REPORT OF 050502

last update on Mon May 2 16:15:40 GMT 2005

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1 - Introduction

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 2005-05-01 00:00:00 to 2005-05-02 16:15:40

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	22	56	7	7	6
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	22	56	7	7	6
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	22	56	7	7	6
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	22	56	7	7	6

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	45	59	4	10	5
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	45	59	4	10	5
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	45	59	4	10	5
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	45	59	4	10	5

2.3 - Browse Visual Inspection

2.2 - Browse Visual Inspection

No anomalies is detected from browse visual inspection

2.4 - Data Analysis

2.3 - 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	20050430 204912
H	20050501 183700

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	-3.348263	0.006737	0.001968
7	P1	-3.114513	0.011883	0.026851
11	P1	-4.670258	0.026504	0.033218
15	P1	-5.583576	0.043508	0.119176
19	P1	-3.712216	0.004141	-0.030659
22	P1	-4.572288	0.012488	-0.064317
26	P1	-4.895829	0.019937	0.048902
30	P1	-7.161763	0.026280	0.068949
3	P1	-15.780190	0.079343	0.212126
7	P1	-15.521289	0.085290	0.101950
11	P1	-21.210840	0.240853	-0.181955
15	P1	-11.476872	0.032241	0.137014
19	P1	-14.323008	0.031636	-0.039769
22	P1	-15.866938	0.325882	-0.246515
26	P1	-17.630322	0.180967	0.026877
30	P1	-17.879192	0.309791	0.050073

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.044758	0.083005	-0.022210
7	P2	-22.222347	0.103708	-0.043448
11	P2	-14.182260	0.110370	0.171067
15	P2	-7.076718	0.093018	-0.070128
19	P2	-9.649958	0.095439	-0.006745
22	P2	-16.882420	0.097649	-0.021246

26	P2	-16.469646	0.097027	-0.054950
30	P2	-18.825539	0.085968	0.013025

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.167096	0.004131	-0.004656
7	P3	-8.167096	0.004131	-0.004656
11	P3	-8.167094	0.004131	-0.004657
15	P3	-8.167094	0.004131	-0.004657
19	P3	-8.167094	0.004131	-0.004657
22	P3	-8.167094	0.004131	-0.004657
26	P3	-8.167094	0.004131	-0.004657
30	P3	-8.167095	0.004131	-0.004656

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	-2.752337	0.012259	-0.056002
7	P1	-3.007209	0.031205	0.041768
11	P1	-3.981171	0.016835	0.045940
15	P1	-3.541656	0.021797	0.073347
19	P1	-3.623059	0.014620	-0.030345
22	P1	-5.682776	0.046948	0.109282
26	P1	-7.310744	0.024776	-0.027219
30	P1	-6.277122	0.061757	0.004472
3	P1	-10.756398	0.045062	-0.051105
7	P1	-10.393810	0.150759	-0.109158

11	P1	-12.558177	0.098386	0.010669
15	P1	-11.679790	0.069876	0.169341
19	P1	-15.609736	0.059975	-0.052010
22	P1	-25.075058	1.856138	-1.075760
26	P1	-15.616817	0.281491	-0.252465
30	P1	-20.177794	1.246562	-0.219654

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.752447	0.039758	-0.053848
7	P2	-22.287577	0.047195	0.043742
11	P2	-10.058848	0.058033	0.070718
15	P2	-5.052255	0.037990	-0.118995
19	P2	-6.879345	0.053140	-0.082325
22	P2	-7.090915	0.038836	-0.057628
26	P2	-23.892027	0.038390	-0.090868
30	P2	-21.918848	0.043297	-0.080879

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.003420	0.003669	-0.006813
7	P3	-8.003437	0.003661	-0.006710
11	P3	-8.003401	0.003658	-0.006349
15	P3	-8.003523	0.003665	-0.006745
19	P3	-8.003514	0.003665	-0.006541
22	P3	-8.003501	0.003647	-0.006507
26	P3	-8.003489	0.003658	-0.006401
30	P3	-8.003489	0.003670	-0.006407

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	0.000476820
	stdev	2.16680e-07
MEAN Q	mean	0.000491173
	stdev	2.35058e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128977
	stdev	0.00104815
STDEV Q	mean	0.129237
	stdev	0.00105967

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005050[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_IMM_1PNPDK20050501_124044_000000372036_00482_16568_3555.N1	1	0

7 - Doppler Analysis

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

6.1 - Unbiased Doppler Error for WVS

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

6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
Acsending
Descending

6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

6.4 - Unbiased Doppler Error for GM1

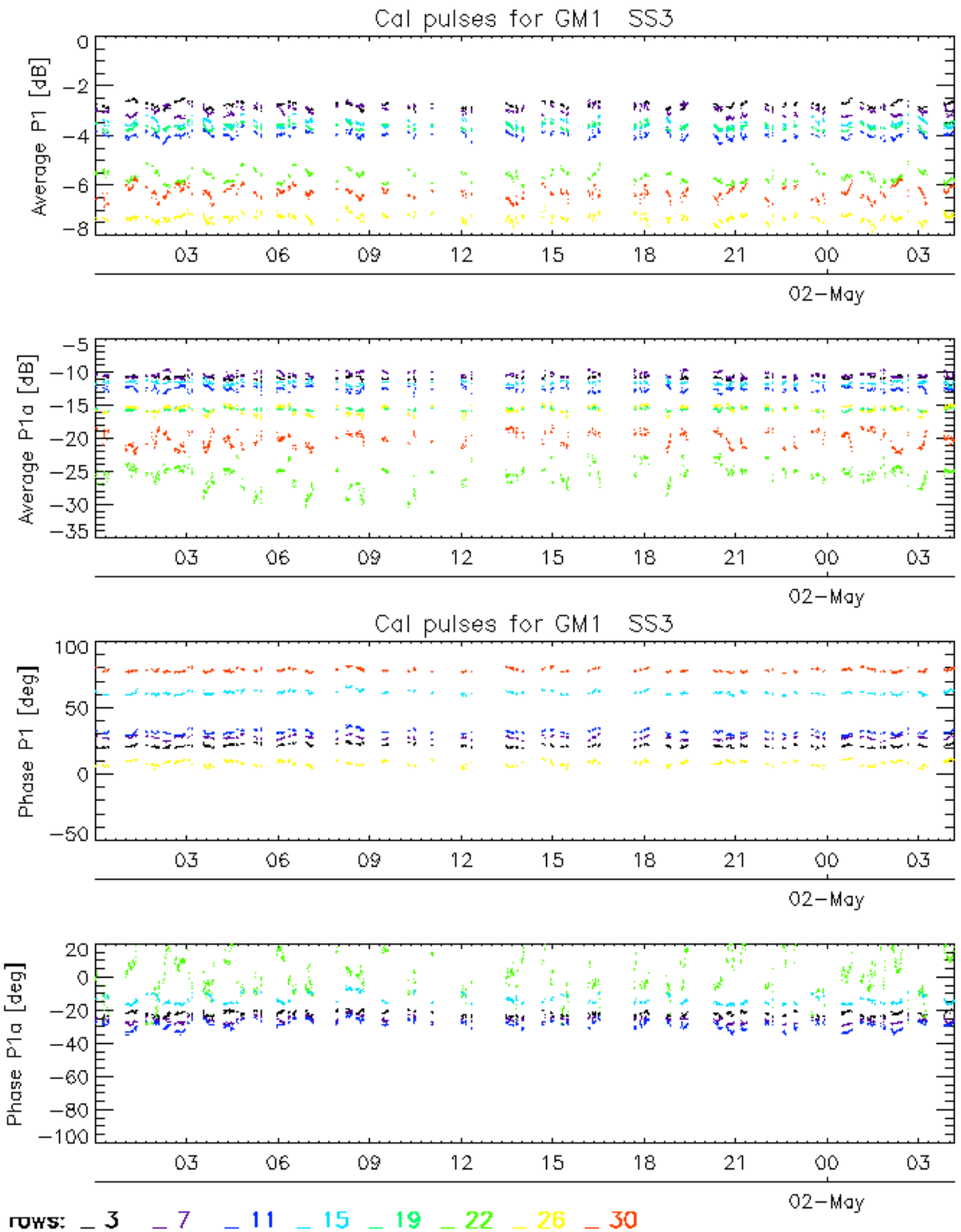
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

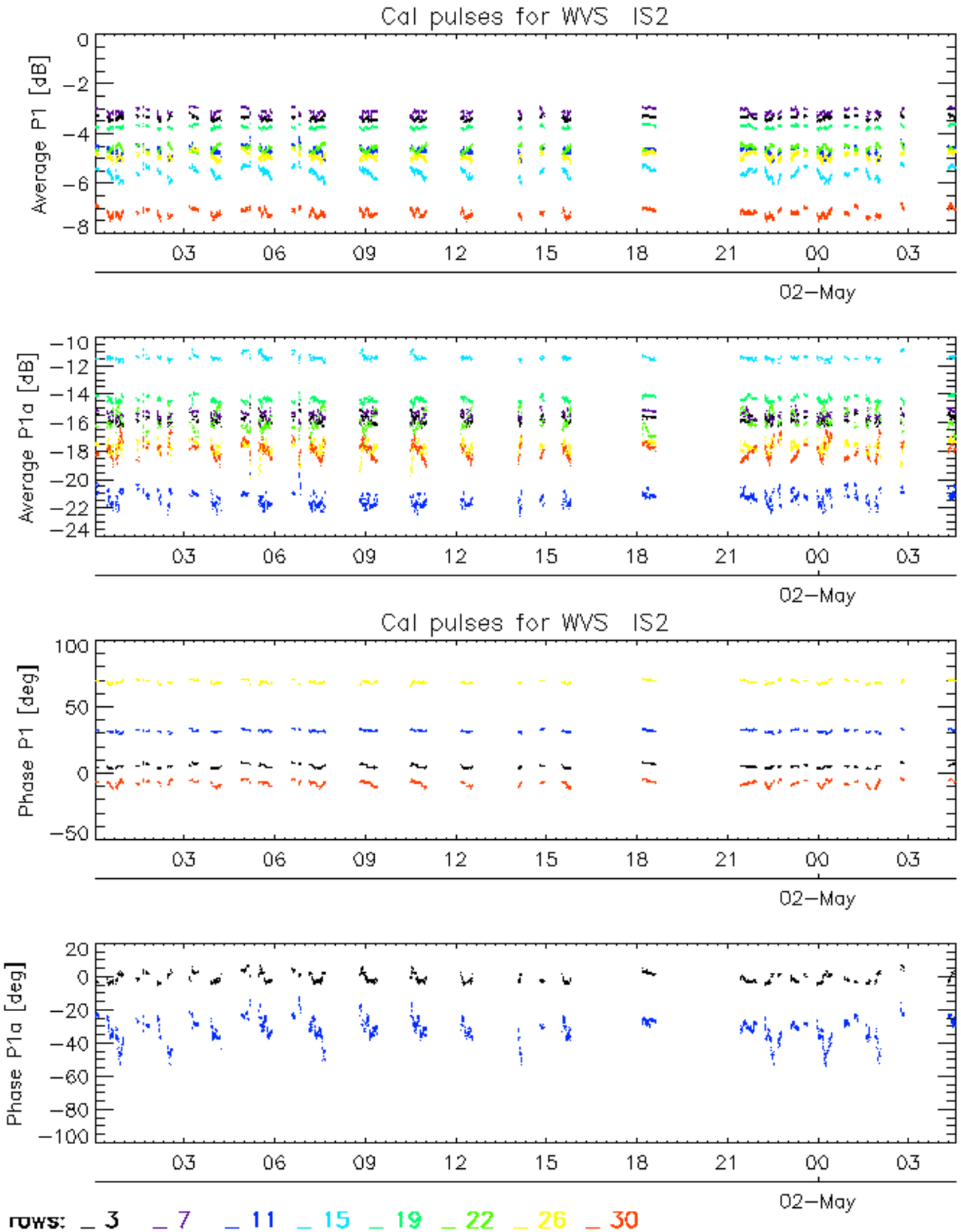
6.5 - Absolute Doppler for GM1

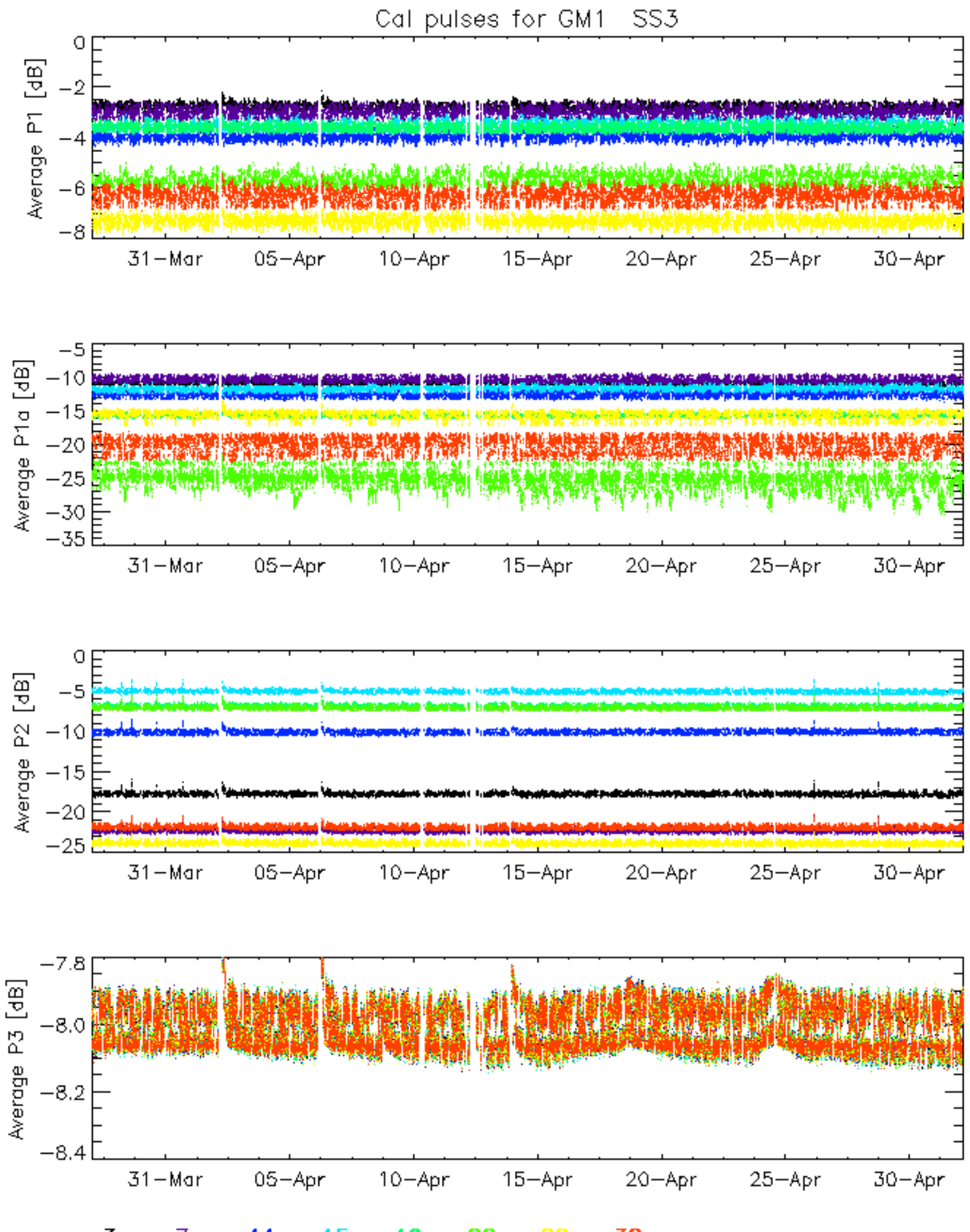
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

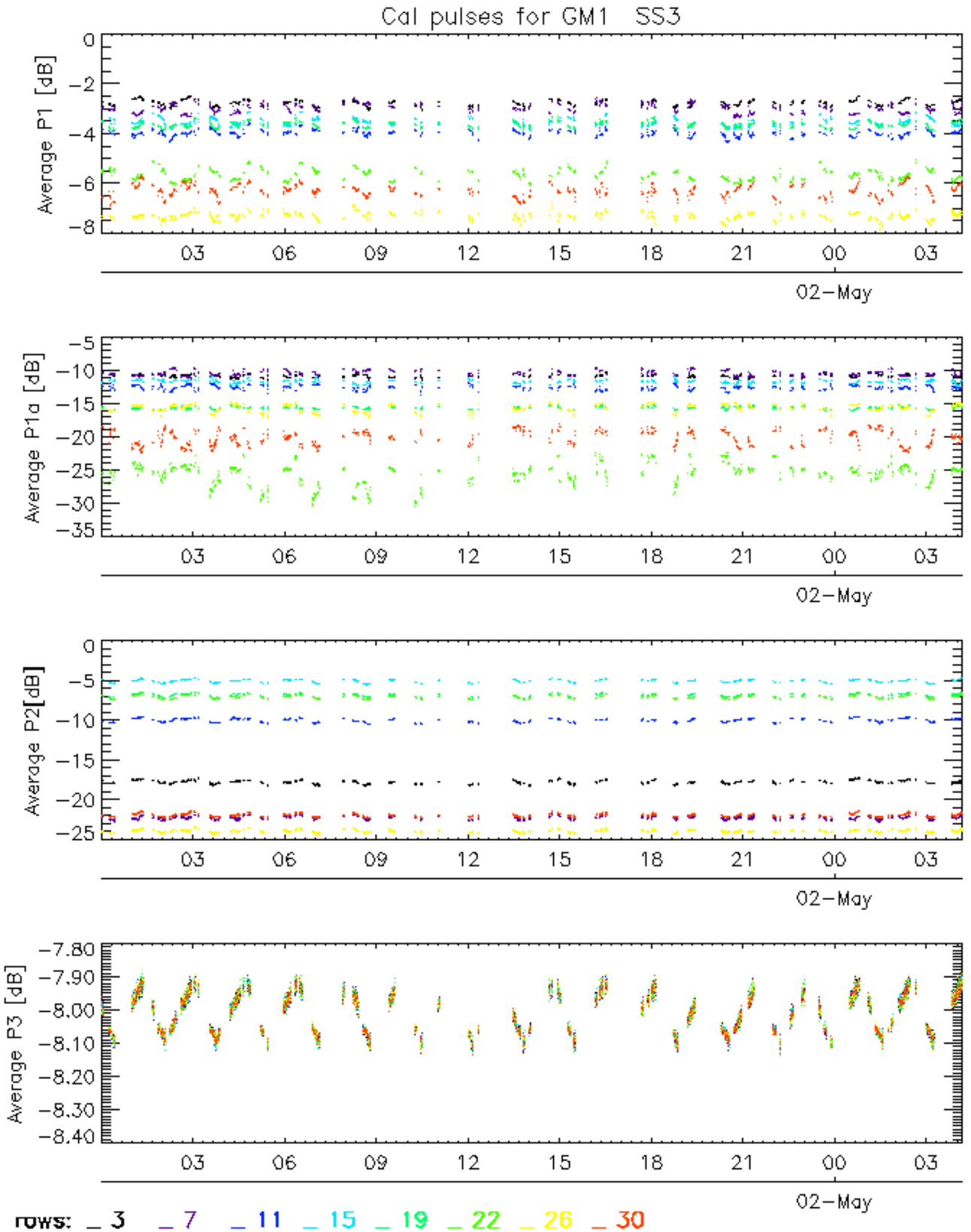
6.6 - Doppler evolution versus ANX for GM1

