PRELIMINARY REPORT OF 050529

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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 2005-05-28 00:00:00 to 2005-05-29 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	27	51	12	6	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	27	51	12	6	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	27	51	12	6	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	27	51	12	6	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	41	56	0	0	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	41	56	0	0	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	41	56	0	0	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	41	56	0	0	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	20050527 063532
H	20050528 060355

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	-3.345384	0.007005	0.023941
7	P1	-3.118465	0.014923	-0.025727
11	P1	-4.644606	0.029458	0.035757
15	P1	-5.517402	0.044656	0.064689
19	P1	-3.728561	0.004035	-0.011343
22	P1	-4.590309	0.014861	0.011076
26	P1	-4.869903	0.017659	0.025971
30	P1	-7.141244	0.027730	0.005438
3	P1	-15.666750	0.090644	0.142378
7	P1	-15.523643	0.105962	-0.075449
11	P1	-21.315809	0.243260	-0.074179
15	P1	-11.369495	0.042157	0.134731
19	P1	-14.367140	0.034039	-0.056075
22	P1	-15.956170	0.338182	0.002317
26	P1	-17.677553	0.226421	-0.093427
30	P1	-17.862404	0.229546	0.047713

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.048056	0.076850	0.036227
7	P2	-22.219995	0.100926	0.071672
11	P2	-14.060026	0.099466	0.158377
15	P2	-7.115496	0.085074	-0.026041
19	P2	-9.635685	0.088652	0.029668
22	P2	-16.889376	0.087174	0.008592
26	P2	-16.496706	0.089701	-0.018213
30	P2	-18.812330	0.077434	0.021513

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.166490	0.003026	0.010178
7	P3	-8.166490	0.003026	0.010178
11	P3	-8.166490	0.003026	0.010178
15	P3	-8.166490	0.003026	0.010178
19	P3	-8.166490	0.003026	0.010178
22	P3	-8.166490	0.003026	0.010178
26	P3	-8.166490	0.003026	0.010178
30	P3	-8.166490	0.003026	0.010178

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	-2.782115	0.012515	-0.011074
7	P1	-2.966716	0.031377	0.051301
11	P1	-3.957041	0.018431	-0.009304
15	P1	-3.525844	0.024287	-0.016198
19	P1	-3.628351	0.015392	0.003115
22	P1	-5.649579	0.049019	0.001907
26	P1	-7.308682	0.023535	0.019684
30	P1	-6.274036	0.051812	-0.008360
3	P1	-10.817190	0.043716	-0.042417
7	P1	-10.399352	0.164331	0.052830
11	P1	-12.543923	0.109239	-0.017214
15	P1	-11.623903	0.077722	0.022477
19	P1	-15.617171	0.063895	0.026446
22	P1	-25.699009	2.785748	-0.368384
26	P1	-15.650688	0.366021	0.130448
30	P1	-20.249687	1.137887	0.065843

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.776308	0.039154	0.042498
7	P2	-22.211084	0.046315	0.140500
11	P2	-9.984179	0.055967	0.139324
15	P2	-5.097420	0.041184	-0.012080
19	P2	-6.903654	0.055660	0.016141
22	P2	-7.104080	0.035693	0.025811
26	P2	-23.935244	0.036936	-0.036867
30	P2	-21.943493	0.040151	0.020544

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.999350	0.003722	0.013982
7	P3	-7.999229	0.003726	0.014155
11	P3	-7.999275	0.003727	0.013921
15	P3	-7.999285	0.003709	0.013957
19	P3	-7.999189	0.003746	0.014246
22	P3	-7.999398	0.003715	0.013728
26	P3	-7.999179	0.003724	0.013844
30	P3	-7.999349	0.003746	0.013821

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	0.000437996
	stdev	2.32234e-07
MEAN Q	mean	0.000466807
	stdev	2.42320e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.125716
	stdev	0.00104924
STDEV Q	mean	0.125959
	stdev	0.00105944

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005052[789]
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_1PNPDK20050527_074012_000002232037_00350_16937_5223.N1	0	2
ASA_WSM_1PNPDK20050527_064534_000001532037_00349_16936_3956.N1	0	2
ASA_WSM_1PNPDK20050527_073746_000000852037_00350_16937_3957.N1	0	2

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

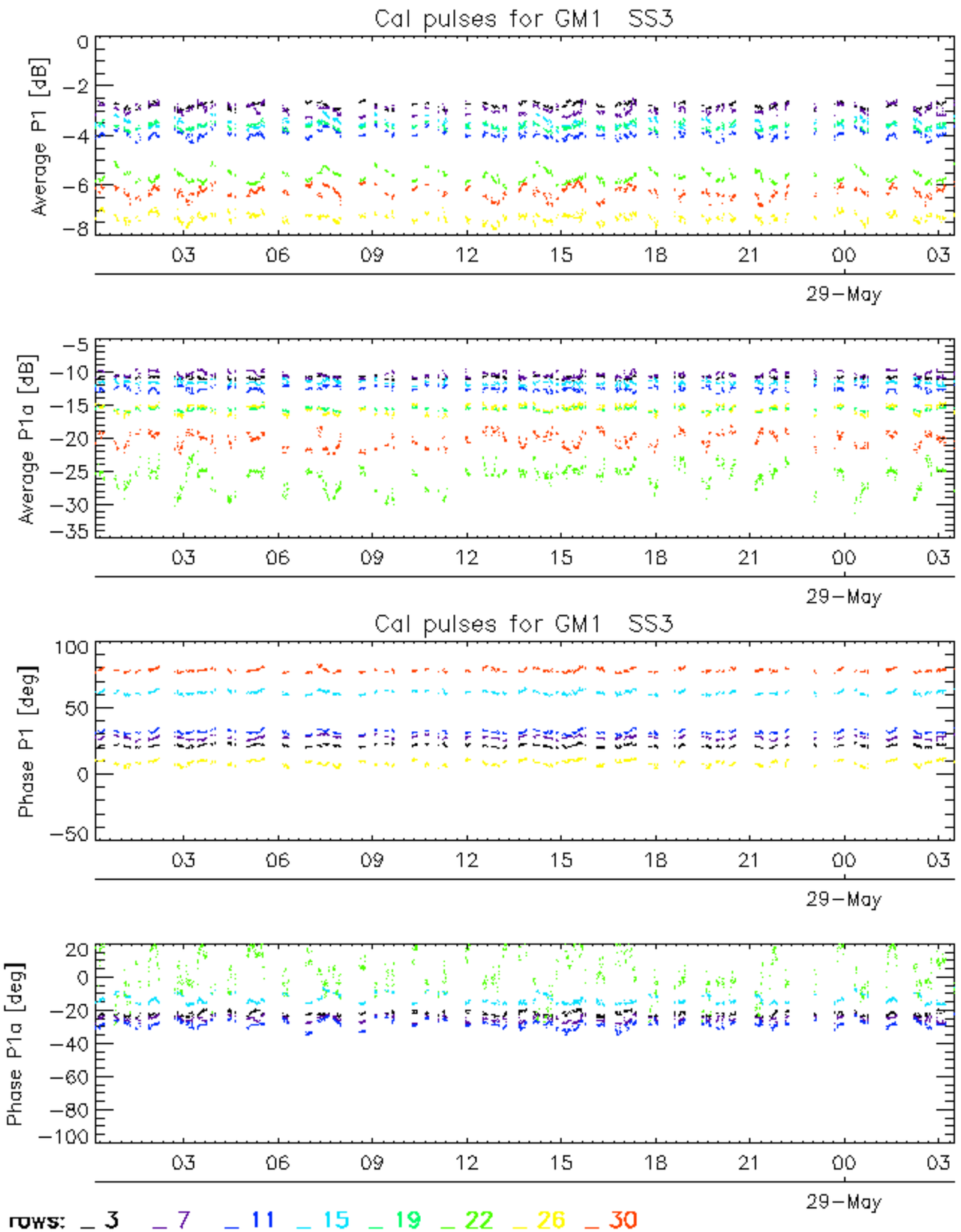
Descending

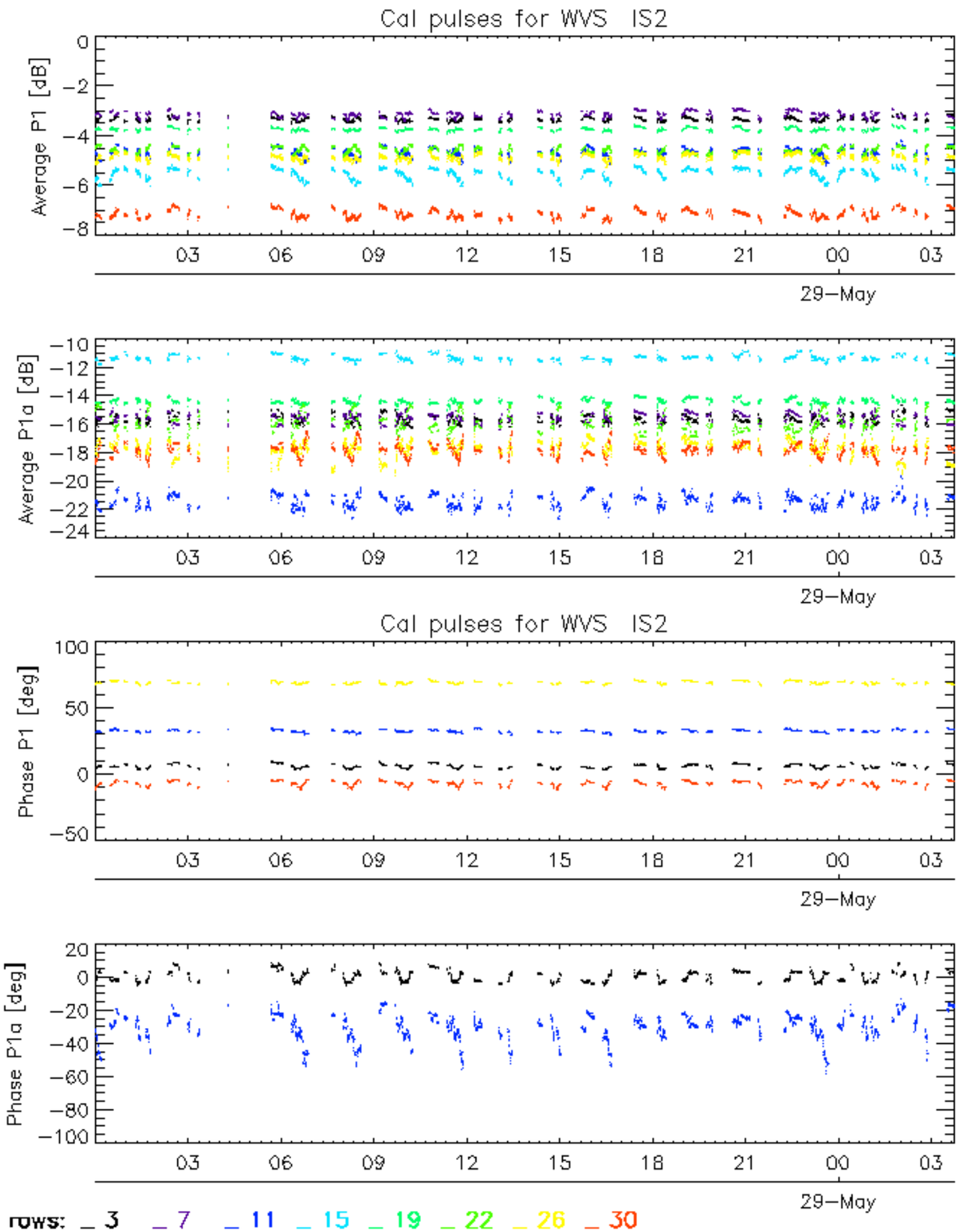
7.5 - Absolute Doppler for GM1

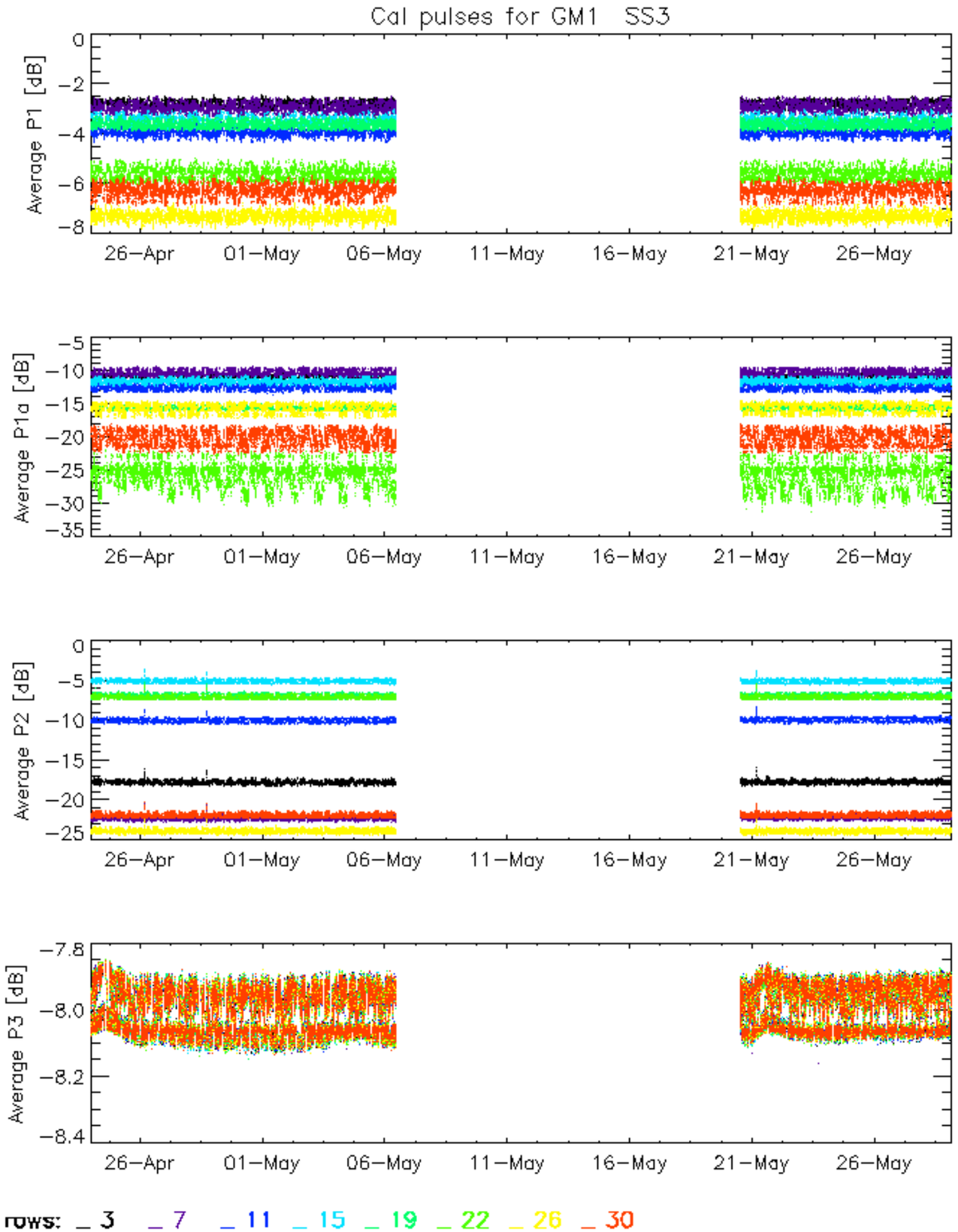
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

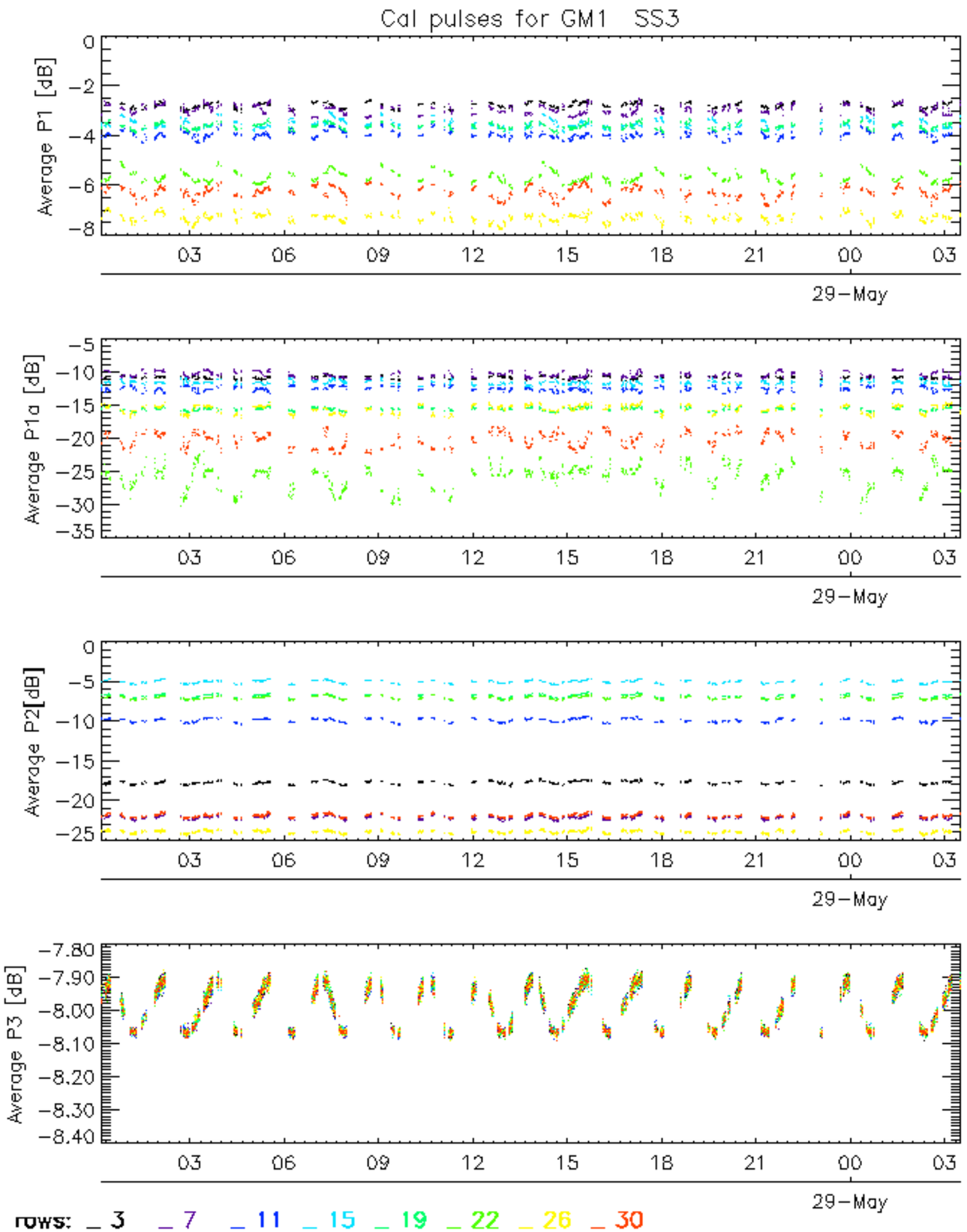
7.6 - Doppler evolution versus ANX for GM1

