PRELIMINARY REPORT OF 050728

last update on Thu Jul 28 10:59:29 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 2005-07-27 00:00:00 to 2005-07-28 10:59:29

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	14	35	15	4	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	14	35	15	4	0
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	14	35	15	4	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	14	35	15	4	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	40	47	26	10	50
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	40	47	26	10	50
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	40	47	26	10	50
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	40	47	26	10	50

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	20050727 043741
H	20050726 050919

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	-3.318146	0.006481	0.017666
7	P1	-3.136861	0.015027	0.000897
11	P1	-4.687008	0.032349	-0.049469
15	P1	-5.555635	0.047568	-0.042553
19	P1	-3.792188	0.046311	-0.002721
22	P1	-4.637588	0.142226	-0.109647
26	P1	-4.866192	0.166333	-0.062834
30	P1	-7.241857	0.252551	-0.124621
3	P1	-15.570751	0.078409	0.018866
7	P1	-15.527834	0.105317	0.049764
11	P1	-21.635365	0.255087	-0.240308
15	P1	-11.290252	0.042691	-0.008500
19	P1	-14.497981	0.263621	0.022487
22	P1	-15.769913	0.357798	0.120822
26	P1	-17.447977	0.235784	0.244880
30	P1	-17.724840	0.500140	0.103609

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.864889	0.083148	0.076315
7	P2	-22.034378	0.104435	0.121813
11	P2	-13.680310	0.105928	0.238636
15	P2	-7.090309	0.093117	0.044340
19	P2	-9.594240	0.094998	0.018747
22	P2	-16.855297	0.095538	0.017960
26	P2	-16.505417	0.097767	0.000307
30	P2	-18.791355	0.084854	-0.008831

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.157107	0.002735	0.006098
7	P3	-8.157107	0.002735	0.006098
11	P3	-8.157107	0.002735	0.006098
15	P3	-8.157107	0.002735	0.006098
19	P3	-8.157107	0.002735	0.006098
22	P3	-8.157107	0.002735	0.006098
26	P3	-8.157107	0.002735	0.006098
30	P3	-8.157107	0.002735	0.006098

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	-2.783027	0.013666	0.006964
7	P1	-2.952955	0.031308	0.018213
11	P1	-3.995426	0.016613	-0.020381
15	P1	-3.570951	0.023252	-0.050192
19	P1	-3.665348	0.115361	0.071745
22	P1	-5.694269	0.162897	-0.060805
26	P1	-7.412577	0.327142	-0.107443
30	P1	-6.337103	0.148857	-0.073093
3	P1	-10.833245	0.040372	-0.041868
7	P1	-10.450406	0.154103	-0.005762
11	P1	-12.612464	0.109060	-0.075165
15	P1	-11.617634	0.072737	0.021186
19	P1	-15.649515	1.335061	0.288920
22	P1	-25.727615	3.845528	0.504637
26	P1	-15.385832	0.443367	0.215910
30	P1	-20.098145	1.328396	0.298419

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.608692	0.046580	0.096866
7	P2	-22.048822	0.040663	0.061194
11	P2	-9.695151	0.062634	0.177354
15	P2	-5.122325	0.046102	0.027136
19	P2	-6.901966	0.064256	0.021547
22	P2	-7.078732	0.039551	0.037407
26	P2	-23.969341	0.044034	-0.012820
30	P2	-21.953146	0.043386	0.018413

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.997802	0.004160	0.001209
7	P3	-7.997700	0.004152	0.001466
11	P3	-7.997648	0.004153	0.001530
15	P3	-7.997813	0.004157	0.001413
19	P3	-7.997828	0.004159	0.001344
22	P3	-7.997821	0.004140	0.001344
26	P3	-7.997859	0.004143	0.001489
30	P3	-7.997725	0.004147	0.001670

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	0.000473736
	stdev	2.12595e-07
MEAN Q	mean	0.000501536
	stdev	2.30908e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128488
	stdev	0.00100646
STDEV Q	mean	0.128736
	stdev	0.00101771

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005072[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

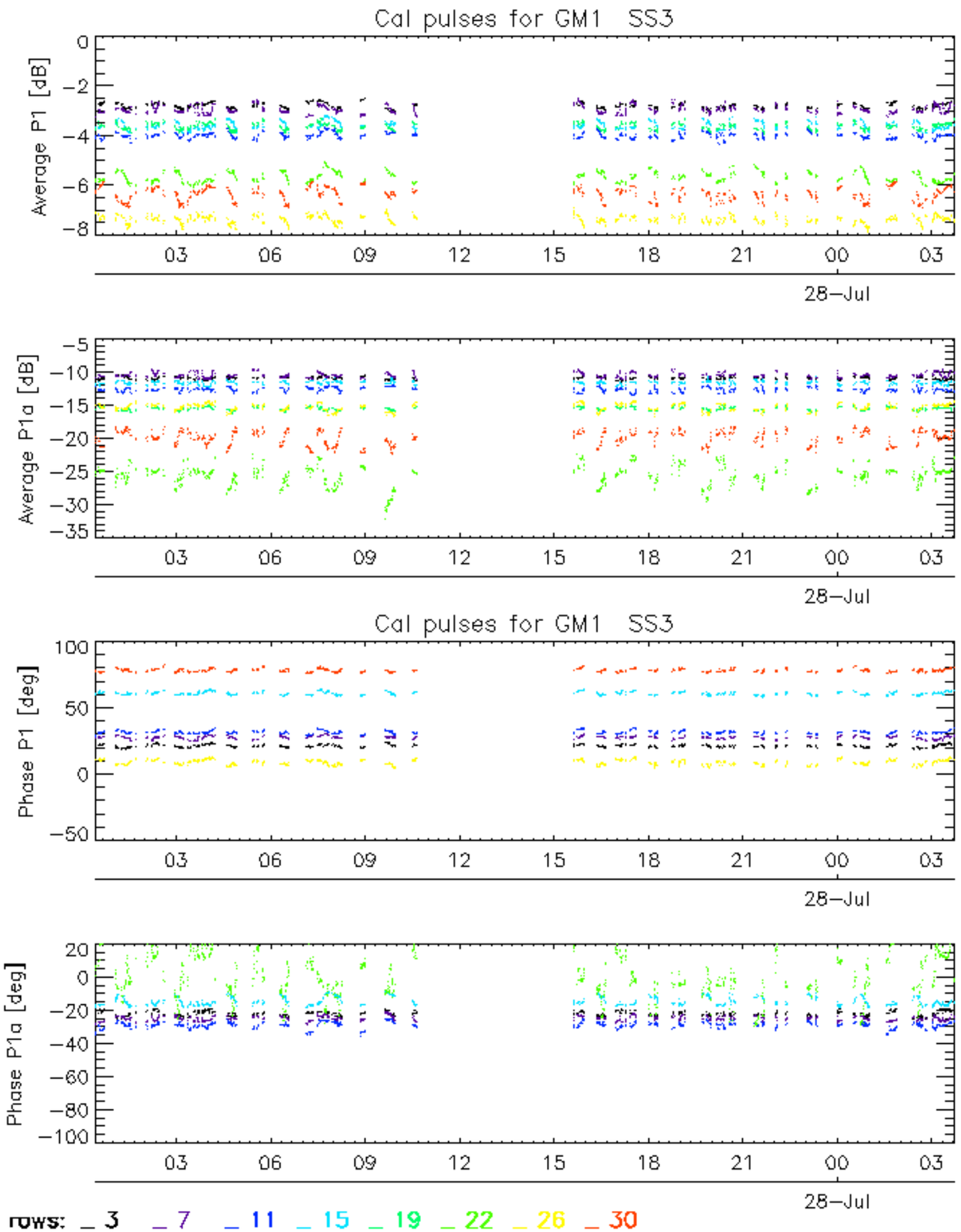
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

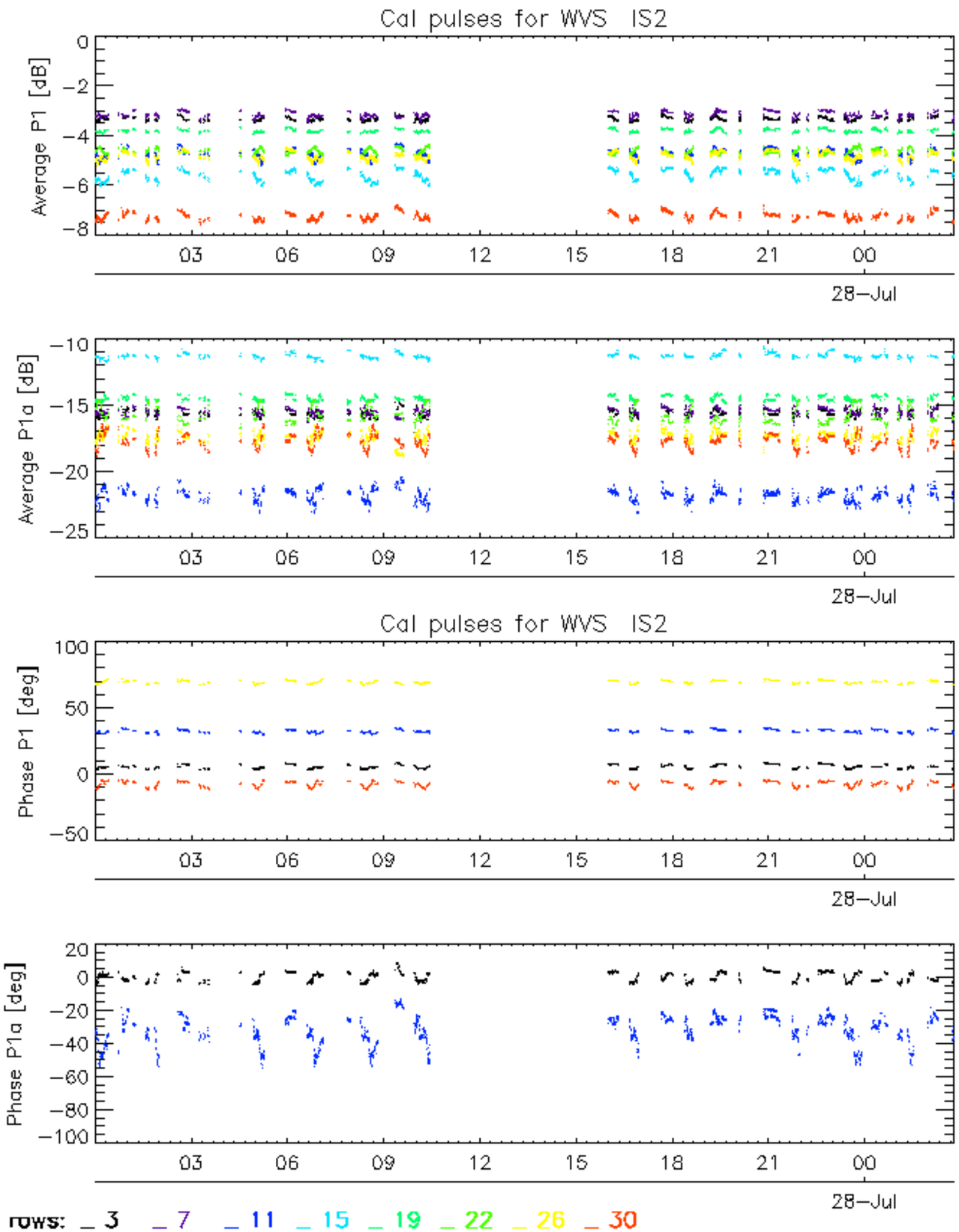
7.5 - Absolute Doppler for GM1

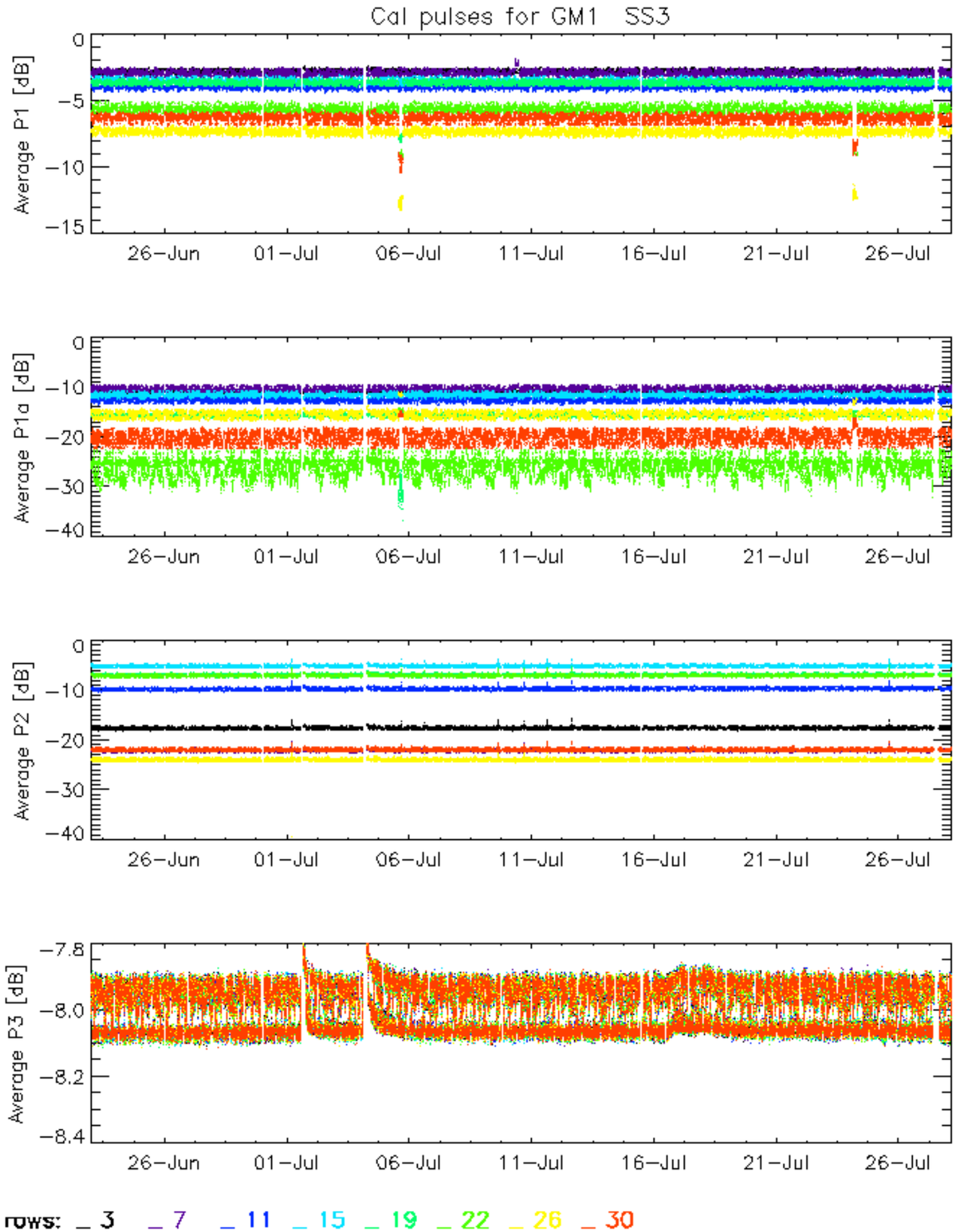
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

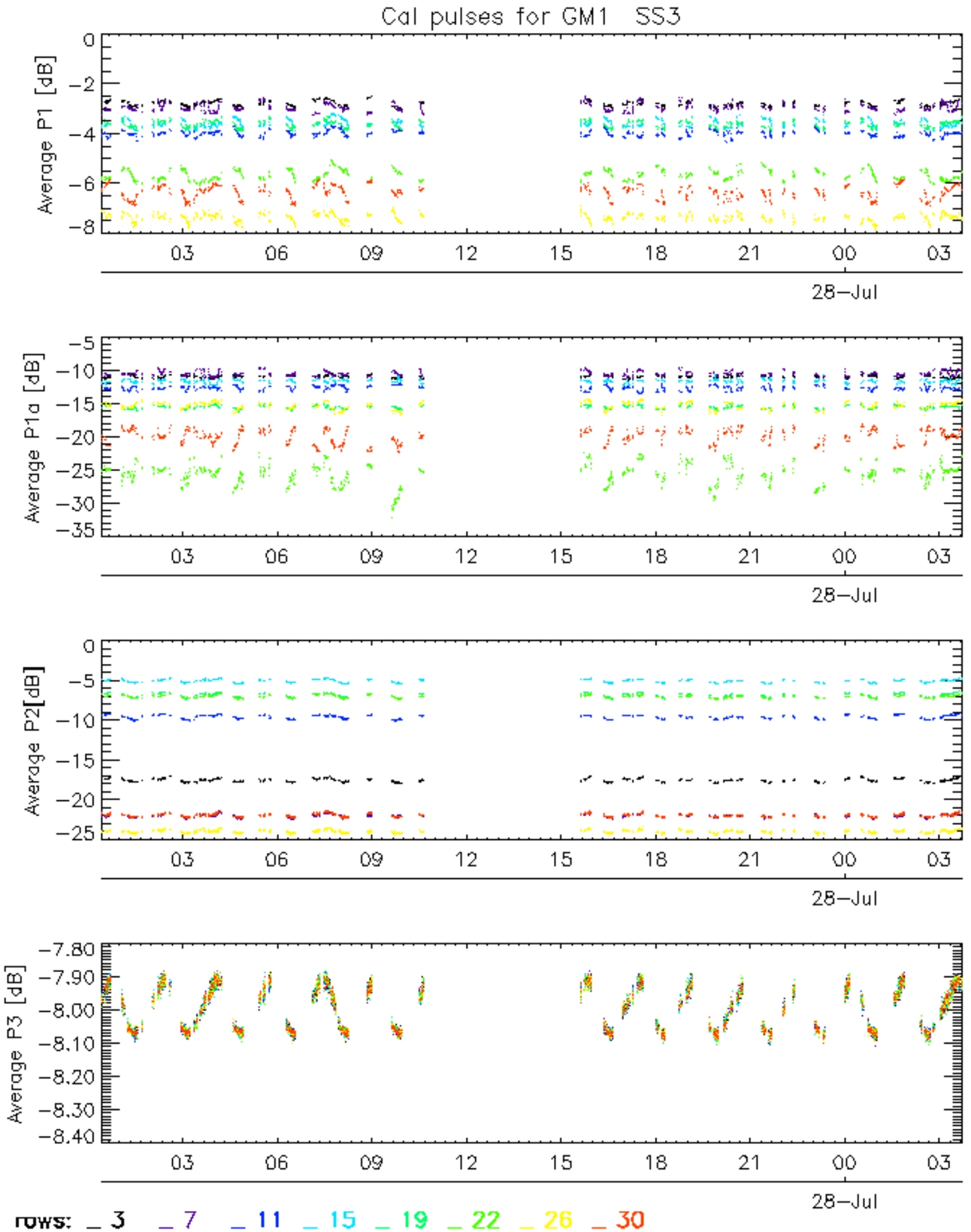
7.6 - Doppler evolution versus ANX for GM1

