PRELIMINARY REPORT OF 051004

last update on Tue Oct 4 16:33:46 GMT 2005

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 2005-10-03 00:00:00 to 2005-10-04 16:33:46

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	24	52	14	3	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	52	14	3	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	24	52	14	3	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	52	14	3	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	40	57	31	12	56
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	40	57	31	12	56
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	40	57	31	12	56
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	40	57	31	12	56

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	20051003 054052
H	20051002 061229

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	-3.512286	0.078778	-0.314091
7	P1	-3.020338	0.040401	0.477434
11	P1	-4.359653	0.161698	1.083612
15	P1	-5.884292	0.053116	-0.539192
19	P1	-3.308024	0.210089	0.888294
22	P1	-4.517599	0.024951	0.302838
26	P1	-4.542458	0.113094	0.838669
30	P1	-6.213049	0.631051	2.240418
3	P1	-15.880935	1.938621	0.512218
7	P1	-16.647270	5.243977	-0.214814
11	P1	-19.036581	14.276208	9.201931
15	P1	-13.471163	10.613900	-2.022368
19	P1	-13.855628	0.309376	1.310545
22	P1	-17.237659	25.249092	0.640353
26	P1	-17.981218	23.006824	2.756125
30	P1	-17.807774	9.564901	3.193636

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.806330	0.103401	-0.263915
7	P2	-22.439829	0.312773	-1.274336
11	P2	-15.649916	2.944304	-4.877590
15	P2	-7.179343	0.122516	-0.223726
19	P2	-9.227364	0.215390	0.502346
22	P2	-17.326645	0.277798	-1.348400
26	P2	-16.251072	0.141243	0.645406
30	P2	-19.365046	0.260970	-1.141636

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.169824	0.004746	-0.039319
7	P3	-8.169824	0.004746	-0.039319
11	P3	-8.169824	0.004746	-0.039319
15	P3	-8.169824	0.004746	-0.039319
19	P3	-8.169824	0.004746	-0.039319
22	P3	-8.169824	0.004746	-0.039319
26	P3	-8.169824	0.004746	-0.039319
30	P3	-8.169824	0.004746	-0.039319

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	-3.210894	0.302750	-1.396310
7	P1	-2.965779	0.073303	0.231989
11	P1	-3.360724	0.355891	1.795151
15	P1	-3.505041	0.035440	0.391373
19	P1	-3.380088	0.077999	0.340351
22	P1	-5.255210	0.215891	0.698846
26	P1	-6.165366	0.896610	2.077864
30	P1	-5.456129	0.503722	1.385849
3	P1	-11.454926	0.514604	-0.376242
7	P1	-11.624928	22.155699	2.381686
11	P1	-13.040893	42.560741	5.963186
15	P1	-12.916841	37.396290	3.529693
19	P1	-15.311725	0.231313	-0.111665
22	P1	-22.343388	6.816547	7.214182
26	P1	-17.021021	6.294047	-2.068343
30	P1	-19.672617	2.010041	1.860032

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.576614	0.070304	-0.499187
7	P2	-22.680176	0.355033	-1.501875
11	P2	-10.937643	1.279333	-3.316530
15	P2	-4.952364	0.051502	0.272315
19	P2	-6.765693	0.122432	-0.210028
22	P2	-7.637897	0.299810	-1.618371
26	P2	-23.887455	0.042799	0.168414
30	P2	-22.054302	0.069318	-0.146488

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.011774	0.003397	-0.039533
7	P3	-8.011790	0.003408	-0.040045
11	P3	-8.011608	0.003401	-0.039382
15	P3	-8.011670	0.003403	-0.039608
19	P3	-8.011870	0.003394	-0.039519
22	P3	-8.011639	0.003402	-0.039815
26	P3	-8.011866	0.003402	-0.039992
30	P3	-8.011795	0.003412	-0.039818

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

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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	0.000520439
	stdev	1.90123e-07
MEAN Q	mean	0.000520380
	stdev	2.19565e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.134265
	stdev	0.00107110
STDEV Q	mean	0.134574
	stdev	0.00108531

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005100[234]
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_1PNPDE20051004_003705_000001542041_00202_18793_7333.N1	1	0
ASA_WSM_1PNPDE20051003_020026_000000852041_00189_18780_2057.N1	0	22
ASA_WSM_1PNPDE20051003_043835_000001282041_00191_18782_2079.N1	0	37
ASA_WSM_1PNPDE20051003_162343_000000912041_00198_18789_2129.N1	0	58

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

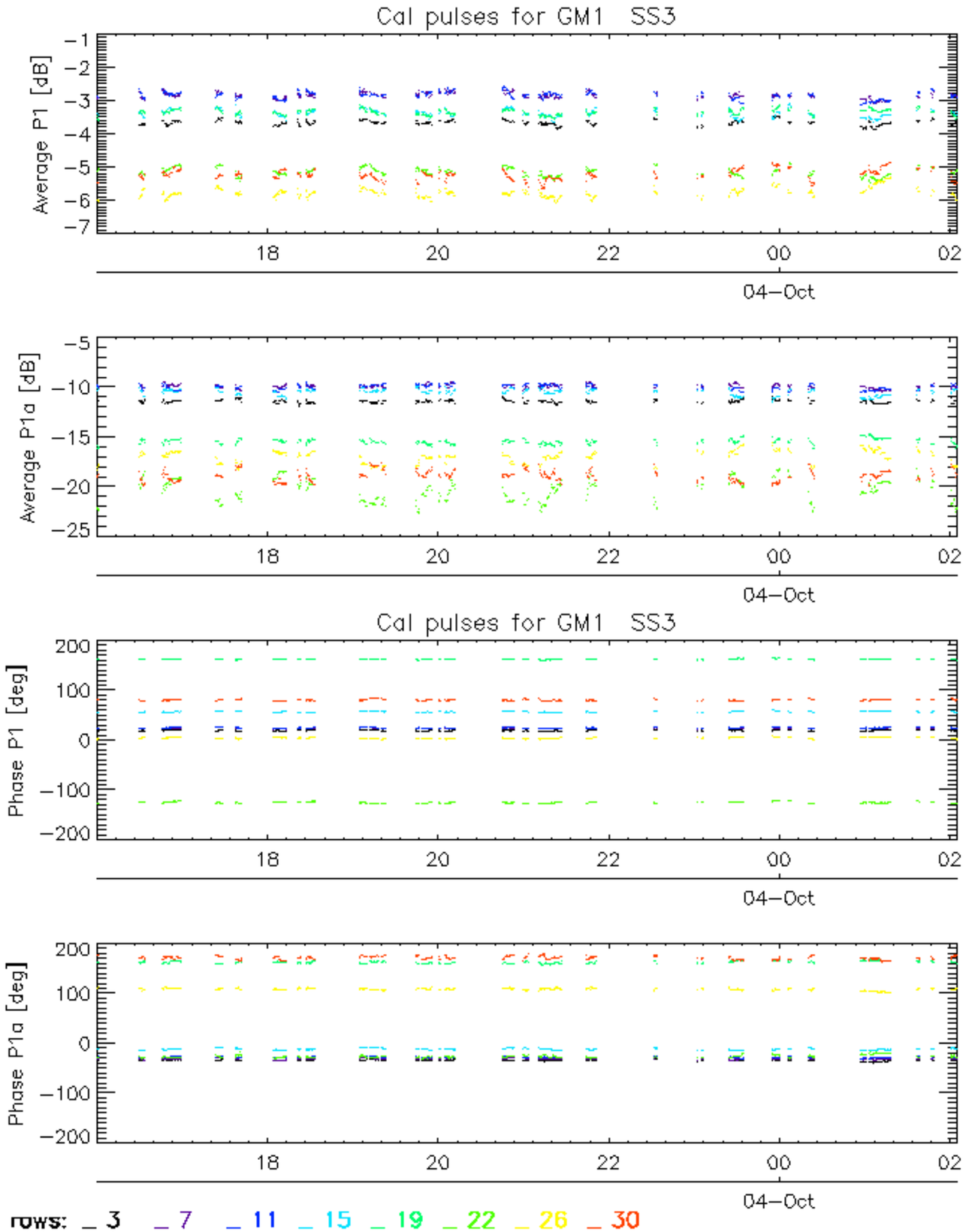
Descending

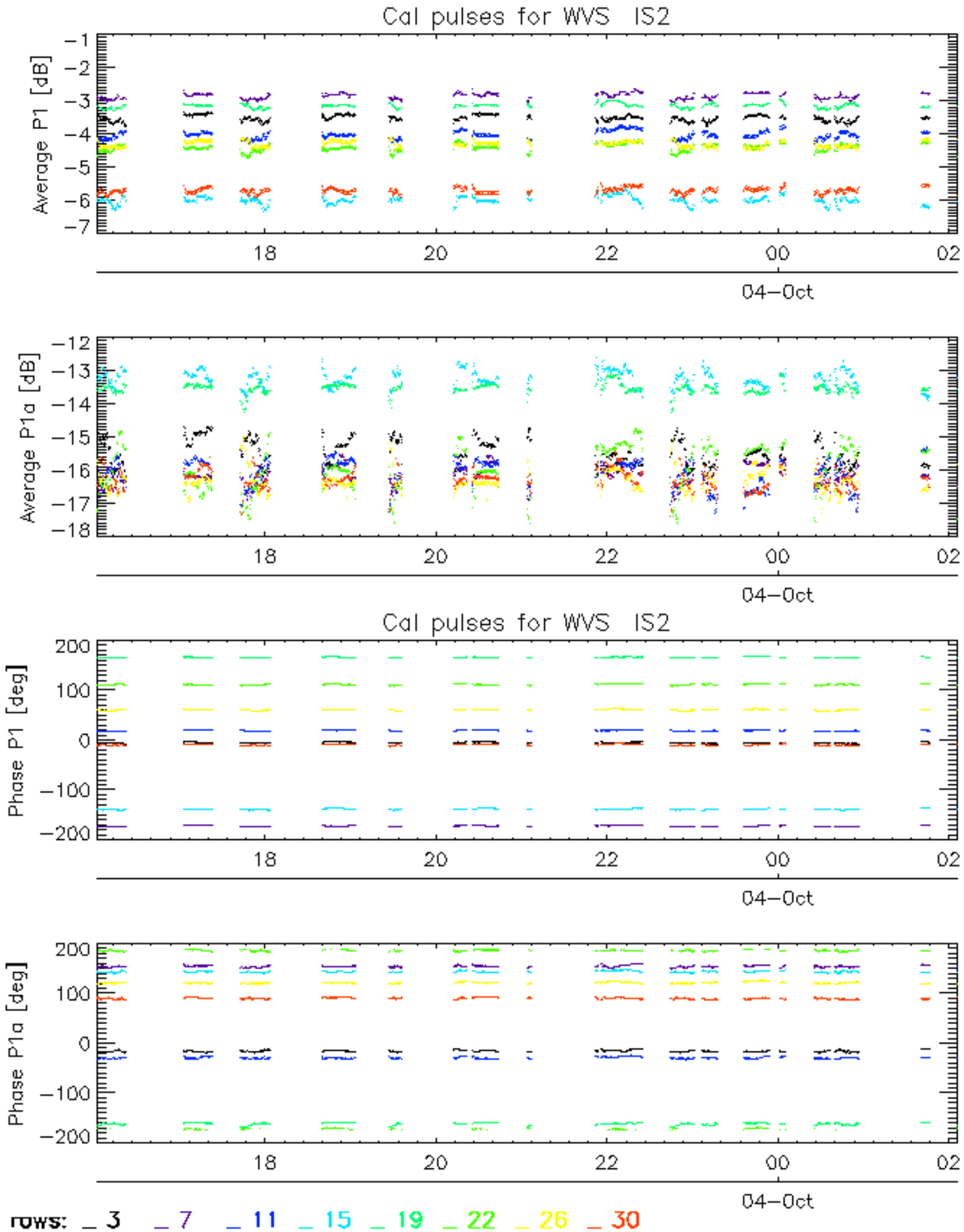
7.5 - Absolute Doppler for GM1

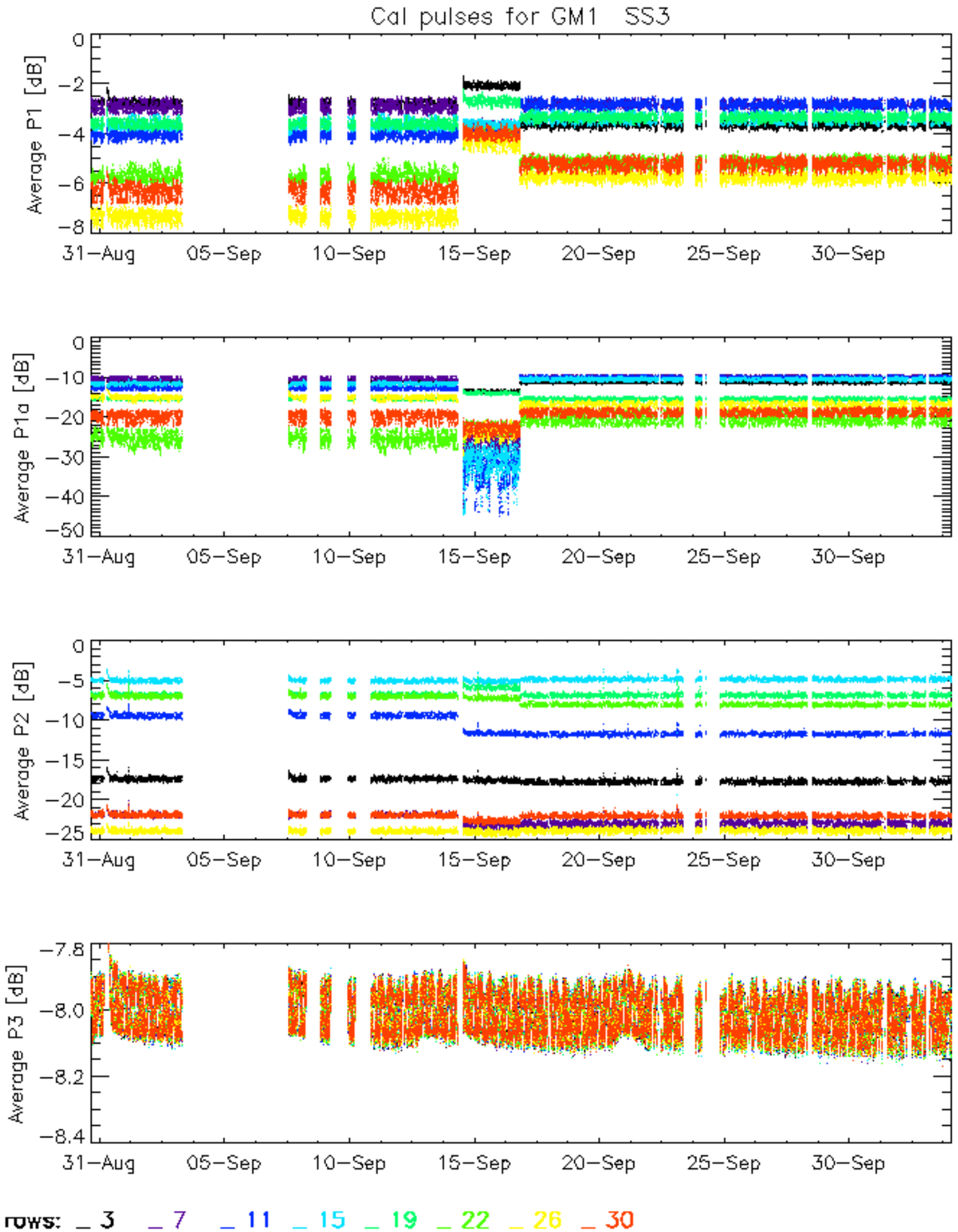
Evolution of Absolute Doppler
Acsending
Descending

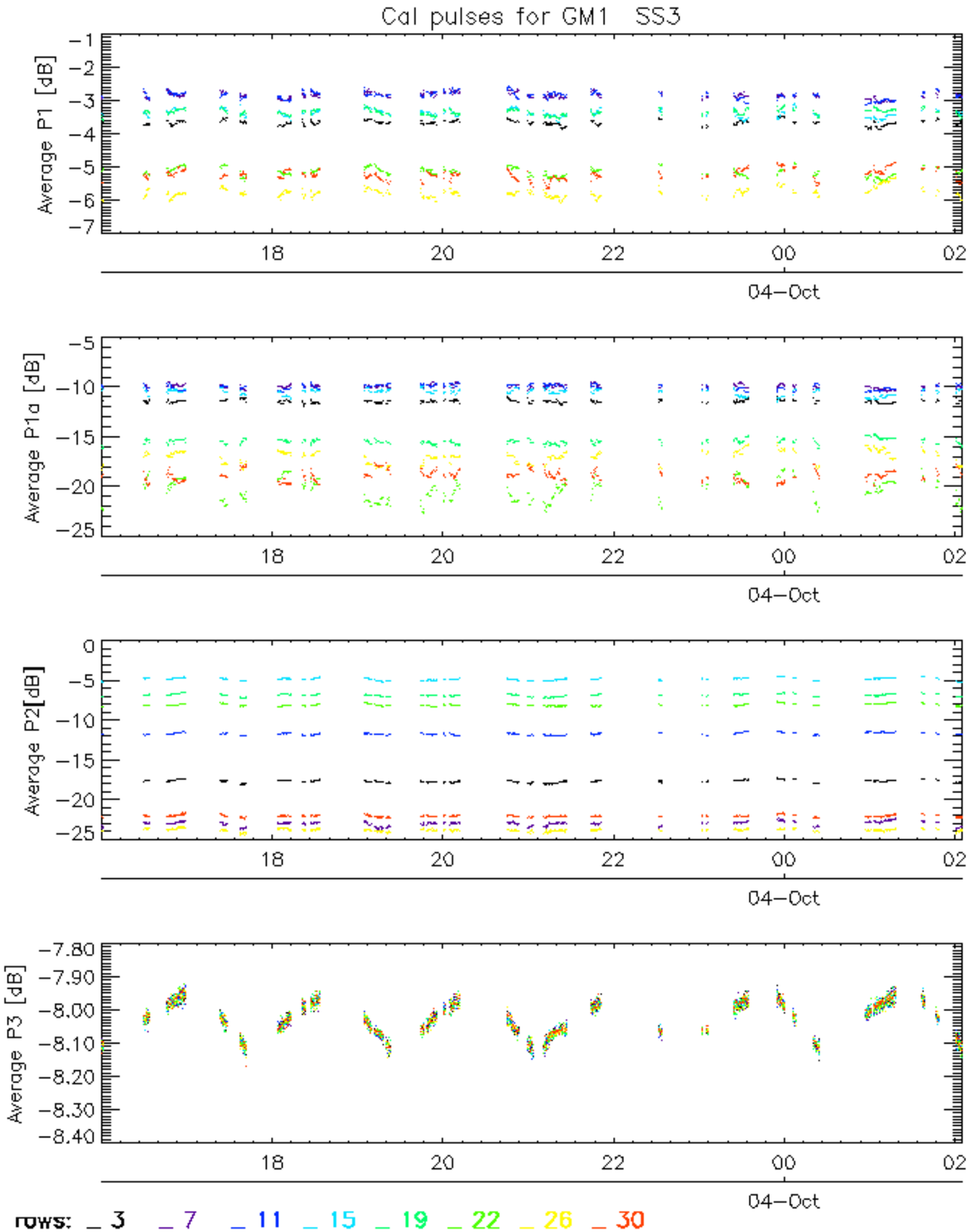
7.6 - Doppler evolution versus ANX for GM1

