PRELIMINARY REPORT OF 070524

last update on Thu May 24 23:10:10 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 2007-05-23 00:00:00 to 2007-05-24 23:10:10

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	50	99	5	1	34
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	50	99	5	1	34
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	50	99	5	1	34
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	50	99	5	1	34

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	43	50	29	16	90
ASA_XCA_AXVIEC20070517_153558_20070204_165113_20071231_000000	43	50	29	16	90
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	43	50	29	16	90
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	43	50	29	16	90

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	20070523 043734
H	20070524 040557

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	-15.247265	0.125619	-0.231569
7	P1a	-17.602617	0.071810	-0.055797
11	P1a	-17.746294	0.341640	-0.137645
15	P1a	-13.165545	0.153642	-0.148159
19	P1a	-15.441884	0.069453	-0.048542
22	P1a	-16.000835	0.335524	-0.028000
26	P1a	-14.954665	0.209280	-0.100164
30	P1a	-18.018368	0.424060	-0.418266

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.785295	0.009939	-0.006654
7	P1	-3.167868	0.008393	-0.039609
11	P1	-4.189893	0.018044	0.061828
15	P1	-6.470988	0.019308	-0.061384
19	P1	-3.778333	0.012022	-0.016110
22	P1	-4.738907	0.011507	0.040768
26	P1	-3.910269	0.017463	-0.028633
30	P1	-5.961526	0.009345	0.008702

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.648643	0.093474	0.017868
7	P2	-21.501171	0.093807	0.086038
11	P2	-15.276799	0.121457	0.055921
15	P2	-7.133996	0.091226	-0.005595
19	P2	-9.122648	0.082500	-0.010359
22	P2	-18.085382	0.077817	0.001433
26	P2	-16.657137	0.084563	-0.046937
30	P2	-19.243114	0.084222	0.059125

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.244103	0.004583	0.003923
7	P3	-8.244103	0.004583	0.003923
11	P3	-8.244103	0.004583	0.003923
15	P3	-8.244103	0.004583	0.003923
19	P3	-8.244103	0.004583	0.003923
22	P3	-8.244103	0.004583	0.003923
26	P3	-8.244081	0.004589	0.004072
30	P3	-8.244081	0.004589	0.004072

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	-11.538914	0.143735	-0.880352
7	P1a	-10.015054	0.104200	0.048042
11	P1a	-10.688913	0.060509	-0.046431
15	P1a	-10.766256	0.136423	0.087013
19	P1a	-15.871373	0.096606	-0.119203
22	P1a	-21.510275	1.329930	-0.141845
26	P1a	-15.570089	0.311683	-0.080646
30	P1a	-18.258307	0.408537	0.075855

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-7.854552	0.354004	1.665792
7	P1	-2.363746	0.053667	0.053230
11	P1	-2.867800	0.016193	0.009056
15	P1	-3.789541	0.033954	0.046180
19	P1	-3.609341	0.017816	-0.047438
22	P1	-4.941568	0.023163	0.032563
26	P1	-6.062882	0.021100	-0.051708
30	P1	-5.360527	0.030616	-0.067741

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.217447	0.090388	-0.070336
7	P2	-22.067339	0.178747	-0.030845
11	P2	-10.662393	0.057168	-0.059138
15	P2	-4.966096	0.046010	-0.095538
19	P2	-6.882823	0.045507	-0.043373
22	P2	-8.103903	0.063359	-0.033325
26	P2	-24.354294	0.114714	-0.061037
30	P2	-21.702545	0.098608	-0.007349

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.091991	0.005219	-0.008002
7	P3	-8.091884	0.005211	-0.007906
11	P3	-8.091920	0.005203	-0.008343
15	P3	-8.091897	0.005211	-0.008390
19	P3	-8.091929	0.005217	-0.008066
22	P3	-8.091906	0.005217	-0.008596
26	P3	-8.091969	0.005219	-0.008656
30	P3	-8.091868	0.005213	-0.008404

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	0.000552208
	stdev	1.89675e-07
MEAN Q	mean	0.000512459
	stdev	2.36597e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136199
	stdev	0.00115903
STDEV Q	mean	0.136584
	stdev	0.00117607

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007052[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_WSM_1PNPDE20070522_190811_000001712058_00214_27322_6378.N1	0	73
ASA_WSM_1PNPDE20070523_183932_000000852058_00228_27336_7371.N1	0	10
ASA_WSM_1PNPDE20070524_180905_000001292058_00242_27350_8687.N1	0	31

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

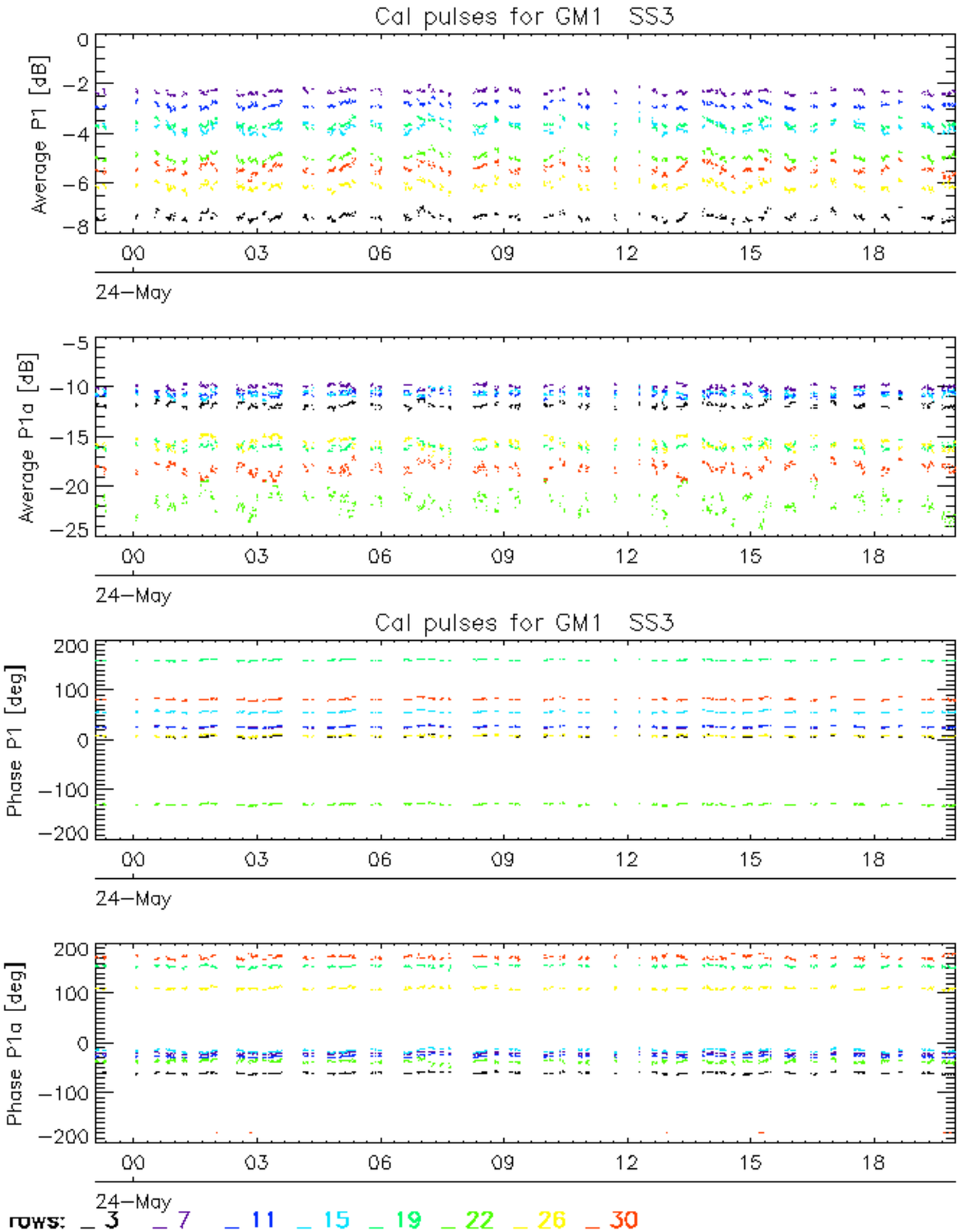

Descending

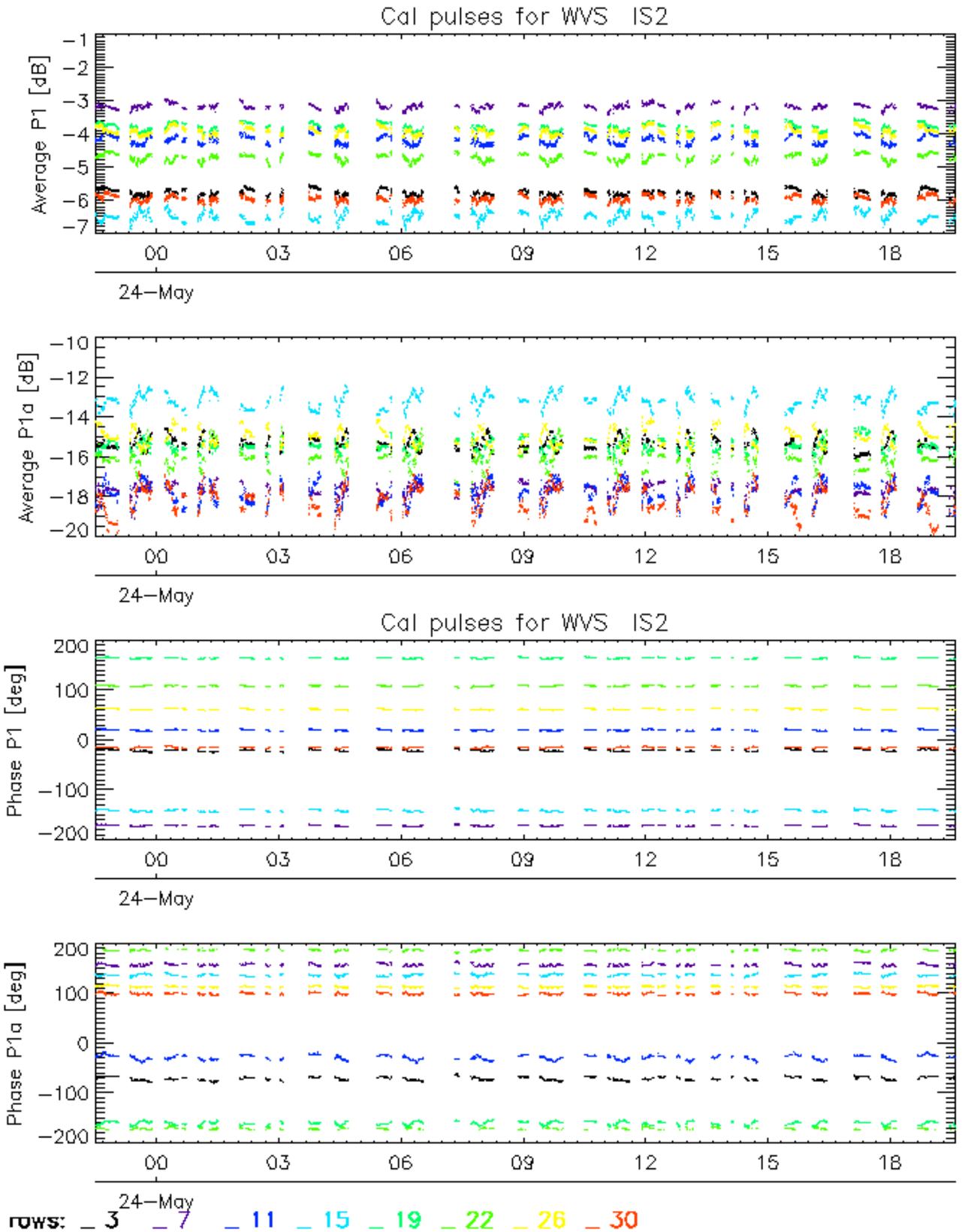
7.5 - Absolute Doppler for GM1

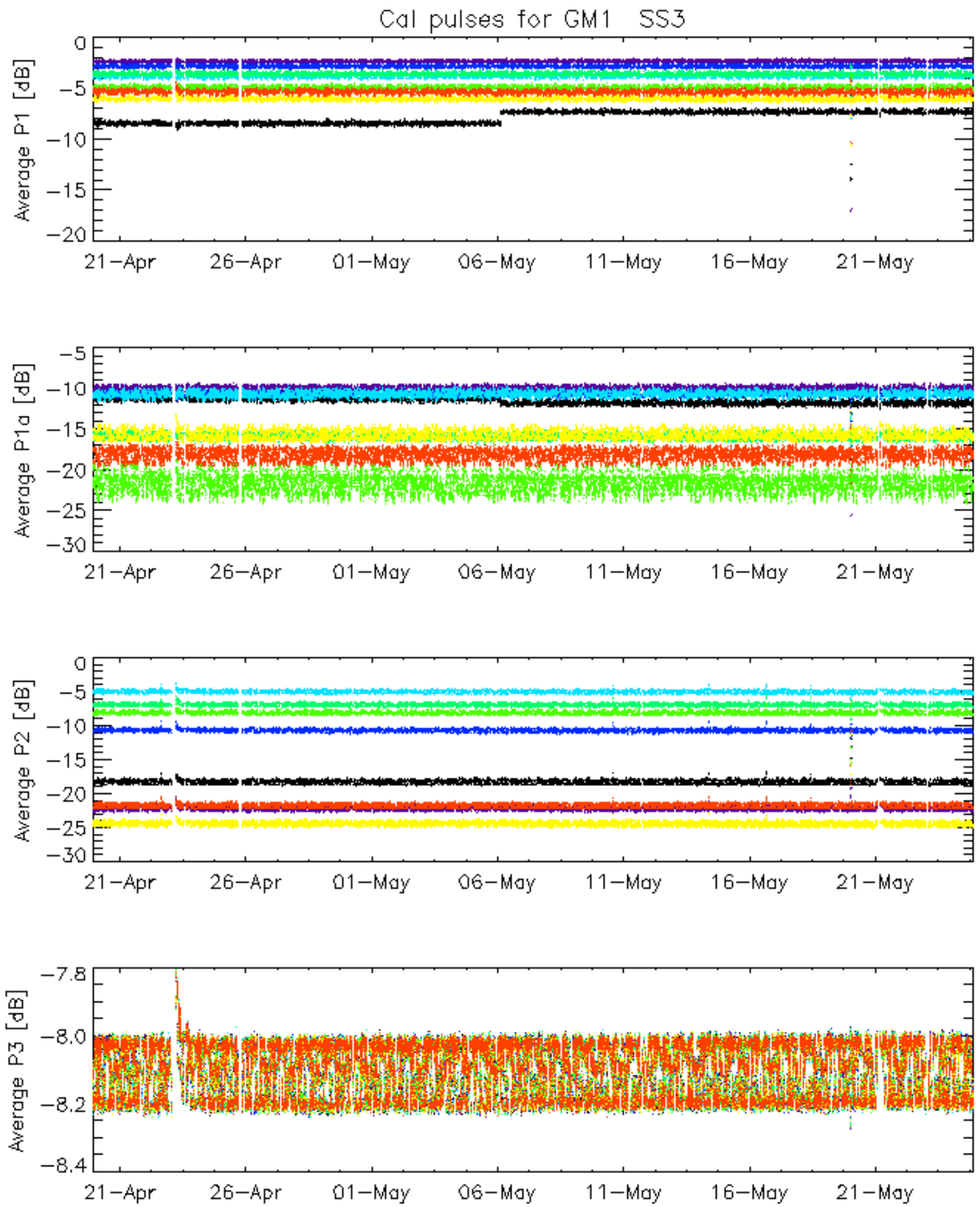
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

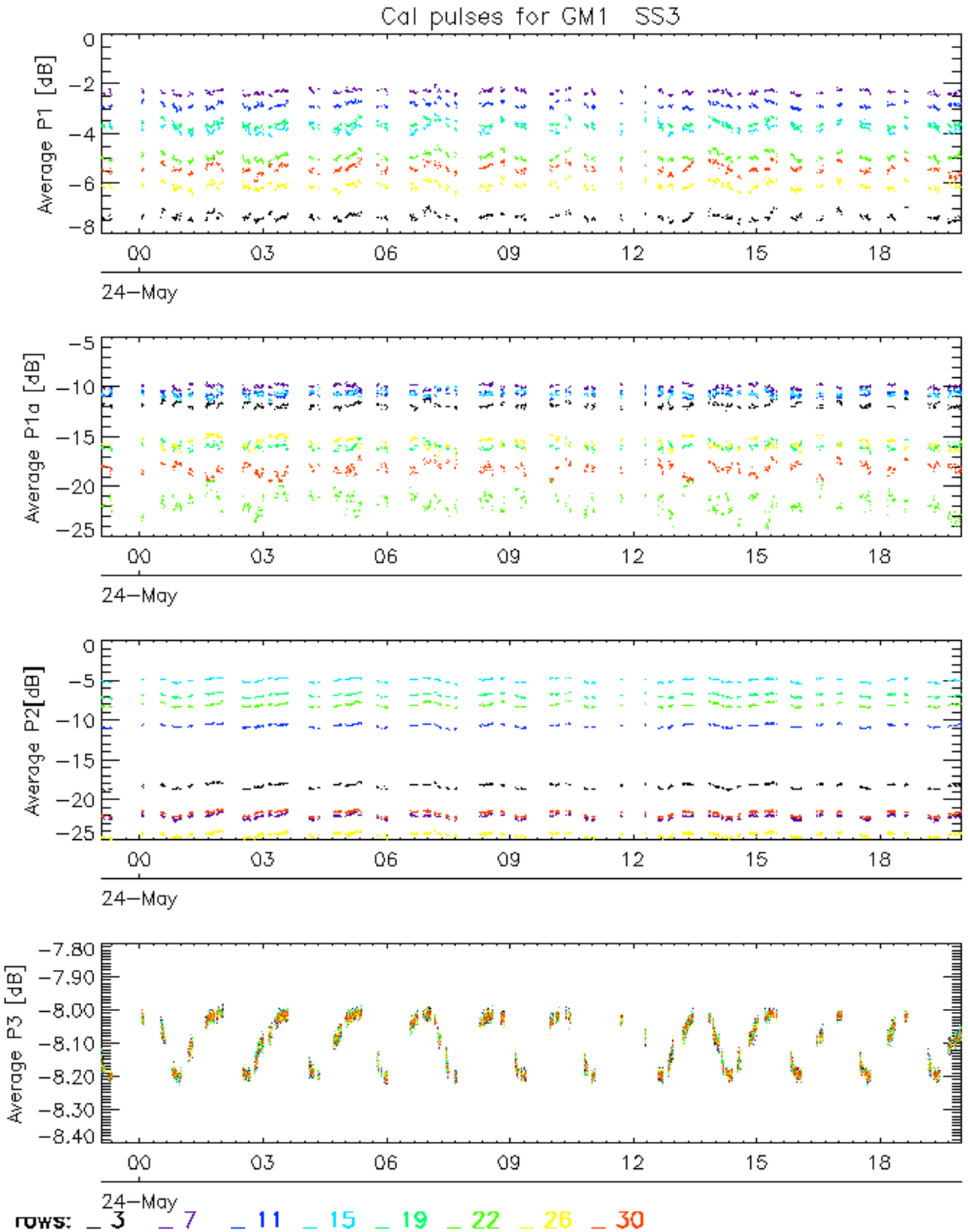
7.6 - Doppler evolution versus ANX for GM1

