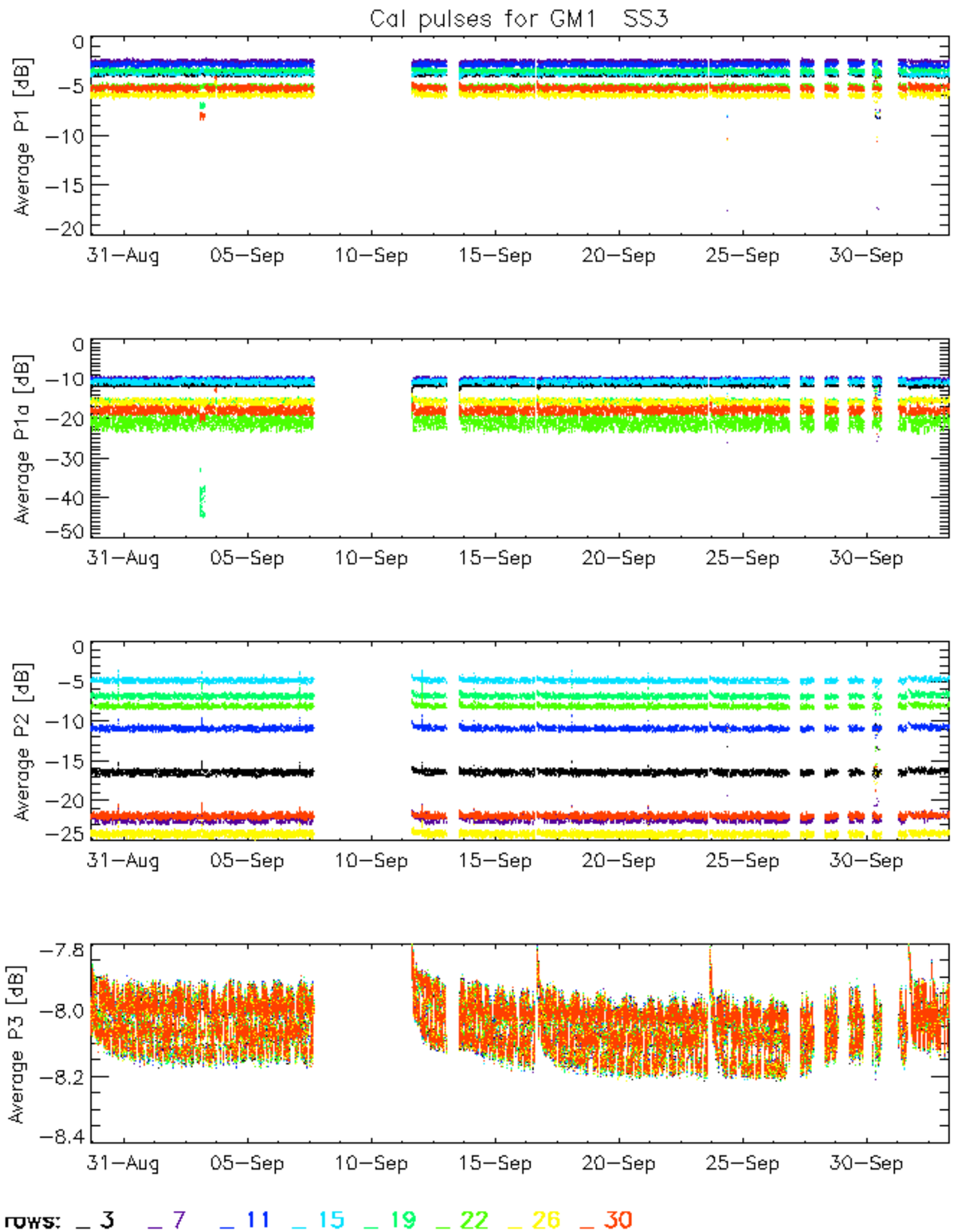
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

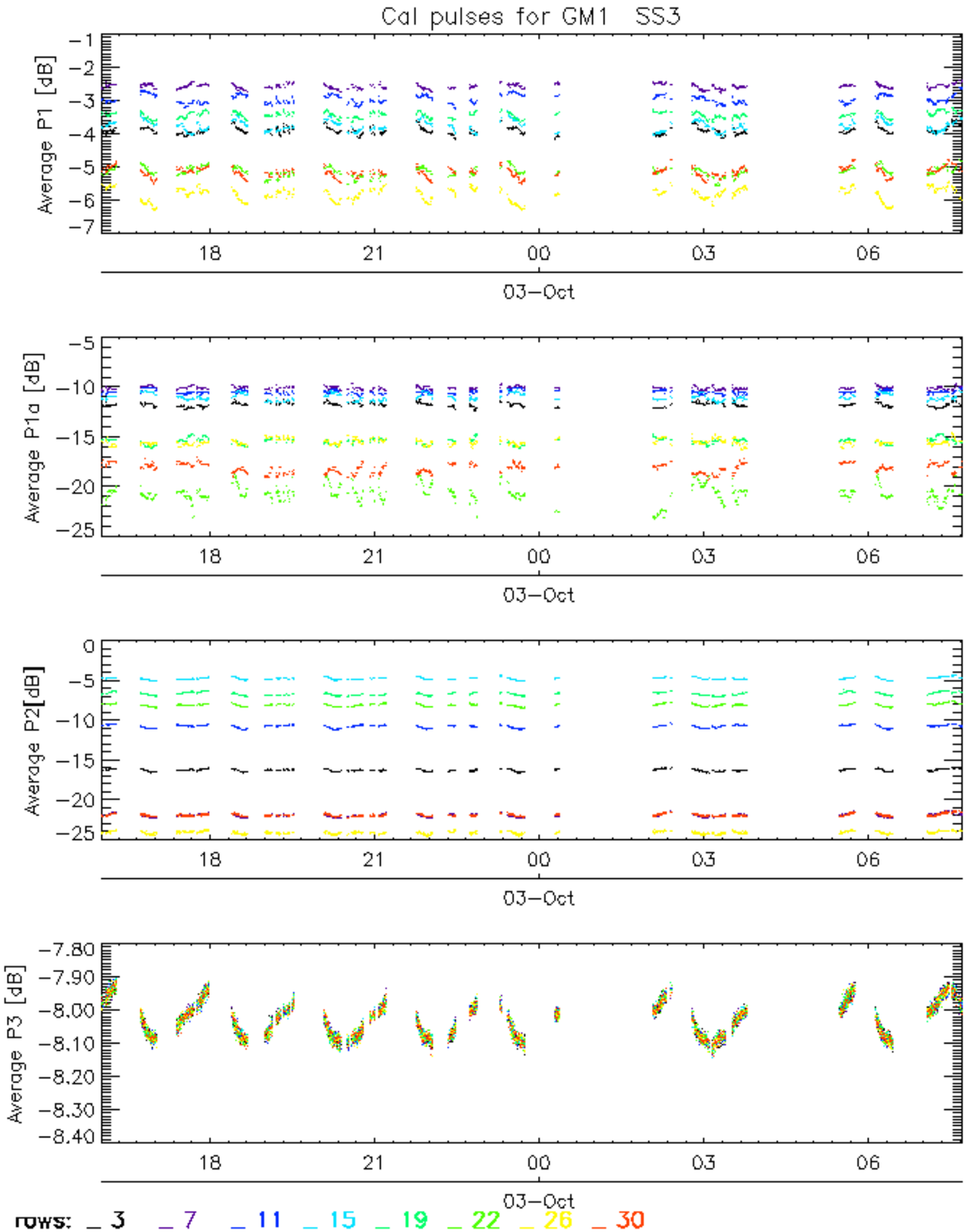
7.6 - Doppler evolution versus ANX for GM1

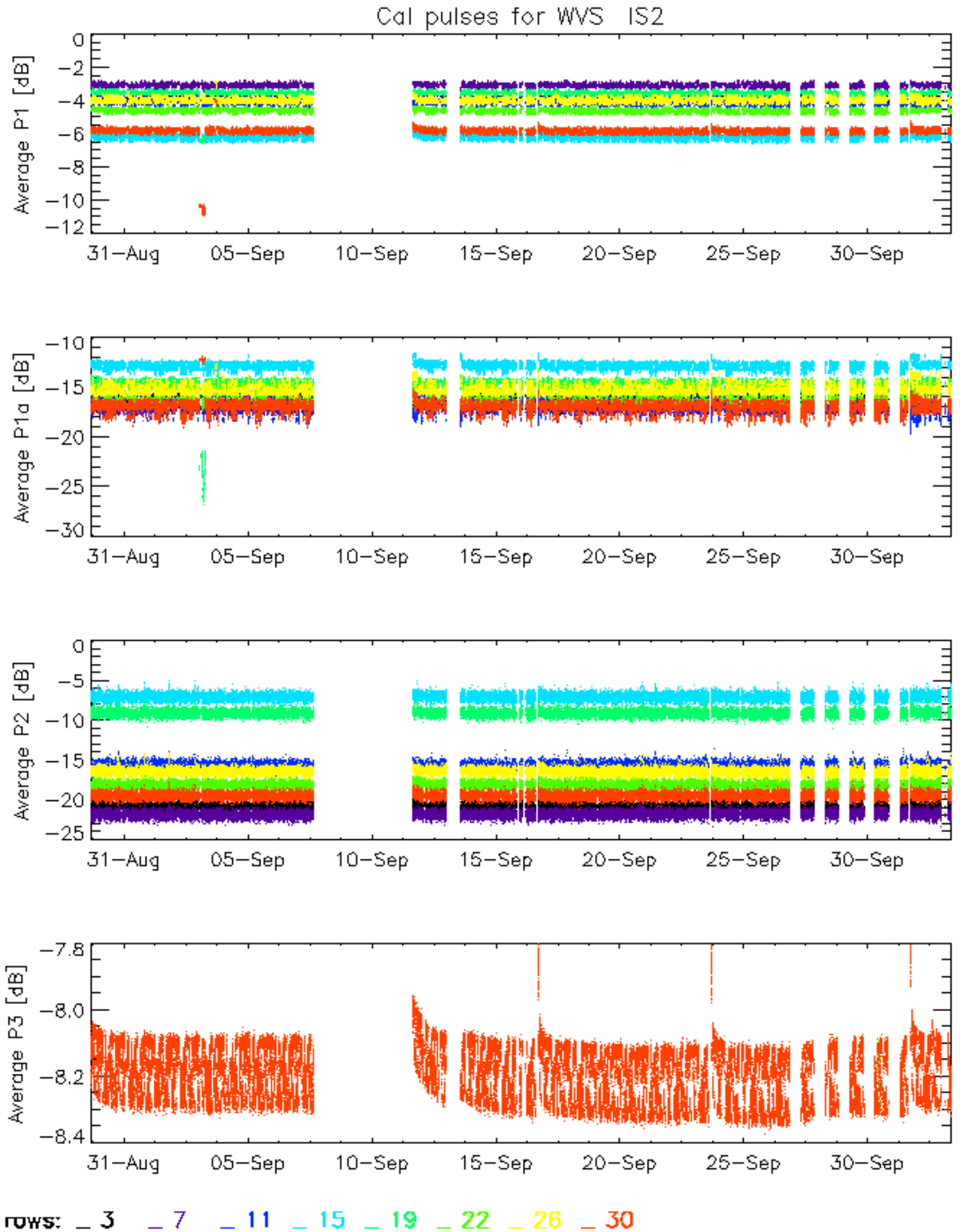
Evolution Doppler error versus ANX
☒

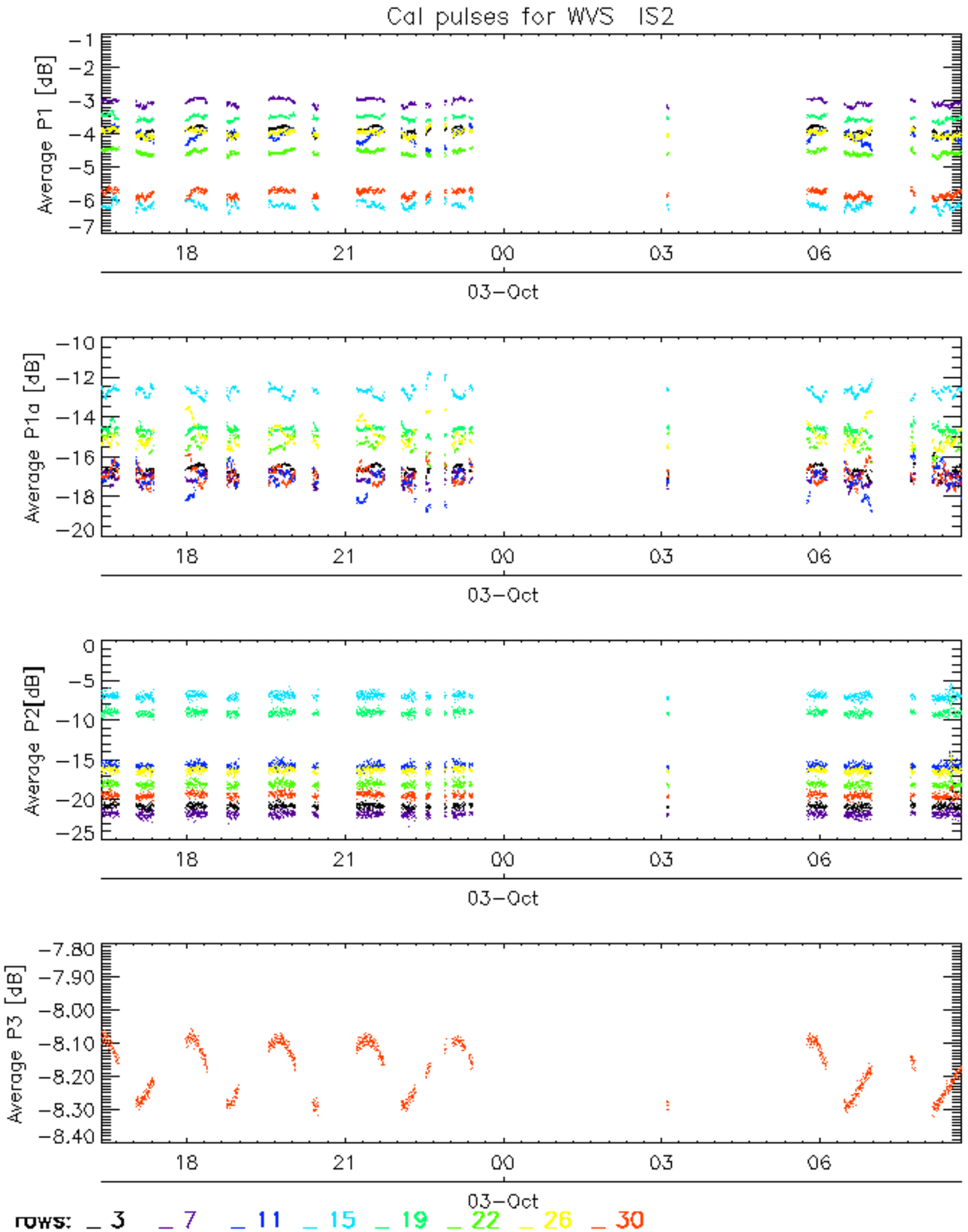

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
03−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
03−Oct
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
03−Oct
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
03−Oct
rows: _ 3 _ 7 _ 11 _ 15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


