PRELIMINARY REPORT OF 060327

last update on Mon Mar 27 17:33:19 GMT 2006

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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 2006-03-26 00:00:00 to 2006-03-27 17:33:19

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

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

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	20060325 064353
H	20060326 061216

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

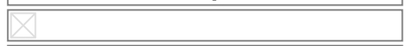
No anomalies observed.

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	-4.001692	0.009137	0.008706
7	P1	-3.012904	0.008385	-0.019071
11	P1	-4.060241	0.018245	-0.008174
15	P1	-6.096322	0.020191	-0.052949
19	P1	-3.302595	0.006503	-0.046110
22	P1	-4.463239	0.014202	-0.025482
26	P1	-4.174282	0.113571	0.254837
30	P1	-5.784932	0.171836	0.173360
3	P1	-16.967695	0.255537	0.078466
7	P1	-16.748301	0.101658	-0.102848
11	P1	-16.477674	0.311554	0.042267
15	P1	-13.054776	0.092777	-0.017375
19	P1	-13.960176	0.050426	-0.098251
22	P1	-15.589568	0.458255	-0.102723
26	P1	-15.746092	0.361744	-0.014881
30	P1	-16.511084	0.316038	-0.152604

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.377684	0.086728	0.070997
7	P2	-22.345181	0.096338	0.132181
11	P2	-16.217157	0.100591	0.038256
15	P2	-7.166438	0.097549	-0.010492
19	P2	-9.135286	0.089472	-0.024365
22	P2	-17.956577	0.087788	-0.072093
26	P2	-16.222969	0.093625	-0.069787
30	P2	-19.652756	0.084197	-0.012860

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.195910	0.005551	-0.001477
7	P3	-8.195910	0.005551	-0.001477
11	P3	-8.195910	0.005551	-0.001477
15	P3	-8.195910	0.005551	-0.001477
19	P3	-8.195910	0.005551	-0.001477
22	P3	-8.195910	0.005551	-0.001477

26	P3	-8.195910	0.005551	-0.001477
30	P3	-8.195910	0.005551	-0.001475

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	-3.827854	2.476369	0.377612
7	P1	-2.805856	2.600622	0.439232
11	P1	-3.006274	2.618913	0.432472
15	P1	-3.651451	2.596158	0.463663
19	P1	-3.450109	2.514488	0.393559
22	P1	-5.250636	2.312514	0.360958
26	P1	-5.902755	2.480498	0.722654
30	P1	-5.250923	2.350662	0.476452
3	P1	-11.638523	1.633153	0.270740
7	P1	-10.030258	1.809783	0.310215
11	P1	-10.335752	1.803724	0.313499
15	P1	-10.886537	1.820297	0.308673
19	P1	-15.446279	1.345870	0.264643
22	P1	-20.325680	2.019422	0.075726
26	P1	-16.269377	1.828424	0.109698
30	P1	-18.308947	1.567071	0.304840

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.069721	1.717742	0.097167
7	P2	-22.521168	2.019032	-0.053829

11	P2	-11.254031	1.864050	0.202727
15	P2	-4.896672	2.420496	0.373578
19	P2	-6.904188	2.178489	0.343181
22	P2	-8.197828	2.042670	0.293539
26	P2	-23.919044	2.059054	-0.313317
30	P2	-22.043301	1.940854	-0.184130

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.022760	0.002316	0.006891
7	P3	-8.022703	0.002312	0.007109
11	P3	-8.022697	0.002331	0.007197
15	P3	-8.022775	0.002320	0.007522
19	P3	-8.022726	0.002322	0.007093
22	P3	-8.022823	0.002316	0.007210
26	P3	-8.022819	0.002315	0.007055
30	P3	-8.022683	0.002324	0.007003

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	0.000565903
	stdev	1.69766e-07
MEAN Q	mean	0.000524959

stdev	2.17111e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.139030
	stdev	0.00116555
STDEV Q	mean	0.139401
	stdev	0.00118408

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006032[567]
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_1PNPDE20060325_022726_000000692046_00161_21257_1486.N1	1	0
ASA_GM1_1PNPDK20060325_105812_000005072046_00166_21262_0859.N1	0	17
ASA_GM1_1PNPDK20060325_134937_000003502046_00167_21263_0870.N1	0	6
ASA_WSM_1PNPDE20060325_012047_000001282046_00160_21256_2418.N1	0	39

7 - Doppler Analysis

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

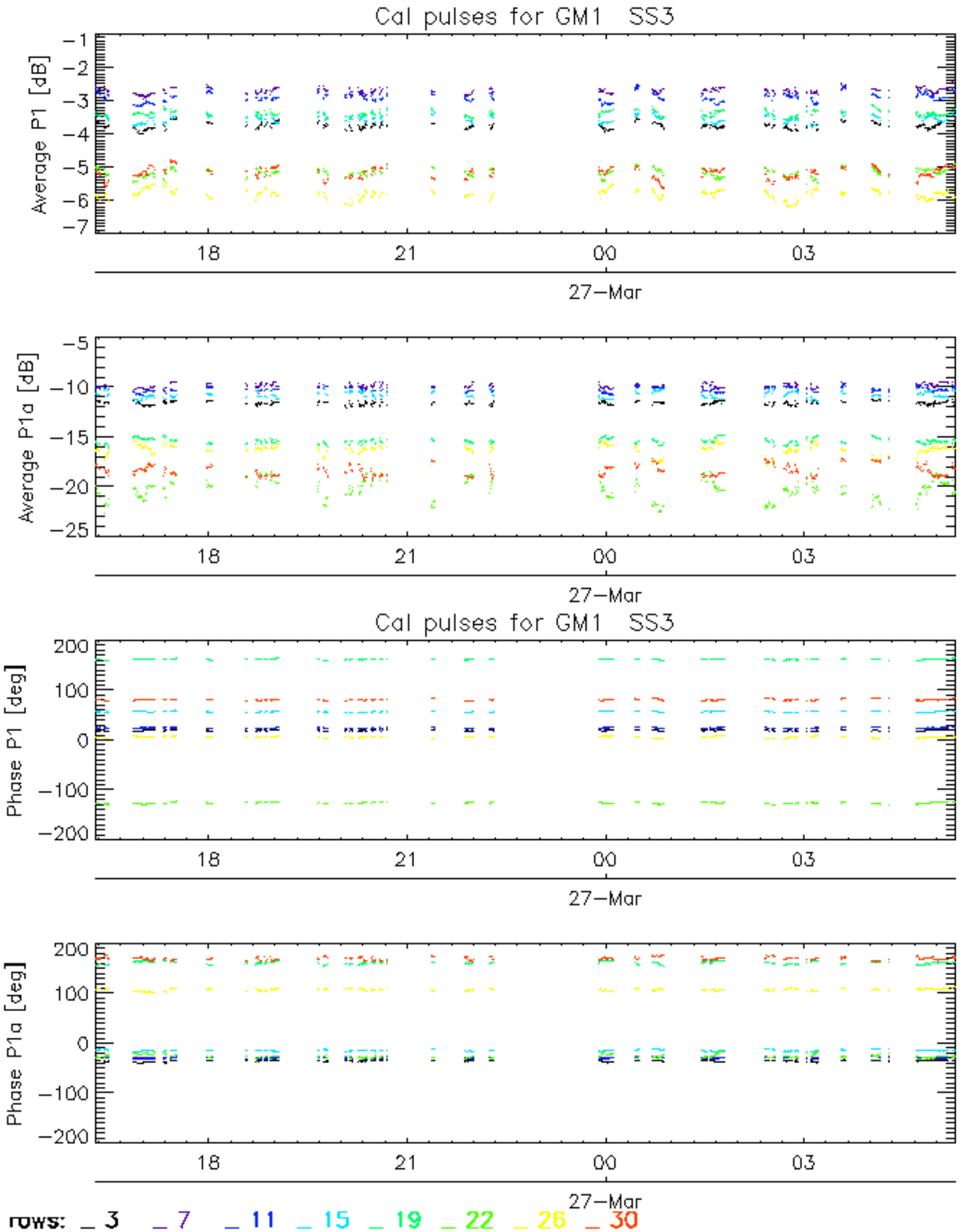
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

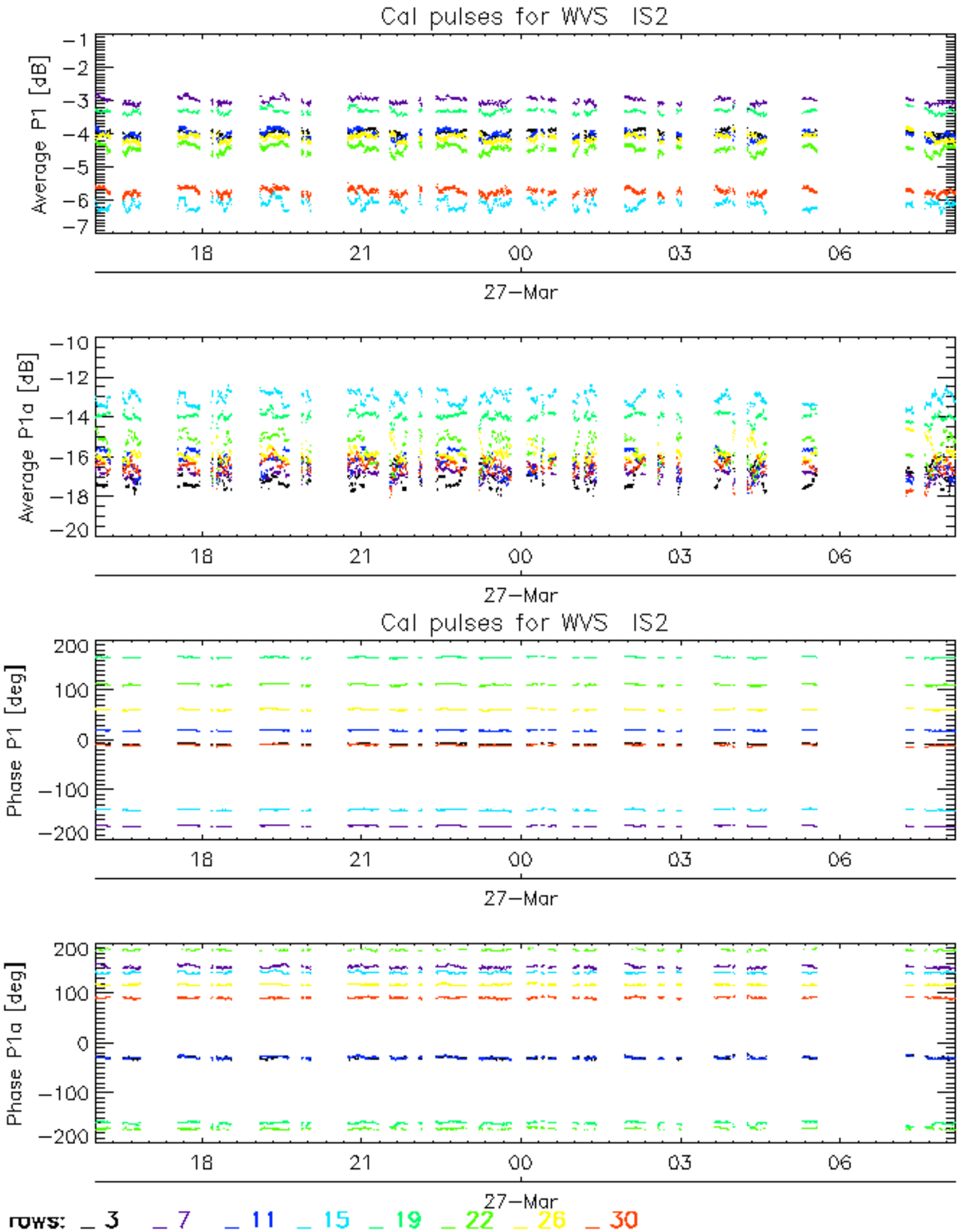
7.5 - Absolute Doppler for GM1

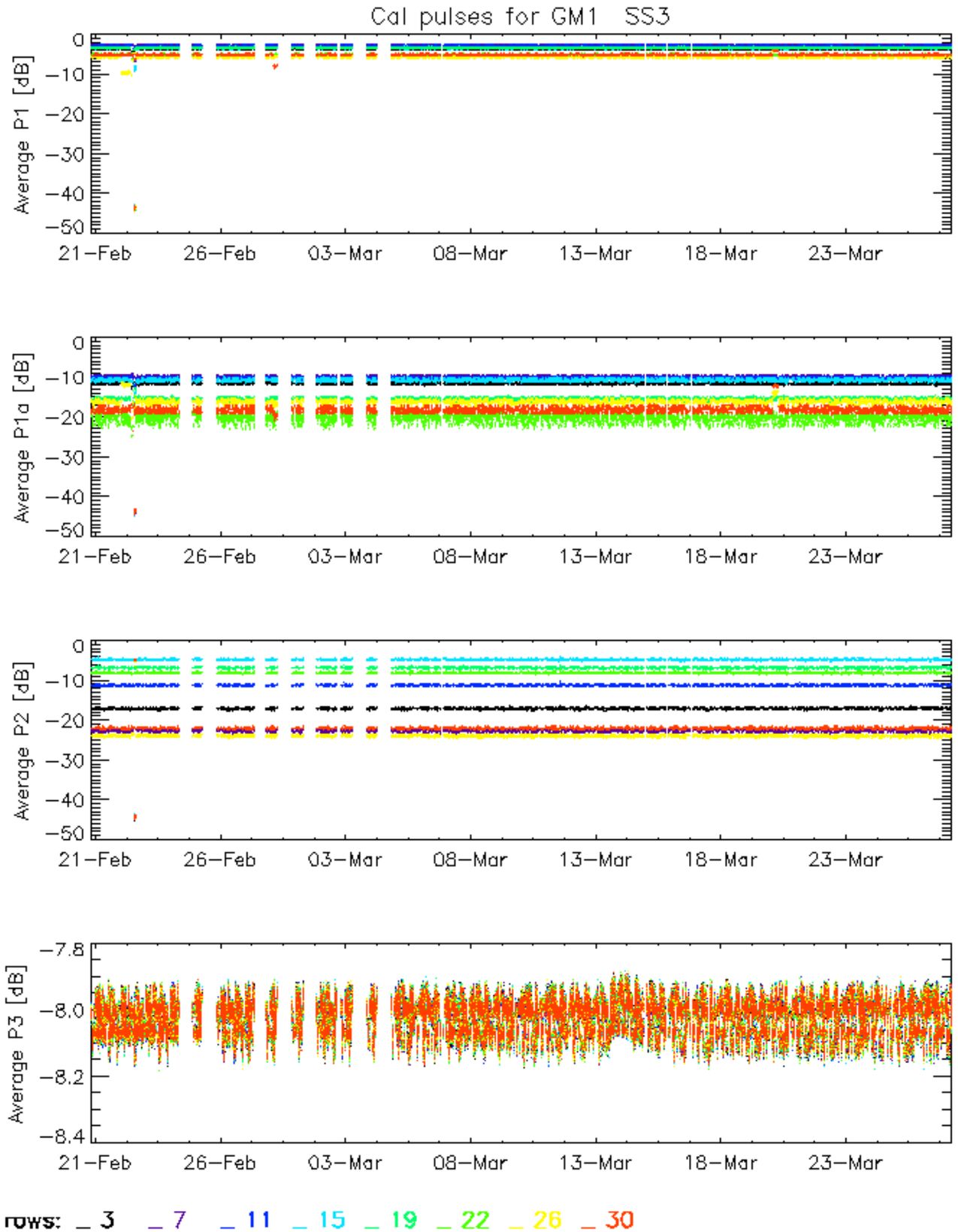
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

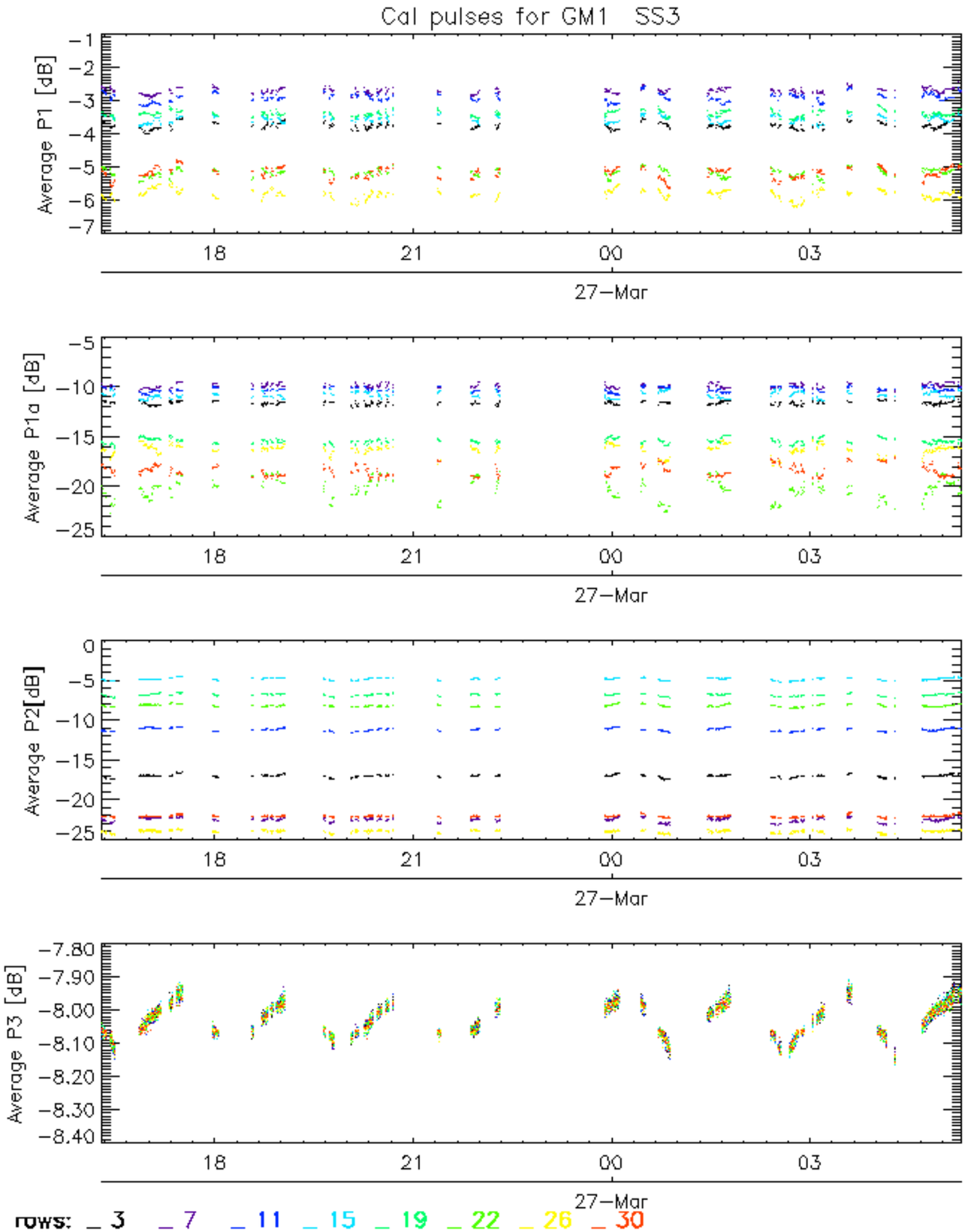
7.6 - Doppler evolution versus ANX for GM1