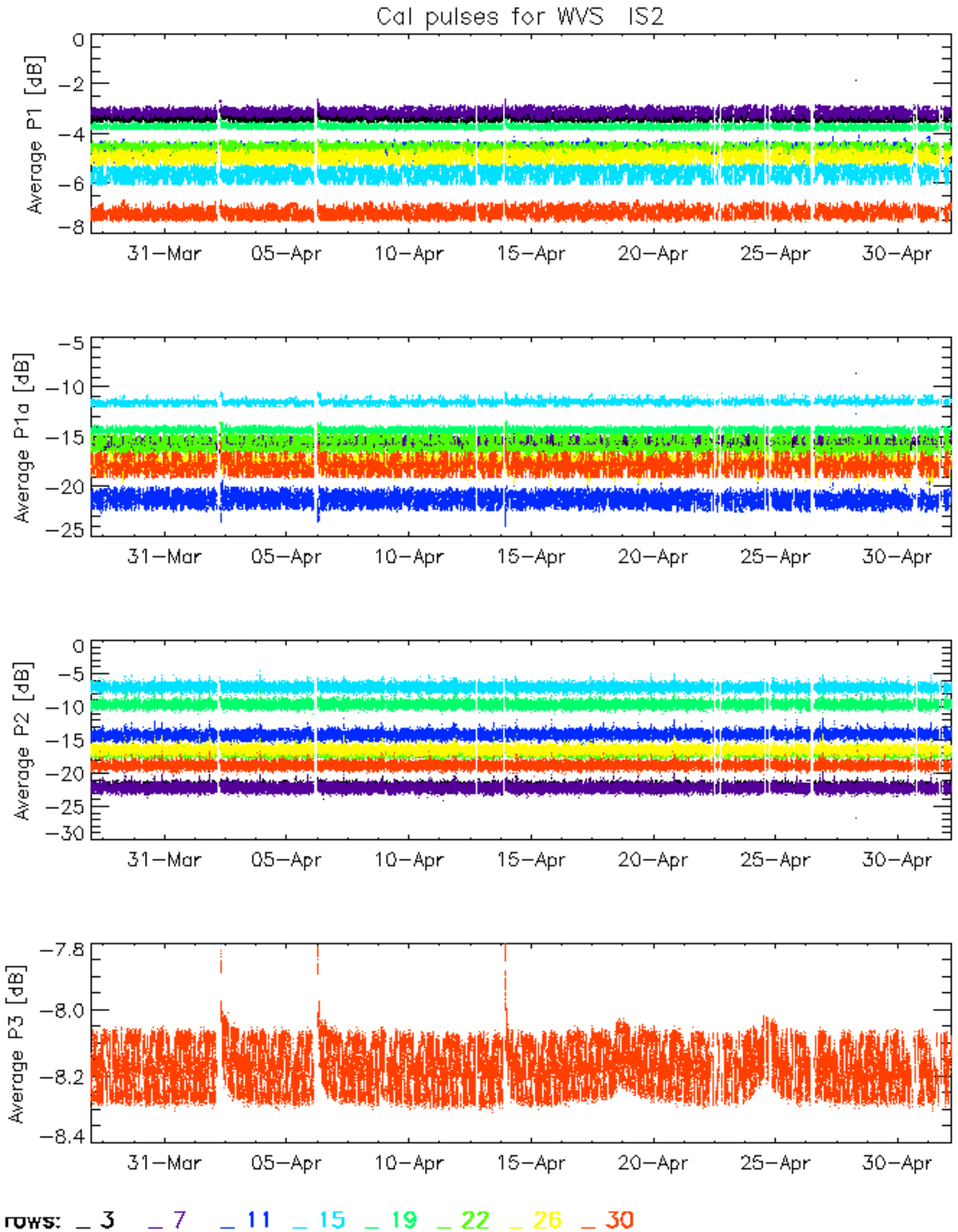
Evolution Doppler error versus ANX
☒

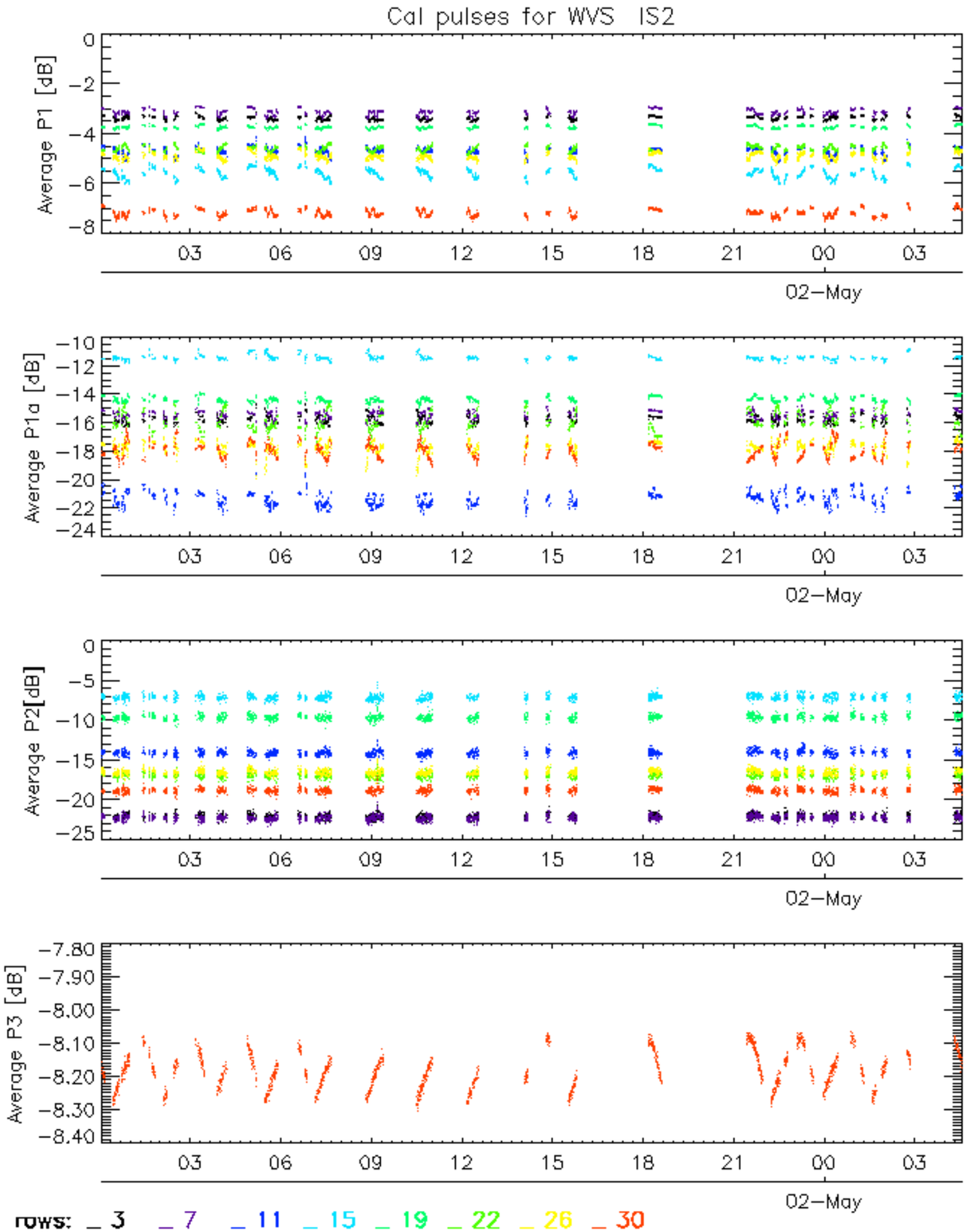

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
02−May
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
02−May
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
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
30−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

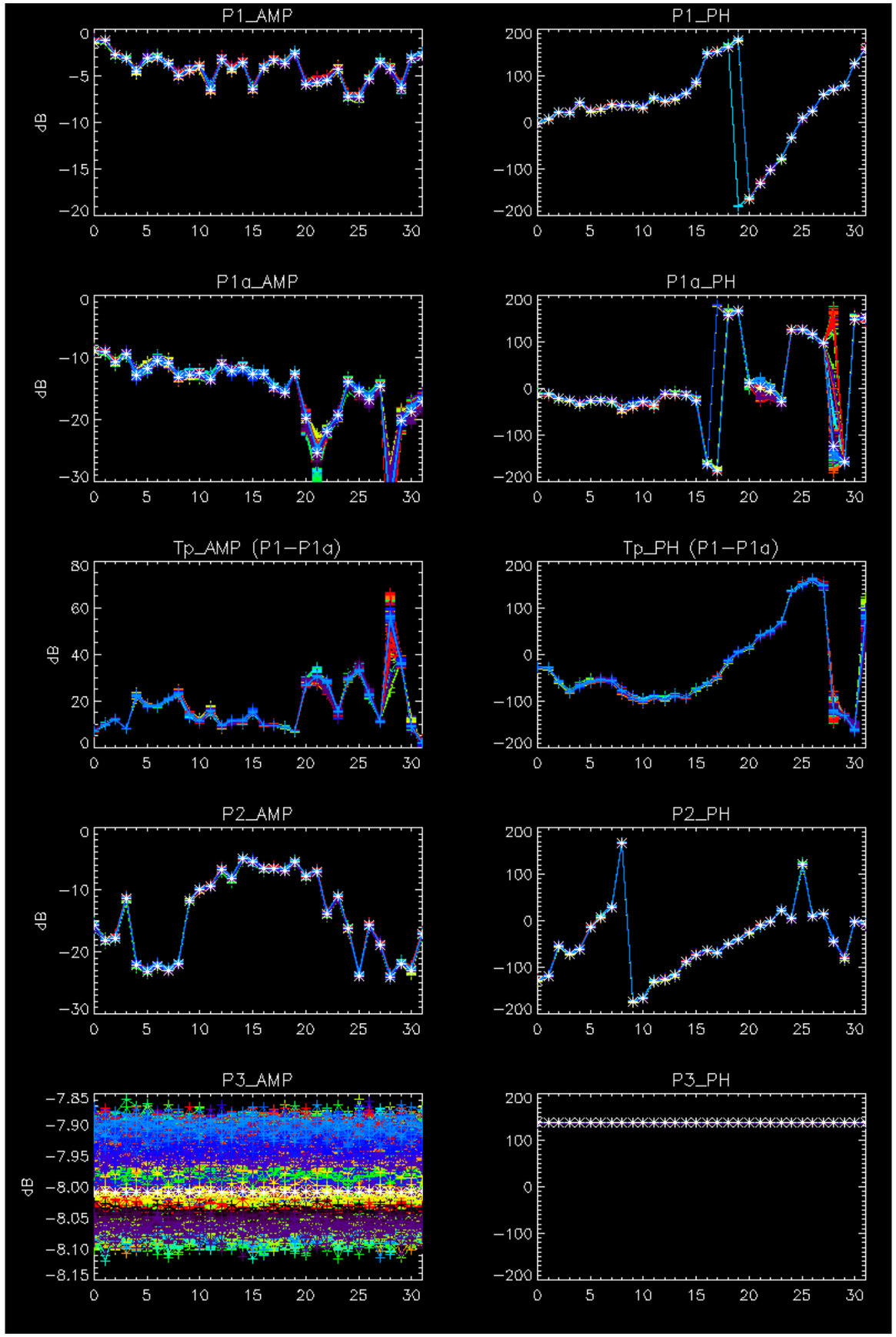

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
02−May
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

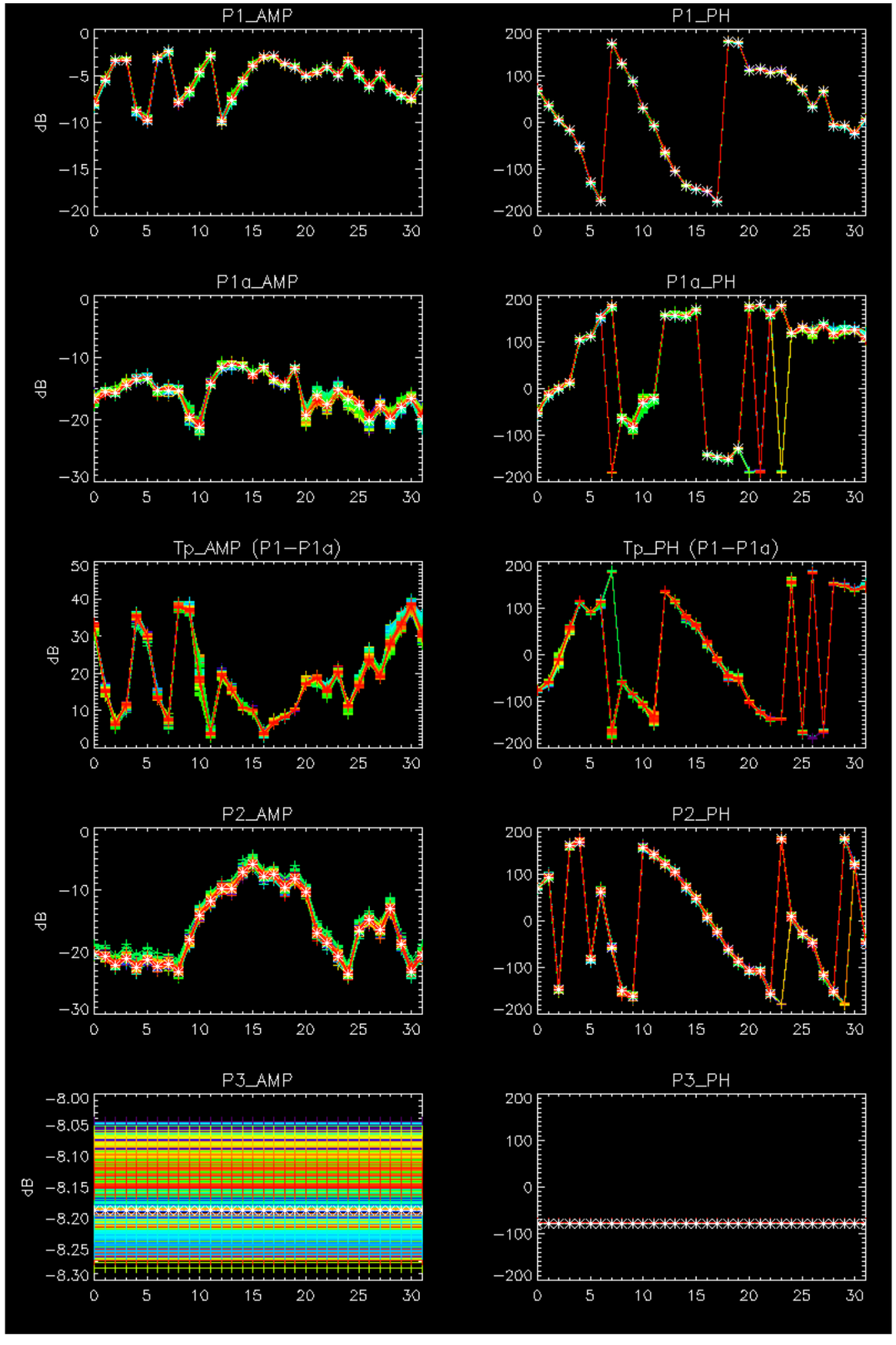

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
30−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
−30
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
02−May
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 is detected from browse visual inspection

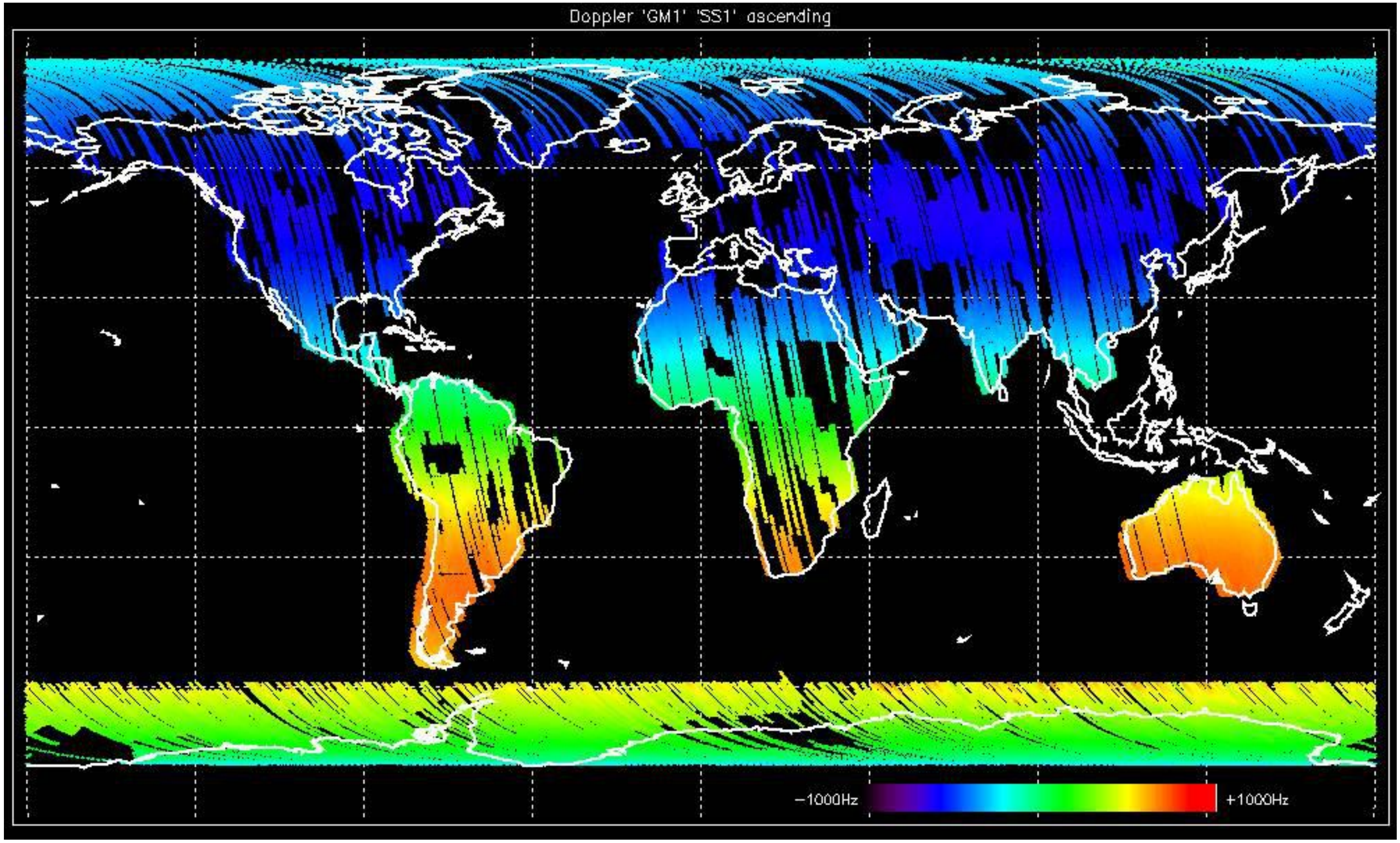
No anomalies observed.