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

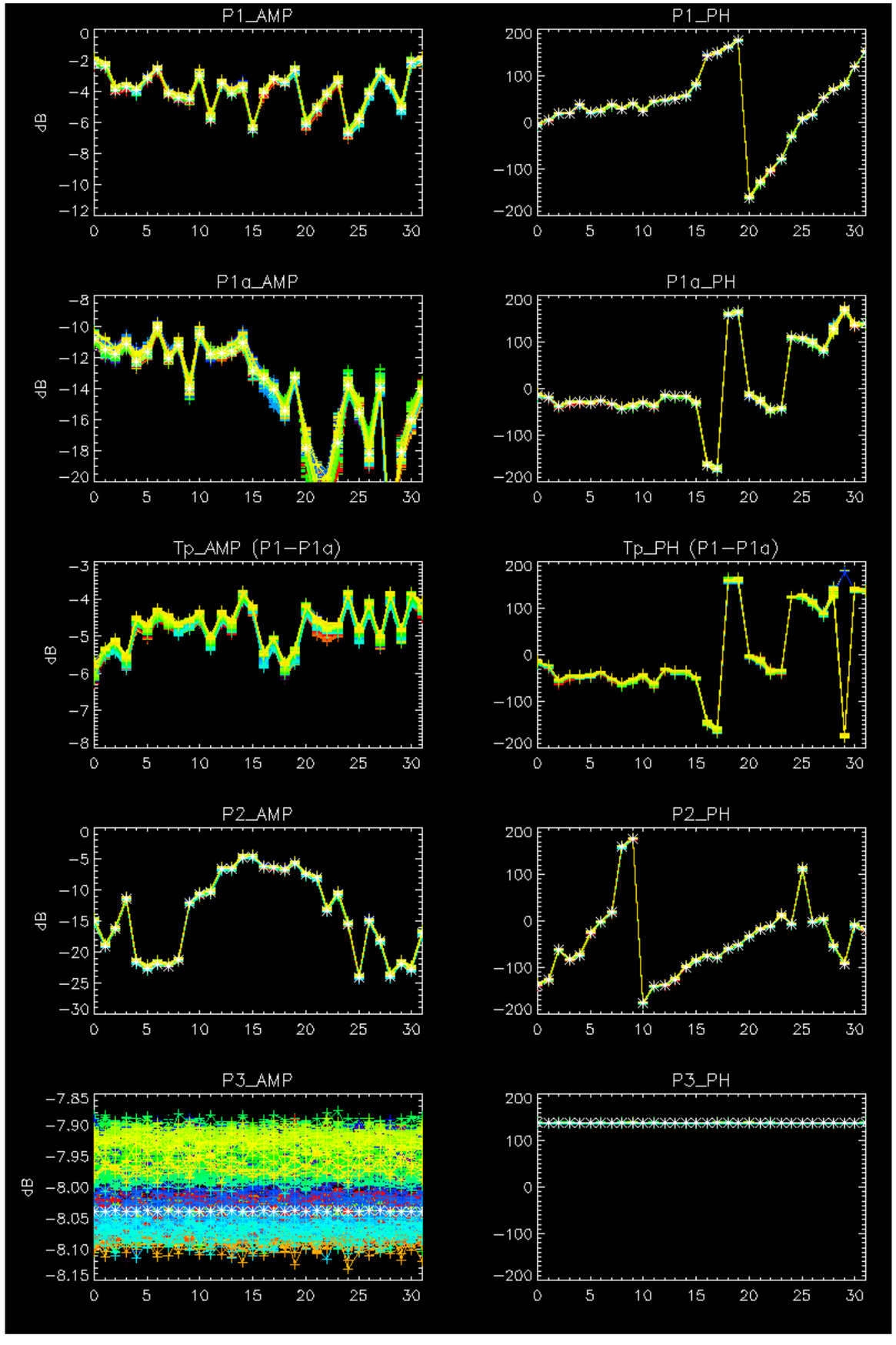

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

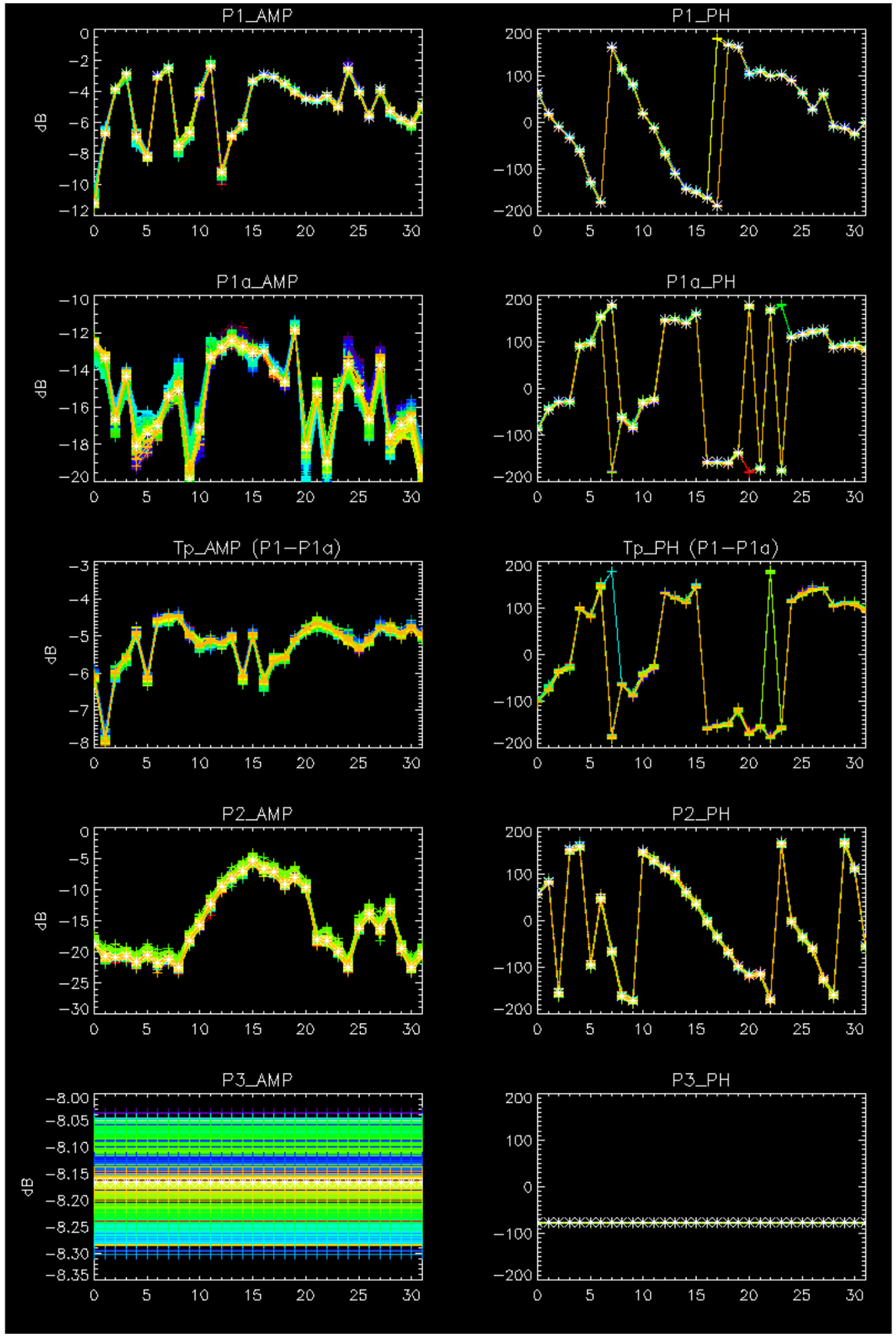

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
03−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
03−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
03−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
03−Oct
rows: _ 3 _ 7 _ 11 _ 15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


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

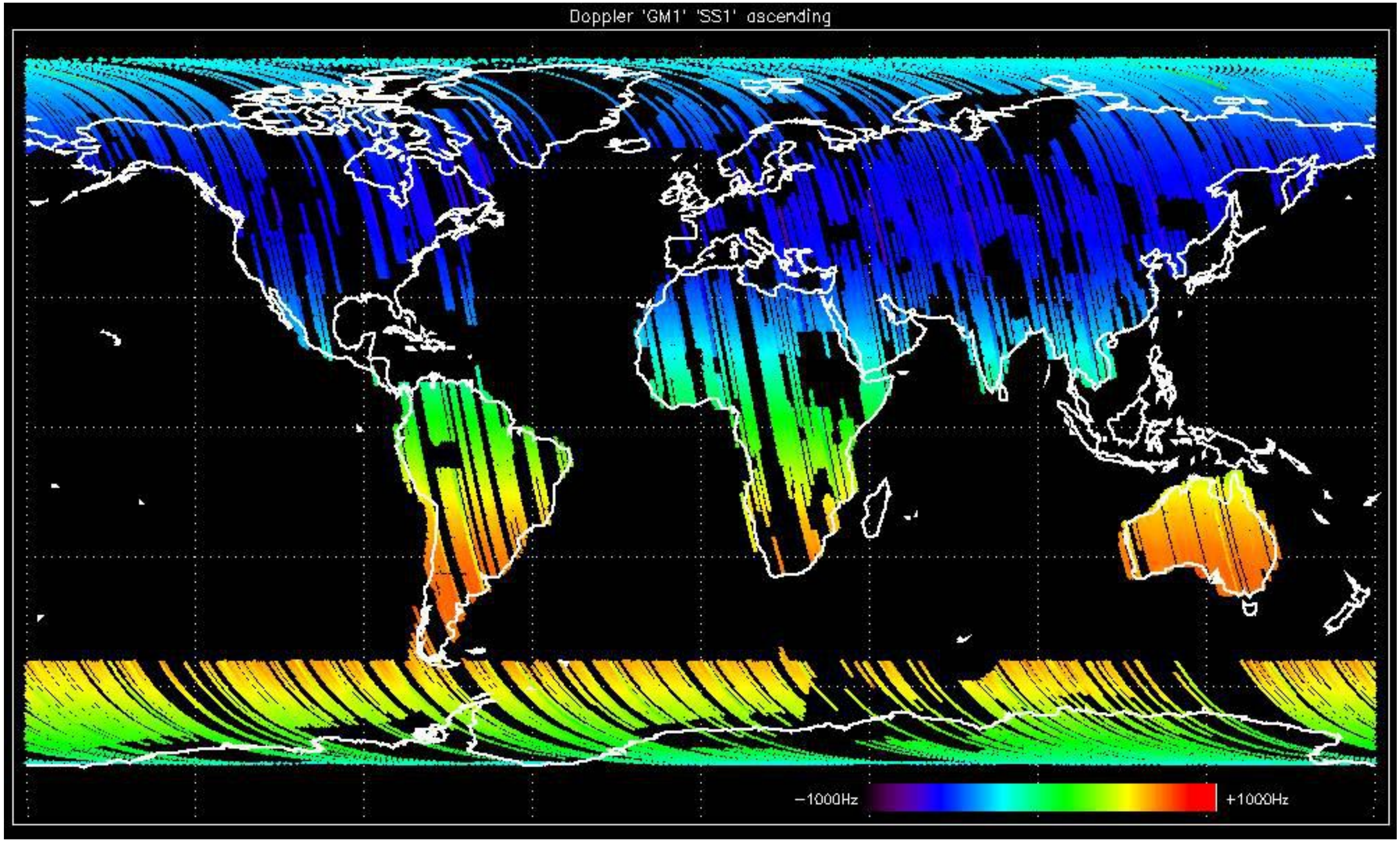
No anomalies observed.

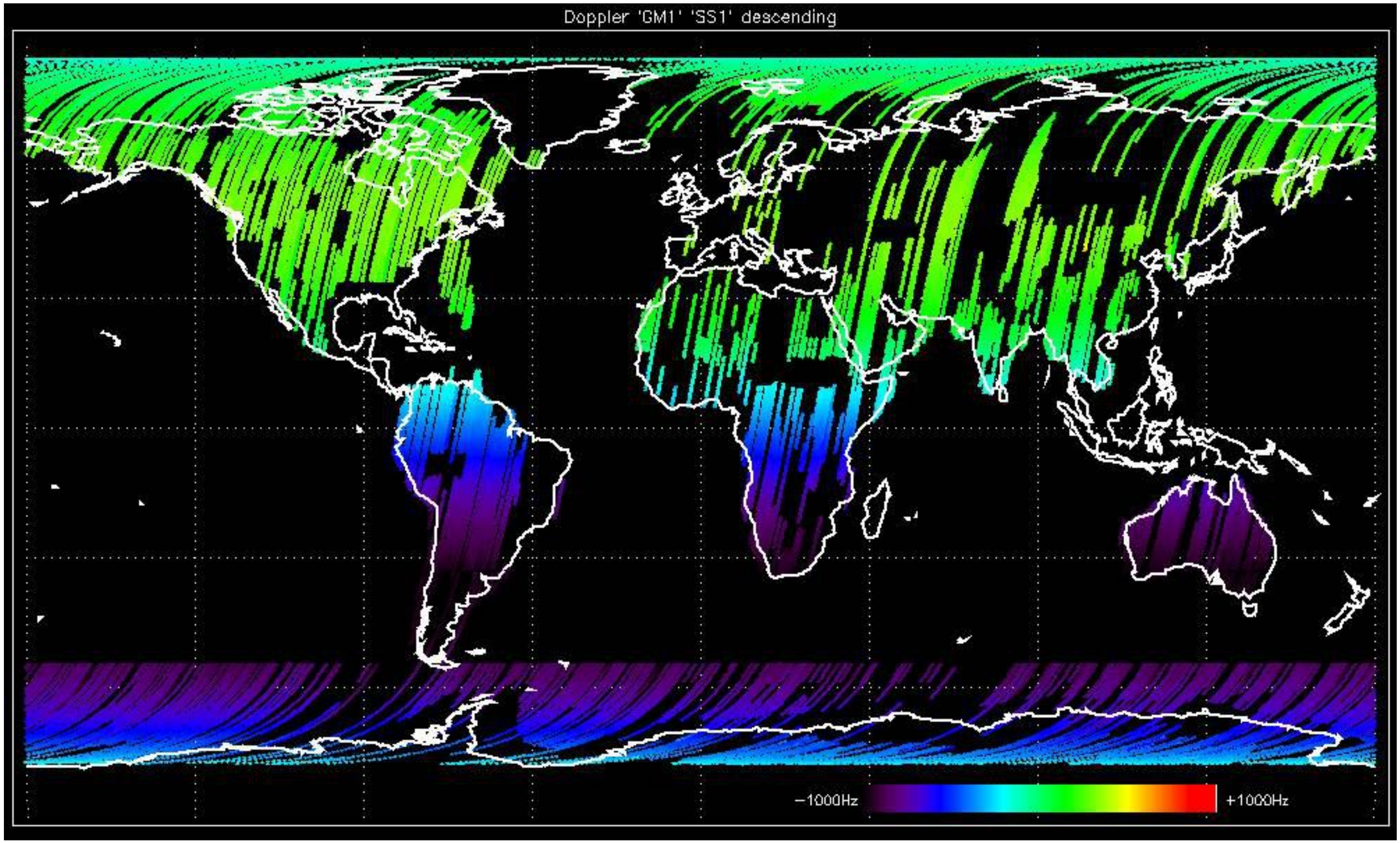

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

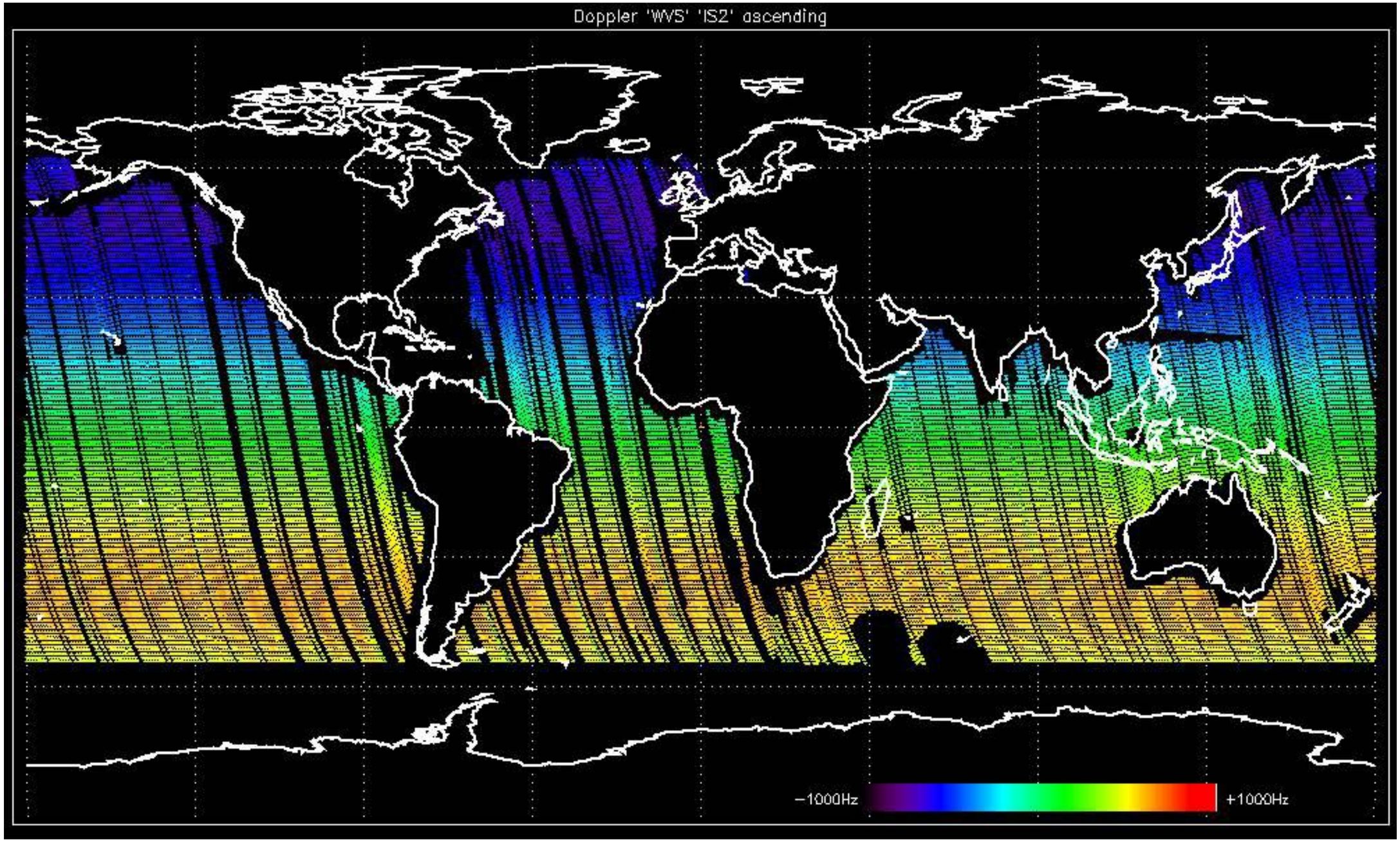

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

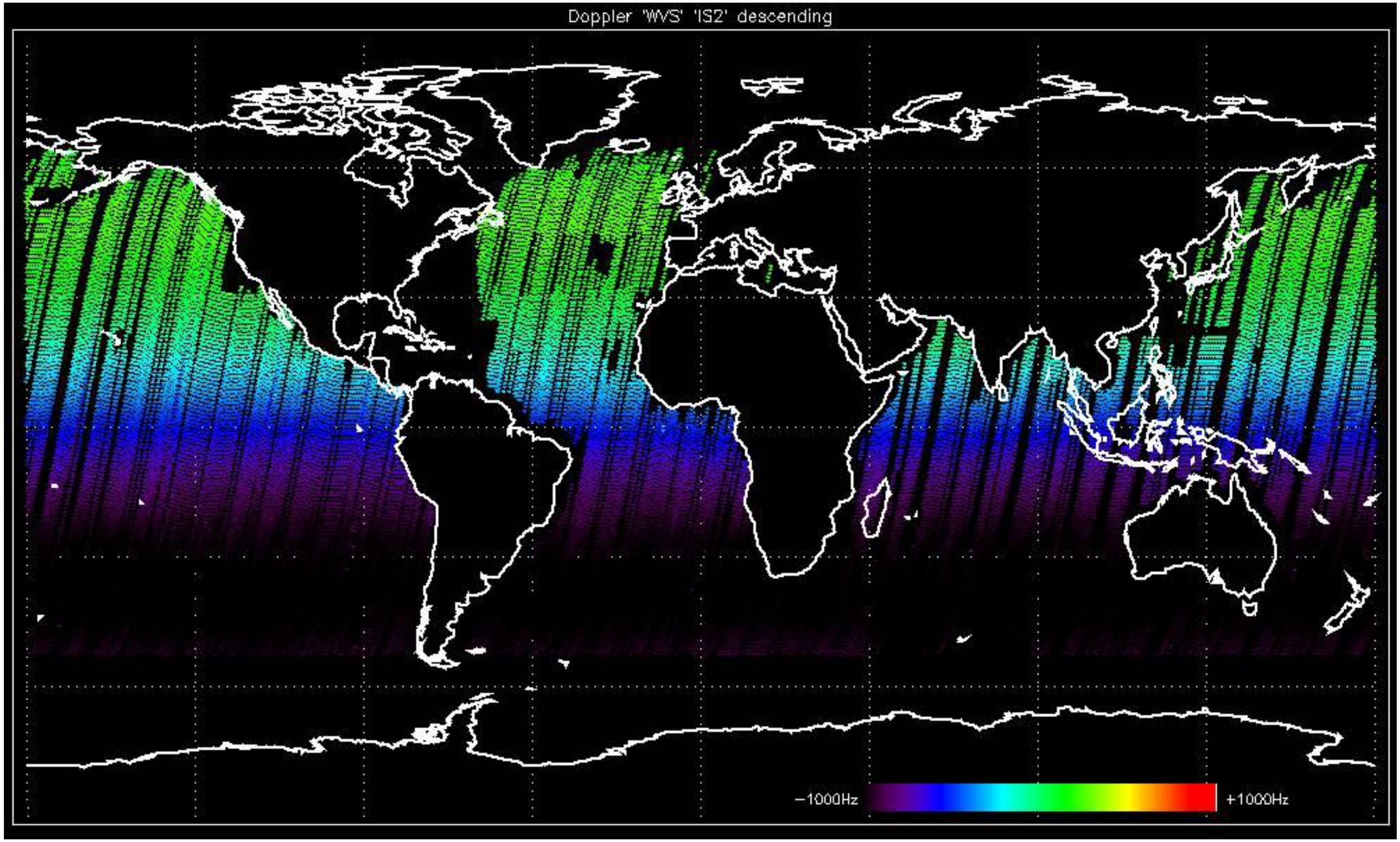
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

