PRELIMINARY REPORT OF 050831

last update on Wed Aug 31 10:50:01 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 2005-08-30 00:00:00 to 2005-08-31 10:50:02

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	24	57	15	2	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	24	57	15	2	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	24	57	15	2	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	24	57	15	2	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	37	23	17	8	18
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	37	23	17	8	18
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	37	23	17	8	18
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	37	23	17	8	18

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	20050827 064406
H	20050830 050914

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	-3.304474	0.027258	0.057391
7	P1	-3.173790	0.025172	-0.005205
11	P1	-4.724196	0.034182	-0.020633
15	P1	-5.617028	0.052644	-0.033163
19	P1	-3.812672	0.004283	-0.025404
22	P1	-4.617964	0.011811	0.006400
26	P1	-4.826027	0.022910	-0.011762
30	P1	-7.243226	0.026727	-0.076995
3	P1	-15.540917	0.075104	-0.014161
7	P1	-15.548944	0.146896	-0.108556
11	P1	-21.790220	0.347567	-0.018850
15	P1	-11.319507	0.124483	-0.111965
19	P1	-14.514828	0.035409	-0.056619
22	P1	-15.579705	0.336469	0.302390
26	P1	-17.278954	0.176958	0.133604
30	P1	-17.847544	0.293171	-0.132143

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.759985	0.086503	0.131094
7	P2	-21.902281	0.101536	0.156922
11	P2	-13.473349	0.111372	0.190915
15	P2	-7.049647	0.092750	0.037492
19	P2	-9.582839	0.097259	0.022862
22	P2	-16.813648	0.100532	0.050979
26	P2	-16.504404	0.100520	0.017783
30	P2	-18.802479	0.087842	0.001580

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.156354	0.003327	0.001607
7	P3	-8.156354	0.003327	0.001607
11	P3	-8.156354	0.003327	0.001607
15	P3	-8.156354	0.003327	0.001607
19	P3	-8.156354	0.003327	0.001607
22	P3	-8.156354	0.003327	0.001607
26	P3	-8.156363	0.003327	0.001599
30	P3	-8.156363	0.003327	0.001599

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	-2.804812	0.093060	0.080692
7	P1	-2.971566	0.065870	0.059107
11	P1	-4.028062	0.025790	-0.024279
15	P1	-3.632128	0.063575	0.016474
19	P1	-3.631819	0.014117	-0.008800
22	P1	-5.699752	0.042765	-0.055775
26	P1	-7.364868	0.029503	0.005524
30	P1	-6.301017	0.071824	0.041355
3	P1	-10.944885	0.052105	-0.026910
7	P1	-10.486140	0.168871	-0.033708
11	P1	-12.654096	0.100078	-0.020947
15	P1	-11.621805	0.120584	-0.118845
19	P1	-15.471805	0.057412	0.054466
22	P1	-25.492184	2.105242	0.433151
26	P1	-15.232560	0.242261	0.177540
30	P1	-20.083942	1.332777	-0.075544

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.477055	0.046257	0.151290
7	P2	-21.996754	0.035720	0.071575
11	P2	-9.521974	0.066561	0.173533
15	P2	-5.089717	0.037711	0.033226
19	P2	-6.861295	0.059099	0.062596
22	P2	-7.037375	0.039305	0.041701
26	P2	-23.956696	0.036206	0.036474
30	P2	-21.938656	0.041941	0.025039

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.000029	0.004030	-0.008093
7	P3	-8.000027	0.004021	-0.008283
11	P3	-7.999993	0.004024	-0.008162
15	P3	-7.999906	0.004035	-0.008311
19	P3	-8.000056	0.004027	-0.008110
22	P3	-8.000010	0.004028	-0.008209
26	P3	-7.999888	0.004026	-0.007994
30	P3	-7.999863	0.004021	-0.008003

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	0.000437949
	stdev	2.30627e-07
MEAN Q	mean	0.000470338
	stdev	2.38985e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126571
	stdev	0.000989762
STDEV Q	mean	0.126822
	stdev	0.000998850

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005083[901]
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

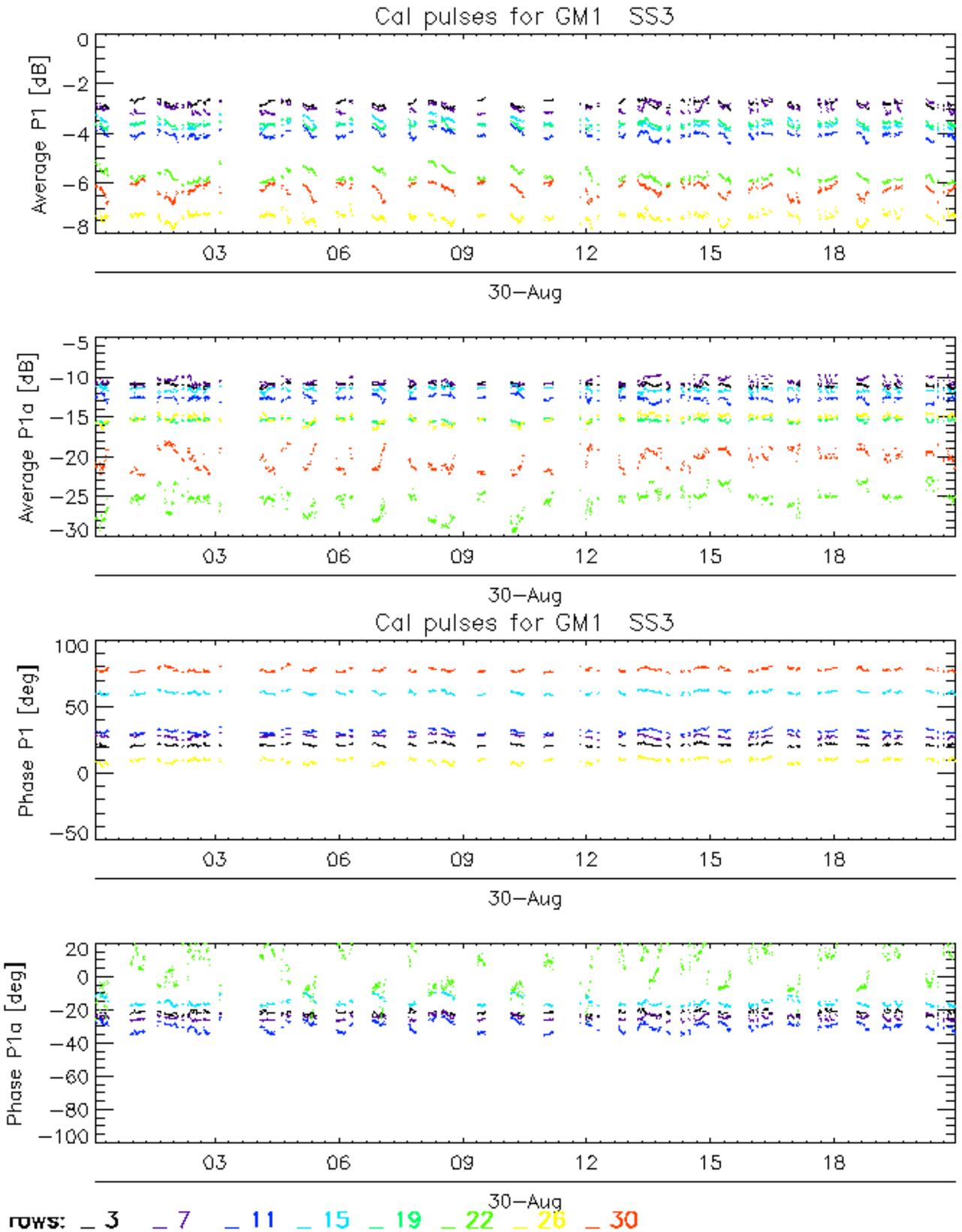
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

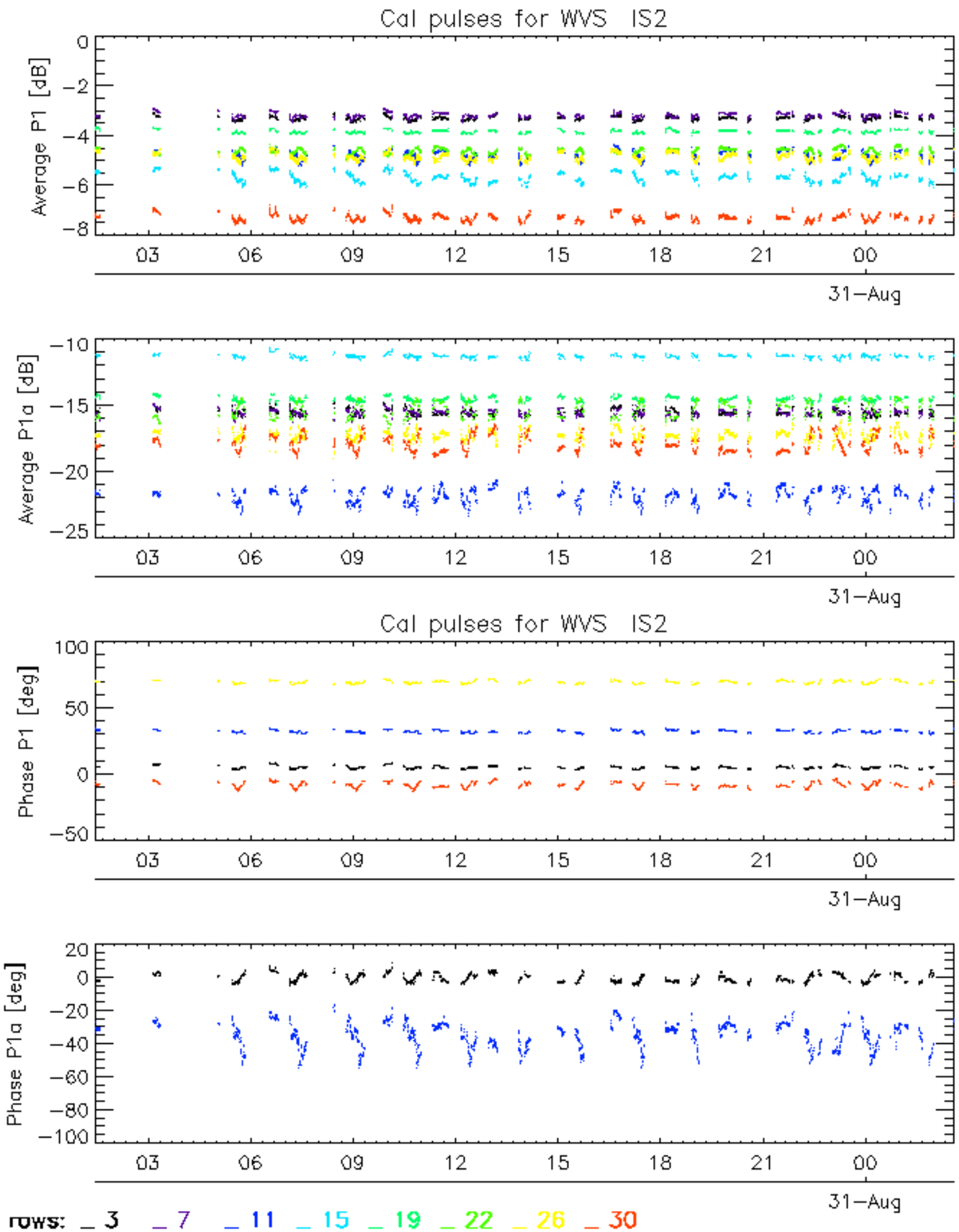
7.5 - Absolute Doppler for GM1

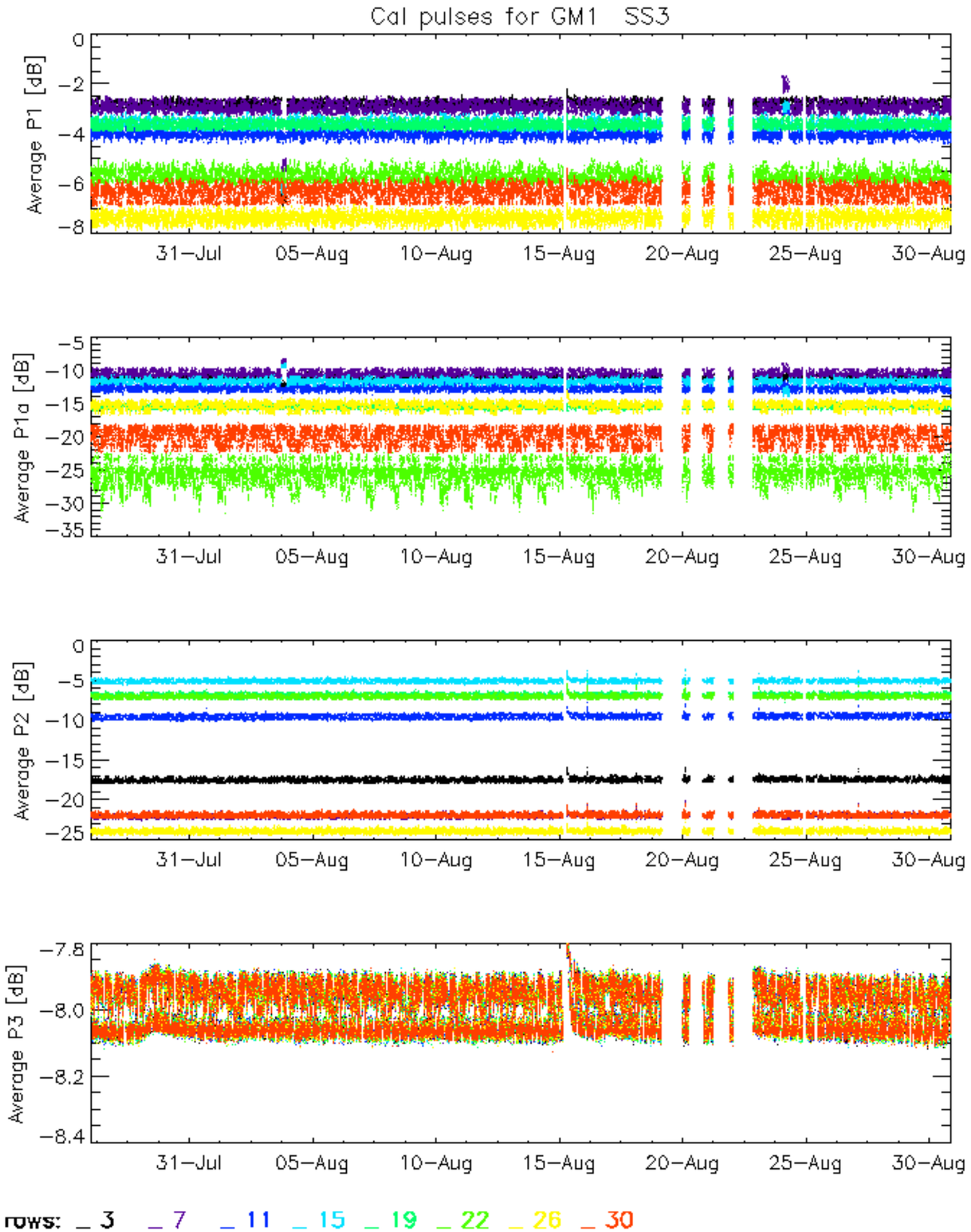
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