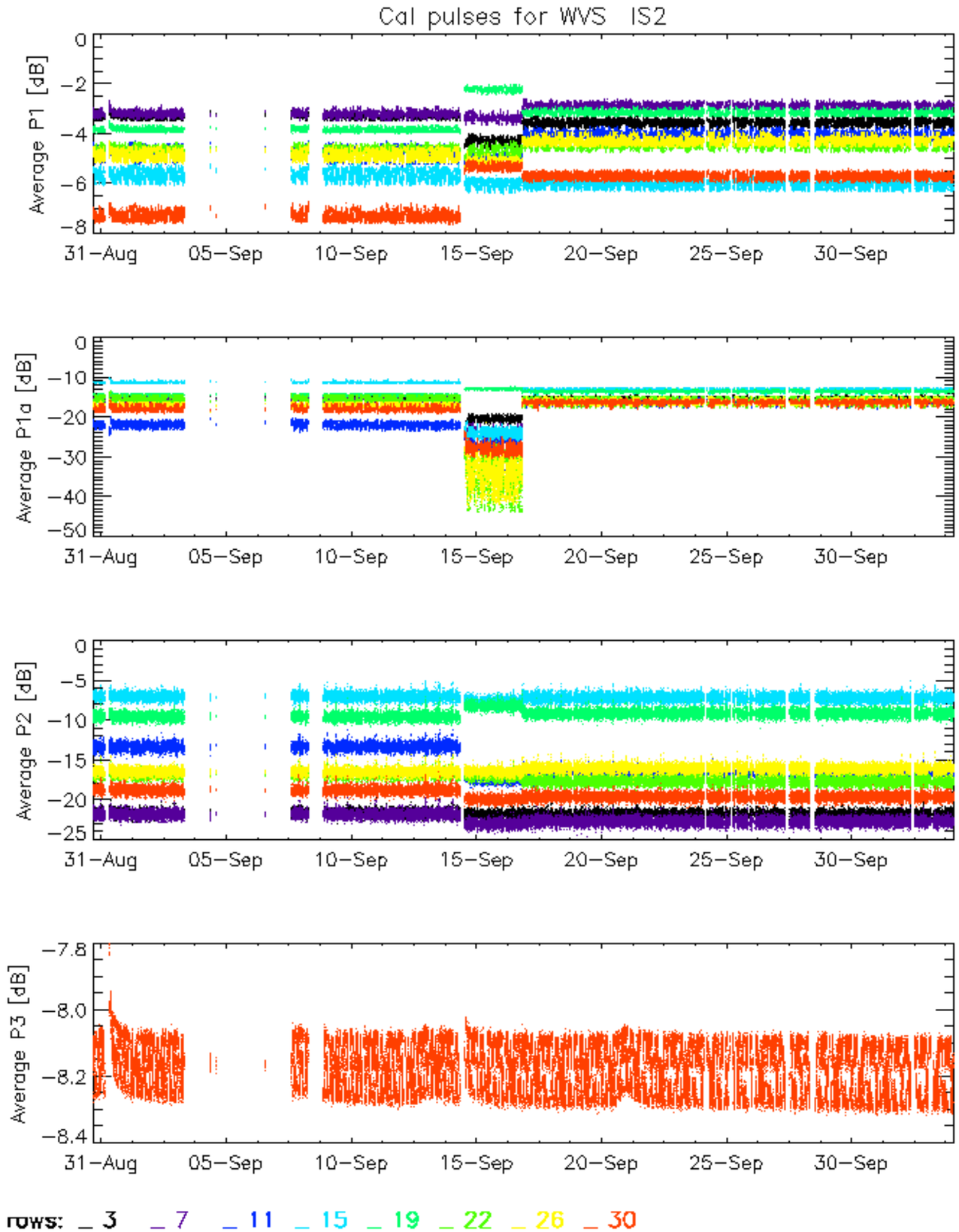
Evolution Doppler error versus ANX

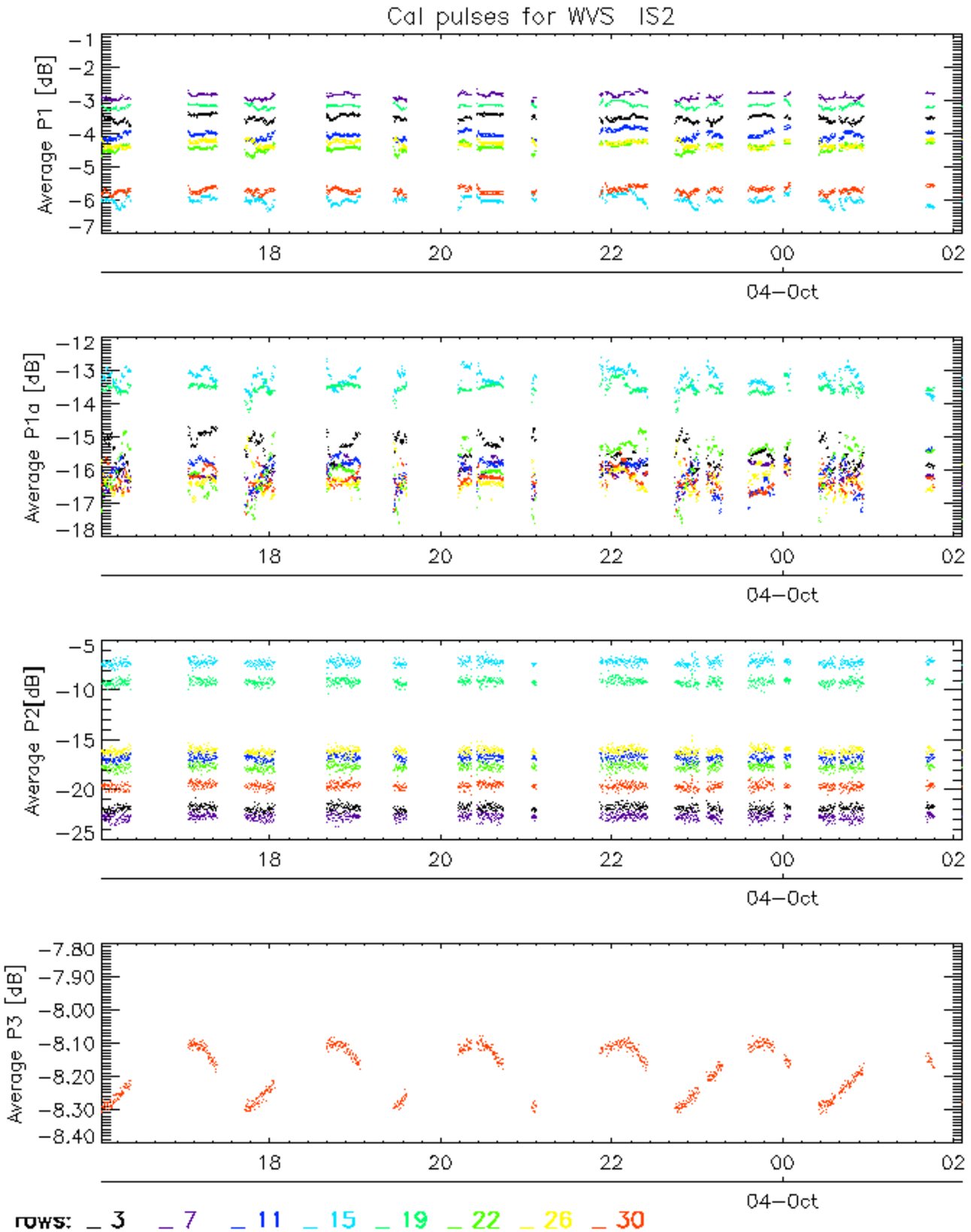

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
20
22
00
02
04−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
20
22
00
02
04−Oct
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
20
22
00
02
04−Oct
Phase P1a [deg]
200
100
0
−100
−200
18
20
22
00
02
04−Oct
rows: 3 7 11 15 19 22 26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


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
20
22
00
02
04−Oct
Average P1a [dB]
−12
−13
−14
−15
−16
−17
−18
18
20
22
00
02
04−Oct
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
20
22
00
02
04−Oct
Phase P1a [deg]
200
100
0
−100
−200
18
20
22
00
02
04−Oct
rows: 3 7 11 15 19 22 26 30

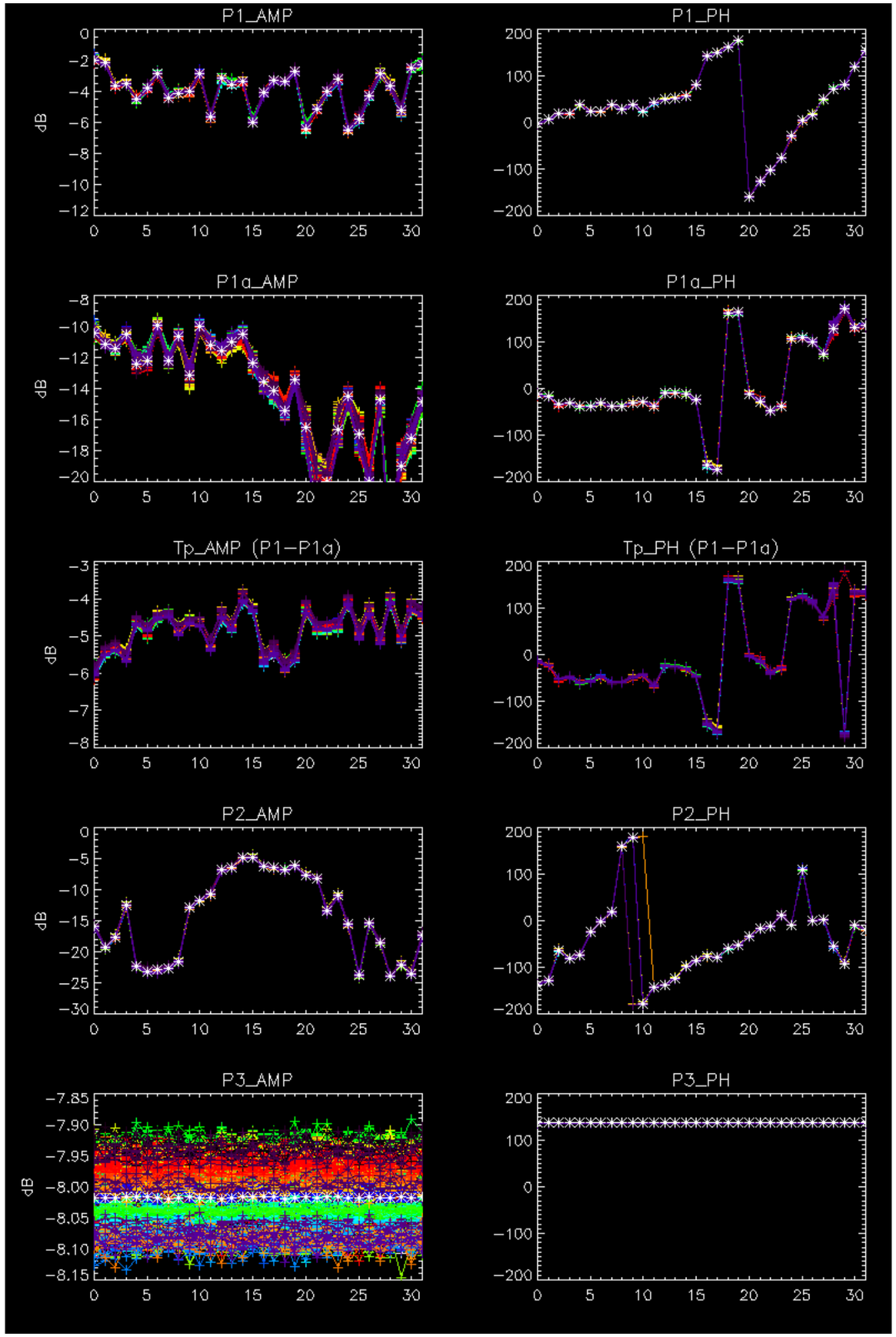

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

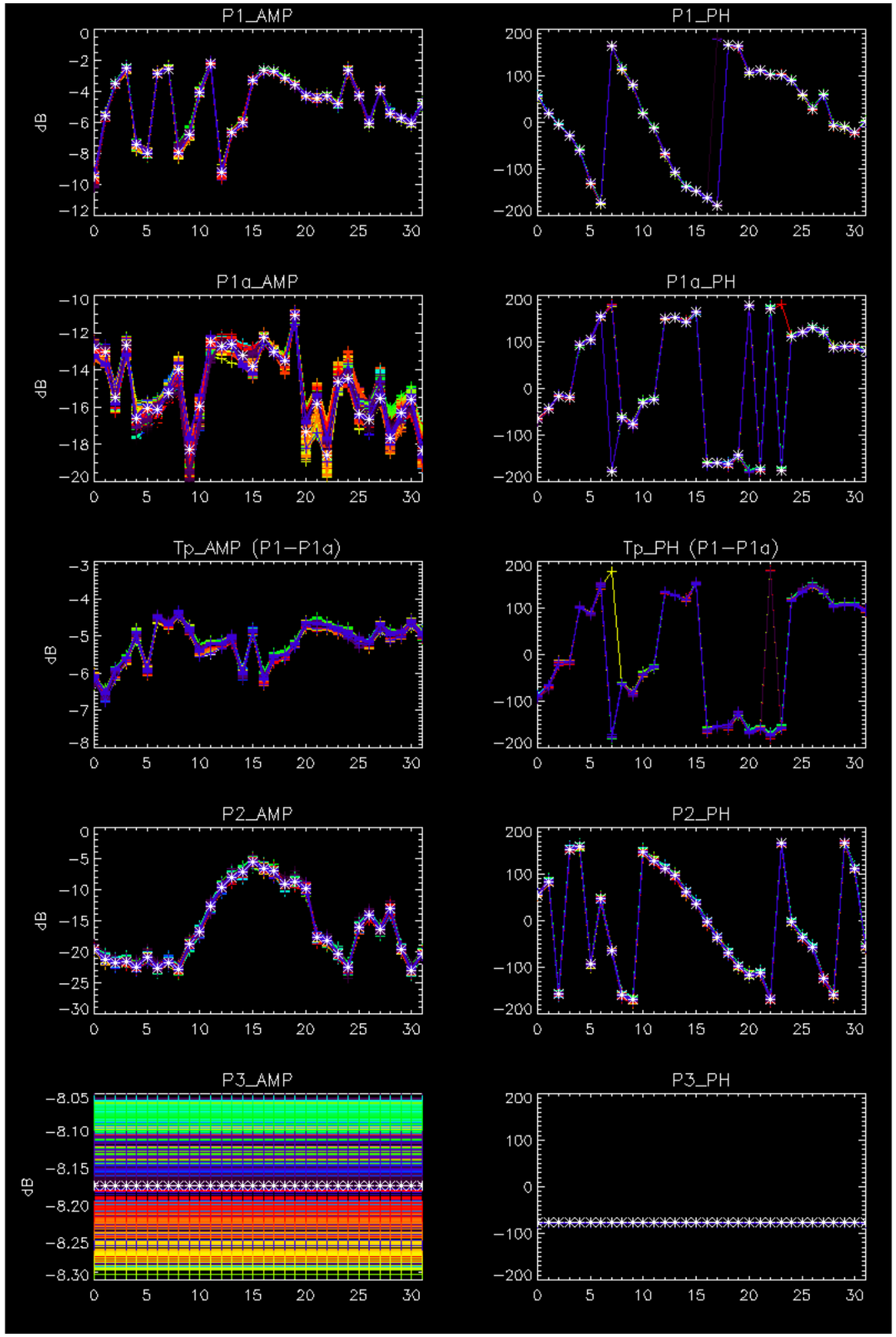

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
20
22
00
02
04−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
18
20
22
00
02
04−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
18
20
22
00
02
04−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
20
22
00
02
04−Oct
rows: _ 3 _ 7 _ 11 _ 15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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
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 WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
20
22
00
02
04−Oct
Average P1a [dB]
−12
−13
−14
−15
−16
−17
−18
18
20
22
00
02
04−Oct
Average P2[dB]
−5
−10
−15
−20
−25
18
20
22
00
02
04−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
20
22
00
02
04−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

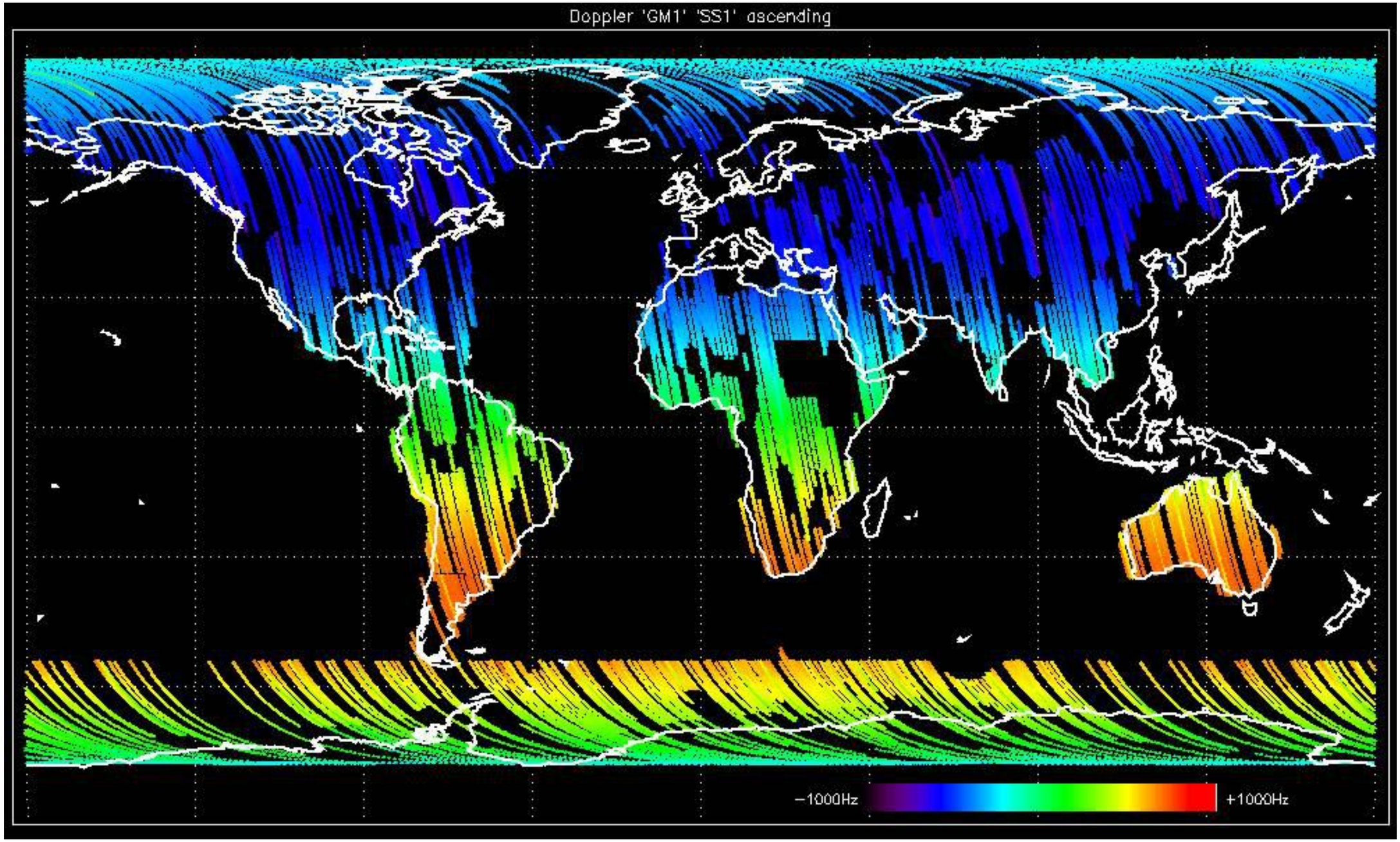
No anomalies observed.

