PRELIMINARY REPORT OF 061115

last update on Wed Nov 15 16:49:59 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 2006-11-14 00:00:00 to 2006-11-15 16:49:59

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	42	73	13	9	25
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	42	73	13	9	25
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	42	73	13	9	25
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	42	73	13	9	25

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	37	51	17	6	47
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	37	51	17	6	47
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	37	51	17	6	47
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	37	51	17	6	47

2.3 - Browse Visual Inspection

No anomalies observed on available browse products

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	20061113 180516
H	20061114 173339

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	-3.955580	0.008950	0.001346
7	P1	-3.131963	0.021993	-0.098801
11	P1	-4.123991	0.024095	-0.043883
15	P1	-6.268552	0.014628	-0.106120
19	P1	-3.606941	0.064369	-0.020952
22	P1	-4.660797	0.129374	-0.004145
26	P1	-3.978142	0.087768	0.065758
30	P1	-5.880577	0.168775	0.013959
3	P1	-16.520058	0.231380	0.160547
7	P1	-17.222013	0.200870	-0.272201
11	P1	-17.120607	0.436555	-0.144321
15	P1	-13.014080	0.123518	-0.266386
19	P1	-14.868650	0.371919	-0.175552
22	P1	-15.811086	0.501392	-0.396562
26	P1	-15.079086	0.210604	0.048880
30	P1	-17.321308	0.583349	-0.642289

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.845755	0.088791	-0.021457
7	P2	-21.736393	0.092911	0.025250
11	P2	-15.672721	0.103822	0.075615
15	P2	-7.108975	0.106240	-0.075158
19	P2	-9.175185	0.101637	-0.092553
22	P2	-18.208620	0.094907	-0.115442
26	P2	-16.513037	0.107852	-0.165708
30	P2	-19.472382	0.088004	-0.019943

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.226507	0.007887	-0.044797
7	P3	-8.226507	0.007887	-0.044797
11	P3	-8.226507	0.007887	-0.044797
15	P3	-8.226507	0.007887	-0.044797
19	P3	-8.226507	0.007887	-0.044797
22	P3	-8.226507	0.007887	-0.044797
26	P3	-8.226630	0.007905	-0.044481
30	P3	-8.226630	0.007905	-0.044481

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	-3.924355	0.160522	0.088295
7	P1	-2.598722	1.031729	0.397637
11	P1	-2.891599	0.128830	0.141699
15	P1	-3.694467	0.119941	0.071035
19	P1	-3.528024	0.126670	-0.023425
22	P1	-5.061171	0.095336	0.005872
26	P1	-6.007720	0.237496	-0.015655
30	P1	-5.311355	0.161077	-0.051347
3	P1	-11.751612	0.393622	0.212971
7	P1	-10.139747	1.311195	0.429954
11	P1	-10.399090	0.361660	0.347751
15	P1	-10.849458	0.490665	0.420409
19	P1	-15.755020	2.219545	0.014623
22	P1	-21.213902	1.633681	-0.701026

26	P1	-15.975666	0.428427	-0.313328
30	P1	-17.959442	0.517212	0.178354

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.406908	0.247708	-0.258887
7	P2	-22.084623	1.358430	-0.661192
11	P2	-10.895617	0.219589	-0.210013
15	P2	-4.935407	0.078708	-0.103430
19	P2	-6.919946	0.155788	-0.121934
22	P2	-8.273213	0.448131	0.102024
26	P2	-24.204828	1.023654	-0.561265
30	P2	-21.895306	0.521680	-0.293842

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.073908	0.003225	-0.035777
7	P3	-8.073766	0.003205	-0.036141
11	P3	-8.073791	0.003209	-0.036400
15	P3	-8.073729	0.003208	-0.036116
19	P3	-8.073831	0.003214	-0.036273
22	P3	-8.073654	0.003215	-0.036301
26	P3	-8.073792	0.003200	-0.036603
30	P3	-8.073853	0.003211	-0.036854

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	0.000544682
	stdev	1.77762e-07
MEAN Q	mean	0.000517986
	stdev	2.20417e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.136375
	stdev	0.00111989
STDEV Q	mean	0.136733
	stdev	0.00113701

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006111[345]
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_WSM_1PNPDE20061113_015825_000001292052_00490_24592_0001.N1	0	19
ASA_WSM_1PNPDE20061114_033934_000001462053_00004_24607_0001.N1	0	1
ASA_WSM_1PNPDK20061113_133931_000002452052_00497_24599_0002.N1	0	39
ASA_WSM_1PNPDK20061114_095012_000000852053_00008_24611_0057.N1	0	43

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

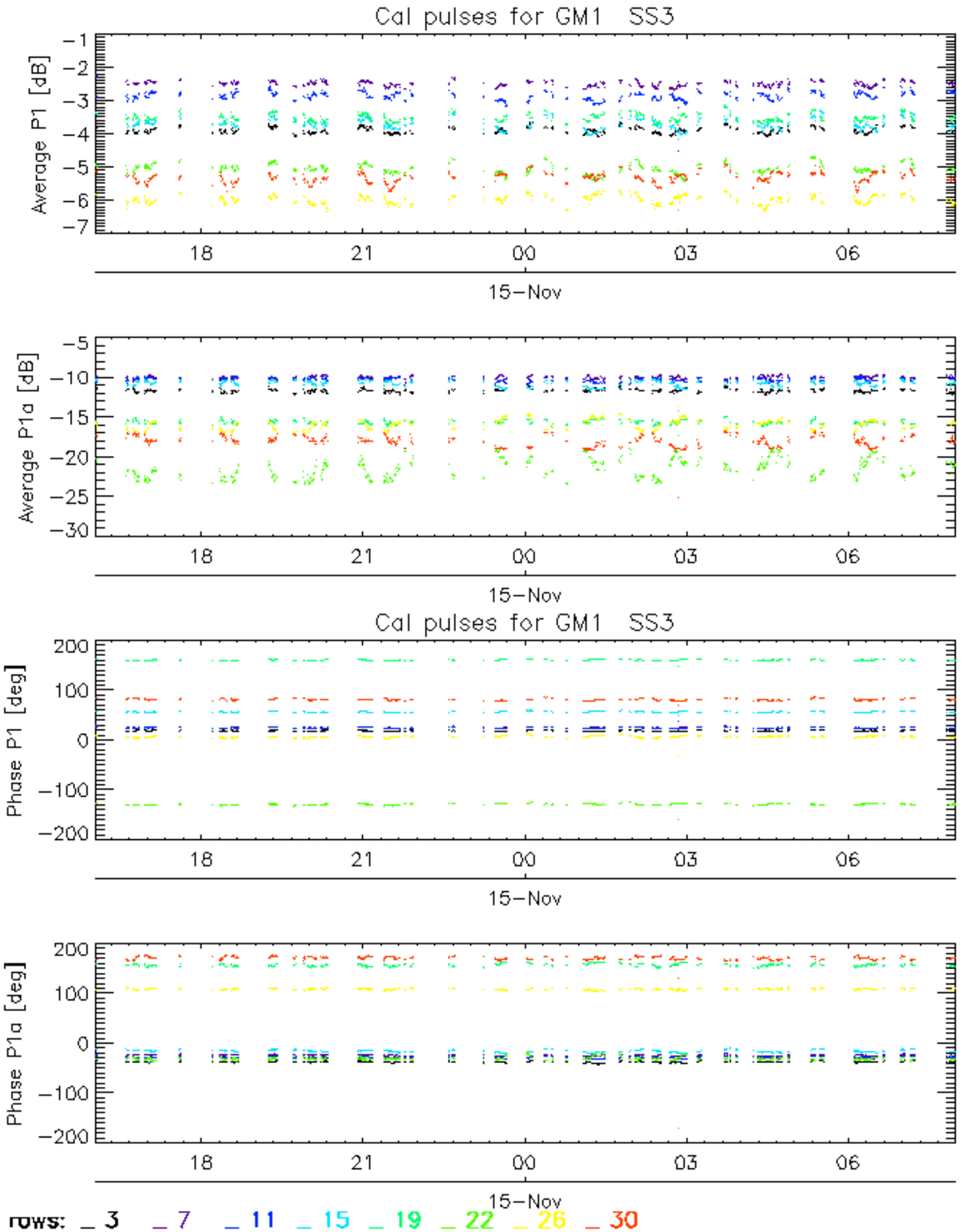
Evolution of Absolute Doppler

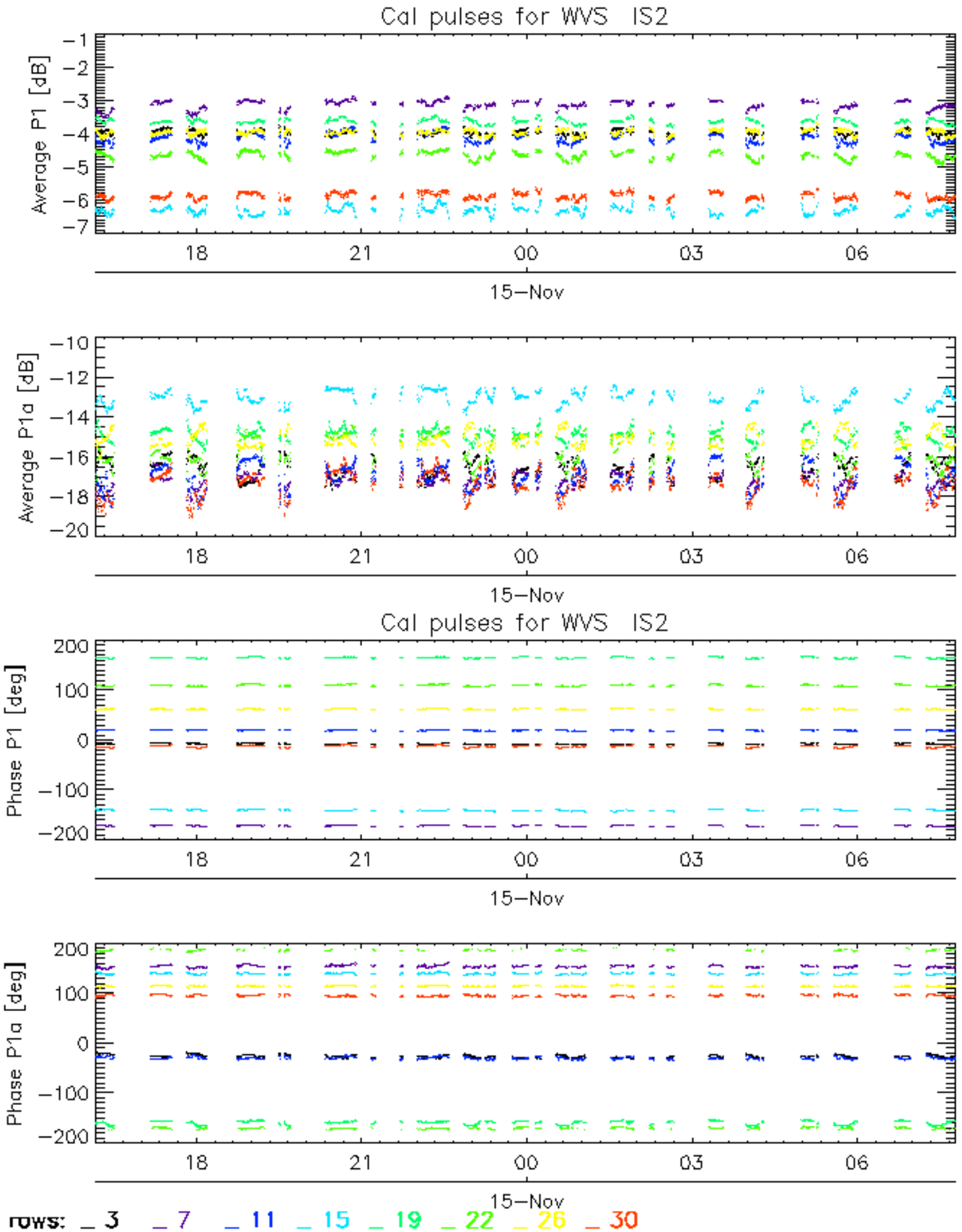
Acsending

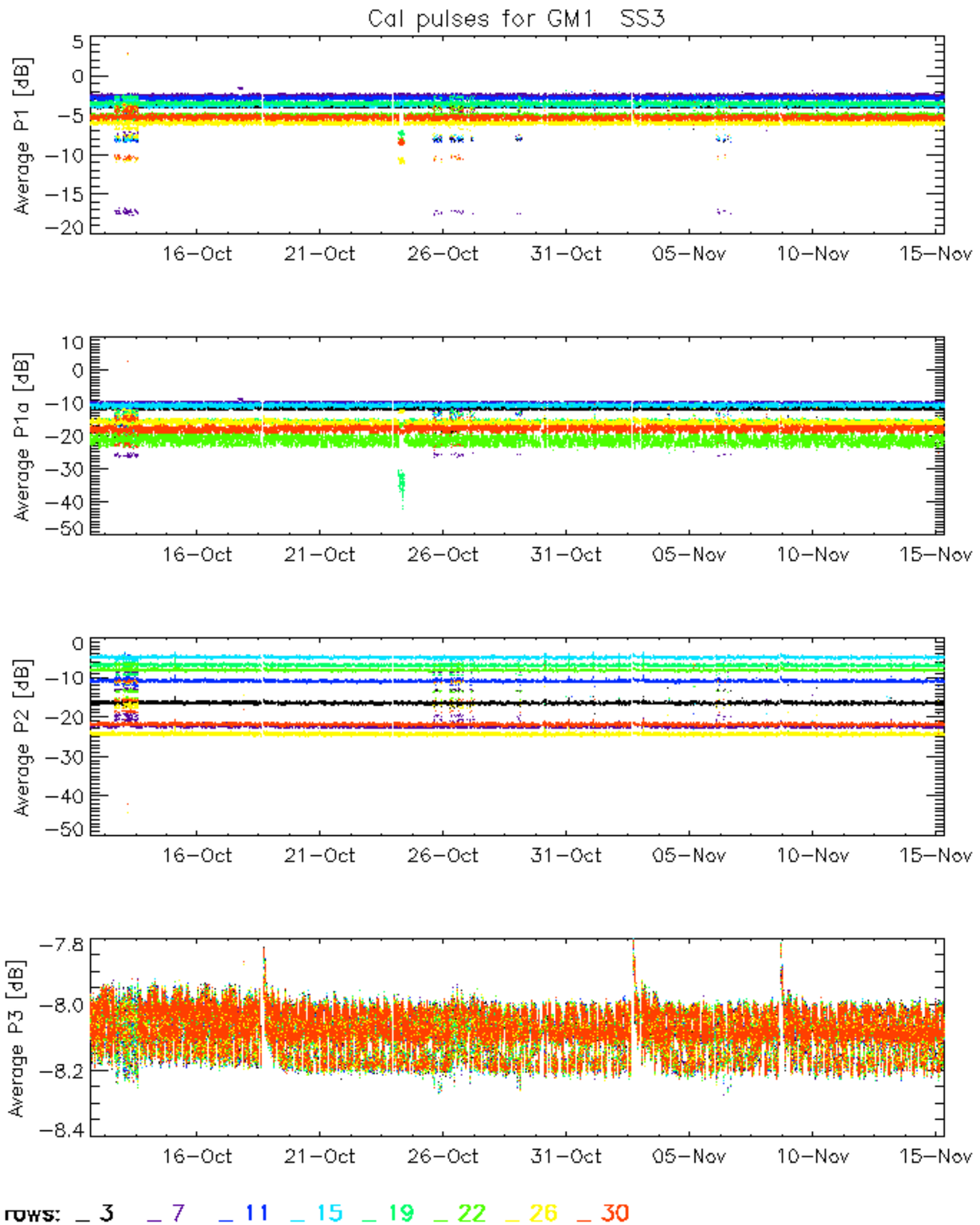
Descending

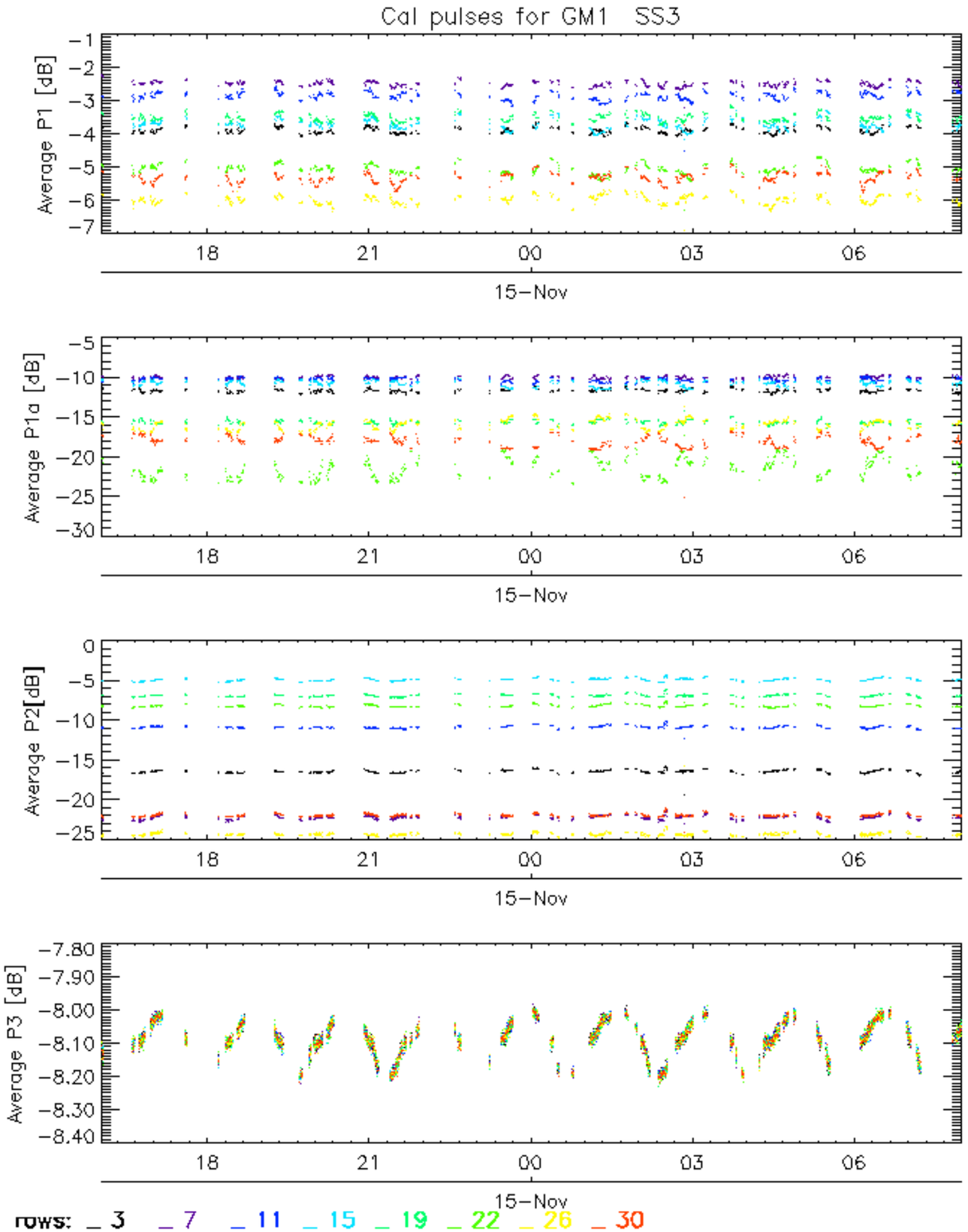
7.6 - Doppler evolution versus ANX for GM1