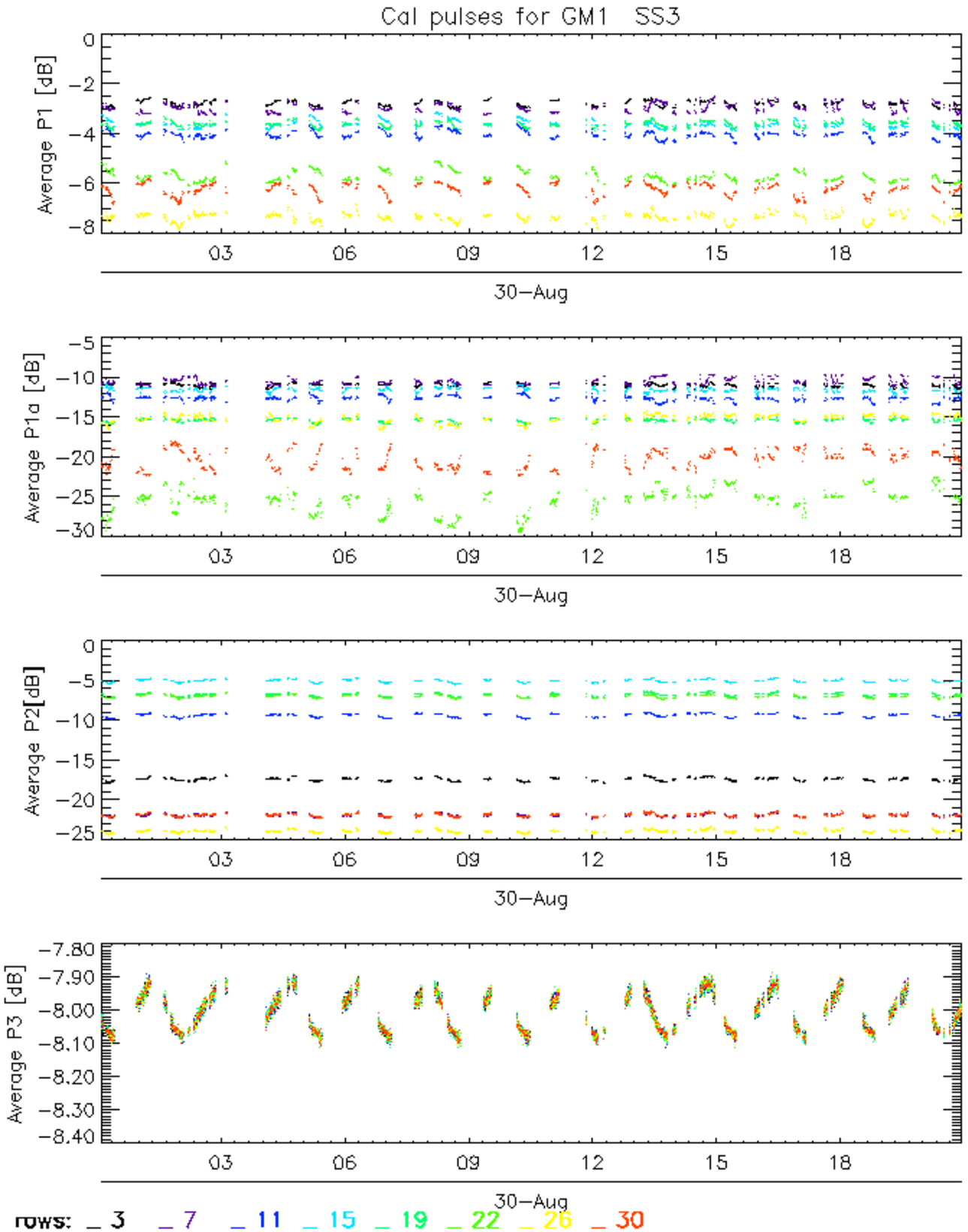
7.6 - Doppler evolution versus ANX for GM1

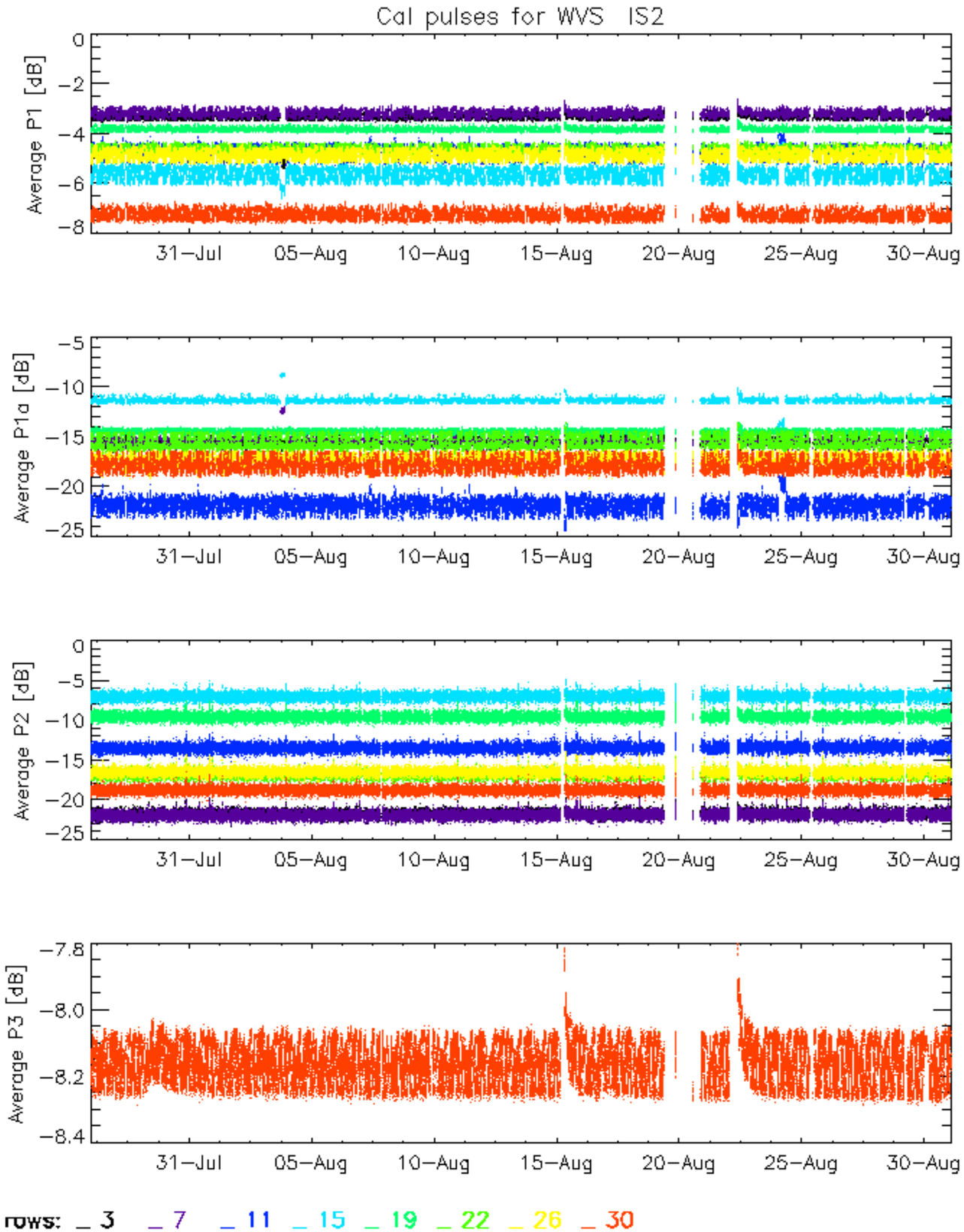
Evolution Doppler error versus ANX
☒

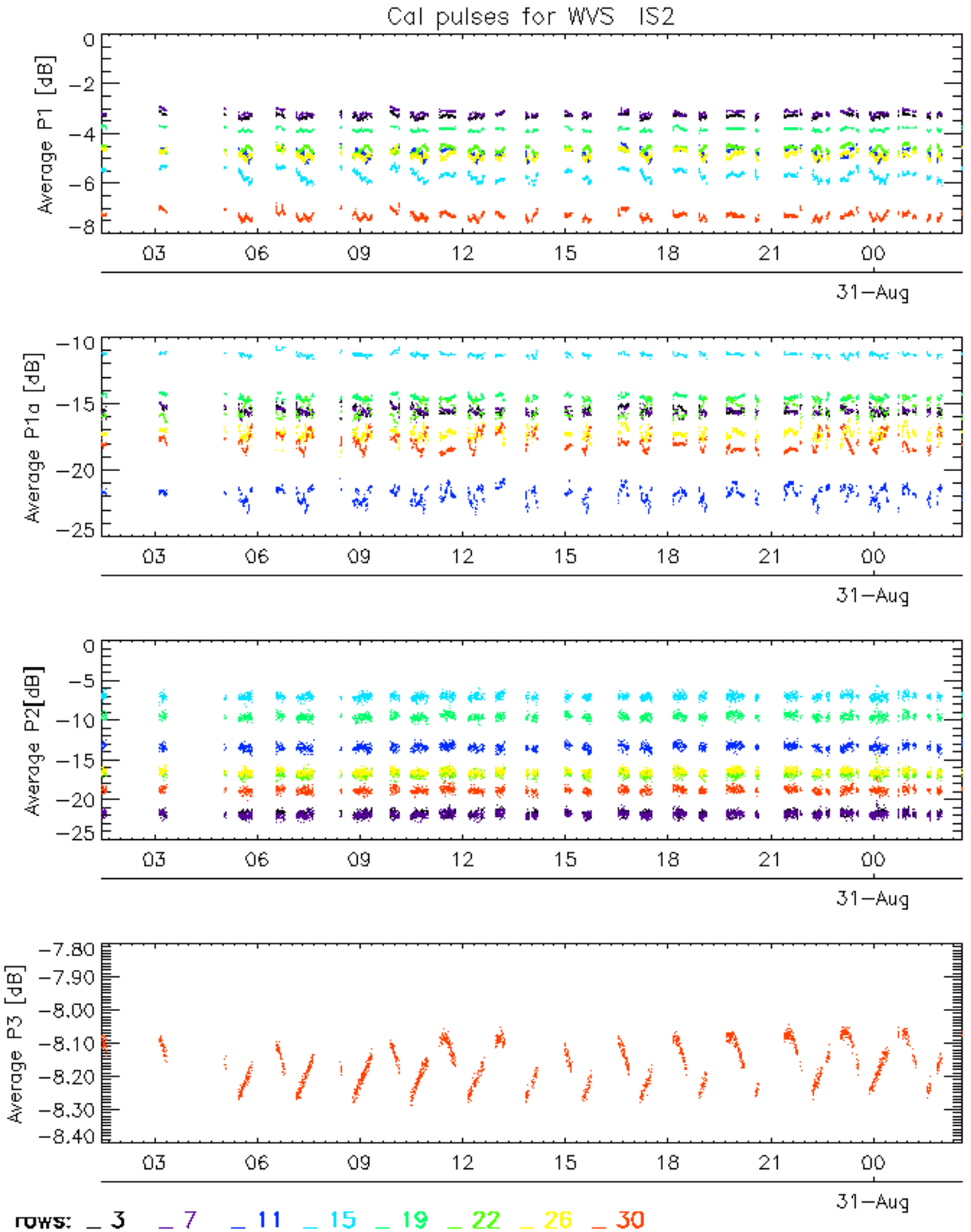

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
30−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
30−Aug
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
03
06
09
12
15
18
30−Aug
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
03
06
09
12
15
18
30−Aug
rows: 3 7 11 15 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
31−Aug
Average P1a [dB]
−10
−15
−20
−25
Cal pulses for WVS IS2
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30

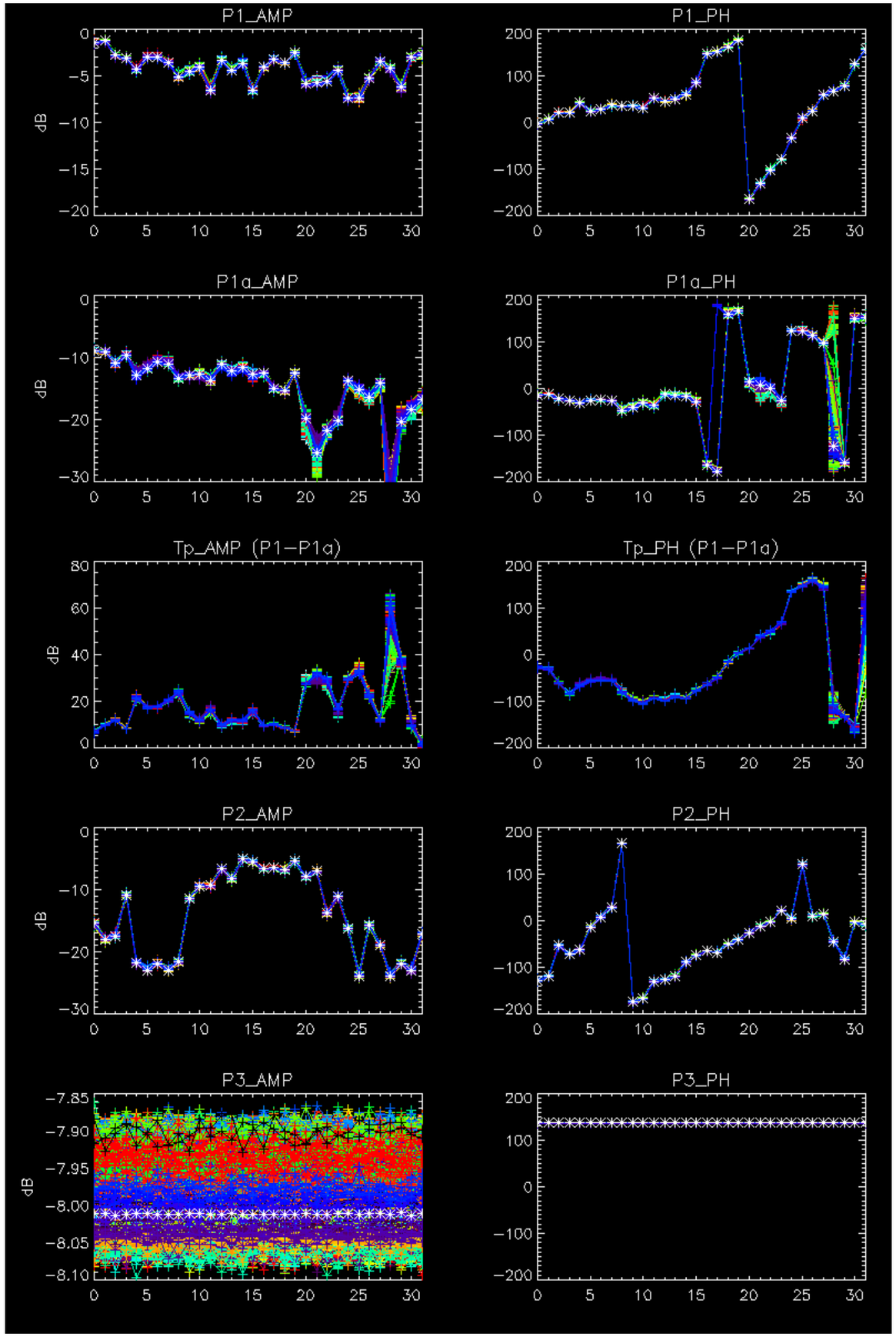

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

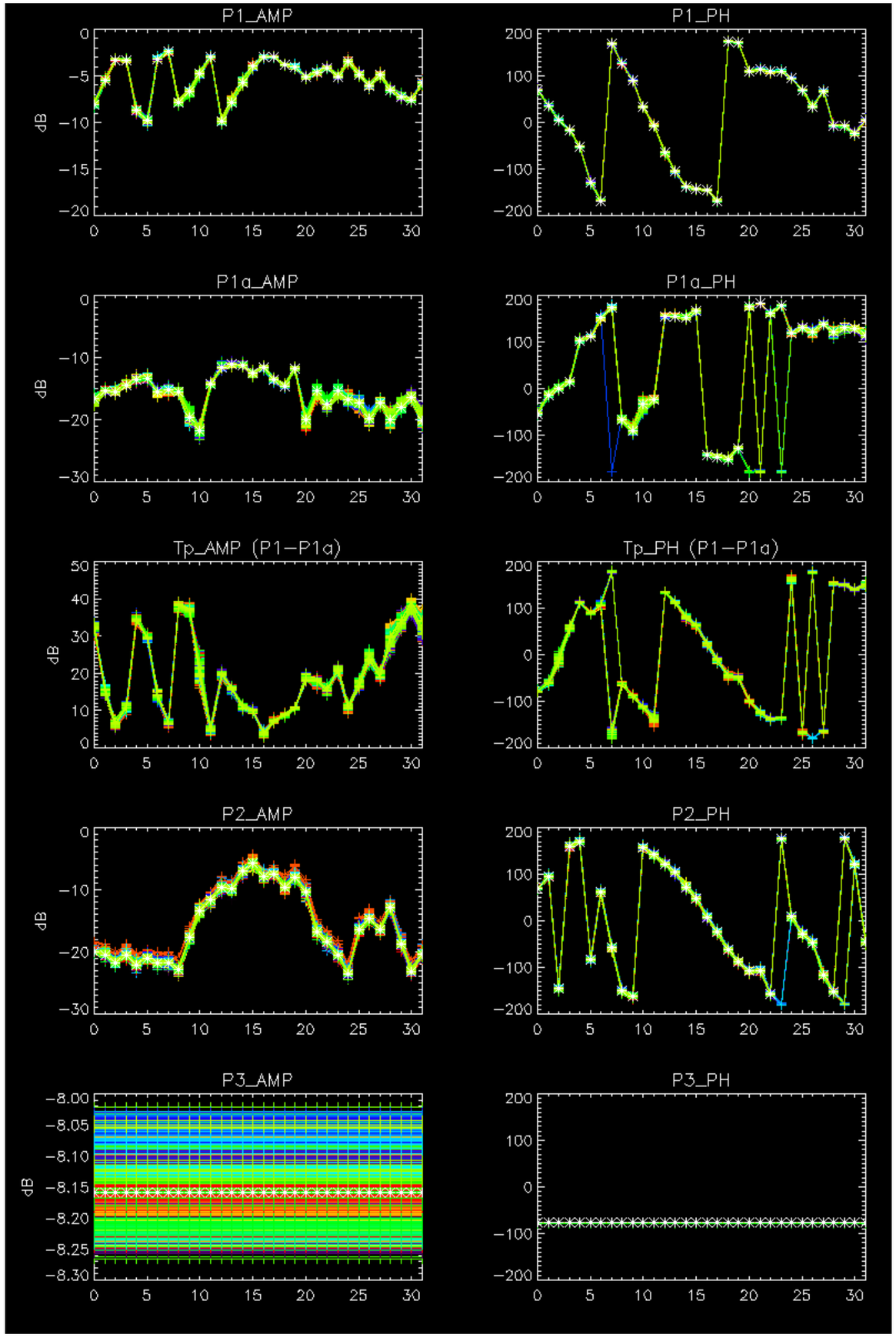

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
30−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
30−Aug
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
30−Aug
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
30−Aug
rows: _ 3 _ 7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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
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
31−Aug
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

