PRELIMINARY REPORT OF 050901

last update on Thu Sep 1 10:50:01 GMT 2005

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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 2005-08-31 00:00:00 to 2005-09-01 10:50:01

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

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	25	43	9	4	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	25	43	9	4	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	25	43	9	4	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	25	43	9	4	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	39	52	25	11	38
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	39	52	25	11	38
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	39	52	25	11	38
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	39	52	25	11	38

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	-3.302306	0.027419	0.063923
7	P1	-3.174097	0.025122	0.003627
11	P1	-4.724971	0.033842	-0.018073
15	P1	-5.618871	0.051933	-0.029817
19	P1	-3.812364	0.004320	-0.016606
22	P1	-4.616923	0.011782	0.007249
26	P1	-4.825531	0.022835	-0.002904
30	P1	-7.244219	0.026590	-0.078316
3	P1	-15.541823	0.075009	-0.031446
7	P1	-15.549736	0.146819	-0.112415
11	P1	-21.794010	0.355469	-0.031804
15	P1	-11.318187	0.125508	-0.094673
19	P1	-14.513576	0.035674	-0.042343
22	P1	-15.565976	0.335842	0.307663
26	P1	-17.270567	0.177880	0.140046
30	P1	-17.848890	0.300599	-0.104722

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.753609	0.086859	0.134750
7	P2	-21.894218	0.101911	0.163153
11	P2	-13.464914	0.112293	0.196144
15	P2	-7.045728	0.093375	0.043919
19	P2	-9.580061	0.097867	0.039160
22	P2	-16.809484	0.101151	0.052298
26	P2	-16.501097	0.101346	0.029512
30	P2	-18.801052	0.088259	0.004782

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.154910	0.003481	0.008130
7	P3	-8.154910	0.003481	0.008130
11	P3	-8.154910	0.003481	0.008130
15	P3	-8.154910	0.003481	0.008130
19	P3	-8.154910	0.003481	0.008130
22	P3	-8.154910	0.003481	0.008130
26	P3	-8.154913	0.003481	0.008124
30	P3	-8.154913	0.003481	0.008124

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	-2.802621	0.092870	0.091757
7	P1	-2.971433	0.065790	0.065915
11	P1	-4.031381	0.025819	-0.027968
15	P1	-3.635271	0.062905	0.014908
19	P1	-3.630999	0.014158	-0.004003
22	P1	-5.703348	0.042007	-0.054368
26	P1	-7.363448	0.030102	0.014163
30	P1	-6.297729	0.072002	0.044351
3	P1	-10.947500	0.052265	-0.032168
7	P1	-10.485185	0.168924	-0.024277
11	P1	-12.657289	0.099494	-0.026213
15	P1	-11.626531	0.120934	-0.131537
19	P1	-15.468155	0.056520	0.052414
22	P1	-25.458794	2.063221	0.497475
26	P1	-15.214513	0.243370	0.221720
30	P1	-20.079779	1.332837	-0.023465

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.467337	0.048550	0.166202
7	P2	-21.992336	0.036207	0.082985
11	P2	-9.511548	0.068335	0.186243
15	P2	-5.084462	0.038856	0.048848
19	P2	-6.854687	0.059866	0.076929
22	P2	-7.032366	0.041312	0.056284
26	P2	-23.953148	0.036224	0.039478
30	P2	-21.934111	0.043001	0.041321

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.998580	0.004292	-0.000589
7	P3	-7.998583	0.004285	-0.000802
11	P3	-7.998535	0.004285	-0.000659
15	P3	-7.998479	0.004294	-0.000900
19	P3	-7.998604	0.004287	-0.000705
22	P3	-7.998568	0.004289	-0.000669
26	P3	-7.998425	0.004287	-0.000583
30	P3	-7.998405	0.004284	-0.000441

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	0.000437750
	stdev	2.31046e-07
MEAN Q	mean	0.000469630
	stdev	2.39741e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126575
	stdev	0.000991892
STDEV Q	mean	0.126827
	stdev	0.00100094

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005083[011]
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_1PNPDE20050830_163553_000000842040_00212_18302_4094.N1	1	0
ASA_WSM_1PNPDE20050830_222940_000002852040_00216_18306_6643.N1	0	2

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

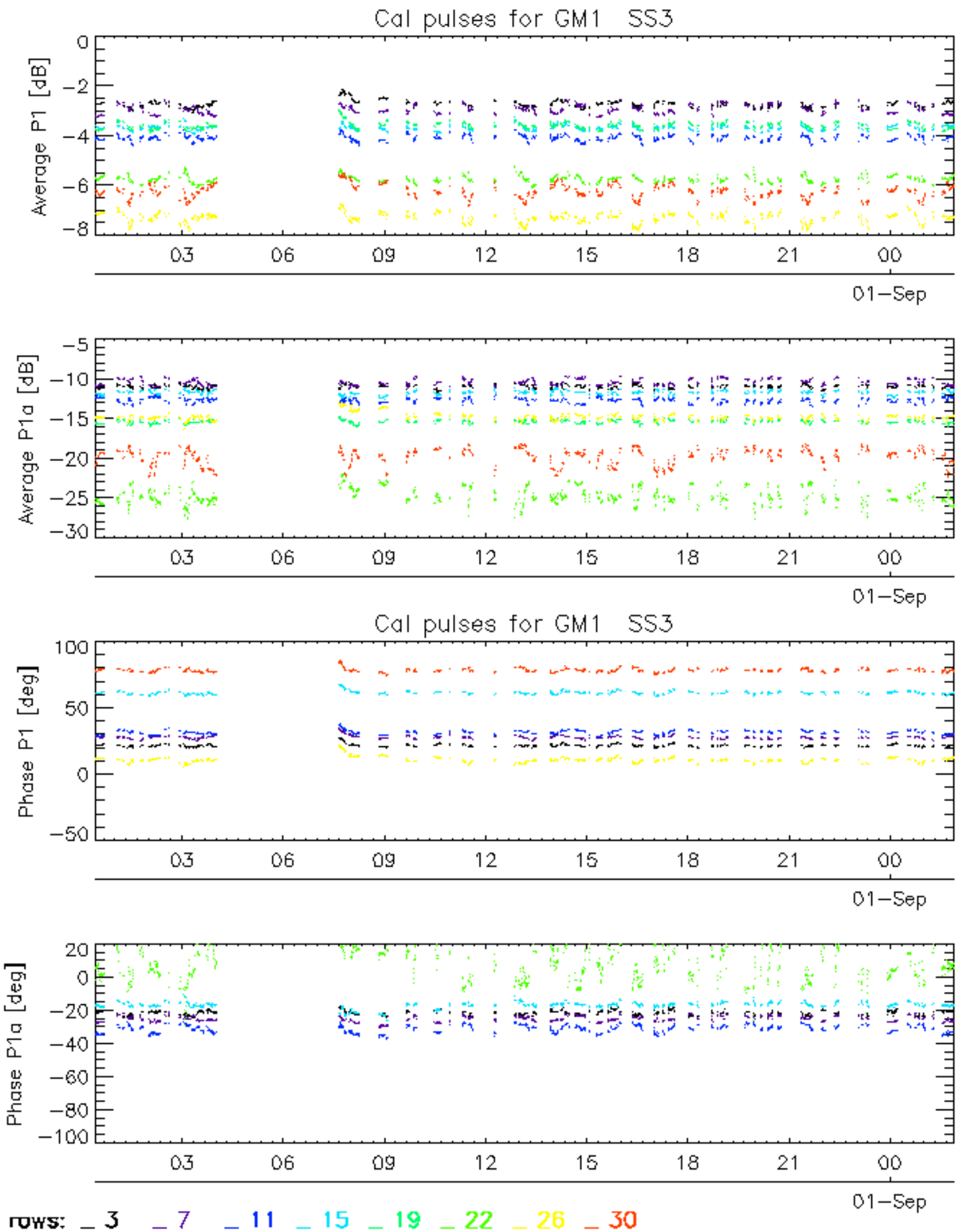
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

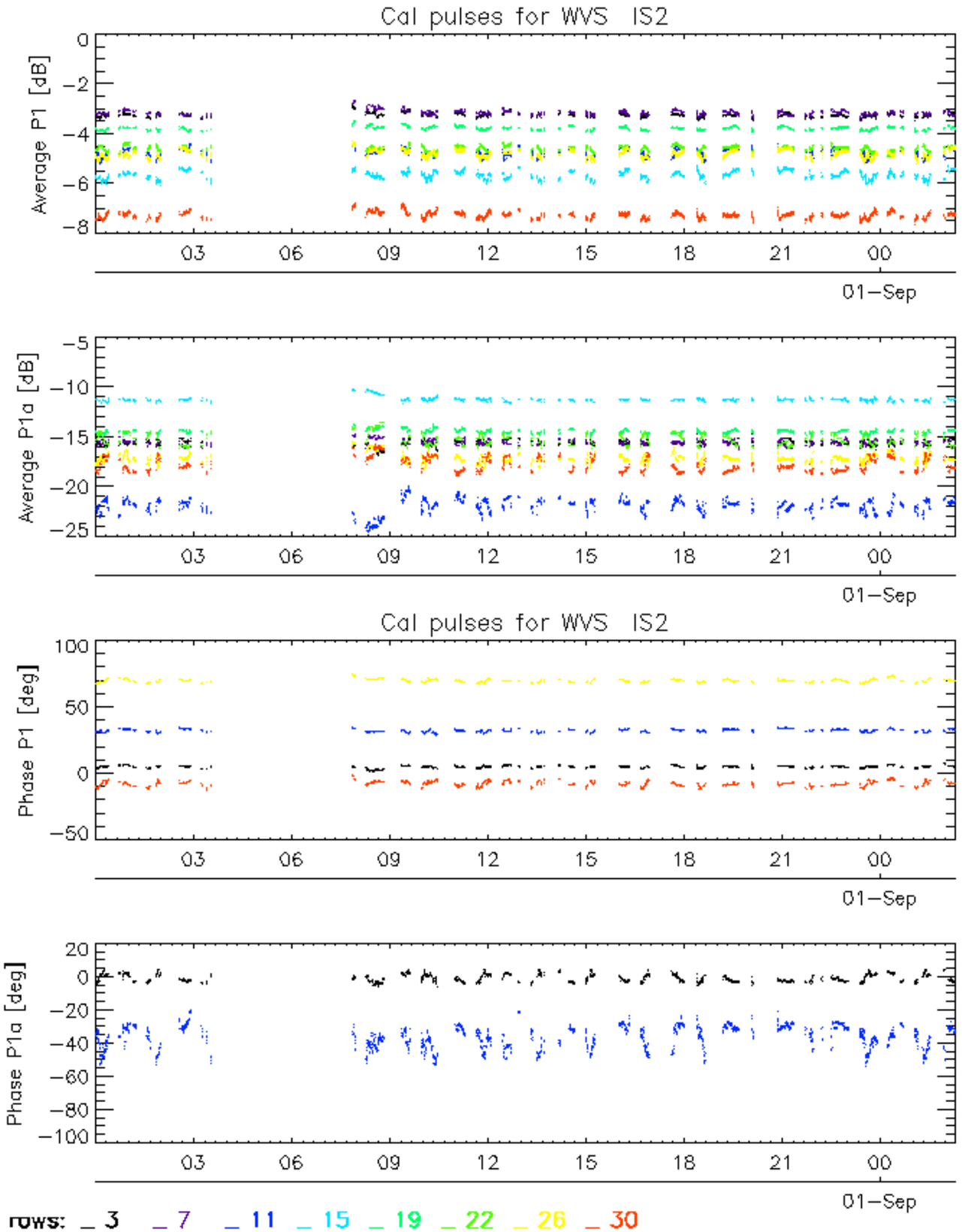
7.5 - Absolute Doppler for GM1

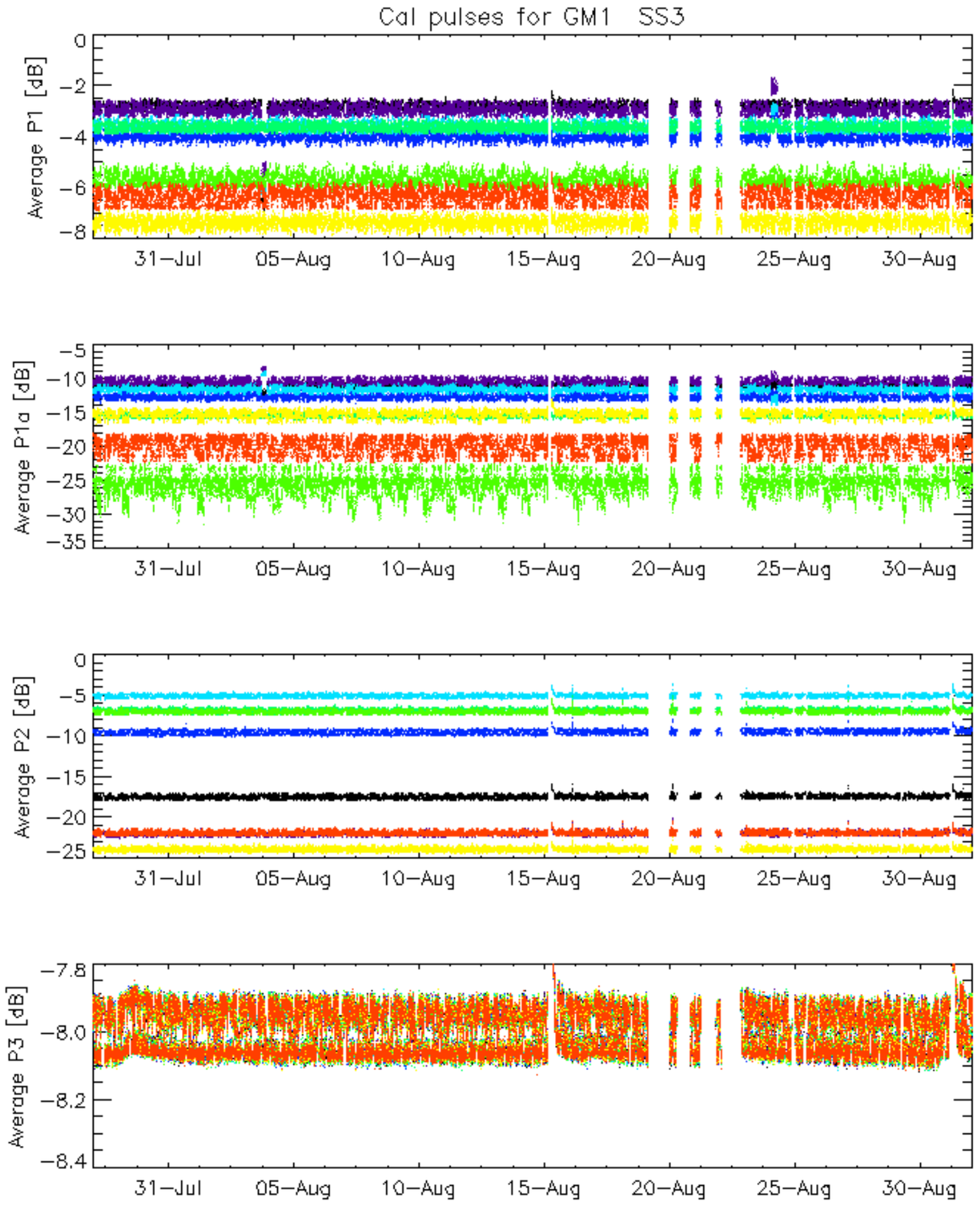
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

