PRELIMINARY REPORT OF 061025

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1. Introduction
2. Summary
   - Instrument Unavailability
   - Auxiliary files used
   - Browse Visual Inspection
   - Module Stepping Results
   - Data Analysis
3. Module Stepping
4. Internal Calibration pulses
   - Daily statistics
   - Cyclic statistics
   - cal pulses monitoring (all rows)
5. Raw Data Statistics
   - raw data mean I and Q
   - raw data stdev I and Q
   - raw gain imbalance
6. TLM analysis
7. Wave Doppler analysis
   - Unbiased Doppler Error for WVS
   - Absolute Doppler for WVS
   - Doppler evolution versus ANX for WVS
   - Unbiased Doppler Error for GM1
   - Absolute Doppler for GM1
   - Doppler evolution versus ANX for GM1

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 2006-10-24 00:00:00 to 2006-10-25 11:00:01

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

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	33	54	20	8	0
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	33	54	20	8	0
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	33	54	20	8	0
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	54	20	8	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	14	39	17	2	39
ASA_XCA_AXVIEC20060717_154125_20050916_195733_20061231_000000	14	39	17	2	39
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	14	39	17	2	39
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	14	39	17	2	39

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	20061023 054051
H	20061024 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	-3.951922	0.010065	-0.010883
7	P1	-3.086270	0.013487	-0.035281
11	P1	-4.097911	0.023762	-0.029935
15	P1	-6.216304	0.015491	-0.048143
19	P1	-3.581407	0.072929	-0.154586
22	P1	-4.640069	0.142876	-0.185080
26	P1	-4.006439	0.137601	-0.120754
30	P1	-5.882877	0.261239	-0.205233
3	P1	-16.605999	0.217135	0.049106
7	P1	-17.124487	0.153769	-0.007808
11	P1	-17.013056	0.396287	-0.247163
15	P1	-12.879755	0.105429	-0.091326
19	P1	-14.748006	0.392320	-0.397829
22	P1	-15.641924	0.491235	0.090116
26	P1	-15.105659	0.253004	0.089480
30	P1	-16.992435	0.619287	-0.075364

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.828413	0.088051	-0.018536
7	P2	-21.765251	0.097319	0.067758
11	P2	-15.718960	0.109951	0.062689
15	P2	-7.078236	0.108602	0.006690
19	P2	-9.132829	0.100523	-0.016804
22	P2	-18.150621	0.095282	-0.042052
26	P2	-16.438623	0.104876	-0.040436
30	P2	-19.465948	0.093397	0.009616

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.204019	0.006885	-0.017155
7	P3	-8.204019	0.006885	-0.017155
11	P3	-8.204019	0.006885	-0.017155
15	P3	-8.204019	0.006885	-0.017155
19	P3	-8.204019	0.006885	-0.017155
22	P3	-8.204019	0.006885	-0.017155
26	P3	-8.204008	0.006902	-0.017211
30	P3	-8.204008	0.006902	-0.017211

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	-3.907794	0.136234	-0.044720
7	P1	-2.606203	0.830821	-0.069548
11	P1	-2.913642	0.107062	-0.007336
15	P1	-3.704358	0.103076	-0.019920
19	P1	-3.494643	0.121176	-0.161727
22	P1	-5.093129	0.093032	-0.051538
26	P1	-5.958038	0.290835	-0.227129
30	P1	-5.266778	0.216099	-0.158142
3	P1	-11.736277	0.354119	-0.075798
7	P1	-10.127738	1.079357	-0.118567
11	P1	-10.436342	0.316796	-0.074835
15	P1	-10.926003	0.439195	-0.045147
19	P1	-15.676869	2.171441	-0.672708
22	P1	-21.002527	1.500994	0.049430

26	P1	-15.822856	0.495164	0.082572
30	P1	-18.041046	0.499580	0.007857

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.354893	0.207562	0.030432
7	P2	-22.019165	1.159335	0.140466
11	P2	-10.851626	0.182411	0.048468
15	P2	-4.871708	0.034863	-0.035821
19	P2	-6.846184	0.057407	-0.031993
22	P2	-8.211262	0.362209	-0.087967
26	P2	-24.136257	0.860054	0.044395
30	P2	-21.892397	0.440182	0.111625

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.052949	0.003202	-0.013462
7	P3	-8.052824	0.003189	-0.013268
11	P3	-8.052807	0.003184	-0.012764
15	P3	-8.052873	0.003188	-0.013188
19	P3	-8.052914	0.003185	-0.012784
22	P3	-8.052831	0.003184	-0.012673
26	P3	-8.052732	0.003185	-0.012788
30	P3	-8.052691	0.003187	-0.012802

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	0.000563317
	stdev	1.65009e-07
MEAN Q	mean	0.000523077
	stdev	2.15221e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.138494
	stdev	0.00112315
STDEV Q	mean	0.138869
	stdev	0.00114132

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006102[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_GM1_1PNPDK20061023_154305_000005372052_00197_24299_7155.N1	0	7
ASA_GM1_1PNPDK20061024_115706_000007252052_00209_24311_7205.N1	0	20
ASA_GM1_1PNPDK20061024_151127_000008152052_00211_24313_7219.N1	0	15
ASA_WSM_1PNPDE20061023_162157_000001282052_00198_24300_4755.N1	0	52
ASA_APM_1PNPDK20061024_141130_000000852052_00211_24313_1374.N1	0	20

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

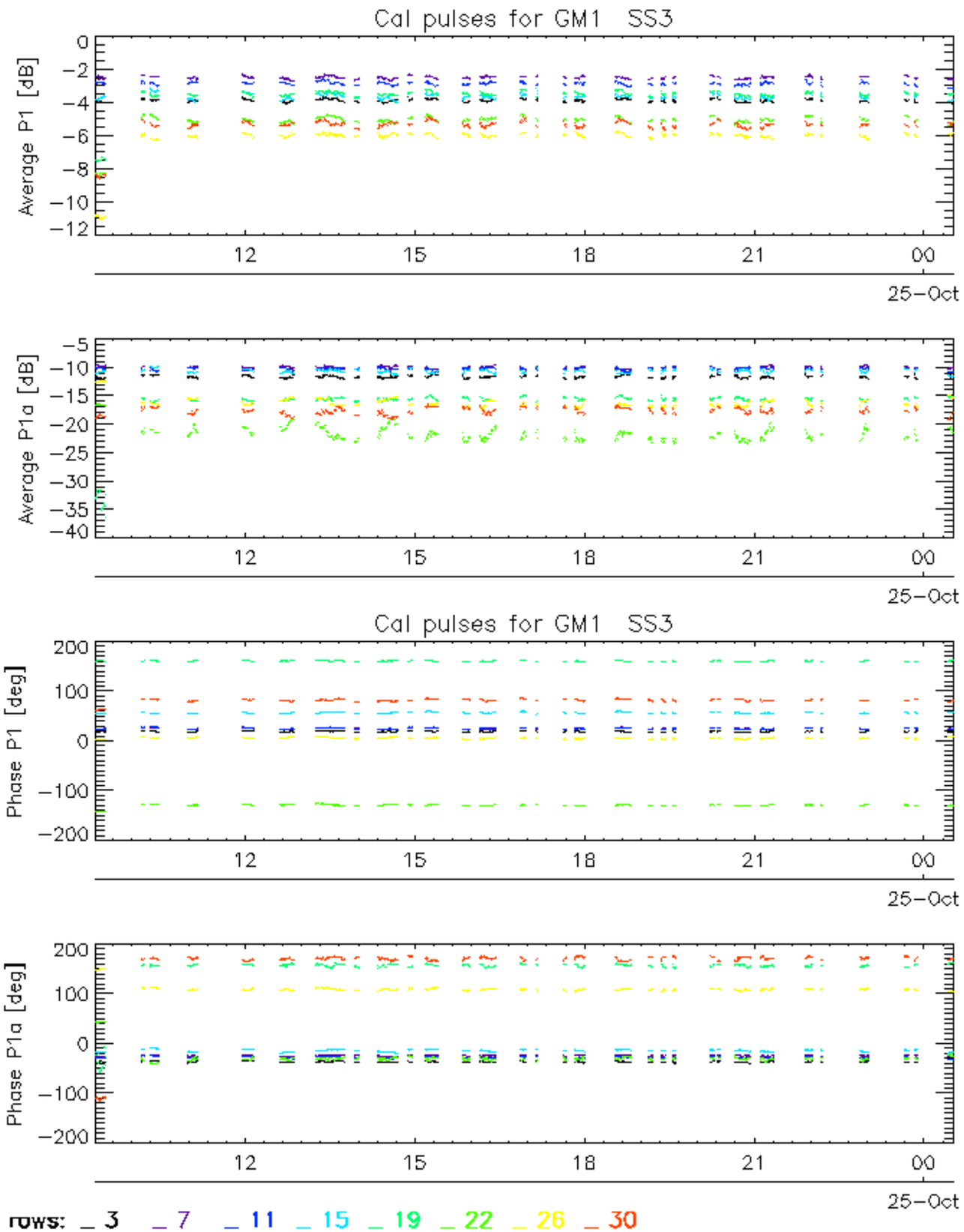
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

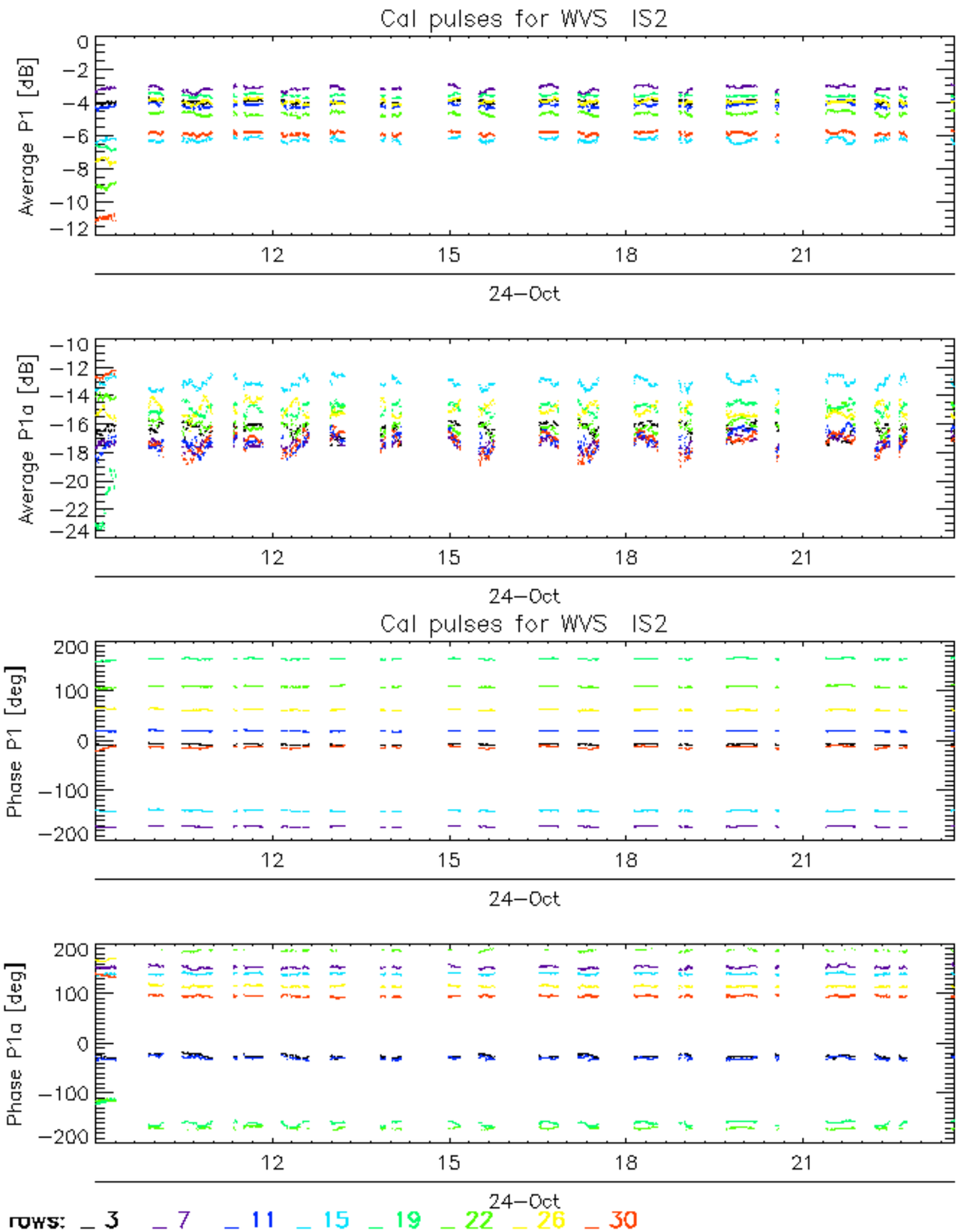
7.5 - Absolute Doppler for GM1

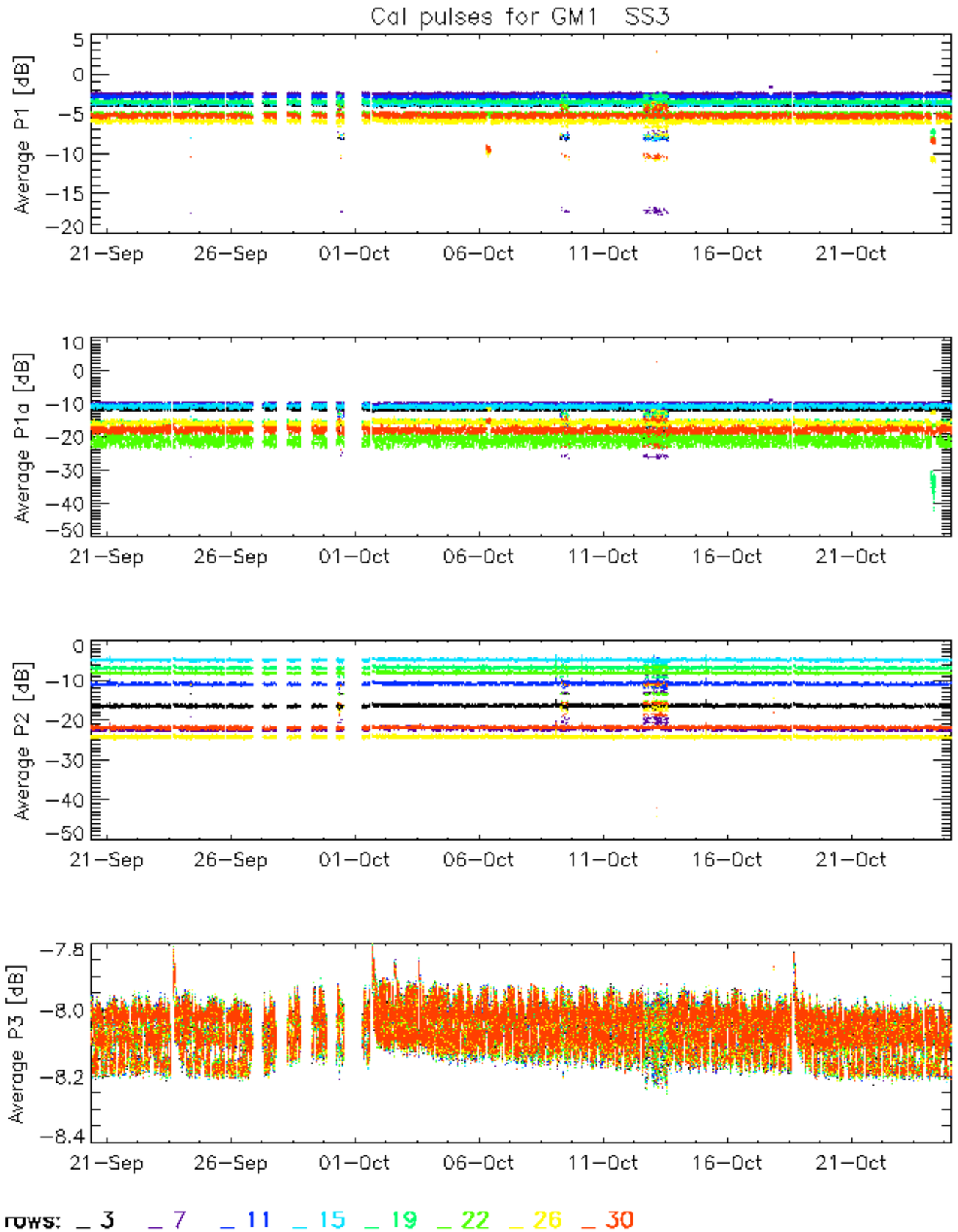
Evolution of Absolute Doppler
Acsending
Descending

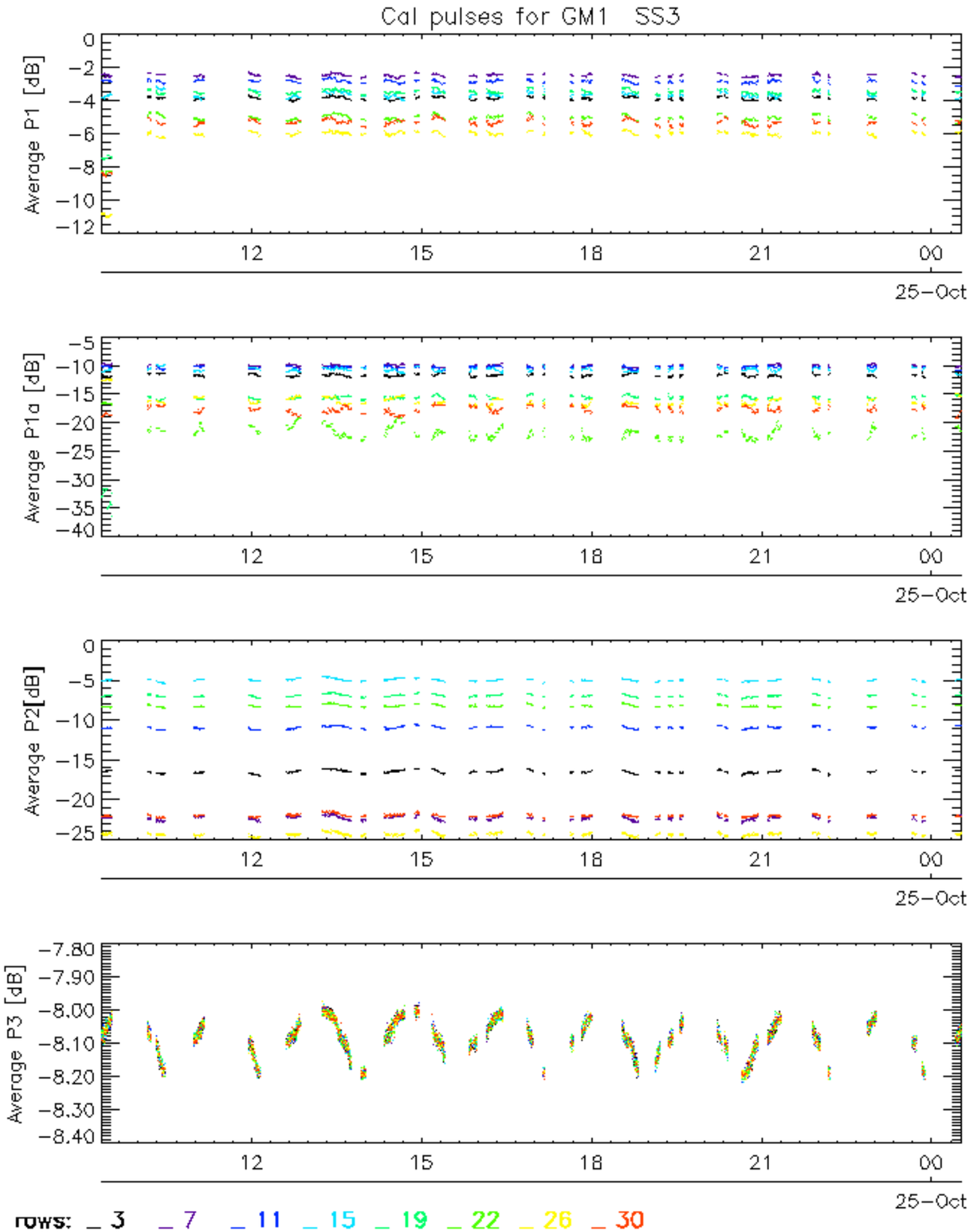
7.6 - Doppler evolution versus ANX for GM1