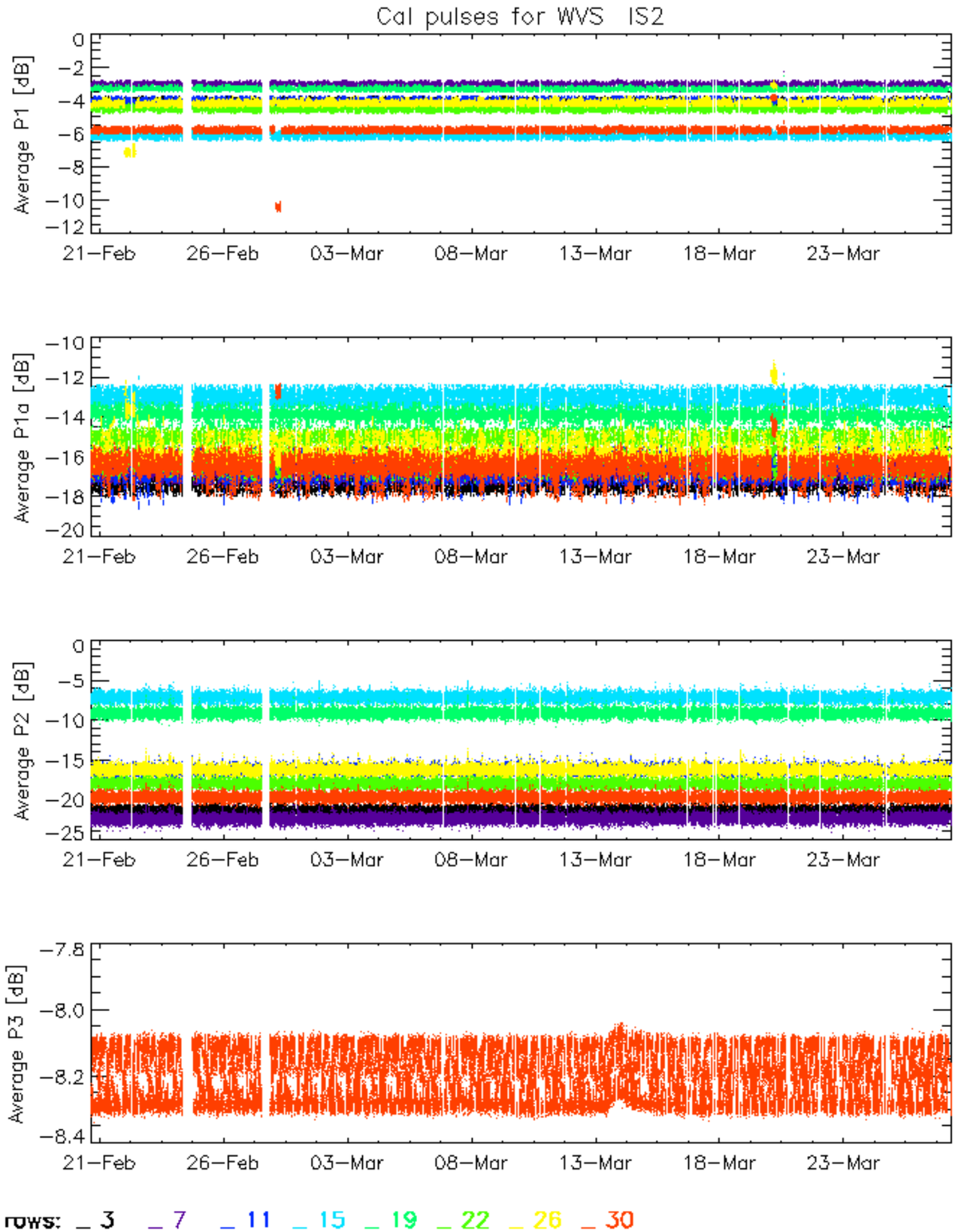
Evolution Doppler error versus ANX
☒

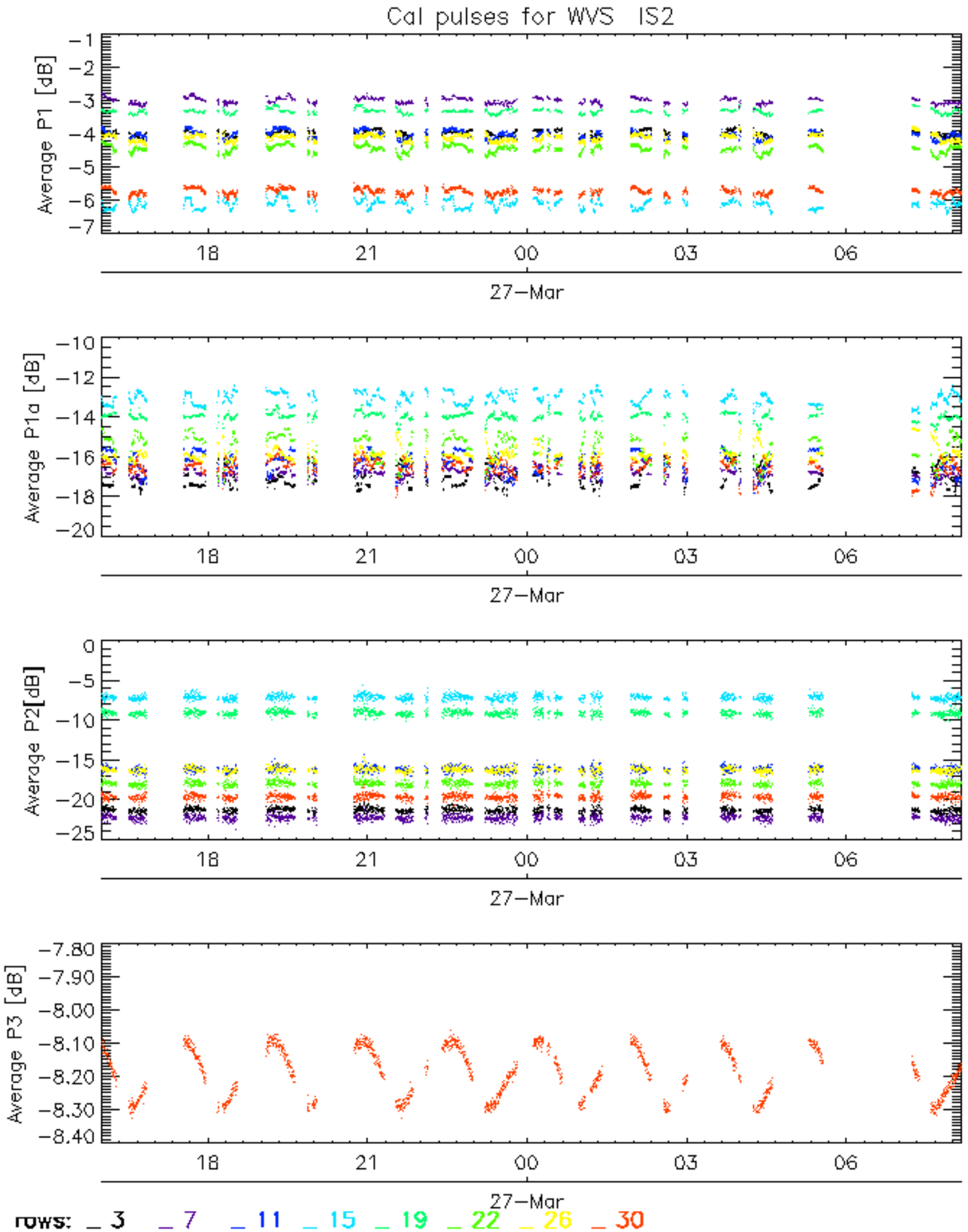

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
27−Mar
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
27−Mar
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
27−Mar
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
27−Mar
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

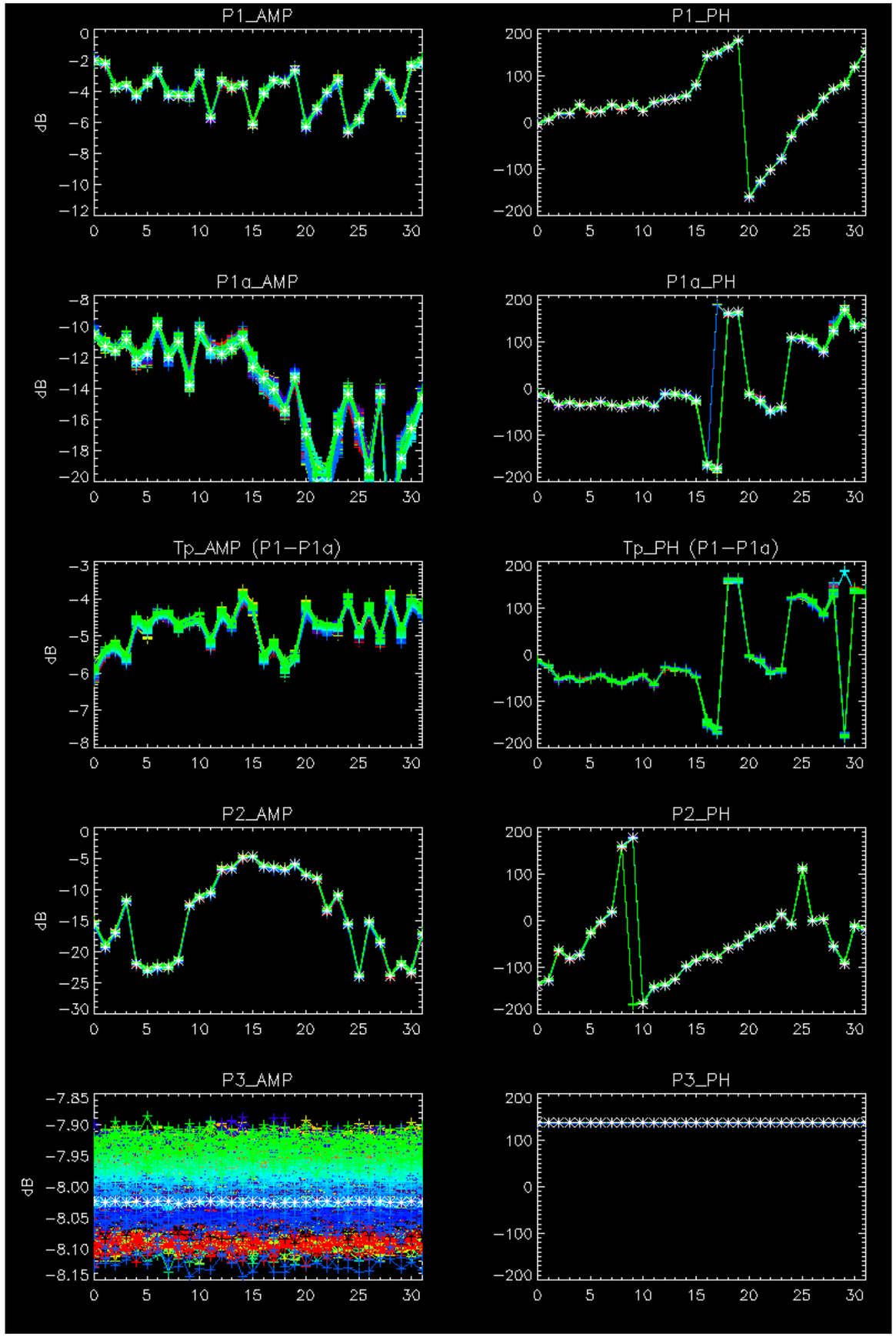

Cal pulses for GM1 SS3
Average P1 [dB]
0
−10
−20
−30
−40
−50
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
Average P1a [dB]
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

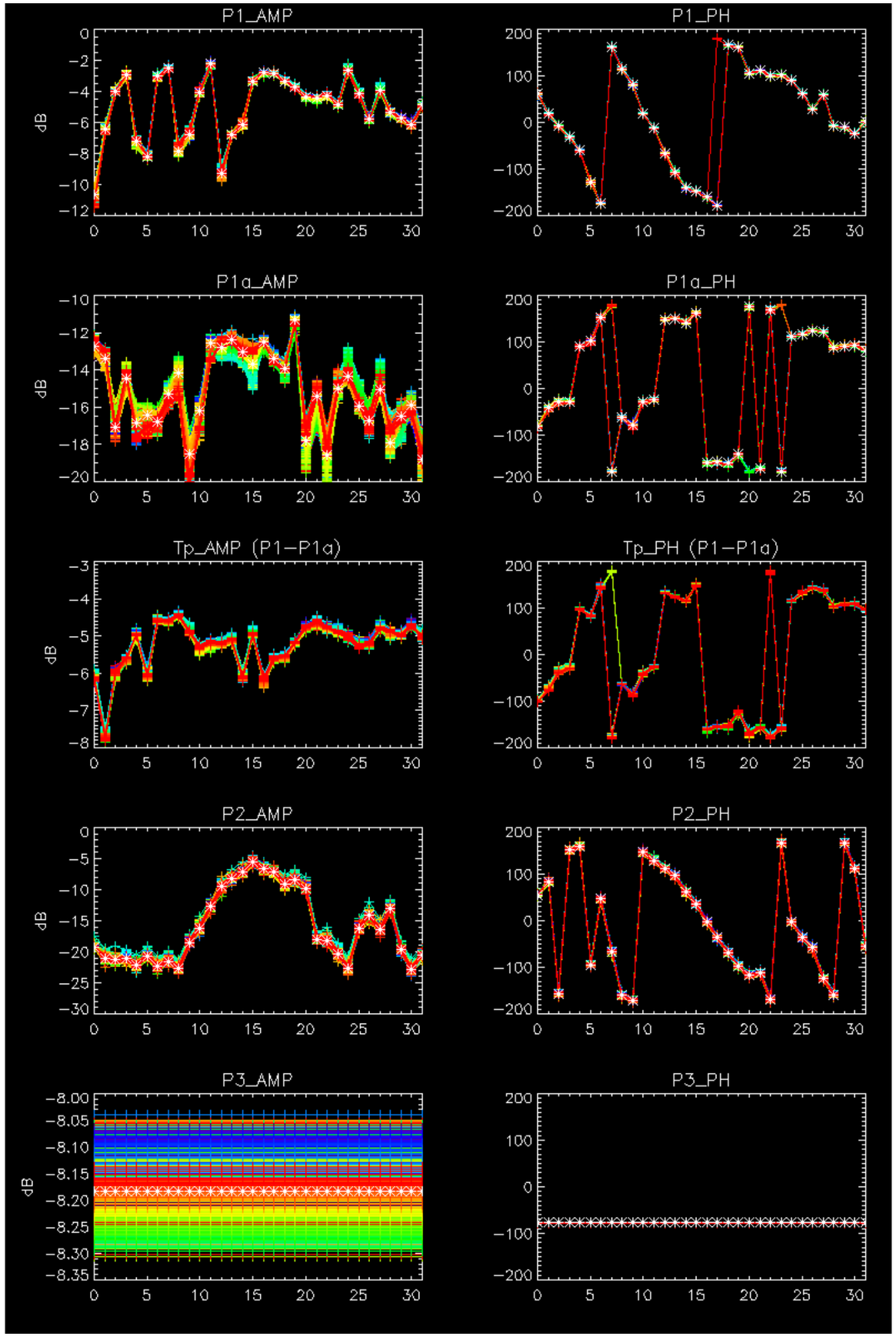

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
27−Mar
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
27−Mar
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
27−Mar
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
27−Mar
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar
Average P1a [dB]
−10
−12
−14
−16
−18
−20
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
18
21
00
03
06
27−Mar
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
27−Mar
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
27−Mar
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
27−Mar
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

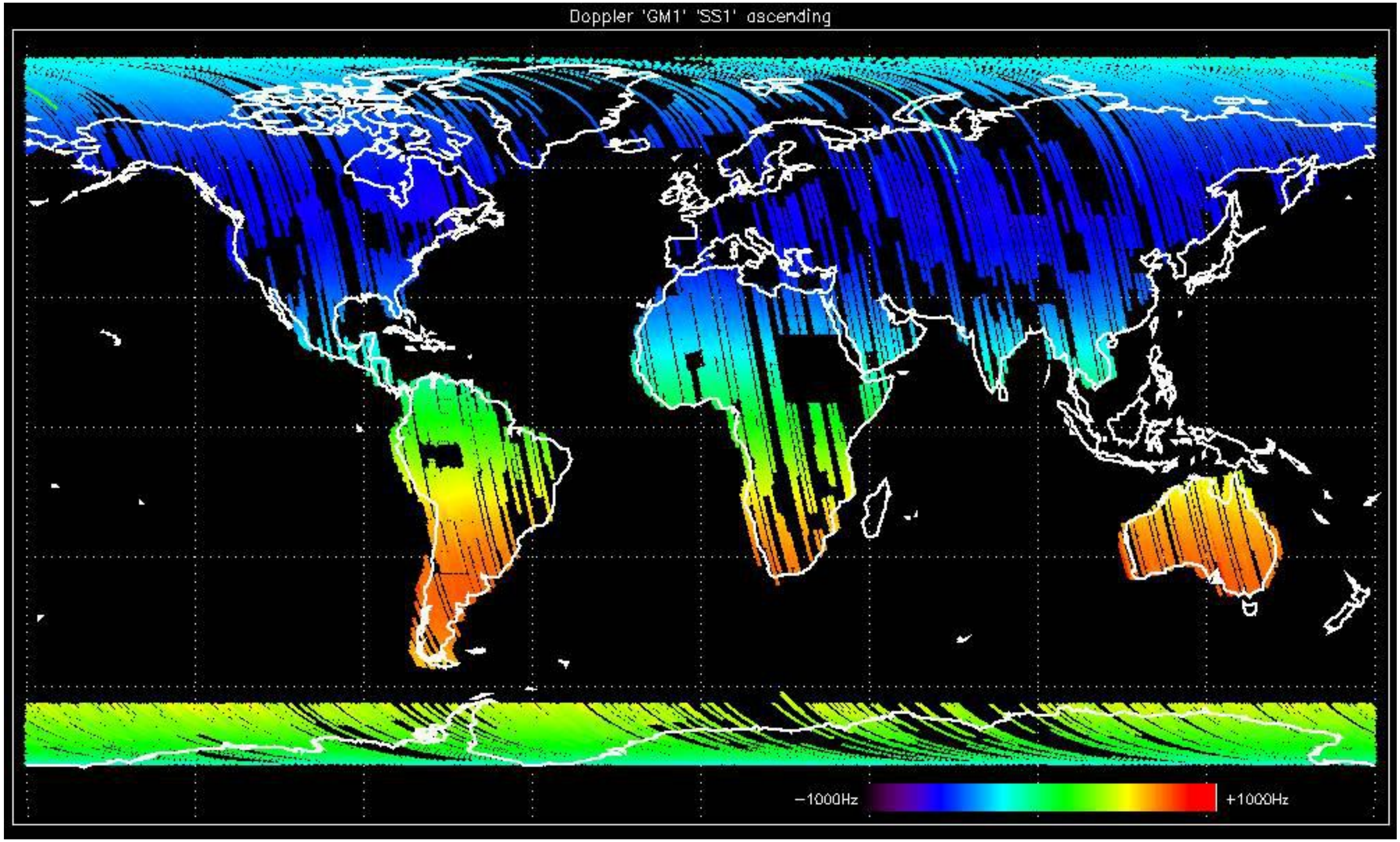
No anomalies observed.

