PRELIMINARY REPORT OF 050420

last update on Wed Apr 20 10:50:01 GMT 2005

1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA_WVS_1P), global monitoring products (ASA_GM1_1P), which are the available few hours after the acquisition, on the browse (BP) products and
on the Module Stepping (MS) product.

2 - Summary

2.1 - Instrument Unavailability

No unavailabilities during the reported period.

2.2 - Auxiliary files

Summary of the auxiliary files used from 2005-04-19 00:00:00 to 2005-04-20 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	26	50	3	2	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	26	50	3	2	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	26	50	3	2	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	26	50	3	2	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	41	63	6	3	1
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	41	63	6	3	1
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	41	63	6	3	1
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	41	63	6	3	1

2.3 - Browse Visual Inspection

No anomalies observed from 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	20050418 084200
H	20050419 081023

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1

4.2 - Cyclic statistics

4.2.1 - Evolution for WVS

Evolution of cal pulses for WVS

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.341348	0.013516	-0.016799
7	P1	-3.115742	0.009895	0.001481
11	P1	-4.667154	0.032072	0.005472
15	P1	-5.603745	0.044215	0.084710
19	P1	-3.702791	0.004004	-0.027252
22	P1	-4.549339	0.012220	-0.082014
26	P1	-4.909769	0.019675	0.055980
30	P1	-7.176733	0.023755	0.076945
3	P1	-15.783379	0.338888	0.034341
7	P1	-15.527904	0.088403	0.004276
11	P1	-21.099430	0.454261	-0.371313
15	P1	-11.528109	0.055499	0.178788
19	P1	-14.315571	0.028334	0.003150
22	P1	-15.781646	0.318072	-0.334498
26	P1	-17.631449	0.180622	0.023858
30	P1	-17.918253	0.361283	0.173295

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.048529	0.082031	0.018678
7	P2	-22.224255	0.097996	0.026827
11	P2	-14.235521	0.108968	0.154437
15	P2	-7.059579	0.092095	-0.046611
19	P2	-9.643470	0.094889	-0.039993
22	P2	-16.884415	0.096868	0.019380
26	P2	-16.454395	0.094493	-0.050902
30	P2	-18.826105	0.085519	0.003991

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.165354	0.004439	-0.001478
7	P3	-8.165354	0.004439	-0.001478
11	P3	-8.165353	0.004439	-0.001474
15	P3	-8.165353	0.004439	-0.001474
19	P3	-8.165353	0.004439	-0.001474
22	P3	-8.165353	0.004439	-0.001474
26	P3	-8.165353	0.004439	-0.001474
30	P3	-8.165354	0.004439	-0.001476

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1
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P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-2.724852	0.026574	-0.104479
7	P1	-3.007348	0.046461	0.001531
11	P1	-3.979541	0.027310	-0.018595
15	P1	-3.540720	0.036963	-0.011761
19	P1	-3.614856	0.013880	-0.028754
22	P1	-5.707095	0.042742	0.093205
26	P1	-7.298839	0.025041	-0.031777
30	P1	-6.265707	0.060311	-0.076893
3	P1	-10.710285	0.163196	-0.137882
7	P1	-10.353151	0.178691	-0.118877
11	P1	-12.535984	0.140334	-0.108853
15	P1	-11.694464	0.100442	0.050846
19	P1	-15.595983	0.053729	-0.062208
22	P1	-24.843594	1.574967	-0.715266

26	P1	-15.559210	0.251991	-0.248175
30	P1	-20.172514	1.230067	0.079597

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.747128	0.040079	-0.005090
7	P2	-22.301868	0.045653	0.040786
11	P2	-10.080792	0.058205	0.018770
15	P2	-5.020194	0.034199	-0.107969
19	P2	-6.856377	0.050510	-0.095211
22	P2	-7.078233	0.038568	-0.045490
26	P2	-23.869043	0.037439	-0.090217
30	P2	-21.899206	0.042878	-0.069165

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.000427	0.003545	-0.012884
7	P3	-8.000638	0.003528	-0.012873
11	P3	-8.000502	0.003536	-0.013028
15	P3	-8.000591	0.003541	-0.013352
19	P3	-8.000664	0.003535	-0.013496
22	P3	-8.000583	0.003526	-0.012935
26	P3	-8.000545	0.003528	-0.013257
30	P3	-8.000546	0.003532	-0.013078

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

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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	0.000479883
	stdev	2.15567e-07
MEAN Q	mean	0.000493374
	stdev	2.32789e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.129549
	stdev	0.00103978
STDEV Q	mean	0.129810
	stdev	0.00105164

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005041[890]
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_1PNPDK20050418_124849_000000872036_00296_16382_2654.N1	1	0
ASA_WVS_1PNPDE20050410_231921_000000002036_00187_16273_8167.N1	1	0
ASA_GM1_1PNPDK20050410_161611_000003442036_00183_16269_7778.N1	0	7
ASA_WSM_1PNPDE20050410_183358_000002732036_00185_16271_6237.N1	0	42
ASA_WSM_1PNPDE20050418_063106_000001282036_00292_16378_7404.N1	0	1

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

Acsending

Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

7.5 - Absolute Doppler for GM1

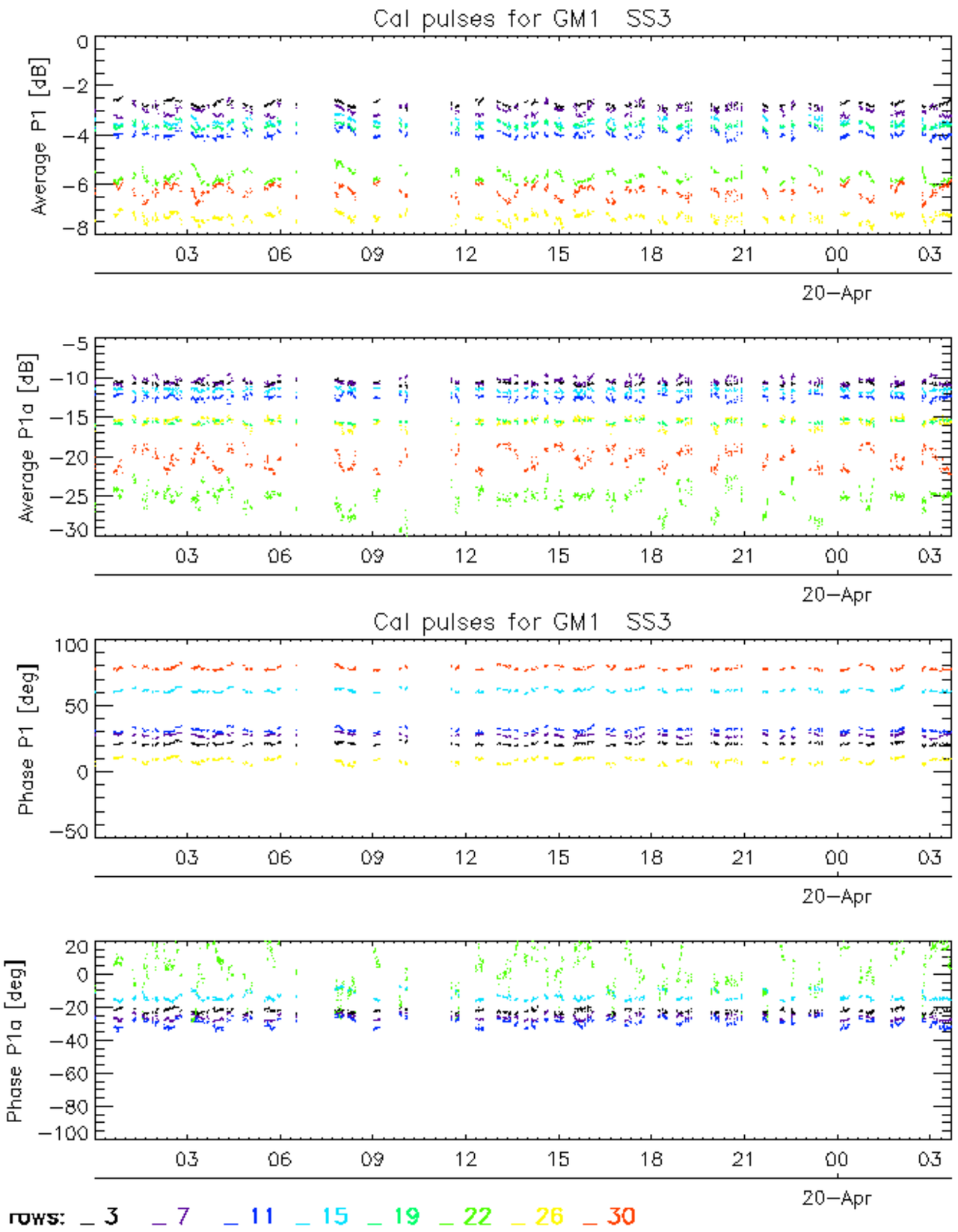
Evolution of Absolute Doppler

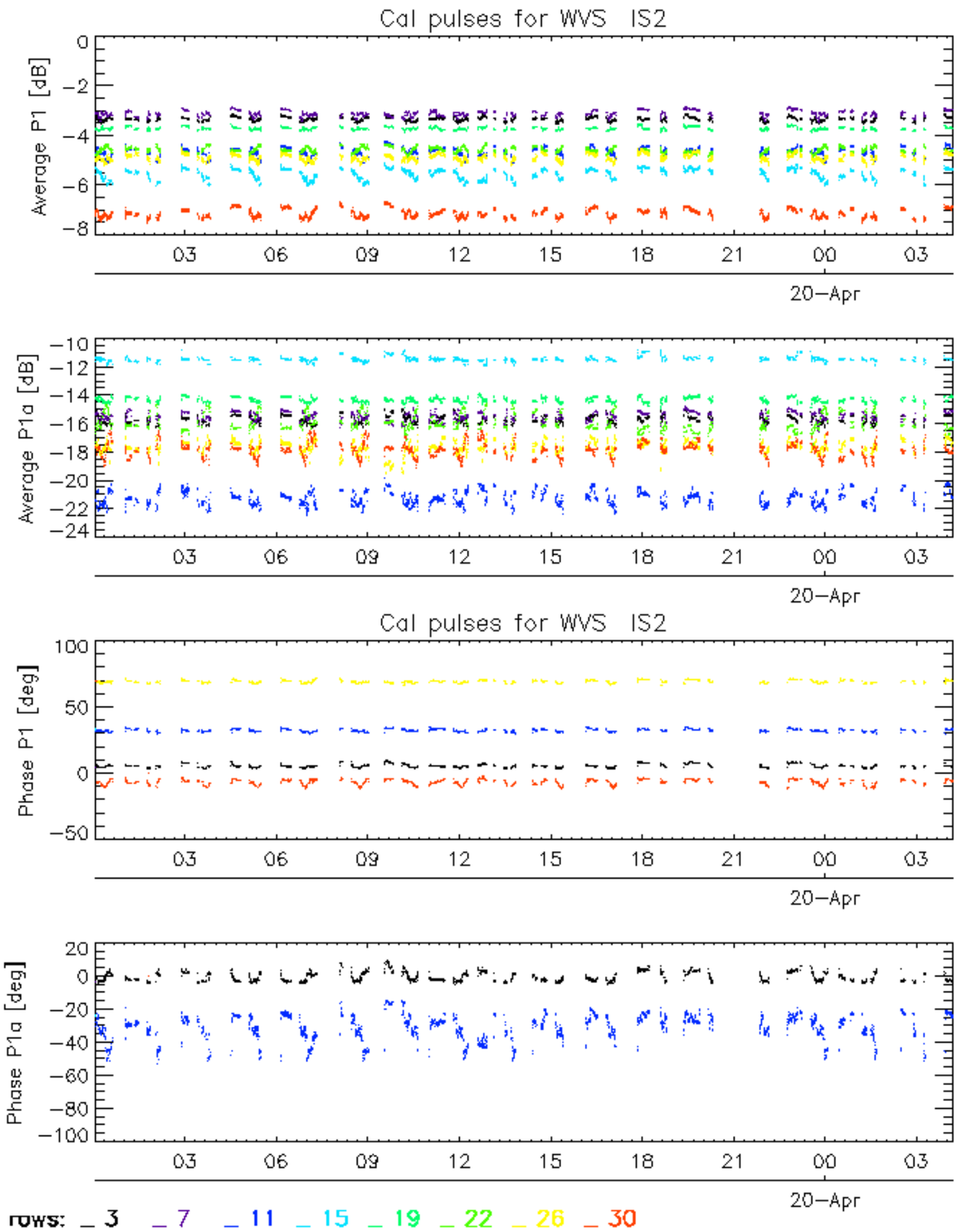
Acsending

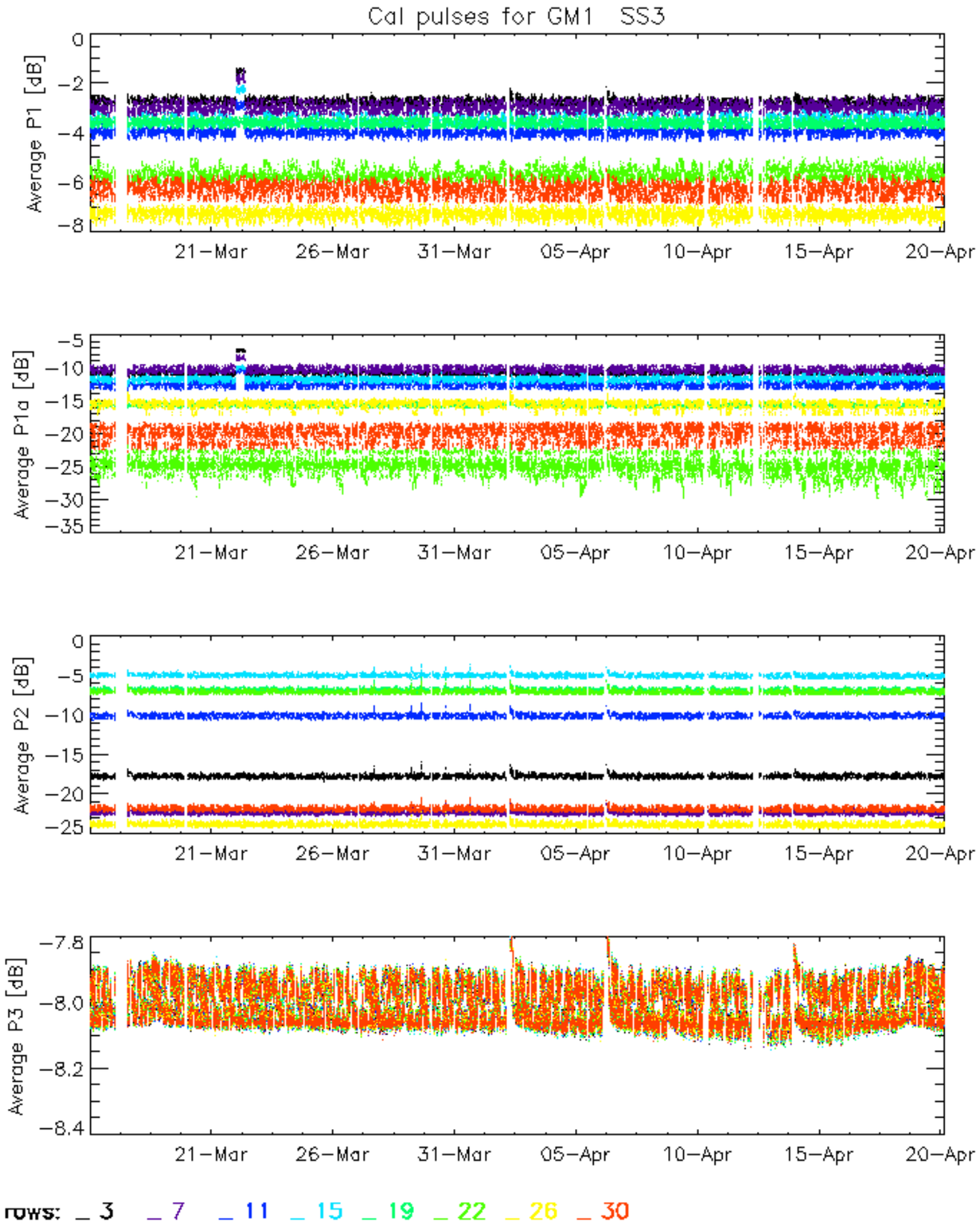
Descending

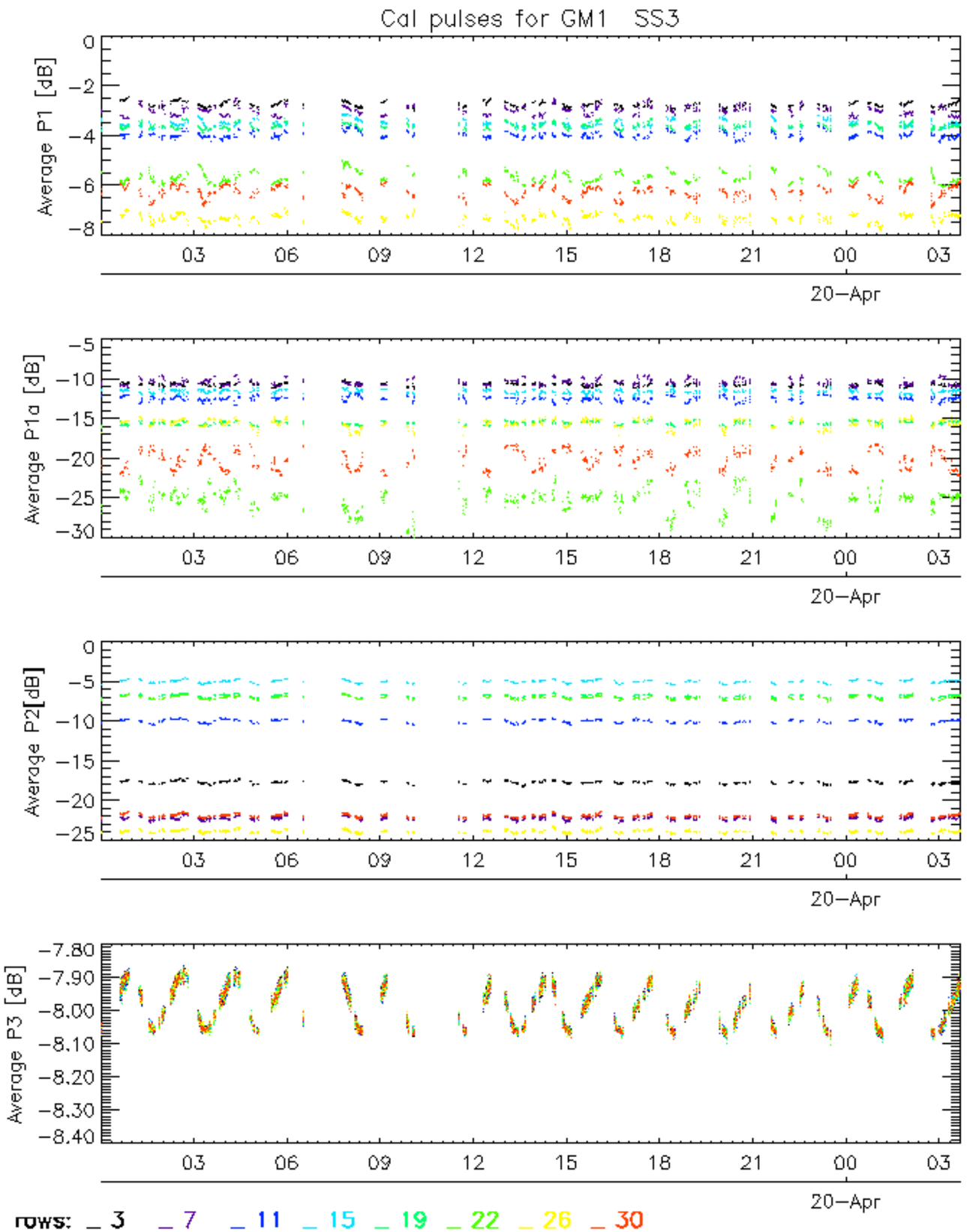
7.6 - Doppler evolution versus ANX for GM1

