PRELIMINARY REPORT OF 050620

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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 2005-06-19 00:00:00 to 2005-06-20 11:37:31

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	28	52	12	1	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	28	52	12	1	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	28	52	12	1	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	28	52	12	1	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	37	53	0	0	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	37	53	0	0	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	37	53	0	0	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	37	53	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	20050618 064410
H	20050619 061233

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	-3.332126	0.007943	0.009139
7	P1	-3.141801	0.015144	-0.022623
11	P1	-4.627579	0.034441	-0.022250
15	P1	-5.494799	0.043164	-0.023358
19	P1	-3.745048	0.004492	-0.037703
22	P1	-4.588096	0.016311	-0.014921
26	P1	-4.849974	0.020844	0.010416
30	P1	-7.144826	0.026963	-0.026631
3	P1	-15.568034	0.115501	0.082695
7	P1	-15.590879	0.115454	-0.046513
11	P1	-21.392857	0.305685	-0.178472
15	P1	-11.294394	0.049125	0.042992
19	P1	-14.421422	0.032983	-0.080771
22	P1	-15.932078	0.328179	0.091985
26	P1	-17.712553	0.373773	0.061457
30	P1	-17.820919	0.215461	0.071074

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.996029	0.079951	0.121379
7	P2	-22.184122	0.098288	0.068822
11	P2	-13.926788	0.095095	0.228191
15	P2	-7.136480	0.088339	-0.017327
19	P2	-9.614762	0.089705	0.020159
22	P2	-16.881481	0.088271	0.014644
26	P2	-16.507103	0.090685	-0.014080
30	P2	-18.792606	0.076817	0.025315

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.162876	0.002720	-0.000899
7	P3	-8.162876	0.002720	-0.000899
11	P3	-8.162876	0.002720	-0.000899
15	P3	-8.162876	0.002720	-0.000899
19	P3	-8.162876	0.002720	-0.000899
22	P3	-8.162876	0.002720	-0.000899
26	P3	-8.162876	0.002720	-0.000899
30	P3	-8.162876	0.002720	-0.000899

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	-2.796385	0.014002	-0.015055
7	P1	-2.939746	0.030262	0.002215
11	P1	-3.963814	0.017994	-0.028334
15	P1	-3.529854	0.024114	-0.007515
19	P1	-3.638185	0.016018	-0.034132
22	P1	-5.636047	0.046281	0.013006
26	P1	-7.305030	0.034966	-0.055369
30	P1	-6.292570	0.044102	-0.027952
3	P1	-10.834249	0.045882	0.011198
7	P1	-10.381840	0.167142	-0.034773
11	P1	-12.558966	0.117050	-0.054065
15	P1	-11.608666	0.083398	0.008705
19	P1	-15.620963	0.064773	-0.041702
22	P1	-26.049723	3.330611	-0.296388
26	P1	-15.612549	0.374222	0.065722
30	P1	-20.209587	1.128915	0.035599

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.743641	0.044526	0.075937
7	P2	-22.135042	0.043374	0.073272
11	P2	-9.879945	0.058067	0.159004
15	P2	-5.124646	0.045735	-0.045911
19	P2	-6.913511	0.058664	-0.031367
22	P2	-7.102495	0.041842	-0.009941
26	P2	-23.958849	0.041505	-0.018340
30	P2	-21.953489	0.039387	-0.045525

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.995828	0.004032	-0.004726
7	P3	-7.995783	0.004027	-0.005344
11	P3	-7.995955	0.004014	-0.005355
15	P3	-7.995883	0.004013	-0.005318
19	P3	-7.995798	0.004025	-0.005319
22	P3	-7.995955	0.004017	-0.004986
26	P3	-7.995944	0.004019	-0.005404
30	P3	-7.995912	0.004021	-0.005190

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	0.000457369
	stdev	2.18822e-07
MEAN Q	mean	0.000497369
	stdev	2.29584e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127773
	stdev	0.000966331
STDEV Q	mean	0.128010
	stdev	0.000976913

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005061[890]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_IMM_1PNPDK20050619_083112_000000372038_00179_17267_0636.N1	0	17

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

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

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
Acsending
Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

7.4 - Unbiased Doppler Error for GM1

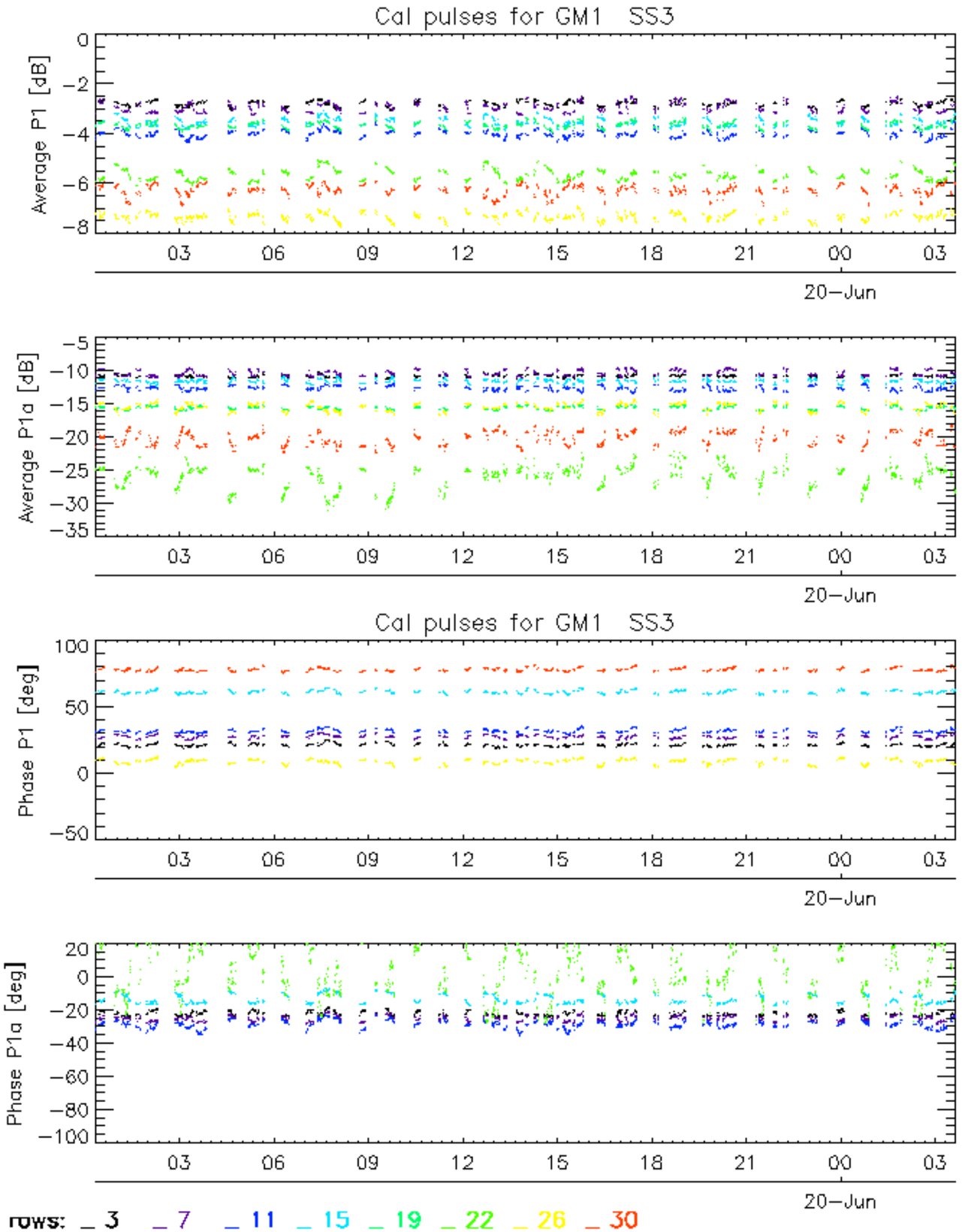
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

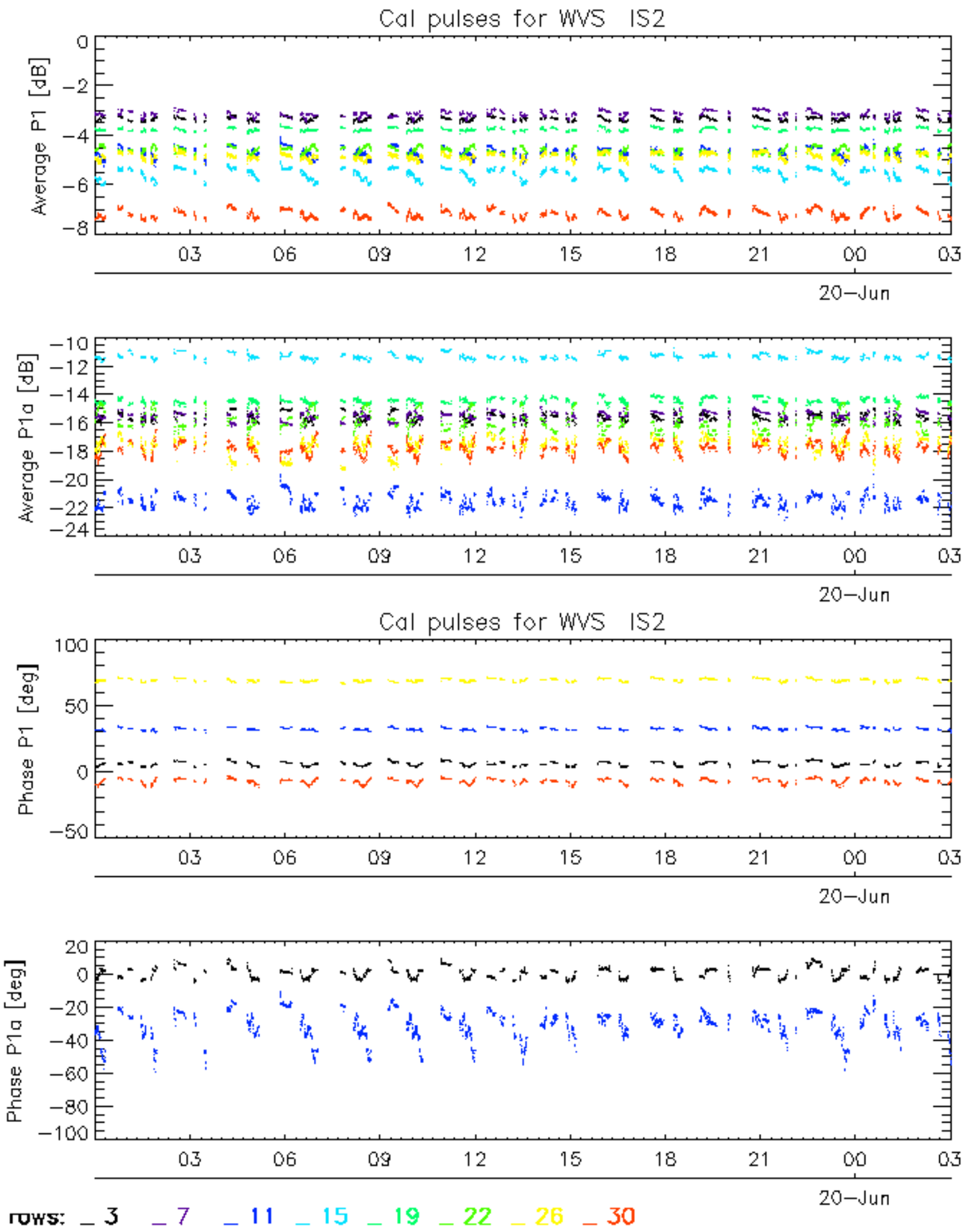
7.5 - Absolute Doppler for GM1

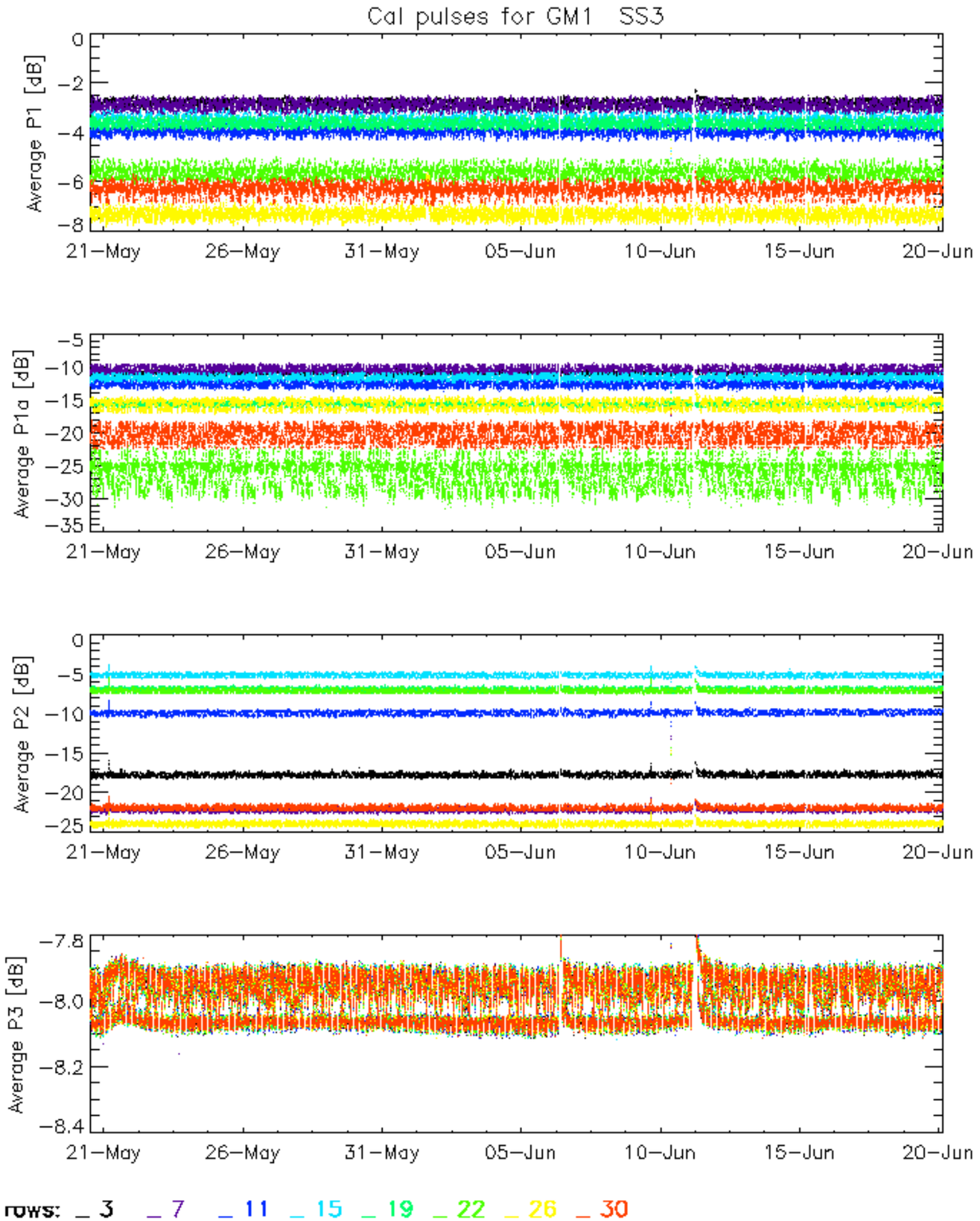
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

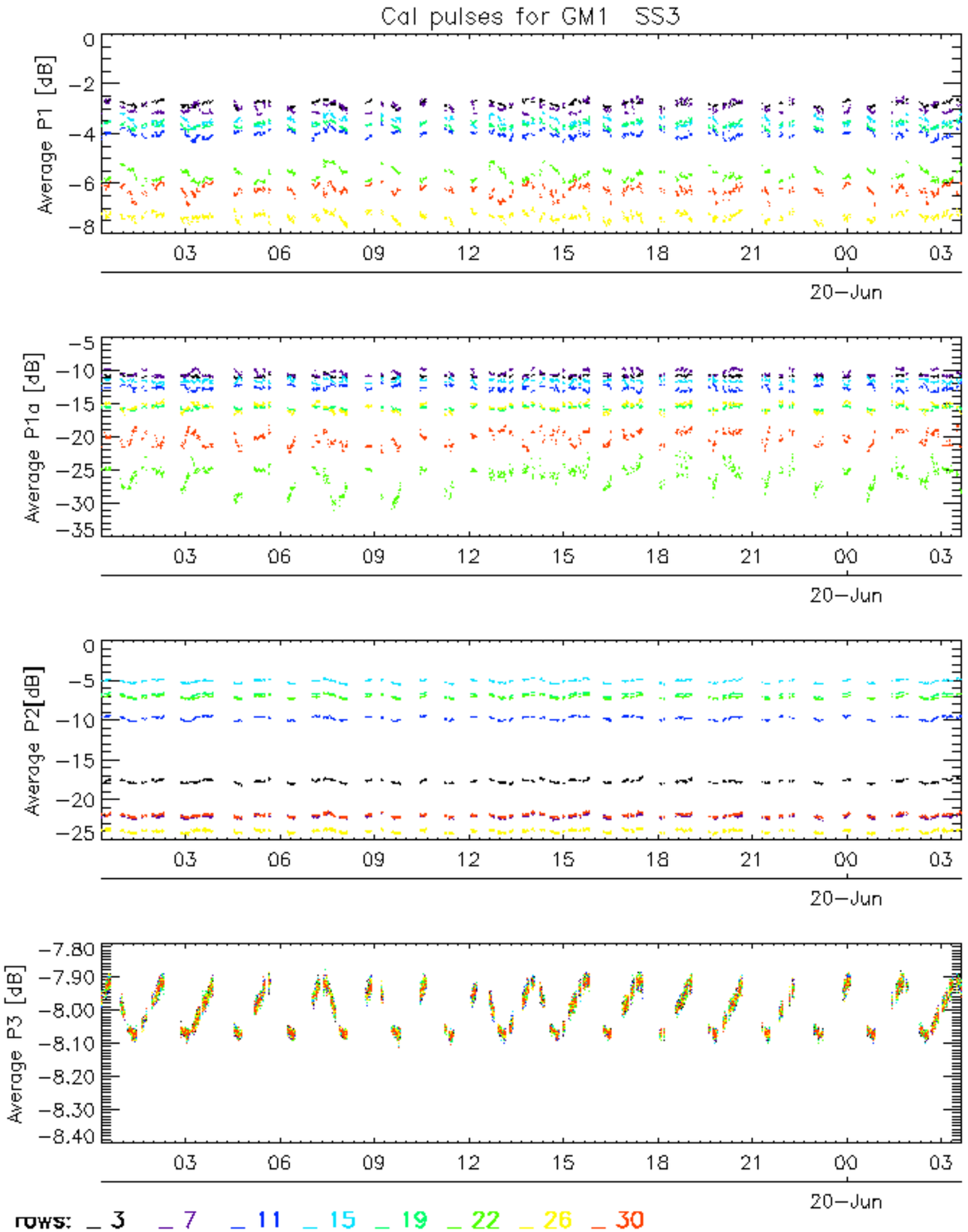
7.6 - Doppler evolution versus ANX for GM1

