PRELIMINARY REPORT OF 070512

last update on Sat May 12 03:30:31 GMT 2007

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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 2007-05-11 00:00:00 to 2007-05-12 03:30:31

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	33	49	7	1	17
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	33	49	7	1	17
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	33	49	7	1	17
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	49	7	1	17

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	24	47	23	7	43
ASA_CON_AXVIEC20070410_140202_20070204_165113_20071231_000000	24	47	23	7	43
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	24	47	23	7	43
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	24	47	23	7	43

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	20070511 055509
H	20070510 062646

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
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☒

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1
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☒

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	-15.160349	0.143418	-0.312384
7	P1a	-17.578089	0.093684	-0.109137
11	P1a	-17.624777	0.359015	-0.540942
15	P1a	-13.093222	0.142190	-0.347623
19	P1a	-15.393706	0.070236	-0.216833
22	P1a	-15.975130	0.376088	-0.201580
26	P1a	-14.975987	0.217696	0.182068
30	P1a	-17.855530	0.389695	-0.604109

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.776481	0.010257	-0.034738
7	P1	-3.156677	0.009134	-0.039548
11	P1	-4.204088	0.014437	0.028753
15	P1	-6.439642	0.020287	-0.127677
19	P1	-3.778492	0.011686	0.021316
22	P1	-4.746669	0.010118	0.015777
26	P1	-3.911271	0.019214	0.023726
30	P1	-5.964635	0.009317	0.005365

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.654934	0.091322	0.035206
7	P2	-21.535933	0.090977	0.107935
11	P2	-15.314749	0.119670	0.160747
15	P2	-7.132314	0.088793	-0.020988
19	P2	-9.122184	0.081355	-0.027066
22	P2	-18.088919	0.077334	-0.006048
26	P2	-16.638464	0.082618	-0.085975
30	P2	-19.264658	0.082713	0.065568

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.245711	0.005007	-0.002134
7	P3	-8.245711	0.005007	-0.002134
11	P3	-8.245711	0.005007	-0.002134
15	P3	-8.245711	0.005007	-0.002134
19	P3	-8.245711	0.005007	-0.002134
22	P3	-8.245711	0.005007	-0.002134
26	P3	-8.245711	0.005007	-0.002134
30	P3	-8.245711	0.005007	-0.002134

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	-11.317217	0.156305	-0.536237
7	P1a	-10.038866	0.166344	0.094972
11	P1a	-10.683140	0.086867	0.000881
15	P1a	-10.806260	0.152101	0.140358
19	P1a	-15.831822	0.089087	-0.118469
22	P1a	-21.443363	1.445866	-0.193123
26	P1a	-15.537016	0.349506	-0.099687
30	P1a	-18.290892	0.445590	0.041763

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.264370	0.222920	0.947393
7	P1	-2.390824	0.086473	0.080954
11	P1	-2.878073	0.022375	0.035715
15	P1	-3.806845	0.035385	0.045078
19	P1	-3.596172	0.015039	-0.039645
22	P1	-4.957866	0.023040	0.042063
26	P1	-6.047799	0.023897	-0.046131
30	P1	-5.346939	0.031619	-0.046531

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.195023	0.068475	-0.068629
7	P2	-22.053431	0.169153	-0.036012
11	P2	-10.649580	0.044429	-0.056137
15	P2	-4.940022	0.042518	-0.070909
19	P2	-6.877080	0.040406	-0.024051
22	P2	-8.109100	0.080447	0.018422
26	P2	-24.333519	0.131623	-0.043271
30	P2	-21.706932	0.104273	0.015345

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.092095	0.004994	0.000653
7	P3	-8.092042	0.005005	0.000505
11	P3	-8.091937	0.004992	0.000343
15	P3	-8.091879	0.005002	0.000428
19	P3	-8.092026	0.005014	0.000347
22	P3	-8.091908	0.004995	0.000539
26	P3	-8.091914	0.005004	0.000296
30	P3	-8.091987	0.004999	0.000269

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	0.000549700
	stdev	1.94492e-07
MEAN Q	mean	0.000503112
	stdev	2.40039e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136082
	stdev	0.00119986
STDEV Q	mean	0.136472
	stdev	0.00121720

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007051[012]
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_1PNPDE20070511_145415_000000852058_00054_27162_0657.N1	0	30

7 - Doppler Analysis

No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

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

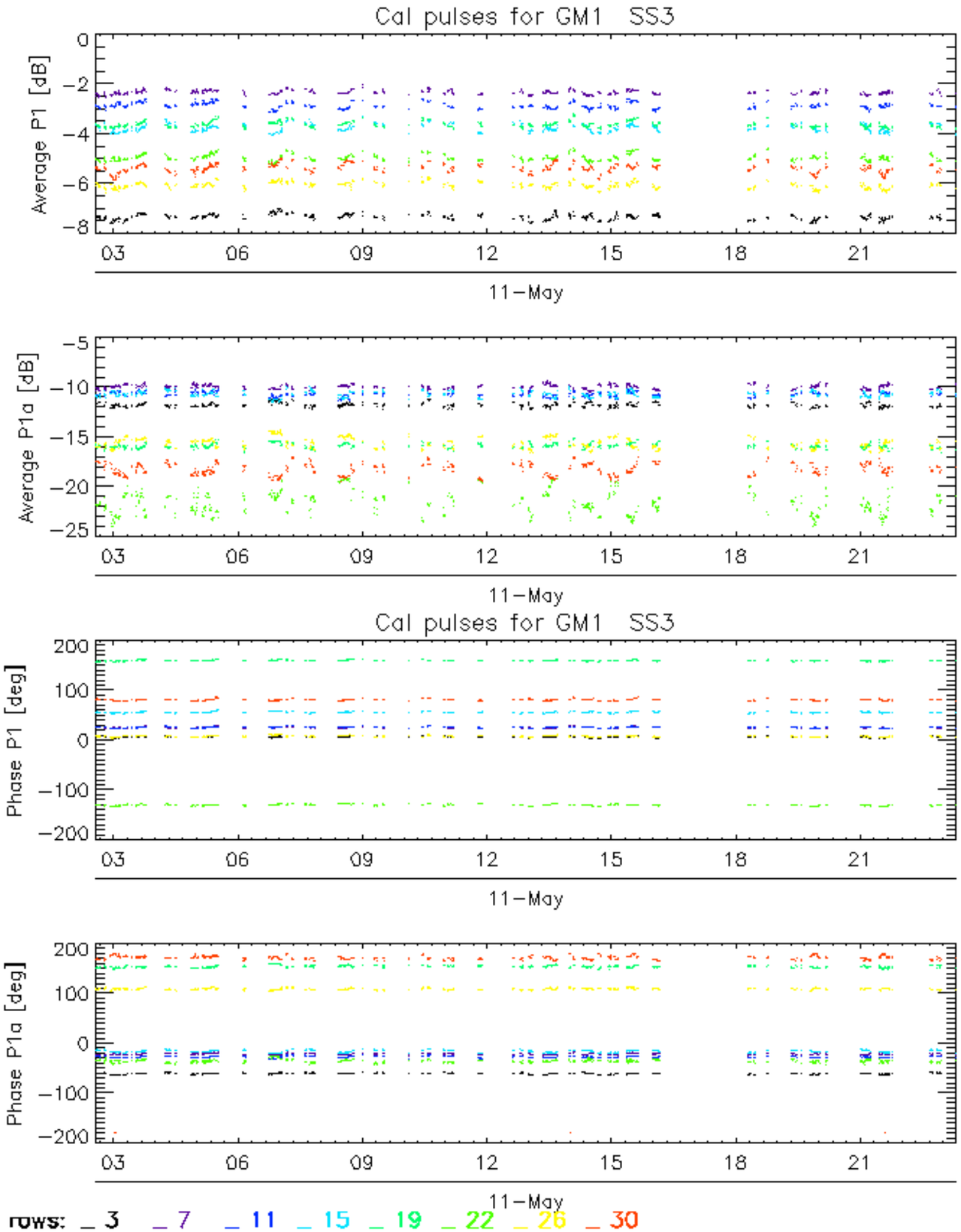
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

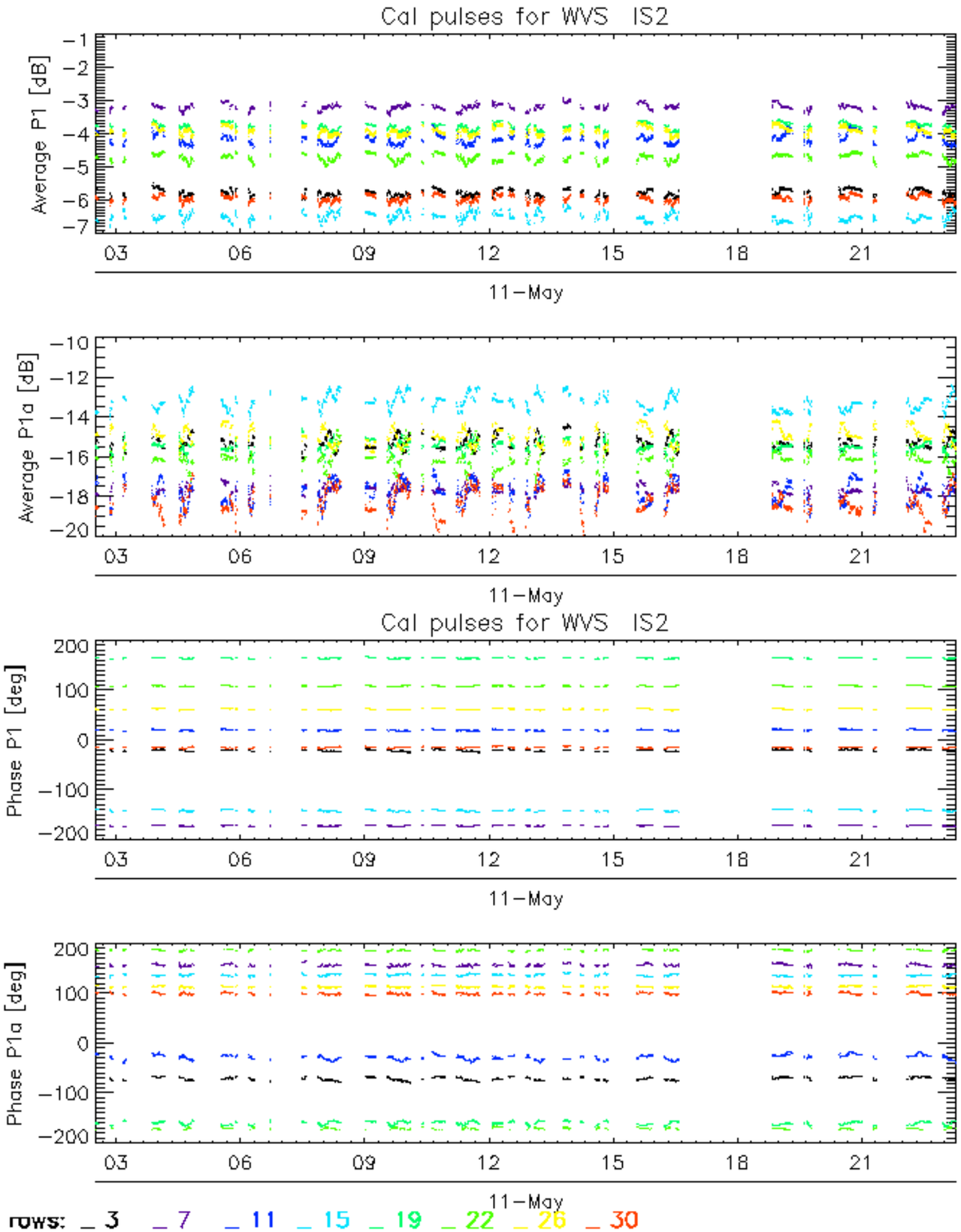
7.5 - Absolute Doppler for GM1

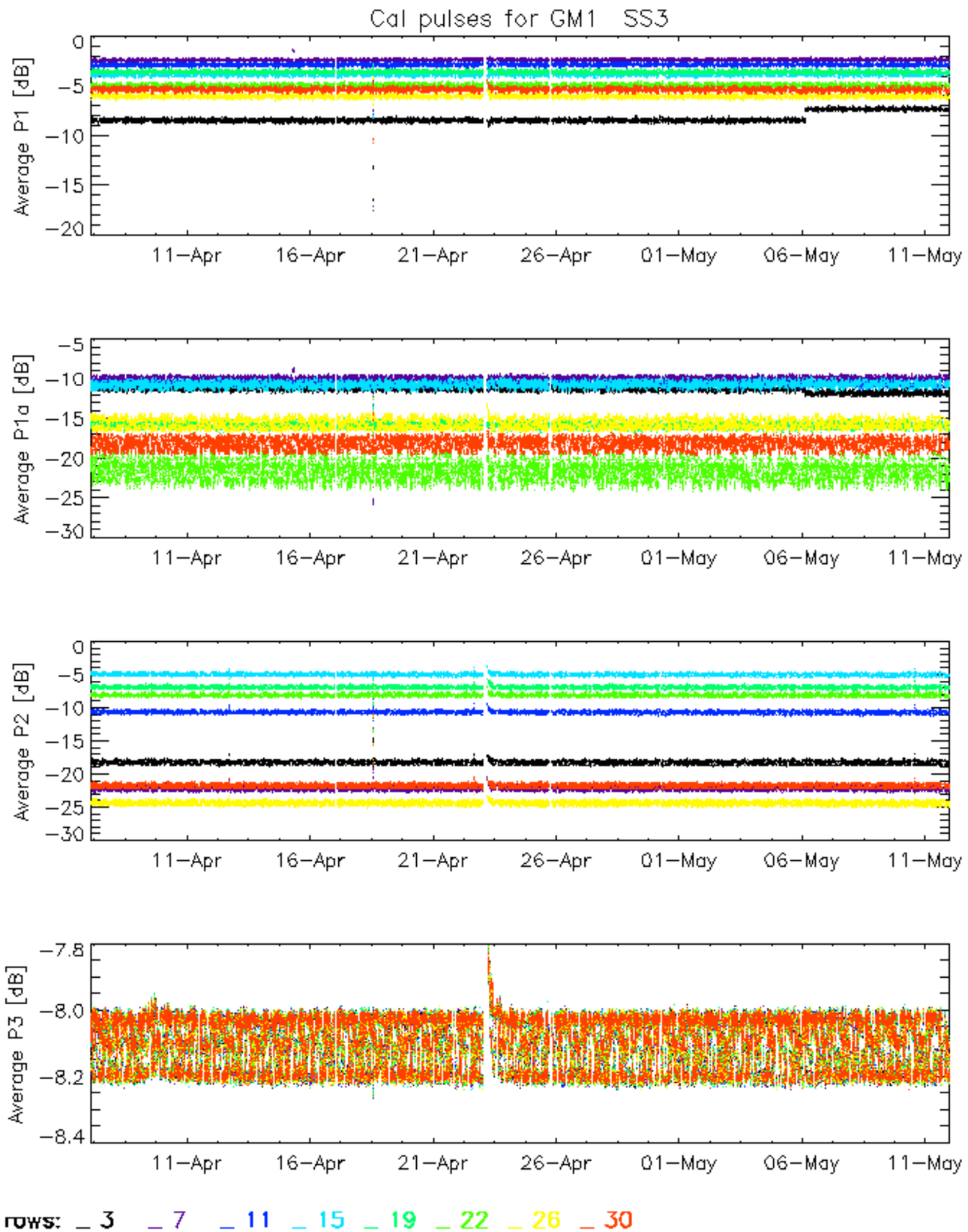
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

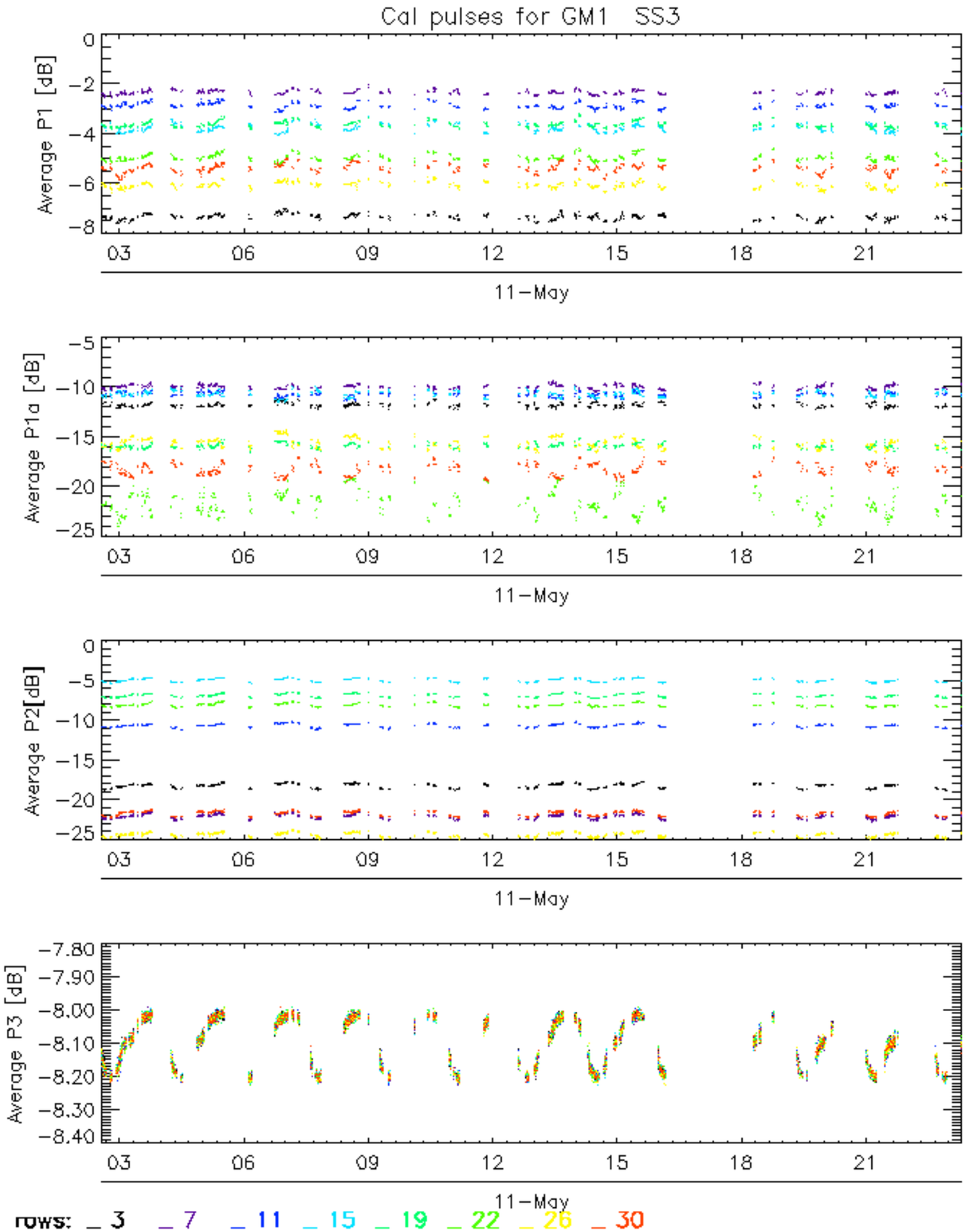
7.6 - Doppler evolution versus ANX for GM1

