PRELIMINARY REPORT OF 050722

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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 2005-07-21 00:00:00 to 2005-07-22 10:57:30

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	17	36	17	6	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	17	36	17	6	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	17	36	17	6	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	17	36	17	6	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	36	51	35	8	43
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	36	51	35	8	43
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	36	51	35	8	43
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	36	51	35	8	43

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	20050721 074724
H	20050720 081902

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	-3.321700	0.006685	0.025689
7	P1	-3.137587	0.015147	0.016667
11	P1	-4.676701	0.033070	-0.060680
15	P1	-5.545845	0.047177	-0.056860
19	P1	-3.786999	0.046638	-0.030538
22	P1	-4.611086	0.067887	-0.027333
26	P1	-4.848586	0.072565	0.017989
30	P1	-7.208711	0.162953	-0.072105
3	P1	-15.570423	0.083223	-0.011985
7	P1	-15.538773	0.109227	0.092098
11	P1	-21.587055	0.261920	-0.256888
15	P1	-11.290402	0.044812	0.013290
19	P1	-14.494203	0.264182	-0.048410
22	P1	-15.795073	0.355327	0.176317
26	P1	-17.505775	0.250788	0.263429
30	P1	-17.757566	0.365315	0.112232

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.882563	0.082620	0.123729
7	P2	-22.060835	0.104850	0.172674
11	P2	-13.724751	0.104812	0.263184
15	P2	-7.100871	0.093098	0.083376
19	P2	-9.597735	0.093824	0.039484
22	P2	-16.859613	0.094219	0.028224
26	P2	-16.506409	0.096486	0.028746
30	P2	-18.789133	0.083232	0.003570

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.158680	0.002759	0.016793
7	P3	-8.158680	0.002759	0.016793
11	P3	-8.158680	0.002759	0.016793
15	P3	-8.158680	0.002759	0.016793
19	P3	-8.158680	0.002759	0.016793
22	P3	-8.158680	0.002759	0.016793
26	P3	-8.158680	0.002759	0.016793
30	P3	-8.158680	0.002759	0.016793

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	-2.785614	0.013823	0.029939
7	P1	-2.952025	0.031874	0.002243
11	P1	-3.992386	0.017109	-0.021559
15	P1	-3.561411	0.023604	-0.050243
19	P1	-3.672111	0.119715	0.007679
22	P1	-5.672670	0.112926	-0.024948
26	P1	-7.381430	0.200775	-0.060959
30	P1	-6.322258	0.120477	-0.061094
3	P1	-10.820952	0.039100	0.042661
7	P1	-10.440444	0.157852	-0.035432
11	P1	-12.606370	0.111145	-0.051295
15	P1	-11.617352	0.074780	0.017415
19	P1	-15.678189	1.387748	0.073156
22	P1	-25.854219	3.491029	0.442915
26	P1	-15.437509	0.419188	0.194062
30	P1	-20.139782	1.287697	0.223616

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.632856	0.047107	0.136173
7	P2	-22.062798	0.040312	0.074421
11	P2	-9.729013	0.061702	0.182869
15	P2	-5.129367	0.046667	0.024766
19	P2	-6.908300	0.063504	0.015770
22	P2	-7.088698	0.039534	0.038964
26	P2	-23.967426	0.043945	-0.018396
30	P2	-21.959267	0.041963	0.026088

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998654	0.004140	0.001850
7	P3	-7.998665	0.004130	0.001916
11	P3	-7.998631	0.004128	0.002319
15	P3	-7.998719	0.004135	0.002173
19	P3	-7.998709	0.004142	0.001704
22	P3	-7.998749	0.004124	0.001834
26	P3	-7.998772	0.004129	0.001977
30	P3	-7.998704	0.004125	0.002026

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	0.000464405
	stdev	2.17874e-07
MEAN Q	mean	0.000498832
	stdev	2.33418e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127614
	stdev	0.000987384
STDEV Q	mean	0.127855
	stdev	0.000997783

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005072[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_WVS_1PNPDE20050720_030923_000000002039_00118_17707_0049.N1	1	0
ASA_WSM_1PNPDE20050720_062911_000001462039_00120_17709_0357.N1	0	21

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

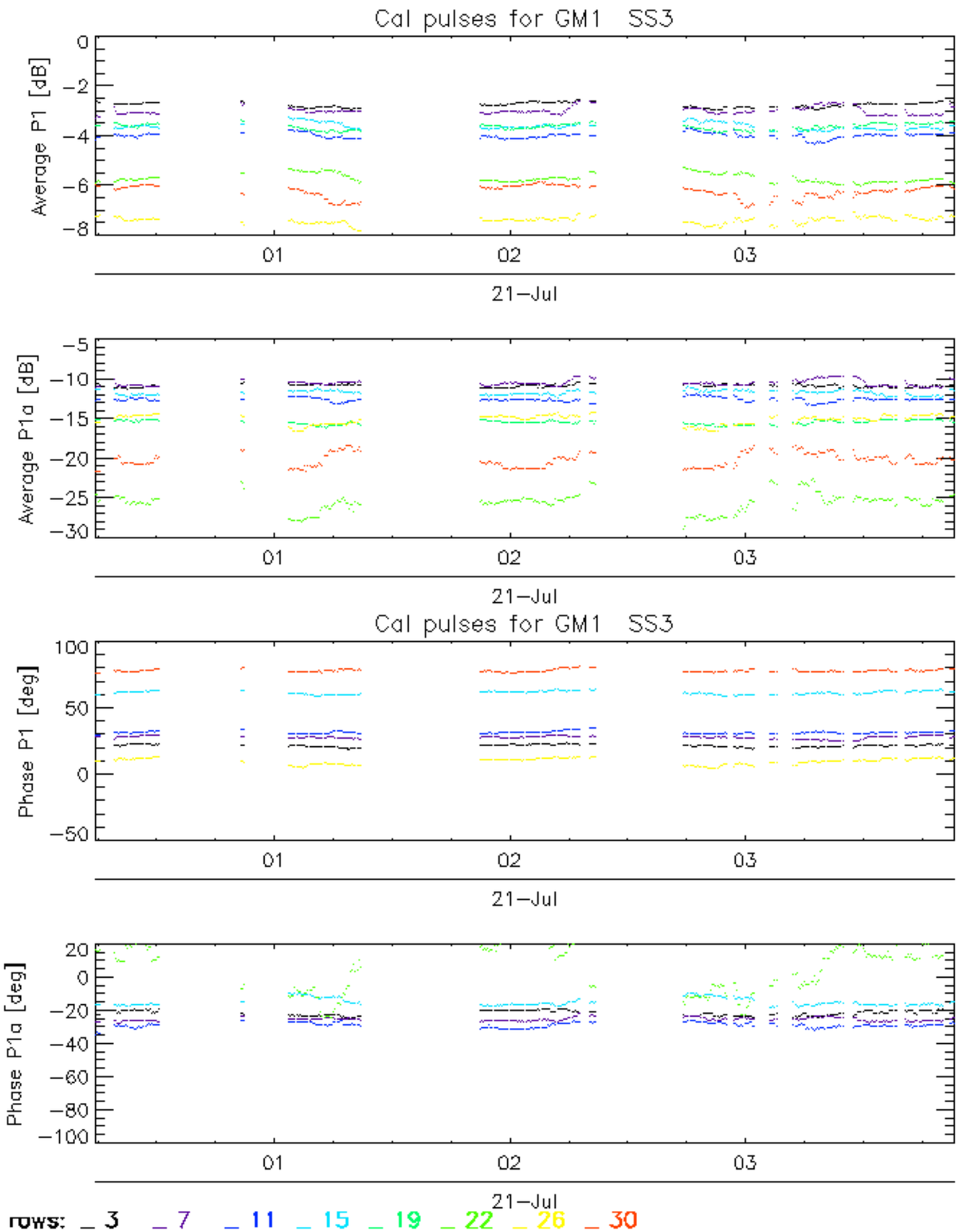
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

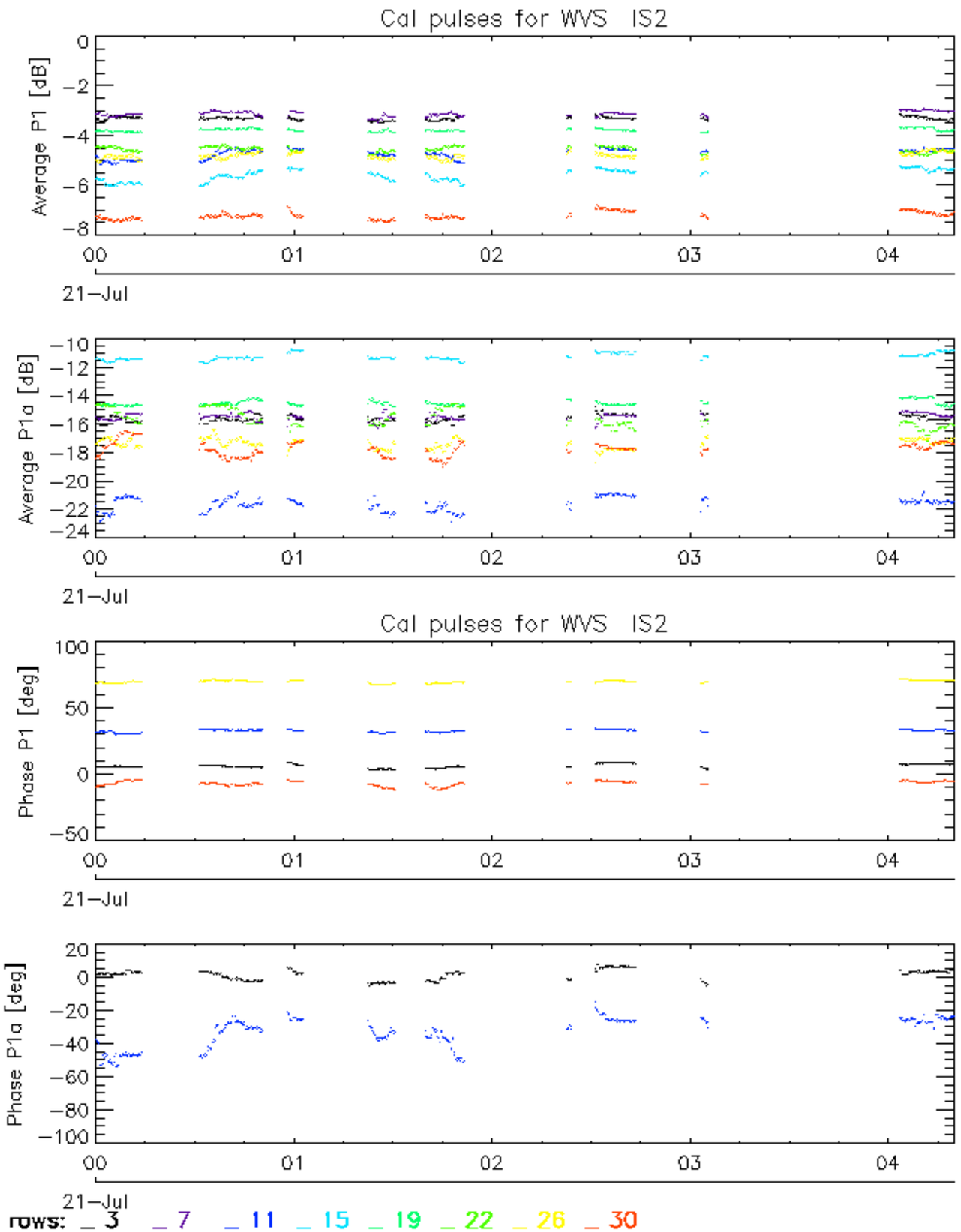
7.5 - Absolute Doppler for GM1

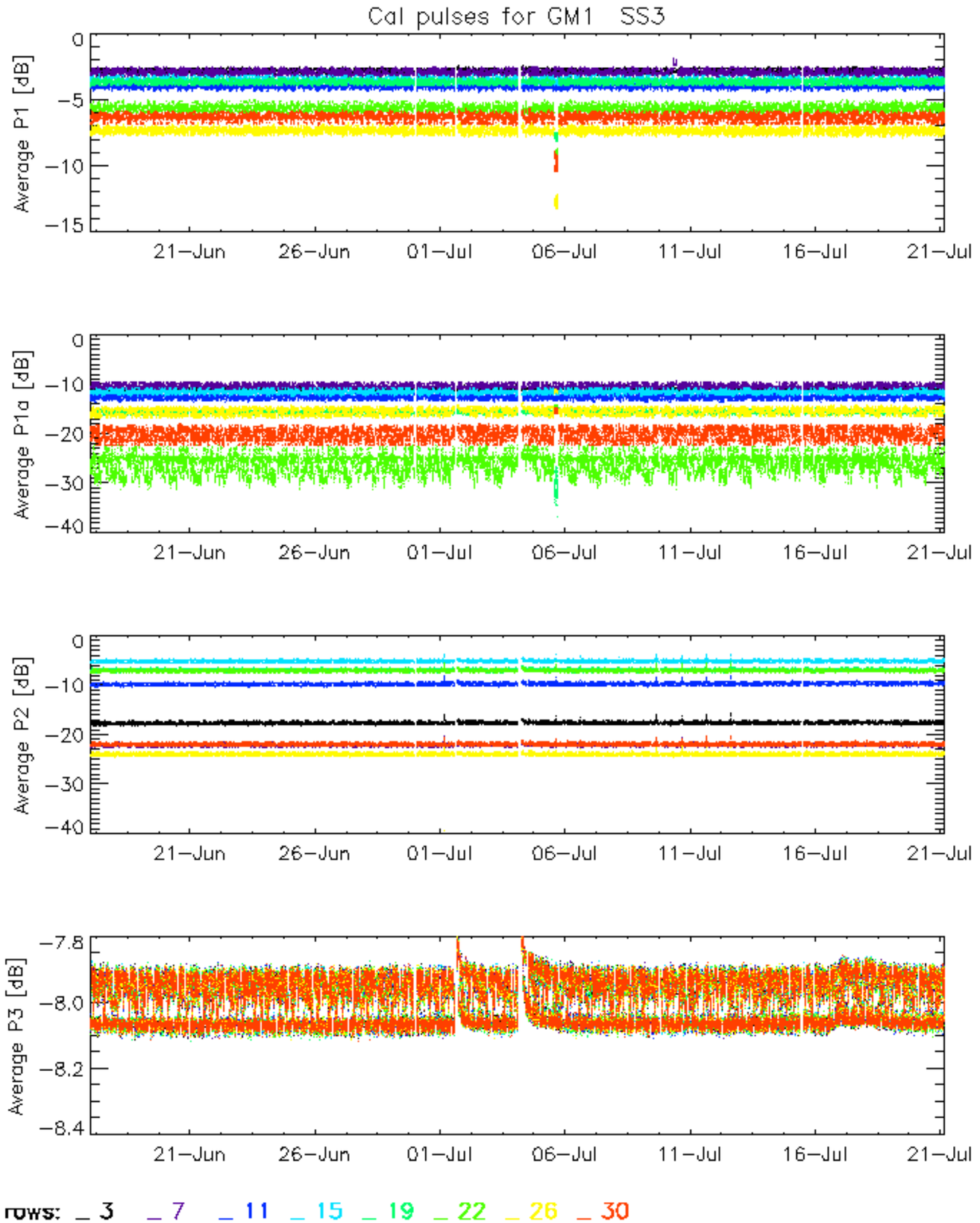
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

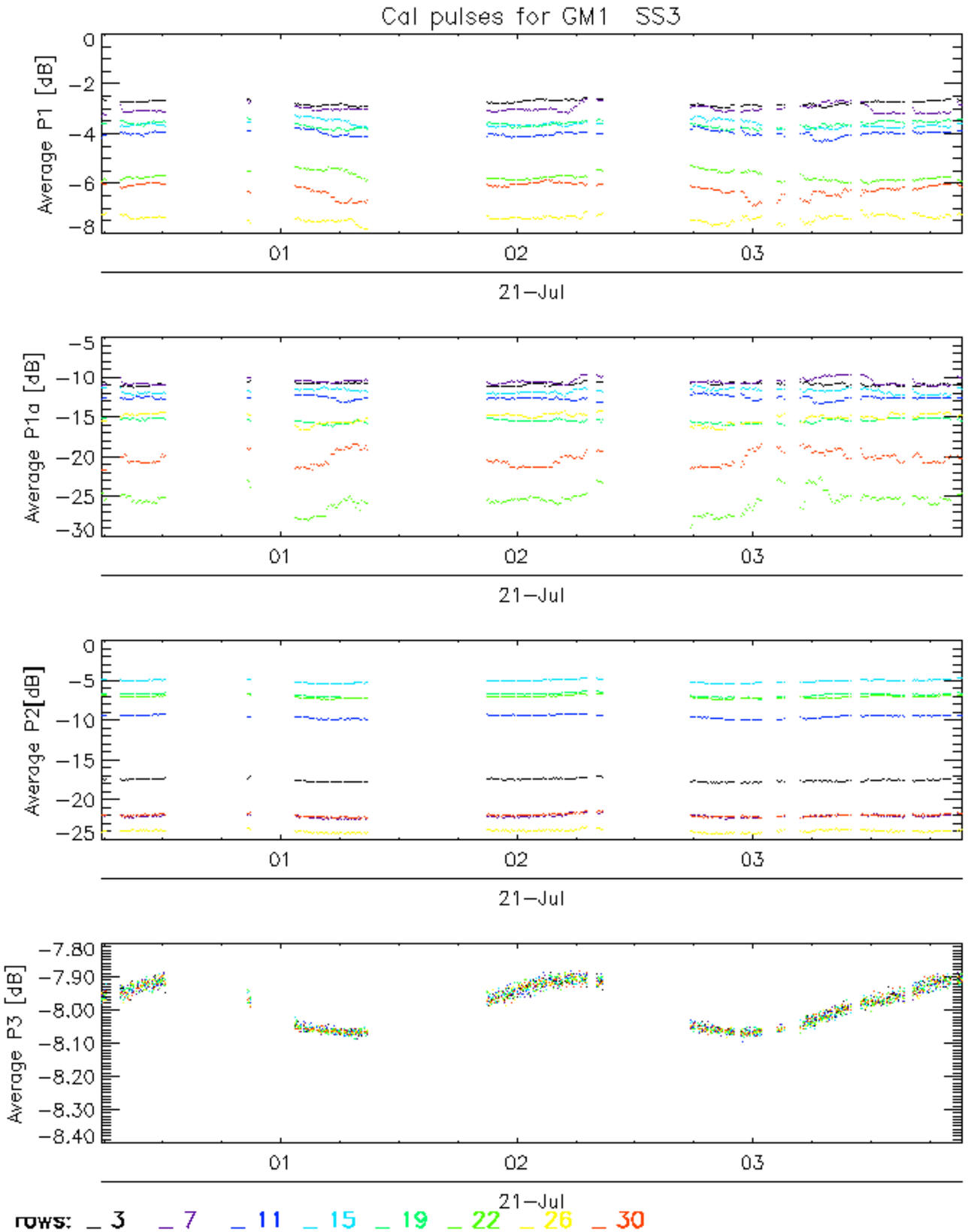
7.6 - Doppler evolution versus ANX for GM1