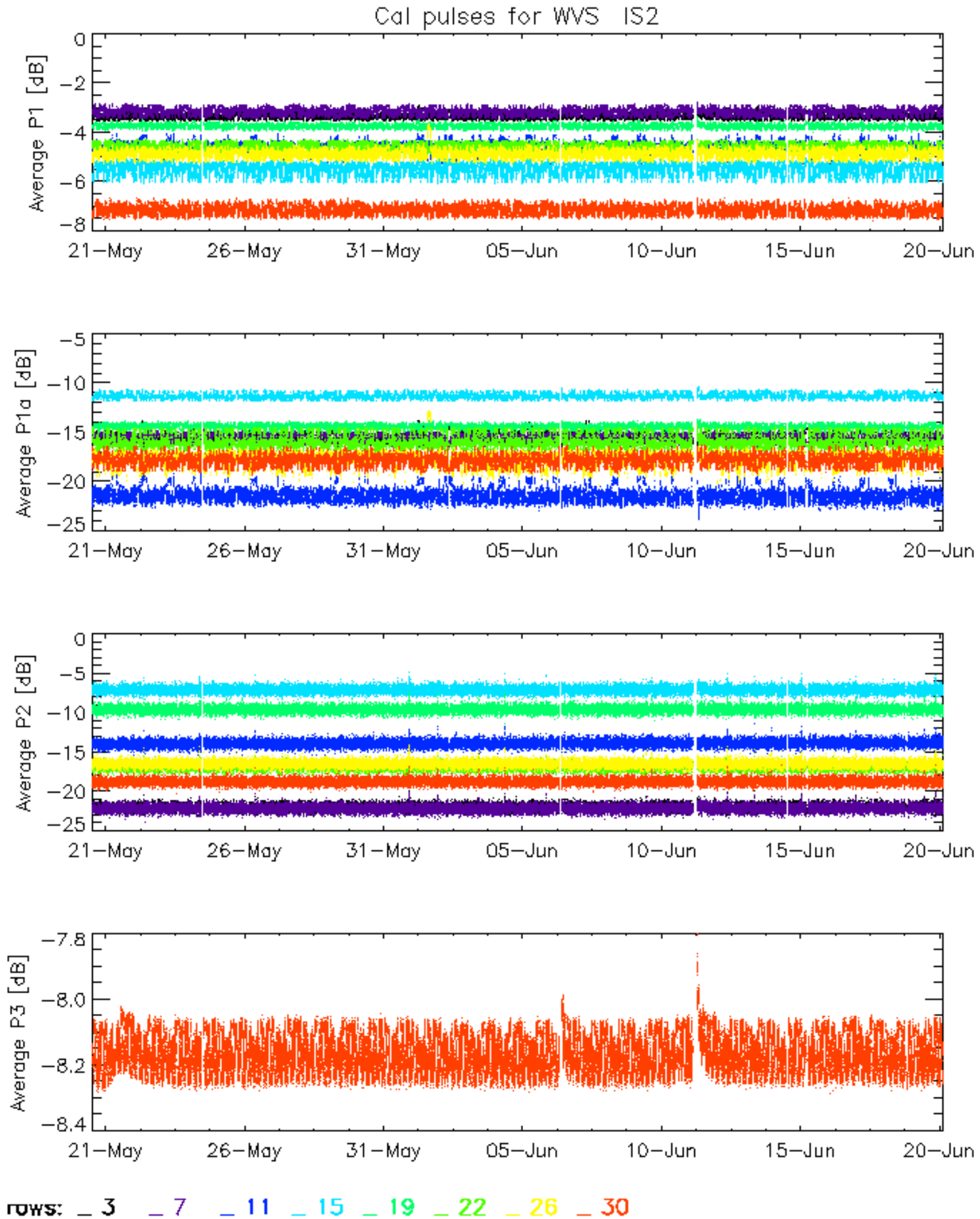
Evolution Doppler error versus ANX
☒

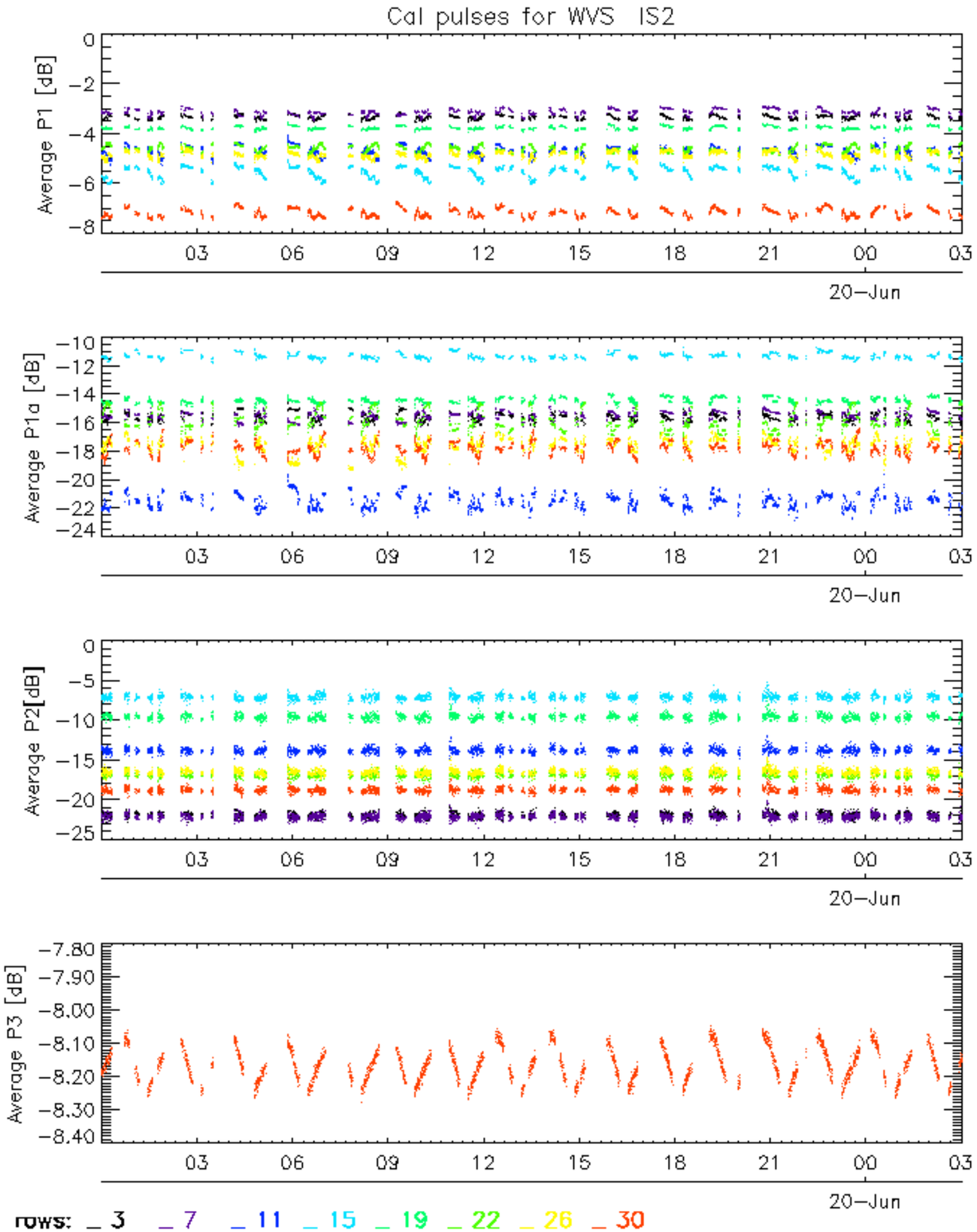

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
20−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


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

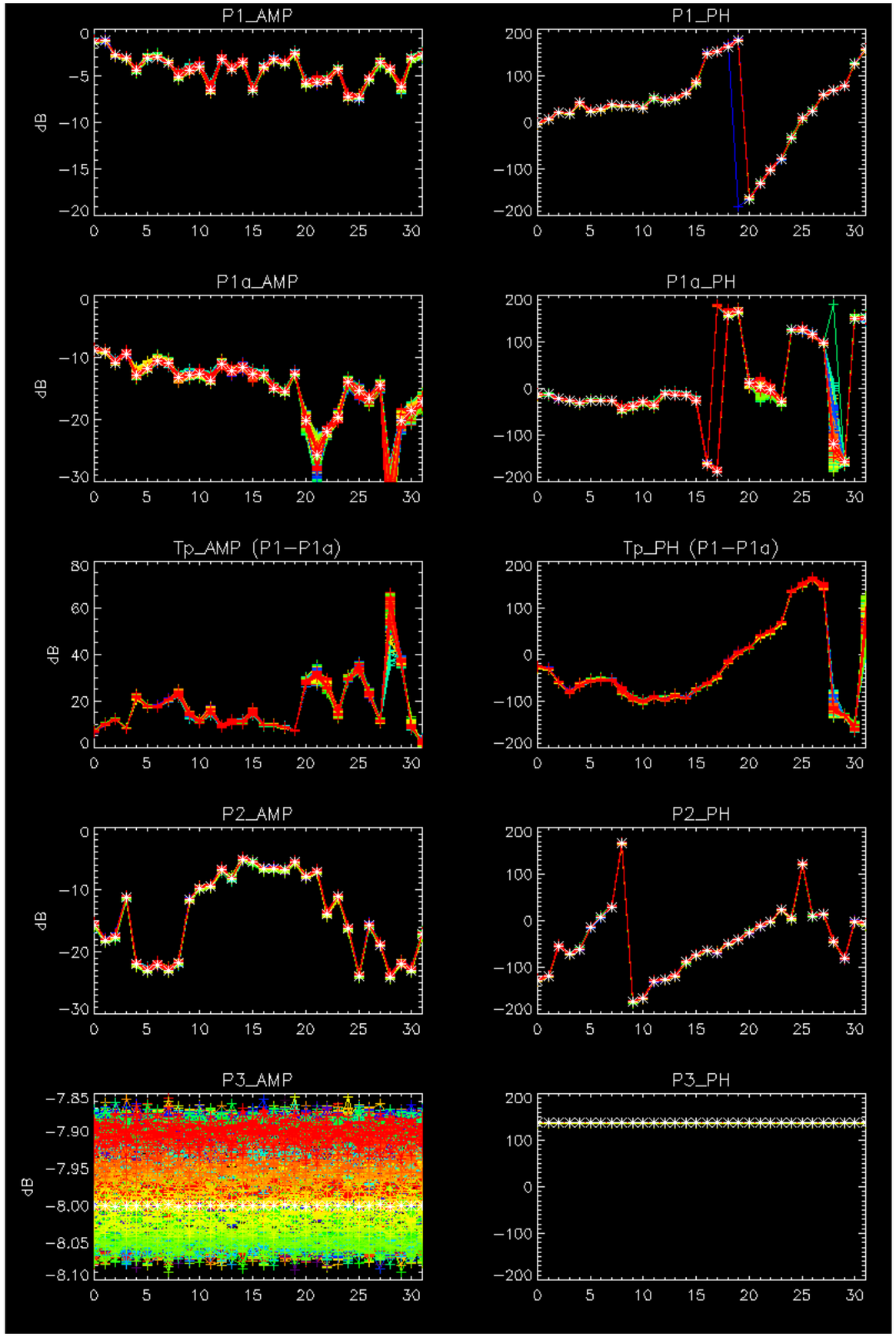

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−May
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

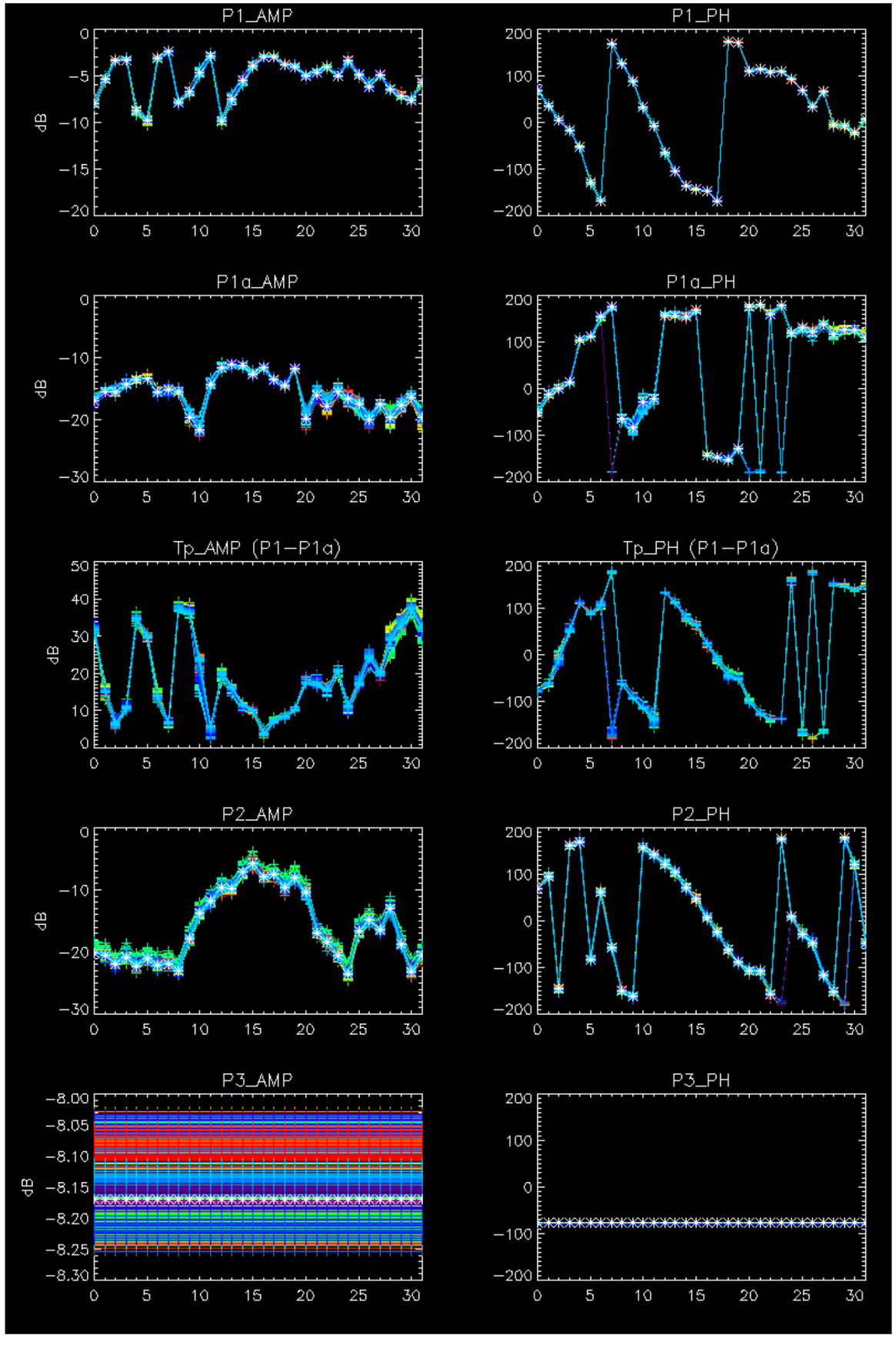

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
20−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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


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

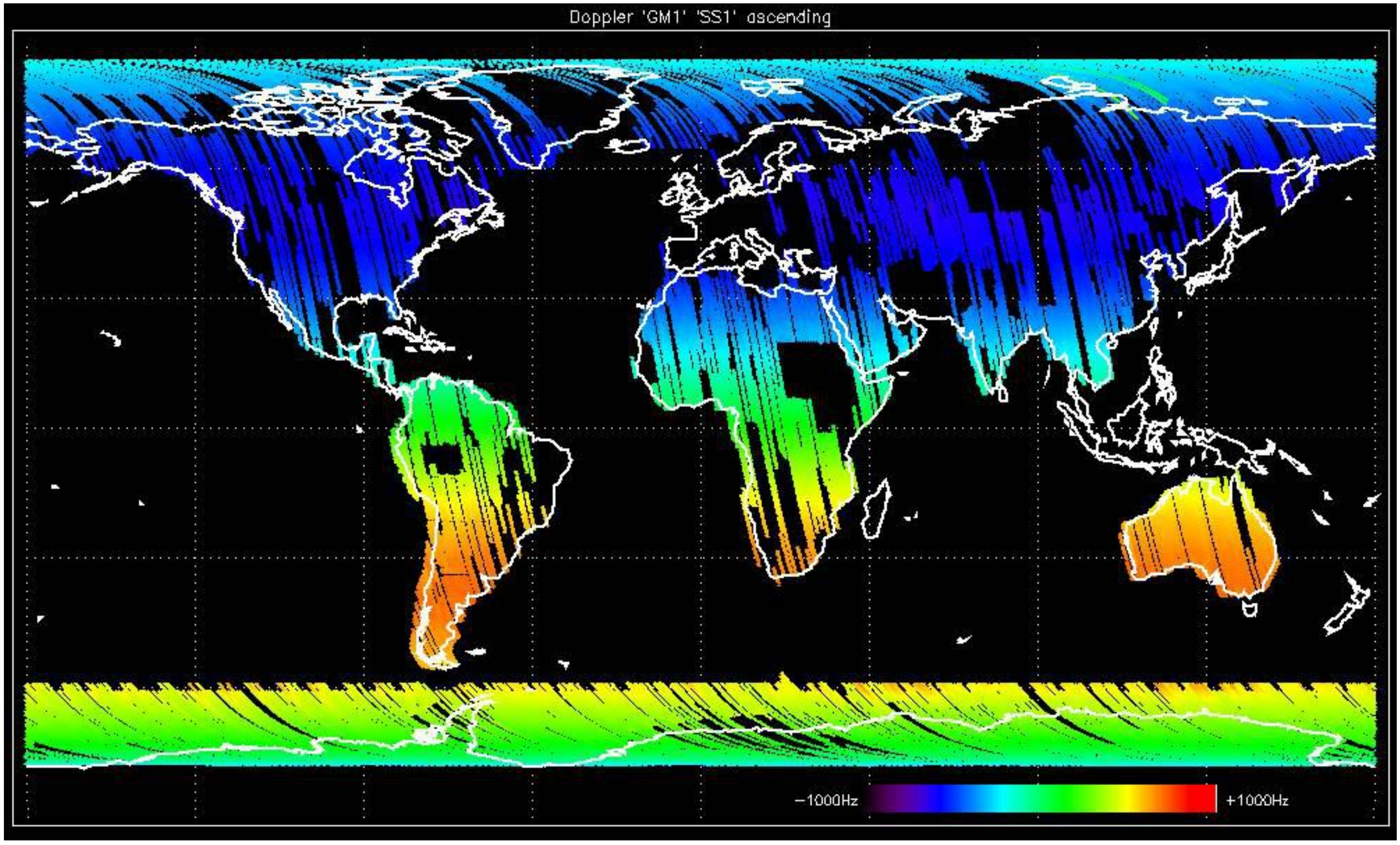
No anomalies observed.

