PRELIMINARY REPORT OF 070521

last update on Mon May 21 23:18:34 GMT 2007

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 2007-05-20 00:00:00 to 2007-05-21 23:18:34

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

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	43	78	7	3	30
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	43	78	7	3	30
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	43	78	7	3	30
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	43	78	7	3	30

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	37	48	29	13	86
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	37	48	29	13	86
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	37	48	29	13	86
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	37	48	29	13	86

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	20070519 064401
H	20070520 061224

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)
3	P1a	-15.227239	0.128633	-0.255169
7	P1a	-17.598598	0.072146	-0.060720
11	P1a	-17.728571	0.343487	-0.194893
15	P1a	-13.152814	0.152833	-0.190749
19	P1a	-15.437817	0.067886	-0.076444
22	P1a	-15.993353	0.346822	-0.027840
26	P1a	-14.950582	0.213303	-0.064827
30	P1a	-17.982849	0.414184	-0.434853

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.784704	0.009950	-0.013713
7	P1	-3.165735	0.008505	-0.042116
11	P1	-4.193073	0.017265	0.057705
15	P1	-6.466086	0.019415	-0.077065
19	P1	-3.777795	0.012076	-0.012337
22	P1	-4.741603	0.011175	0.036592
26	P1	-3.909234	0.018028	-0.024997
30	P1	-5.962590	0.009327	0.007096

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.652405	0.093599	0.016496
7	P2	-21.507195	0.094204	0.094154
11	P2	-15.283037	0.122245	0.070029
15	P2	-7.133412	0.091329	-0.001357
19	P2	-9.121841	0.083183	-0.012548
22	P2	-18.086334	0.078032	-0.000877
26	P2	-16.652607	0.084849	-0.051997
30	P2	-19.249298	0.084354	0.056551

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.244804	0.004663	0.003459
7	P3	-8.244804	0.004663	0.003459
11	P3	-8.244804	0.004663	0.003459
15	P3	-8.244804	0.004663	0.003459
19	P3	-8.244804	0.004663	0.003459
22	P3	-8.244804	0.004663	0.003459
26	P3	-8.244785	0.004669	0.003632
30	P3	-8.244785	0.004669	0.003632

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1


P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.489757	0.203713	-0.854283
7	P1a	-10.031459	0.212332	0.123234
11	P1a	-10.690898	0.100775	-0.022831
15	P1a	-10.784924	0.167505	0.114313
19	P1a	-15.860083	0.109664	-0.141157
22	P1a	-21.497282	1.377496	-0.063938
26	P1a	-15.562099	0.326192	-0.047415
30	P1a	-18.260605	0.431548	0.024832

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-7.952662	0.377806	1.663043
7	P1	-2.376578	0.131803	0.089192
11	P1	-2.871421	0.025870	0.023128
15	P1	-3.794592	0.040631	0.049576
19	P1	-3.605867	0.018777	-0.050312
22	P1	-4.944352	0.024031	0.029474

26	P1	-6.058861	0.026775	-0.048286
30	P1	-5.355924	0.035191	-0.048531

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.209560	0.098732	-0.060612
7	P2	-22.053947	0.274741	-0.051898
11	P2	-10.656301	0.063718	-0.047641
15	P2	-4.960515	0.045667	-0.077137
19	P2	-6.881511	0.045969	-0.026481
22	P2	-8.109184	0.106511	-0.001753
26	P2	-24.344723	0.185057	-0.084414
30	P2	-21.698280	0.129434	-0.005301

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.092098	0.005185	-0.003123
7	P3	-8.092009	0.005188	-0.002591
11	P3	-8.092023	0.005179	-0.003064
15	P3	-8.091988	0.005184	-0.003241
19	P3	-8.092025	0.005192	-0.003108
22	P3	-8.091976	0.005188	-0.003290
26	P3	-8.091990	0.005194	-0.003593
30	P3	-8.091982	0.005186	-0.003406

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	0.000550296
	stdev	1.91323e-07
MEAN Q	mean	0.000509742
	stdev	2.37090e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136082
	stdev	0.00117001
STDEV Q	mean	0.136467
	stdev	0.00118708

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007052[901]
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_WSM_1PNPDE20070520_005022_000002612058_00174_27282_3191.N1	0	35
ASA_WSM_1PNPDE20070520_151026_000003302058_00183_27291_3737.N1	0	52
ASA_WSM_1PNPDE20070520_165036_000000852058_00184_27292_3767.N1	0	31
ASA_WSM_1PNPDE20070520_183356_000000862058_00185_27293_3810.N1	0	36
ASA_WSM_1PNPDE20070521_162341_000002022058_00198_27306_5002.N1	0	46

ASA_WSM_1PNPDE20070521_180340_000001102058_00199_27307_5028.N1	0	5

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

Acsending

Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


7.4 - Unbiased Doppler Error for GM1

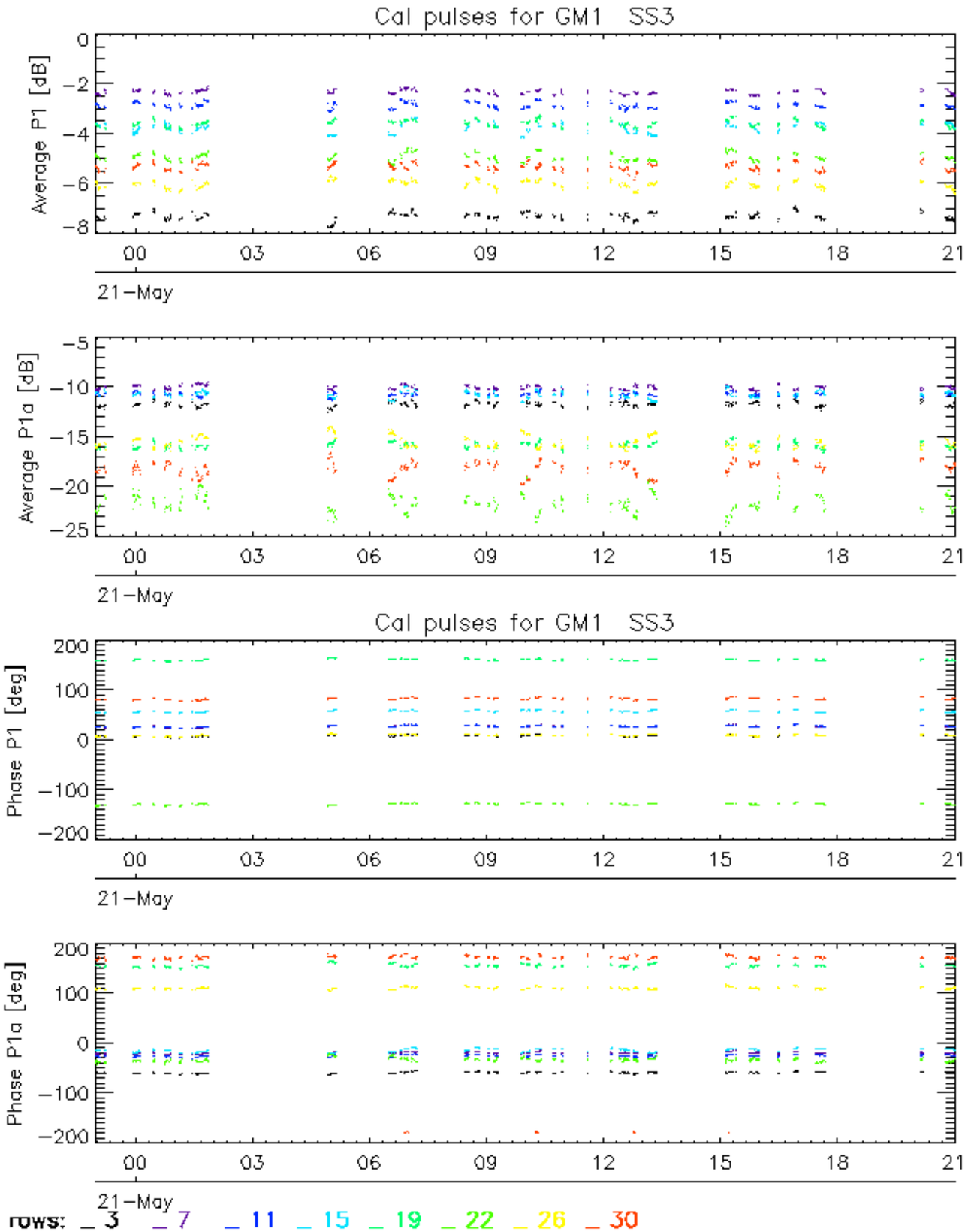
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

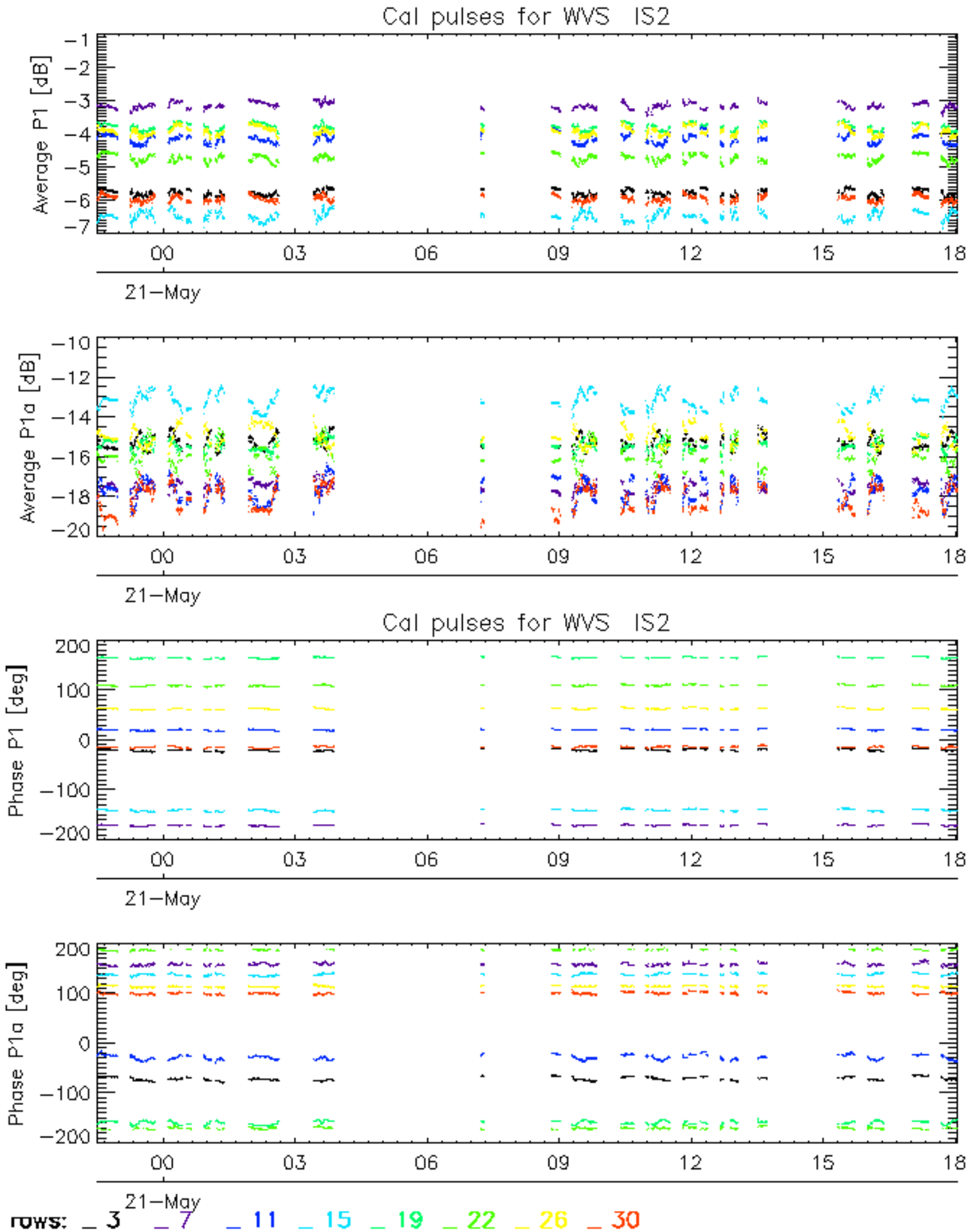
7.5 - Absolute Doppler for GM1

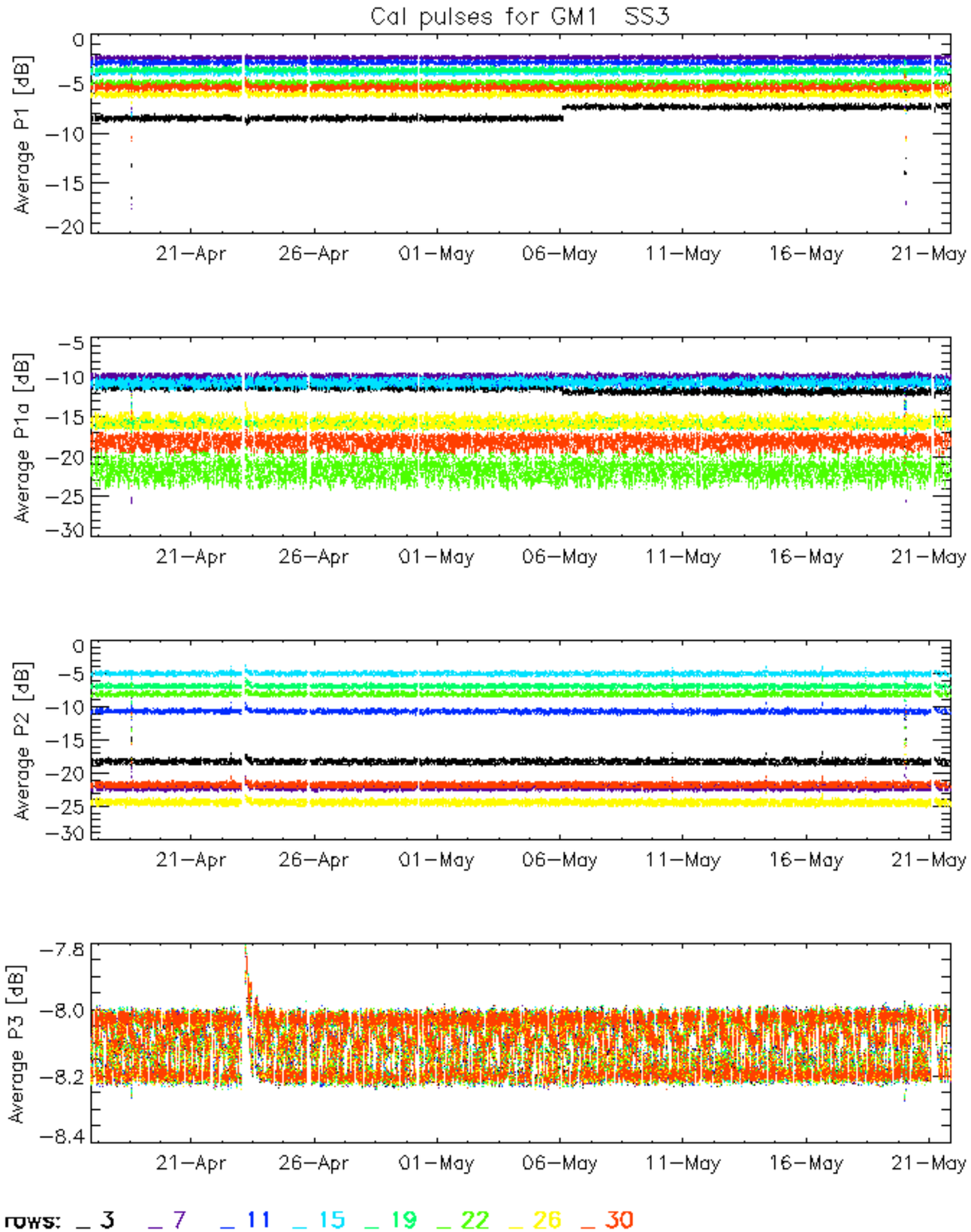
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

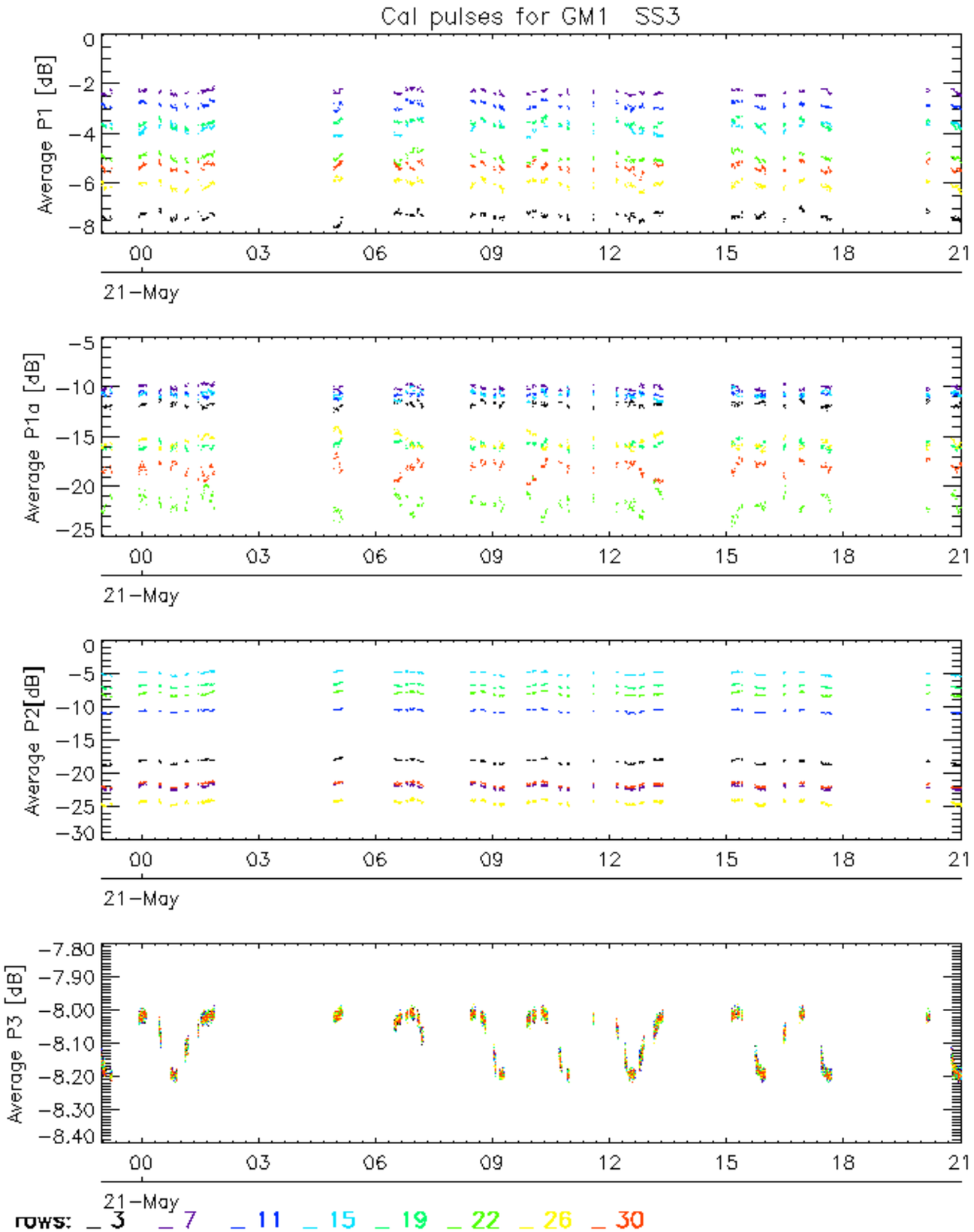
7.6 - Doppler evolution versus ANX for GM1