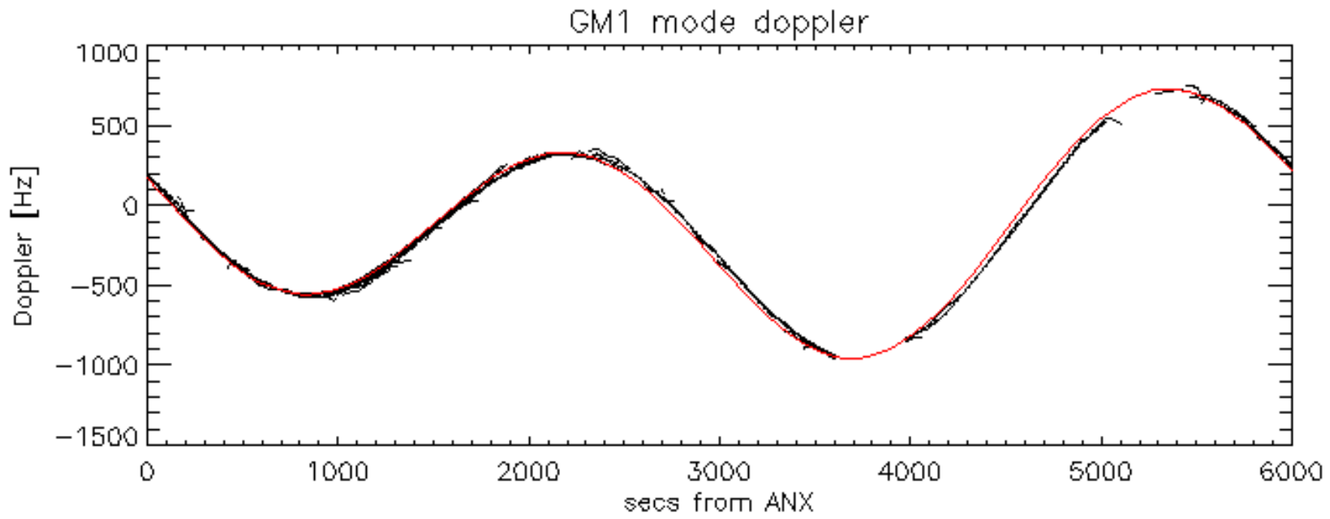
Preliminary report.The data is not yet controled