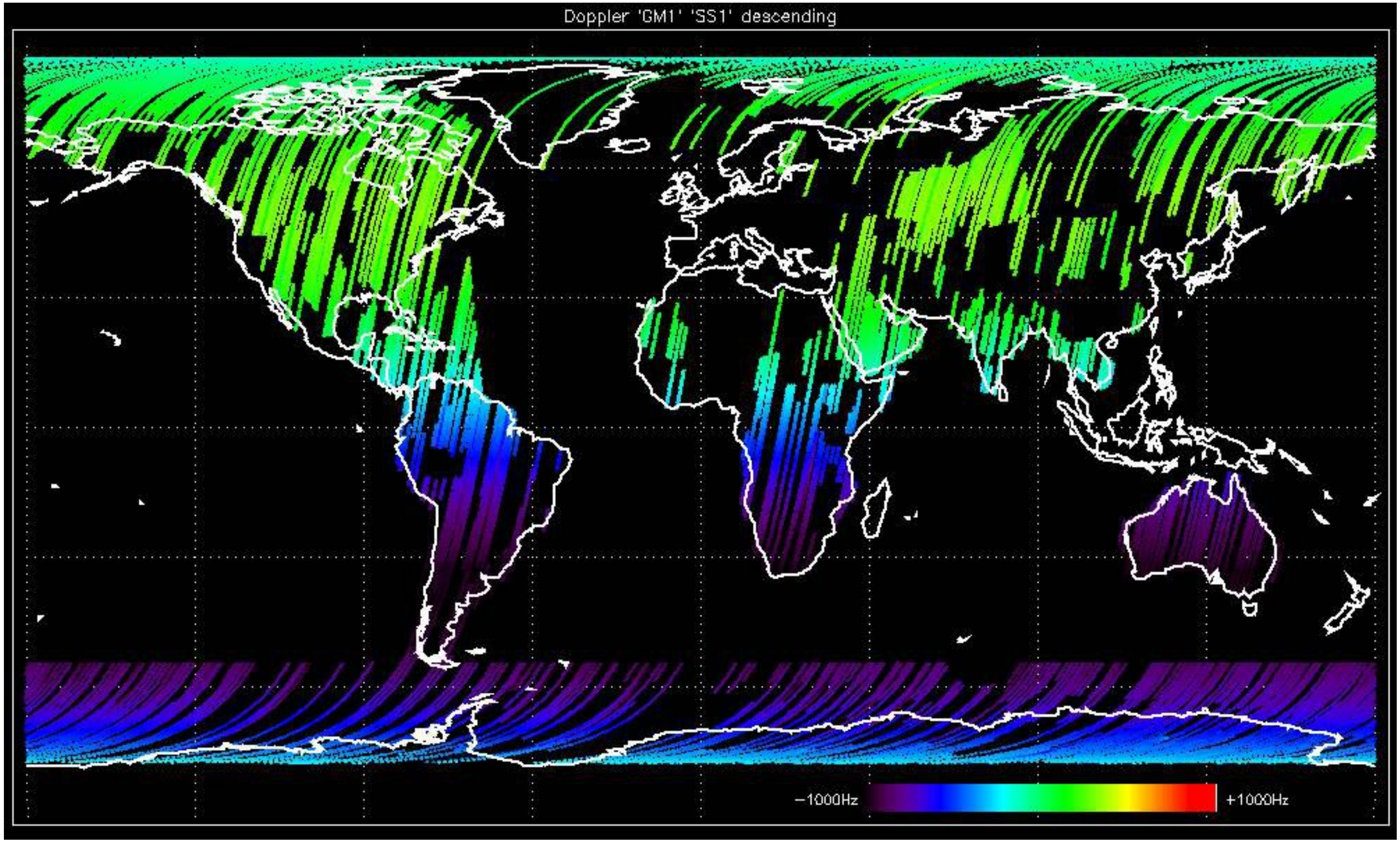

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

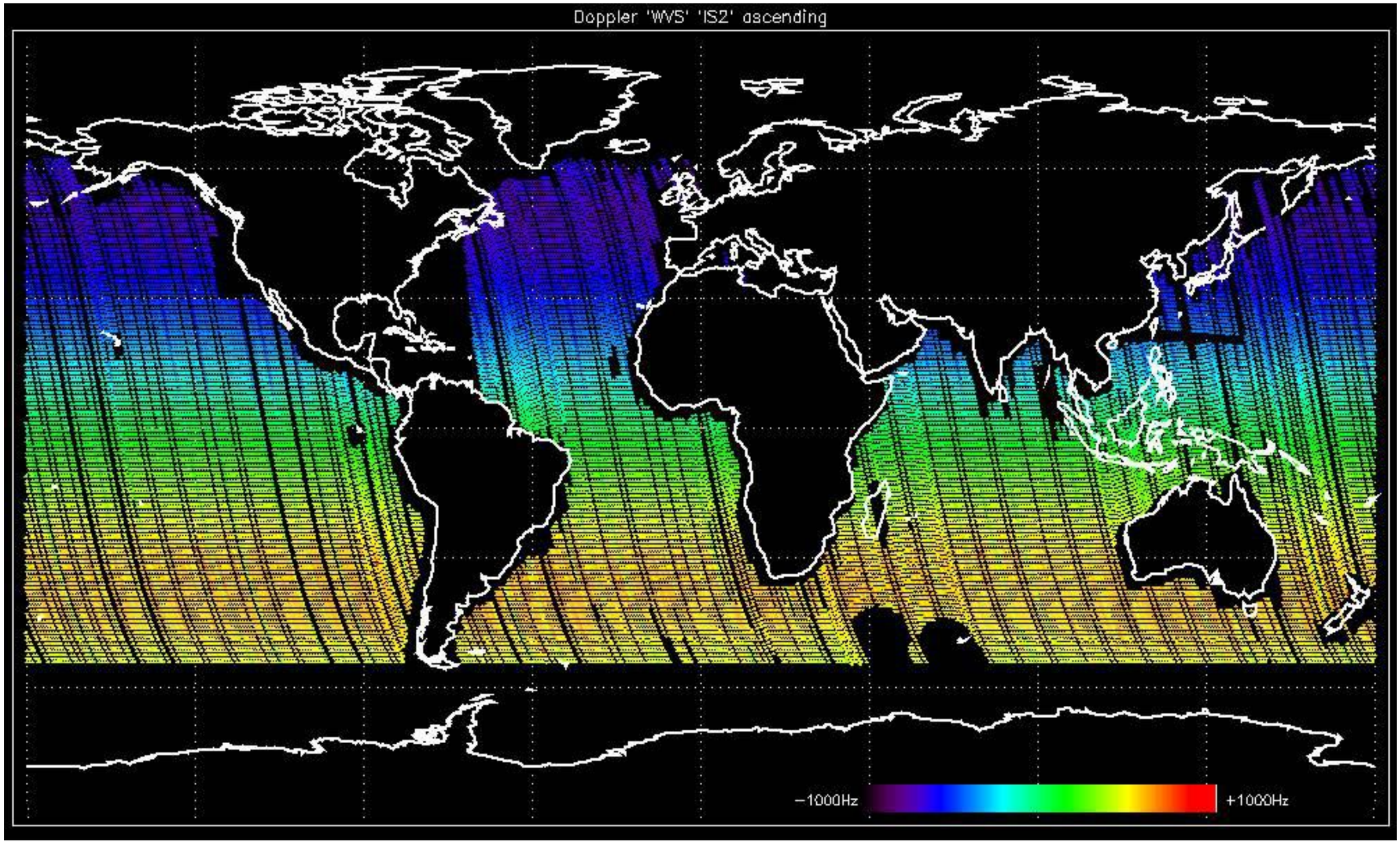

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

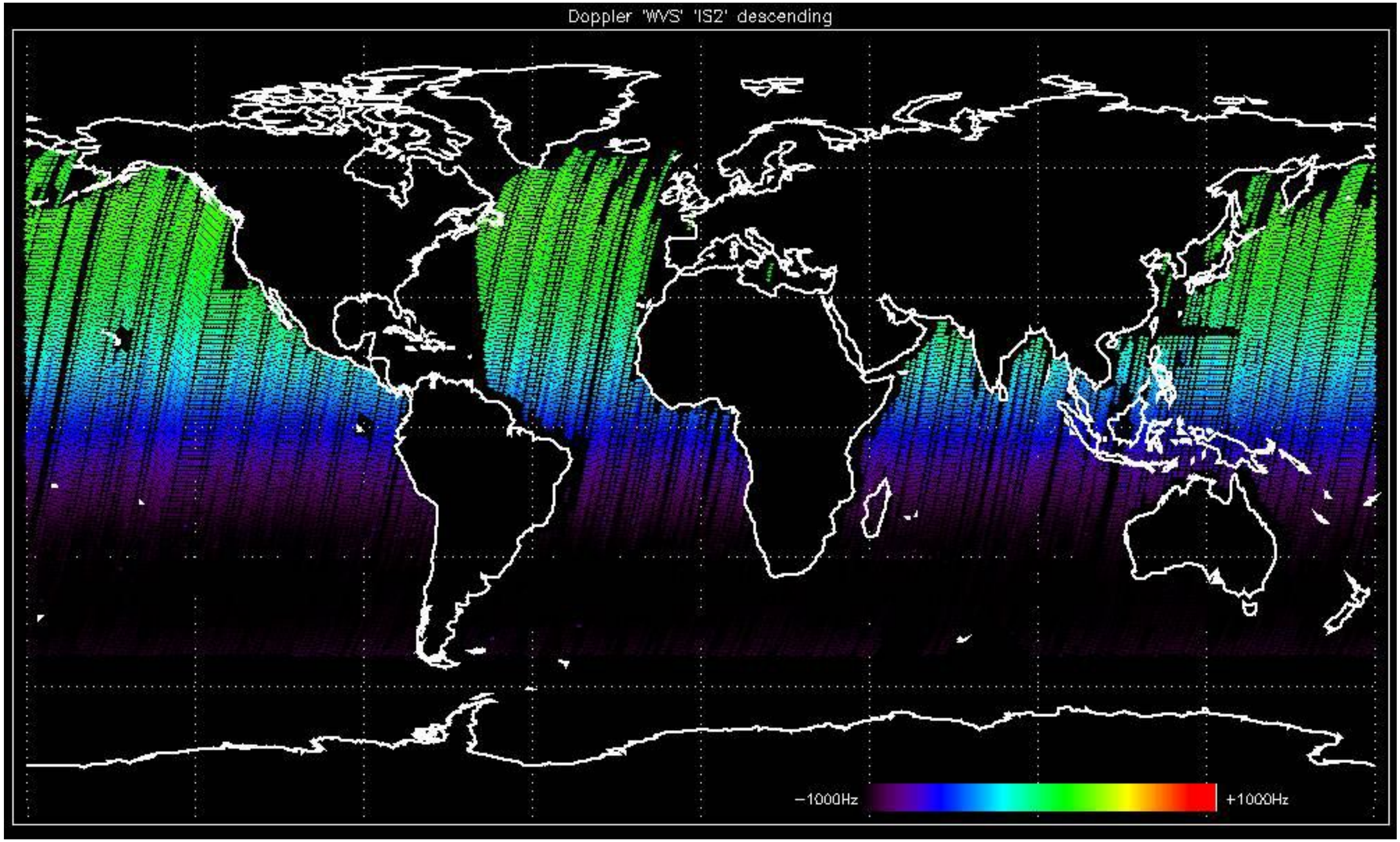
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

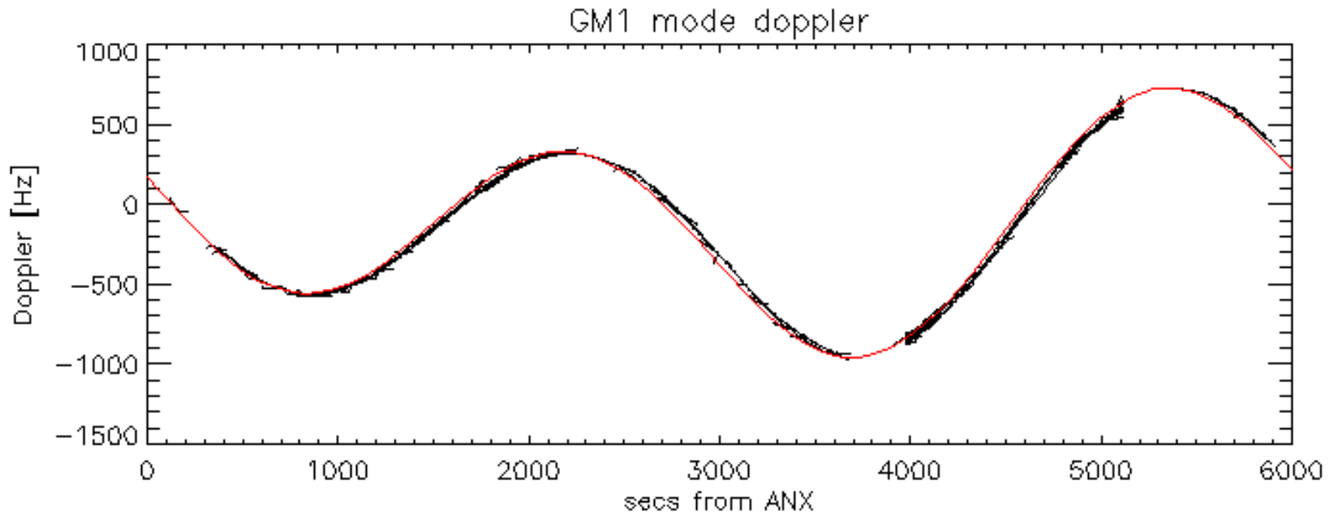
Preliminary report.The data is not yet controled