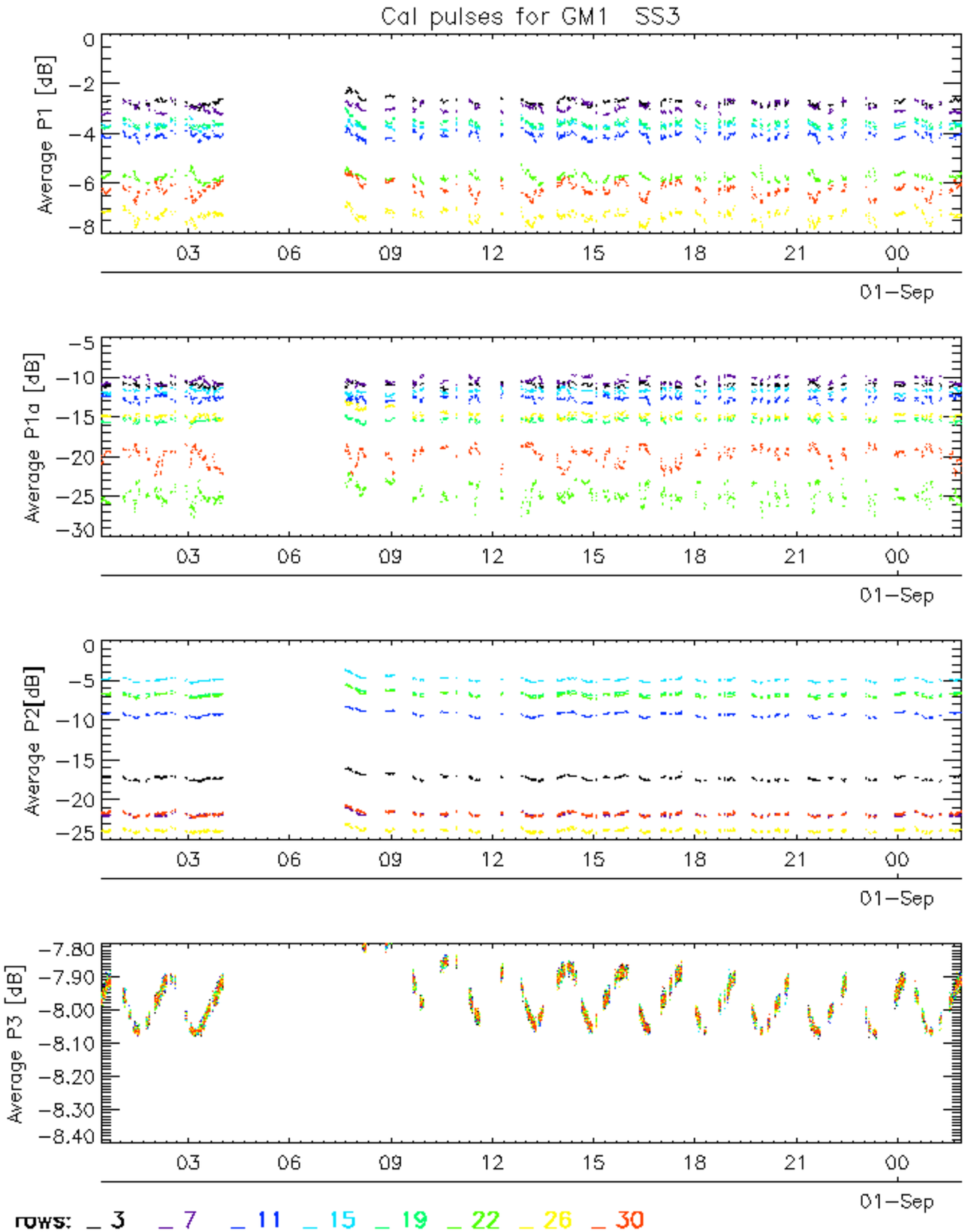
7.6 - Doppler evolution versus ANX for GM1

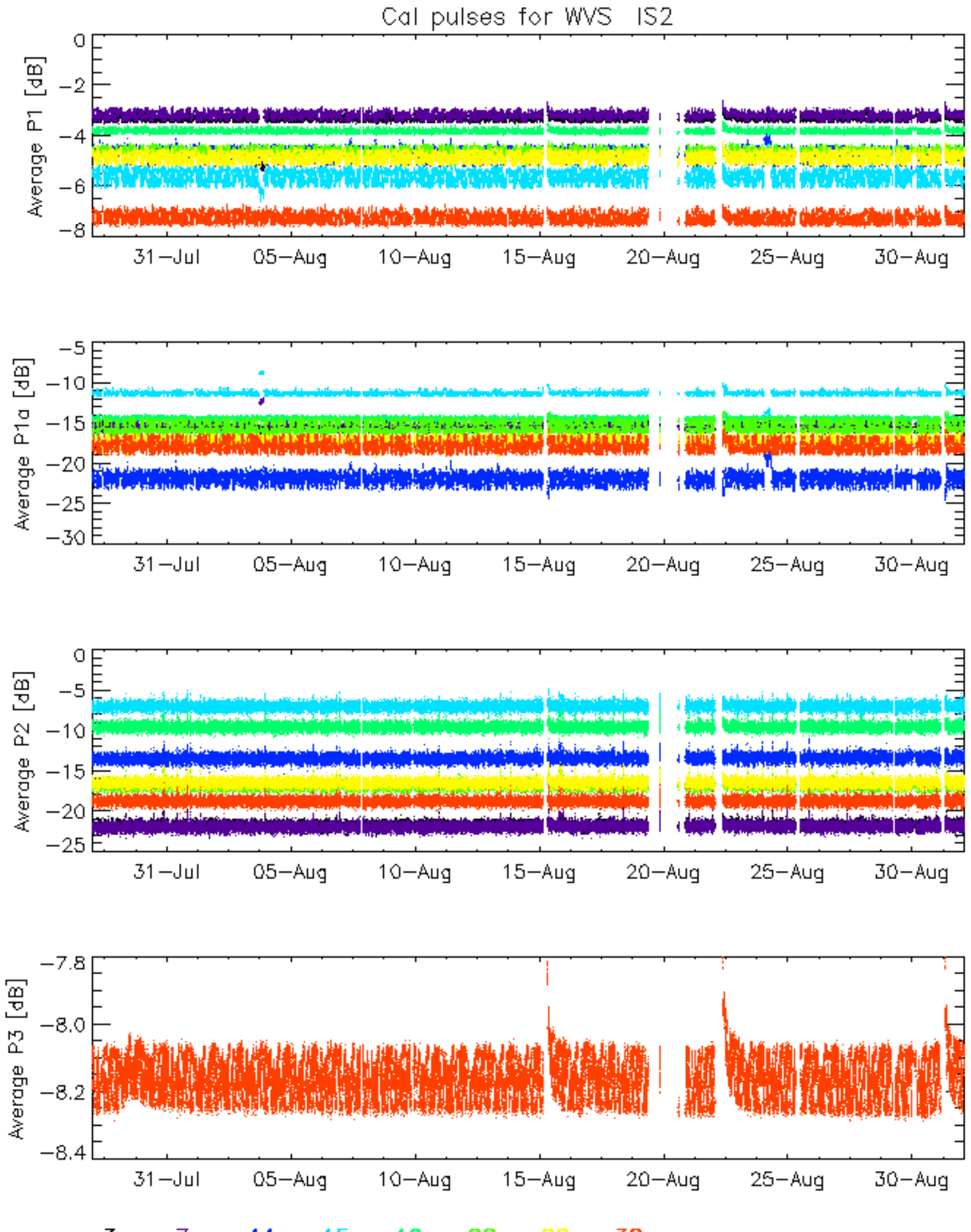
Evolution Doppler error versus ANX
☒

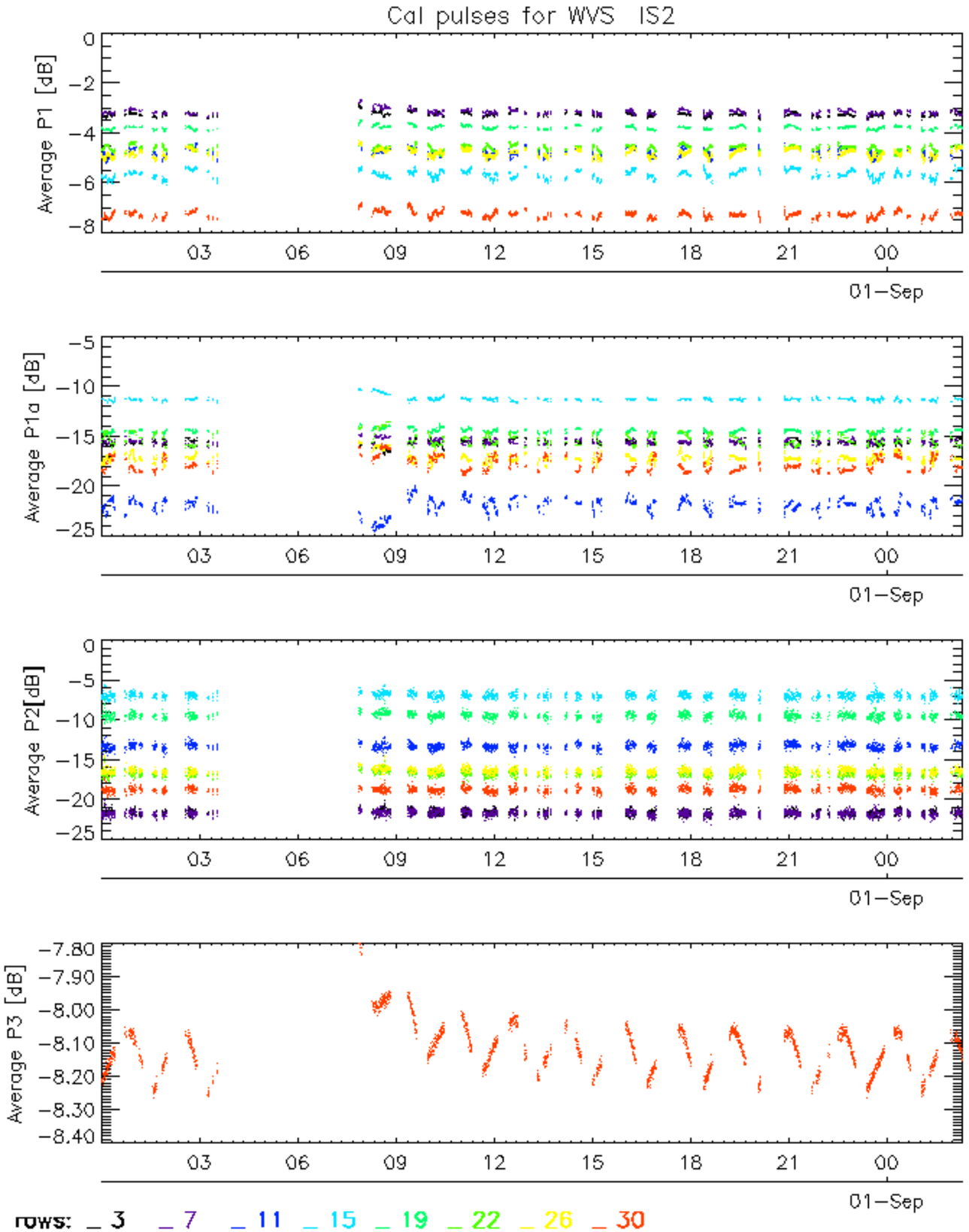

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
01−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
−100
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
01−Sep
Average P1a [dB]
−5
−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

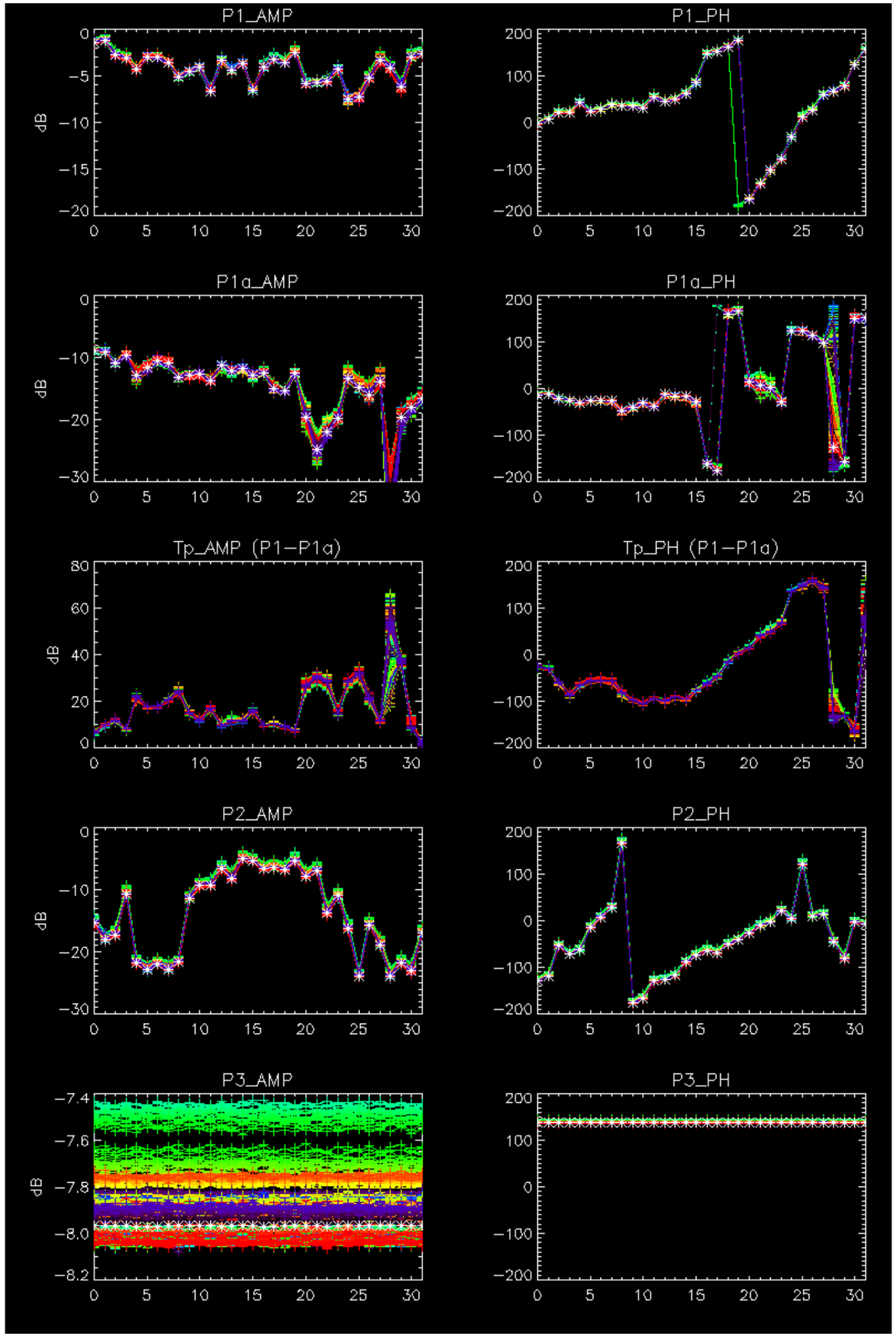

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

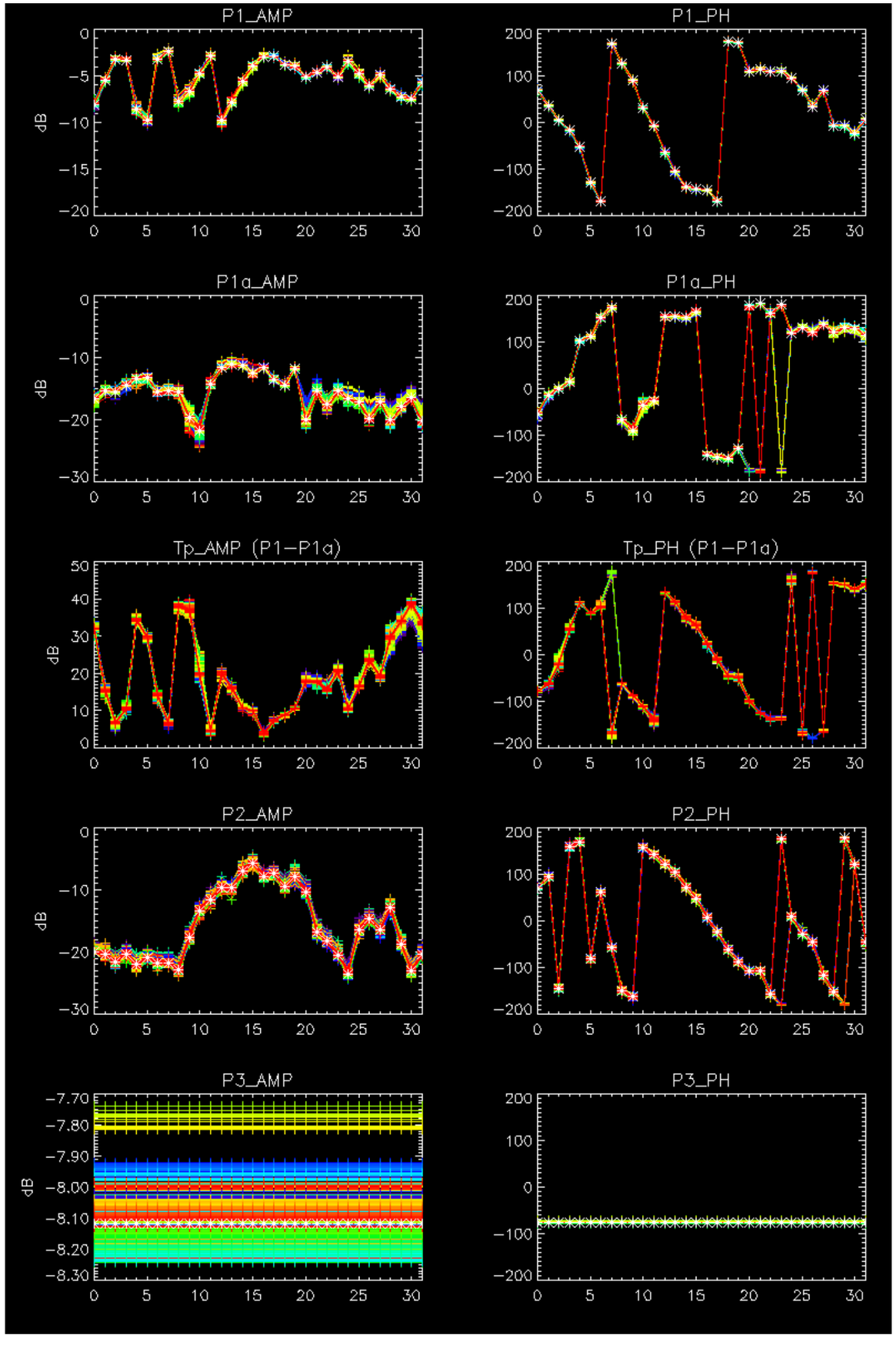

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
01−Sep
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Jul
05−Aug
10−Aug
15−Aug
20−Aug
25−Aug
30−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
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
01−Sep
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