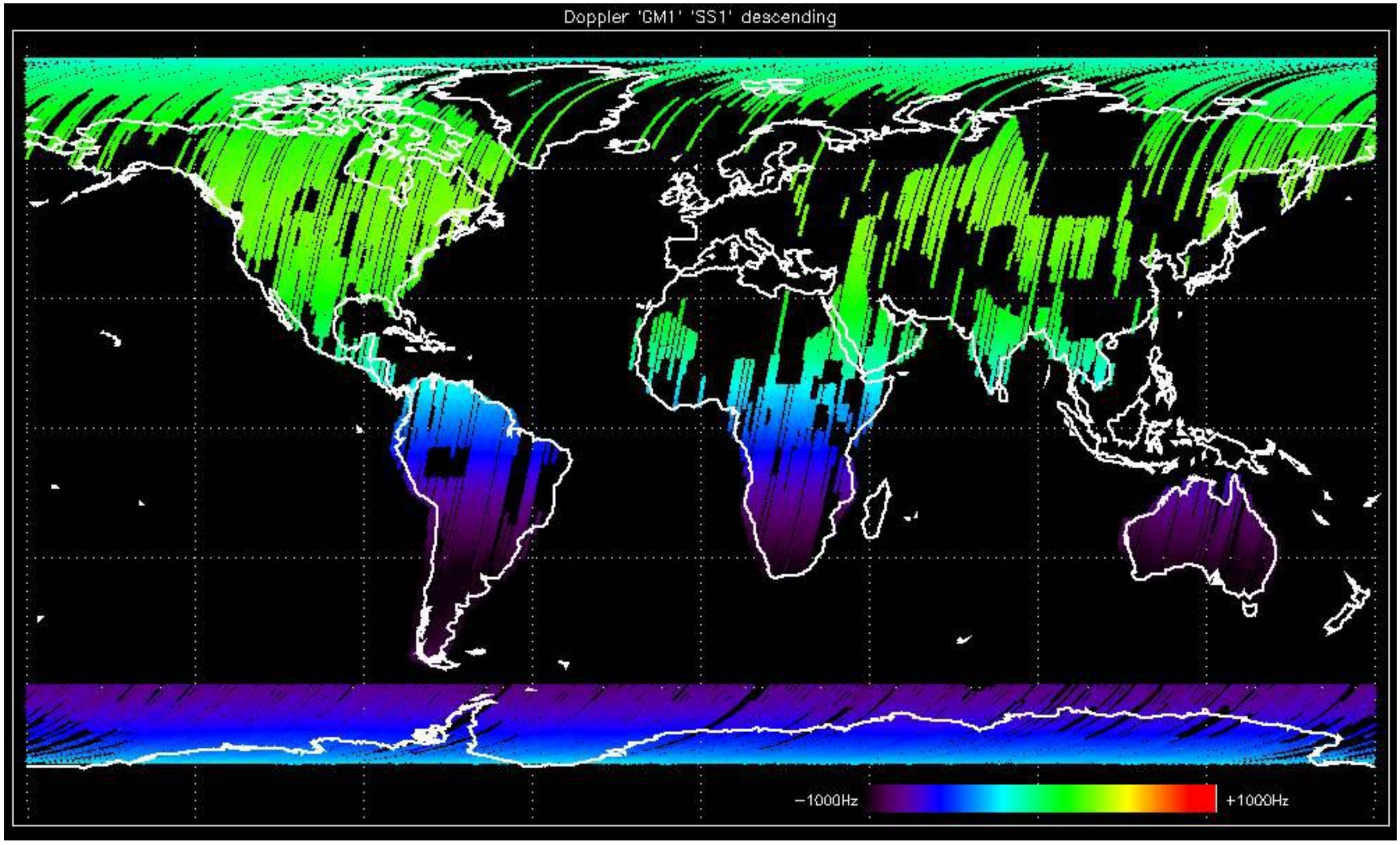

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

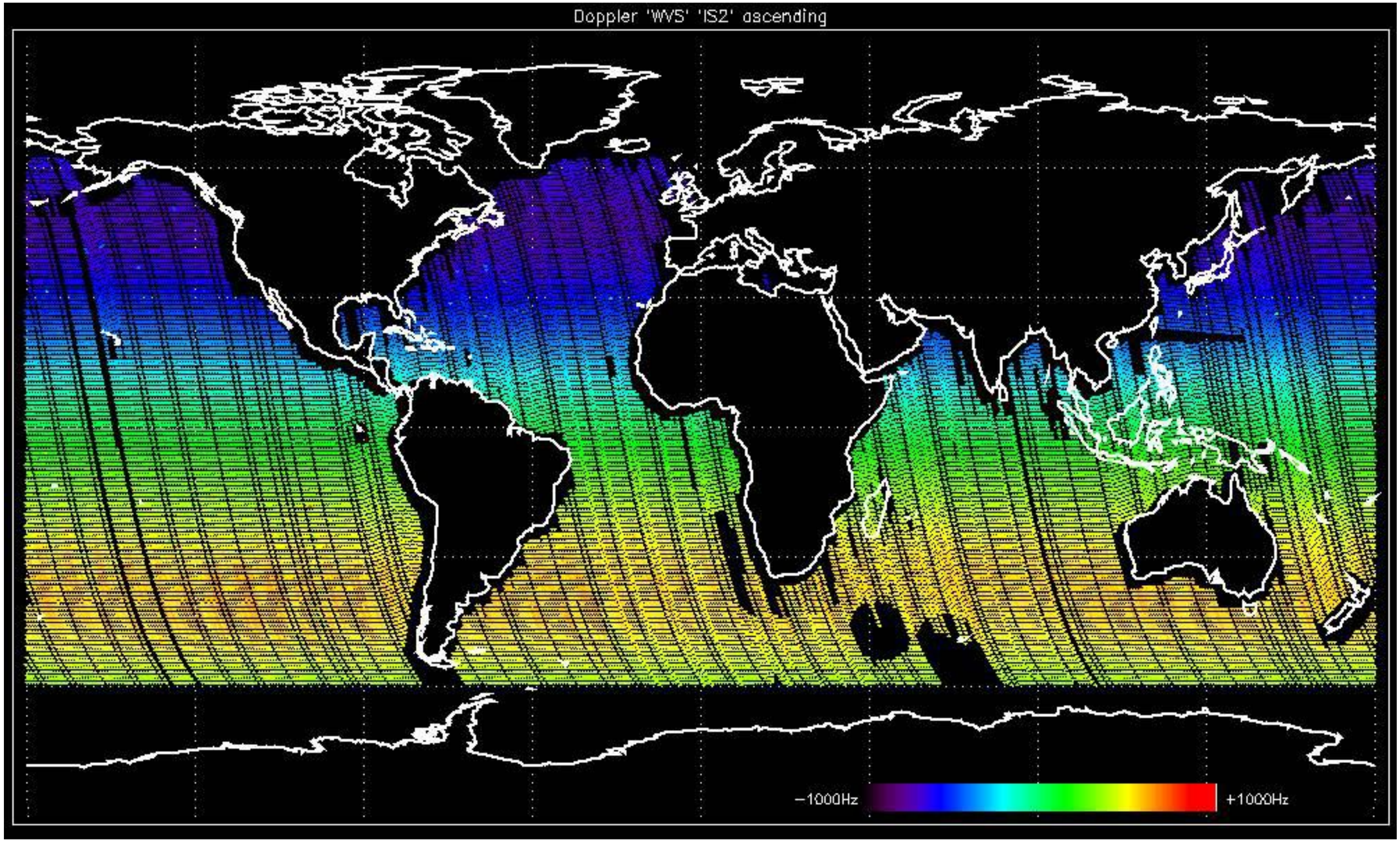

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

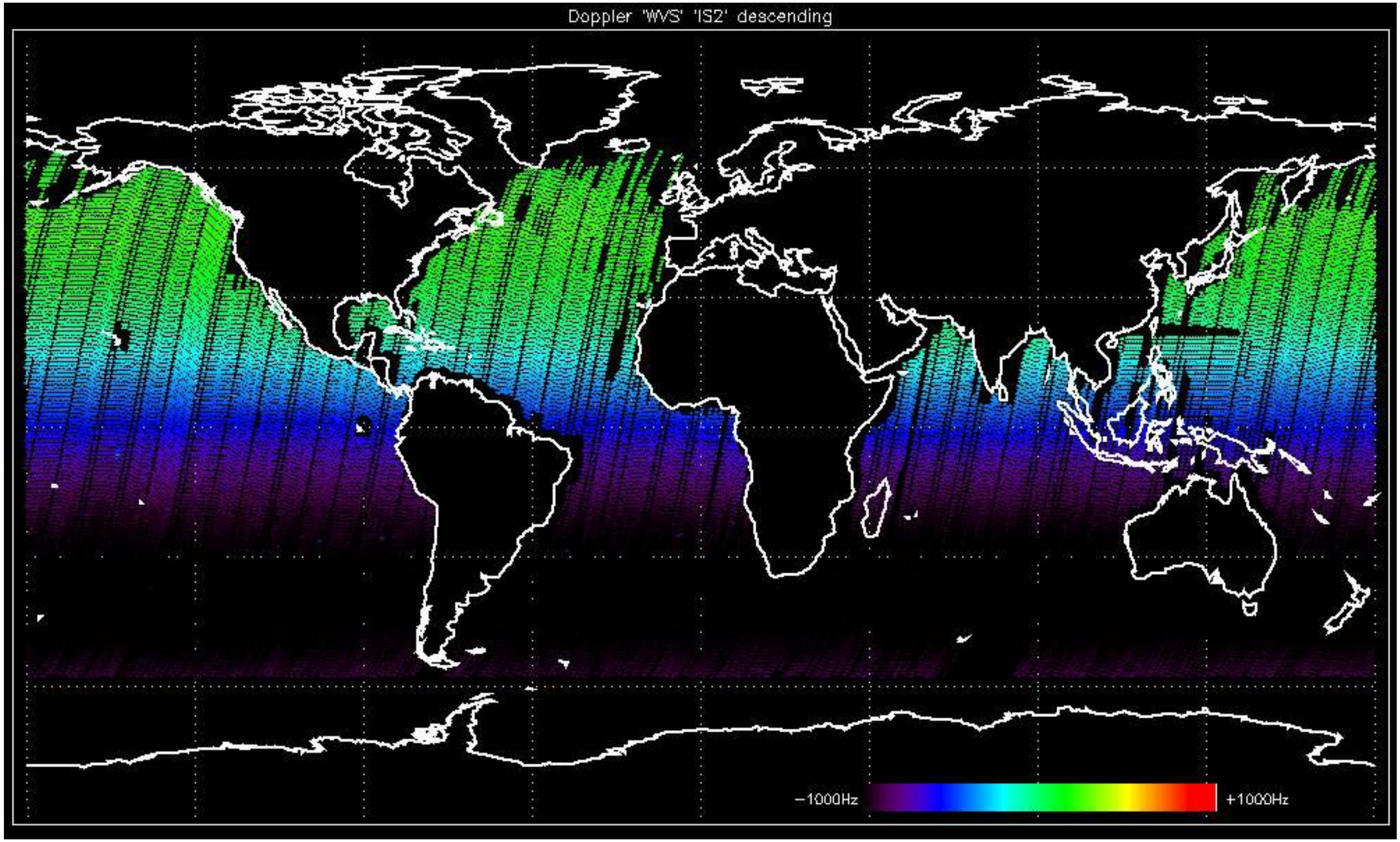
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

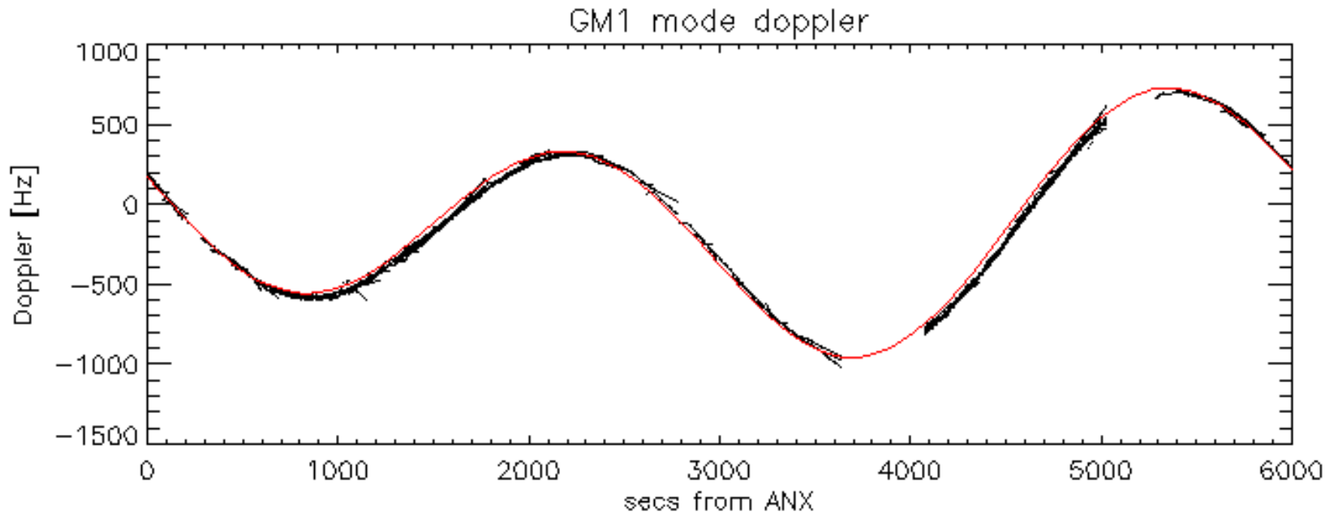
Preliminary report.The data is not yet controled

