PRELIMINARY REPORT OF 070131

last update on Wed Jan 31 16:12:00 GMT 2007

Due to an ASAR test acquisition campaign, the daily analysis on WVS products
will be based on IS4 instead of IS2 during the following periods:

From orbit 25621 (23-Jan-2007) to 25720 (30-Jan-2007) in HH polarization
From orbit 26122 (27-Feb-2007) to 26221 (06-Mar-2007) in HH polarization
From orbit 25721 (30-Jan-2007) to 25820 (06-Feb-2007) in VV polarization
From orbit 26222 (06-Mar-2007) to 26321 (13-Mar-2007) in VV polarization

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 2007-01-30 00:00:00 to 2007-01-31 16:12:00

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	43	71	10	4	42
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	43	71	10	4	42
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	43	71	10	4	42
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	43	71	10	4	42

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	44	48	31	10	48
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	44	48	31	10	48
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	44	48	31	10	48
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	44	48	31	10	48

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	20070130 085026
H	20070129 092202

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)
3	P1a	-11.671341	0.047979	0.757052
7	P1a	-10.017548	0.046778	-0.250099
11	P1a	-10.532276	0.064010	-0.622692
15	P1a	-10.877606	0.342382	-3.019457
19	P1a	-15.724515	0.211989	1.977561
22	P1a	-21.331259	2.759770	5.466150
26	P1a	-15.577394	0.378442	-0.090969
30	P1a	-18.329489	1.315083	-5.270540

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.401024	0.188137	-5.838664
7	P1	-2.545502	0.006466	-0.081531
11	P1	-2.980782	0.029990	-0.728608
15	P1	-3.830951	0.208469	-2.376076
19	P1	-3.597891	0.025103	0.472456
22	P1	-5.121612	0.038675	-0.760573
26	P1	-5.930198	0.114159	1.551531
30	P1	-5.328873	0.045751	-0.149013

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.223005	0.093924	-0.331227
7	P2	-22.093433	0.135910	0.405541
11	P2	-10.970537	0.087184	0.539308
15	P2	-5.151628	0.099490	0.080735

19	P2	-7.277018	0.084315	0.043477
22	P2	-8.347115	0.080802	-0.104509
26	P2	-24.325481	0.078717	0.358314
30	P2	-21.703238	0.075181	0.023612

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.225302	0.007437	0.010408
7	P3	-8.225302	0.007437	0.010408
11	P3	-8.225302	0.007437	0.010408
15	P3	-8.225302	0.007437	0.010408
19	P3	-8.225302	0.007437	0.010408
22	P3	-8.225302	0.007437	0.010408
26	P3	-8.225302	0.007437	0.010408
30	P3	-8.225302	0.007437	0.010408

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.732714	0.046411	0.515594
7	P1a	-10.010092	0.038868	0.455334
11	P1a	-10.485227	0.055959	0.149525
15	P1a	-10.822659	0.131075	-0.143554
19	P1a	-15.750072	0.061072	-0.364519
22	P1a	-20.981882	1.422961	1.918942
26	P1a	-15.517839	0.254523	-0.198985
30	P1a	-18.314247	0.368658	-0.390483

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

3	P1	-4.239511	0.181023	-5.172446
7	P1	-2.439427	0.006207	0.084429
11	P1	-2.847234	0.015904	0.197916
15	P1	-3.766700	0.032271	0.039440
19	P1	-3.549370	0.013670	-0.124701
22	P1	-5.022064	0.023868	0.113081
26	P1	-6.003450	0.021783	-0.324471
30	P1	-5.292257	0.025196	-0.074518

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.291819	0.031045	-0.270267
7	P2	-22.044939	0.047136	-0.484287
11	P2	-10.706727	0.030197	-0.399551
15	P2	-4.847503	0.026965	-0.221697
19	P2	-6.848670	0.027128	-0.291754
22	P2	-8.158969	0.028103	-0.407109
26	P2	-24.263601	0.031645	-0.378659
30	P2	-21.805897	0.034176	-0.103026

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.057279	0.002545	-0.040736
7	P3	-8.057047	0.002540	-0.042139
11	P3	-8.057099	0.002547	-0.034803
15	P3	-8.057190	0.002533	-0.041256
19	P3	-8.057112	0.002527	-0.040368
22	P3	-8.057271	0.002545	-0.040187
26	P3	-8.057209	0.002529	-0.040509
30	P3	-8.057136	0.002528	-0.037659

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	0.000669863
	stdev	2.51980e-07
MEAN Q	mean	0.000334987
	stdev	1.76738e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.0563811
	stdev	0.00100106
STDEV Q	mean	0.0559686
	stdev	0.00100918

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007013[901]
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_1PNPDE20070130_000819_000002452055_00102_25707_9211.N1	0	68
ASA_WSM_1PNPDE20070130_063931_000000852055_00106_25711_9762.N1	0	1

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

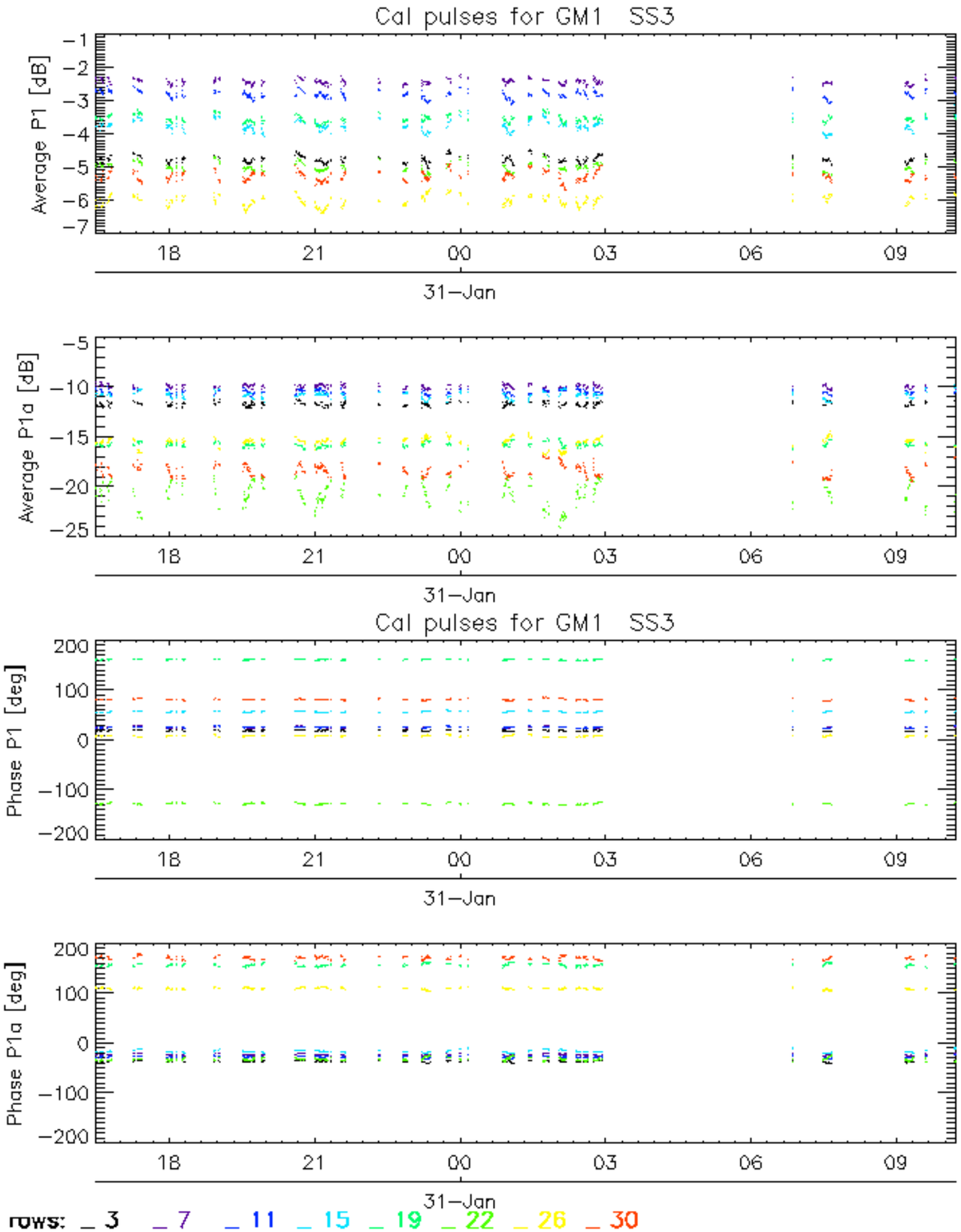
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

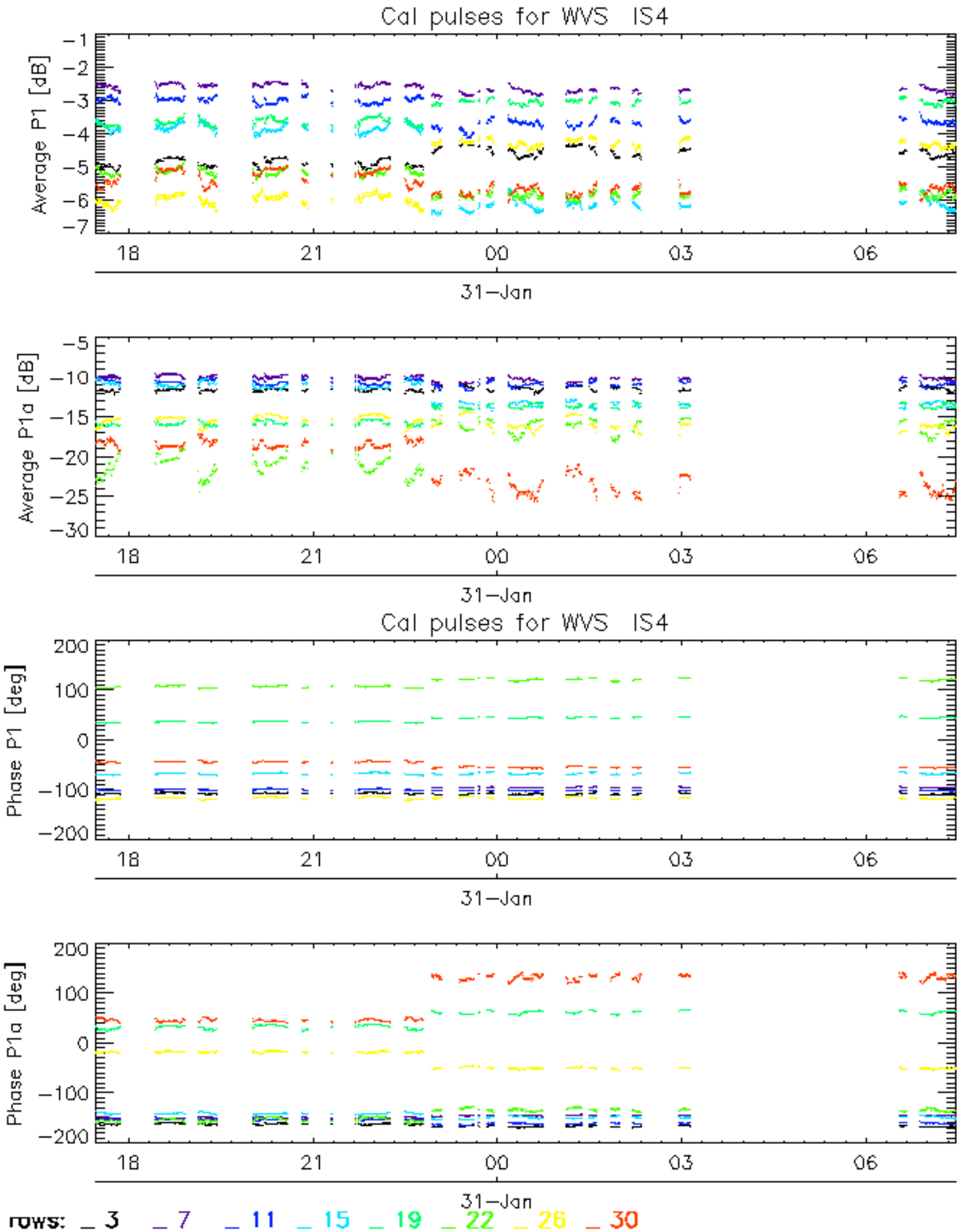
7.5 - Absolute Doppler for GM1

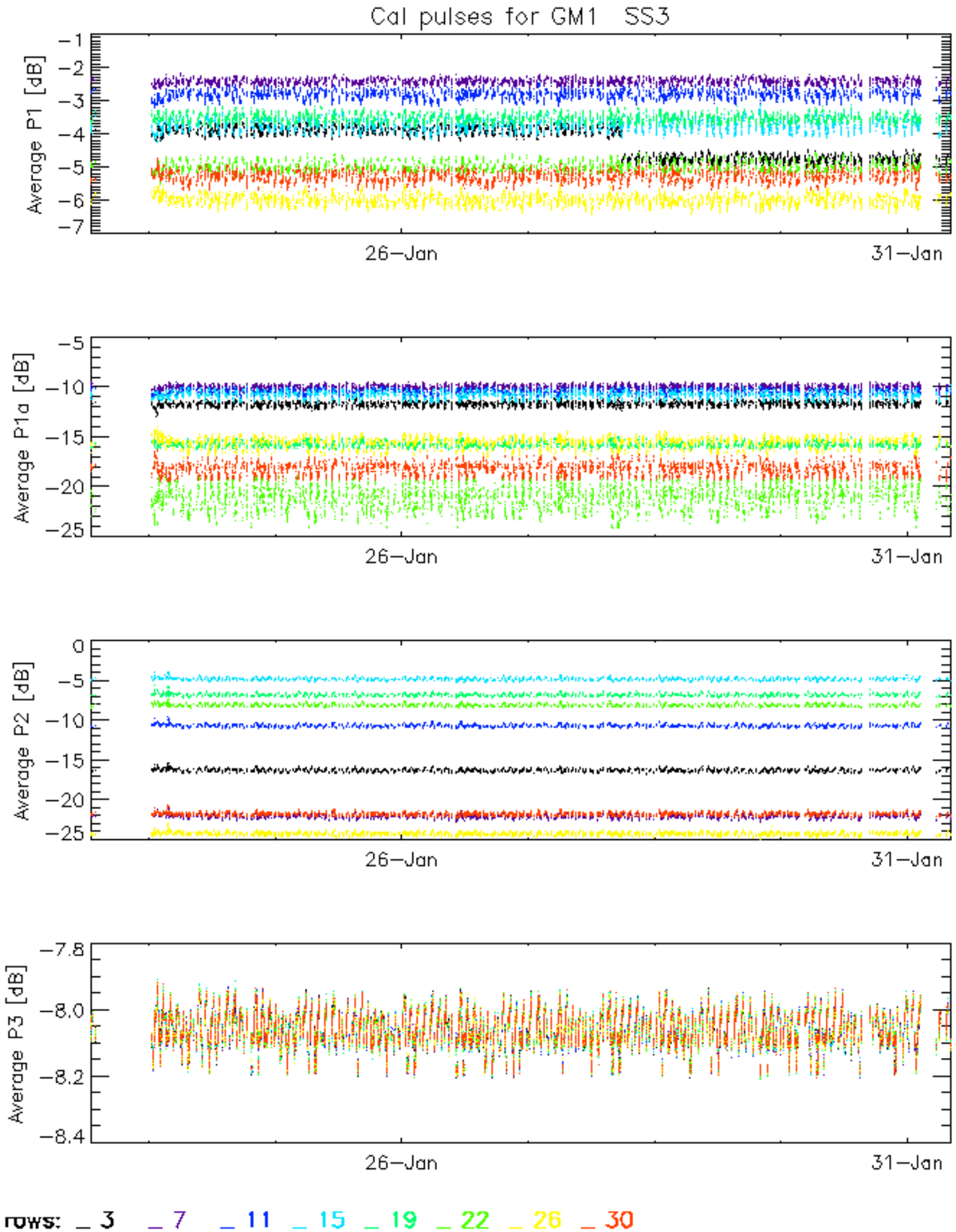
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