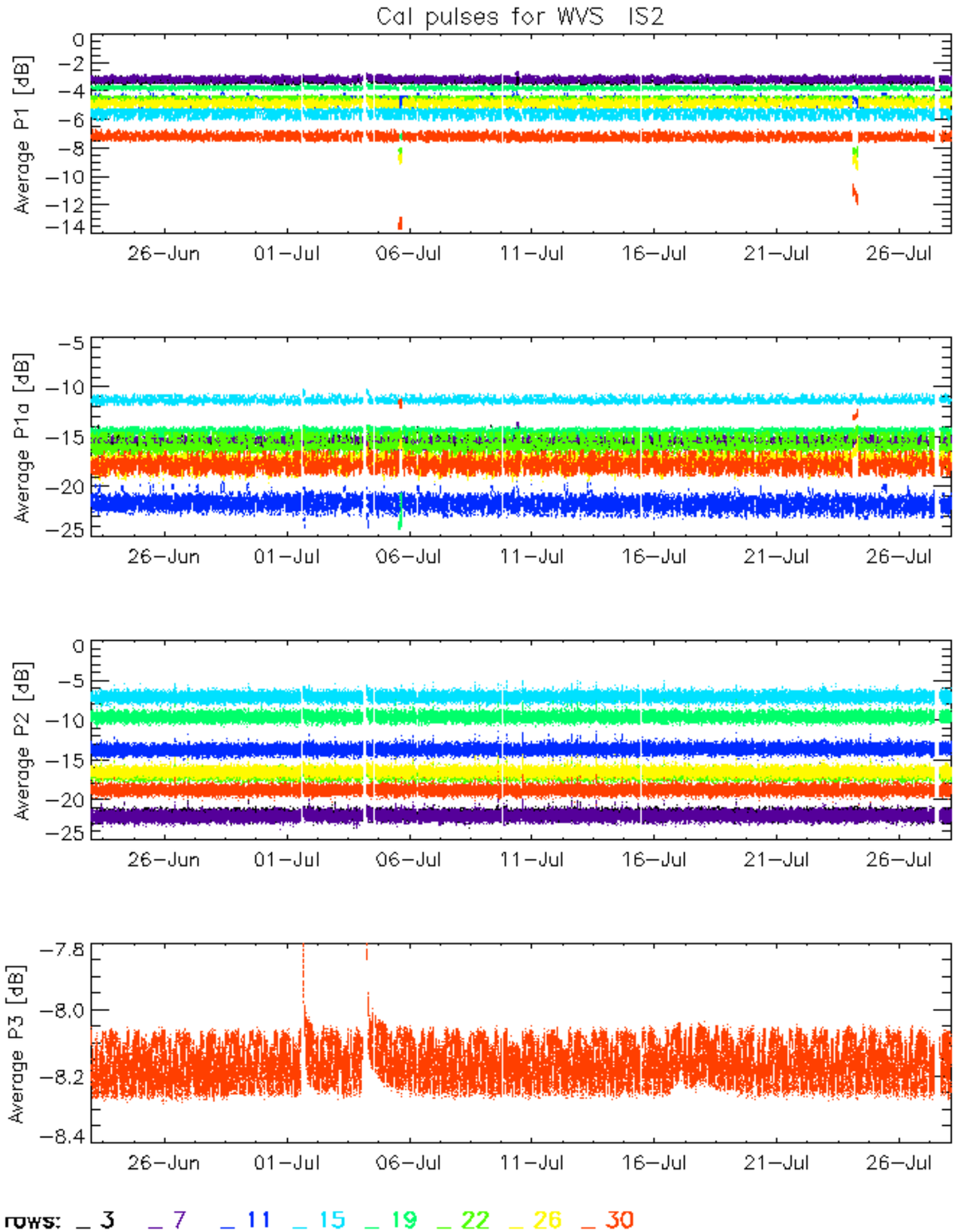
Evolution Doppler error versus ANX
☒

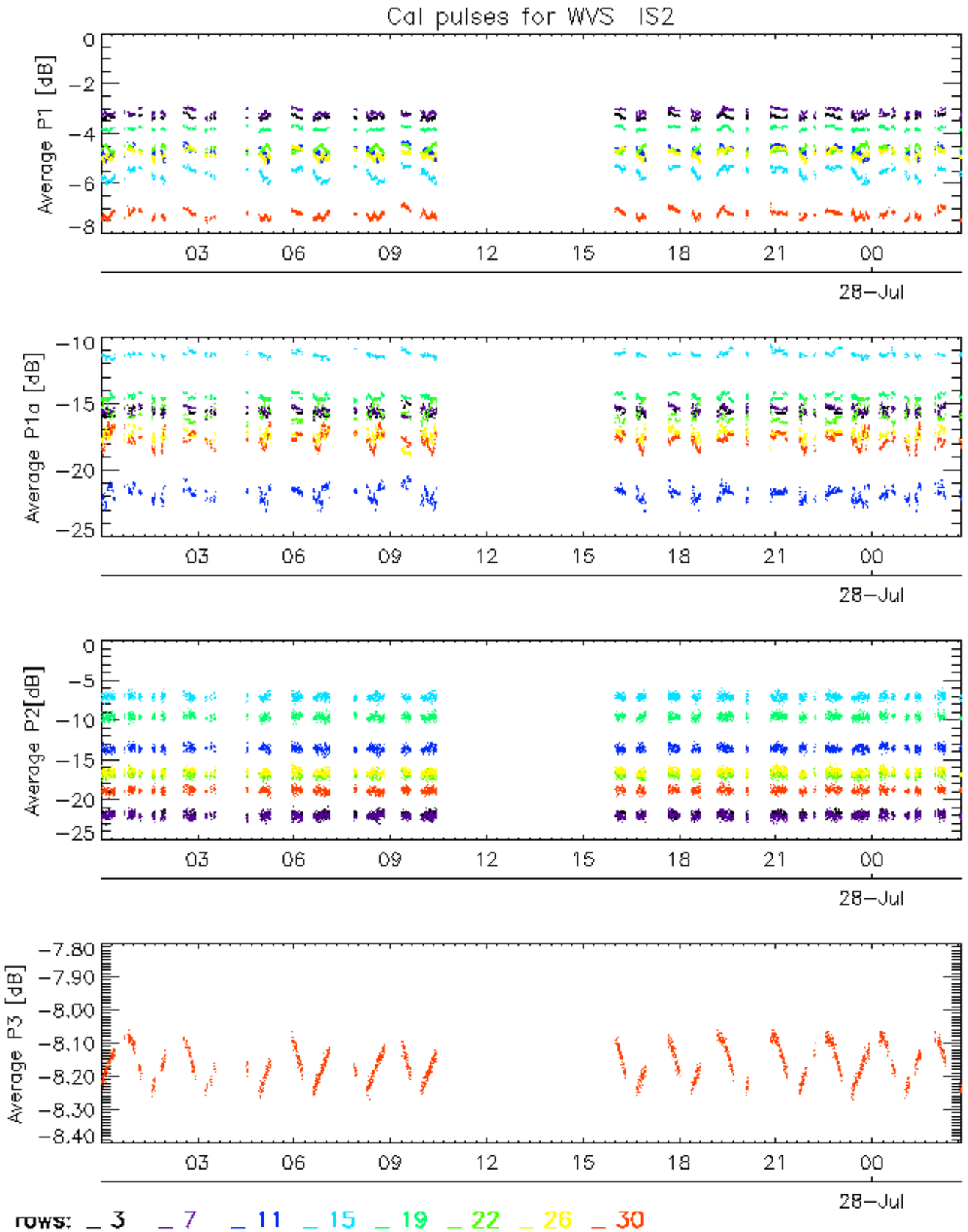

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
28−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
28−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

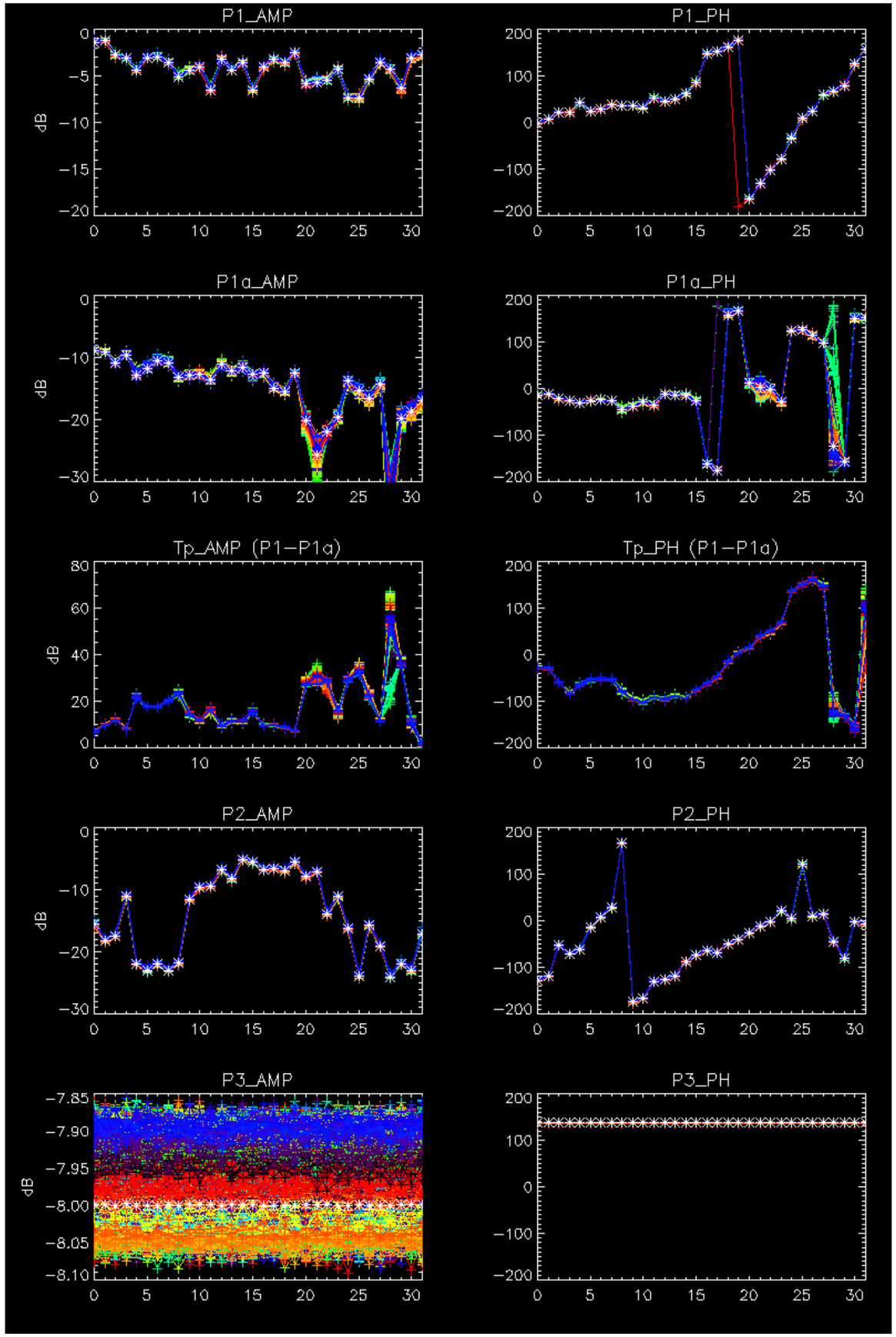

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
Average P1a [dB]
0
−10
−20
−30
−40
Average P2 [dB]
0
−10
−20
−30
−40
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

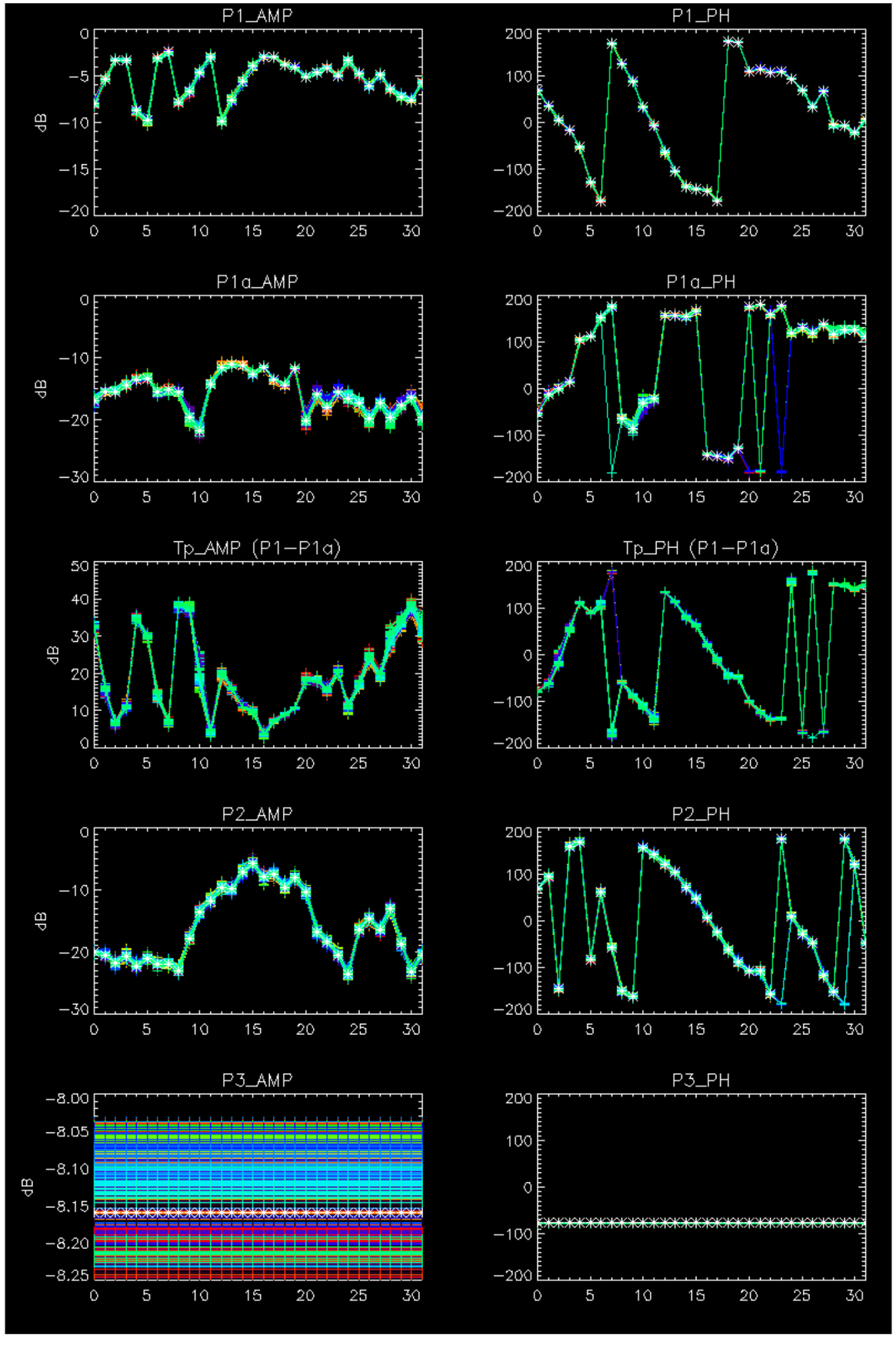

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
28−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
−14
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−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
28−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

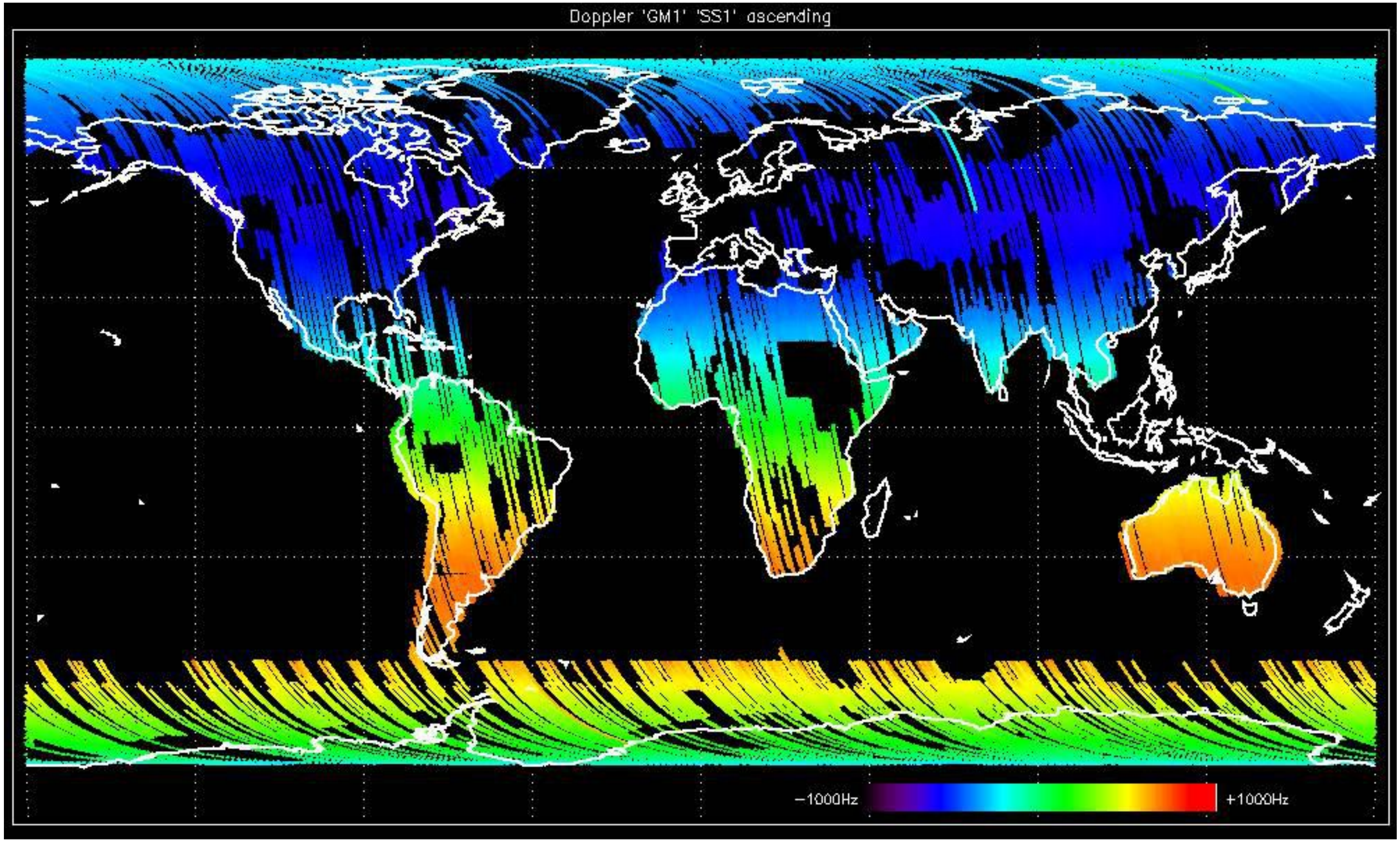
No anomalies observed.