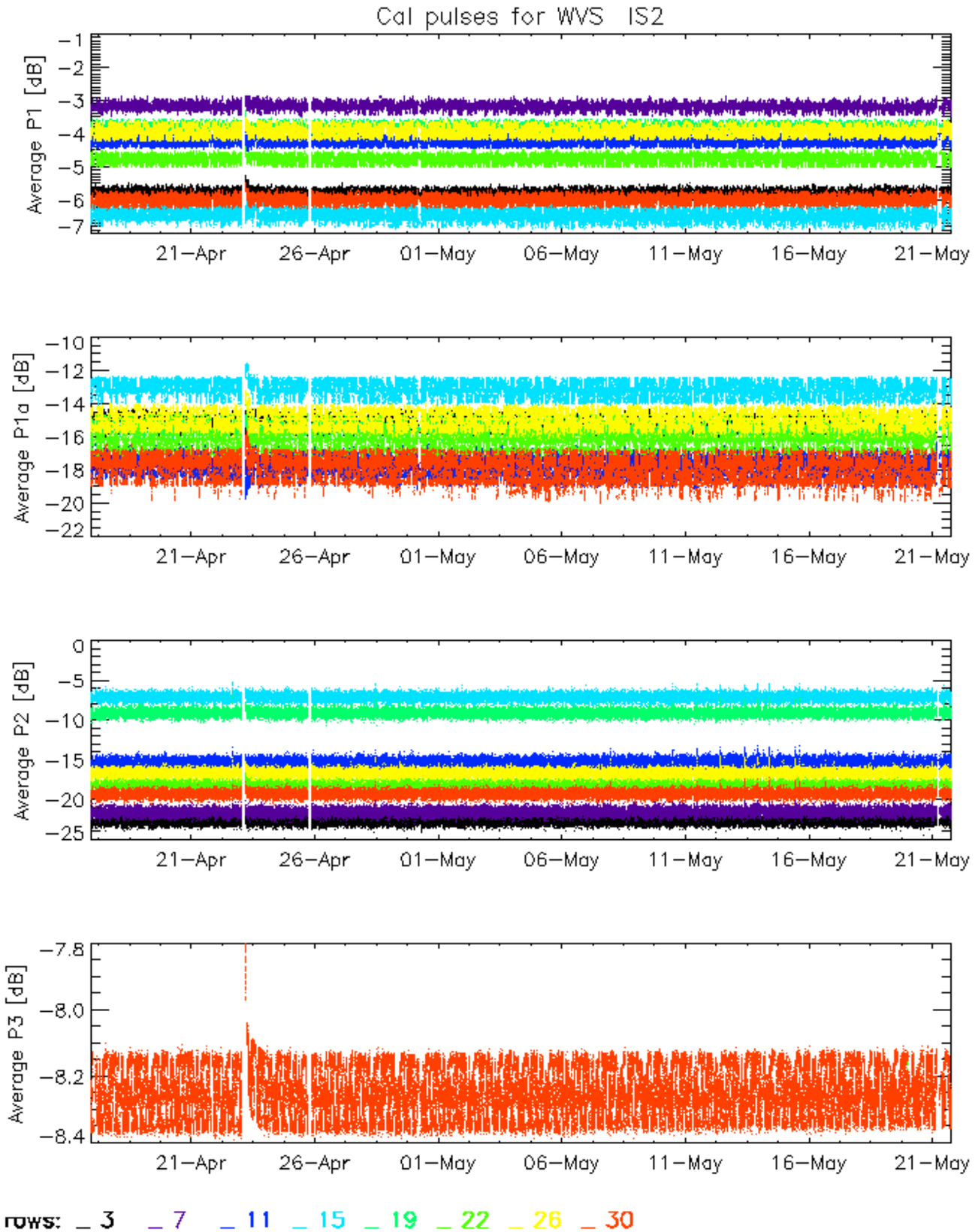
Evolution Doppler error versus ANX
☒

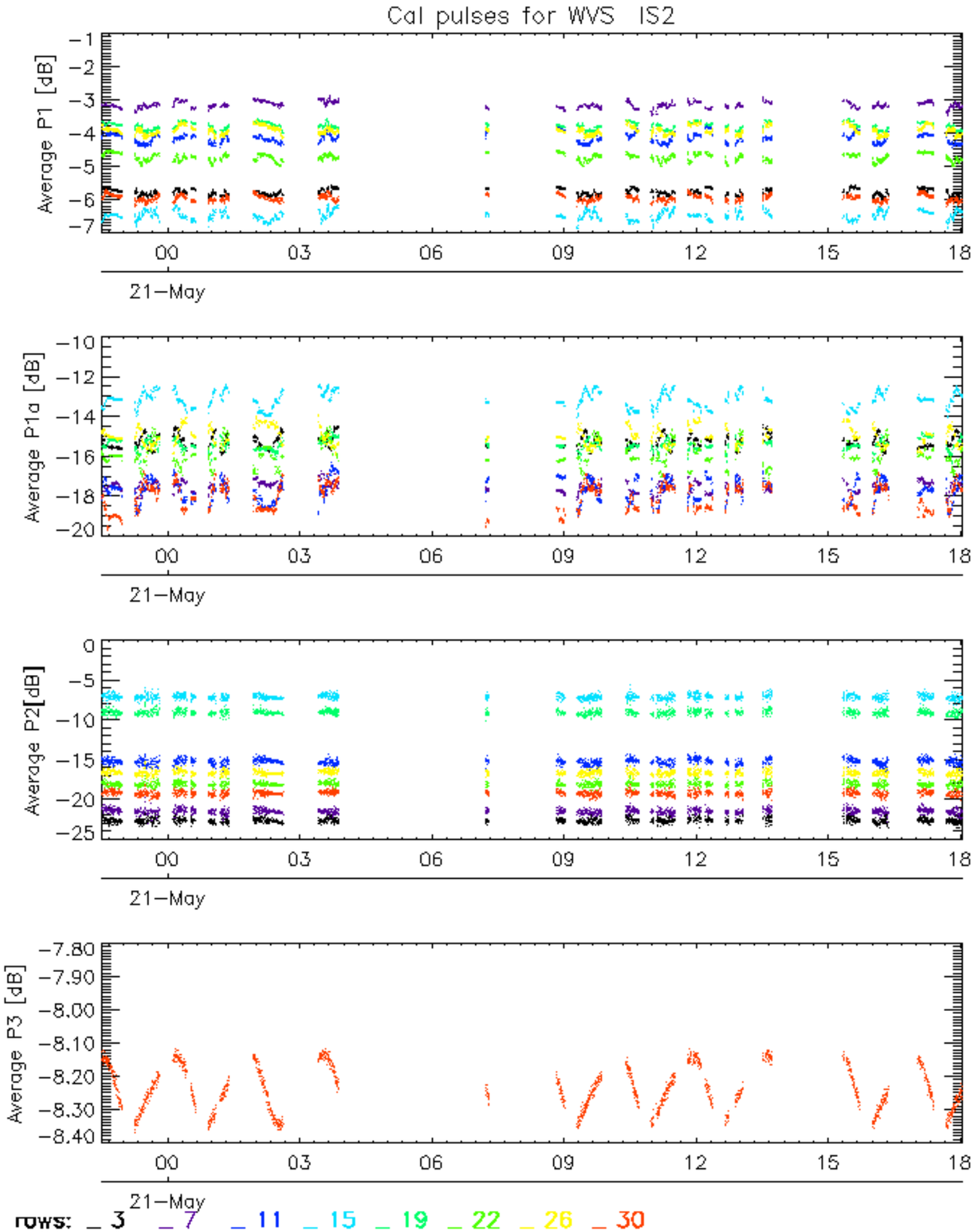

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
00
03
06
09
12
15
18
21
21−May
Average P1a [dB]
−5
−10
−15
−20
−25
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
00
03
06
09
12
15
18
21−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
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]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

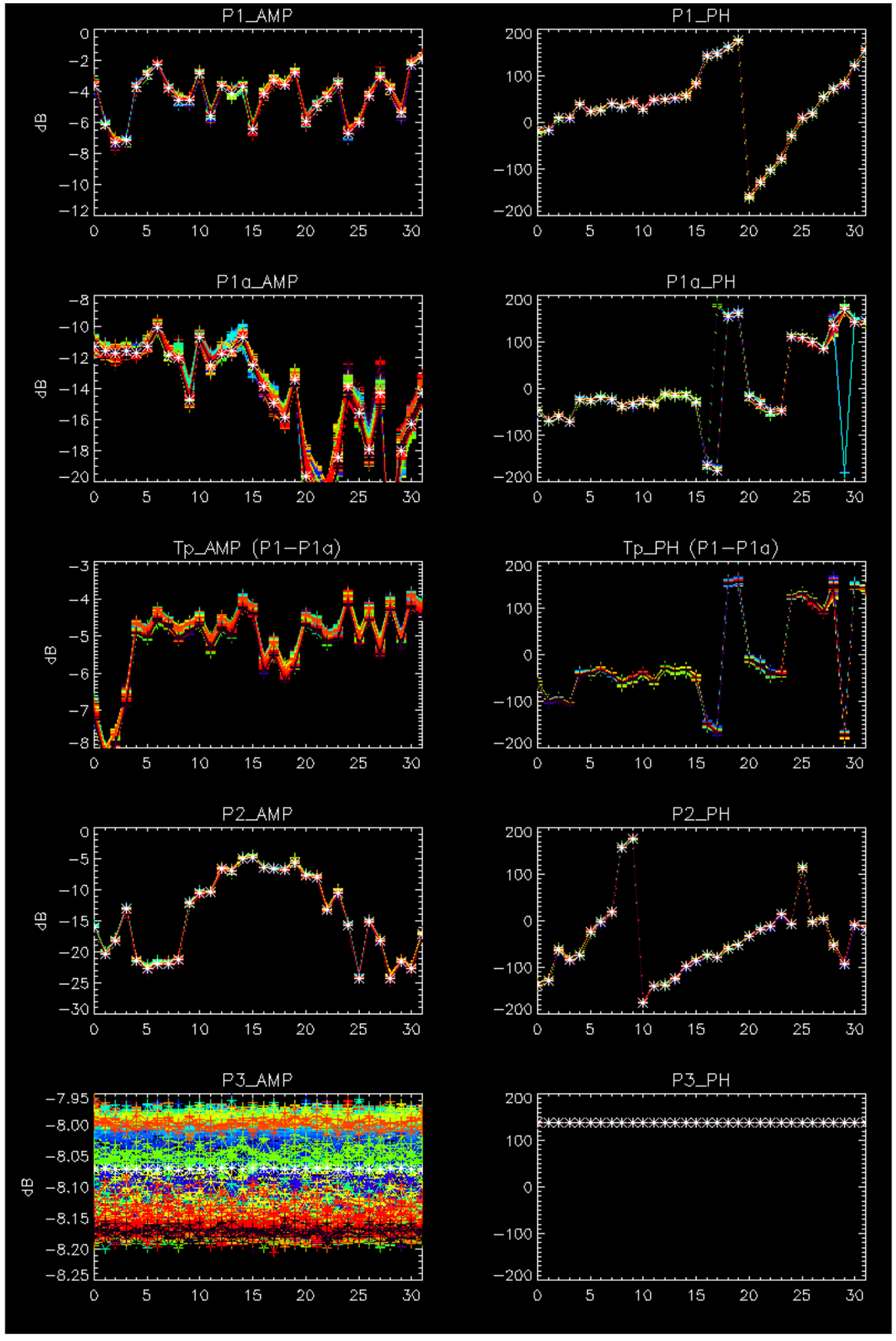

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
00
03
06
09
12
15
18
21
21−May
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2[dB]
−30
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30

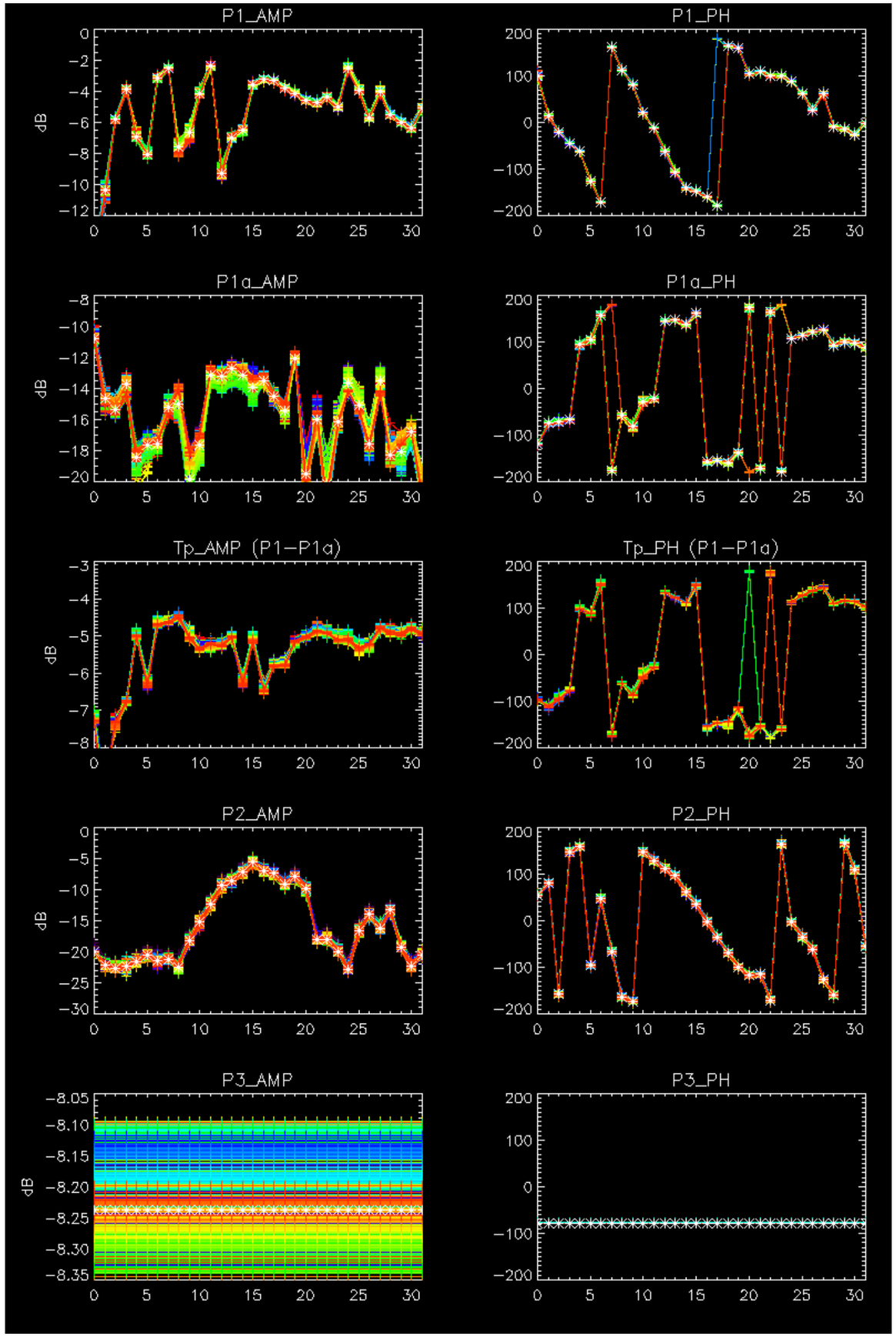

Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
00
03
06
09
12
15
18
21−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
Average P2[dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30

No anomalies observed on available browse products

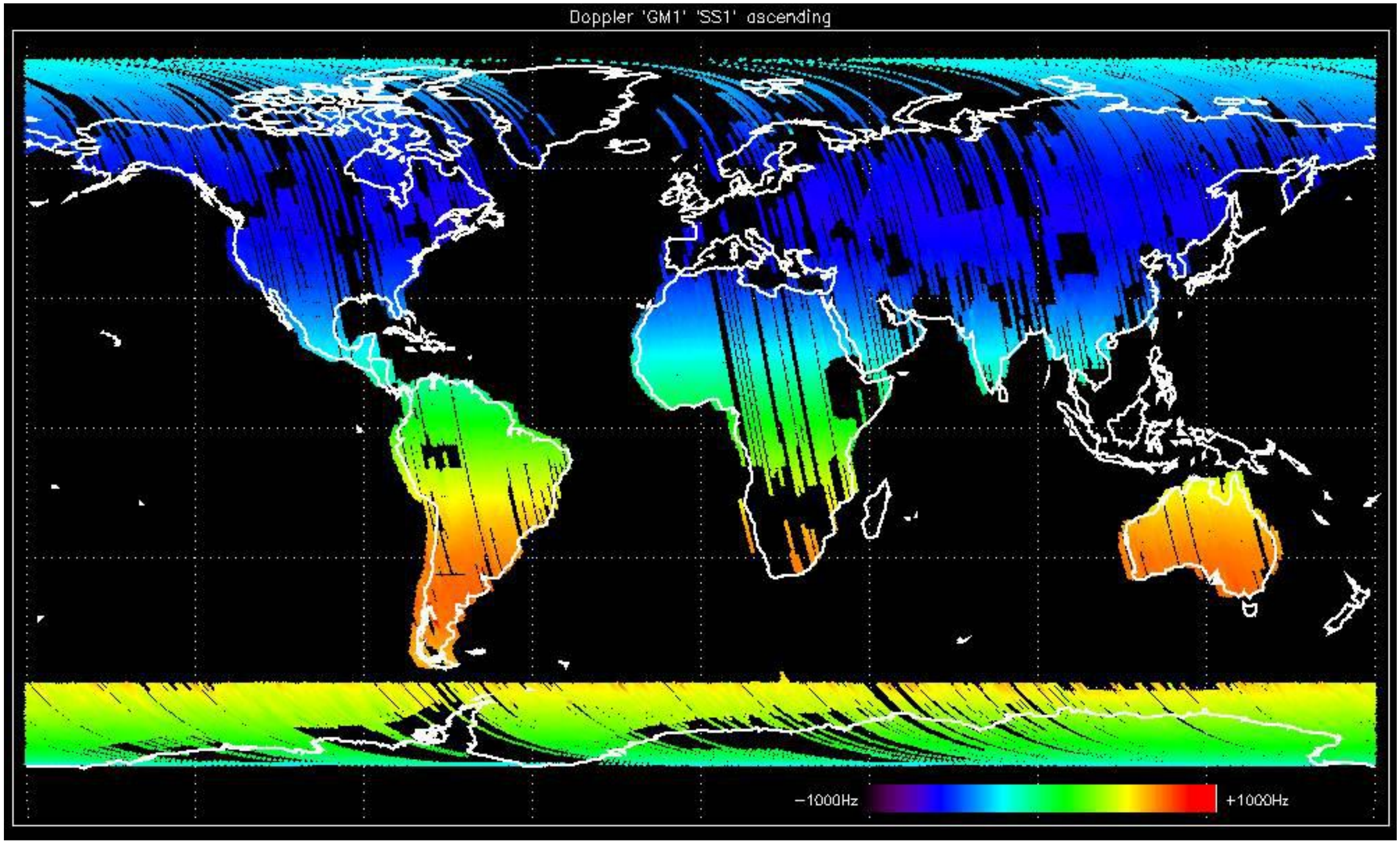
No anomalies observed.