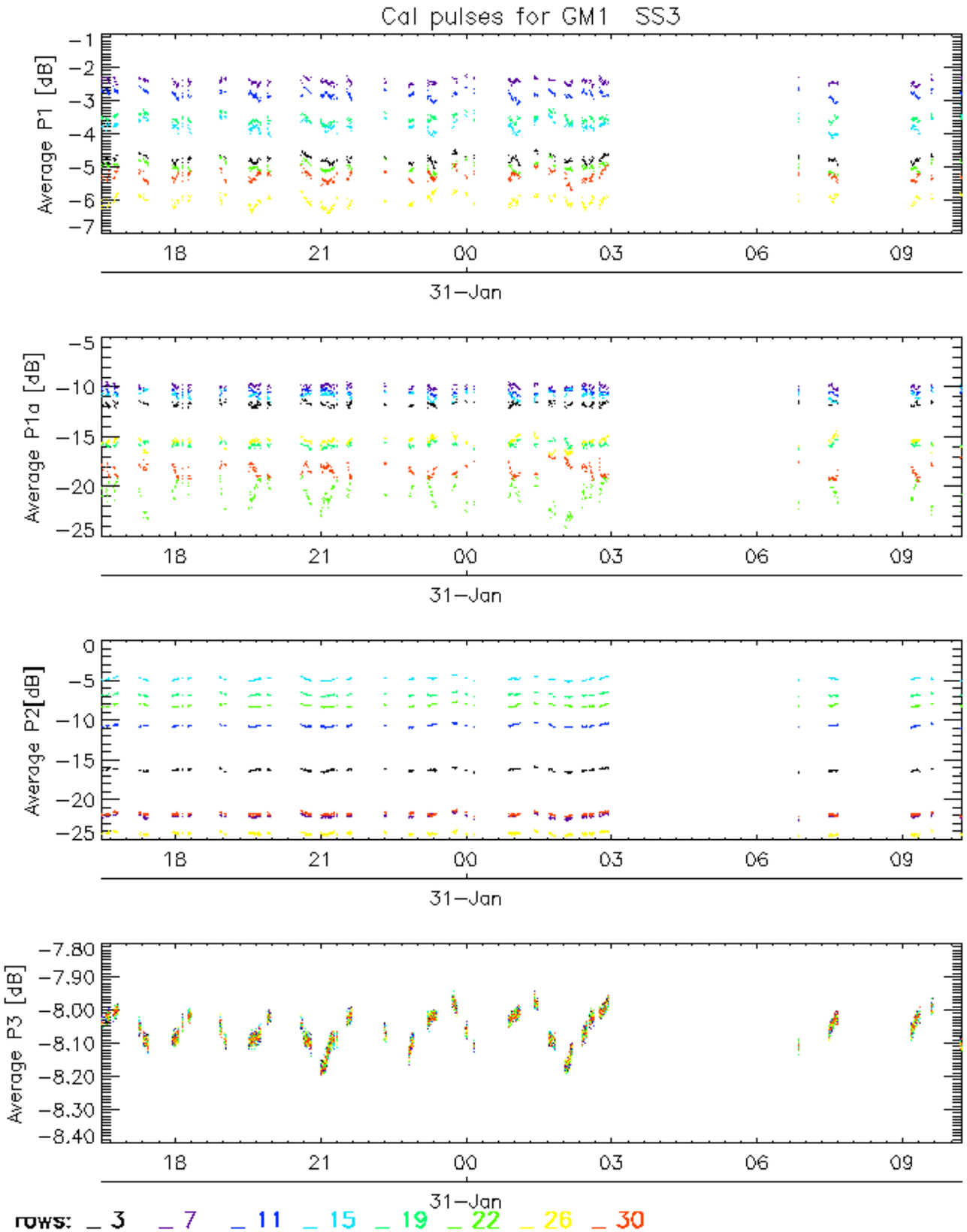
7.6 - Doppler evolution versus ANX for GM1

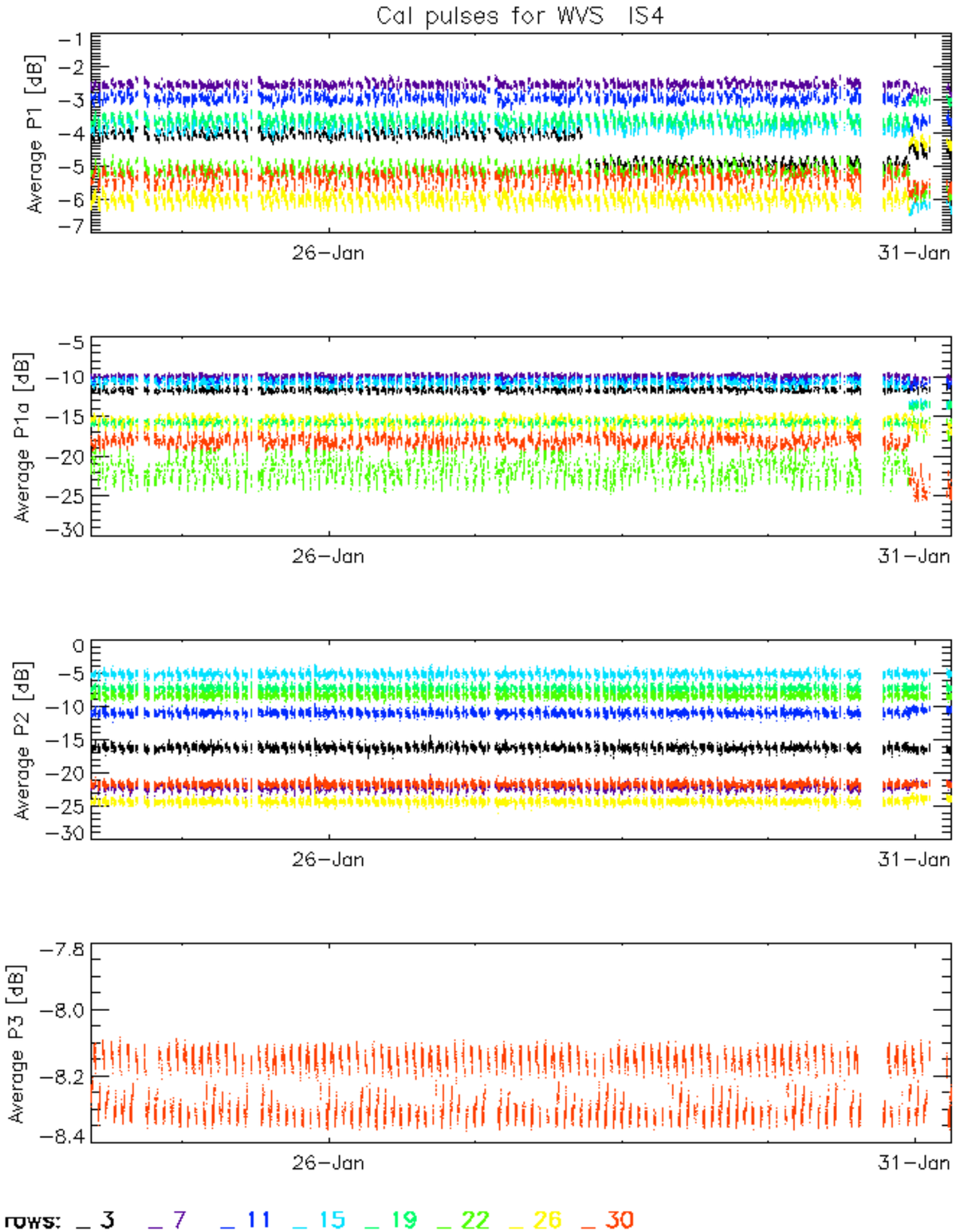
Evolution Doppler error versus ANX
☒

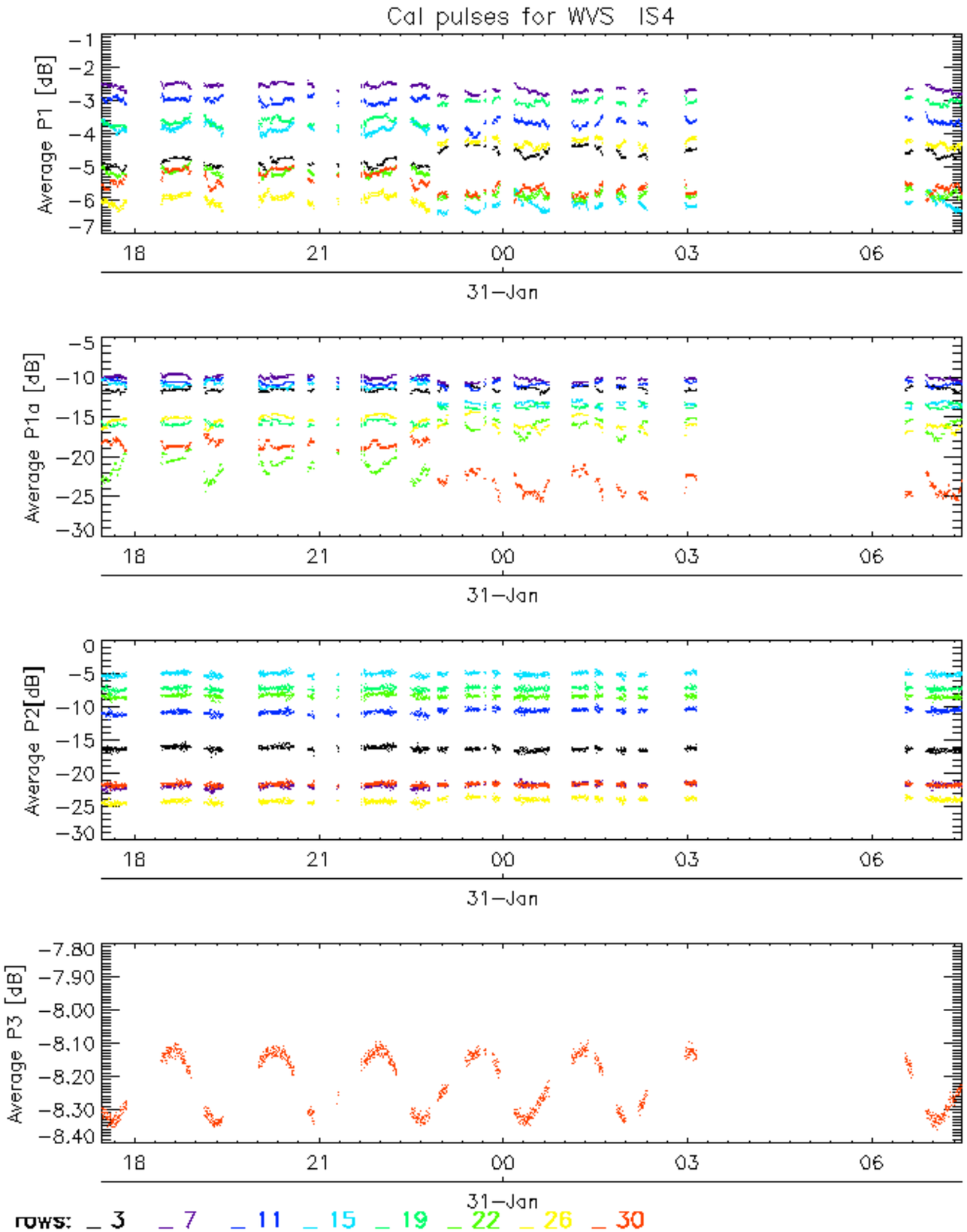

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
09
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
09
31−Jan
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
09
31−Jan
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
09
31−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
18
21
00
03
06
31−Jan
Cal pulses for WVS IS4
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
31−Jan
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
31−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
26−Jan
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
26−Jan
31−Jan
Average P2 [dB]
0
−5
−10
−15
−20
−25
26−Jan
31−Jan
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

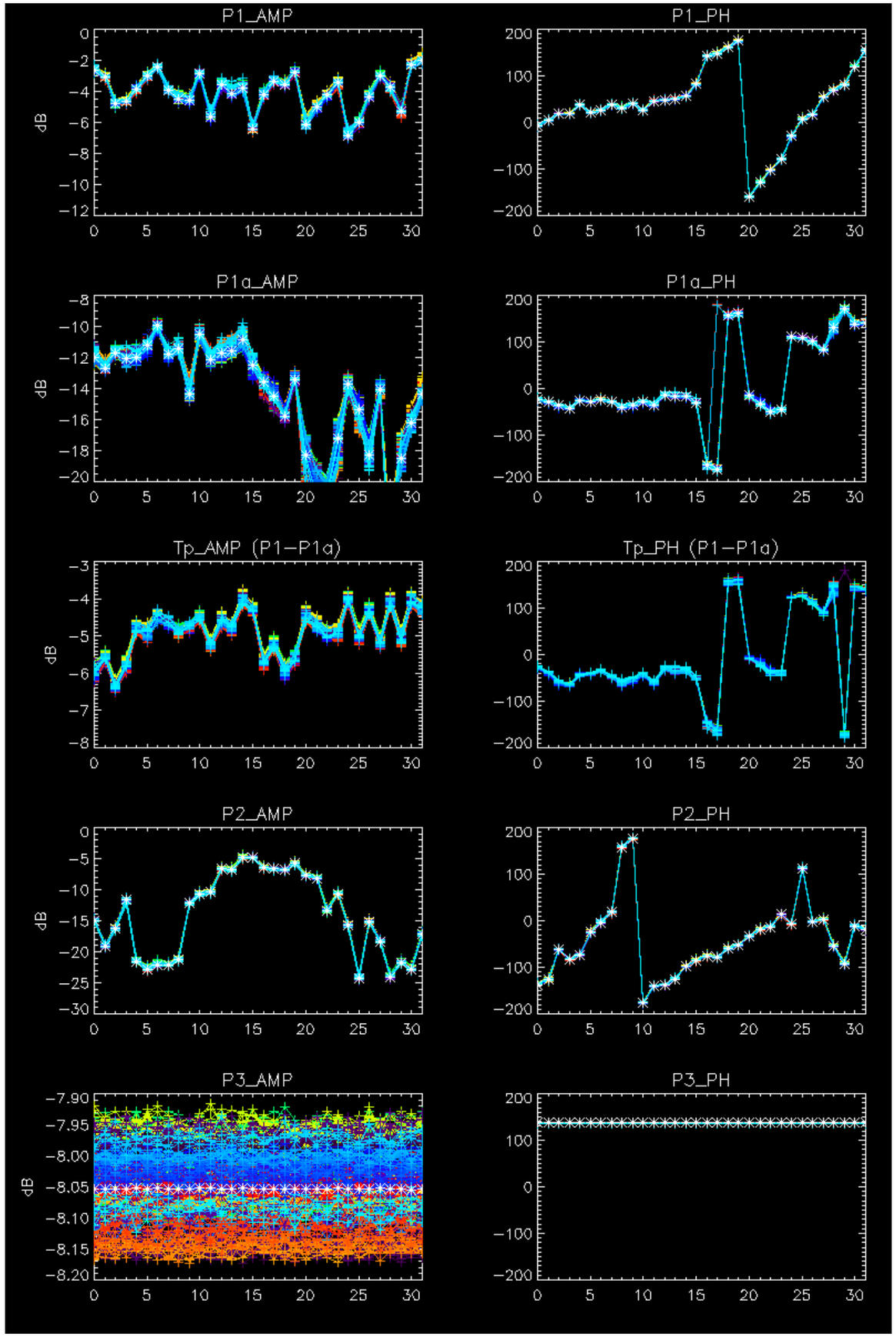

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
09
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
09
31−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
09
31−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
09
31−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

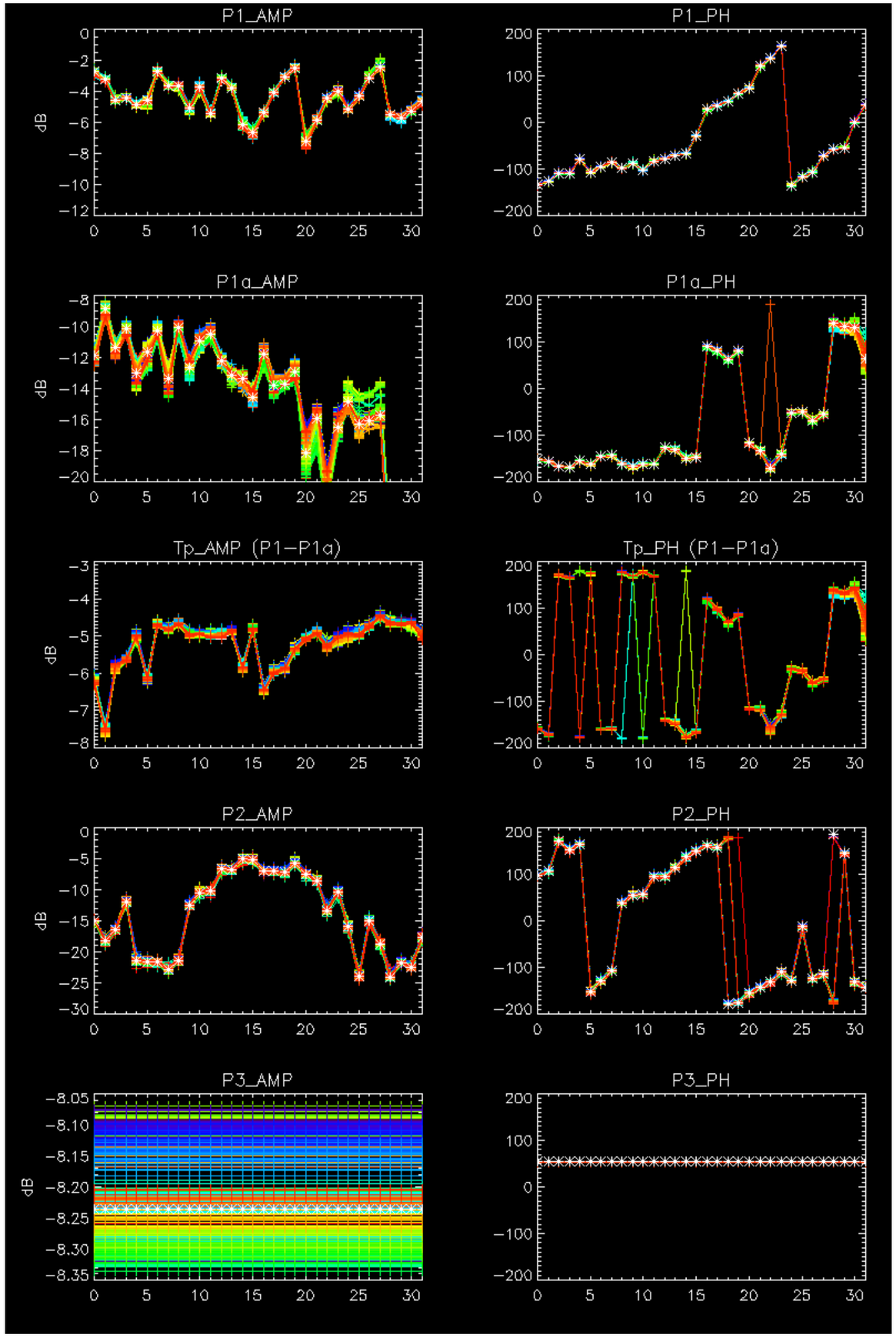

Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
26−Jan
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
18
21
00
03
06
31−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
−30
18
21
00
03
06
31−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
31−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No anomalies observed on available browse products