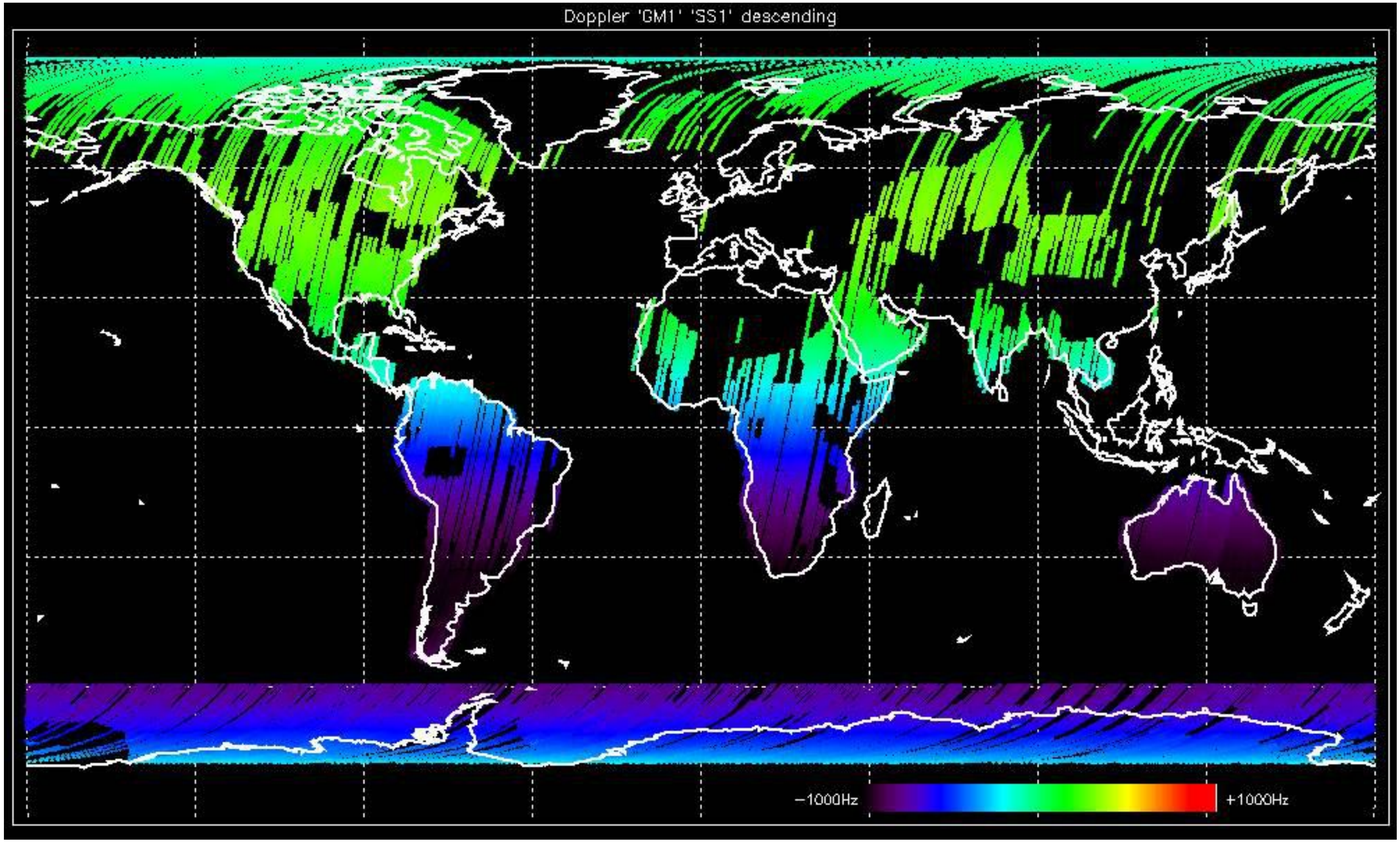

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

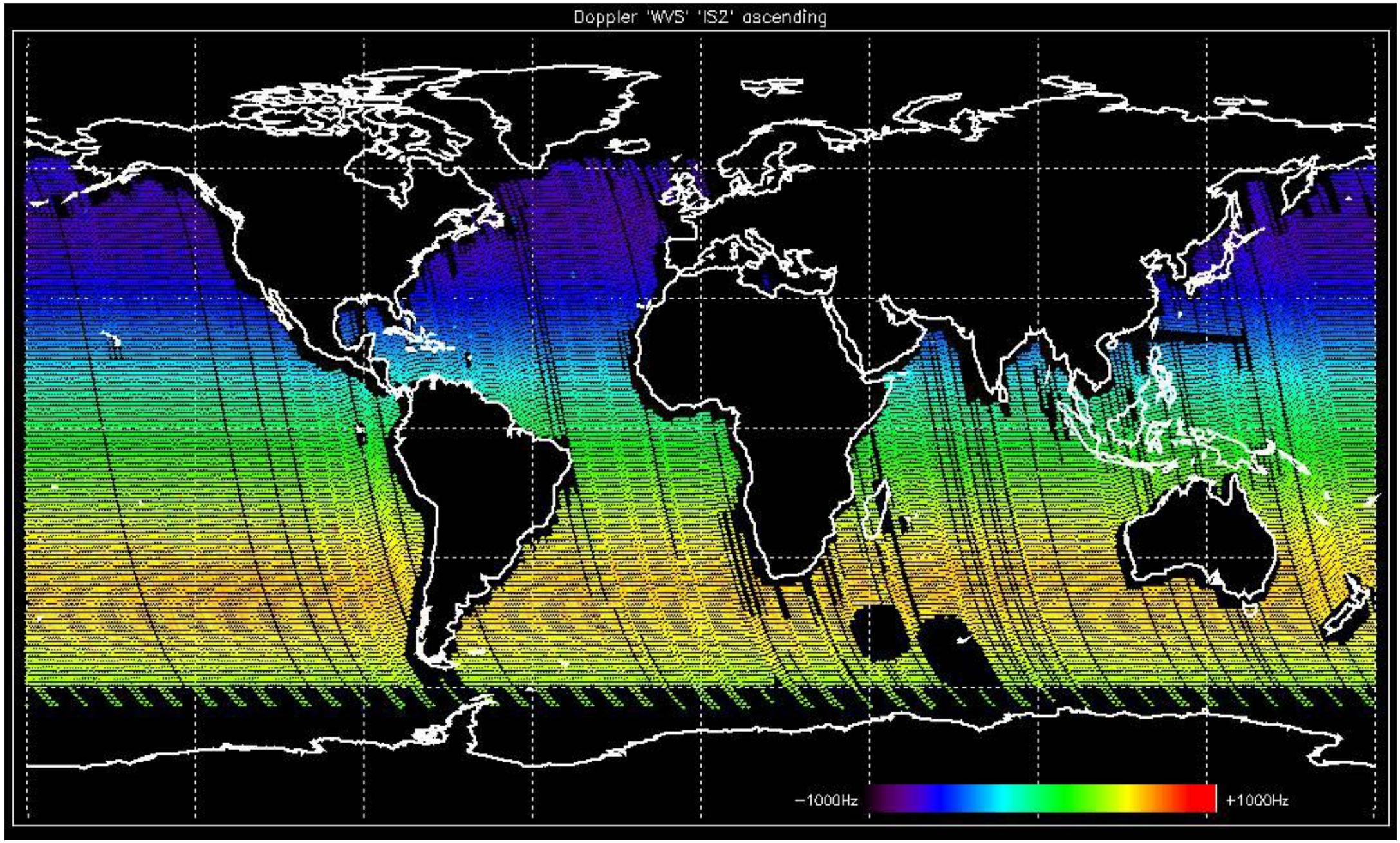

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

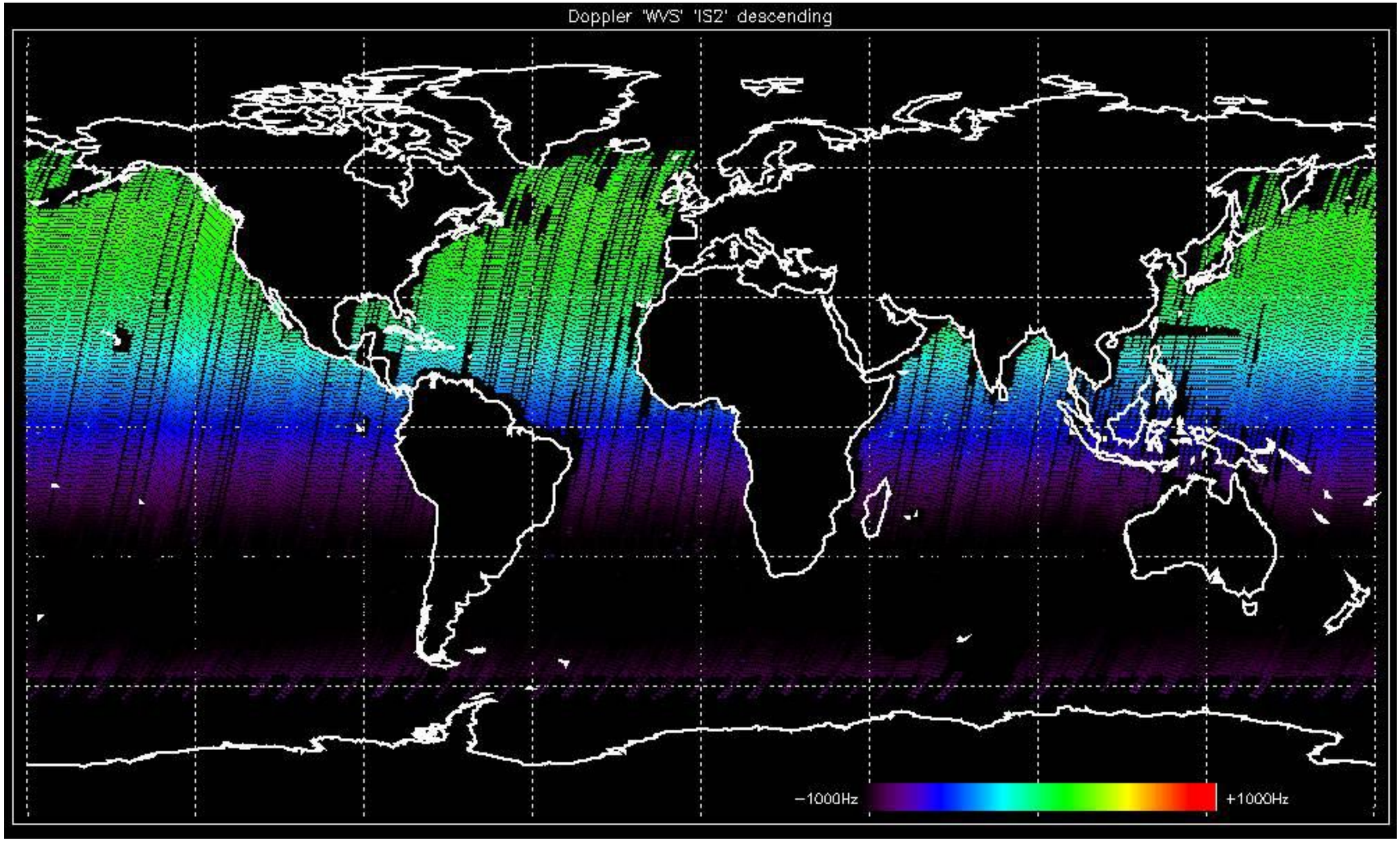
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

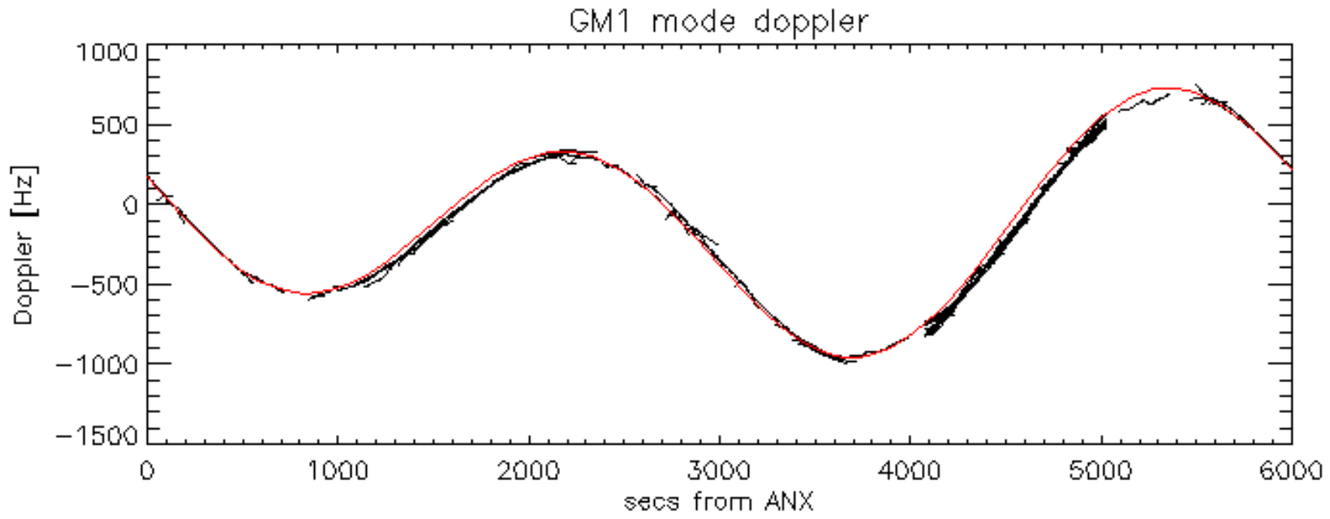
No anomalies observed in Doppler evolution.
Doppler analysis performed over the last 35 days.