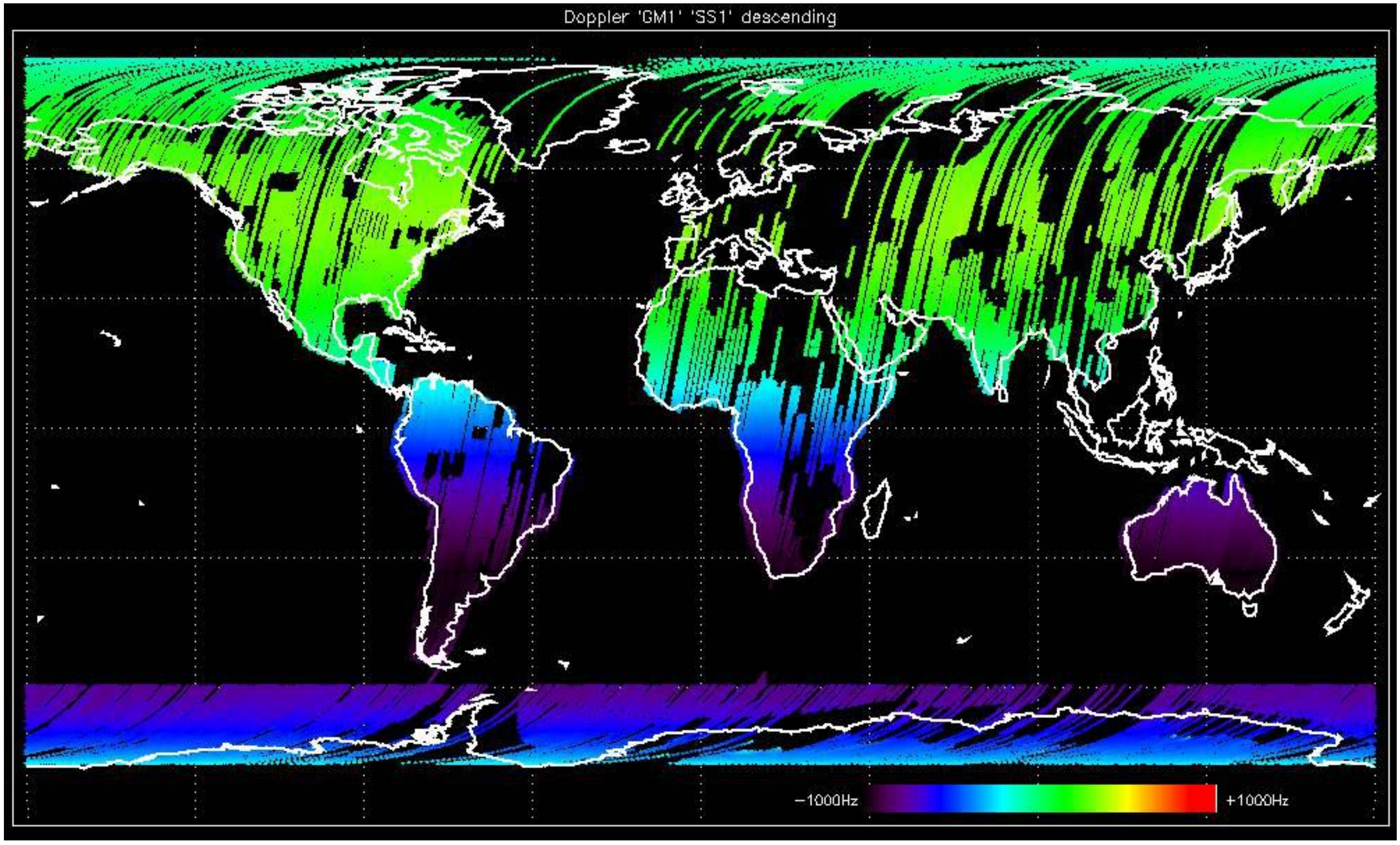

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

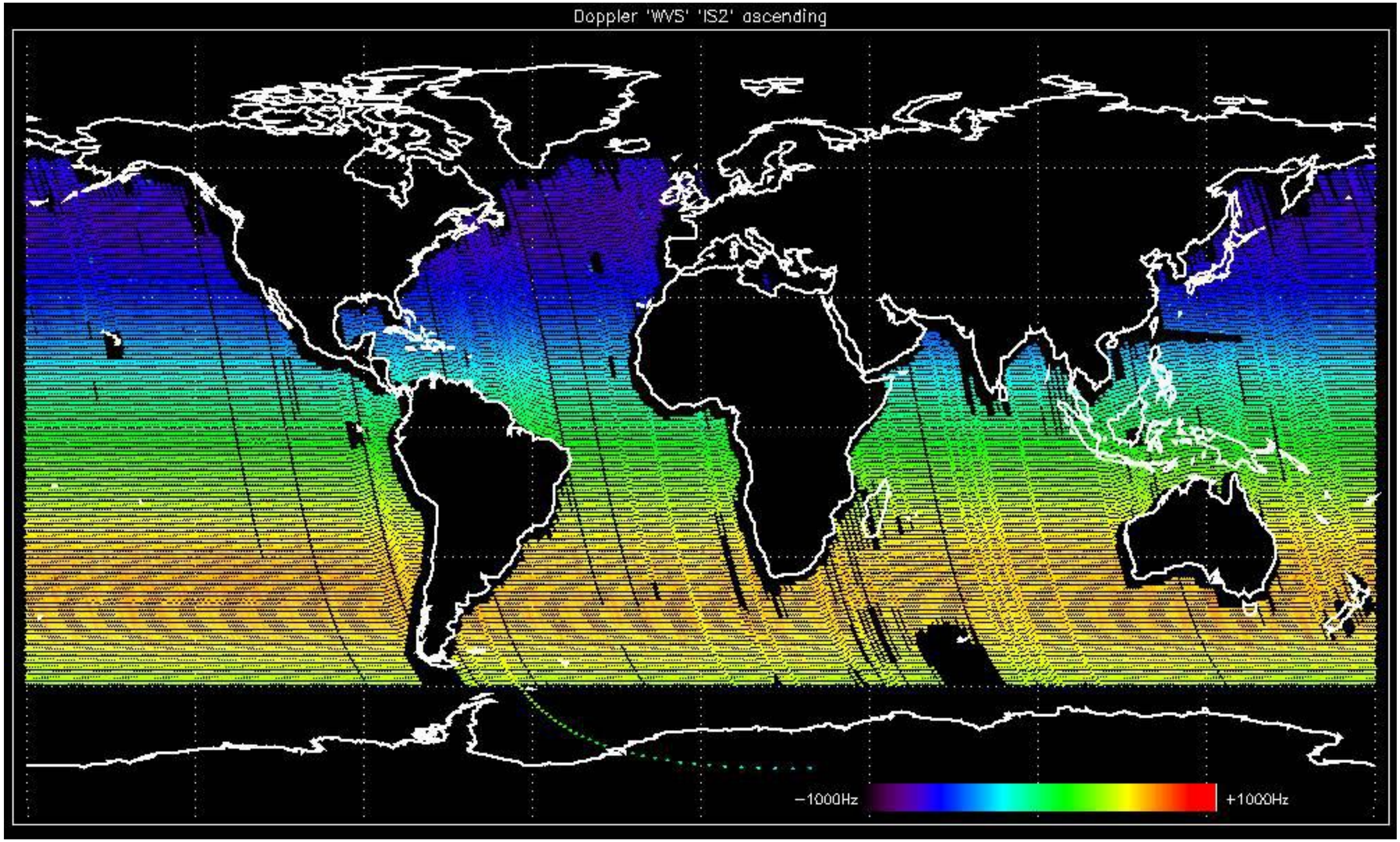

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

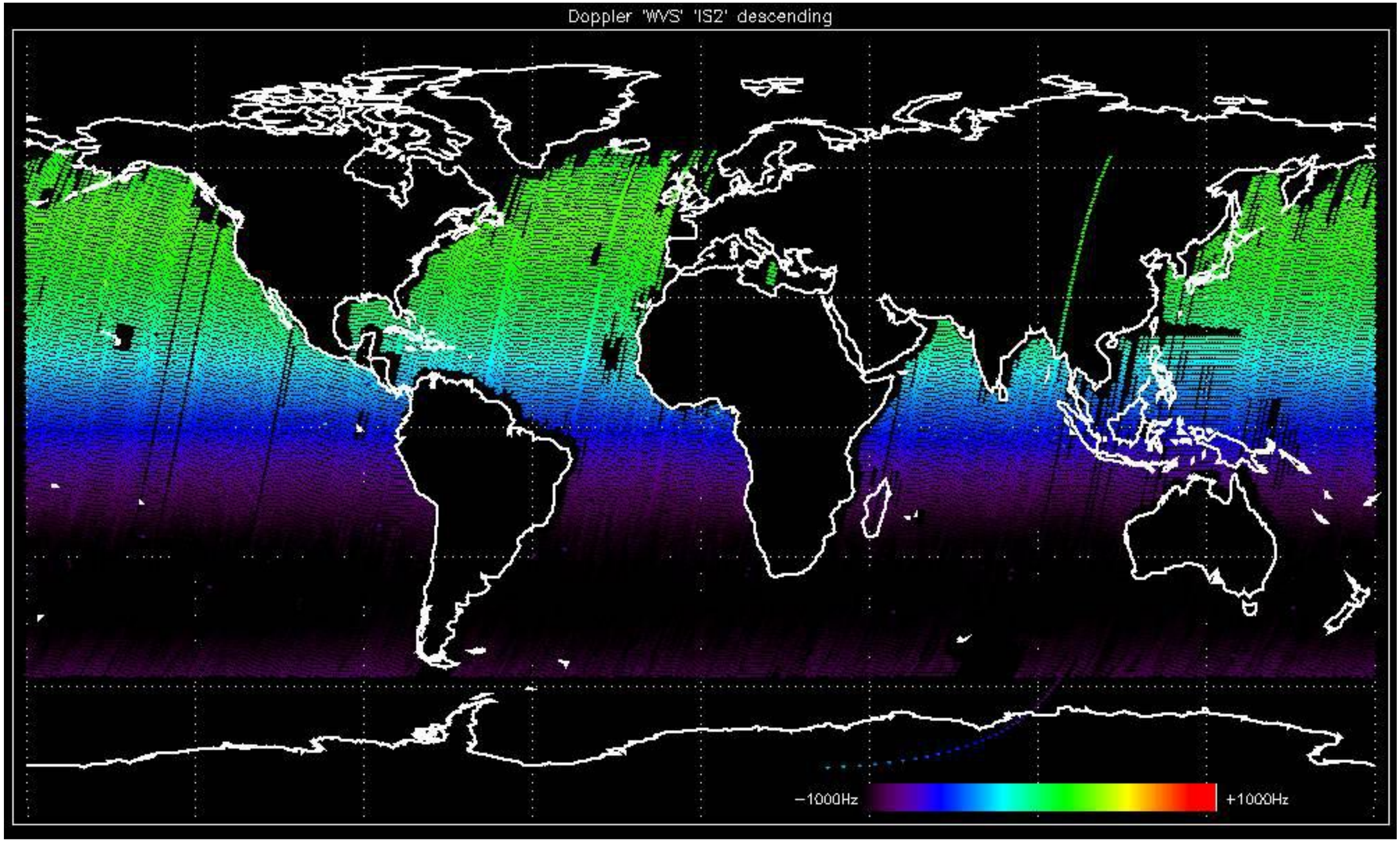
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

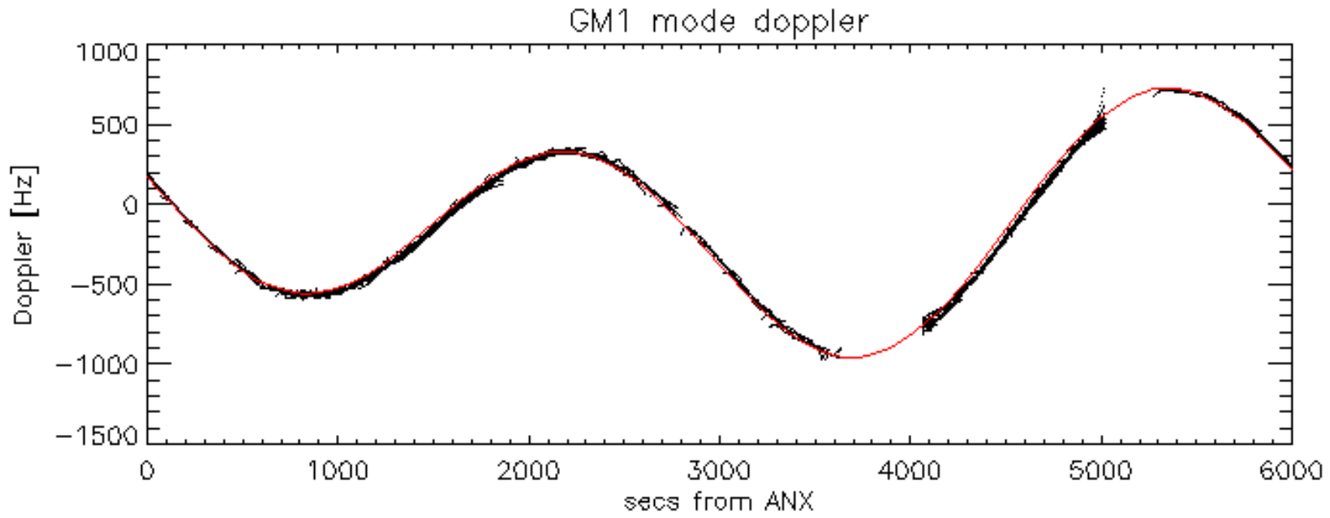
Preliminary report.The data is not yet controled

