PRELIMINARY REPORT OF 060821

last update on Mon Aug 21 16:33:01 GMT 2006

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 2006-08-20 00:00:00 to 2006-08-21 16:33:01

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

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	39	75	14	6	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	39	75	14	6	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	39	75	14	6	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	39	75	14	6	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	35	55	78	24	32
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	35	55	78	24	32
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	35	55	78	24	32
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	35	55	78	24	32

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

MSM in V/V polarisation

MSM in H/H polarisation

4 - Internal calibration Results

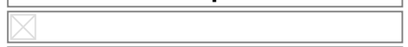
No anomalies observed.

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	-3.943825	0.009943	-0.001914

7	P1	-3.088546	0.051168	0.083780
11	P1	-4.092010	0.062685	0.007529
15	P1	-6.199594	0.093256	-0.050612
19	P1	-3.443907	0.010079	-0.080675
22	P1	-4.566648	0.009965	-0.024873
26	P1	-3.921530	0.020119	-0.011419
30	P1	-5.765441	0.009915	-0.009932
3	P1	-16.535145	0.255653	0.008943
7	P1	-16.918564	0.592538	1.370118
11	P1	-16.897287	0.291254	0.215887
15	P1	-13.015279	0.164161	0.158493
19	P1	-14.506207	0.054538	-0.070995
22	P1	-15.936240	0.458292	0.179692
26	P1	-15.130568	0.222814	-0.096662
30	P1	-17.062565	0.323440	0.108250

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.896143	0.084605	0.095650
7	P2	-21.869667	0.100520	0.028928
11	P2	-15.760621	0.116644	0.041664
15	P2	-7.109381	0.097149	0.030390
19	P2	-9.119622	0.090706	0.016275
22	P2	-18.142538	0.085333	0.011598
26	P2	-16.399538	0.091439	-0.003476
30	P2	-19.492184	0.091259	0.040827

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.172767	0.003388	-0.001887
7	P3	-8.172767	0.003388	-0.001887
11	P3	-8.172767	0.003388	-0.001887
15	P3	-8.172767	0.003388	-0.001887
19	P3	-8.172767	0.003388	-0.001887
22	P3	-8.172767	0.003388	-0.001887
26	P3	-8.172820	0.003387	-0.002064
30	P3	-8.172820	0.003387	-0.002064

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	-3.830560	0.021699	-0.012201
7	P1	-2.510405	0.279602	0.388615
11	P1	-2.896306	0.137780	-0.096489
15	P1	-3.635551	0.149590	-0.124966
19	P1	-3.427576	0.025652	-0.001564
22	P1	-5.086561	0.020625	-0.010768
26	P1	-5.866697	0.023246	-0.015461
30	P1	-5.194646	0.040203	0.002439
3	P1	-11.623044	0.066802	-0.023670
7	P1	-9.921303	0.183105	0.270937
11	P1	-10.280932	0.081500	-0.094129
15	P1	-10.788245	0.173097	-0.123845
19	P1	-15.550574	0.529704	0.082107
22	P1	-20.939718	1.342174	-0.170163
26	P1	-16.168133	0.404925	0.162852
30	P1	-17.992983	0.430605	-0.073690

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.504482	0.085512	0.136133
7	P2	-22.293583	0.206470	0.174271
11	P2	-10.980656	0.055343	0.142906
15	P2	-4.888755	0.043610	0.021809
19	P2	-6.861839	0.040566	0.002999
22	P2	-8.187827	0.062624	0.003336

26	P2	-24.170773	0.129813	0.015043
30	P2	-21.979849	0.079276	0.043995

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.012497	0.003703	-0.010457
7	P3	-8.012319	0.003703	-0.010102
11	P3	-8.012421	0.003706	-0.010063
15	P3	-8.012492	0.003705	-0.010355
19	P3	-8.012416	0.003717	-0.010291
22	P3	-8.012576	0.003696	-0.010262
26	P3	-8.012408	0.003691	-0.009772
30	P3	-8.012457	0.003703	-0.010054

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	0.000555296
	stdev	1.76369e-07
MEAN Q	mean	0.000531638
	stdev	2.15841e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136838
	stdev	0.00108185
STDEV Q	mean	0.137190
	stdev	0.00109844

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006082[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
ASA_IMM_1PNPDE20060820_013600_000001612050_00275_23375_3774.N1	1	0
ASA_IMM_1PNPDE20060821_004801_000000802050_00288_23388_3949.N1	1	0
ASA_WSM_1PNPDE20060820_231435_000000972050_00288_23388_8788.N1	0	56

