PRELIMINARY REPORT OF 050405

last update on Tue Apr 5 10:50:01 GMT 2005

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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 2005-04-04 00:00:00 to 2005-04-05 10:50:01

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	28	51	0	3	3
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	28	51	0	3	3
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	28	51	0	3	3
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	28	51	0	3	3

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	45	57	1	7	4
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	45	57	1	7	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	45	57	1	7	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	45	57	1	7	4

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	20050403 095347
H	20050404 092210

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	-3.348065	0.013433	0.022455
7	P1	-3.109689	0.008381	-0.036495
11	P1	-4.681344	0.030245	0.031081
15	P1	-5.635500	0.038567	0.039676
19	P1	-3.692734	0.003779	-0.020798
22	P1	-4.525846	0.011875	-0.039790
26	P1	-4.930473	0.017999	0.043724
30	P1	-7.195185	0.019026	-0.001084
3	P1	-15.863483	0.327534	0.175042
7	P1	-15.535096	0.071456	-0.020802
11	P1	-21.017344	0.448968	-0.150169
15	P1	-11.566167	0.048785	0.032164
19	P1	-14.309690	0.024791	-0.016010
22	P1	-15.678815	0.307716	-0.200471
26	P1	-17.624243	0.188941	-0.071271
30	P1	-17.962654	0.424814	0.064306

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.065203	0.081026	0.062900
7	P2	-22.247013	0.094695	0.092503
11	P2	-14.320753	0.109412	0.232321
15	P2	-7.045630	0.090173	-0.014892
19	P2	-9.635003	0.093362	-0.014514
22	P2	-16.898912	0.093380	0.052104
26	P2	-16.443607	0.092447	-0.001576
30	P2	-18.837629	0.083895	0.044642

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.165256	0.004676	0.001487
7	P3	-8.165256	0.004676	0.001487
11	P3	-8.165256	0.004676	0.001487
15	P3	-8.165256	0.004676	0.001487
19	P3	-8.165256	0.004676	0.001487
22	P3	-8.165256	0.004676	0.001487
26	P3	-8.165256	0.004676	0.001487
30	P3	-8.165256	0.004676	0.001487

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	-2.711053	0.026130	0.009297
7	P1	-3.021978	0.048115	0.025649
11	P1	-3.985920	0.026402	-0.001632
15	P1	-3.554504	0.034119	0.018579
19	P1	-3.604107	0.013762	-0.024779
22	P1	-5.736739	0.035998	0.021653
26	P1	-7.292780	0.025024	-0.003720
30	P1	-6.239746	0.053374	-0.050715
3	P1	-10.706863	0.170029	0.025573
7	P1	-10.340596	0.178227	0.024333
11	P1	-12.531494	0.135431	0.002467
15	P1	-11.730475	0.102440	0.037639
19	P1	-15.573749	0.047362	-0.018610
22	P1	-24.606125	1.218383	-0.183921
26	P1	-15.495297	0.187835	-0.027530
30	P1	-20.203243	1.212071	0.100481

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.763151	0.037905	0.078395
7	P2	-22.329813	0.041923	0.067342
11	P2	-10.115551	0.056046	0.136937
15	P2	-4.987926	0.027112	-0.036020
19	P2	-6.831342	0.041054	-0.014830
22	P2	-7.076091	0.035847	0.031314
26	P2	-23.846237	0.032692	-0.007900
30	P2	-21.885096	0.038848	0.008066

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.996866	0.003180	-0.001110
7	P3	-7.996921	0.003184	-0.001350
11	P3	-7.996878	0.003184	-0.001535
15	P3	-7.996881	0.003186	-0.001285
19	P3	-7.996864	0.003191	-0.001361
22	P3	-7.996956	0.003175	-0.001361
26	P3	-7.996936	0.003188	-0.001655
30	P3	-7.996827	0.003187	-0.001705

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	0.000459872
	stdev	2.24608e-07
MEAN Q	mean	0.000476124
	stdev	2.34718e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128524
	stdev	0.00105639
STDEV Q	mean	0.128780
	stdev	0.00106824

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005040[345]
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

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

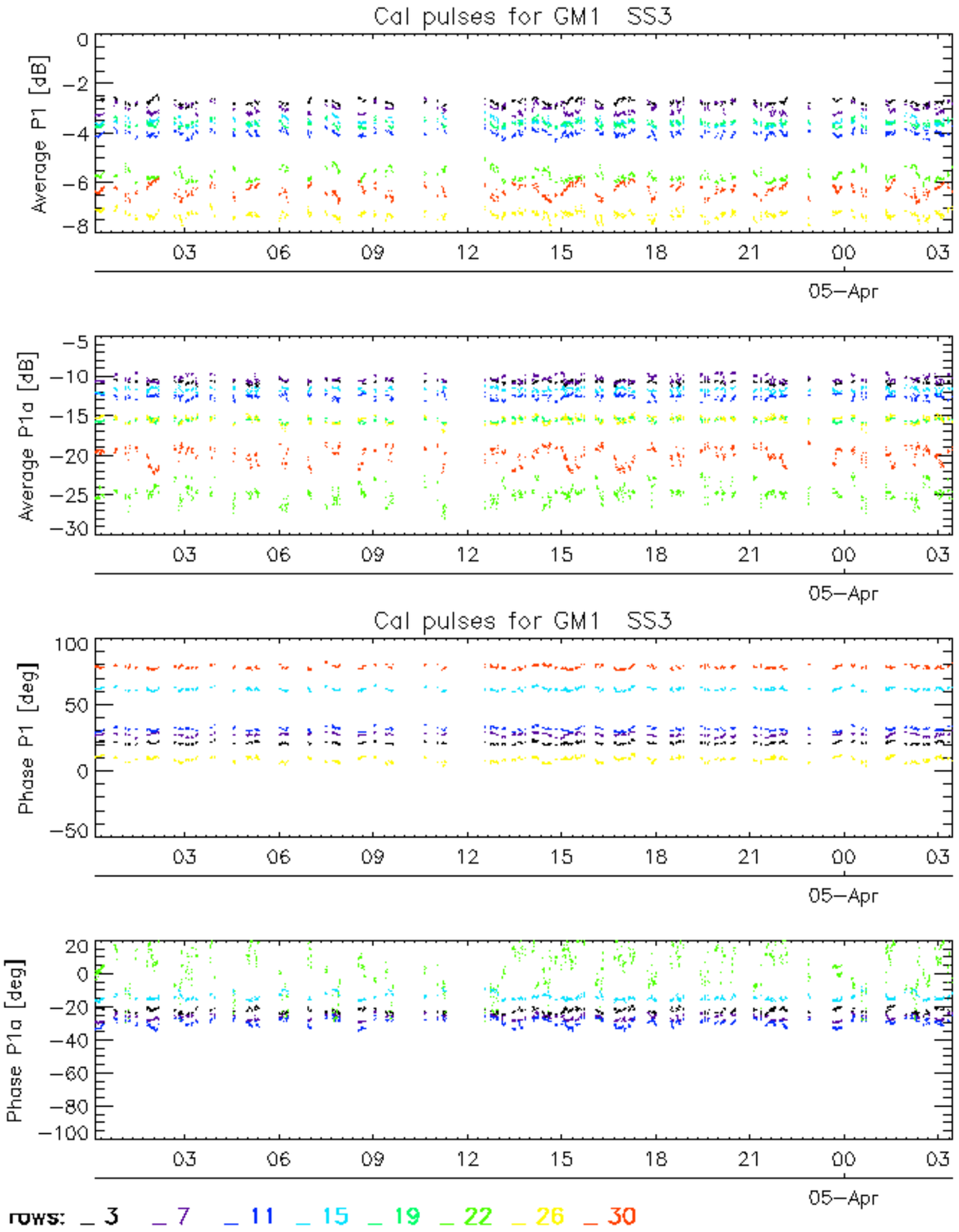
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

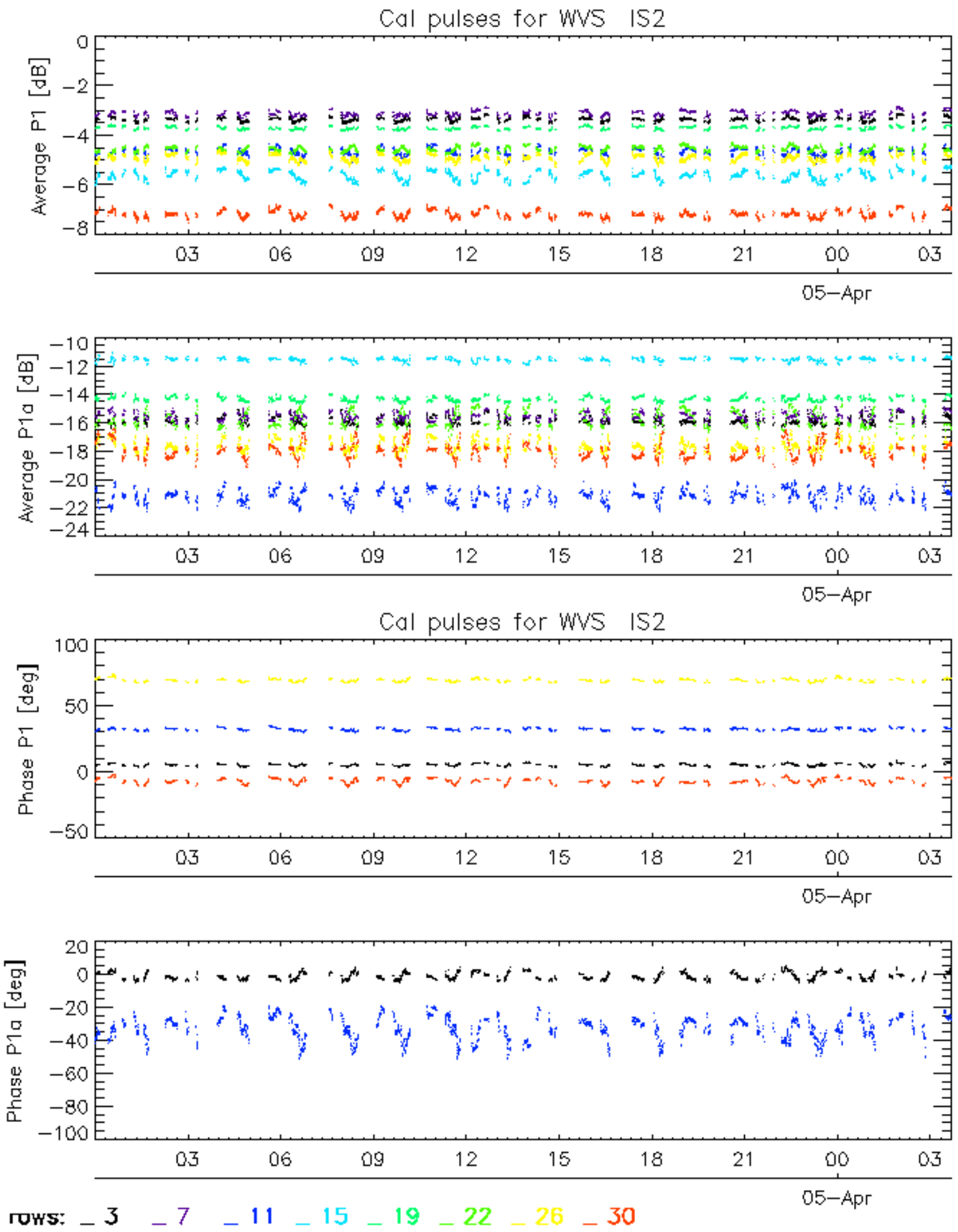
7.5 - Absolute Doppler for GM1

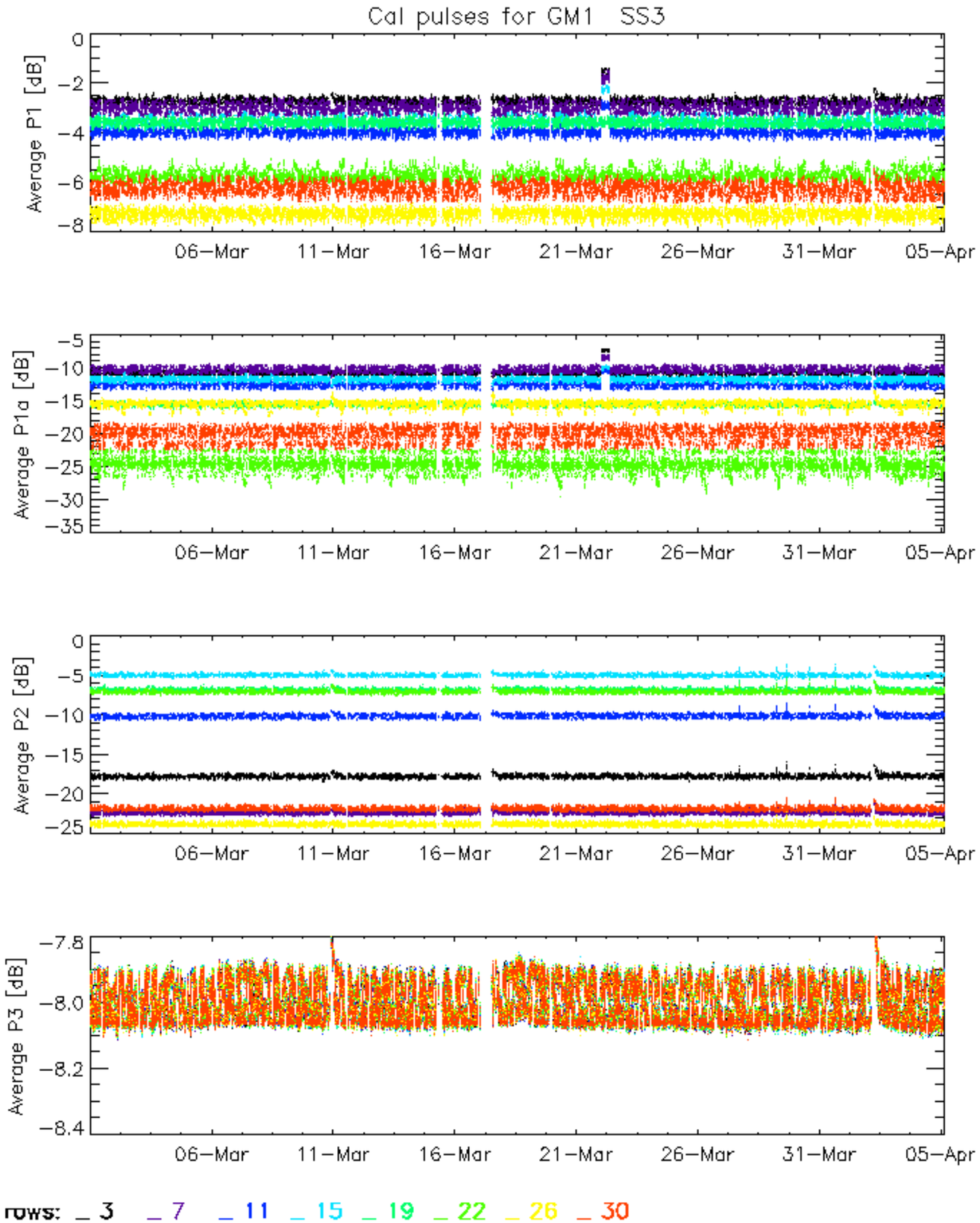
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

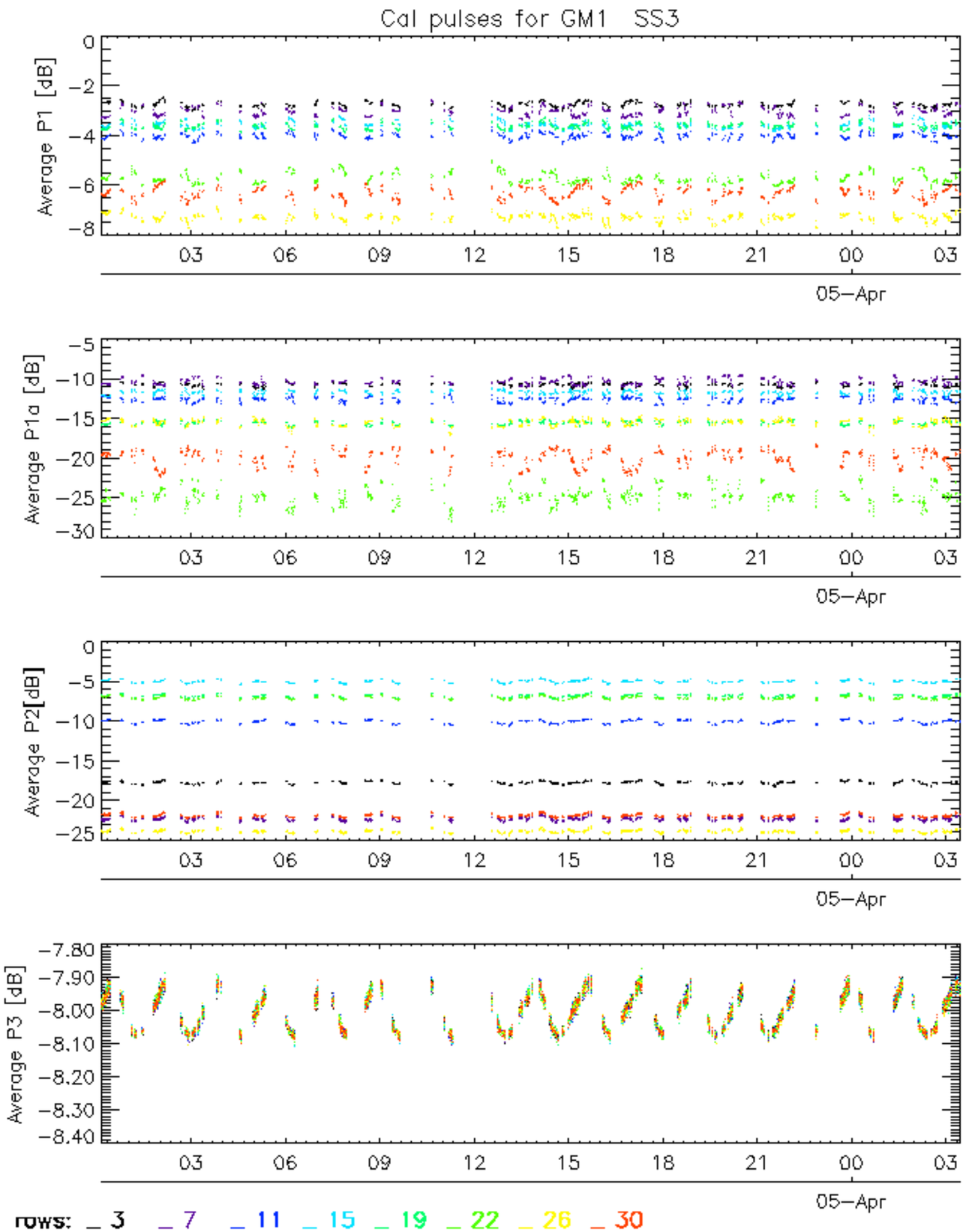
7.6 - Doppler evolution versus ANX for GM1