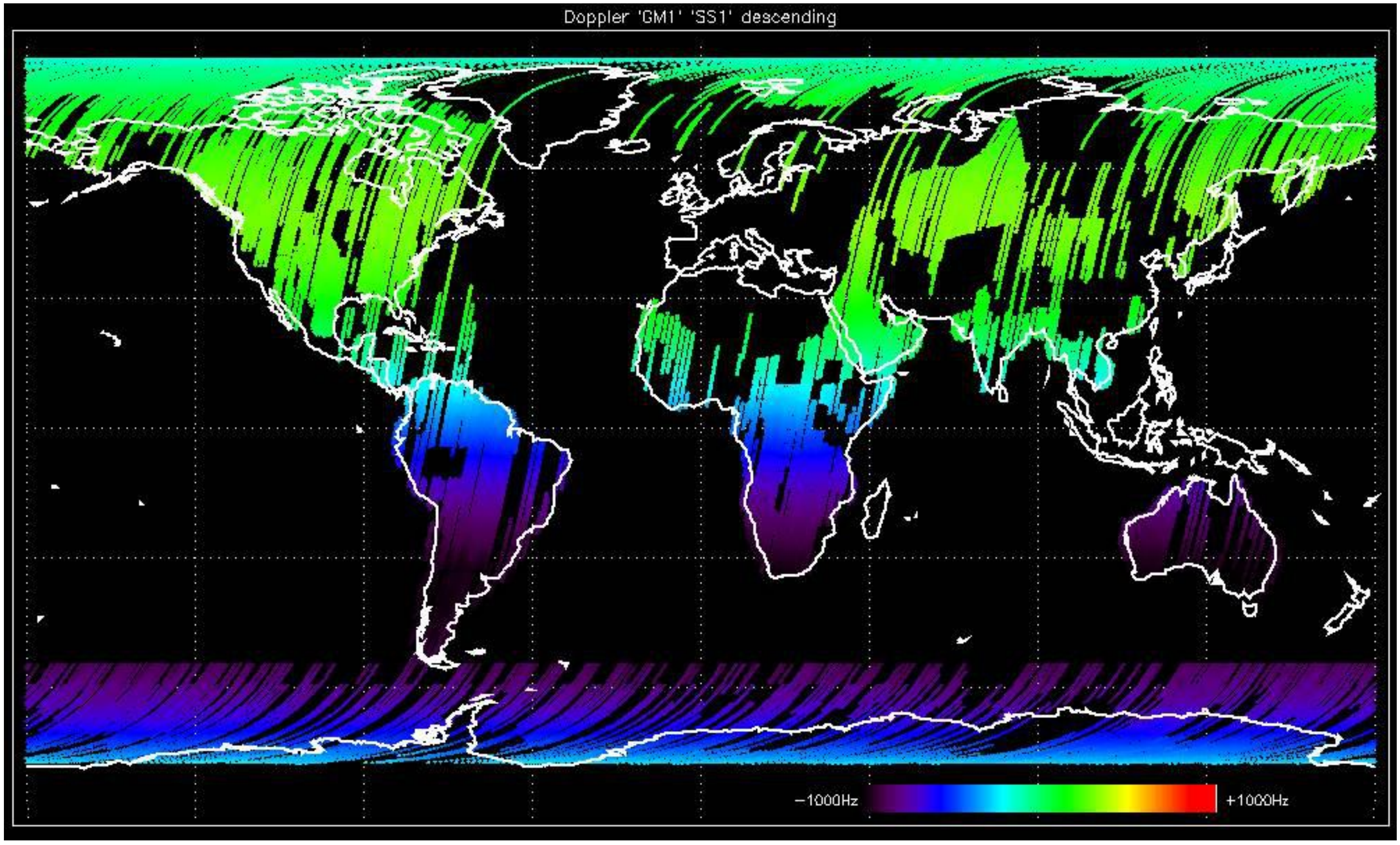

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

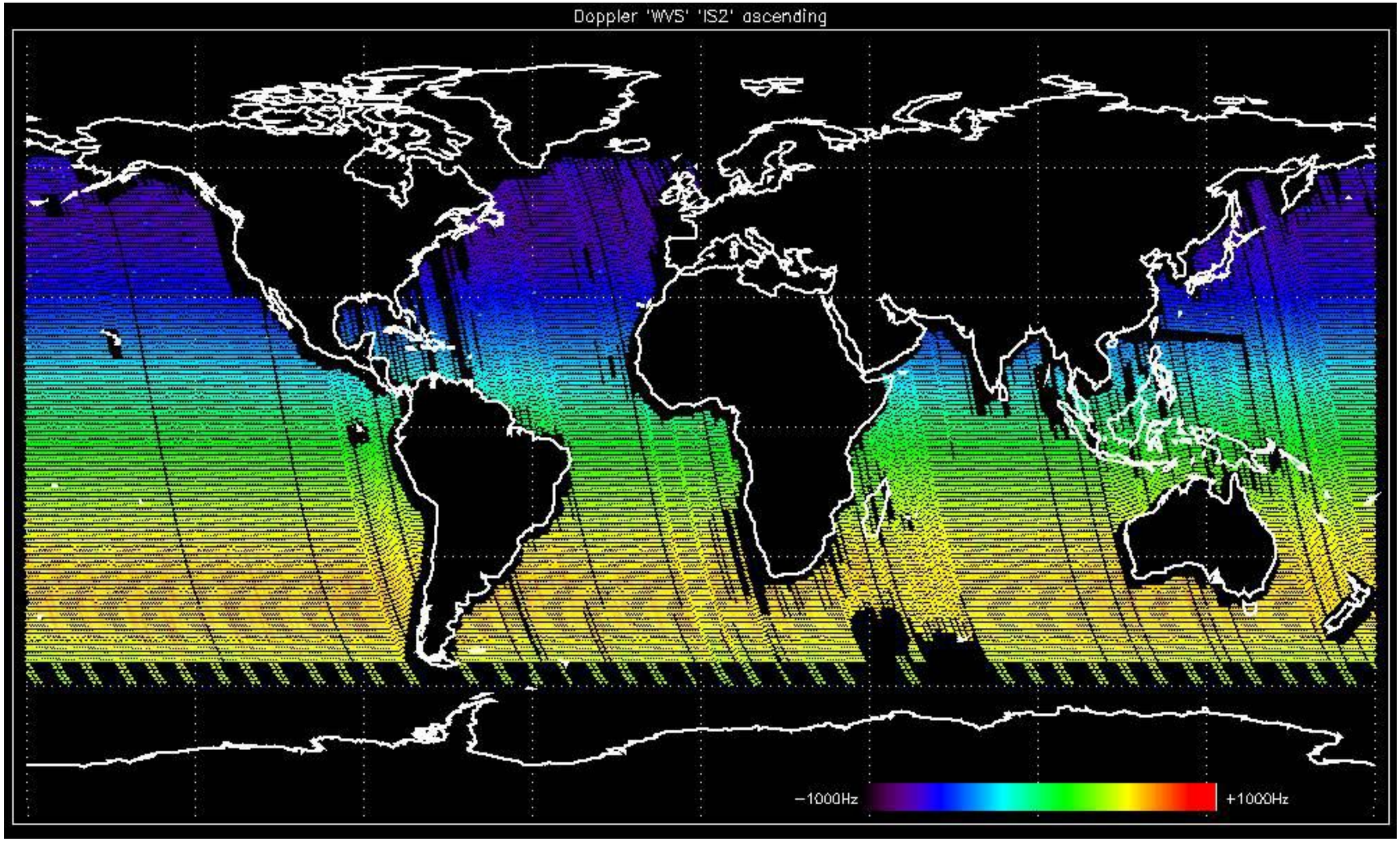

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

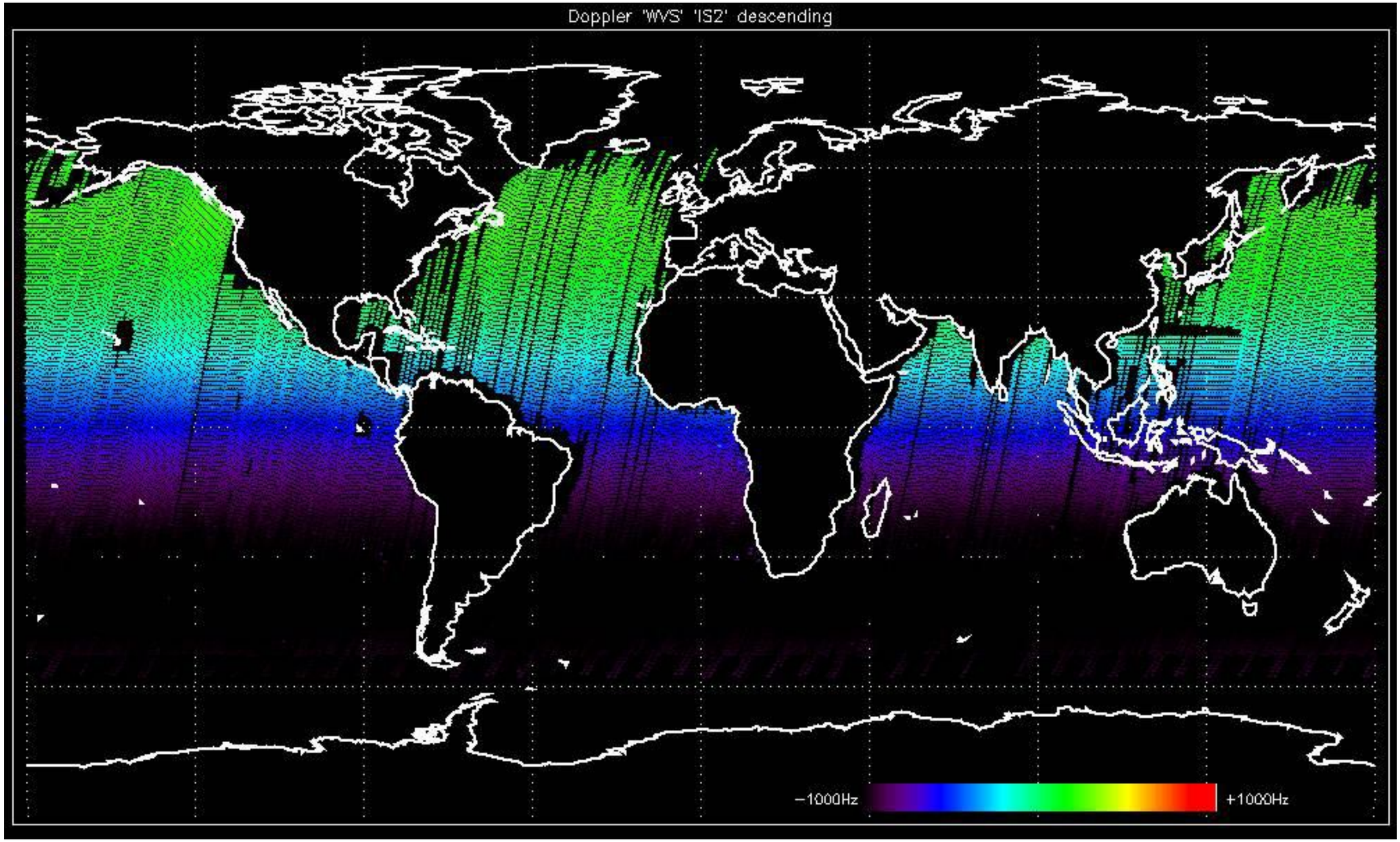
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

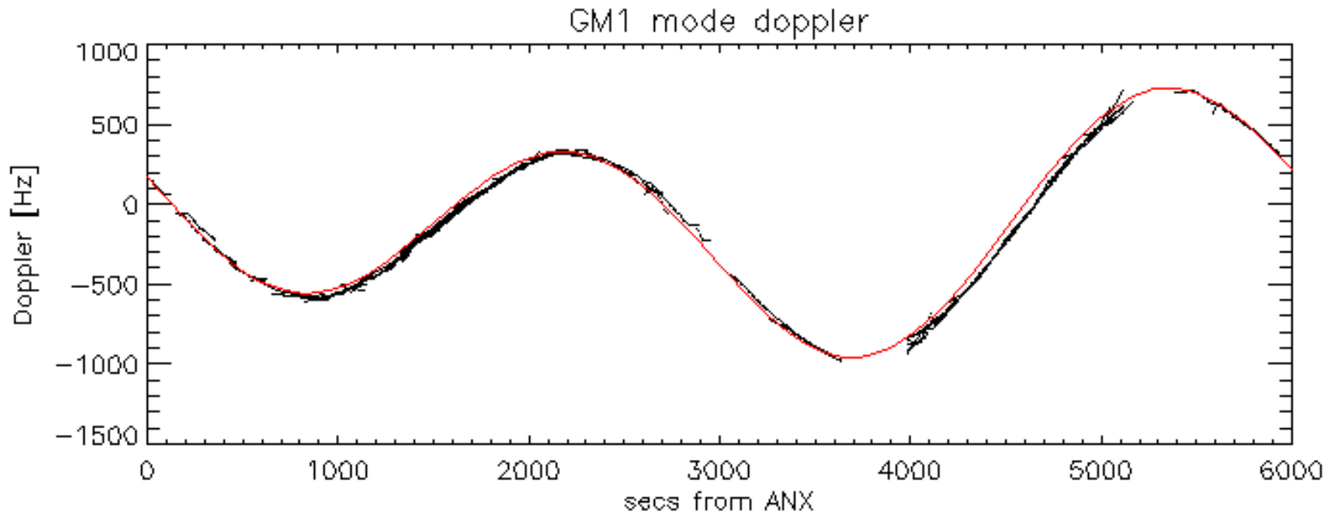
Preliminary report.The data is not yet controled