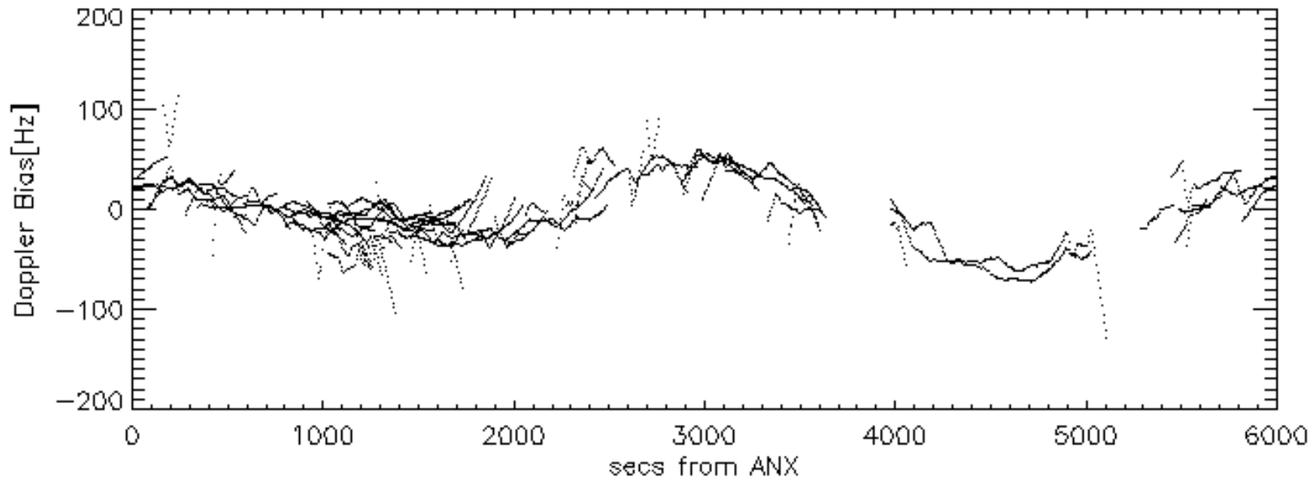

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

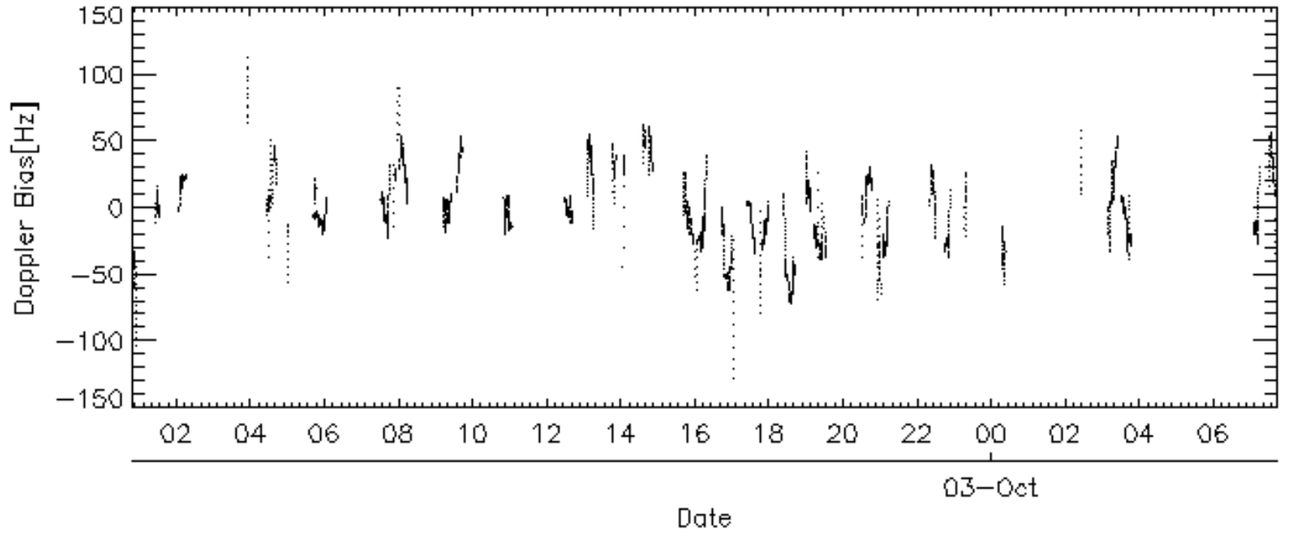

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

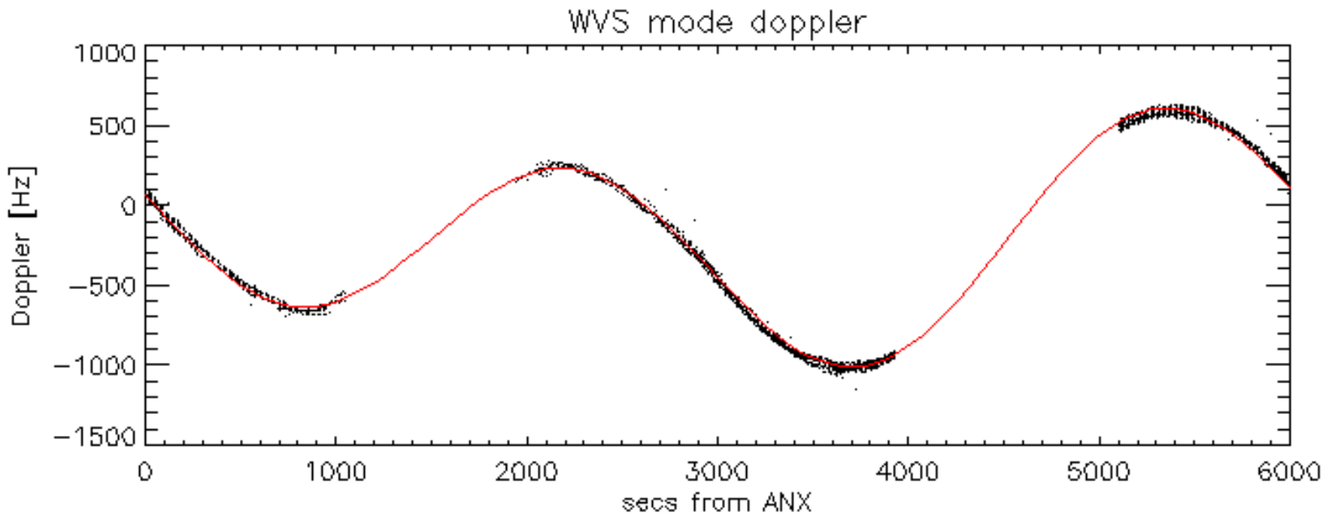

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

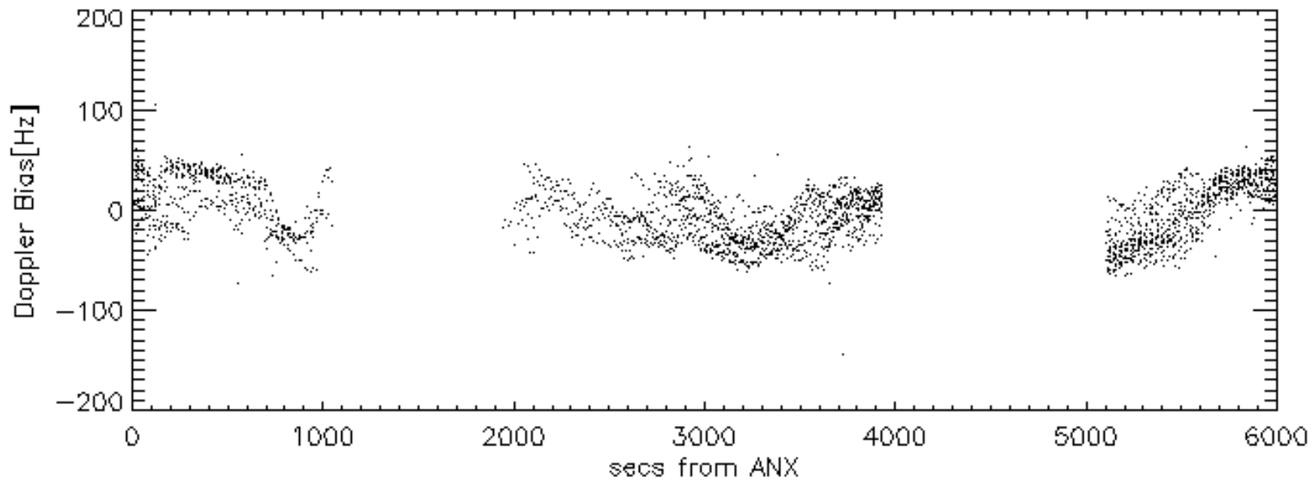

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

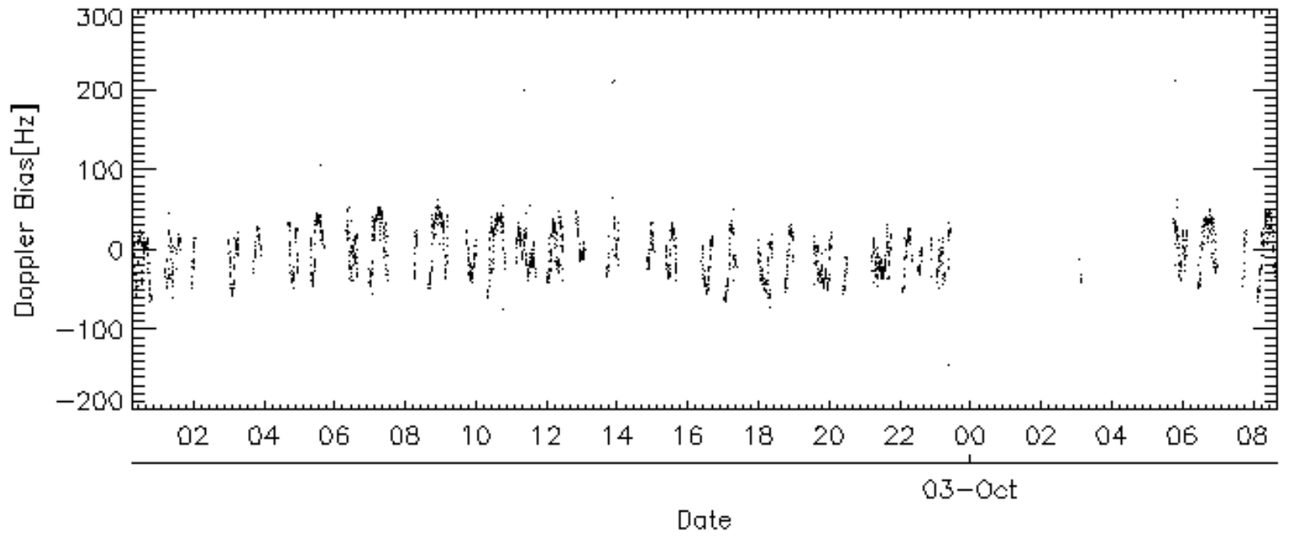

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

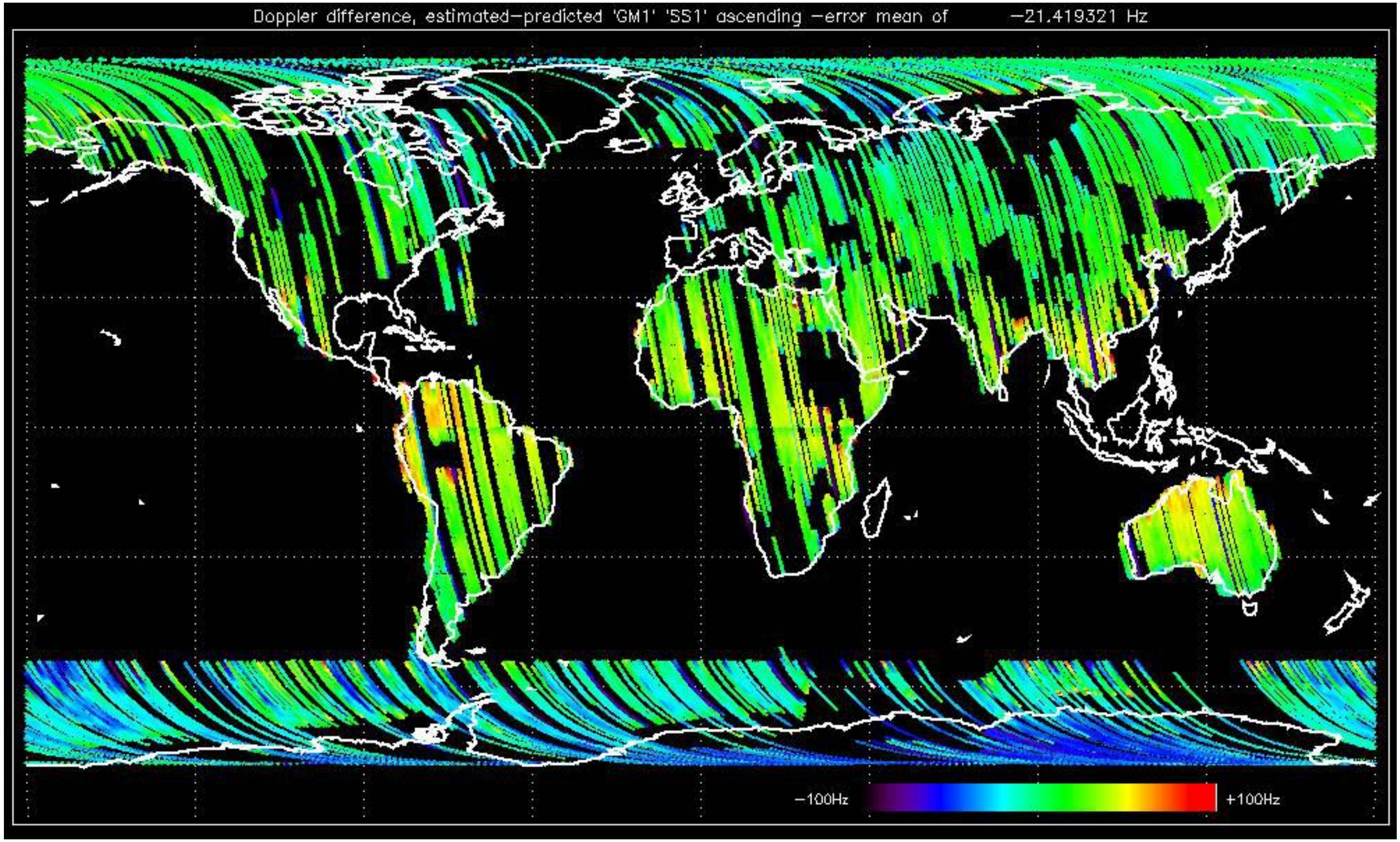

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

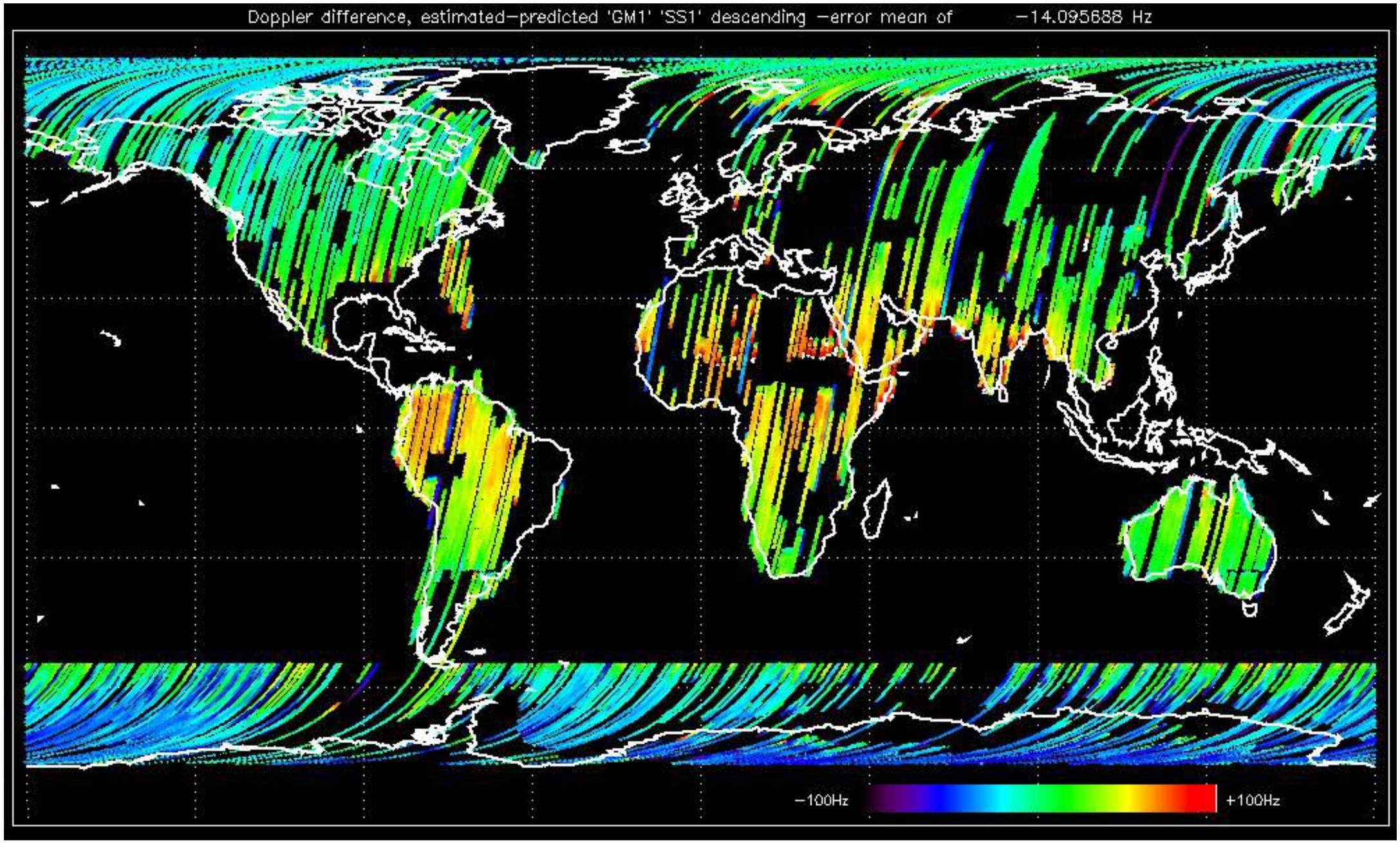

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
03−Oct
Date

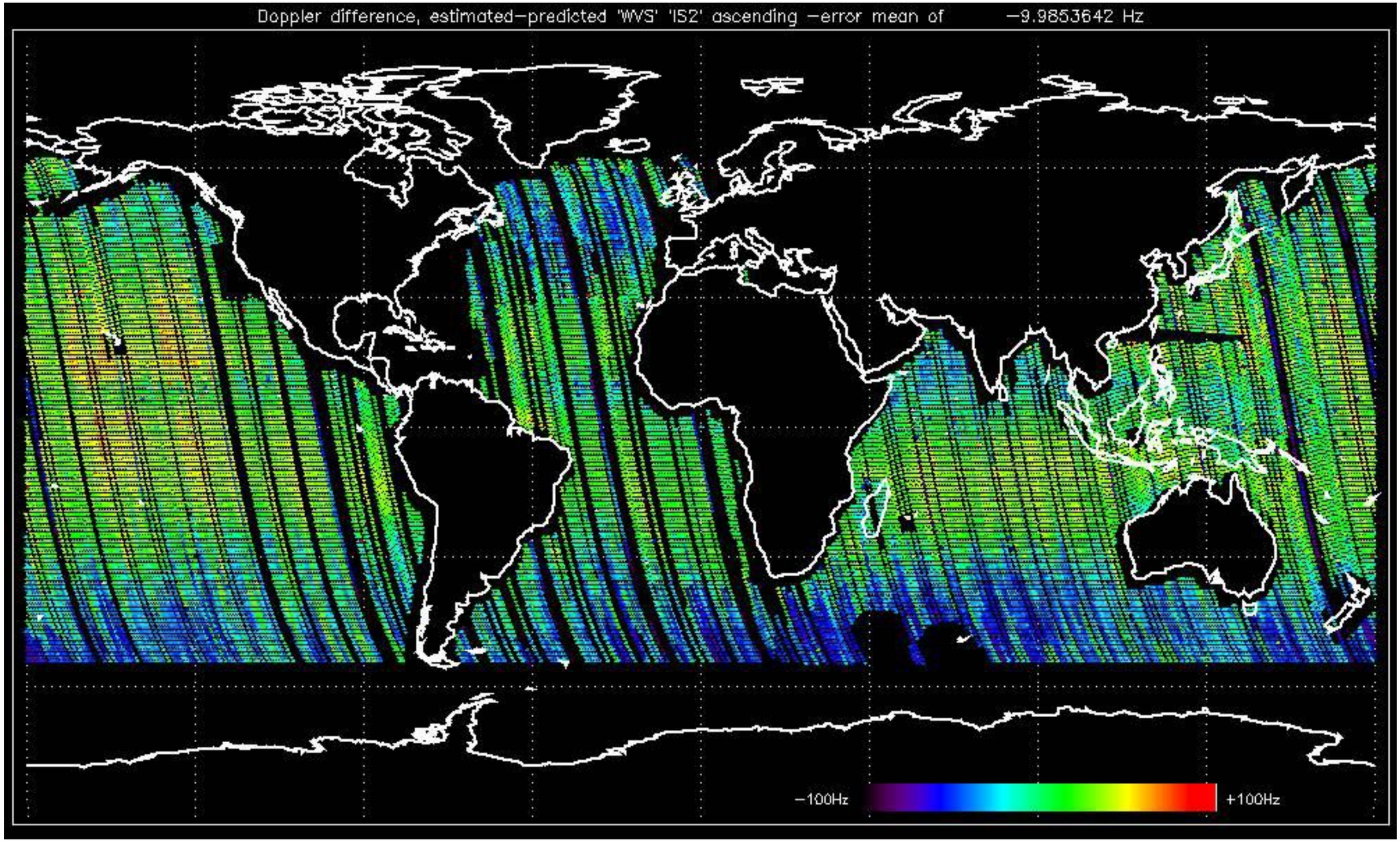

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

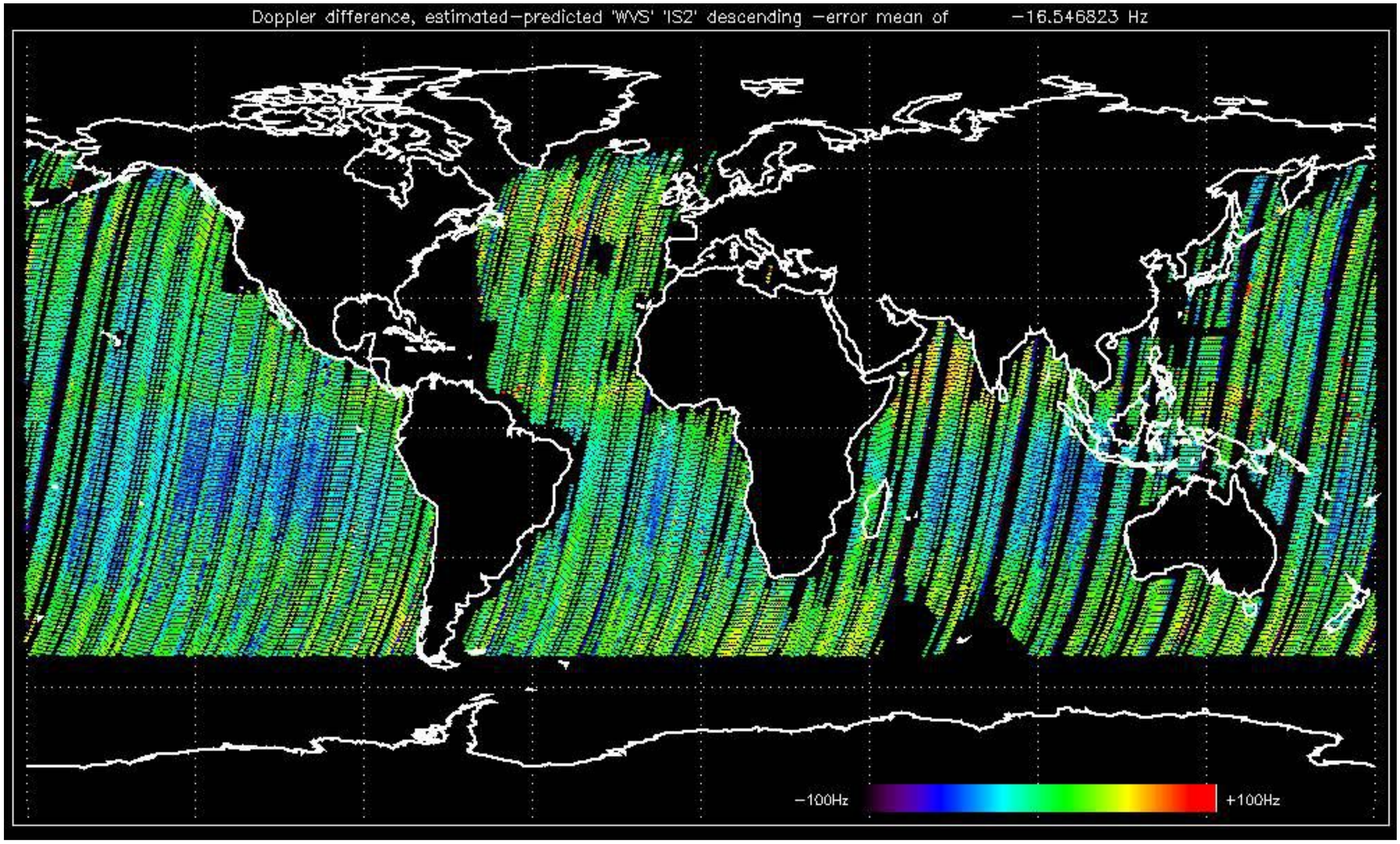

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −21.419321 Hz
−100Hz
+100Hz

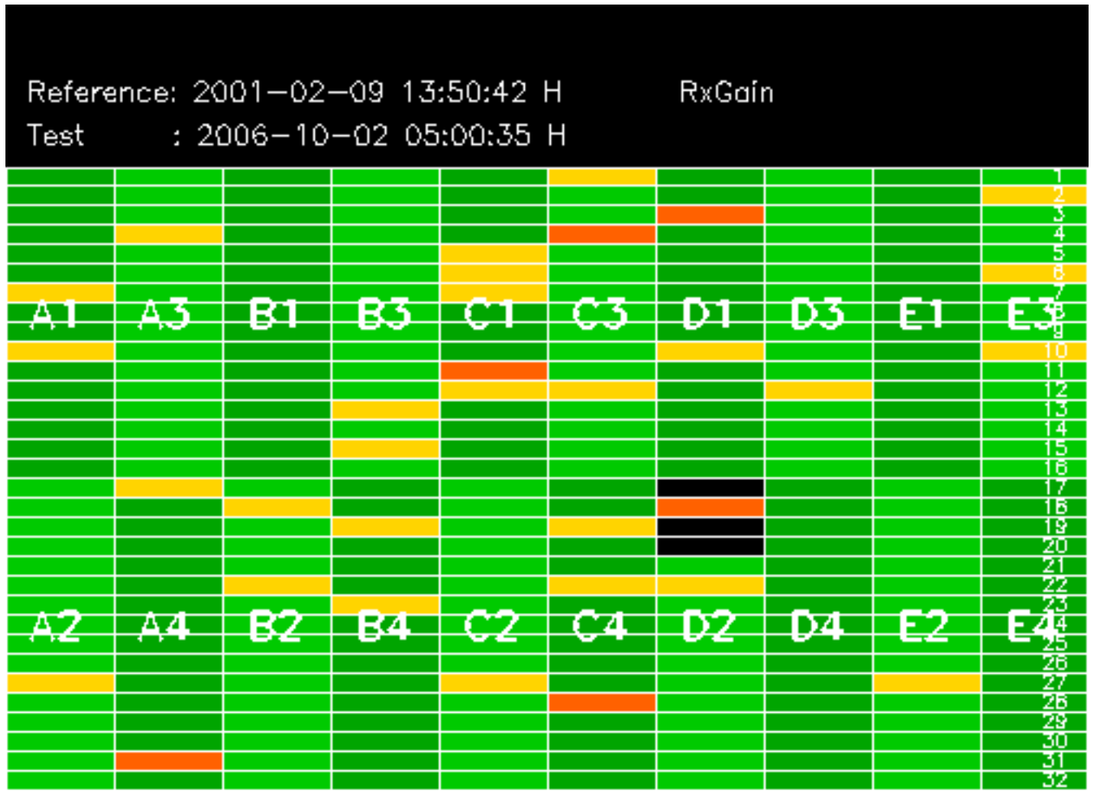

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −14.095688 Hz
−100Hz
+100Hz

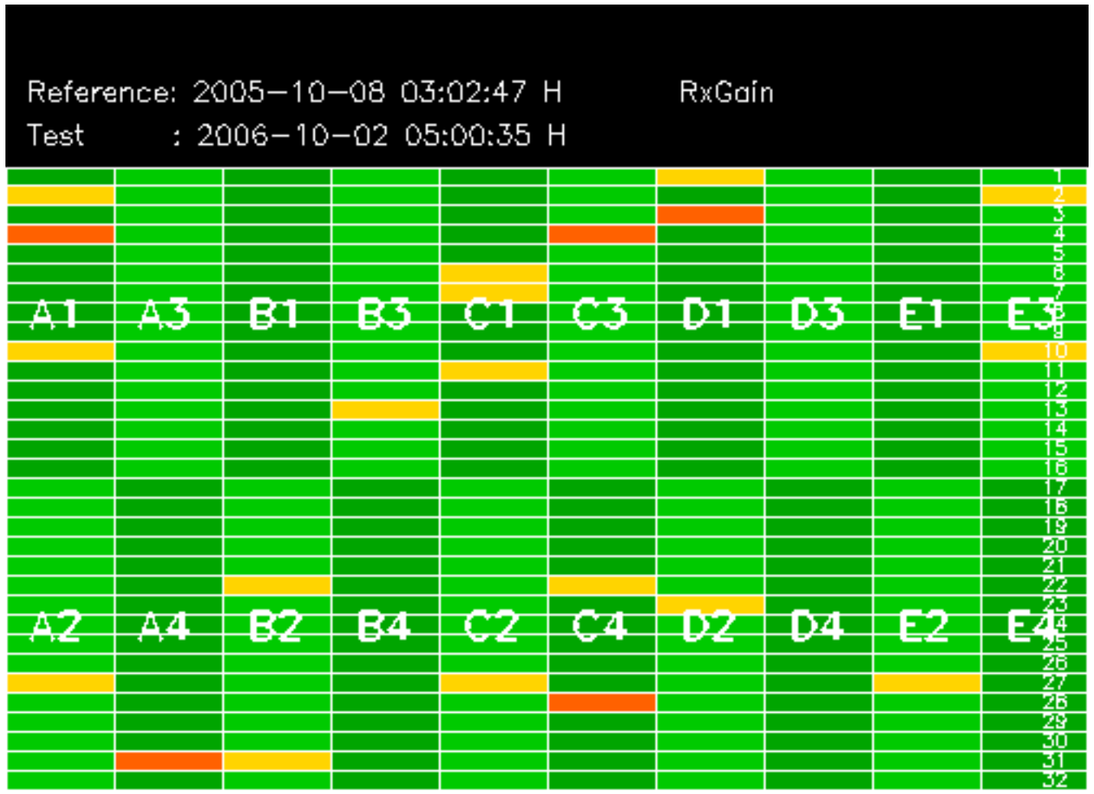

