PRELIMINARY REPORT OF 050719

last update on Tue Jul 19 10:55:11 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 2005-07-18 00:00:00 to 2005-07-19 10:55:11

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	25	39	9	5	19
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	25	39	9	5	19
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	25	39	9	5	19
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	25	39	9	5	19

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	30	49	30	4	36
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	30	49	30	4	36
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	30	49	30	4	36
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	30	49	30	4	36

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	20050717 095353
H	20050716 084454

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
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4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1
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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	-3.323142	0.006746	0.027308
7	P1	-3.138013	0.015261	0.017518
11	P1	-4.673225	0.033259	-0.058566
15	P1	-5.541787	0.047039	-0.059108
19	P1	-3.784663	0.045445	-0.040467
22	P1	-4.610139	0.066514	-0.032122
26	P1	-4.850343	0.070899	0.009256
30	P1	-7.204586	0.159114	-0.088189
3	P1	-15.570718	0.084875	-0.015165
7	P1	-15.543736	0.110567	0.095108
11	P1	-21.570005	0.261652	-0.244232
15	P1	-11.289874	0.045392	0.009009
19	P1	-14.490852	0.257018	-0.067955
22	P1	-15.805845	0.354629	0.189990
26	P1	-17.526131	0.258311	0.277520
30	P1	-17.757862	0.358858	0.124987

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.891397	0.082890	0.138037
7	P2	-22.071487	0.105358	0.190781
11	P2	-13.741943	0.104839	0.267750
15	P2	-7.104590	0.093044	0.090960
19	P2	-9.599019	0.094108	0.041778
22	P2	-16.861473	0.094281	0.035823
26	P2	-16.506649	0.096137	0.030726
30	P2	-18.789736	0.083238	0.005489

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.159402	0.002764	0.018670
7	P3	-8.159402	0.002764	0.018670
11	P3	-8.159402	0.002764	0.018670
15	P3	-8.159402	0.002764	0.018670
19	P3	-8.159402	0.002764	0.018670
22	P3	-8.159402	0.002764	0.018670
26	P3	-8.159402	0.002764	0.018670
30	P3	-8.159402	0.002764	0.018670

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	-2.786788	0.013856	0.029203
7	P1	-2.952539	0.031807	0.002672
11	P1	-3.991219	0.017295	-0.030415
15	P1	-3.557701	0.023673	-0.057046
19	P1	-3.673211	0.117538	-0.017891
22	P1	-5.670889	0.112066	-0.047910
26	P1	-7.378271	0.197259	-0.086749
30	P1	-6.321048	0.118348	-0.078267
3	P1	-10.820885	0.039512	0.040830
7	P1	-10.437980	0.158595	-0.030540
11	P1	-12.603209	0.111085	-0.069232
15	P1	-11.616472	0.074714	0.006318
19	P1	-15.685040	1.360740	-0.003185
22	P1	-25.870201	3.525705	0.499216
26	P1	-15.452676	0.418331	0.226330
30	P1	-20.150146	1.284639	0.275633

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.641180	0.047475	0.148419
7	P2	-22.068710	0.040095	0.079409
11	P2	-9.742516	0.061946	0.185243
15	P2	-5.130474	0.046311	0.022374
19	P2	-6.909901	0.063081	0.018785
22	P2	-7.090438	0.039488	0.036781
26	P2	-23.968241	0.043846	-0.016127
30	P2	-21.959698	0.041188	0.023927

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998832	0.004114	0.001454
7	P3	-7.998898	0.004097	0.001567
11	P3	-7.998831	0.004104	0.001966
15	P3	-7.998870	0.004111	0.001724
19	P3	-7.998920	0.004113	0.001378
22	P3	-7.998900	0.004097	0.001449
26	P3	-7.998960	0.004100	0.001731
30	P3	-7.998895	0.004100	0.001605

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	0.000462589
	stdev	2.17854e-07
MEAN Q	mean	0.000497885
	stdev	2.32611e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127647
	stdev	0.000988070
STDEV Q	mean	0.127886
	stdev	0.000998688

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005071[789]
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

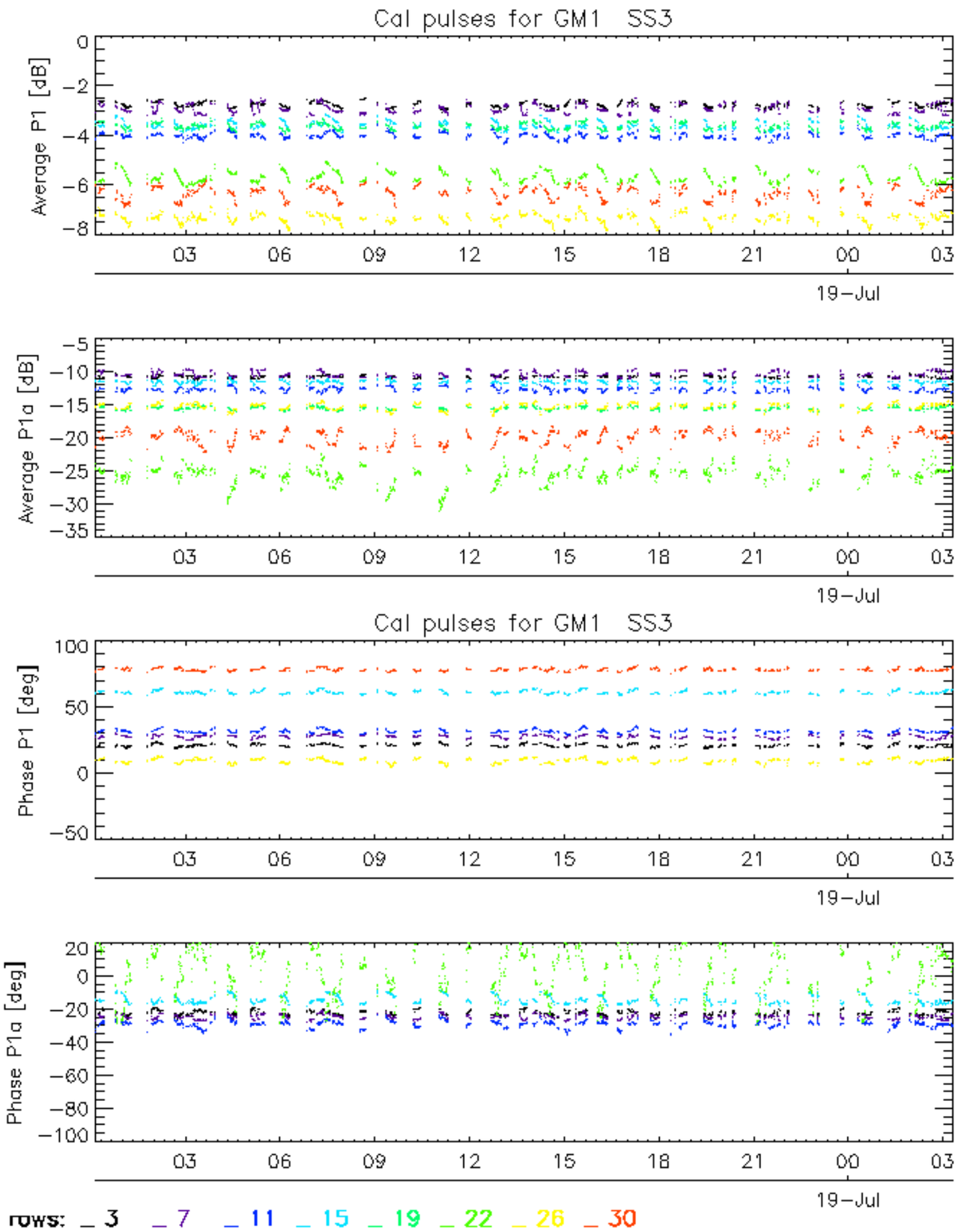
7.5 - Absolute Doppler for GM1

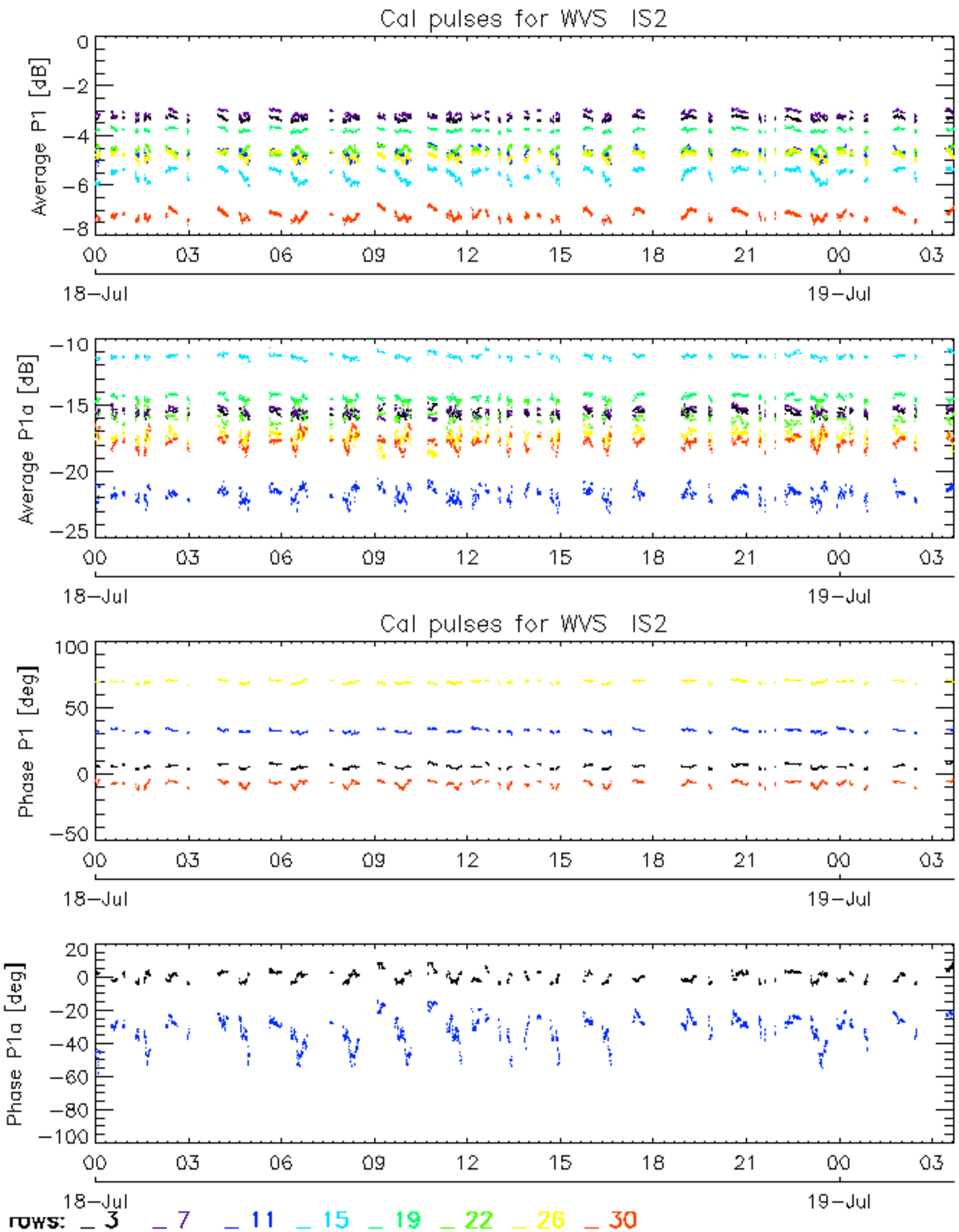
Evolution of Absolute Doppler
☒

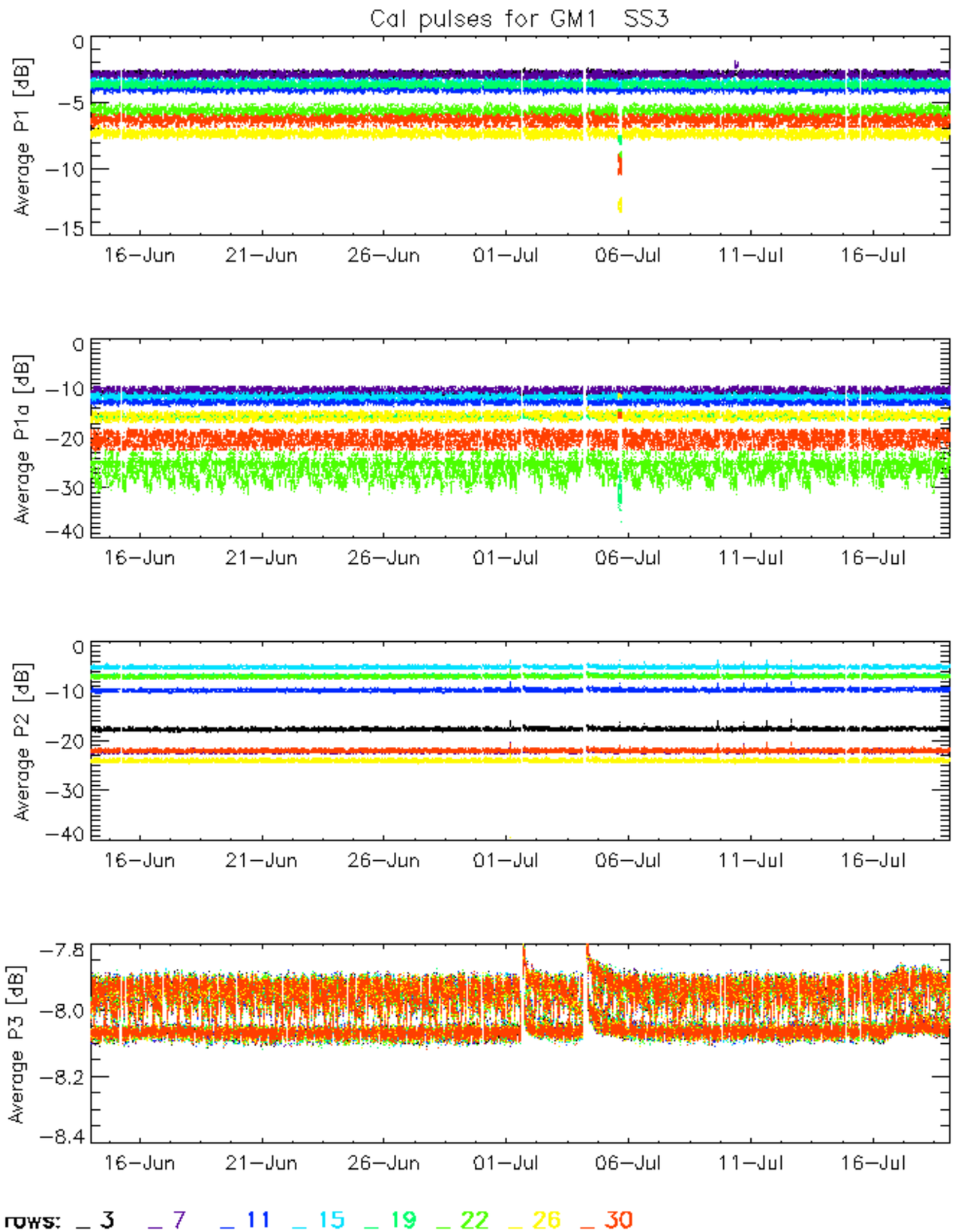
Acsending
☒
Descending

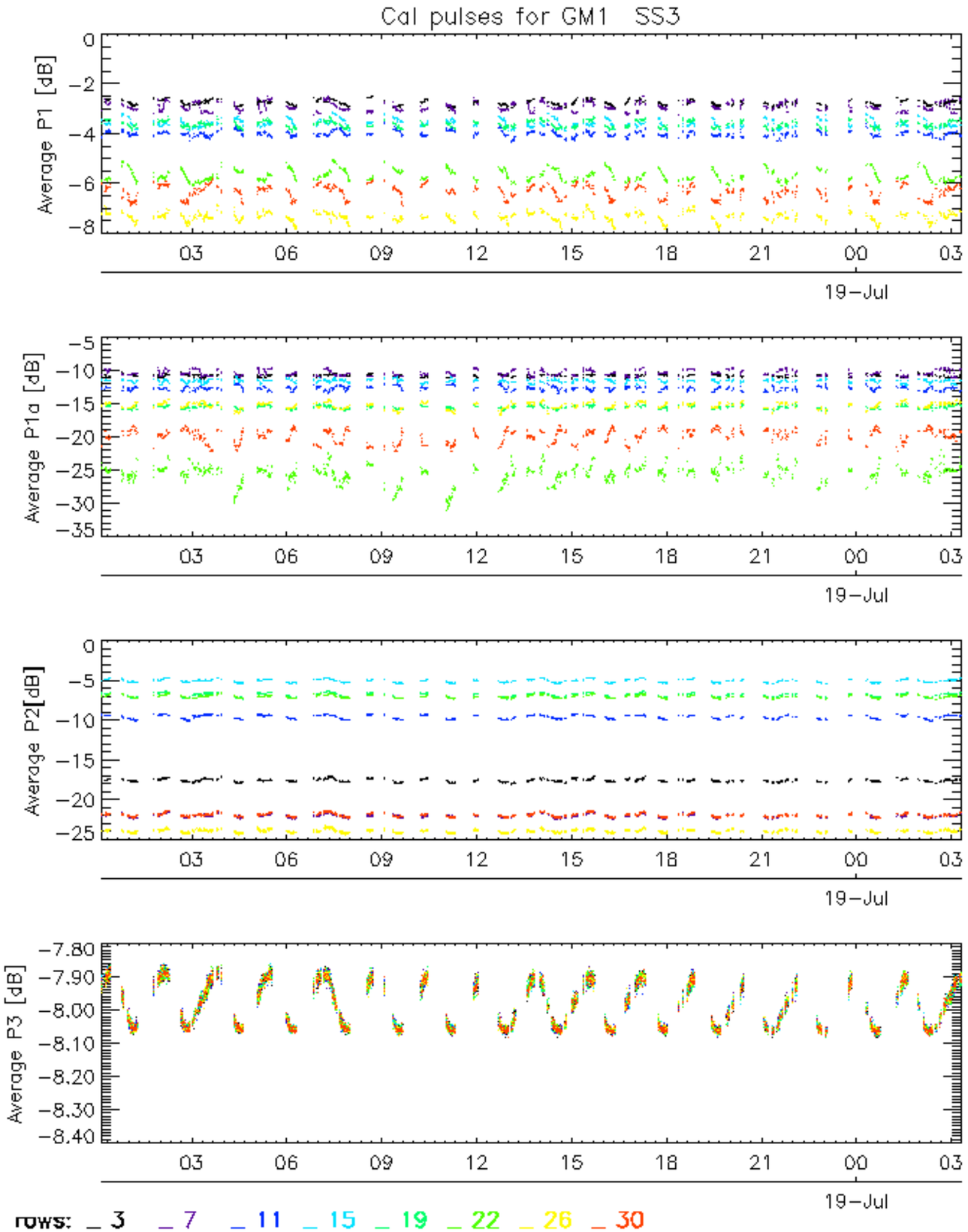
7.6 - Doppler evolution versus ANX for GM1

