PRELIMINARY REPORT OF 050708

last update on Fri Jul 8 11:14:03 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 2005-07-07 00:00:00 to 2005-07-08 11:14:03

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	25	42	9	8	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	25	42	9	8	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	25	42	9	8	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	25	42	9	8	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	38	56	0	0	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	38	56	0	0	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	38	56	0	0	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	38	56	0	0	0

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	20050707 100816
H	20050706 071841

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	-3.325963	0.007528	0.017702
7	P1	-3.142638	0.014778	0.025923
11	P1	-4.648221	0.034388	-0.081682
15	P1	-5.517515	0.044621	-0.071410
19	P1	-3.772782	0.044828	-0.096346
22	P1	-4.605341	0.065999	-0.077871
26	P1	-4.856489	0.068247	-0.036379
30	P1	-7.182970	0.155678	-0.172090
3	P1	-15.558825	0.103091	-0.052080
7	P1	-15.577409	0.108463	0.120634
11	P1	-21.485590	0.293703	-0.247787
15	P1	-11.287507	0.048048	0.005727
19	P1	-14.472749	0.250546	-0.172944
22	P1	-15.862524	0.349607	0.208286
26	P1	-17.622843	0.307002	0.454436
30	P1	-17.774975	0.346634	0.188964

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.934093	0.082502	0.163540
7	P2	-22.124960	0.103974	0.211337
11	P2	-13.822719	0.098807	0.259853
15	P2	-7.124655	0.091424	0.084827
19	P2	-9.605865	0.090667	0.026126
22	P2	-16.869173	0.091130	0.039058
26	P2	-16.508307	0.091899	0.020492
30	P2	-18.788948	0.078606	0.001544

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.160915	0.002922	0.015429
7	P3	-8.160915	0.002922	0.015429
11	P3	-8.160915	0.002922	0.015429
15	P3	-8.160915	0.002922	0.015429
19	P3	-8.160915	0.002922	0.015429
22	P3	-8.160915	0.002922	0.015429
26	P3	-8.160915	0.002922	0.015429
30	P3	-8.160915	0.002922	0.015429

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	-2.794841	0.017050	0.034144
7	P1	-2.951278	0.033165	-0.040677
11	P1	-3.978225	0.018127	-0.049443
15	P1	-3.543272	0.026329	-0.039665
19	P1	-3.672804	0.121922	-0.139811
22	P1	-5.662700	0.118208	-0.146178
26	P1	-7.363628	0.209031	-0.214572
30	P1	-6.313930	0.112879	-0.086358
3	P1	-10.835473	0.078289	0.032906
7	P1	-10.422349	0.183528	-0.105556
11	P1	-12.580058	0.138617	-0.050995
15	P1	-11.616040	0.094225	-0.024496
19	P1	-15.708073	1.415594	-0.411478
22	P1	-25.969801	3.941546	0.744651
26	P1	-15.522196	0.469935	0.376971
30	P1	-20.186239	1.315414	0.144367

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.683990	0.053789	0.181054
7	P2	-22.089460	0.101655	0.083799
11	P2	-9.798993	0.065372	0.196572
15	P2	-5.133649	0.047124	0.013592
19	P2	-6.913949	0.060817	0.034611
22	P2	-7.102574	0.073952	0.048490
26	P2	-23.958330	0.093721	-0.024918
30	P2	-21.960657	0.045590	0.008756

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.997099	0.004211	0.002667
7	P3	-7.997055	0.004206	0.002267
11	P3	-7.997208	0.004187	0.002862
15	P3	-7.997154	0.004197	0.002470
19	P3	-7.997126	0.004210	0.002472
22	P3	-7.997171	0.004195	0.002471
26	P3	-7.997219	0.004199	0.002529
30	P3	-7.997176	0.004193	0.002855

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	0.000460553
	stdev	2.15819e-07
MEAN Q	mean	0.000502138
	stdev	2.28234e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127725
	stdev	0.000943487
STDEV Q	mean	0.127952
	stdev	0.000953786

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005070[678]
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

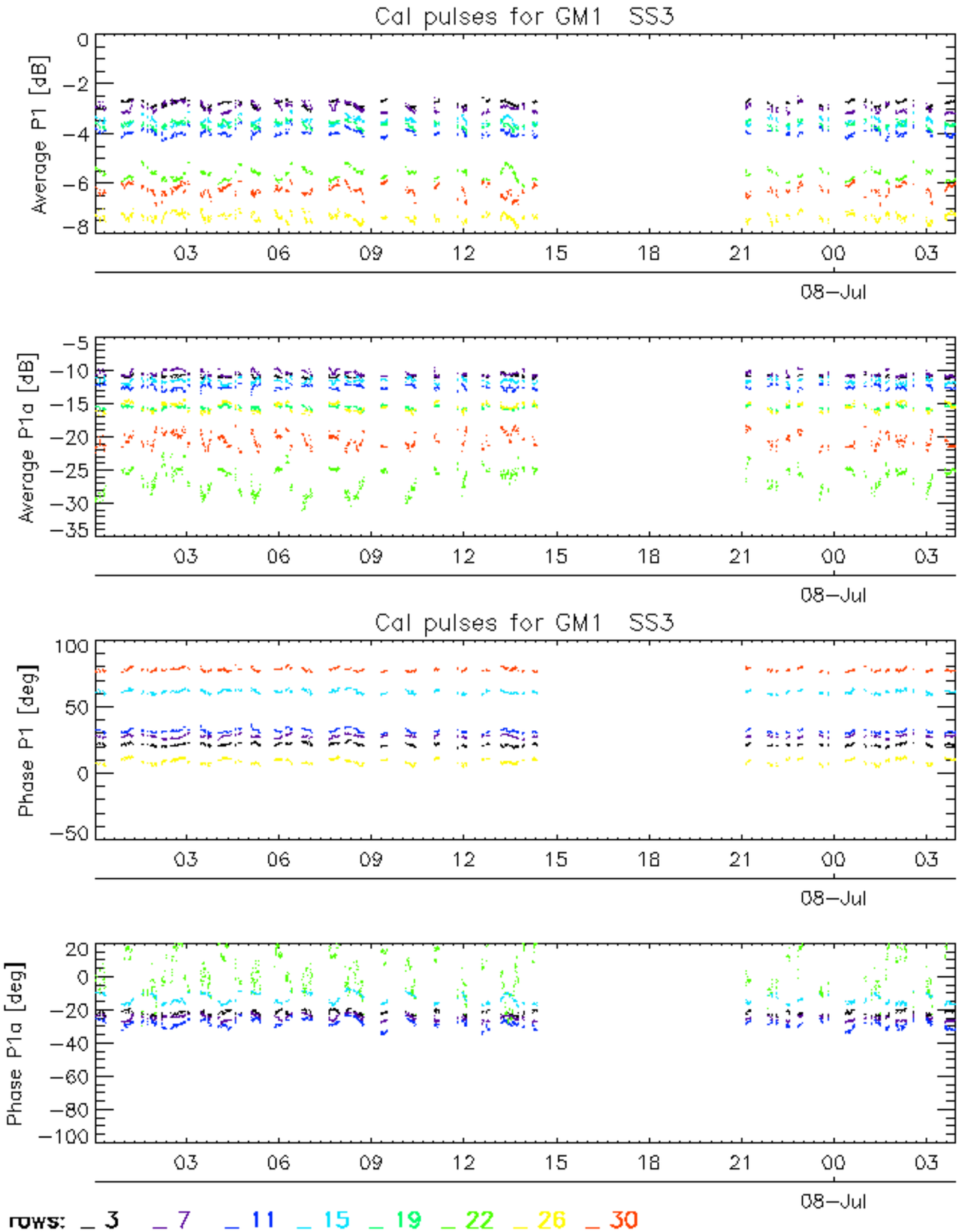
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

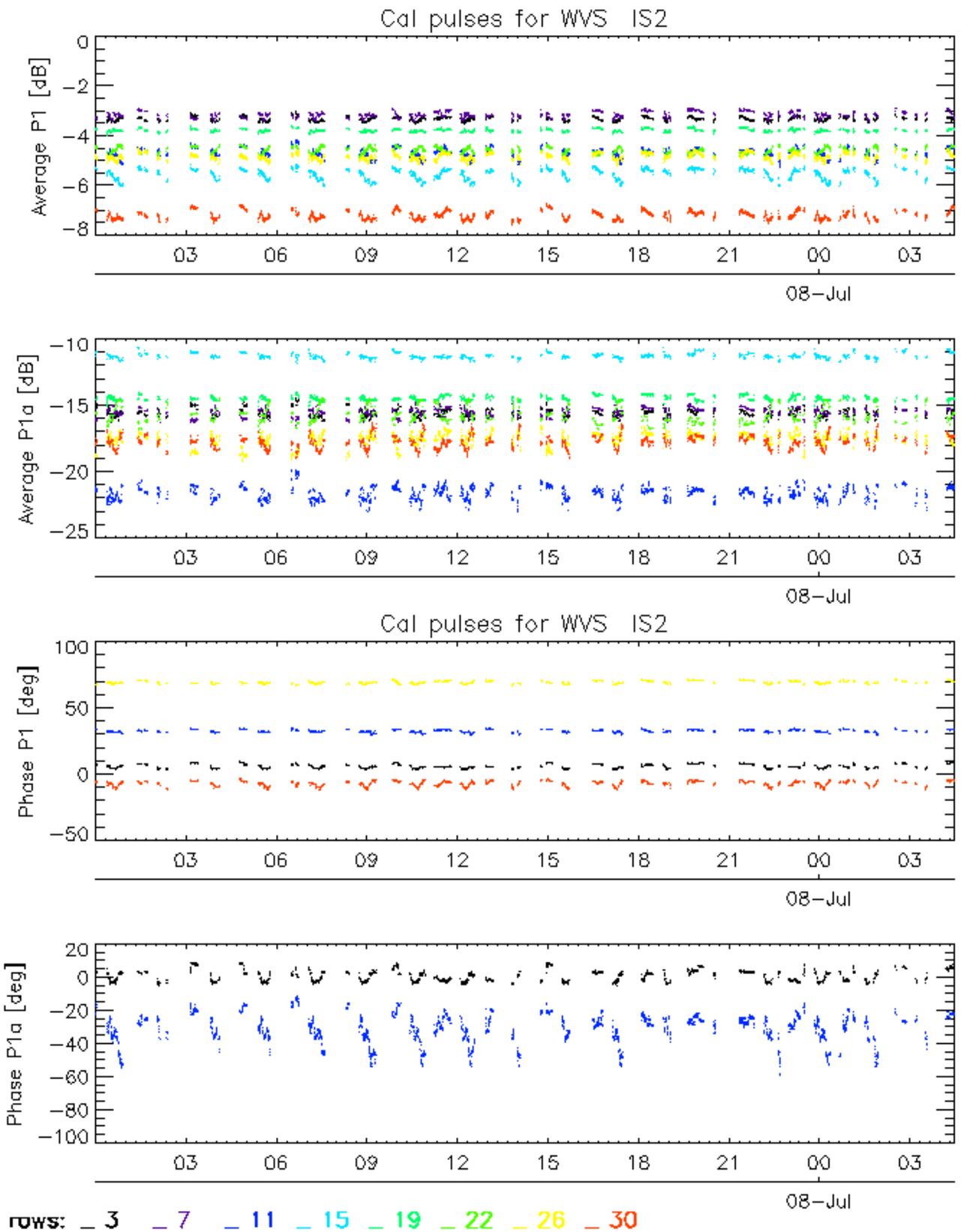
7.5 - Absolute Doppler for GM1

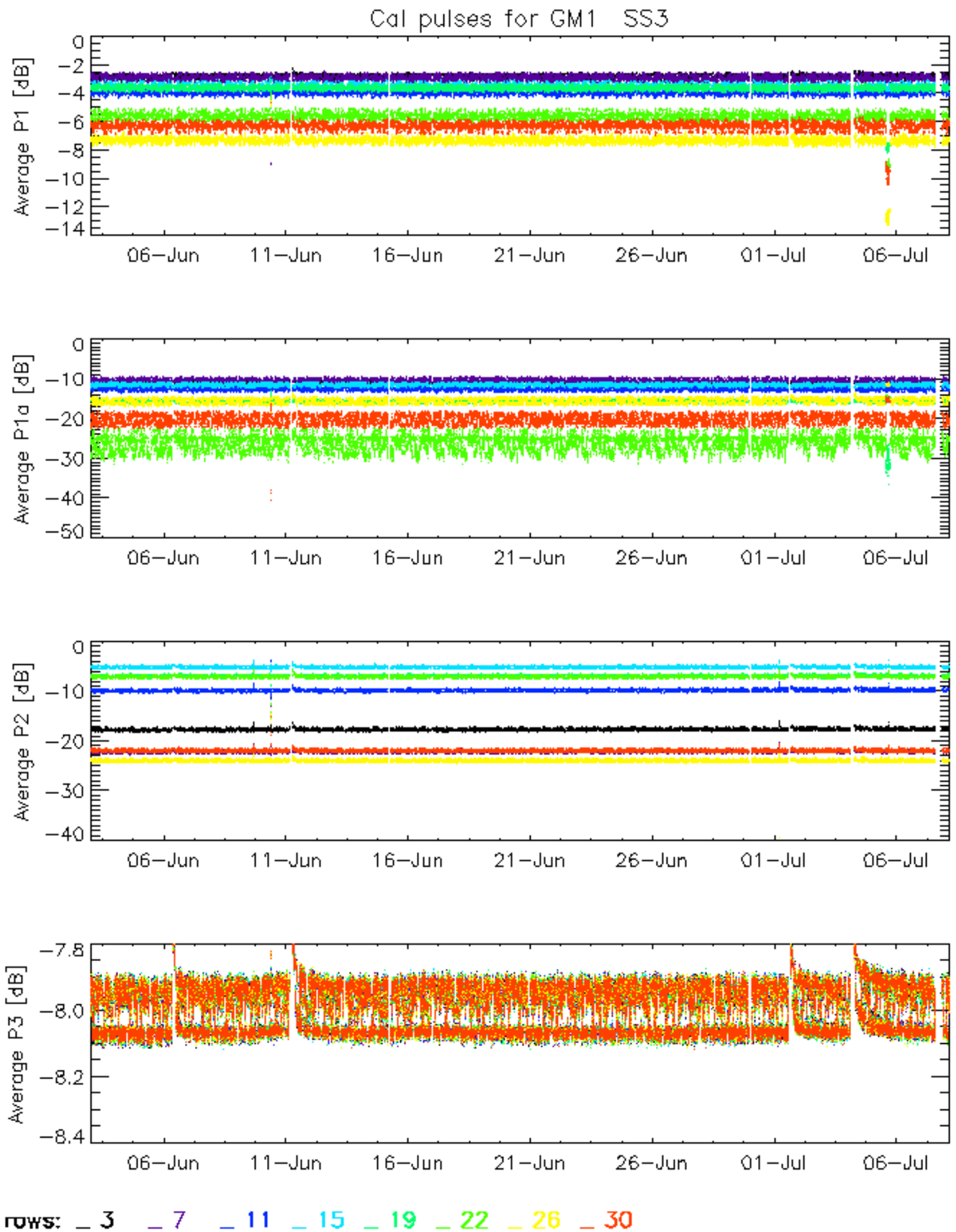
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

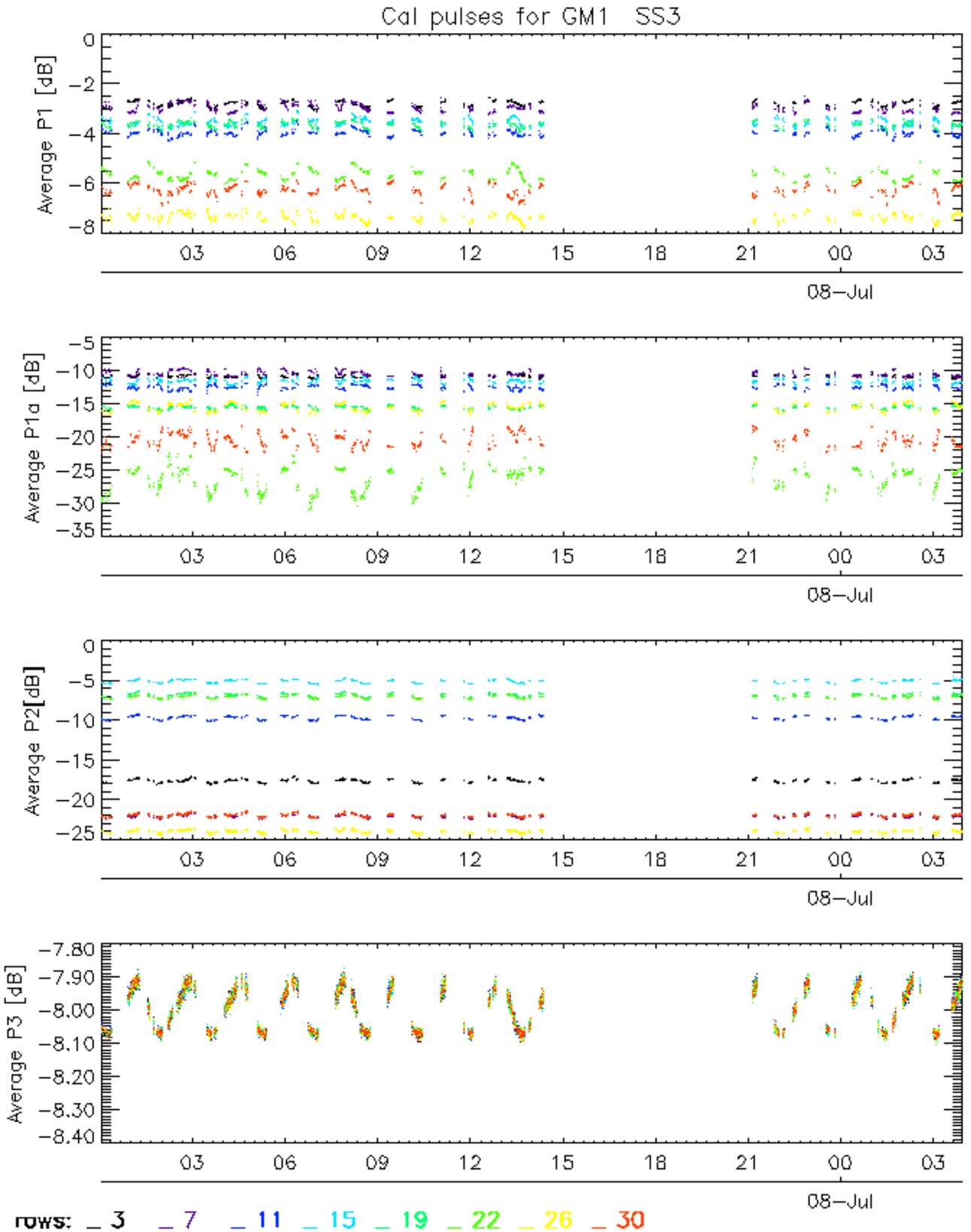
7.6 - Doppler evolution versus ANX for GM1