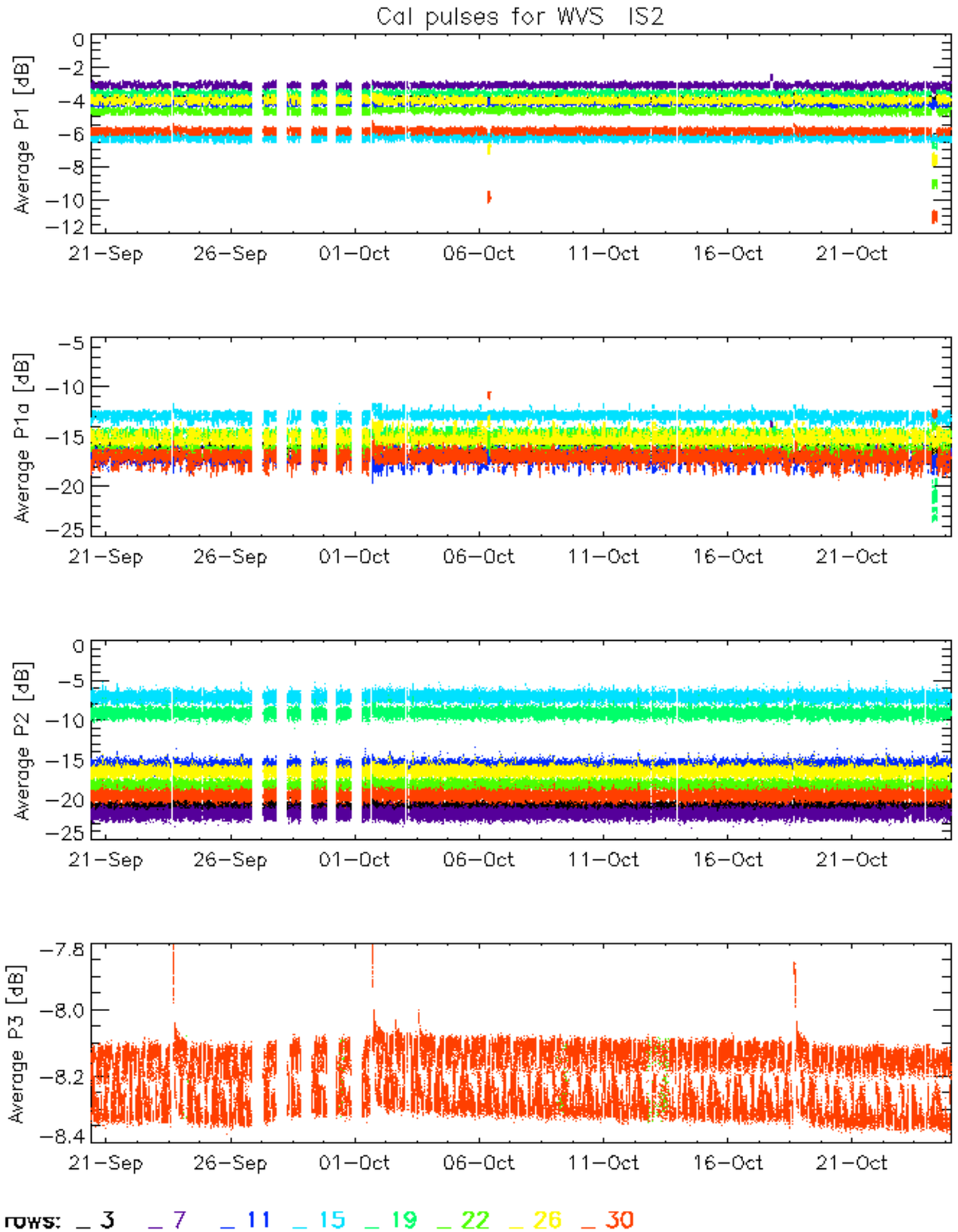
Evolution Doppler error versus ANX

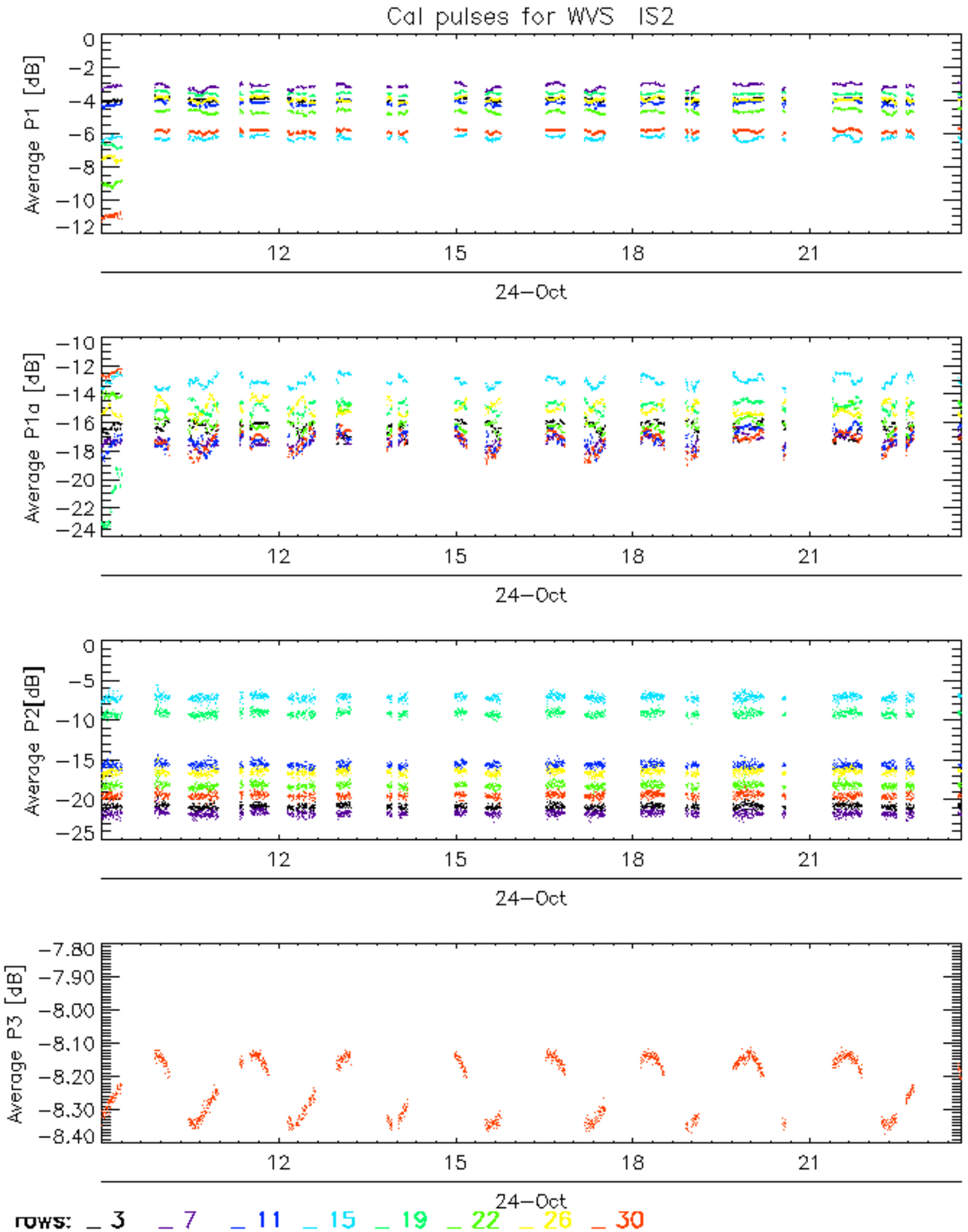

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
12
15
18
21
00
25−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
−40
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
12
15
18
21
24−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
12
15
18
21
24−Oct
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
12
15
18
21
24−Oct
Phase P1a [deg]
200
100
0
−100
−200
12
15
18
21
24−Oct
rows: 3 7 11 15 19 22 26 30


Cal pulses for GM1 SS3
Average P1 [dB]
5
0
−5
−10
−15
−20
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
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

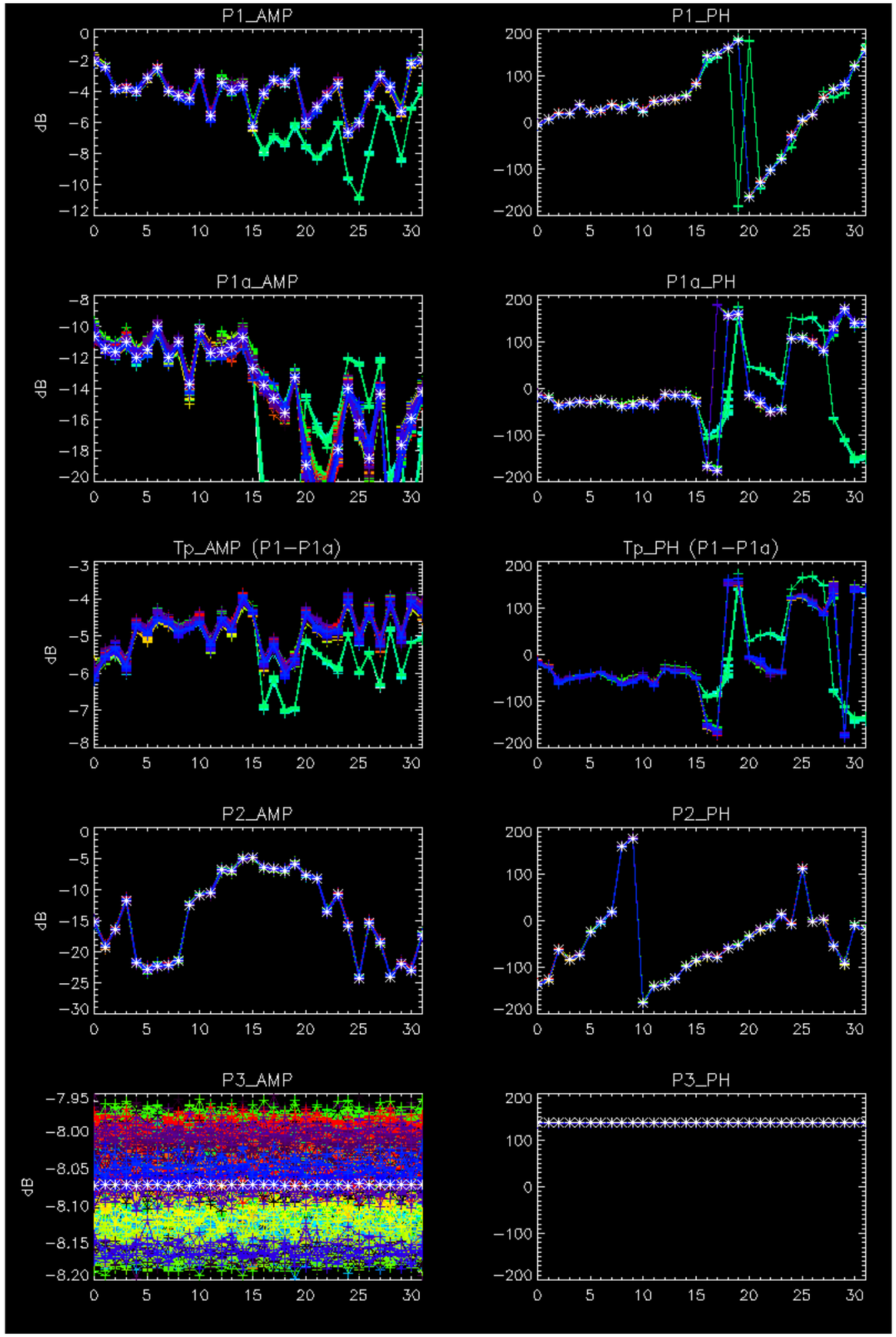

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
12
15
18
21
00
25−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
−40
12
15
18
21
00
25−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
00
25−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
12
15
18
21
00
25−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

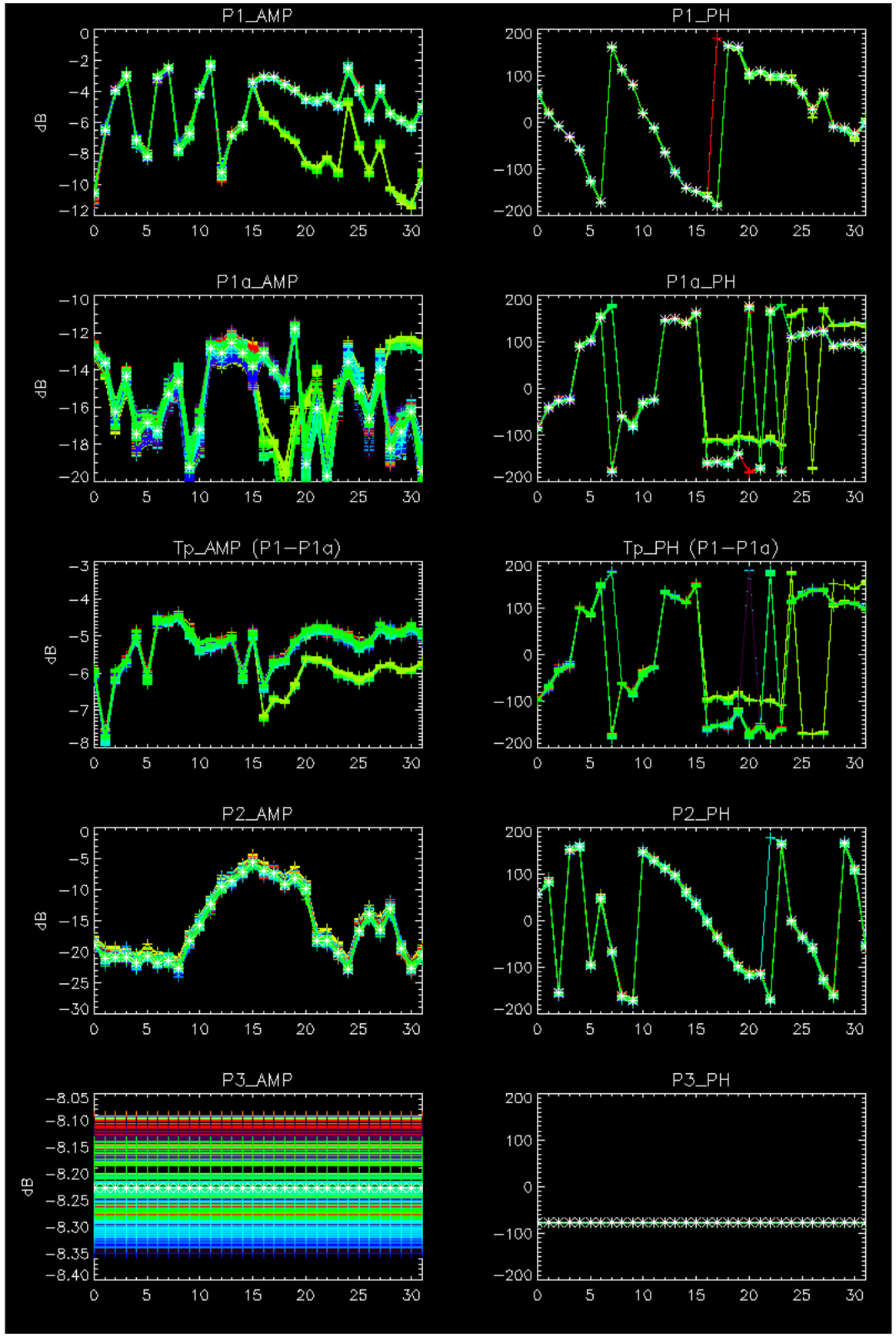

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
12
15
18
21
24−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
12
15
18
21
24−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
24−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
12
15
18
21
24−Oct
rows: 3 7 11 15 19 22 26 30

No anomalies observed on available browse products

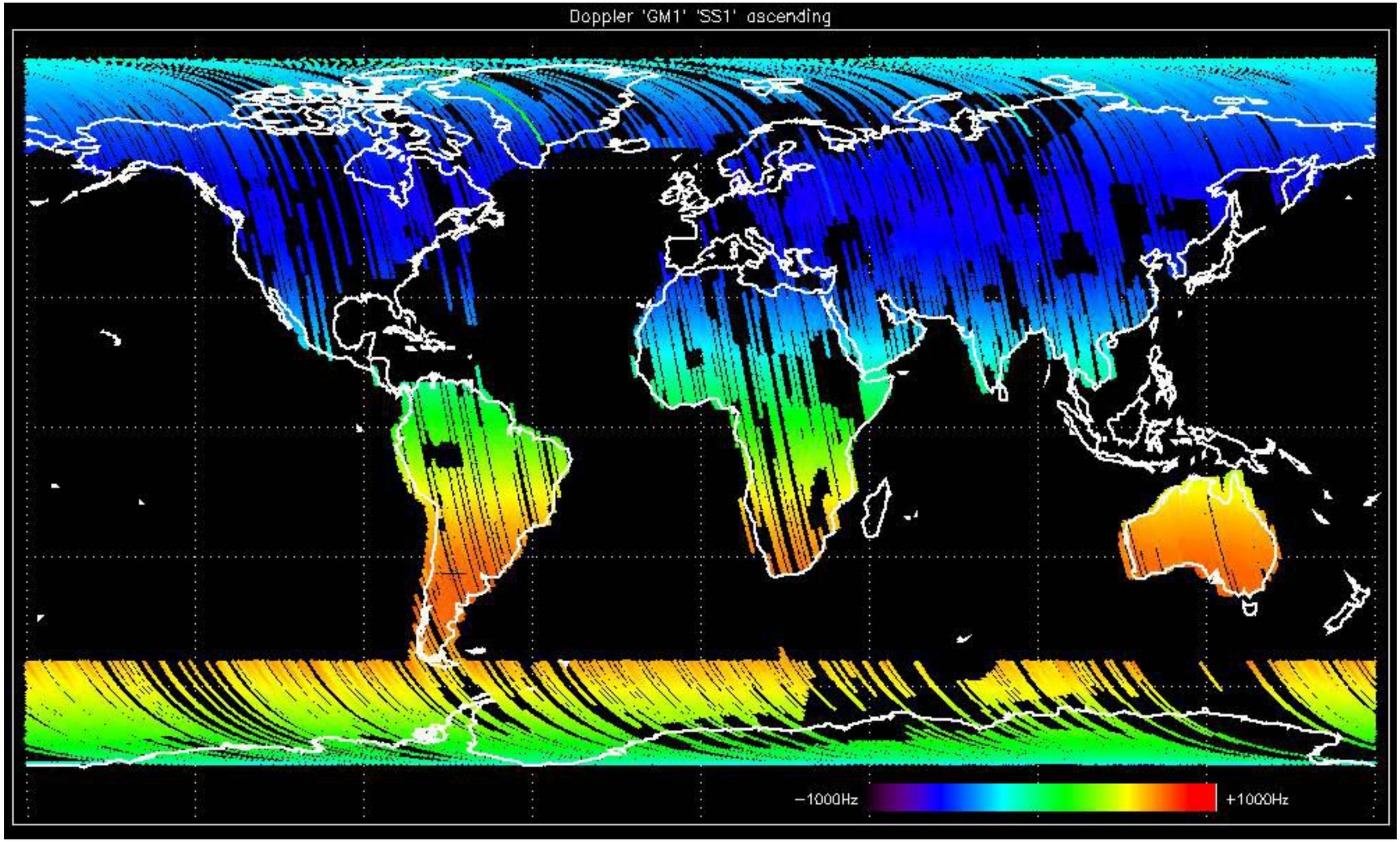
No anomalies observed.