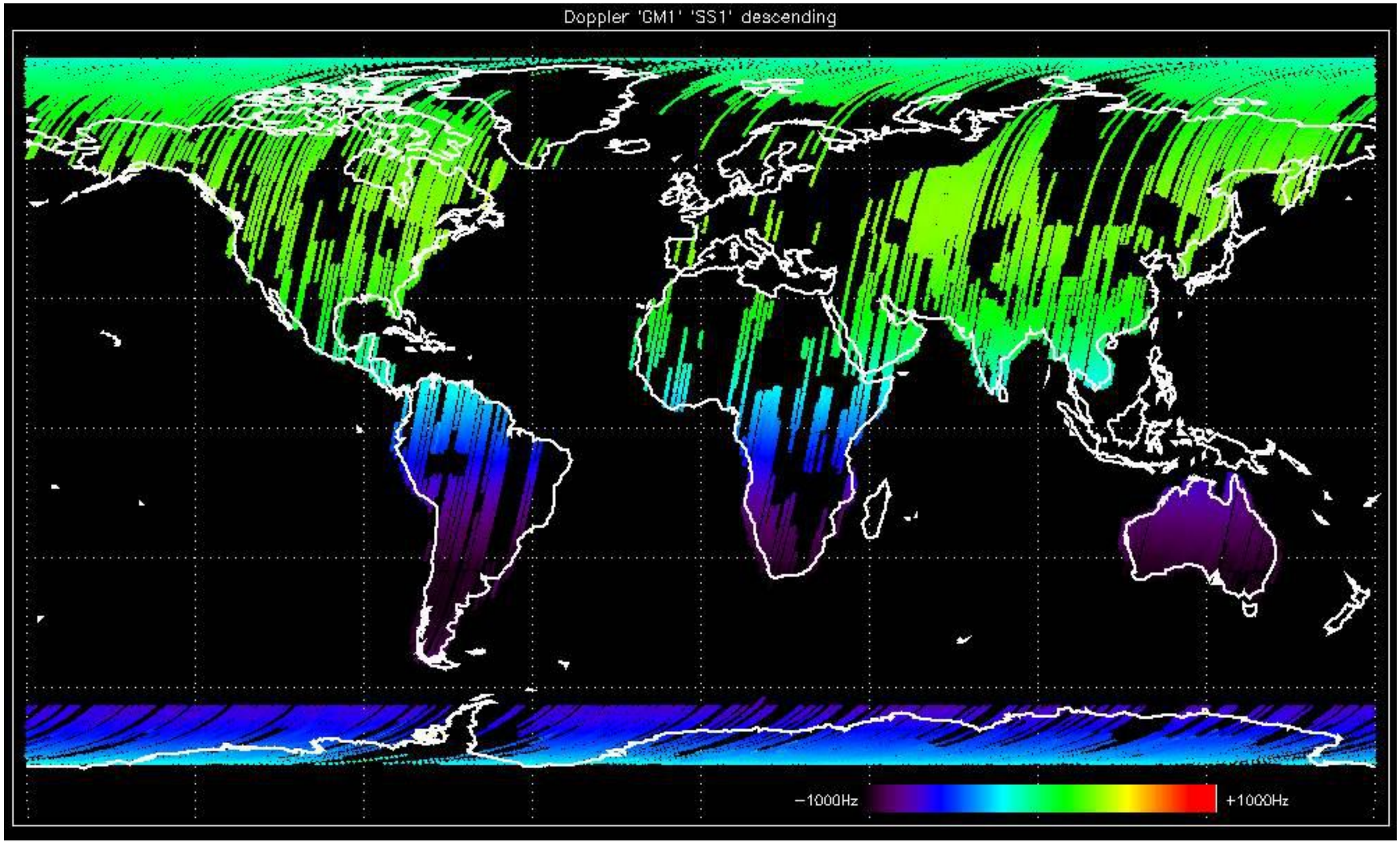

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

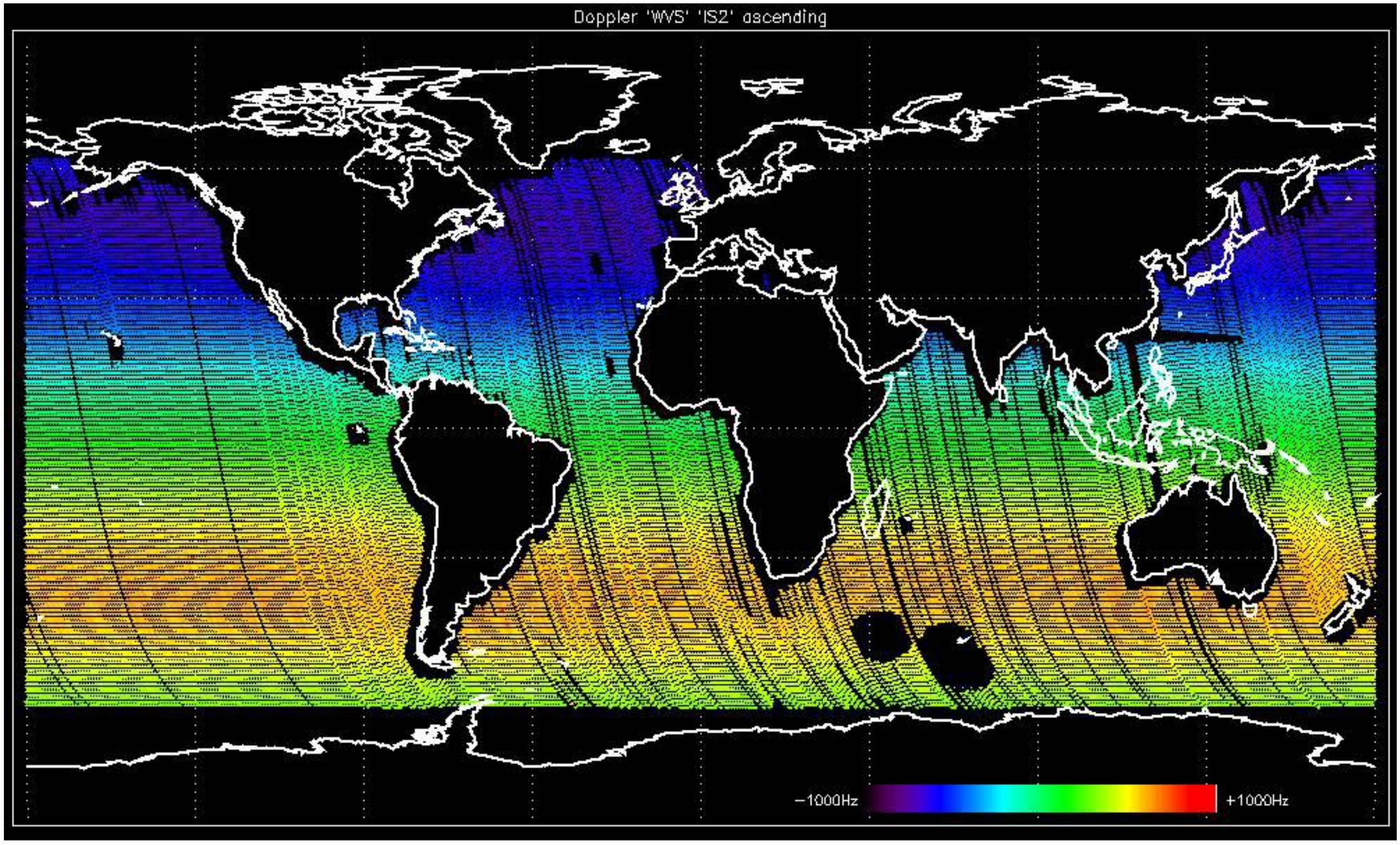

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

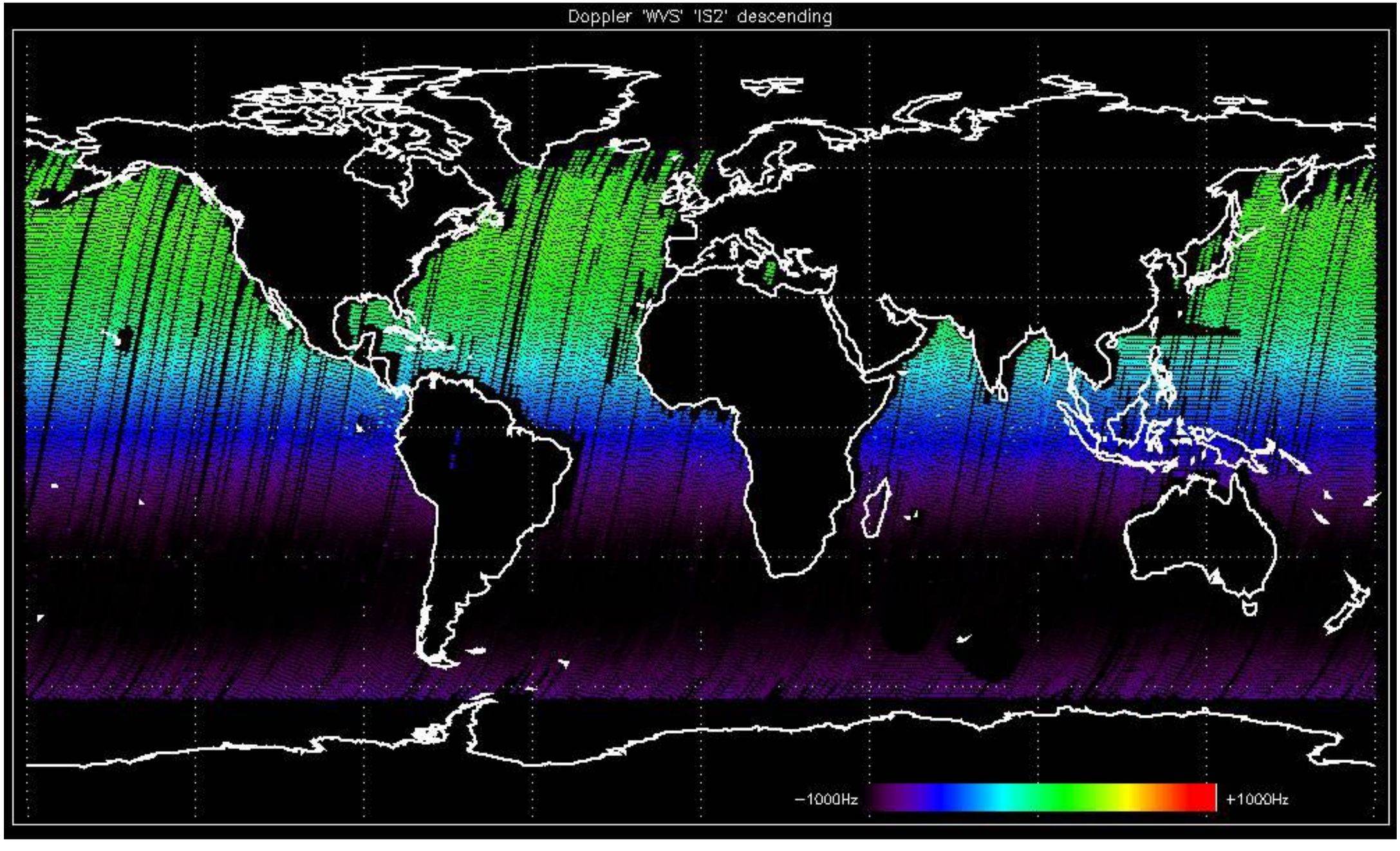
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

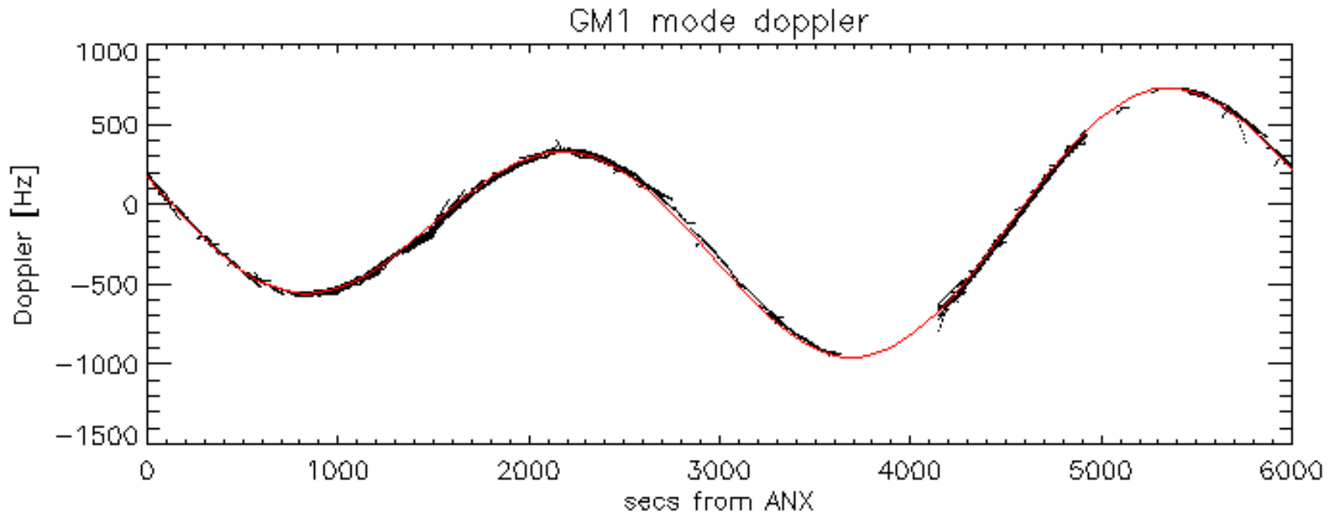
Preliminary report.The data is not yet controled