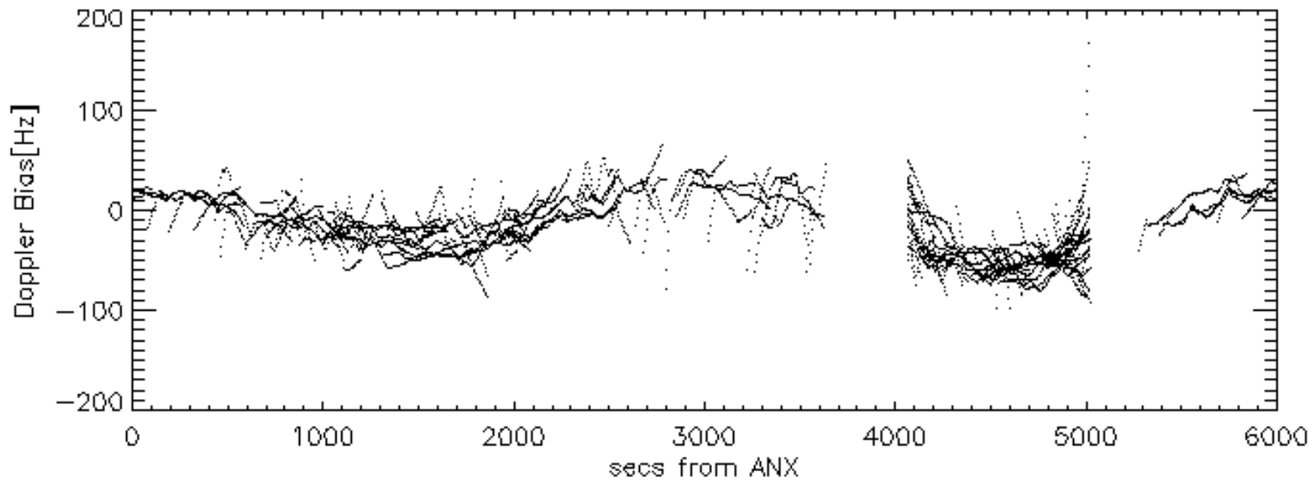

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

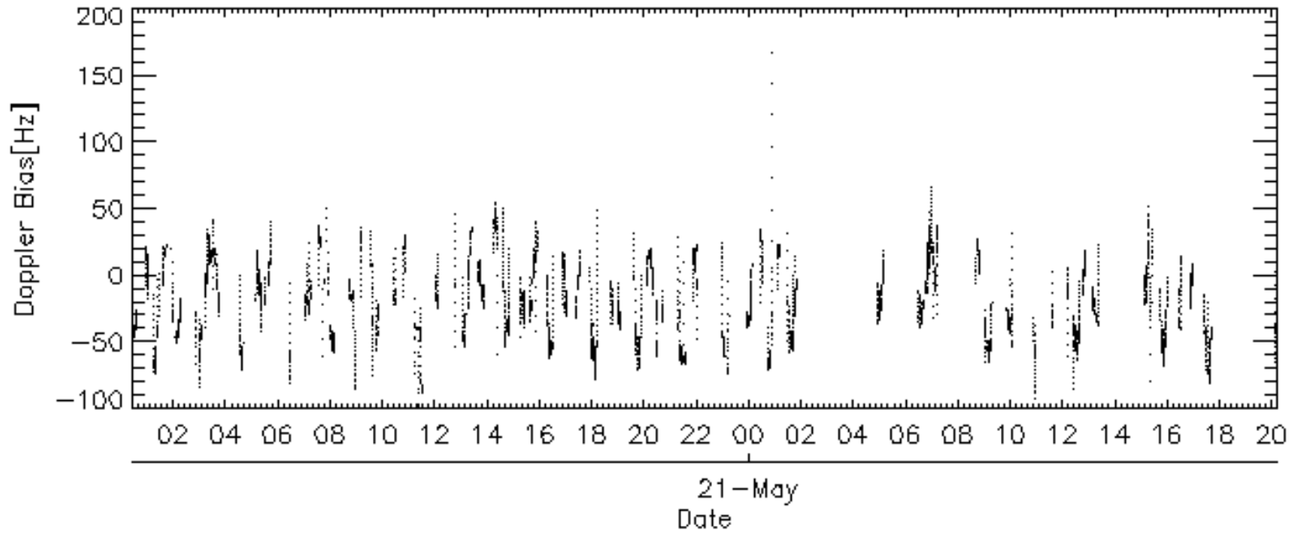

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

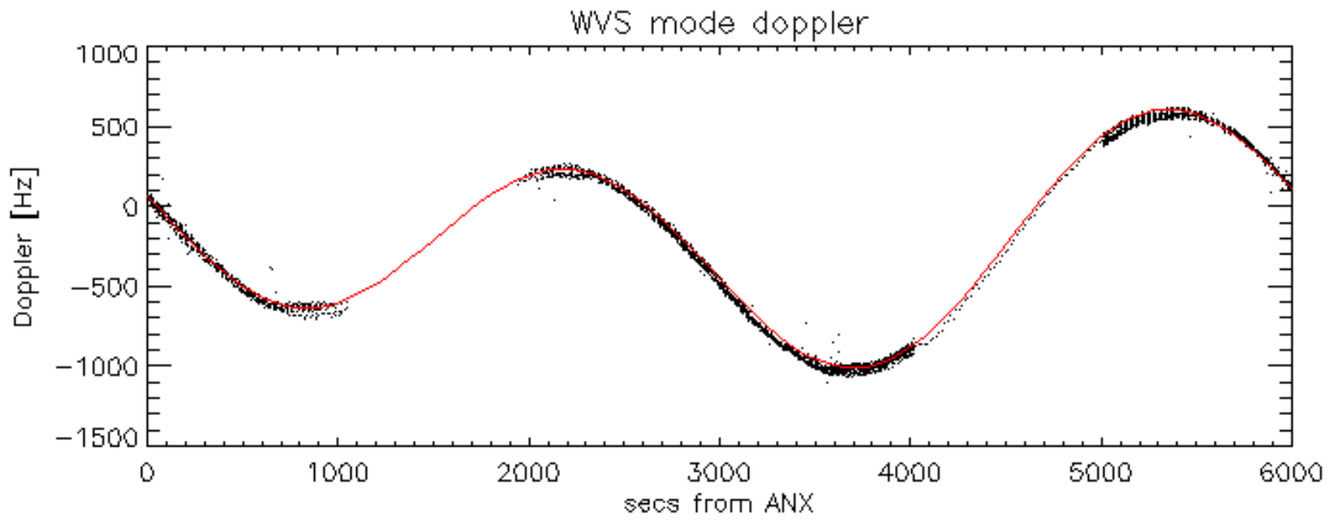

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

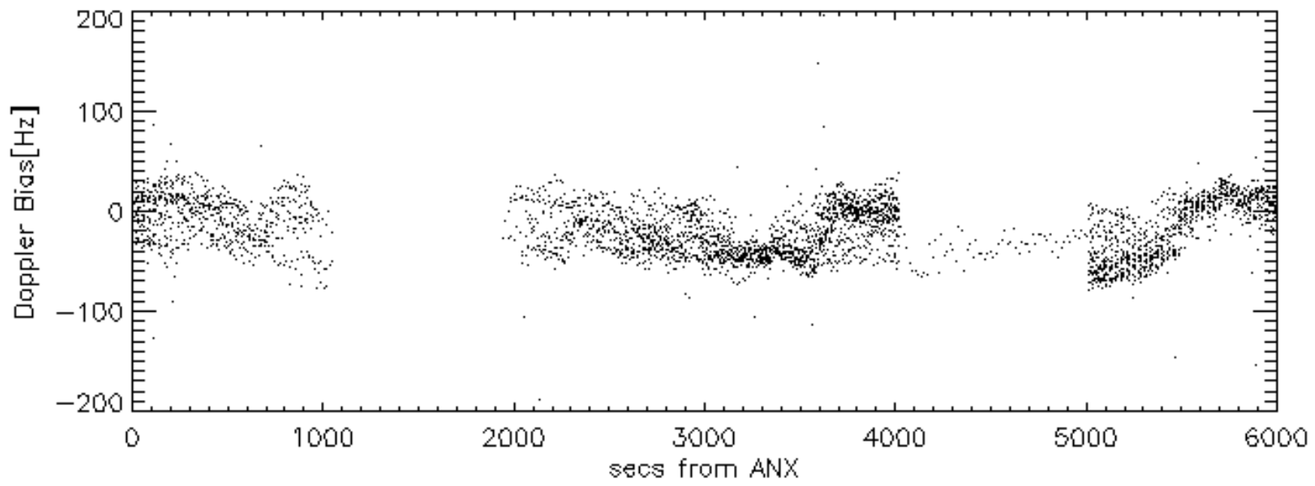

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

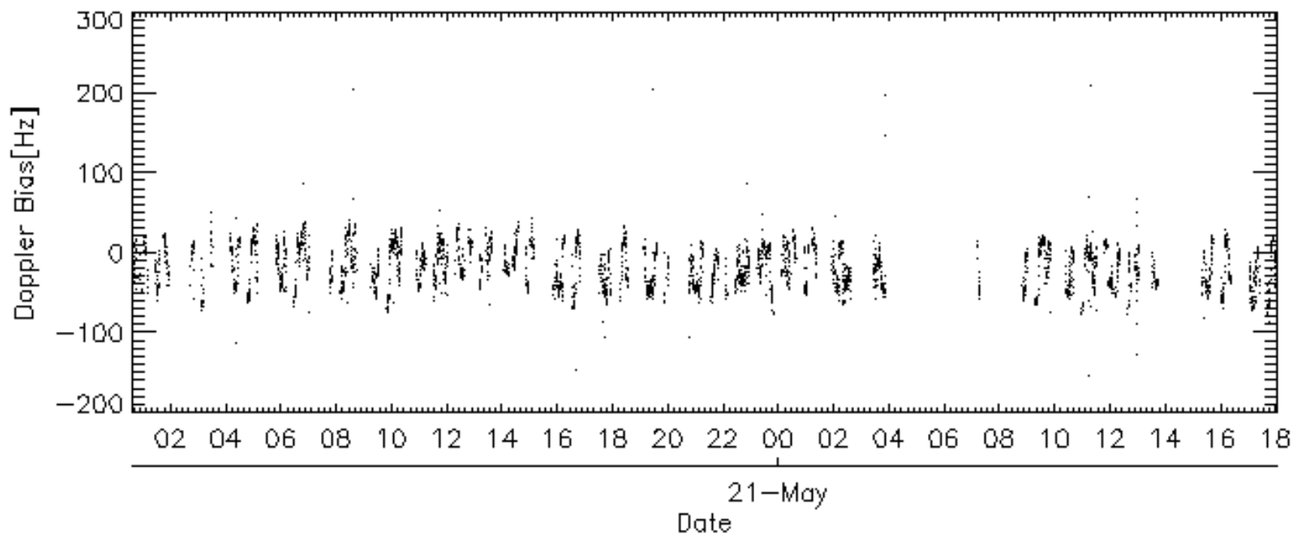

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

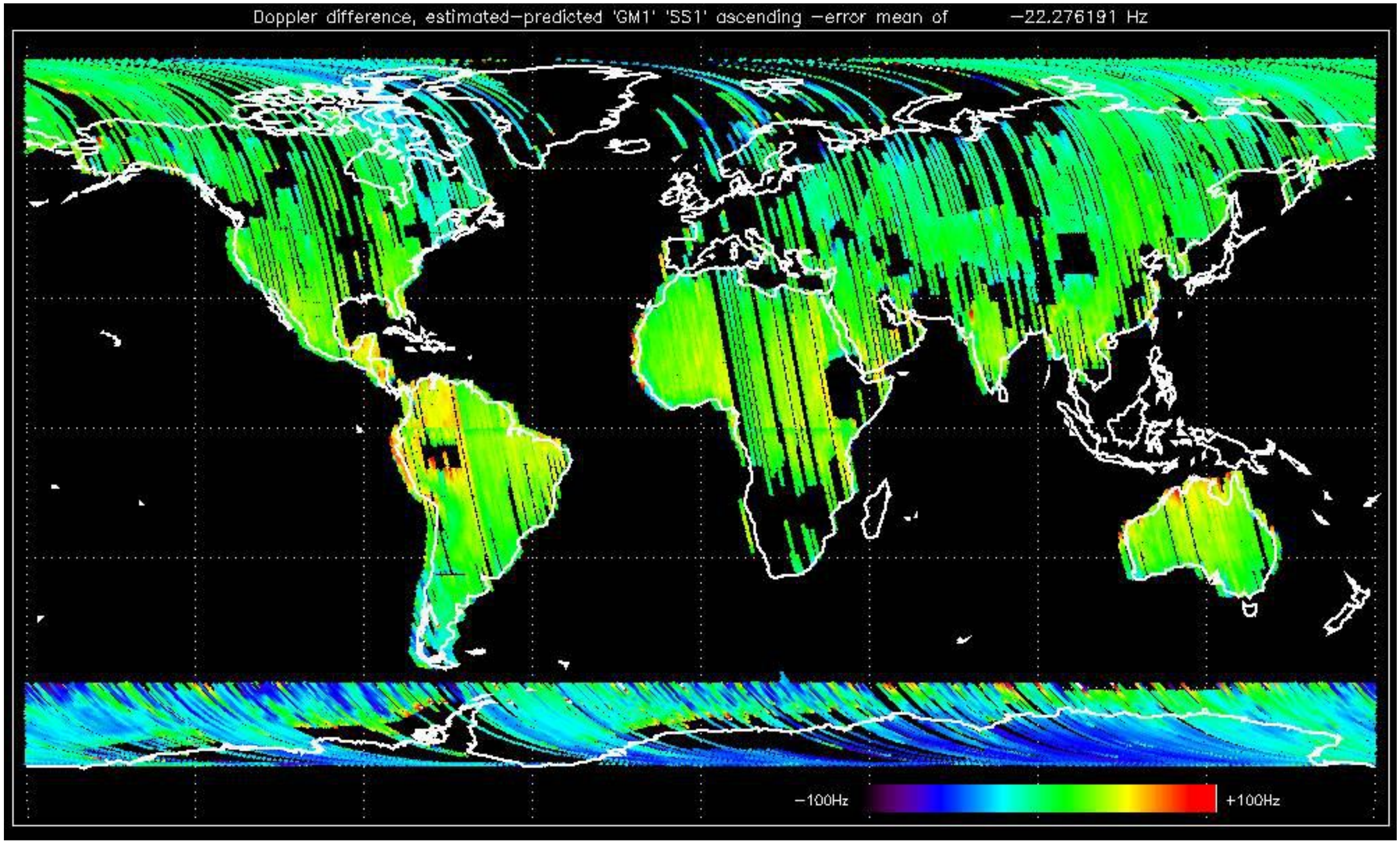

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

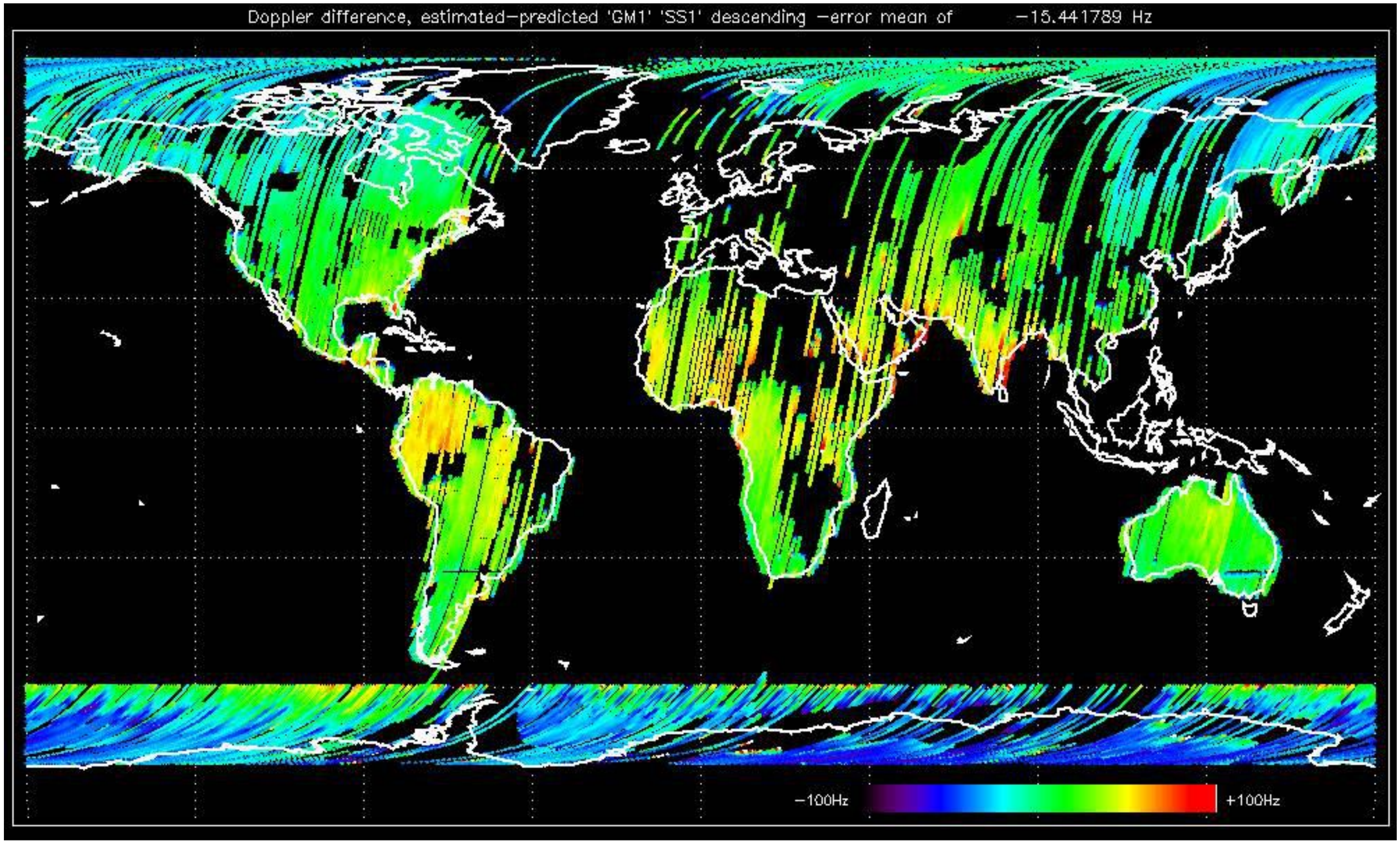

Doppler Bias[Hz]
200
150
100
50
0
−50
−100
02 04 06 08 10 12 14 16 18 20 22 00 02 04 06 08 10 12 14 16 18 20
21−May
Date

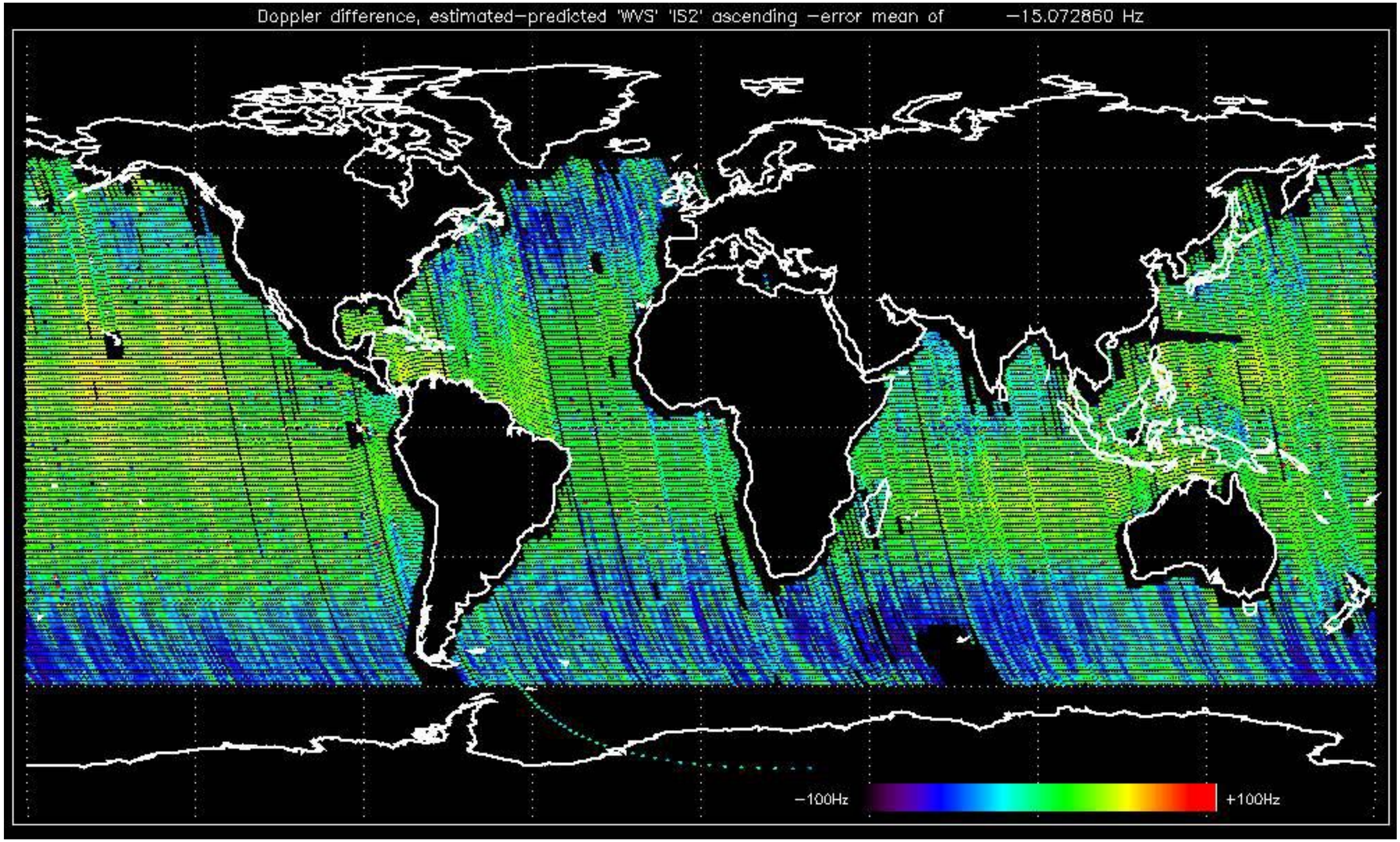

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

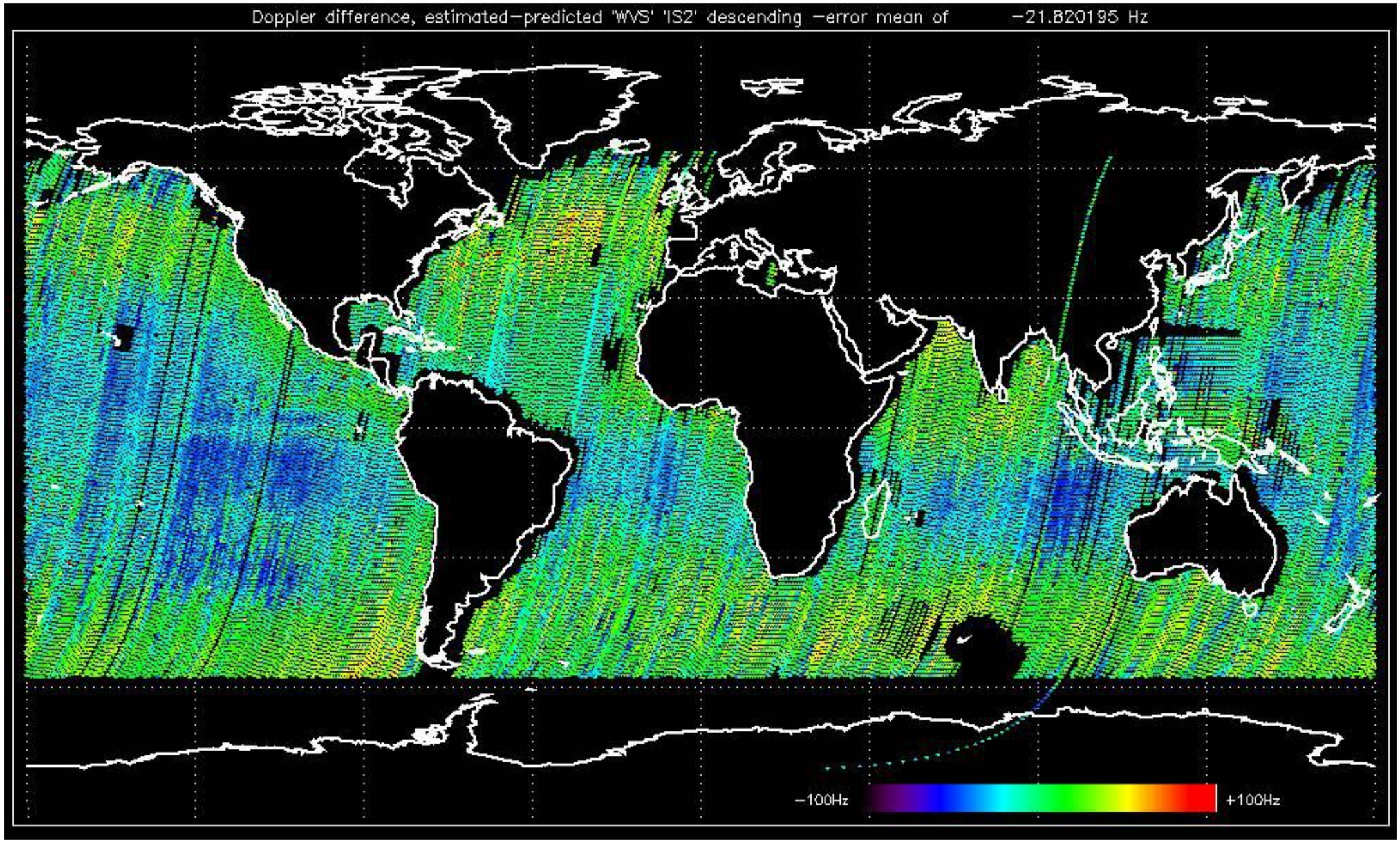

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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 10 12 14 16 18
21−May
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −22.276191 Hz
−100Hz
+100Hz