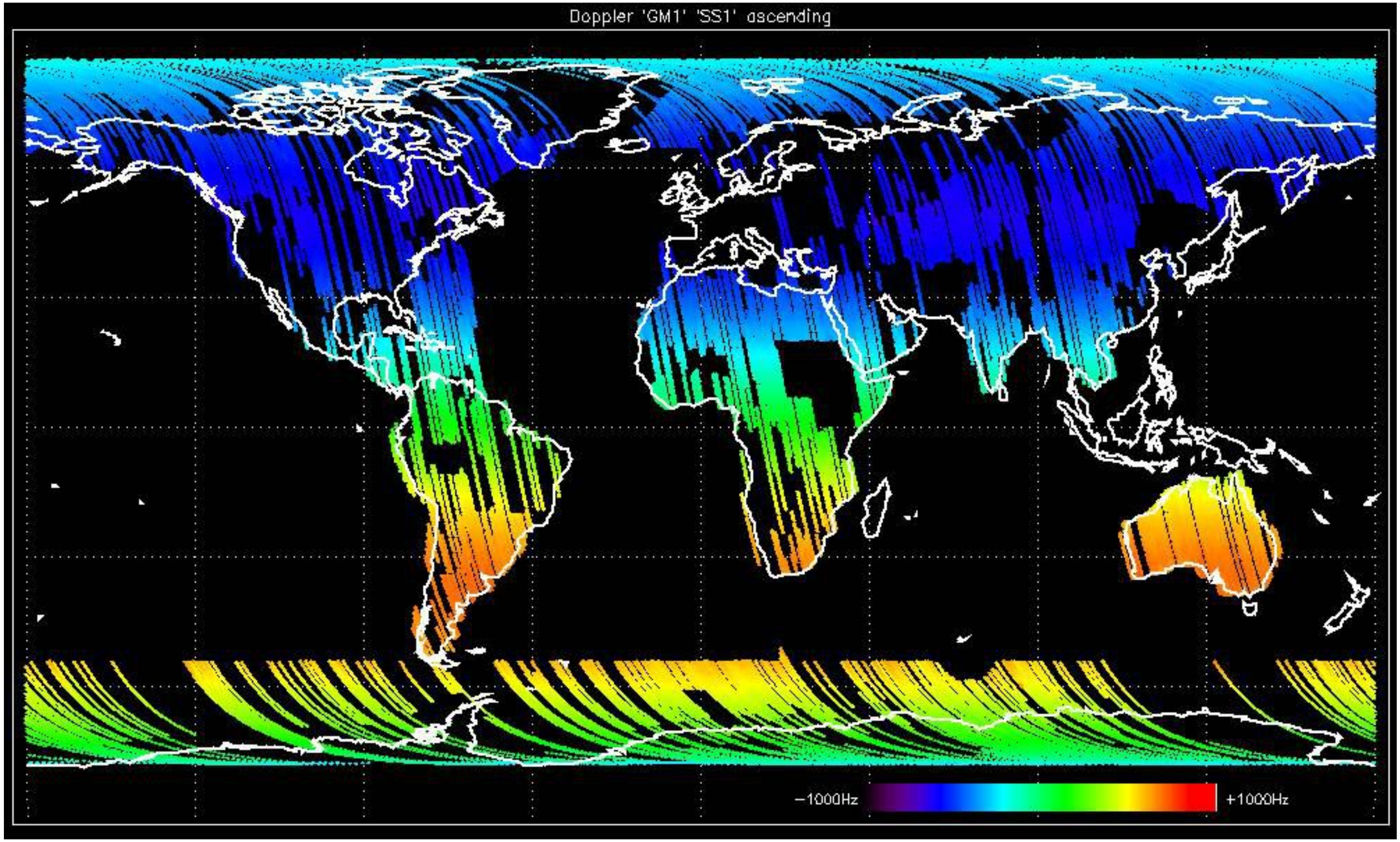
No anomalies observed.

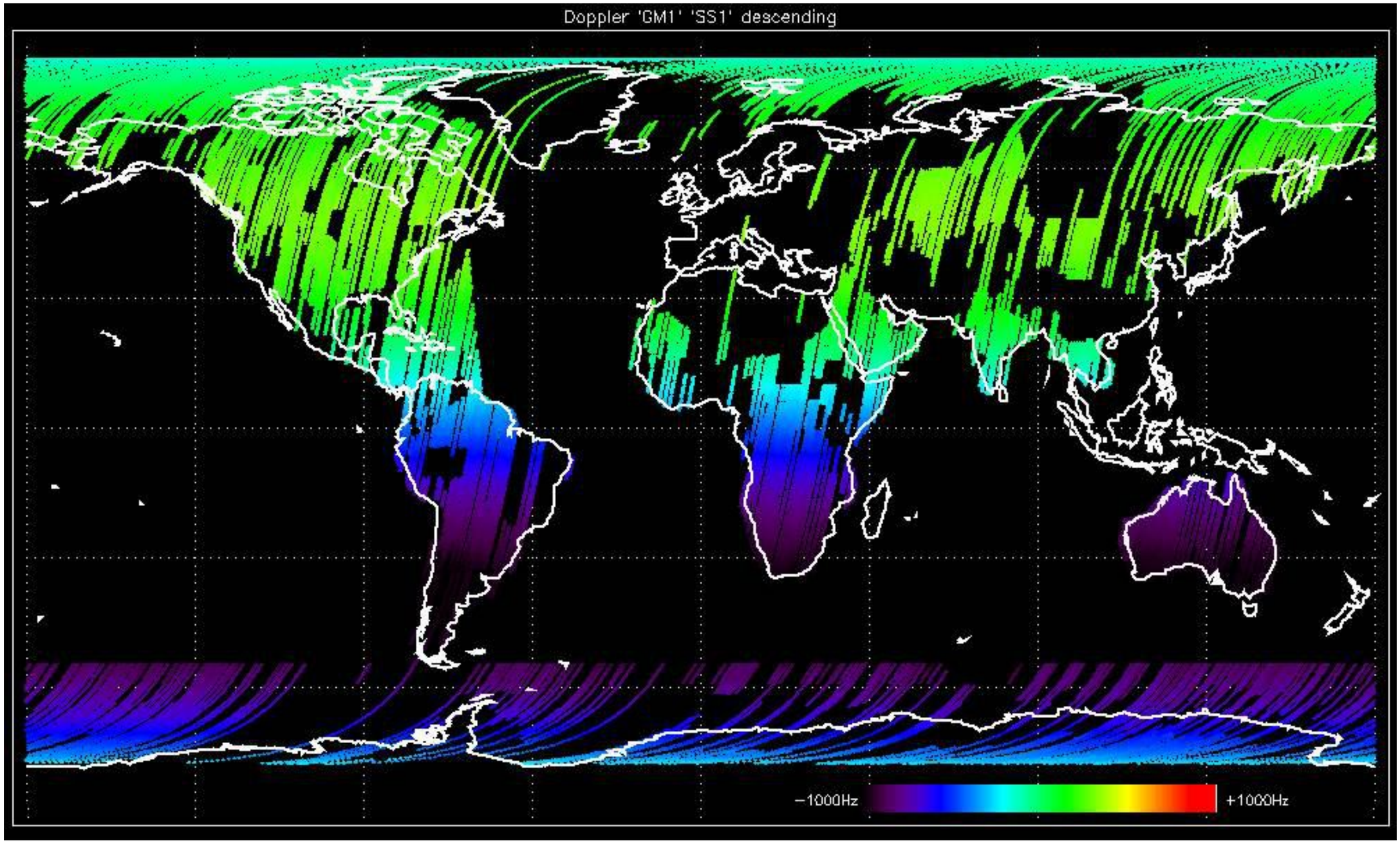

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

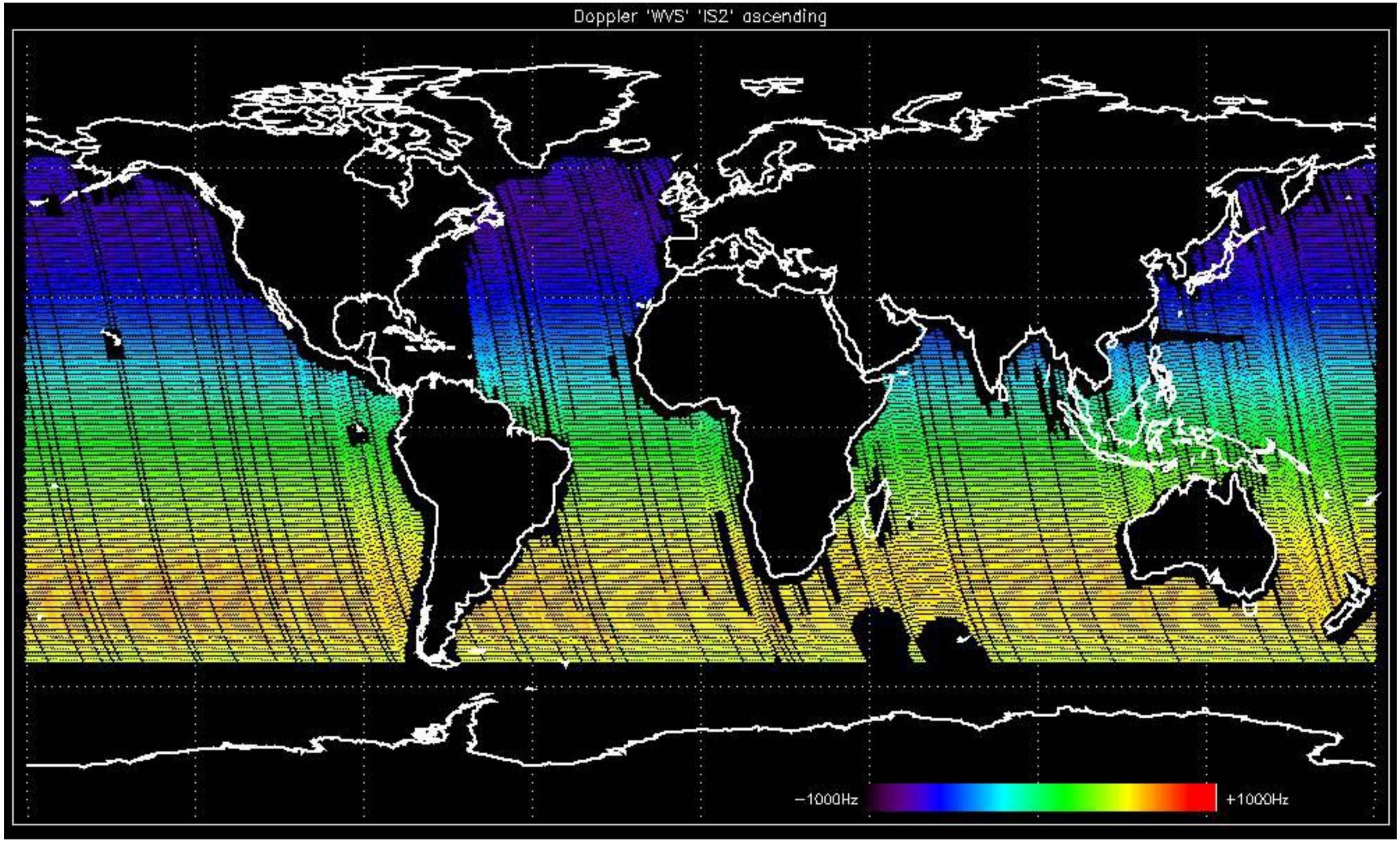

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

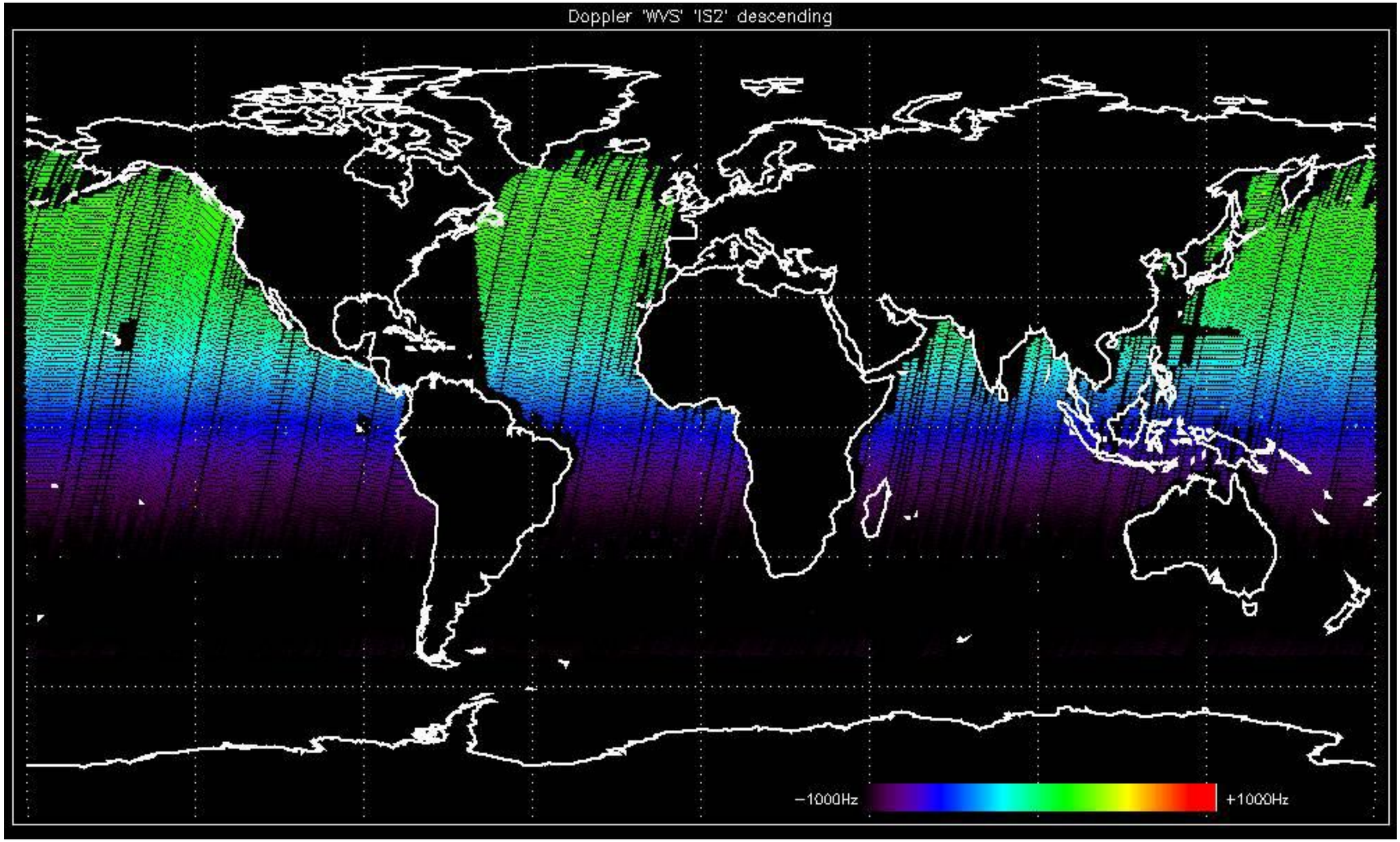
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