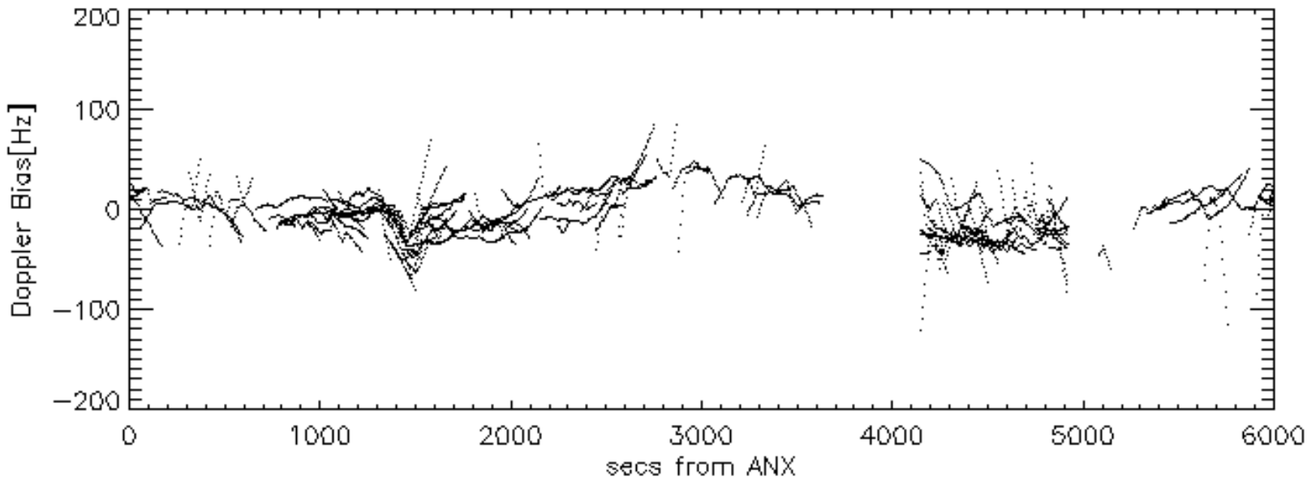

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

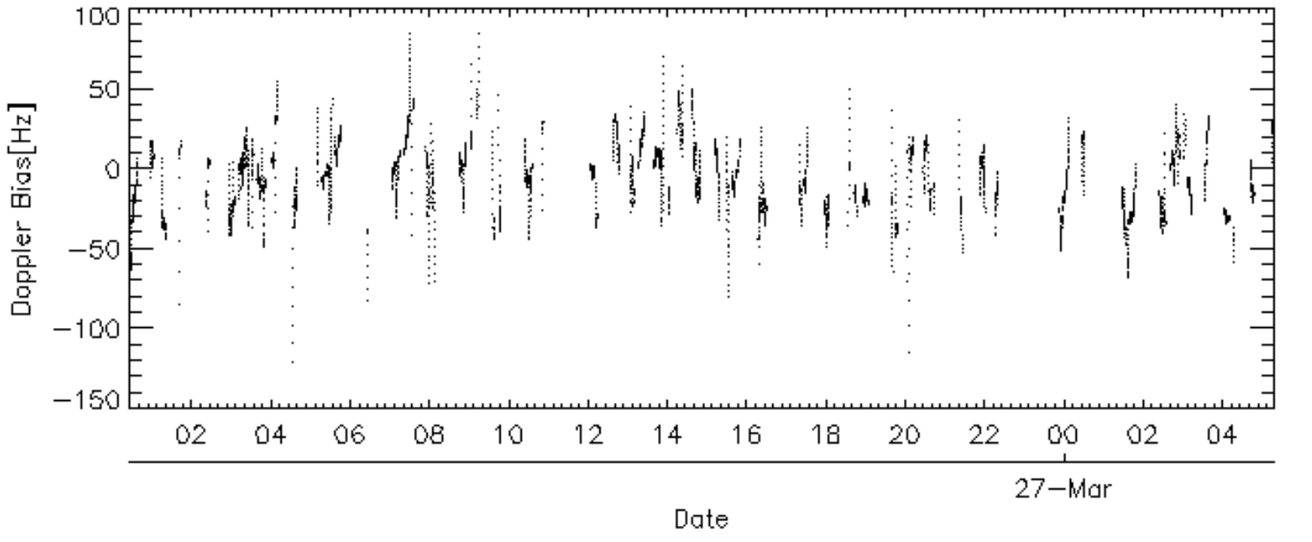

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

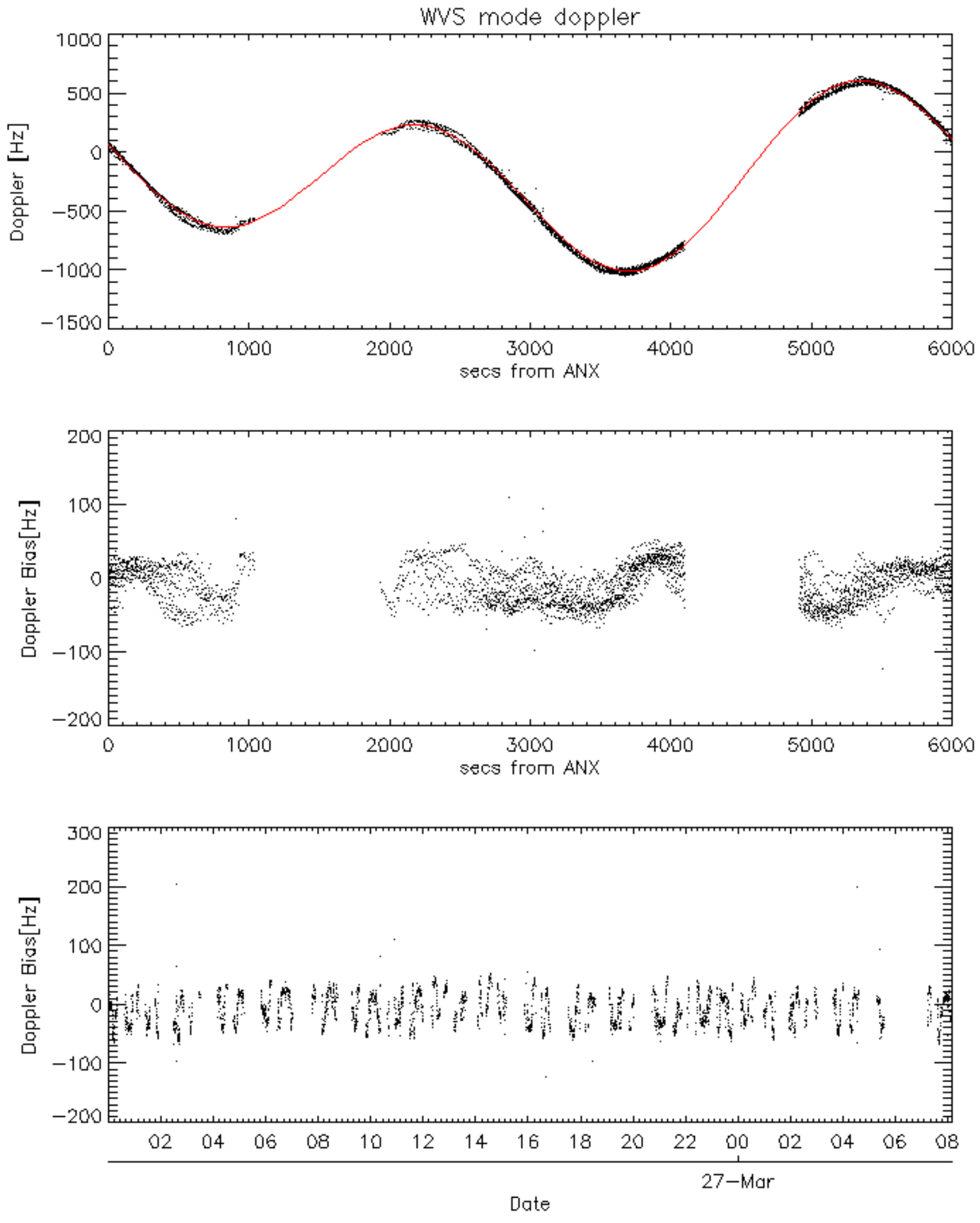

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

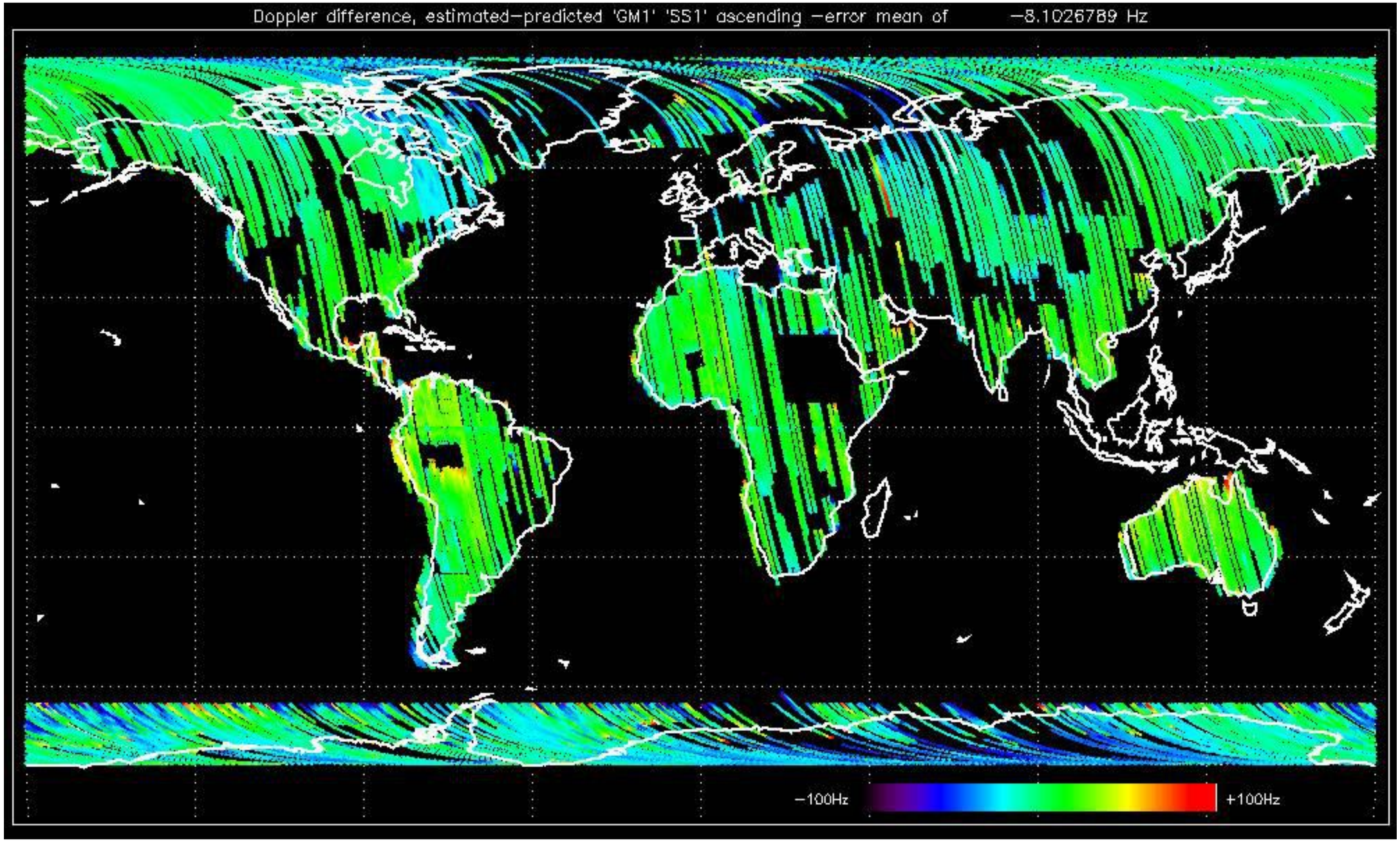

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

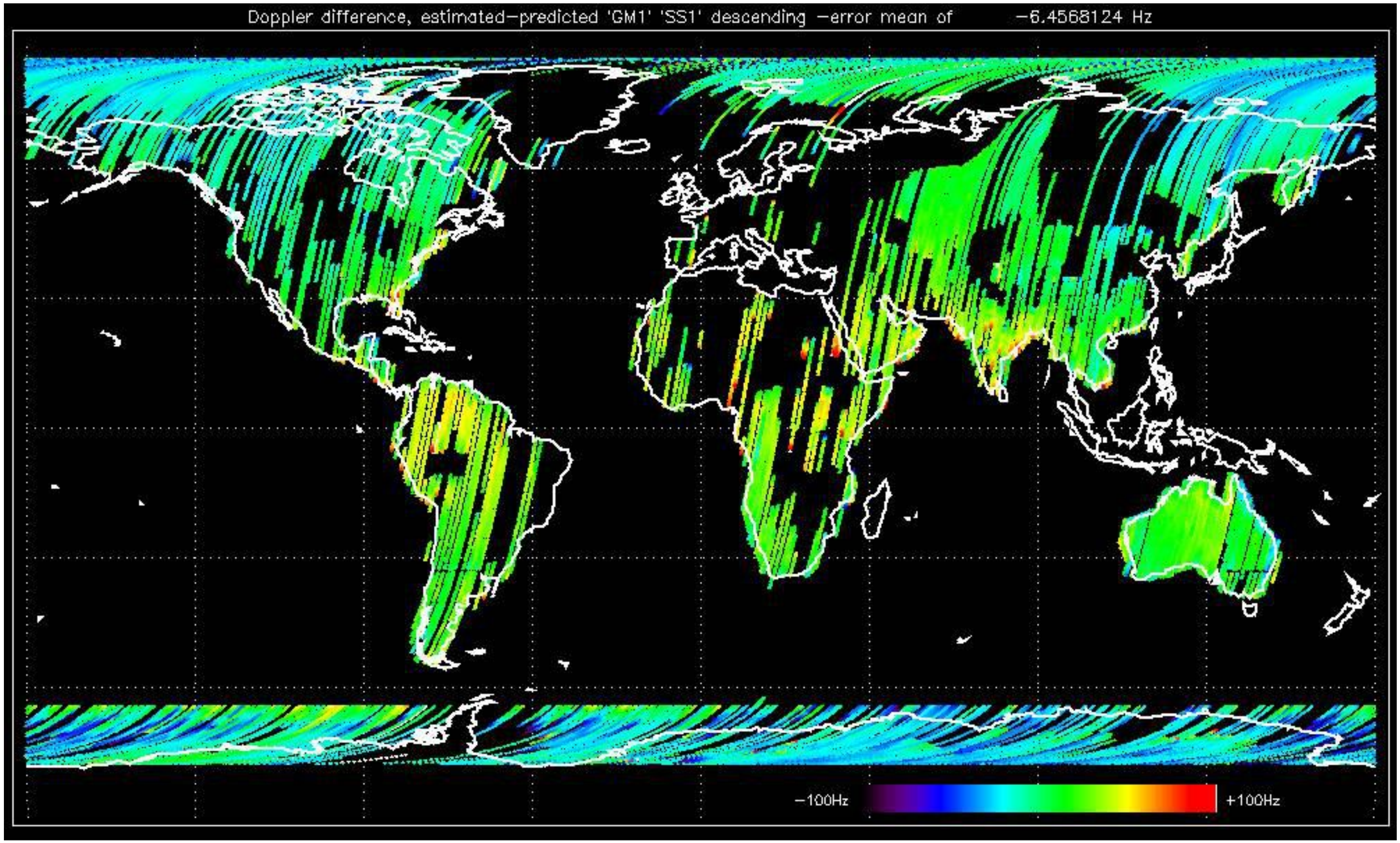

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

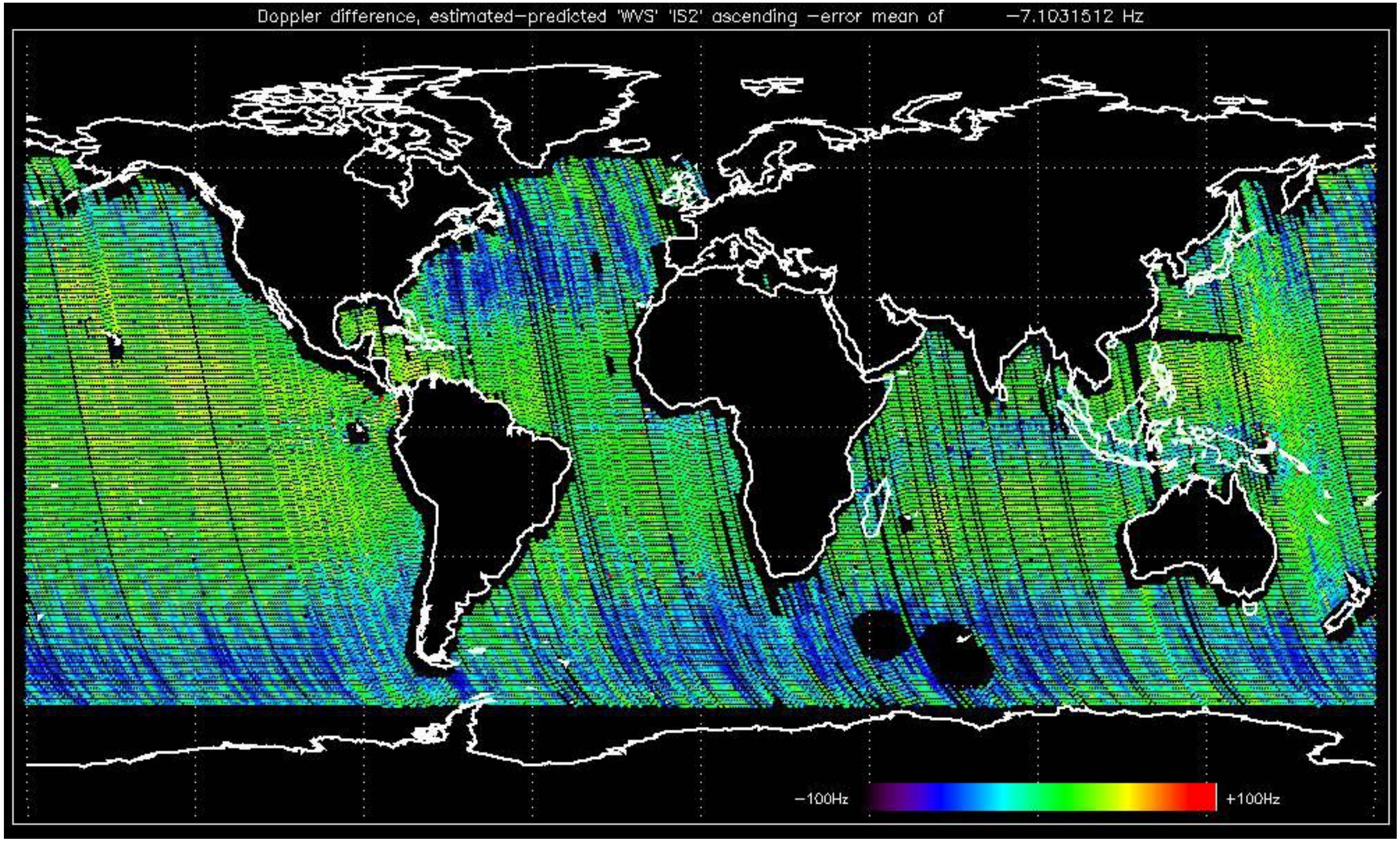

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

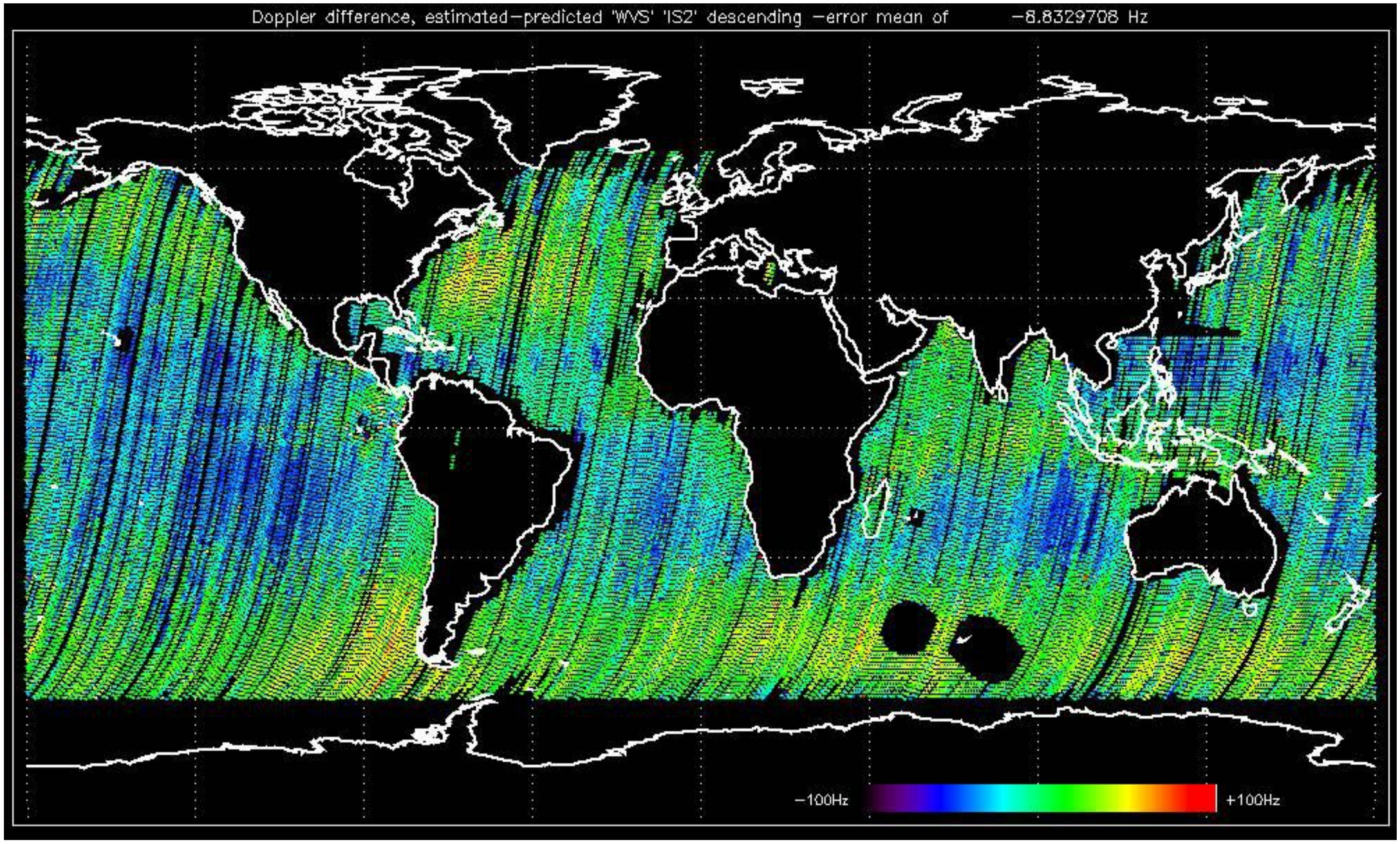

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
27−Mar
Date


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
27−Mar
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −8.1026789 Hz
−100Hz
+100Hz

