PRELIMINARY REPORT OF 060119

last update on Thu Jan 19 16:49:39 GMT 2006

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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 2006-01-18 00:00:00 to 2006-01-19 16:49:39

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

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	39	0	6	0	26
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	39	0	6	0	26
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	39	0	6	0	26
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	39	0	6	0	26

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	44	58	29	8	29
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	44	58	29	8	29
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	44	58	29	8	29
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	44	58	29	8	29

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	20060118 043726
H	20060117 050903

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	-4.048152	0.007433	0.051384
7	P1	-2.997830	0.015008	0.004181
11	P1	-4.103076	0.022757	0.011874
15	P1	-6.066216	0.017165	0.023587
19	P1	-3.242115	0.005520	-0.025511
22	P1	-4.487247	0.020234	0.016078
26	P1	-4.219448	0.012107	0.019748
30	P1	-5.771477	0.009937	-0.002474
3	P1	-16.982653	0.250490	0.122780
7	P1	-16.582191	0.128186	-0.085934
11	P1	-16.602633	0.327729	0.004338
15	P1	-13.265962	0.128638	0.168476
19	P1	-13.876908	0.074509	-0.012293
22	P1	-15.953461	0.570258	0.271097
26	P1	-15.775536	0.262950	-0.012564
30	P1	-16.616947	0.353614	0.117350

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.648855	0.097715	0.148545
7	P2	-22.498953	0.098237	0.093740
11	P2	-16.335445	0.103900	0.110919
15	P2	-7.229207	0.102980	0.053748
19	P2	-9.188508	0.098739	0.068010
22	P2	-17.940481	0.096752	0.018222
26	P2	-16.228220	0.100806	0.040027
30	P2	-19.663338	0.084170	0.044250

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.219521	0.007666	0.024966
7	P3	-8.219521	0.007666	0.024966
11	P3	-8.219521	0.007666	0.024966
15	P3	-8.219521	0.007666	0.024966
19	P3	-8.219521	0.007666	0.024966
22	P3	-8.219521	0.007666	0.024966
26	P3	-8.219521	0.007666	0.024966
30	P3	-8.219521	0.007666	0.024966

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	-3.719774	0.008561	-0.006539
7	P1	-2.760884	0.007562	0.028079
11	P1	-2.867202	0.010538	0.015847
15	P1	-3.448771	0.018085	-0.052064
19	P1	-3.383218	0.013970	0.041272
22	P1	-5.122807	0.021225	0.013515
26	P1	-5.854117	0.015576	0.010880
30	P1	-5.260764	0.031063	0.067004
3	P1	-11.513292	0.034197	-0.056579
7	P1	-9.933846	0.050232	0.078661
11	P1	-10.062796	0.051050	-0.039454
15	P1	-10.604273	0.080104	-0.086454
19	P1	-15.491446	0.064669	0.101925
22	P1	-20.719833	1.113452	0.479703

26	P1	-16.929491	0.325340	0.476617
30	P1	-18.156942	0.297477	-0.043926

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.484249	0.032495	0.267905
7	P2	-22.926003	0.058689	0.292518
11	P2	-11.478615	0.020554	0.197425
15	P2	-4.943002	0.023764	0.123973
19	P2	-6.941394	0.022697	0.113262
22	P2	-8.199864	0.022959	0.056859
26	P2	-23.996035	0.026251	0.131863
30	P2	-22.111288	0.017252	0.080708

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.064356	0.002500	0.041143
7	P3	-8.064350	0.002500	0.041892
11	P3	-8.064443	0.002506	0.041867
15	P3	-8.064318	0.002501	0.041536
19	P3	-8.064470	0.002502	0.041375
22	P3	-8.064292	0.002499	0.041384
26	P3	-8.064203	0.002492	0.041323
30	P3	-8.064383	0.002504	0.041171

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	0.000546353
	stdev	1.79444e-07
MEAN Q	mean	0.000511362
	stdev	2.20038e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.138012
	stdev	0.00122048
STDEV Q	mean	0.138363
	stdev	0.00123946

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006011[789]
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_1PNPDE20060117_003714_000001252044_00202_20296_0294.N1	1	0
ASA_IMM_1PNPDE20060118_004619_000001942044_00217_20311_0394.N1	1	0
ASA_WSM_1PNPDE20060117_112911_000001832044_00209_20303_1118.N1	0	28
ASA_WSM_1PNPDE20060117_175924_000000792044_00213_20307_1178.N1	5	29
ASA_APM_1PNPDE20060117_141137_000000832044_00211_20305_0083.N1	0	14

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

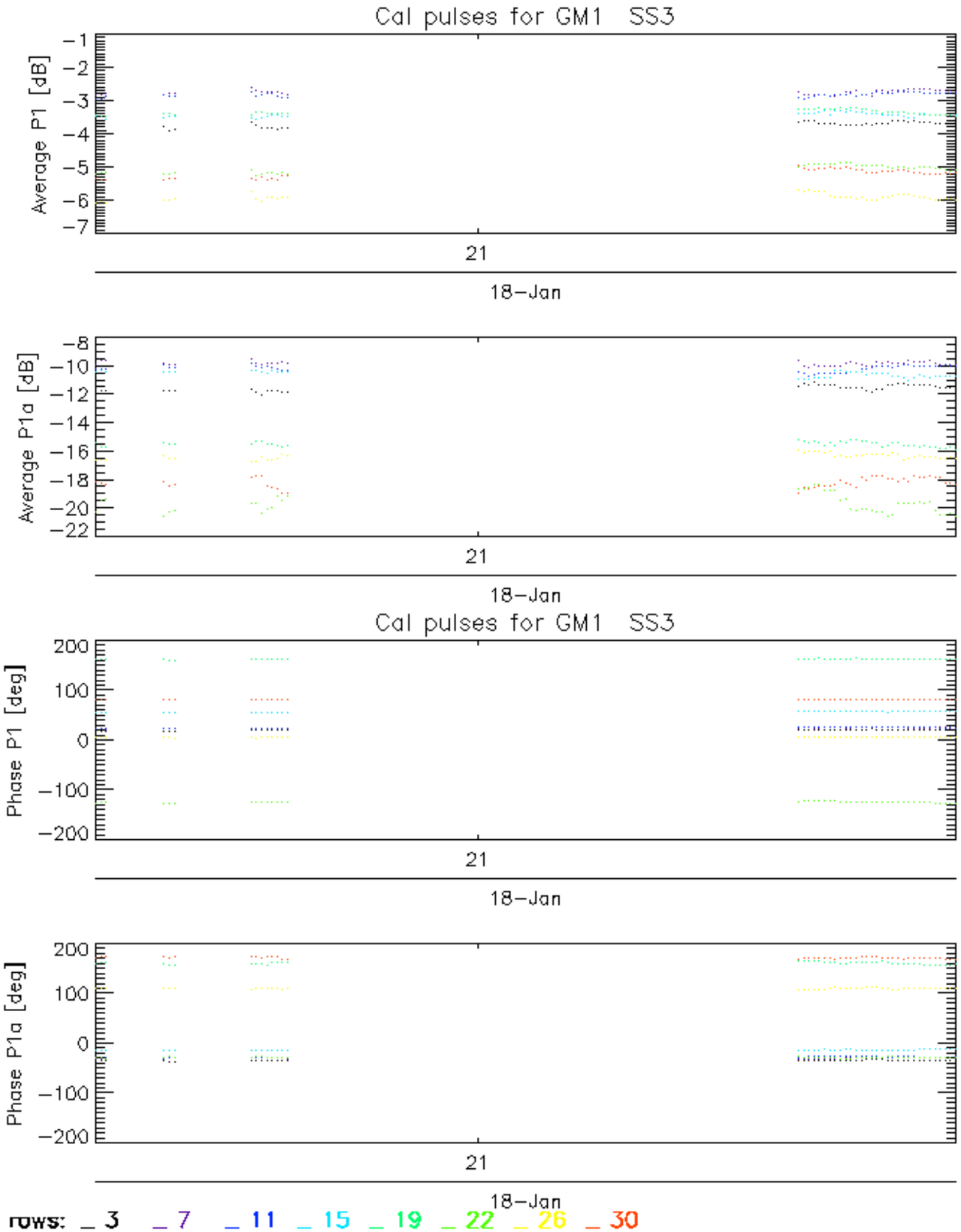
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

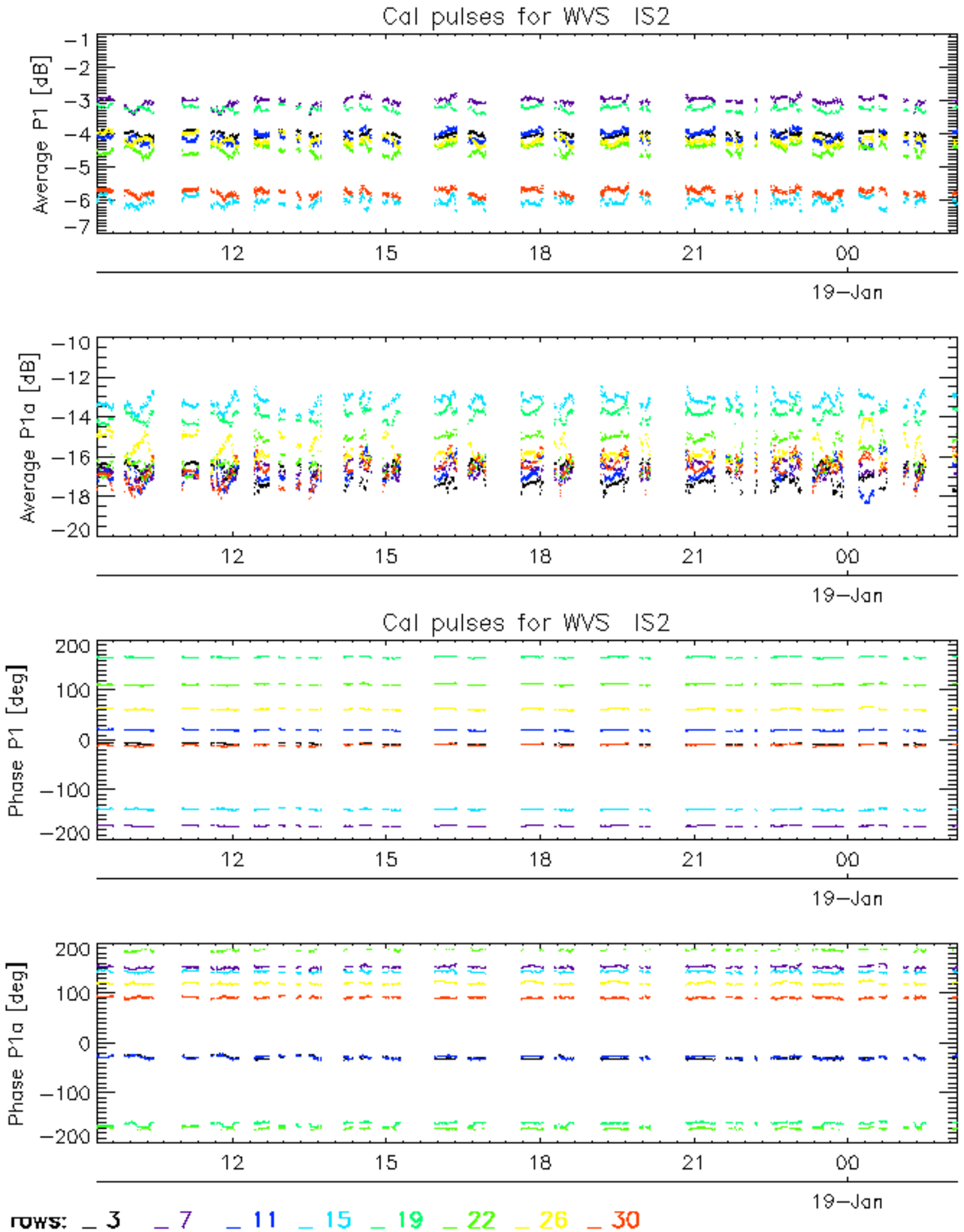
7.5 - Absolute Doppler for GM1

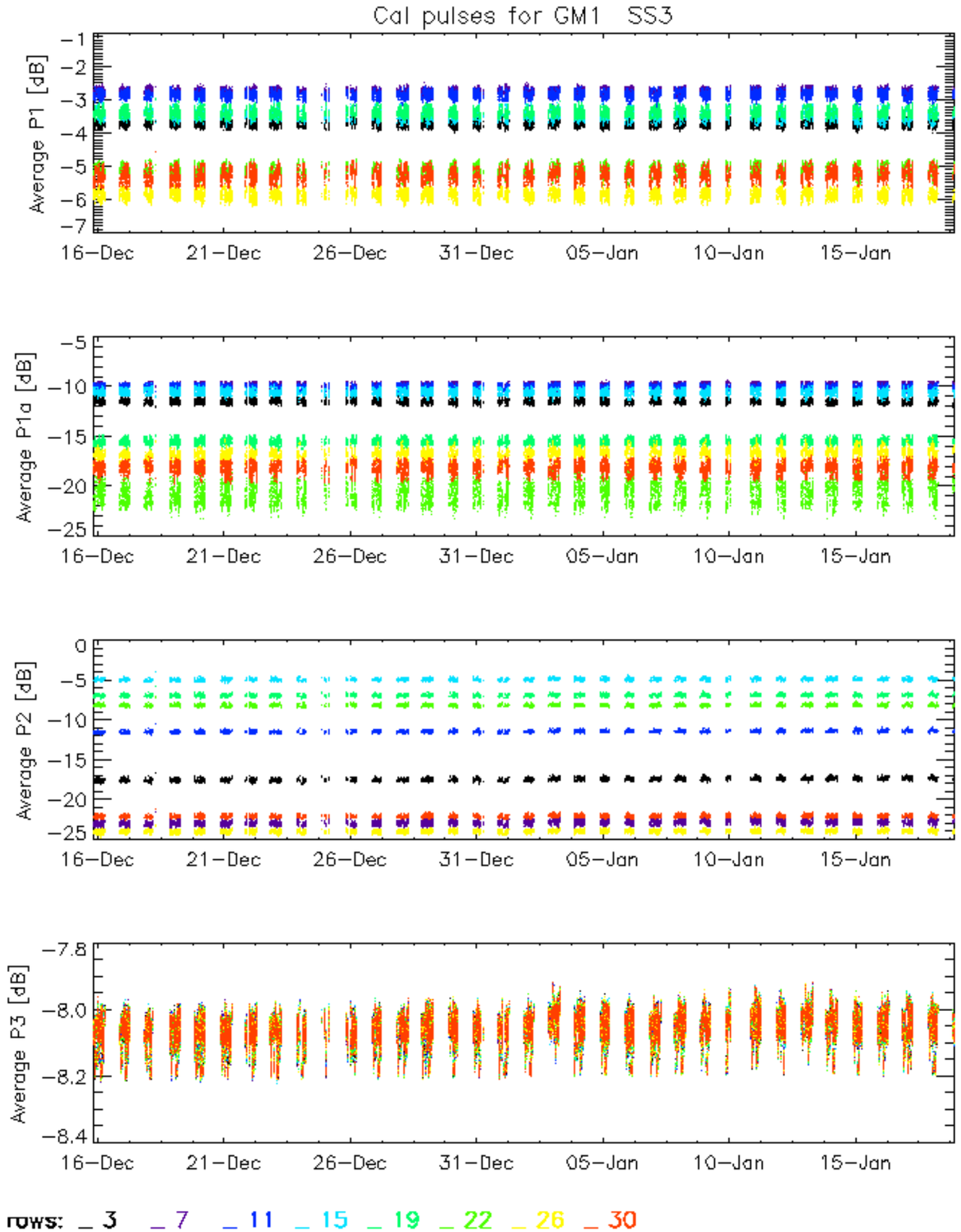
Evolution of Absolute Doppler
Acsending
Descending

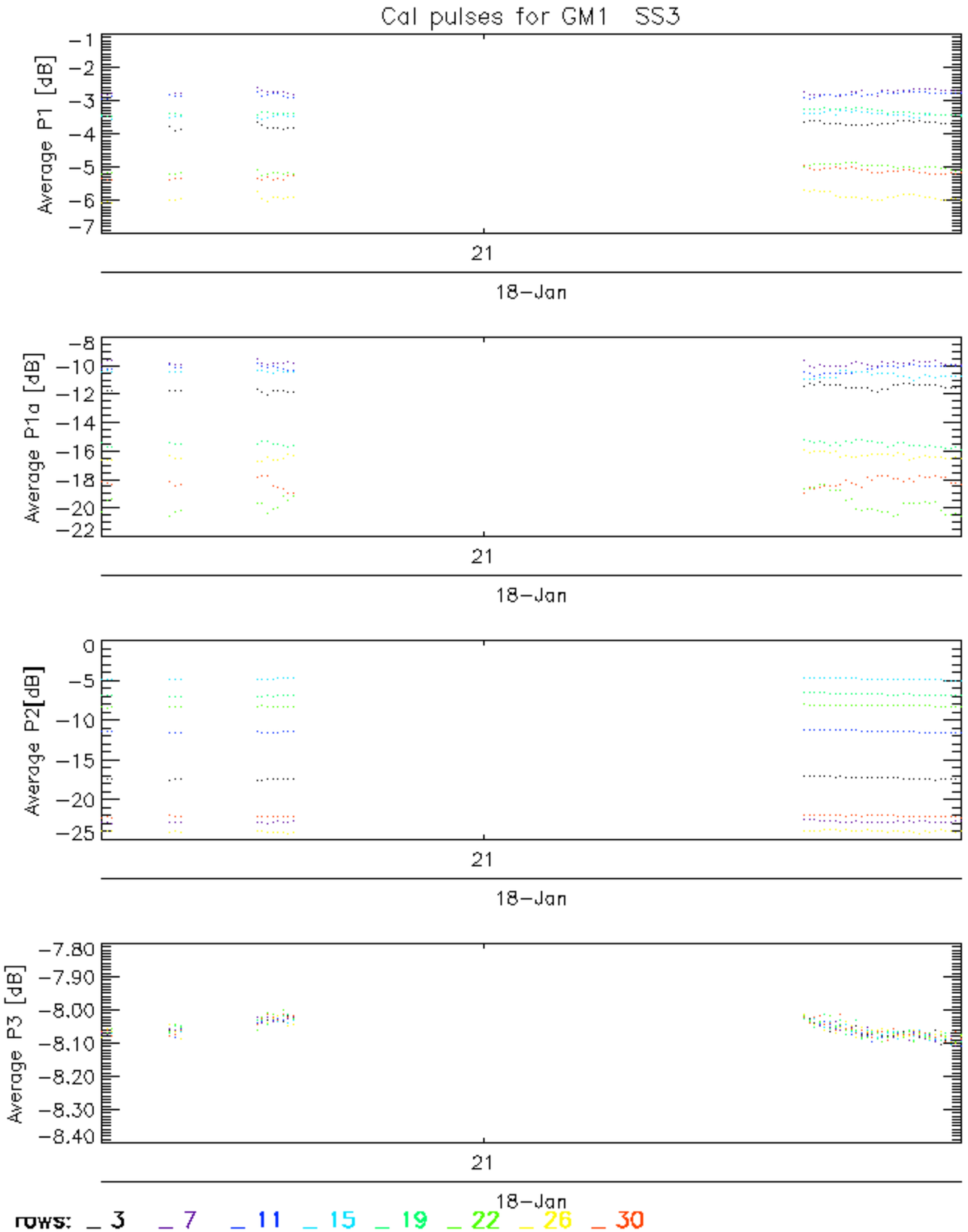
7.6 - Doppler evolution versus ANX for GM1