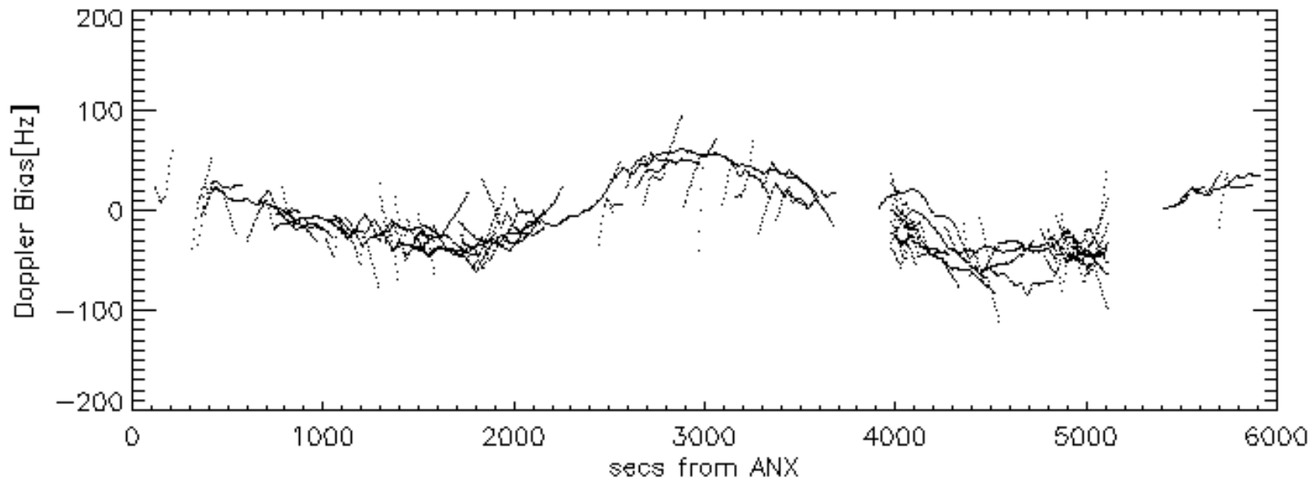

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

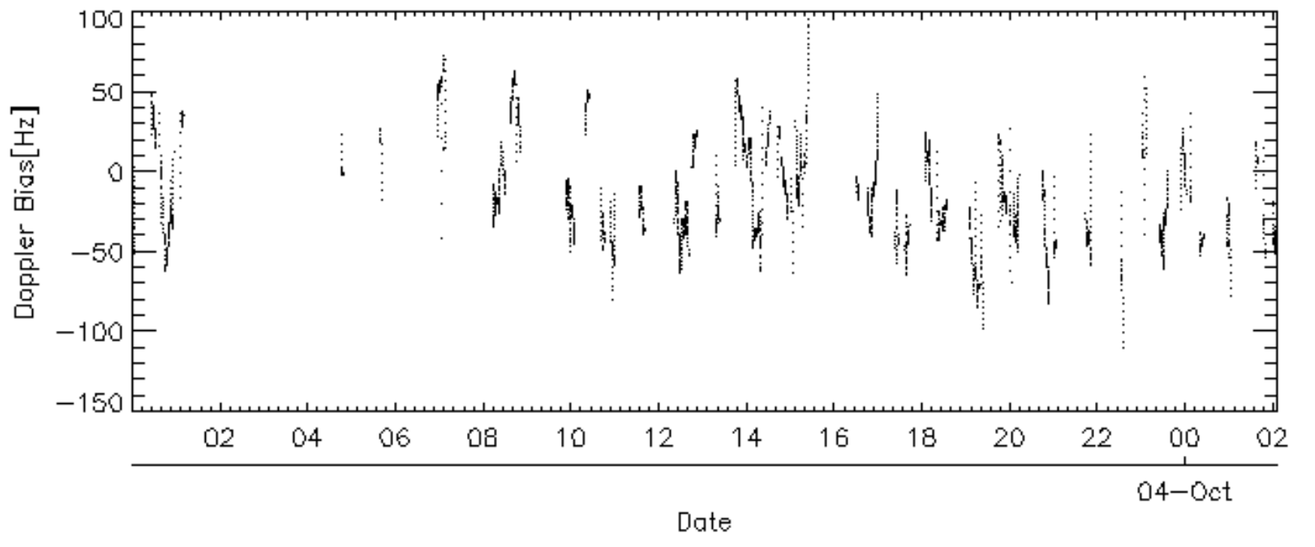

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

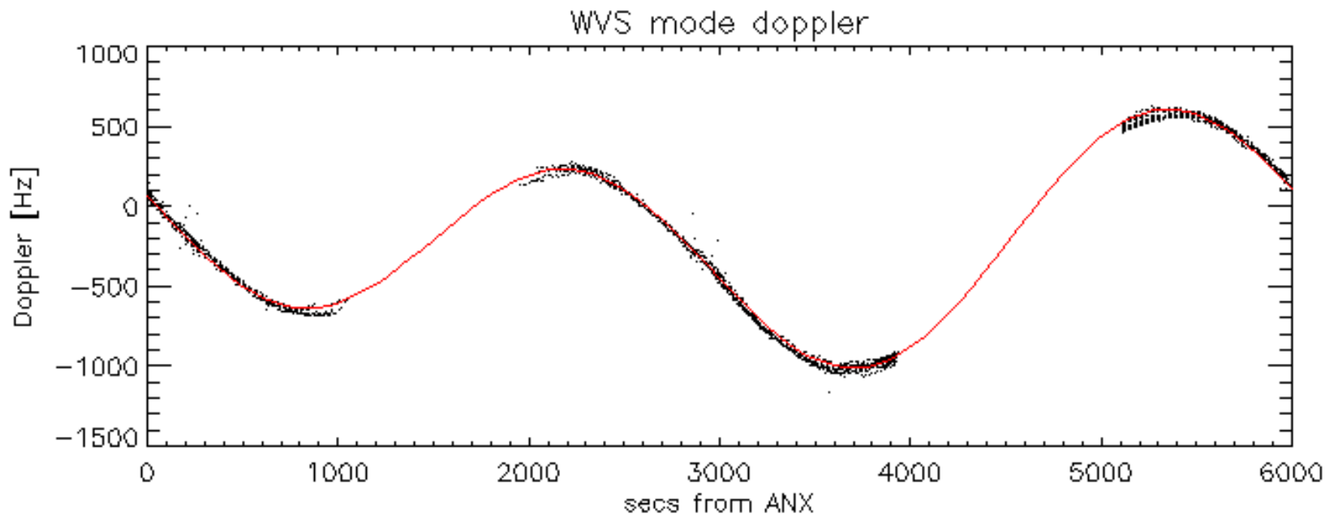

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

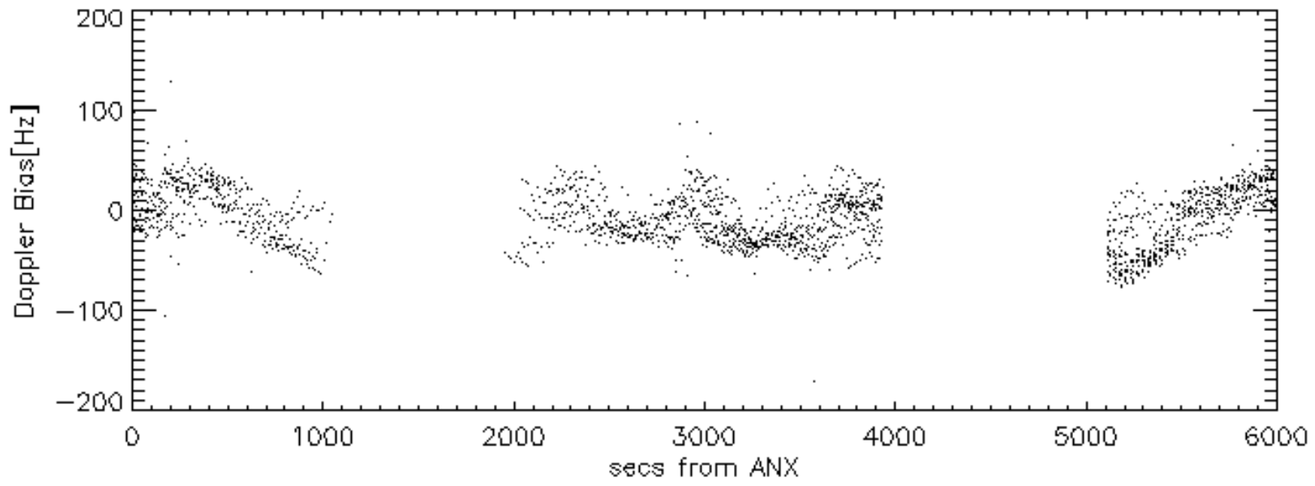

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

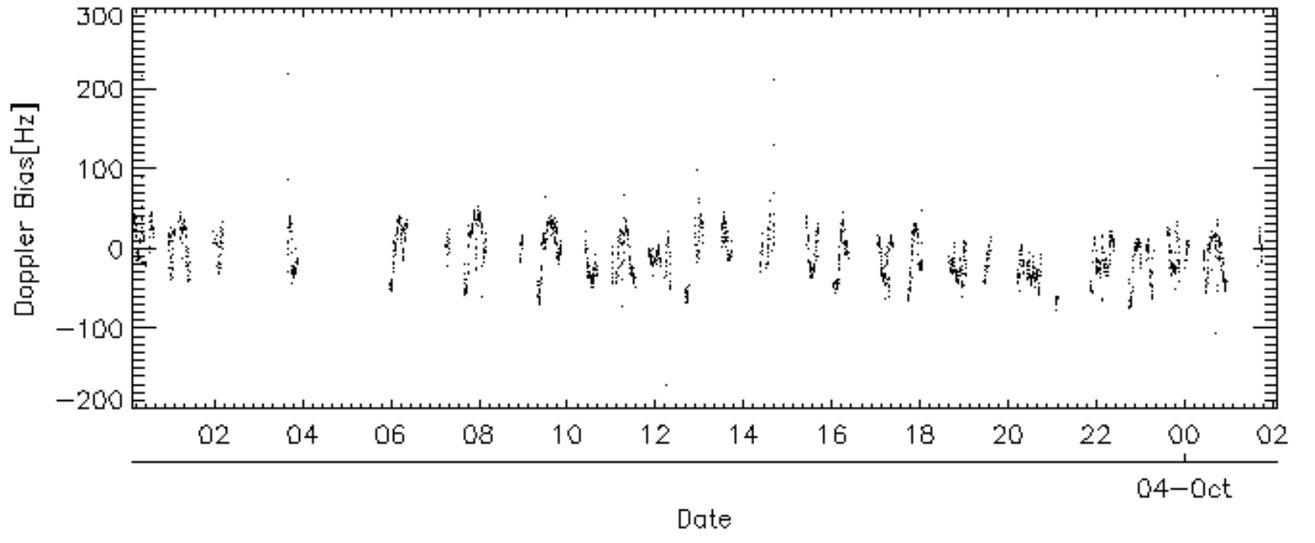

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

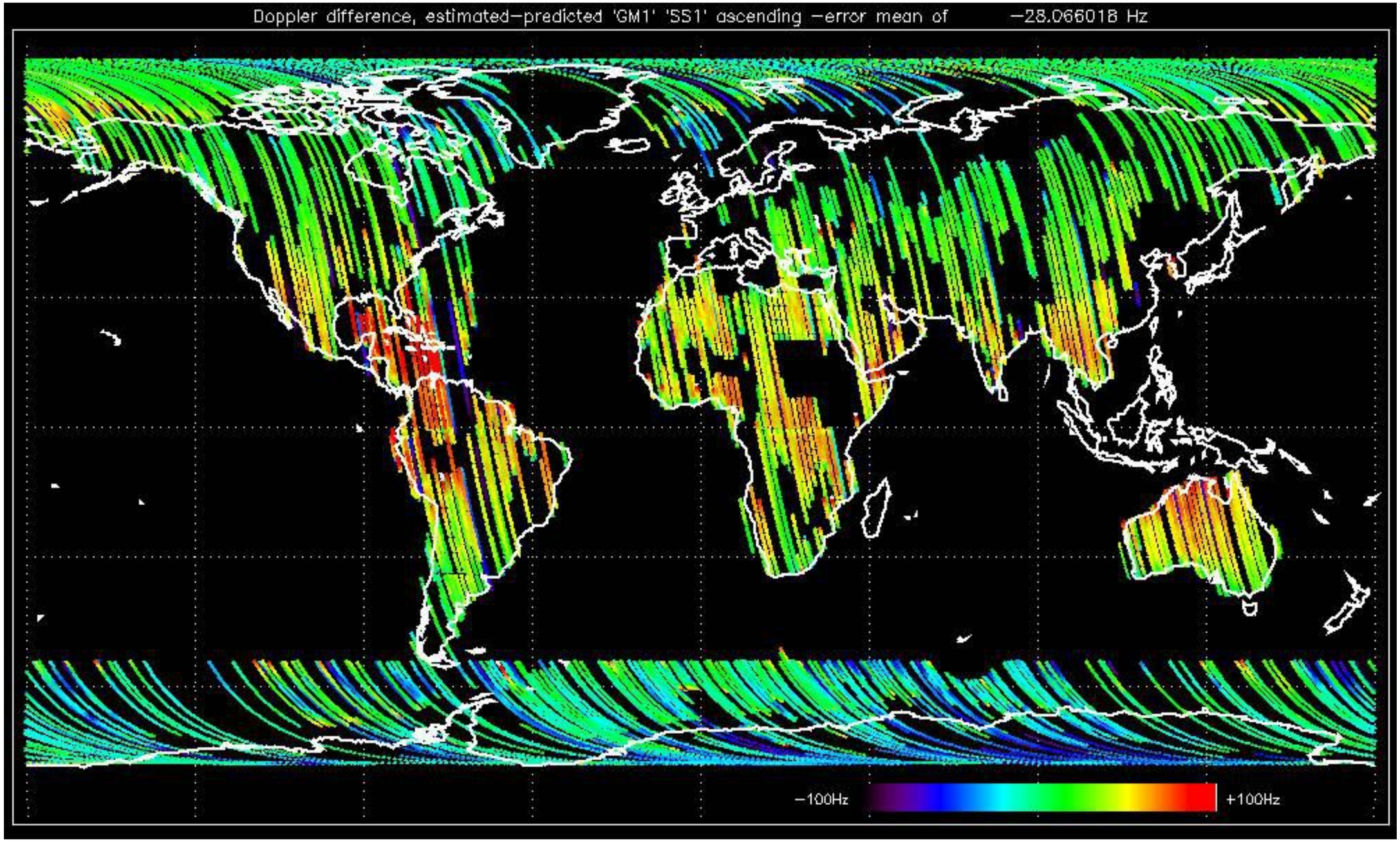

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

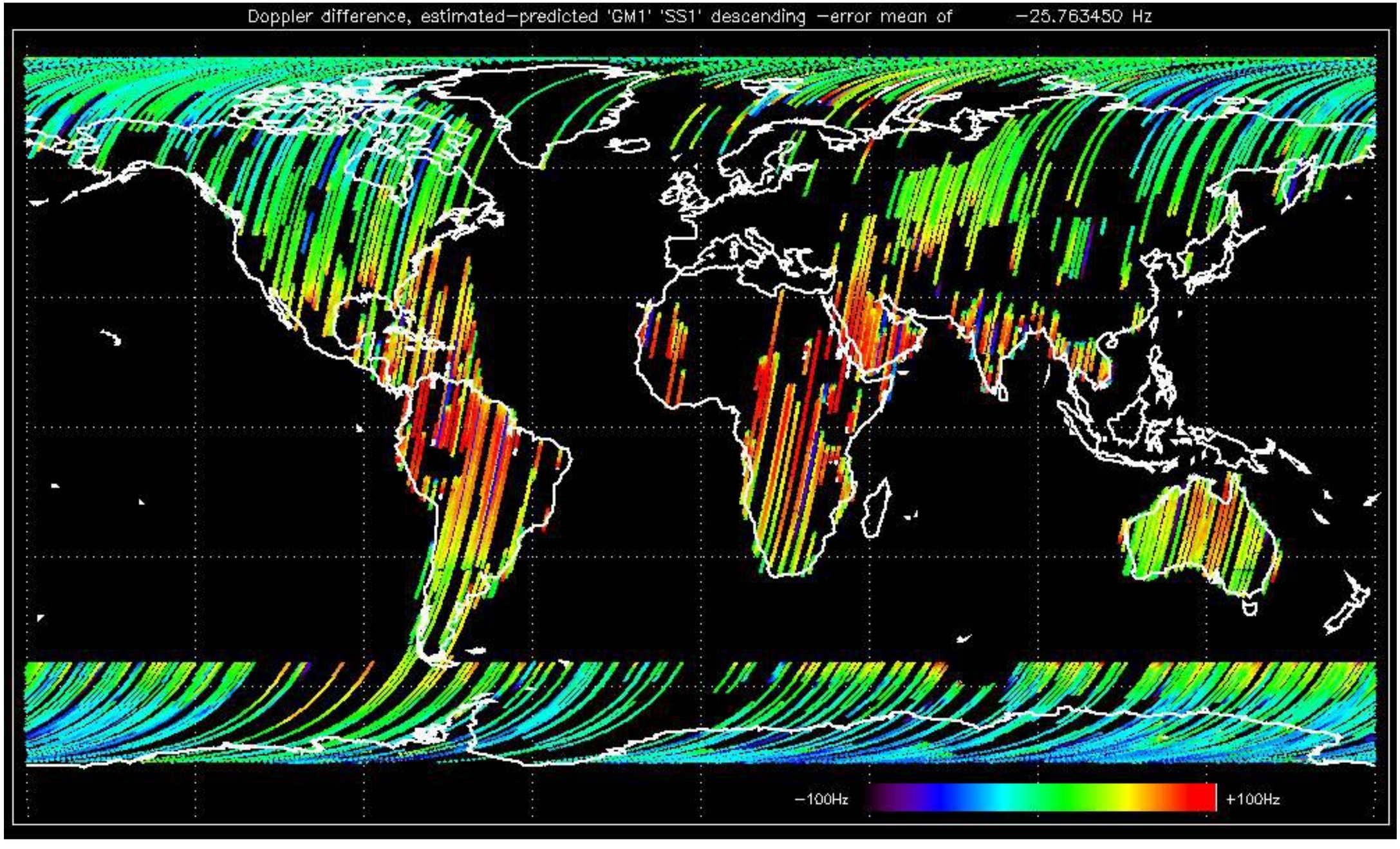

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04−Oct
Date

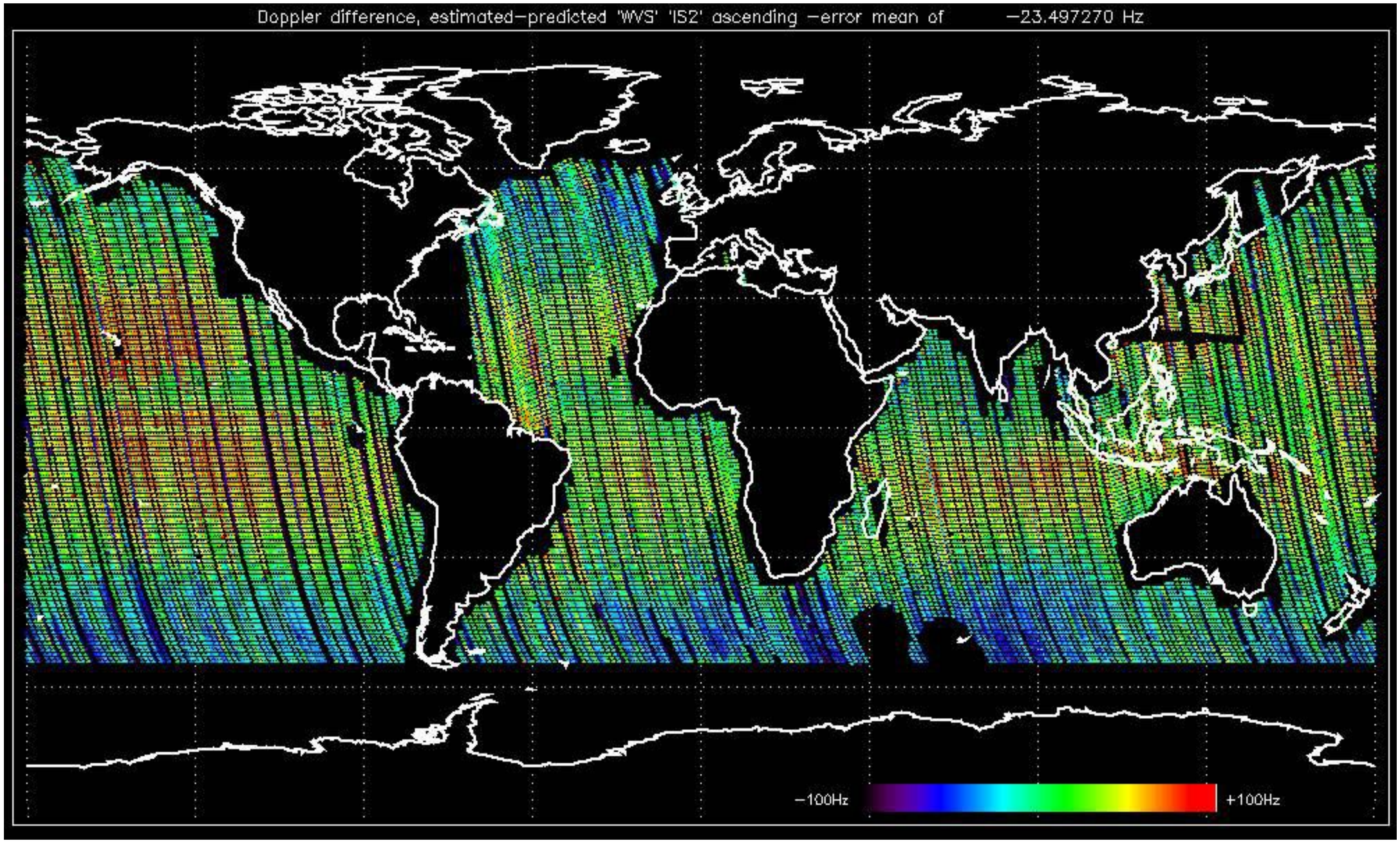

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

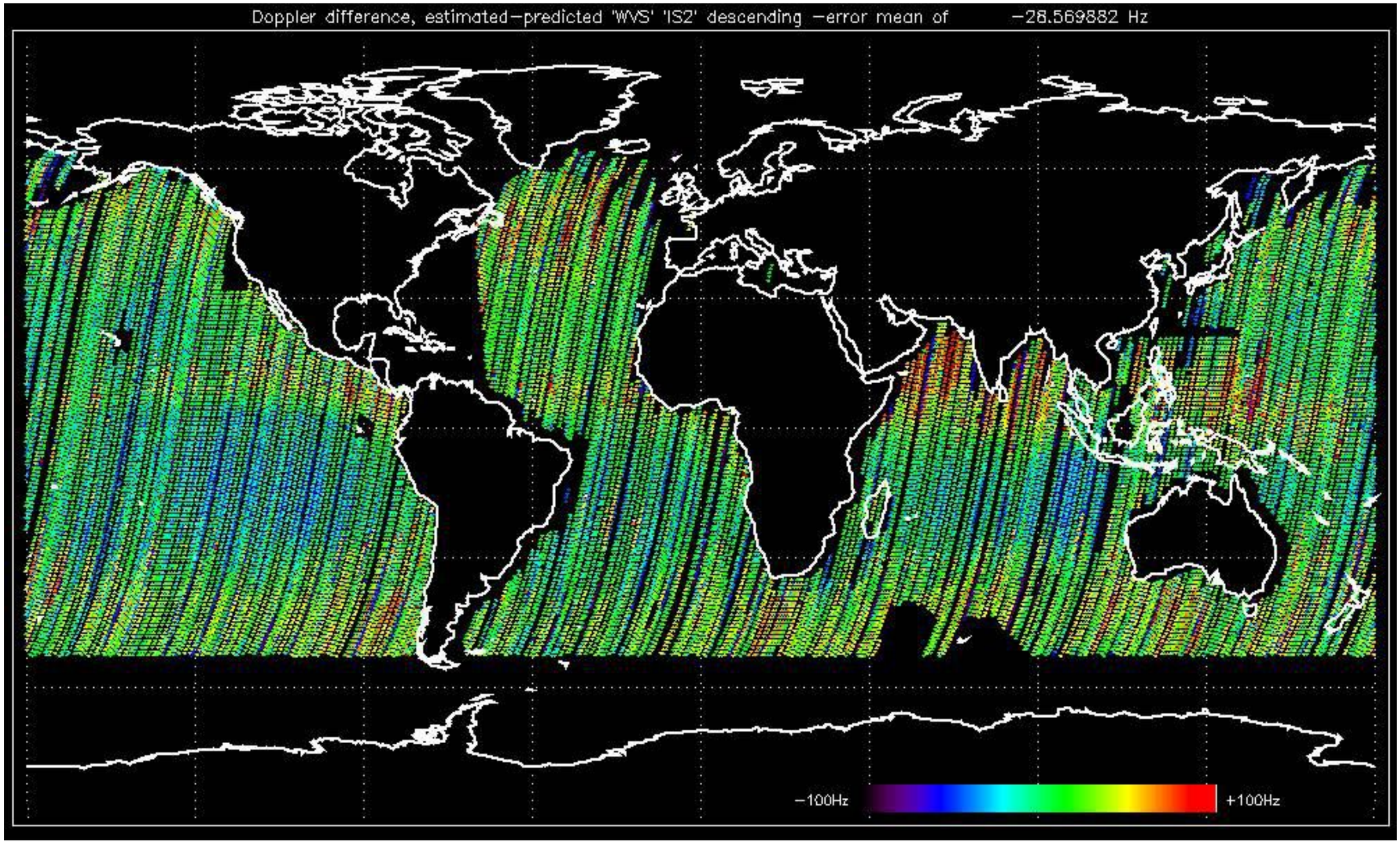

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −28.066018 Hz