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

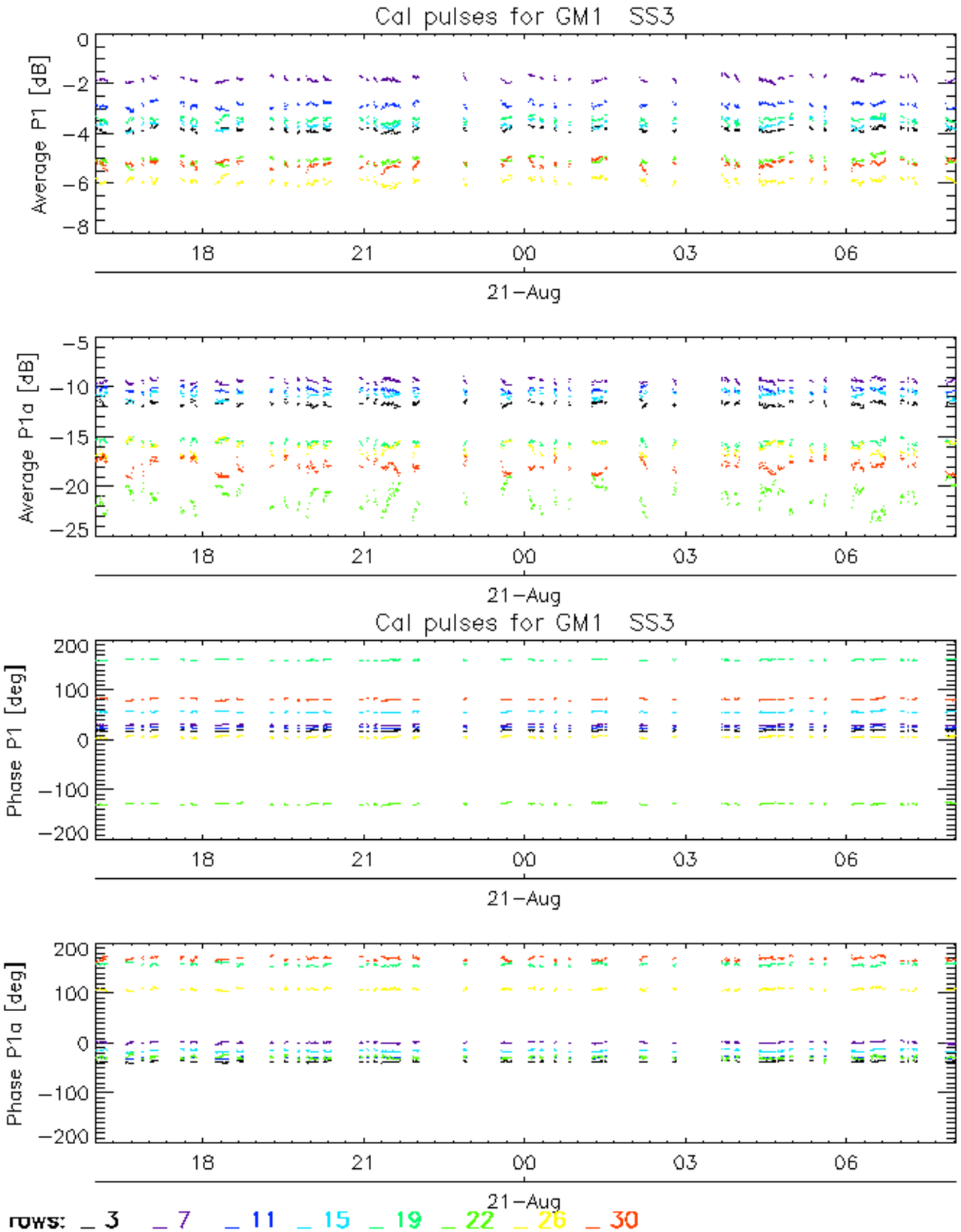
Evolution of Absolute Doppler

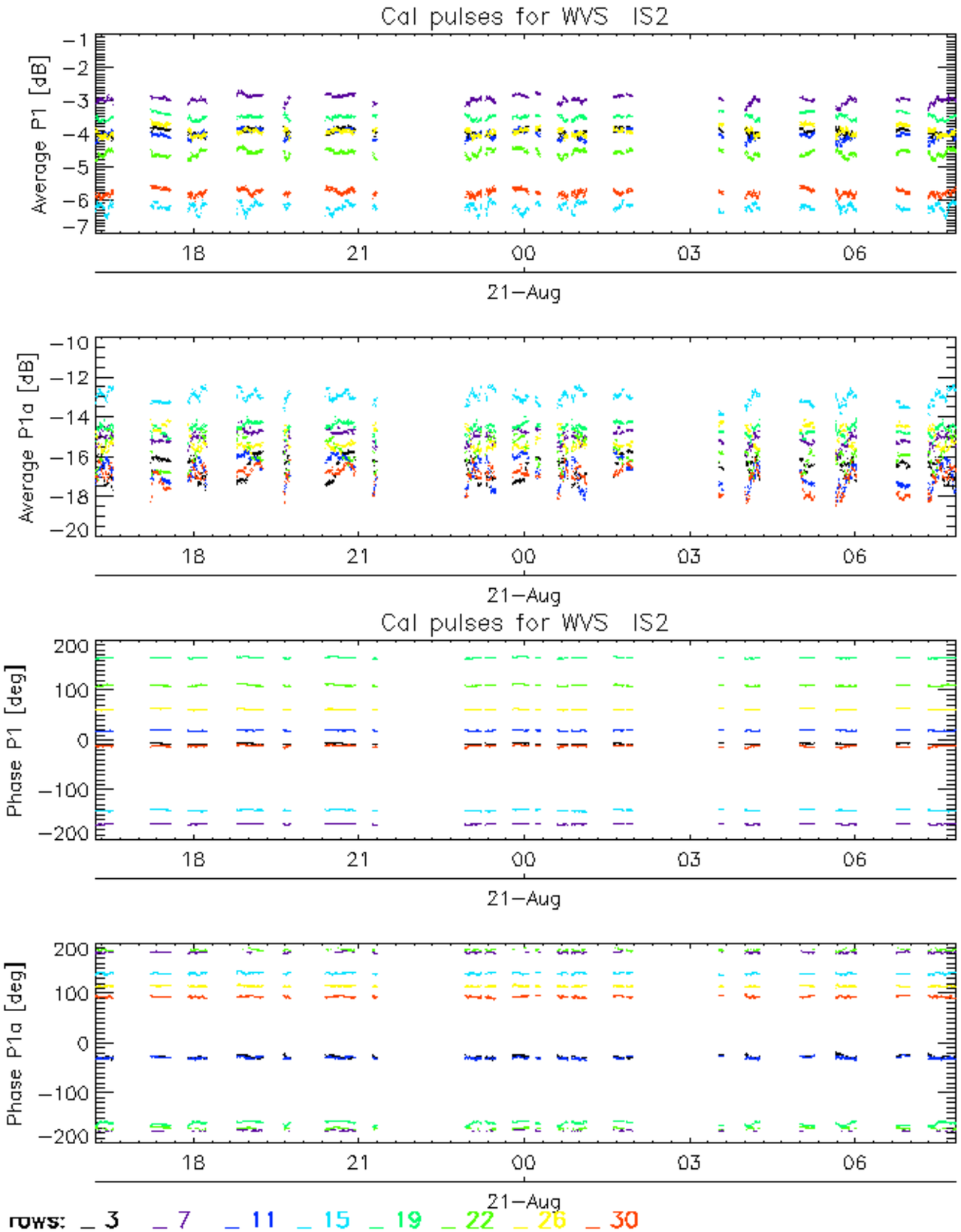
Acsending

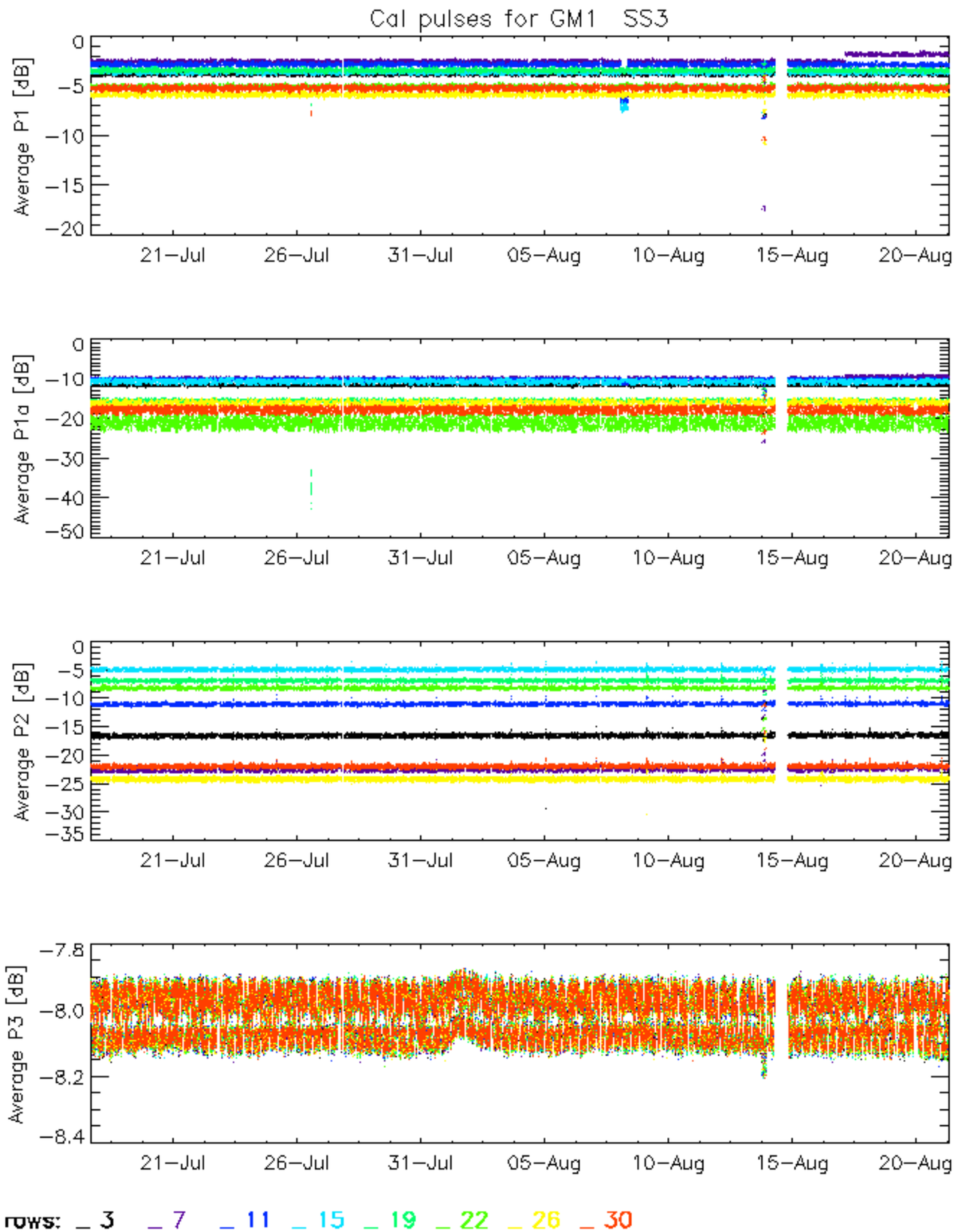

Descending

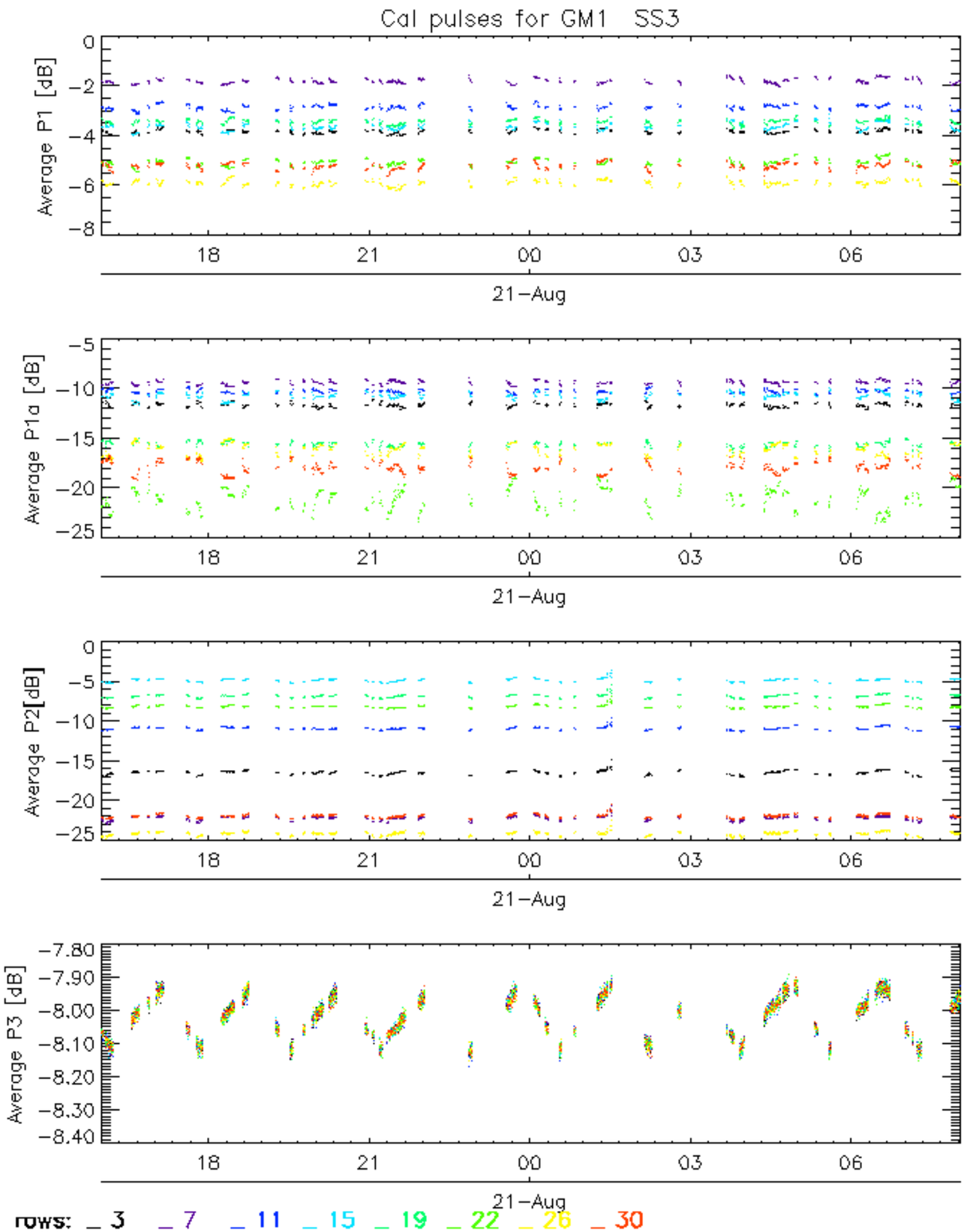
7.6 - Doppler evolution versus ANX for GM1

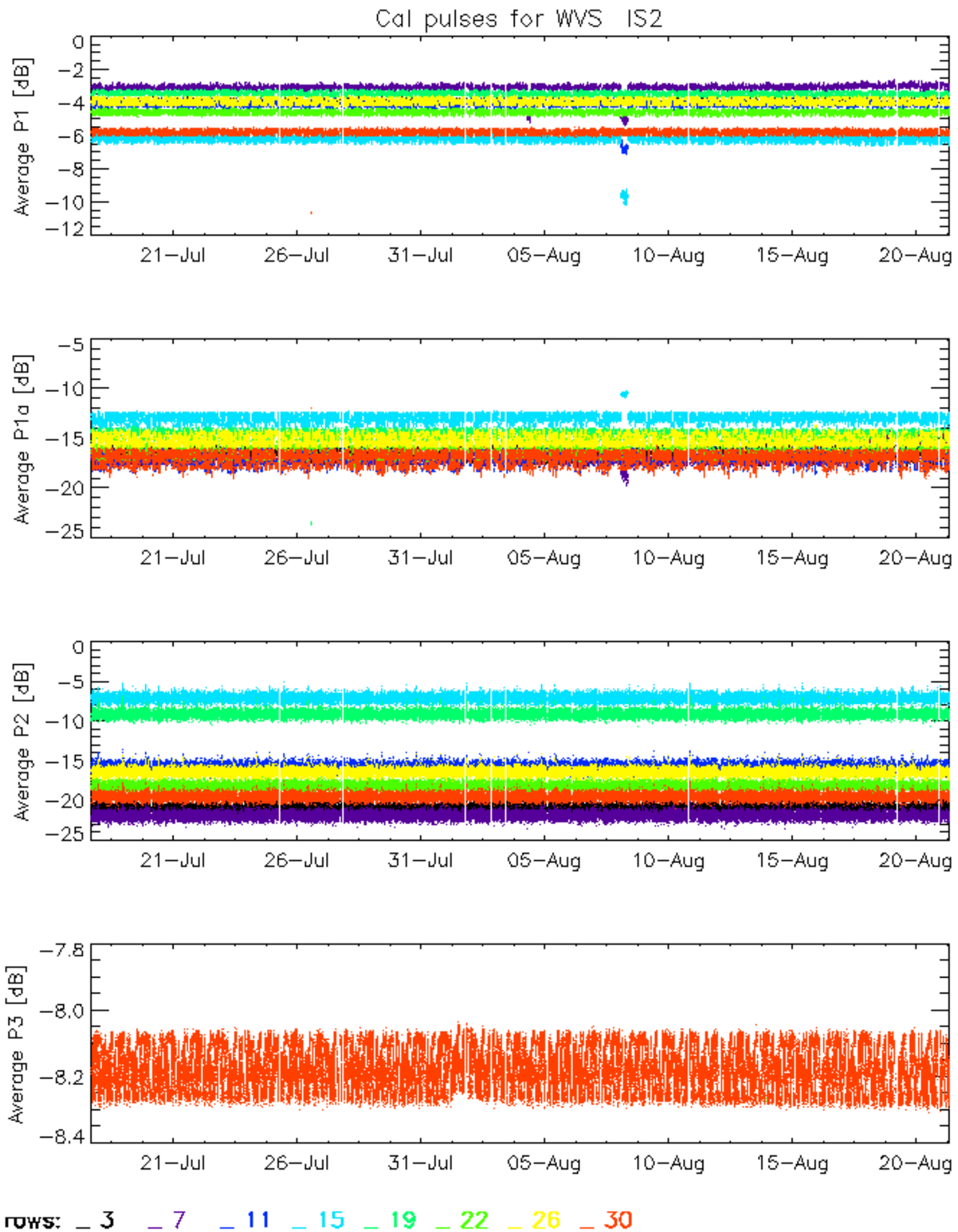
Evolution Doppler error versus ANX

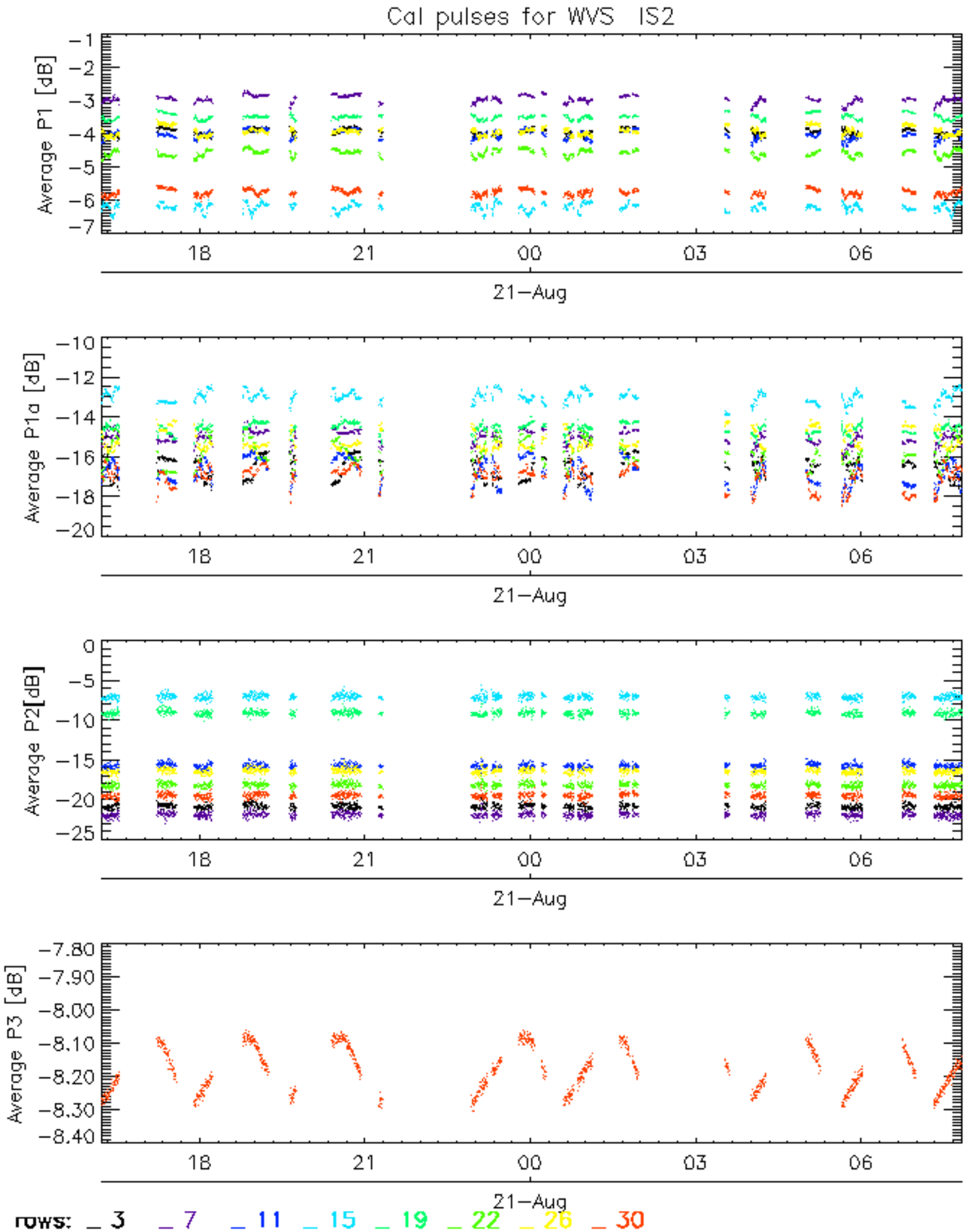

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
18
21
00
03
06
21−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
21−Aug
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
21−Aug
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
21−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
21−Aug
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
21−Aug
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
21−Aug
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
21−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