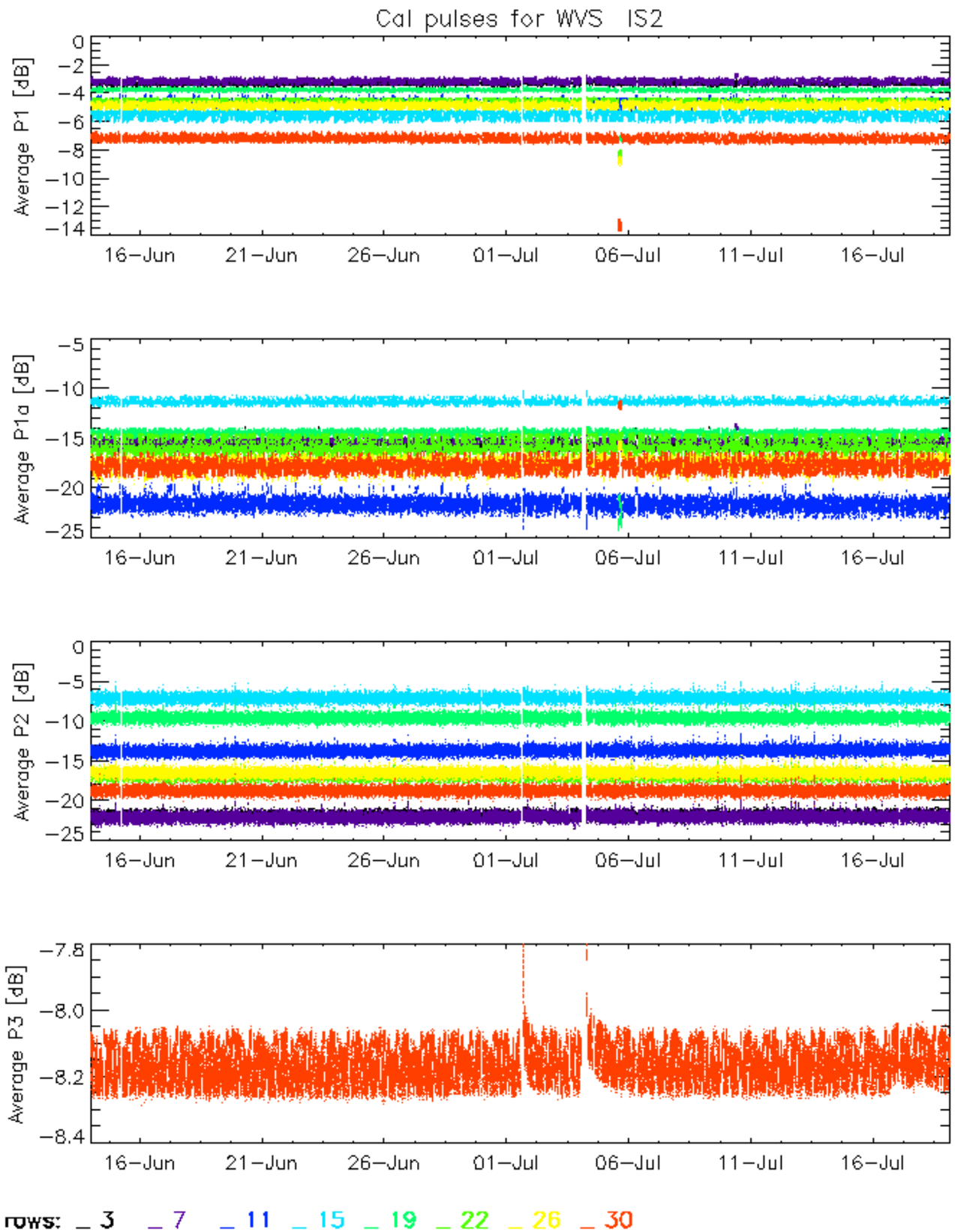
Evolution Doppler error versus ANX
☒

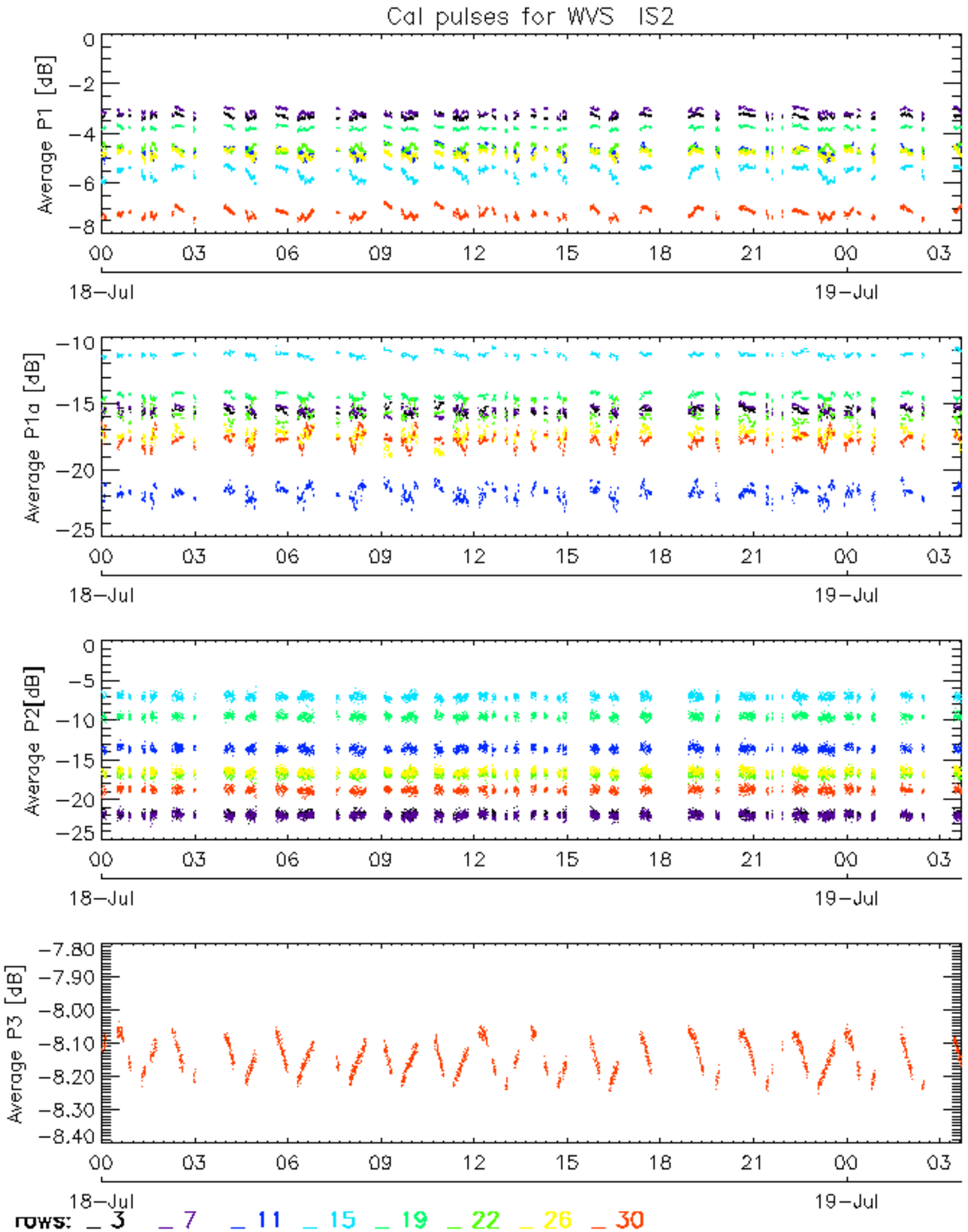

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
19−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
00
03
06
09
12
15
18
21
00
03
18−Jul
19−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

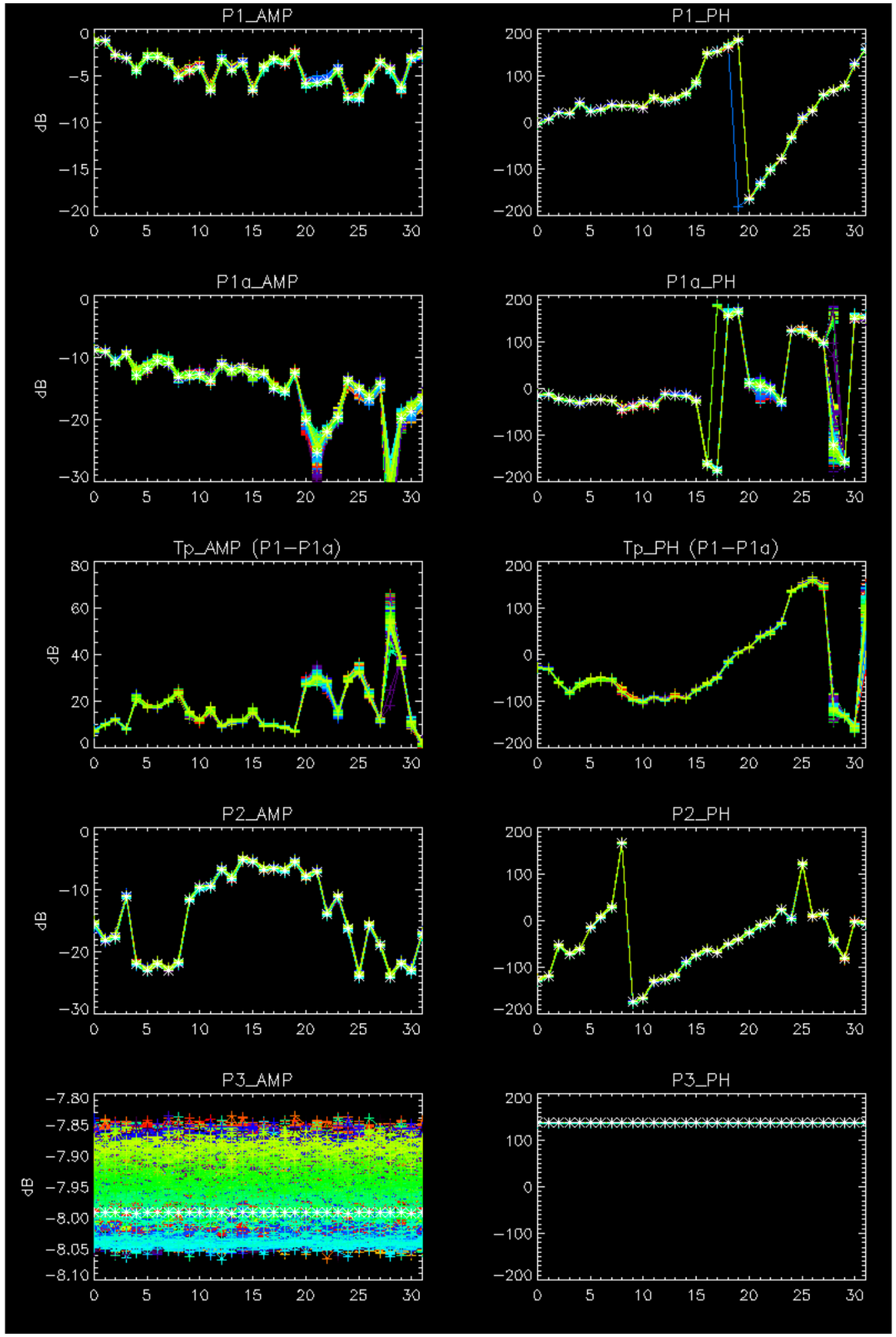

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
Average P1a [dB]
0
−10
−20
−30
−40
Average P2 [dB]
0
−10
−20
−30
−40
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

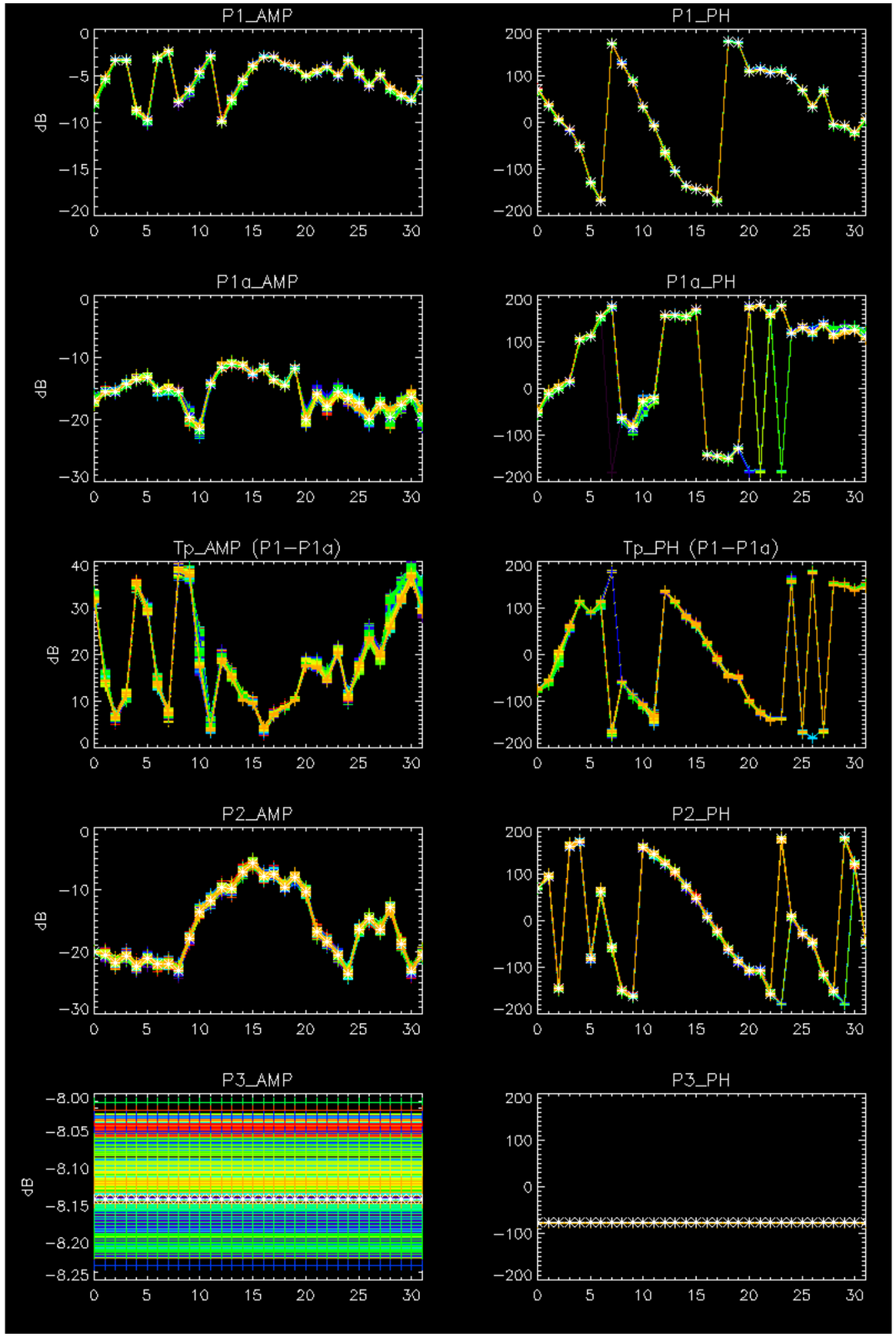

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
19−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−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
00
03
06
09
12
15
18
21
00
03
18−Jul
19−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

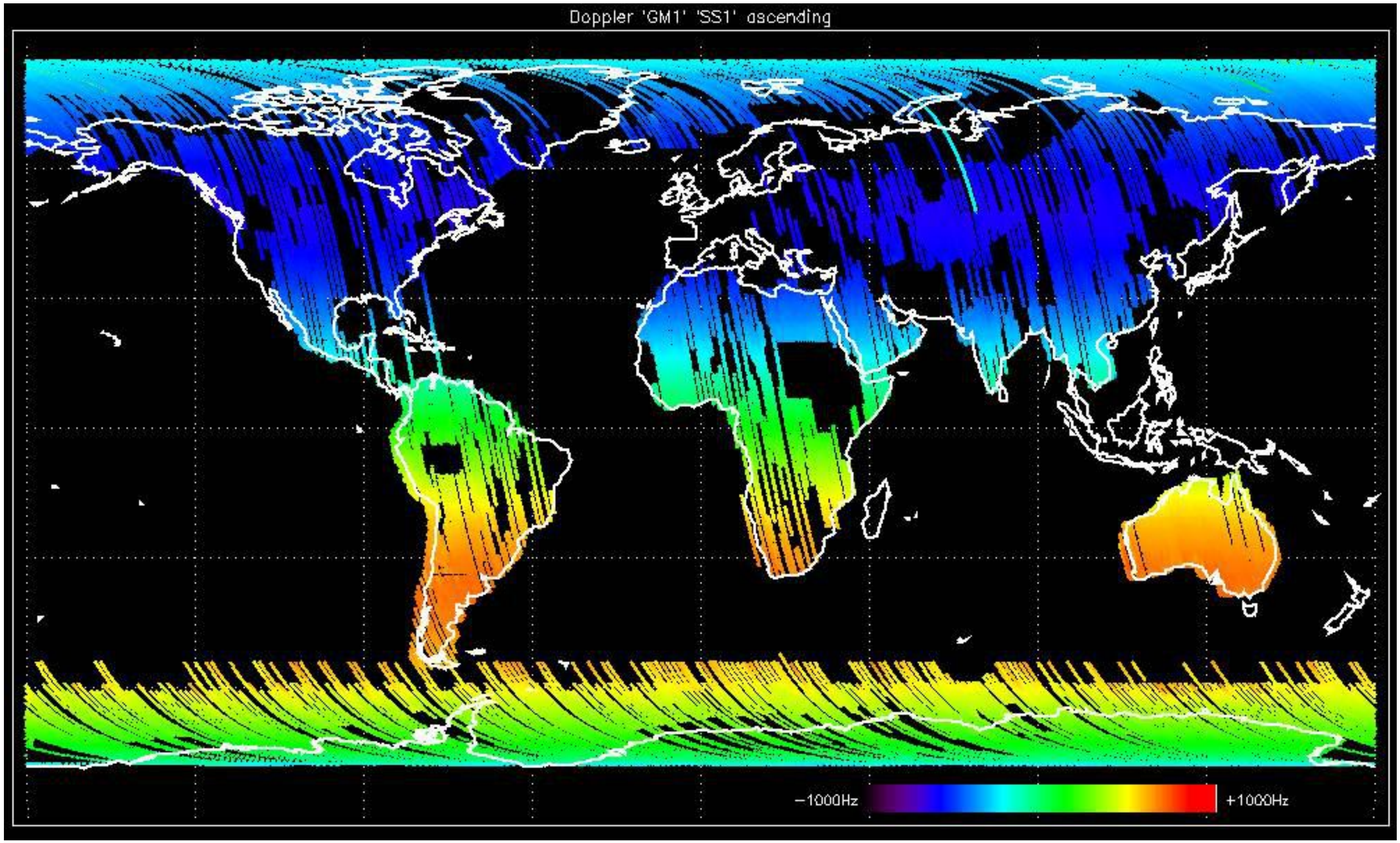
No anomalies observed.