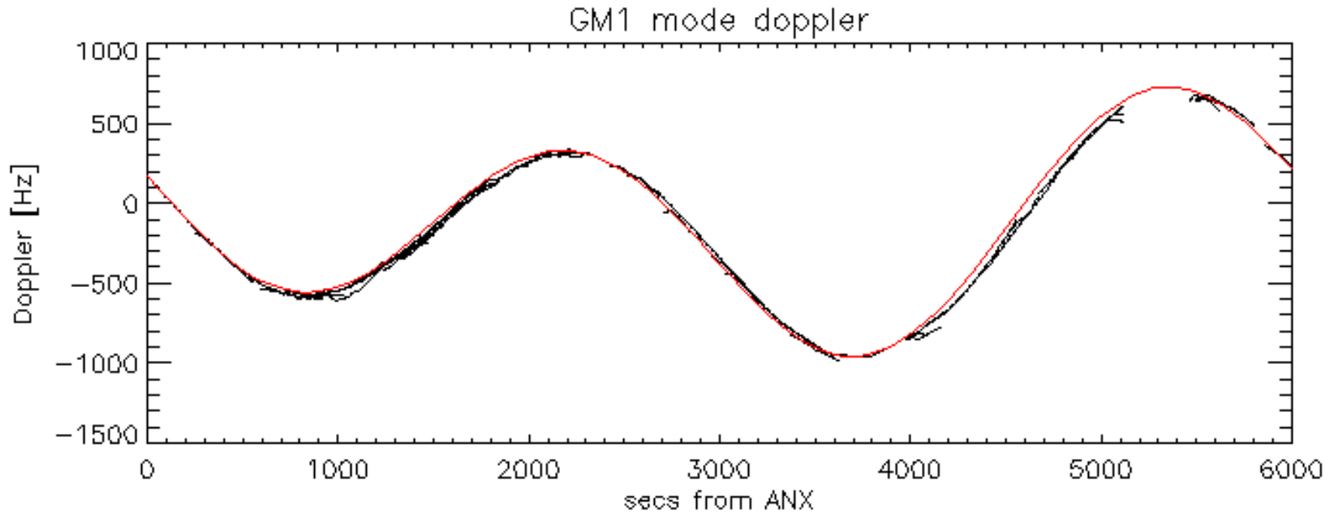
Preliminary report.The data is not yet controled