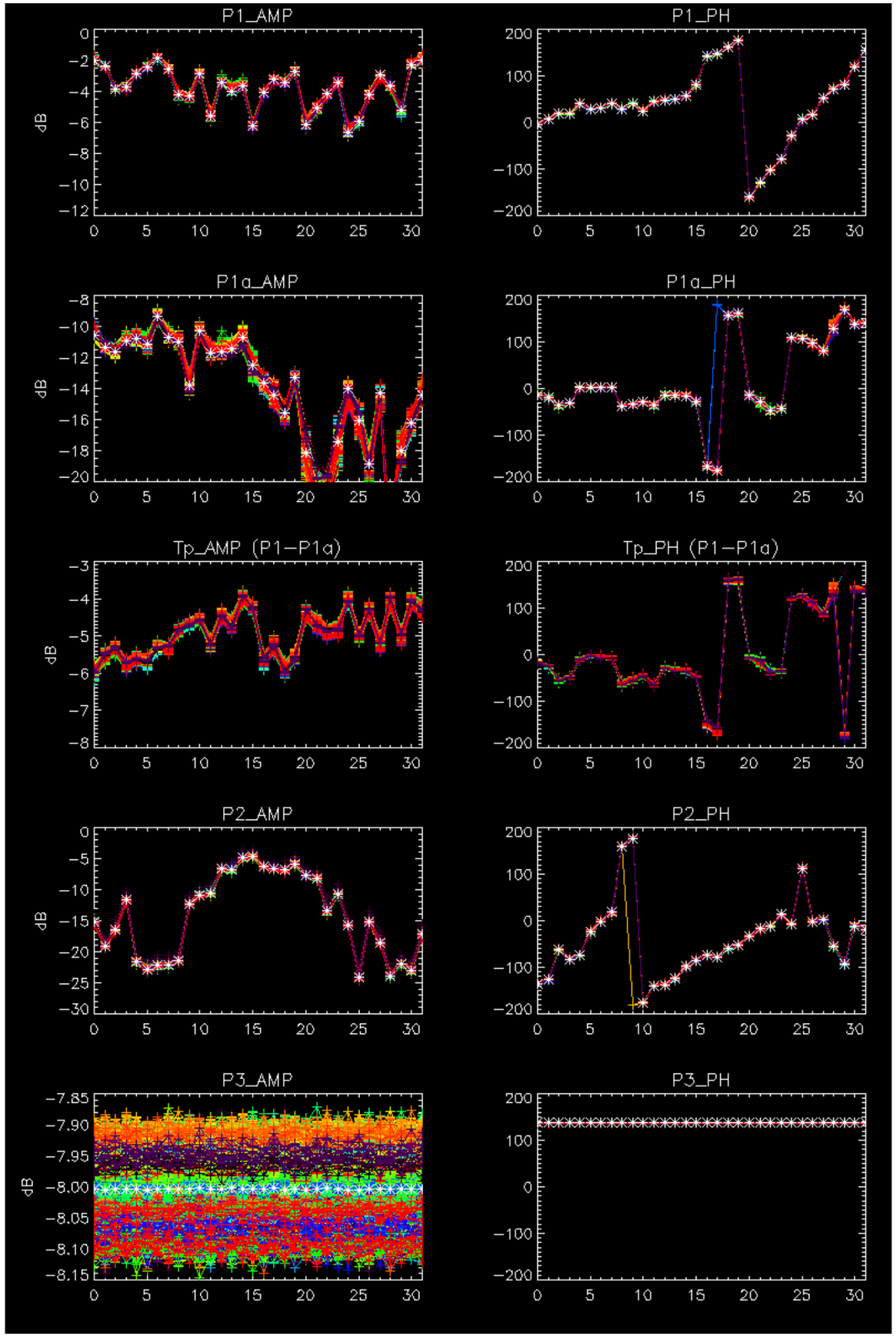

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
Average P1a [dB]
0
−10
−20
−30
−40
−50
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
−35
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

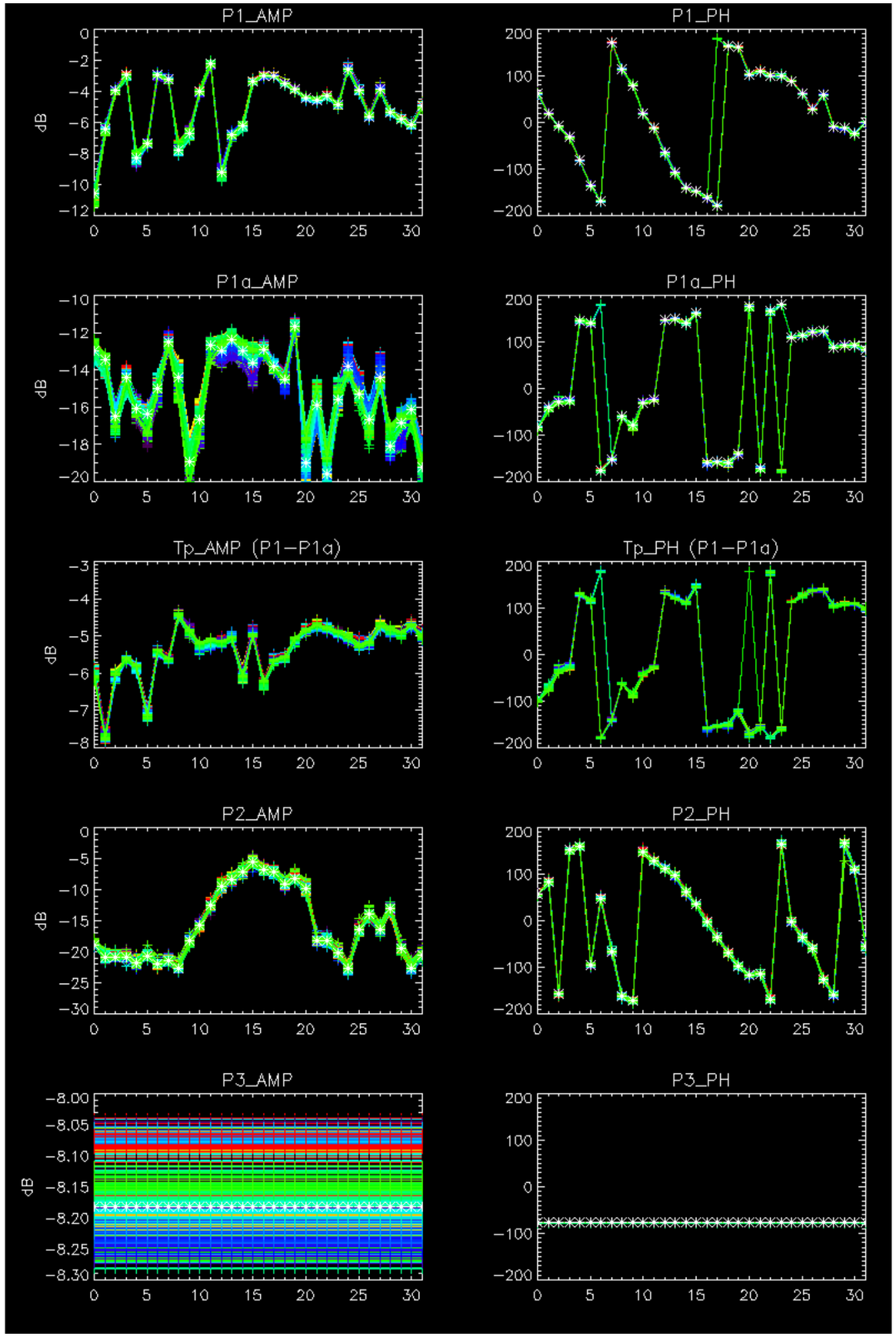

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
18
21
00
03
06
21−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−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]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
21−Aug
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
21−Aug
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
21−Aug
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
21−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

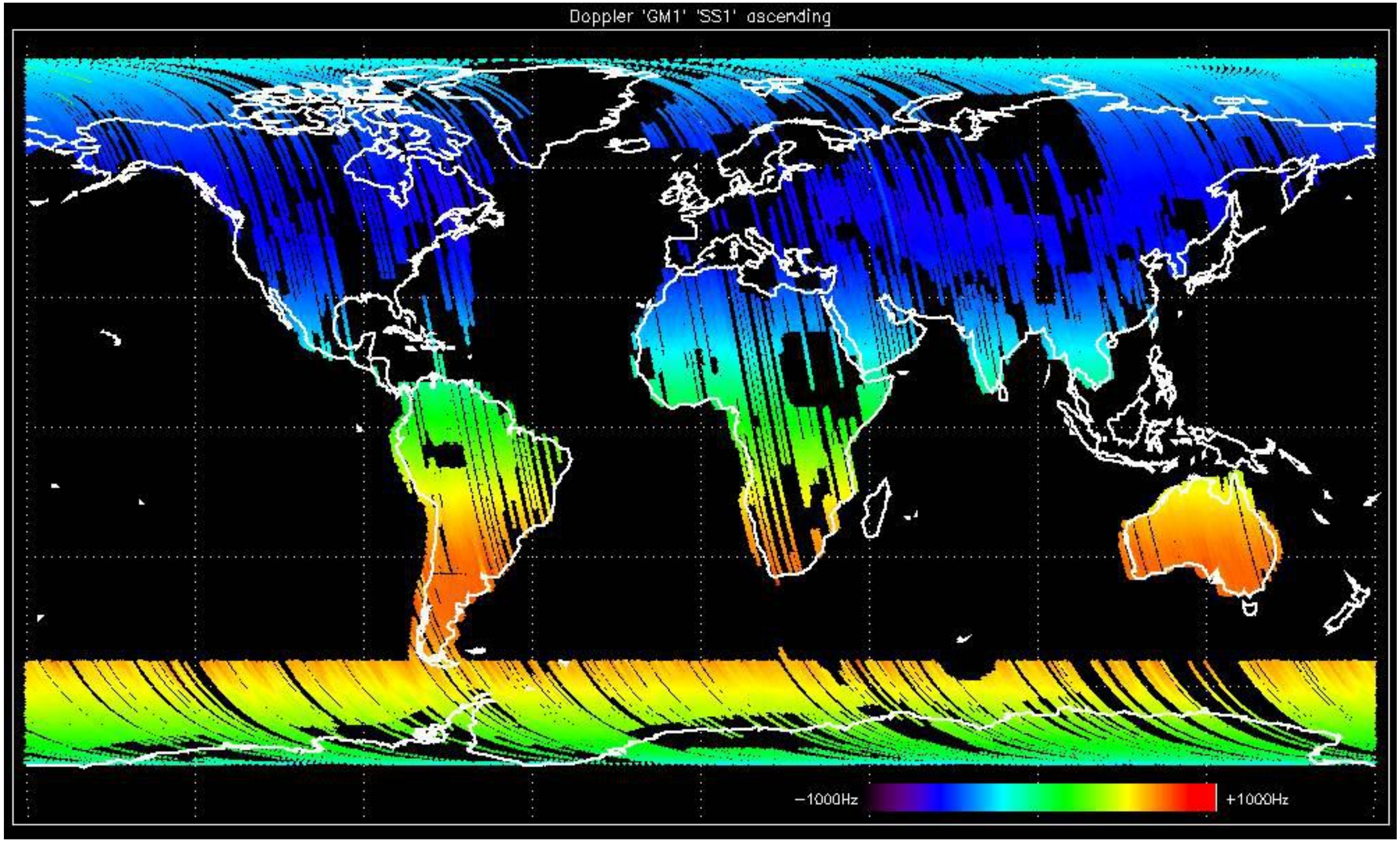
No anomalies observed.