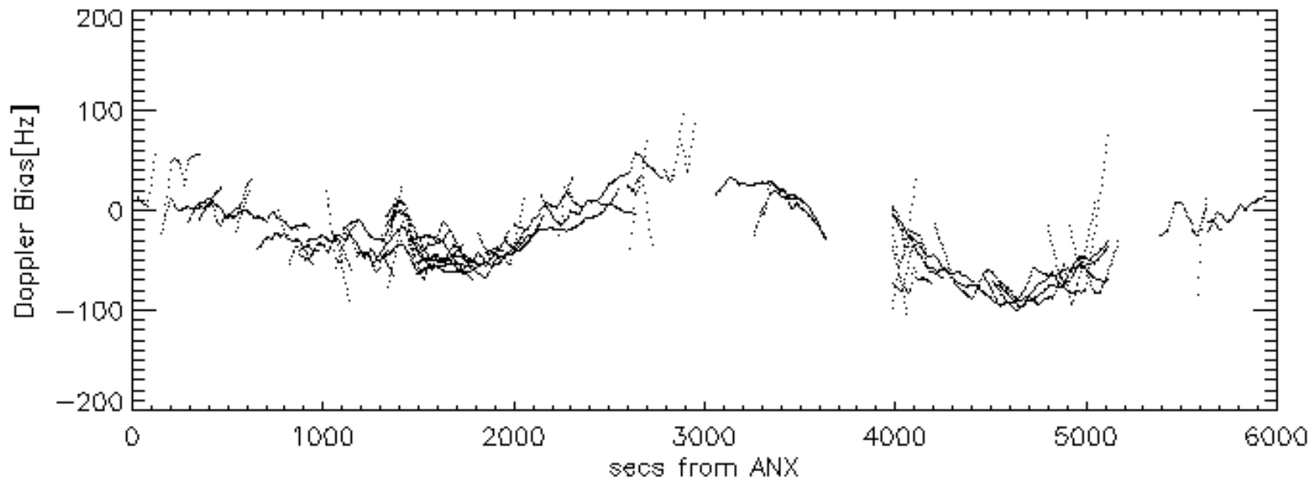

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

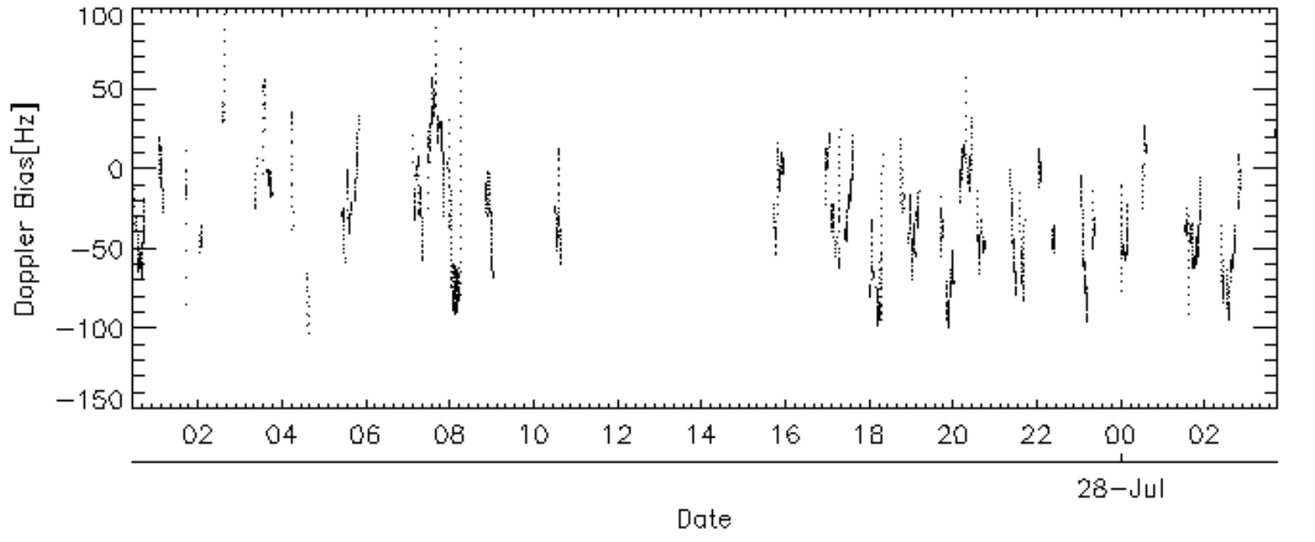

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

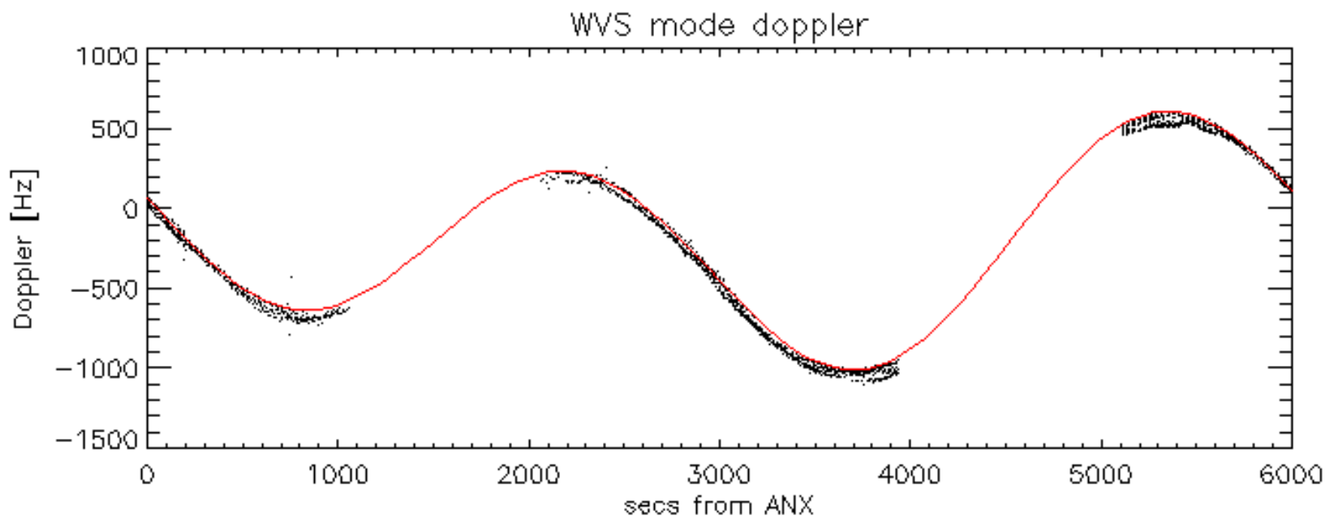

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

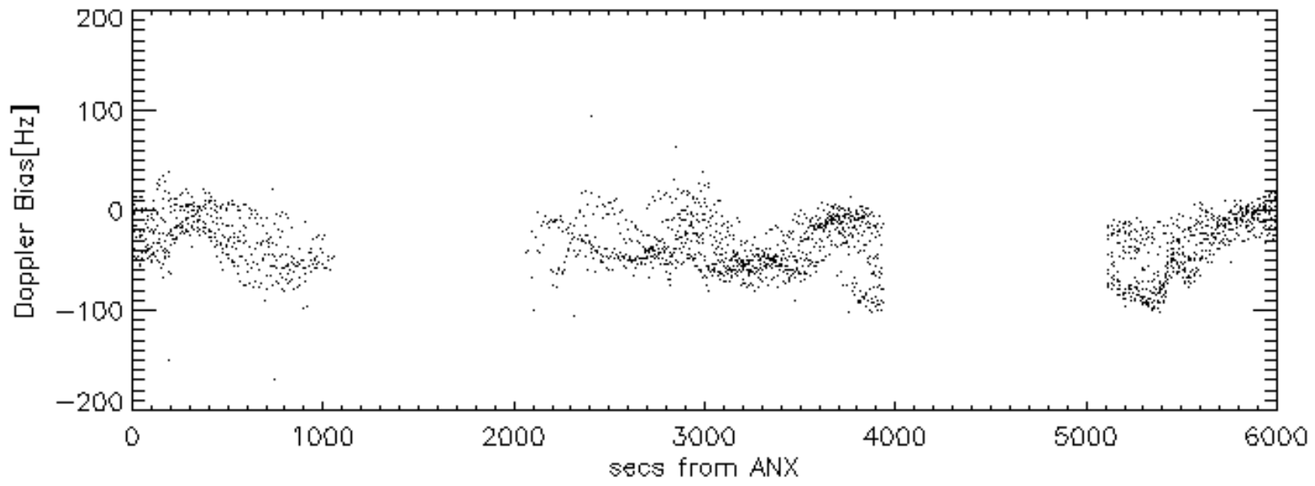

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

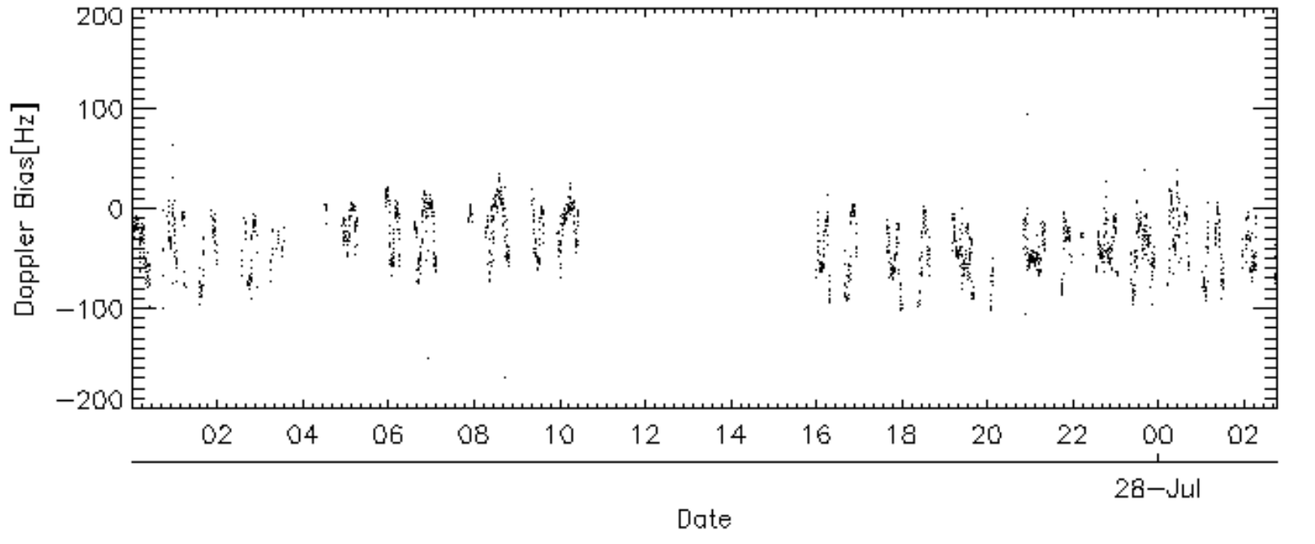

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

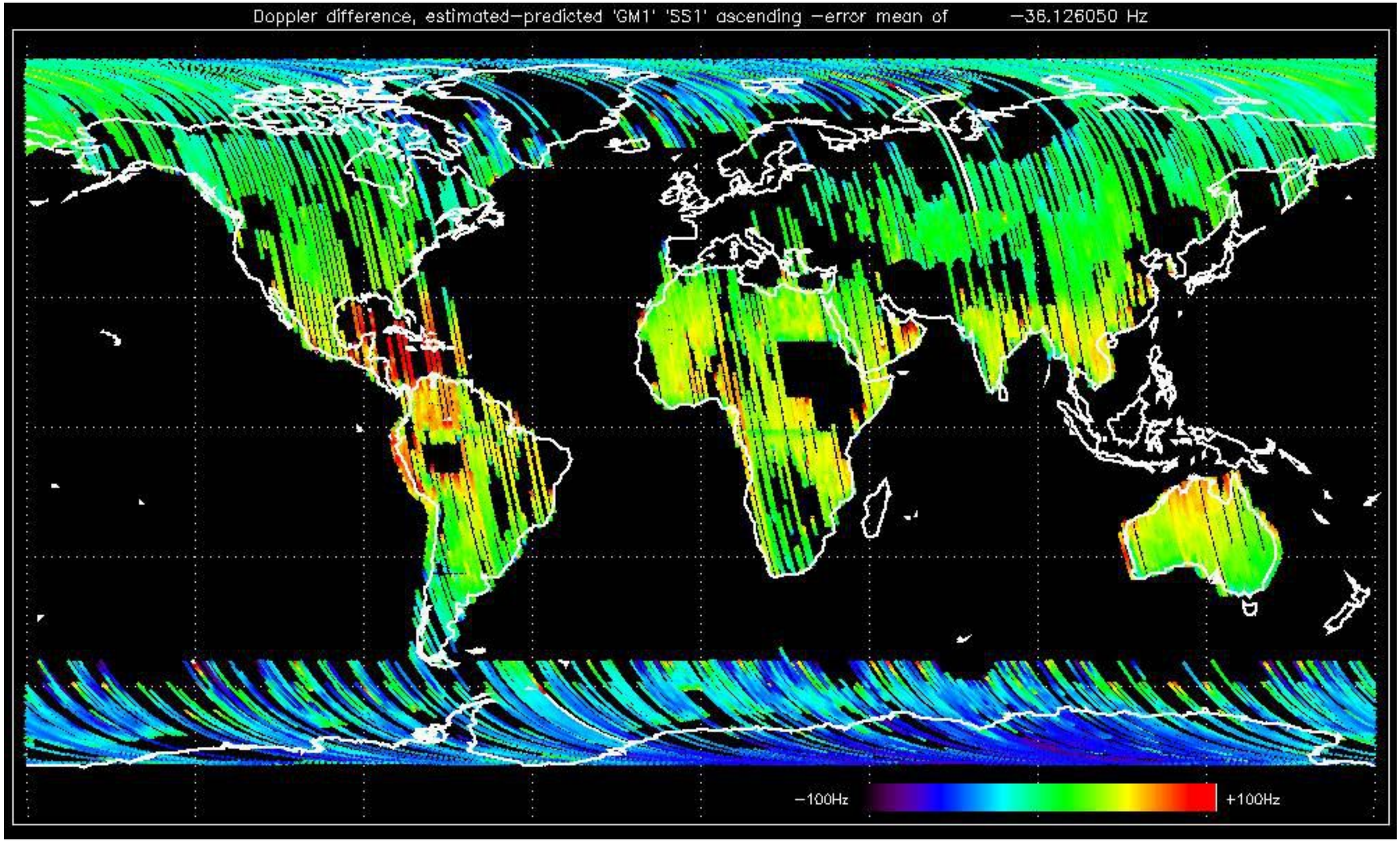

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

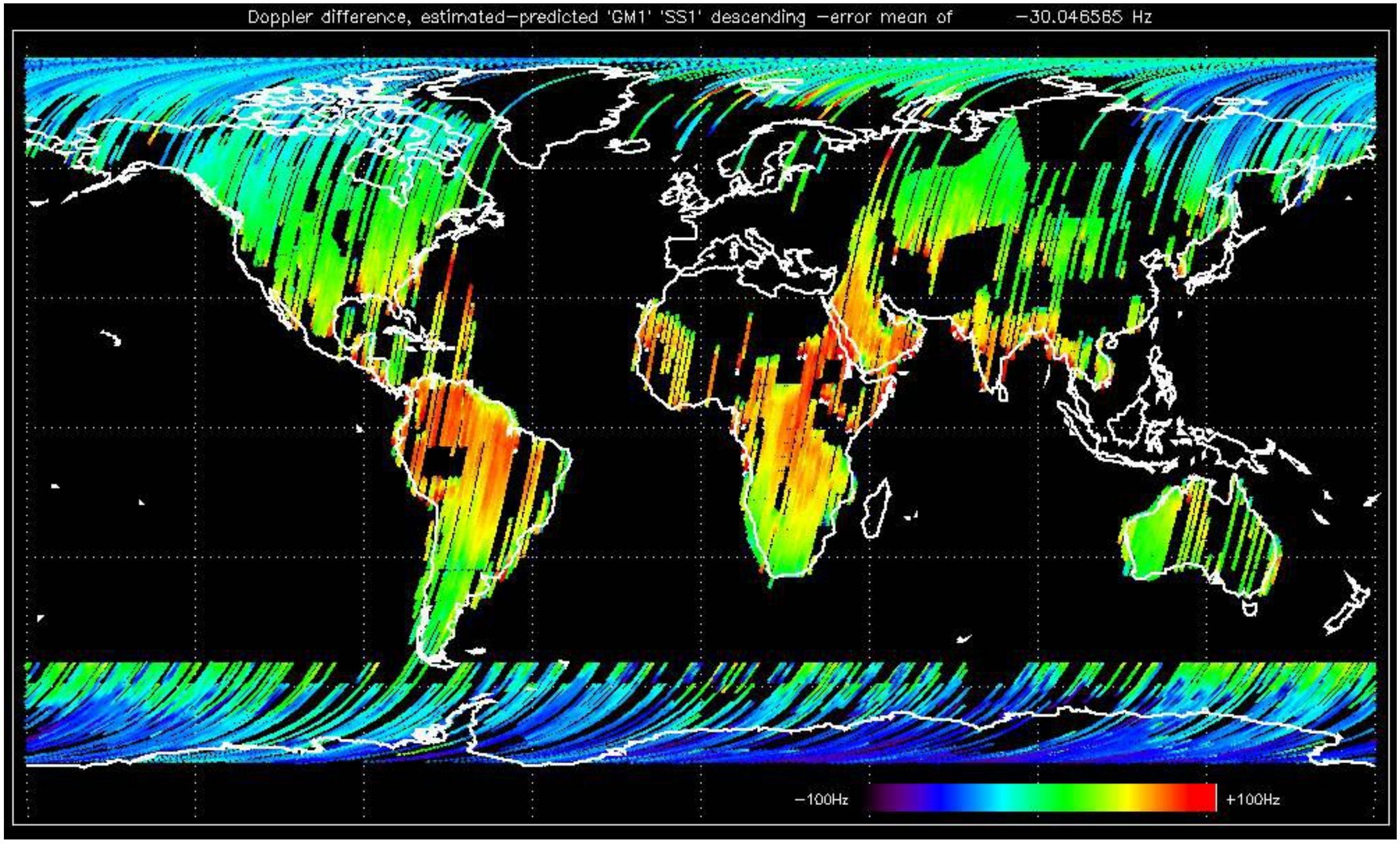

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
28−Jul
Date

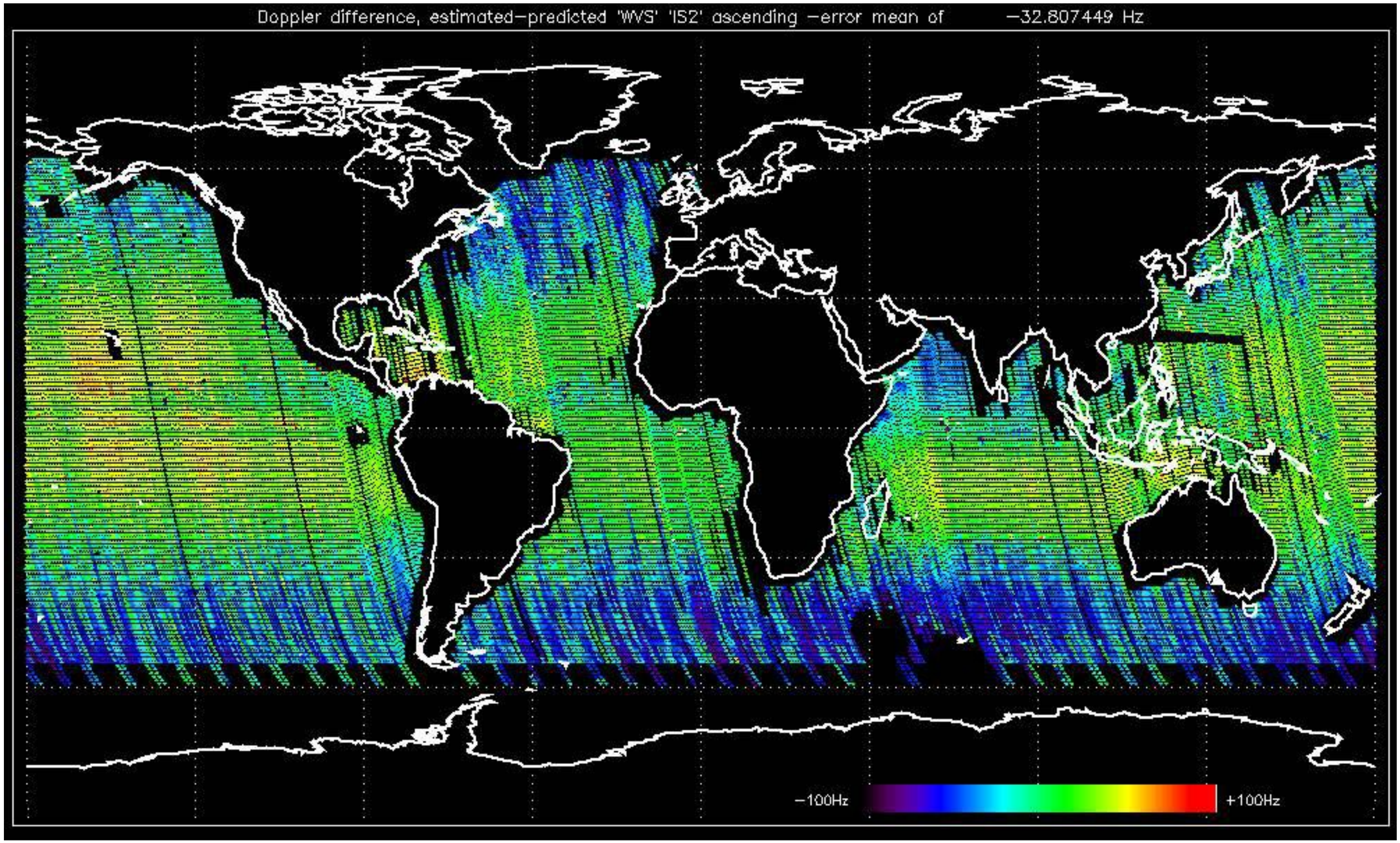

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

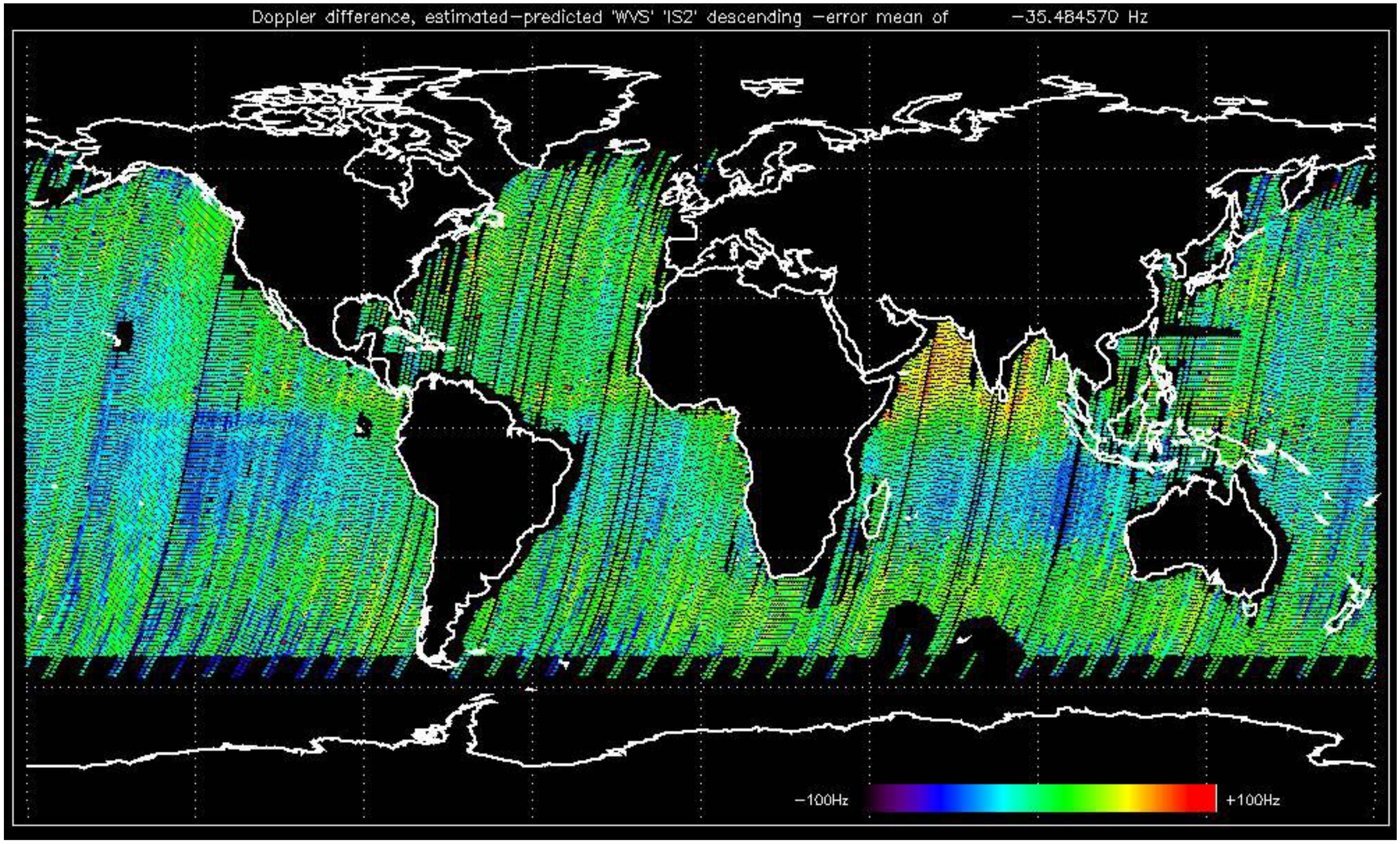

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −36.126050 Hz
−100Hz
+100Hz

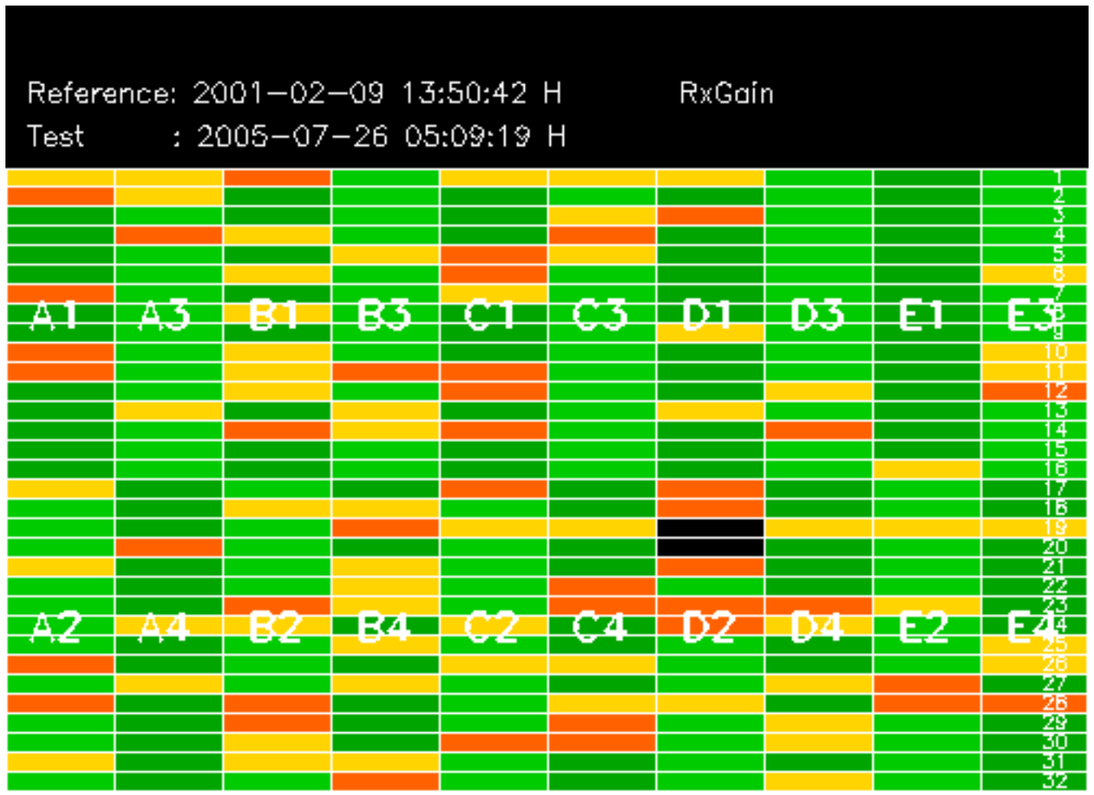