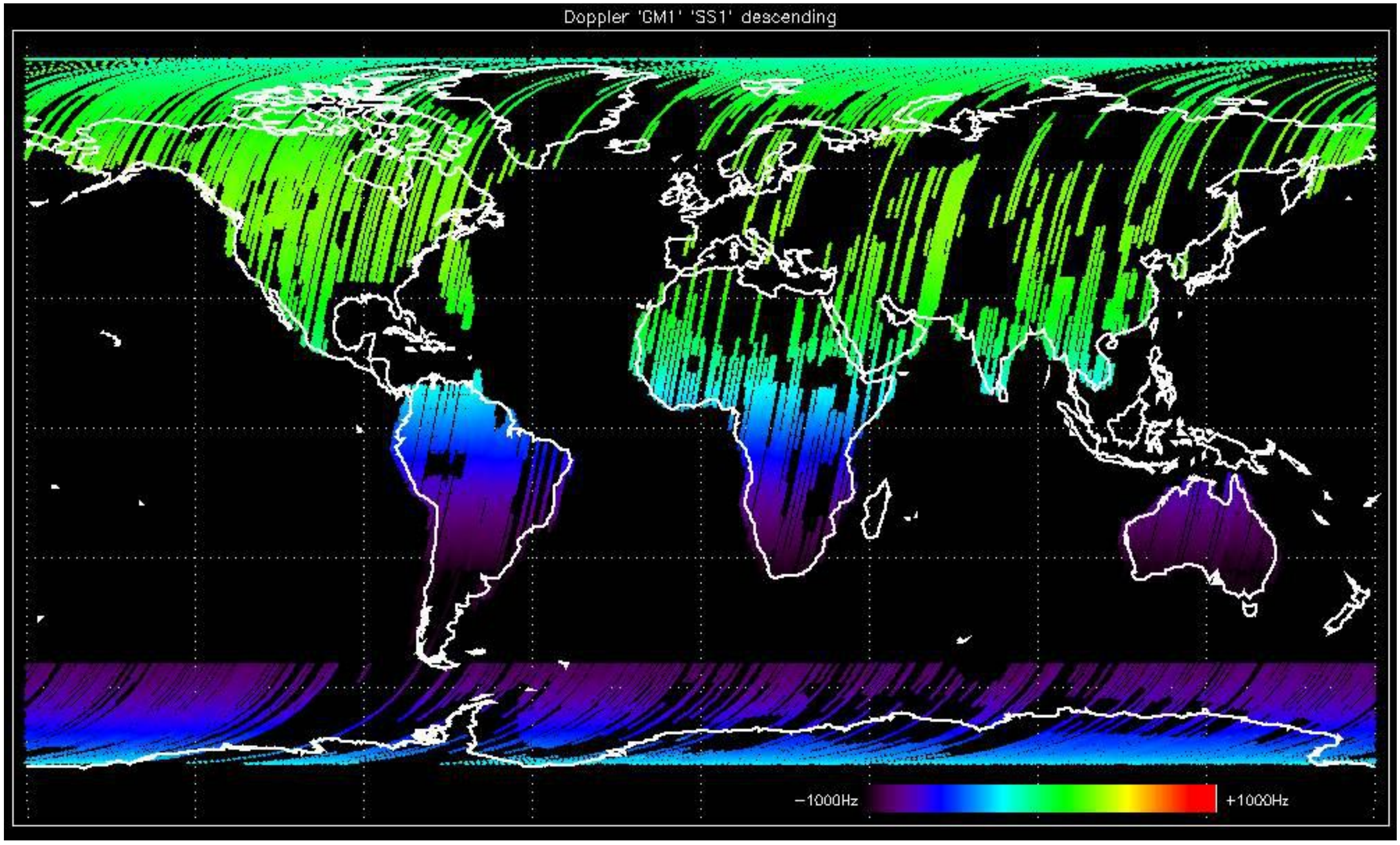

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

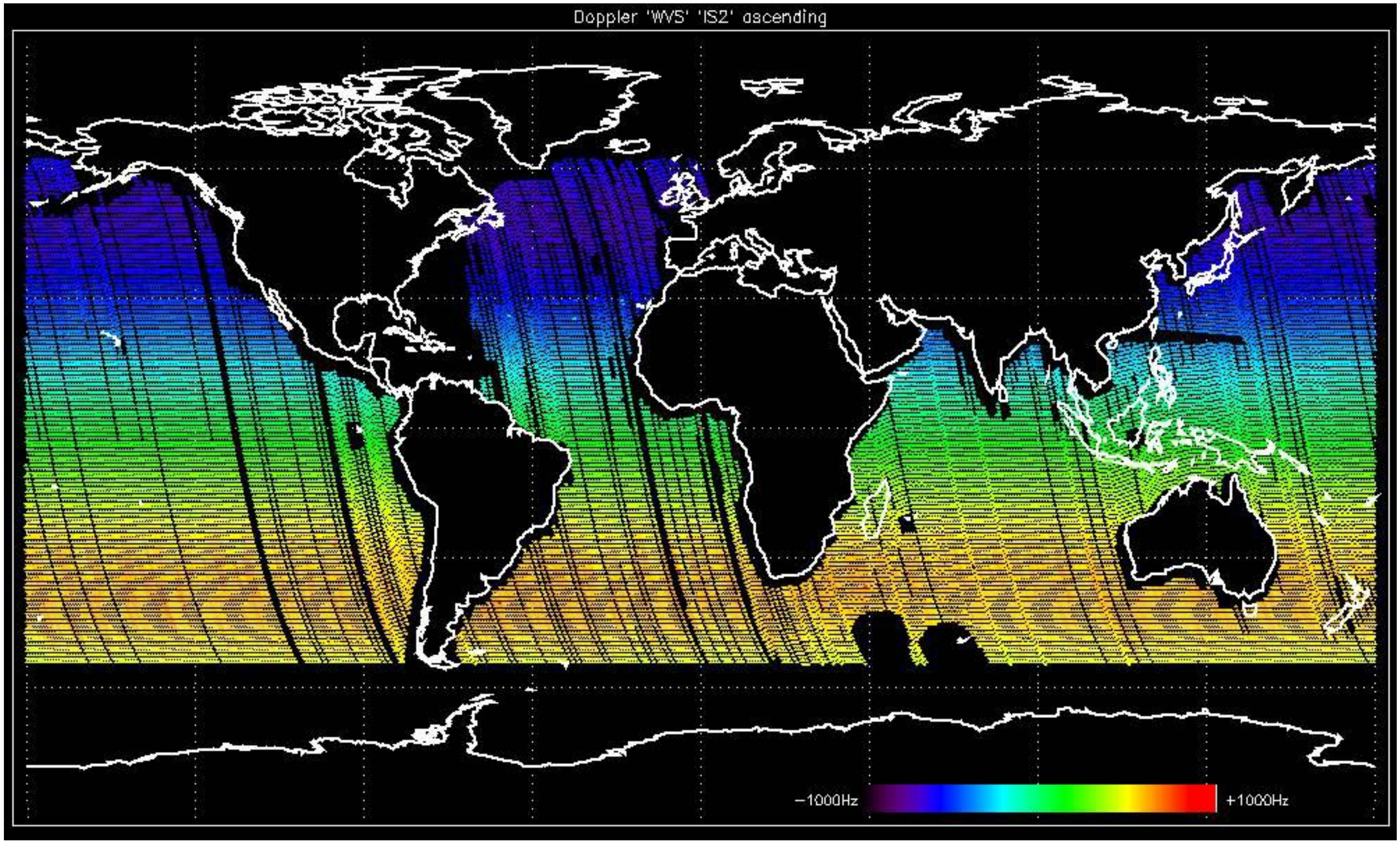

P1_AMP
P1_PH
P1a_AMP
P1a_PH
Tp_AMP (P1−P1a)
Tp_PH (P1−P1a)
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

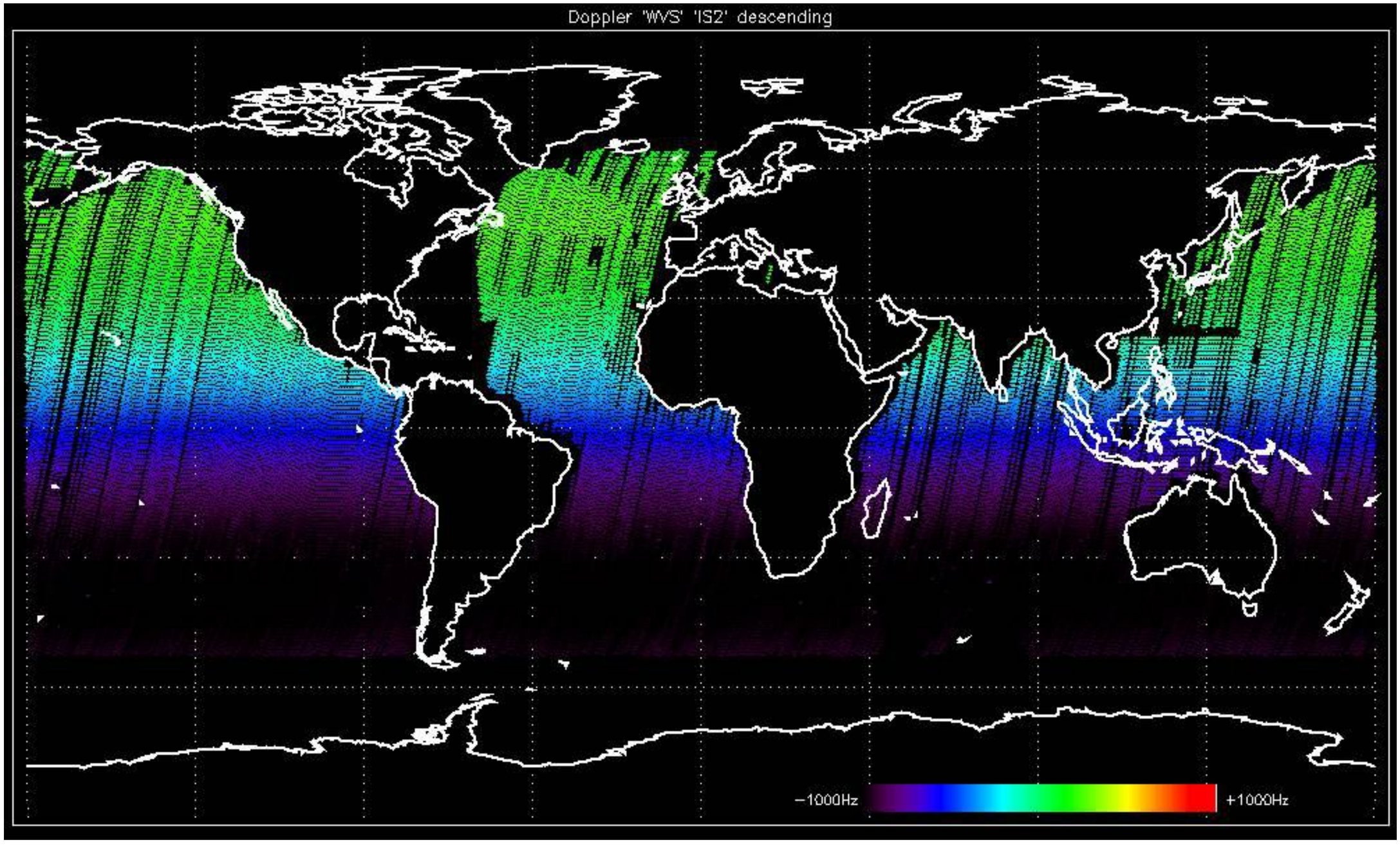
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

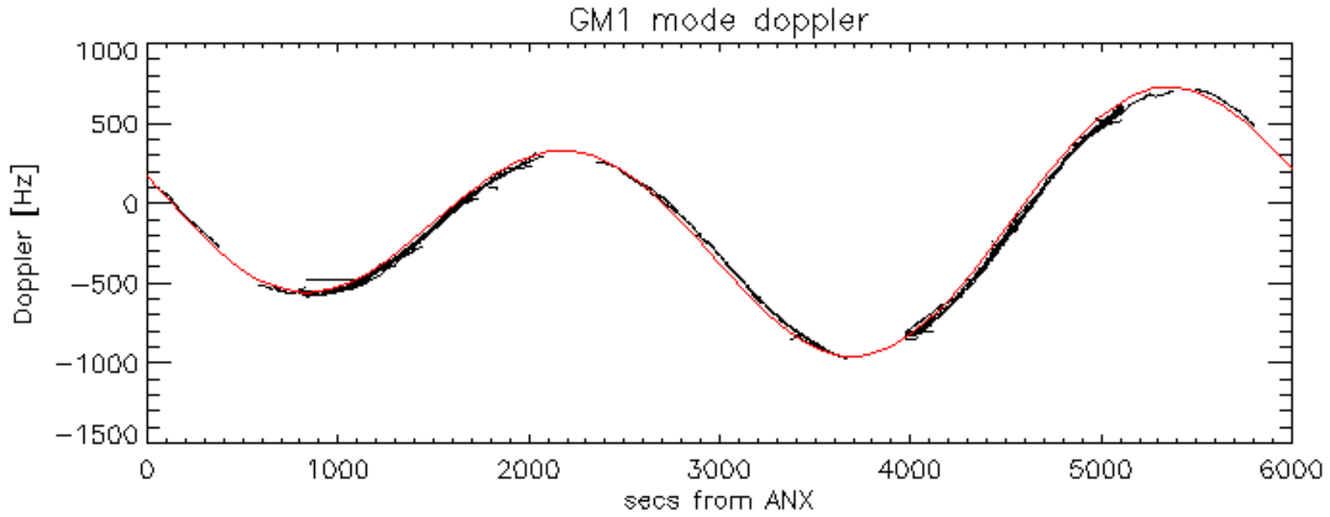
Preliminary report.The data is not yet controled