−100Hz
+100Hz

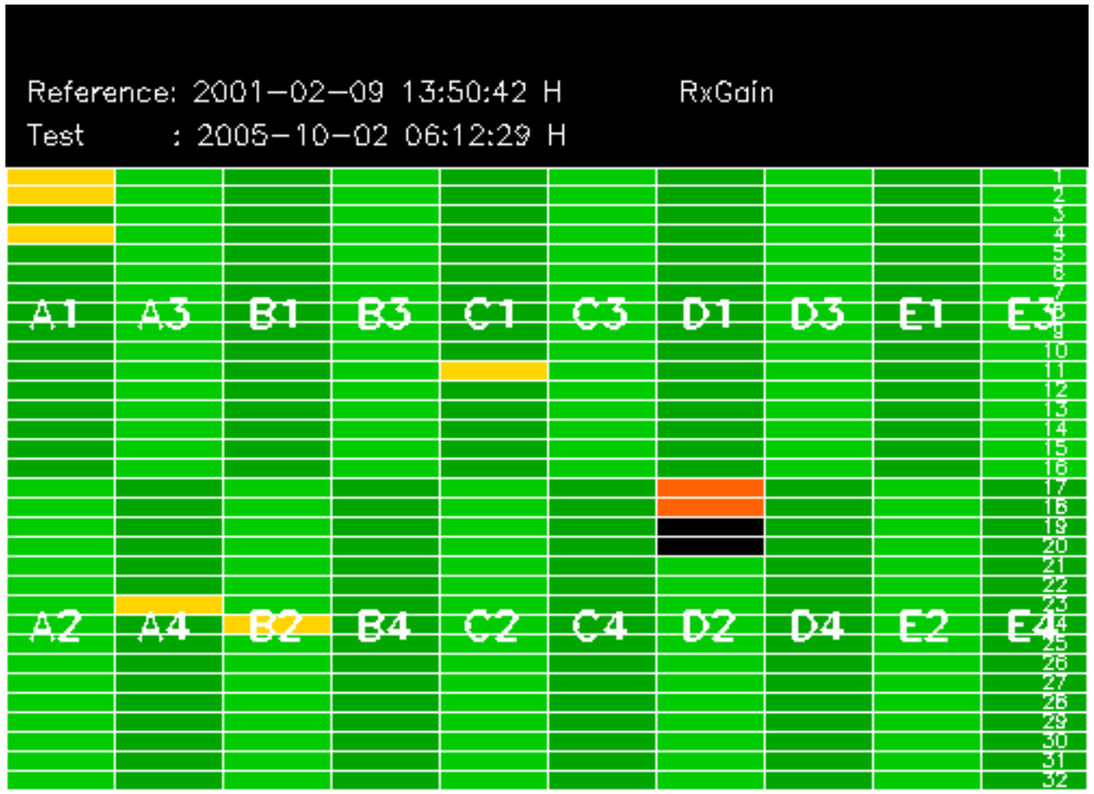

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -25.763450 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −23.497270 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −28.569882 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-10-02 06:12:29 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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8
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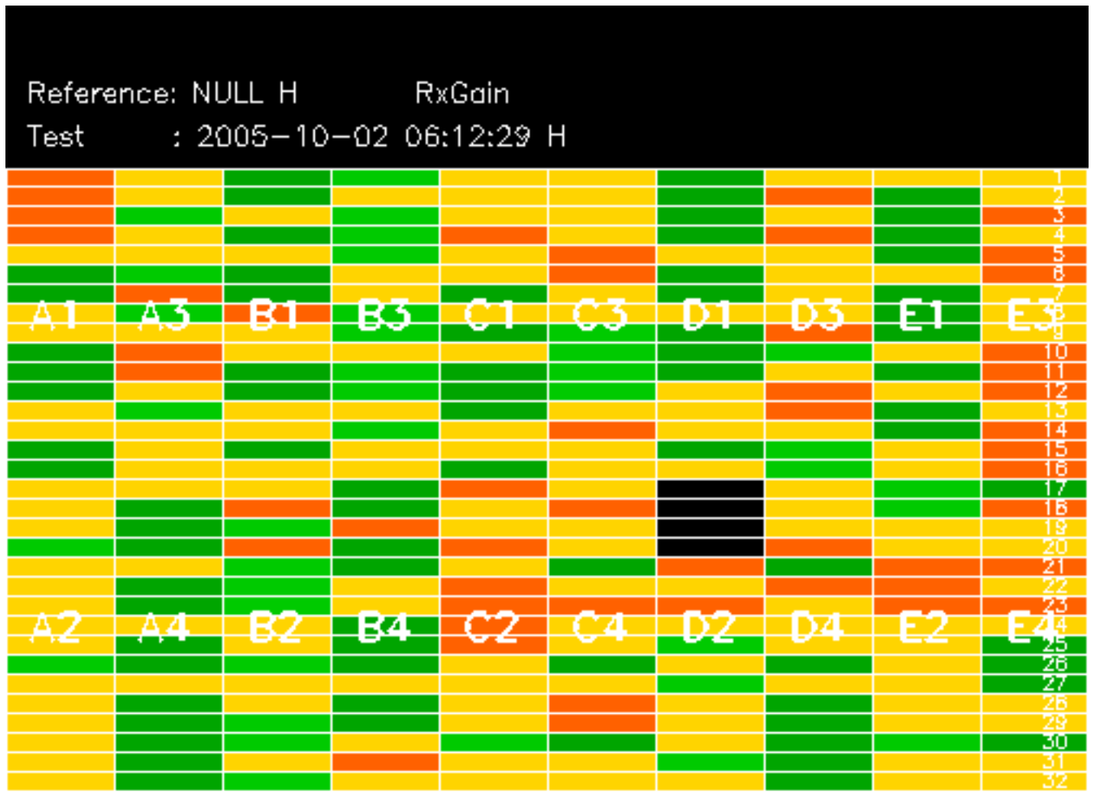
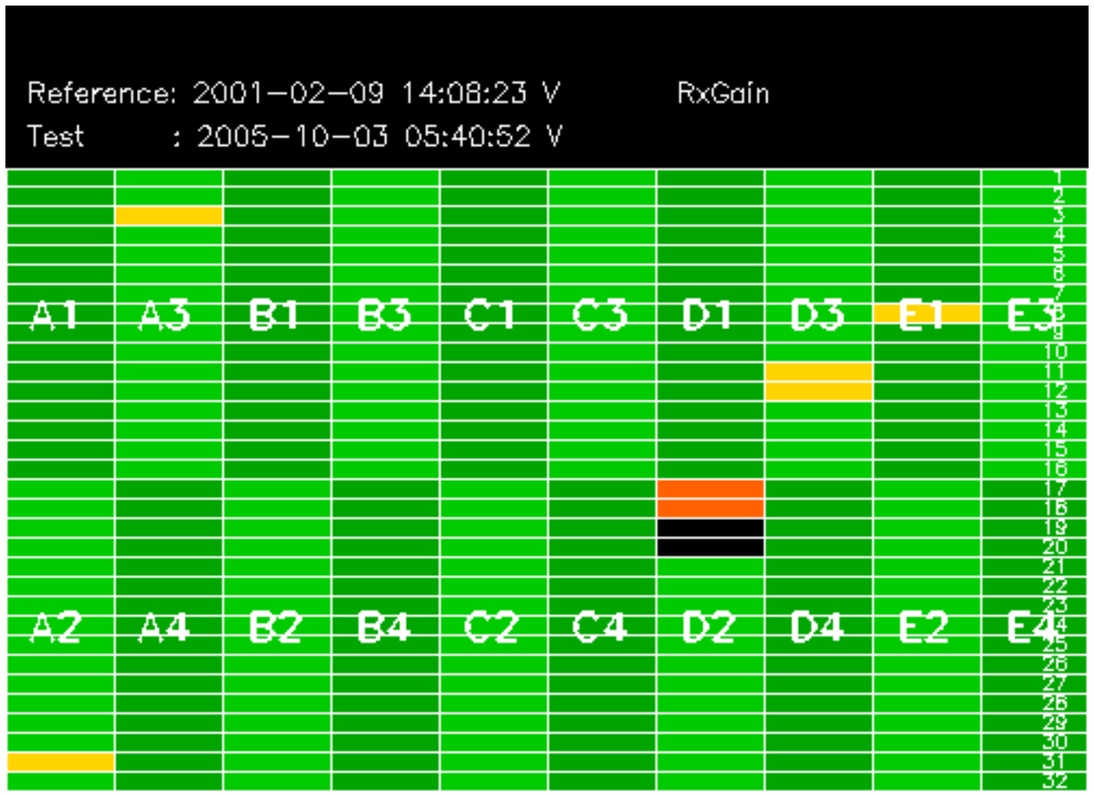

Reference: NULL H RxGain
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-10-03 05:40:52 V
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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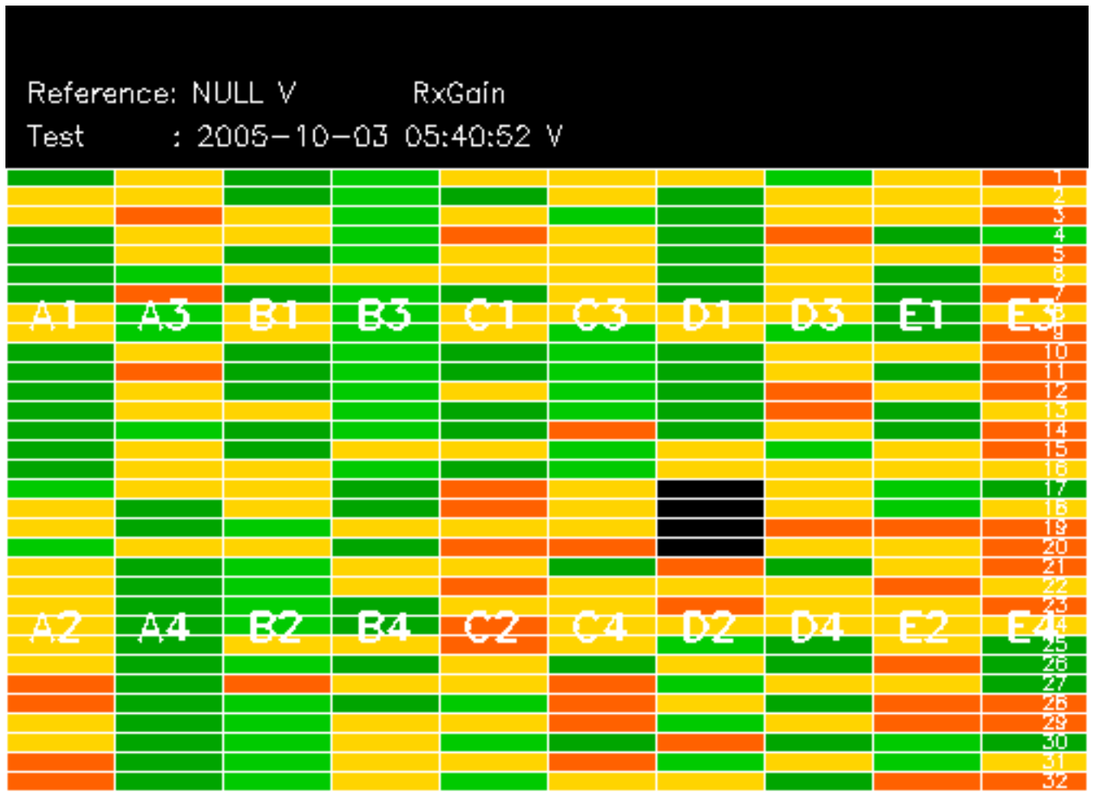
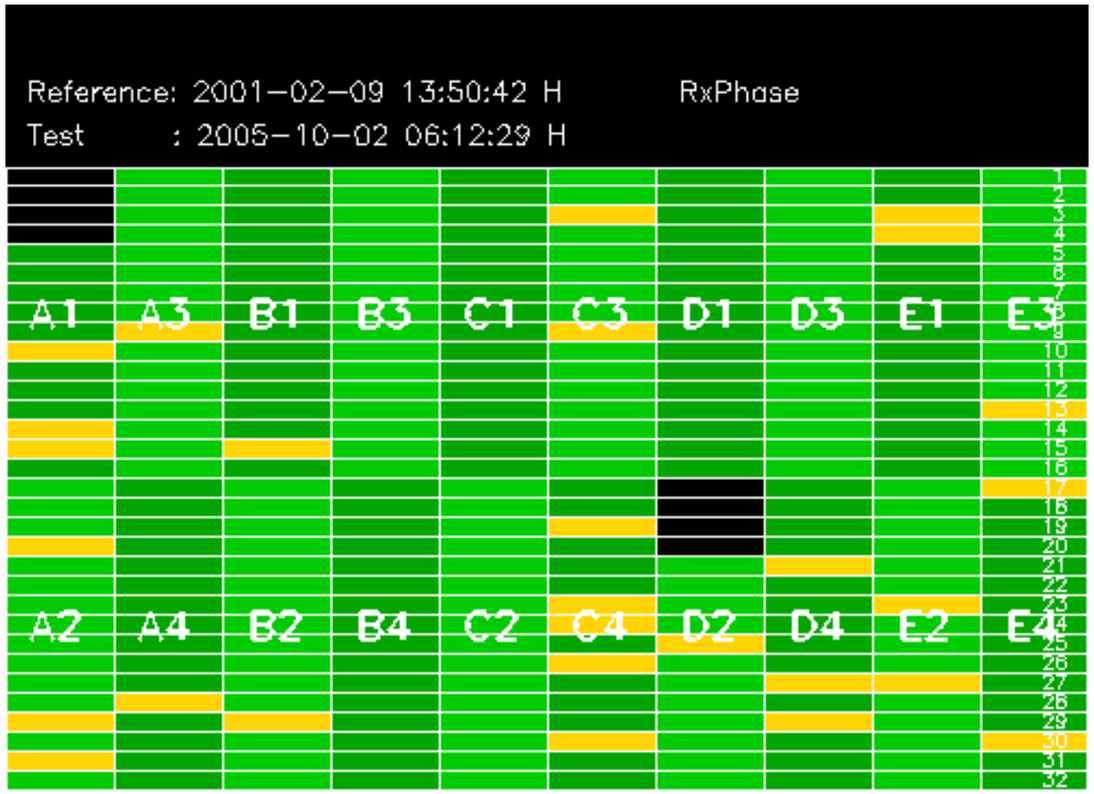