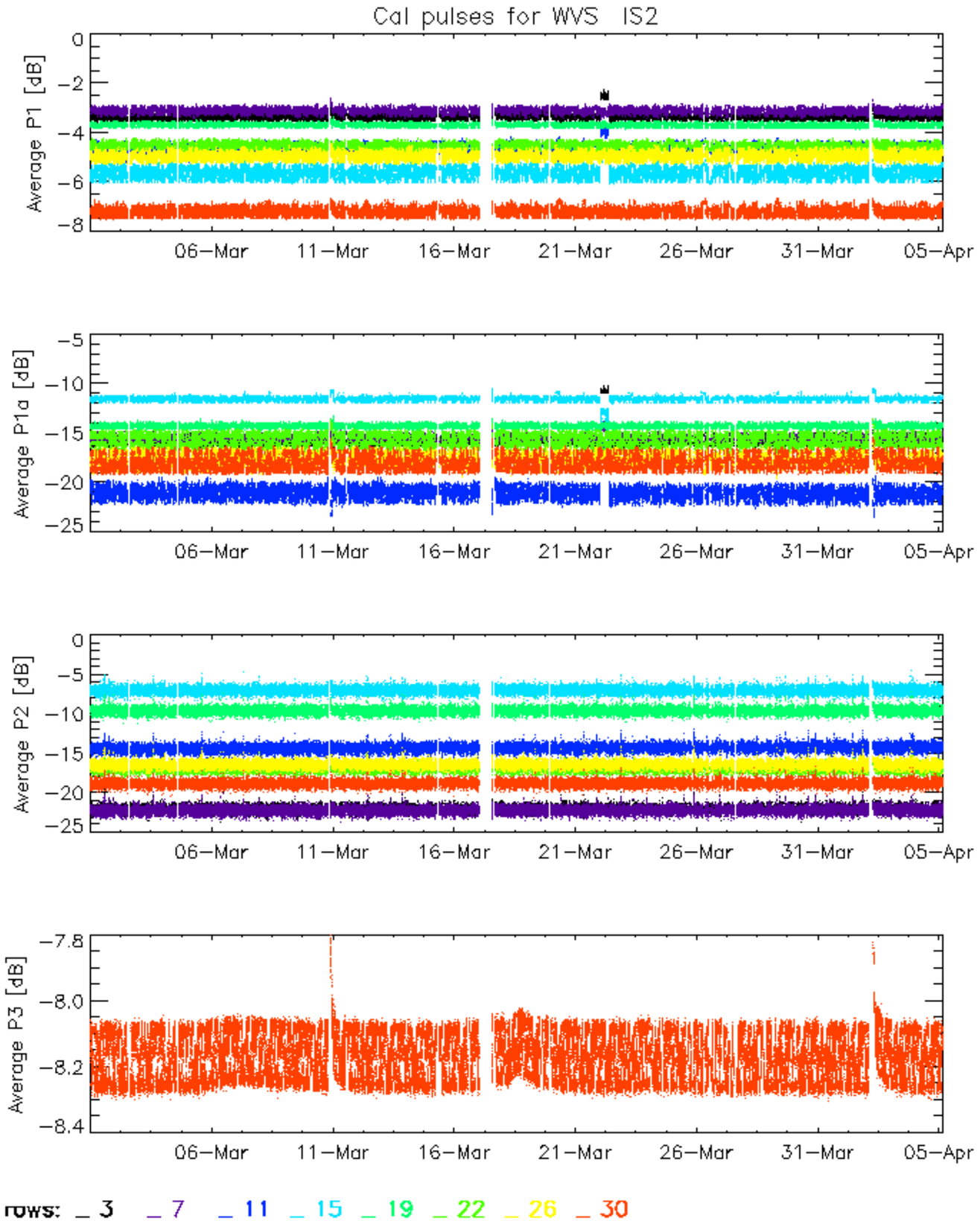
Evolution Doppler error versus ANX
☒

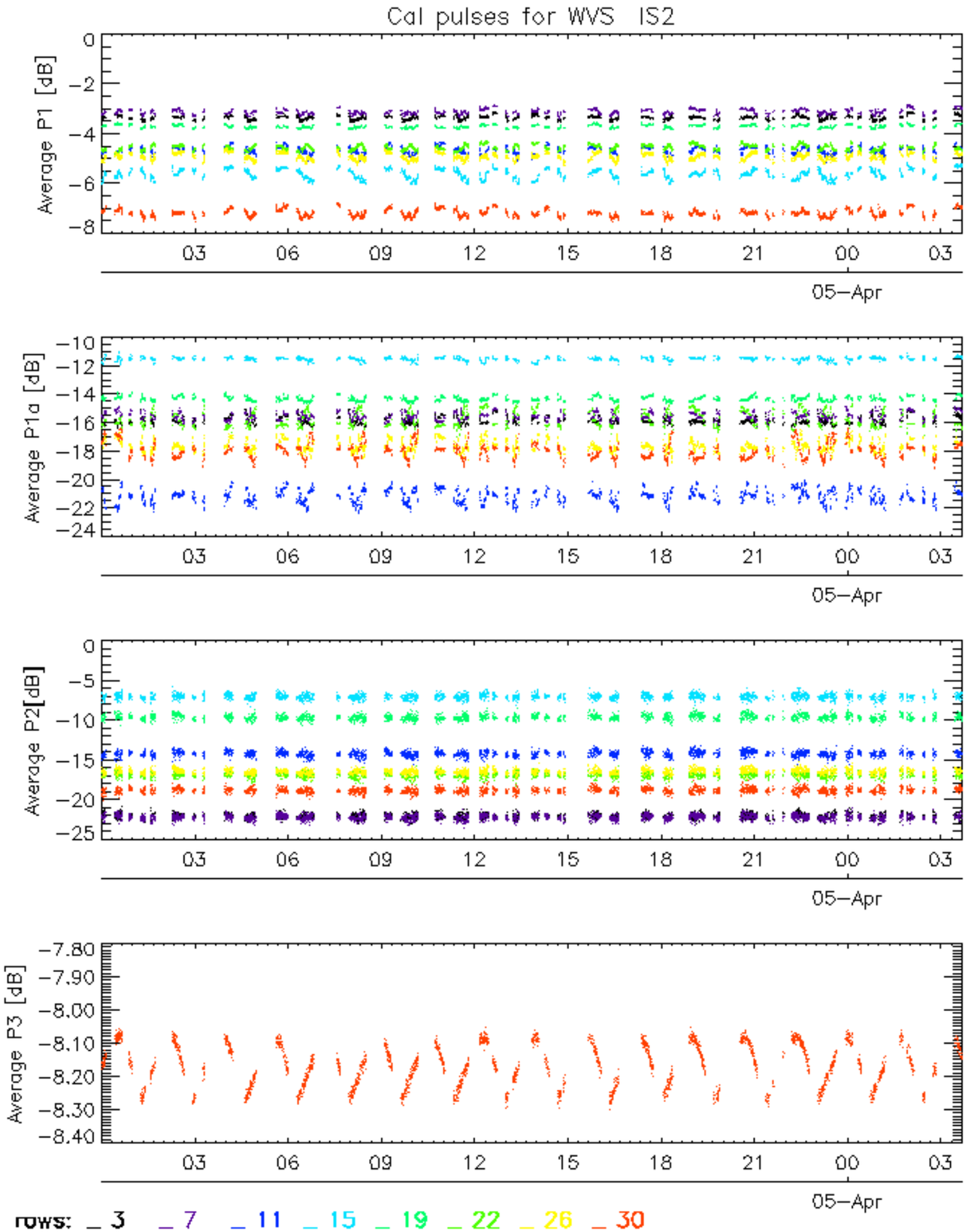

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
05−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
05−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

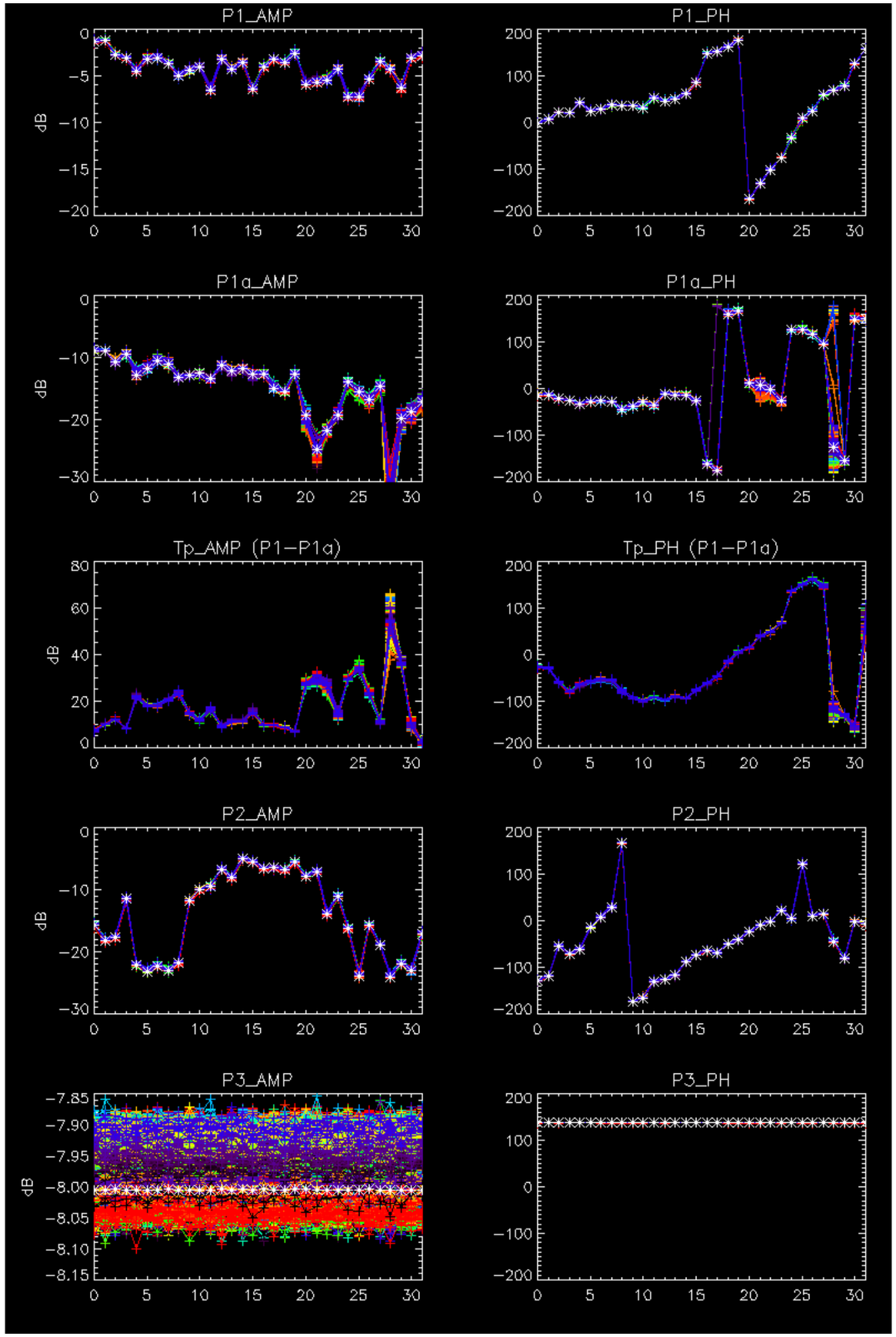

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

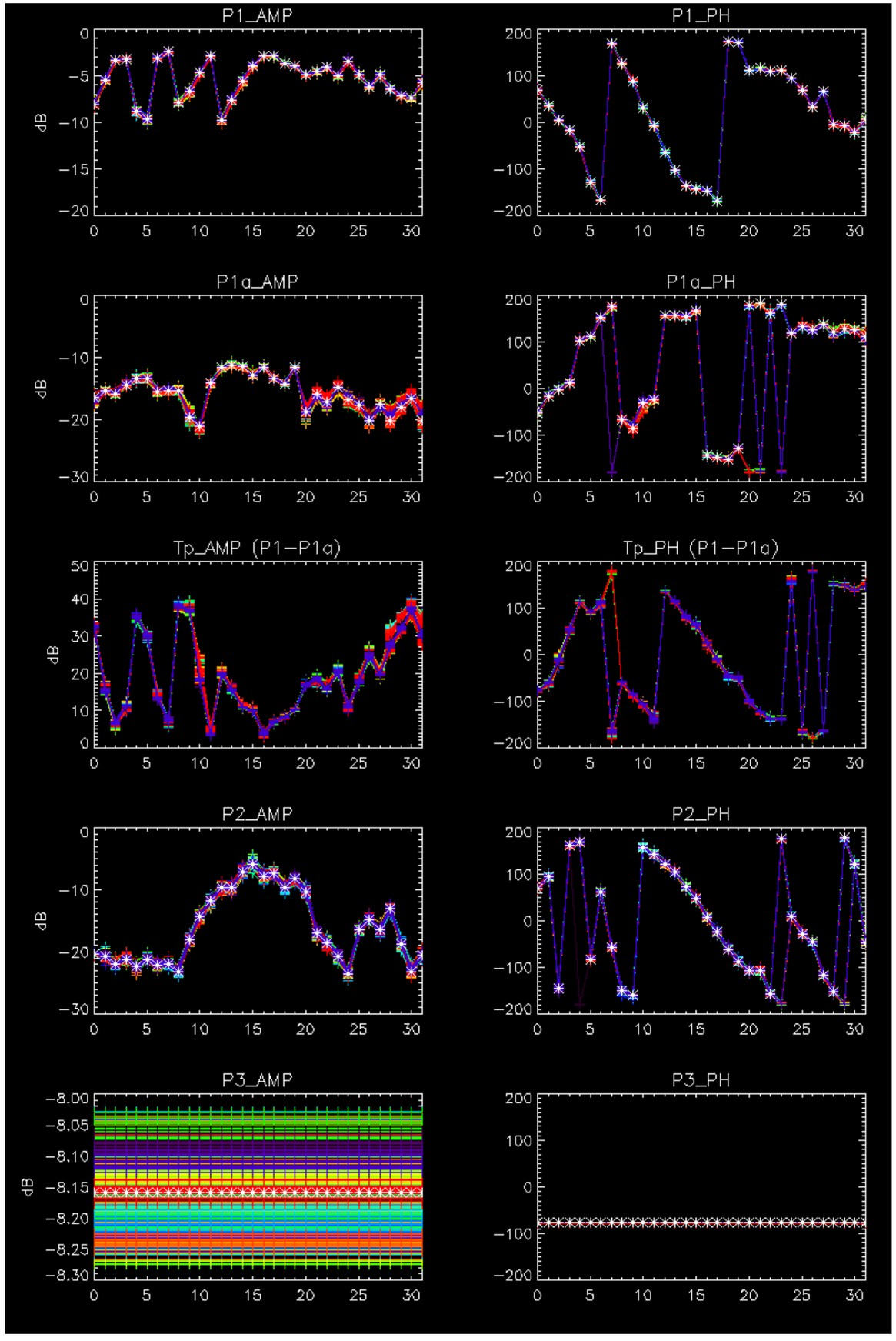

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
05−Apr
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr
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
05−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

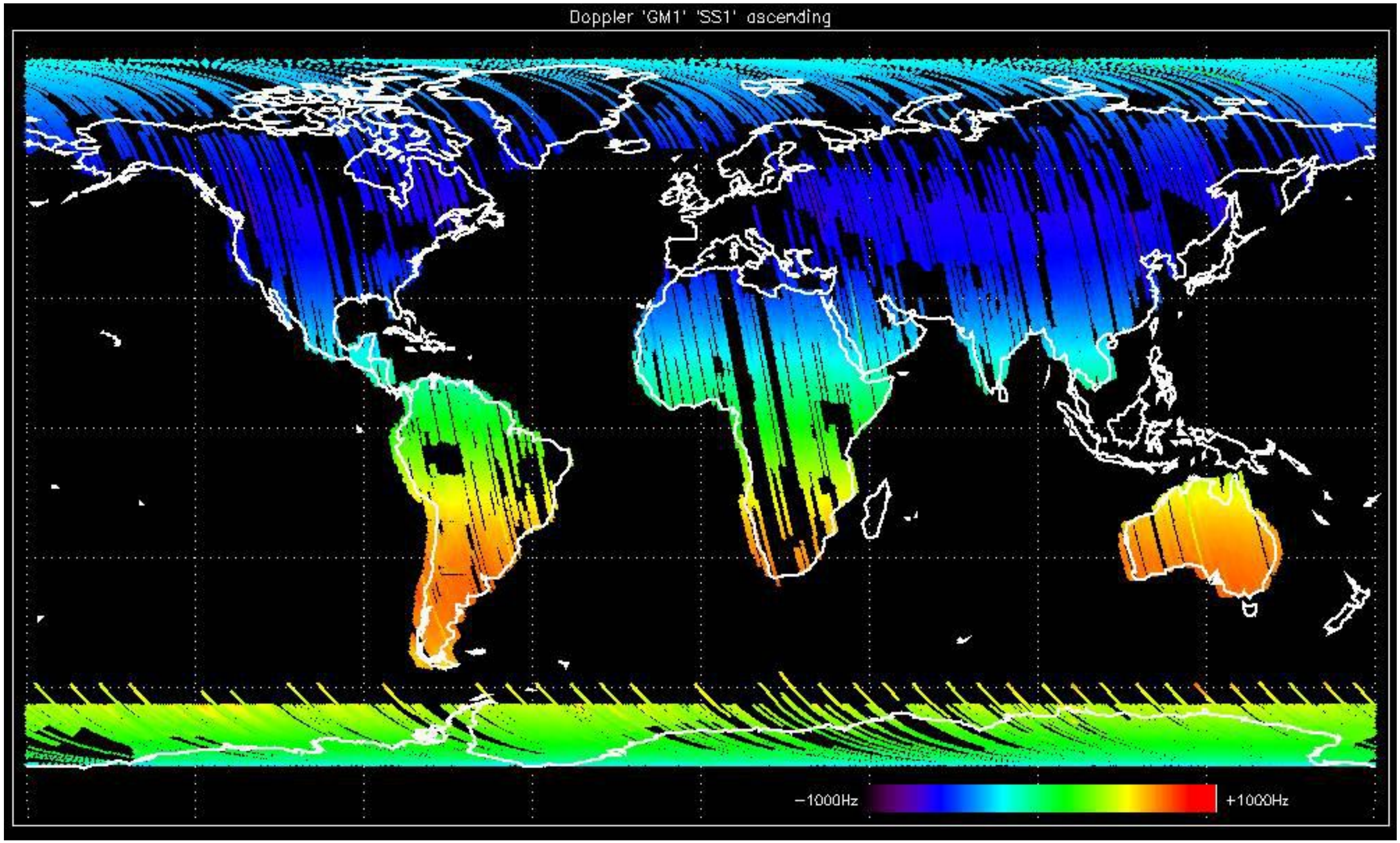
No anomalies observed.