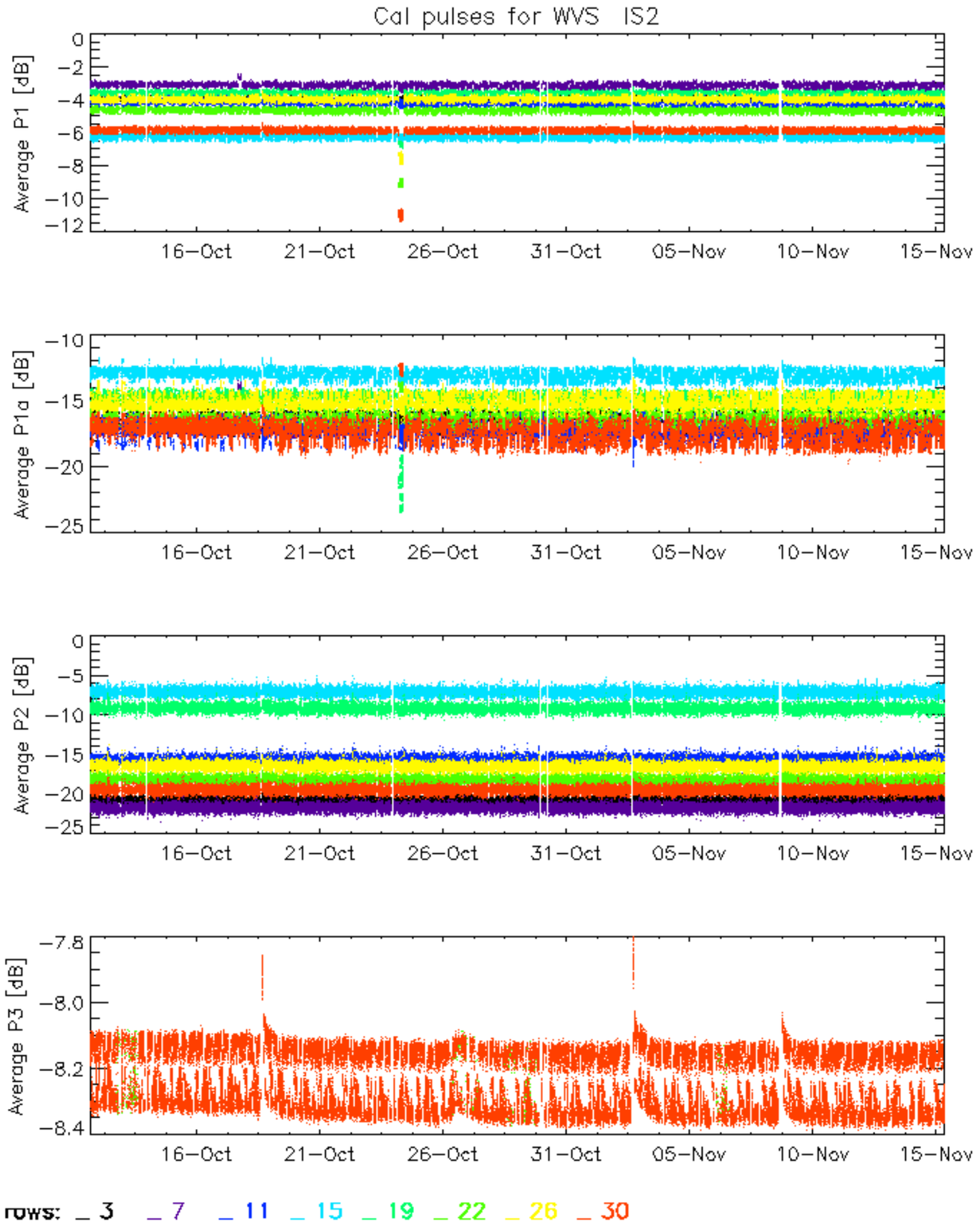
Evolution Doppler error versus ANX

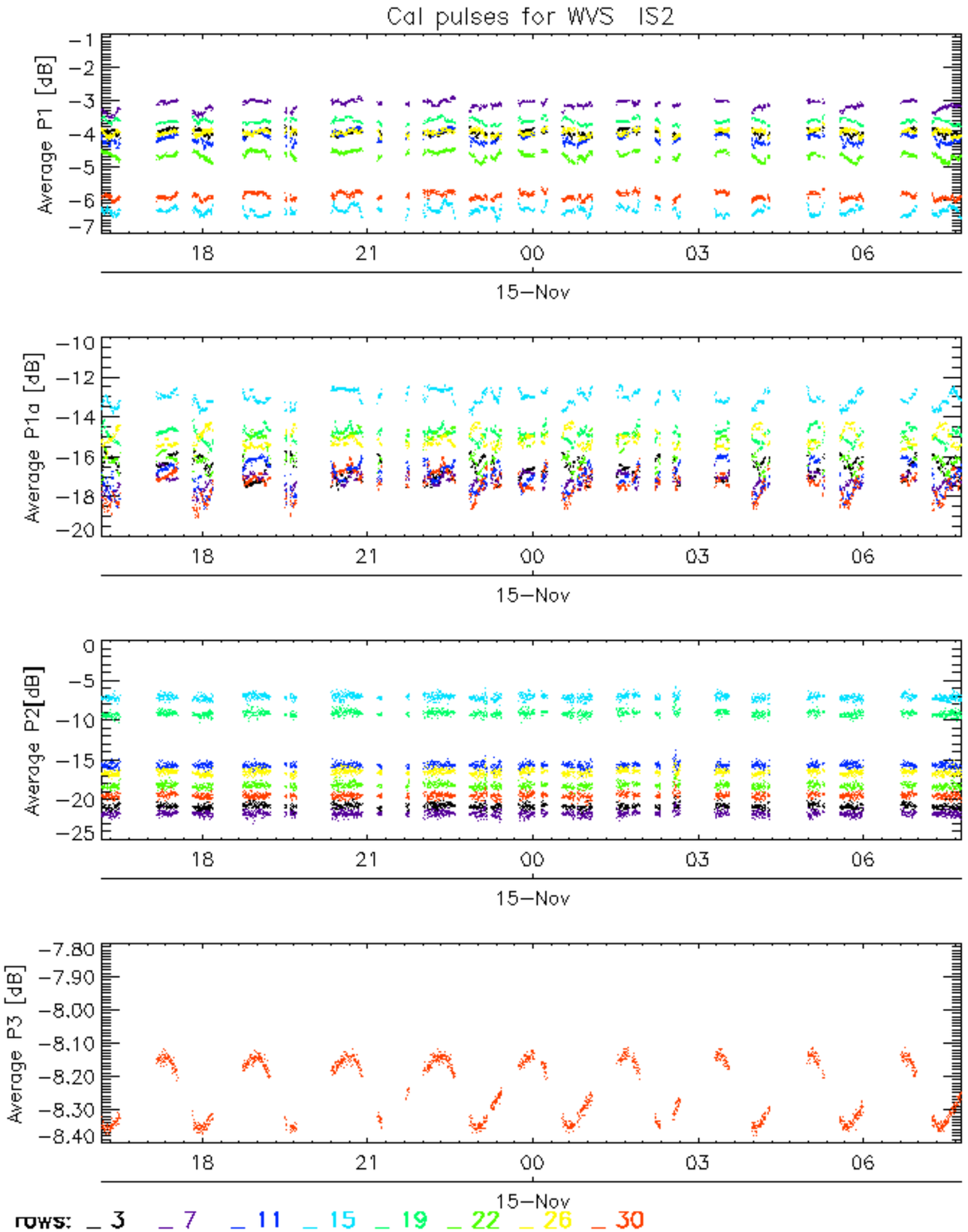


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
15−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
18
21
00
03
06
15−Nov
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
15−Nov
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
15−Nov
rows: _ 3 _ 7 _ 11 _ 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
15−Nov
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
15−Nov
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
15−Nov
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
15−Nov
rows: 3 7 11 15 19 22 26 30


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

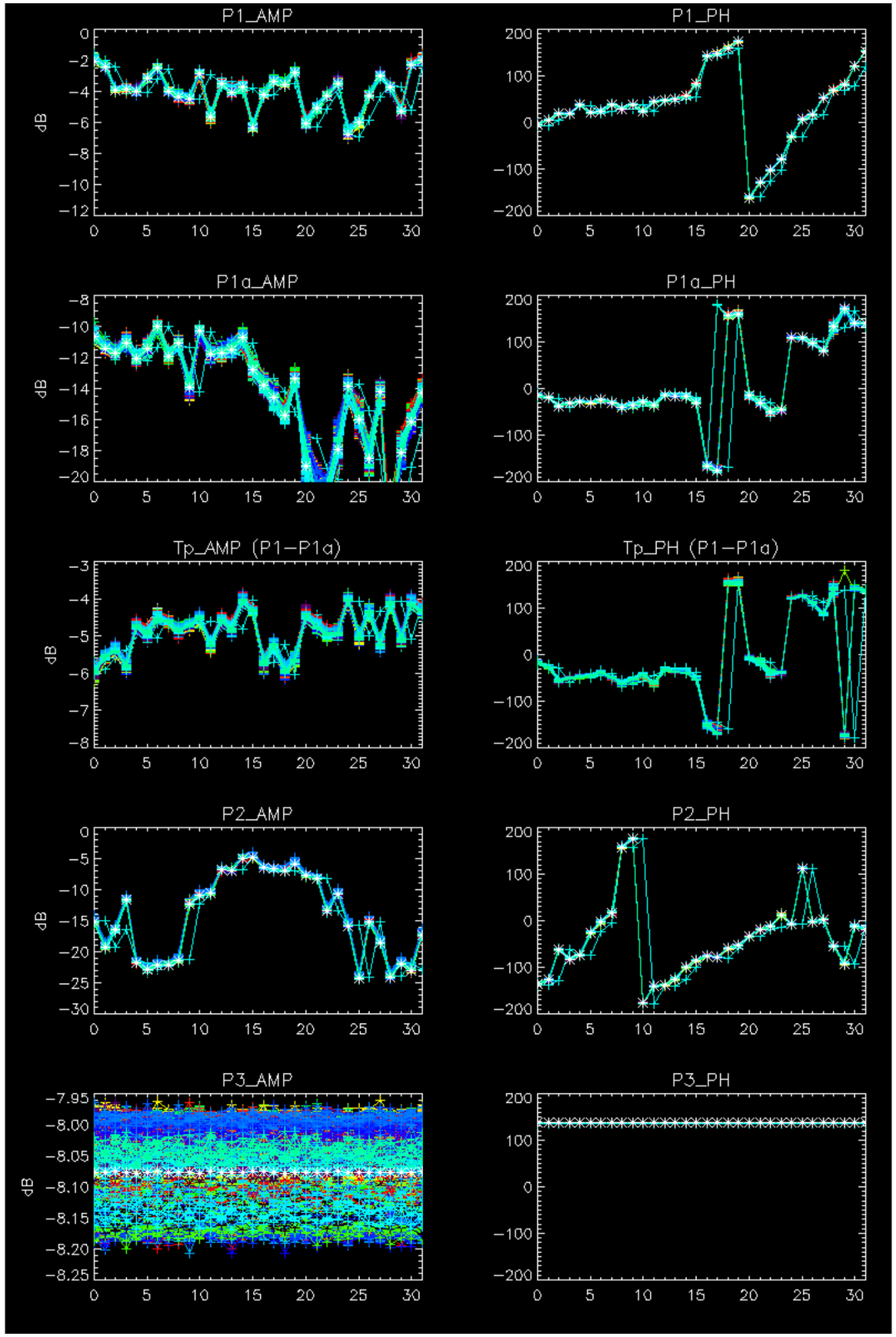

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
15−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
18
21
00
03
06
15−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
15−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
15−Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

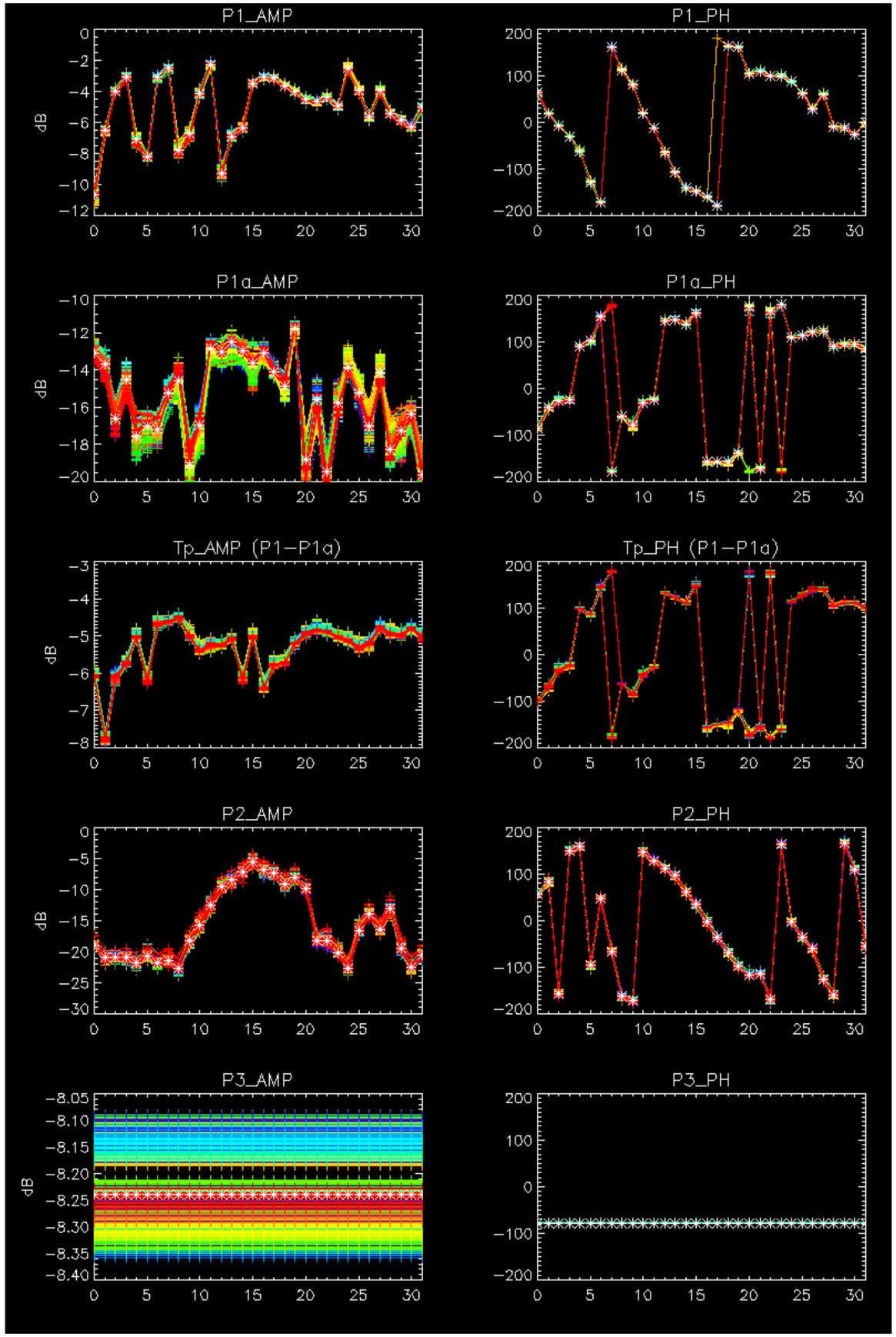

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
−5
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30


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

No anomalies observed on available browse products

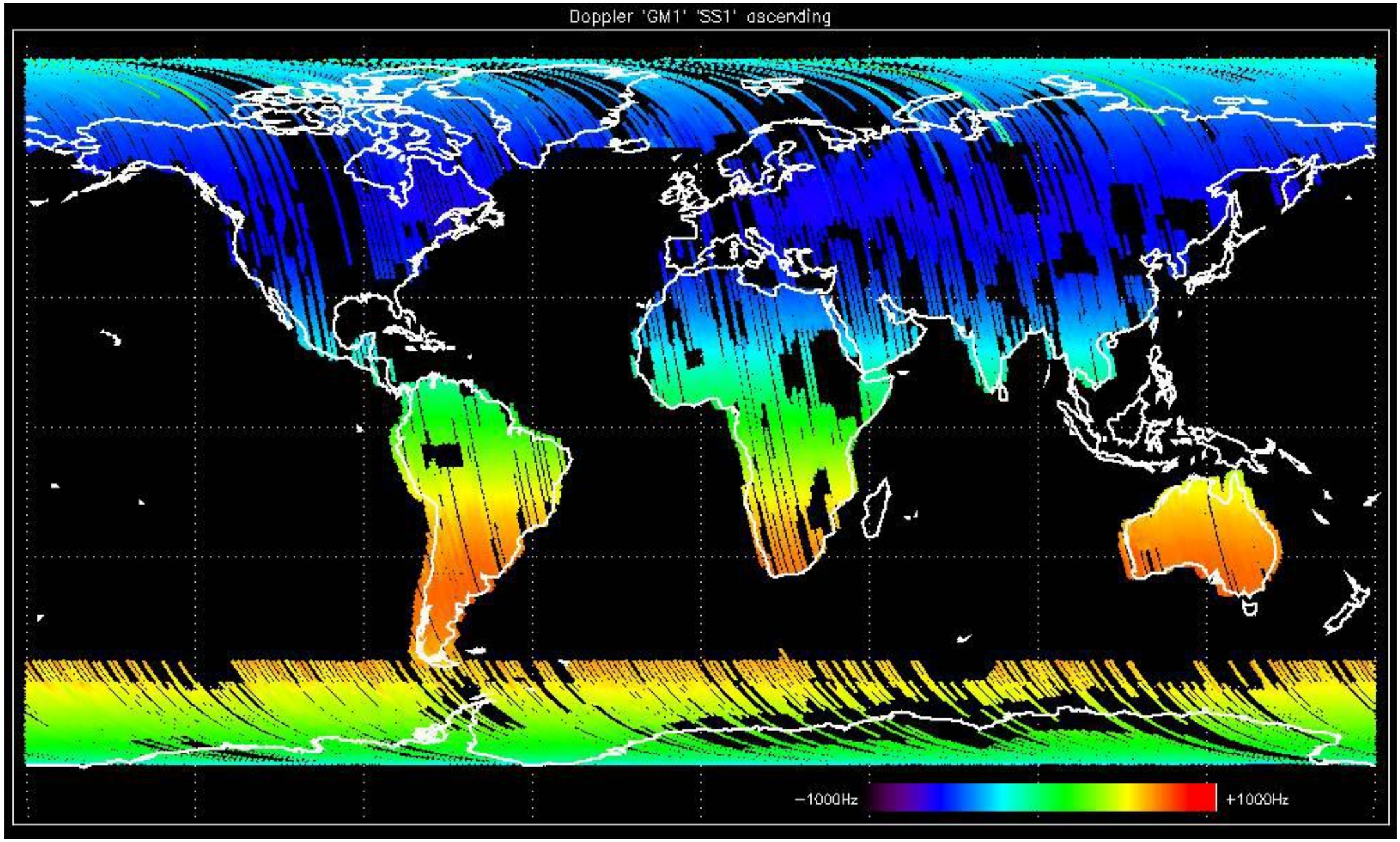
No anomalies observed.