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −9.9853642 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −16.546823 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-02 05:00:35 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 : 2006-10-02 05:00:35 H
RxGain
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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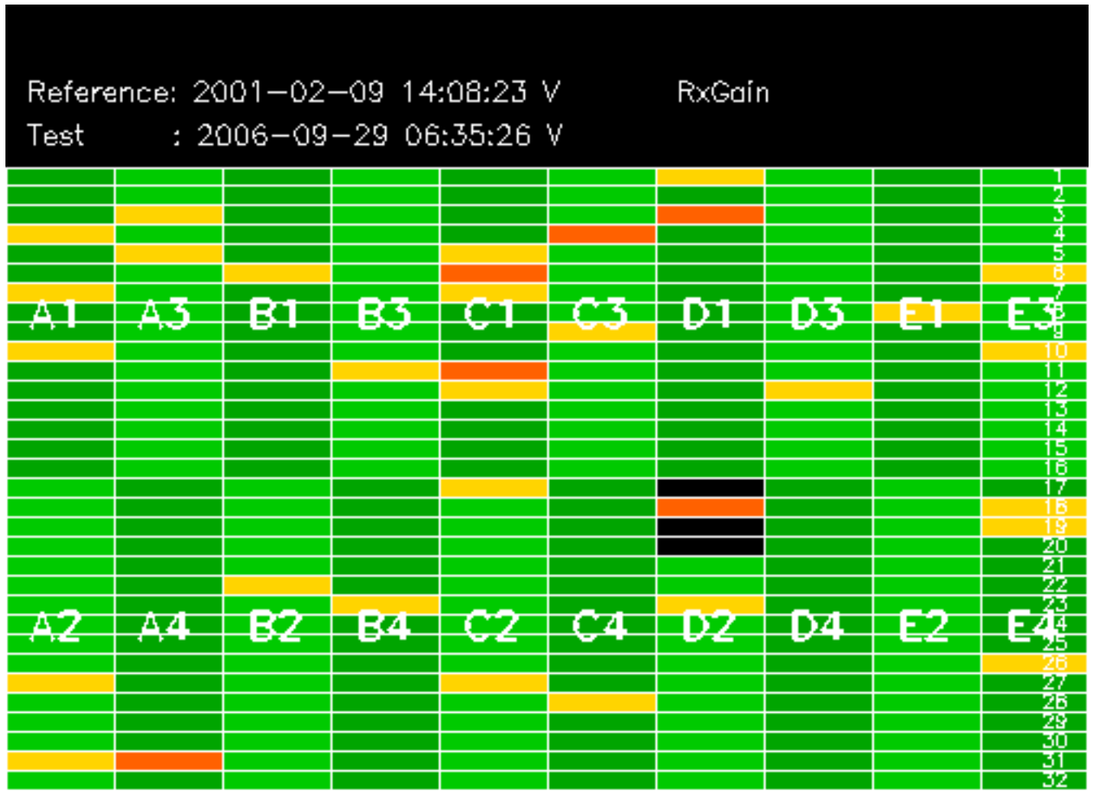
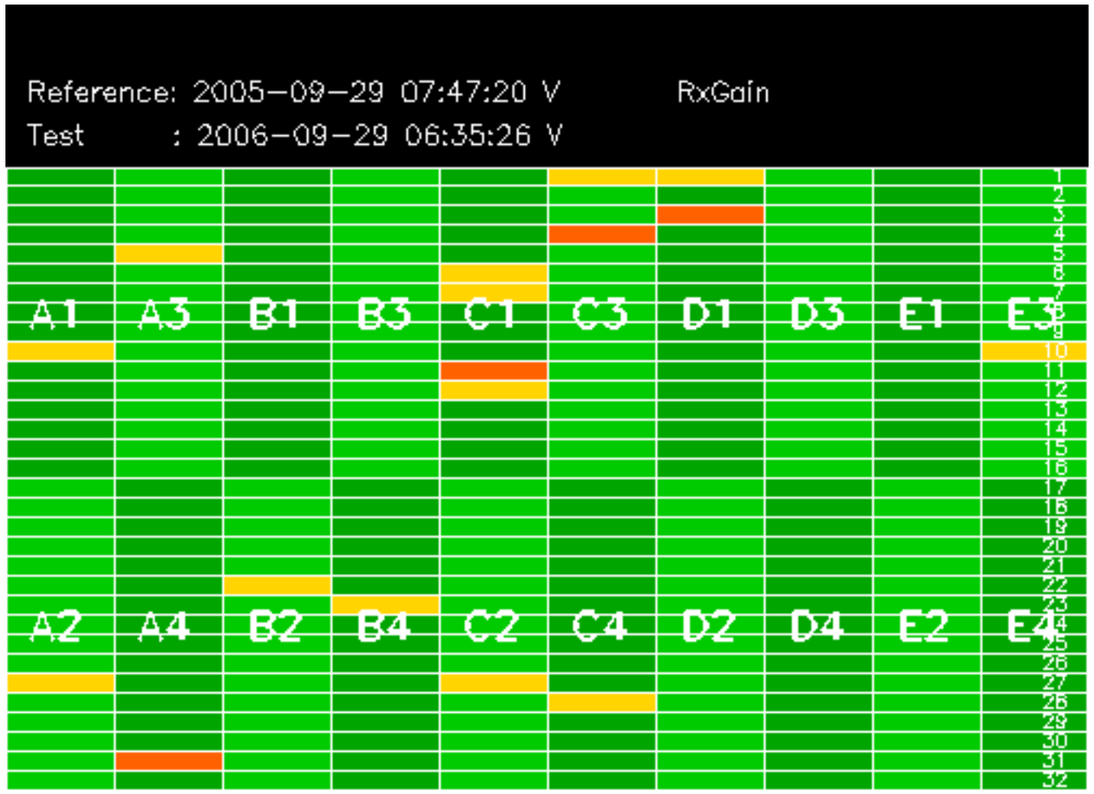

Reference: 2001-02-09 14:08:23 V
Test : 2006-09-29 06:35:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-09-29 06:35:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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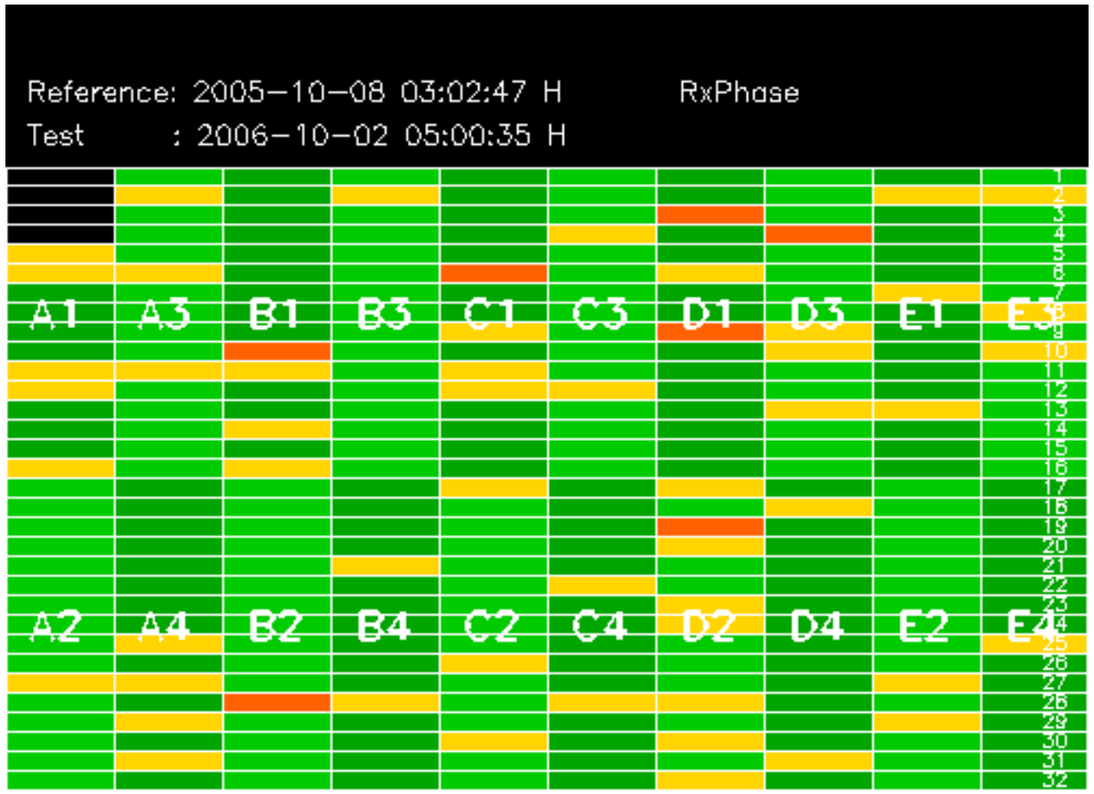
30
31
32


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-10-02 05:00:35 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 : 2006-10-02 05:00:35 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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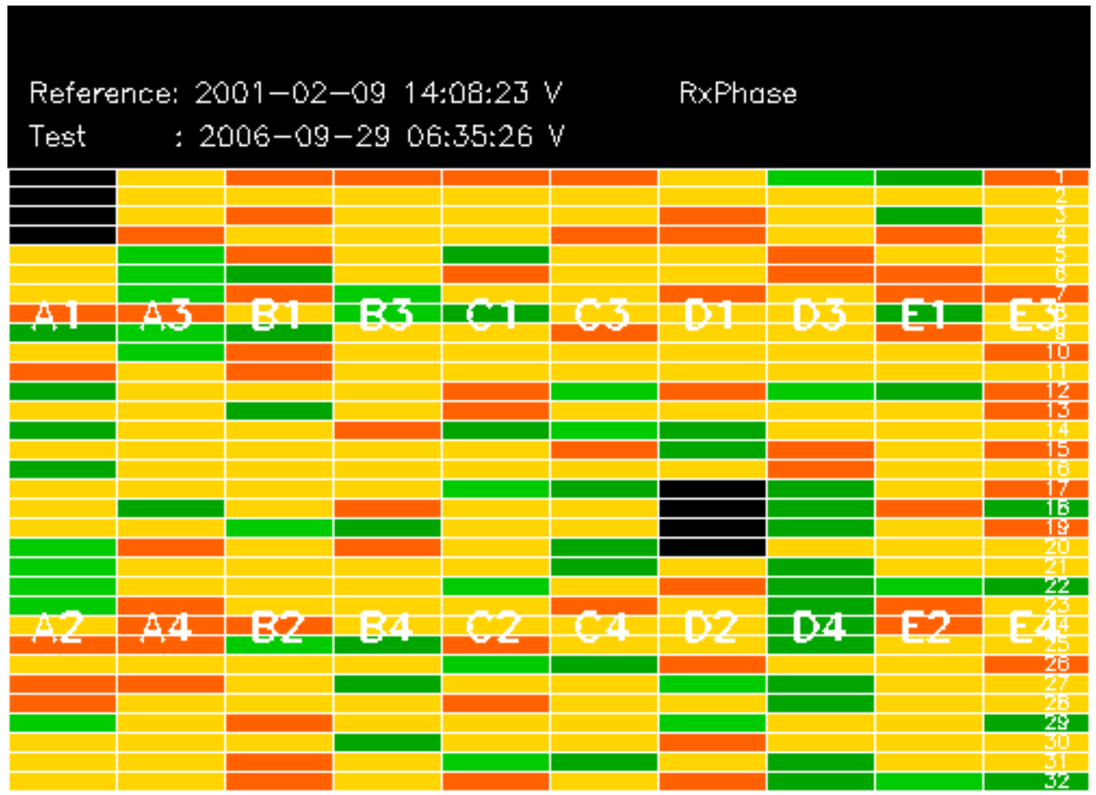
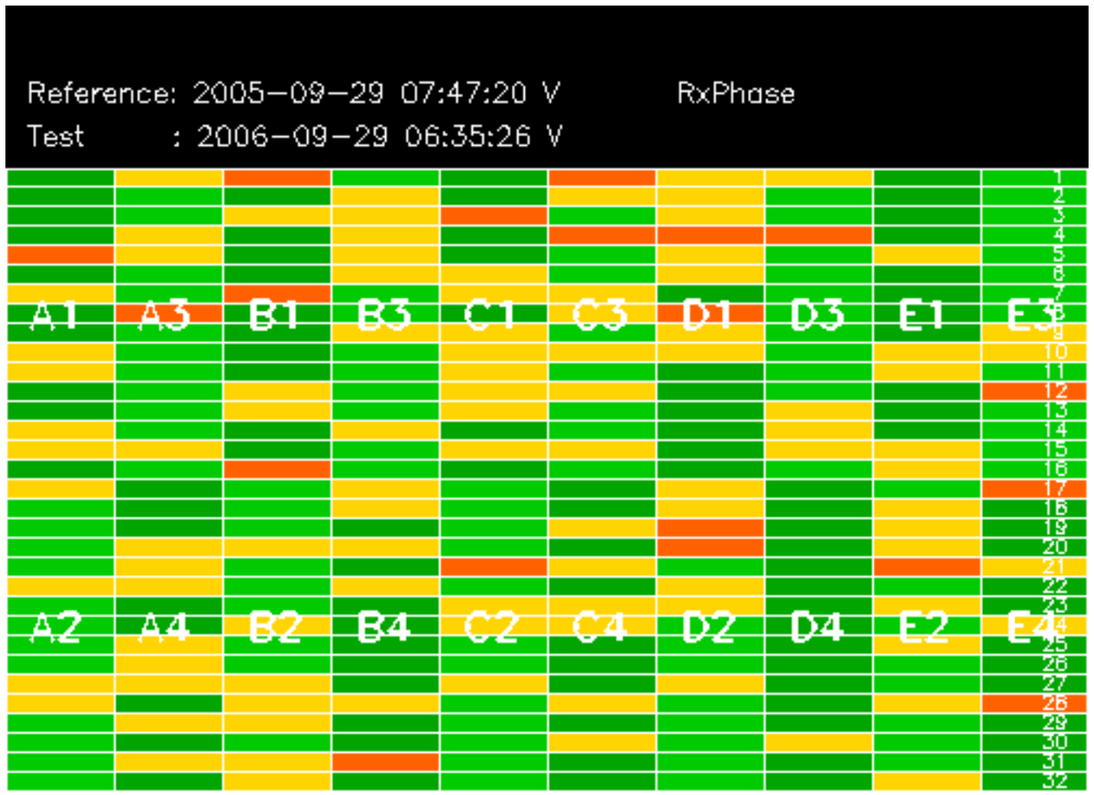