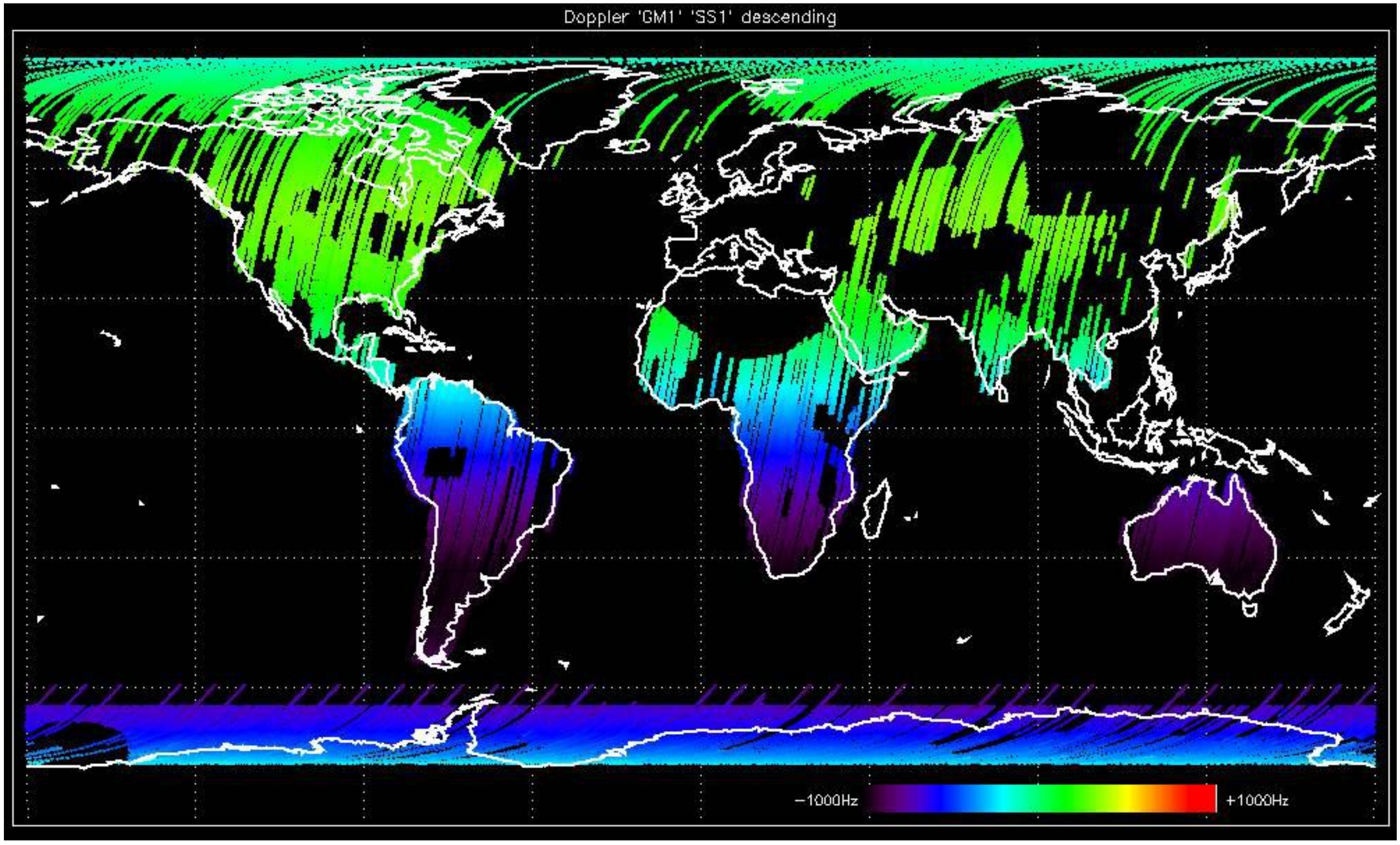

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

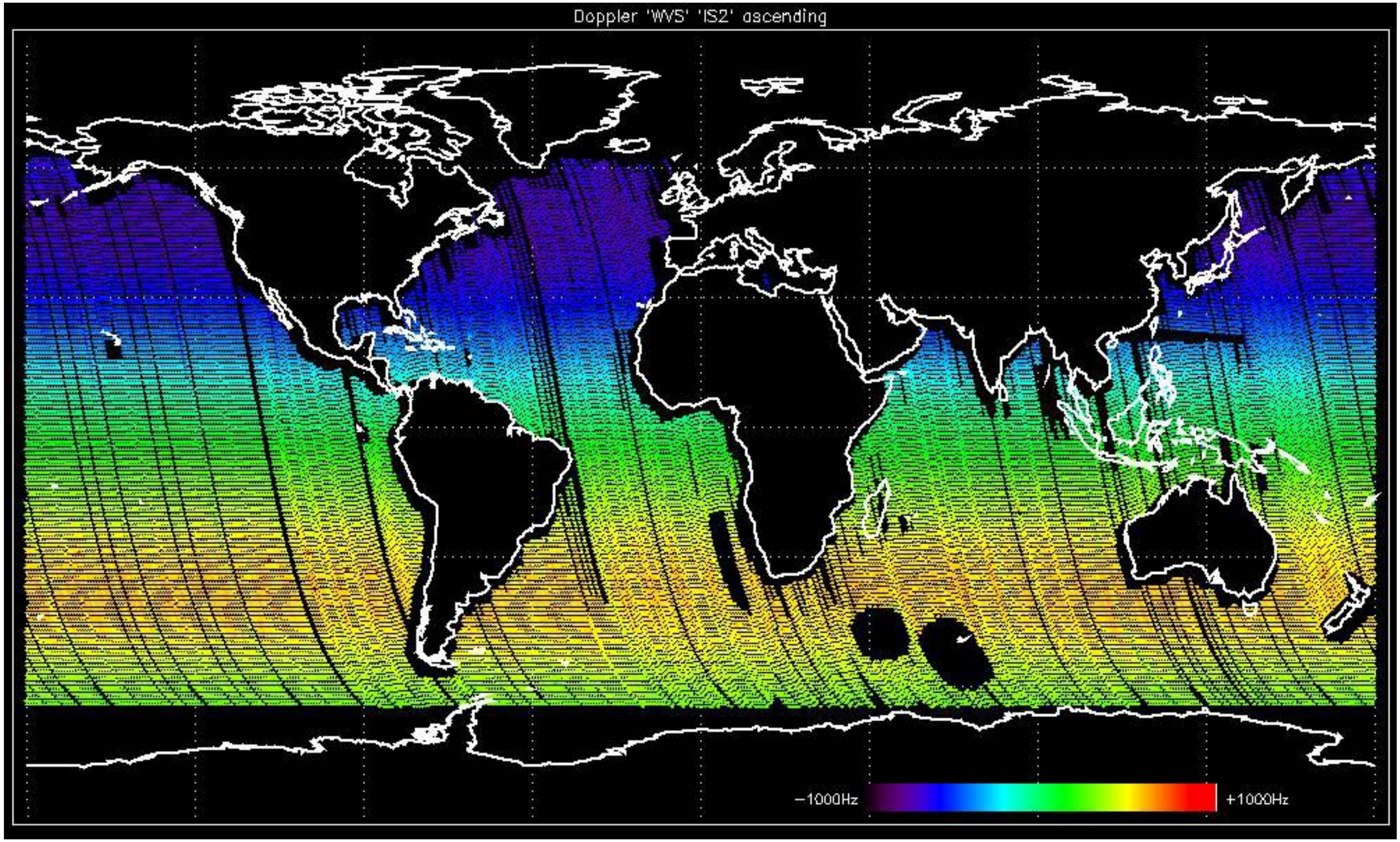

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

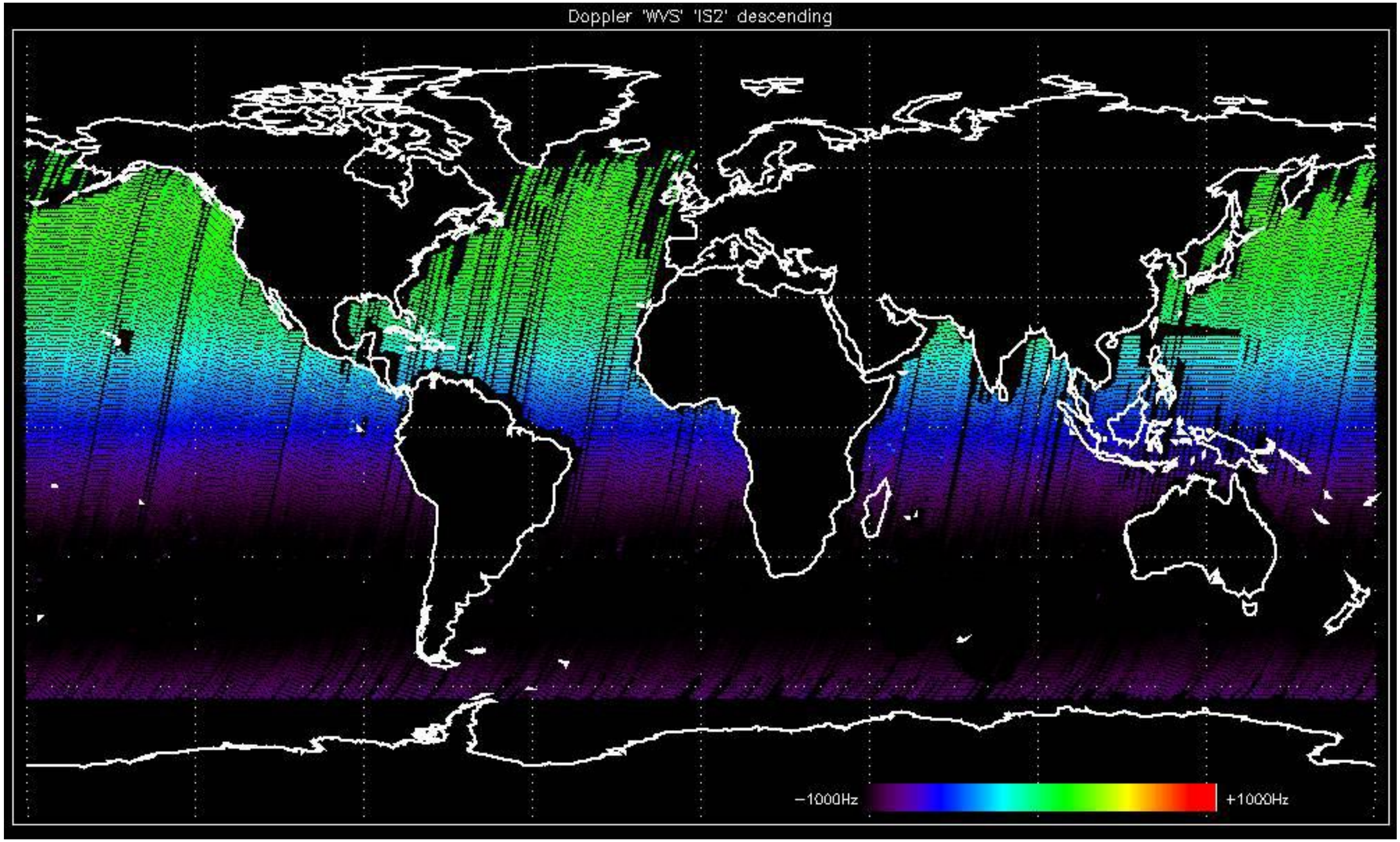
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

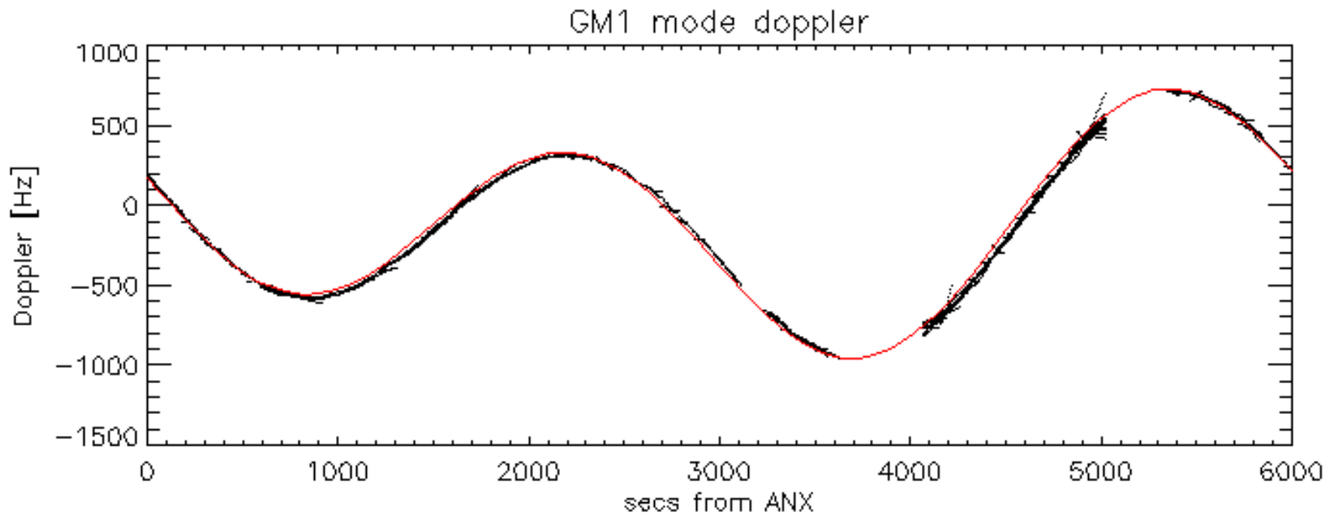
Preliminary report.The data is not yet controled