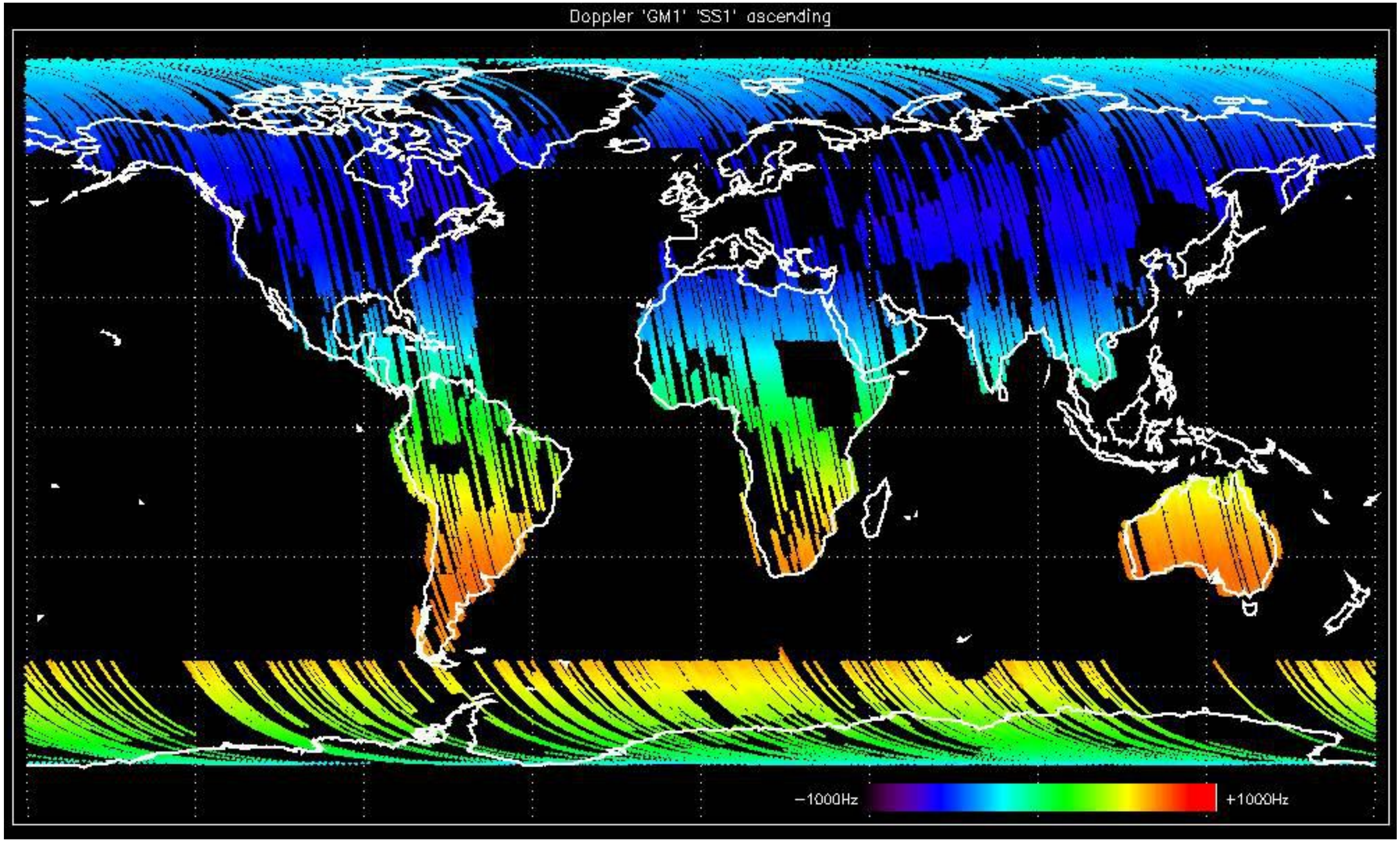
No anomalies observed.

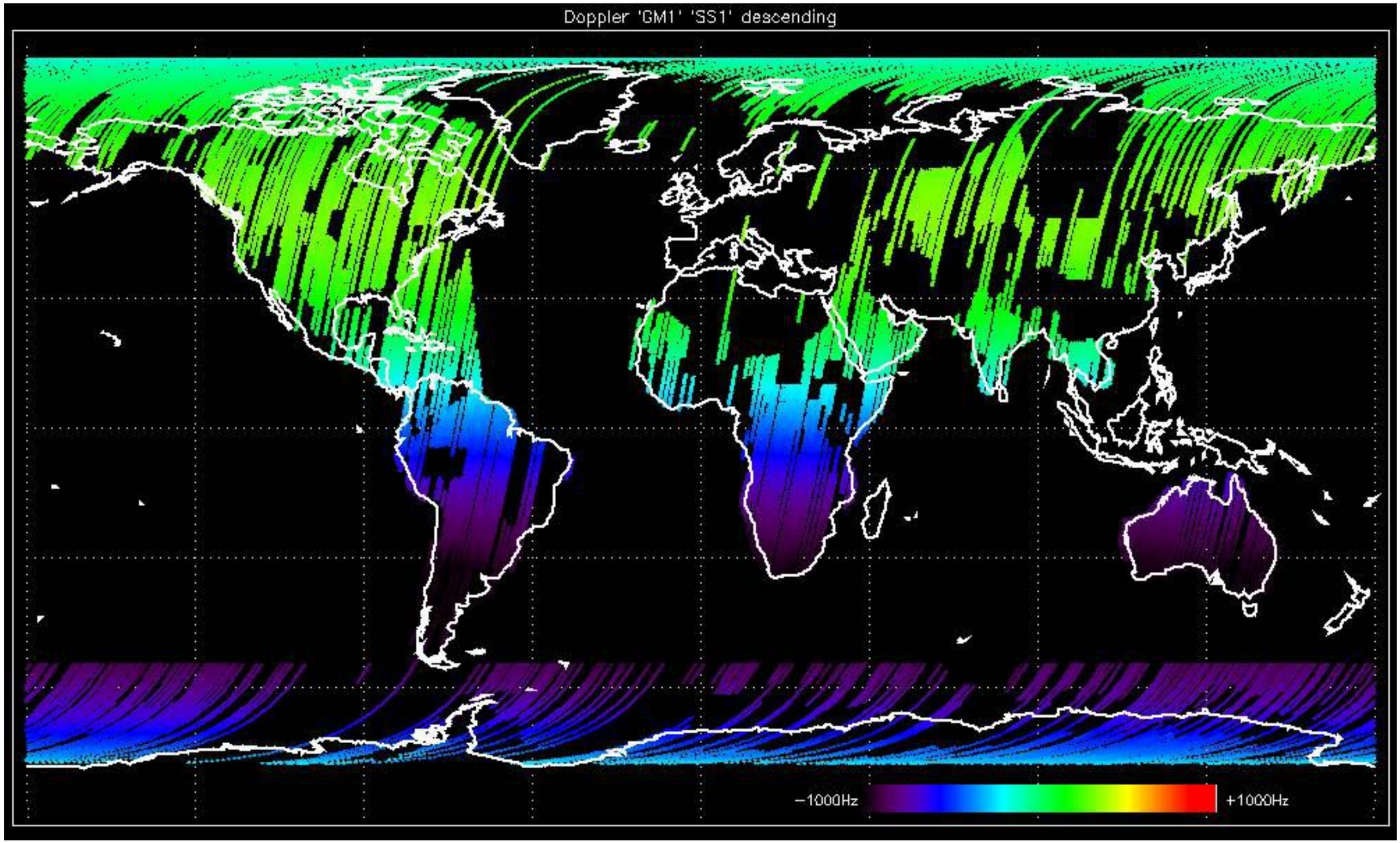

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

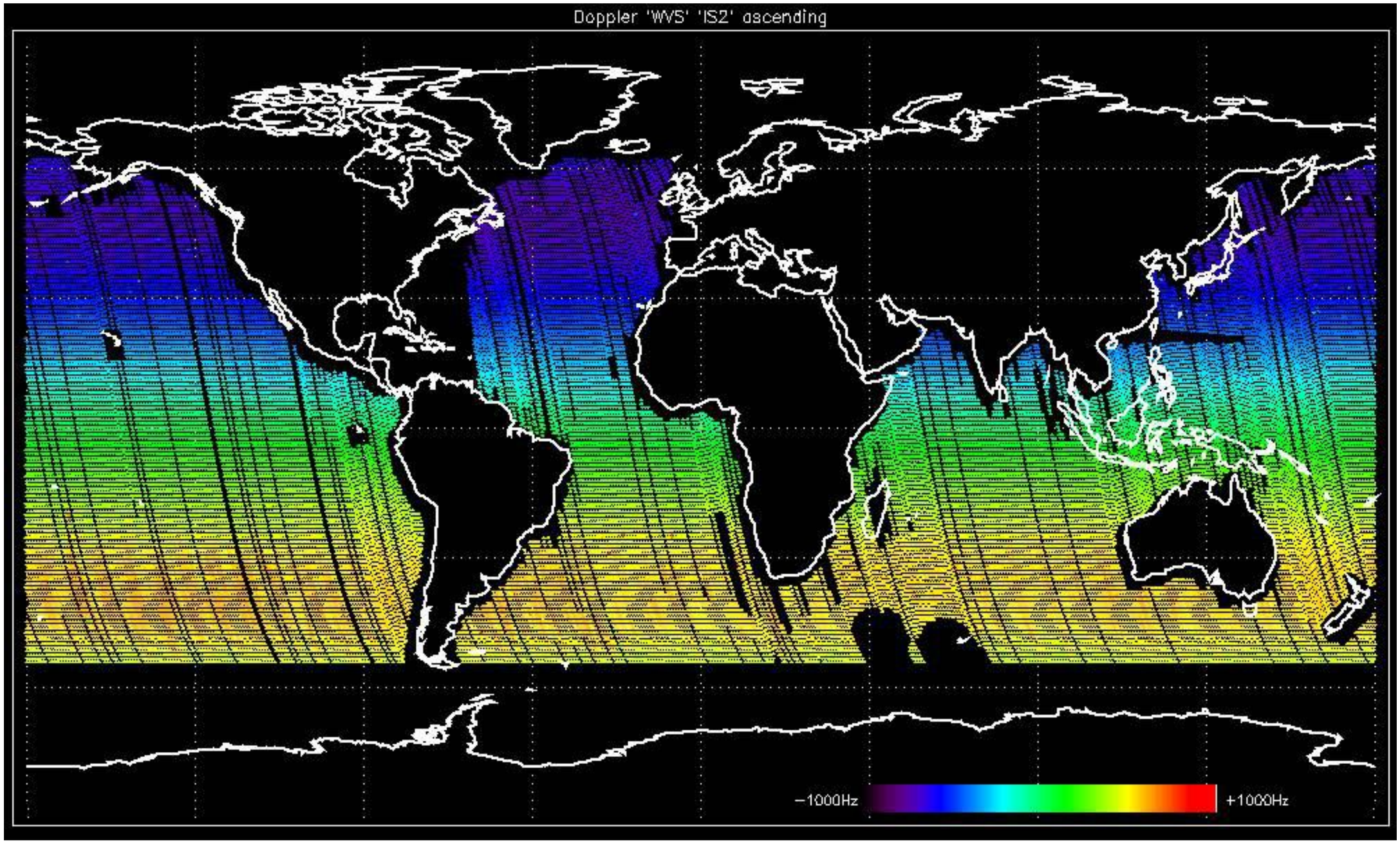

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

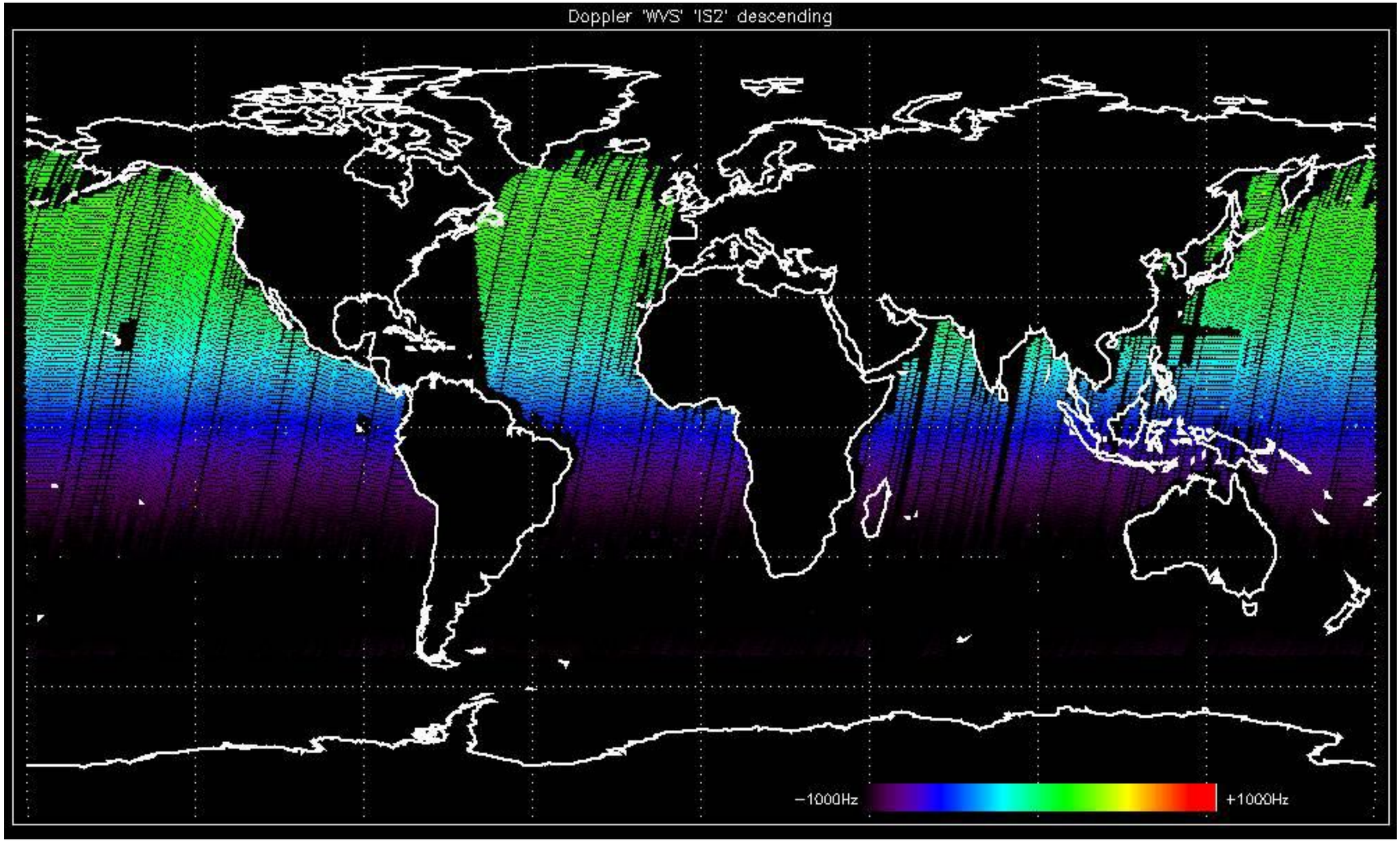
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