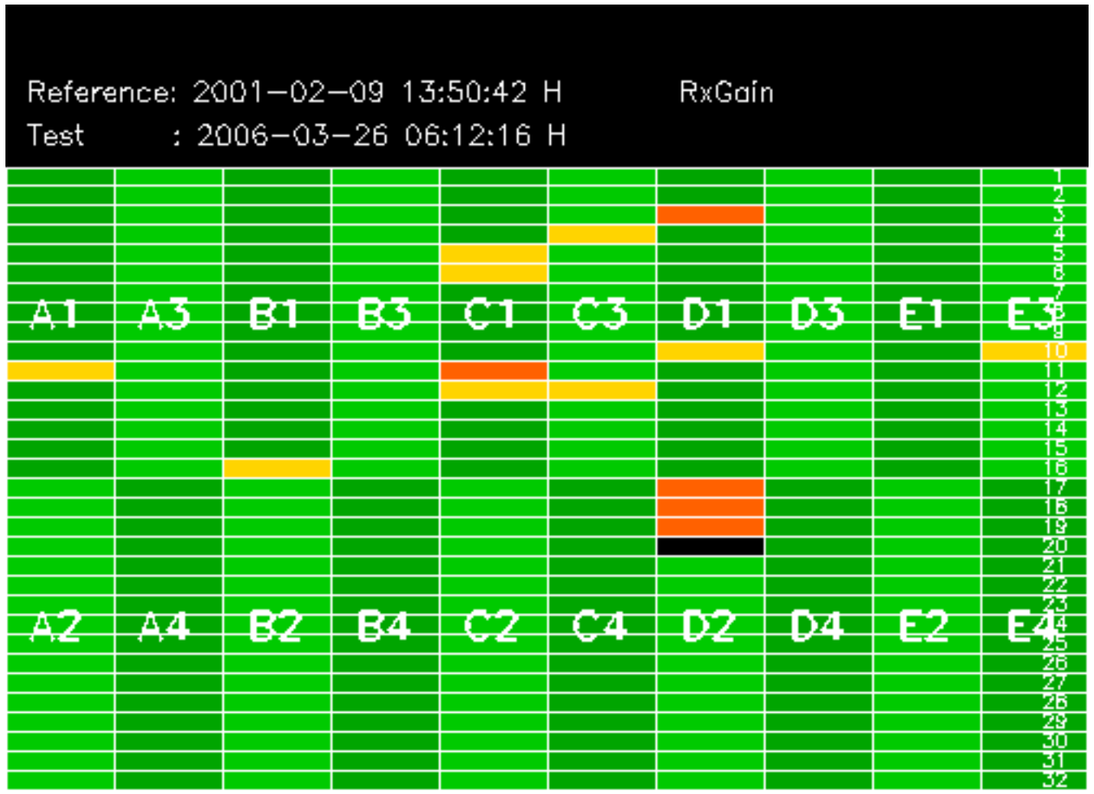

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −6.4568124 Hz
−100Hz
+100Hz

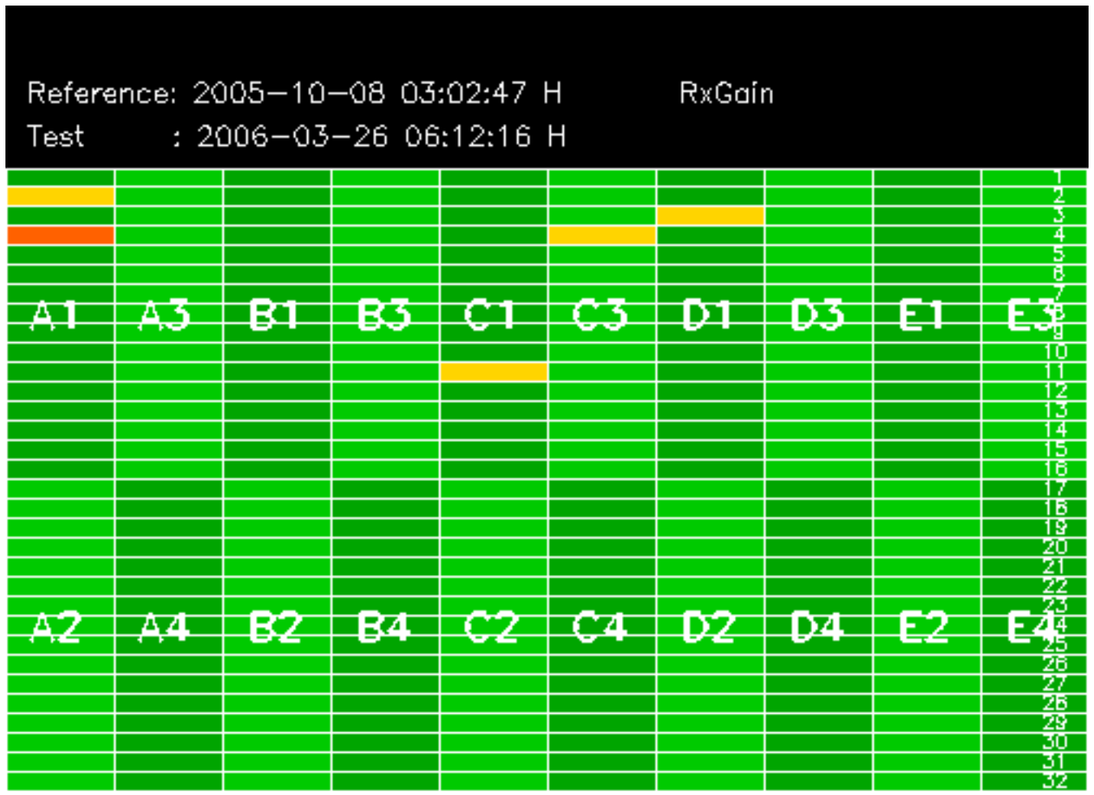

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −7.1031512 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −8.8329708 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-03-26 06:12:16 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-03-26 06:12:16 H
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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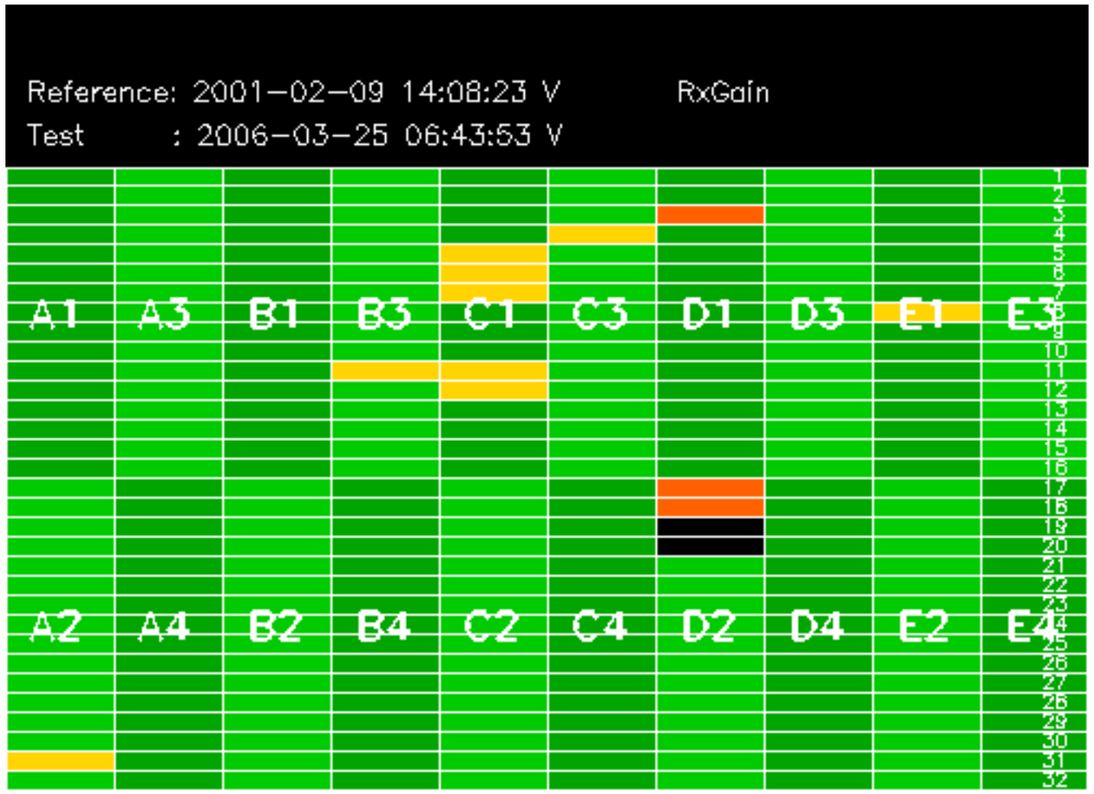
Reference: 2001-02-09 14:08:23 V
Test : 2006-03-25 06:43:53 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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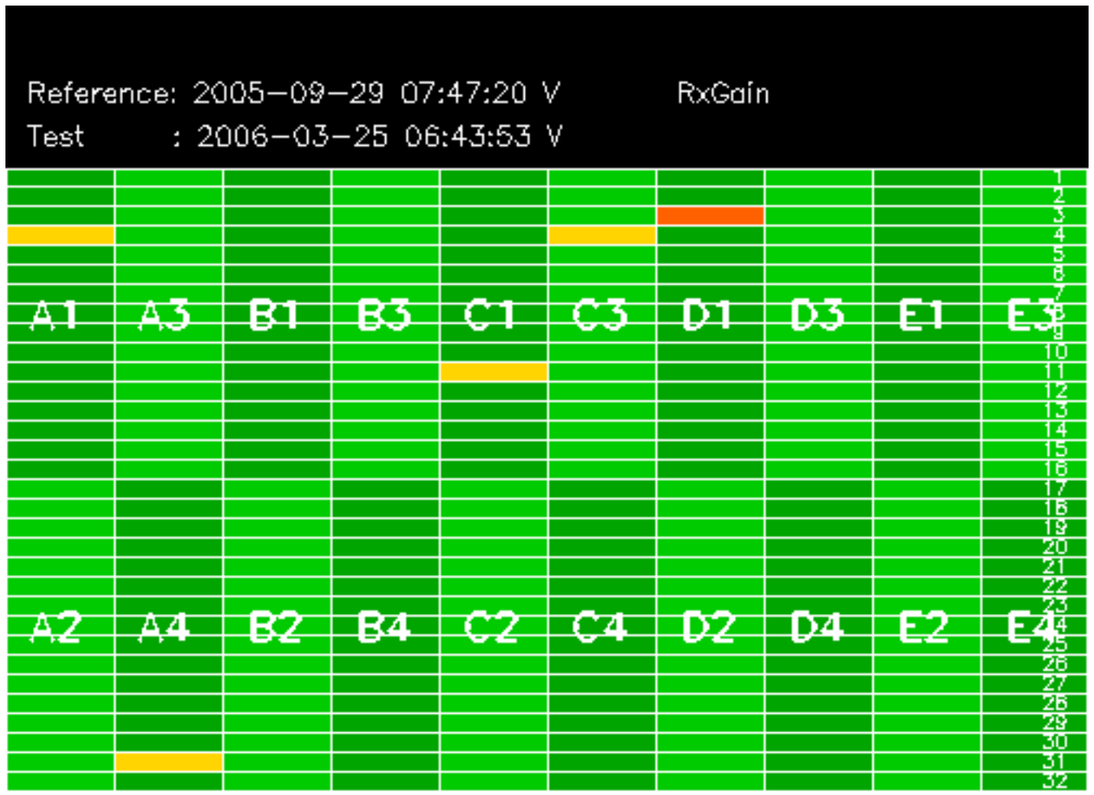
Reference: 2005-09-29 07:47:20 V
Test : 2006-03-25 06:43:53 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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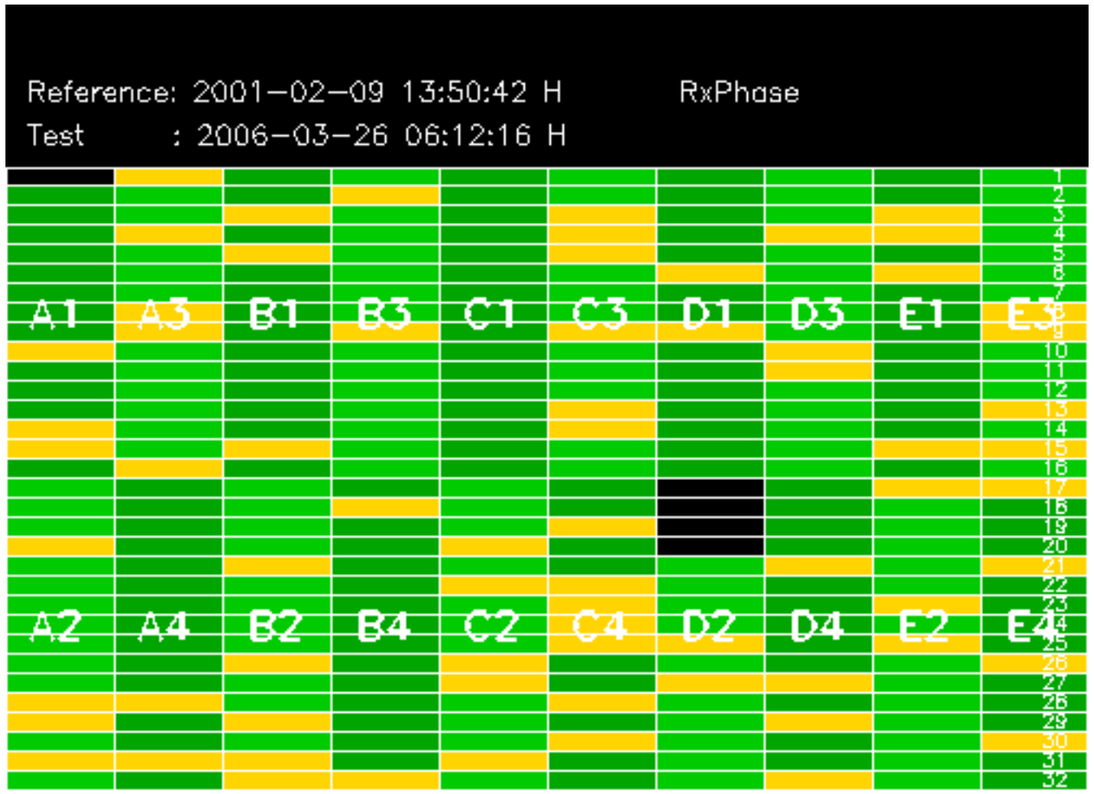
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-03-26 06:12:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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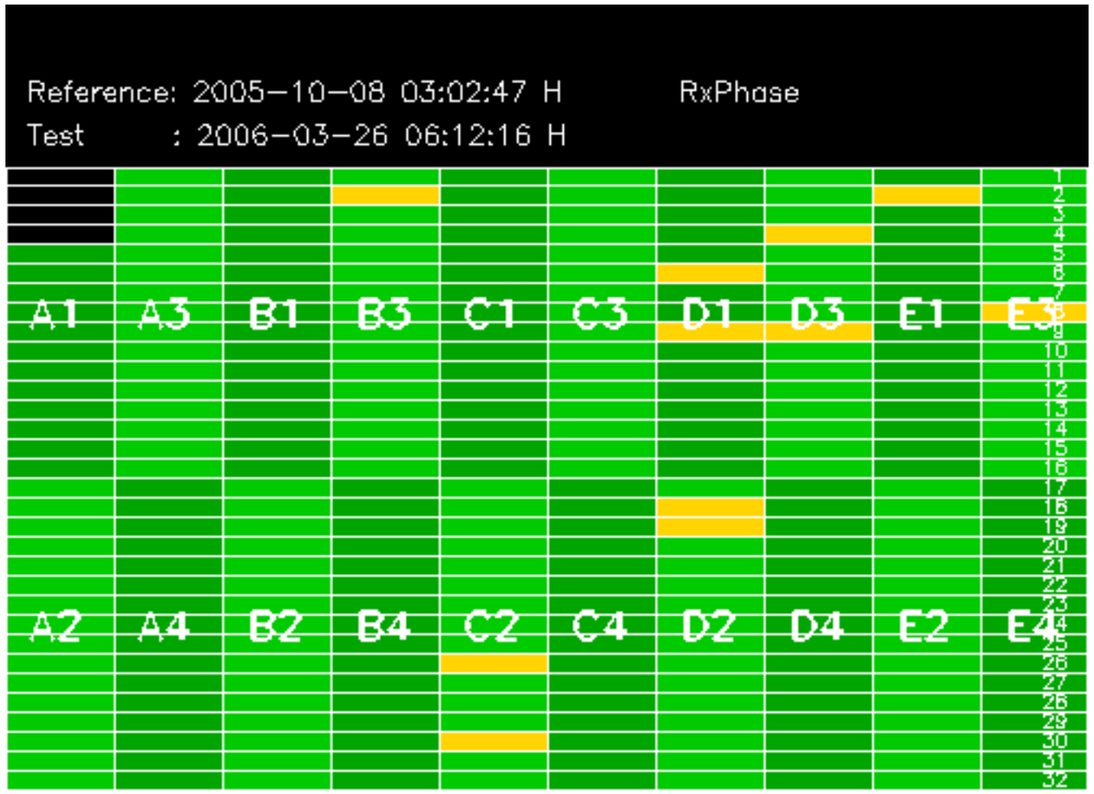
Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-03-26 06:12:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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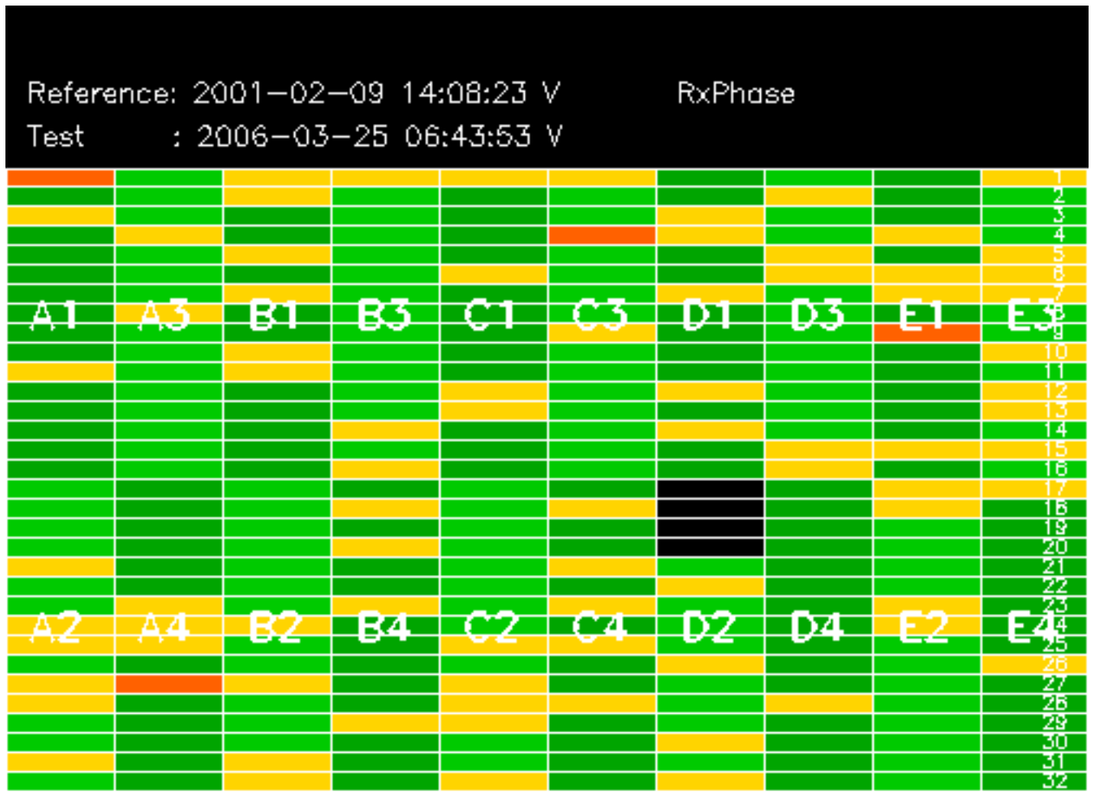
Reference: 2001-02-09 14:08:23 V
Test : 2006-03-25 06:43:53 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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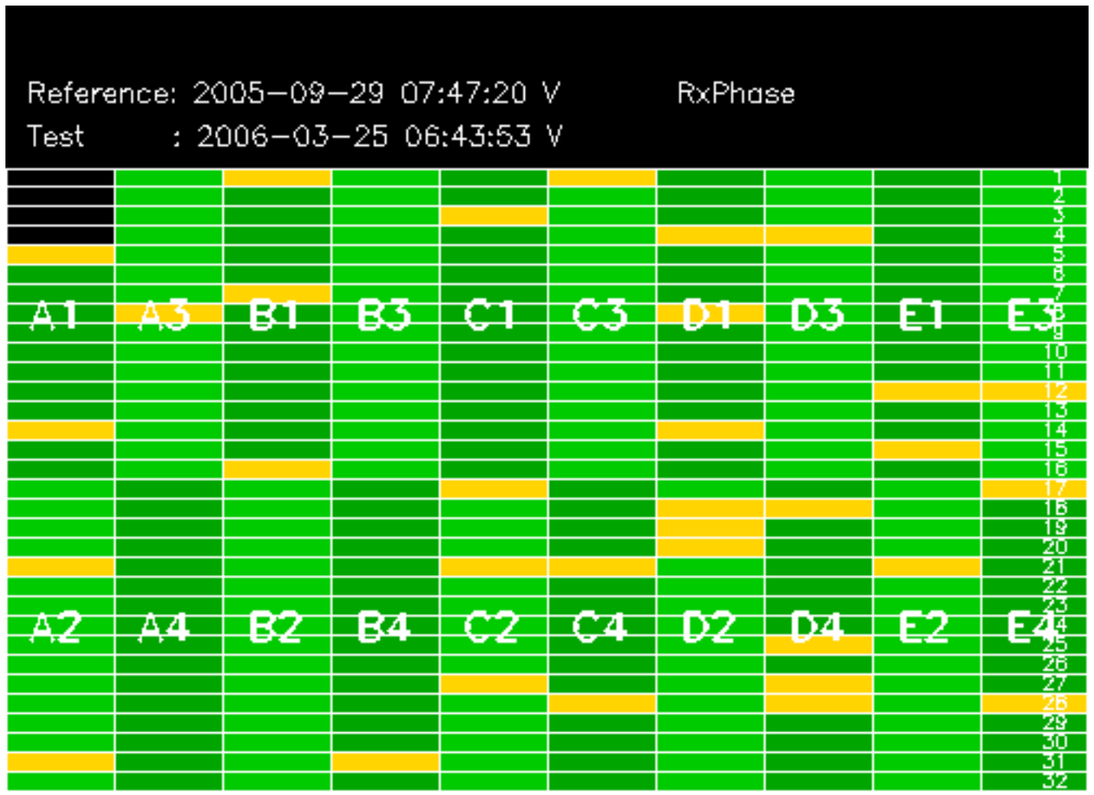
Reference: 2005-09-29 07:47:20 V
Test : 2006-03-25 06:43:53 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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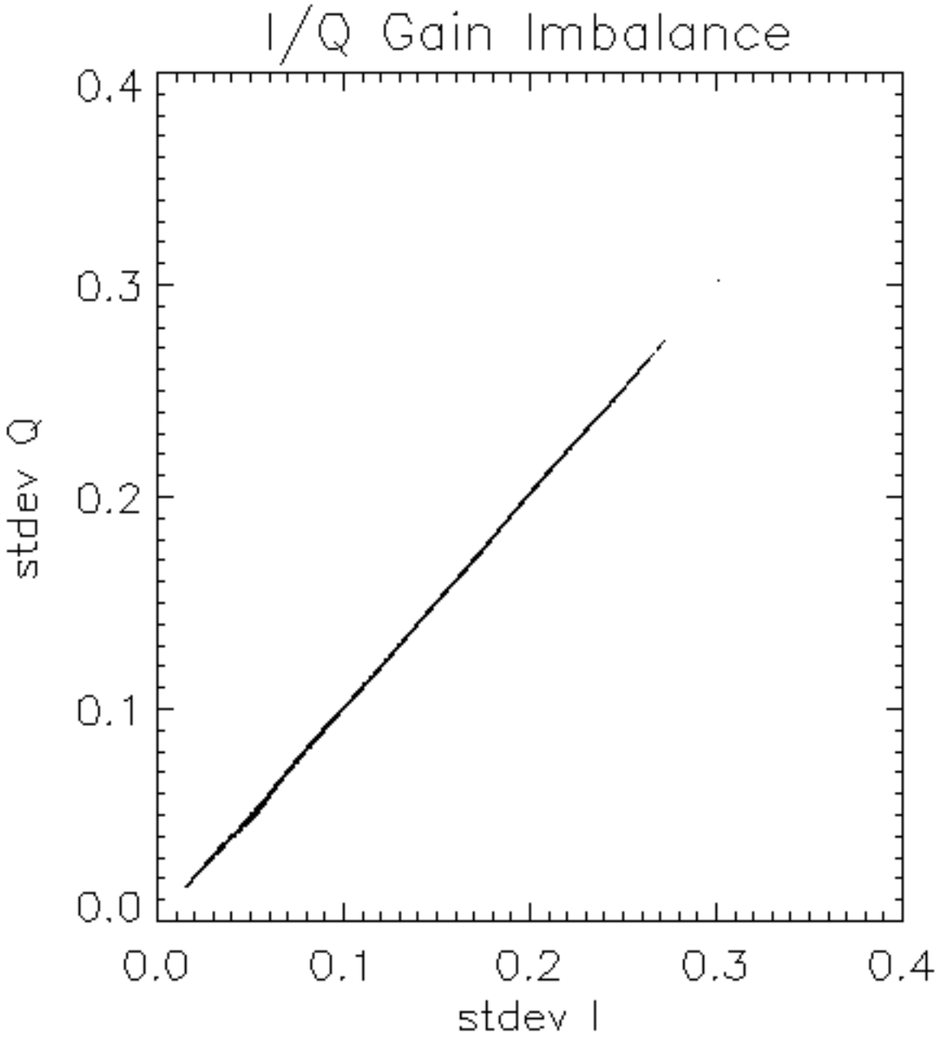
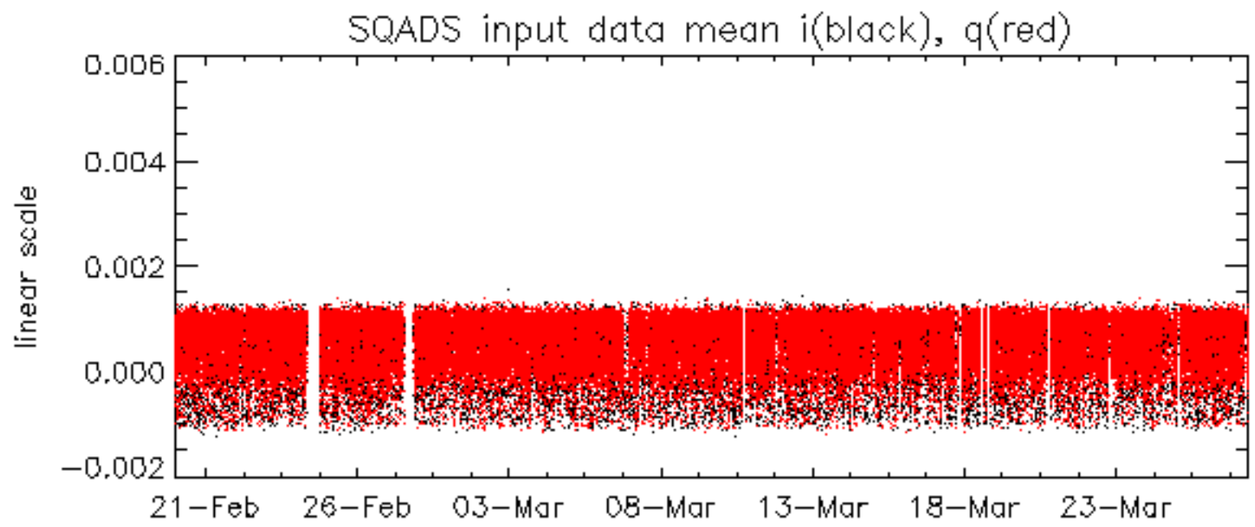
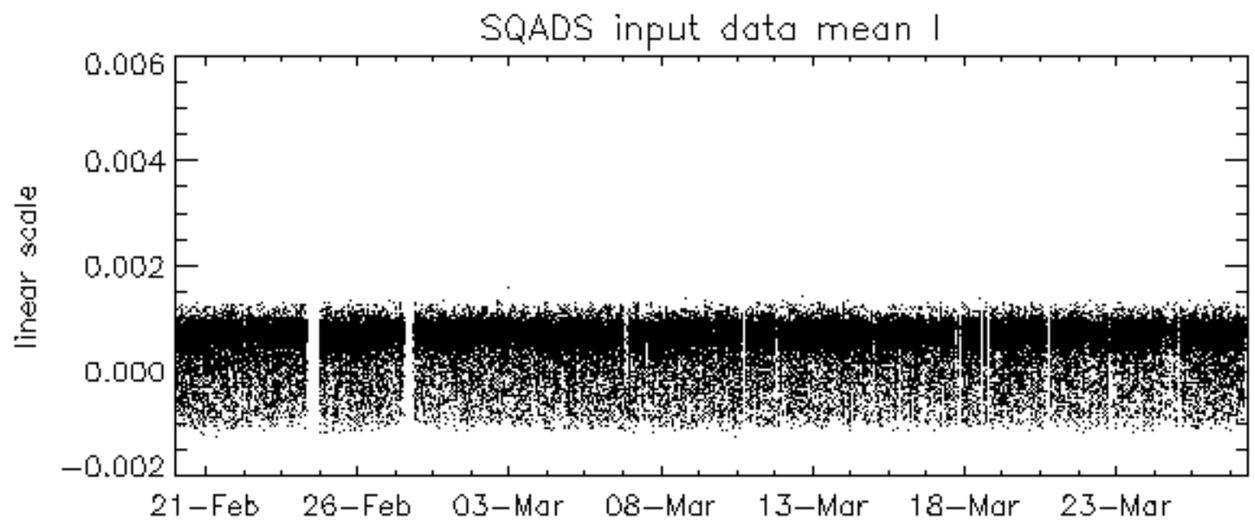
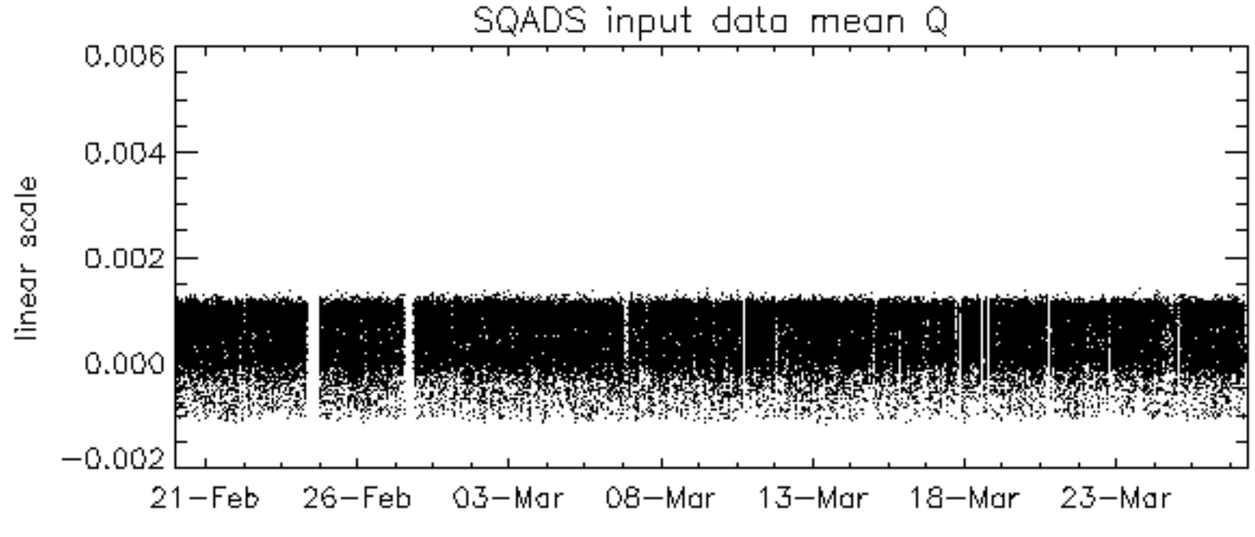
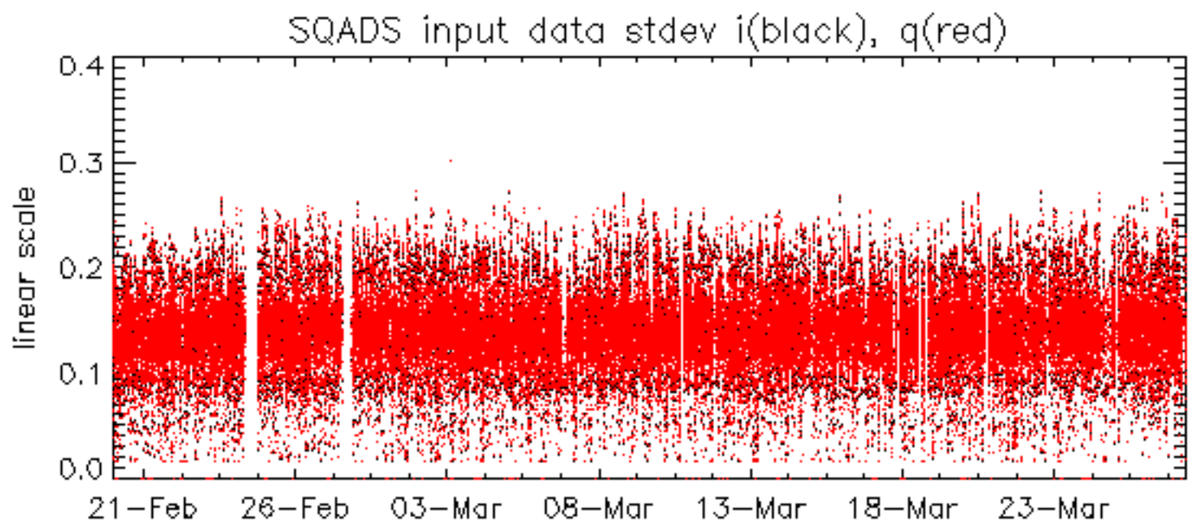
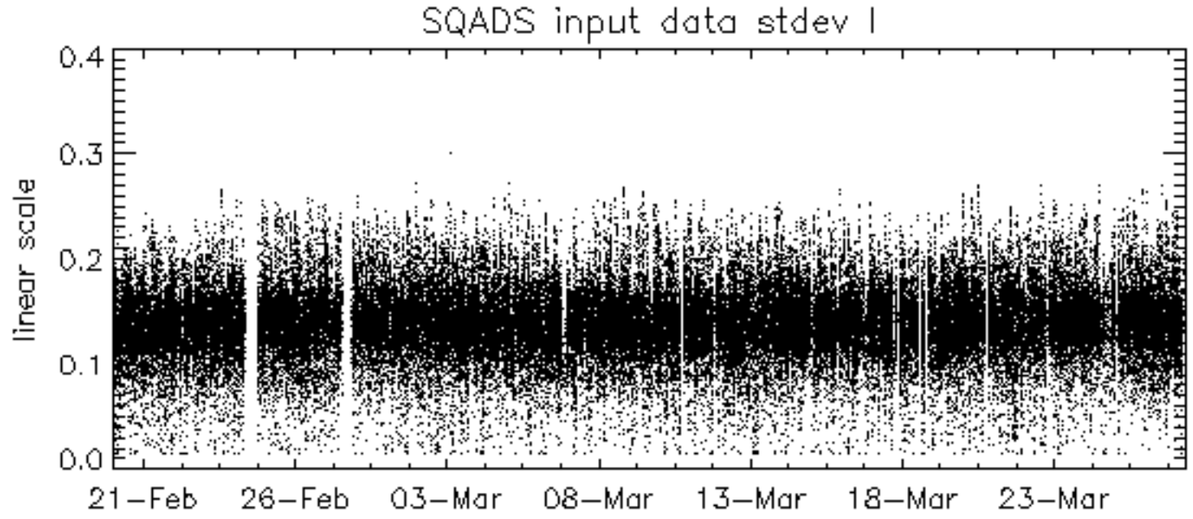