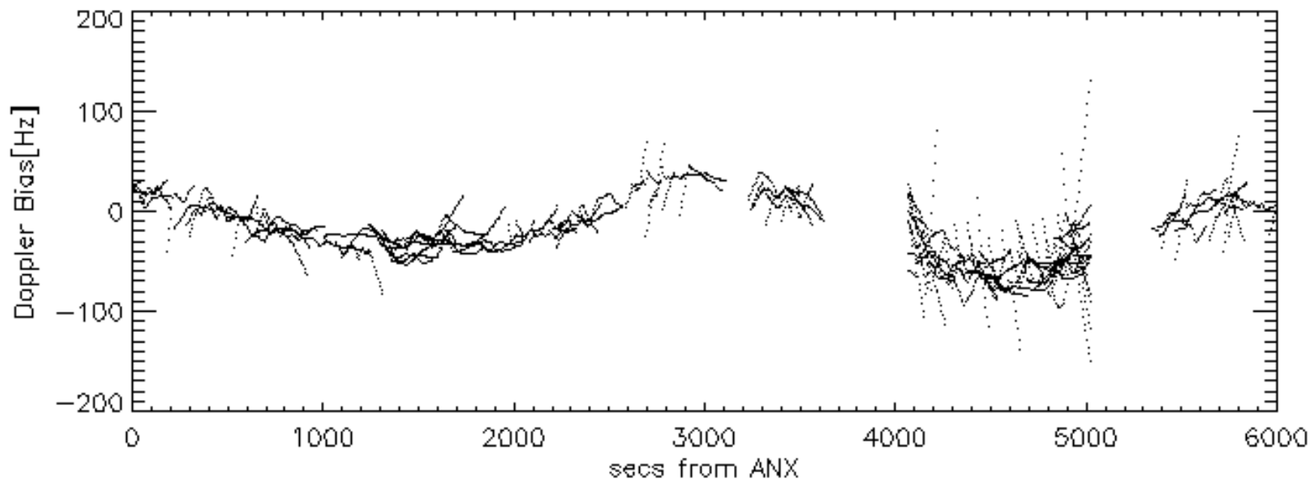

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

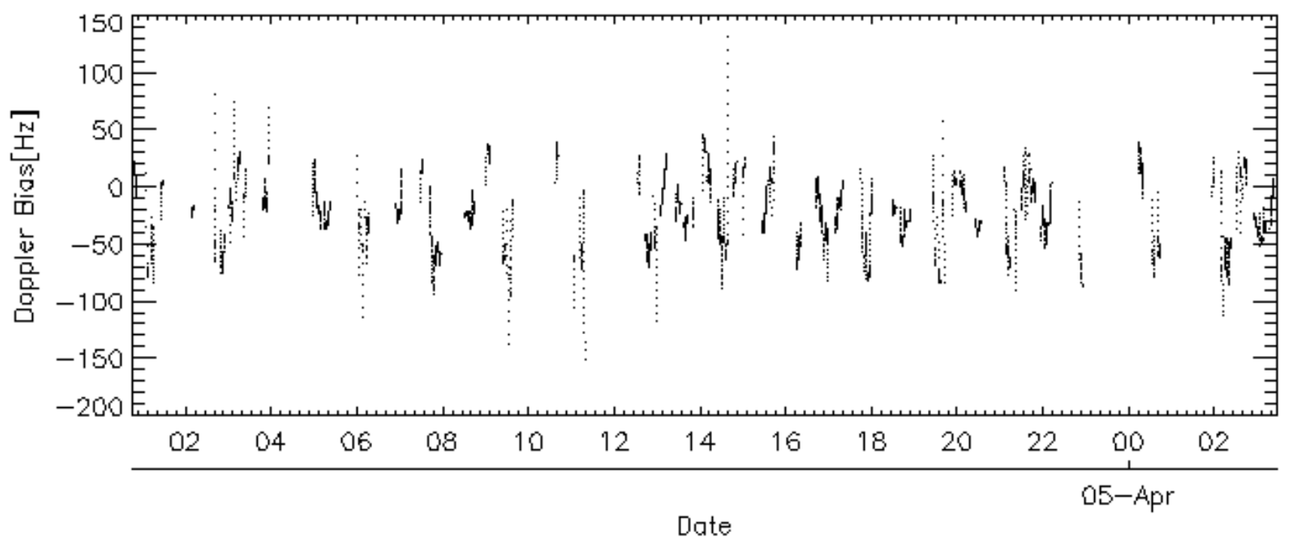

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

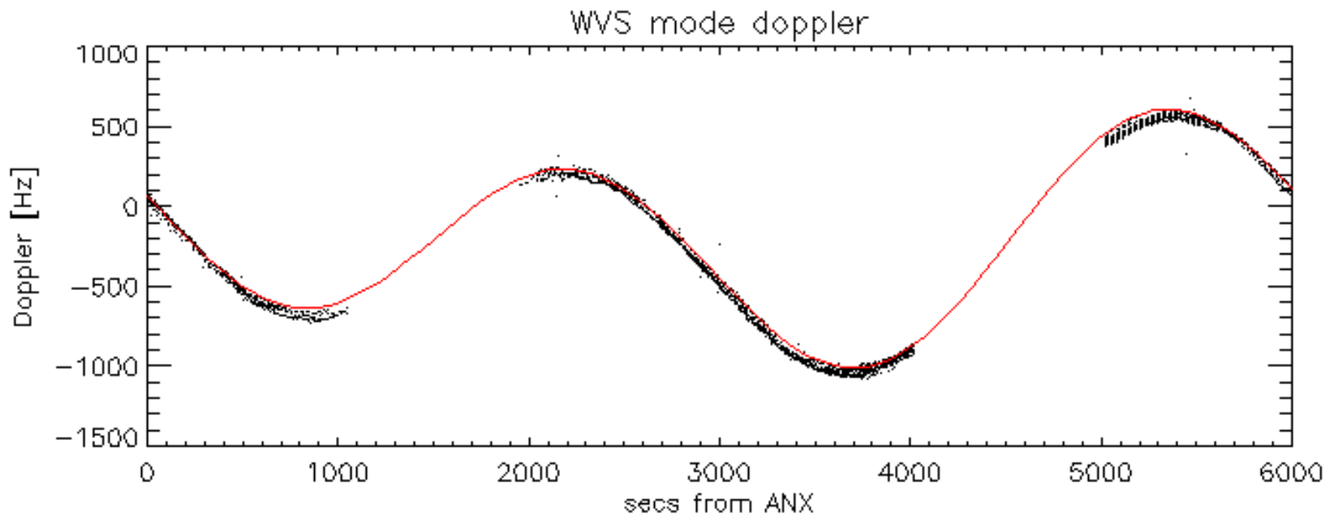

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

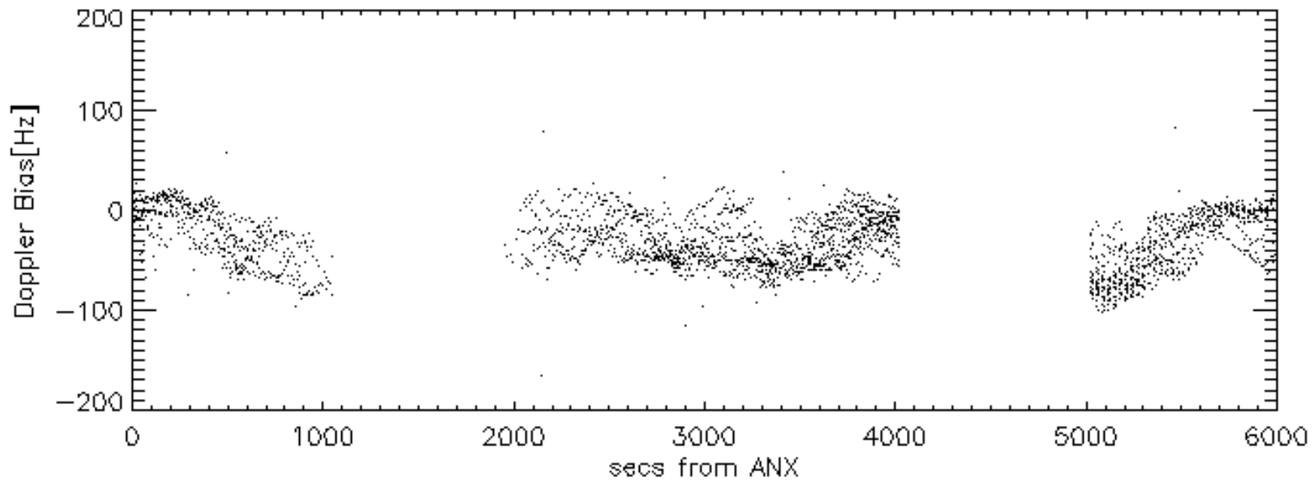

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

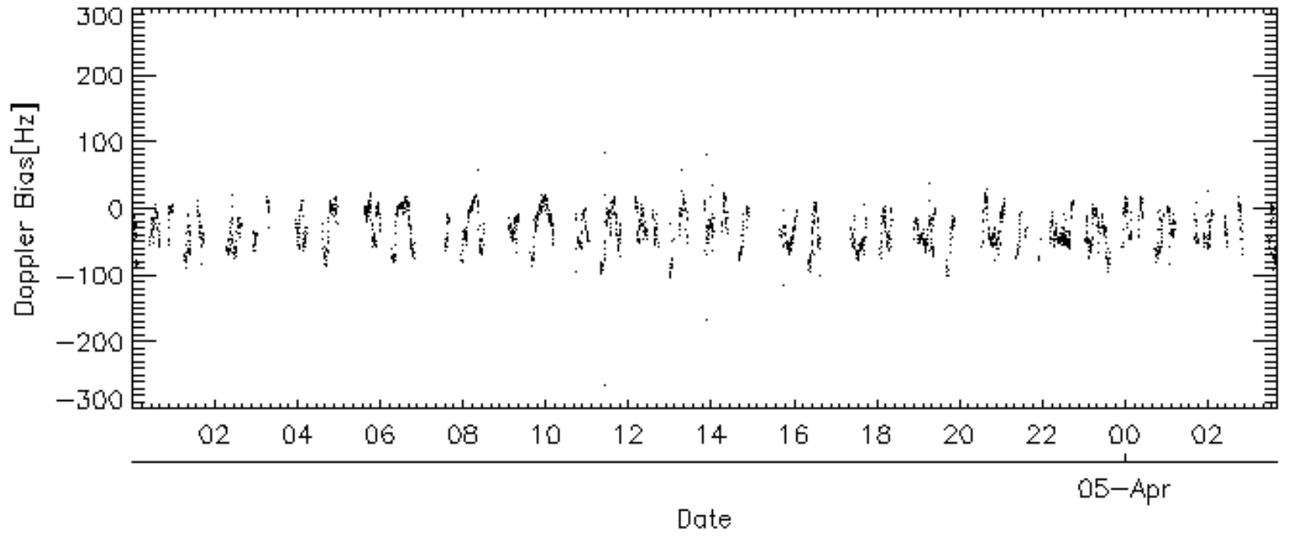

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

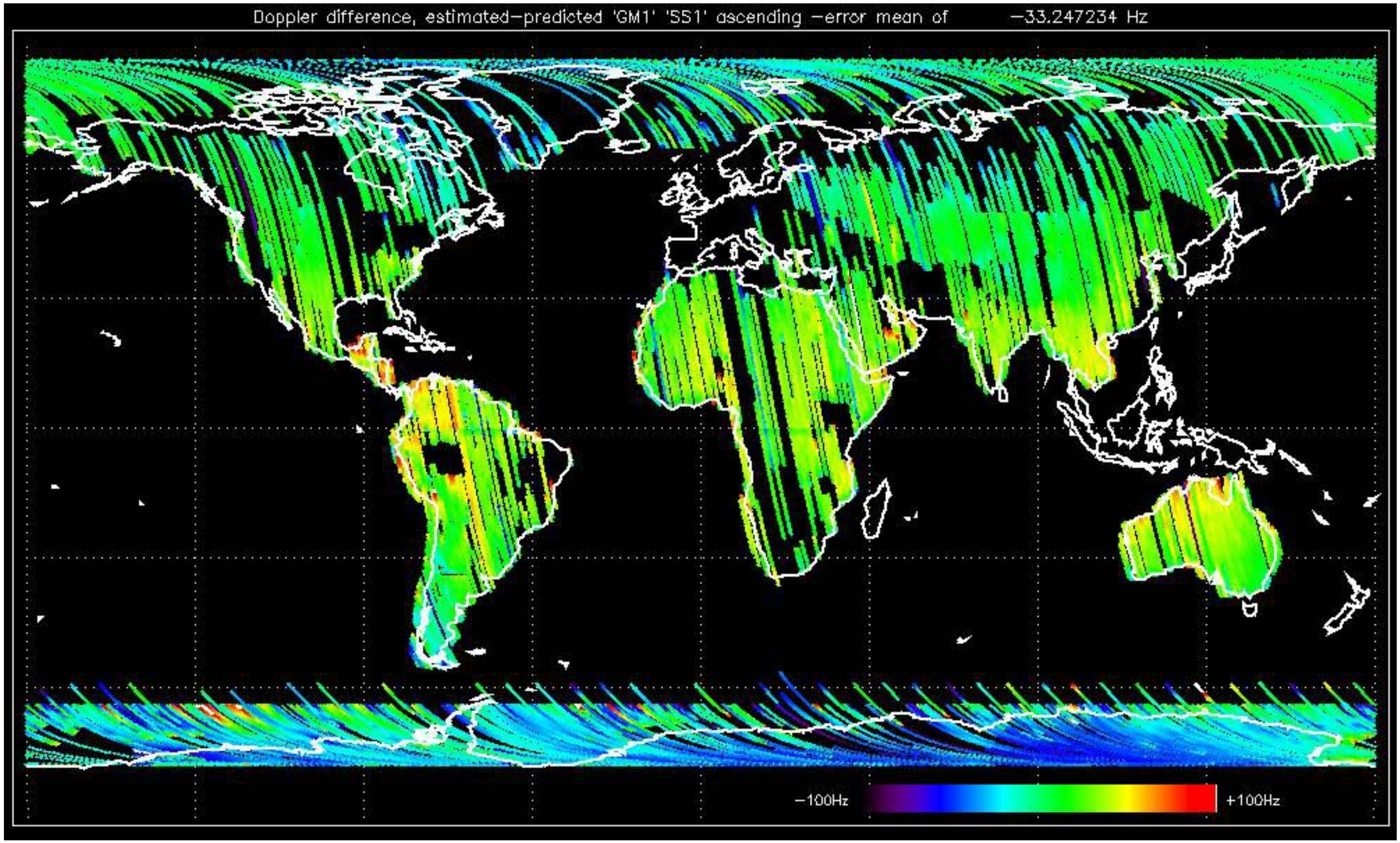

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

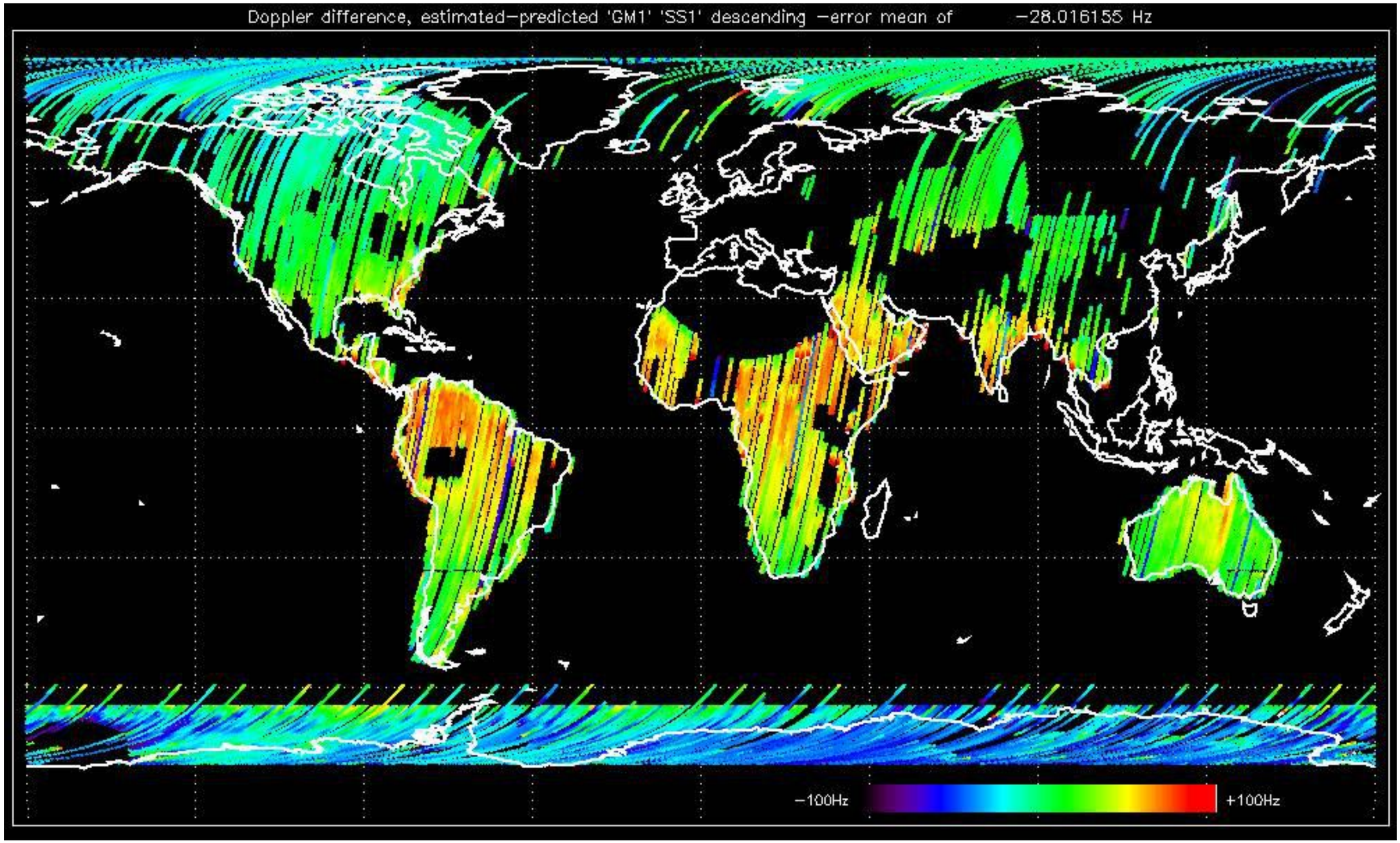

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
05−Apr
Date

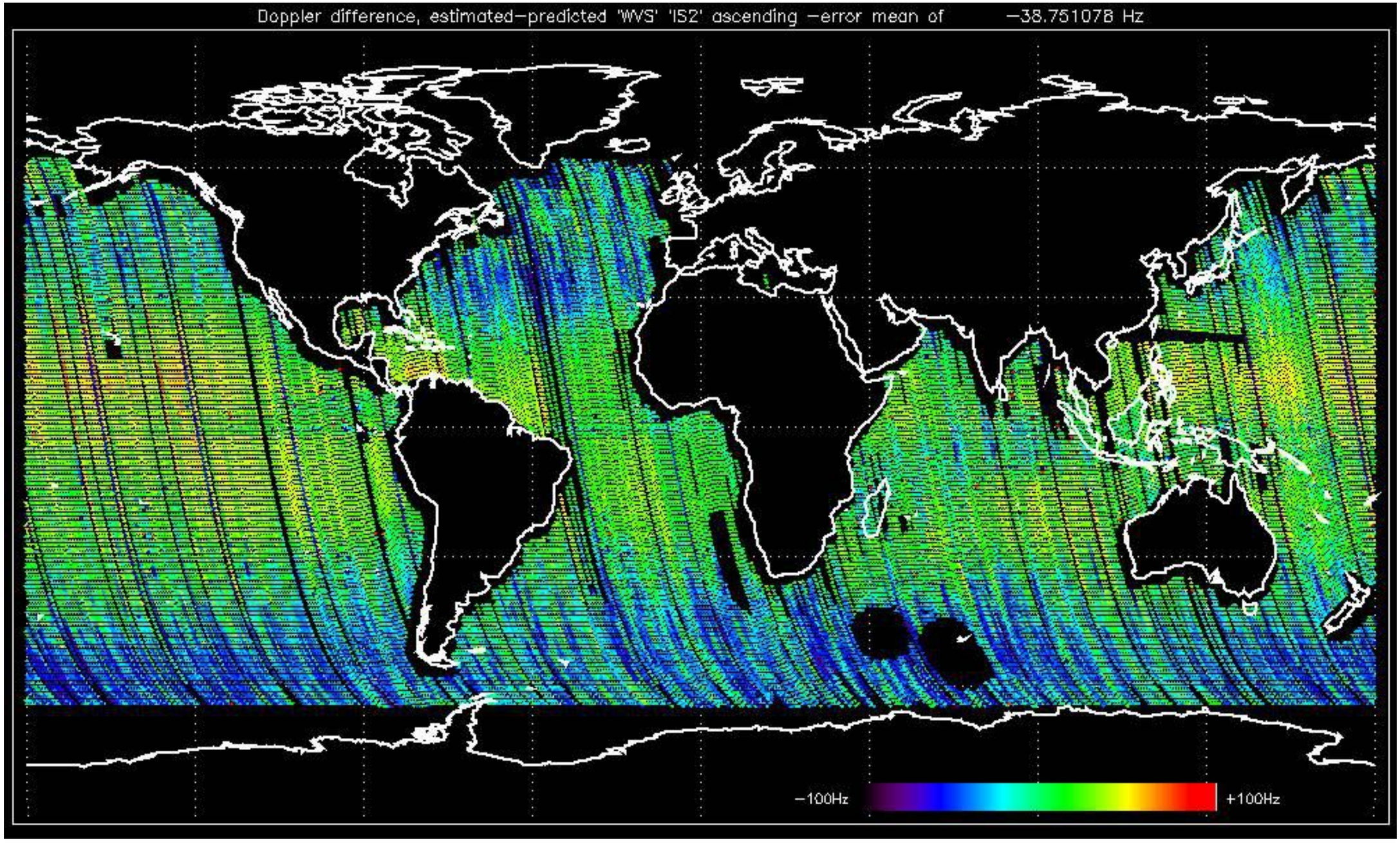

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

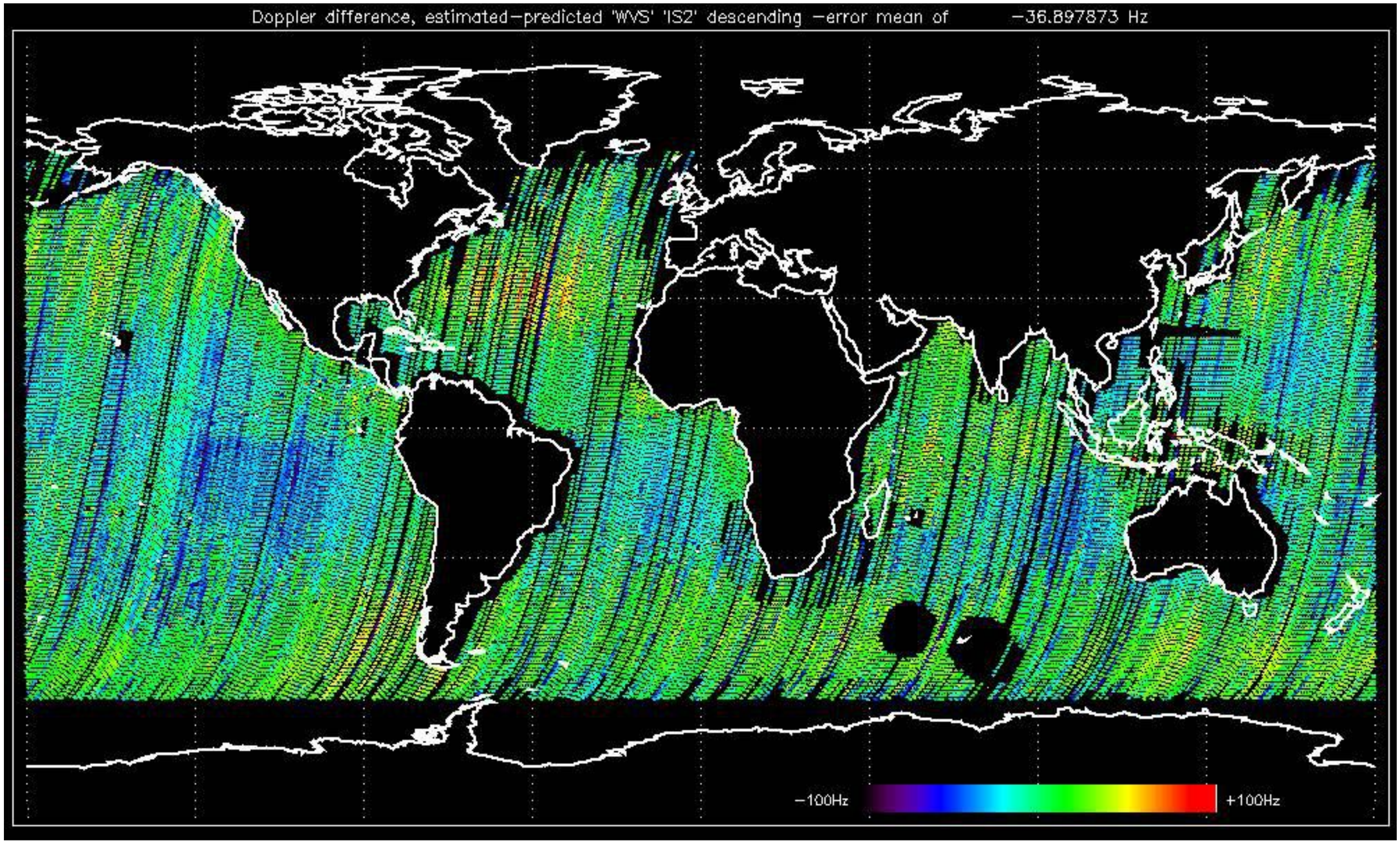

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.247234 Hz
−100Hz
+100Hz

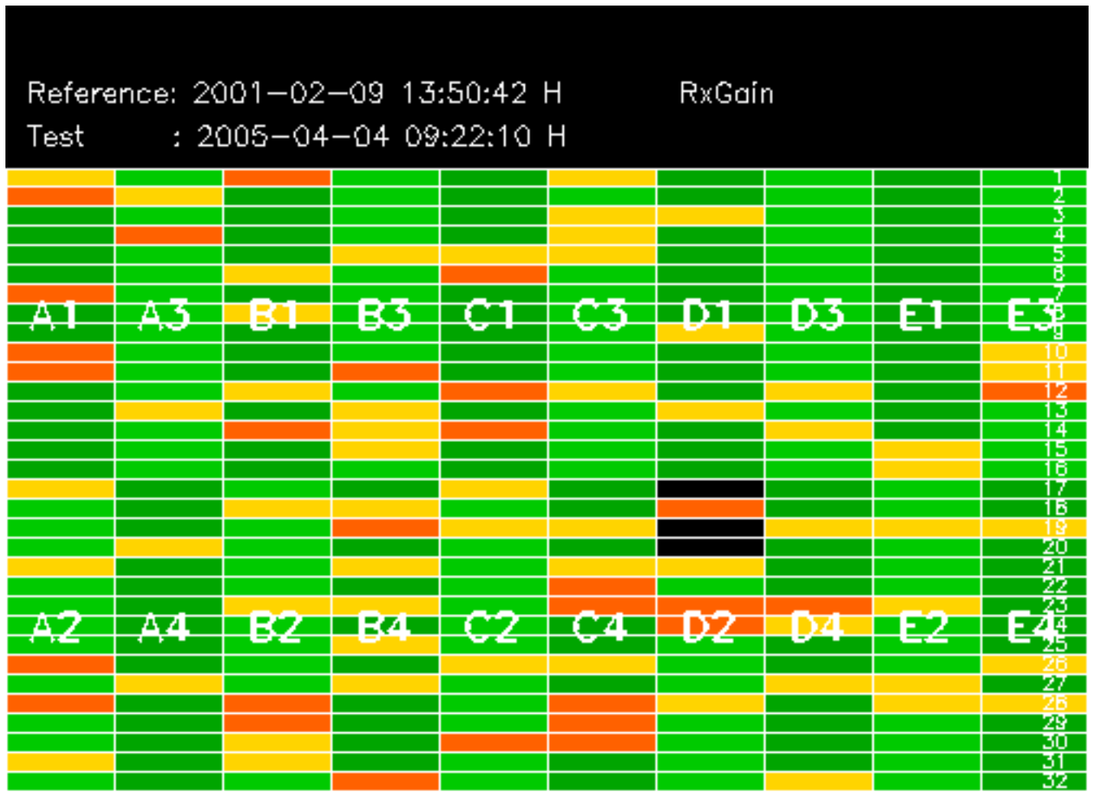