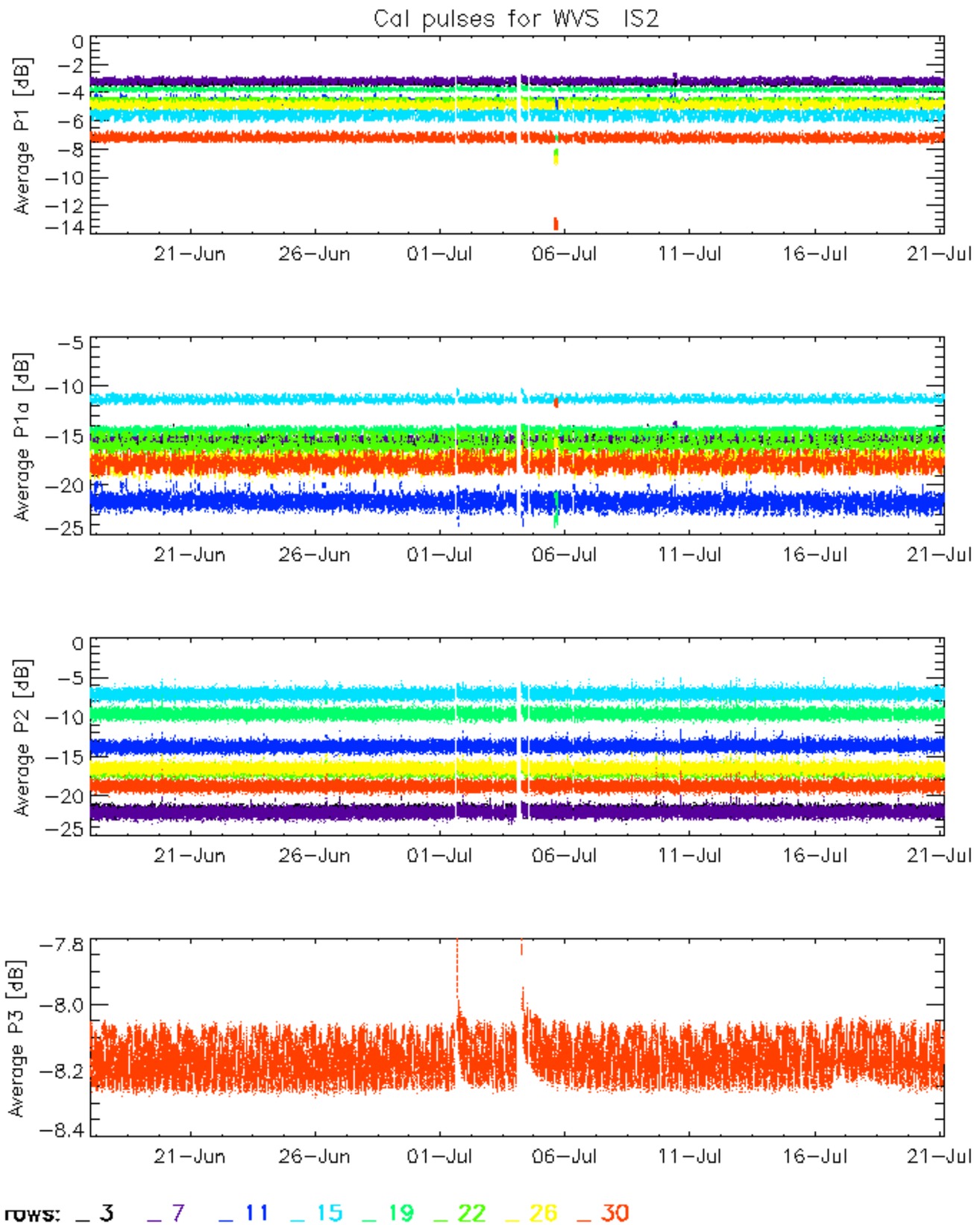
Evolution Doppler error versus ANX
☒

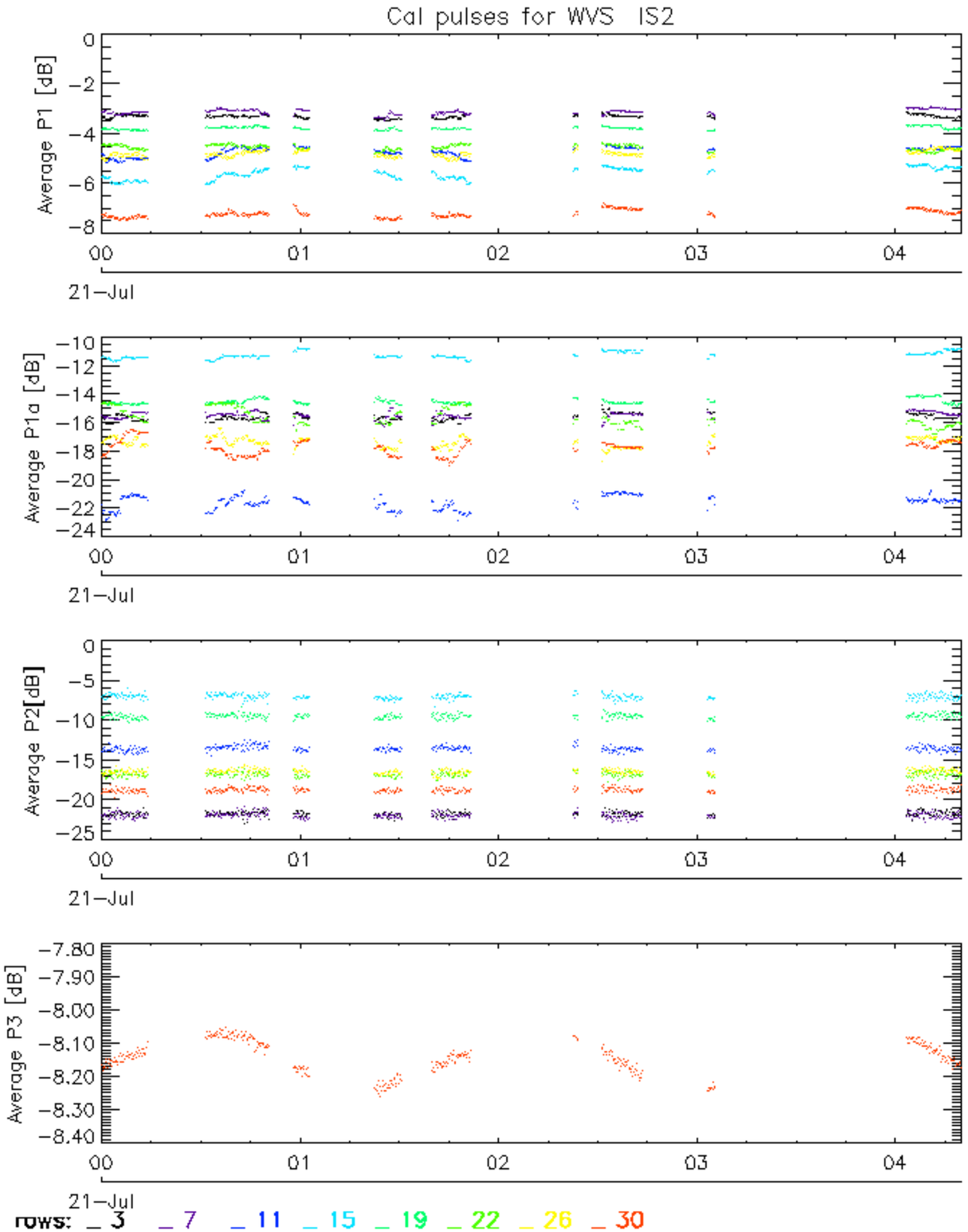

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
01
02
03
21−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
01
02
03
21−Jul
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
01
02
03
21−Jul
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
01
02
03
21−Jul
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
00
01
02
03
04
21−Jul
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

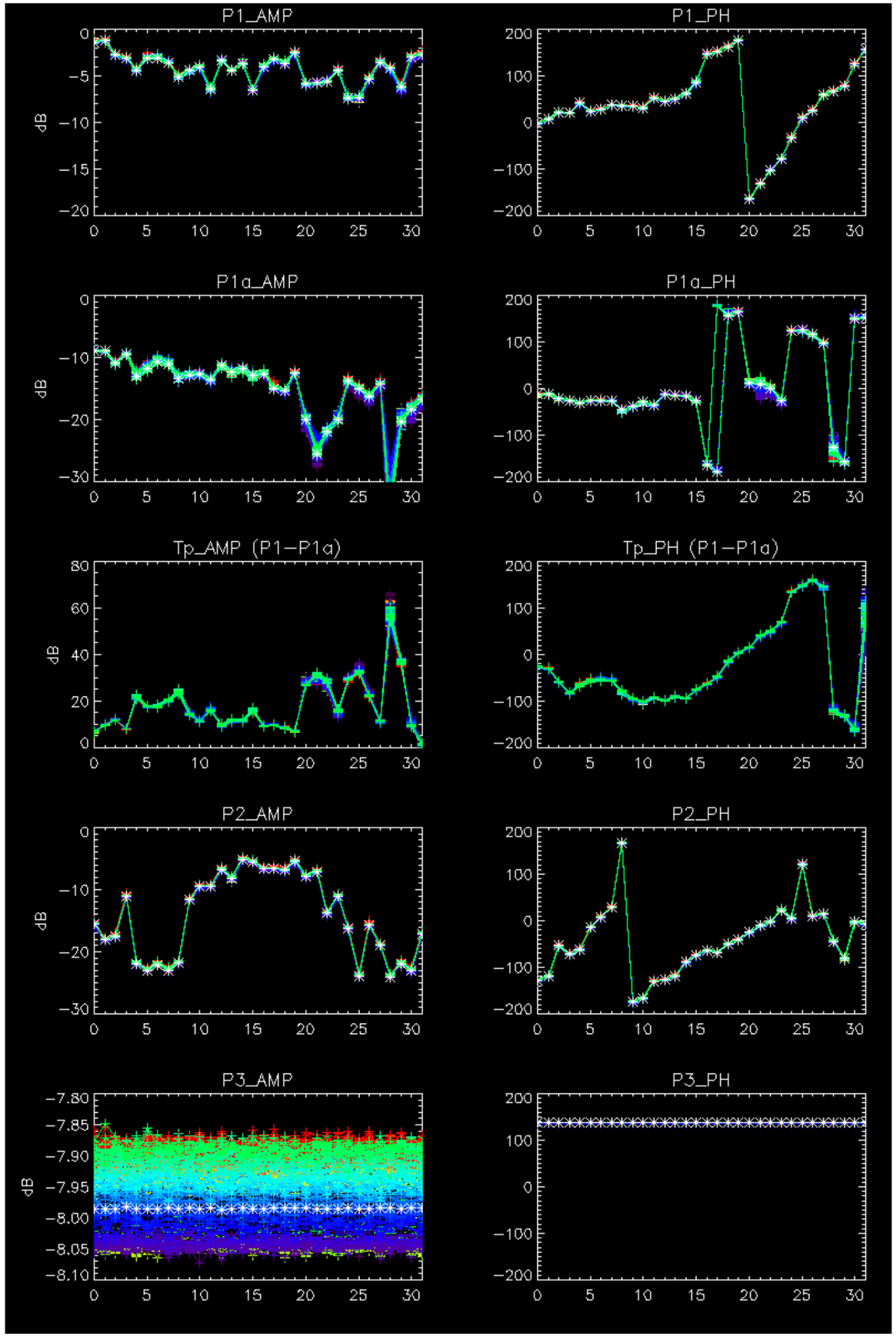

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
Average P1a [dB]
0
−10
−20
−30
−40
Average P2 [dB]
0
−10
−20
−30
−40
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

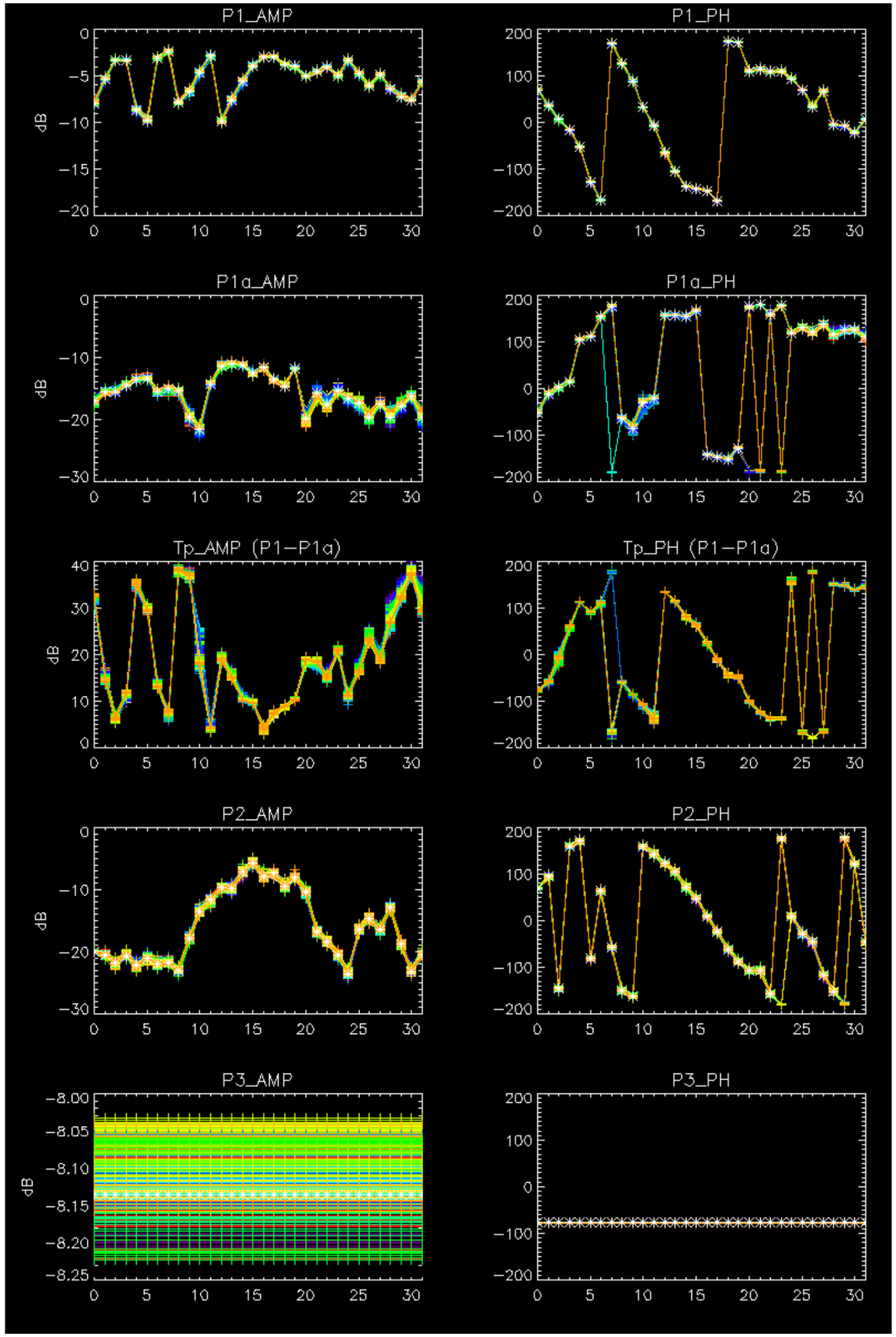

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
01
02
03
21−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
01
02
03
21−Jul
Average P2[dB]
0
−5
−10
−15
−20
−25
01
02
03
21−Jul
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
01
02
03
21−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−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
01
02
03
04
21−Jul
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2[dB]
−5
−15
−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

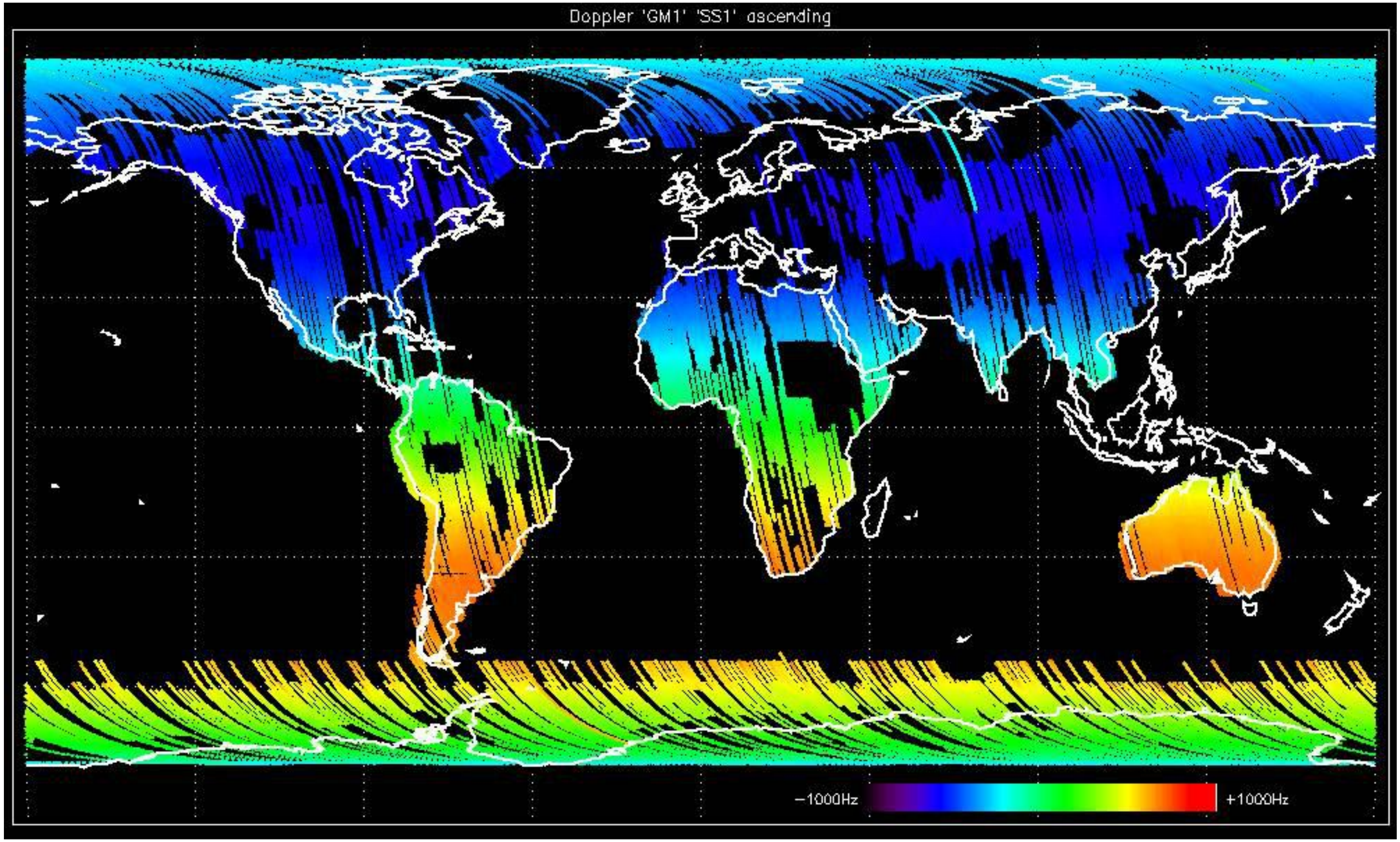
No anomalies observed.