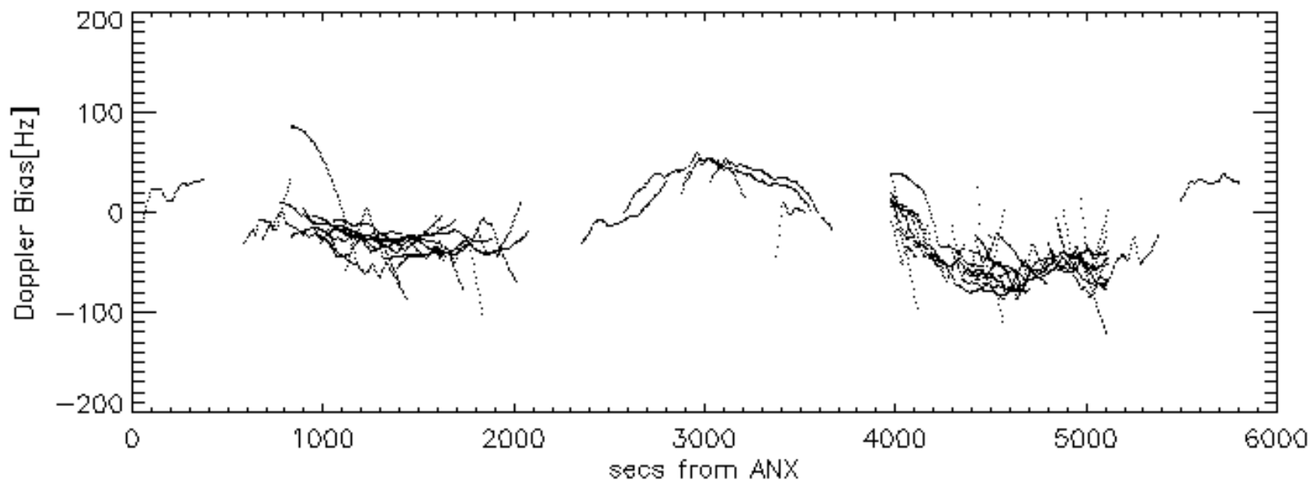

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

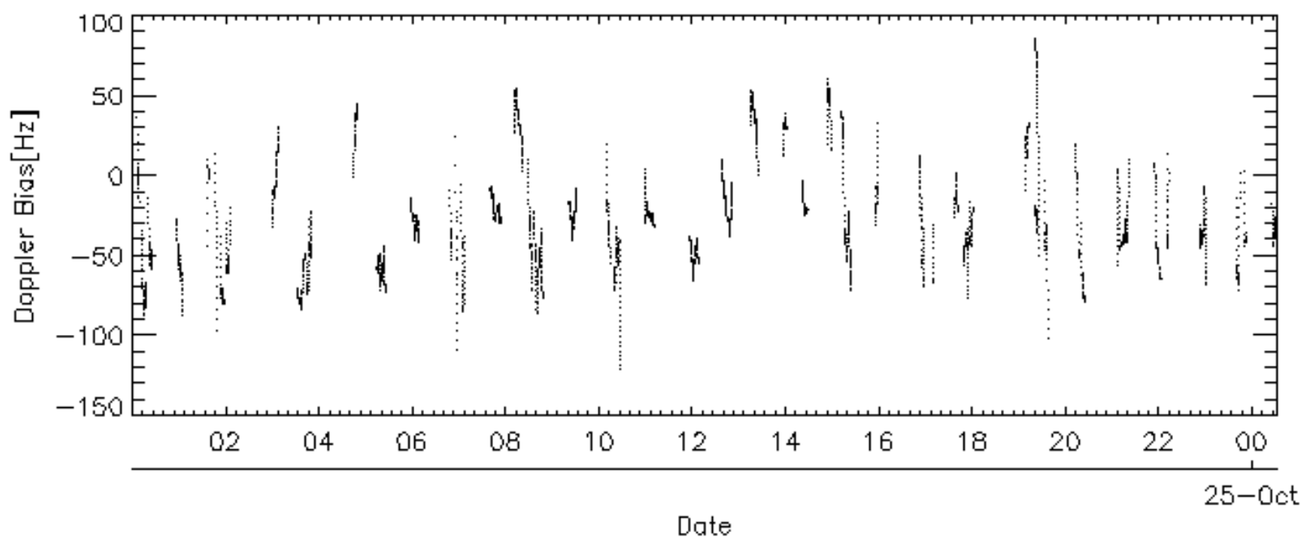

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

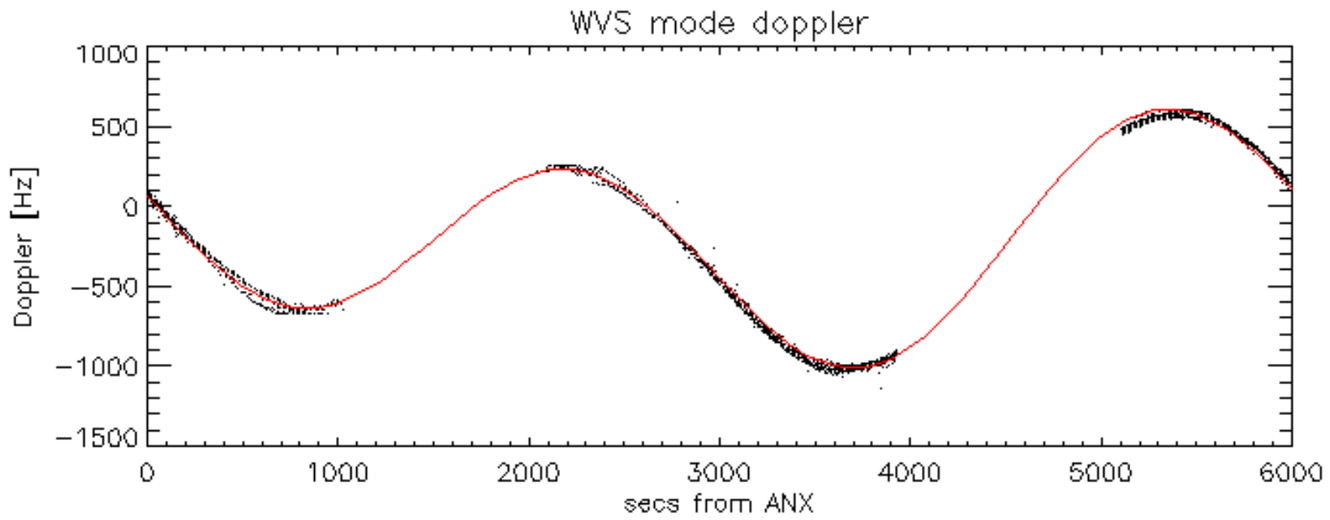

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

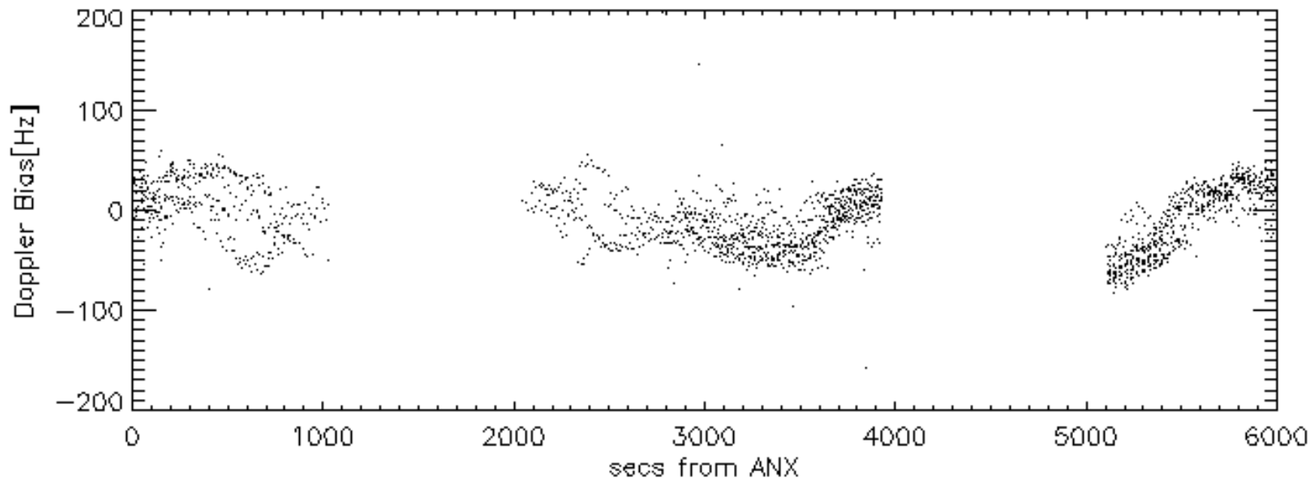

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

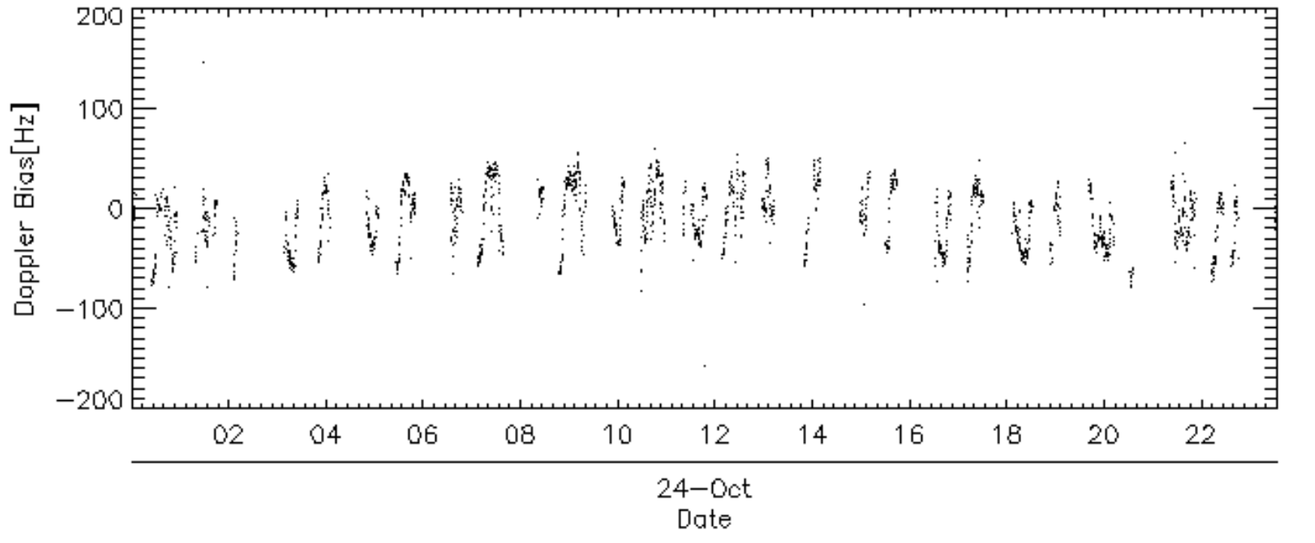

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

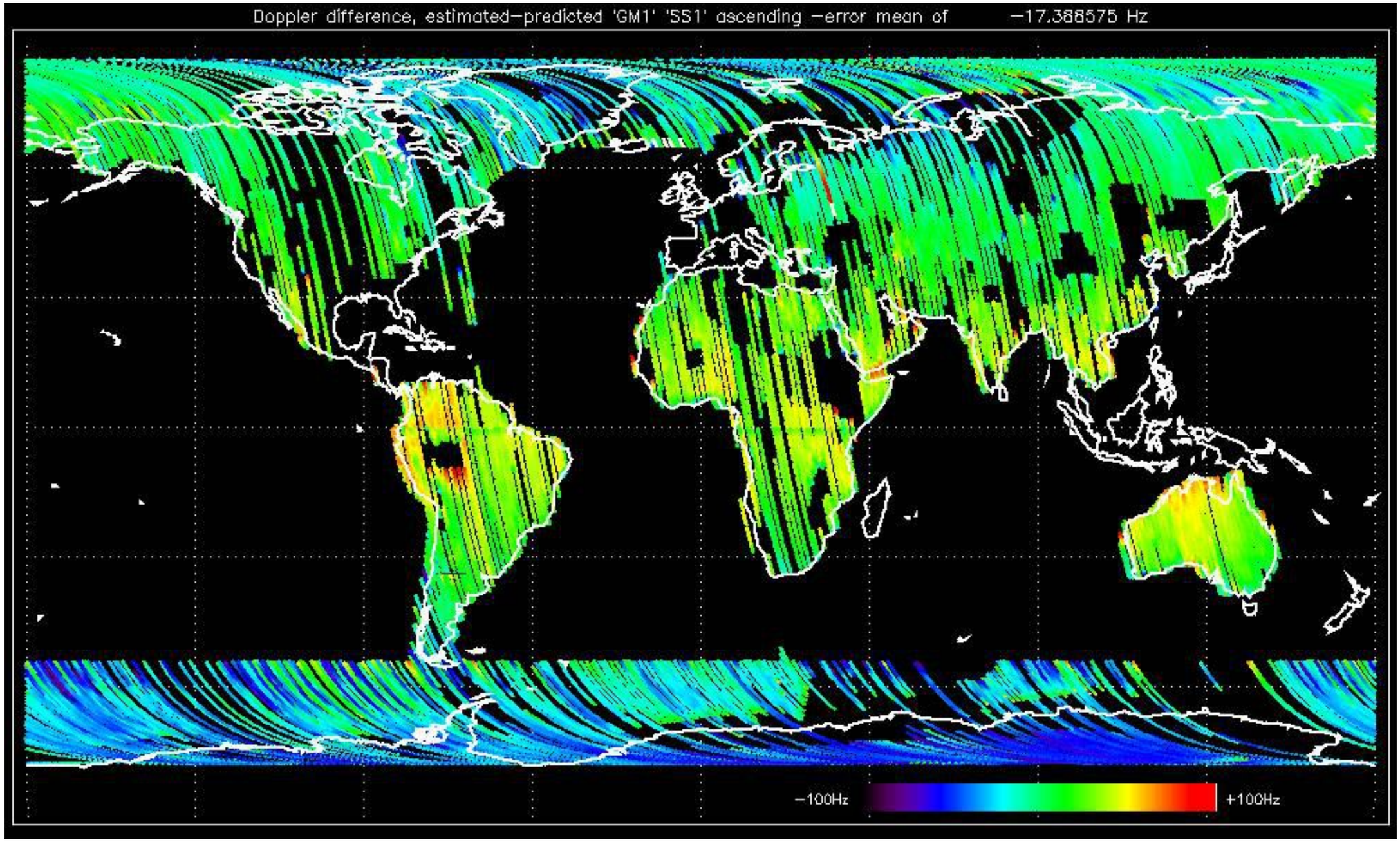

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

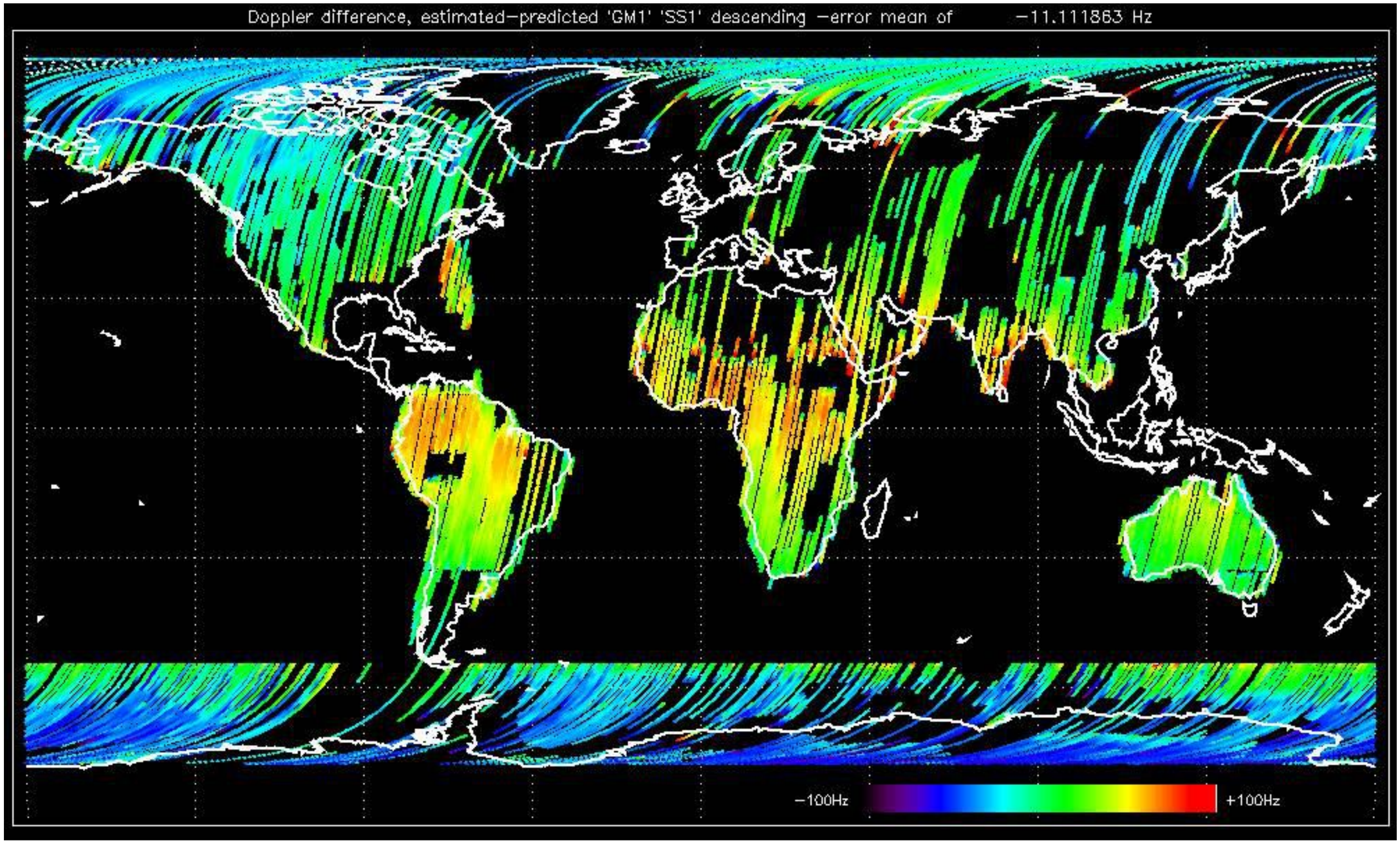

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
25−Oct
Date

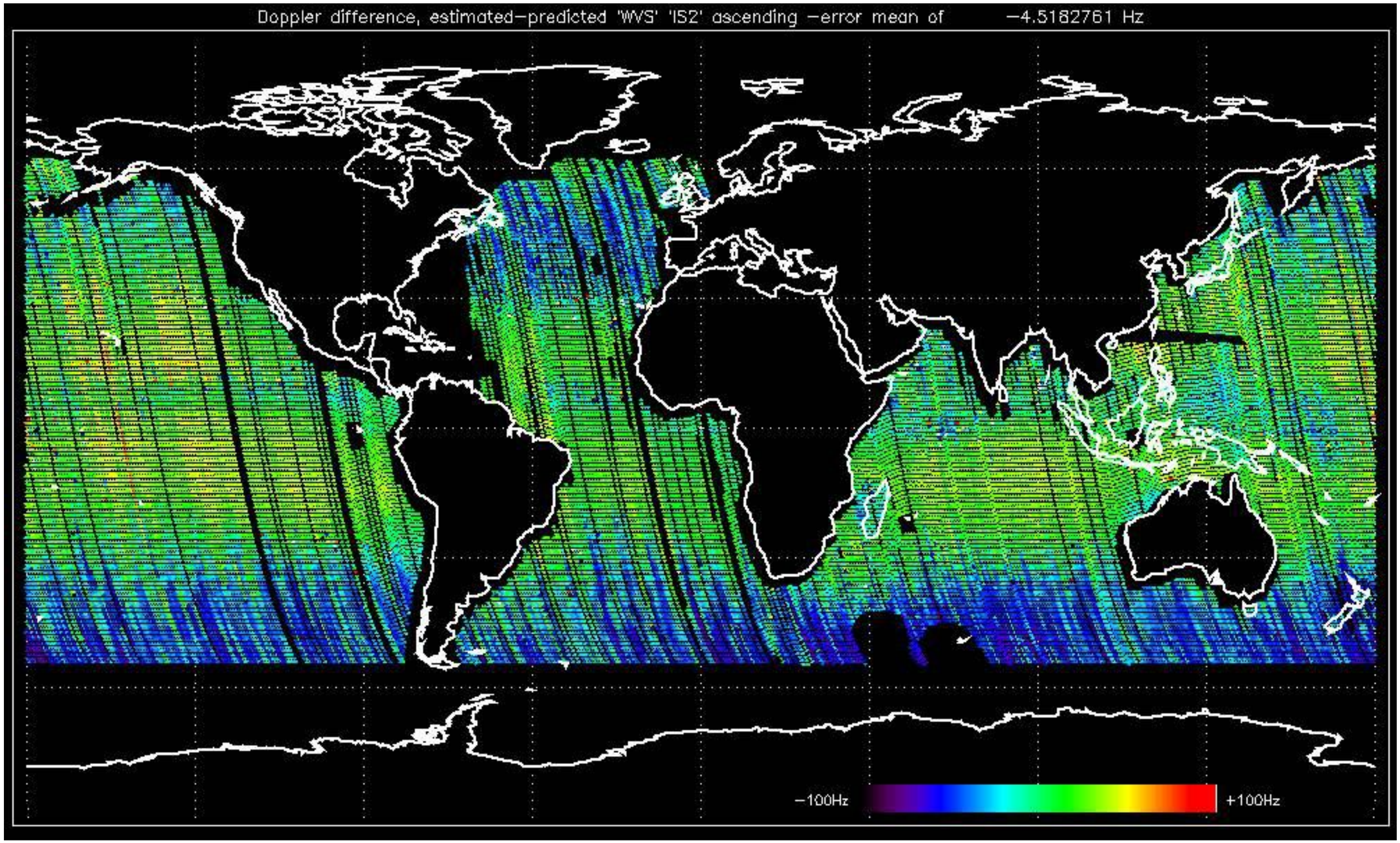

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