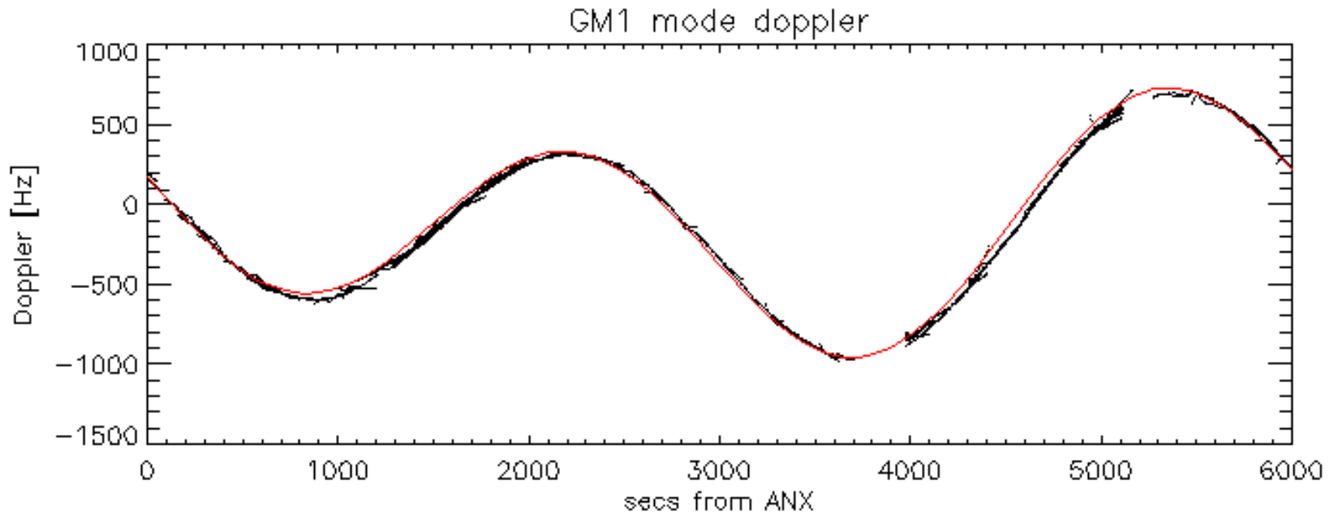
Preliminary report.The data is not yet controled