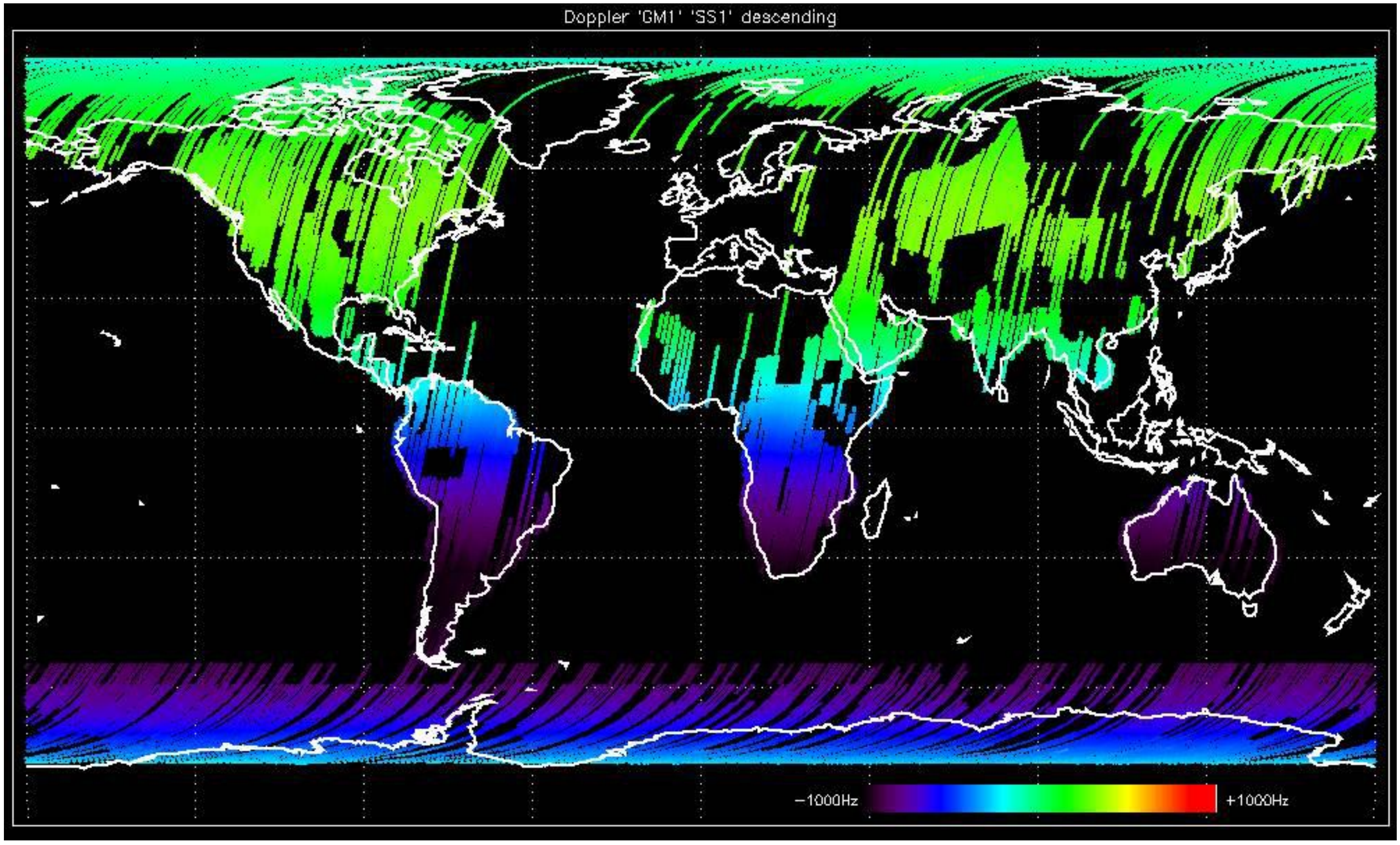

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

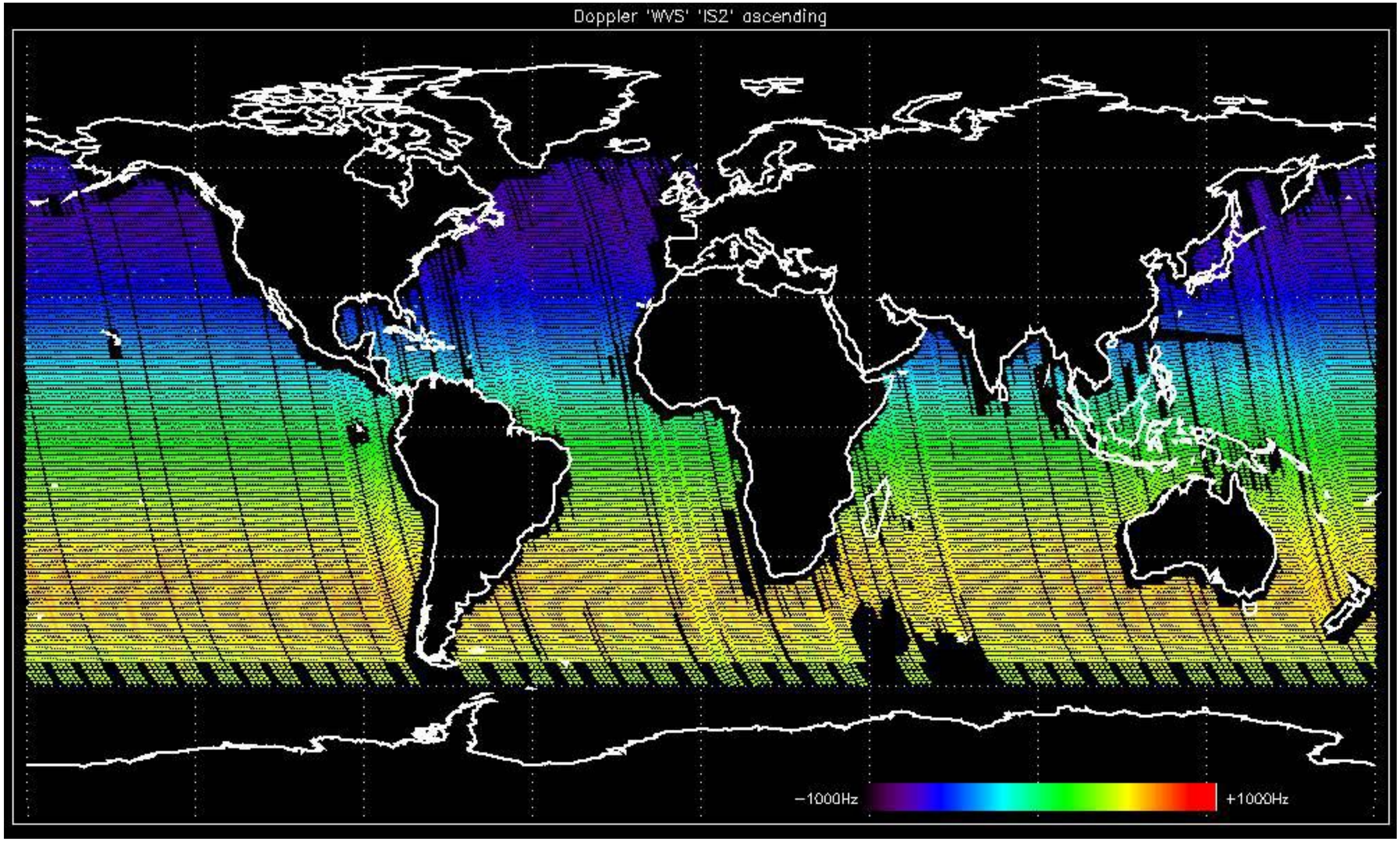

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

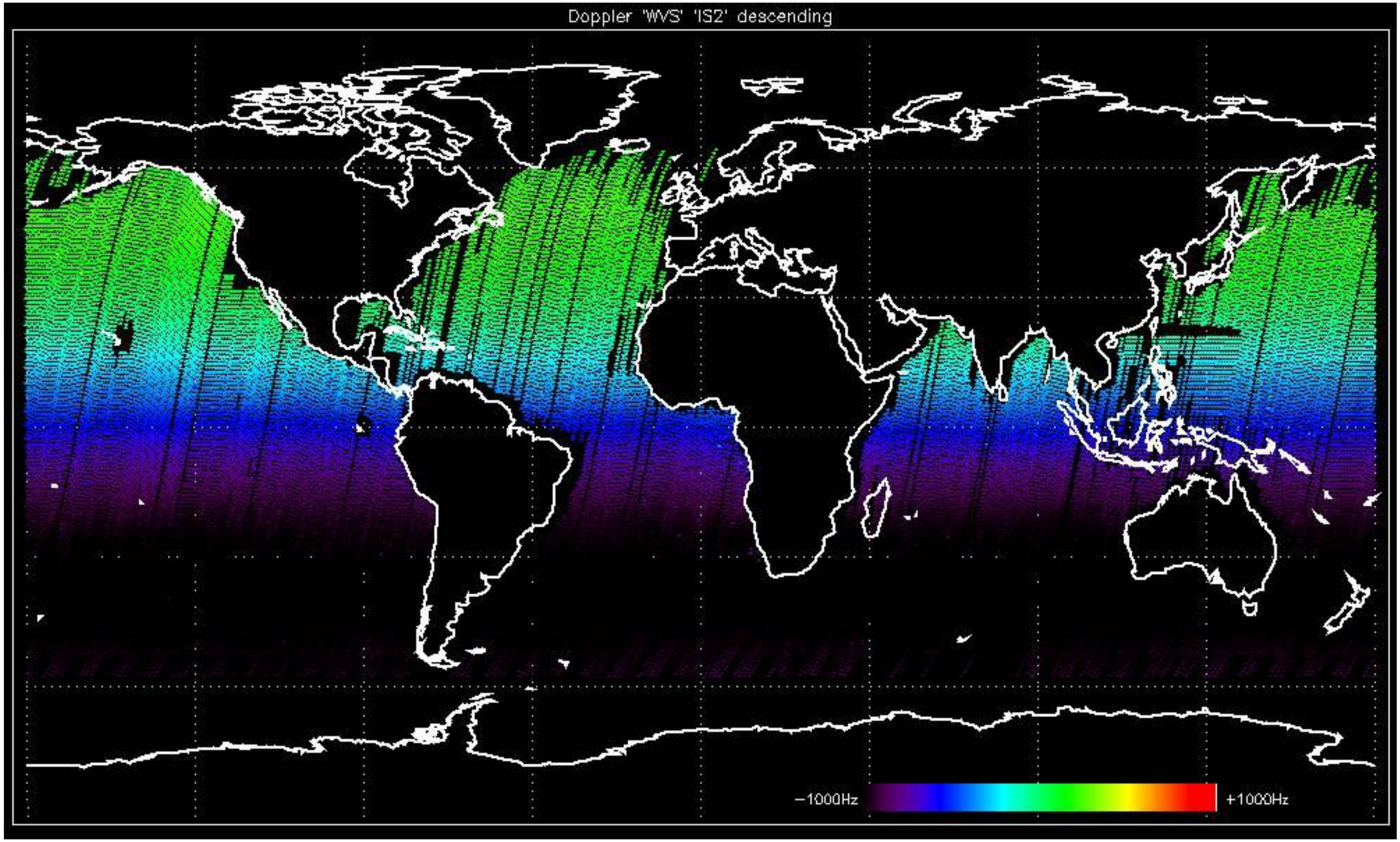
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

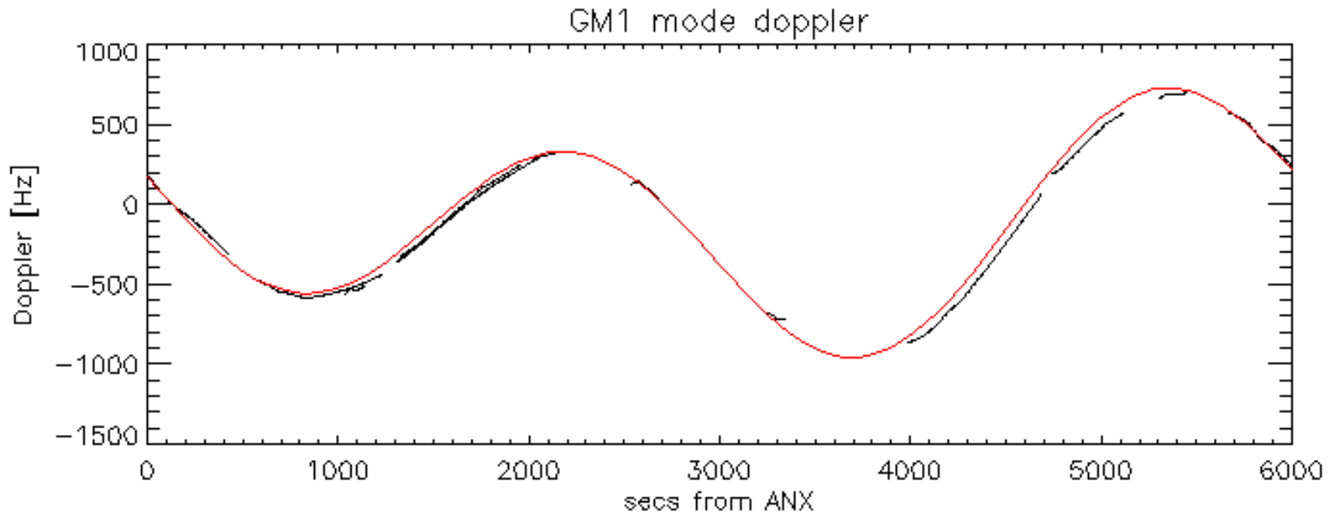
Preliminary report.The data is not yet controled