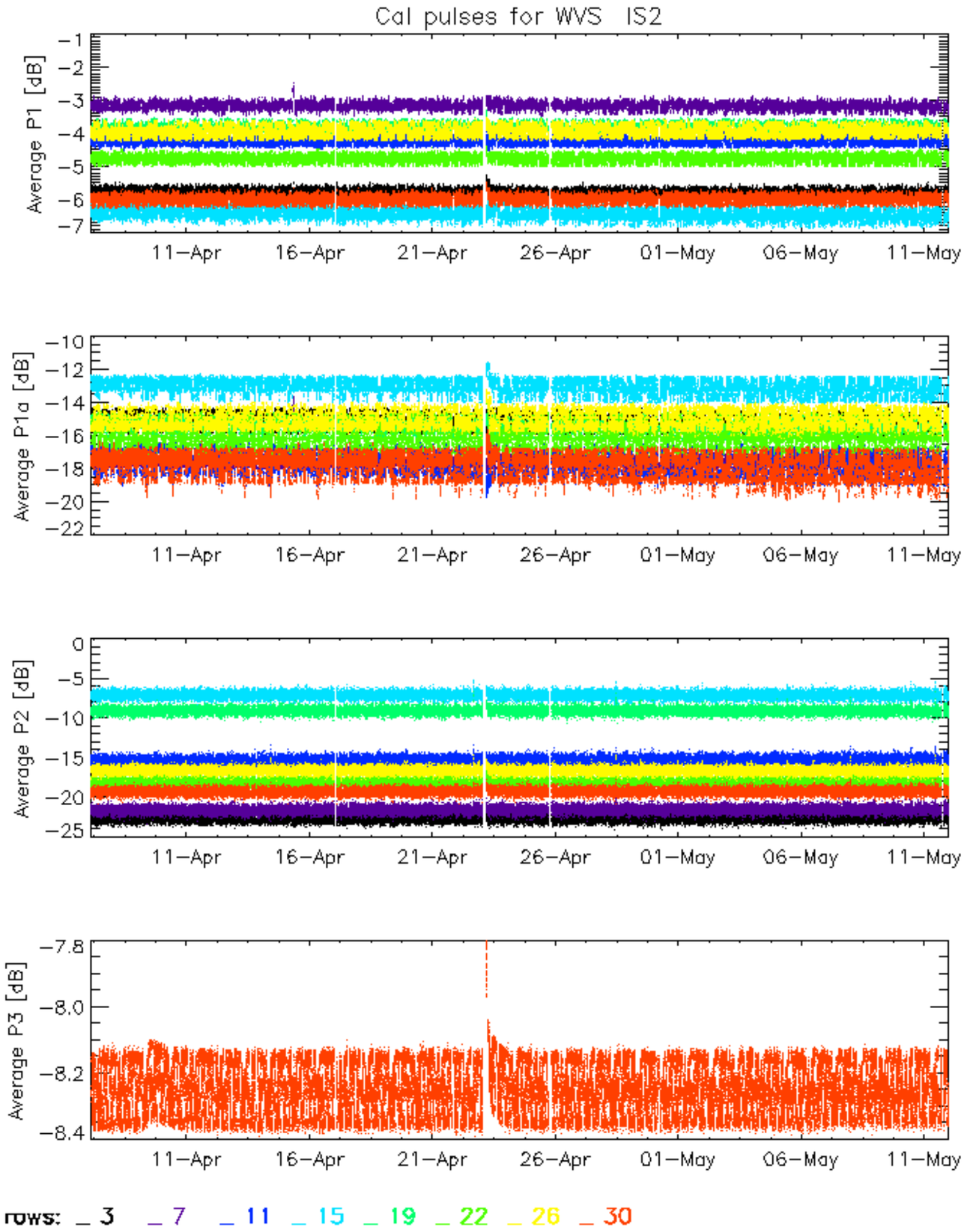
Evolution Doppler error versus ANX
☒

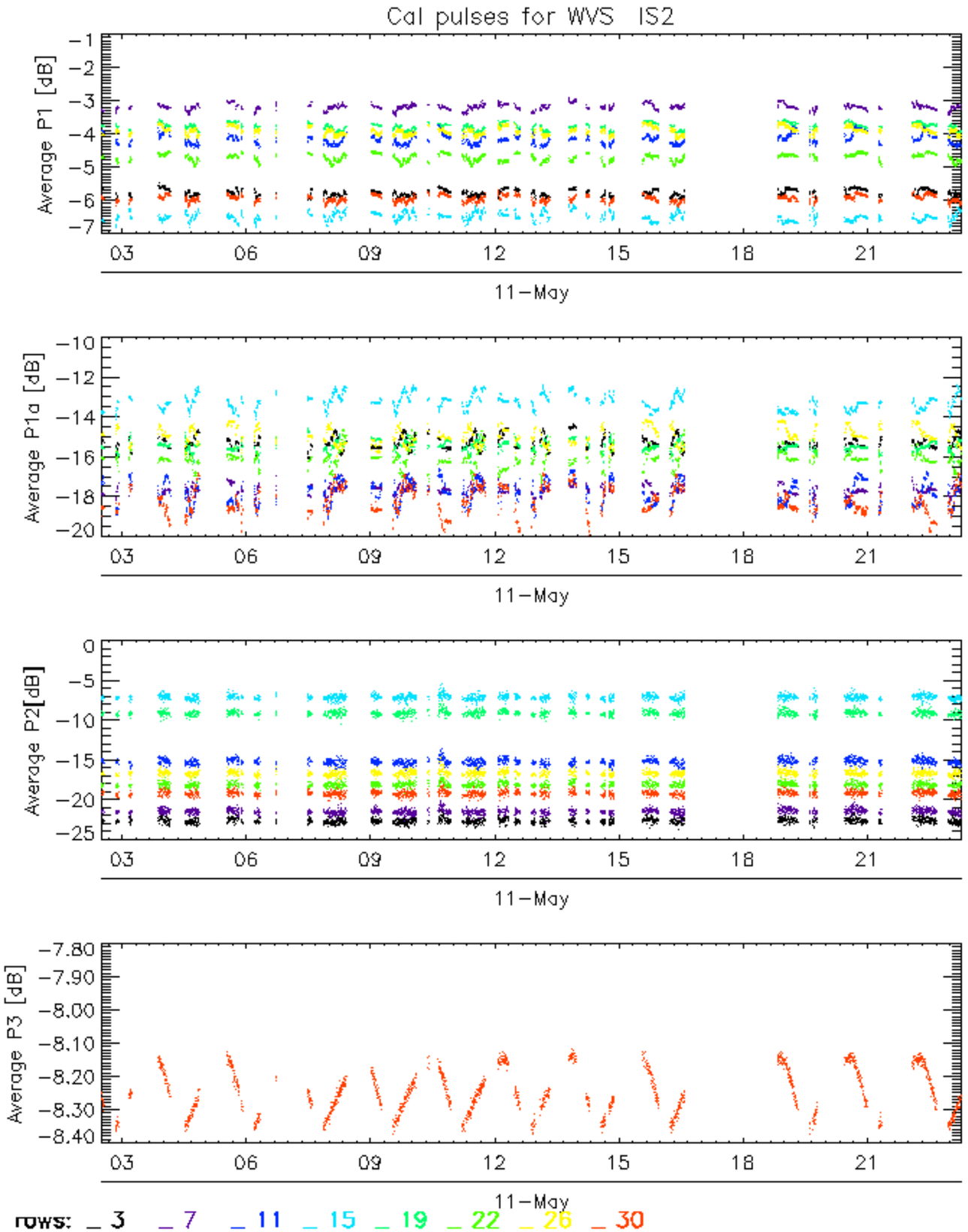

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
11−May
Average P1a [dB]
−5
−10
−15
−20
−25
11−May
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
11−May
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
11−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
03
06
09
12
15
18
21
11−May
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
03
06
09
12
15
18
21
11−May
Phase P1a [deg]
200
100
0
−100
−200
03
06
09
12
15
18
21
11−May
rows: 3 7 11 15 19 22 26 30

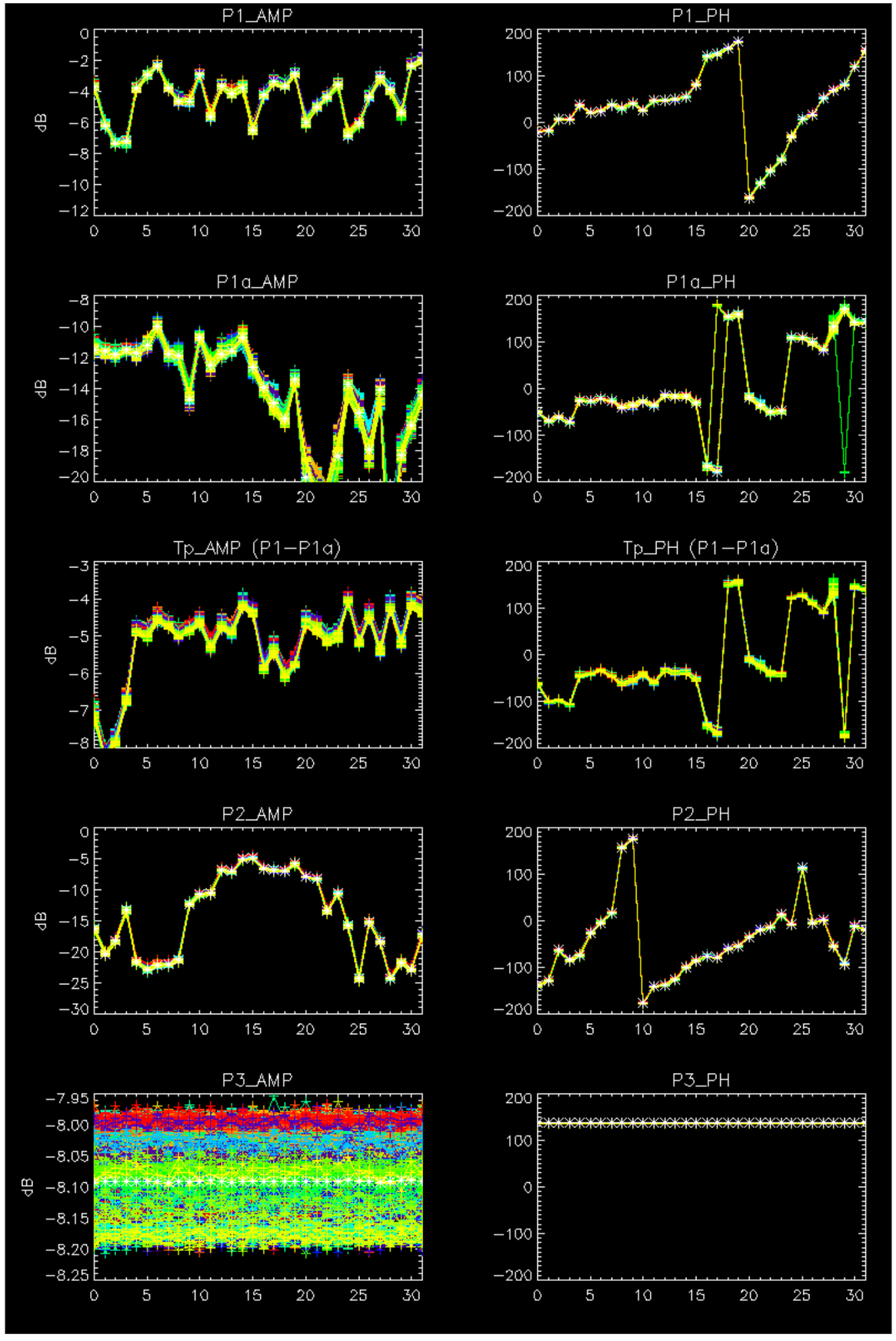

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

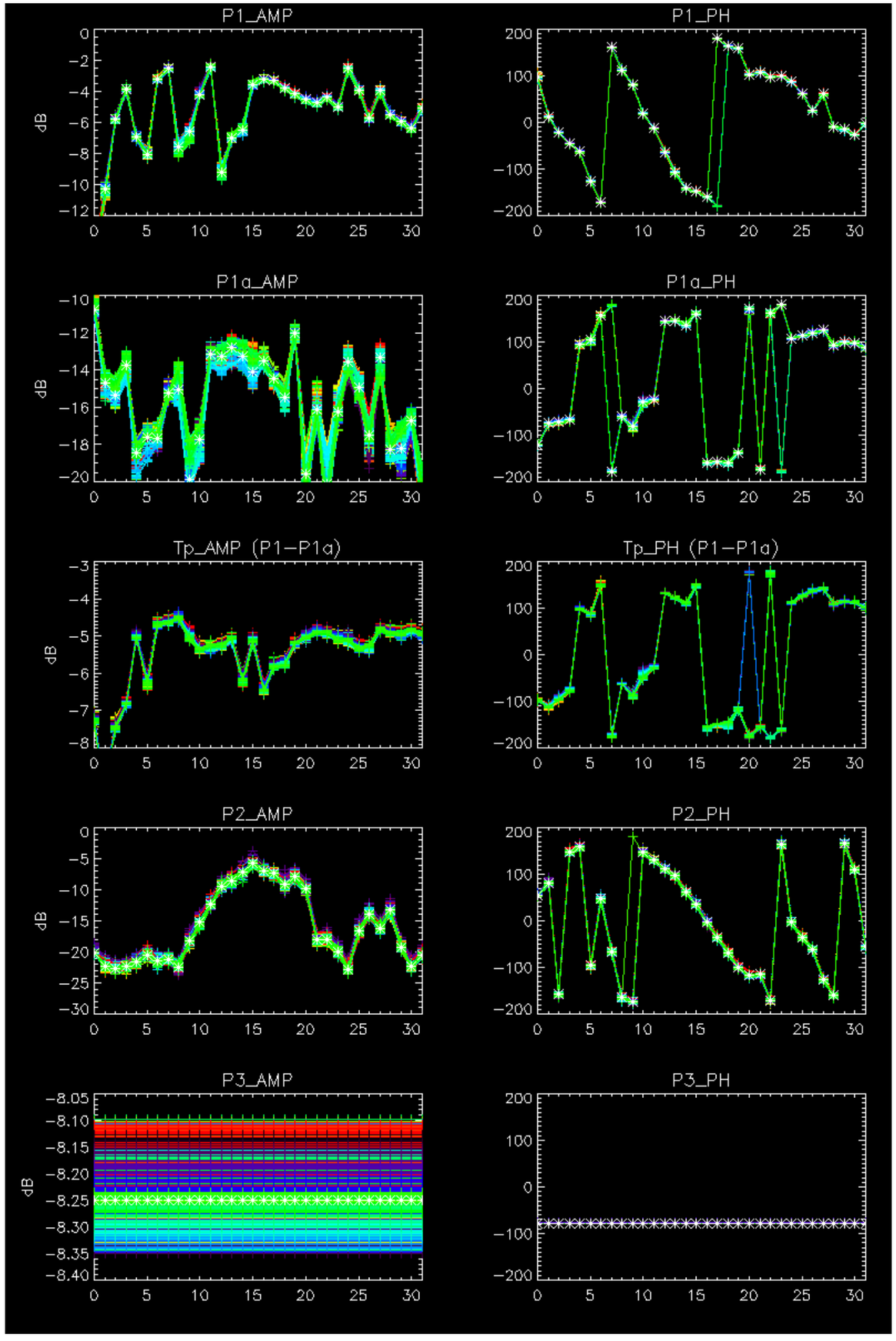

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
11−May
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

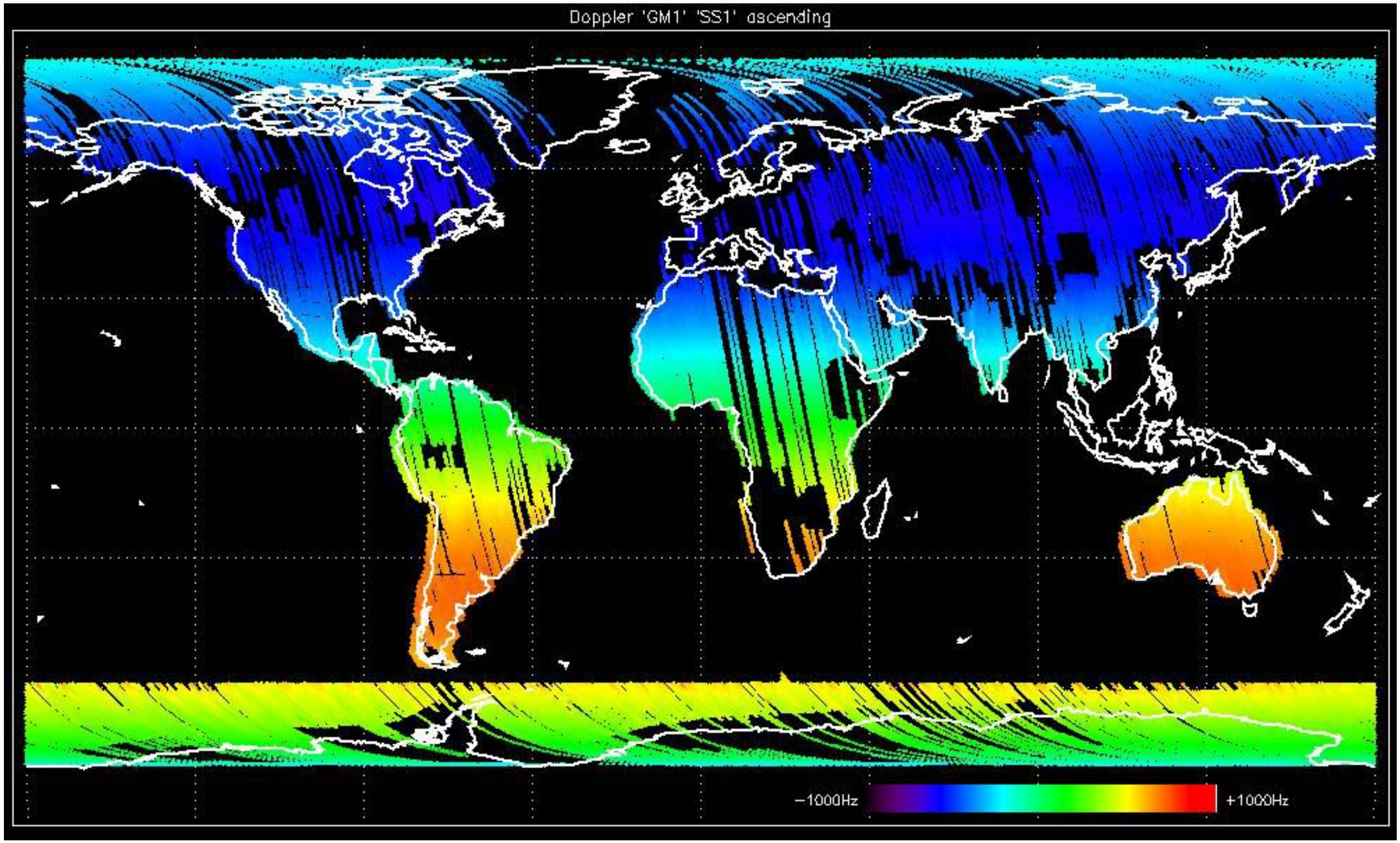
No anomalies observed.