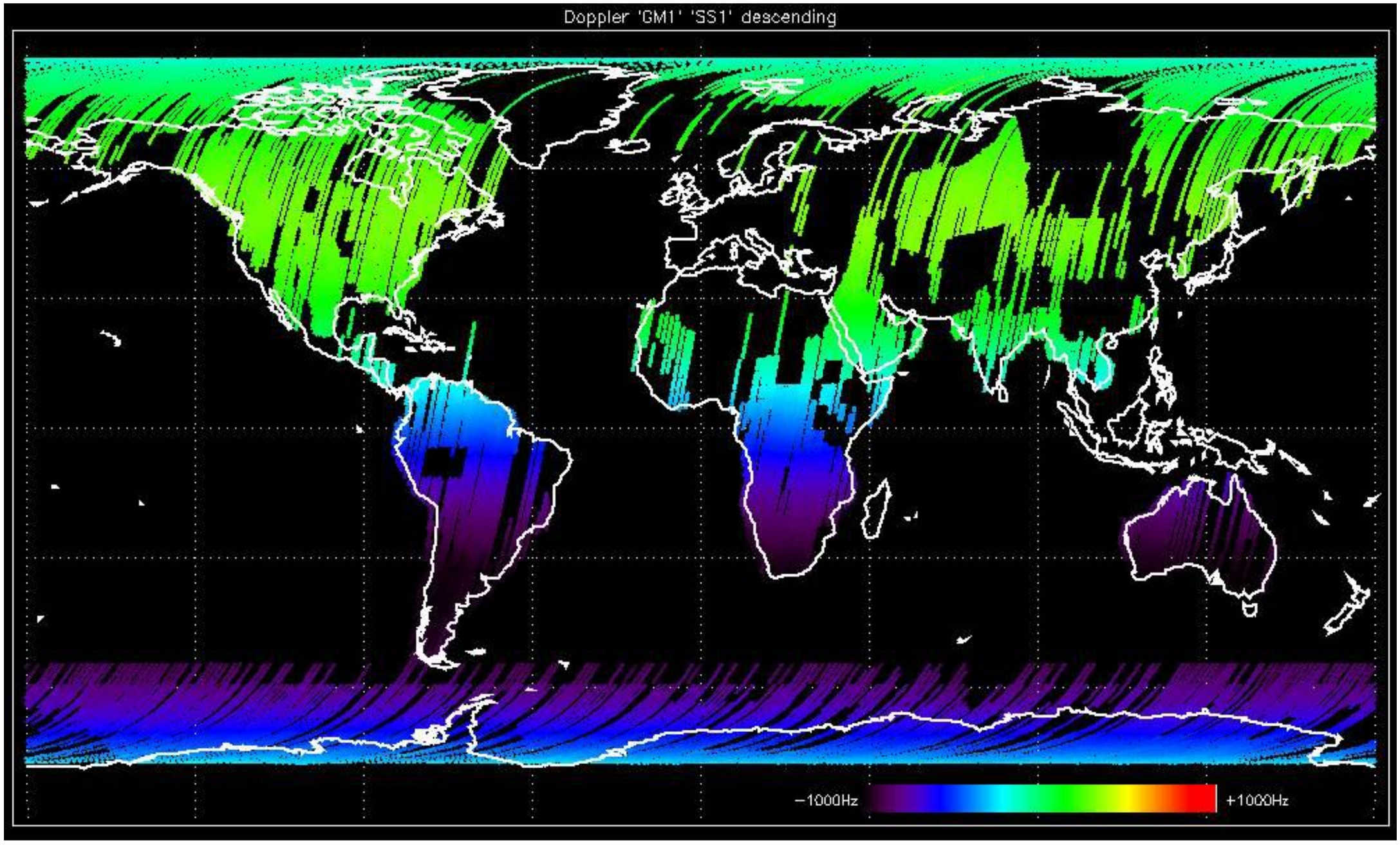

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

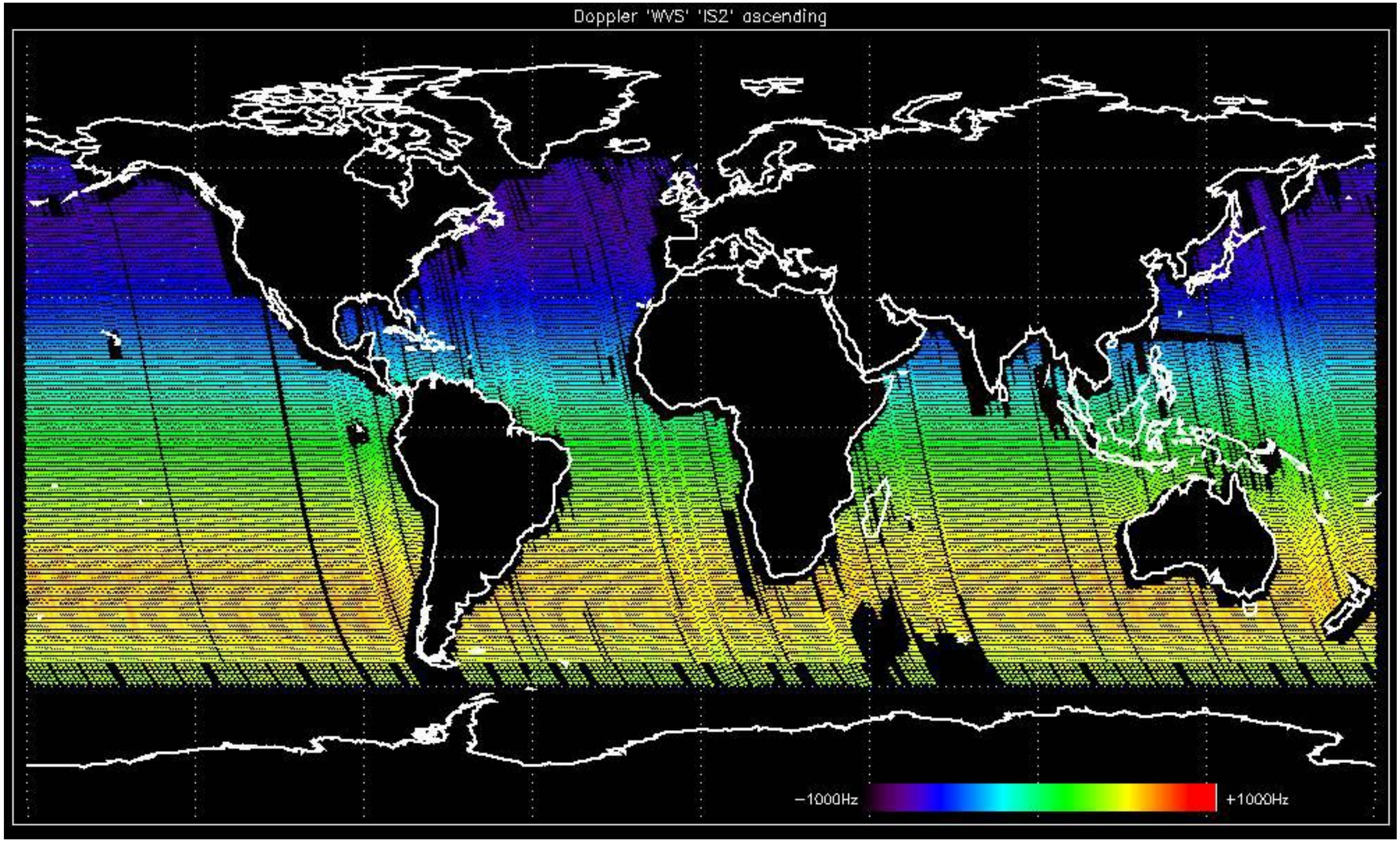

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

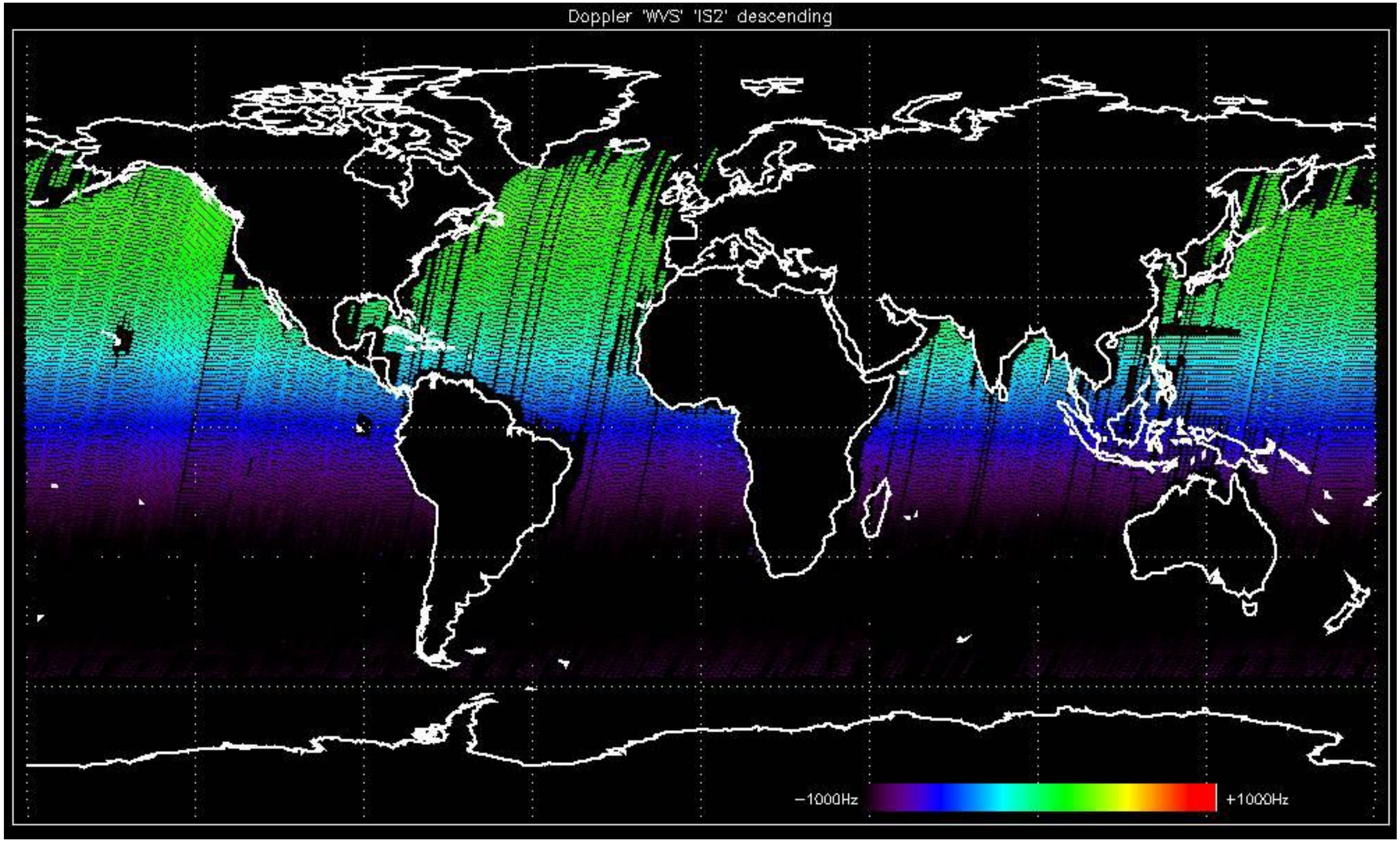
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

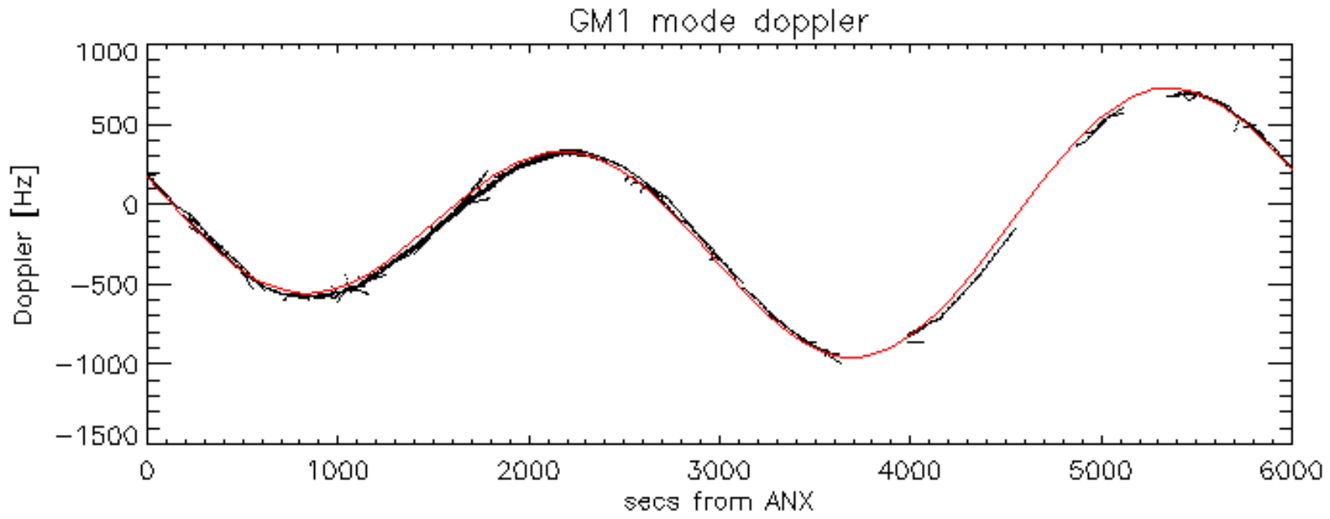
Preliminary report.The data is not yet controled