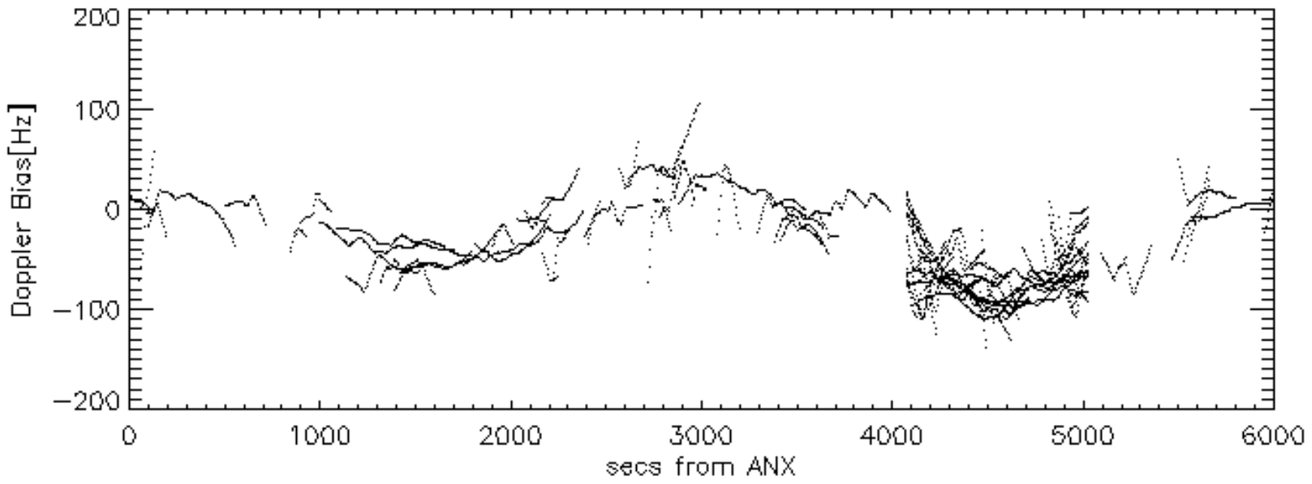

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

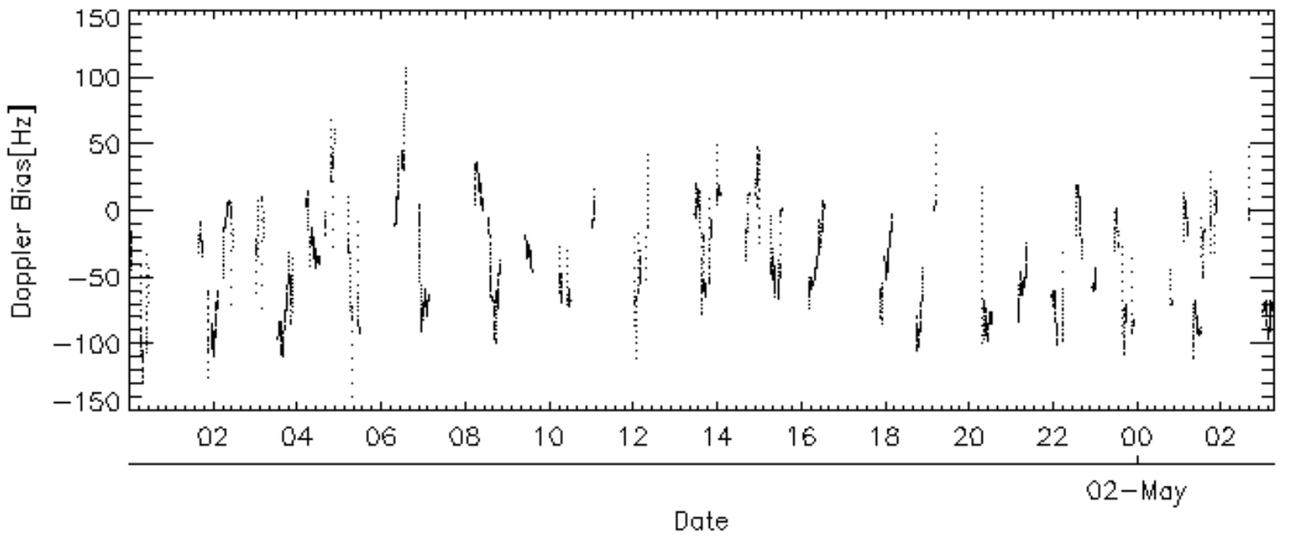

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

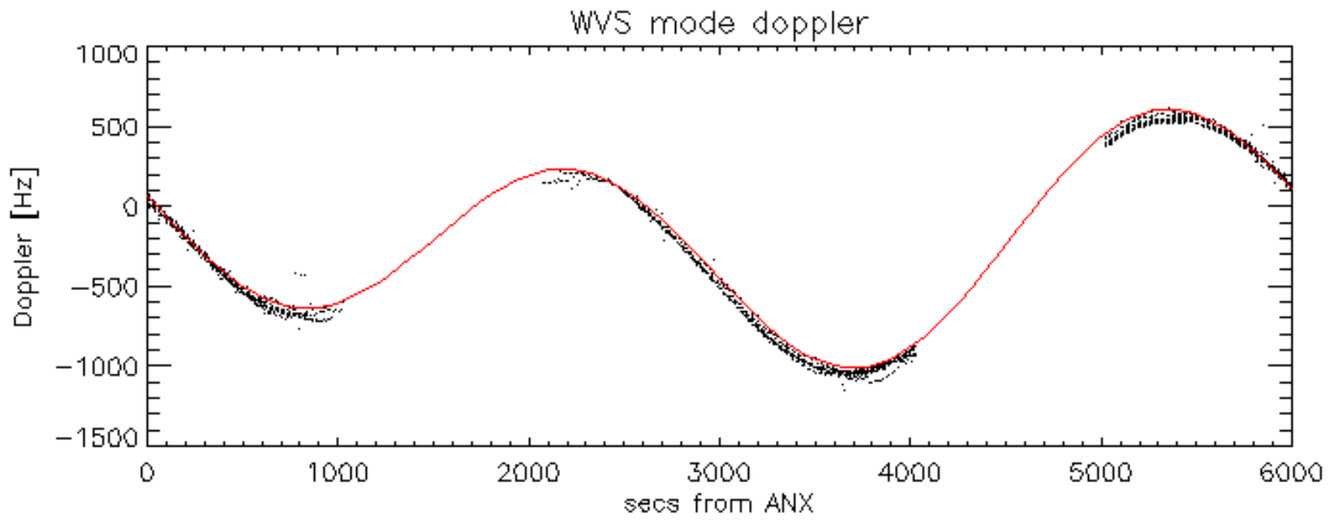

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

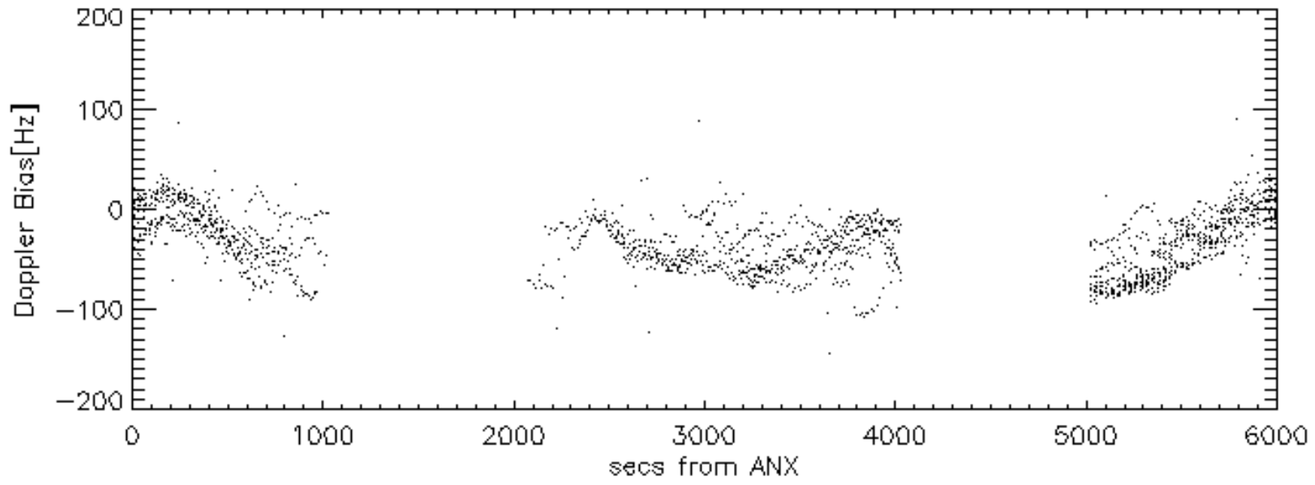

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

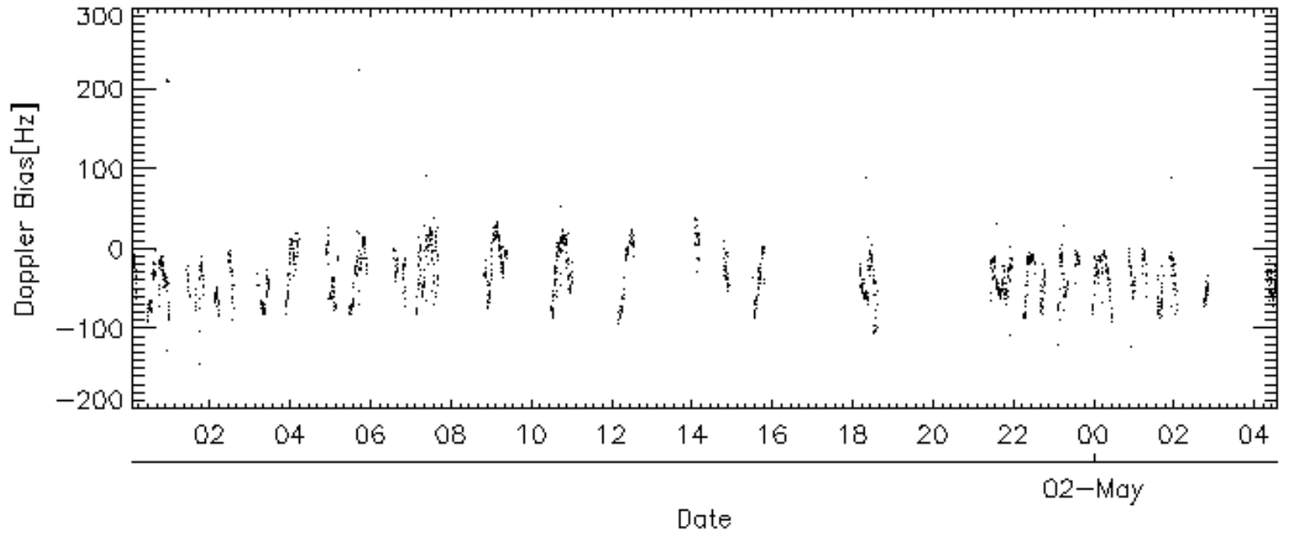

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

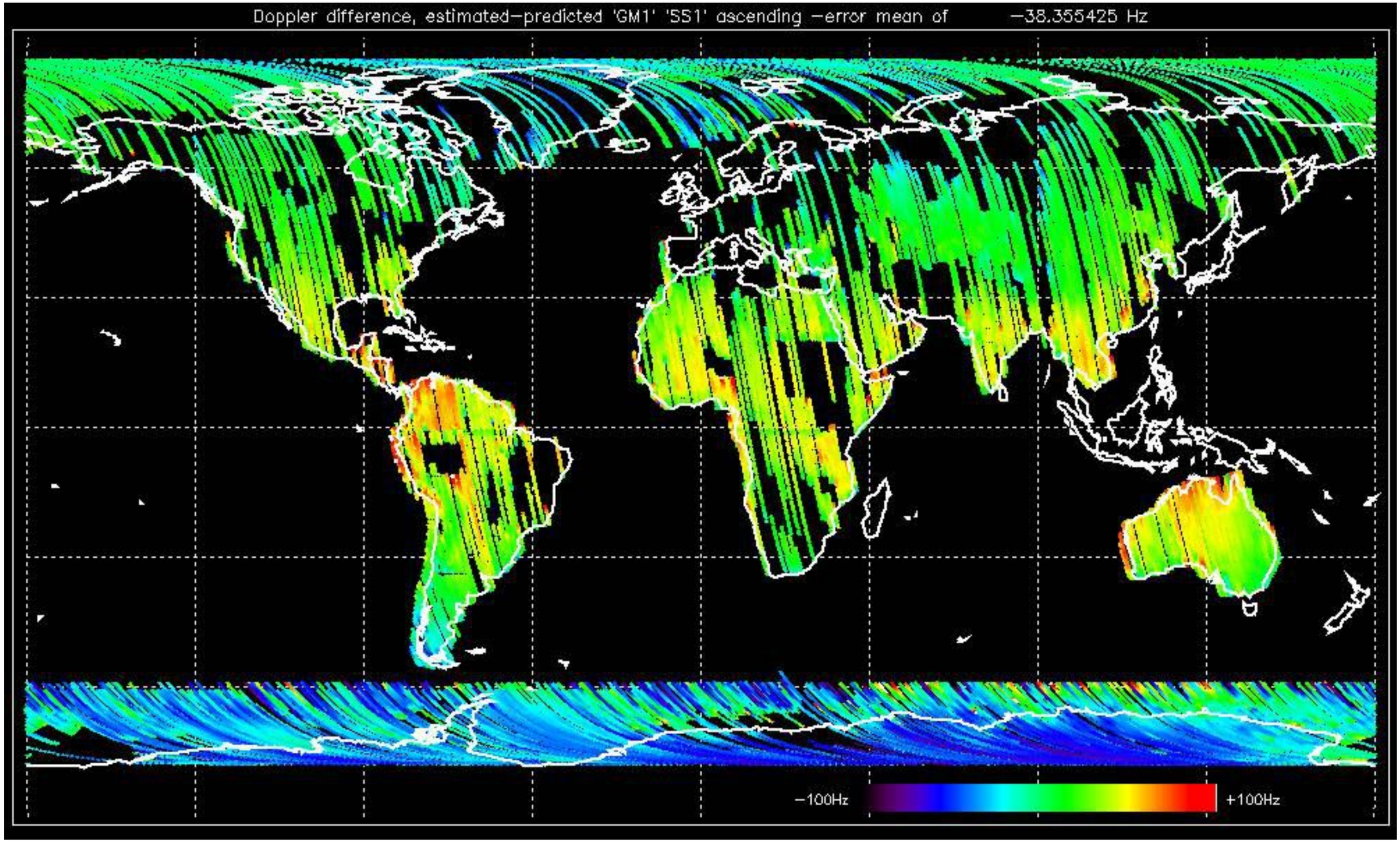

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

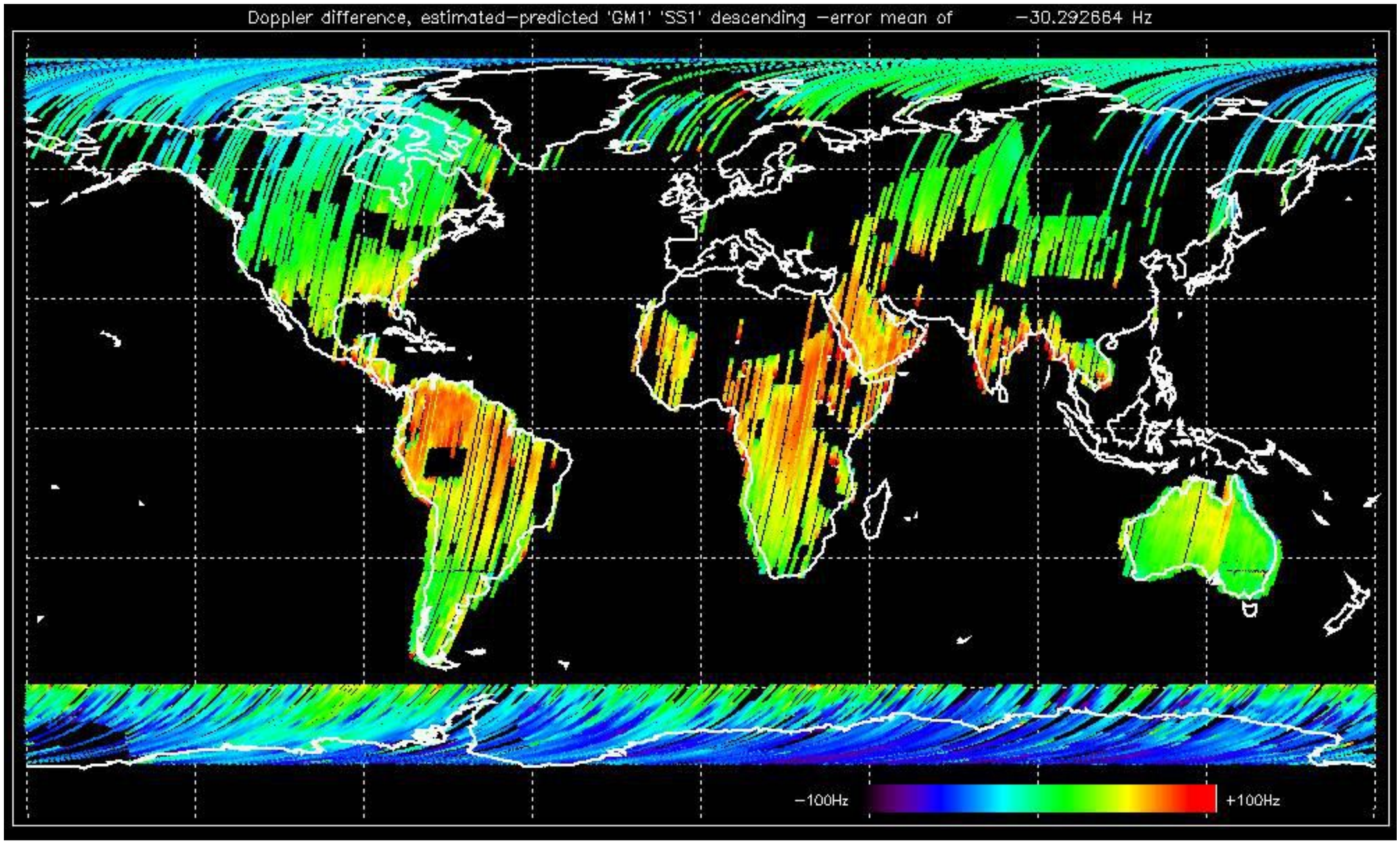

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
02−May
Date

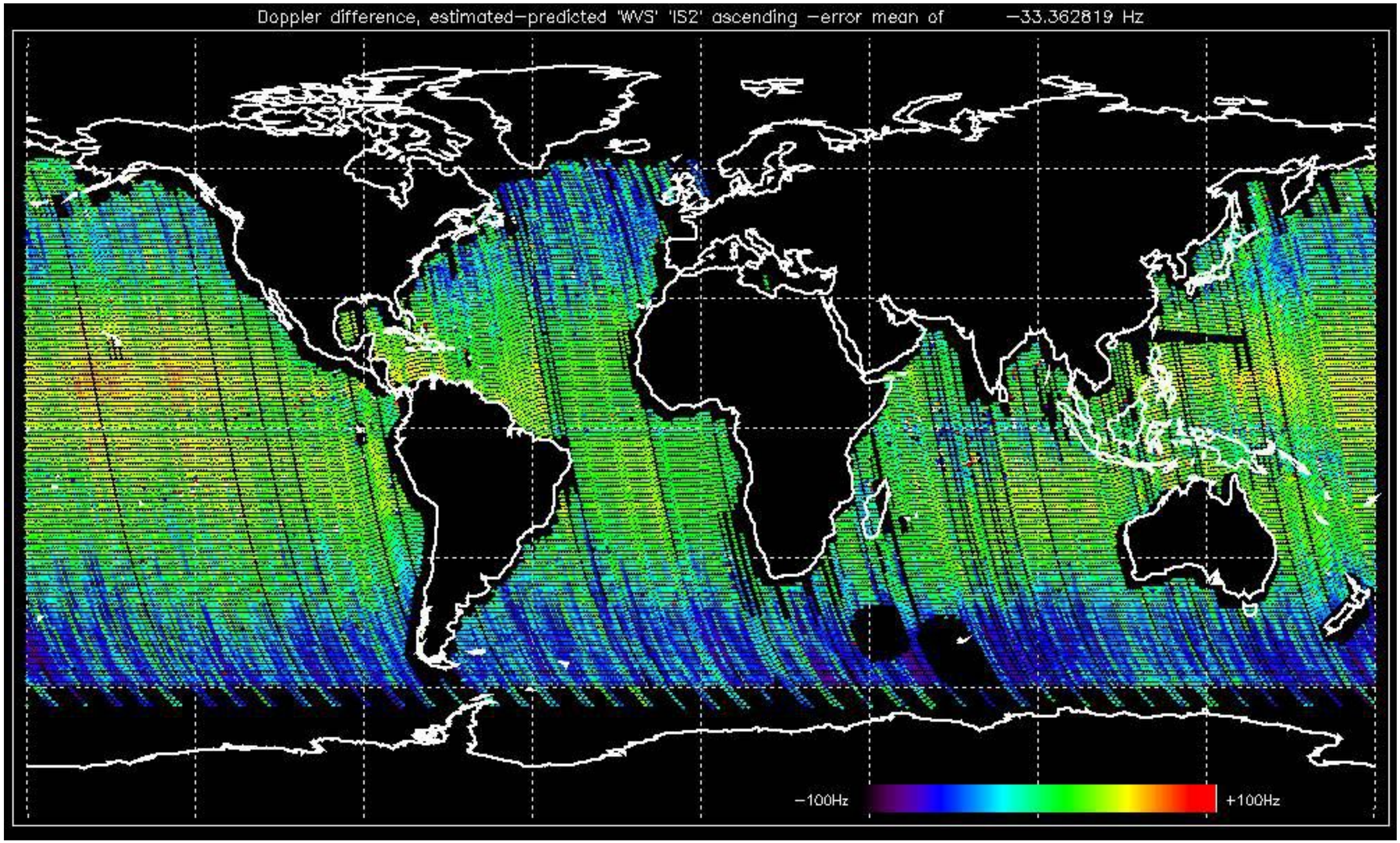

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

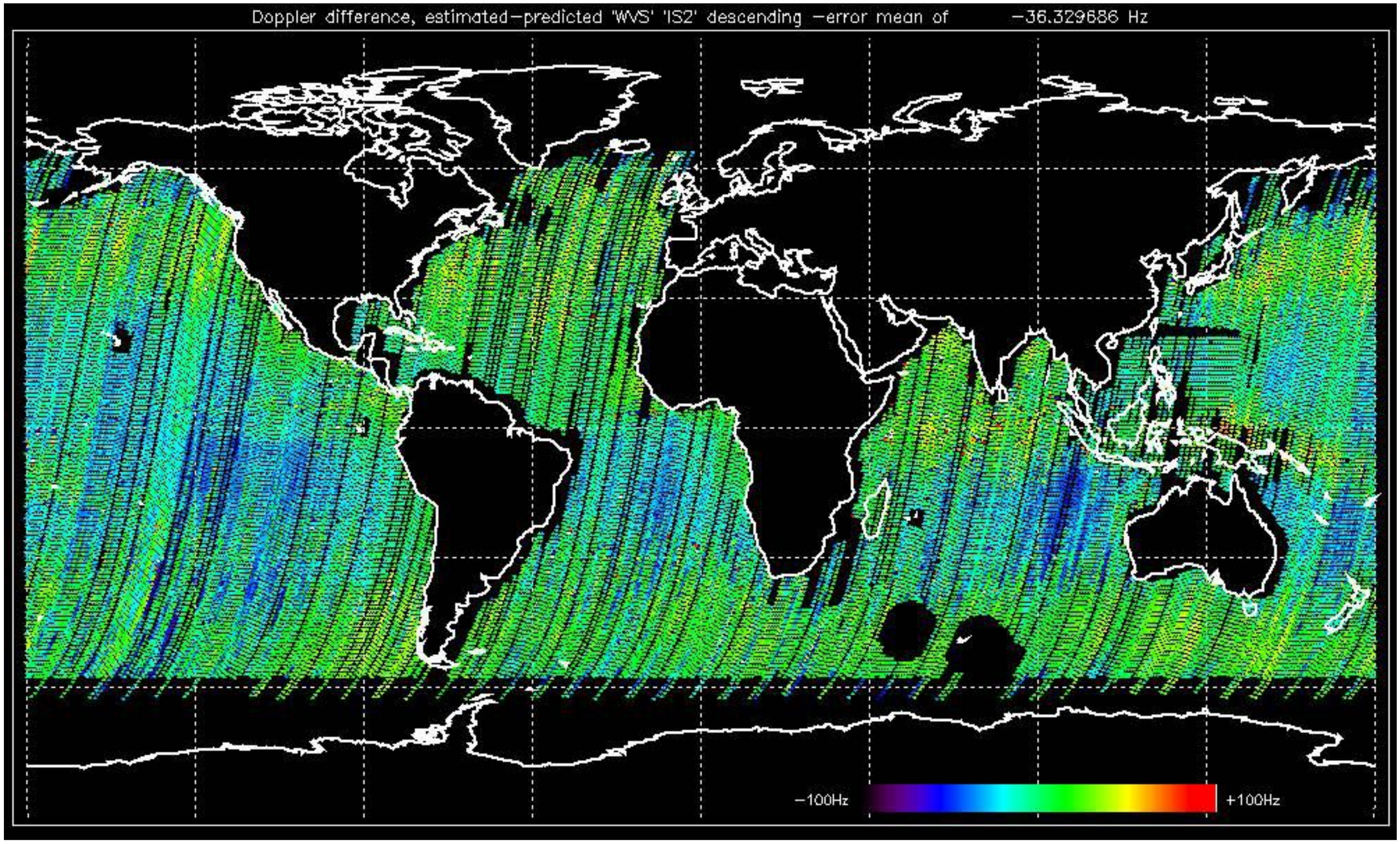

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −38.355425 Hz
−100Hz
+100Hz

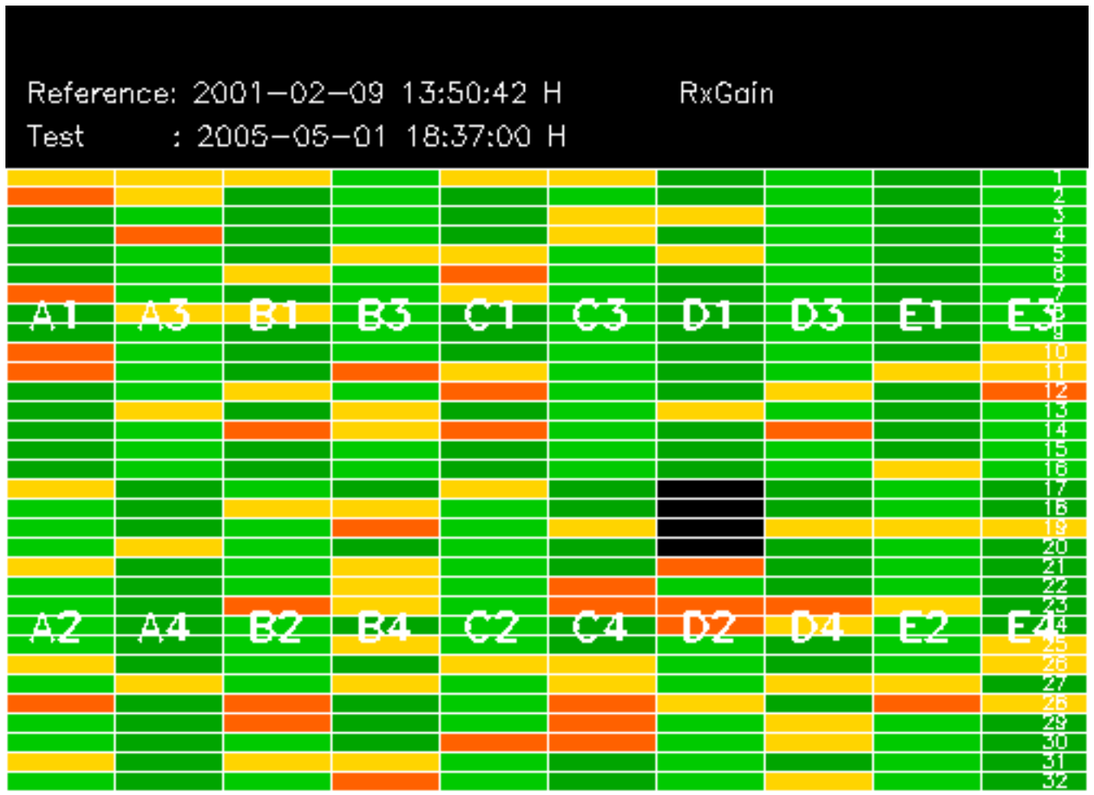