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

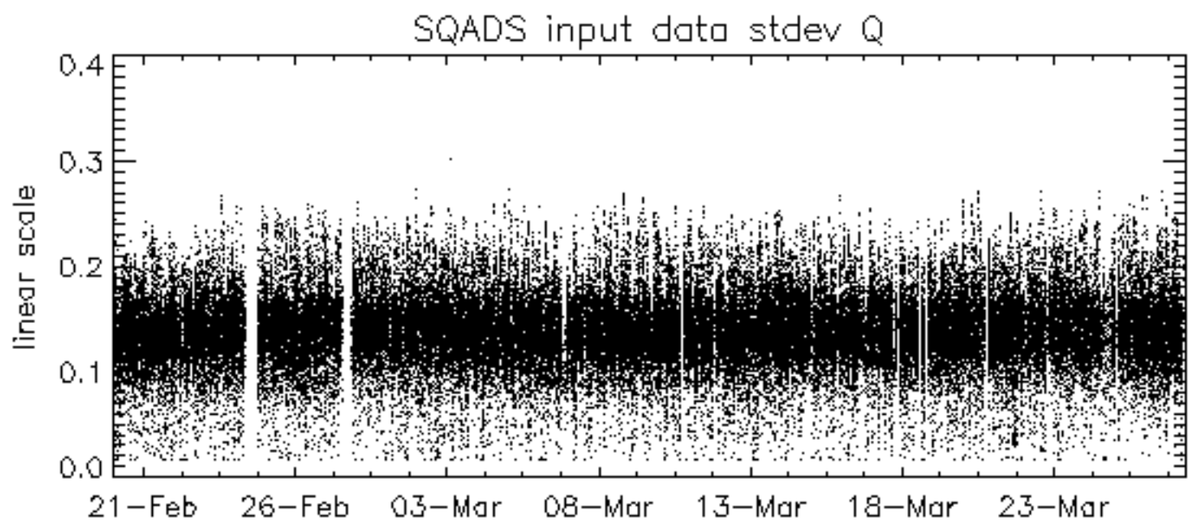

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar

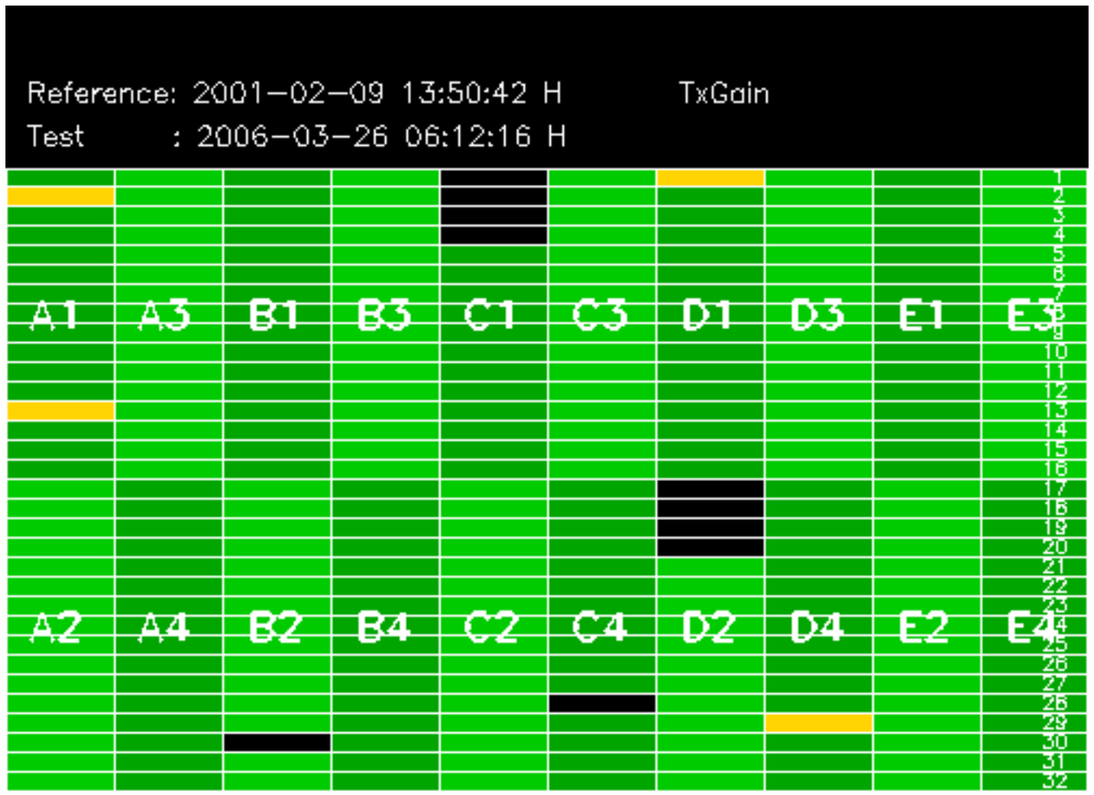

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21−Feb
26−Feb
03−Mar
08−Mar
13−Mar
18−Mar
23−Mar