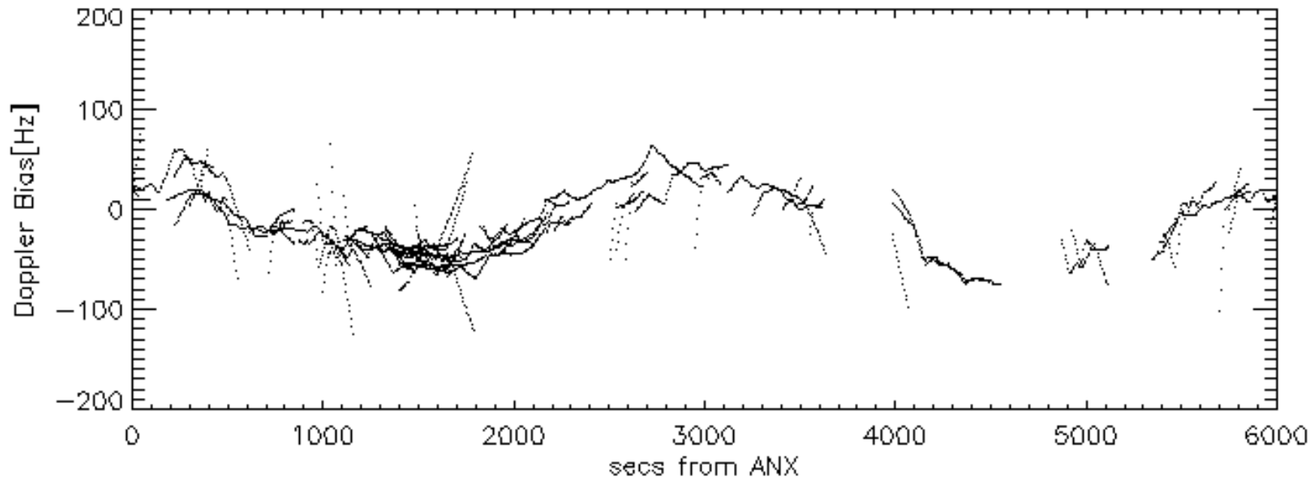

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

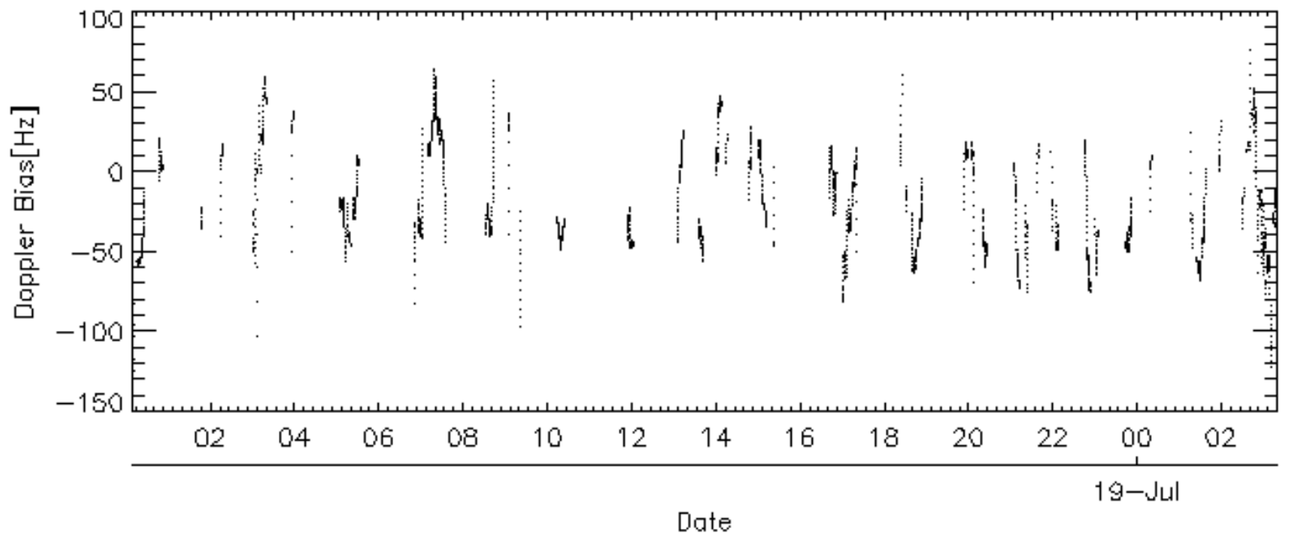

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

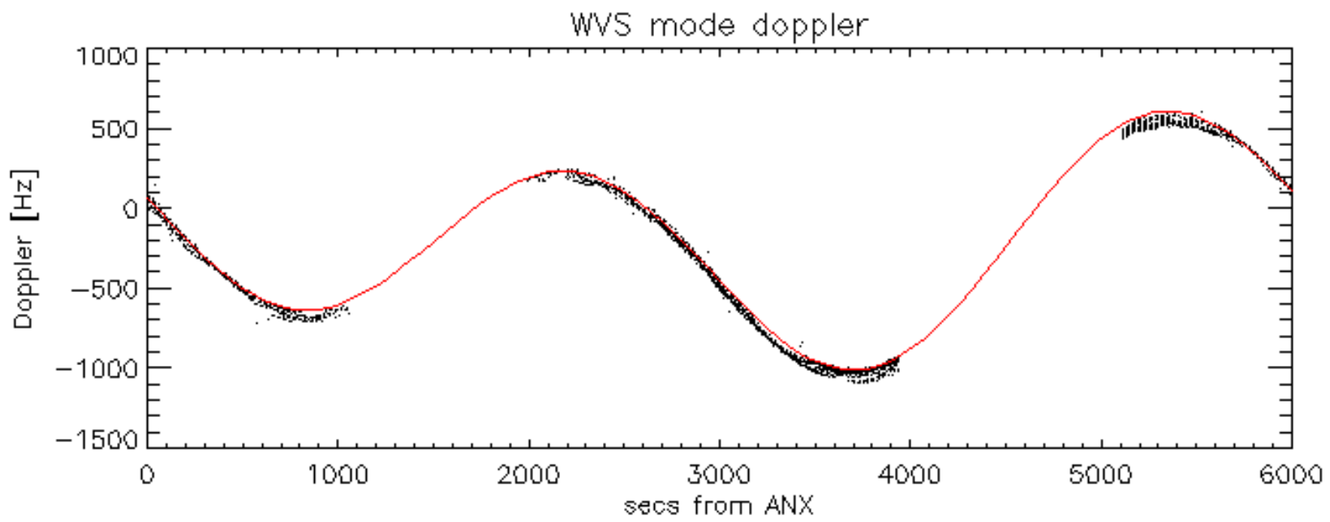

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

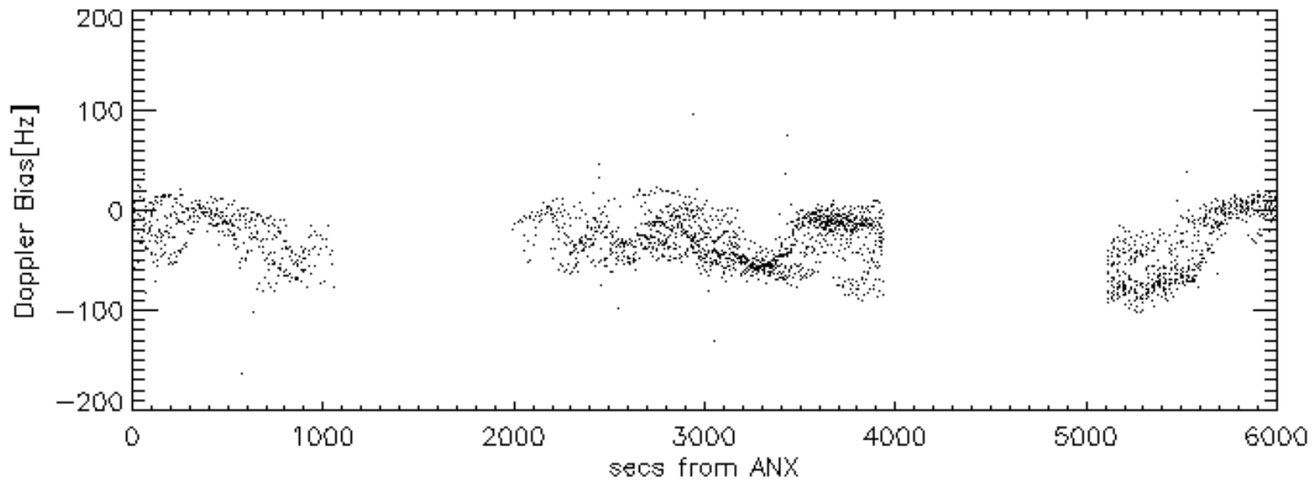

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

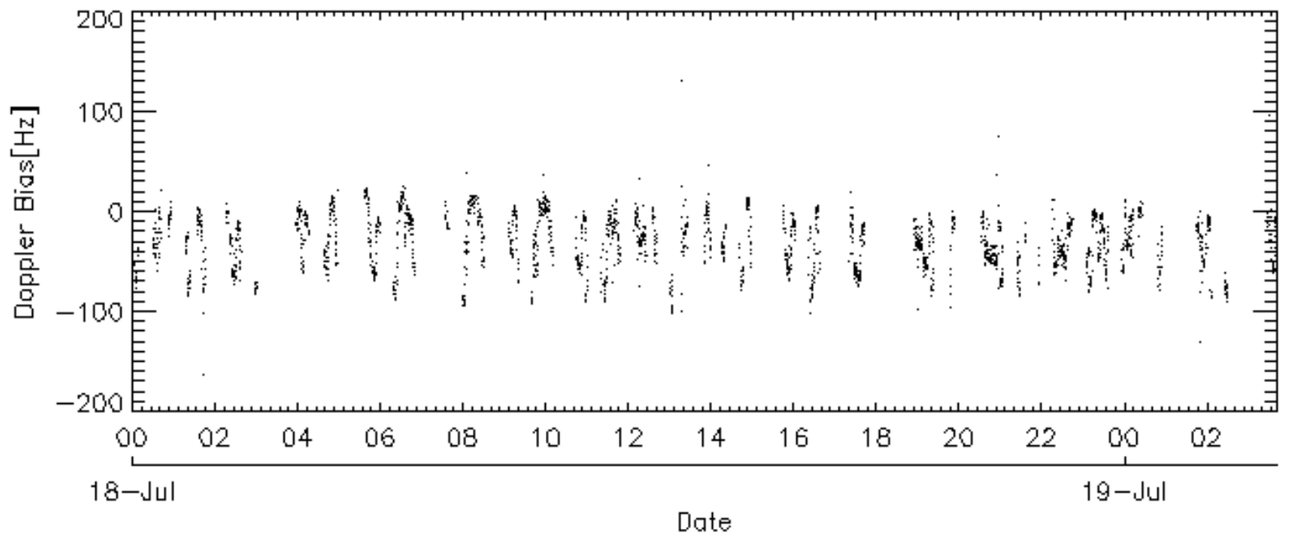

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

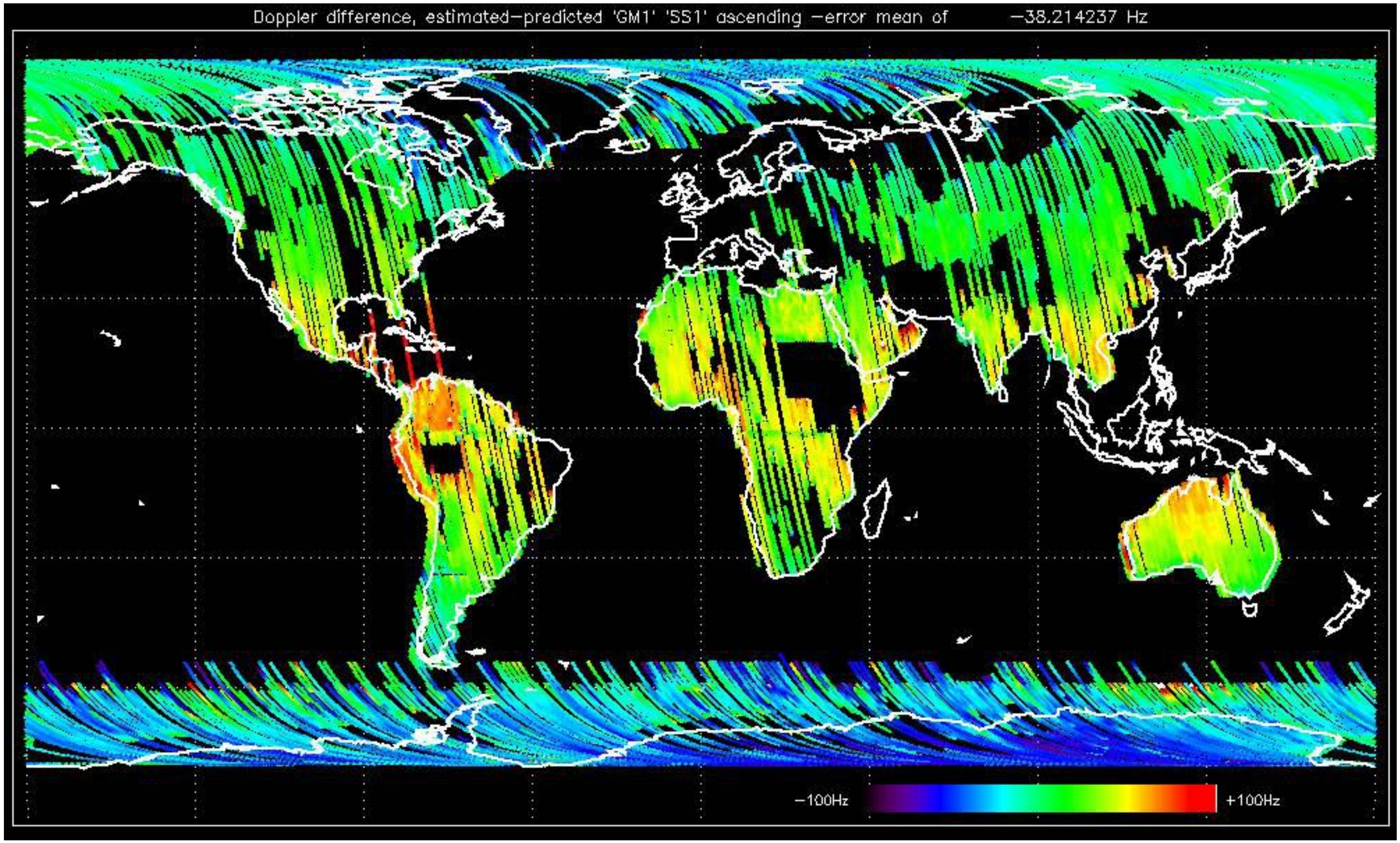

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

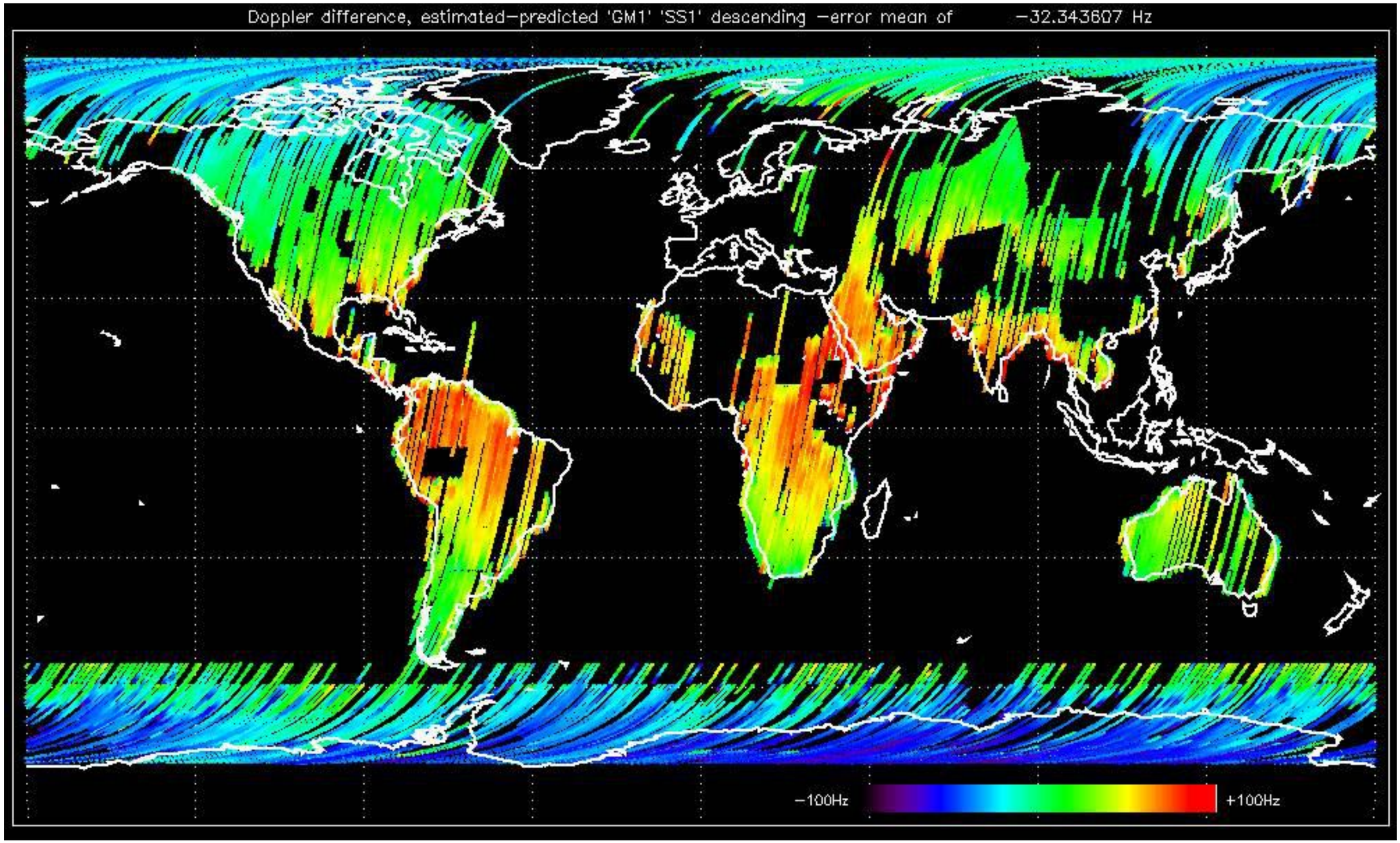

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
19−Jul
Date

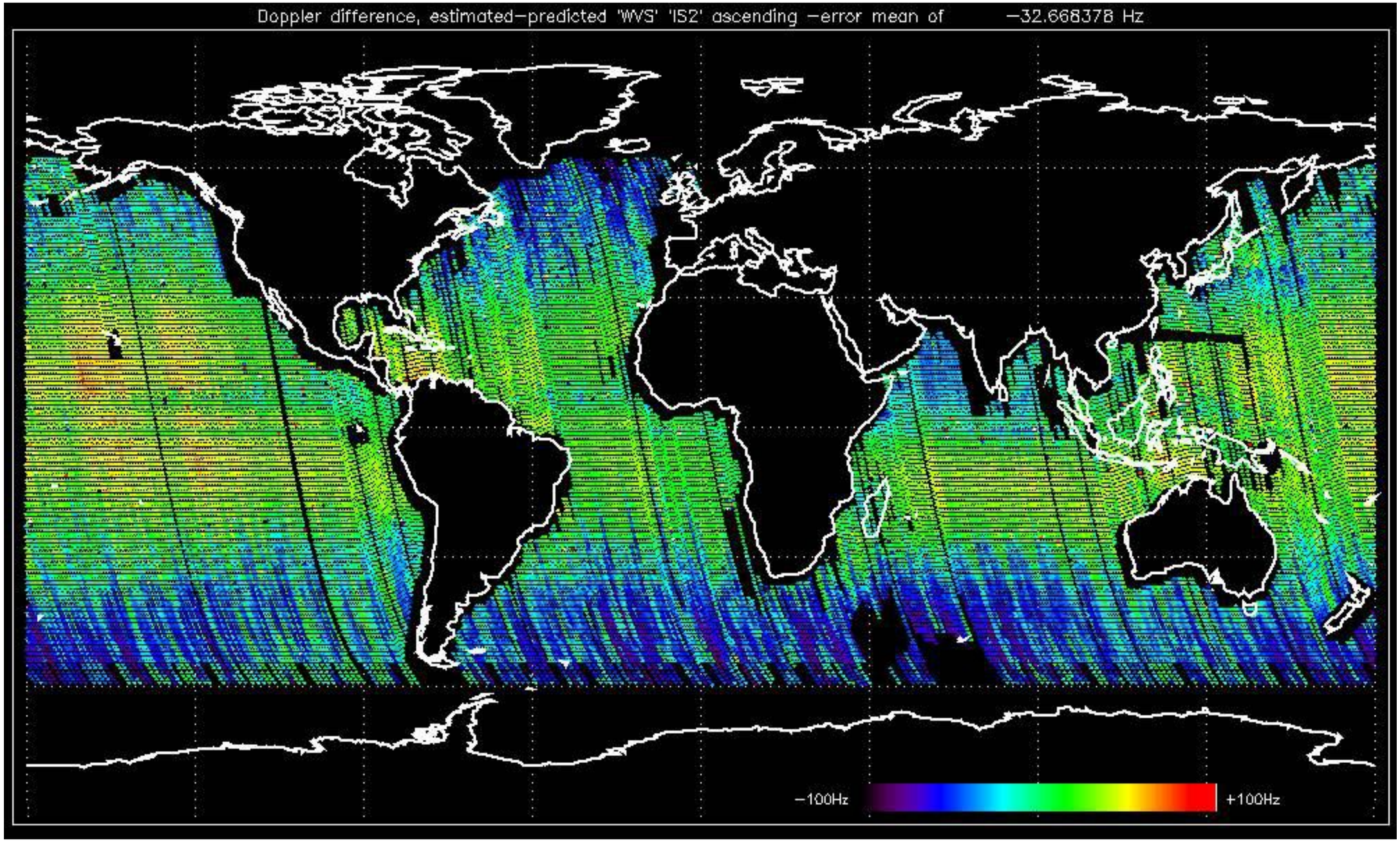

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

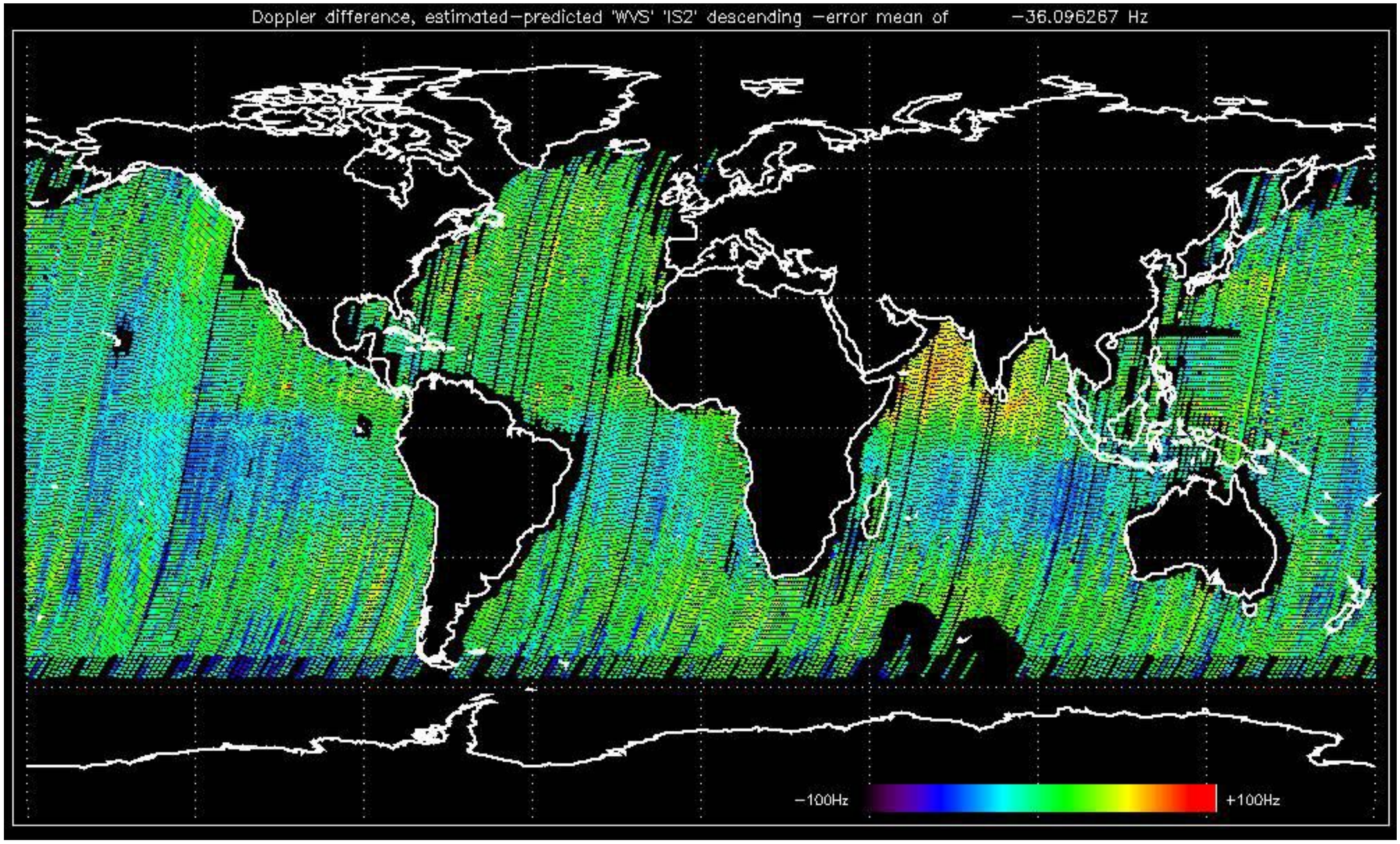

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −38.214237 Hz
−100Hz
+100Hz

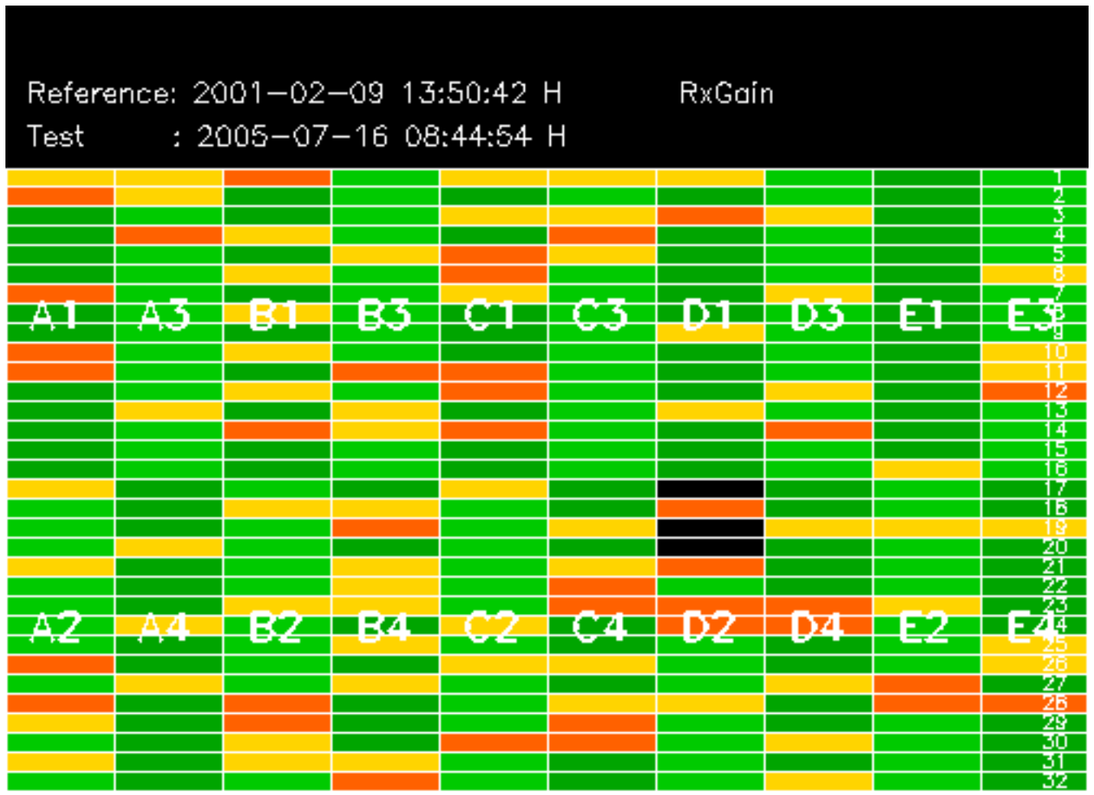