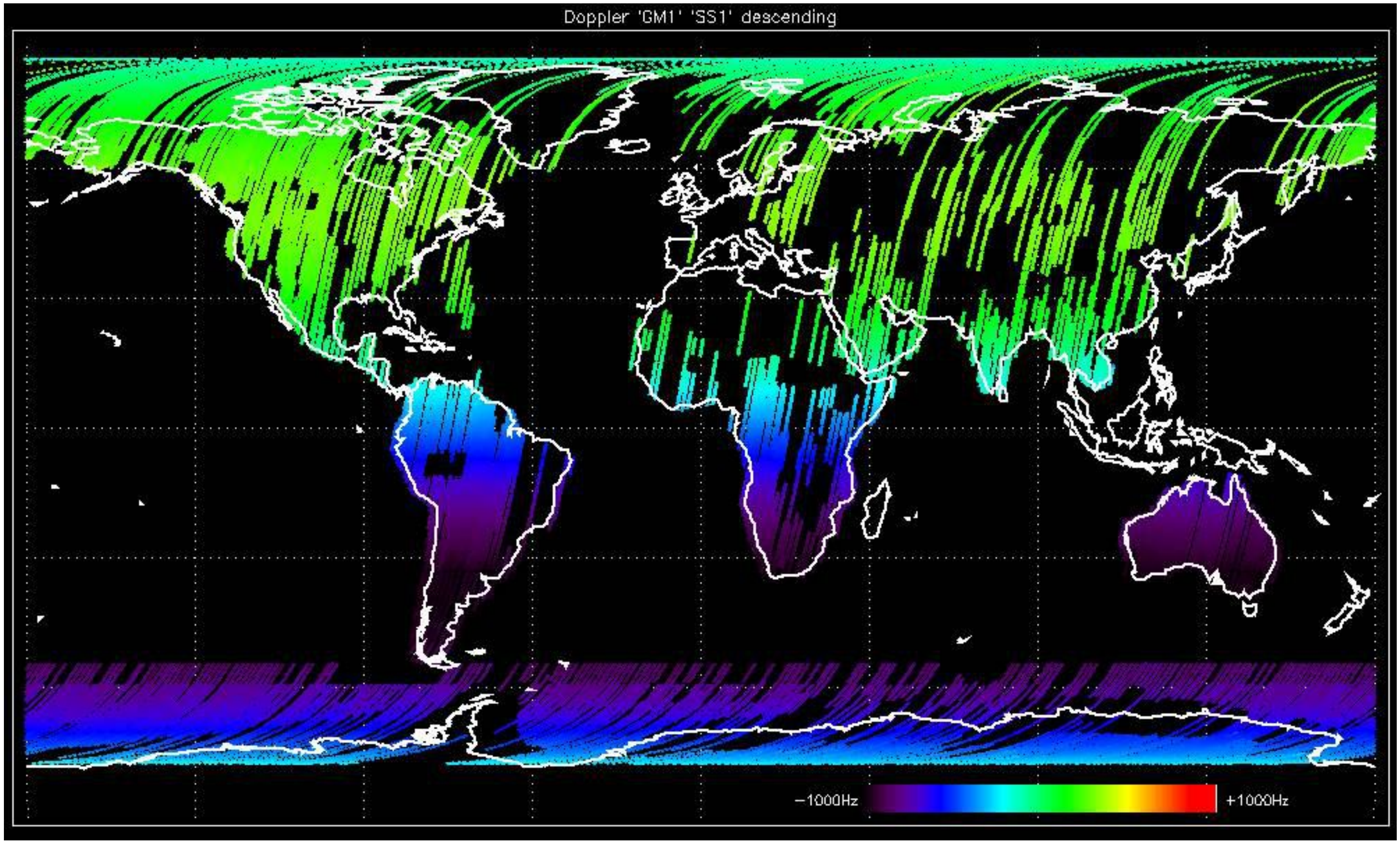

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

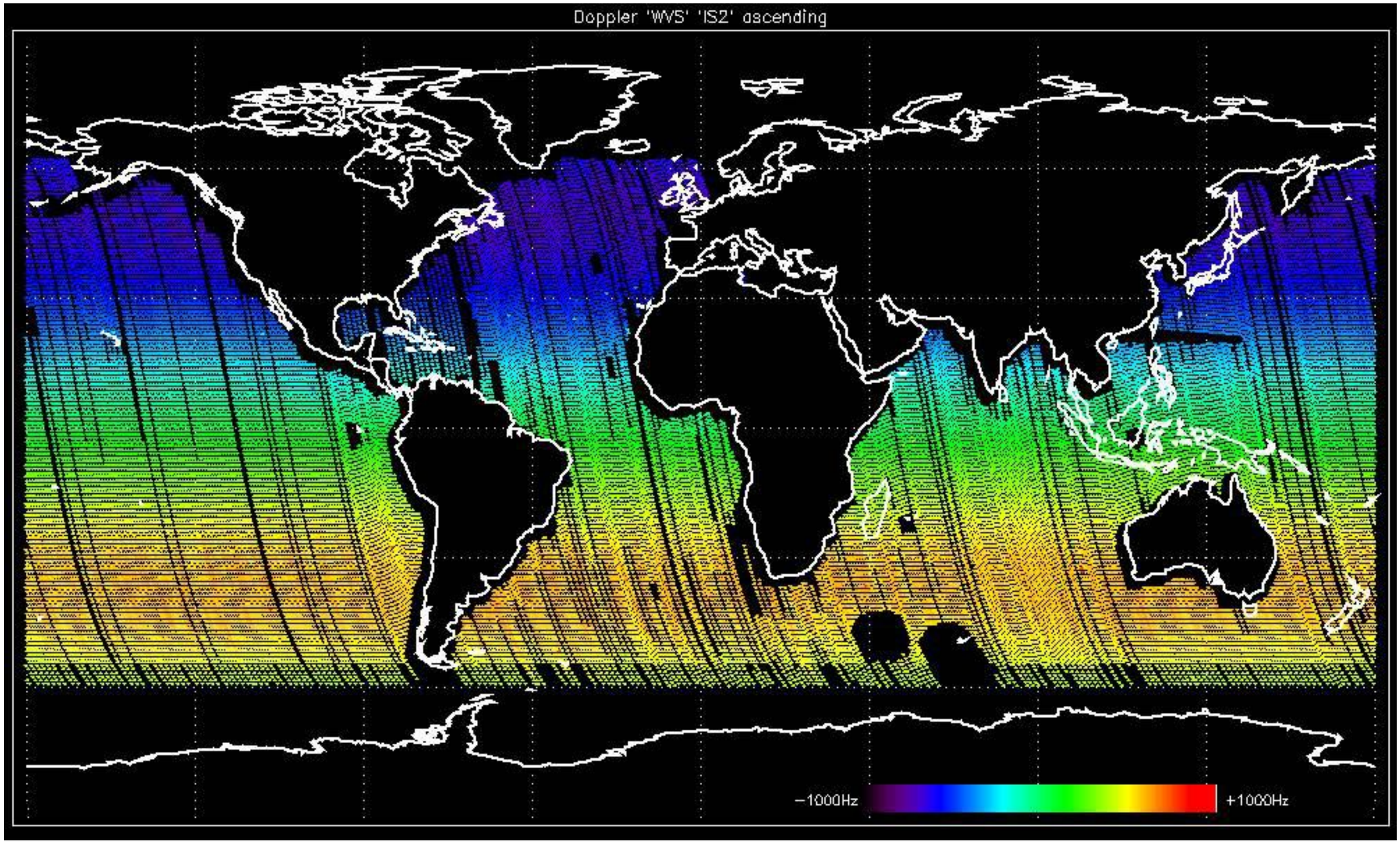

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

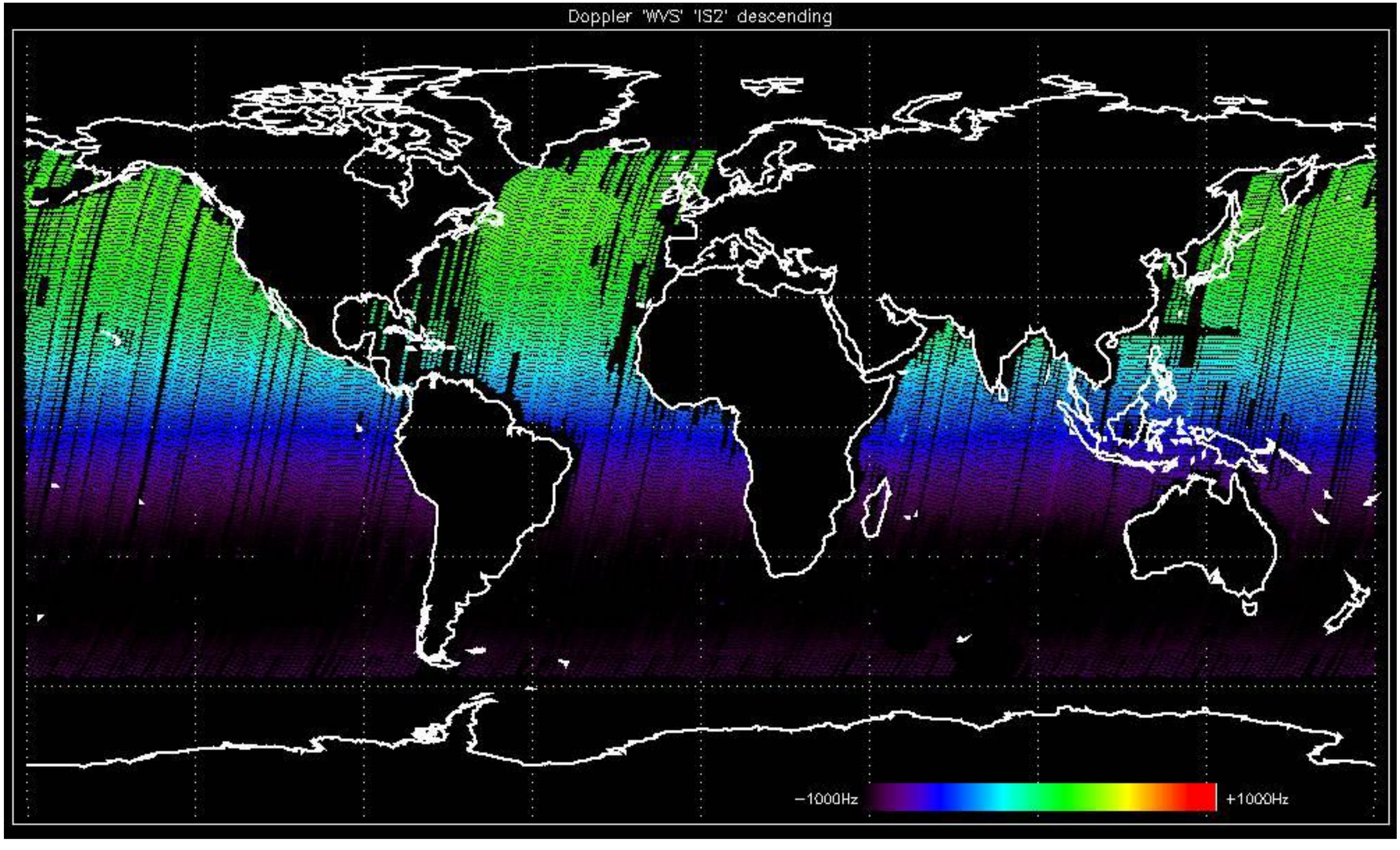
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

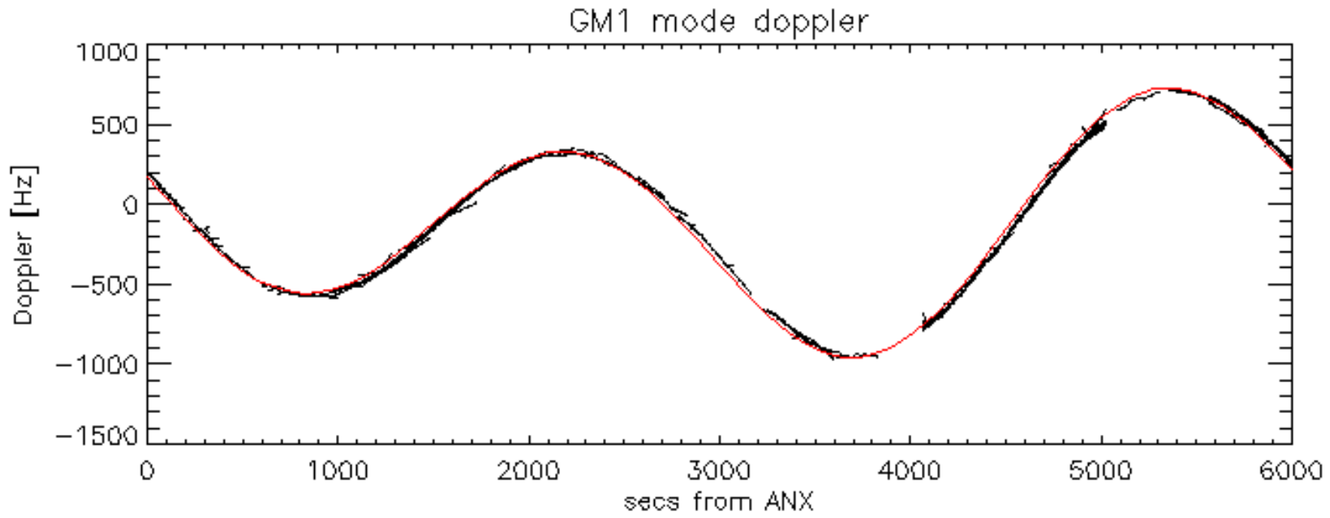
Preliminary report.The data is not yet controled