Reference: NULL V RxGain
Test : 2005-10-03 05:40:52 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-10-02 06:12:29 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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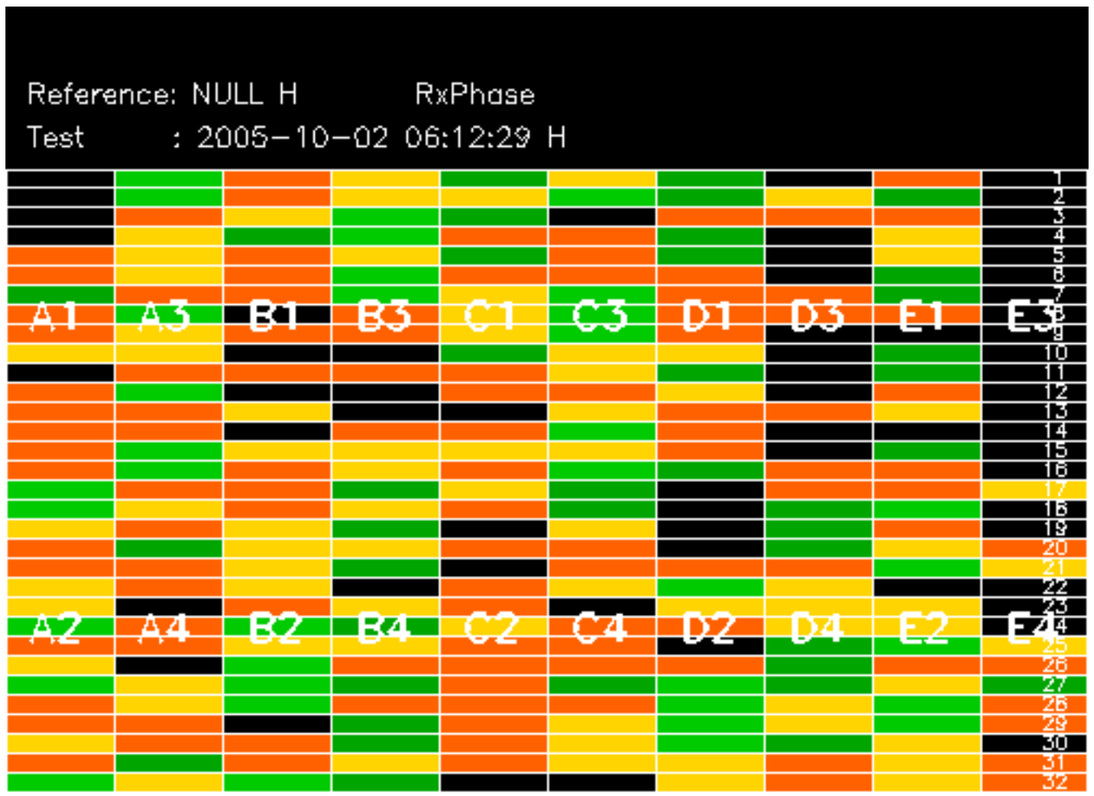
Reference: NULL H RxPhase
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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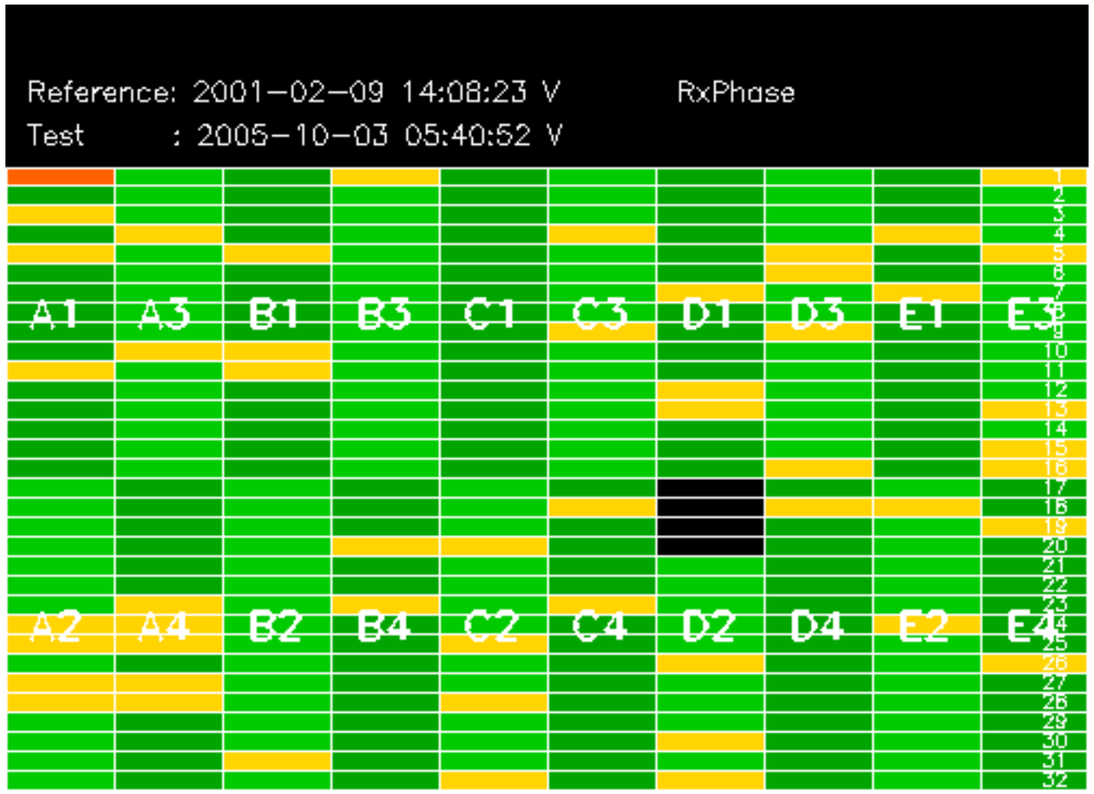
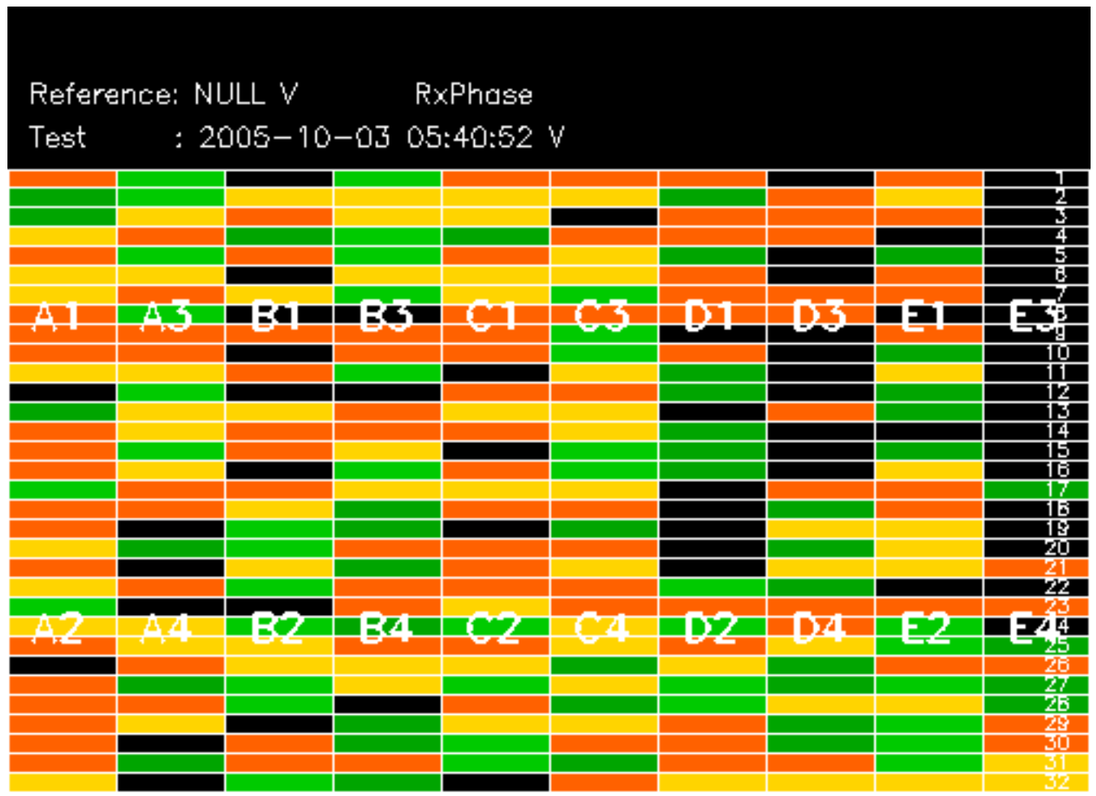
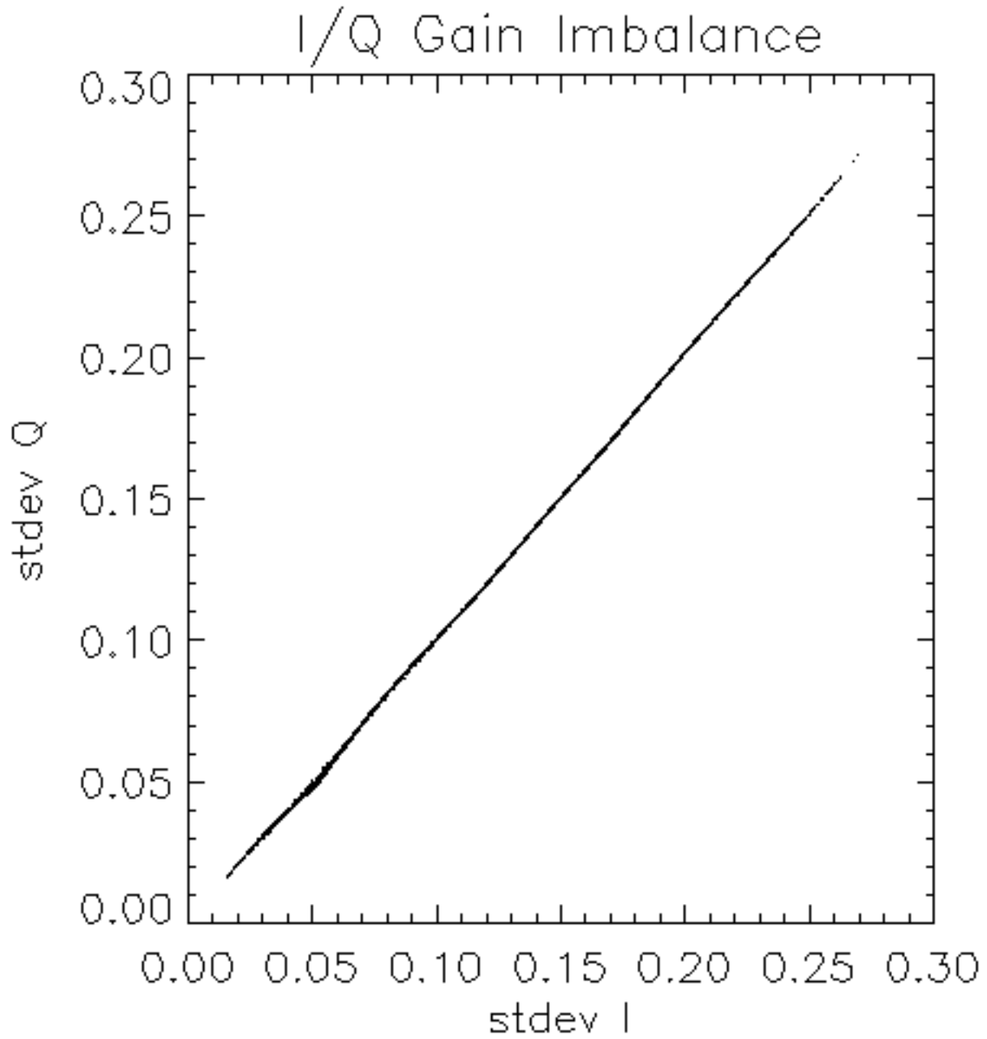
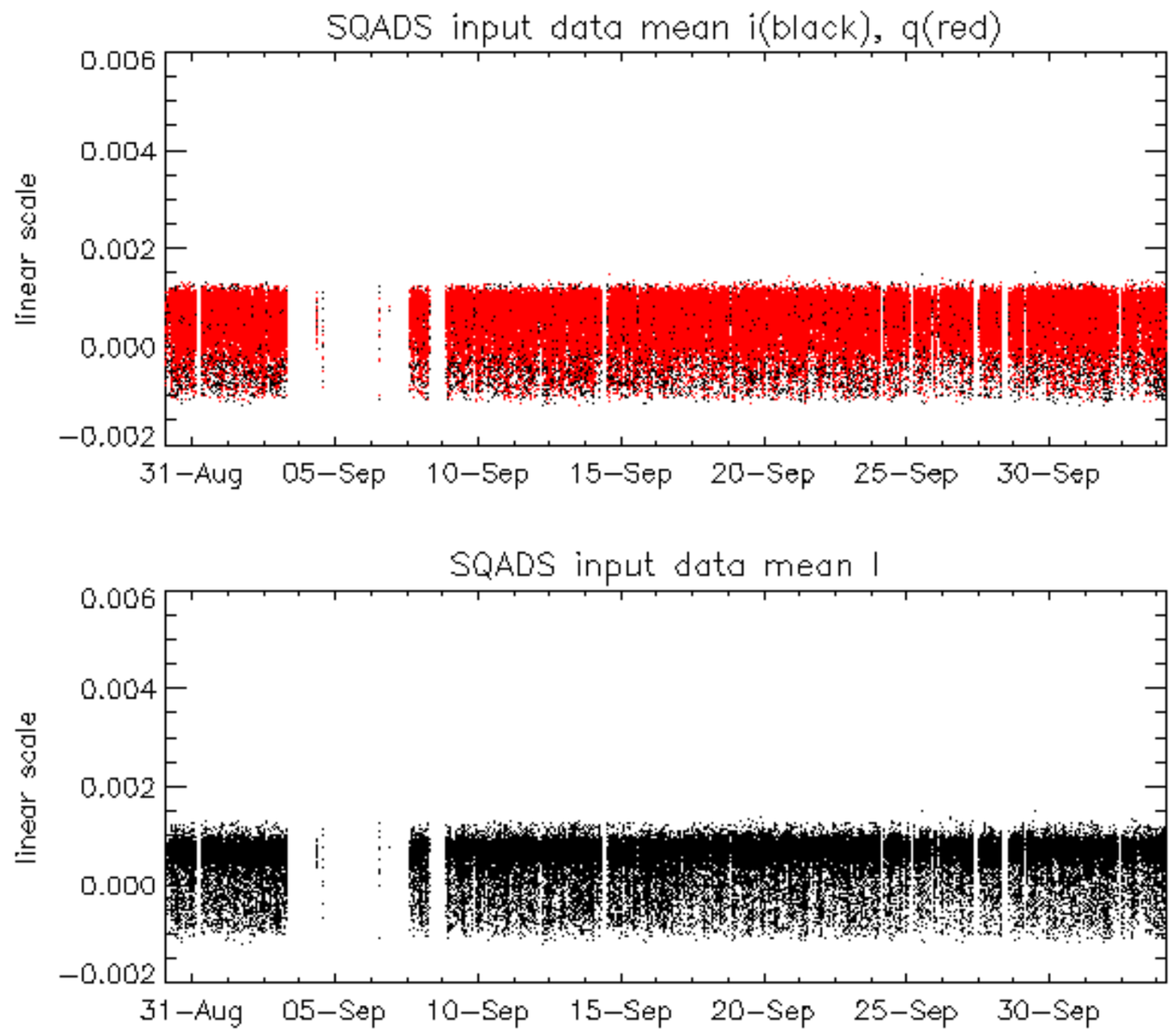
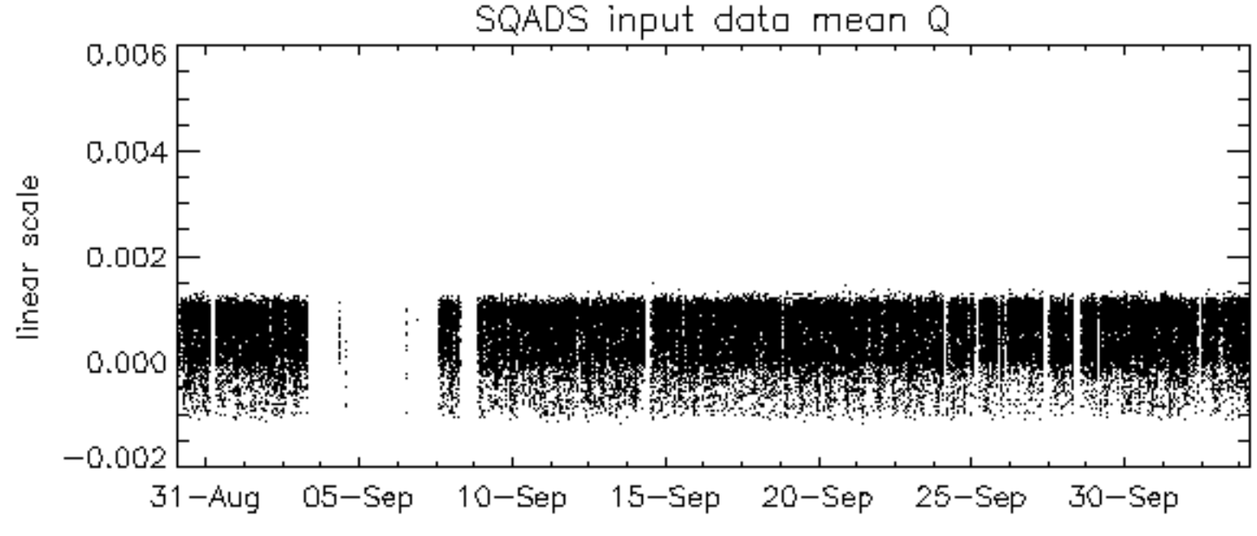

Reference: 2001-02-09 14:08:23 V
Test : 2005-10-03 05:40:52 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

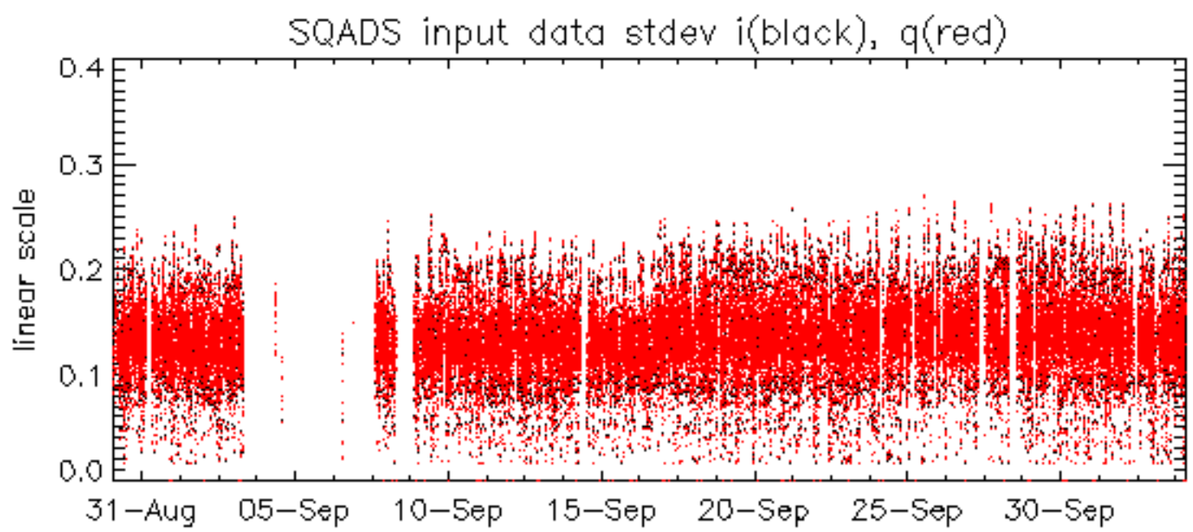

Reference: NULL V RxPhase
Test : 2005-10-03 05:40:52 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

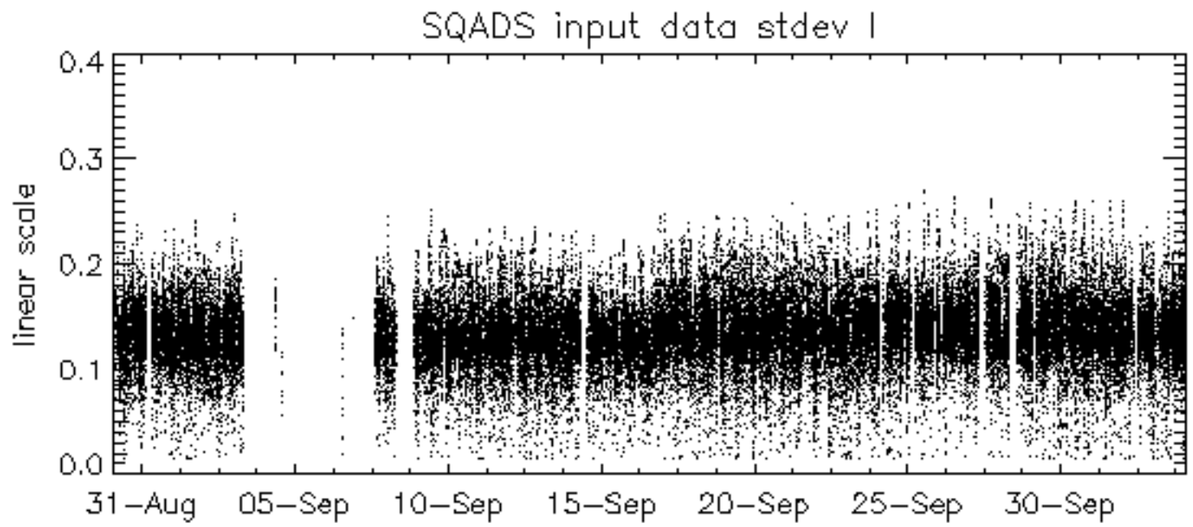

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

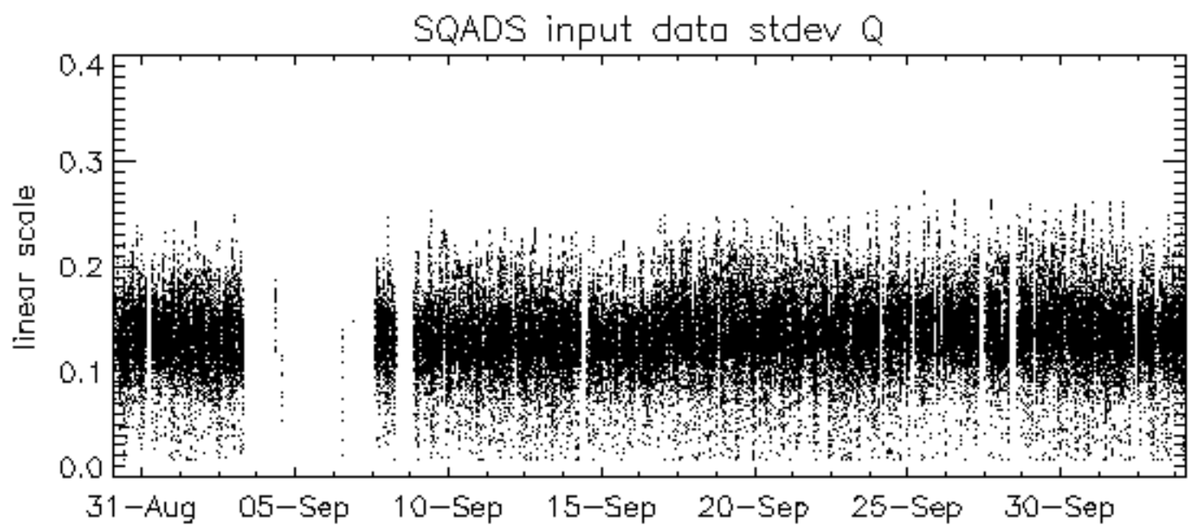

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep

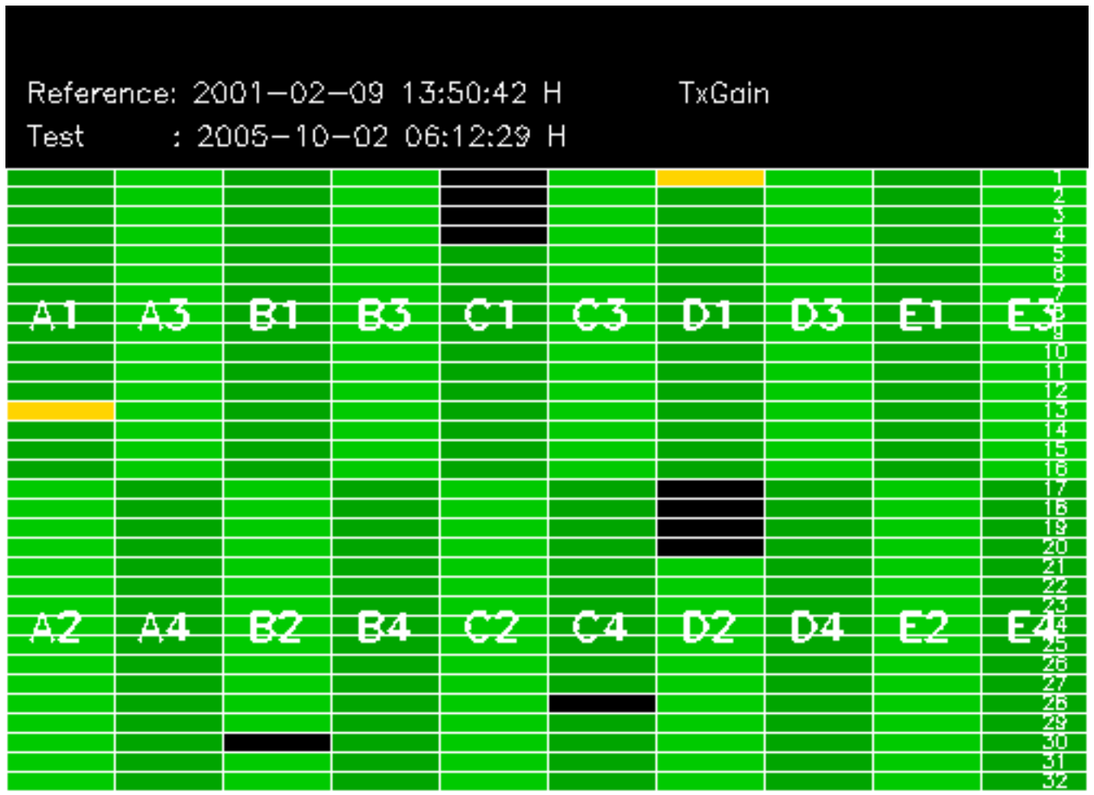
SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