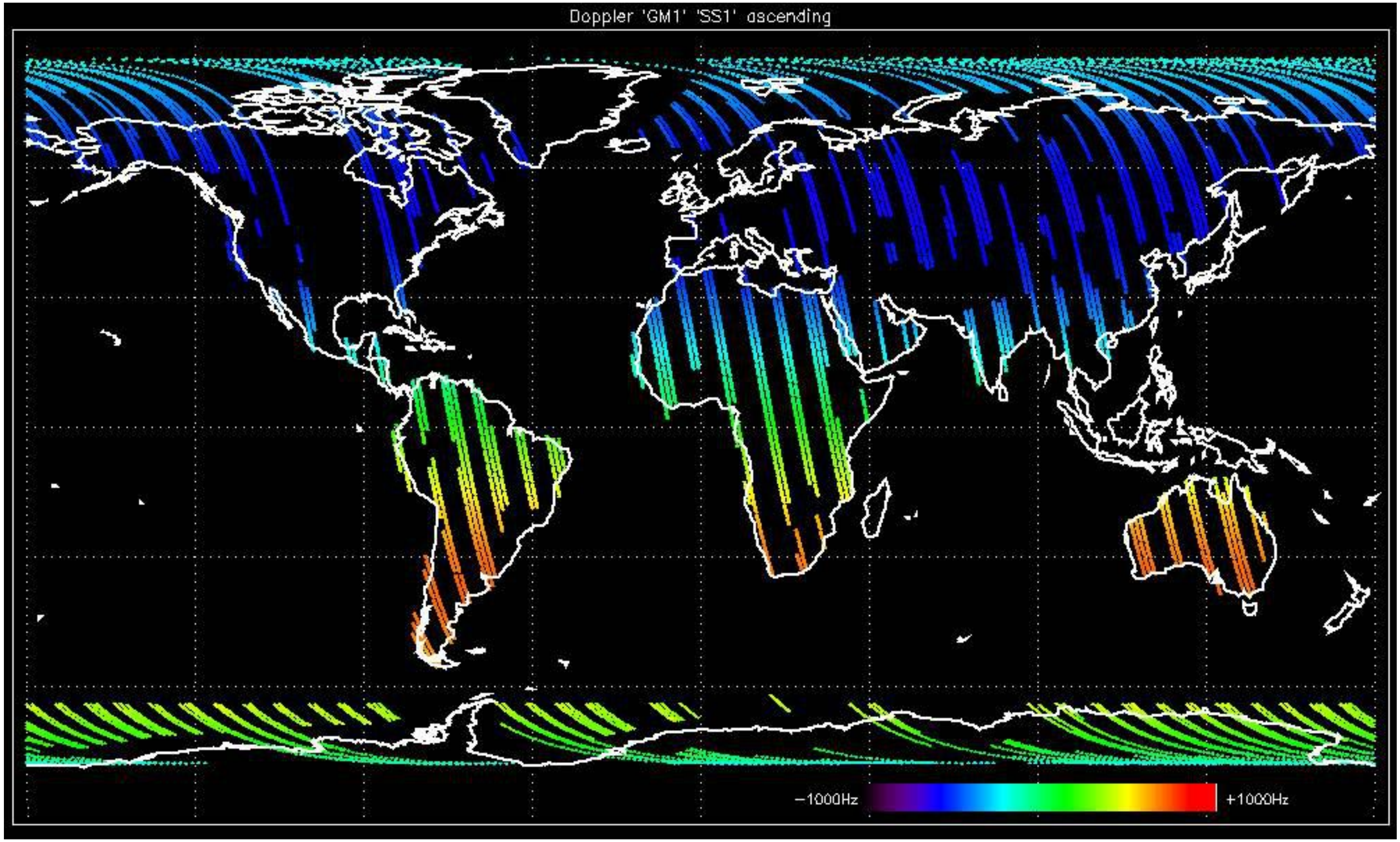
No anomalies observed.

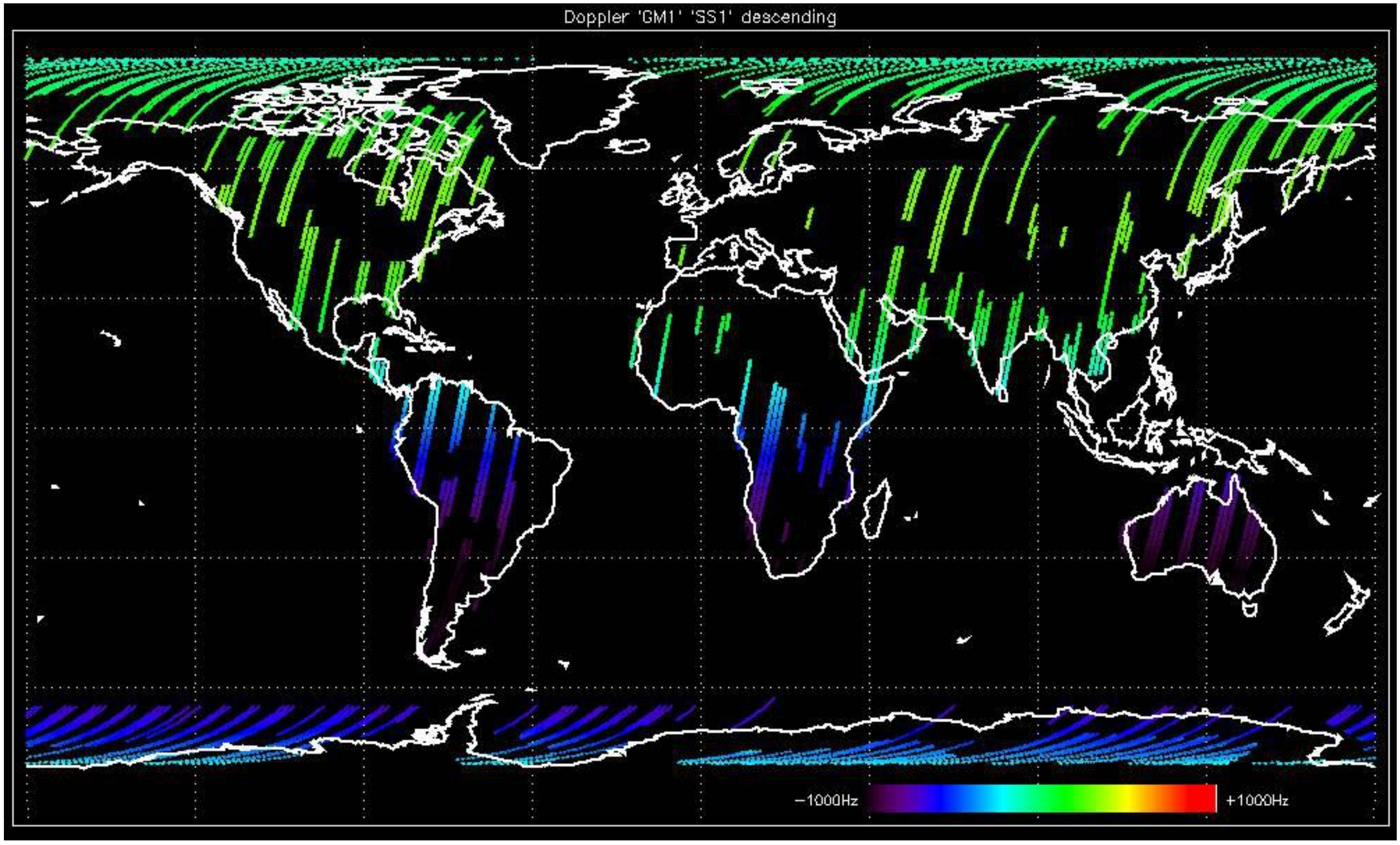

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

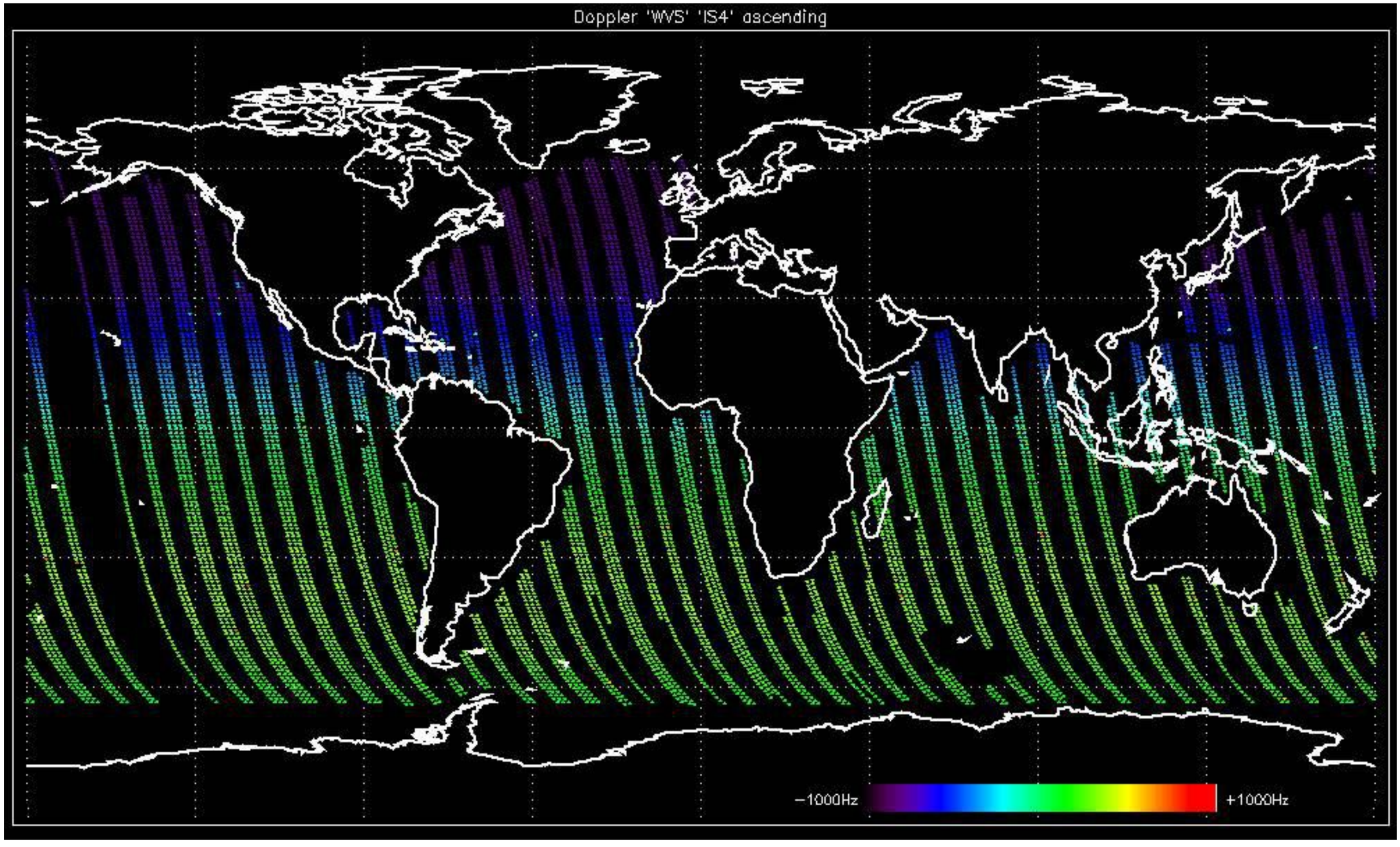

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

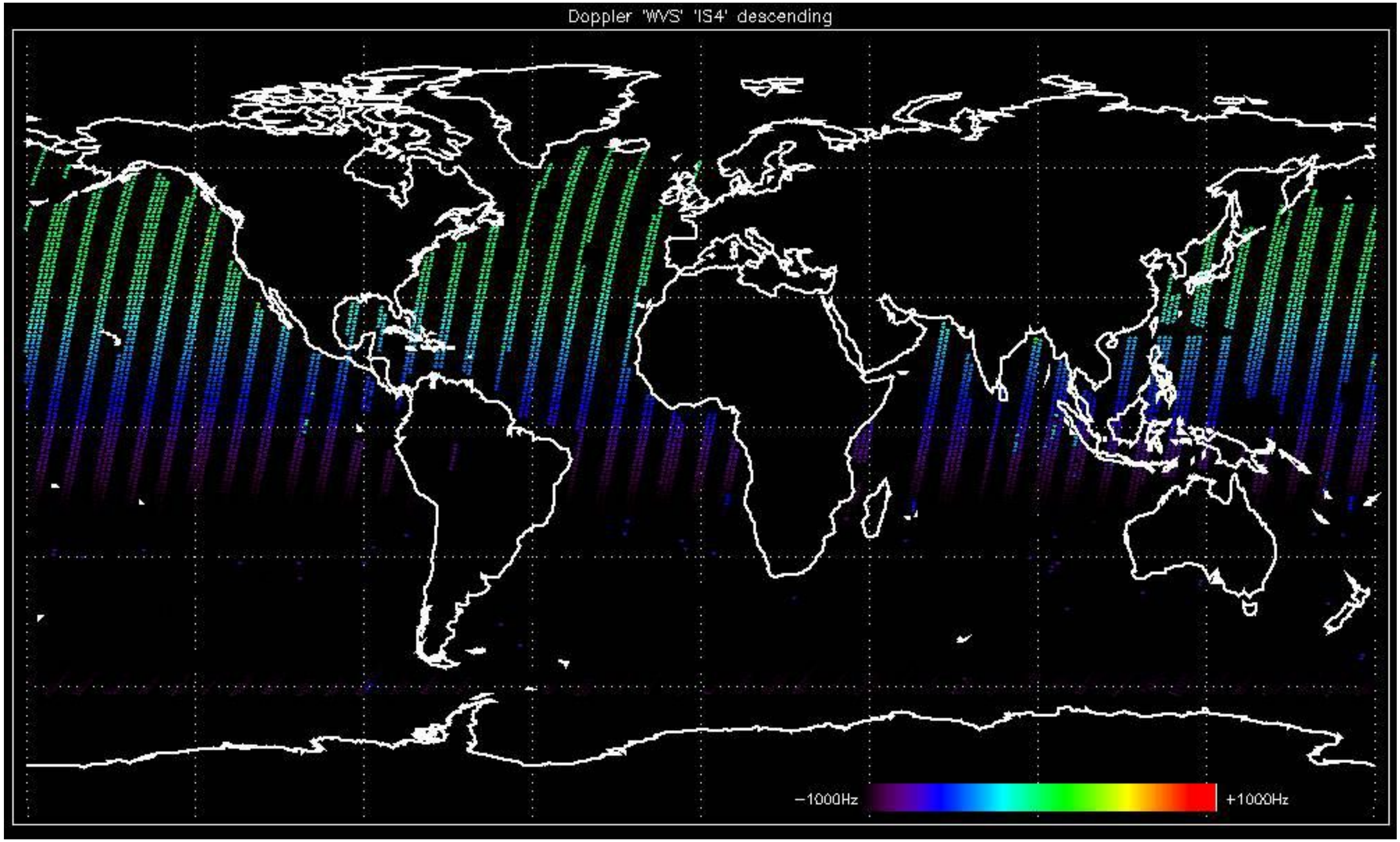
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

