PRELIMINARY REPORT OF 070118

last update on Thu Jan 18 12:11:47 GMT 2007

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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 2007-01-17 00:00:00 to 2007-01-18 12:11:47

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	20	27	5	1	5
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	20	27	5	1	5
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	20	27	5	1	5
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	20	27	5	1	5

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	51	53	35	4	64
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	51	53	35	4	64
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	51	53	35	4	64
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	51	53	35	4	64

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	20070116 042853
H	20070117 071828

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	-3.963512	0.007415	-0.010621
7	P1	-3.131732	0.045829	0.025025
11	P1	-4.116200	0.025033	-0.011895
15	P1	-6.335082	0.016768	-0.040205
19	P1	-3.686158	0.006192	-0.057193
22	P1	-4.679873	0.016427	-0.039577
26	P1	-3.951778	0.009999	0.012046
30	P1	-5.916952	0.008671	-0.021614
3	P1	-16.518747	0.254014	0.039609
7	P1	-17.261168	0.182262	0.053931
11	P1	-17.266878	0.446487	-0.038285
15	P1	-13.035029	0.125358	-0.025897
19	P1	-15.089407	0.111107	-0.119335
22	P1	-15.806736	0.548421	0.035363
26	P1	-15.026310	0.187037	-0.027902
30	P1	-17.533934	0.493243	-0.065319

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-20.780424	0.090193	0.018493
7	P2	-21.666325	0.088526	0.033461
11	P2	-15.530420	0.099747	0.011760
15	P2	-7.091485	0.103030	0.002216
19	P2	-9.171352	0.096596	0.014765
22	P2	-18.219660	0.089074	-0.020073
26	P2	-16.593138	0.102056	-0.005454
30	P2	-19.431664	0.084174	0.021094

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.236065	0.008366	-0.020649
7	P3	-8.236065	0.008366	-0.020649
11	P3	-8.236065	0.008366	-0.020649
15	P3	-8.236065	0.008366	-0.020649
19	P3	-8.236065	0.008366	-0.020649
22	P3	-8.236065	0.008366	-0.020649
26	P3	-8.236090	0.008366	-0.020579
30	P3	-8.236090	0.008366	-0.020579

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	-3.919385	0.013433	-0.009897
7	P1	-2.470167	0.067031	0.039988
11	P1	-2.829640	0.015733	0.016174
15	P1	-3.712161	0.032375	-0.048362
19	P1	-3.549711	0.019267	-0.032491
22	P1	-5.002662	0.022898	0.014342
26	P1	-6.038728	0.026027	-0.051532
30	P1	-5.345427	0.037651	-0.025602
3	P1	-11.722715	0.077448	-0.008601
7	P1	-10.037446	0.090934	0.067350
11	P1	-10.365996	0.091681	-0.031556
15	P1	-10.740884	0.164384	-0.032383
19	P1	-15.743433	0.106030	-0.064142
22	P1	-21.515394	1.484762	0.155111
26	P1	-15.961963	0.323868	0.133196
30	P1	-17.934233	0.383991	-0.127507

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.417290	0.100230	0.084719
7	P2	-22.179539	0.239827	-0.005722
11	P2	-10.823923	0.091716	0.034744
15	P2	-4.953417	0.204651	0.010072
19	P2	-6.939484	0.218917	0.017568
22	P2	-8.229437	0.130148	-0.015526
26	P2	-24.339779	0.158368	-0.050962
30	P2	-21.897882	0.138935	0.052367

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.085732	0.003211	-0.011223
7	P3	-8.085521	0.003189	-0.011269
11	P3	-8.085711	0.003209	-0.011203
15	P3	-8.085549	0.003200	-0.011805
19	P3	-8.085658	0.003210	-0.011271
22	P3	-8.085511	0.003207	-0.011934
26	P3	-8.085888	0.003205	-0.011356
30	P3	-8.085592	0.003188	-0.010750

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

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4.3.2 - Evolution for GM1

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5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000571767
	stdev	1.62762e-07
MEAN Q	mean	0.000509510
	stdev	2.10904e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.140514
	stdev	0.00116641
STDEV Q	mean	0.140913
	stdev	0.00118625

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007011[678]
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_1PNPDK20070116_183117_000003082054_00414_25518_9835.N1	0	19
ASA_GM1_1PNPDK20070117_094938_000006882054_00423_25527_0743.N1	0	7
ASA_WSM_1PNPDE20070116_150734_000001762054_00412_25516_9712.N1	0	36
ASA_WSM_1PNPDE20070117_134134_000000862054_00425_25529_0974.N1	0	45
ASA_WSM_1PNPDE20070117_154858_000000612054_00426_25530_0950.N1	50	13468
ASA_WSM_1PNPDE20070117_162036_000002082054_00427_25531_0996.N1	0	19

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)

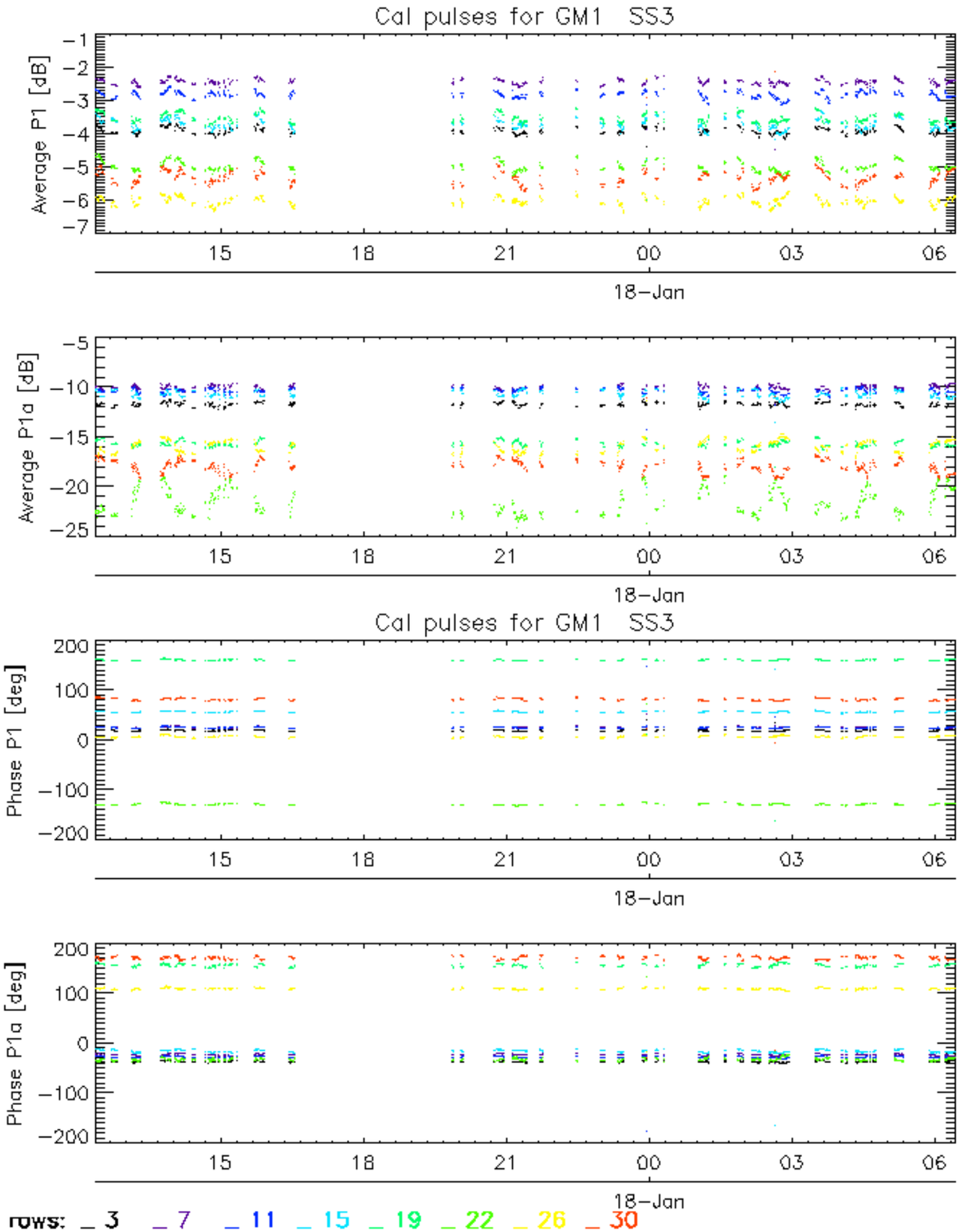
Acsending
Descending

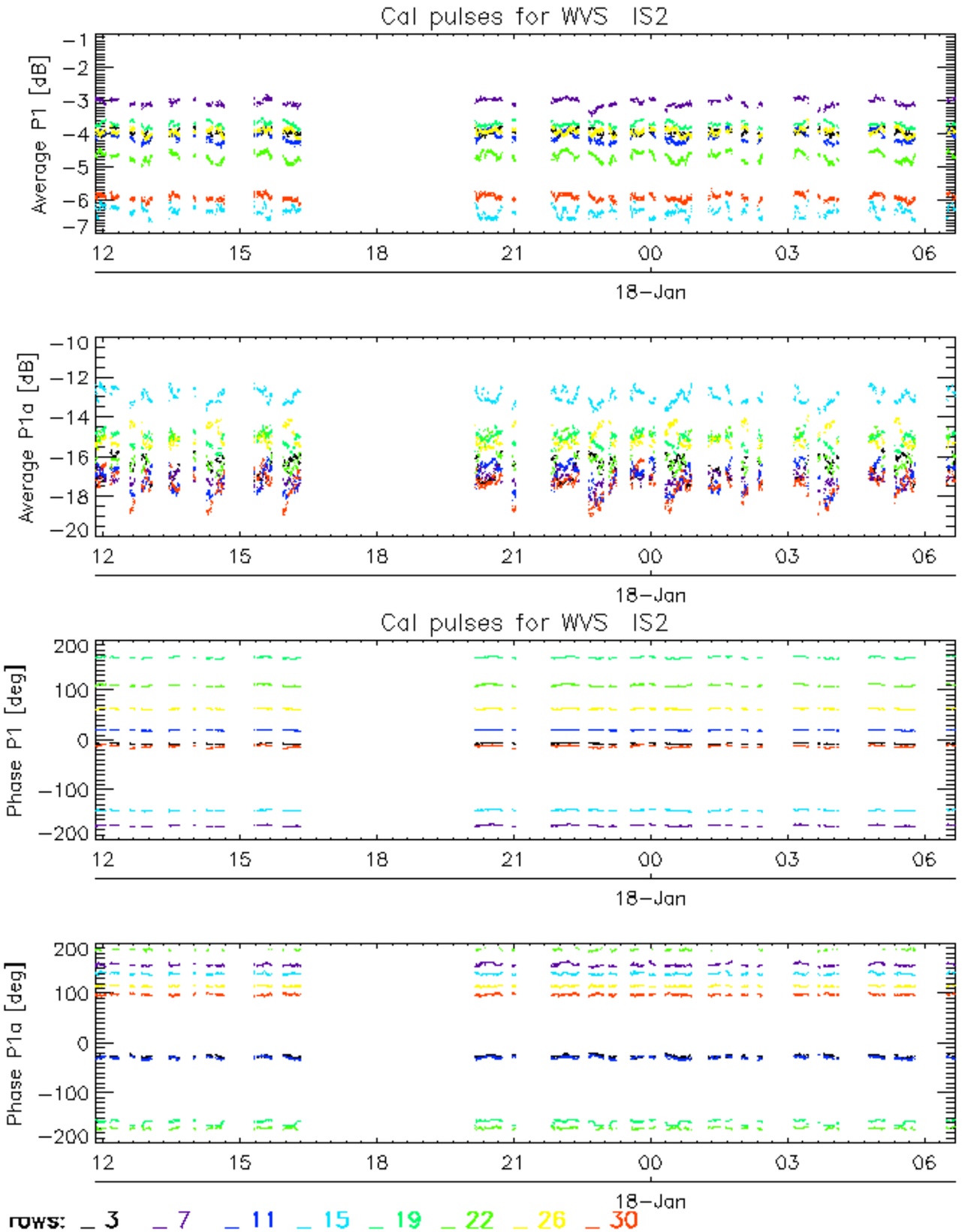
7.5 - Absolute Doppler for GM1

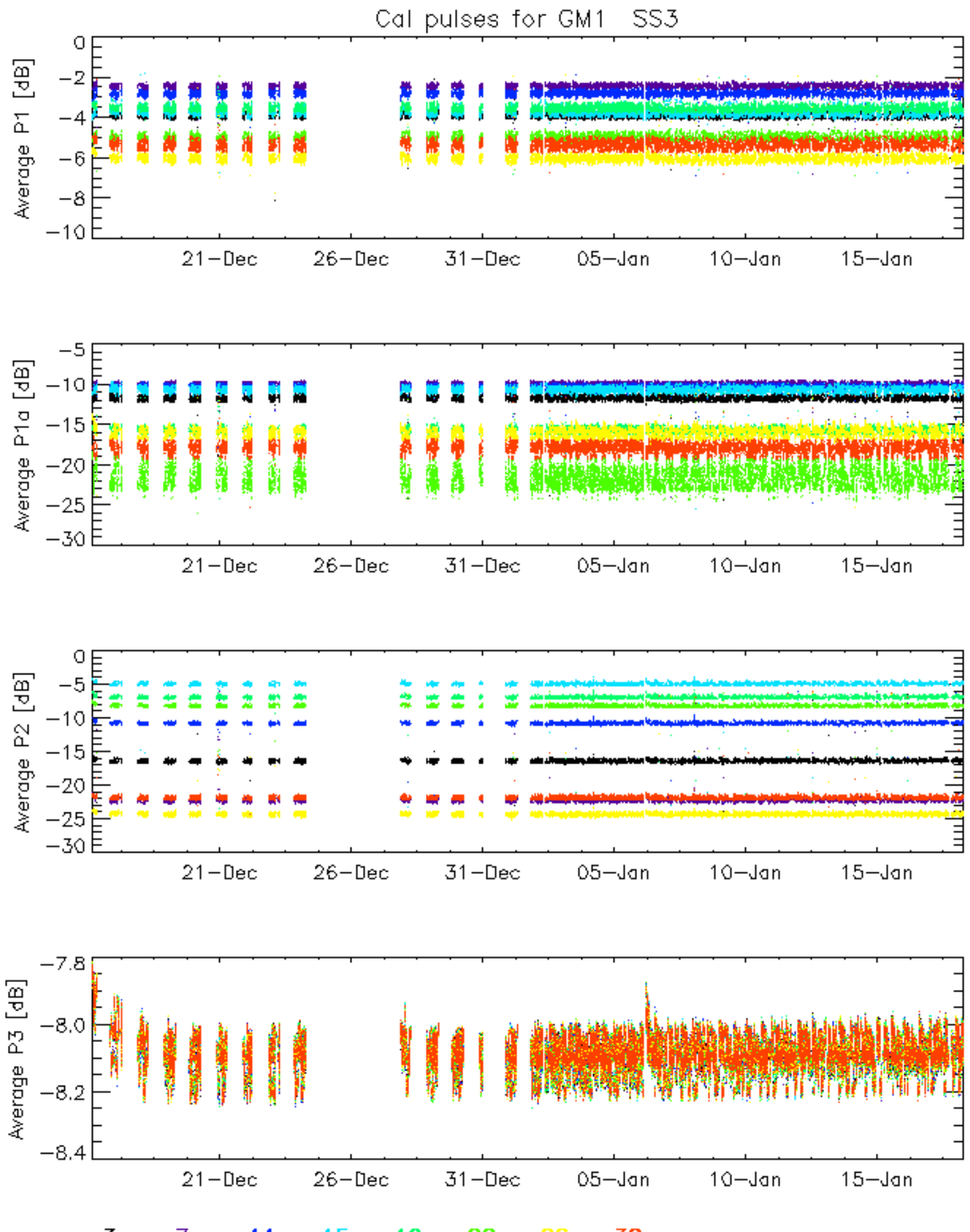
Evolution of Absolute Doppler
Acsending
Descending

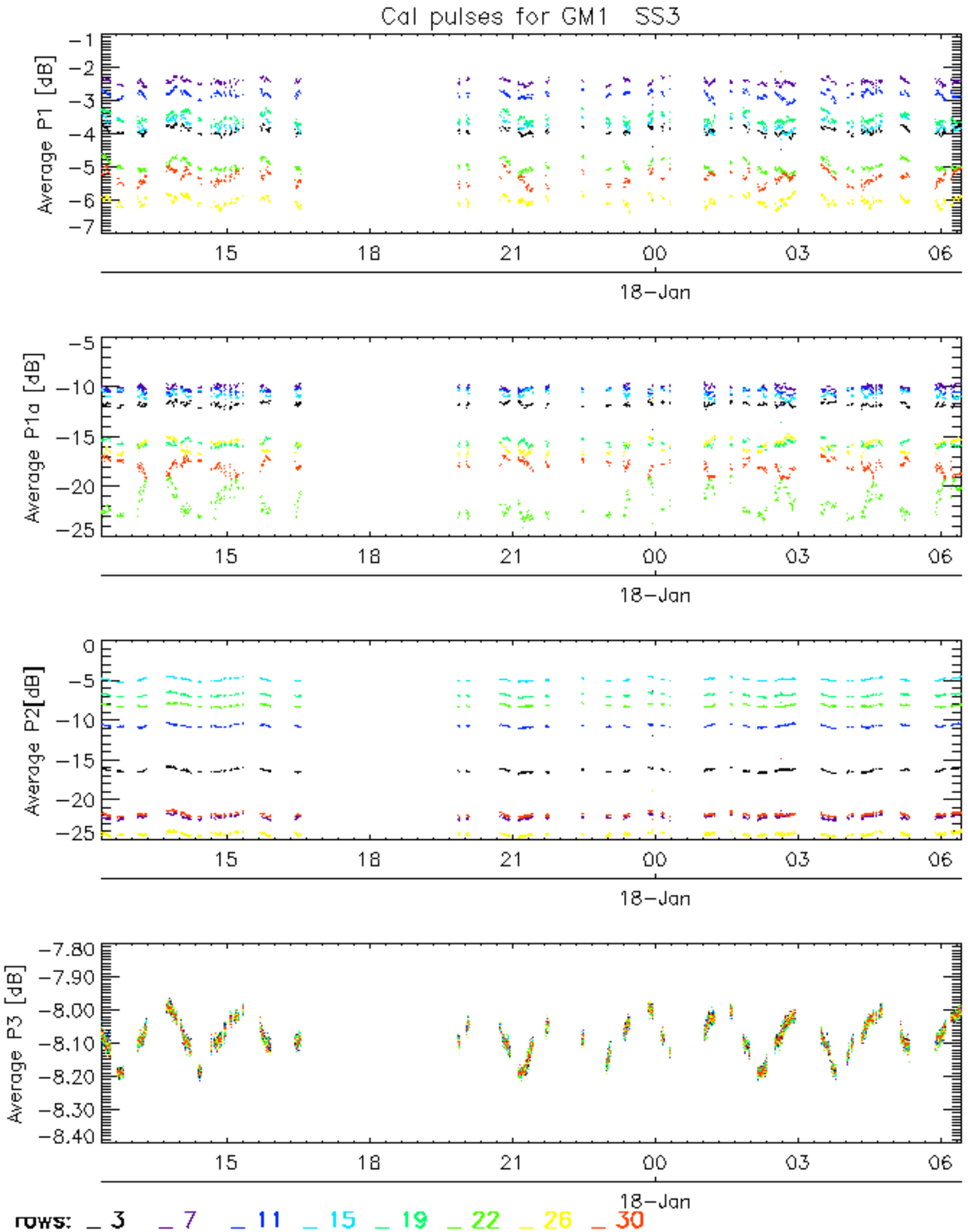
7.6 - Doppler evolution versus ANX for GM1