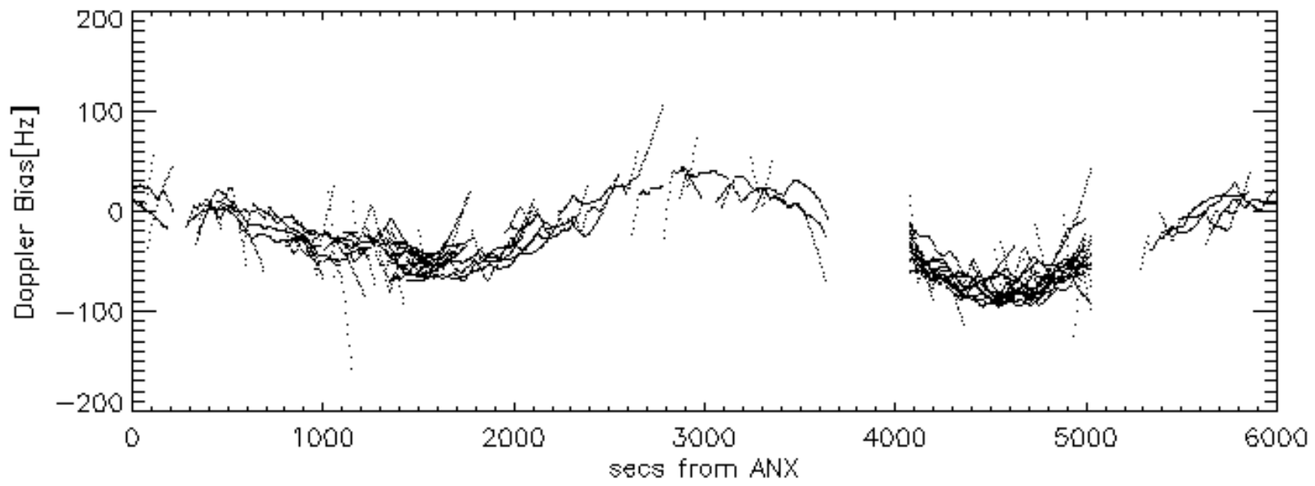

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

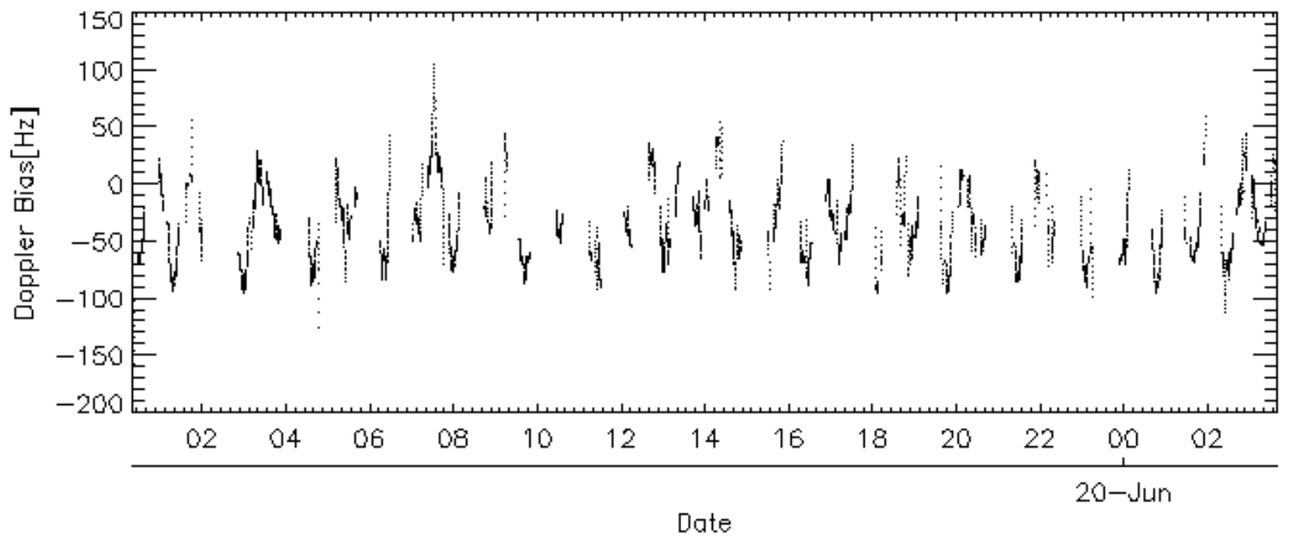

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

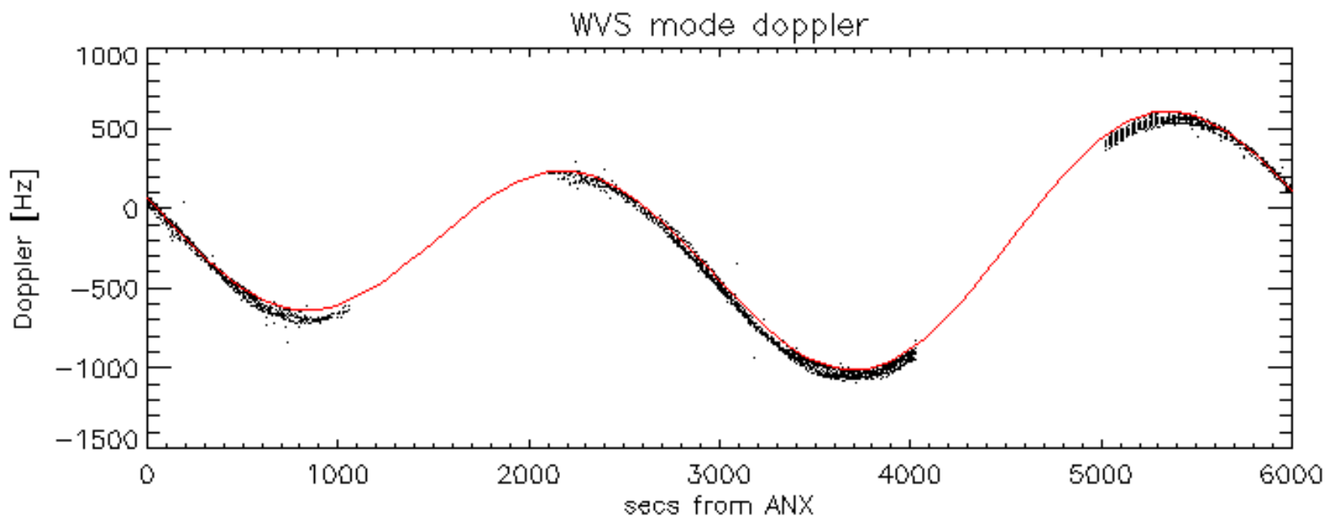

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

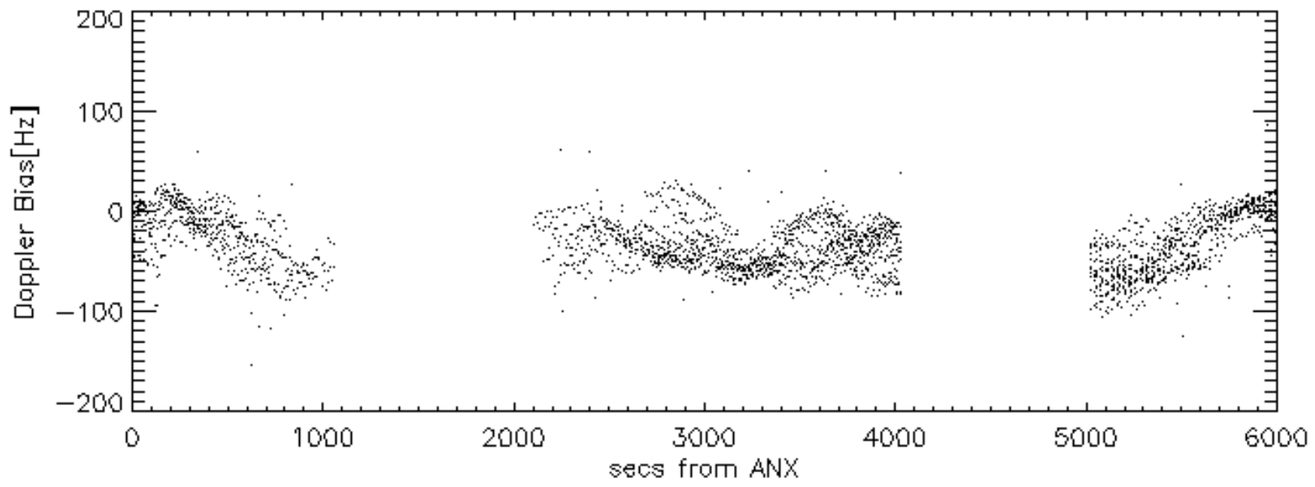

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

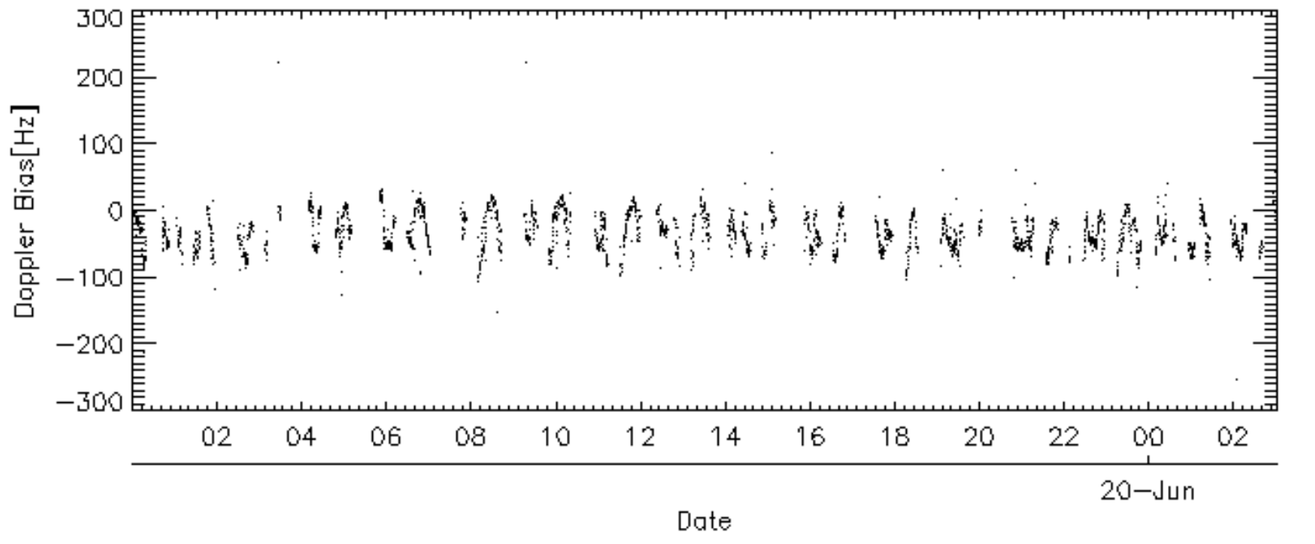

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

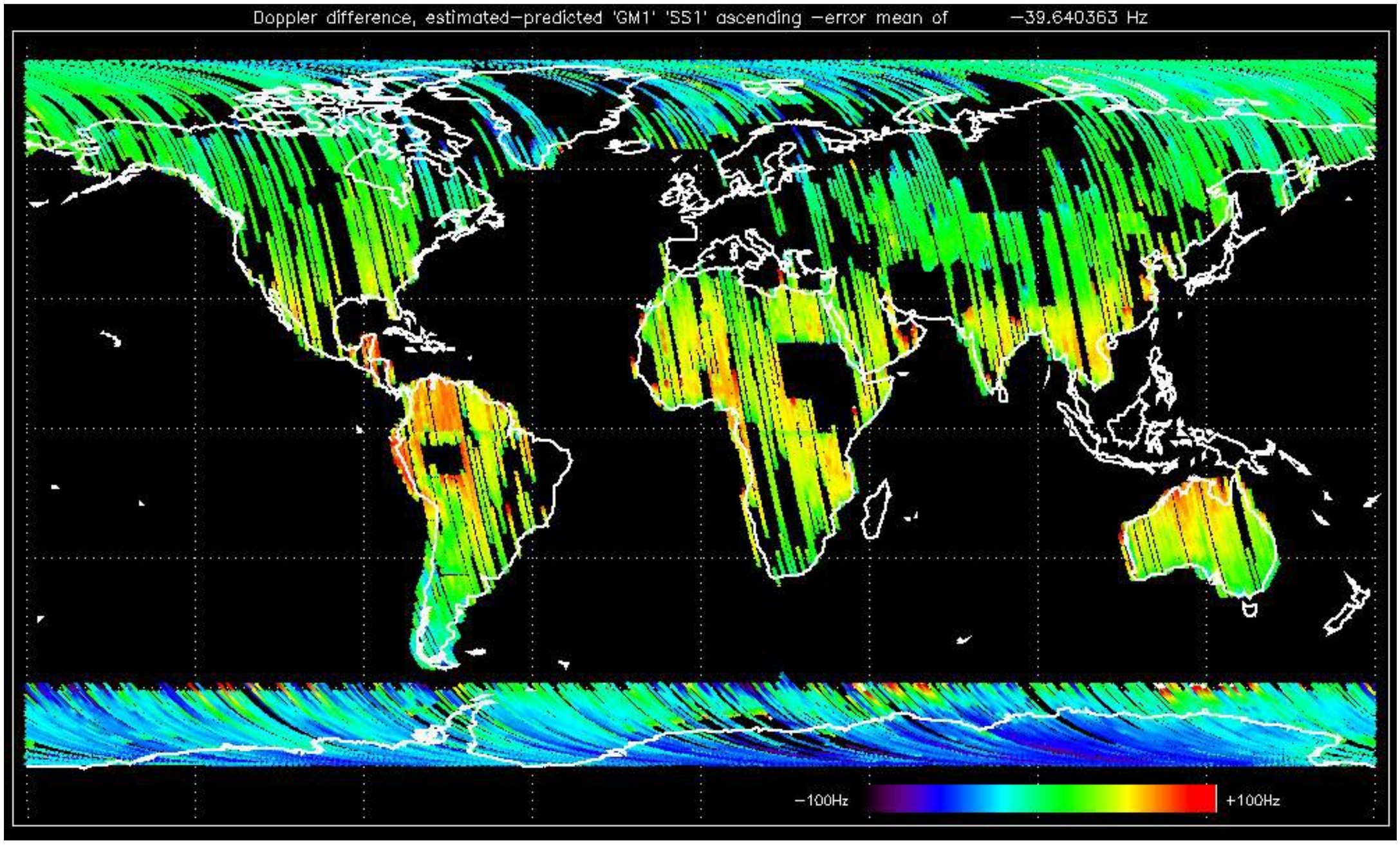

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

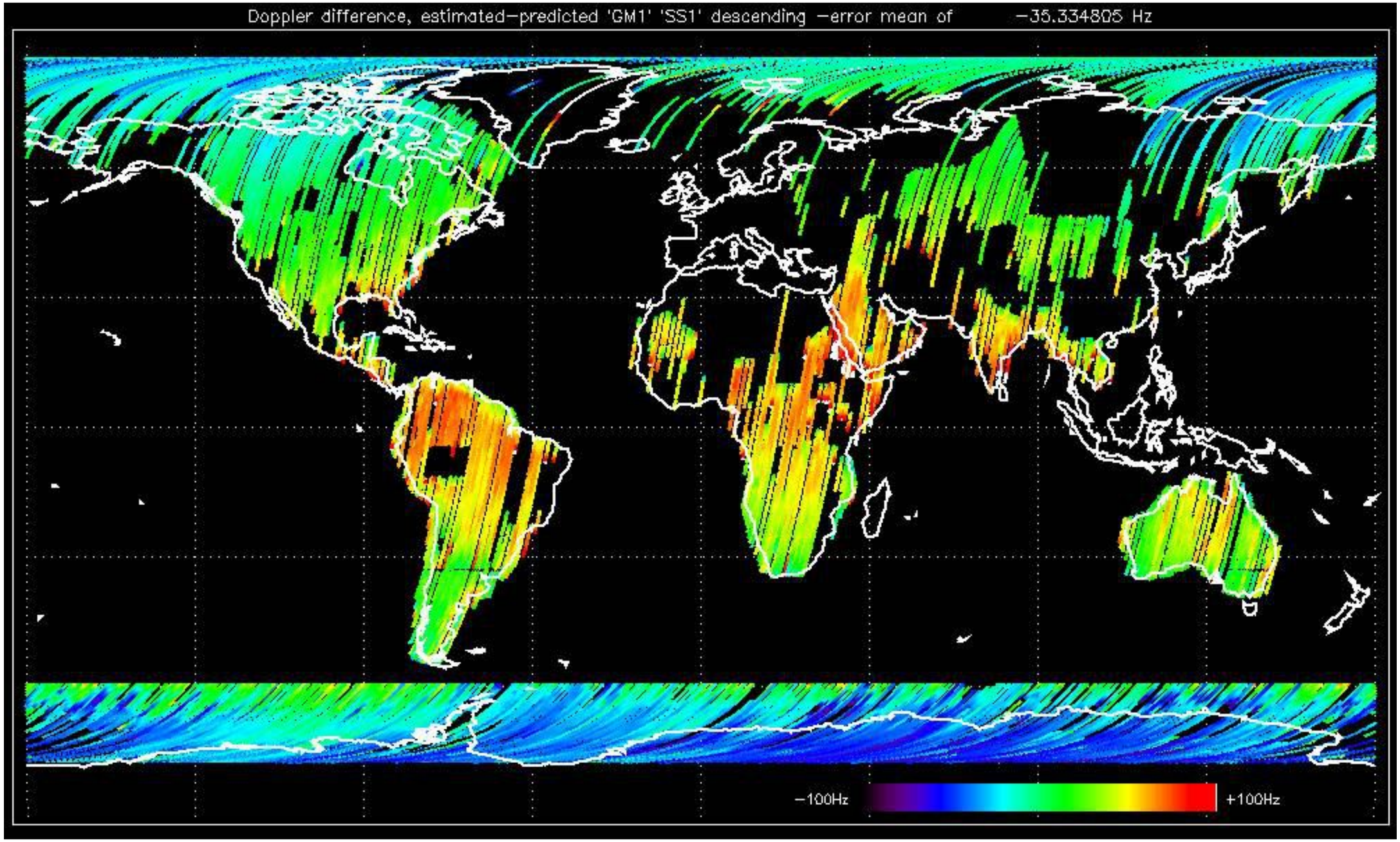

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
20−Jun
Date

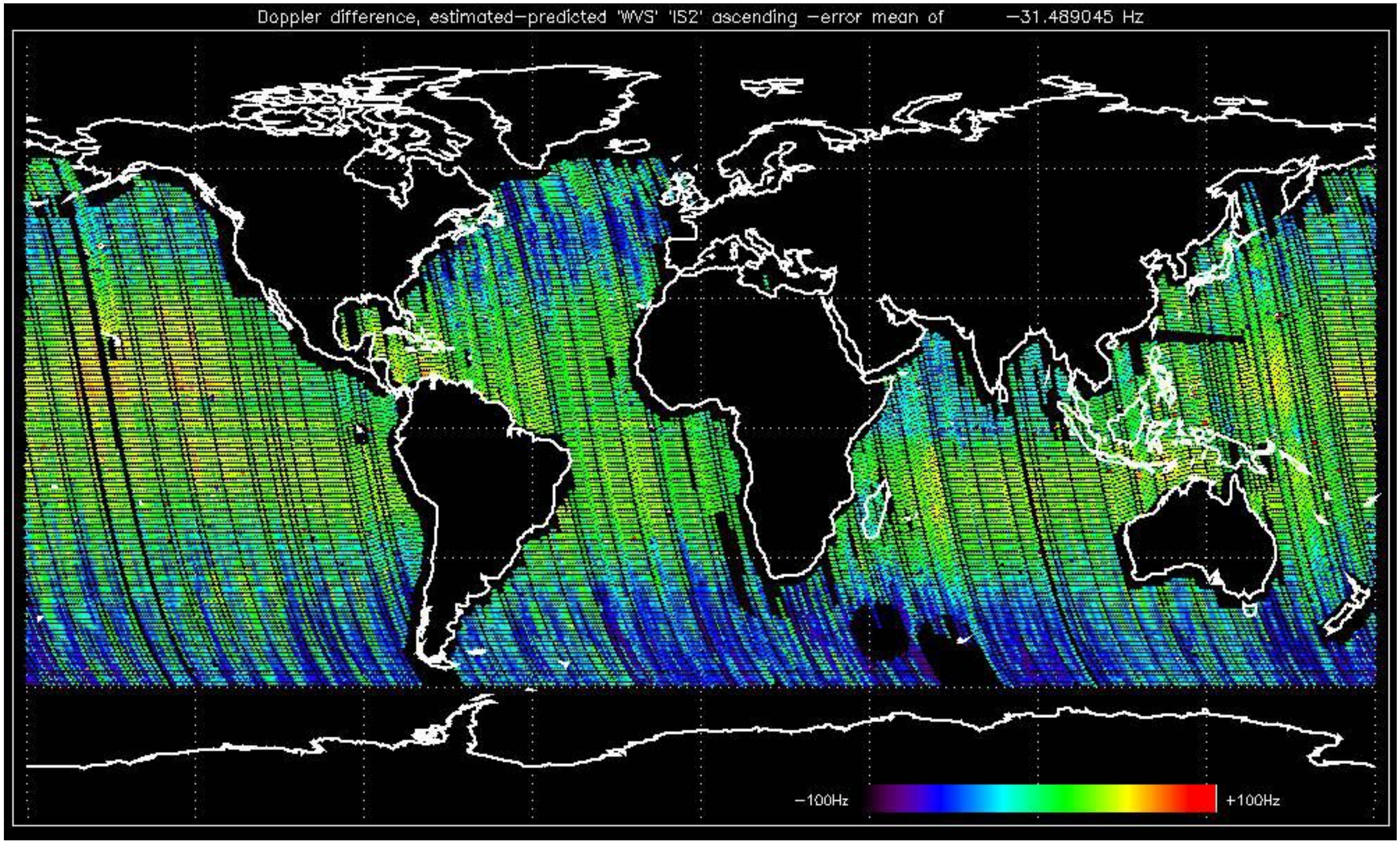

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

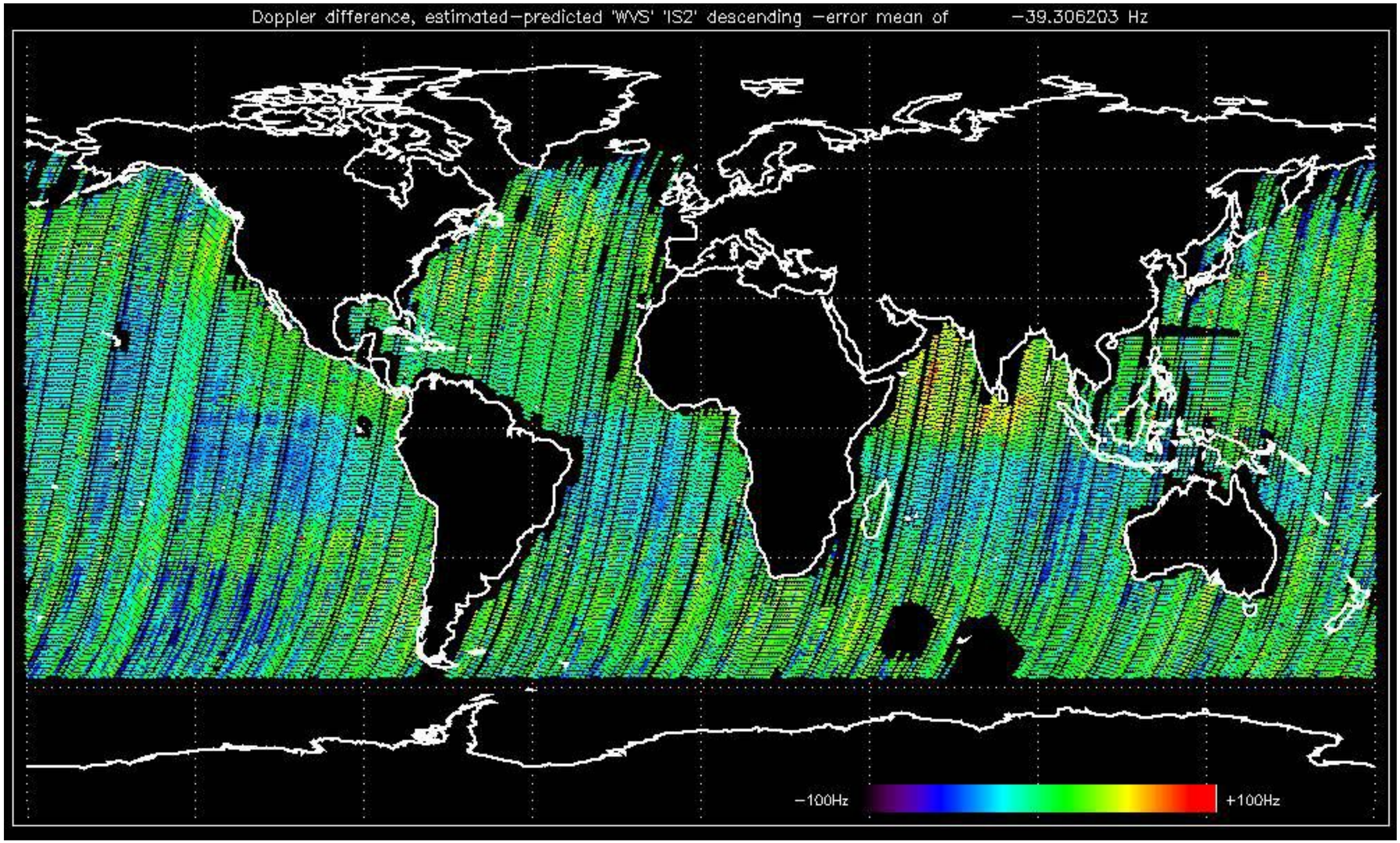

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −39.640363 Hz
−100Hz
+100Hz