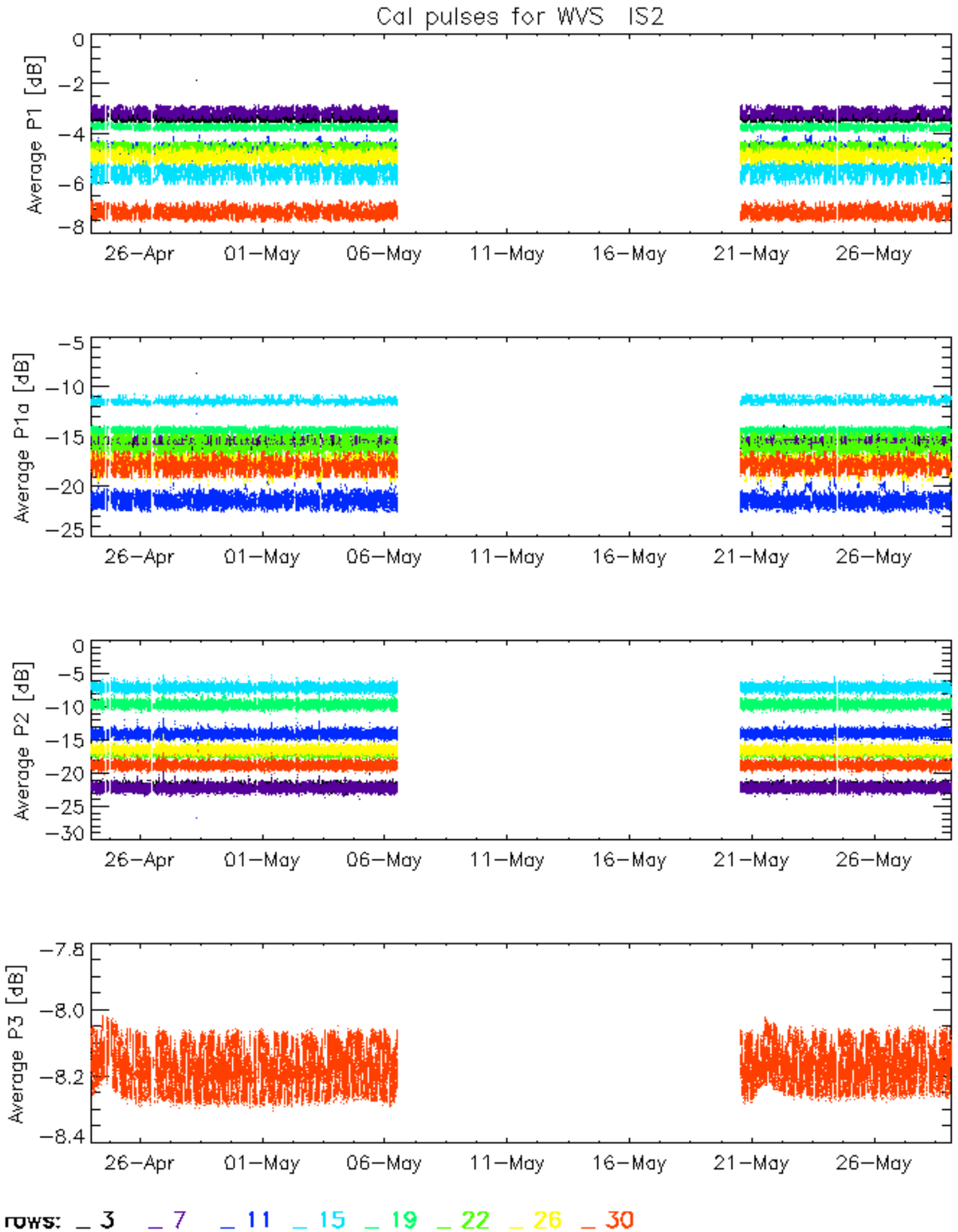
Evolution Doppler error versus ANX
☒

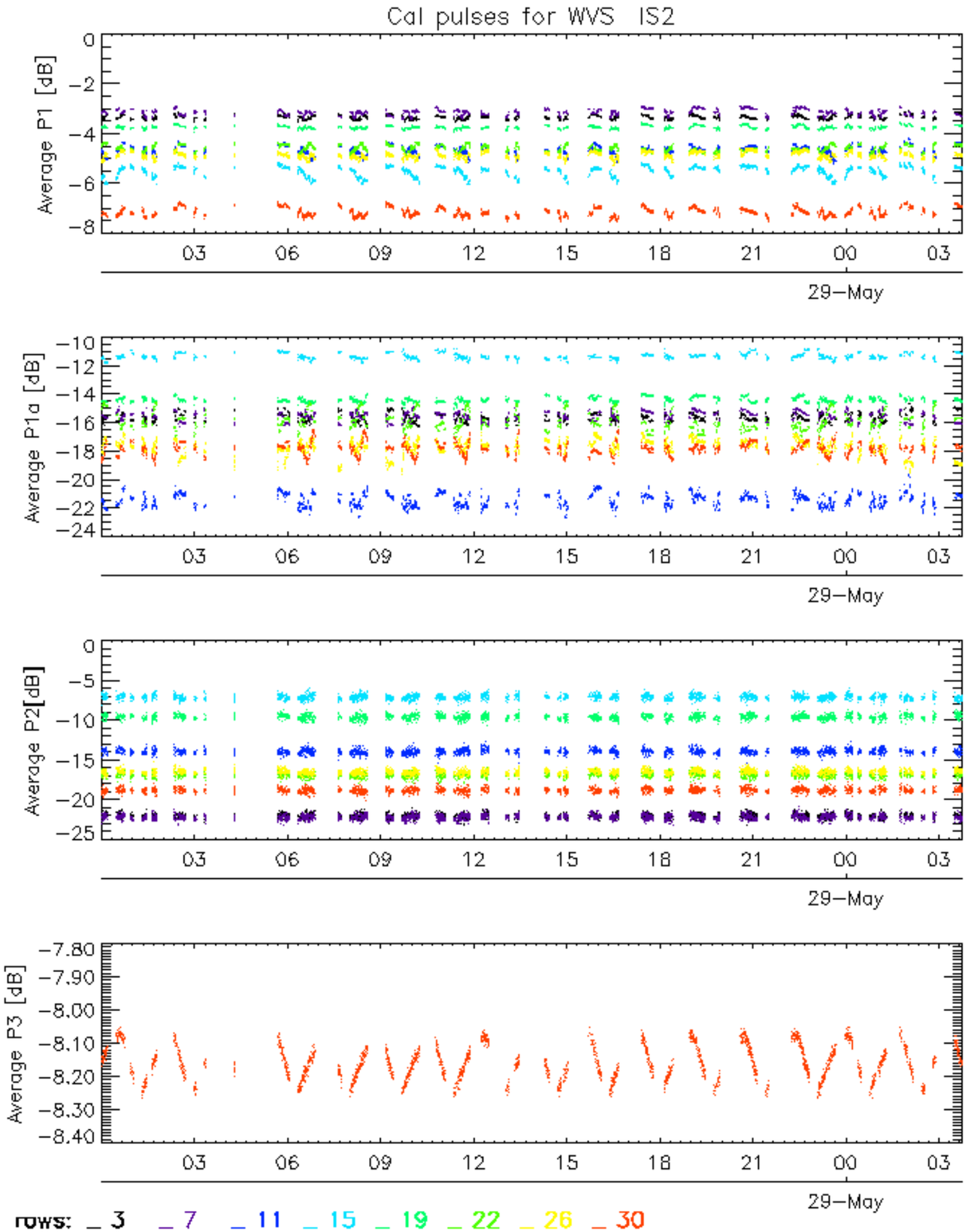

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
29−May
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
29−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Cal pulses for WVS IS2
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30

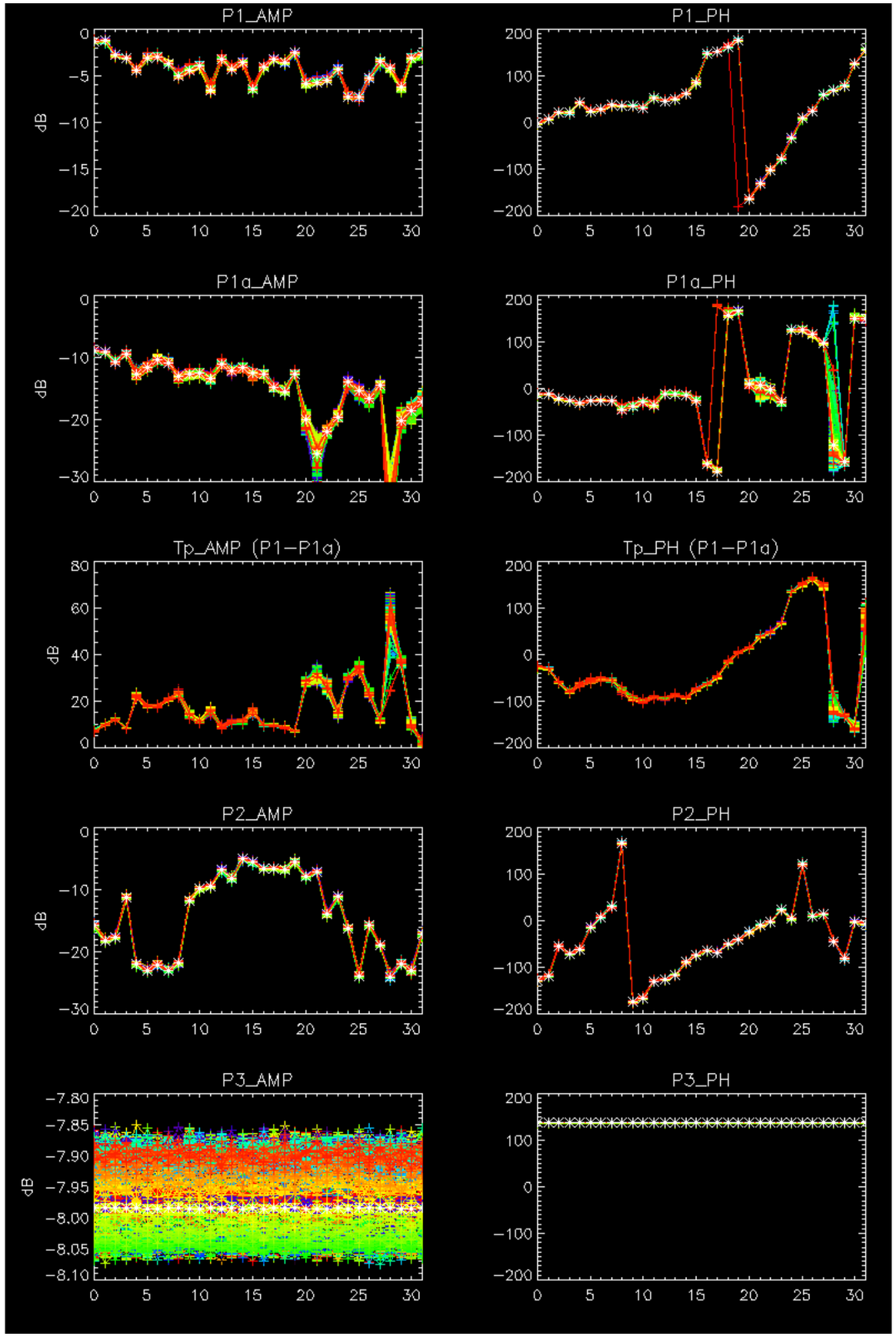

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Apr
01−May
06−May
11−May
16−May
21−May
26−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

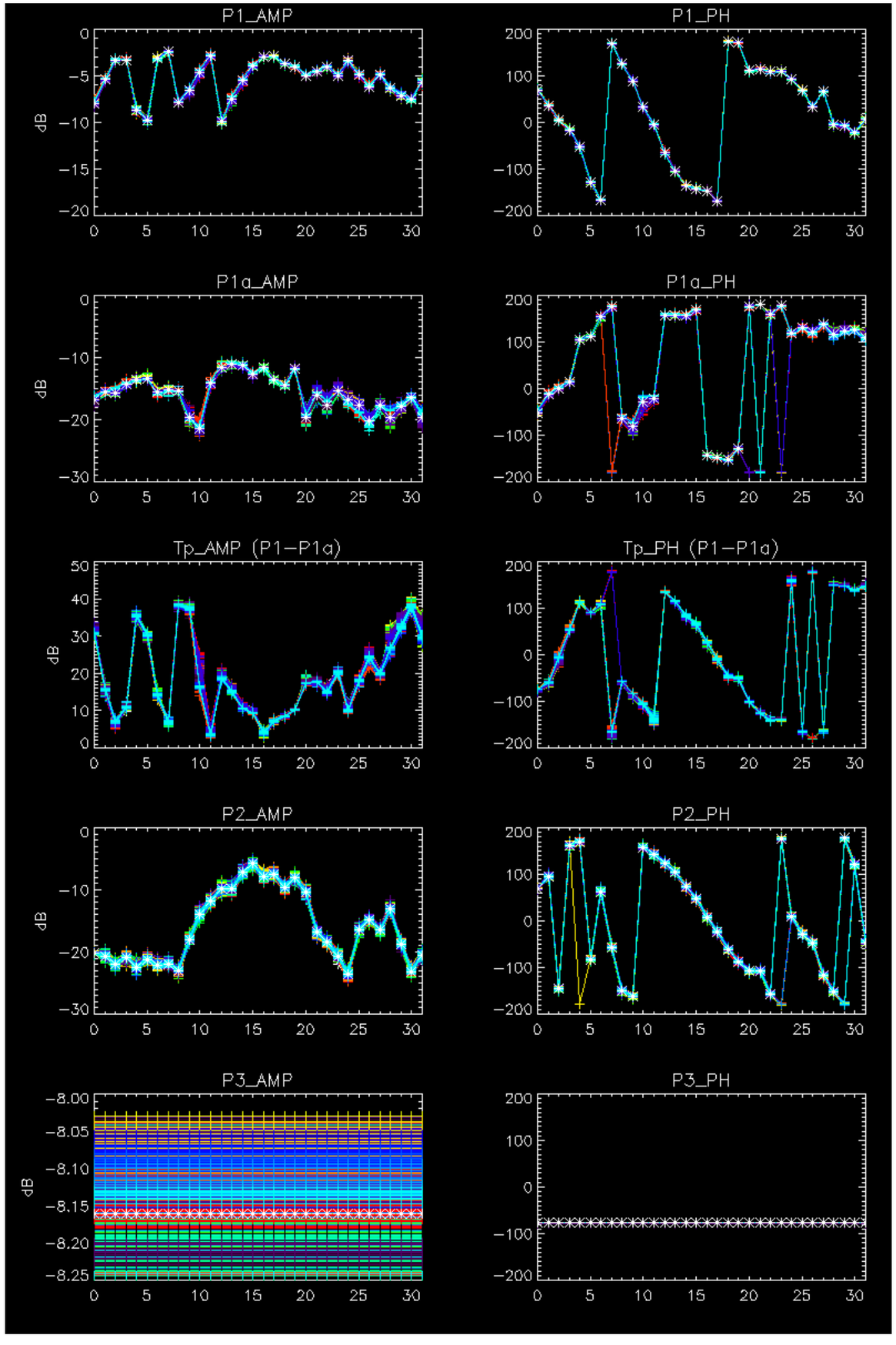

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
29−May
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
29−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2[dB]
−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

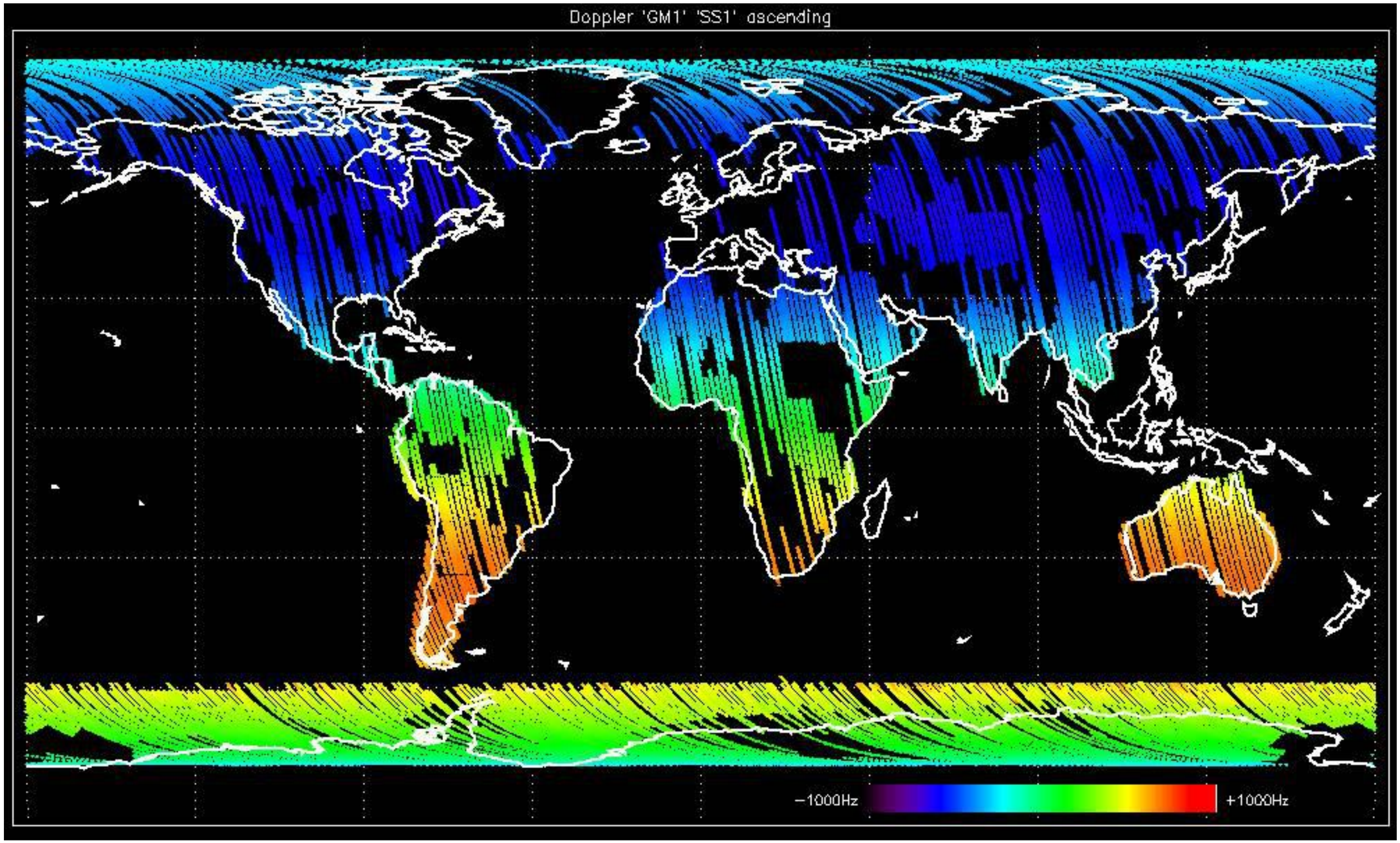
No anomalies observed.