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2006-09-29 06:35:26 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-09-29 06:35:26 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
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8
9
10
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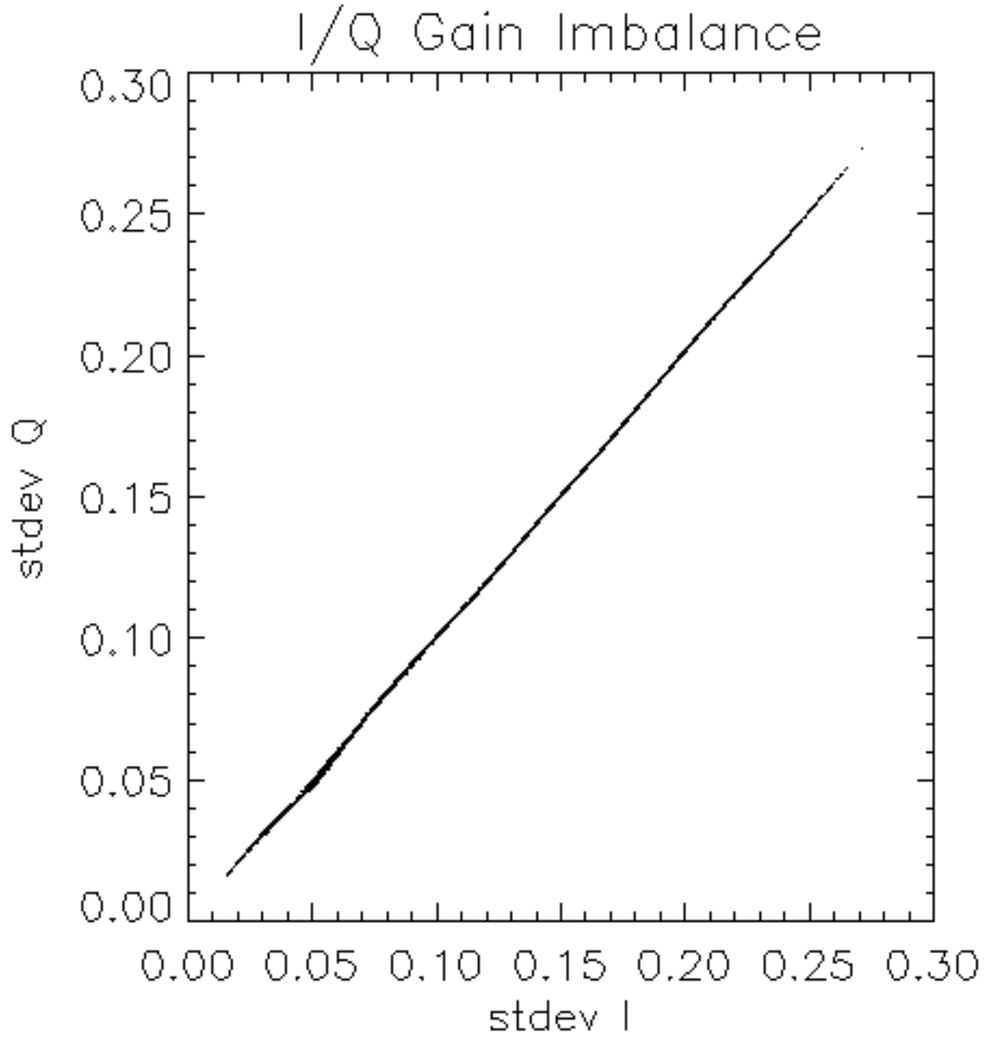
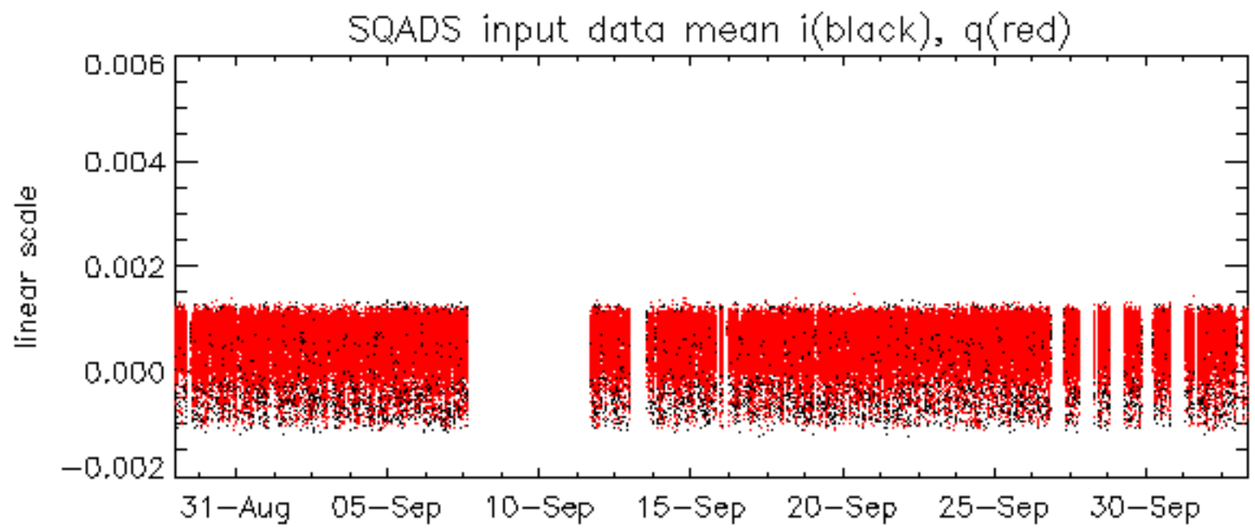
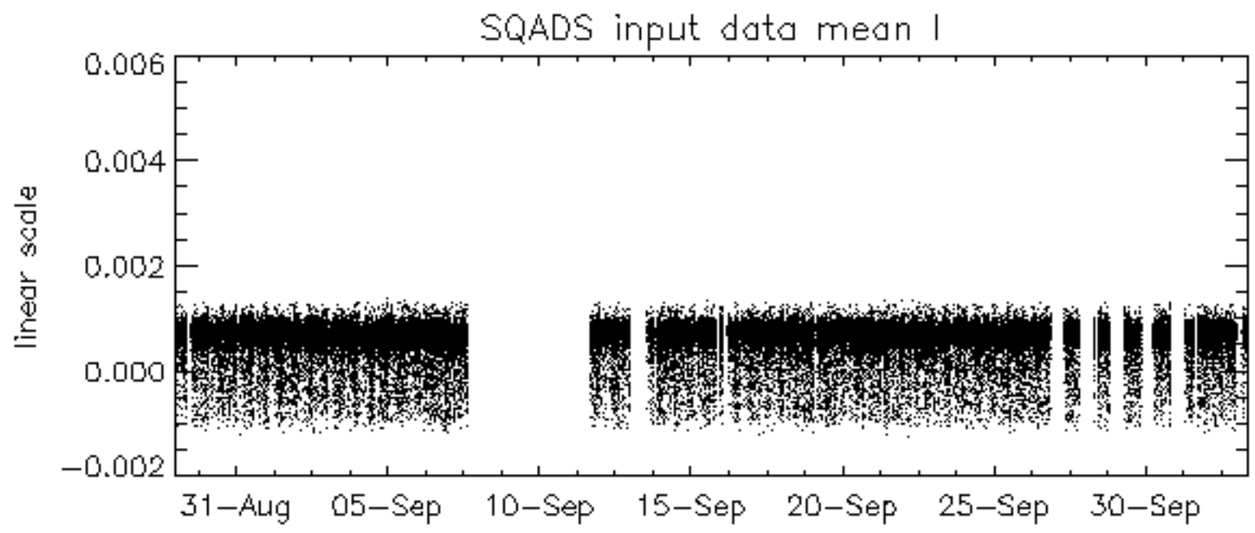
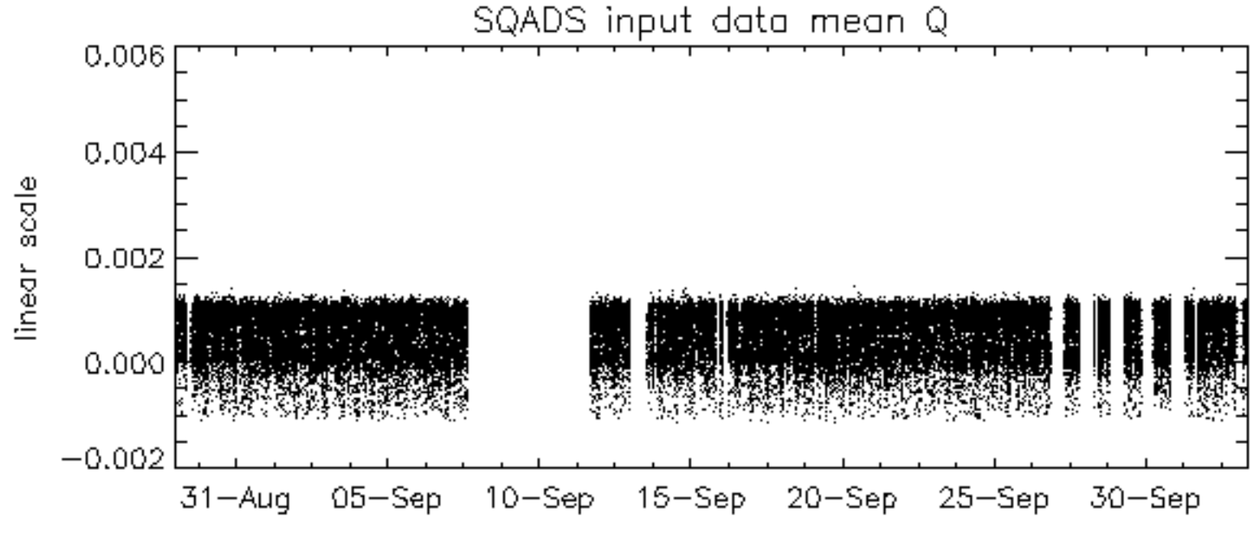
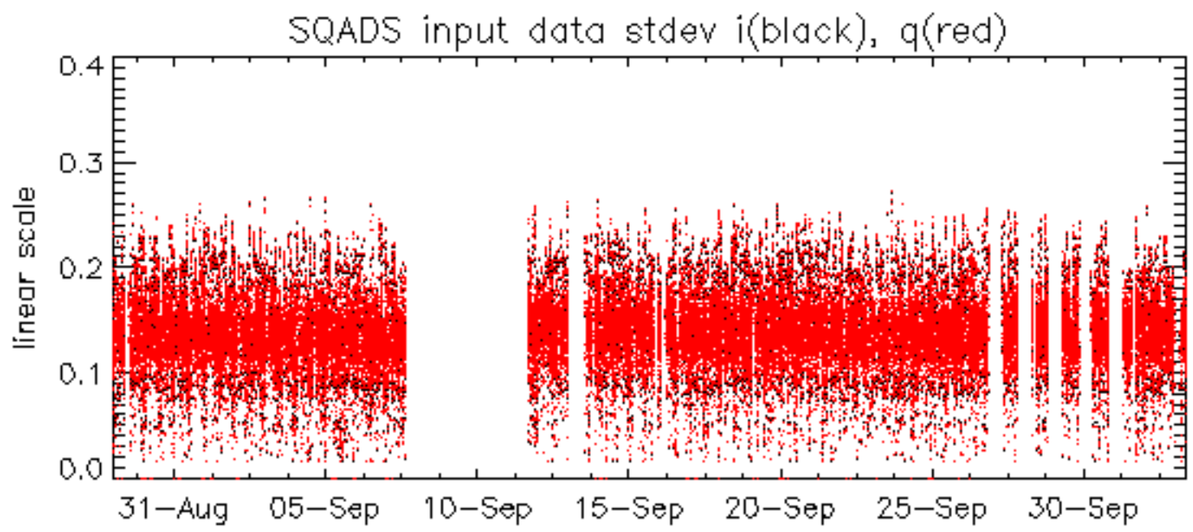
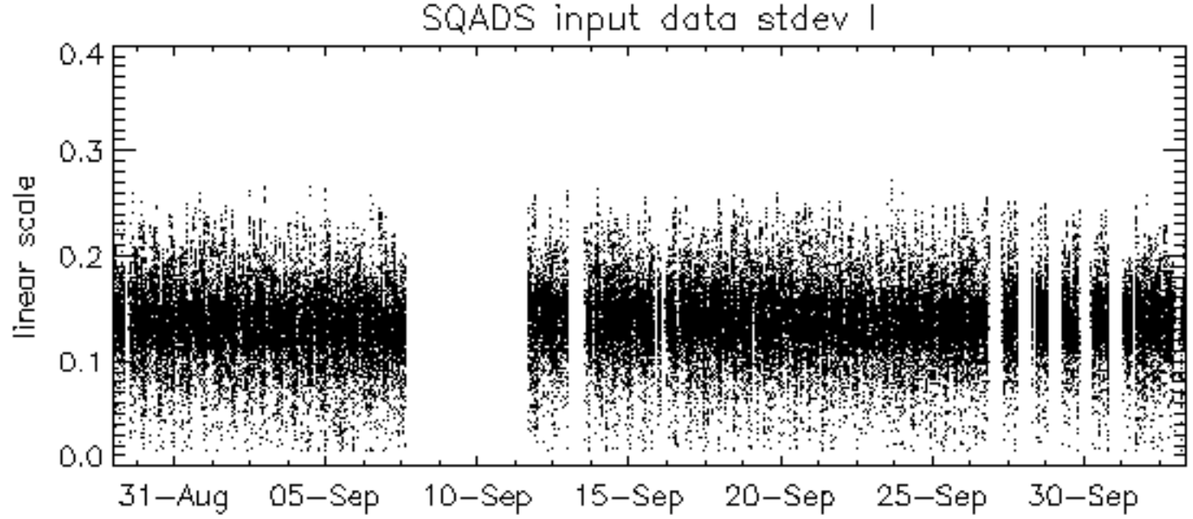