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −30.046565 Hz
−100Hz
+100Hz

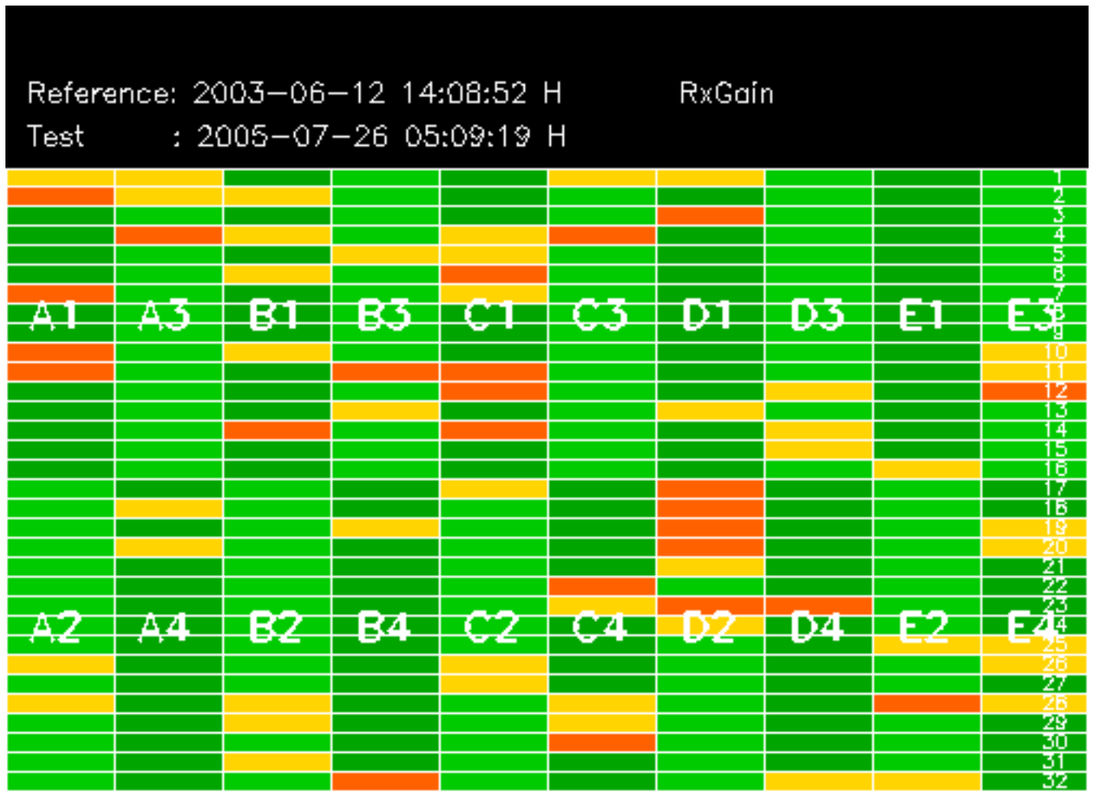

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −32.807449 Hz
−100Hz
+100Hz

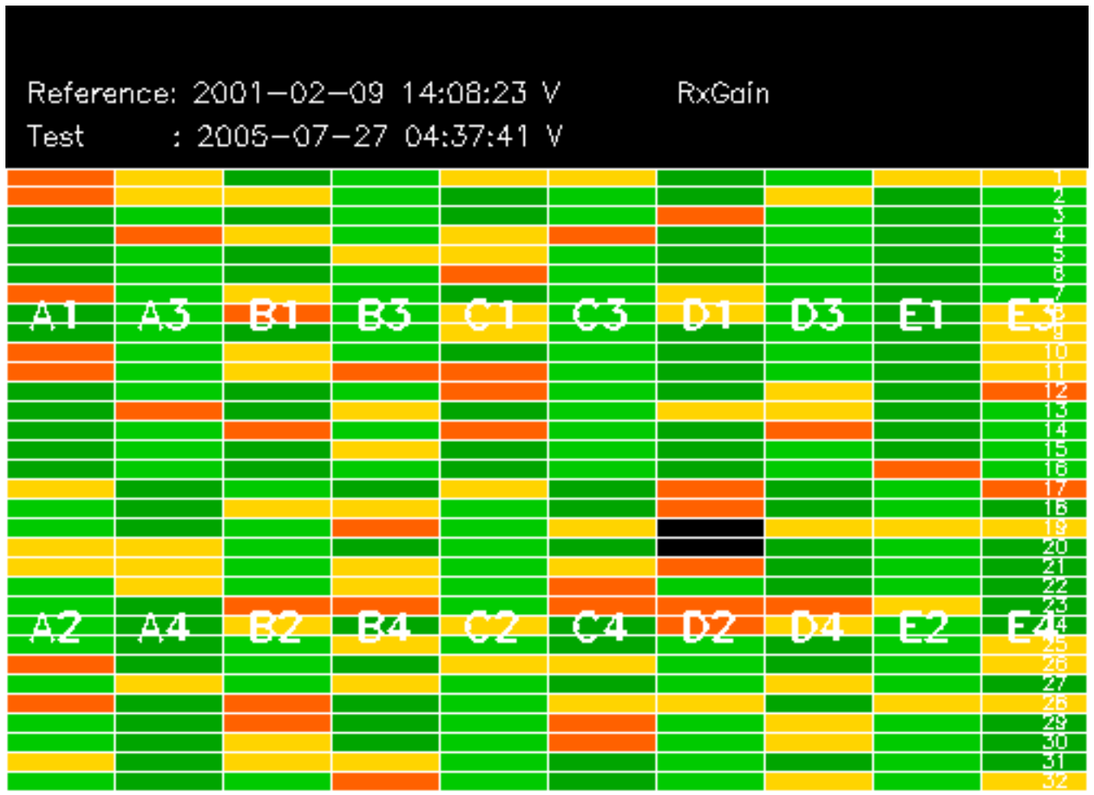

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −35.484570 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2005-07-26 05:09:19 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 : 2005-07-26 05:09:19 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 : 2005-07-27 04:37:41 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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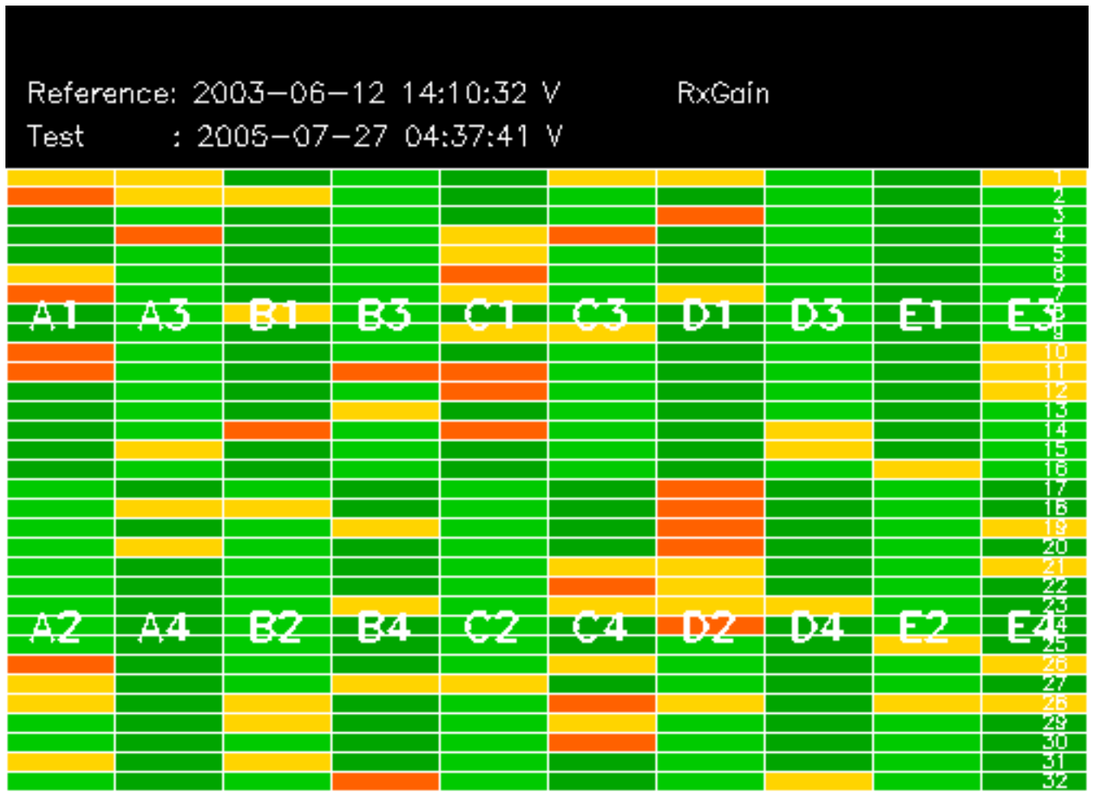
Reference: 2003-06-12 14:10:32 V
Test : 2005-07-27 04:37:41 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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9
10
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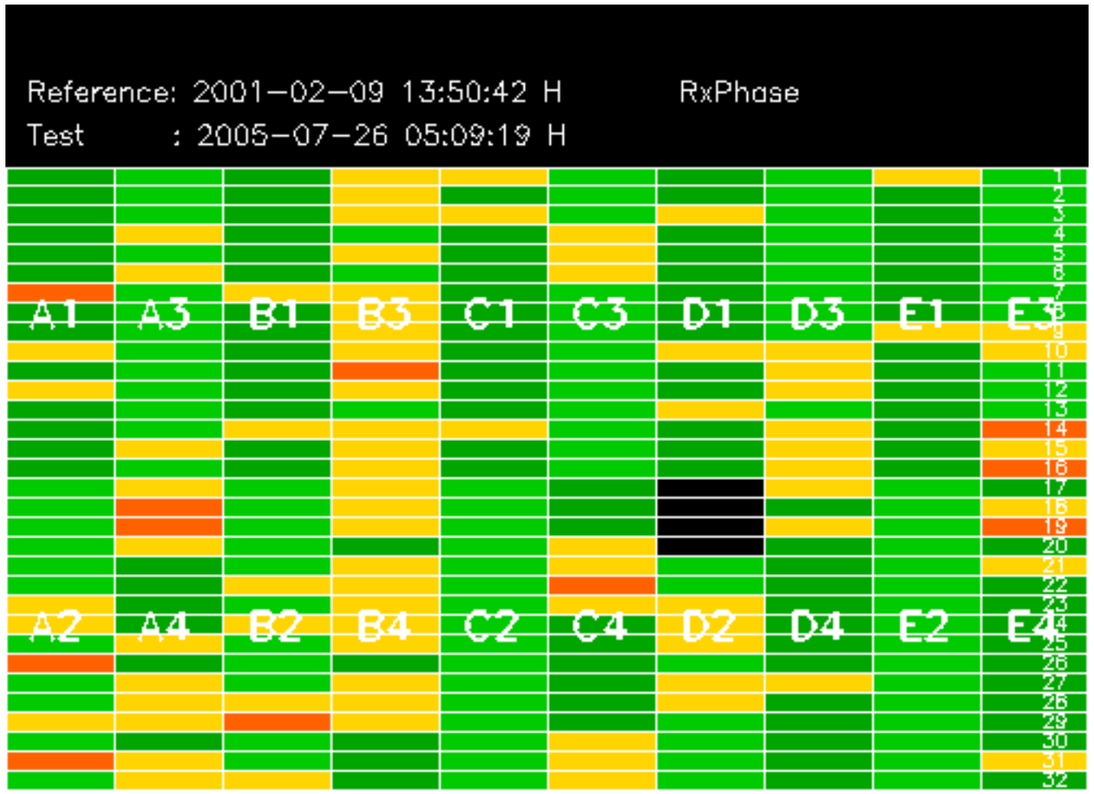
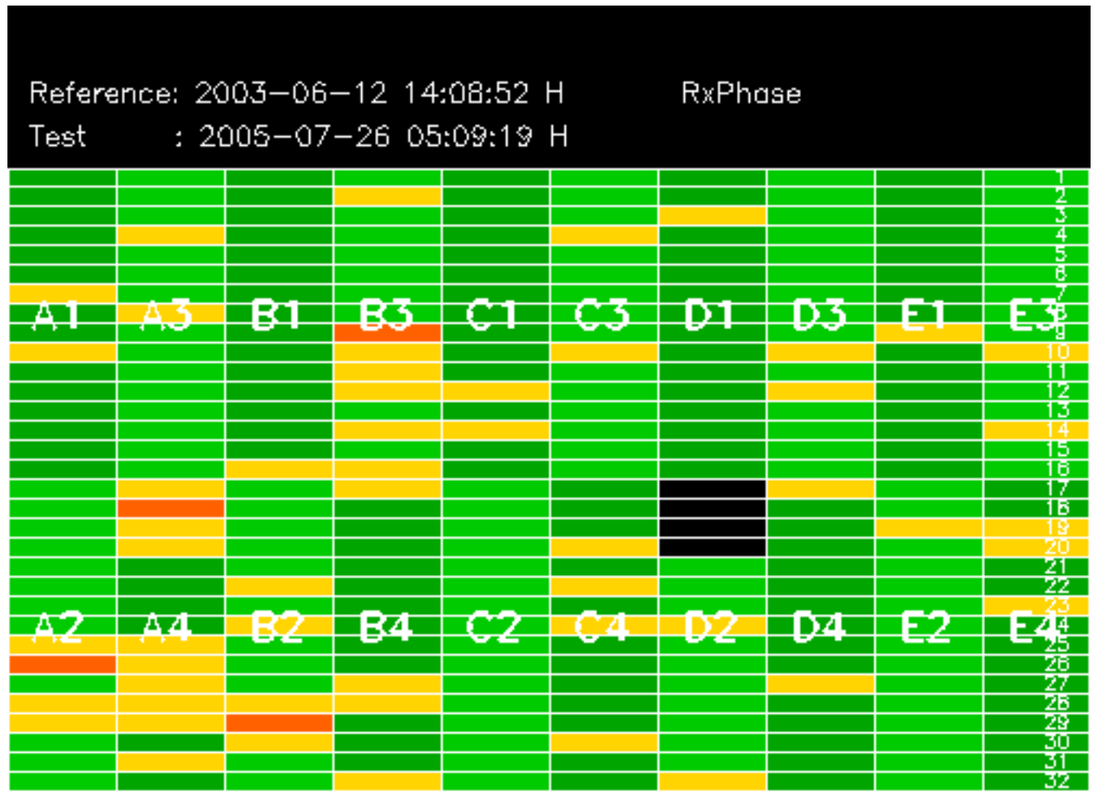