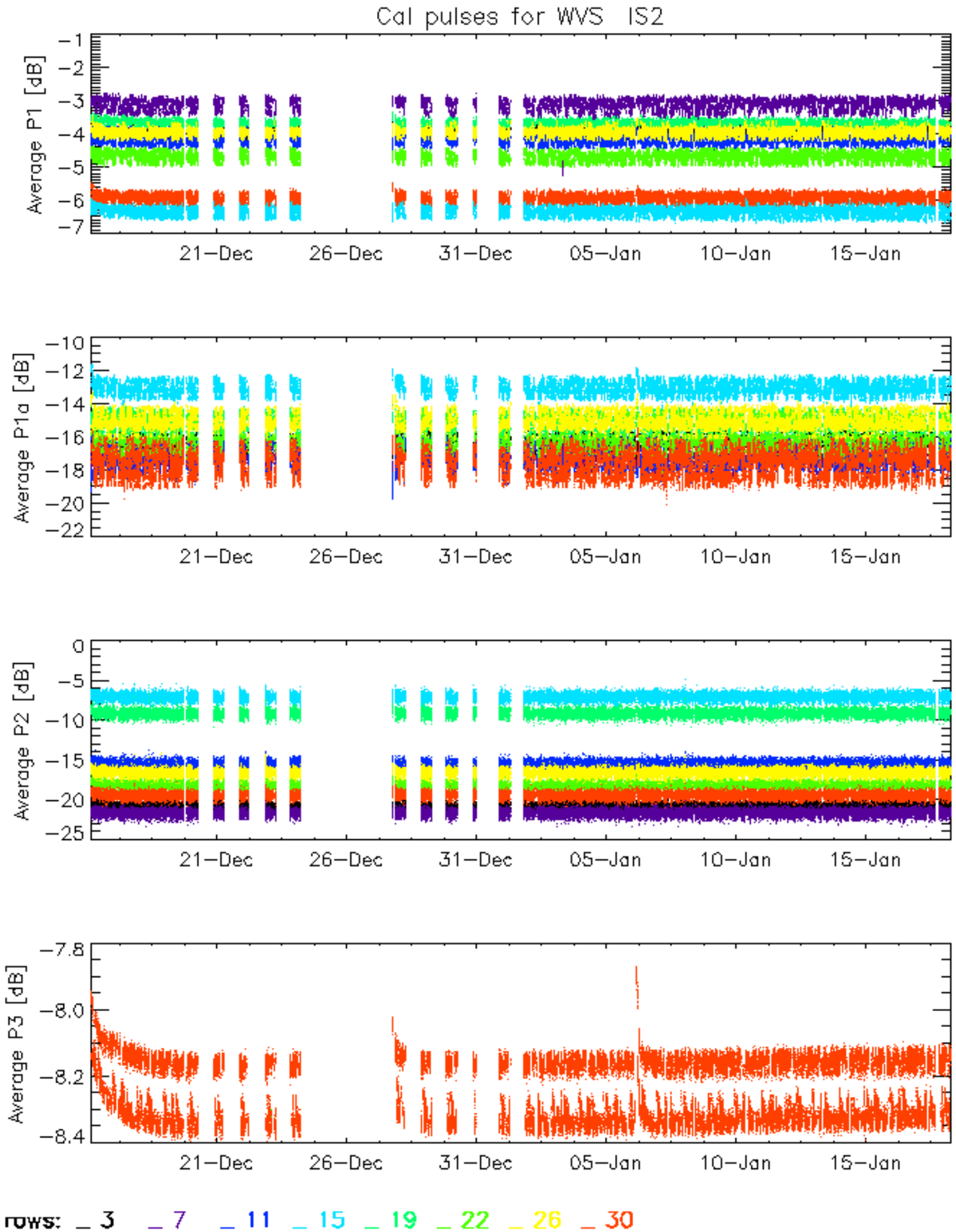
Evolution Doppler error versus ANX

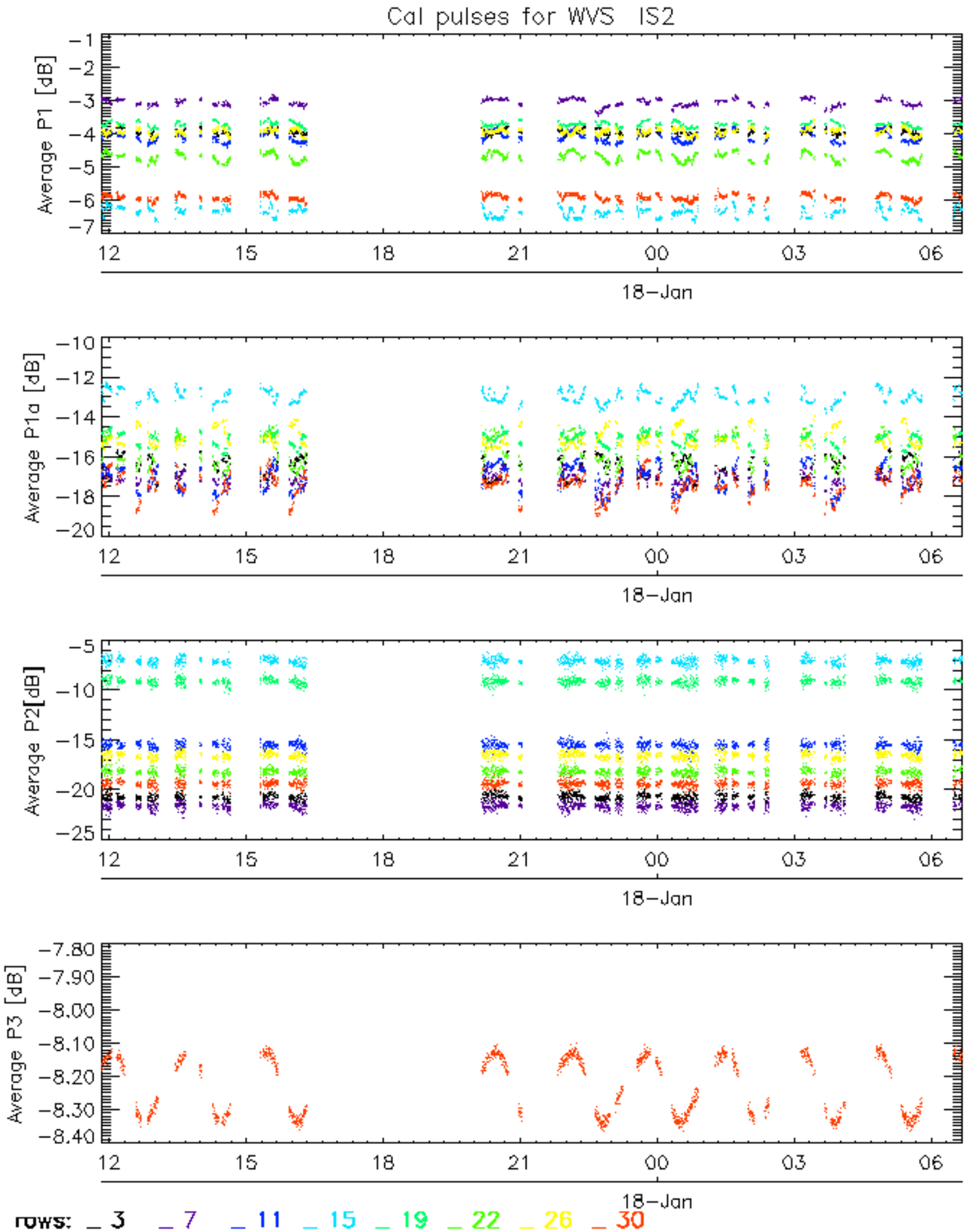

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
15
18
21
00
03
06
18−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
15
18
21
00
03
06
18−Jan
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
15
18
21
00
03
06
18−Jan
Phase P1a [deg]
200
100
0
−100
−200
15
18
21
00
03
06
18−Jan
rows: _ 3 _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

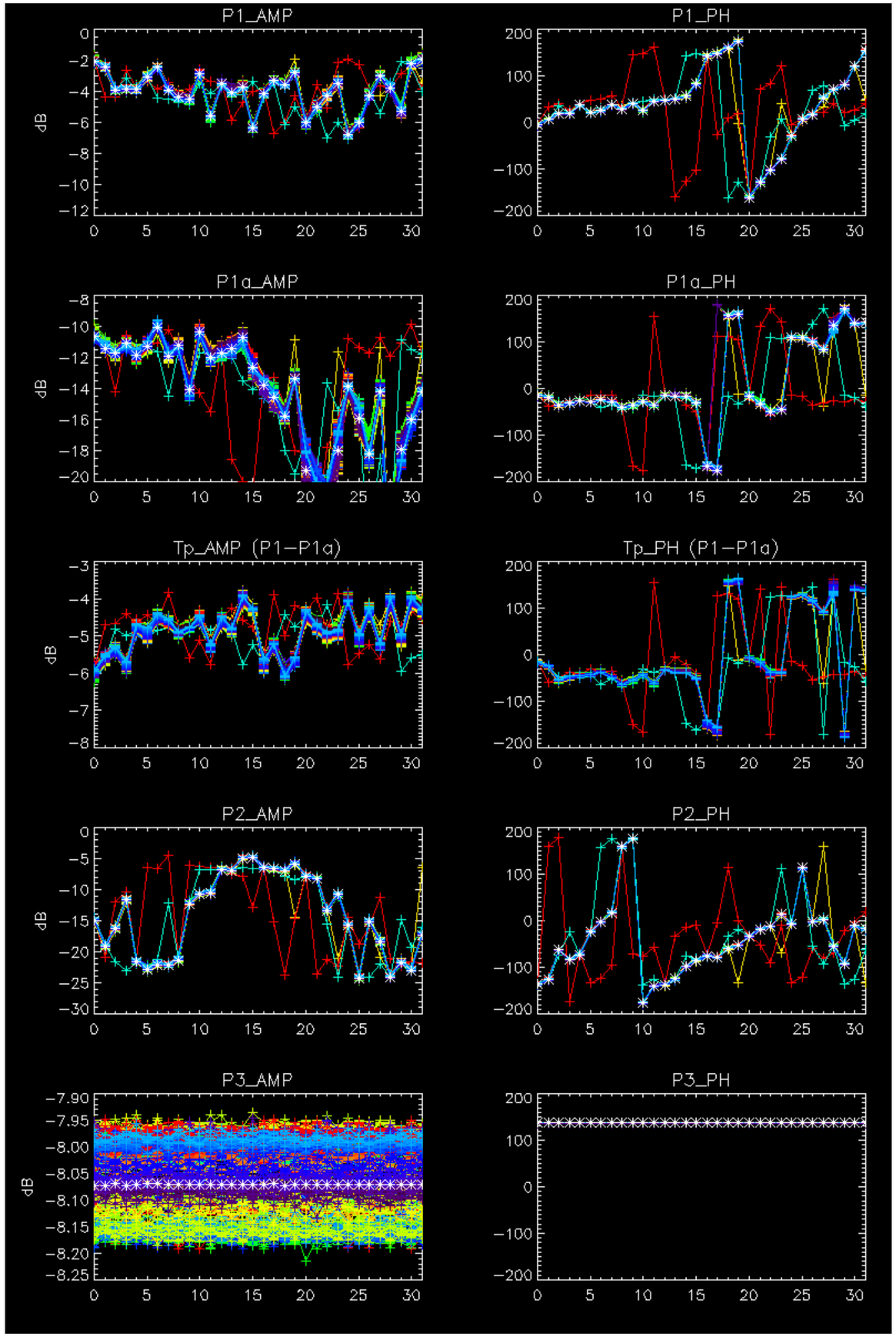

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

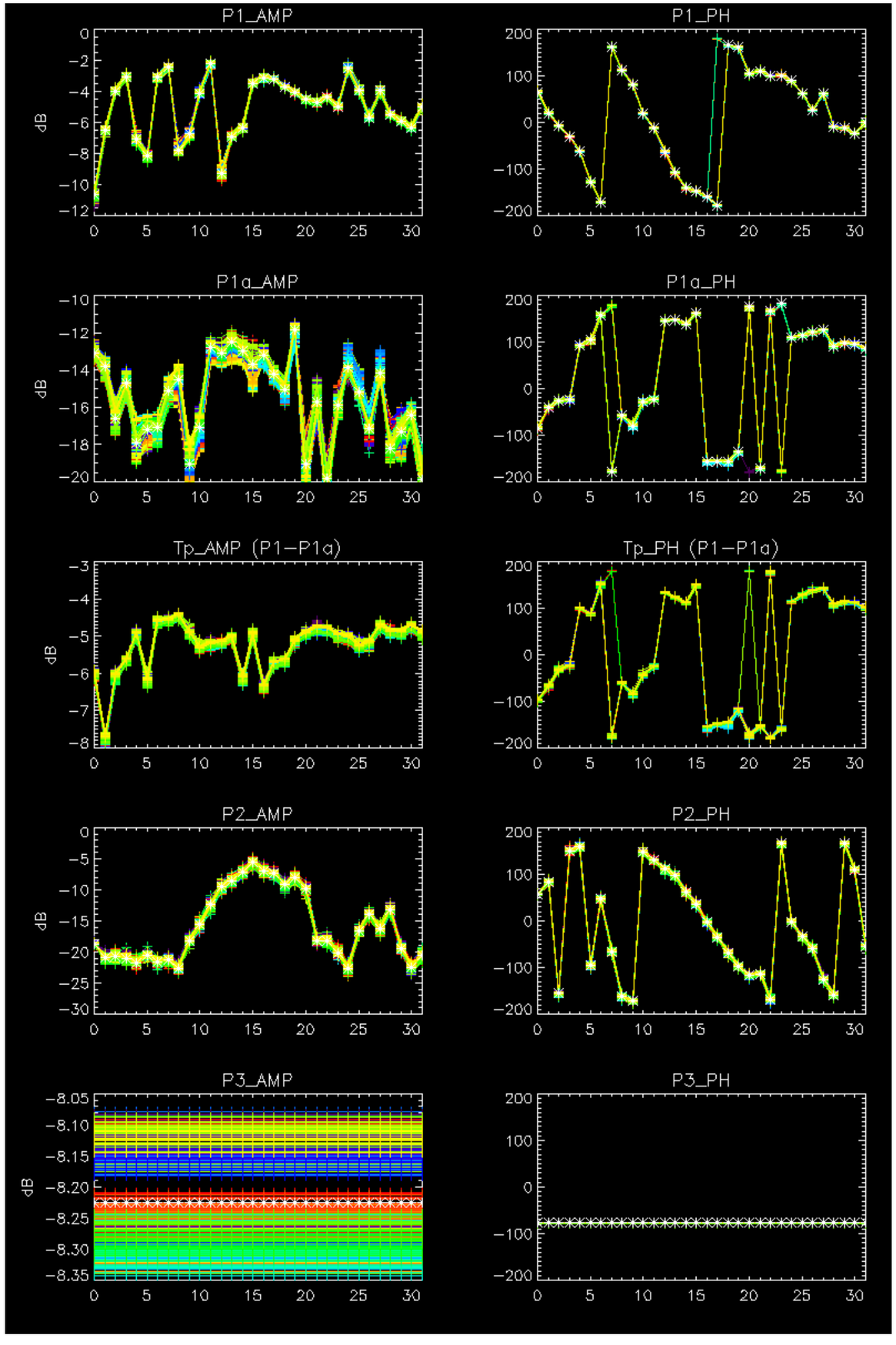

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
15
18
21
00
03
06
18−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
15
18
21
00
03
06
18−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
15
18
21
00
03
06
18−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
15
18
21
00
03
06
18−Jan
rows: _ 3 _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


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

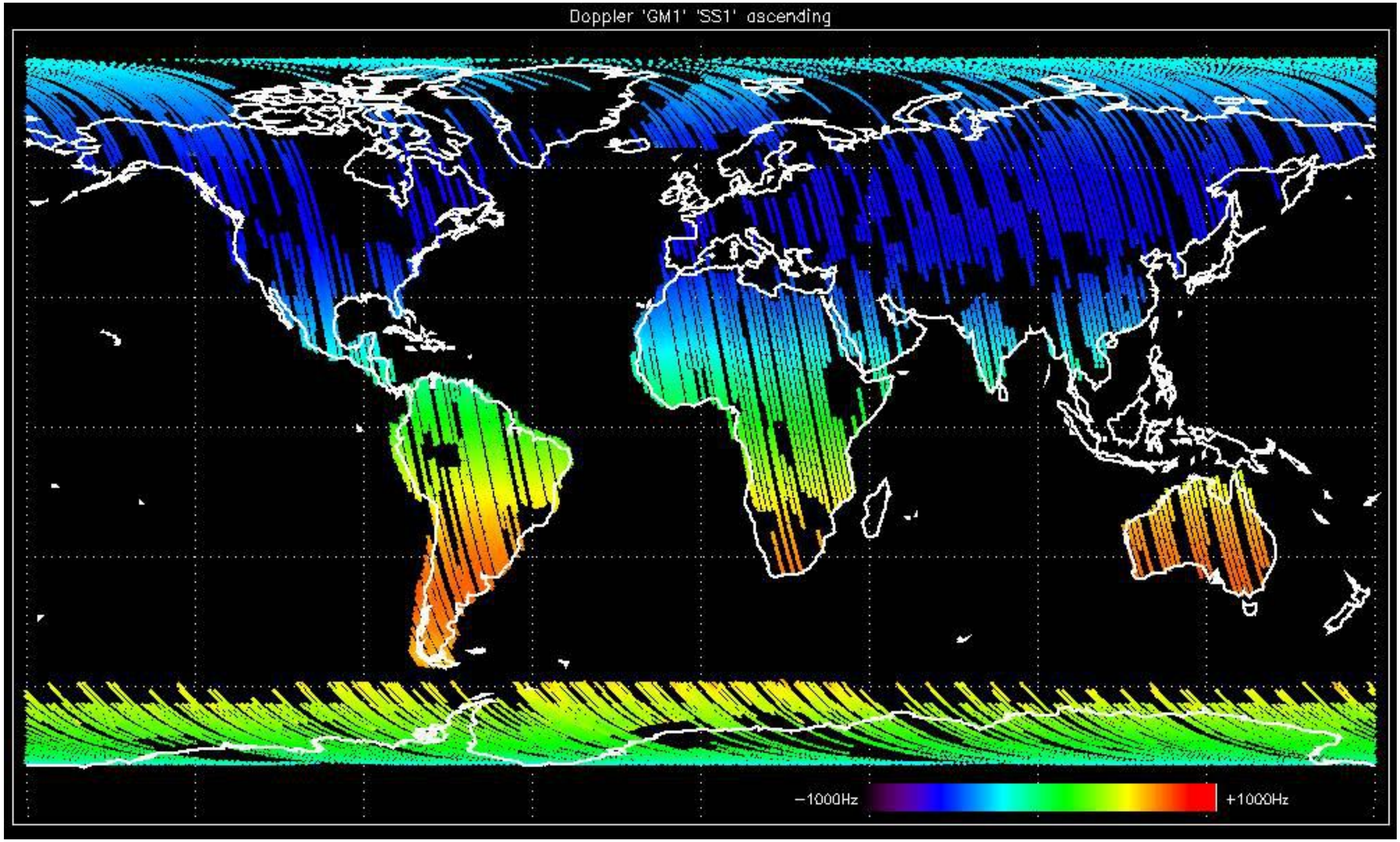
No anomalies observed.