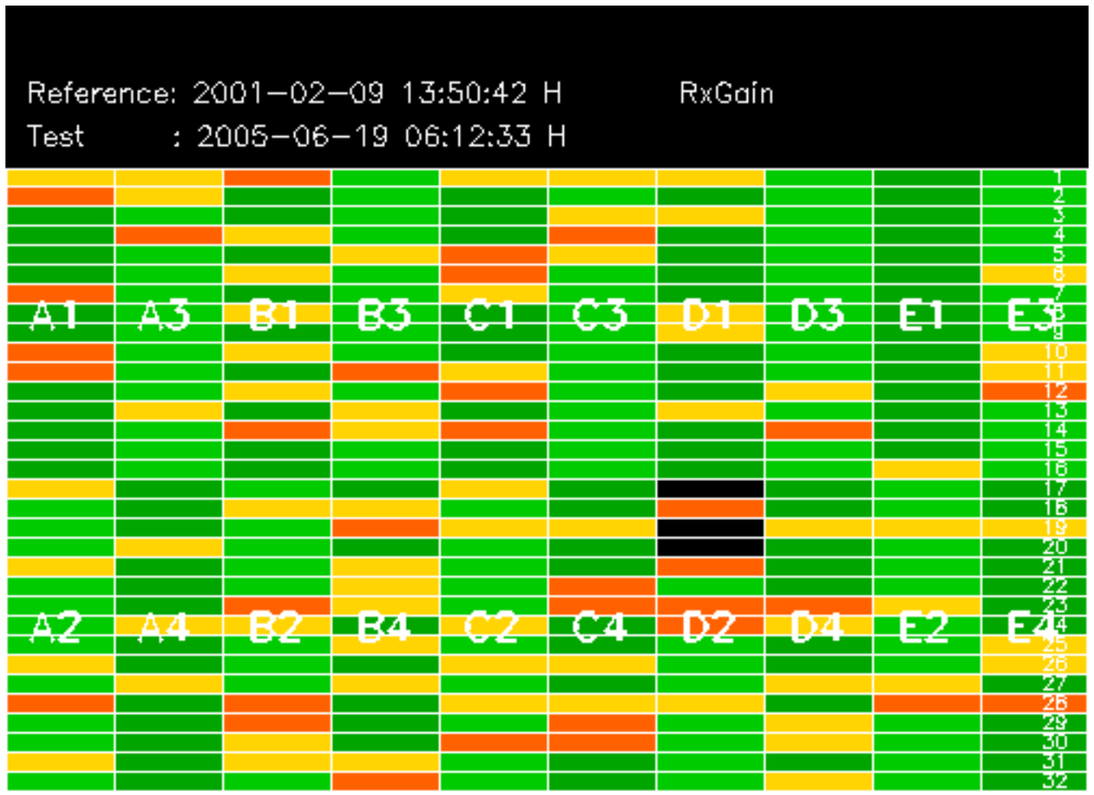

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -35.334805 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −31.489045 Hz
−100Hz
+100Hz

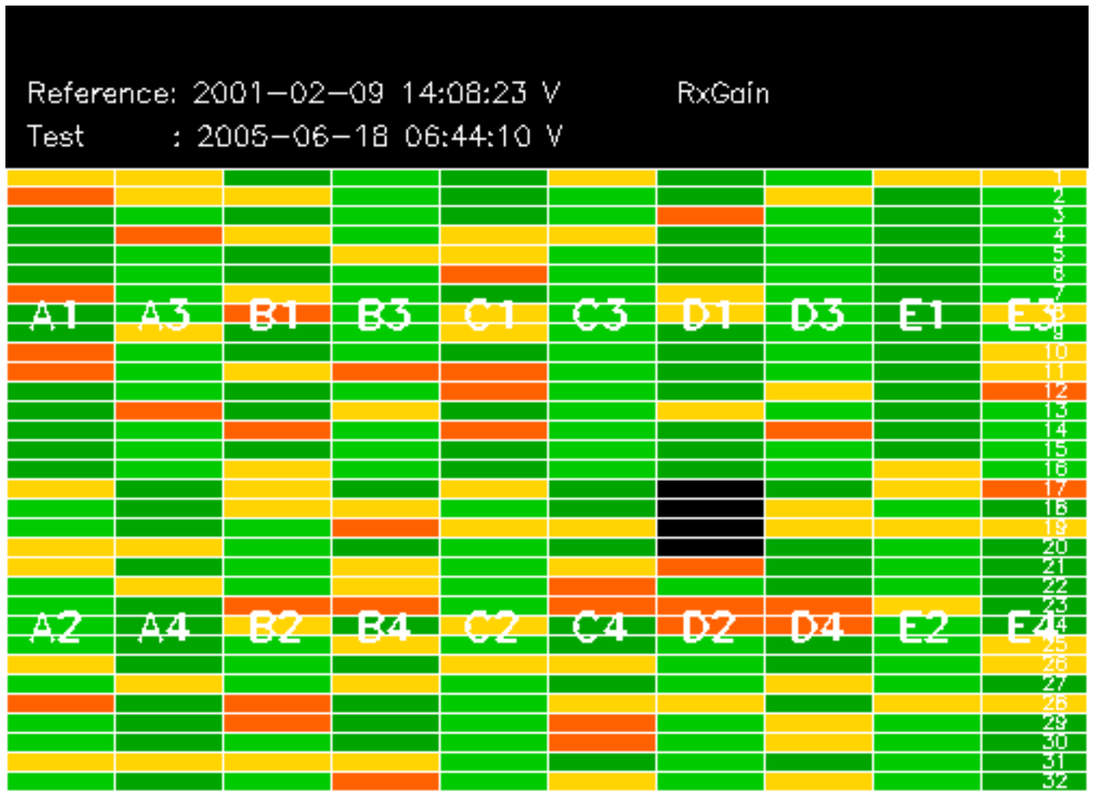

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −39.306203 Hz
−100Hz
+100Hz

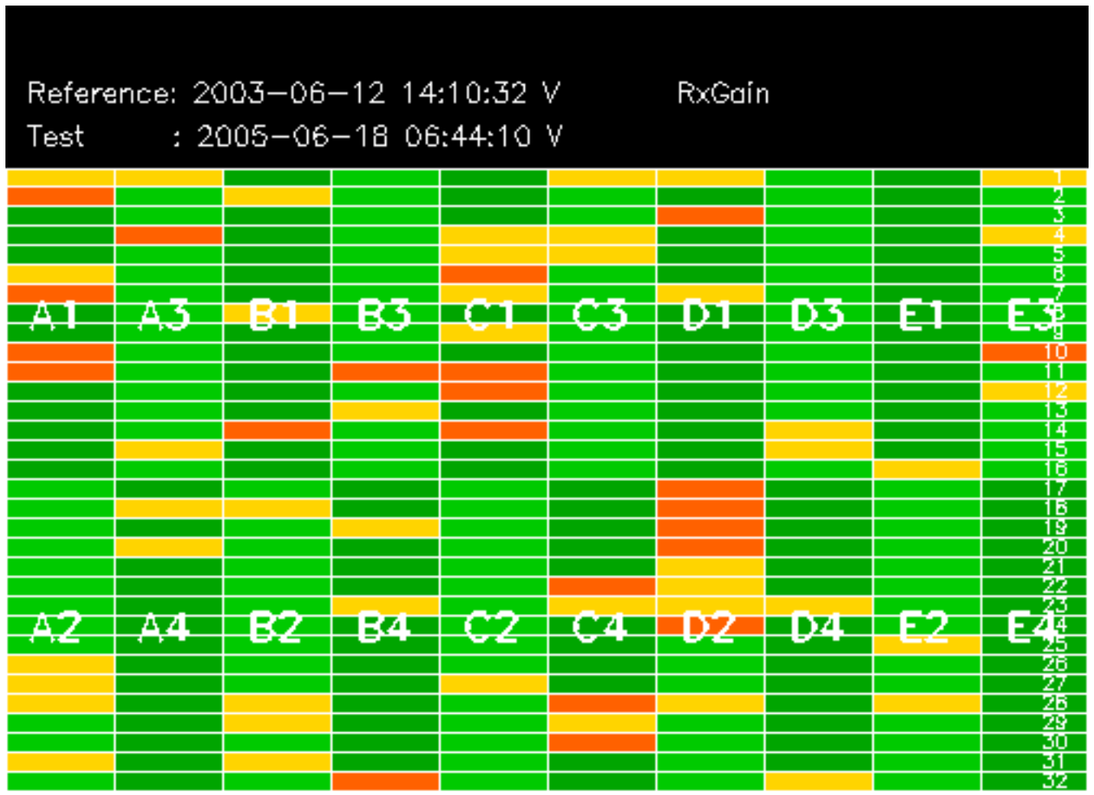
No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-06-19 06:12:33 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 : 2005-06-19 06:12:33 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 : 2005-06-18 06:44:10 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 : 2005-06-18 06:44:10 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
11
12
13
14
15
16
17
18
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21
22
23
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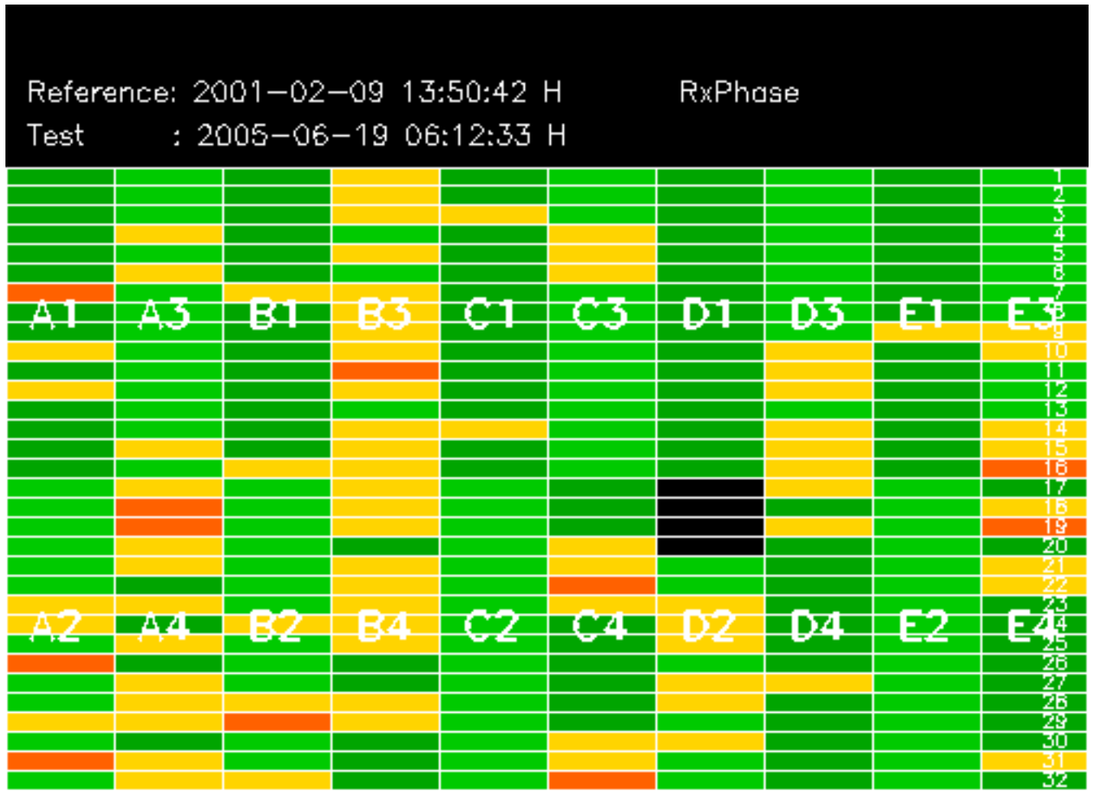
26
27
28
29
30
31
32