Reference: 2001-02-09 13:50:42 H
Test : 2006-03-26 06:12:16 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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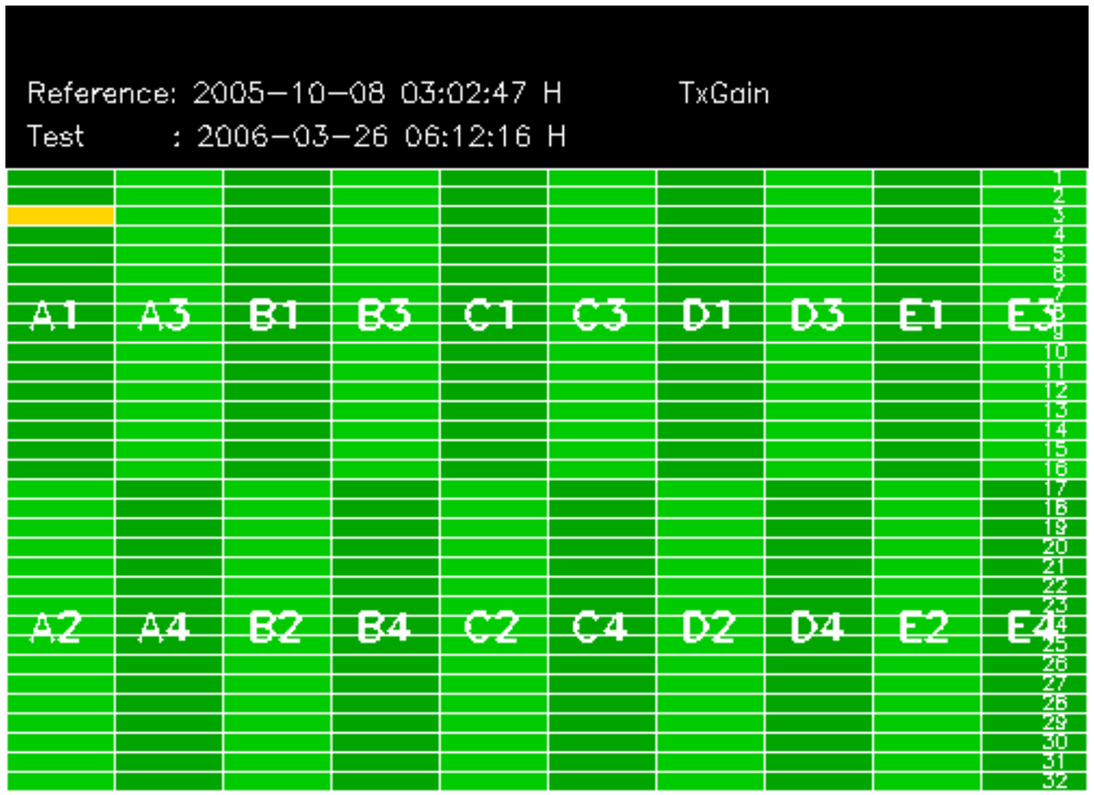
Reference: 2005-10-08 03:02:47 H
Test : 2006-03-26 06:12:16 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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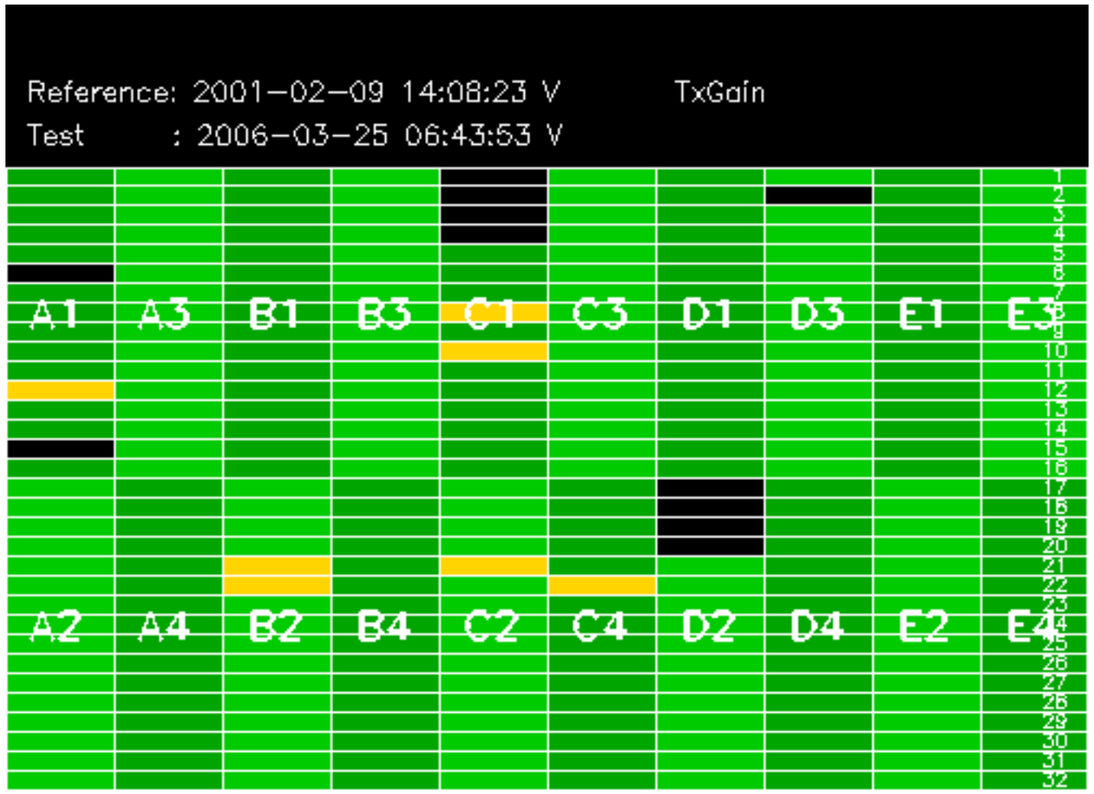
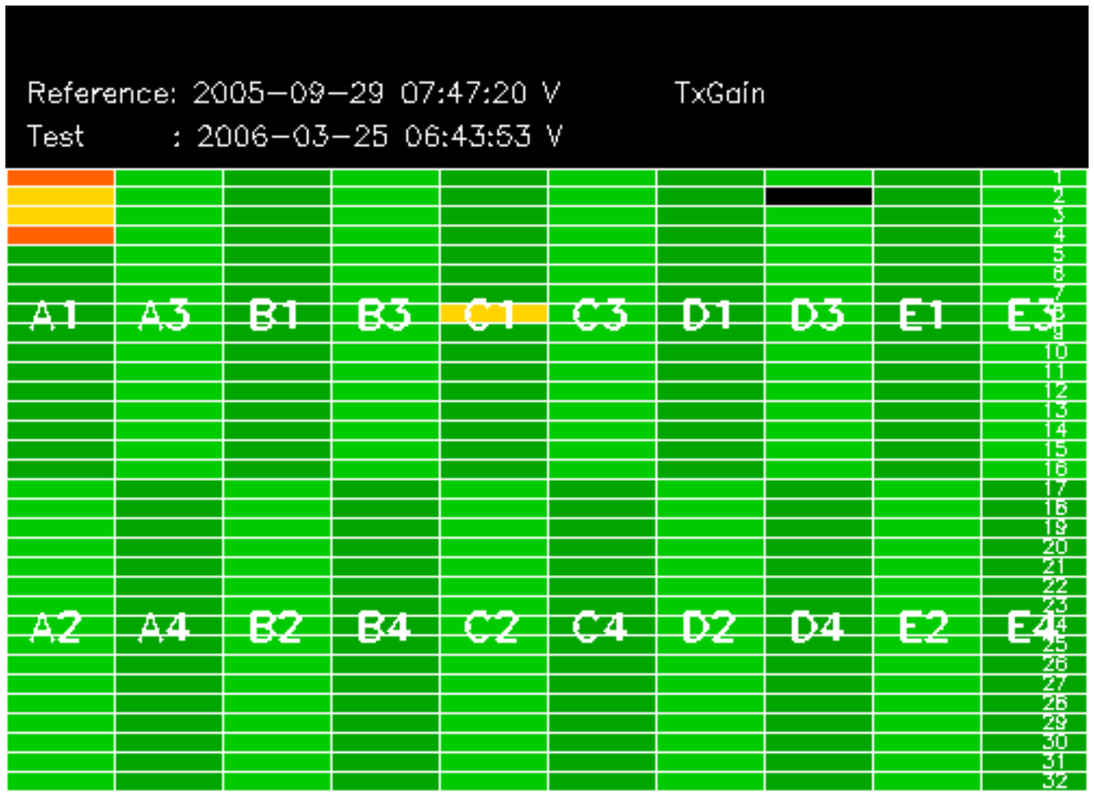

Reference: 2001-02-09 14:08:23 V
Test : 2006-03-25 06:43:53 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-03-25 06:43:53 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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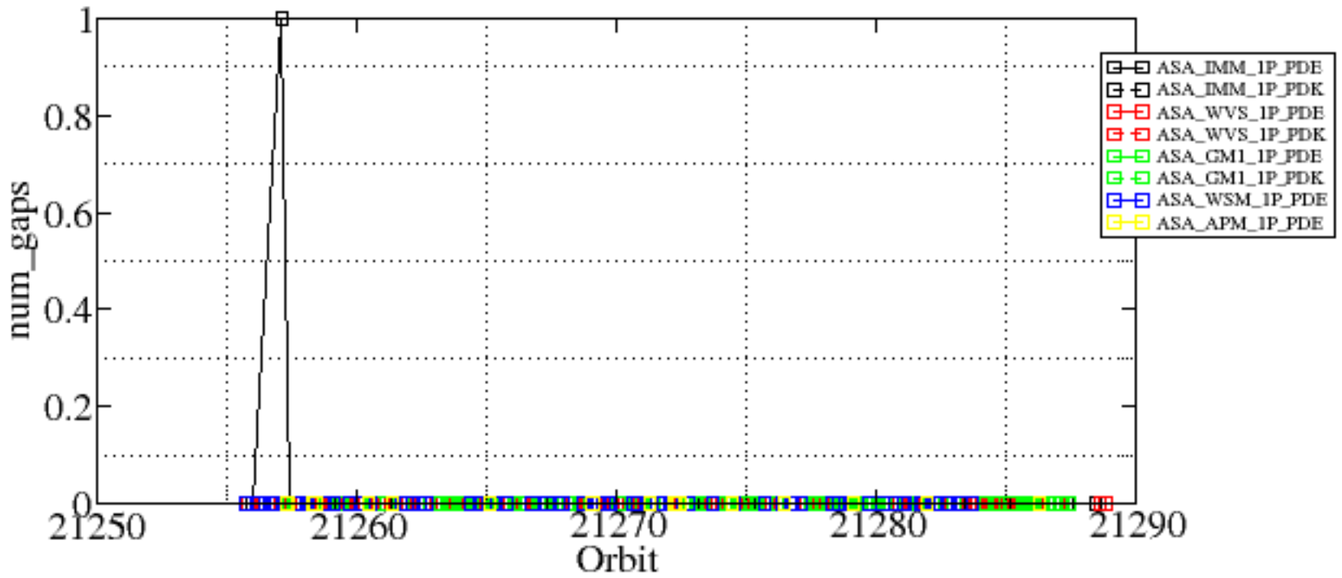
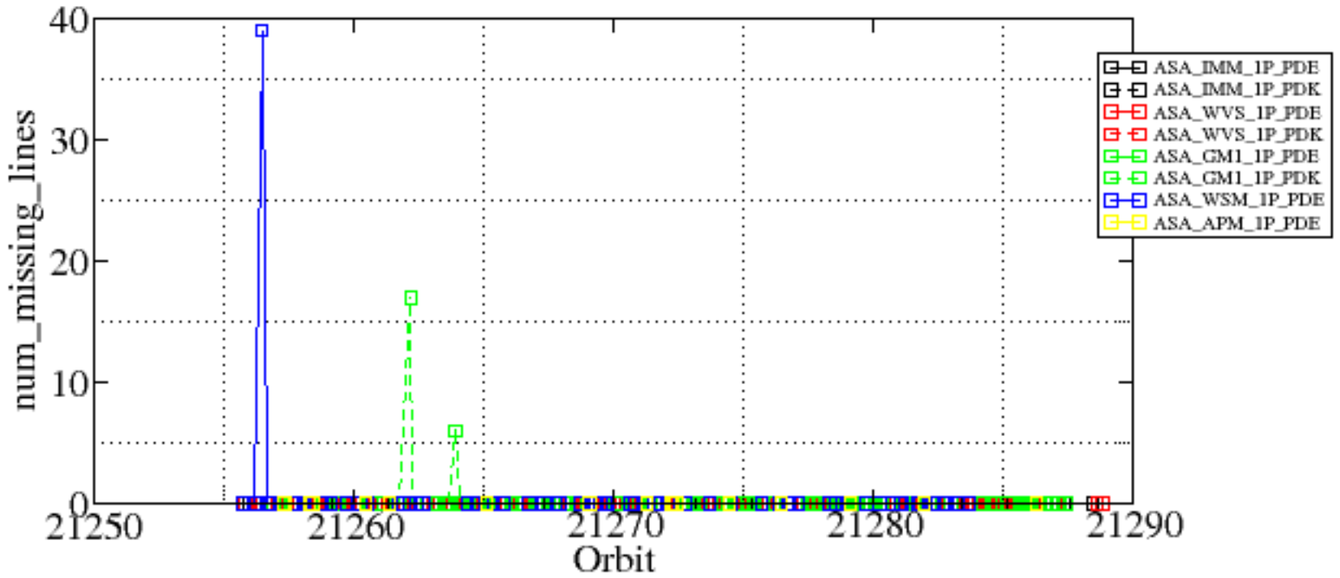
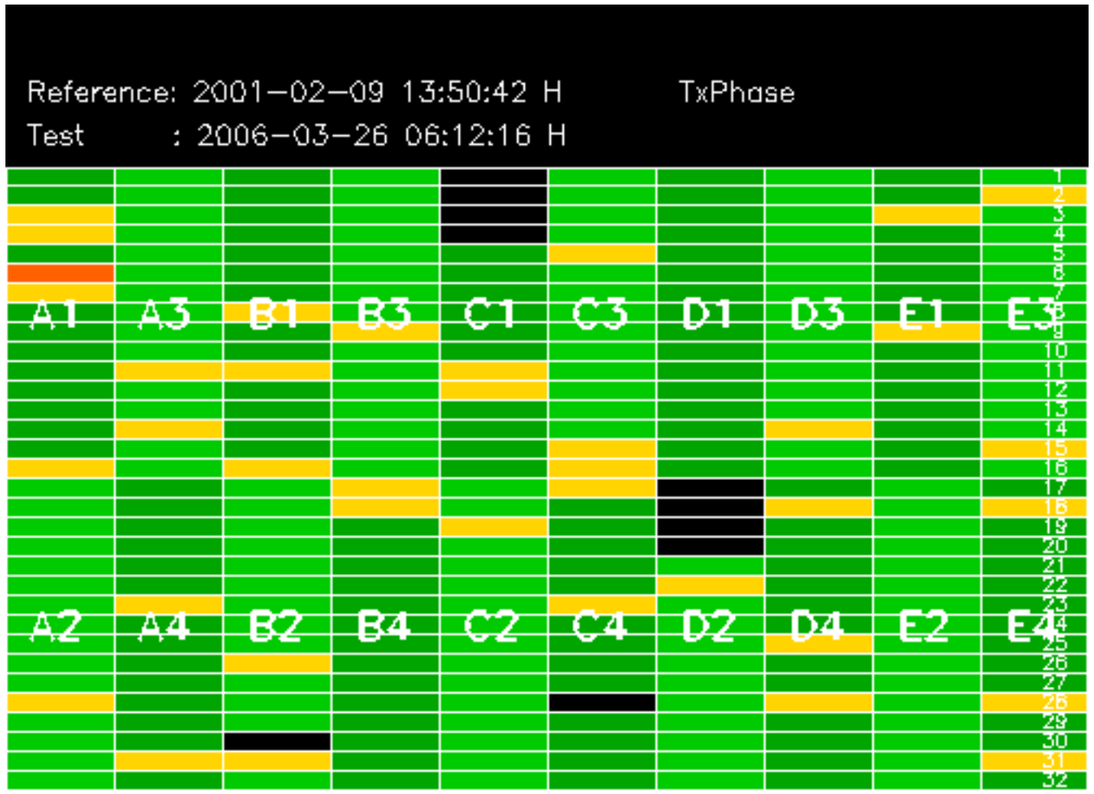
Summary of analysis for the last 3 days 2006032[567]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20060325_022726_000000692046_00161_21257_1486.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20060325_105812_000005072046_00166_21262_0859.N1 </td> <td>0 </td> <td>17 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20060325_134937_000003502046_00167_21263_0870.N1 </td> <td>0 </td> <td>6 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060325_012047_000001282046_00160_21256_2418.N1 </td> <td>0 </td> <td>39 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
21250
21260
21270
21280
21290
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_APM_1P_PDE


num_missing_lines
40
30
20
10
0
21250
21260
21270
21280
21290
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_APM_1P_PDE