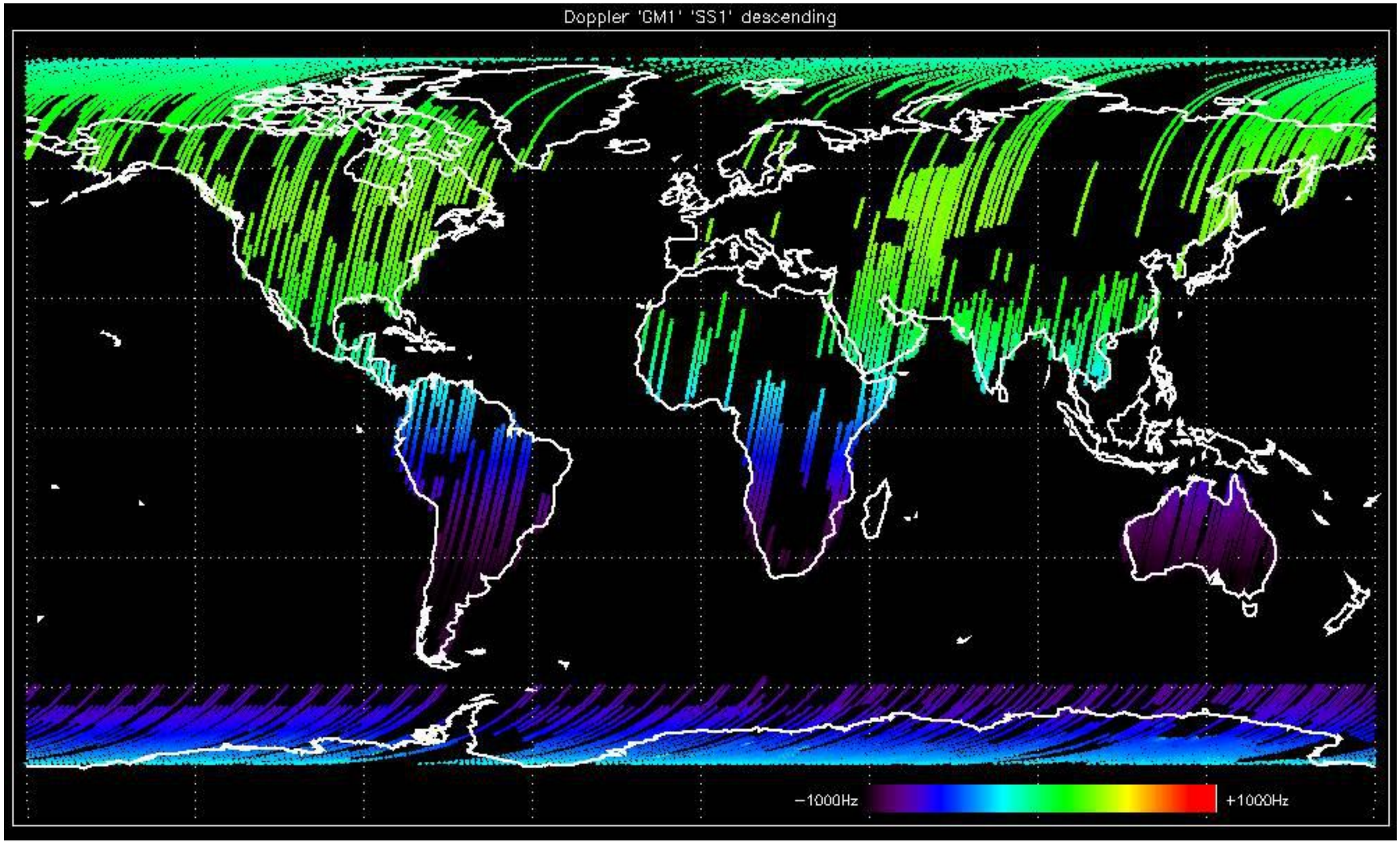

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

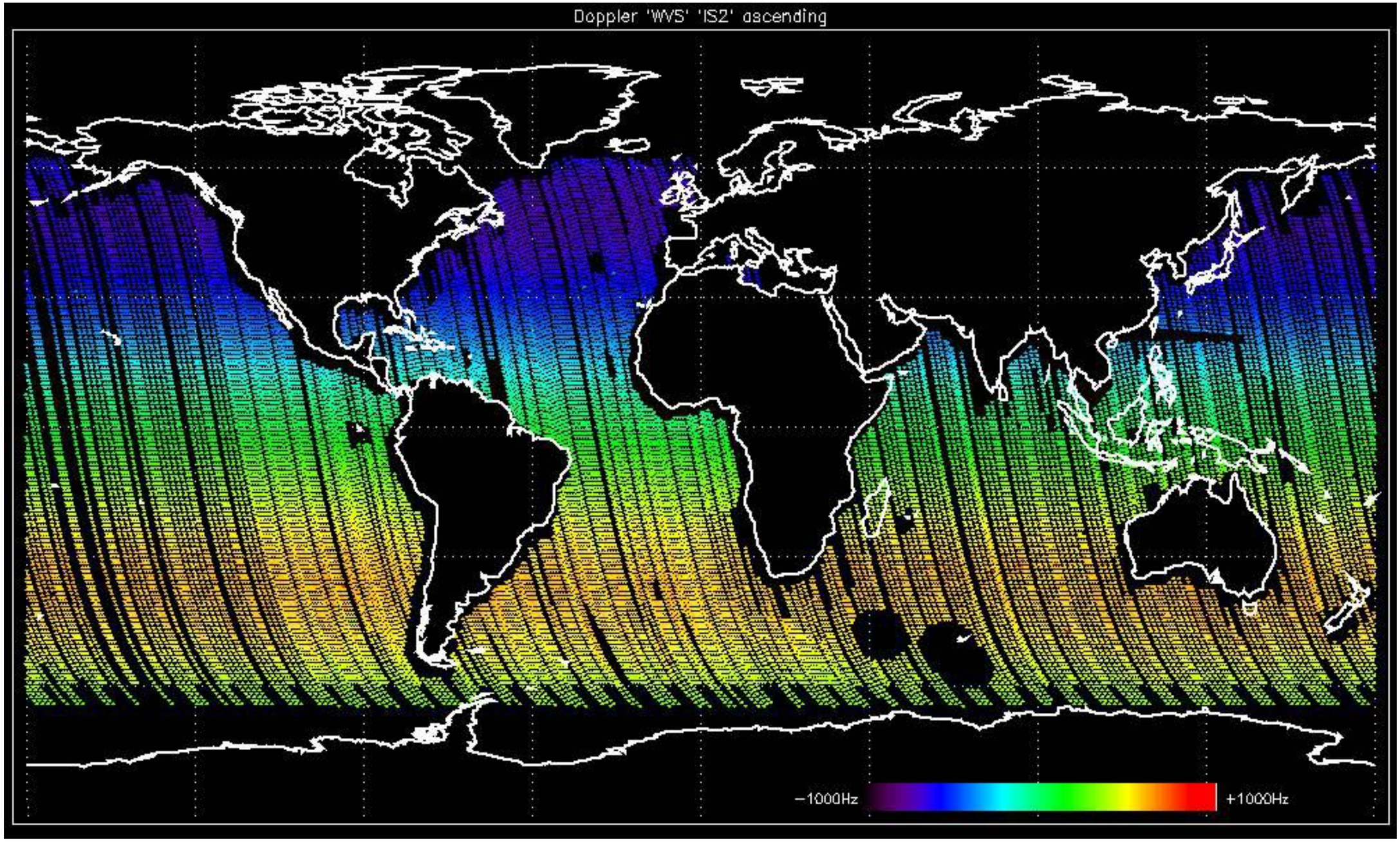

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

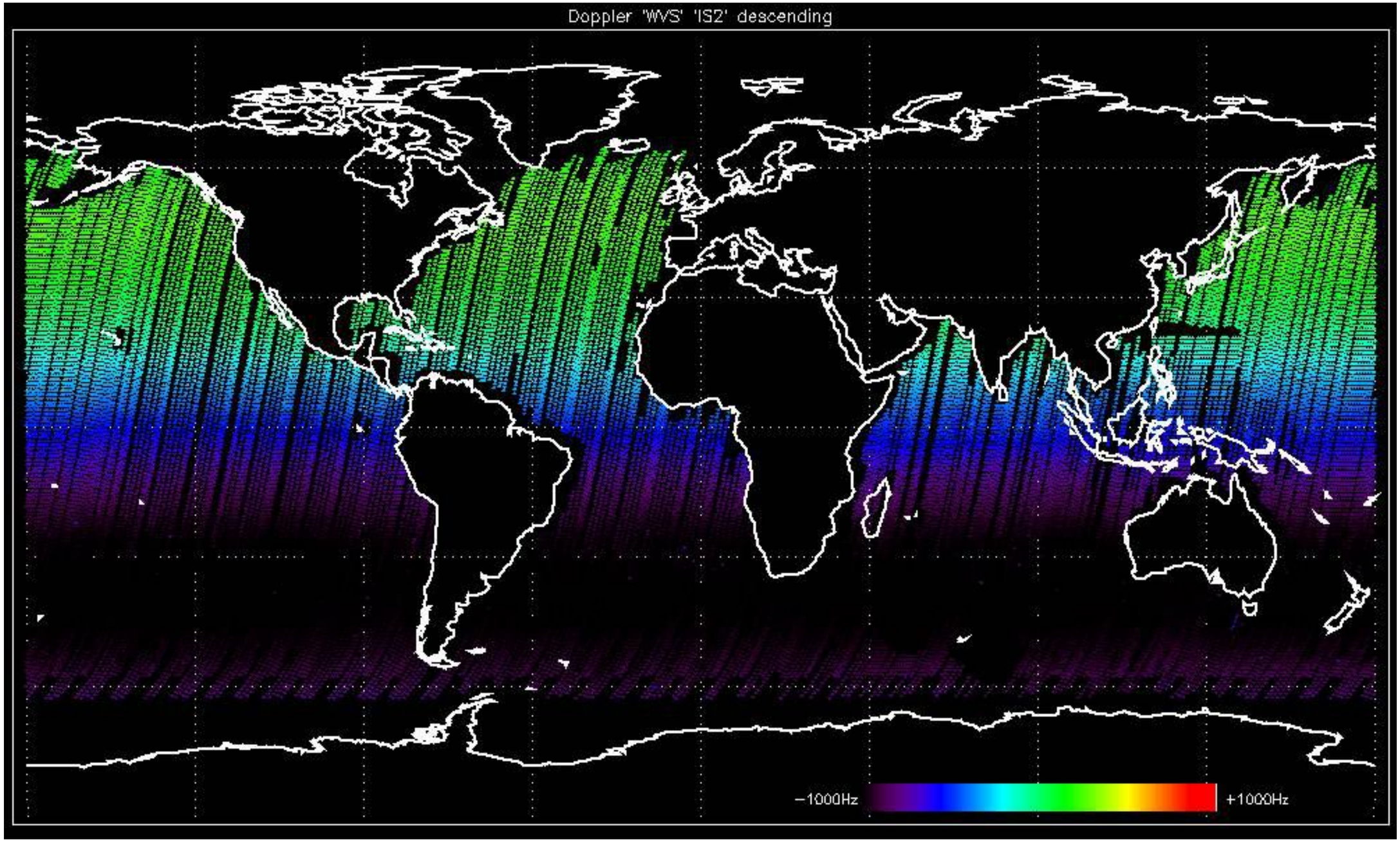
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

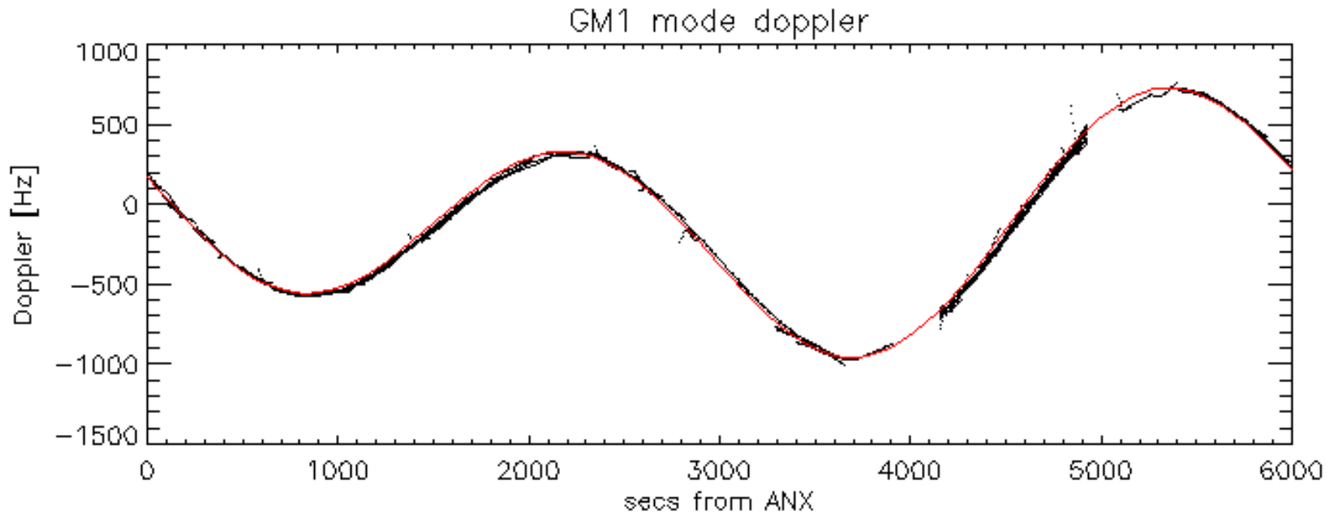
Preliminary report.The data is not yet controled