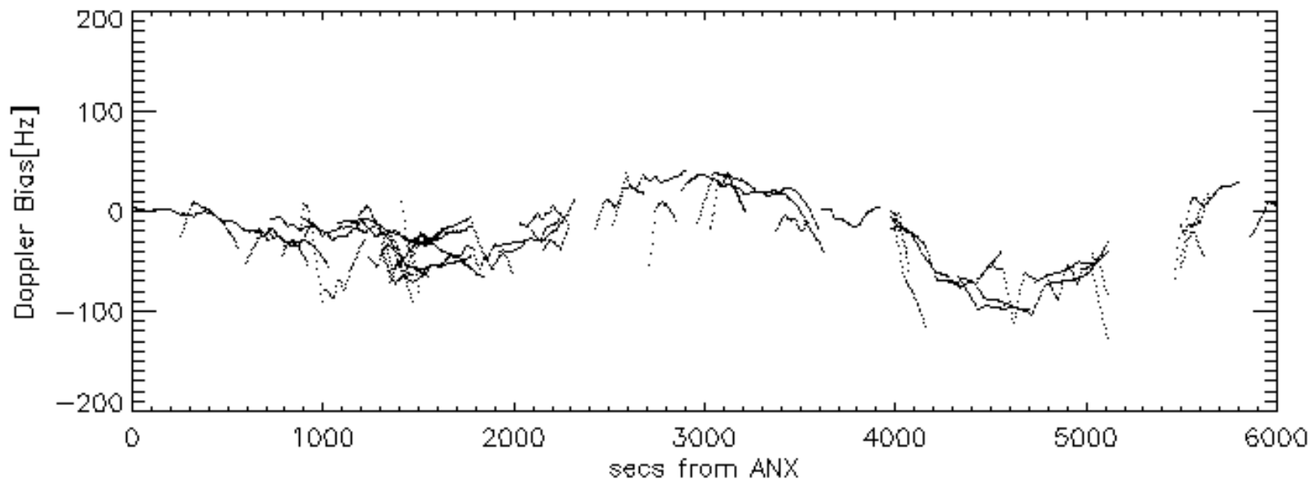

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

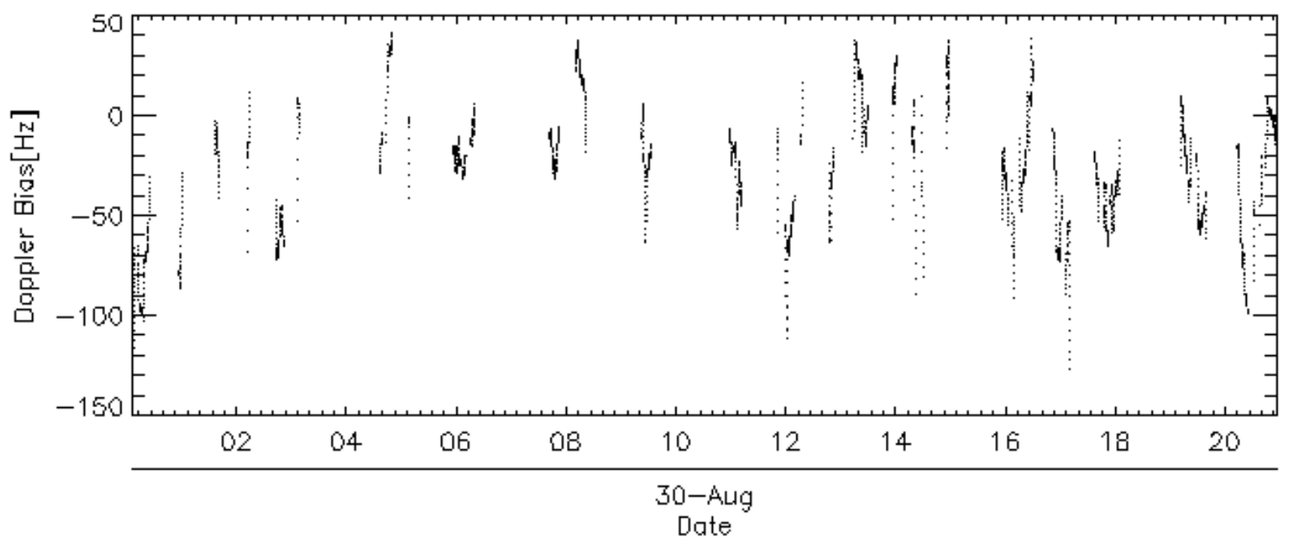

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

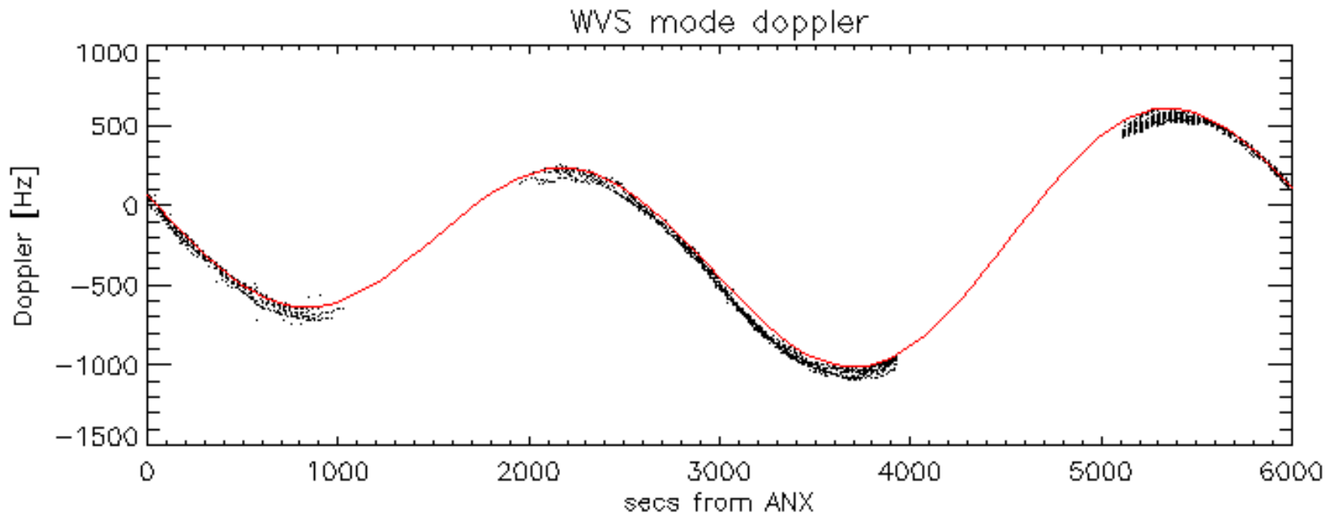

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

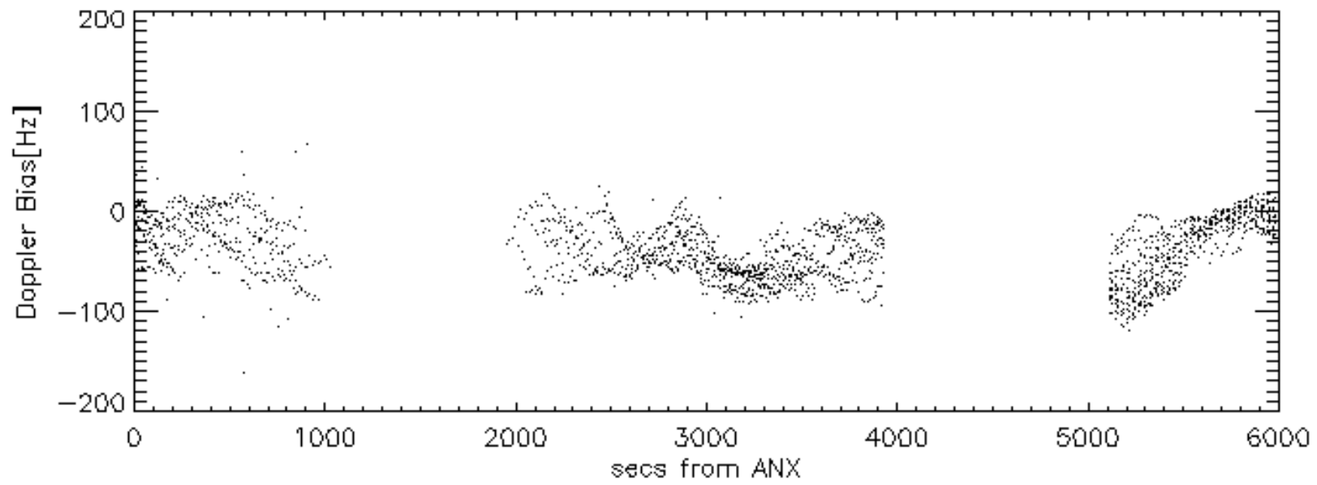

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

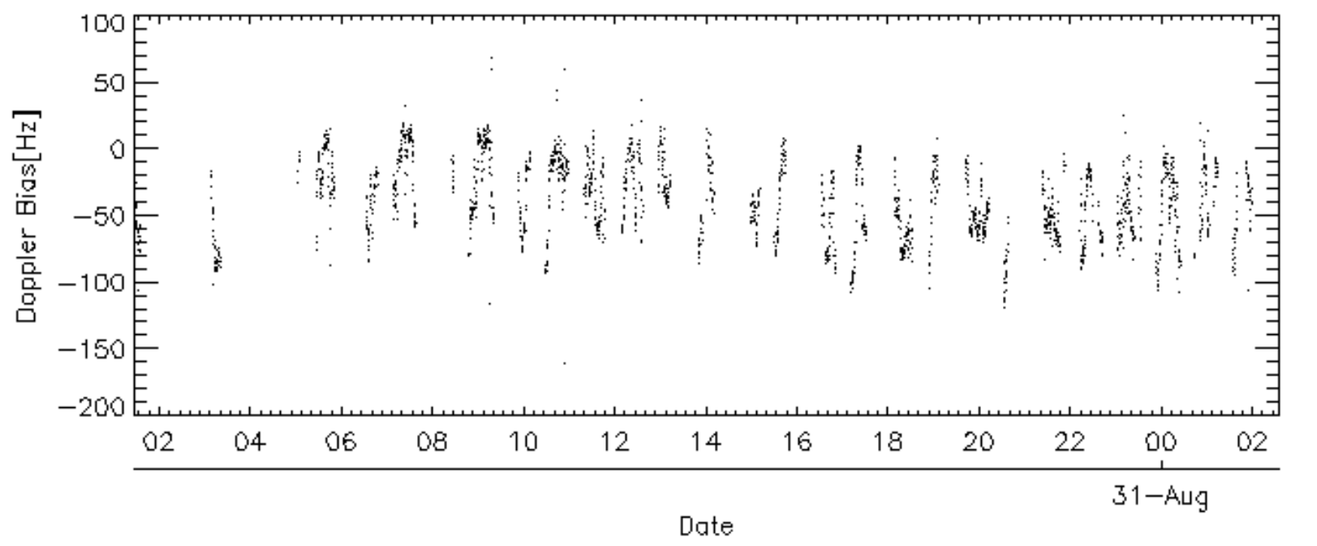

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

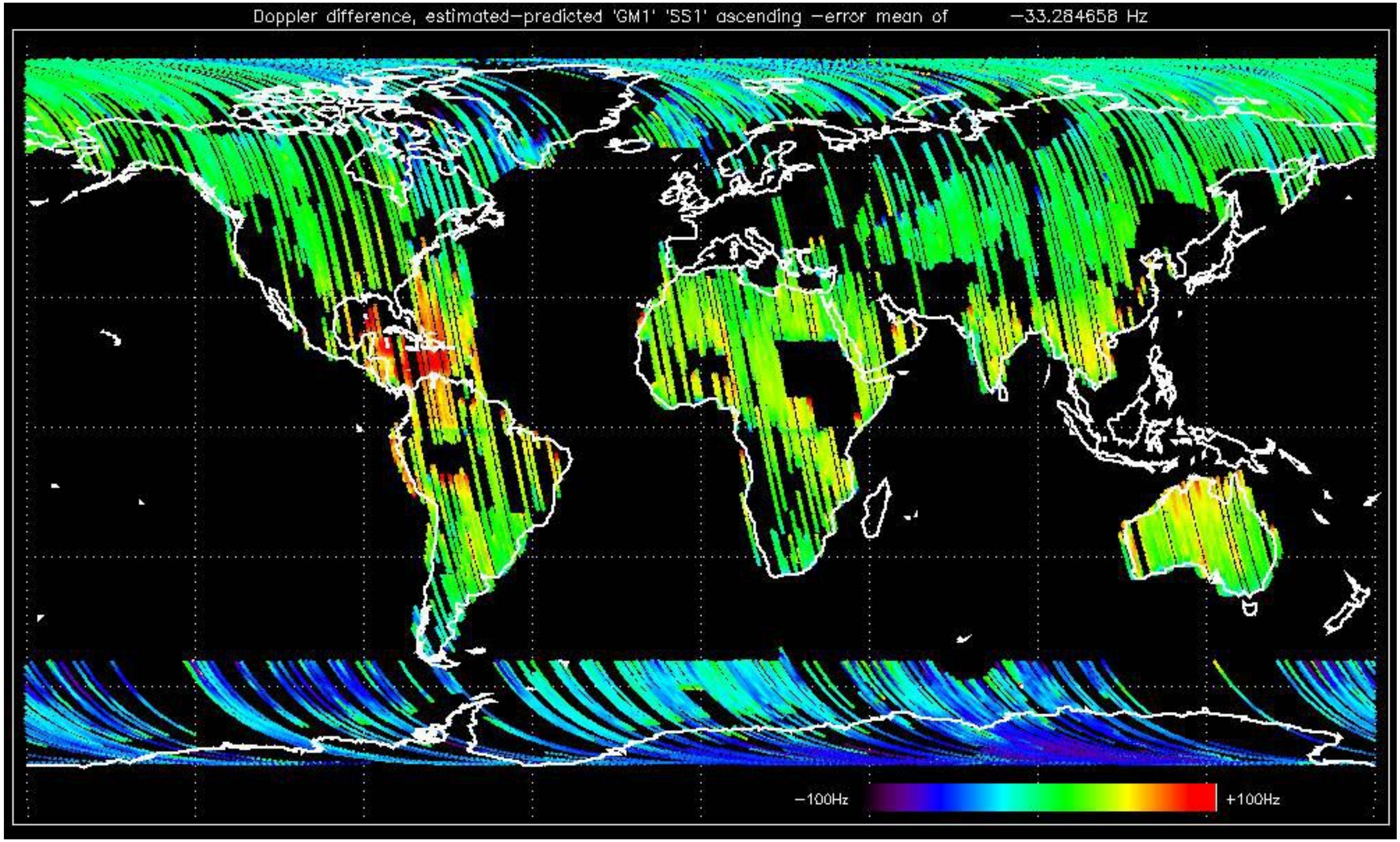

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

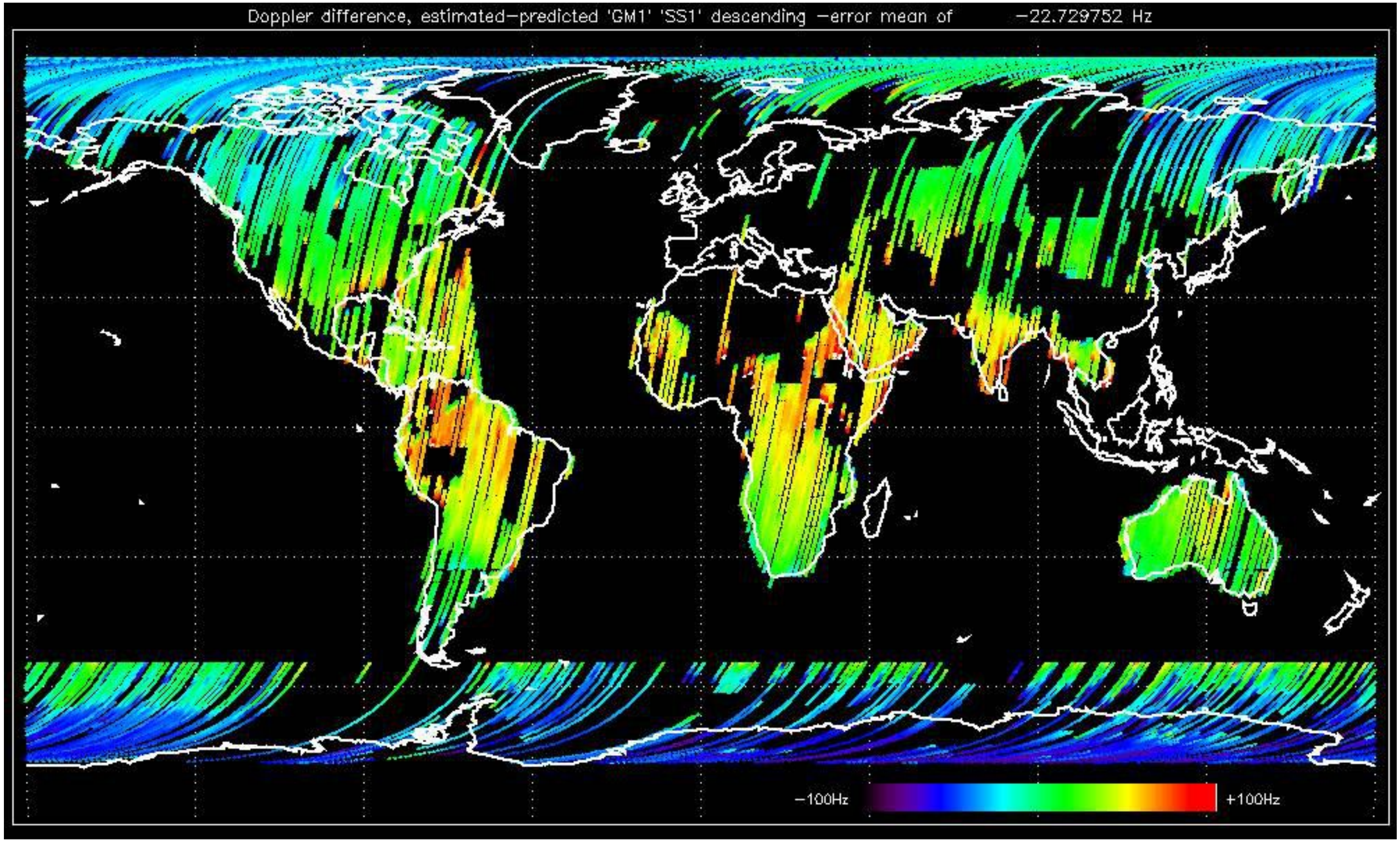

Doppler Bias[Hz]
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
30−Aug
Date