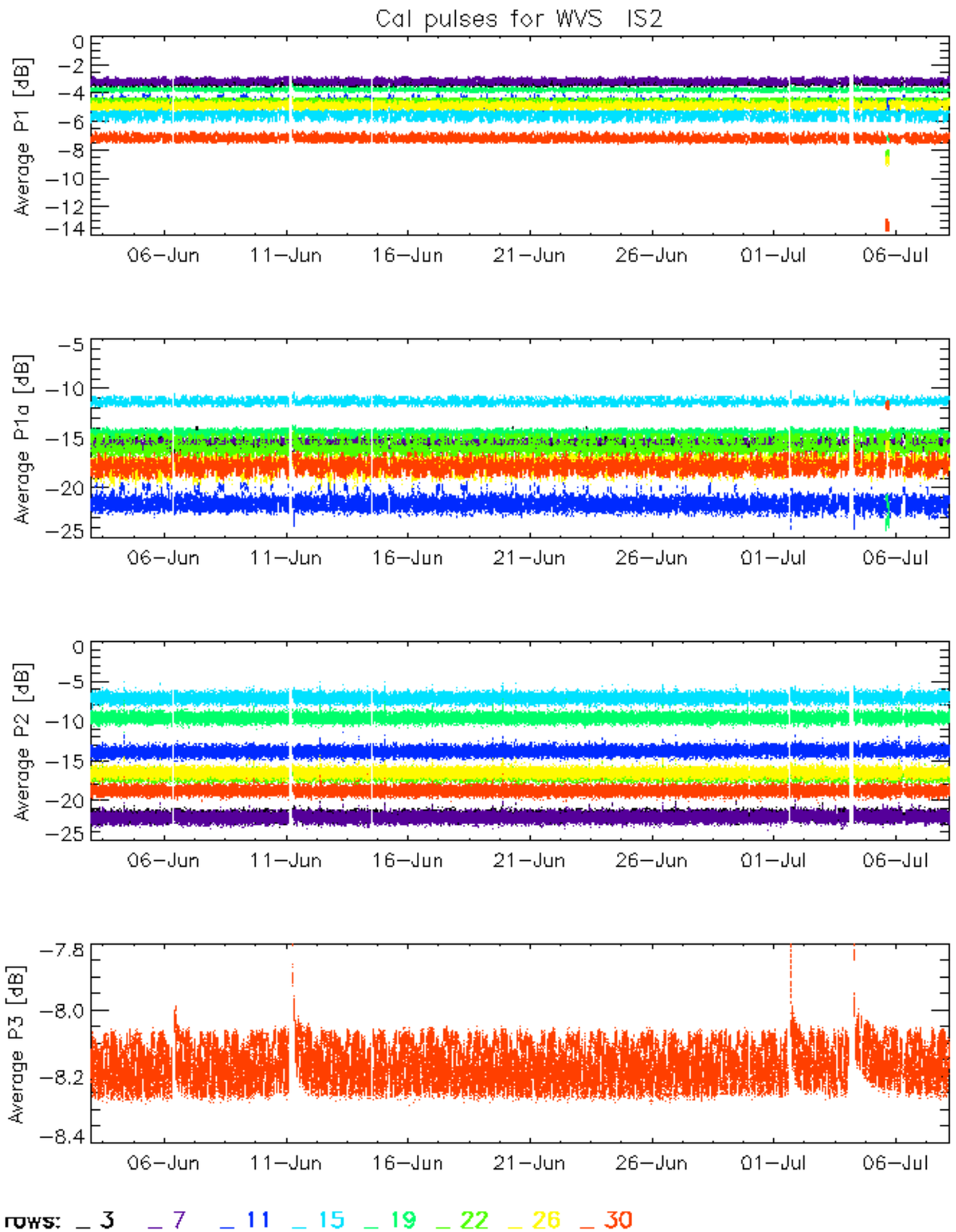
Evolution Doppler error versus ANX
☒

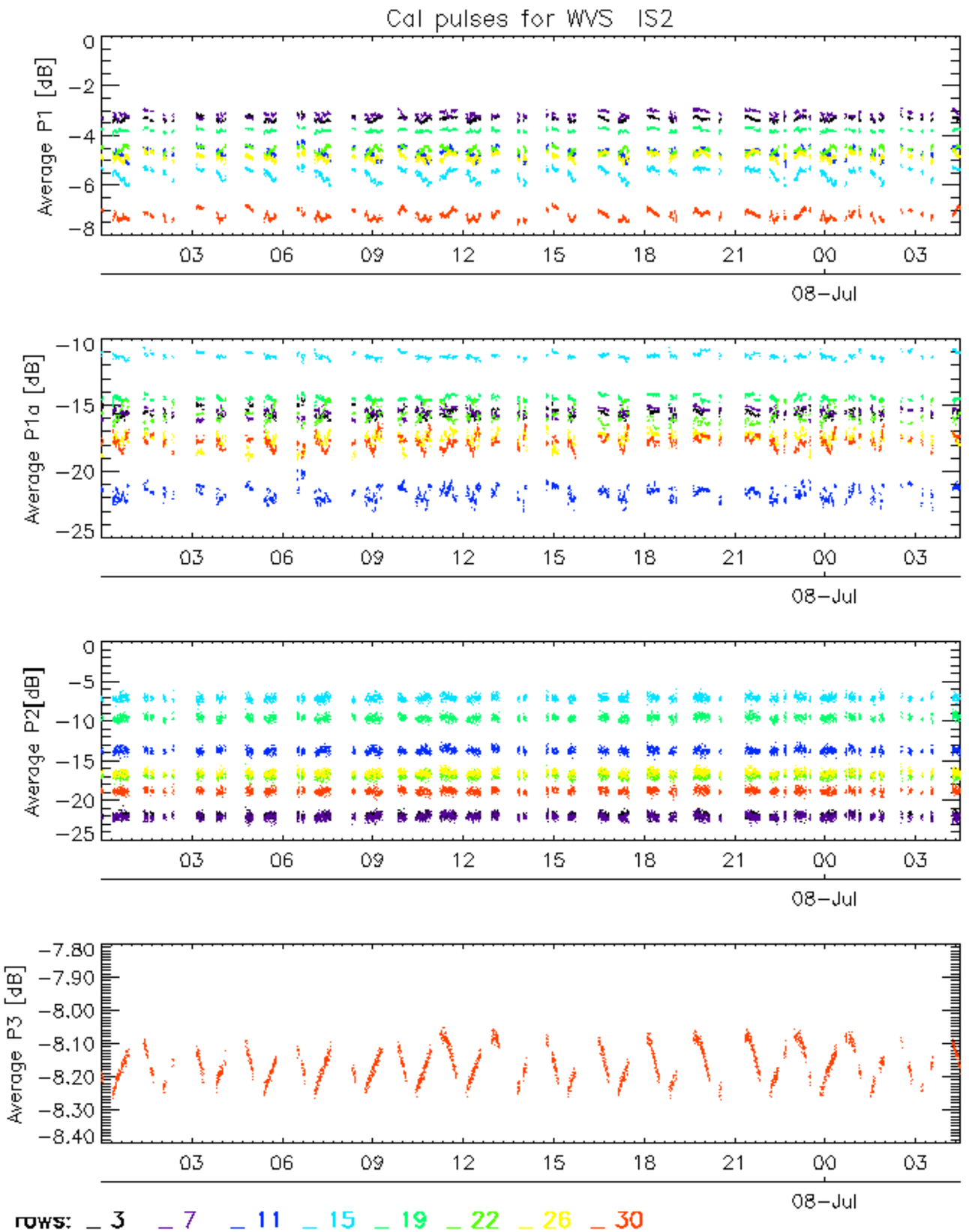

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
08−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
08−Jul
Average P1a [dB]
−10
−15
−20
−25
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

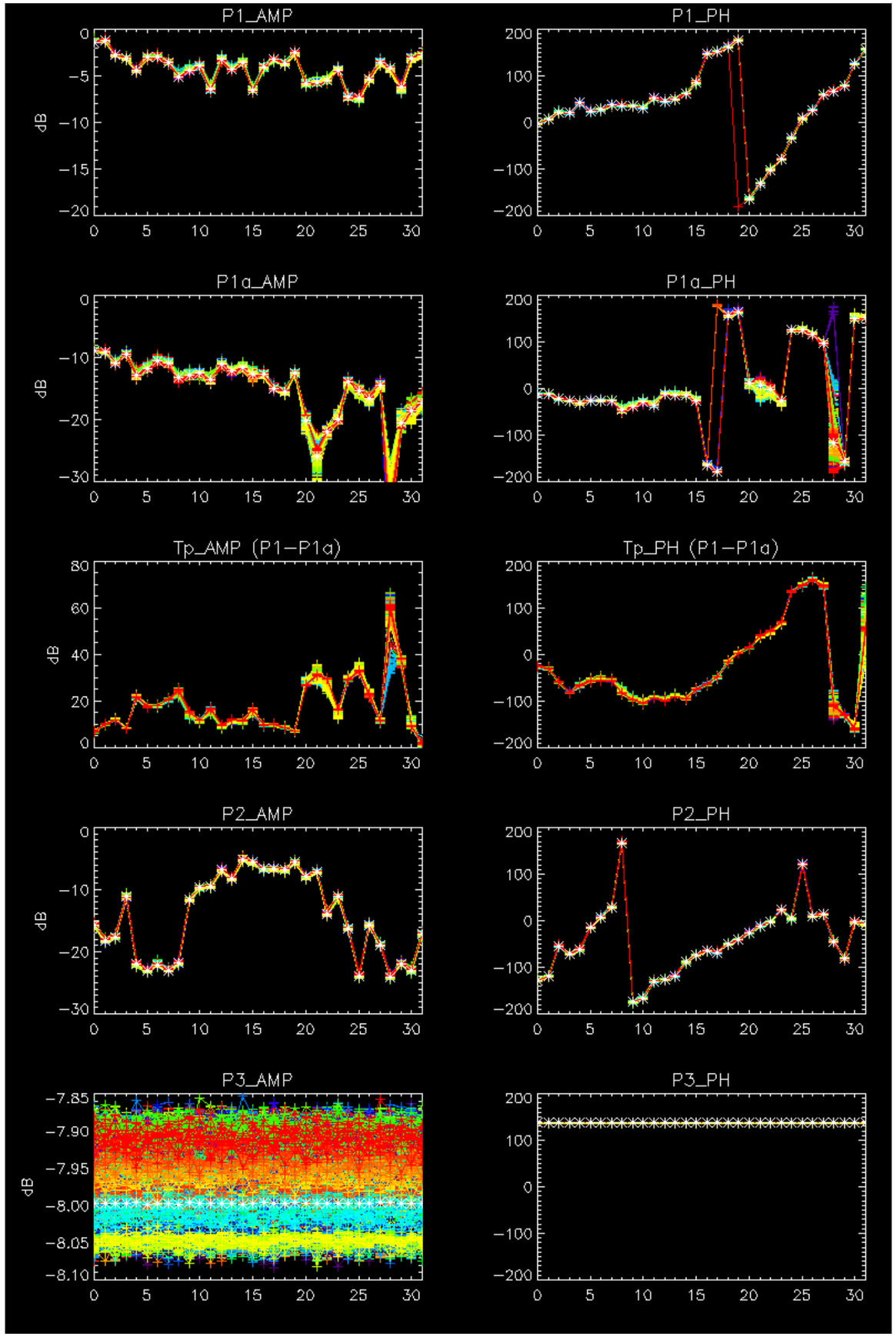

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−10
−20
−30
−40
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

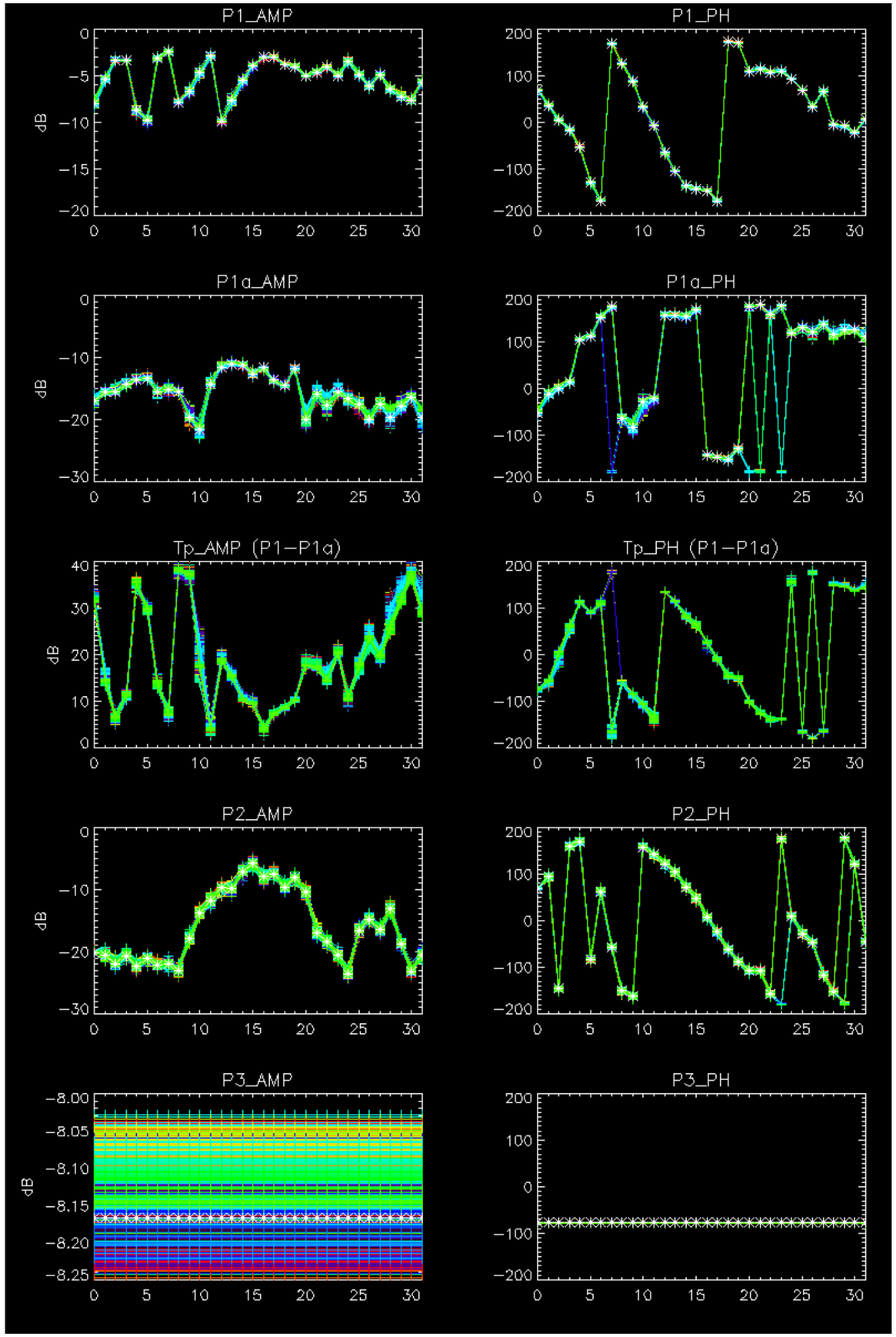

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
03
08−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
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
08−Jul
Average P1a [dB]
−10
−15
−20
−25
Average P2[dB]
−5
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

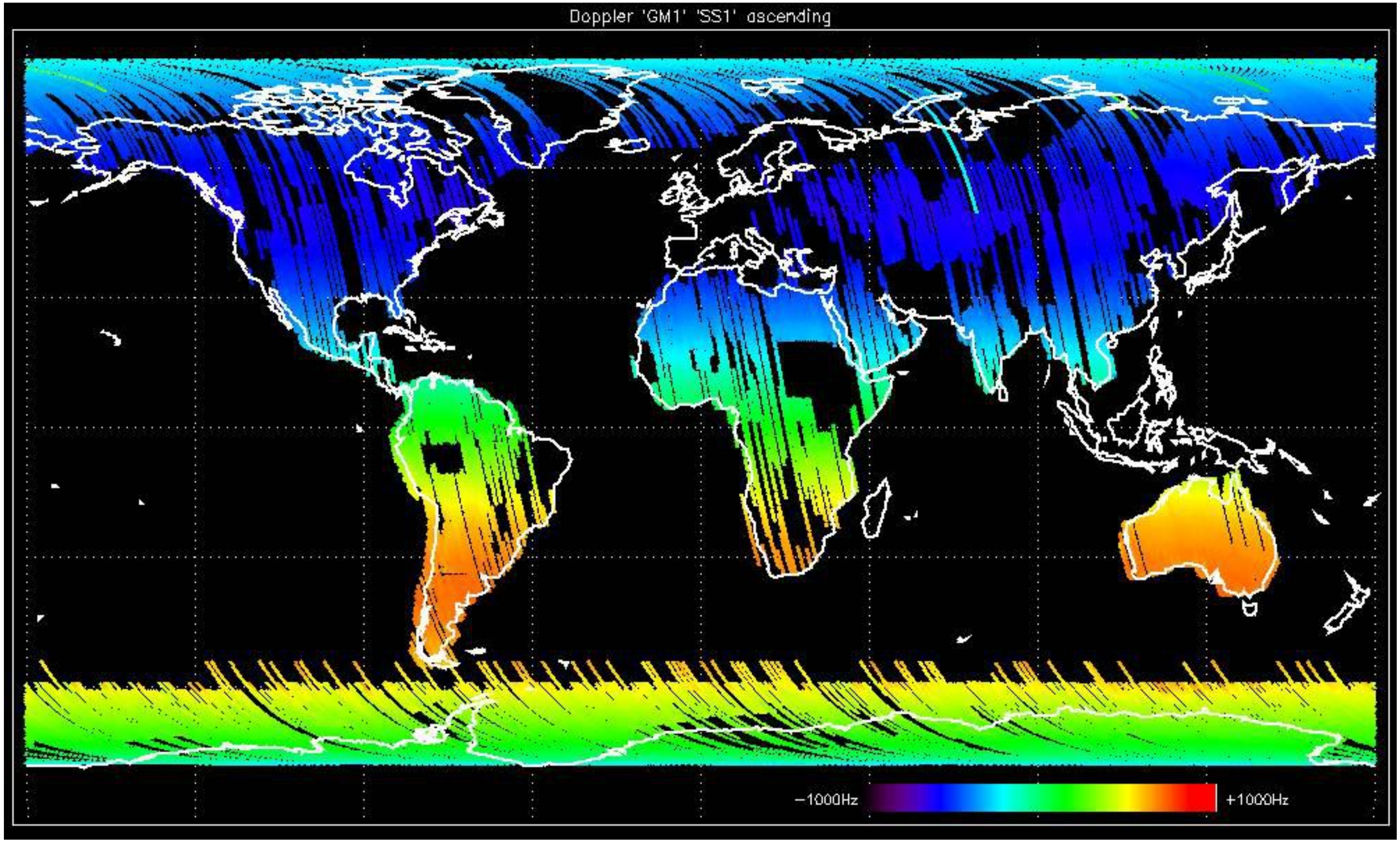
No anomalies observed.