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-06-19 06:12:33 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
5
6
7
8
9
10
11
12
13
14
15
16
17
18
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21
22
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27
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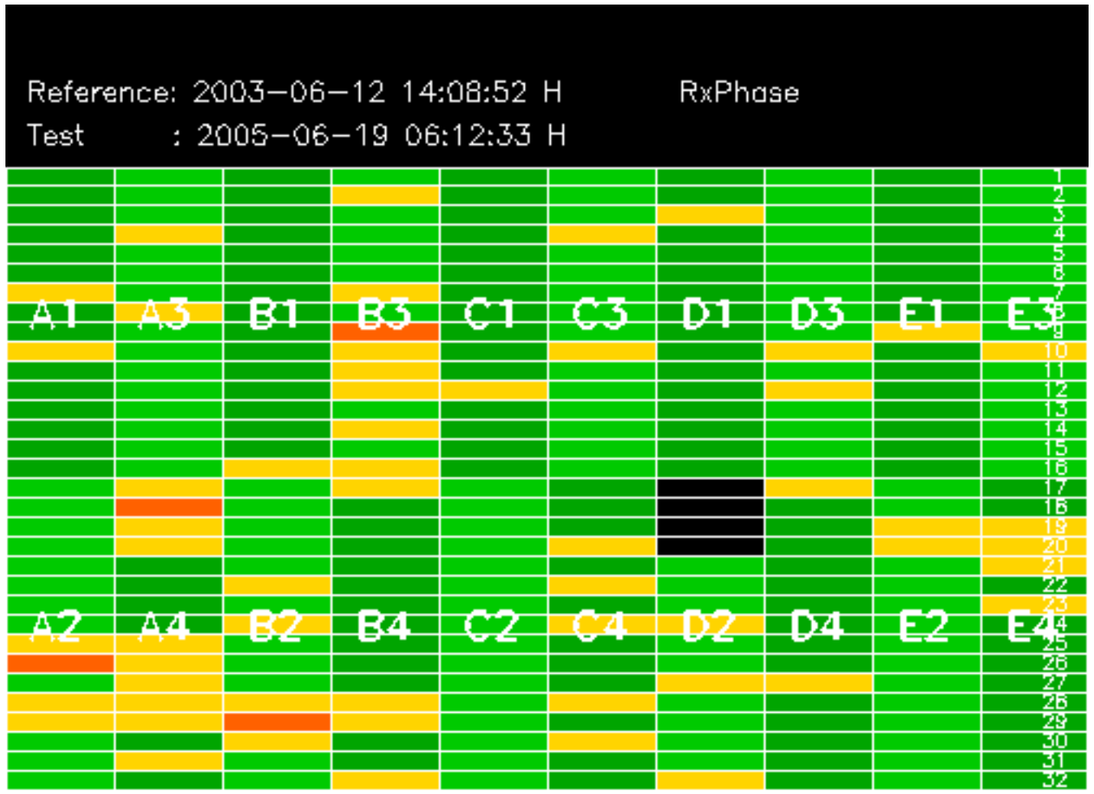
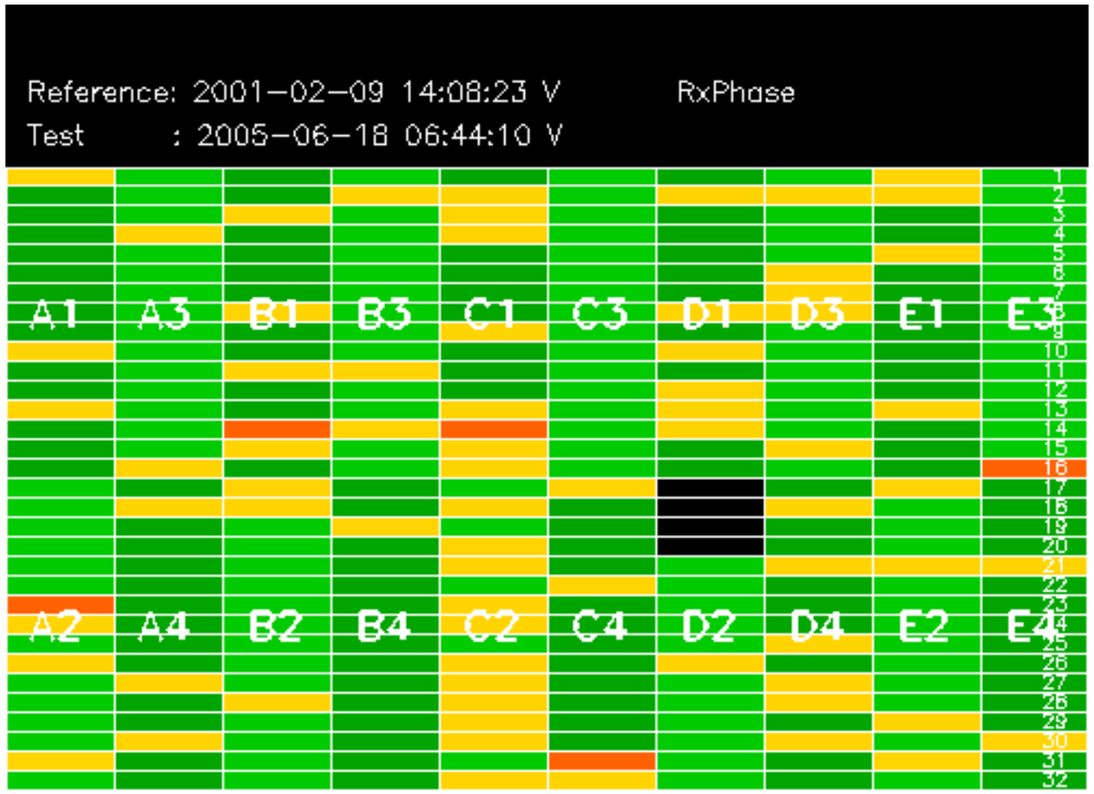
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-06-19 06:12:33 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 : 2005-06-18 06:44:10 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
6
7
8
9
10
11
12
13
14
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16
17
18
19
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21
22
23
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25
26
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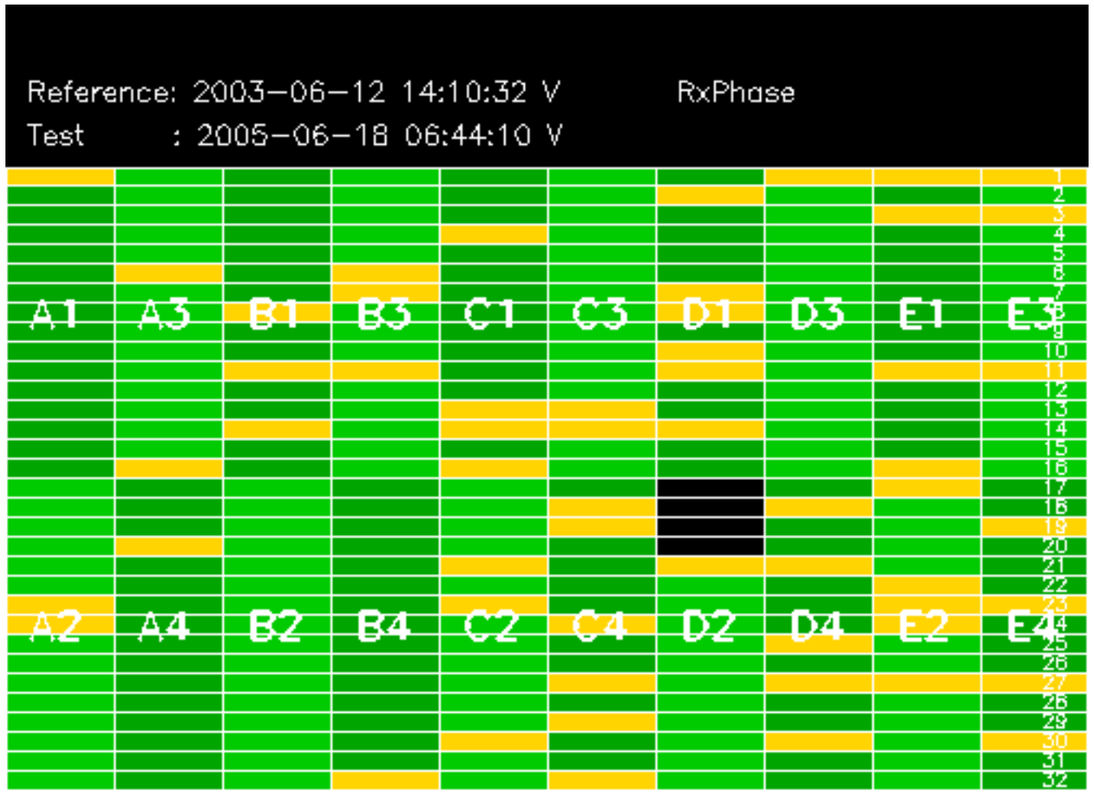
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-06-18 06:44:10 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
6
7
8
9
10
11
12
13
14
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16
17
18
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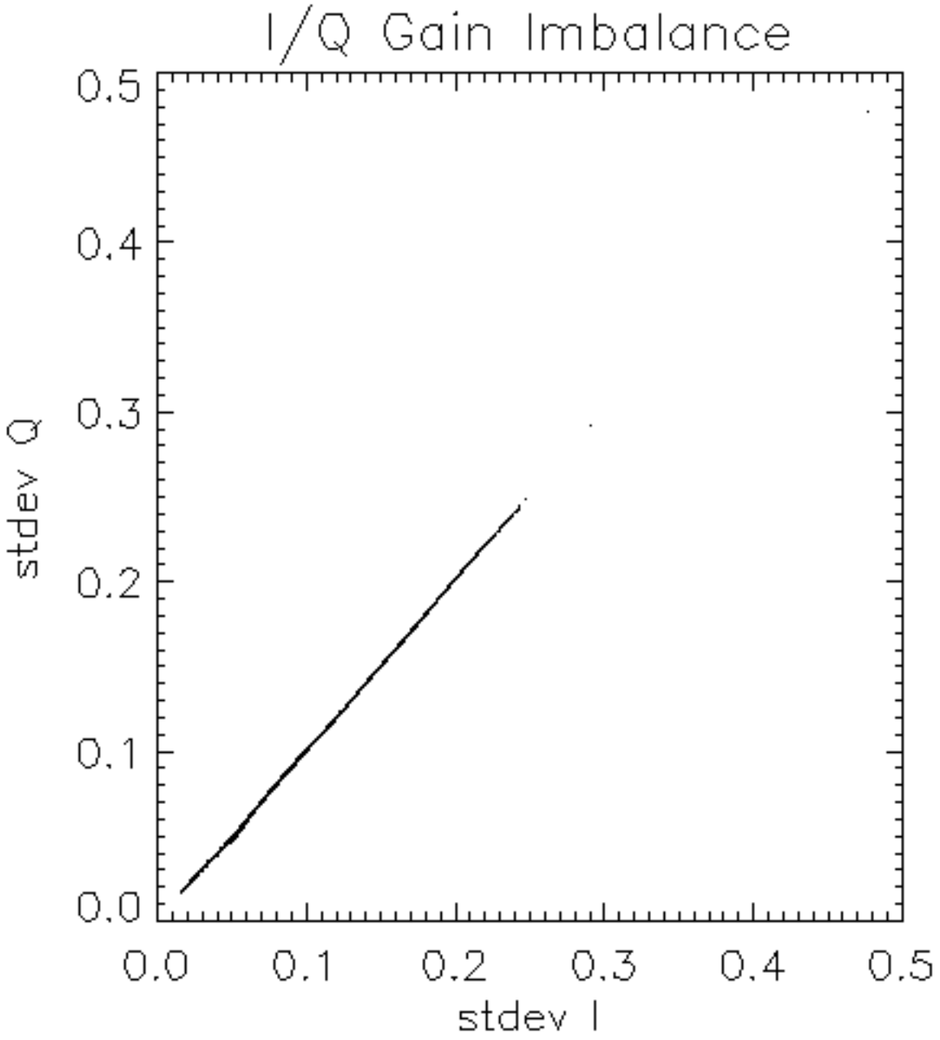
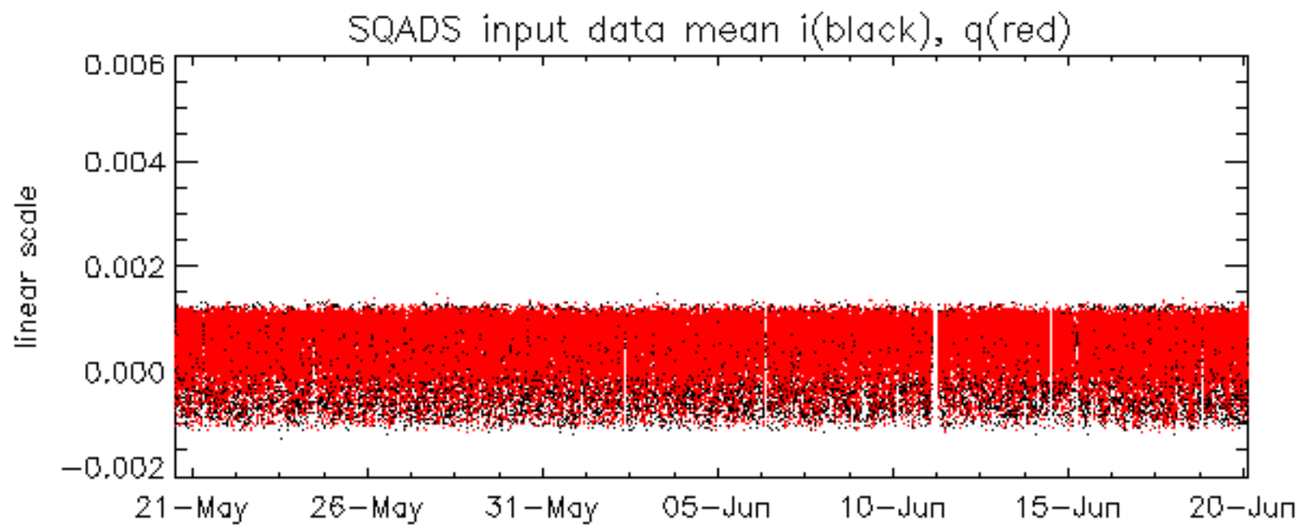
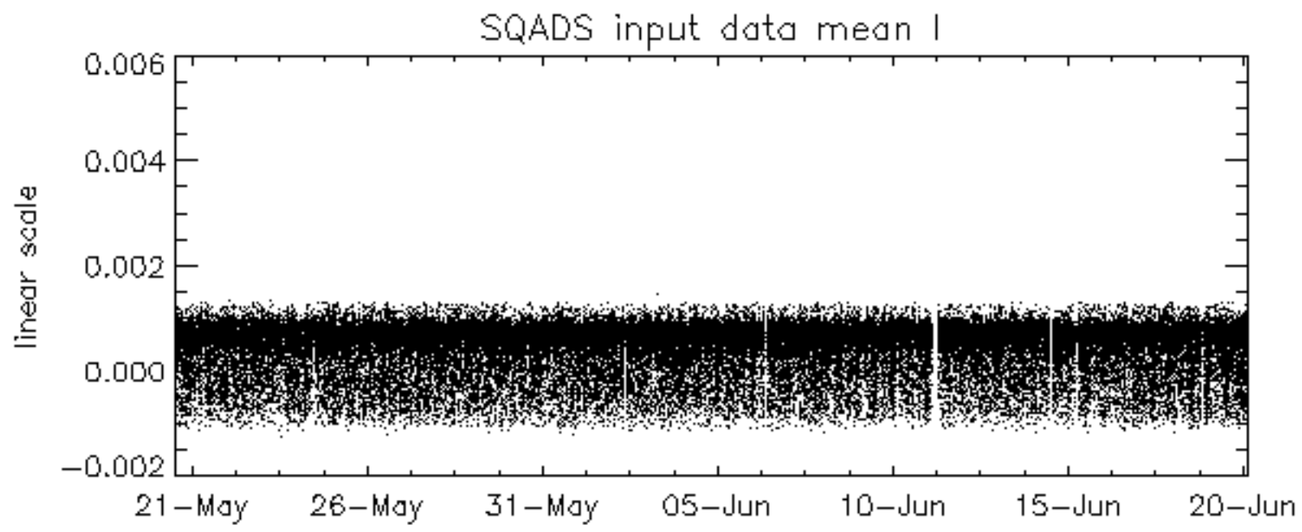
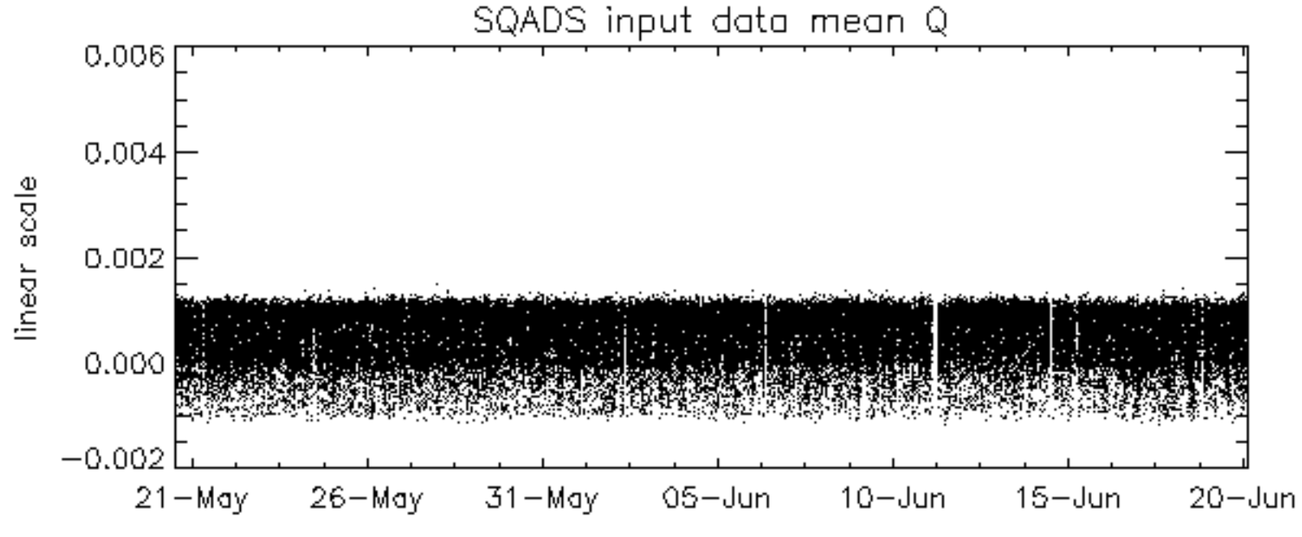
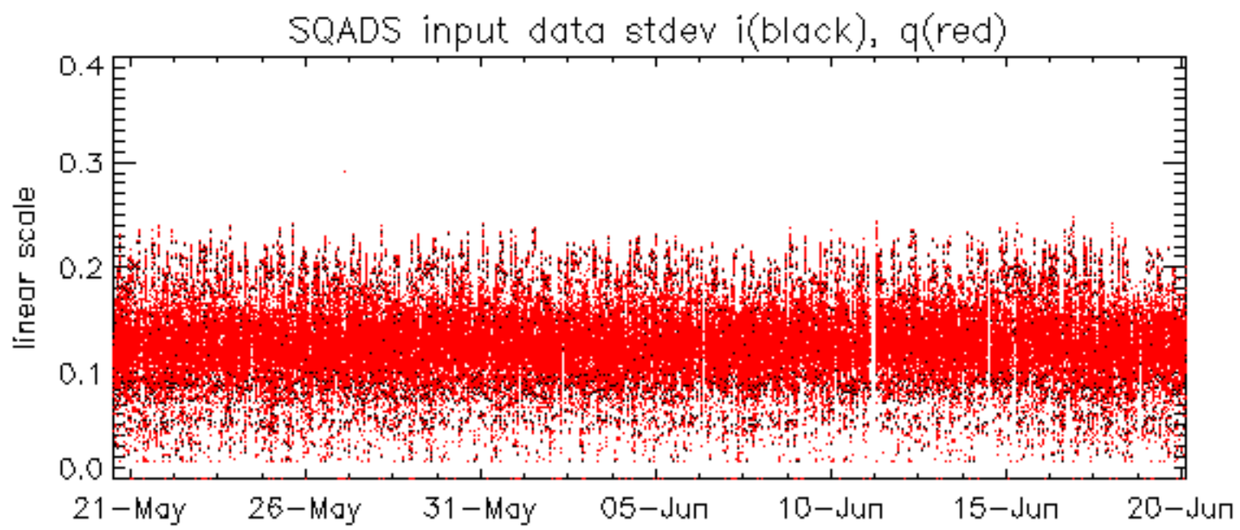
29
30
31
32

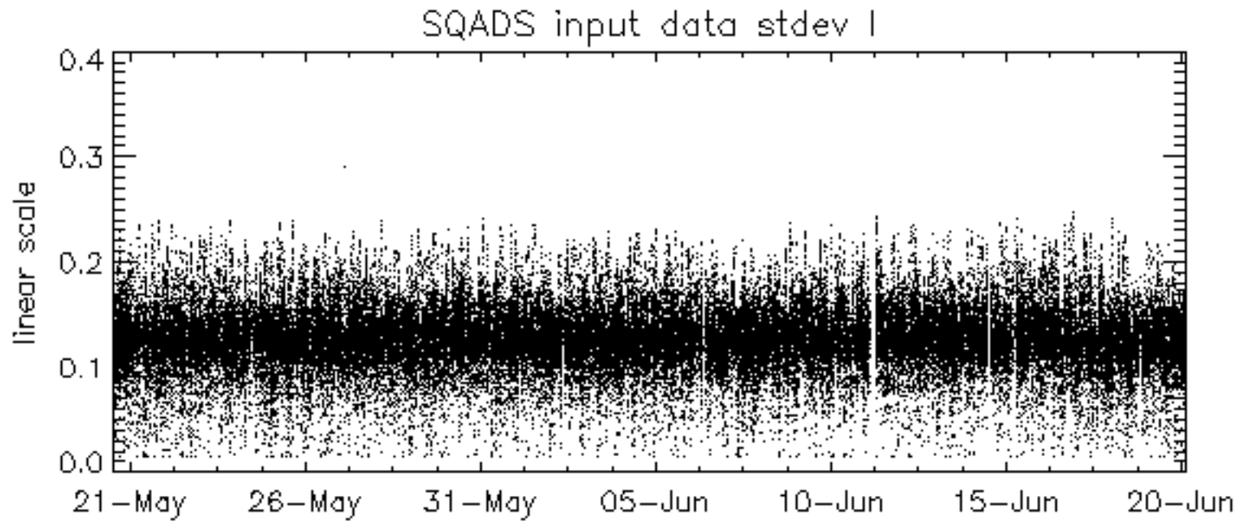

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4
0.5

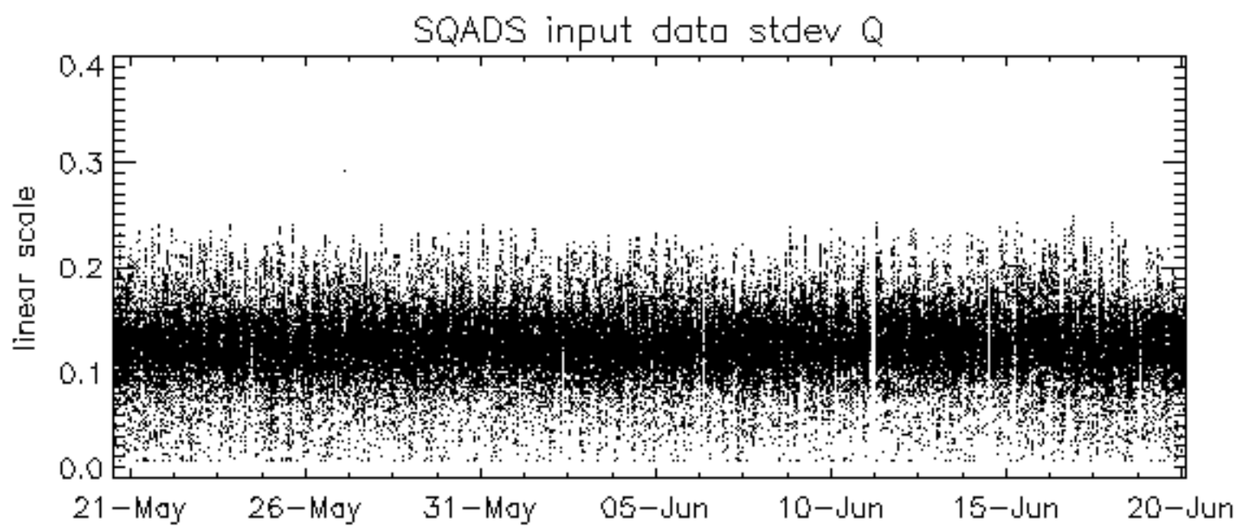

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−May
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun

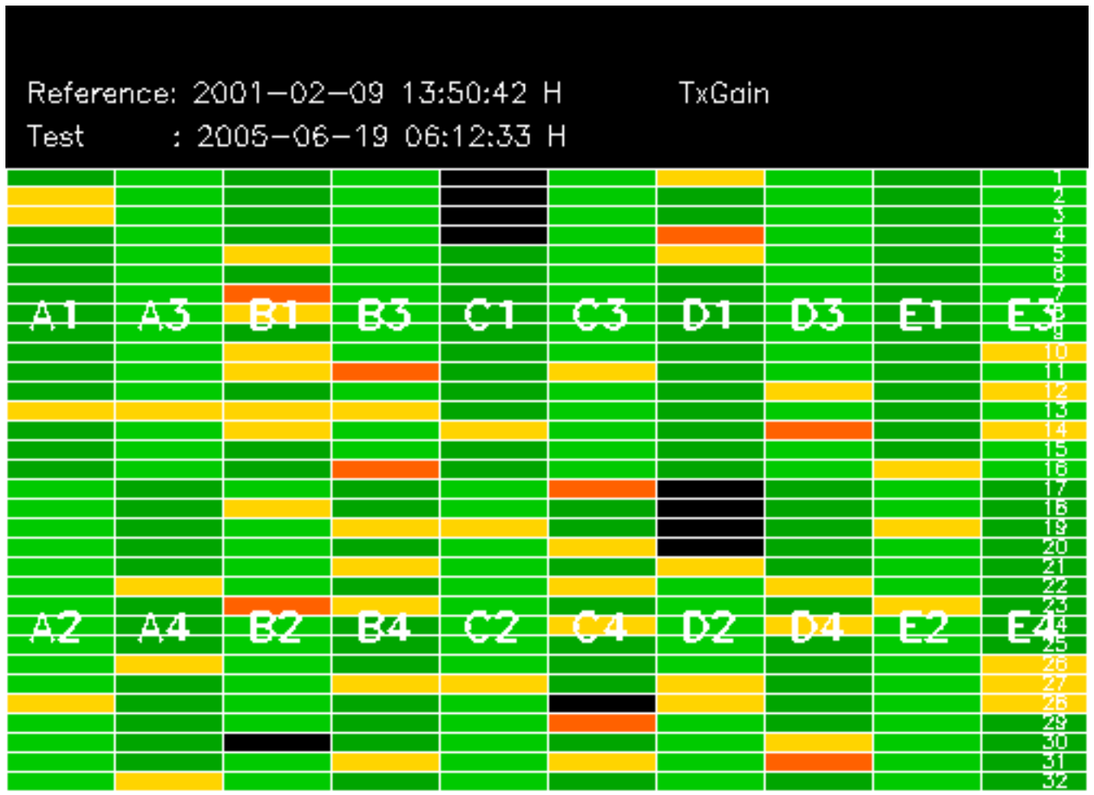

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−May
26−May
31−May
05−Jun
10−Jun
15−Jun
20−Jun