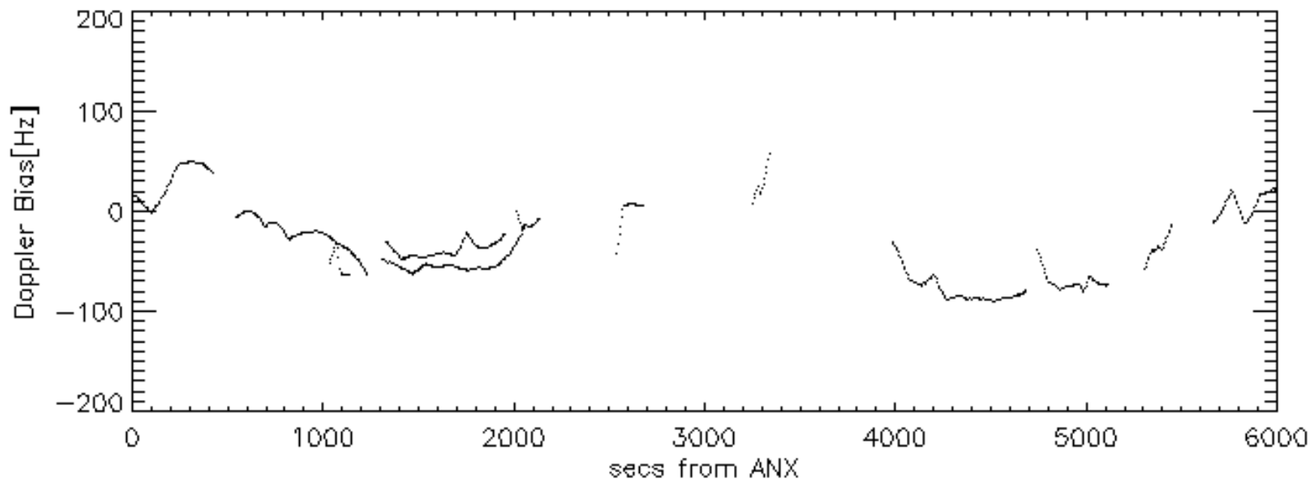

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

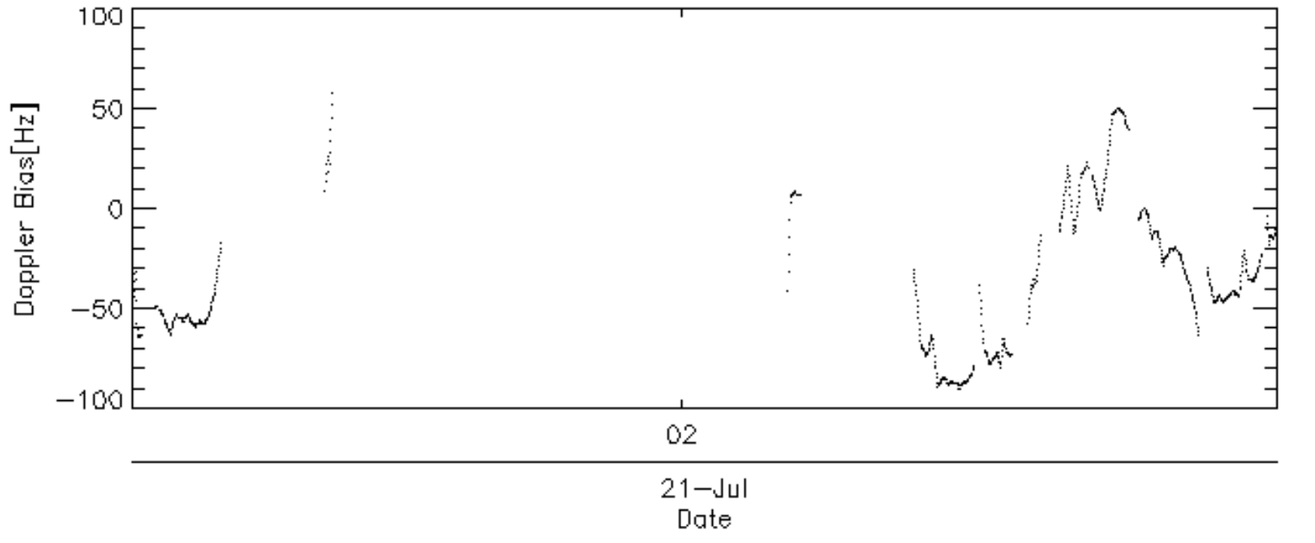

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

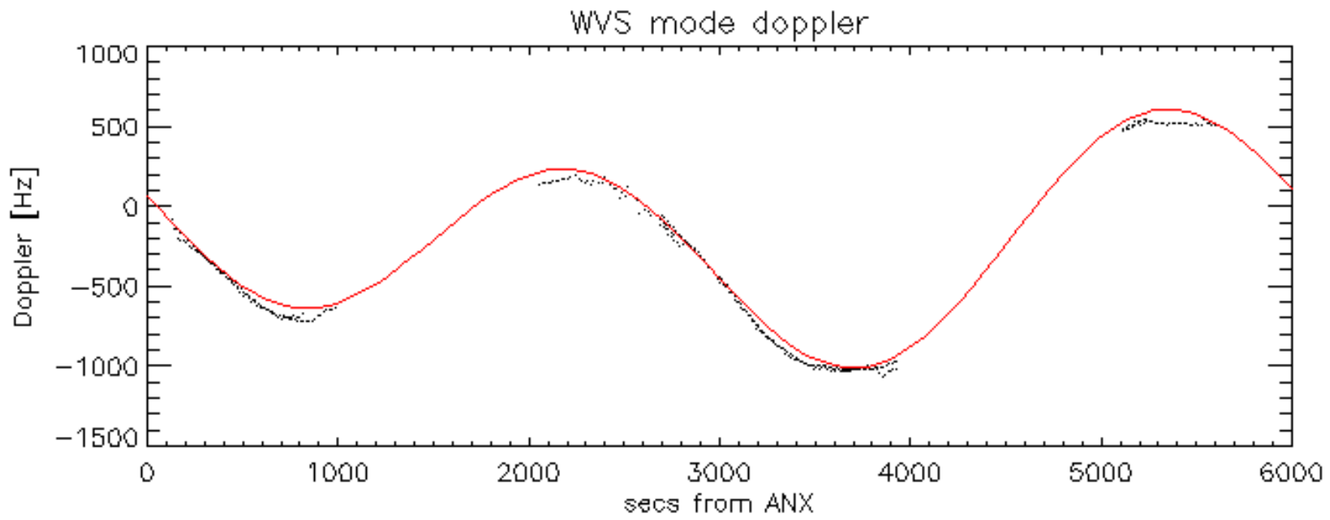

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

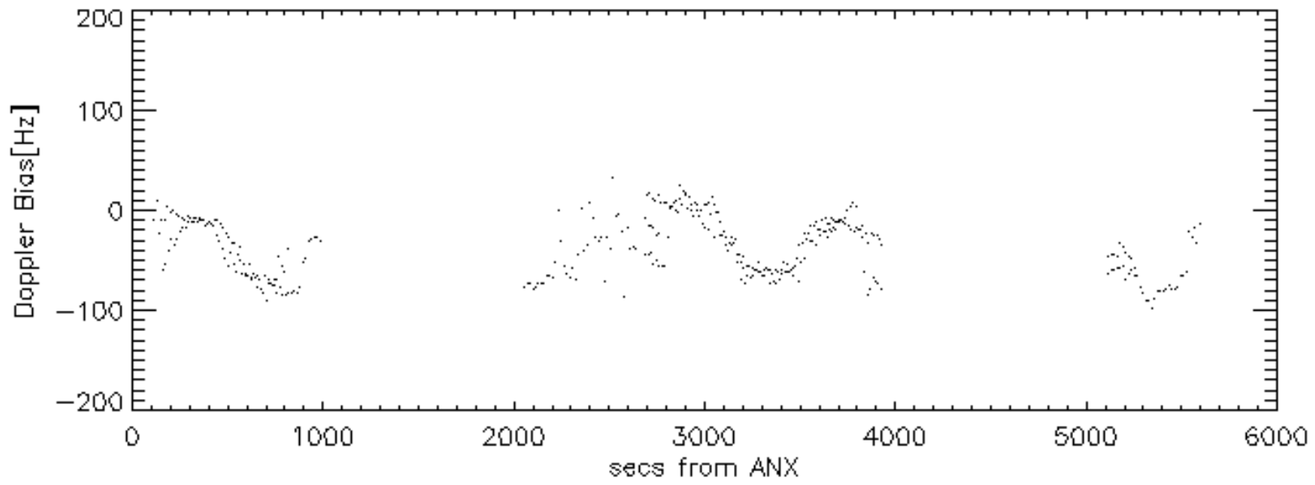

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

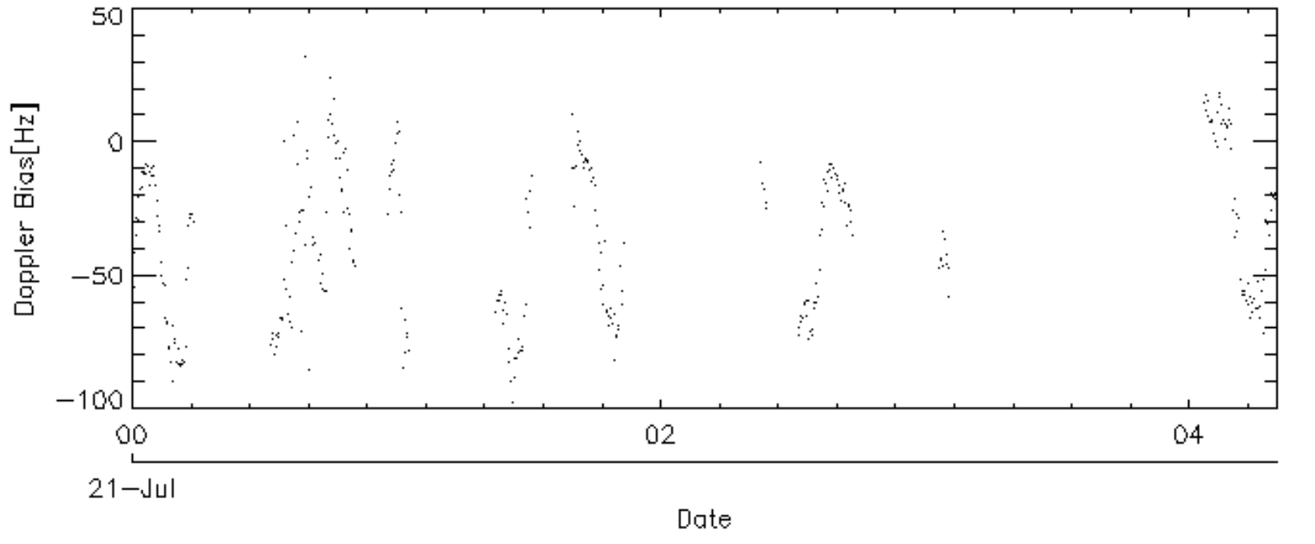

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

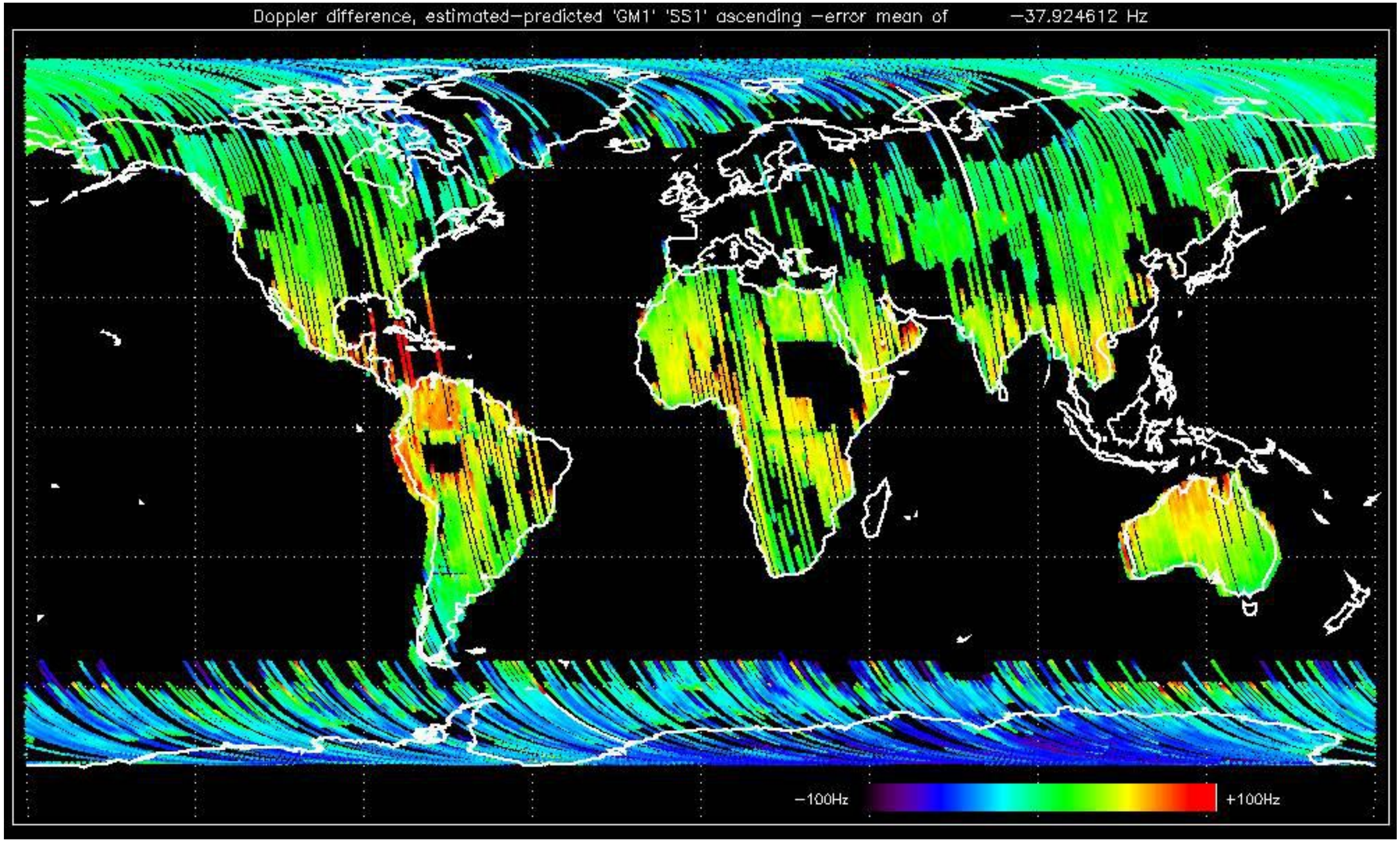

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

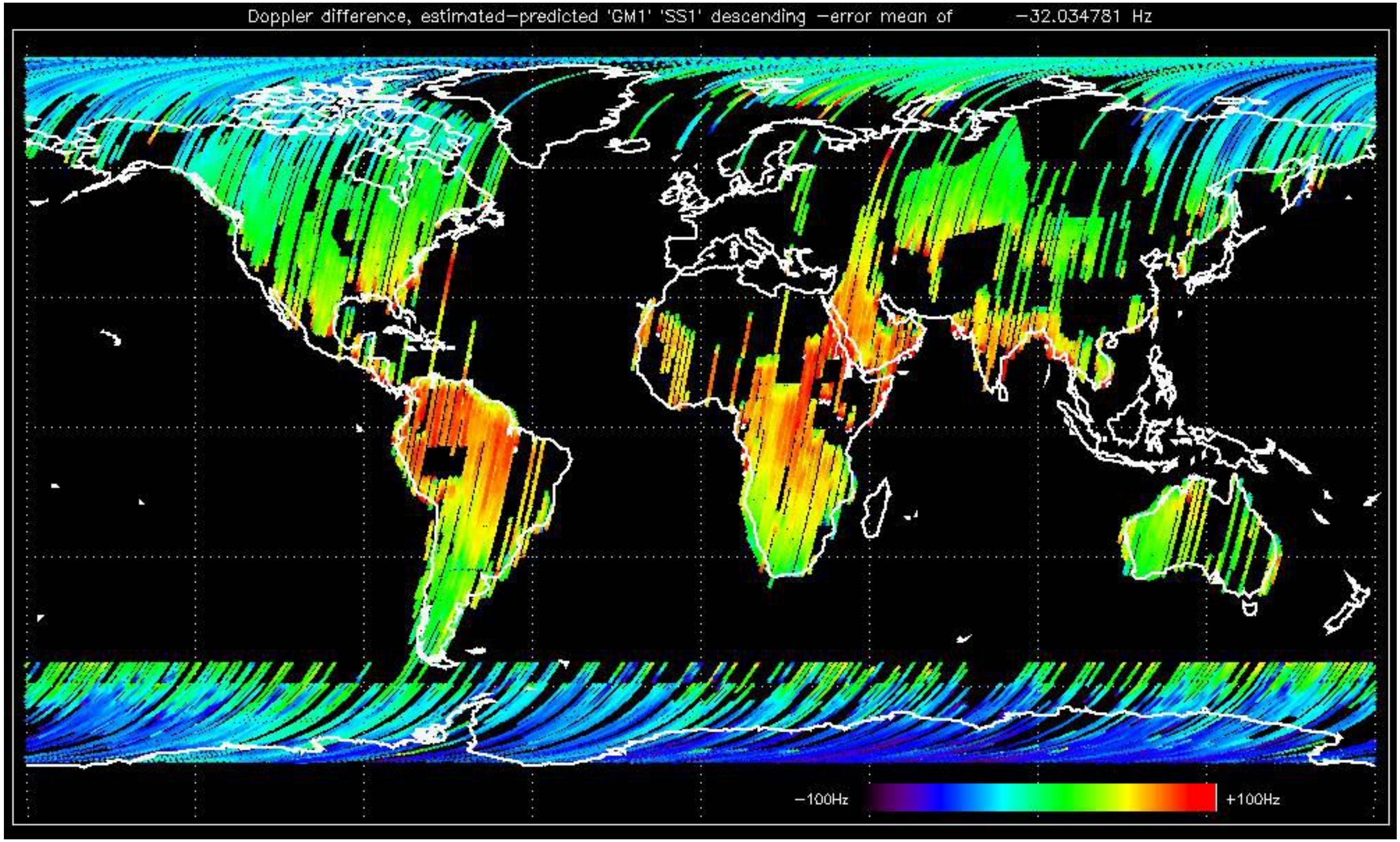

Doppler Bias[Hz]
100
50
0
−50
−100
02
21−Jul
Date

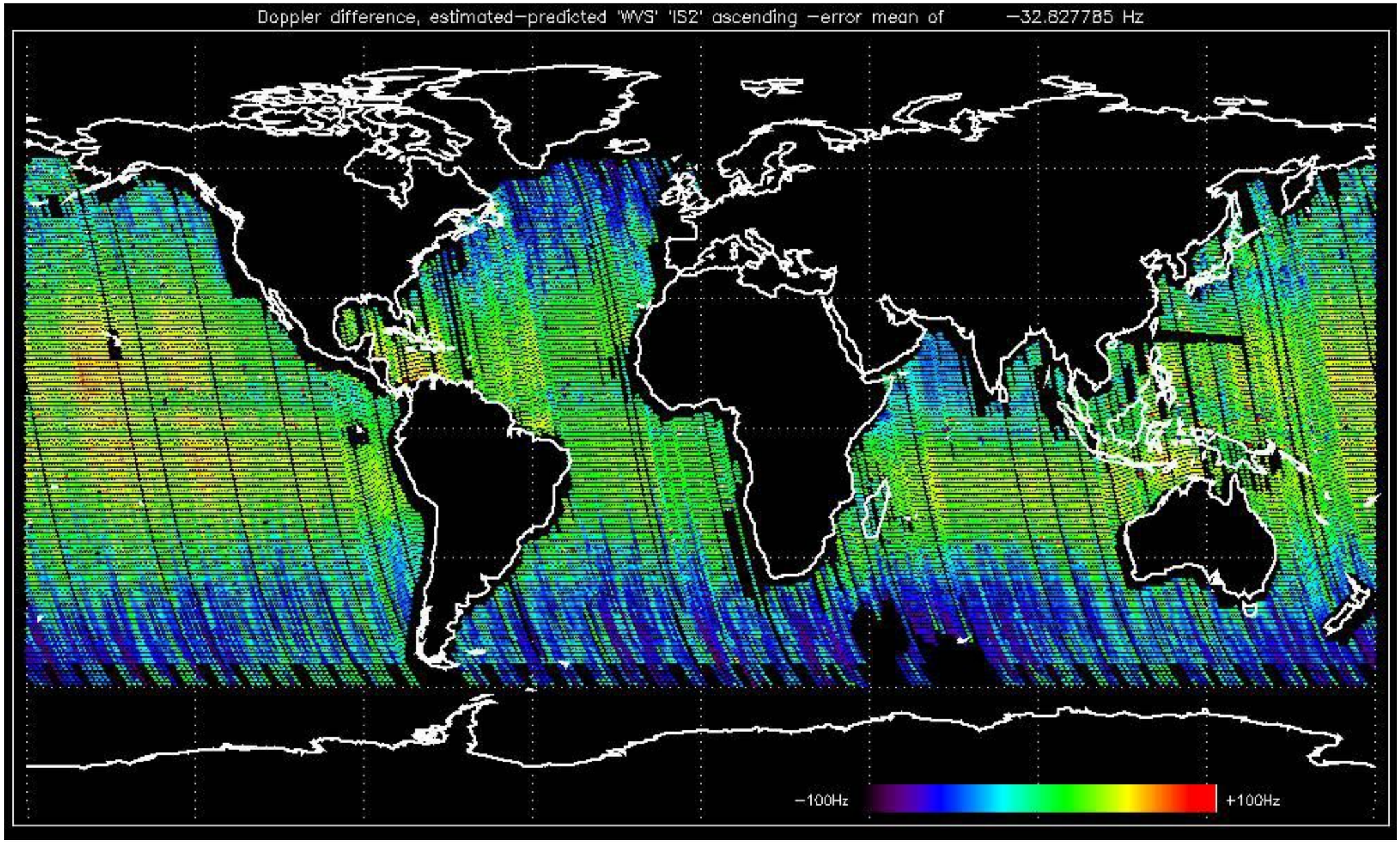

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

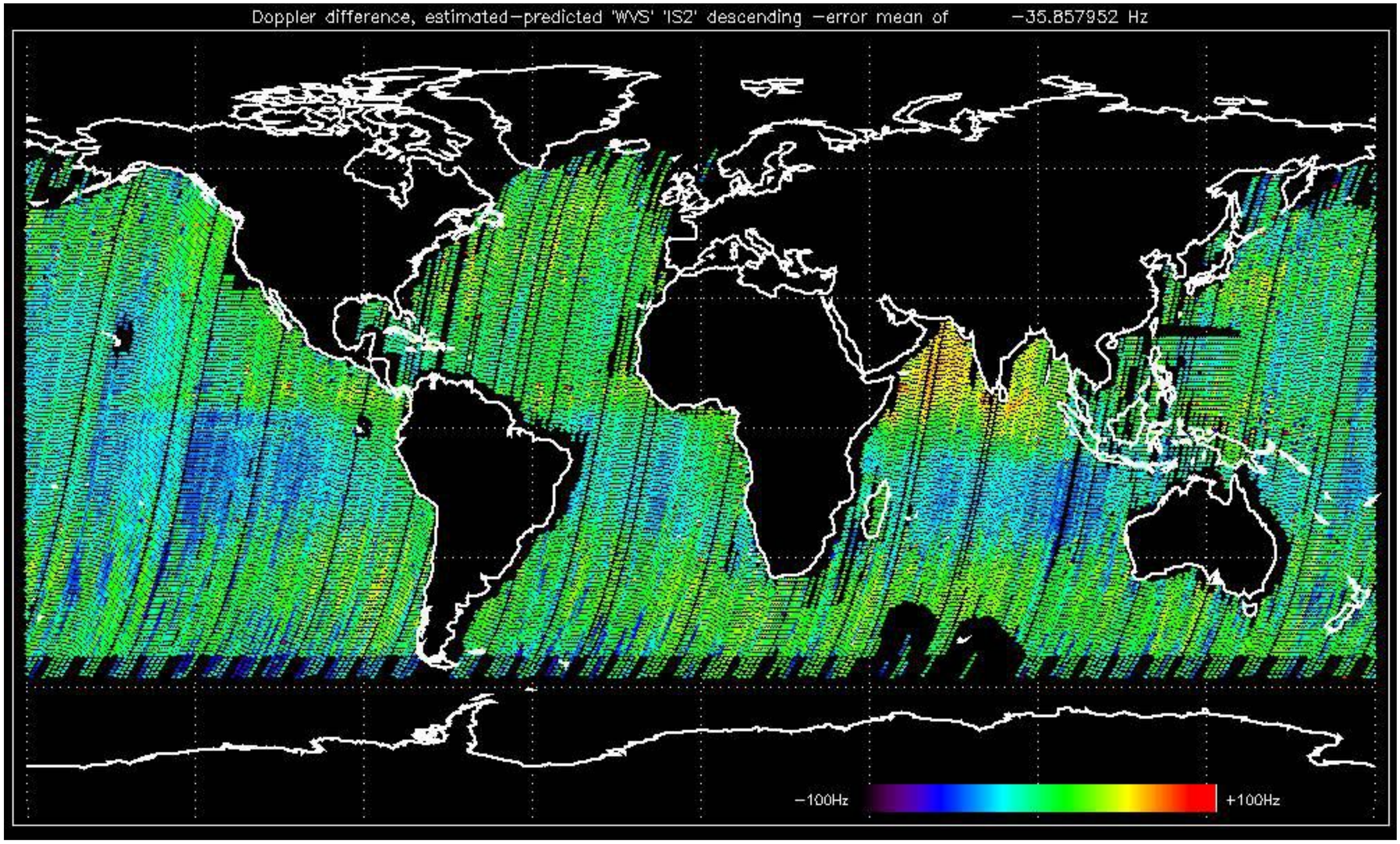

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
50
0
−50
−100
00
02
04
21−Jul
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −37.924612 Hz
−100Hz
+100Hz