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-07-26 05:09:19 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-07-26 05:09:19 H
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
11
12
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14
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16
17
18
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26
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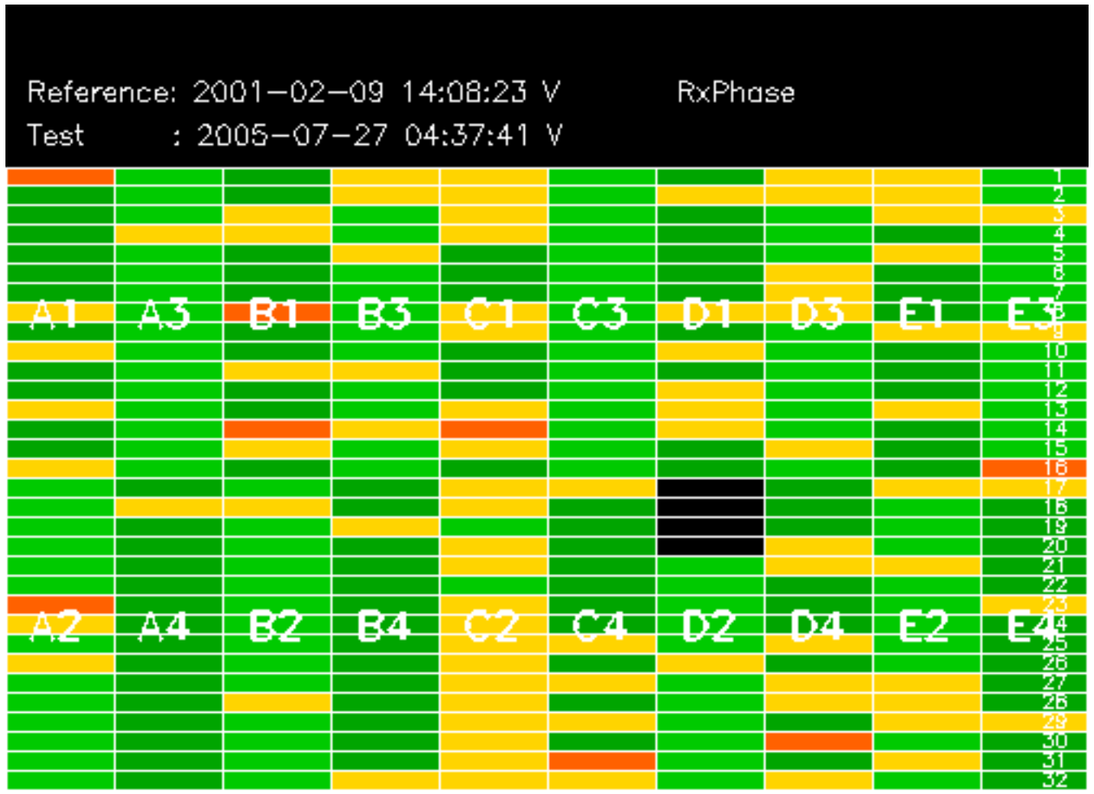
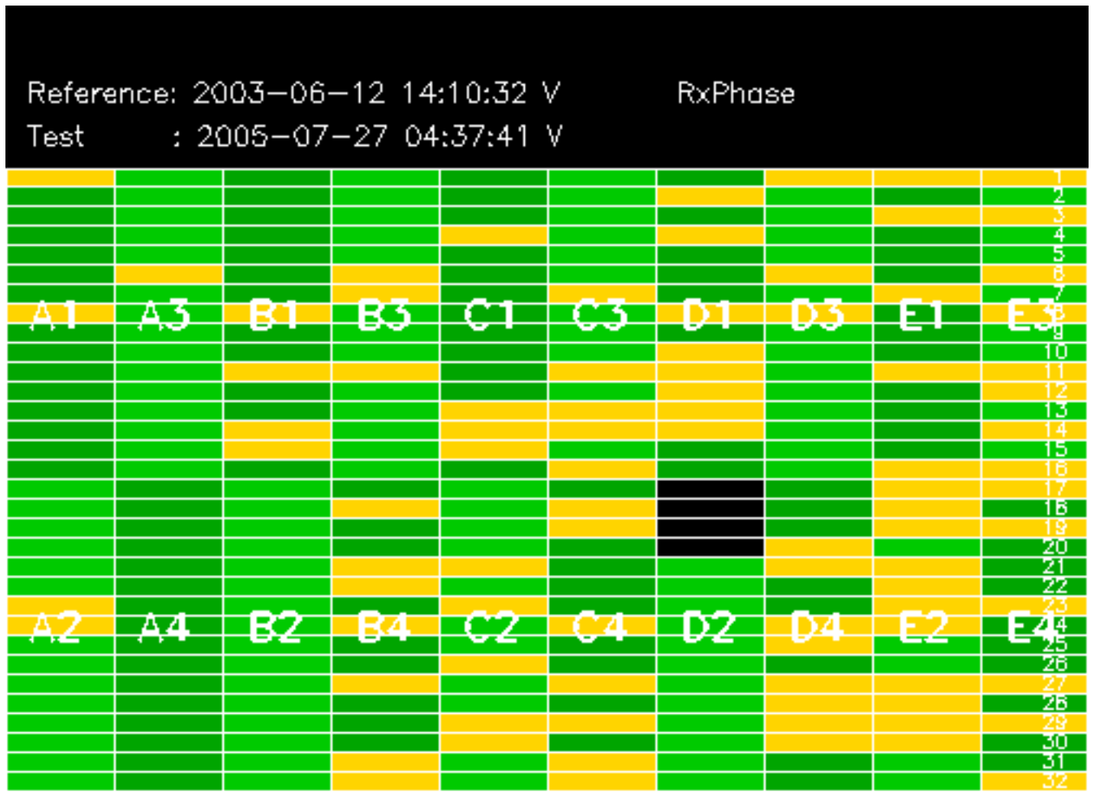
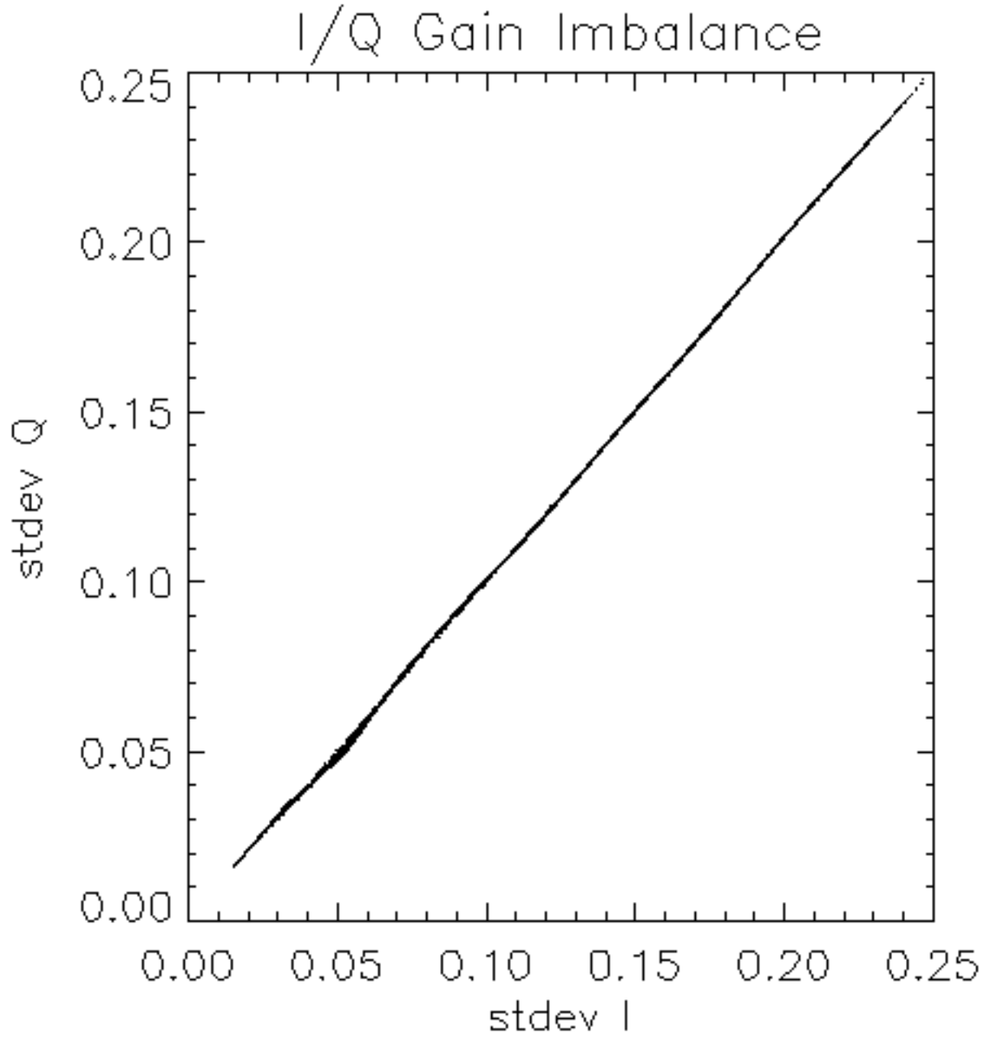
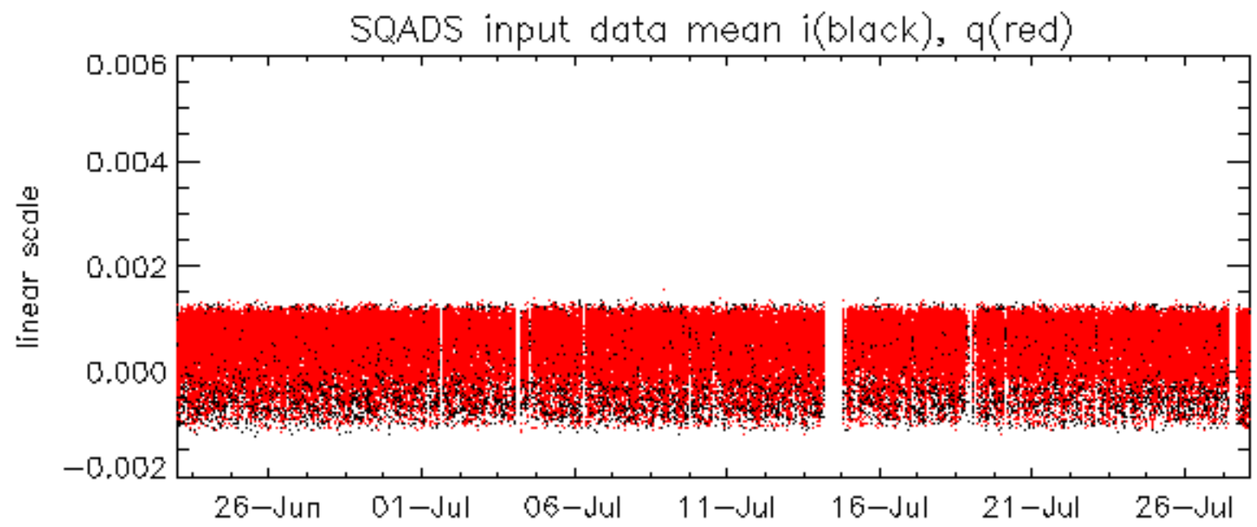
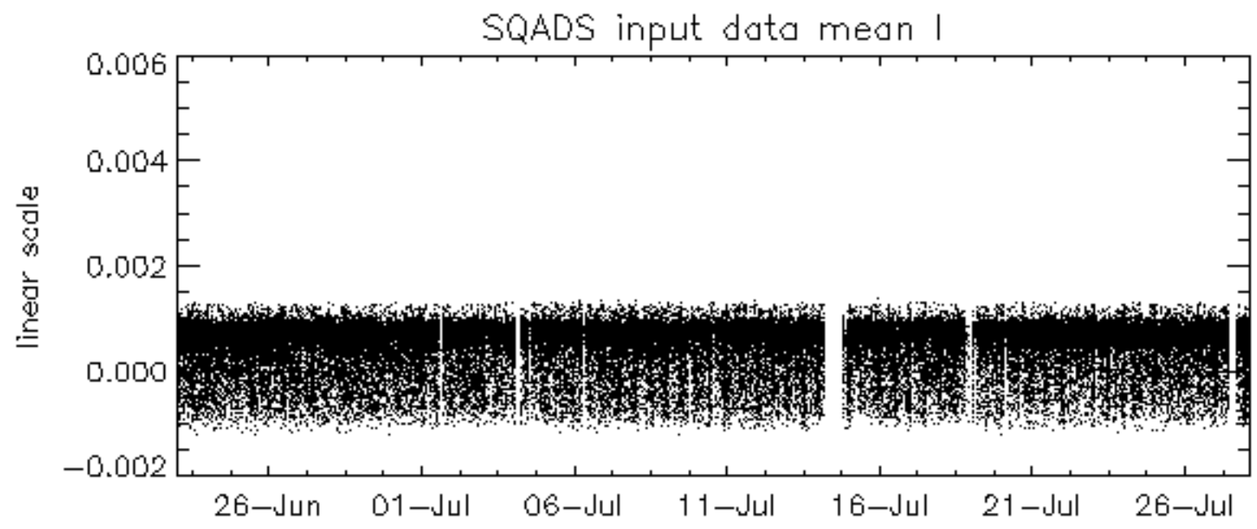
29
30
31
32

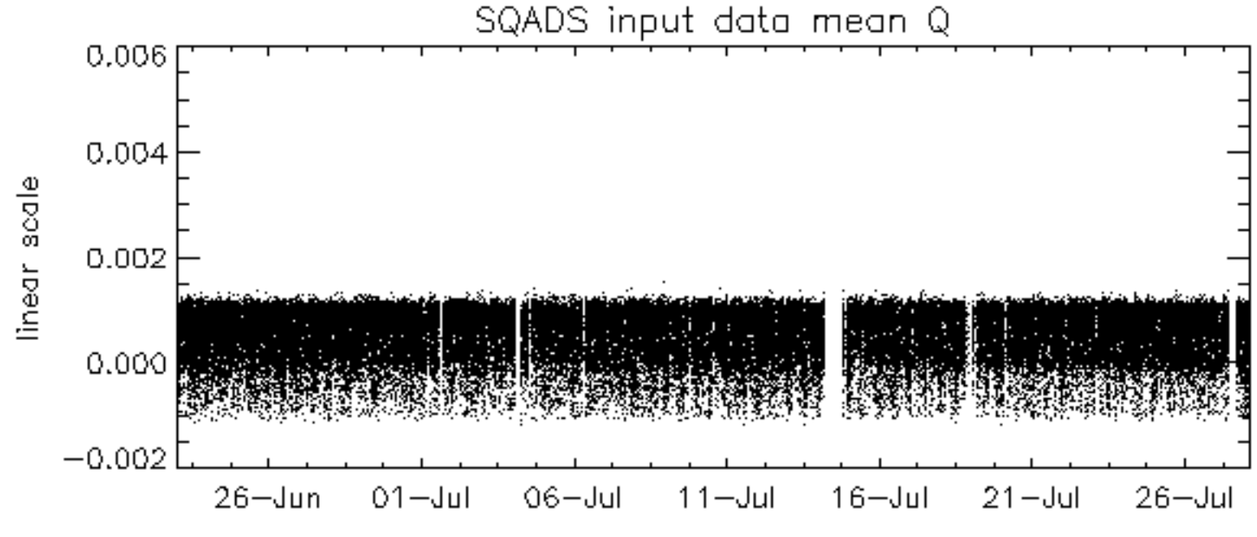

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-27 04:37:41 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

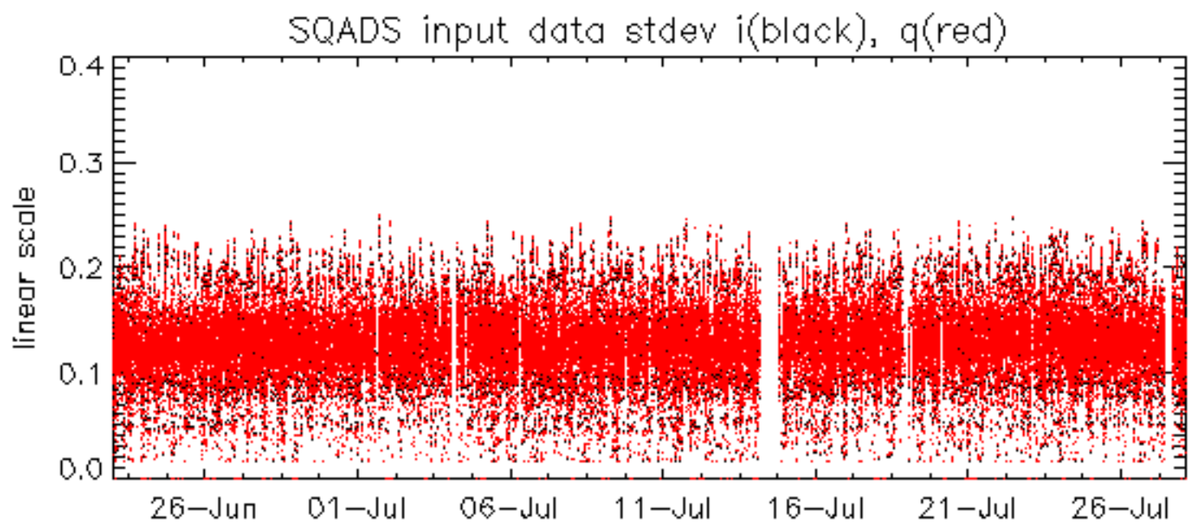

Reference: 2003-06-12 14:10:32 V
Test : 2005-07-27 04:37:41 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