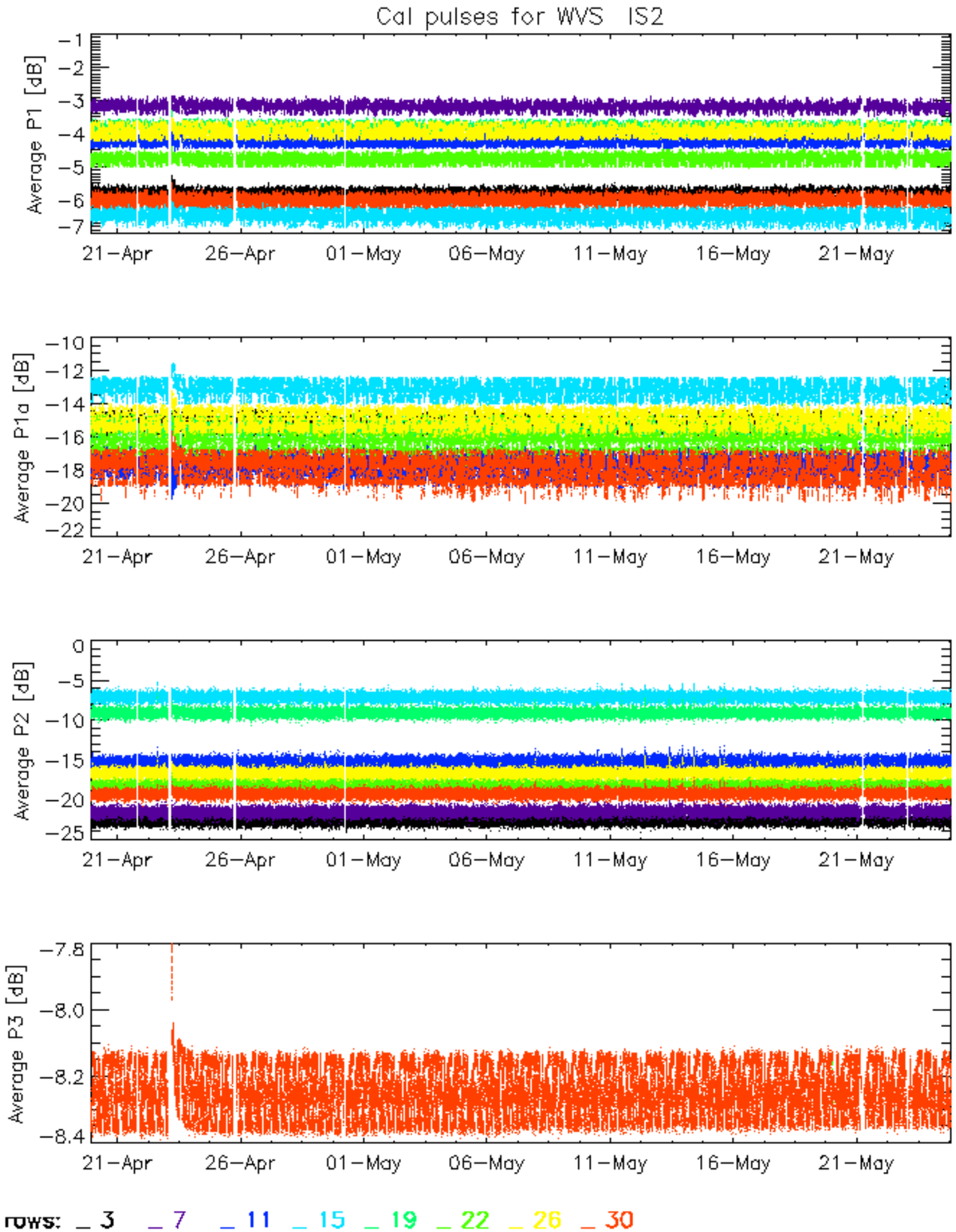
Evolution Doppler error versus ANX
☒

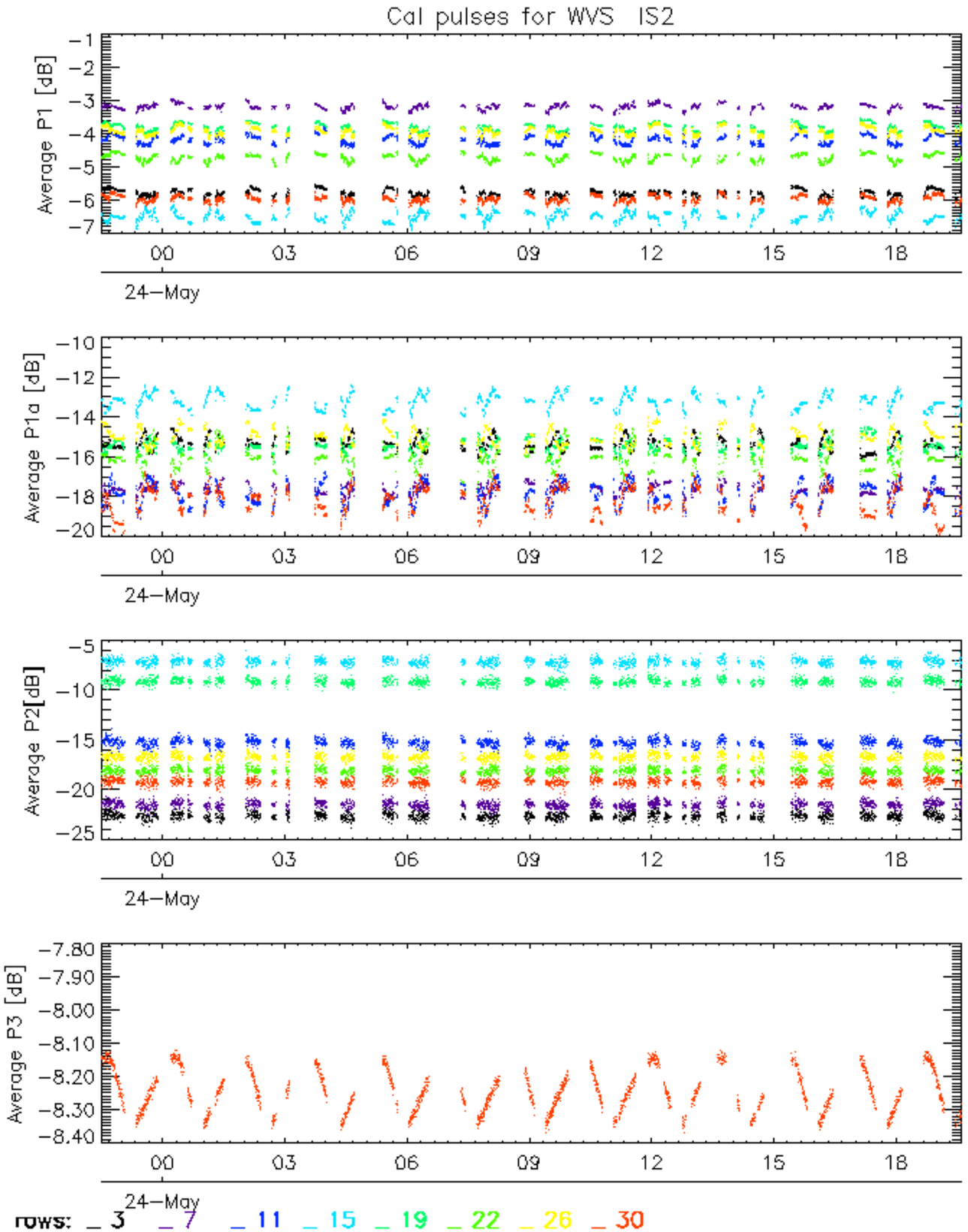

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
00
03
06
09
12
15
18
24−May
Average P1a [dB]
−5
−10
−15
−20
−25
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
00
03
06
09
12
15
18
24−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
00
03
06
09
12
15
18
24−May
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
00
03
06
09
12
15
18
24−May
Phase P1a [deg]
200
100
0
−100
−200
00
03
06
09
12
15
18
24−May
rows: 3 7 11 15 19 22 26 30

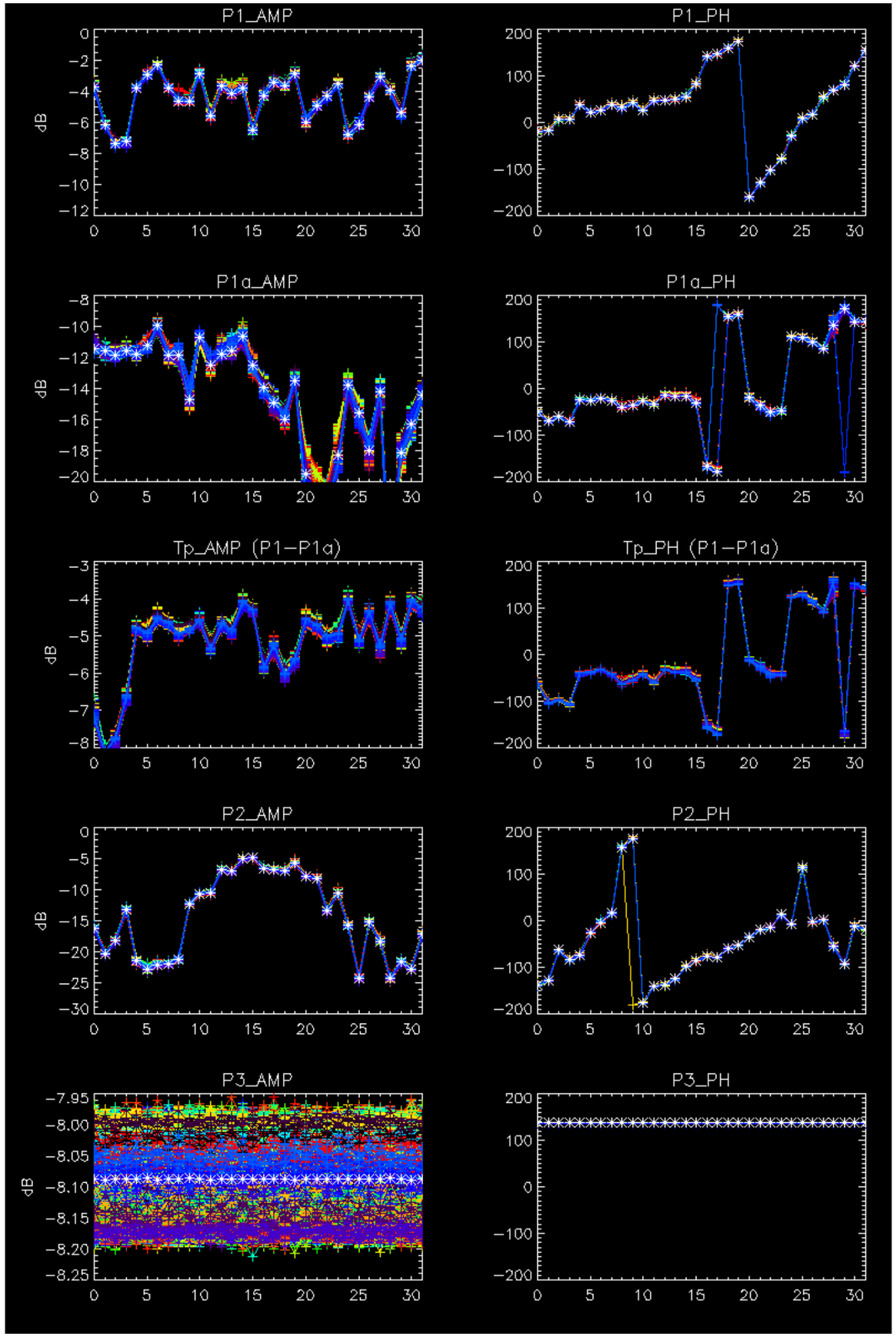

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

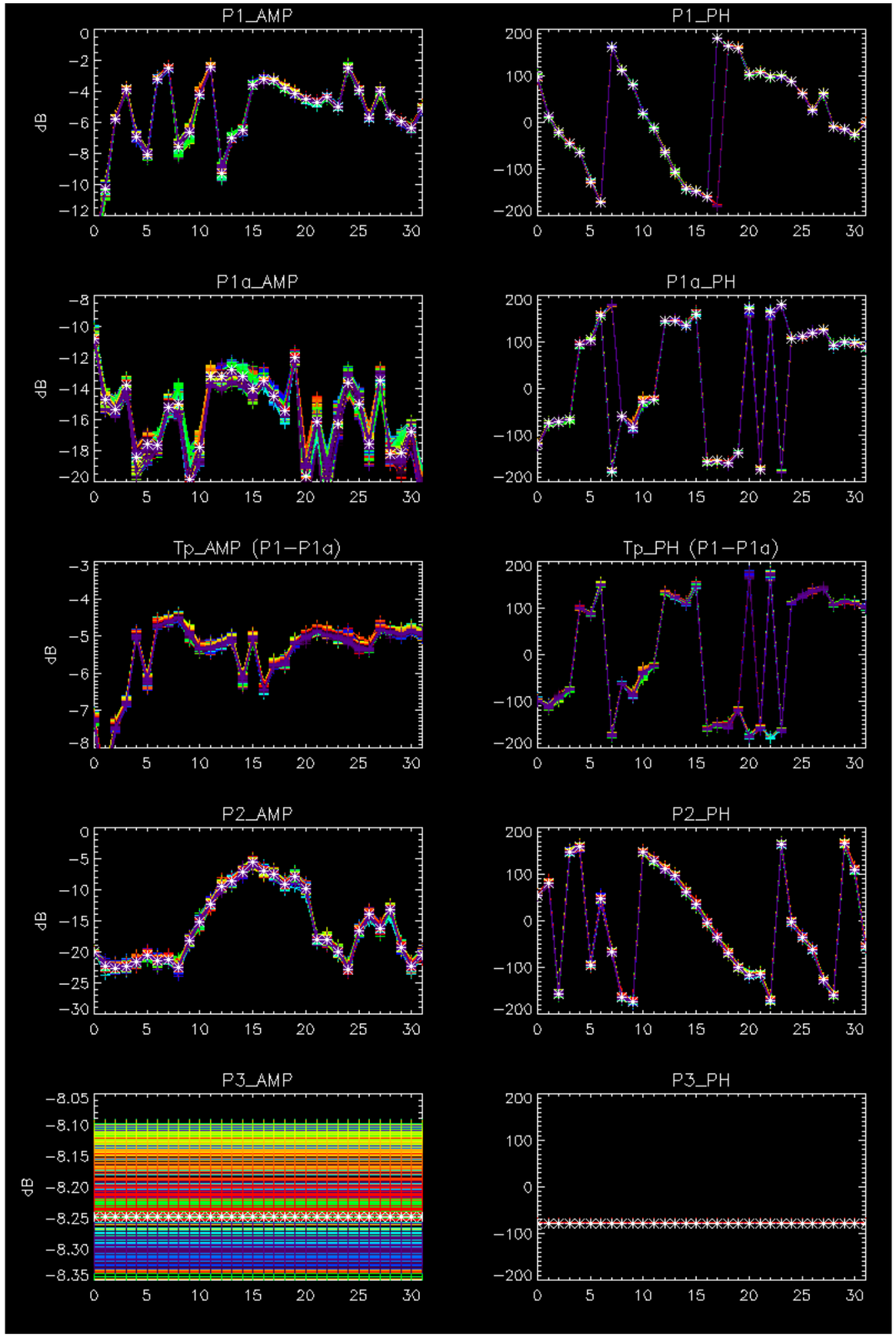

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
00
03
06
09
12
15
18
24−May
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
−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
24−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
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

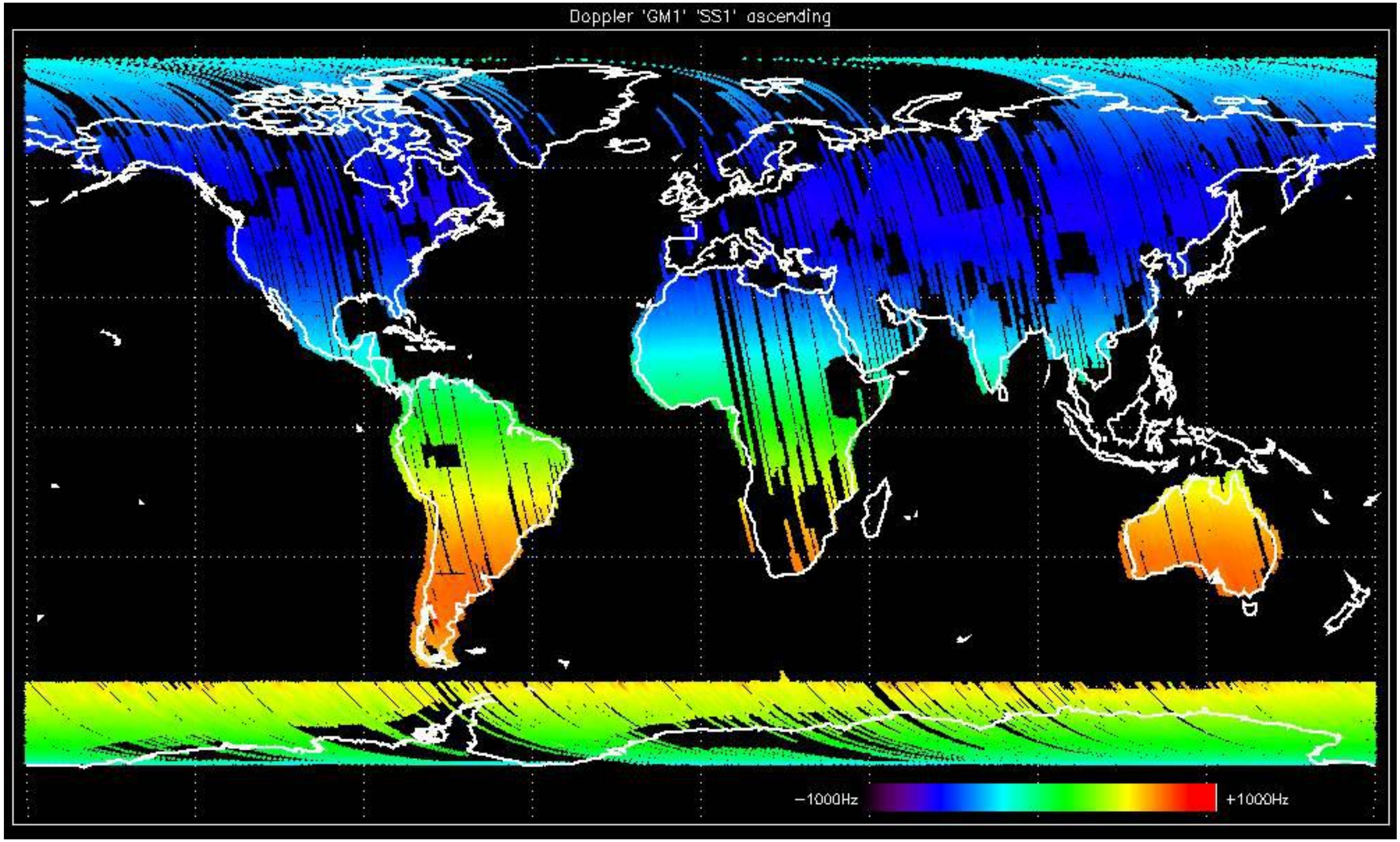
No anomalies observed.