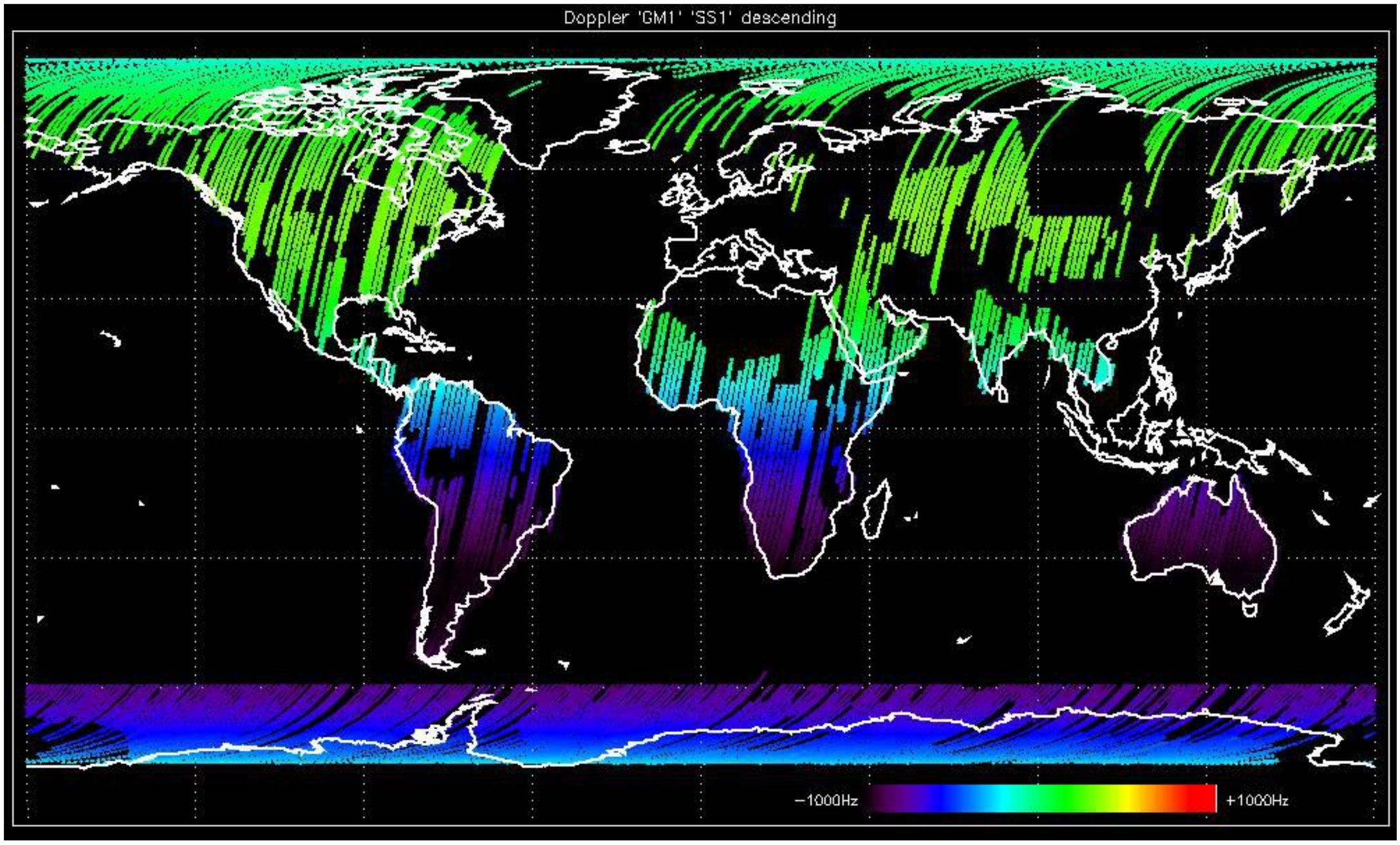

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

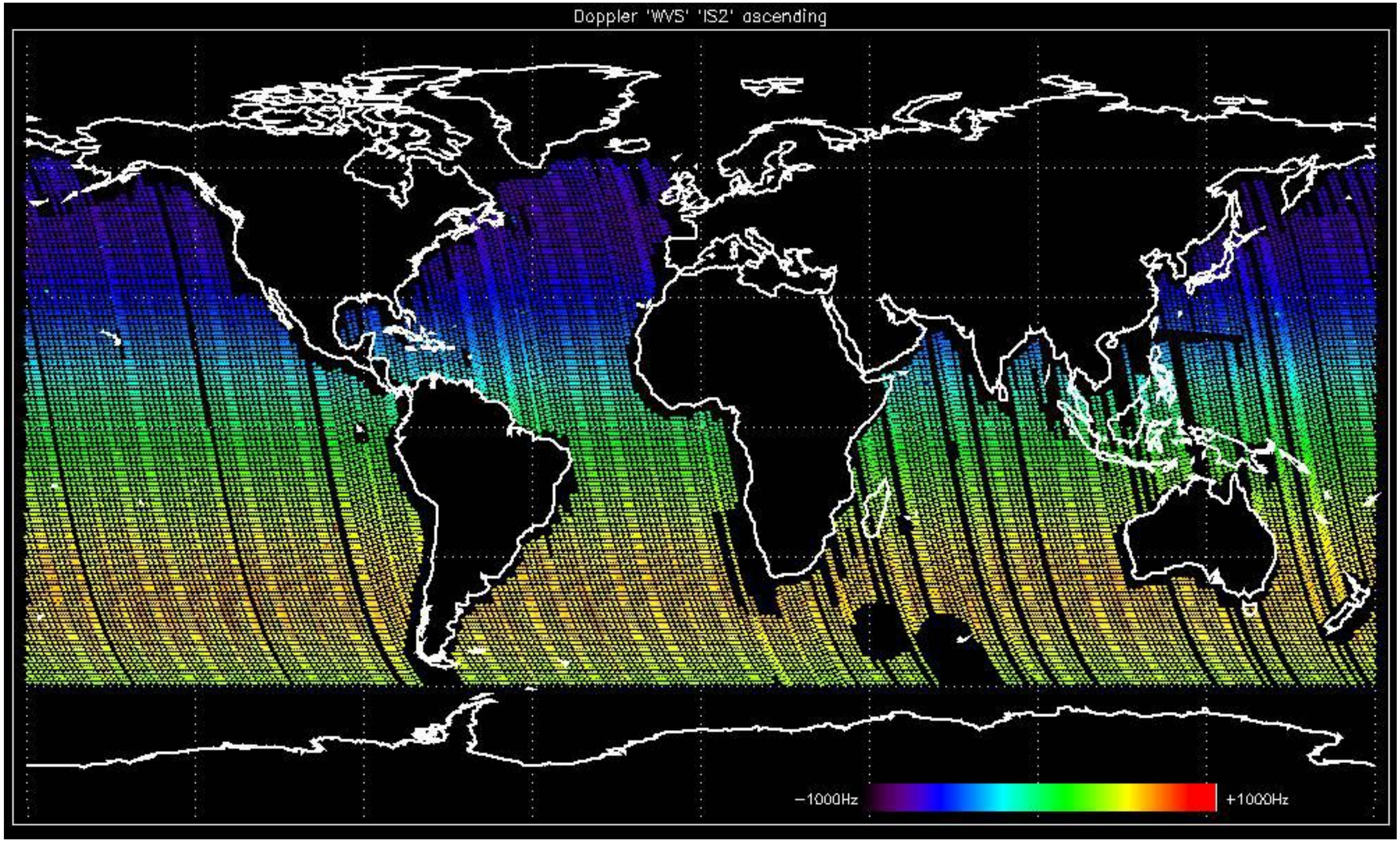

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

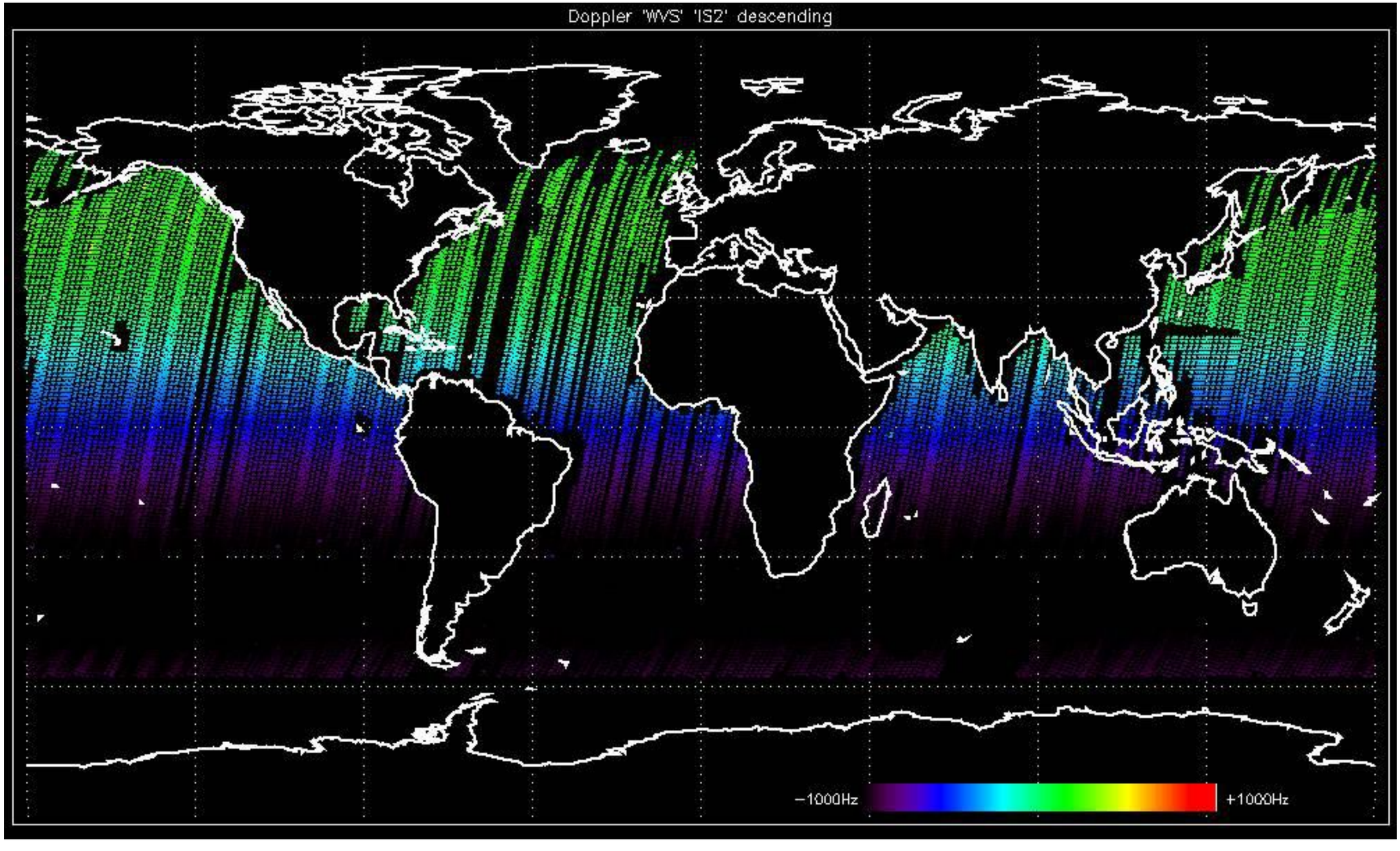
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

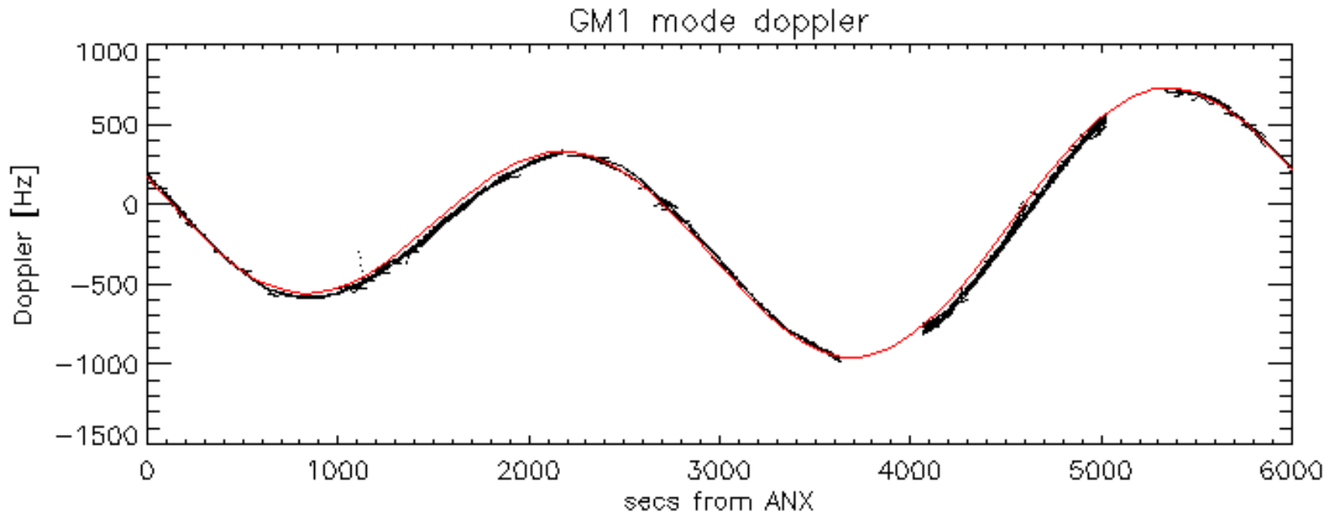
Preliminary report.The data is not yet controled