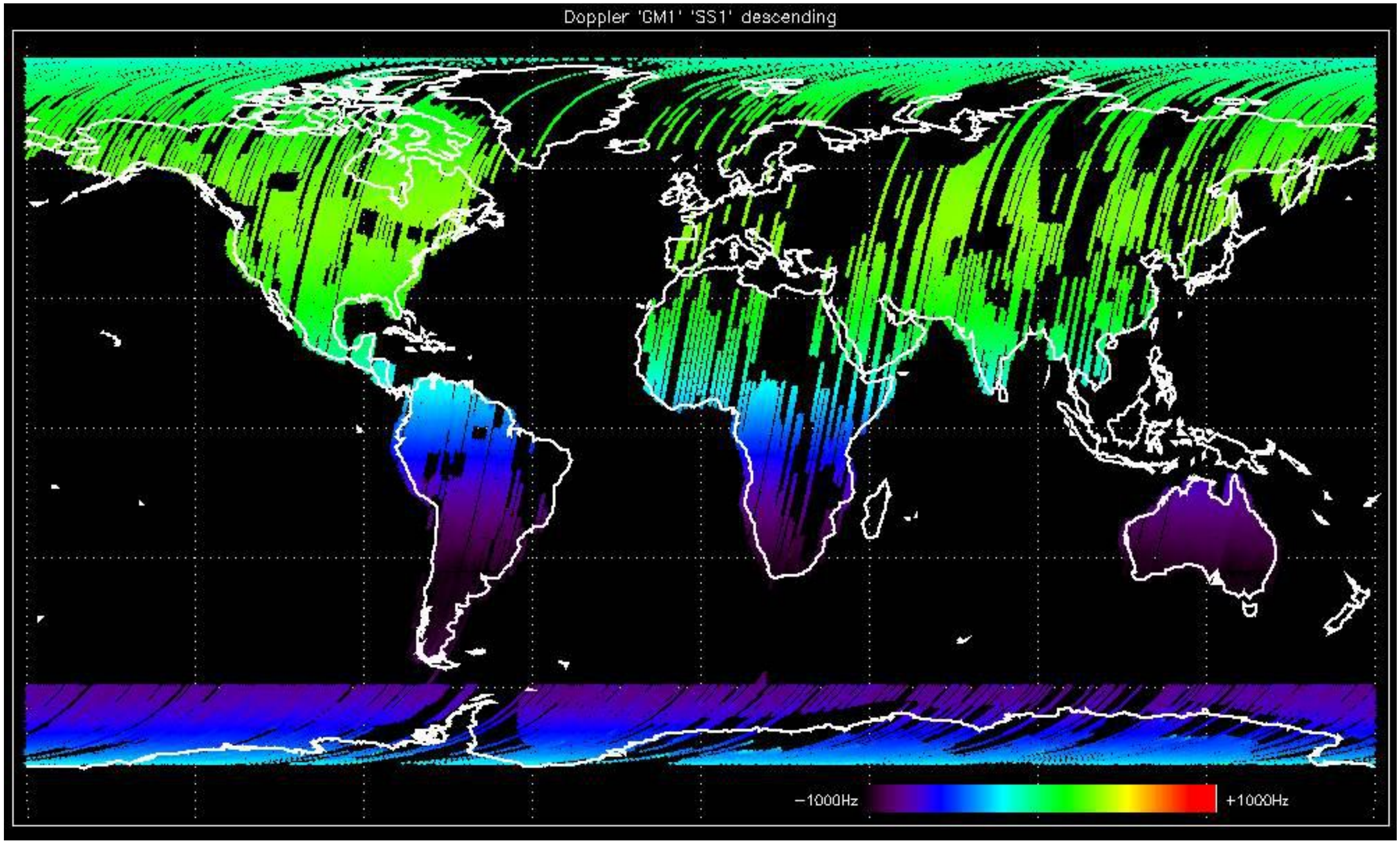

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

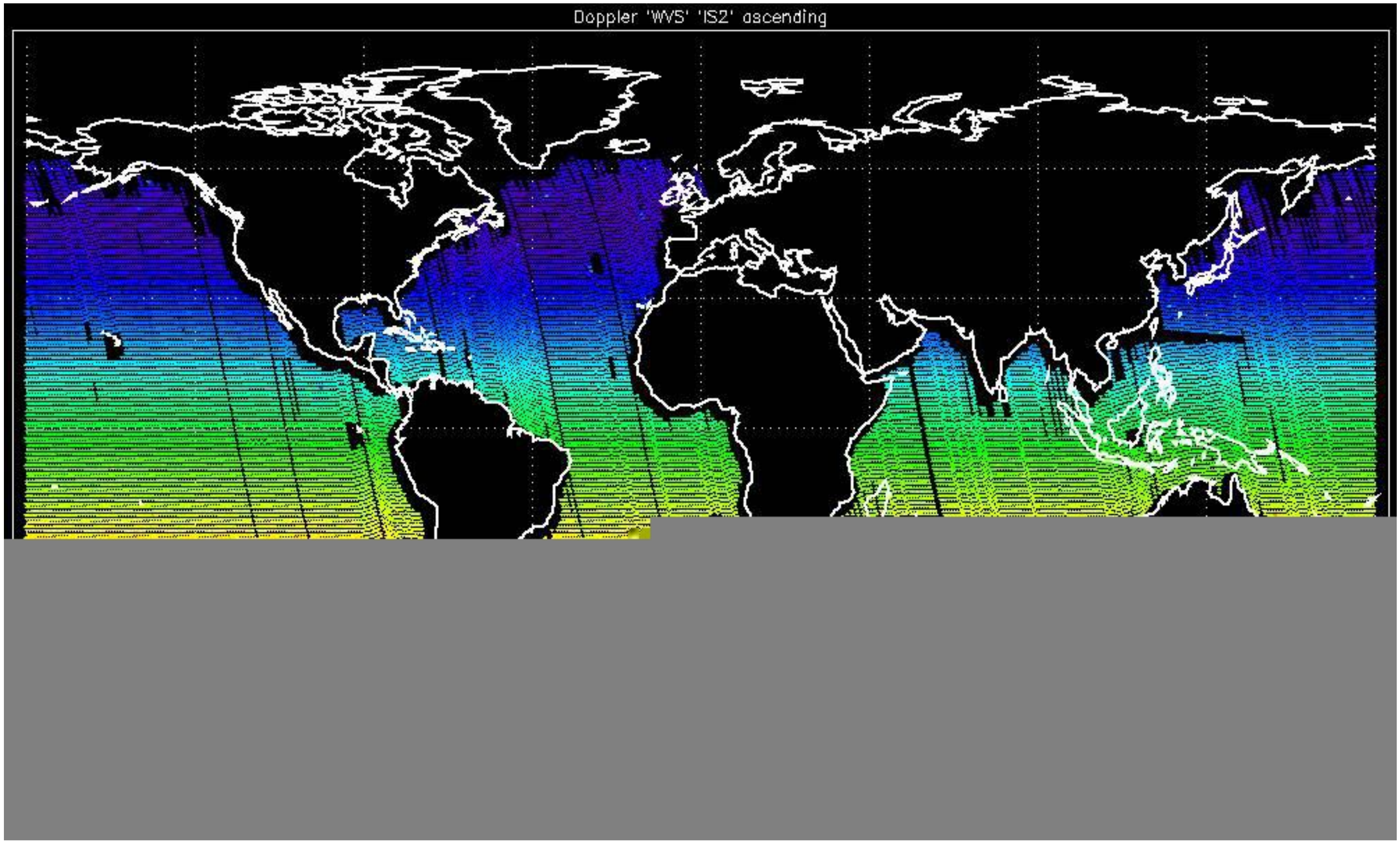

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

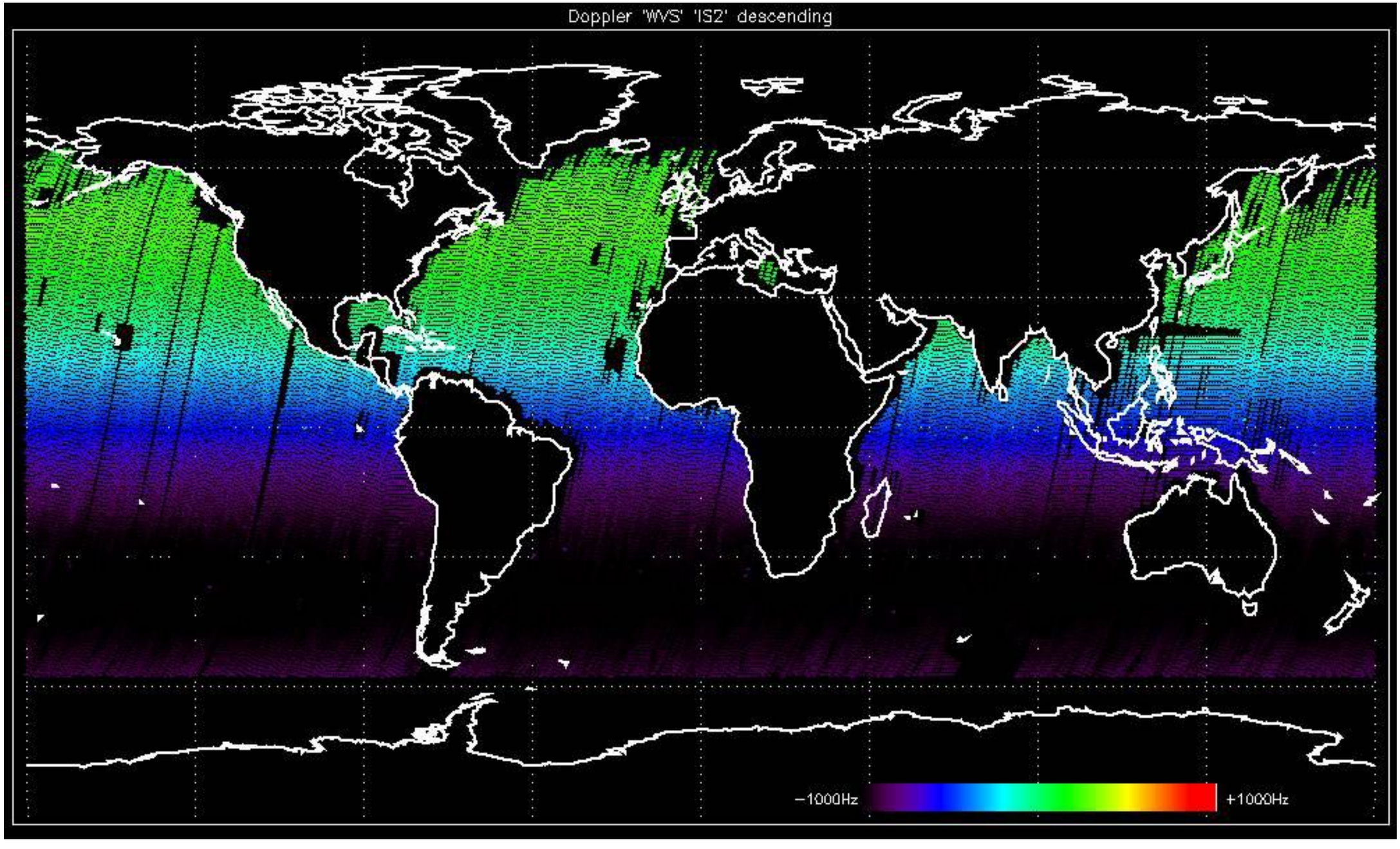
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

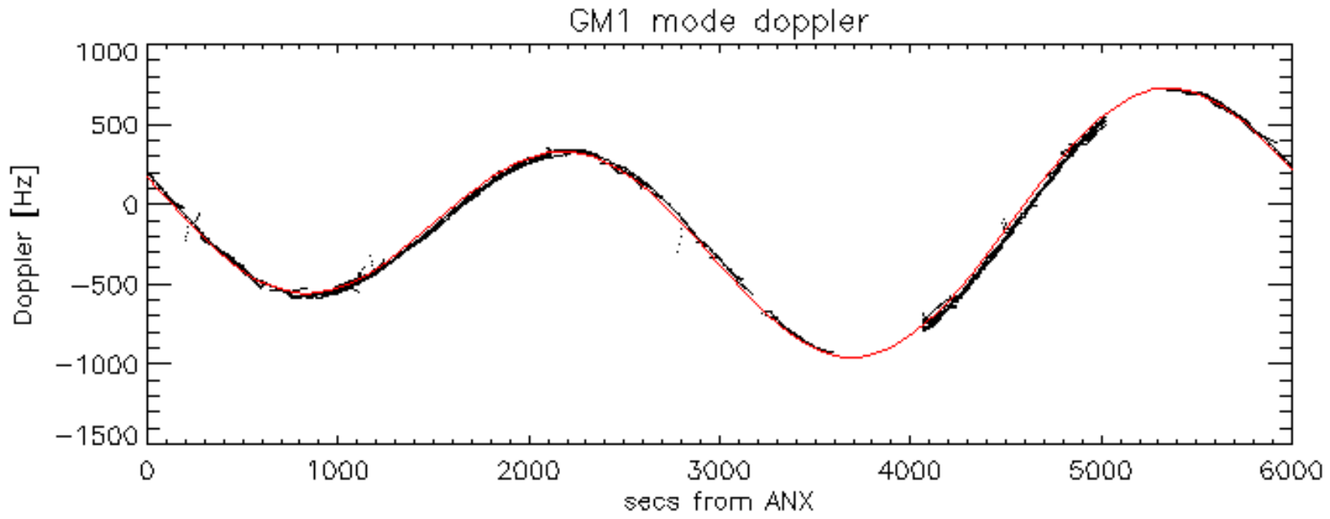
No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