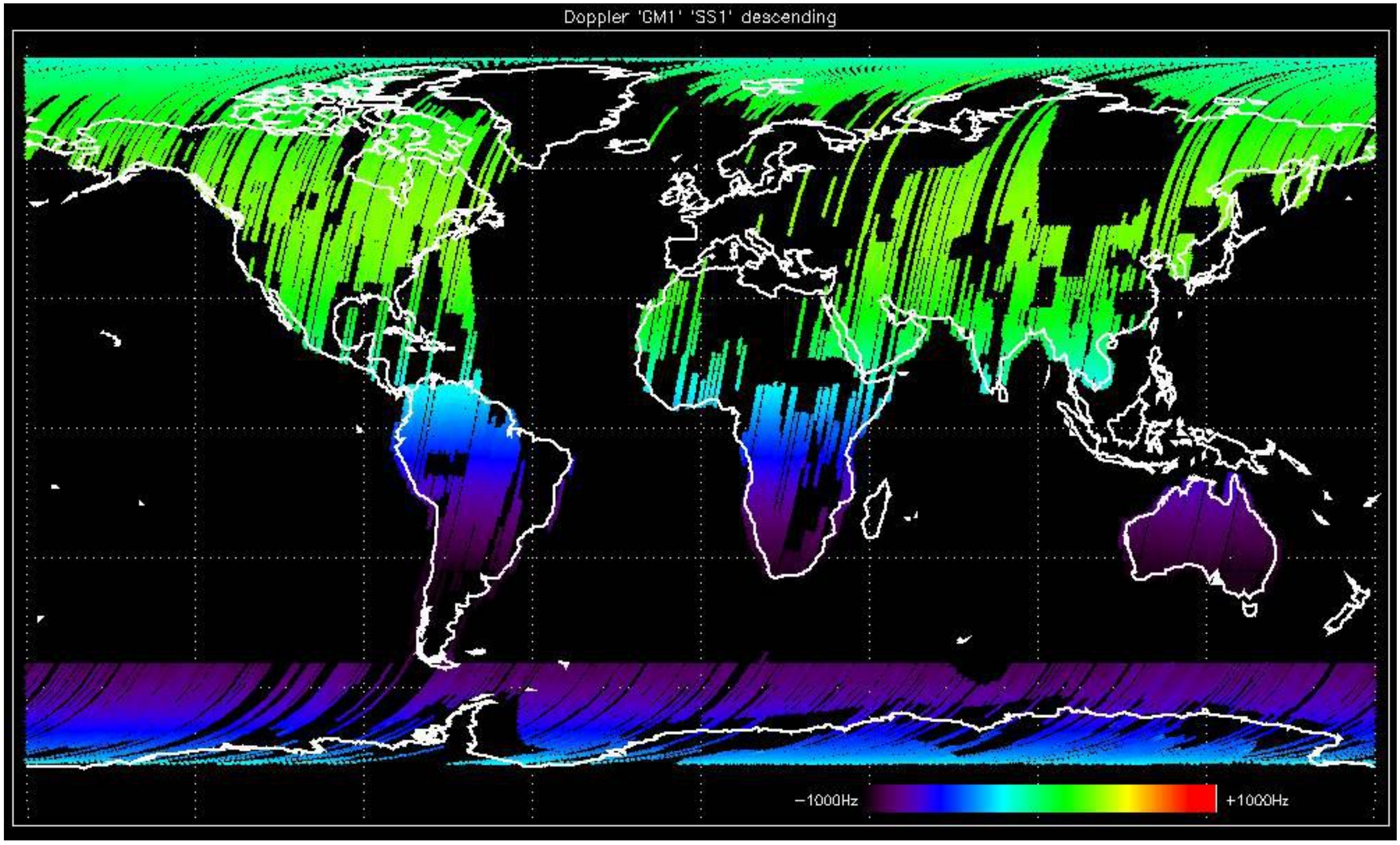

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

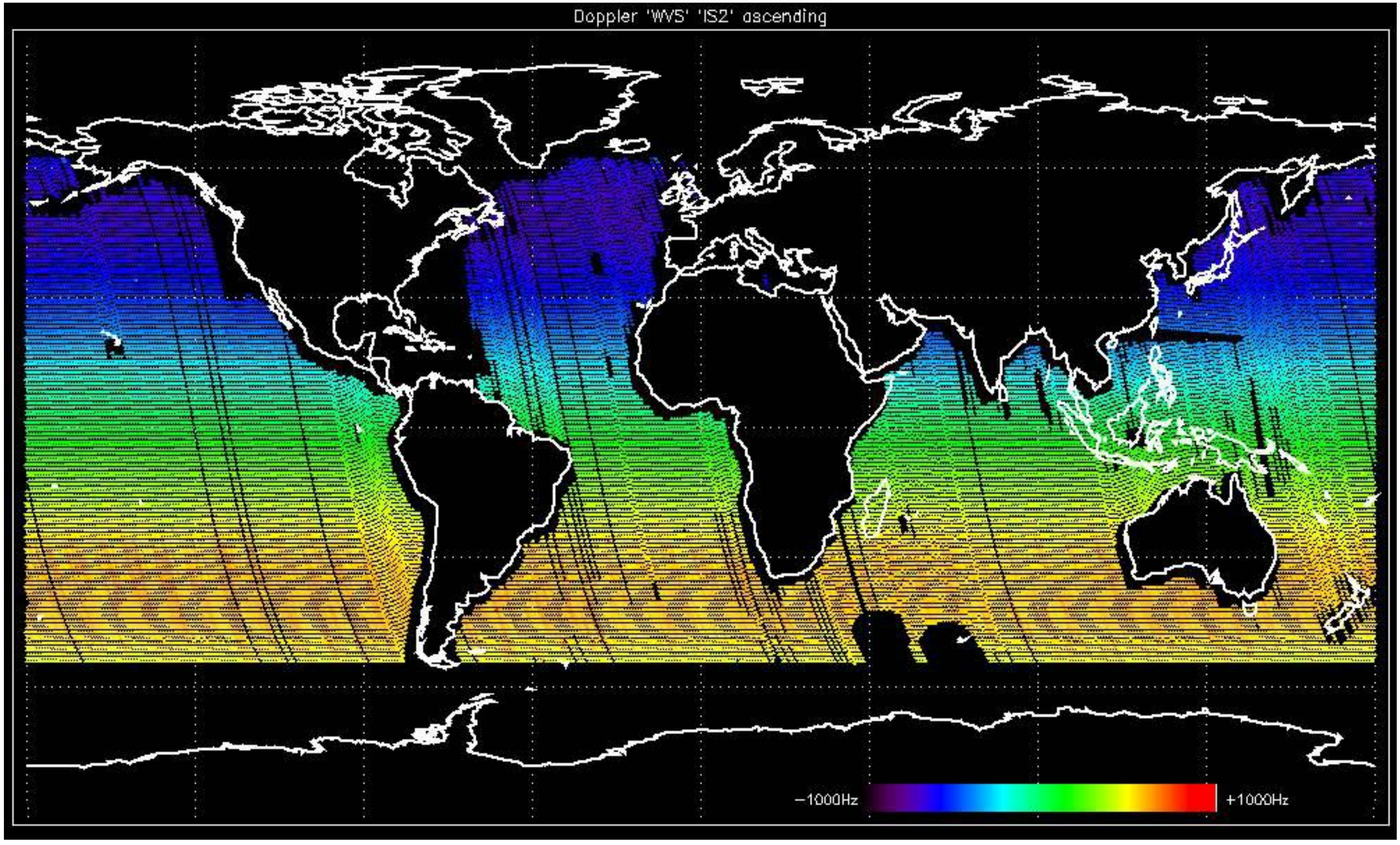

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

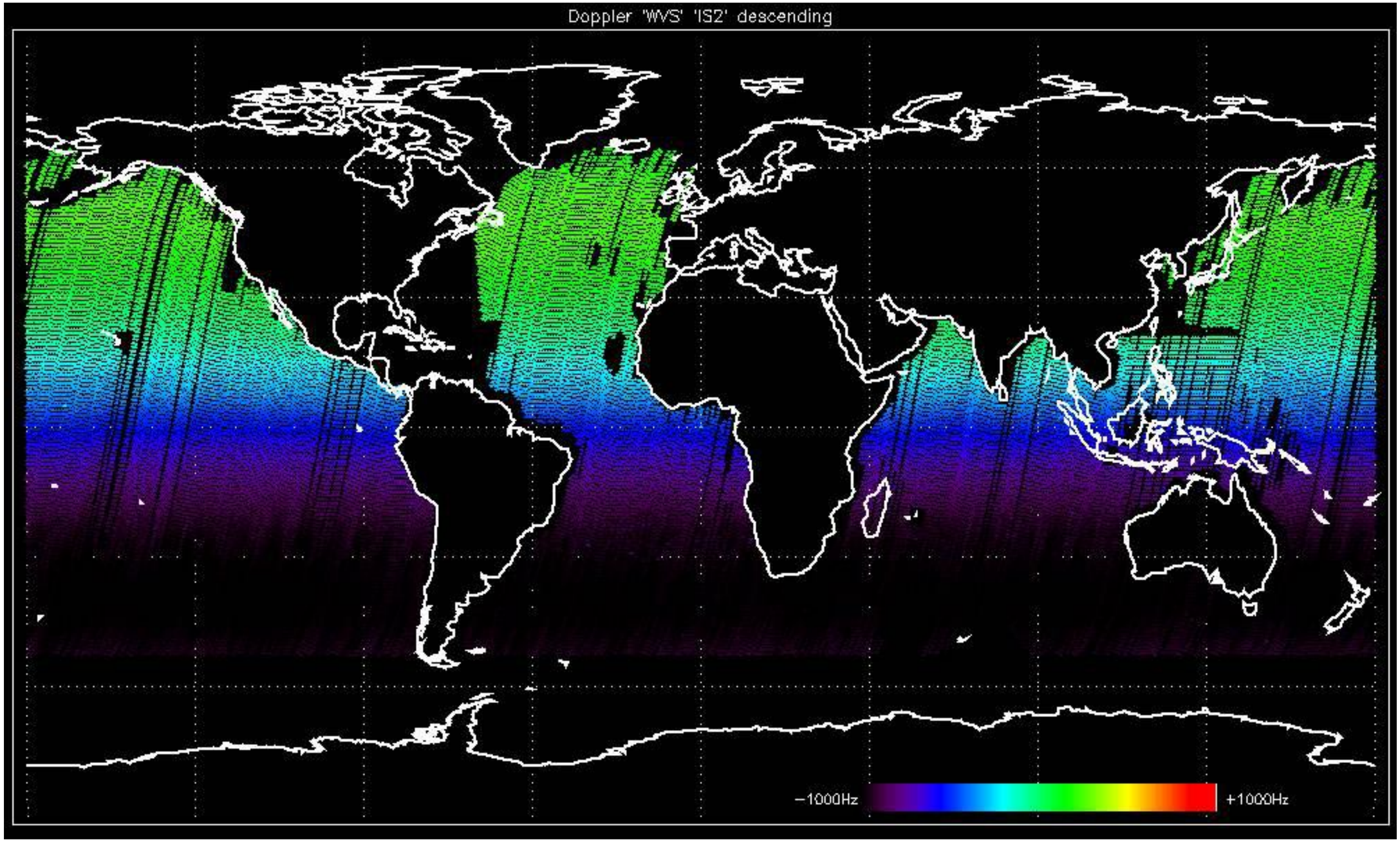
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

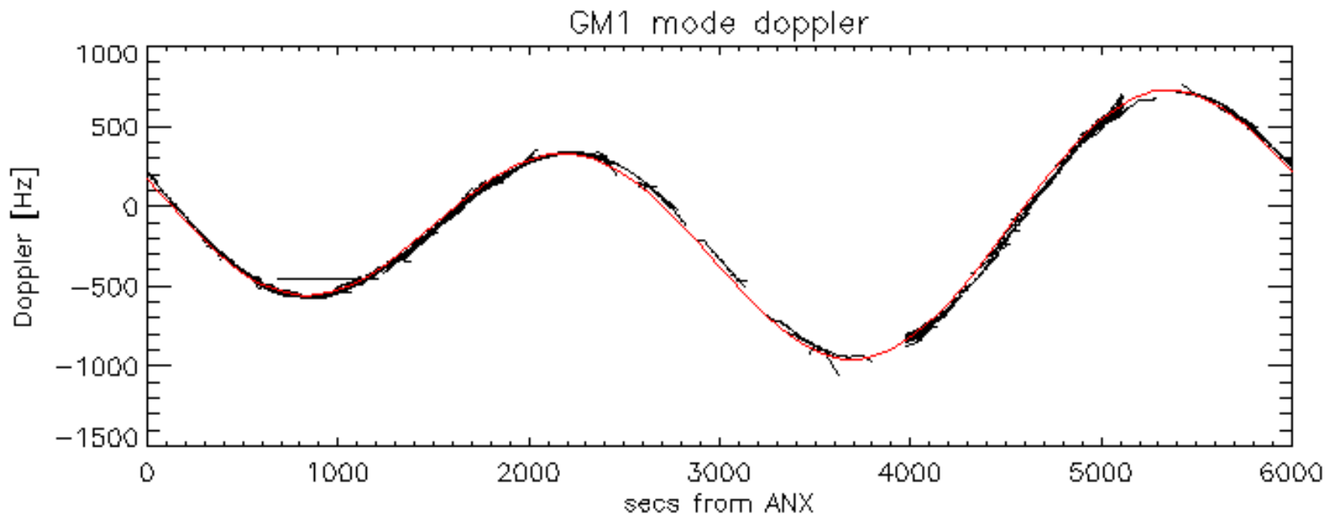
Preliminary report.The data is not yet controled