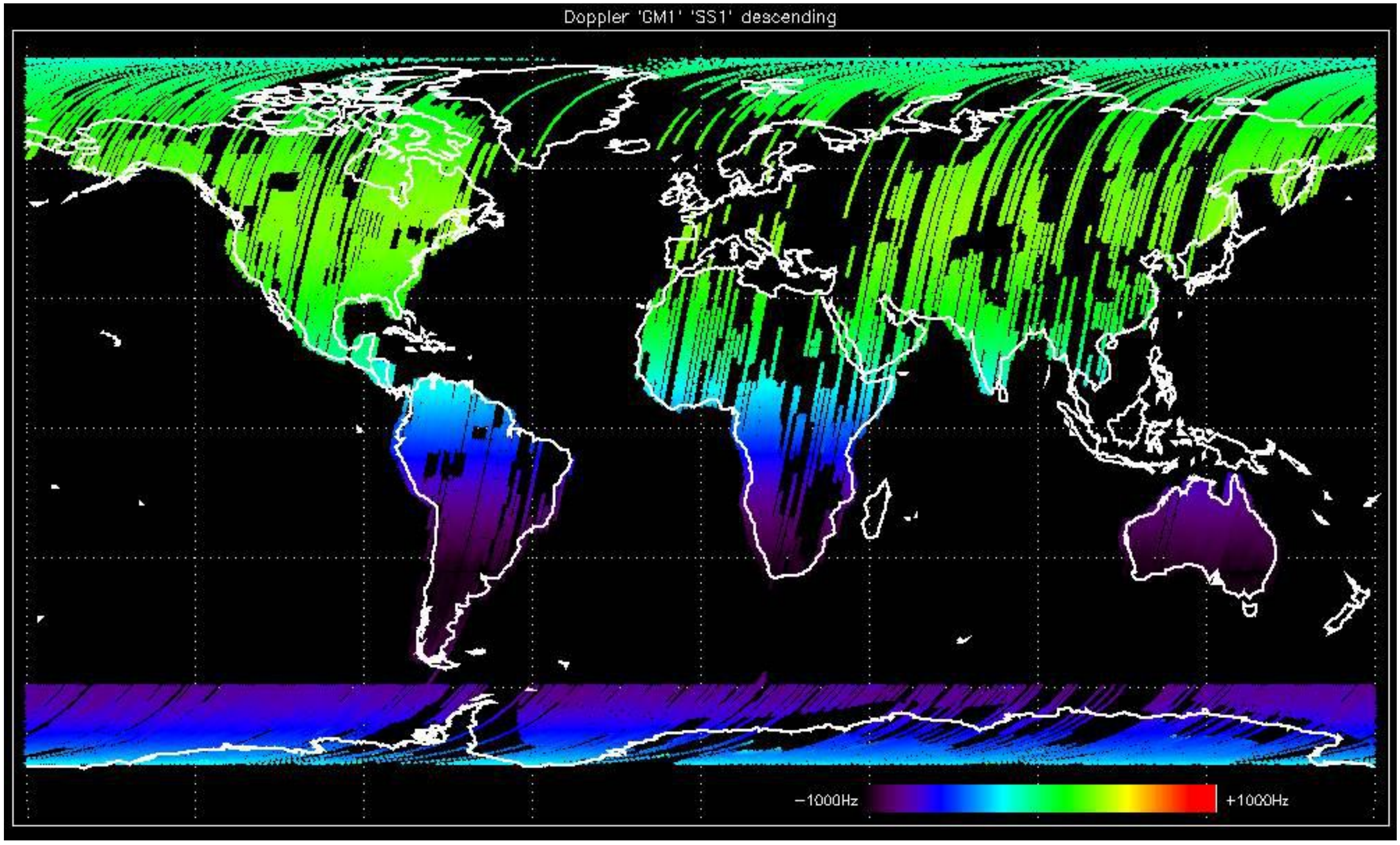

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

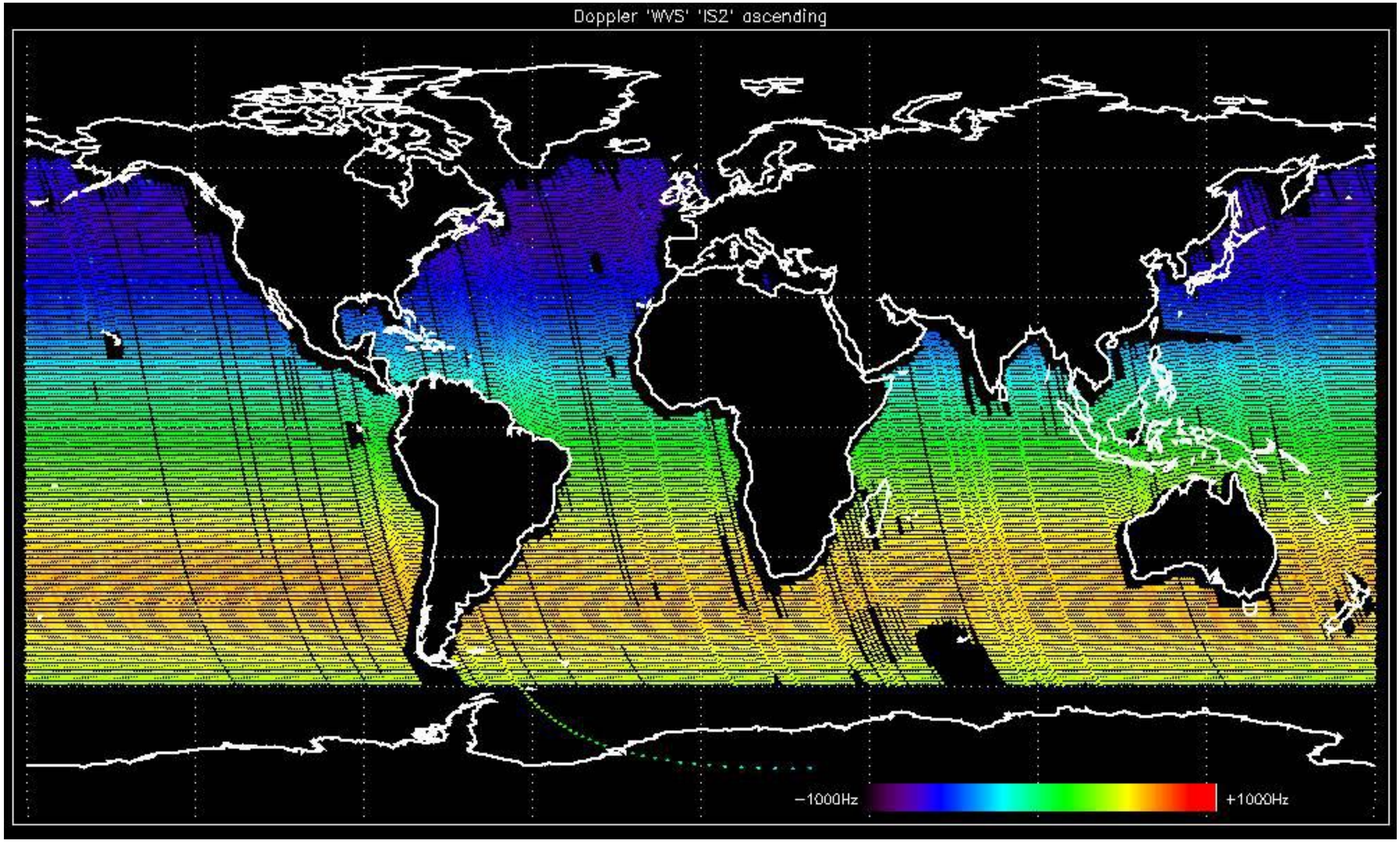

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

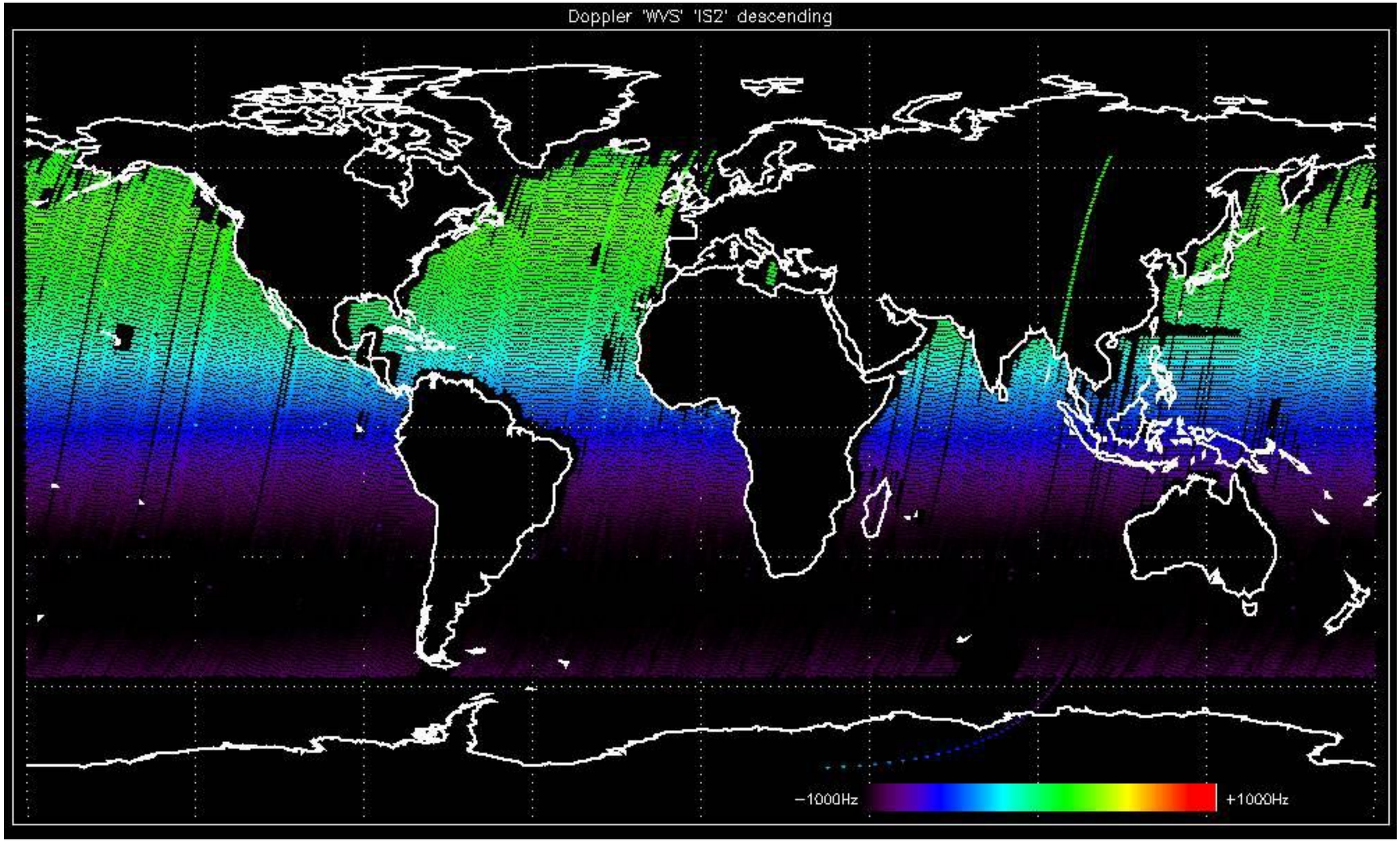
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

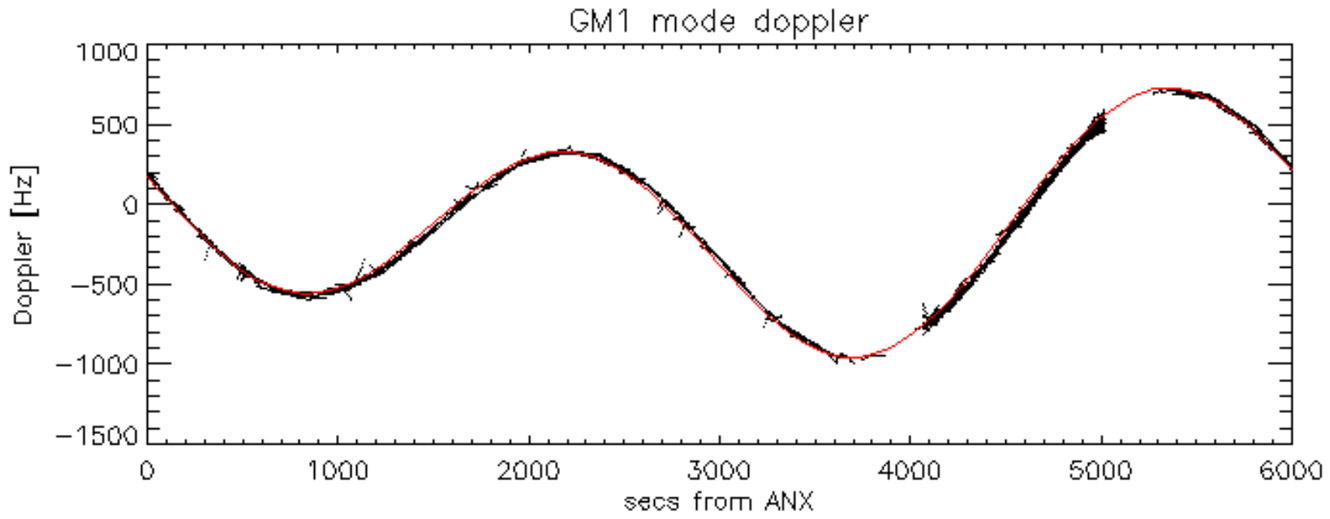
Preliminary report.The data is not yet controled