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −30.292664 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −33.362819 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.329686 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-05-01 18:37:00 H
RxGain
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
6
7
8
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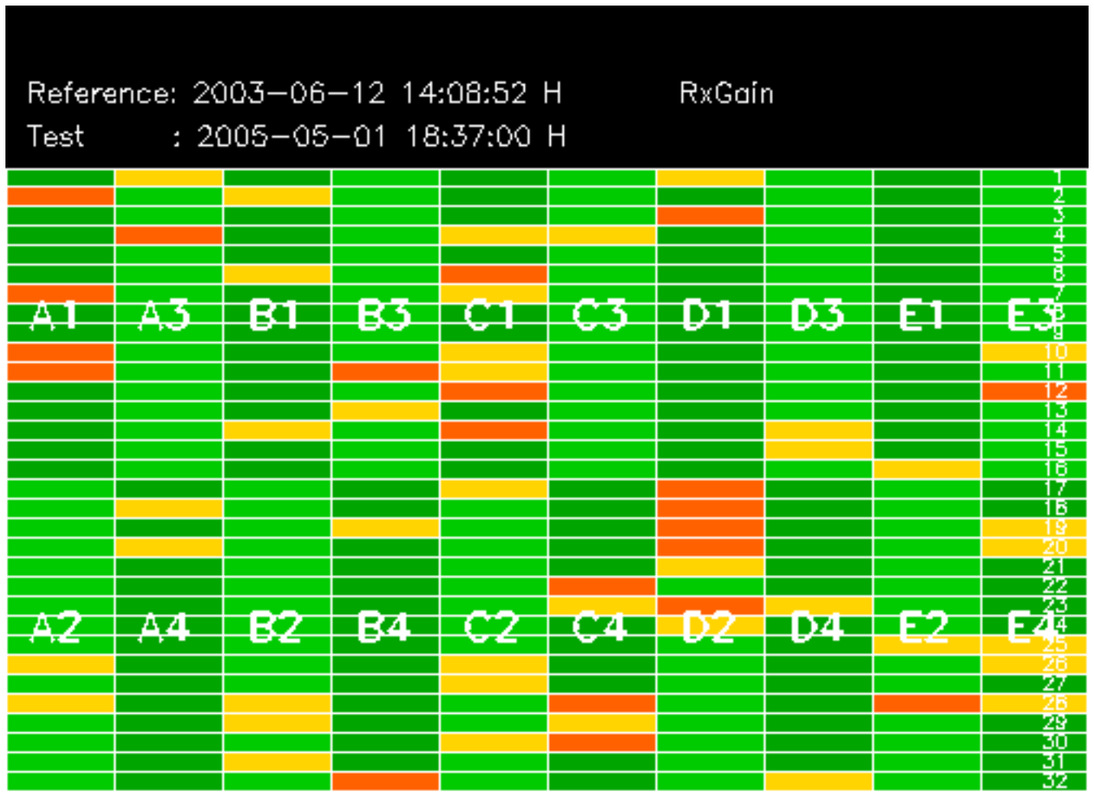
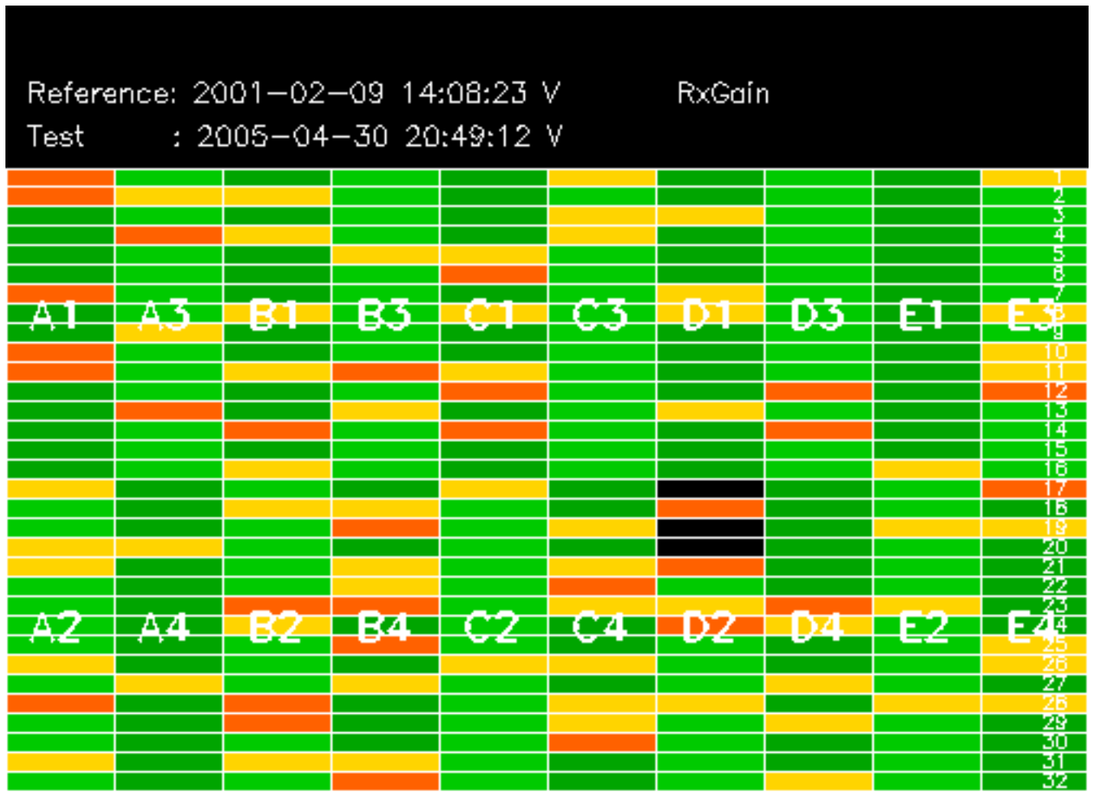

Reference: 2003-06-12 14:08:52 H
Test : 2005-05-01 18:37:00 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-30 20:49:12 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
4
5
6
7
8
9
10
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12
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14
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16
17
18
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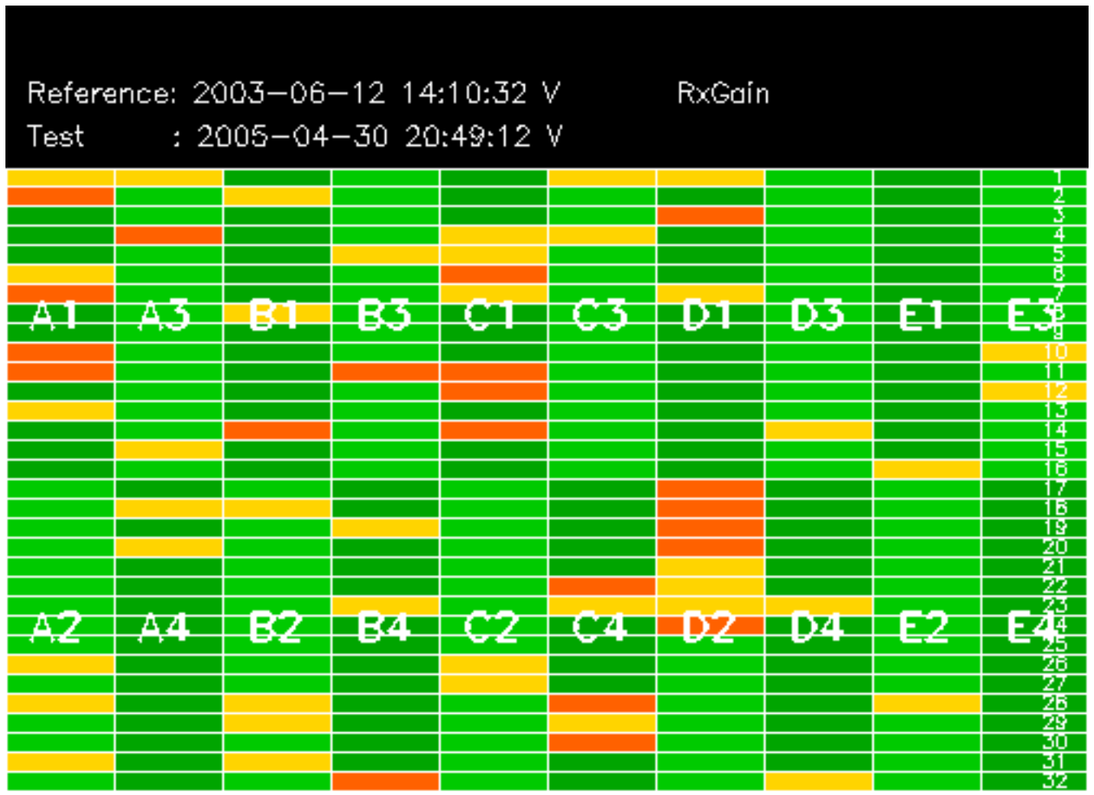
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-04-30 20:49:12 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
4
5
6
7
8
9
10
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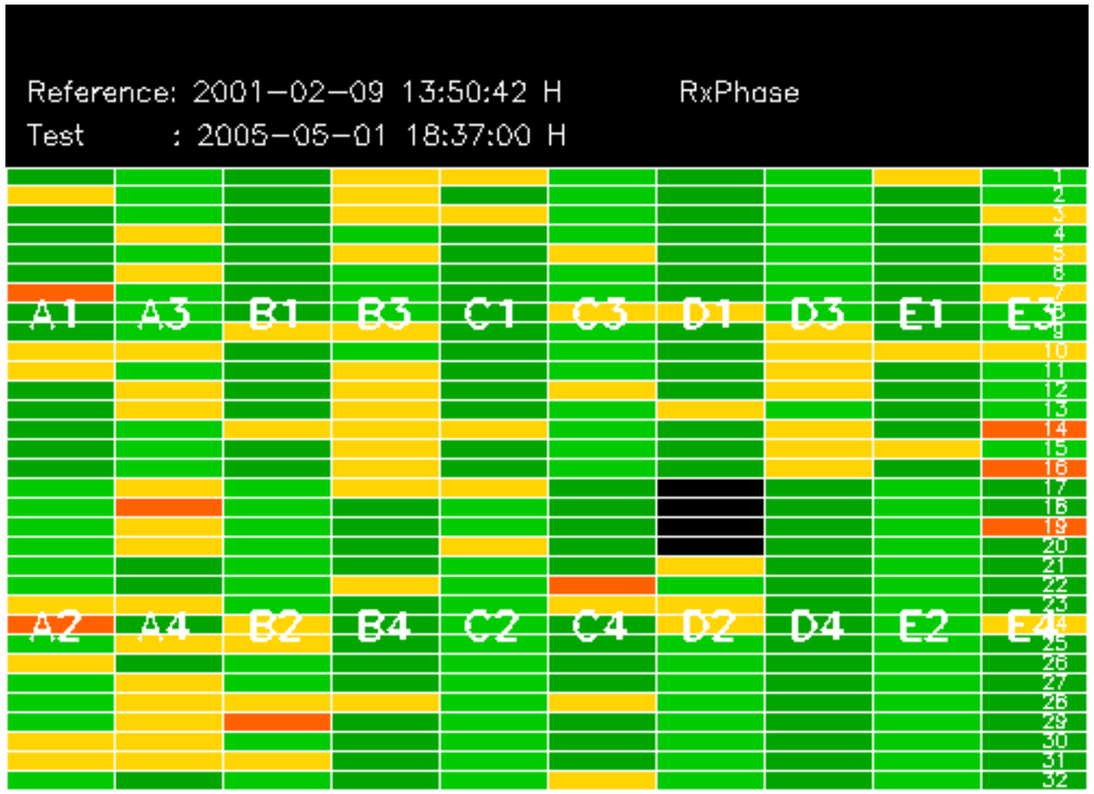
32