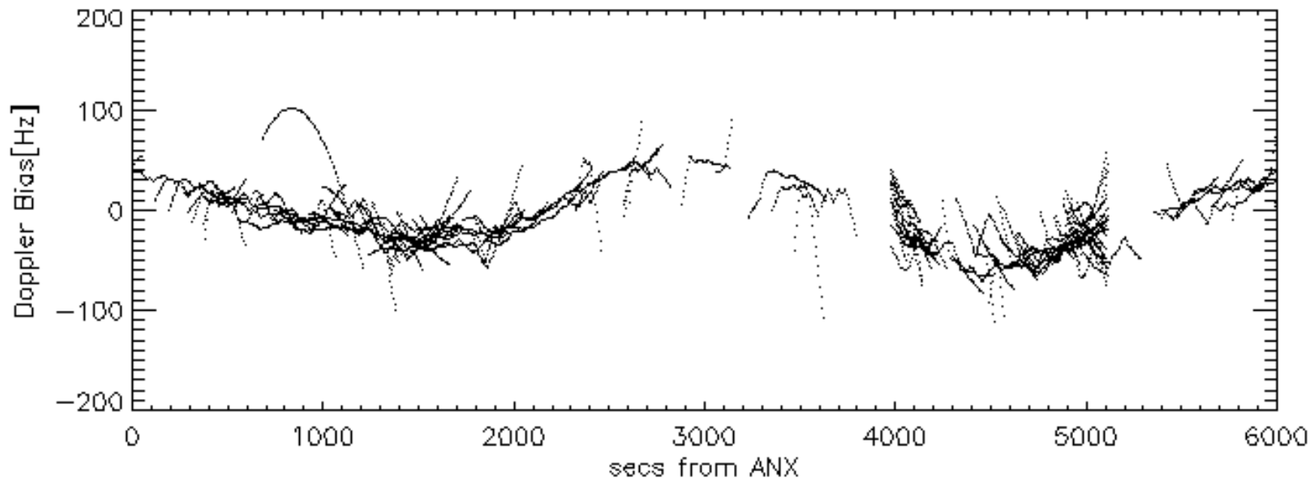

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

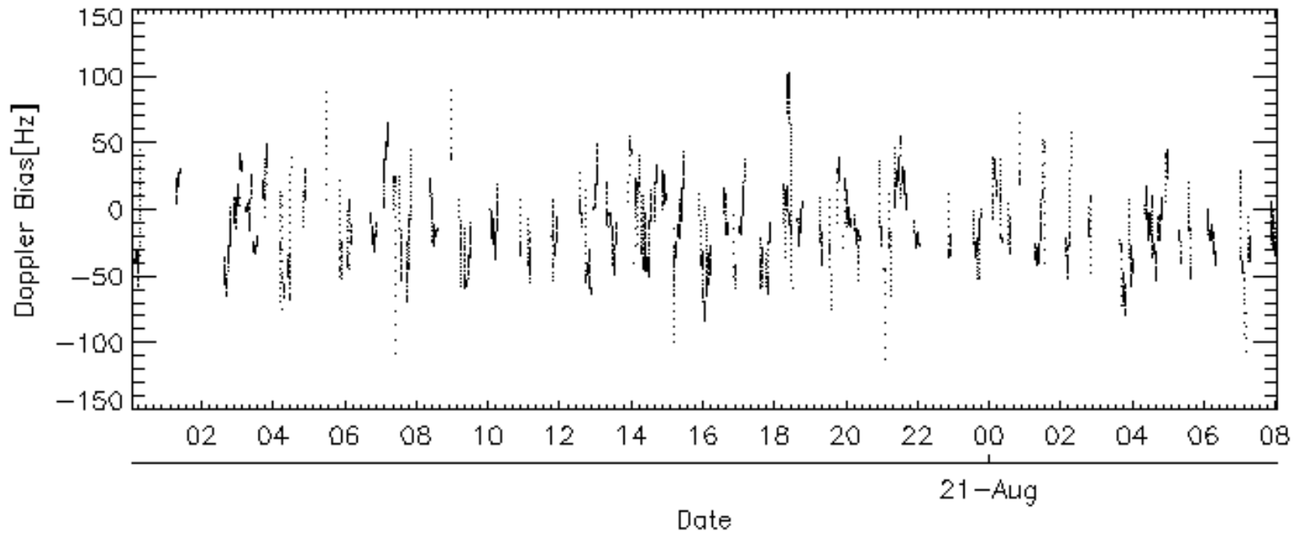

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

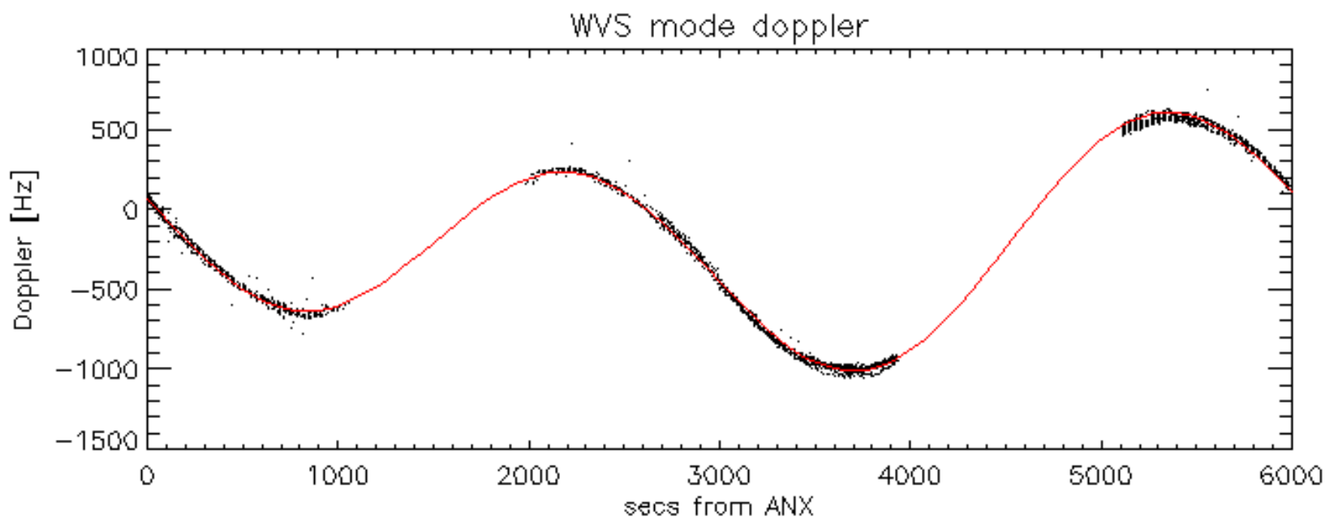

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

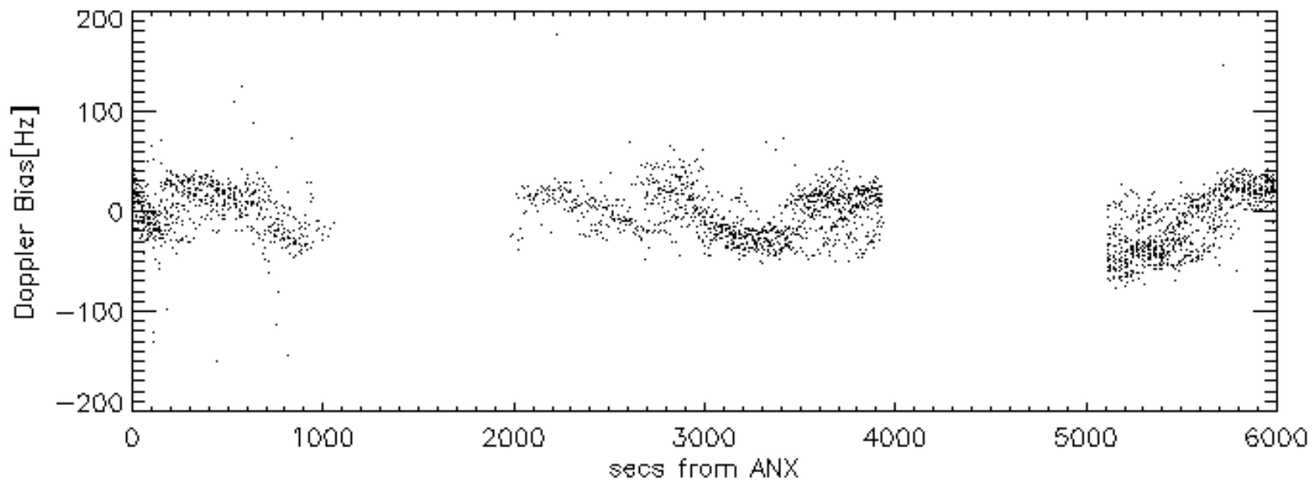

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

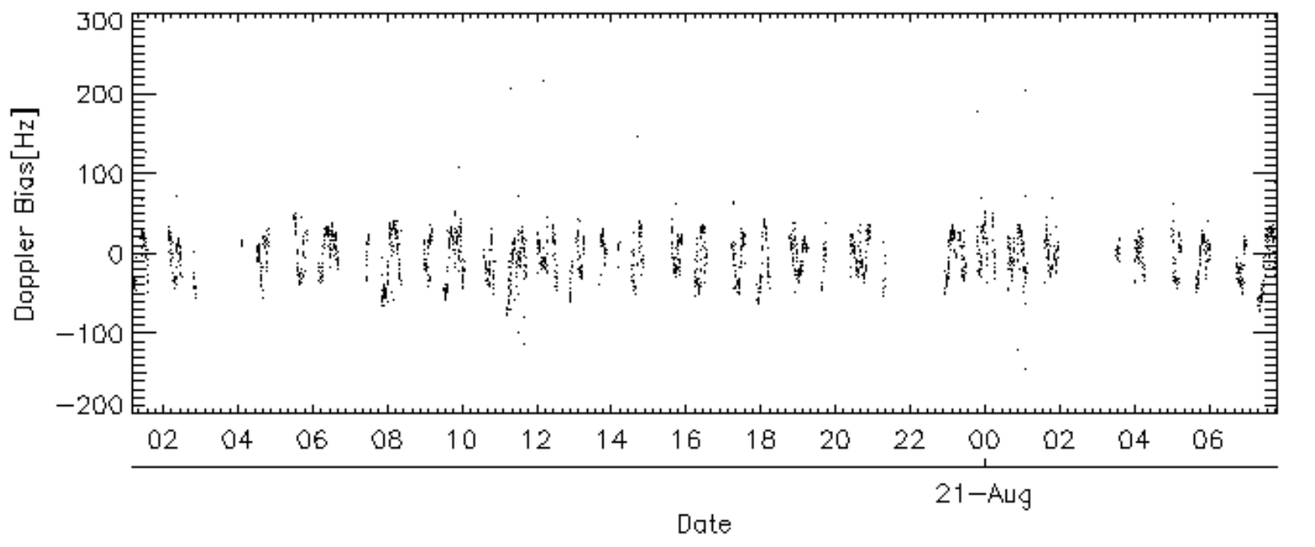

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

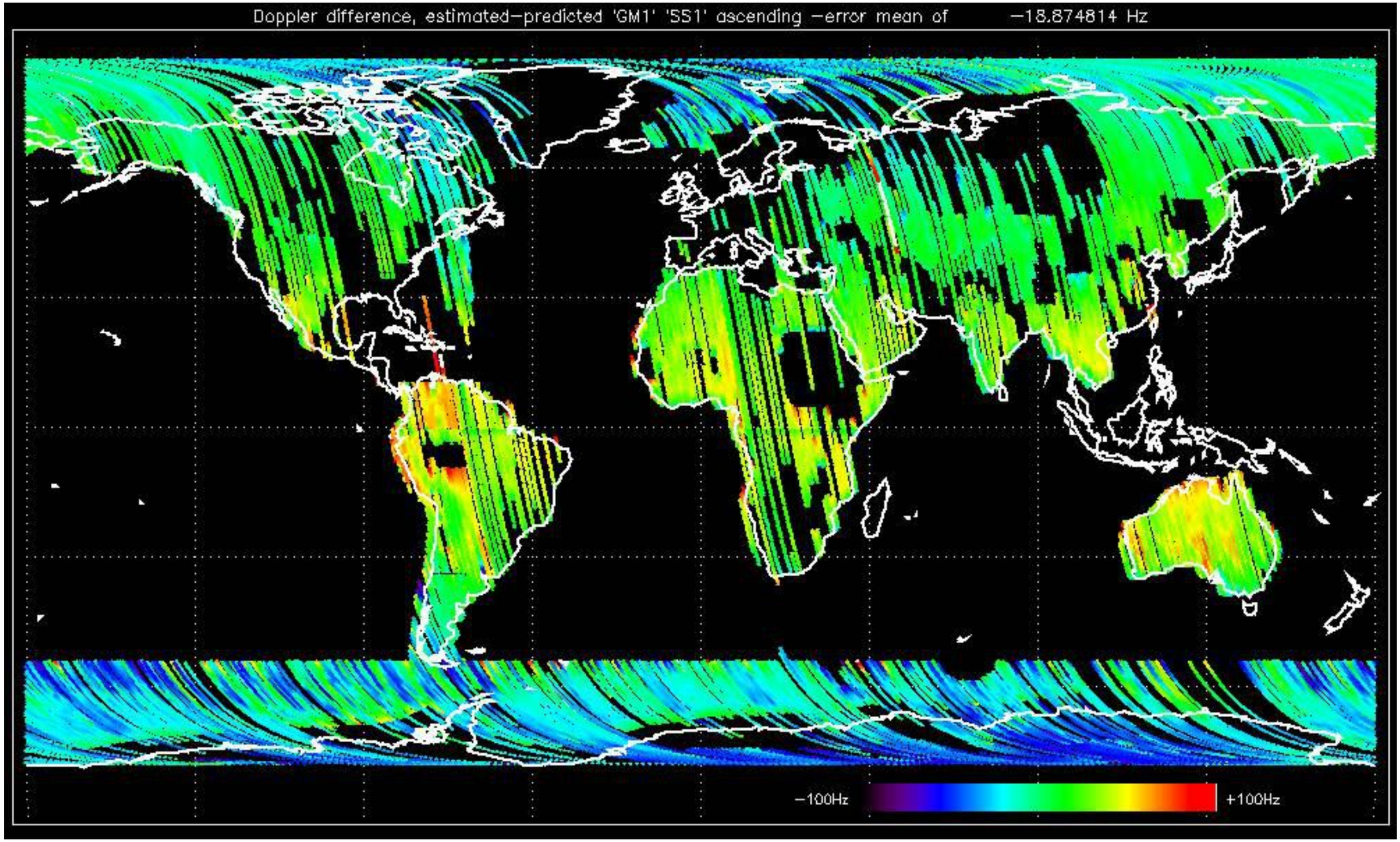

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

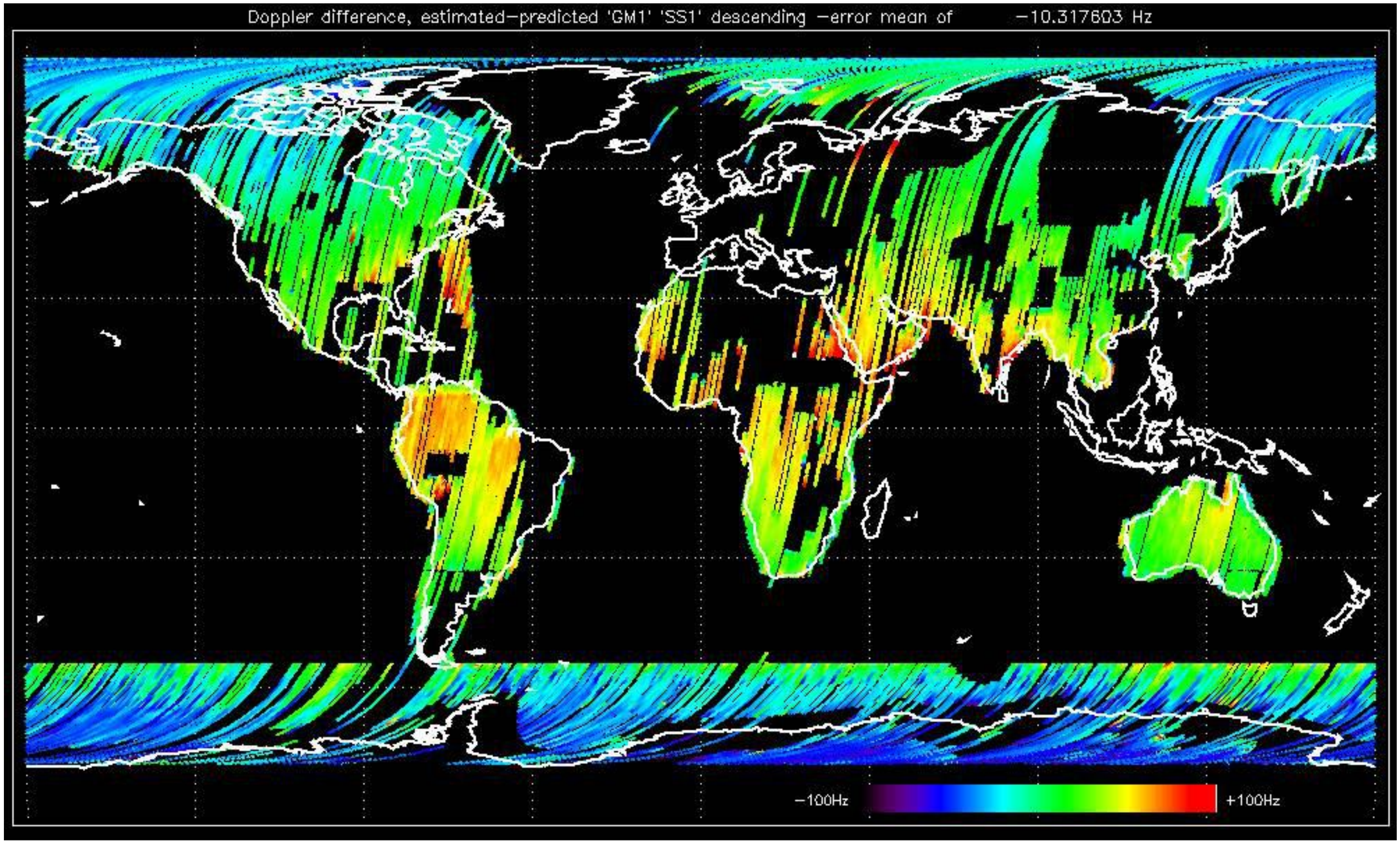

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
21−Aug