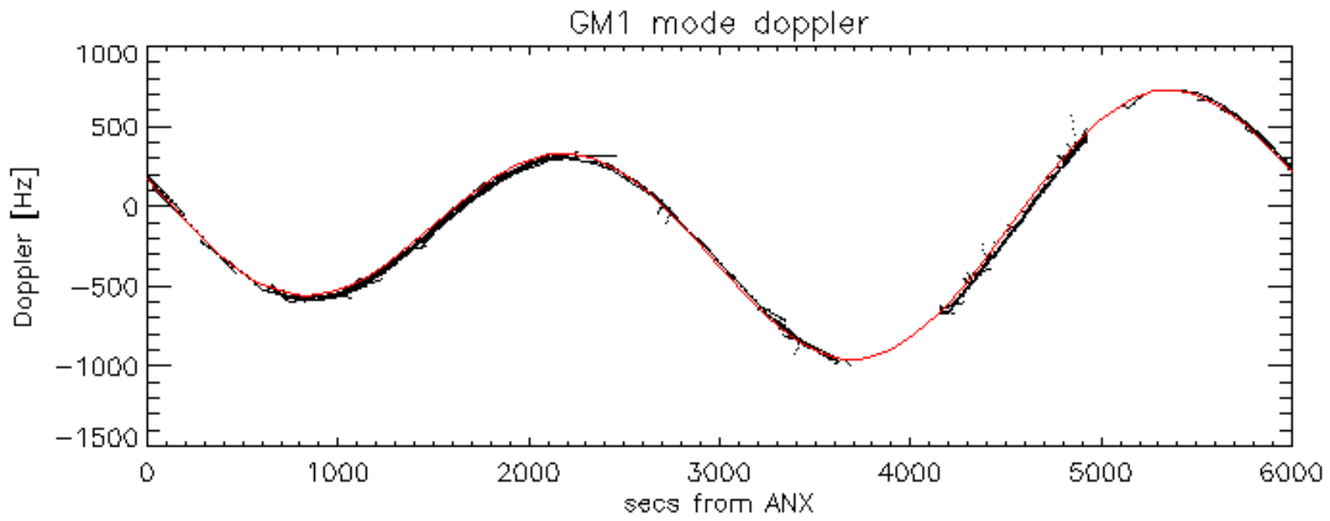
Preliminary report.The data is not yet controled