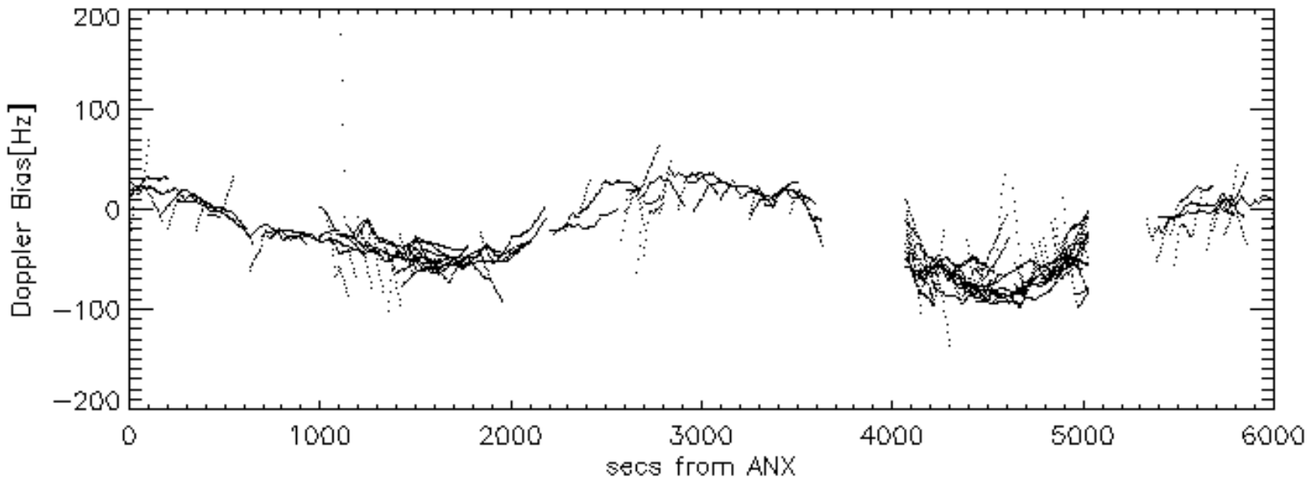

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

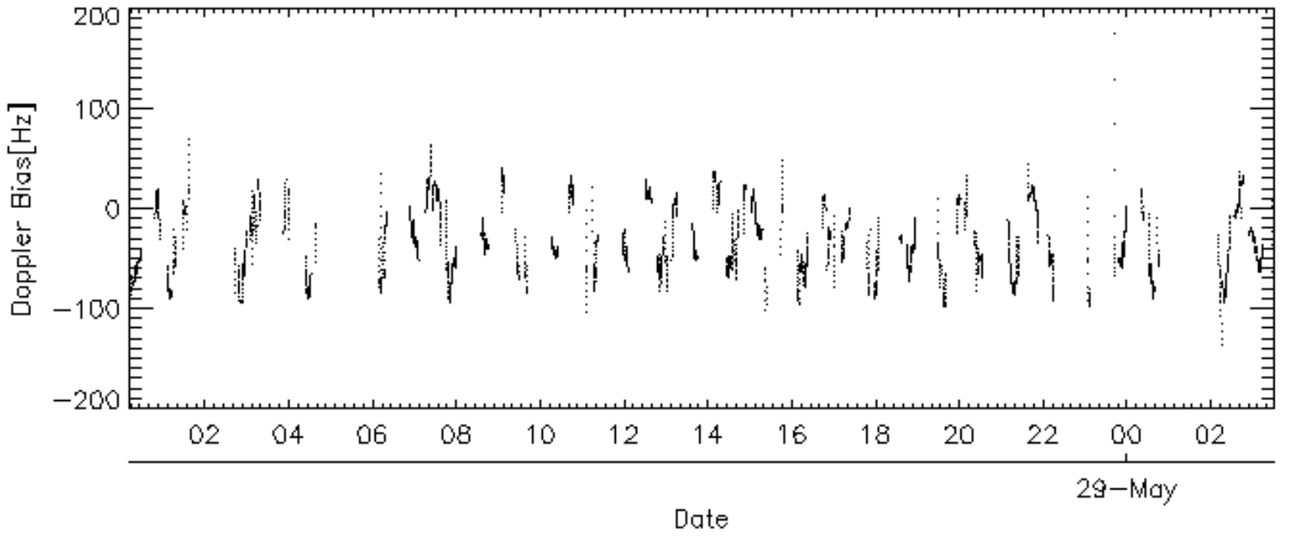

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

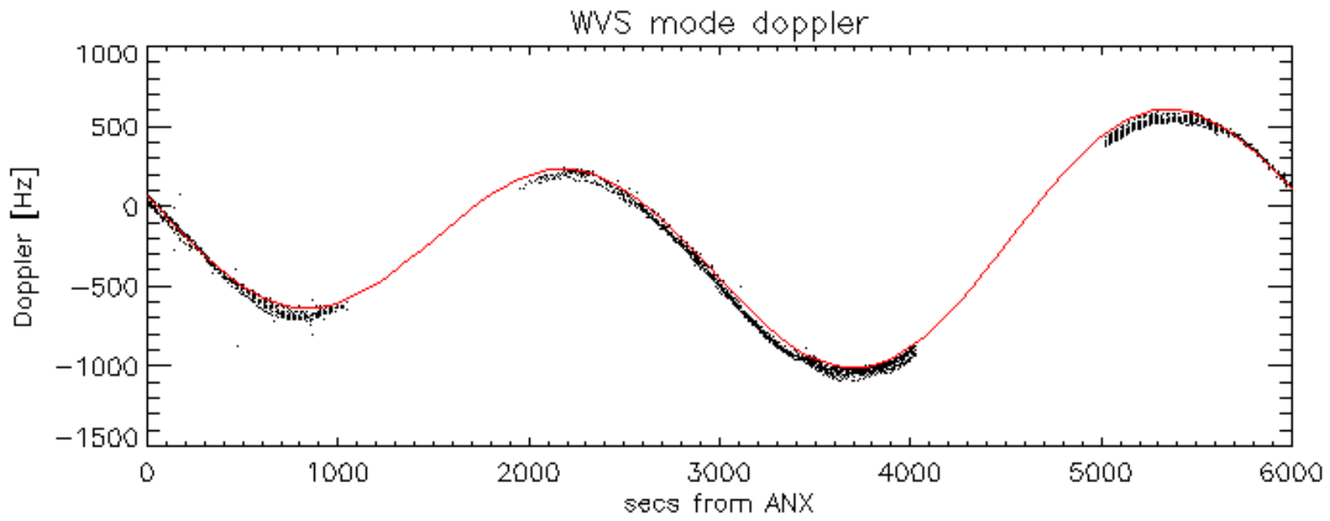

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

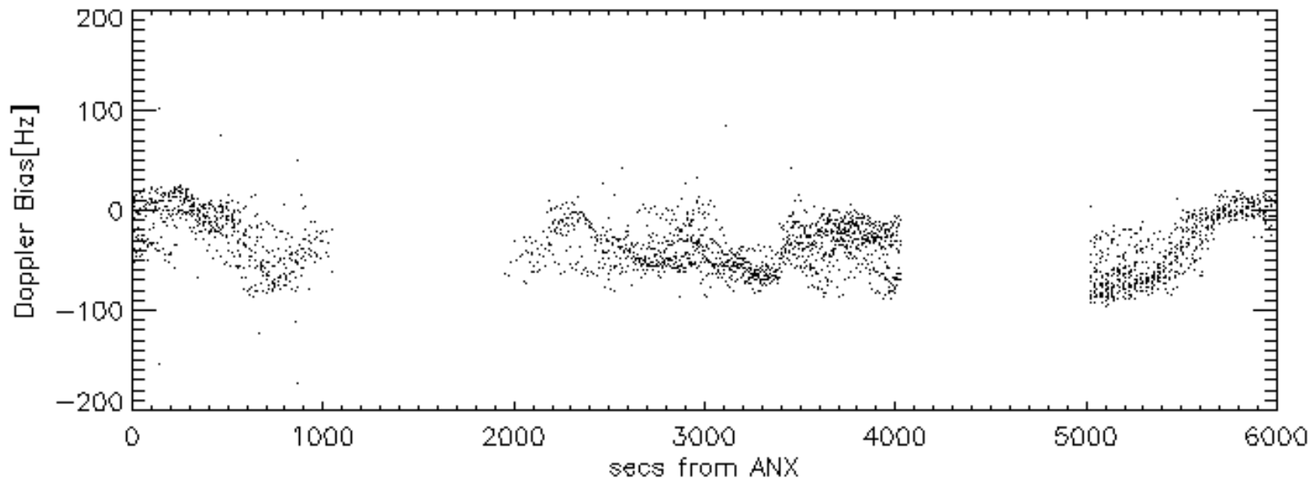

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

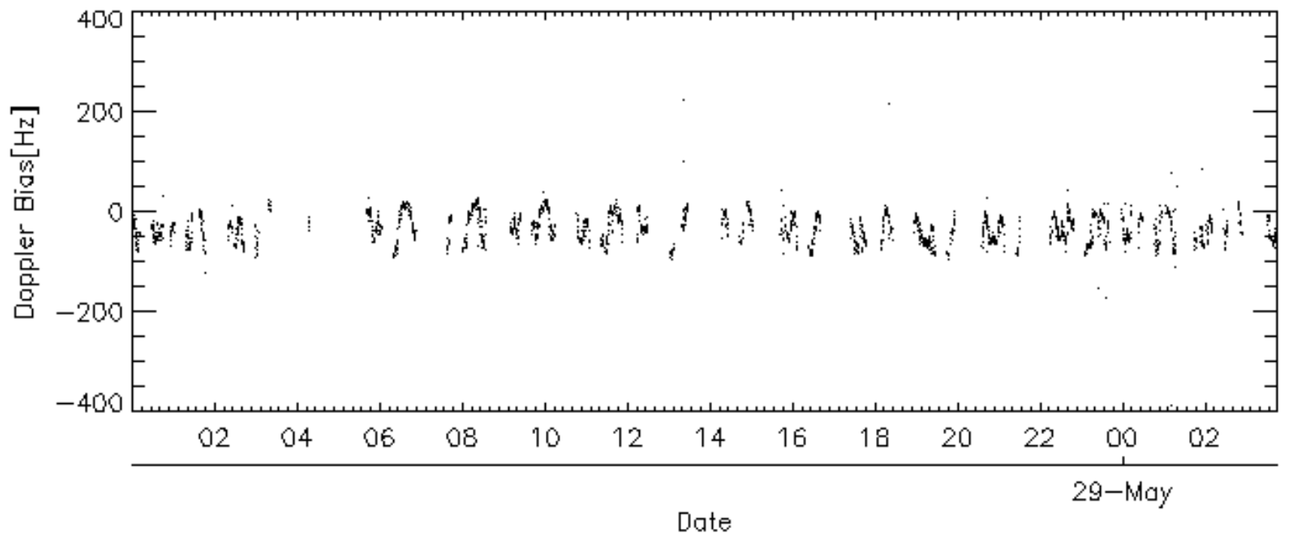

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

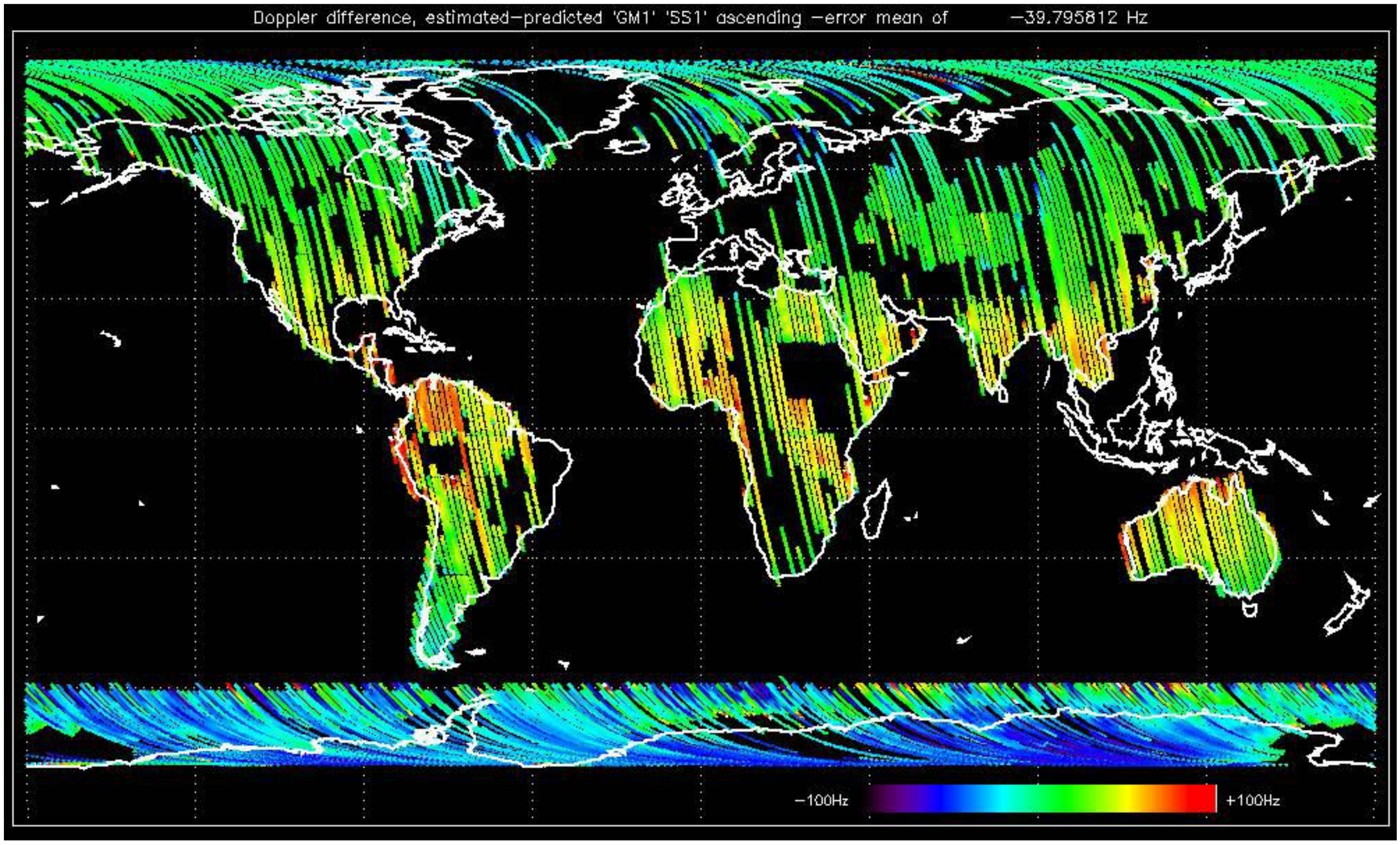

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

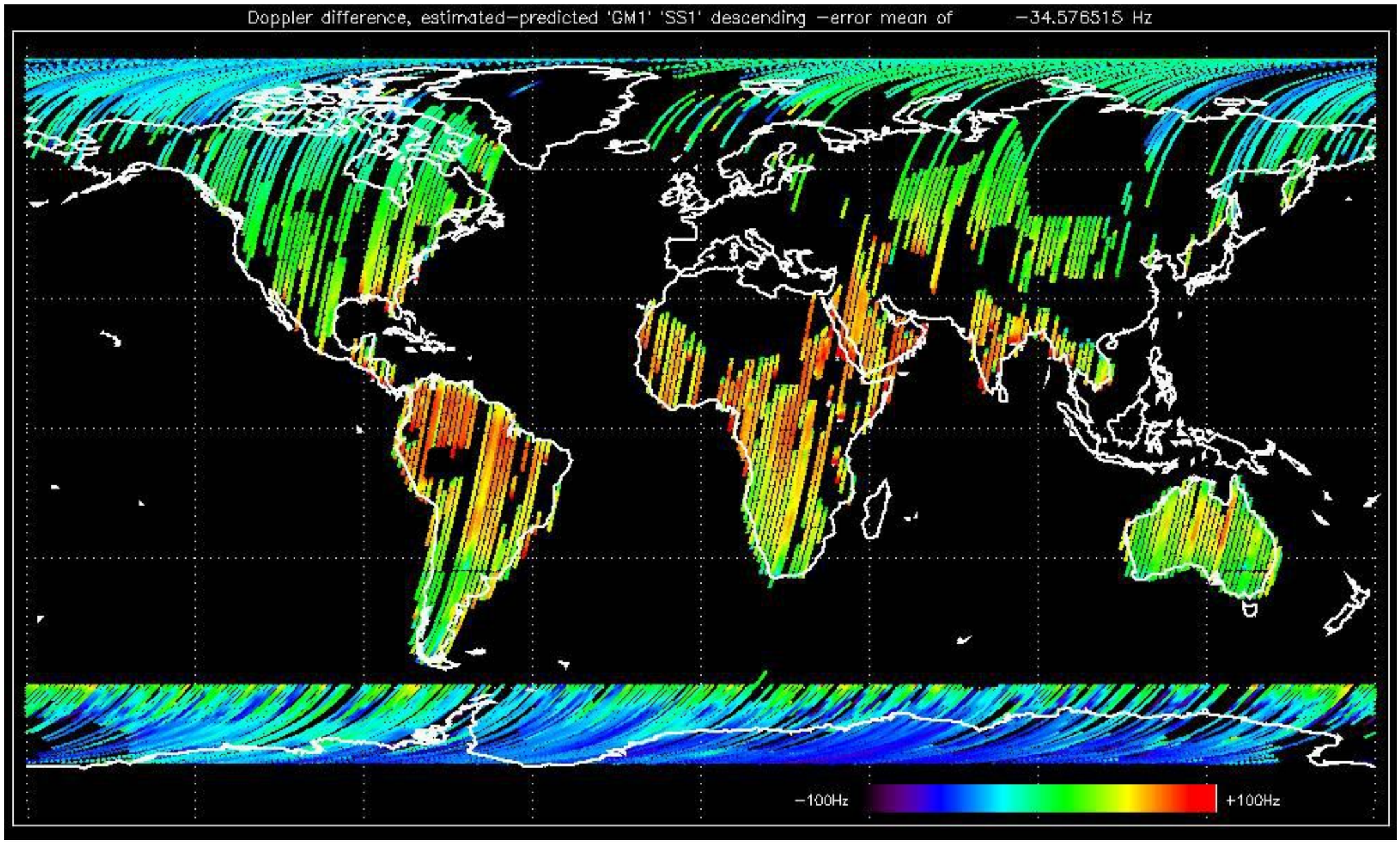

Doppler Bias[Hz]
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
29−May
Date