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-05-01 18:37:00 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 : 2005-05-01 18:37:00 H
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
5
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8
9
10
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12
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29
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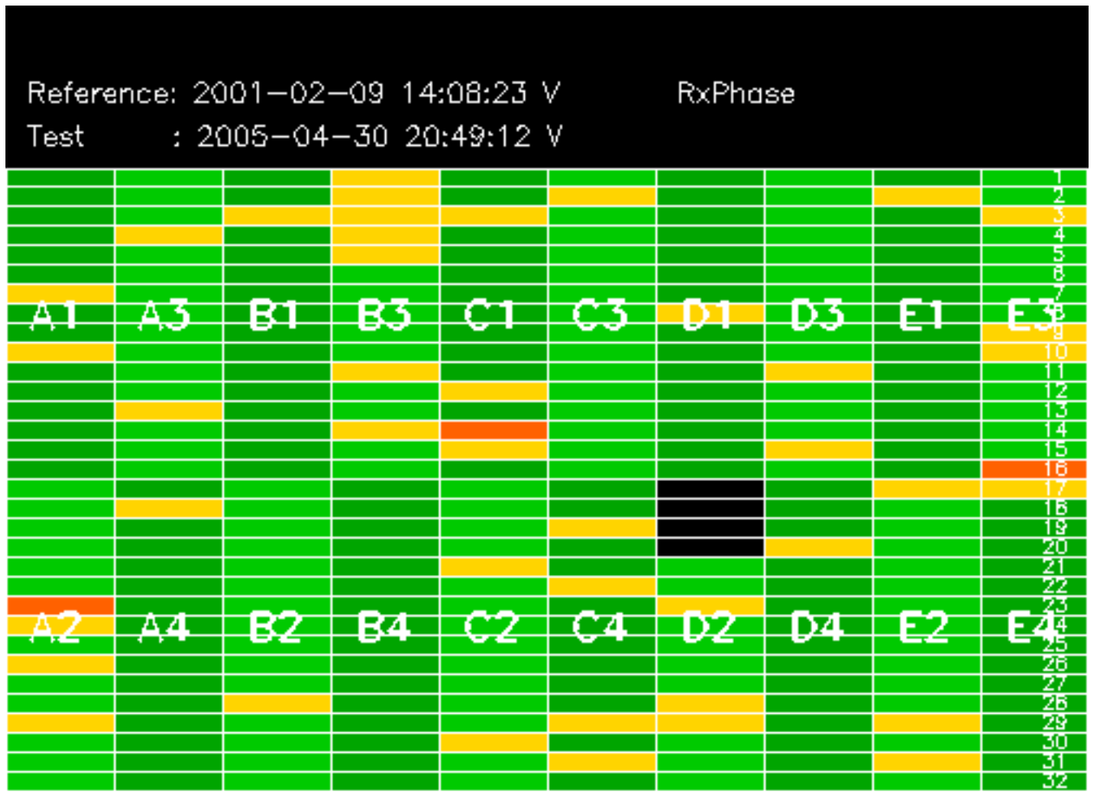
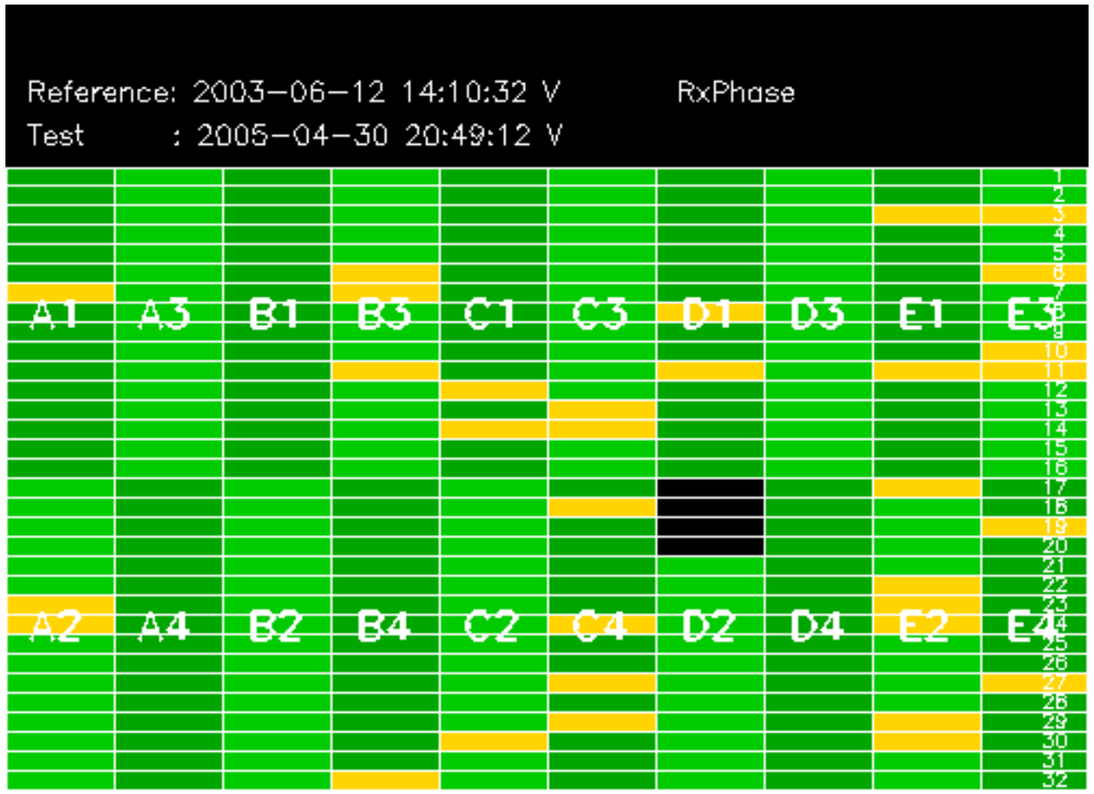
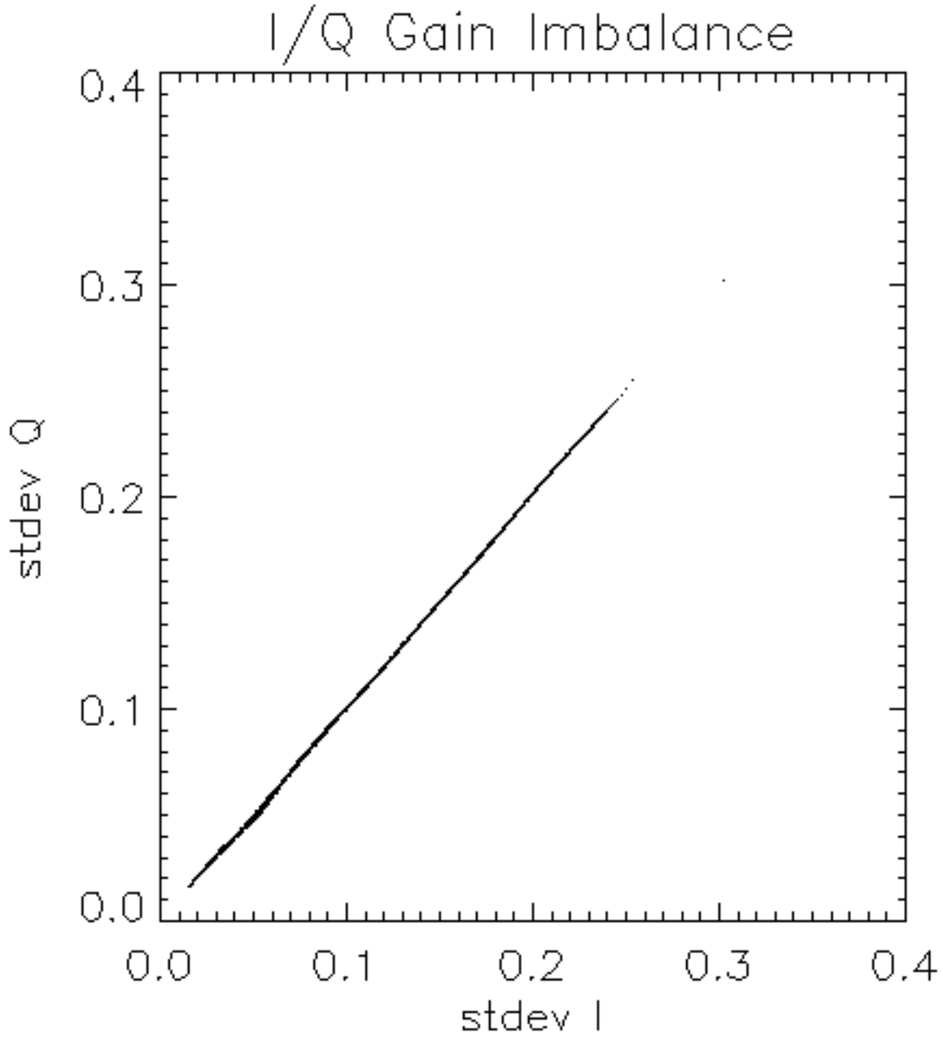
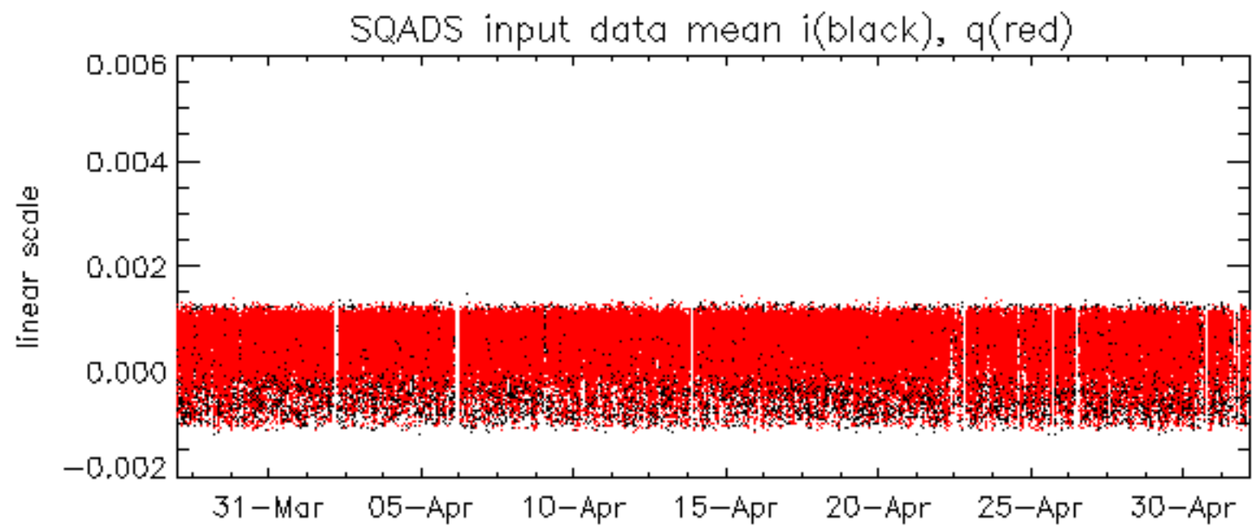
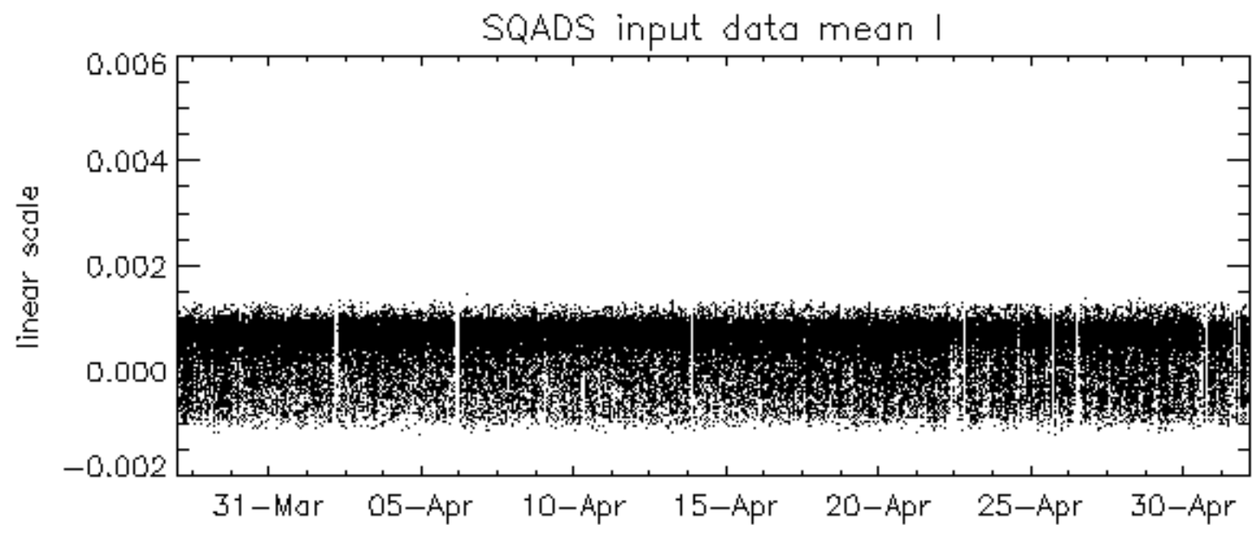
31
32

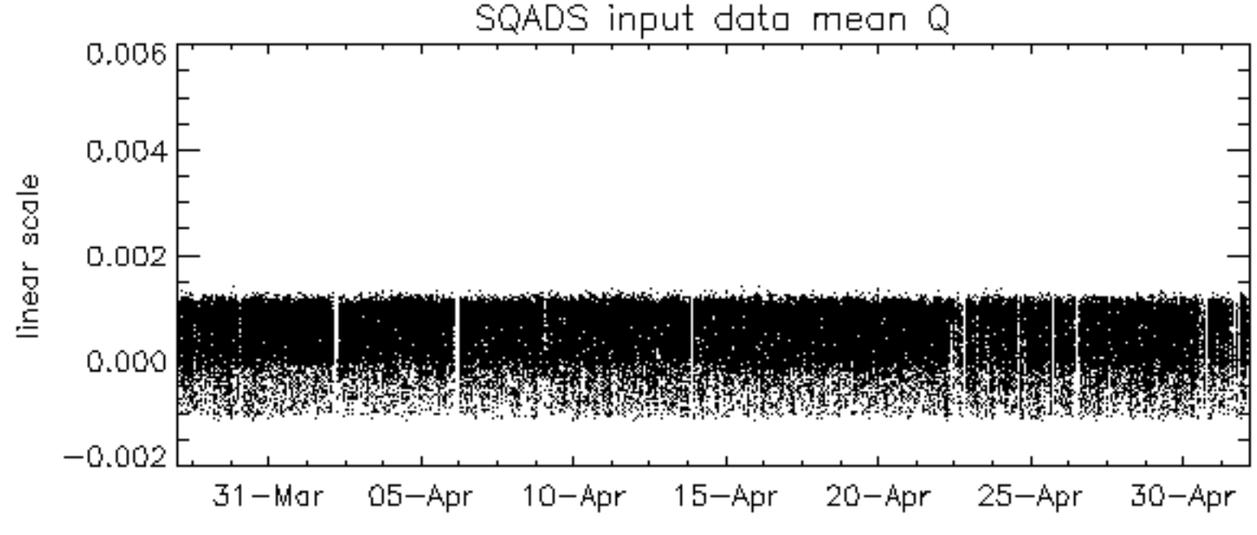

Reference: 2001-02-09 14:08:23 V
Test : 2005-04-30 20:49:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

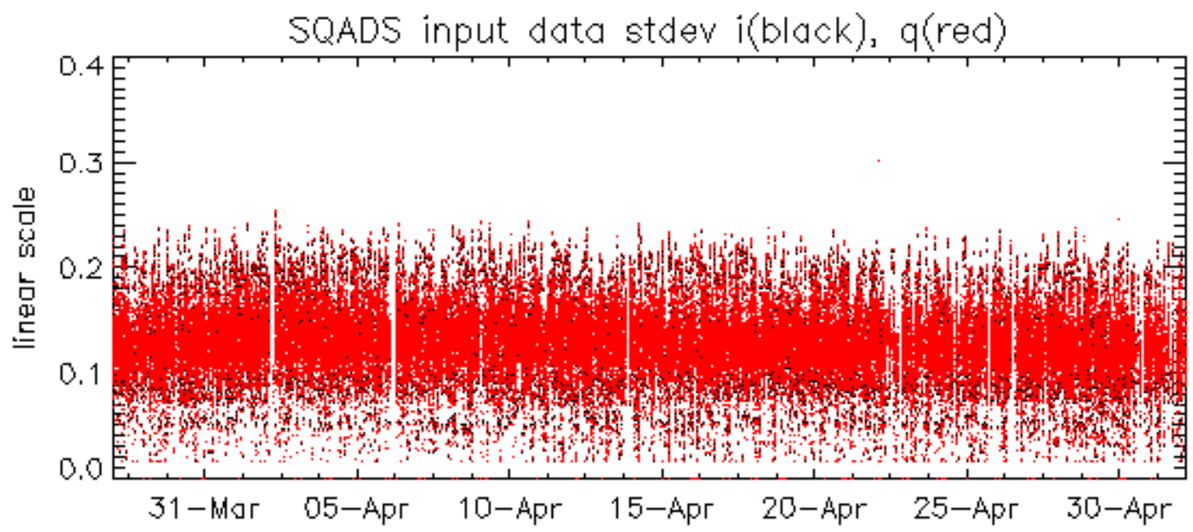

Reference: 2003-06-12 14:10:32 V
Test : 2005-04-30 20:49:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

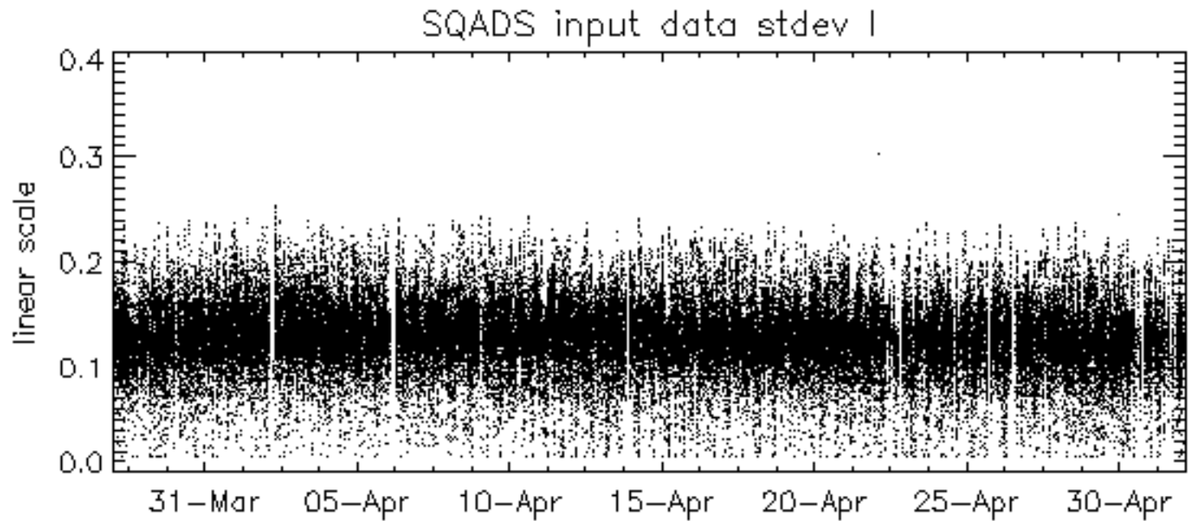

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

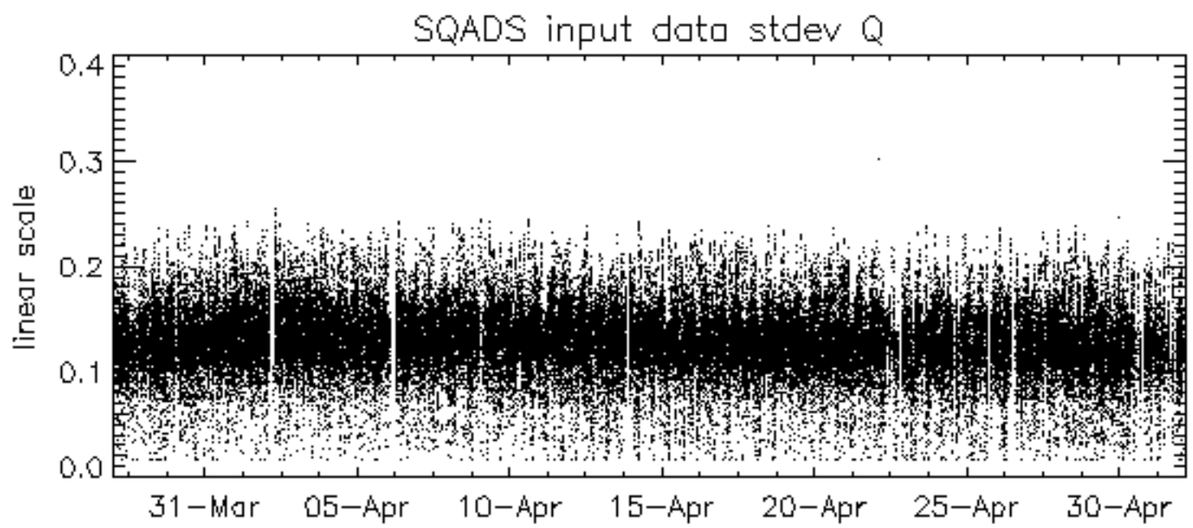

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
30−Apr

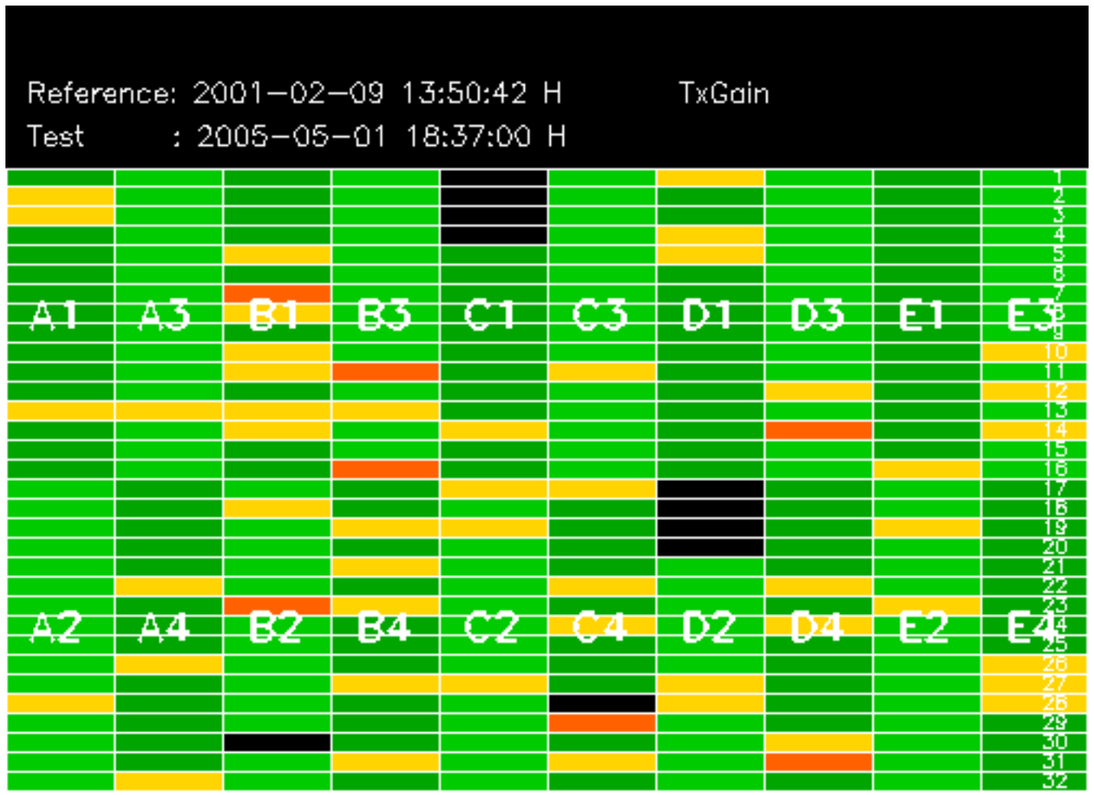

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
30−Apr

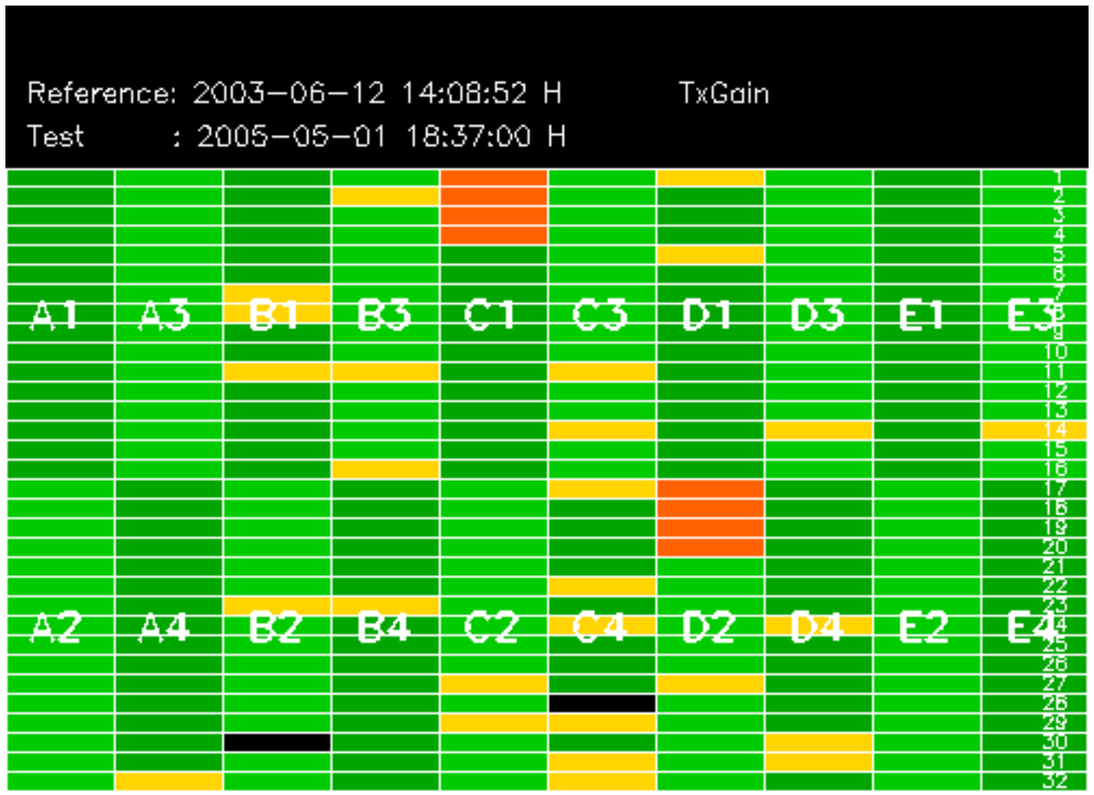

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Mar
05−Apr
10−Apr
15−Apr
20−Apr
25−Apr
30−Apr