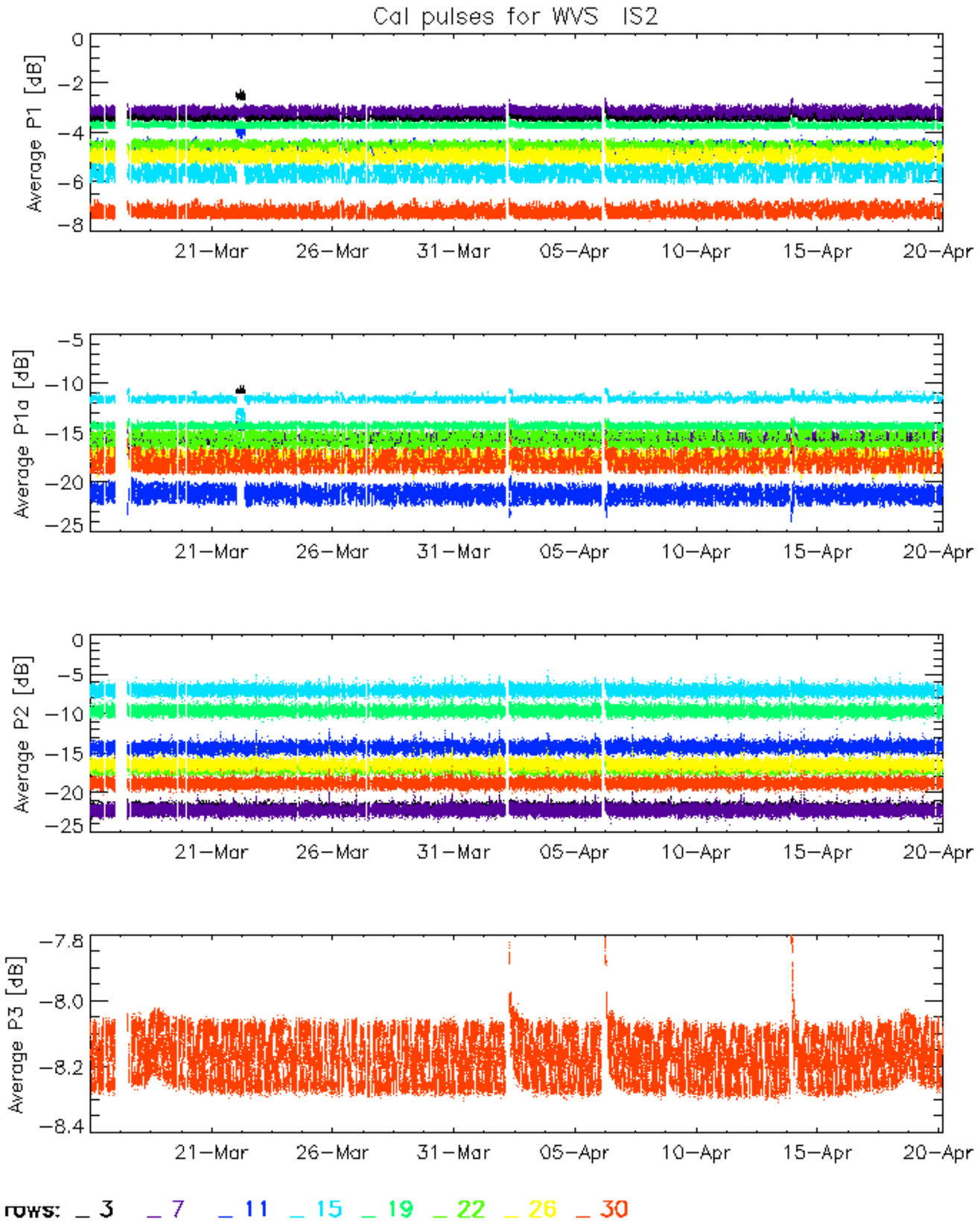
Evolution Doppler error versus ANX

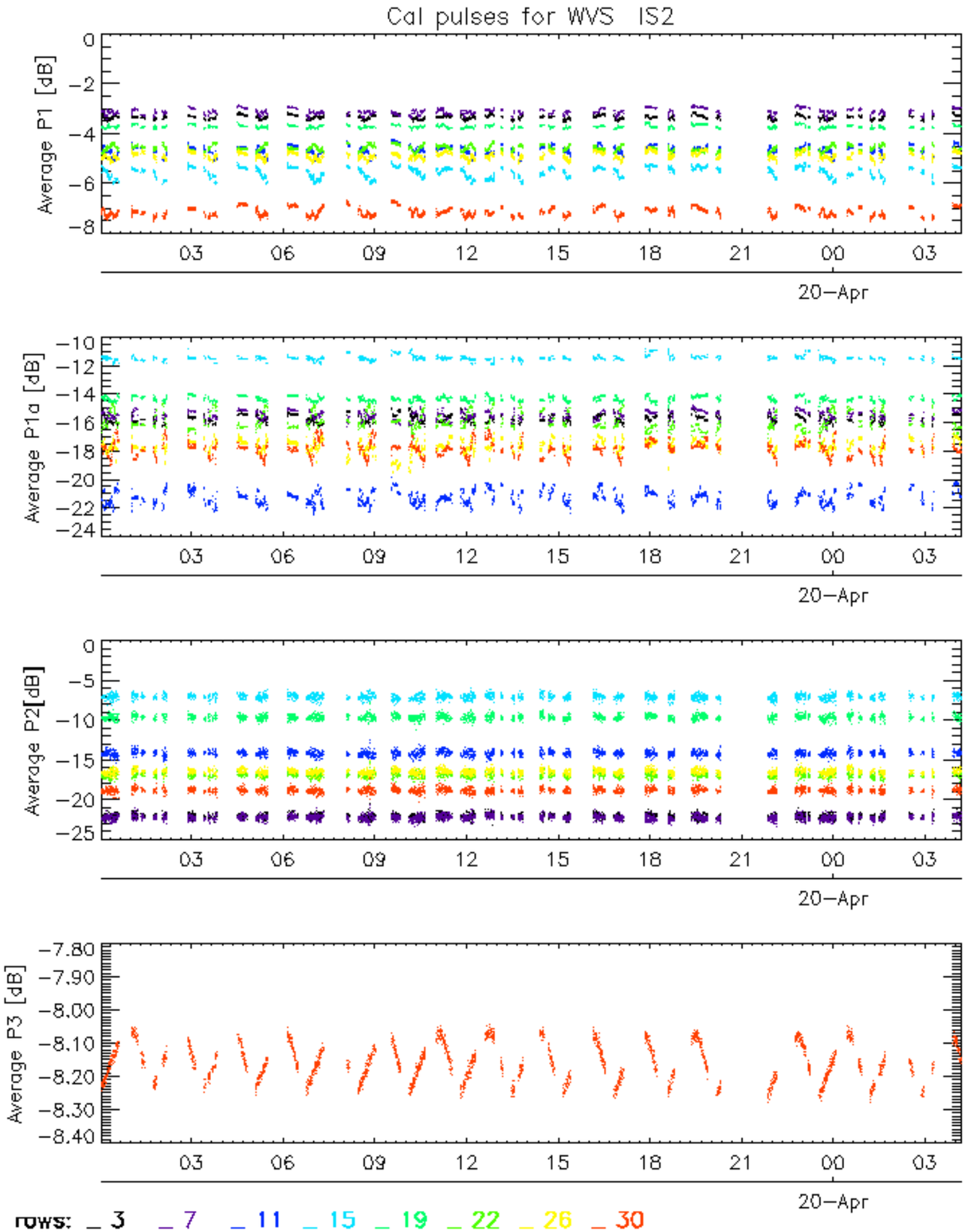


Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
20−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


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


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

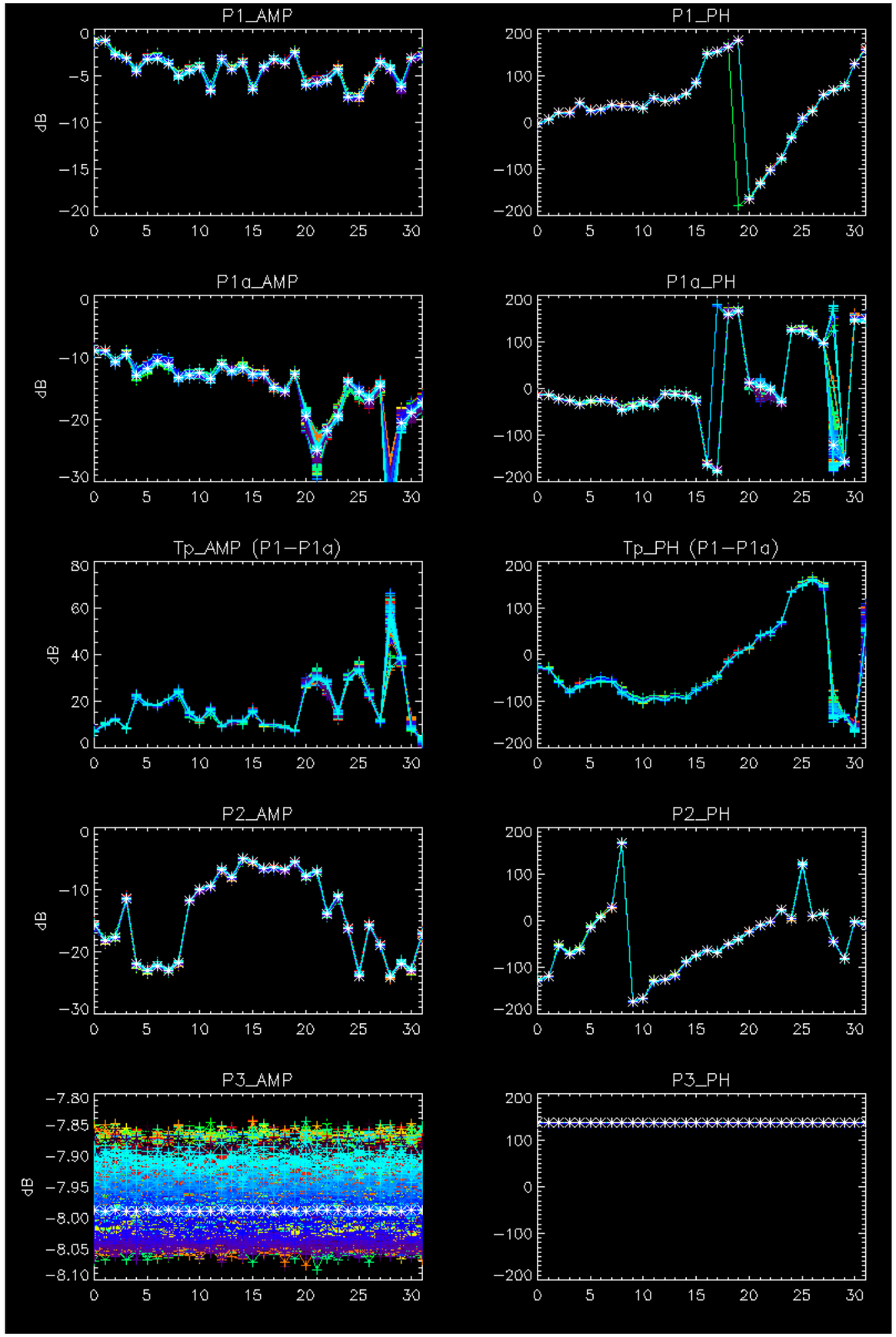

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
20−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

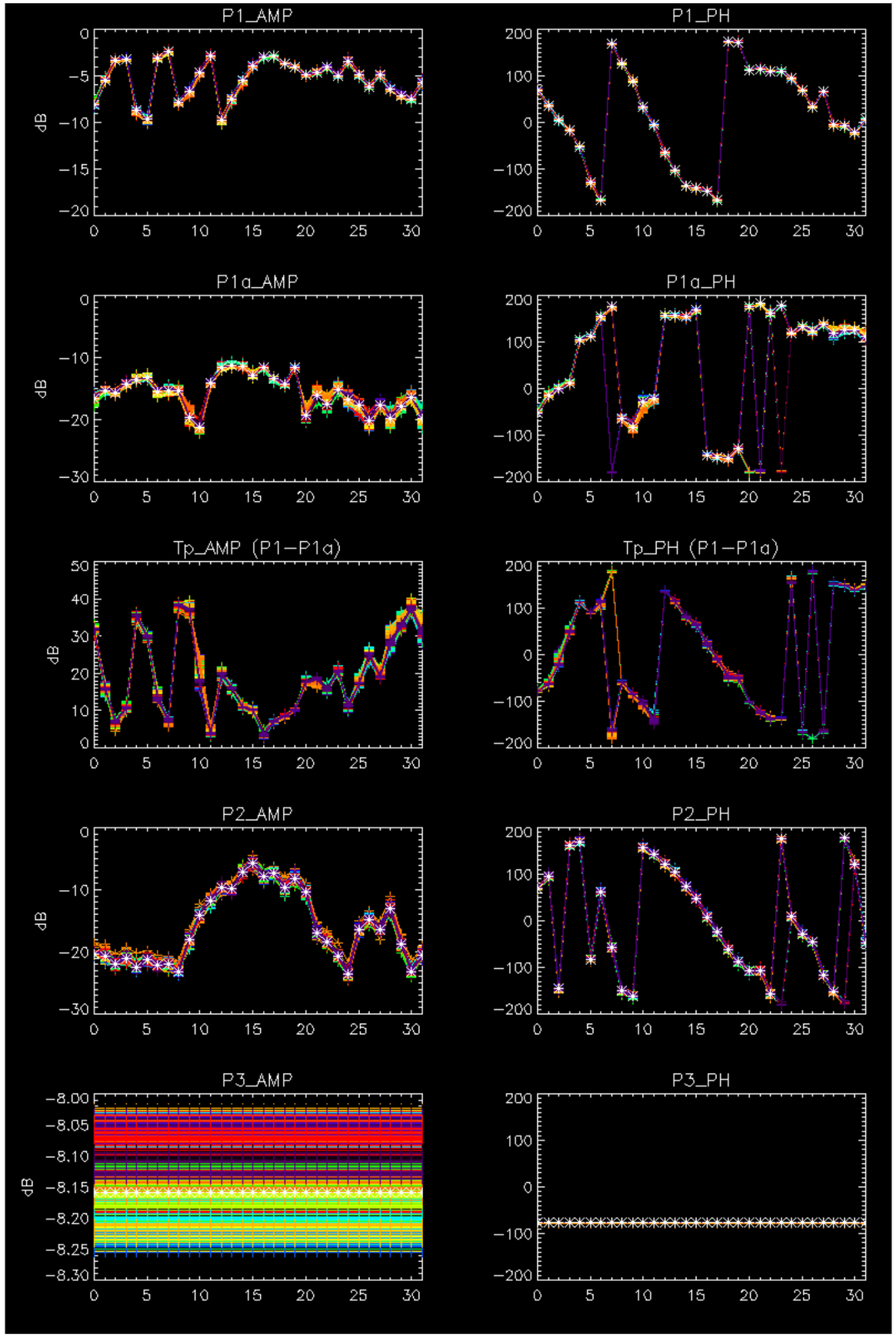

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
20−Apr
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2[dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 26 30

No anomalies observed from browse visual inspection.

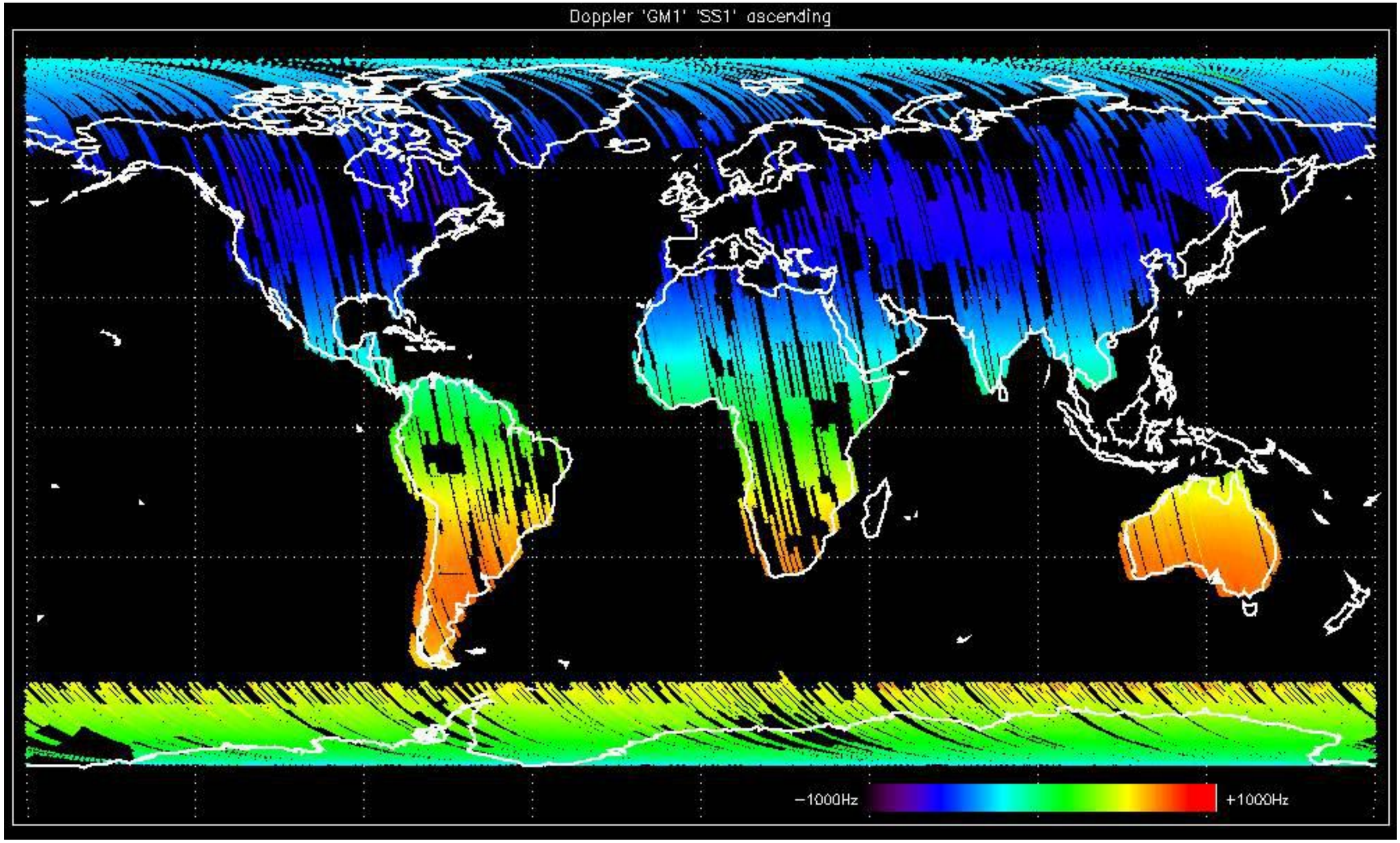
No anomalies observed.