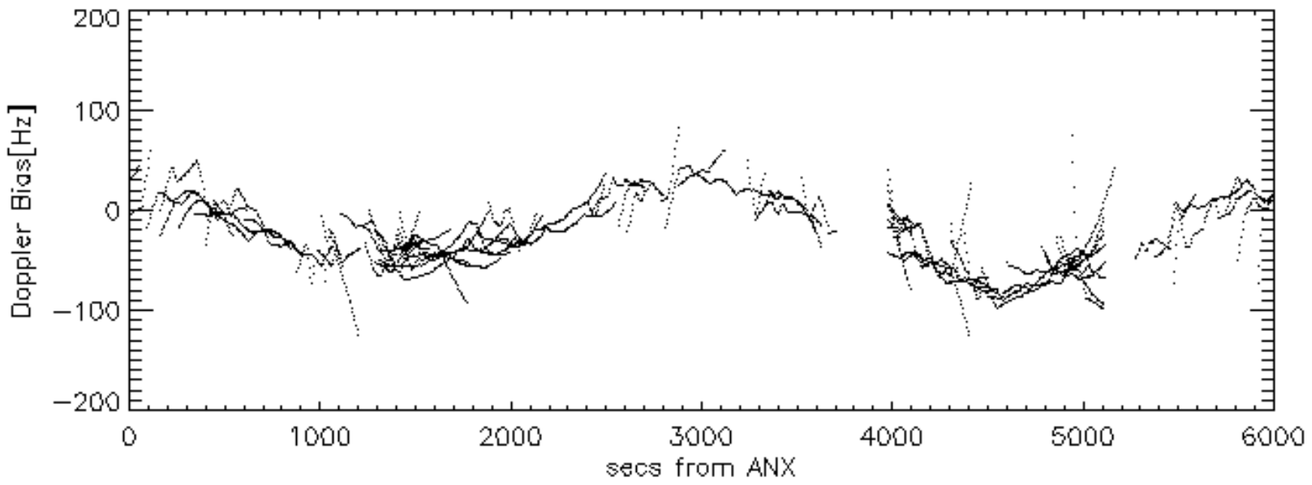

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

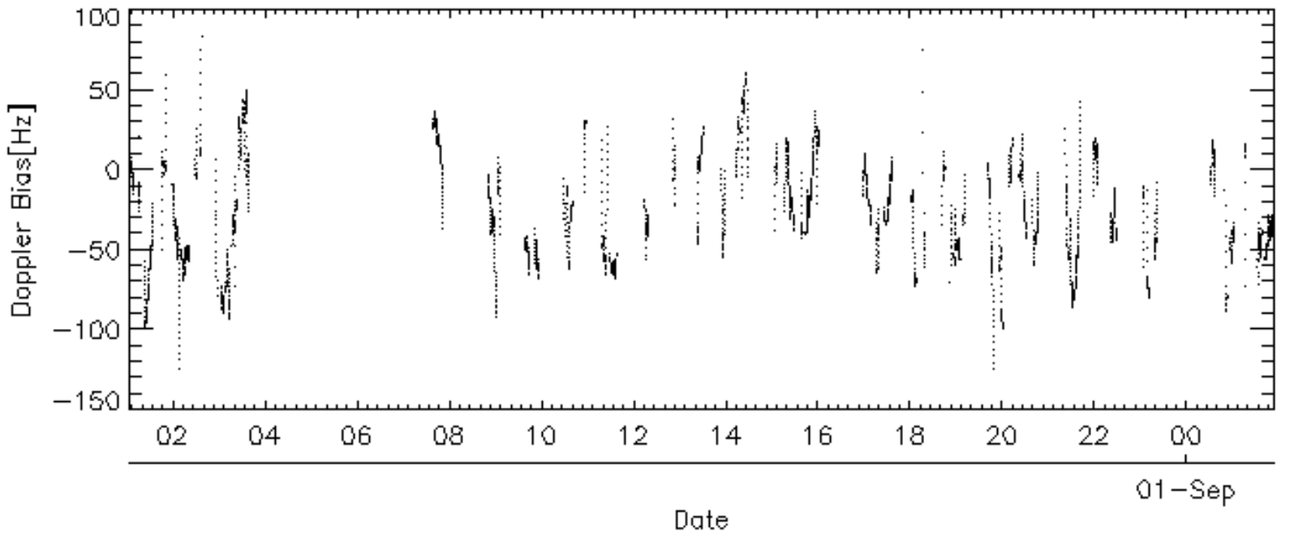

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

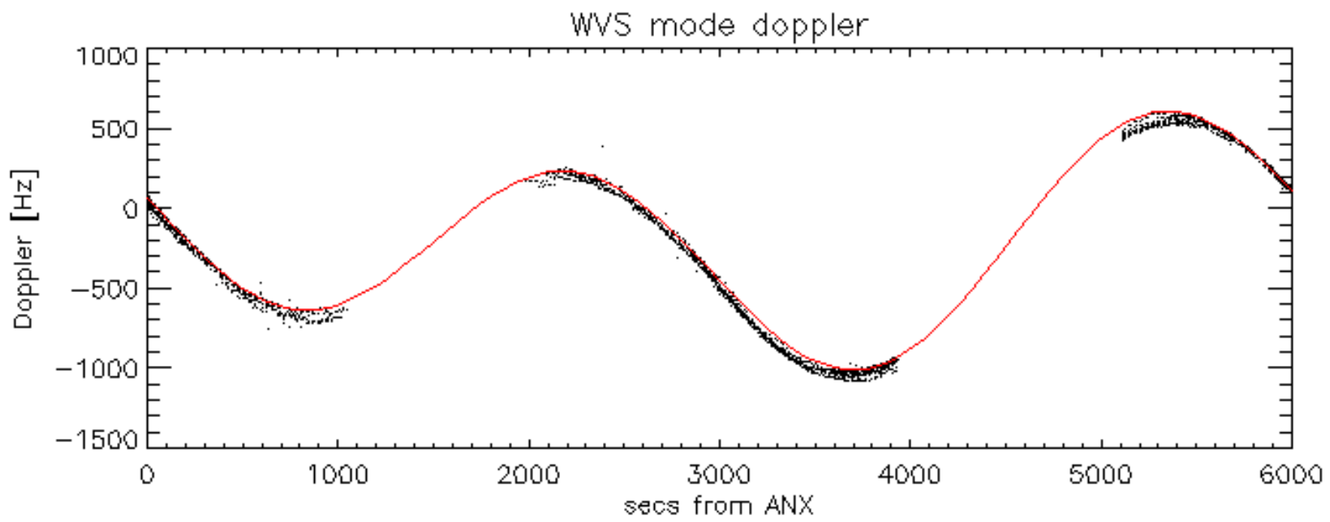

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

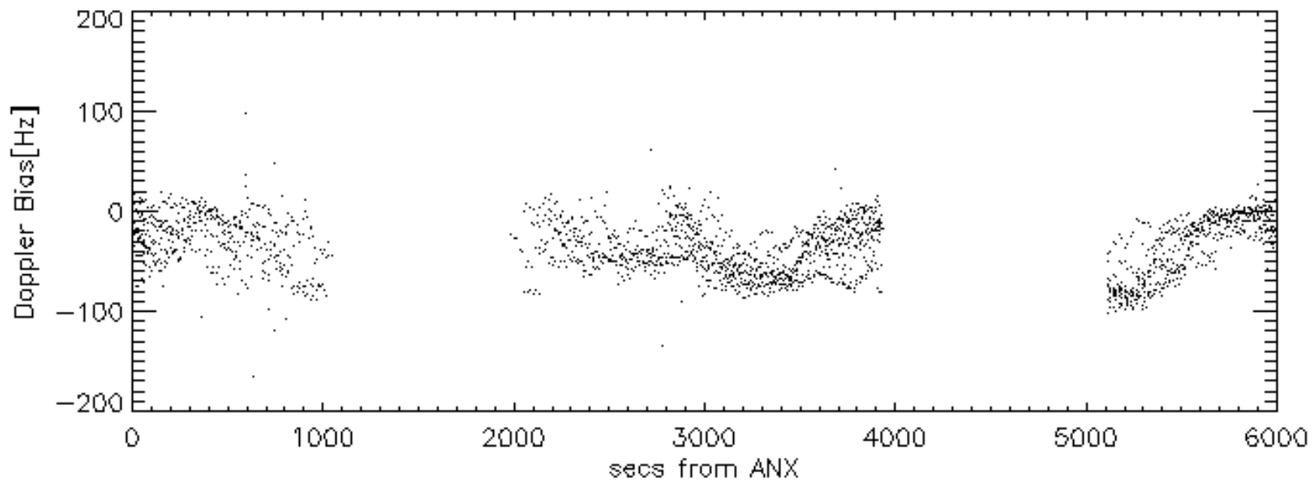

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

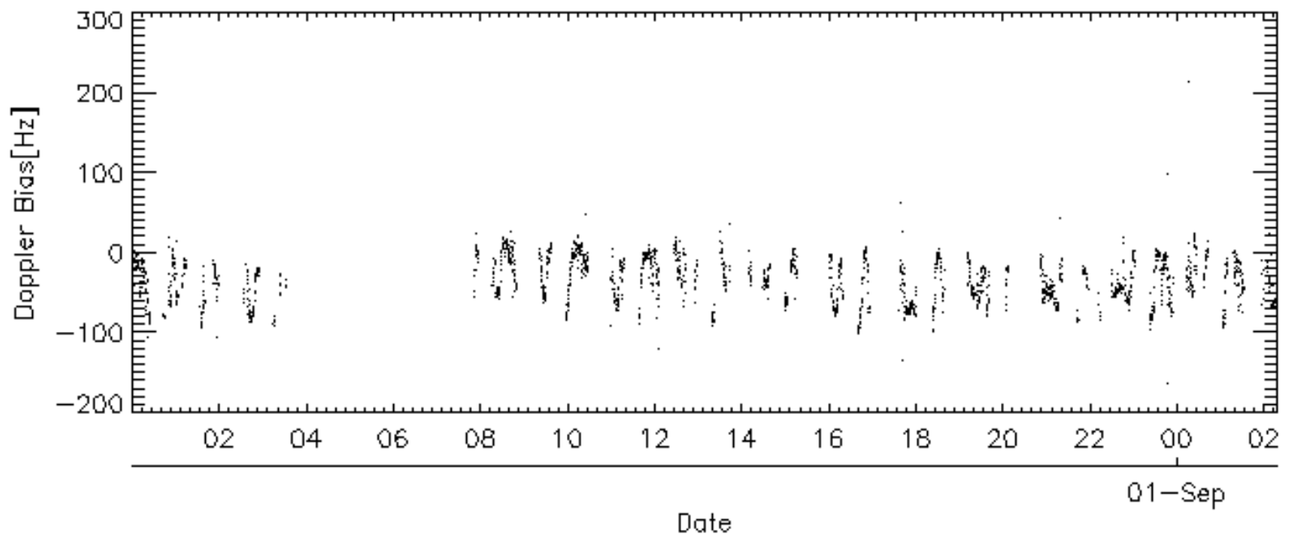

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

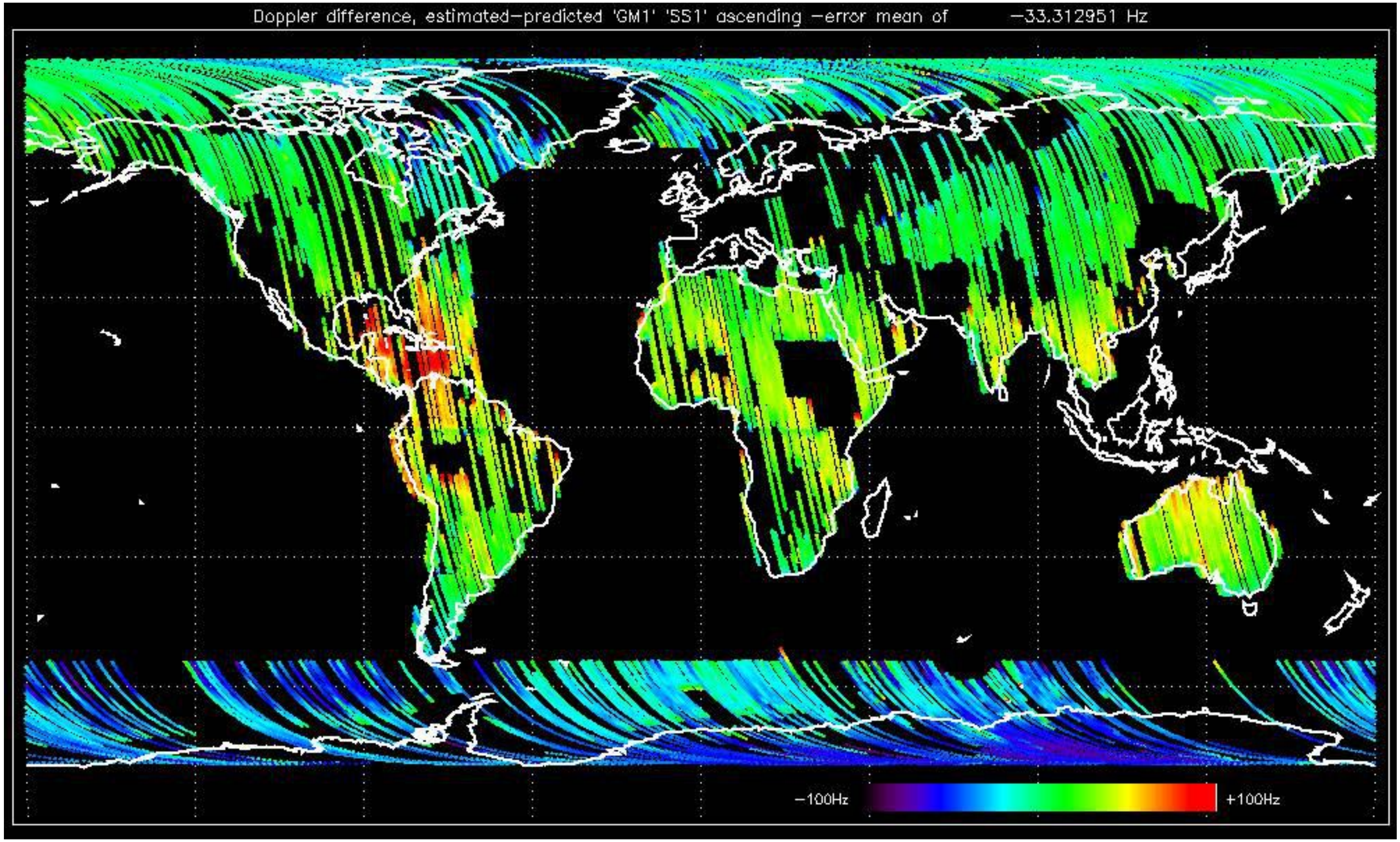

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

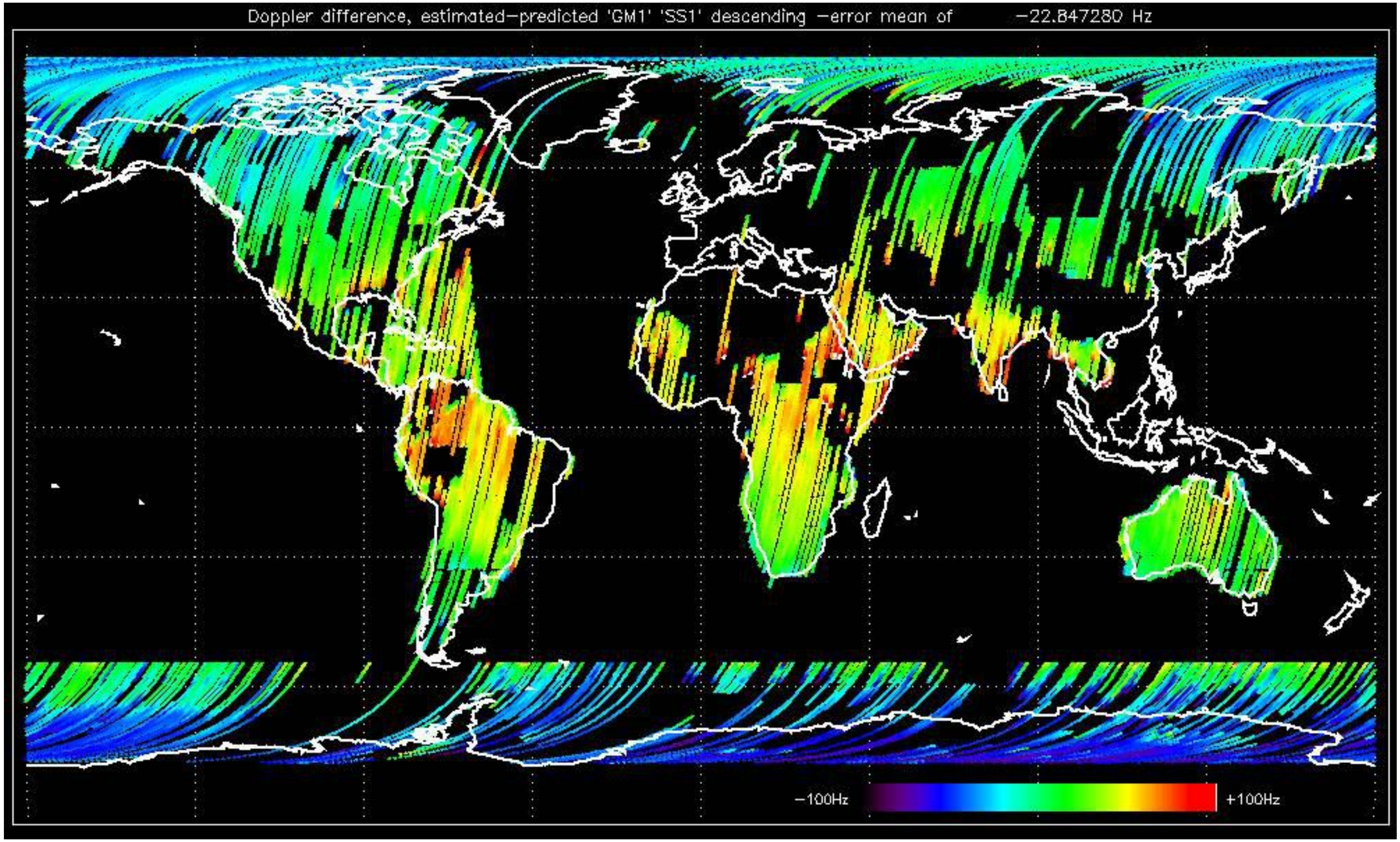

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
01−Sep
Date

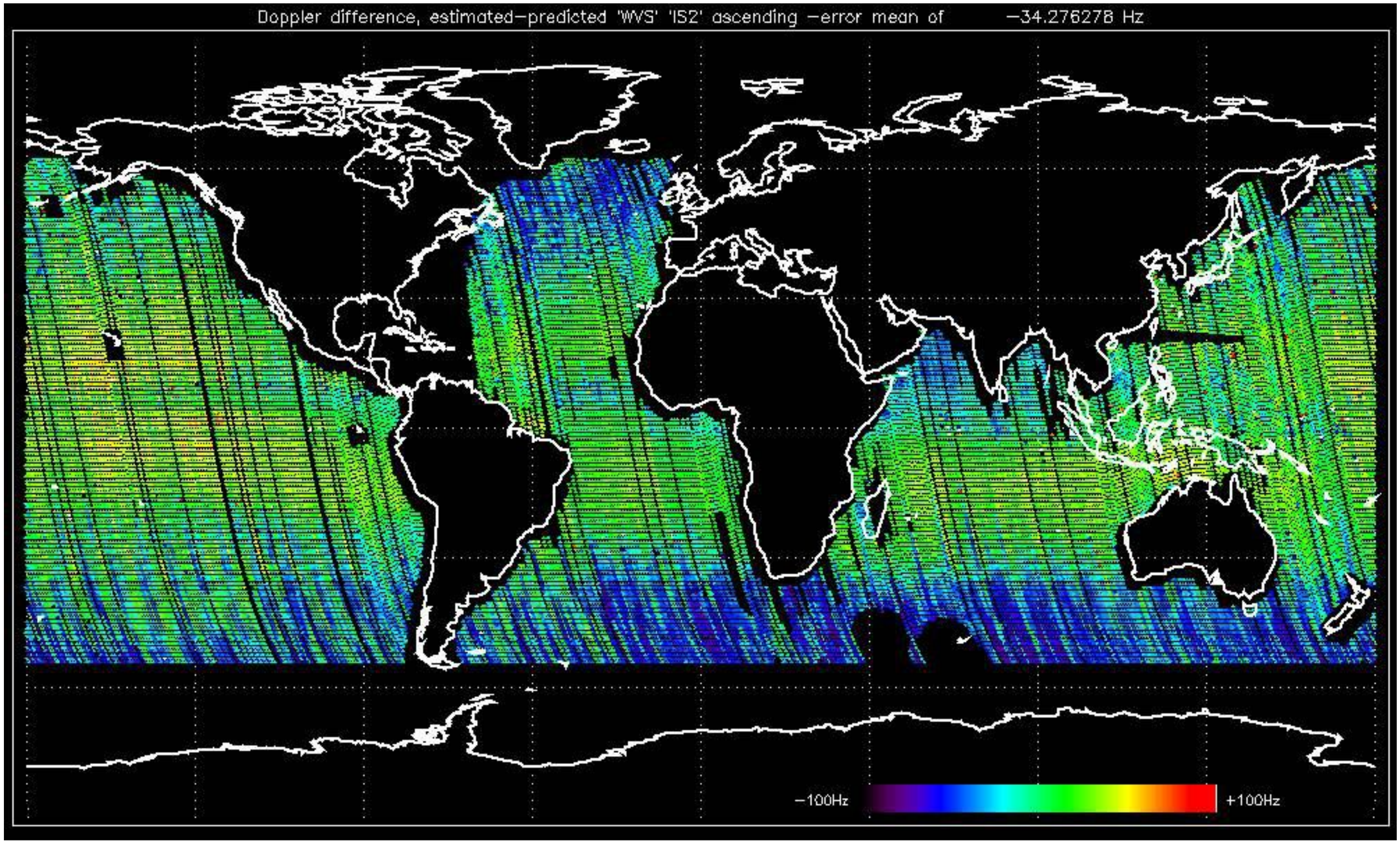

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

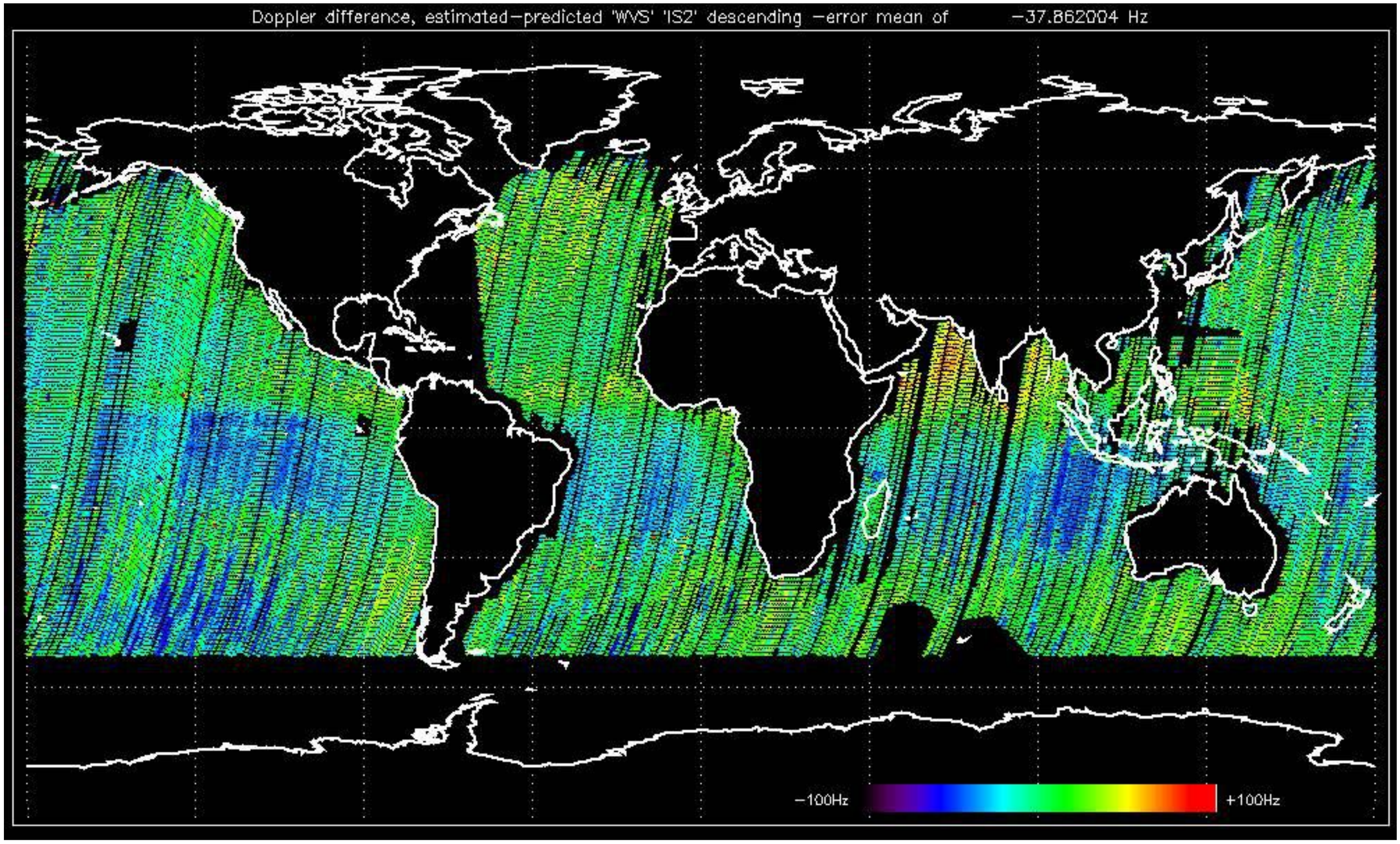

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −33.312951 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −22.847280 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −34.276278 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −37.862004 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
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14
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16
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18
19
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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
3
4
5
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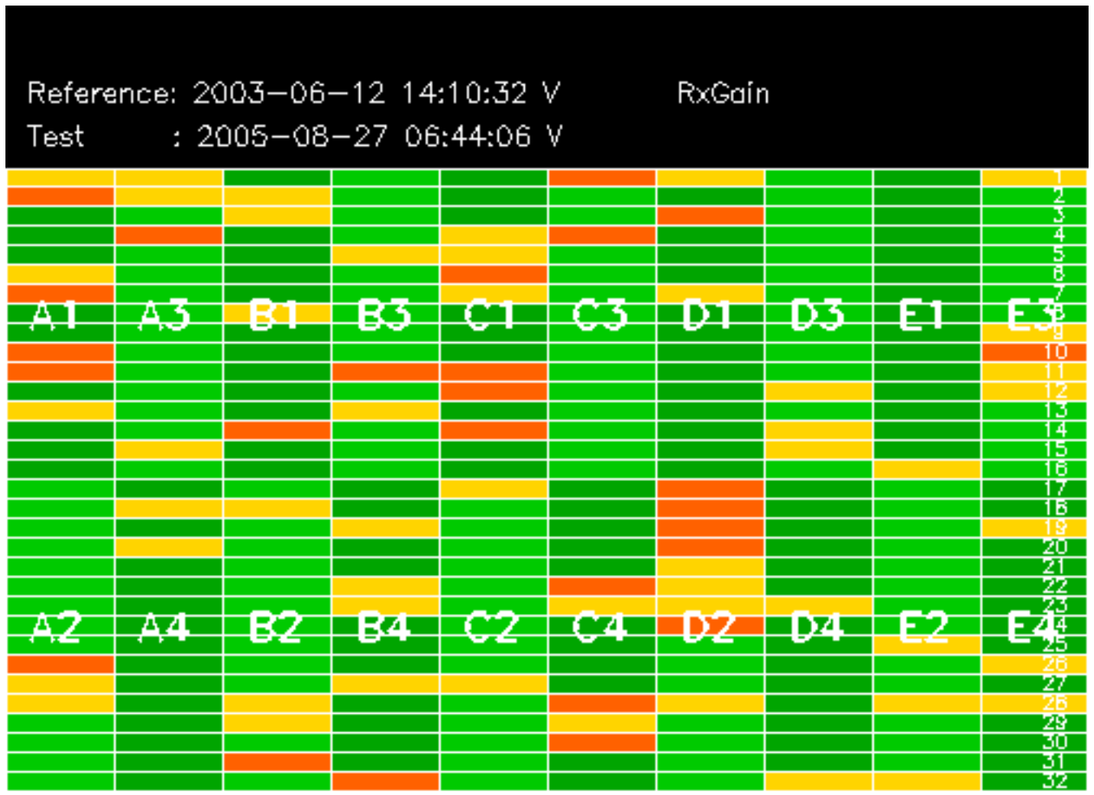
23
24
25
26
27
28
29
30
31
32