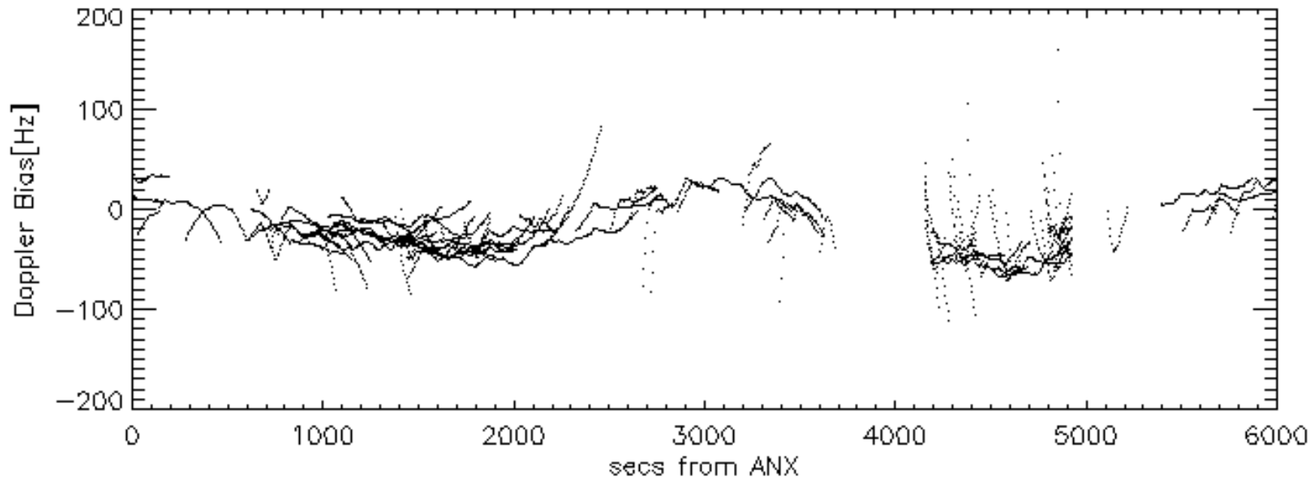

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

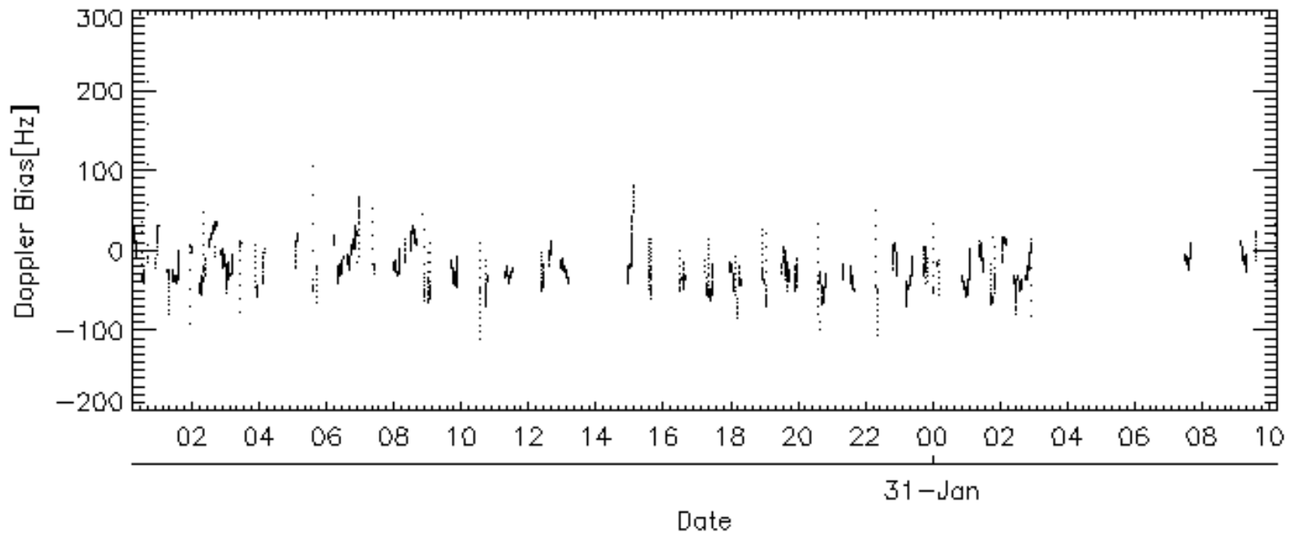

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

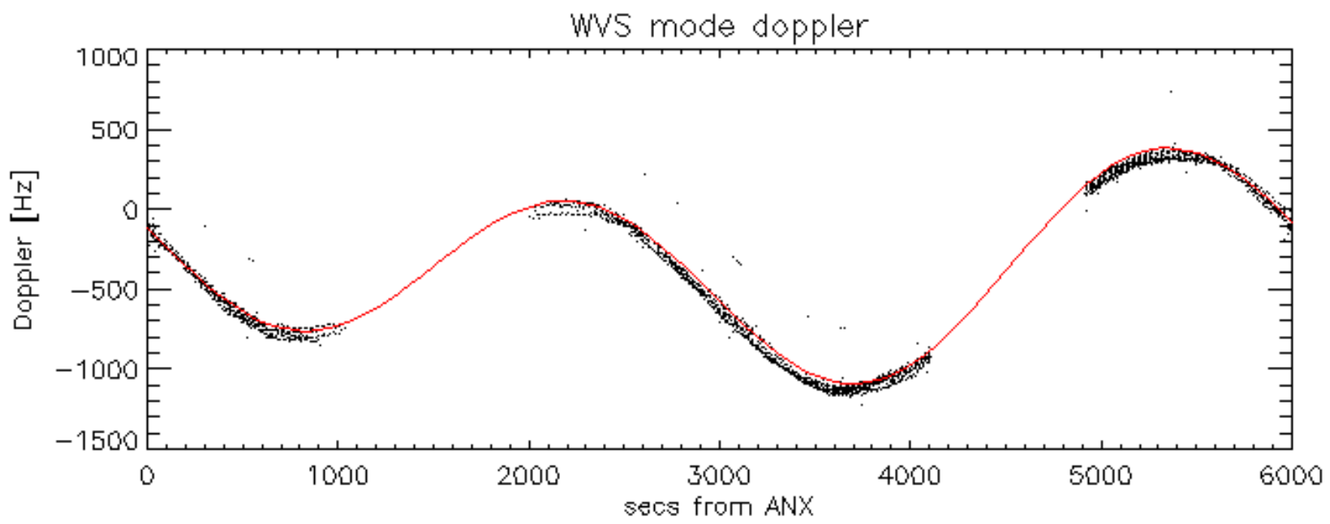

Doppler 'WVS' 'IS4' ascending
−1000Hz
+1000Hz

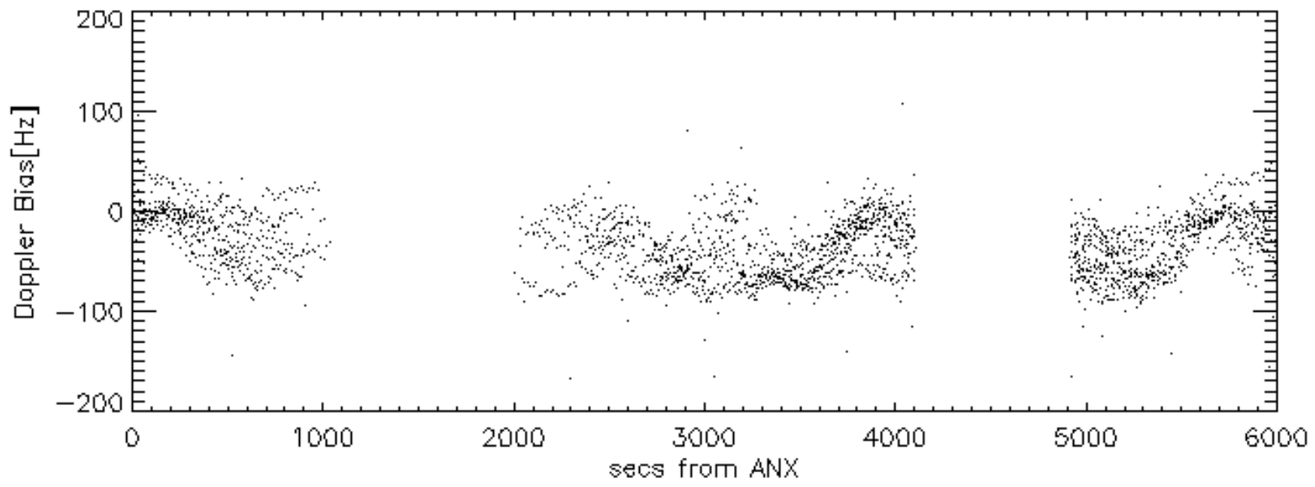

Doppler 'WVS' 'IS4' descending
−1000Hz
+1000Hz

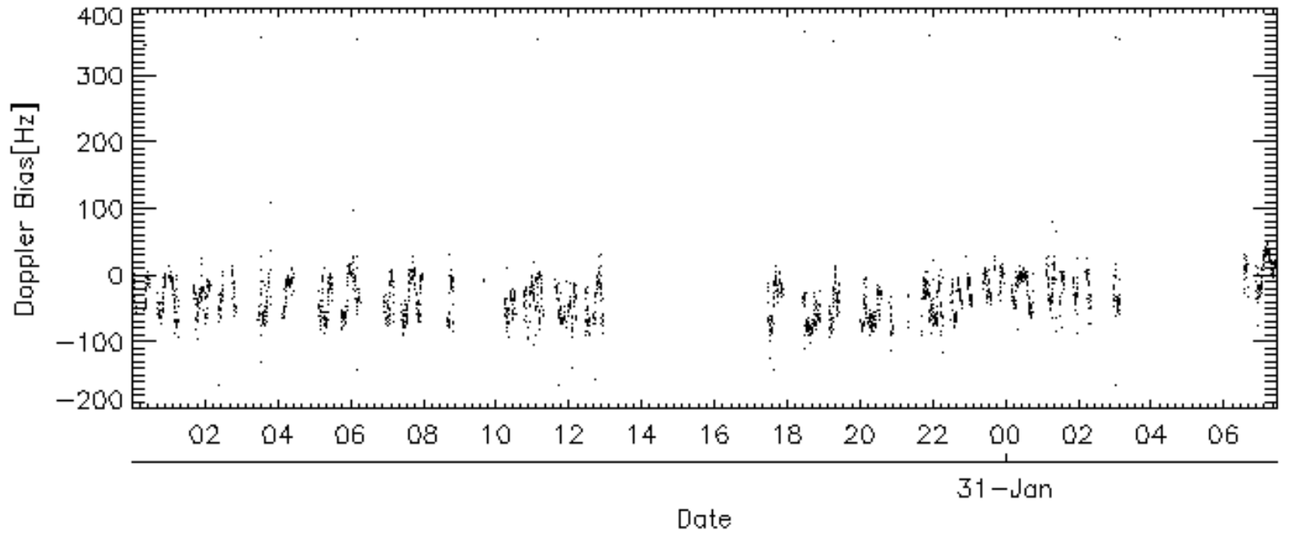

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

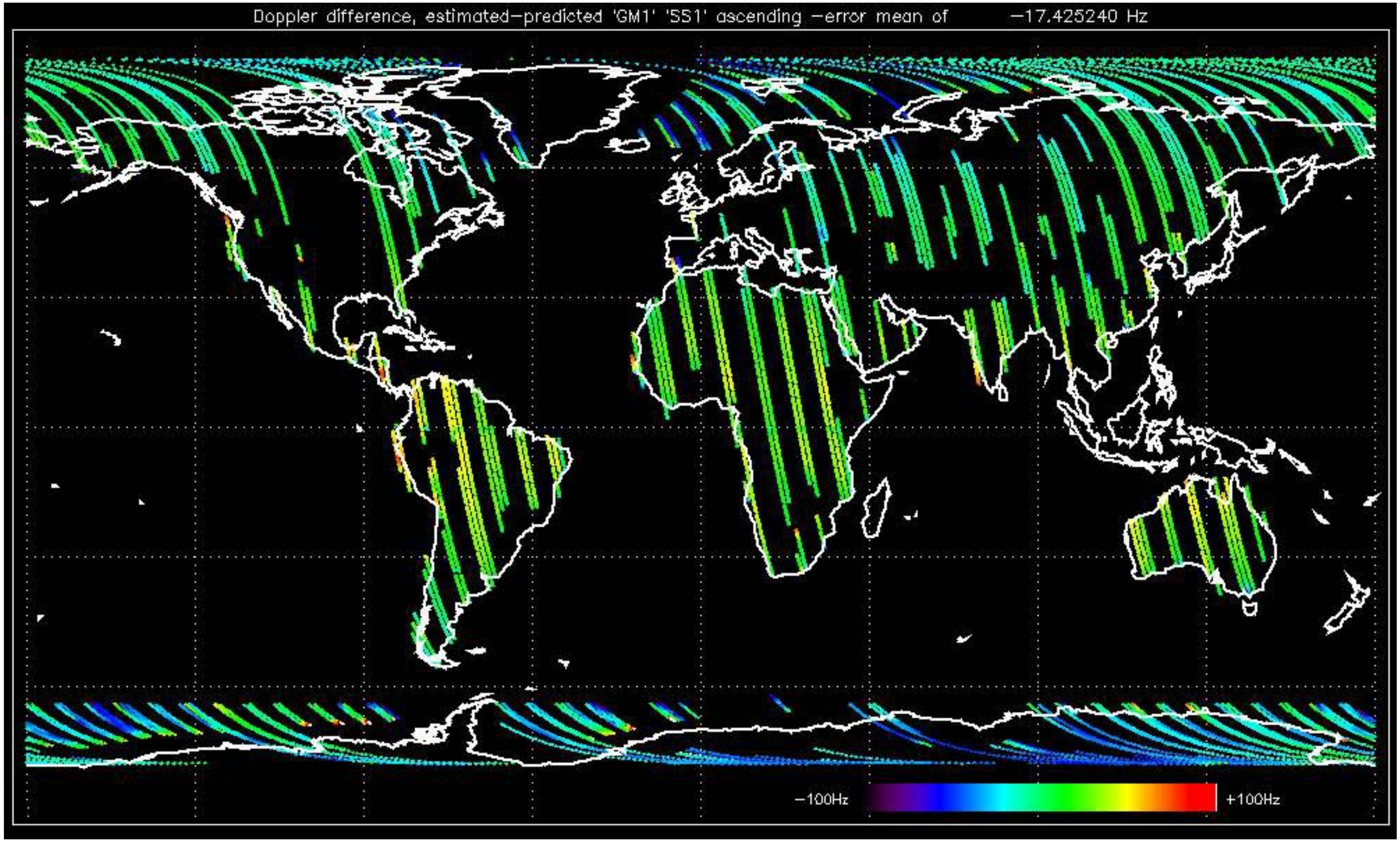

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

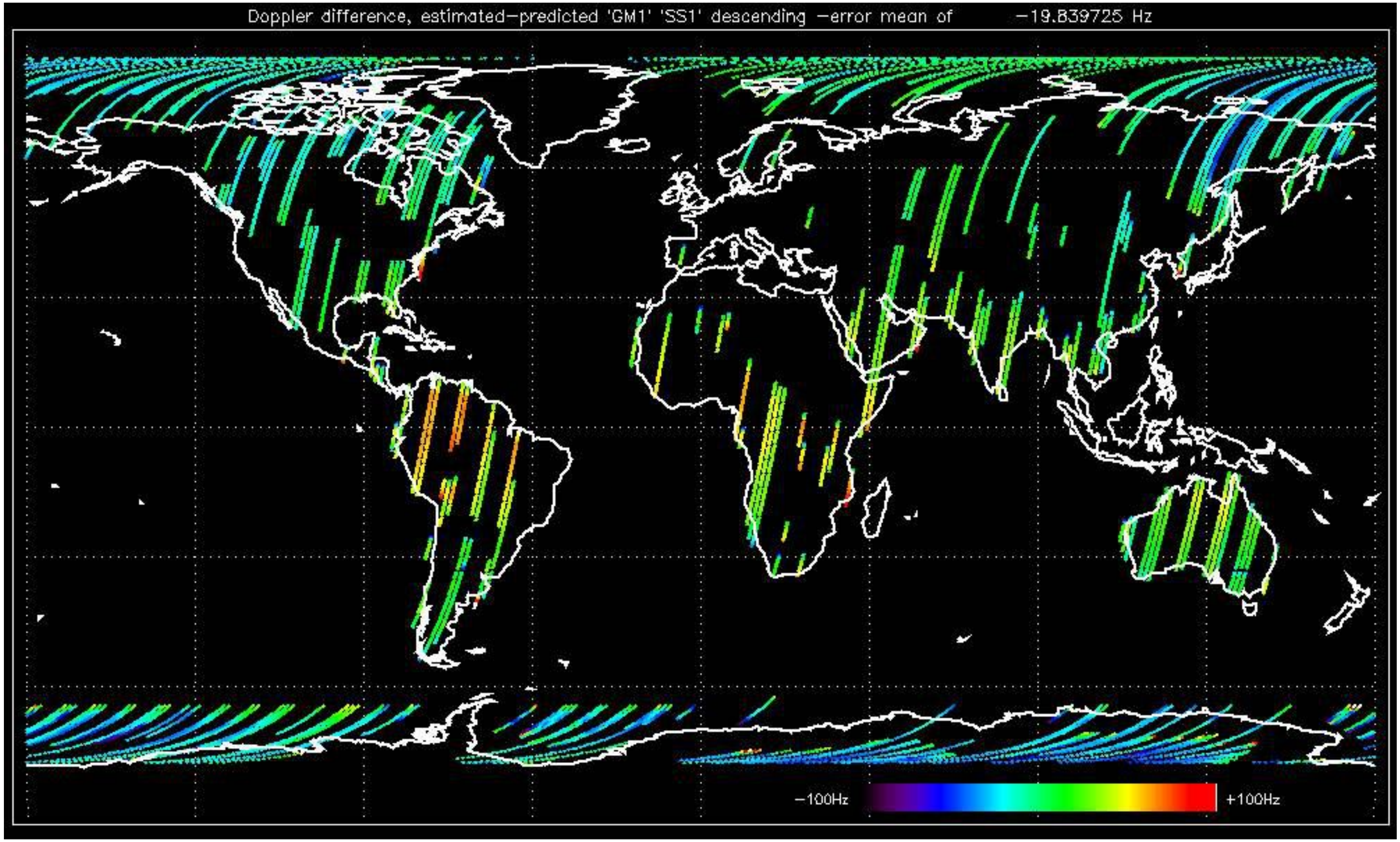

Doppler Bias[Hz]
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
10
31−Jan
Date

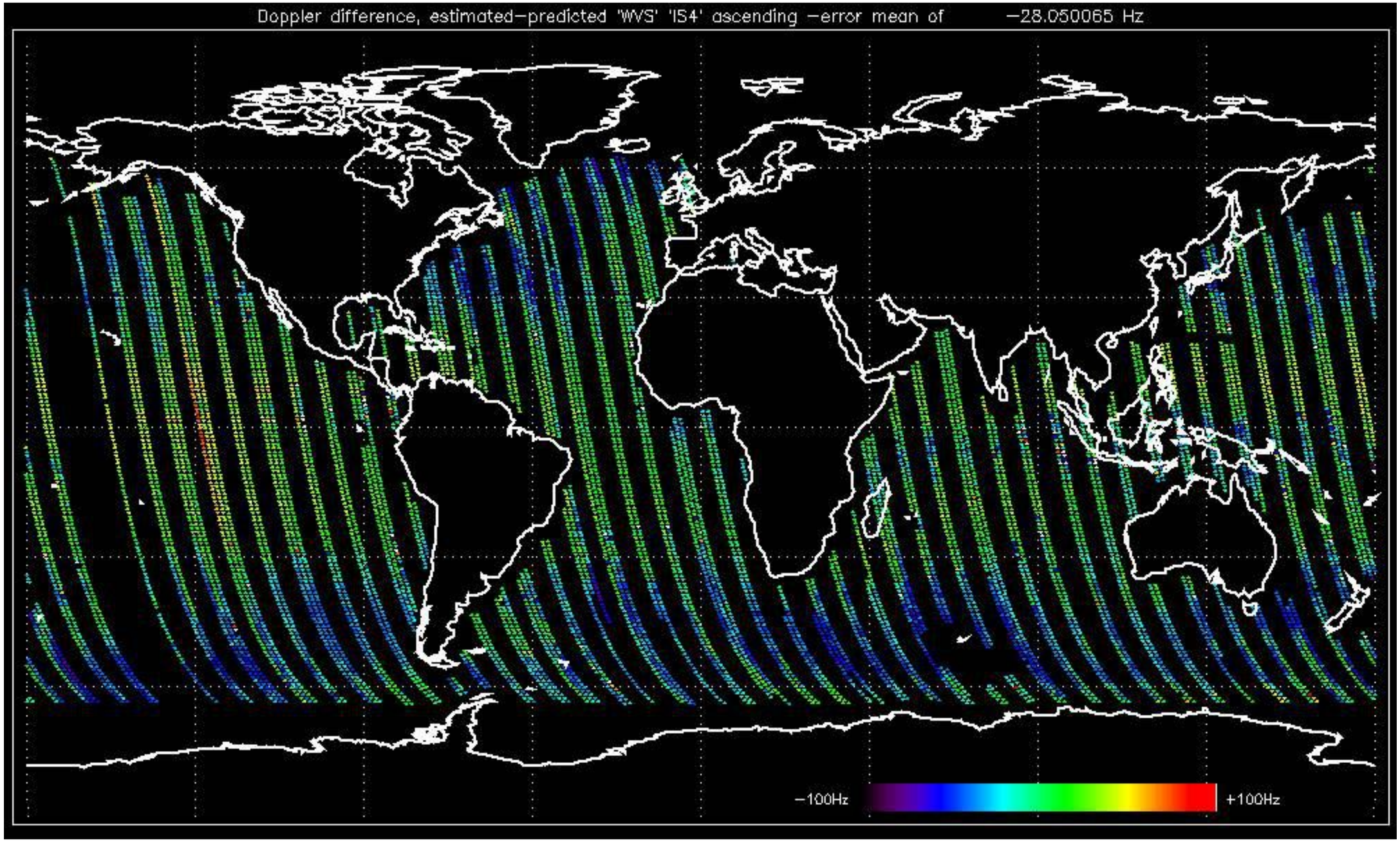

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

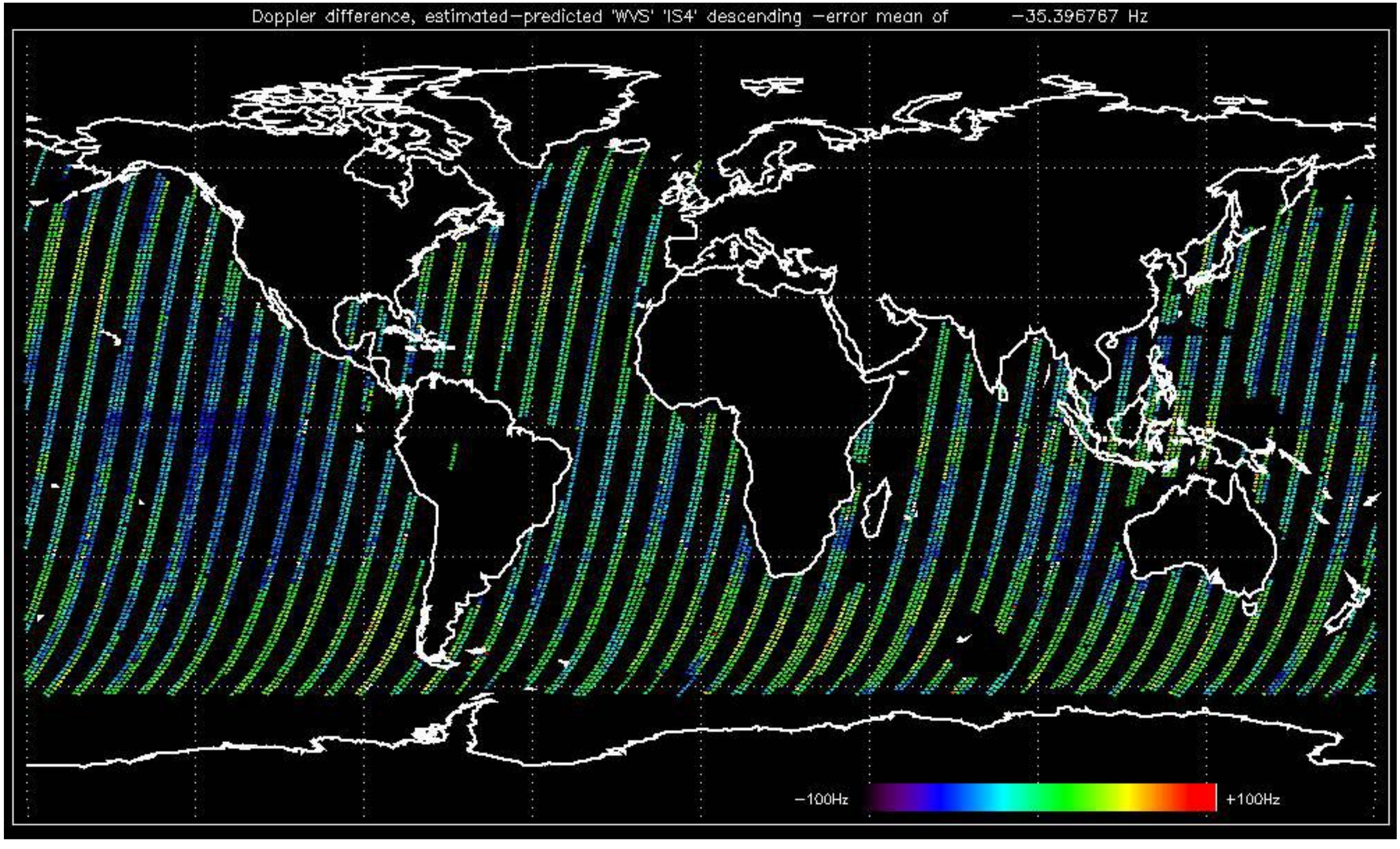

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
400
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
31−Jan
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −17.425240 Hz
−100Hz
+100Hz