Date

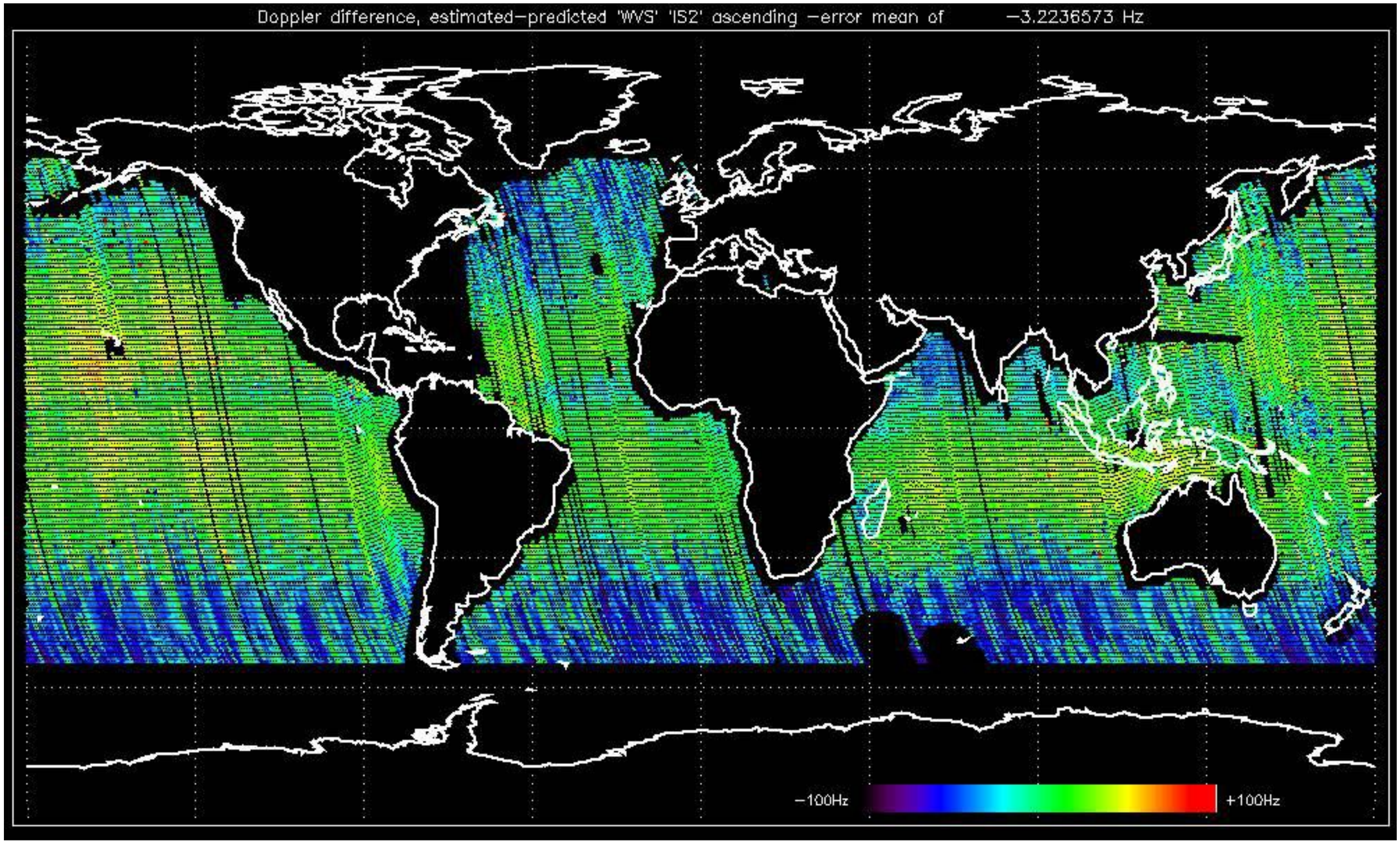

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

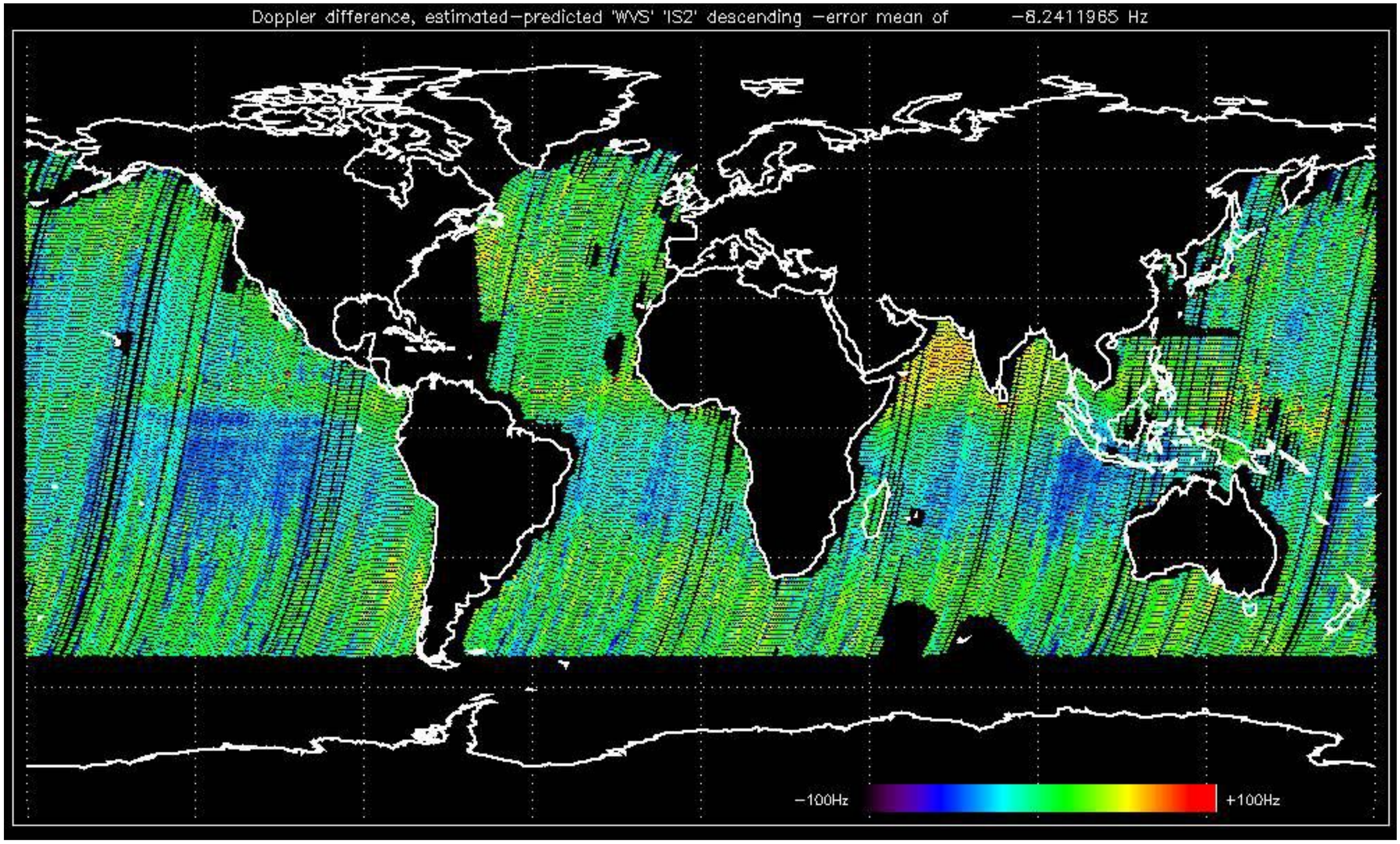

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −18.874814 Hz
−100Hz
+100Hz

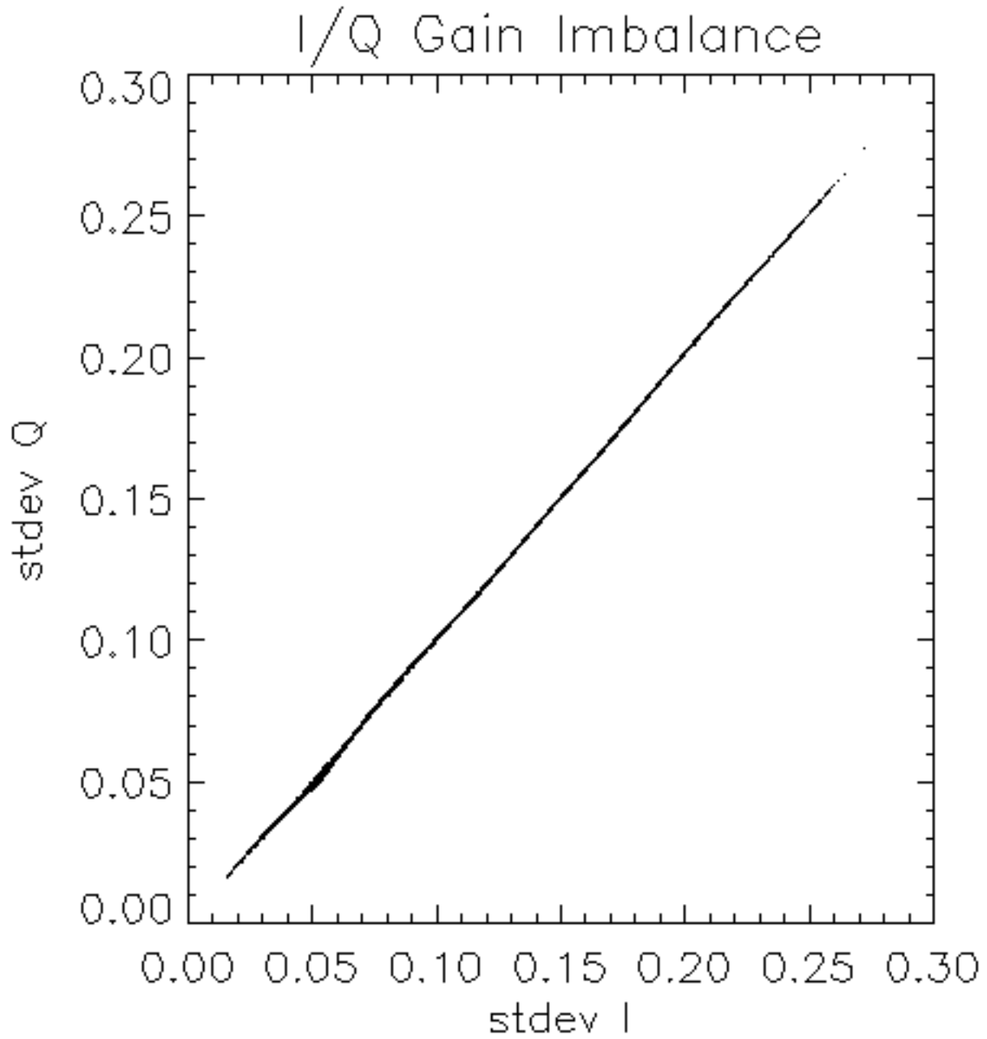

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −10.317603 Hz
−100Hz
+100Hz

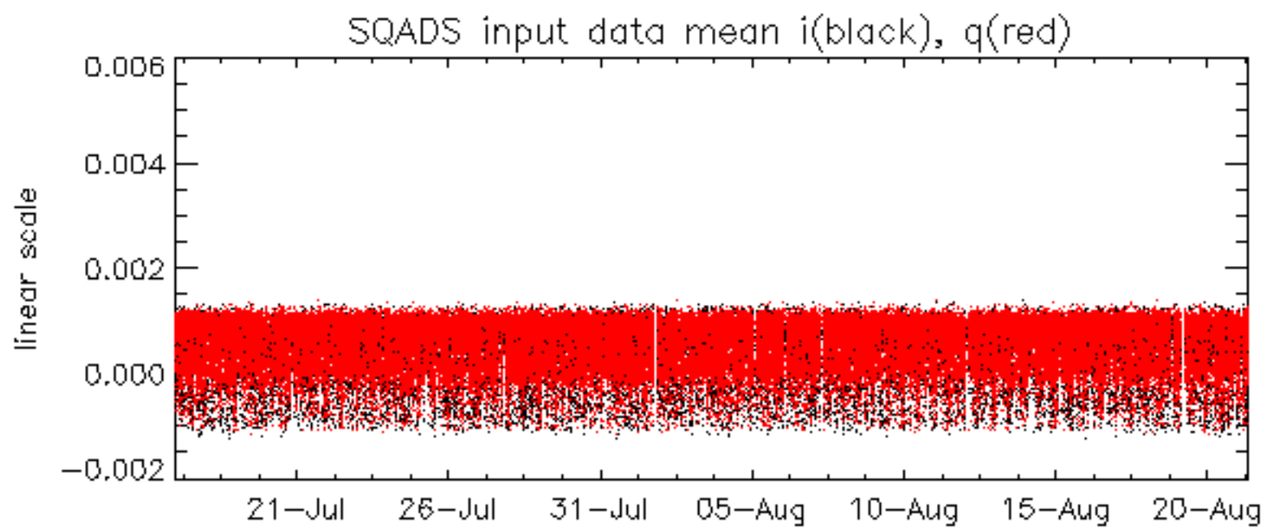

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −3.2236573 Hz
−100Hz
+100Hz

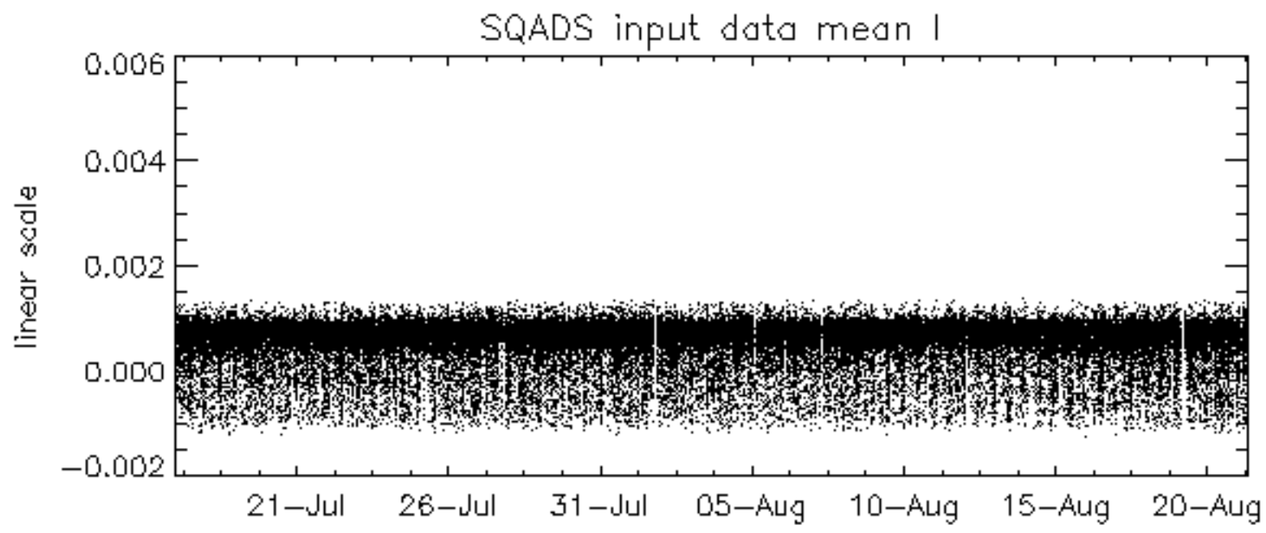

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −8.2411965 Hz
−100Hz
+100Hz

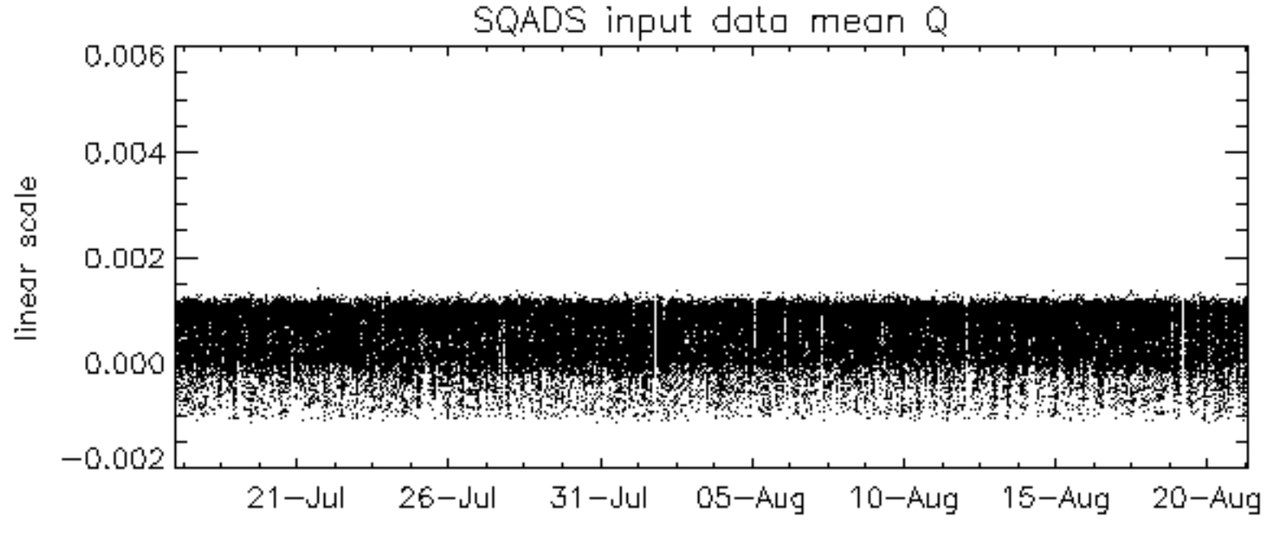
No anomalies observed on available MS products:

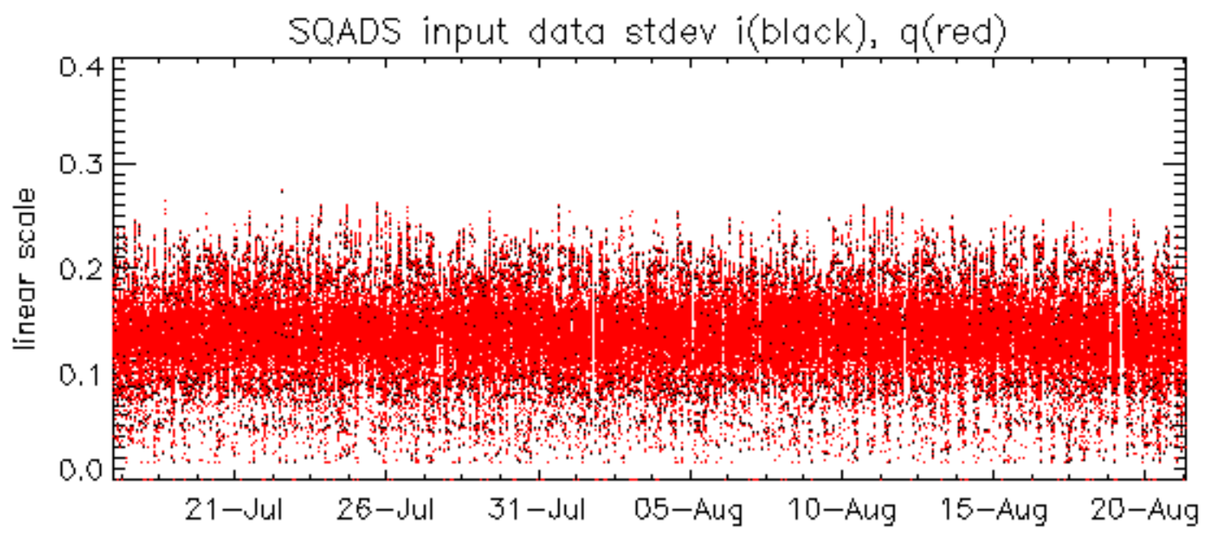
No anomalies observed.

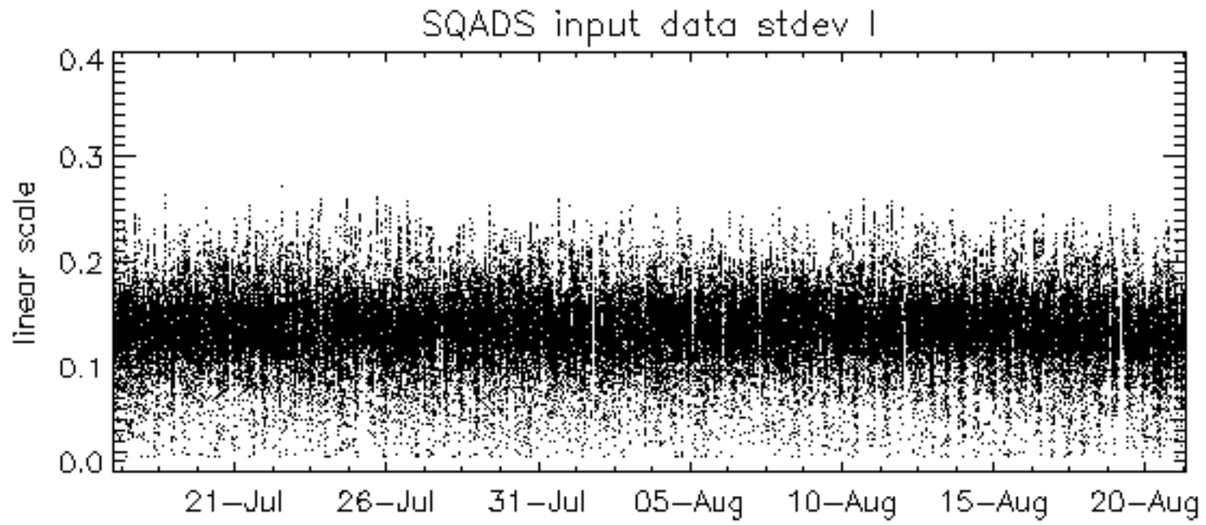

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

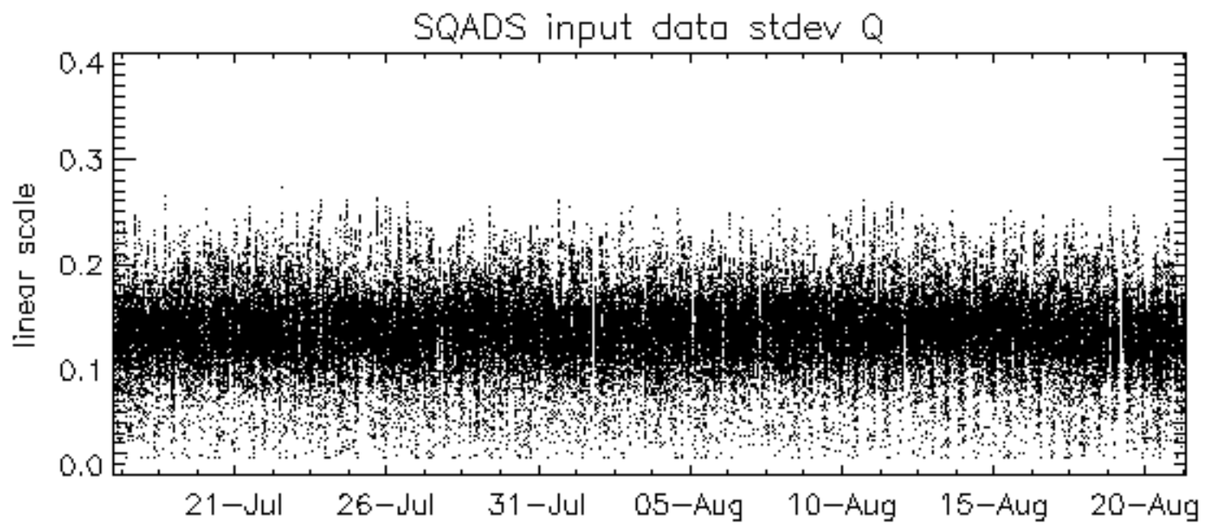

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jul
26−Jul
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug