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 : 2005-10-02 06:12:29 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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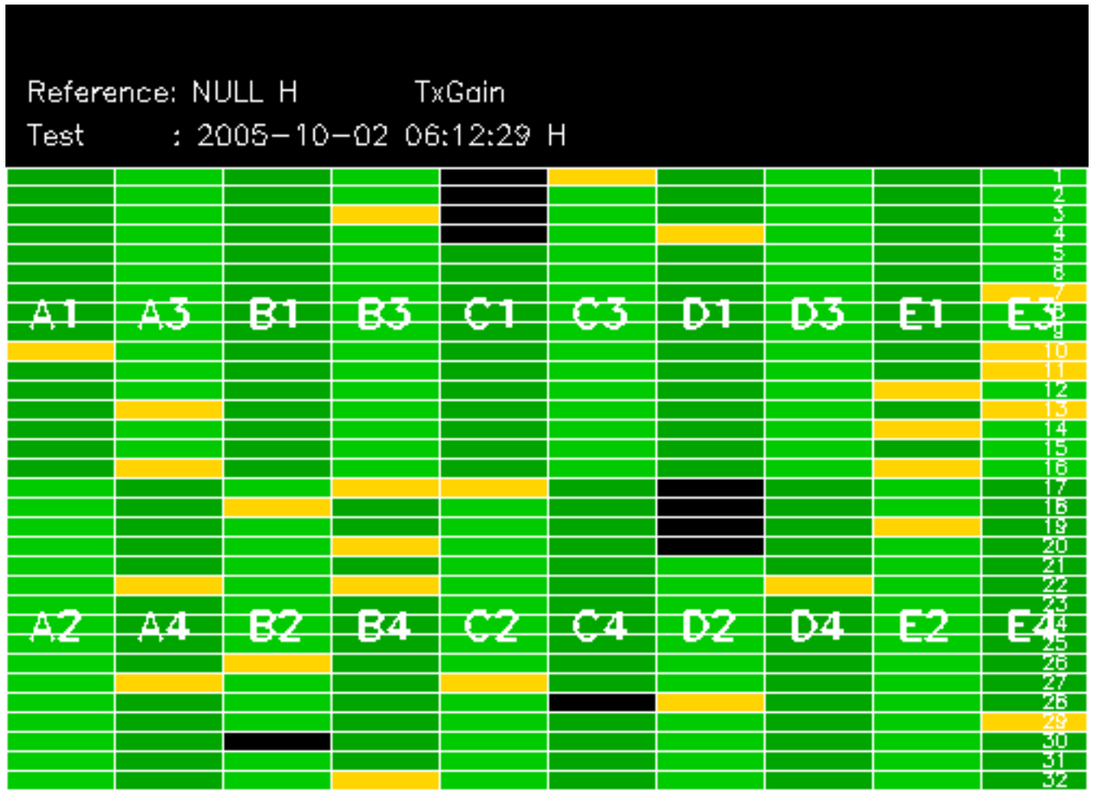
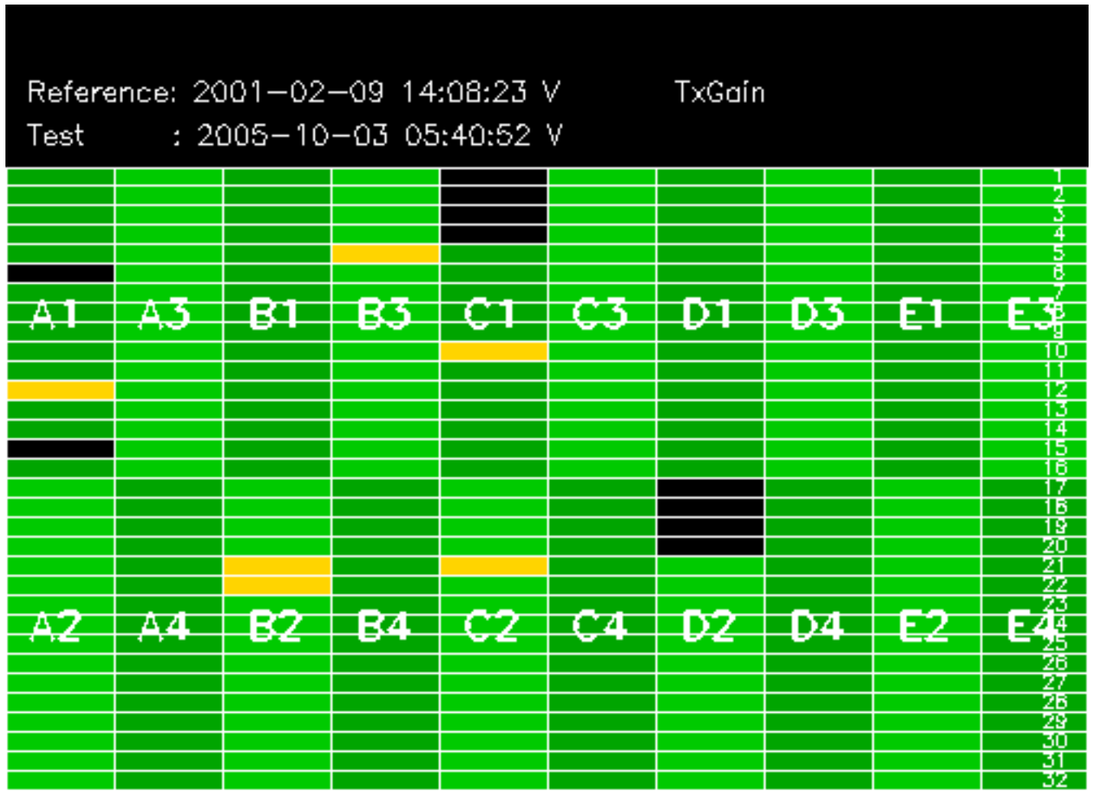

Reference: NULL H TxGain
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-10-03 05:40:52 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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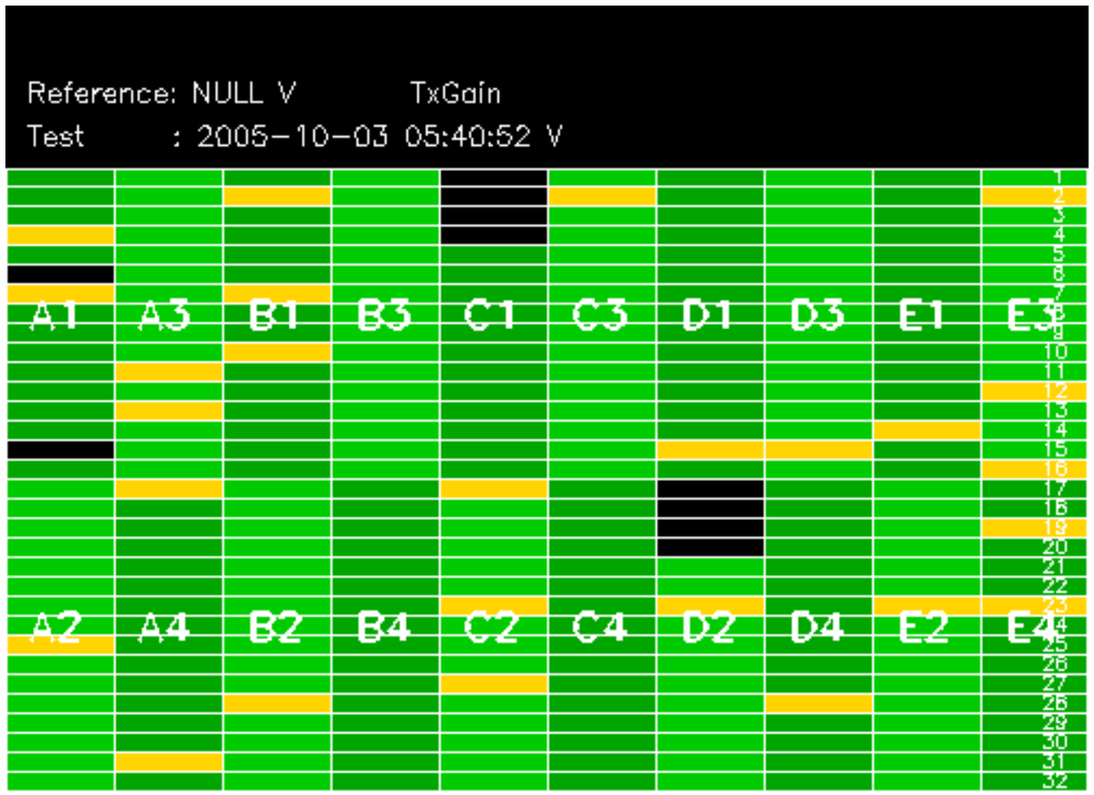
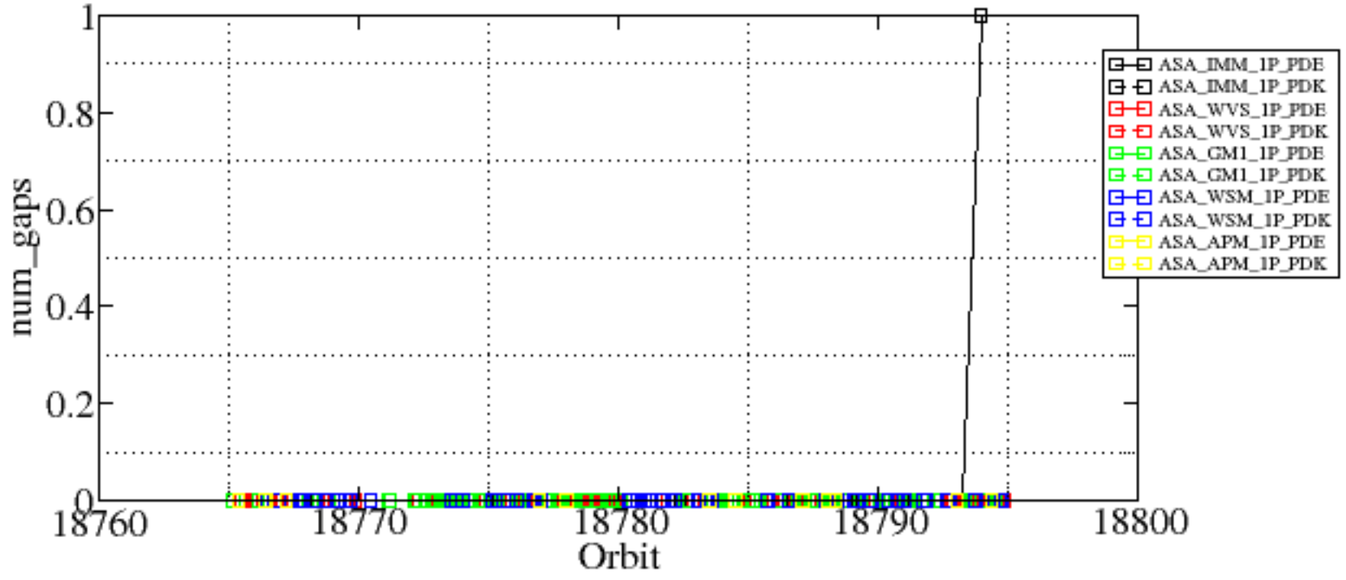
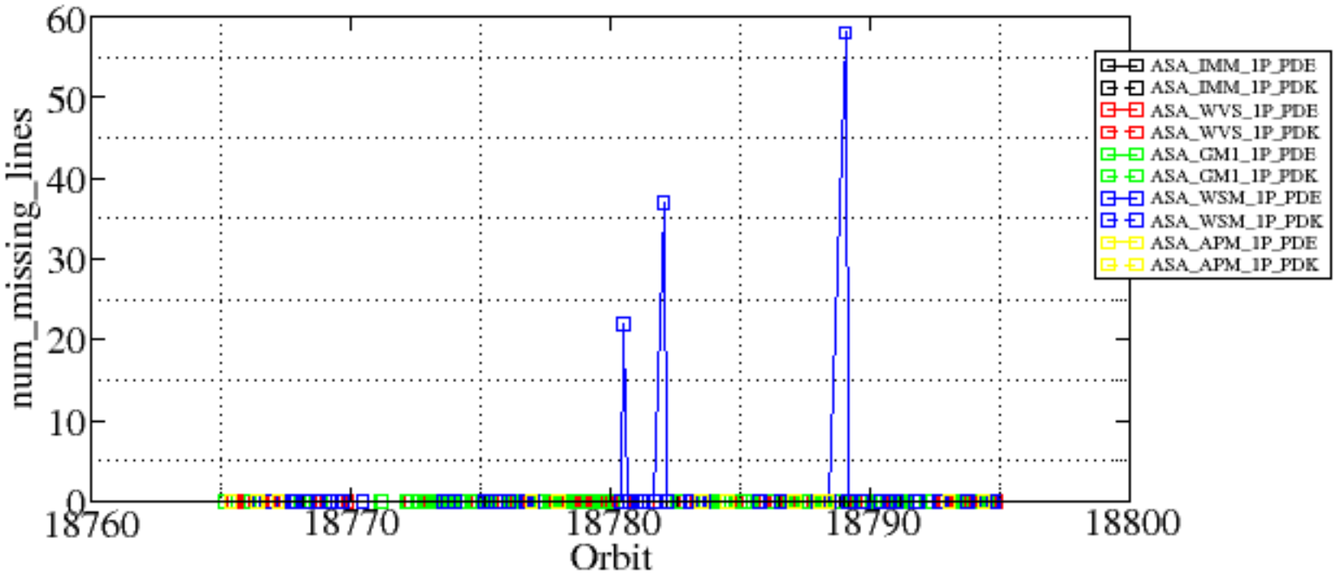
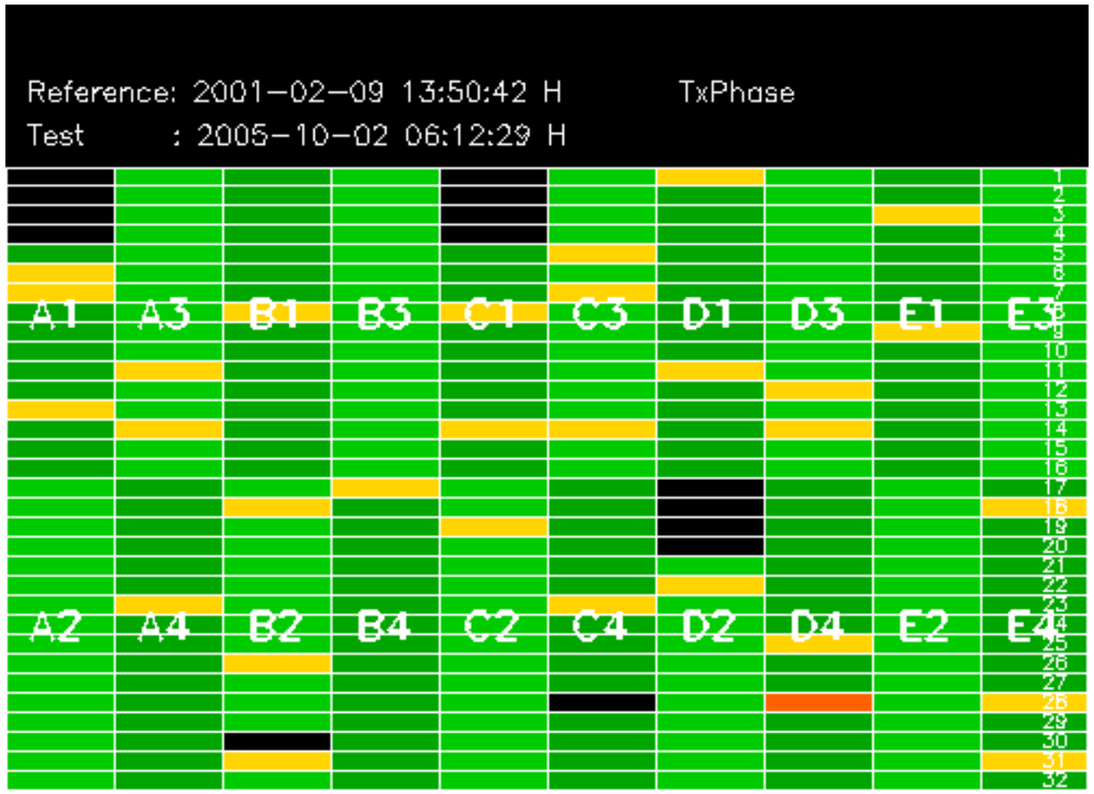

Reference: NULL V TxGain
Test : 2005-10-03 05:40:52 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