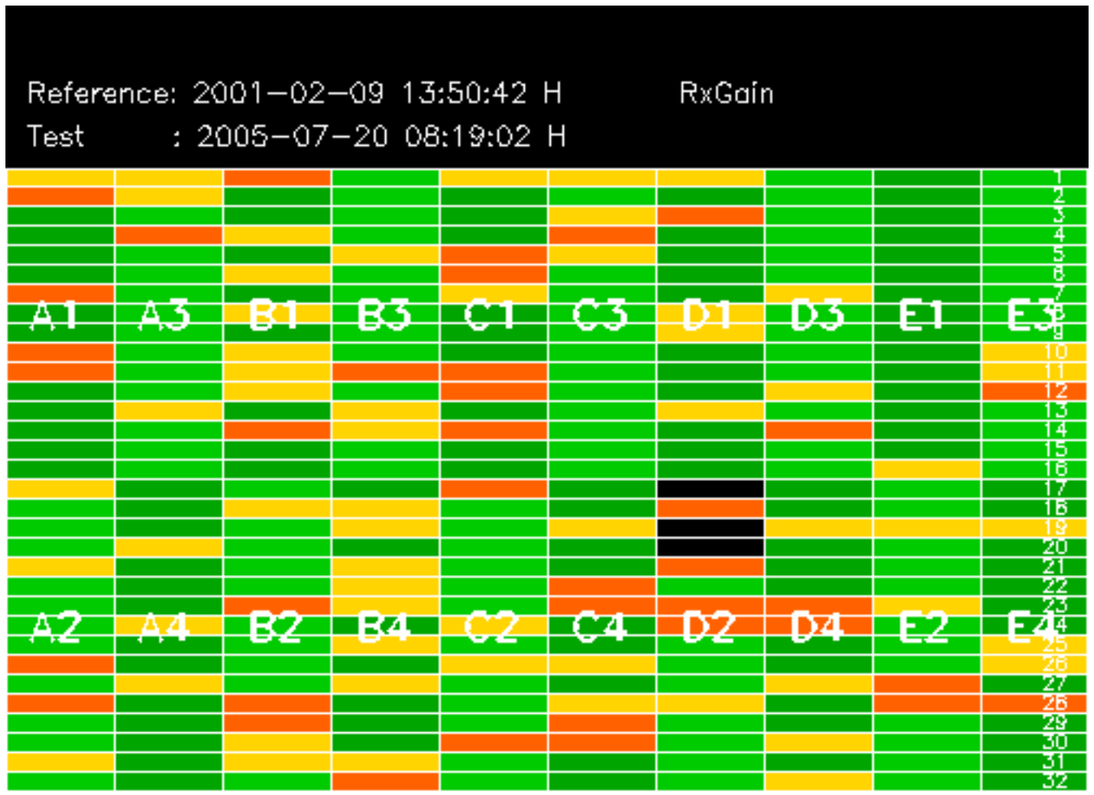

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −32.034781 Hz
−100Hz
+100Hz

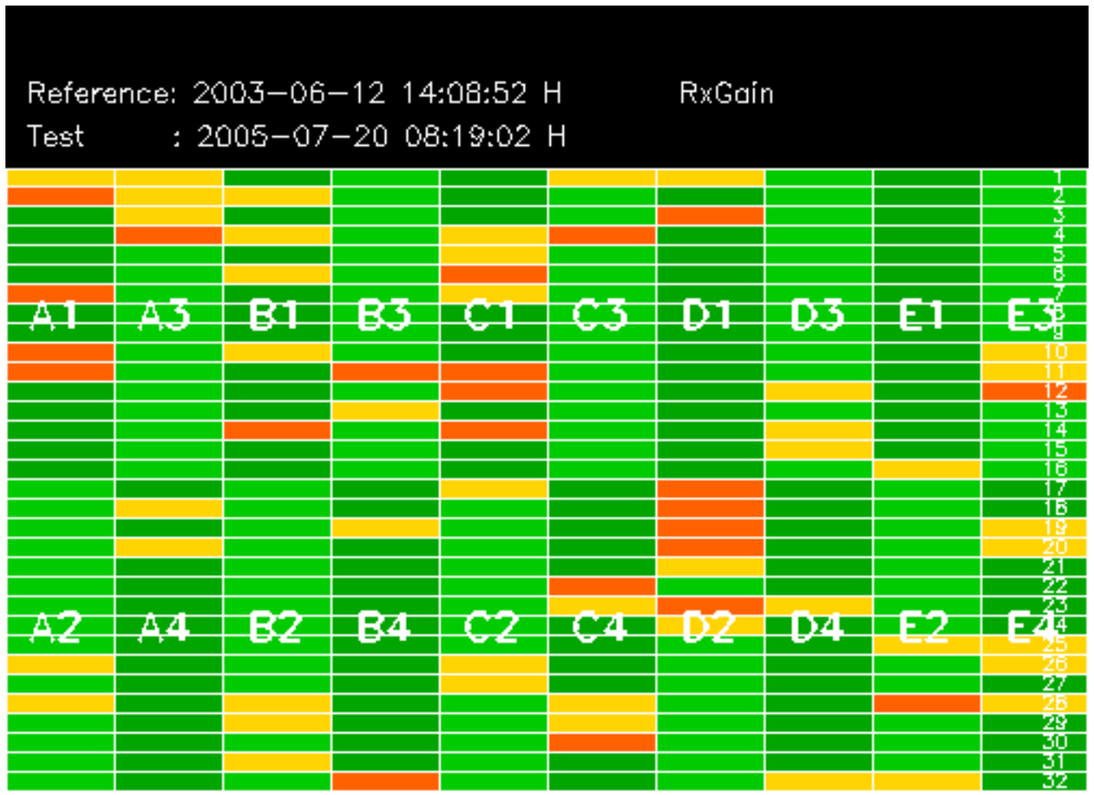

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.827785 Hz
−100Hz
+100Hz

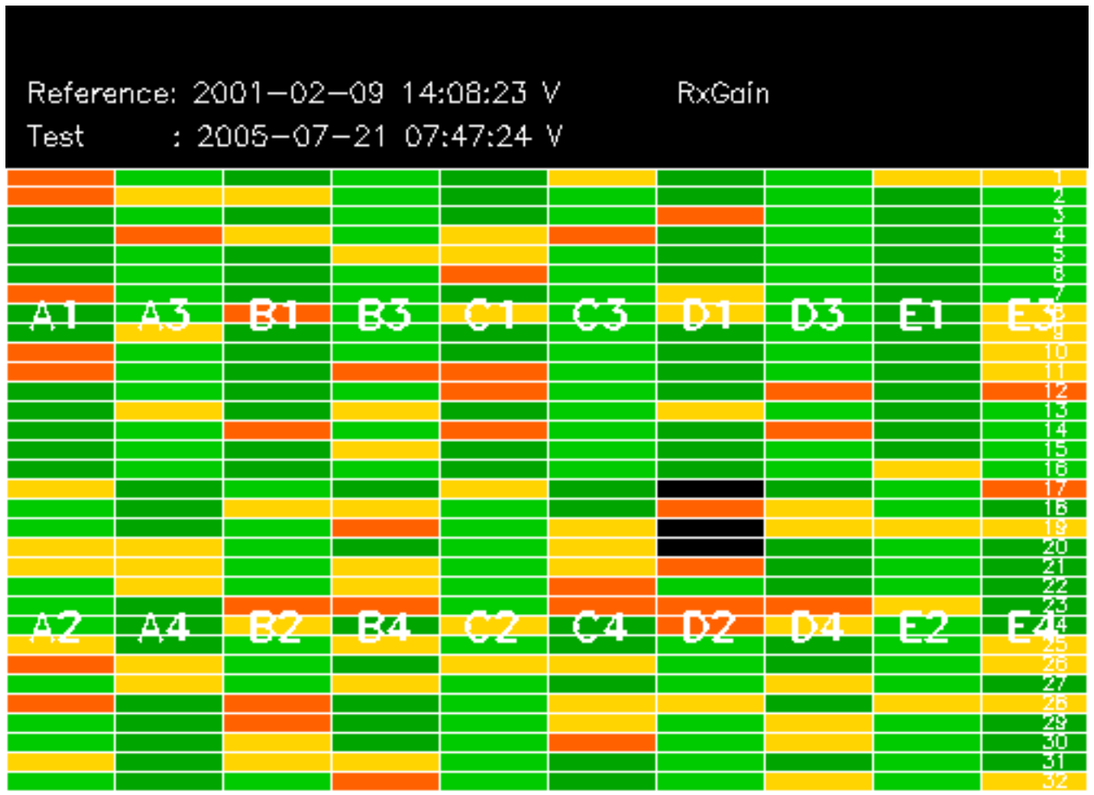

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −35.857952 Hz
−100Hz
+100Hz

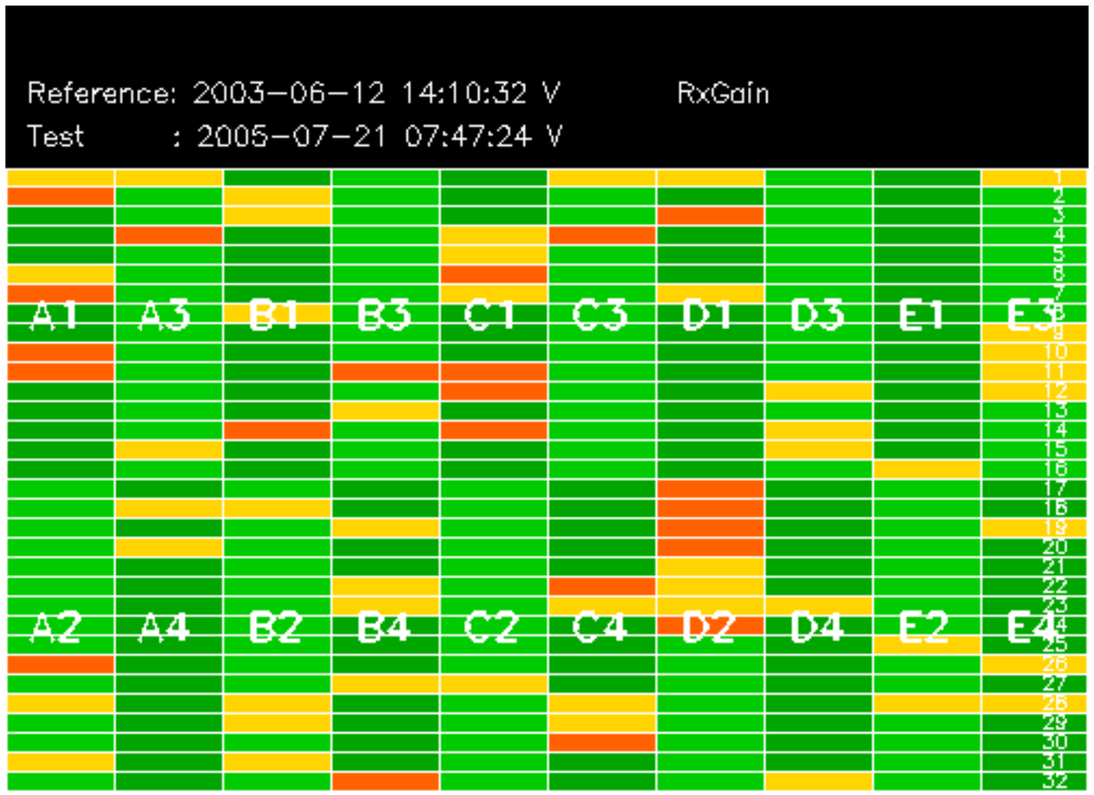
No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-07-20 08:19:02 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 : 2005-07-20 08:19:02 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 : 2005-07-21 07:47:24 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 : 2005-07-21 07:47:24 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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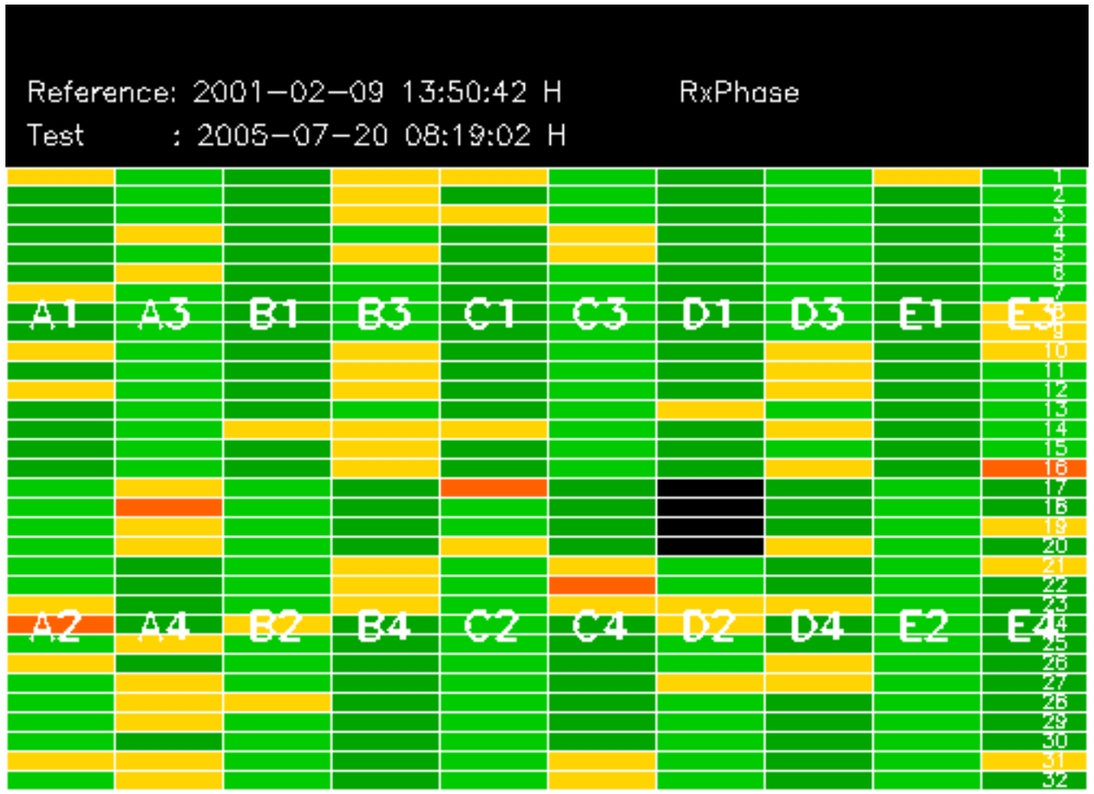
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-07-20 08:19:02 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2005-07-20 08:19:02 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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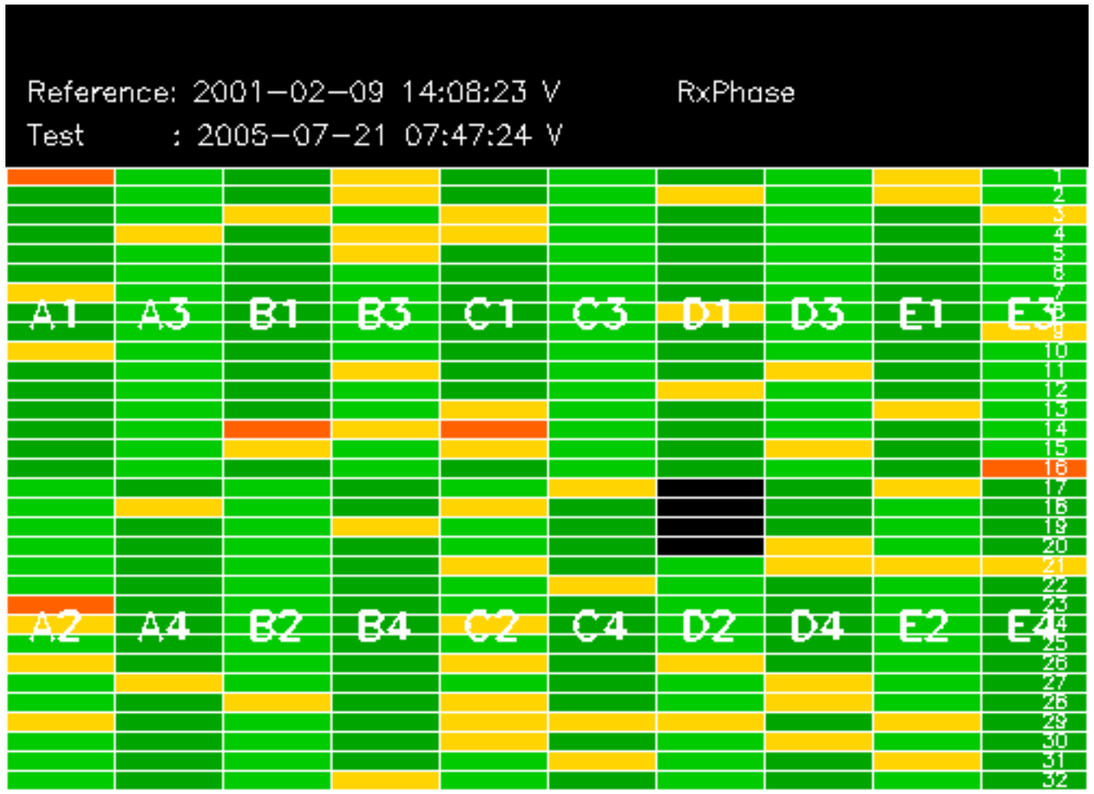
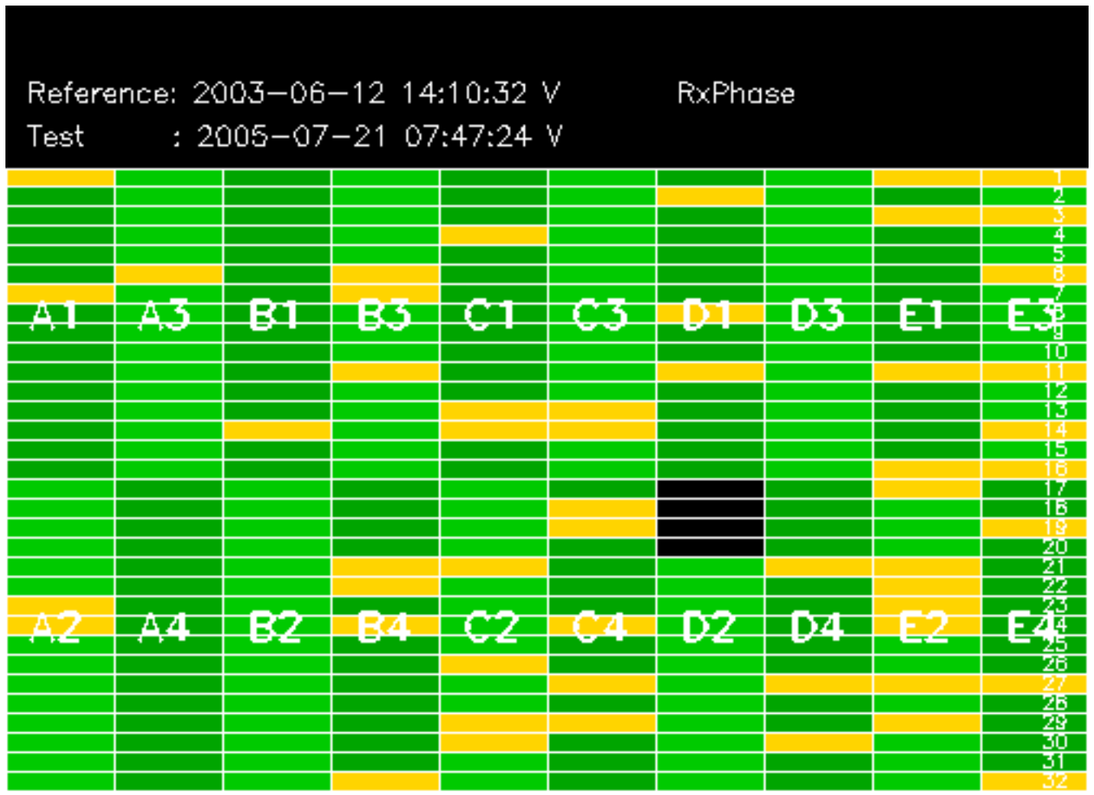
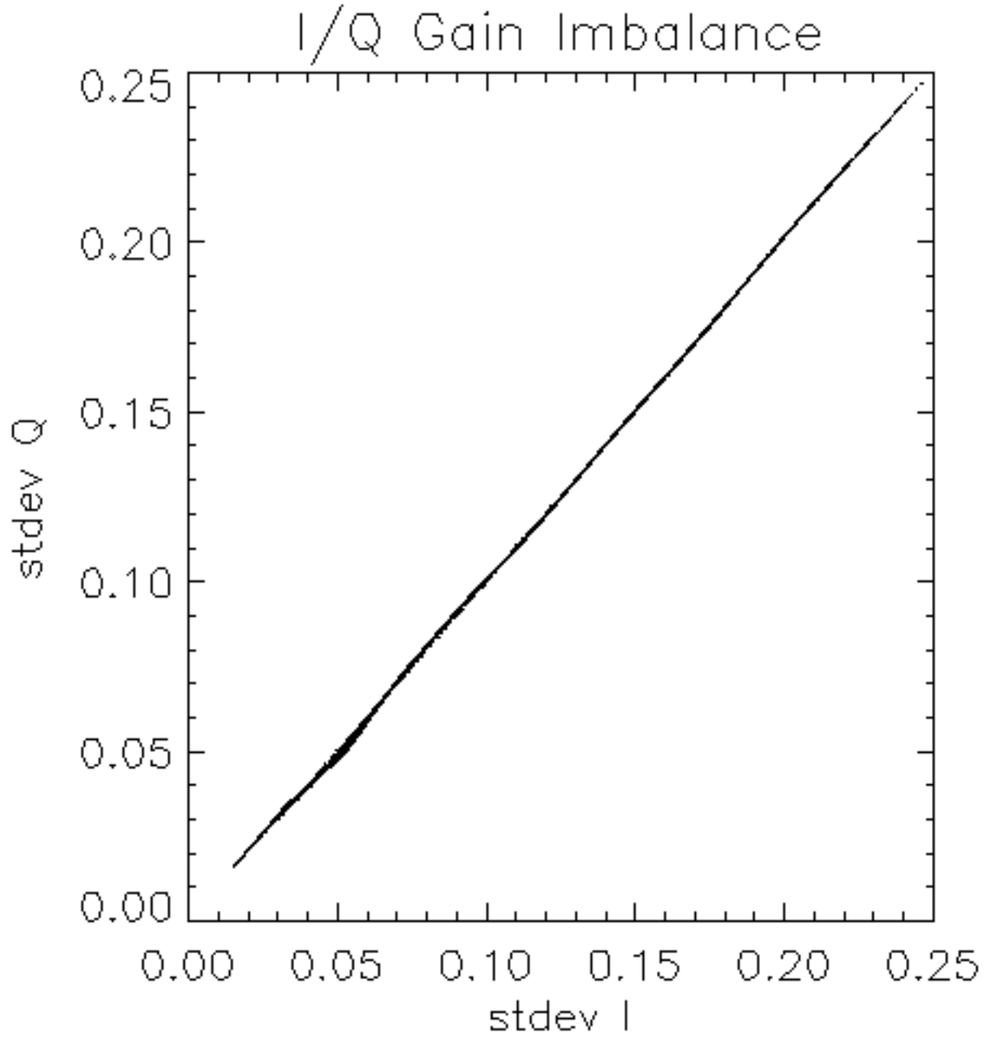
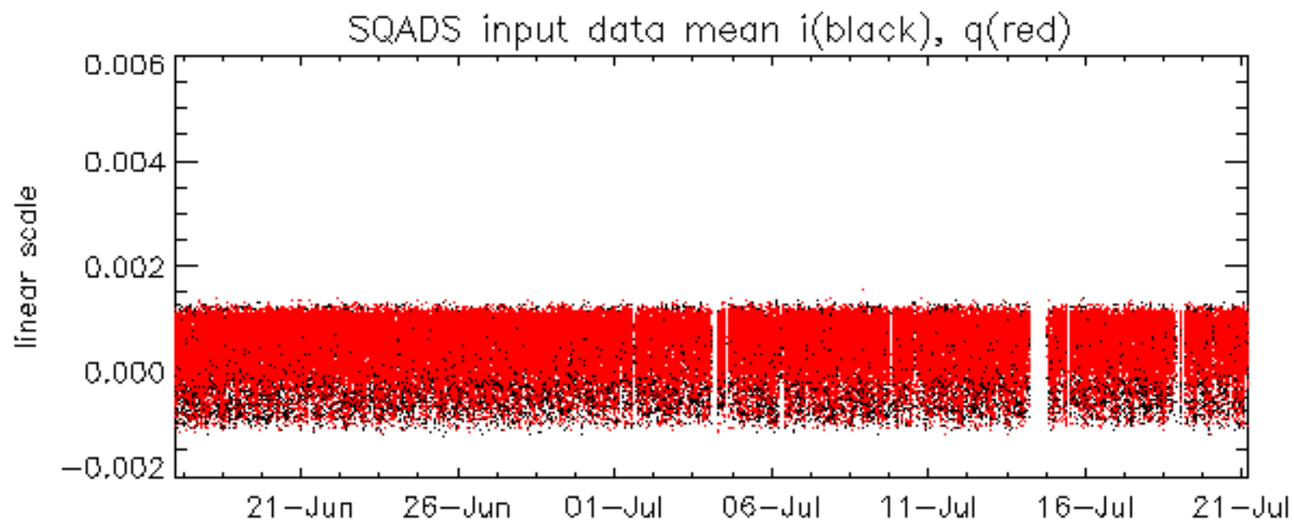
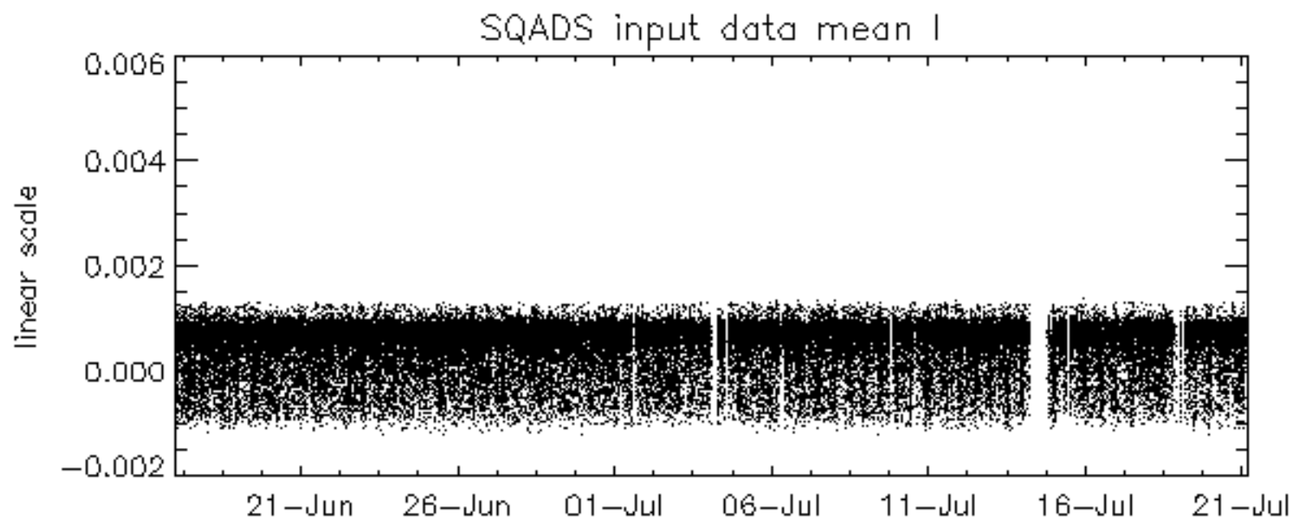
32