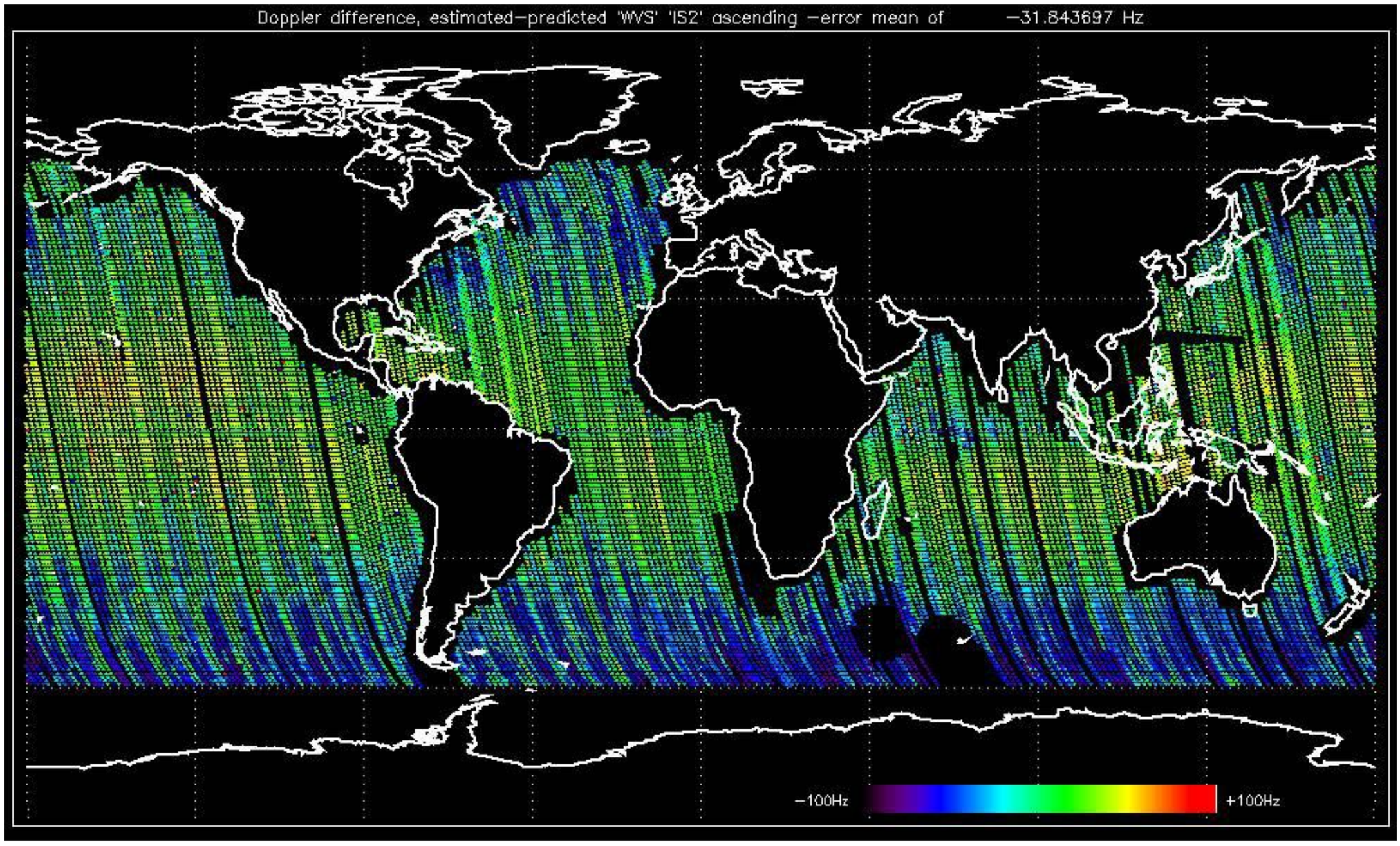

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

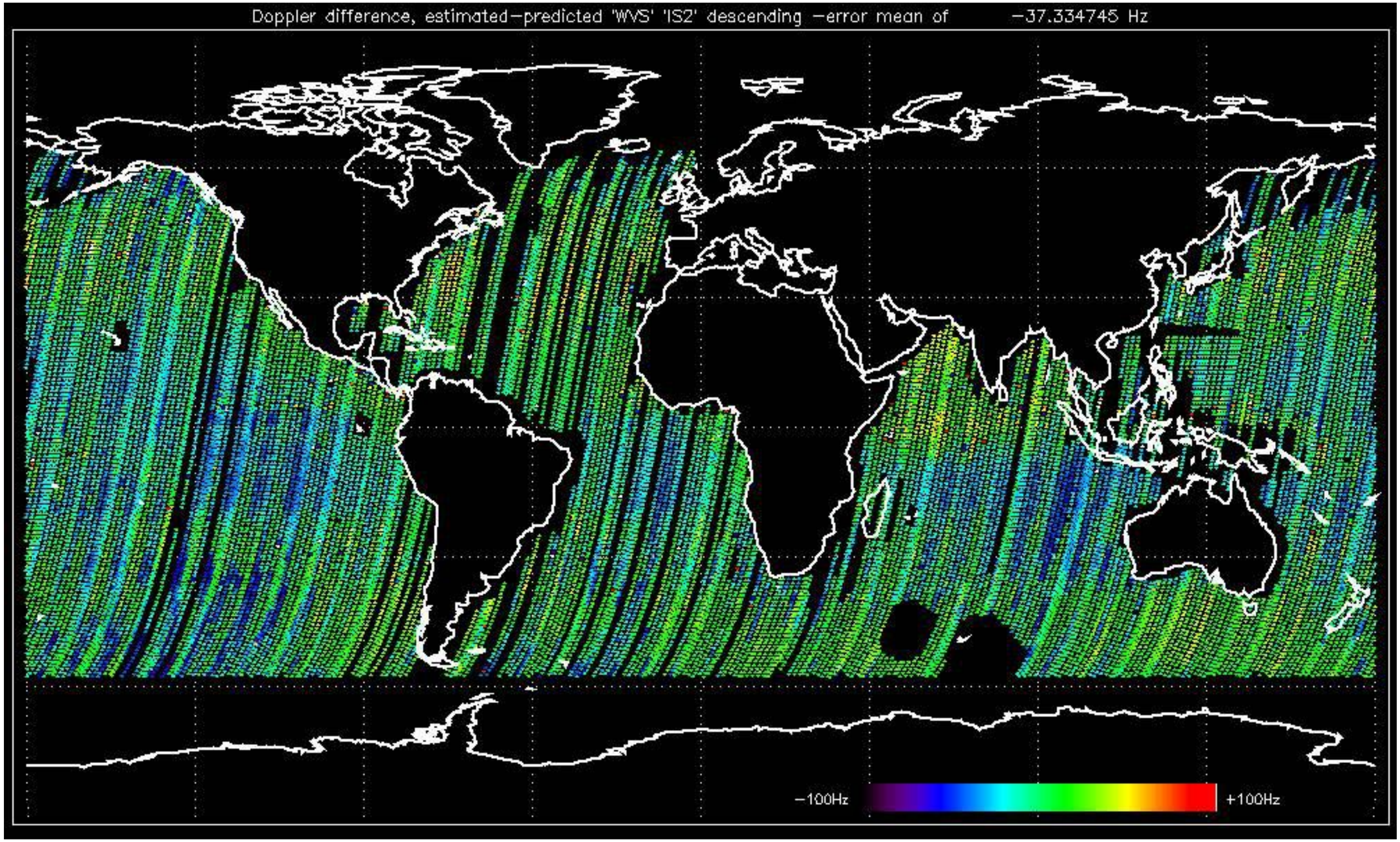

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −39.795812 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -34.576515 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −31.843697 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.334745 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-05-28 06:03:55 H
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
6
7
8
9
10
11
12
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14
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16
17
18
19
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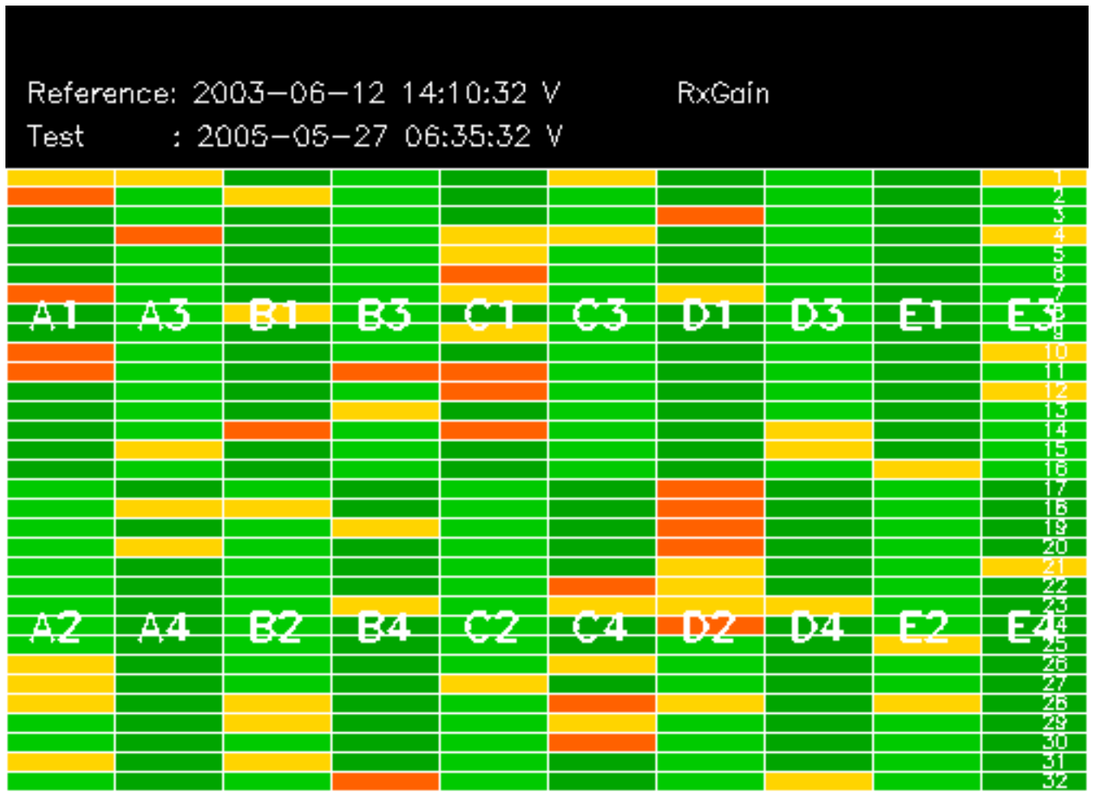
21
22
23
24
25
26
27
28
29
30
31
32

Reference: 2003-06-12 14:08:52 H
Test : 2005-05-28 06:03:55 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 : 2005-05-27 06:35:32 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-05-27 06:35:32 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
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16
17
18
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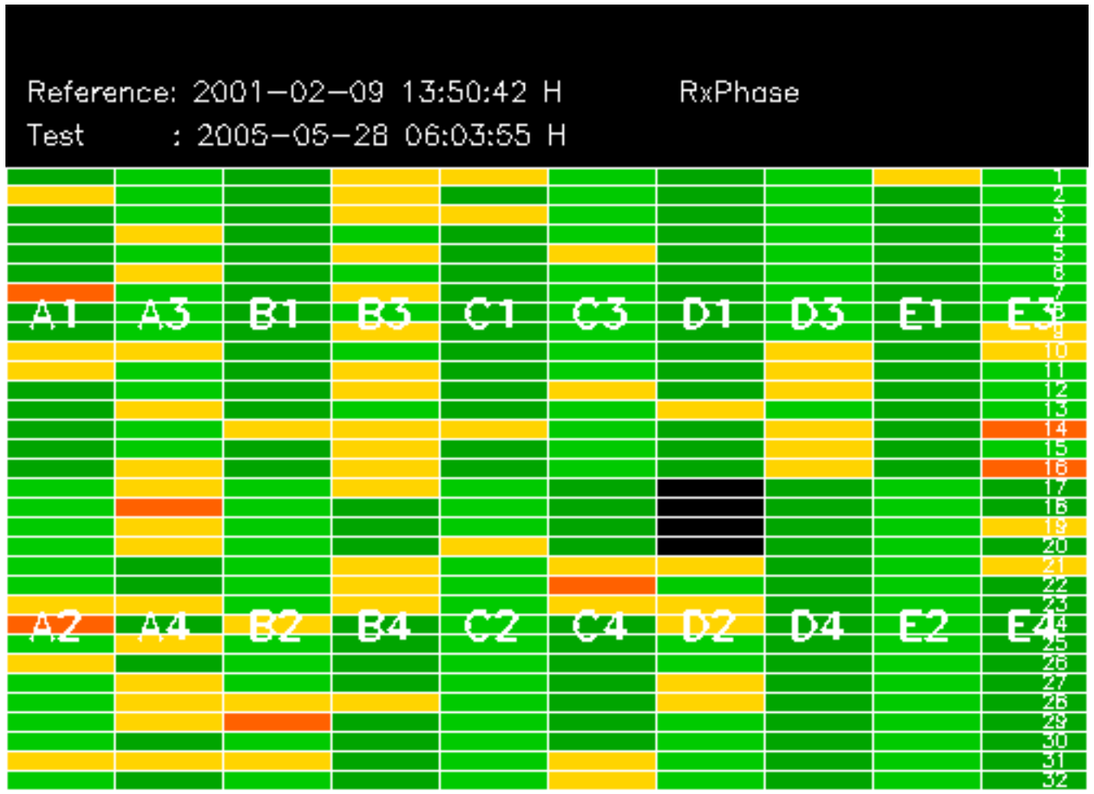
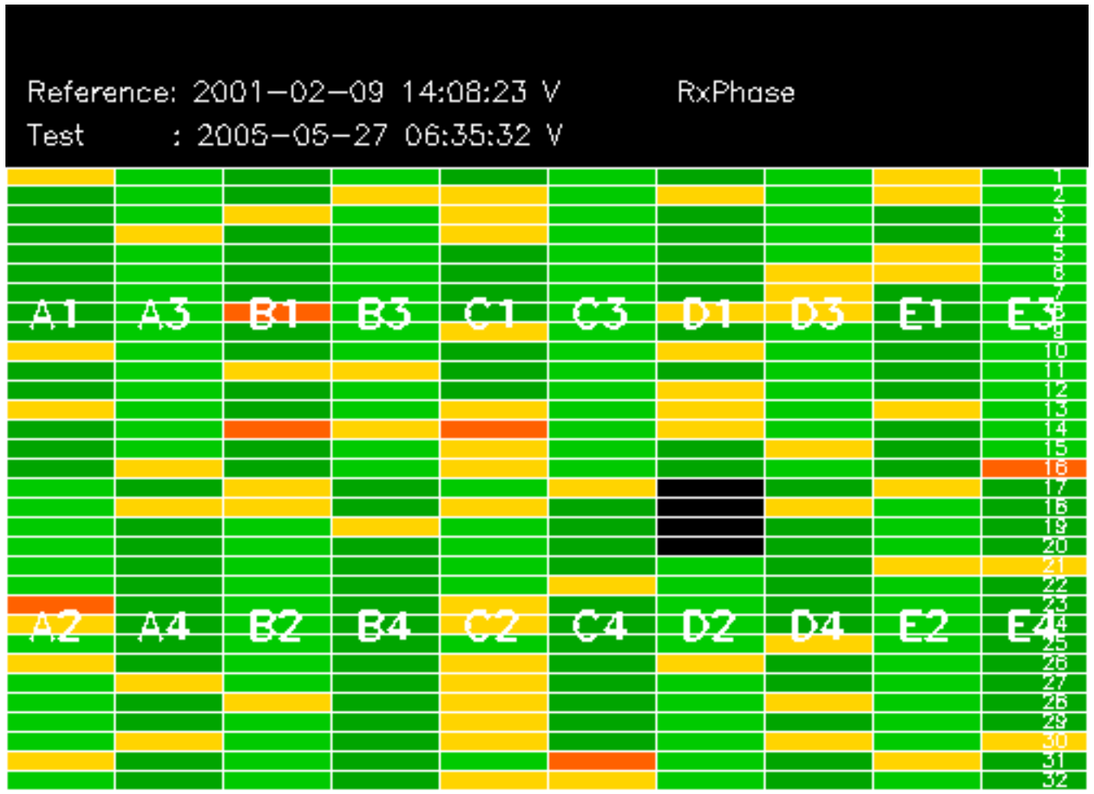
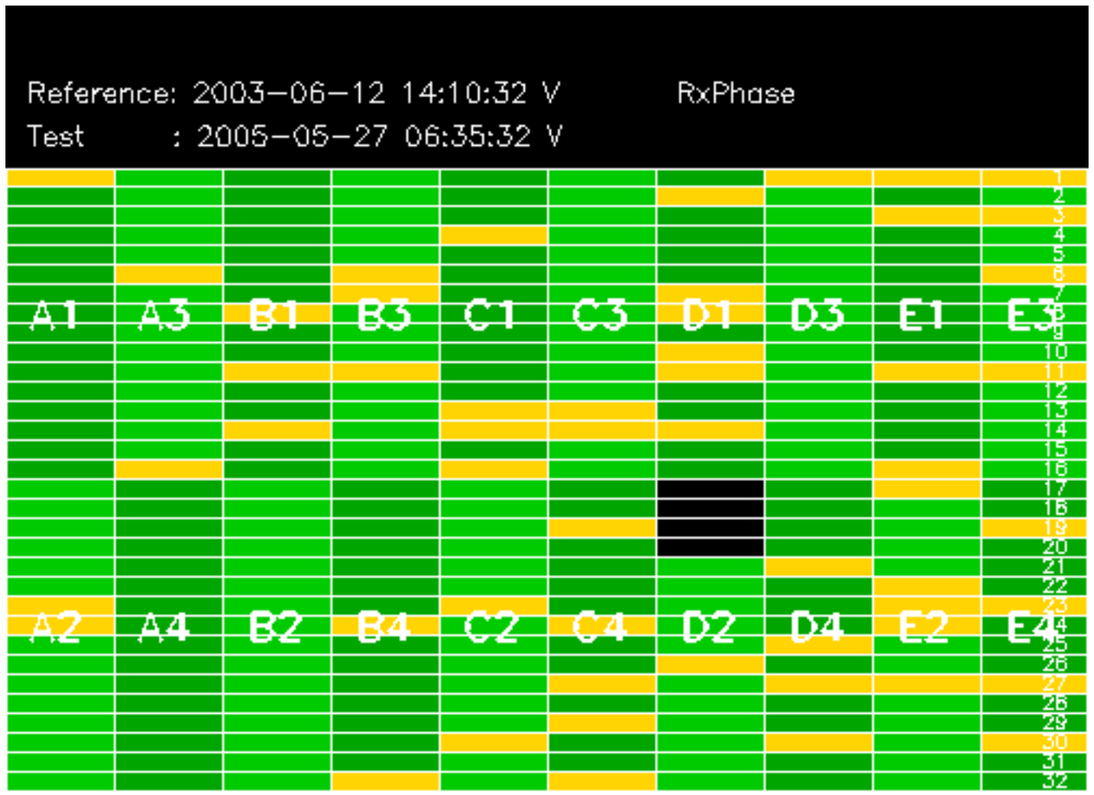
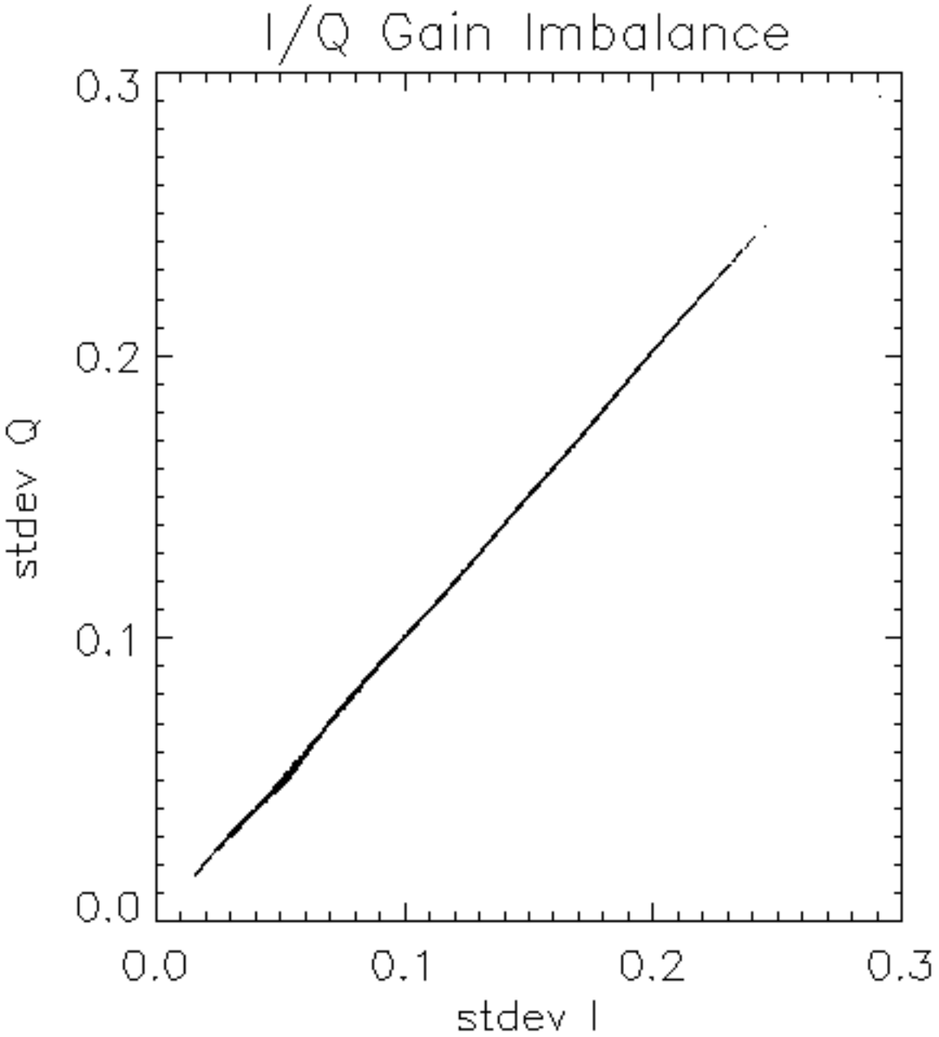
29
30
31
32