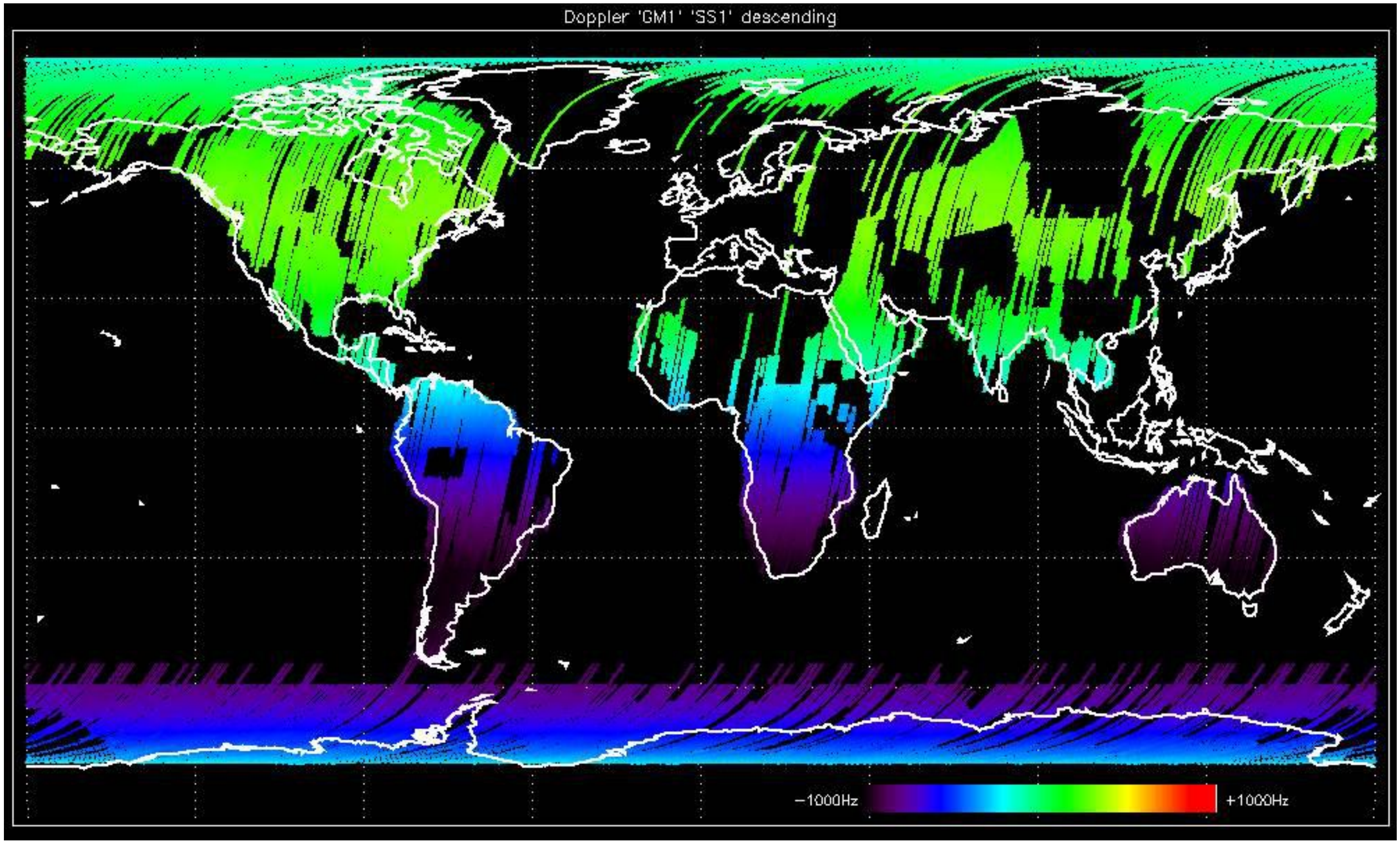

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

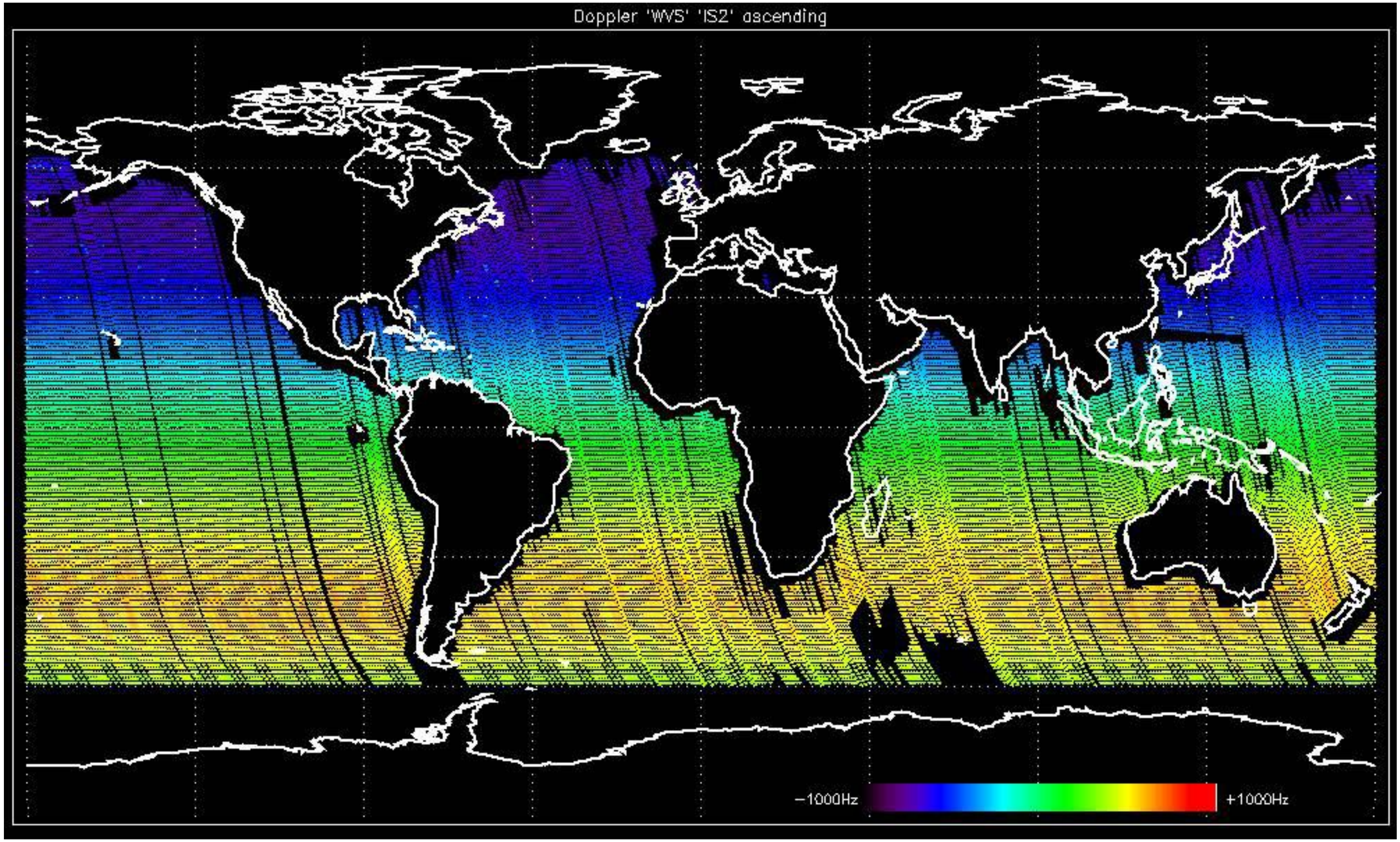

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

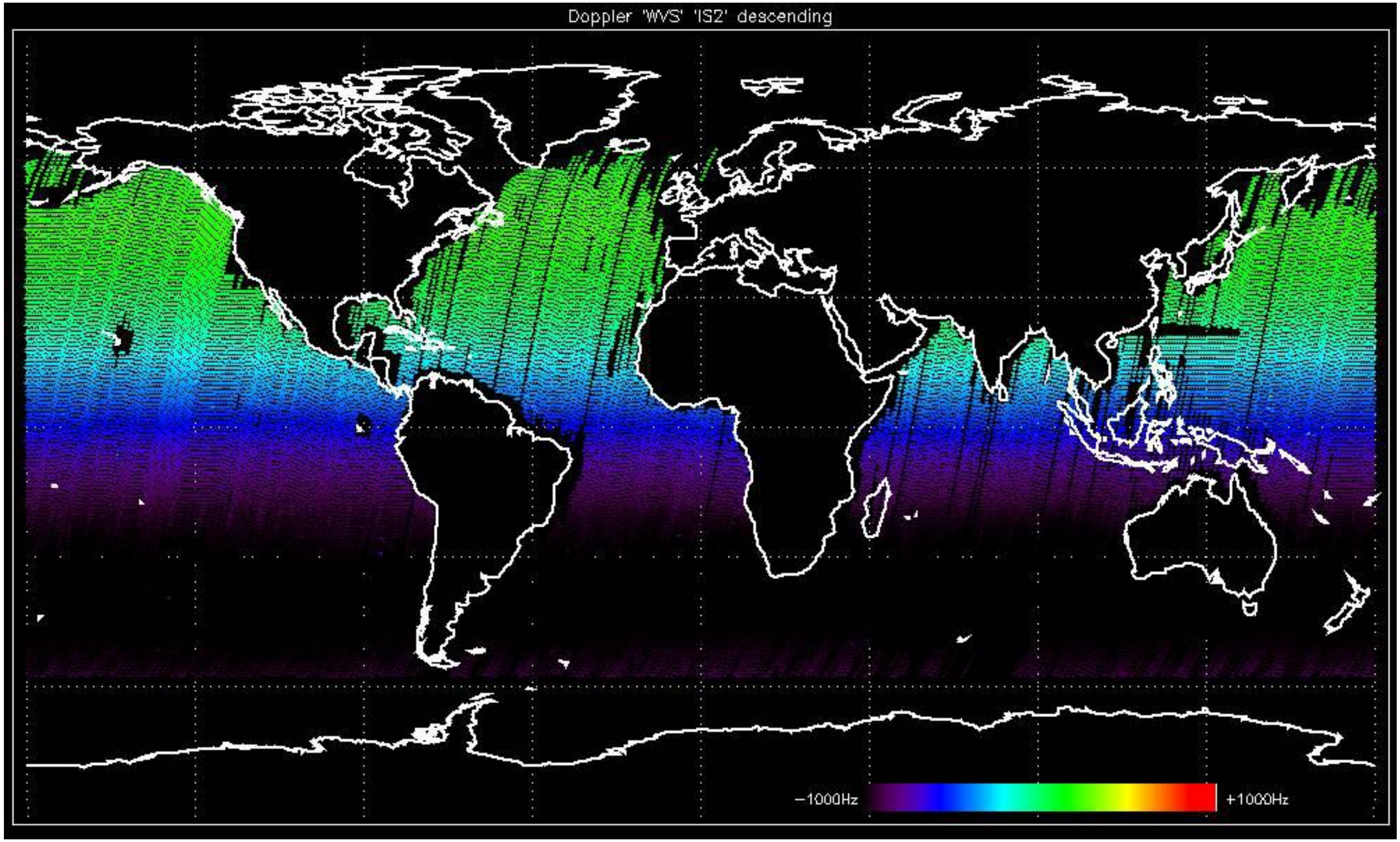
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

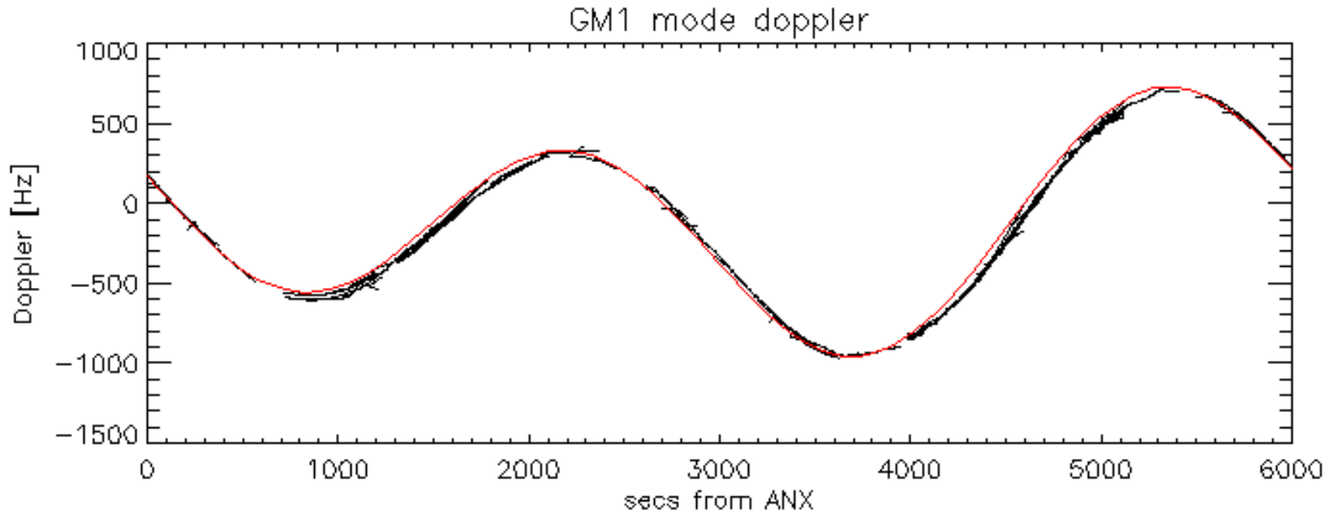
Preliminary report.The data is not yet controled