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

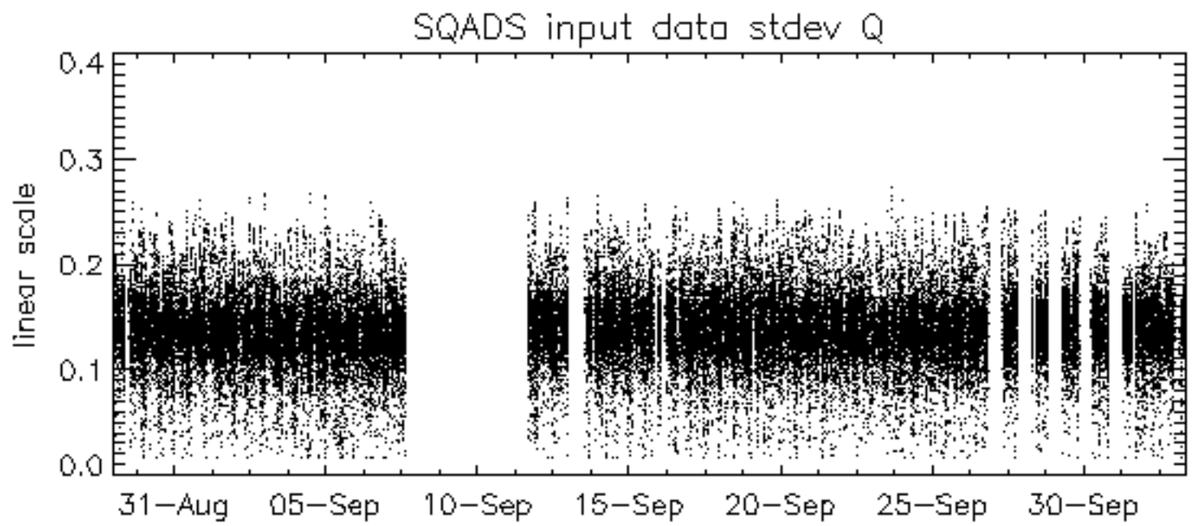

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep

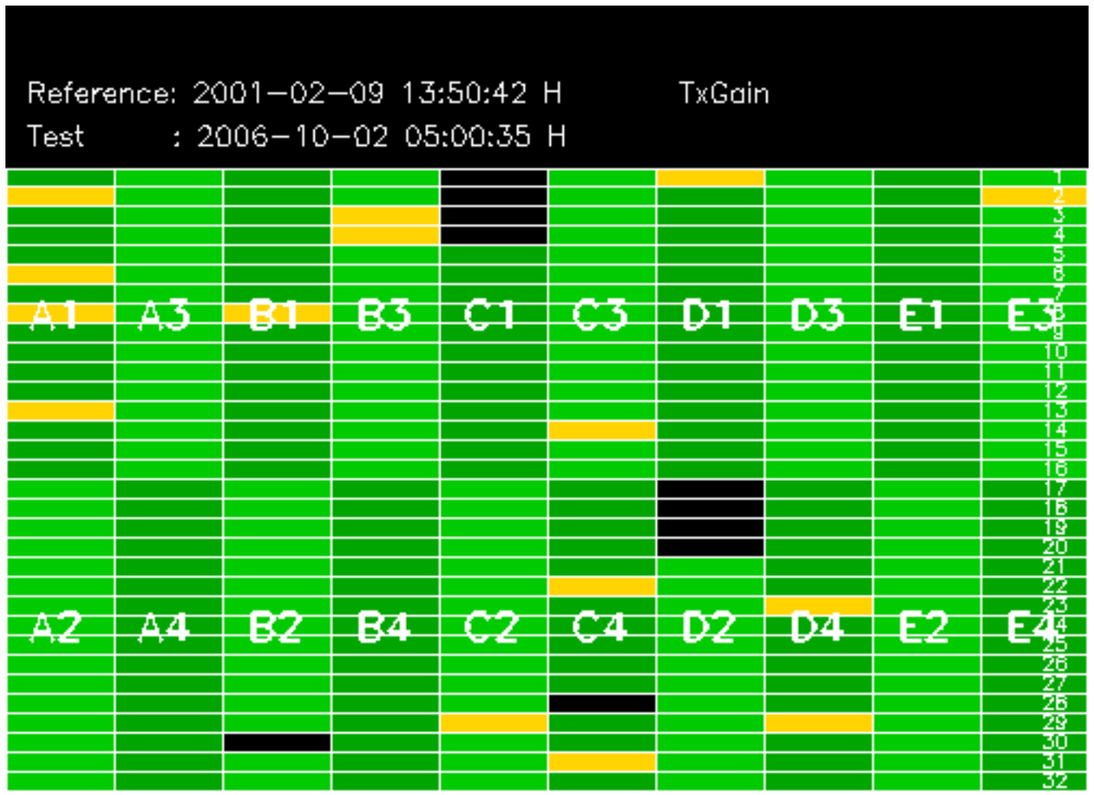

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep

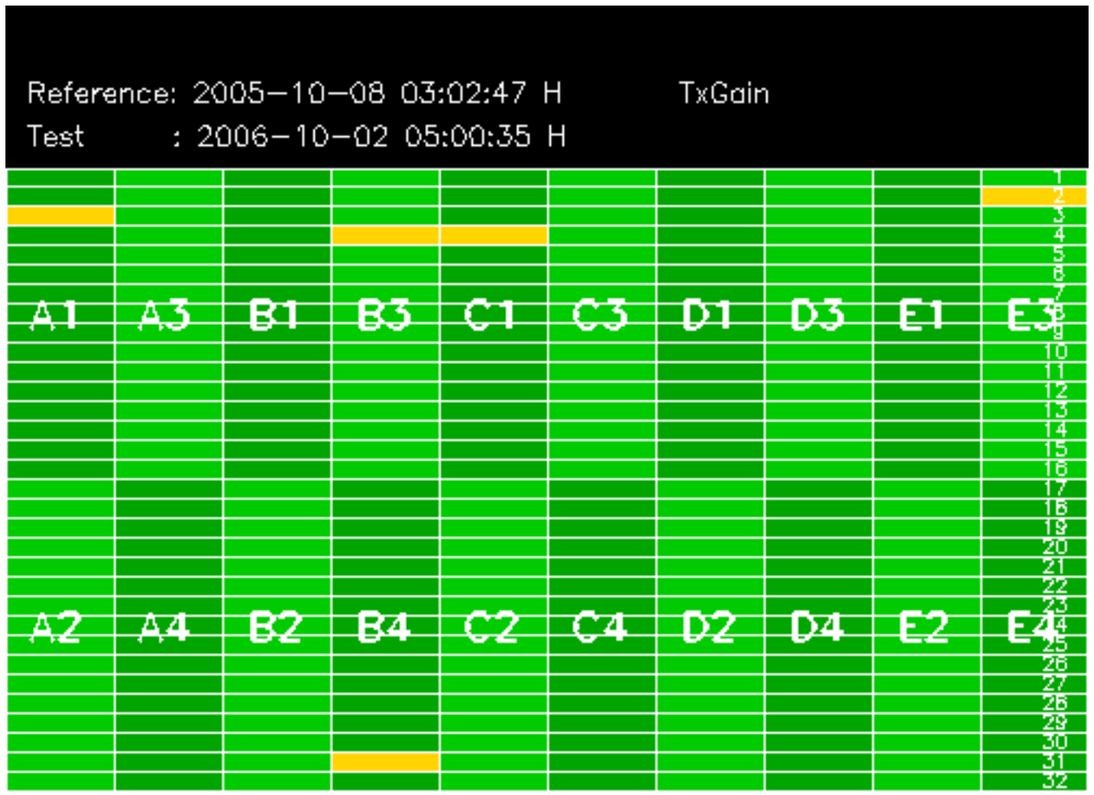

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-02 05:00:35 H
TxGain
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 : 2006-10-02 05:00:35 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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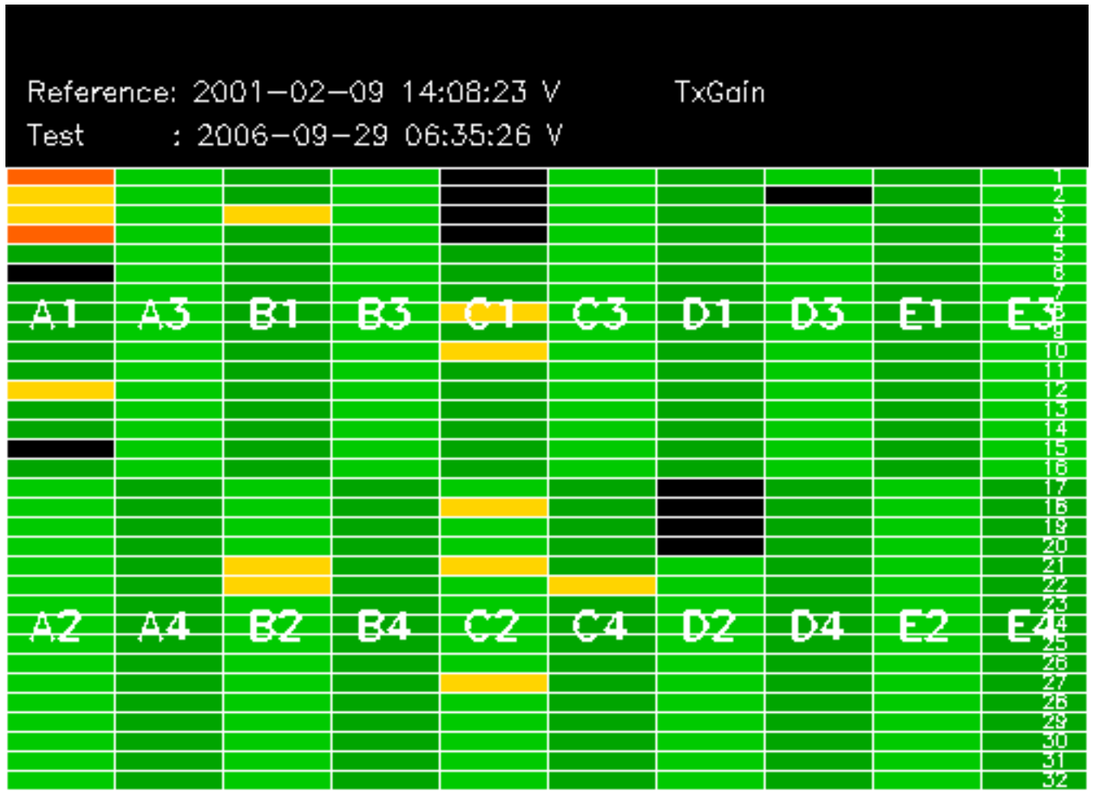
Reference: 2001-02-09 14:08:23 V
Test : 2006-09-29 06:35:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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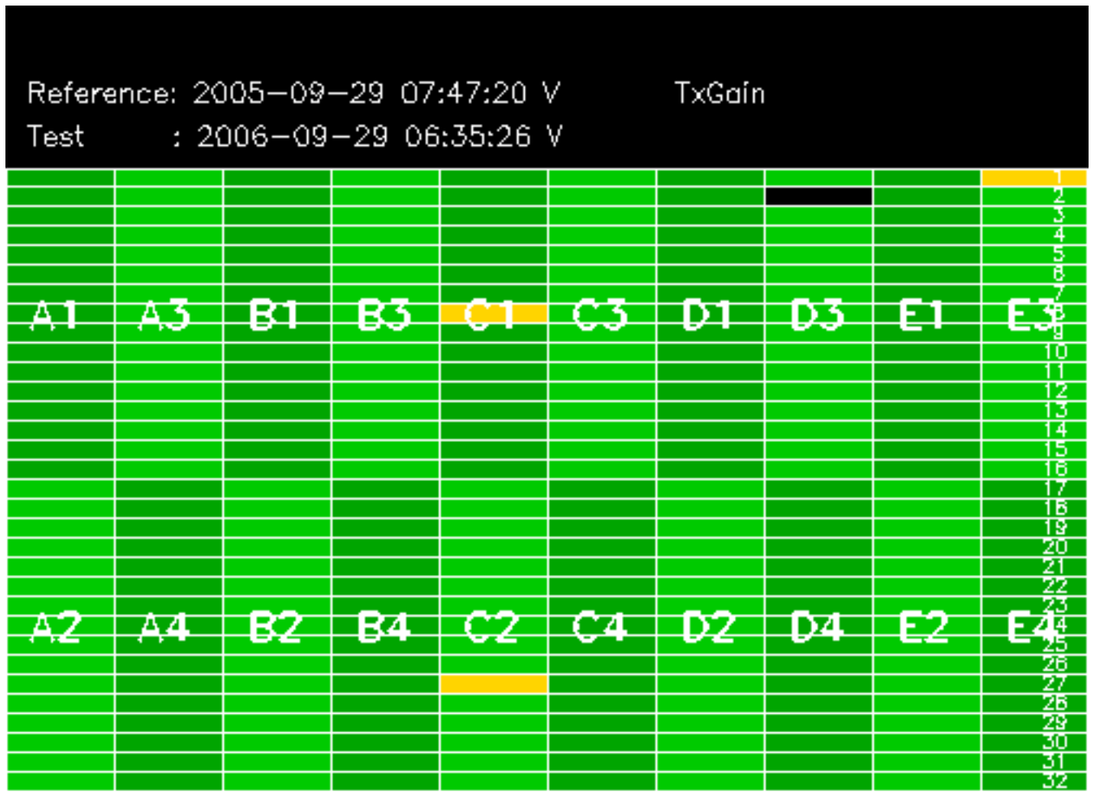
Reference: 2005-09-29 07:47:20 V
Test : 2006-09-29 06:35:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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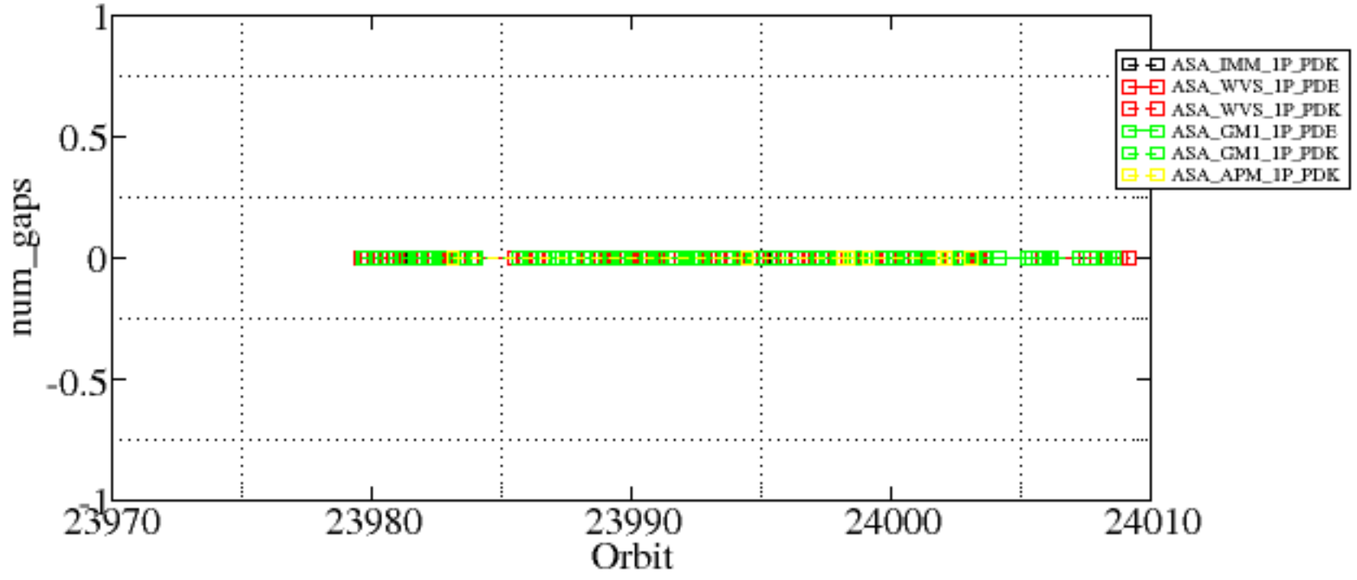
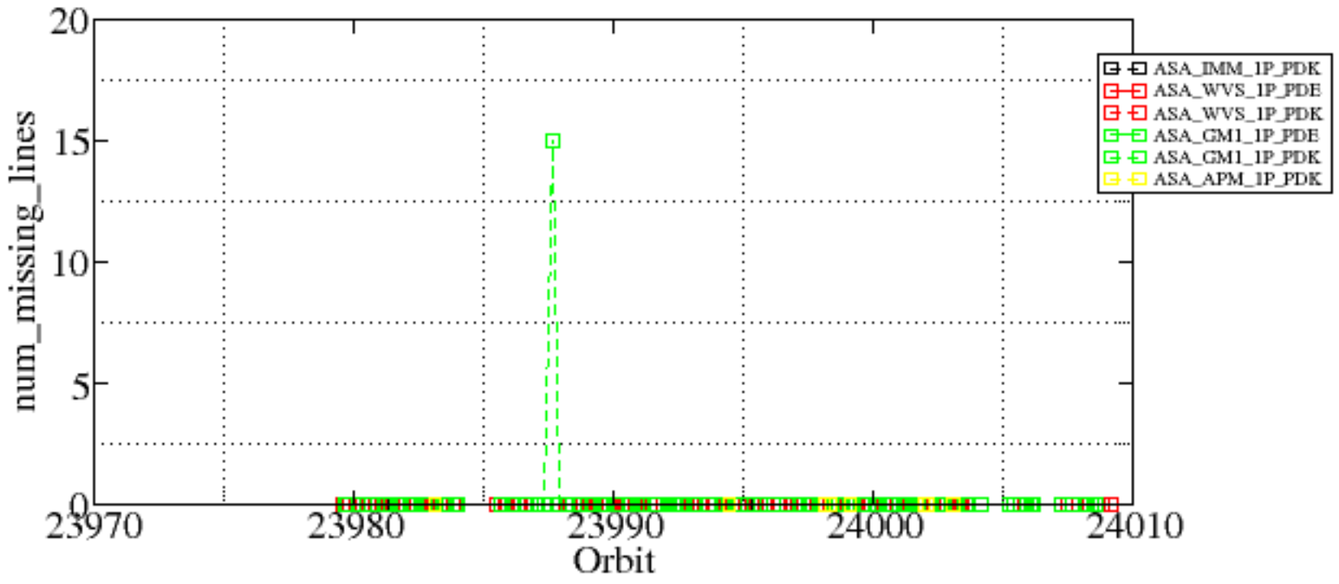
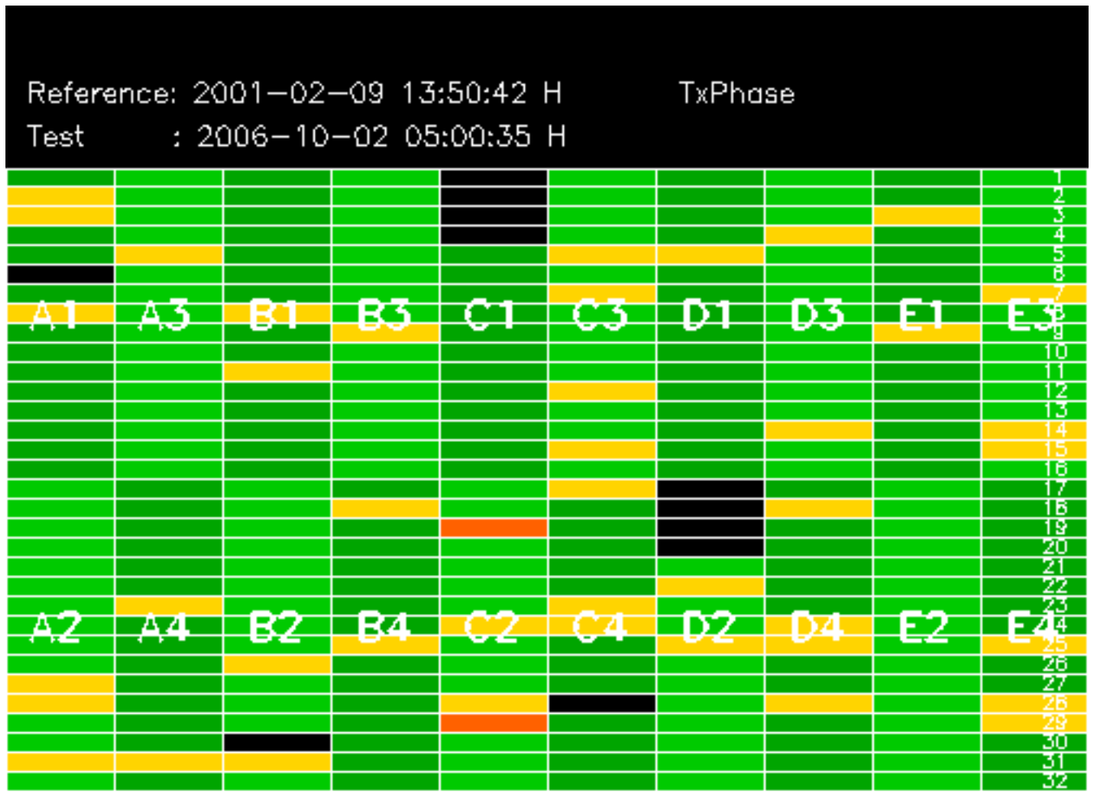
Summary of analysis for the last 3 days 2006100[123]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_GM1_1PNPDK20061001_203613_000011362051_00386_23987_5550.N1 </td> <td>0 </td> <td>15 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
23970
23980
23990
24000
24010
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_APM_1P_PDK


num_missing_lines
20
15
10
5
0
23970
23980
23990
24000
24010
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-02 05:00:35 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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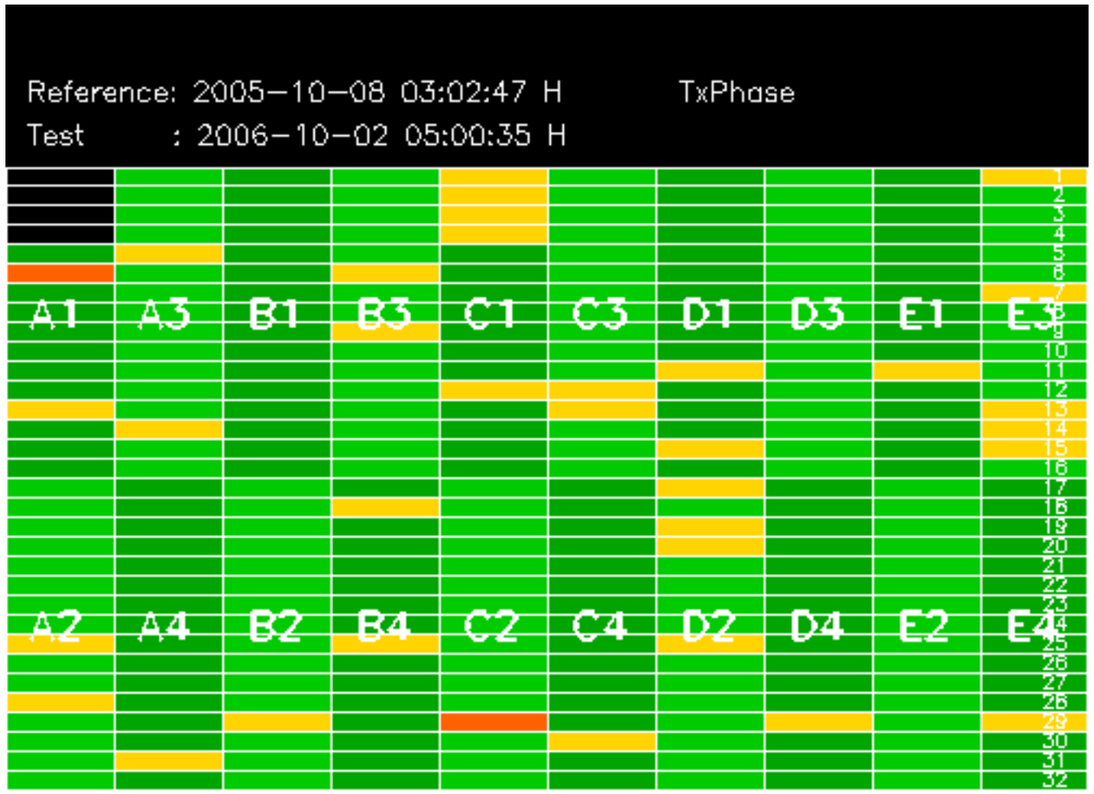
Reference: 2005-10-08 03:02:47 H
Test : 2006-10-02 05:00:35 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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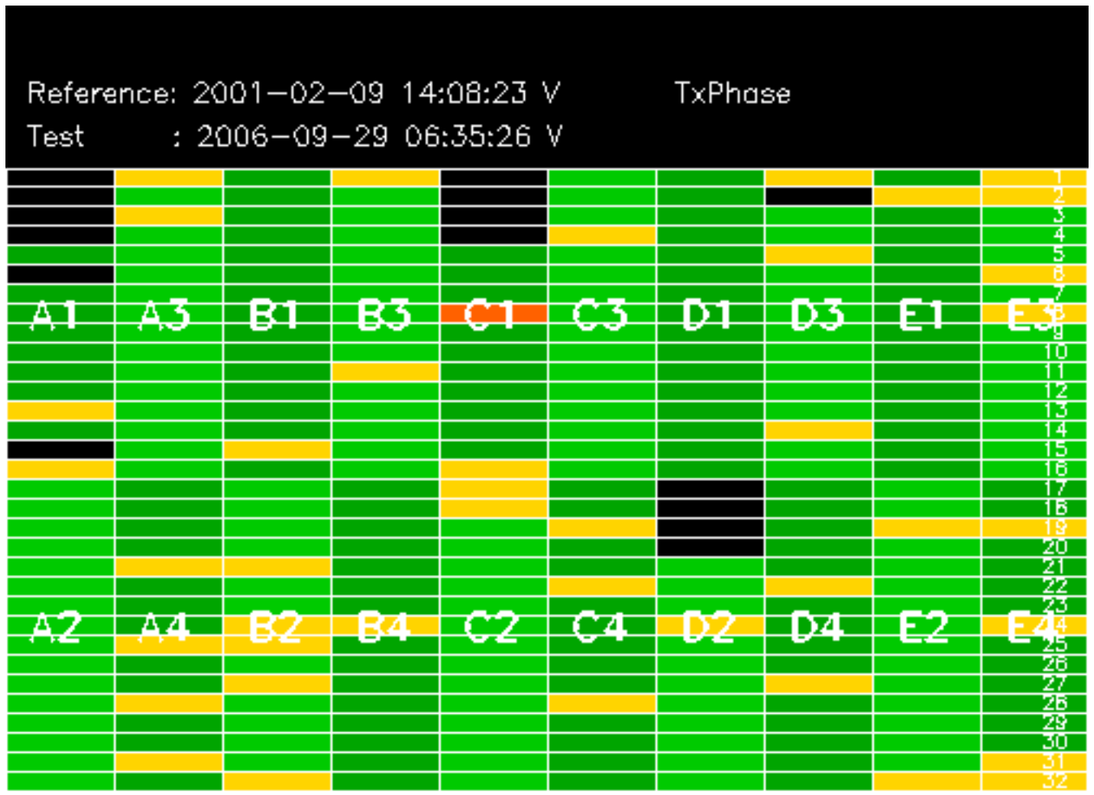
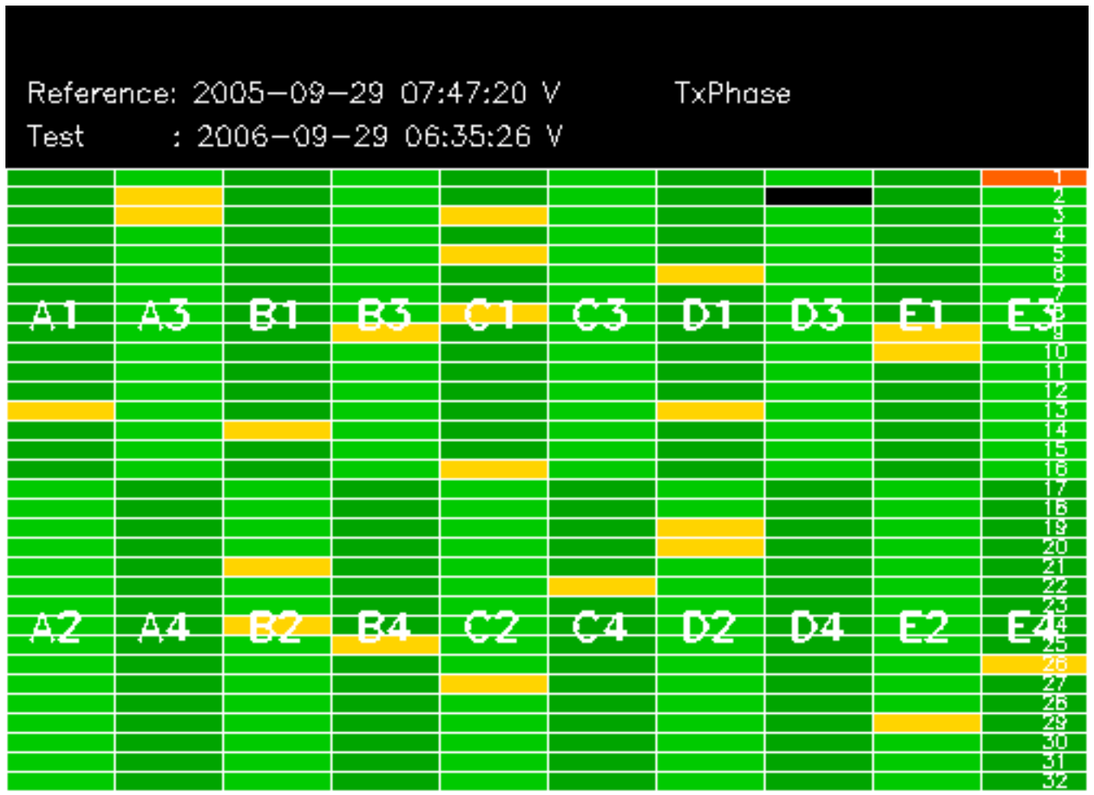