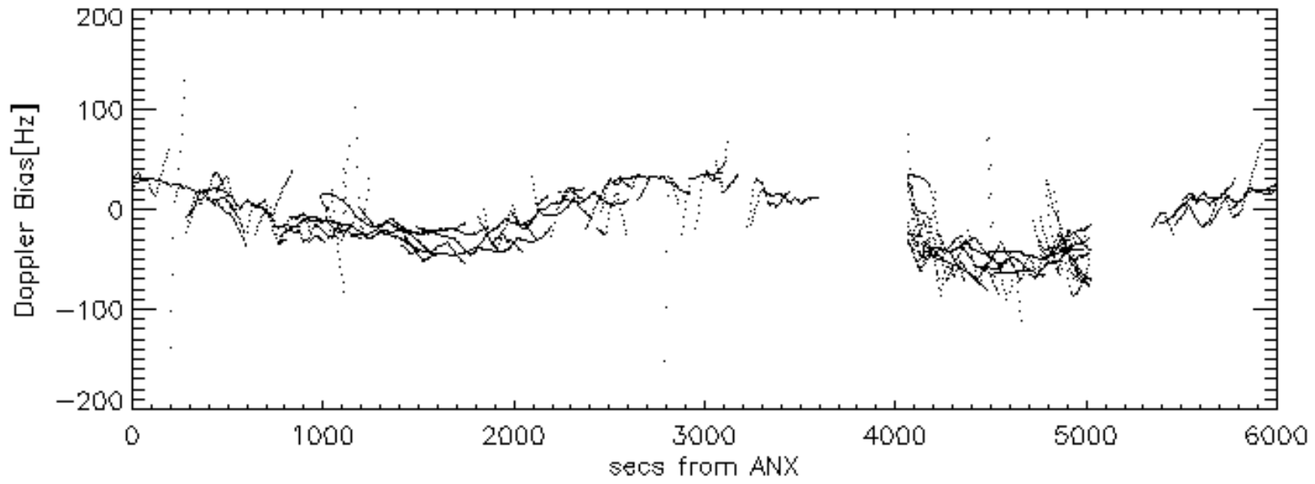

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

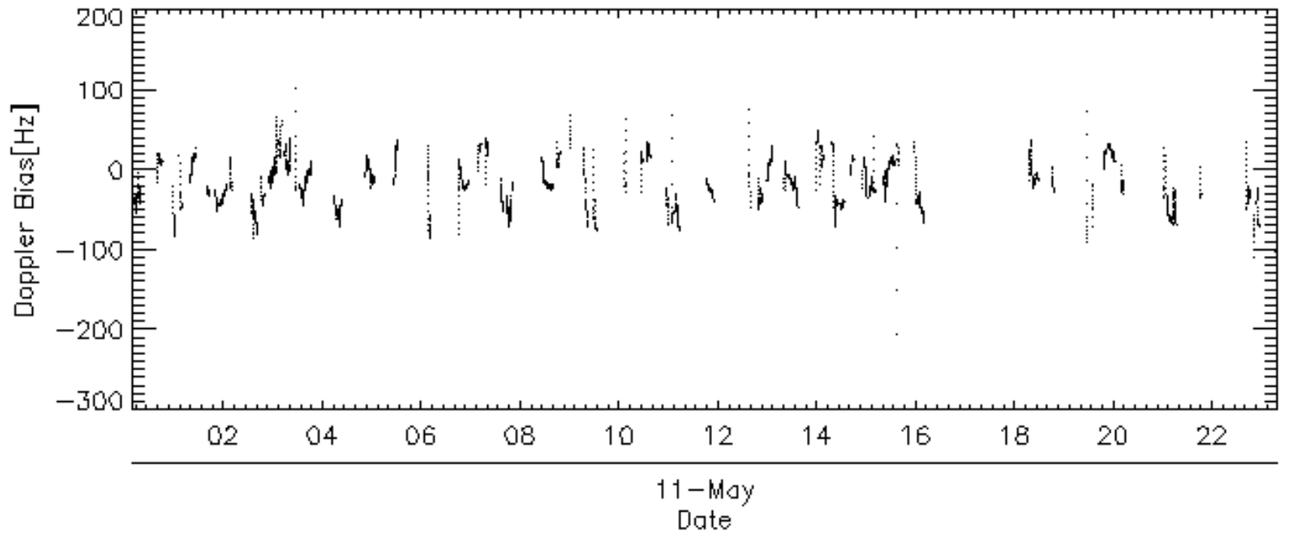

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

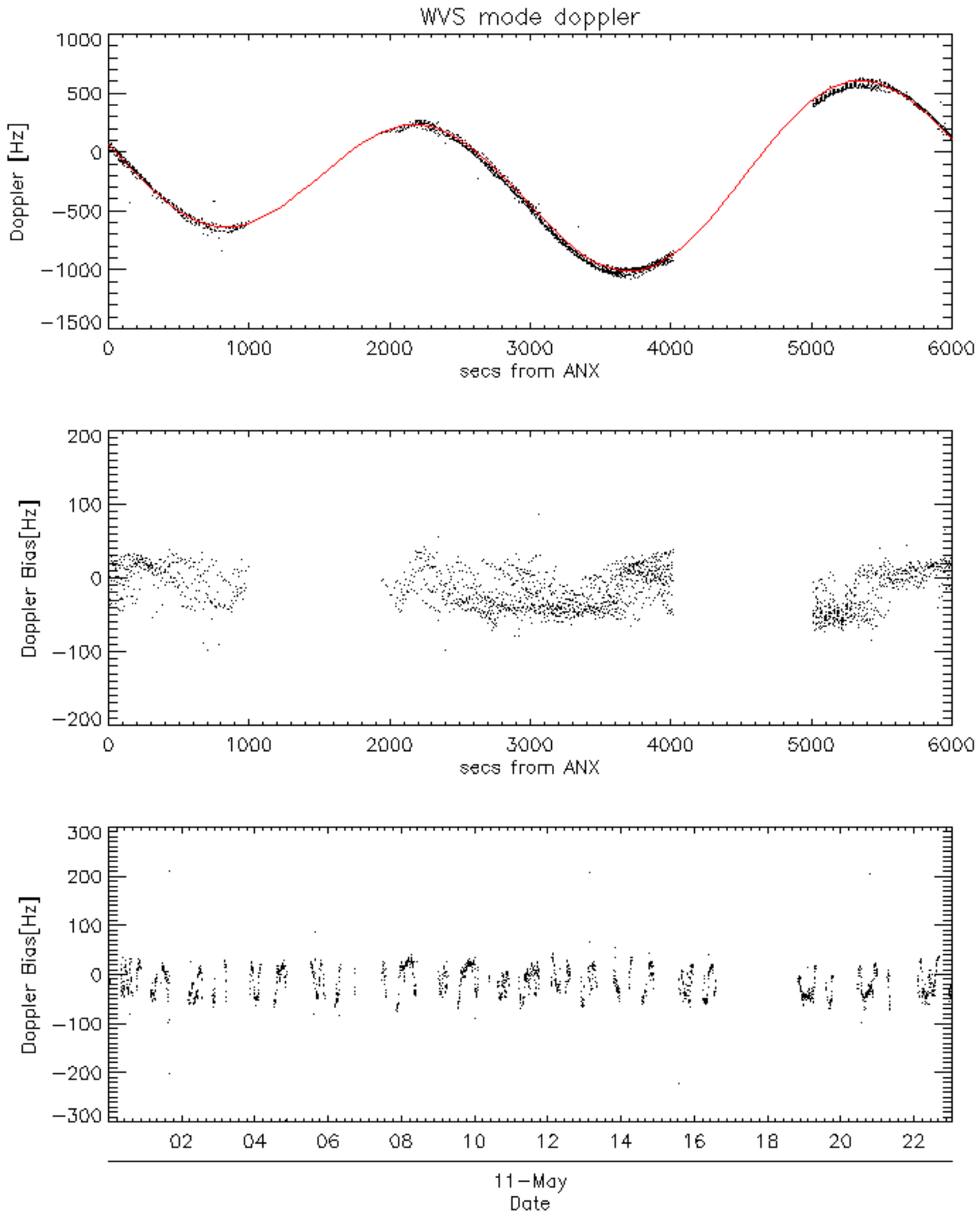

Doppler 'WVS' 'IS2' ascending

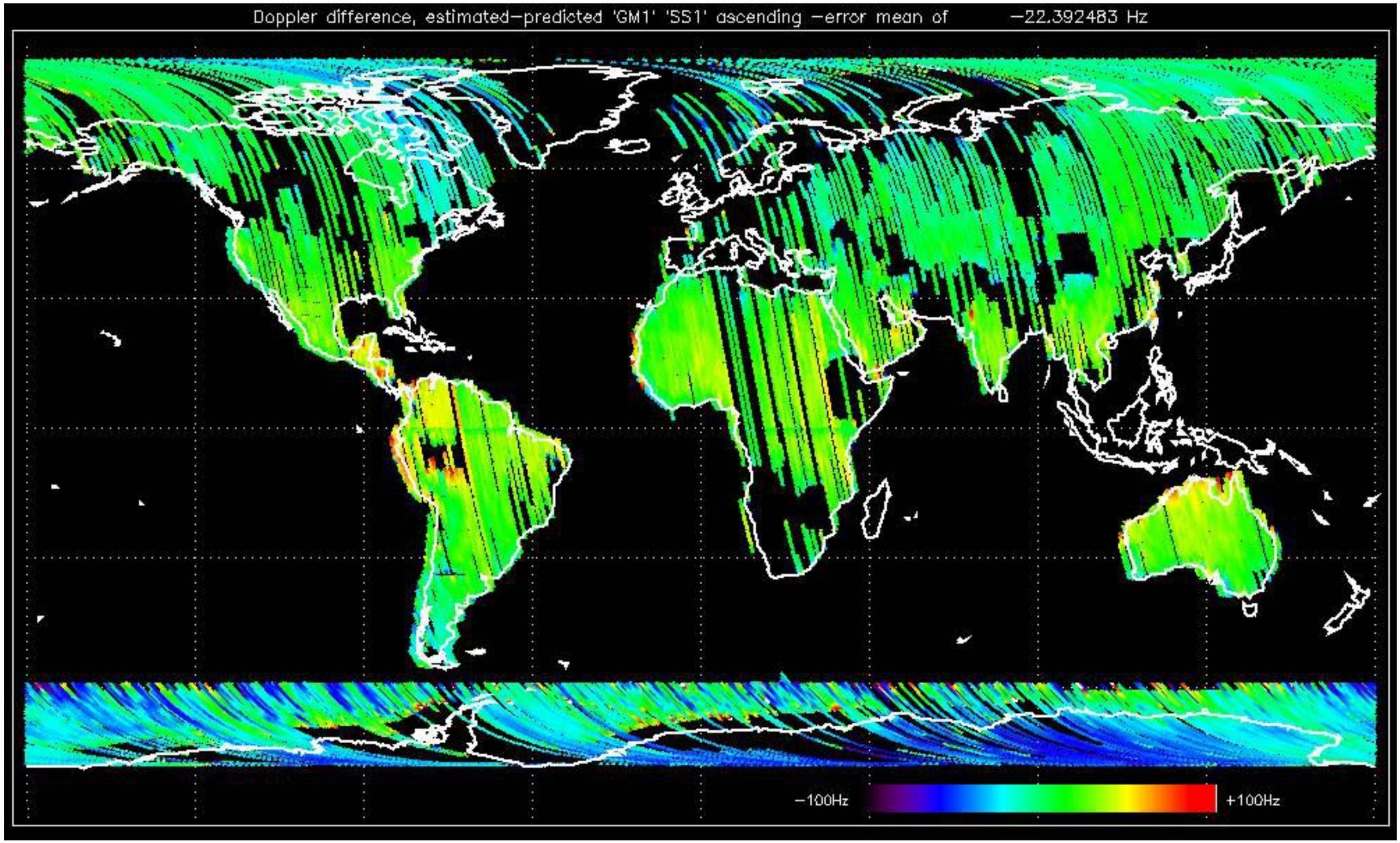

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

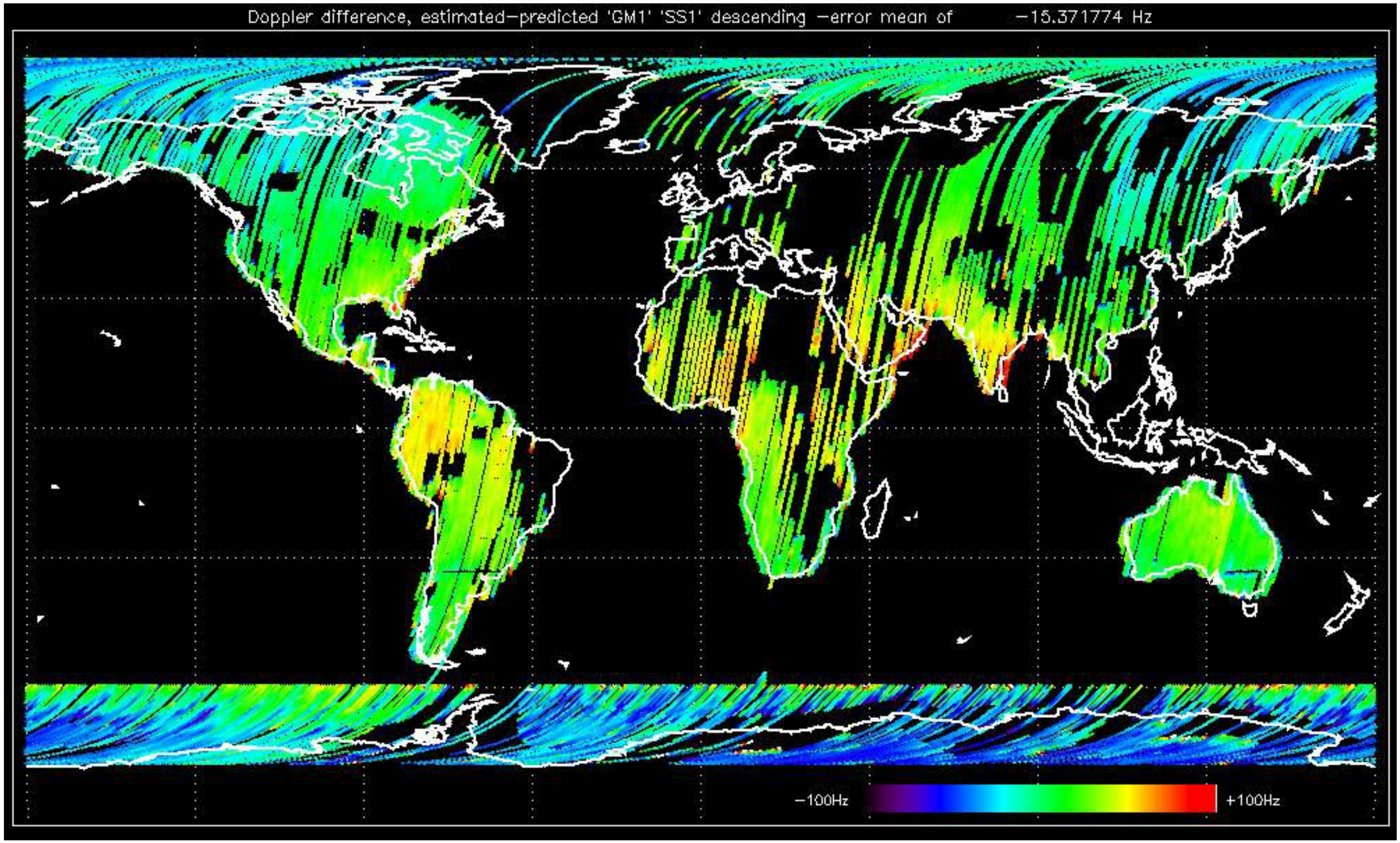

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

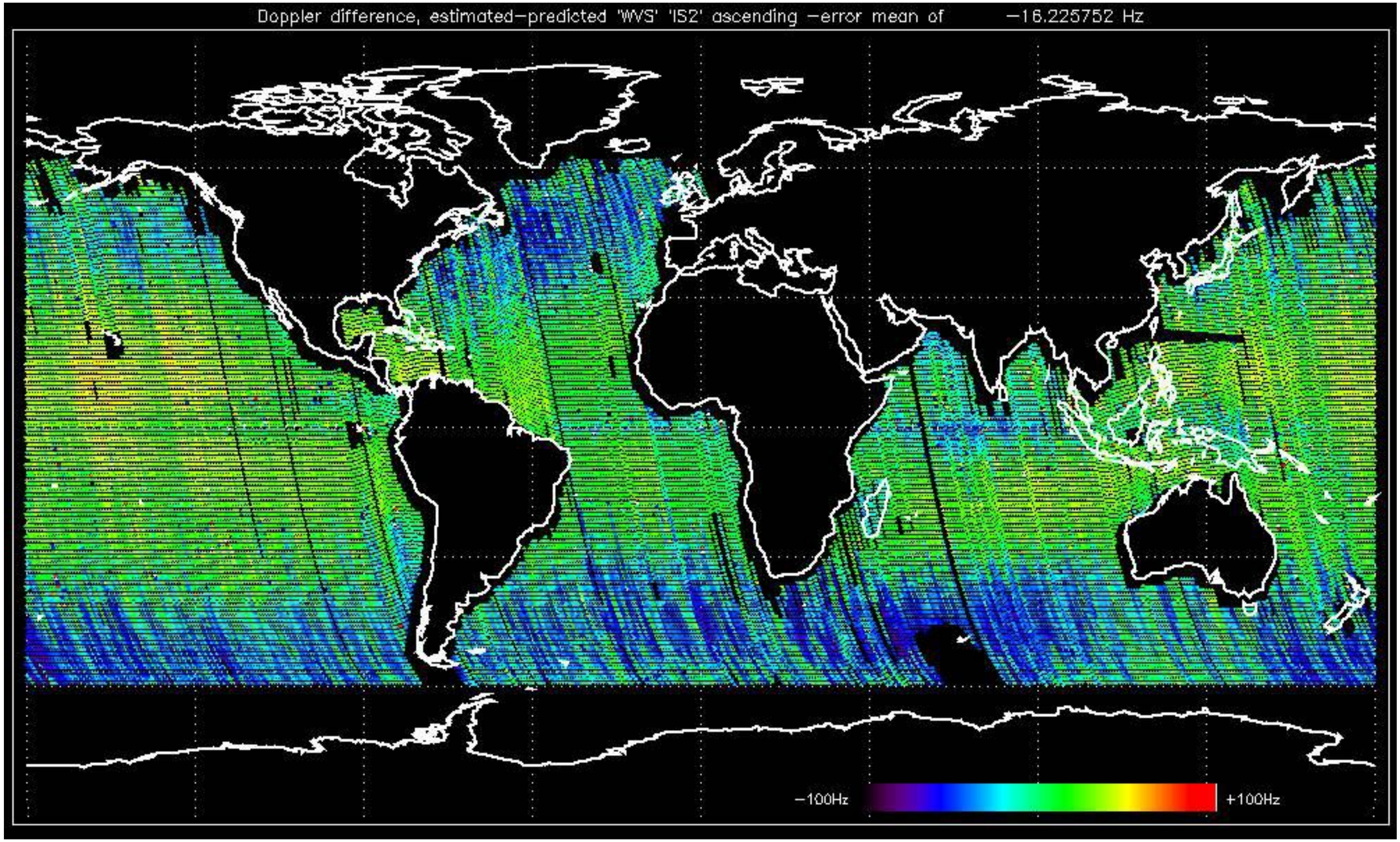

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

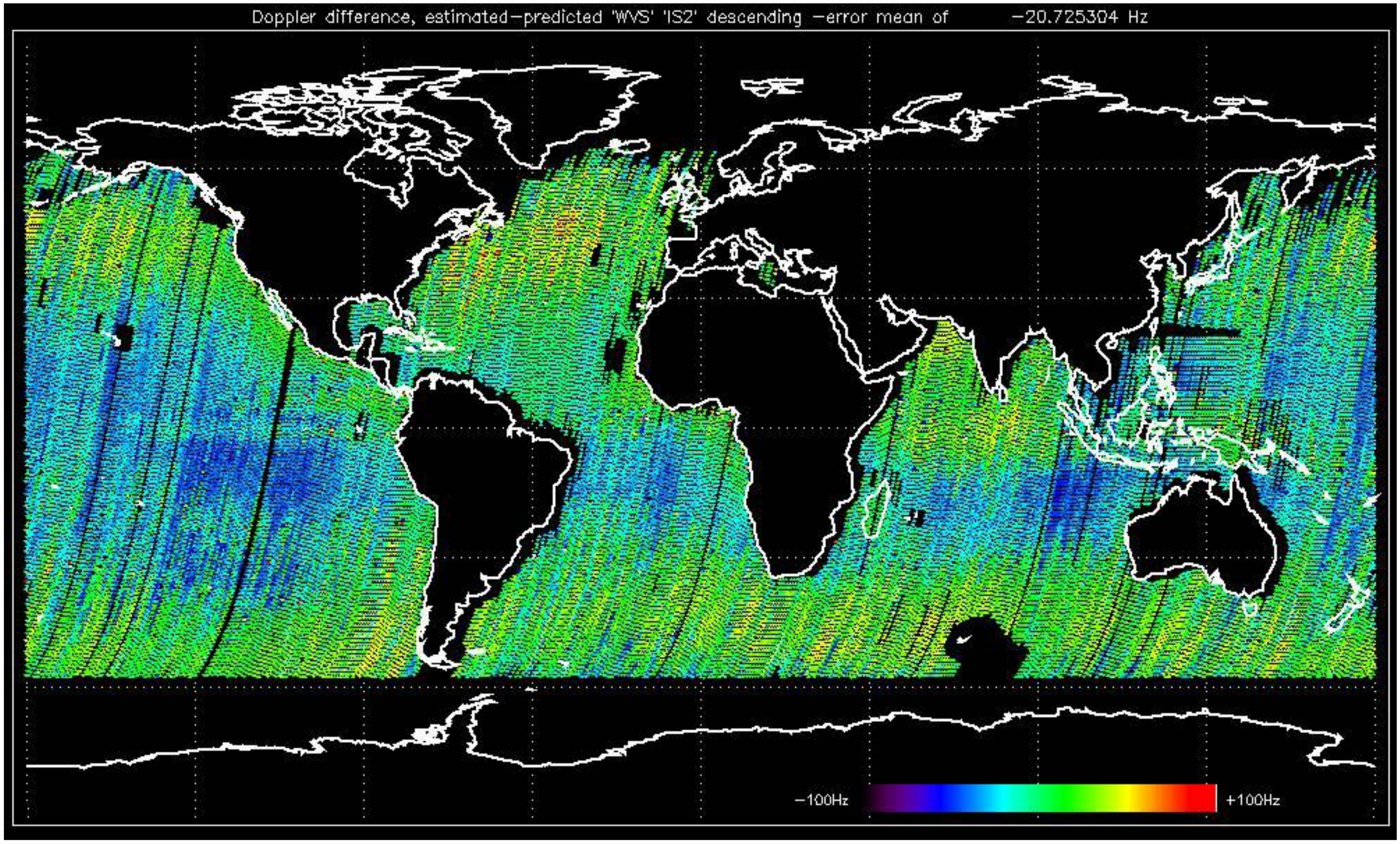

Doppler Bias[Hz]
200
100
0
−100
−200
−300
02
04
06
08
10
12
14
16
18
20
22
11−May
Date


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
−300
02
04
06
08
10
12
14
16
18
20
22
11−May
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −22.392483 Hz
−100Hz
+100Hz