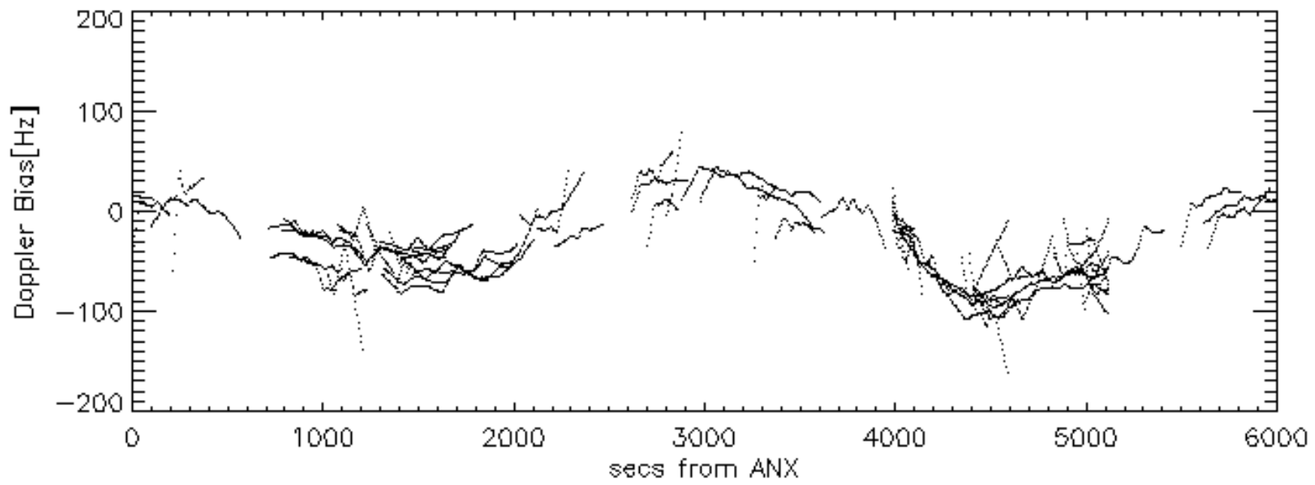

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

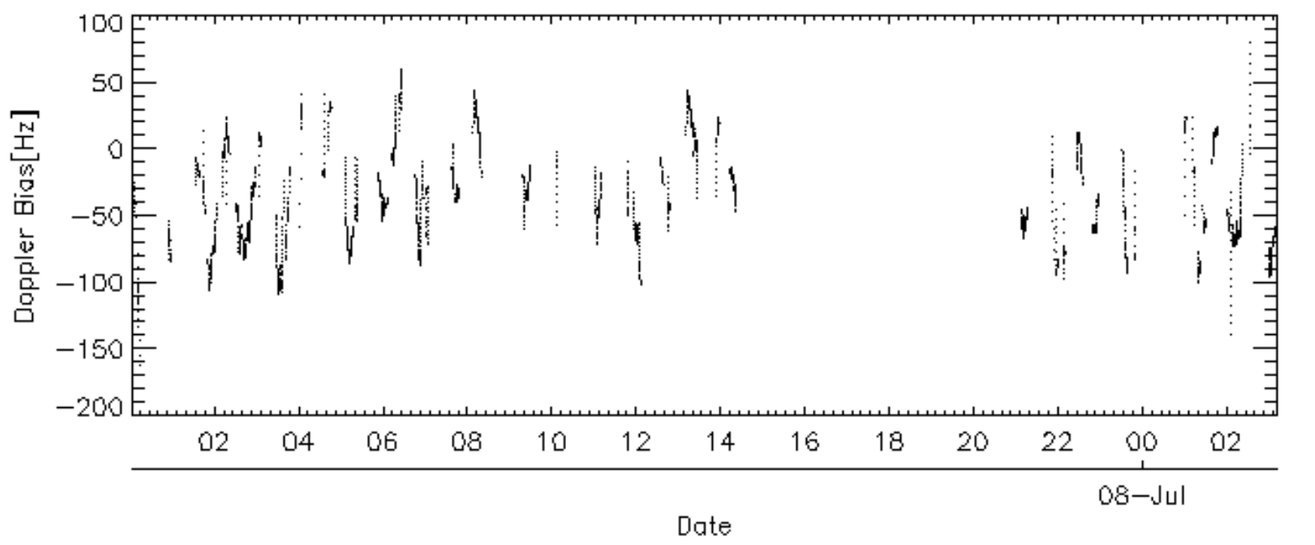

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

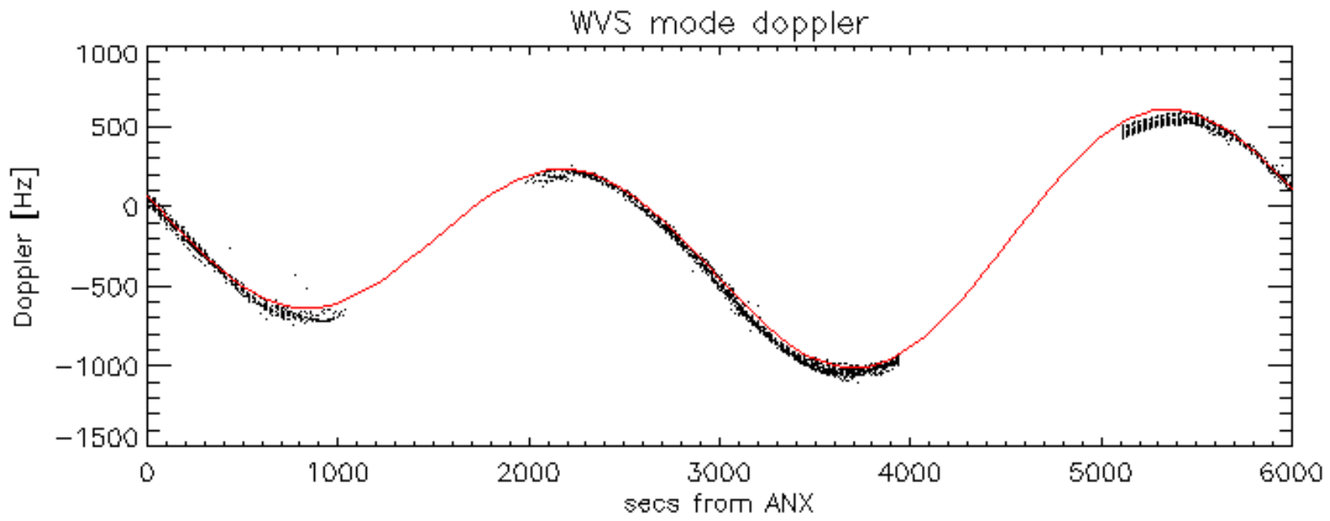

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

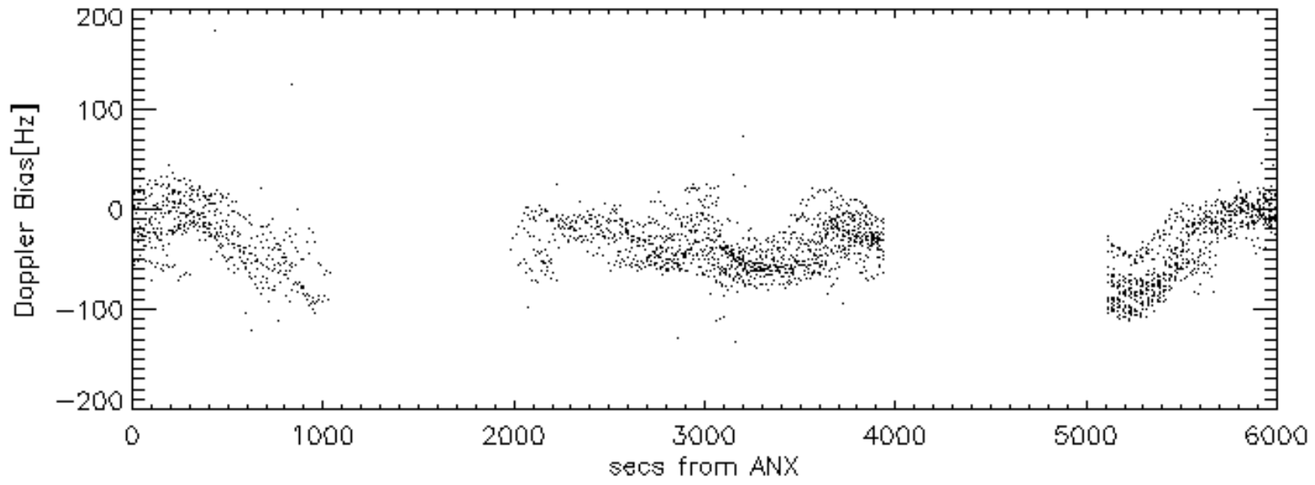

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

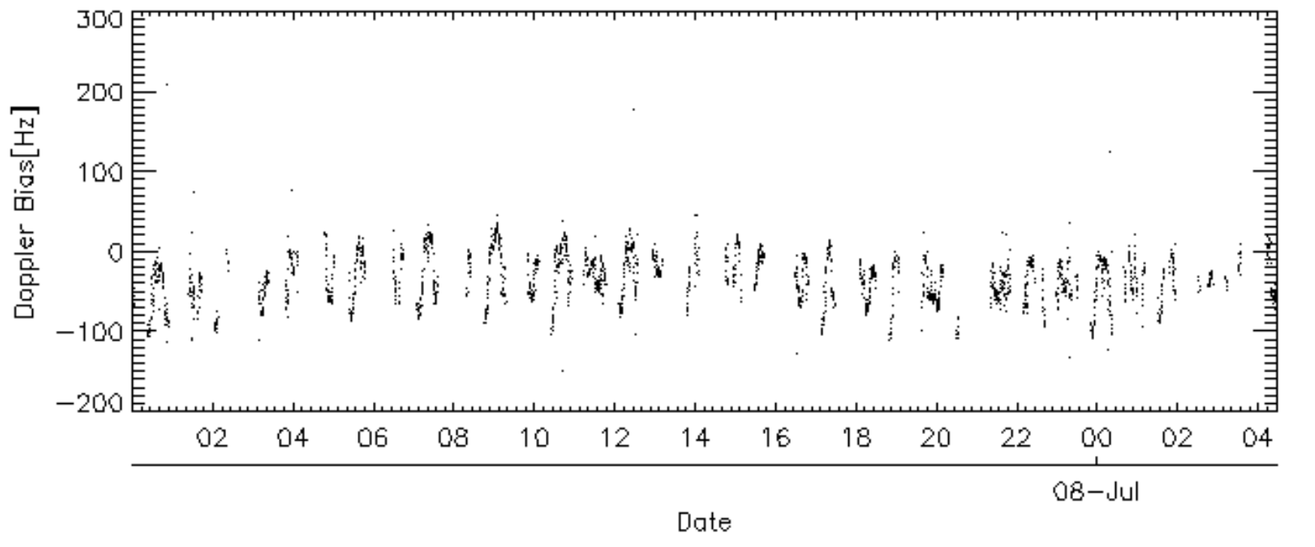

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

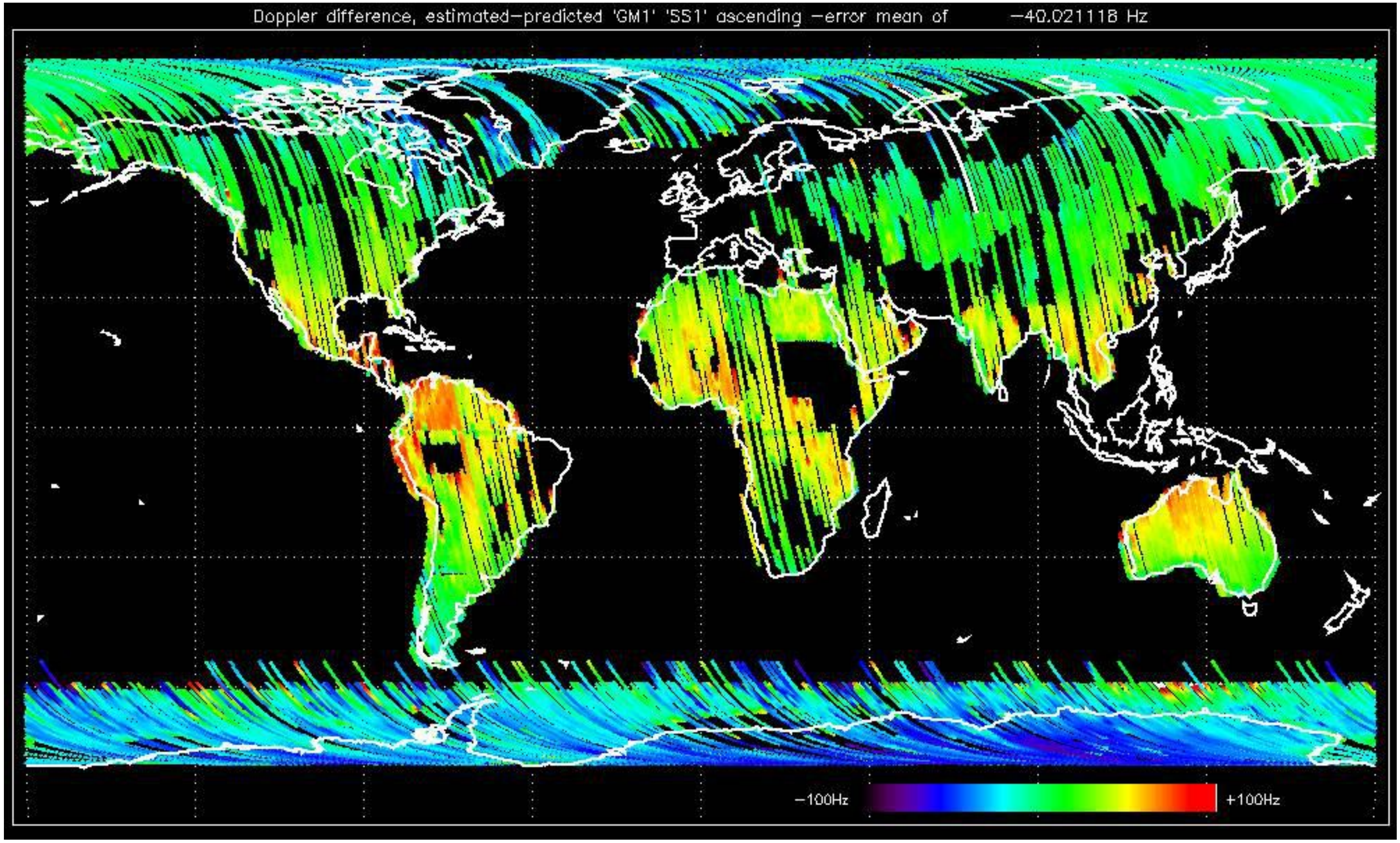

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

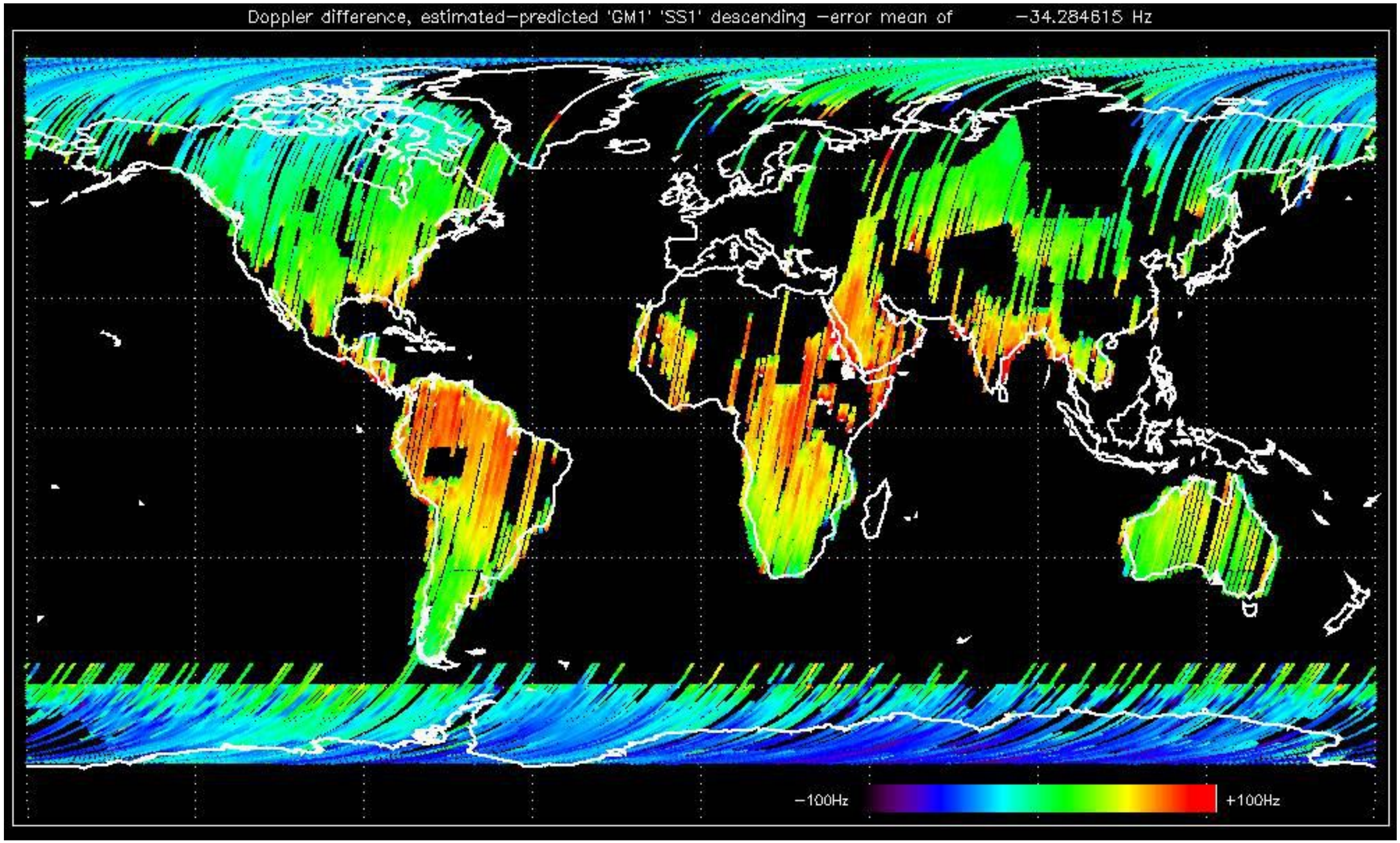

Doppler Bias[Hz]
100
50
0
−50
−100
−150
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
08−Jul
Date