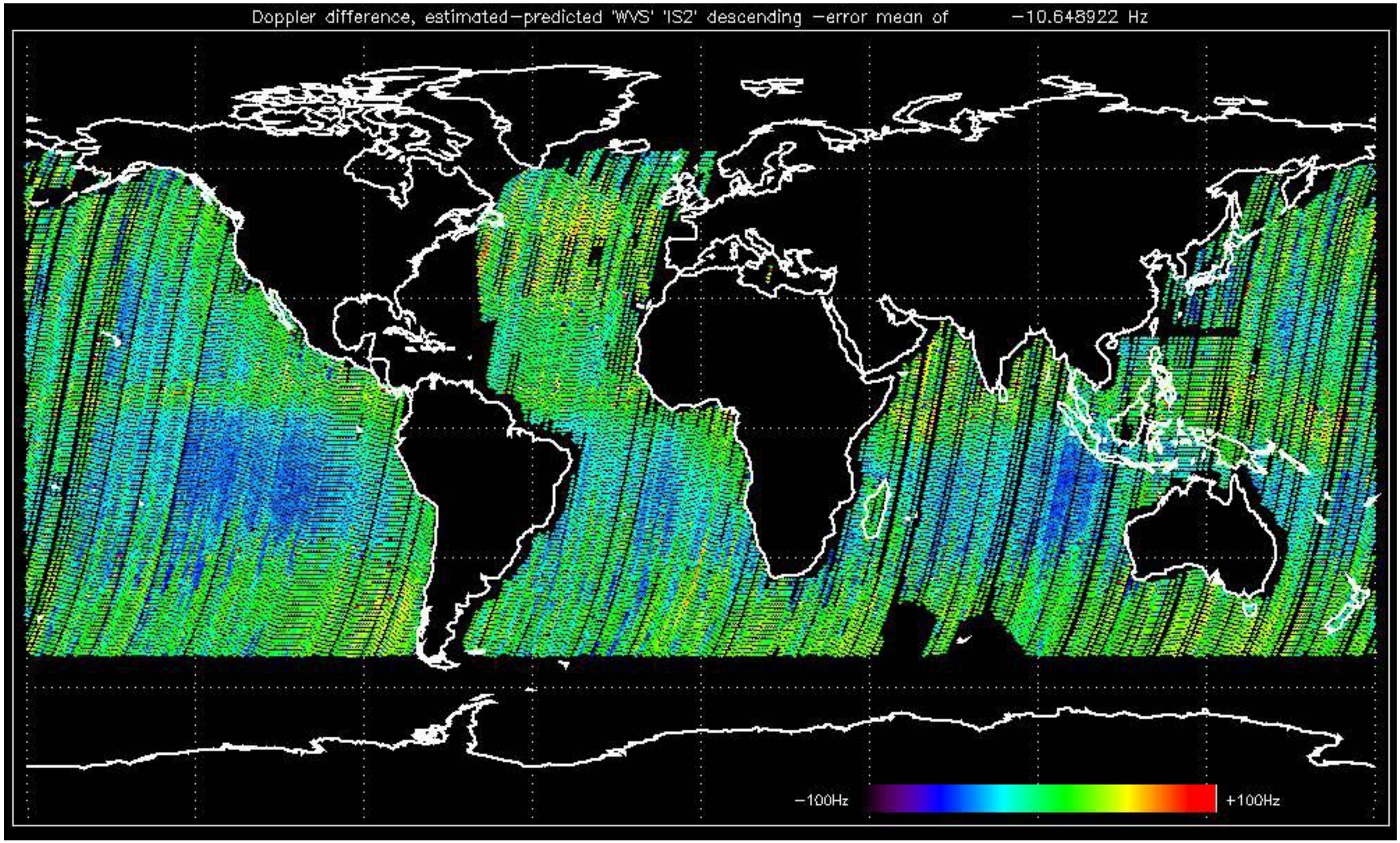

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −17.388575 Hz
−100Hz
+100Hz

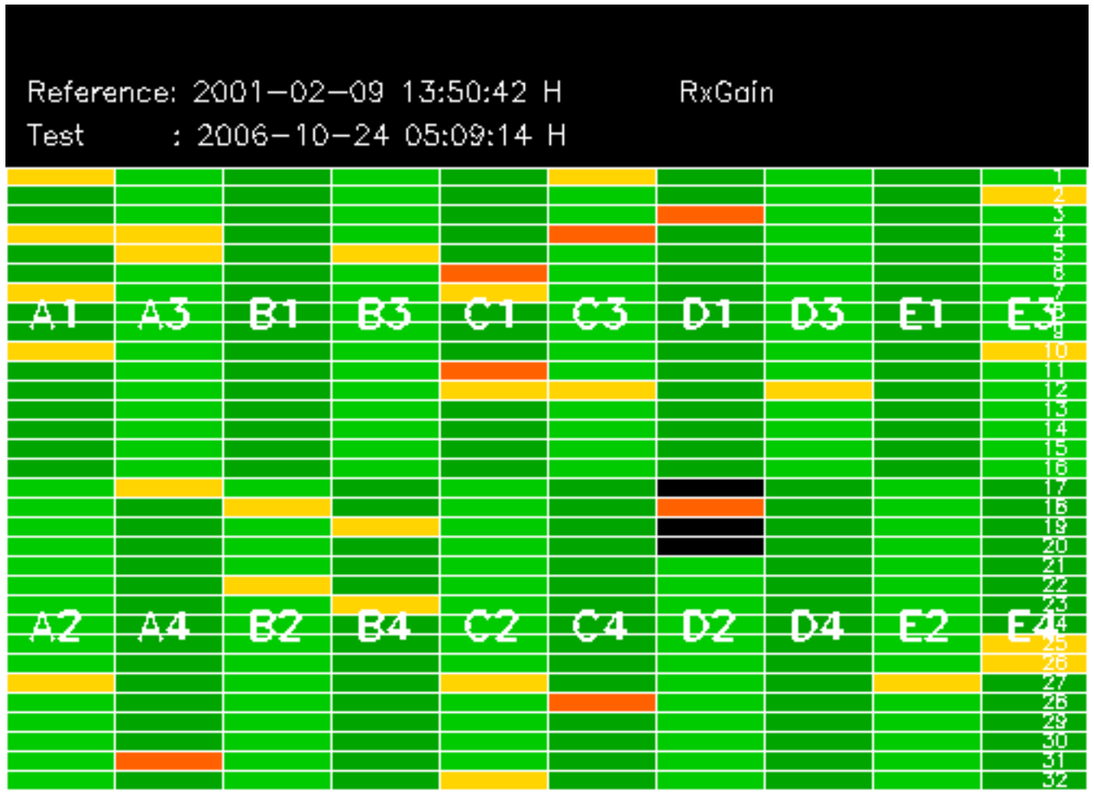

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −11.111863 Hz
−100Hz
+100Hz

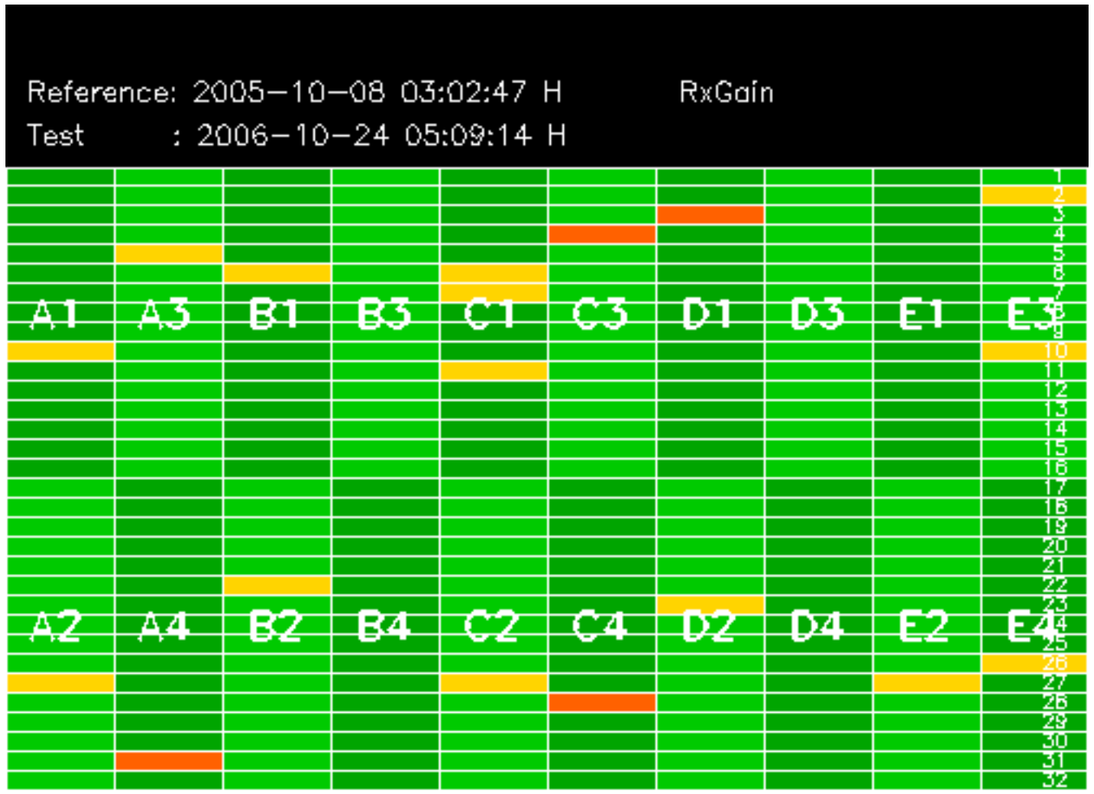

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −4.5182761 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −10.648922 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-24 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


Reference: 2005-10-08 03:02:47 H
Test : 2006-10-24 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
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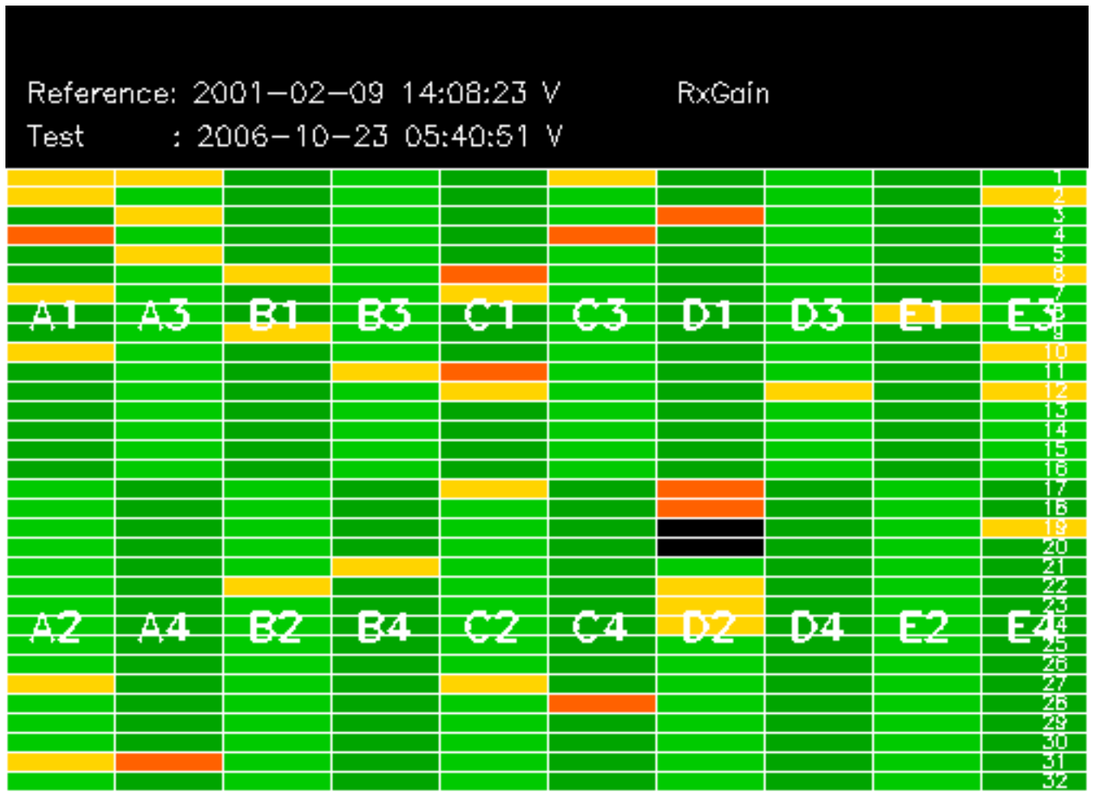
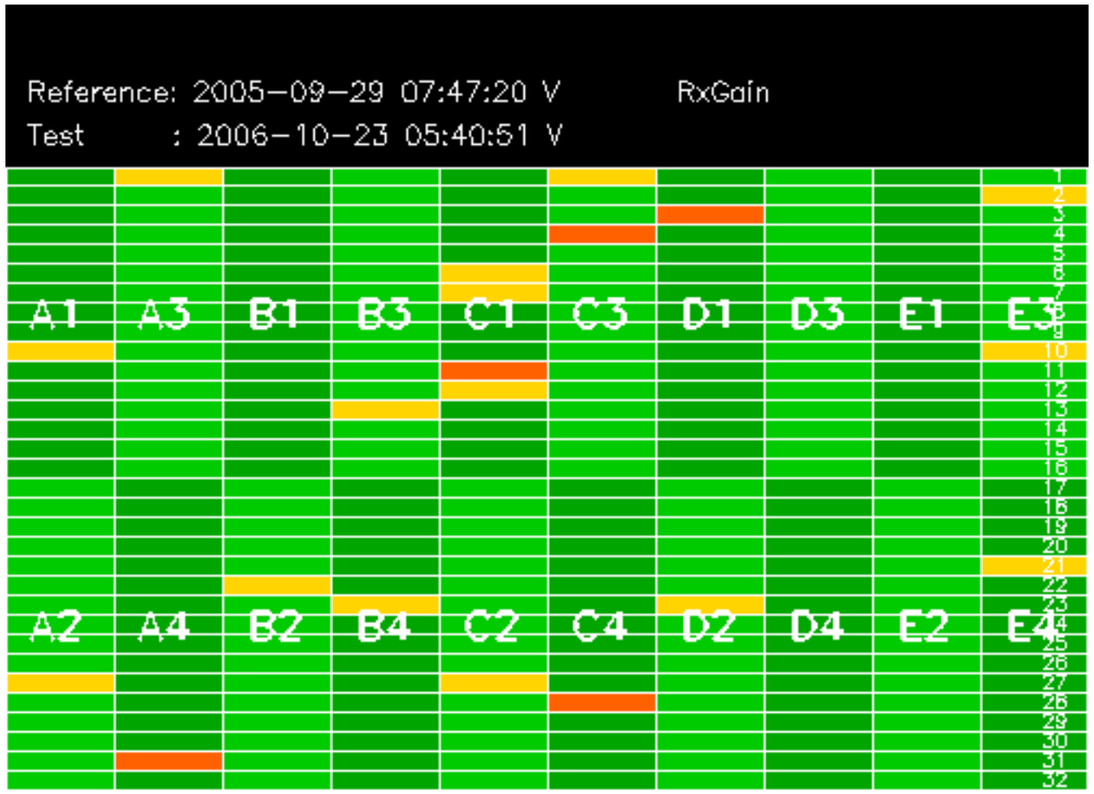