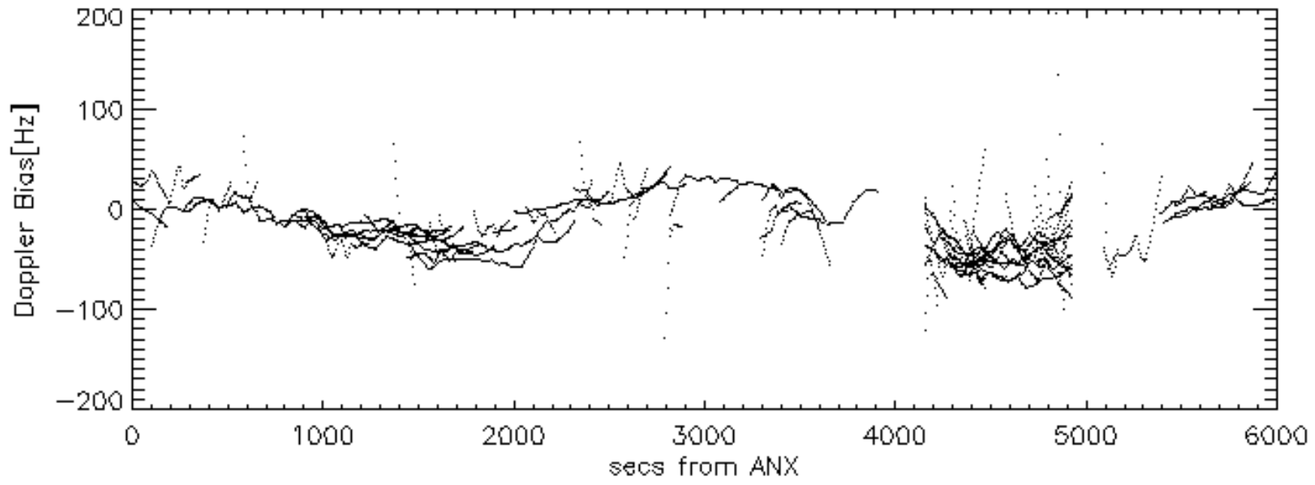

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

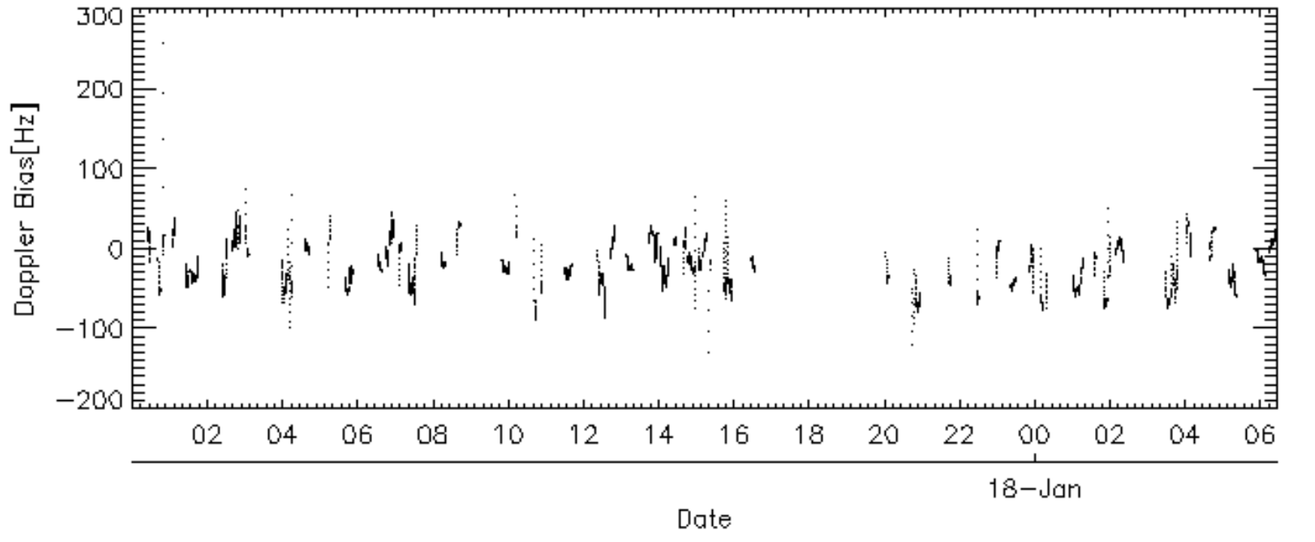

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

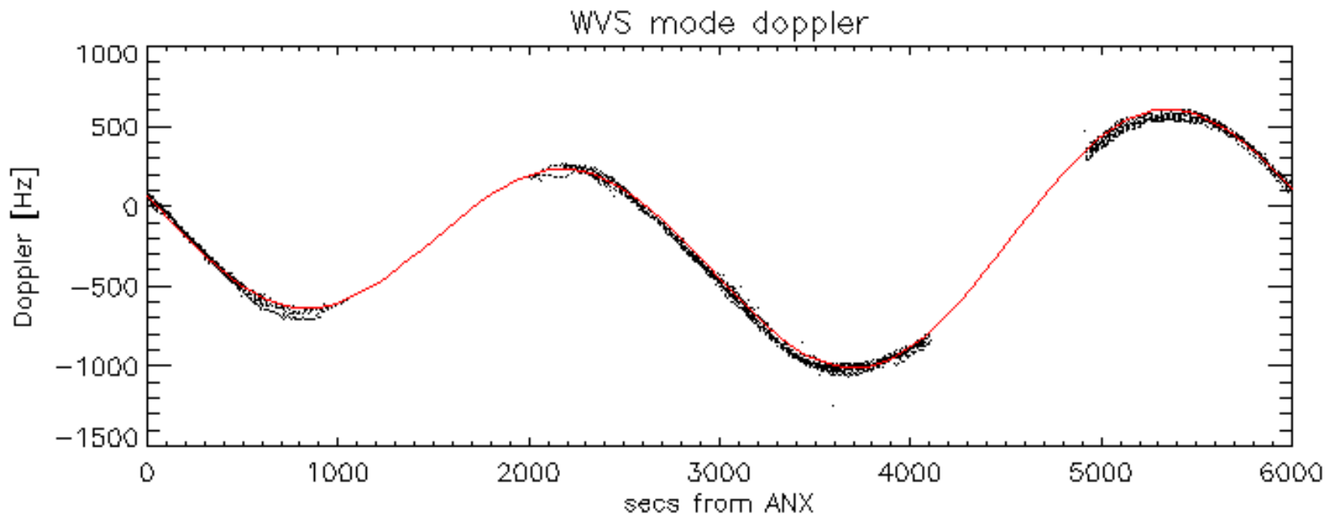

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

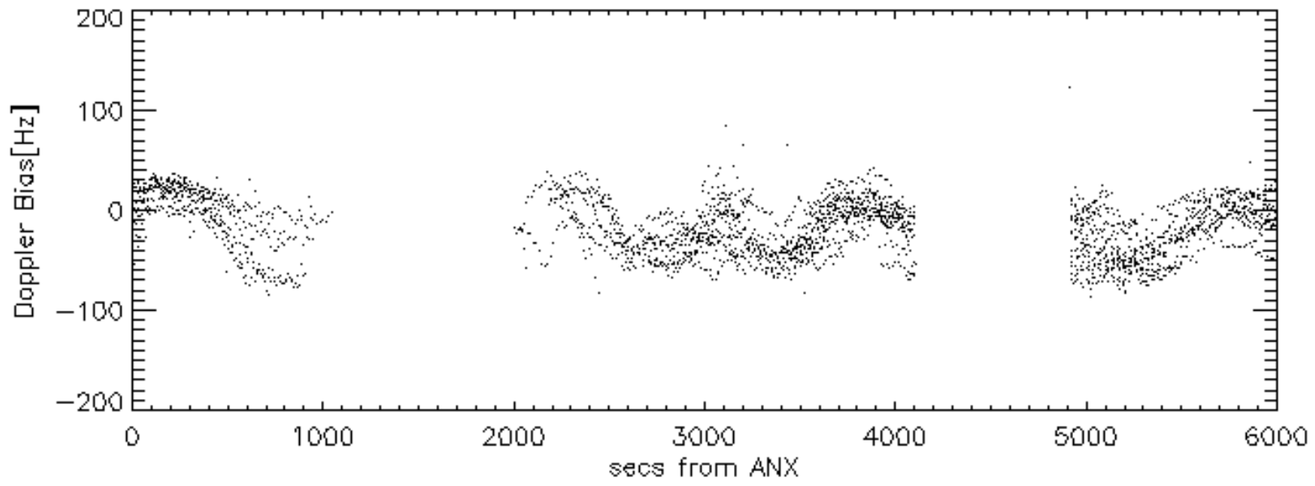

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

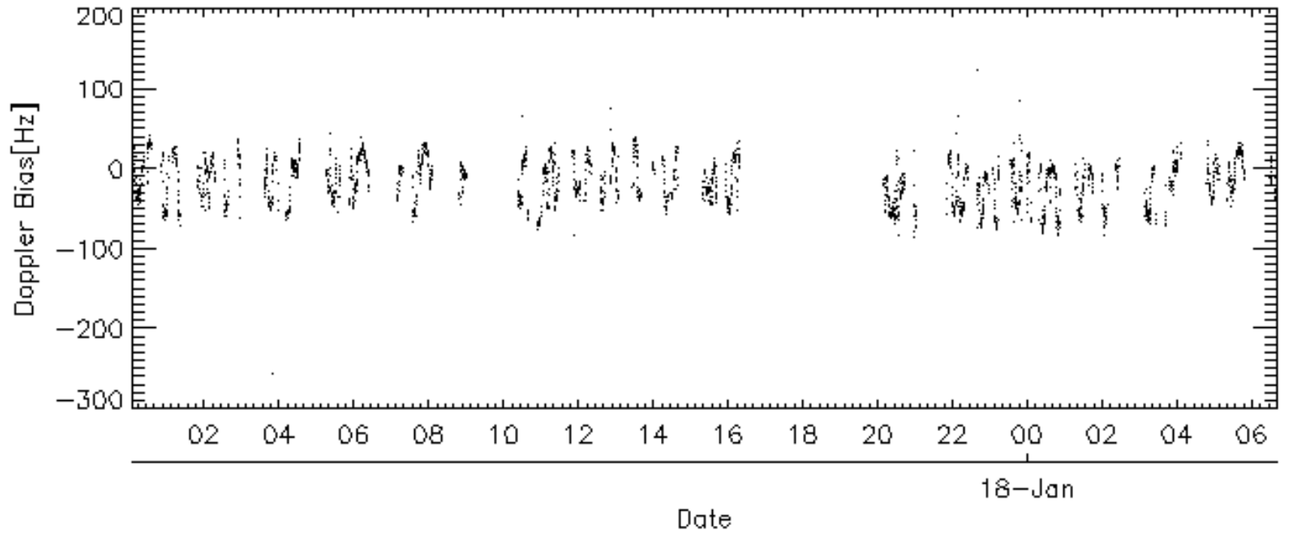

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

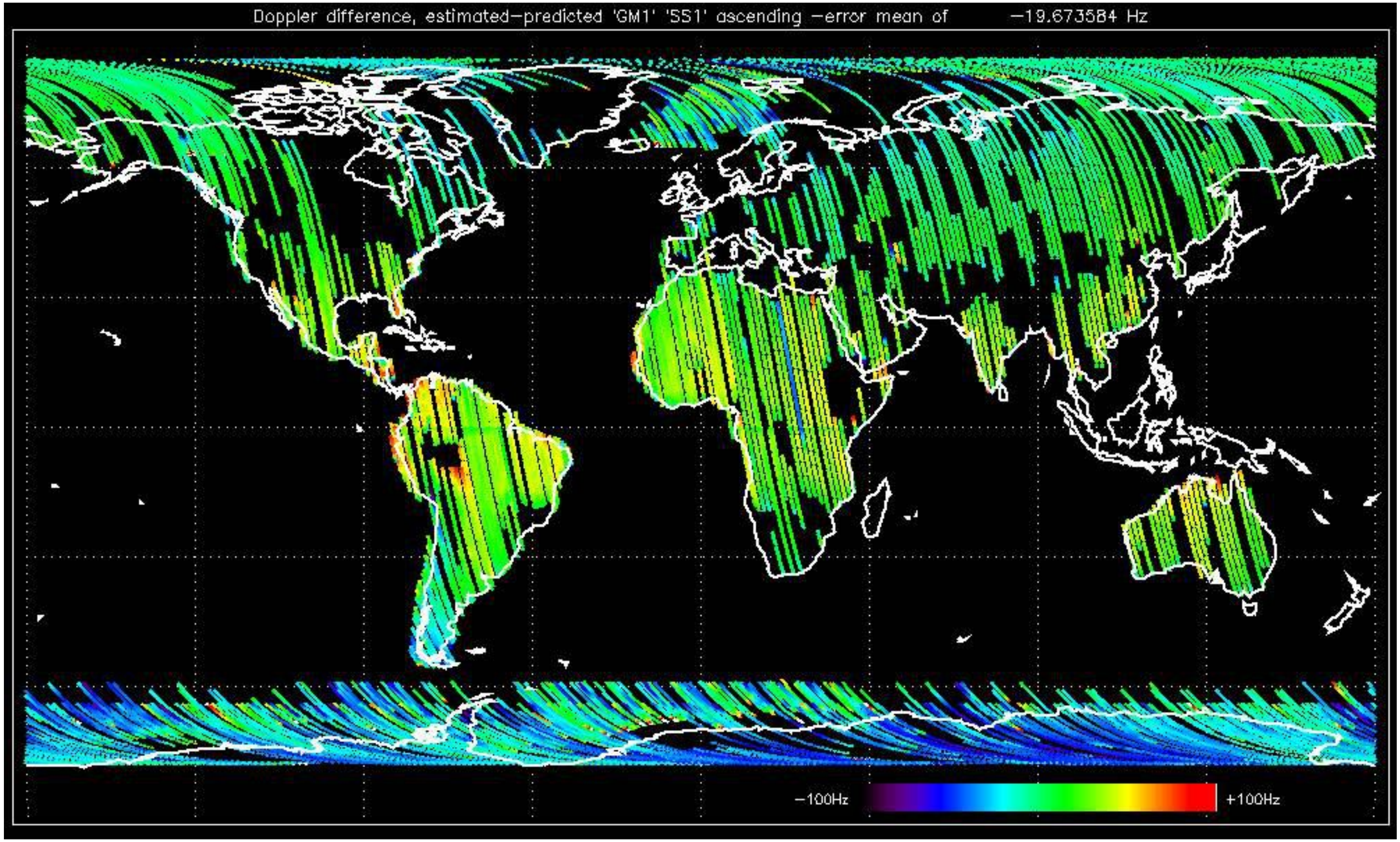

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

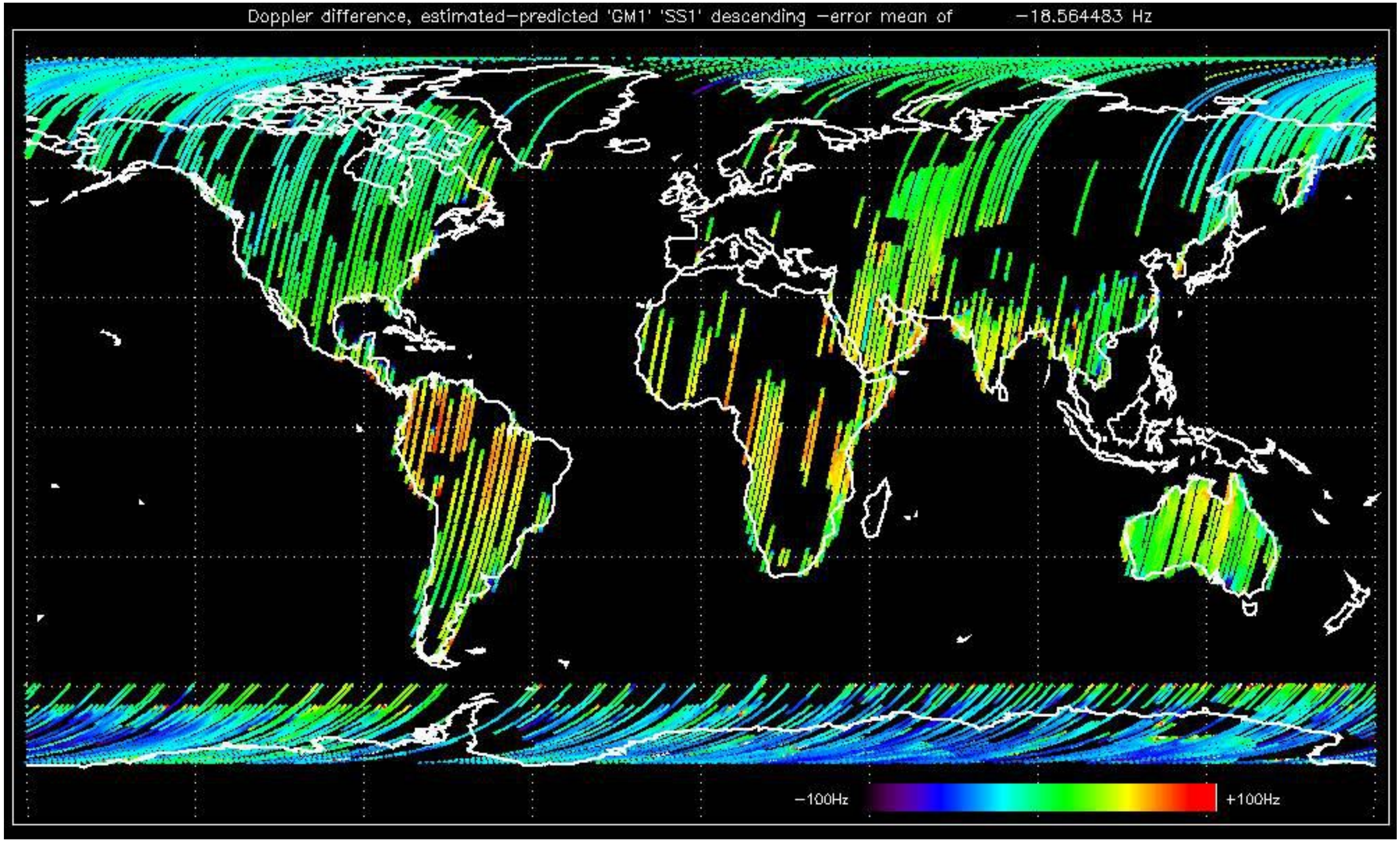

Doppler Bias[Hz]
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
18−Jan
Date