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.016155 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −38.751078 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.897873 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-04-04 09:22:10 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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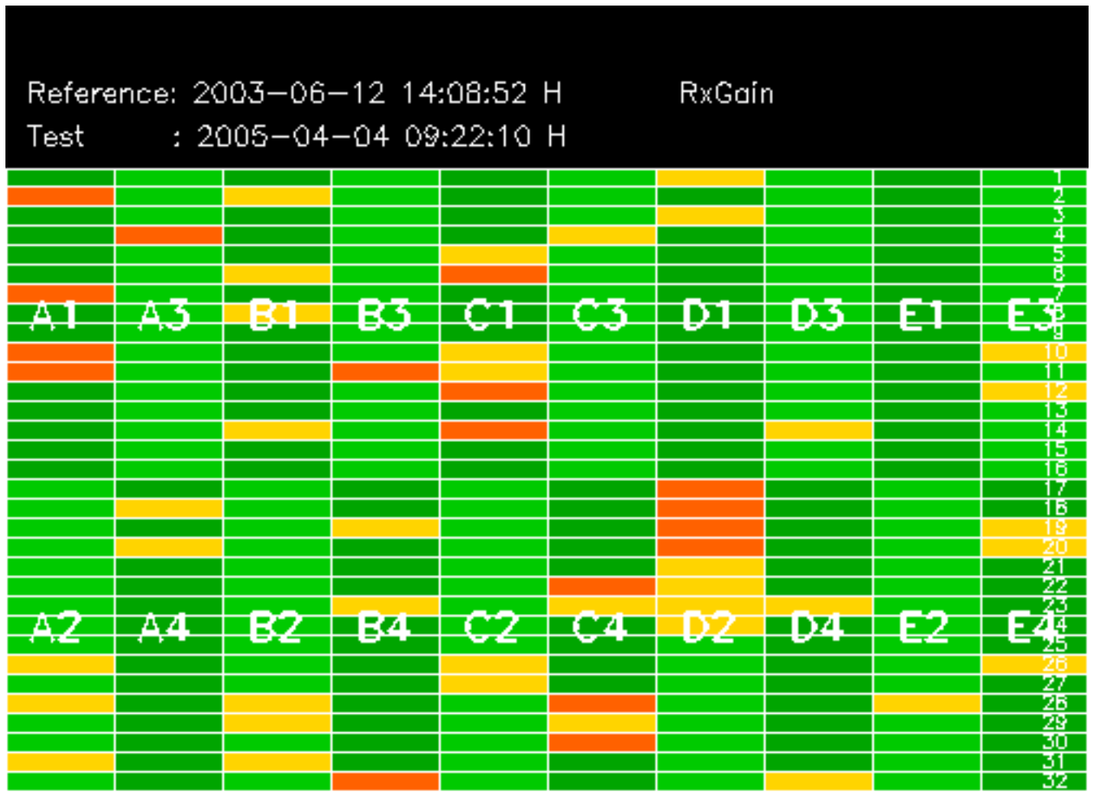
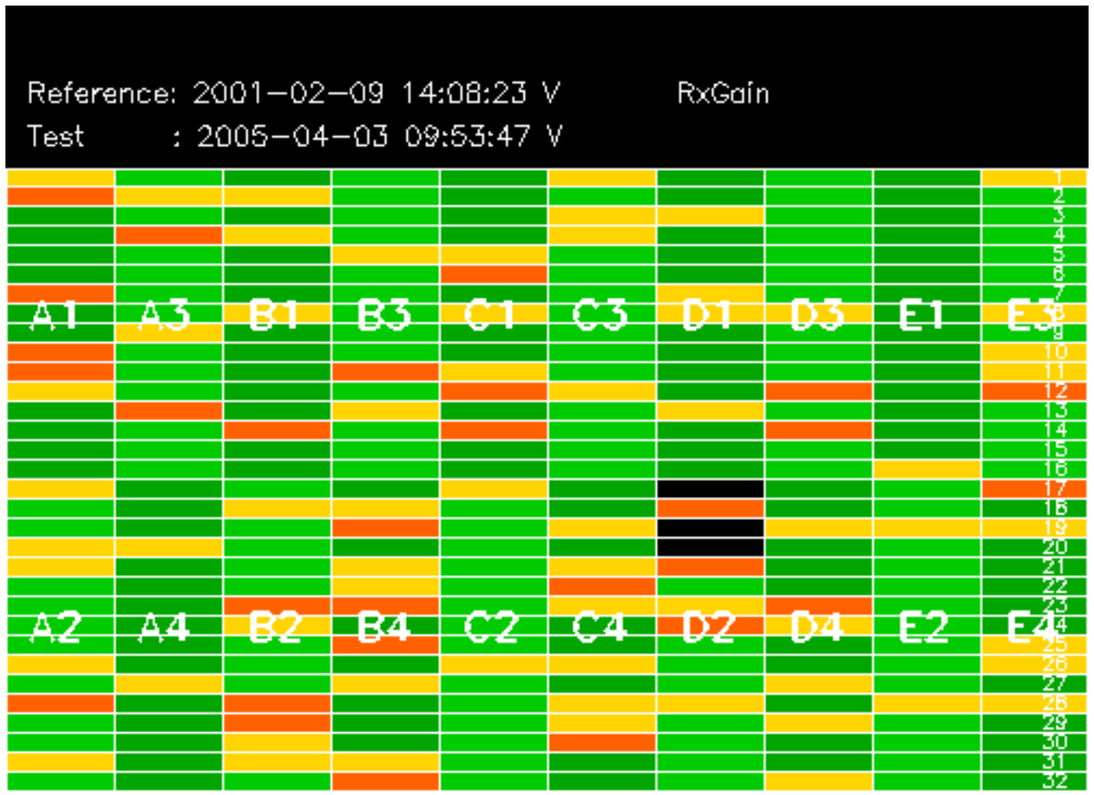

Reference: 2003-06-12 14:08:52 H
RxGain
Test : 2005-04-04 09:22:10 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-03 09:53:47 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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9
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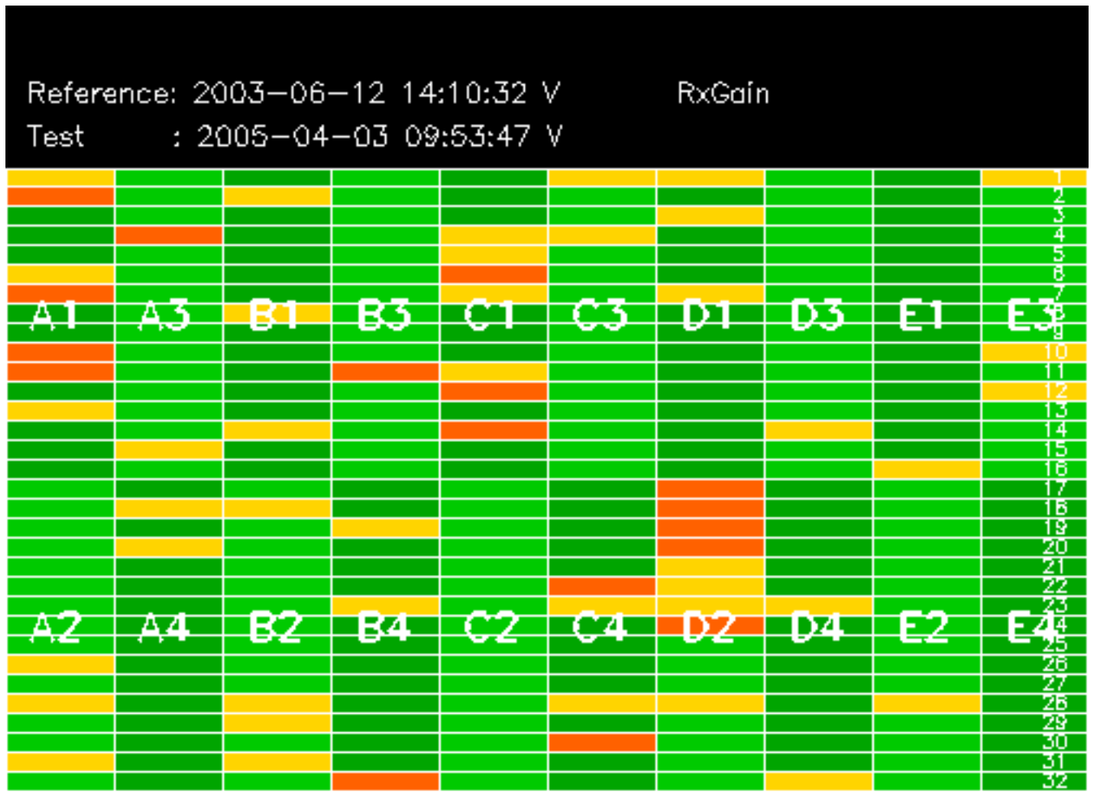
Reference: 2003-06-12 14:10:32 V
Test : 2005-04-03 09:53:47 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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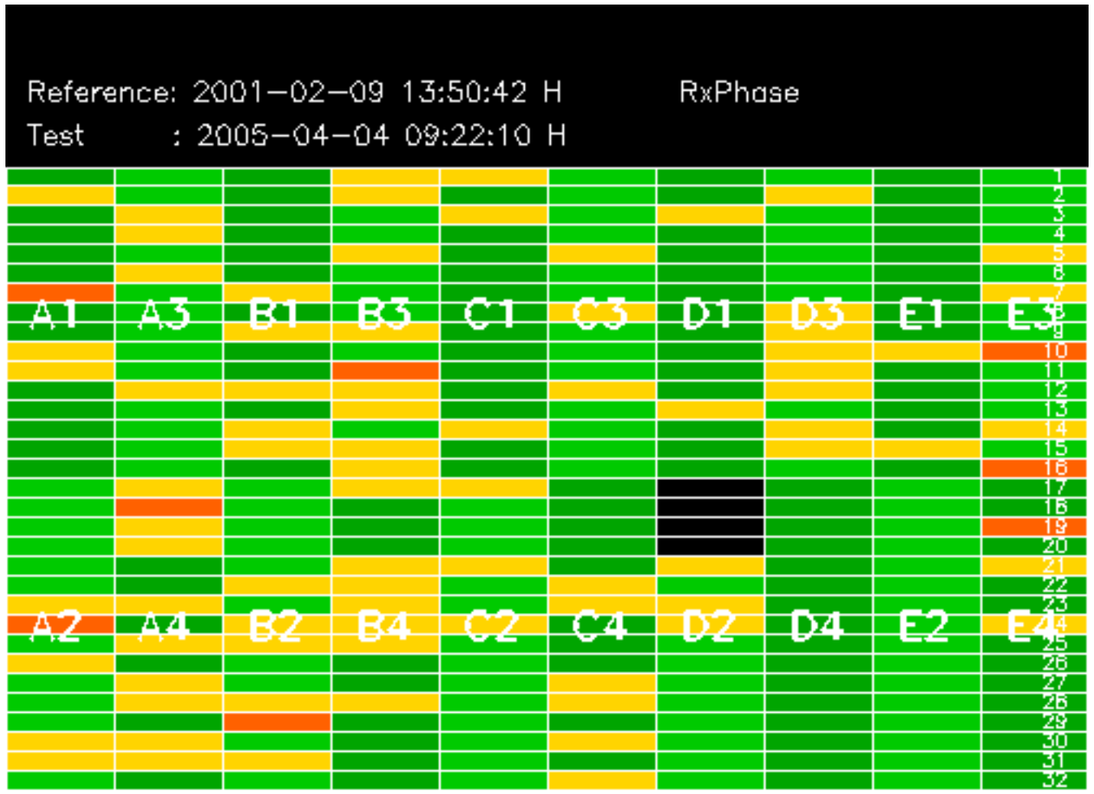
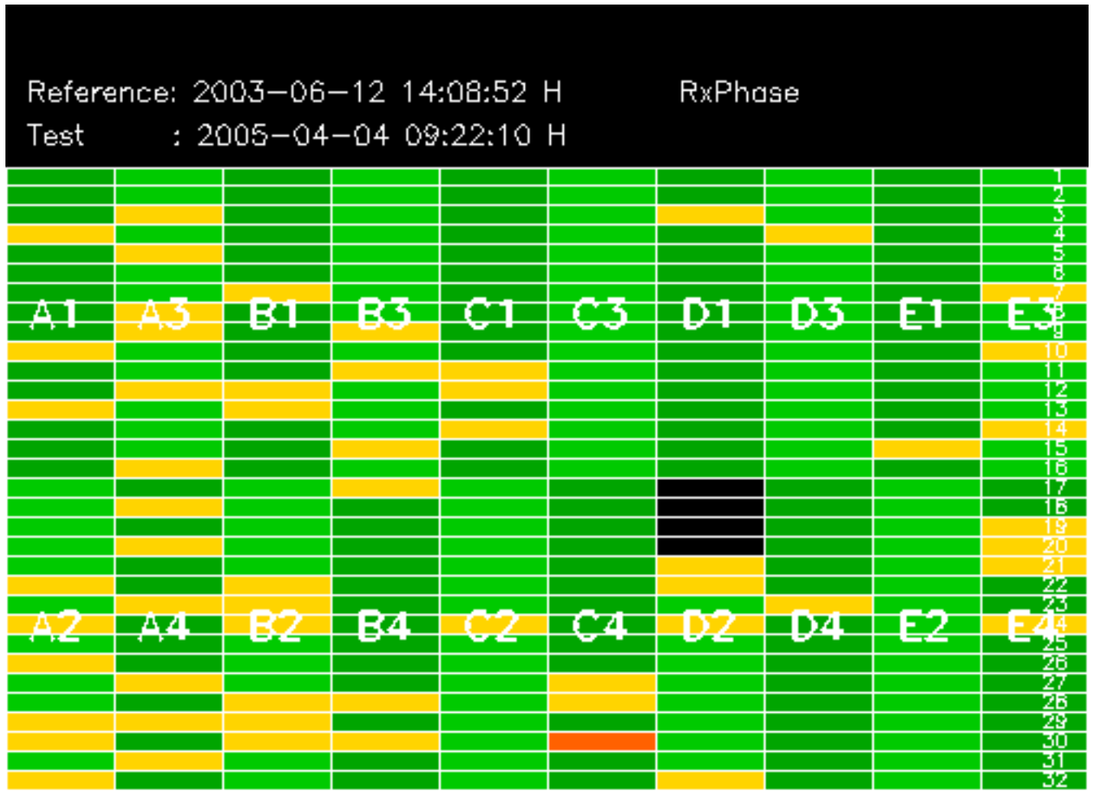