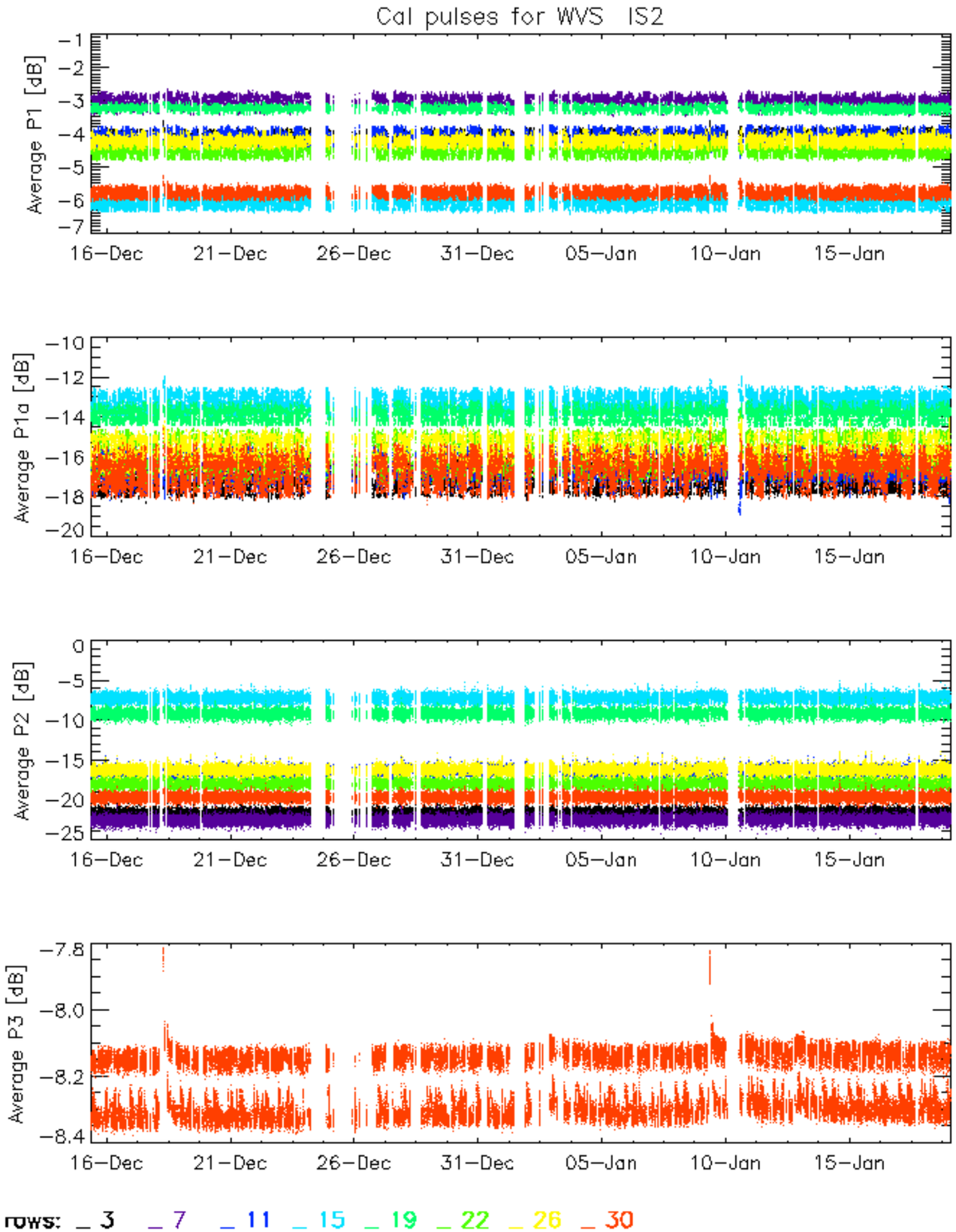
Evolution Doppler error versus ANX

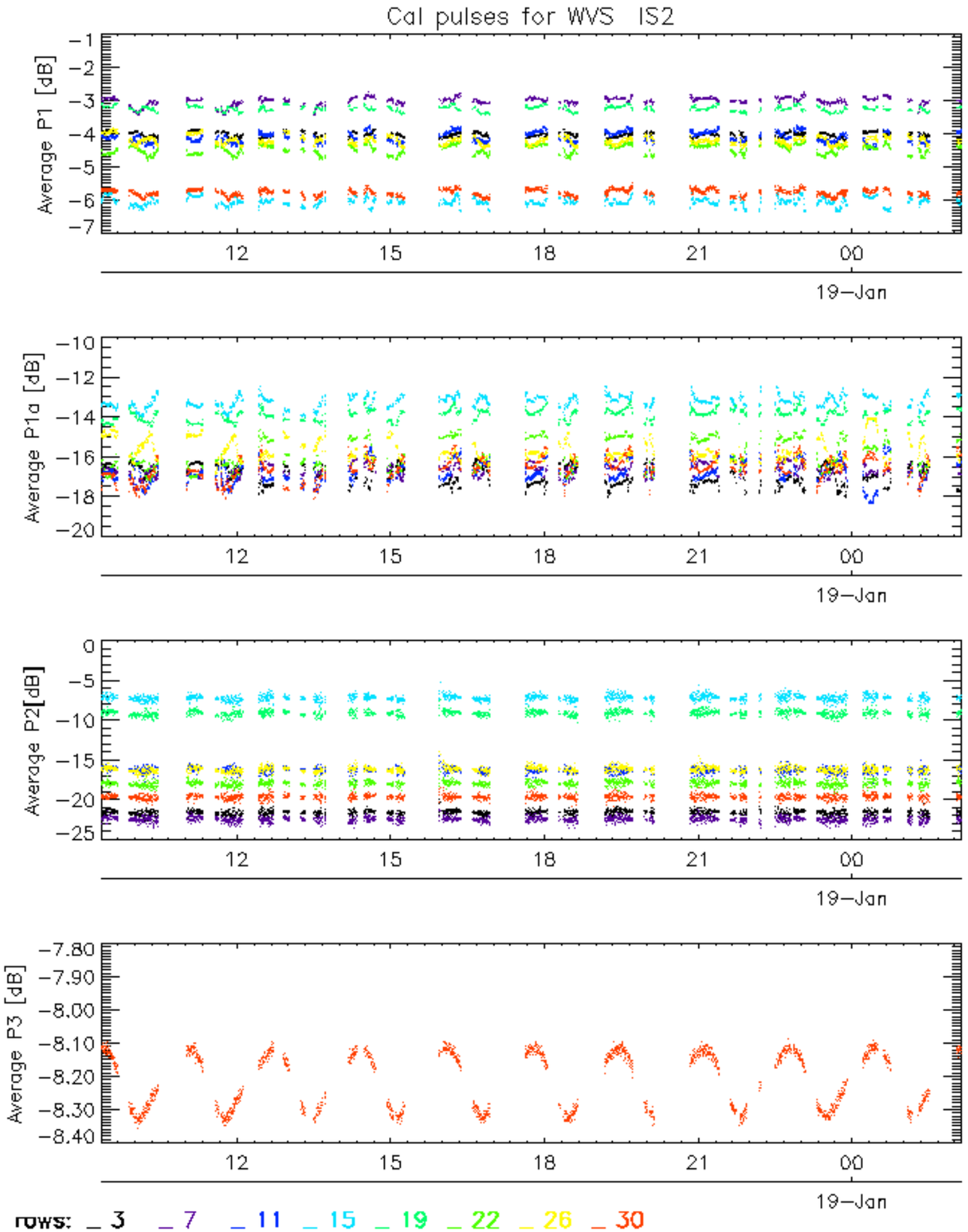

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
21
18−Jan
Average P1a [dB]
−8
−10
−12
−14
−16
−18
−20
−22
21
18−Jan
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
21
18−Jan
Phase P1a [deg]
200
100
0
−100
−200
21
18−Jan
rows: 3 7 11 15 19 22 26 30


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


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
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

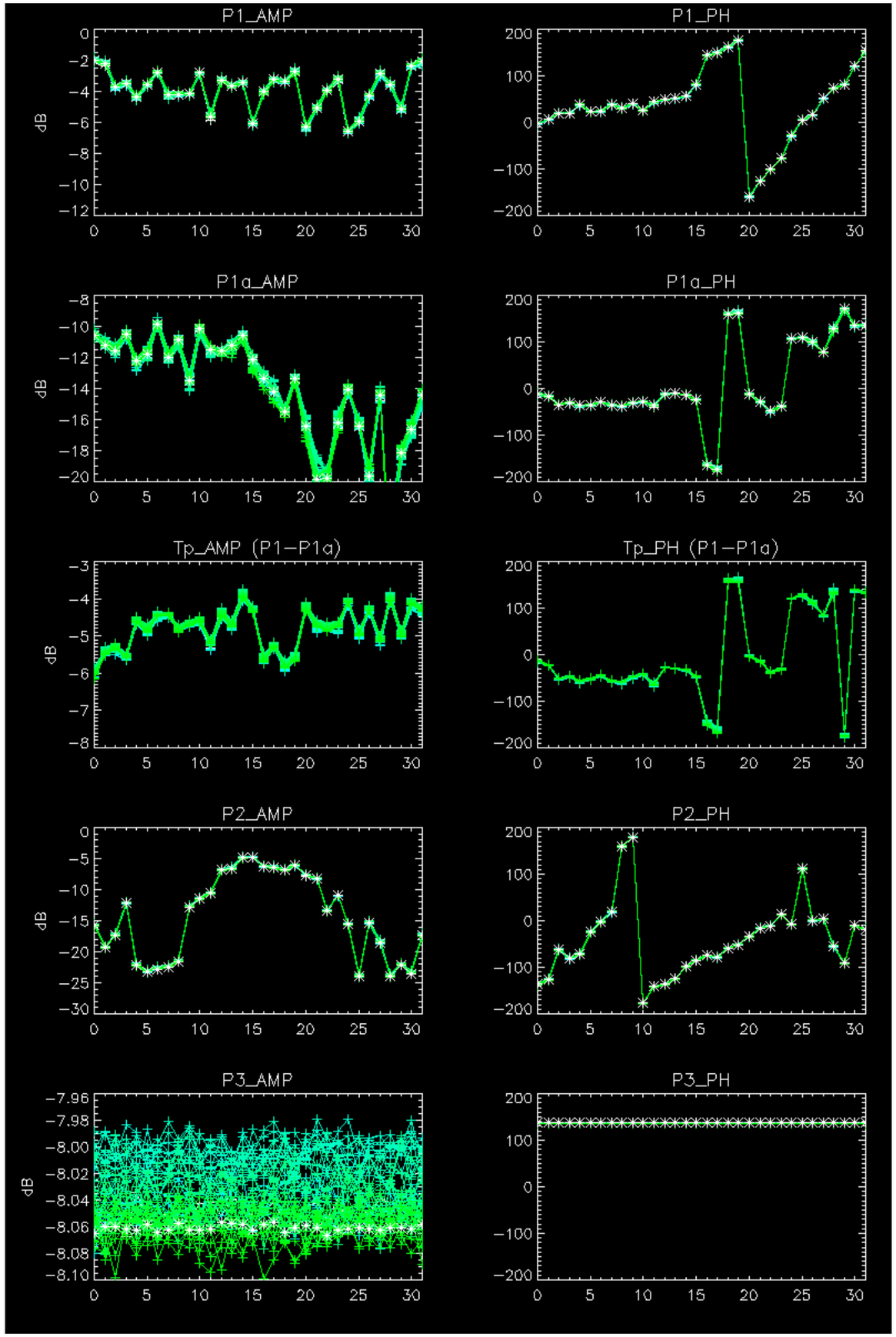

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
21
18−Jan
Average P1a [dB]
−8
−10
−12
−14
−16
−18
−20
−22
21
18−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
21
18−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
21
18−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

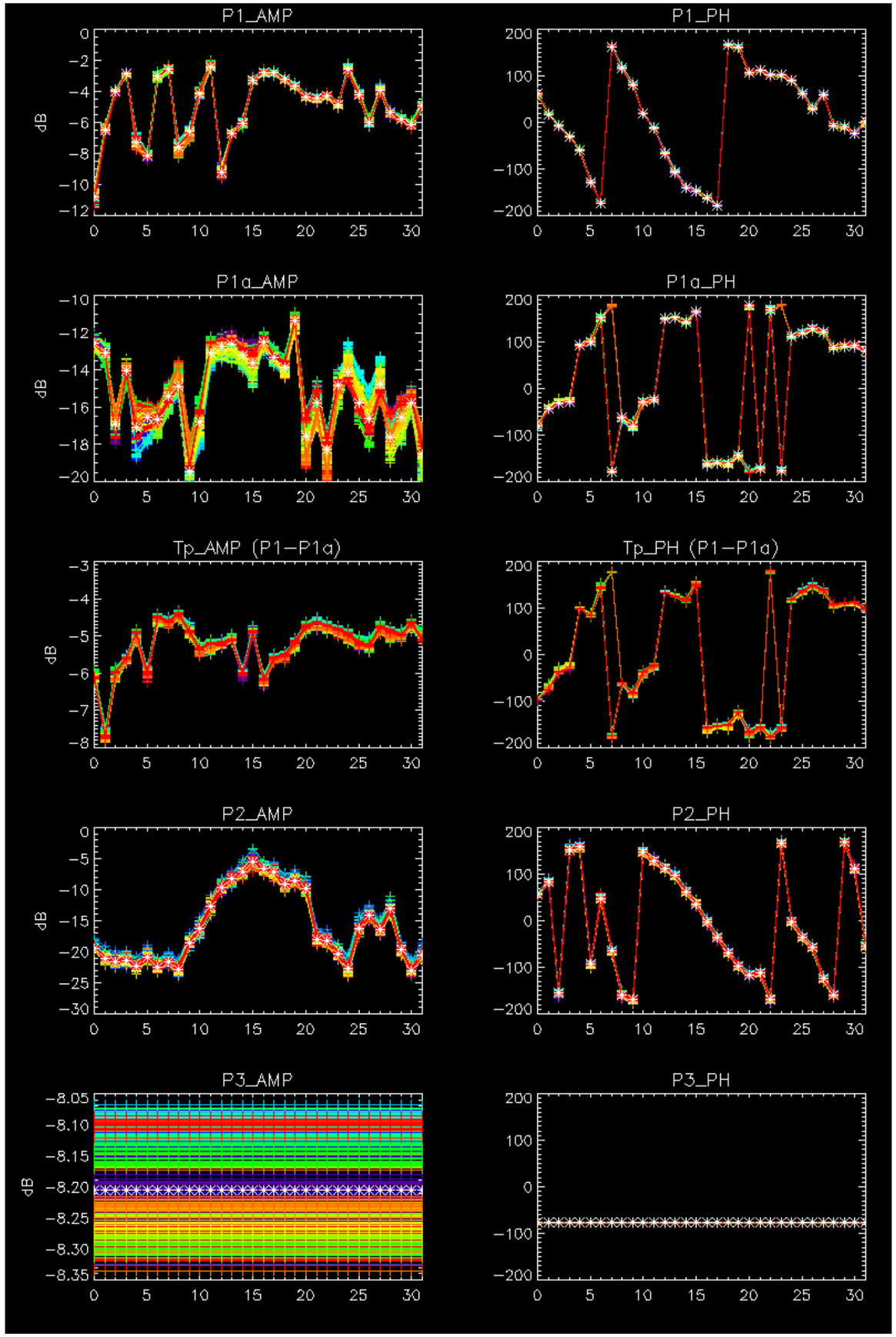

Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
Average P1a [dB]
−10
−12
−14
−16
−18
−20
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

No anomalies observed on available browse products

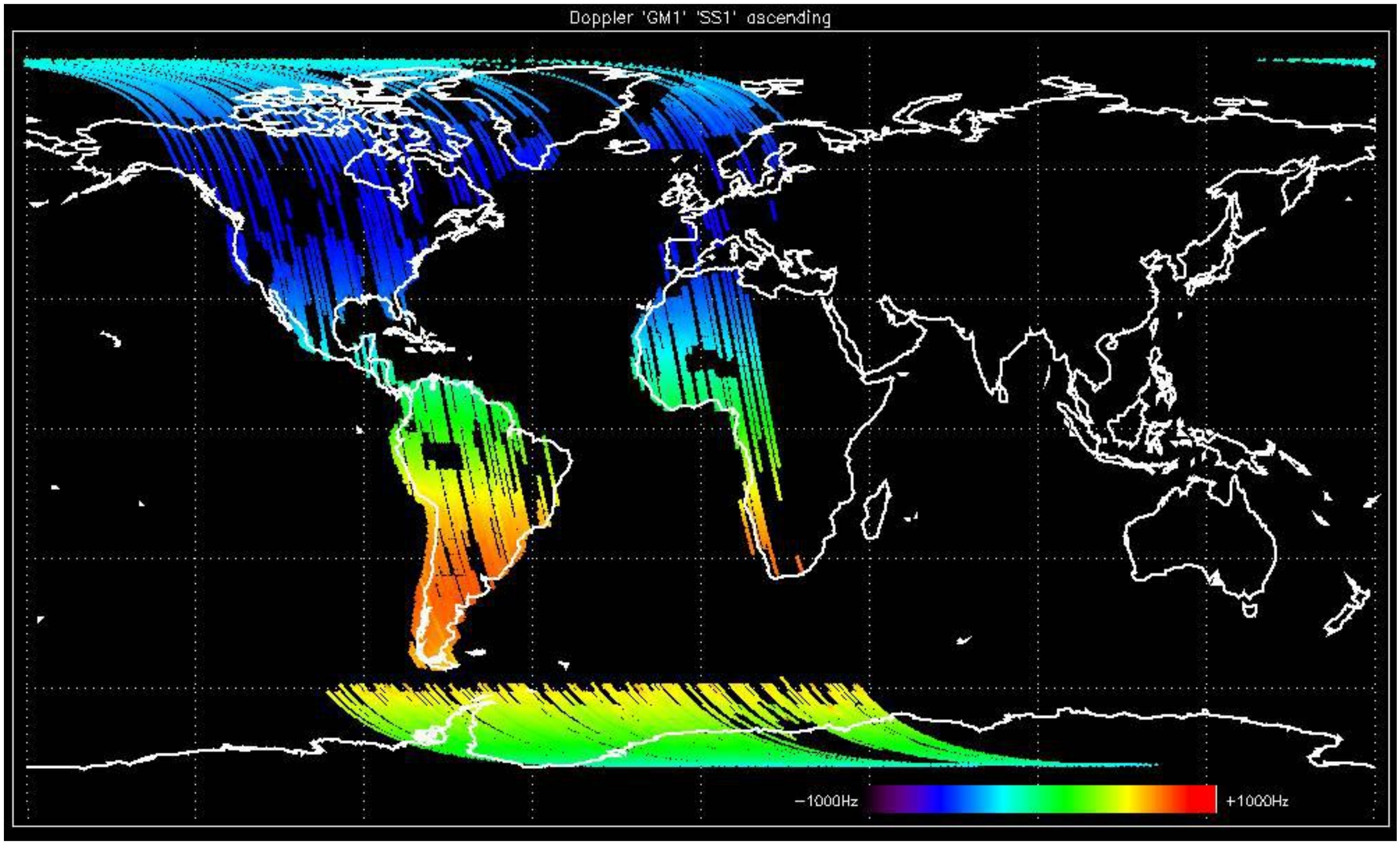
No anomalies observed.