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
5
6
7
8
9
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11
12
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21
22
23
24
25
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
7
8
9
10
11
12
13
14
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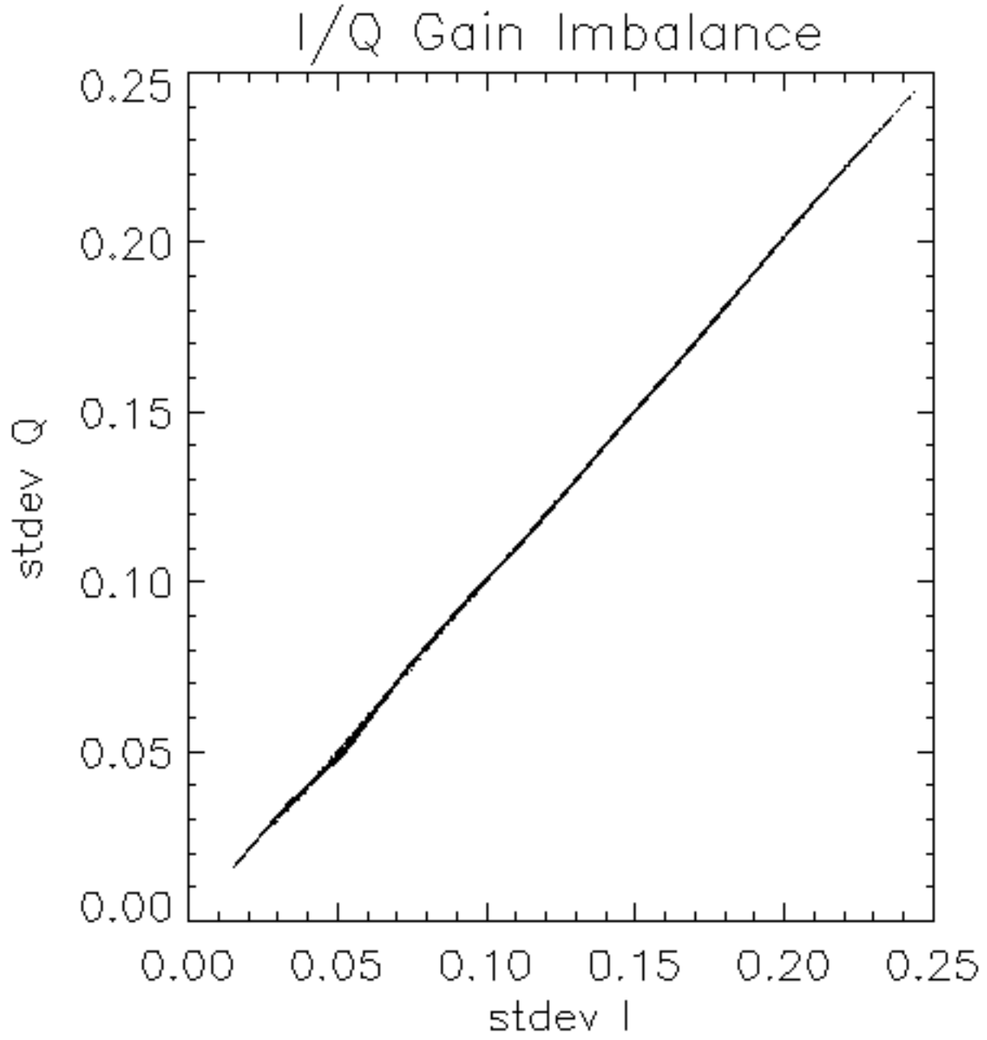
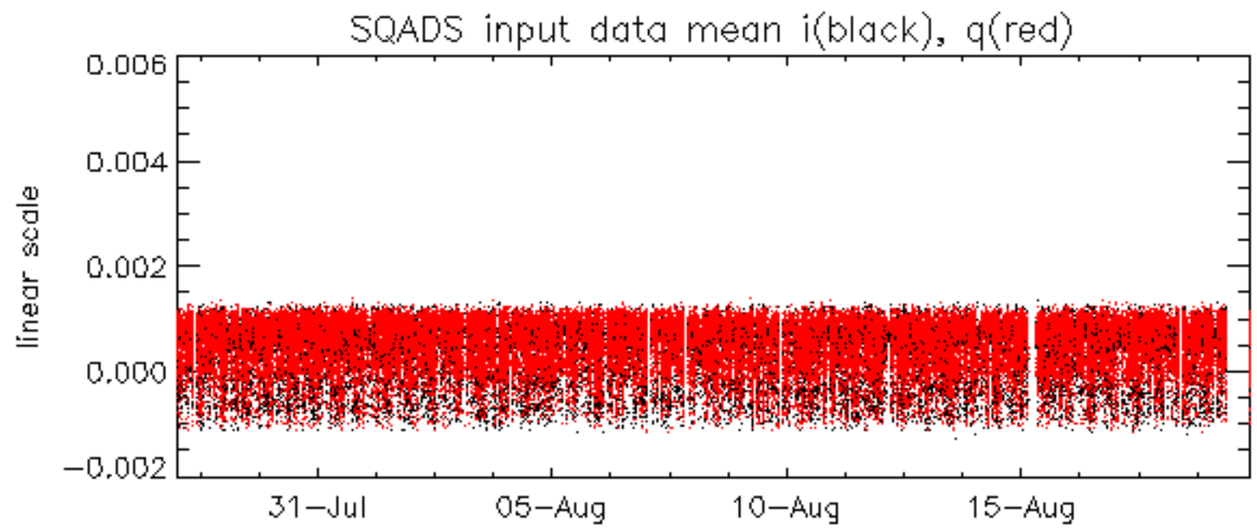
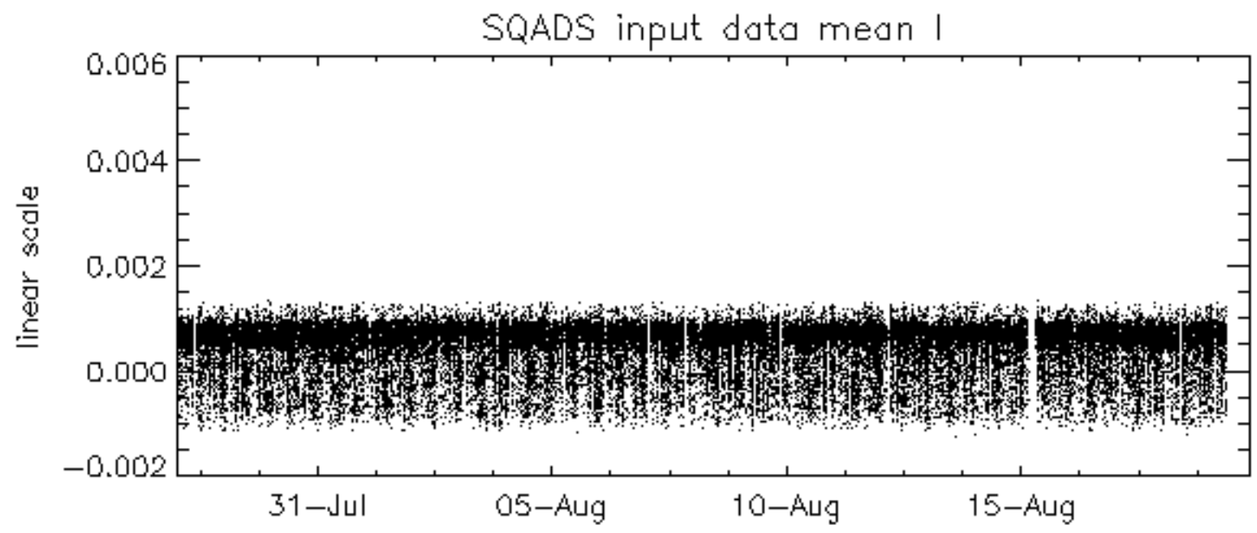
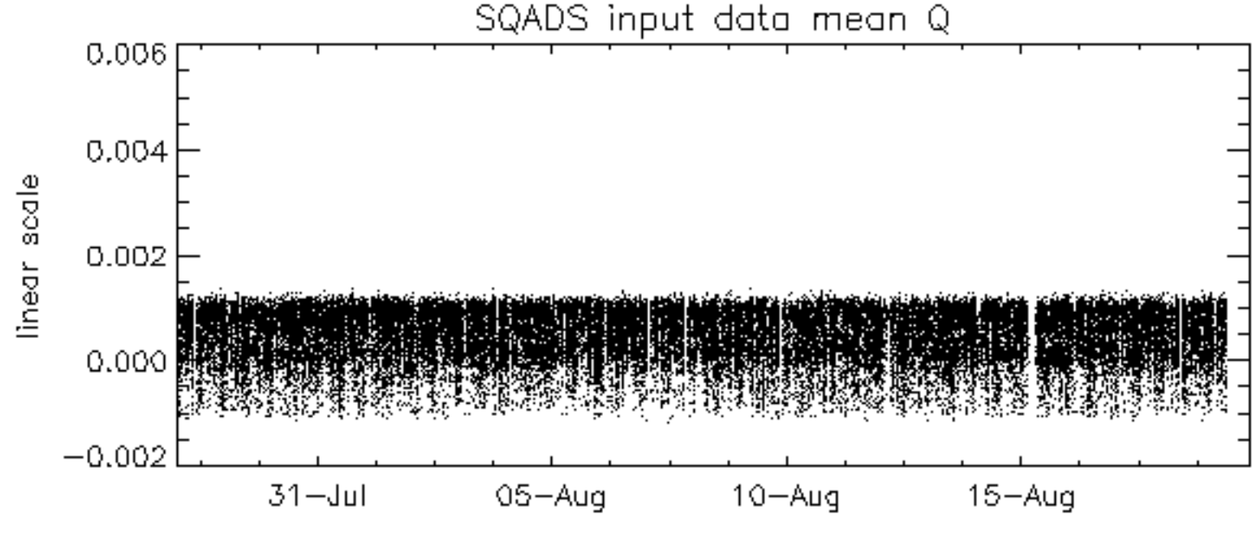
21
22
23
24
25
26
27
28
29
30
31
32

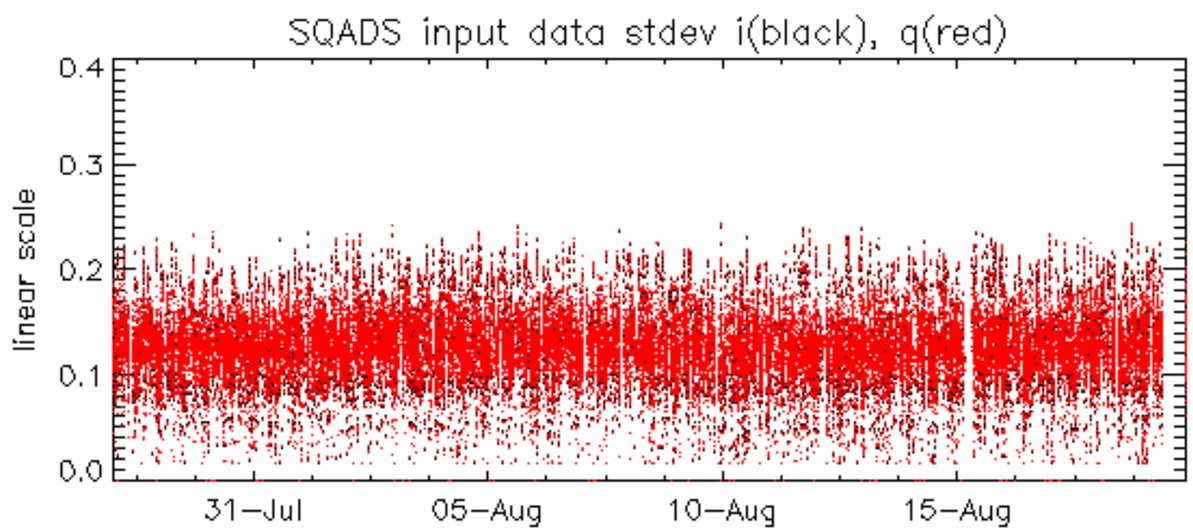
Reference: 2003-06-12 14:10:32 V
Test : 2005-08-27 06:44:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

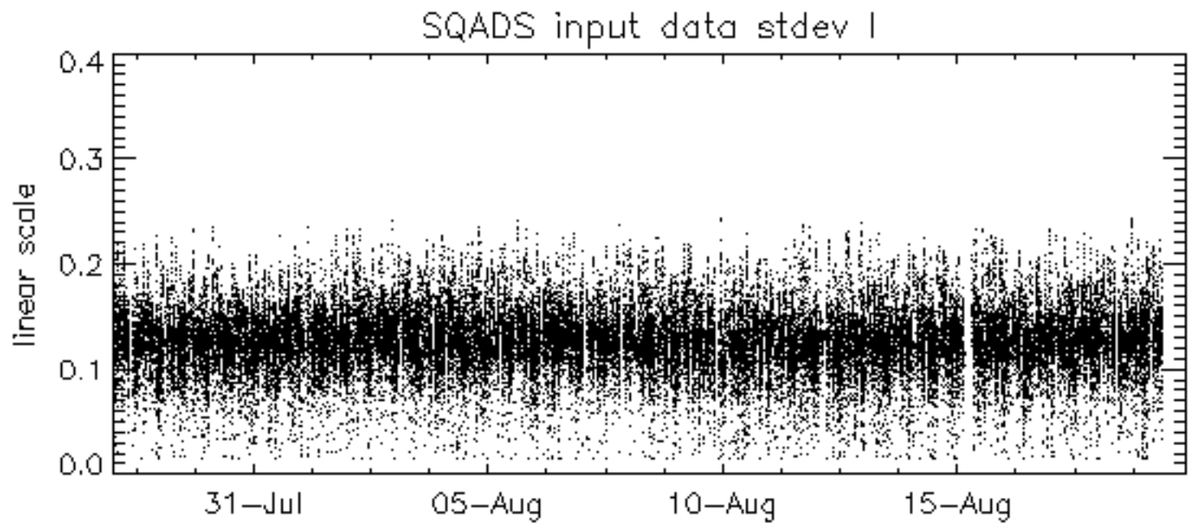

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

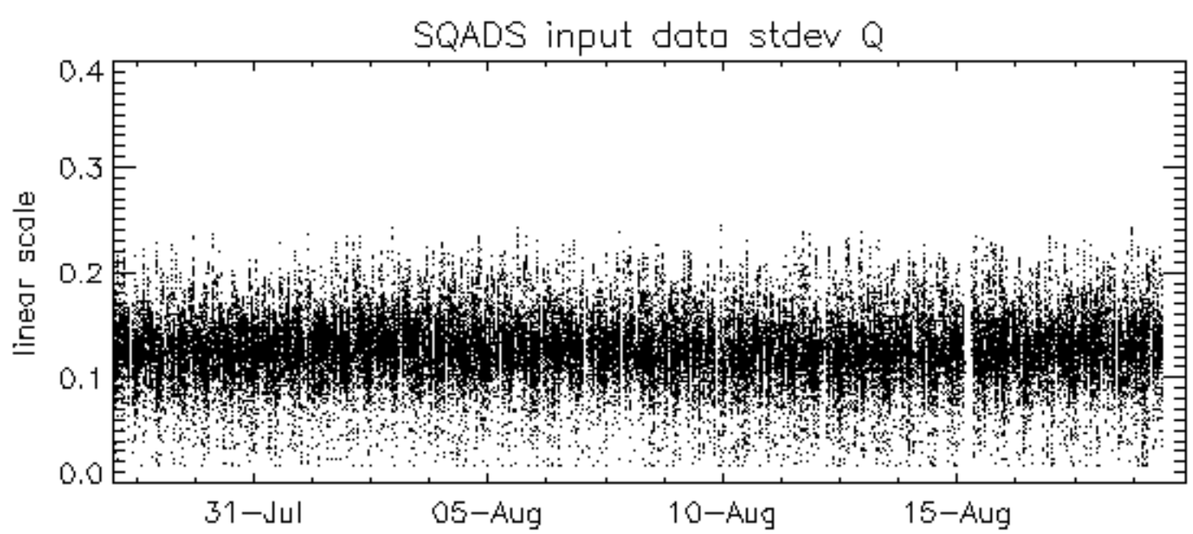

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug

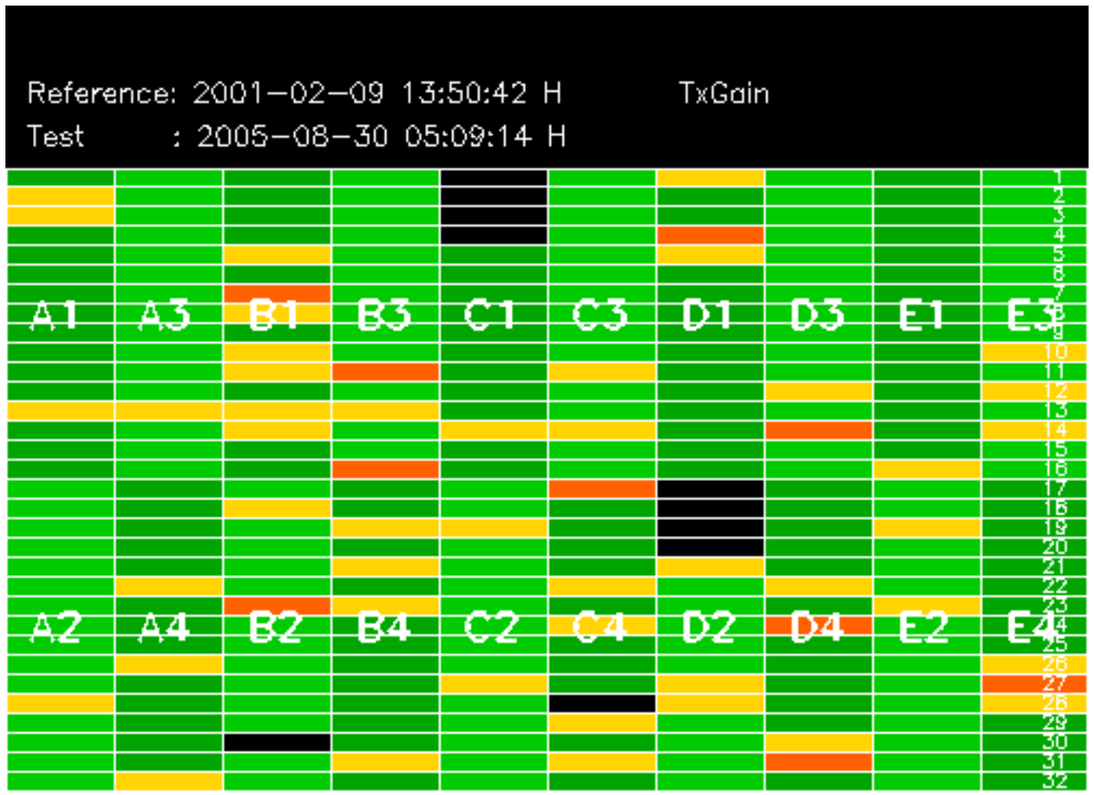

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Jul
05−Aug
10−Aug
15−Aug


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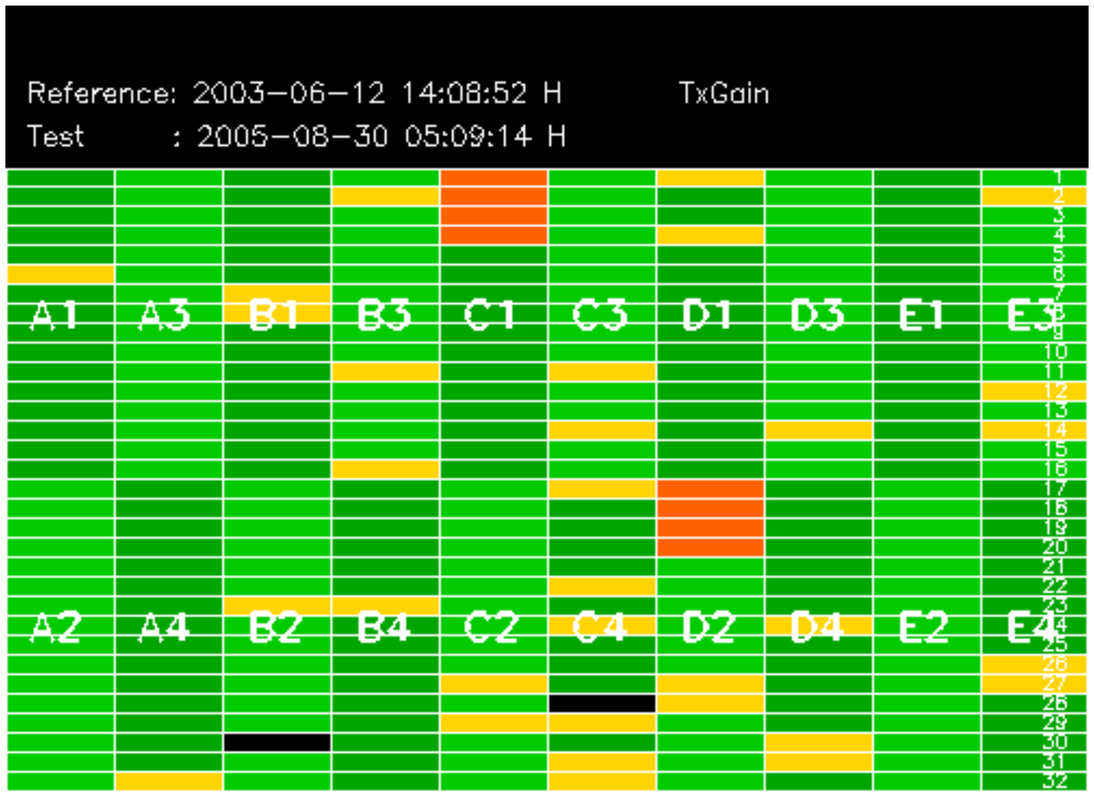
Reference: 2003-06-12 14:08:52 H
Test : 2005-08-30 05:09:14 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