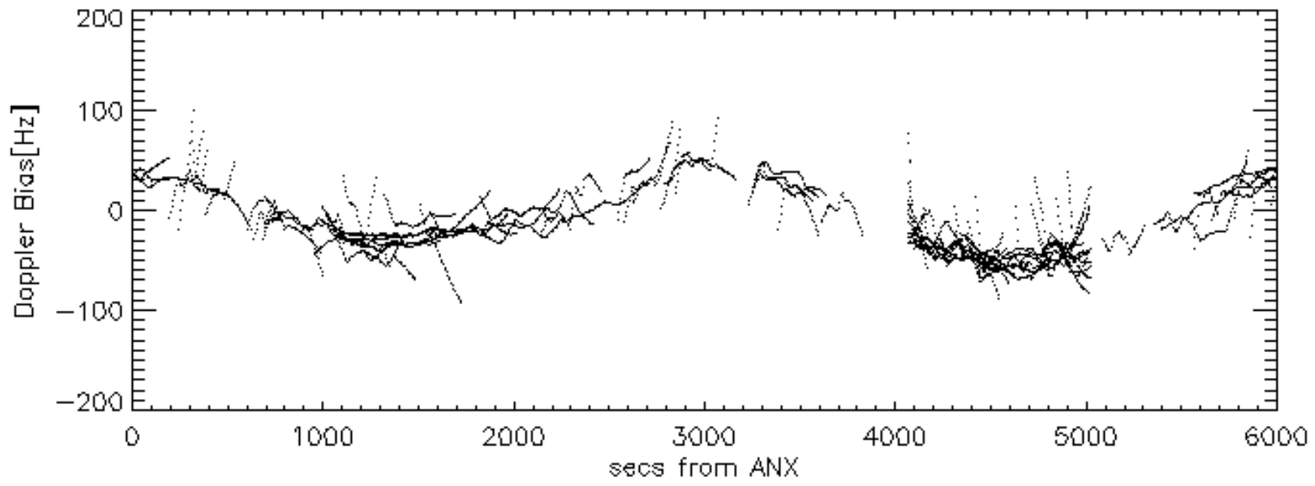

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

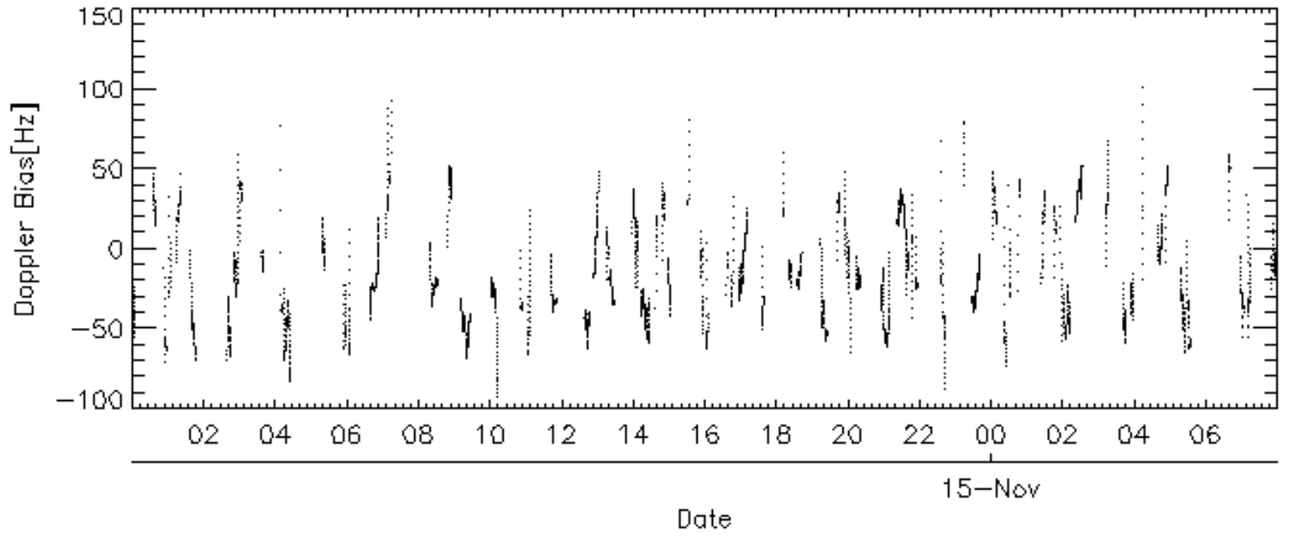

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

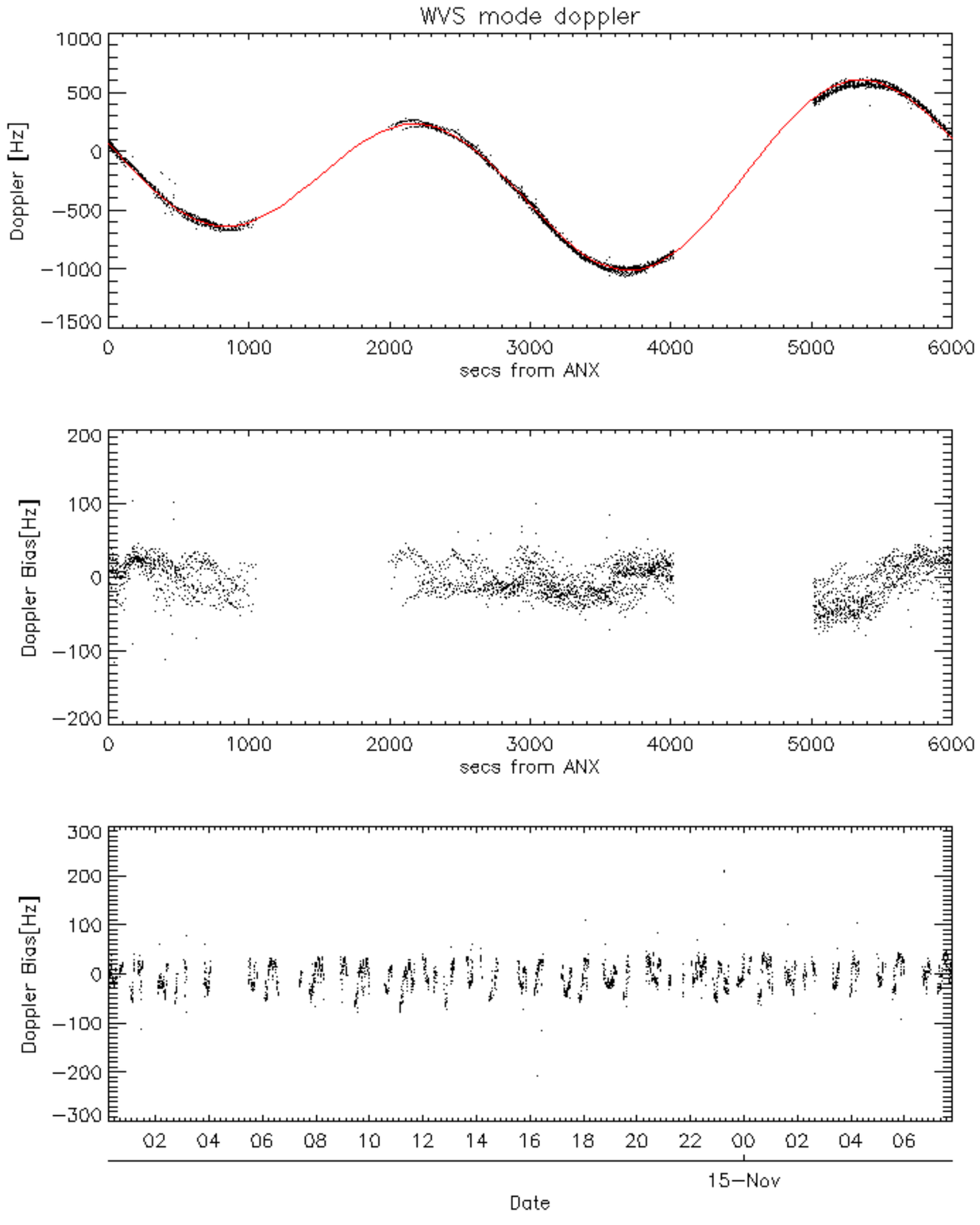

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

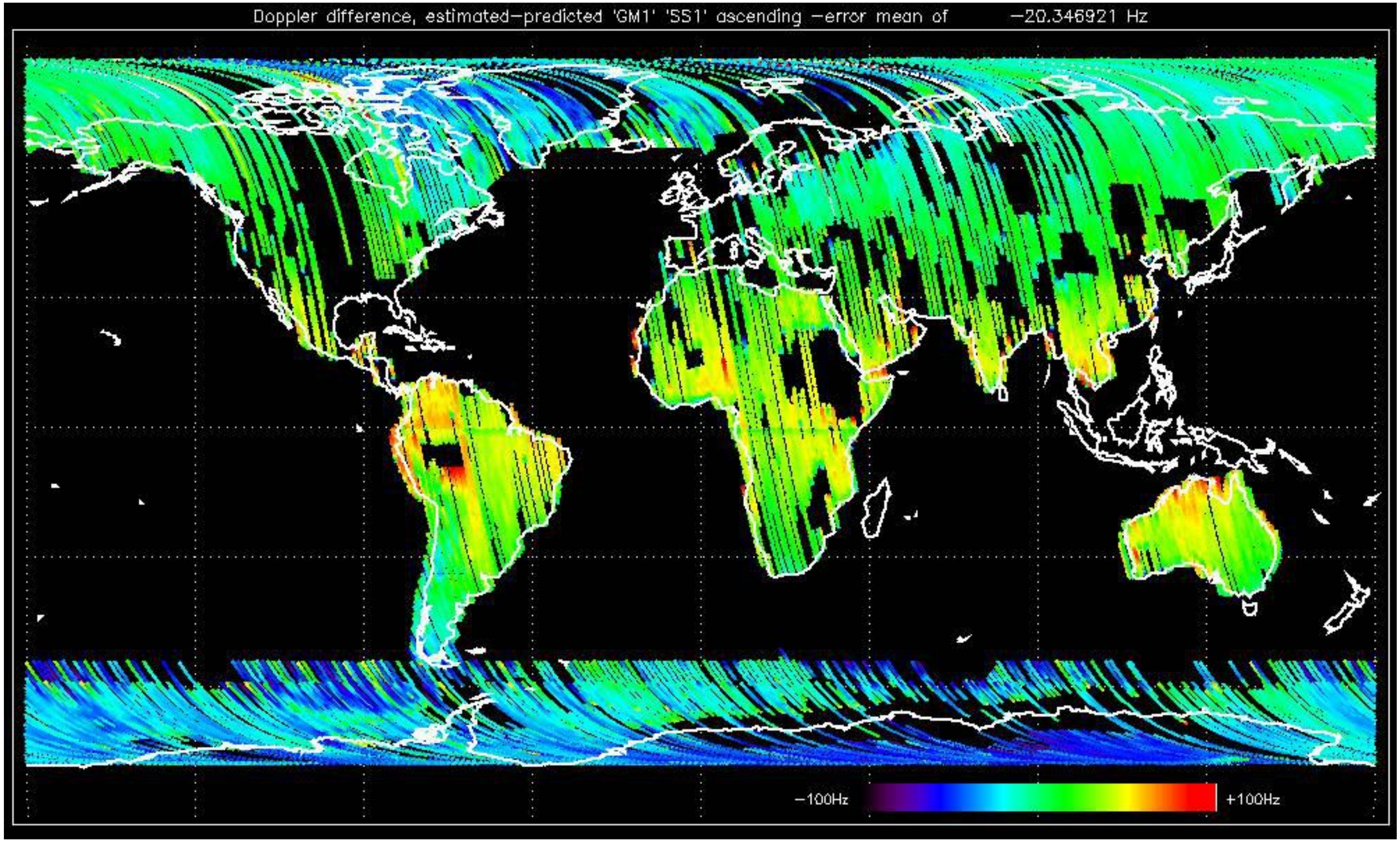

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

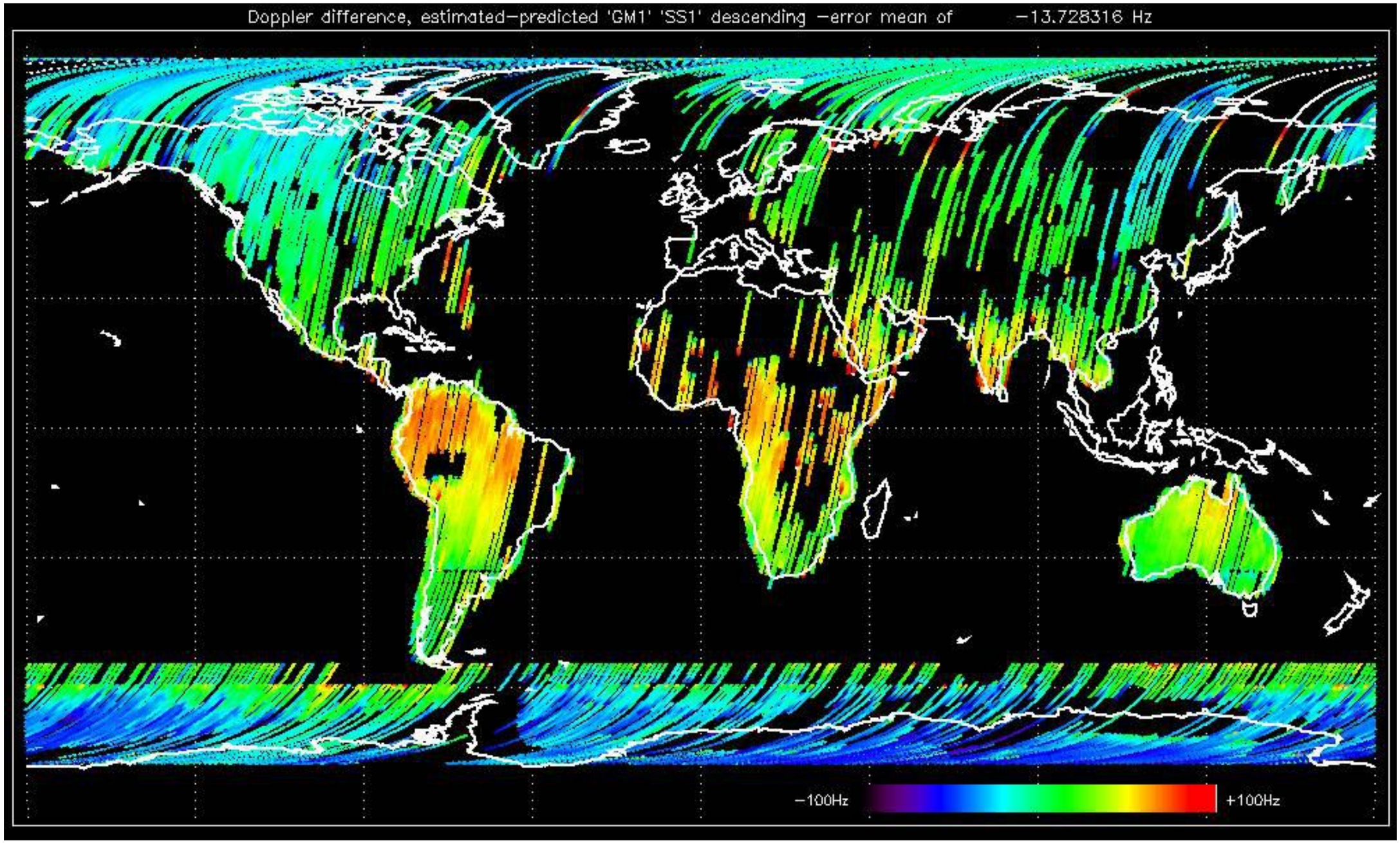

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

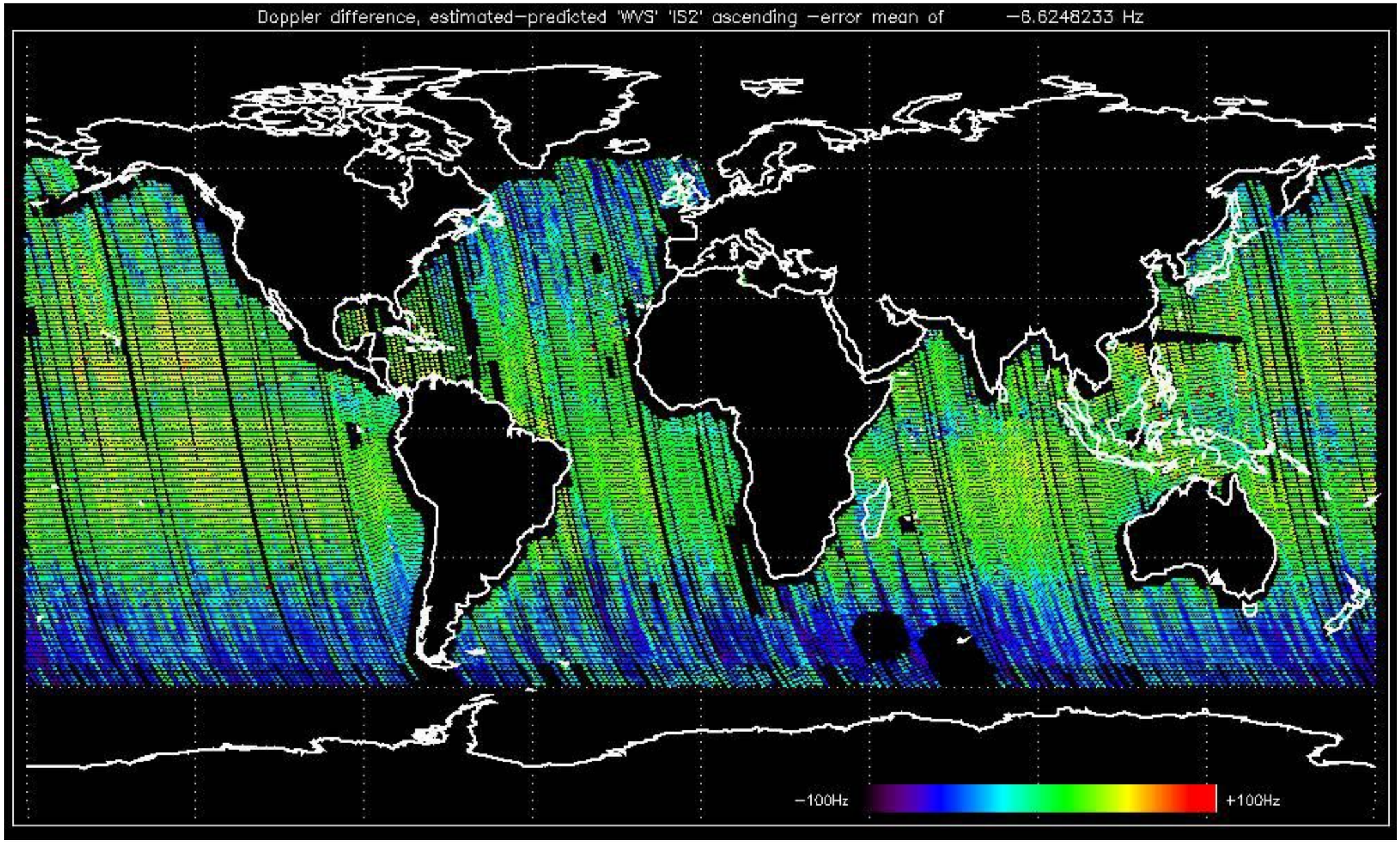

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

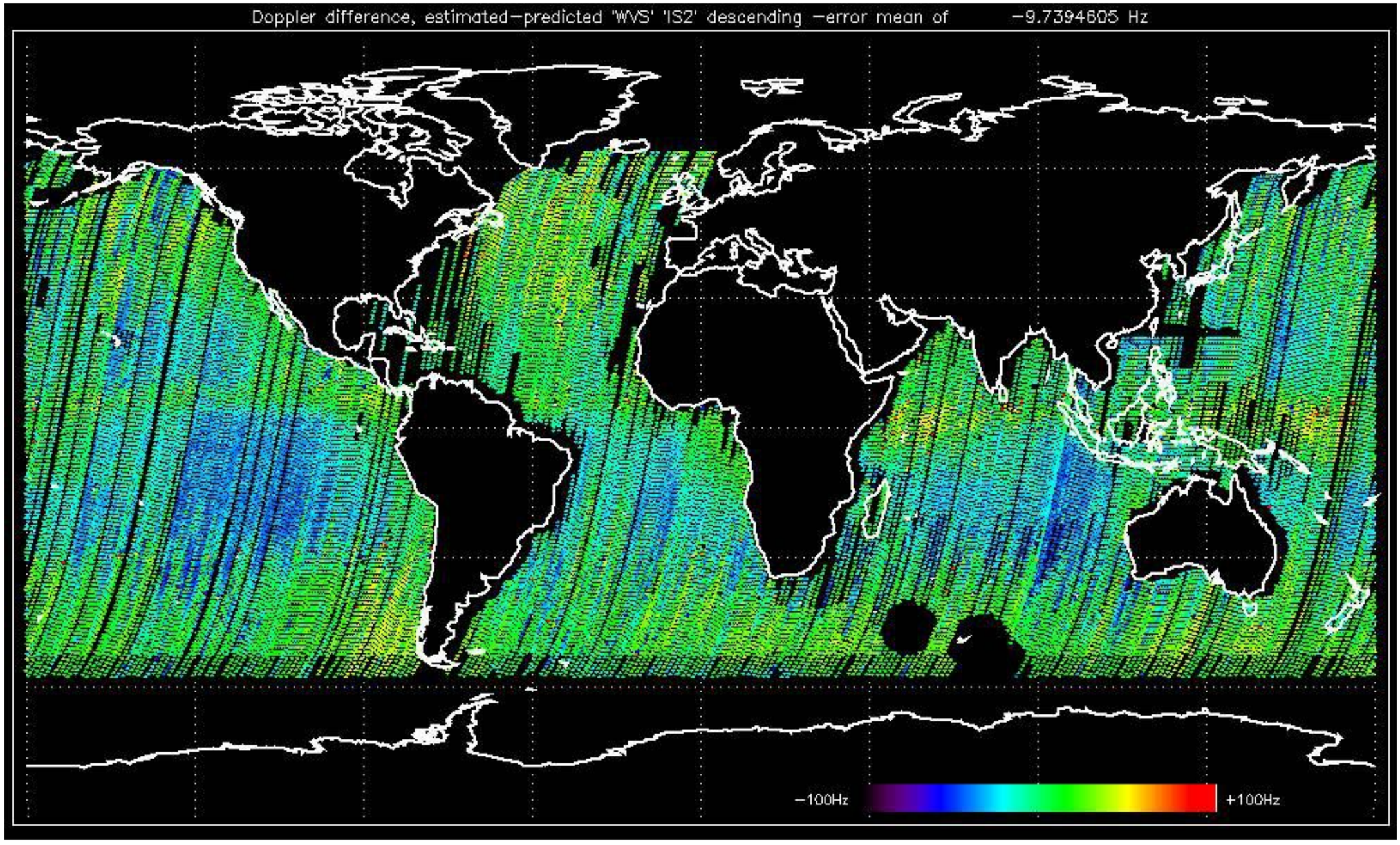

Doppler Bias[Hz]
150
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
15−Nov
Date


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
−300
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
15−Nov
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −20.346921 Hz
−100Hz
+100Hz