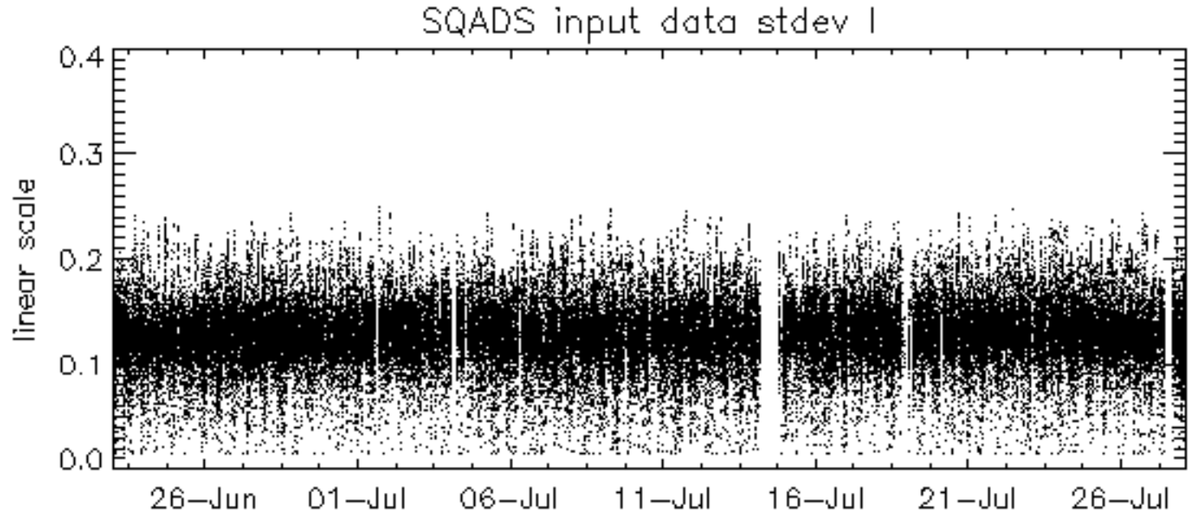

I/Q Gain Imbalance
stdev Q
stdev I
0.00
0.05
0.10
0.15
0.20
0.25

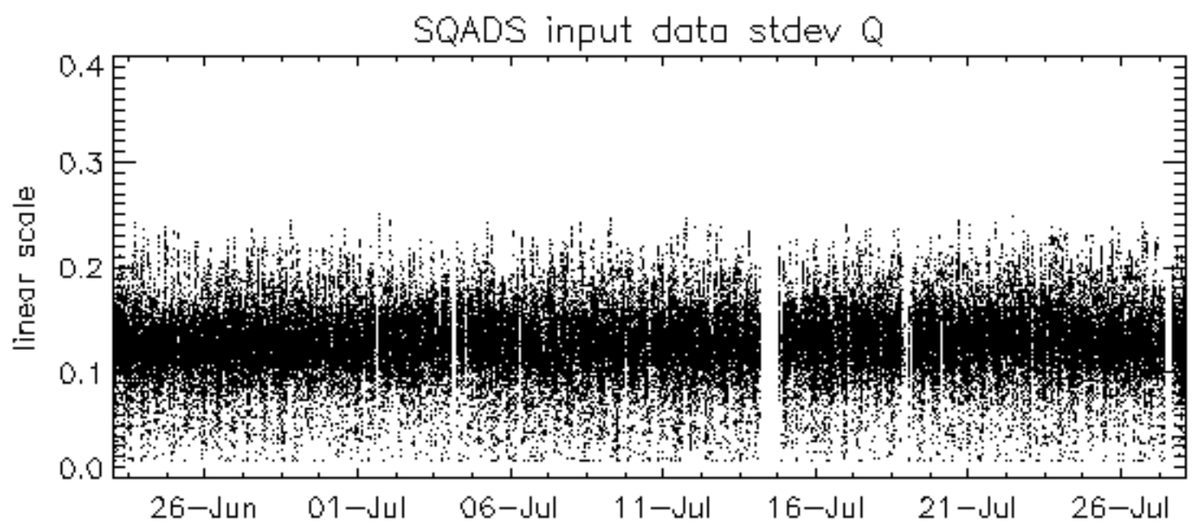

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul

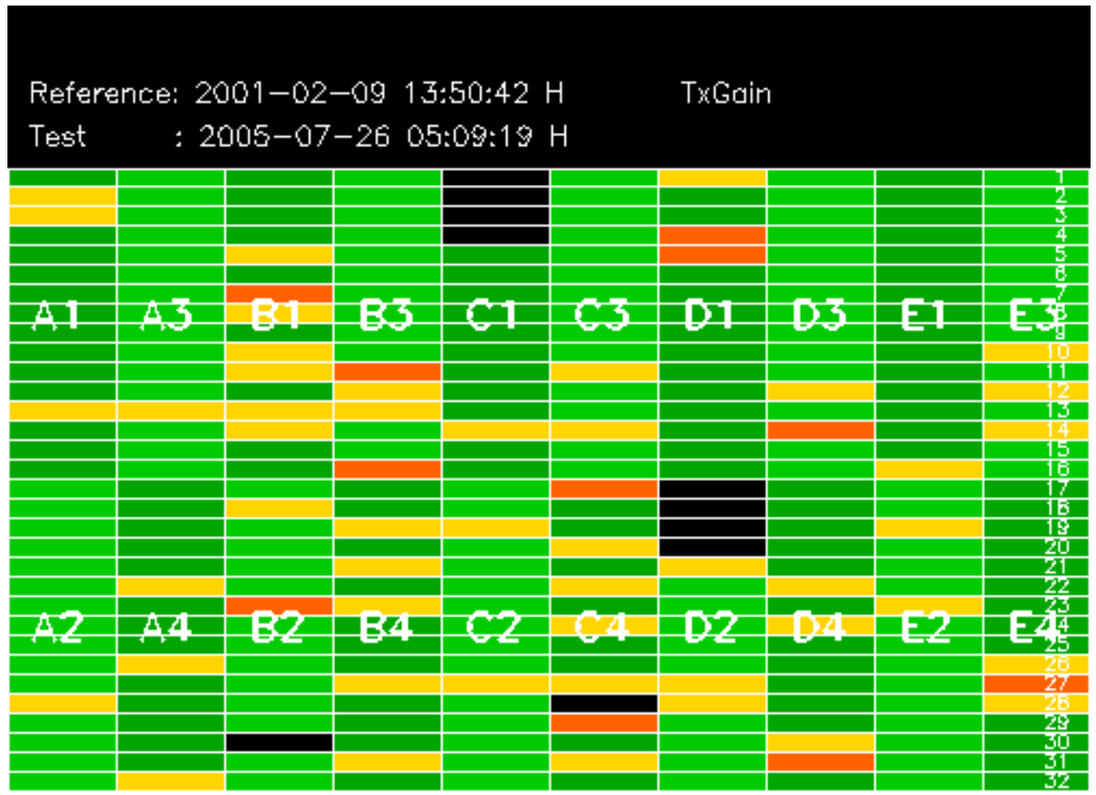

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul

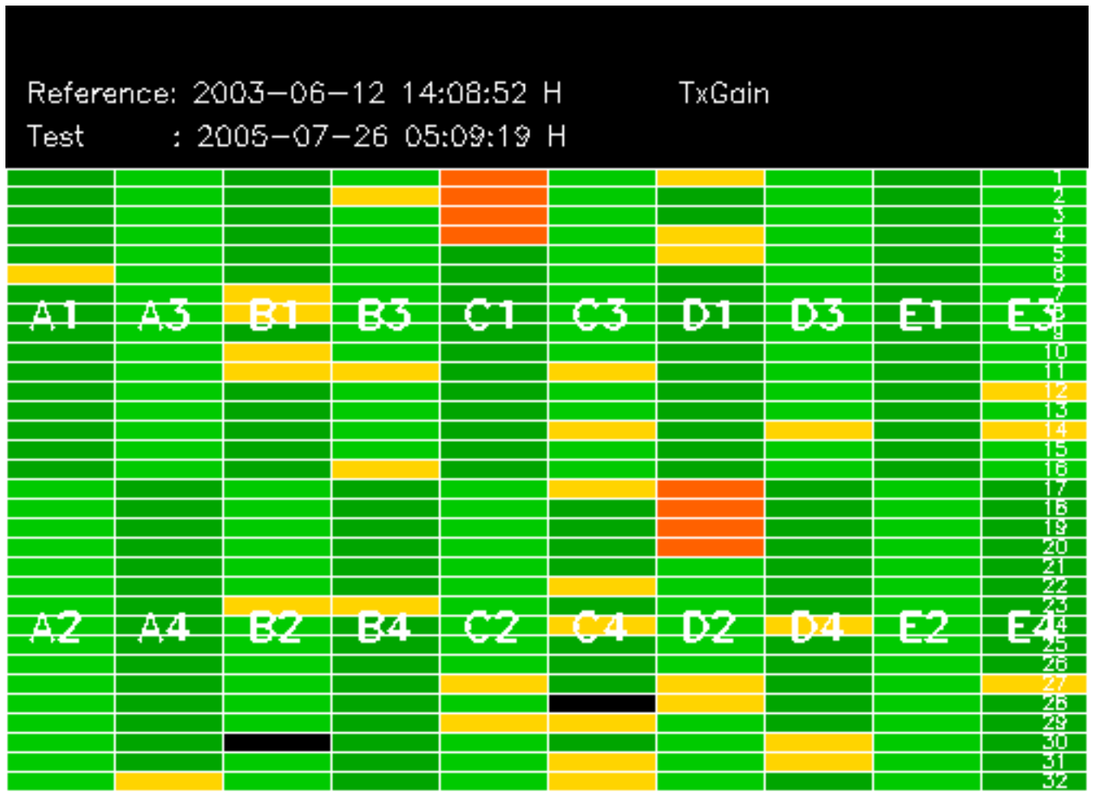

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jun
01−Jul
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-07-26 05:09:19 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2005-07-26 05:09:19 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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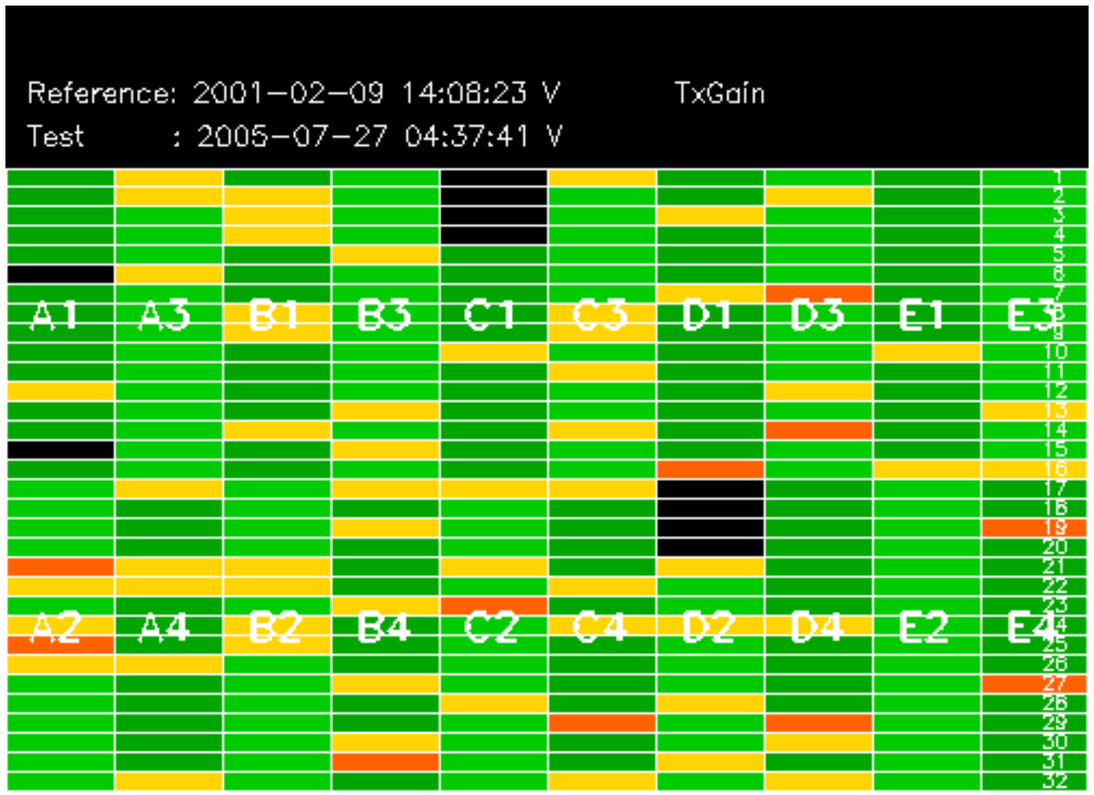
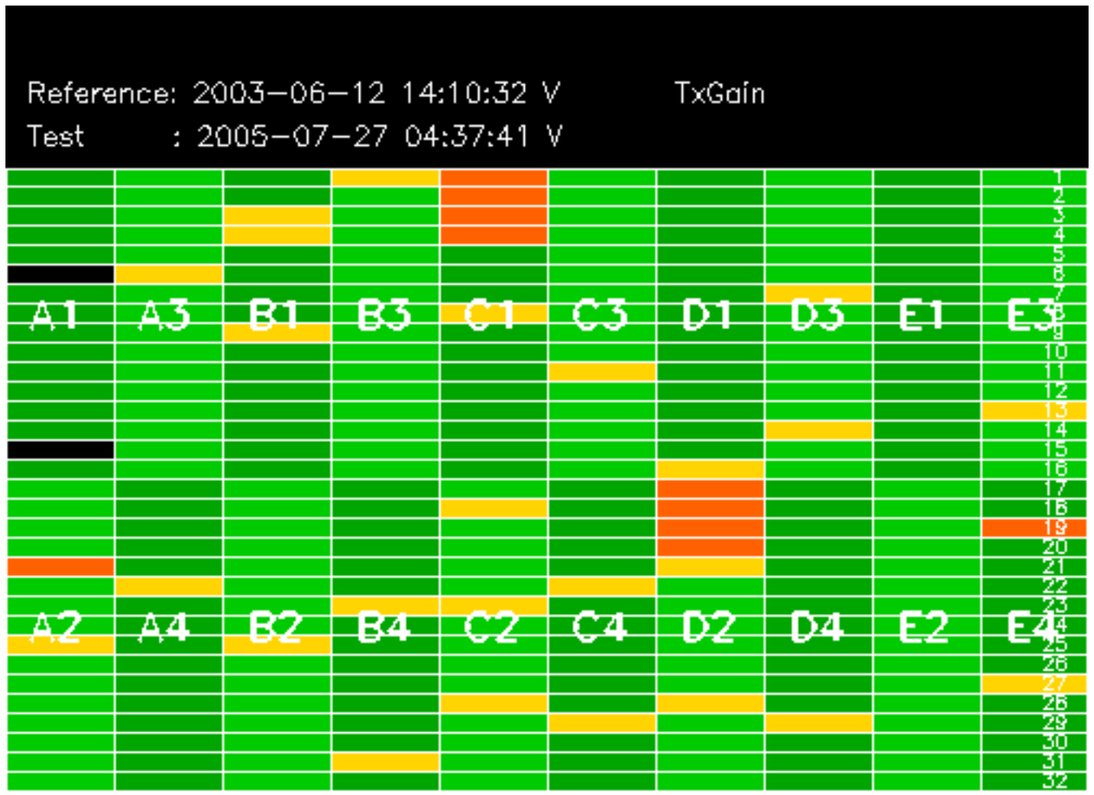

Reference: 2001-02-09 14:08:23 V
Test : 2005-07-27 04:37:41 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-07-27 04:37:41 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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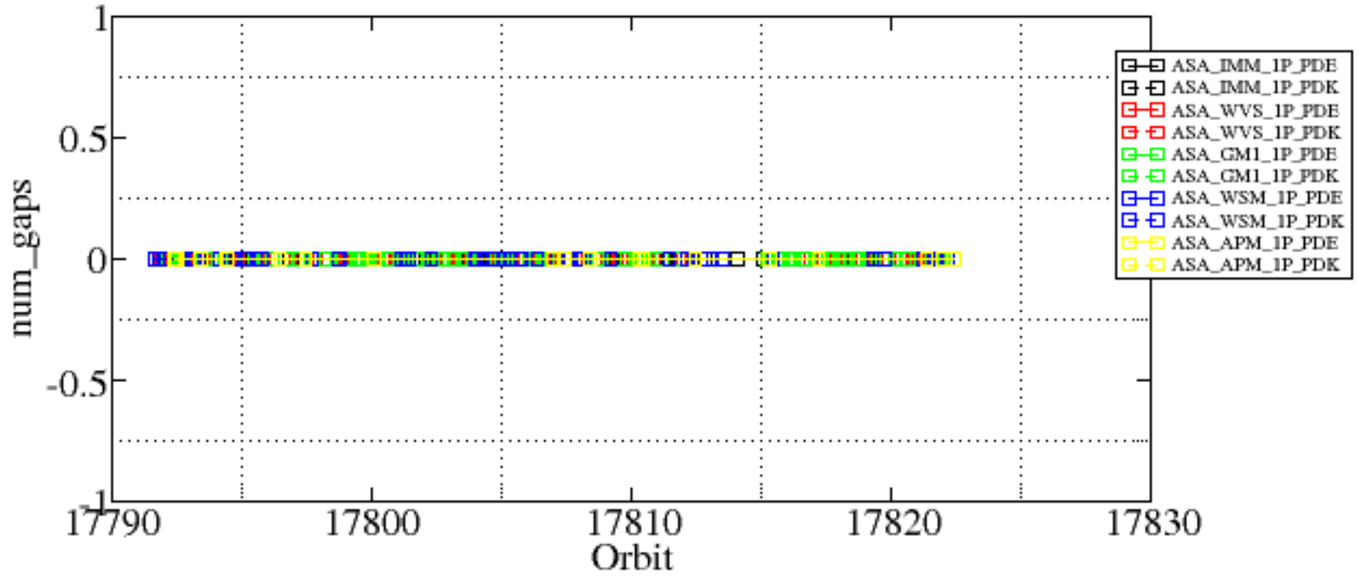
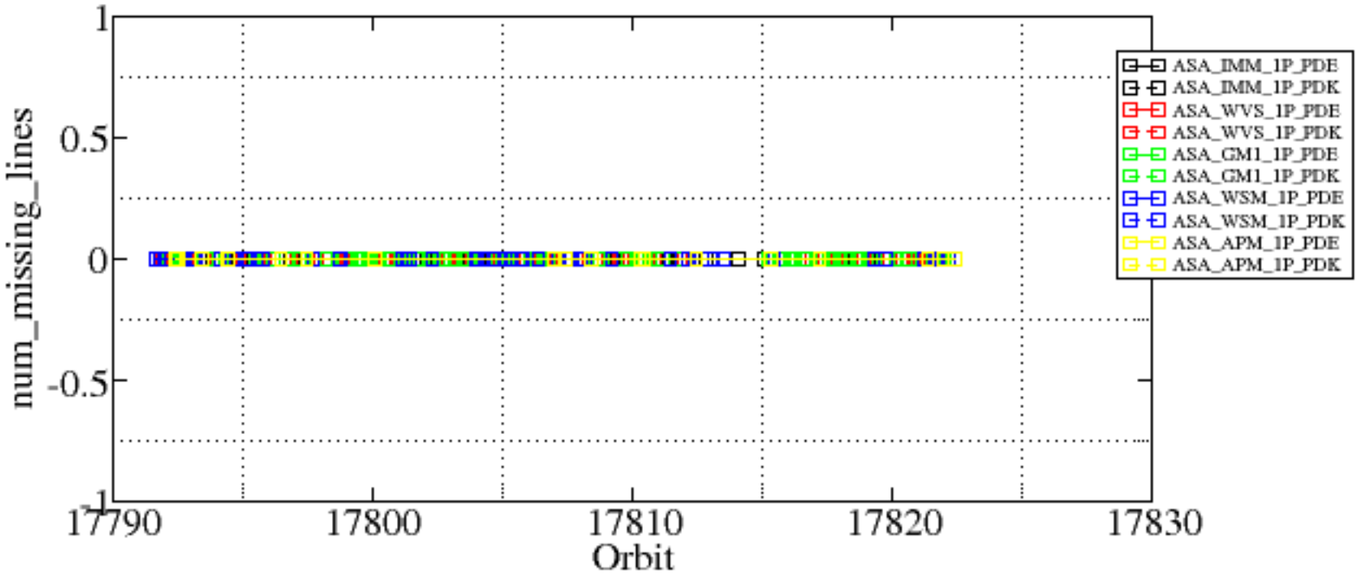
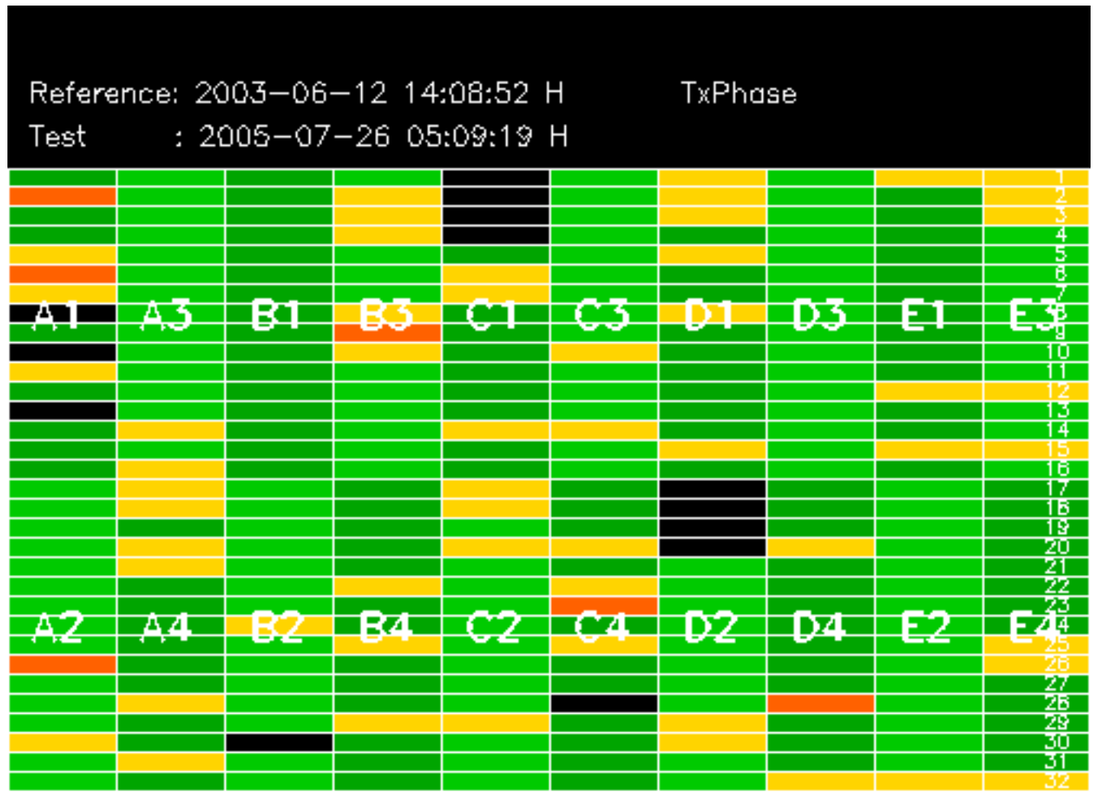
32