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
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24
25
26
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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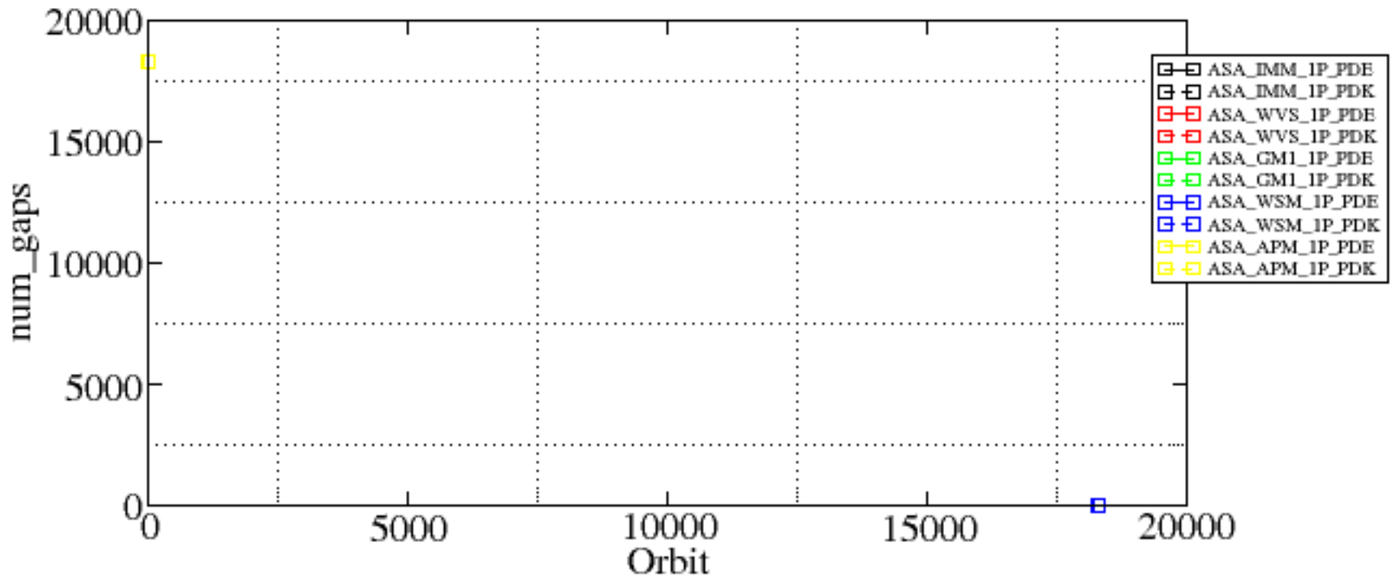
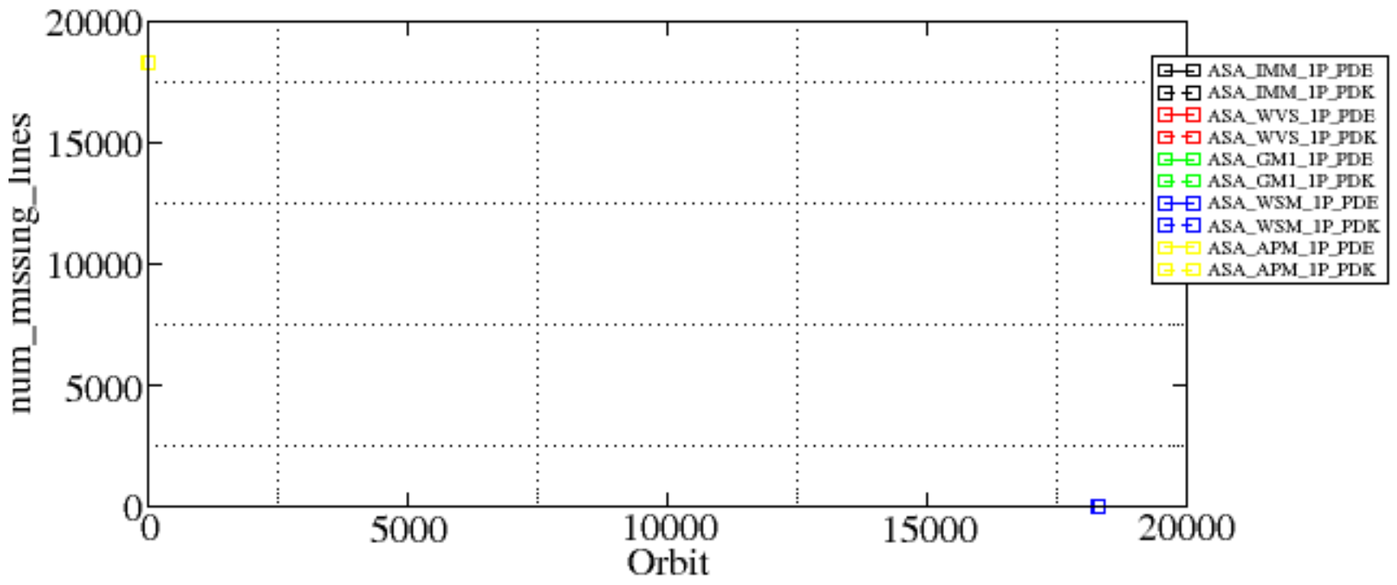
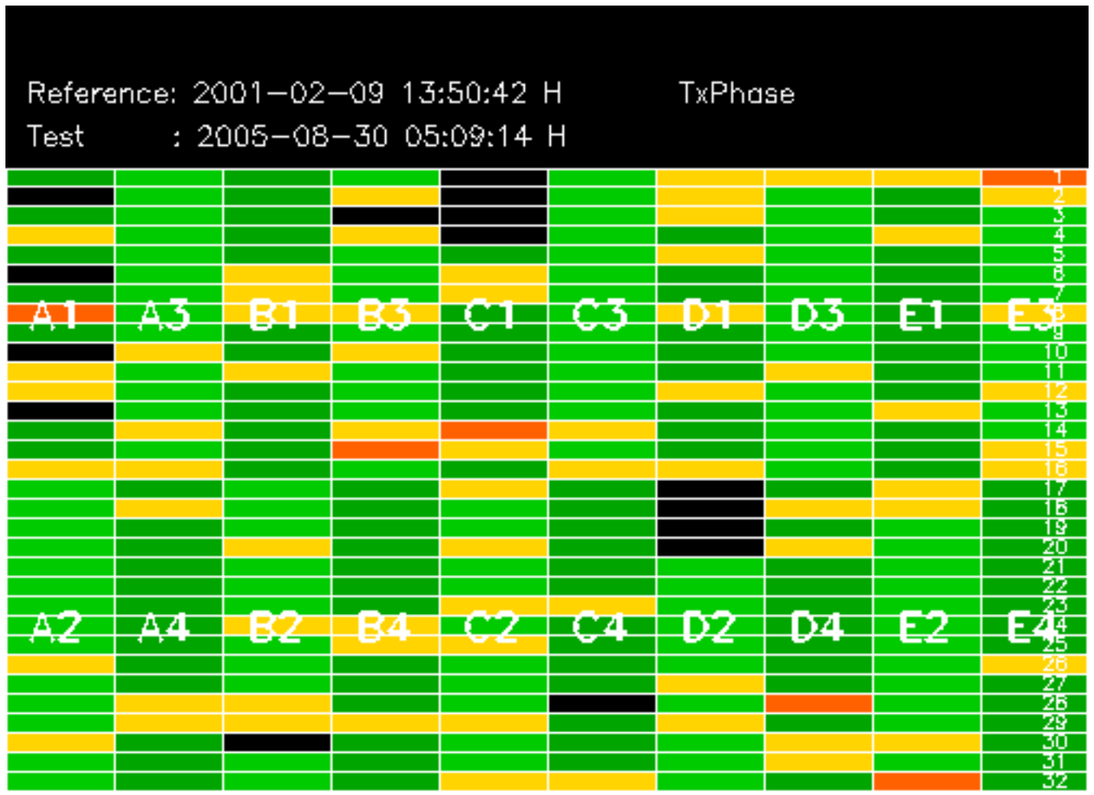
Summary of analysis for the last 3 days 2005083[011]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20050830_163553_000000842040_00212_18302_4094.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20050830_222940_000002852040_00216_18306_6643.N1 </td> <td>0 </td> <td>2 </td></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_WSM_1P_PDK
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_WSM_1P_PDK
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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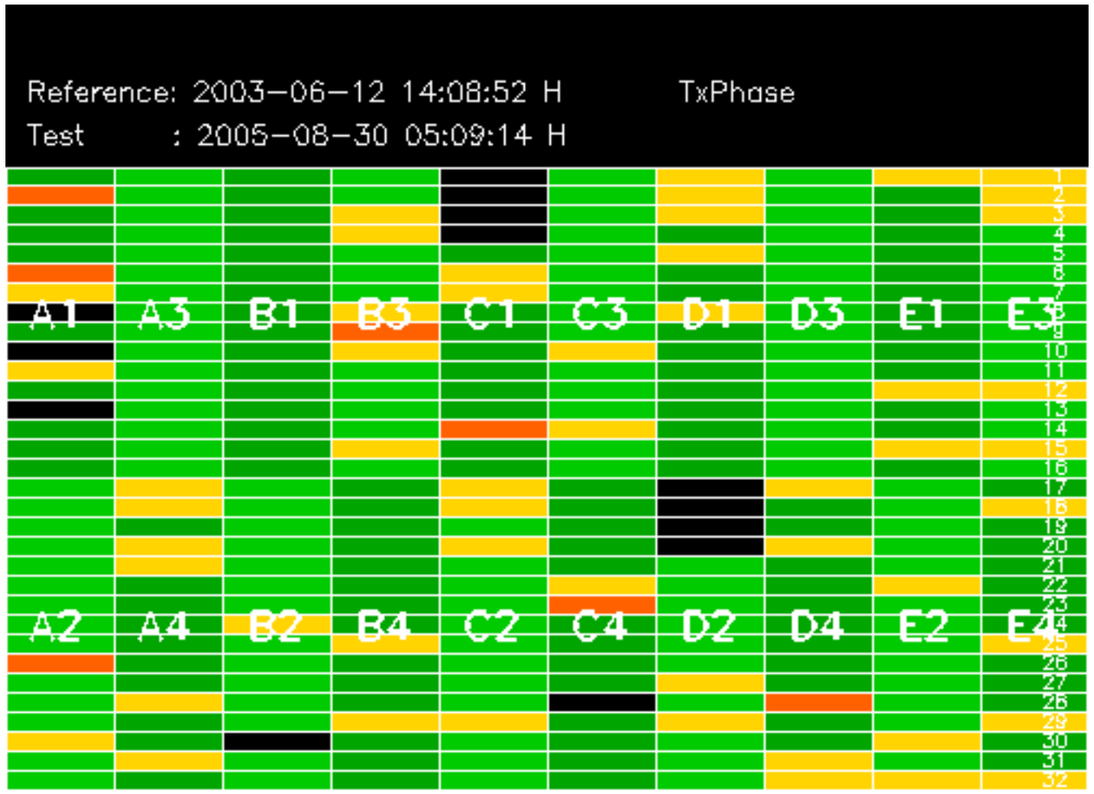
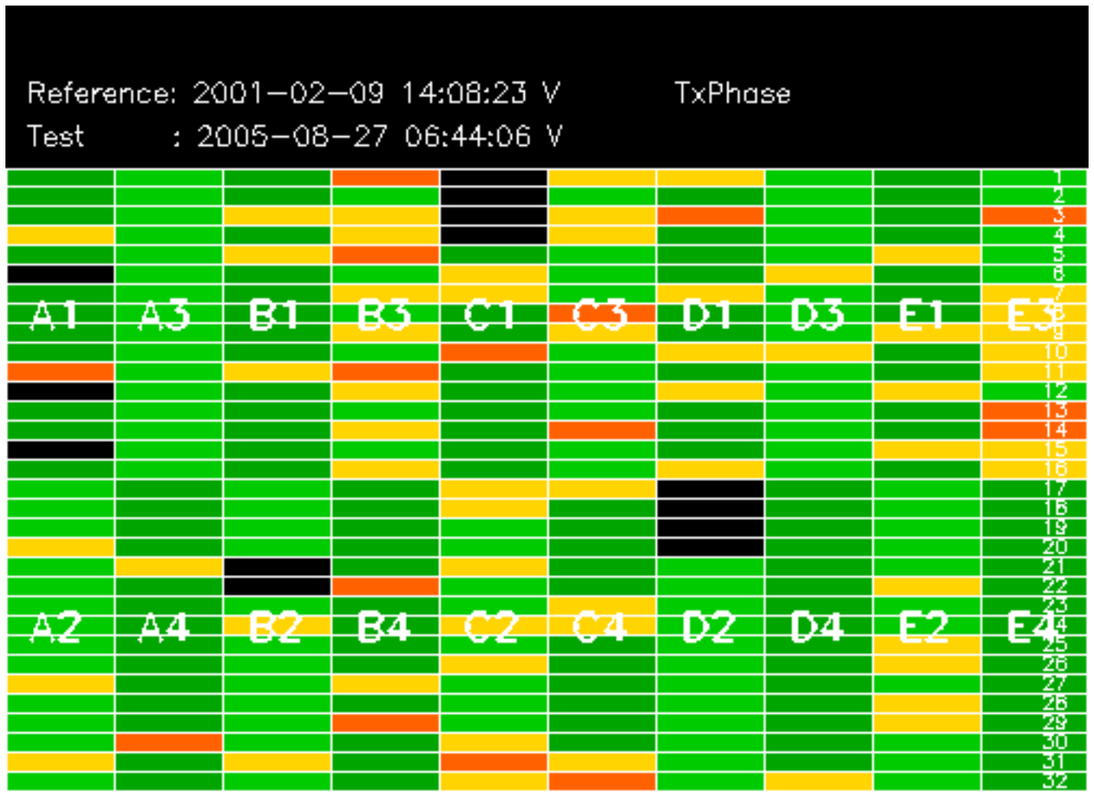

Reference: 2003-06-12 14:08:52 H
Test : 2005-08-30 05:09:14 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