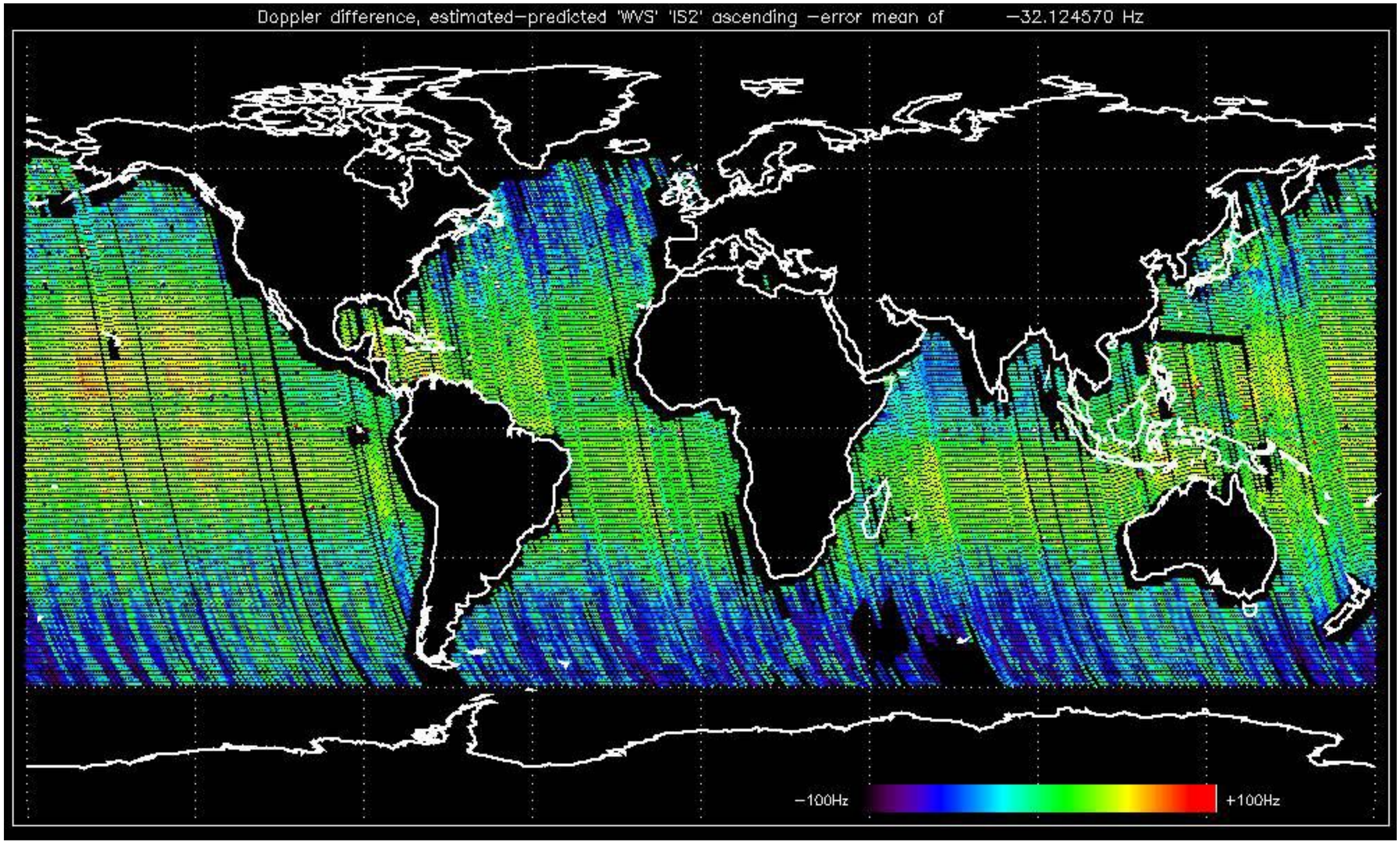

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

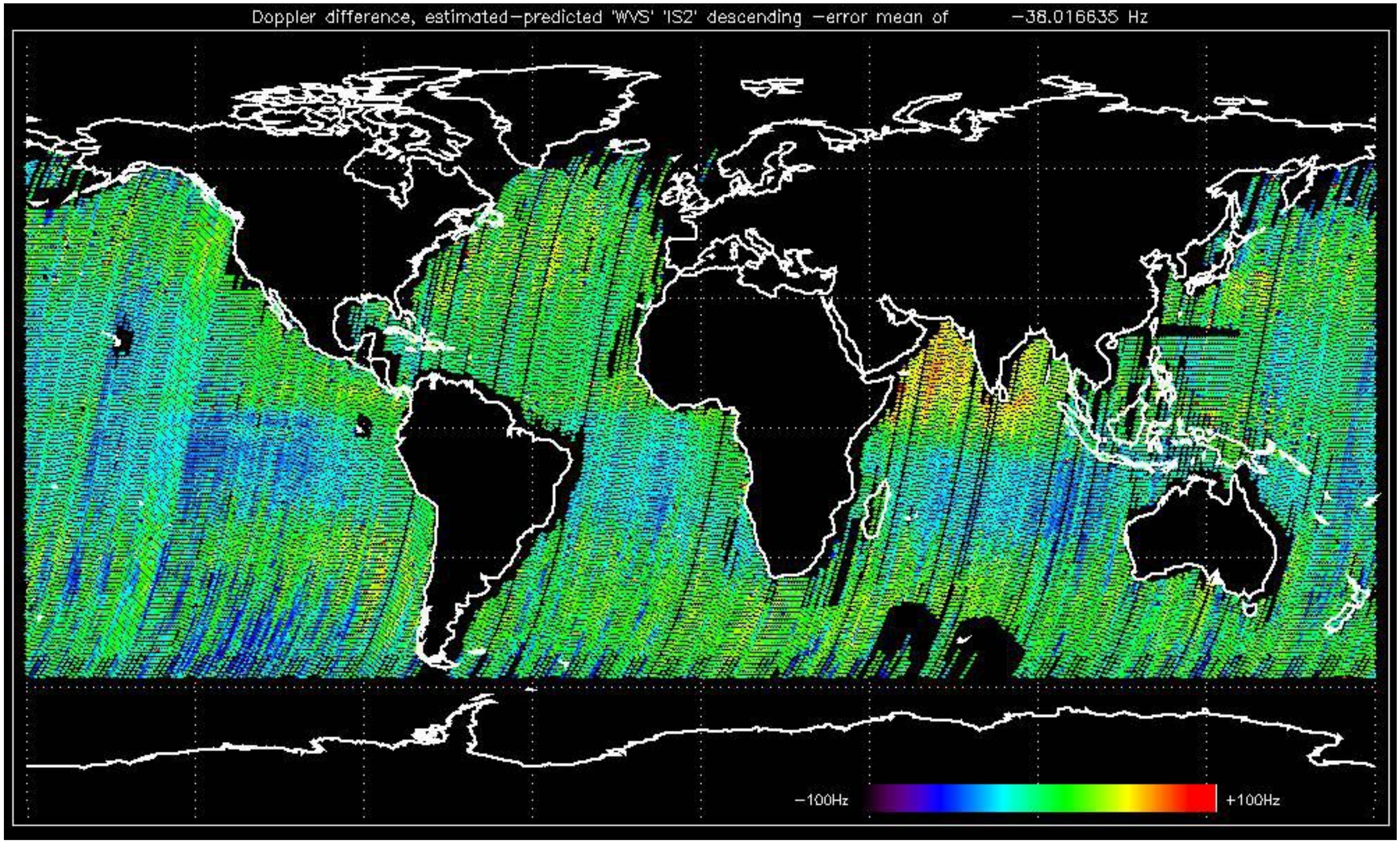

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −40.021118 Hz
−100Hz
+100Hz

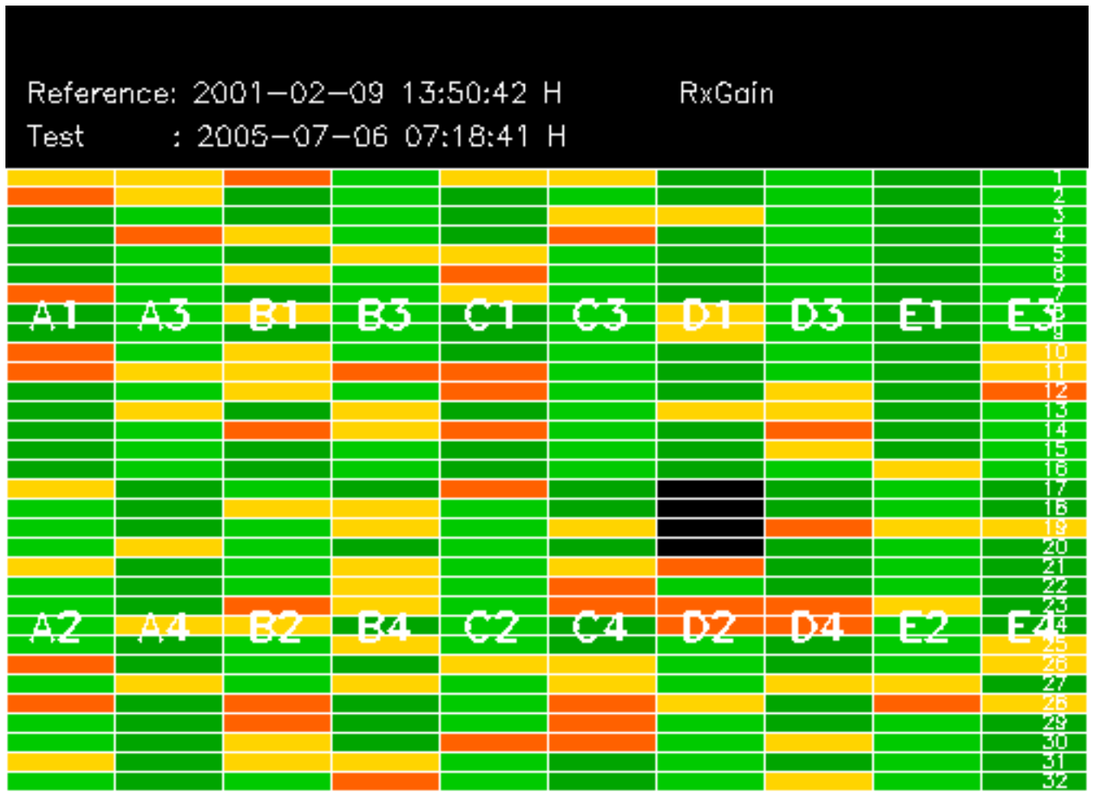

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −34.284615 Hz
−100Hz
+100Hz

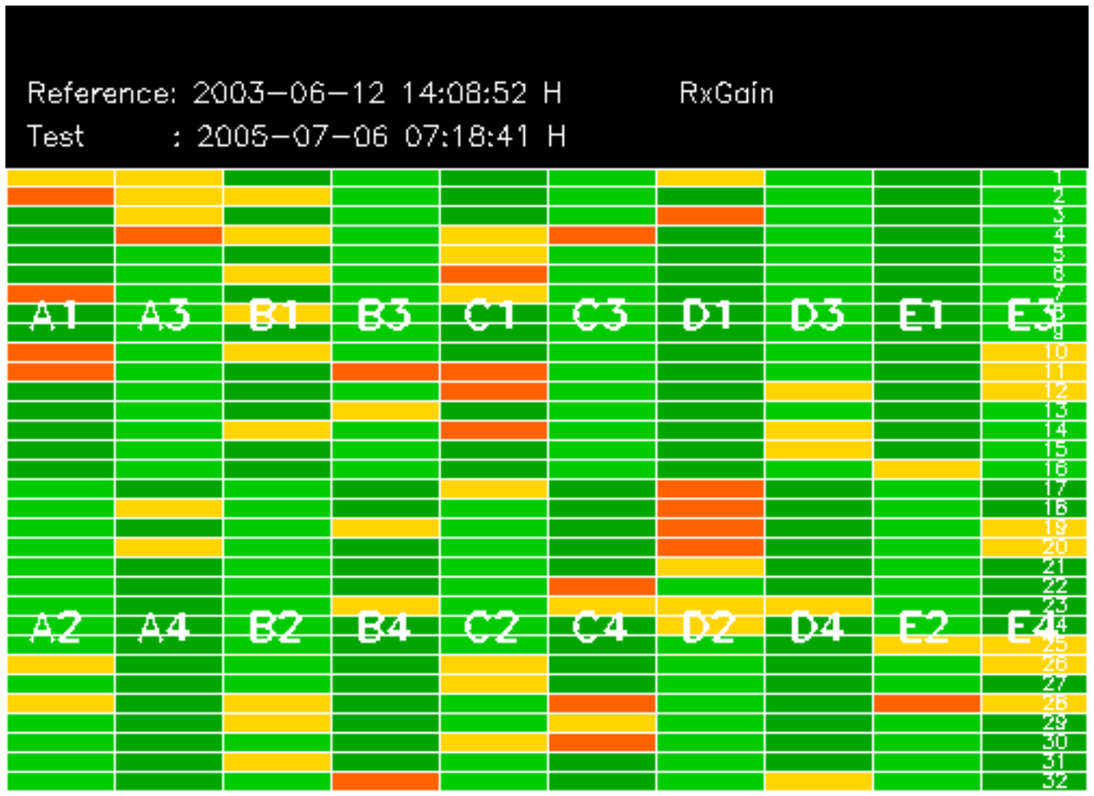

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.124570 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −38.016635 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-07-06 07:18:41 H
RxGain
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 : 2005-07-06 07:18:41 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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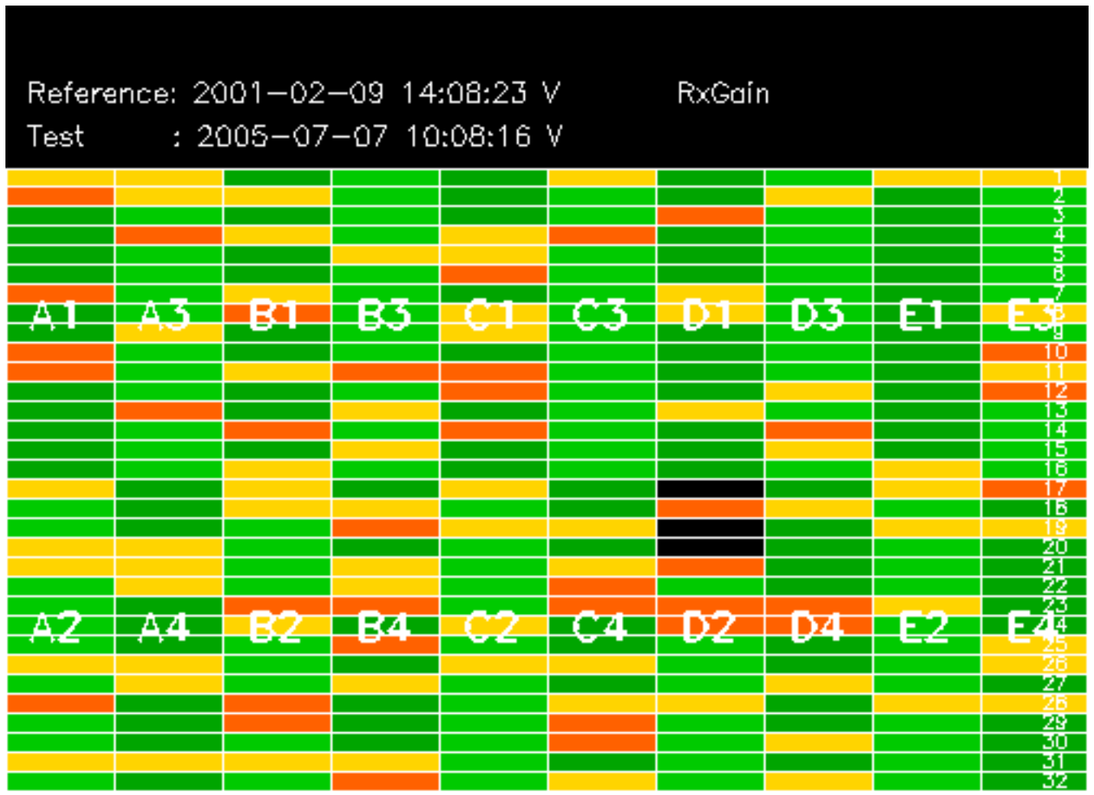
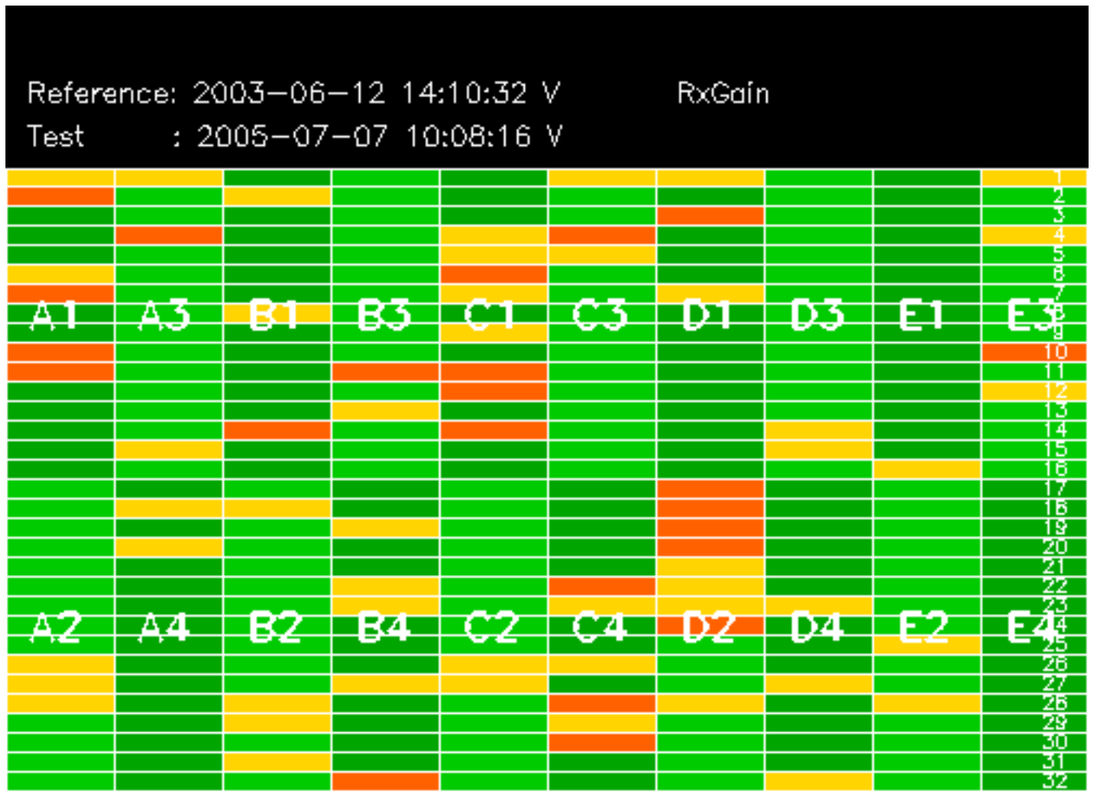
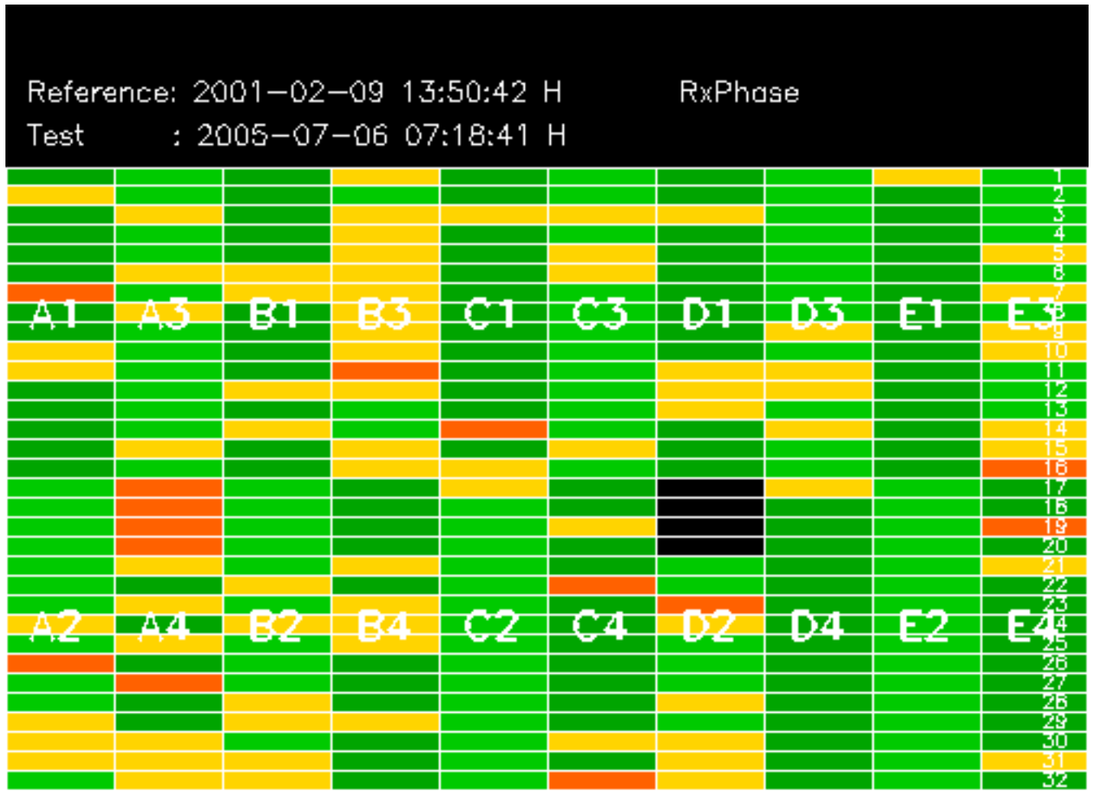

