PRELIMINARY REPORT OF 070403

last update on Tue Apr 3 13:59:21 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 2007-04-02 00:00:00 to 2007-04-03 13:59:21

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	38	75	0	1	33
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	38	75	0	1	33
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	38	75	0	1	33
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	38	75	0	1	33

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000	20	29	20	12	46
ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000	20	29	20	12	46
ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000	20	29	20	12	46
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	20	29	20	12	46

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	20070402 180508
H	20070401 183646

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	-15.095453	0.131746	0.152747
7	P1a	-17.503210	0.098577	-0.173107
11	P1a	-17.281961	0.356515	-0.121834
15	P1a	-12.887165	0.093799	0.012815
19	P1a	-15.180203	0.078181	-0.140444
22	P1a	-15.569068	0.547947	-0.820206
26	P1a	-15.086482	0.395870	-0.126610
30	P1a	-17.431345	0.298320	-0.309460

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-5.747381	0.010844	-0.017109
7	P1	-3.137542	0.008535	-0.020271
11	P1	-4.178944	0.014891	-0.095895
15	P1	-6.373971	0.016923	0.028943
19	P1	-3.777136	0.007838	-0.019226
22	P1	-4.694493	0.038757	-0.182307
26	P1	-3.926733	0.034368	-0.046815
30	P1	-5.931503	0.057481	-0.168482

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.645447	0.093219	-0.019347
7	P2	-21.597218	0.083730	0.042166
11	P2	-15.476473	0.103279	0.201752
15	P2	-7.086307	0.094434	-0.072880
19	P2	-9.106843	0.083880	-0.014596
22	P2	-18.087566	0.079691	0.027197
26	P2	-16.564779	0.086238	-0.068124
30	P2	-19.307938	0.082692	0.107649

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.232984	0.006579	0.000640
7	P3	-8.232984	0.006579	0.000640
11	P3	-8.232984	0.006579	0.000640
15	P3	-8.232984	0.006579	0.000640
19	P3	-8.232984	0.006579	0.000640
22	P3	-8.232984	0.006579	0.000640
26	P3	-8.232926	0.006580	0.000739
30	P3	-8.232926	0.006580	0.000739

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	-11.106004	0.051720	-0.090442
7	P1a	-10.069761	0.123551	-0.005747
11	P1a	-10.681389	0.060979	-0.016894
15	P1a	-10.919461	0.145163	0.138565
19	P1a	-15.727231	0.071651	-0.132189
22	P1a	-20.970123	1.504721	-0.403089
26	P1a	-15.282672	0.334188	-0.198087
30	P1a	-18.364965	0.659738	0.055307

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-8.419313	0.037893	-0.060694
7	P1	-2.423717	0.020149	0.003171
11	P1	-2.917964	0.018421	0.018757
15	P1	-3.845583	0.038232	0.006953
19	P1	-3.565686	0.011240	-0.036723
22	P1	-5.024039	0.030806	0.054186

26	P1	-5.967567	0.049180	-0.094397
30	P1	-5.281926	0.031045	-0.045739

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.110512	0.038900	-0.043070
7	P2	-21.962271	0.065105	-0.059250
11	P2	-10.631173	0.034541	0.031559
15	P2	-4.840566	0.033568	-0.068679
19	P2	-6.816509	0.035231	-0.028803
22	P2	-8.079296	0.034491	-0.016285
26	P2	-24.288015	0.043618	0.013186
30	P2	-21.716953	0.046715	0.024028

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.064068	0.004262	-0.020220
7	P3	-8.063979	0.004257	-0.020498
11	P3	-8.064106	0.004254	-0.020349
15	P3	-8.064139	0.004257	-0.020116
19	P3	-8.064076	0.004268	-0.020137
22	P3	-8.064171	0.004256	-0.020524
26	P3	-8.063931	0.004248	-0.020484
30	P3	-8.064103	0.004249	-0.020465

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	0.000632277
	stdev	2.54917e-07
MEAN Q	mean	0.000367271
	stdev	2.74471e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.107255
	stdev	0.00238078
STDEV Q	mean	0.107271
	stdev	0.00243603

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007040[123]
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_GM1_1PNPDK20070401_124009_000008632056_00482_26588_2418.N1	0	13
ASA_GM1_1PNPDK20070401_160040_000000962056_00484_26590_2686.N1	0	15
ASA_GM1_1PNPDK20070402_145241_000004412056_00497_26603_3762.N1	0	50
ASA_GM1_1PNPDK20070402_195228_000002652056_00500_26606_4207.N1	0	57
ASA_GM1_1PNPDK20070402_201601_000009242056_00500_26606_4215.N1	0	17

ASA_WSM_1PNPDE20070401_023000_000001462056_00476_26582_5190.N1	0	71
ASA_WSM_1PNPDE20070401_141207_000000852056_00483_26589_5694.N1	0	15
ASA_WSM_1PNPDK20070403_095006_000000852057_00008_26615_4739.N1	0	40

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

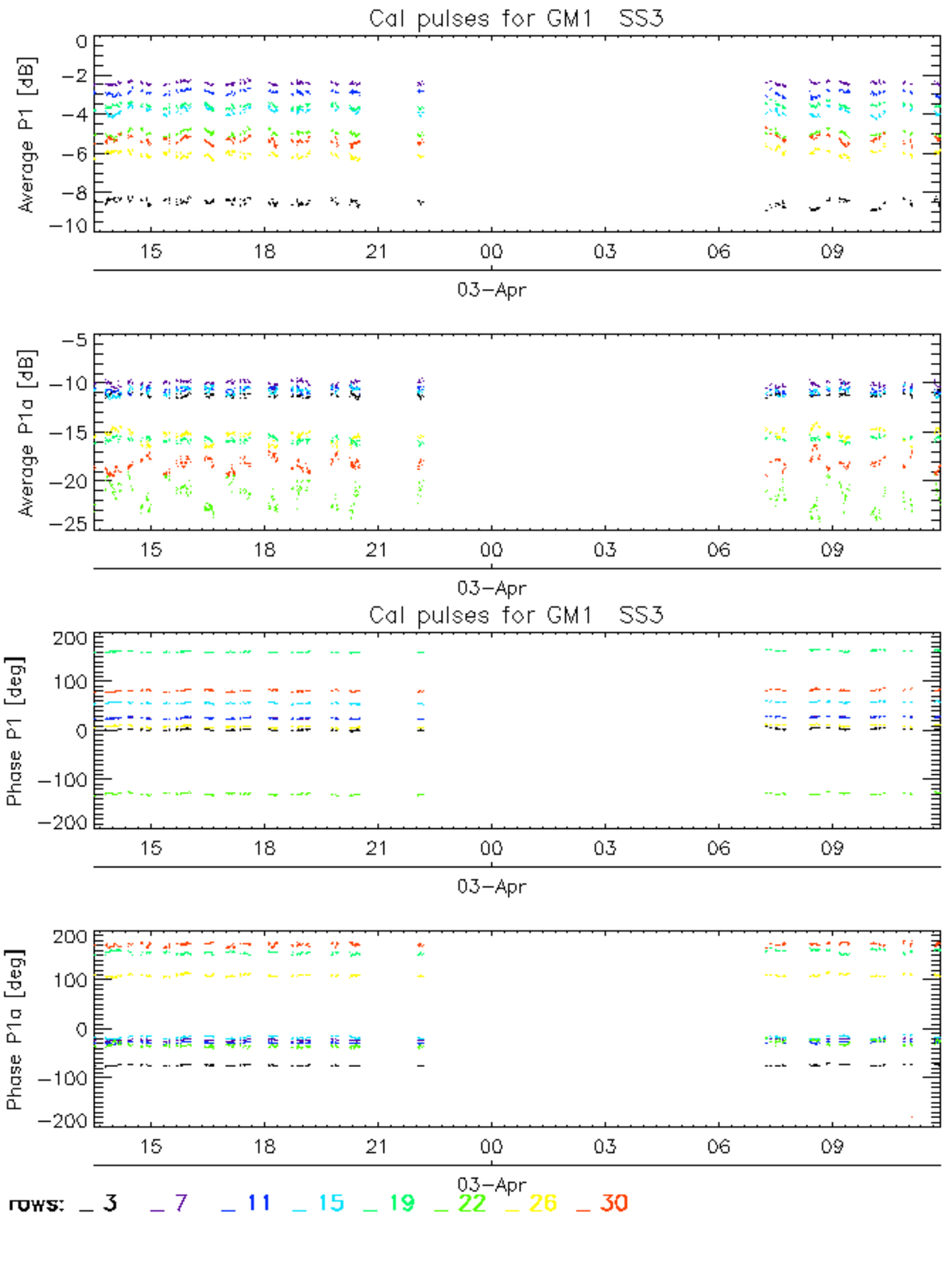
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

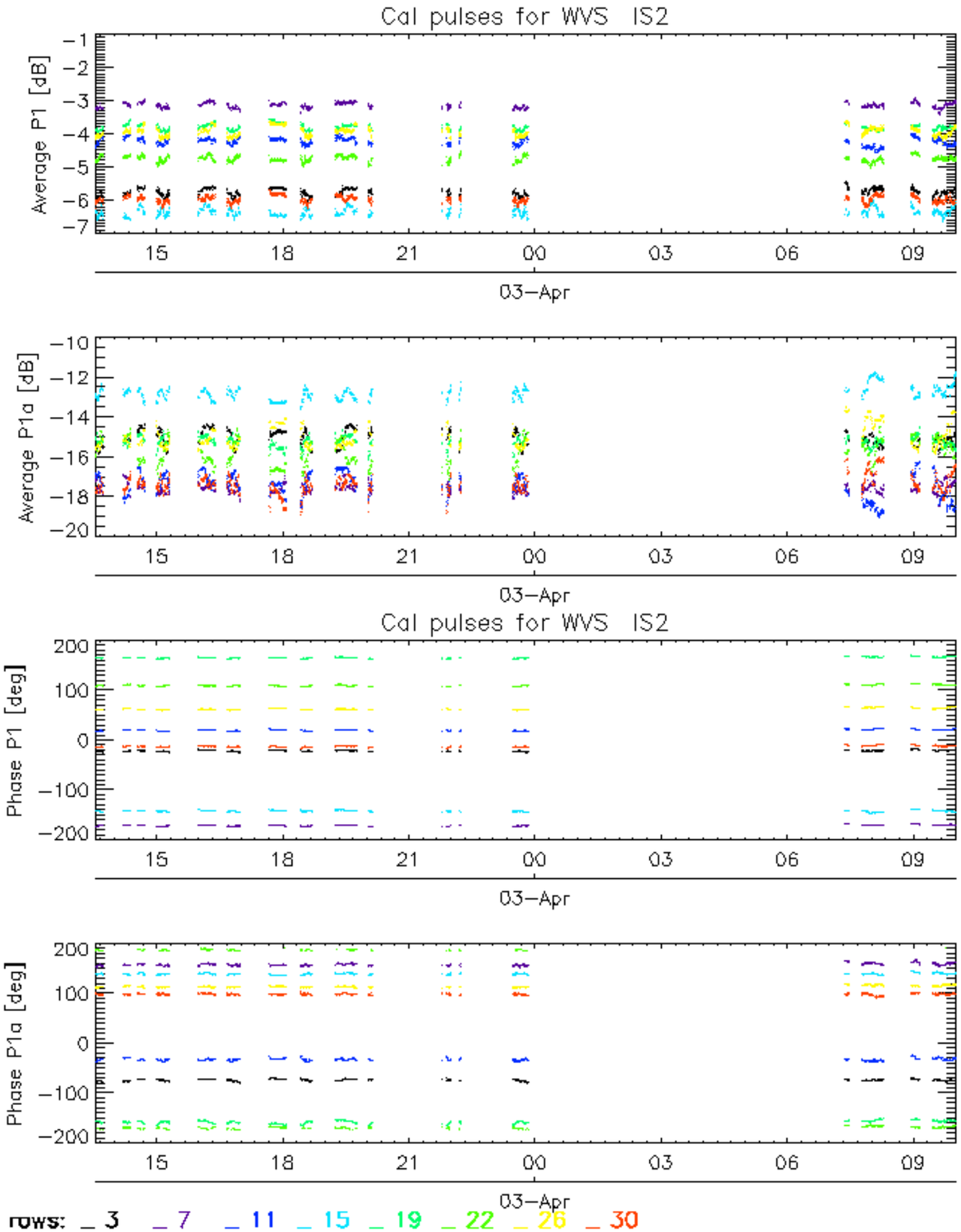
7.5 - Absolute Doppler for GM1

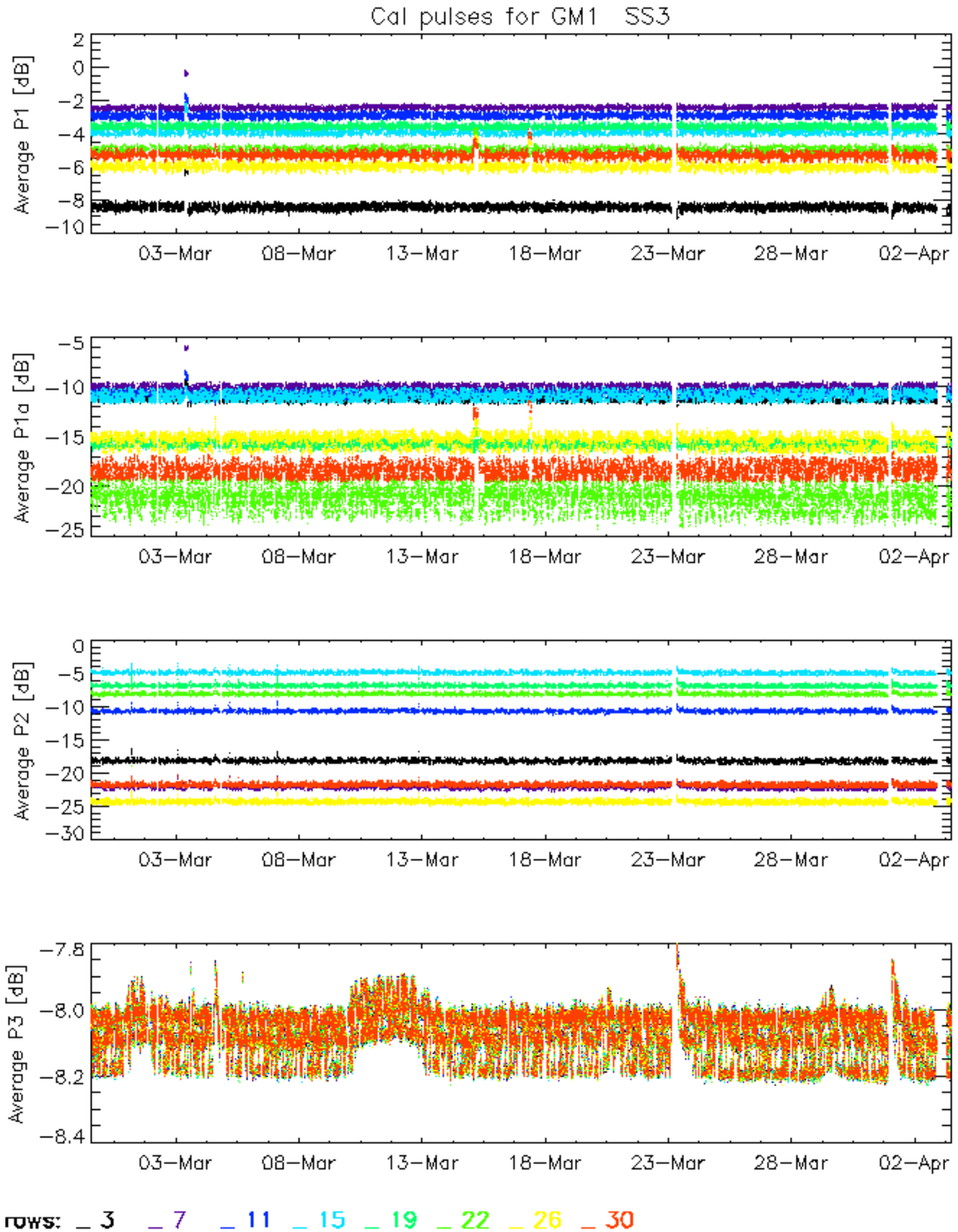
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

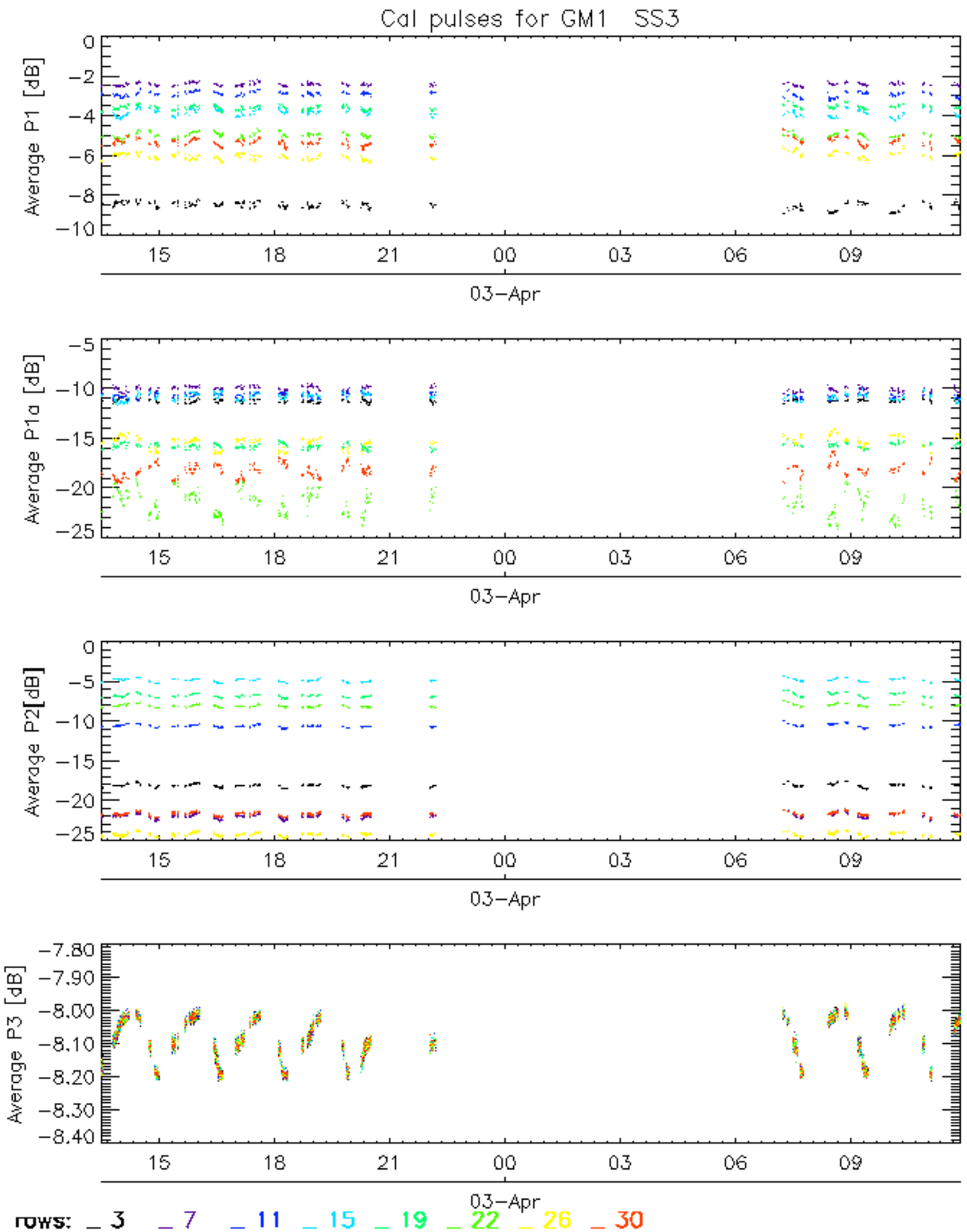
7.6 - Doppler evolution versus ANX for GM1