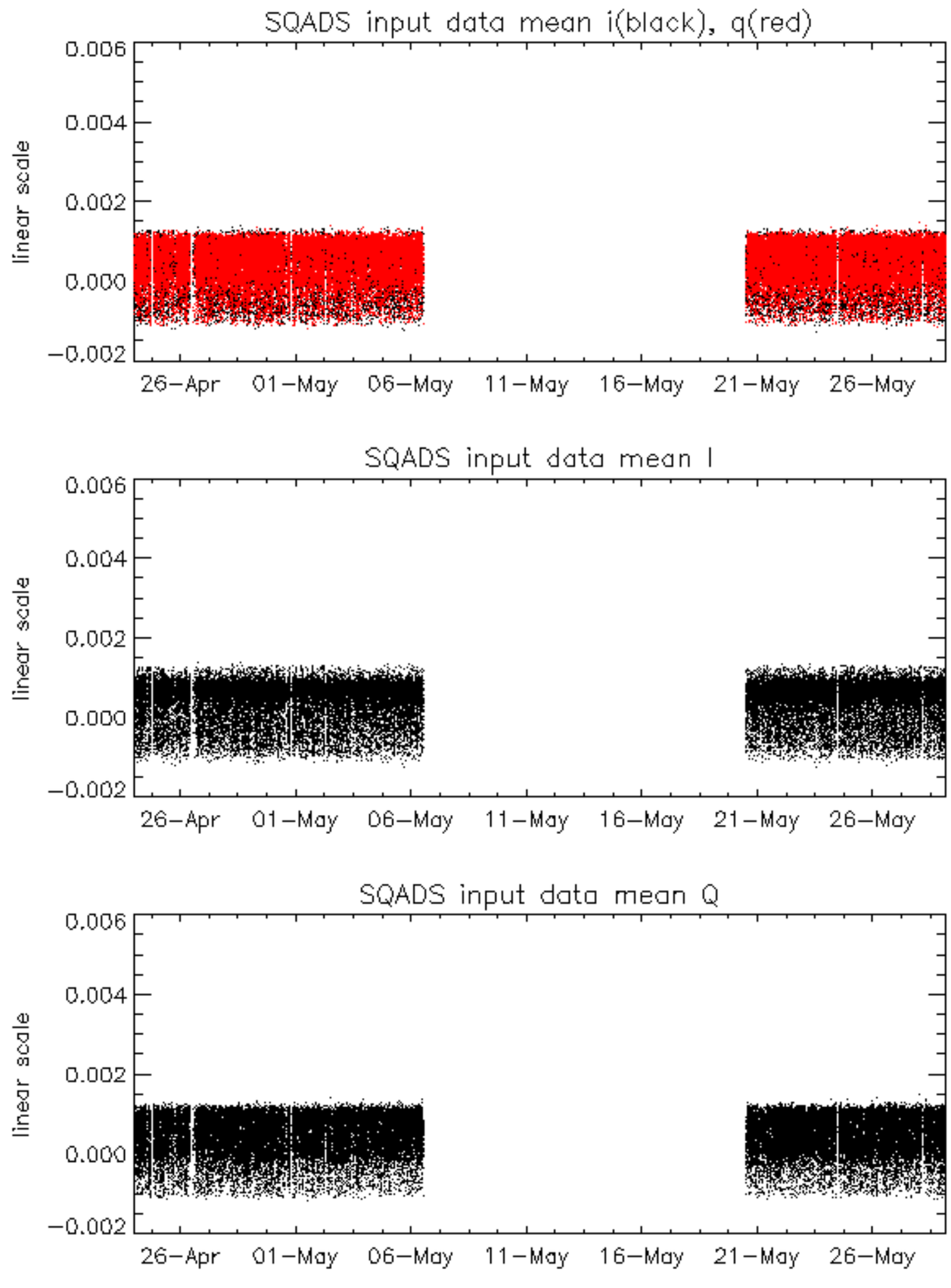

Reference: 2001-02-09 13:50:42 H
Test : 2005-05-28 06:03:55 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Reference: 2003-06-12 14:08:52 H
Test : 2005-05-28 06:03:55 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-05-27 06:35:32 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
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

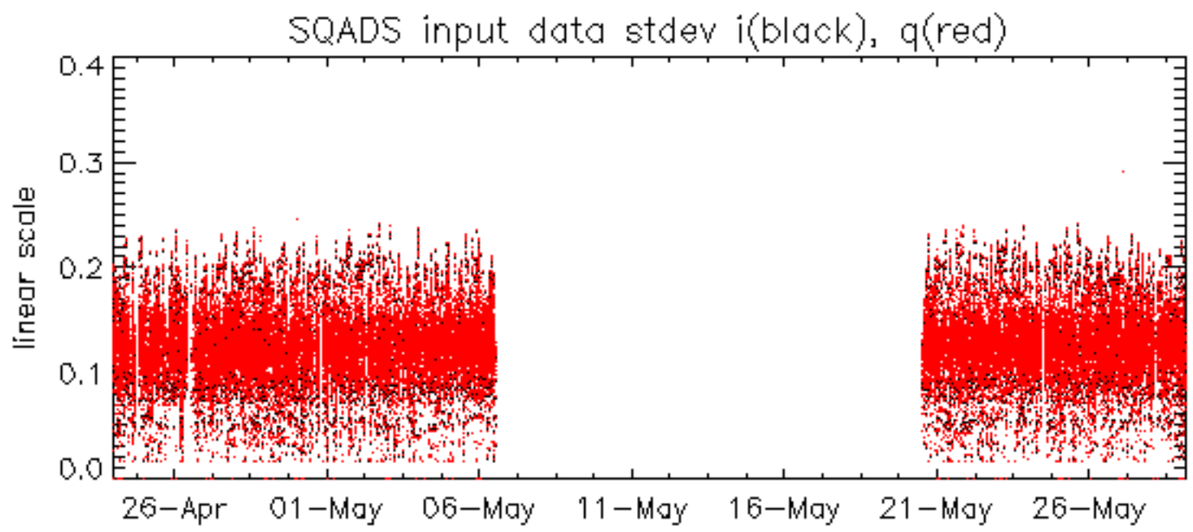

Reference: 2003-06-12 14:10:32 V
Test : 2005-05-27 06:35:32 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

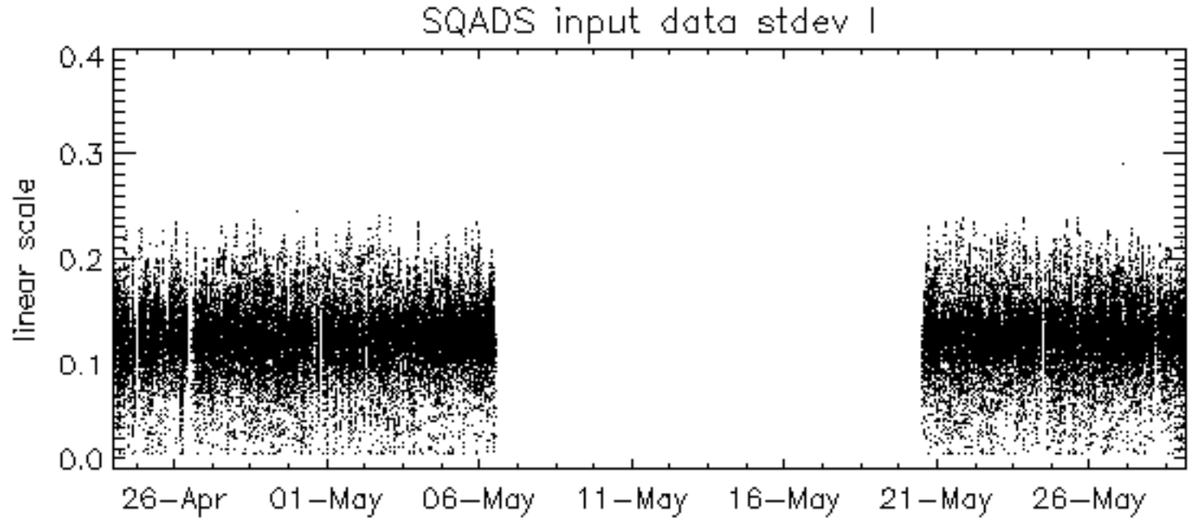

I/Q Gain Imbalance
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
stdev I

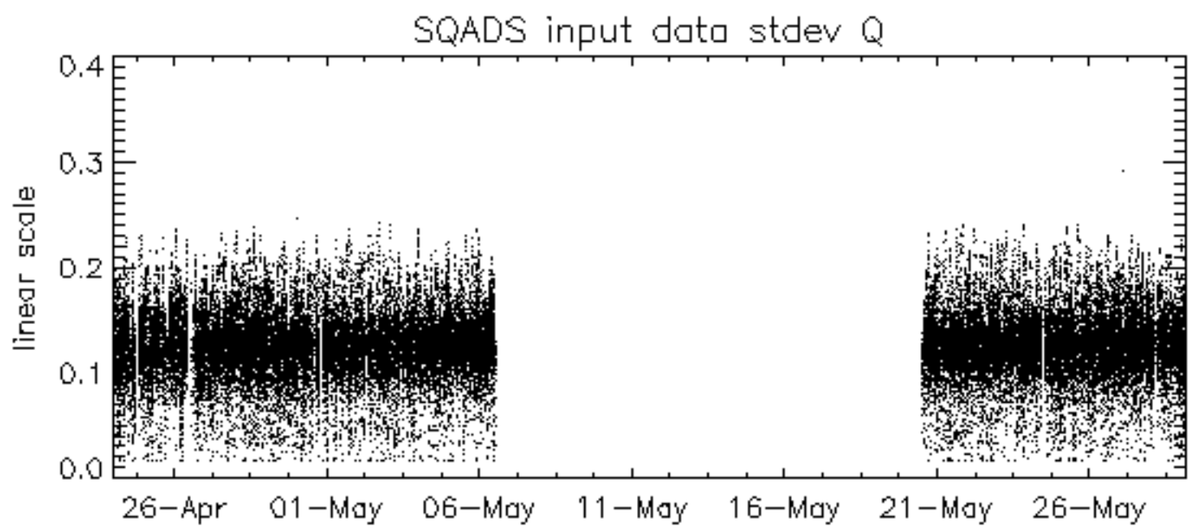

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Apr
01−May
06−May
11−May
16−May
21−May
26−May

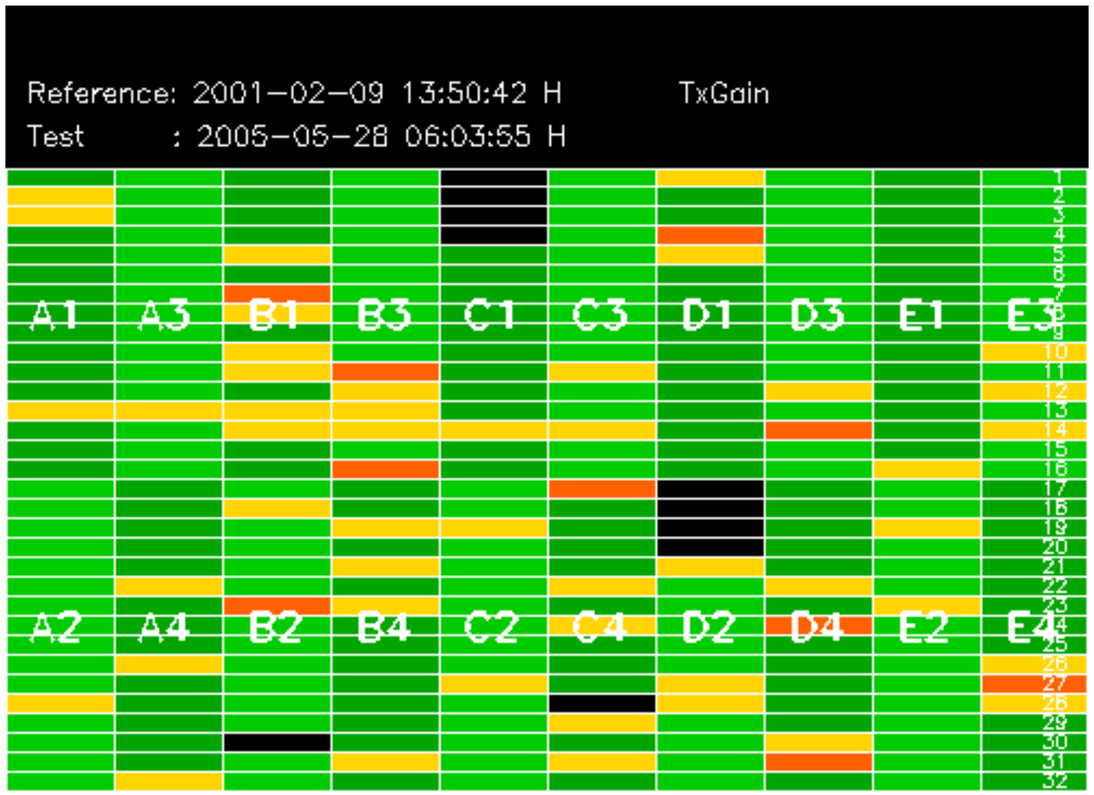
SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Apr
01−May
06−May
11−May
16−May
21−May
26−May