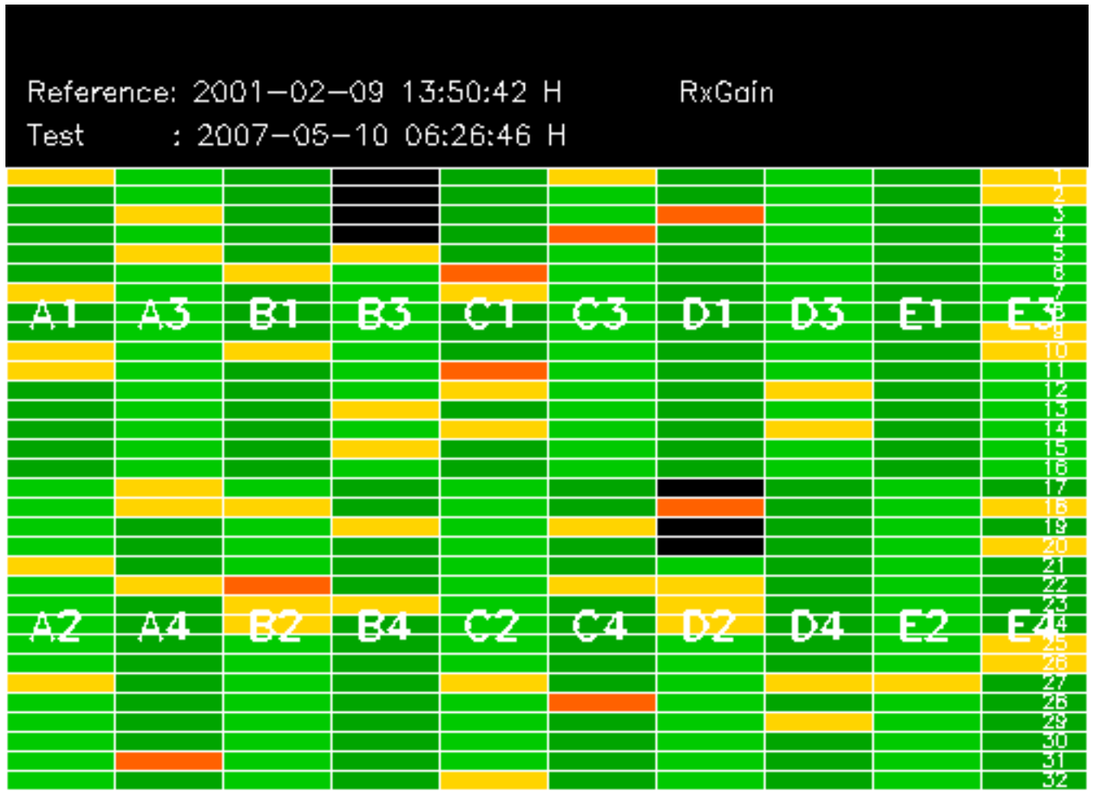

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −15.371774 Hz
−100Hz
+100Hz

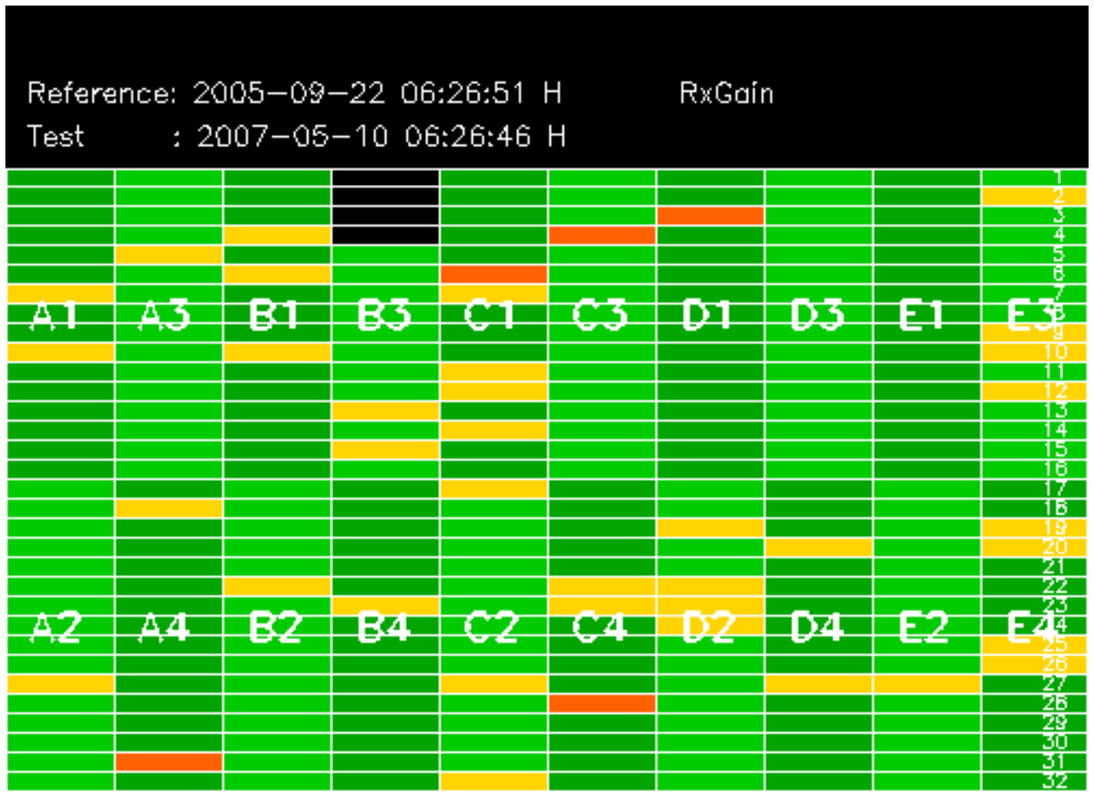

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −16.225752 Hz
−100Hz
+100Hz

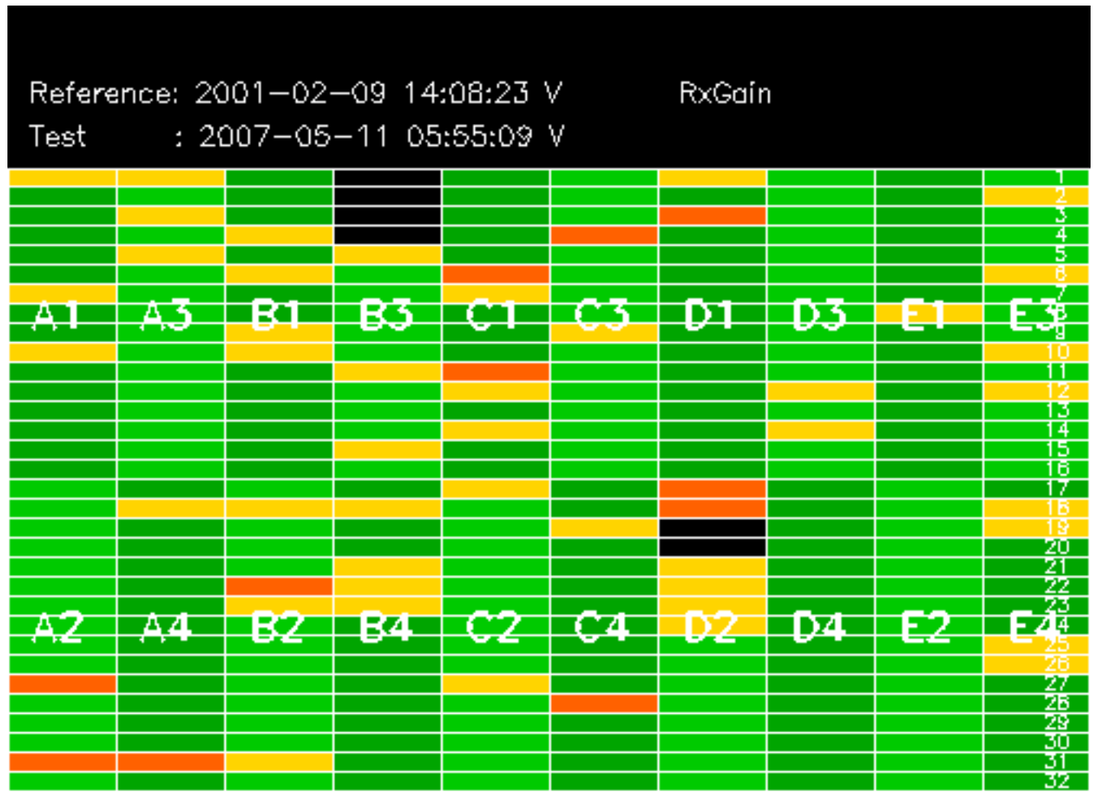

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −20.725304 Hz
−100Hz
+100Hz

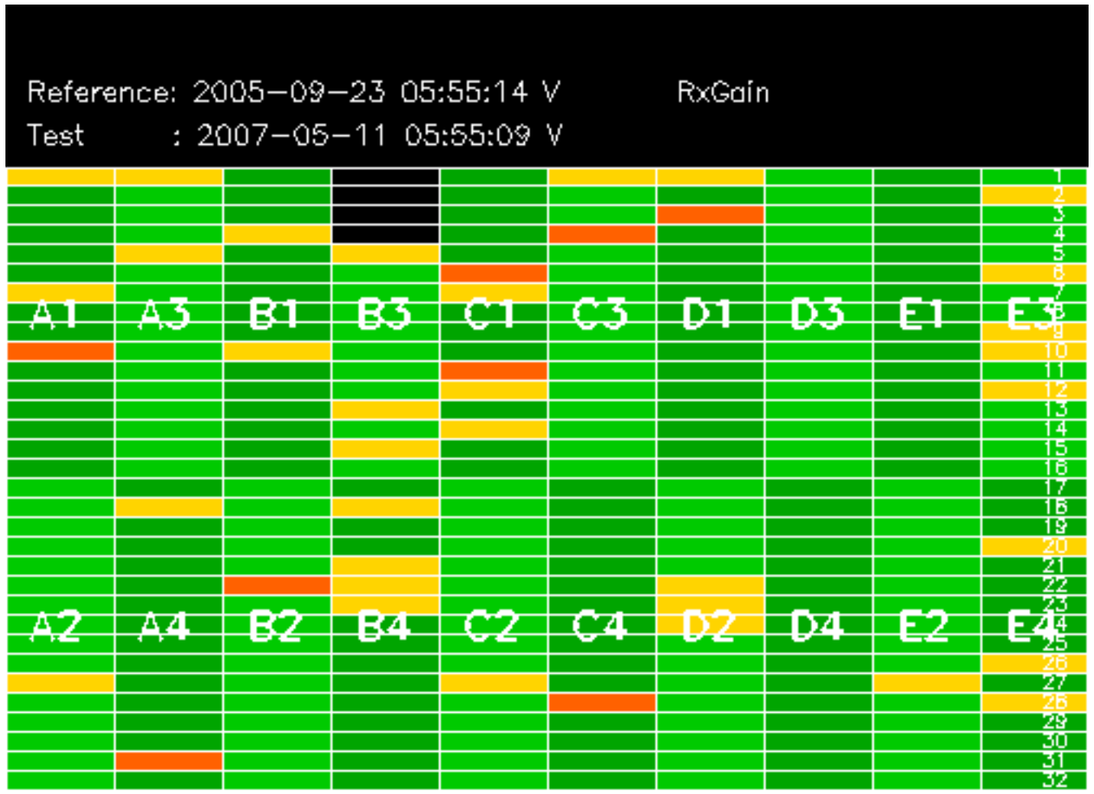
No anomalies observed on available MS products:

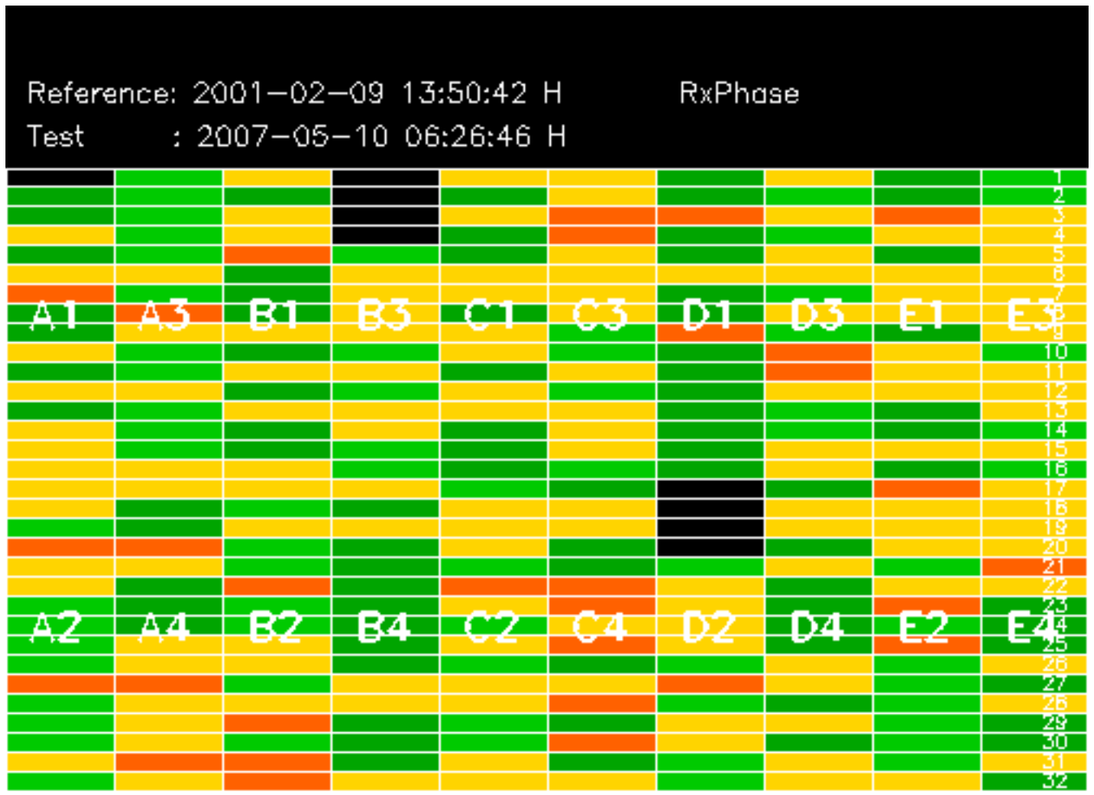
No anomalies observed.