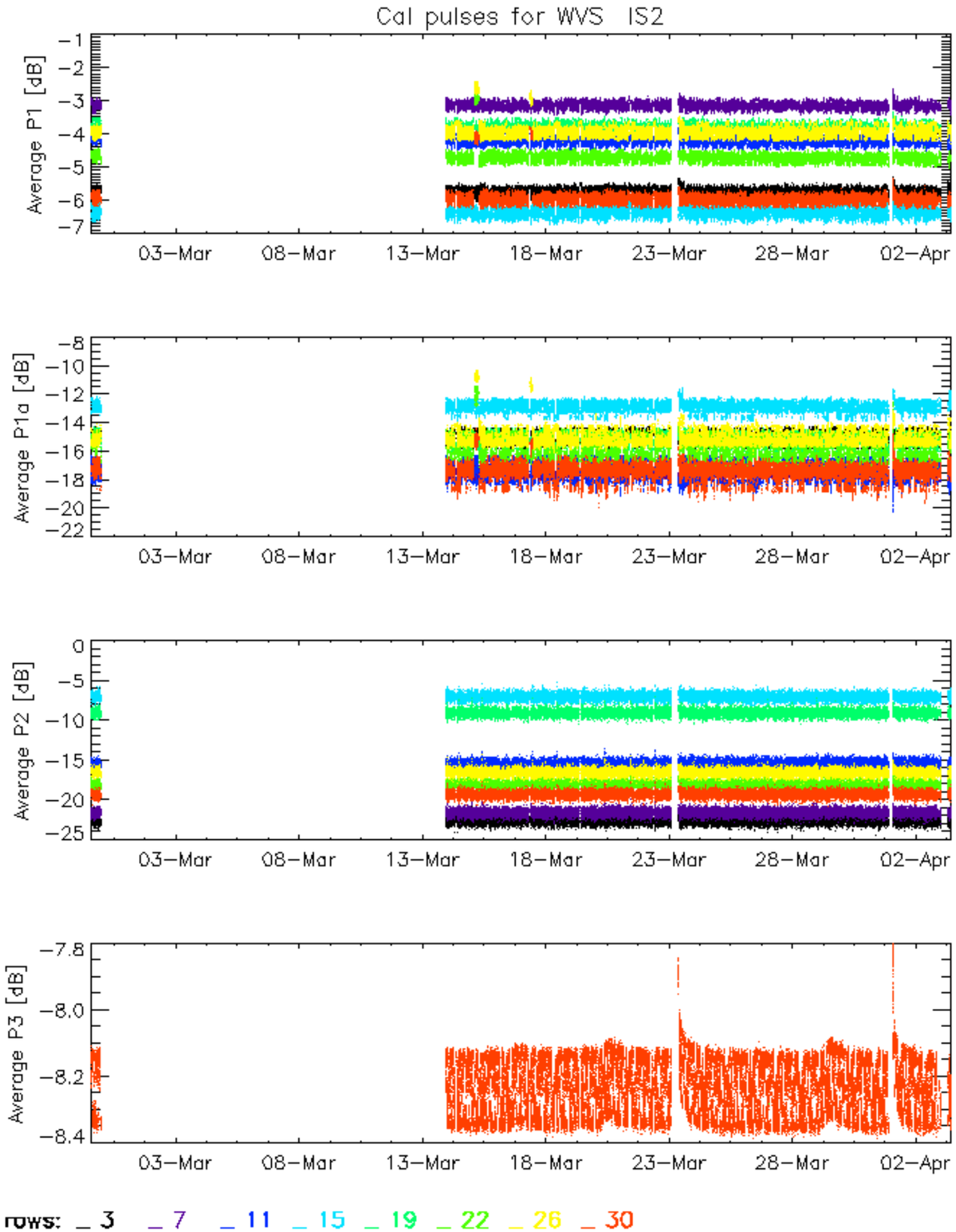
Evolution Doppler error versus ANX
☒

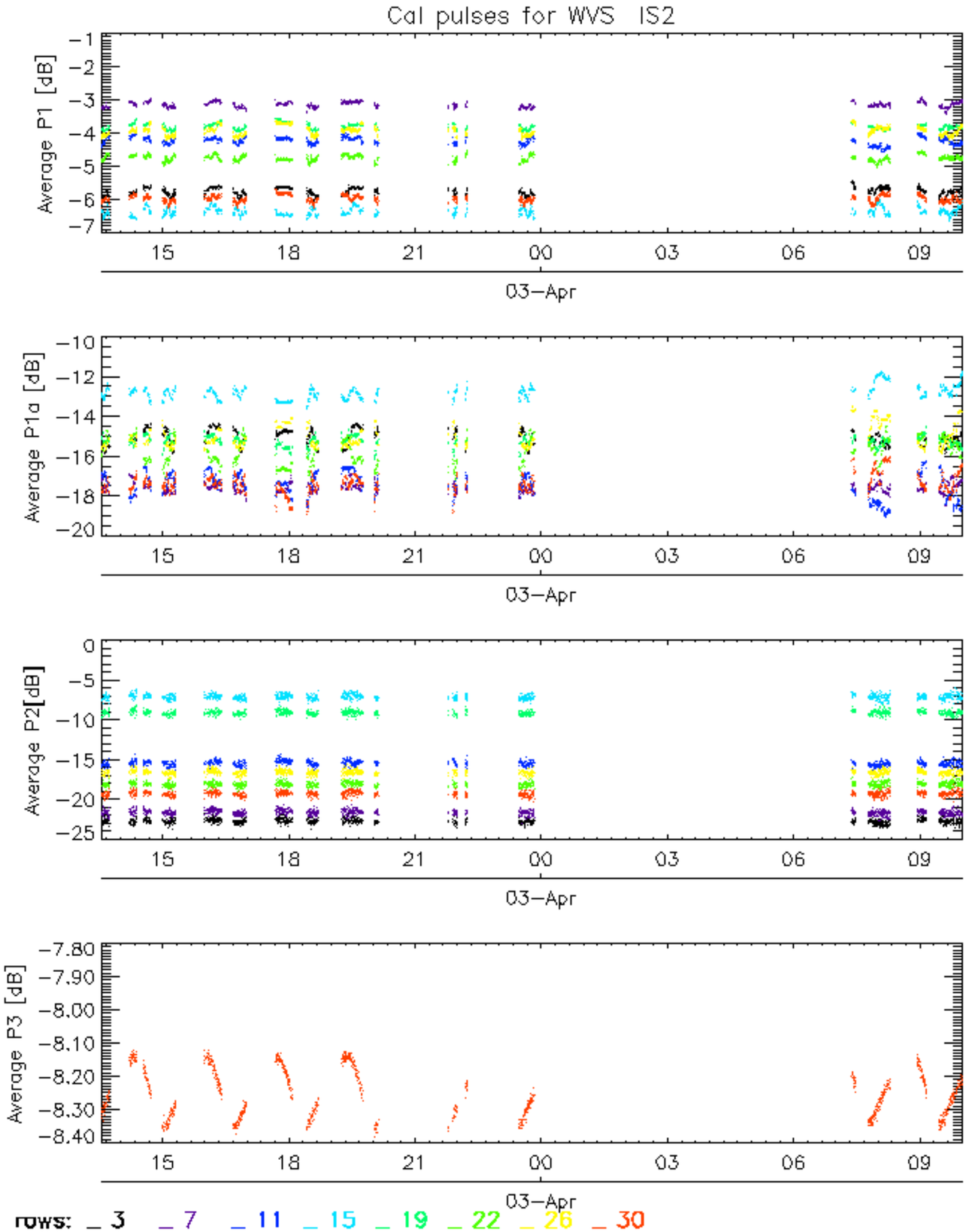

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
15
18
21
00
03
06
09
03−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
15
18
21
00
03
06
09
03−Apr
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
15
18
21
00
03
06
09
03−Apr
Phase P1a [deg]
200
100
0
−100
−200
15
18
21
00
03
06
09
03−Apr
rows: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


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


Cal pulses for GM1 SS3
Average P1 [dB]
2
0
−2
−4
−6
−8
−10
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

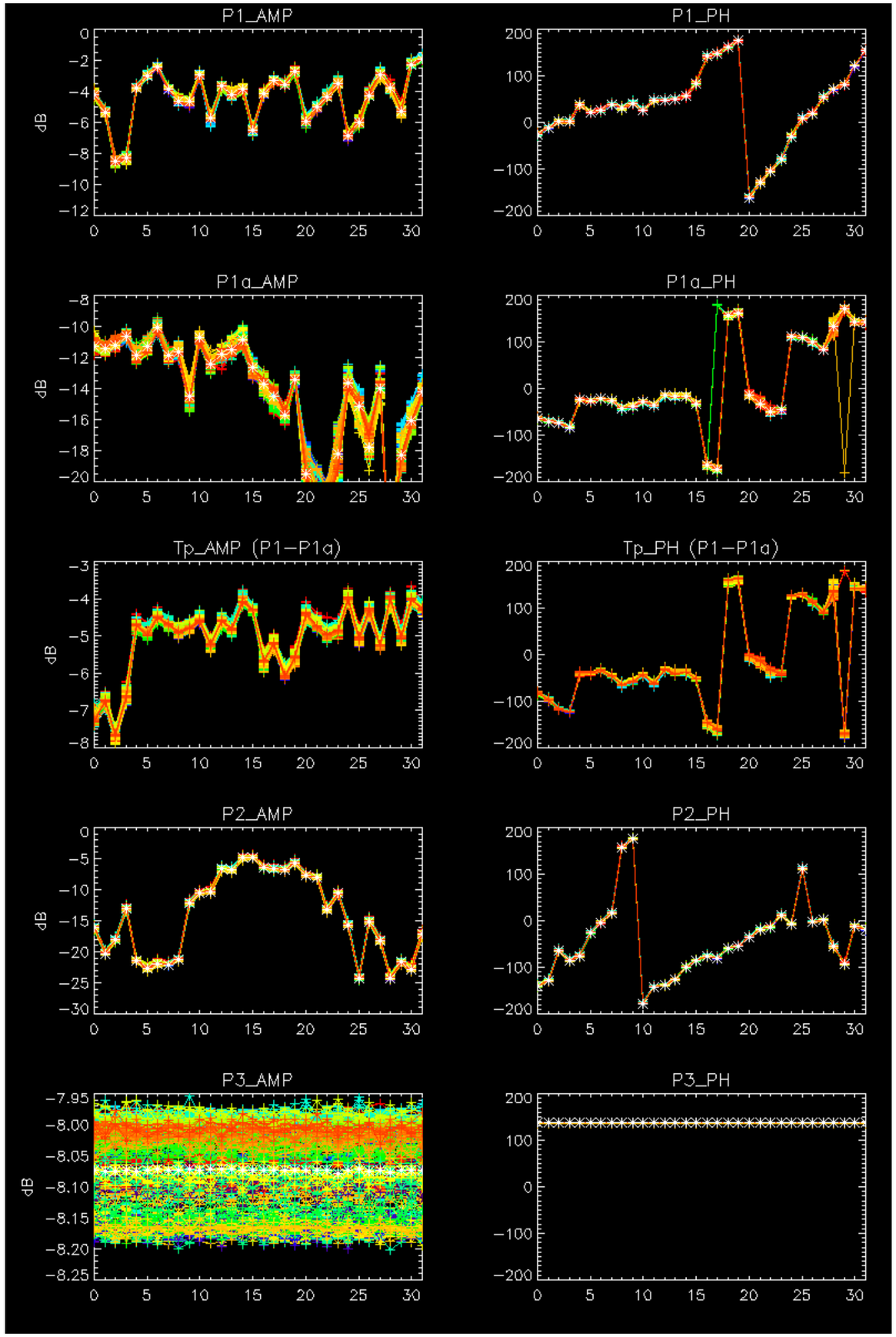

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
15
18
21
00
03
06
09
03−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
15
18
21
00
03
06
09
03−Apr
Average P2[dB]
0
−5
−10
−15
−20
−25
15
18
21
00
03
06
09
03−Apr
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
15
18
21
00
03
06
09
03−Apr
rows: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

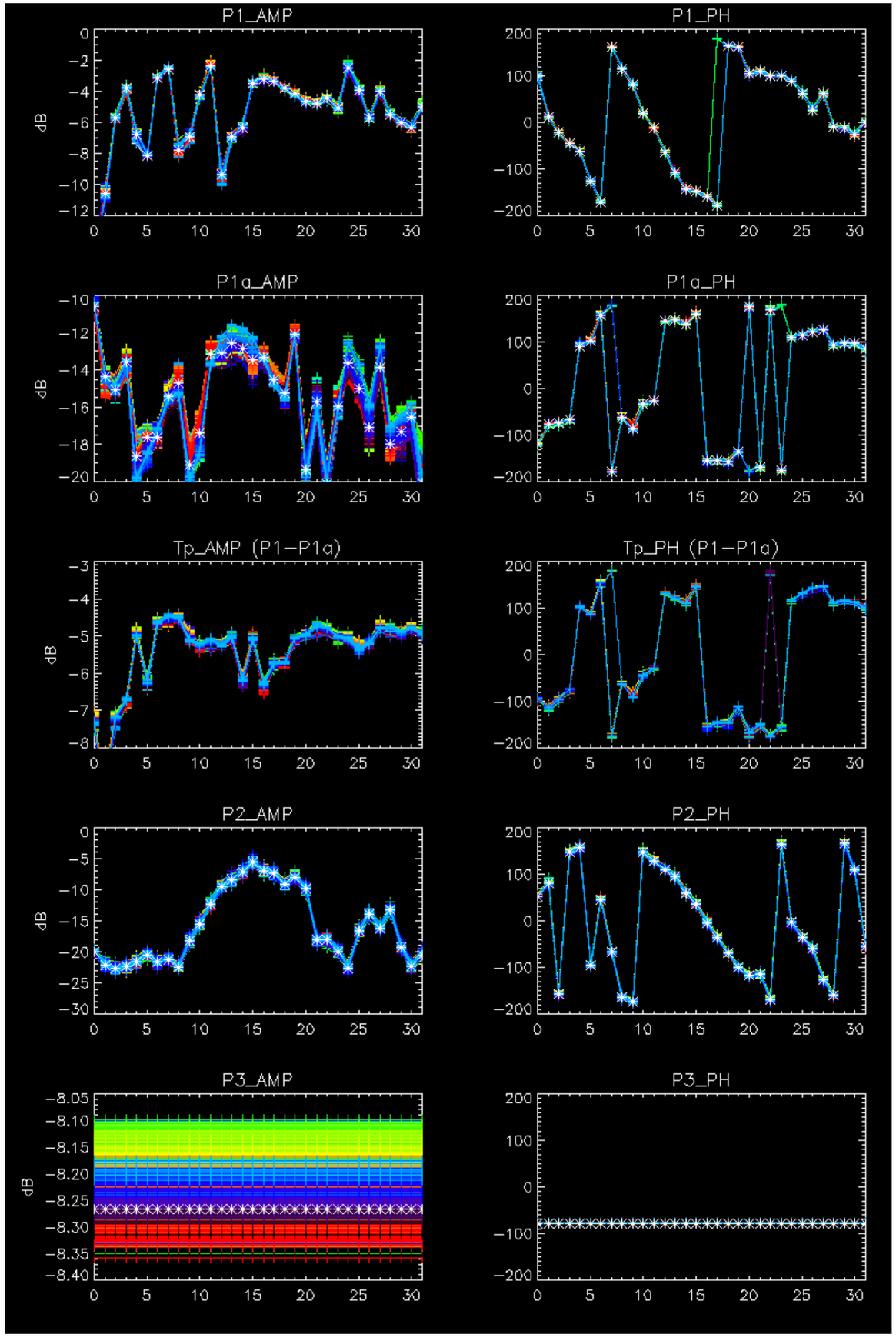

Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr
Average P1a [dB]
−8
−10
−12
−14
−16
−18
−20
−22
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

No anomalies observed on available browse products

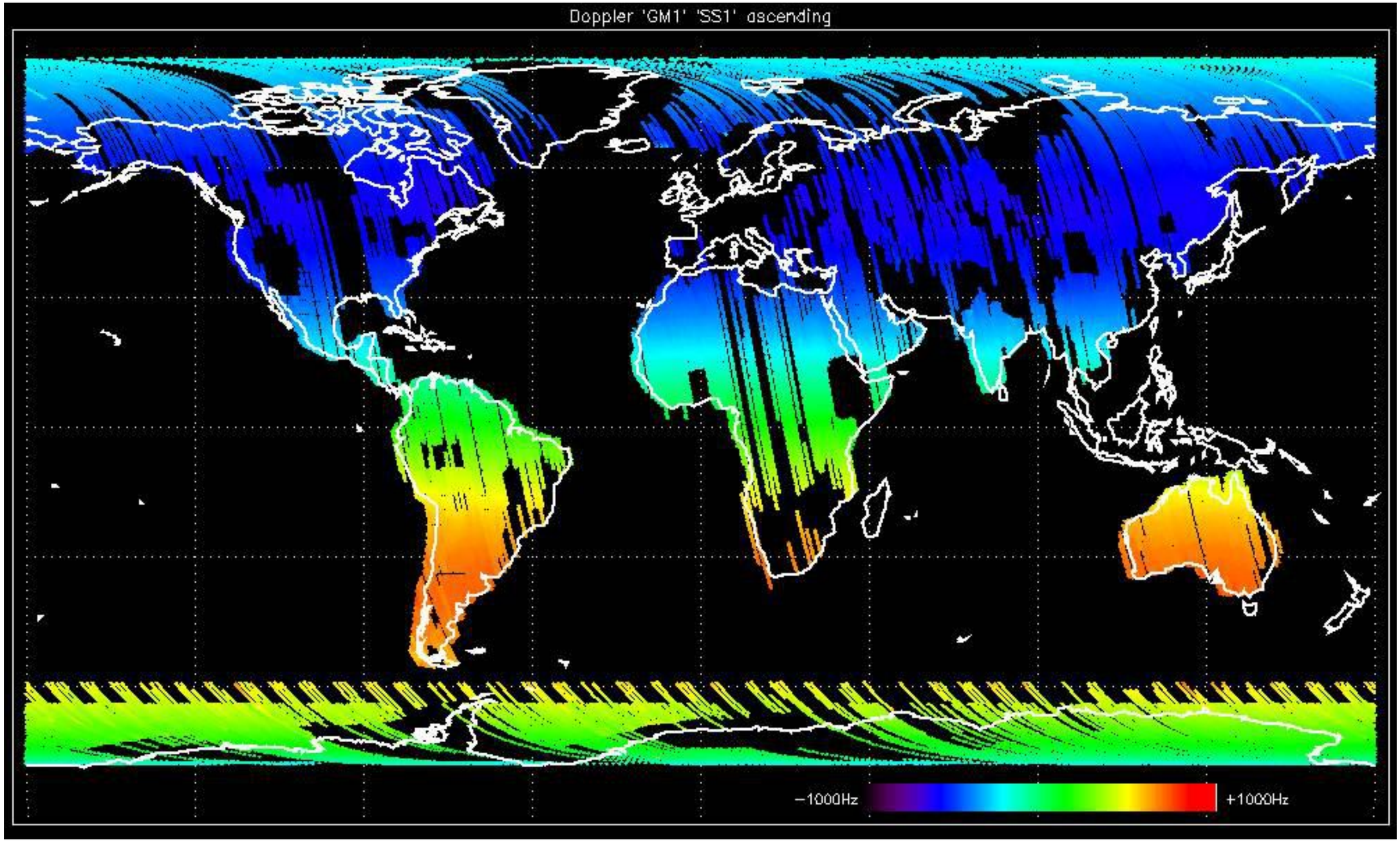
No anomalies observed.