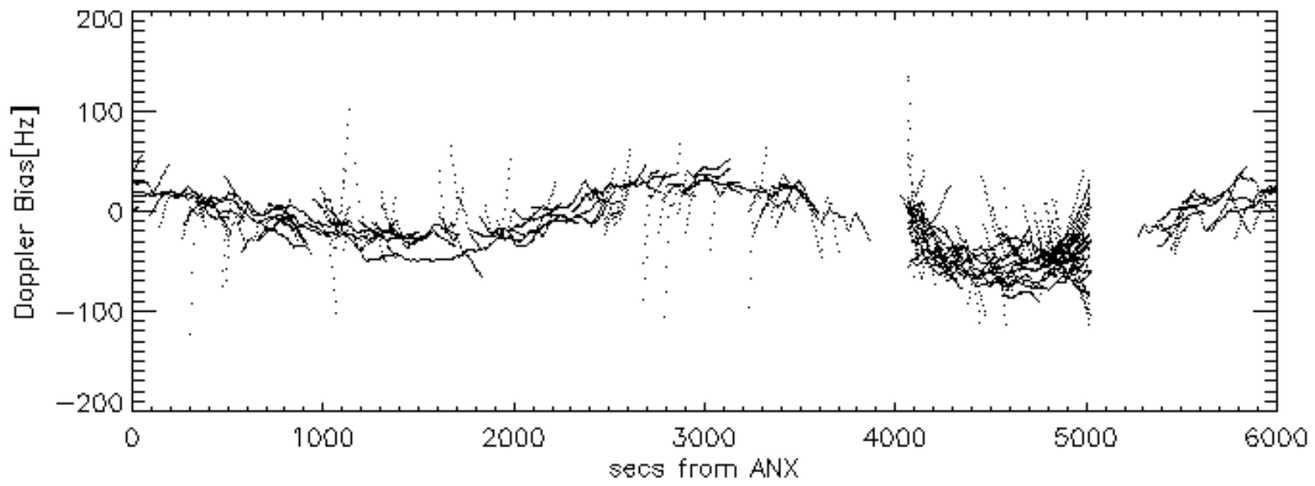

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

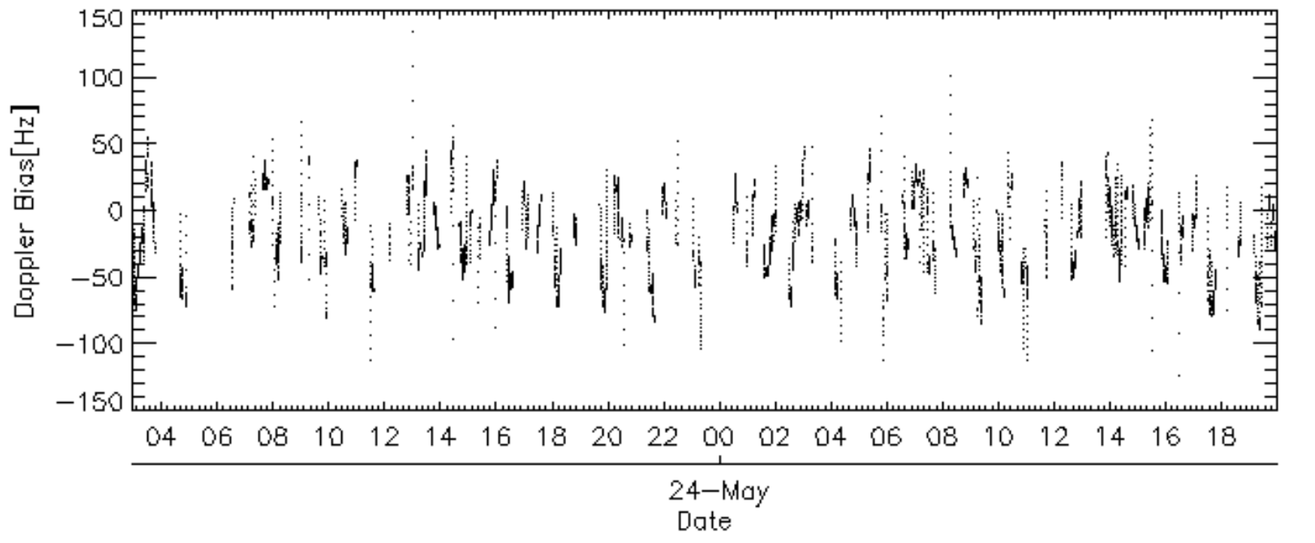

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

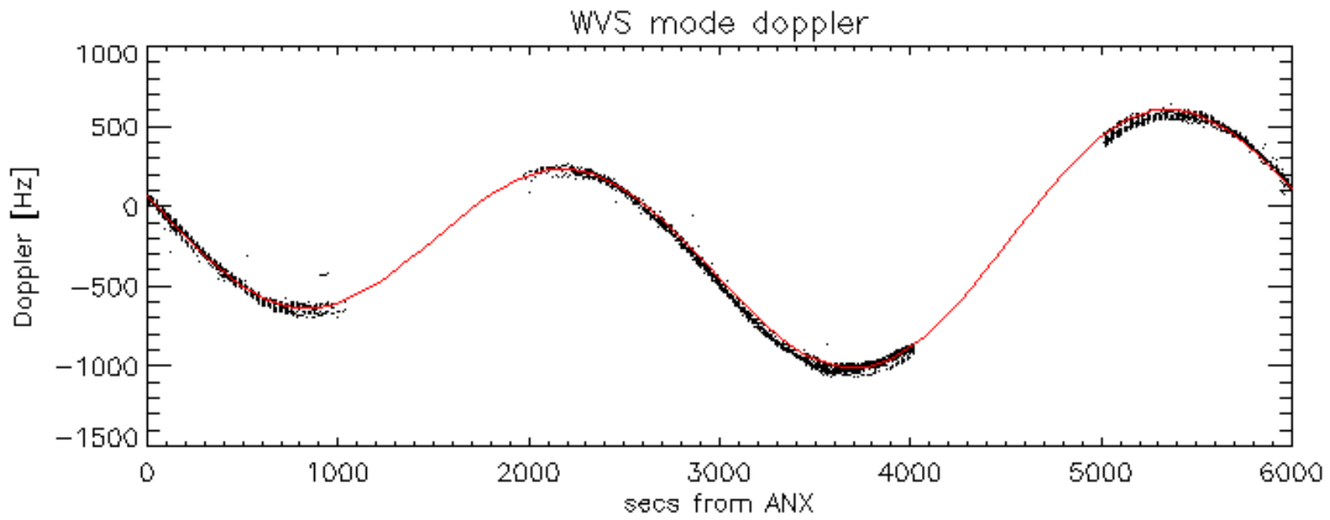

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

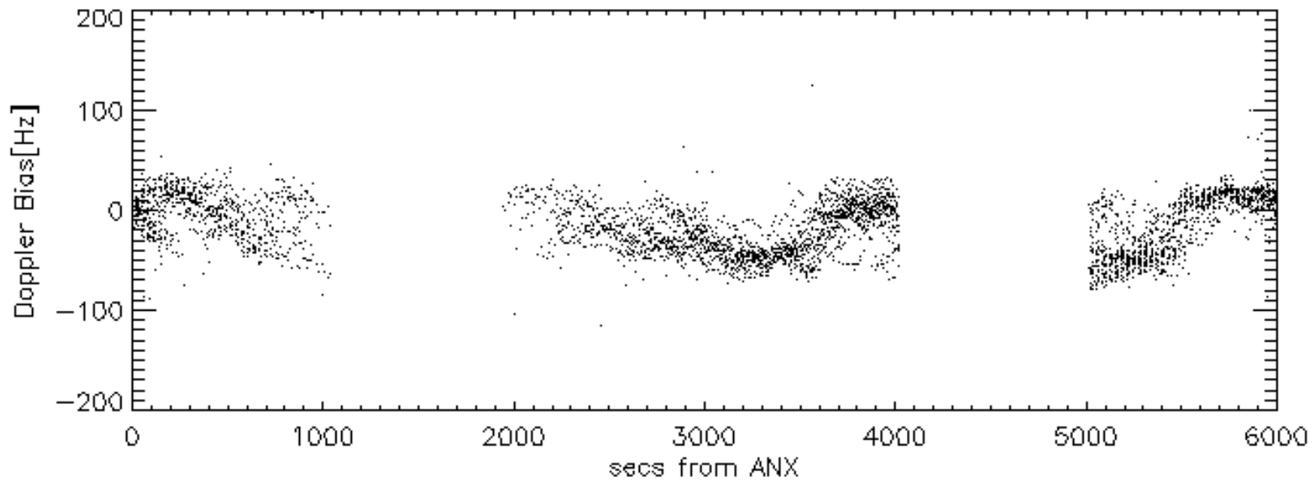

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

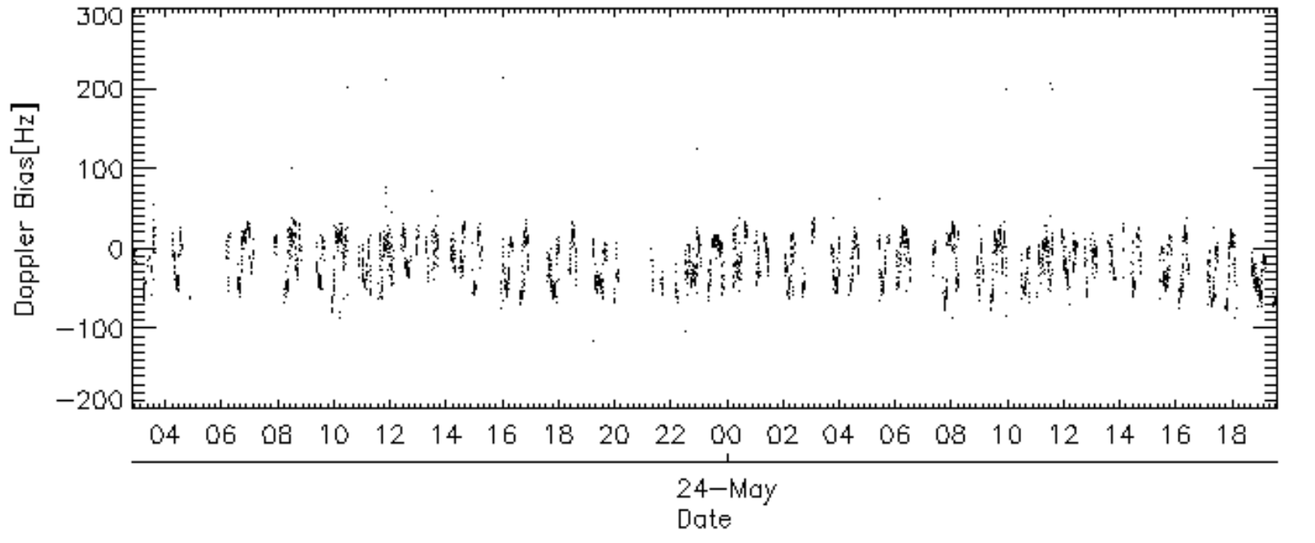

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

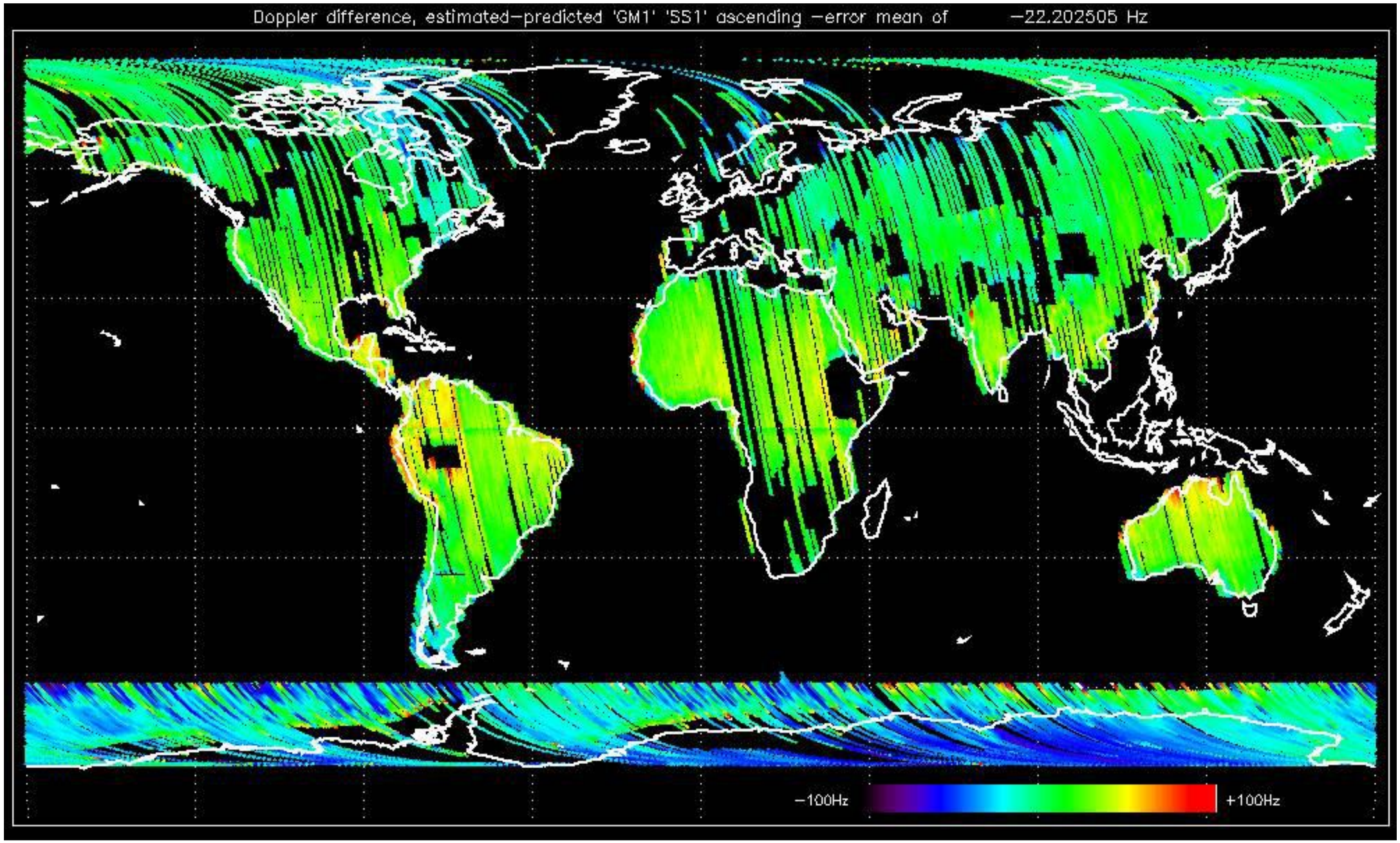

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

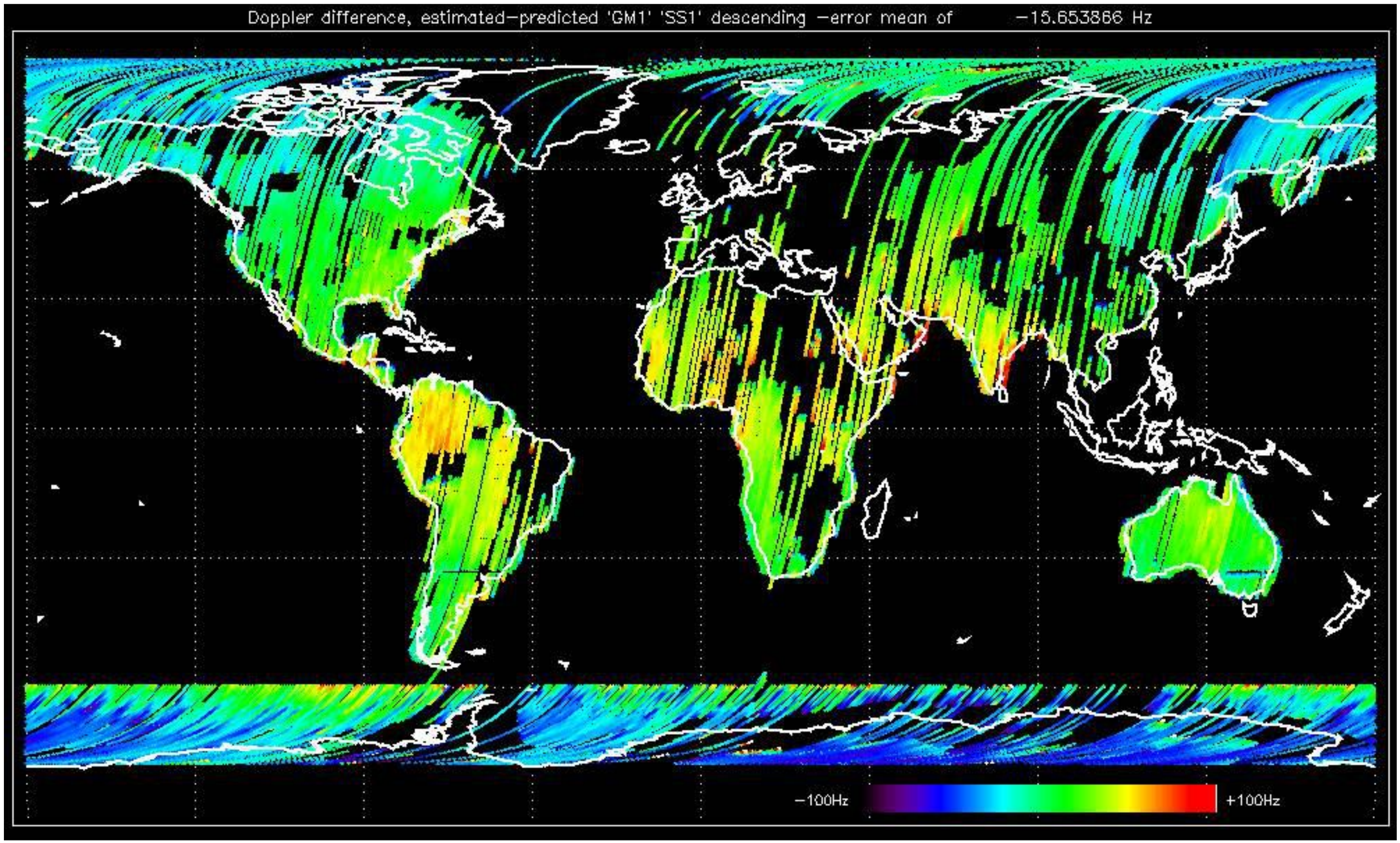

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
10
12
14
16
18
24−May
Date

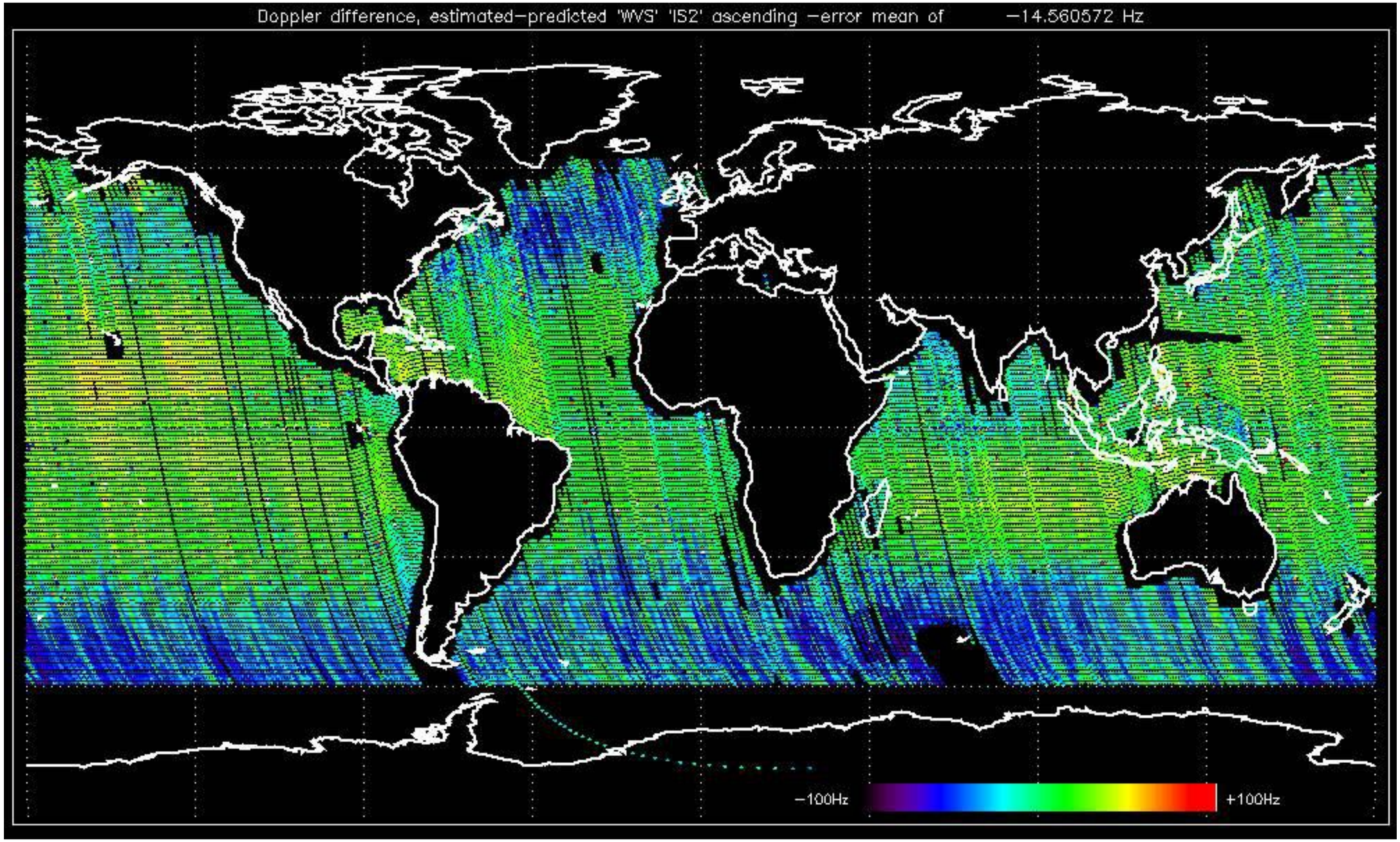

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

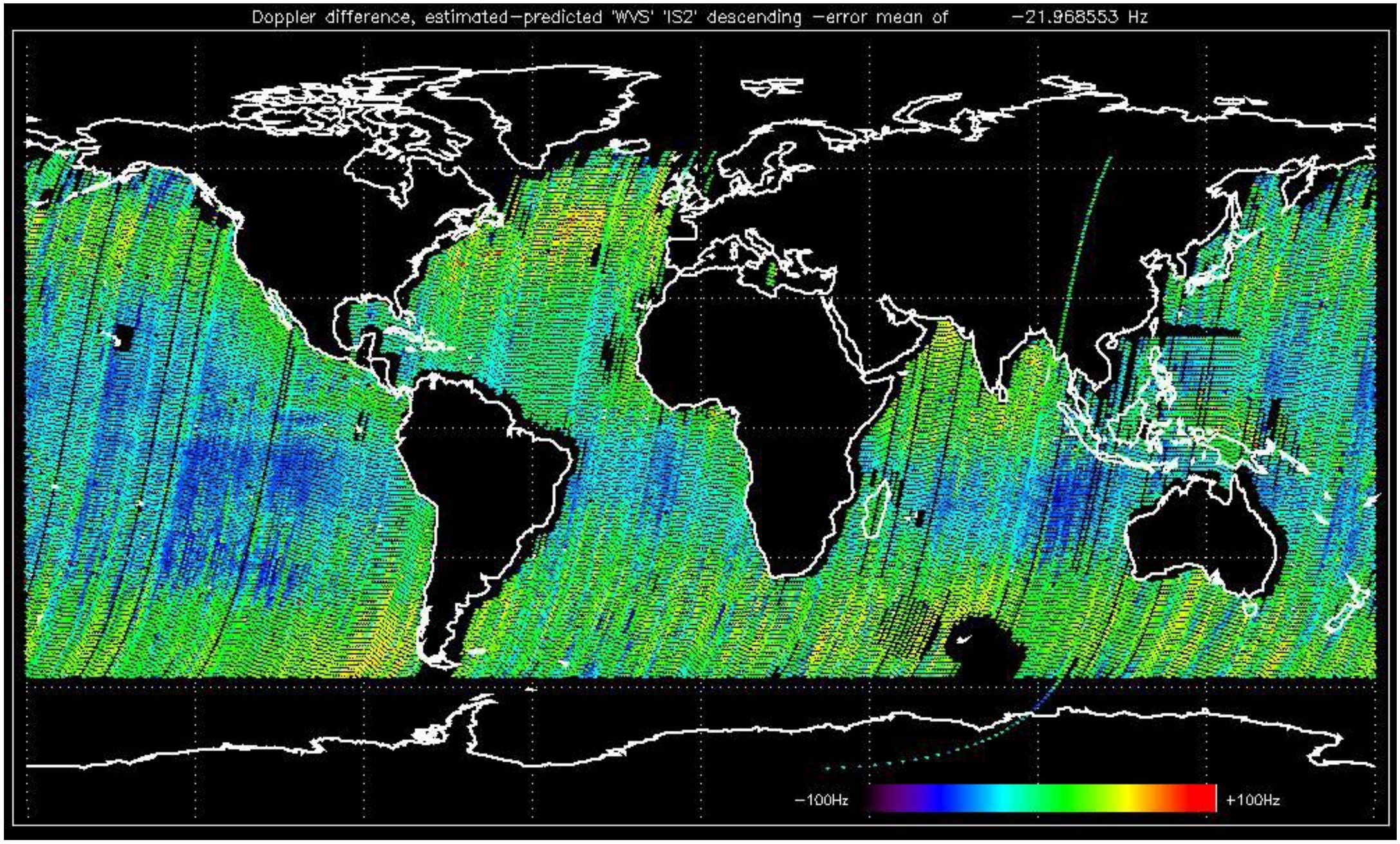

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −22.202505 Hz
−100Hz
+100Hz

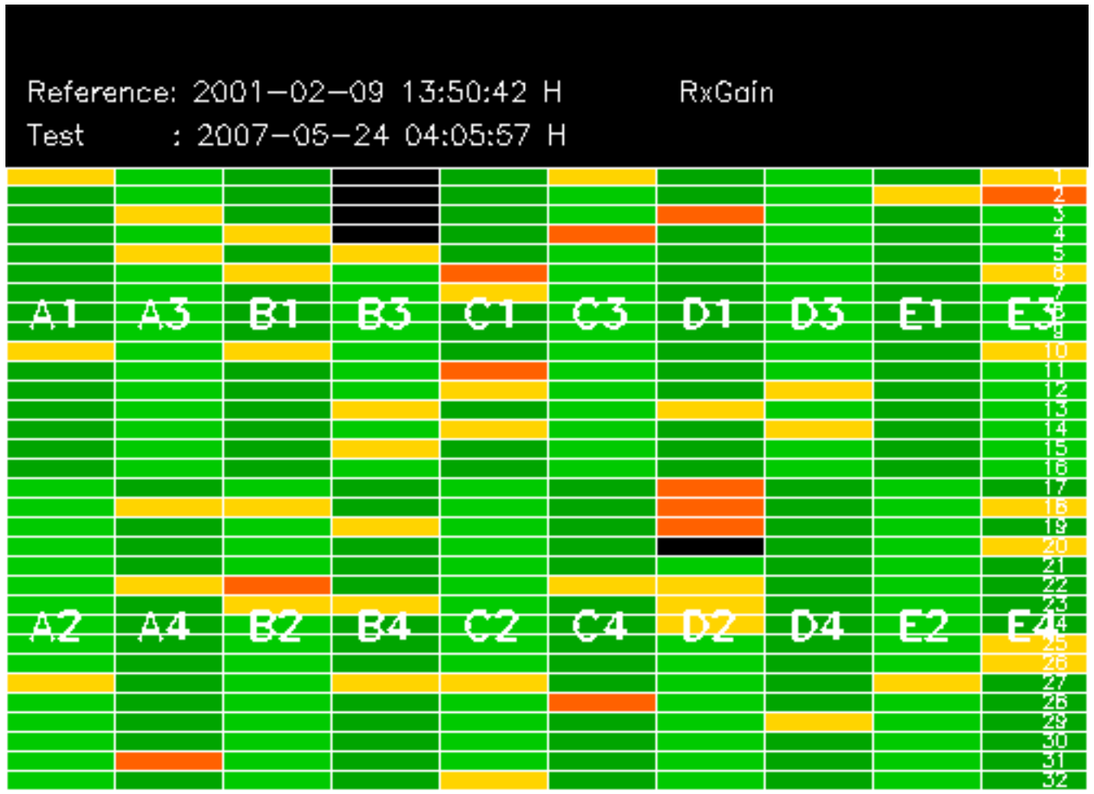

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −15.653866 Hz
−100Hz
+100Hz

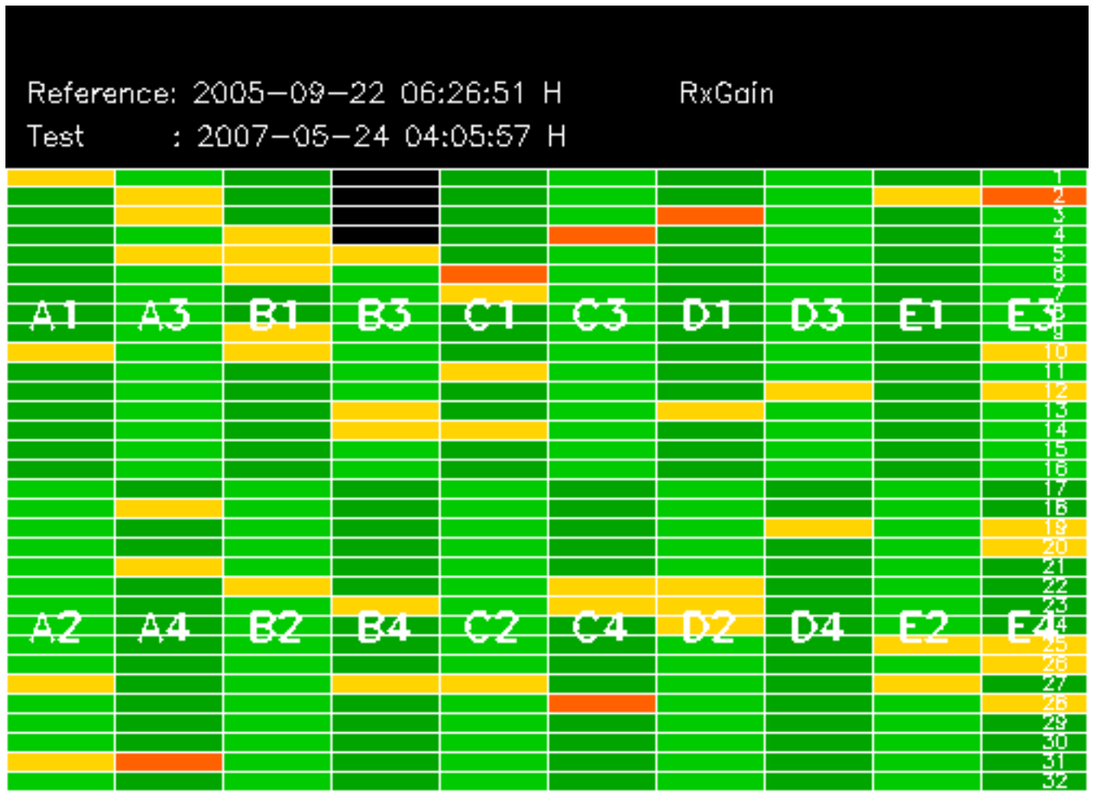