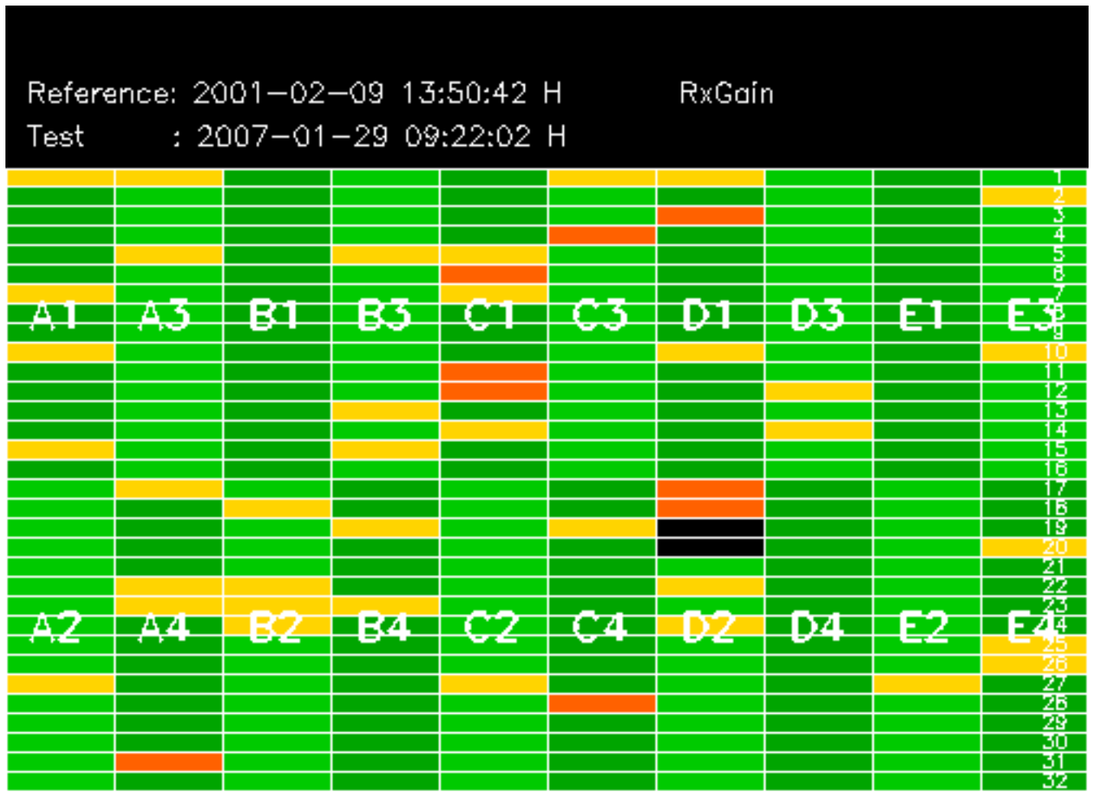

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -19.839725 Hz
-100Hz
+100Hz

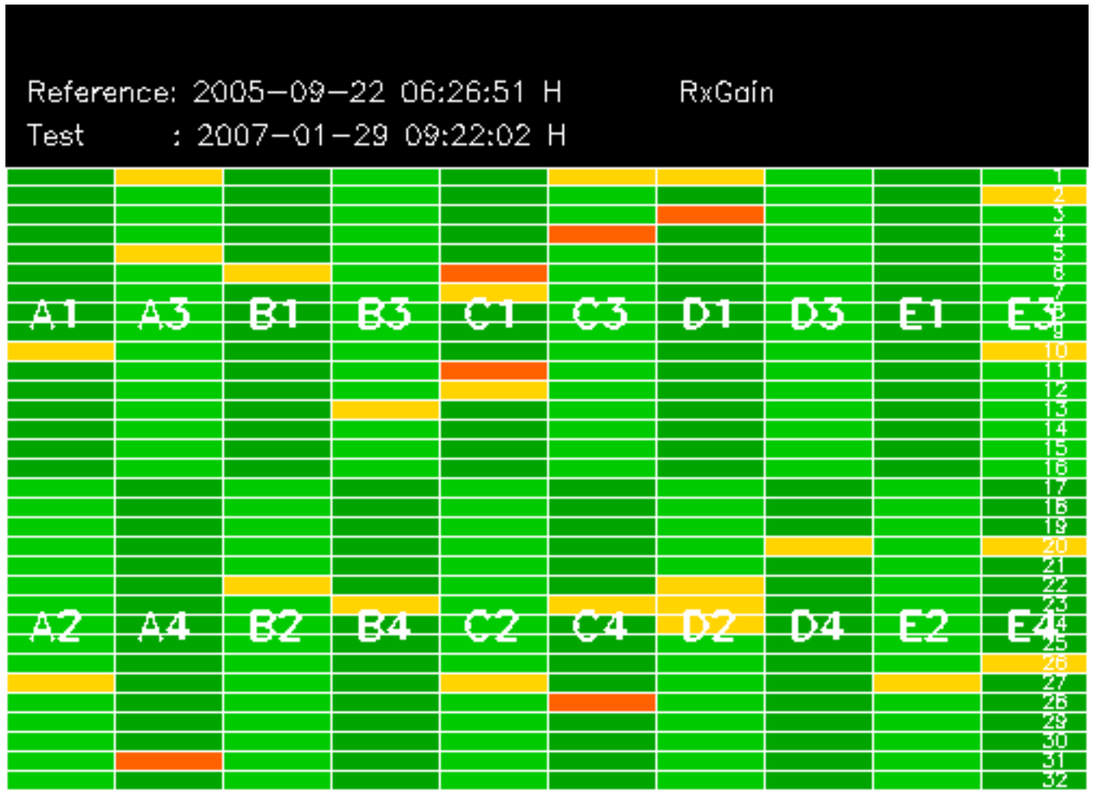

Doppler difference, estimated−predicted 'WVS' 'IS4' ascending −error mean of −28.050065 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS4' descending −error mean of −35.396767 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-29 09:22:02 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 : 2007-01-29 09:22:02 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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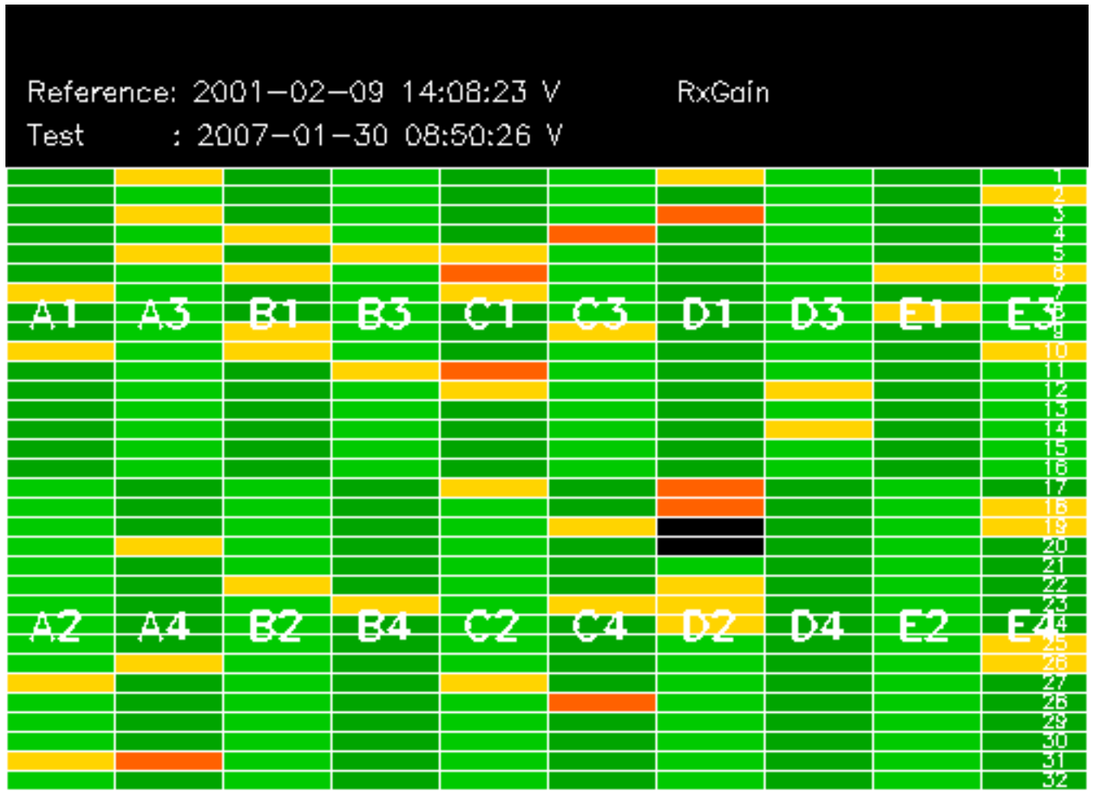
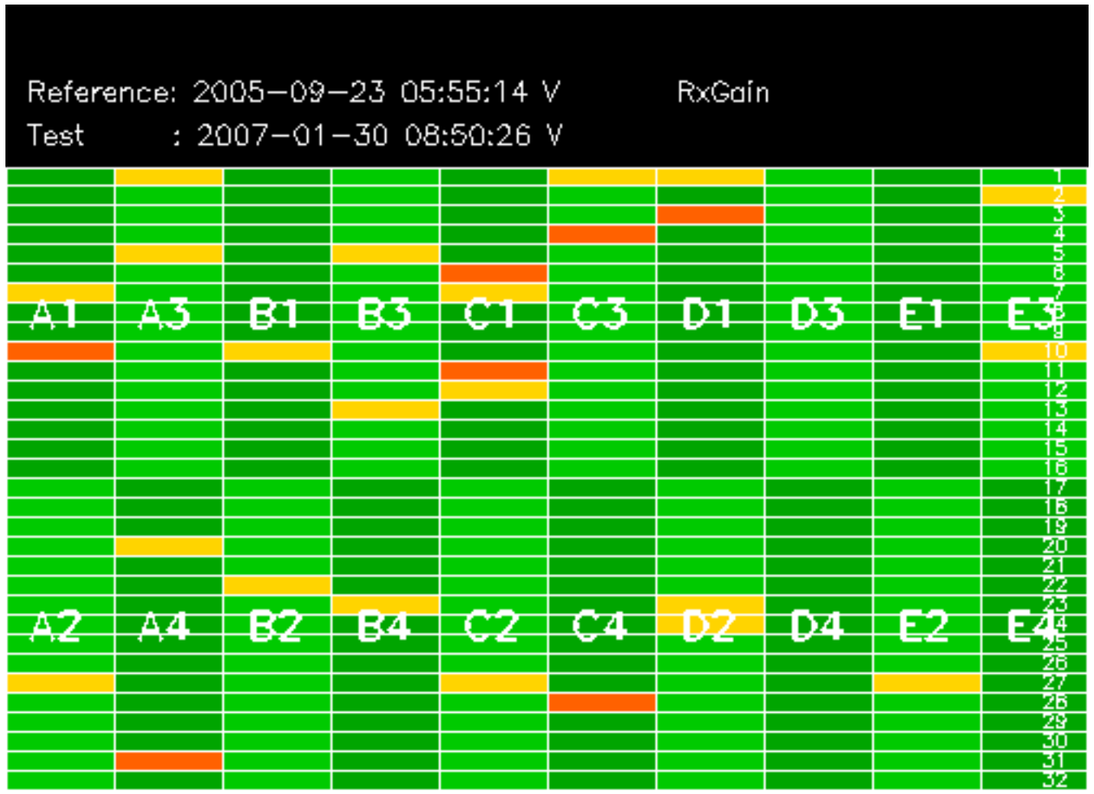

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2007-01-30 08:50:26 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-01-30 08:50:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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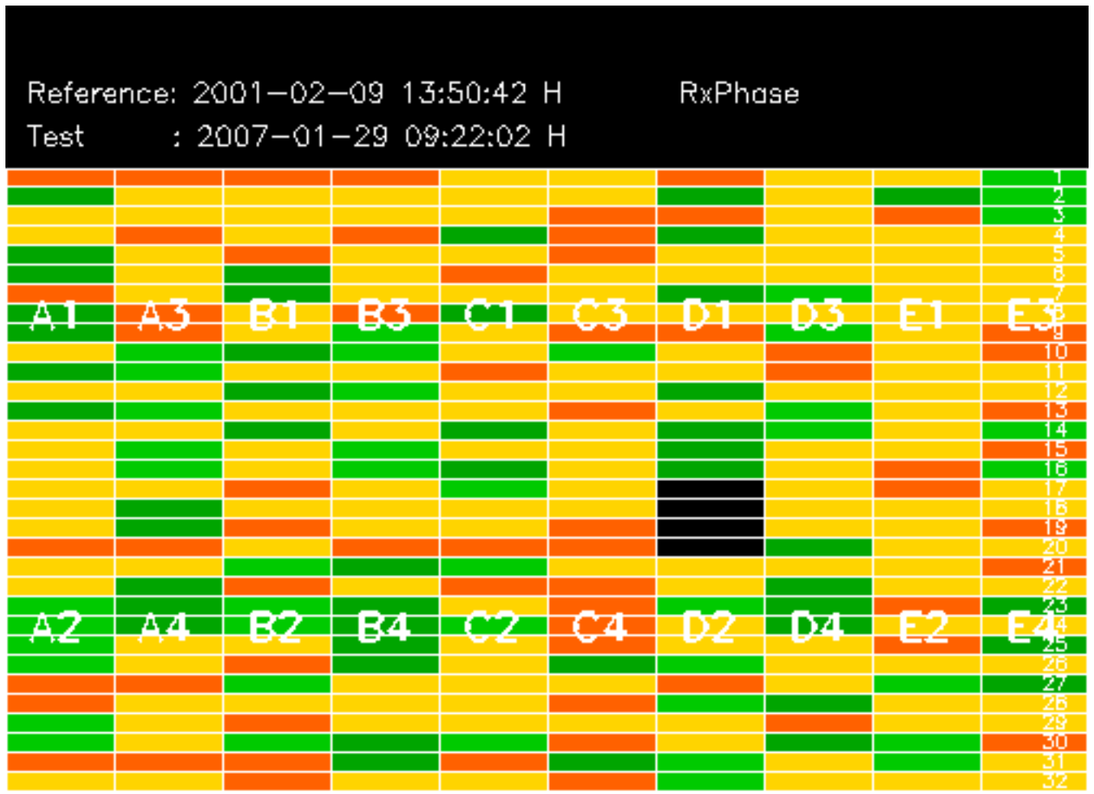
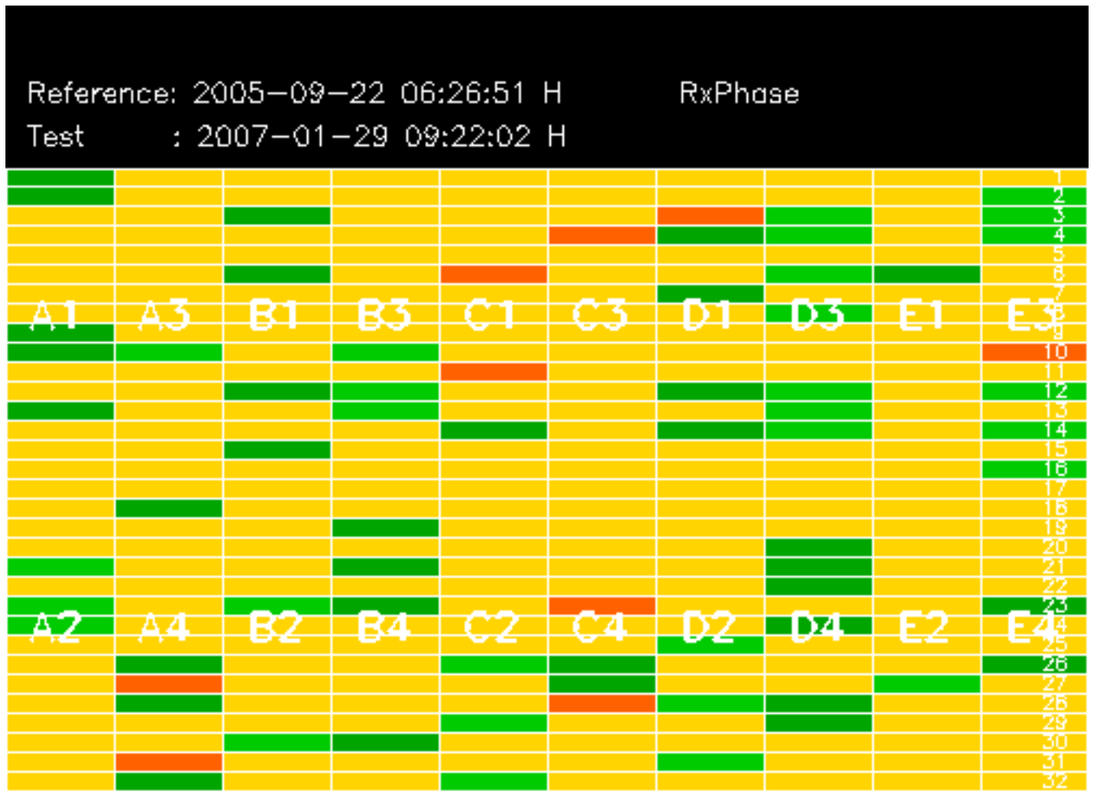
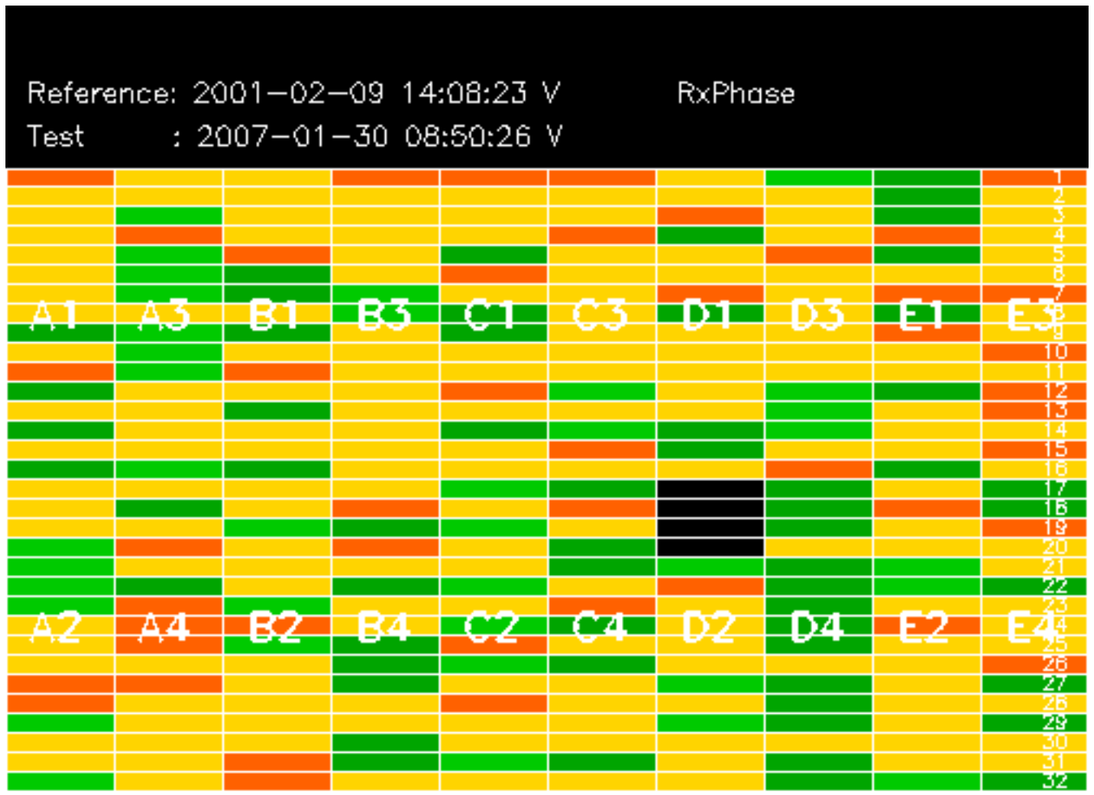
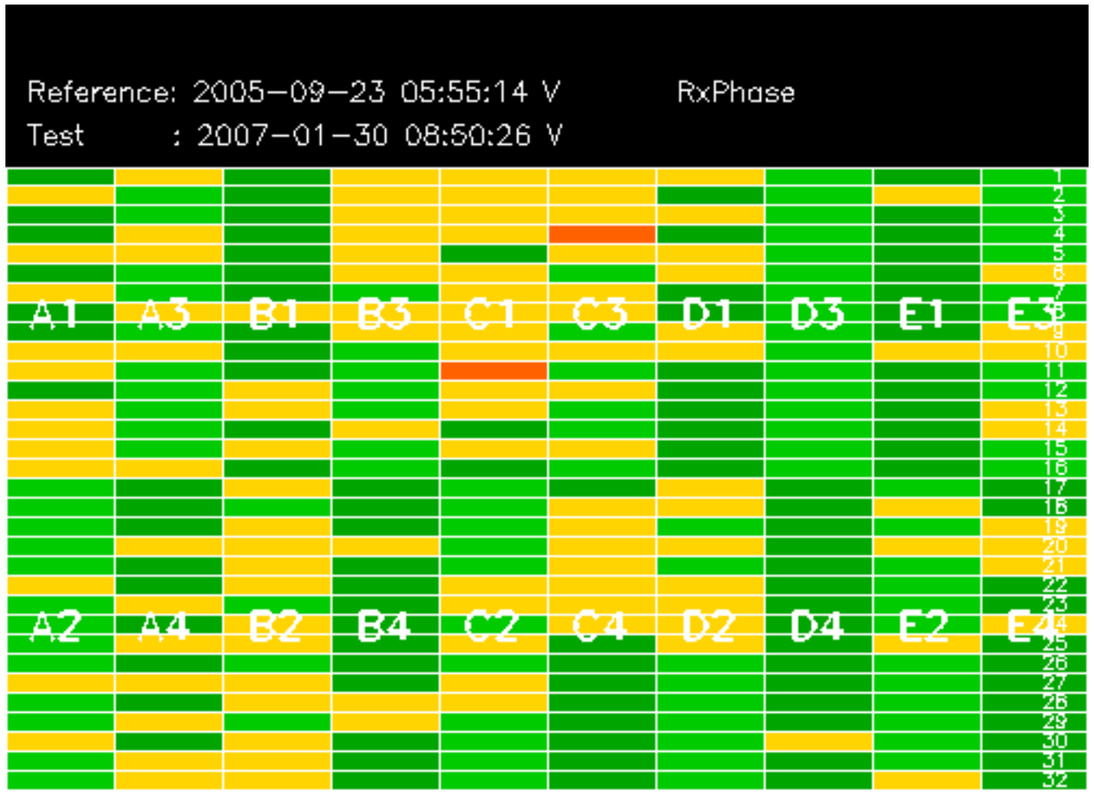