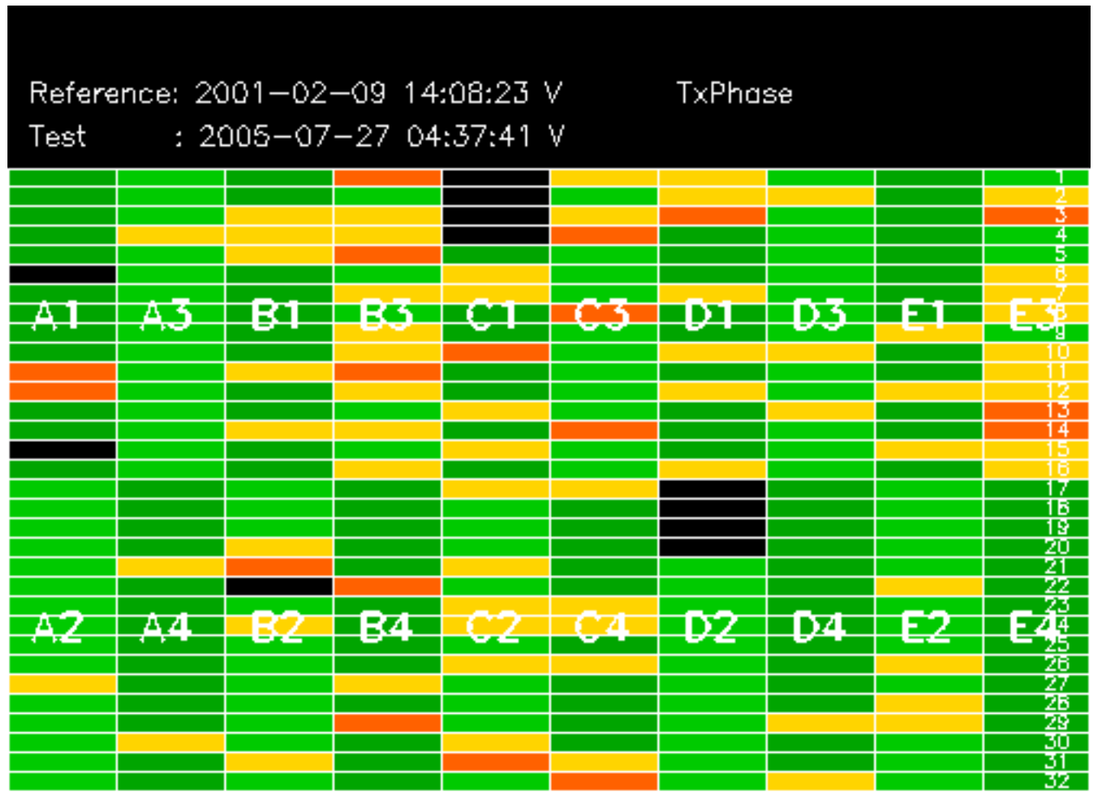
Summary of analysis for the last 3 days 2005072[678]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>

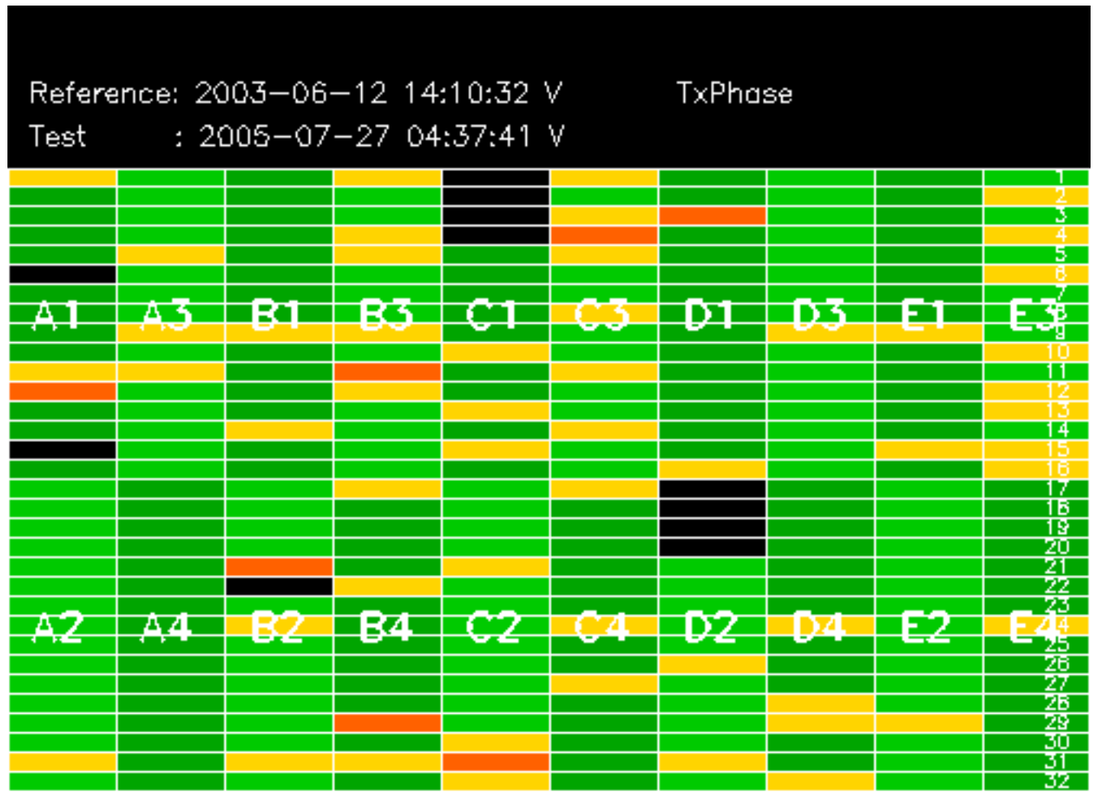

num_gaps
1
0.5
0
-0.5
-1
17790
17800
17810
17820
17830
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

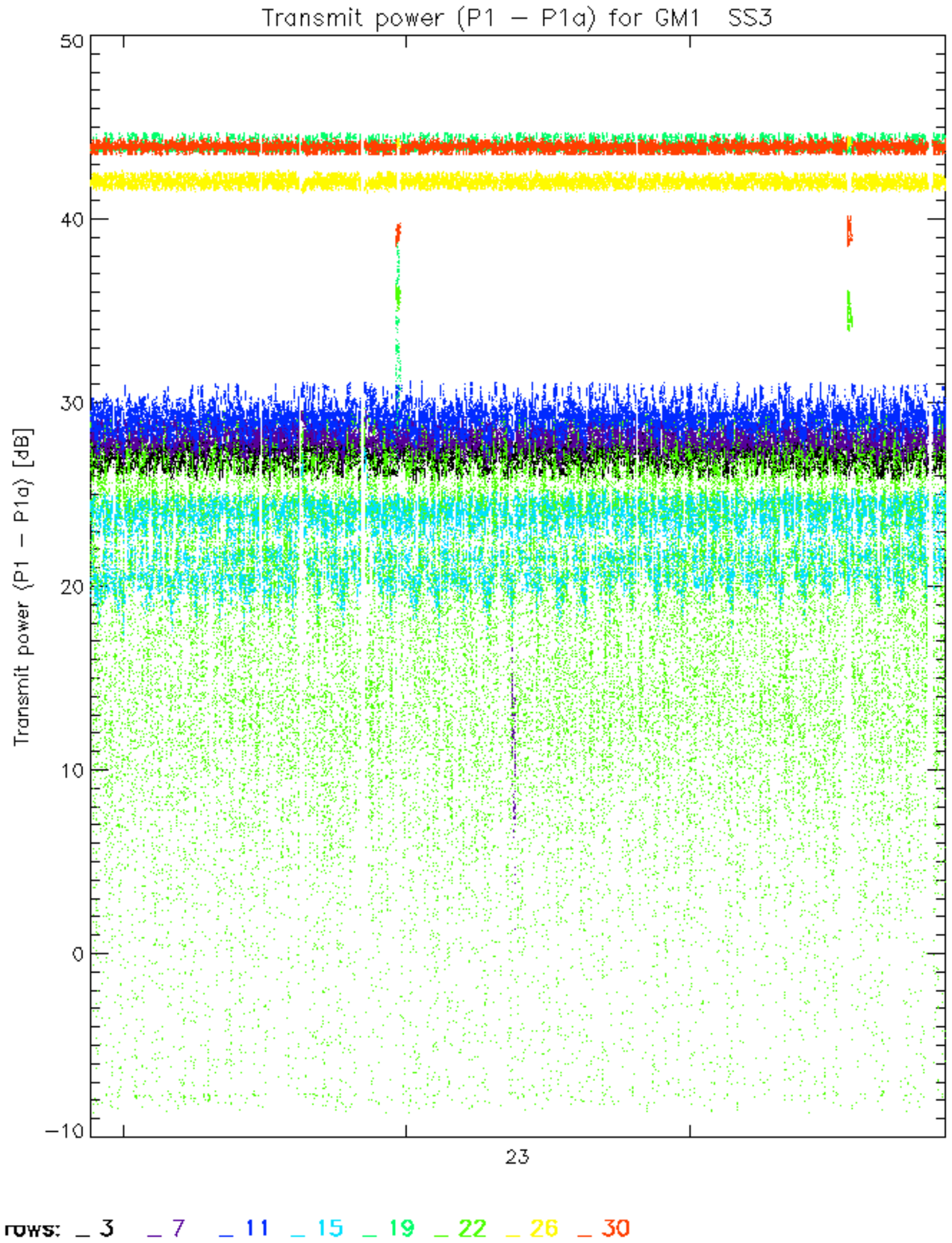

num_missing_lines
1
0.5
0
-0.5
-1
17790
17800
17810
17820
17830
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

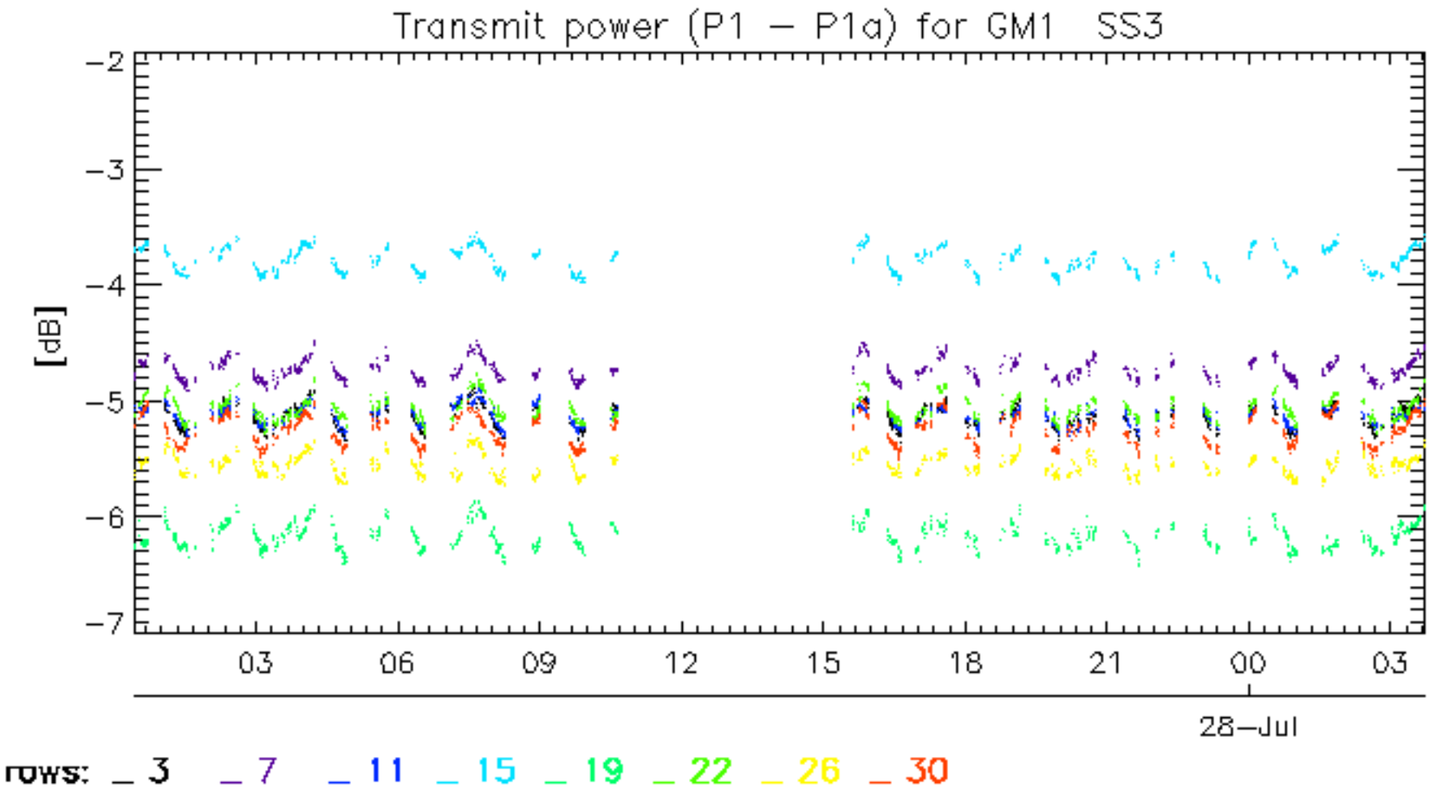

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-07-26 05:09:19 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

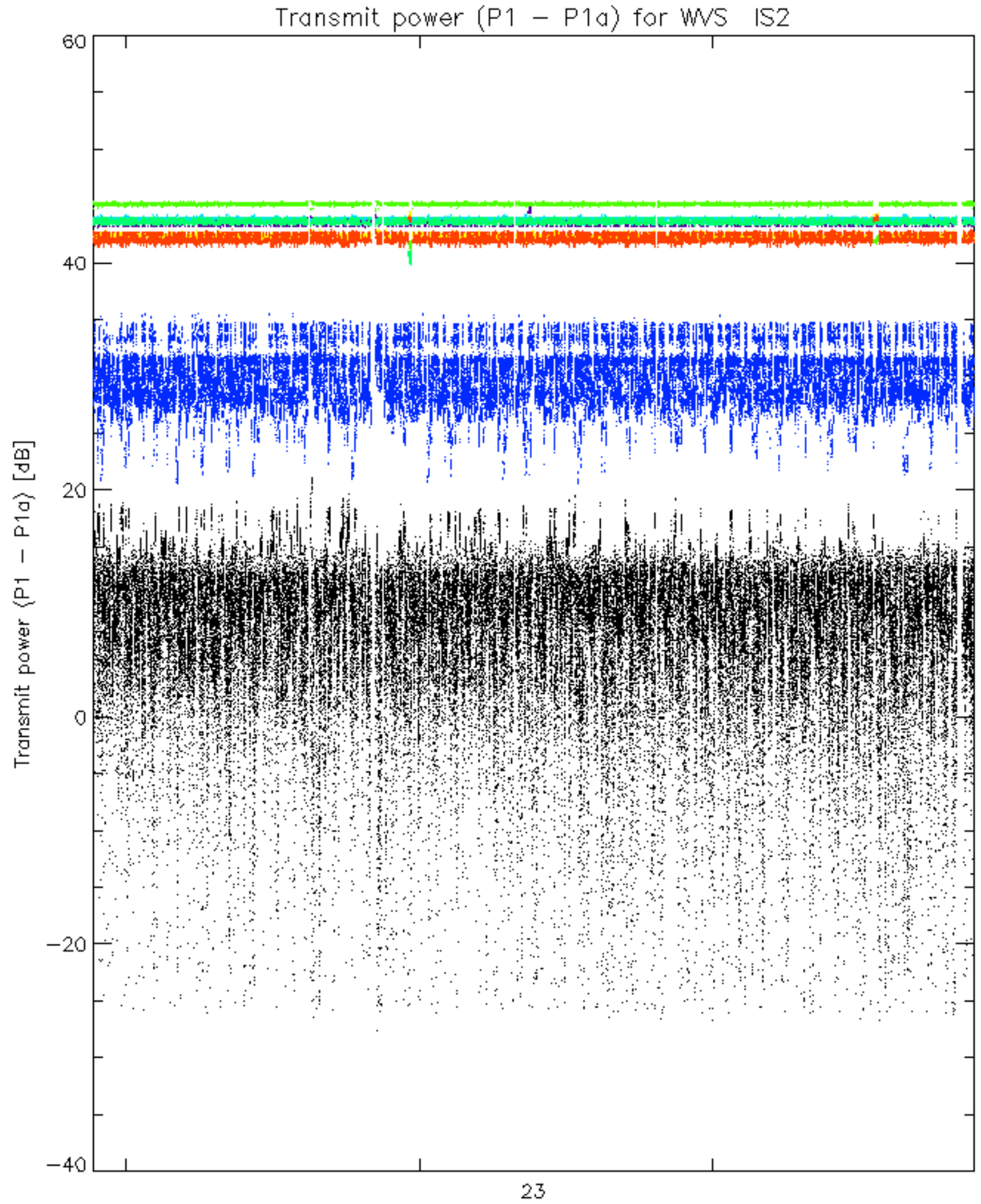

Reference: 2003-06-12 14:08:52 H
Test : 2005-07-26 05:09:19 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

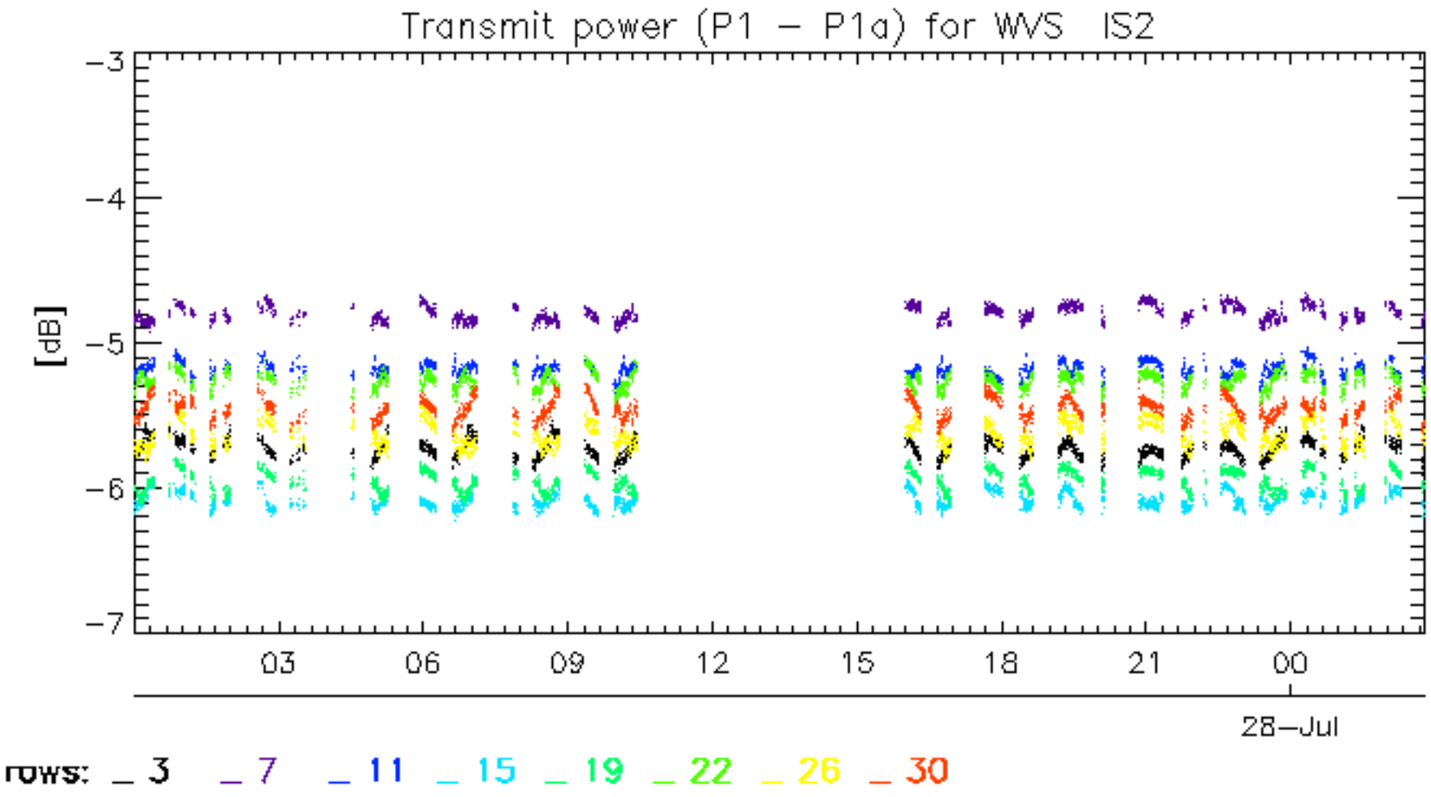

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2005-07-27 04:37:41 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-07-27 04:37:41 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
23
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
28–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]
23
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
28–Jul
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.