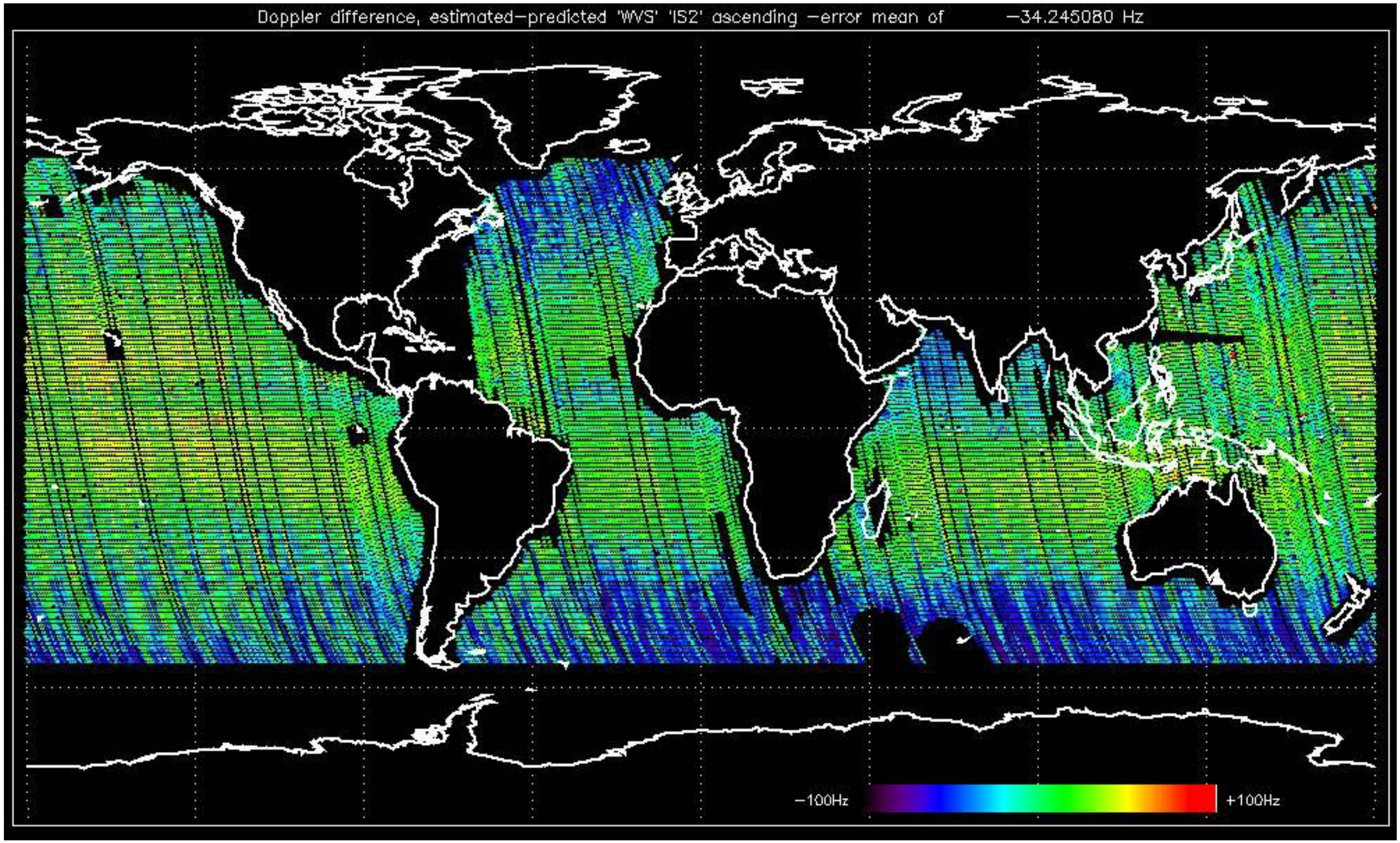

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

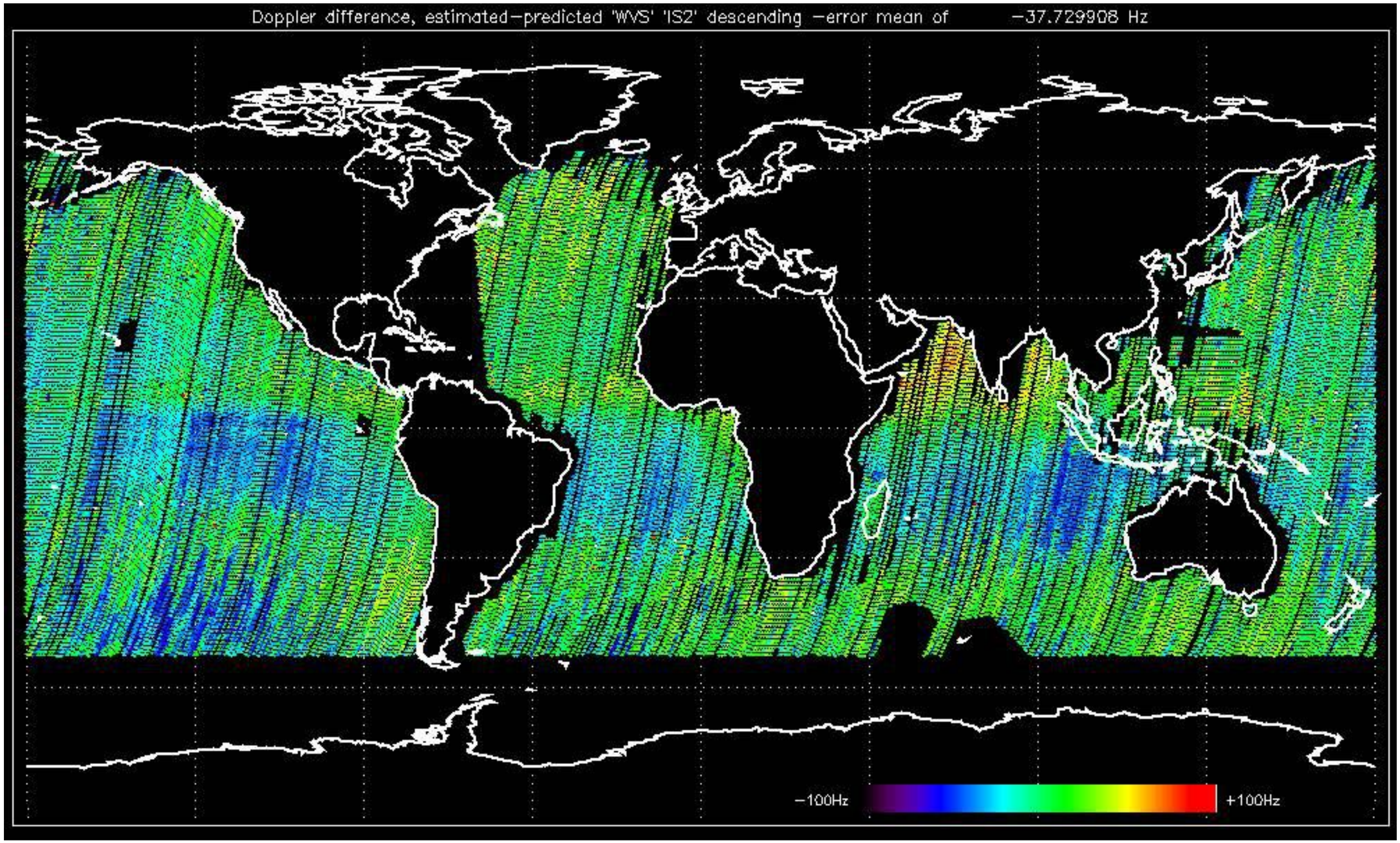

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.284658 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −22.729752 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.245080 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.729908 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-08-30 05:09:14 H
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
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2005-08-30 05:09:14 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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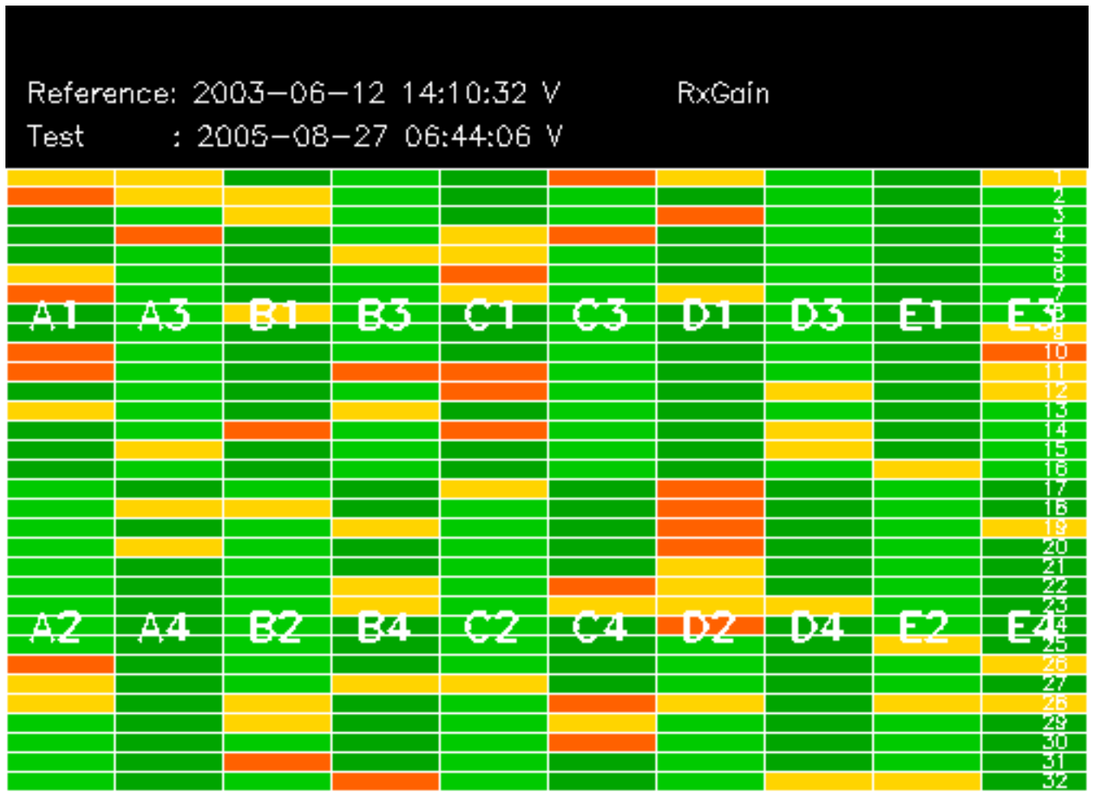
27
28
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2005-08-27 06:44:06 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 : 2005-08-27 06:44:06 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 : 2005-08-30 05:09:14 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 : 2005-08-30 05:09:14 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
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8
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23
24
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26
27
28
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2005-08-27 06:44:06 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
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8
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12
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14
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16
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18
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22
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24
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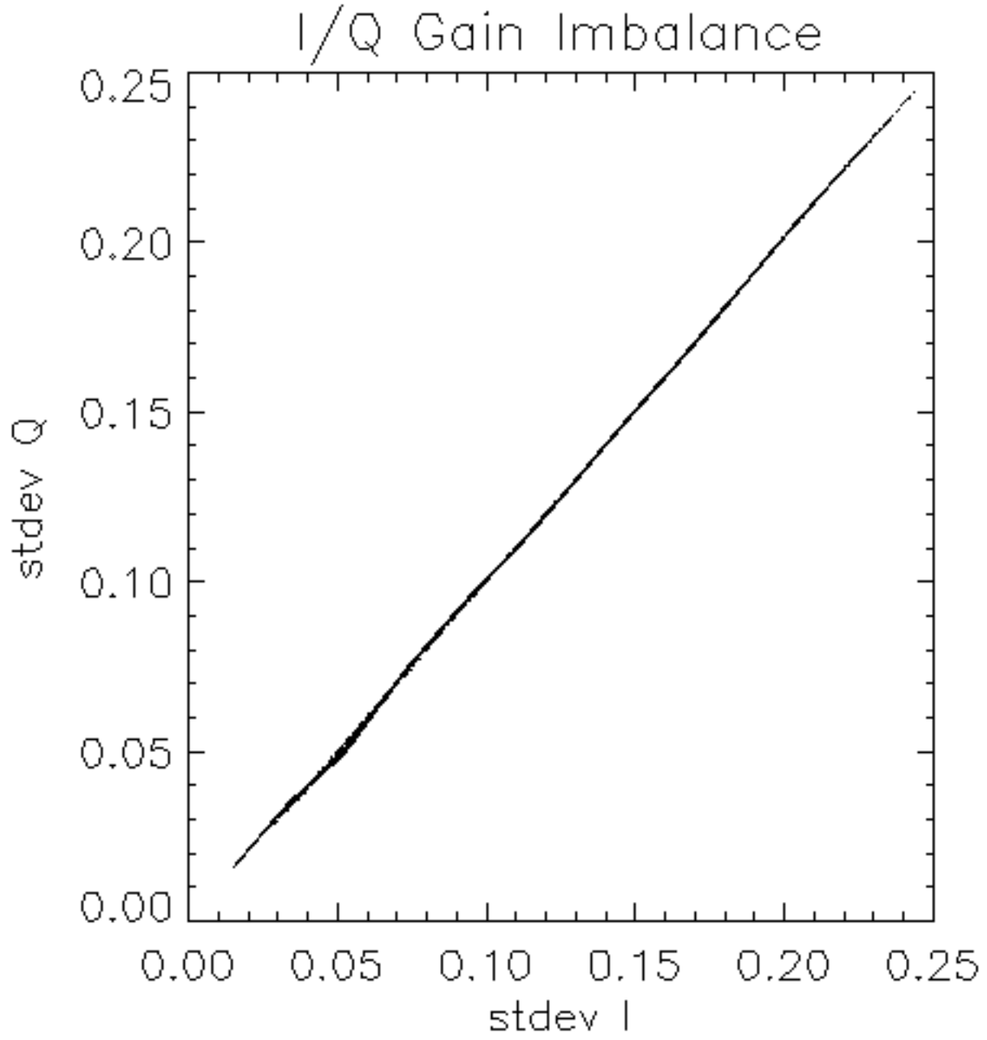
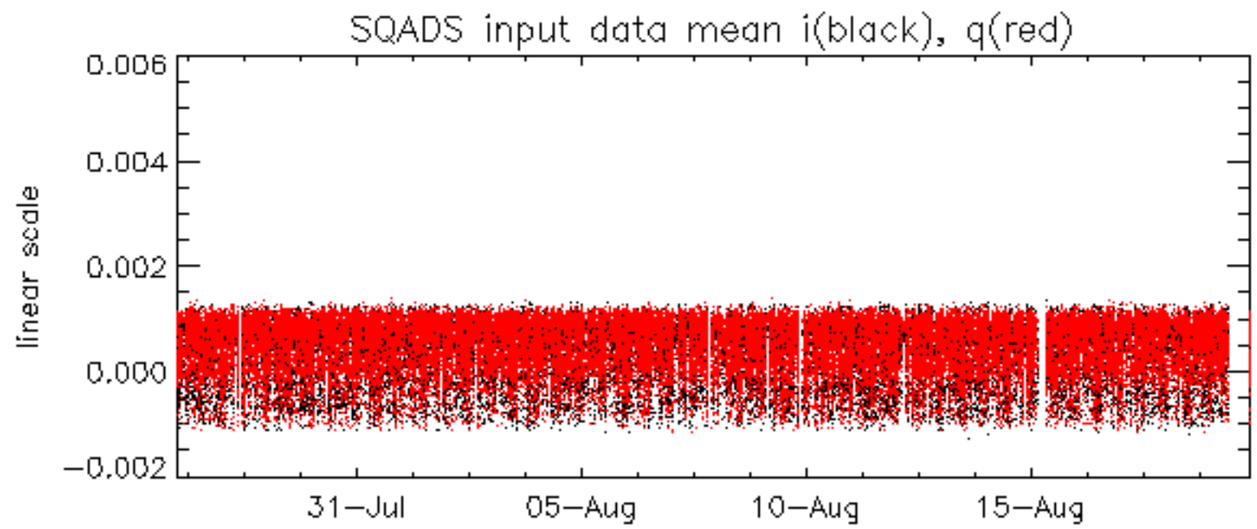
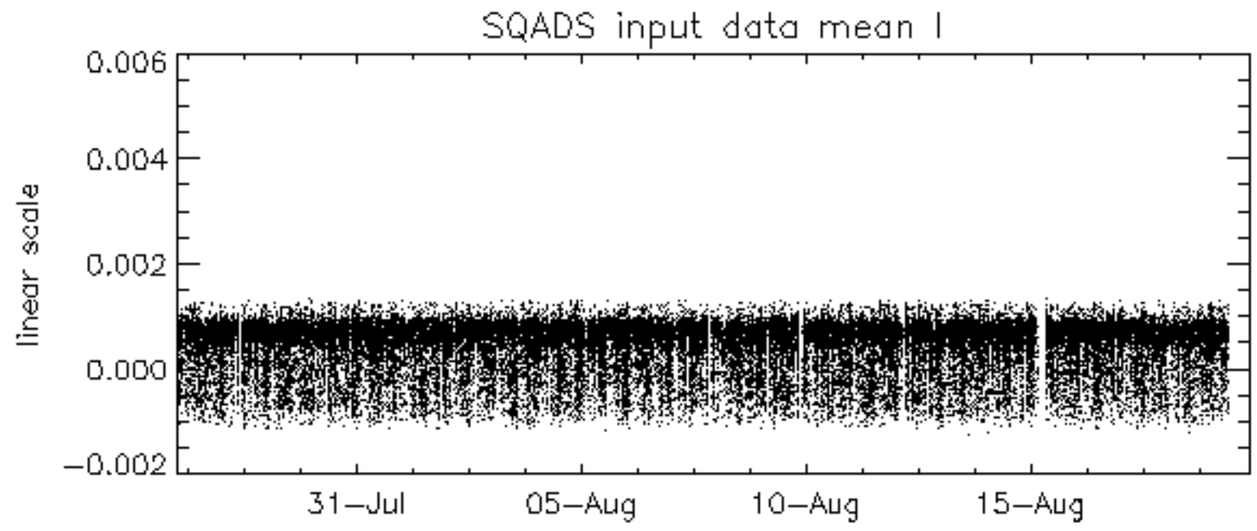
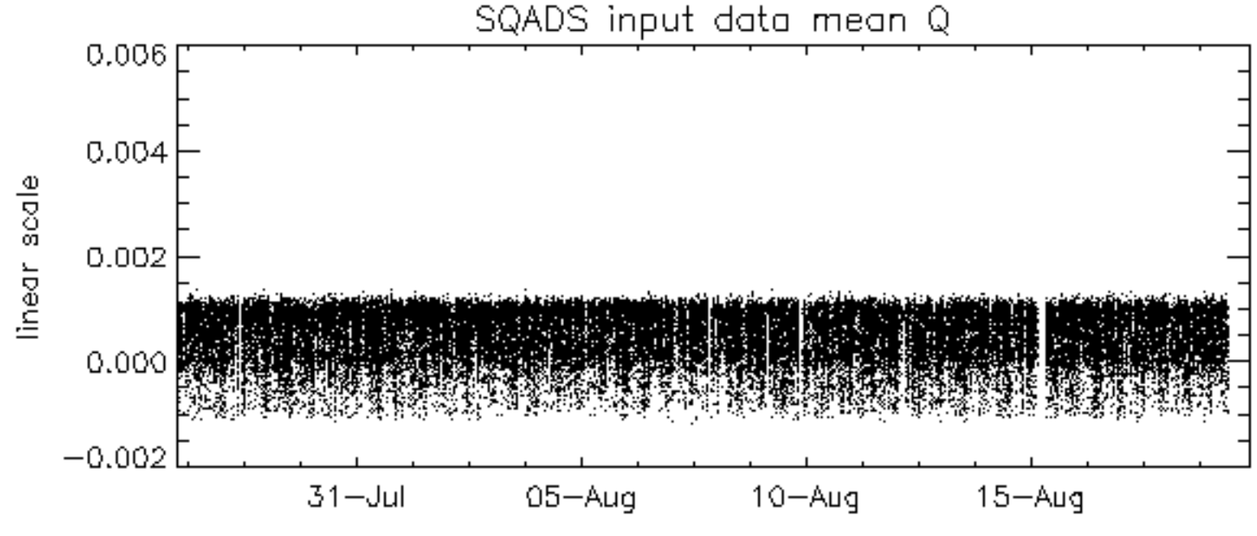
26
27
28
29
30
31
32

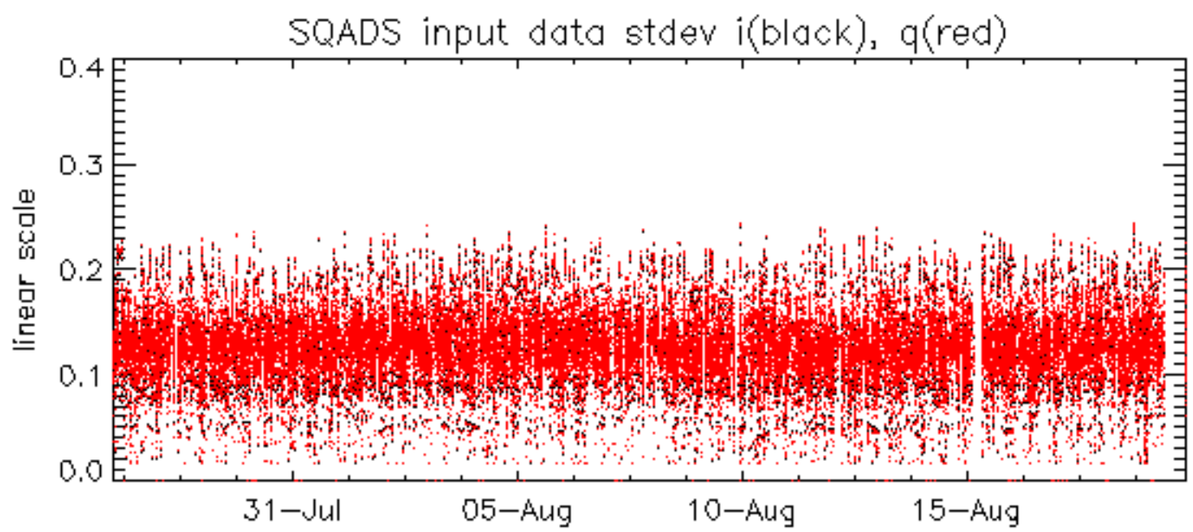

Reference: 2003-06-12 14:10:32 V
Test : 2005-08-27 06:44:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

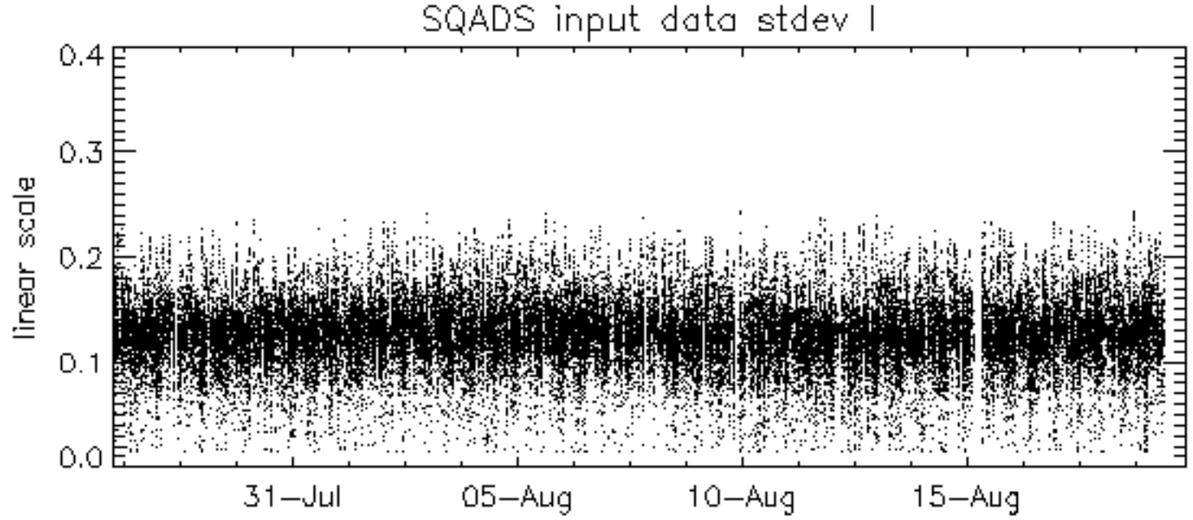

I/Q Gain Imbalance
stdev Q
0.25
0.20
0.15
0.10
0.05
0.00
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

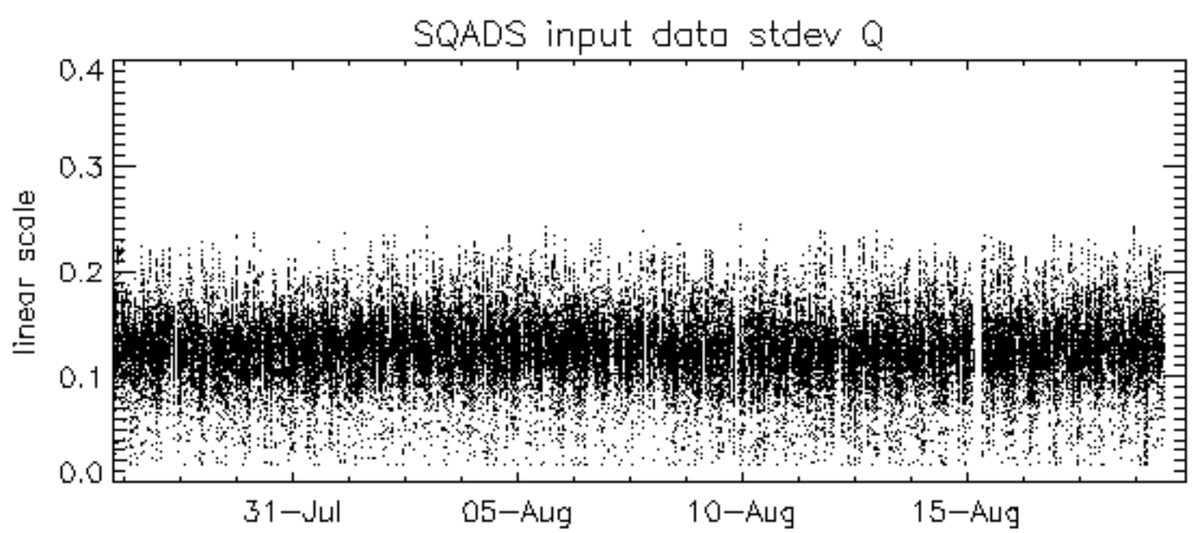

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug

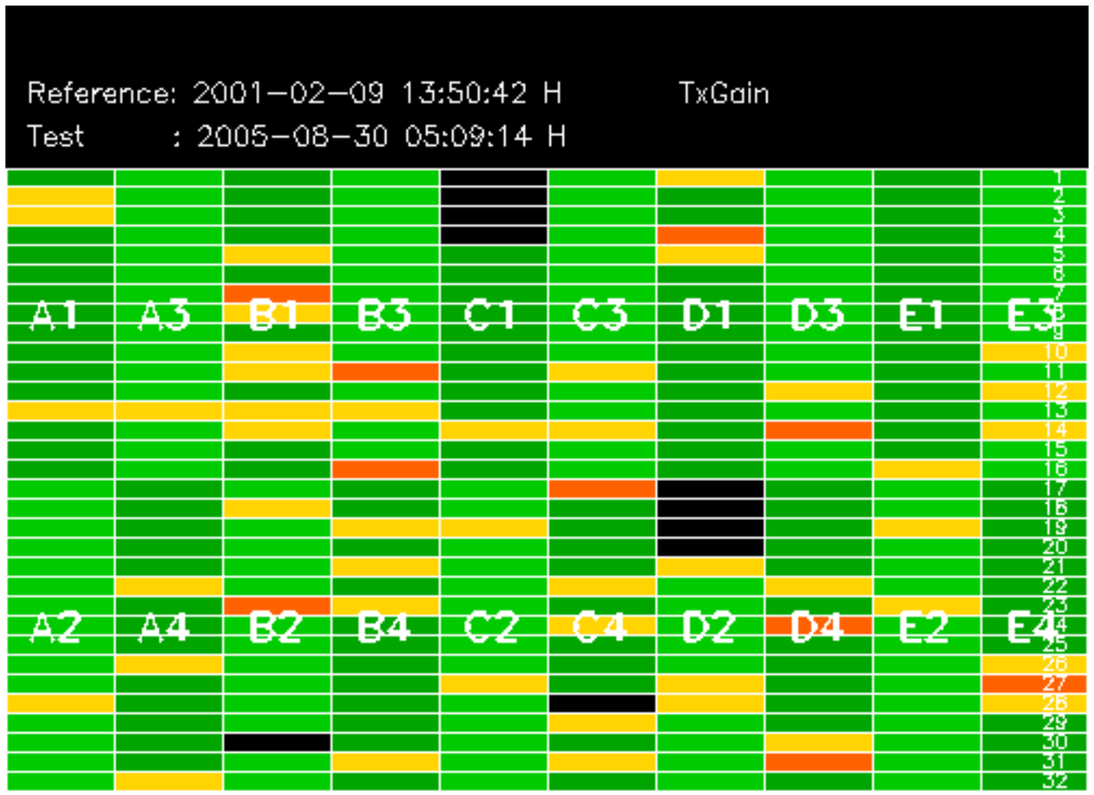

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
31–Jul
05–Aug
10–Aug
15–Aug


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
31–Jul
05–Aug
10–Aug
15–Aug


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
31–Jul
05–Aug
10–Aug
15–Aug