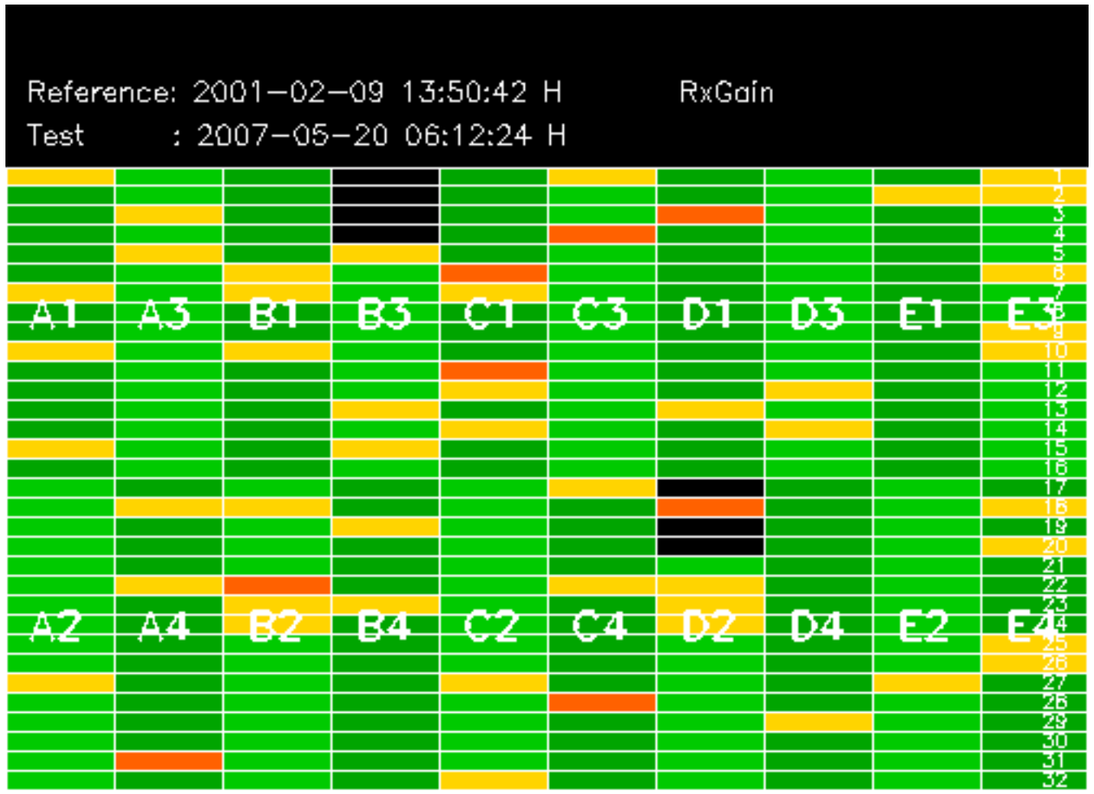

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −15.441789 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −15.072860 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −21.820195 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2007-05-20 06:12:24 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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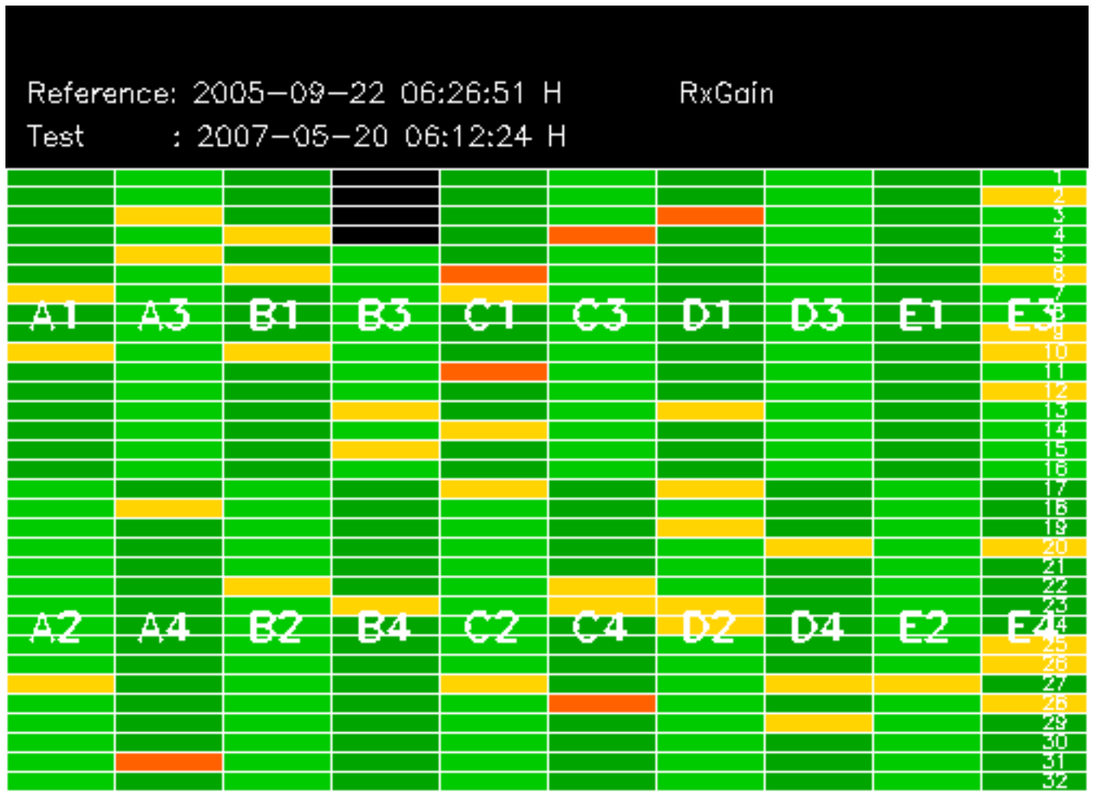
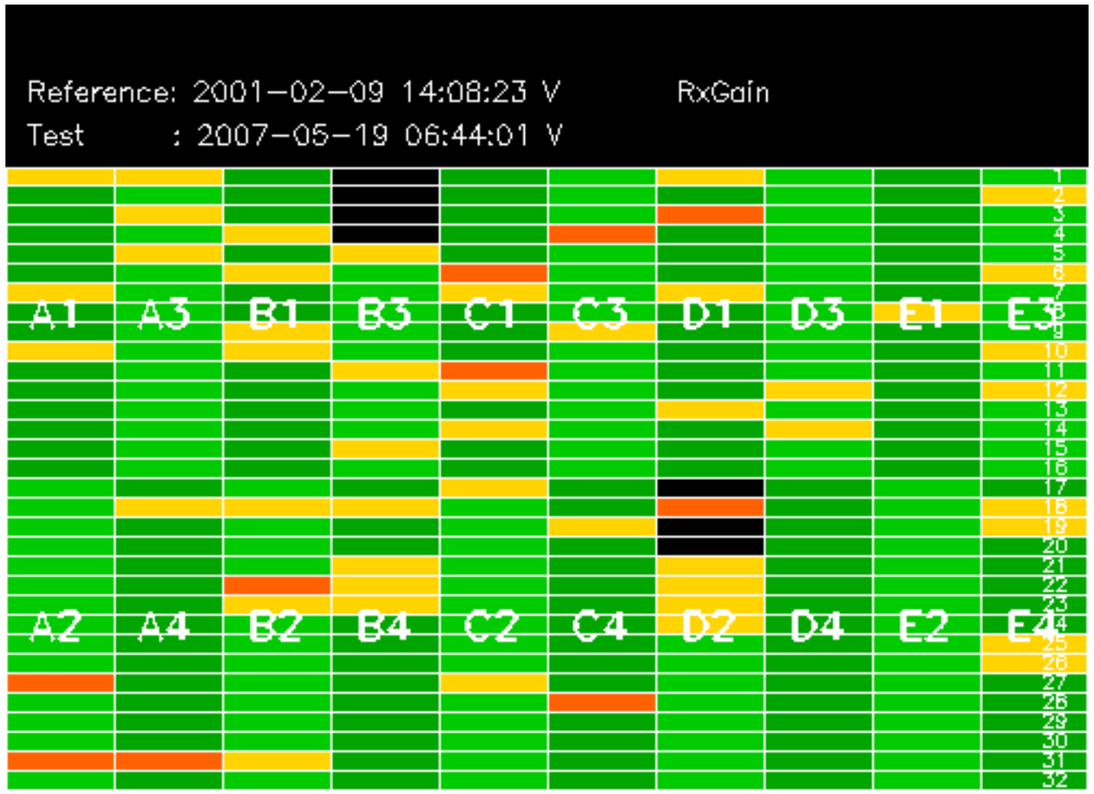
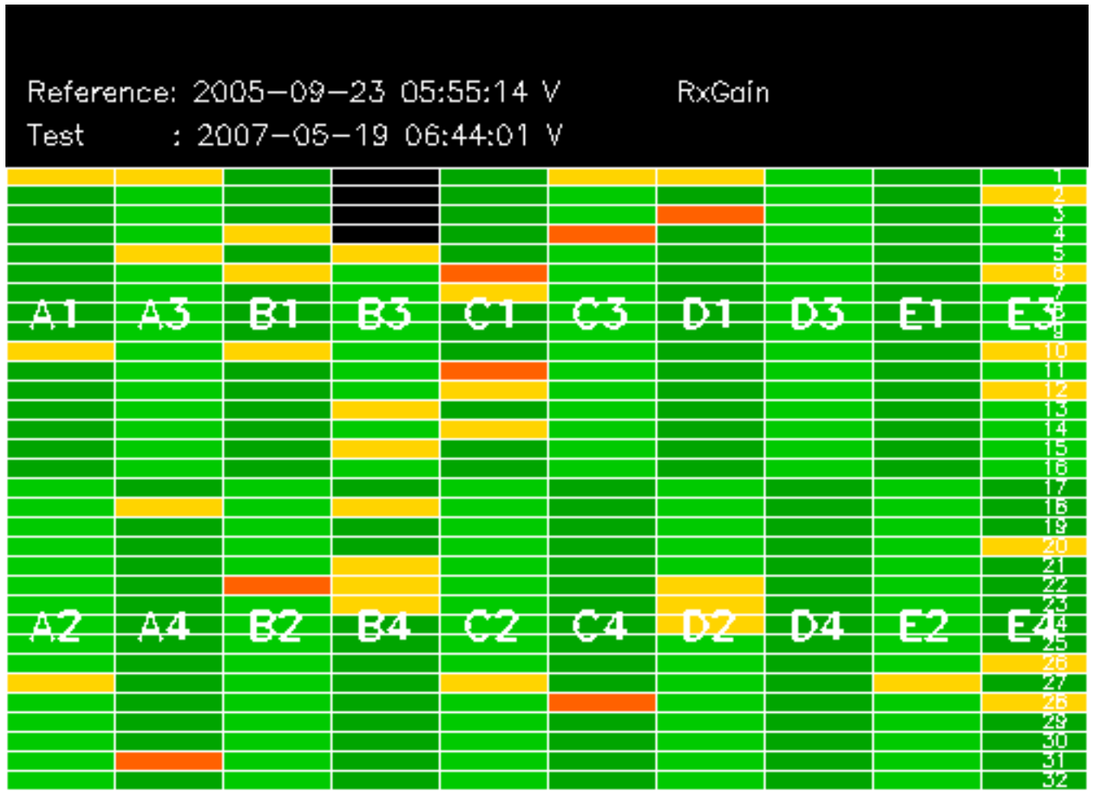
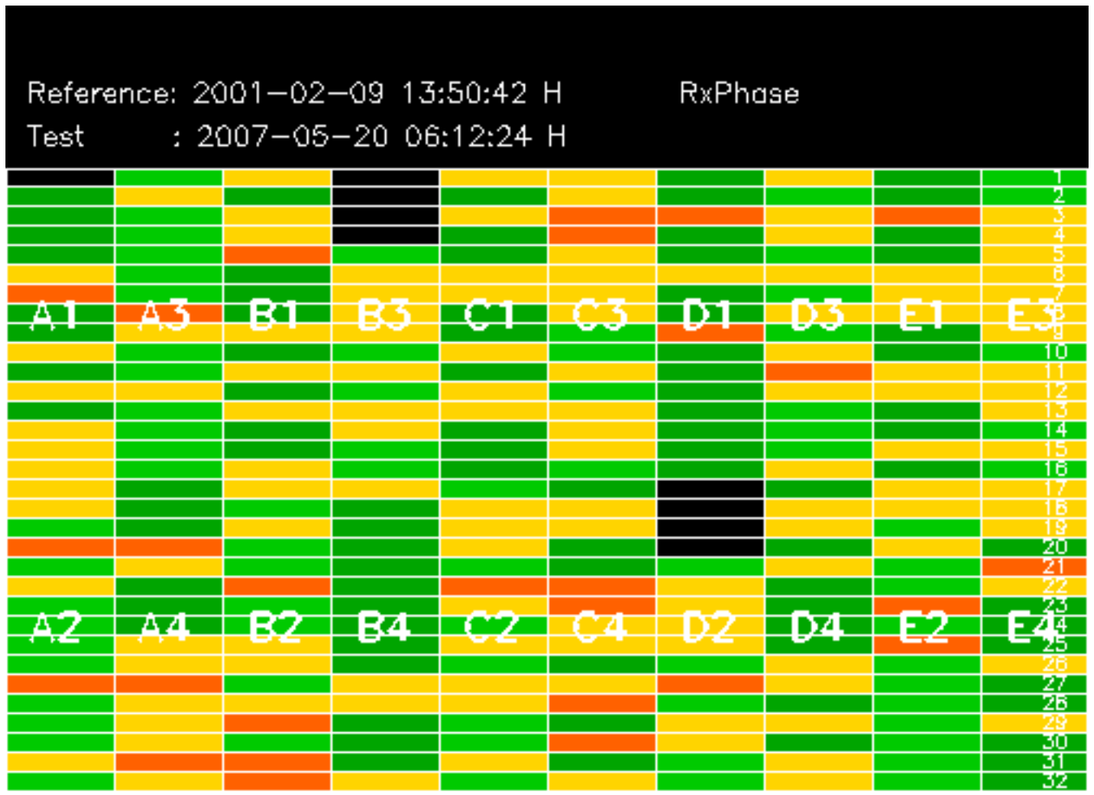

Reference: 2005-09-22 06:26:51 H
Test : 2007-05-20 06:12:24 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2007-05-19 06:44:01 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-05-19 06:44:01 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-05-20 06:12:24 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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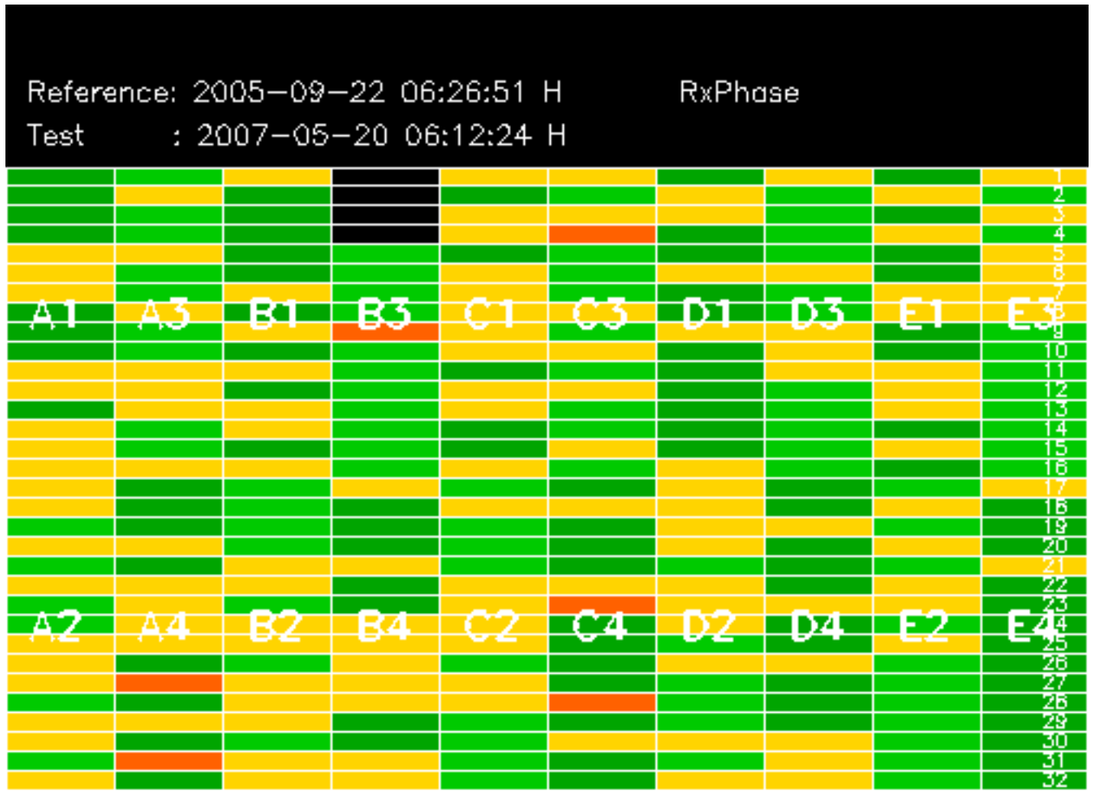
Reference: 2005-09-22 06:26:51 H
RxPhase
Test : 2007-05-20 06:12:24 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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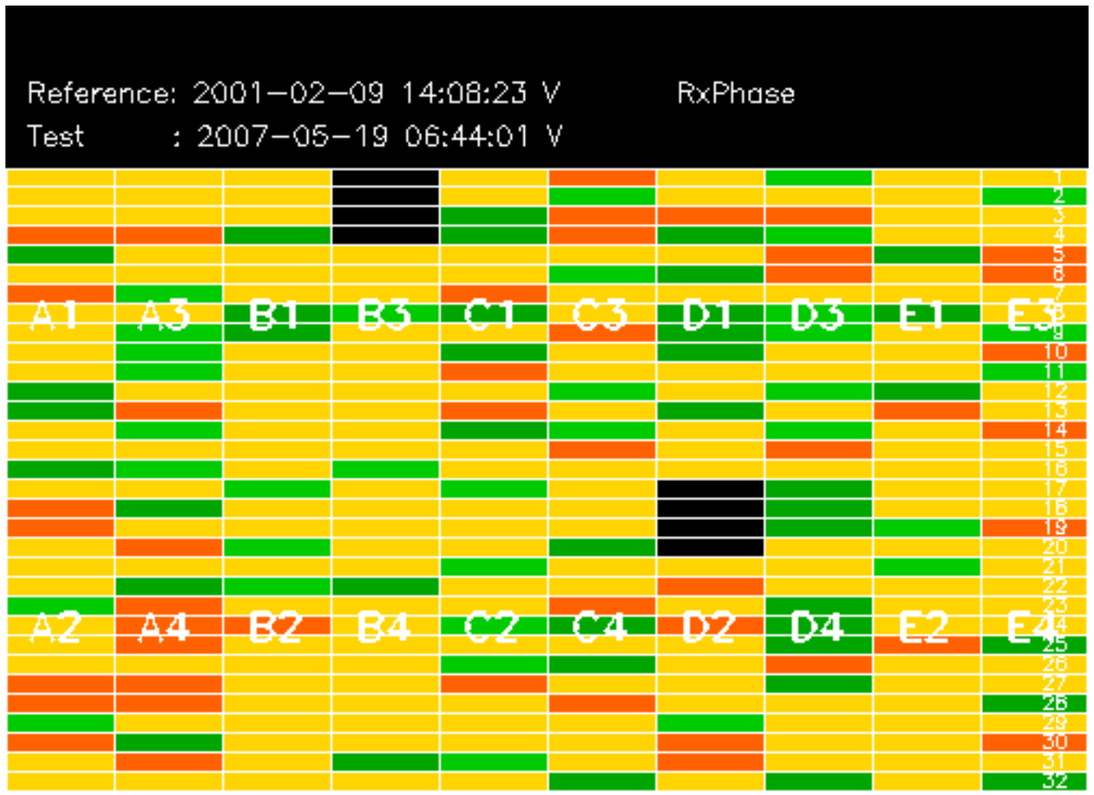
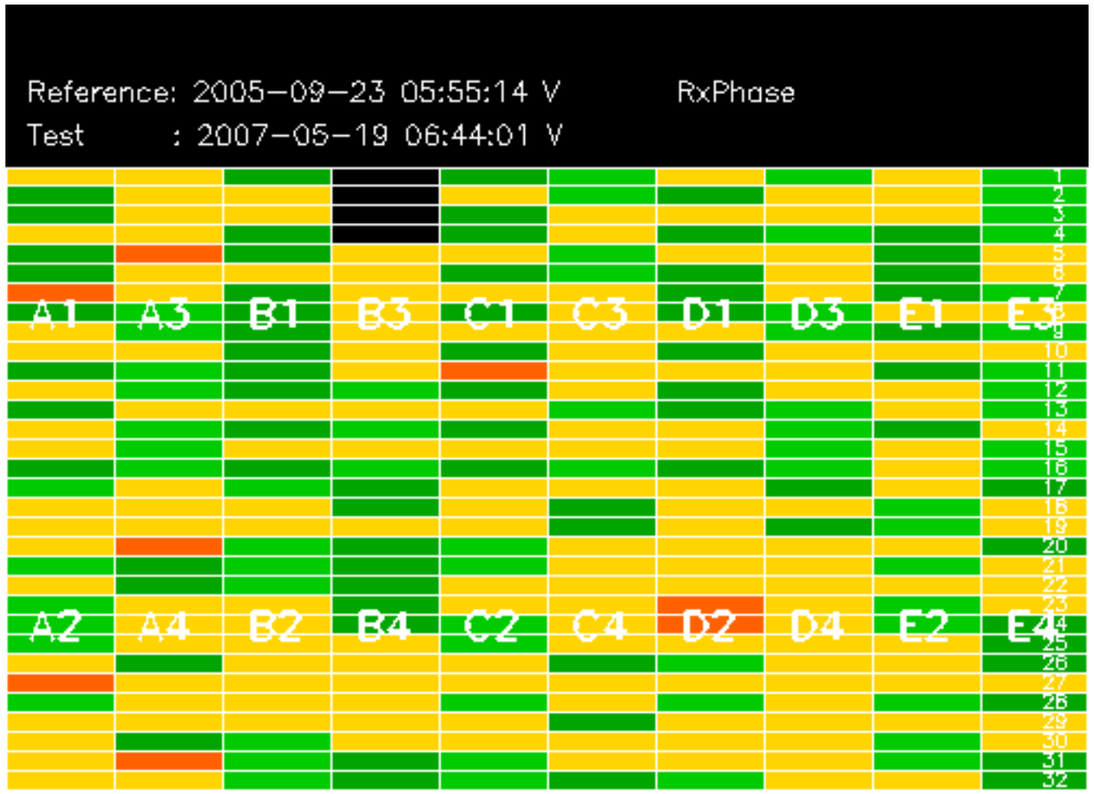