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −14.560572 Hz
−100Hz
+100Hz

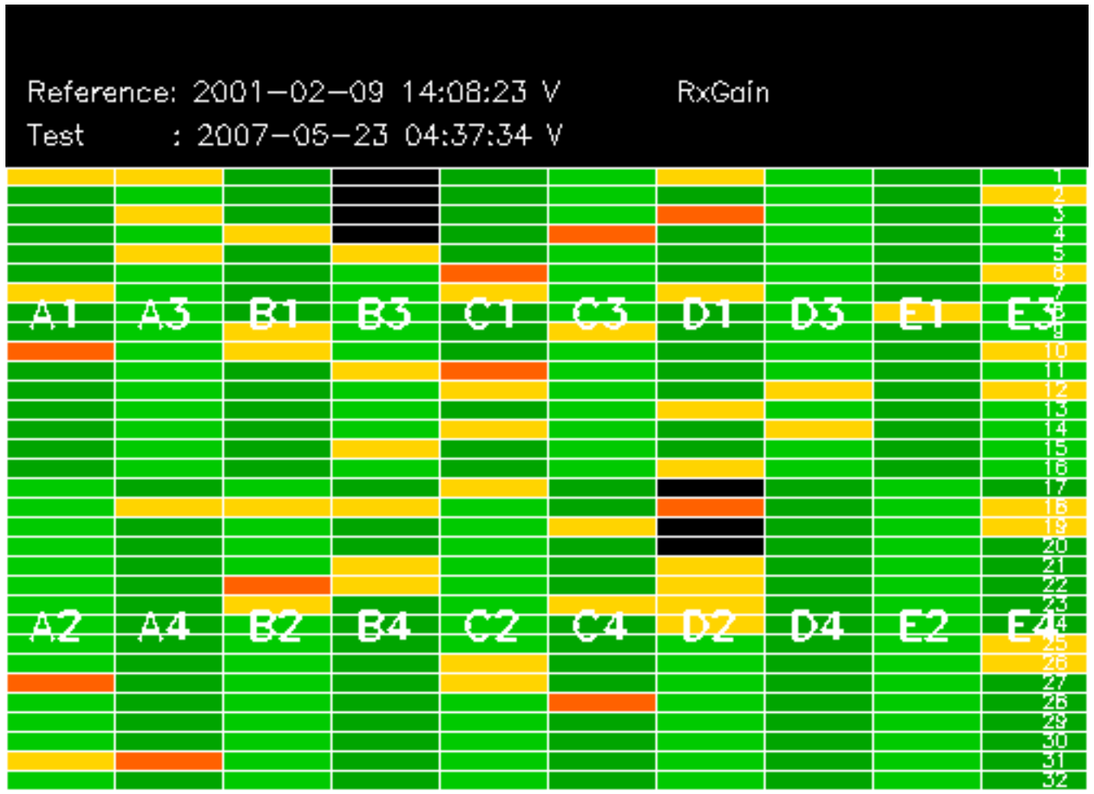

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −21.968553 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2007-05-24 04:05:57 H
RxGain
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 : 2007-05-24 04:05:57 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 : 2007-05-23 04:37:34 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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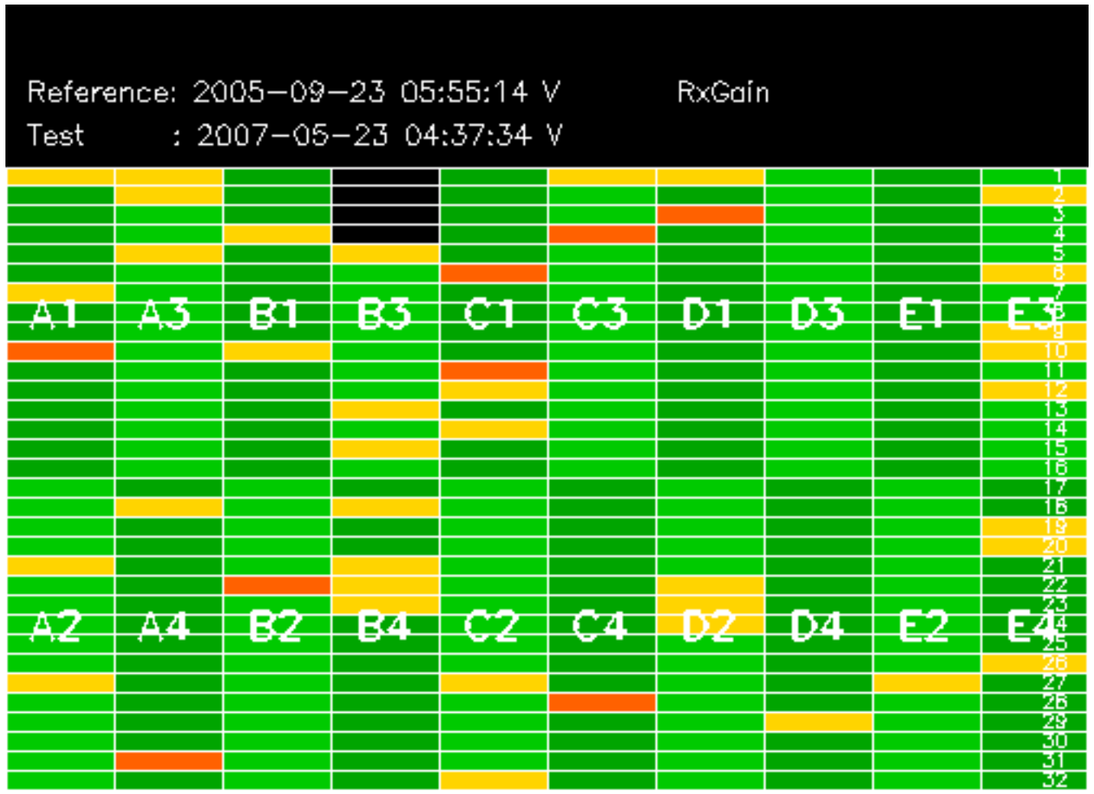
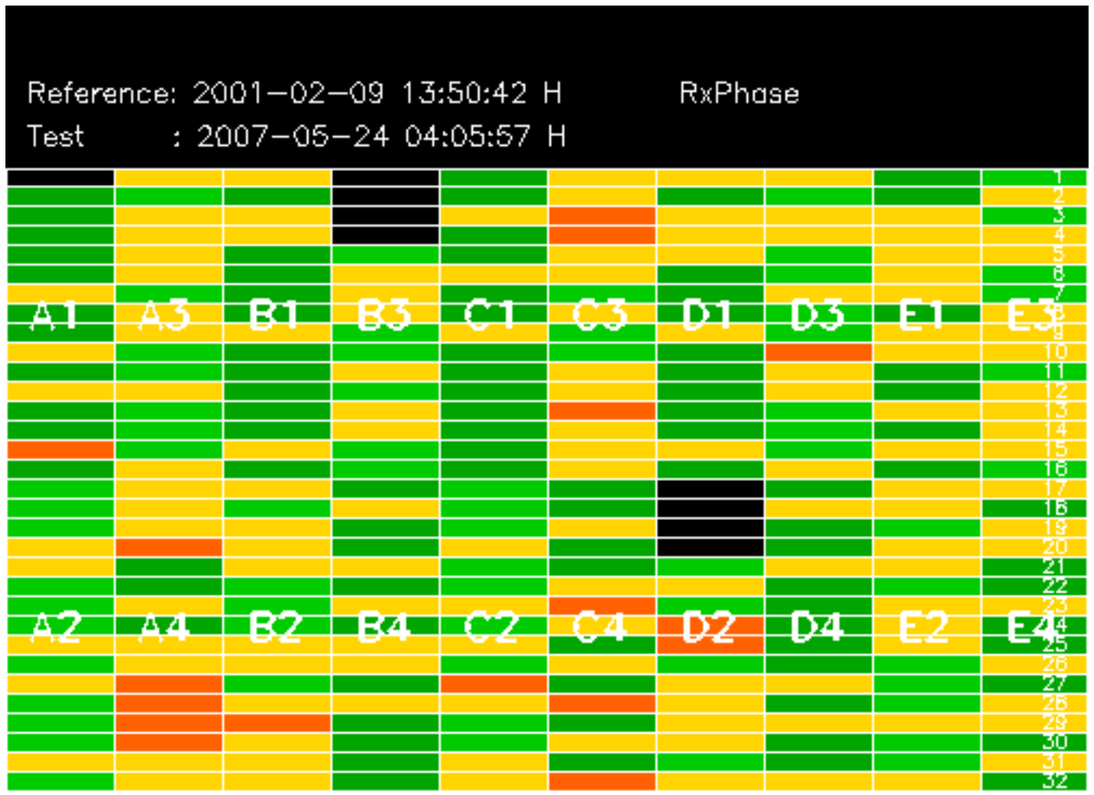

Reference: 2005-09-23 05:55:14 V
Test : 2007-05-23 04:37:34 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-05-24 04:05:57 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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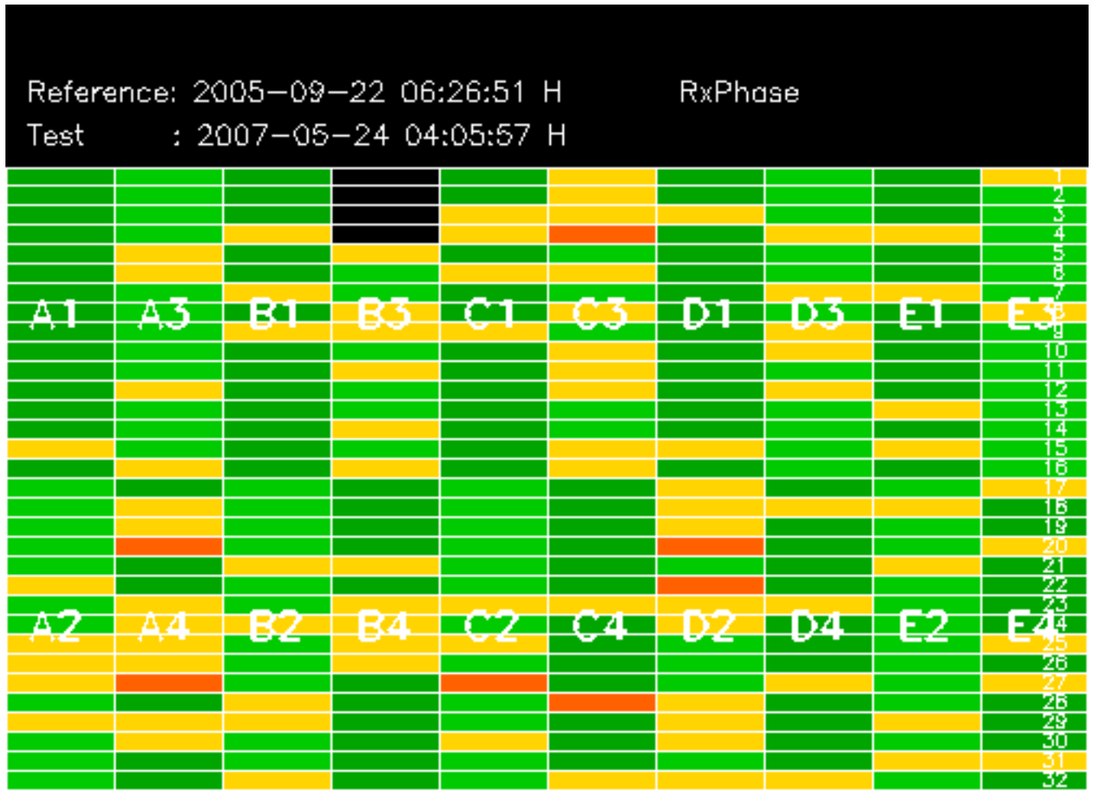
32


Reference: 2005-09-22 06:26:51 H
RxPhase
Test : 2007-05-24 04:05:57 H
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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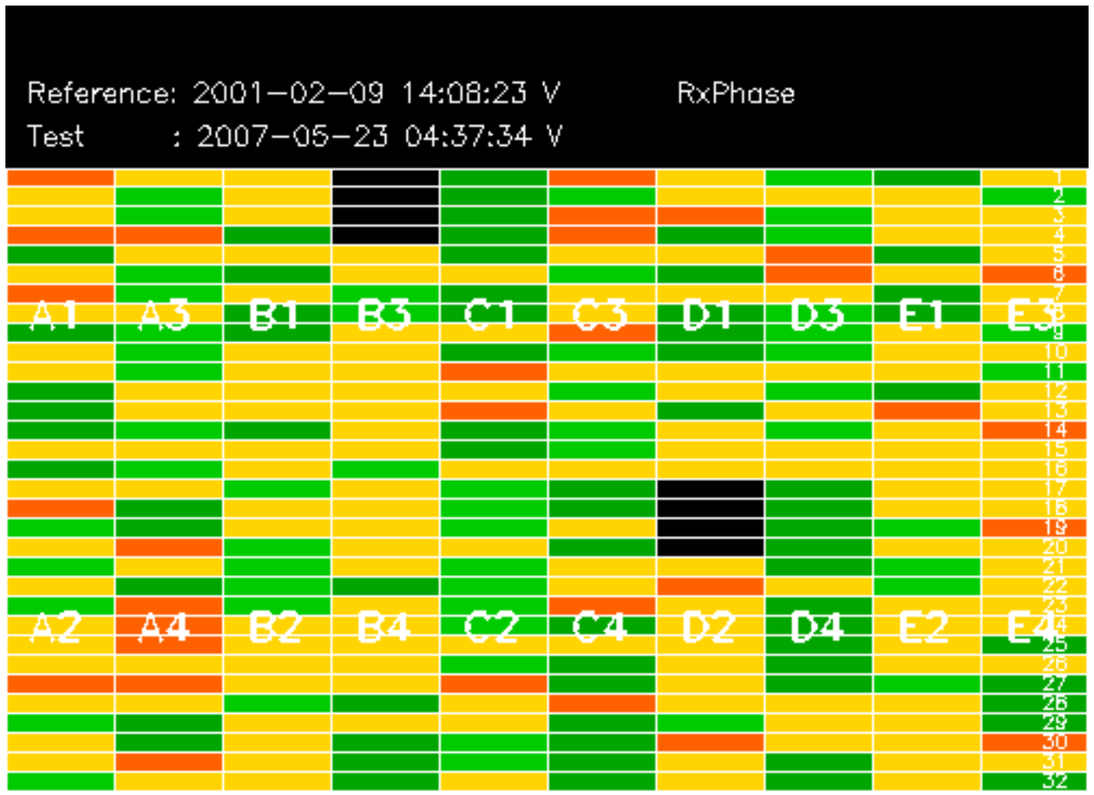
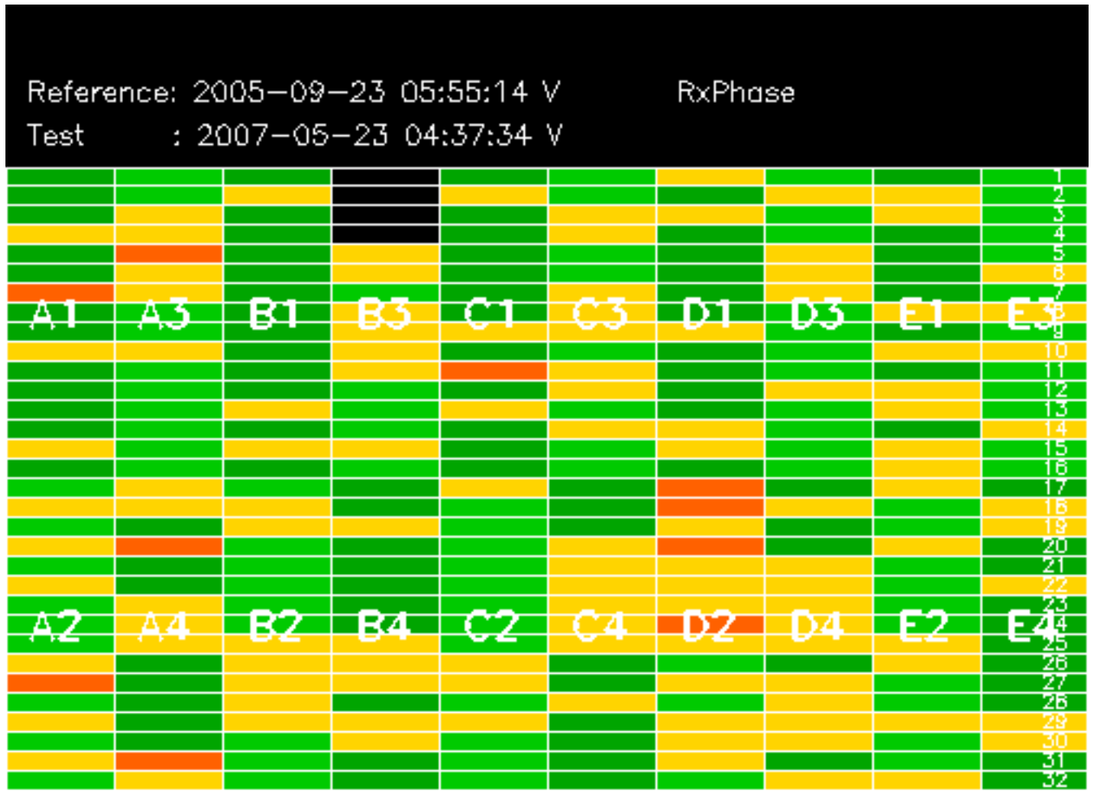