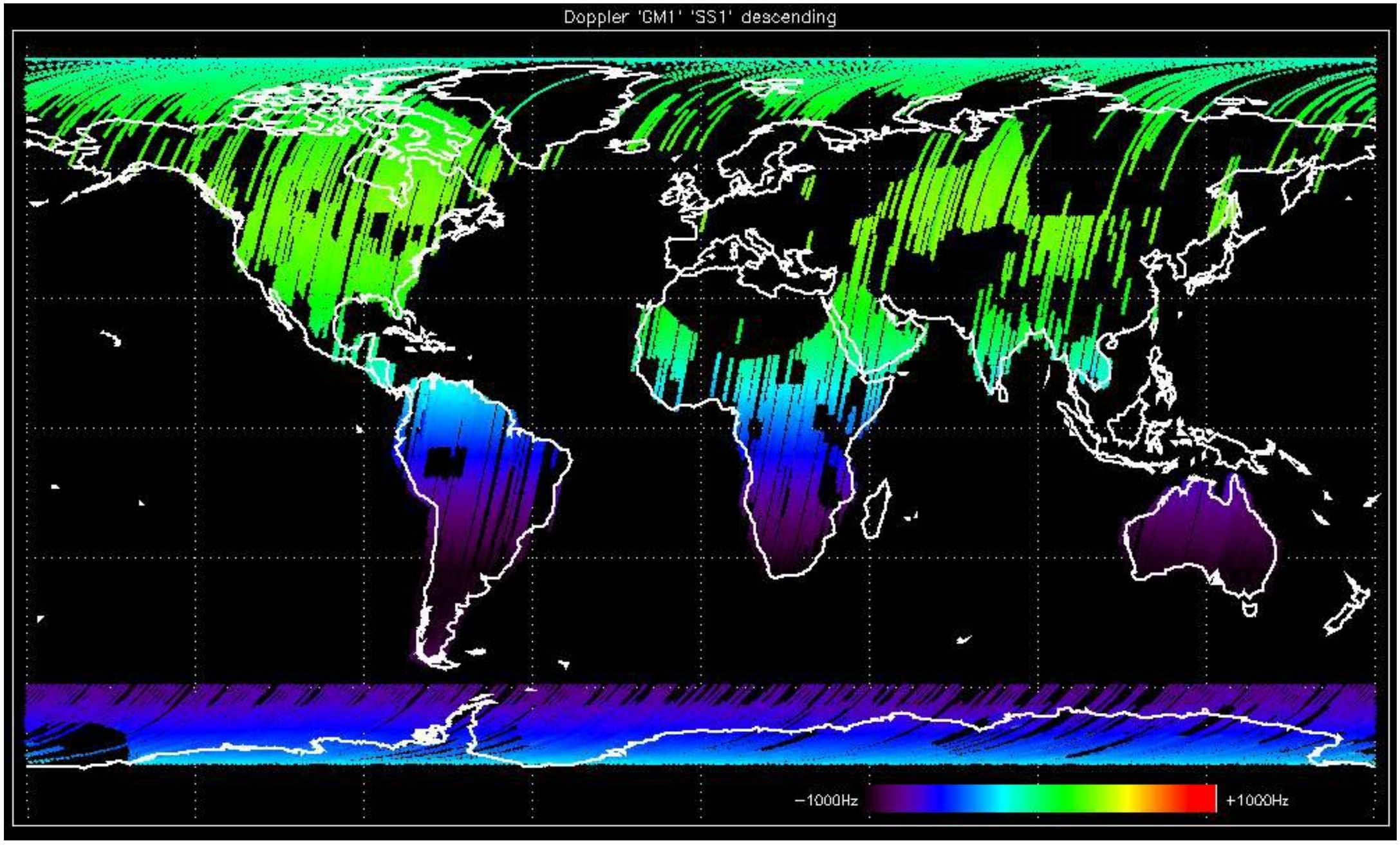

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

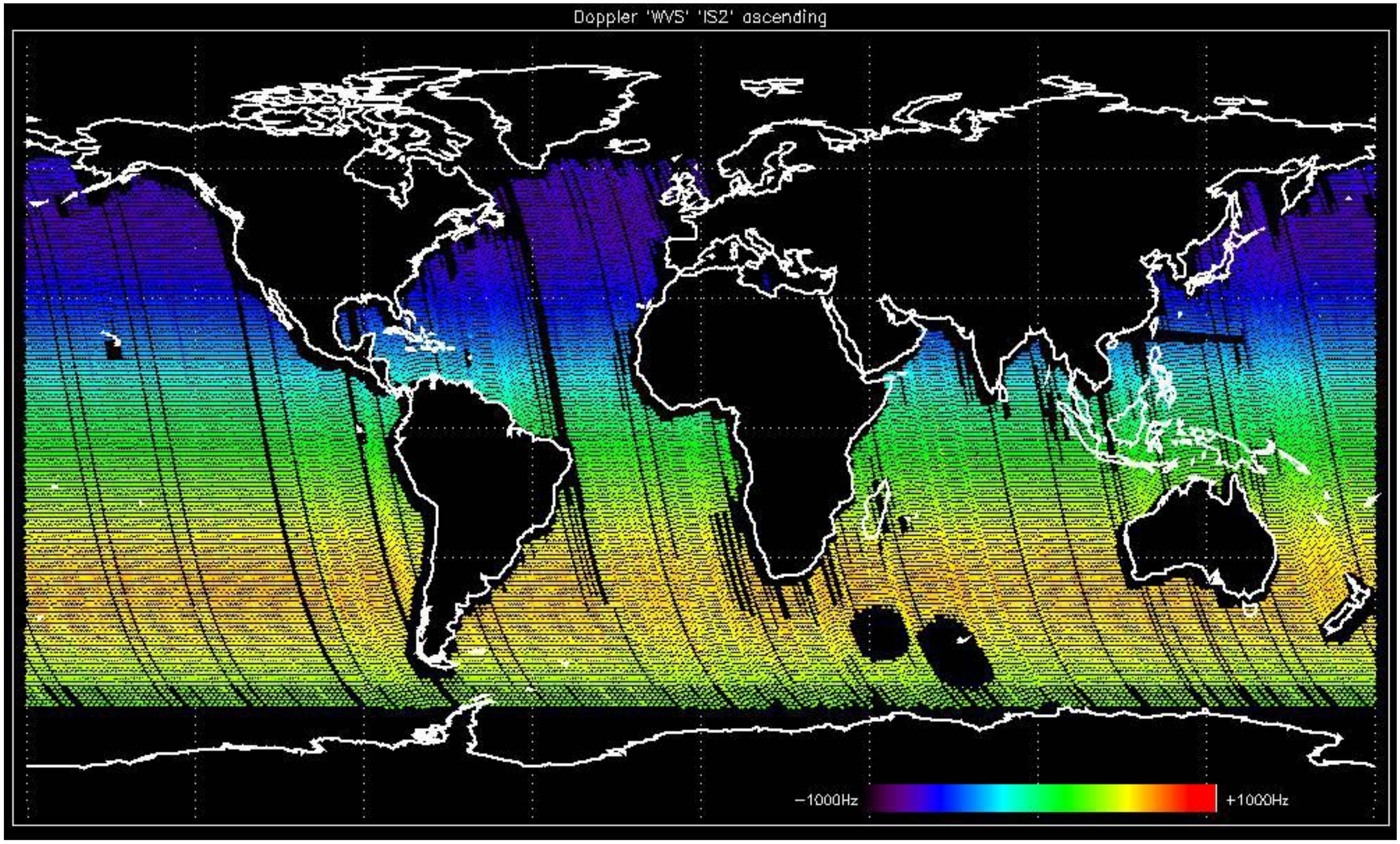

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

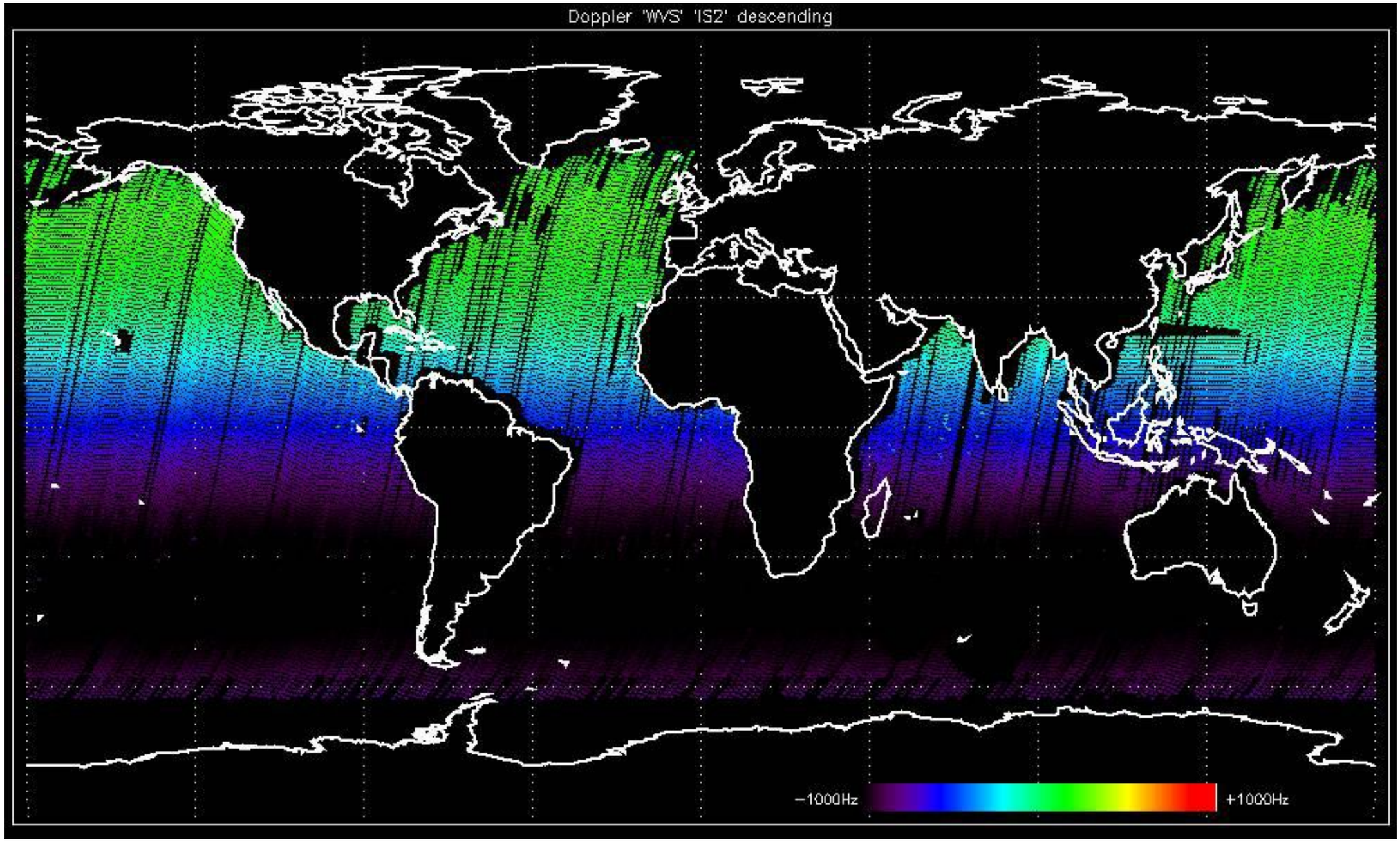
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

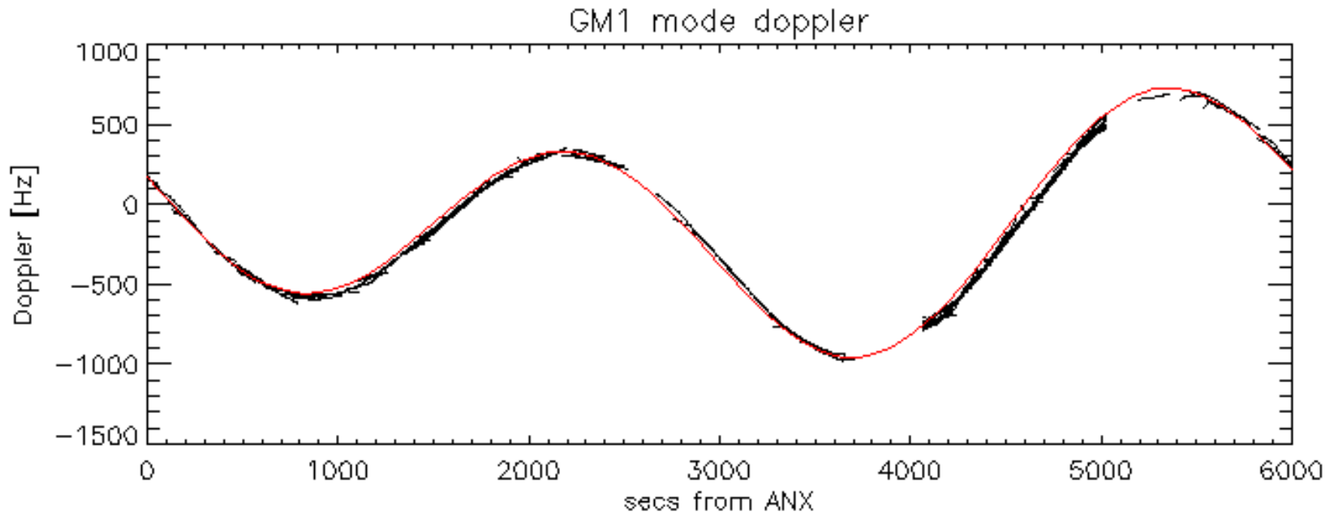
Preliminary report.The data is not yet controled