Reference: 2001-02-09 14:08:23 V
Test : 2007-05-19 06:44:01 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-05-19 06:44:01 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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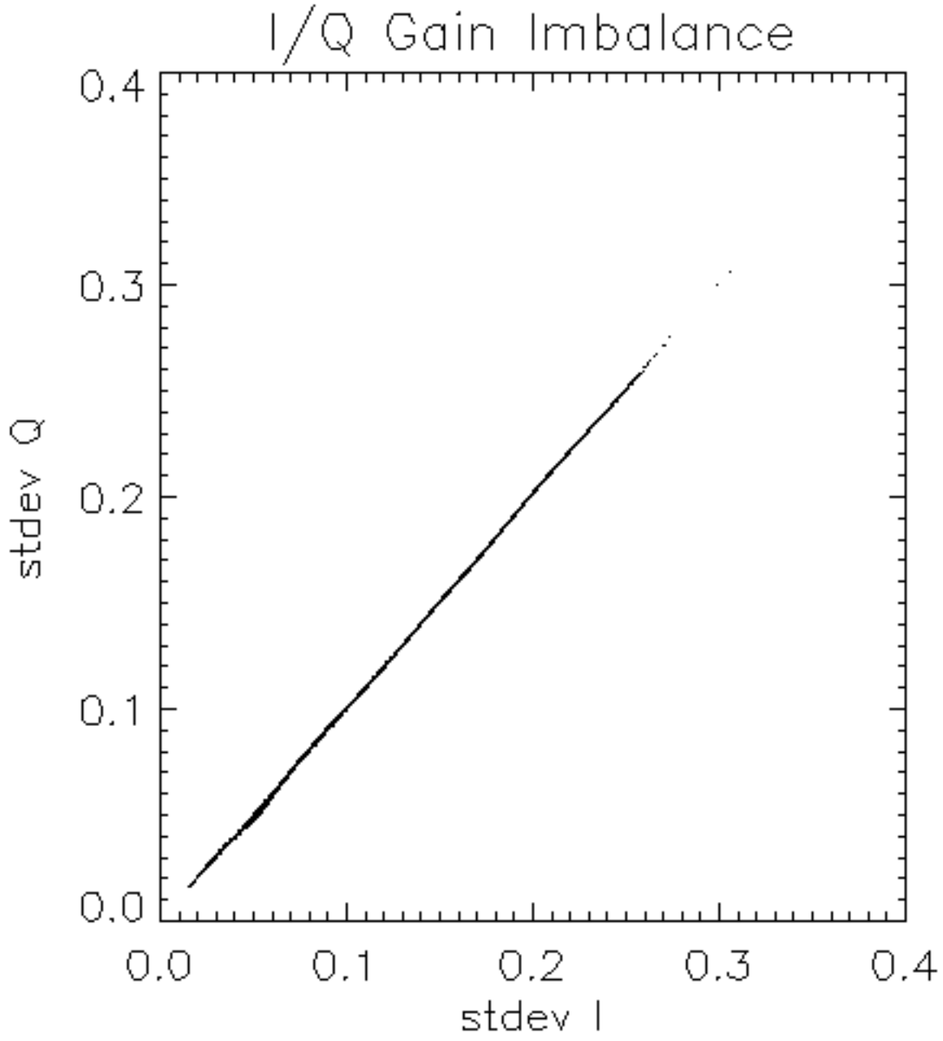
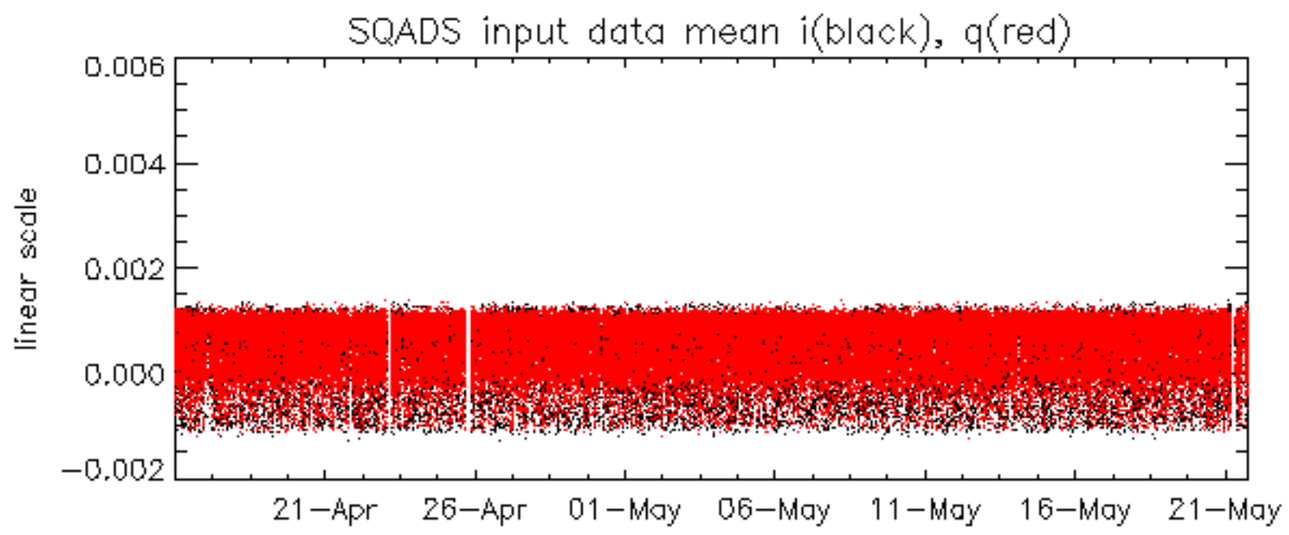
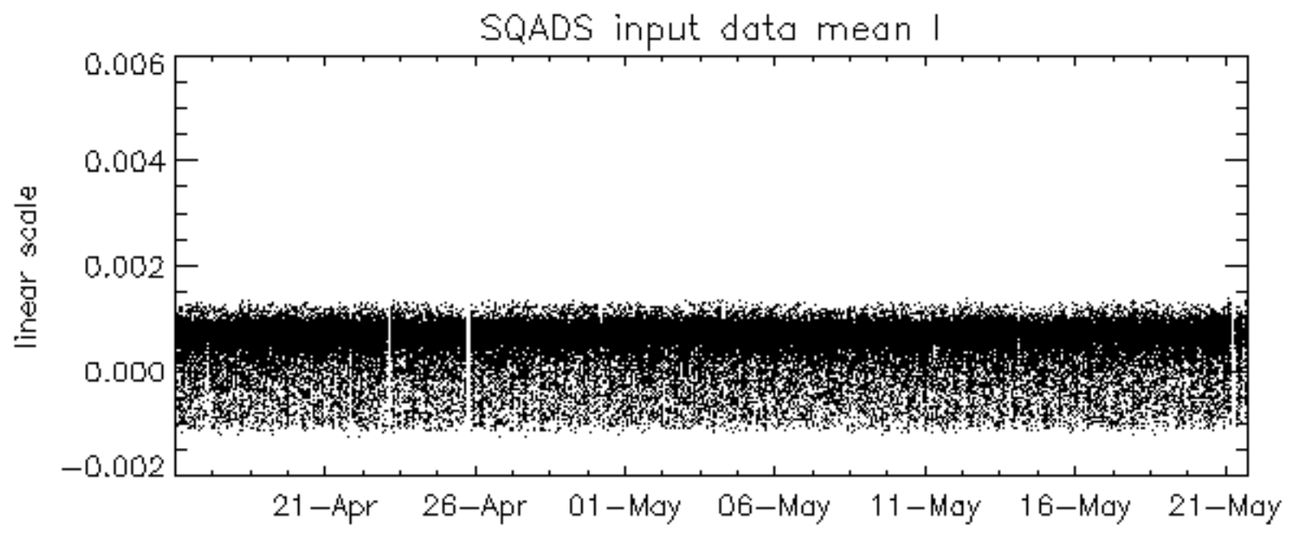
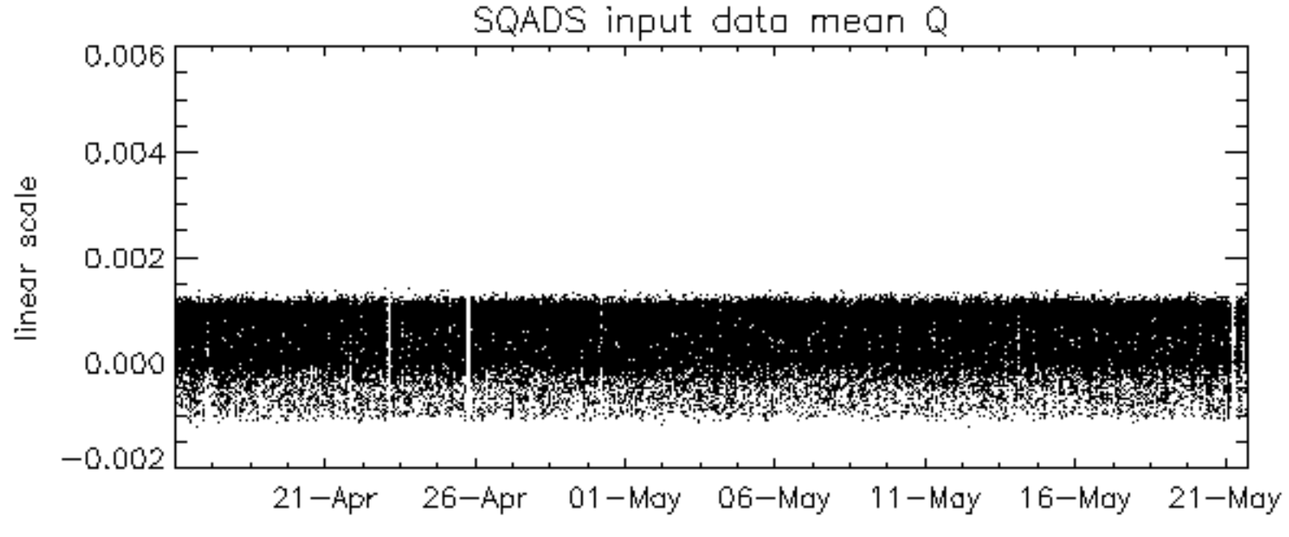
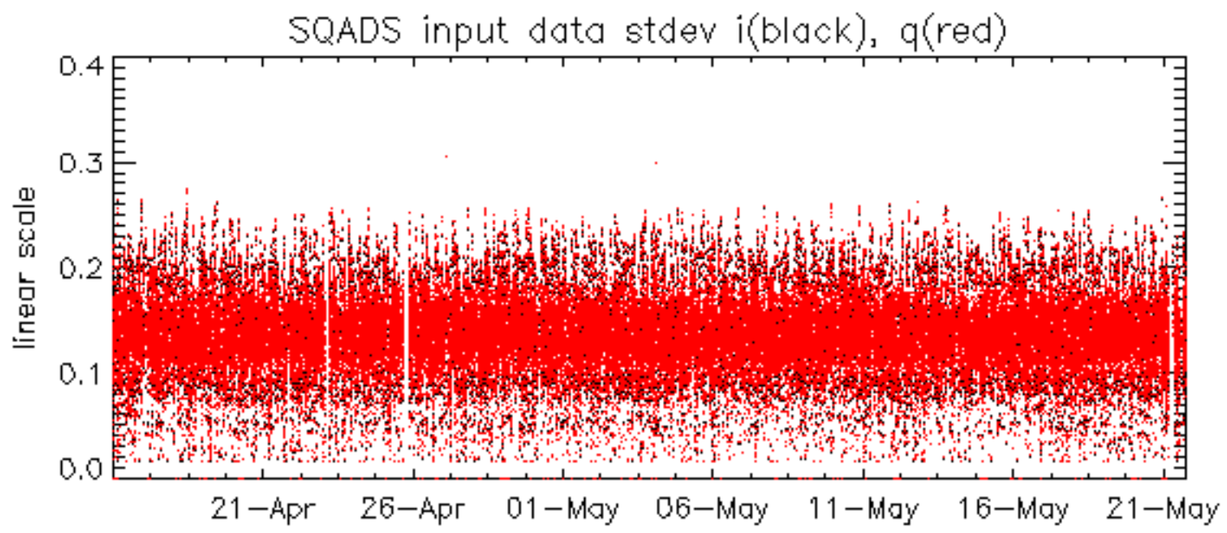
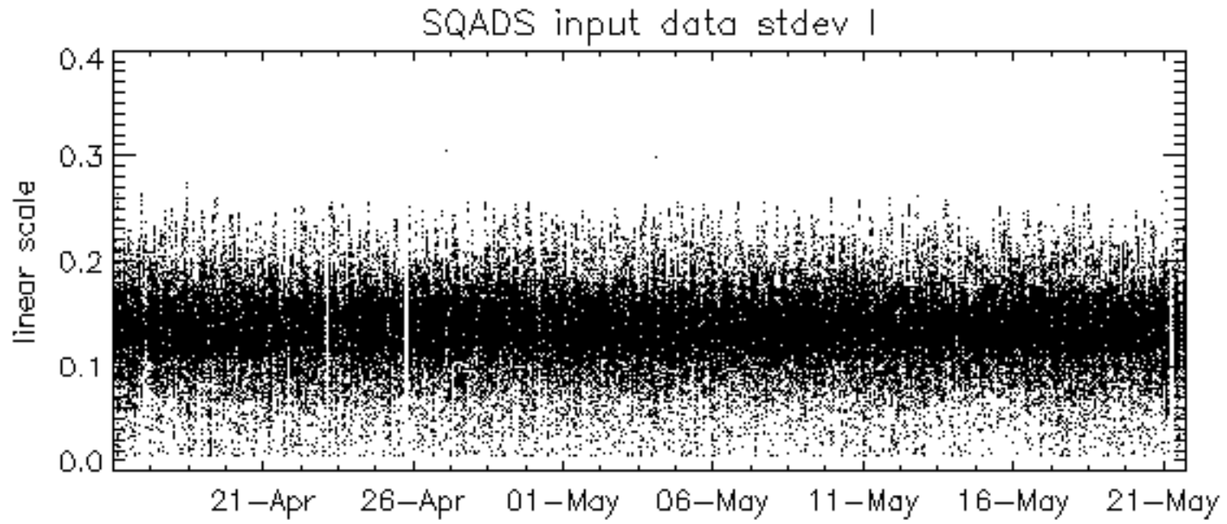