Summary of analysis for the last 3 days 2005100[234]
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_1PNPDE20051004_003705_000001542041_00202_18793_7333.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20051003_020026_000000852041_00189_18780_2057.N1 </td> <td>0 </td> <td>22 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20051003_043835_000001282041_00191_18782_2079.N1 </td> <td>0 </td> <td>37 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20051003_162343_000000912041_00198_18789_2129.N1 </td> <td>0 </td> <td>58 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
18760
18770
18780
18790
18800
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
60
50
40
30
20
10
0
18760
18770
18780
18790
18800
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2005-10-02 06:12:29 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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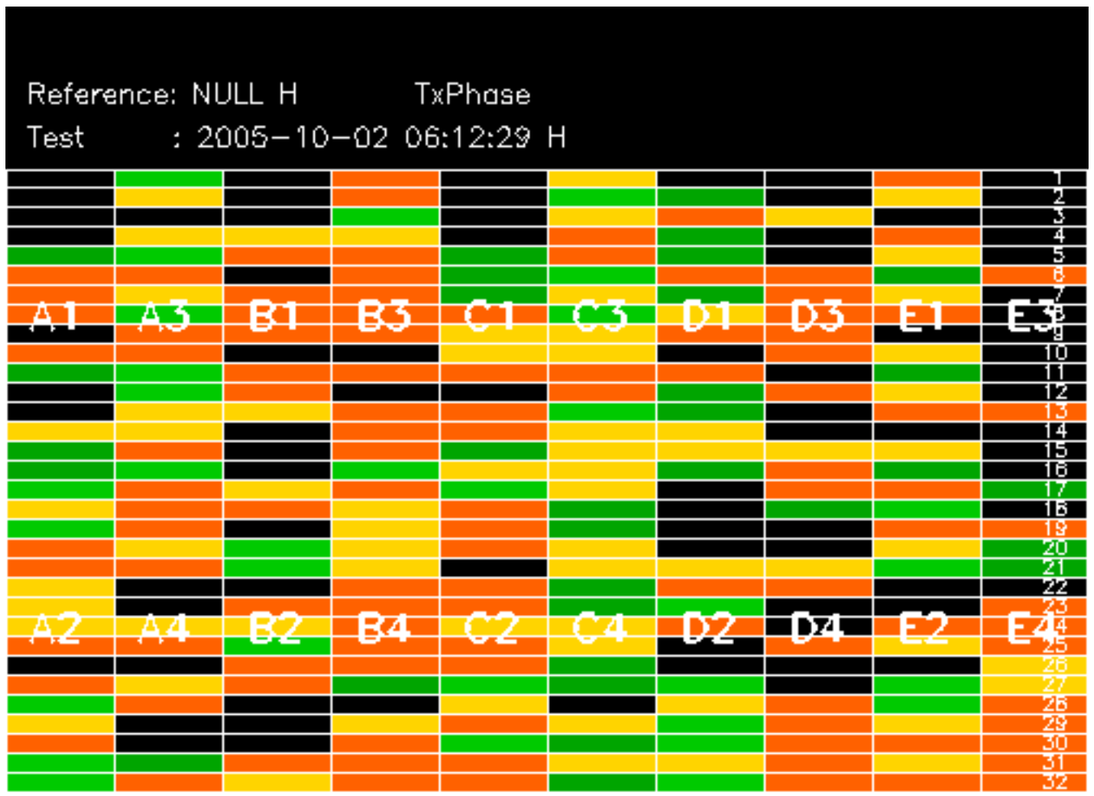
Reference: NULL H TxPhase
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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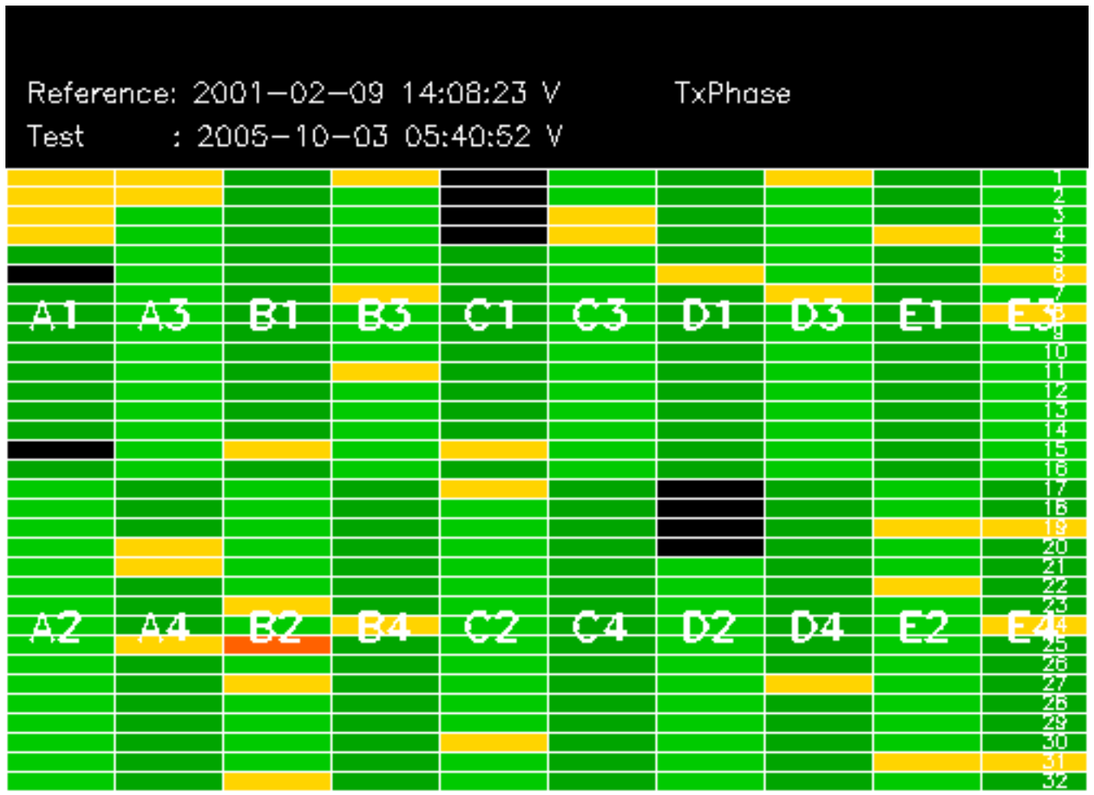
Reference: 2001-02-09 14:08:23 V
Test : 2005-10-03 05:40:52 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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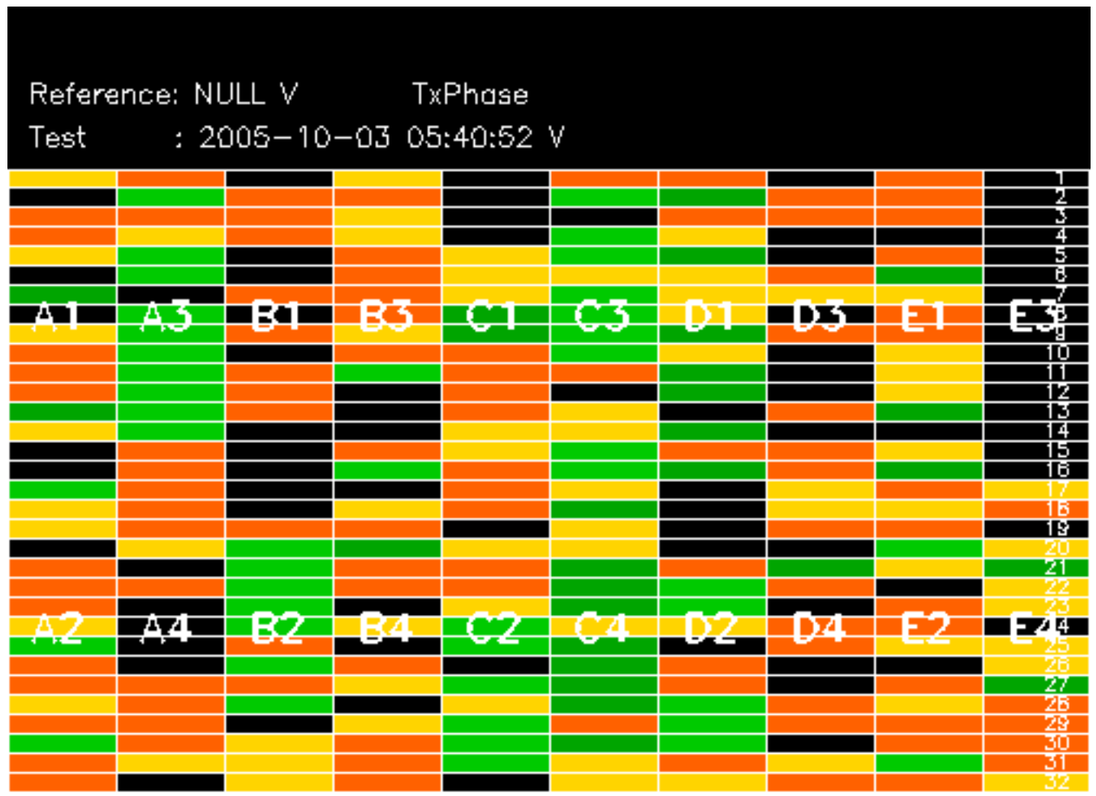
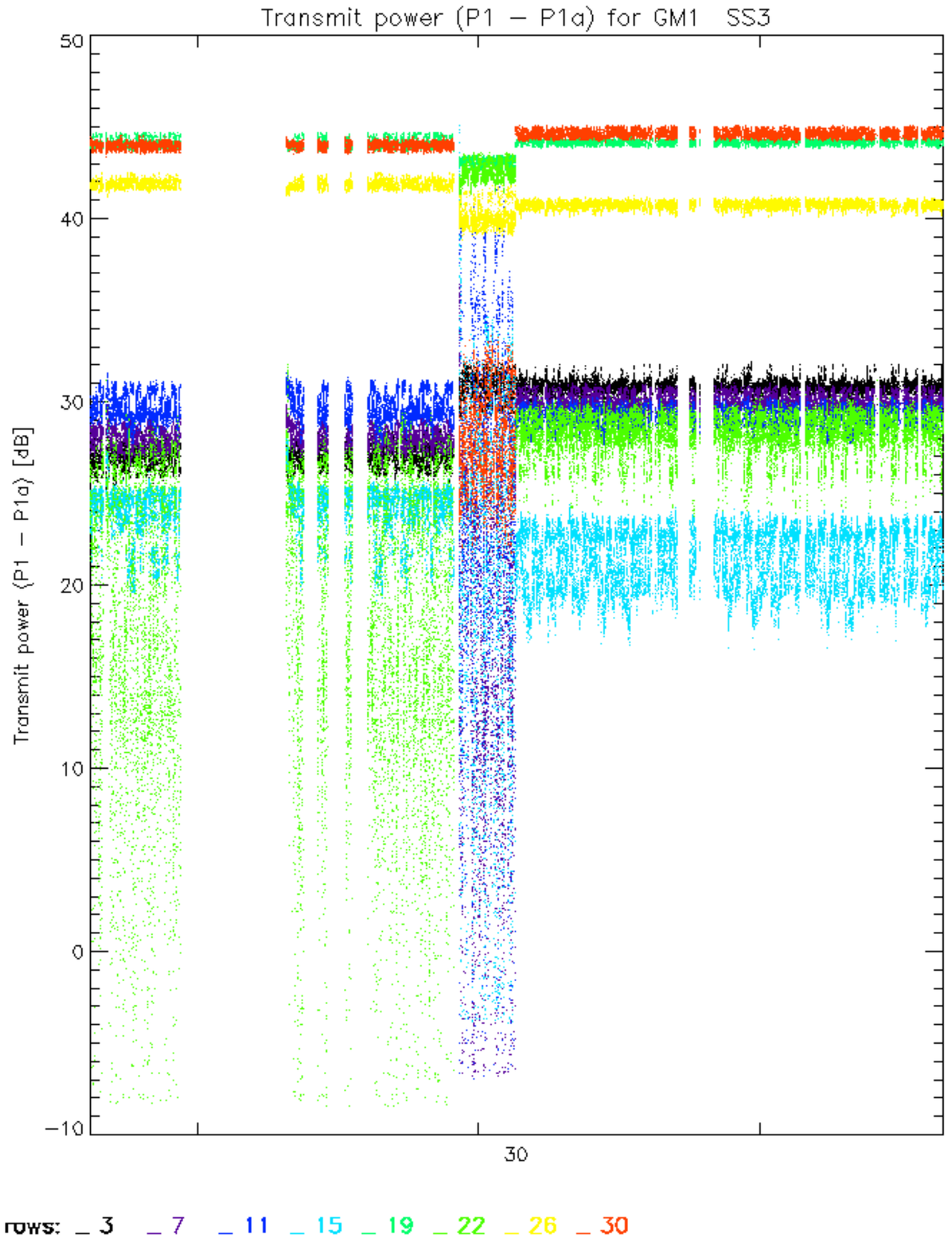
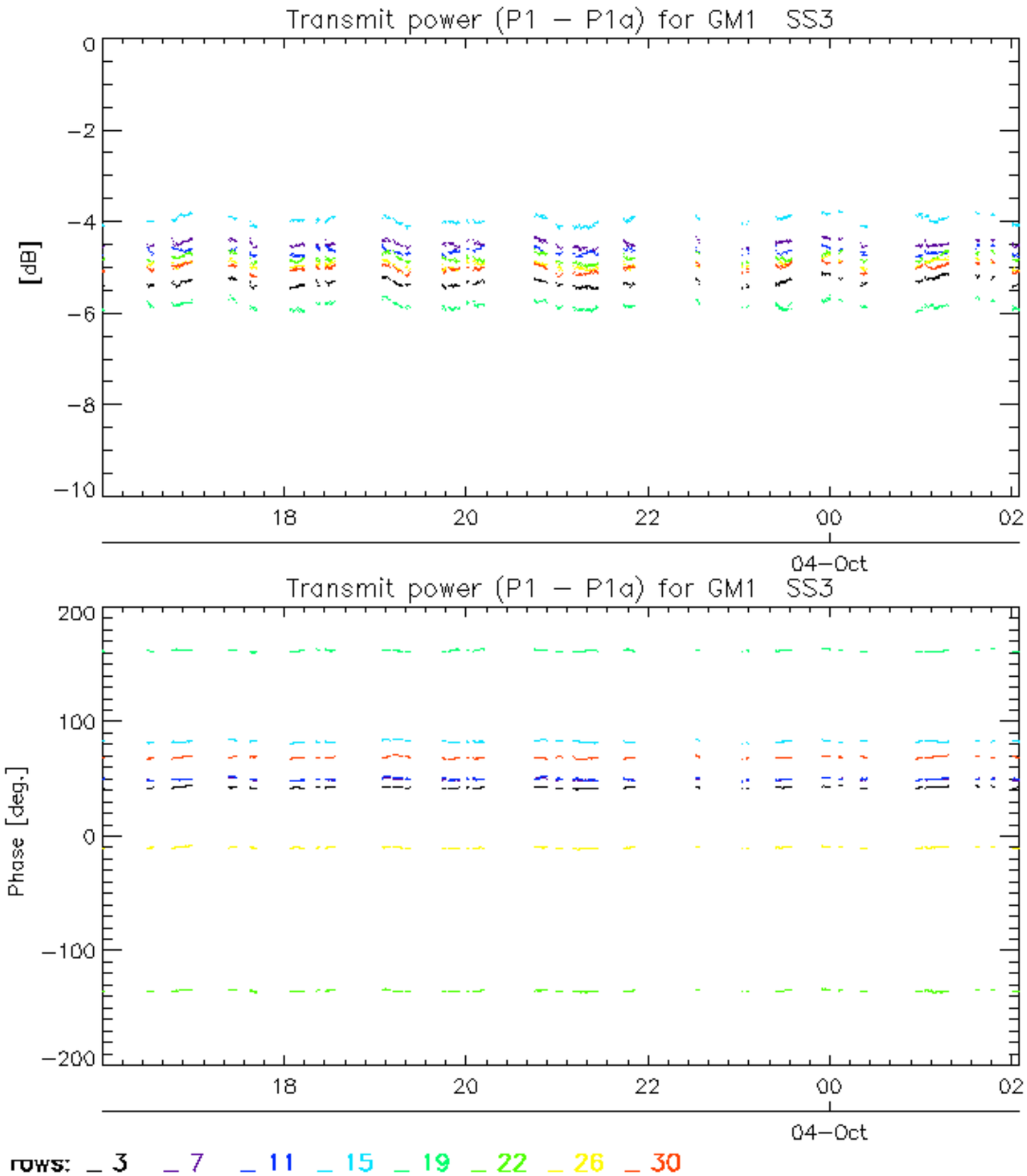
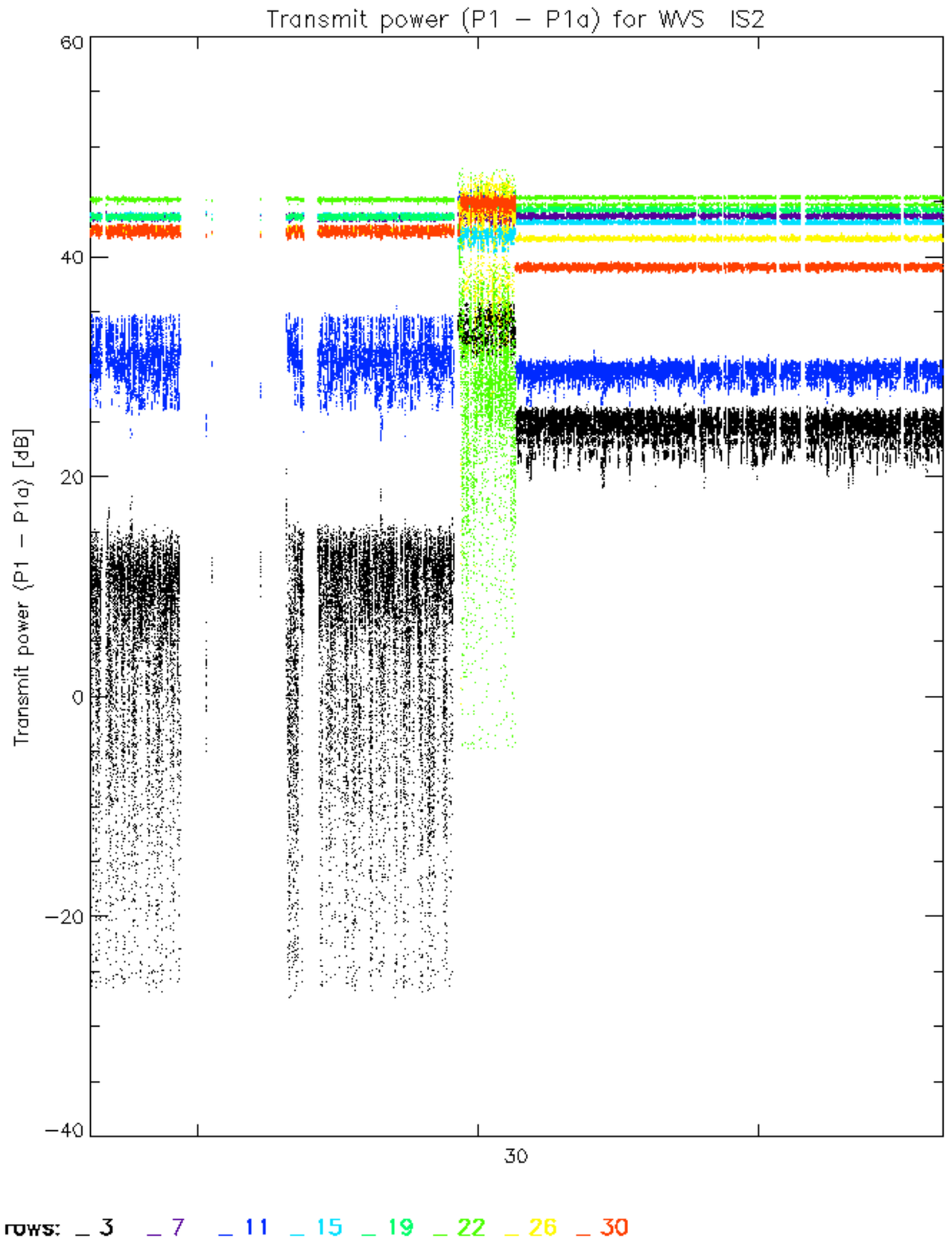
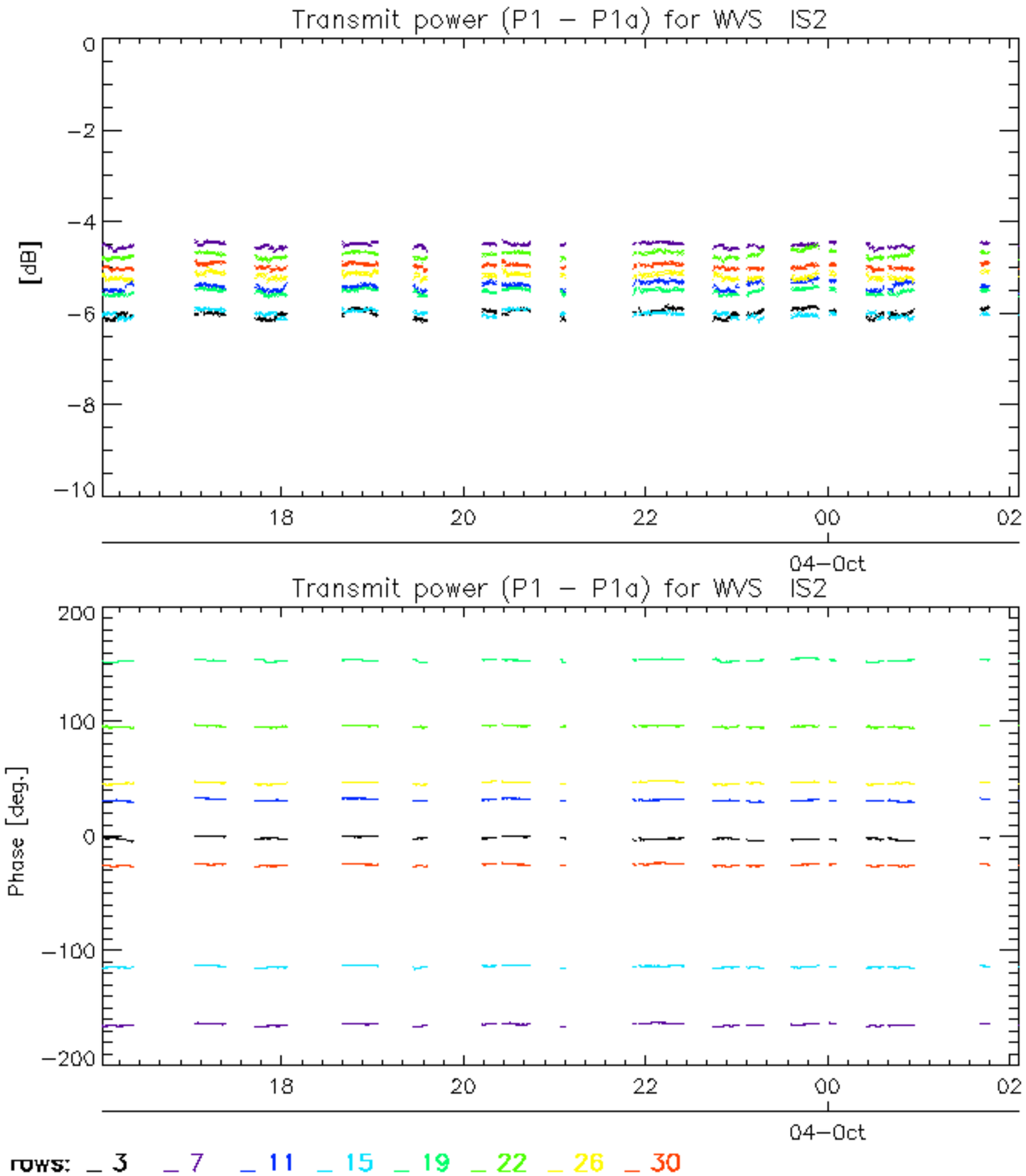

Reference: NULL V TxPhase
Test : 2005-10-03 05:40:52 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


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
0
−2
−4
−6
−8
−10
[dB]
18
20
22
00
02
04–Oct
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
20
22
00
02
04–Oct
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
0
−2
−4
−6
−8
−10
[dB]
18
20
22
00
02
04–Oct
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
20
22
00
02
04–Oct
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.