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


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


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


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


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

Summary of analysis for the last 3 days 2006082[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>
<tr> <td>ASA_IMM_1PNPDE20060820_013600_000001612050_00275_23375_3774.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDE20060821_004801_000000802050_00288_23388_3949.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060820_231435_000000972050_00288_23388_8788.N1 </td> <td>0 </td> <td>56 </td></tr>
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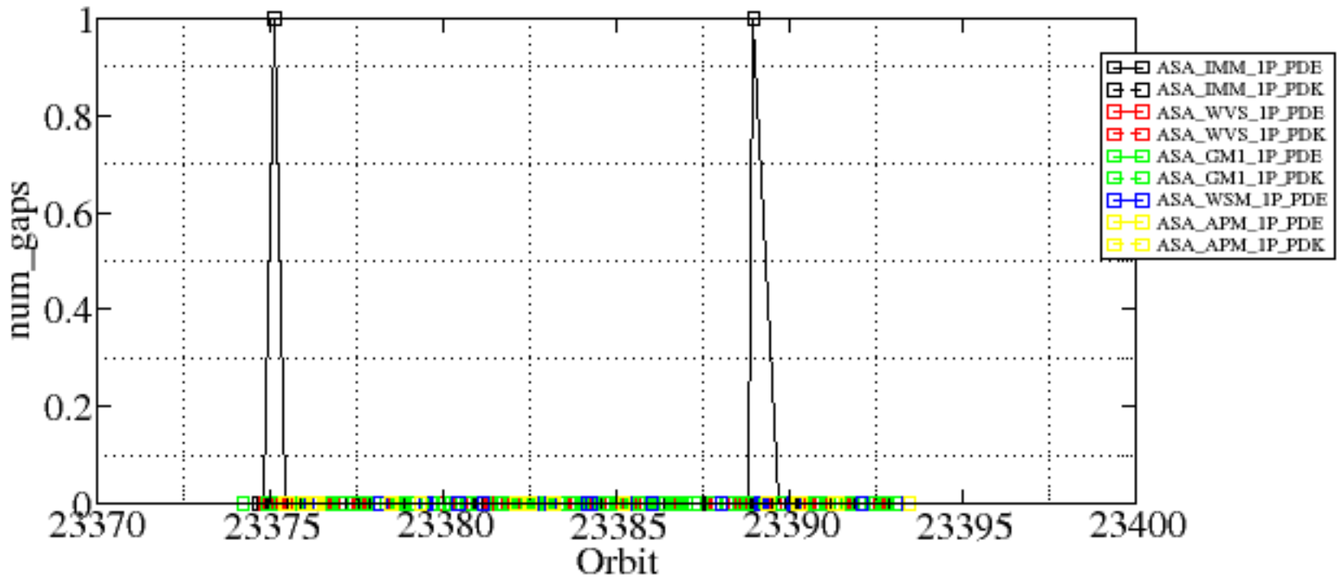
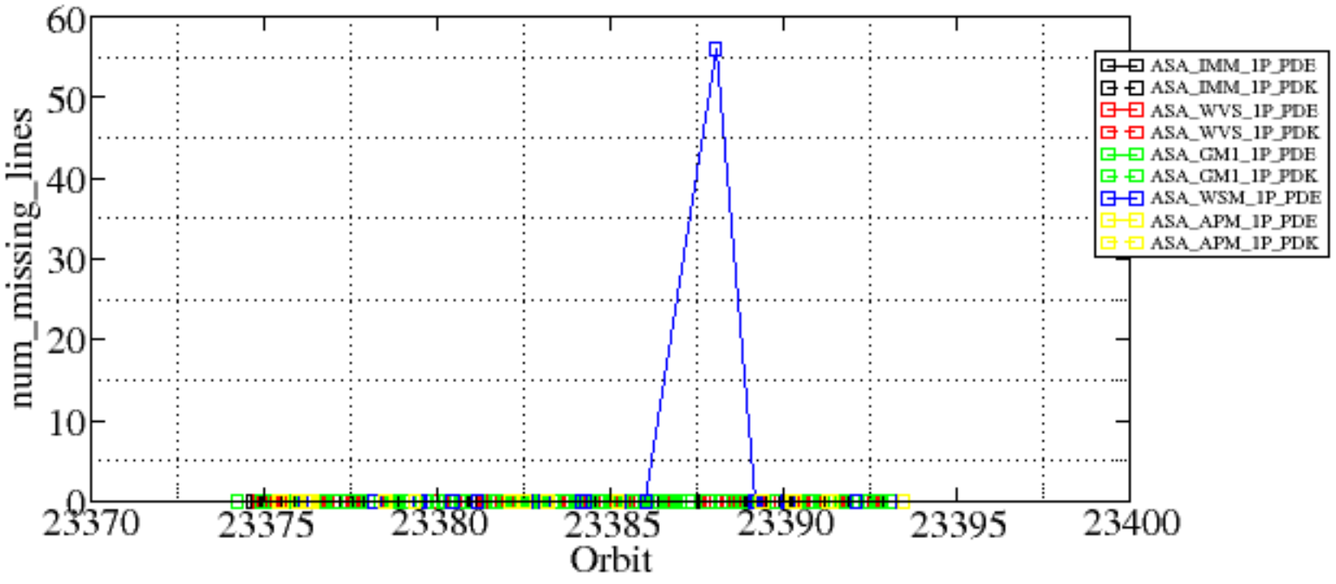
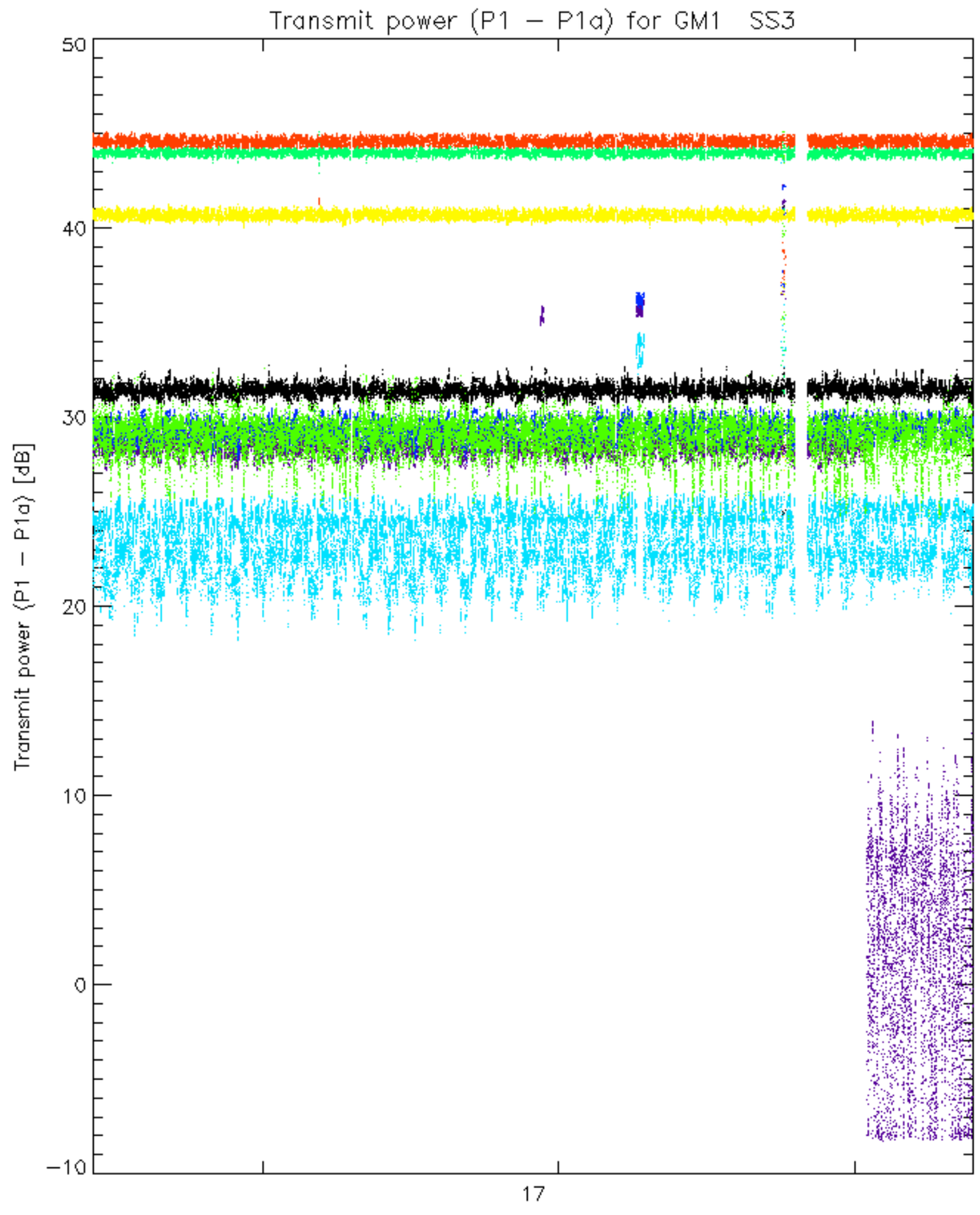
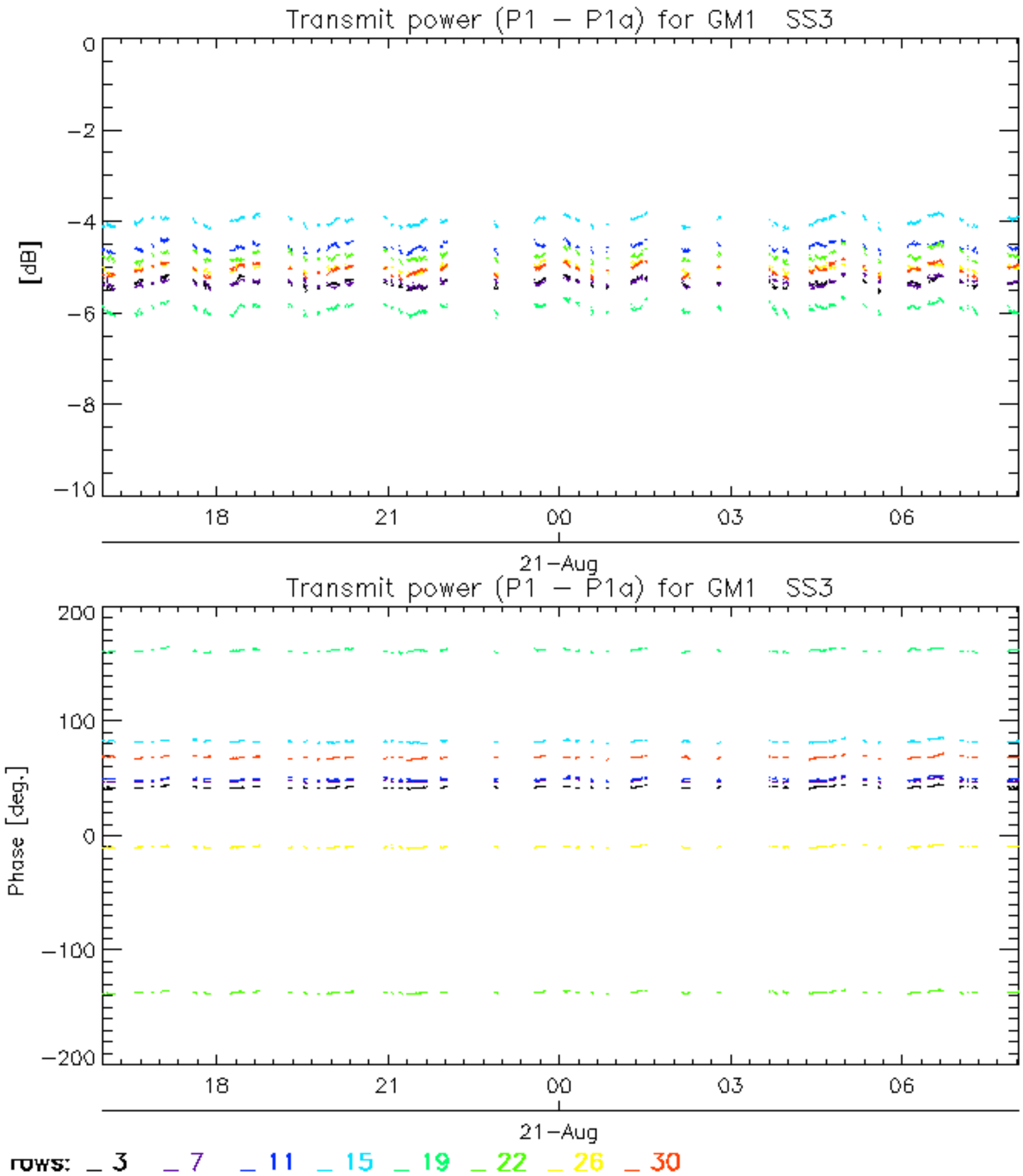
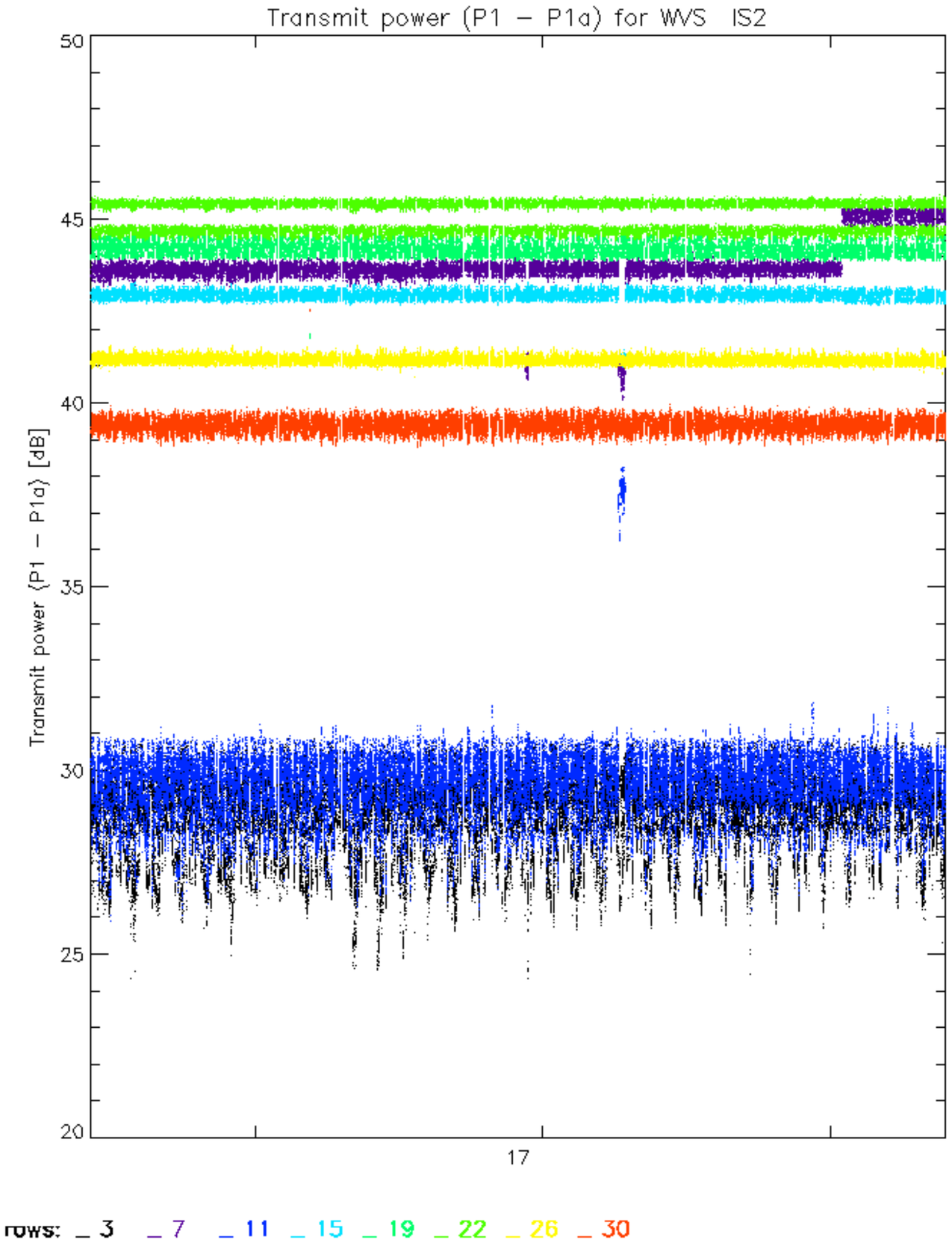
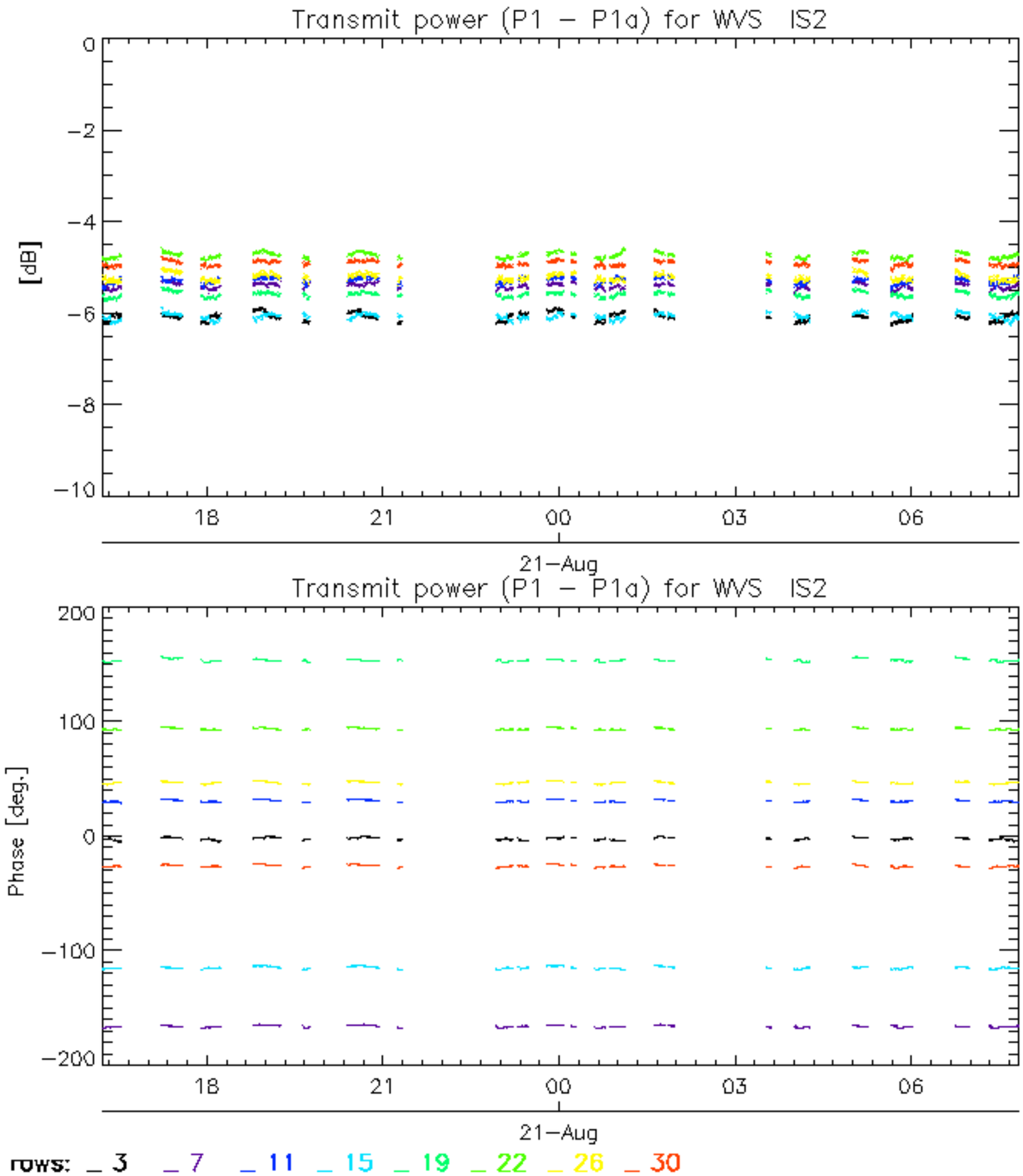

num_gaps
1
0.8
0.6
0.4
0.2
0
23370
23375
23380
23385
23390
23395
23400
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
60
50
40
30
20
10
0
23370
23375
23380
23385
23390
23395
23400
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


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
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
21–Aug
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
21–Aug
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
50
45
40
35
30
25
20
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
21–Aug
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
21–Aug
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.