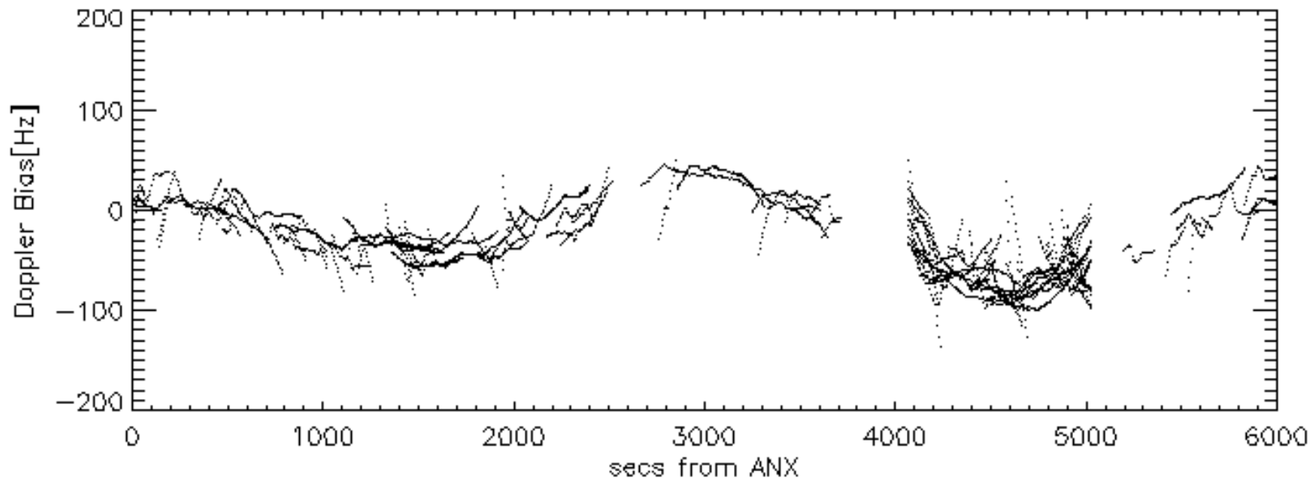

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

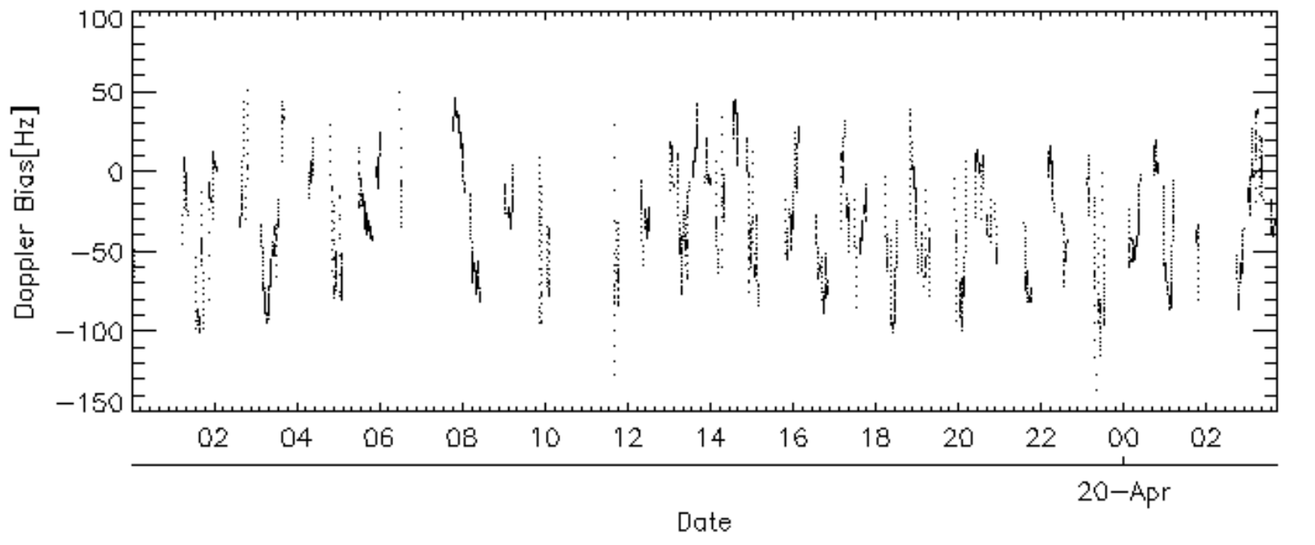

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

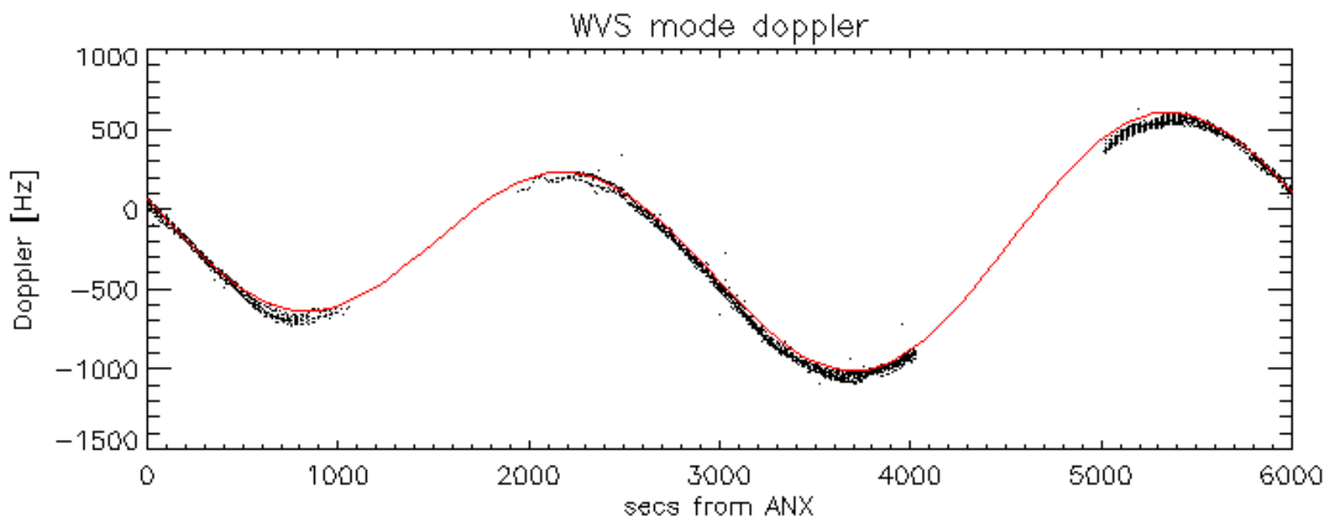

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

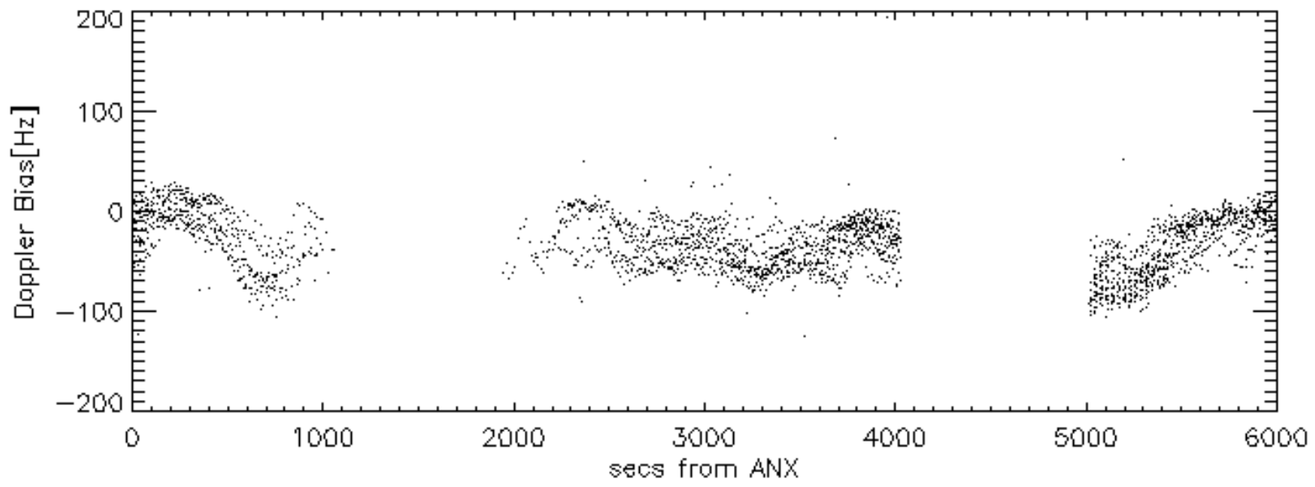

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

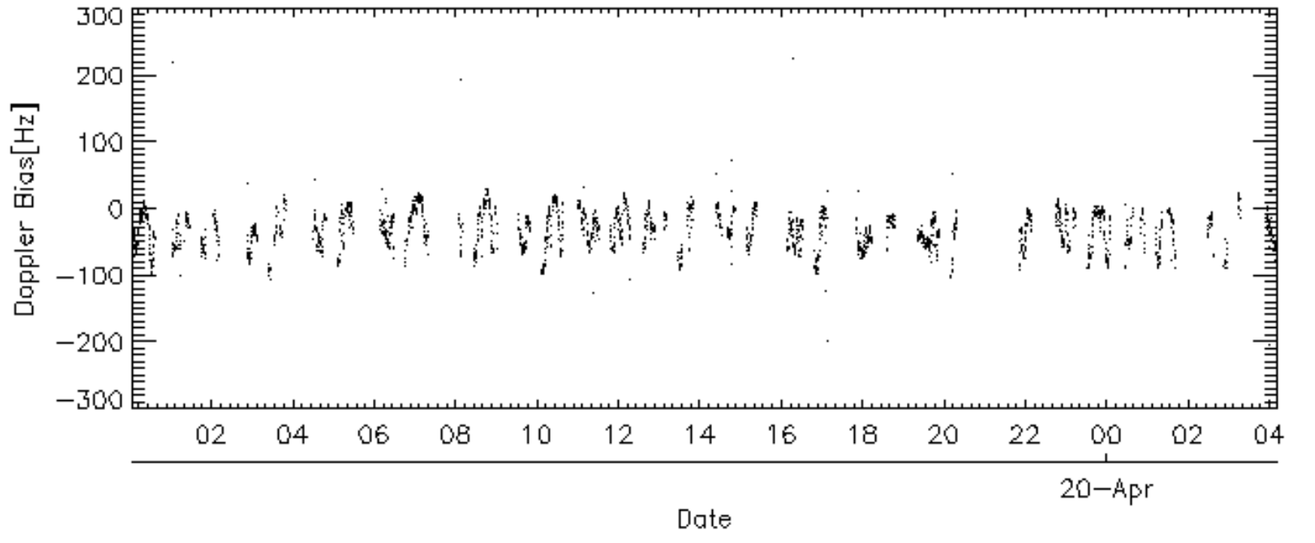

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

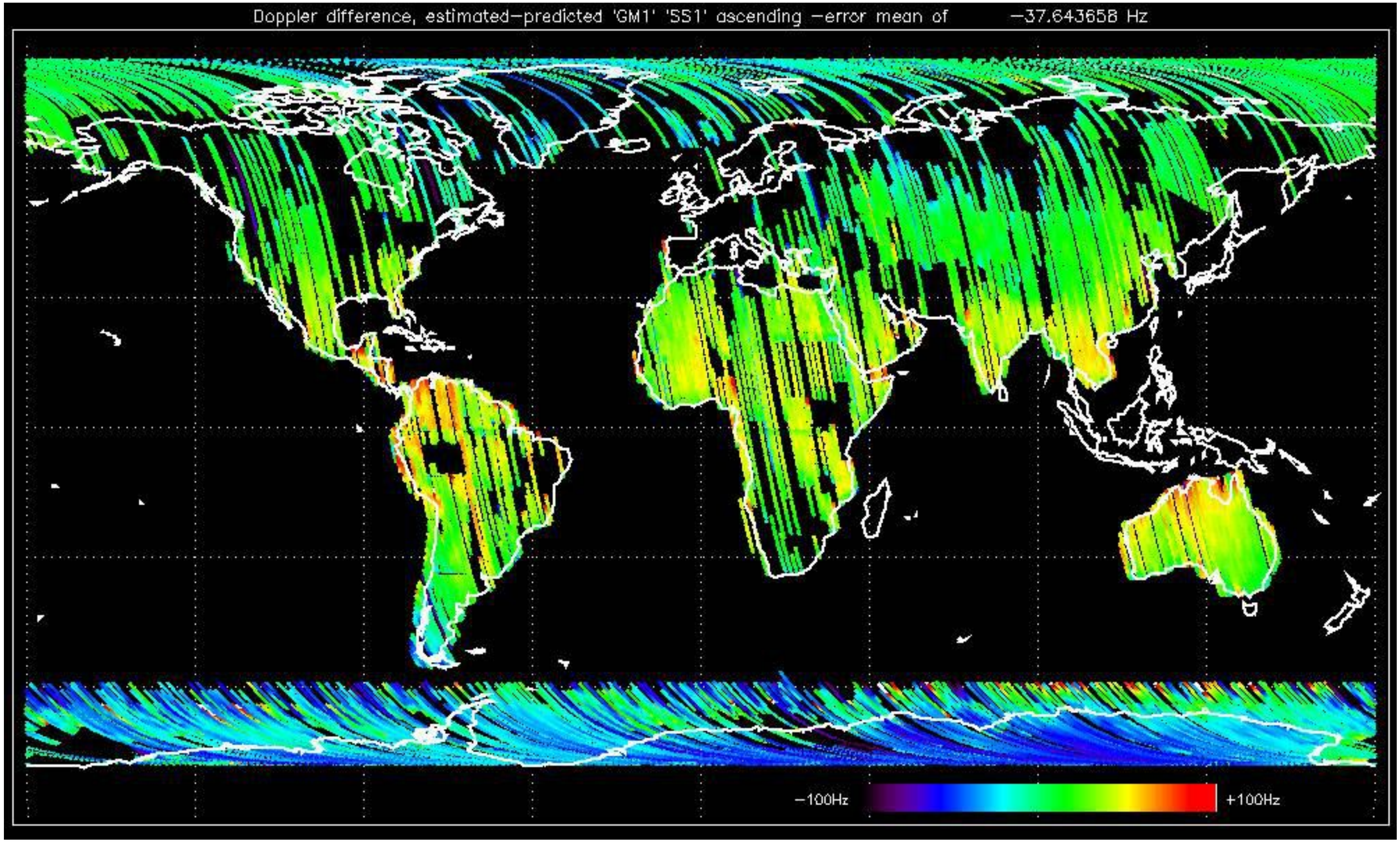

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

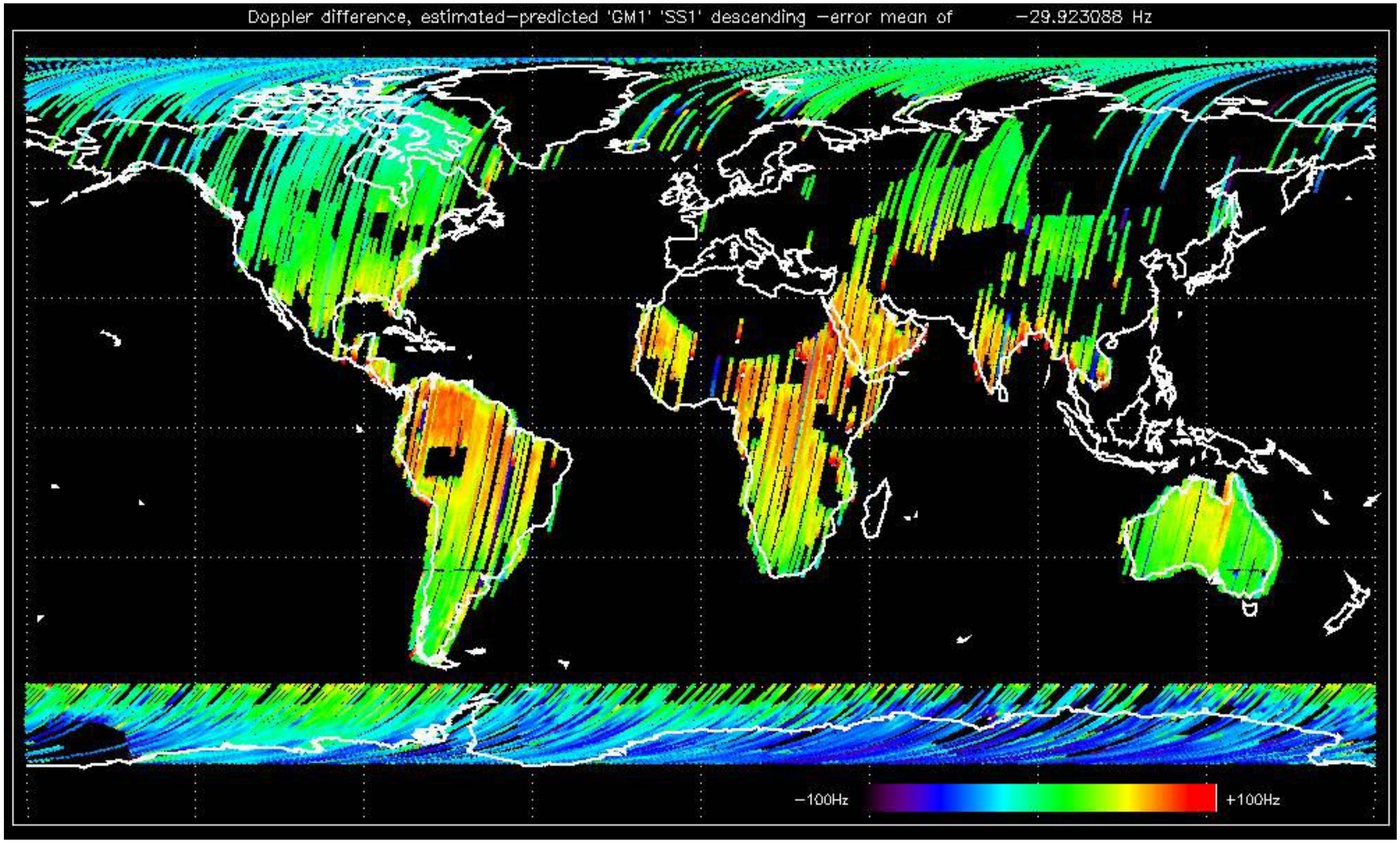

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
20−Apr
Date

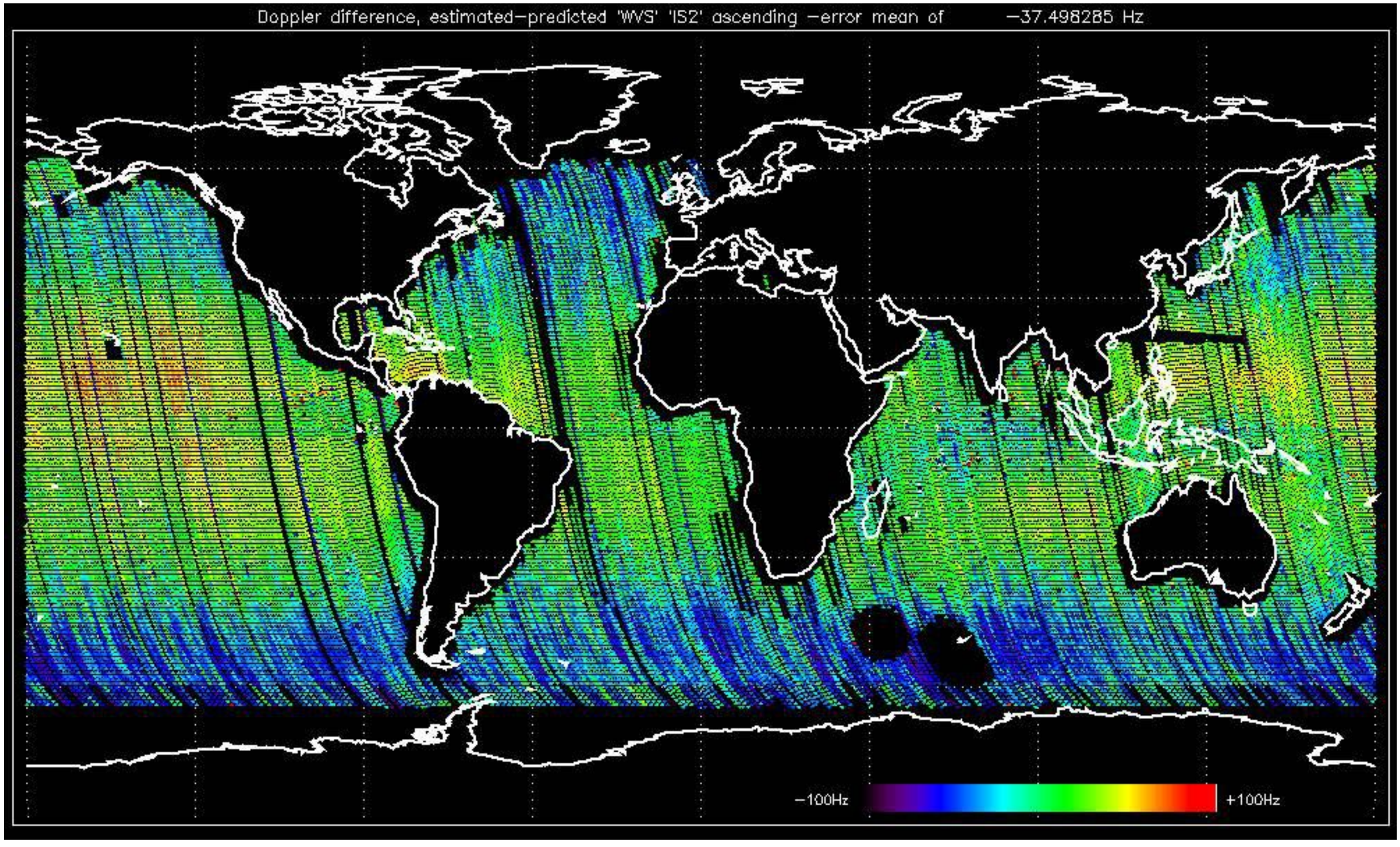

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

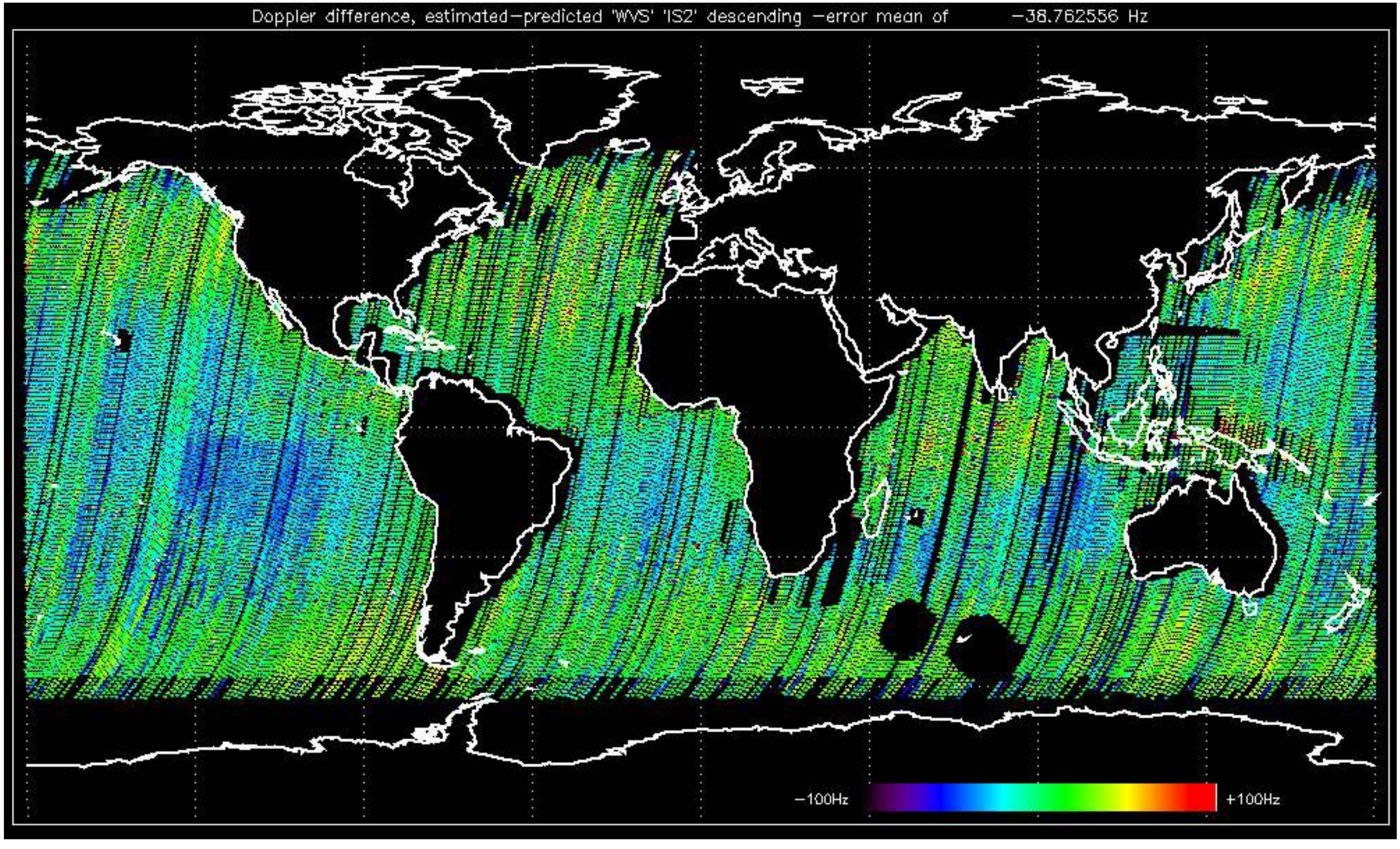

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −37.643658 Hz
−100Hz
+100Hz

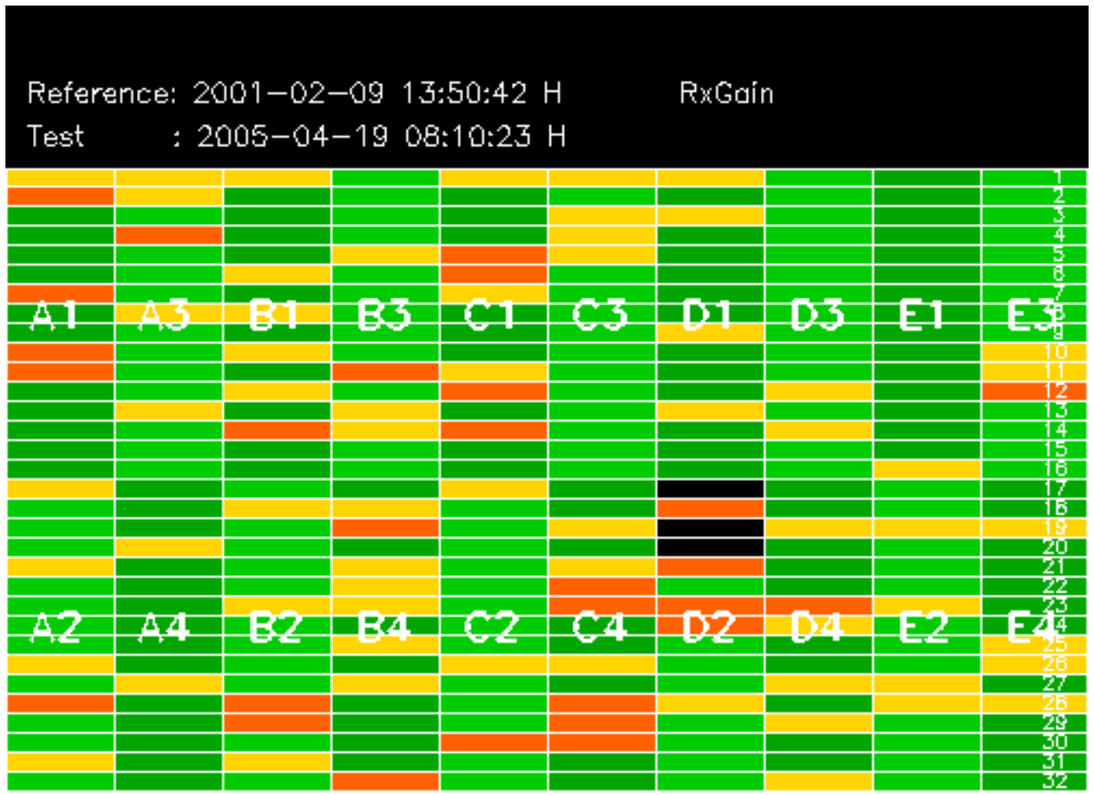

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -29.923088 Hz