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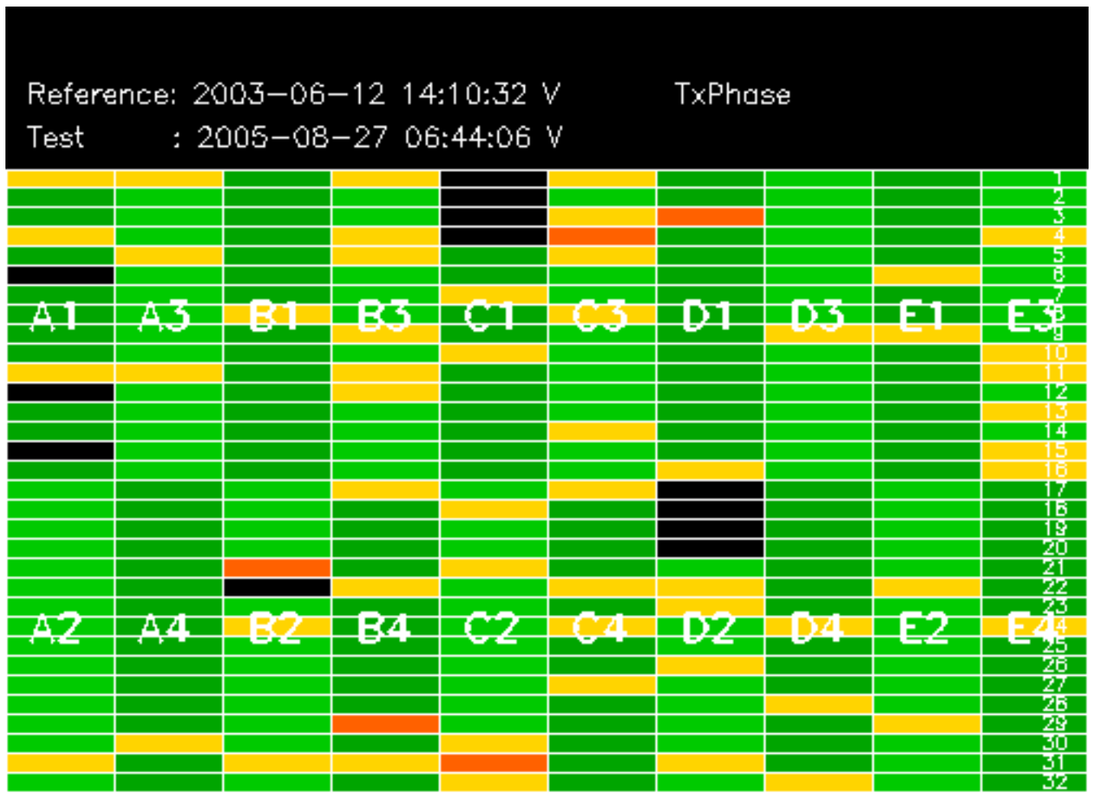
Reference: 2003-06-12 14:10:32 V
Test : 2005-08-27 06:44:06 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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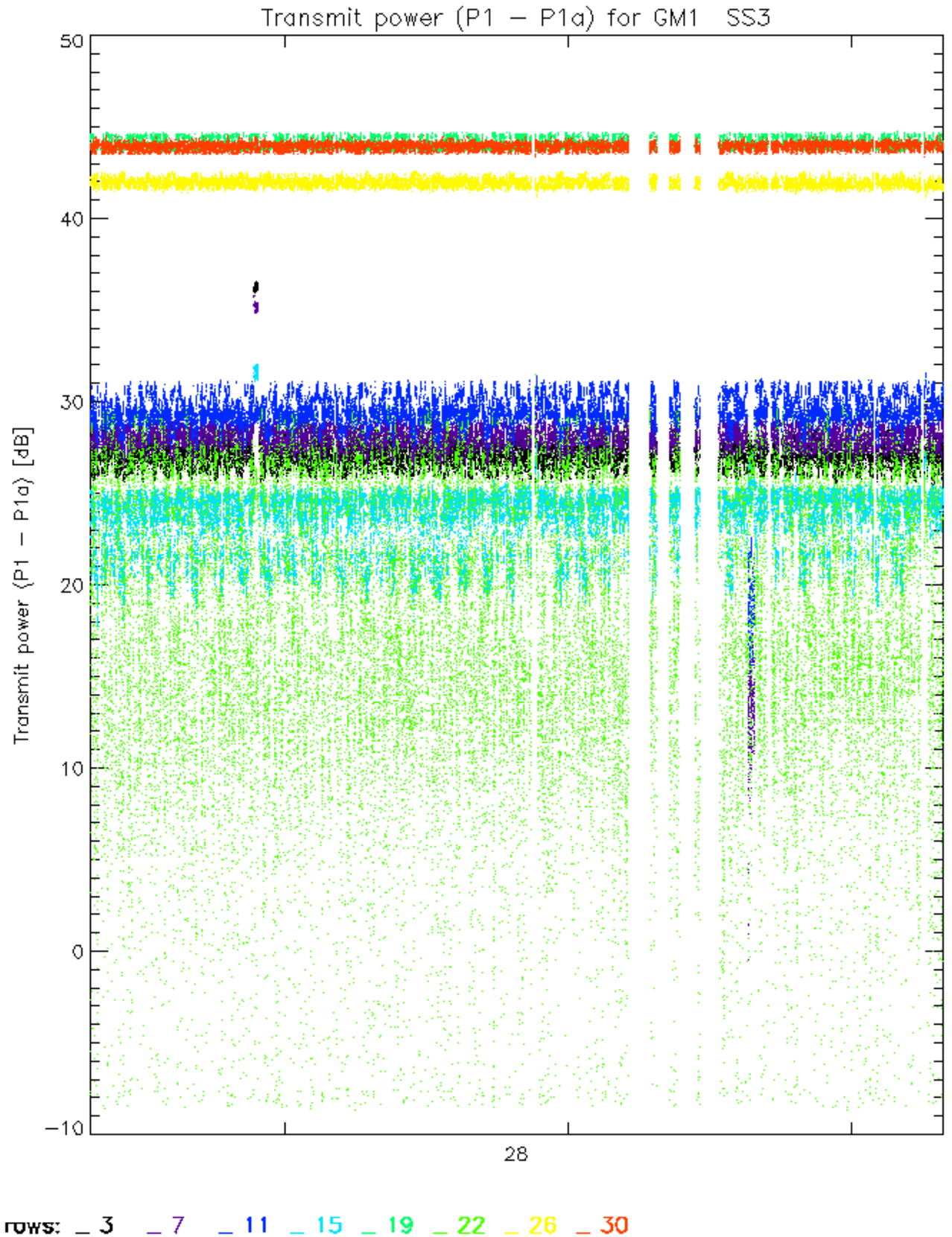
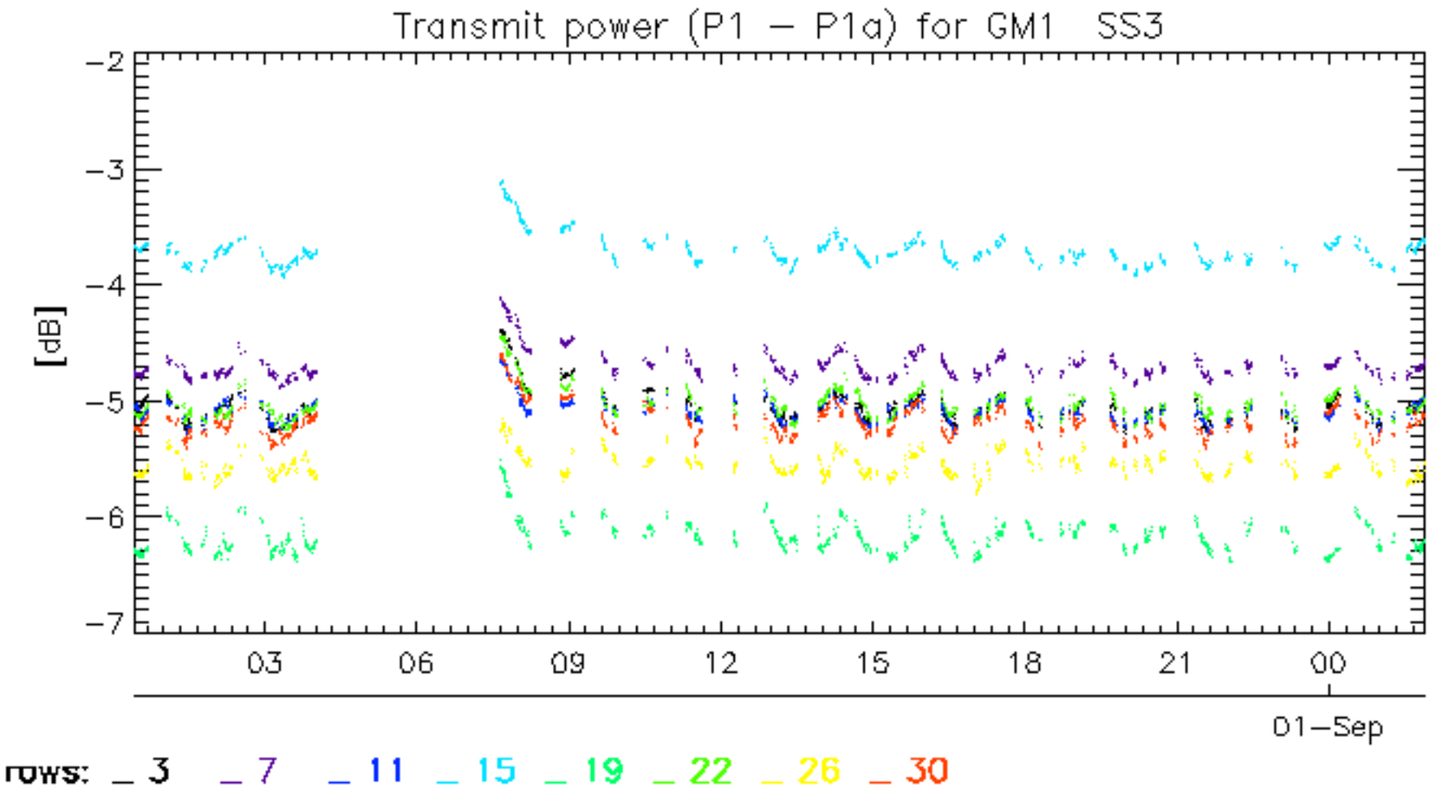
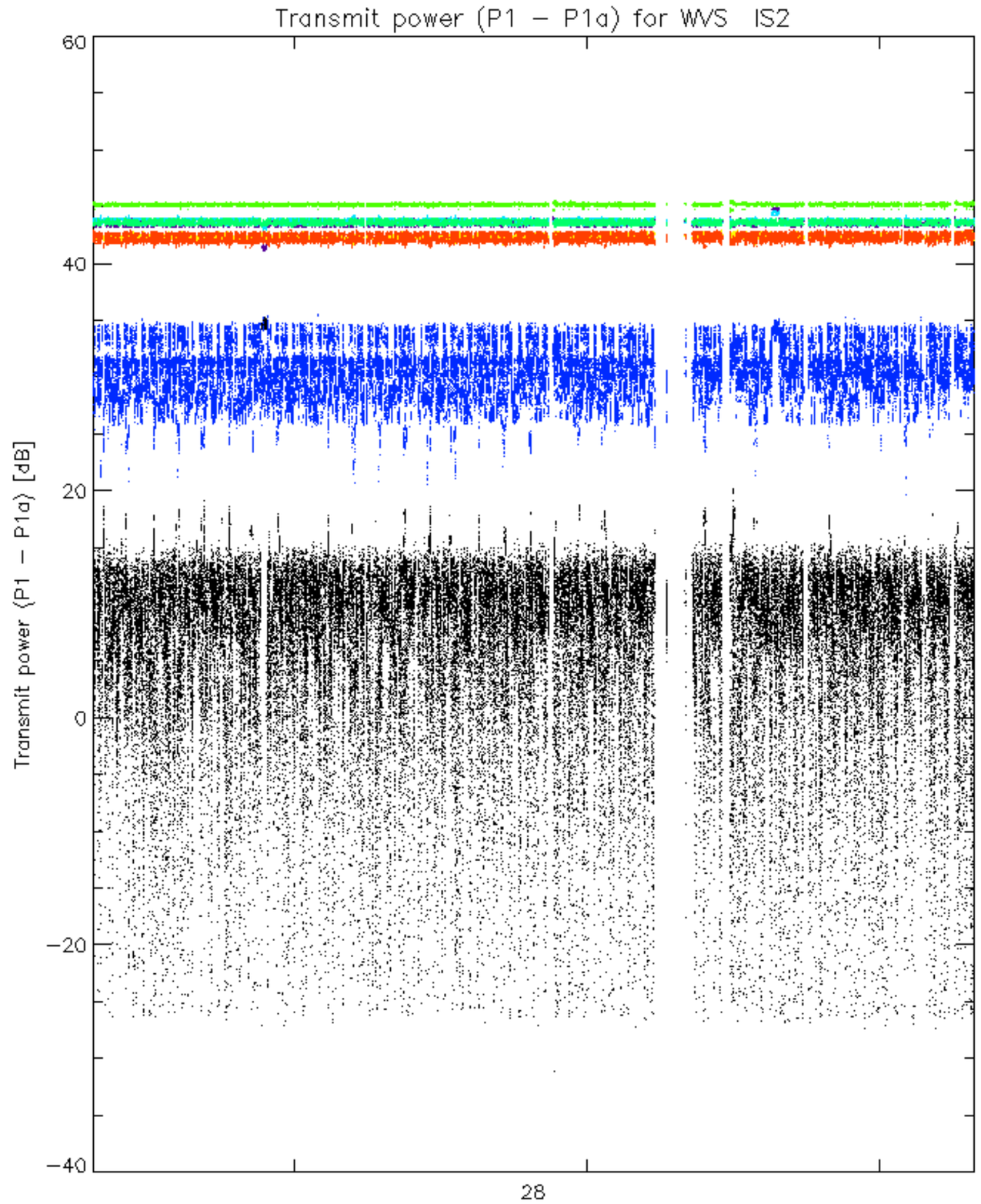
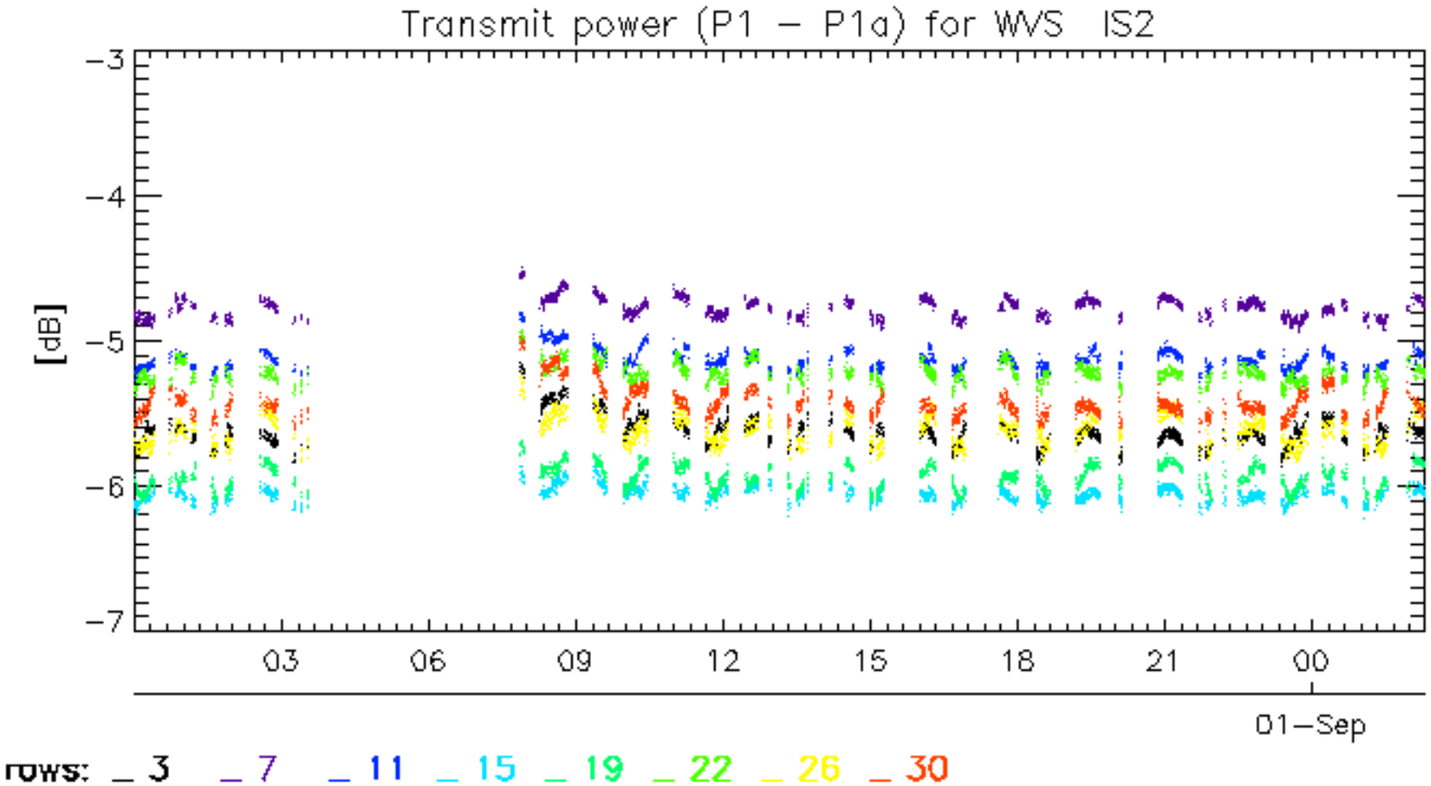

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
28
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
01–Sep
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]
28
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
01–Sep
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.