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-01-29 09:22:02 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-29 09:22:02 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 : 2007-01-30 08:50:26 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-01-30 08:50:26 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
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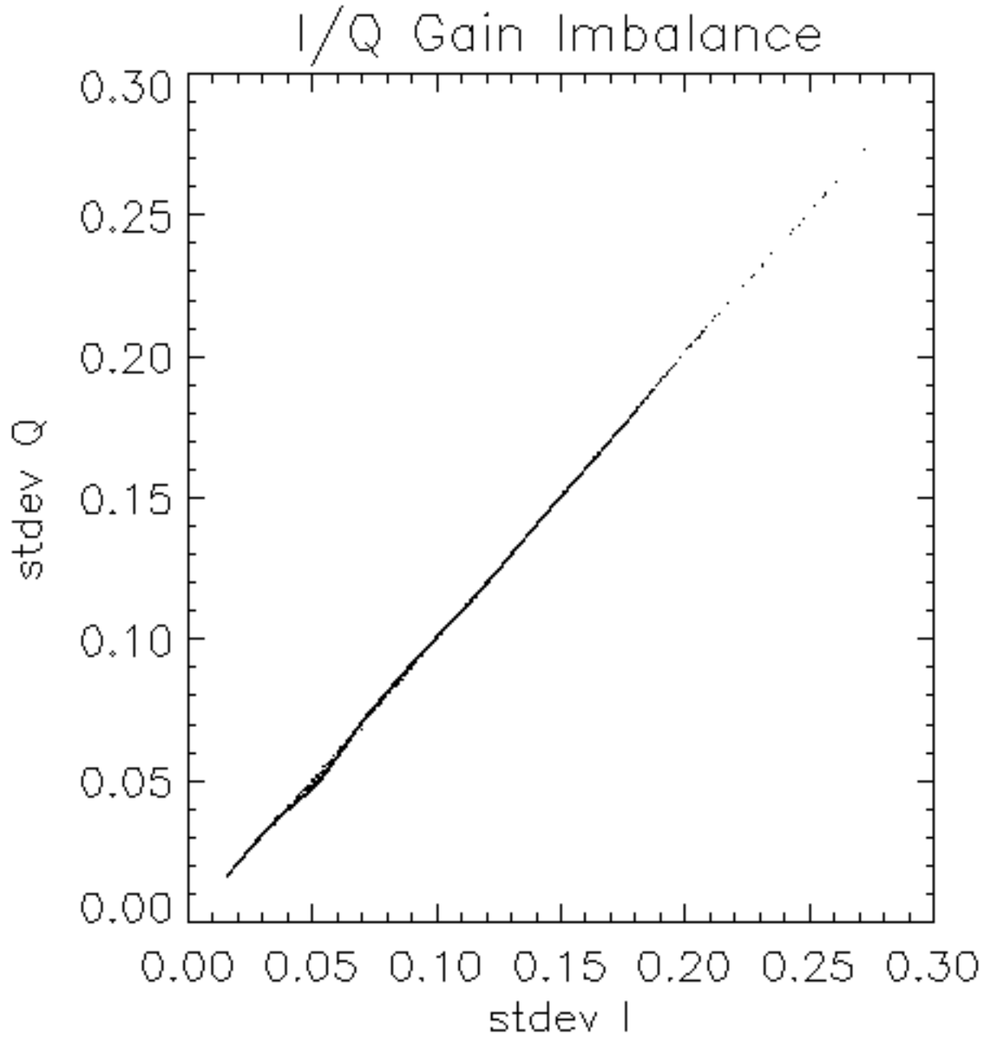
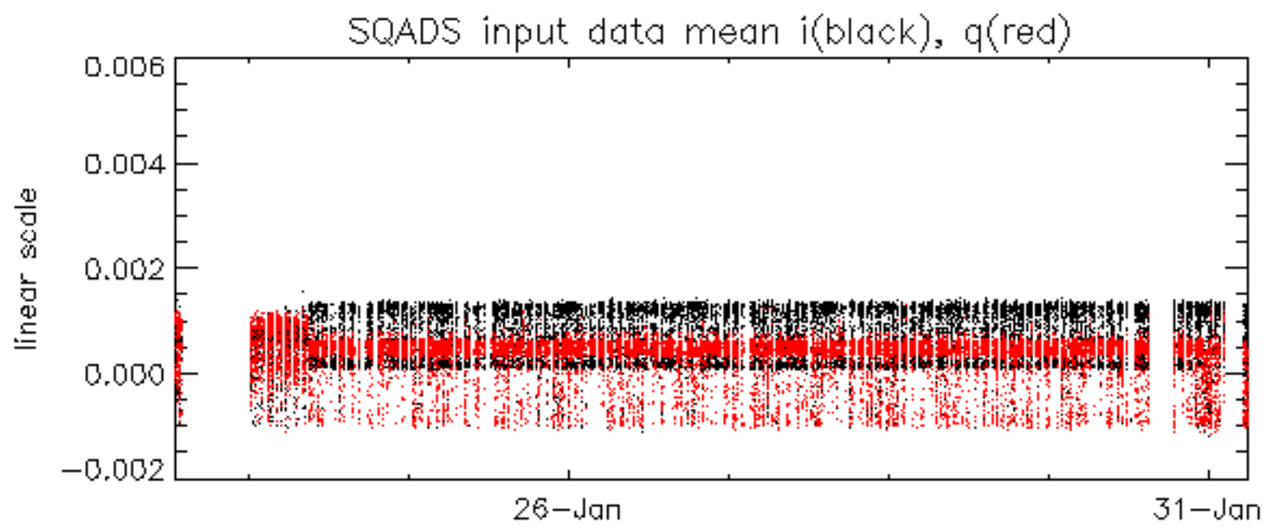
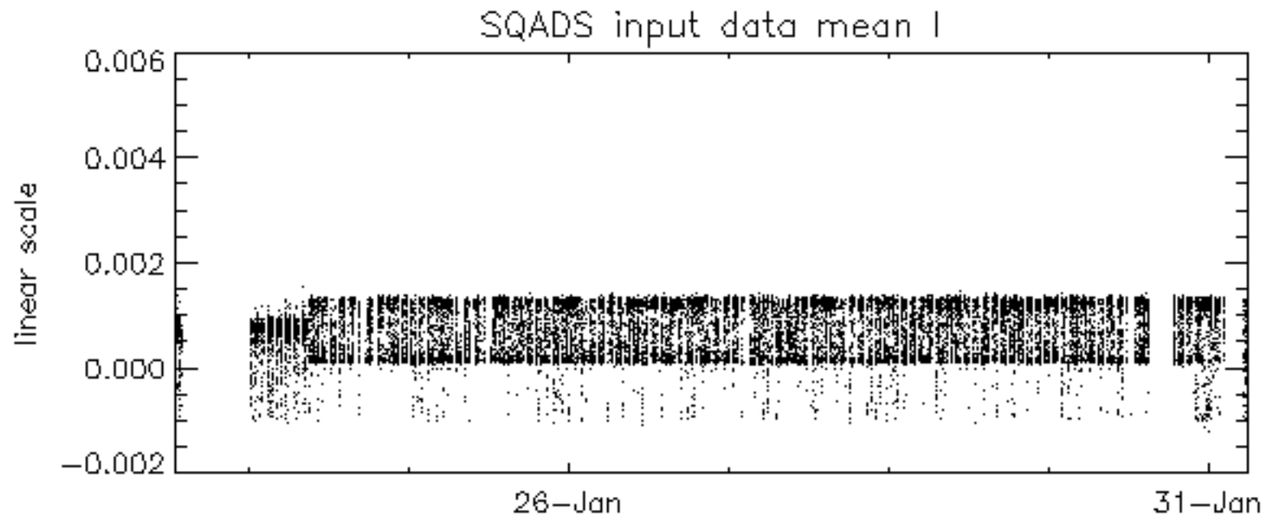
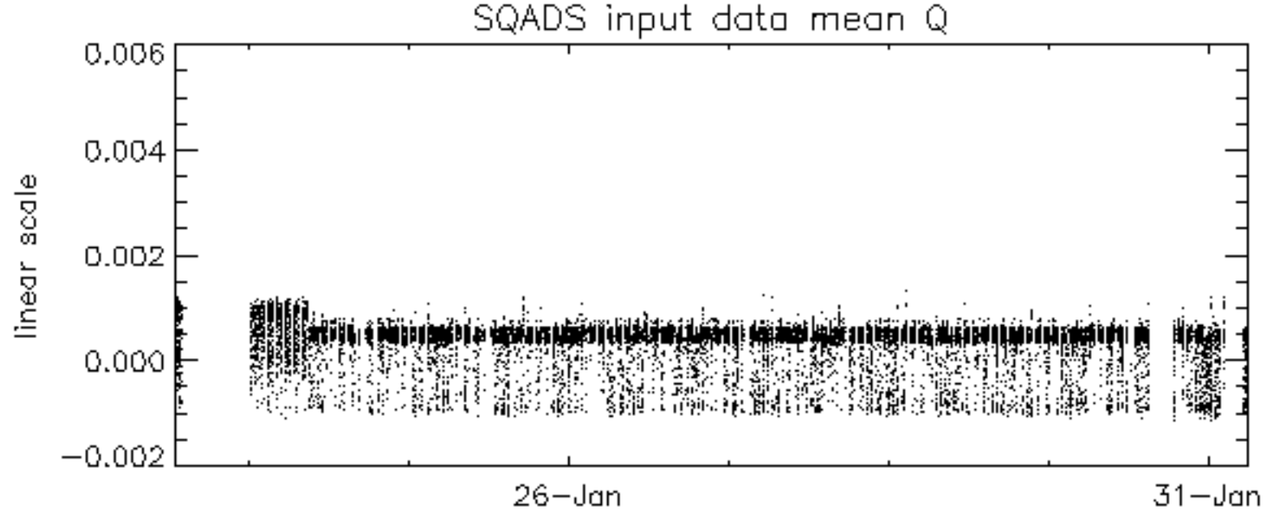
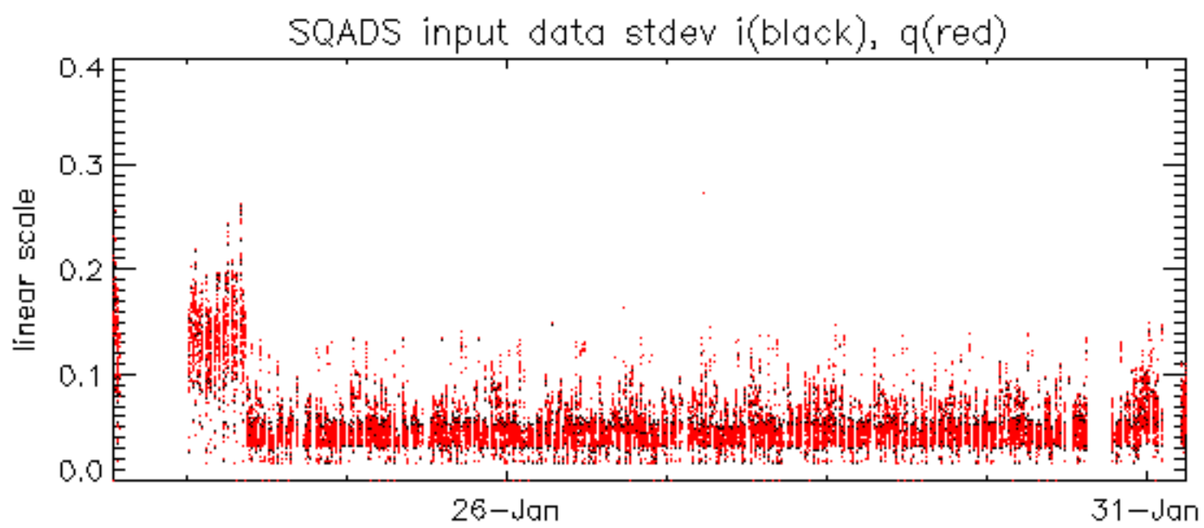
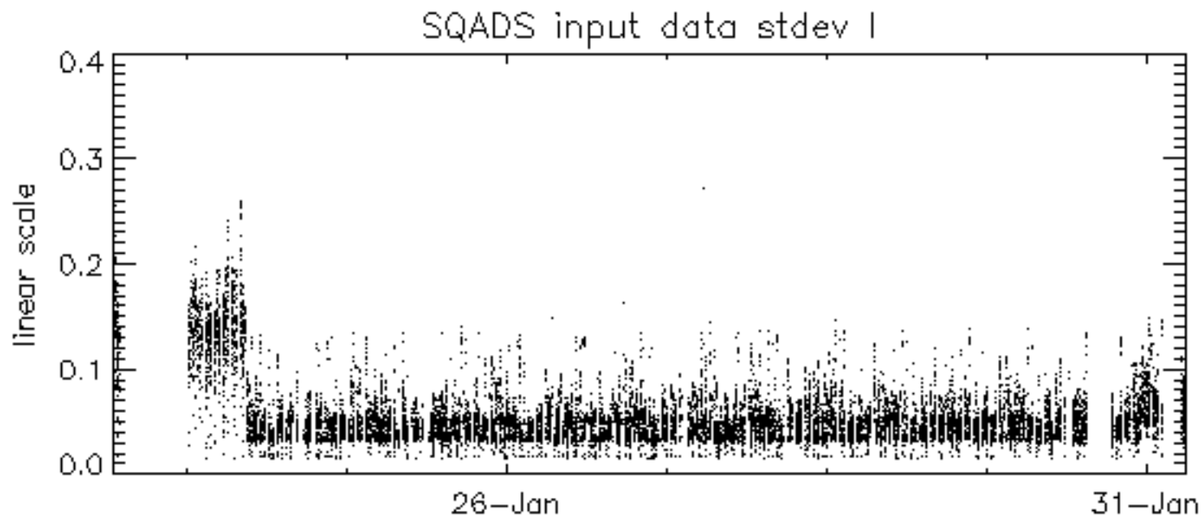