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −32.343607 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.668378 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −36.096267 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-07-16 08:44:54 H
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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27
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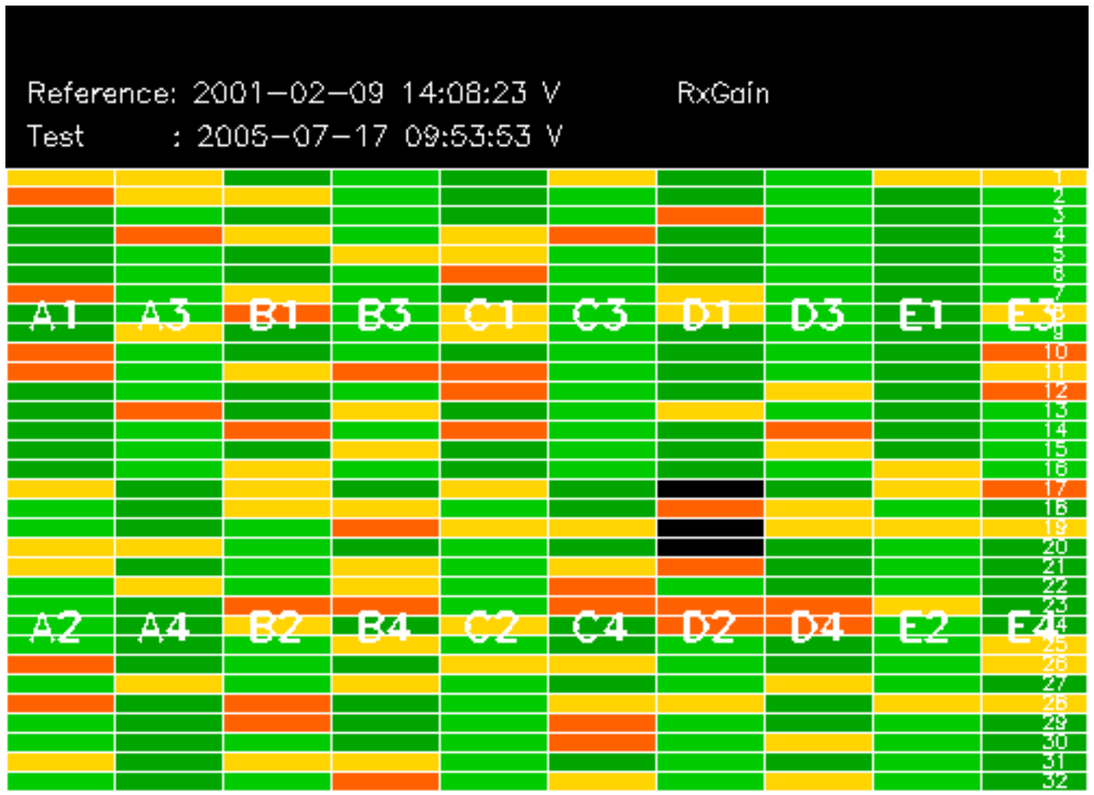
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-07-16 08:44:54 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 : 2005-07-17 09:53:53 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
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9
10
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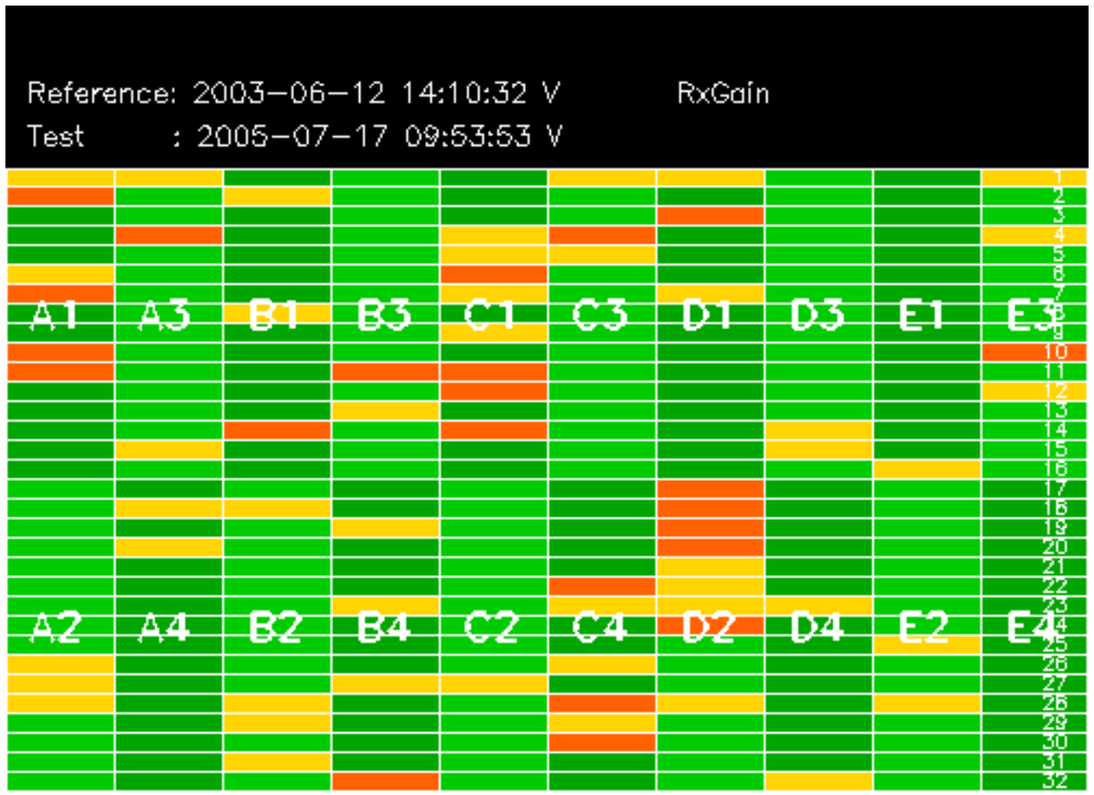
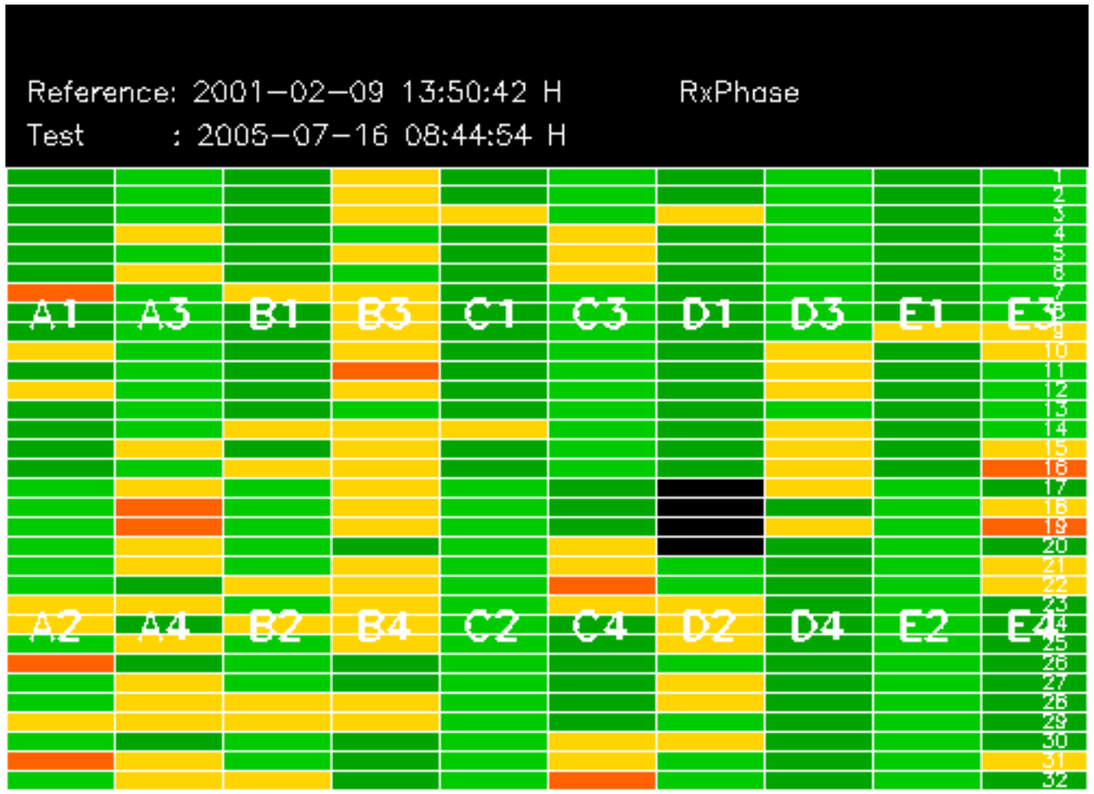
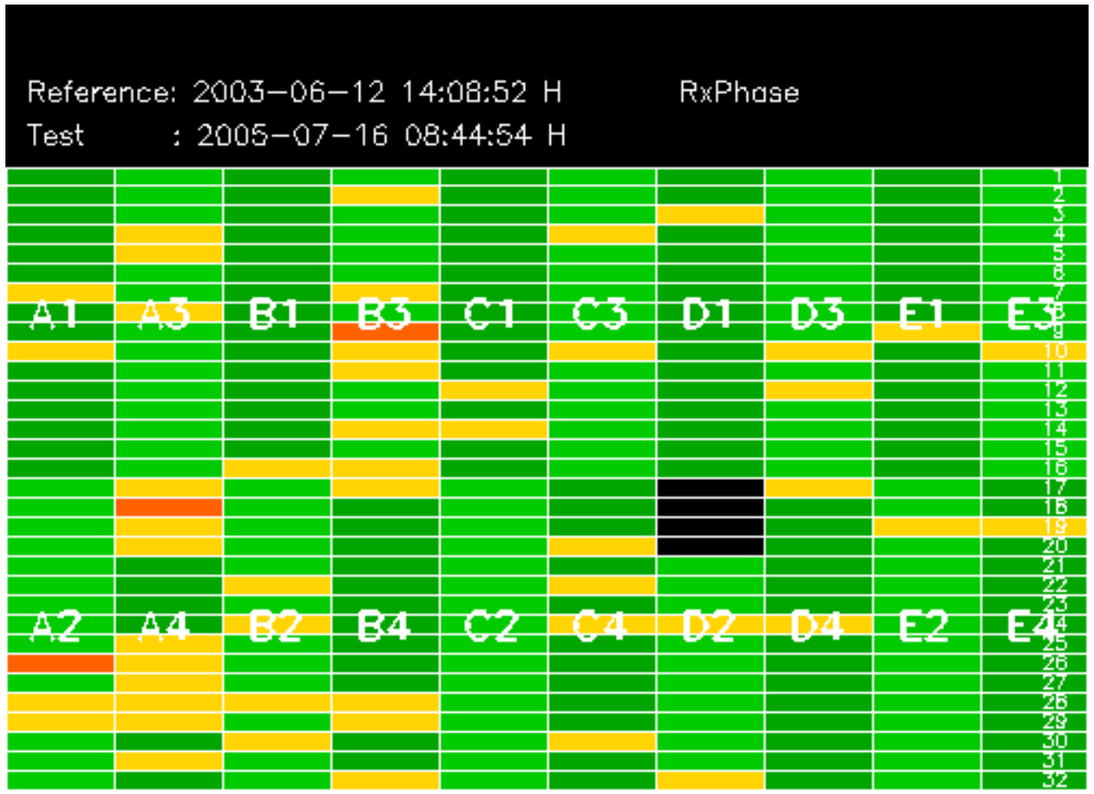
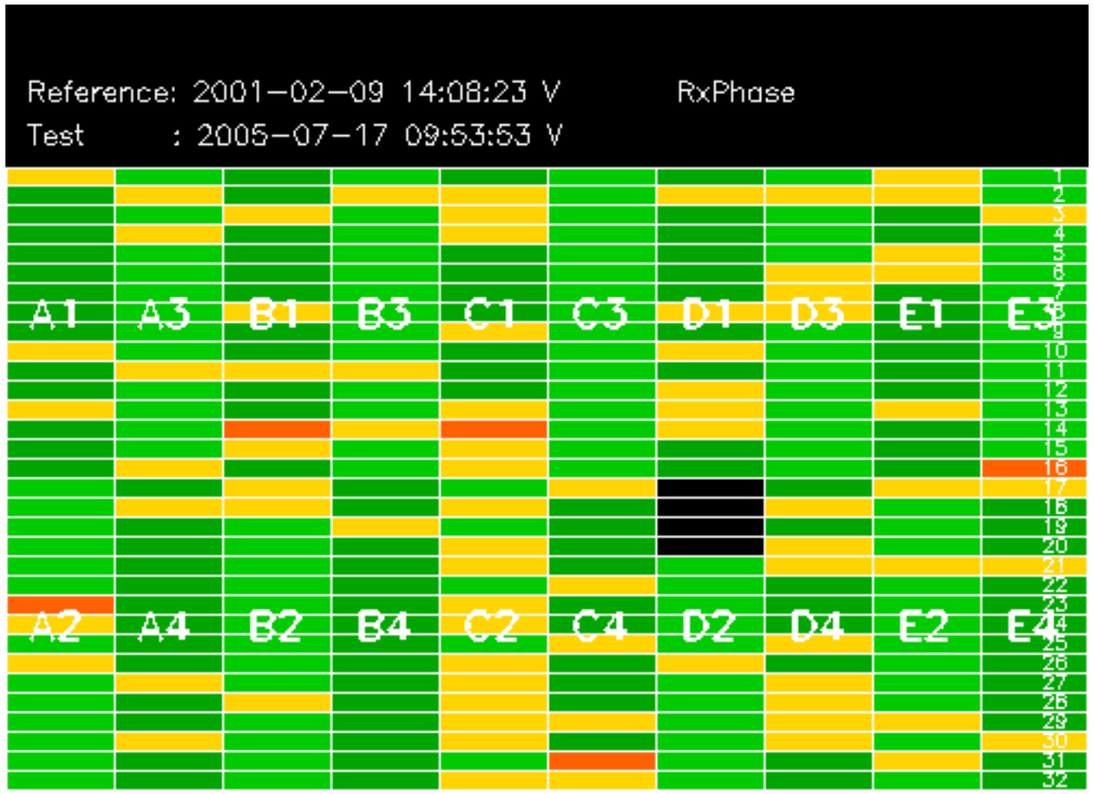