Reference: 2001-02-09 13:50:42 H
Test : 2005-08-30 05:09:14 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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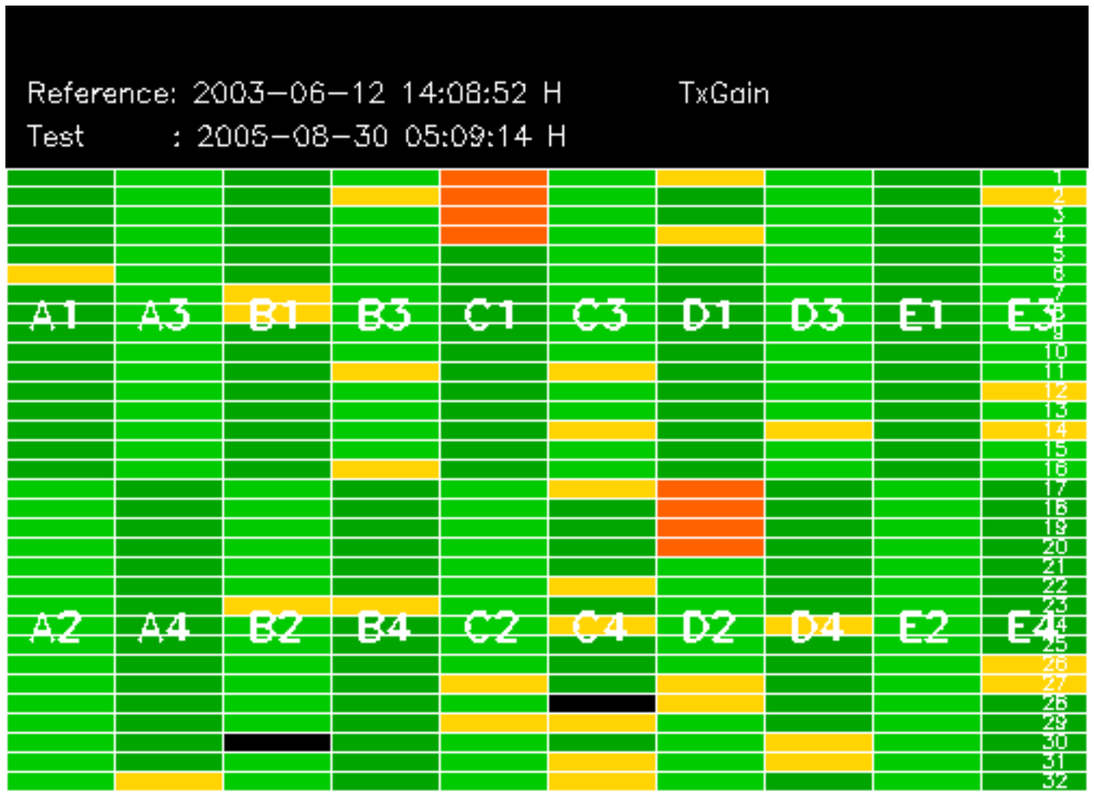
Reference: 2003-06-12 14:08:52 H
Test : 2005-08-30 05:09:14 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-08-27 06:44:06 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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27
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2005-08-27 06:44:06 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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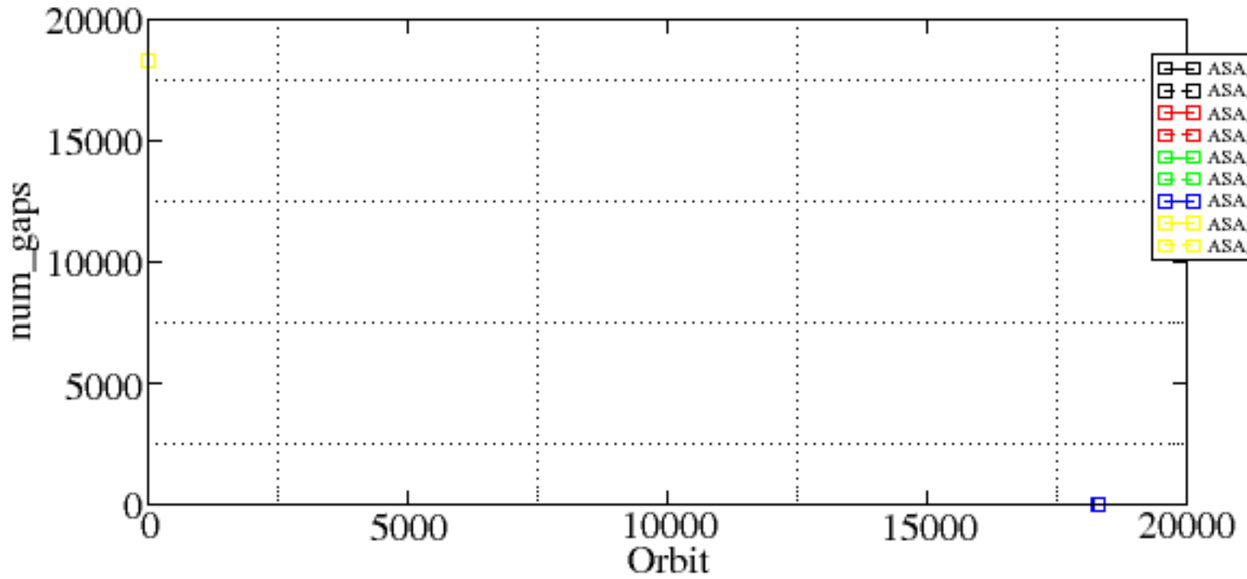
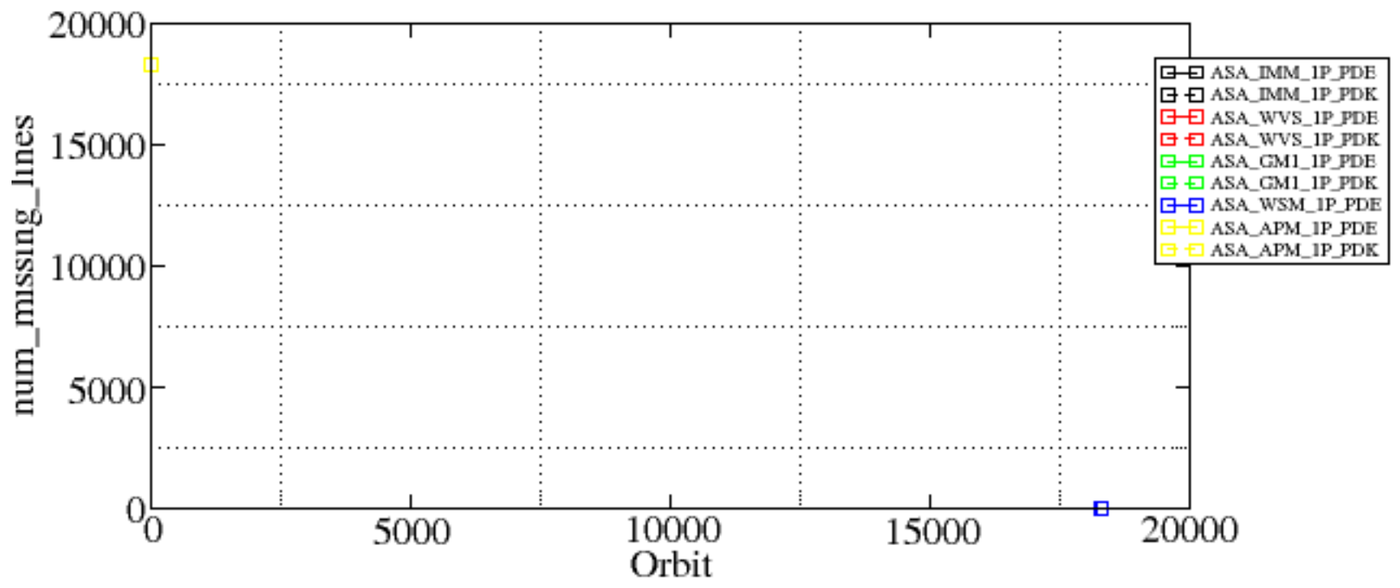
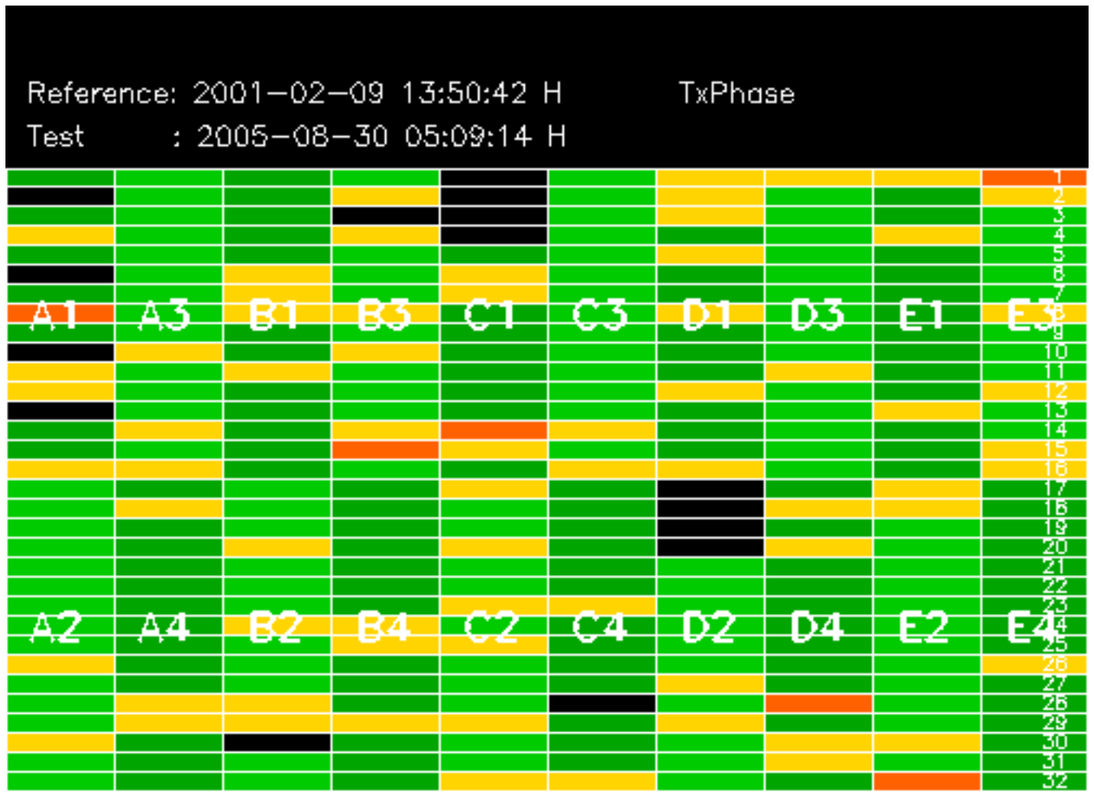
Summary of analysis for the last 3 days 2005083[901]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>


num_gaps
20000
15000
10000
5000
0
0
5000
10000
15000
20000
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_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
20000
15000
10000
5000
0
0
5000
10000
15000
20000
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_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-08-30 05:09:14 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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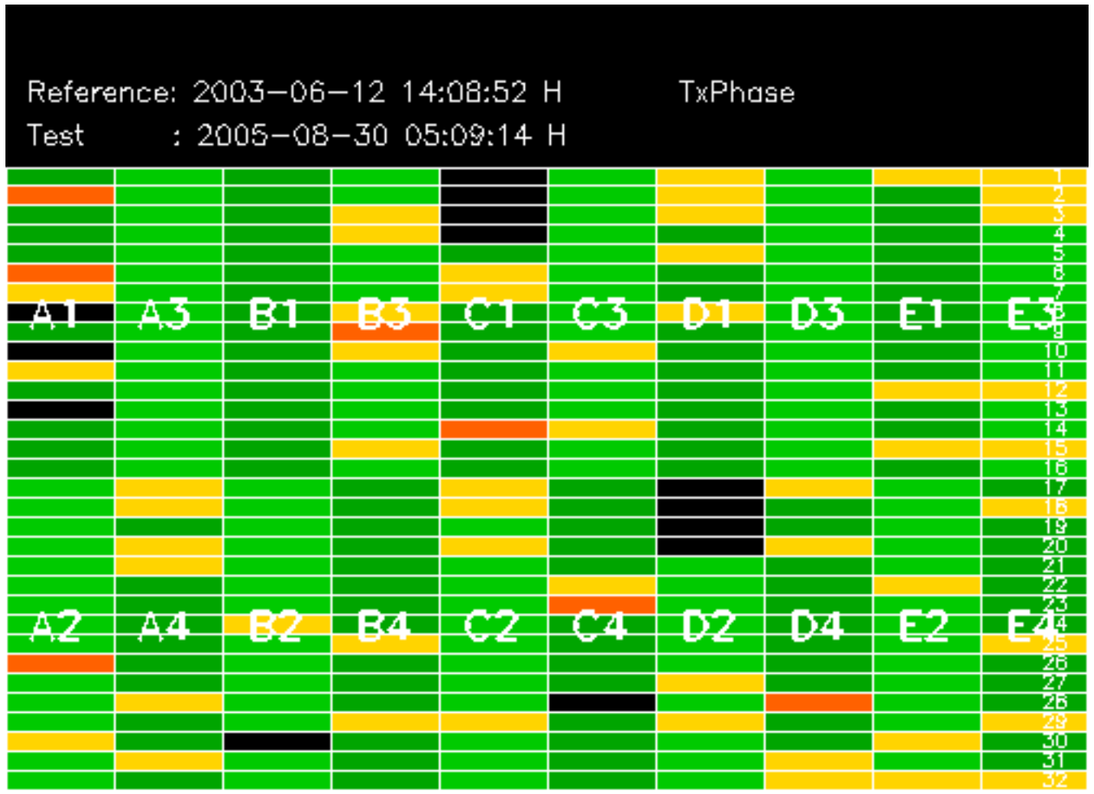
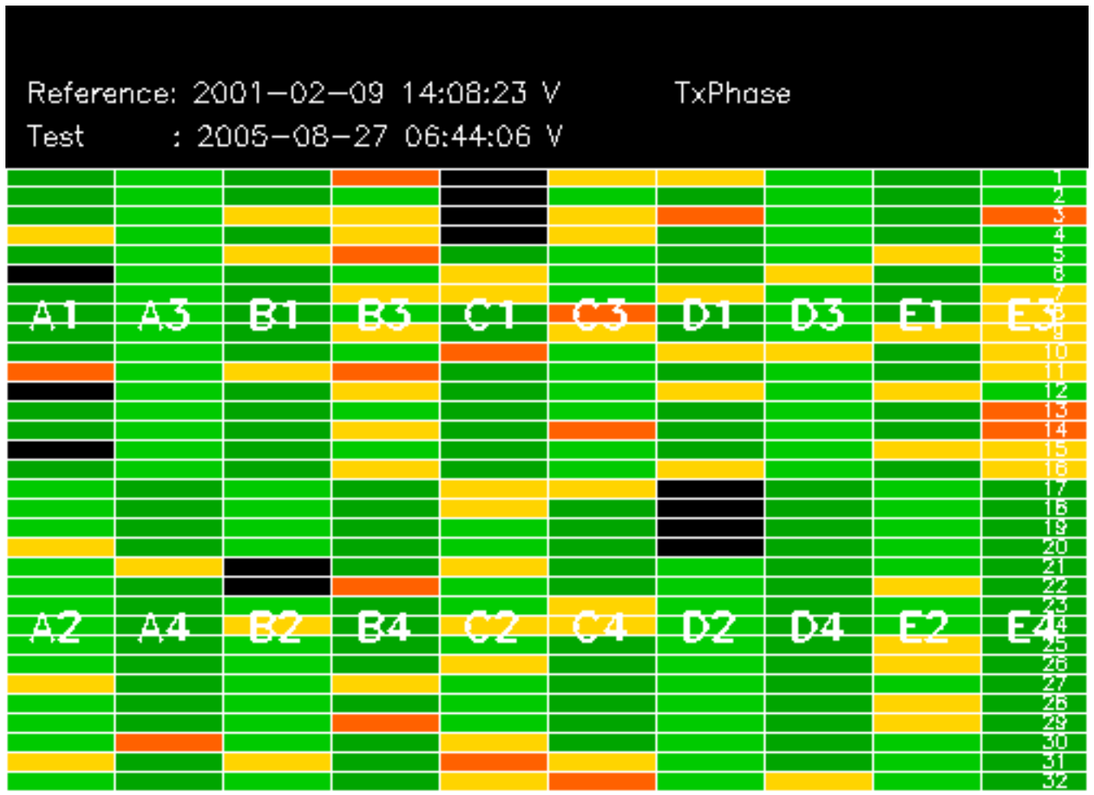