Reference: 2001-02-09 14:08:23 V
Test : 2006-10-23 05:40:51 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-10-23 05:40:51 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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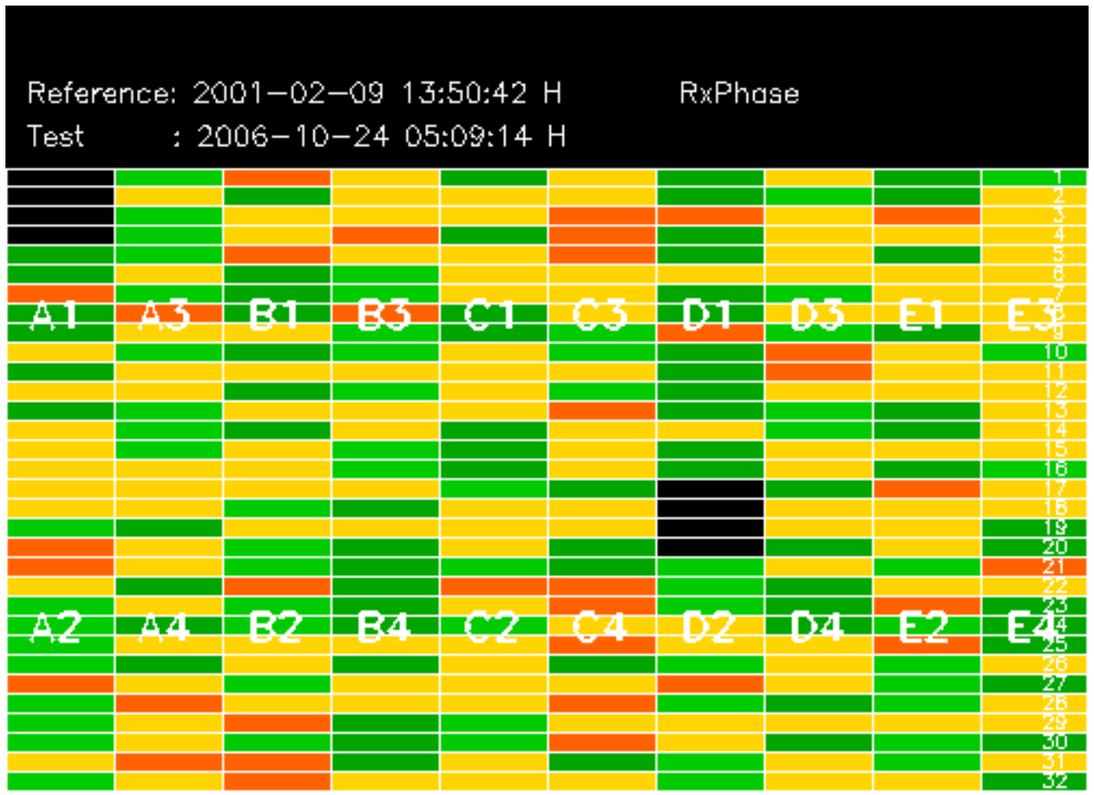
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-10-24 05:09:14 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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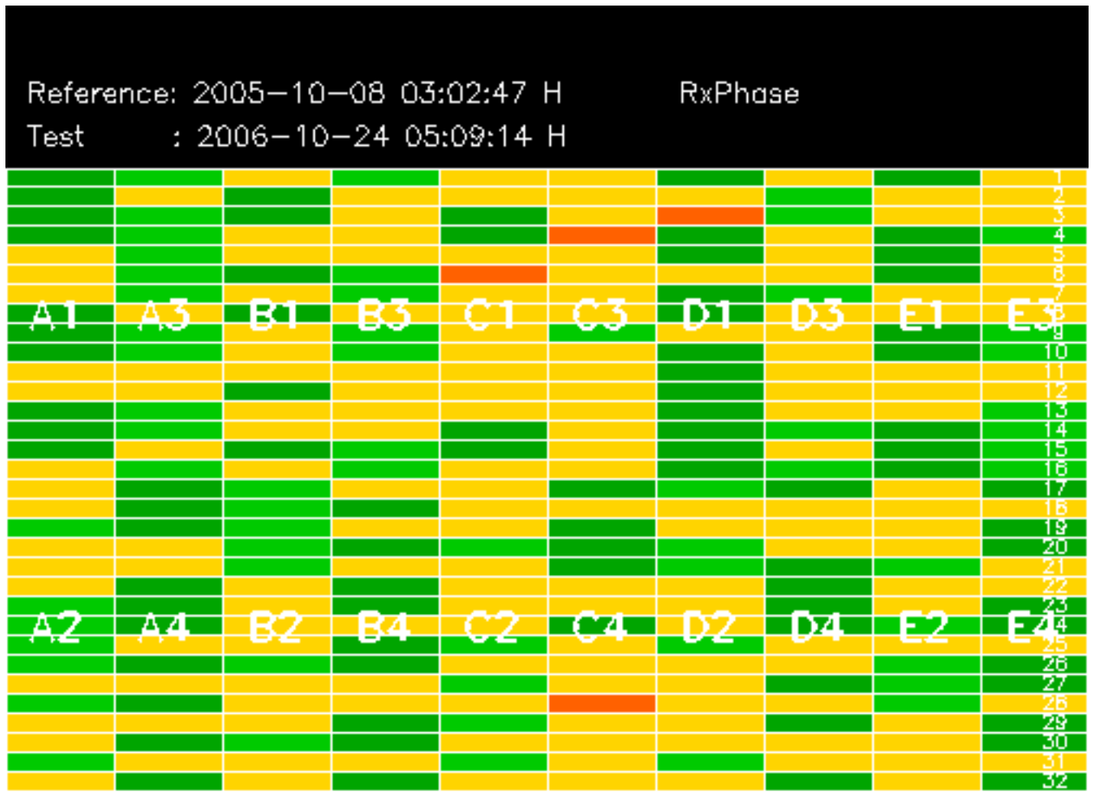
Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-10-24 05:09:14 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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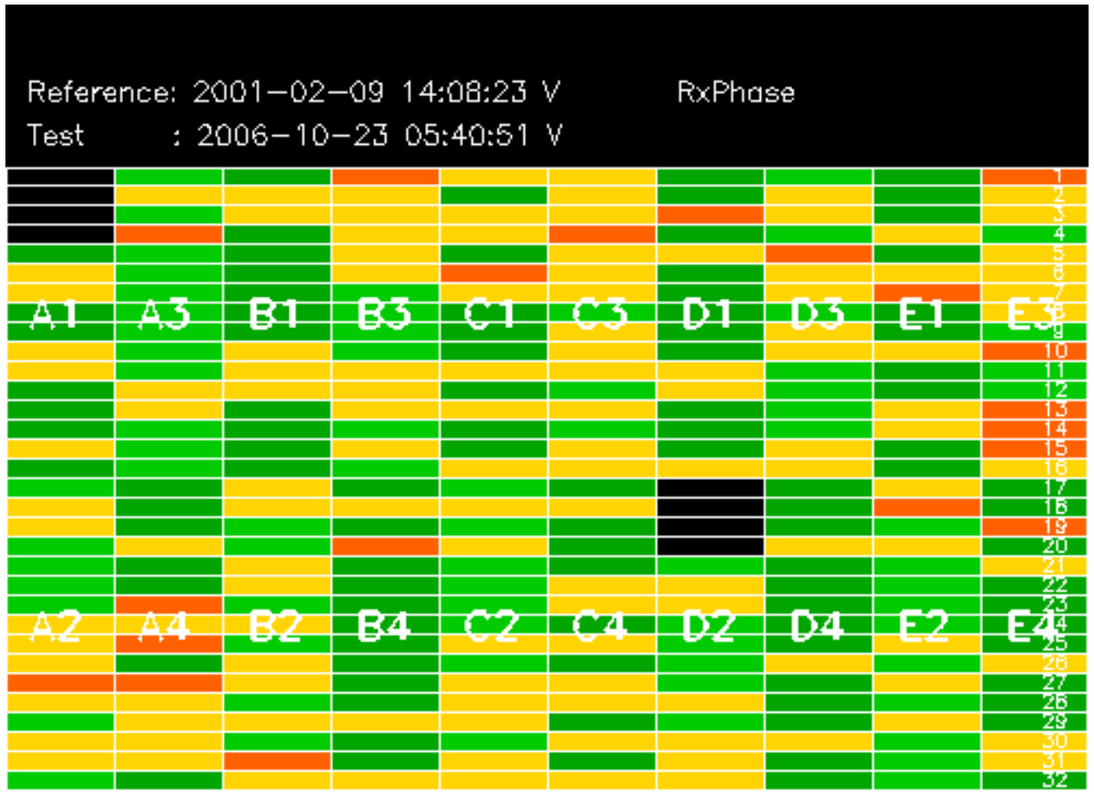
Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2006-10-23 05:40:51 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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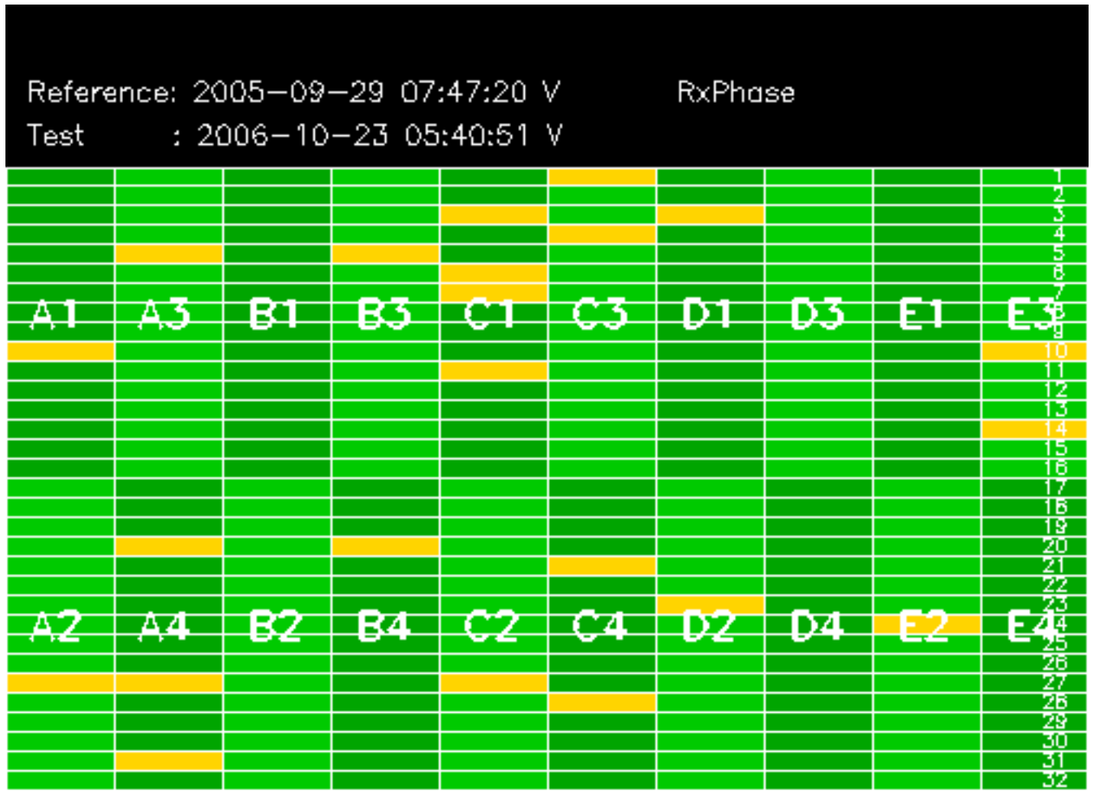
Reference: 2005-09-29 07:47:20 V
Test : 2006-10-23 05:40:51 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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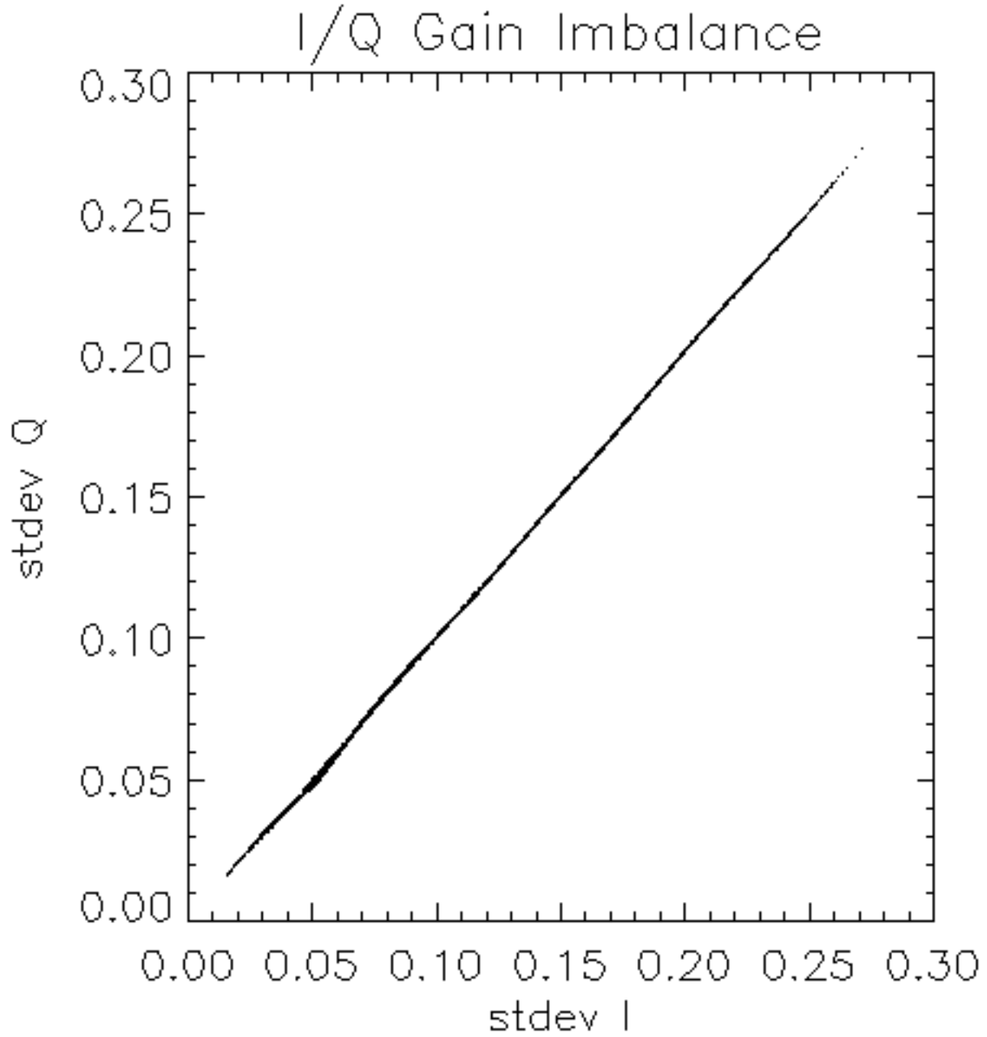
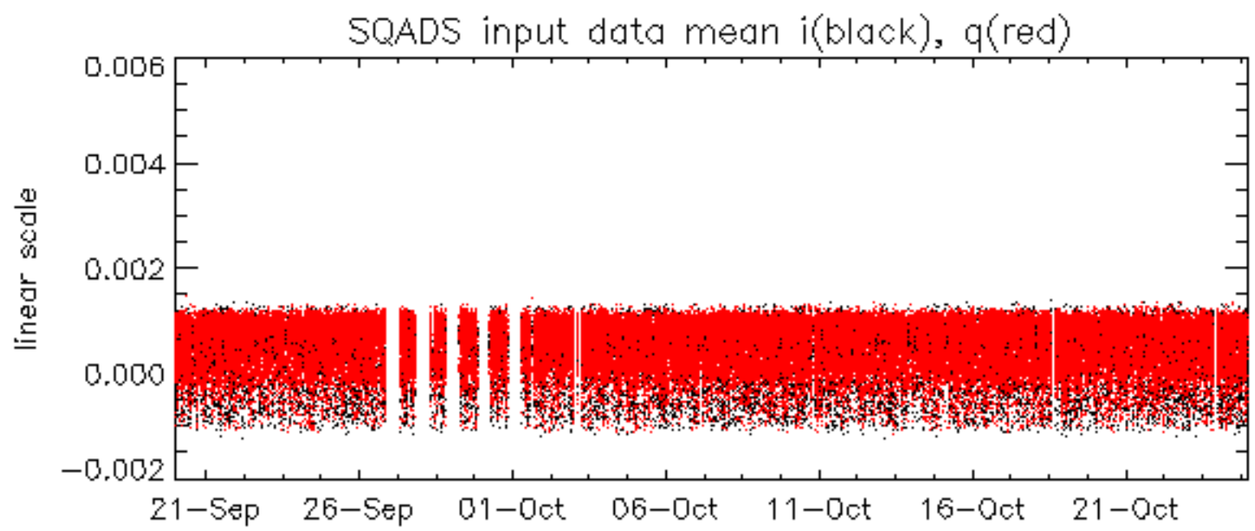
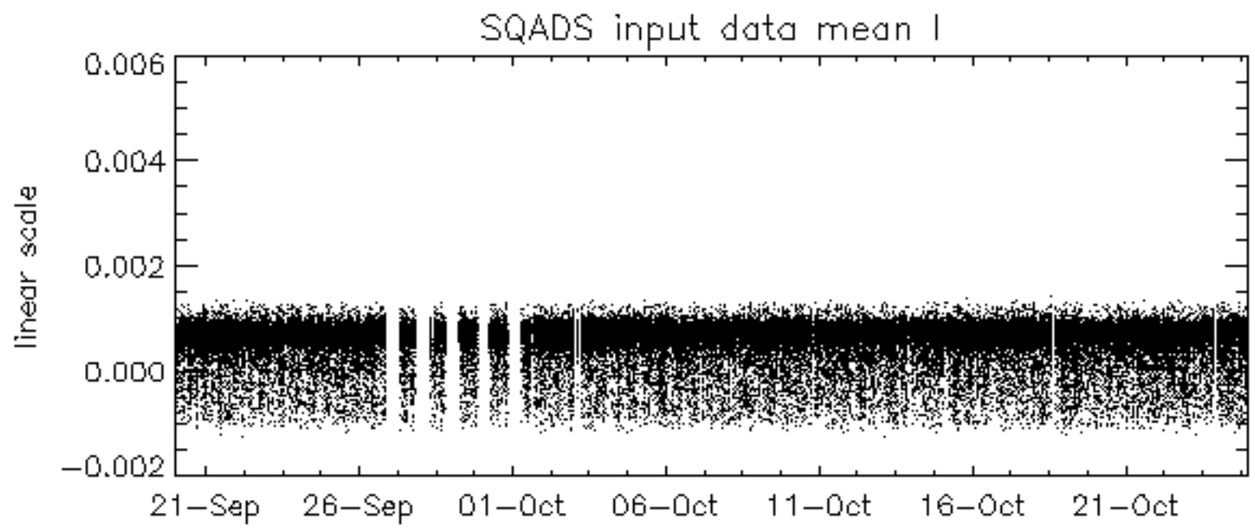
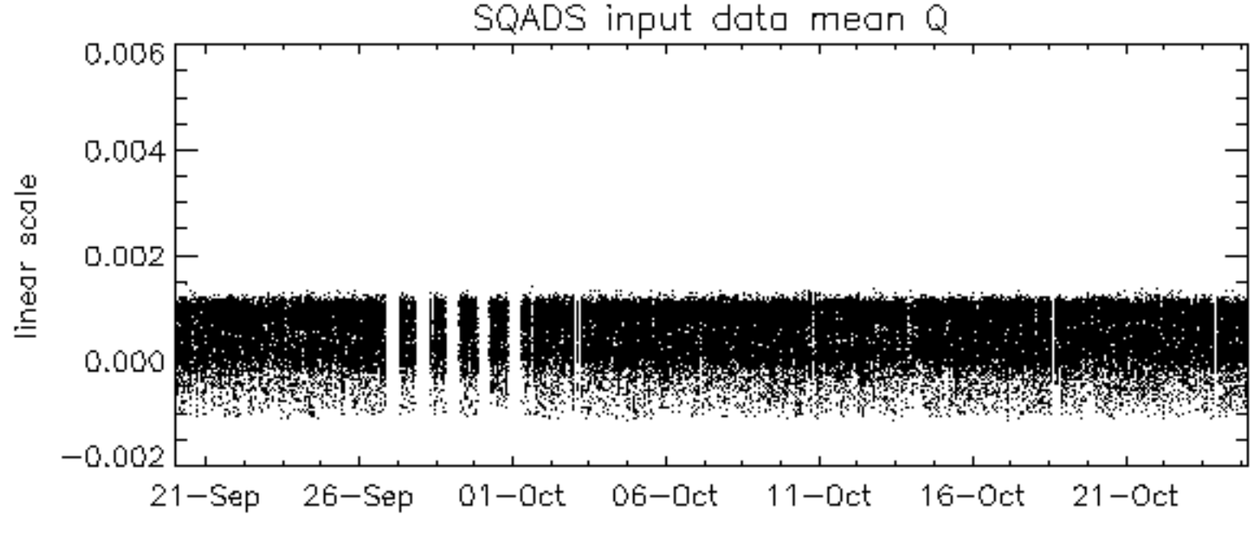
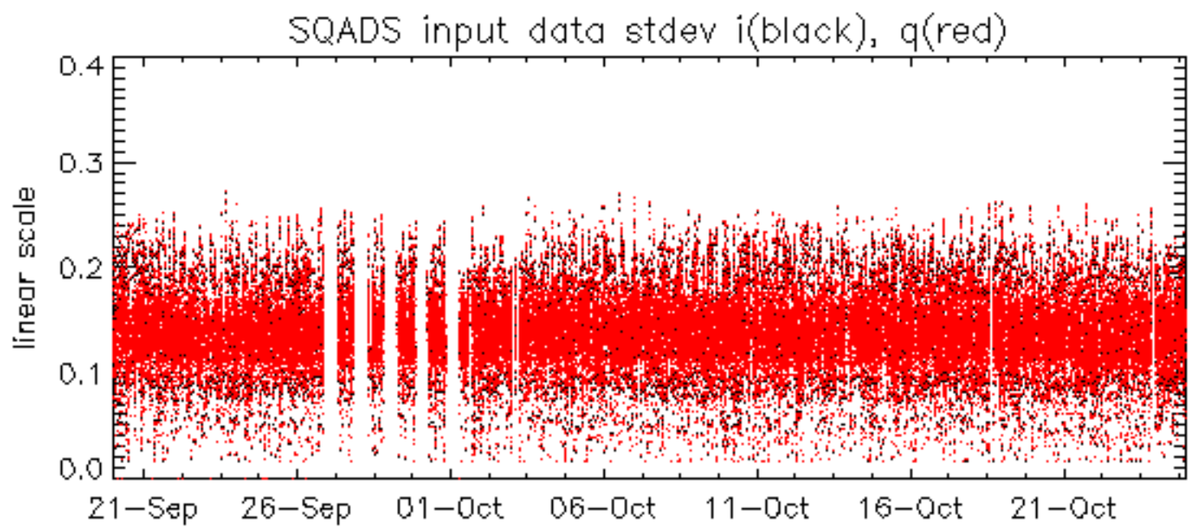
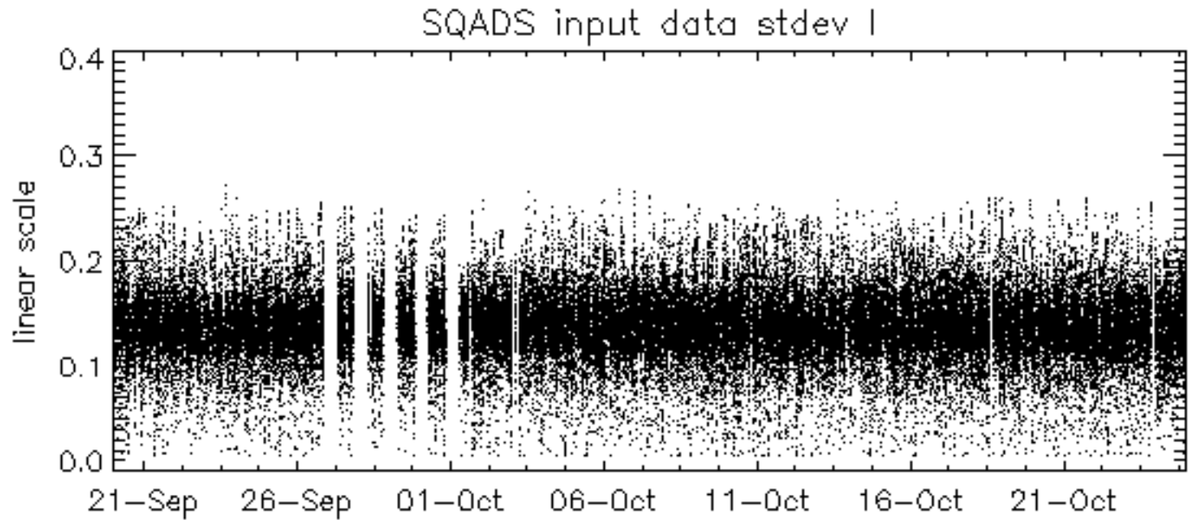