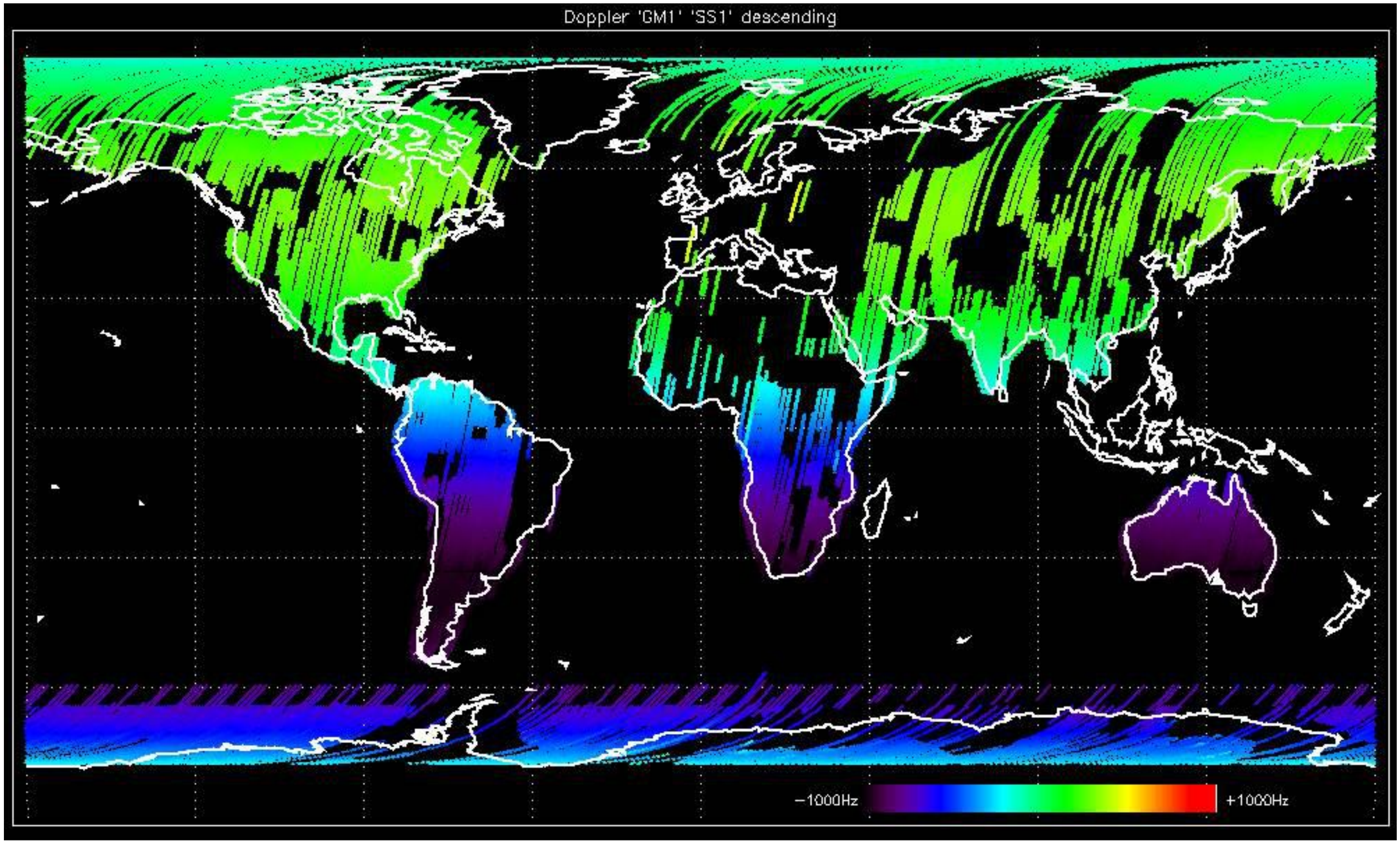

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

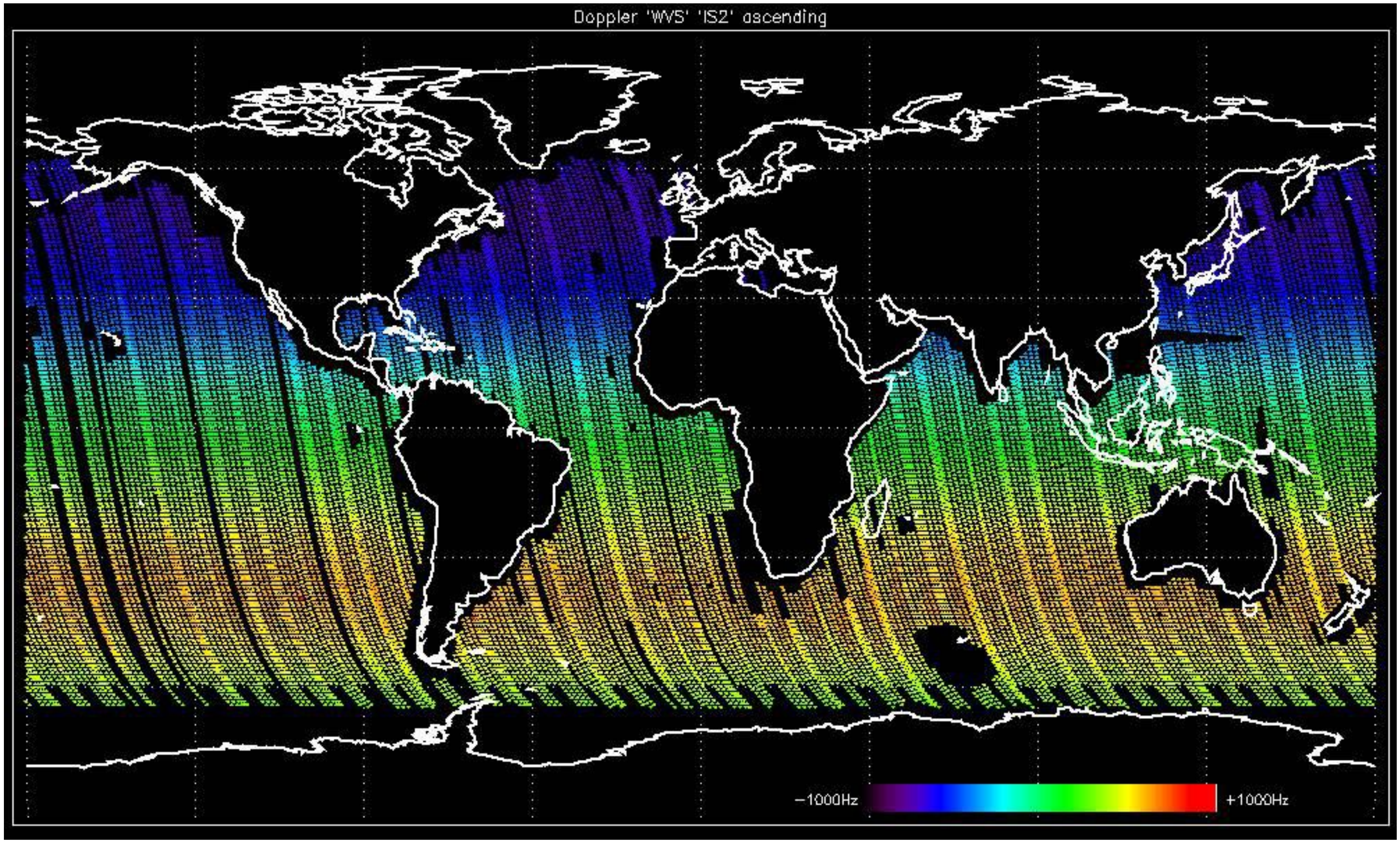

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

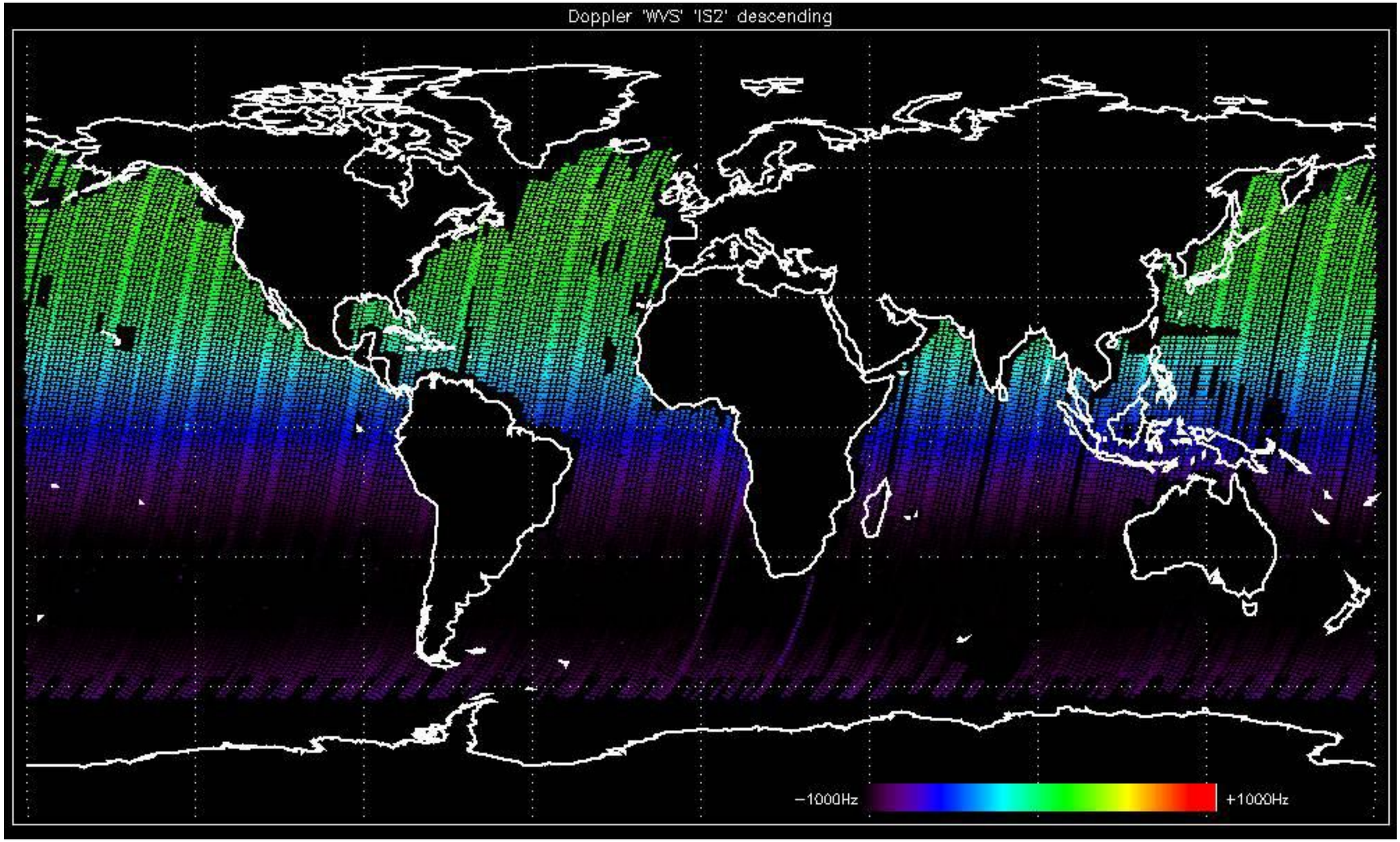
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

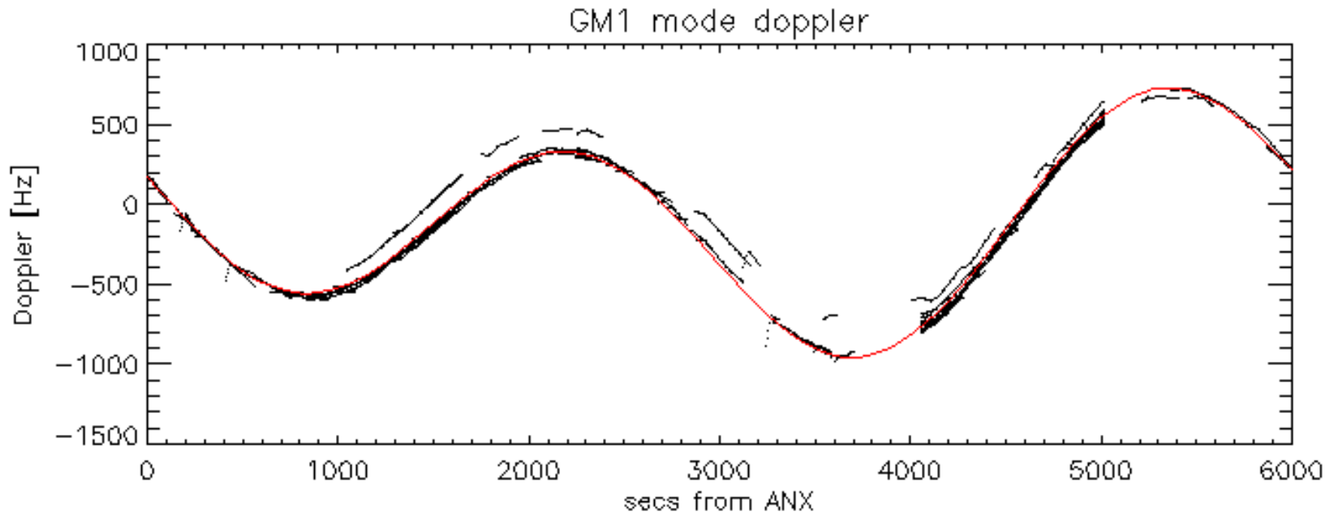
Preliminary report.The data is not yet controled