Reference: 2003-06-12 14:08:52 H
Test : 2005-08-30 05:09:14 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-08-27 06:44:06 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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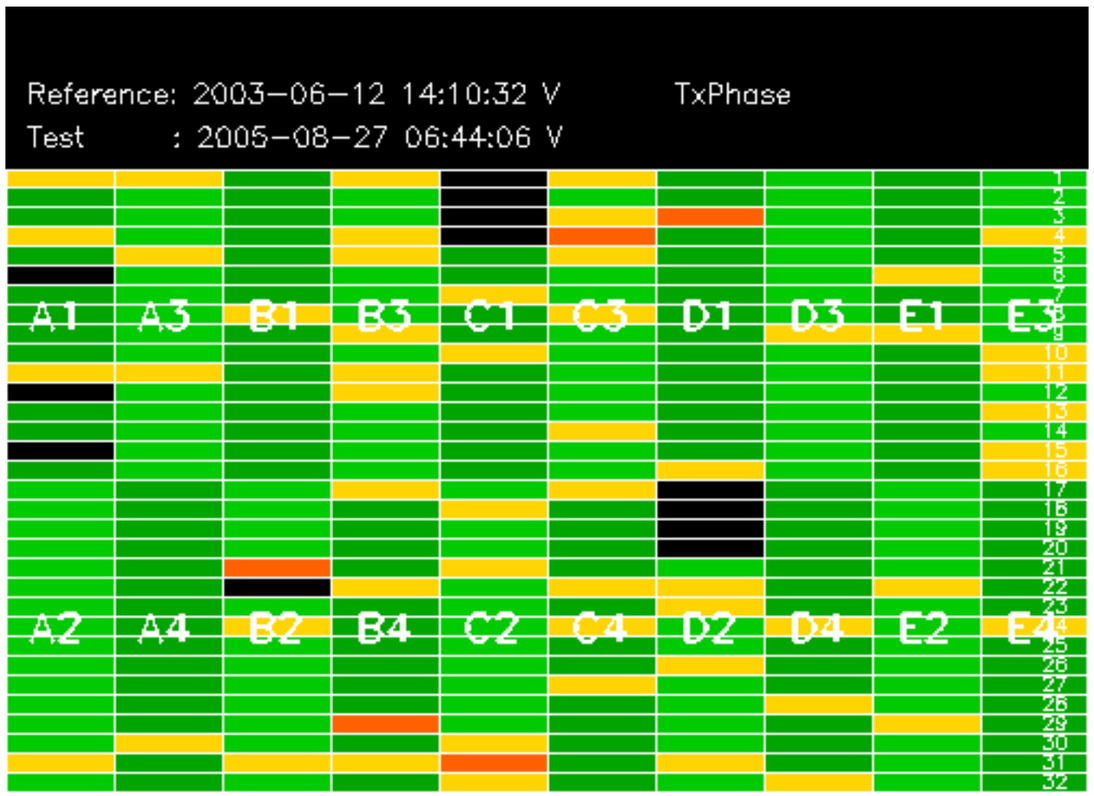
Reference: 2003-06-12 14:10:32 V
Test : 2005-08-27 06:44:06 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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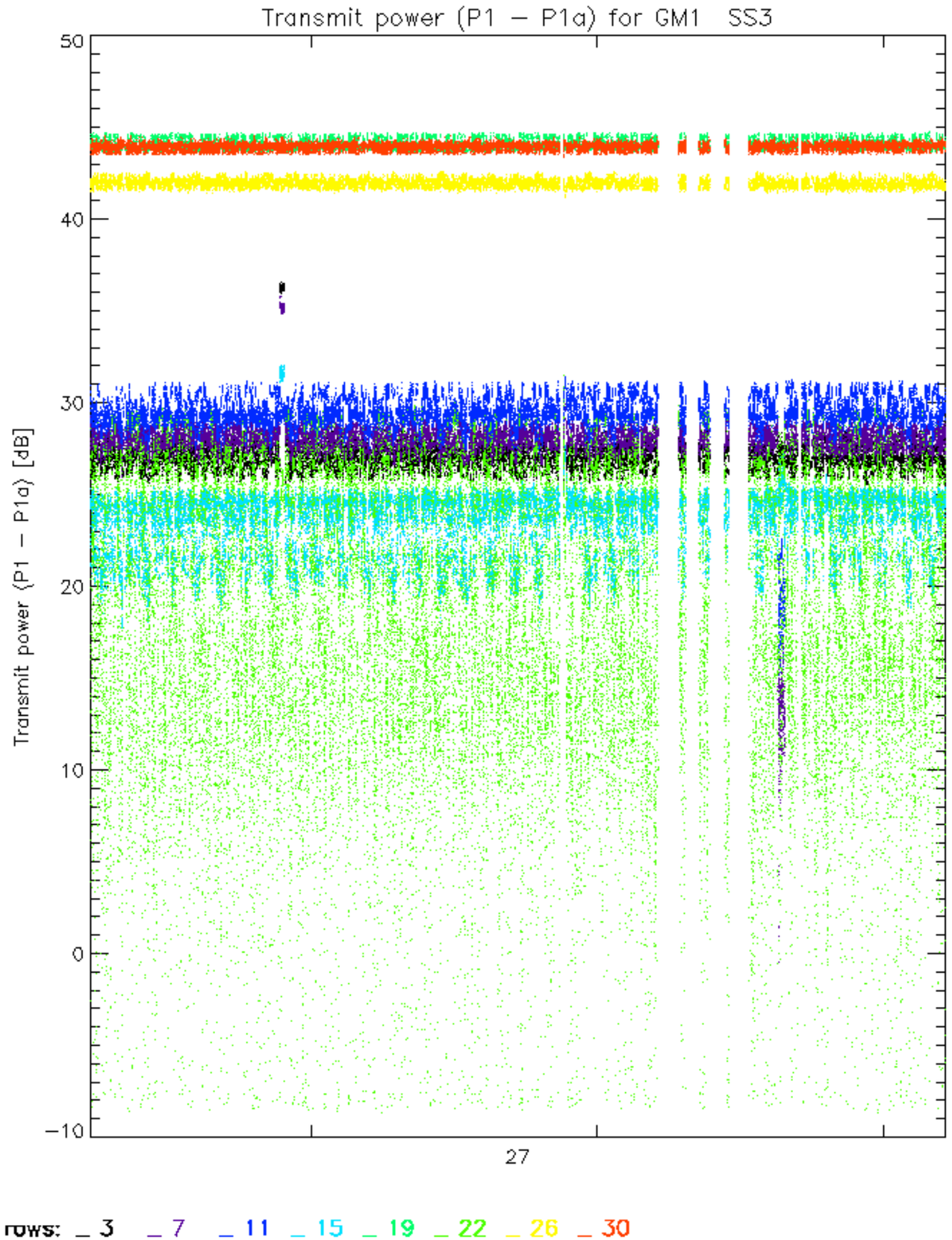
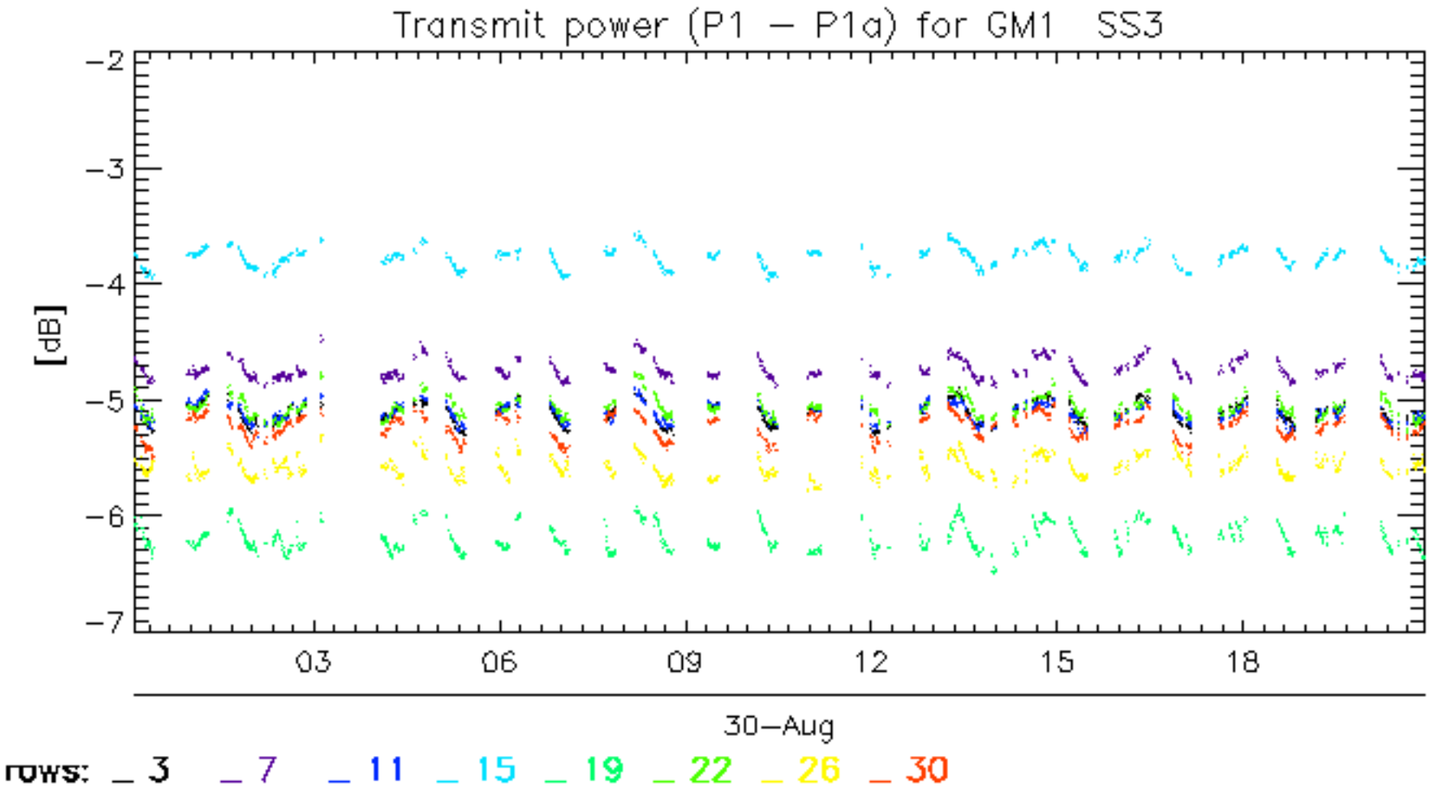
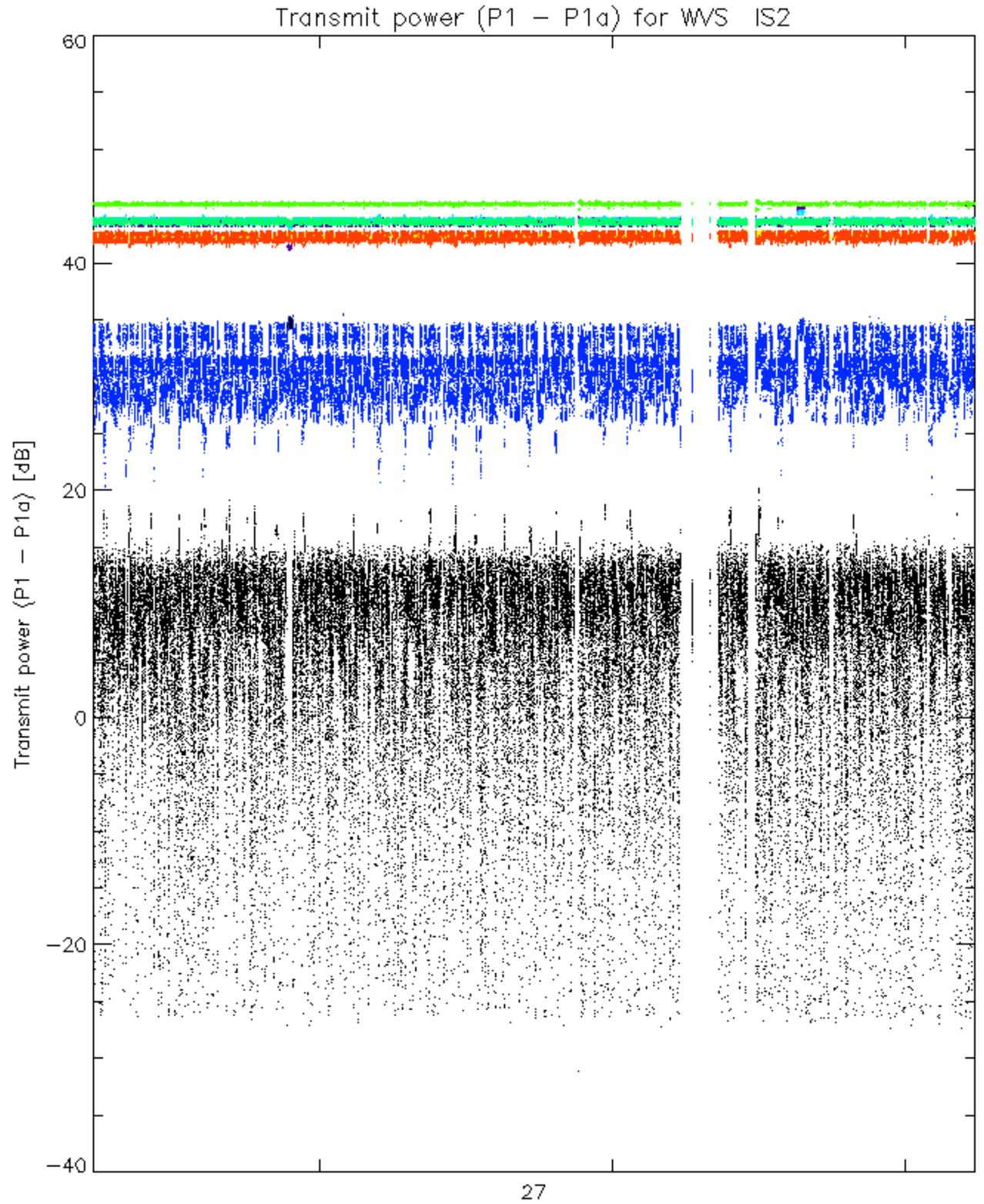
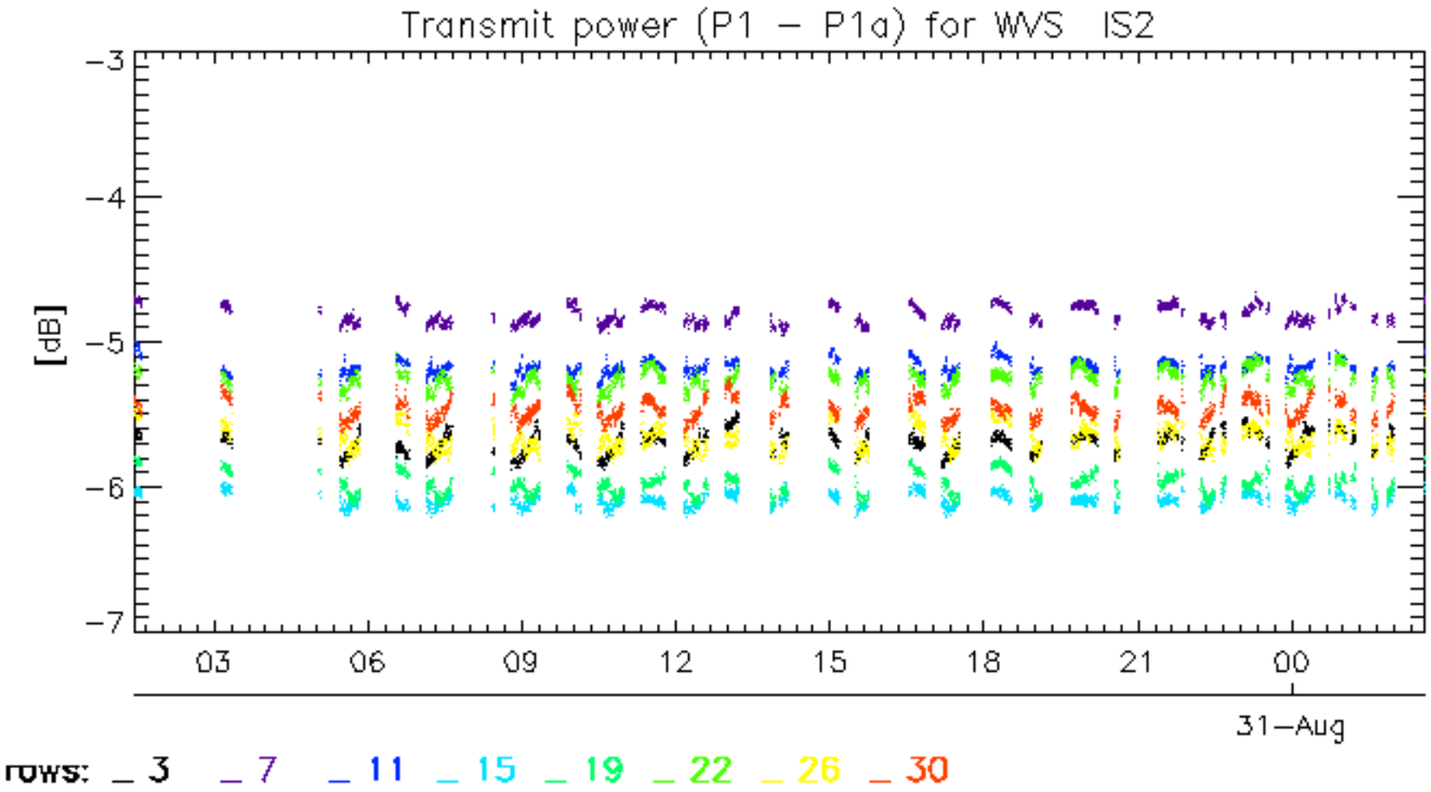

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
27
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
30–Aug
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]
27
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
31–Aug
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.