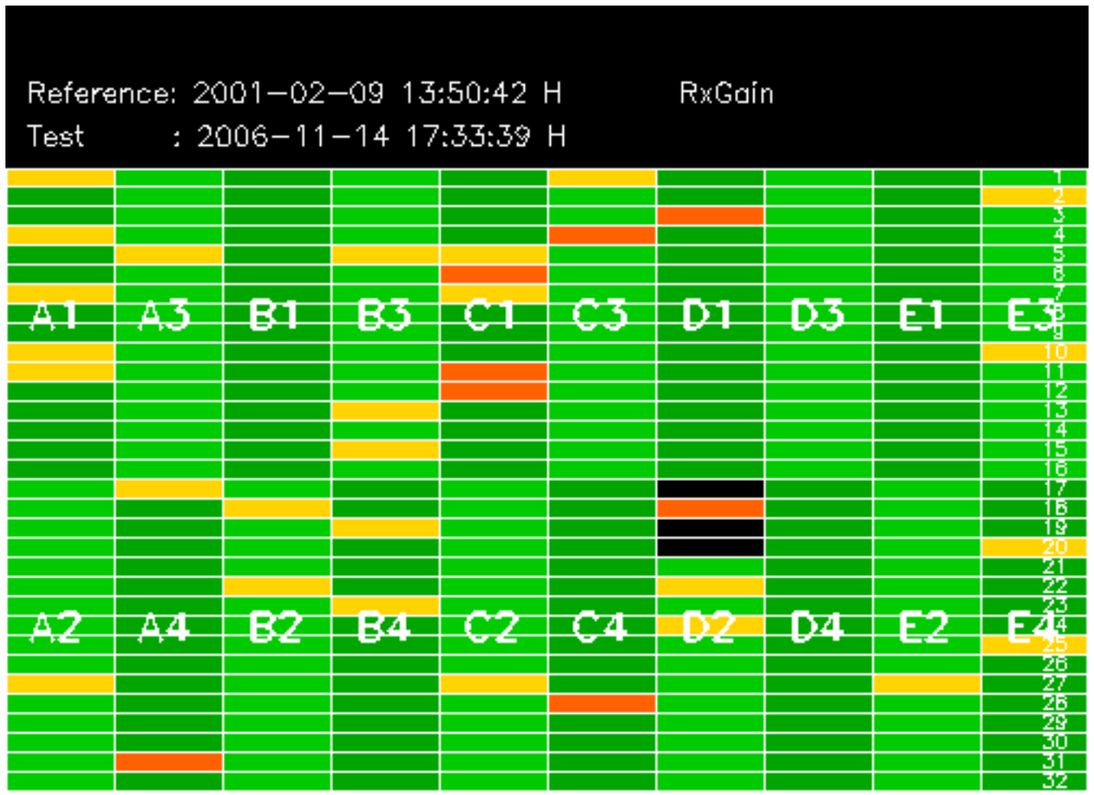

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −13.728316 Hz
−100Hz
+100Hz

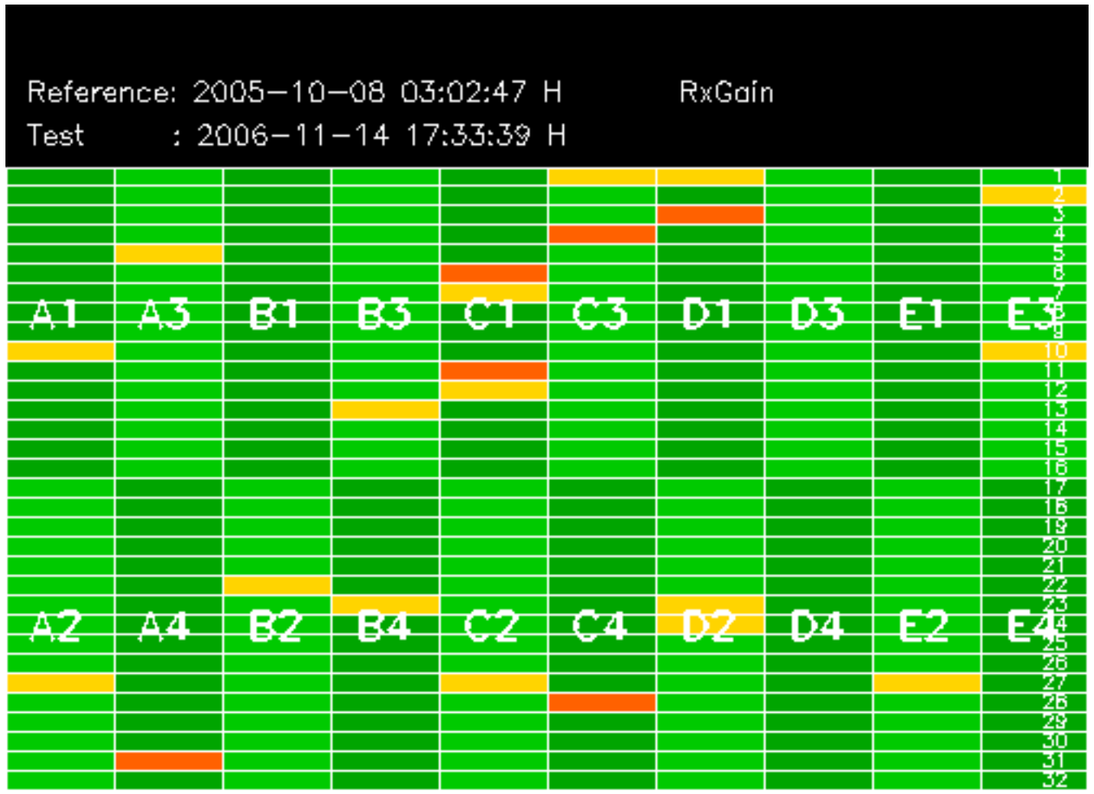

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −6.6248233 Hz
−100Hz
+100Hz

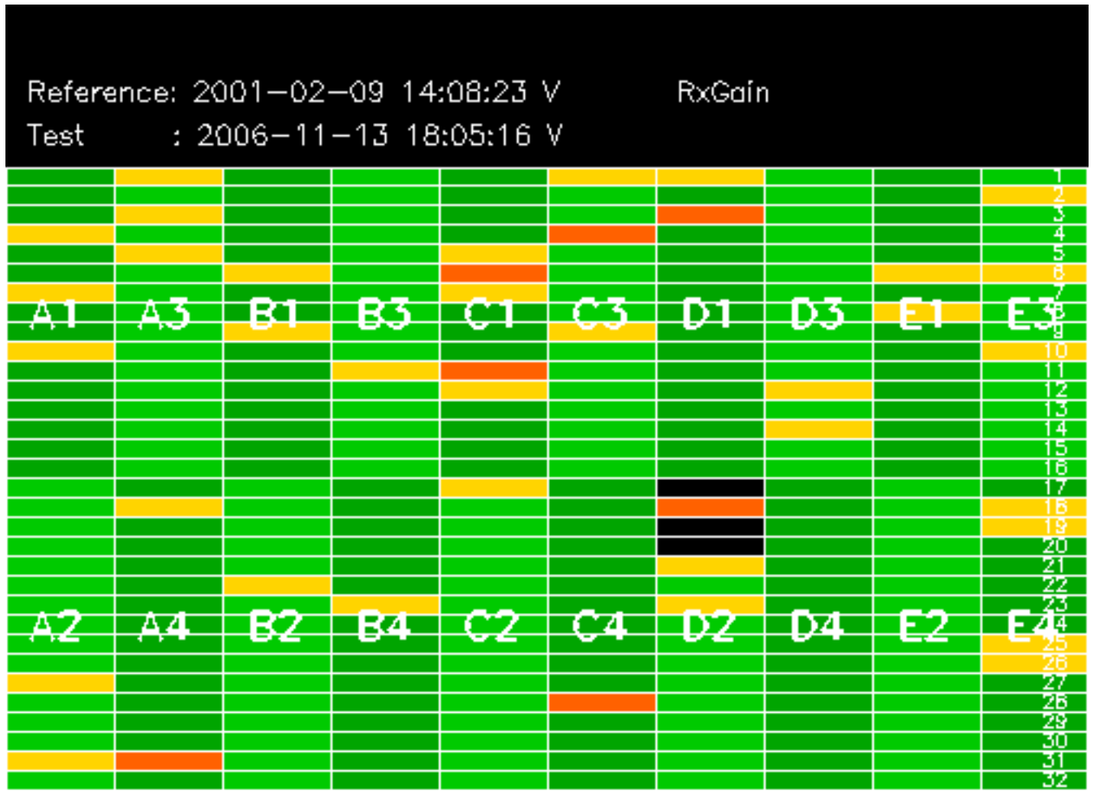

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −9.7394605 Hz
−100Hz
+100Hz

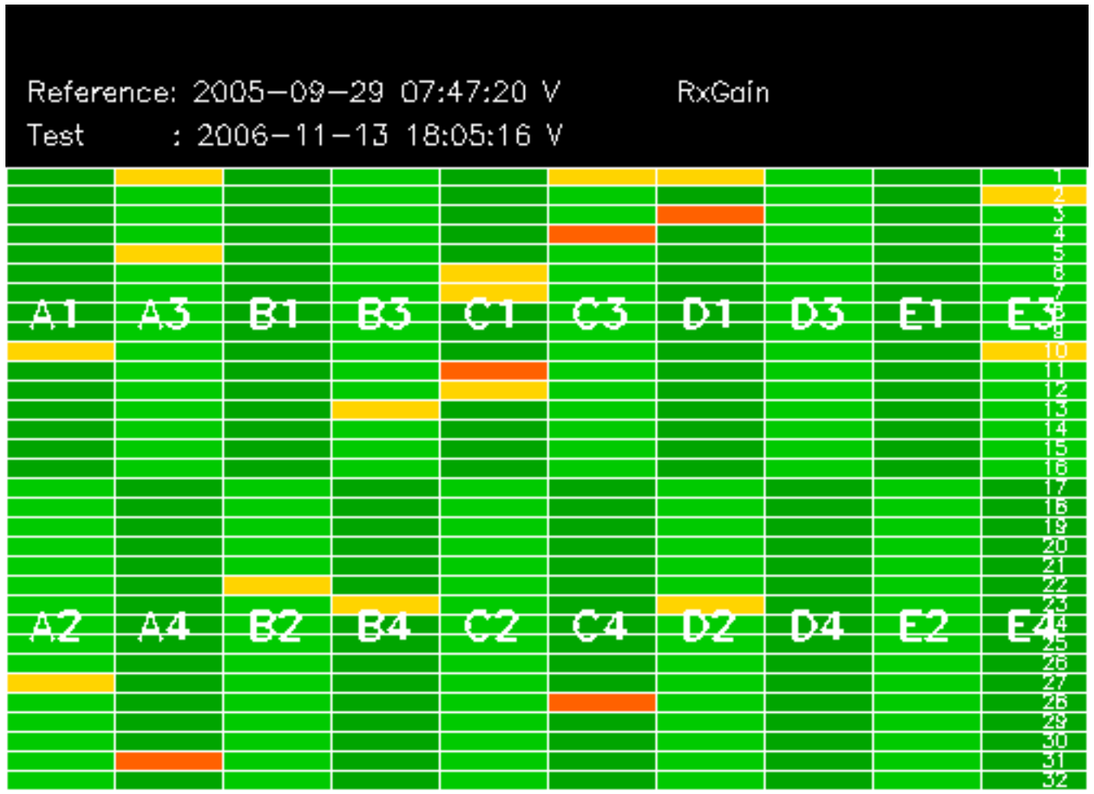
No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-11-14 17:33:39 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-11-14 17:33:39 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 : 2006-11-13 18:05:16 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-11-13 18:05:16 V
RxGain
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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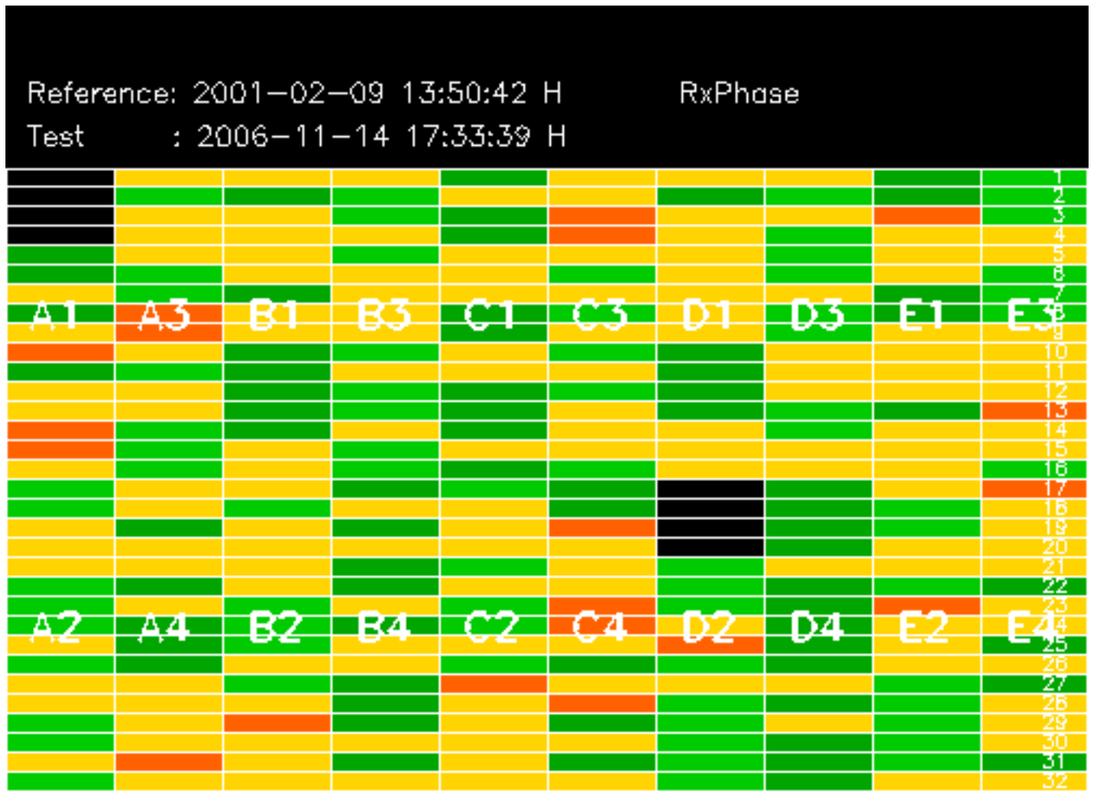
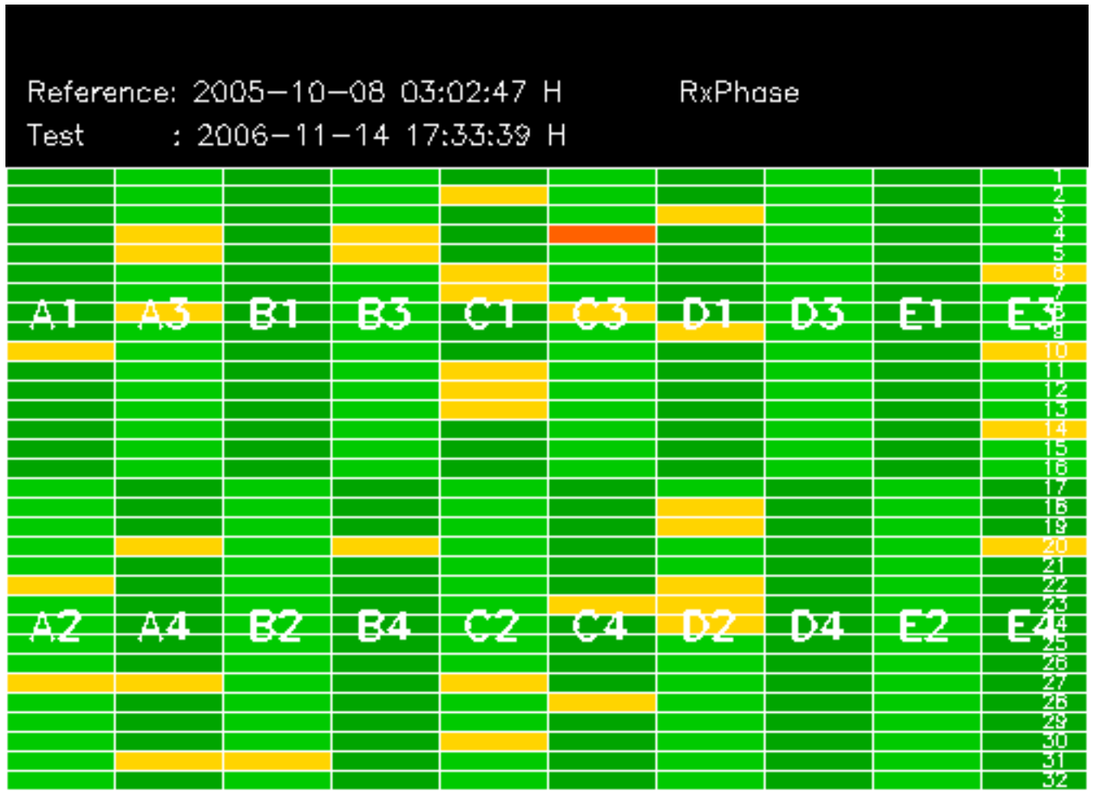

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-11-14 17:33:39 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-11-14 17:33:39 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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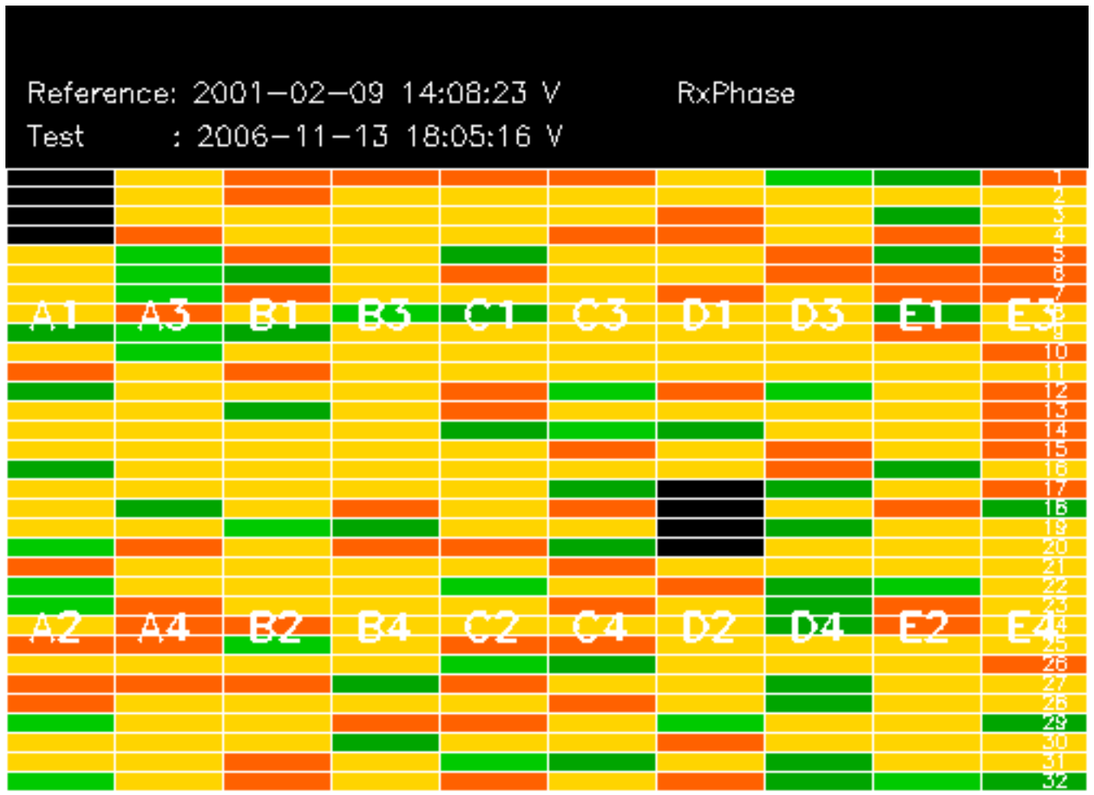
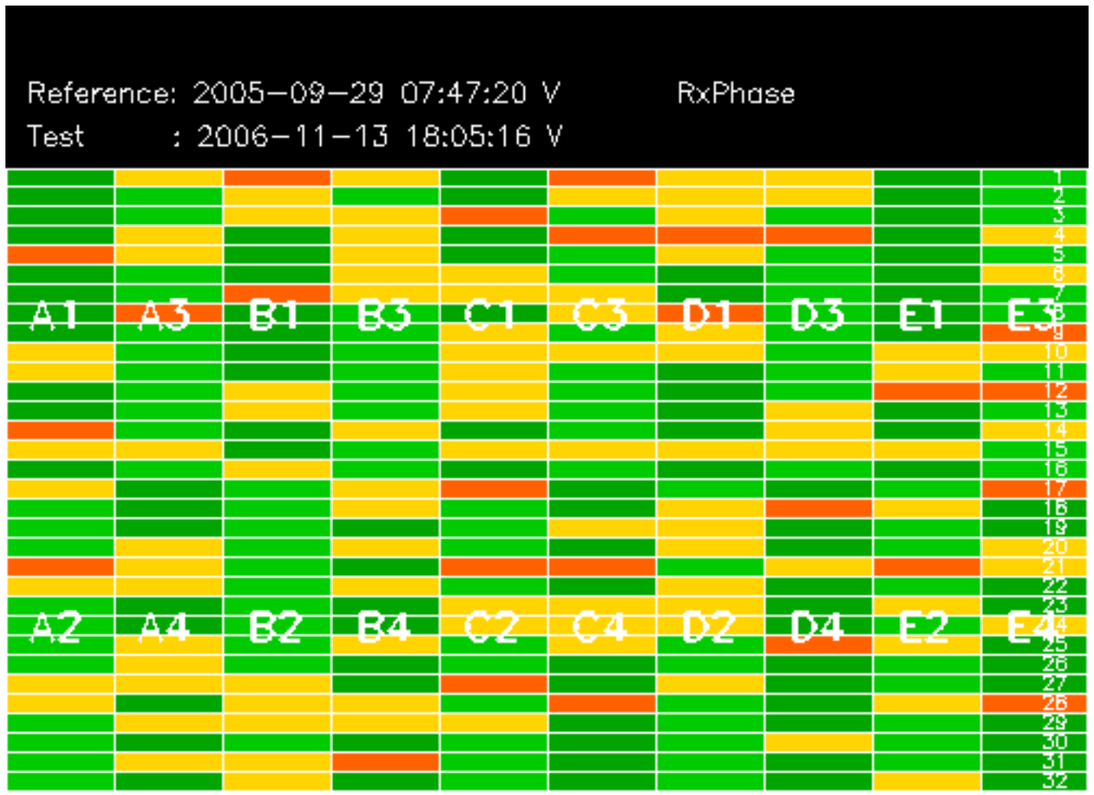