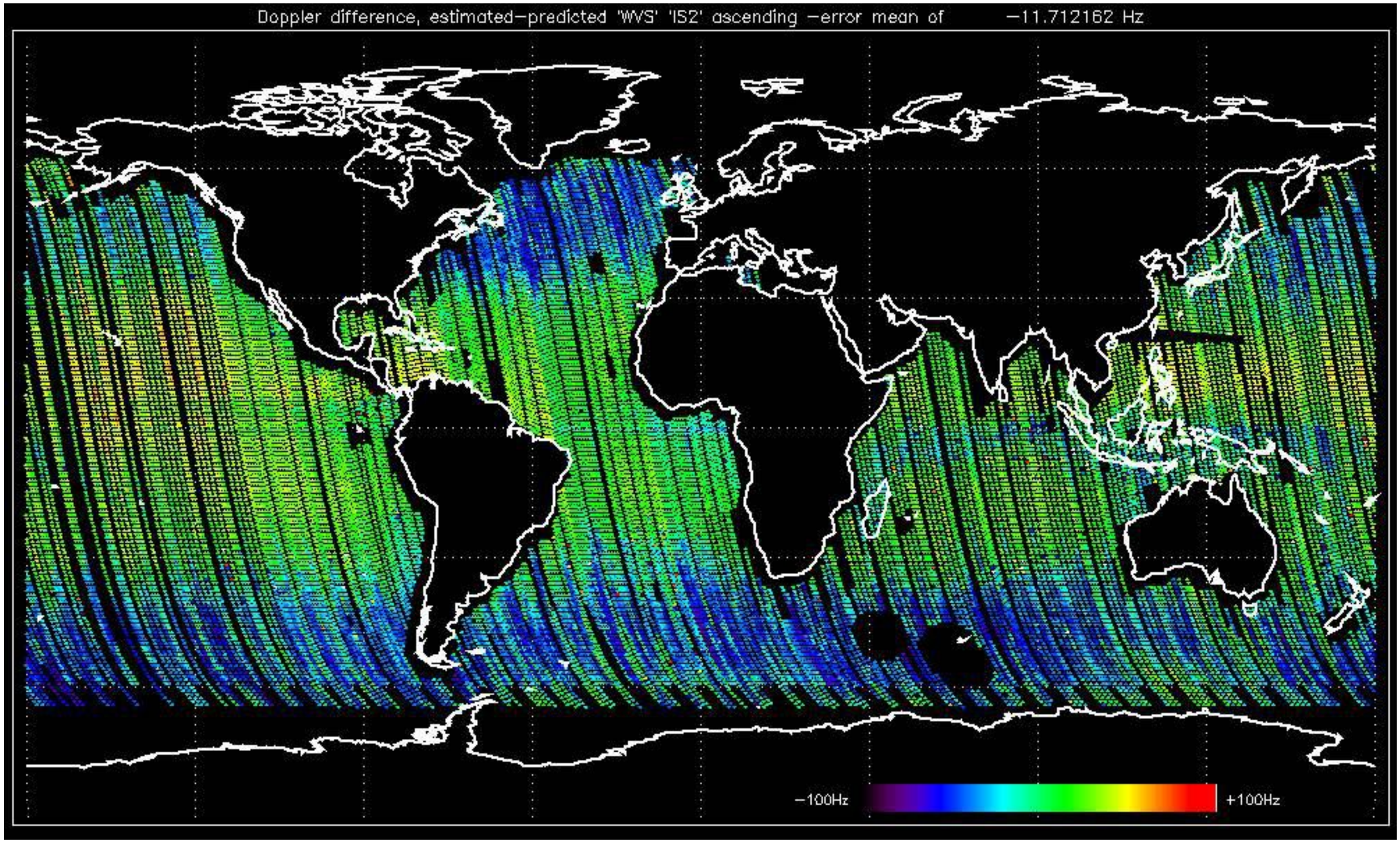

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

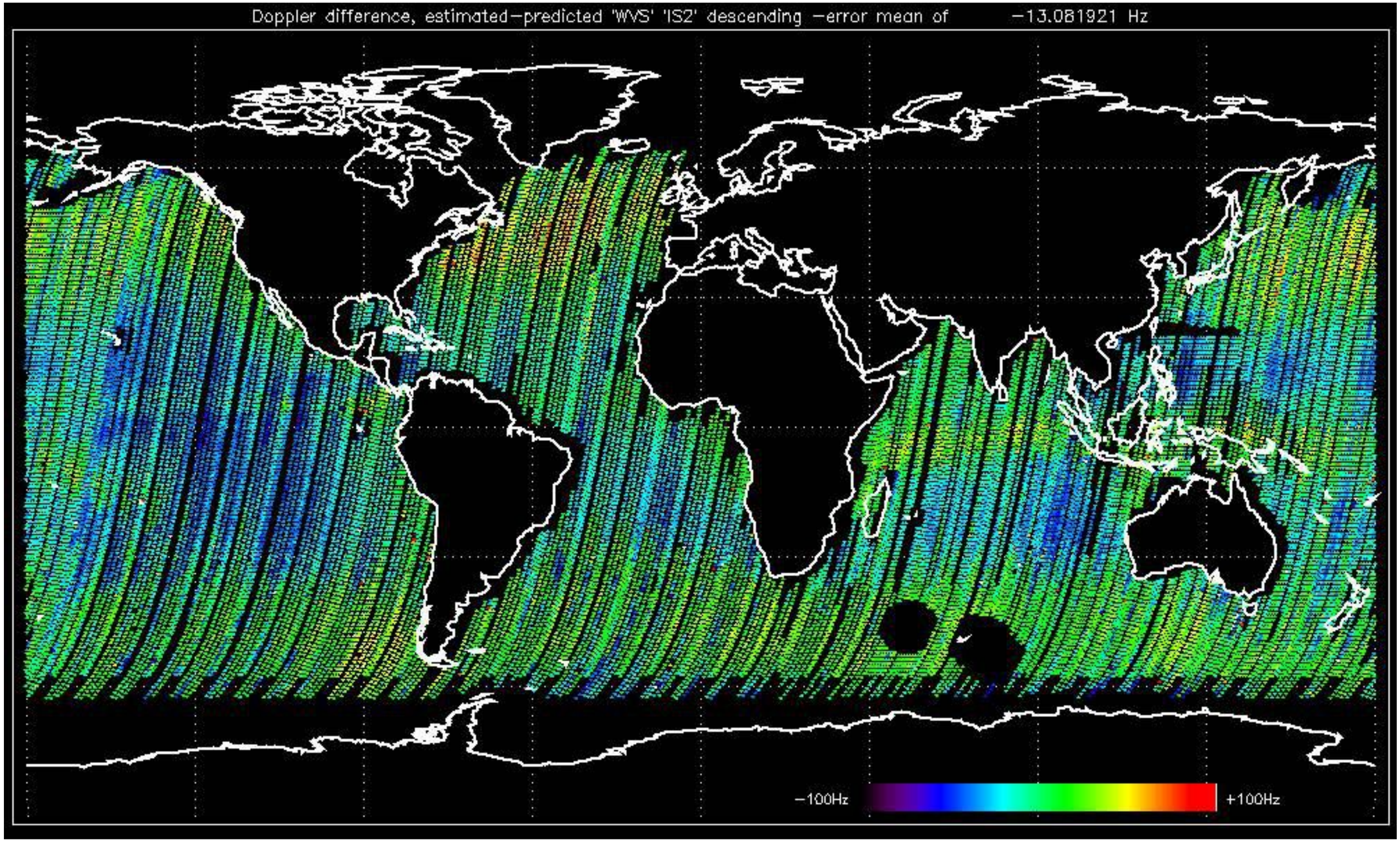

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −19.673584 Hz
−100Hz
+100Hz

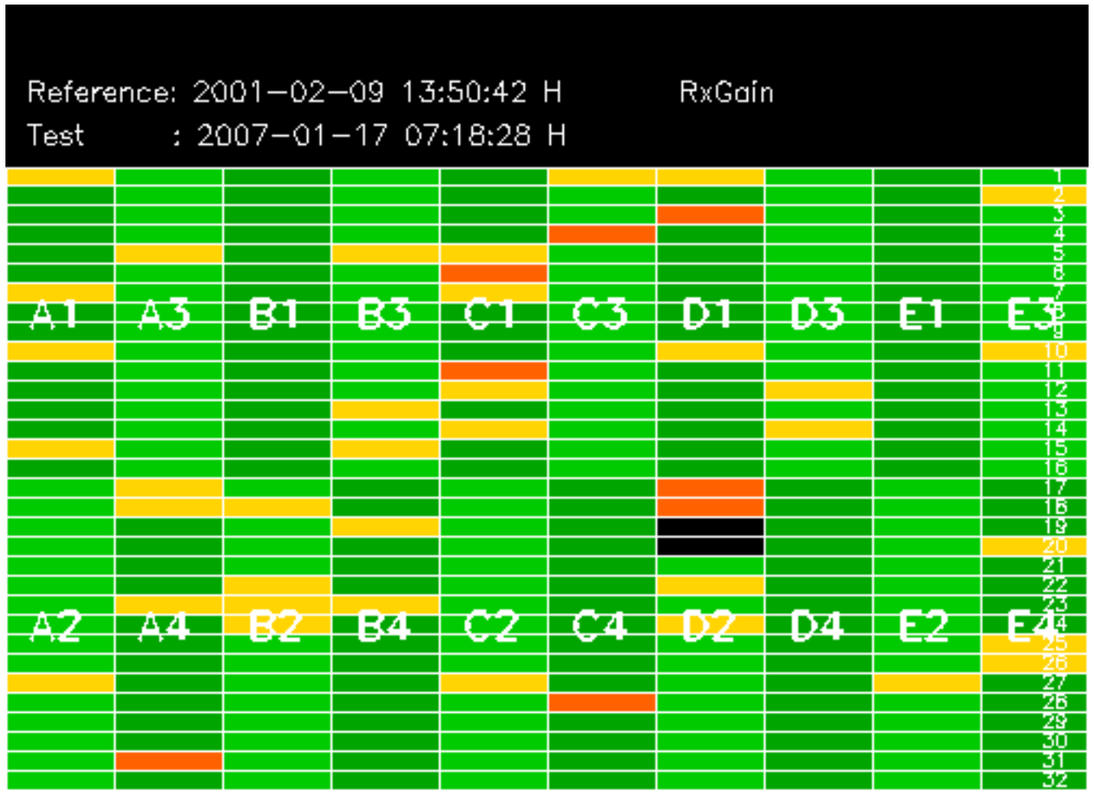

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −18.564483 Hz
−100Hz
+100Hz

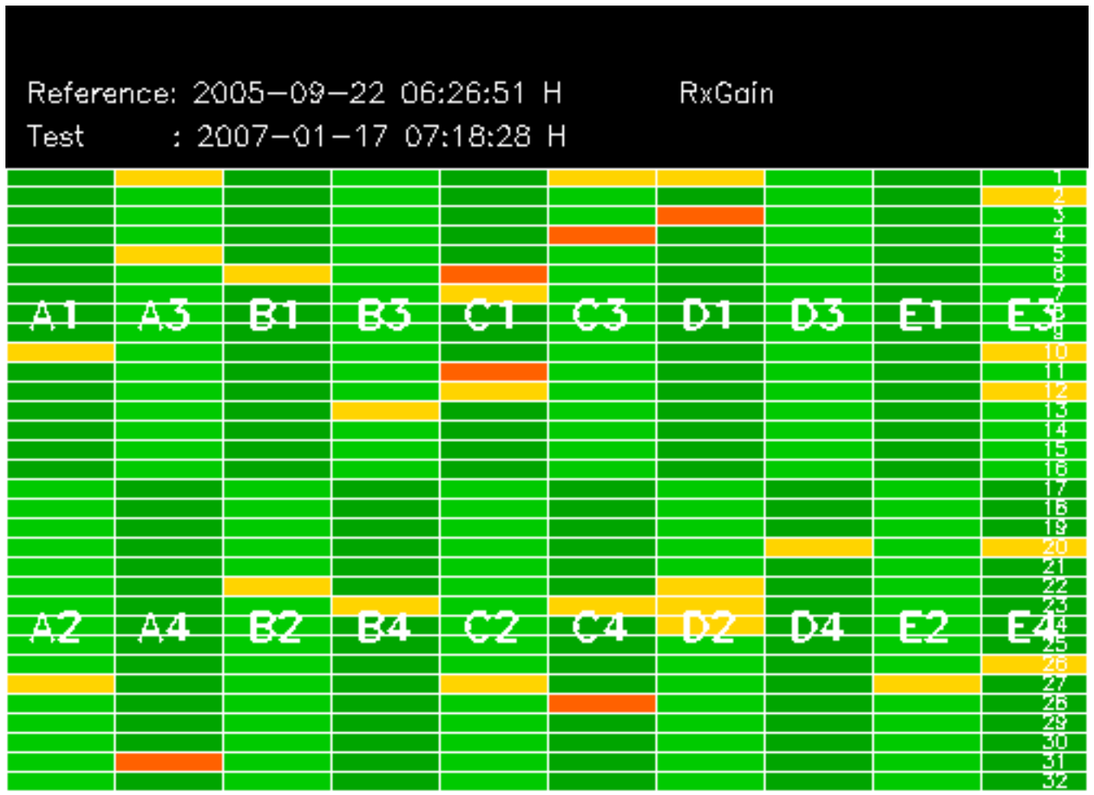

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −11.712162 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −13.081921 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-17 07:18:28 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-17 07:18:28 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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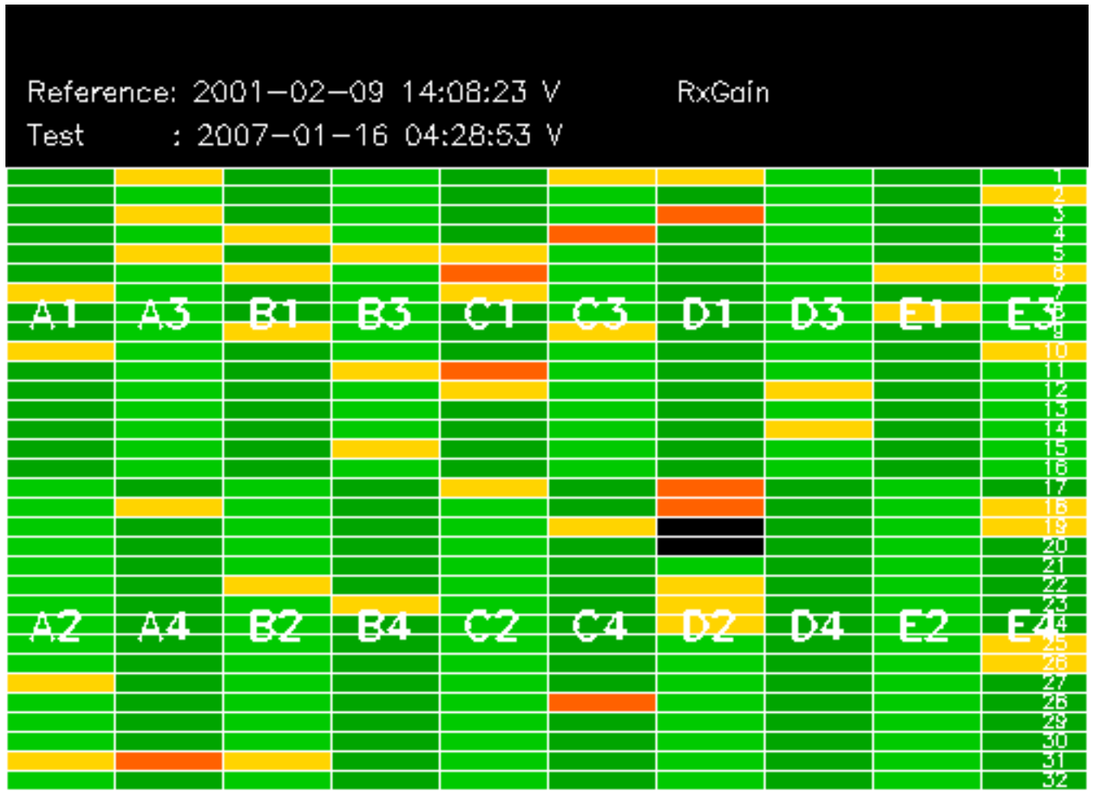
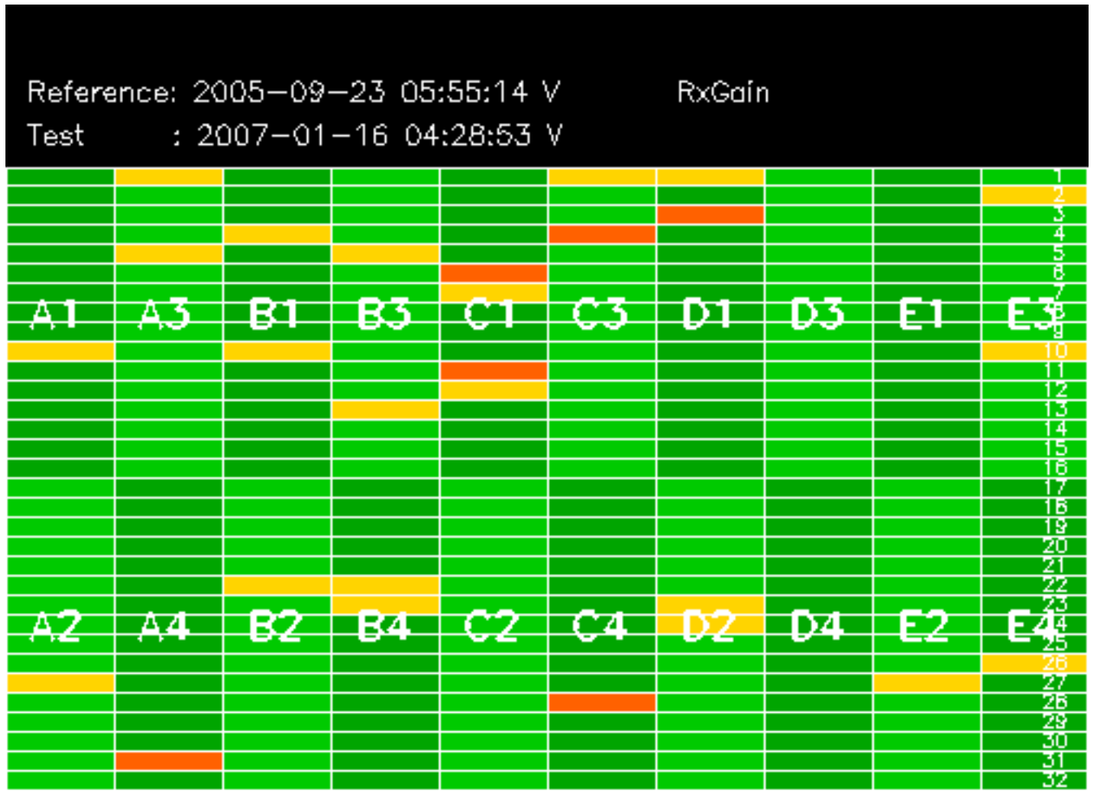

Reference: 2001-02-09 14:08:23 V
Test : 2007-01-16 04:28:53 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-01-16 04:28:53 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
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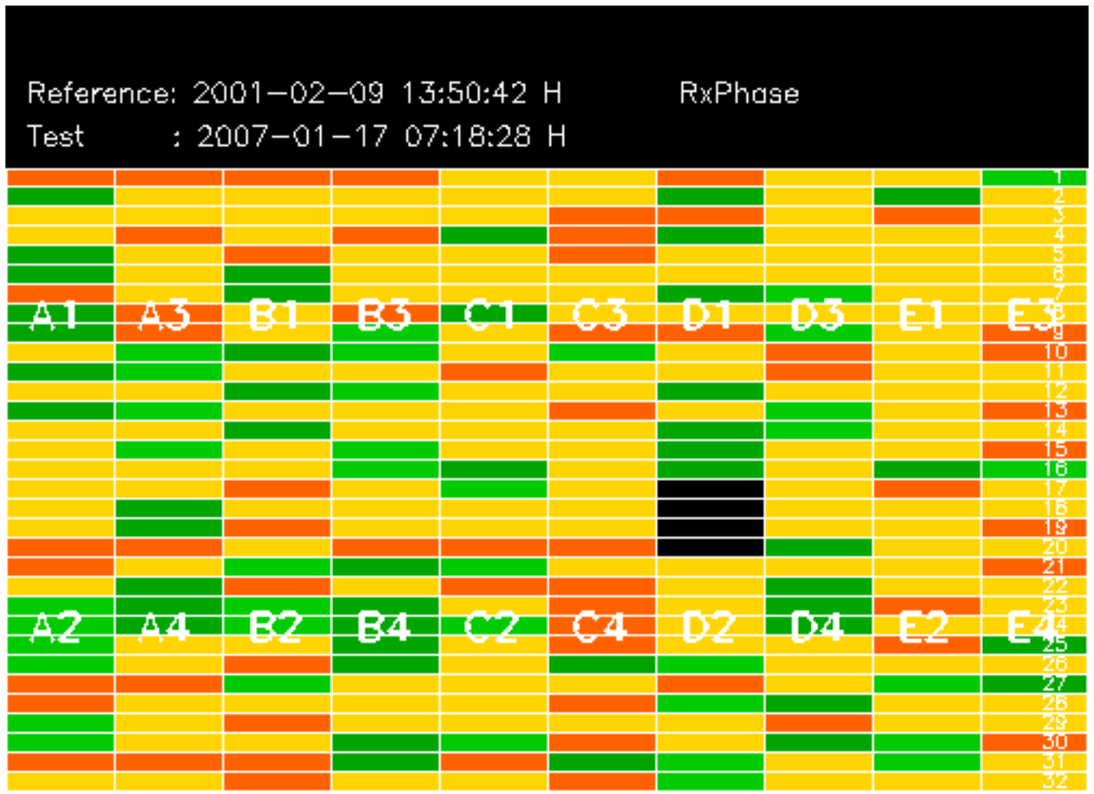
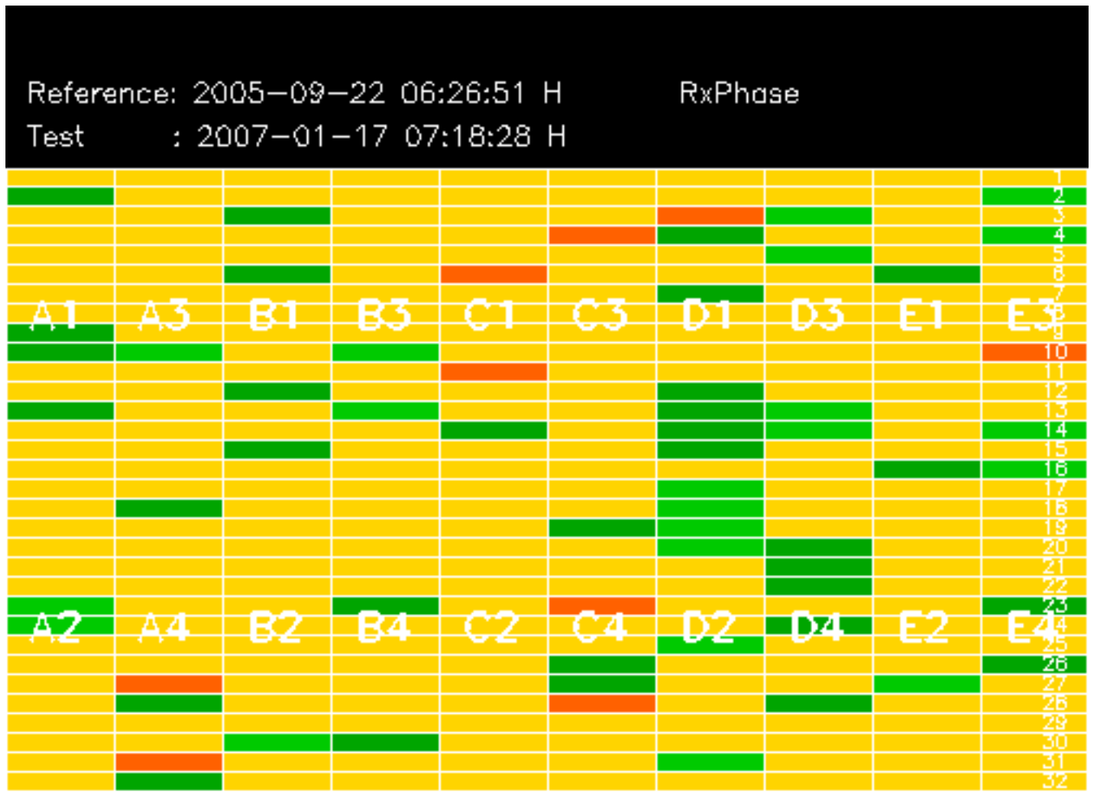
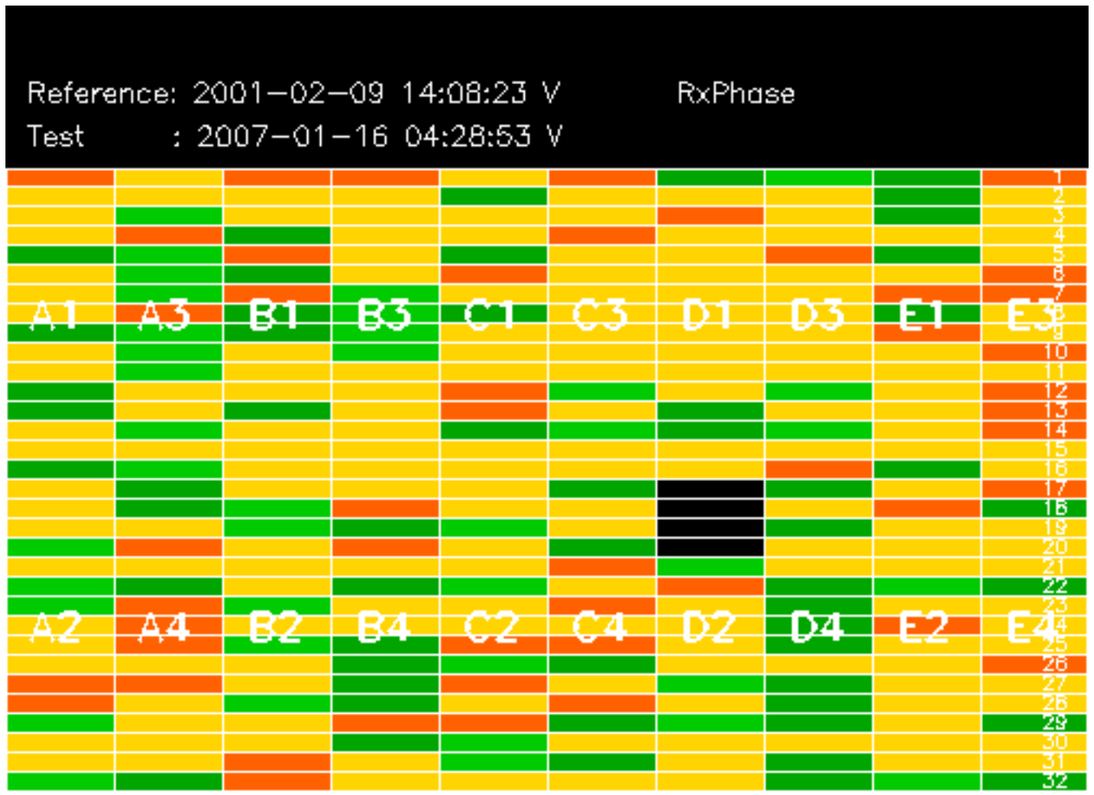
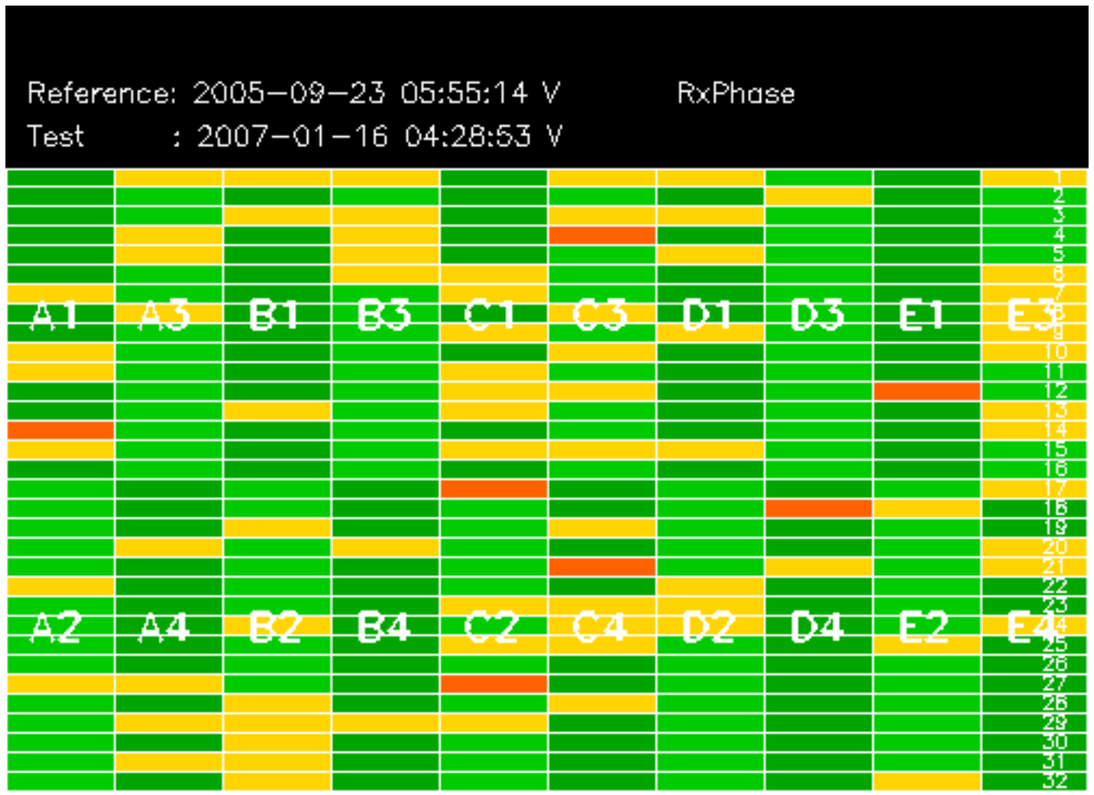