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-07 10:08:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-07-07 10:08:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-07-06 07:18:41 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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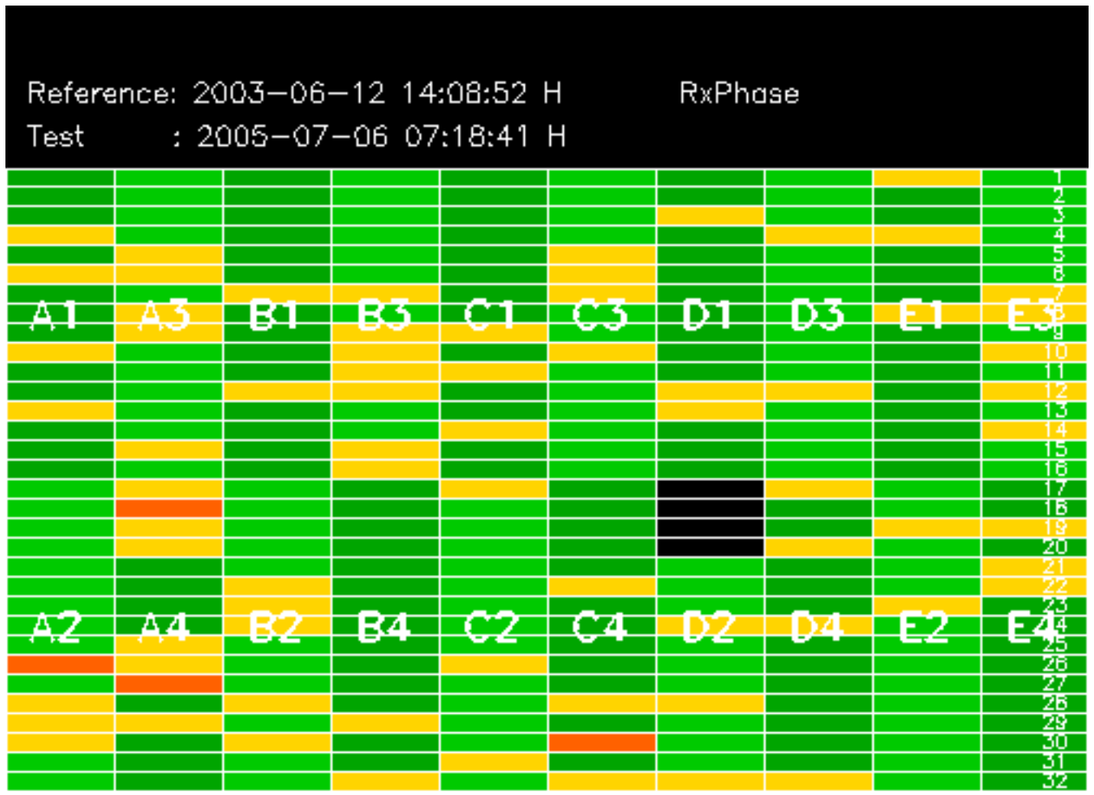
Reference: 2003-06-12 14:08:52 H
Test : 2005-07-06 07:18:41 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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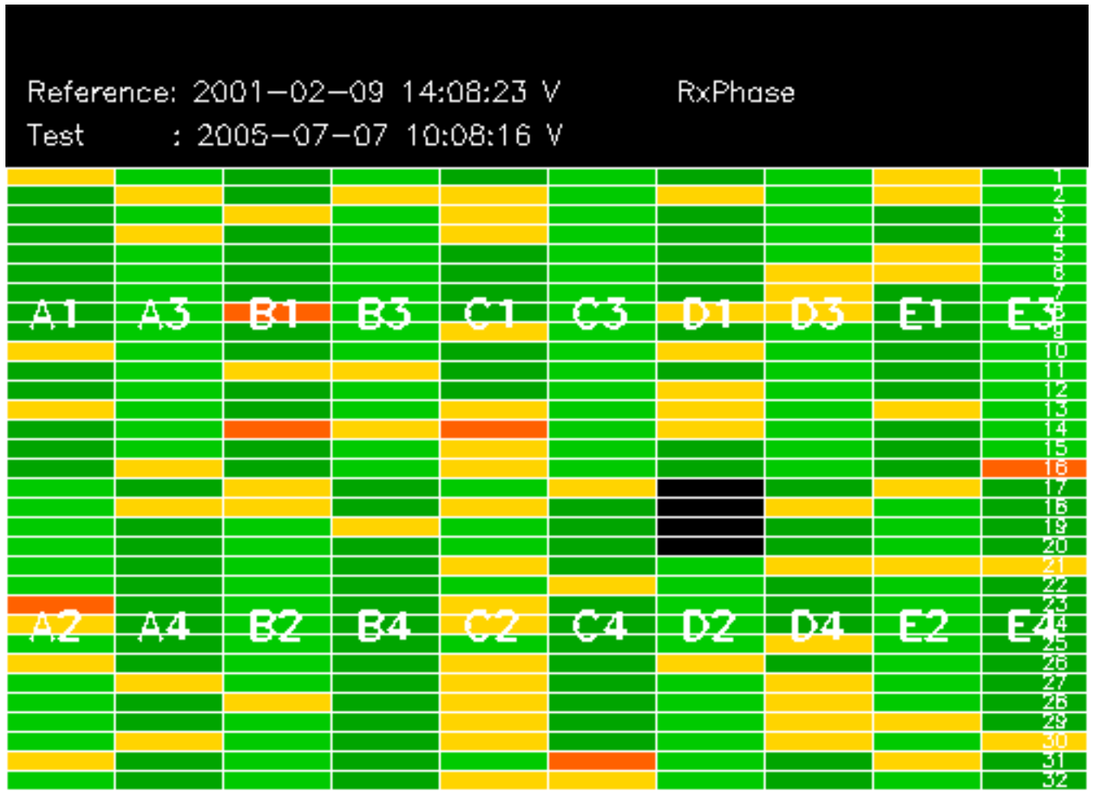
Reference: 2001-02-09 14:08:23 V
Test : 2005-07-07 10:08:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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9
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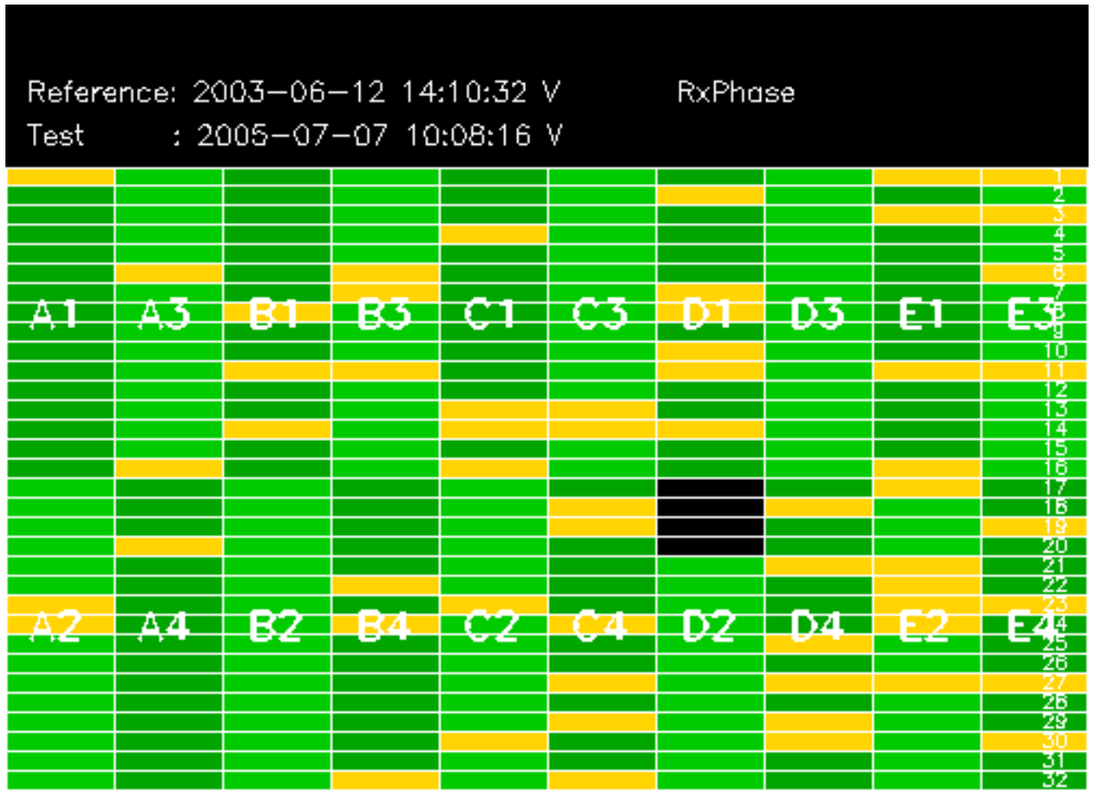
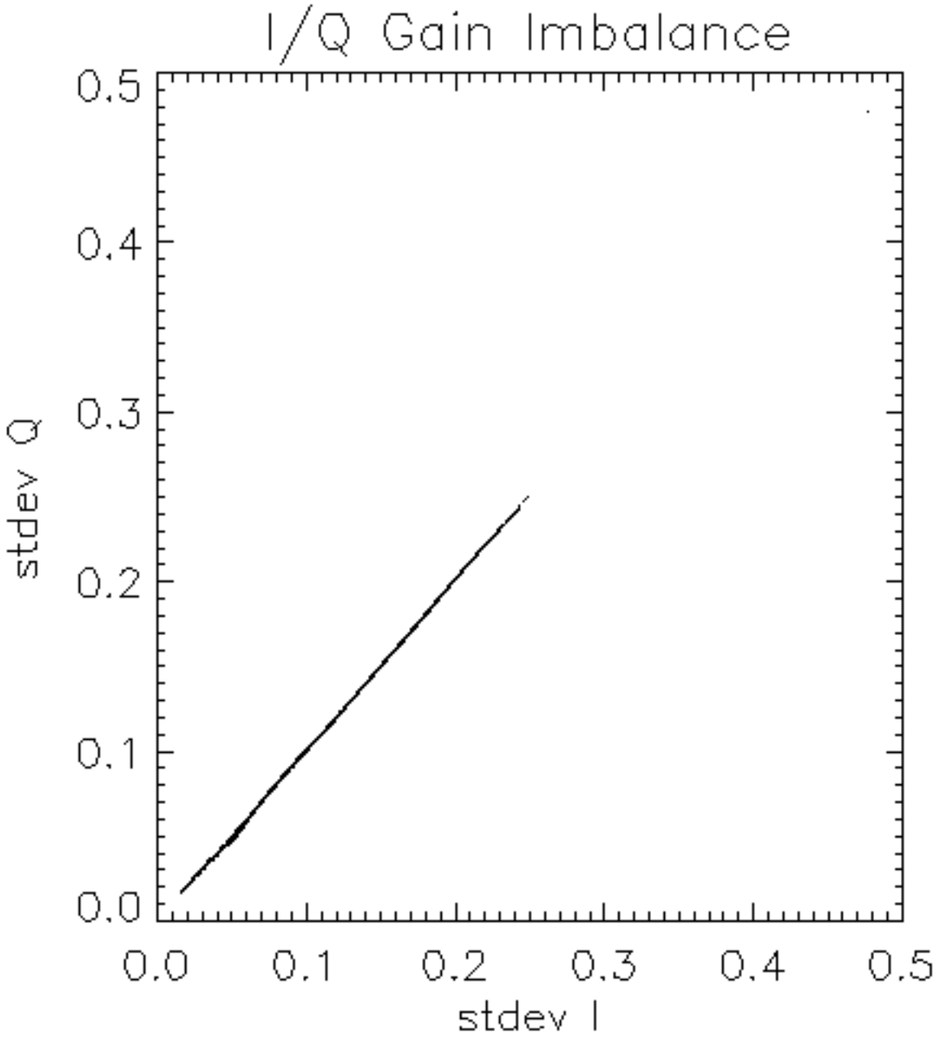
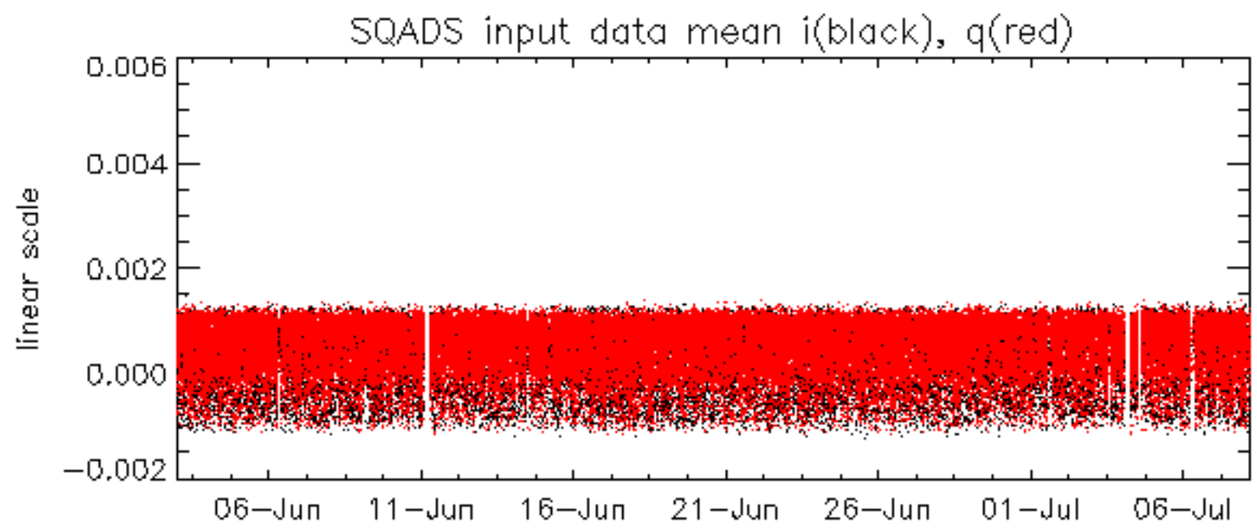
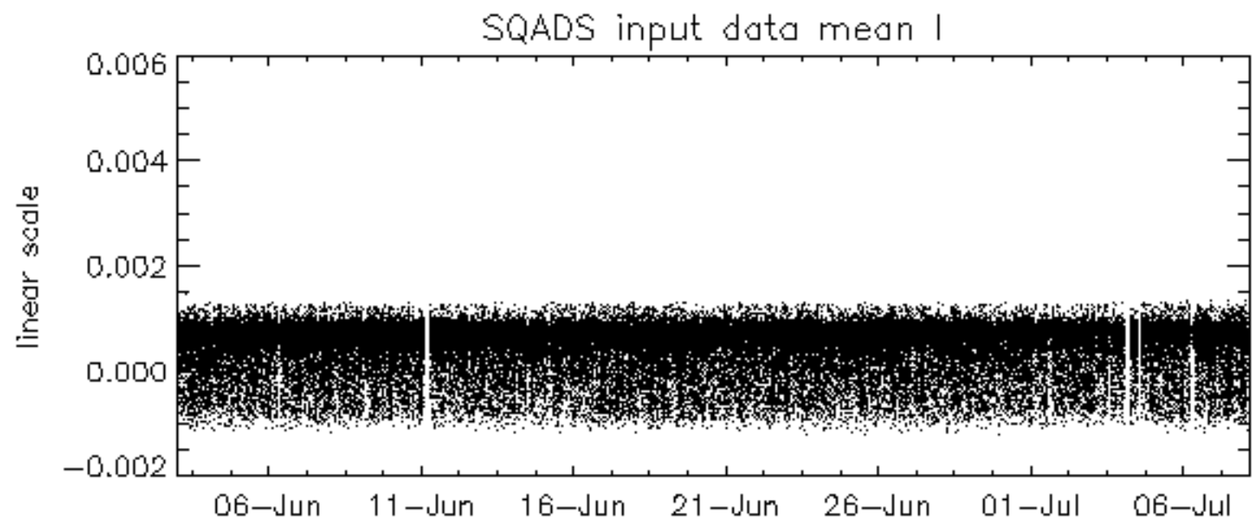
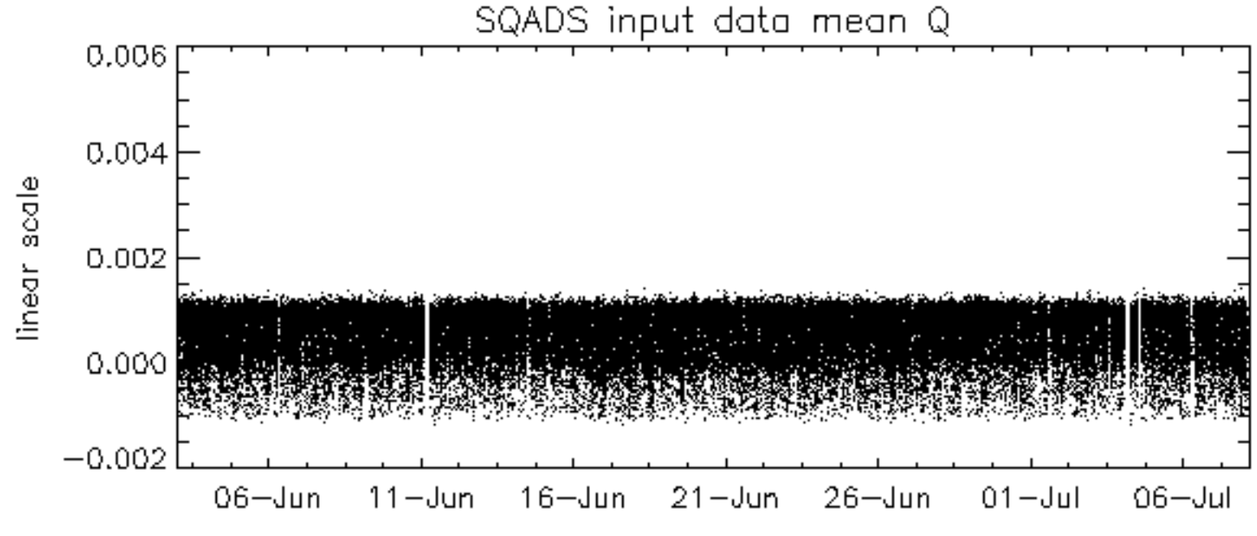
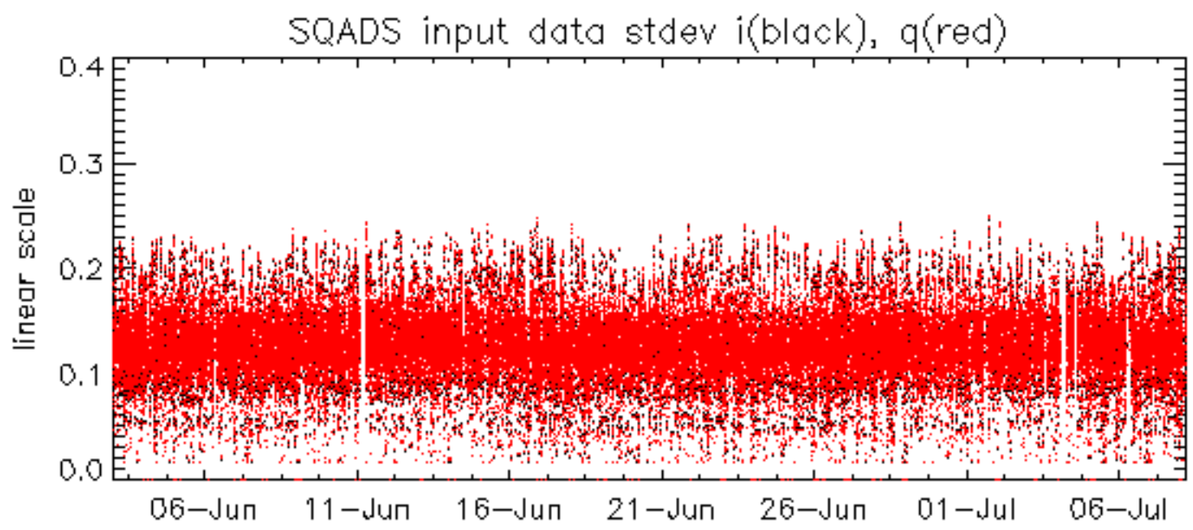

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-07 10:08:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

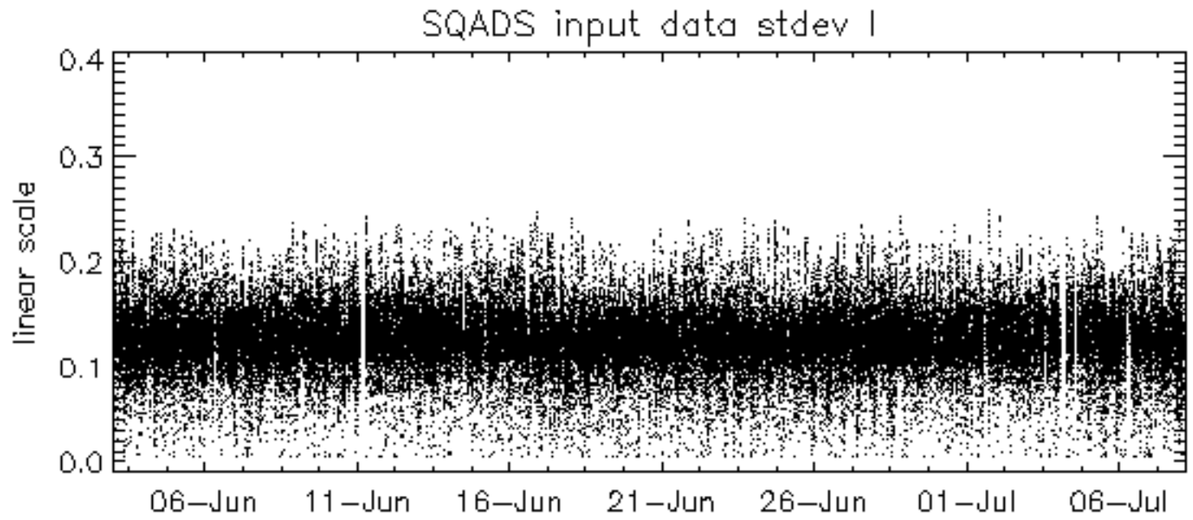

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4
0.5

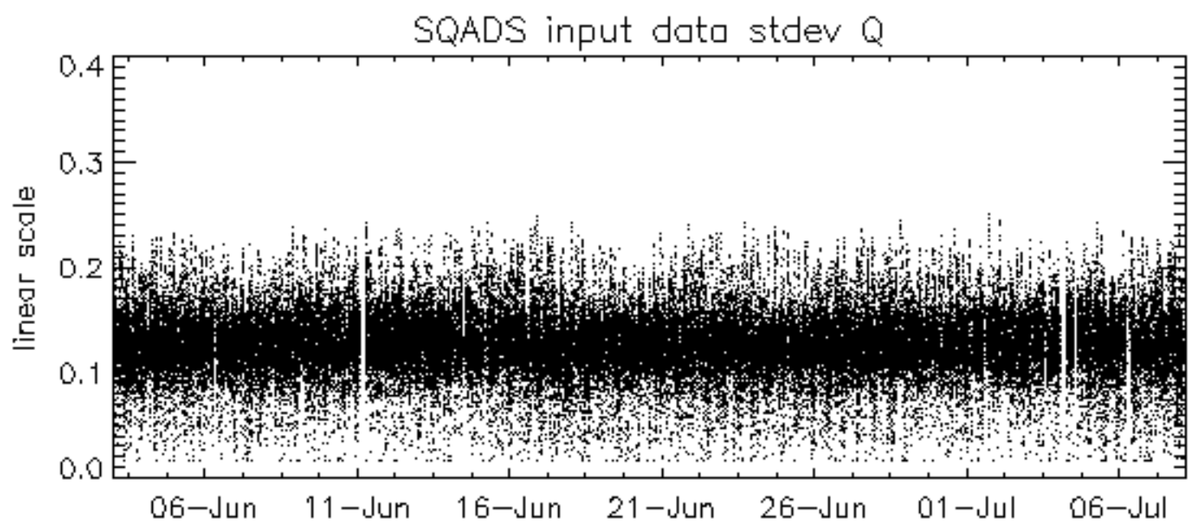

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul

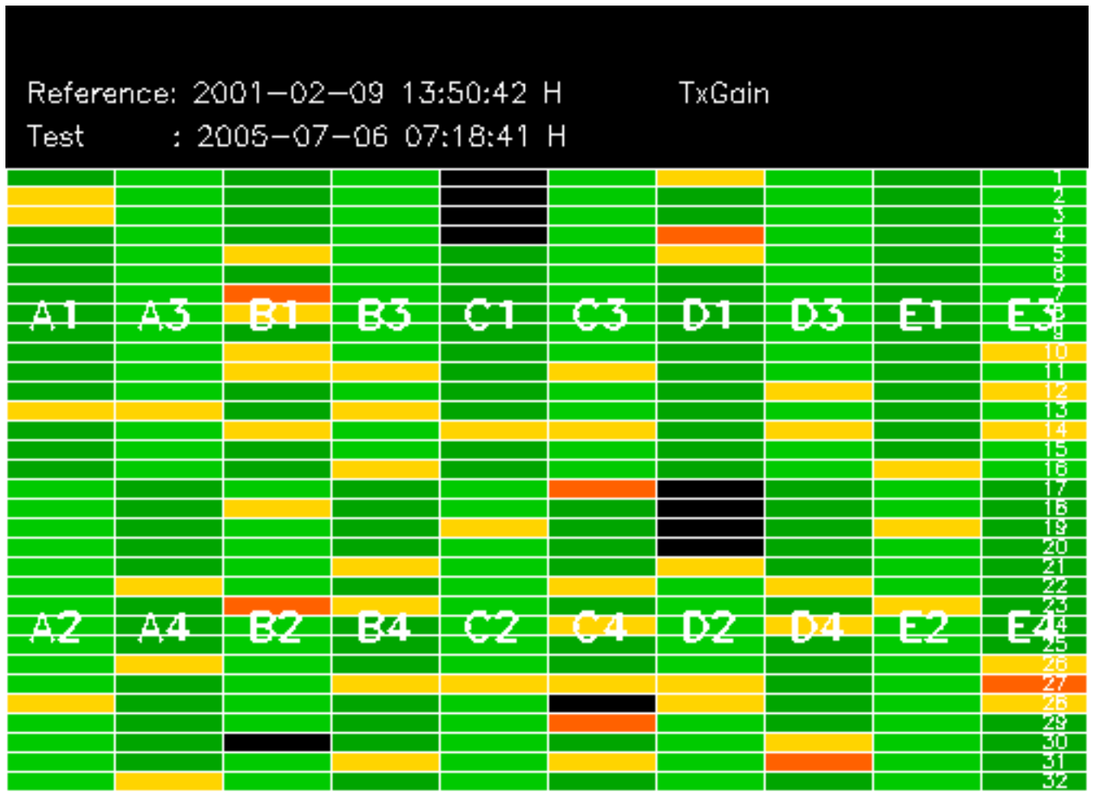

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jun
11−Jun
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
06–Jun
11–Jun
16–Jun
21–Jun
26–Jun
01–Jul
06–Jul


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06–Jun
11–Jun
16–Jun
21–Jun
26–Jun
01–Jul
06–Jul


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06–Jun
11–Jun
16–Jun
21–Jun
26–Jun
01–Jul
06–Jul