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-17 09:53:53 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-07-16 08:44:54 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 : 2005-07-16 08:44:54 H
RxPhase
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 : 2005-07-17 09:53:53 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
4
5
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8
9
10
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30
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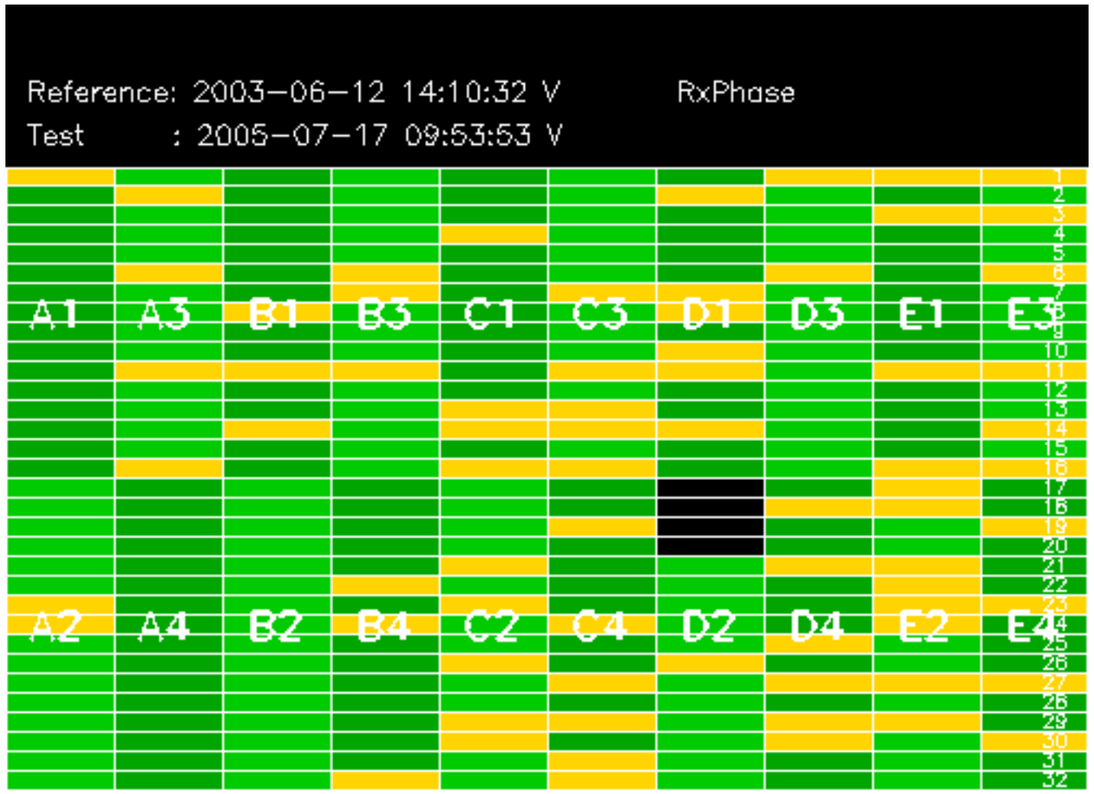
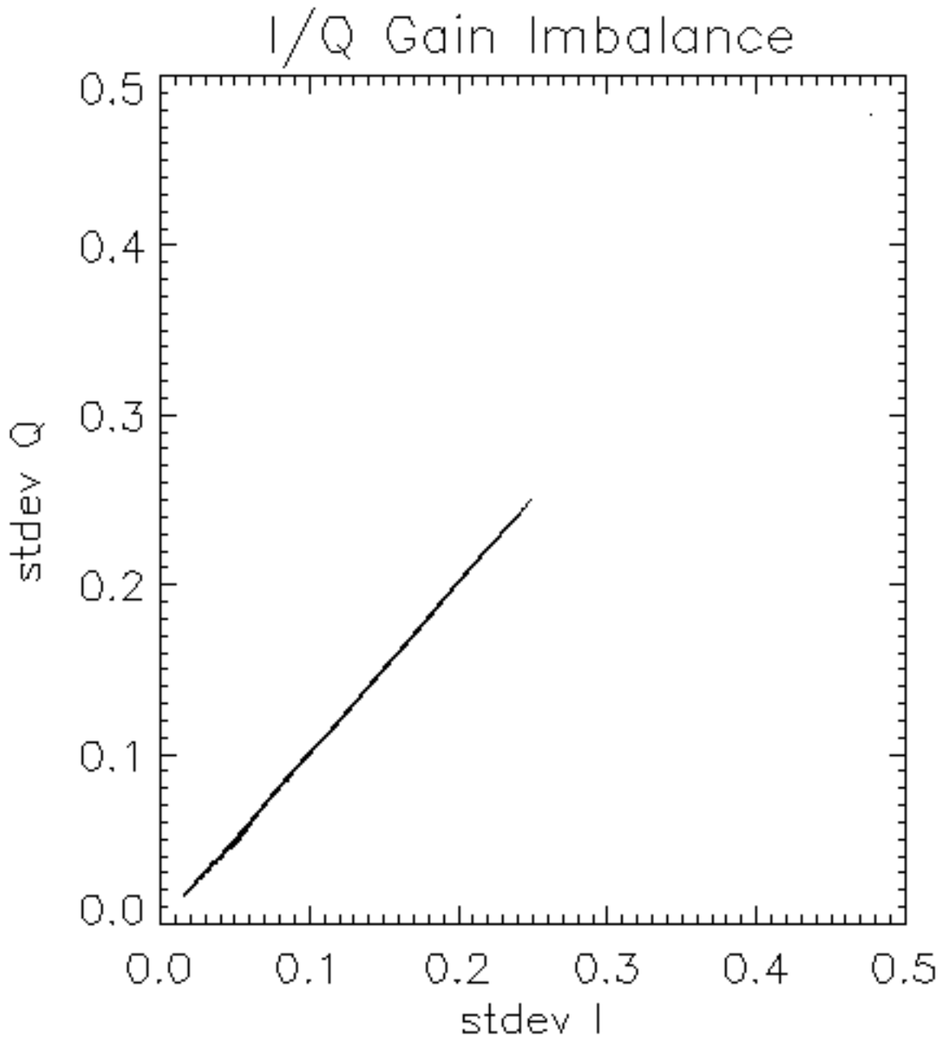
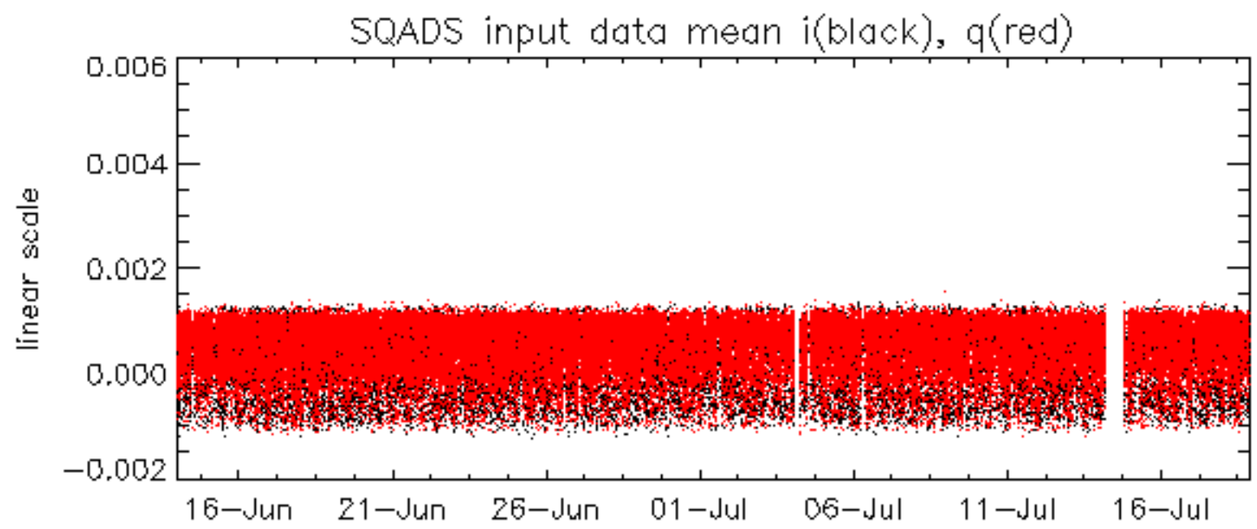
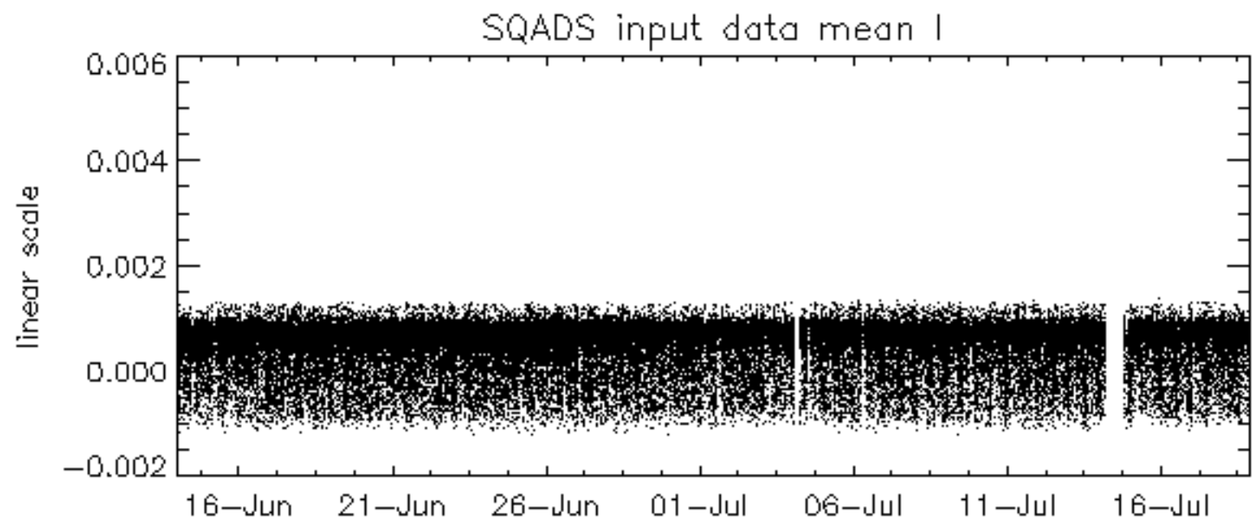
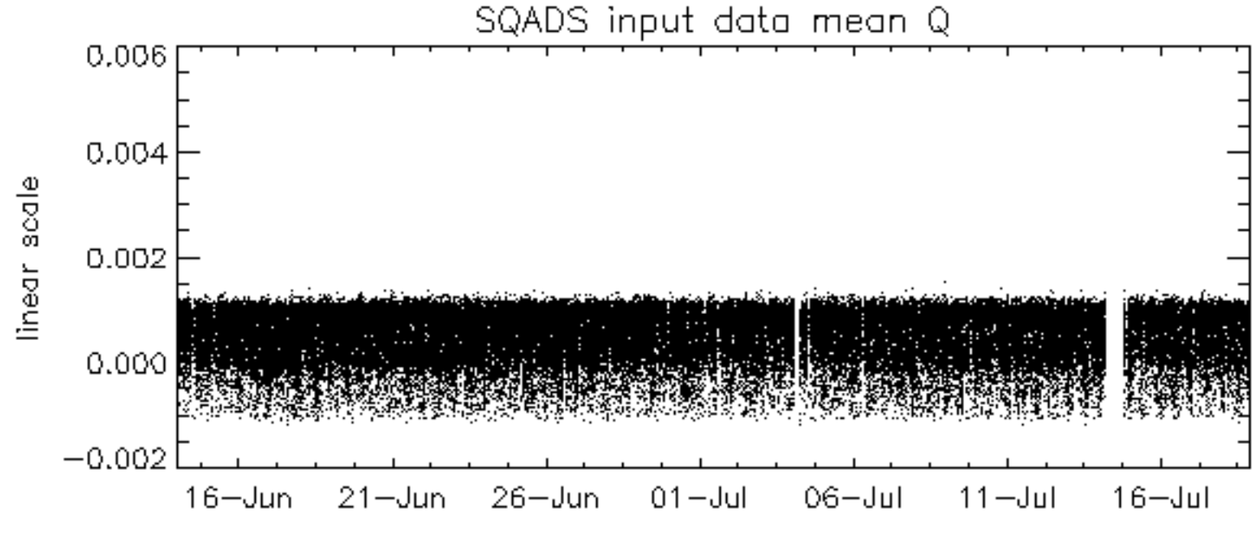
32

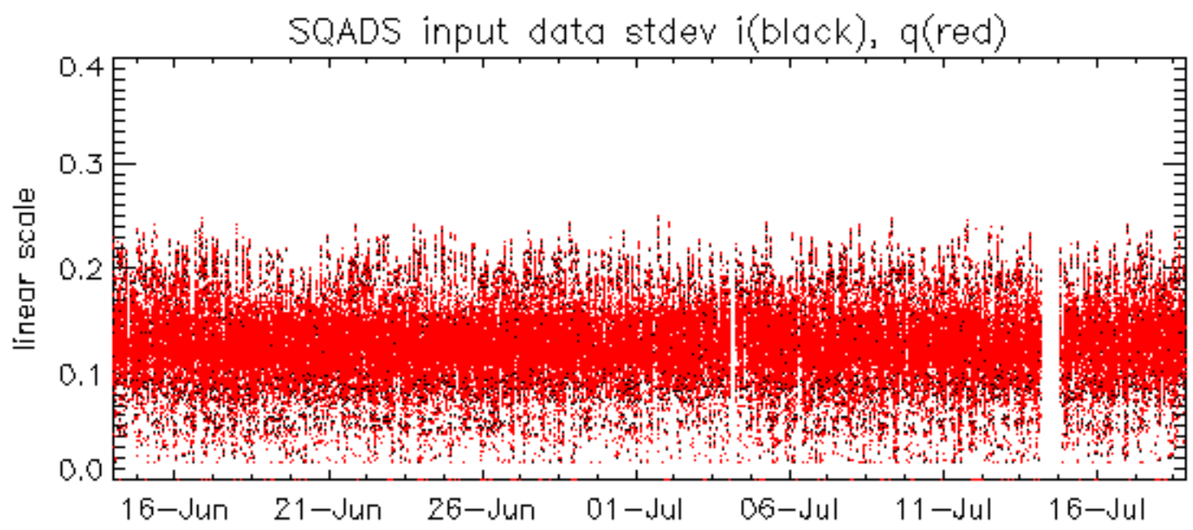

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-17 09:53:53 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