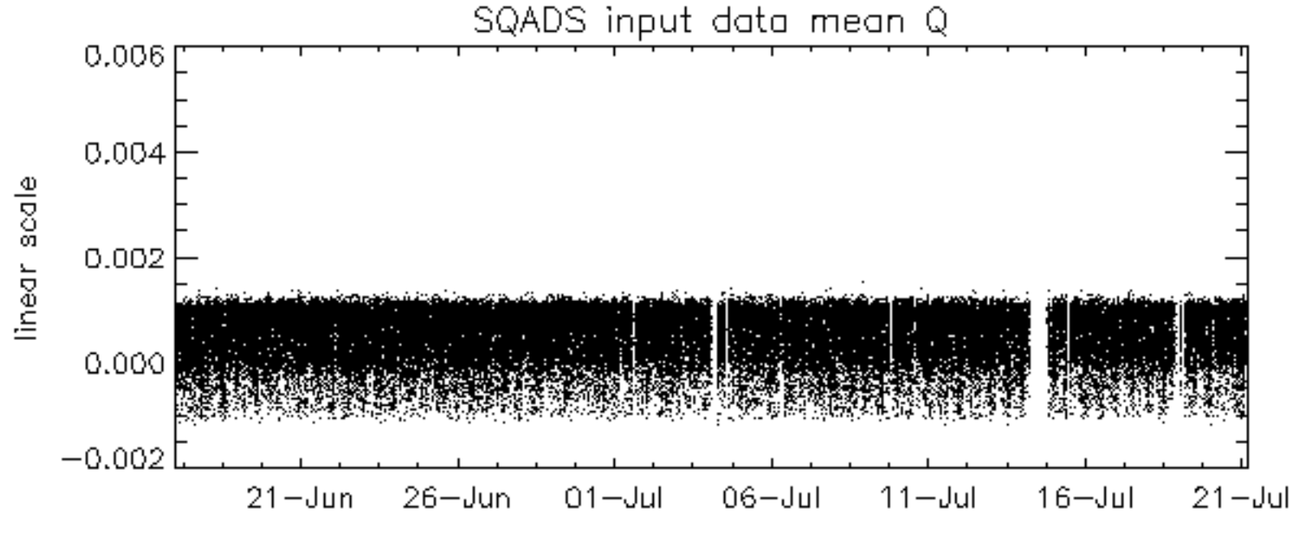

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-21 07:47:24 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

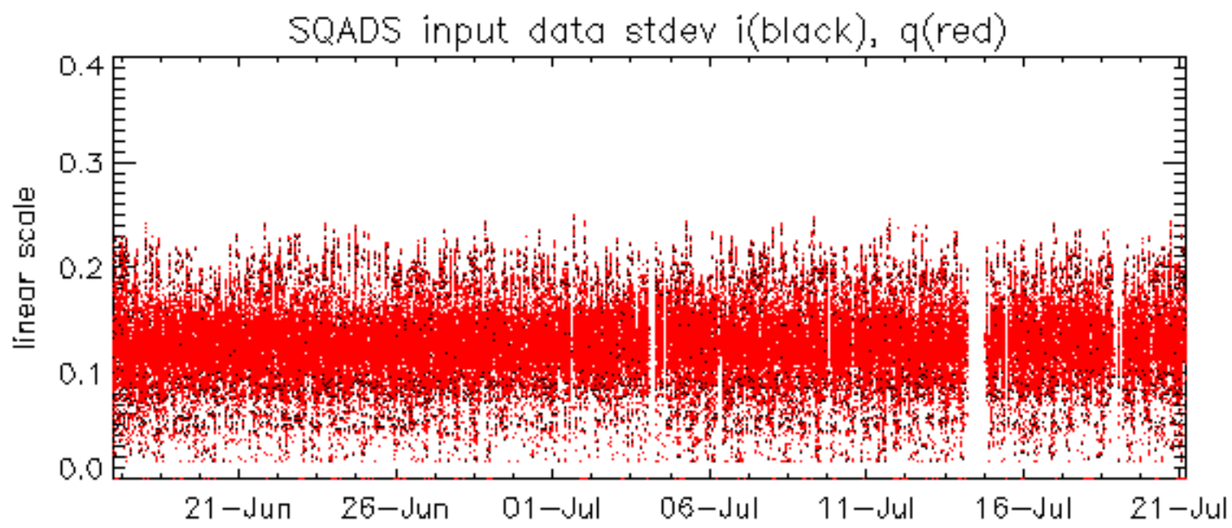

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-21 07:47:24 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