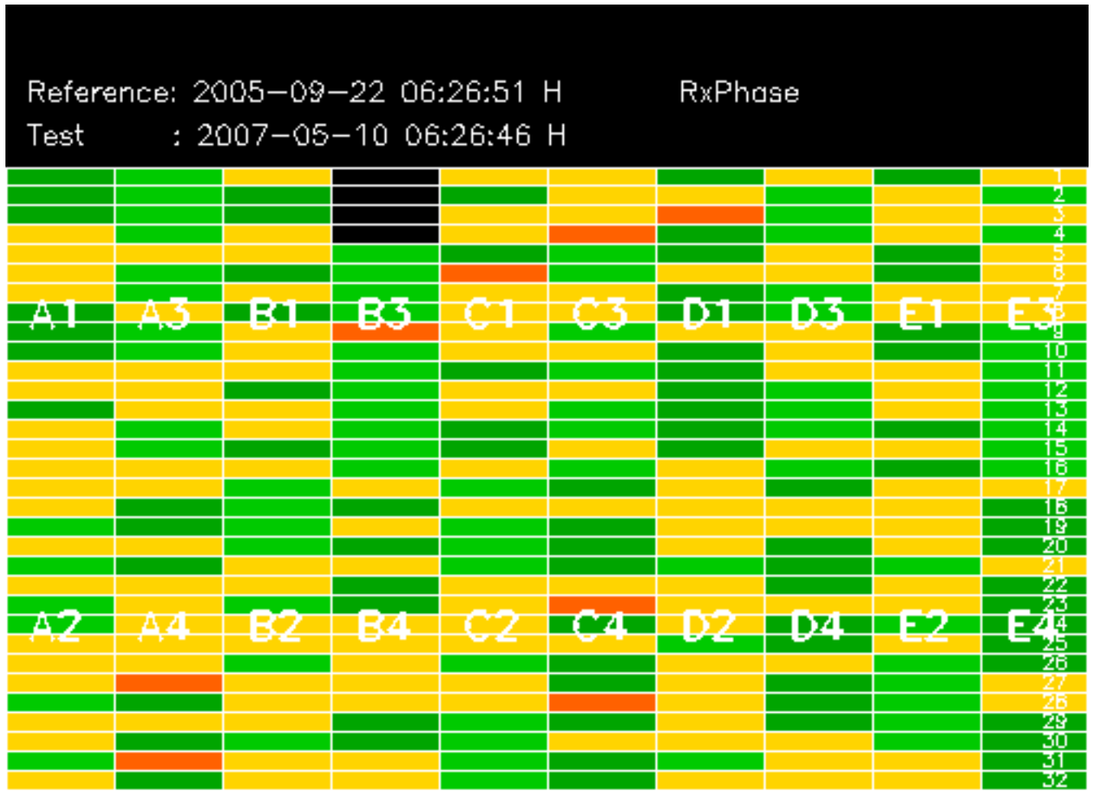

Reference: 2001-02-09 13:50:42 H
Test : 2007-05-10 06:26:46 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-05-10 06:26:46 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
RxGain
Test : 2007-05-11 05:55:09 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 : 2007-05-11 05:55:09 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 : 2007-05-10 06:26:46 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
RxPhase
Test : 2007-05-10 06:26:46 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
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8
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26
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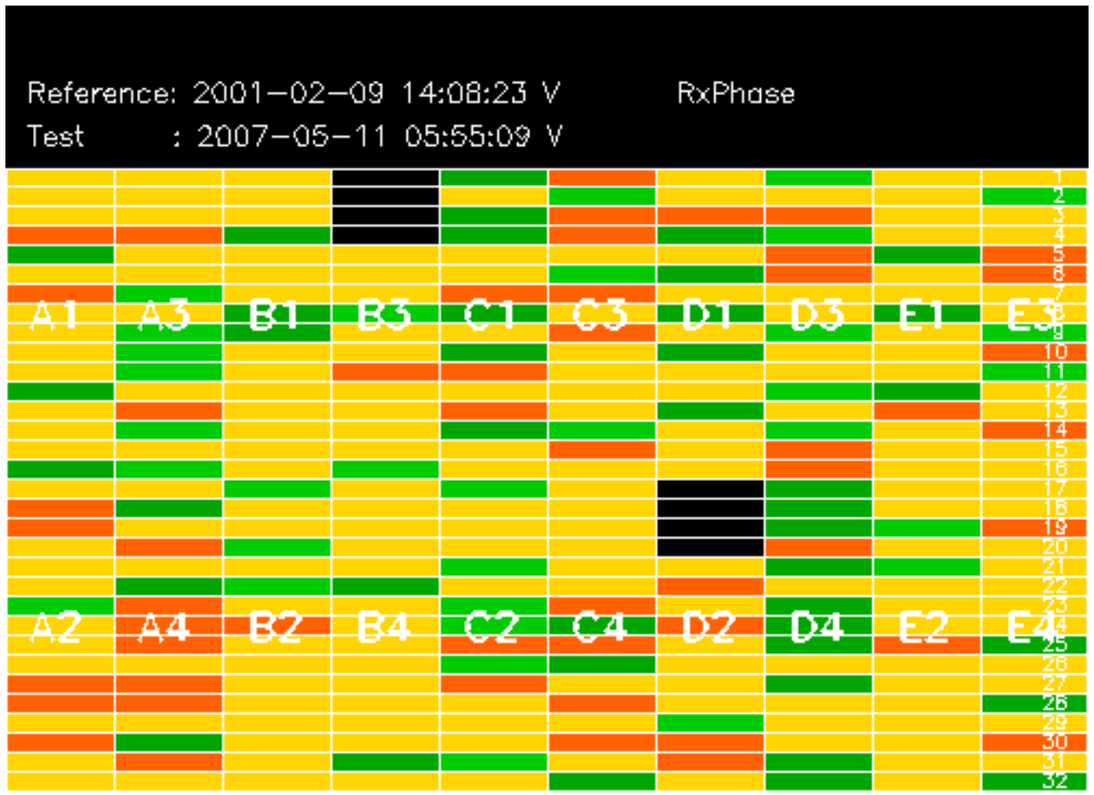
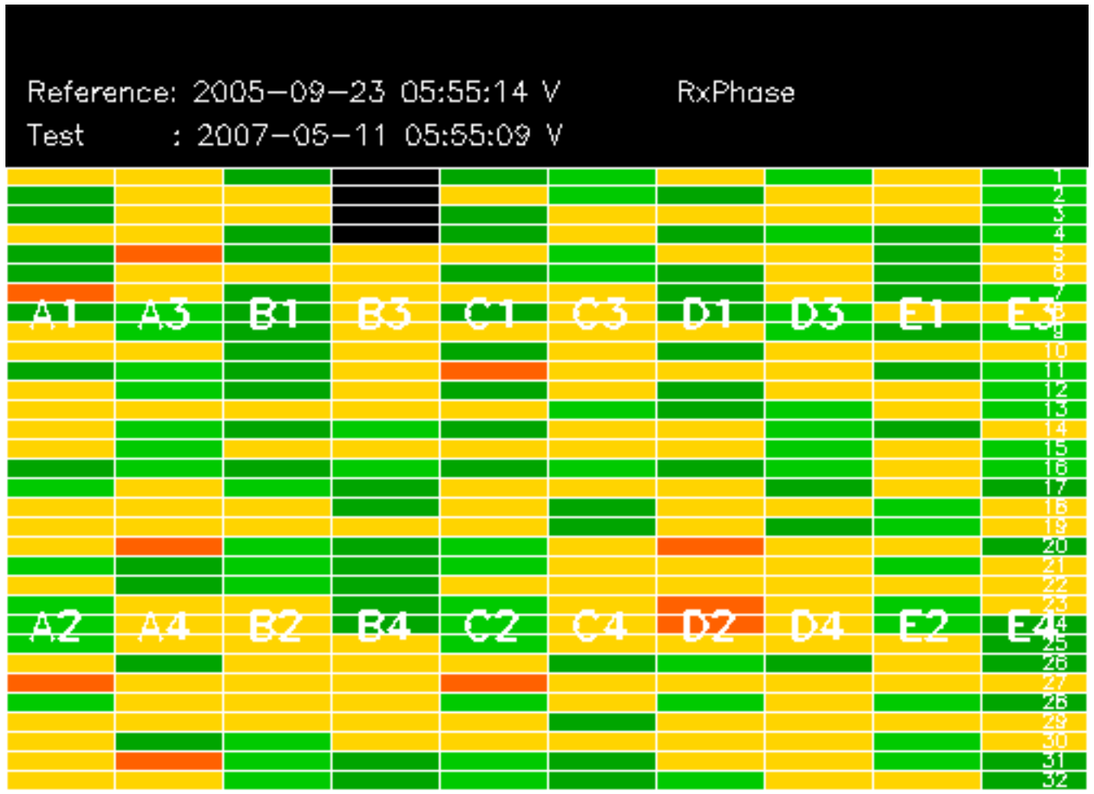
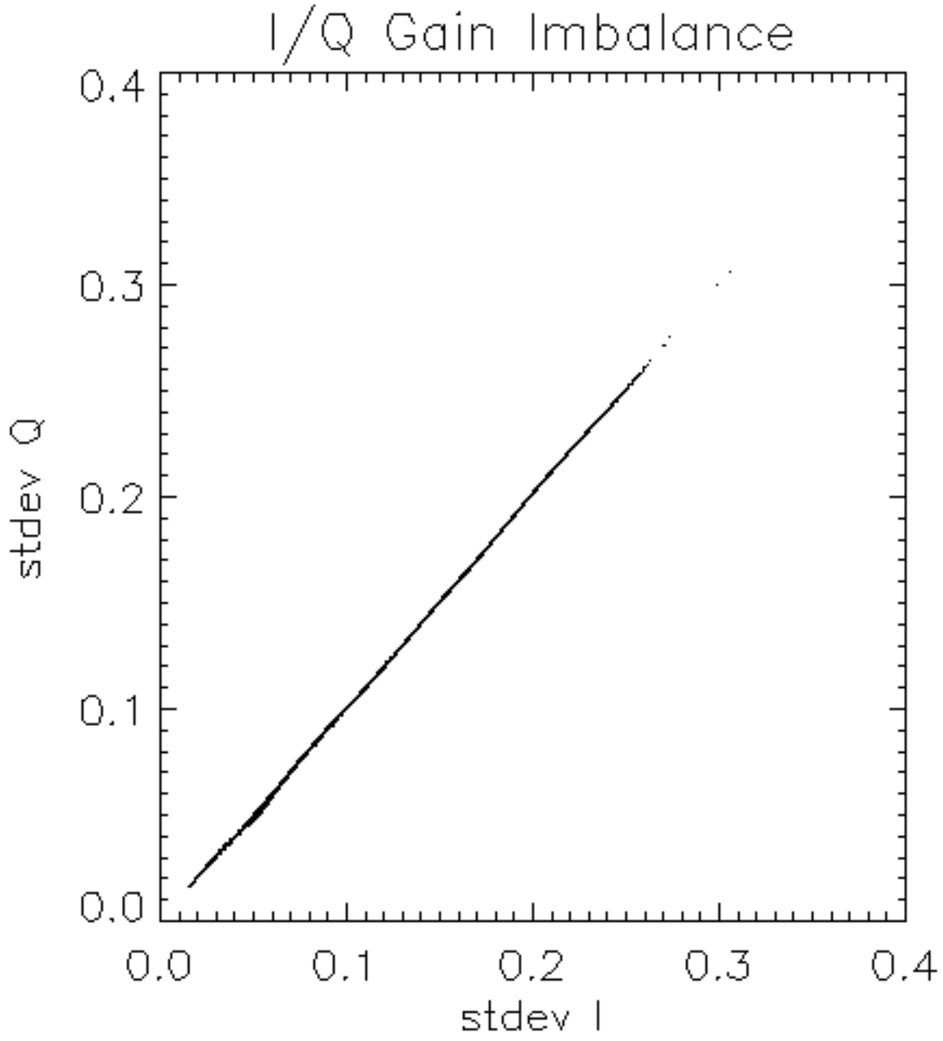
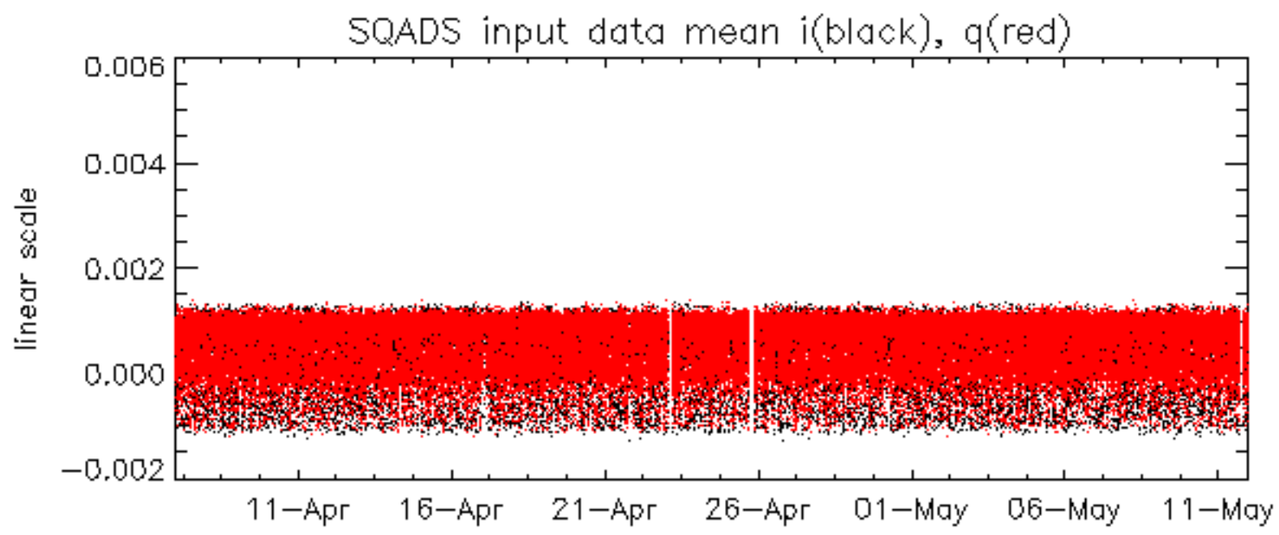
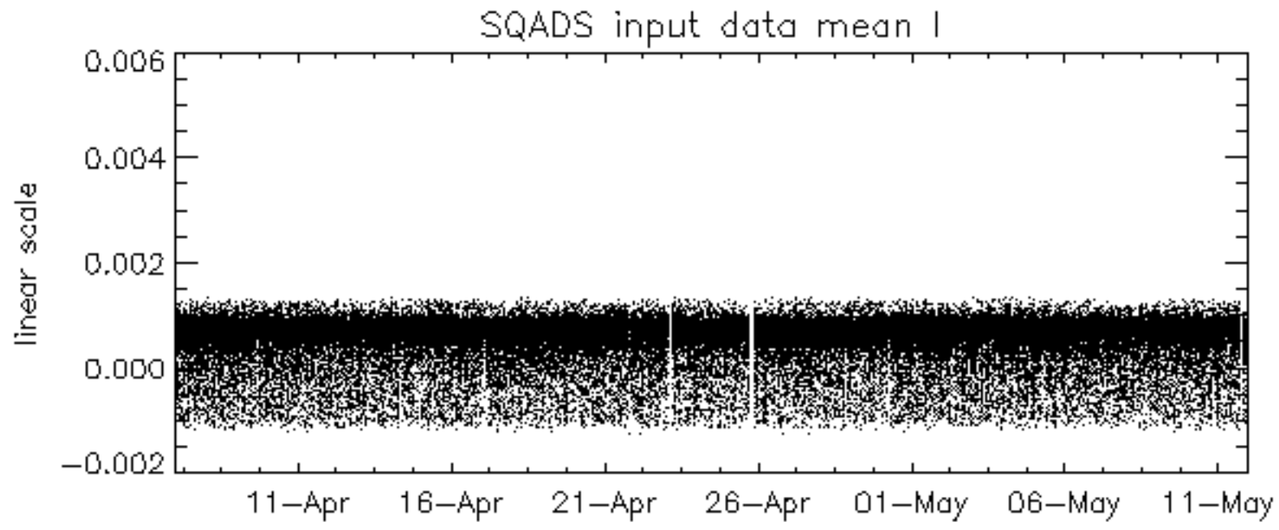
29
30
31
32

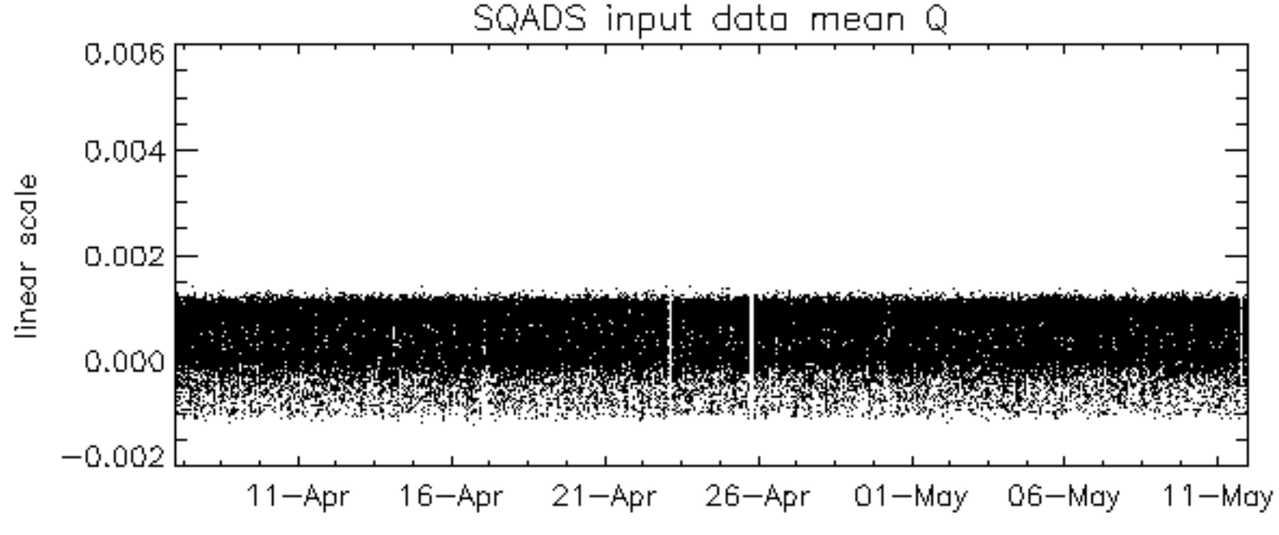

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2007-05-11 05:55:09 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

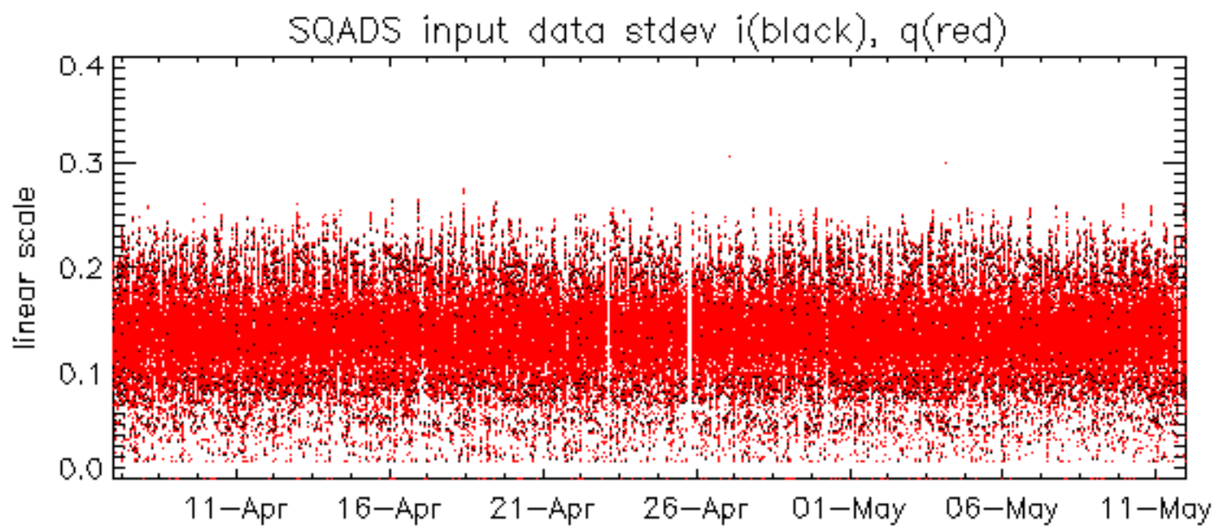

Reference: 2005-09-23 05:55:14 V
Test : 2007-05-11 05:55:09 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