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2007-05-23 04:37:34 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-05-23 04:37:34 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
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8
9
10
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13
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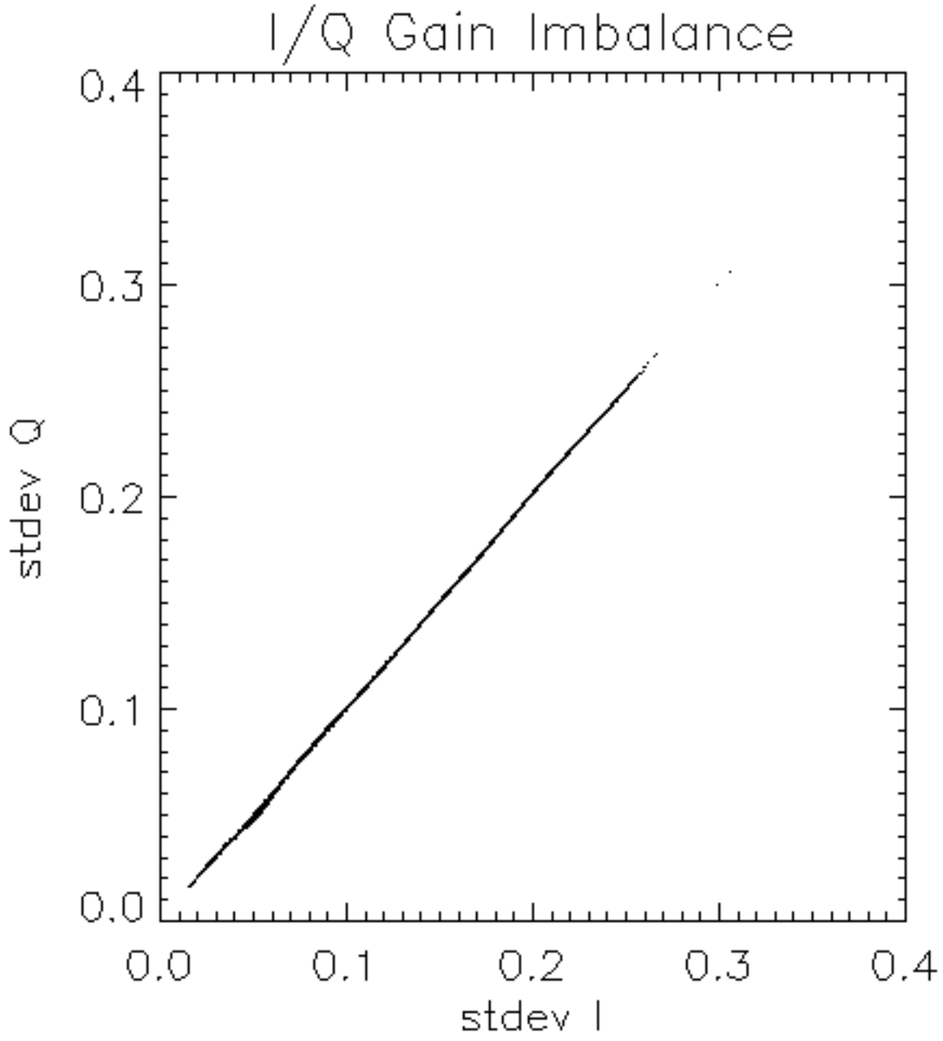
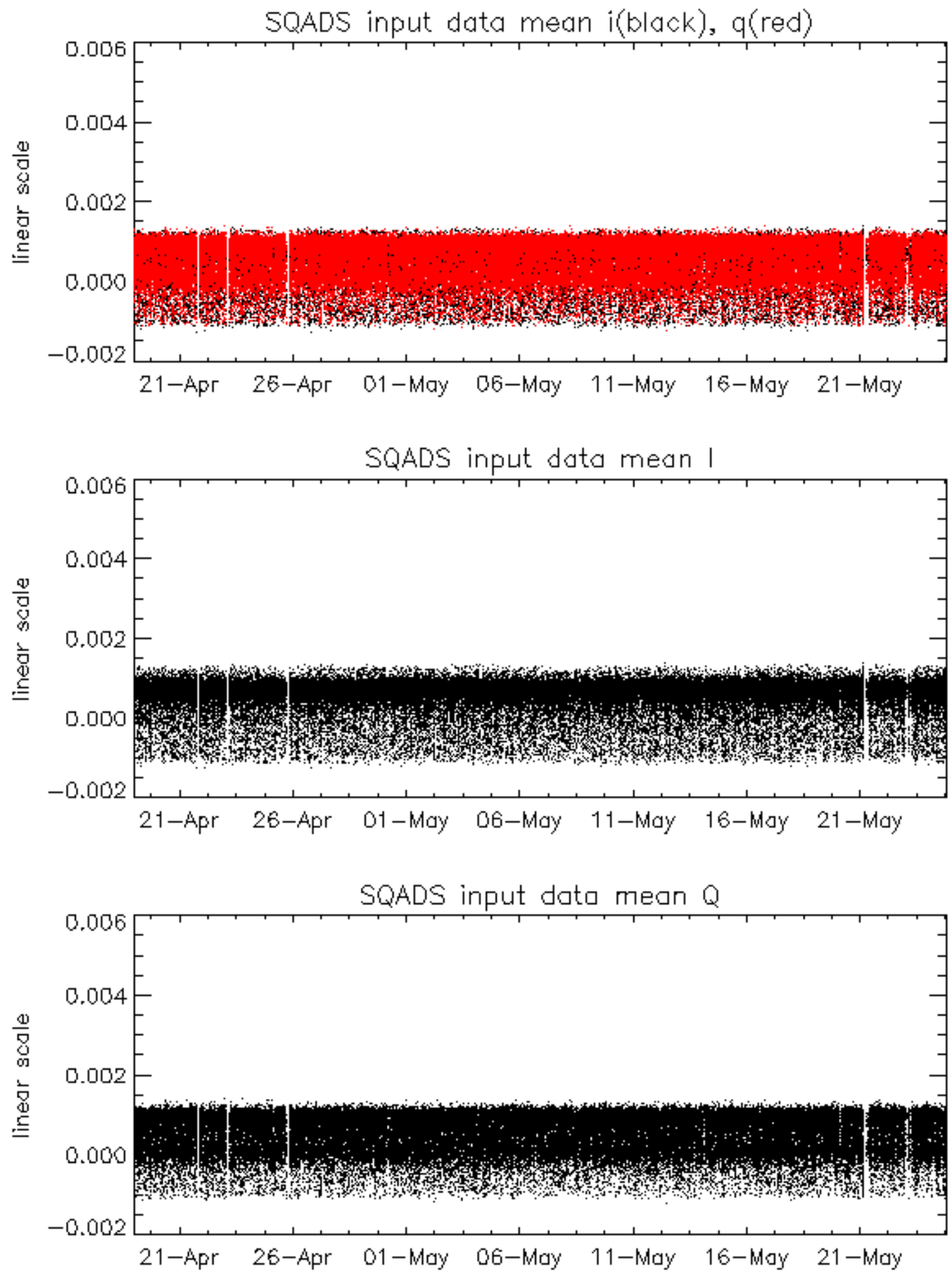
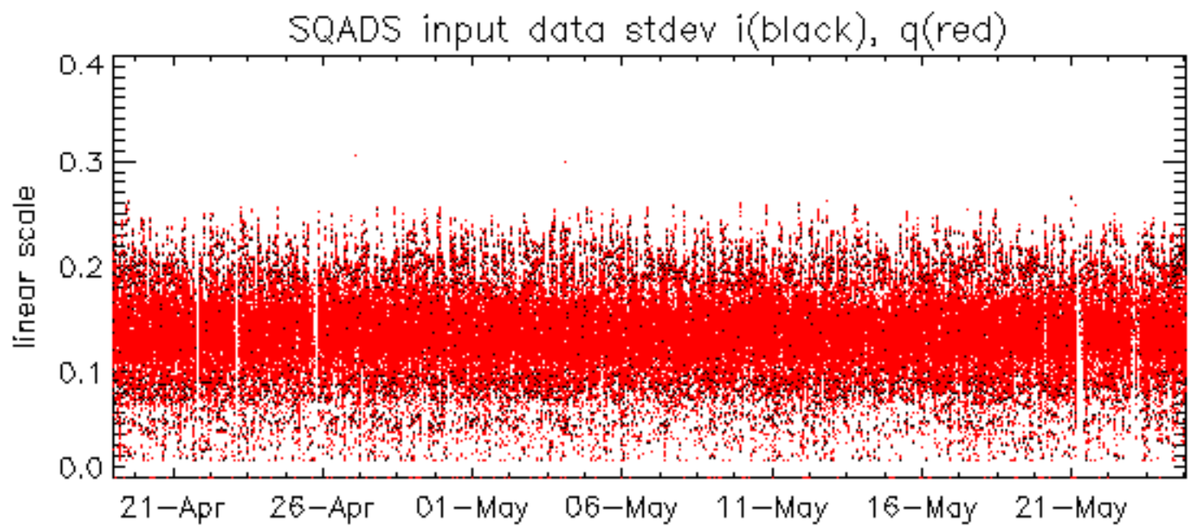
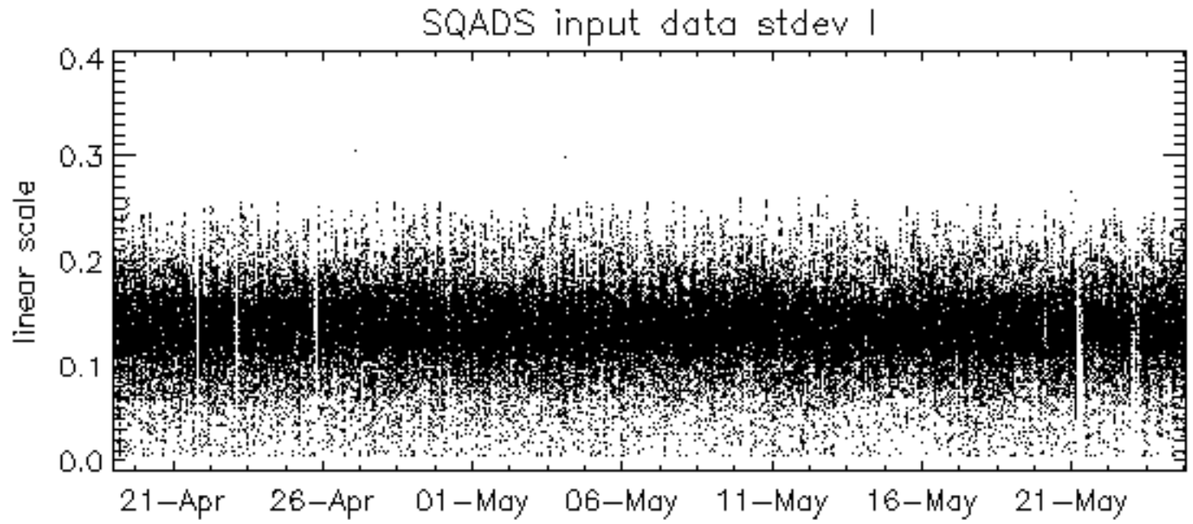
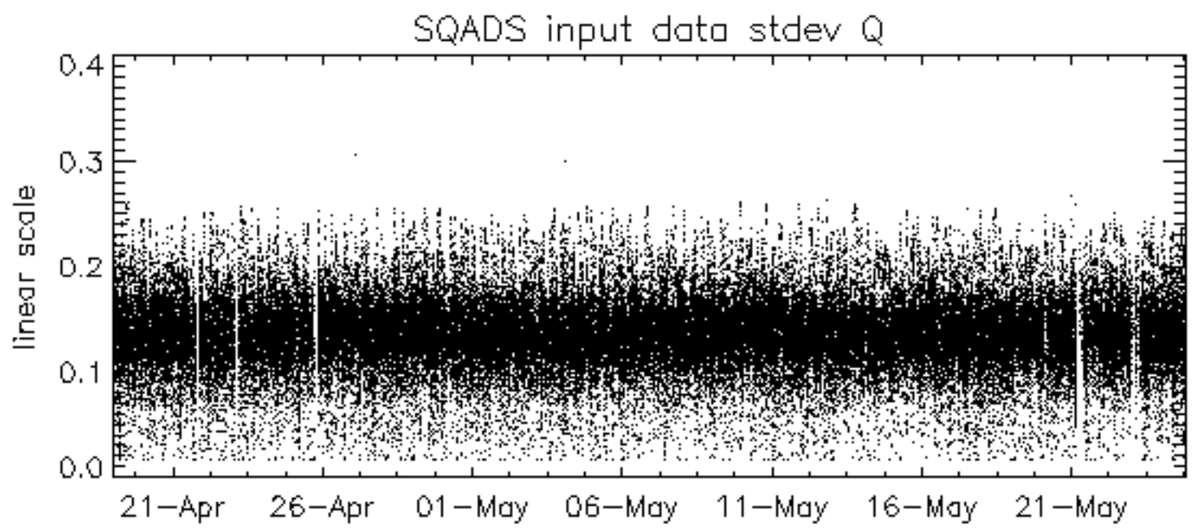
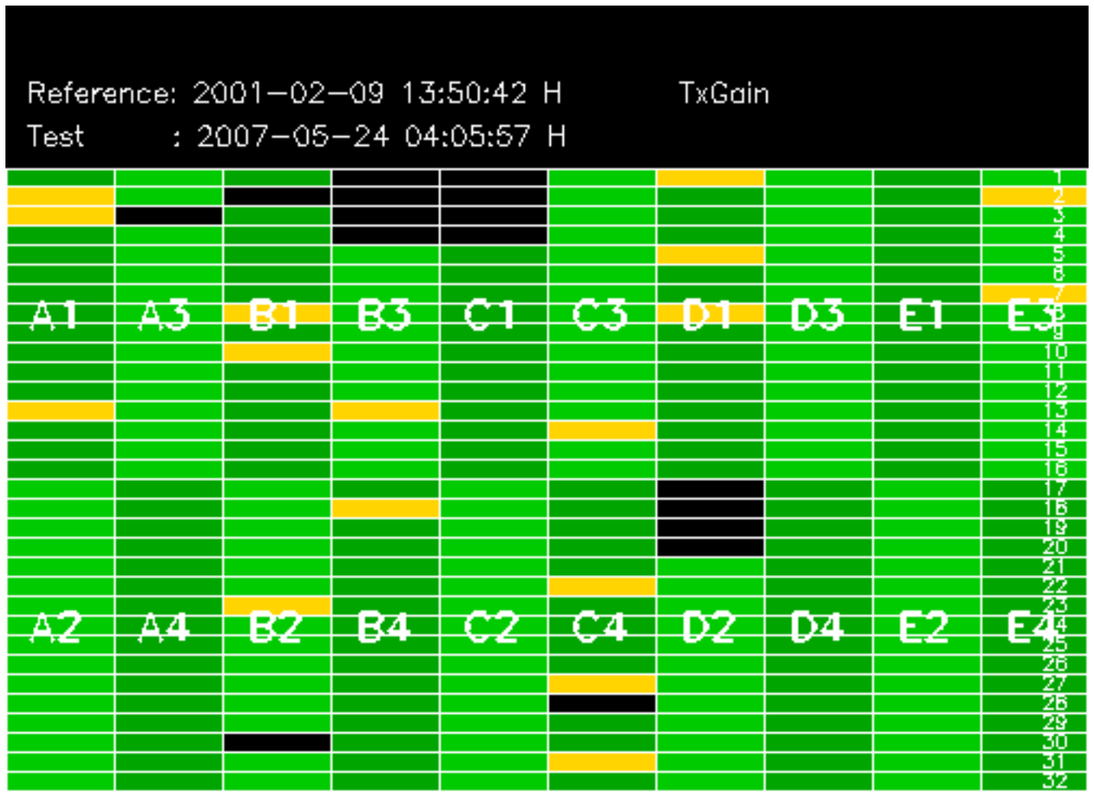