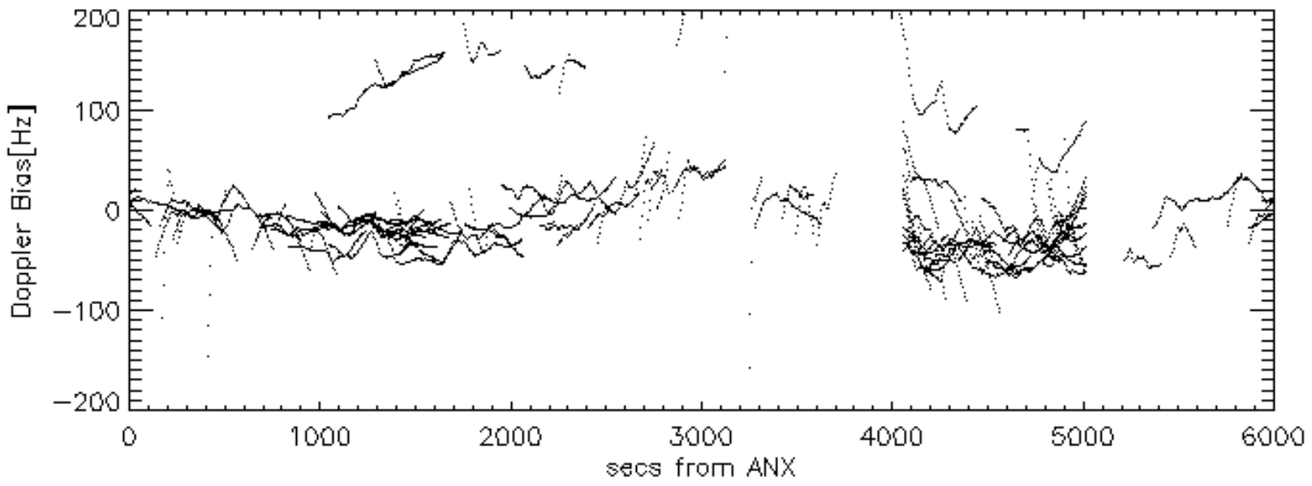

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

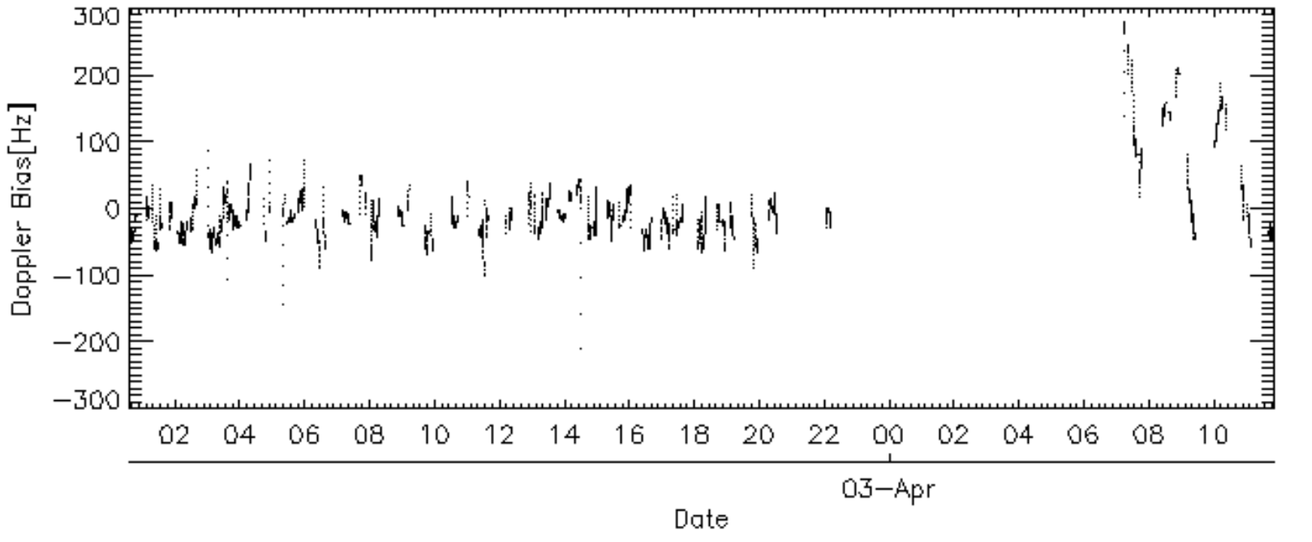

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

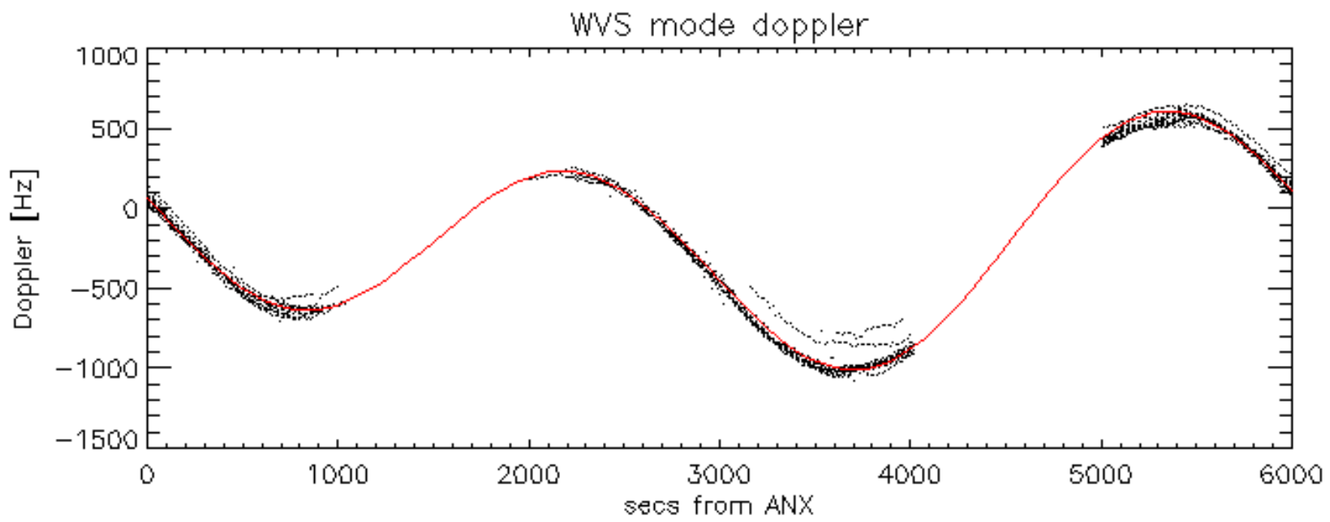

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

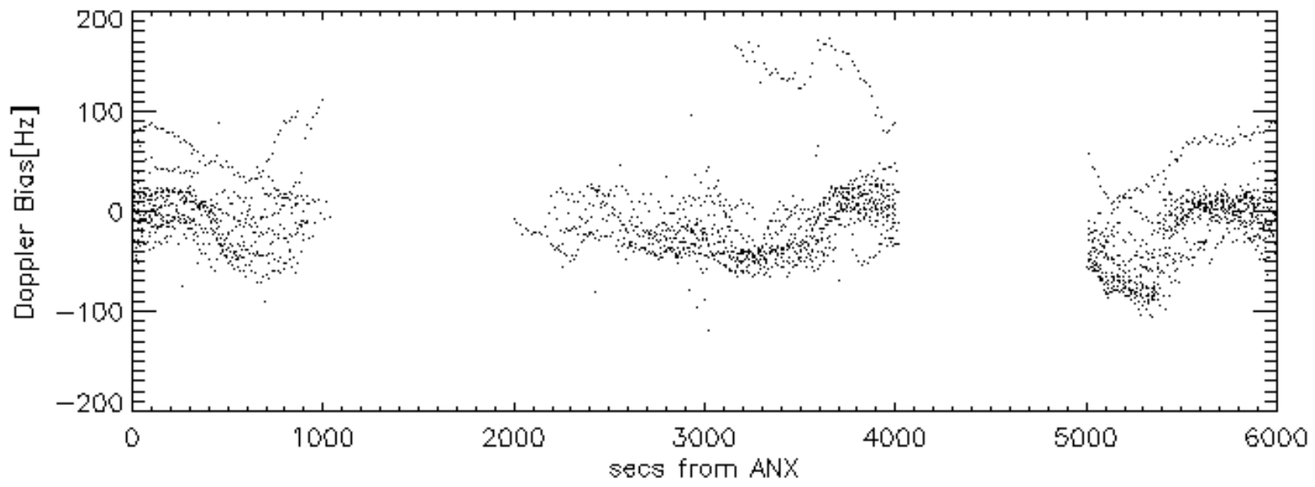

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

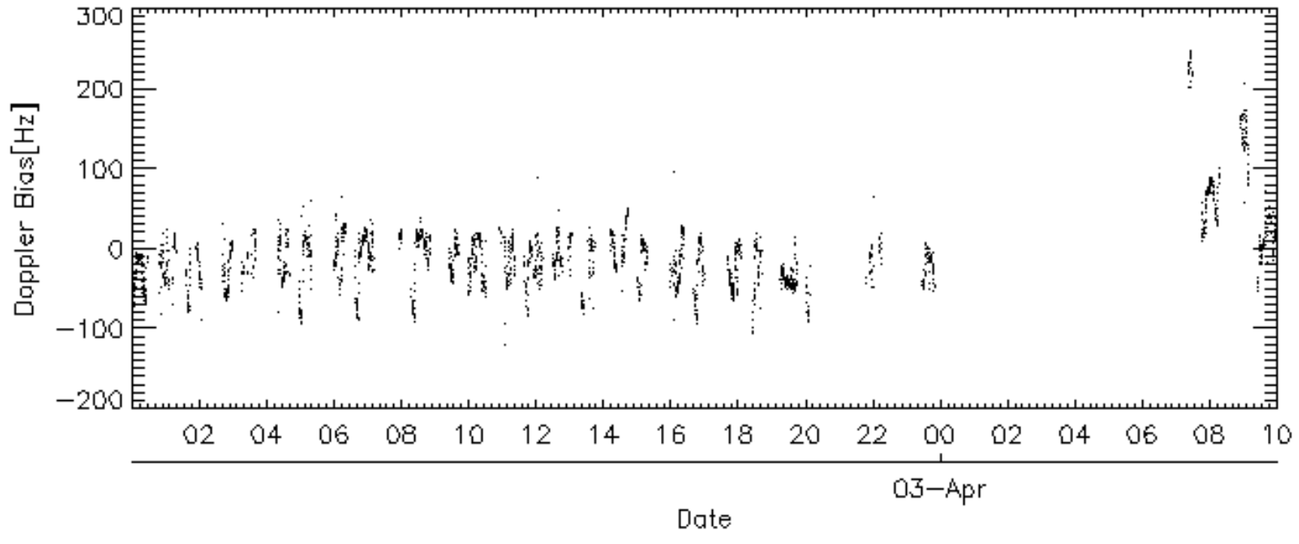

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

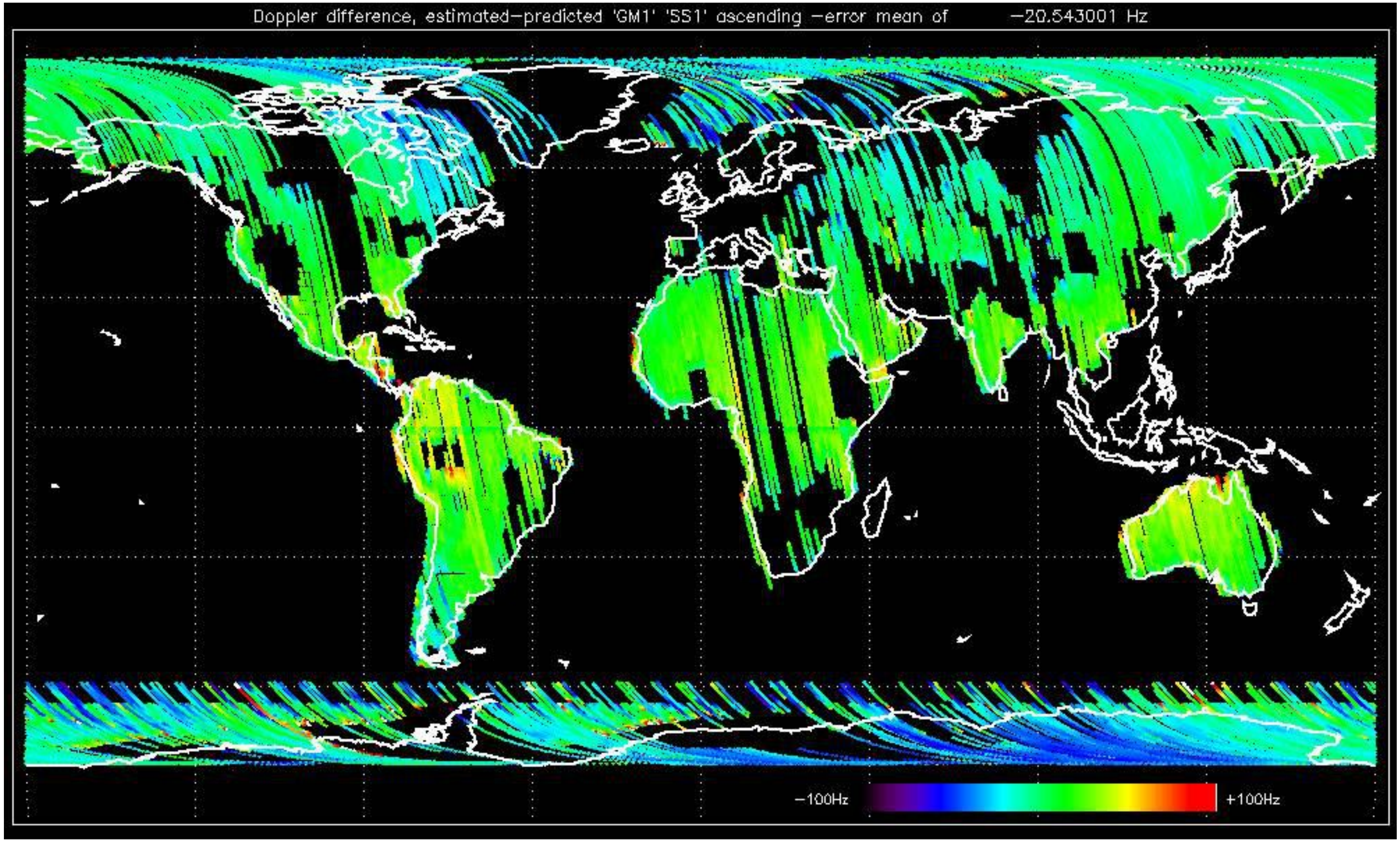

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

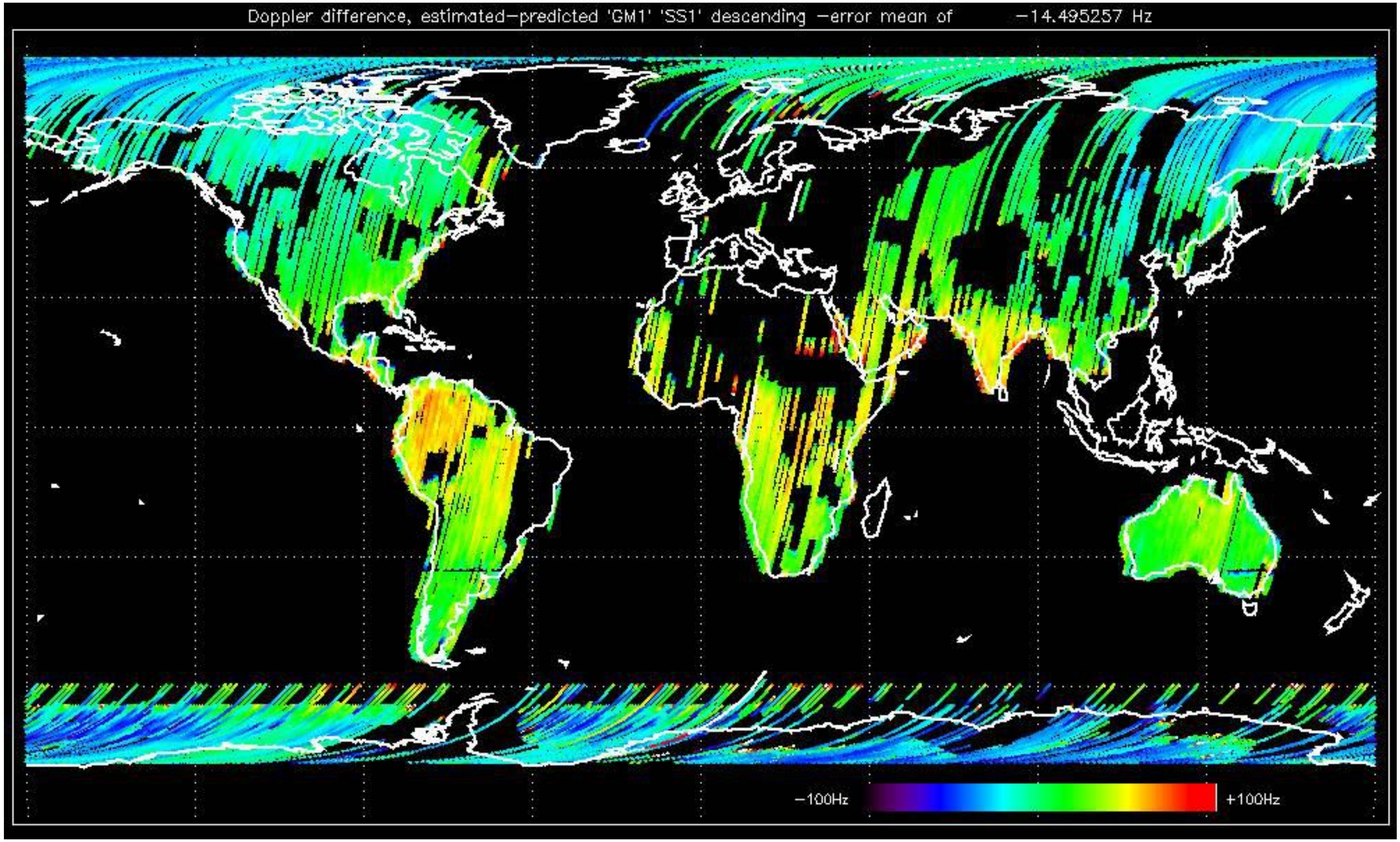

Doppler Bias[Hz]
300
200
100
0
−100
−200
−300
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
10
03−Apr
Date

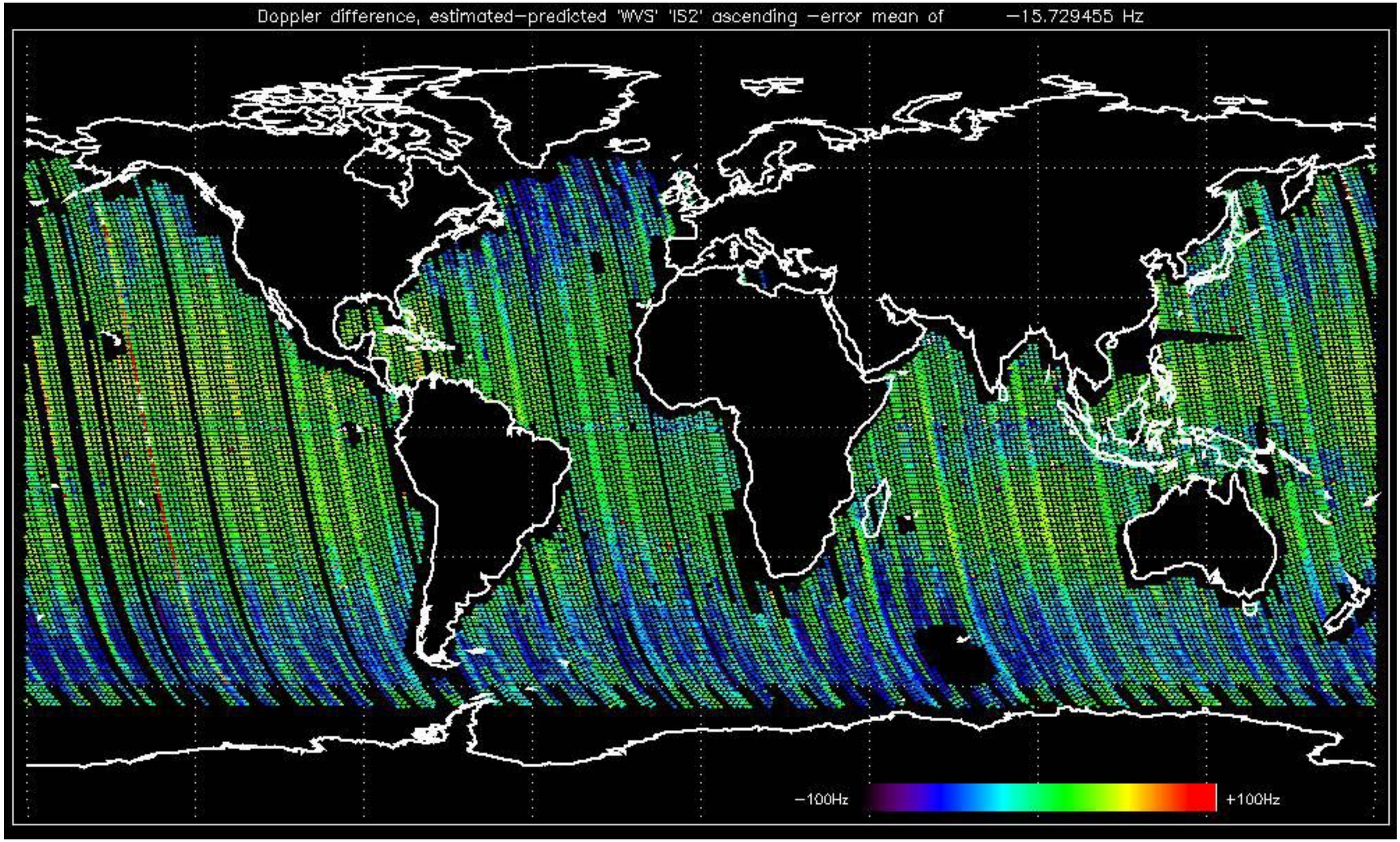

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

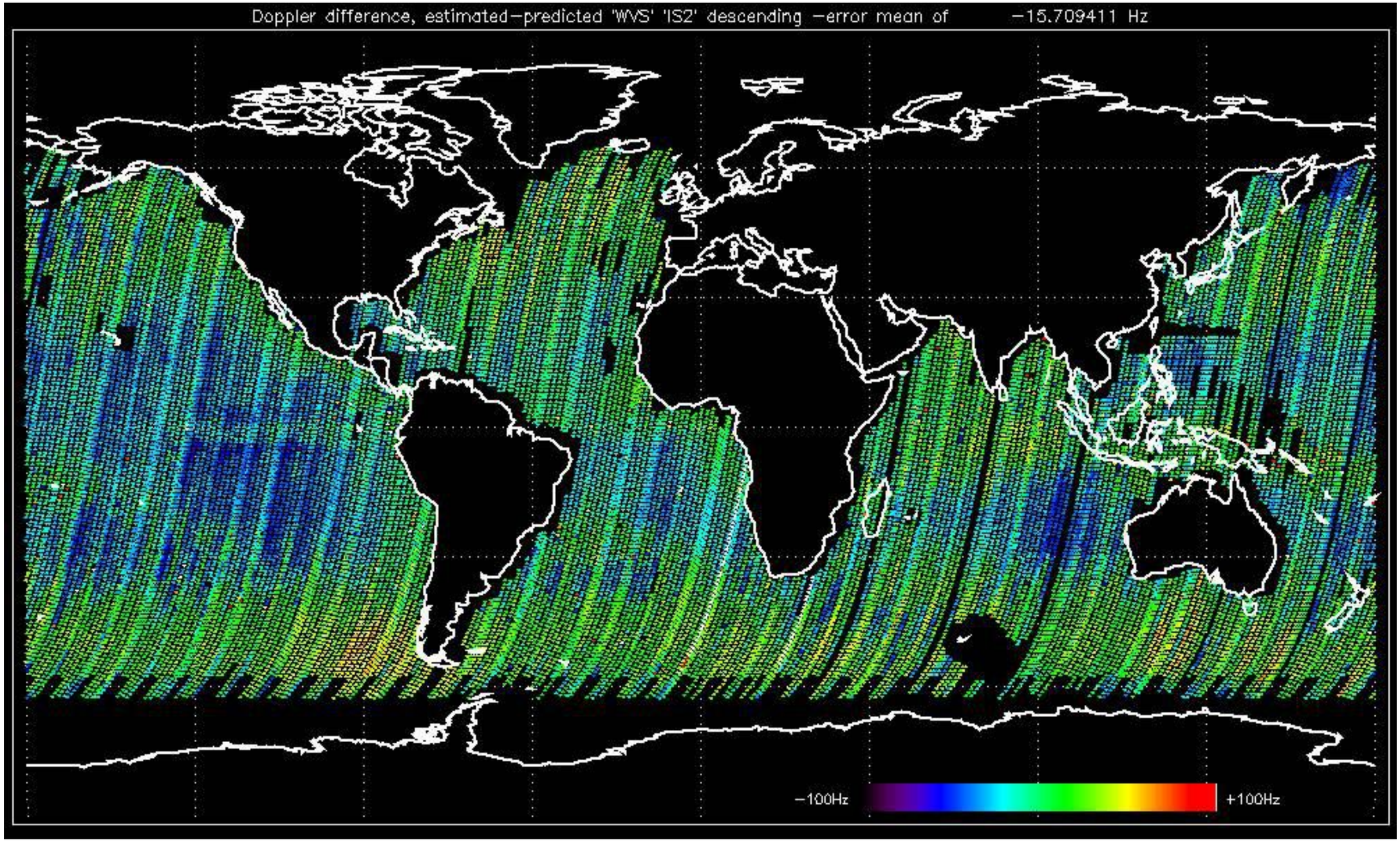

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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
03−Apr
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −20.543001 Hz
−100Hz
+100Hz