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-01-17 07:18:28 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-17 07:18:28 H
RxPhase
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 : 2007-01-16 04:28:53 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-01-16 04:28:53 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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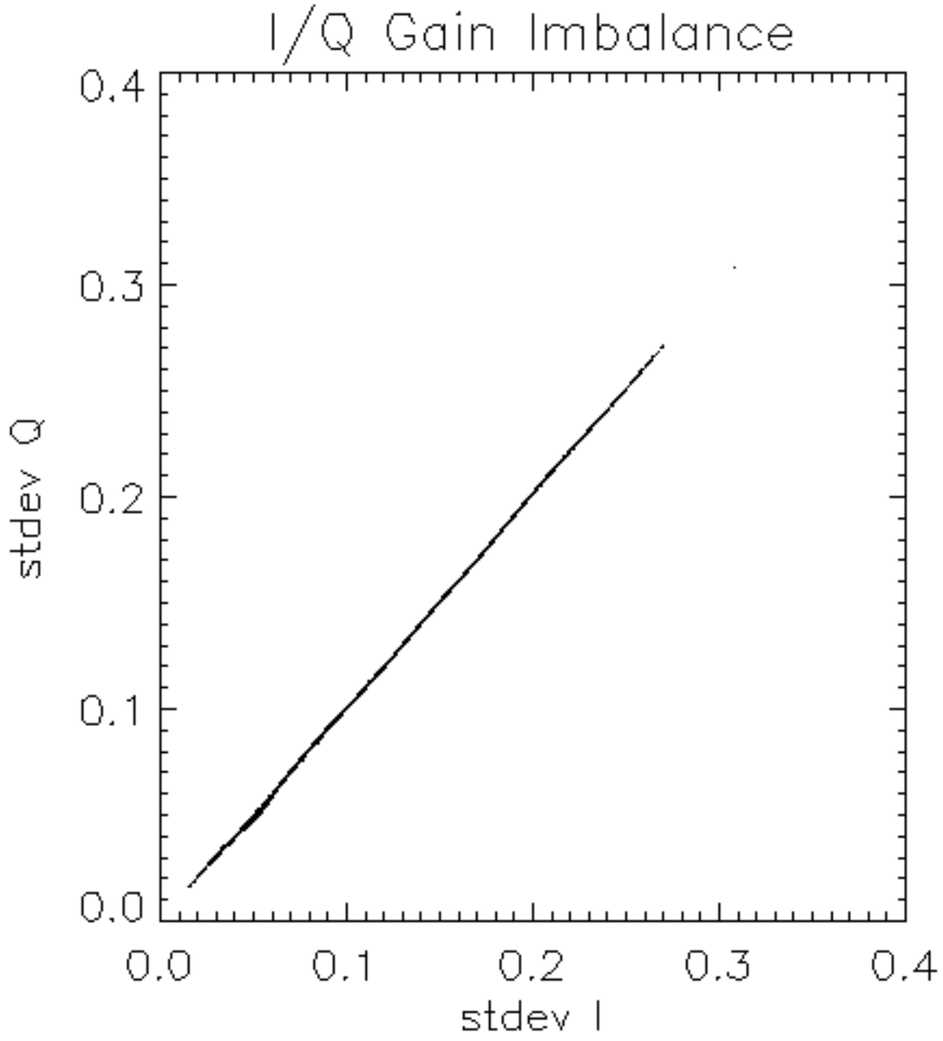
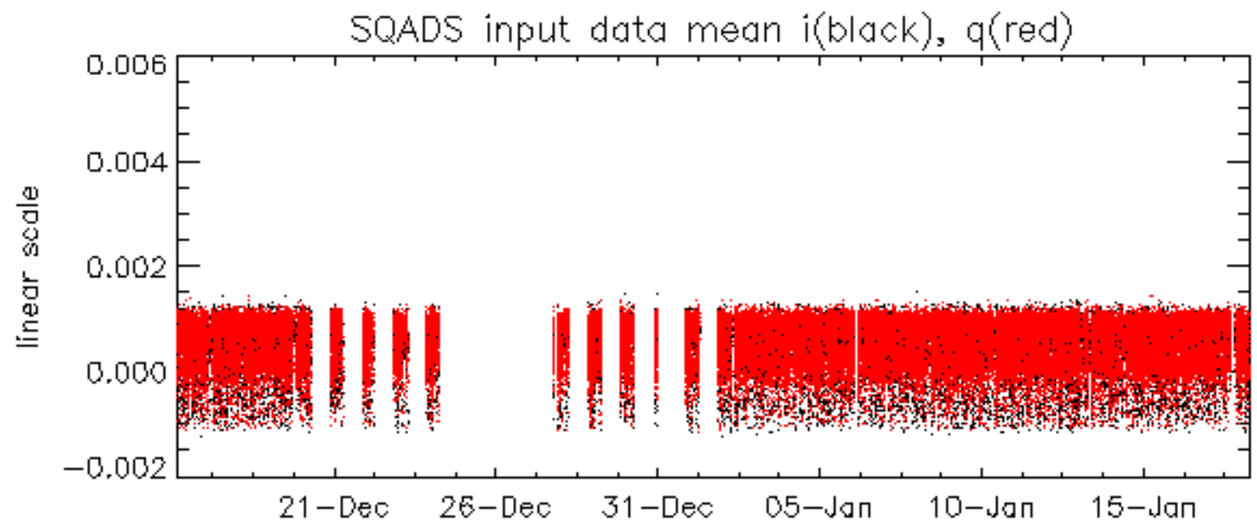
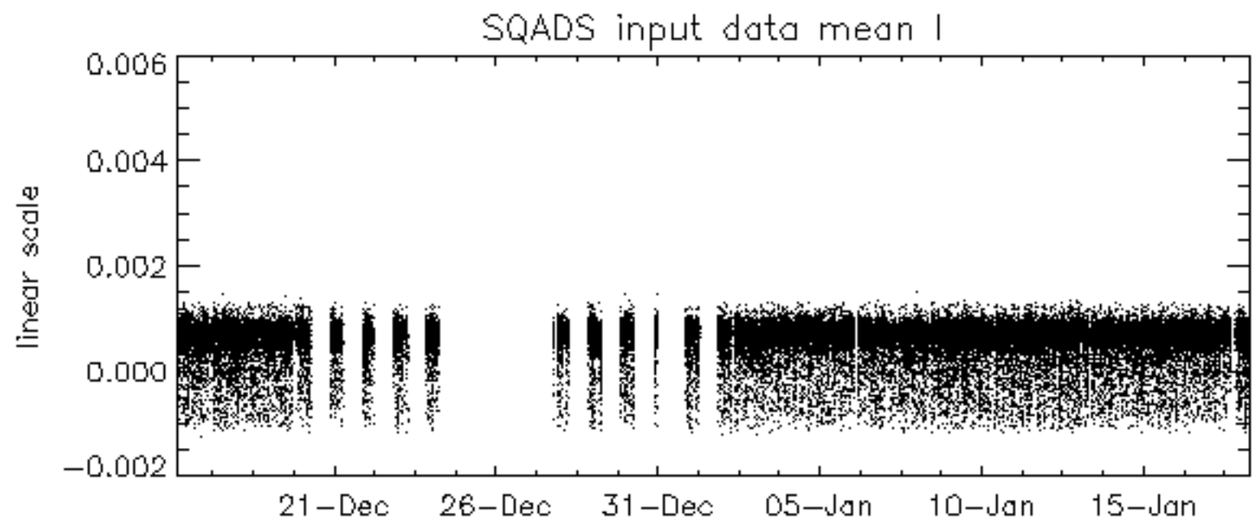
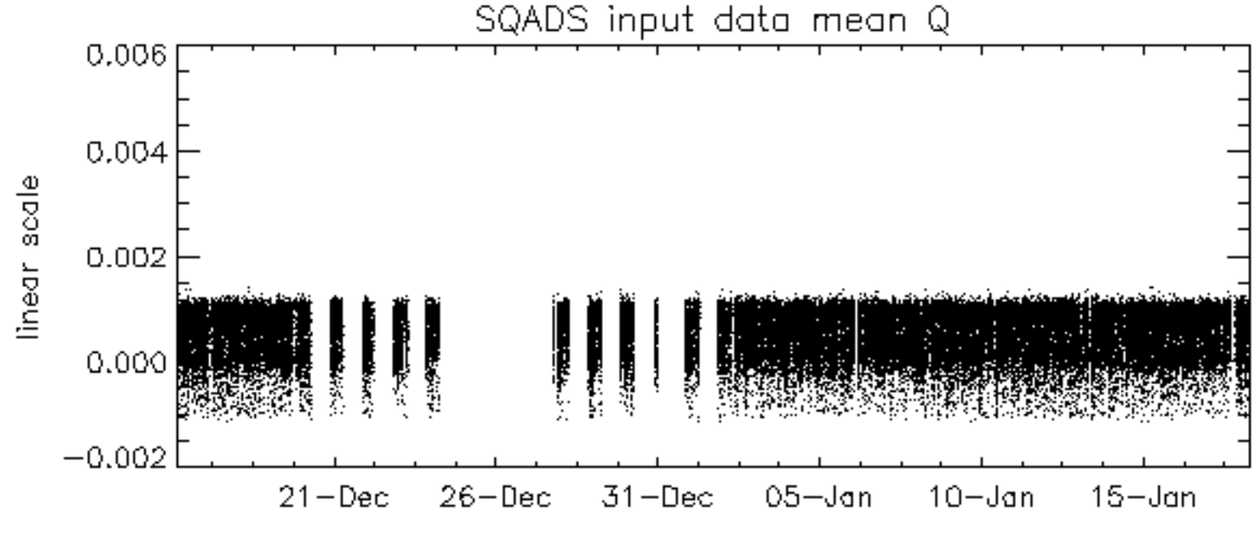
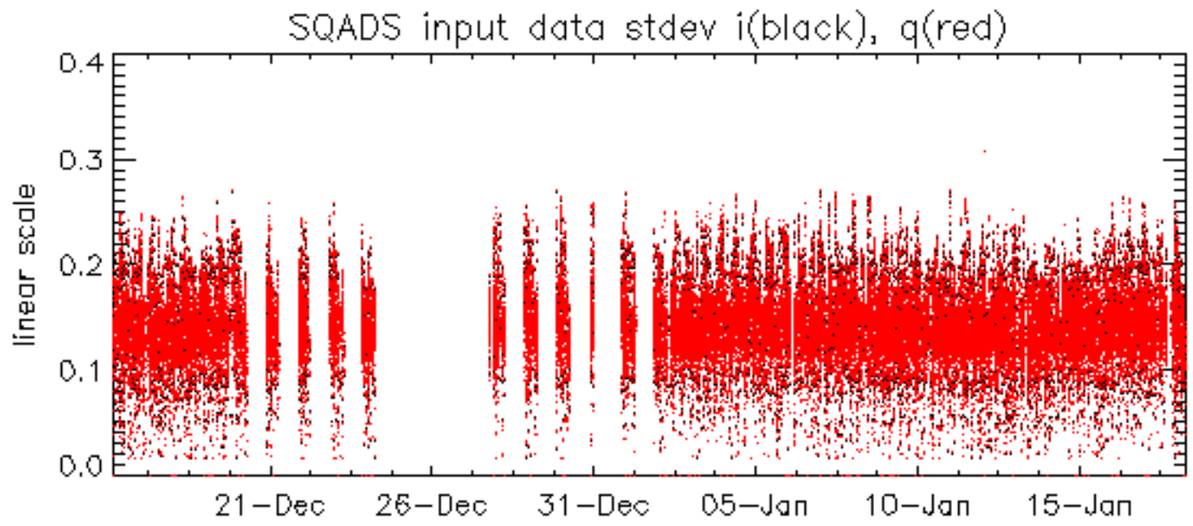
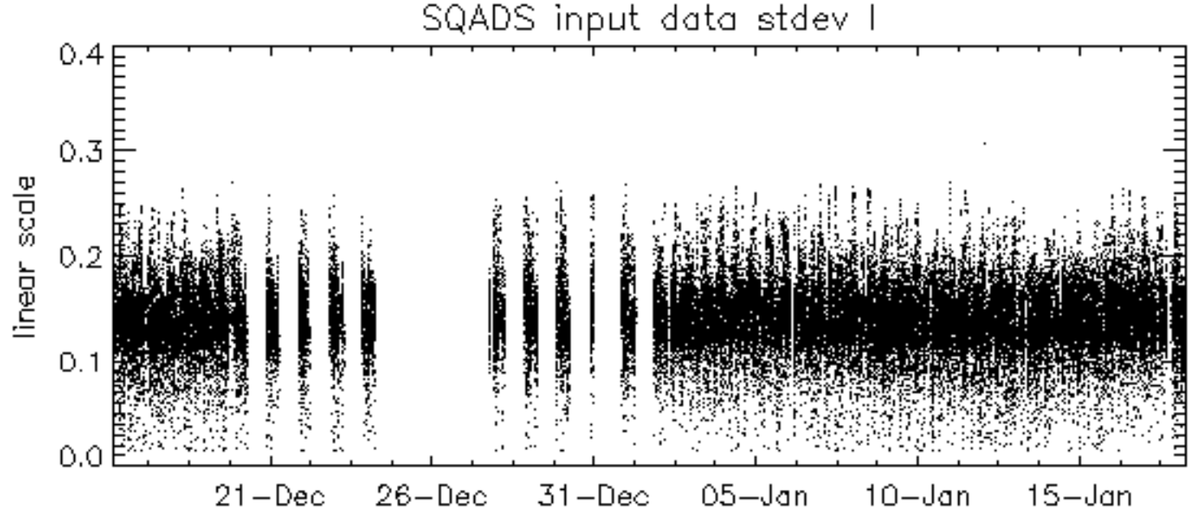