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

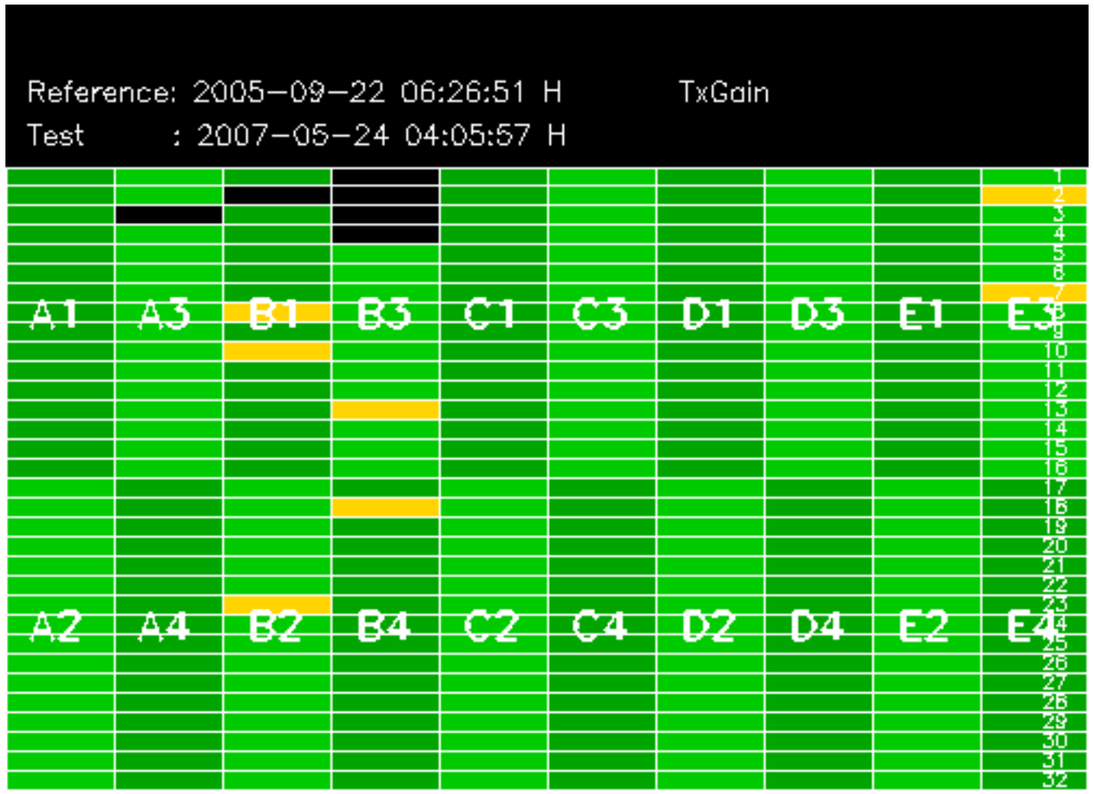

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May
SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Apr
26−Apr
01−May
06−May
11−May
16−May
21−May
SQADS input data mean Q
linear scale
0.006
0.004
0.002
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 : 2007-05-24 04:05:57 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 : 2007-05-24 04:05:57 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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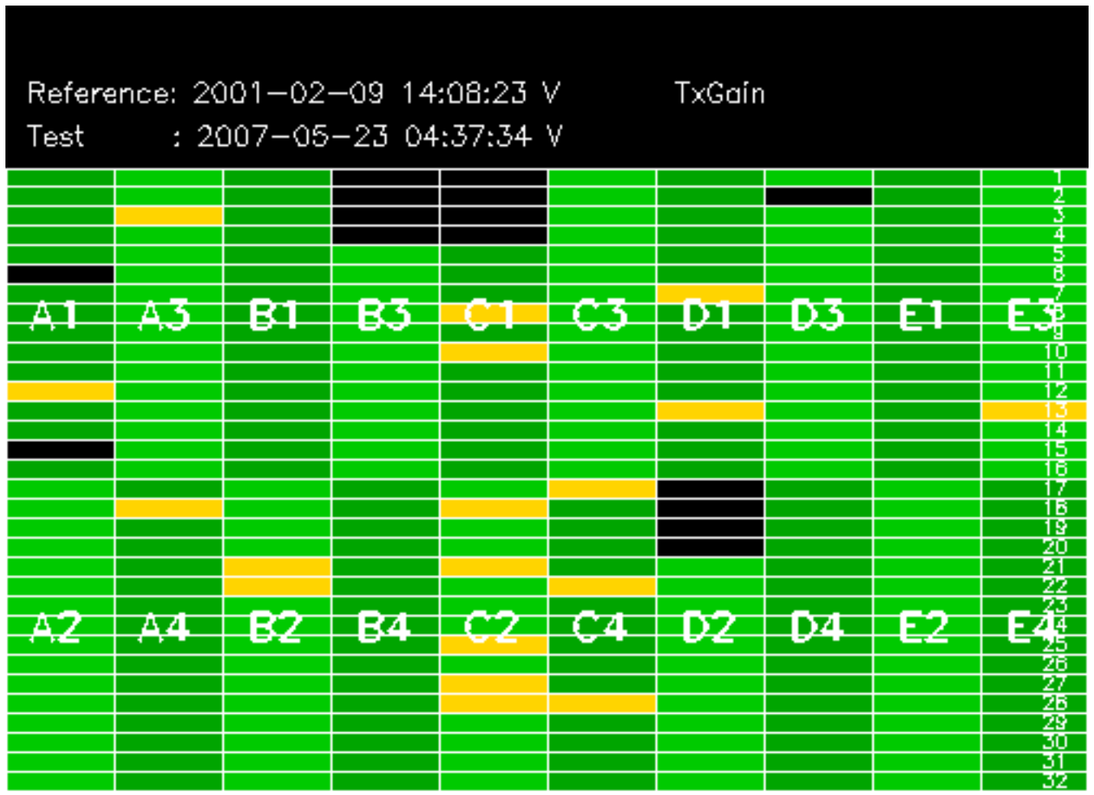
Reference: 2001-02-09 14:08:23 V
Test : 2007-05-23 04:37:34 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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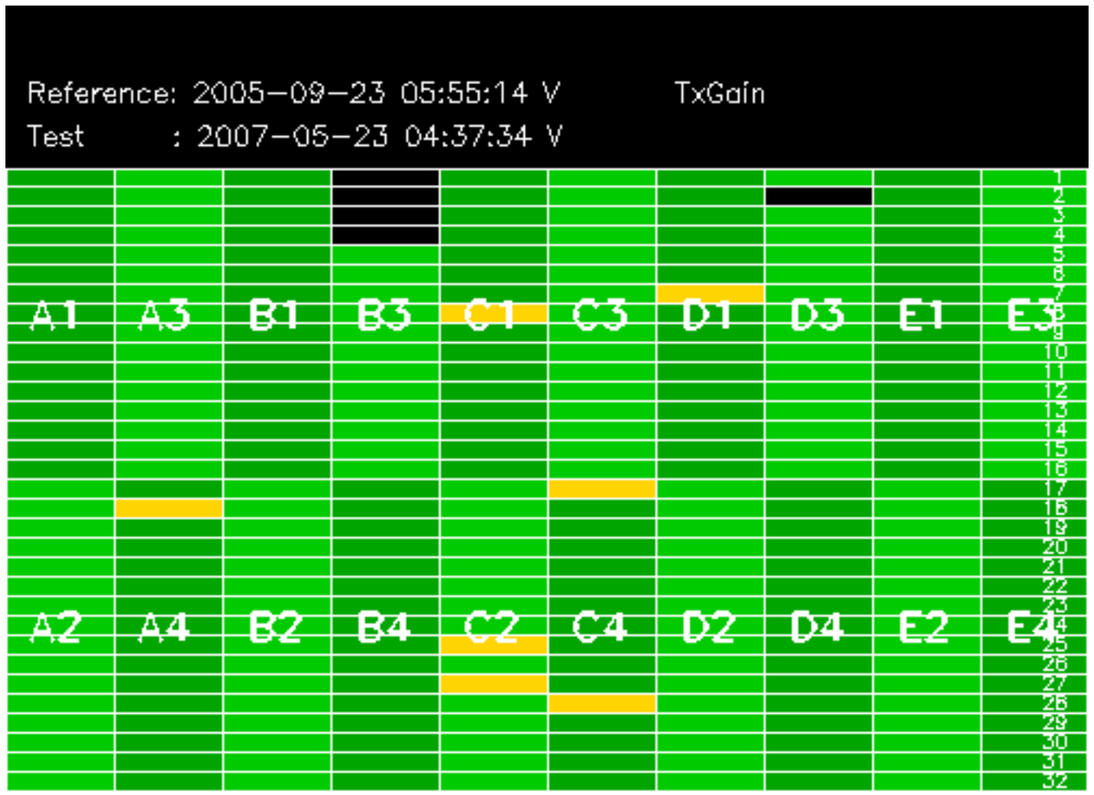
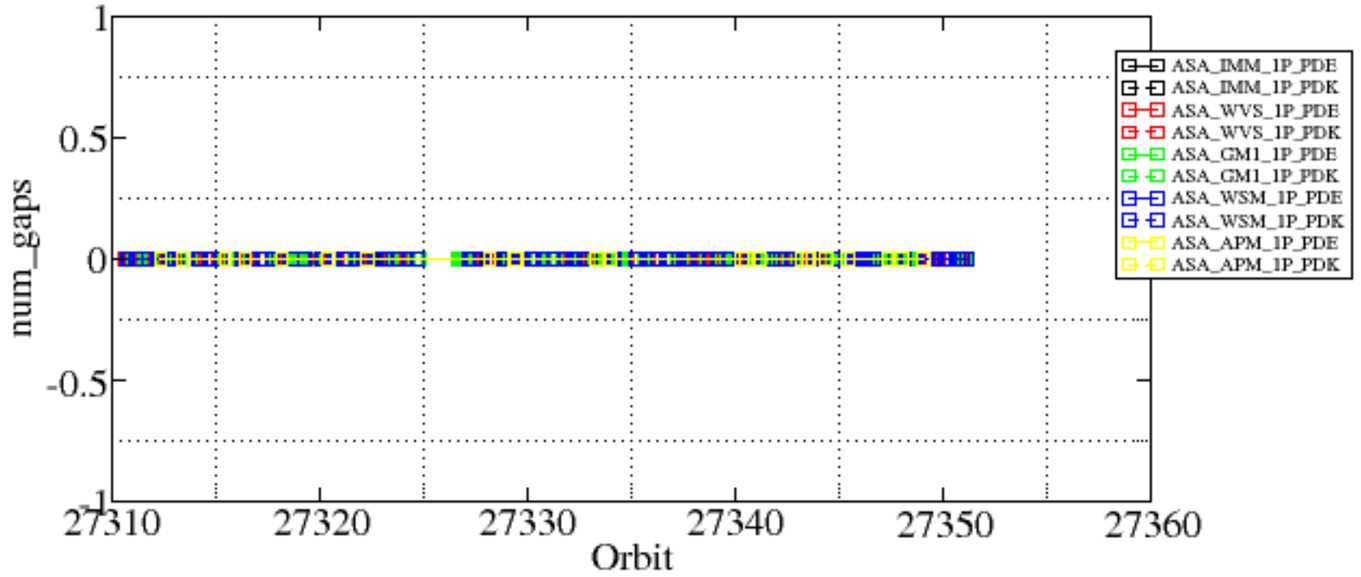
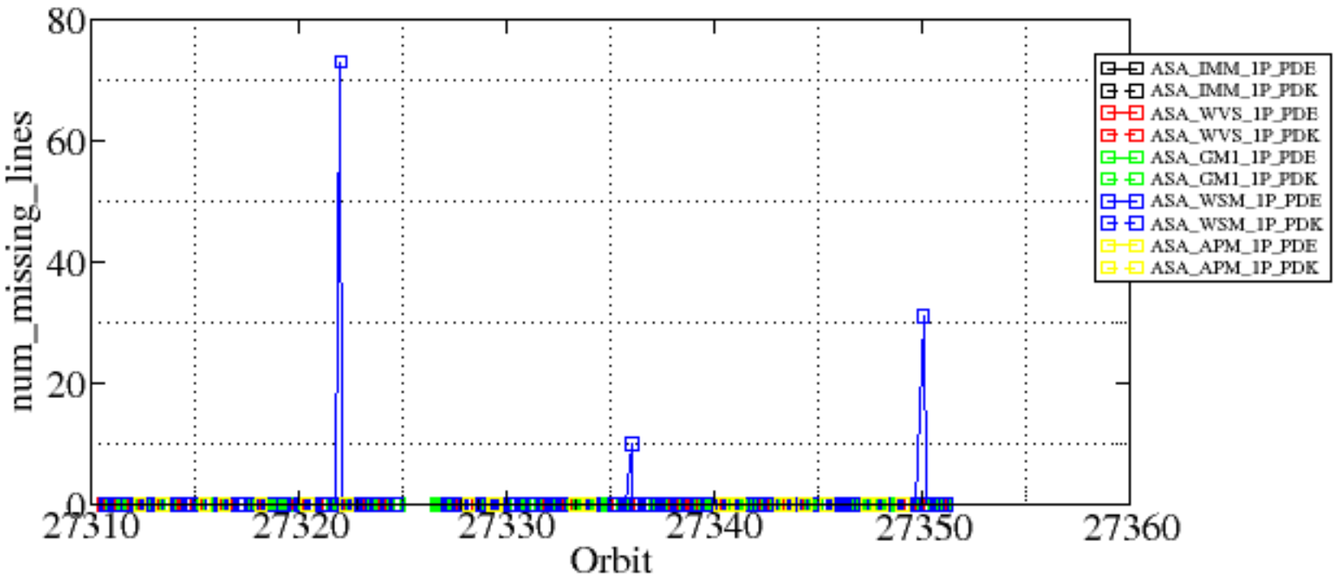
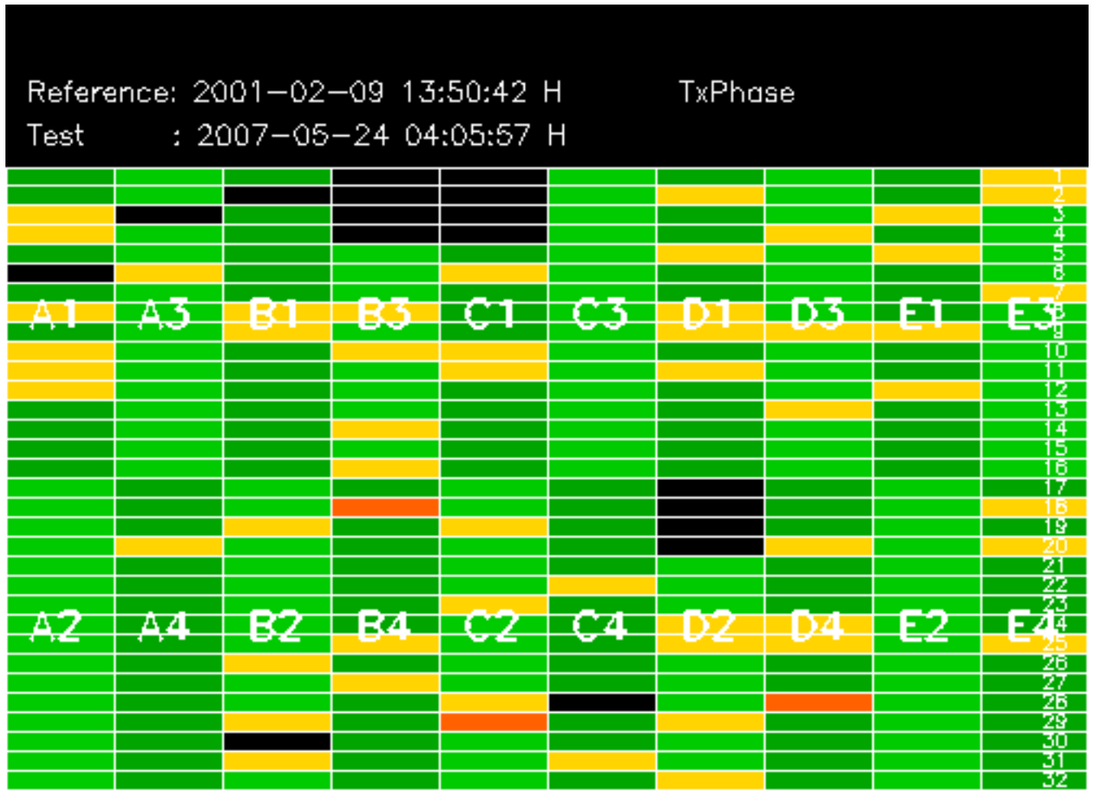
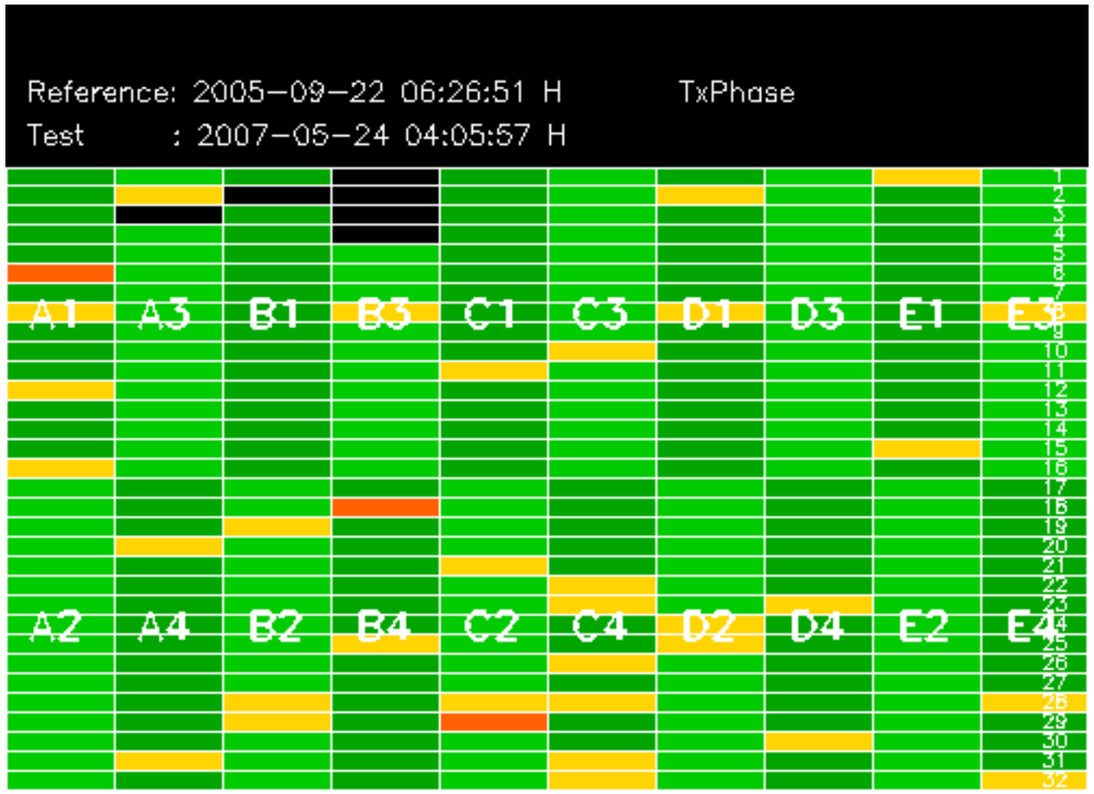

Reference: 2005-09-23 05:55:14 V
Test : 2007-05-23 04:37:34 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