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-06-19 06:12:33 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
6
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8
9
10
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14
15
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22
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27
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29
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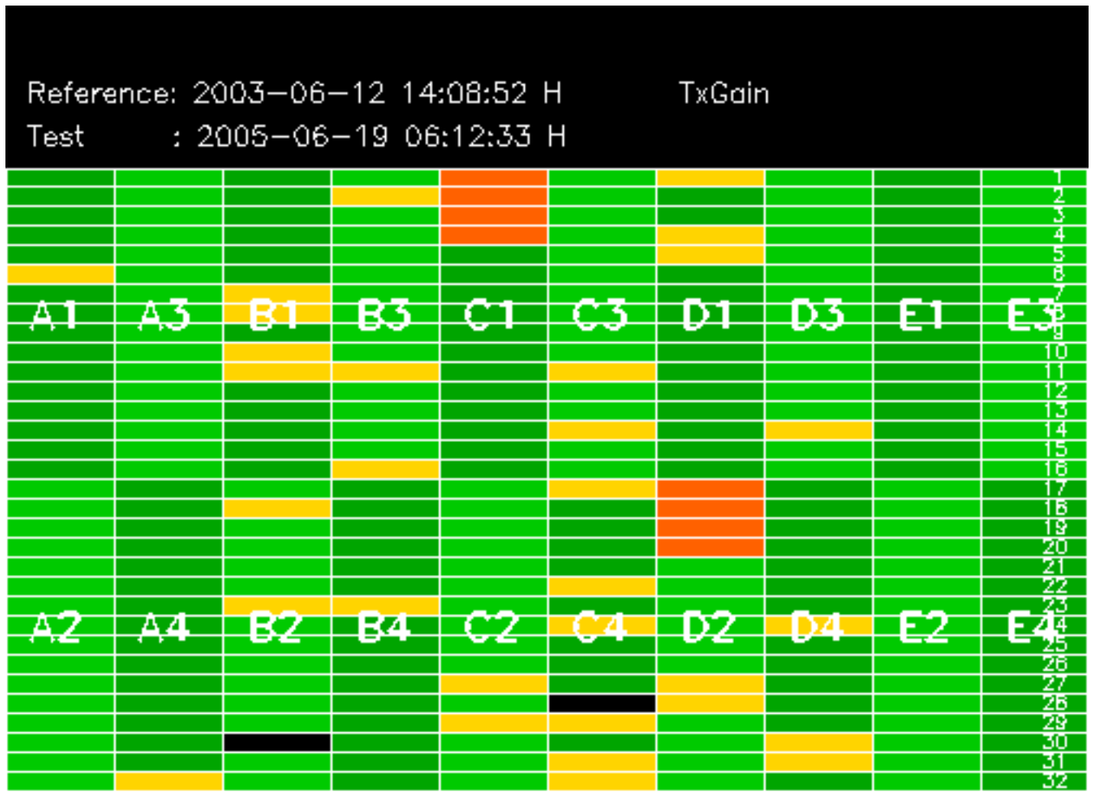
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-06-19 06:12:33 H
TxGain
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
TxGain
Test : 2005-06-18 06:44:10 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
6
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8
9
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26
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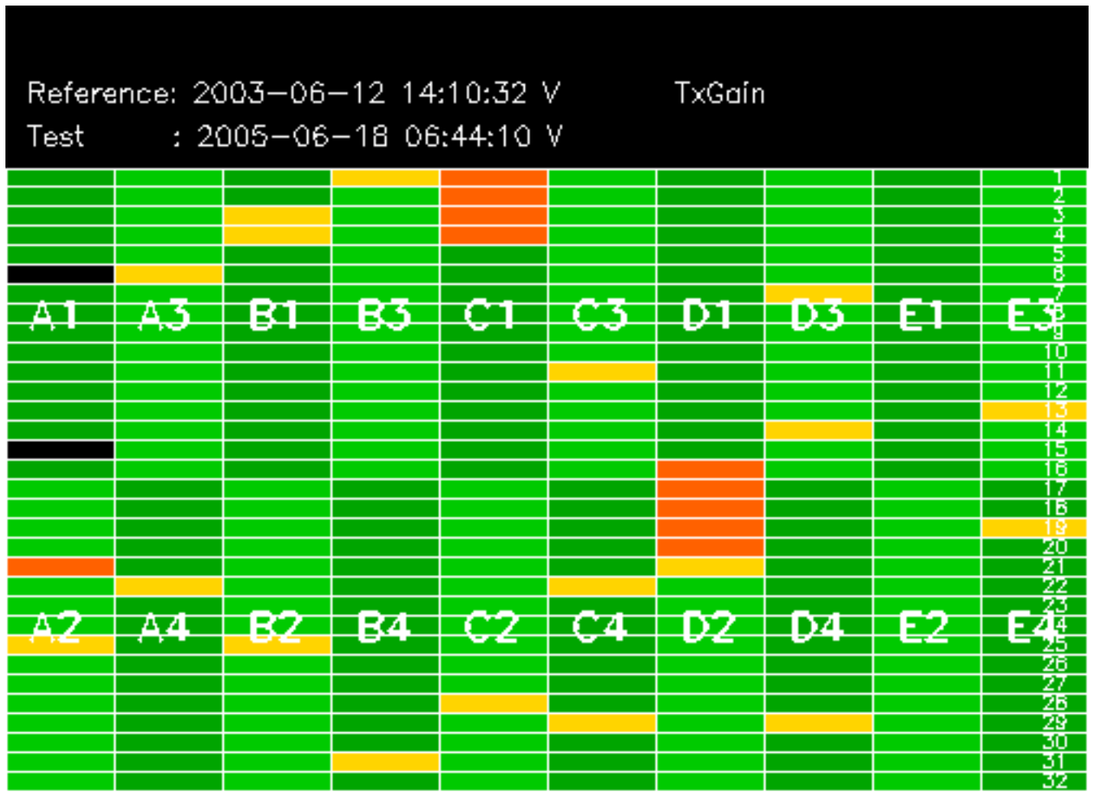
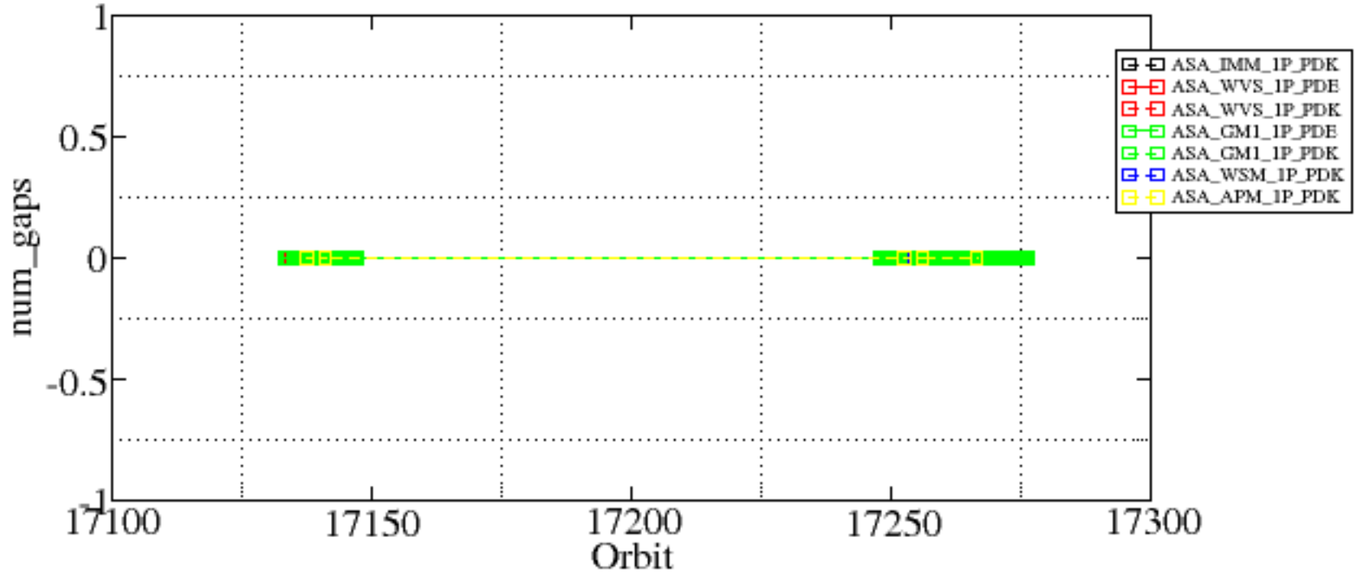
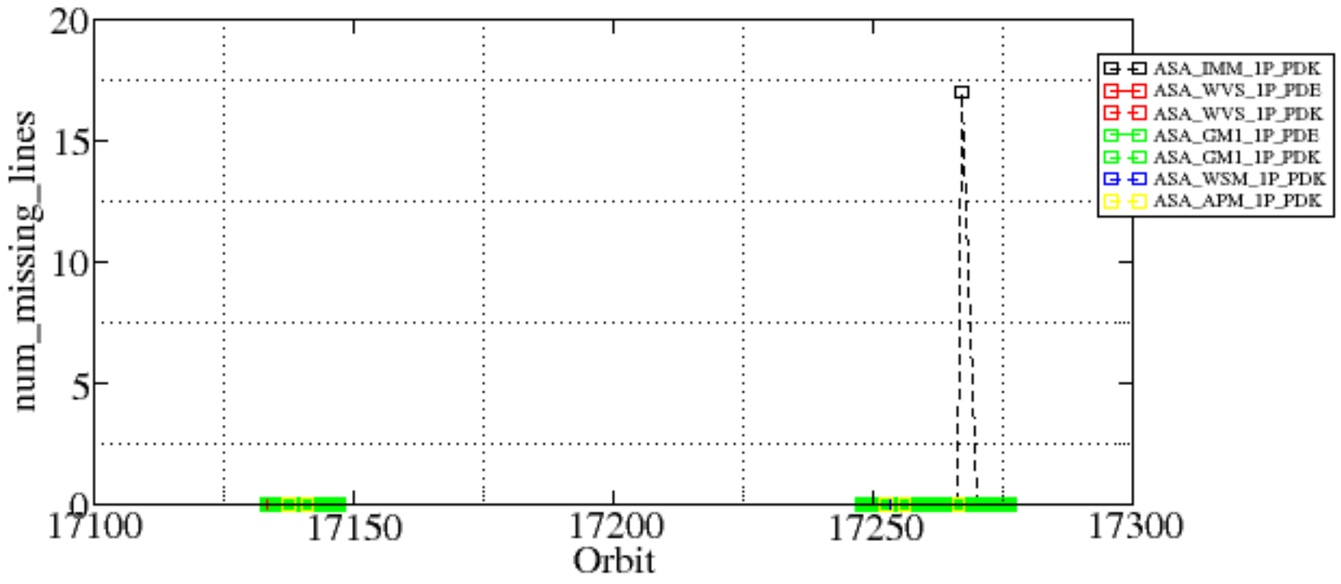
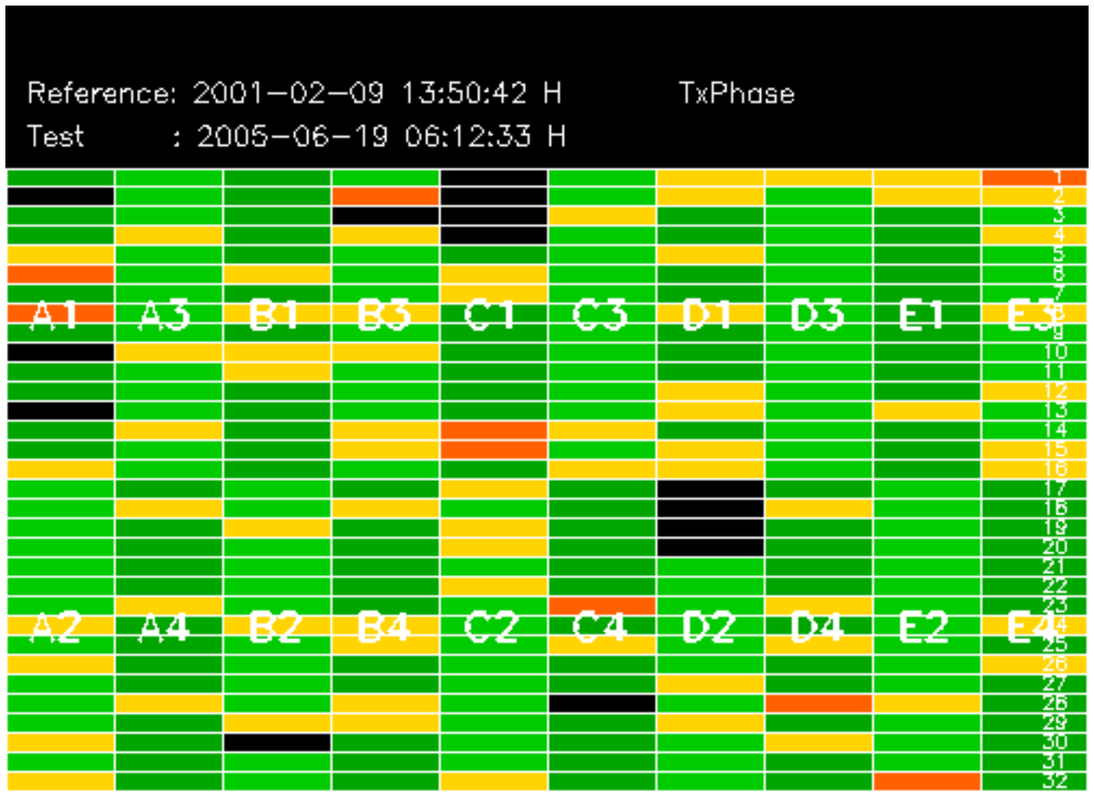
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-06-18 06:44:10 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 2005061[890]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDK20050619_083112_000000372038_00179_17267_0636.N1 </td> <td>0 </td> <td>17 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
17100
17150
17200
17250
17300
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_PDK