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-05-01 18:37:00 H
TxGain
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 : 2005-05-01 18:37:00 H
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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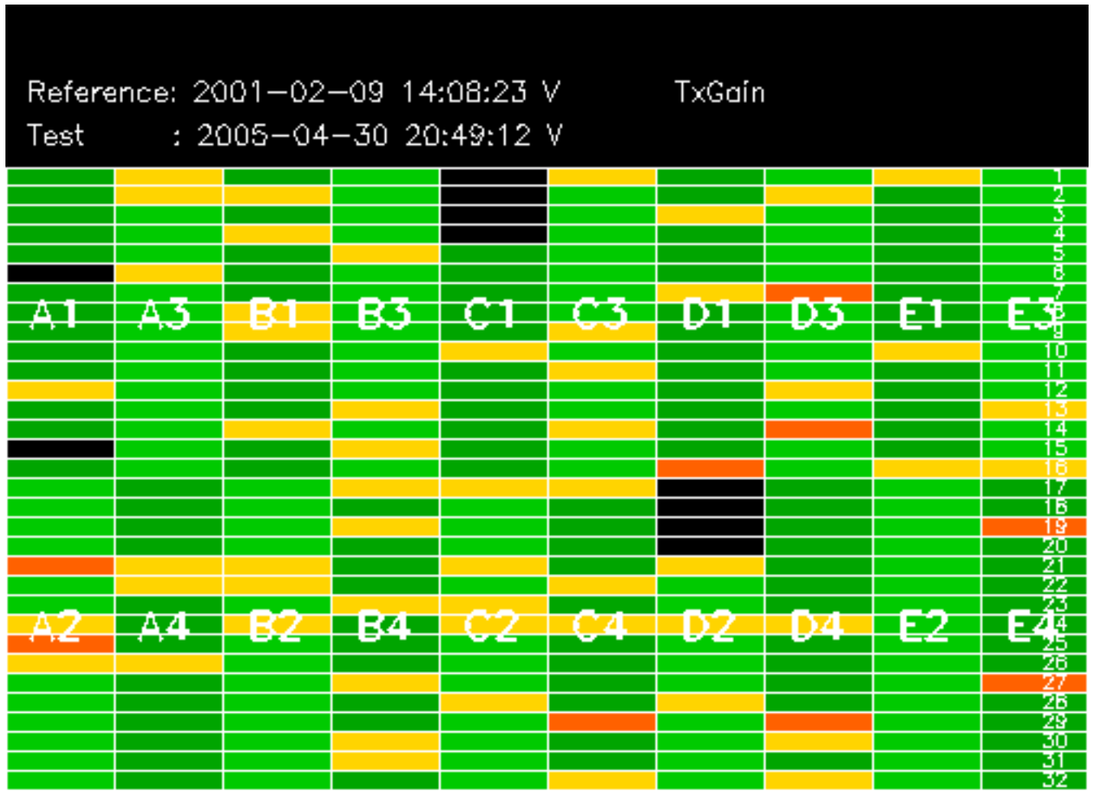
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-30 20:49:12 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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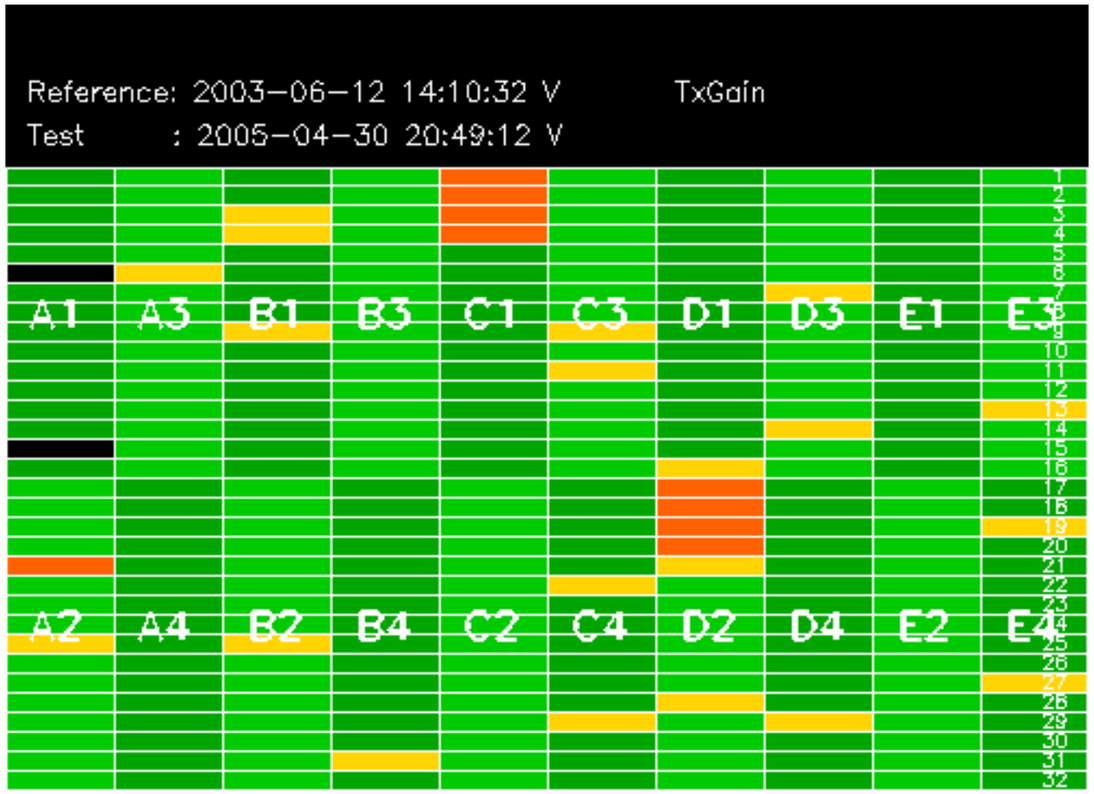
Reference: 2003-06-12 14:10:32 V
Test : 2005-04-30 20:49:12 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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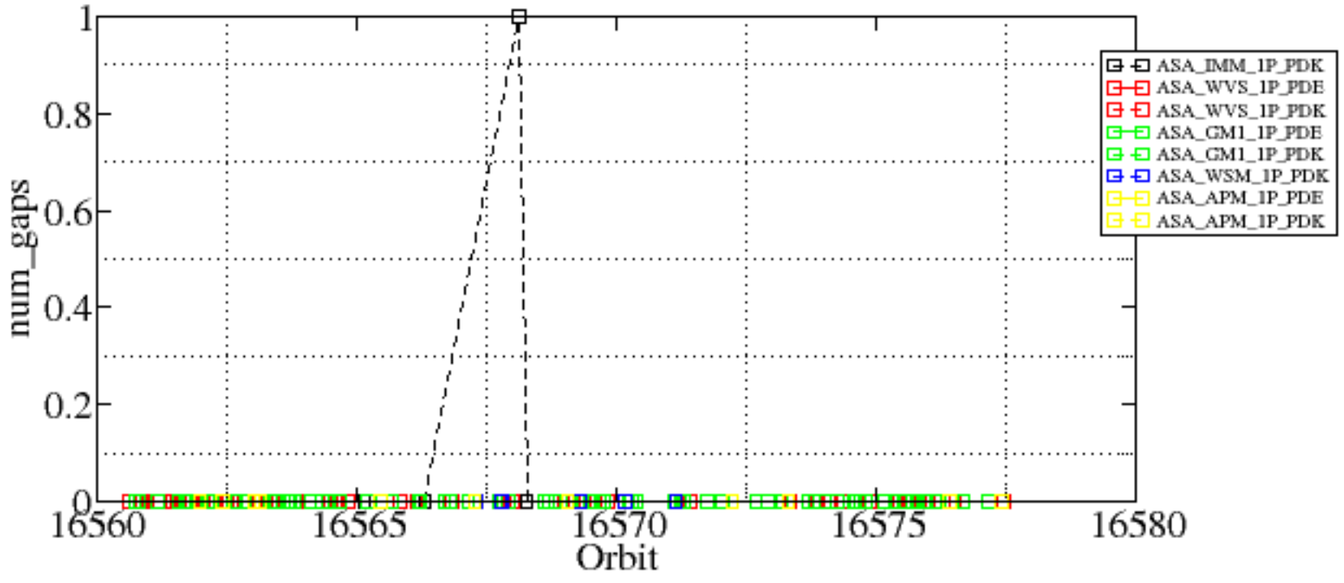
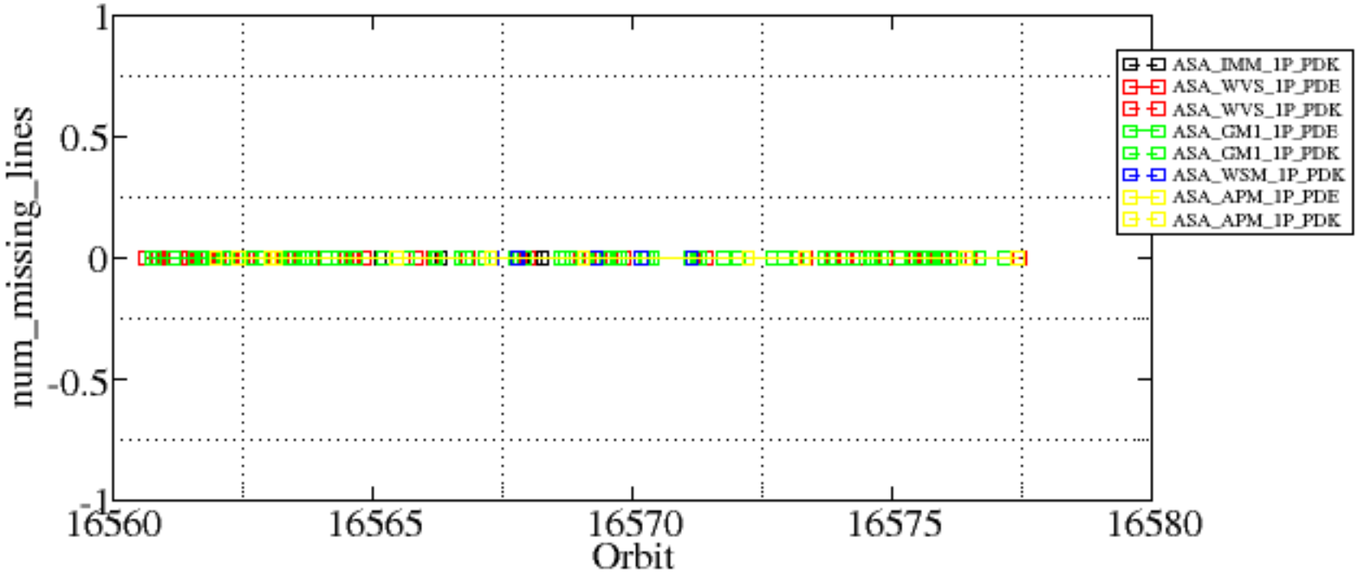
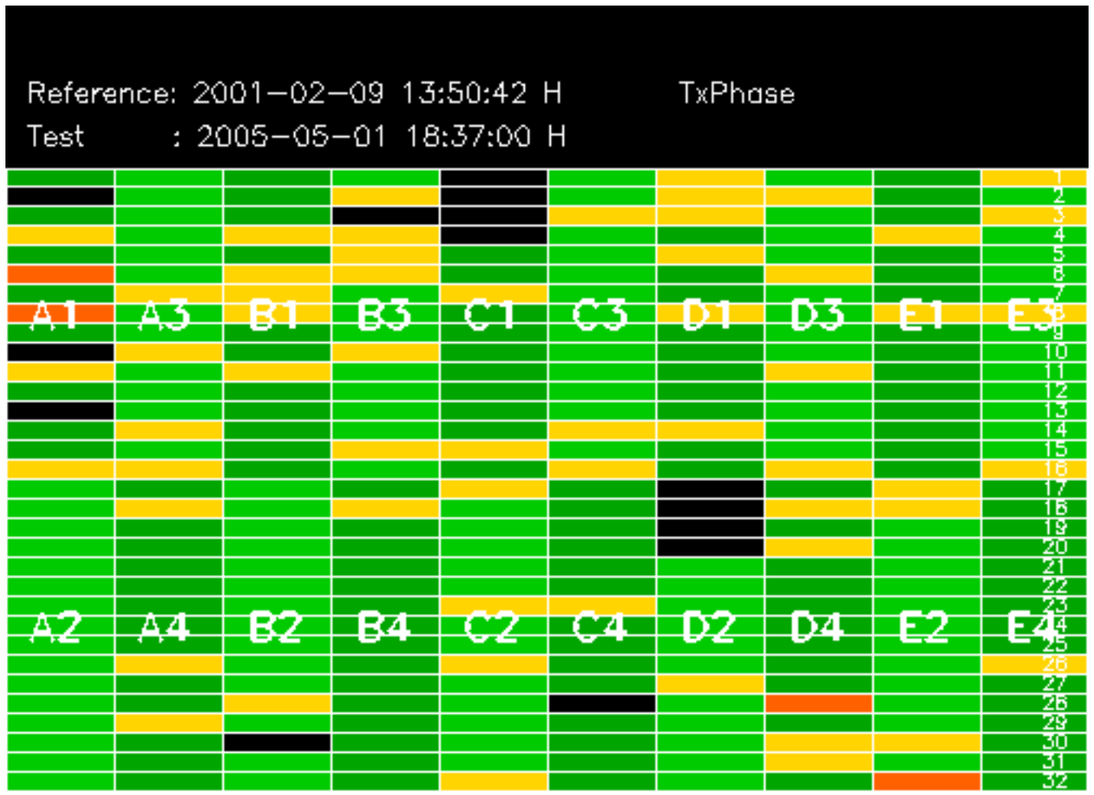
Summary of analysis for the last 3 days 2005050[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050501_124044_000000372036_00482_16568_3555.N1 </td> <td>1 </td> <td>0 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
16560
16565
16570
16575
16580
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
1
0.5
0
-0.5
-1
16560
16565
16570
16575
16580
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-05-01 18:37:00 H
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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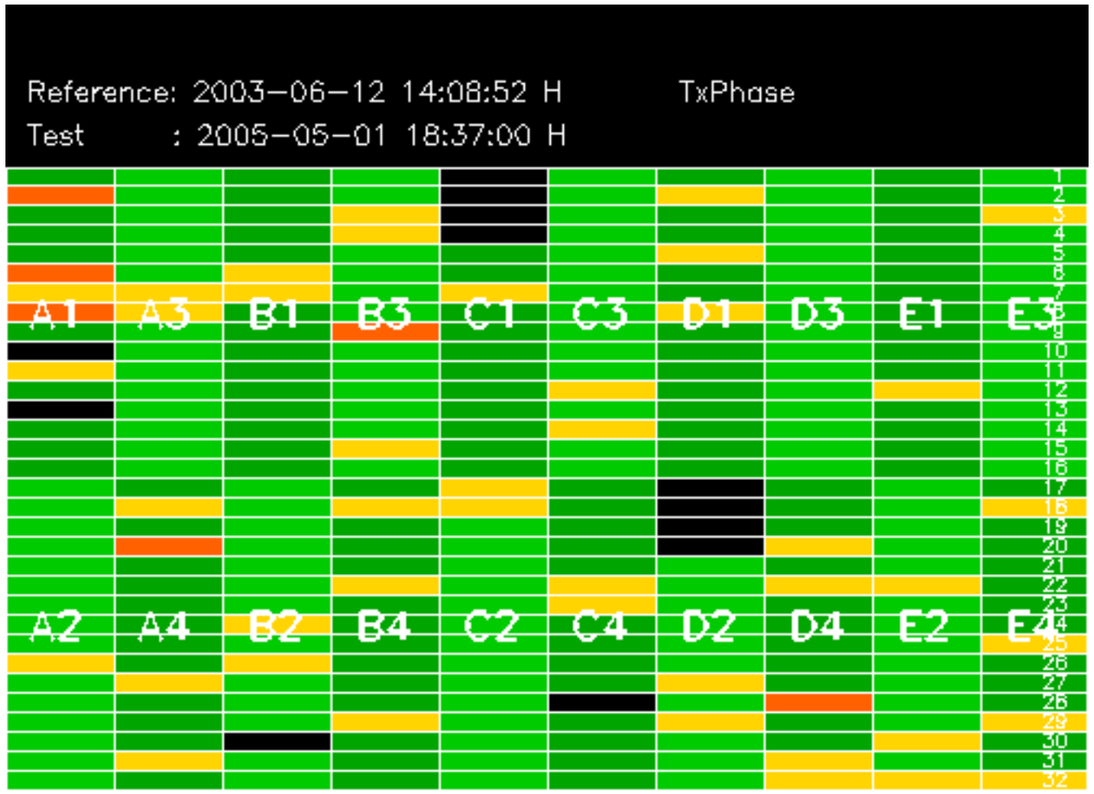
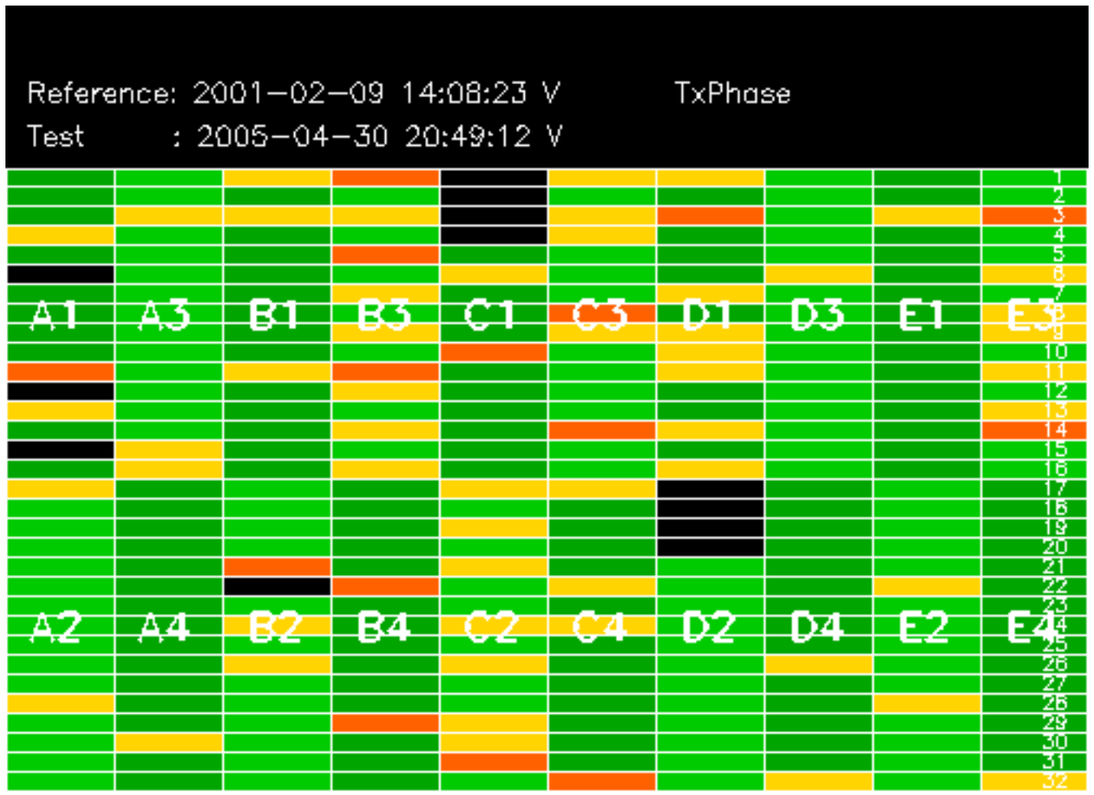
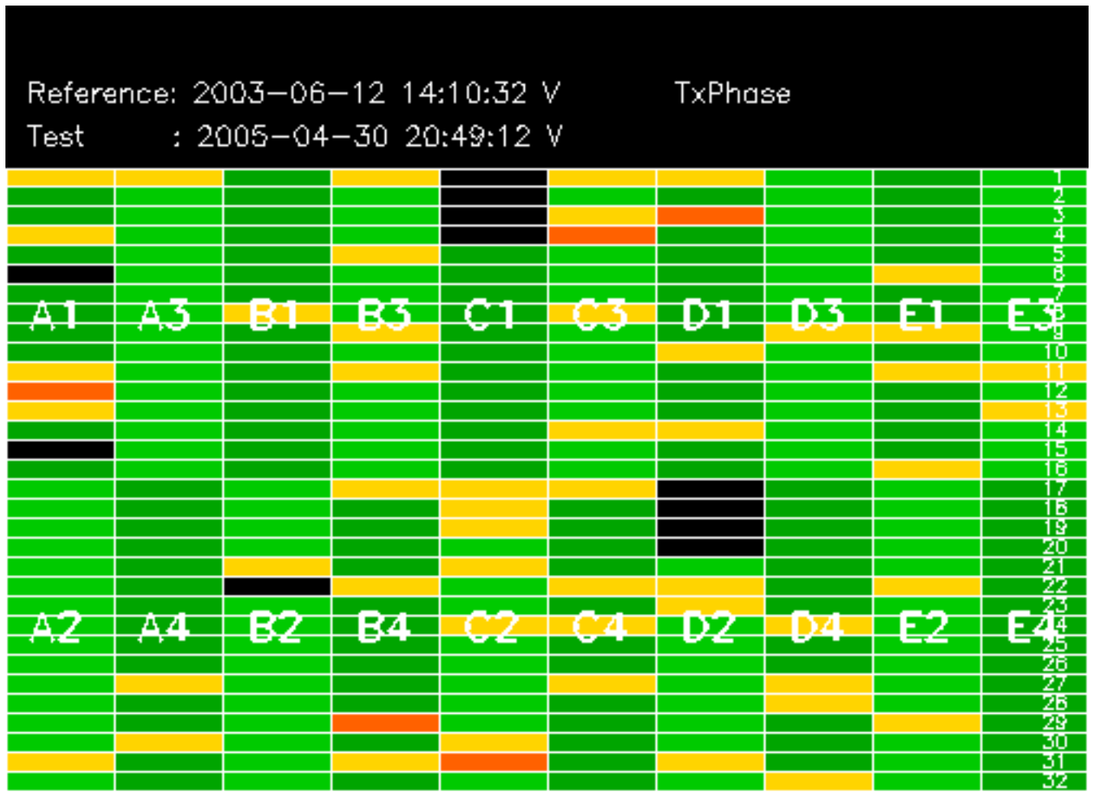