-100Hz
+100Hz

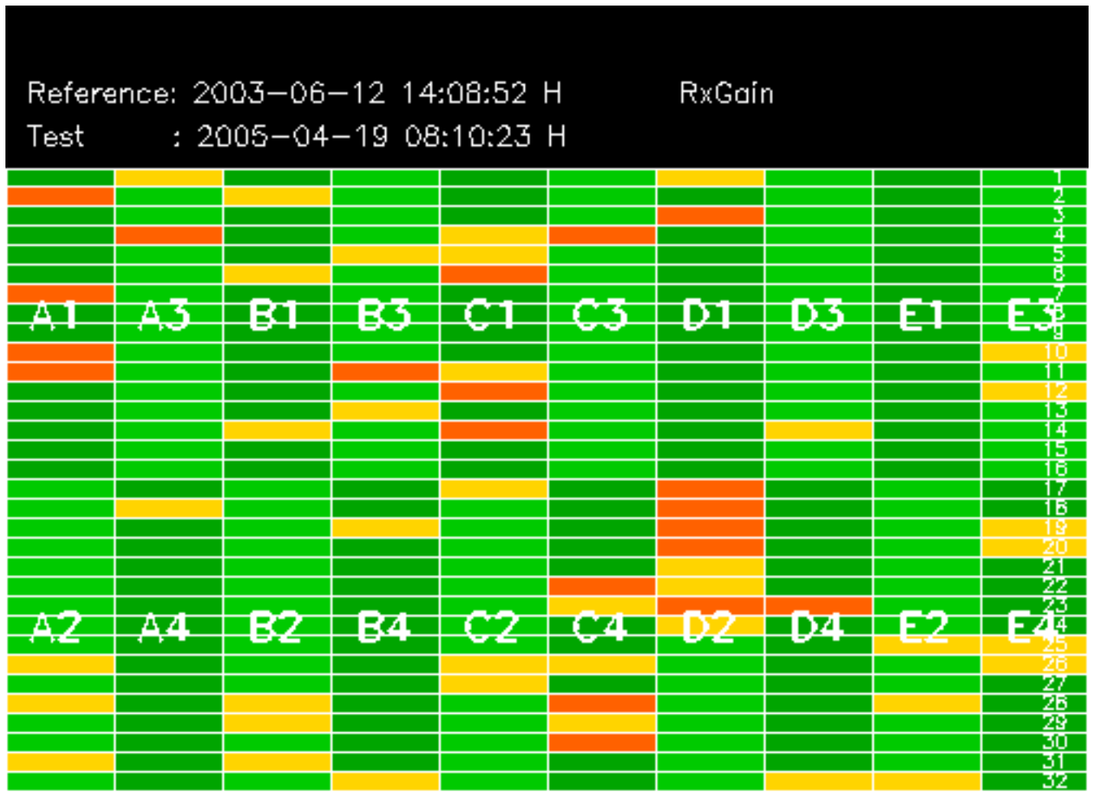

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −37.498285 Hz
−100Hz
+100Hz

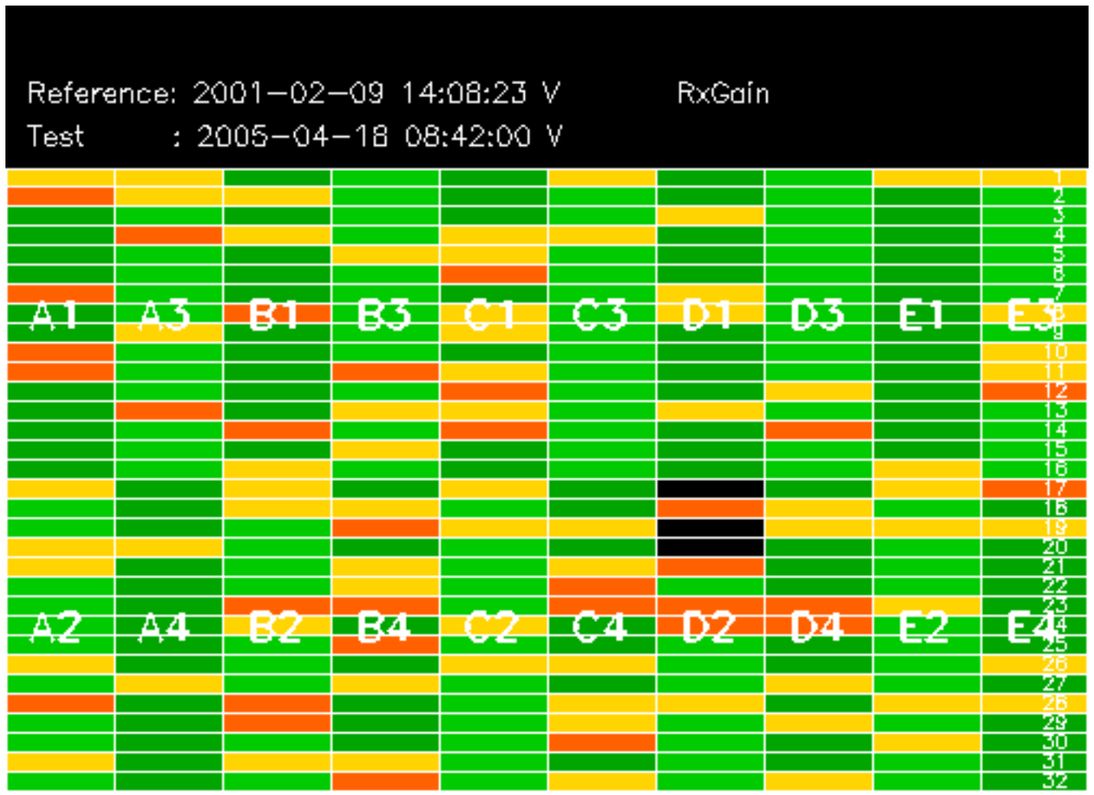

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −38.762556 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-04-19 08:10:23 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2005-04-19 08:10:23 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-18 08:42:00 V
RxGain
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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3
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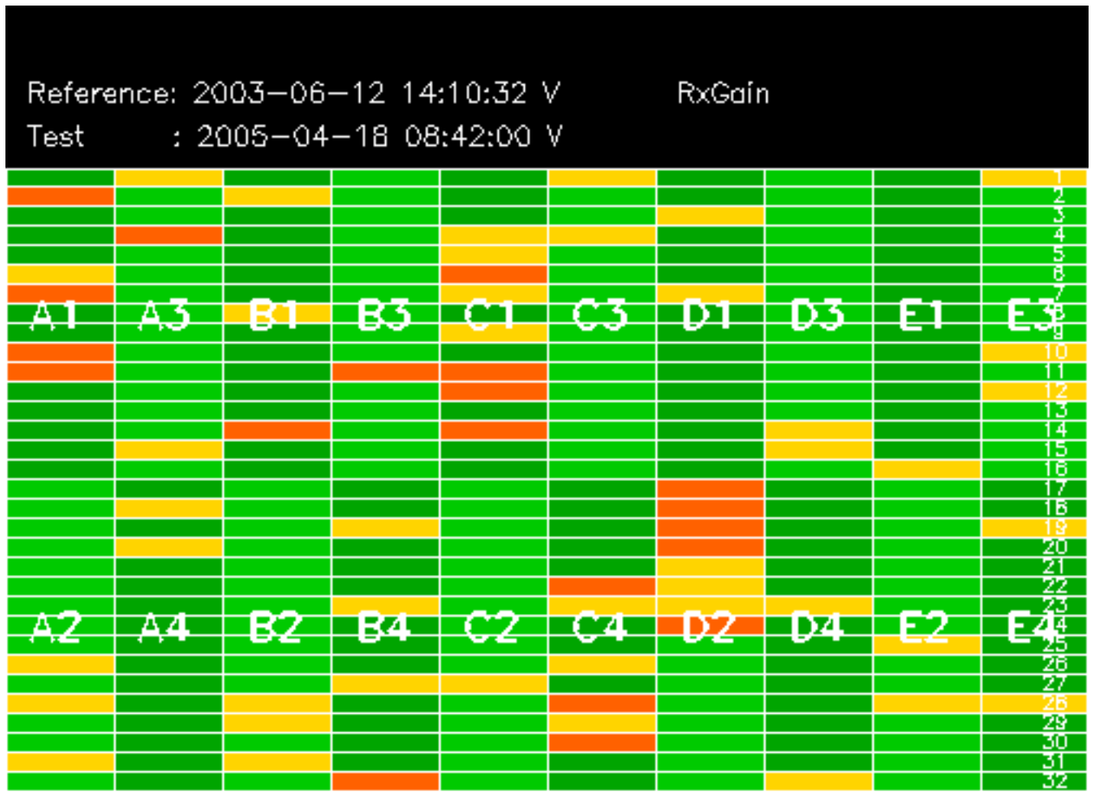
Reference: 2003-06-12 14:10:32 V
Test : 2005-04-18 08:42:00 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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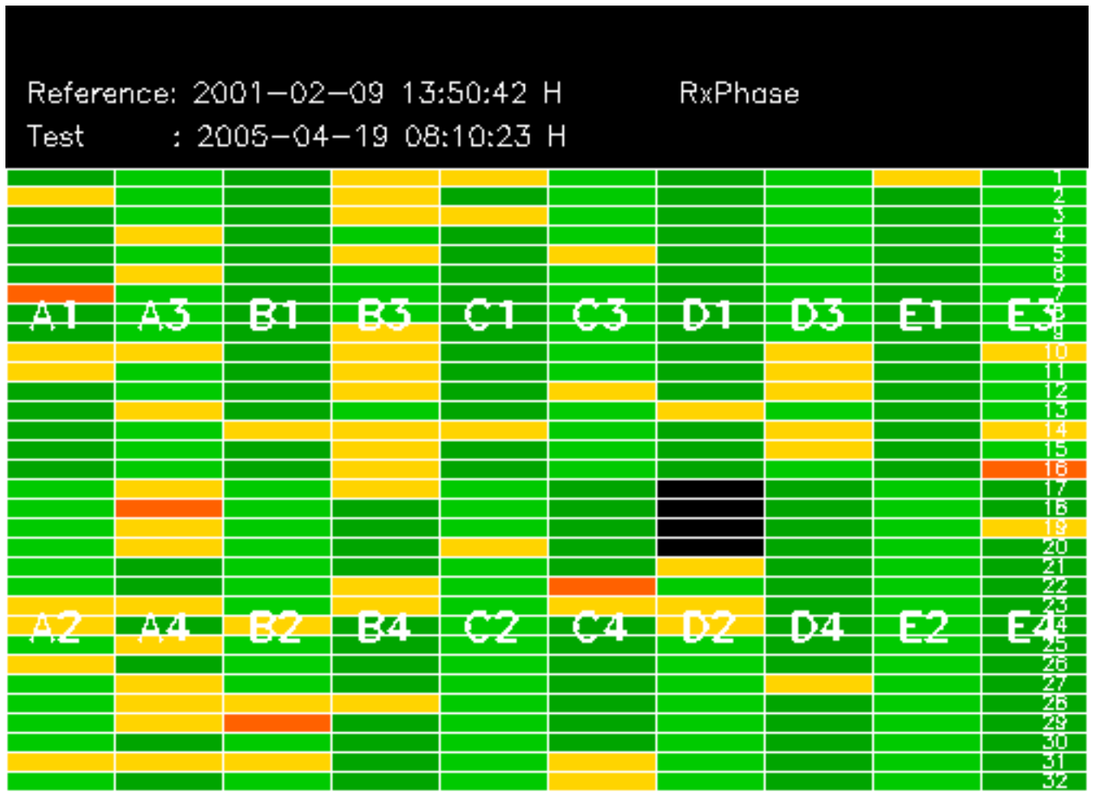