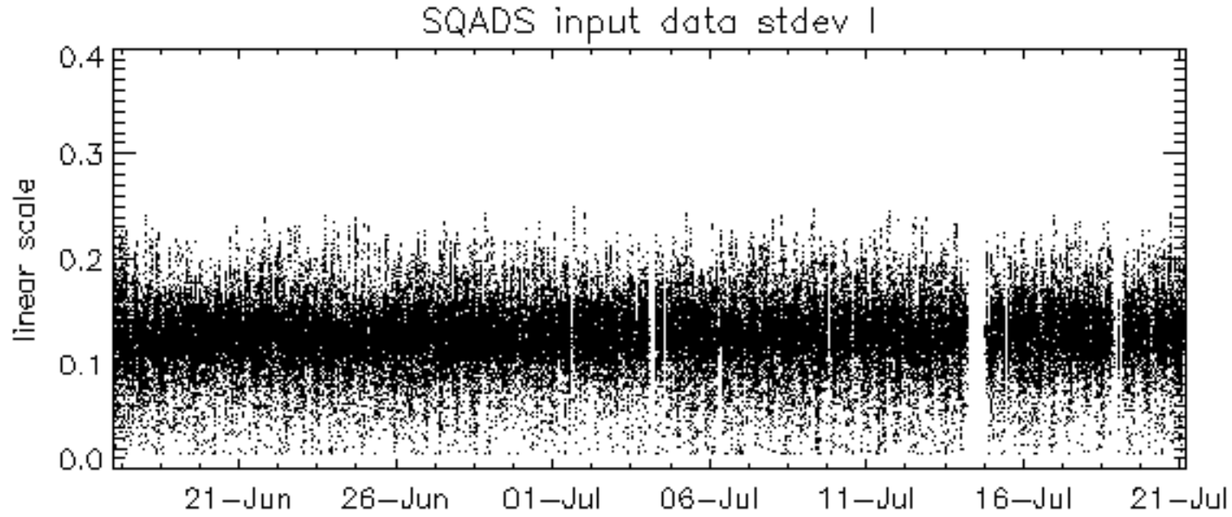

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

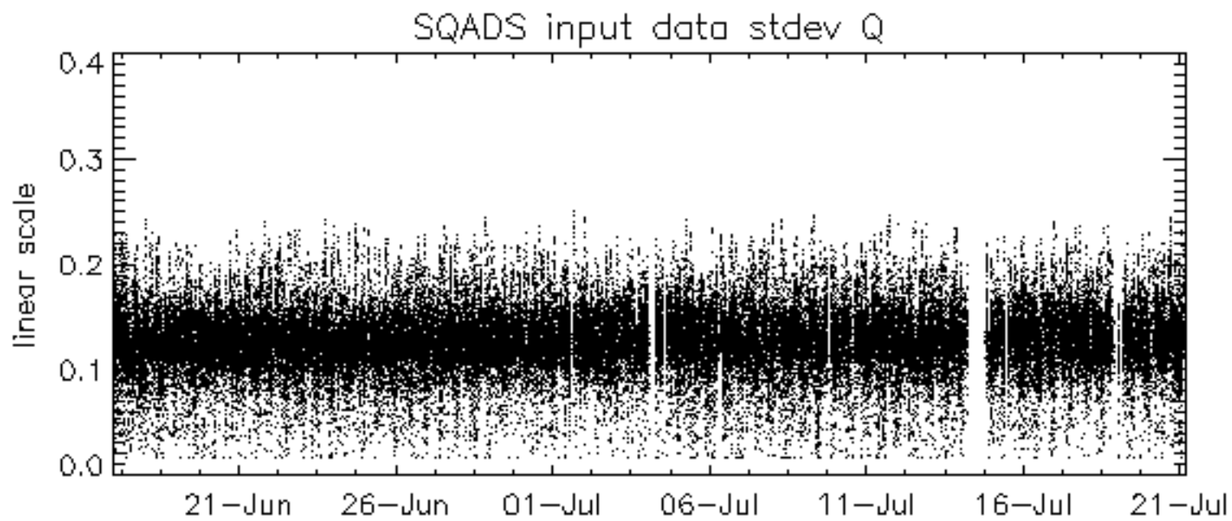

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul

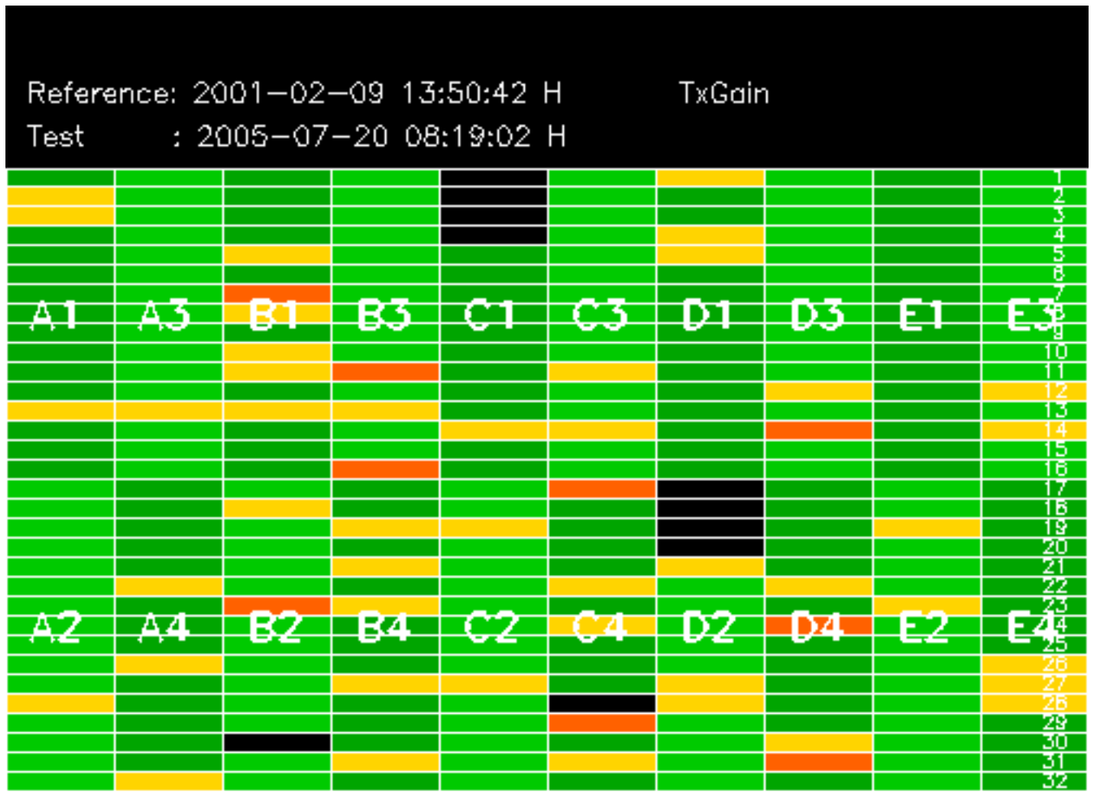

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jun
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-07-20 08:19:02 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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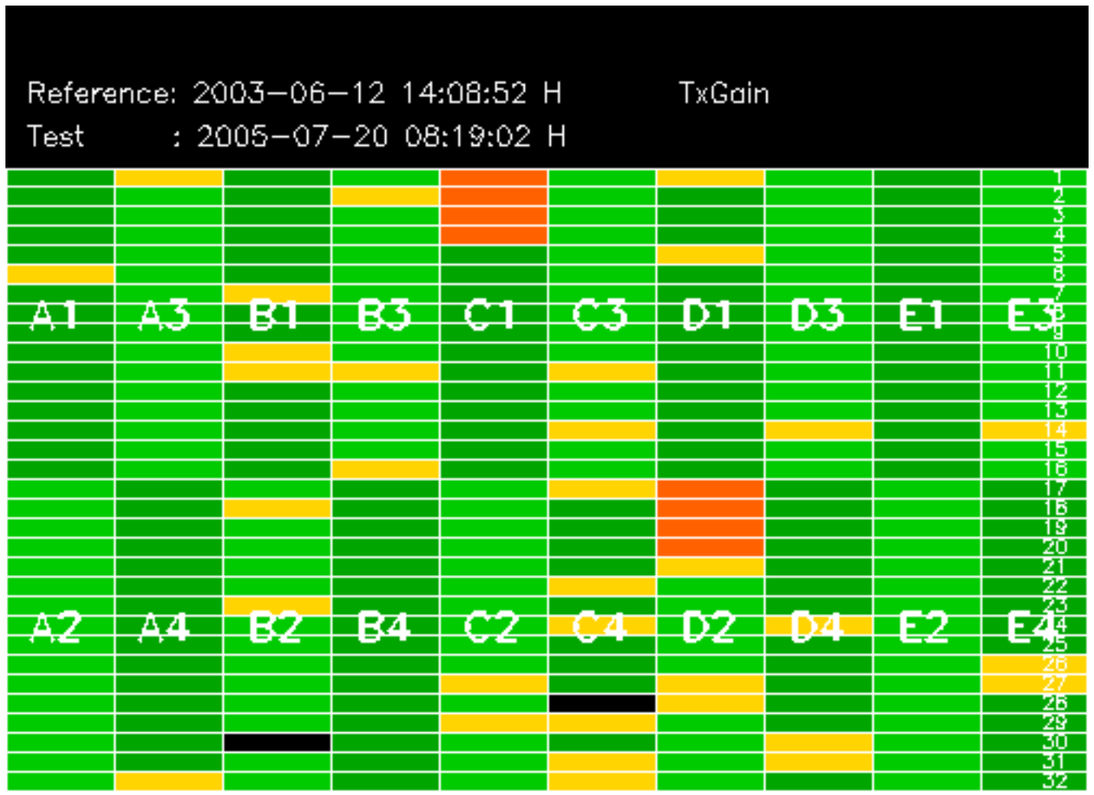
Reference: 2003-06-12 14:08:52 H
Test : 2005-07-20 08:19:02 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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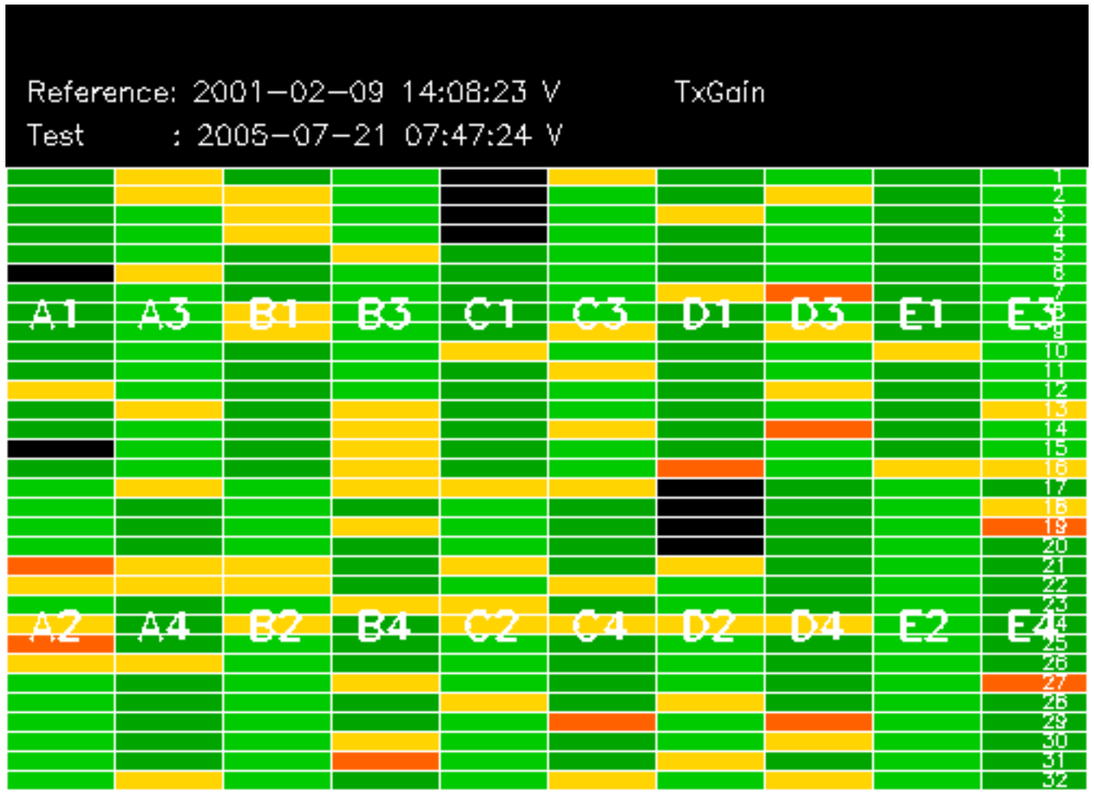
Reference: 2001-02-09 14:08:23 V
TxGain
Test : 2005-07-21 07:47:24 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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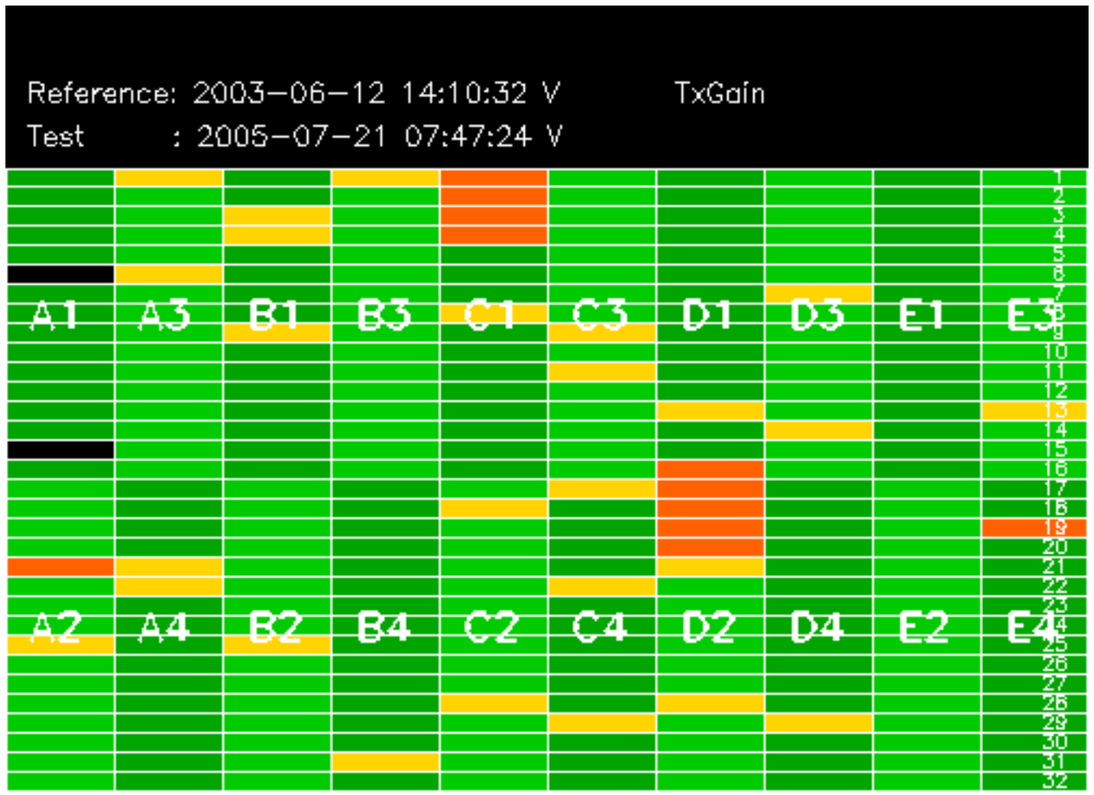
Reference: 2003-06-12 14:10:32 V
Test : 2005-07-21 07:47:24 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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9
10
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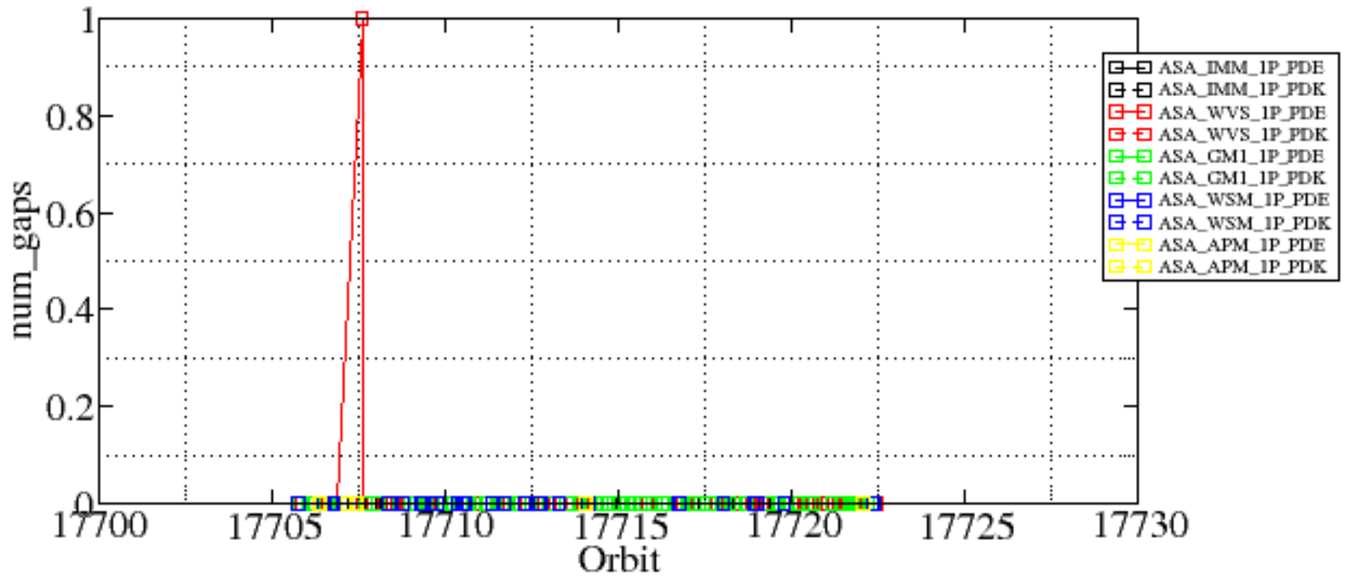
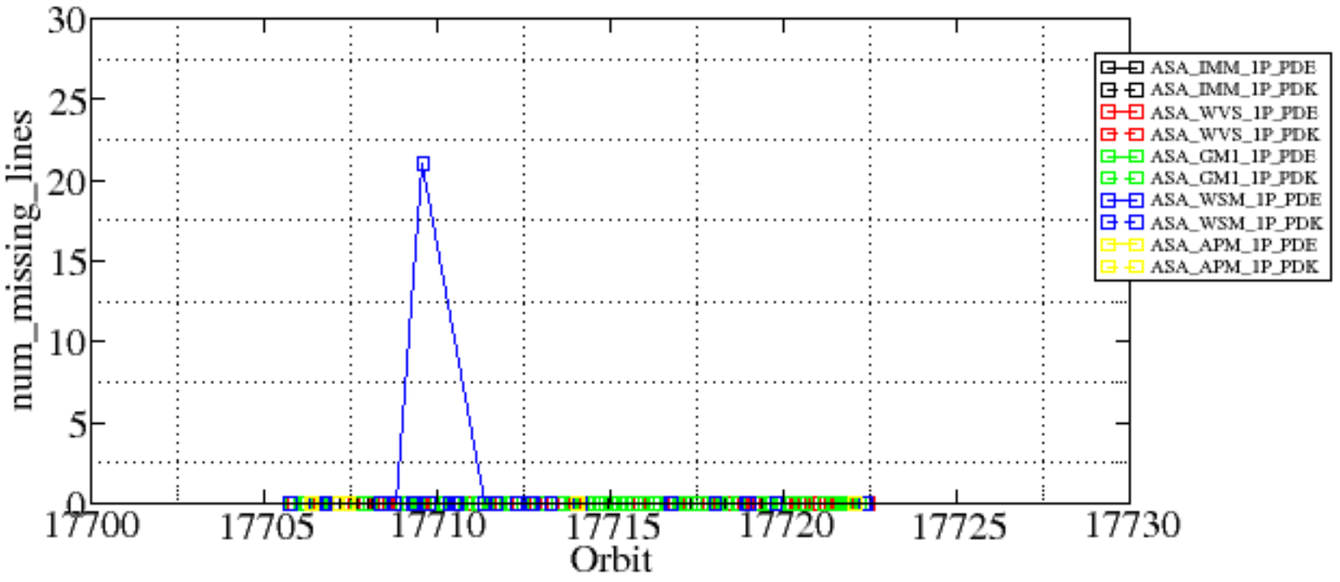
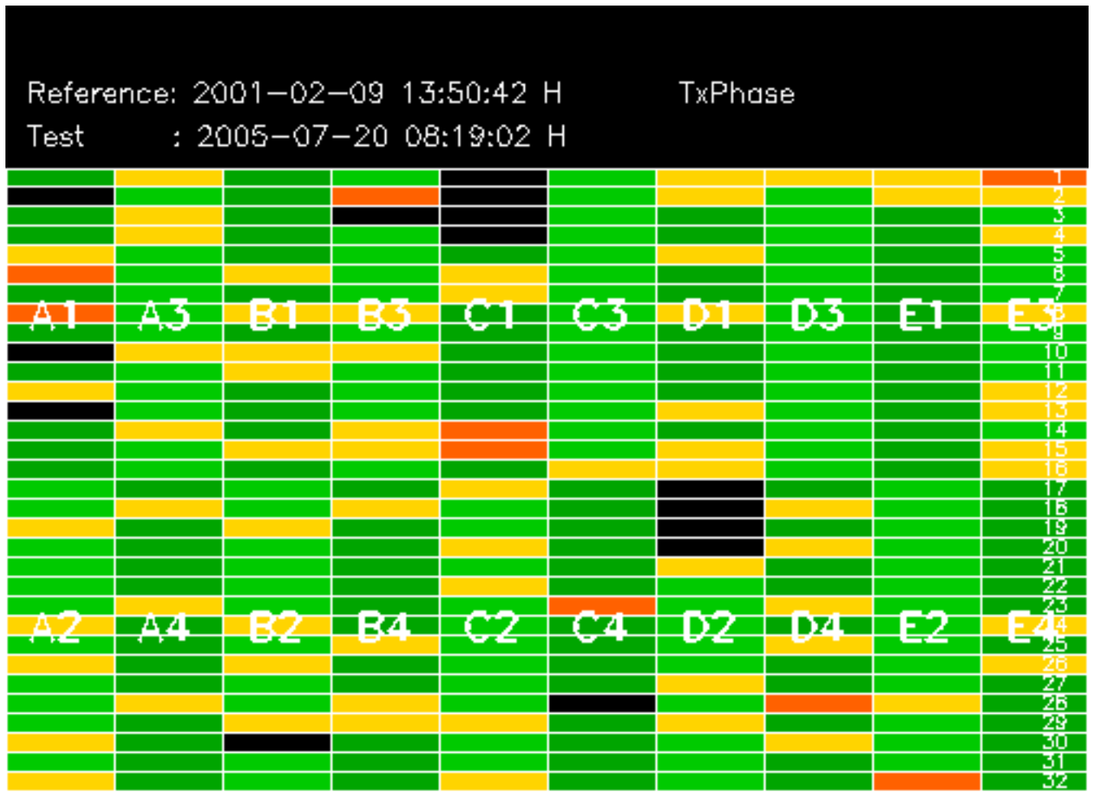
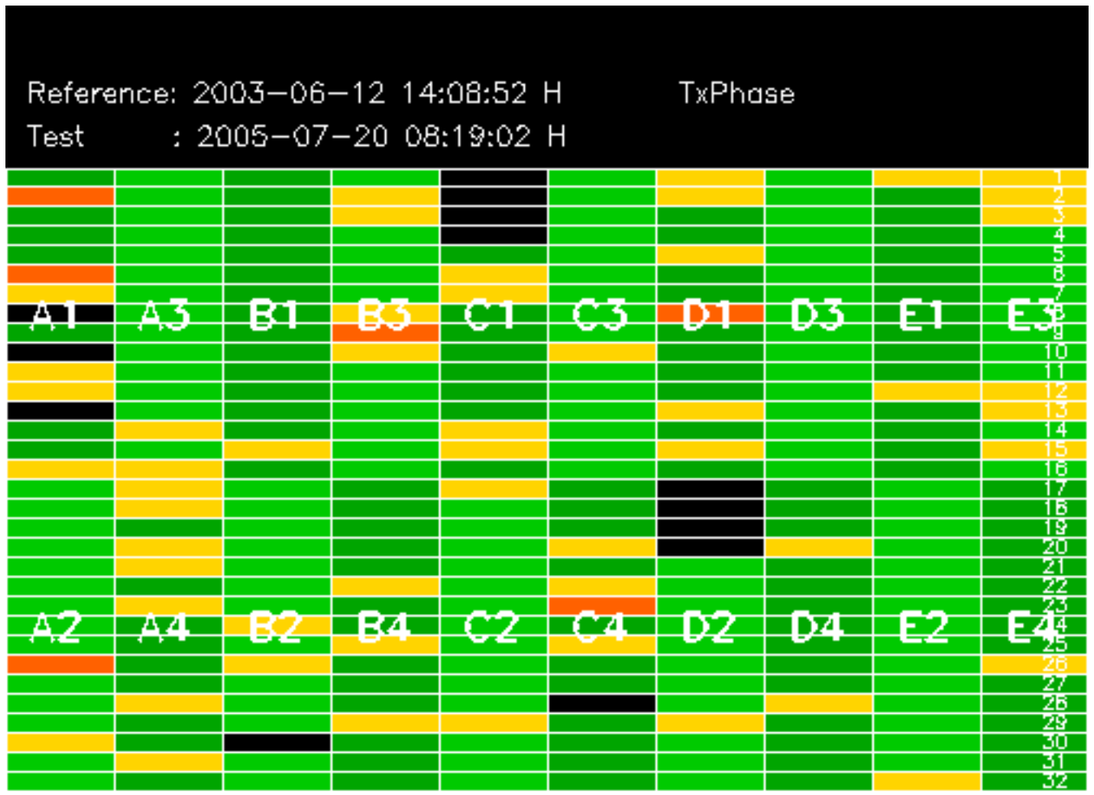
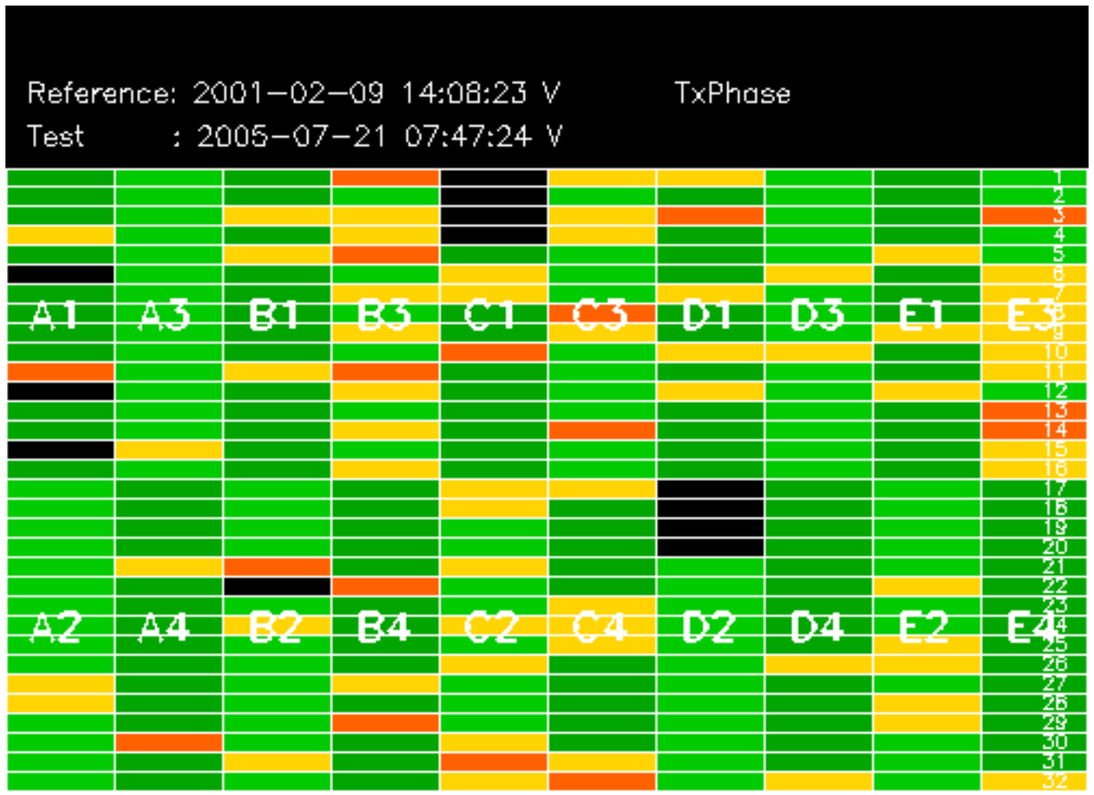