Reference: 2001-02-09 14:08:23 V
Test : 2006-11-13 18:05:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-11-13 18:05:16 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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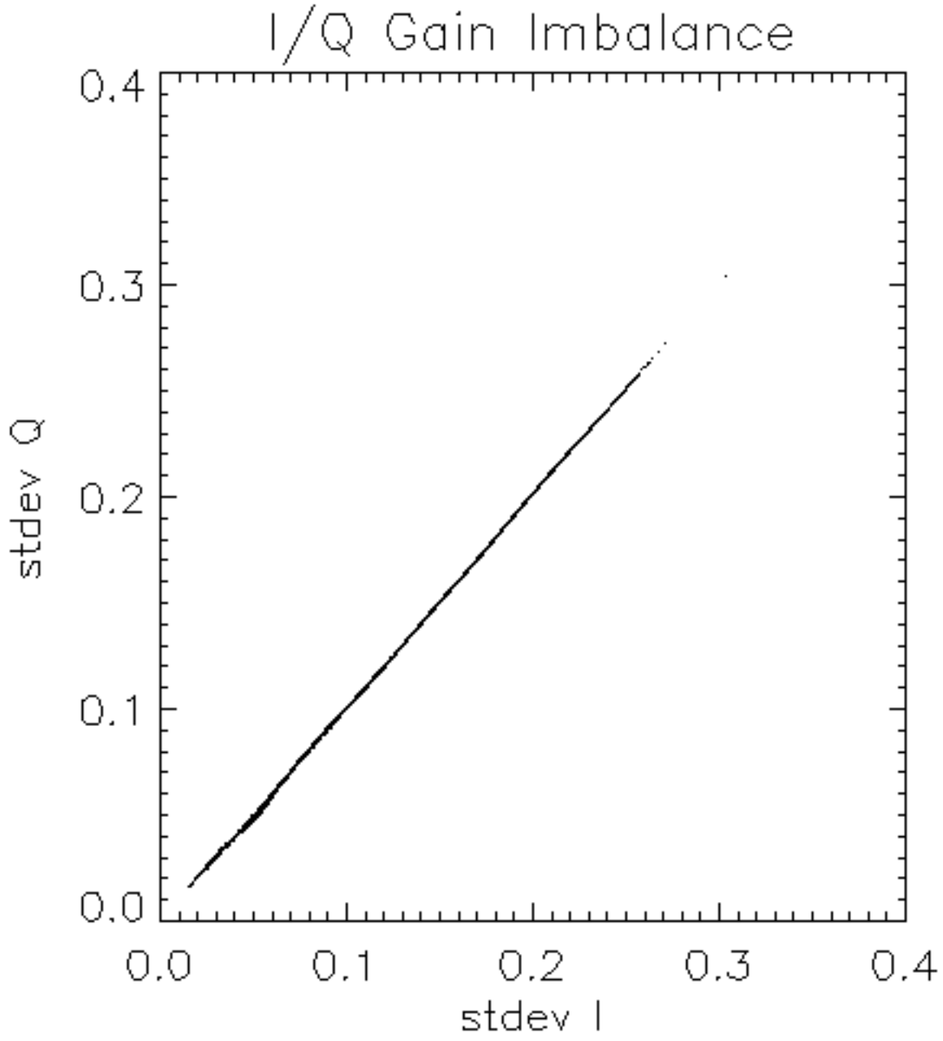
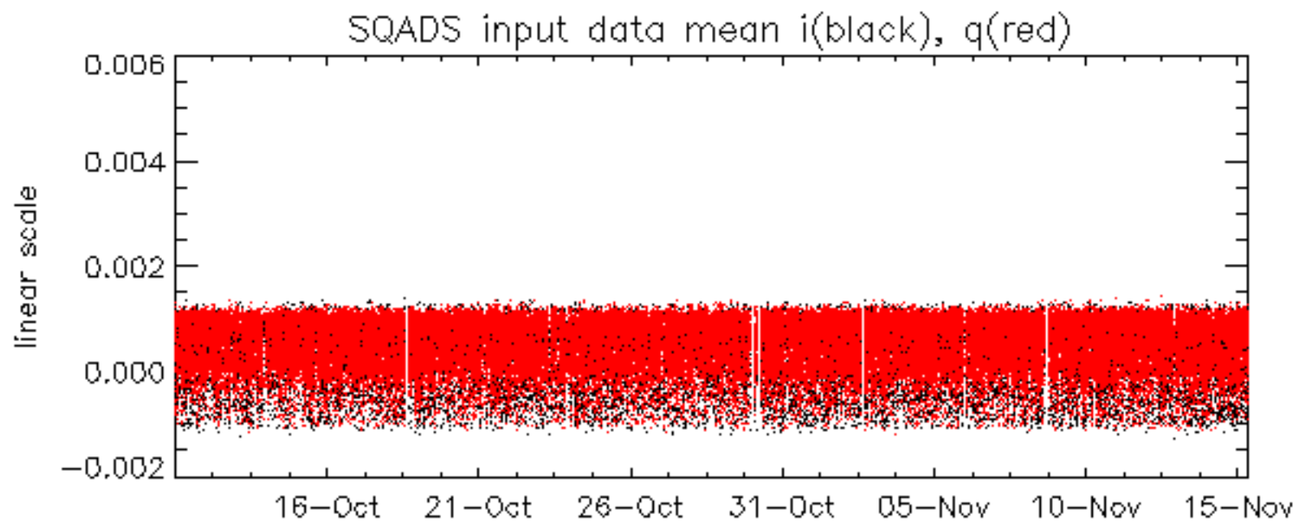
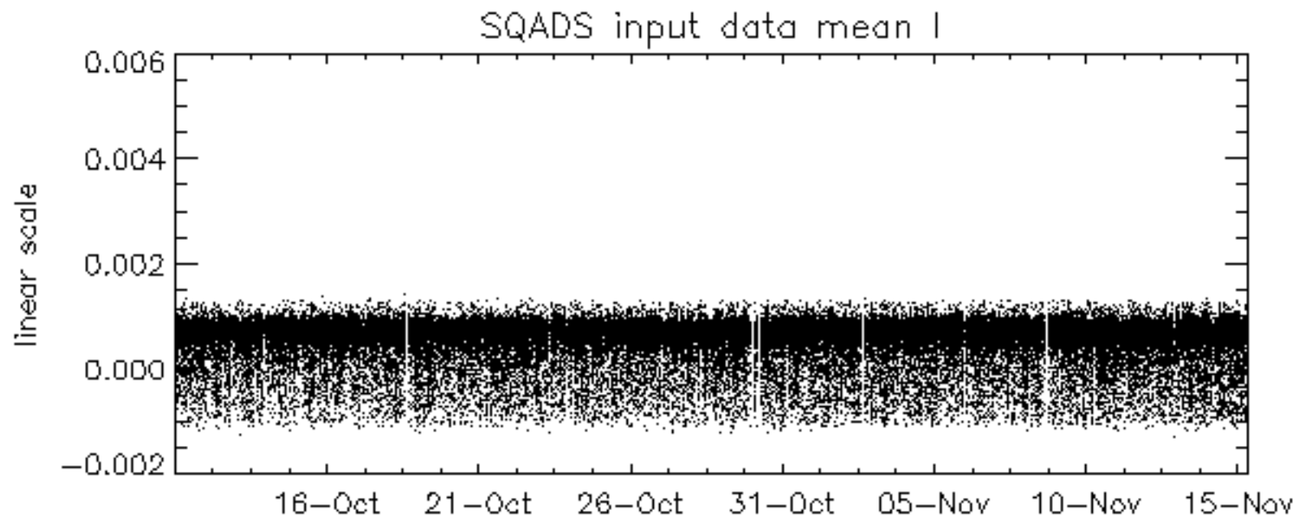
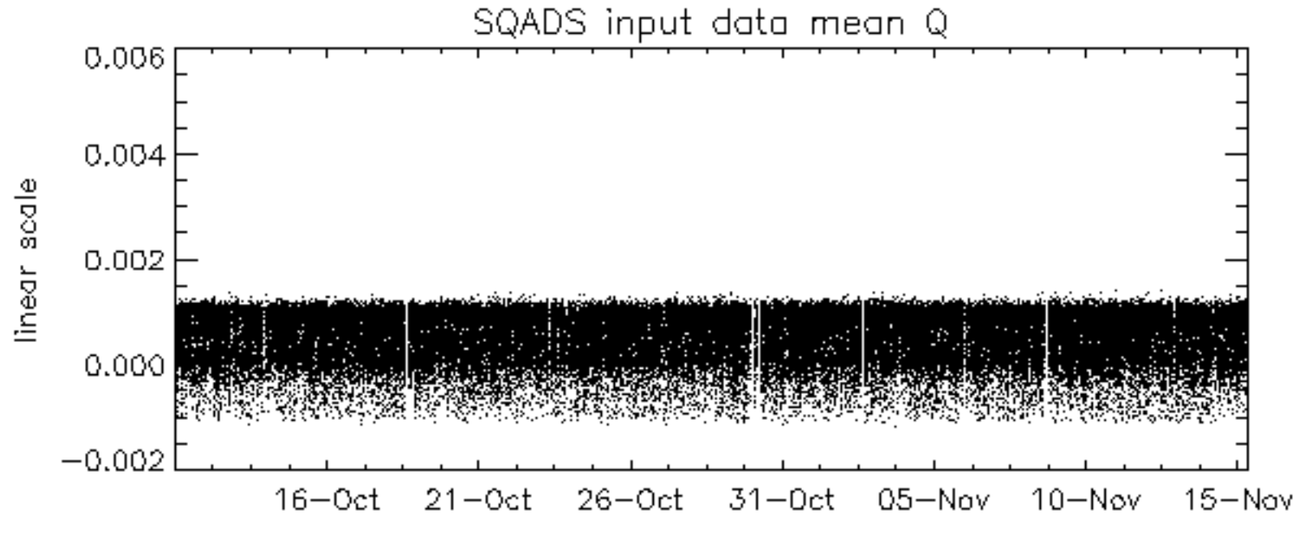
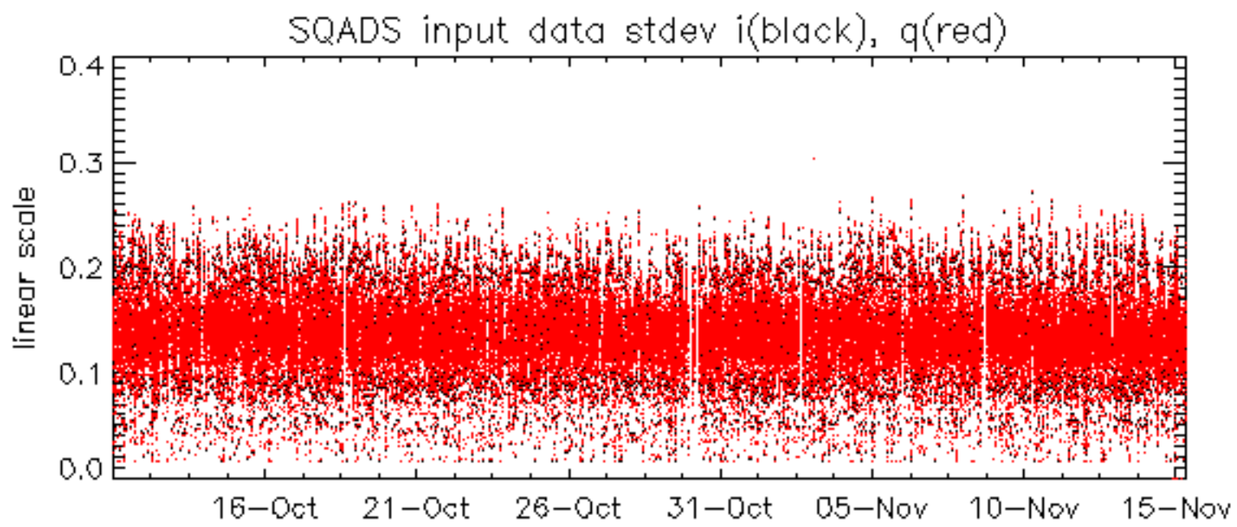
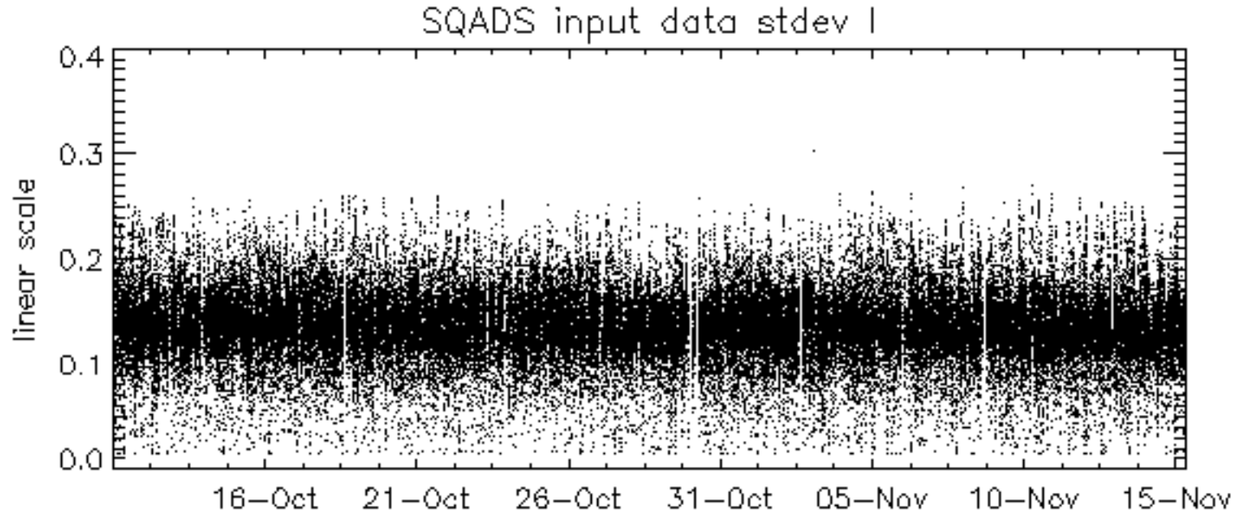

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

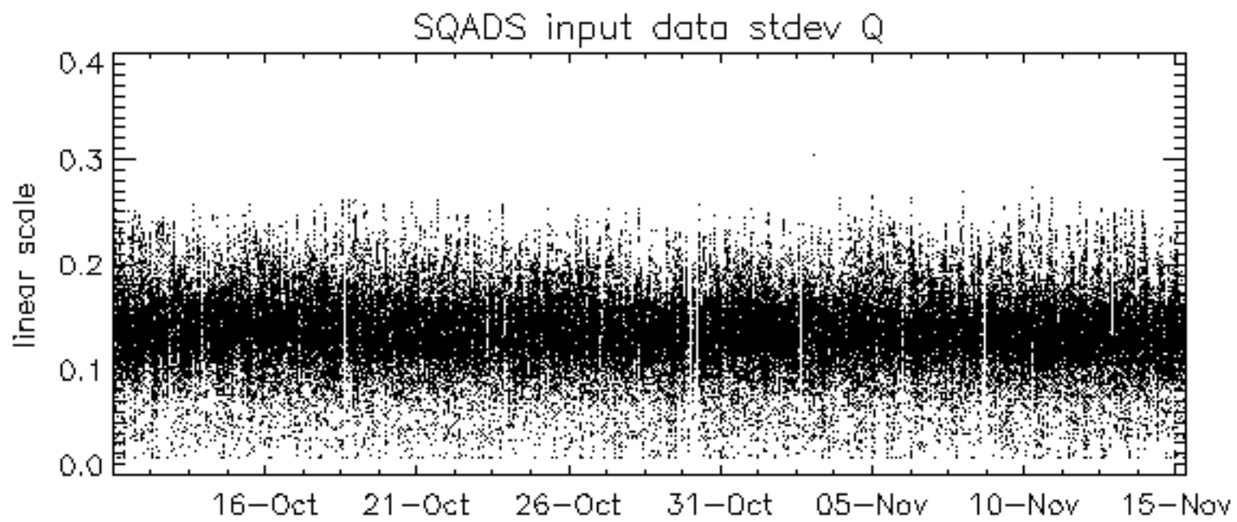

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov

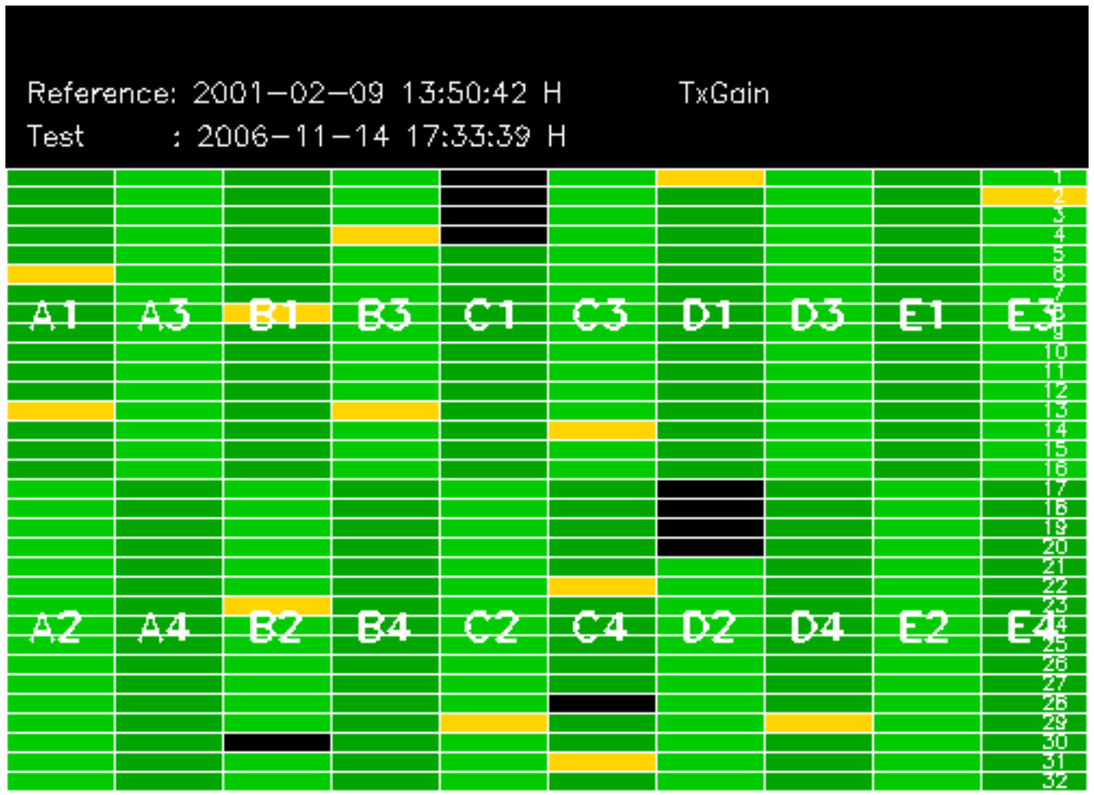

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
16−Oct
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov


Reference: 2001-02-09 13:50:42 H
Test : 2006-11-14 17:33:39 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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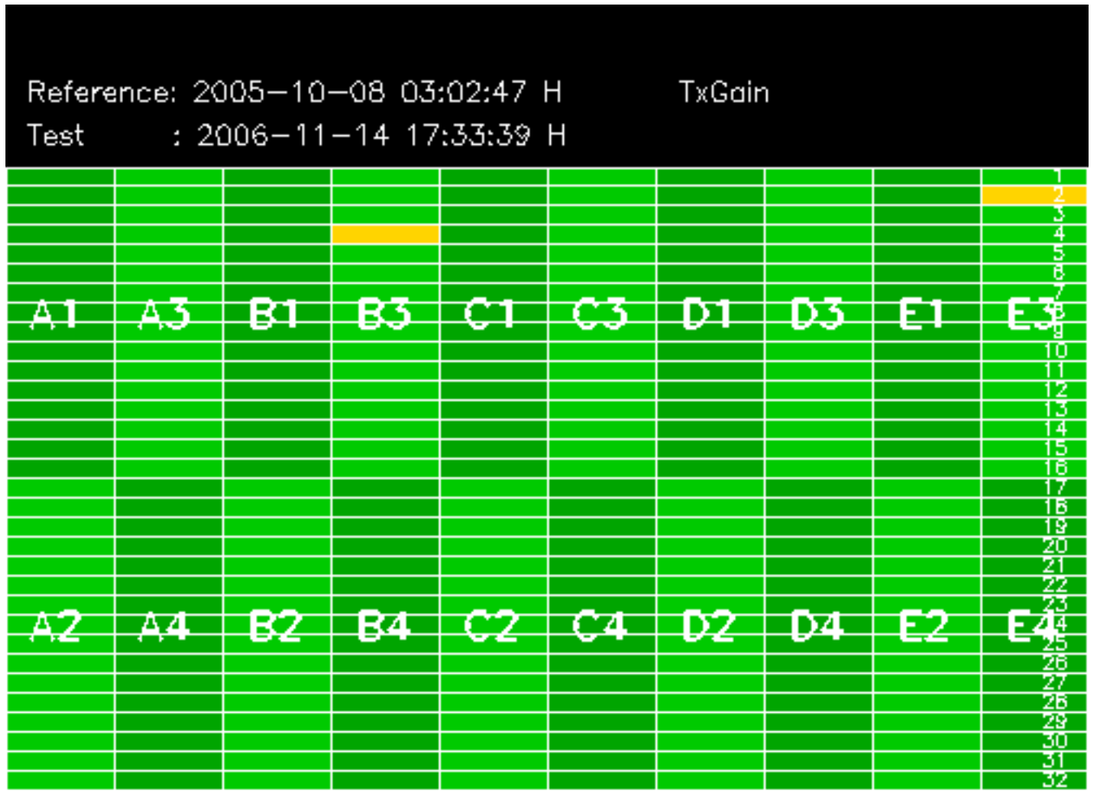
Reference: 2005-10-08 03:02:47 H
Test : 2006-11-14 17:33:39 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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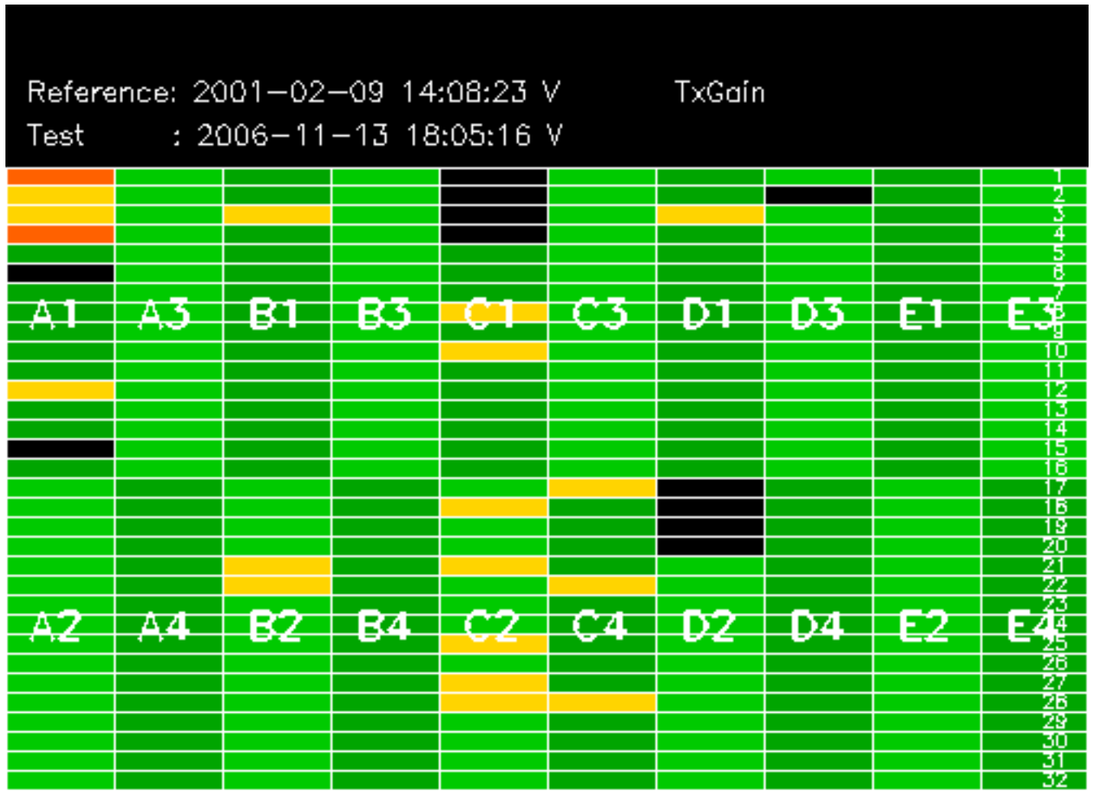
Reference: 2001-02-09 14:08:23 V
Test : 2006-11-13 18:05:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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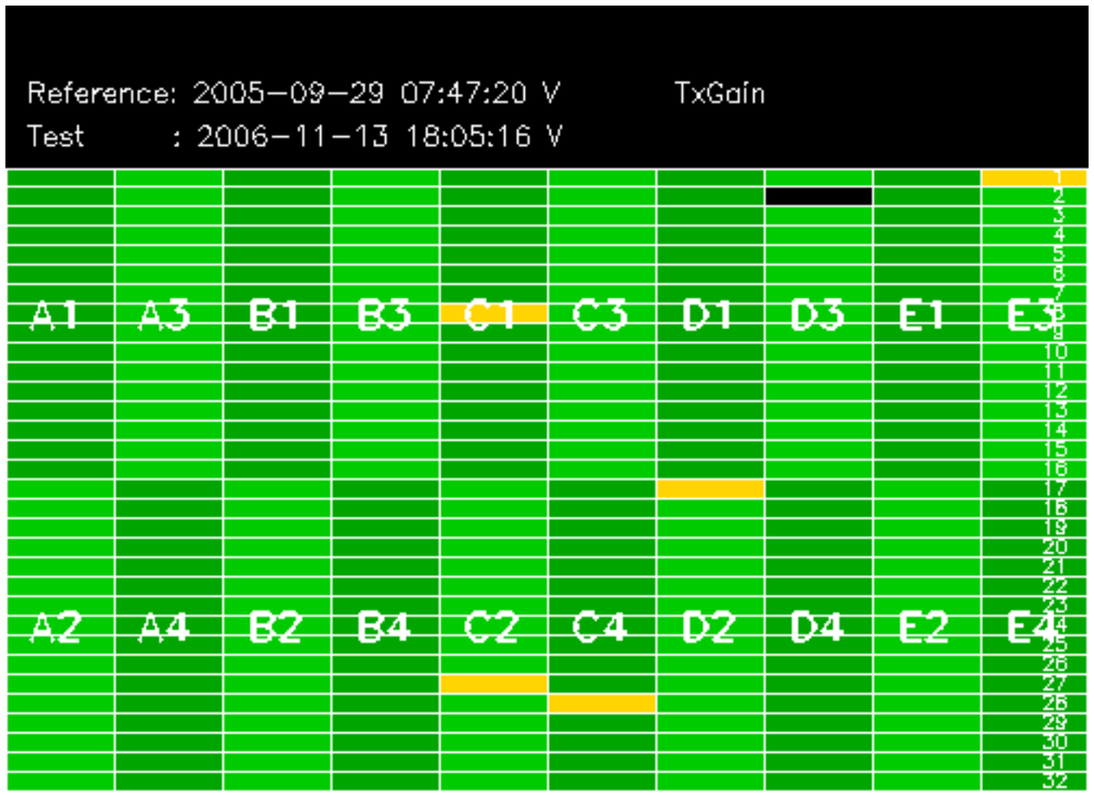
Reference: 2005-09-29 07:47:20 V
Test : 2006-11-13 18:05:16 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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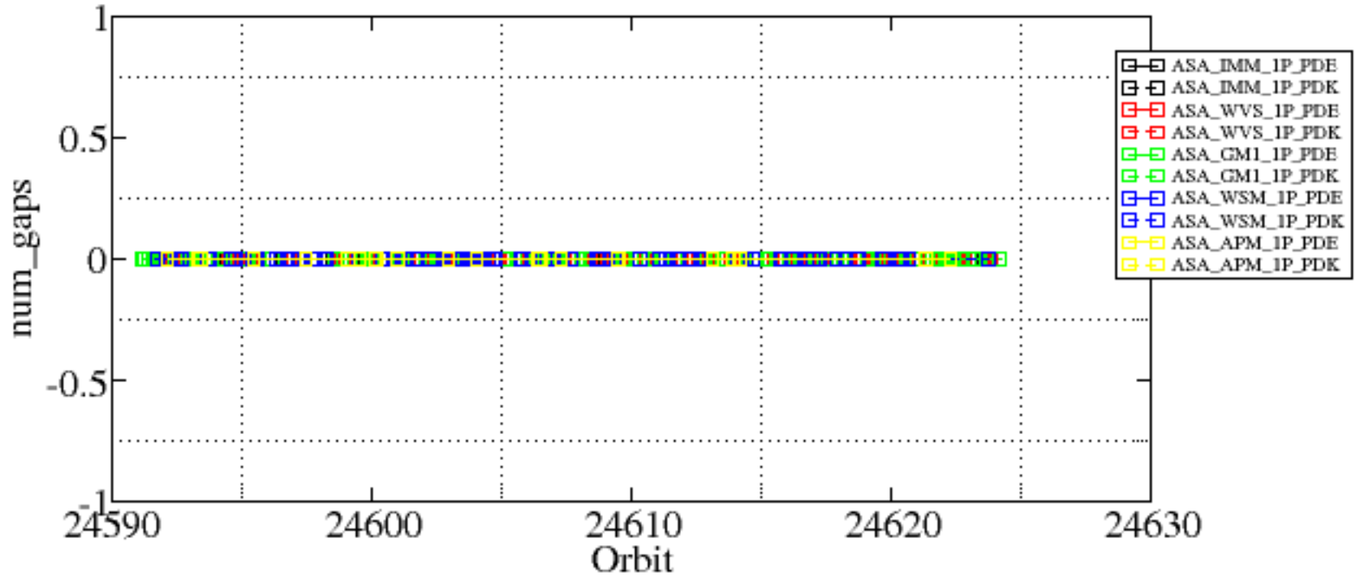
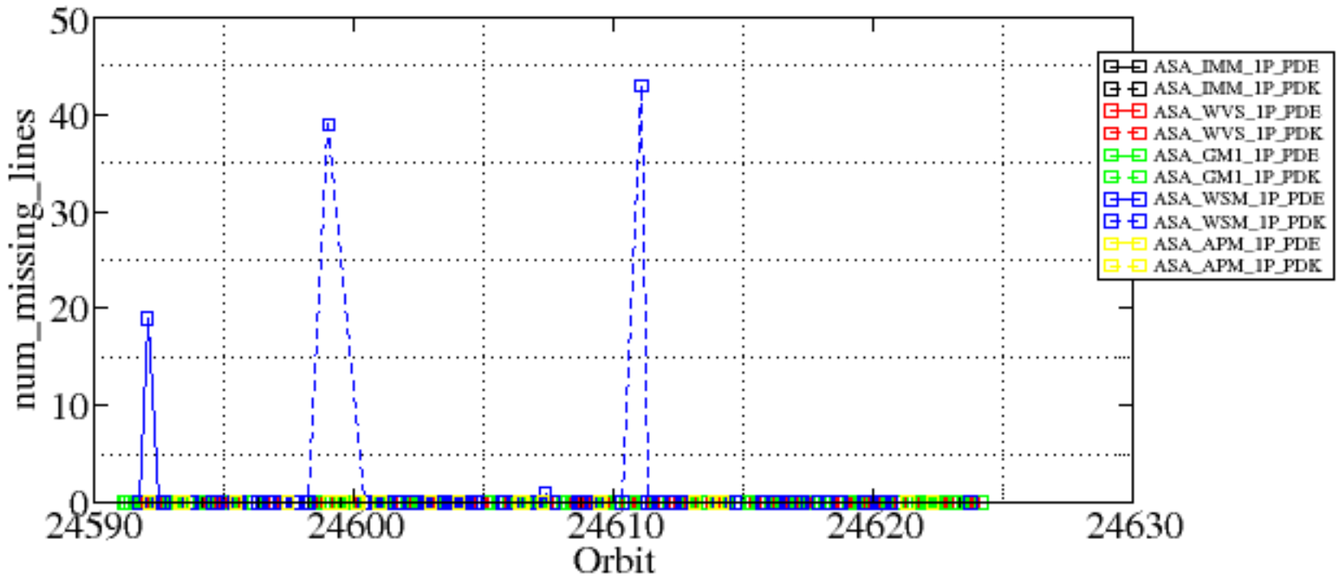
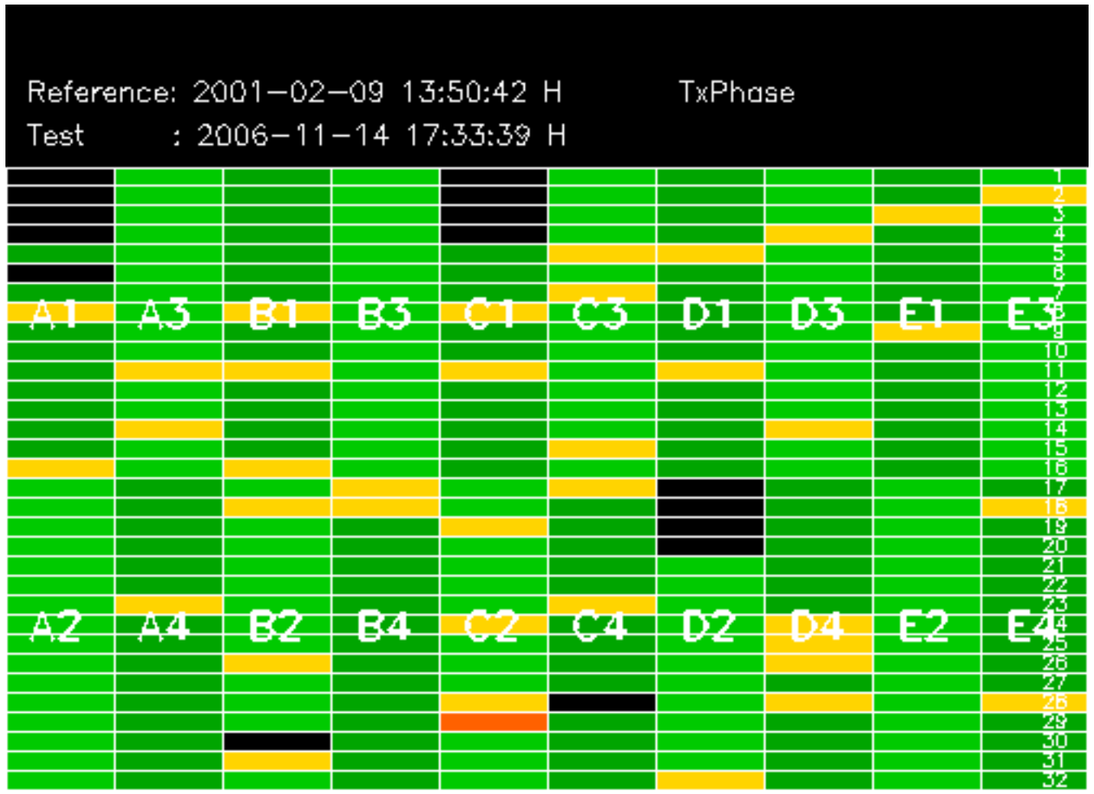
Summary of analysis for the last 3 days 2006111[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20061113_015825_000001292052_00490_24592_0001.N1 </td> <td>0 </td> <td>19 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20061114_033934_000001462053_00004_24607_0001.N1 </td> <td>0 </td> <td>1 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20061113_133931_000002452052_00497_24599_0002.N1 </td> <td>0 </td> <td>39 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20061114_095012_000000852053_00008_24611_0057.N1 </td> <td>0 </td> <td>43 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
24590
24600
24610
24620
24630
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
50
40
30
20
10
0
24590
24600
24610
24620
24630
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 : 2006-11-14 17:33:39 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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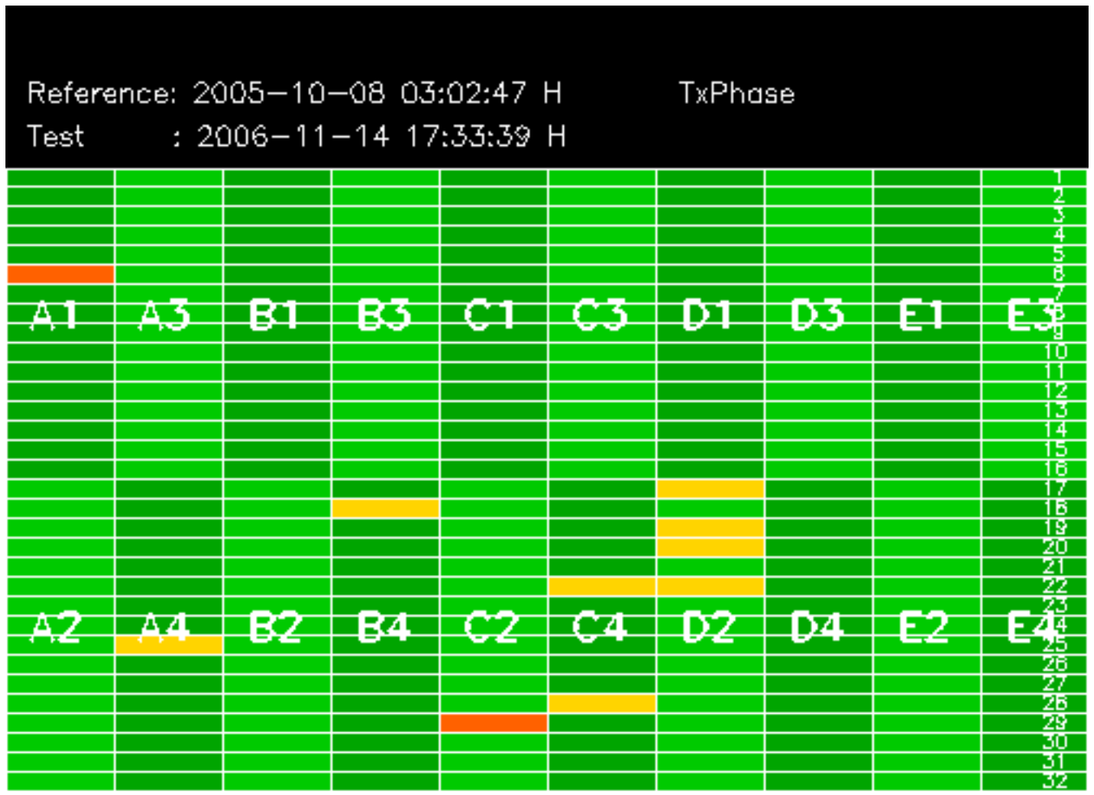
32