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

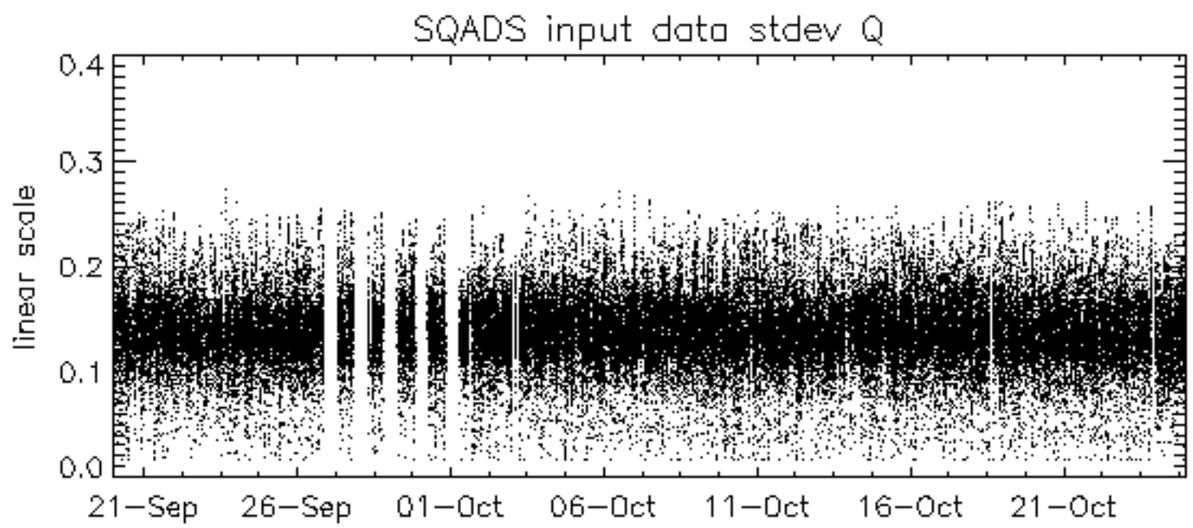

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct

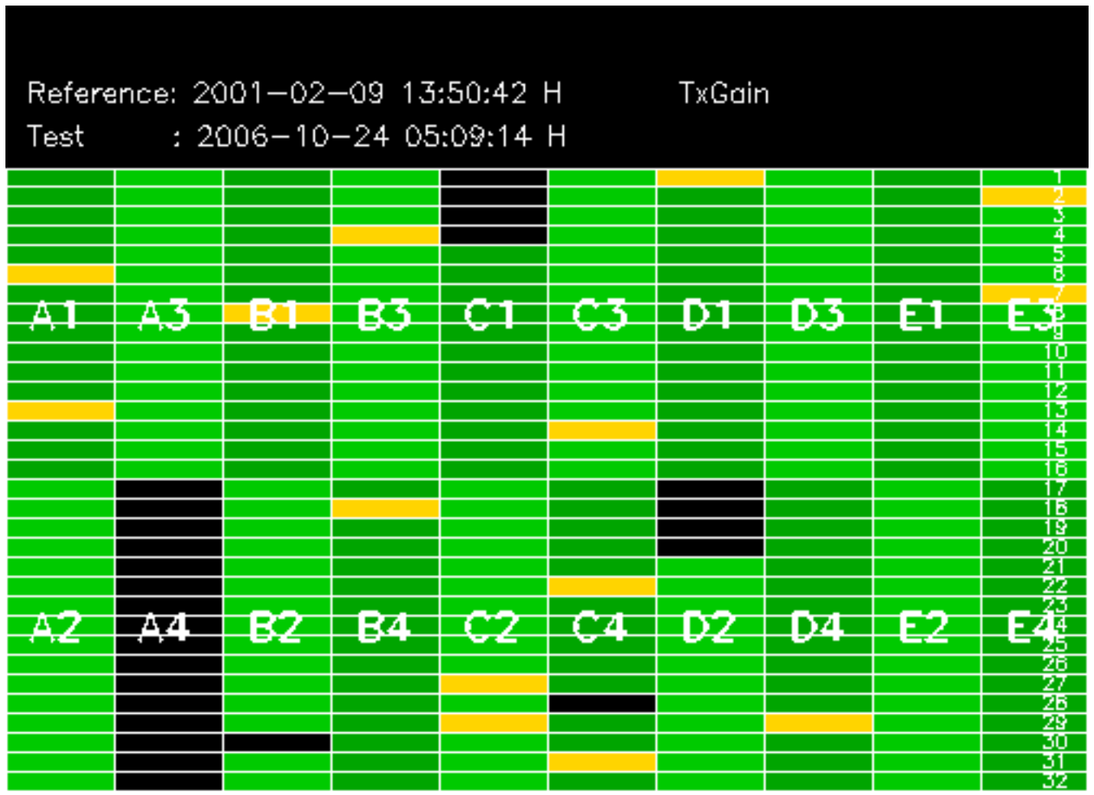

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct

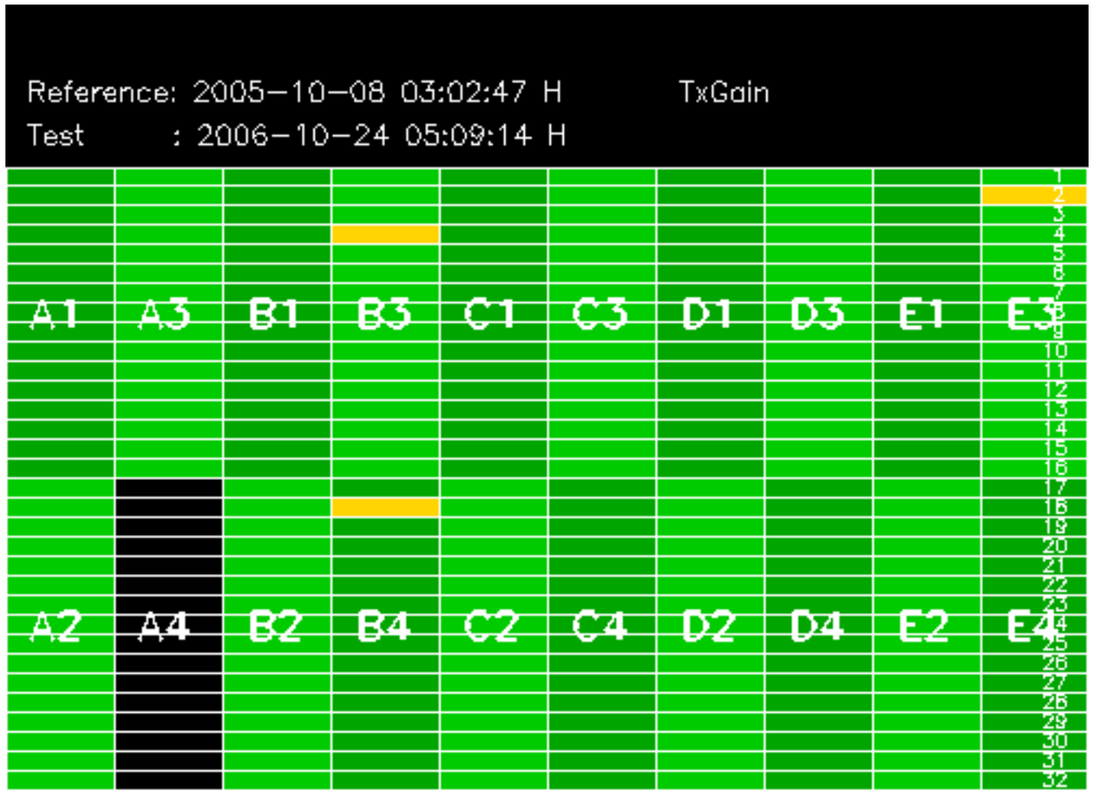

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct


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


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
21−Oct


Reference: 2001-02-09 13:50:42 H
Test : 2006-10-24 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: 2005-10-08 03:02:47 H
Test : 2006-10-24 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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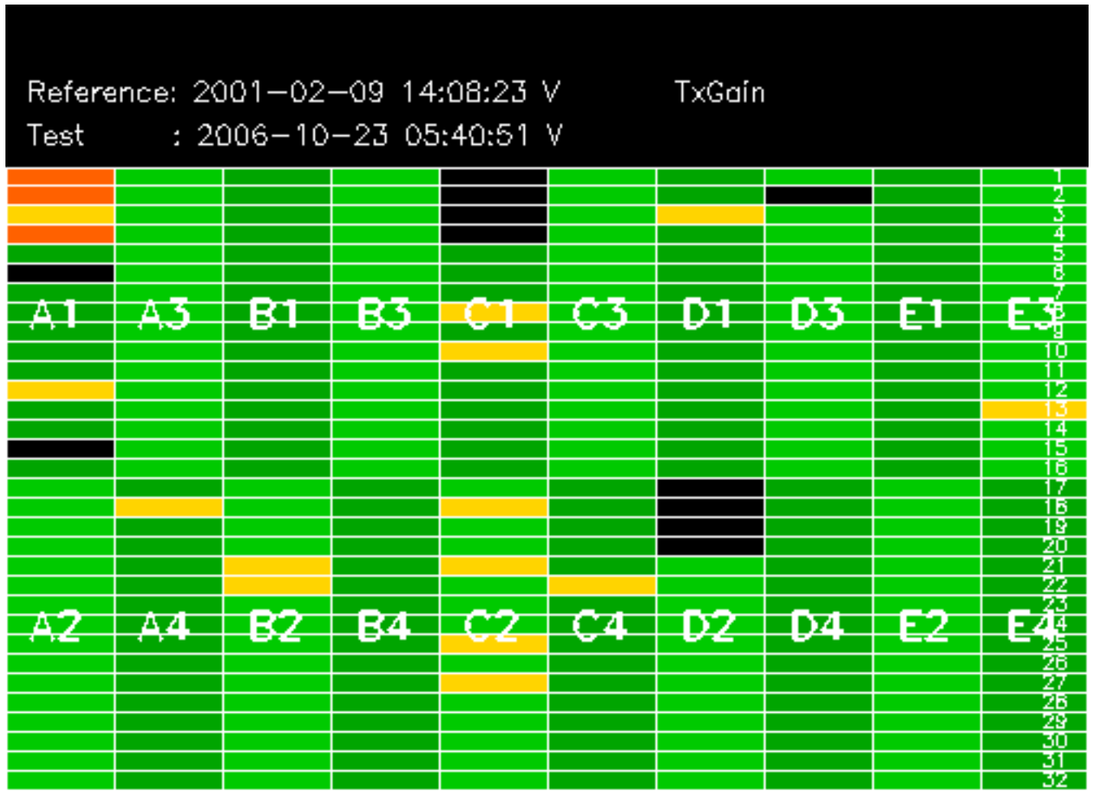
Reference: 2001-02-09 14:08:23 V
Test : 2006-10-23 05:40:51 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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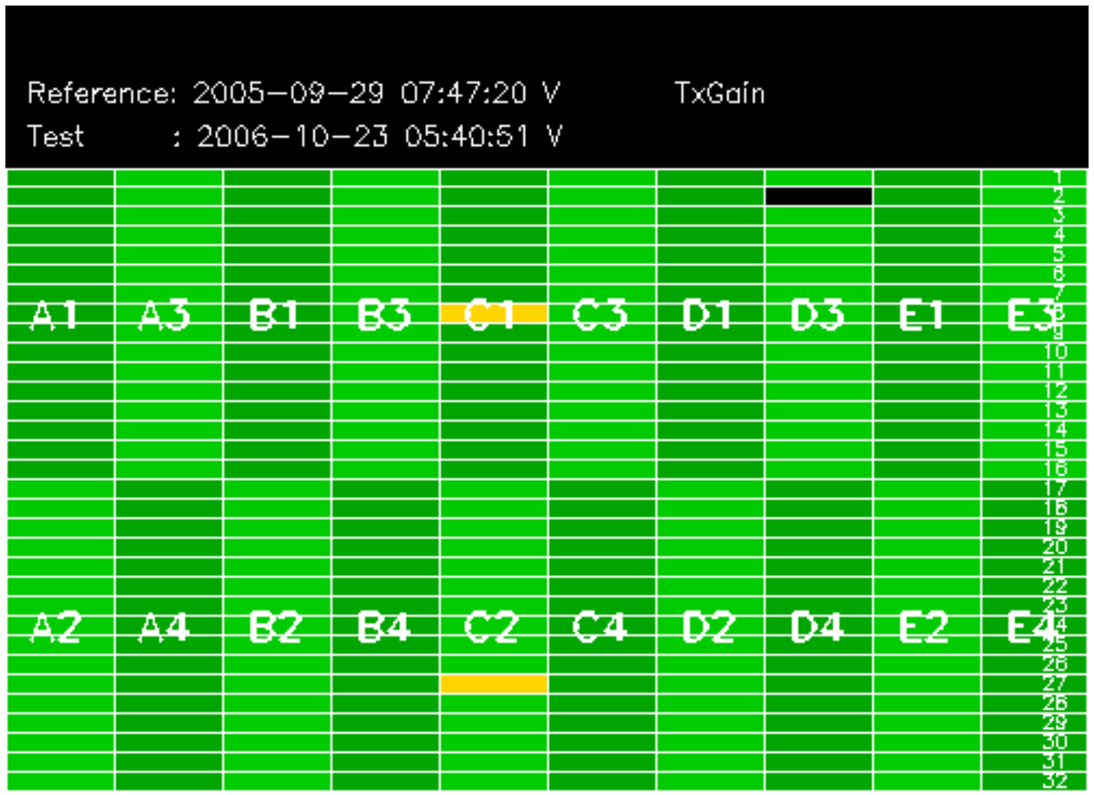
Reference: 2005-09-29 07:47:20 V
Test : 2006-10-23 05:40:51 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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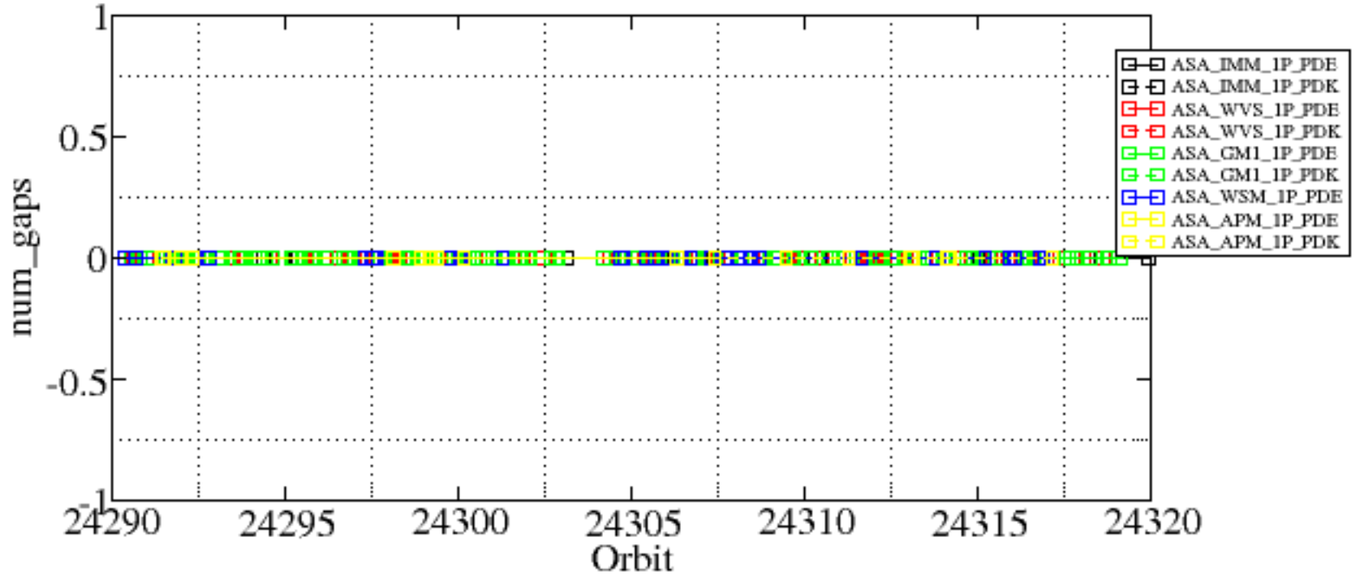
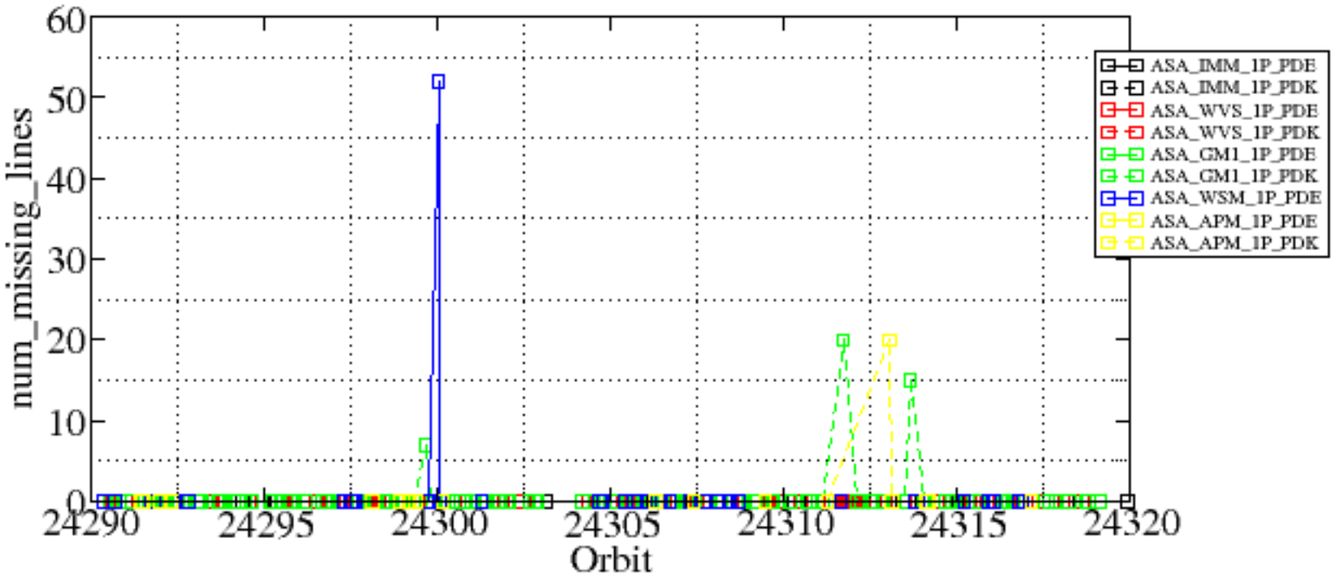
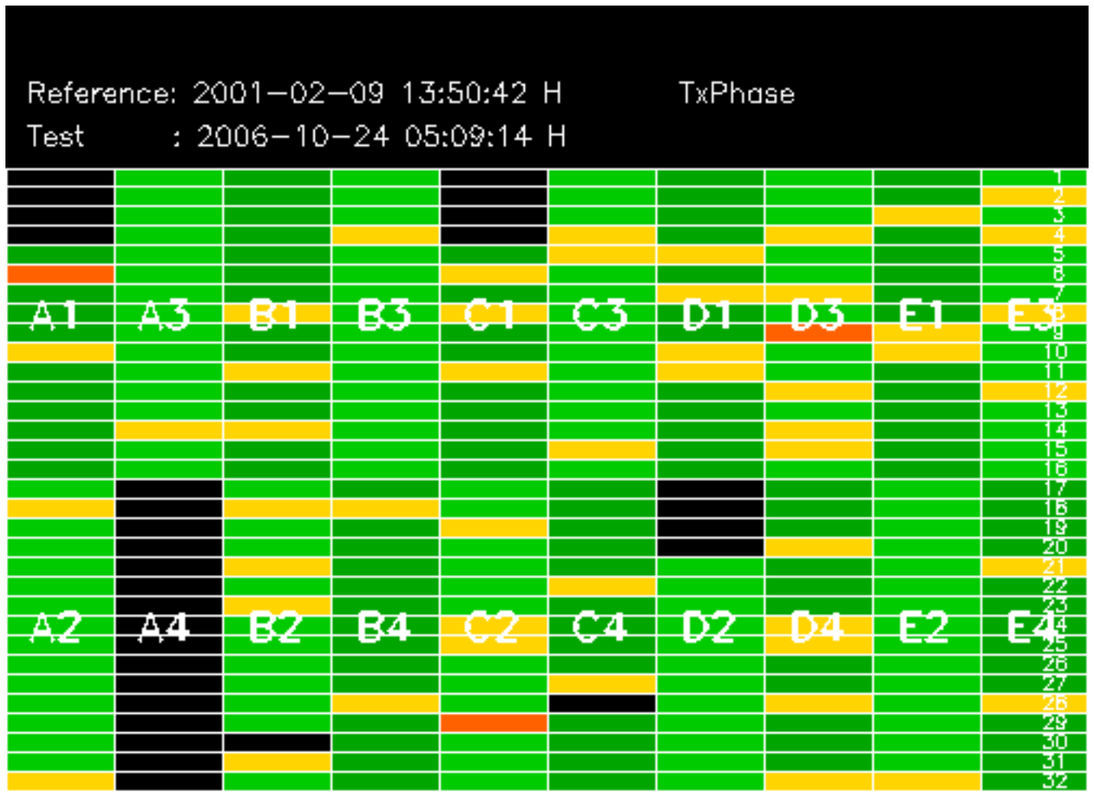
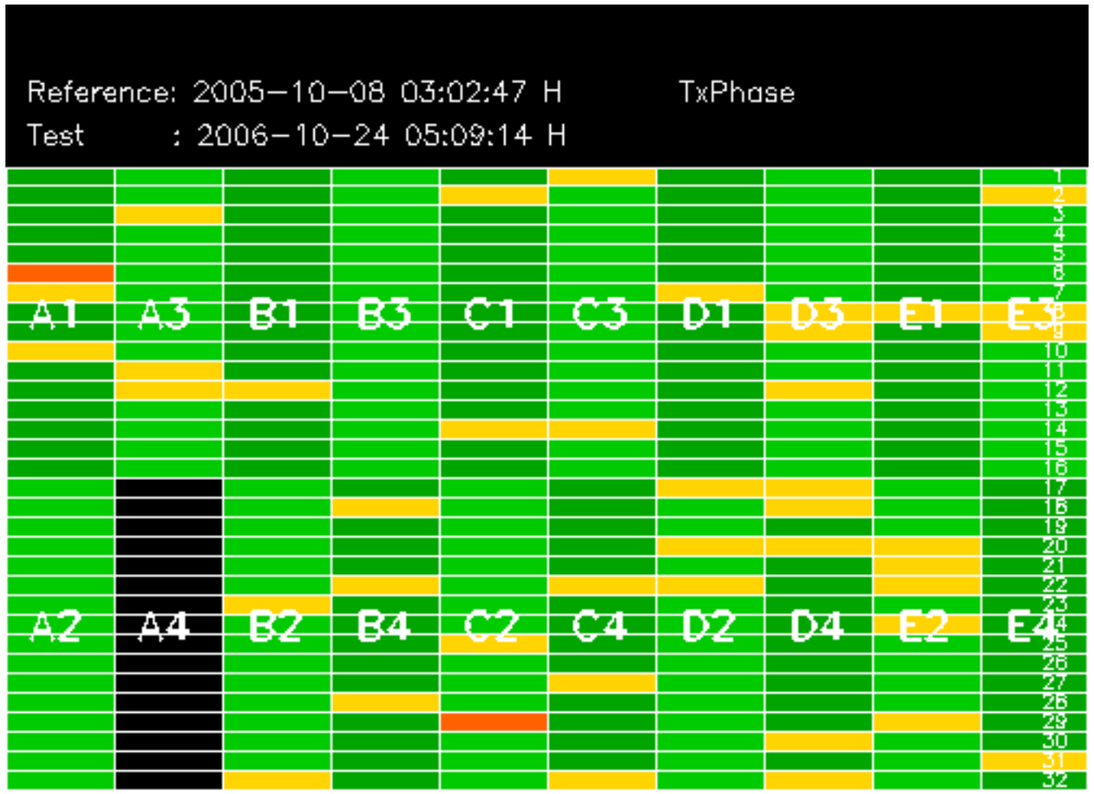
Summary of analysis for the last 3 days 2006102[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_GM1_1PNPDK20061023_154305_000005372052_00197_24299_7155.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20061024_115706_000007252052_00209_24311_7205.N1 </td> <td>0 </td> <td>20 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20061024_151127_000008152052_00211_24313_7219.N1 </td> <td>0 </td> <td>15 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20061023_162157_000001282052_00198_24300_4755.N1 </td> <td>0 </td> <td>52 </td></tr>