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-04-19 08:10:23 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-04-19 08:10:23 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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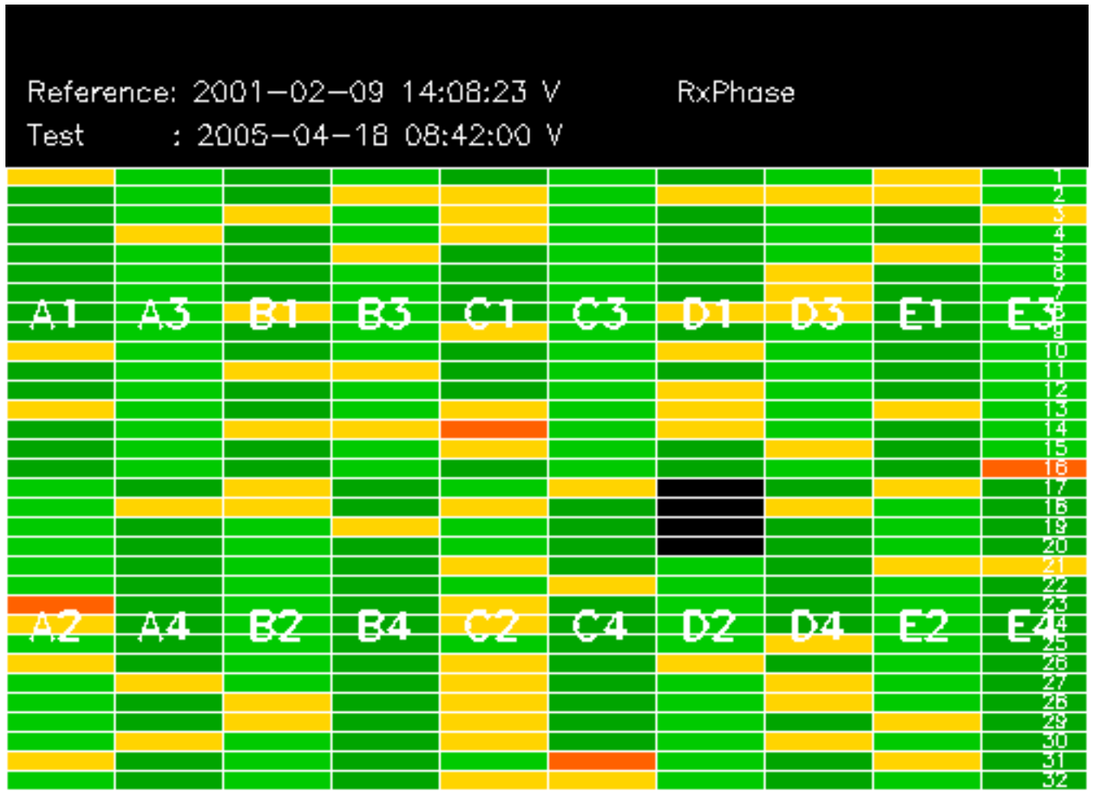
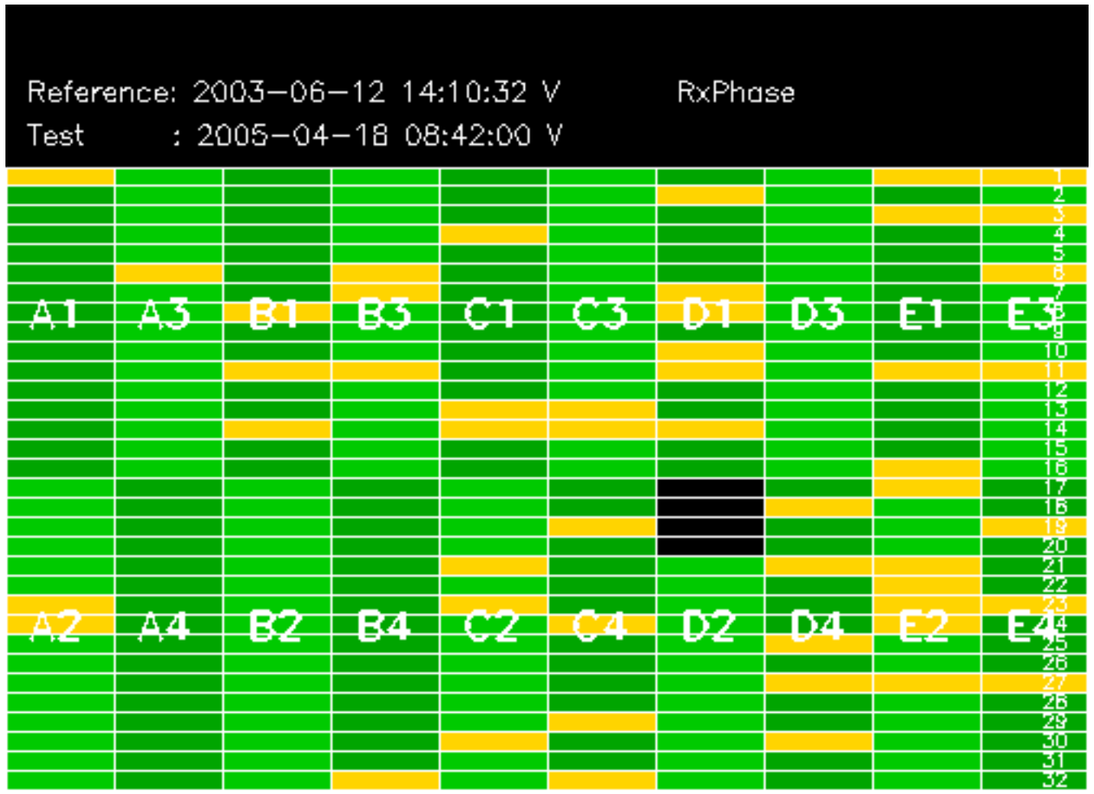
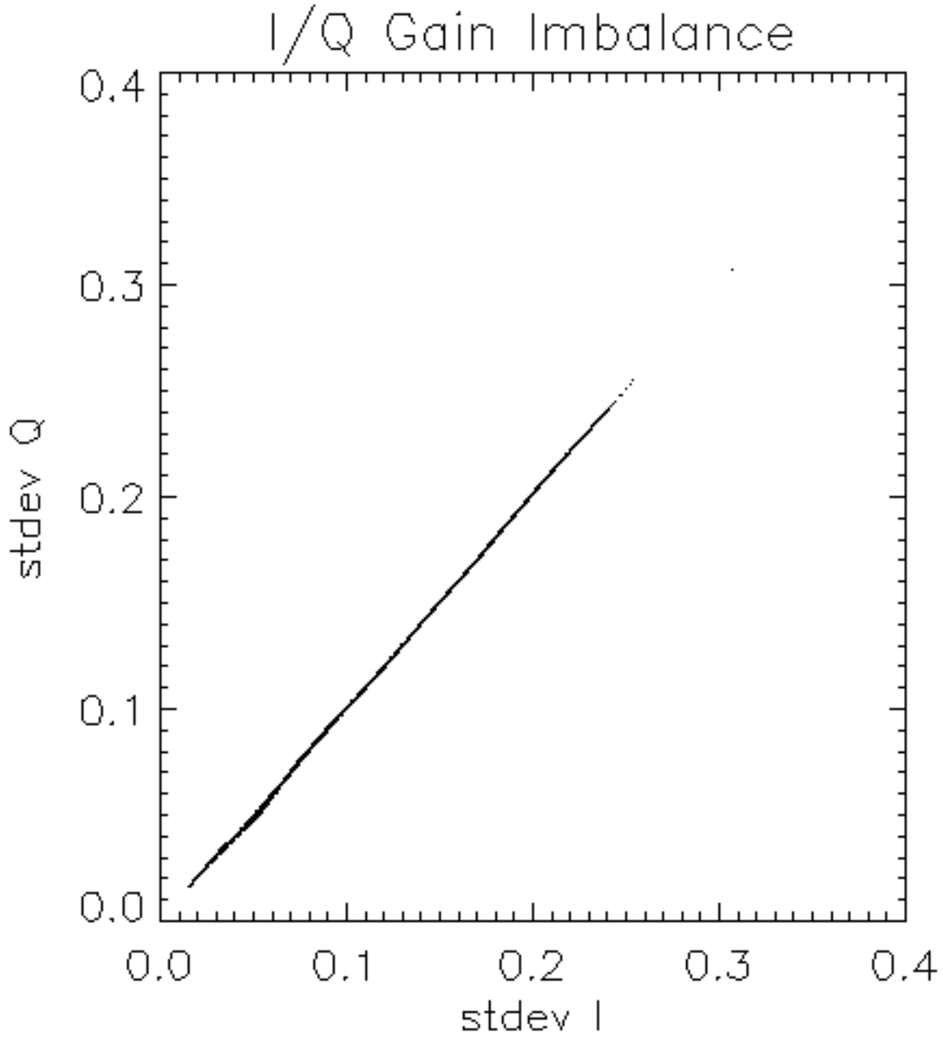
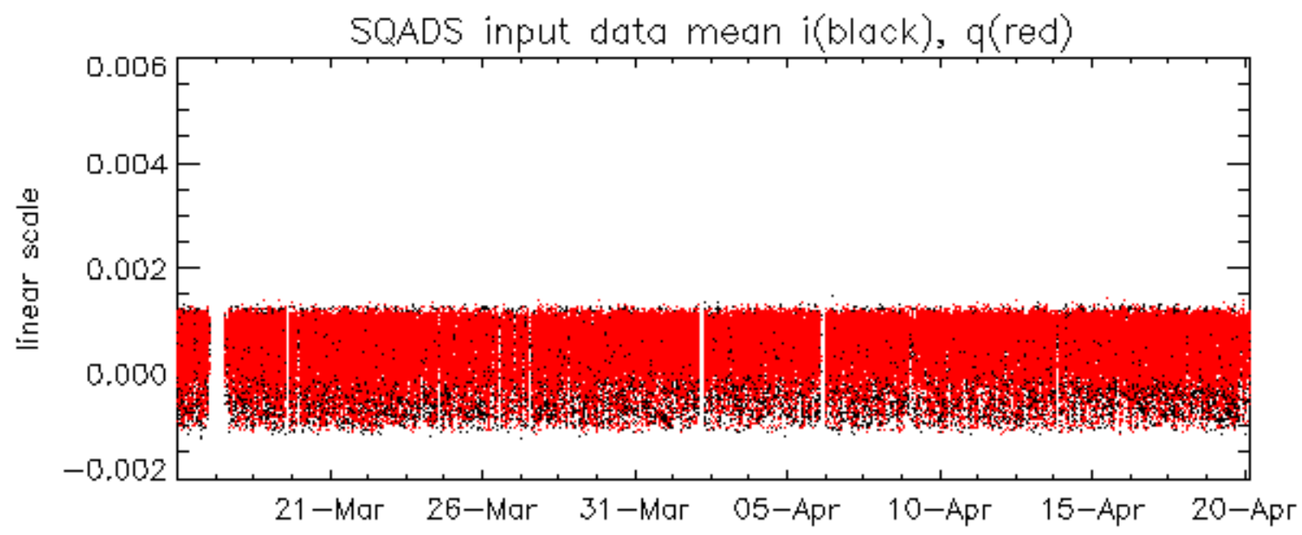
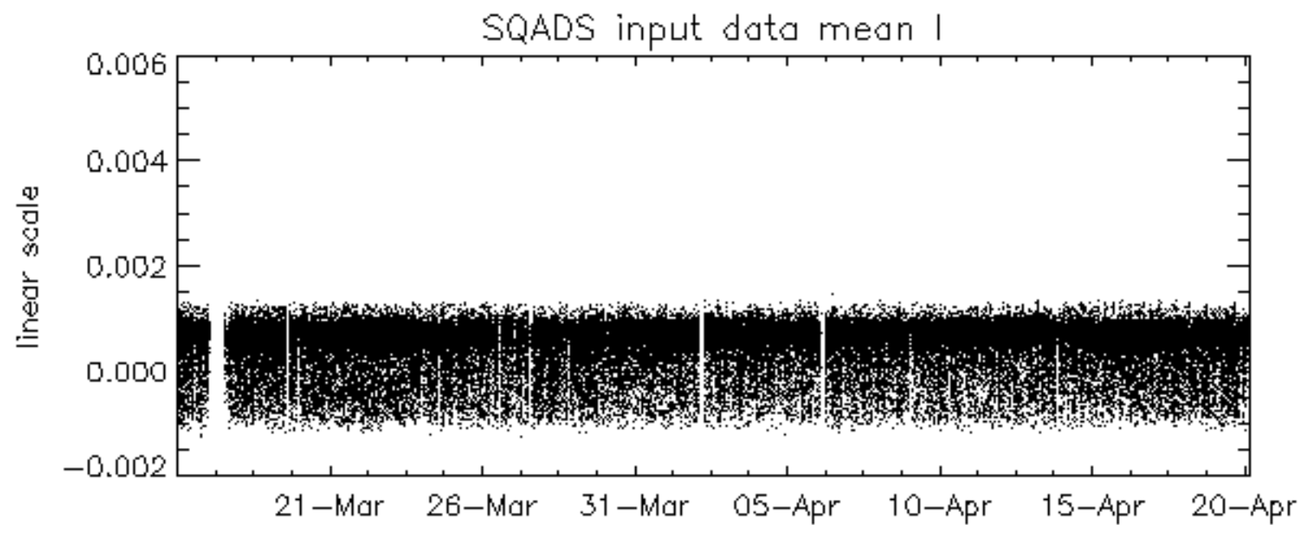
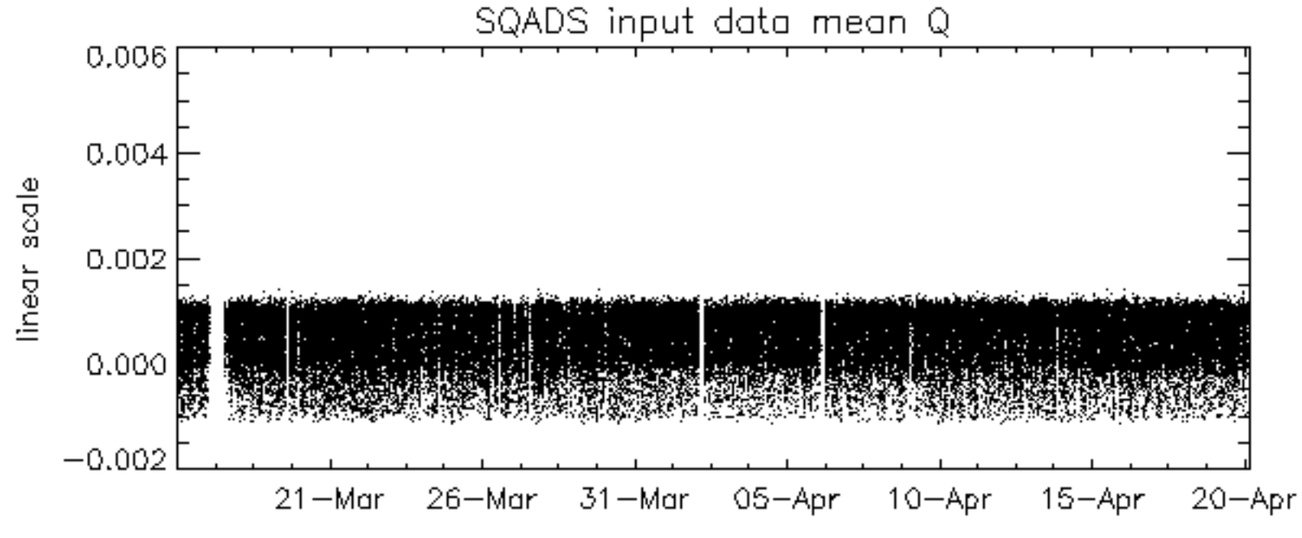

Reference: 2001-02-09 14:08:23 V
Test : 2005-04-18 08:42:00 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

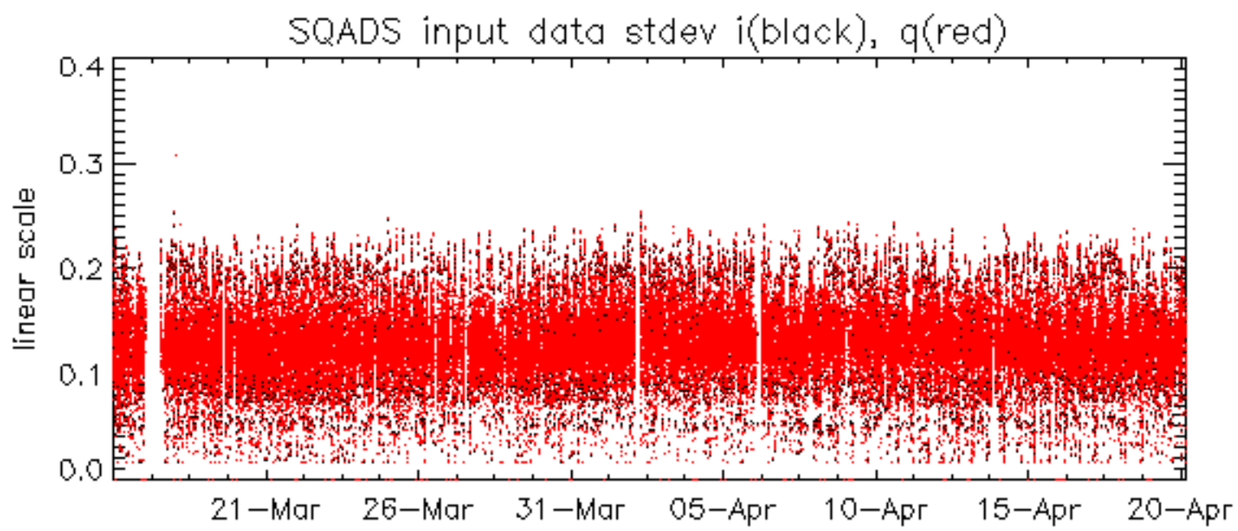

Reference: 2003-06-12 14:10:32 V
Test : 2005-04-18 08:42:00 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

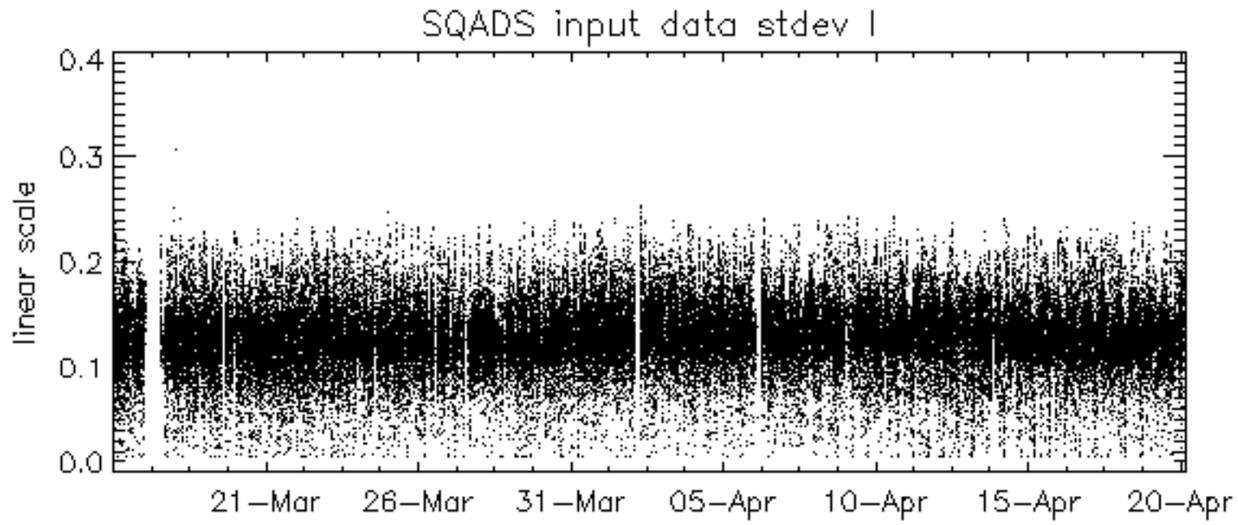

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

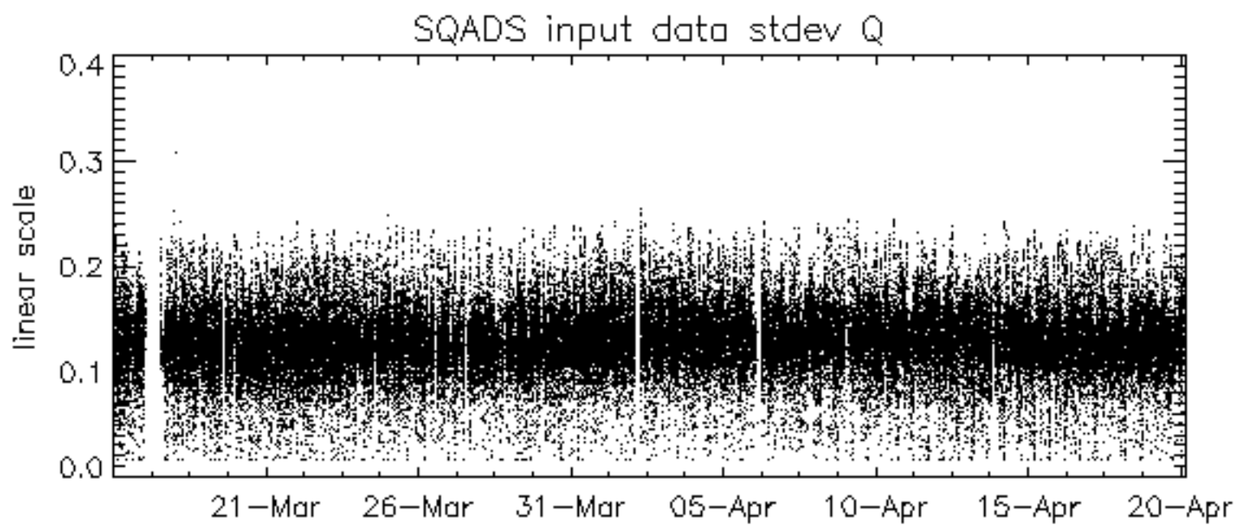

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr

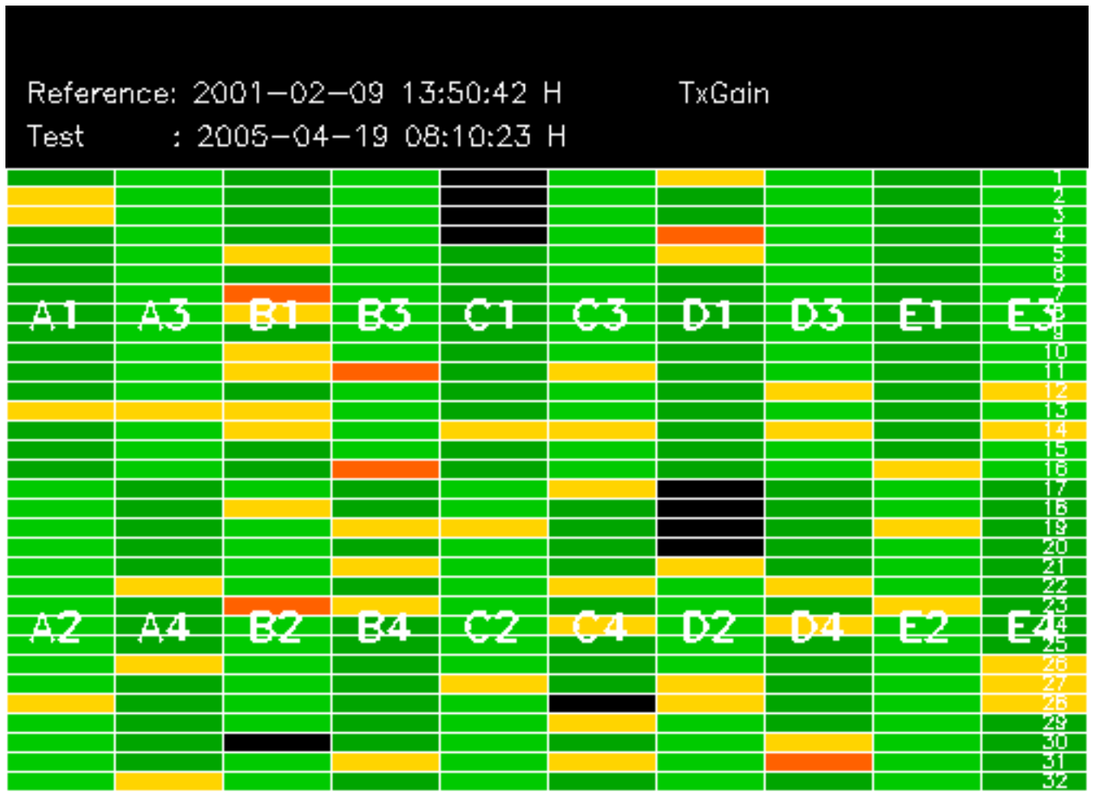

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21−Mar
26−Mar
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr


Reference: 2001-02-09 13:50:42 H
Test : 2005-04-19 08:10:23 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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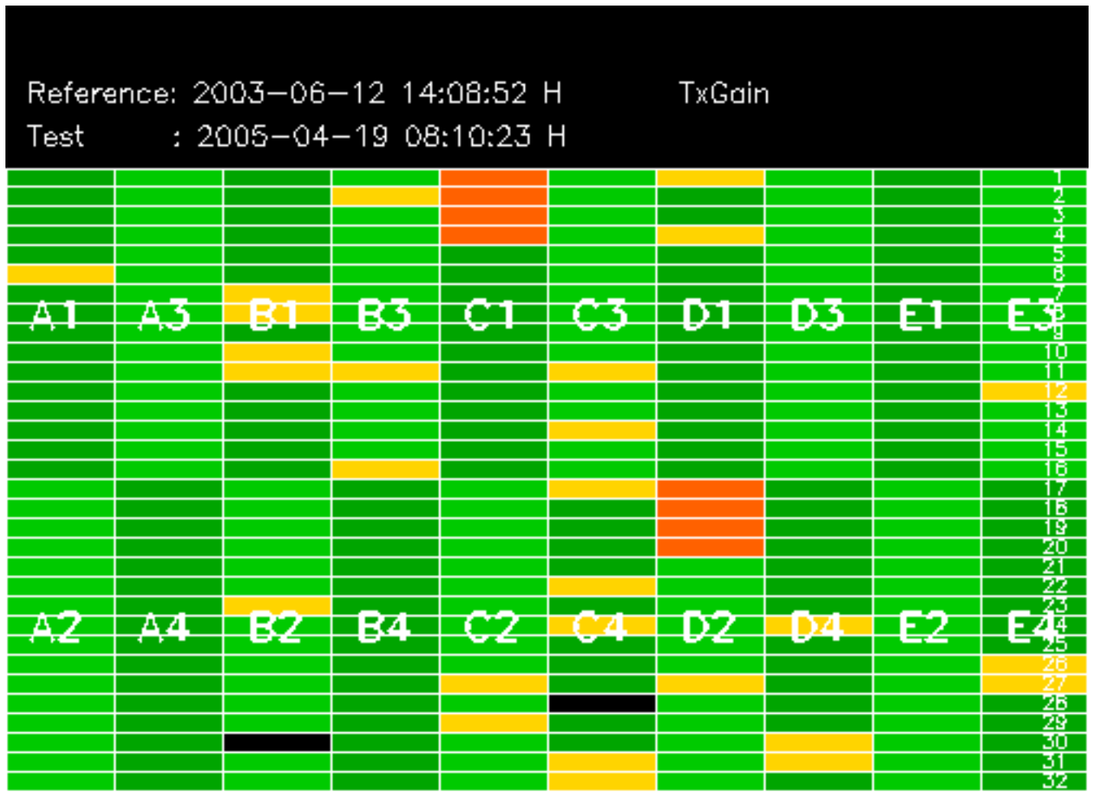
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-04-19 08:10:23 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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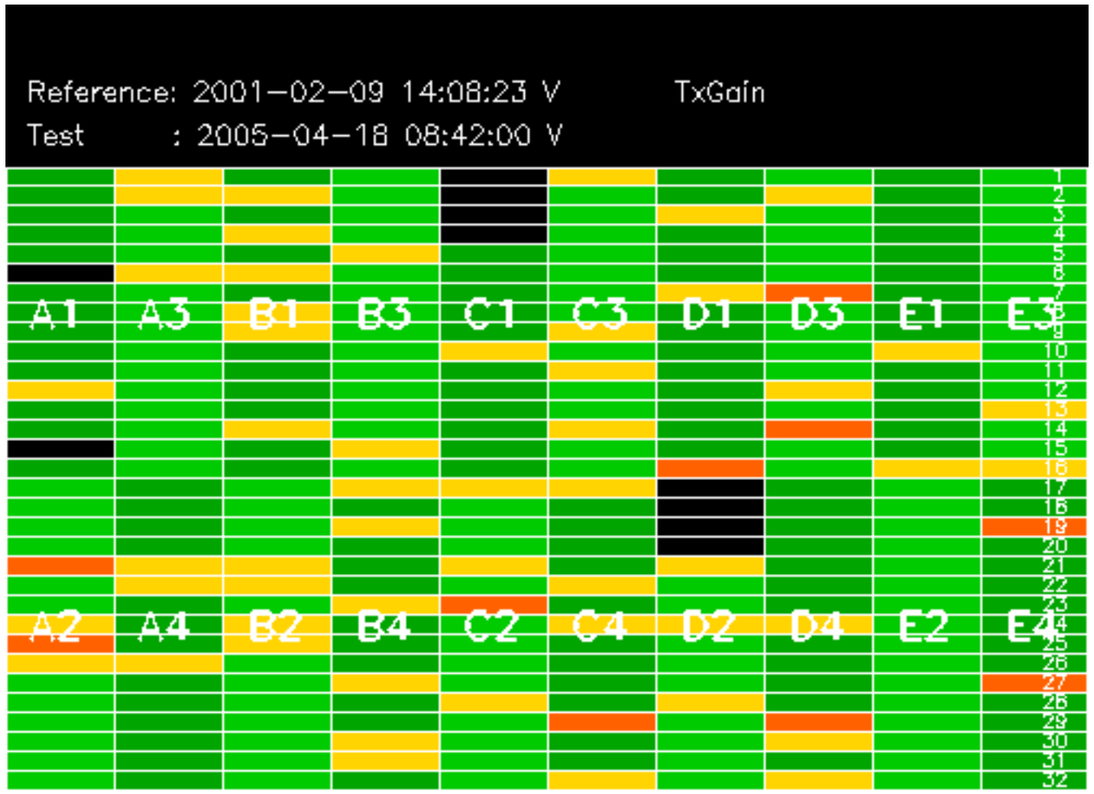
32


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-18 08:42:00 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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27
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-04-18 08:42:00 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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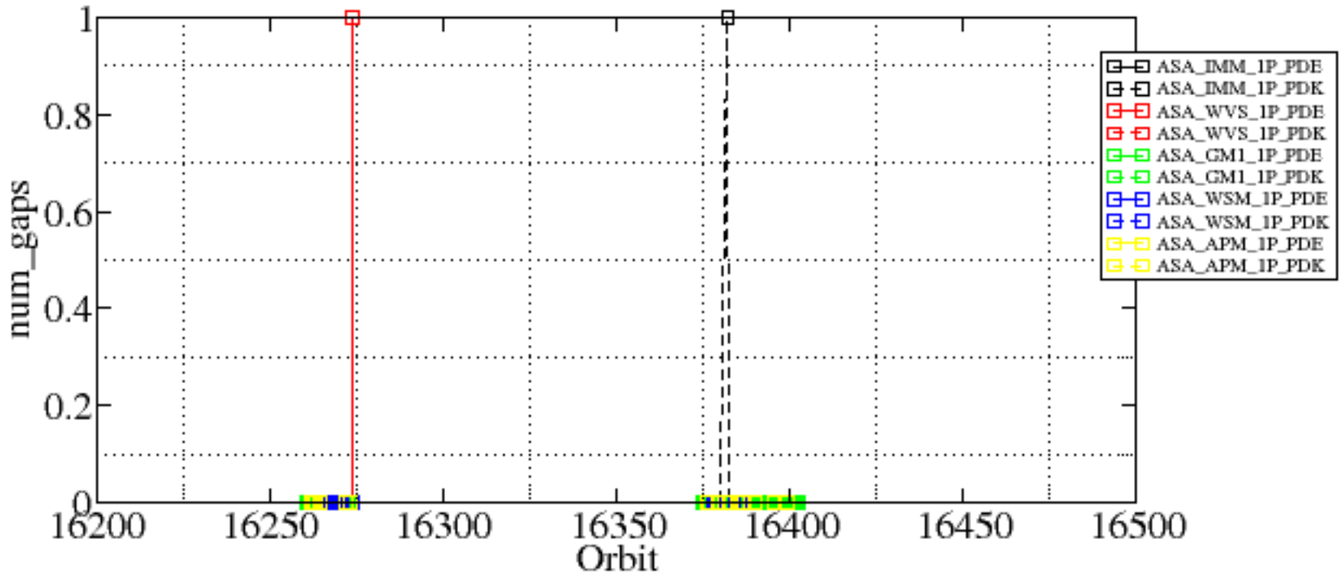
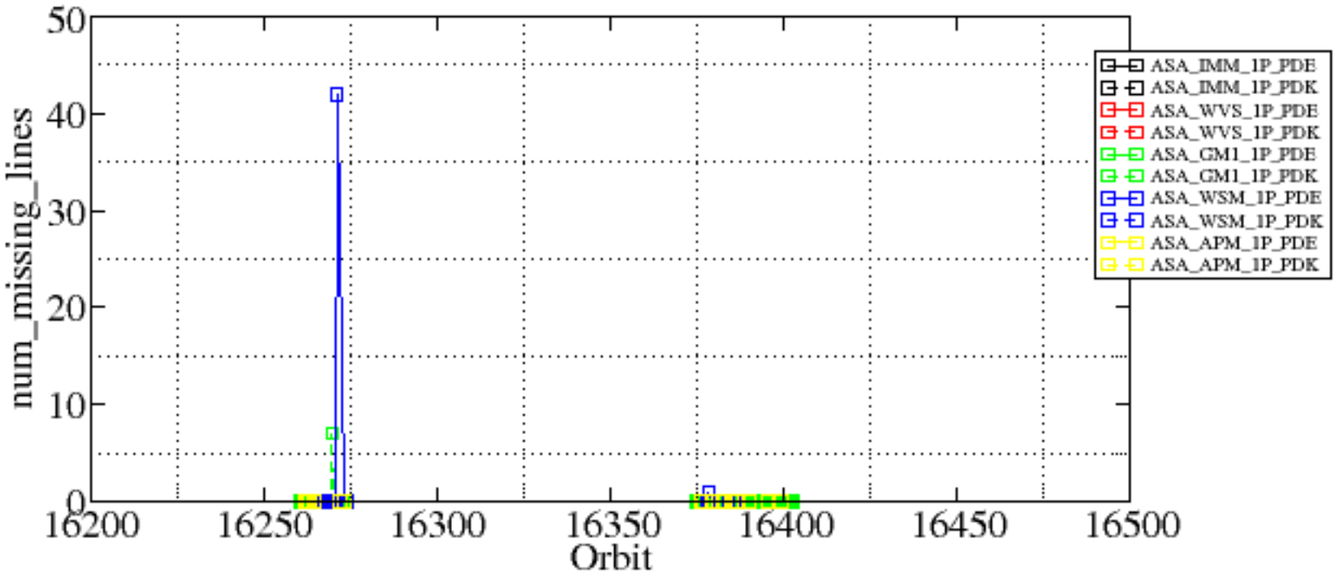
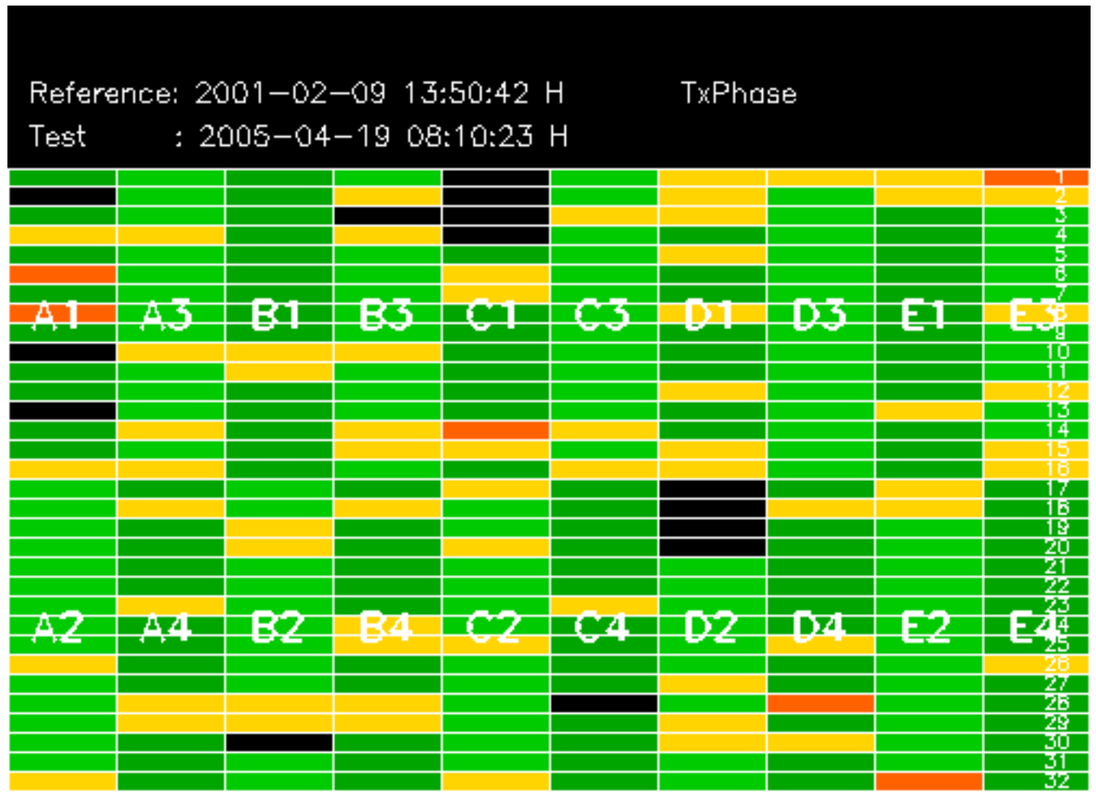
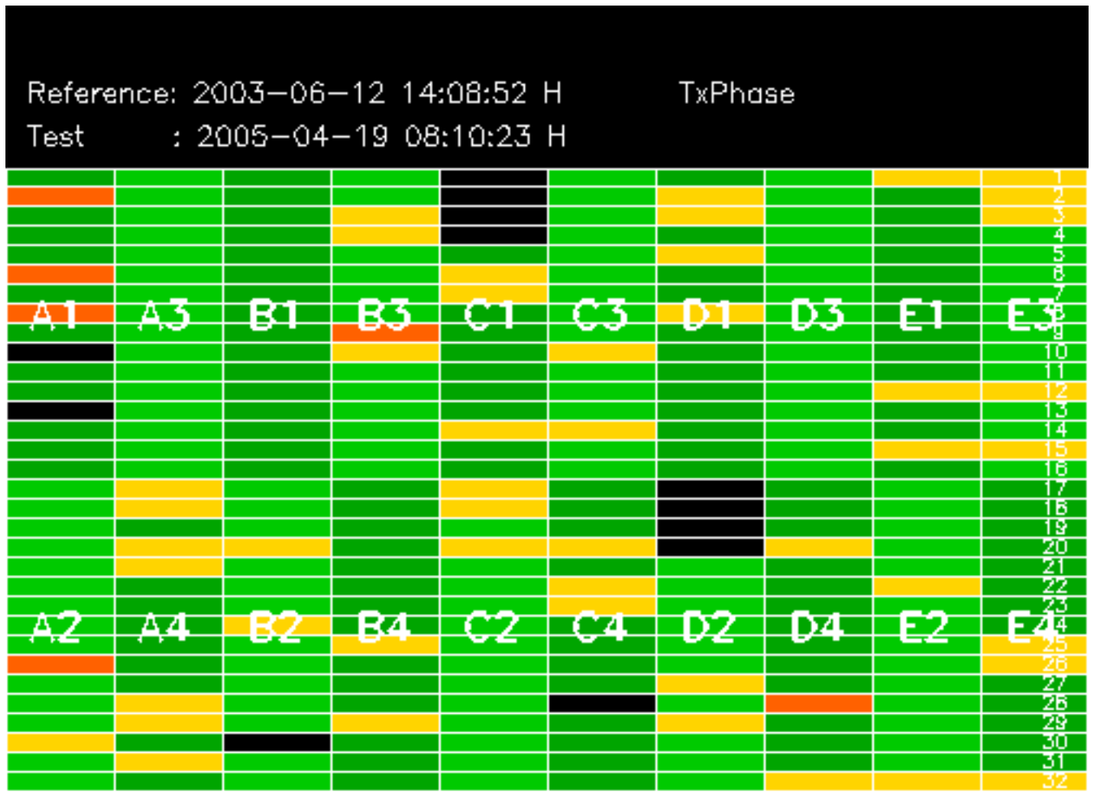
31
32