Reference: 2005-10-08 03:02:47 H
Test : 2006-11-14 17:33:39 H
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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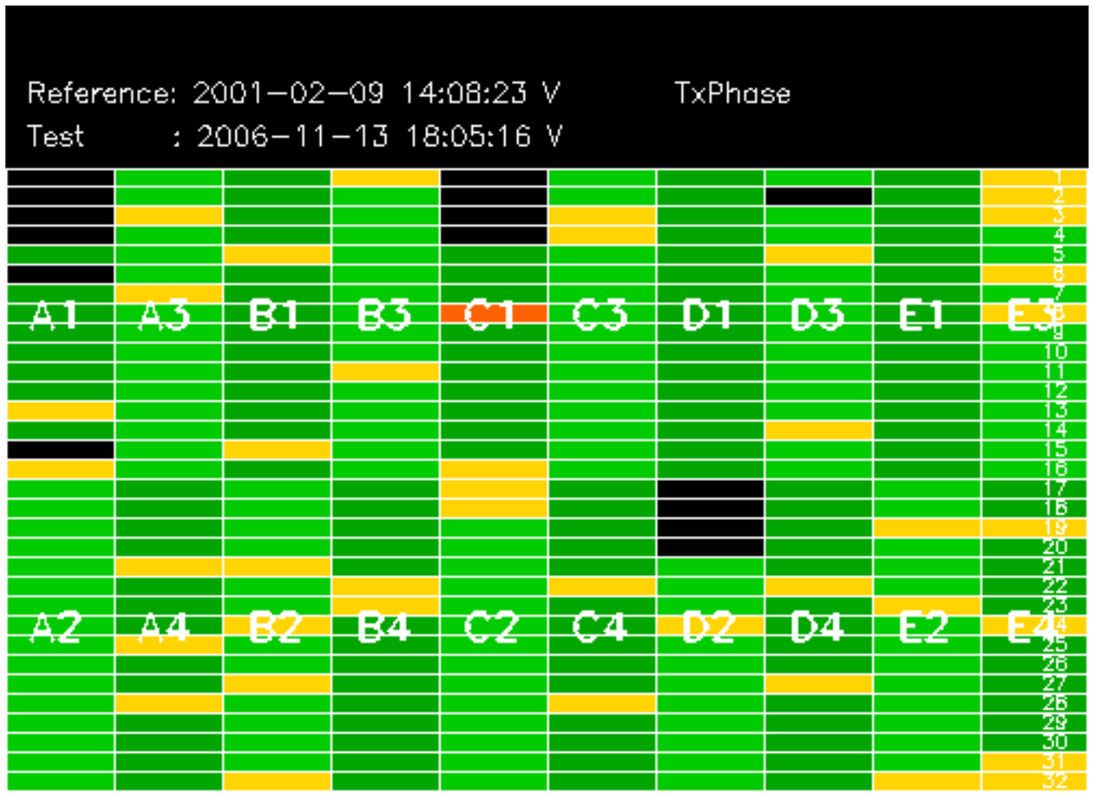
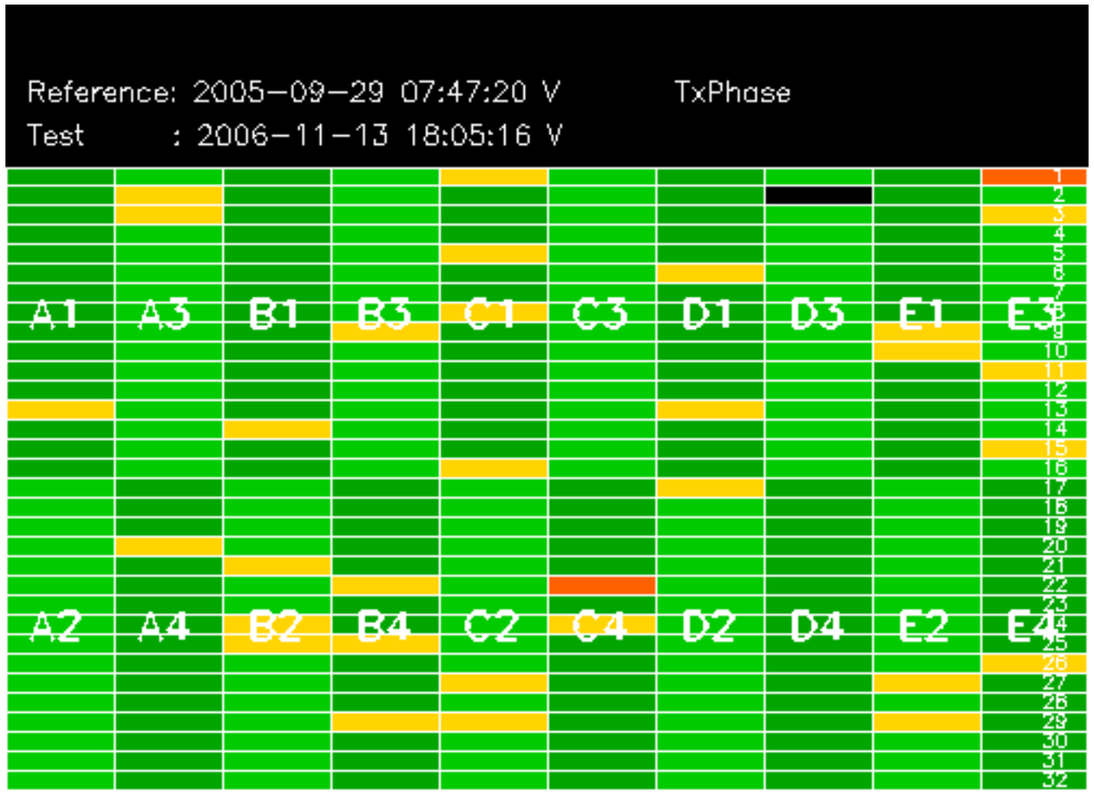

Reference: 2001-02-09 14:08:23 V
Test : 2006-11-13 18:05:16 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-11-13 18:05:16 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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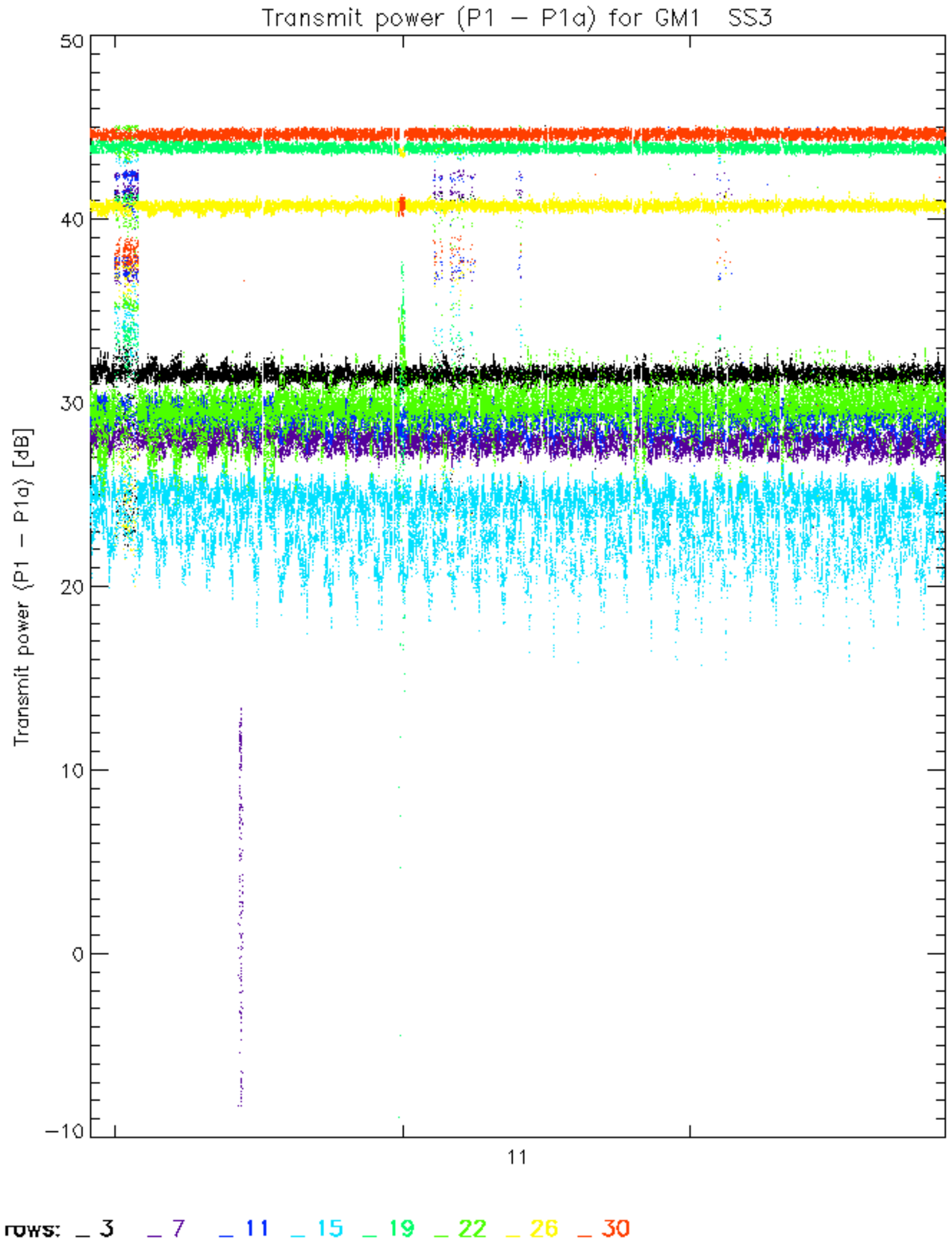
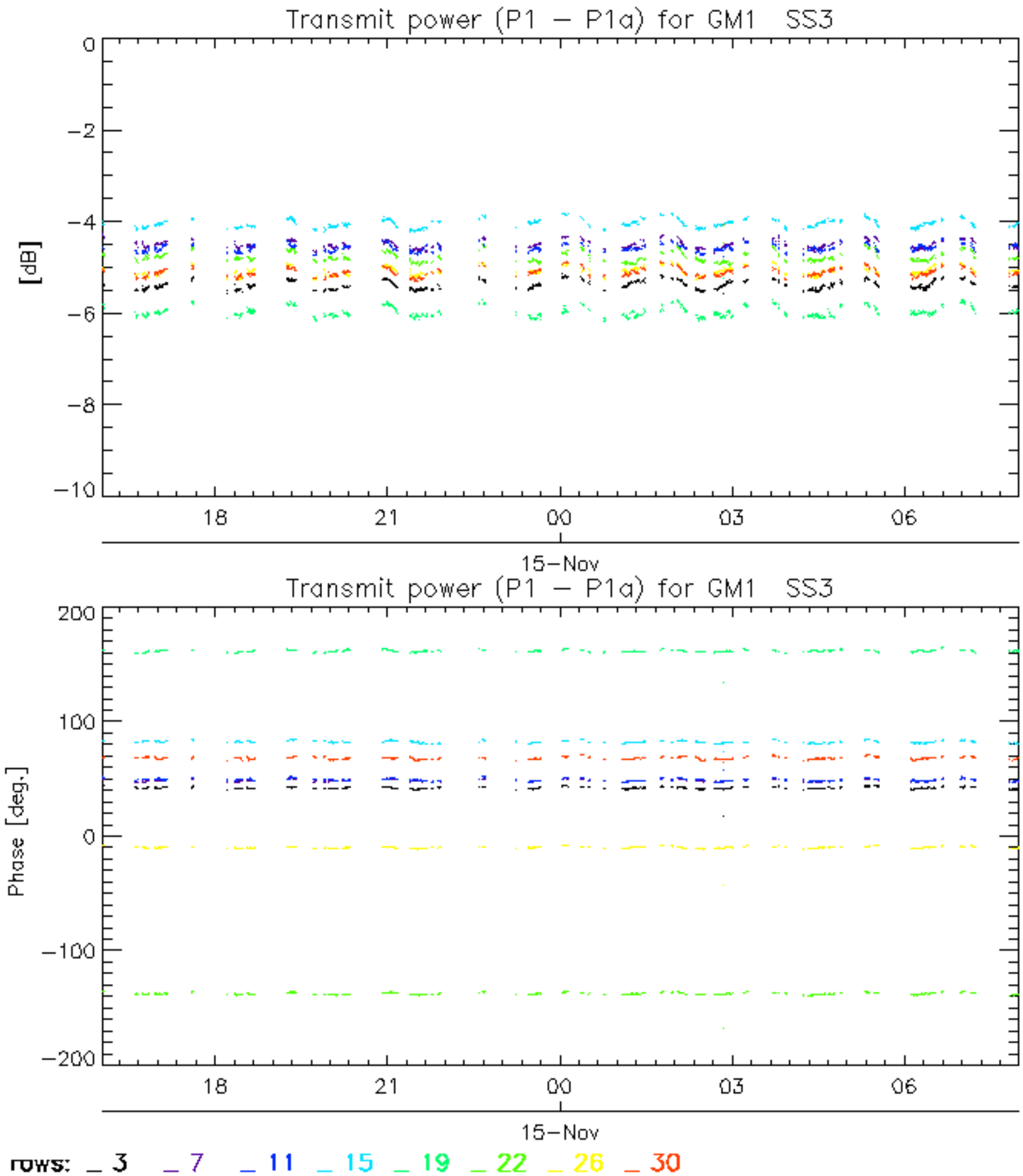
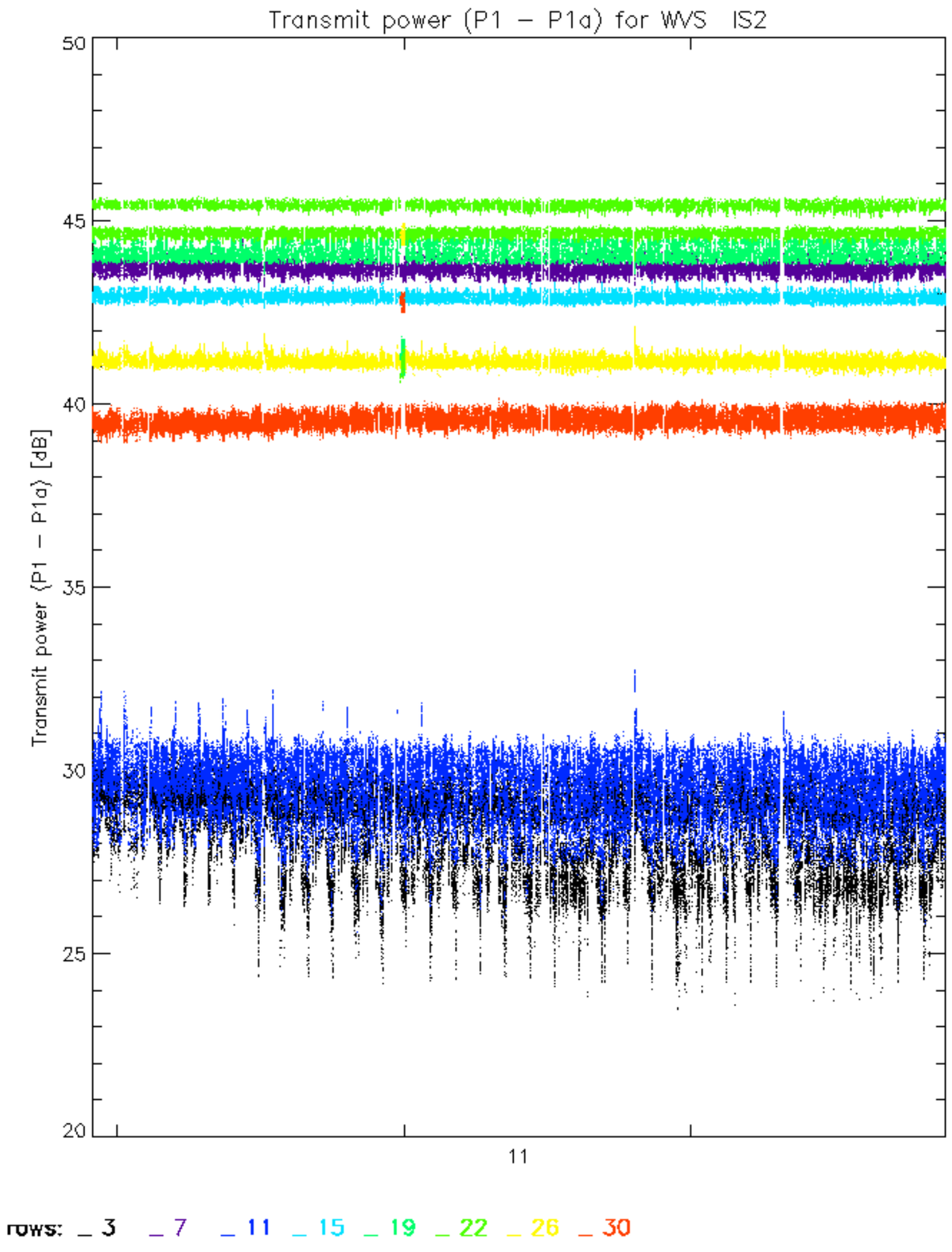
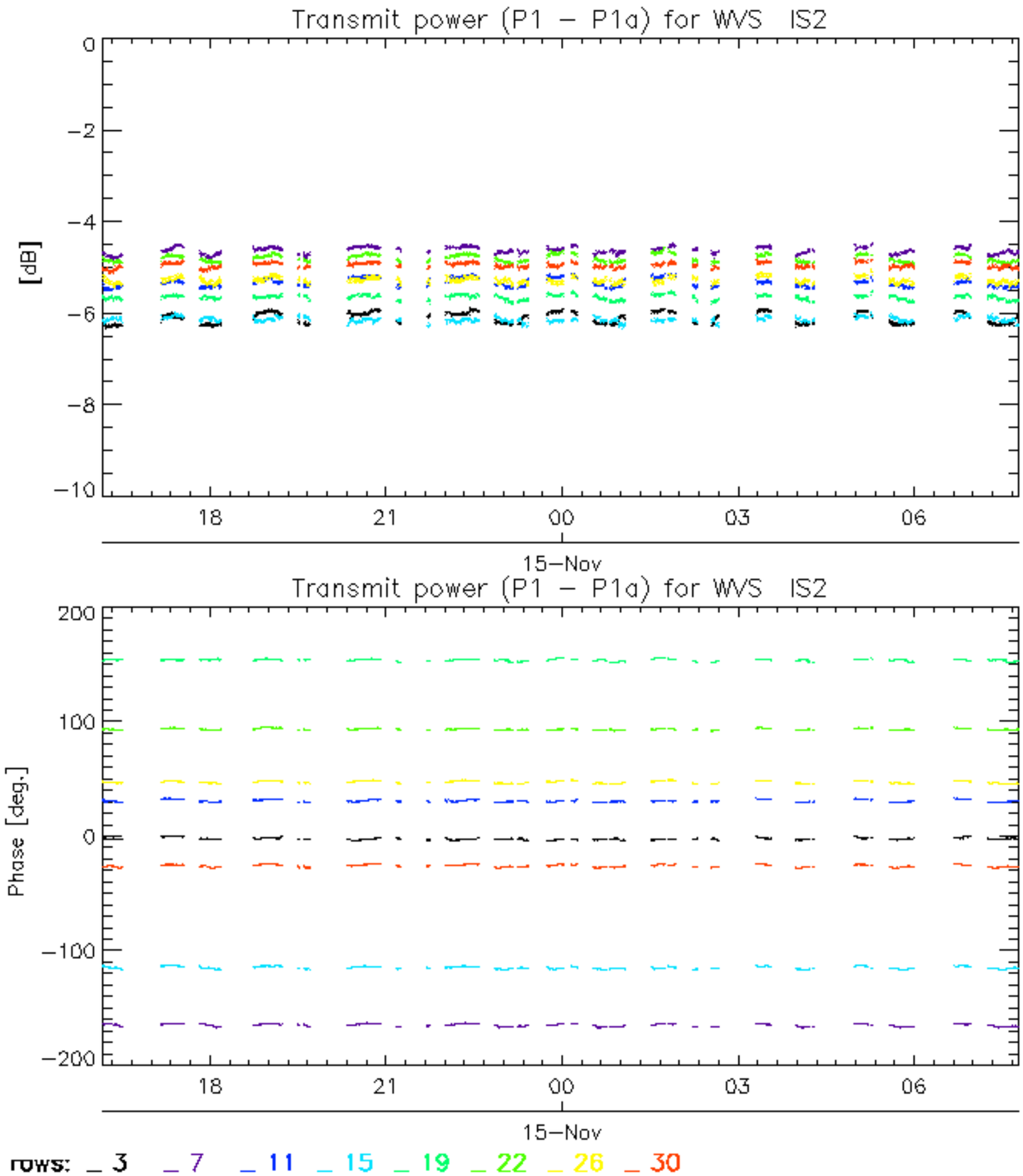

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
11
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
15−Nov
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
15−Nov
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
11
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
15–Nov
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
15–Nov
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.