Reference: 2003-06-12 14:08:52 H
Test : 2005-05-01 18:37:00 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-30 20:49:12 V
TxPhase
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 : 2005-04-30 20:49:12 V
TxPhase
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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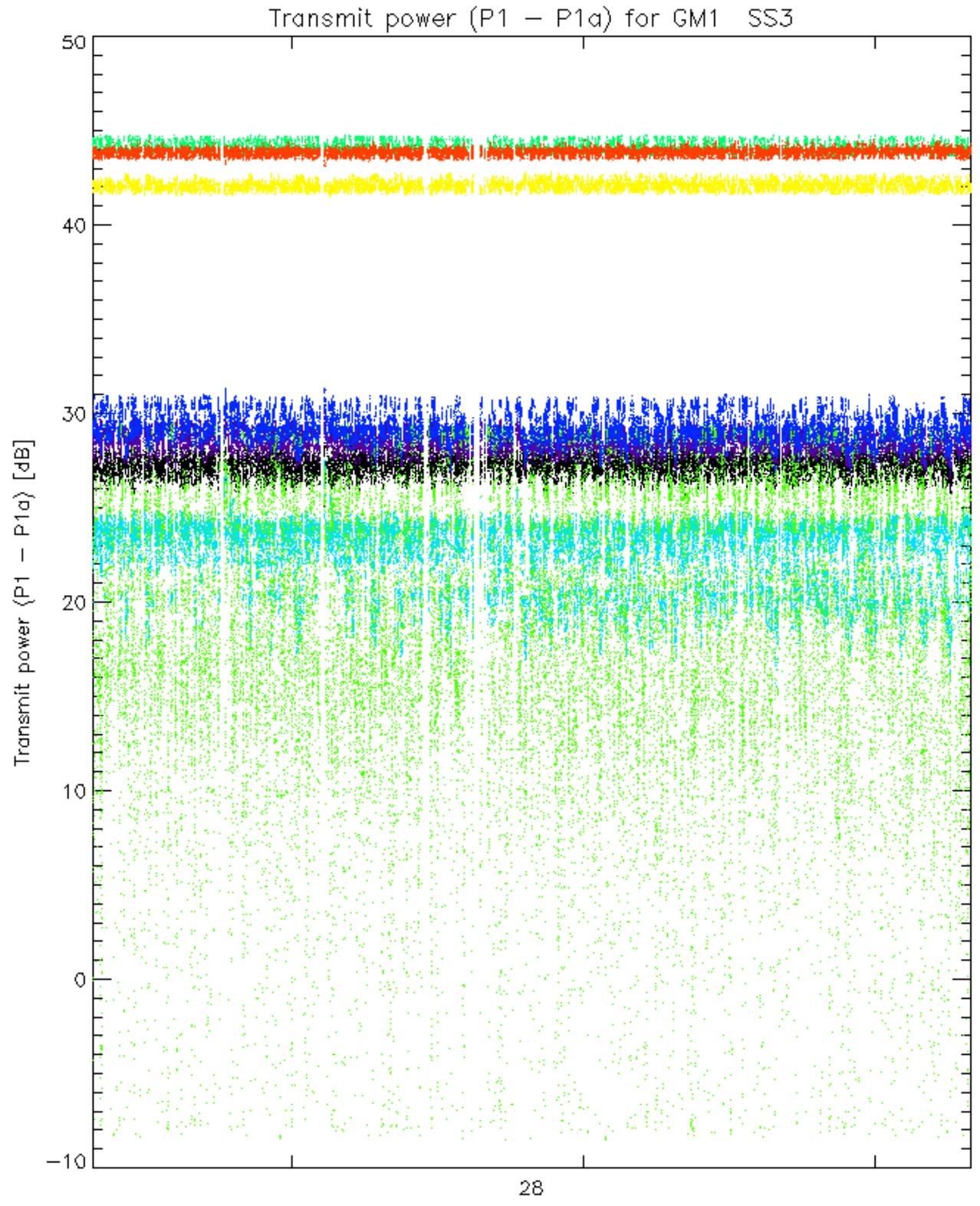
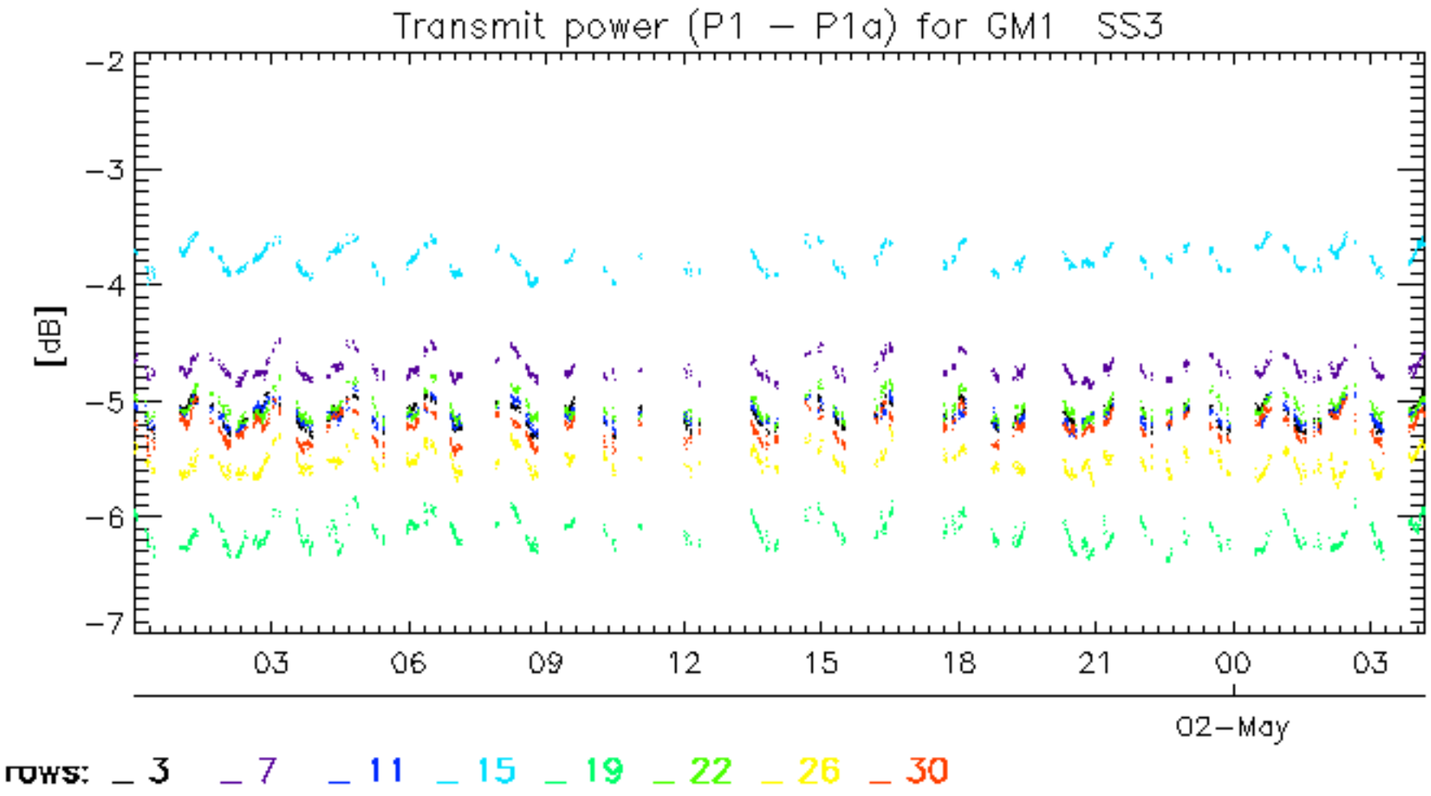
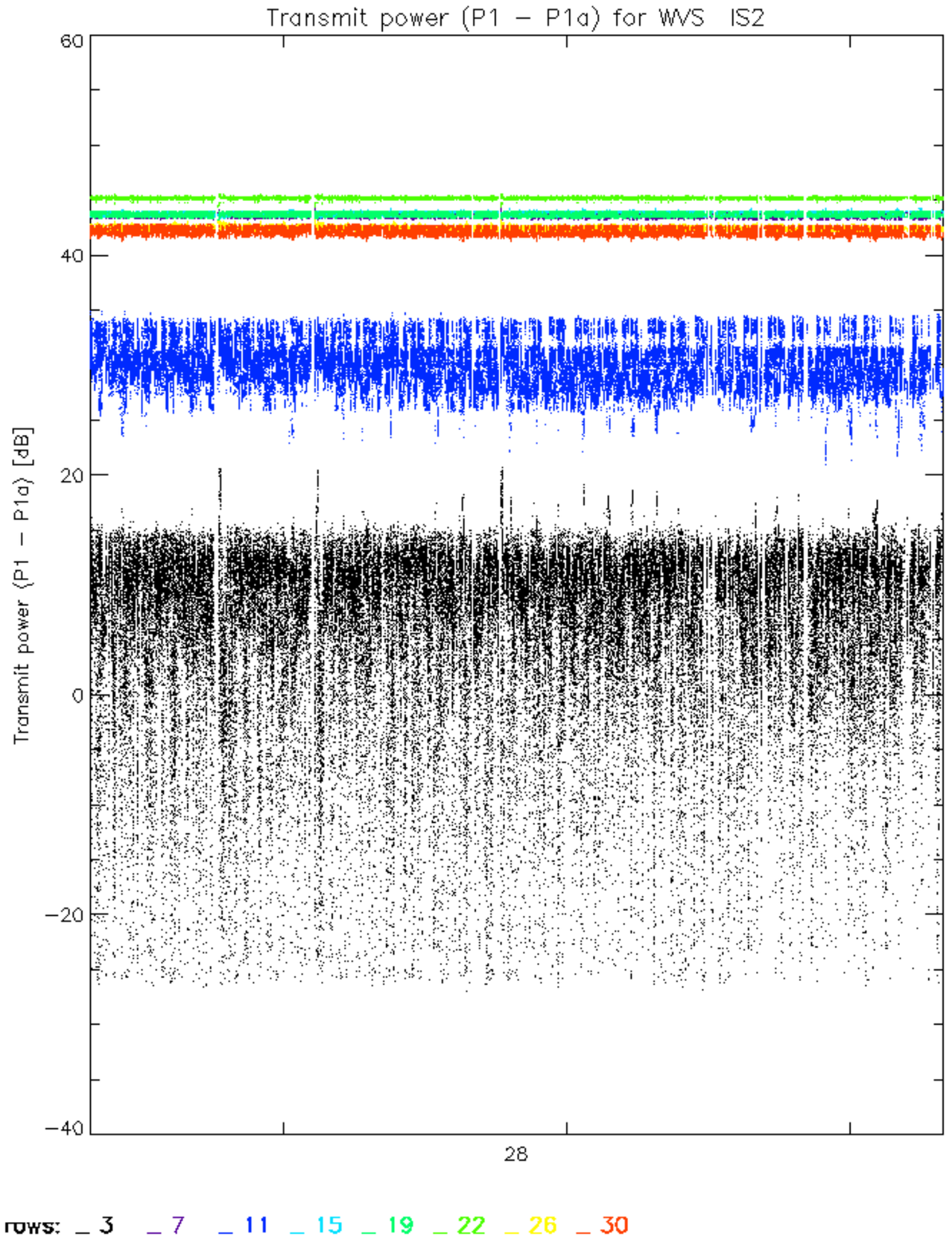
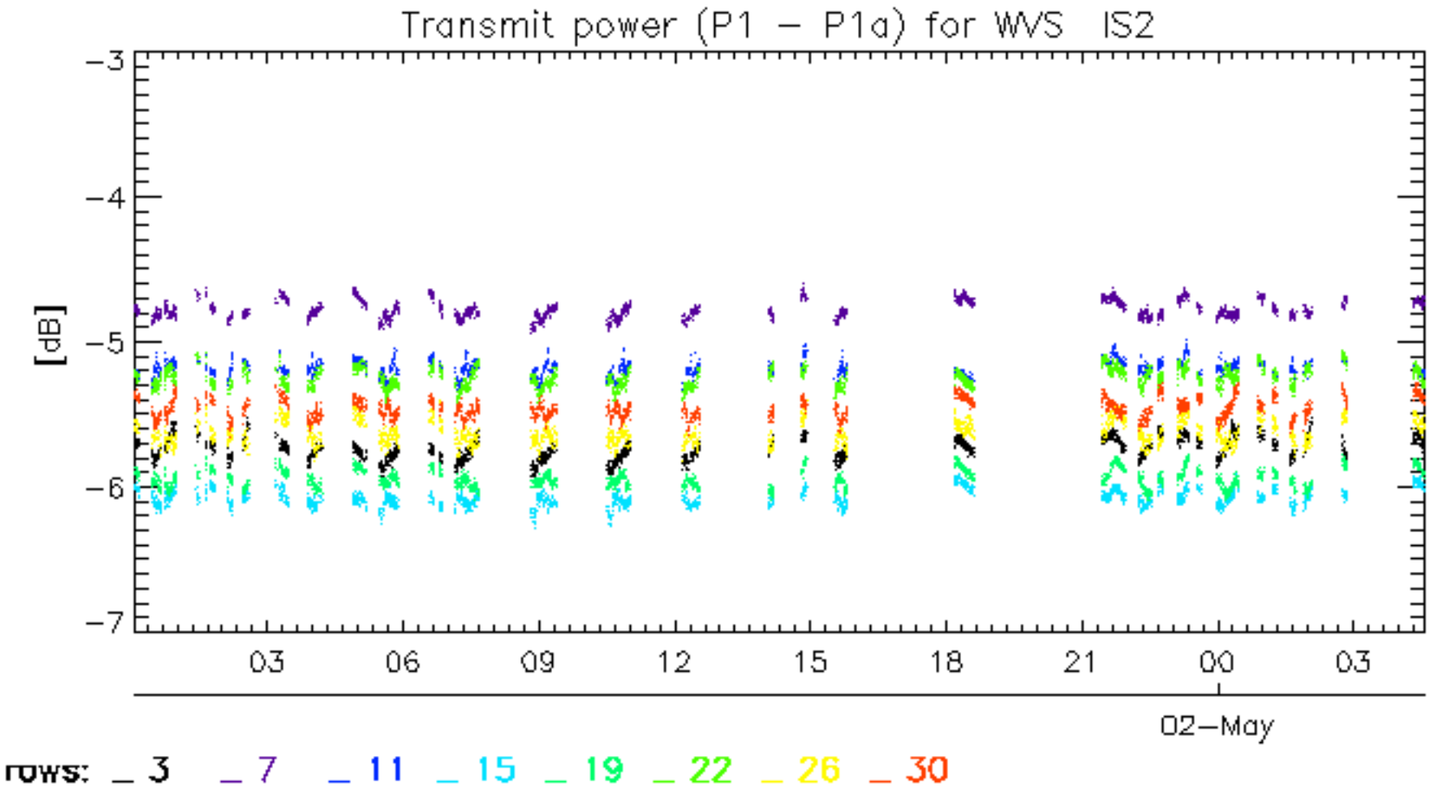
32


Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
−10
28
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
02–May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power ⟨P1 – P1a⟩ [dB]
60
40
20
0
−20
−40
28
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
02—May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.