Summary of analysis for the last 3 days 2007052[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_WSM_1PNPDE20070522_190811_000001712058_00214_27322_6378.N1 </td> <td>0 </td> <td>73 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070523_183932_000000852058_00228_27336_7371.N1 </td> <td>0 </td> <td>10 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070524_180905_000001292058_00242_27350_8687.N1 </td> <td>0 </td> <td>31 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
27310
27320
27330
27340
27350
27360
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
80
60
40
20
0
27310
27320
27330
27340
27350
27360
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 : 2007-05-24 04:05:57 H
TxPhase
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
TxPhase
Test : 2007-05-24 04:05:57 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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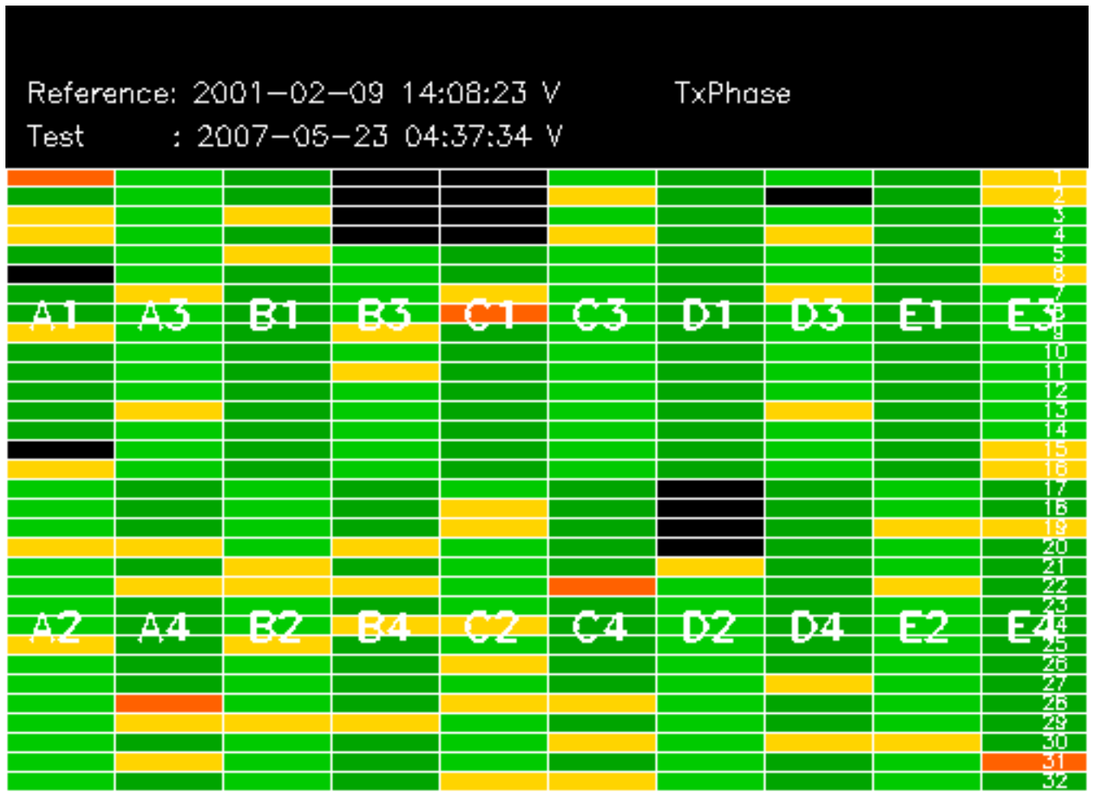
Reference: 2001-02-09 14:08:23 V
Test : 2007-05-23 04:37:34 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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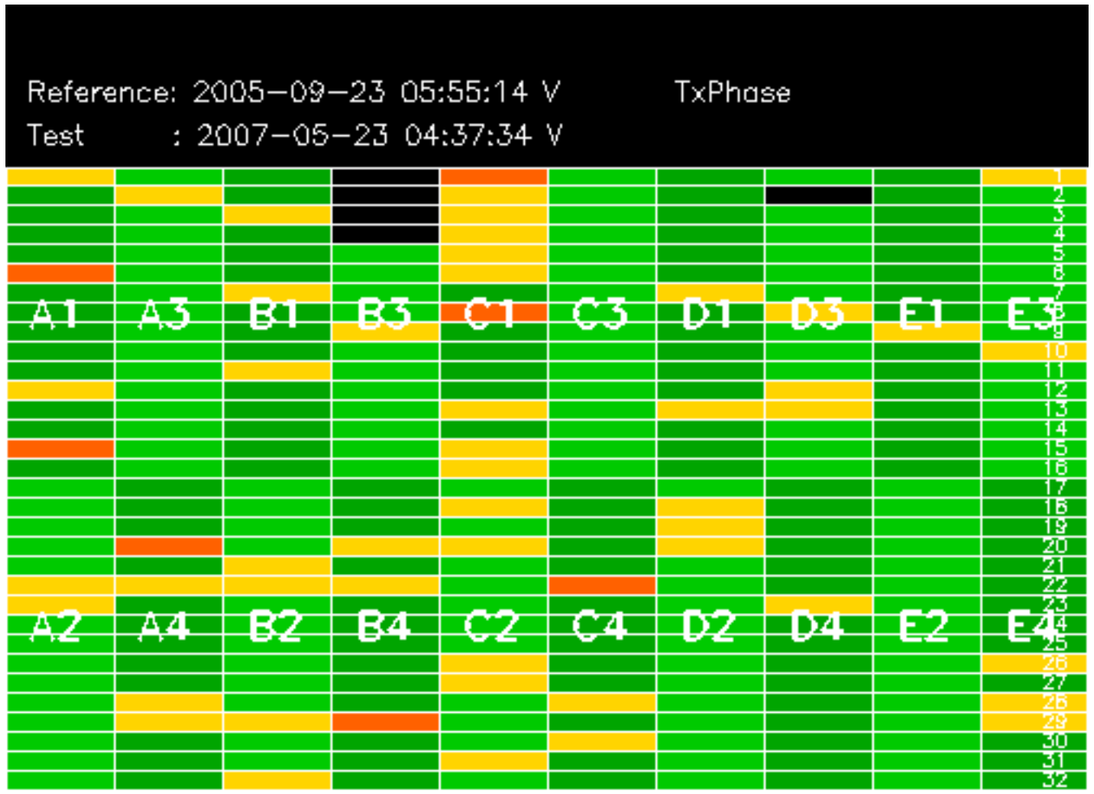
Reference: 2005-09-23 05:55:14 V
Test : 2007-05-23 04:37:34 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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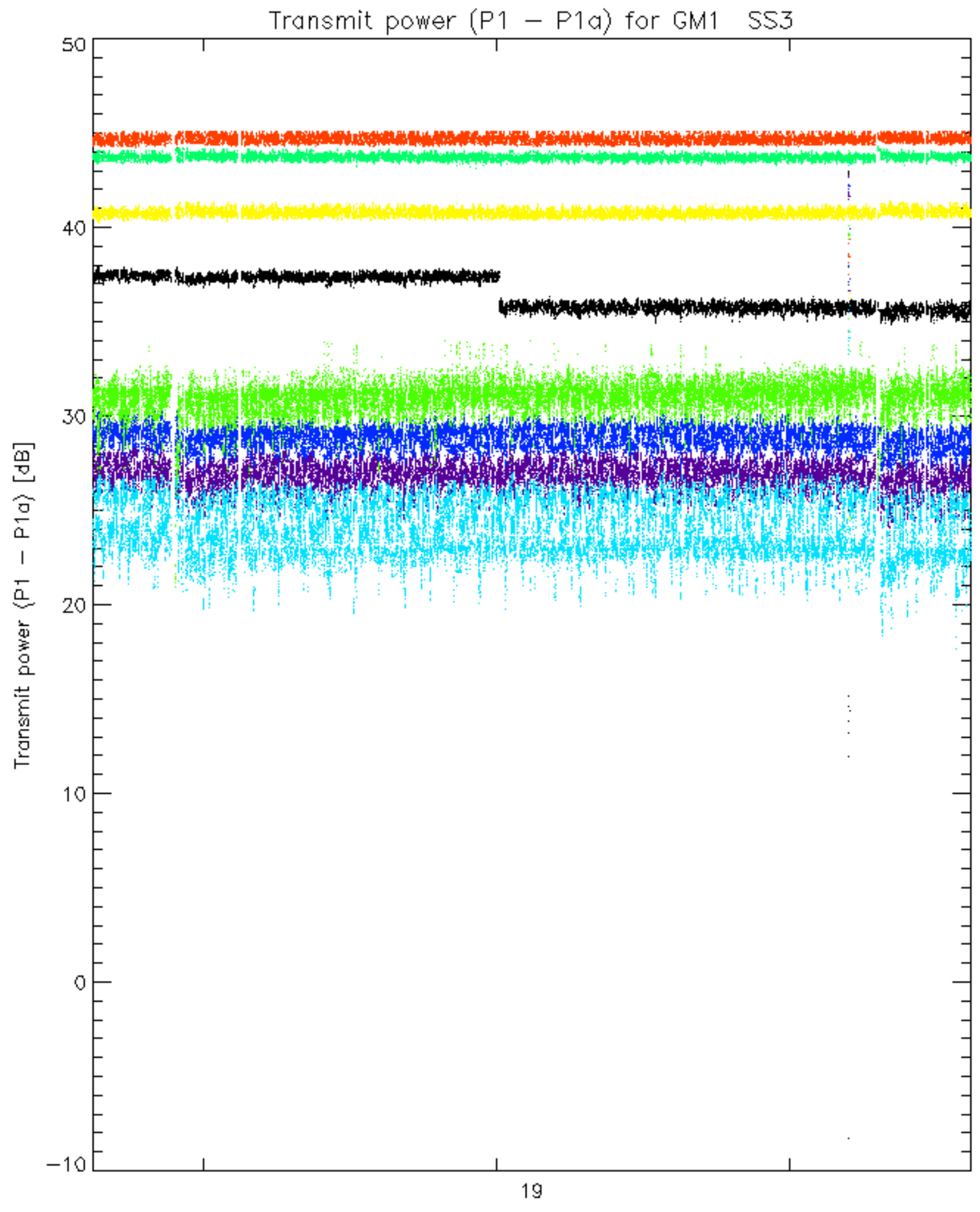
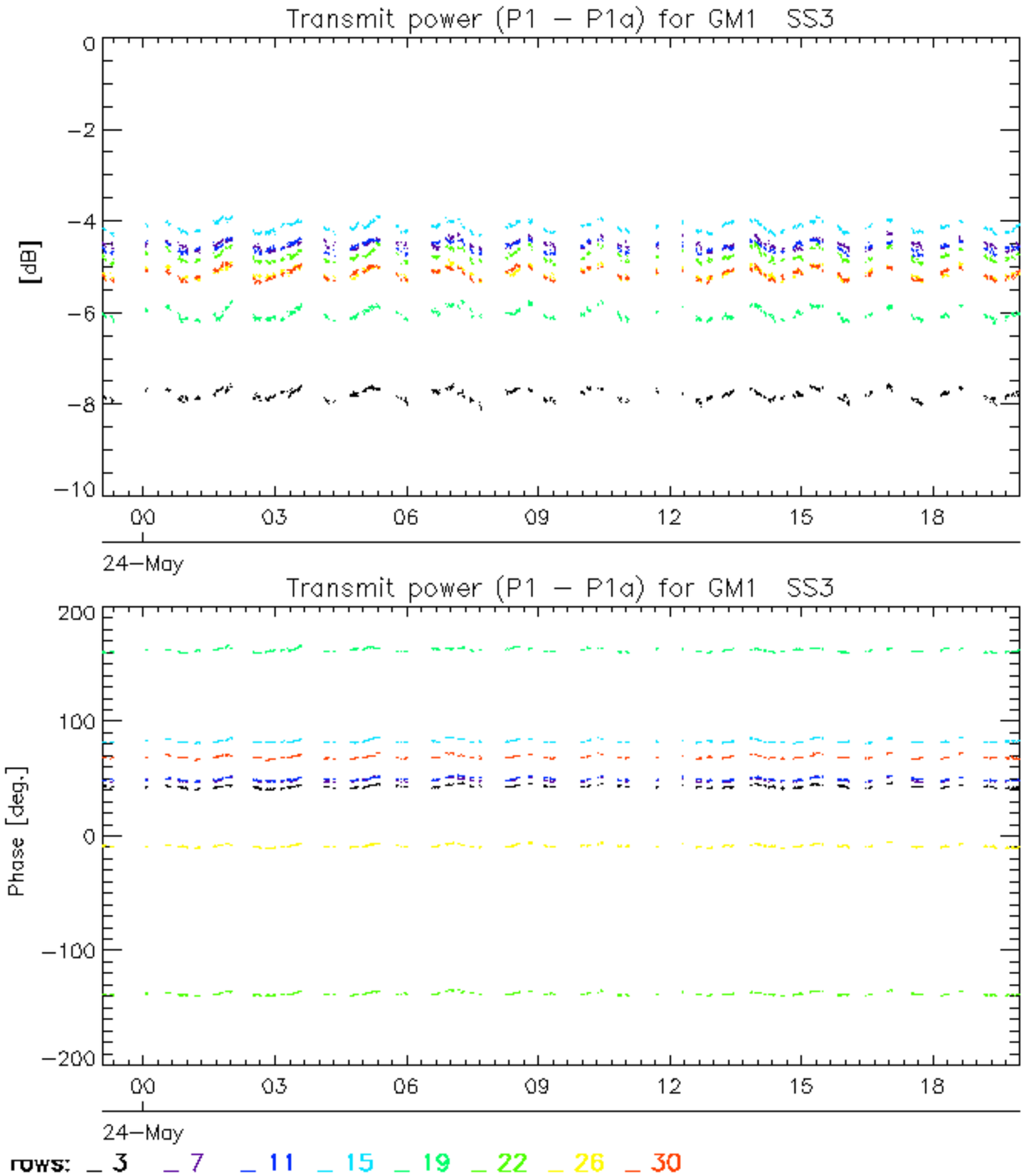
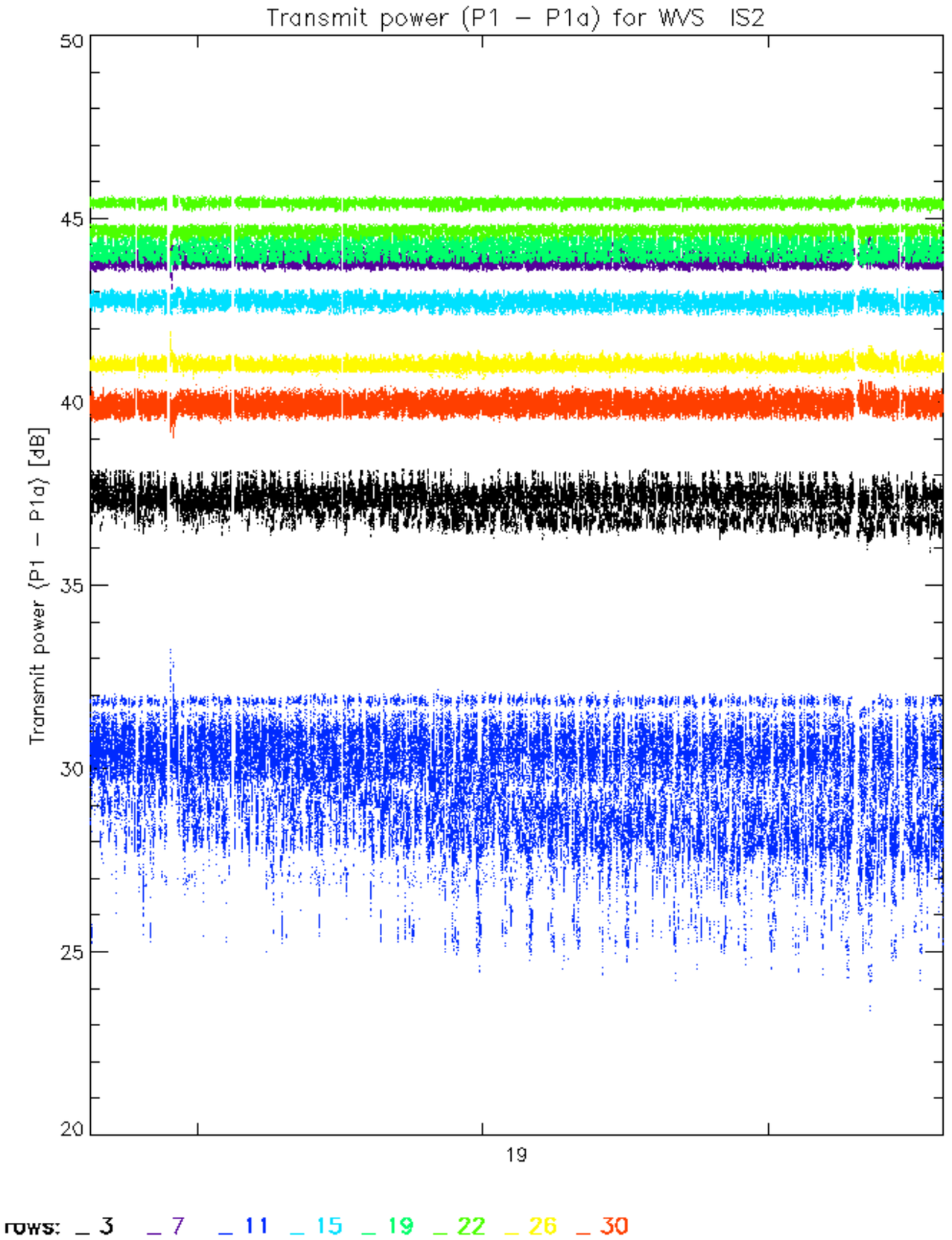
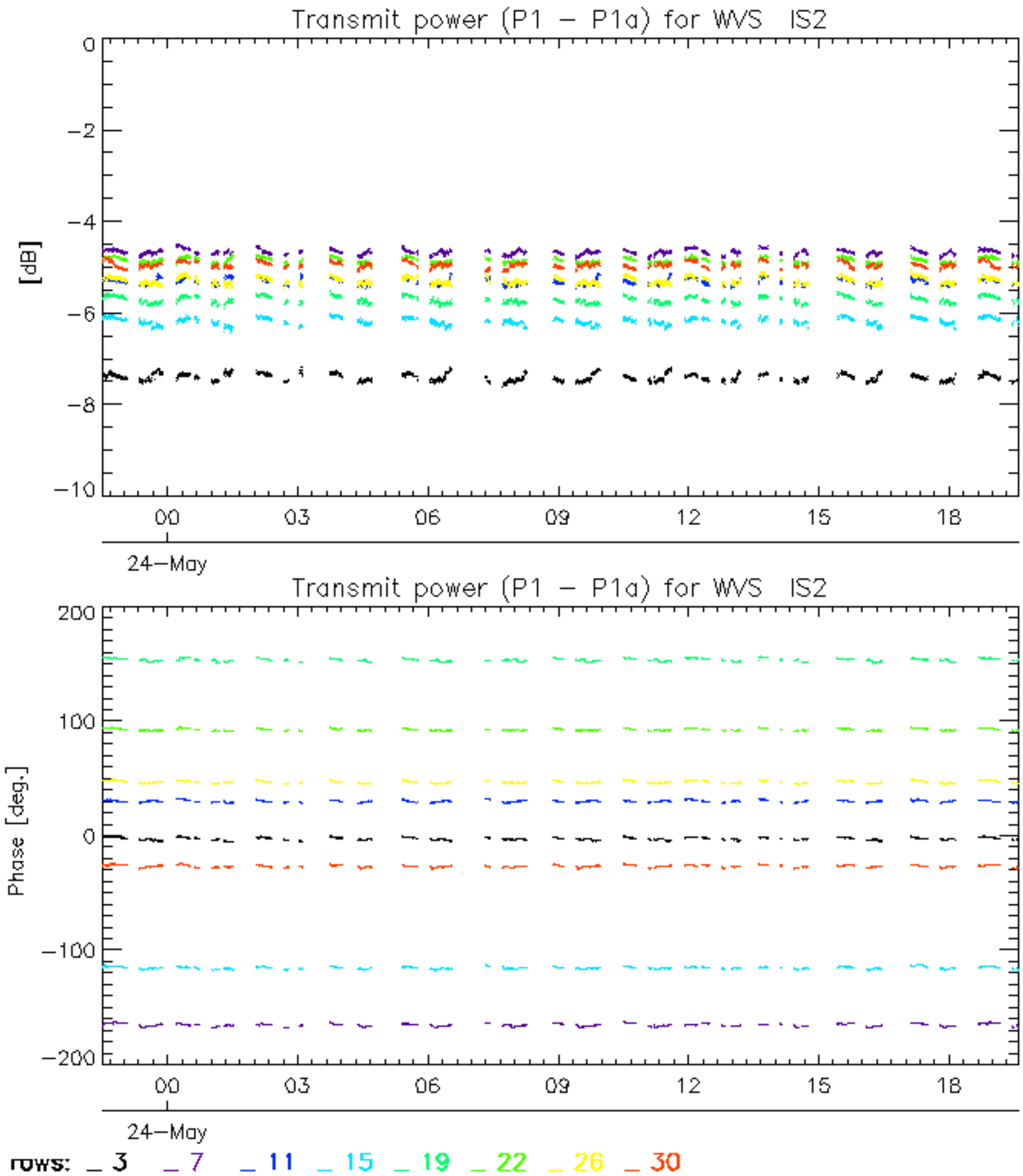

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
19
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
00
03
06
09
12
15
18
24–May
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
00
03
06
09
12
15
18
24–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
19
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
24–May
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
00
03
06
09
12
15
18
24–May
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.