num_missing_lines
20
15
10
5
0
17100
17150
17200
17250
17300
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_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-06-19 06:12:33 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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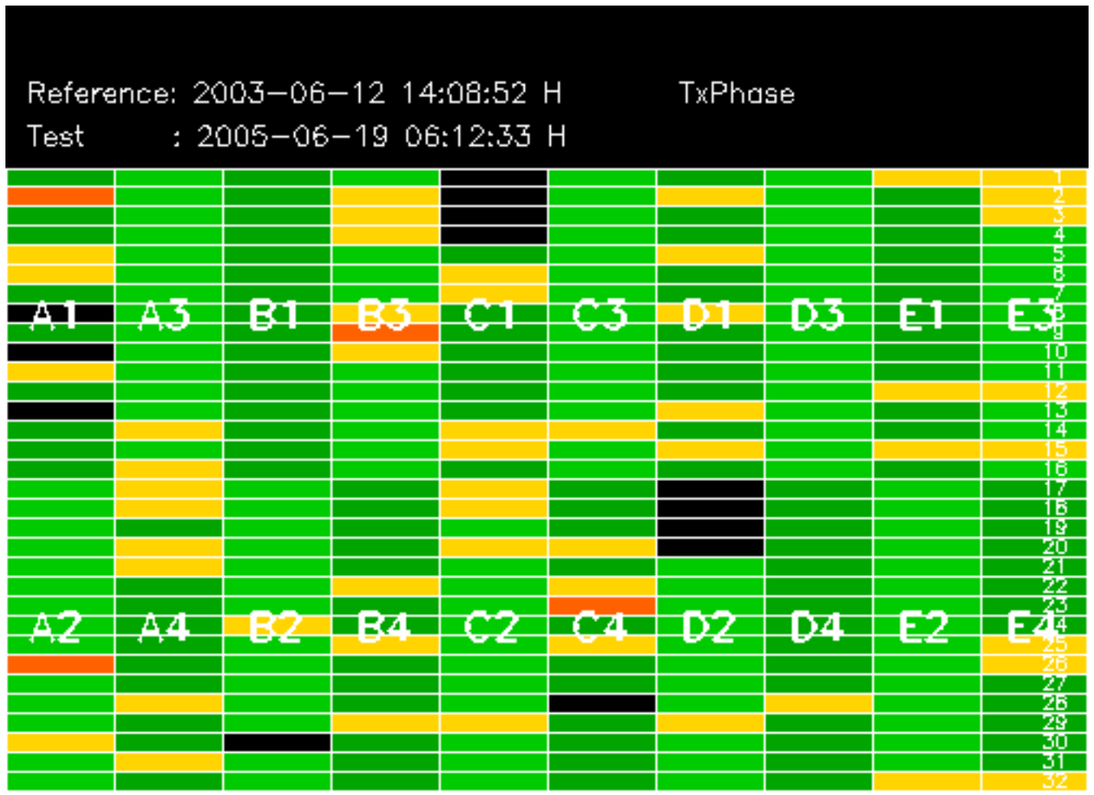
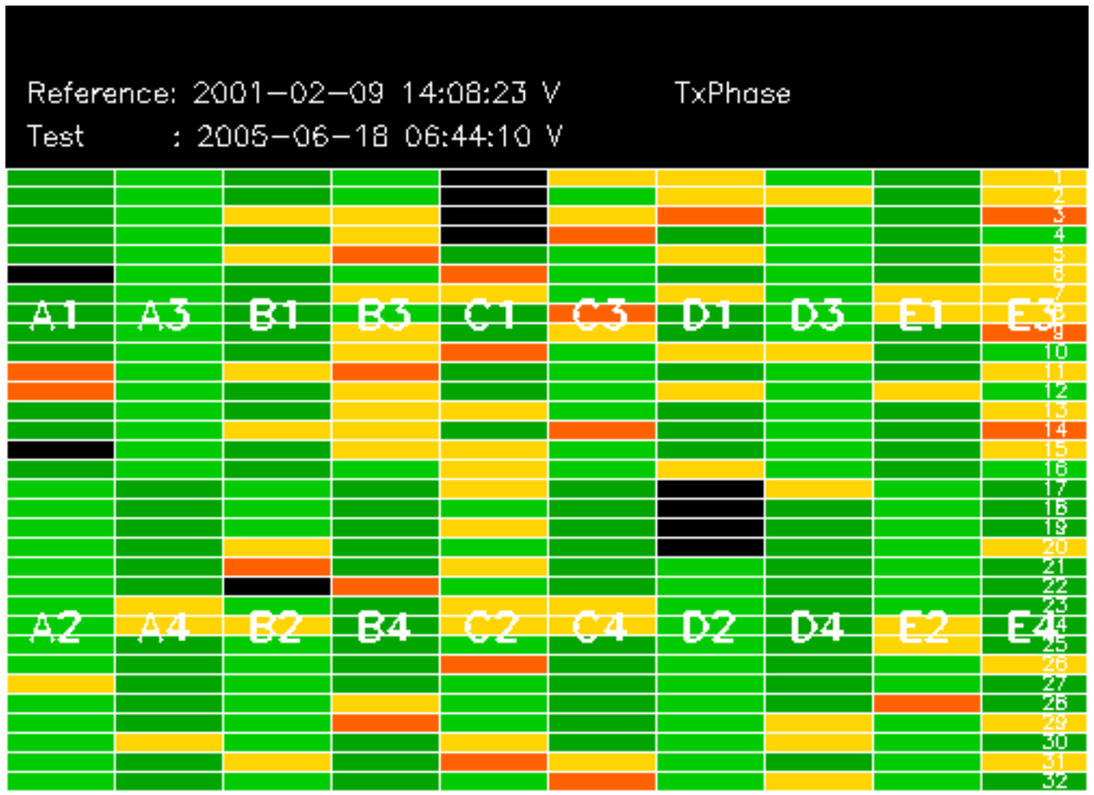
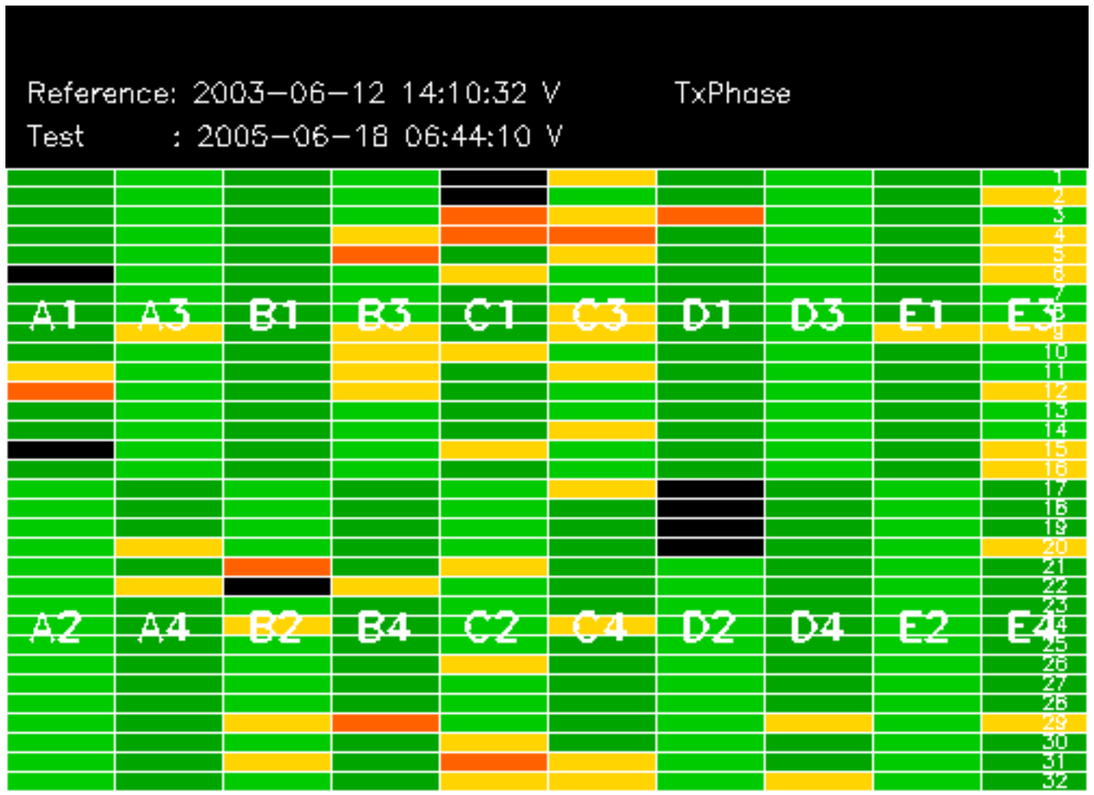
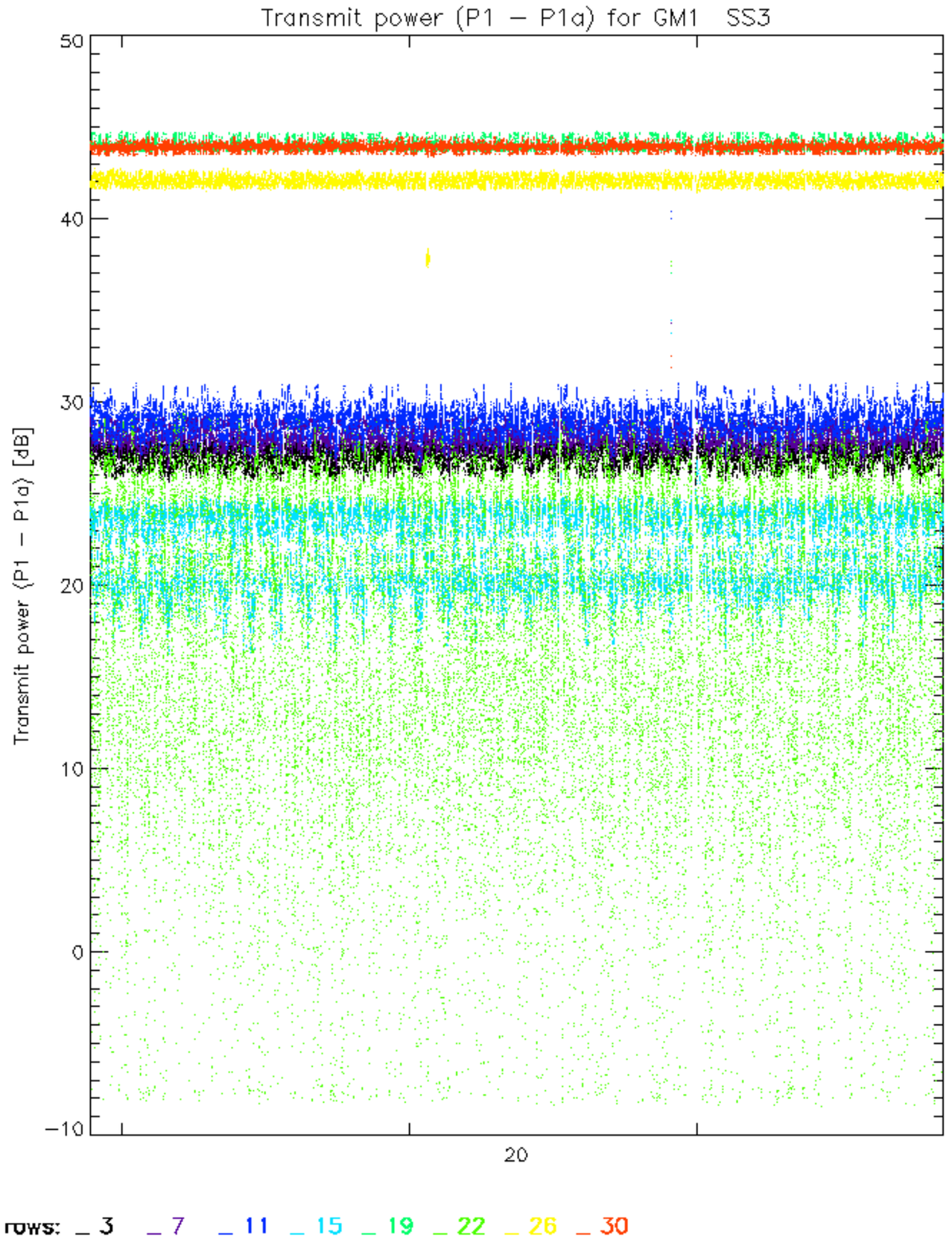
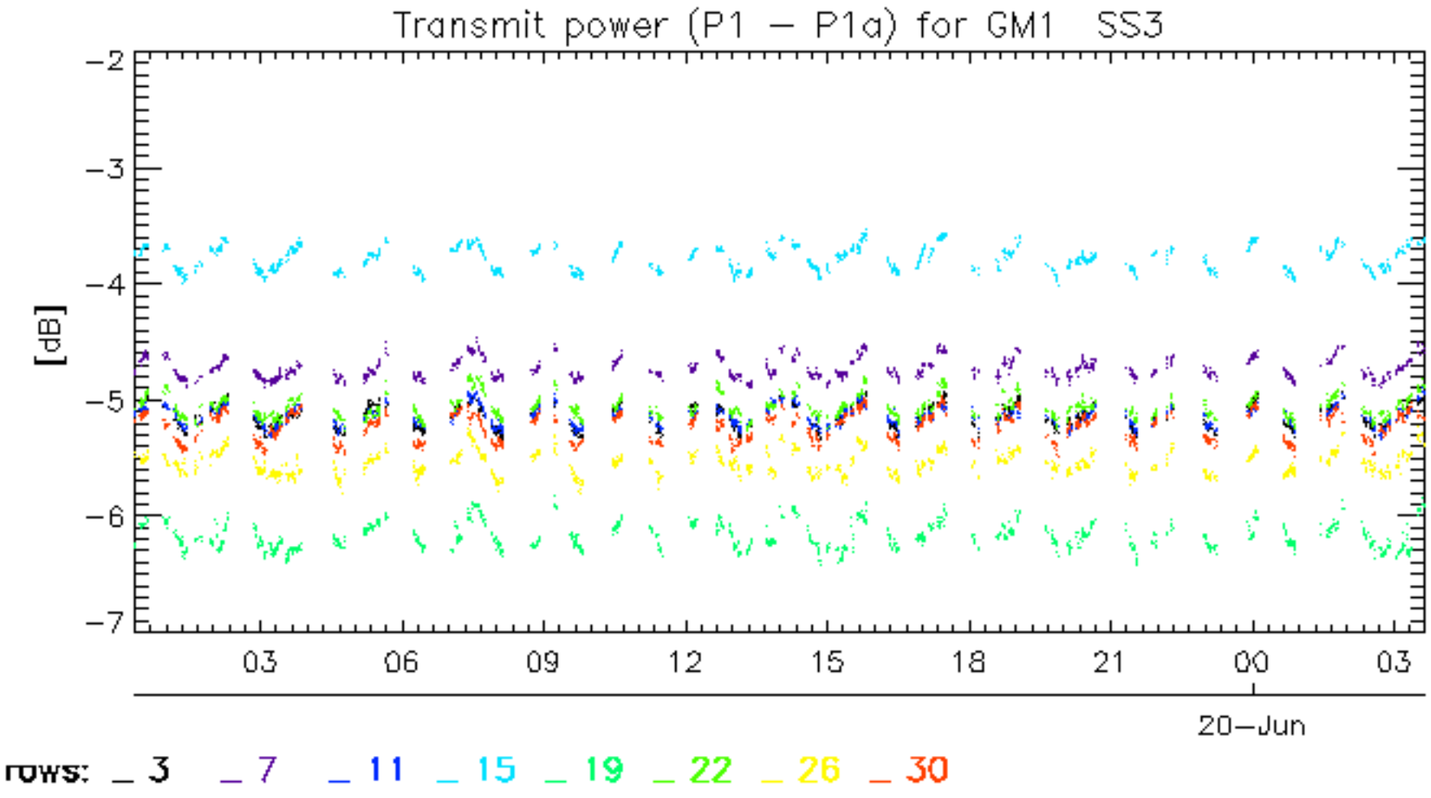
32

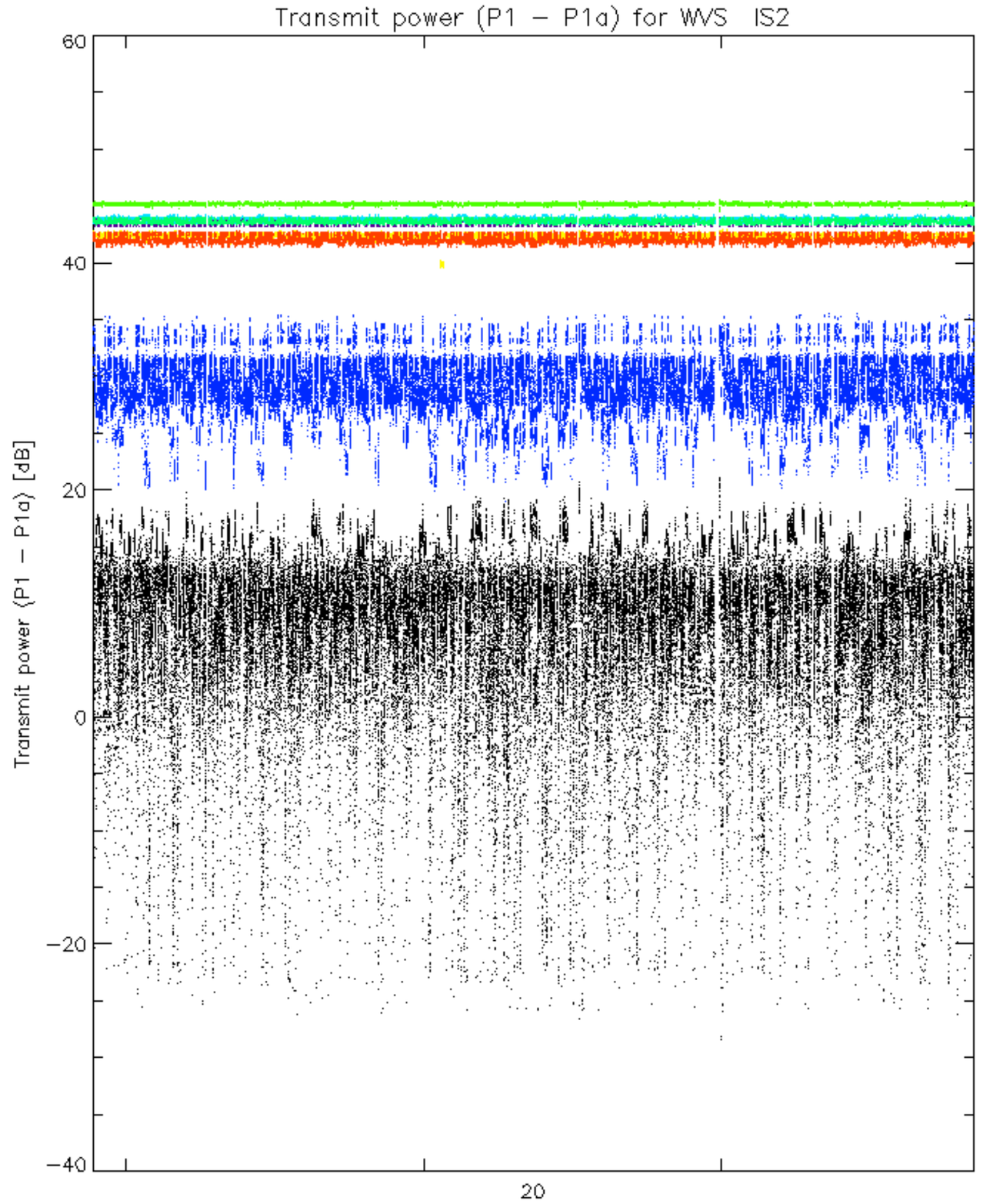

Reference: 2003-06-12 14:08:52 H
Test : 2005-06-19 06:12:33 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

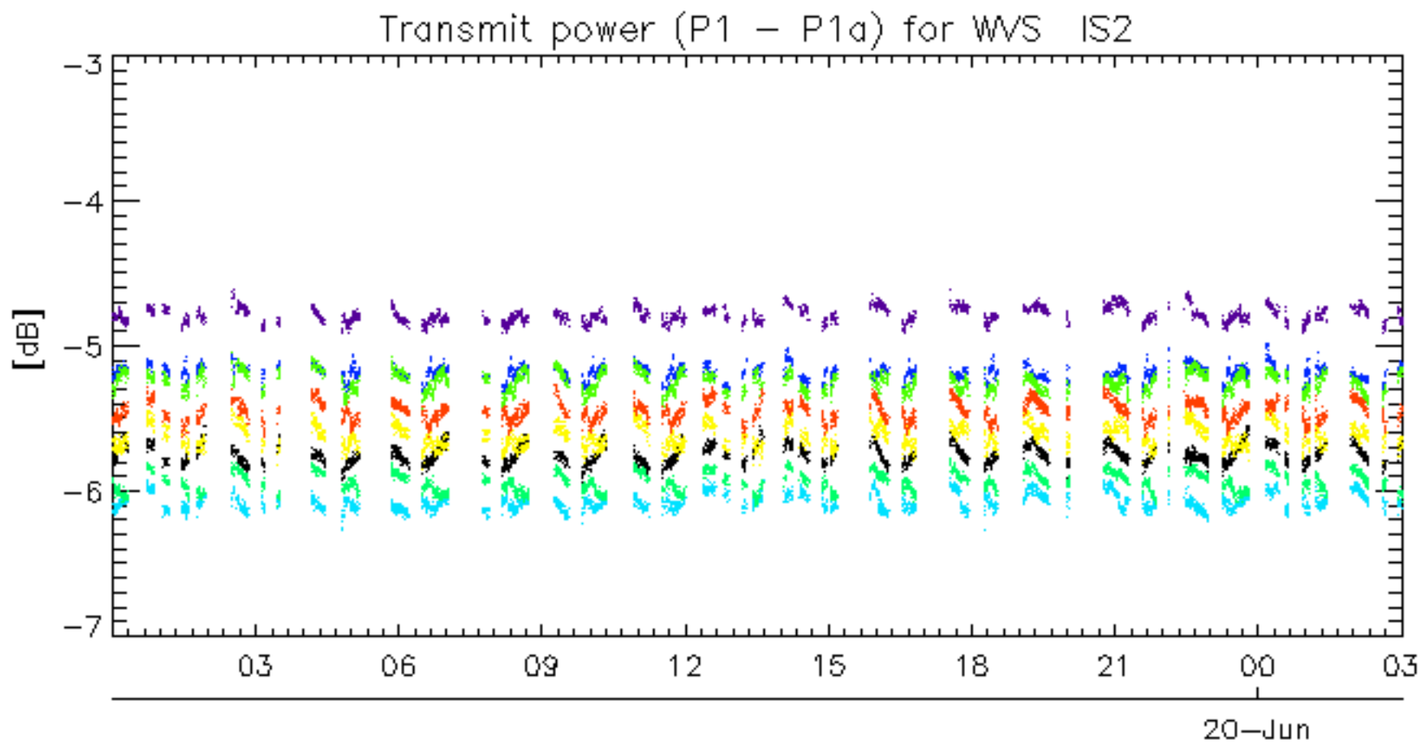

Reference: 2001-02-09 14:08:23 V
Test : 2005-06-18 06:44:10 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-06-18 06:44:10 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
20
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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


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

No unavailabilities during the reported period.