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-04-04 09:22:10 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-04-04 09:22:10 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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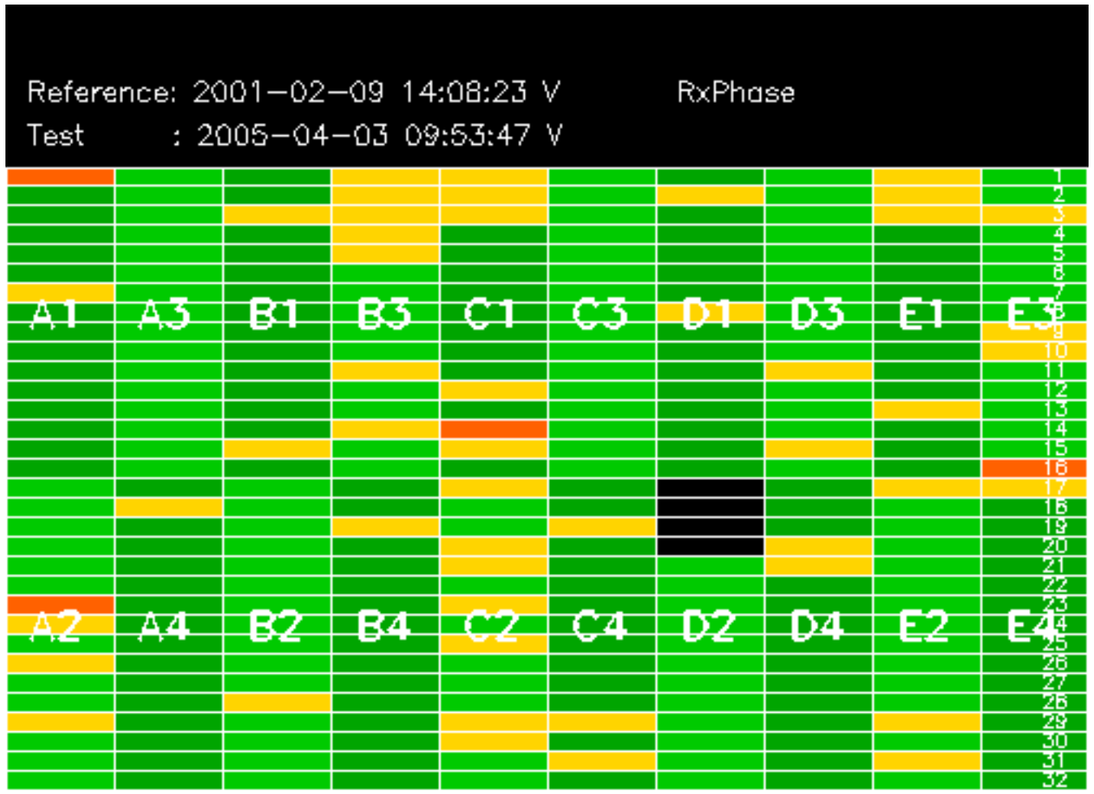
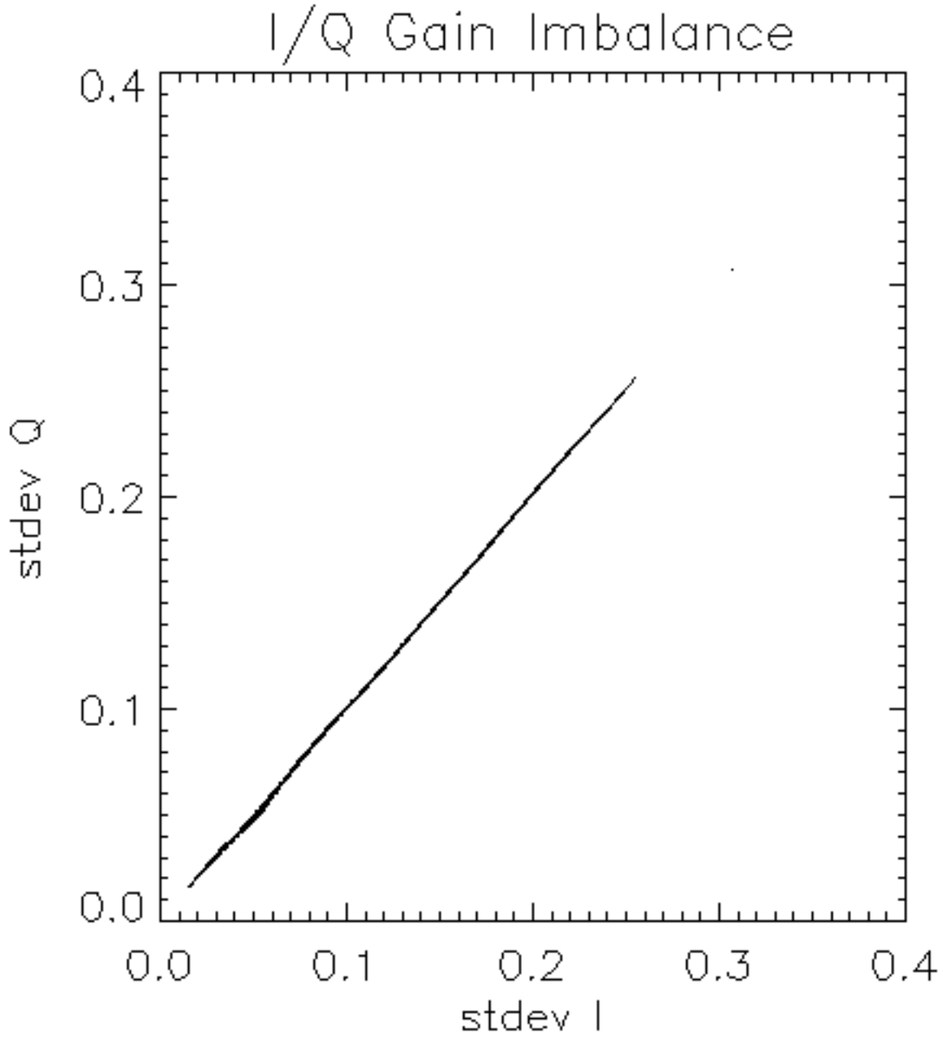
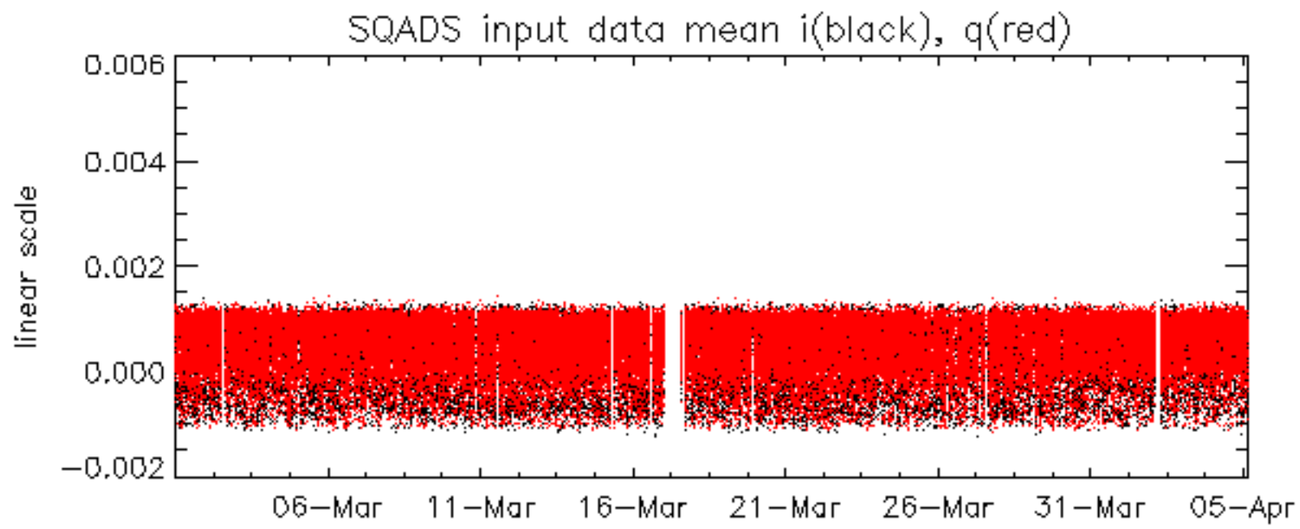
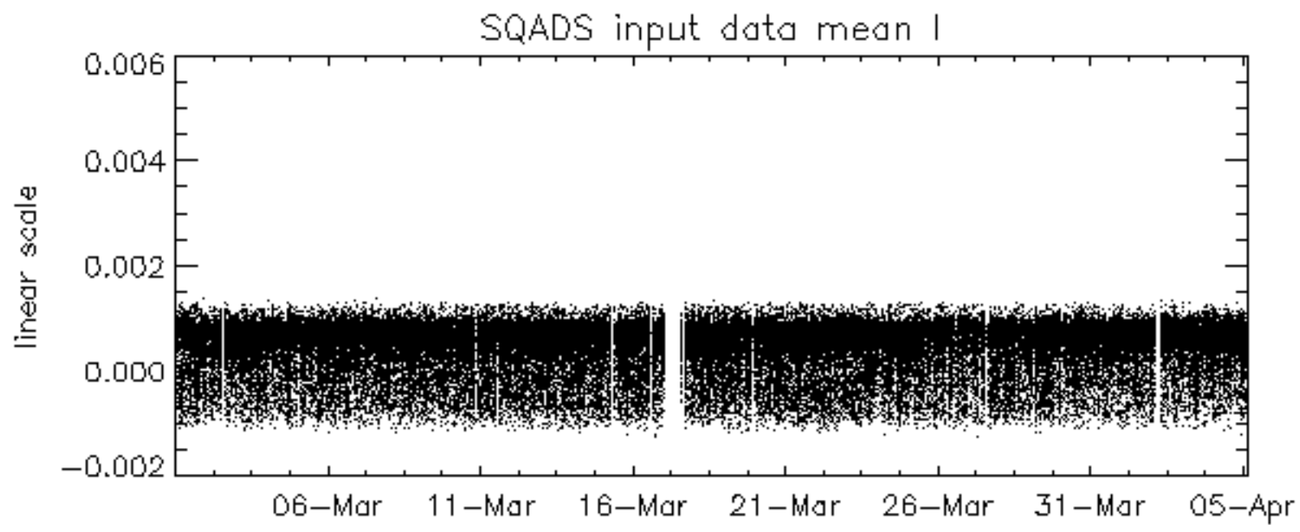
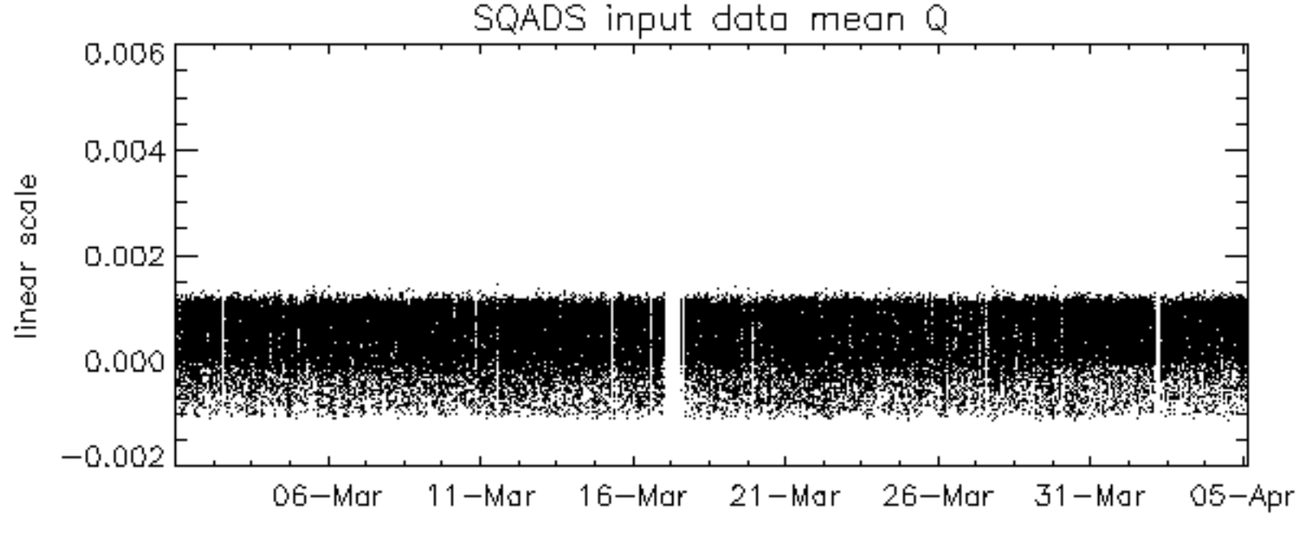

Reference: 2001-02-09 14:08:23 V
Test : 2005-04-03 09:53:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

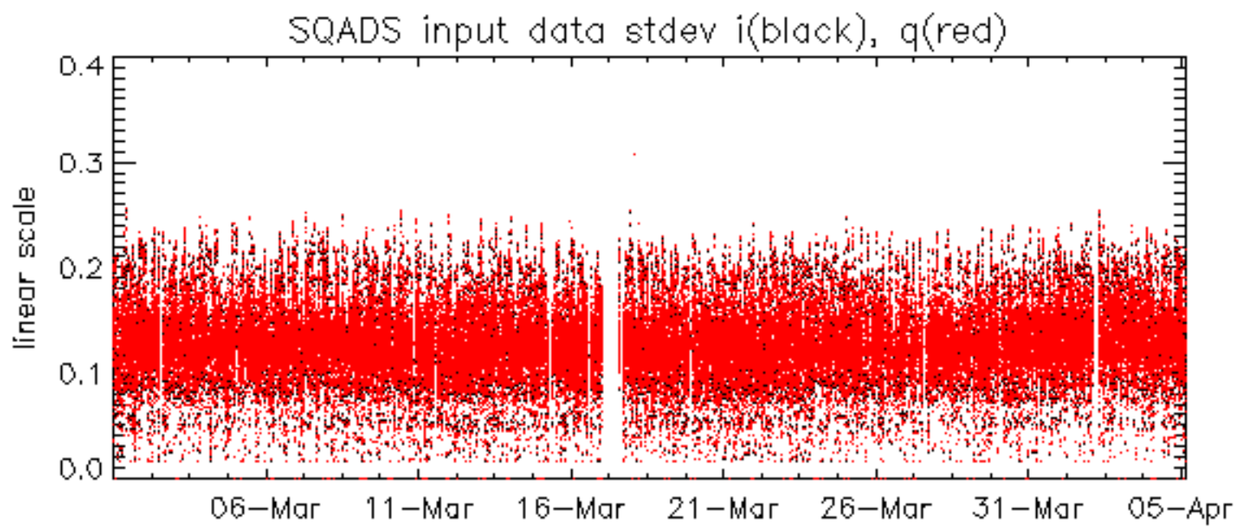

Reference: 2003-06-12 14:10:32 V
Test : 2005-04-03 09:53:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