Reference: 2001-02-09 14:08:23 V
Test : 2006-09-29 06:35:26 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-09-29 06:35:26 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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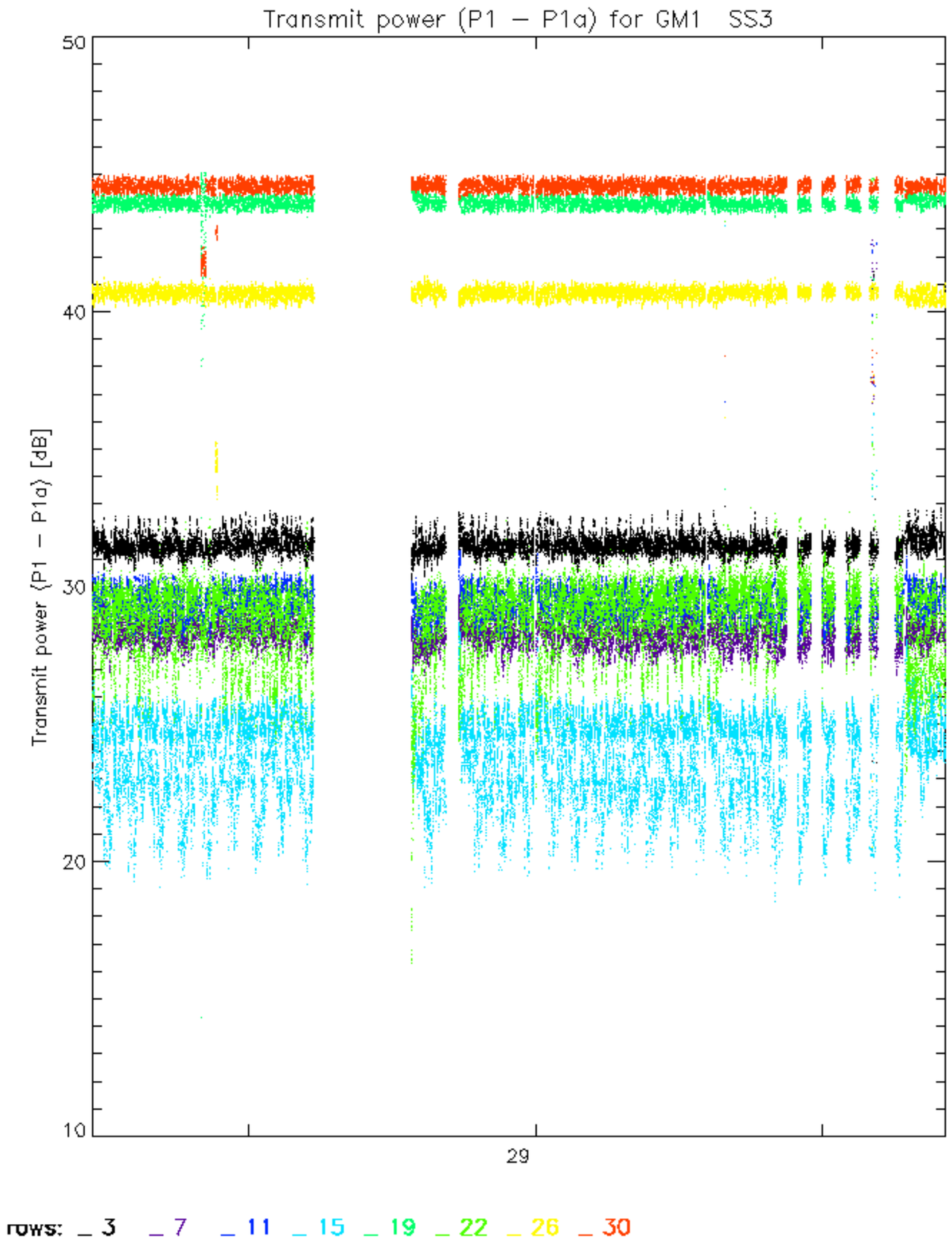
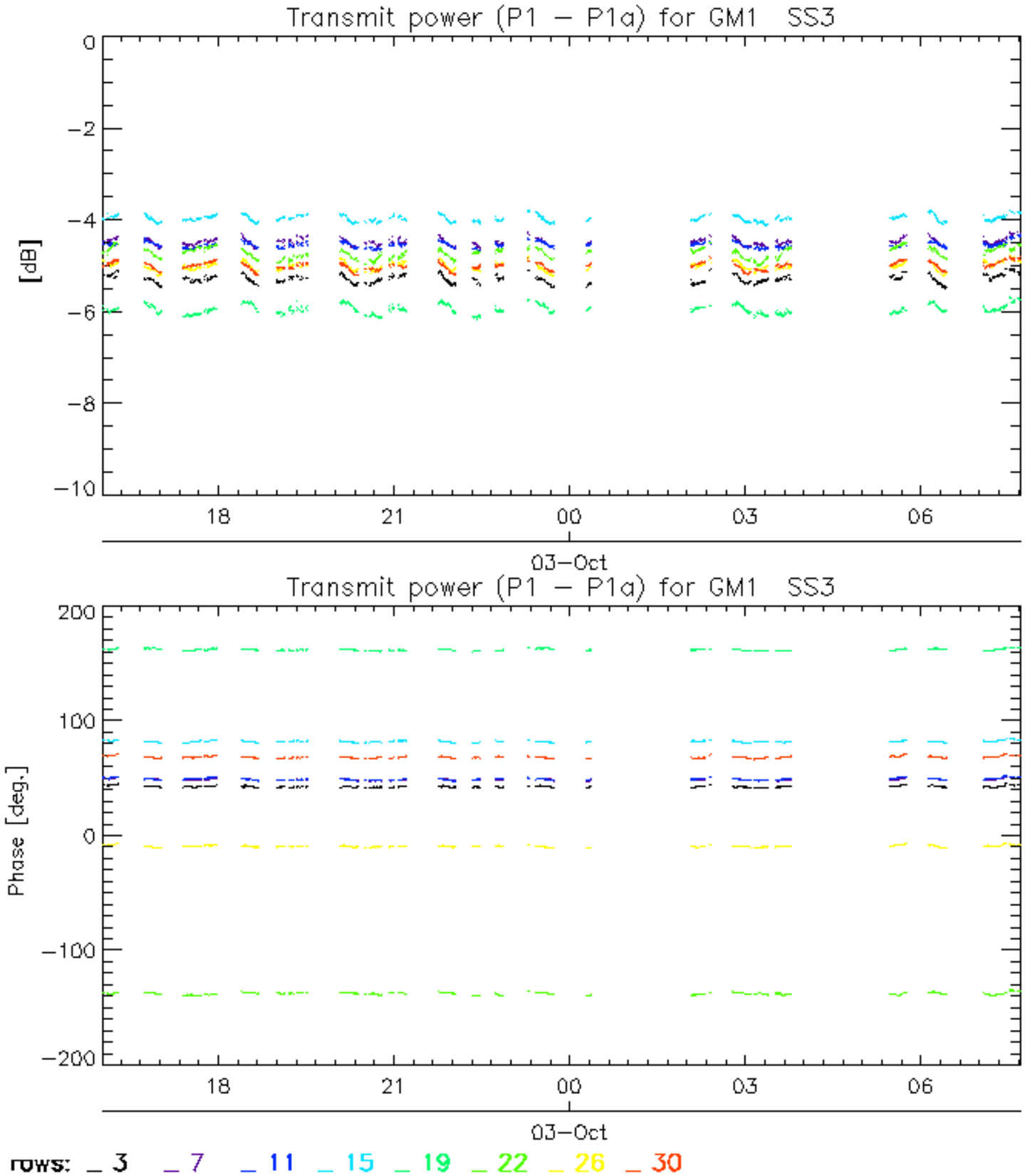
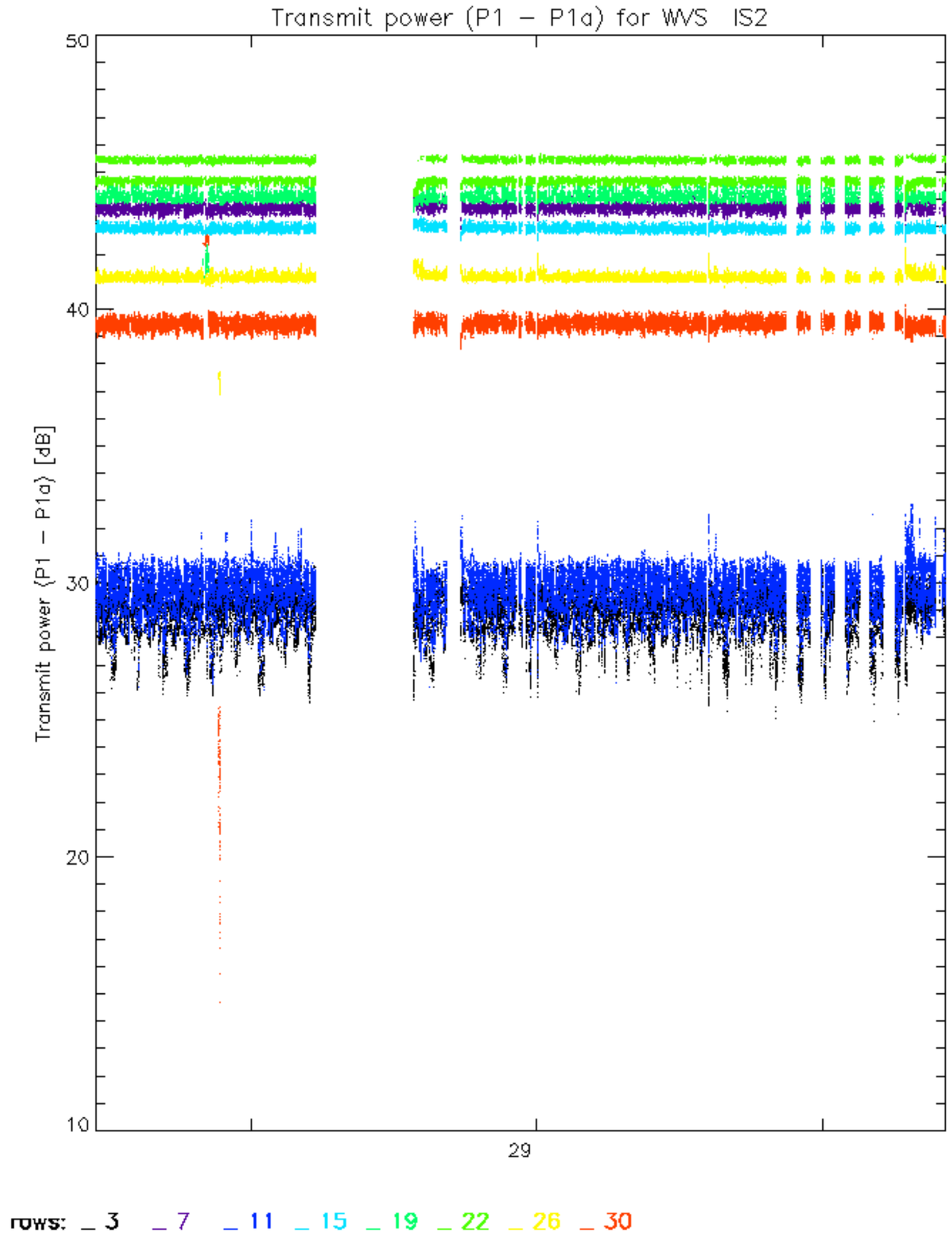
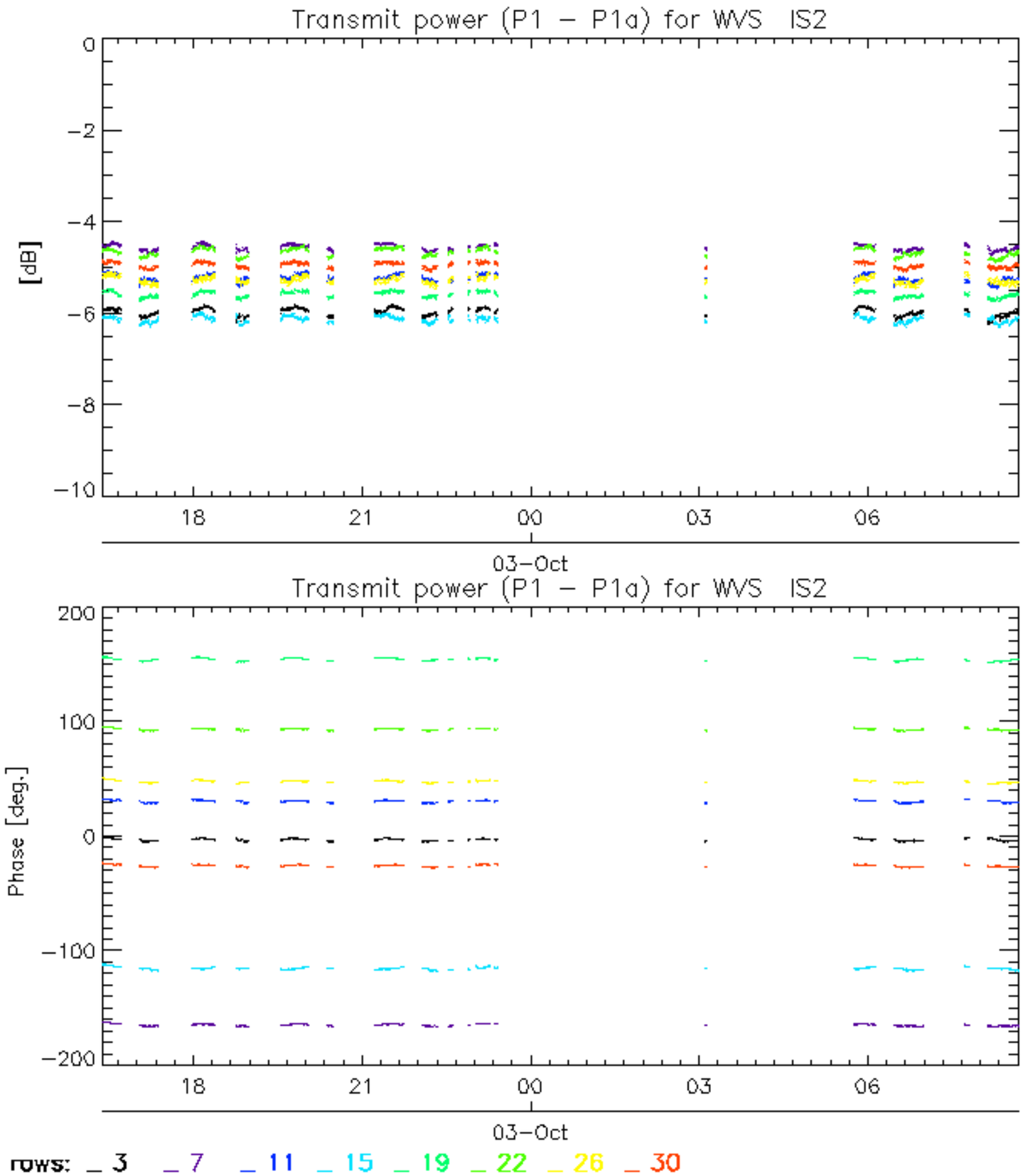

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
29
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
50
40
30
20
10
Transmit power (P1 – P1a) [dB]
29
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
03–Oct
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
03–Oct
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.