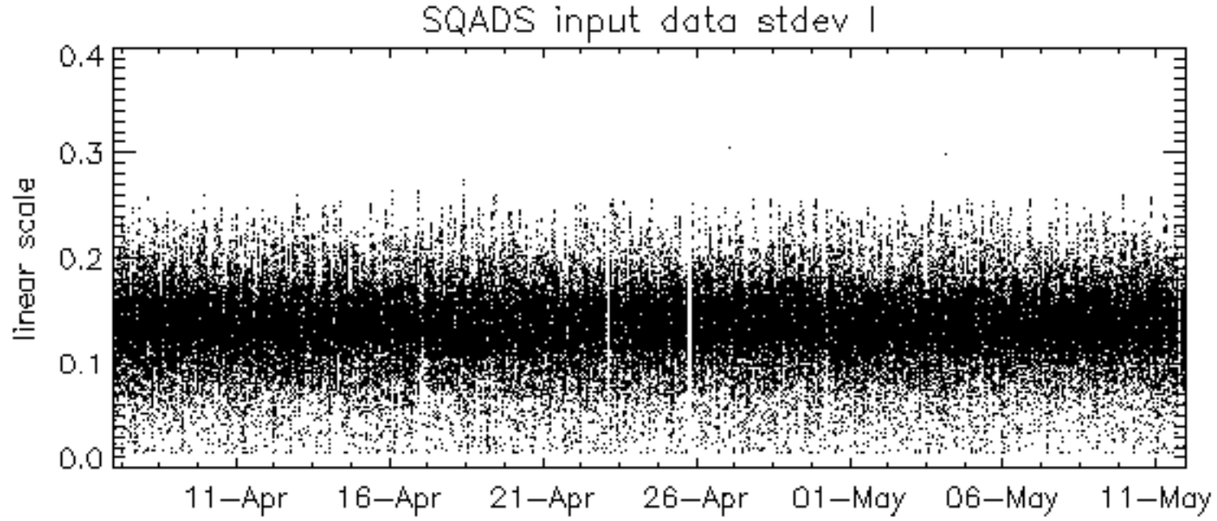

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

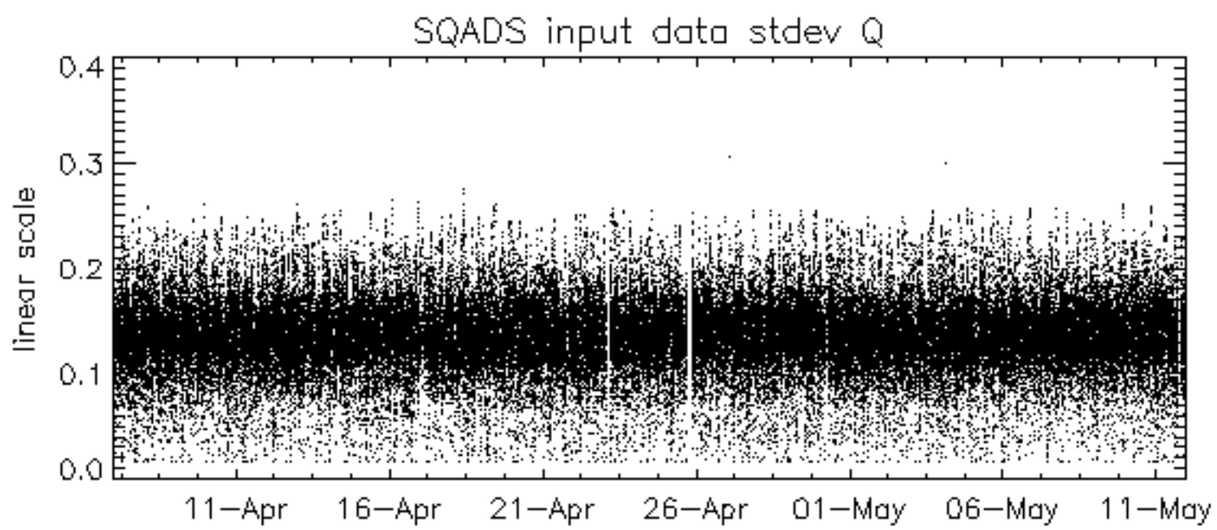

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May

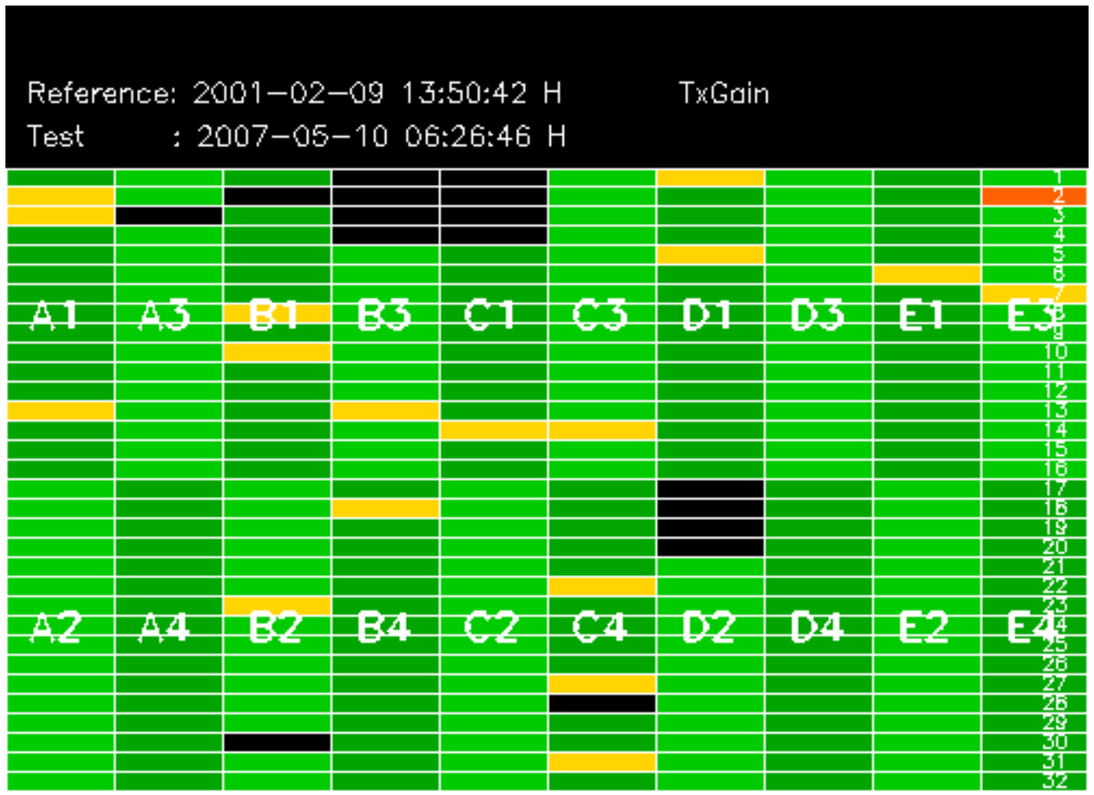

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May

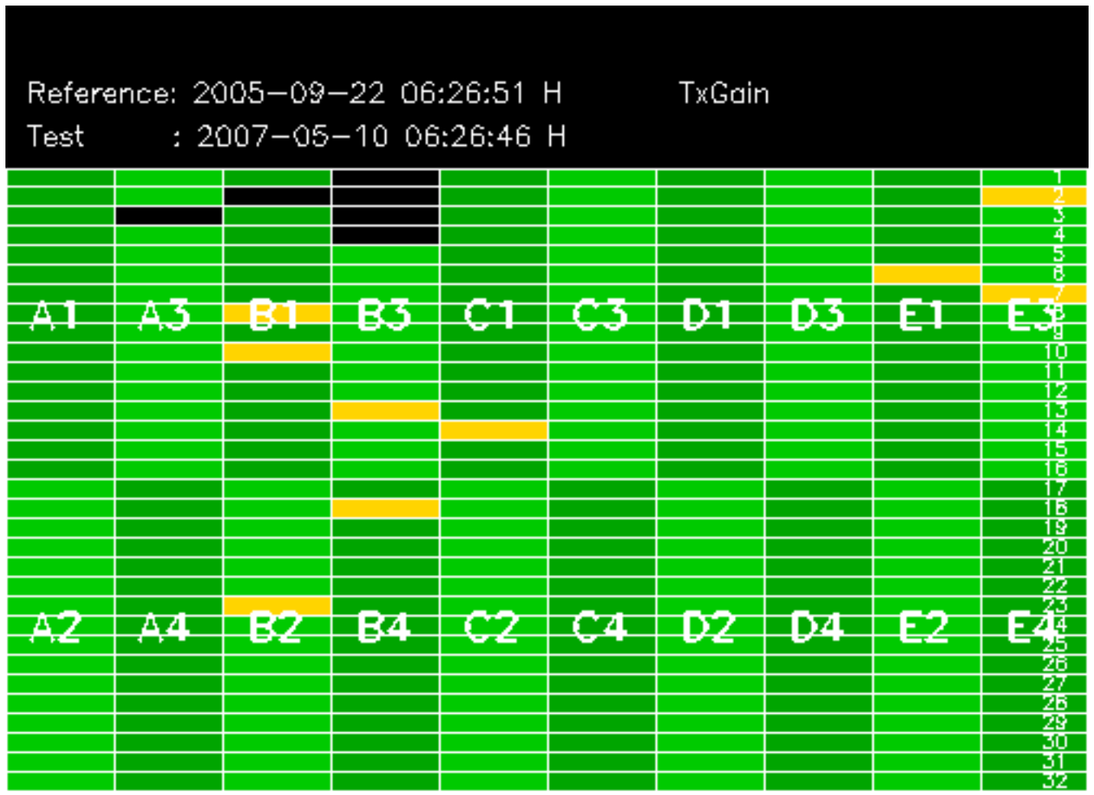

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Apr
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2007-05-10 06:26:46 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
TxGain
Test : 2007-05-10 06:26:46 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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26
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28
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2007-05-11 05:55:09 V
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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28
29
30
31
32


Reference: 2005-09-23 05:55:14 V
Test : 2007-05-11 05:55:09 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
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8
9
10
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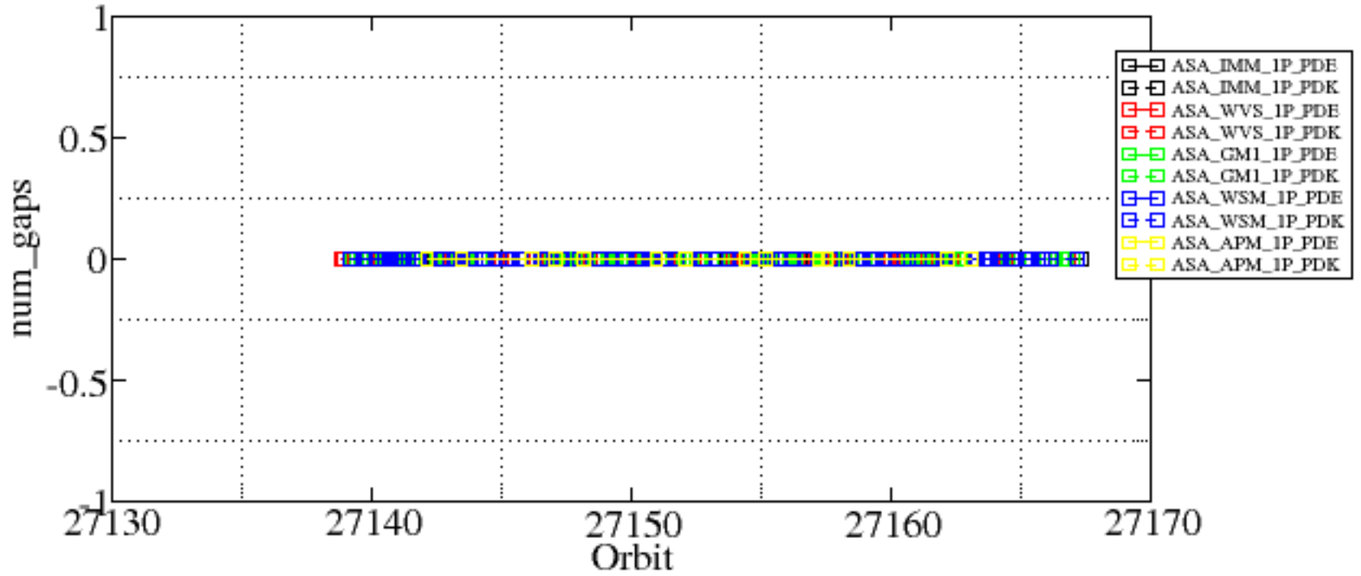
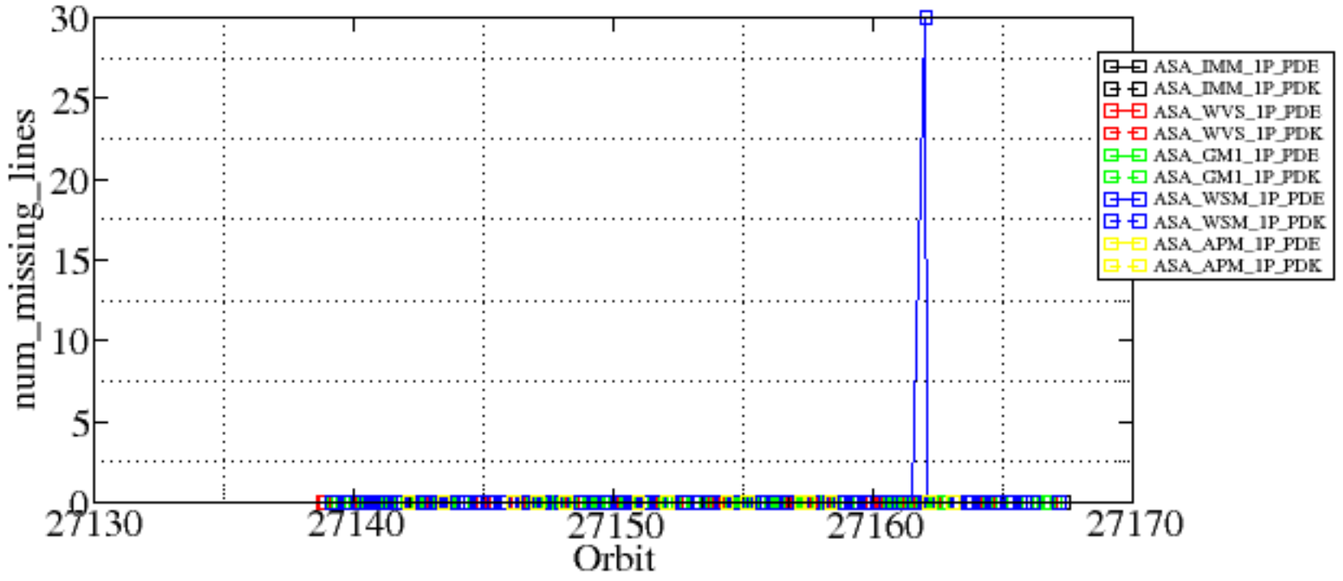
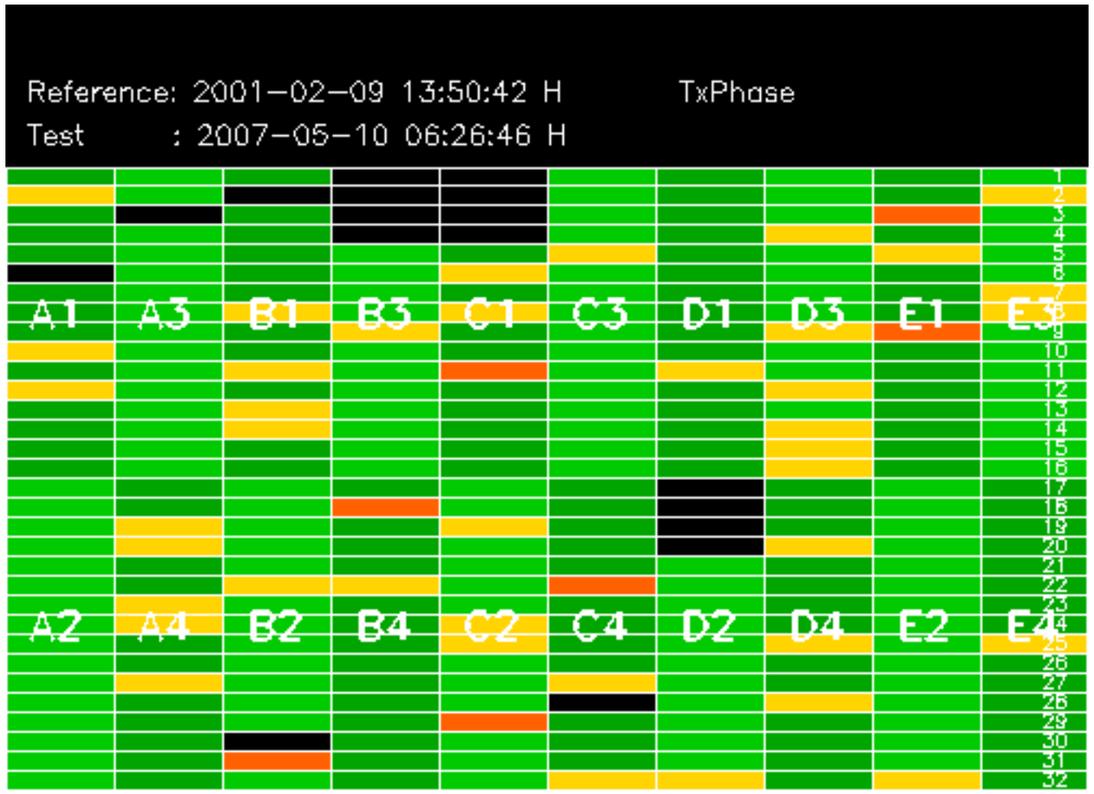
Summary of analysis for the last 3 days 2007051[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename   </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20070511_145415_000000852058_00054_27162_0657.N1 </td> <td>0   </td> <td>30   </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
27130
27140
27150
27160
27170
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
30
25
20
15
10
5
0
27130
27140
27150
27160
27170
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 : 2007-05-10 06:26:46 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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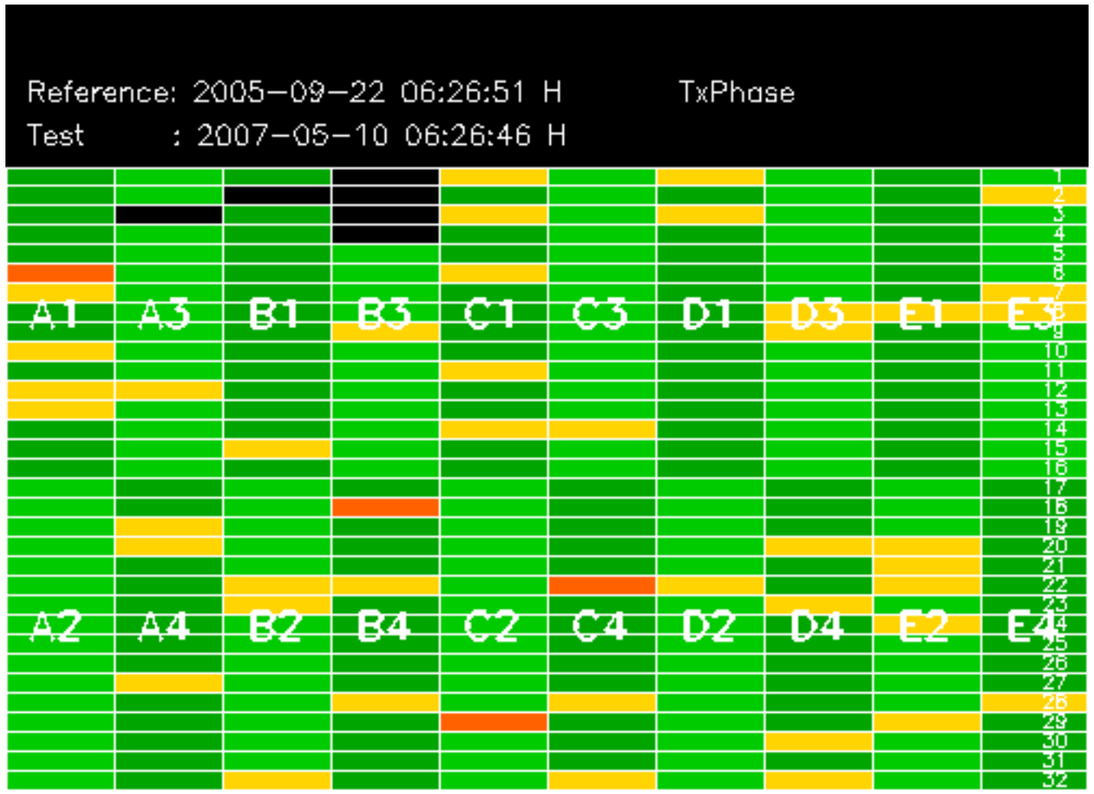
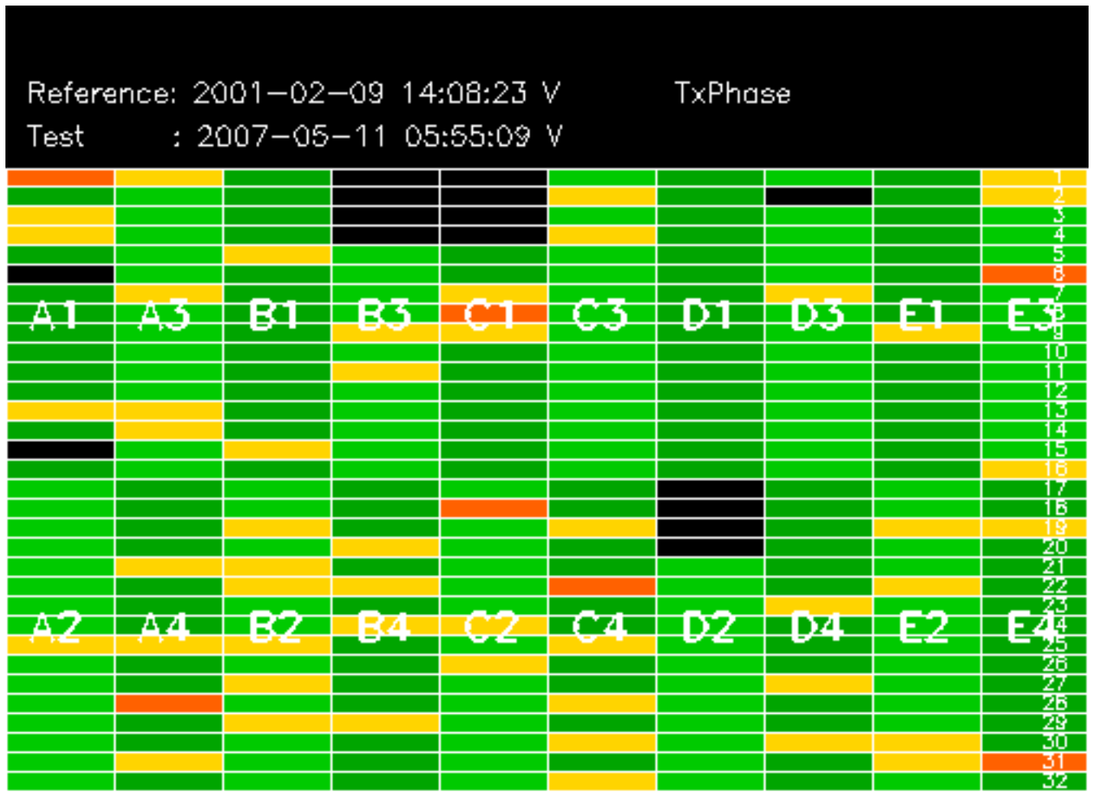
32