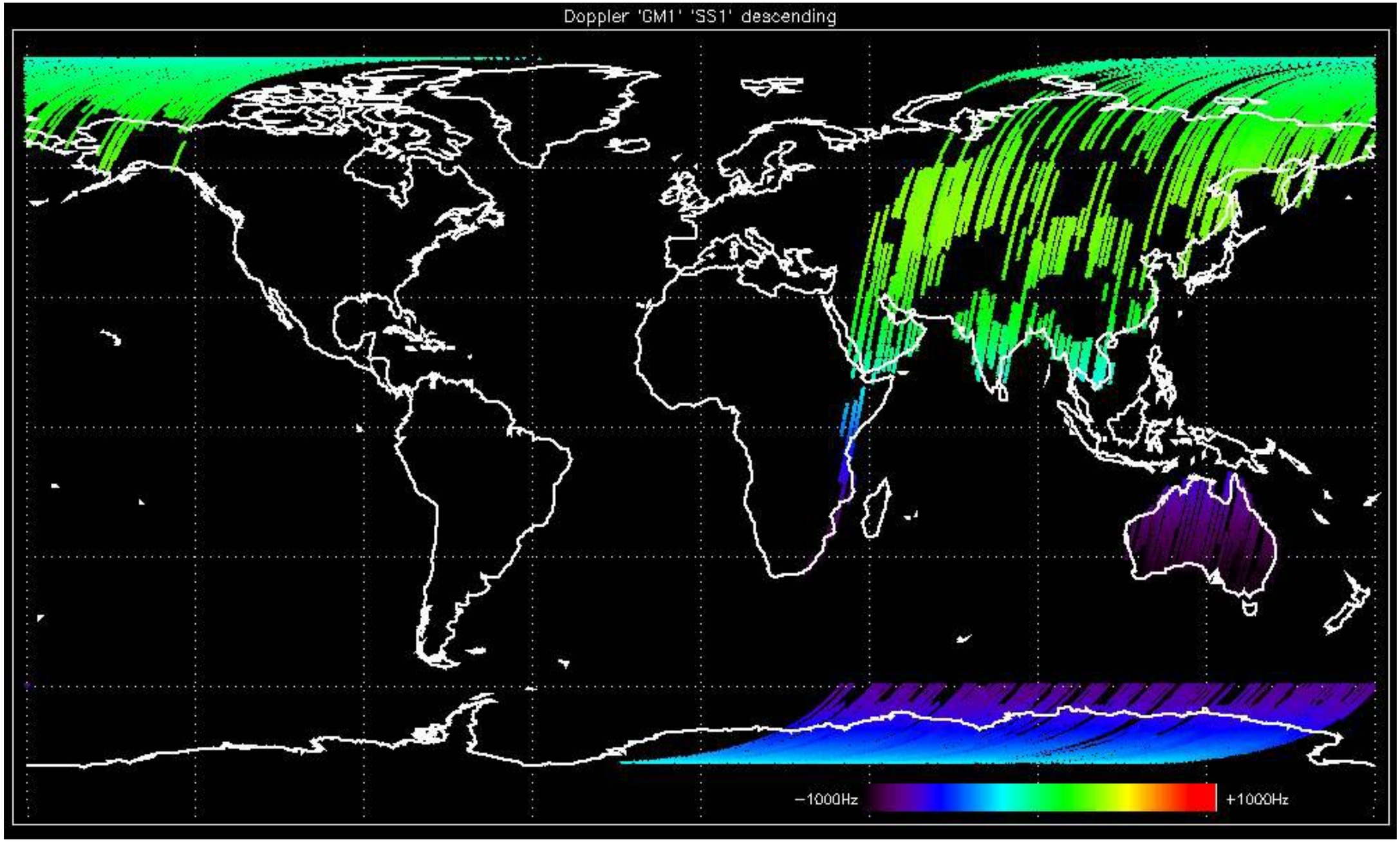

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

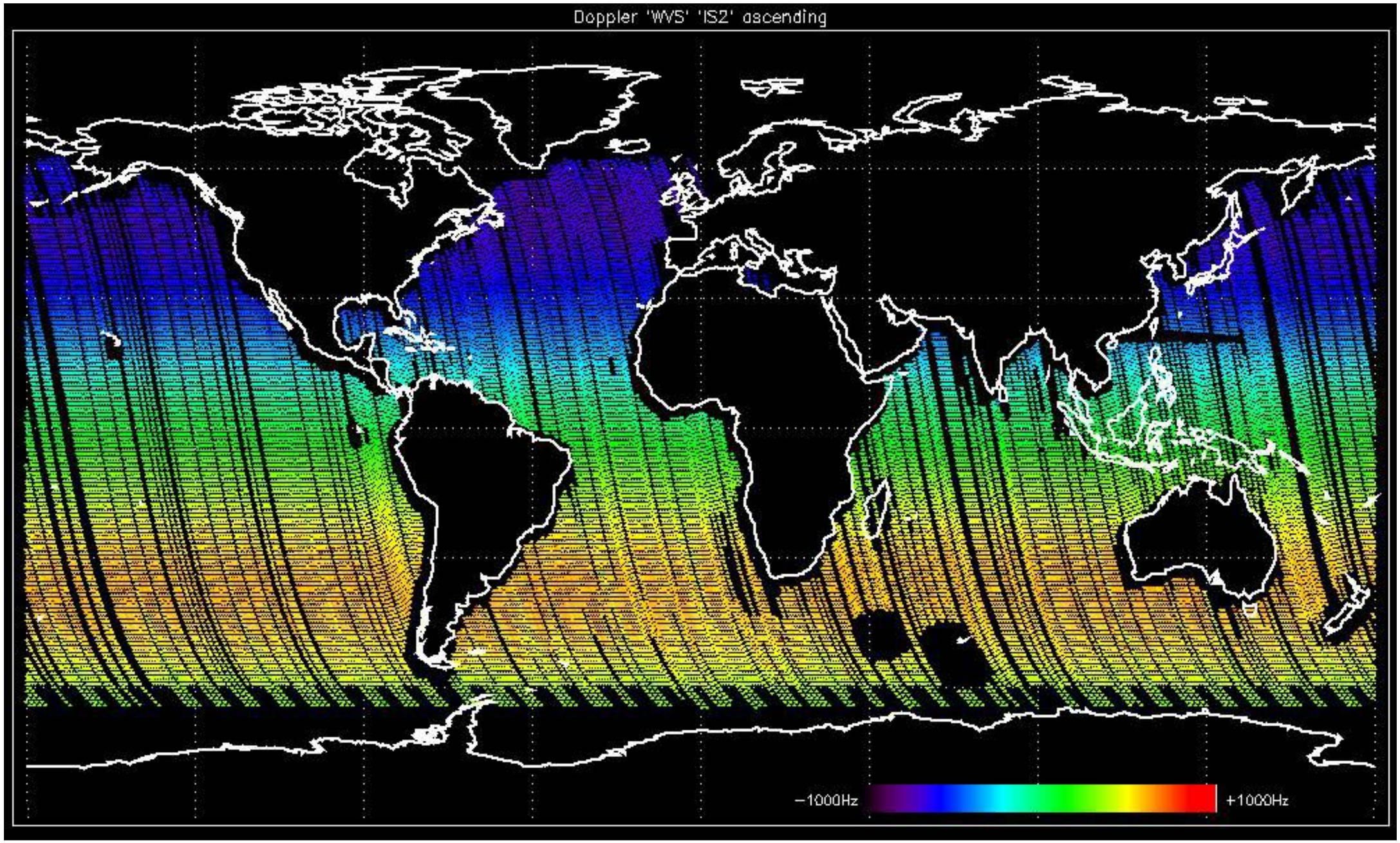

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

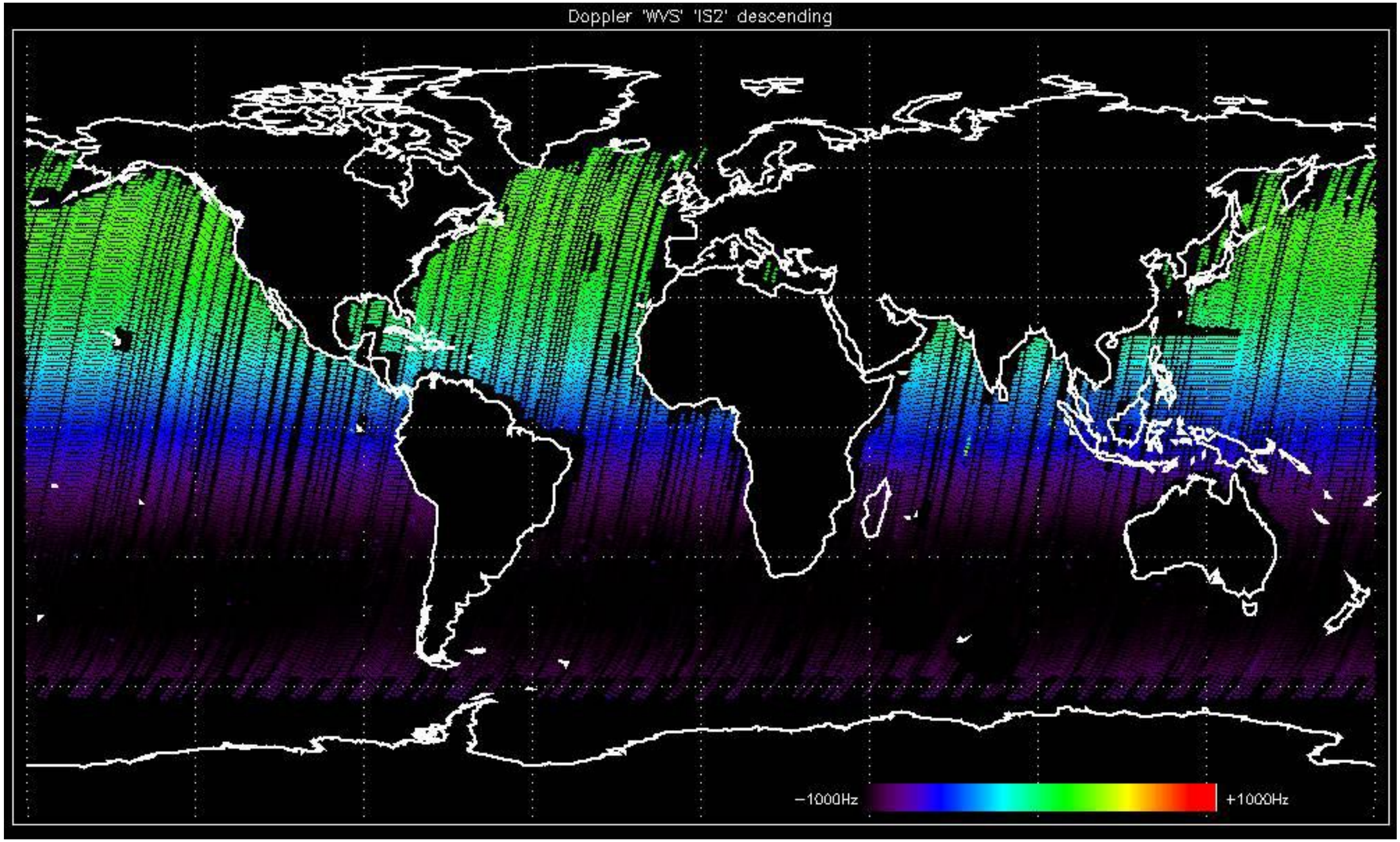
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

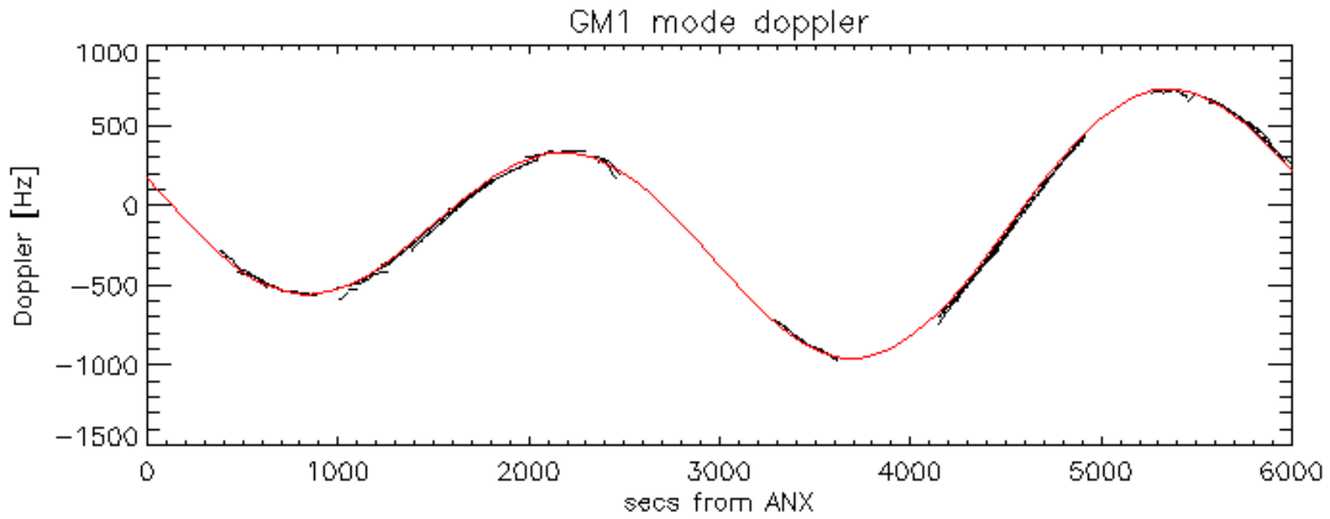
Preliminary report.The data is not yet controled