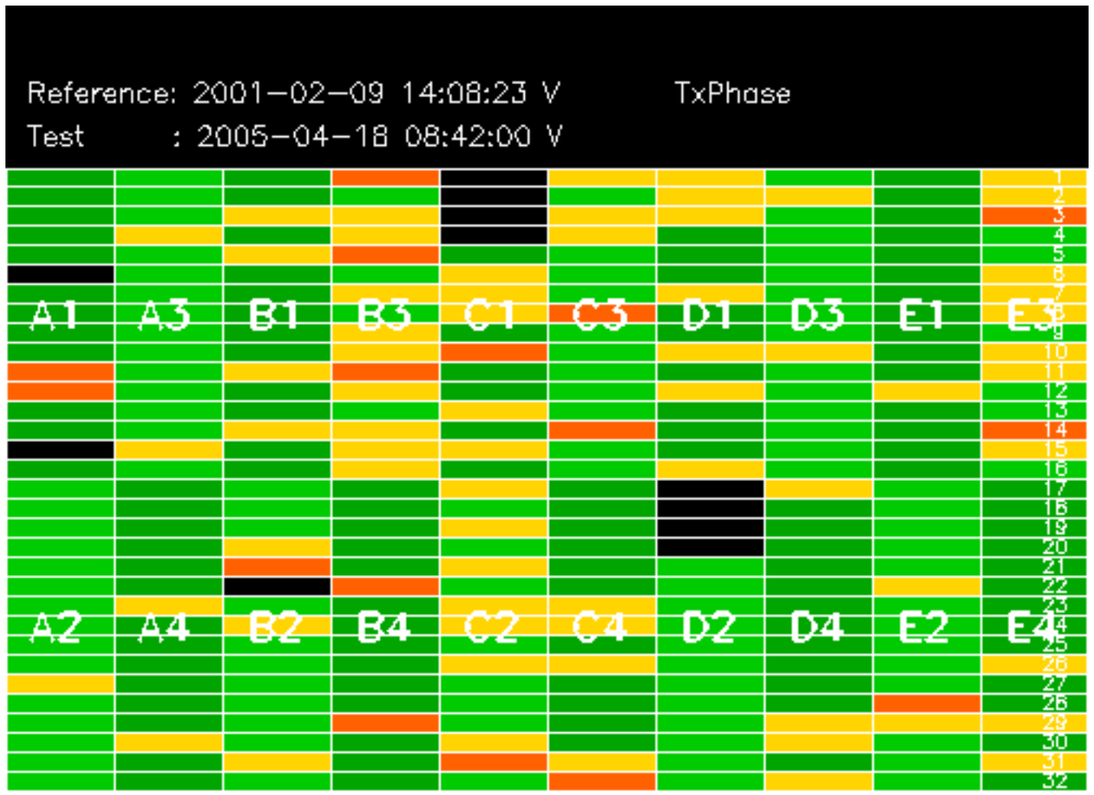
Summary of analysis for the last 3 days 2005041[890]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050418_124849_000000872036_00296_16382_2654.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WVS_1PNPDE20050410_231921_000000002036_00187_16273_8167.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20050410_161611_000003442036_00183_16269_7778.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050410_183358_000002732036_00185_16271_6237.N1 </td> <td>0 </td> <td>42 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050418_063106_000001282036_00292_16378_7404.N1 </td> <td>0 </td> <td>1 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
16200
16250
16300
16350
16400
16450
16500
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
50
40
30
20
10
0
16200
16250
16300
16350
16400
16450
16500
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
TxPhase
Test : 2005-04-19 08:10:23 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2005-04-19 08:10:23 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-04-18 08:42:00 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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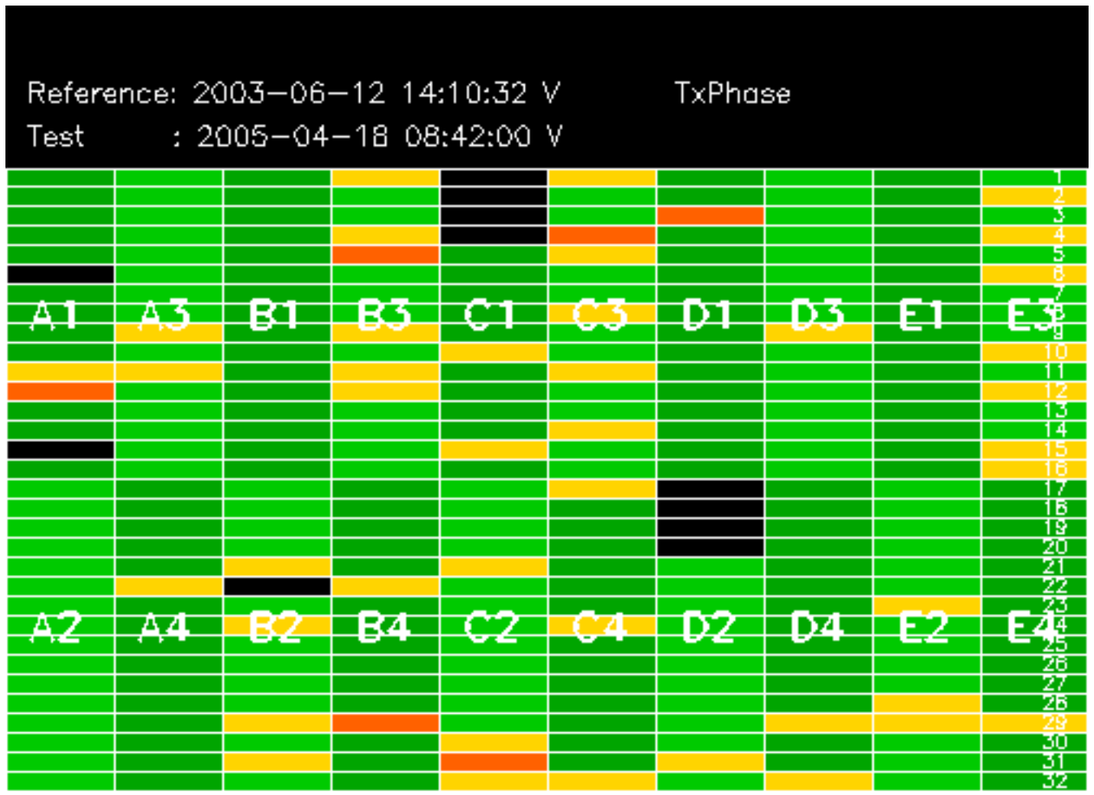
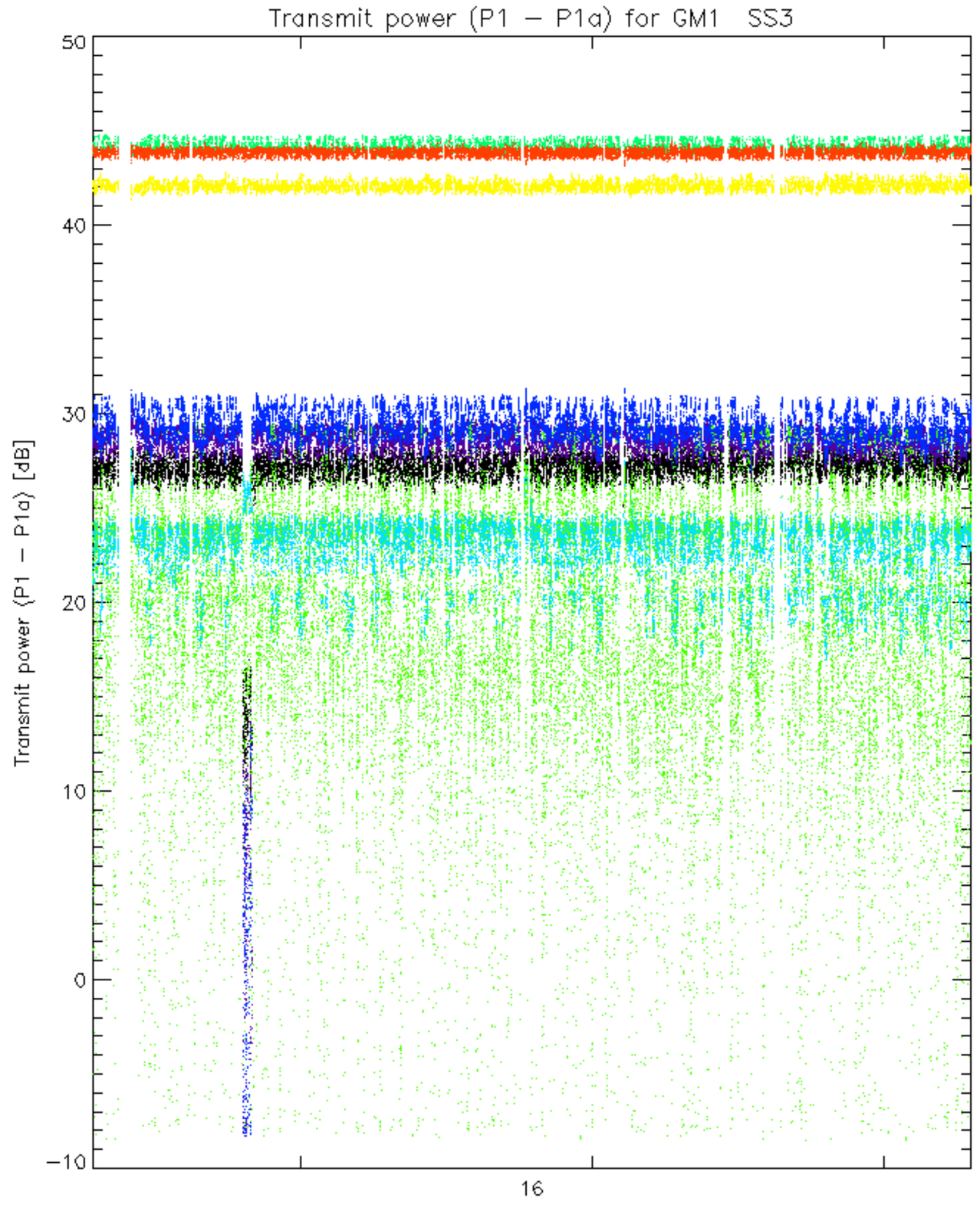
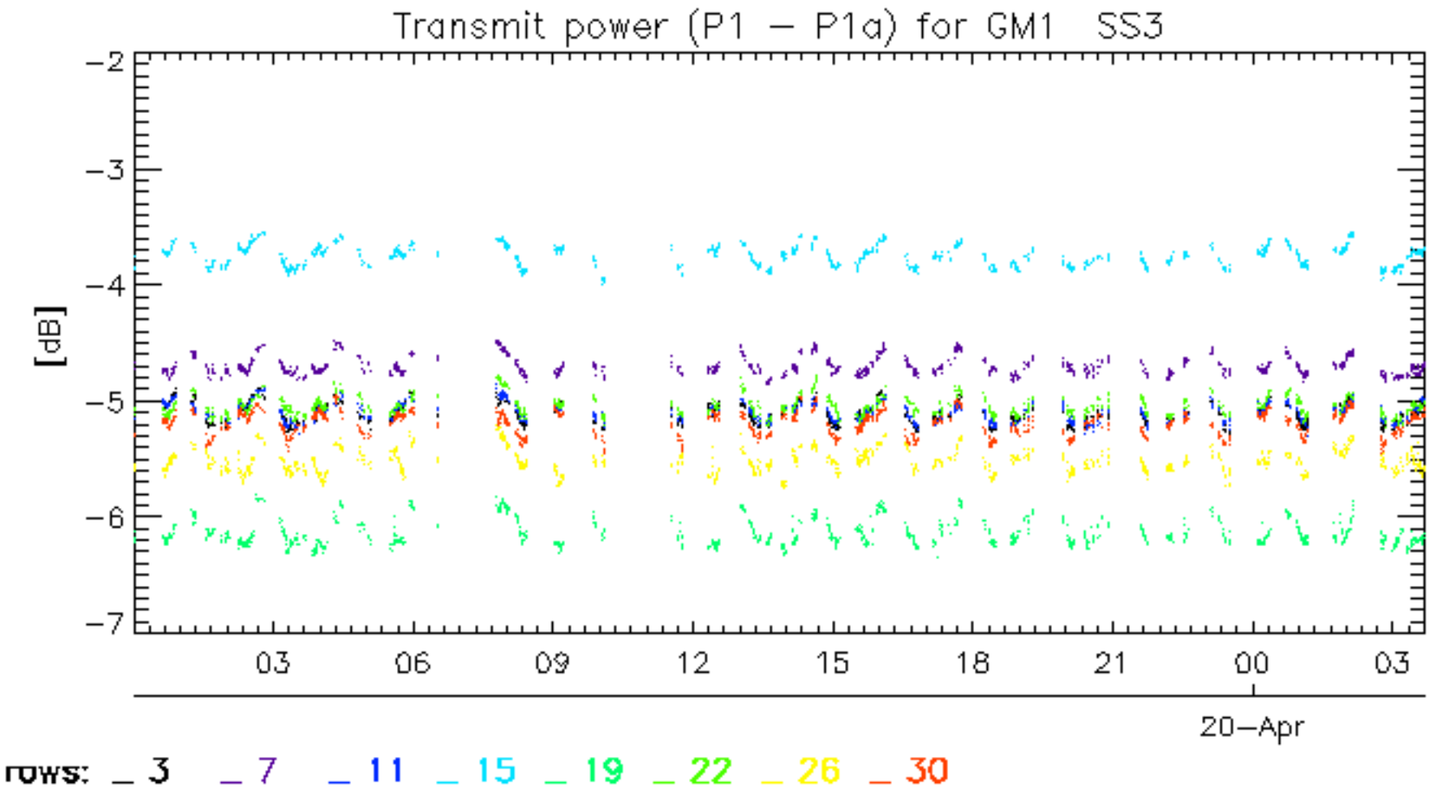
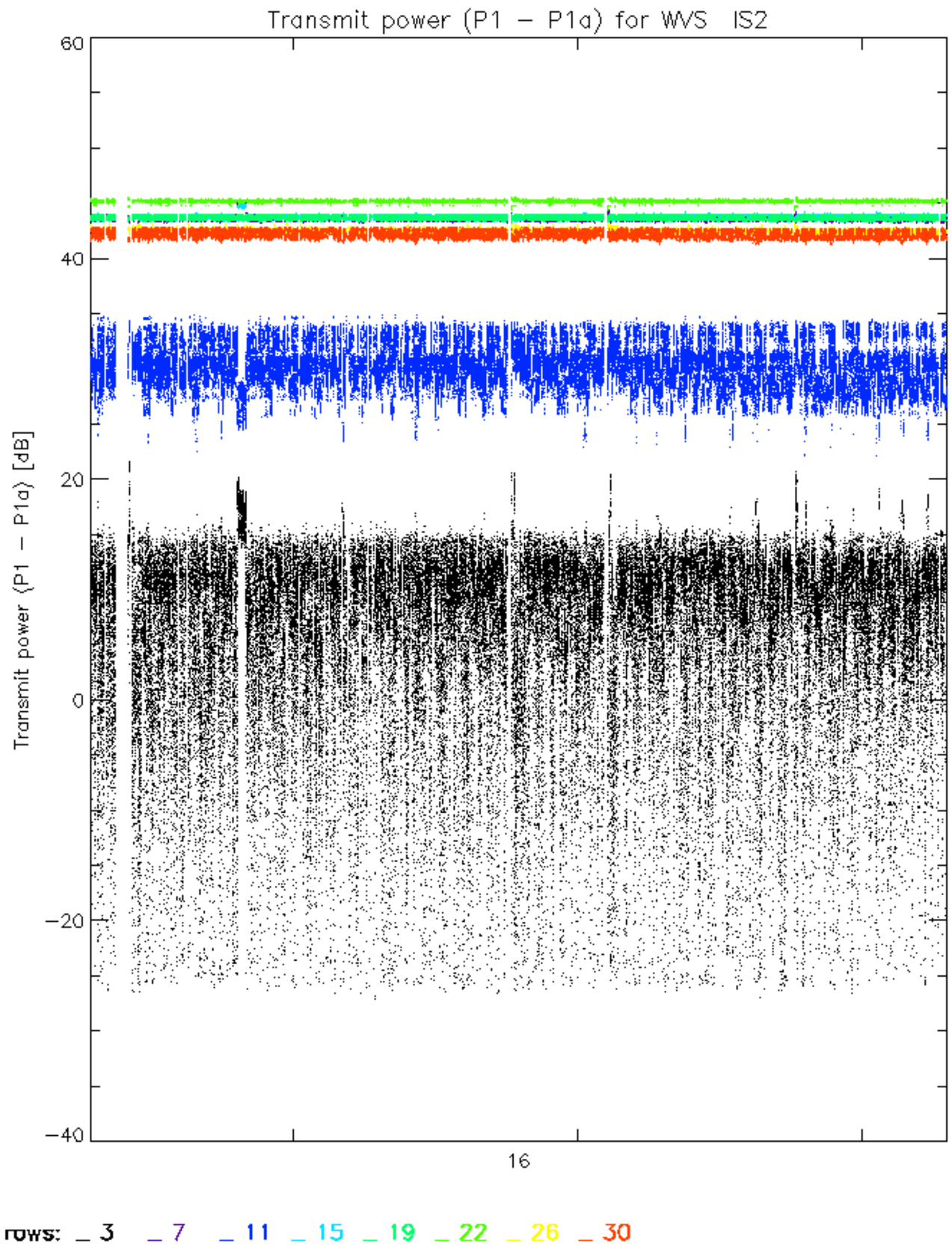
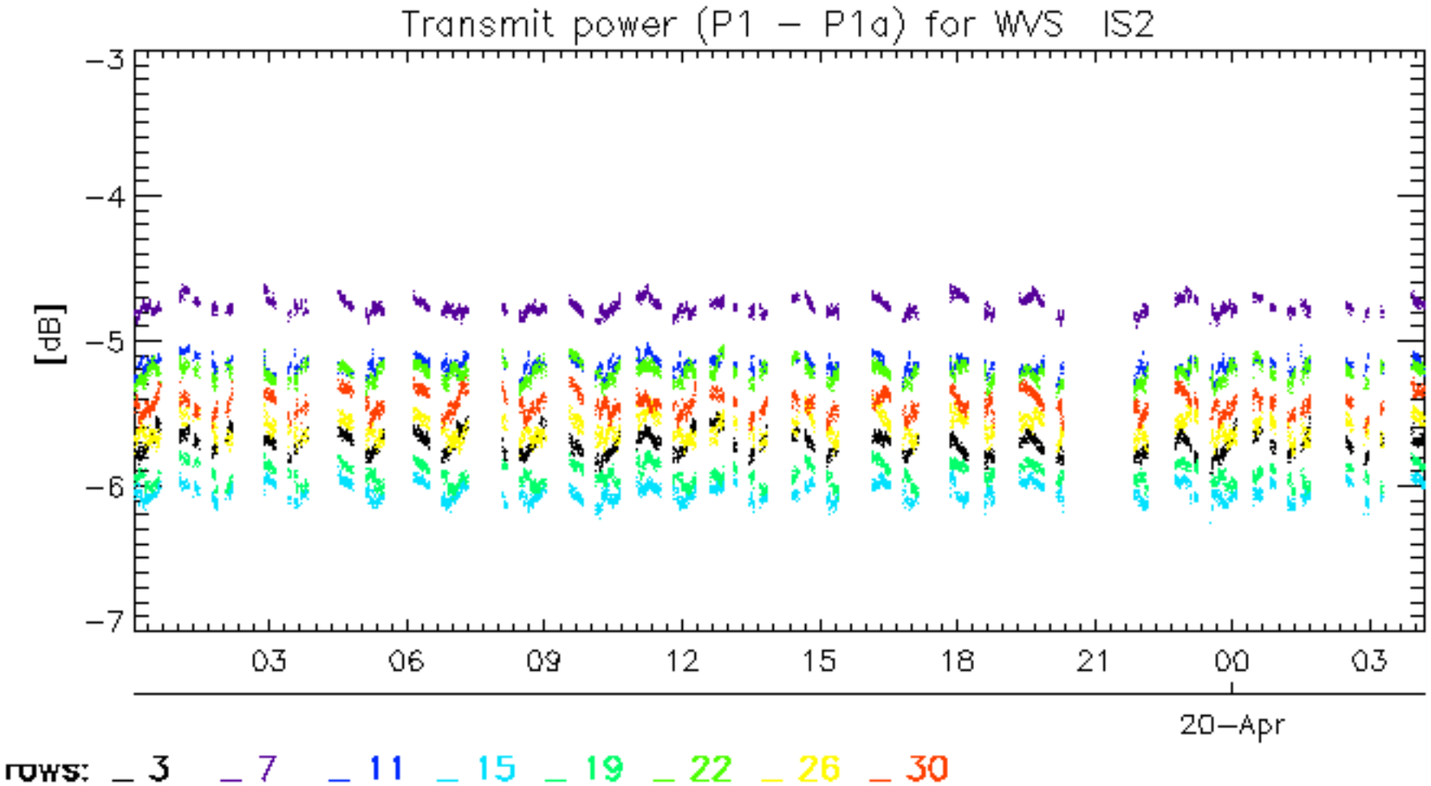
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-04-18 08:42:00 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
−10
16
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
60
40
20
0
−20
−40
Transmit power (P1 – P1a) [dB]
16
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.