Reference: 2005-09-22 06:26:51 H
TxPhase
Test : 2007-05-10 06:26:46 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 : 2007-05-11 05:55:09 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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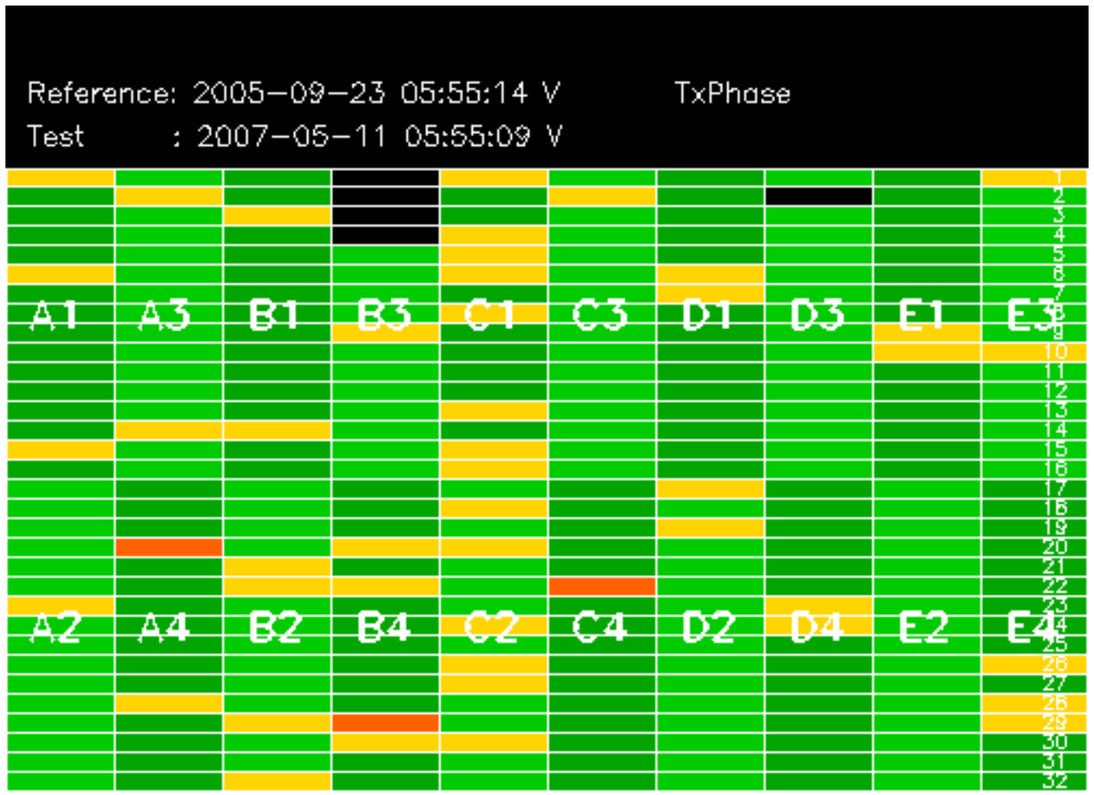
Reference: 2005-09-23 05:55:14 V
Test : 2007-05-11 05:55:09 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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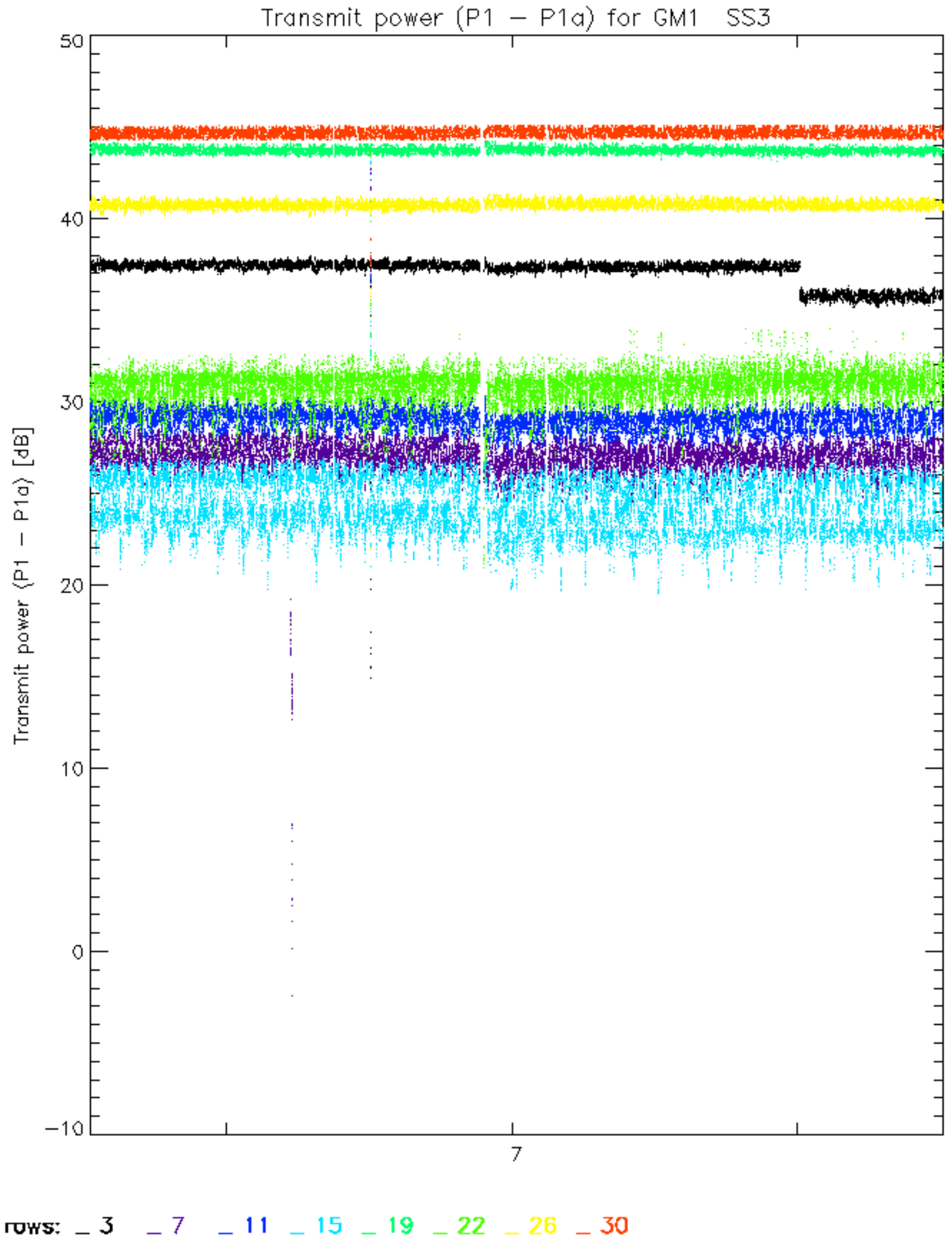
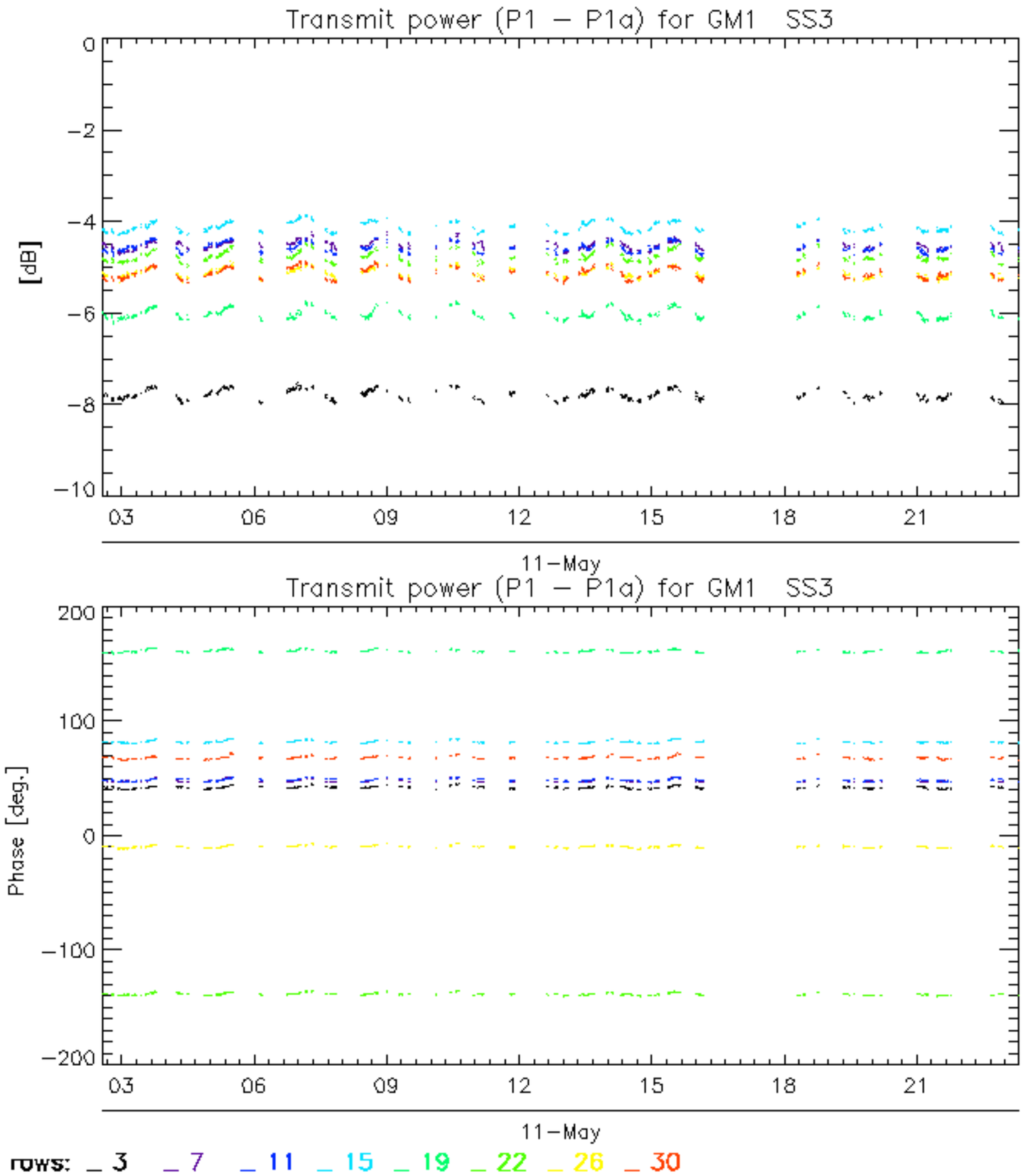
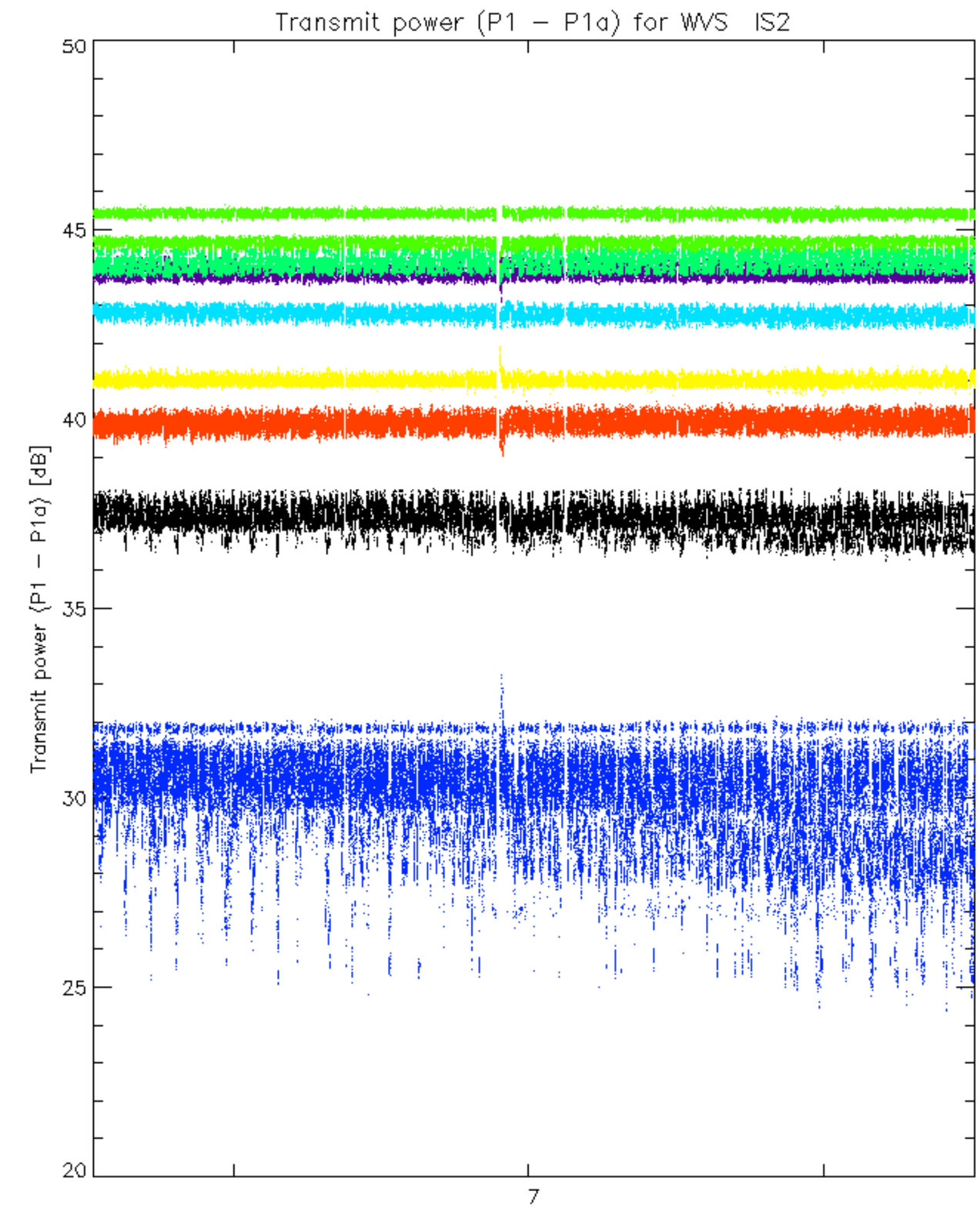
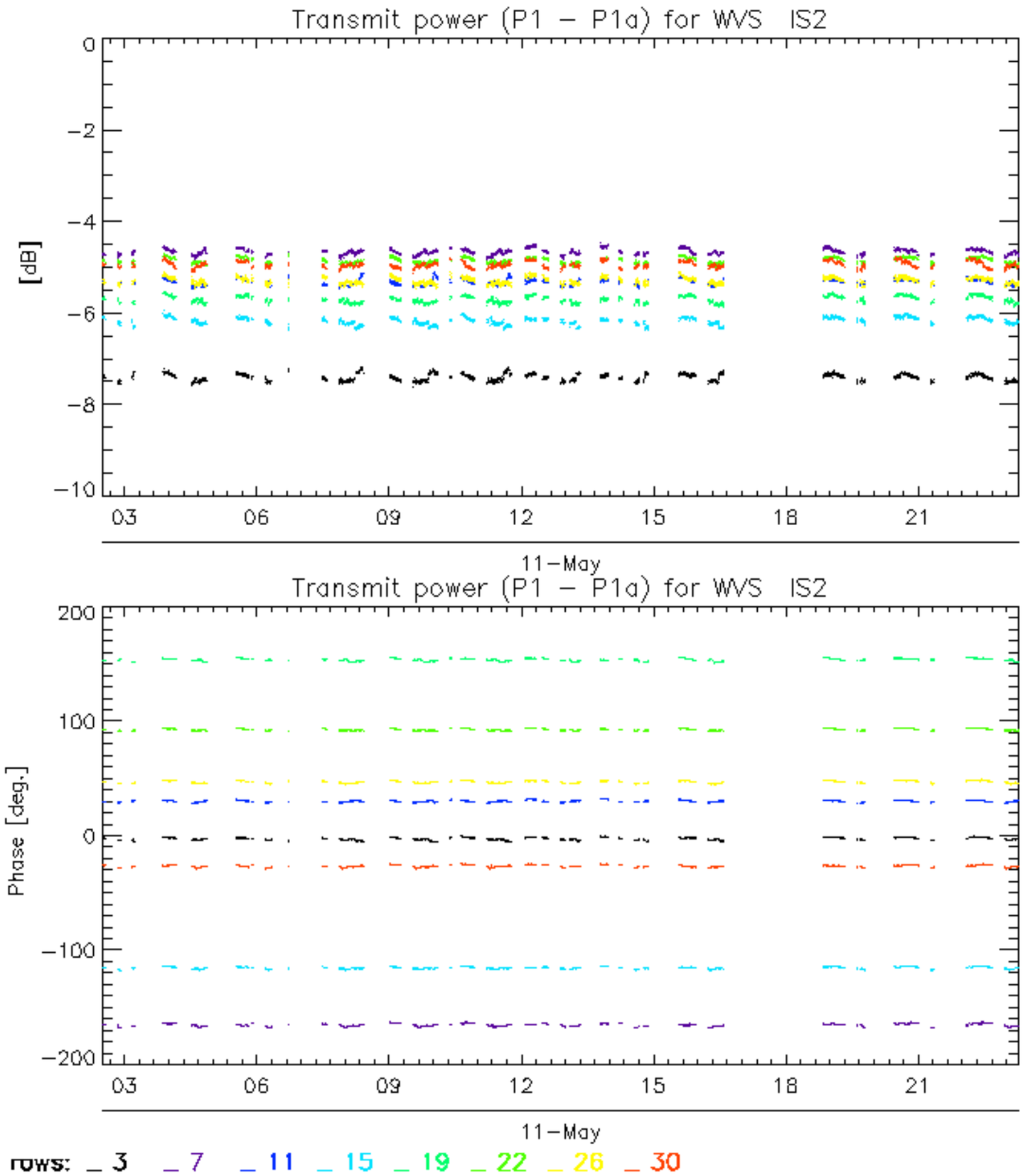

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
7
rows: 3 7 11 15 19 22 26 30


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


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

No unavailabilities during the reported period.