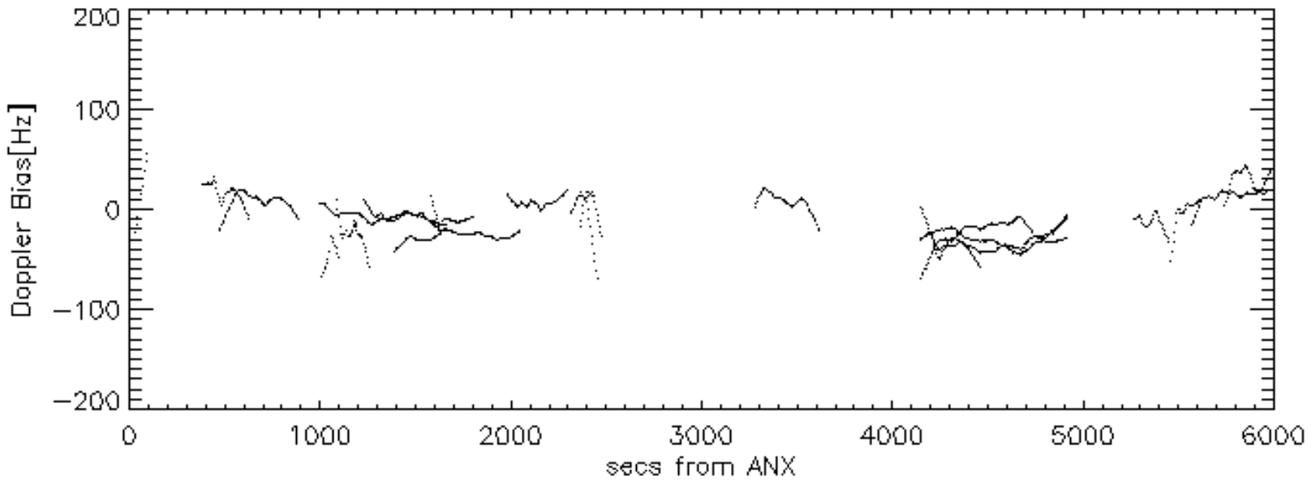

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

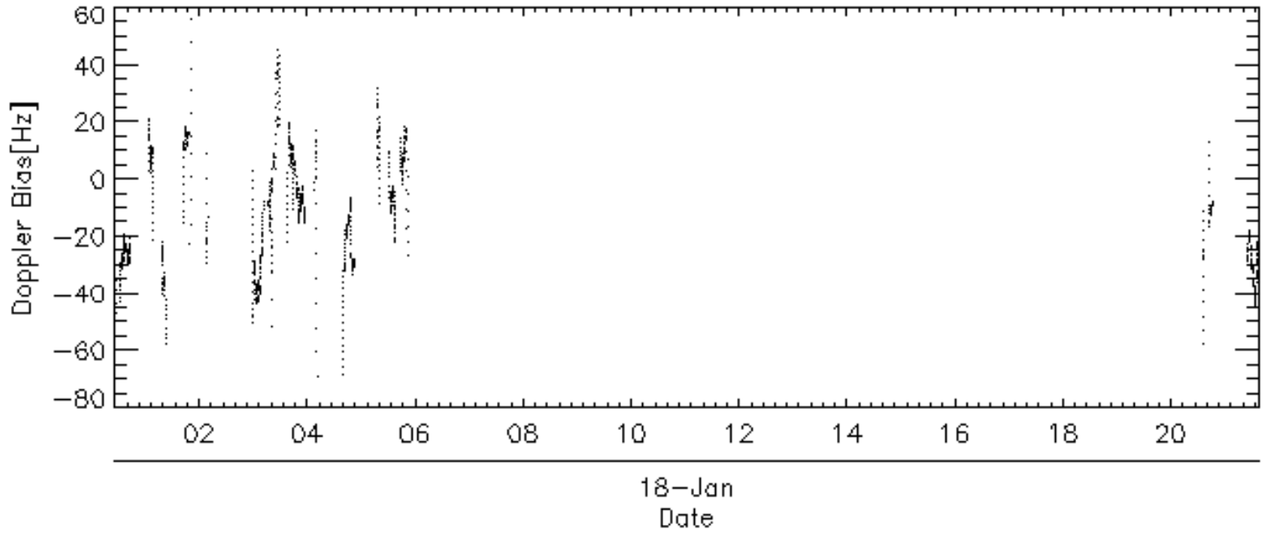

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

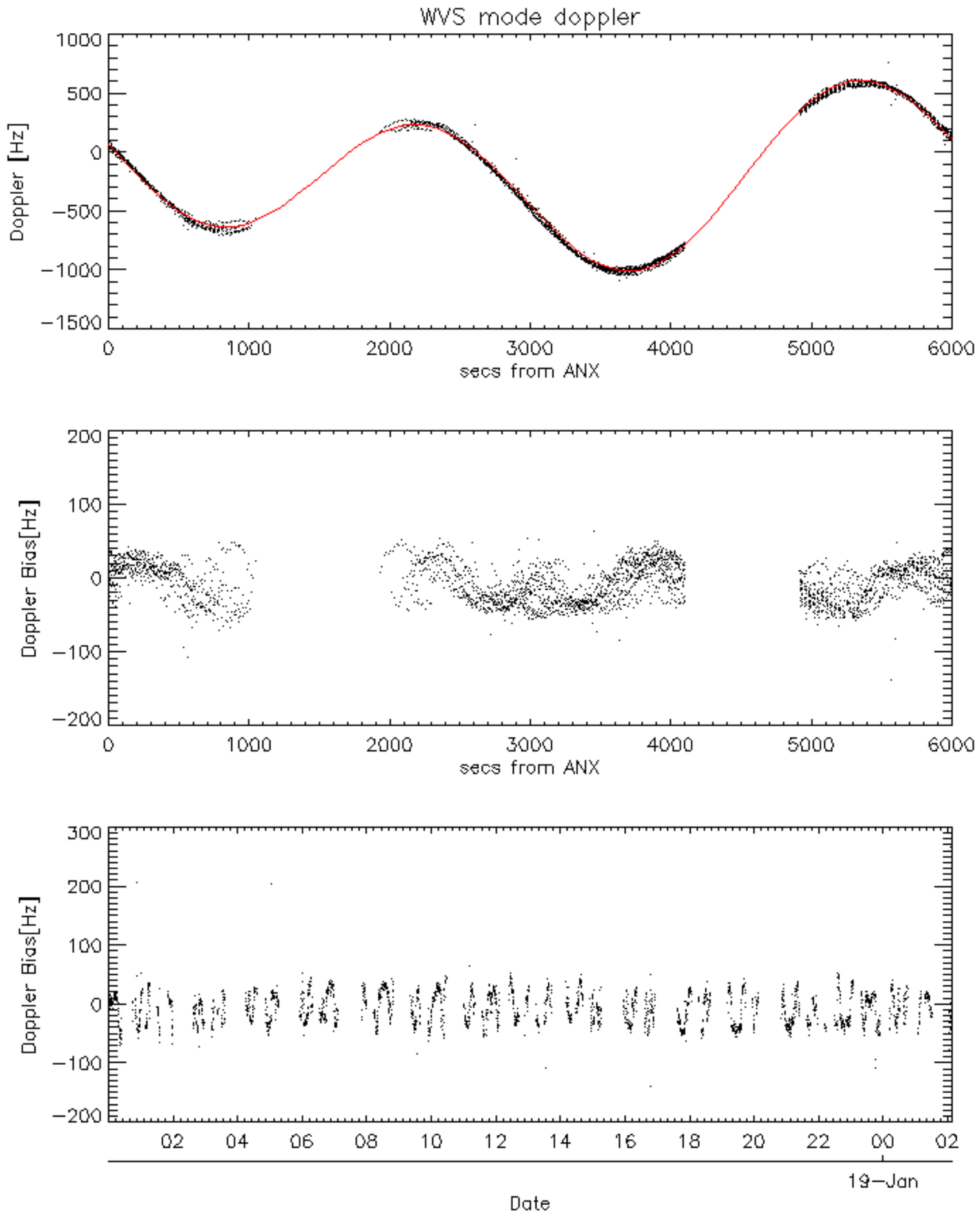

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

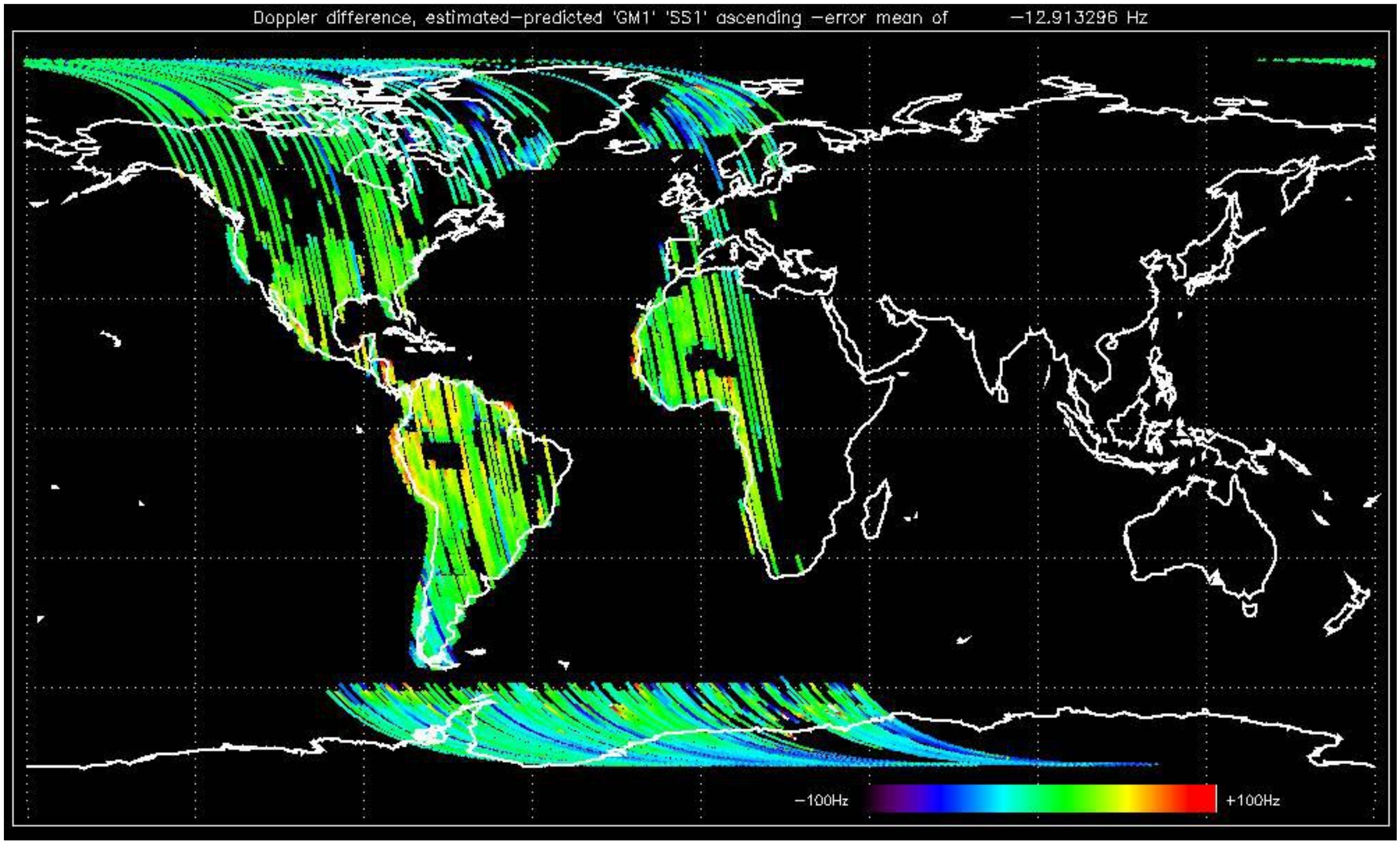

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

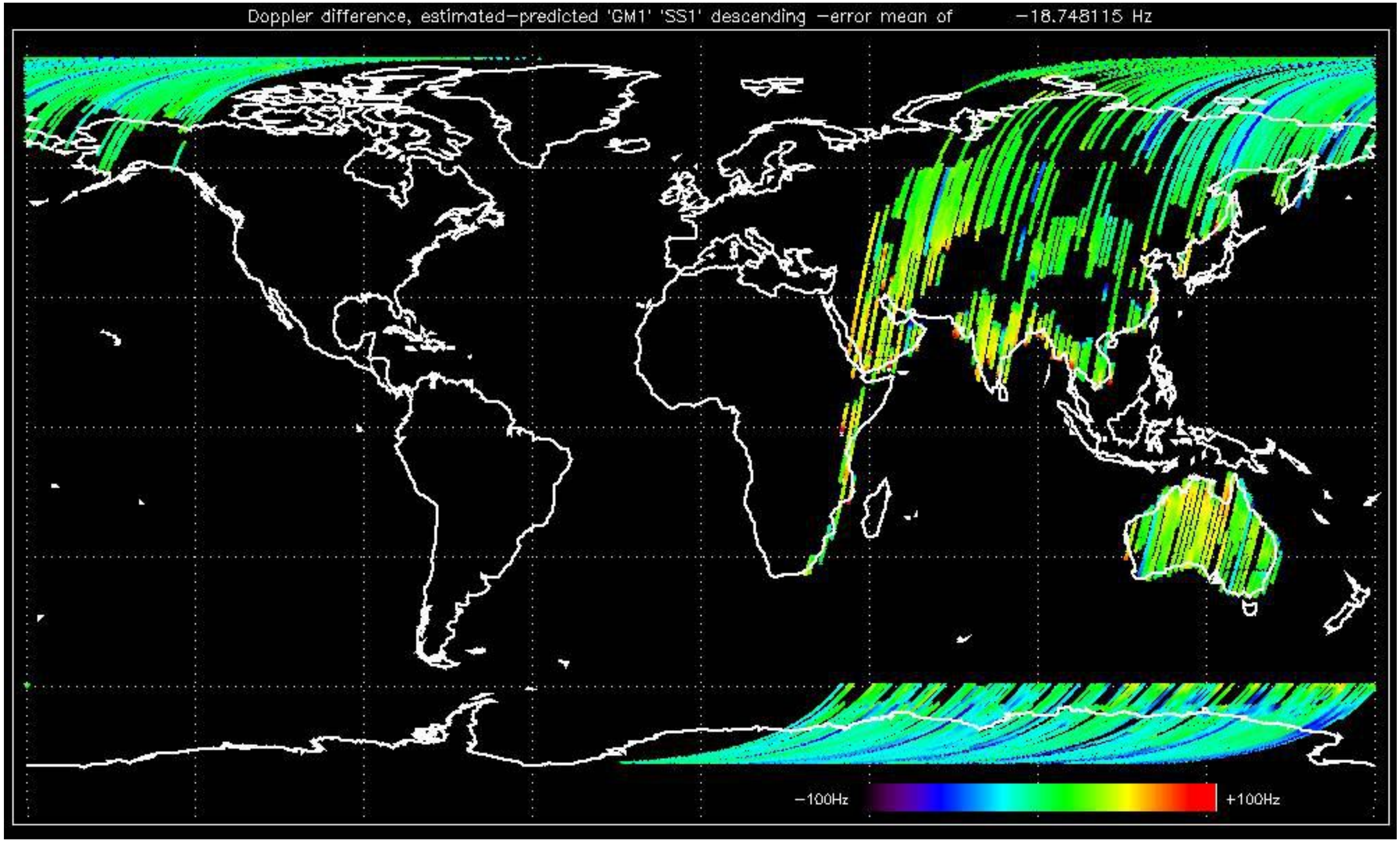

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

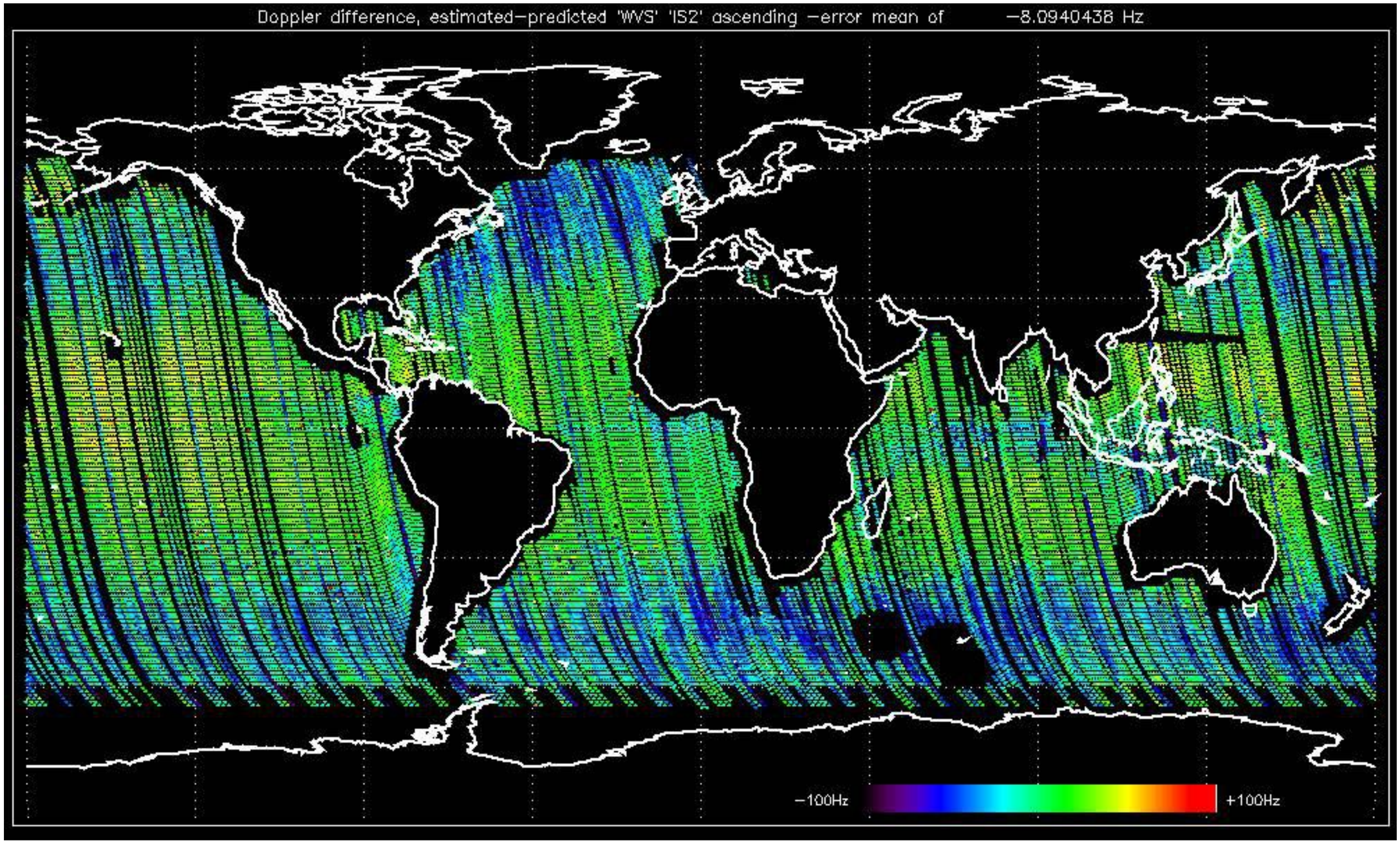

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

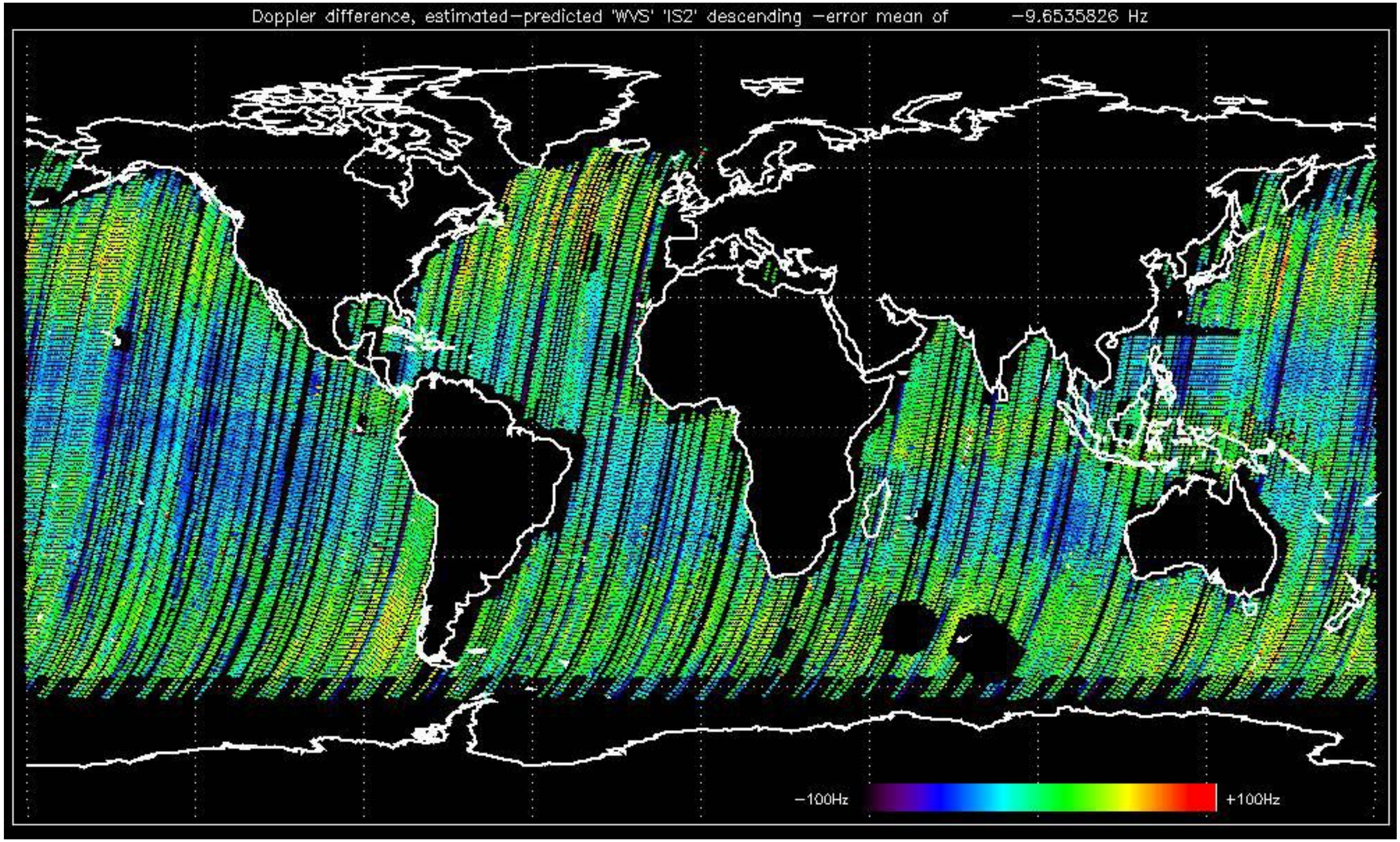

Doppler Bias[Hz]
60
40
20
0
−20
−40
−60
−80
02
04
06
08
10
12
14
16
18
20
18−Jan
Date


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
19−Jan
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −12.913296 Hz
−100Hz
+100Hz