Summary of analysis for the last 3 days 2005072[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WVS_1PNPDE20050720_030923_000000002039_00118_17707_0049.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050720_062911_000001462039_00120_17709_0357.N1 </td> <td>0 </td> <td>21 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
17700
17705
17710
17715
17720
17725
17730
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
30
25
20
15
10
5
0
17700
17705
17710
17715
17720
17725
17730
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
Test : 2005-07-20 08:19:02 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 : 2005-07-20 08:19:02 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 : 2005-07-21 07:47:24 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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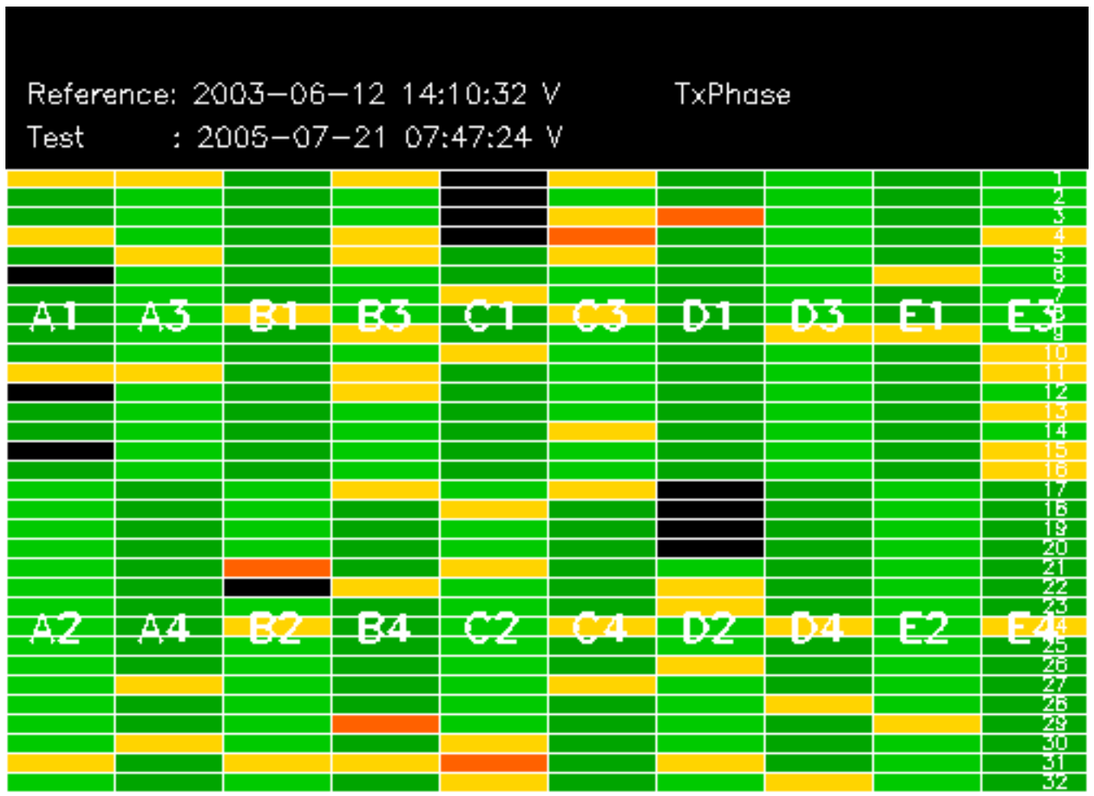
Reference: 2003-06-12 14:10:32 V
Test : 2005-07-21 07:47:24 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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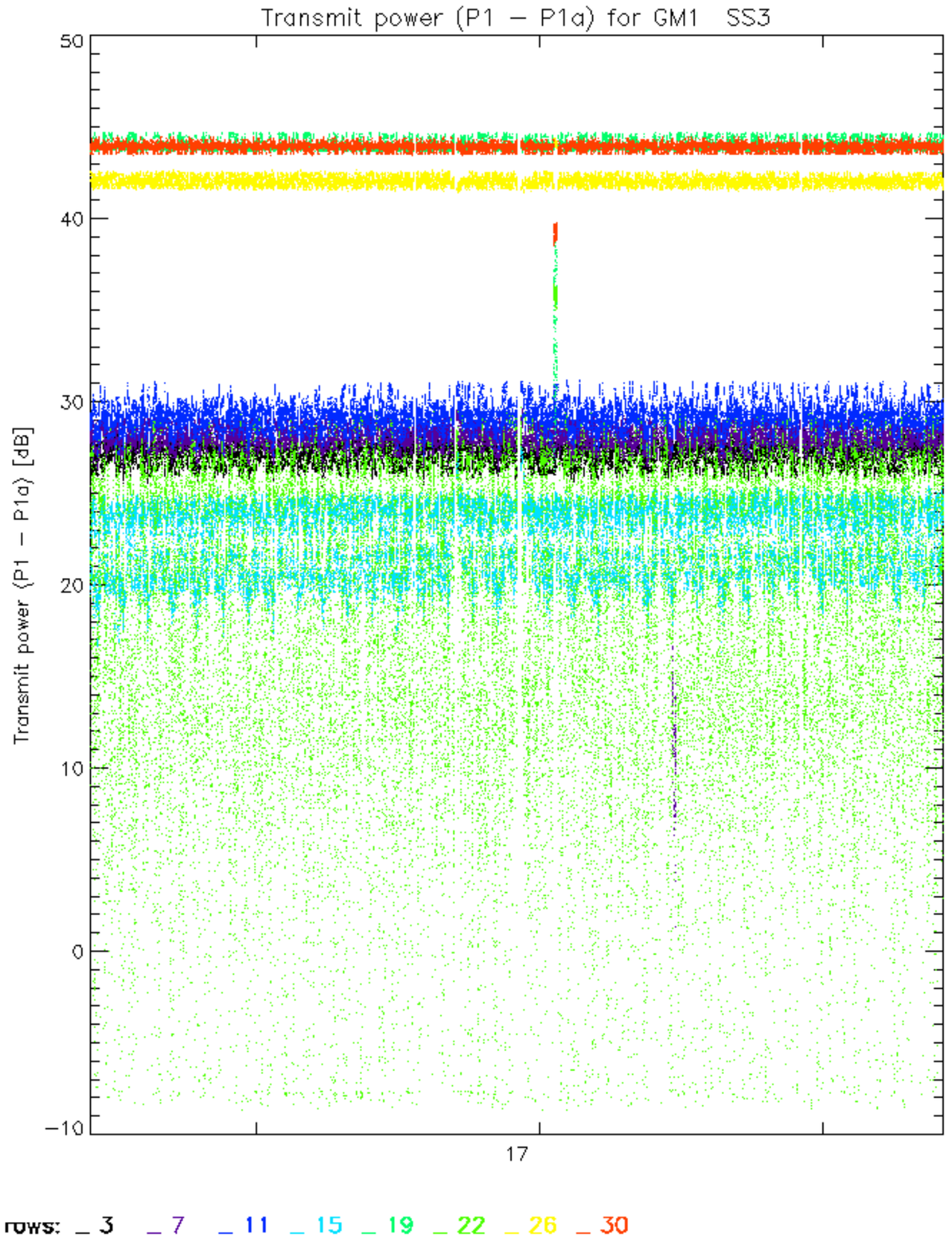
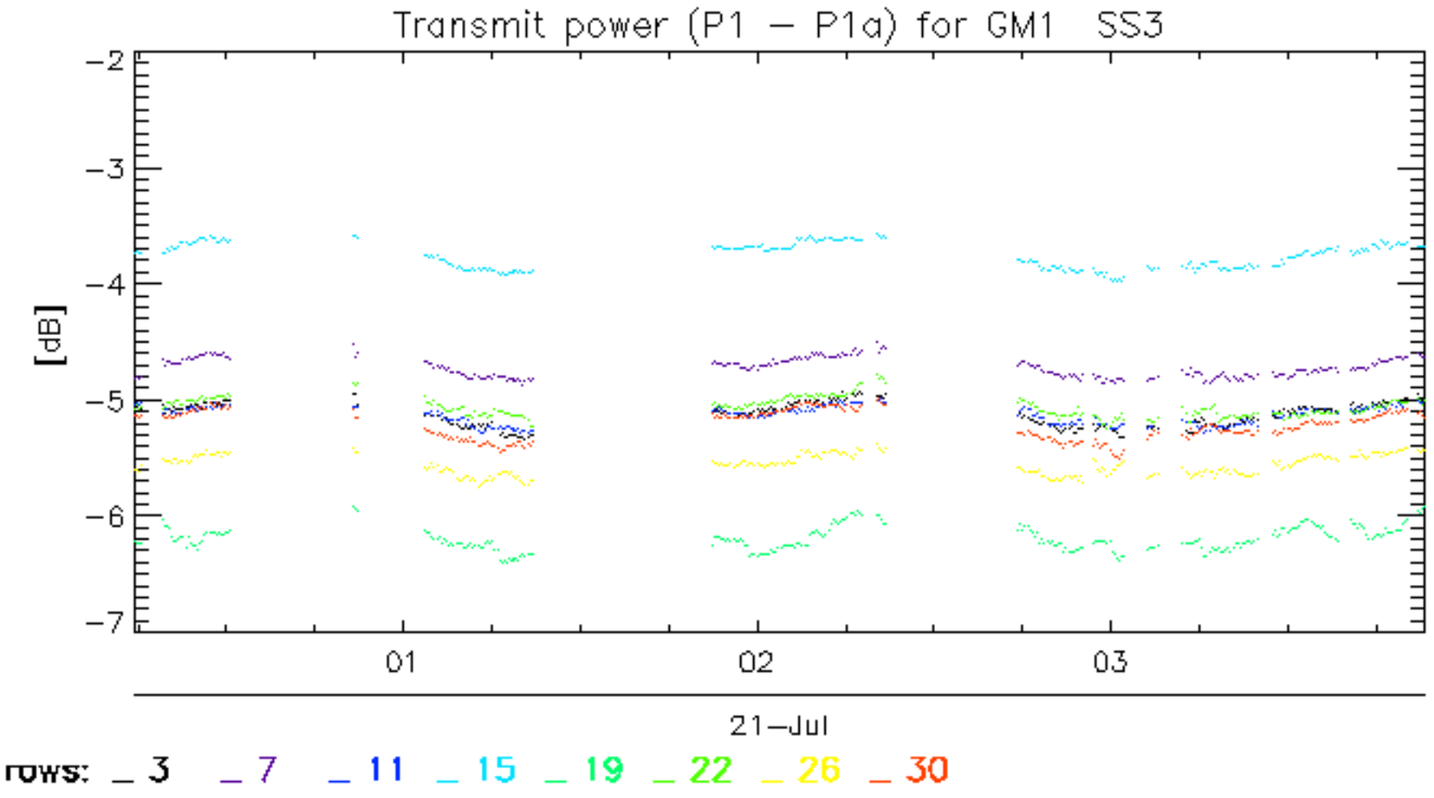
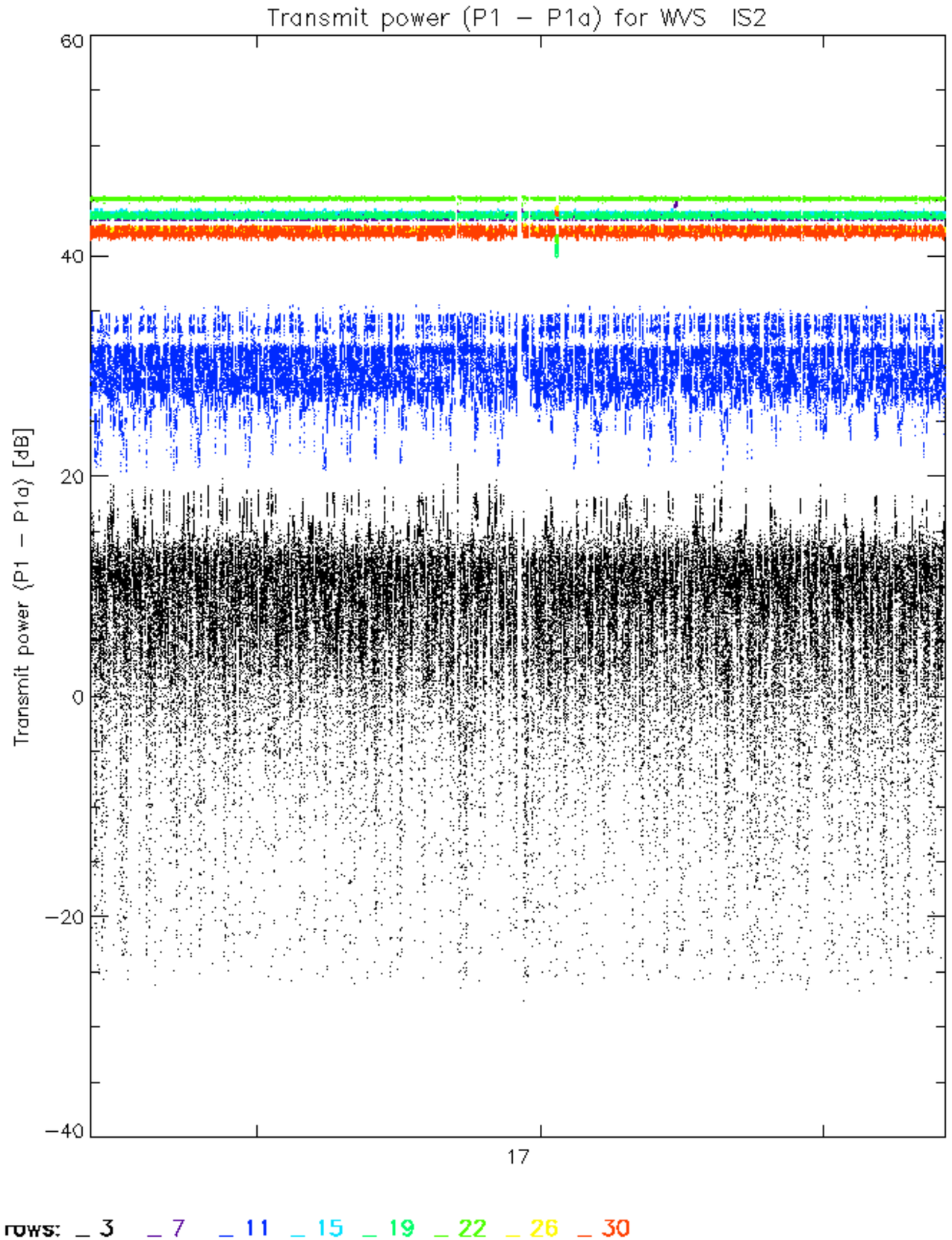
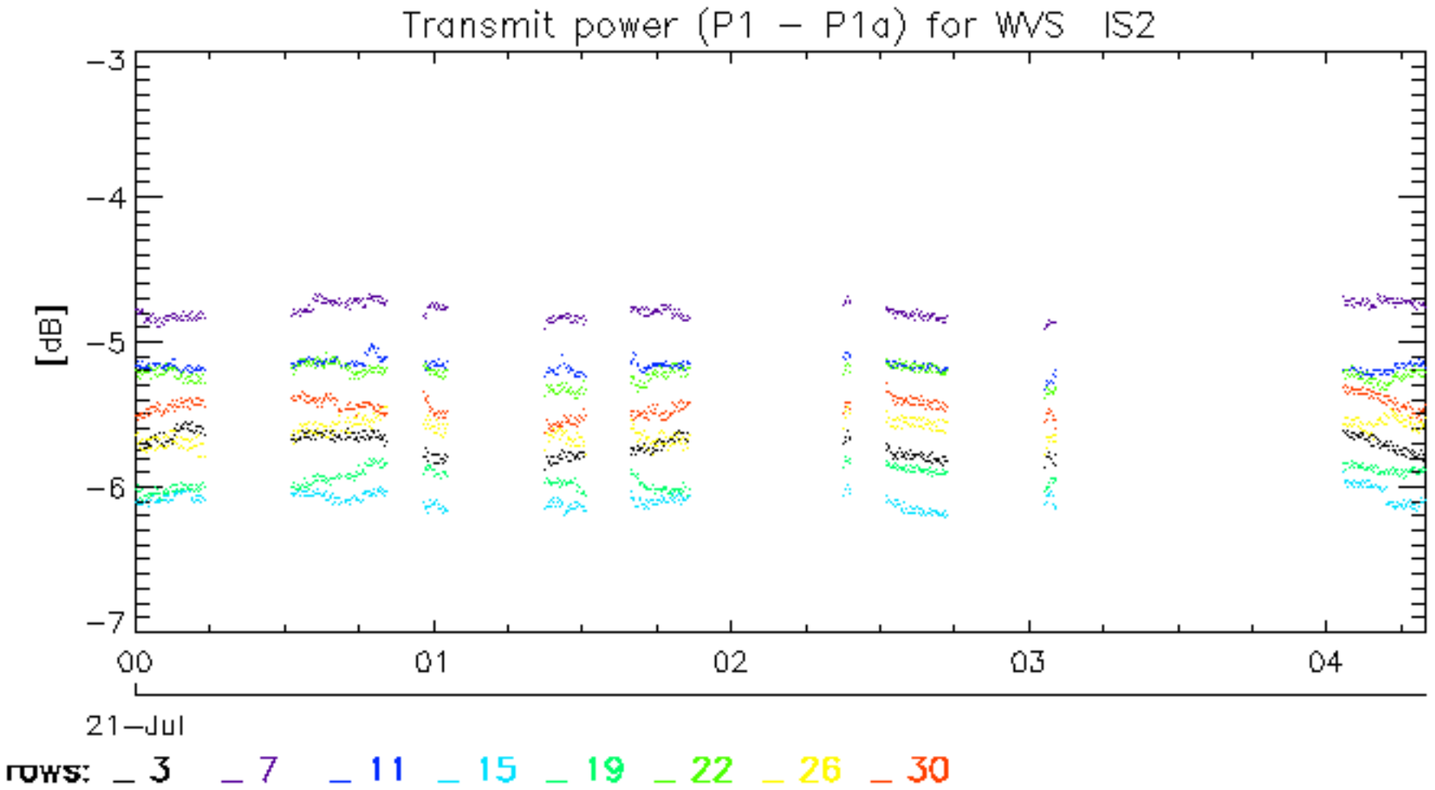

Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
−10
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
−2
−3
−4
−5
−6
−7
01
02
03
21–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]
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
−3
−4
−5
−6
−7
00
01
02
03
04
21–Jul
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.