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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-05-28 06:03:55 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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12
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18
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29
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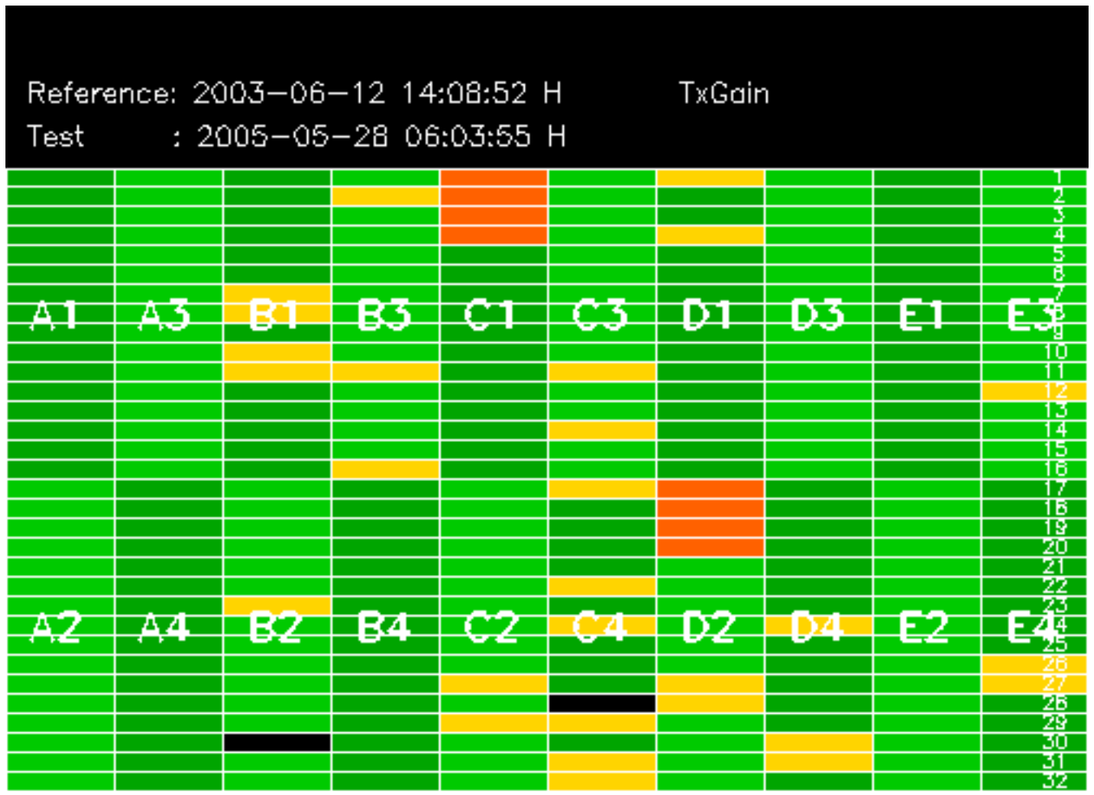
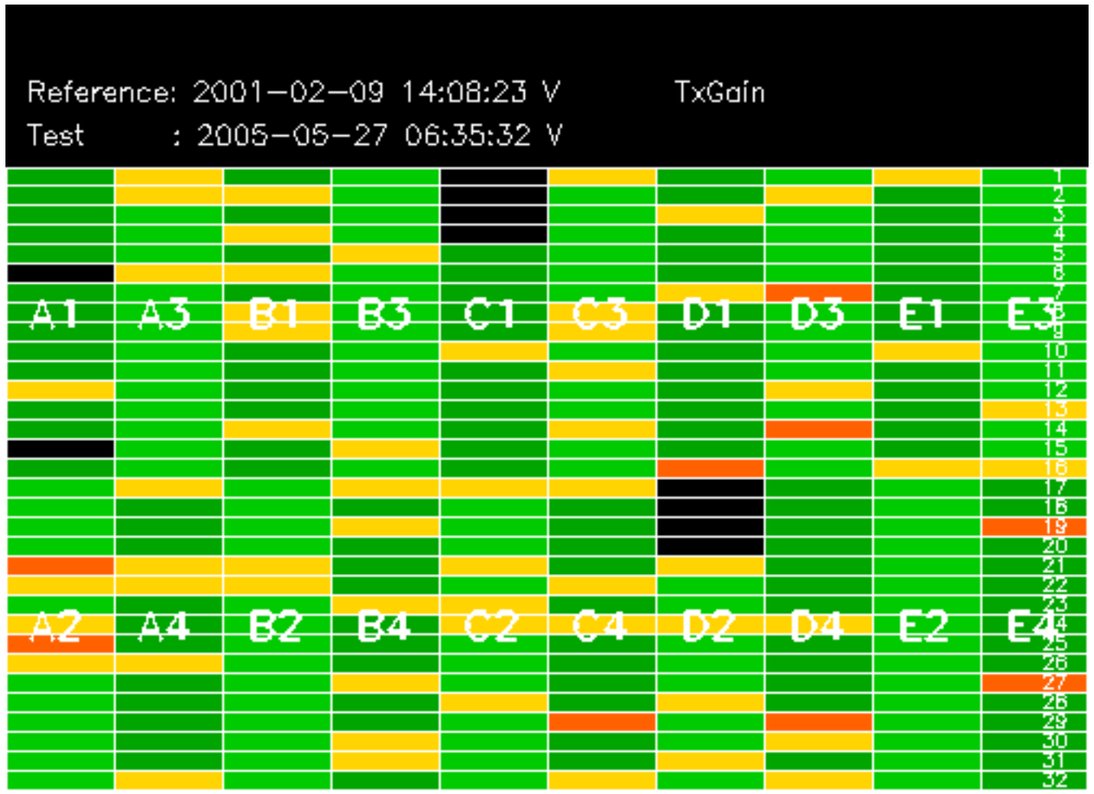
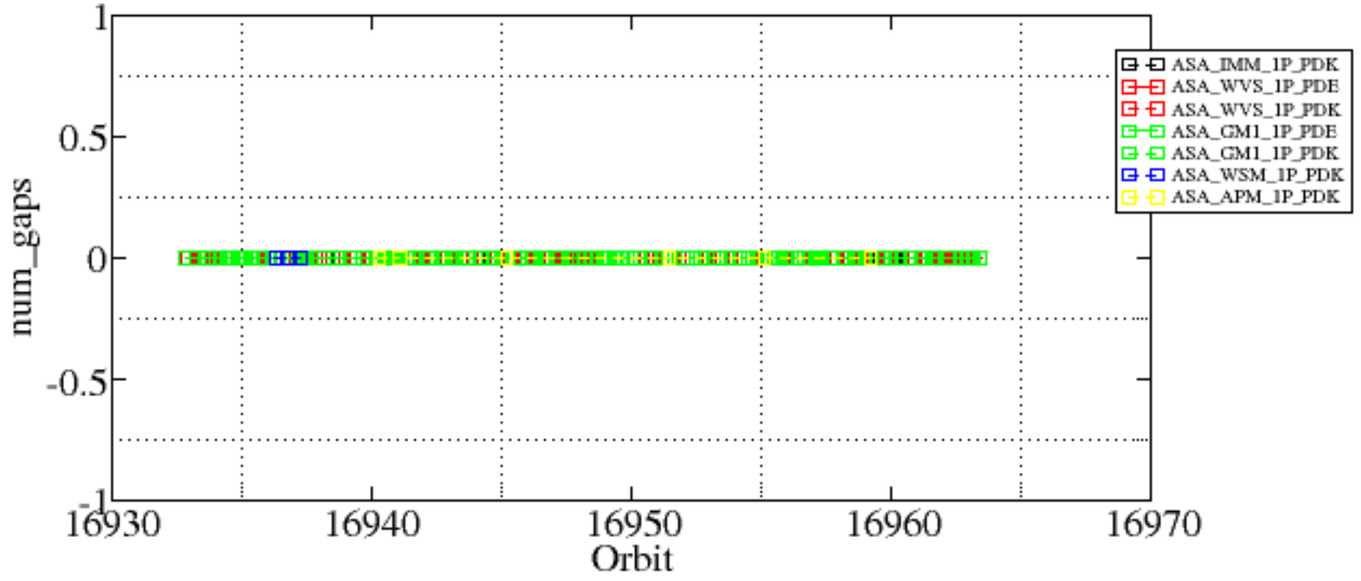
31
32

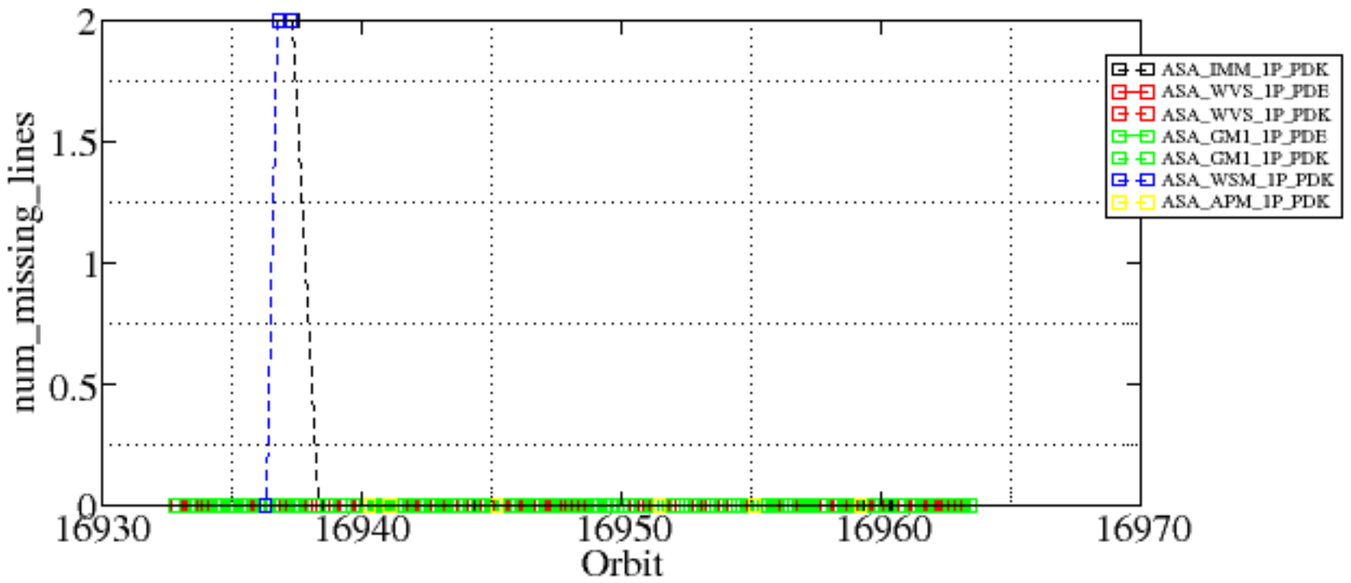

Reference: 2003-06-12 14:08:52 H
Test : 2005-05-28 06:03:55 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

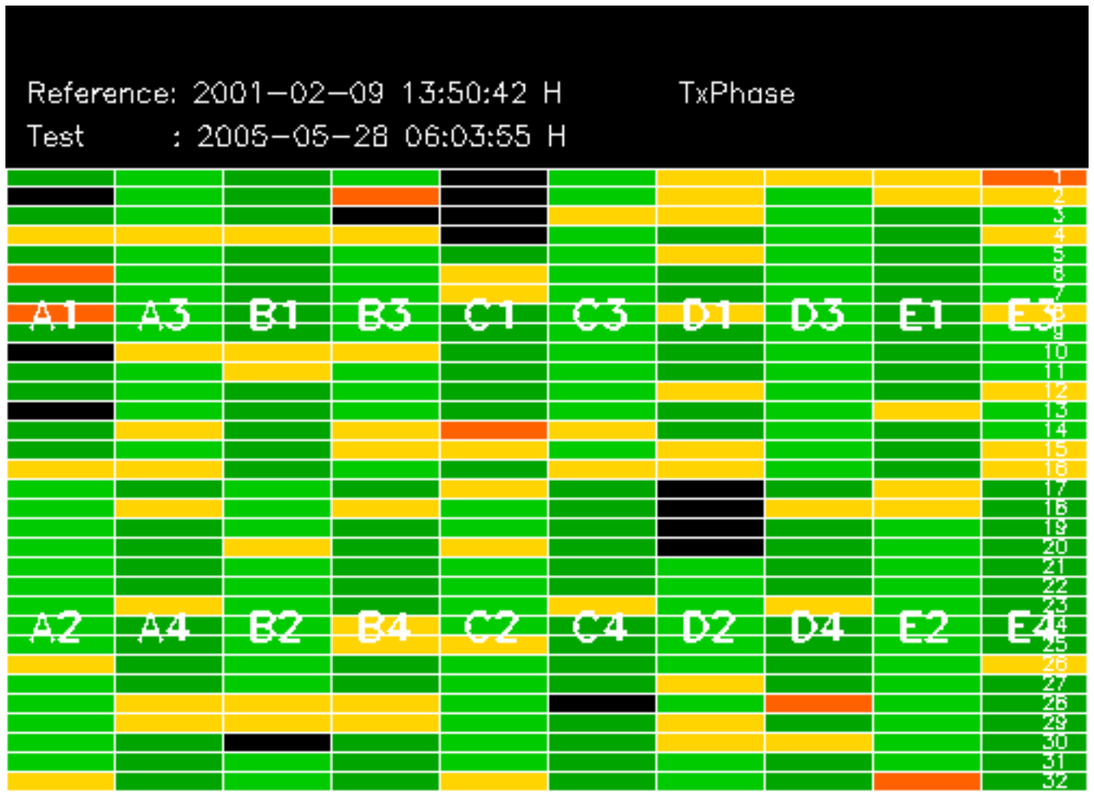

Reference: 2001-02-09 14:08:23 V
Test : 2005-05-27 06:35:32 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

Reference: 2003-06-12 14:10:32 V
Test : 2005-05-27 06:35:32 V
TxGain
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 2005052[789]
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_1PNPDK20050527_074012_000002232037_00350_16937_5223.N1 </td> <td>0 </td> <td>2 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20050527_064534_000001532037_00349_16936_3956.N1 </td> <td>0 </td> <td>2 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20050527_073746_000000852037_00350_16937_3957.N1 </td> <td>0 </td> <td>2 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
16930
16940
16950
16960
16970
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDK