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

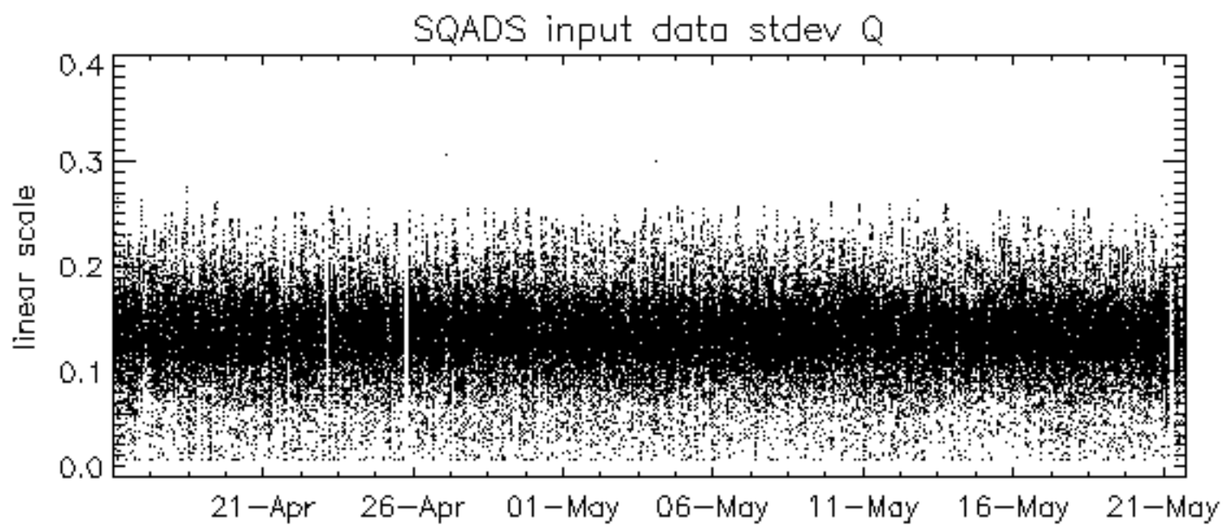

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May

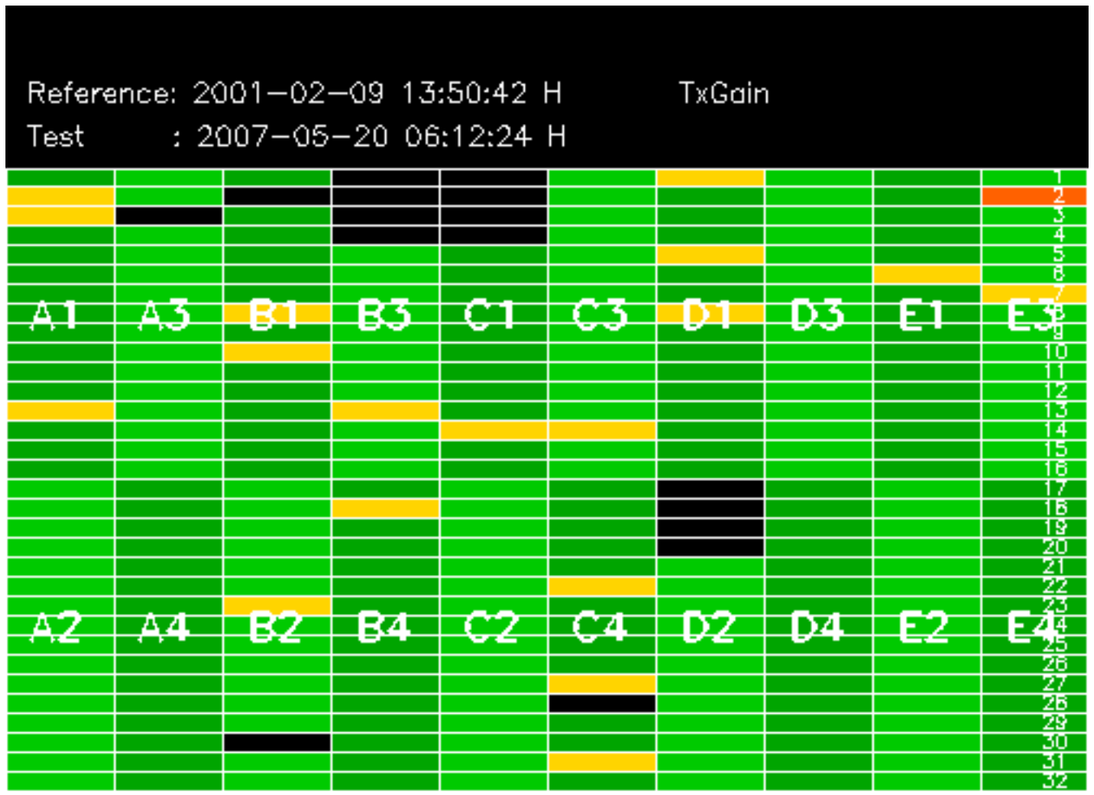

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May

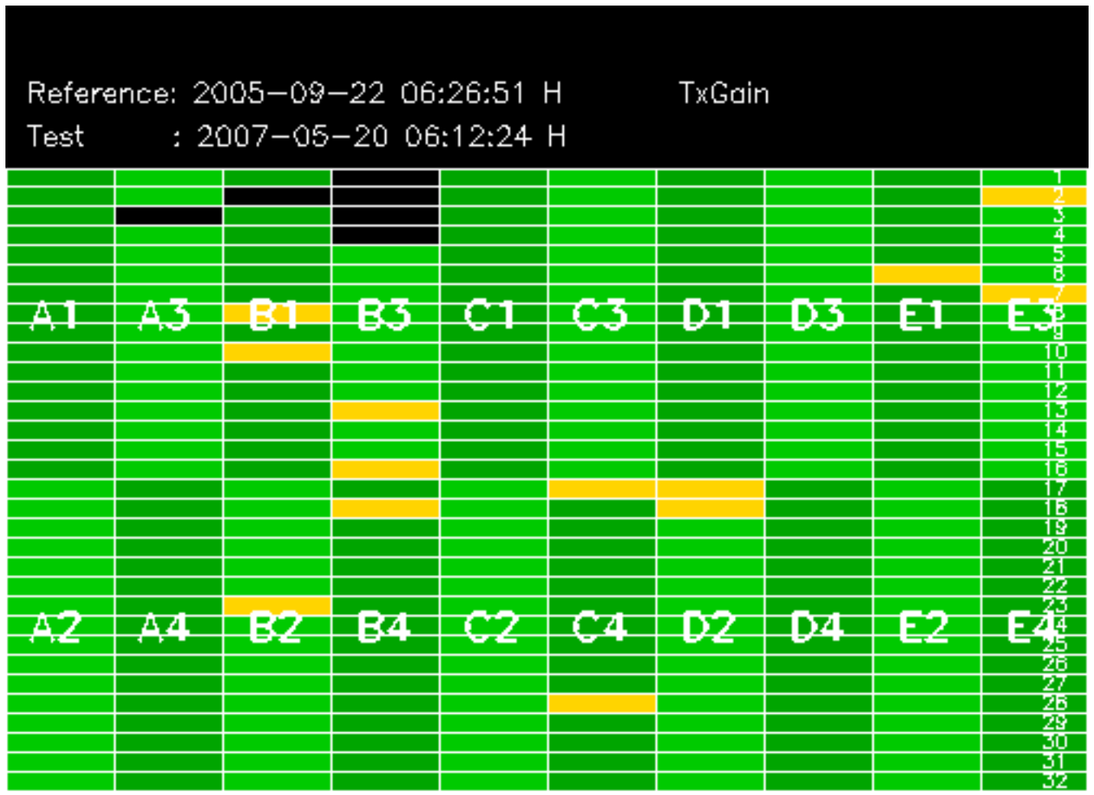

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2007-05-20 06:12:24 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-05-20 06:12:24 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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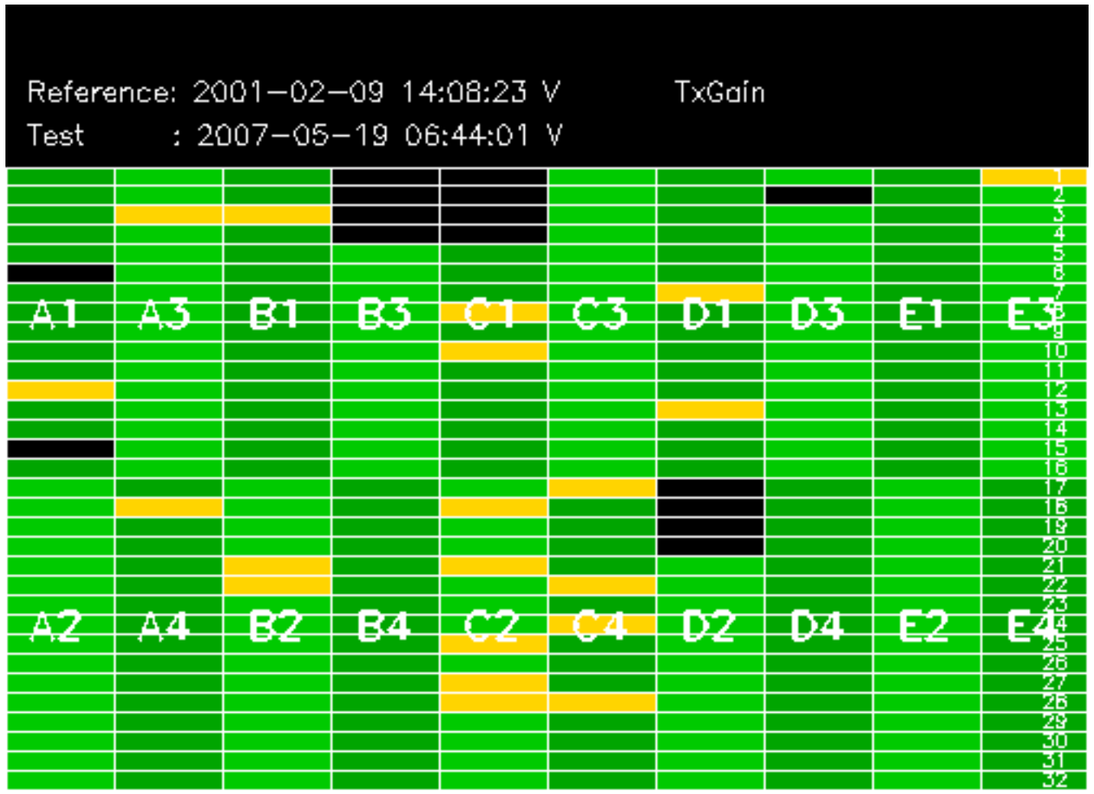
Reference: 2001-02-09 14:08:23 V
Test : 2007-05-19 06:44:01 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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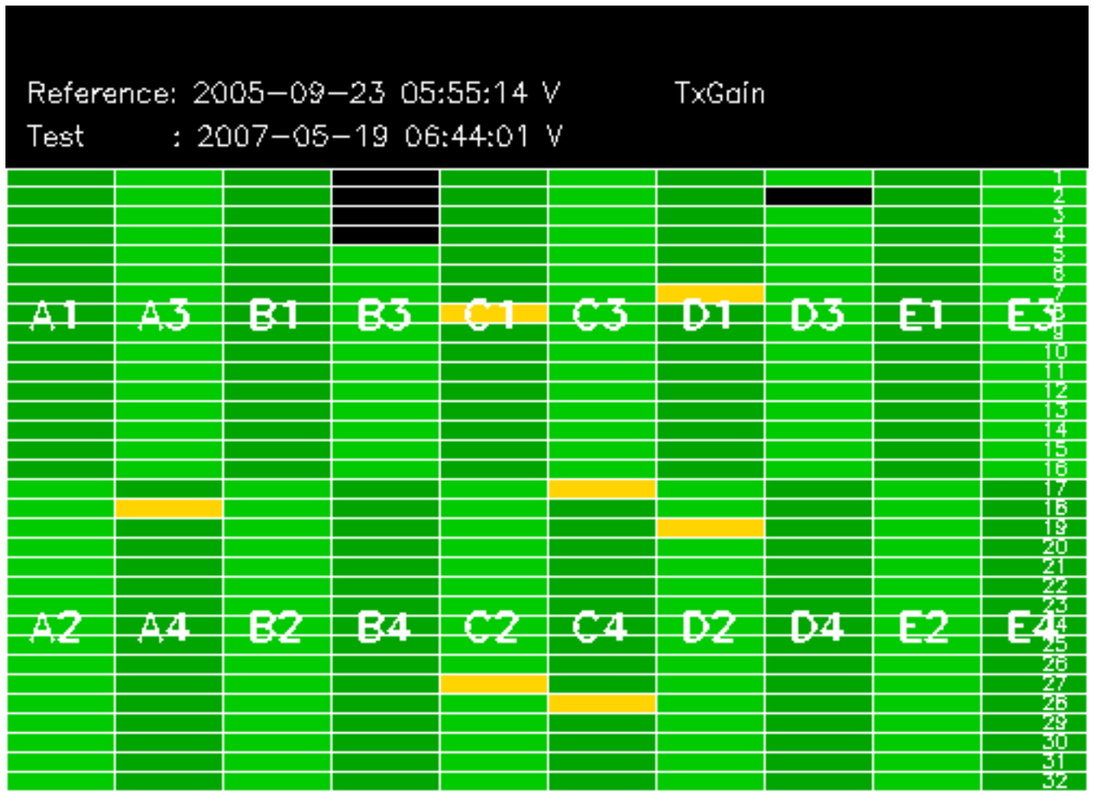
Reference: 2005-09-23 05:55:14 V
Test : 2007-05-19 06:44:01 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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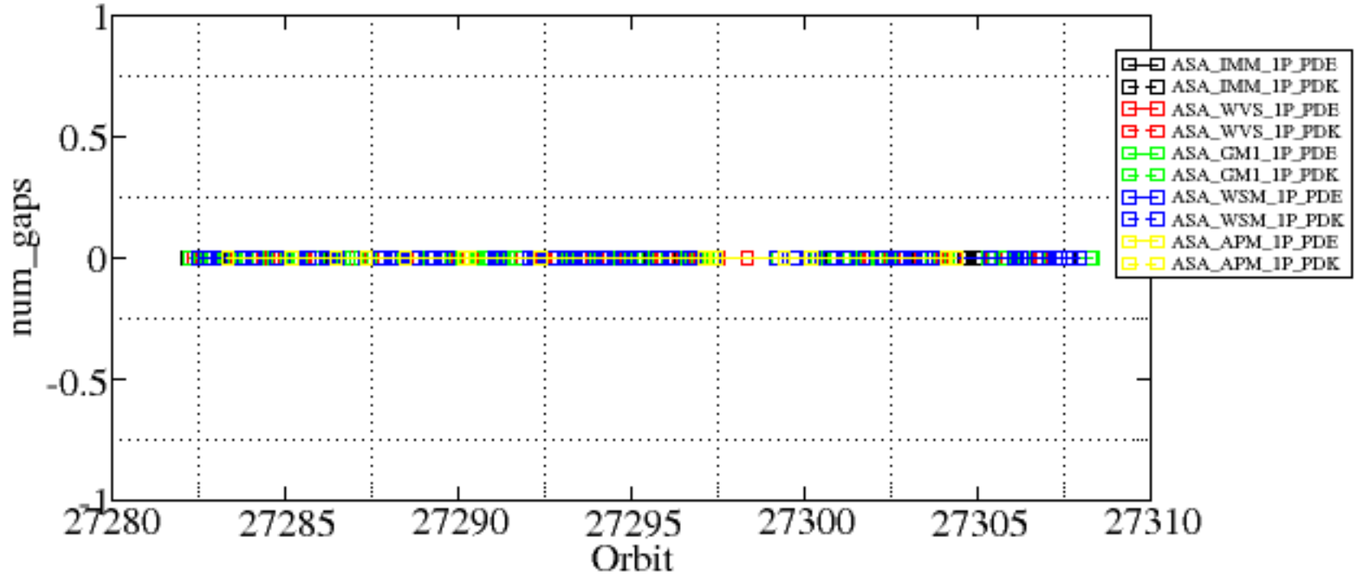
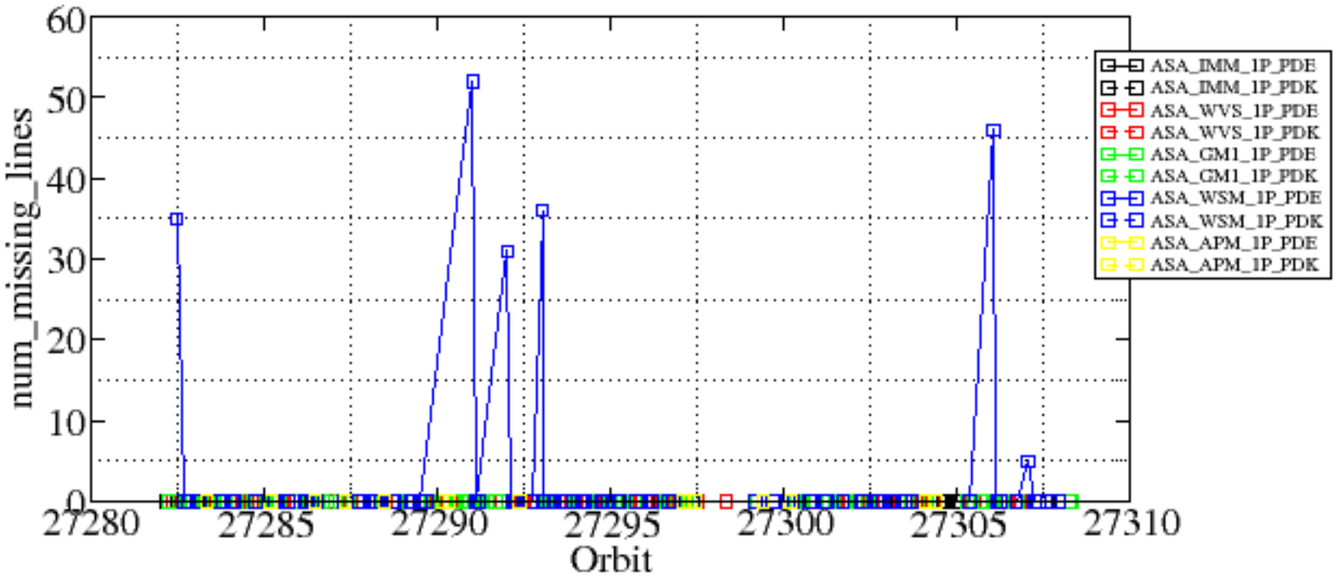
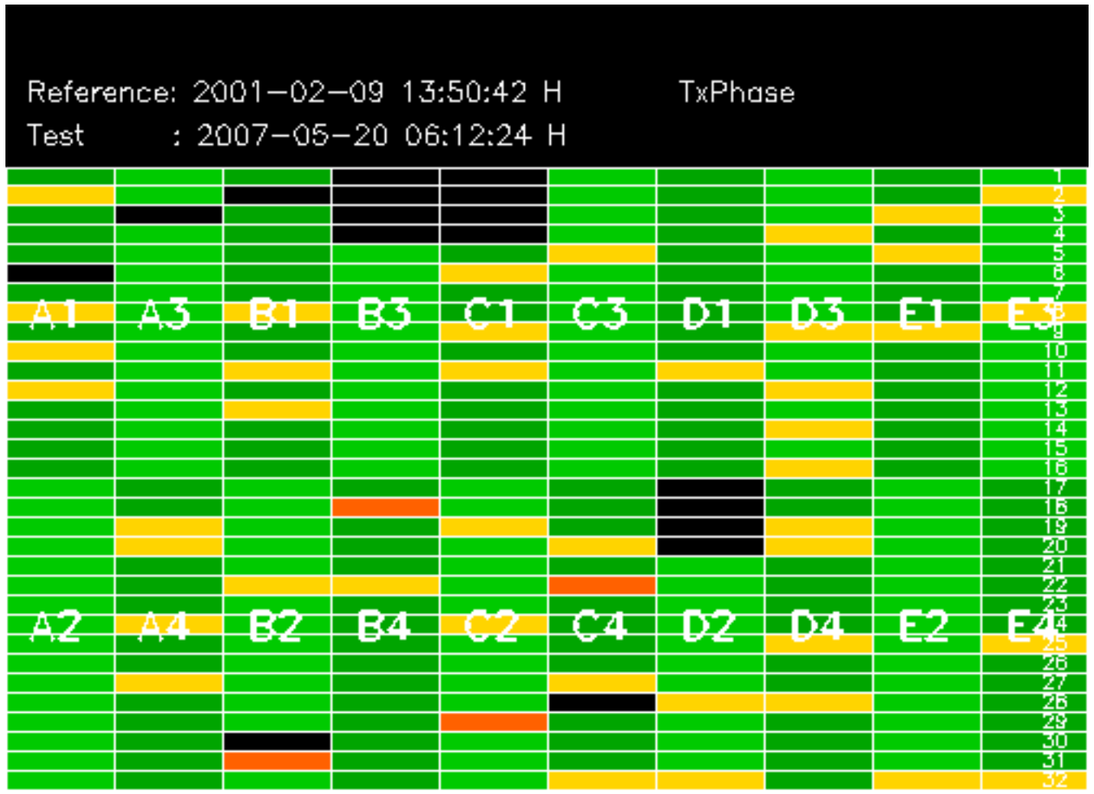
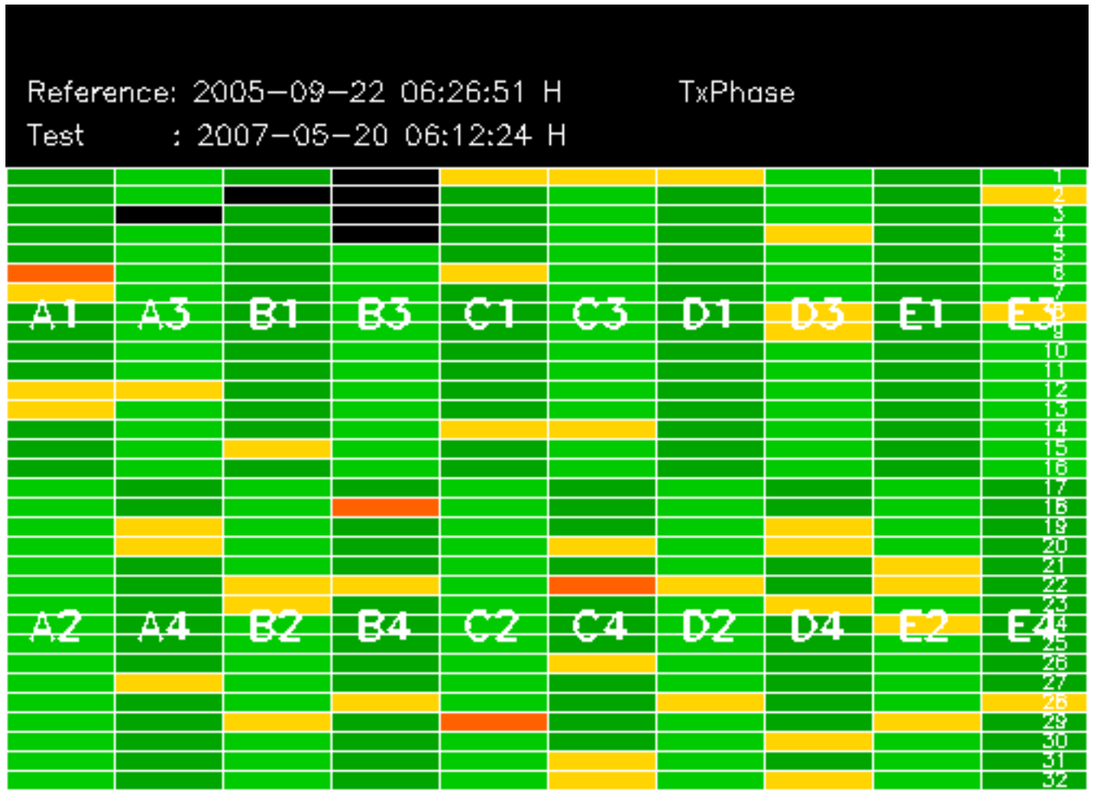
Summary of analysis for the last 3 days 2007052[901]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20070520_005022_000002612058_00174_27282_3191.N1 </td> <td>0 </td> <td>35 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070520_151026_000003302058_00183_27291_3737.N1 </td> <td>0 </td> <td>52 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070520_165036_000000852058_00184_27292_3767.N1 </td> <td>0 </td> <td>31 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070520_183356_000000862058_00185_27293_3810.N1 </td> <td>0 </td> <td>36 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070521_162341_000002022058_00198_27306_5002.N1 </td> <td>0 </td> <td>46 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070521_180340_000001102058_00199_27307_5028.N1 </td> <td>0 </td> <td>5 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