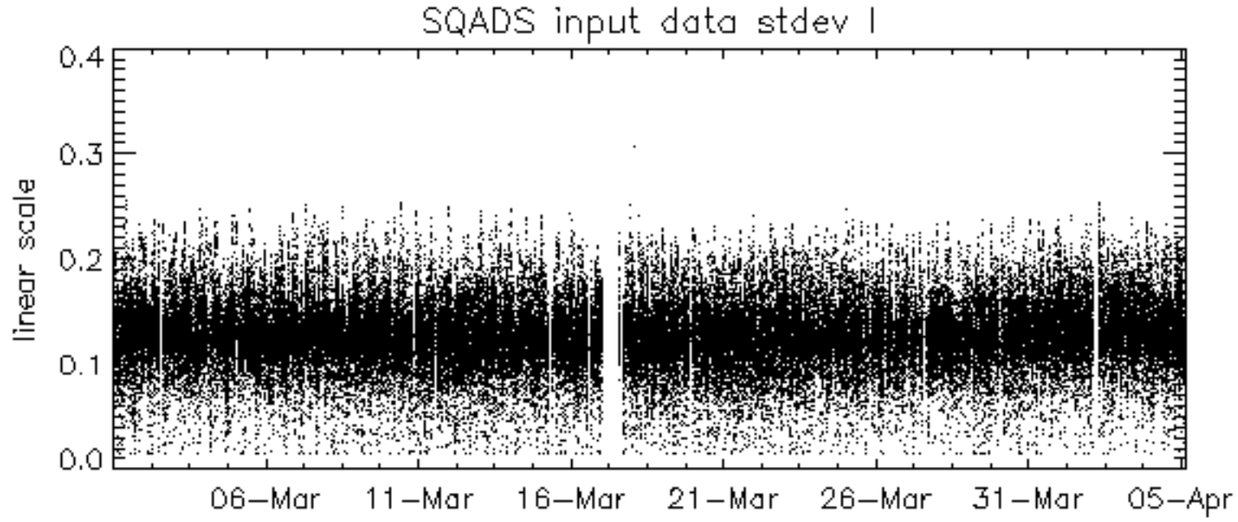

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

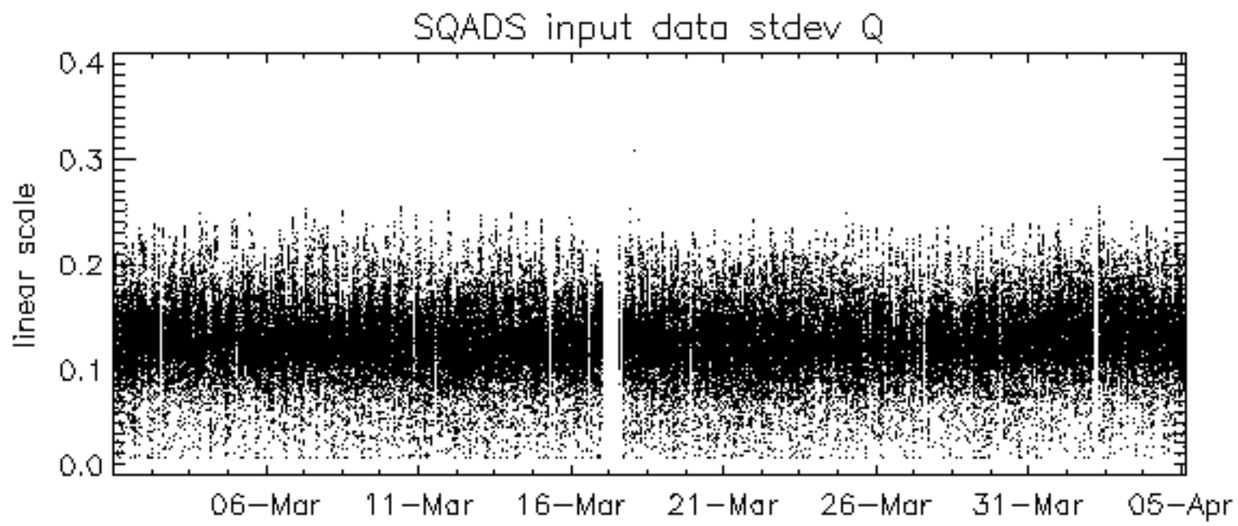

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr

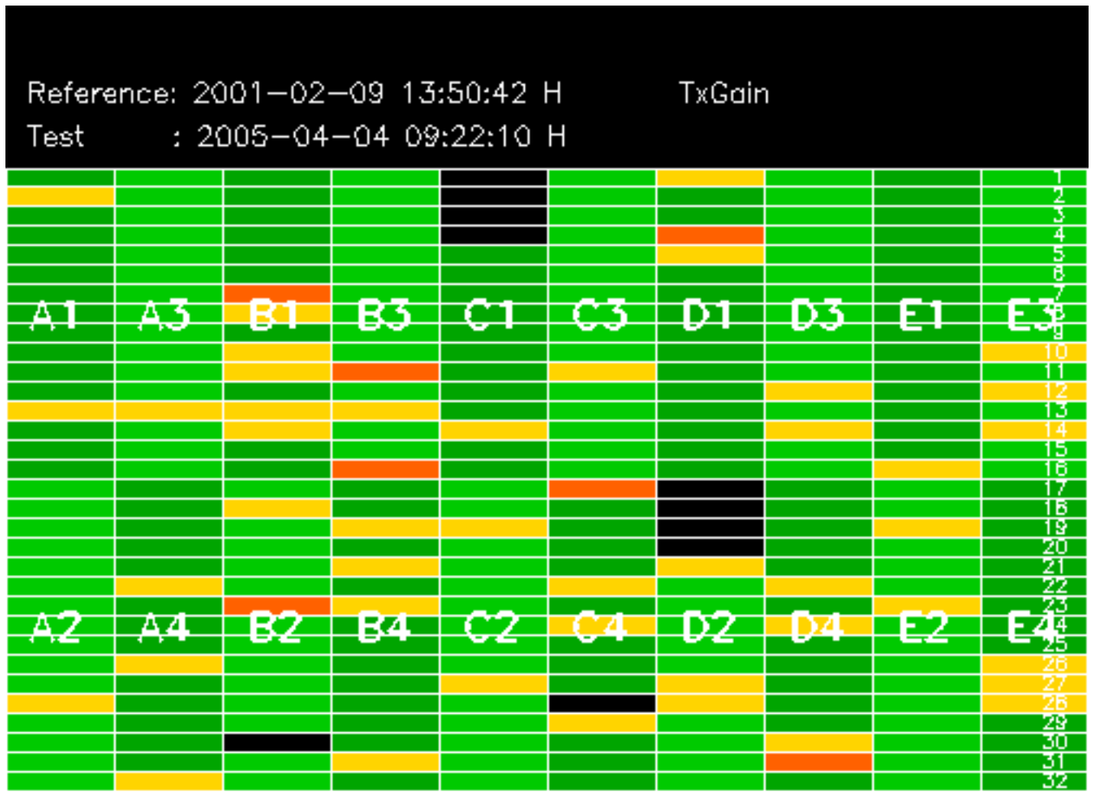

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06−Mar
11−Mar
16−Mar
21−Mar
26−Mar
31−Mar
05−Apr


Reference: 2001-02-09 13:50:42 H
Test : 2005-04-04 09:22:10 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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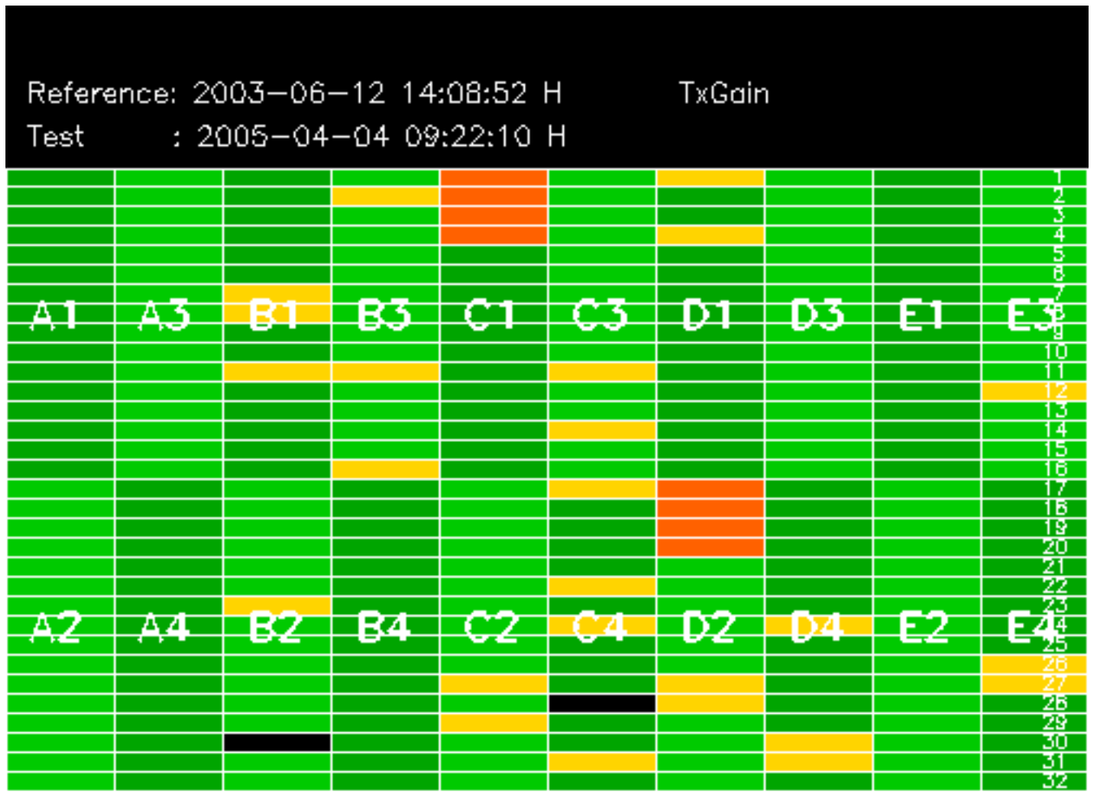
Reference: 2003-06-12 14:08:52 H
Test : 2005-04-04 09:22:10 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
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8
9
10
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14
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17
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23
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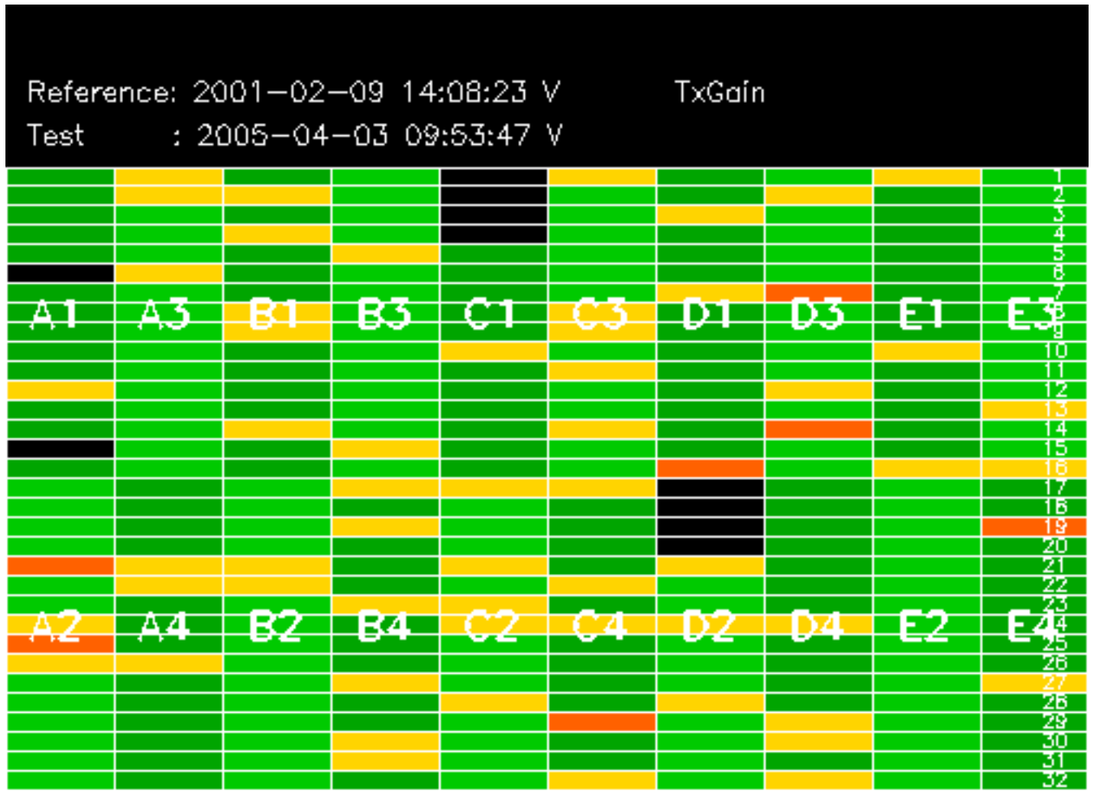
32