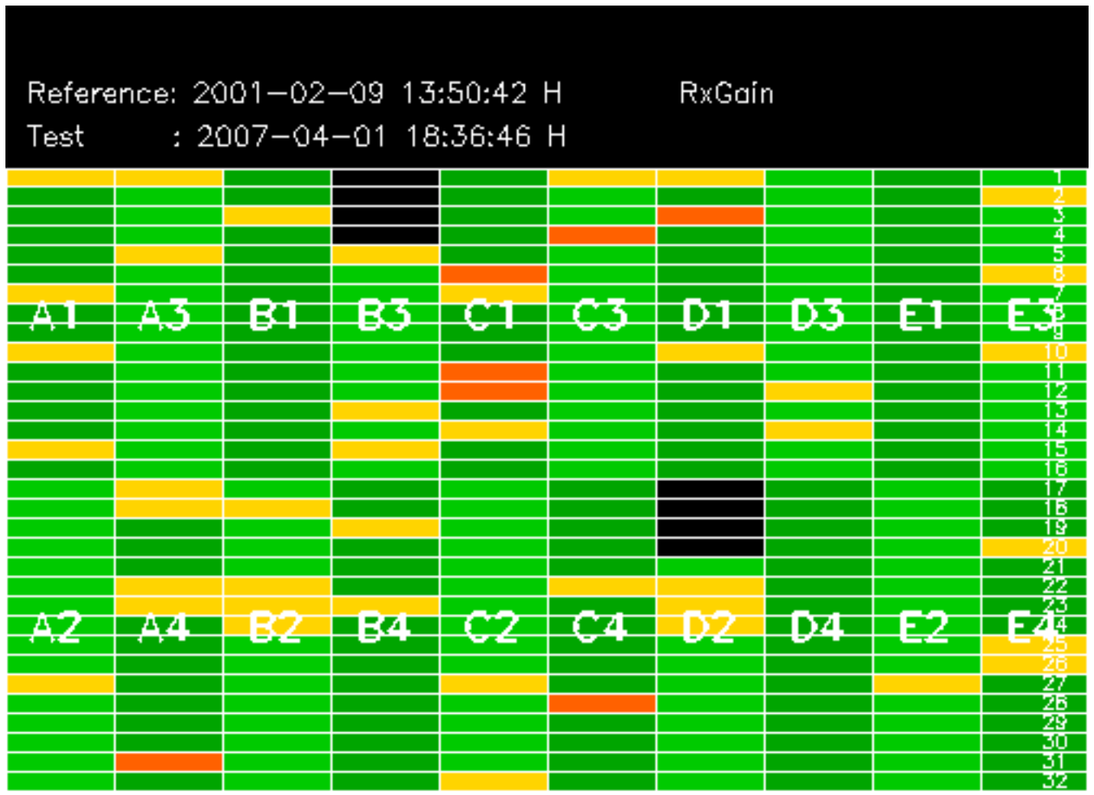

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -14.495257 Hz
-100Hz
+100Hz

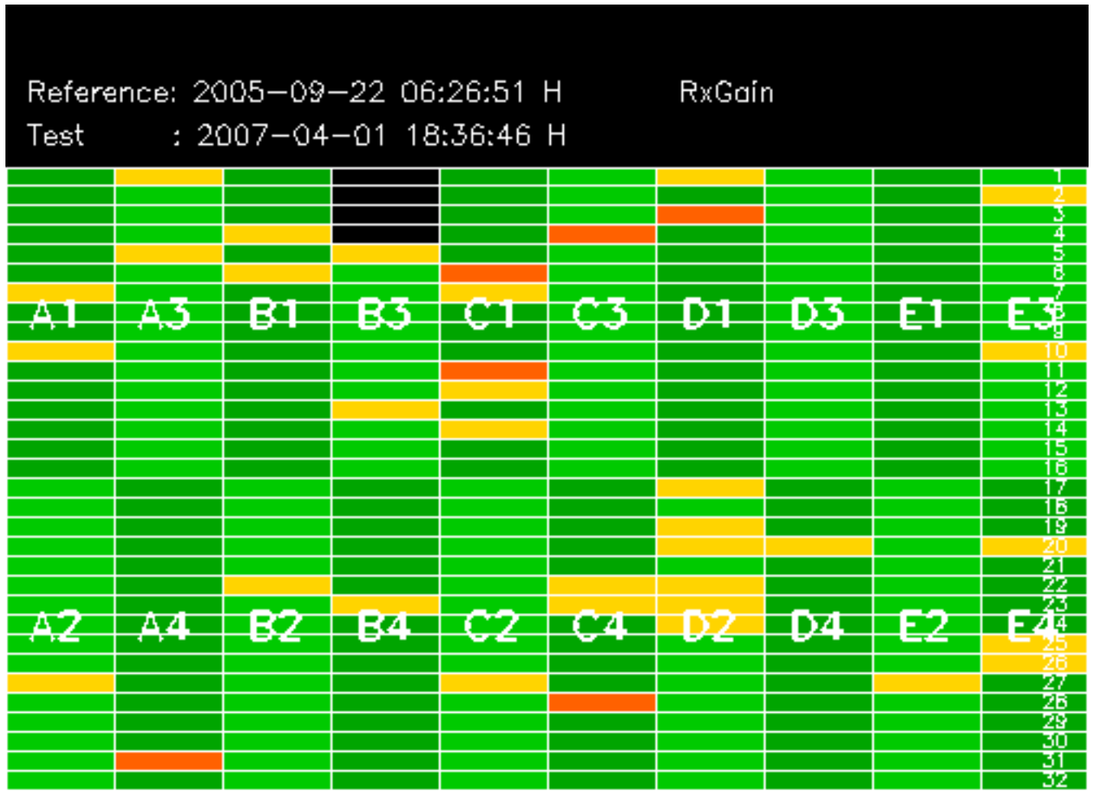

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −15.729455 Hz
−100Hz
+100Hz

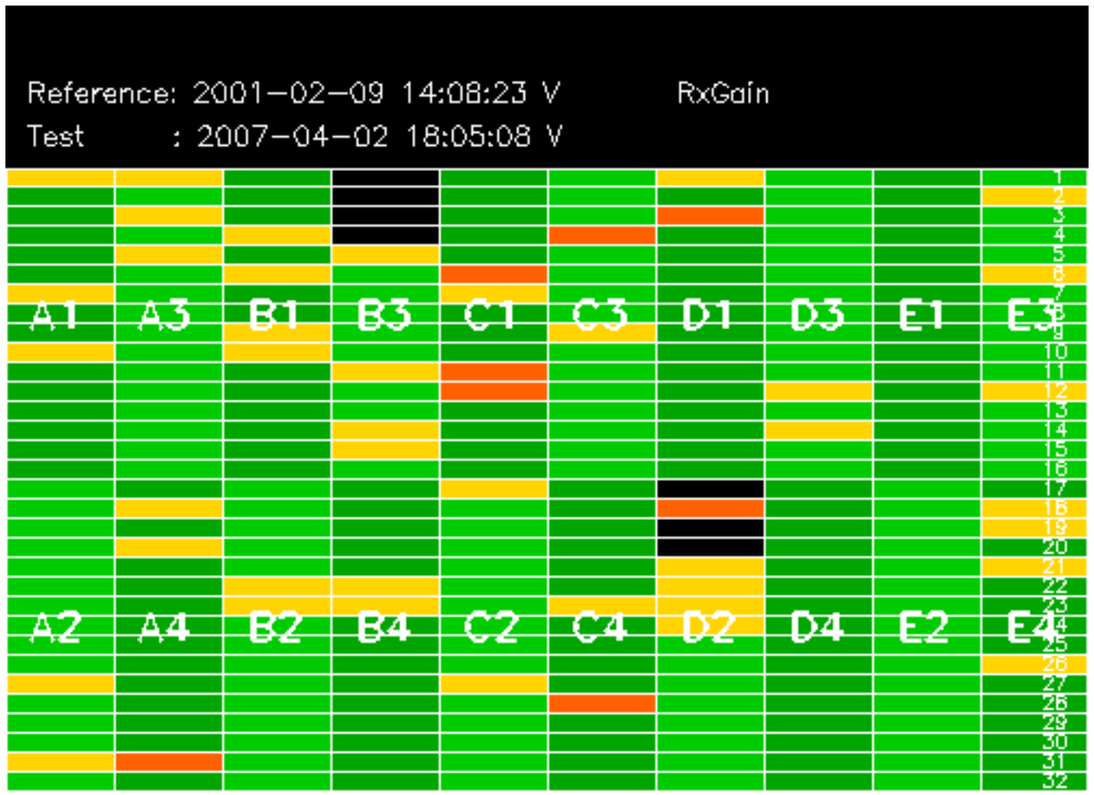

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −15.709411 Hz
−100Hz
+100Hz

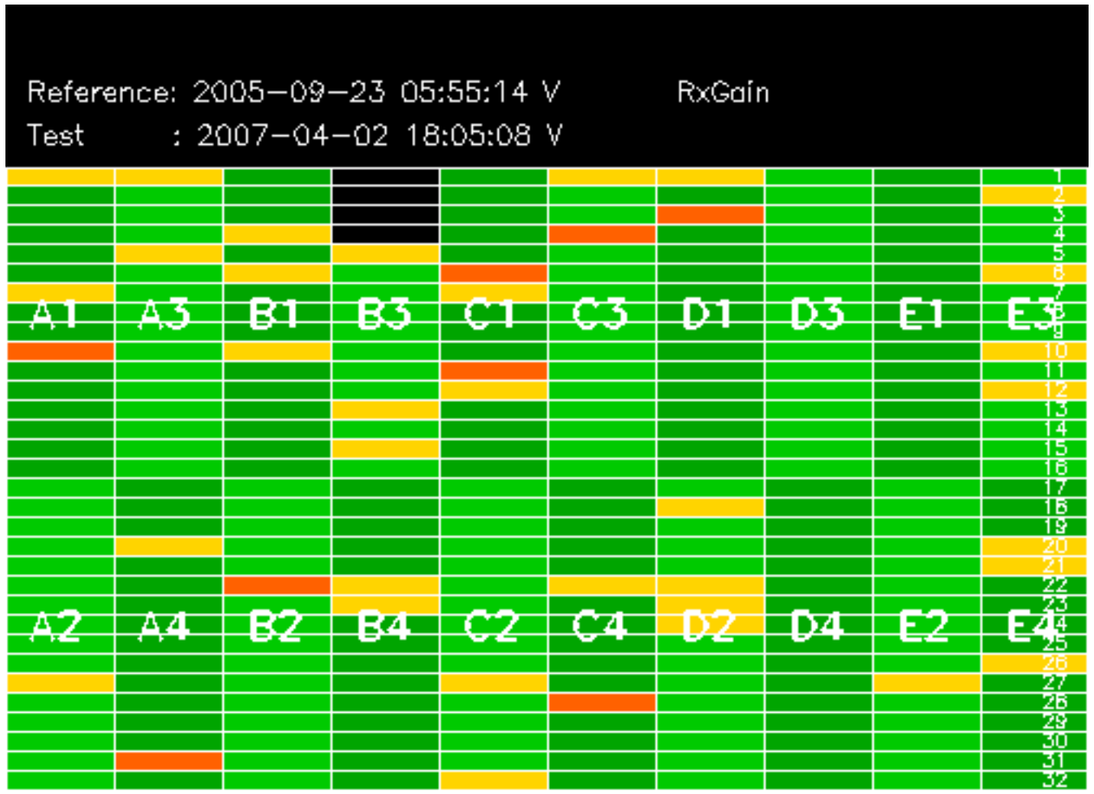
No anomalies observed on available MS products:

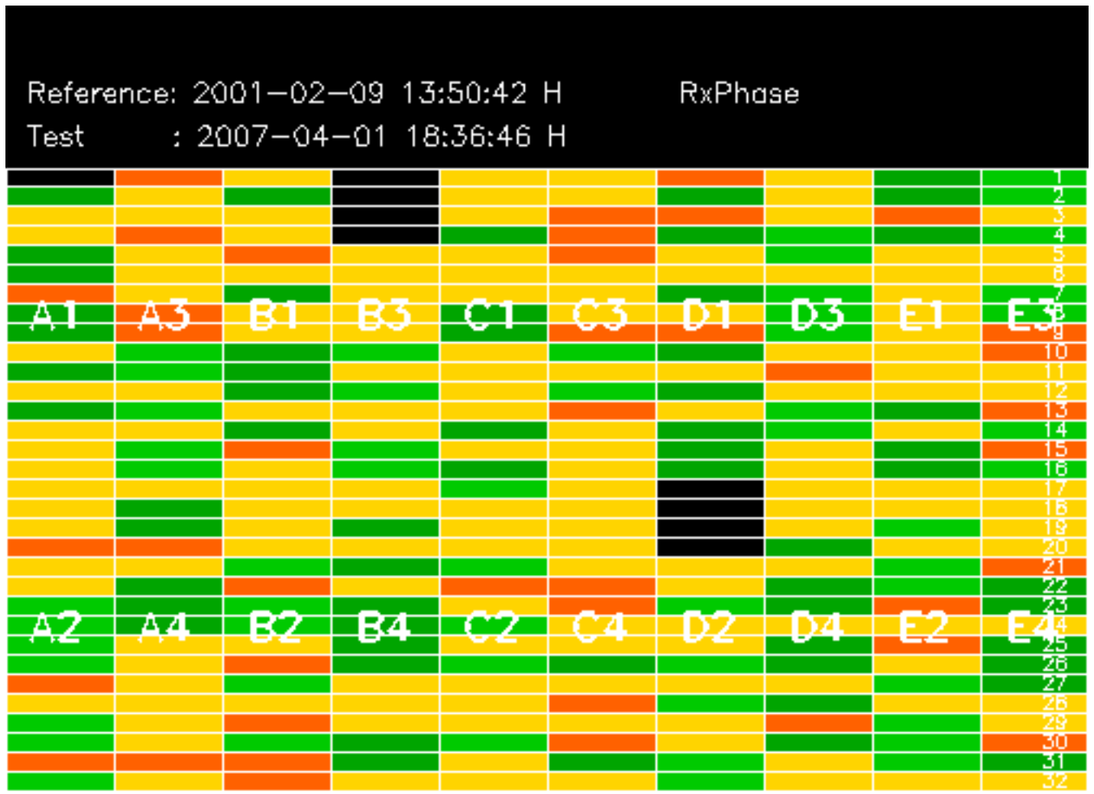
No anomalies observed.

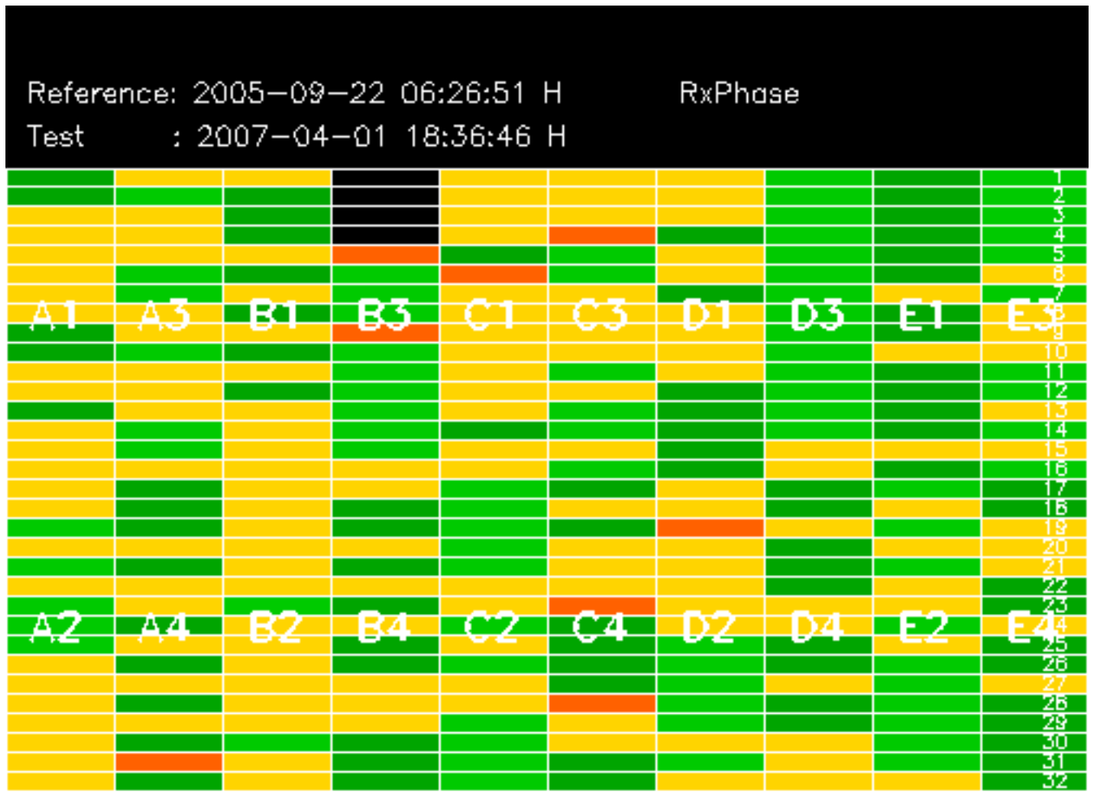

Reference: 2001-02-09 13:50:42 H
Test : 2007-04-01 18:36:46 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

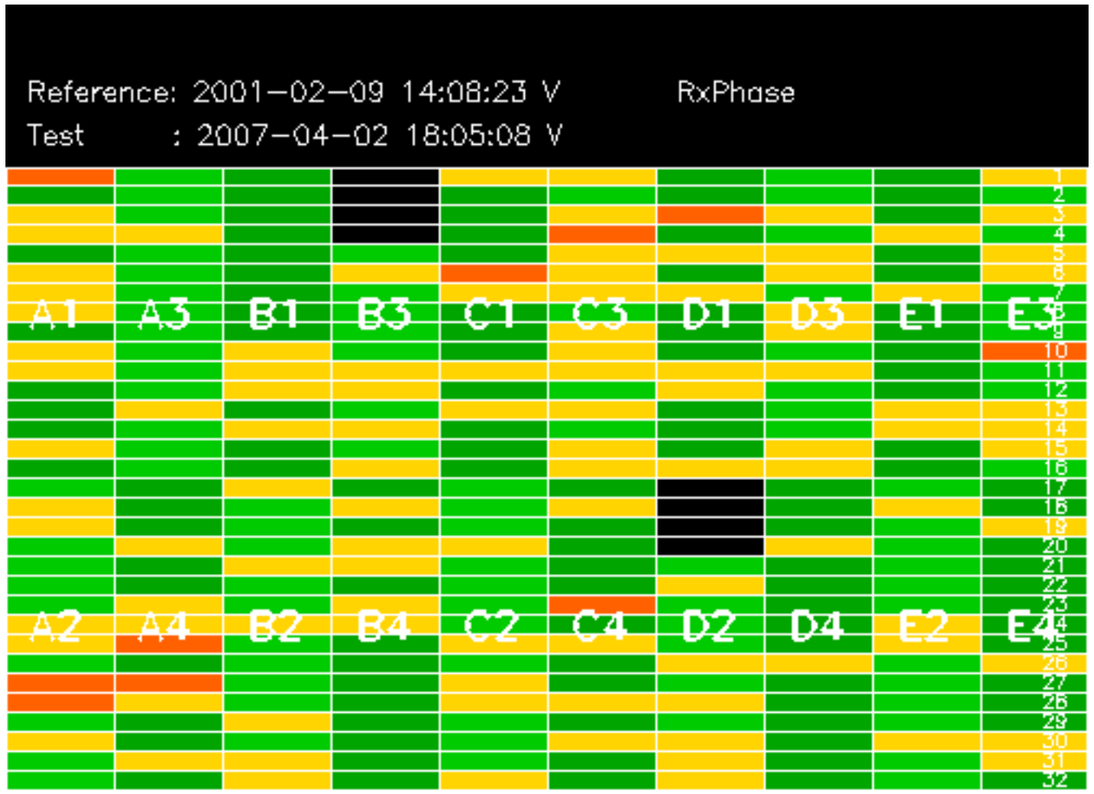

Reference: 2005-09-22 06:26:51 H
Test : 2007-04-01 18:36:46 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