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

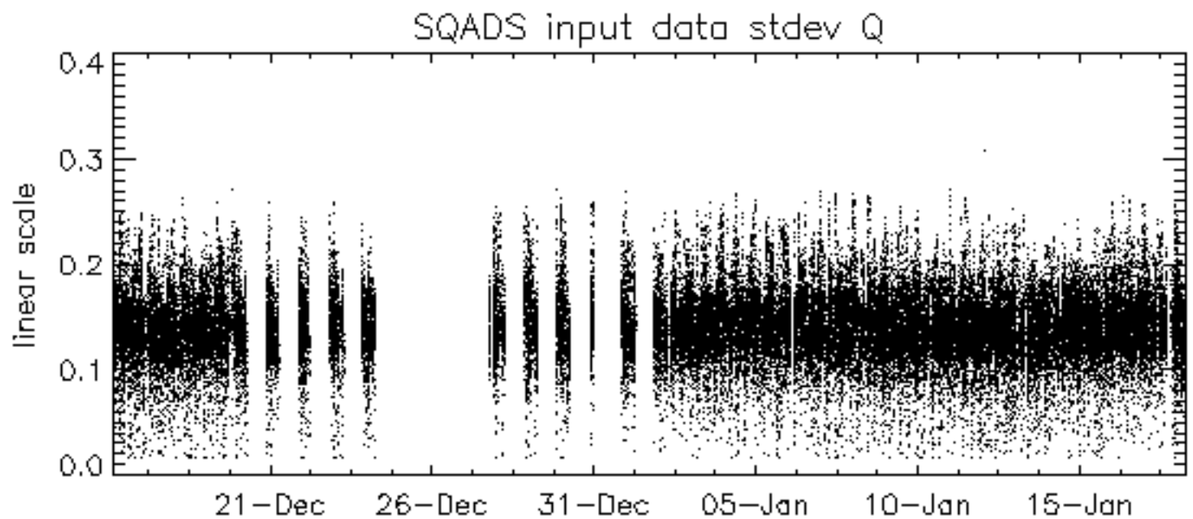

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

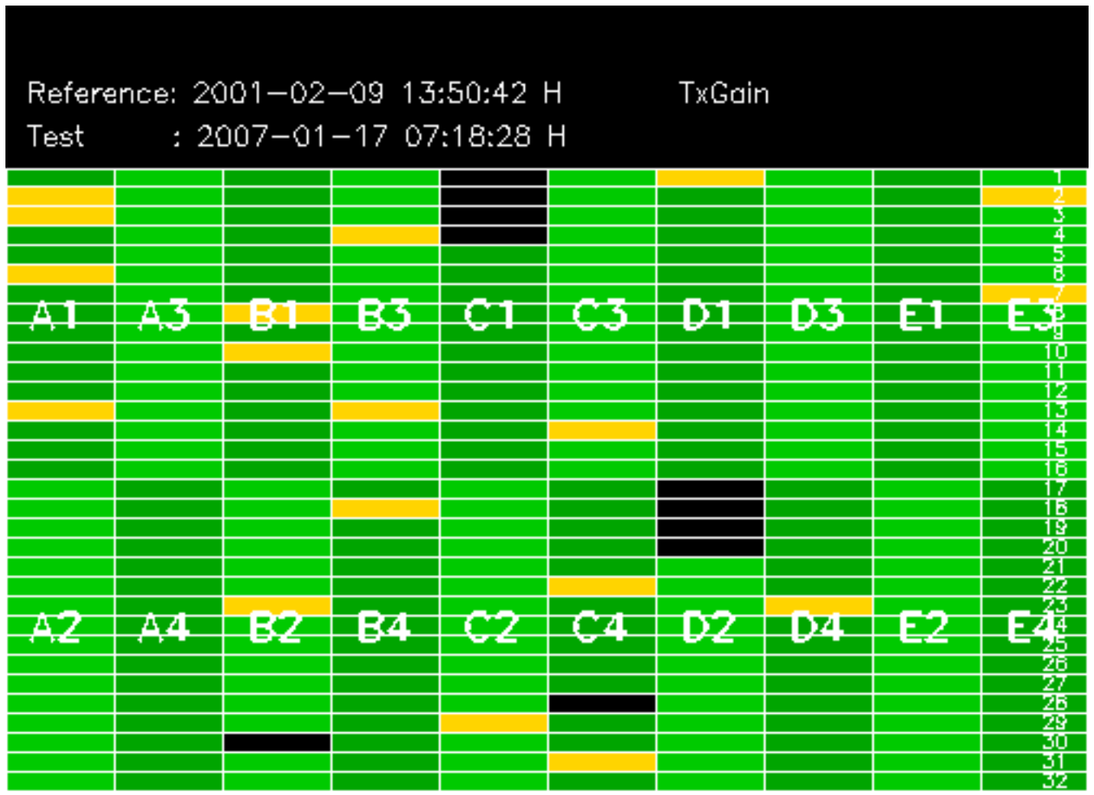

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan

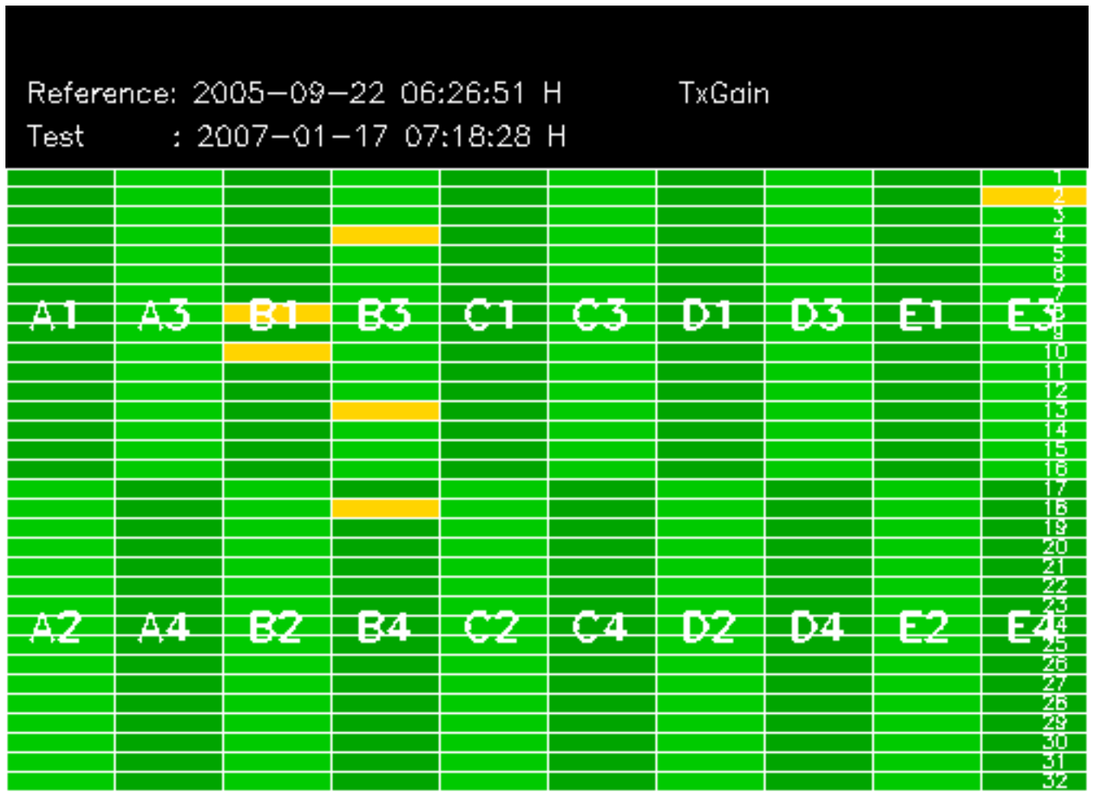

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan


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


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-17 07:18:28 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-17 07:18:28 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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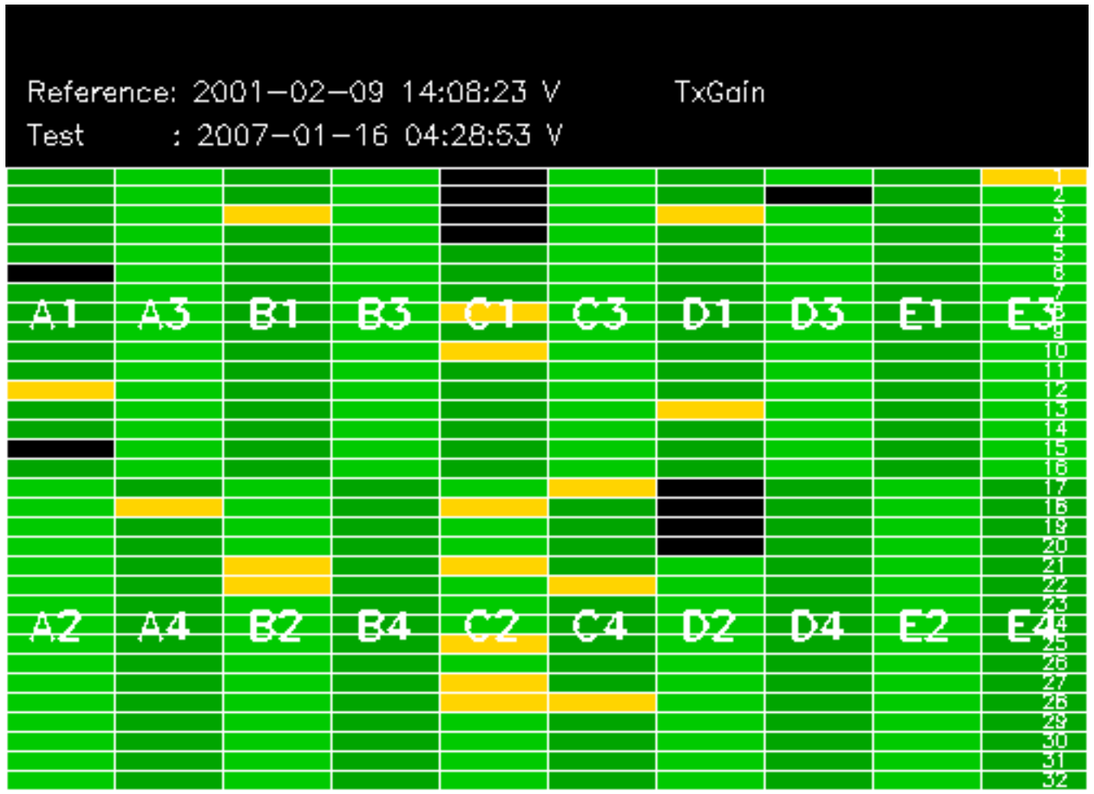
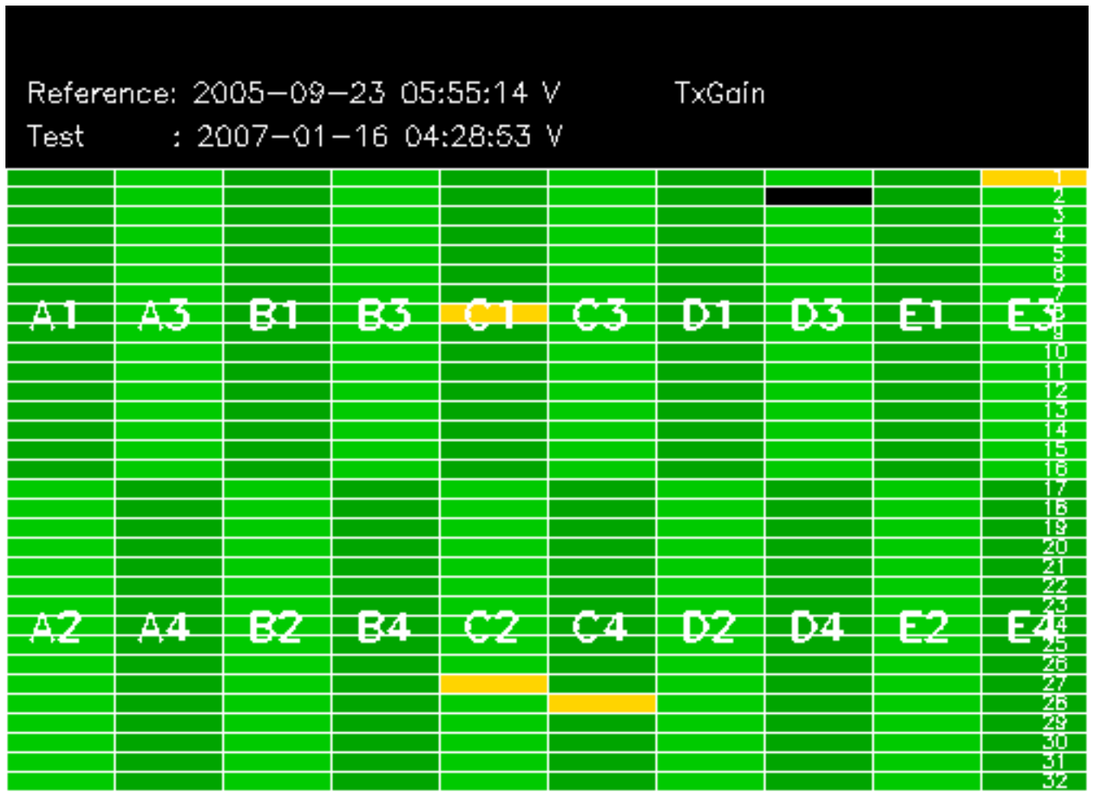

Reference: 2001-02-09 14:08:23 V
Test : 2007-01-16 04:28:53 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-01-16 04:28:53 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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Summary of analysis for the last 3 days 2007011[678]
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_1PNPDK20070116_183117_000003082054_00414_25518_9835.N1 </td> <td>0 </td> <td>19 </td></tr>
<tr> <td>ASA_GM1_1PNPDK20070117_094938_000006882054_00423_25527_0743.N1 </td> <td>0 </td> <td>7 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070116_150734_000001762054_00412_25516_9712.N1 </td> <td>0 </td> <td>36 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070117_134134_000000862054_00425_25529_0974.N1 </td> <td>0 </td> <td>45 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070117_154858_000000612054_00426_25530_0950.N1 </td> <td>50 </td> <td>13468 </td></tr>
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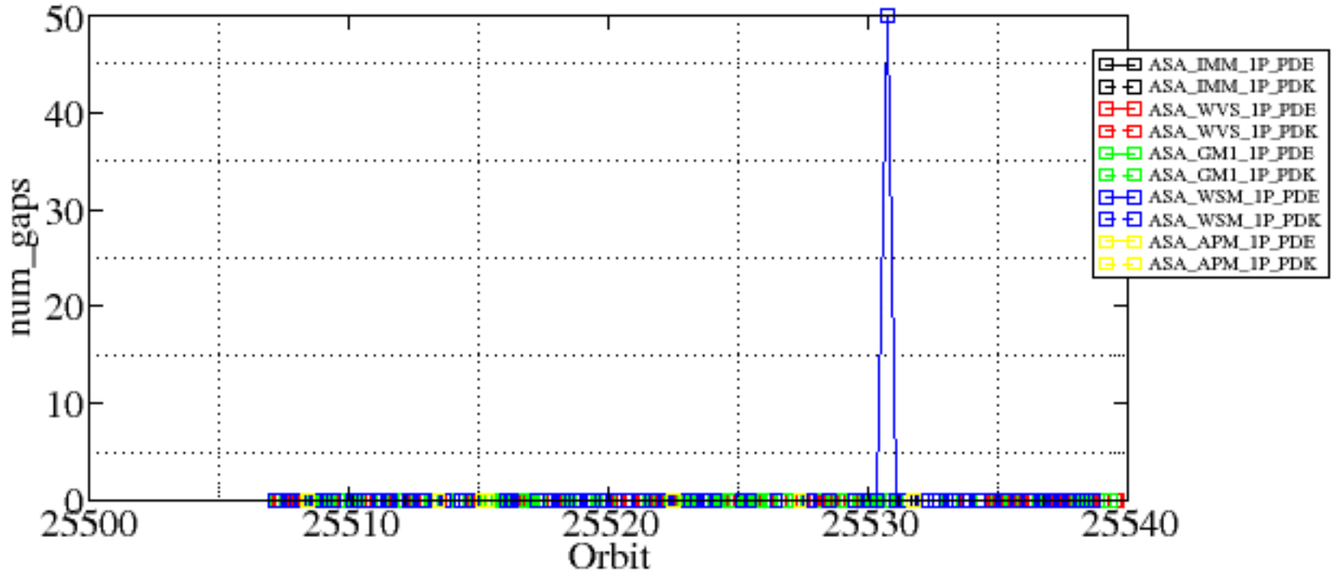
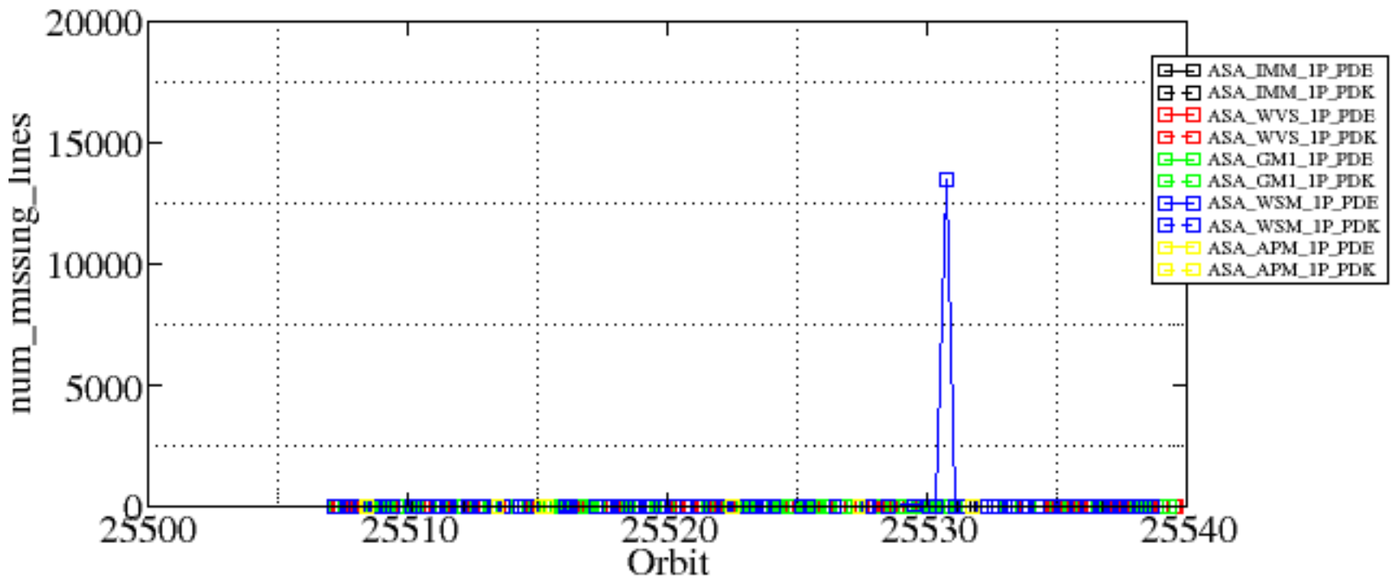
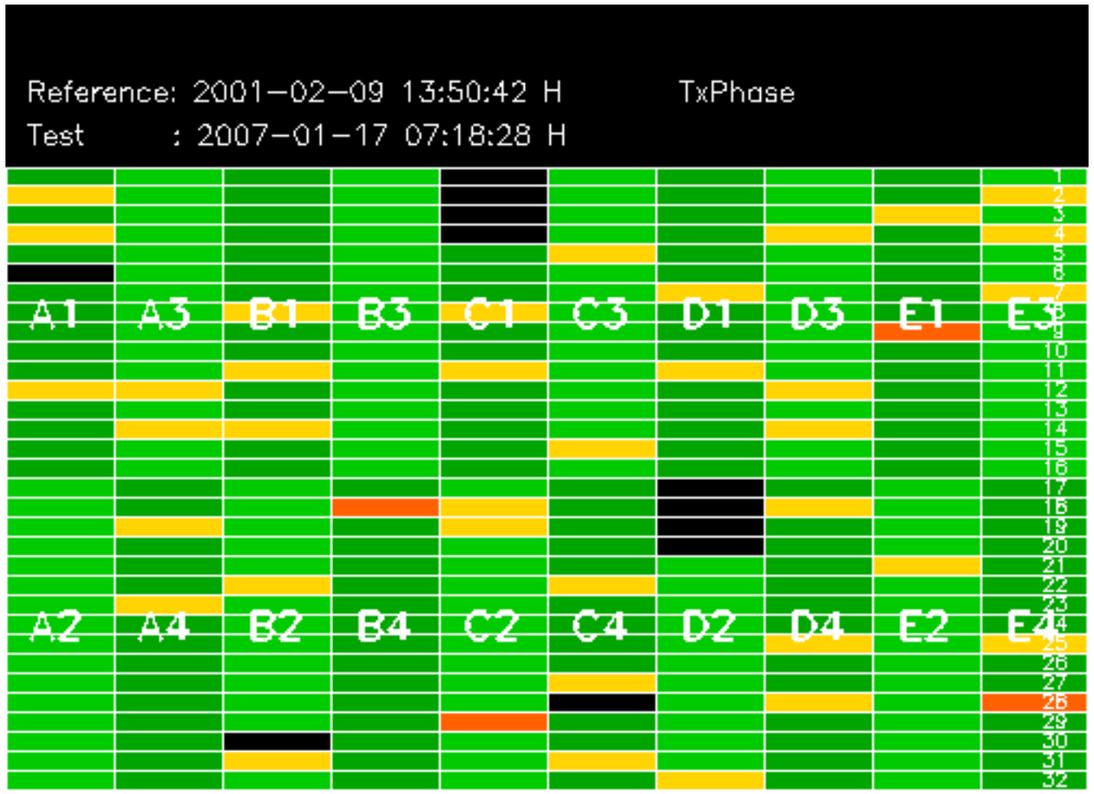
</table>