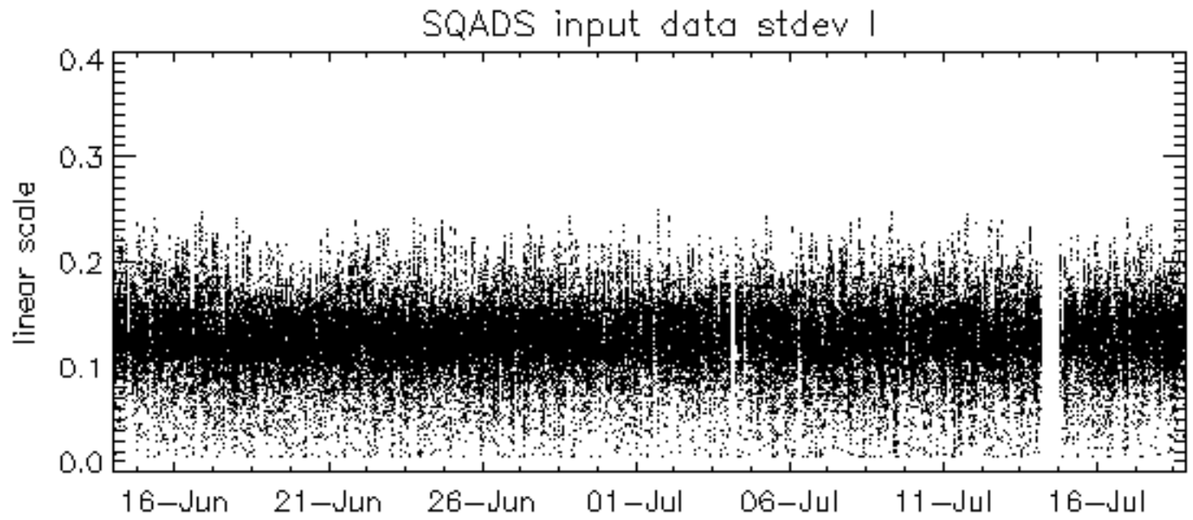

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4
0.5

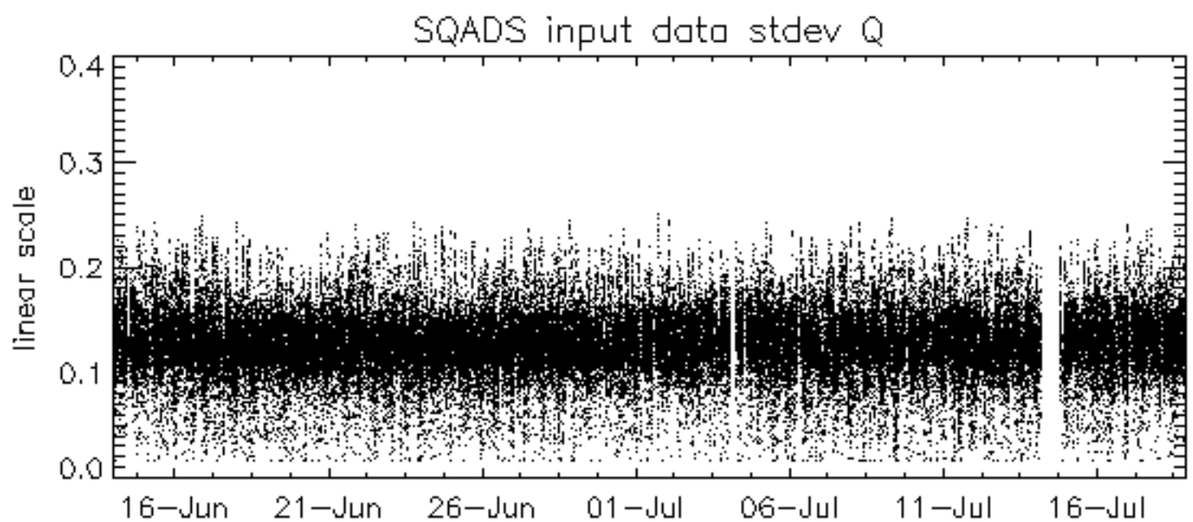

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul

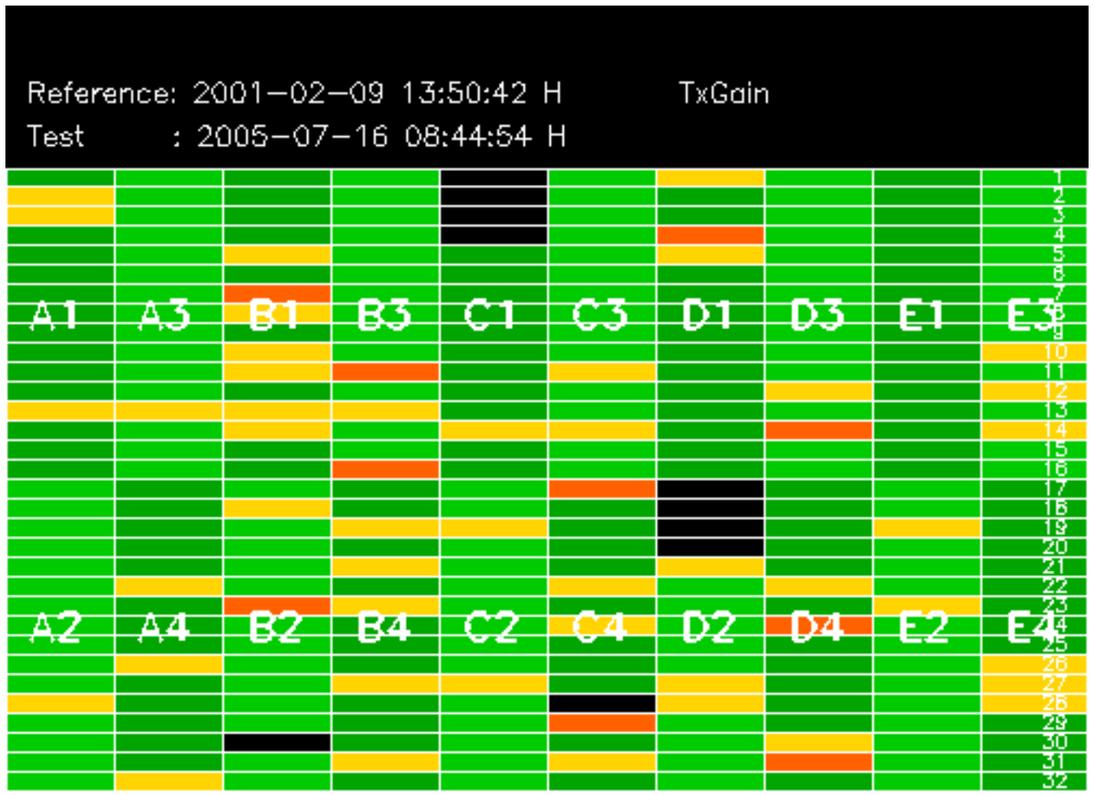

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Jun
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-07-16 08:44:54 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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27
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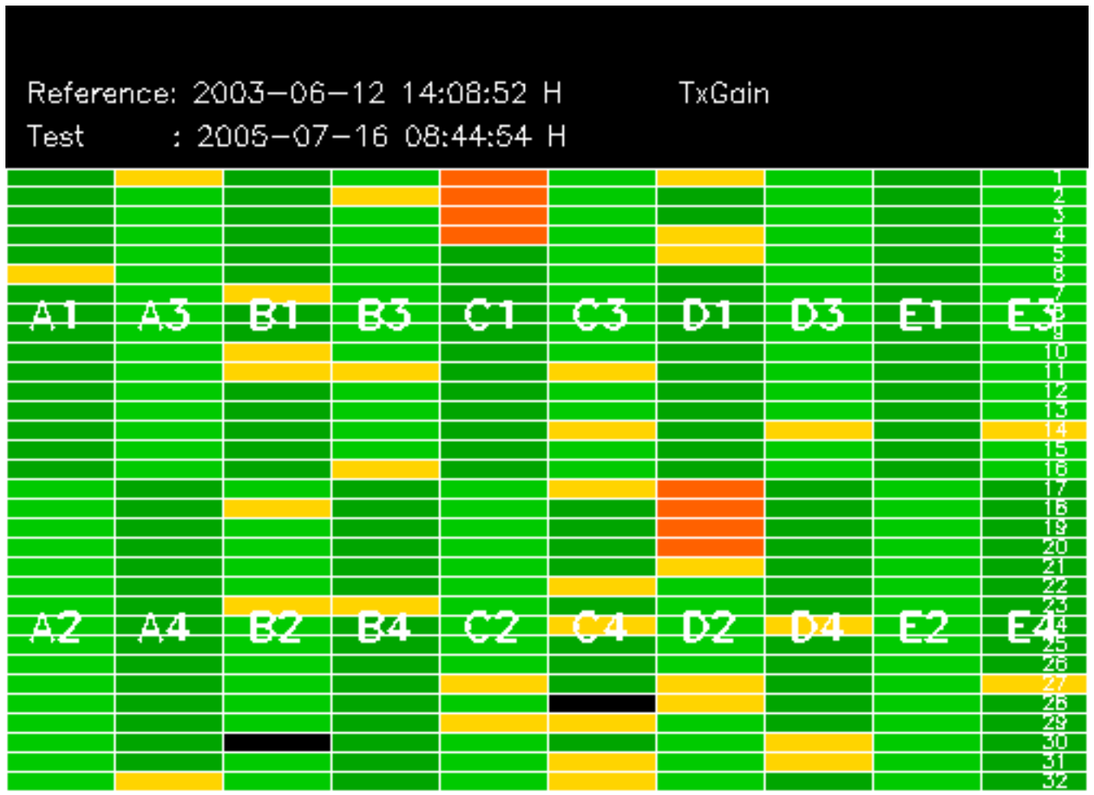
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-07-16 08:44:54 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
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17
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21
22
23
24
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26
27
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29
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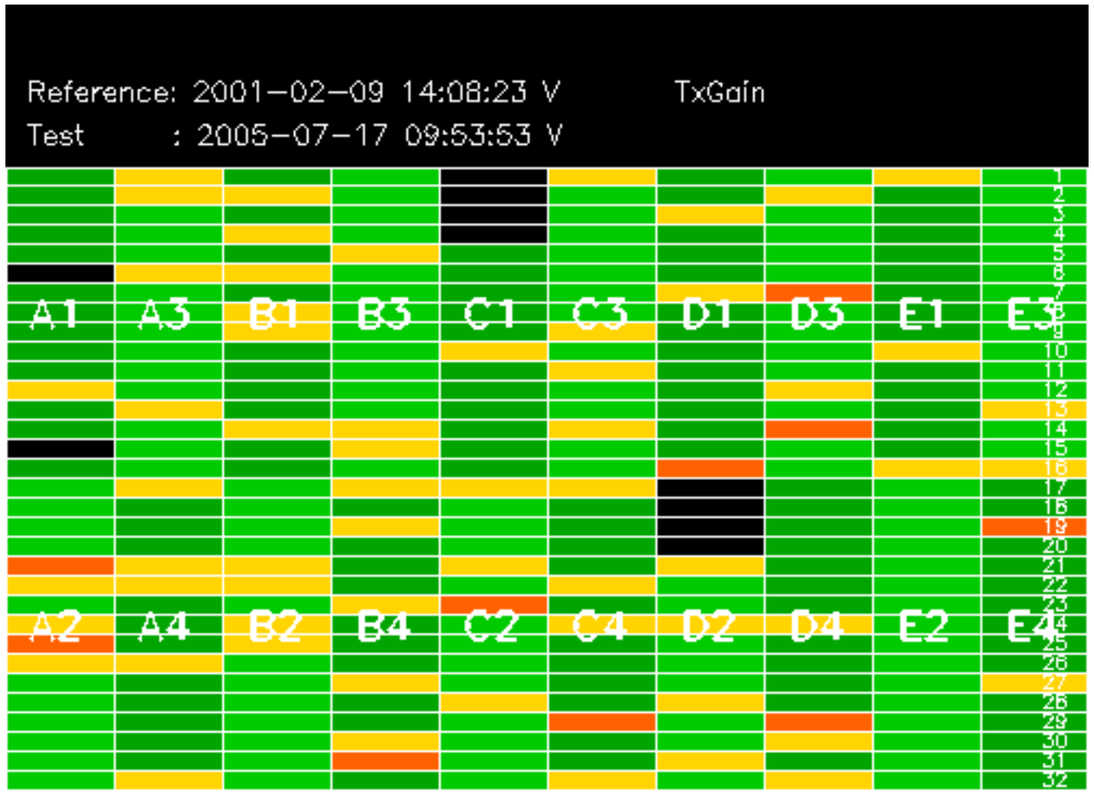
31
32


Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-07-17 09:53:53 V
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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23
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26
27
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29
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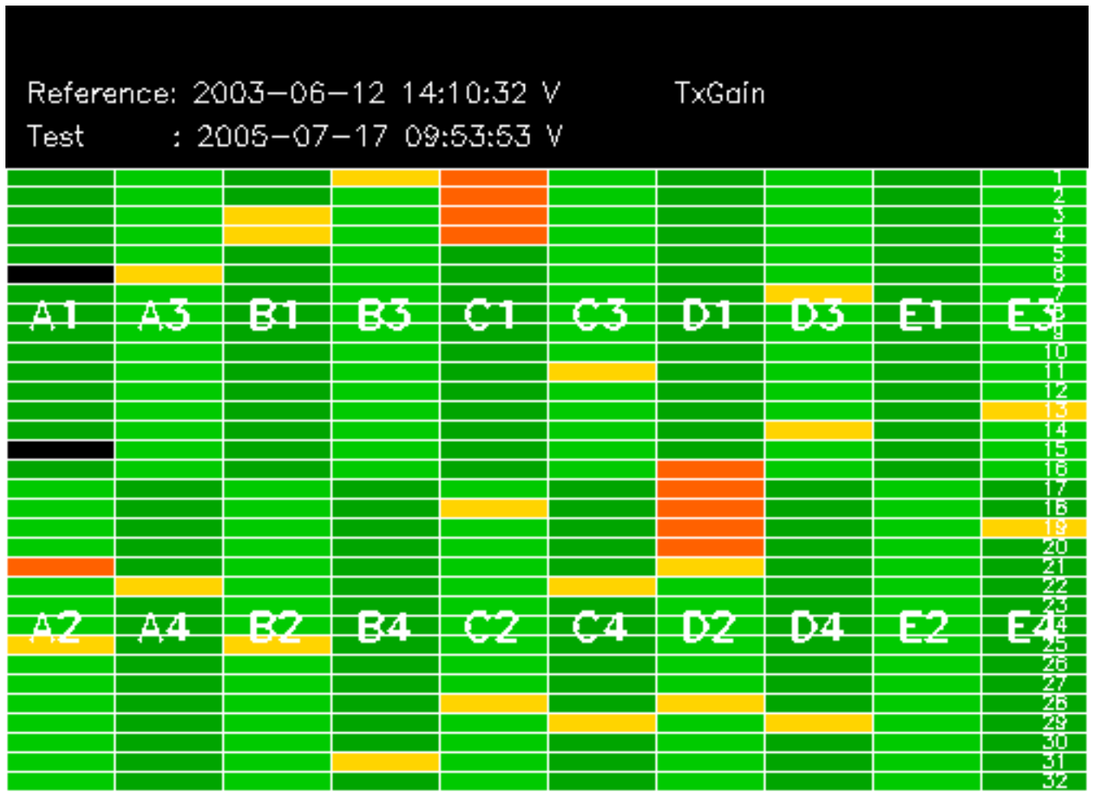
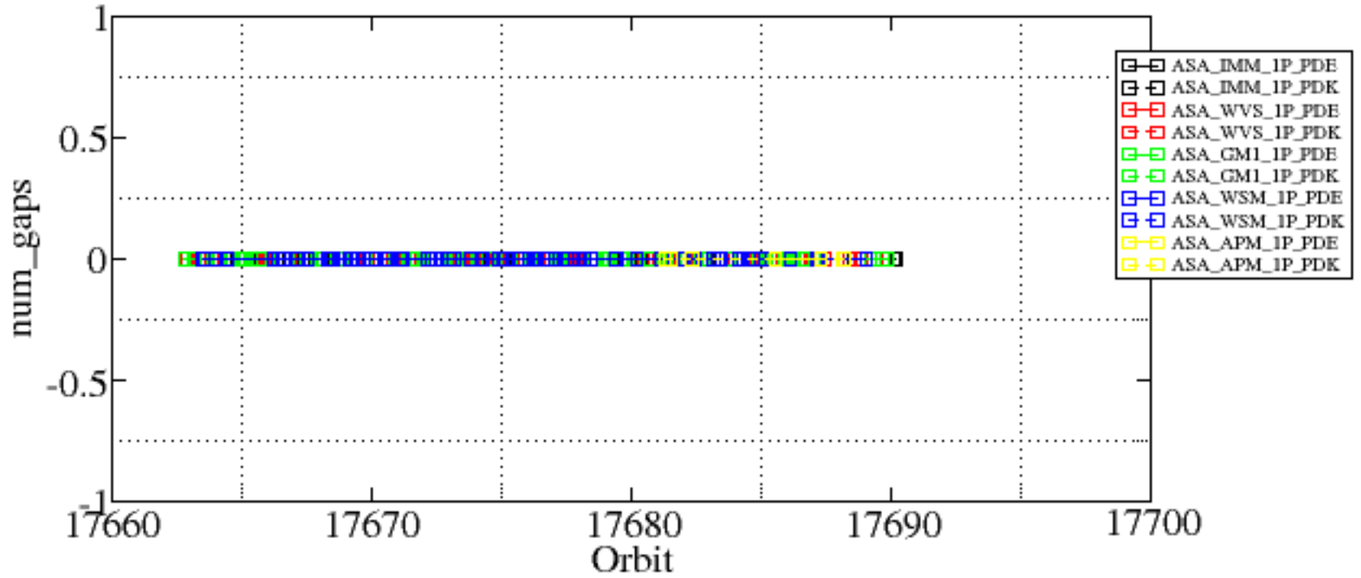
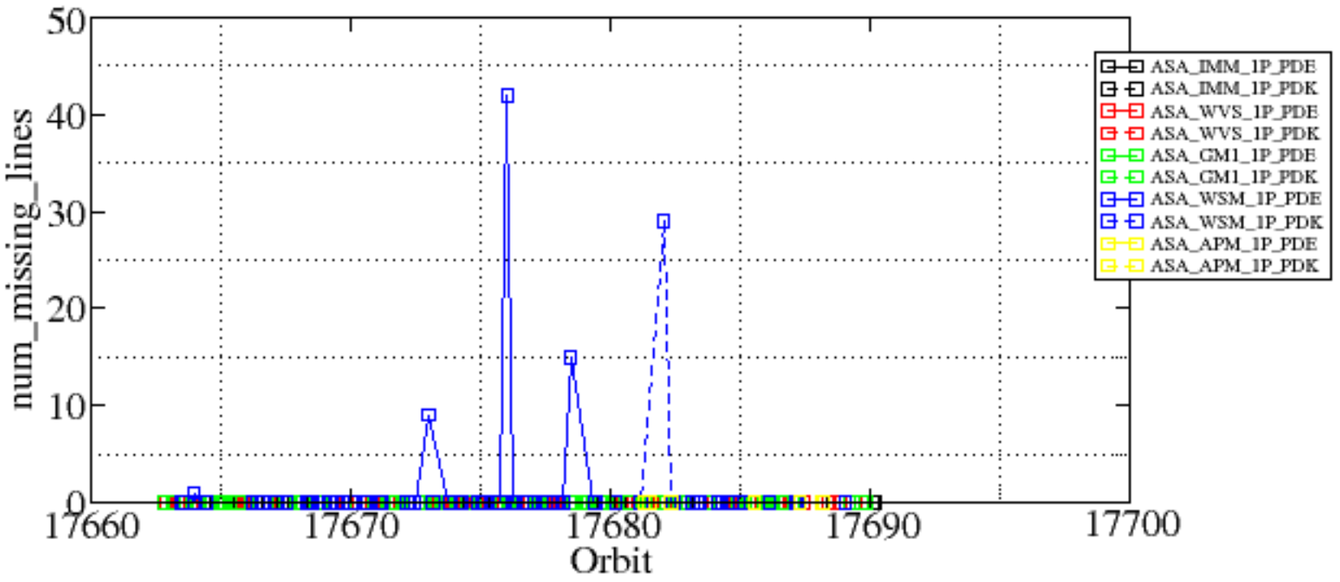
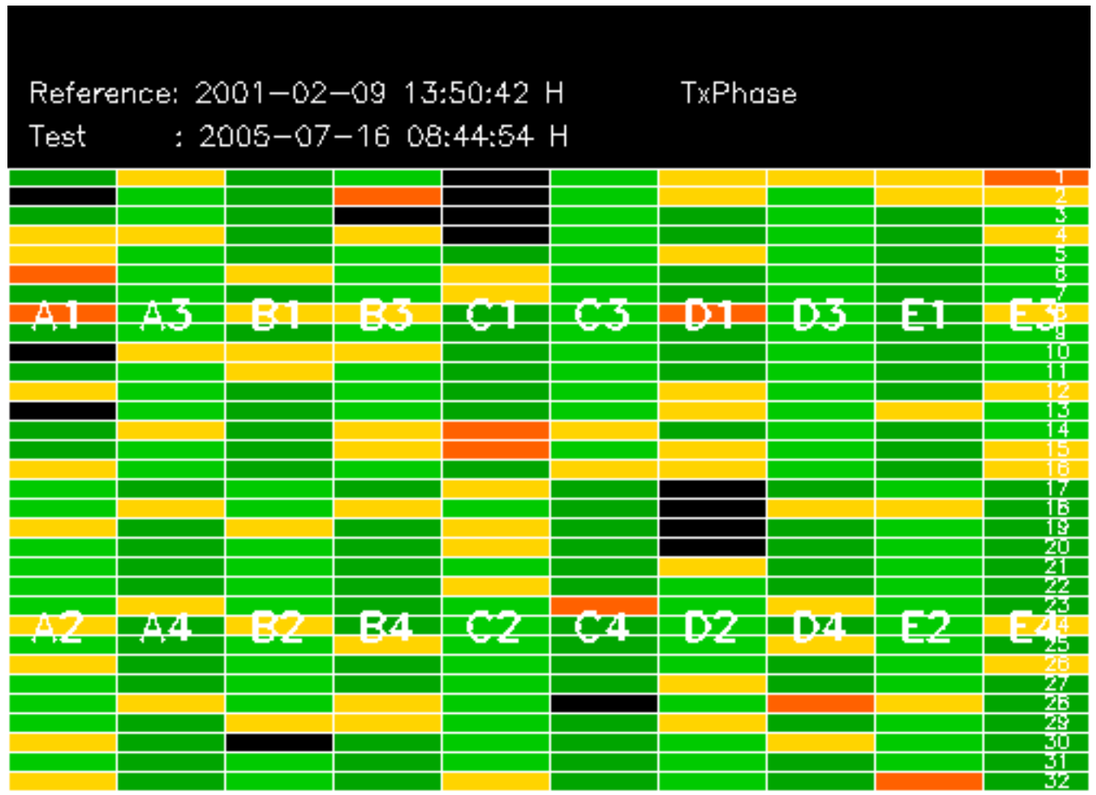
31
32

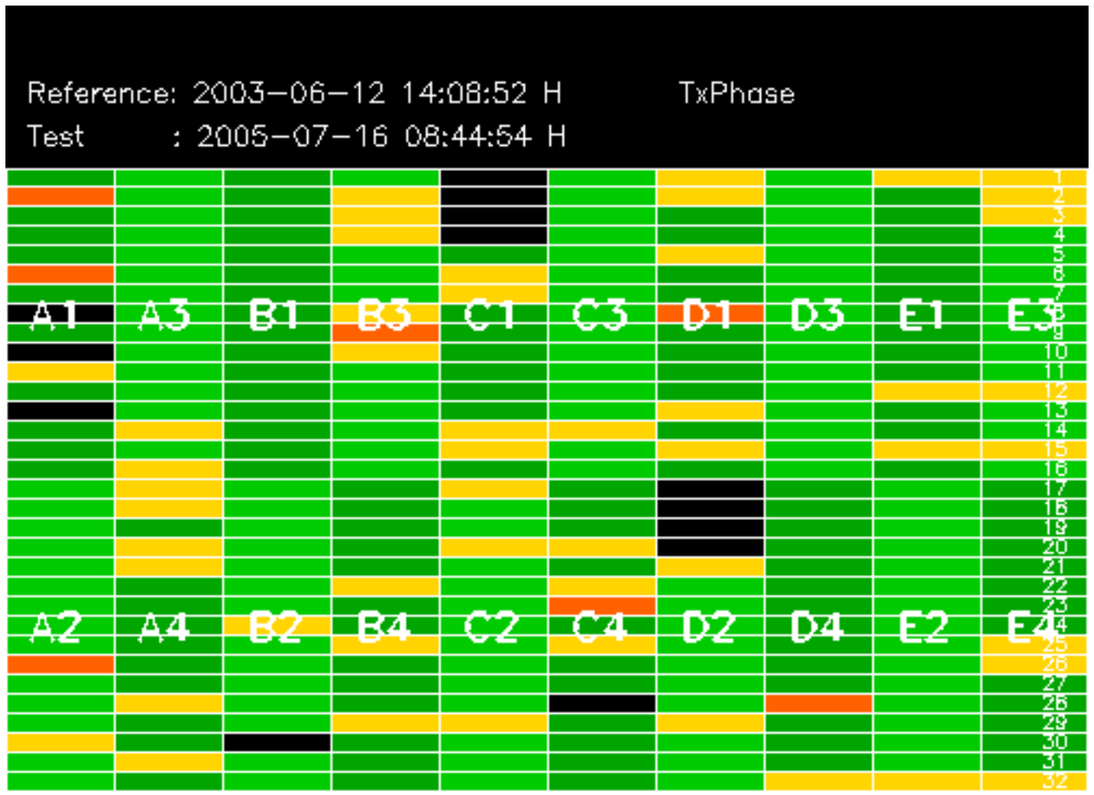

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-17 09:53:53 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