num_missing_lines
2
1.5
1
0.5
0
16930
16940
16950
16960
16970
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2005-05-28 06:03:55 H
TxPhase
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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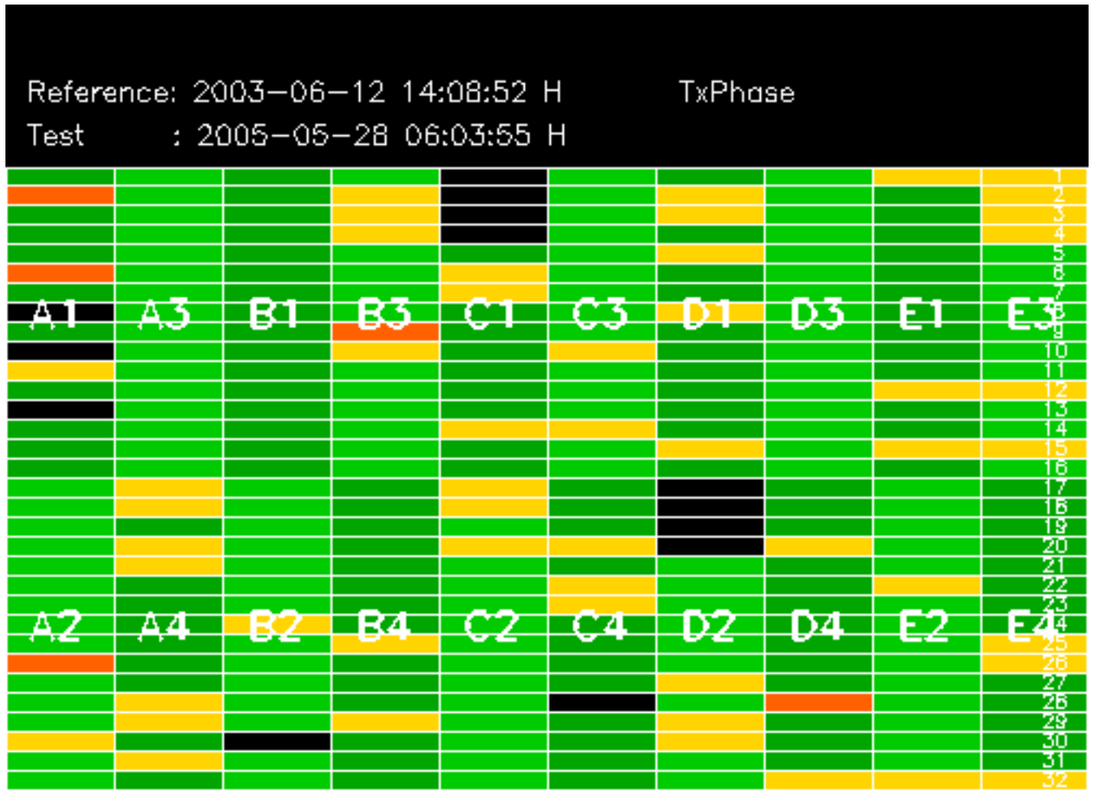
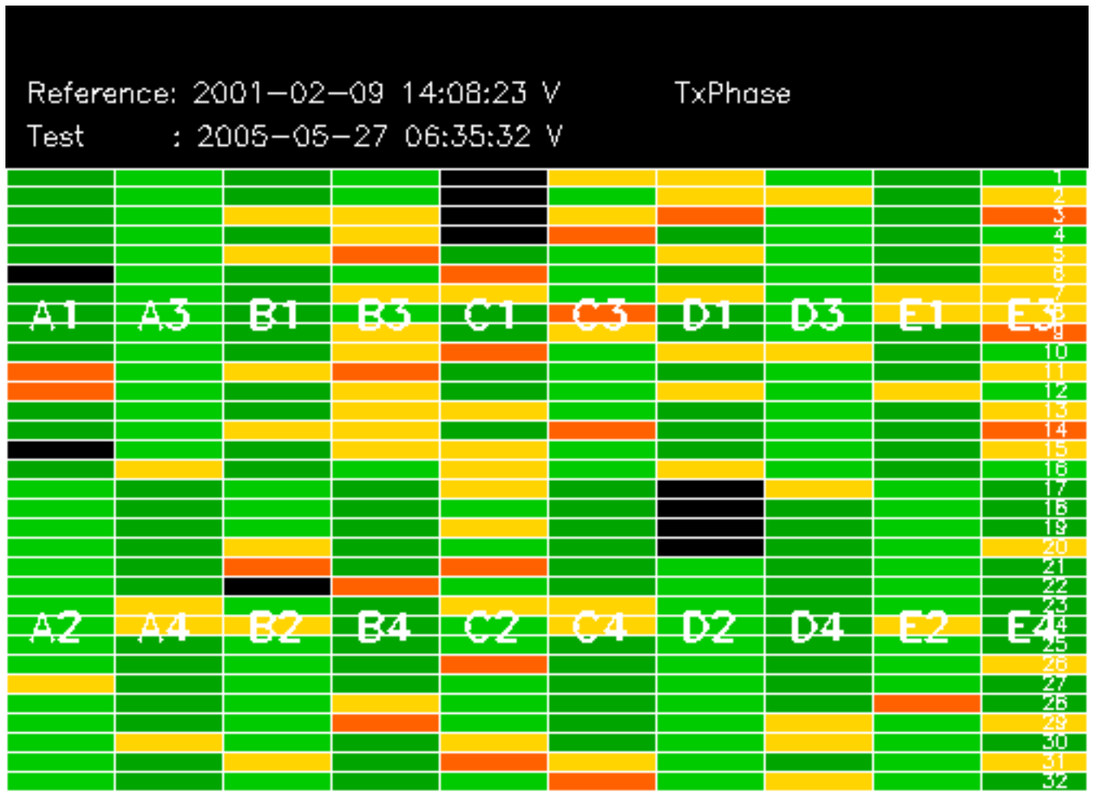
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-05-28 06:03:55 H
TxPhase
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 : 2005-05-27 06:35:32 V
TxPhase
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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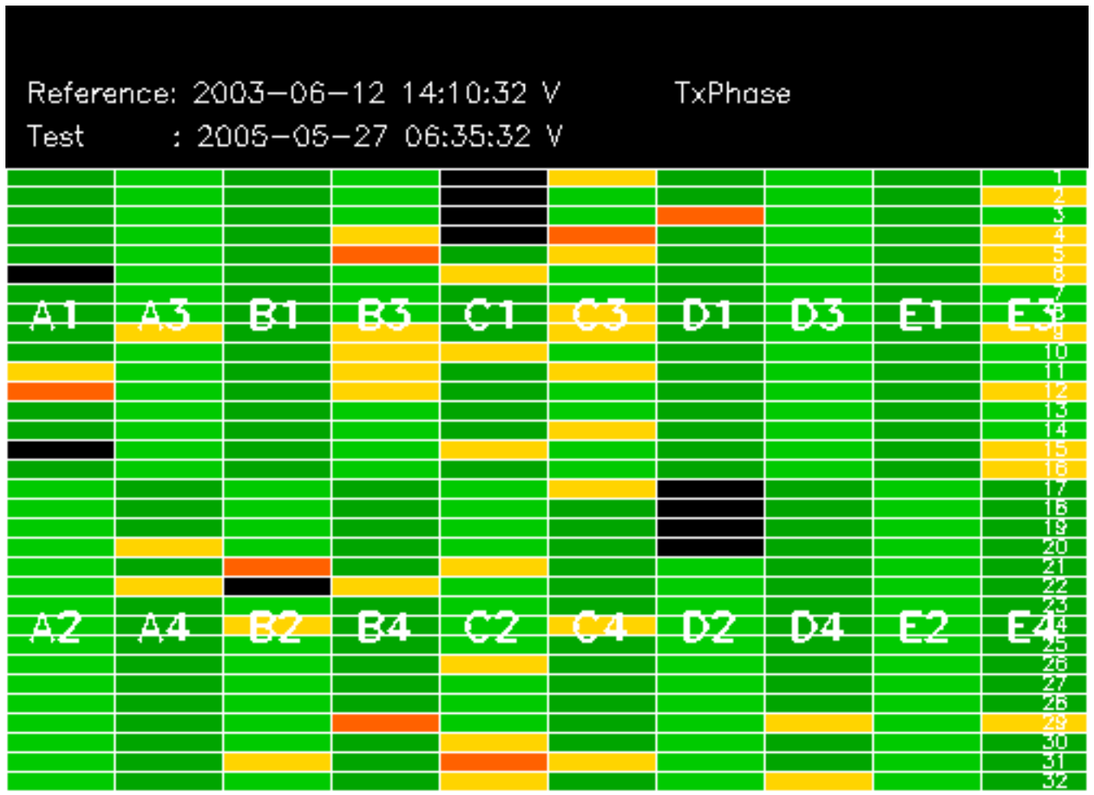
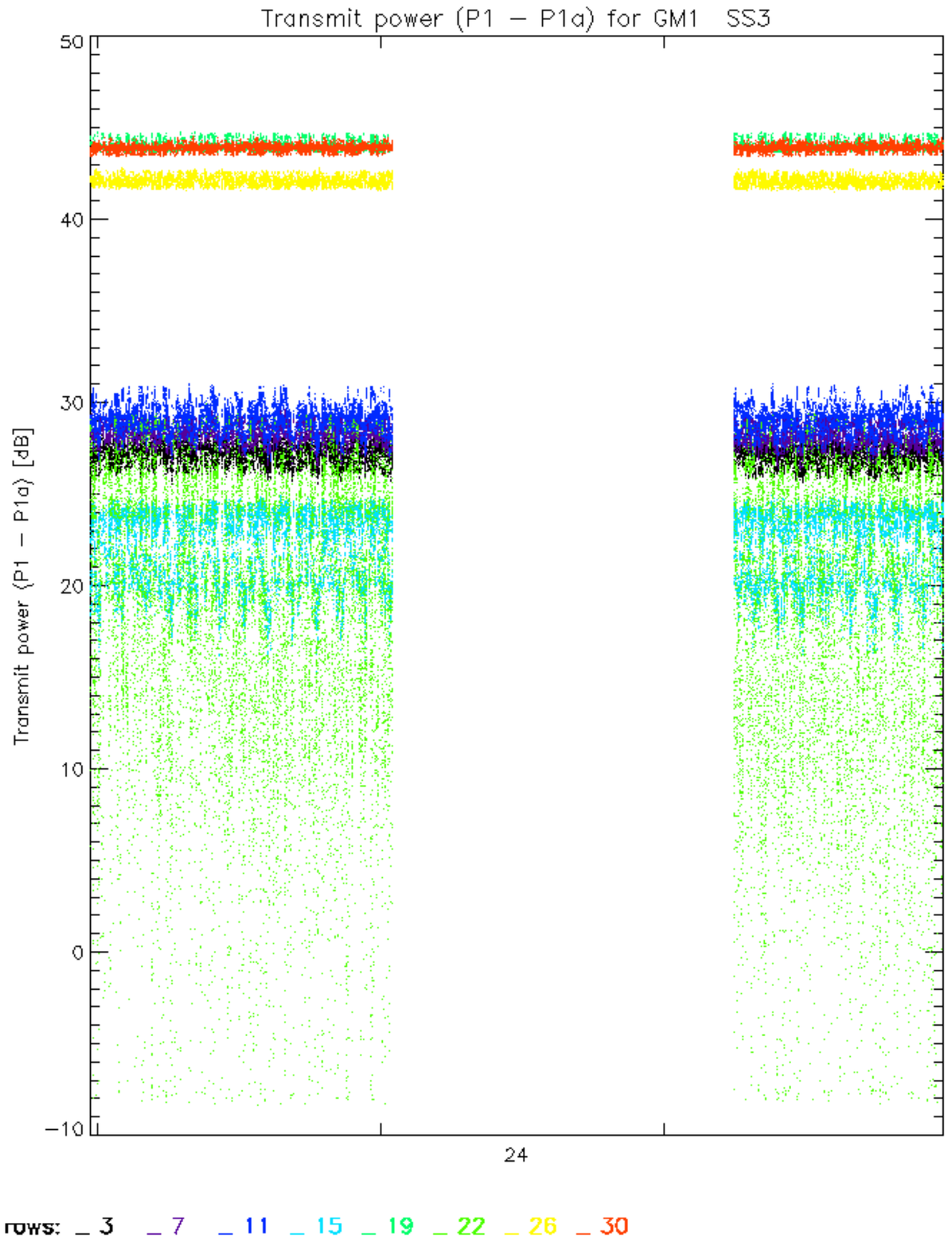
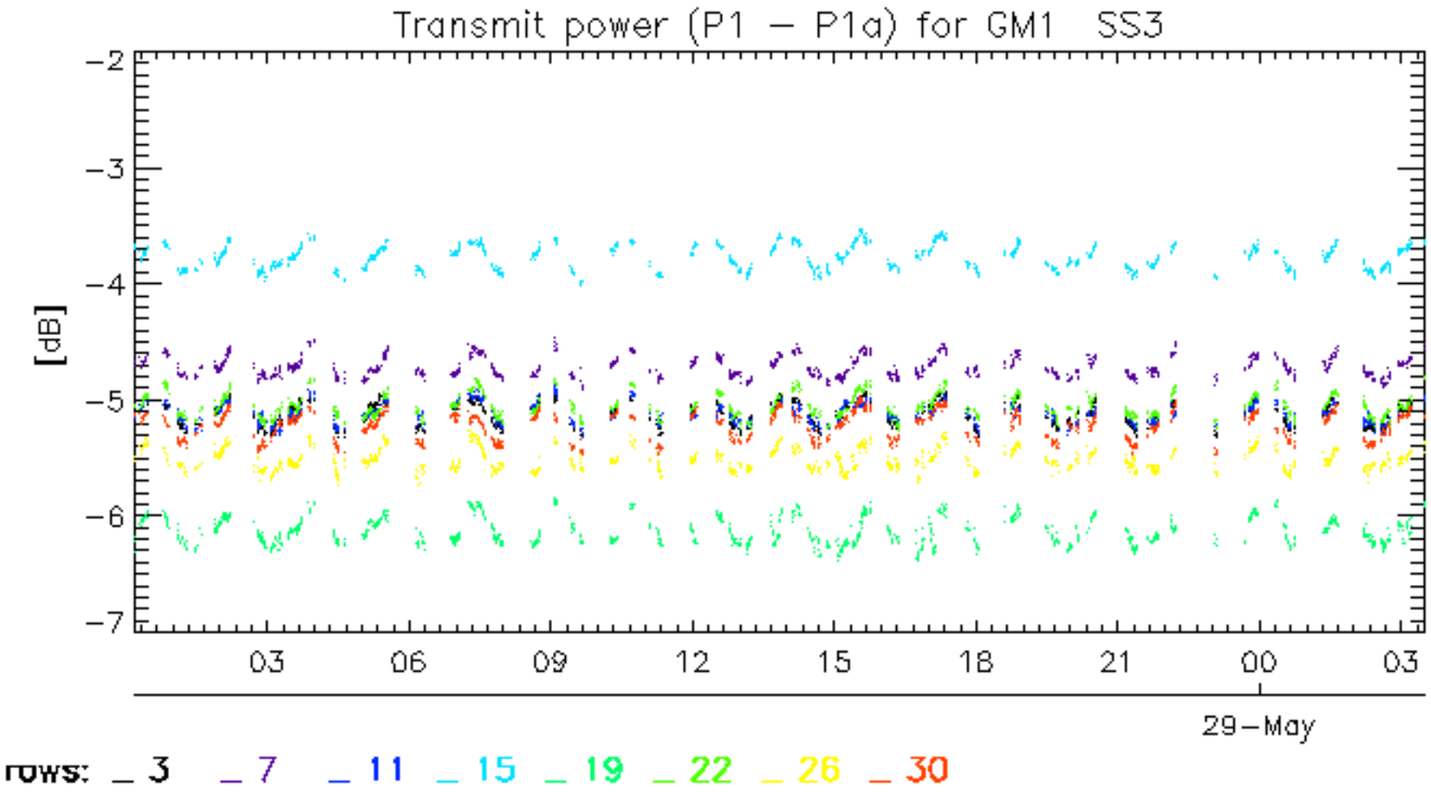
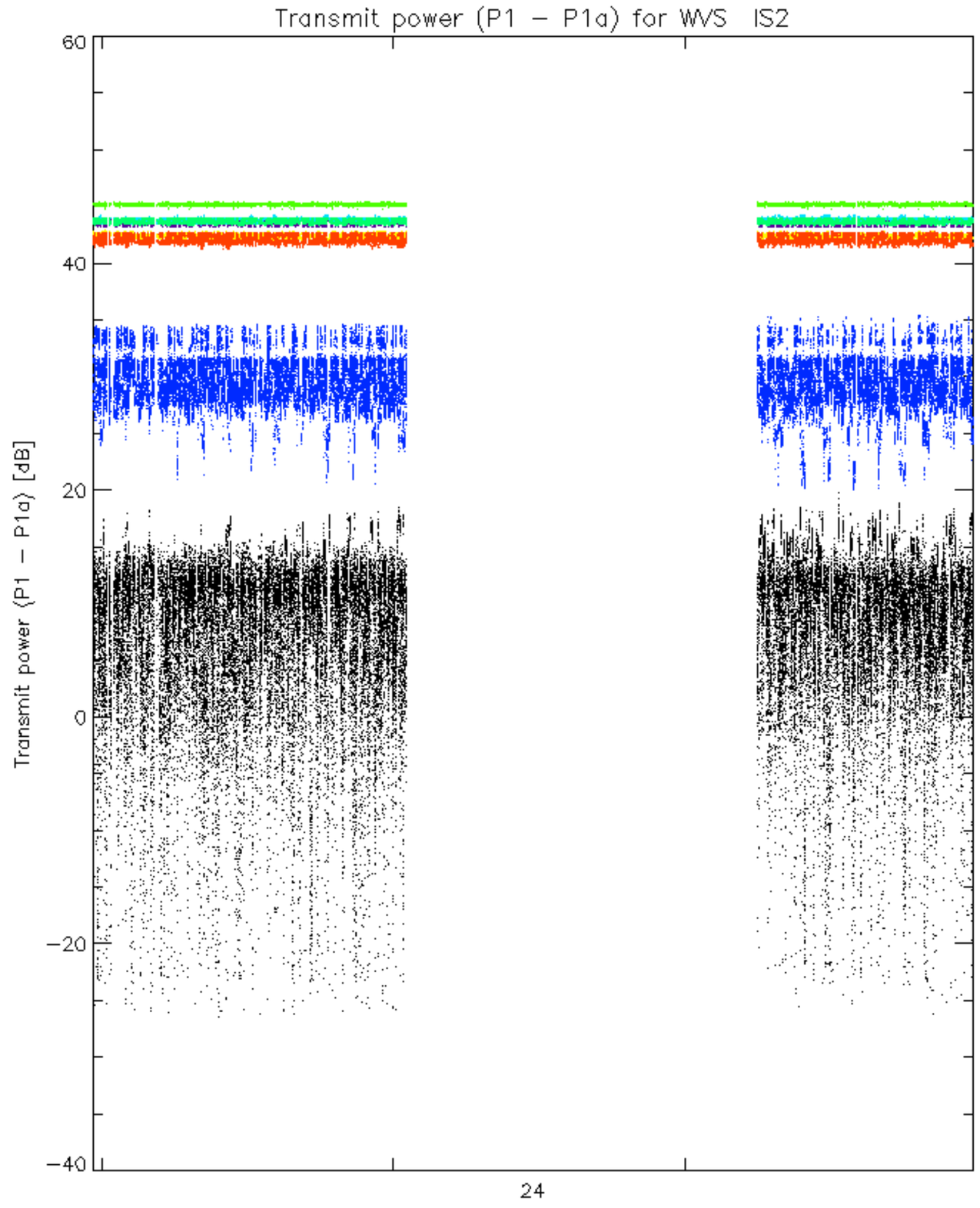
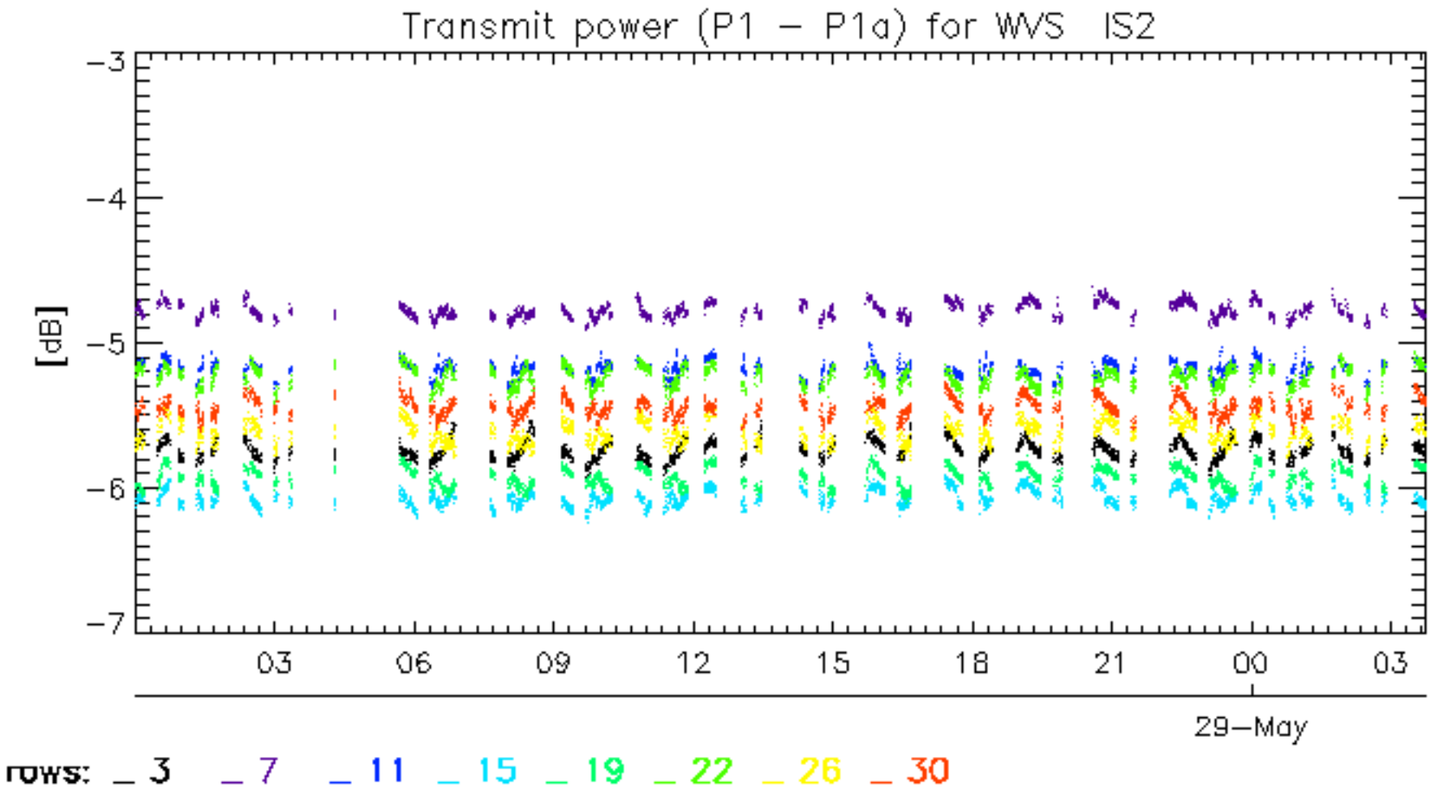
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-05-27 06:35:32 V
TxPhase
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
24
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
29–May
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
24
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
29–May
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.