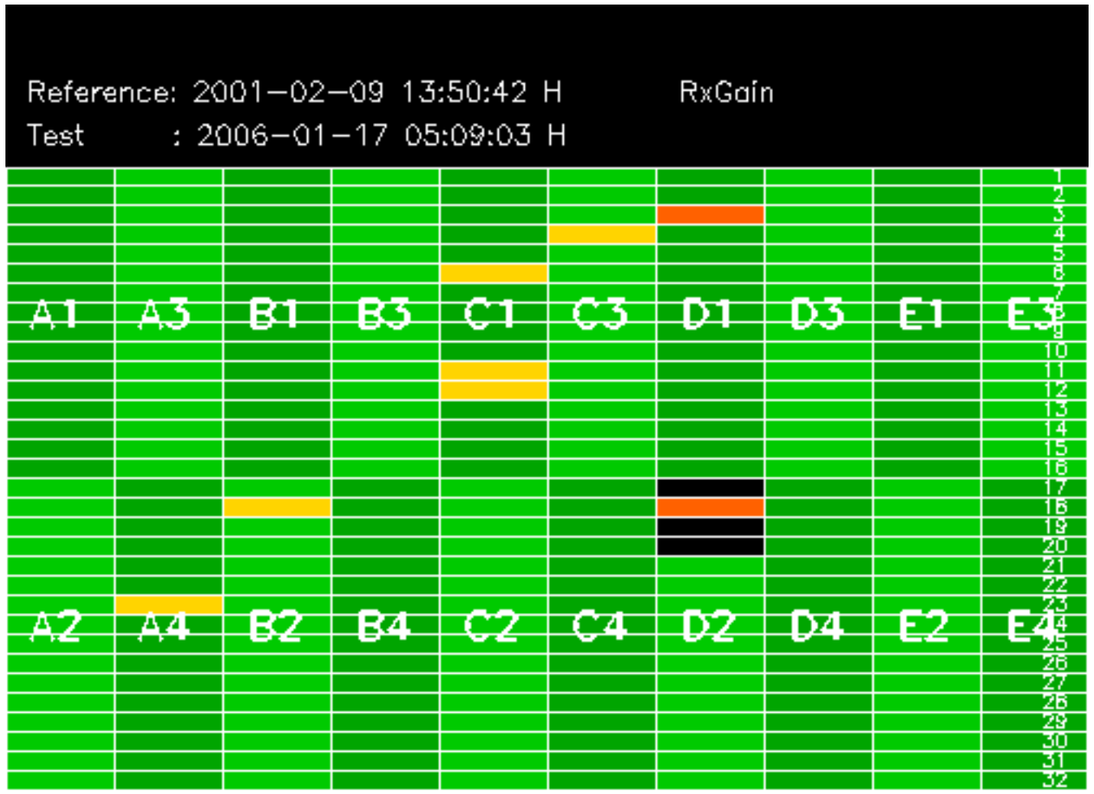

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.748115 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −8.0940438 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −9.6535826 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-01-17 05:09:03 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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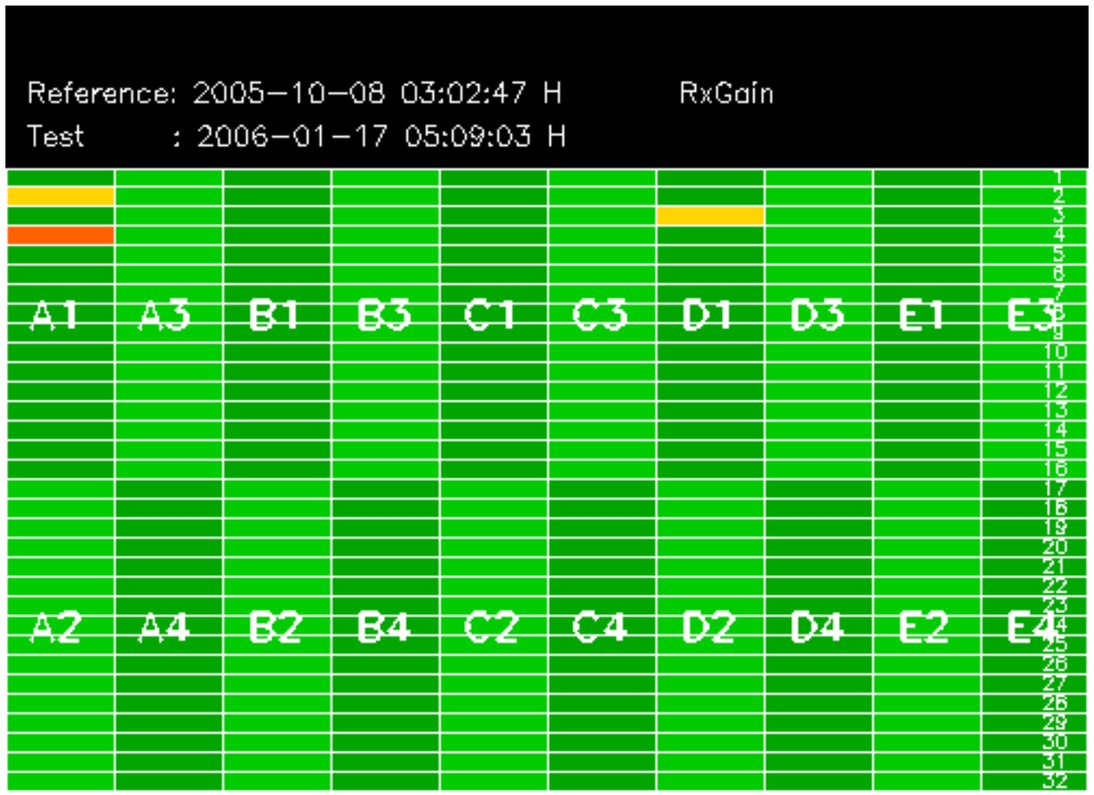
Reference: 2005-10-08 03:02:47 H
Test : 2006-01-17 05:09:03 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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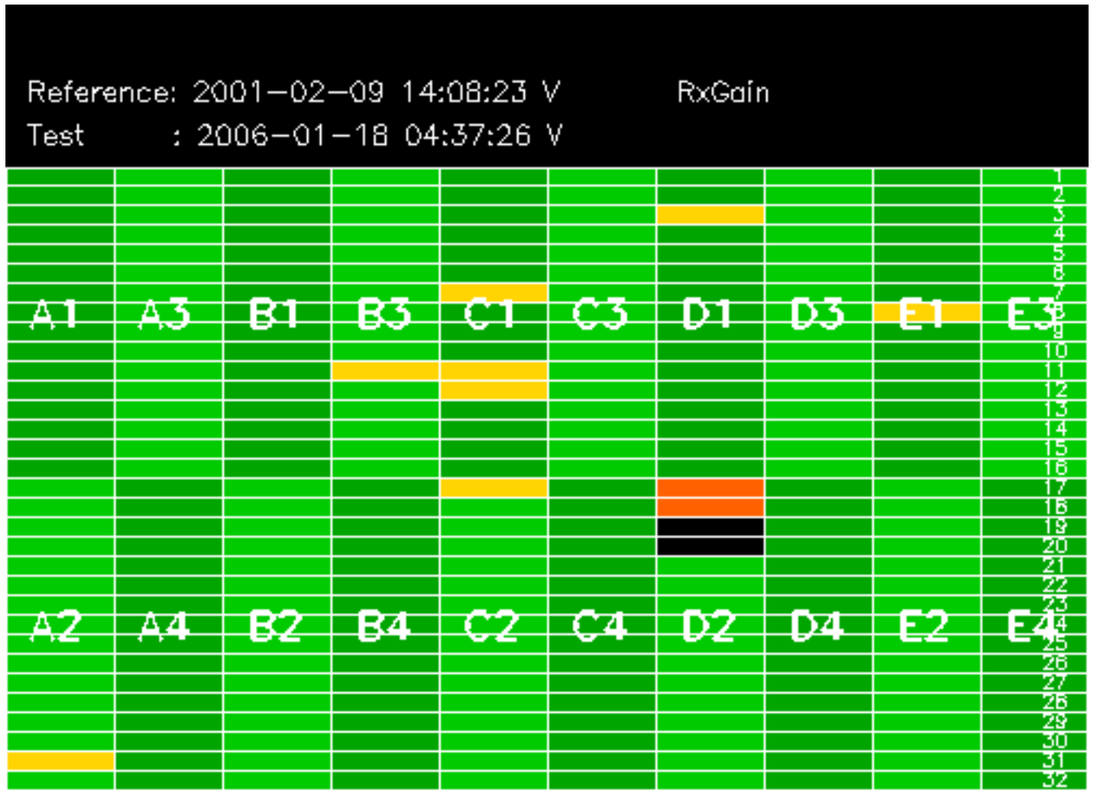
Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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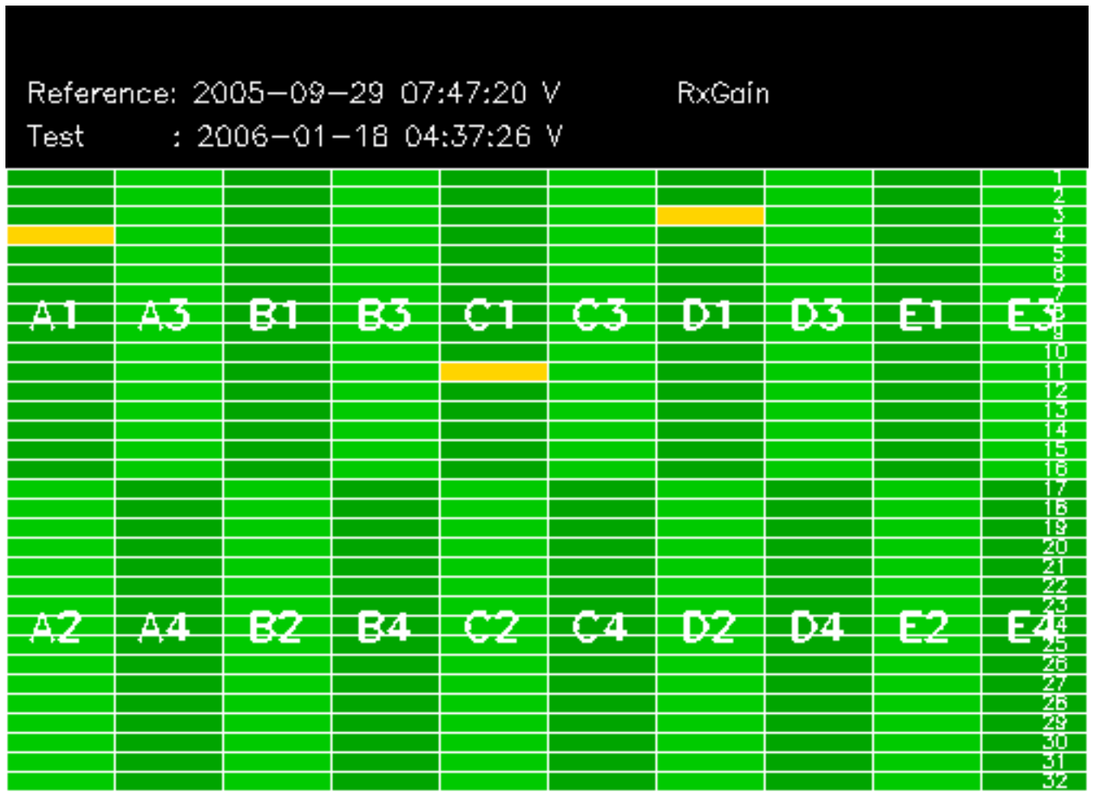
Reference: 2005-09-29 07:47:20 V
Test : 2006-01-18 04:37:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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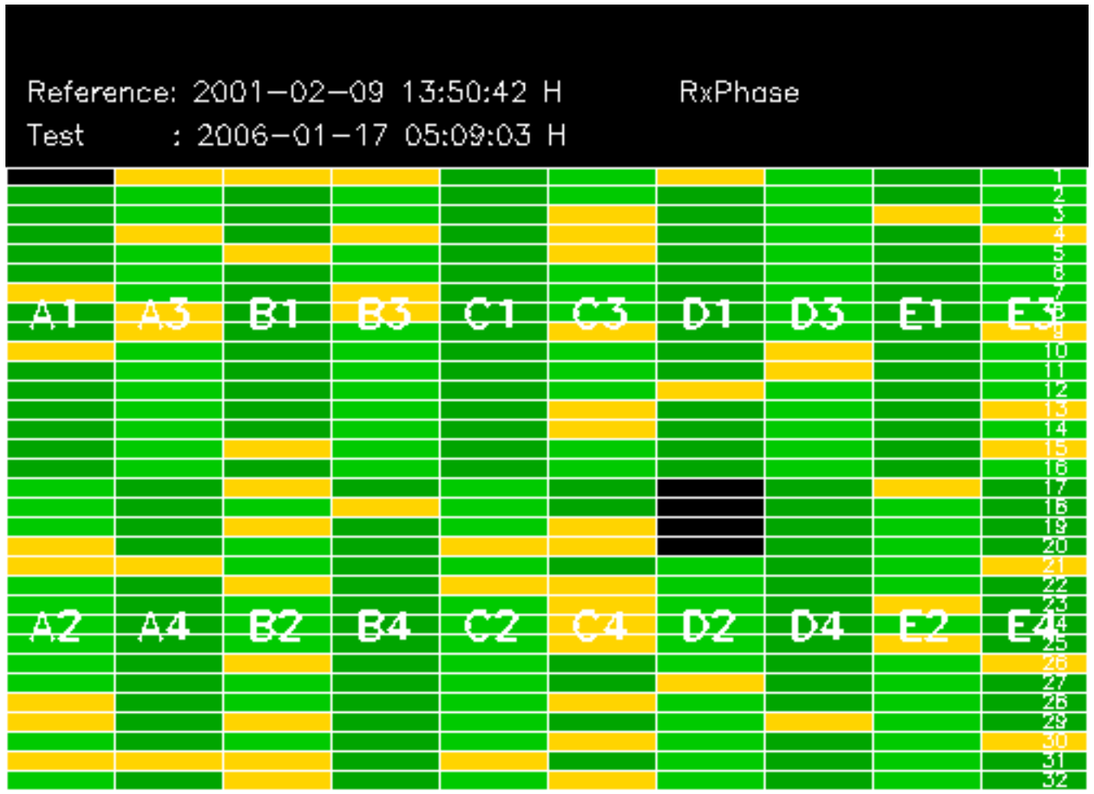
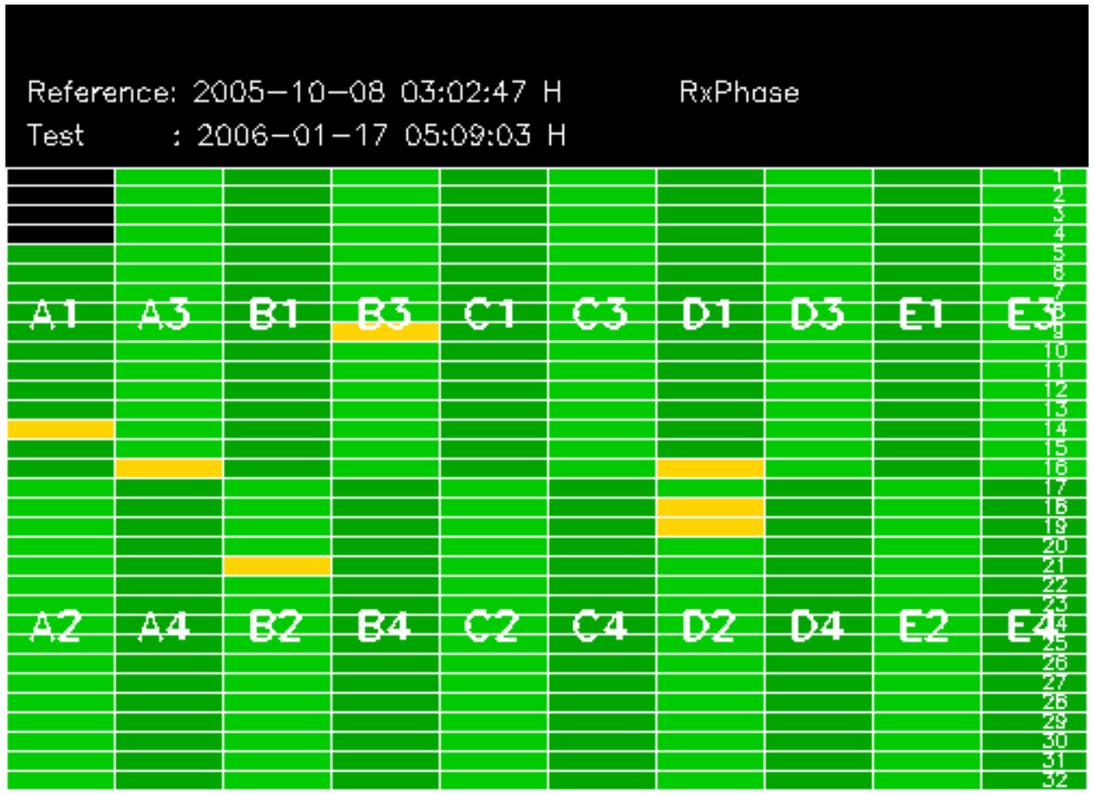

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-01-17 05:09:03 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-01-17 05:09:03 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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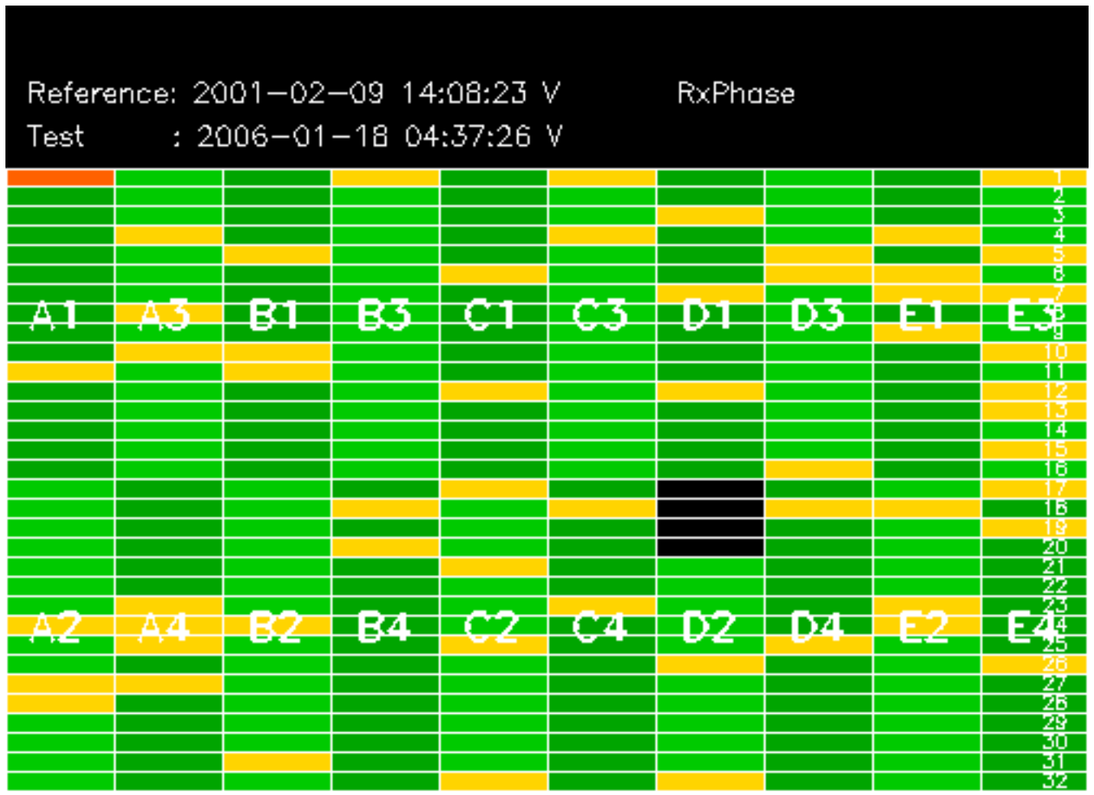
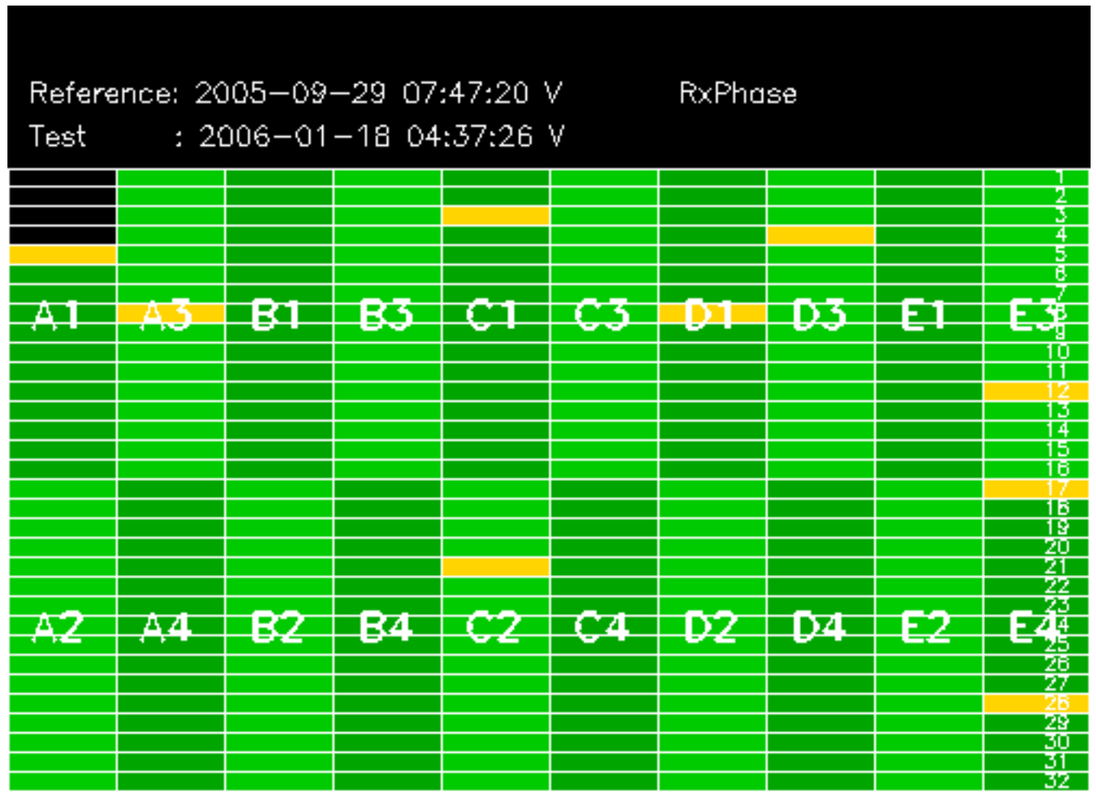

Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-01-18 04:37:26 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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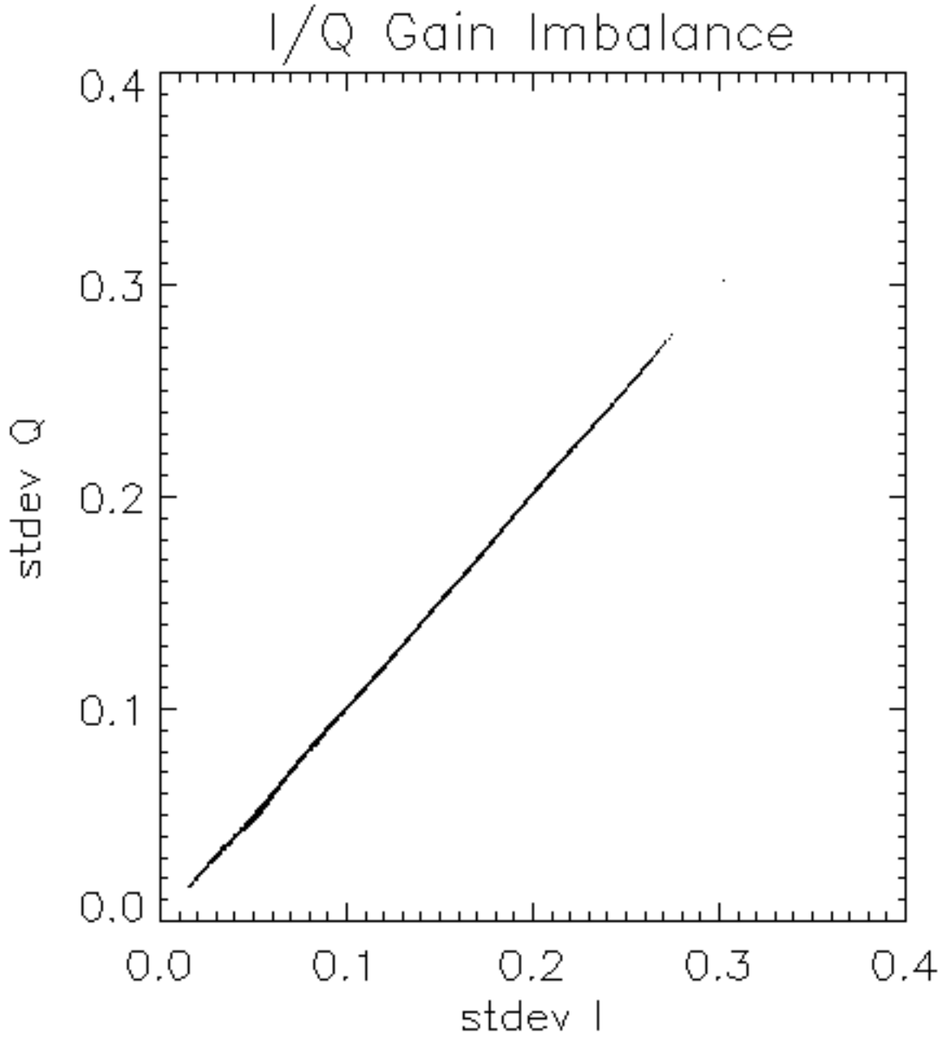
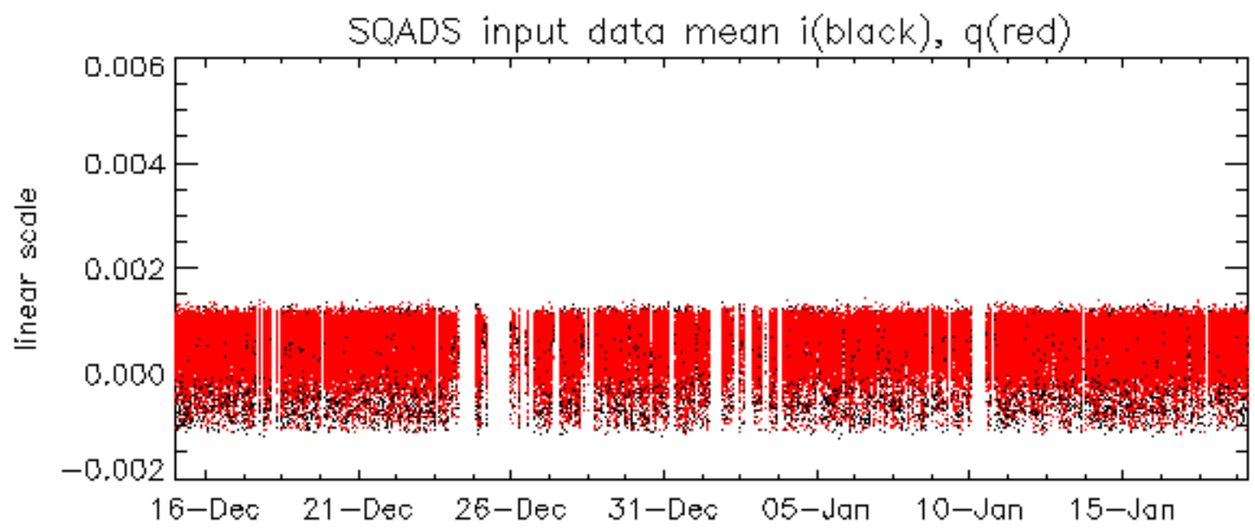
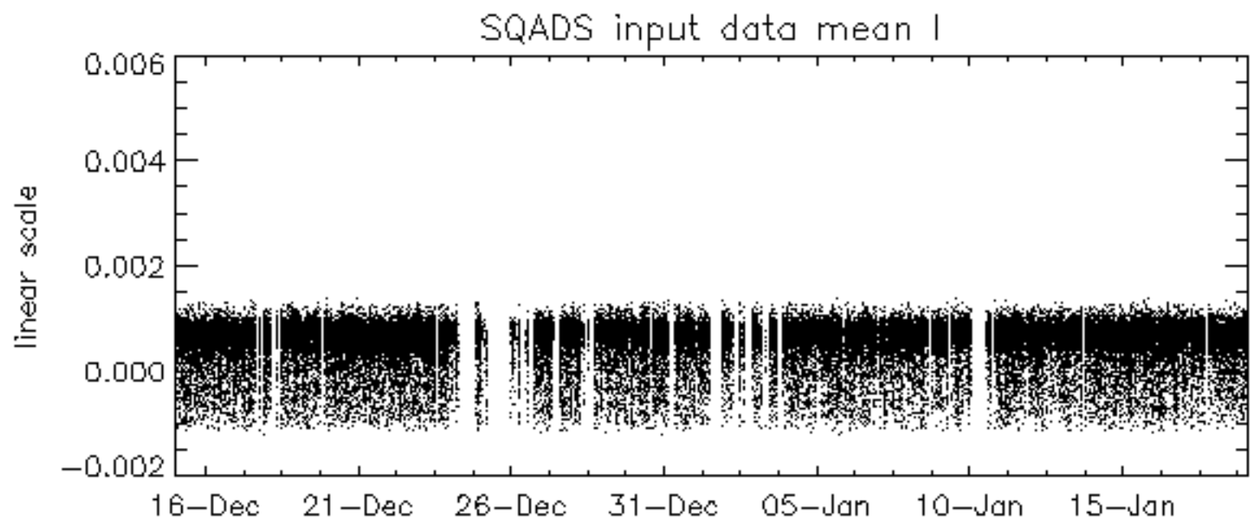
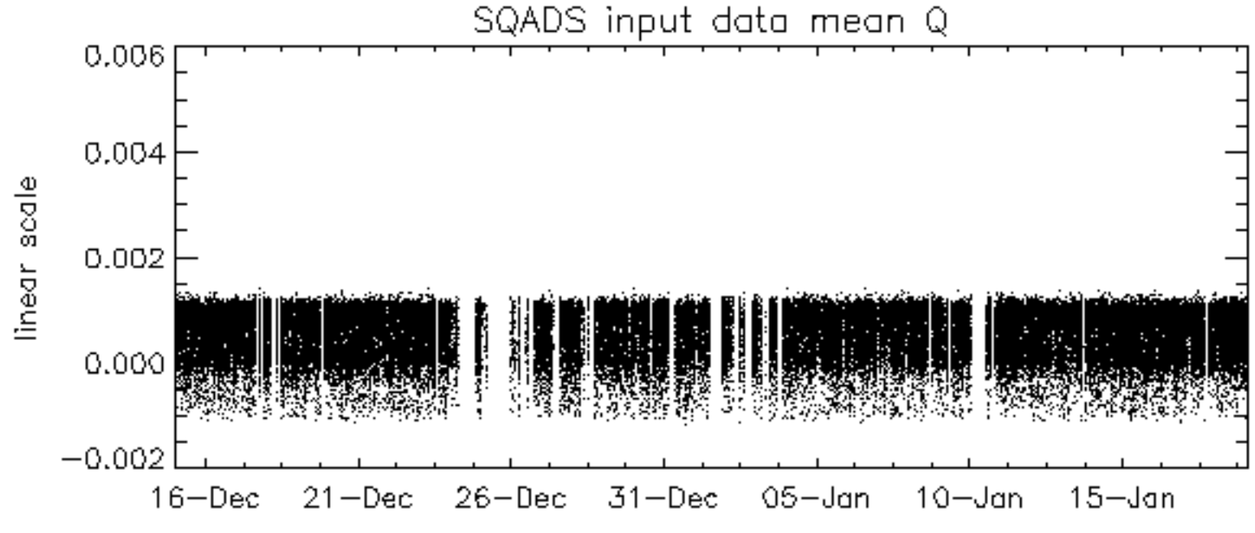
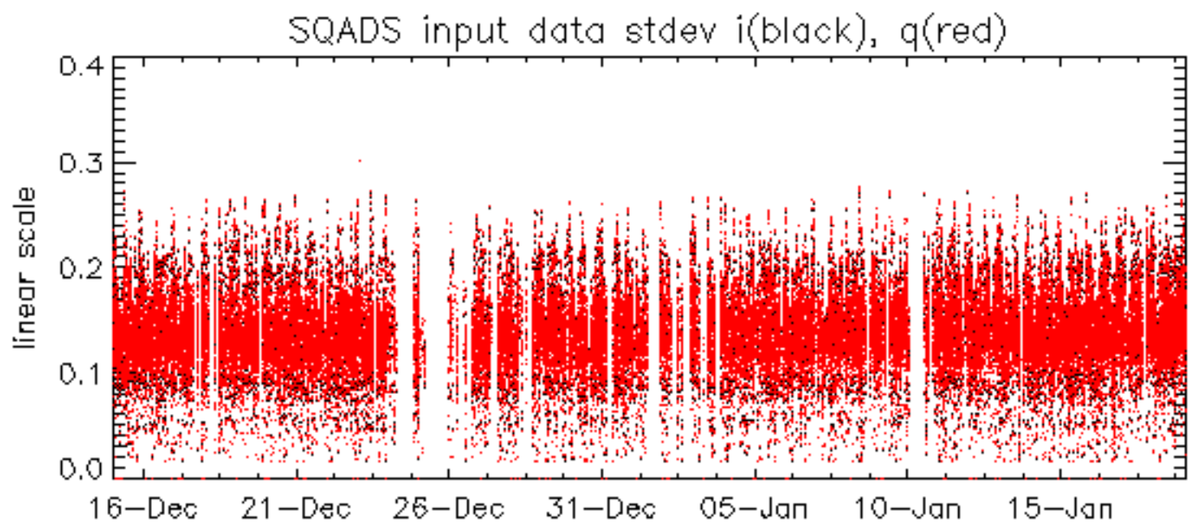
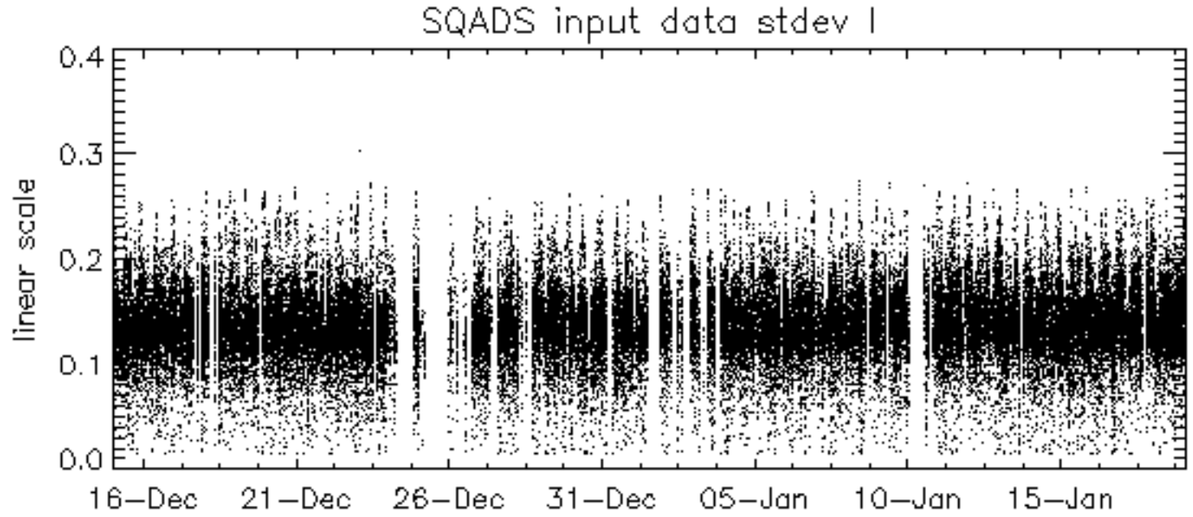