Reference: 2001-02-09 13:50:42 H
Test : 2006-03-26 06:12:16 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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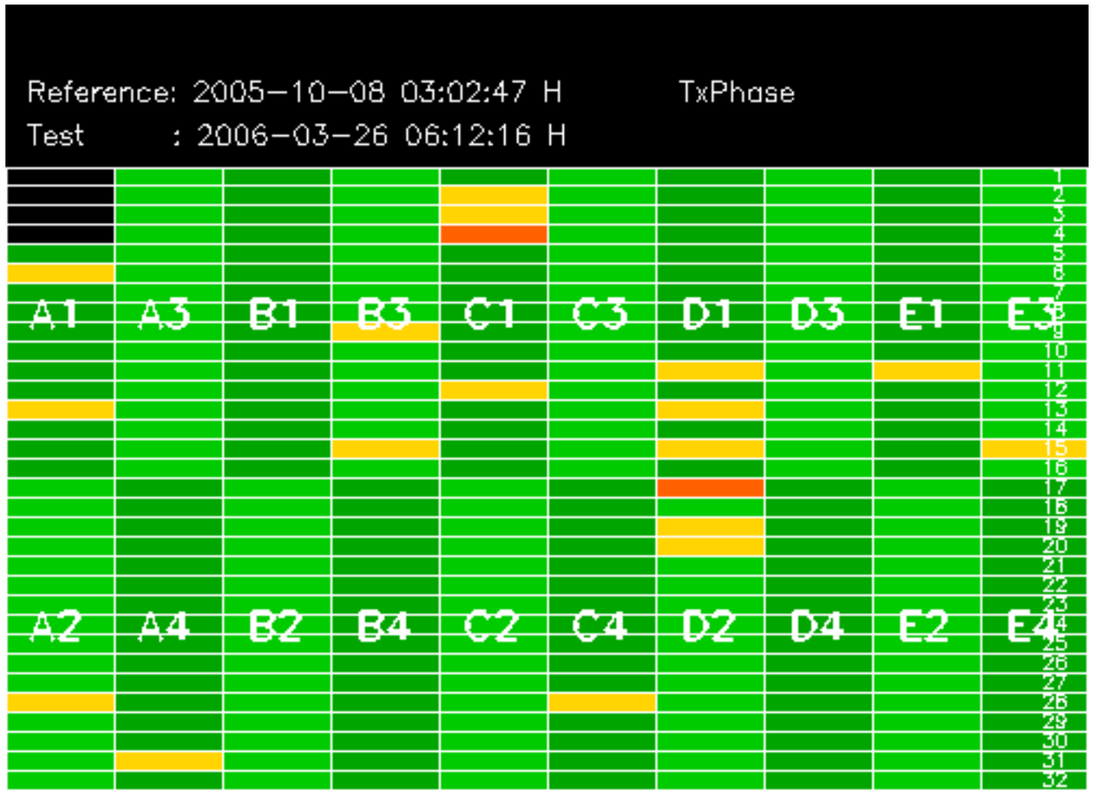
Reference: 2005-10-08 03:02:47 H
Test : 2006-03-26 06:12:16 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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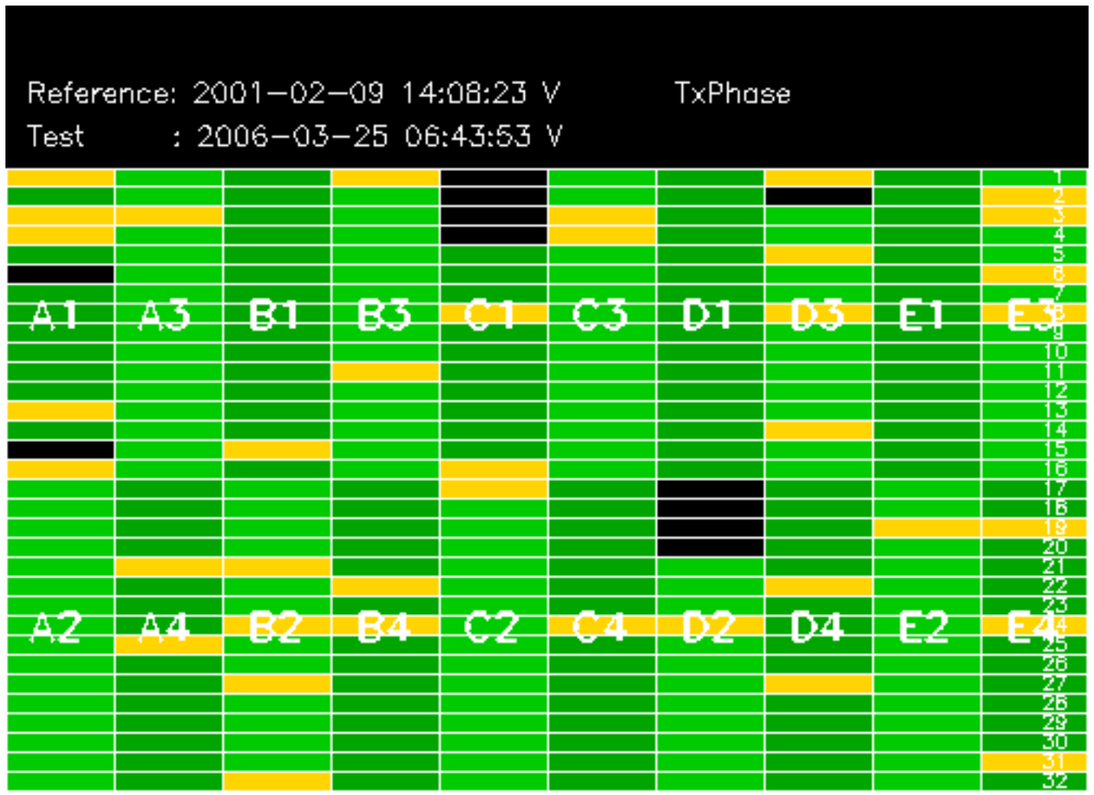
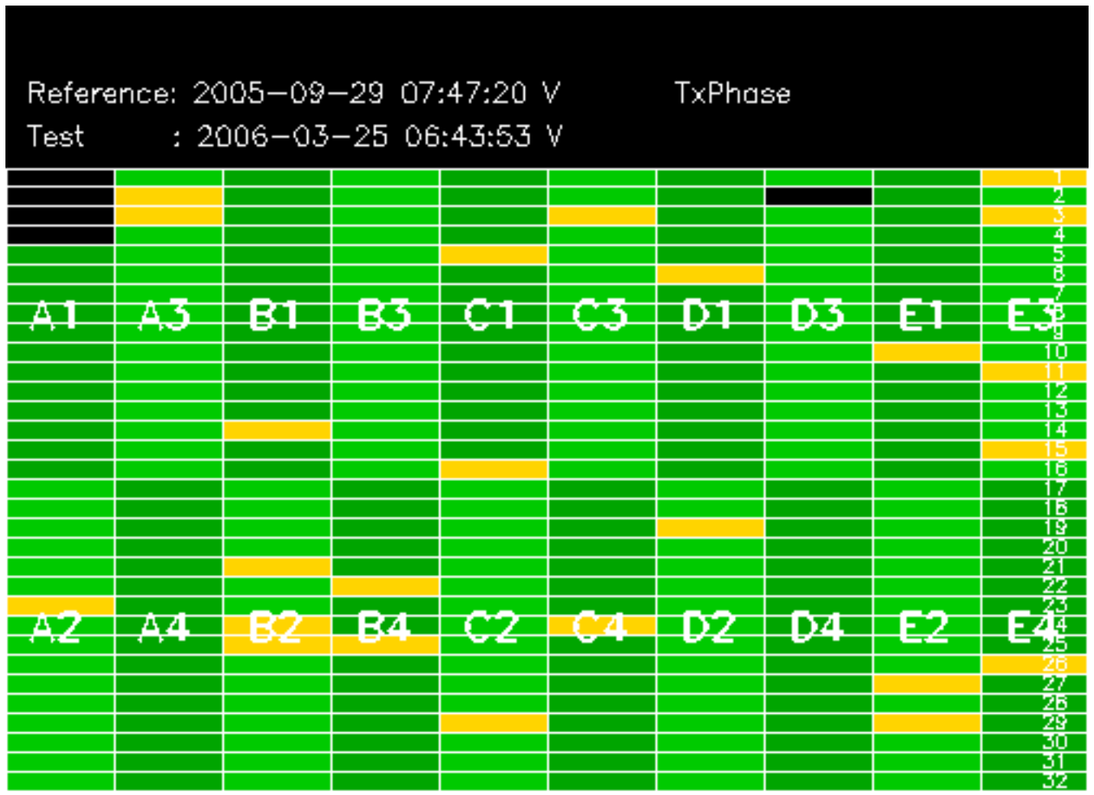

Reference: 2001-02-09 14:08:23 V
Test : 2006-03-25 06:43:53 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-03-25 06:43:53 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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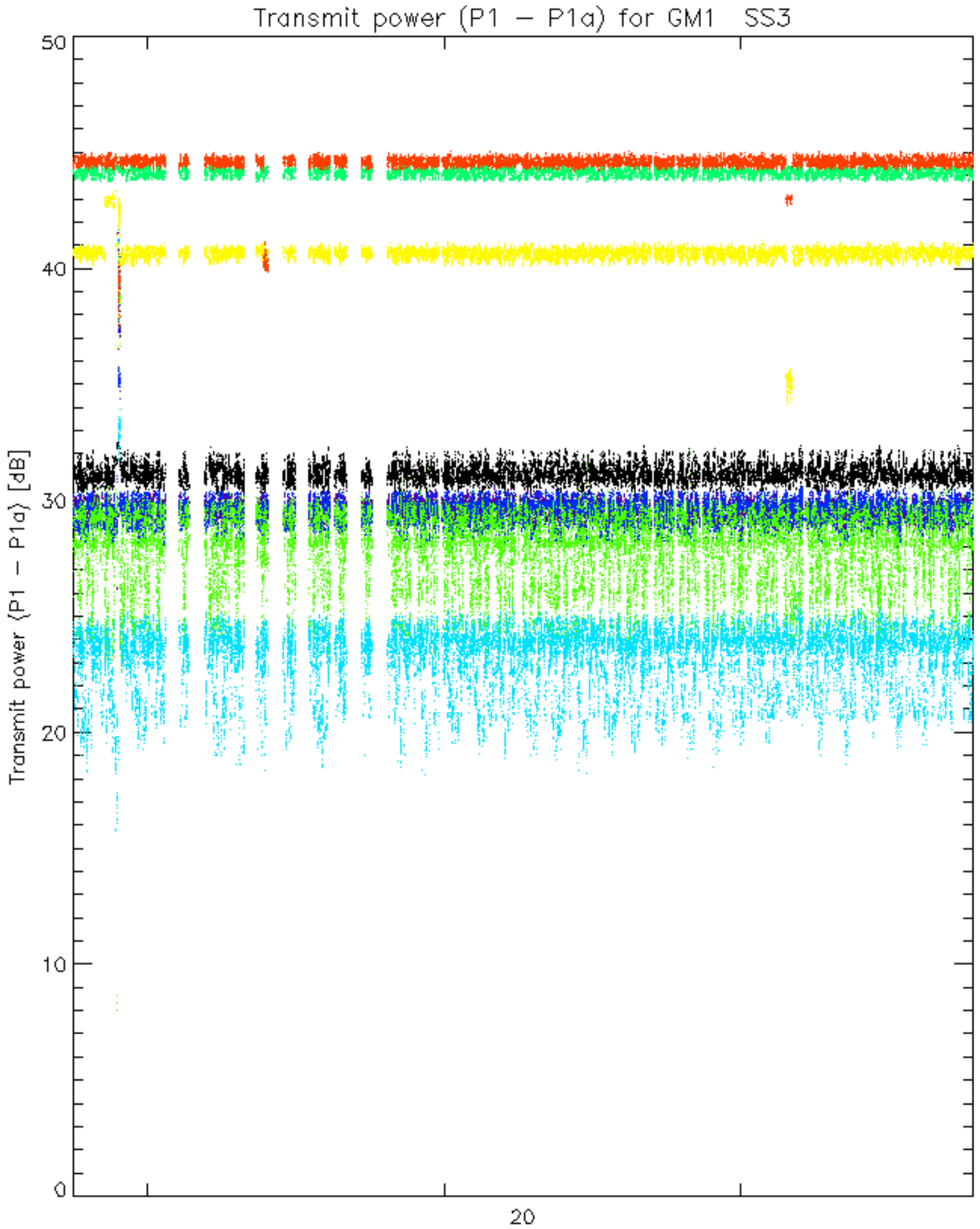
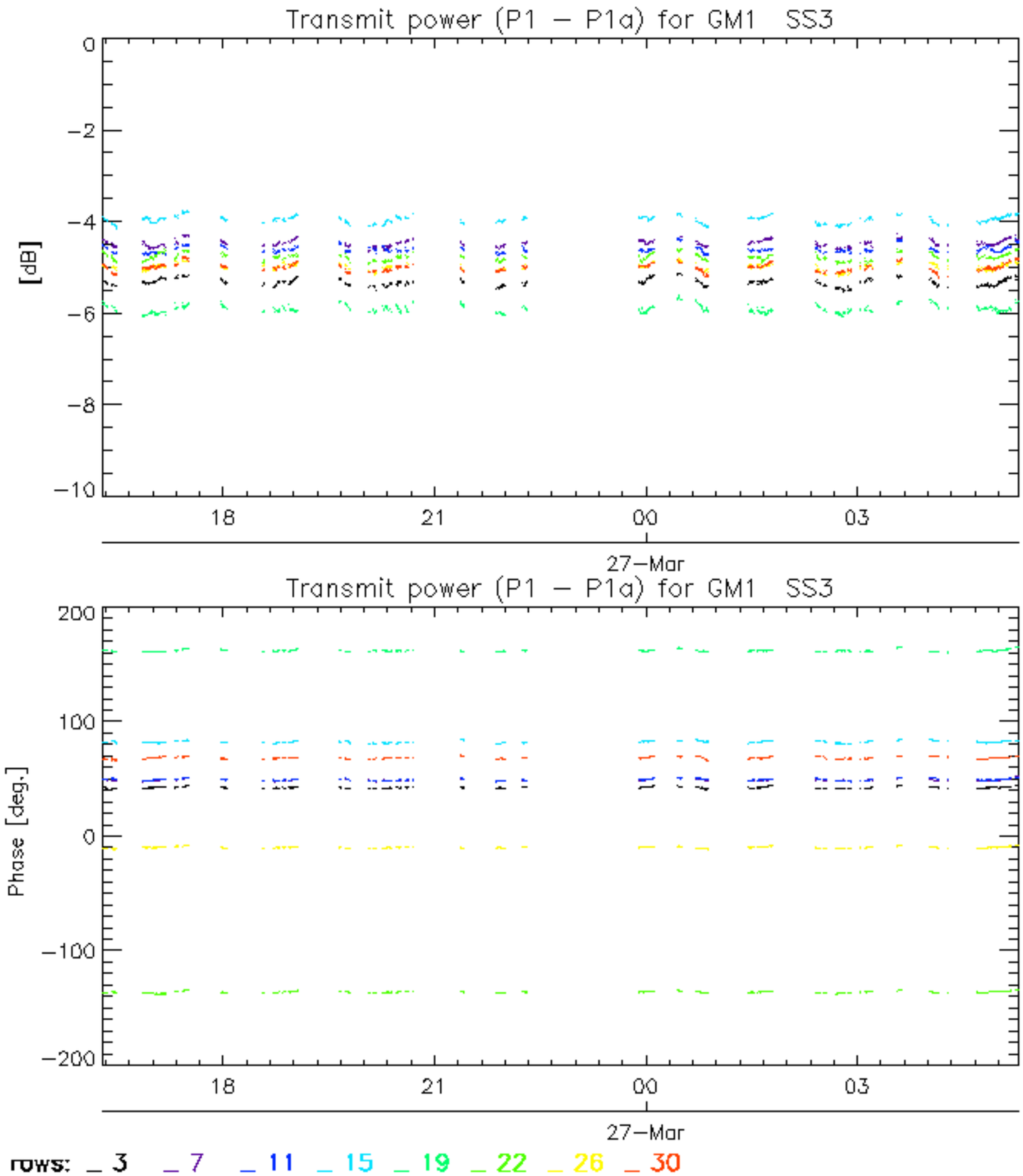
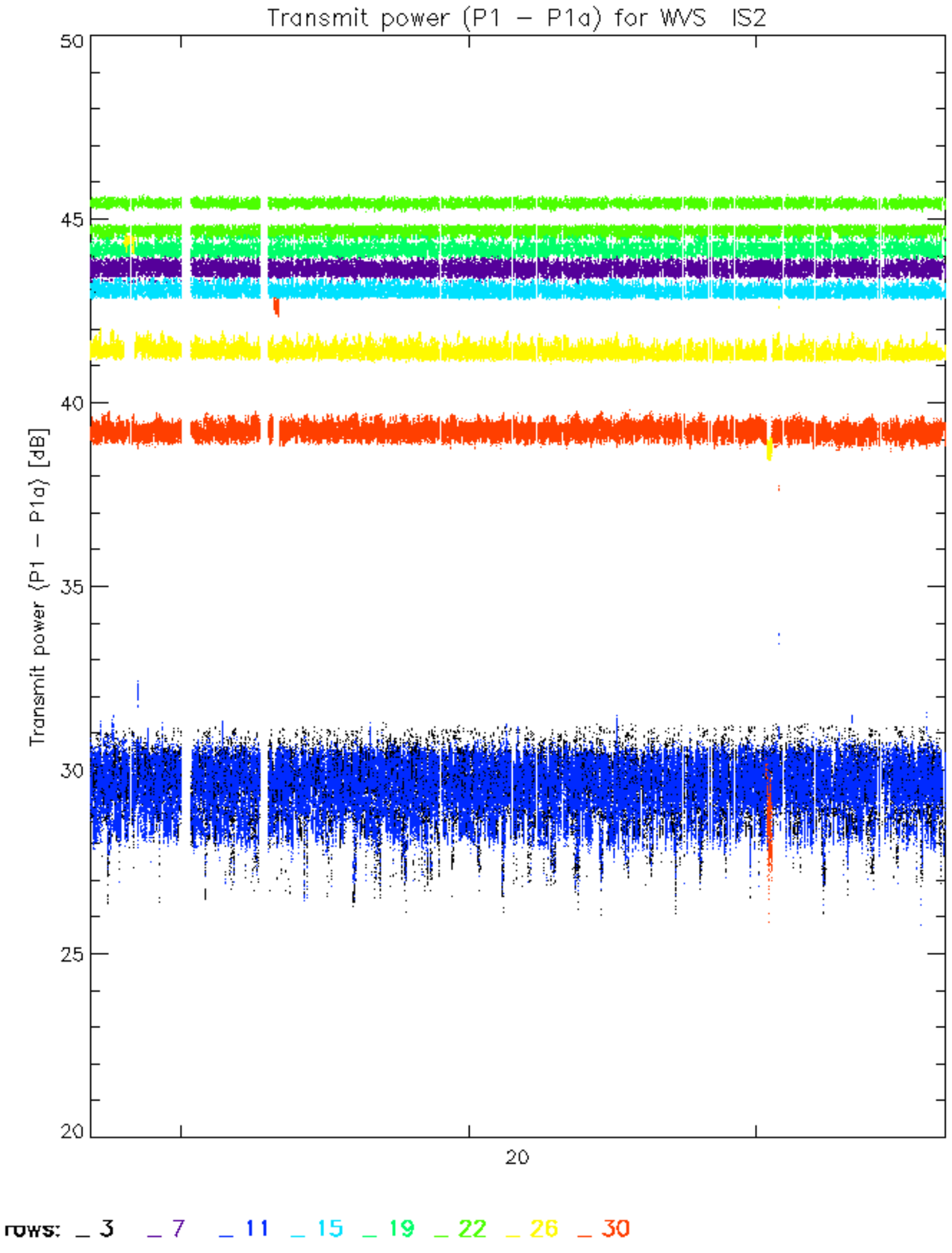
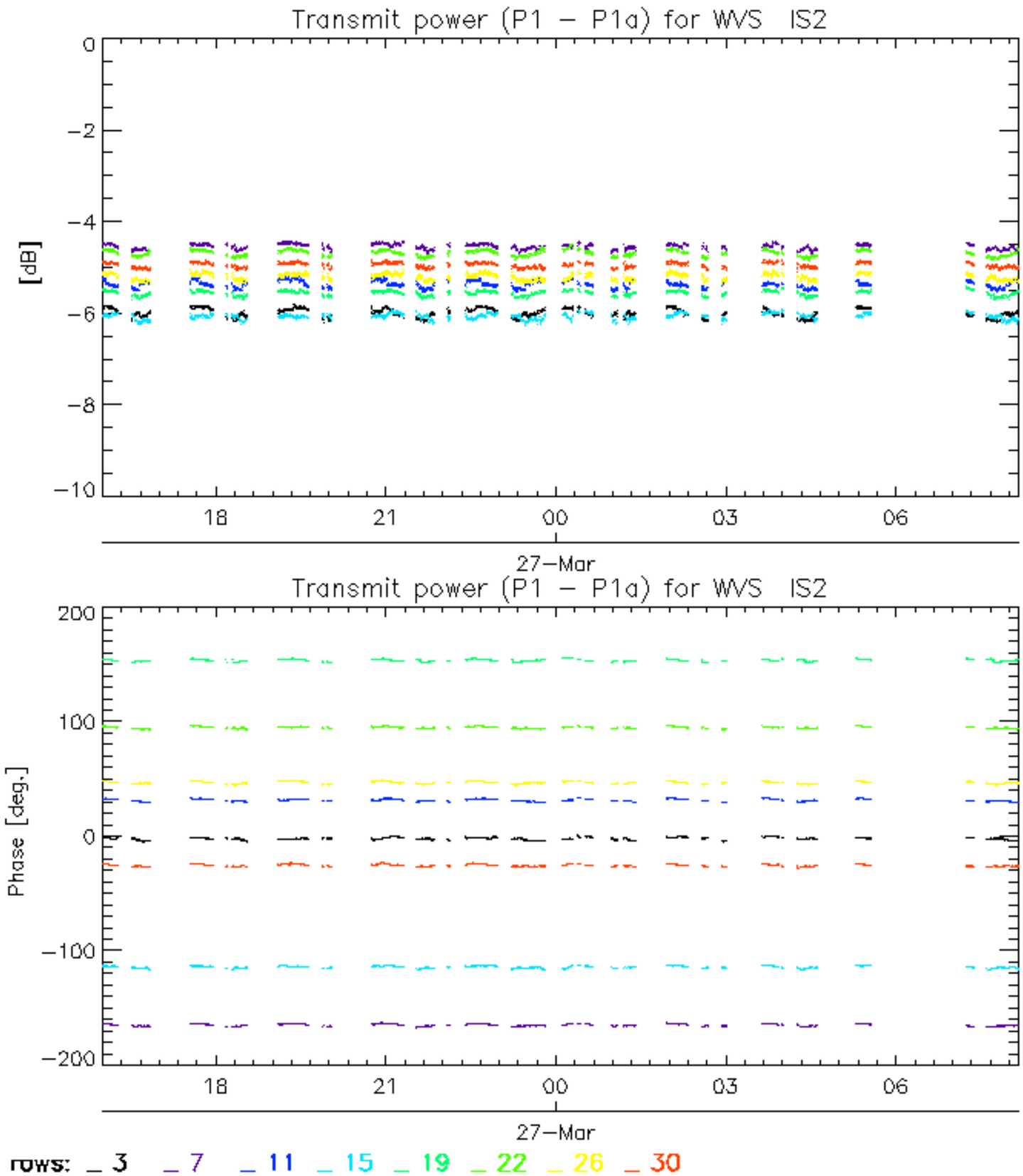

Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
20
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
27–Mar
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
27–Mar
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
20
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.