Reference: 2001-02-09 13:50:42 H
Test : 2005-07-06 07:18:41 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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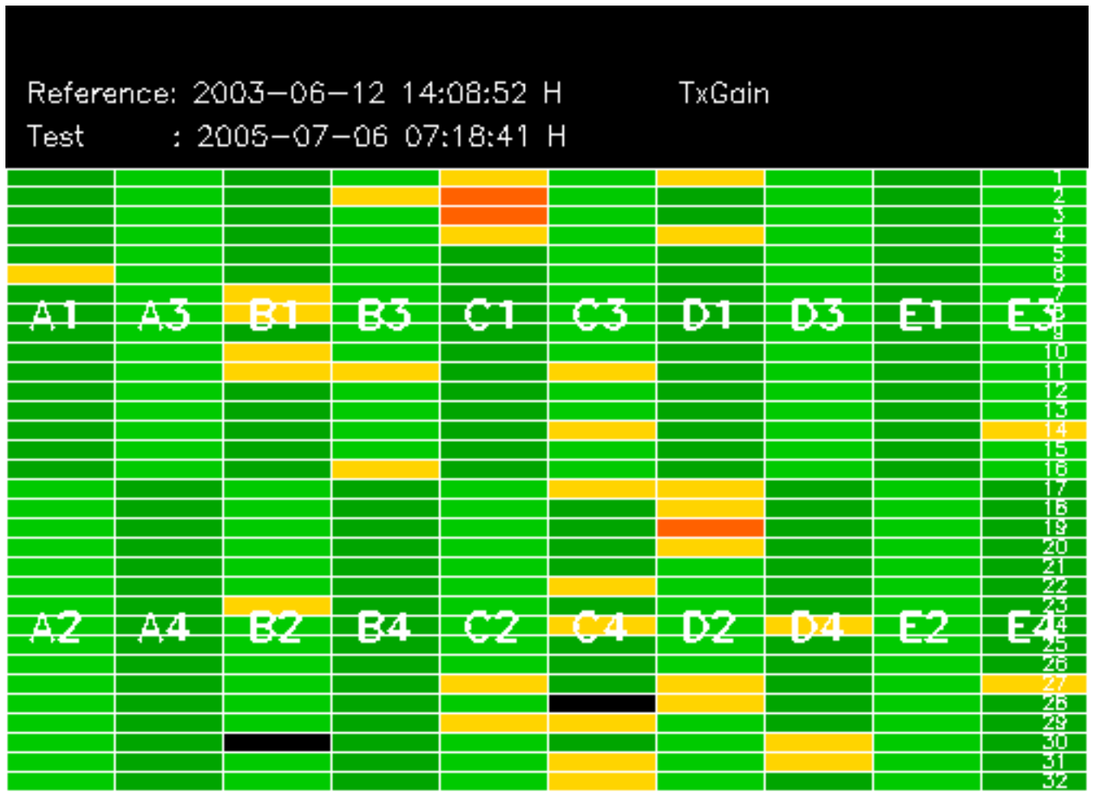
Reference: 2003-06-12 14:08:52 H
Test : 2005-07-06 07:18:41 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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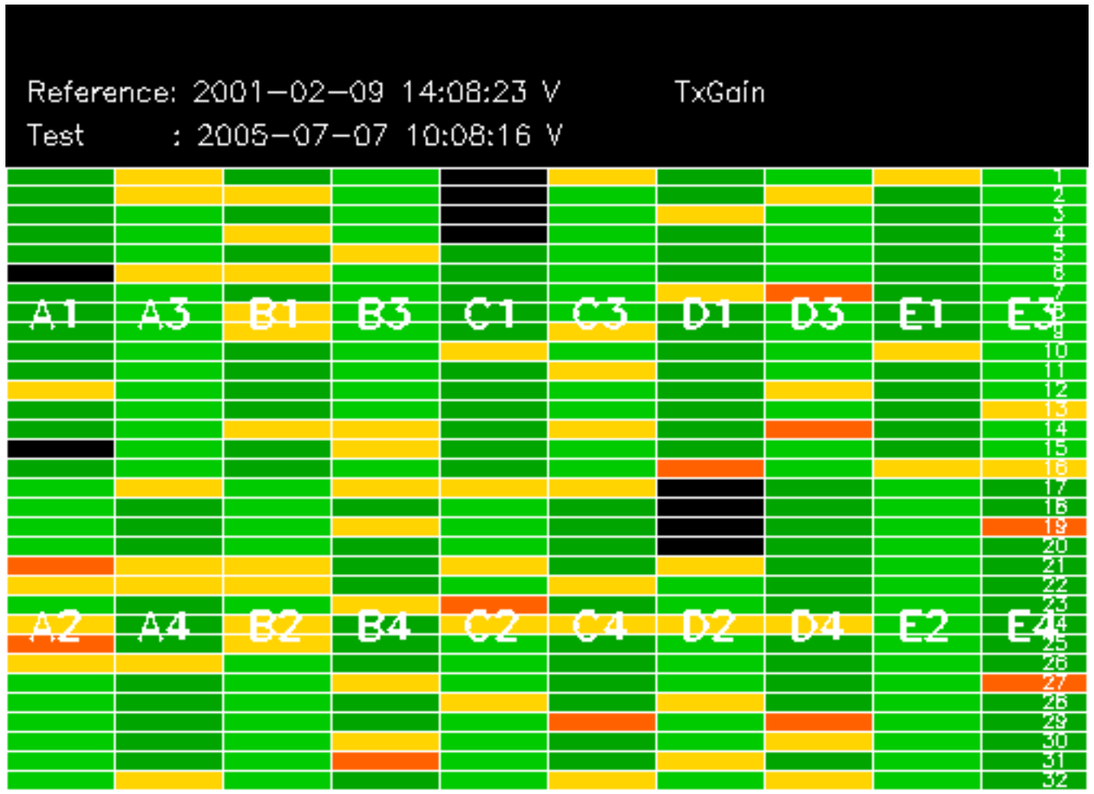
Reference: 2001-02-09 14:08:23 V
Test : 2005-07-07 10:08:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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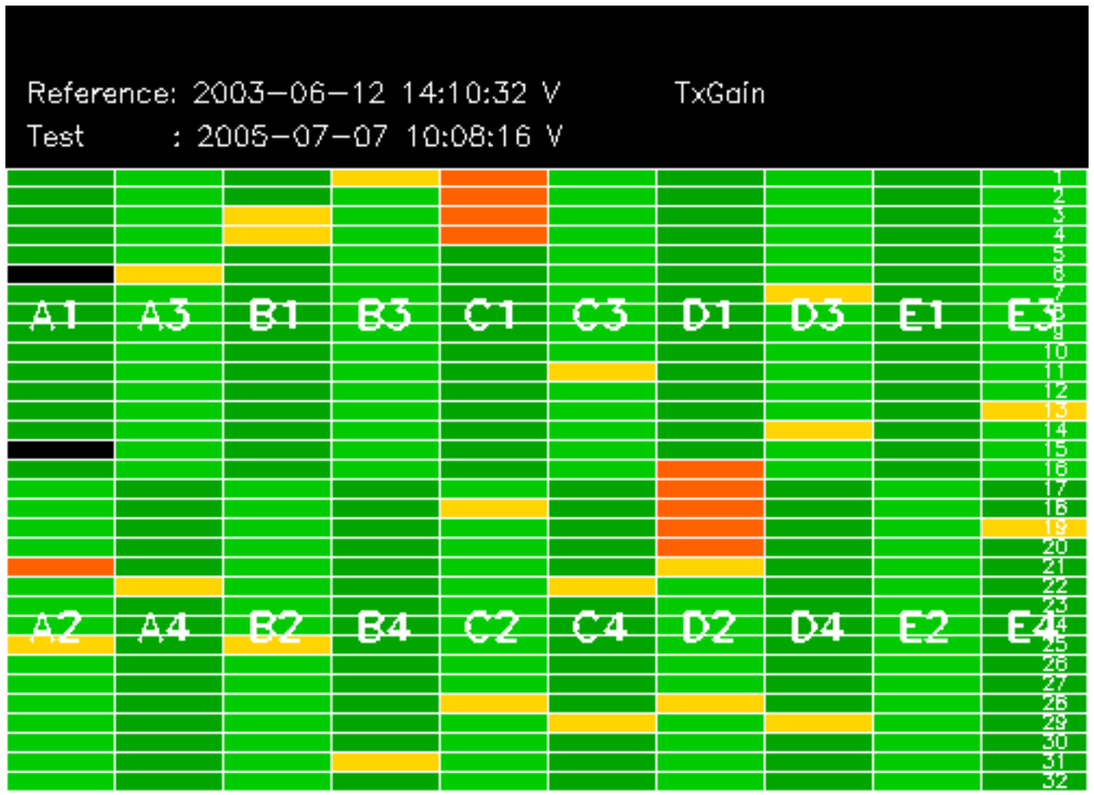
Reference: 2003-06-12 14:10:32 V
Test : 2005-07-07 10:08:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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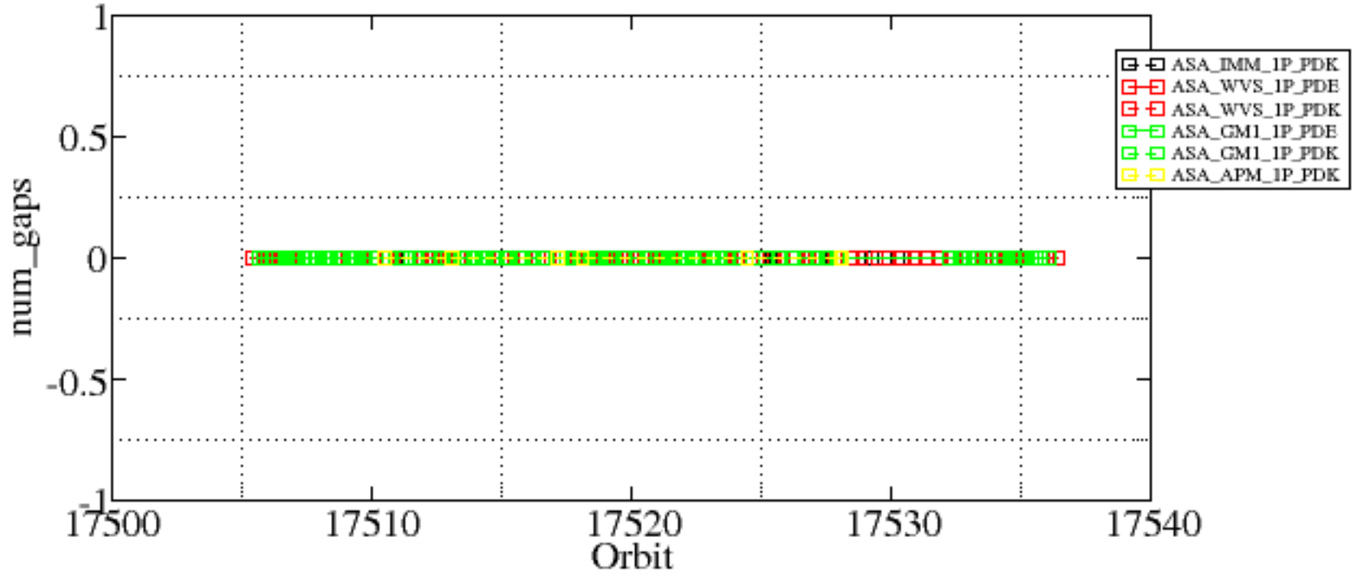
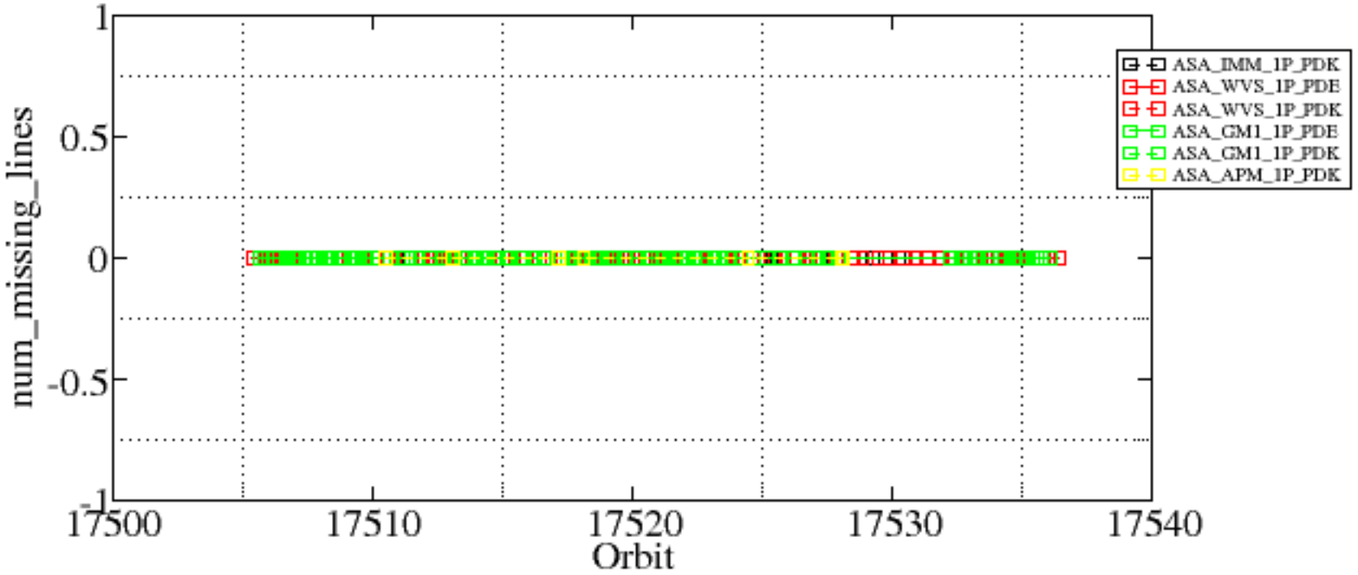
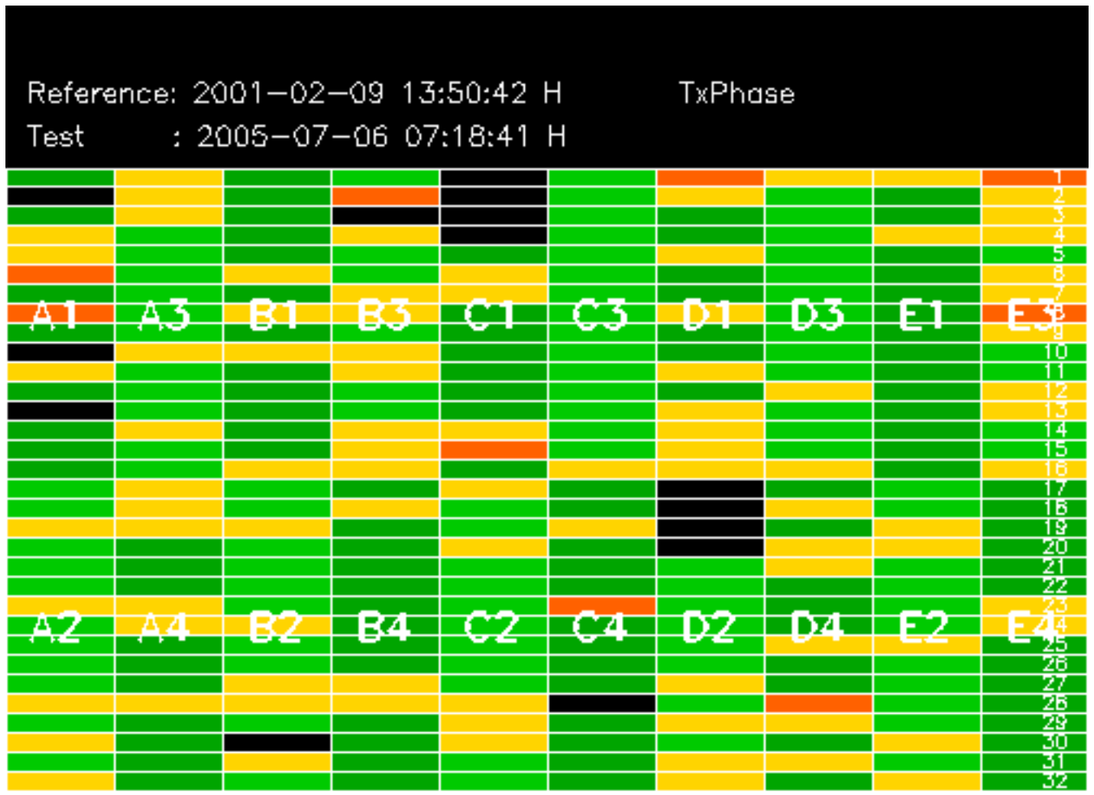
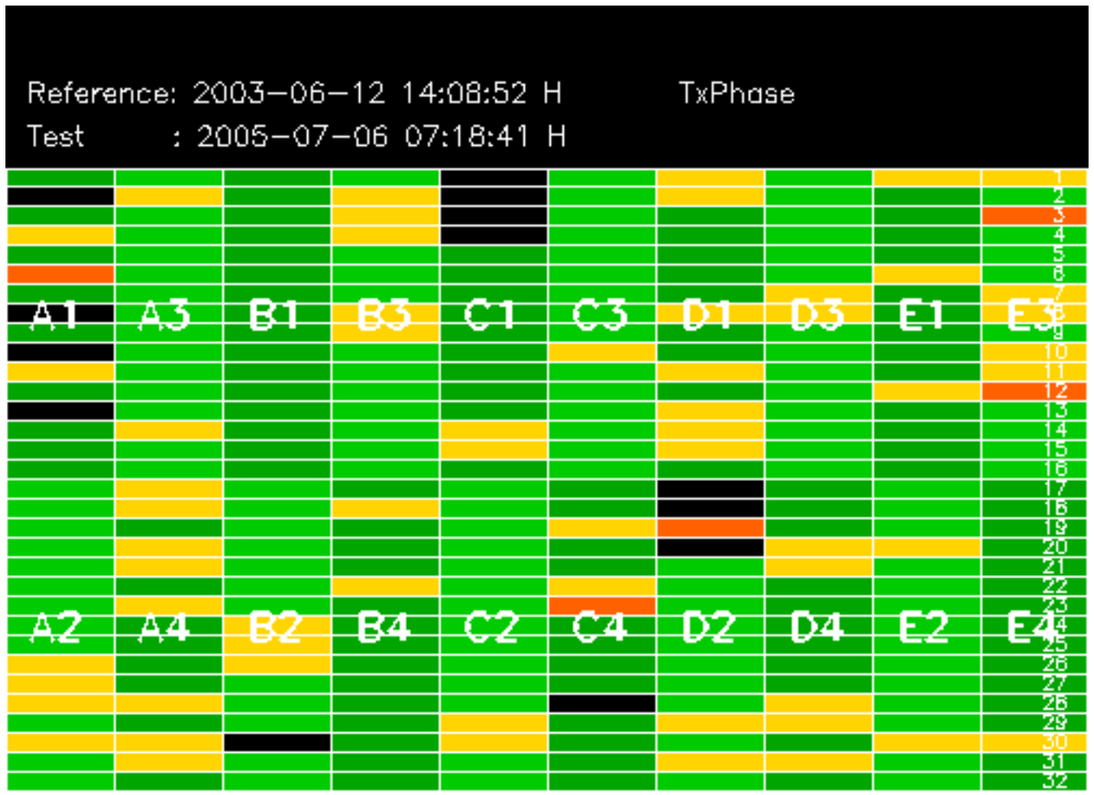
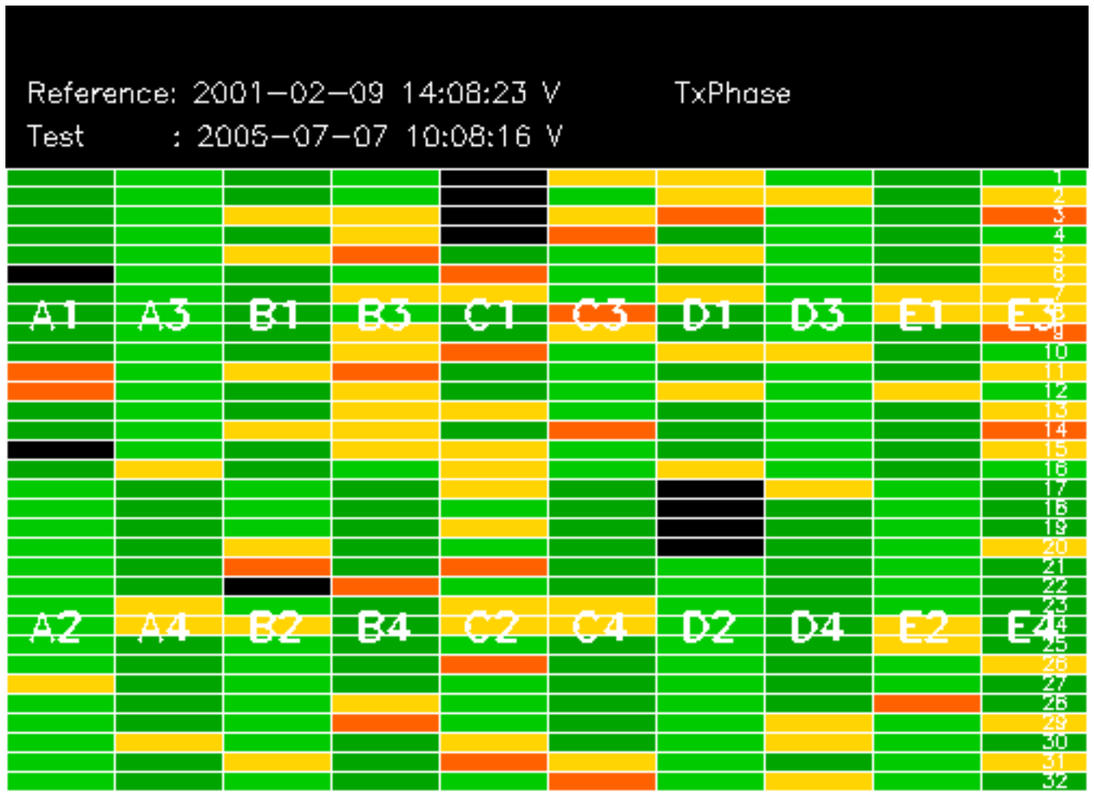
Summary of analysis for the last 3 days 2005070[678]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>