27280
27285
27290
27295
27300
27305
27310
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
27280
27285
27290
27295
27300
27305
27310
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
TxPhase
Test : 2007-05-20 06:12:24 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-05-20 06:12:24 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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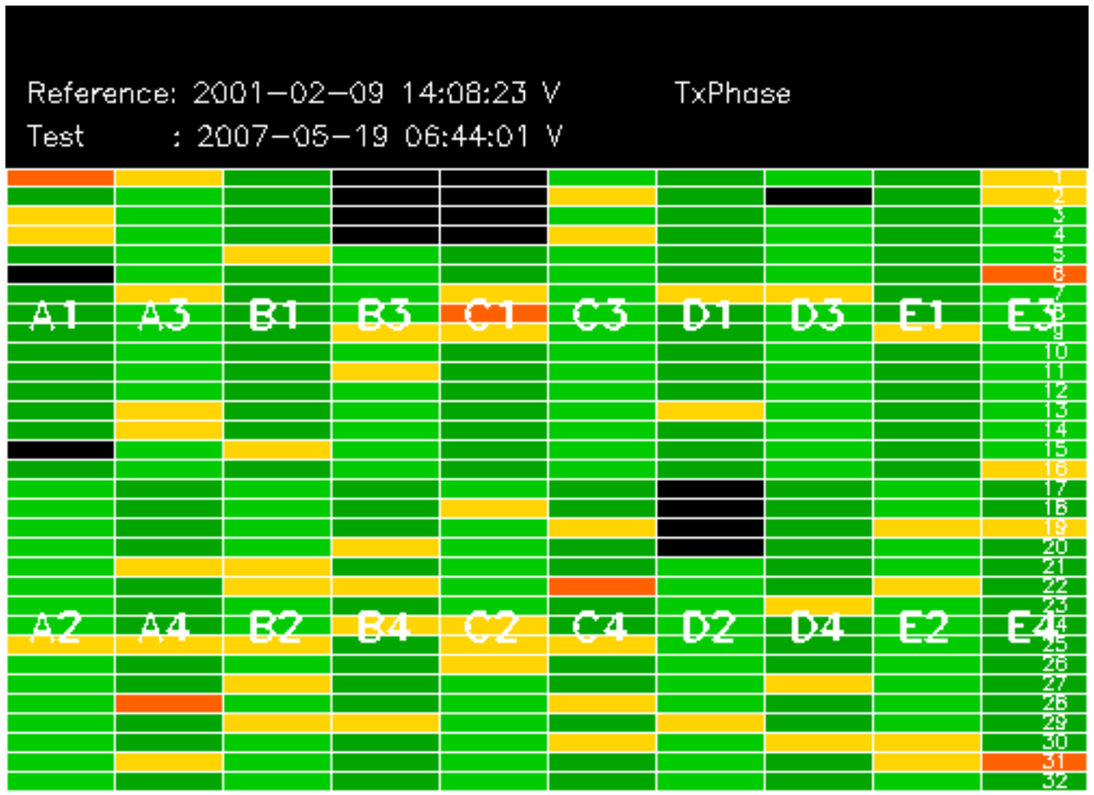
Reference: 2001-02-09 14:08:23 V
Test : 2007-05-19 06:44:01 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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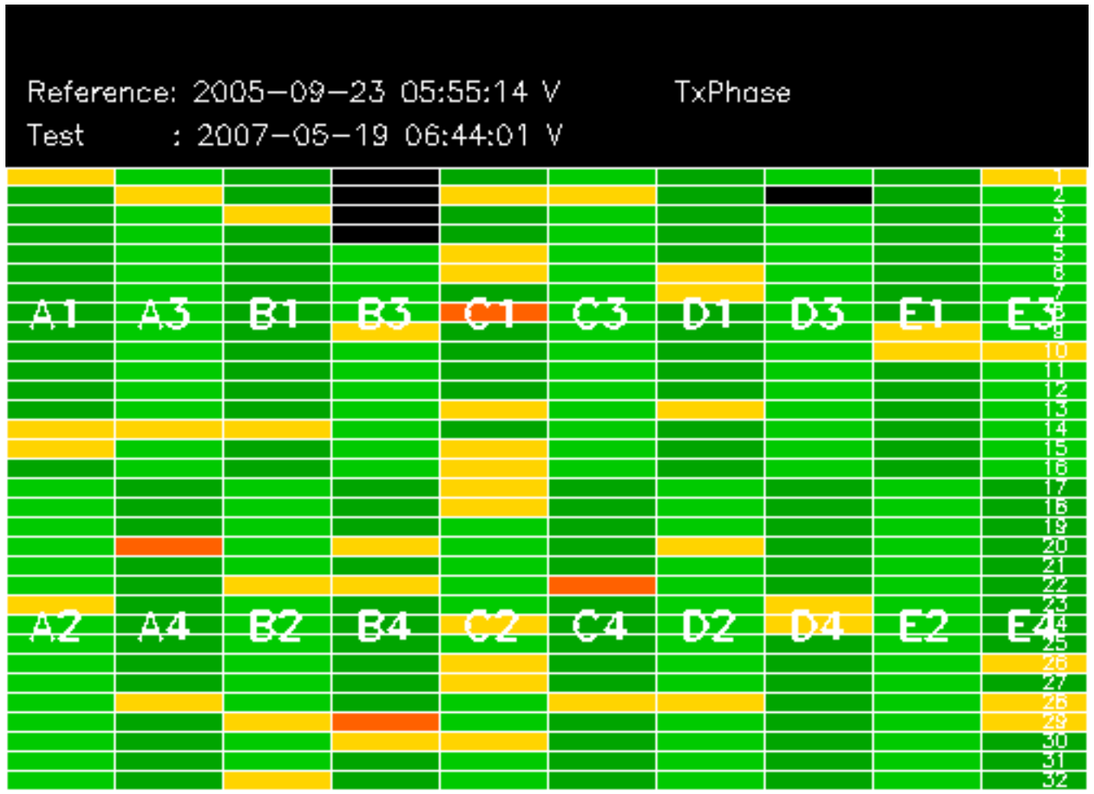
Reference: 2005-09-23 05:55:14 V
Test : 2007-05-19 06:44:01 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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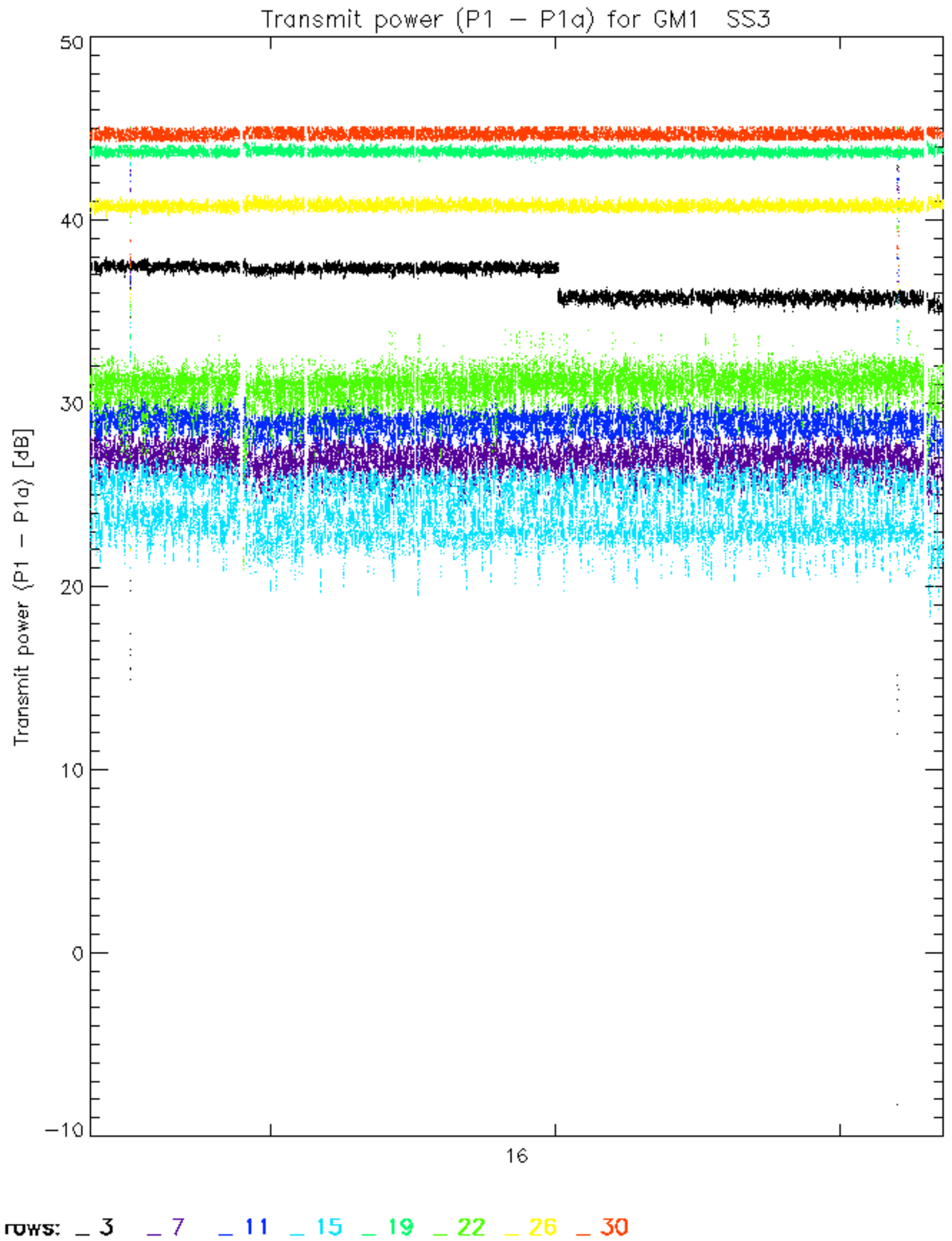
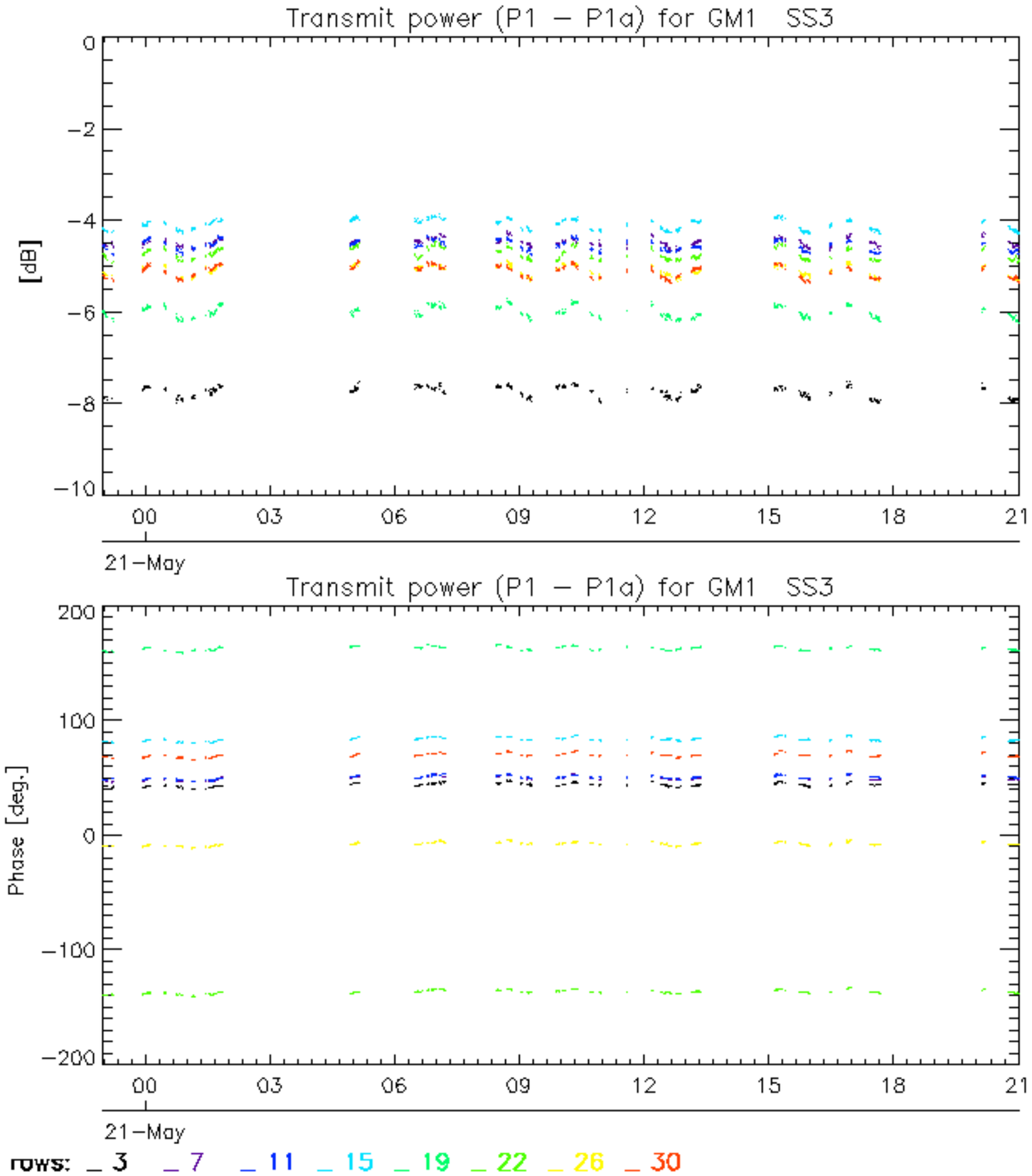
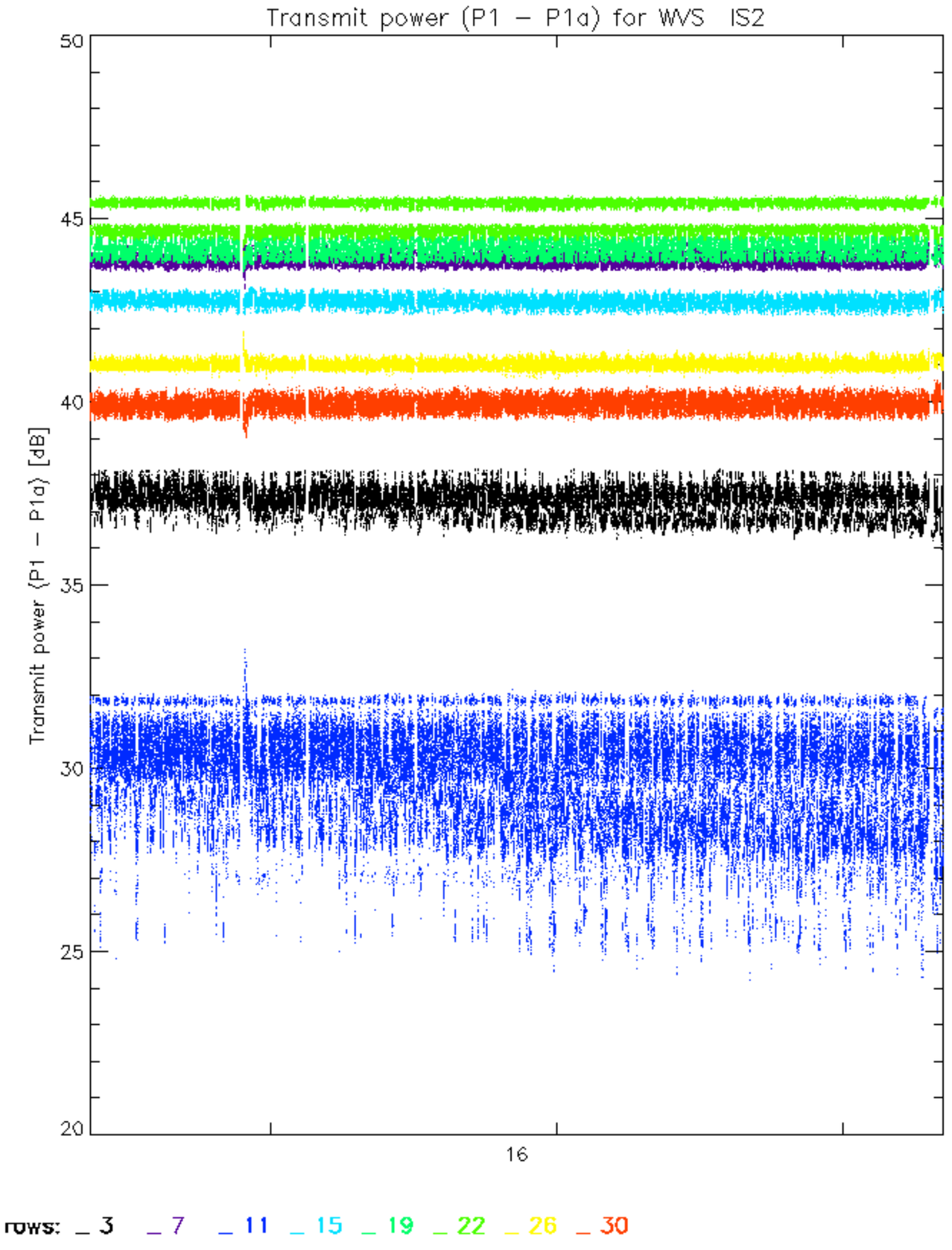
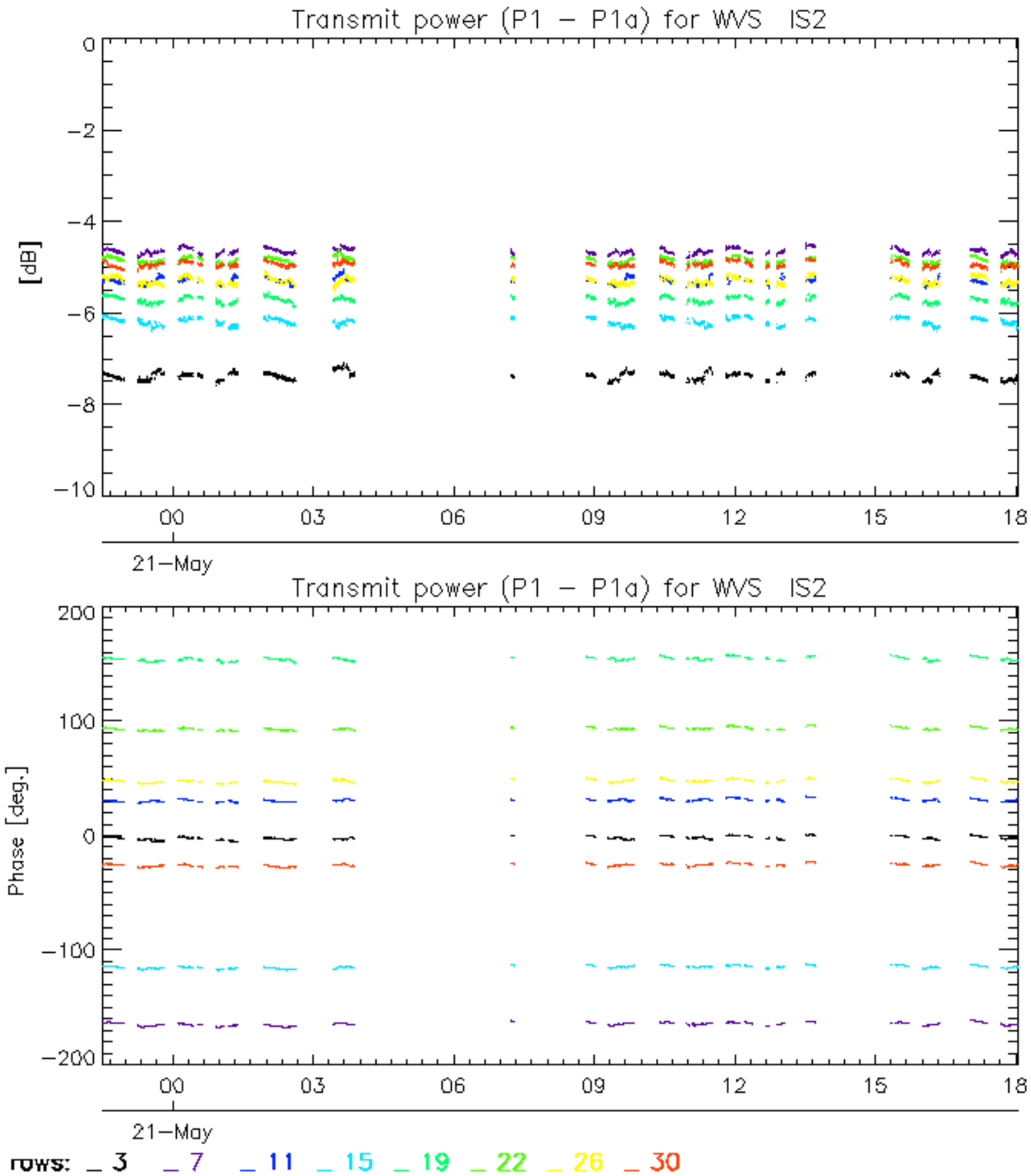

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
16
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
0
−2
−4
−6
−8
−10
00
03
06
09
12
15
18
21
21–May
Transmit power (P1 – P1a) for GM1 SS3
Phase [deg.]
200
100
0
−100
−200
00
03
06
09
12
15
18
21
21–May
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
50
45
40
35
30
25
20
16
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
00
03
06
09
12
15
18
21–May
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
00
03
06
09
12
15
18
21–May
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.