<tr> <td>ASA_APM_1PNPDK20061024_141130_000000852052_00211_24313_1374.N1 </td> <td>0 </td> <td>20 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
24290
24295
24300
24305
24310
24315
24320
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
24290
24295
24300
24305
24310
24315
24320
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 : 2006-10-24 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: 2005-10-08 03:02:47 H
Test : 2006-10-24 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
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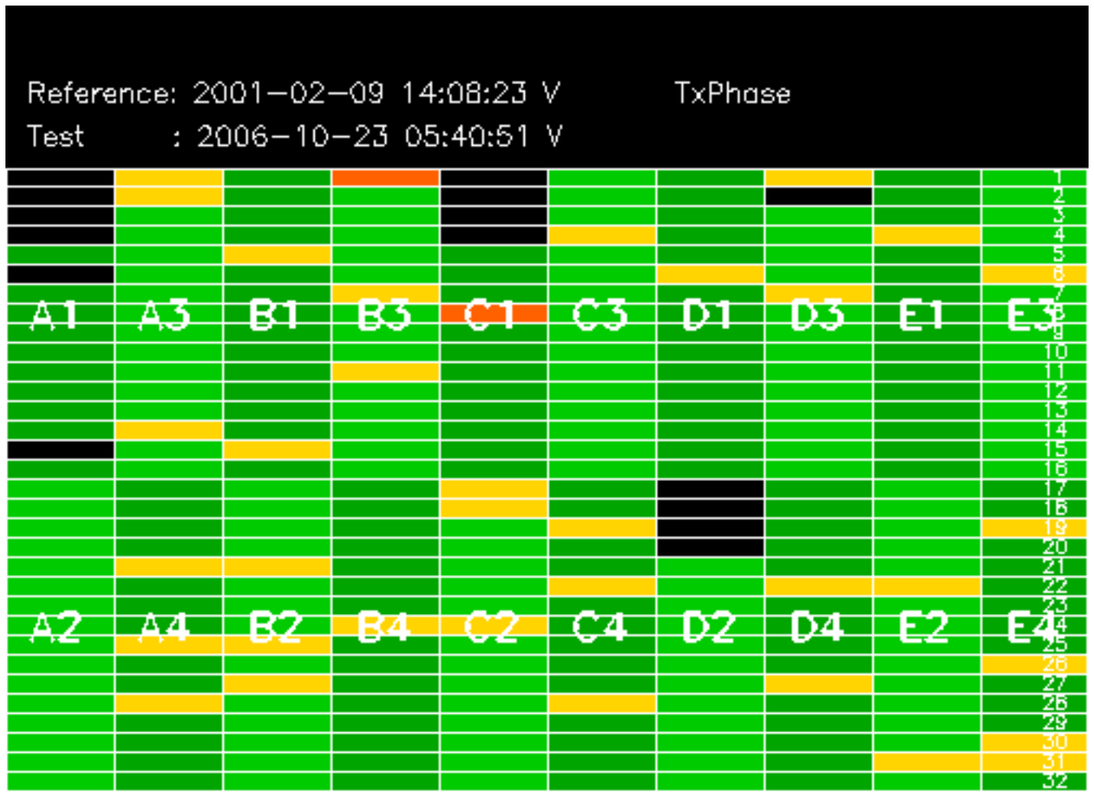
Reference: 2001-02-09 14:08:23 V
Test : 2006-10-23 05:40:51 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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D4
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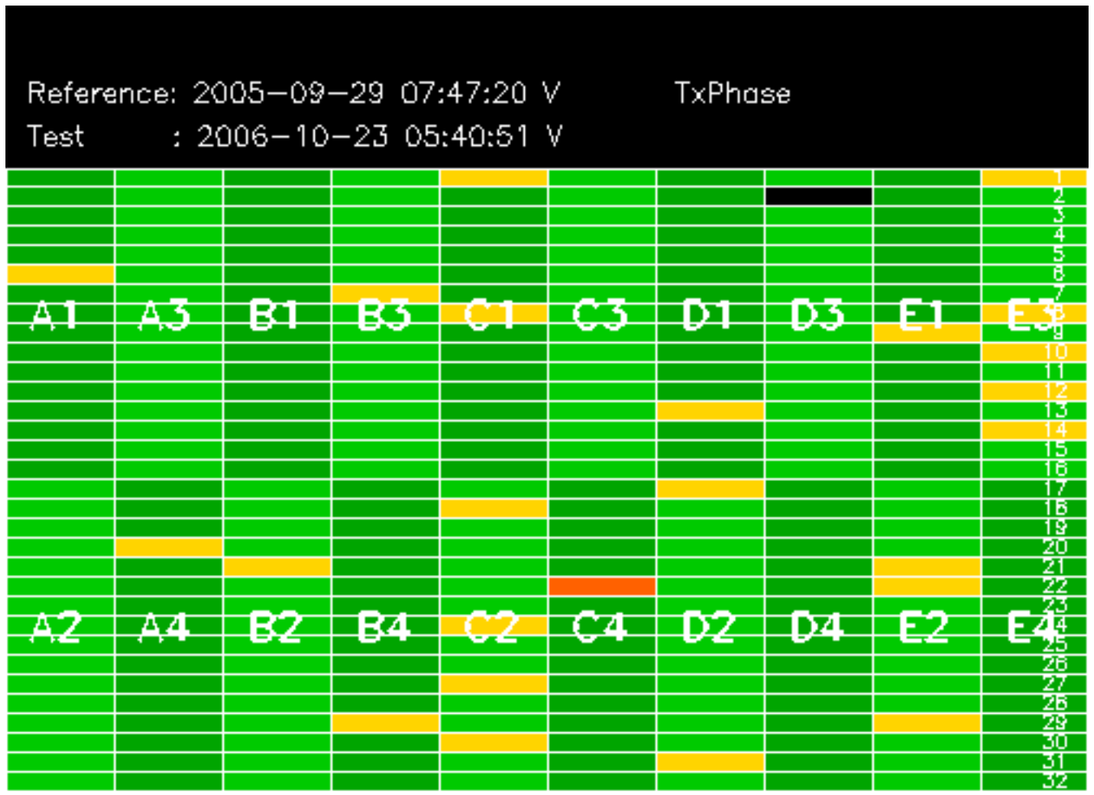
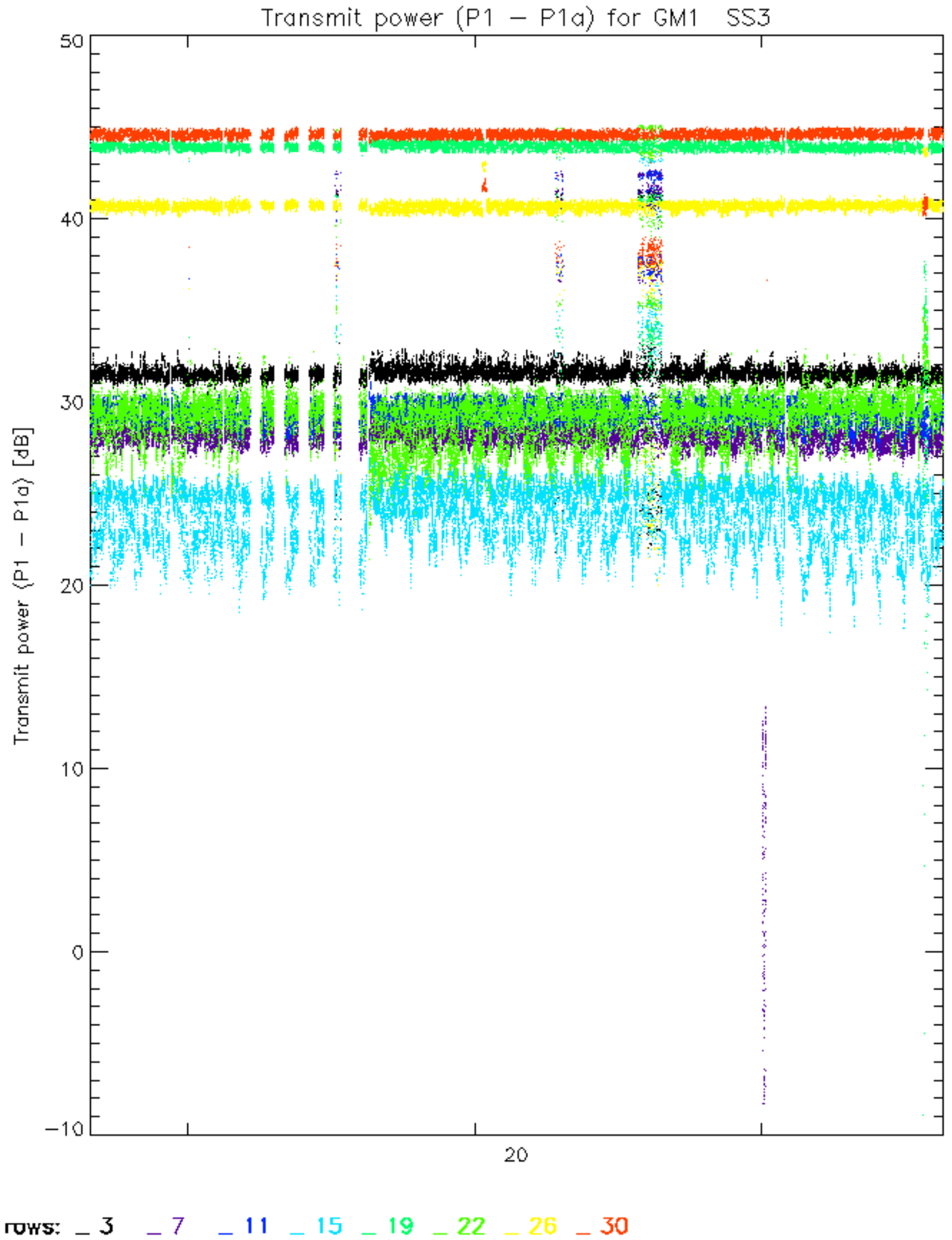
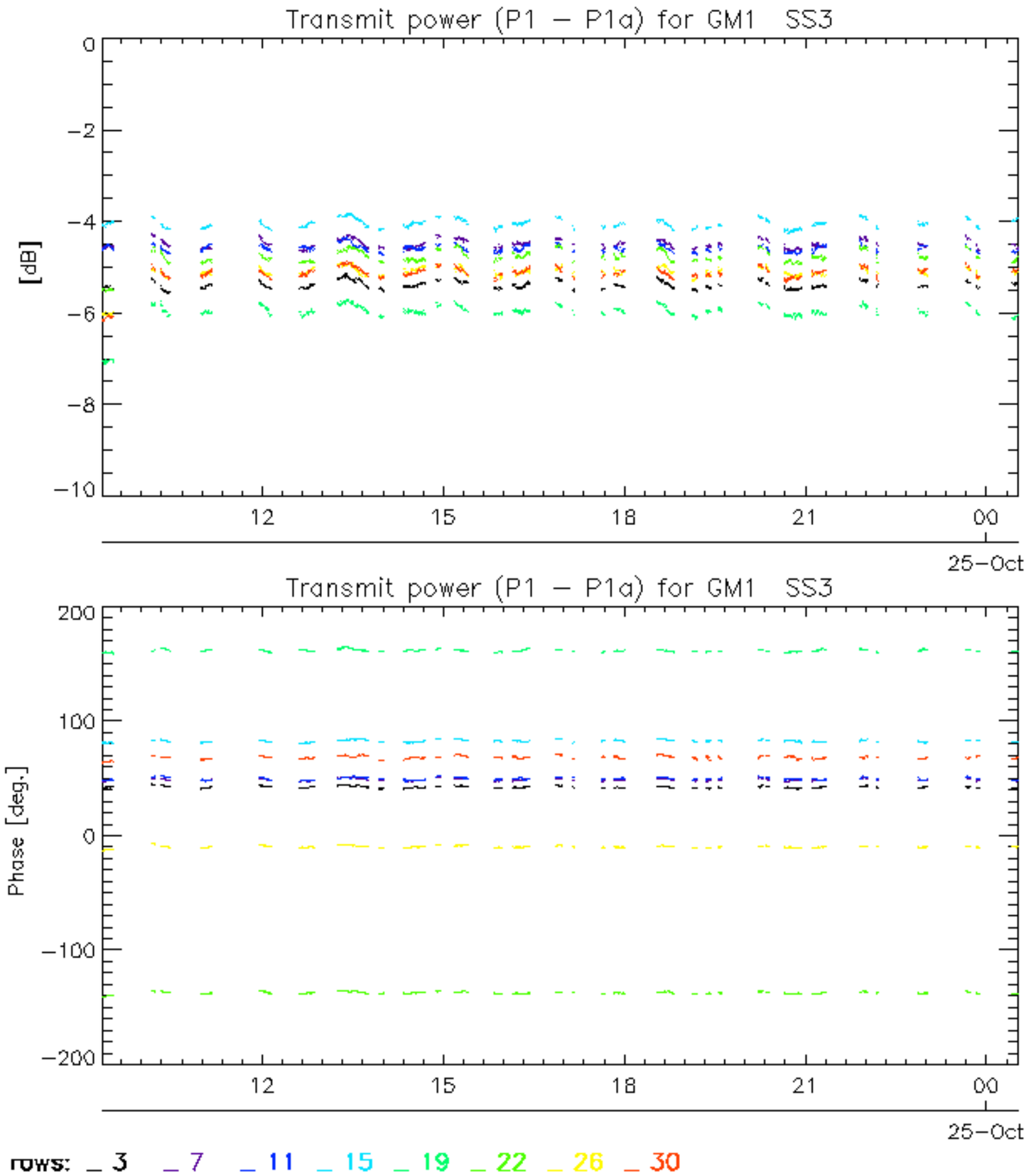
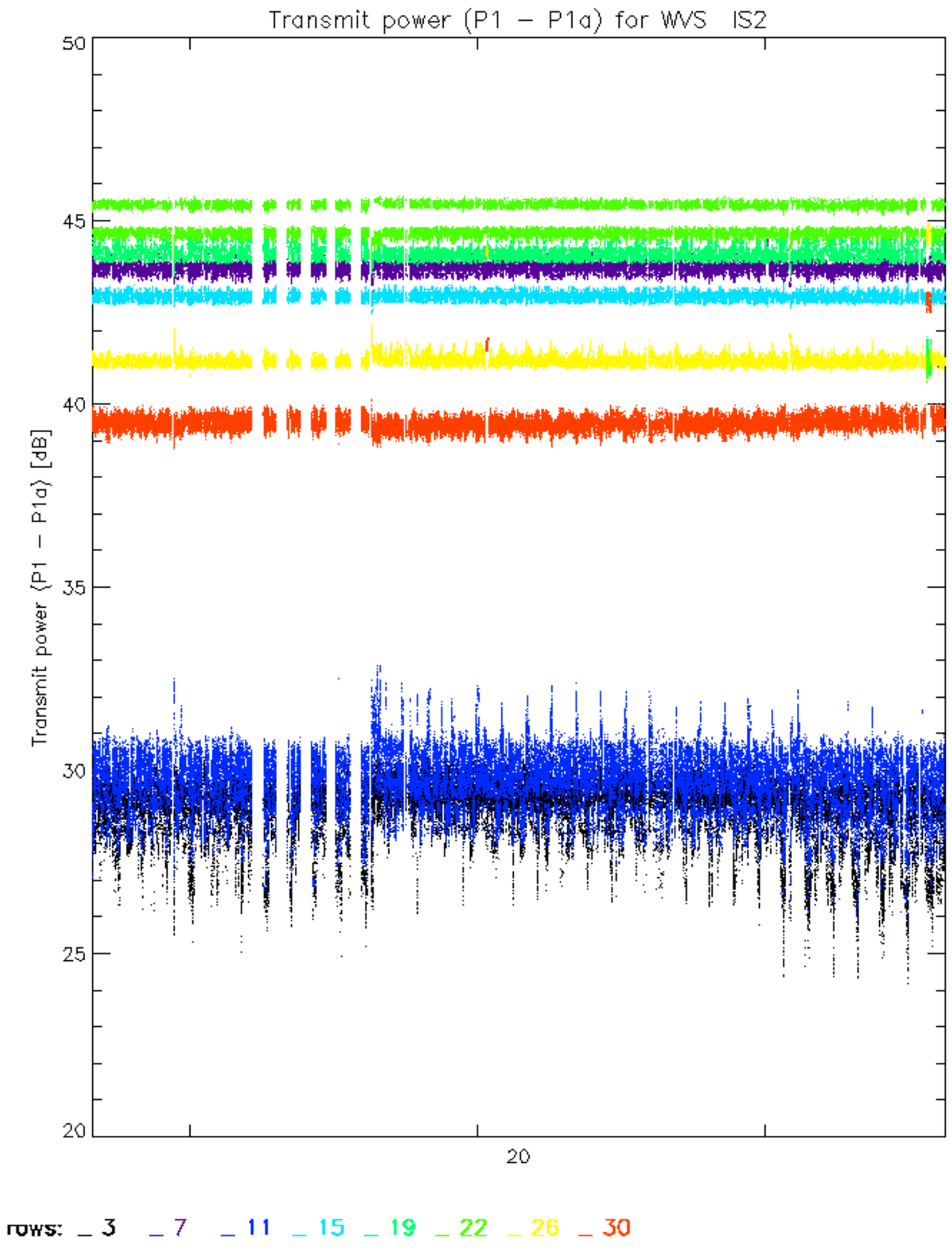
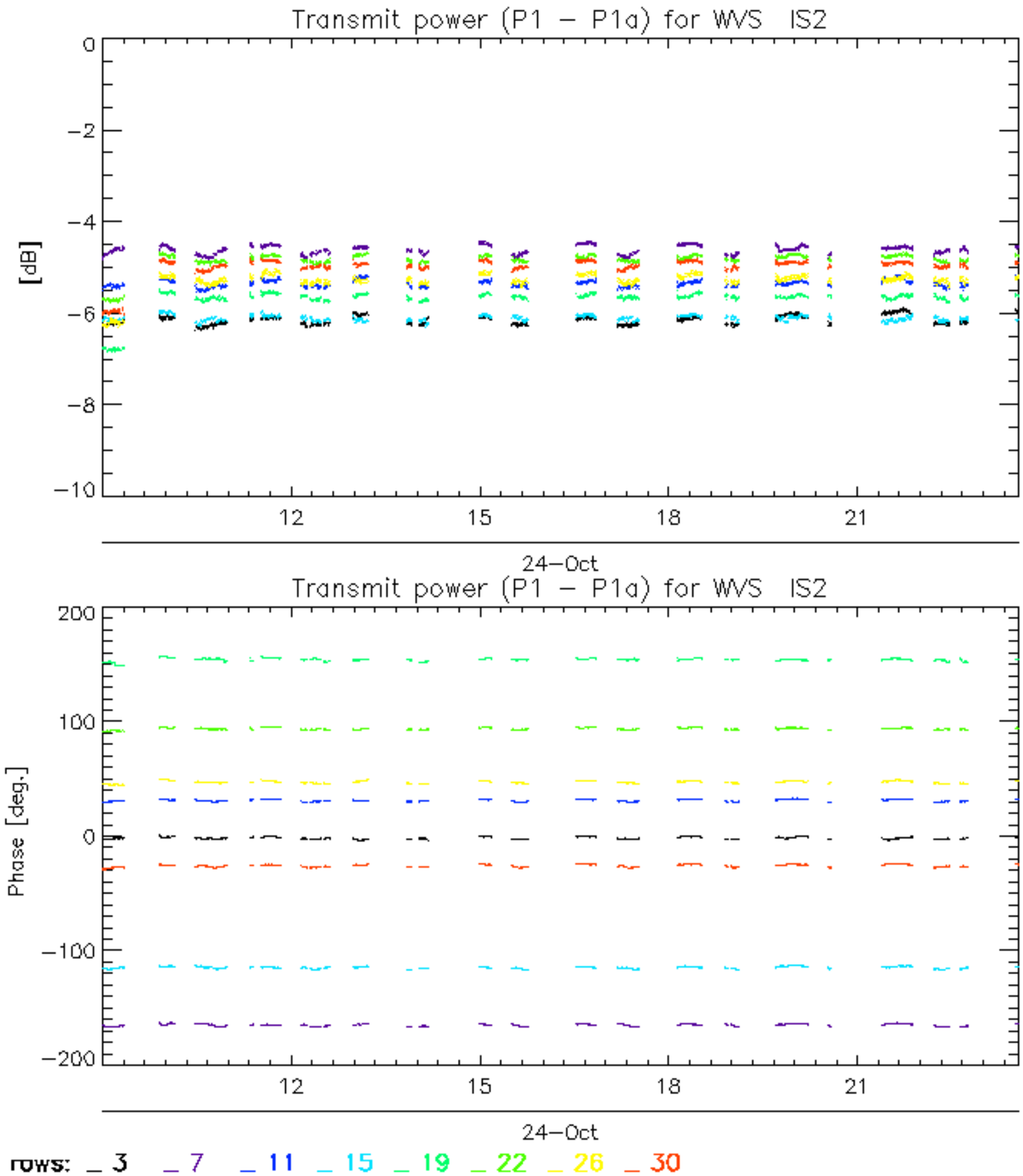

Reference: 2005-09-29 07:47:20 V
Test : 2006-10-23 05:40:51 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


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


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
12
15
18
21
00
25−Oct
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
25−Oct
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
20
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
12
15
18
21
24–Oct
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
24–Oct
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.