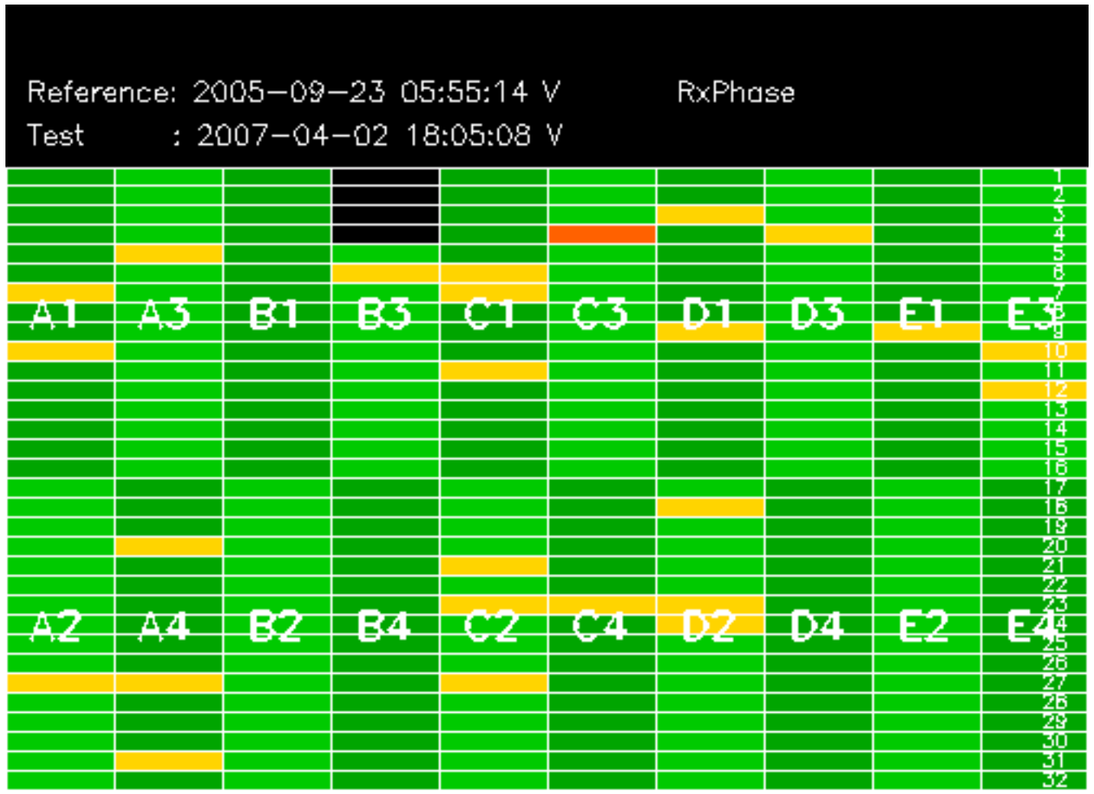

Reference: 2001-02-09 14:08:23 V
Test : 2007-04-02 18:05:08 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-04-02 18:05:08 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 : 2007-04-01 18:36:46 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 : 2007-04-01 18:36:46 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 : 2007-04-02 18:05:08 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 : 2007-04-02 18:05:08 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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9
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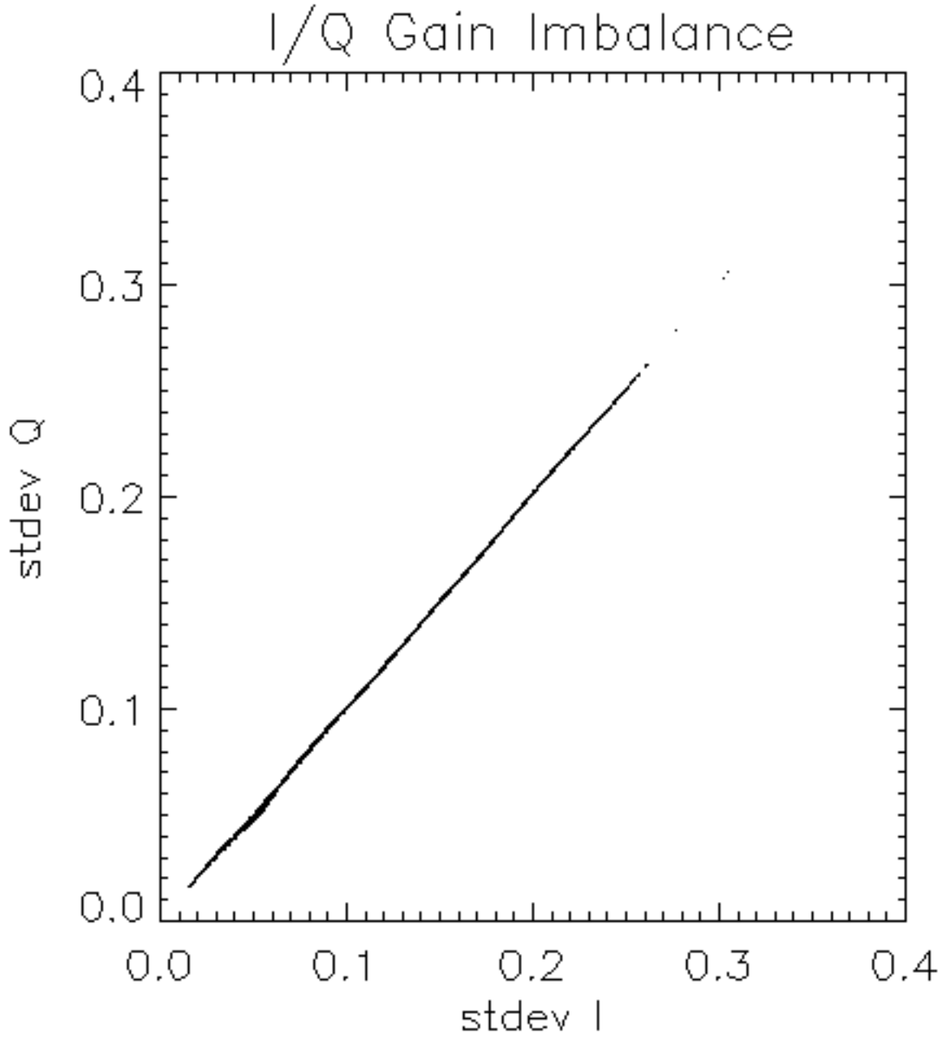
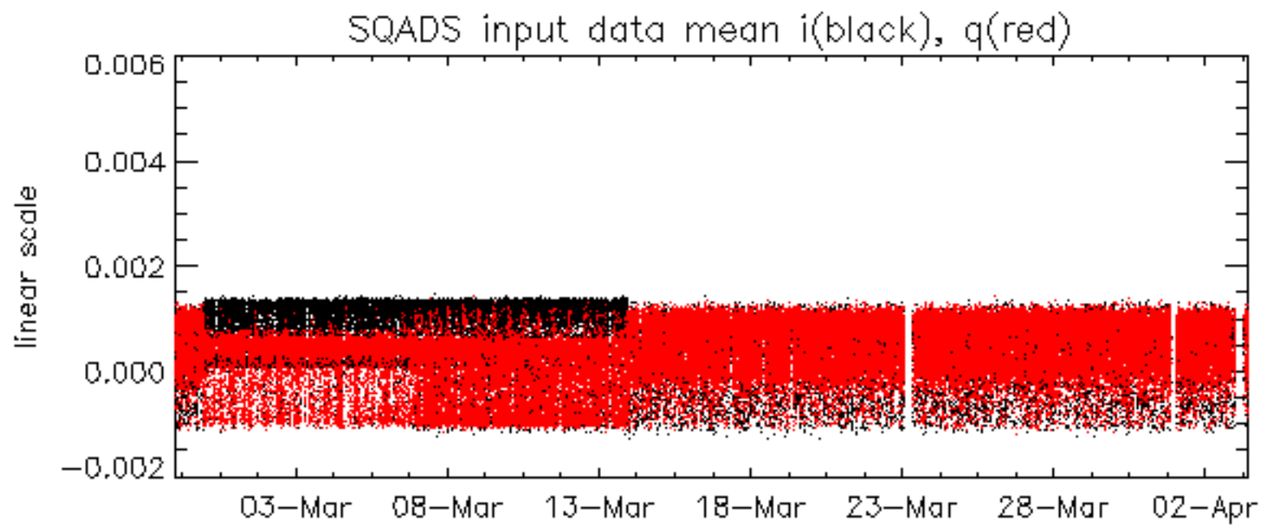
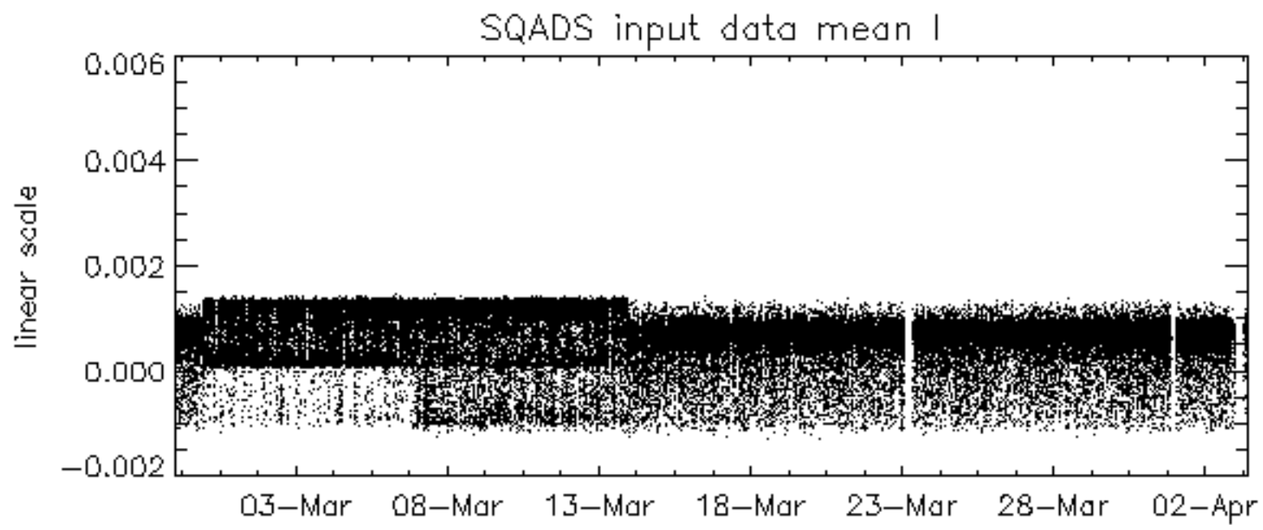
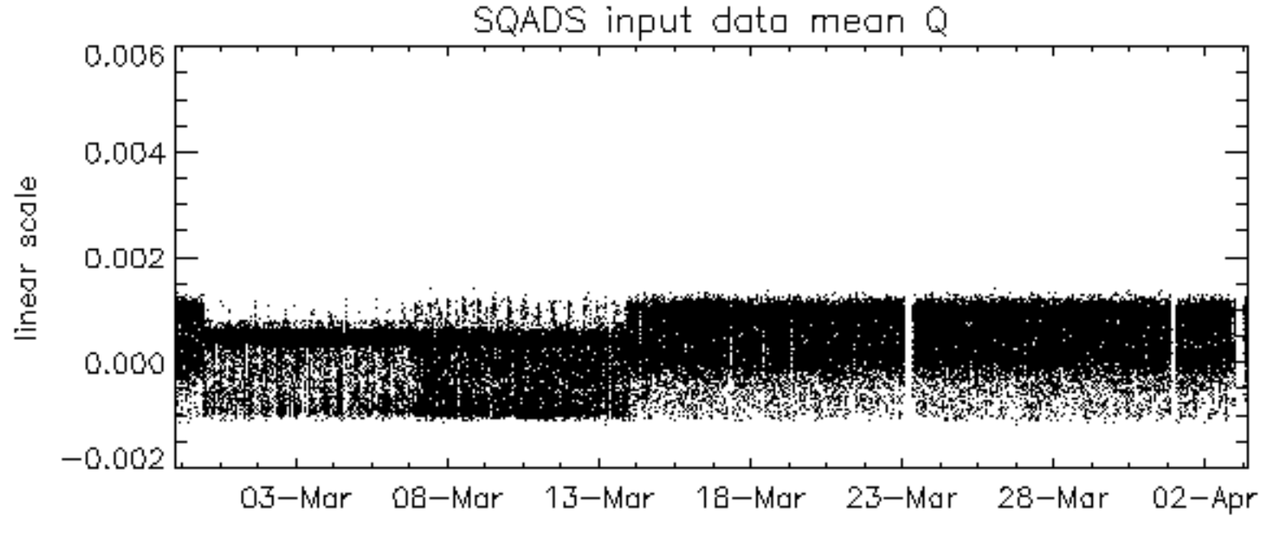
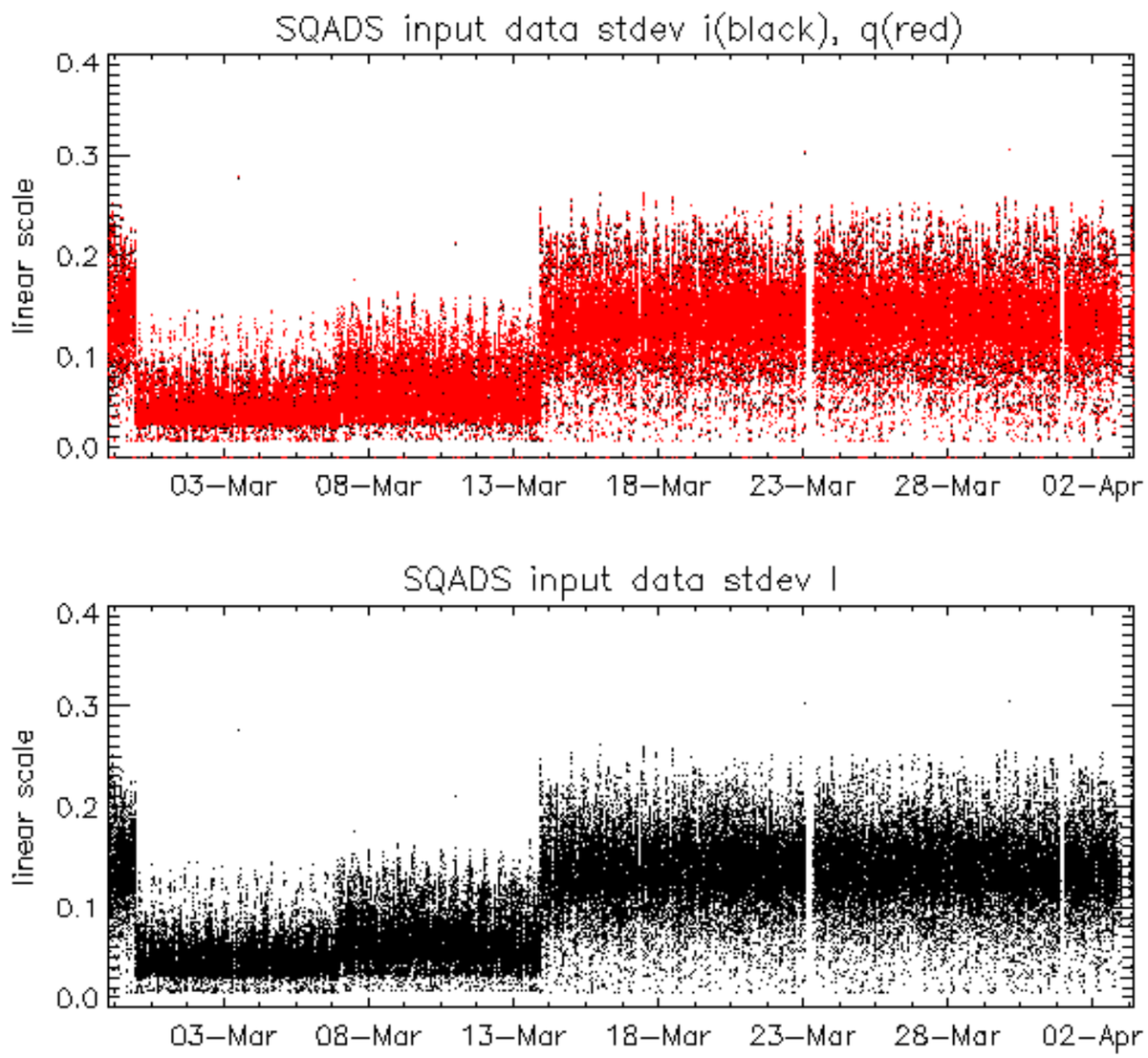
32