num_gaps
Orbit
50
40
30
20
10
0
25500
25510
25520
25530
25540
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
25500
25510
25520
25530
25540
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
Test : 2007-01-17 07:18:28 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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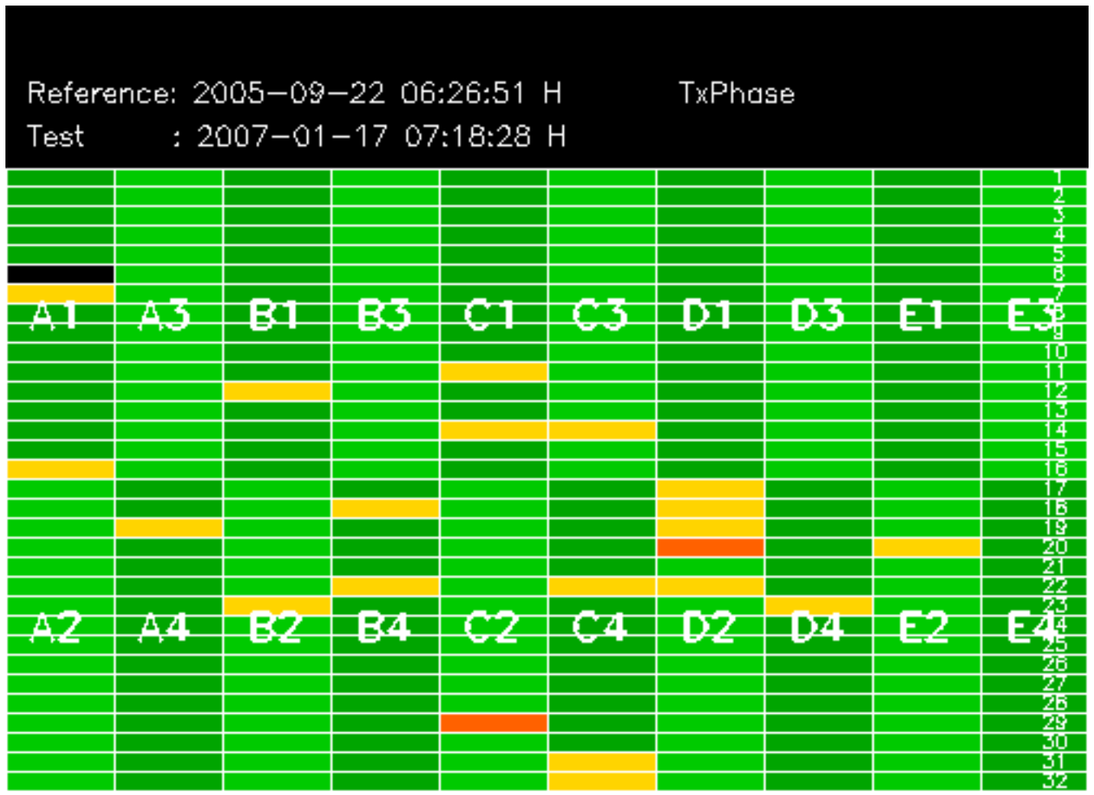
Reference: 2005-09-22 06:26:51 H
Test : 2007-01-17 07:18:28 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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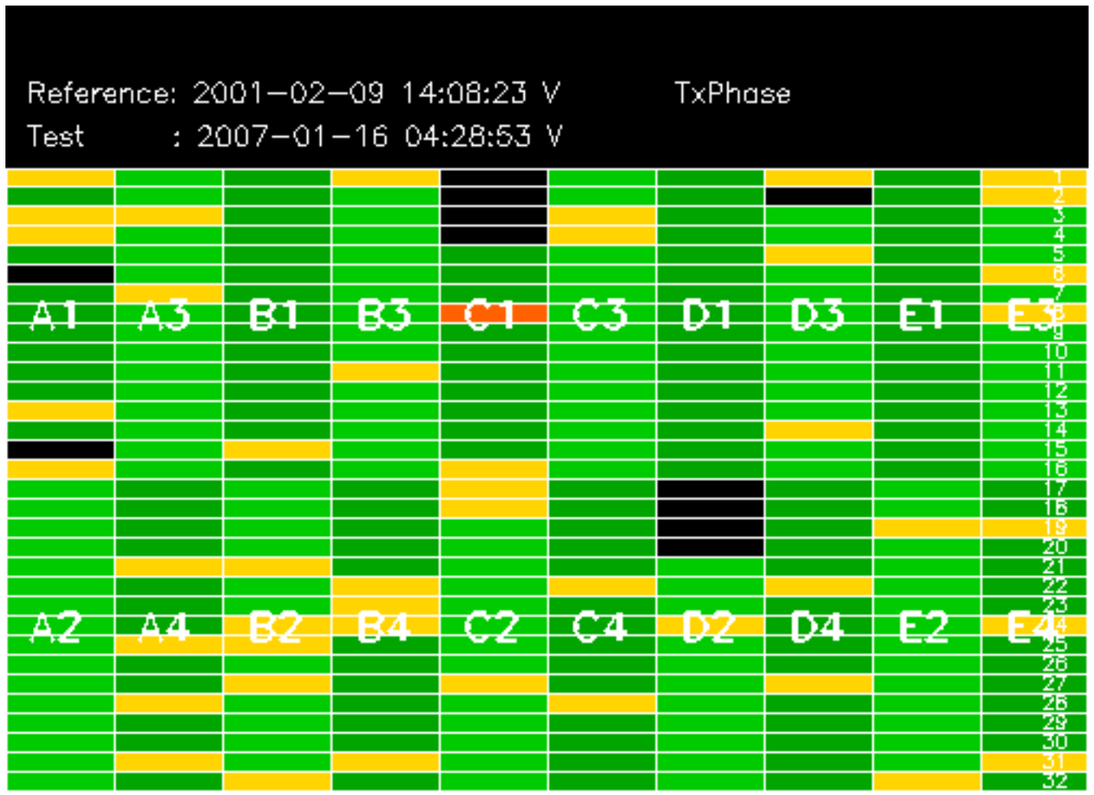
Reference: 2001-02-09 14:08:23 V
Test : 2007-01-16 04:28:53 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
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B4
C2
C4
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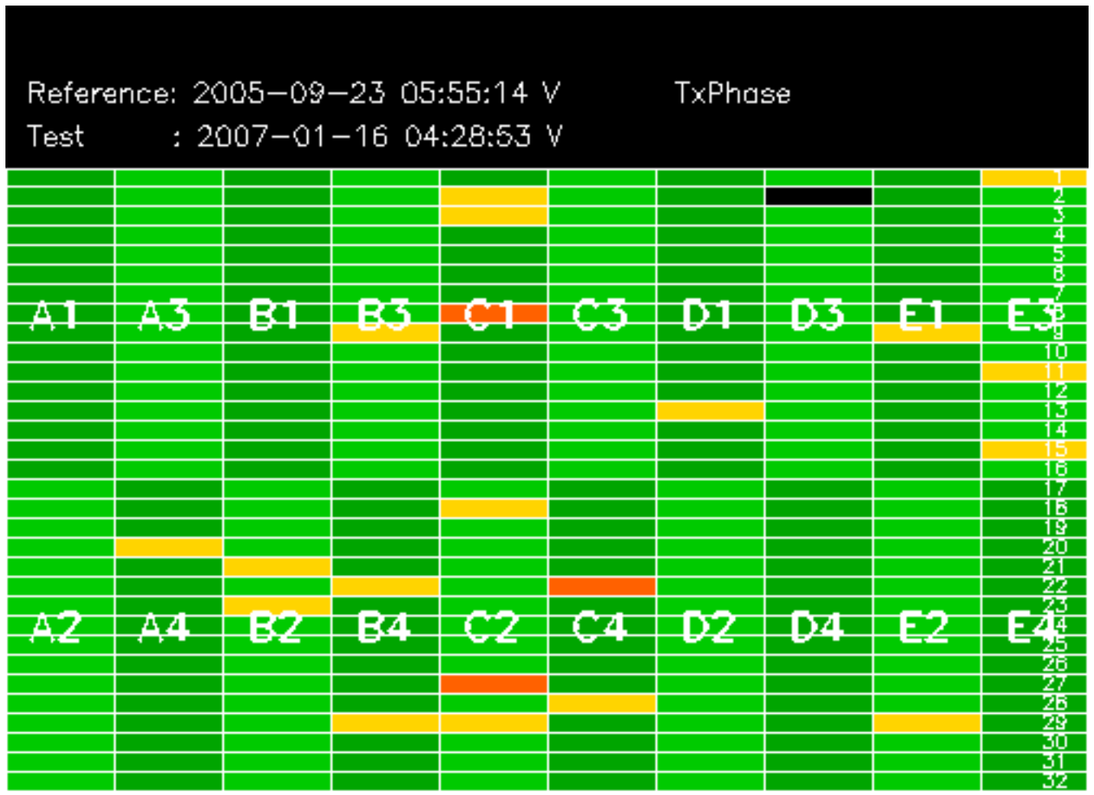
Reference: 2005-09-23 05:55:14 V
Test : 2007-01-16 04:28:53 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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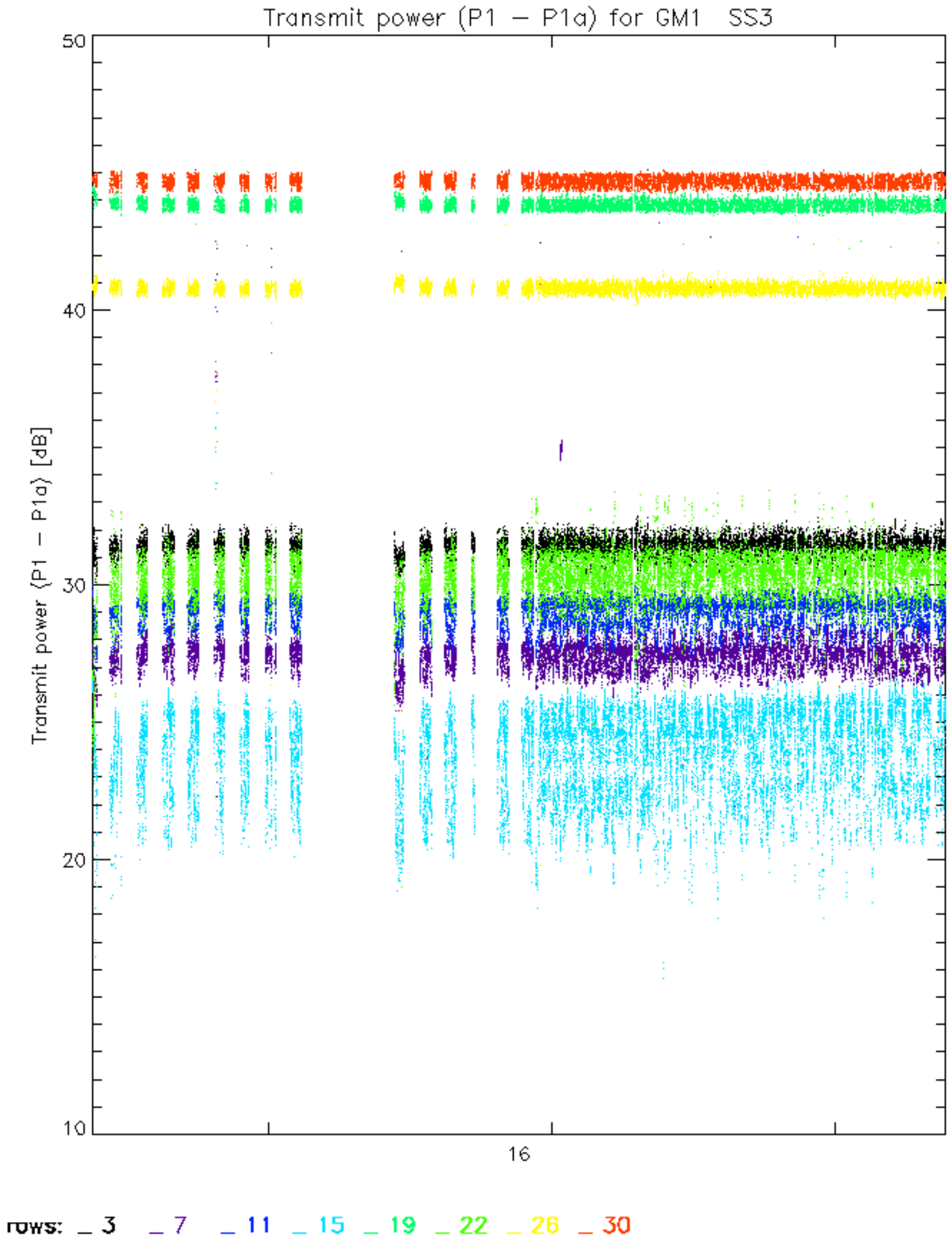
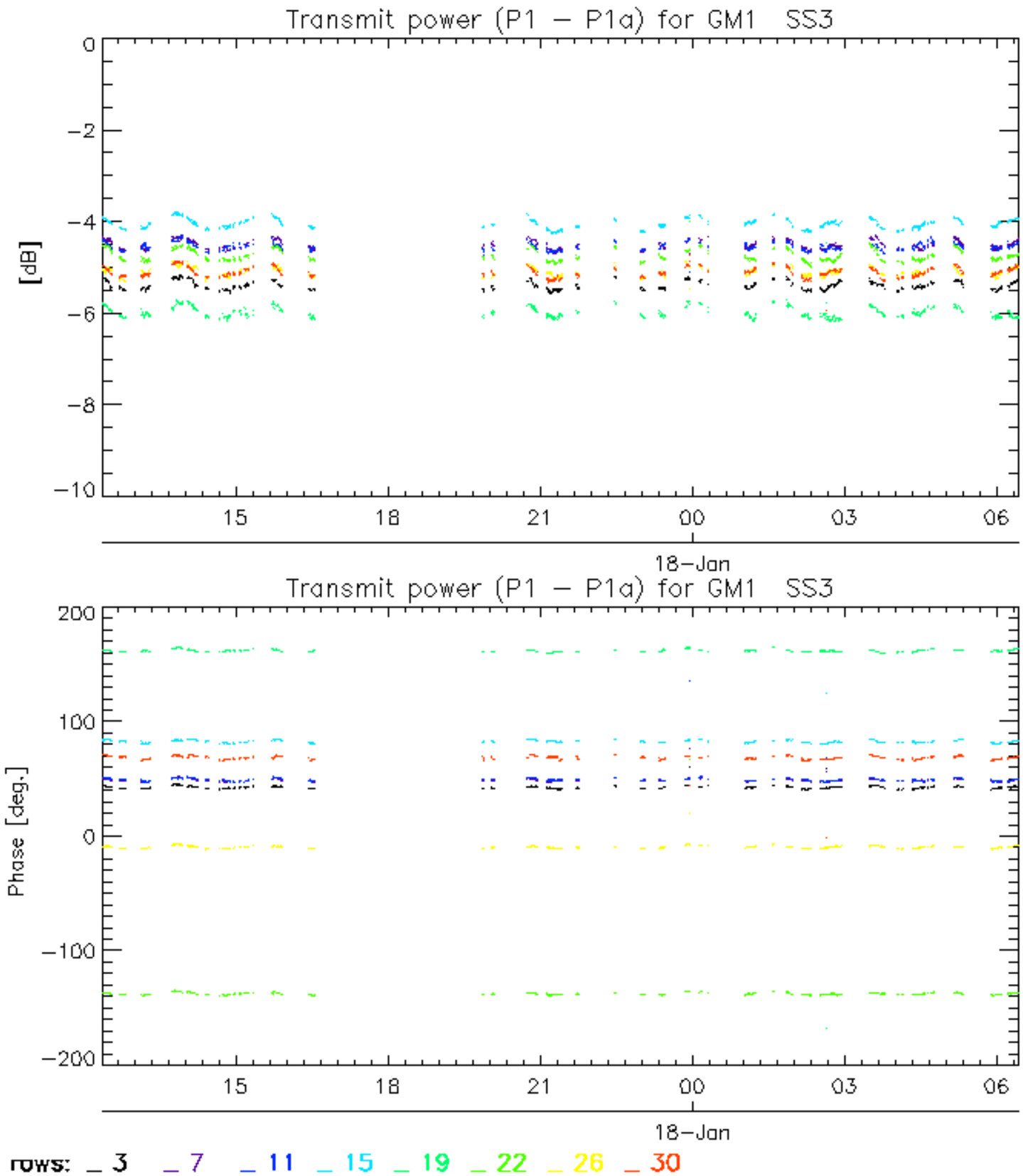
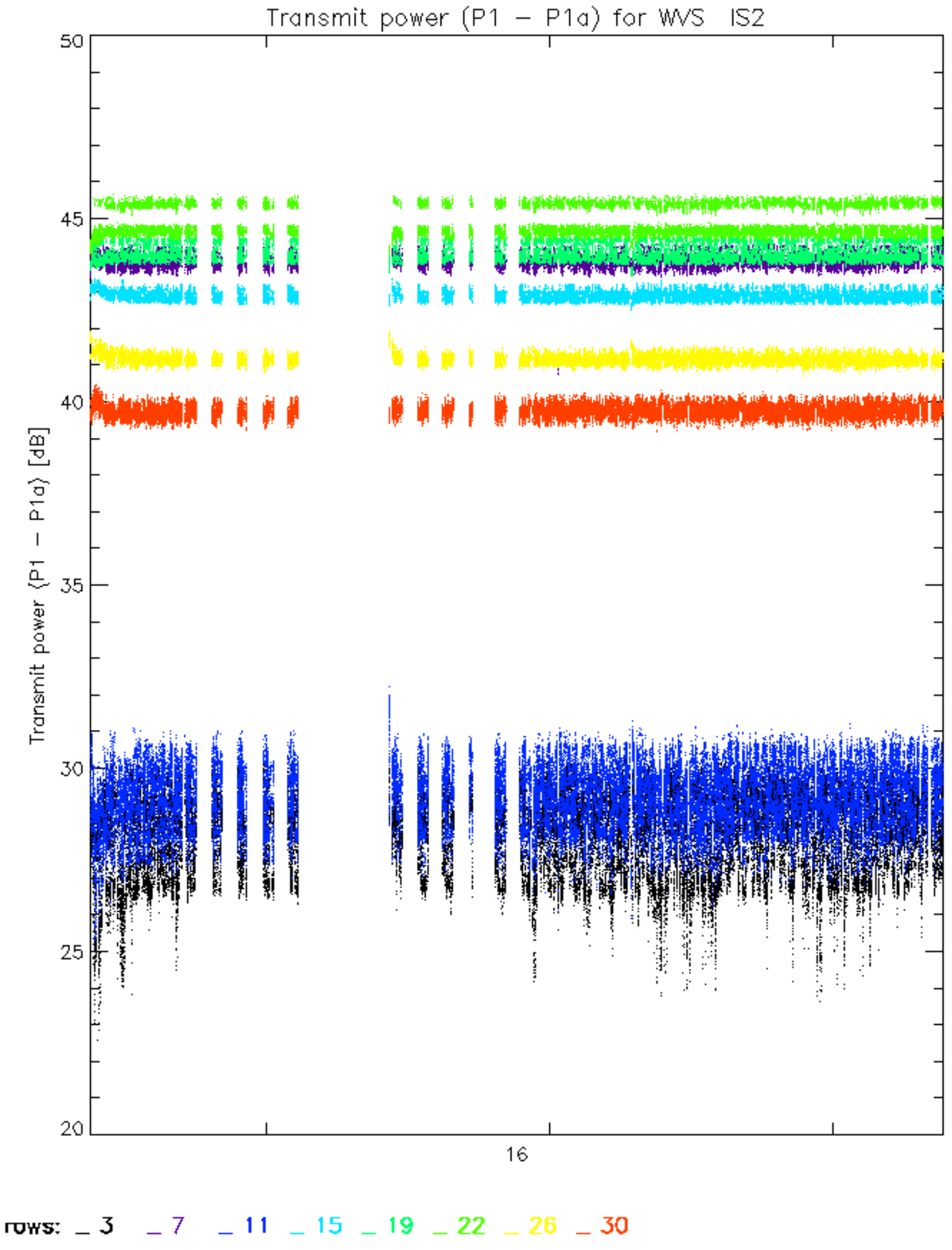
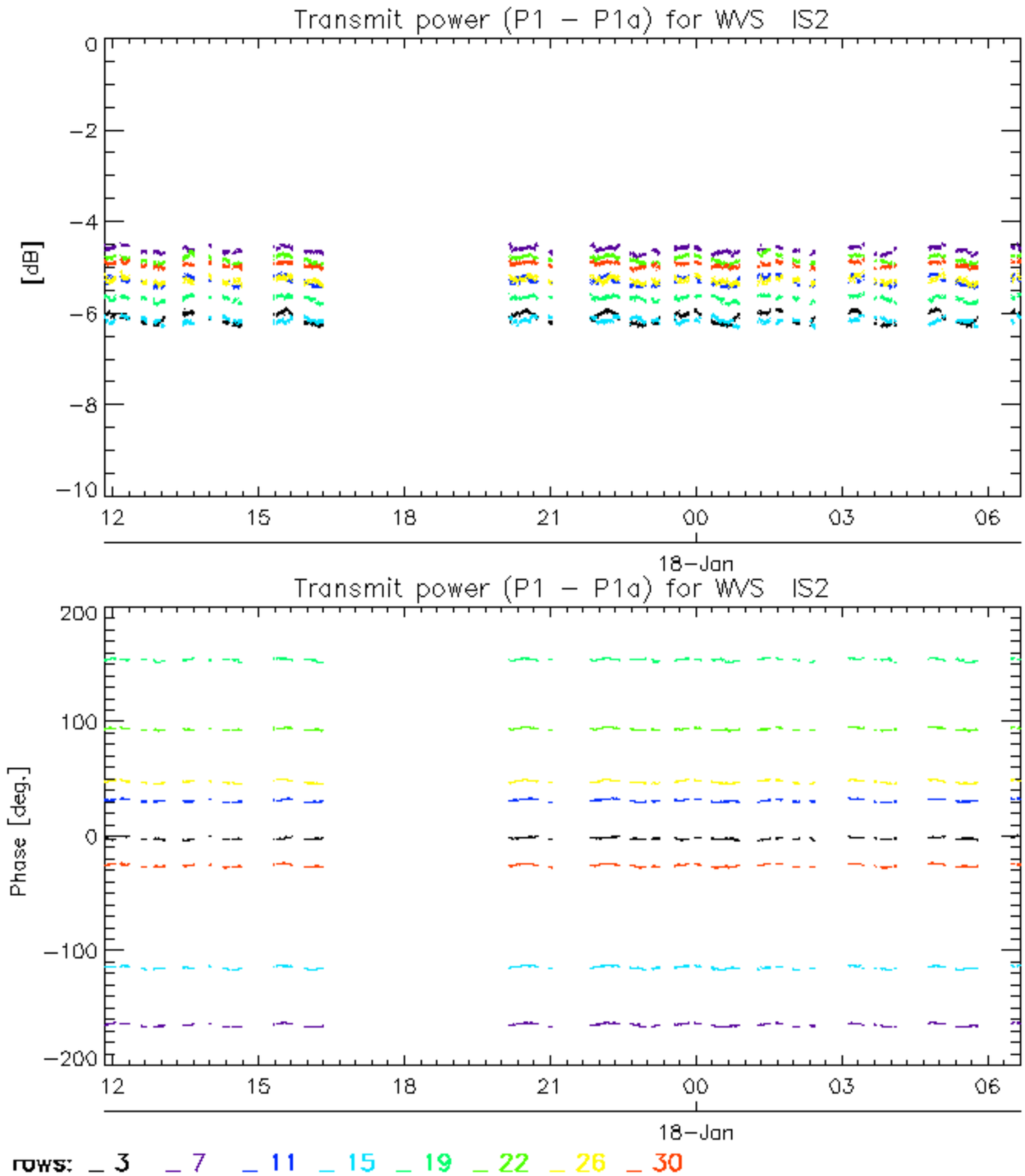
32


Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
16
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
15
18
21
00
03
06
18–Jan
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
15
18
21
00
03
06
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
16
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
03
06
18–Jan
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
03
06
18–Jan
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.