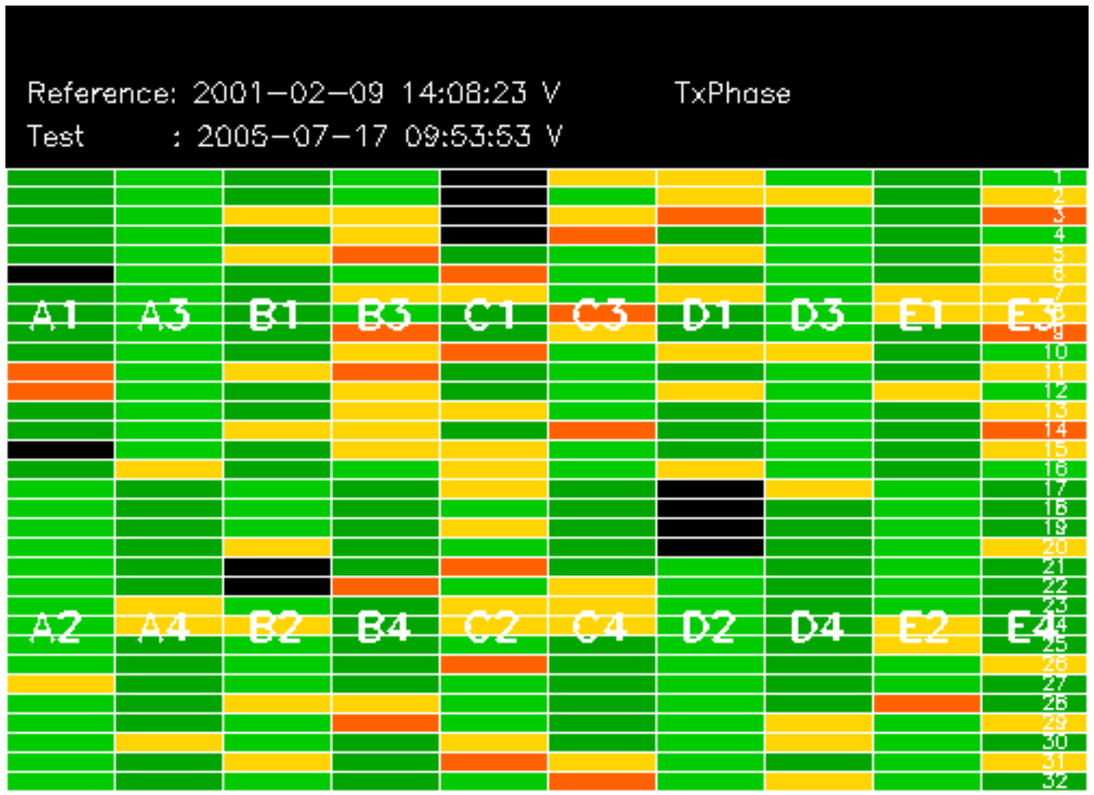
Summary of analysis for the last 3 days 2005071[789]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>

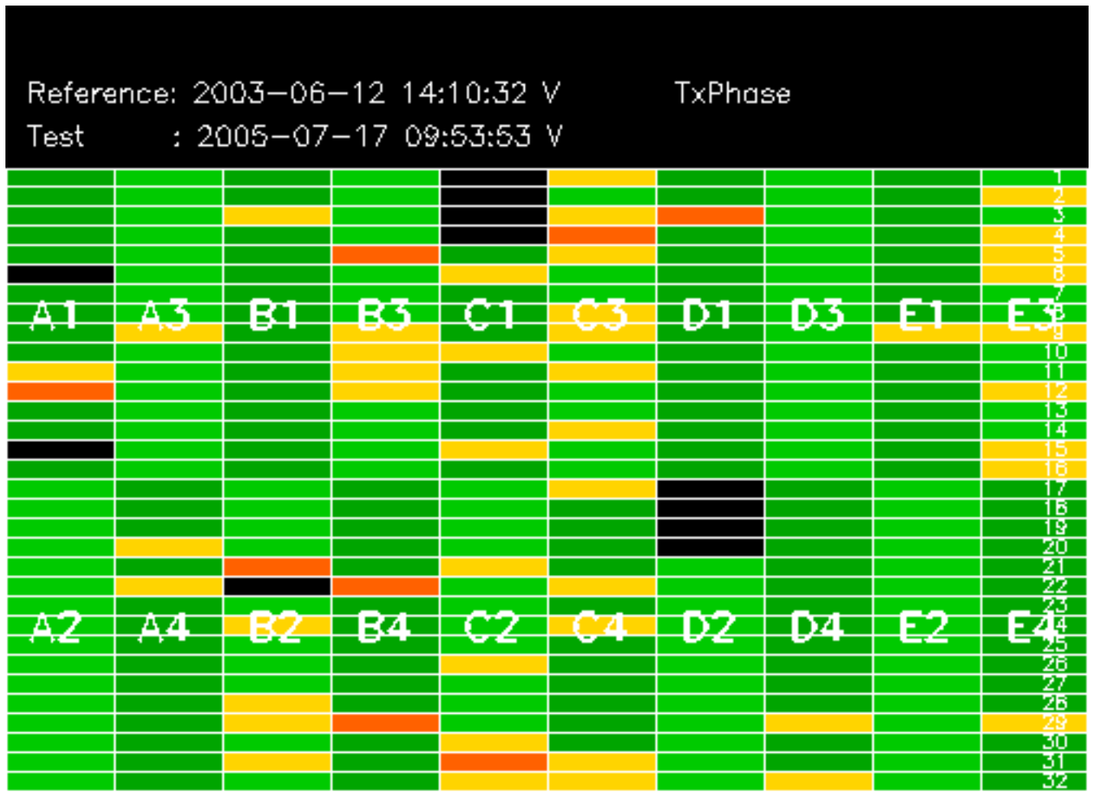

num_gaps
1
0.5
0
-0.5
-1
17660
17670
17680
17690
17700
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

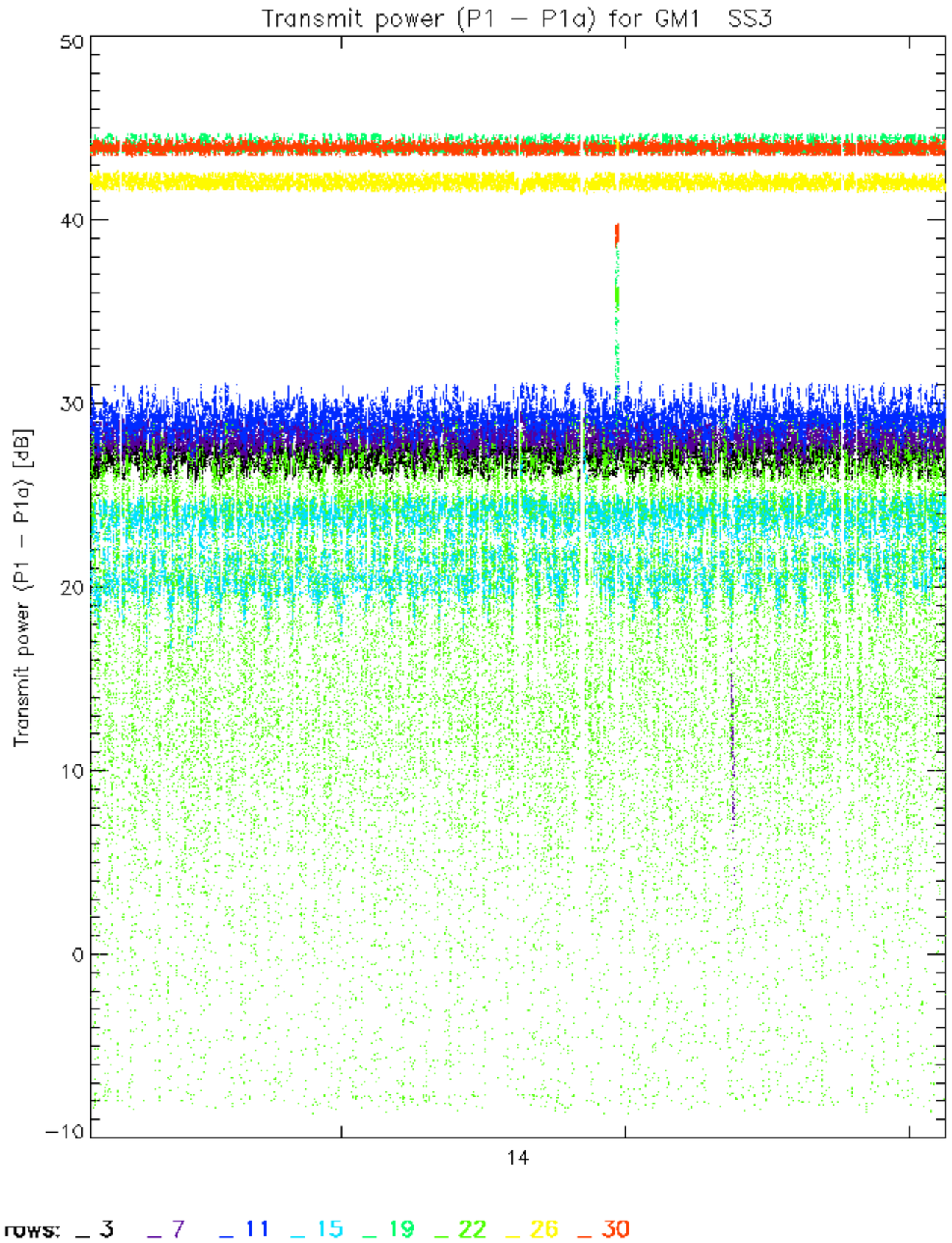

num_missing_lines
50
40
30
20
10
0
17660
17670
17680
17690
17700
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

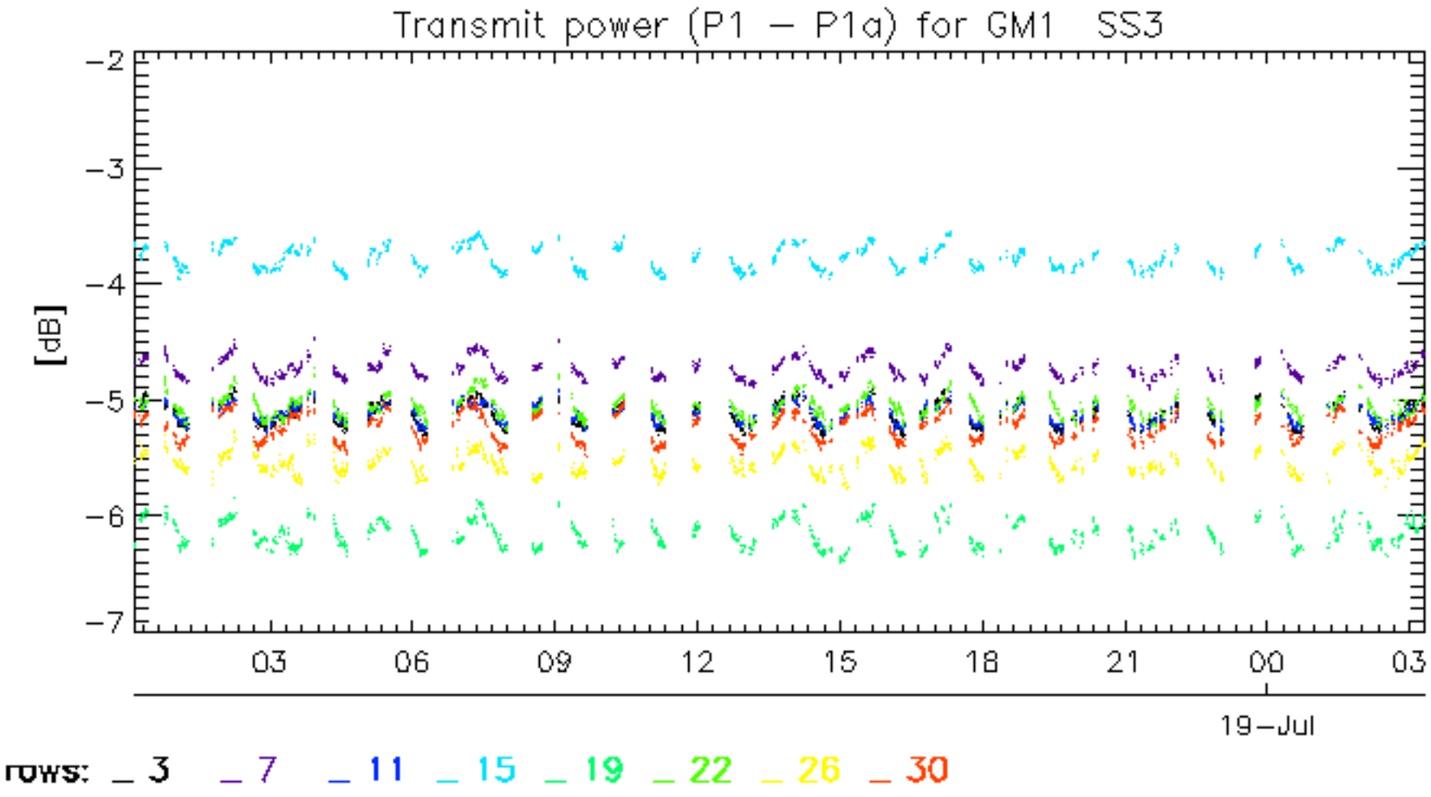

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-07-16 08:44:54 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

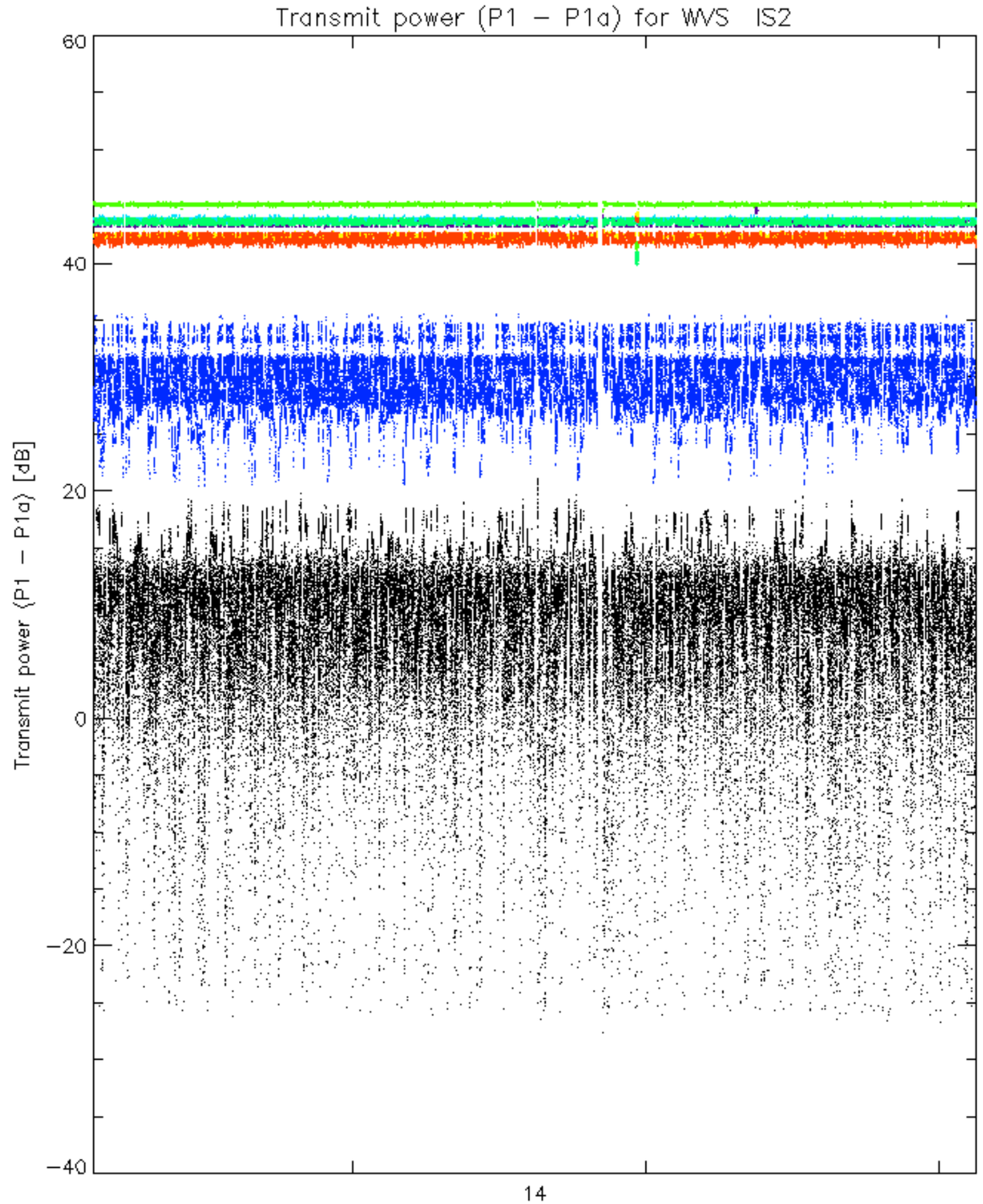

Reference: 2003-06-12 14:08:52 H
Test : 2005-07-16 08:44:54 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

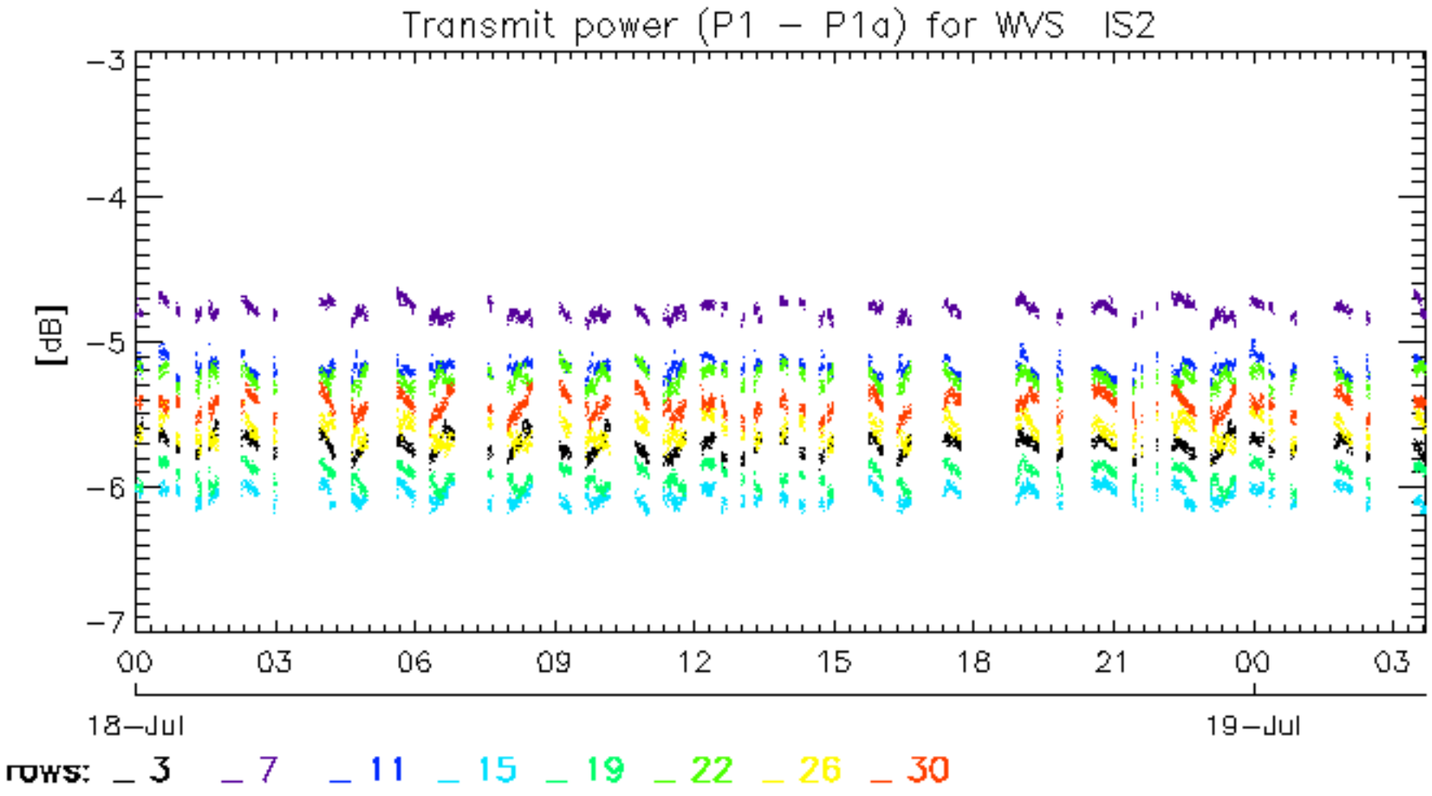

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-17 09:53:53 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-07-17 09:53:53 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
14
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
19–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]
14
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.