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

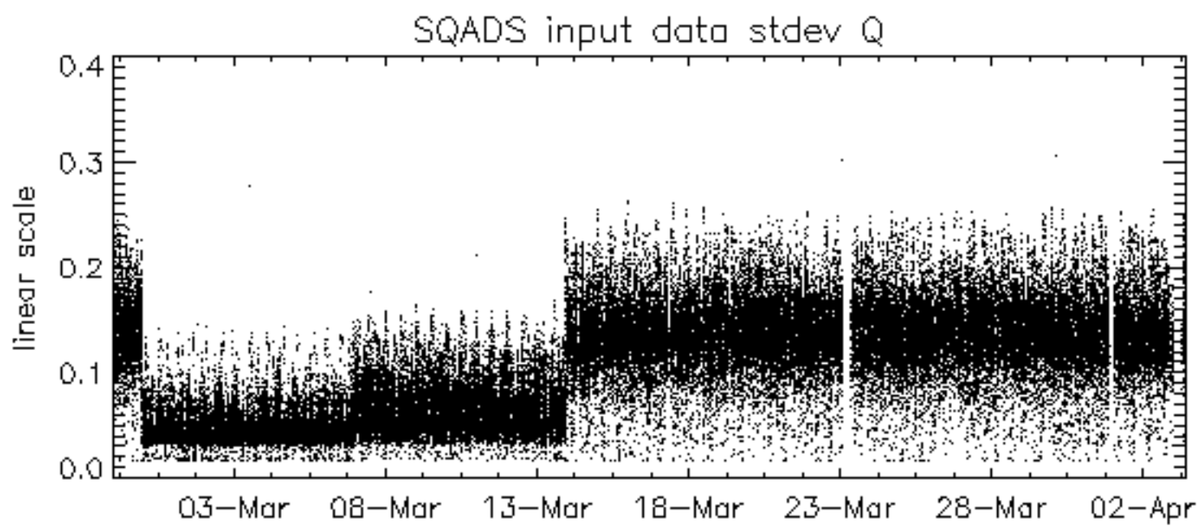

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr

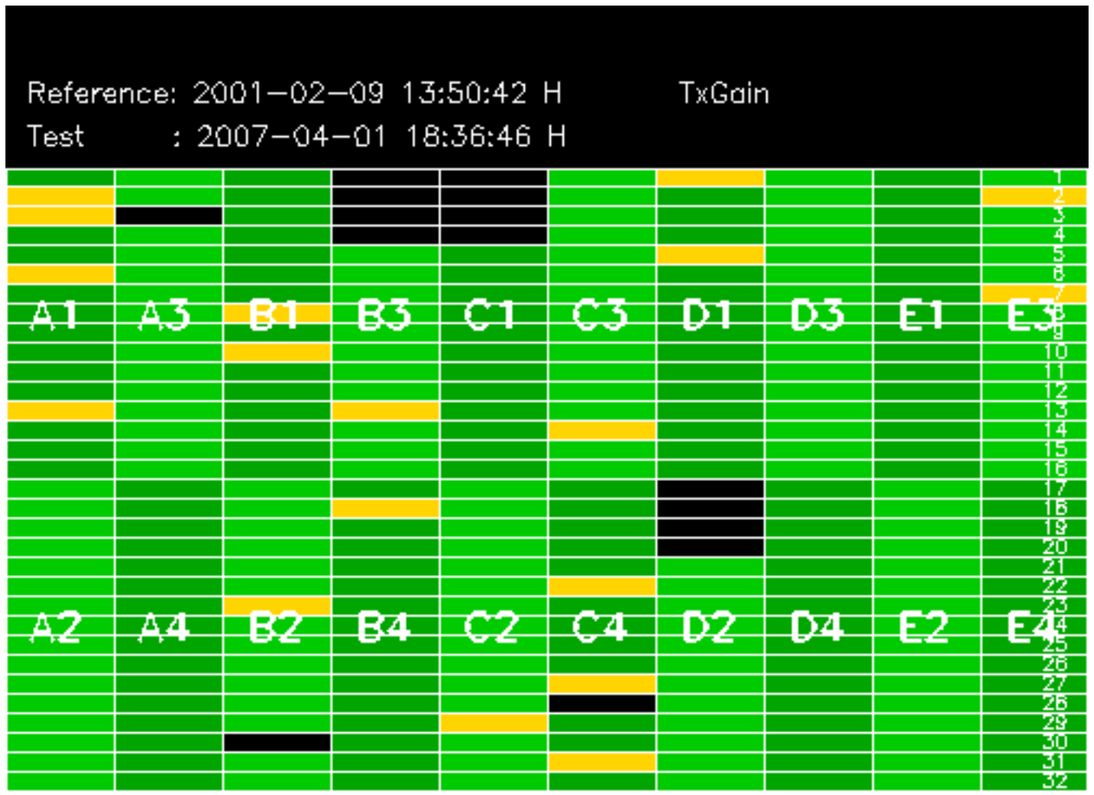

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr

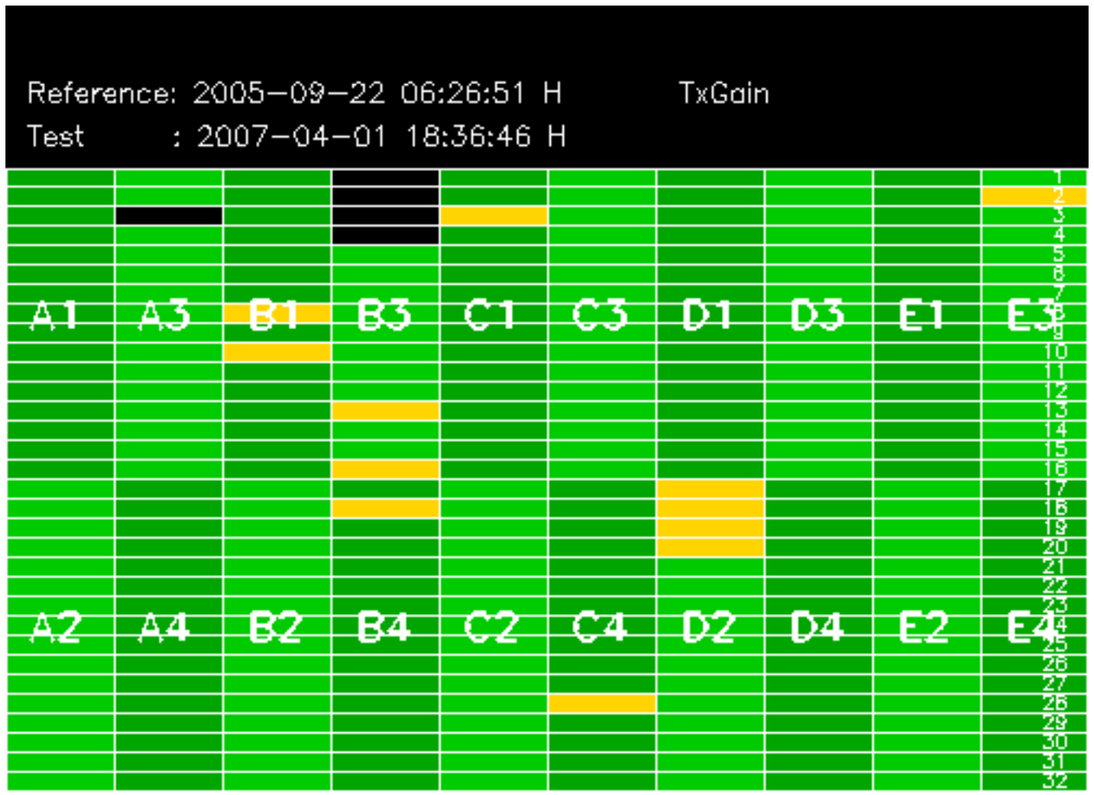

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
28−Mar
02−Apr


Reference: 2001-02-09 13:50:42 H
Test : 2007-04-01 18:36:46 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
Test : 2007-04-01 18:36:46 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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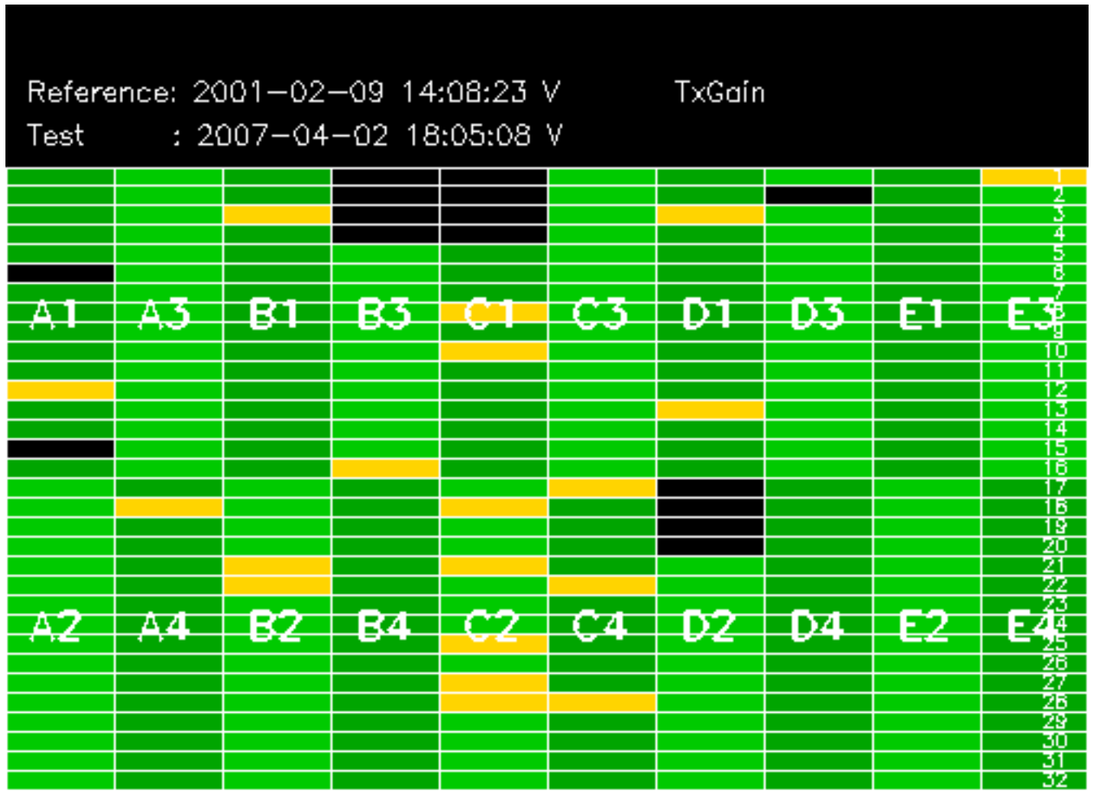
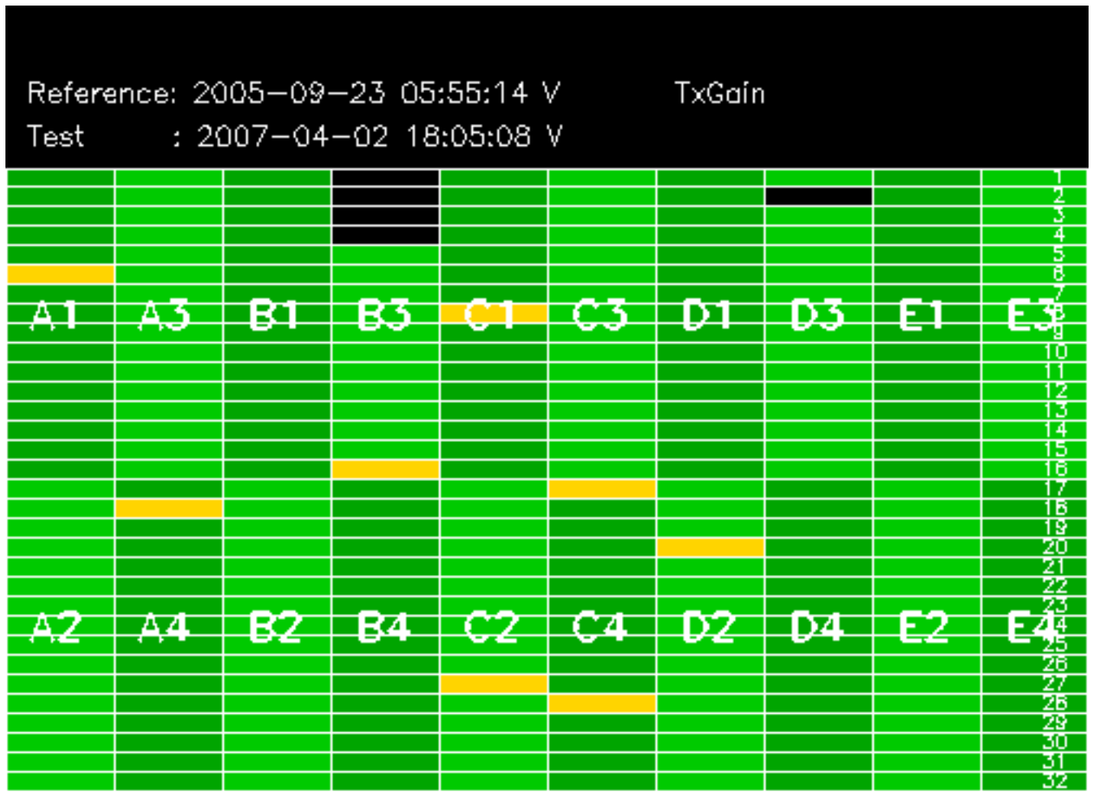

Reference: 2001-02-09 14:08:23 V
Test : 2007-04-02 18:05:08 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-04-02 18:05:08 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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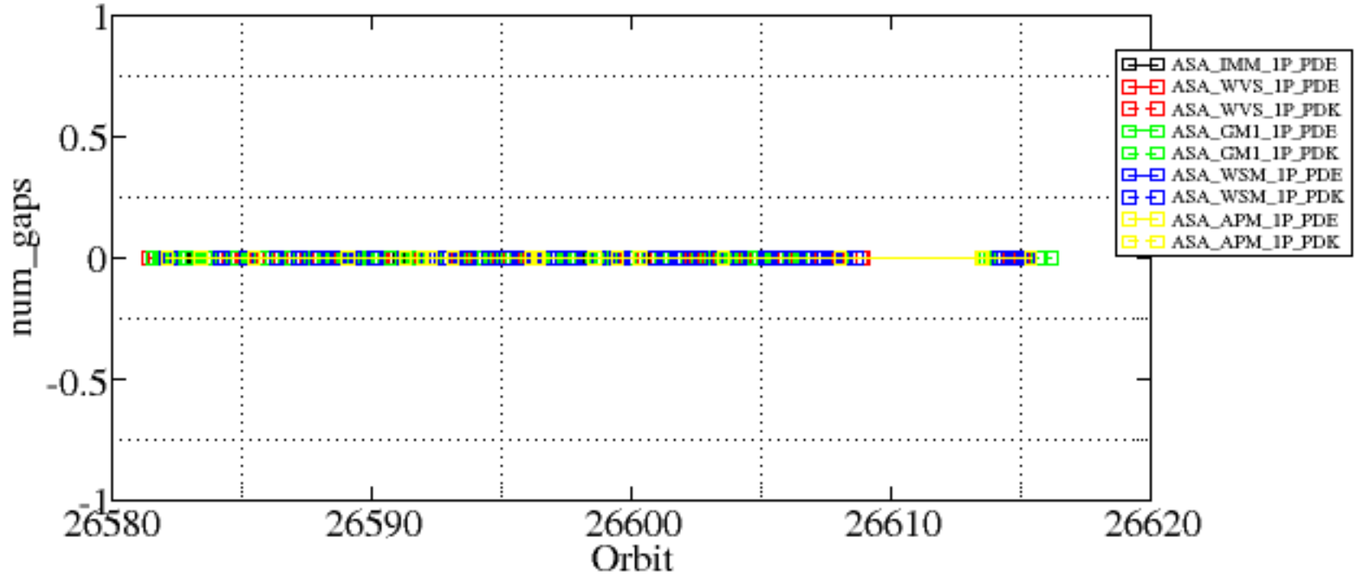
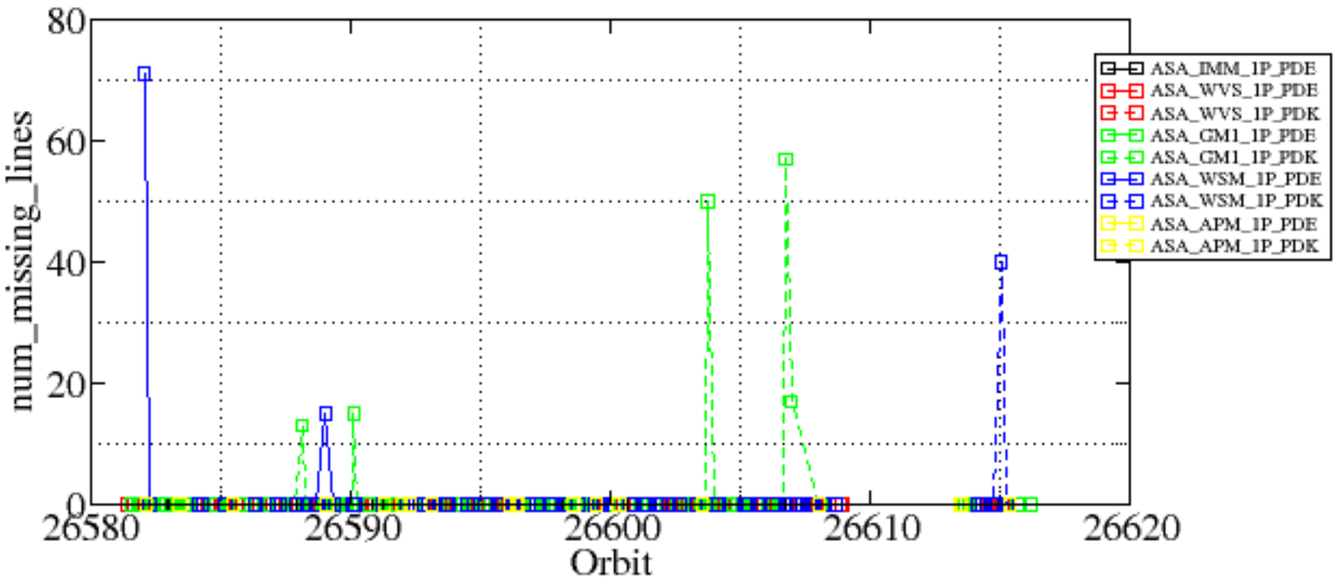
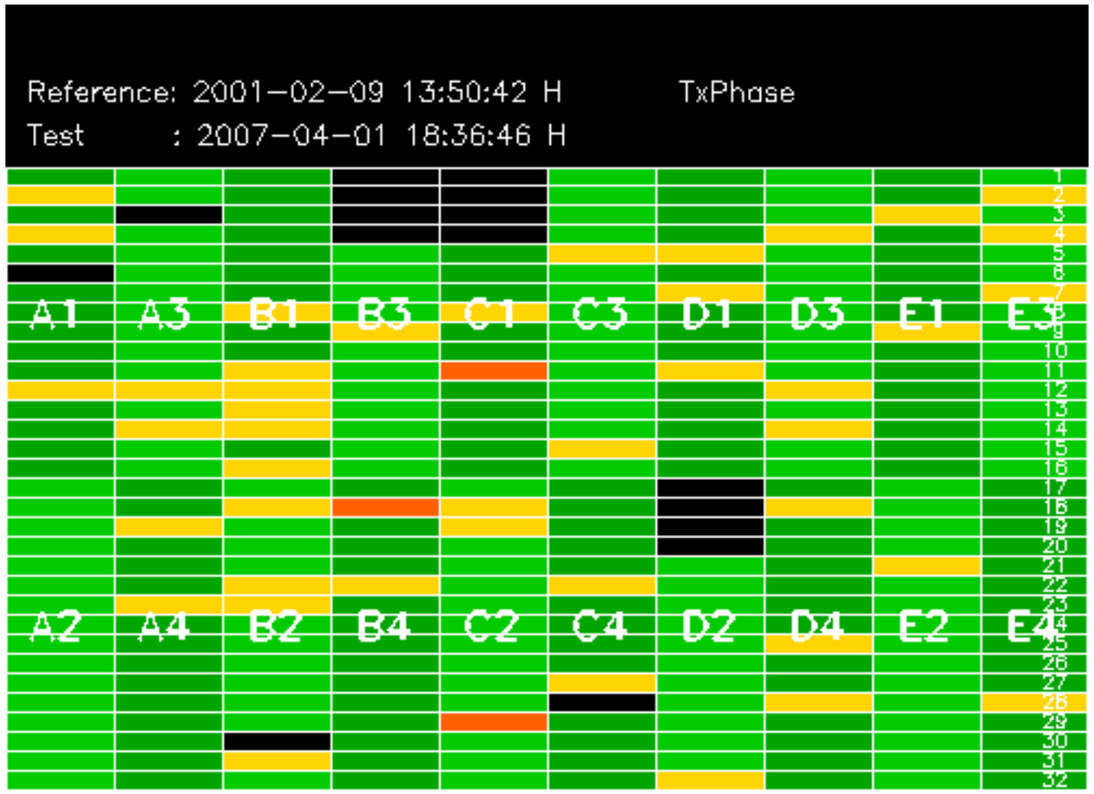
Summary of analysis for the last 3 days 2007040[123]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_GM1_1PNPDK20070401_124009_000008632056_00482_26588_2418.N1	0	13
ASA_GM1_1PNPDK20070401_160040_000000962056_00484_26590_2686.N1	0	15
ASA_GM1_1PNPDK20070402_145241_000004412056_00497_26603_3762.N1	0	50
ASA_GM1_1PNPDK20070402_195228_000002652056_00500_26606_4207.N1	0	57
ASA_GM1_1PNPDK20070402_201601_000009242056_00500_26606_4215.N1	0	17
ASA_WSM_1PNPDE20070401_023000_000001462056_00476_26582_5190.N1	0	71
ASA_WSM_1PNPDE20070401_141207_000000852056_00483_26589_5694.N1	0	15
ASA_WSM_1PNPDK20070403_095006_000000852057_00008_26615_4739.N1	0	40