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

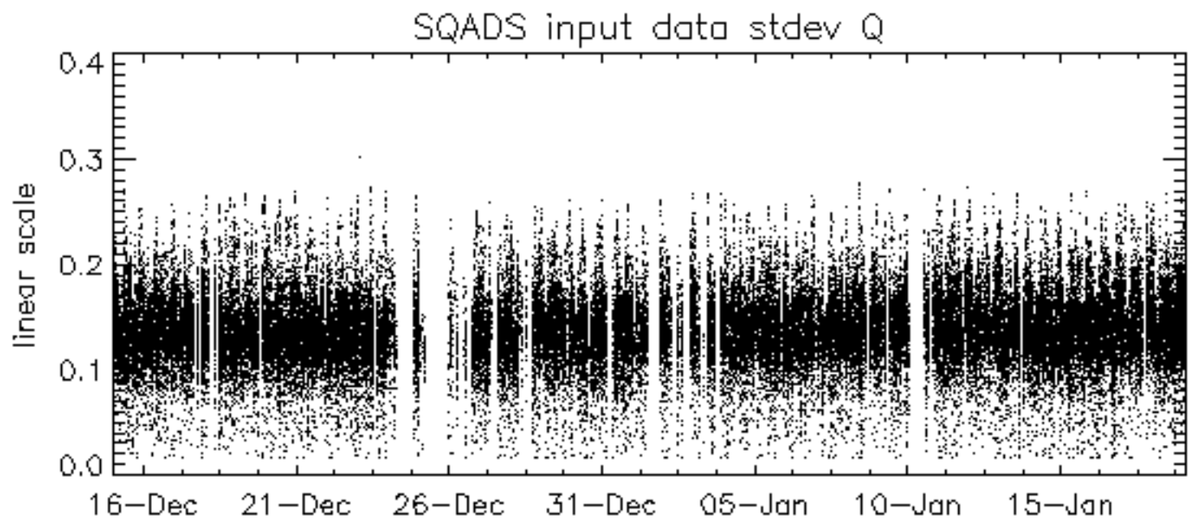

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

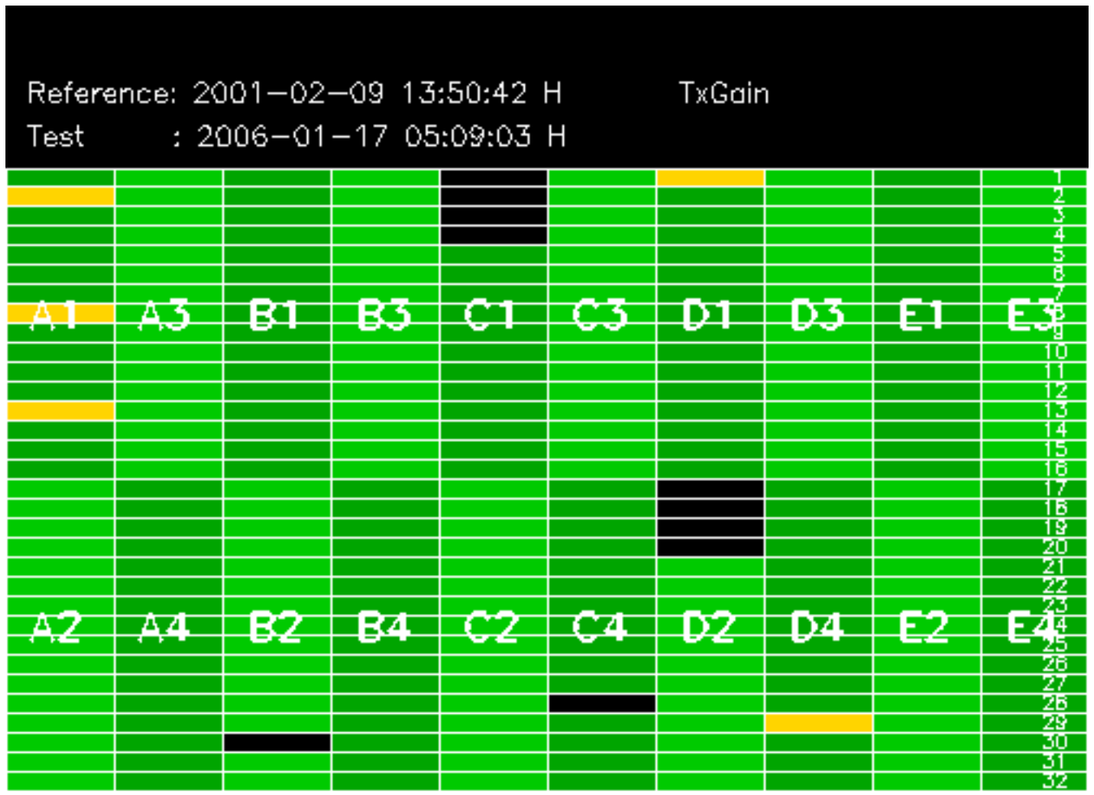

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Dec
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2006-01-17 05:09:03 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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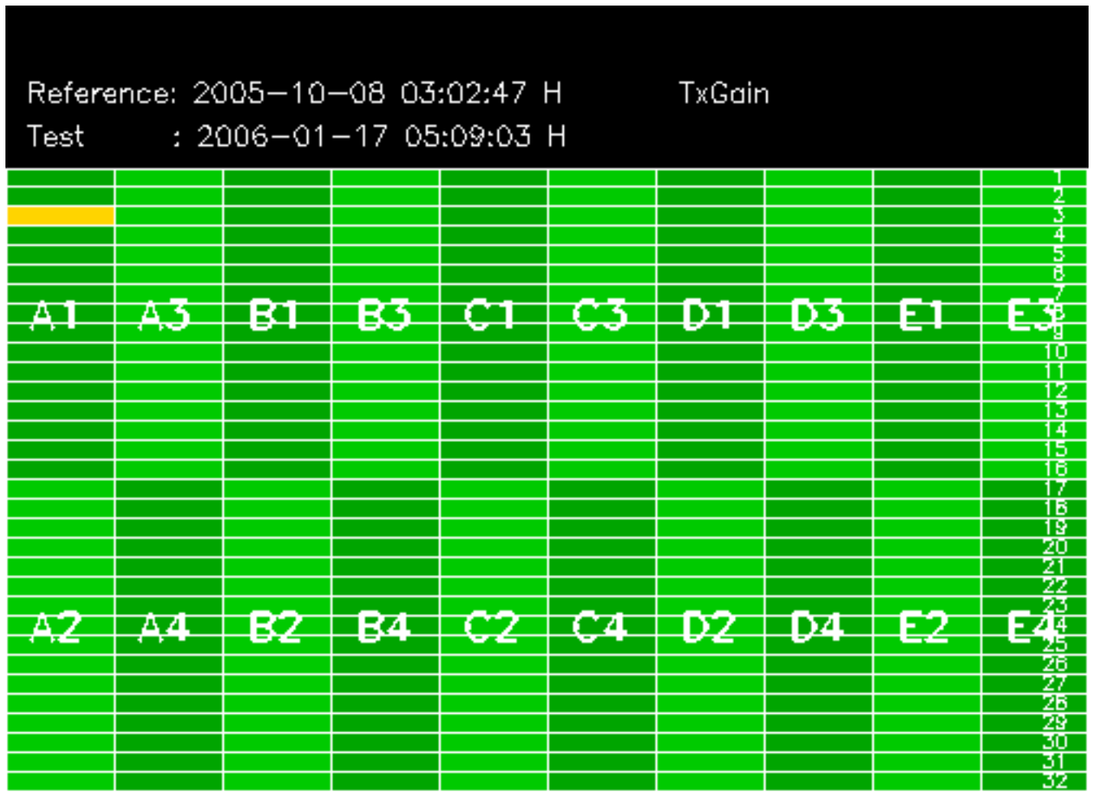
Reference: 2005-10-08 03:02:47 H
Test : 2006-01-17 05:09:03 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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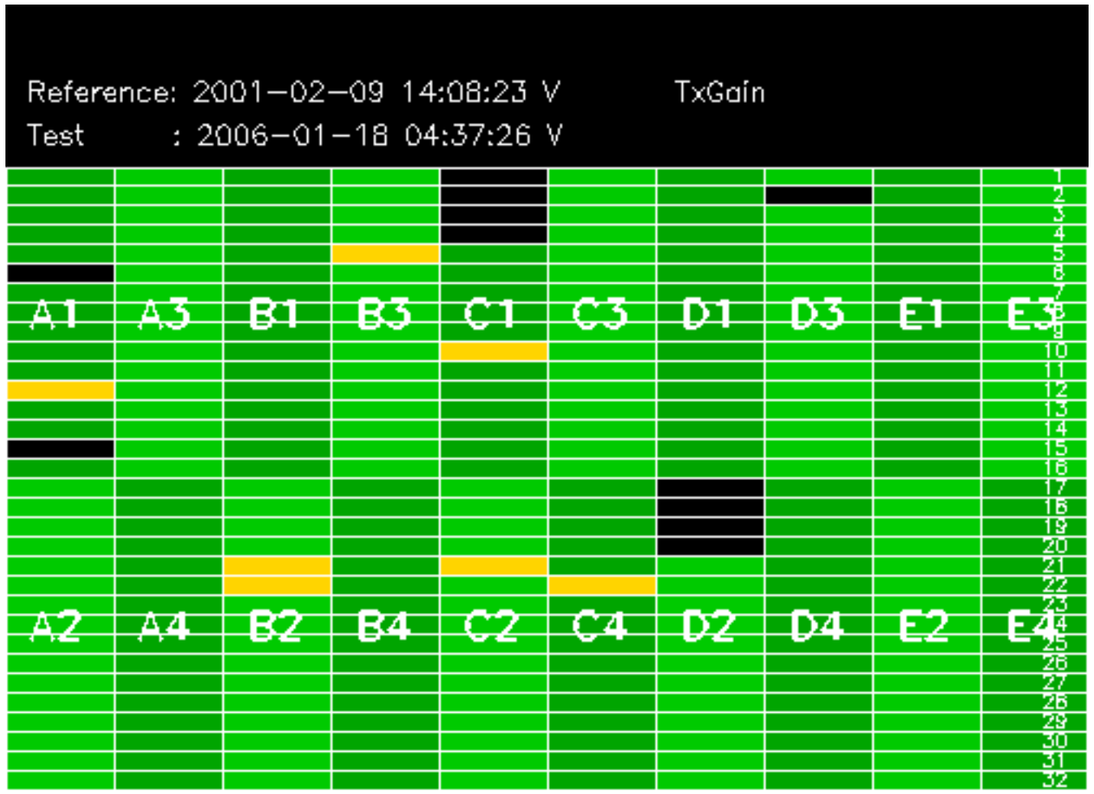
Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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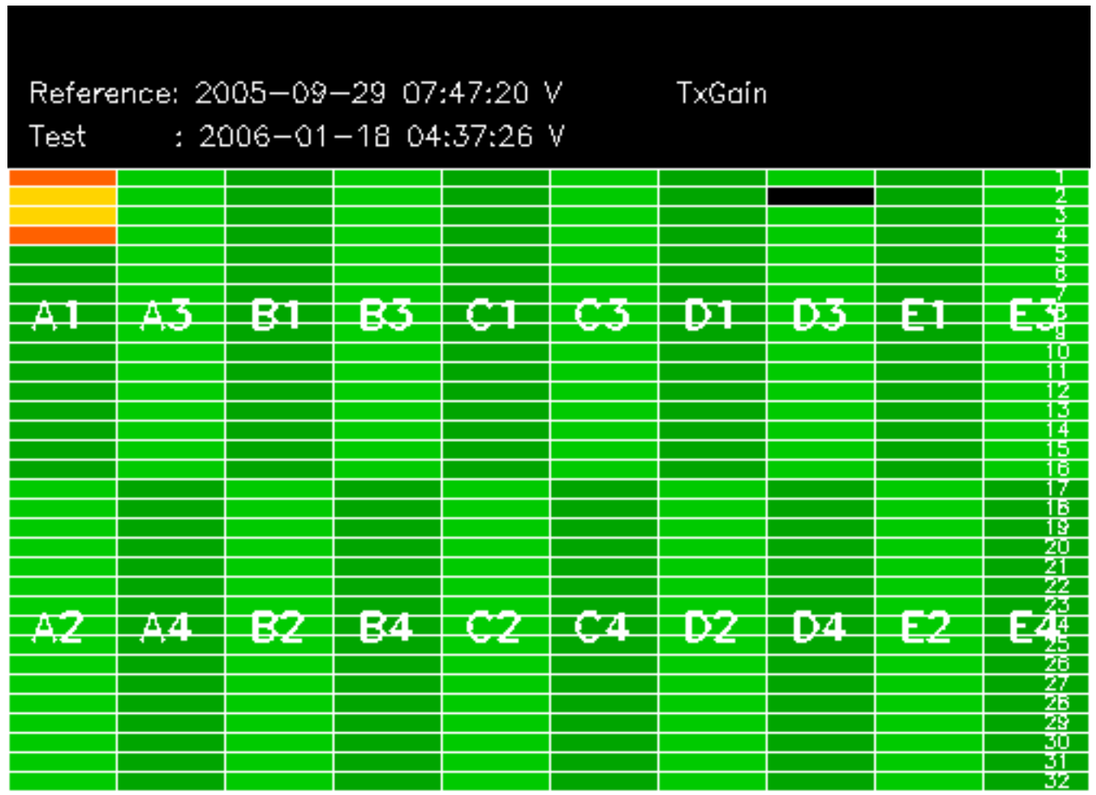
Reference: 2005-09-29 07:47:20 V
Test : 2006-01-18 04:37:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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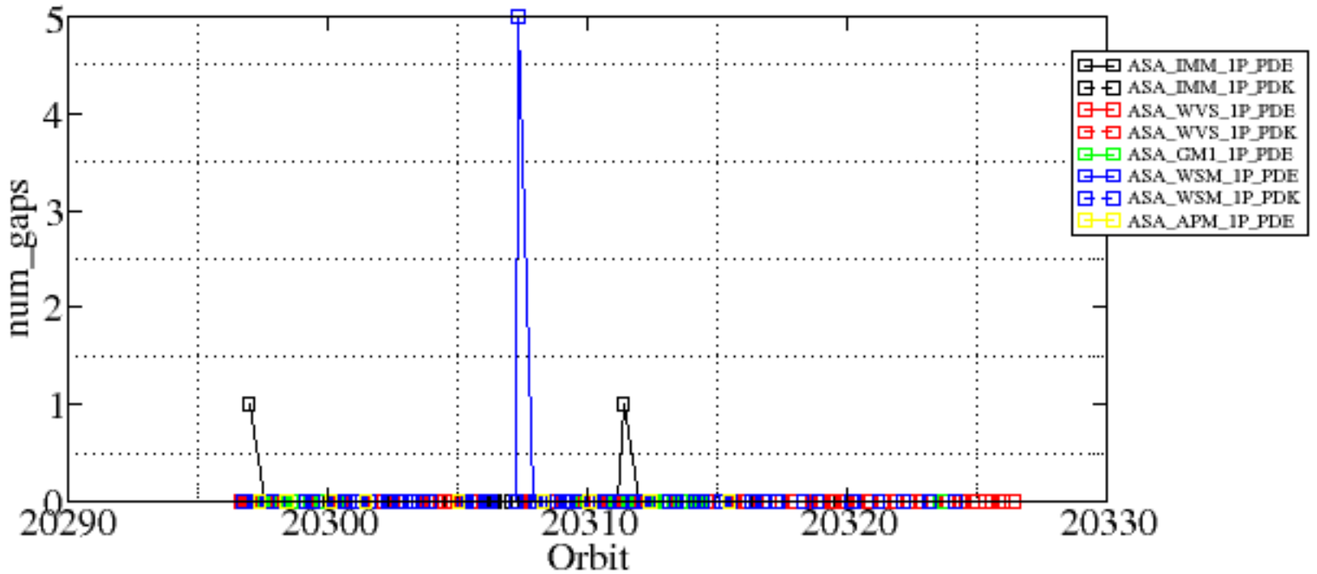
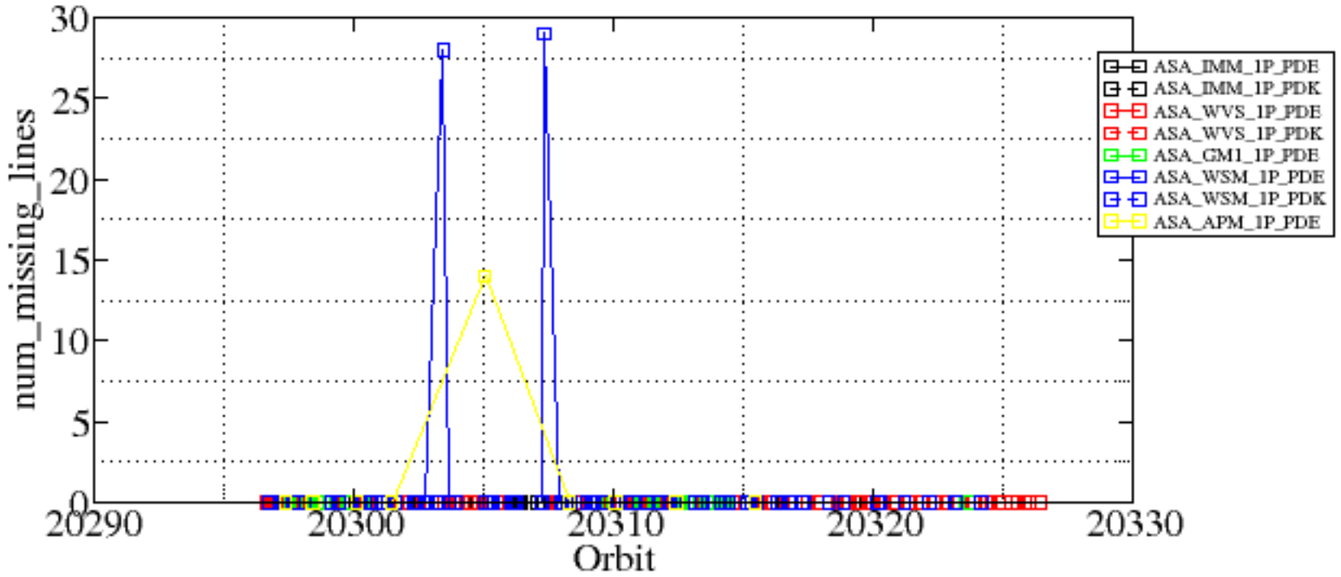
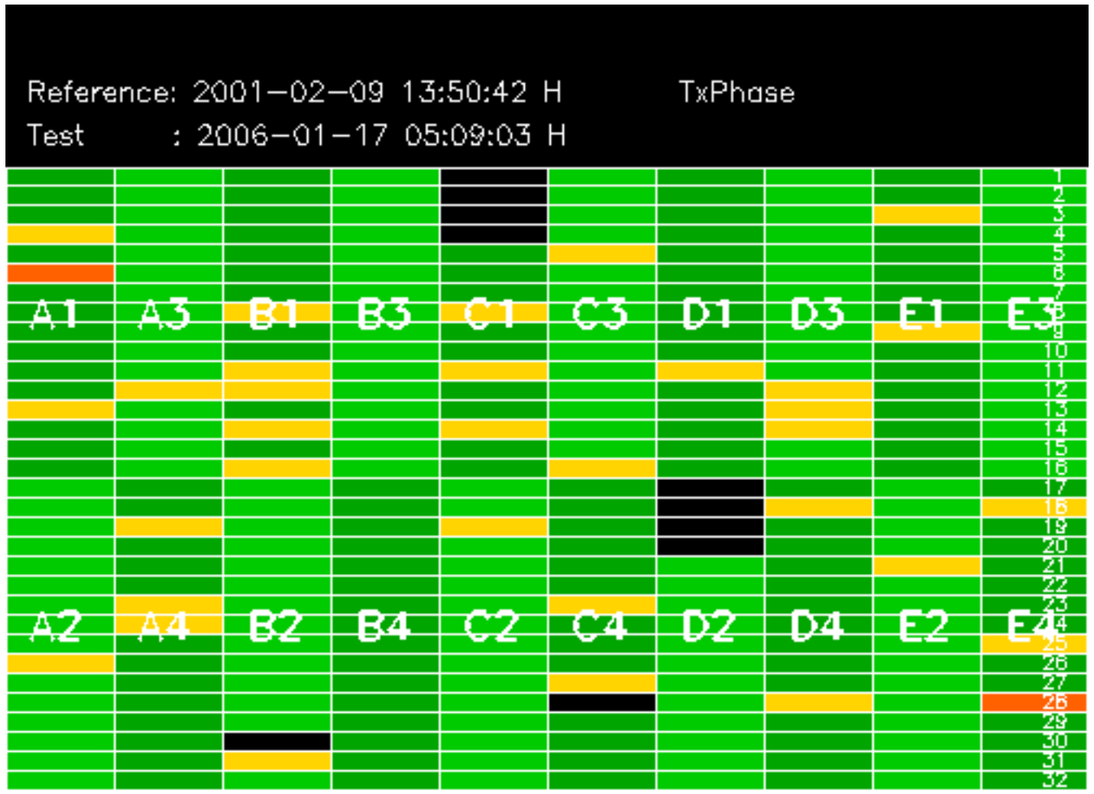
Summary of analysis for the last 3 days 2006011[789]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

<table border=1>
<tr> <th>Filename</th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20060117_003714_000001252044_00202_20296_0294.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDE20060118_004619_000001942044_00217_20311_0394.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060117_112911_000001832044_00209_20303_1118.N1 </td> <td>0 </td> <td>28 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060117_175924_000000792044_00213_20307_1178.N1 </td> <td>5 </td> <td>29 </td></tr>
<tr> <td>ASA_APM_1PNPDE20060117_141137_000000832044_00211_20305_0083.N1 </td> <td>0 </td> <td>14 </td></tr>
</table>


num_gaps
Orbit
0
1
2
3
4
5
20290
20300
20310
20320
20330
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE


num_missing_lines
Orbit
30
25
20
15
10
5
0
20290
20300
20310
20320
20330
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE


Reference: 2001-02-09 13:50:42 H
Test : 2006-01-17 05:09:03 H
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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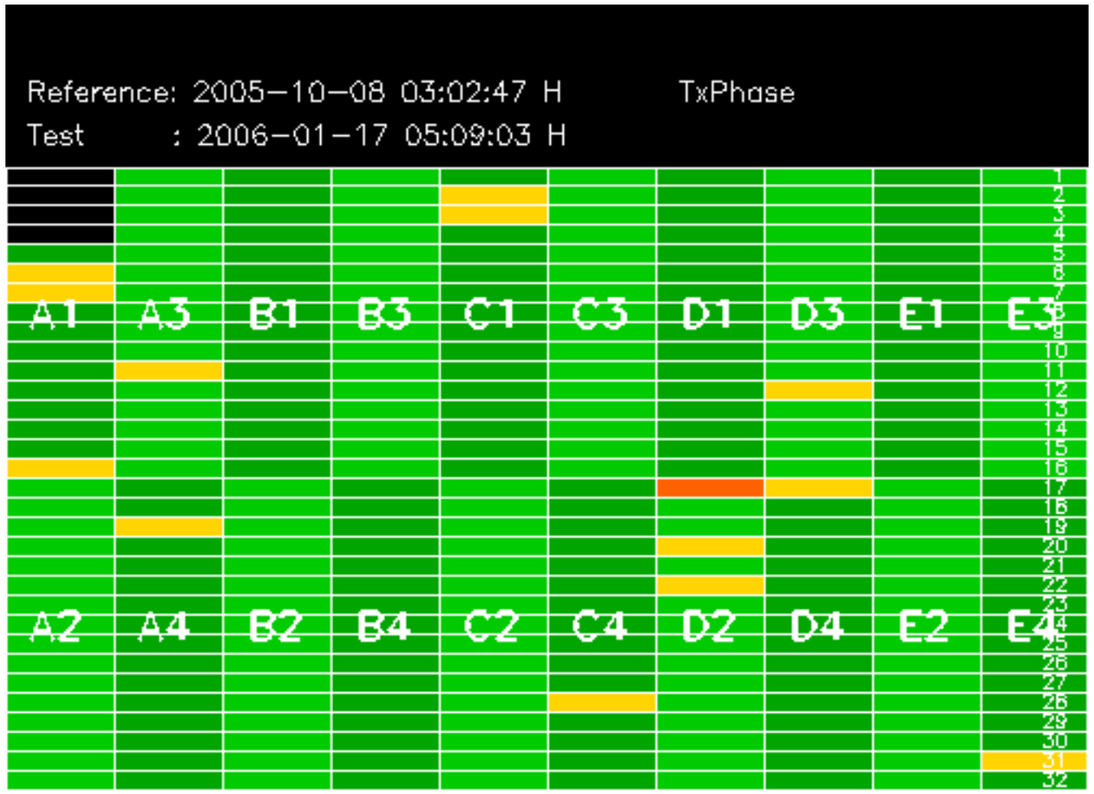
Reference: 2005-10-08 03:02:47 H
TxPhase
Test : 2006-01-17 05:09:03 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
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C4
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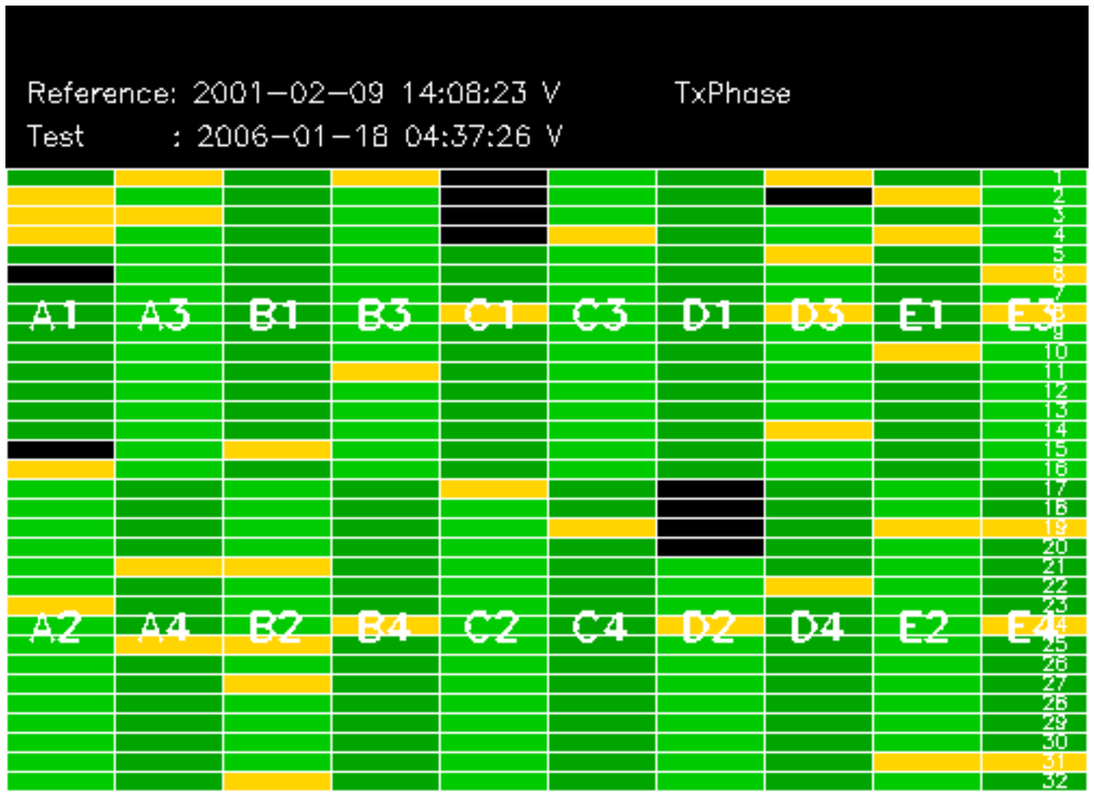
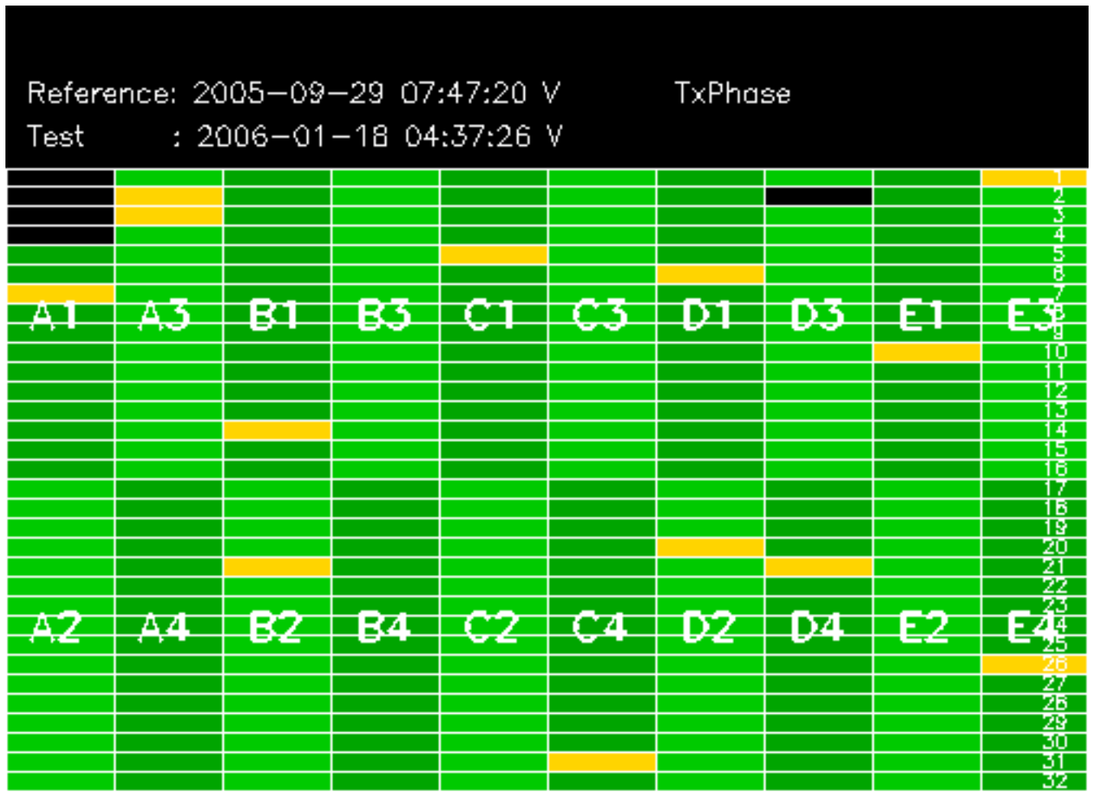

Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
TxPhase
Test : 2006-01-18 04:37:26 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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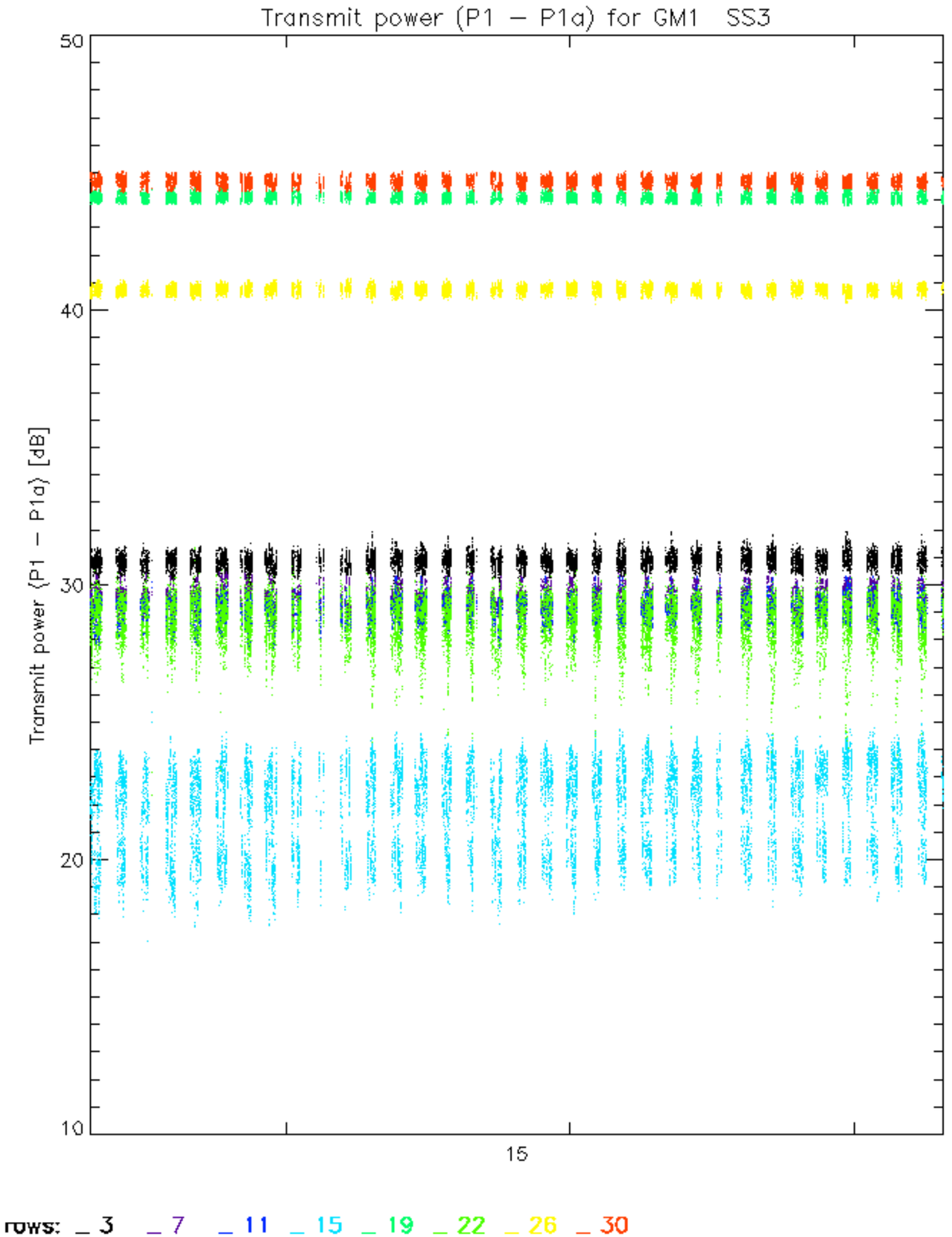
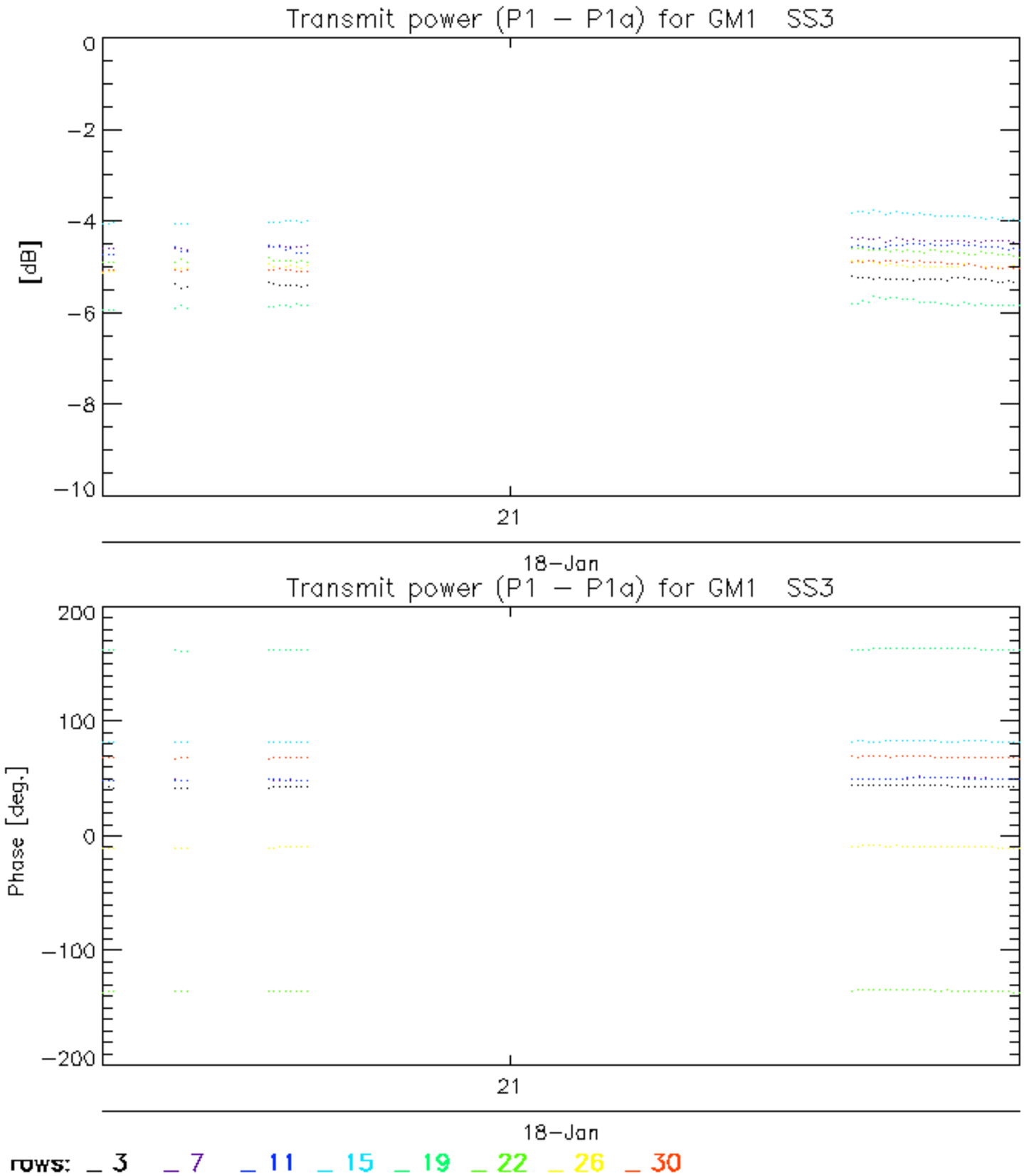
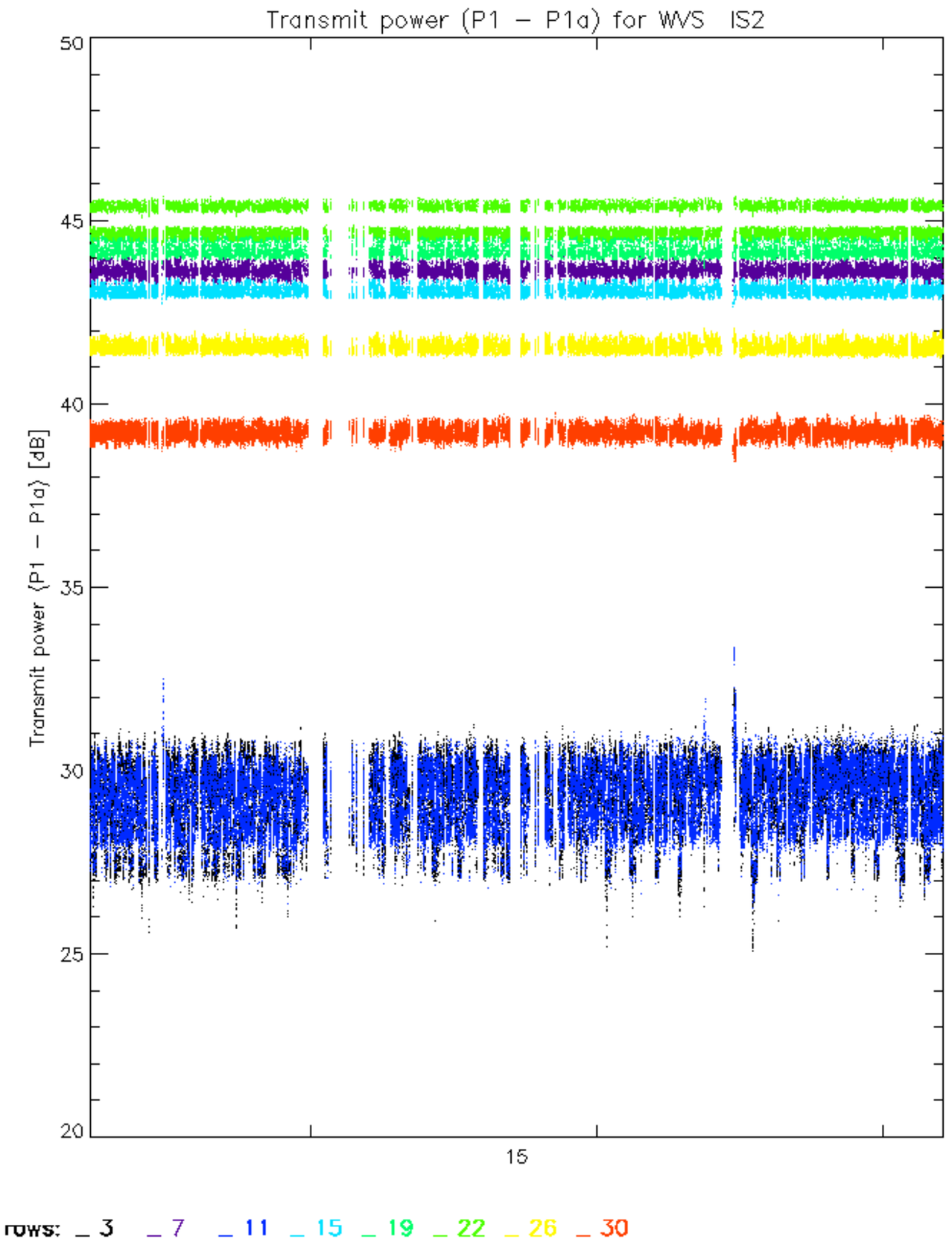
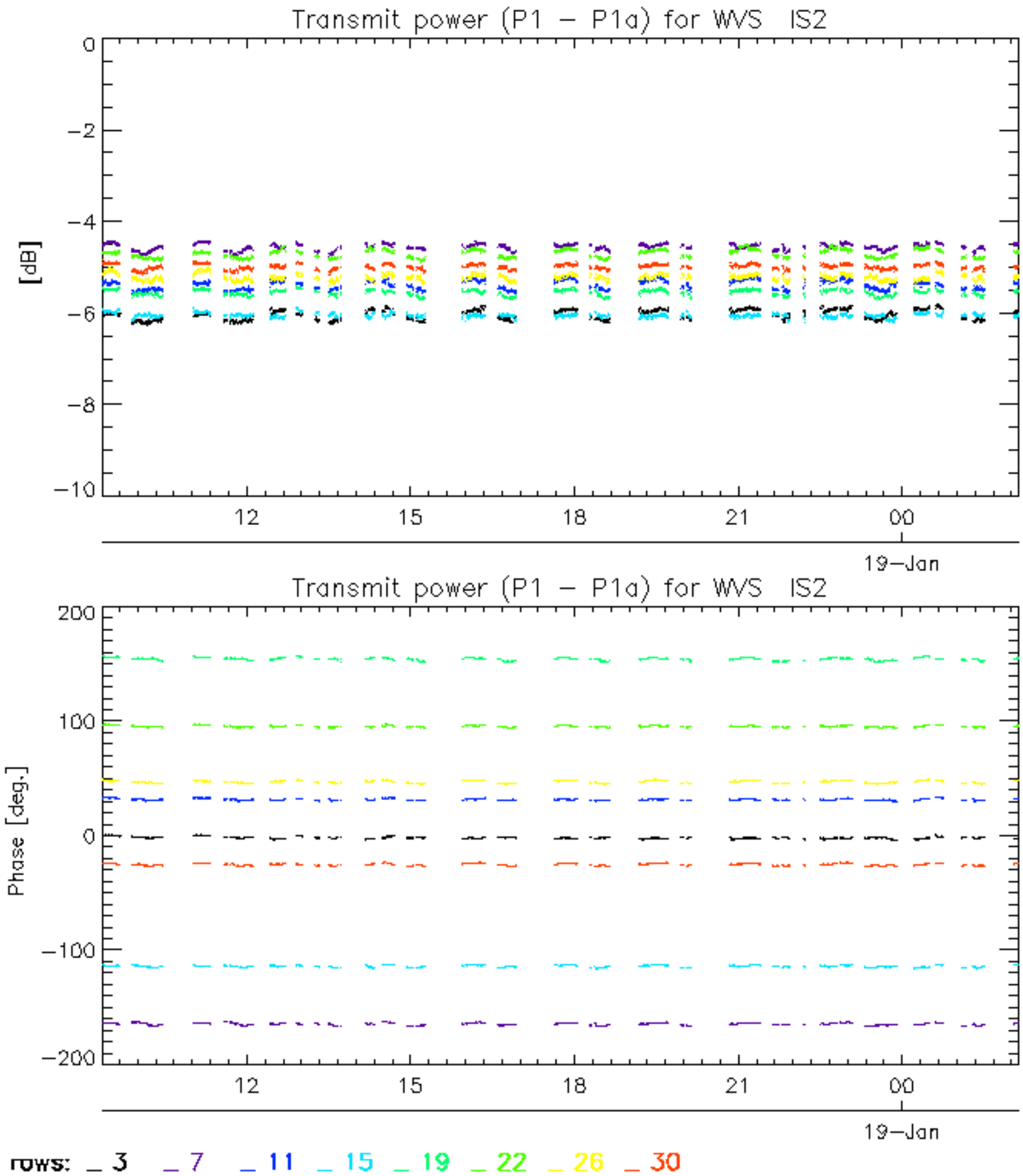
25
26
27
28
29
30
31
32


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


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
21
18−Jan
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
21
18−Jan
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
15
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
00
19–Jan
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
19–Jan
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.