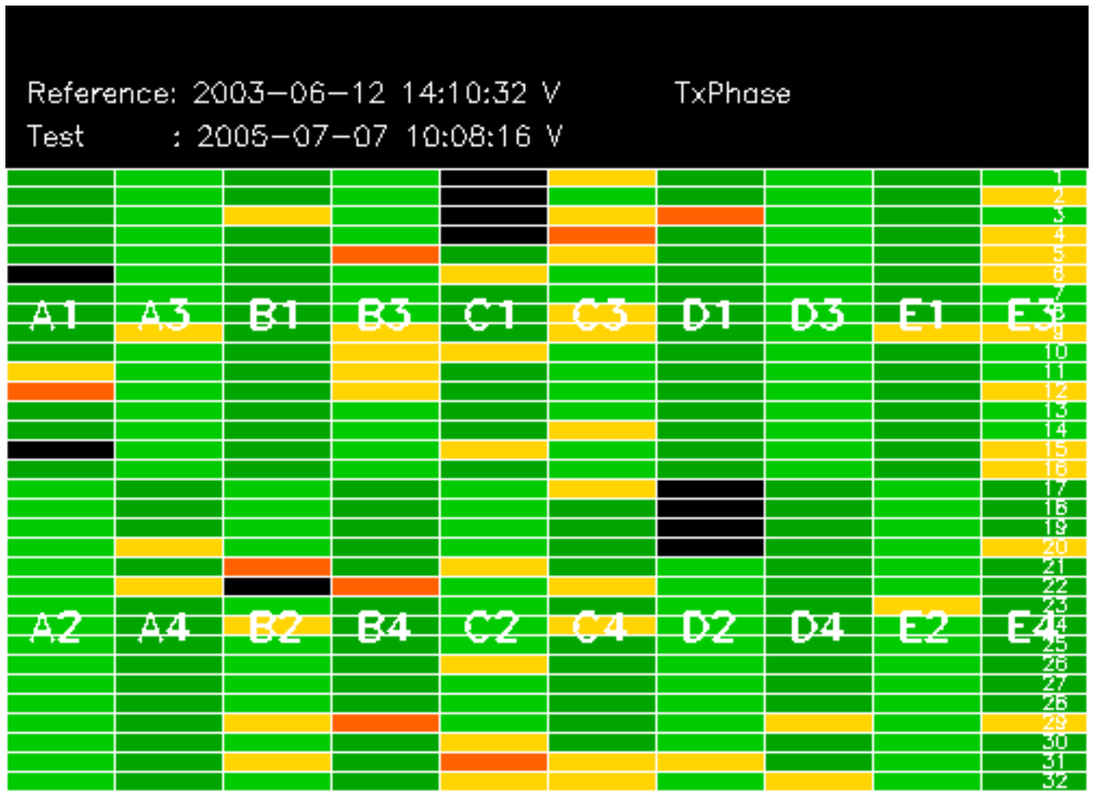

num_gaps
1
0.5
0
-0.5
-1
17500
17510
17520
17530
17540
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_APM_1P_PDK

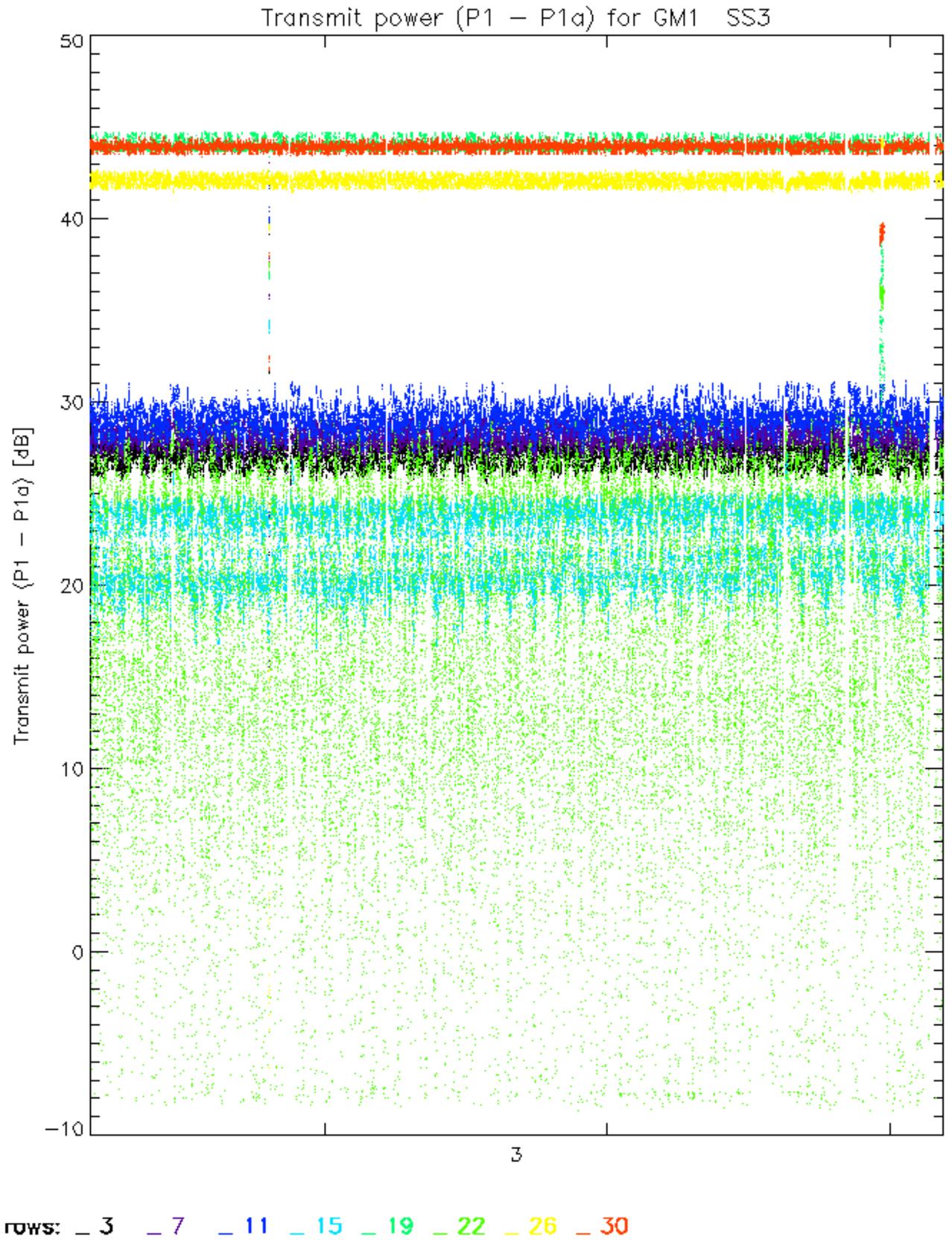

num_missing_lines
1
0.5
0
-0.5
-1
17500
17510
17520
17530
17540
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_APM_1P_PDK

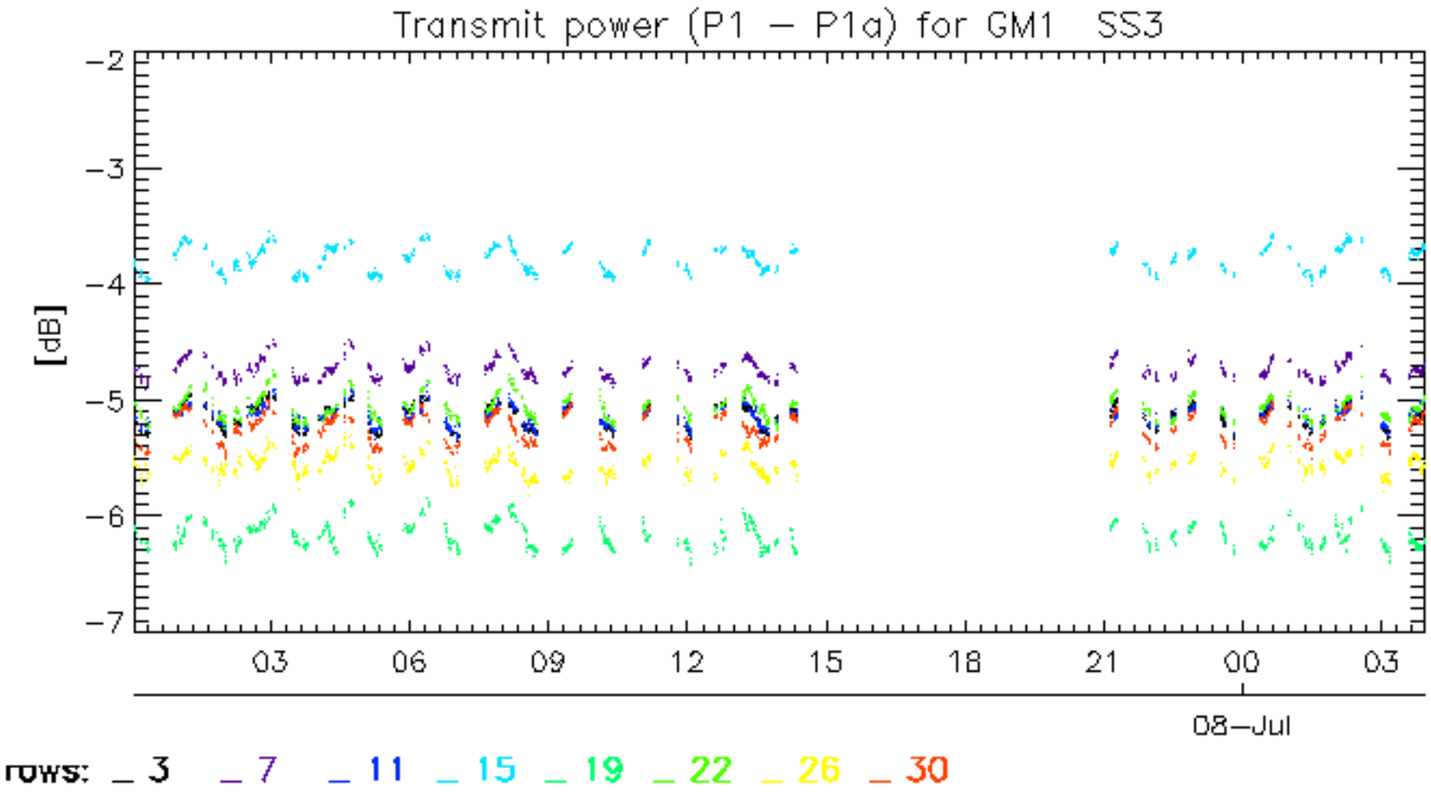

Reference: 2001-02-09 13:50:42 H
Test : 2005-07-06 07:18:41 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

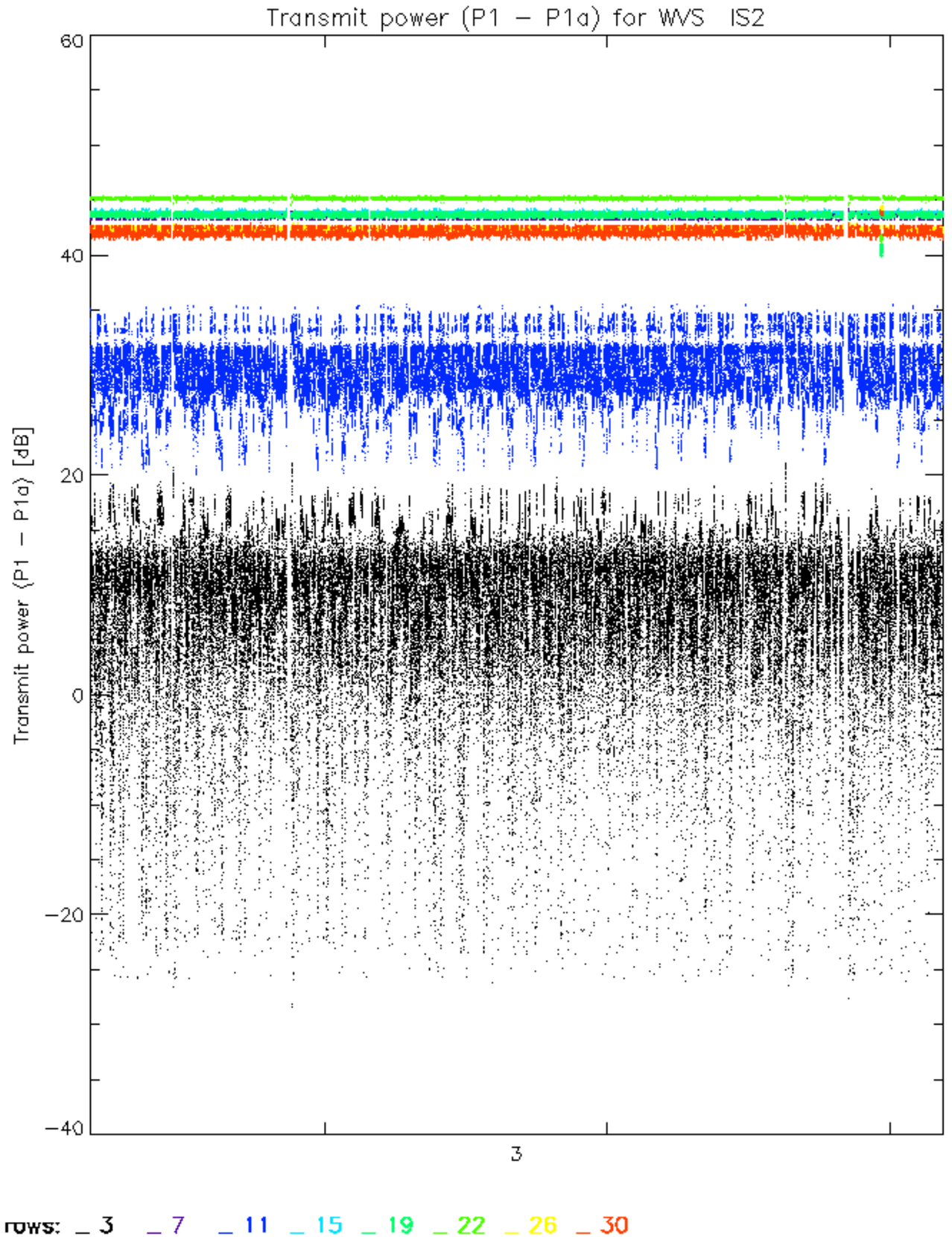

Reference: 2003-06-12 14:08:52 H
Test : 2005-07-06 07:18:41 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

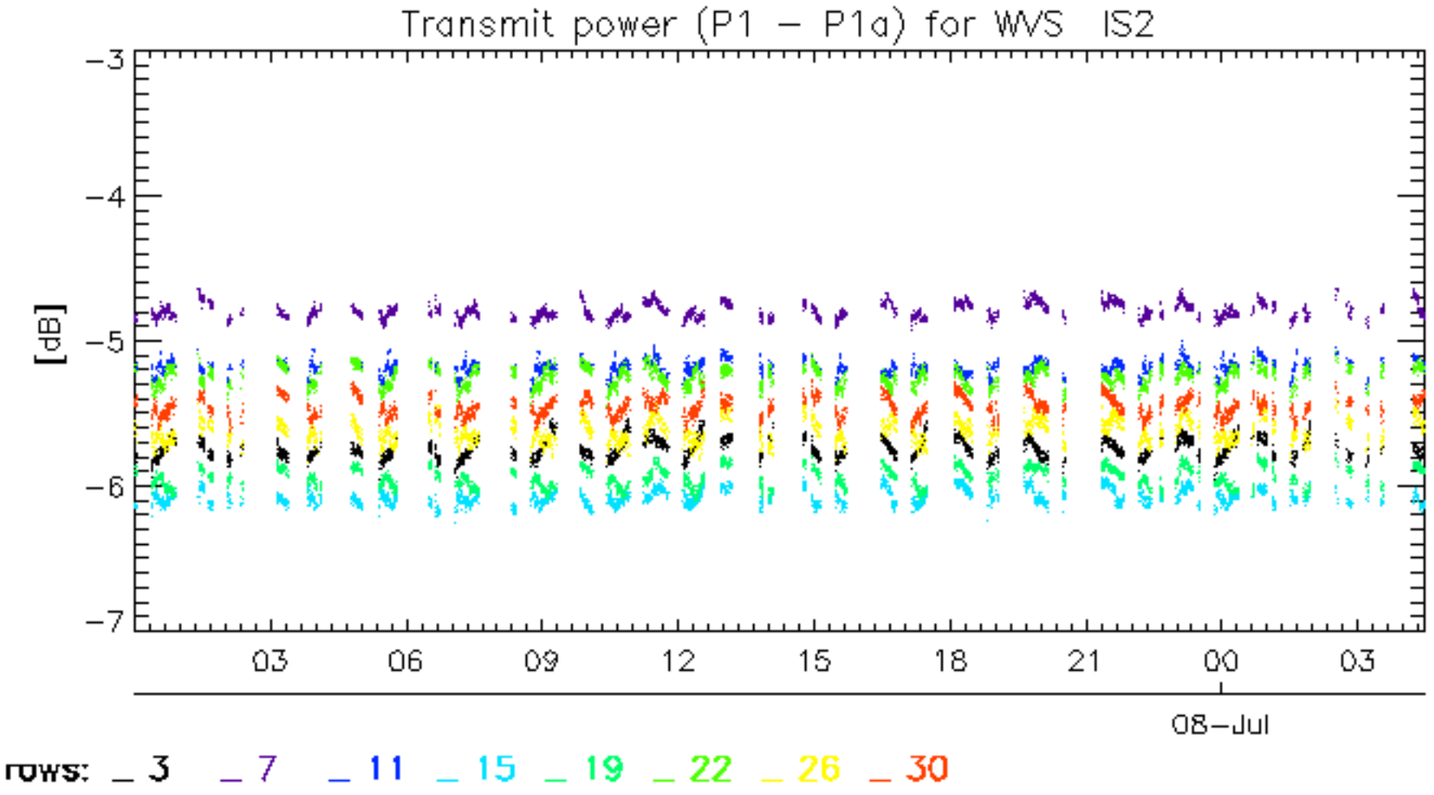

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-07 10:08:16 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-07-07 10:08:16 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
3
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
08–Jul
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]
3
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
08–Jul
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.