num_gaps
1
0.5
0
-0.5
-1
26580
26590
26600
26610
26620
Orbit
ASA_IMM_1P_PDE
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
Orbit
0
20
40
60
80
26580
26590
26600
26610
26620
ASA_IMM_1P_PDE
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 : 2007-04-01 18:36:46 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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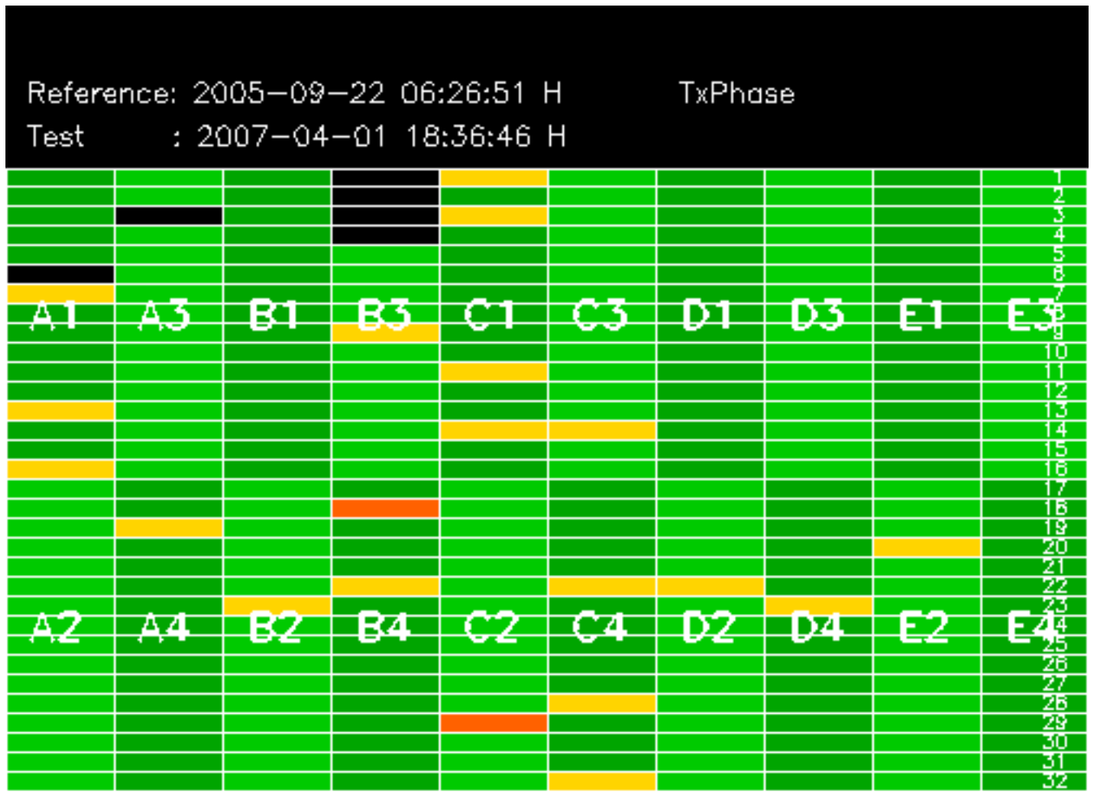
Reference: 2005-09-22 06:26:51 H
TxPhase
Test : 2007-04-01 18:36:46 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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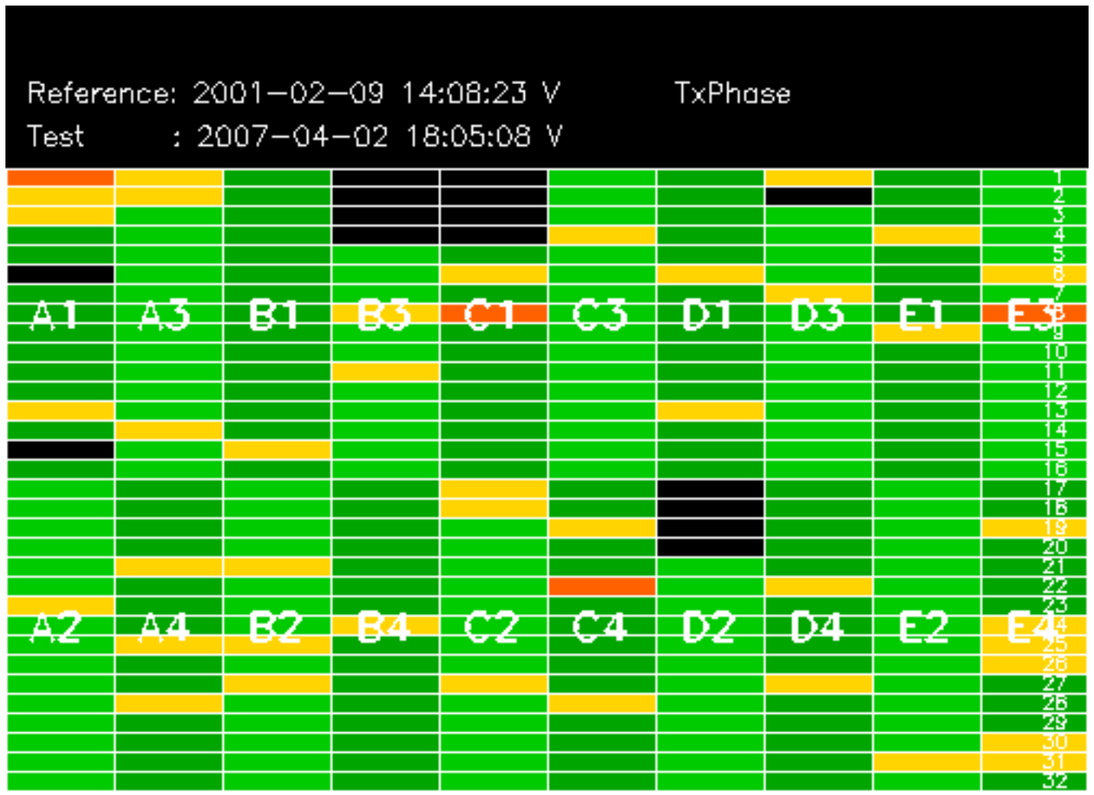
Reference: 2001-02-09 14:08:23 V
Test : 2007-04-02 18:05:08 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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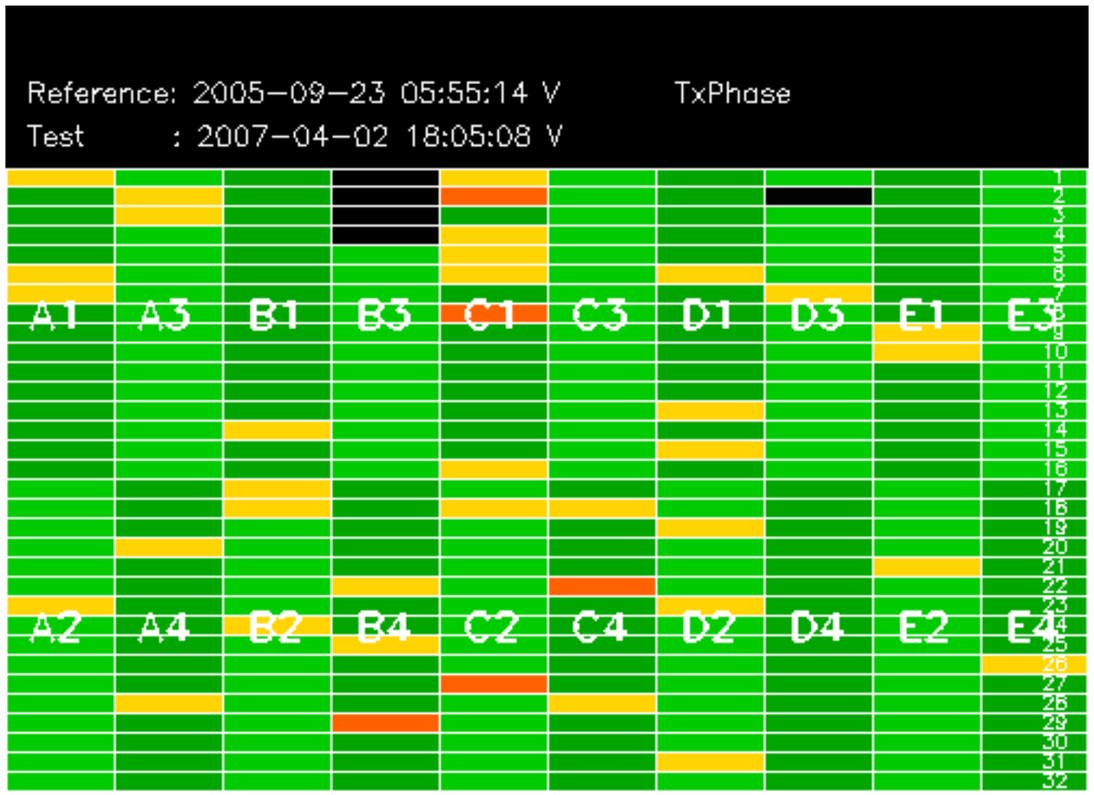
Reference: 2005-09-23 05:55:14 V
Test : 2007-04-02 18:05:08 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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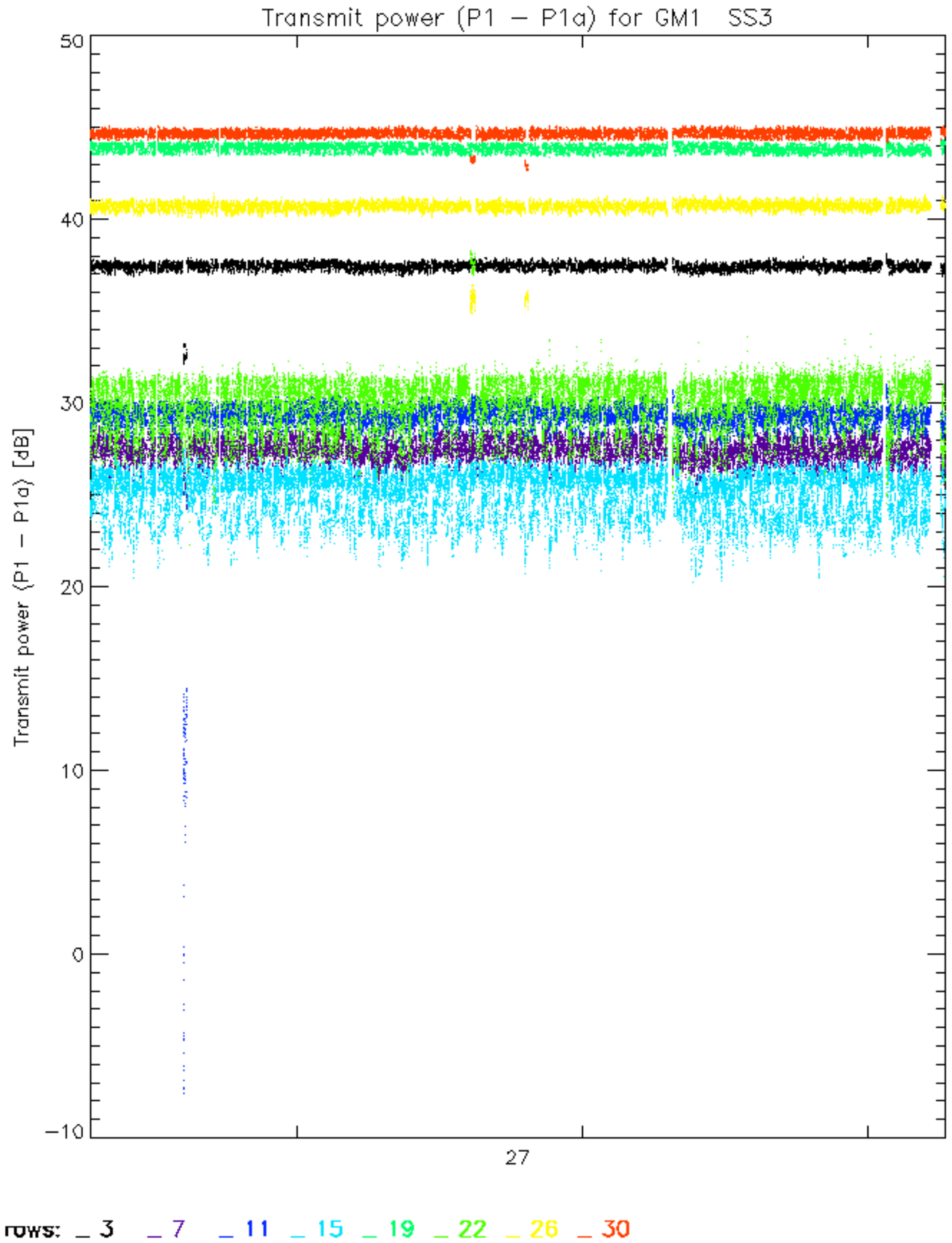
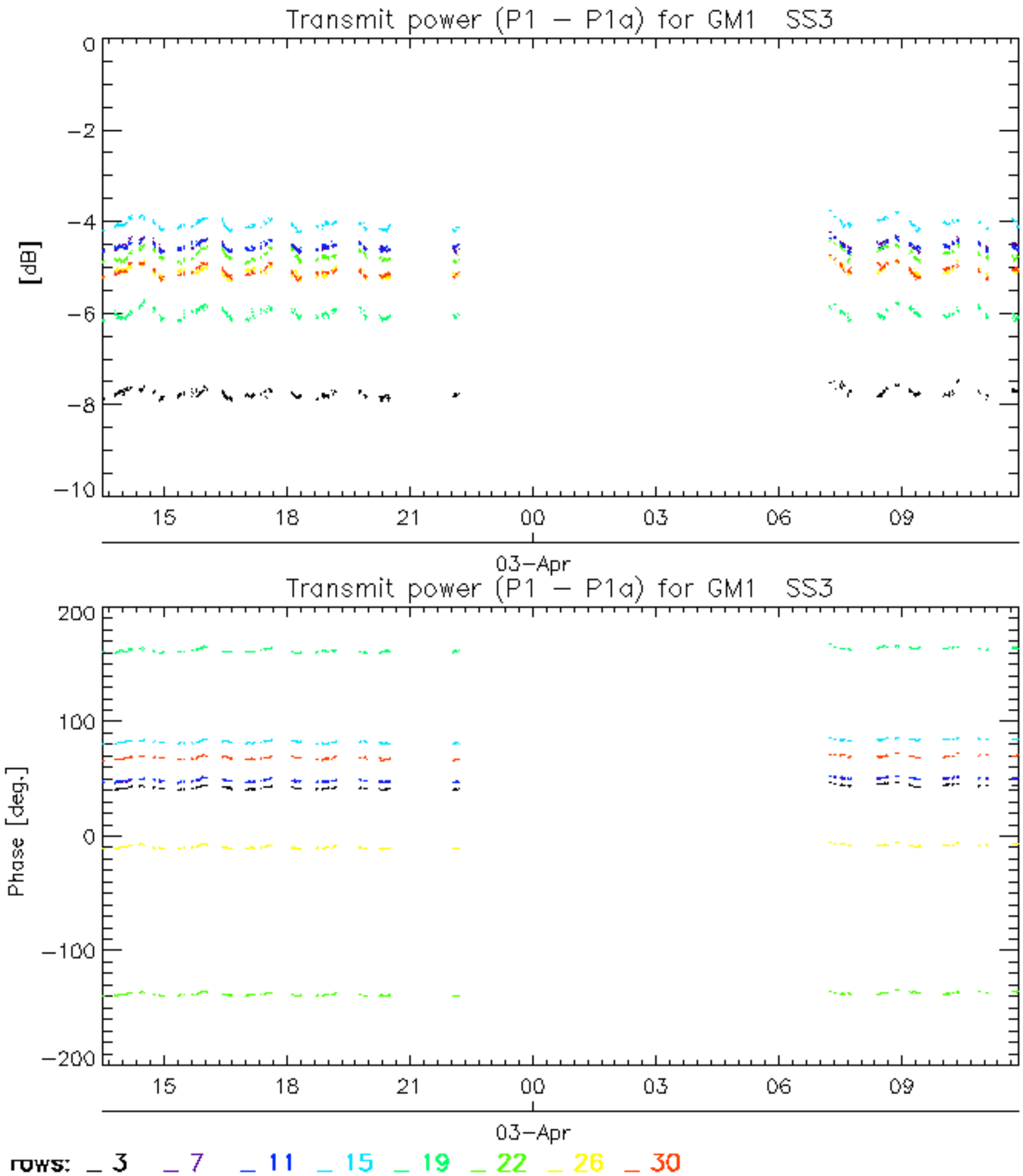
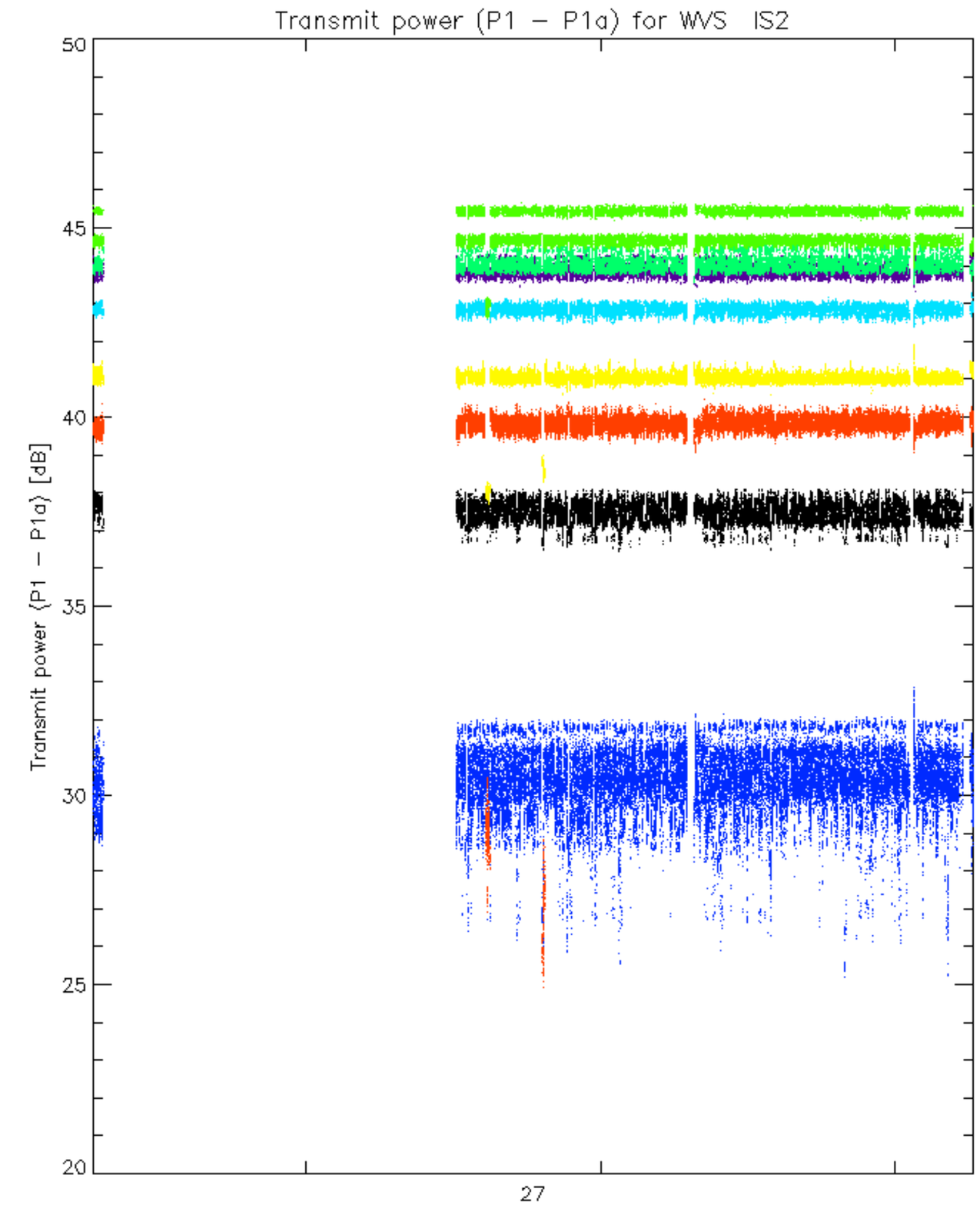
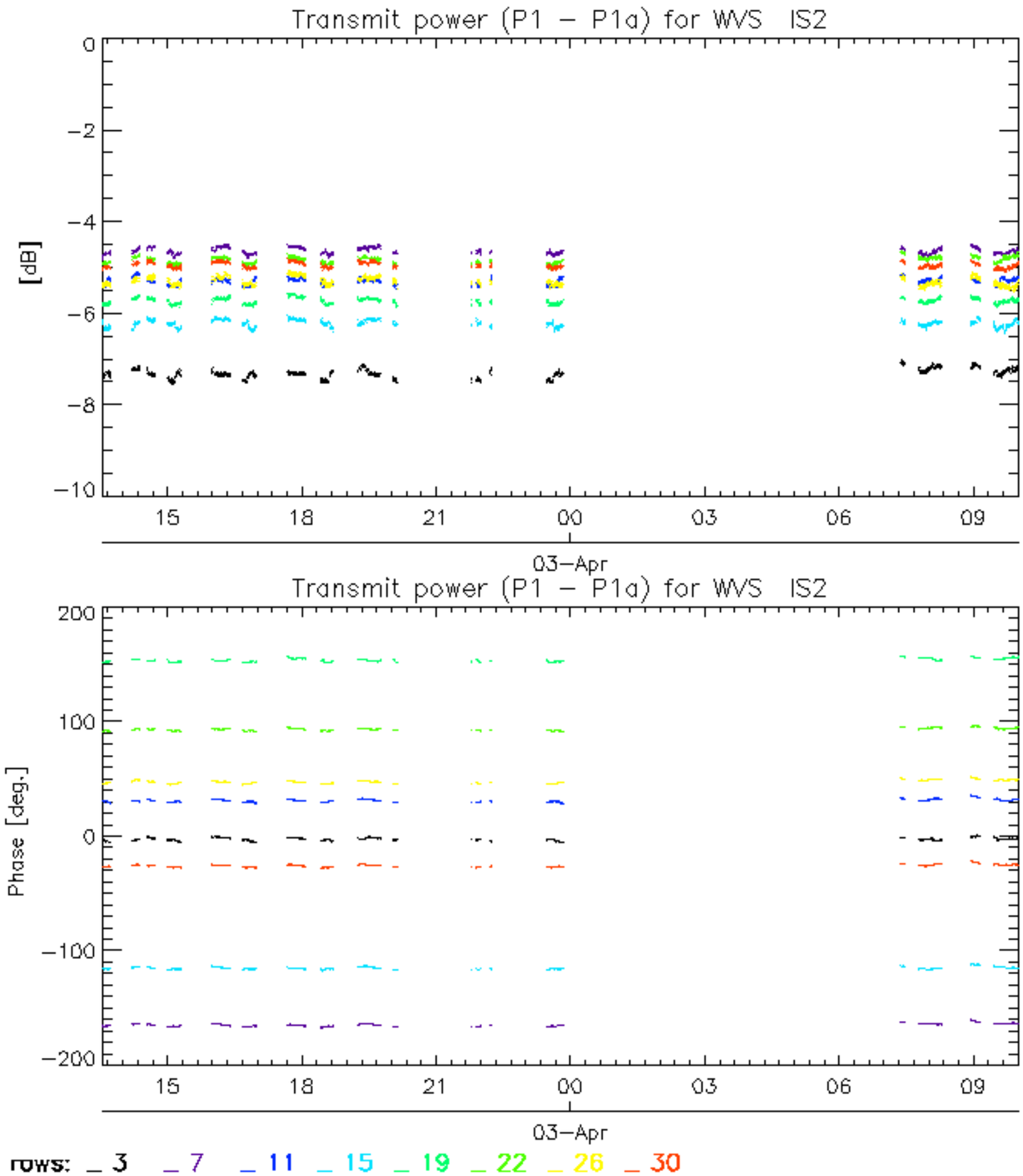

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
27
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
15
18
21
00
03
06
09
03–Apr
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
15
18
21
00
03
06
09
03–Apr
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
27
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.