Reference: 2001-02-09 14:08:23 V
Test : 2005-04-03 09:53:47 V
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 14:10:32 V
Test : 2005-04-03 09:53:47 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
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8
9
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11
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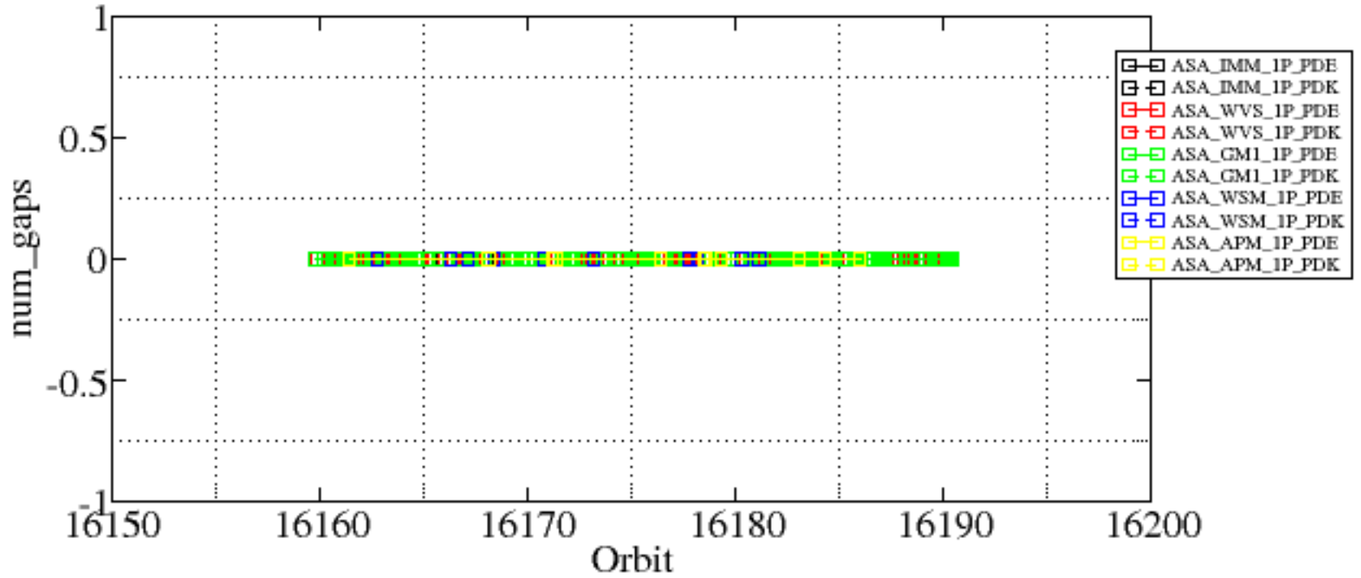
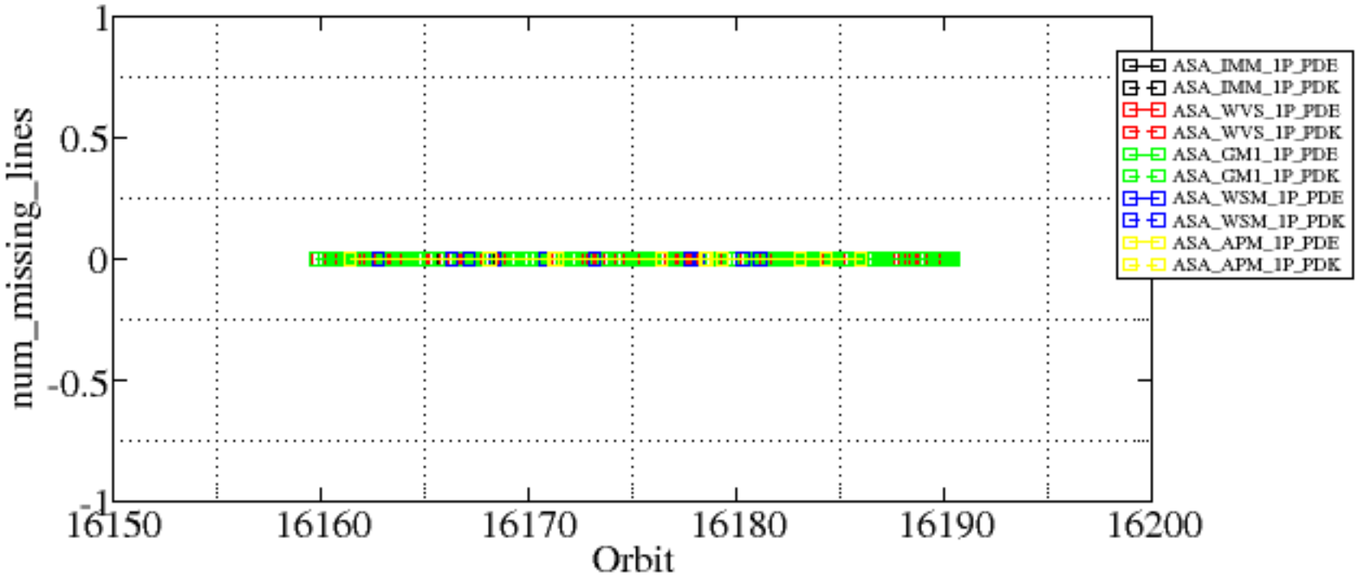
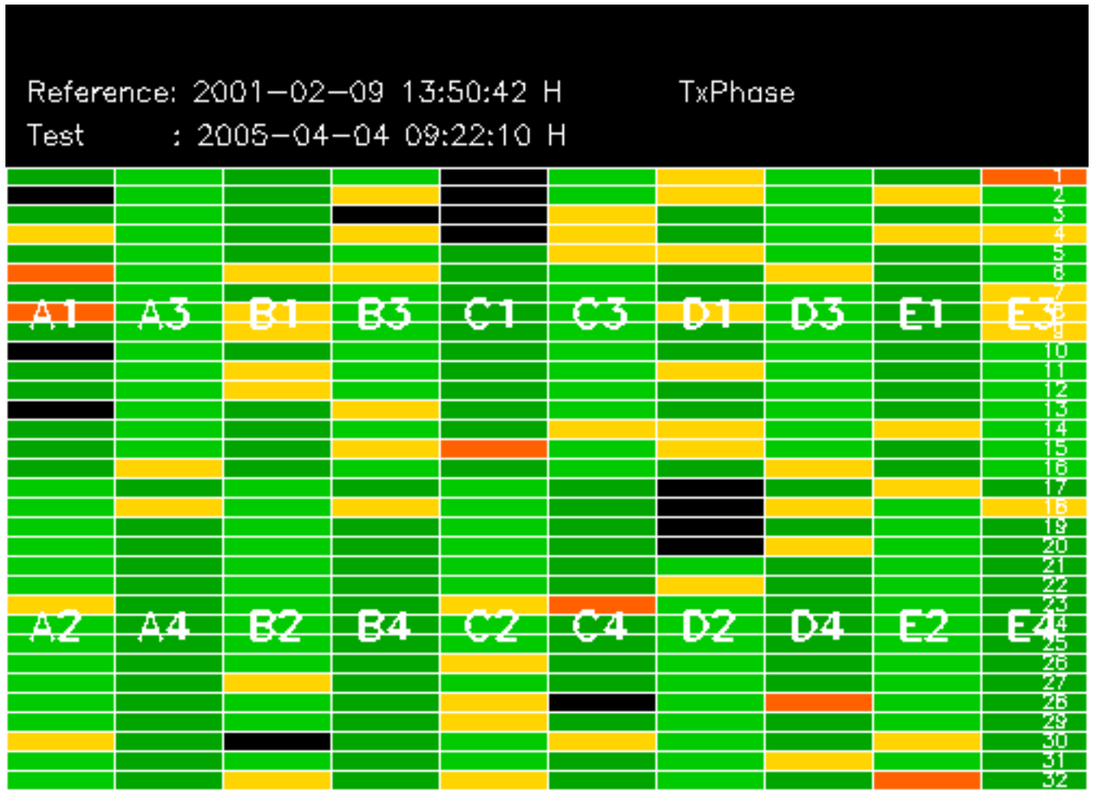
Summary of analysis for the last 3 days 2005040[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
16150
16160
16170
16180
16190
16200
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
1
0.5
0
-0.5
-1
16150
16160
16170
16180
16190
16200
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 : 2005-04-04 09:22:10 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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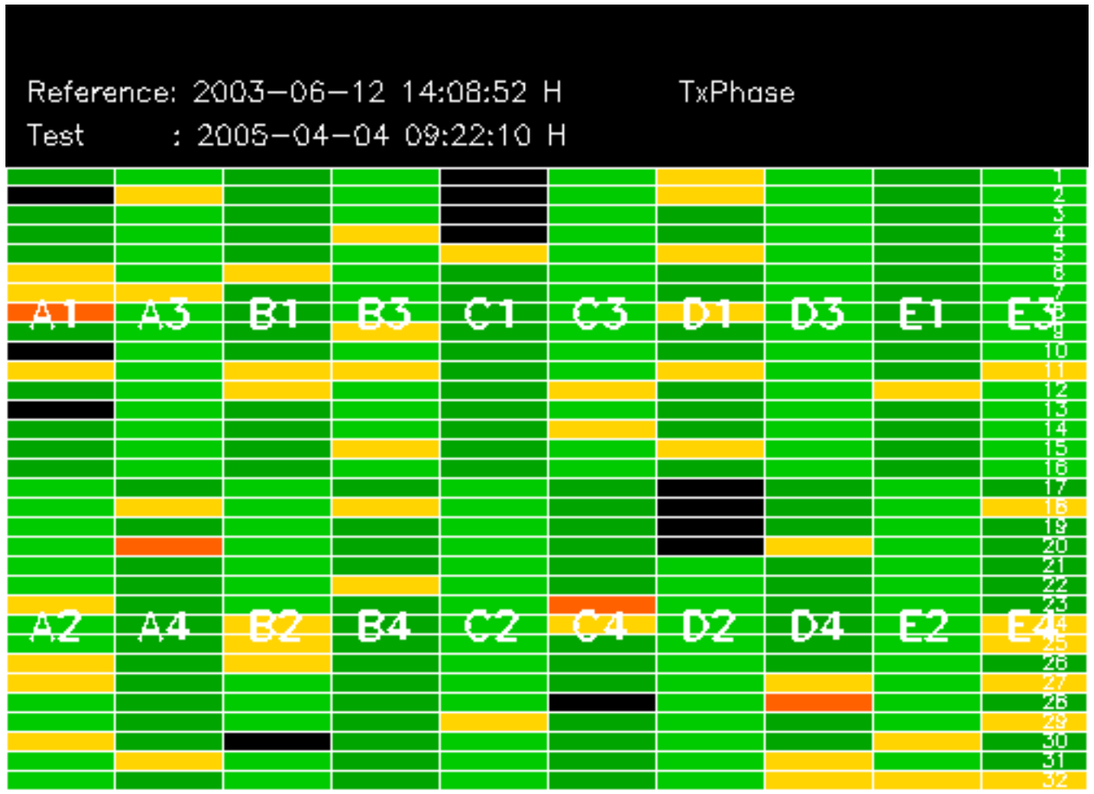
Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2005-04-04 09:22:10 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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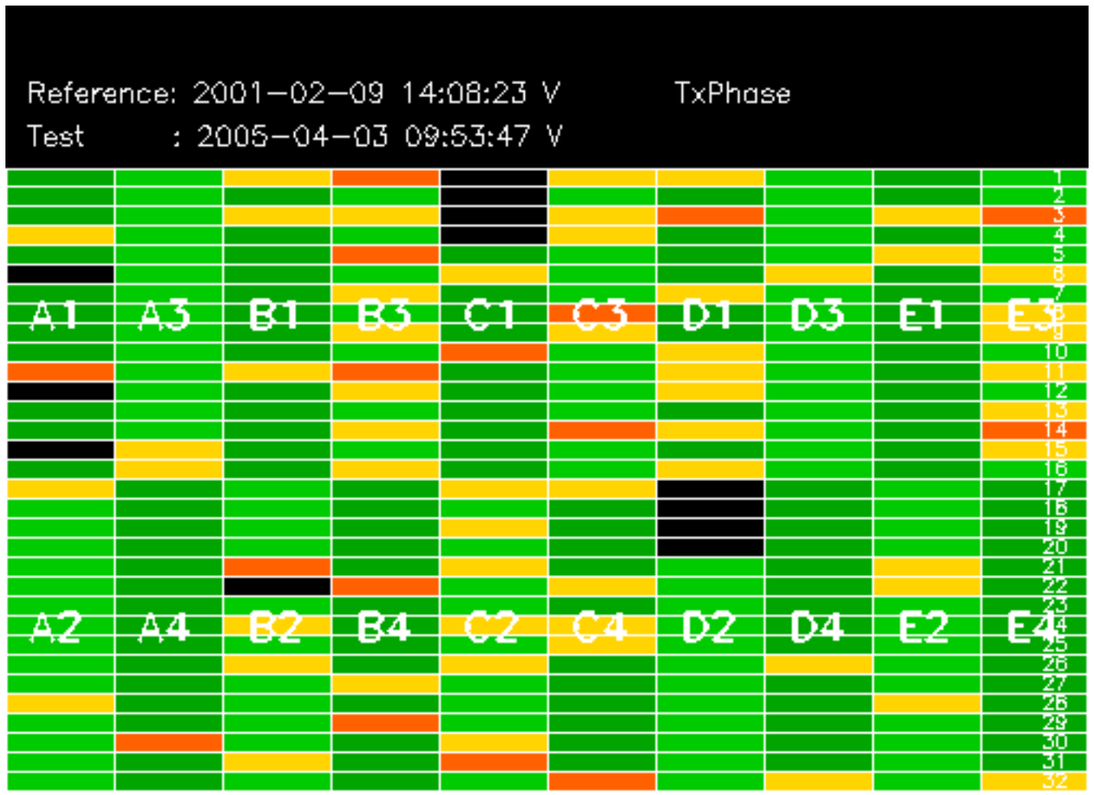
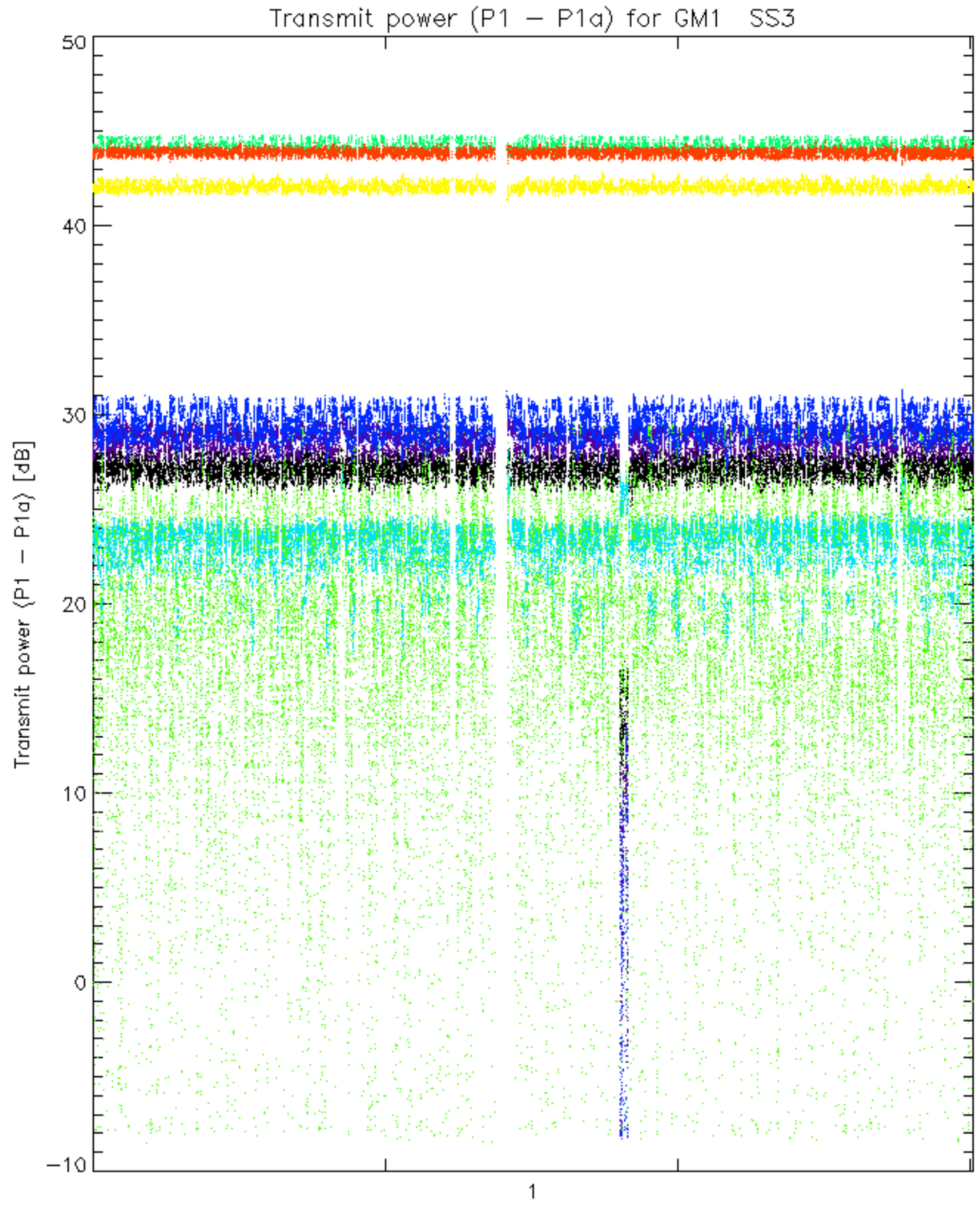
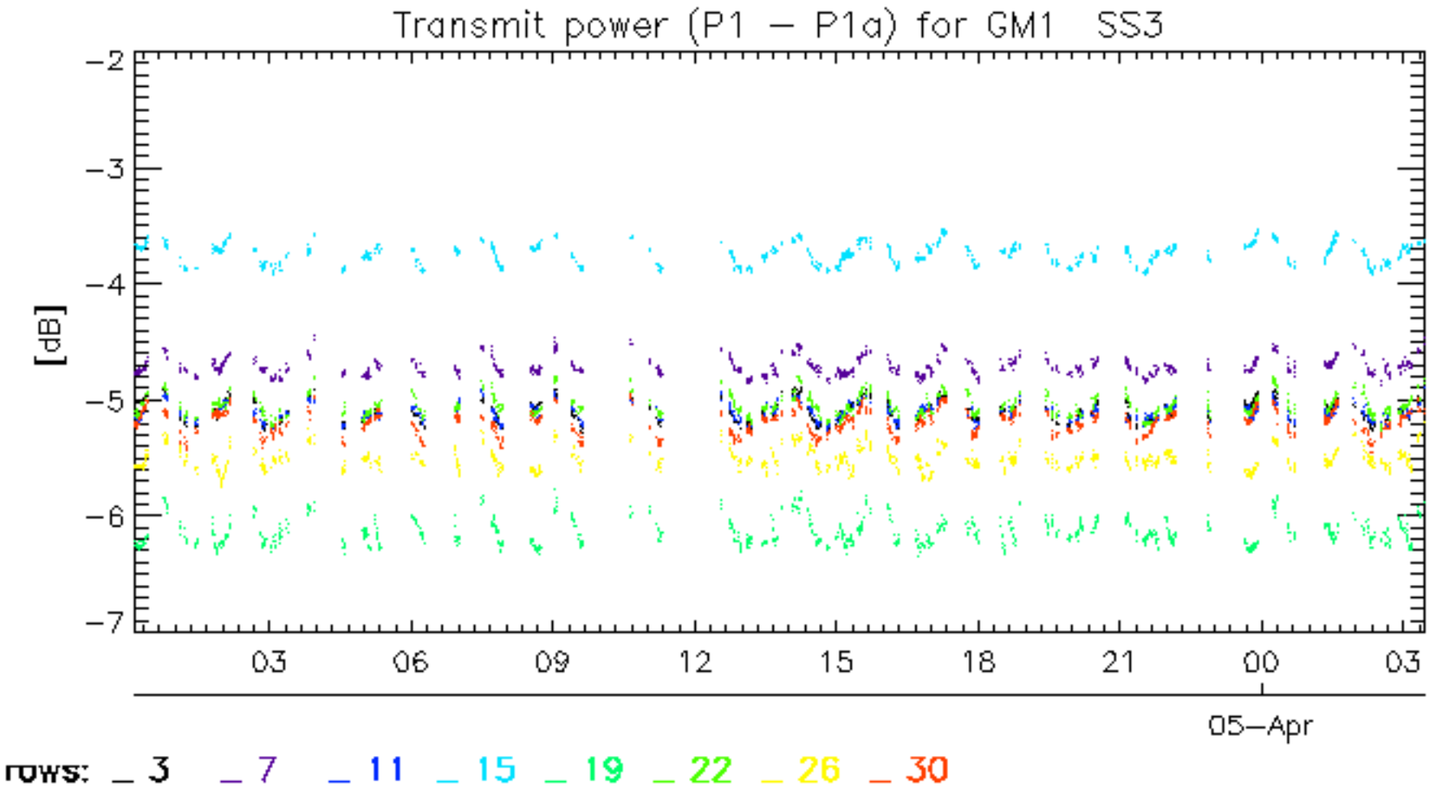
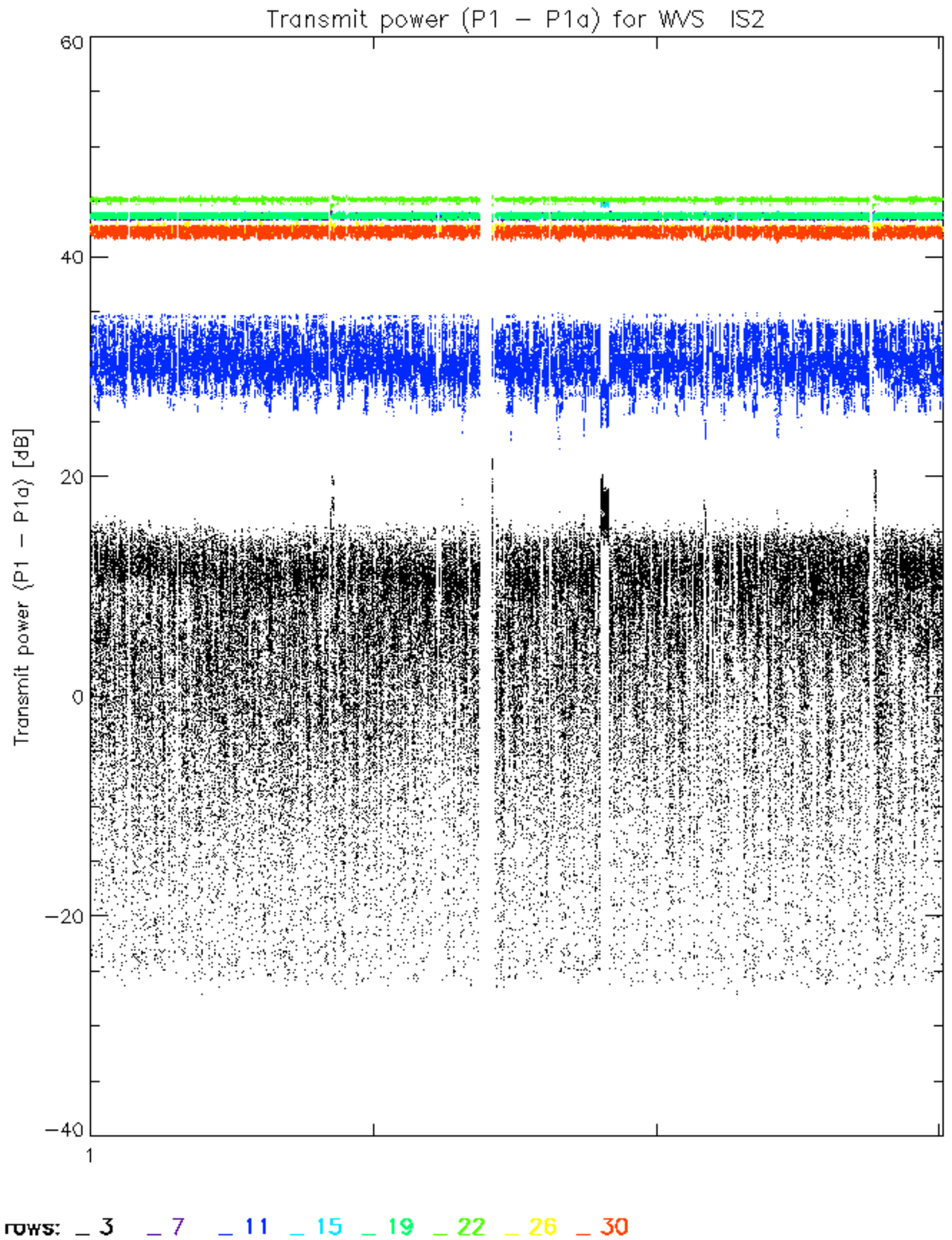
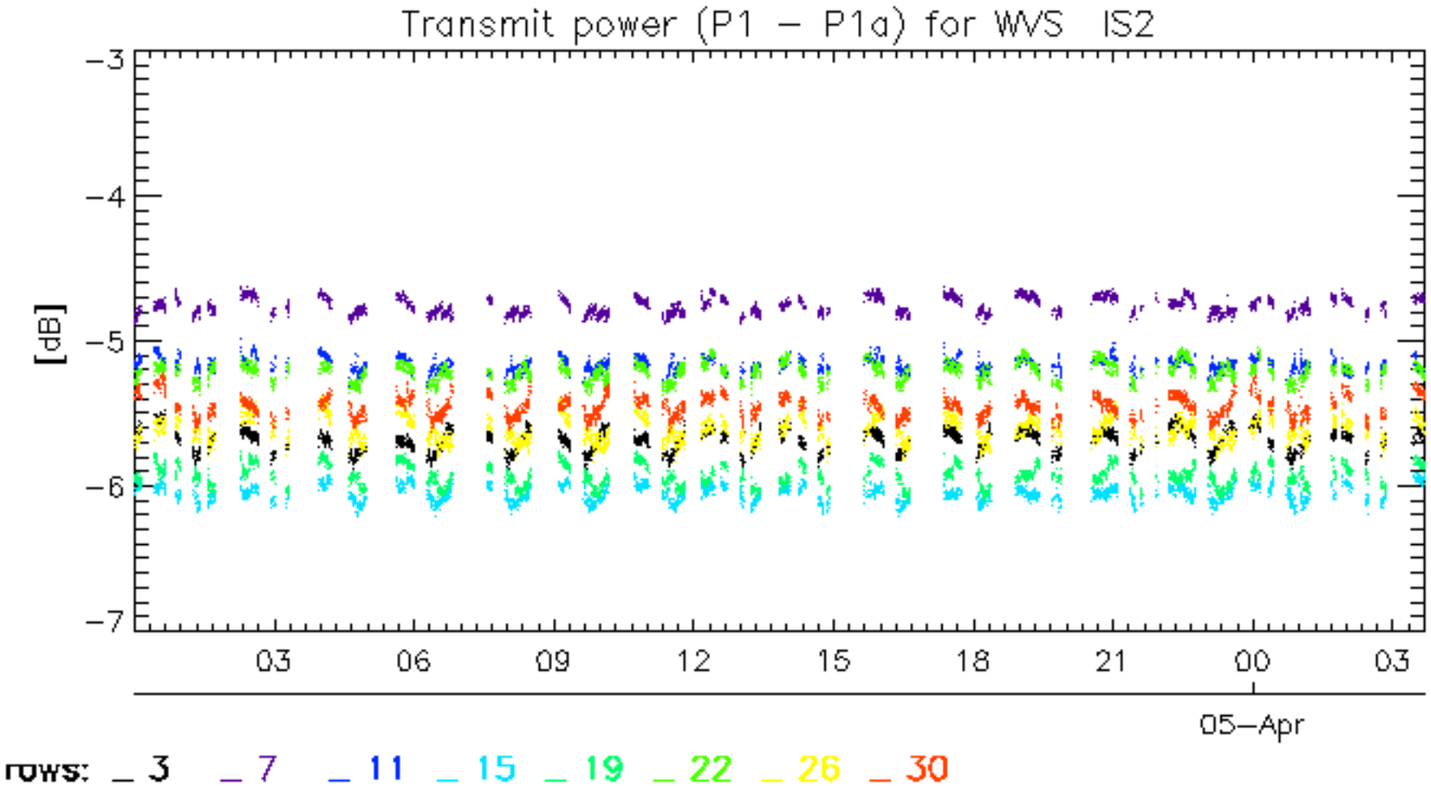

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-04-03 09:53:47 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-04-03 09:53:47 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
1
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
05–Apr
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
1
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
05–Apr
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.