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

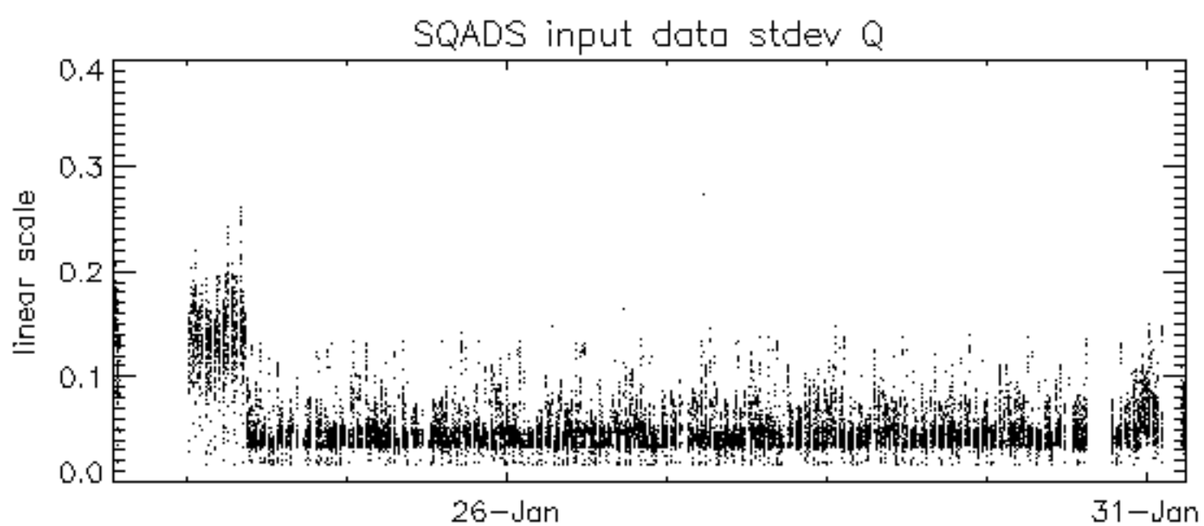

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan

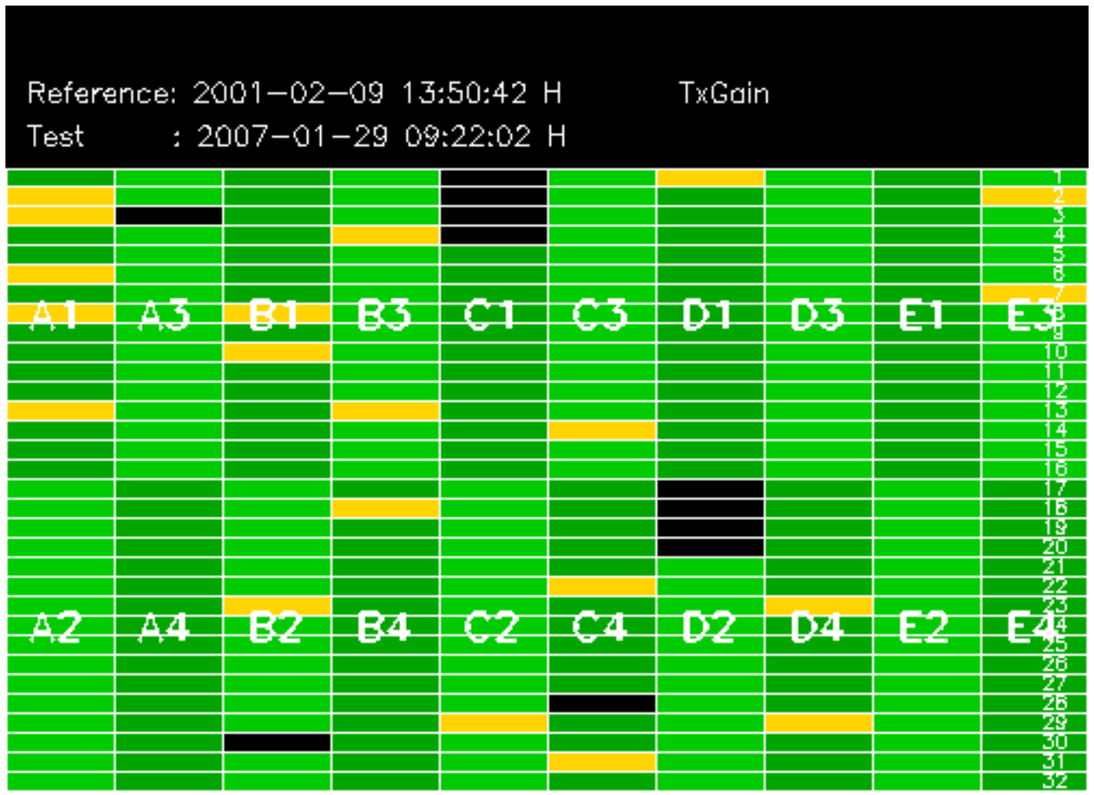

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan

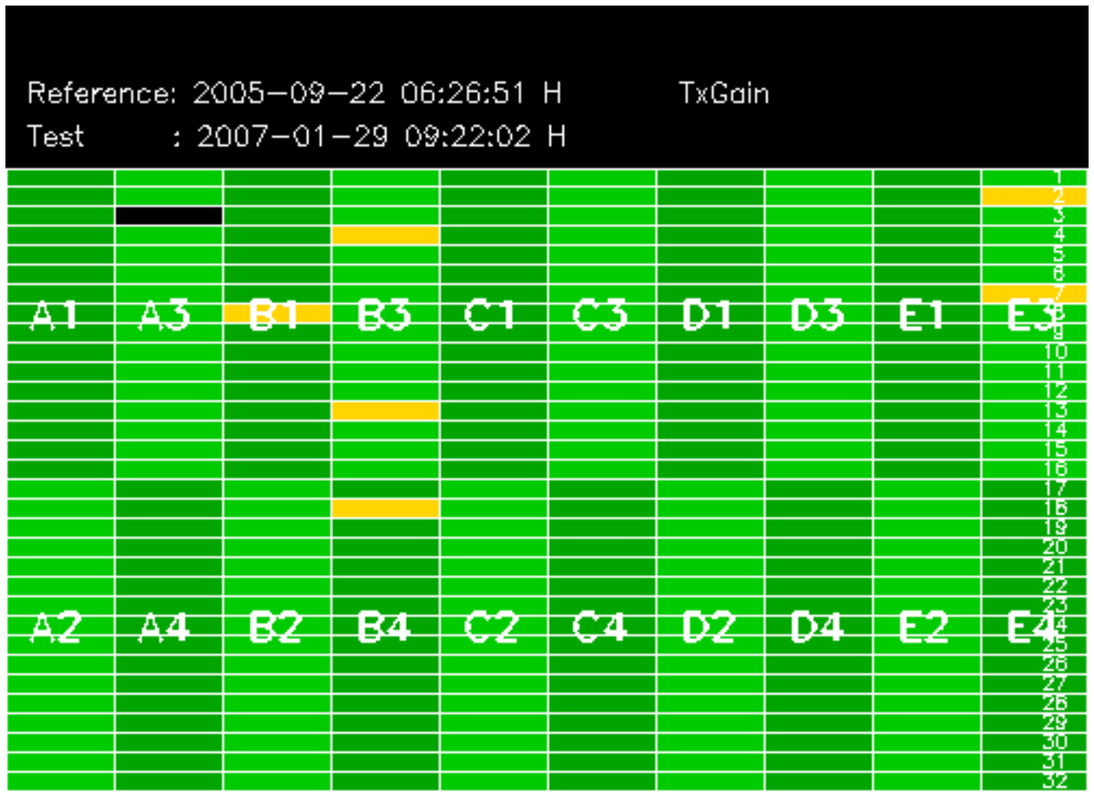

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan

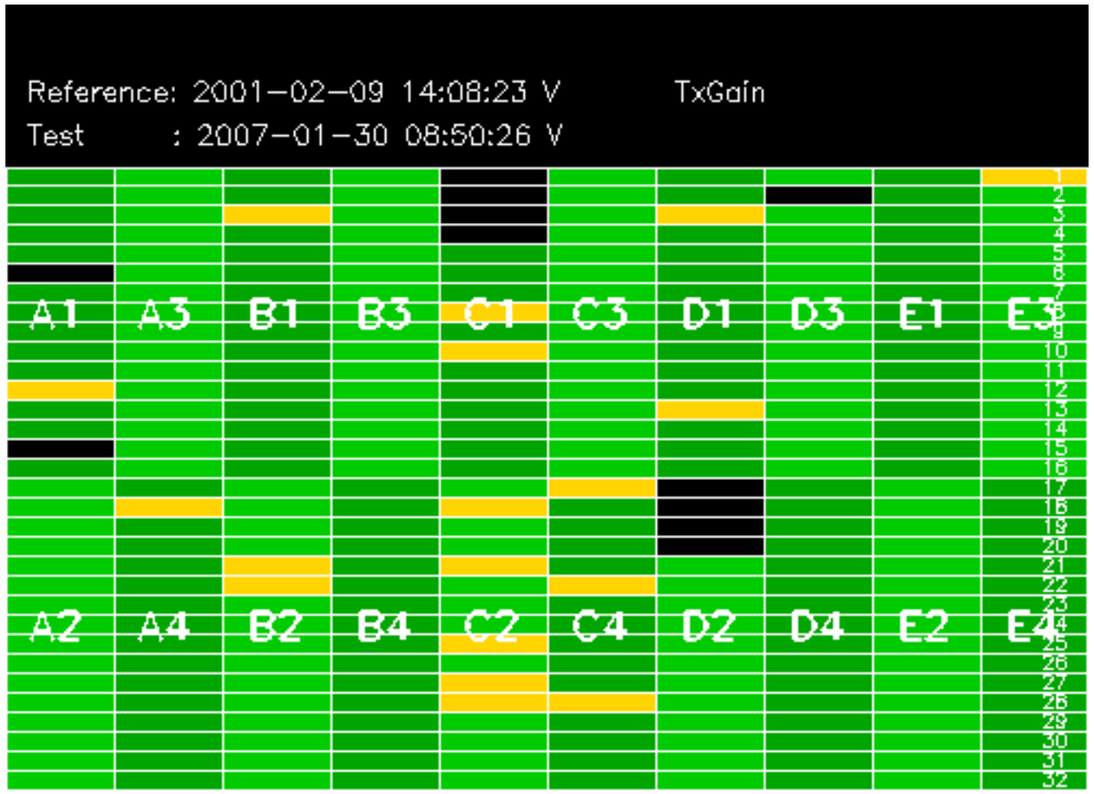

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26−Jan
31−Jan

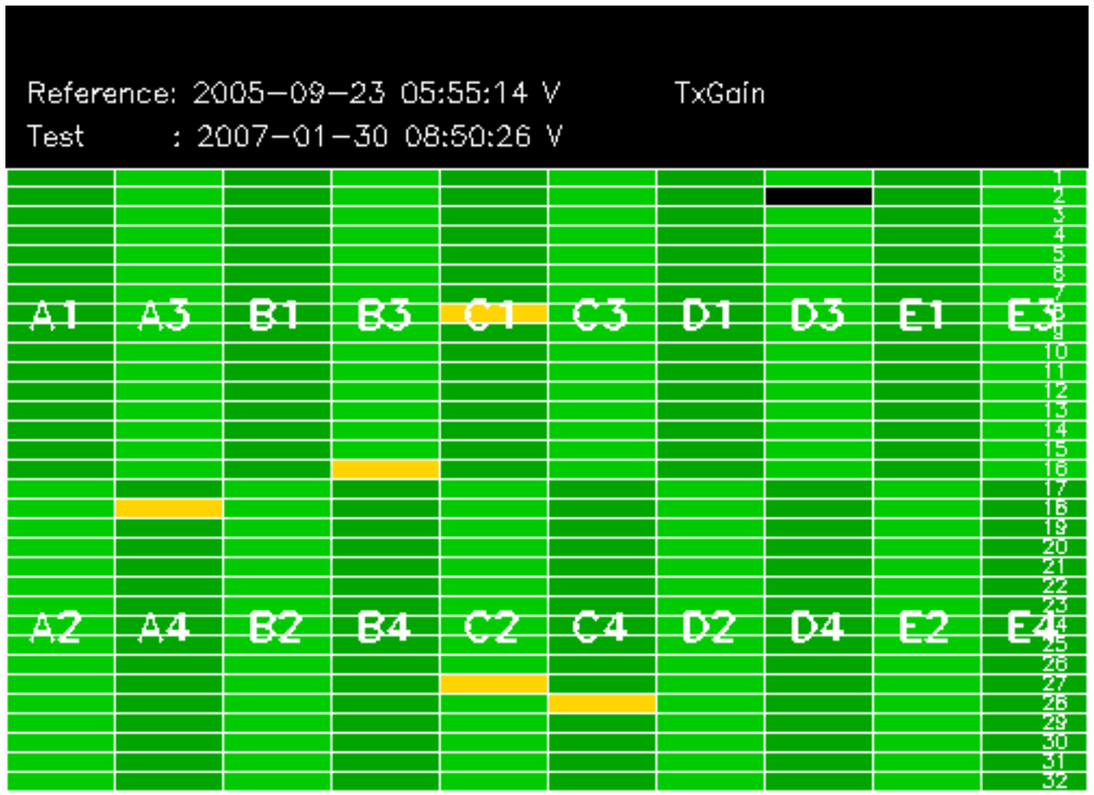

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26−Jan
31−Jan


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26−Jan
31−Jan


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-29 09:22:02 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 : 2007-01-29 09:22:02 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2007-01-30 08:50:26 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 : 2007-01-30 08:50:26 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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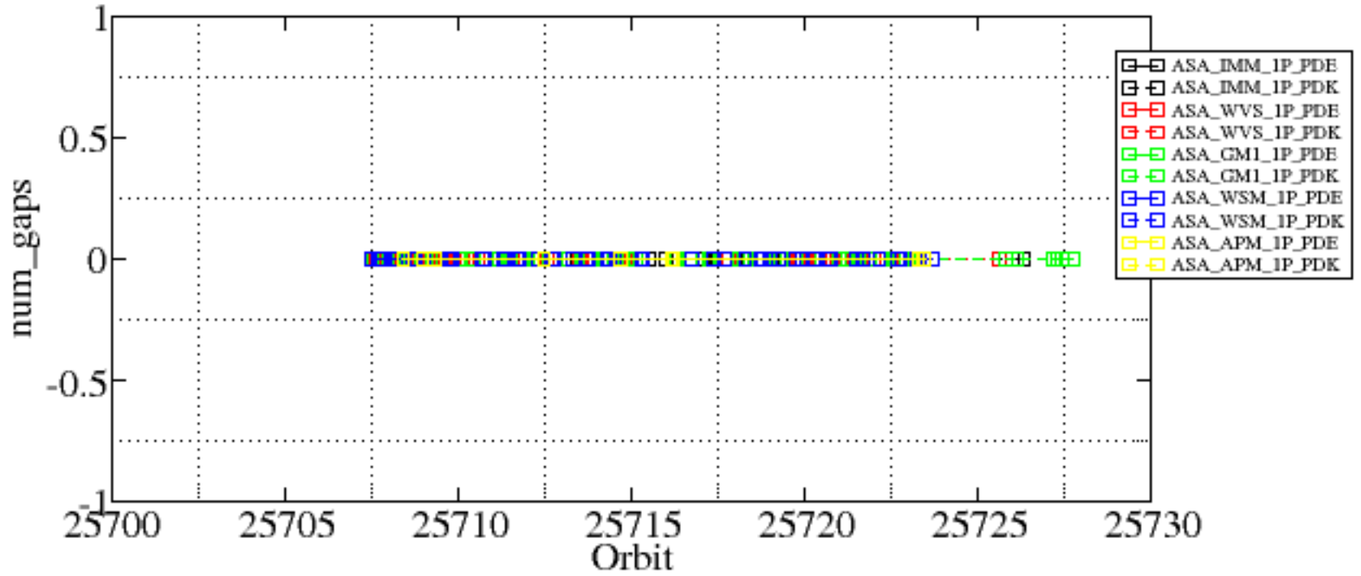
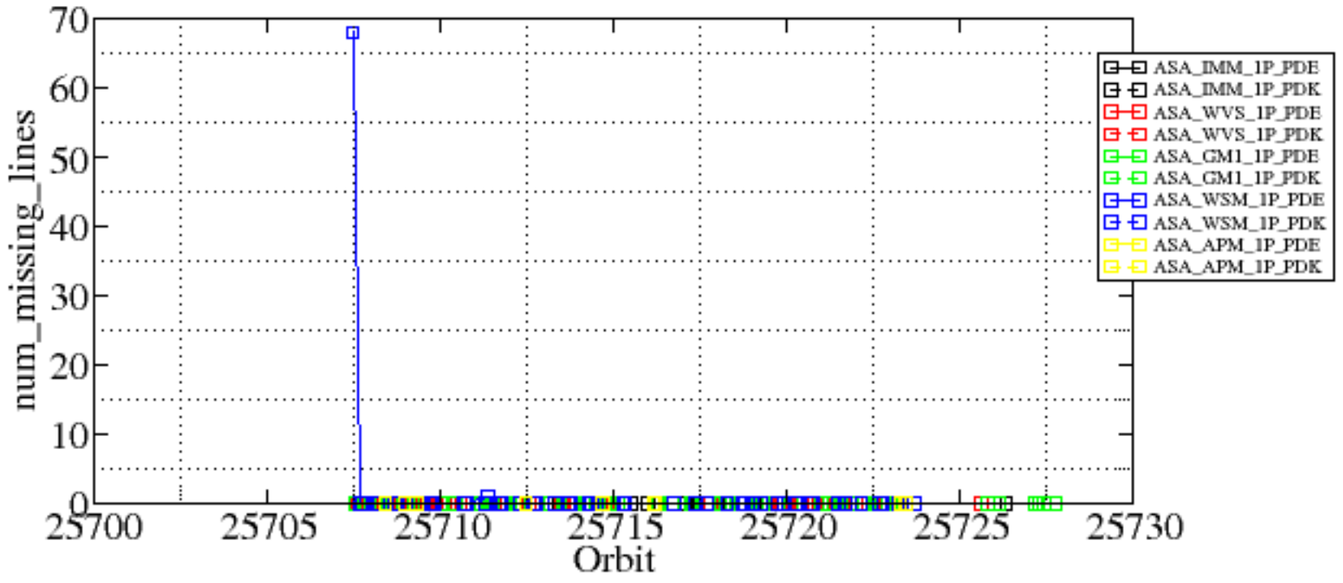
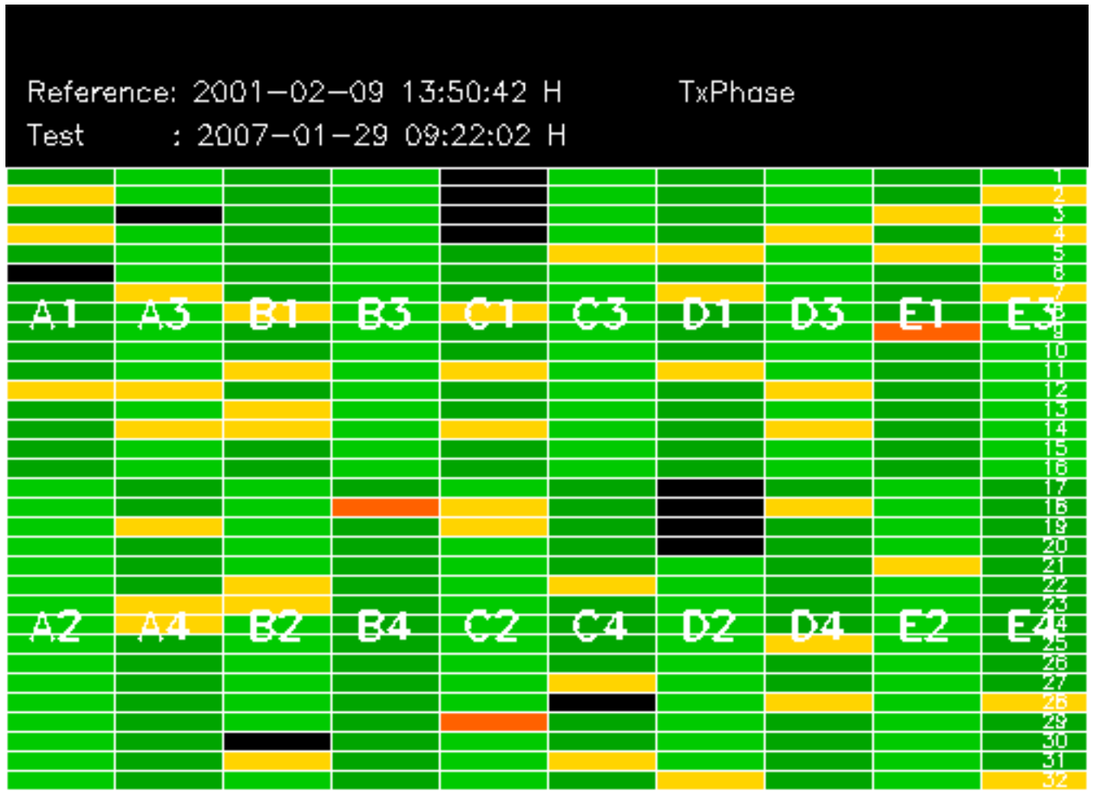
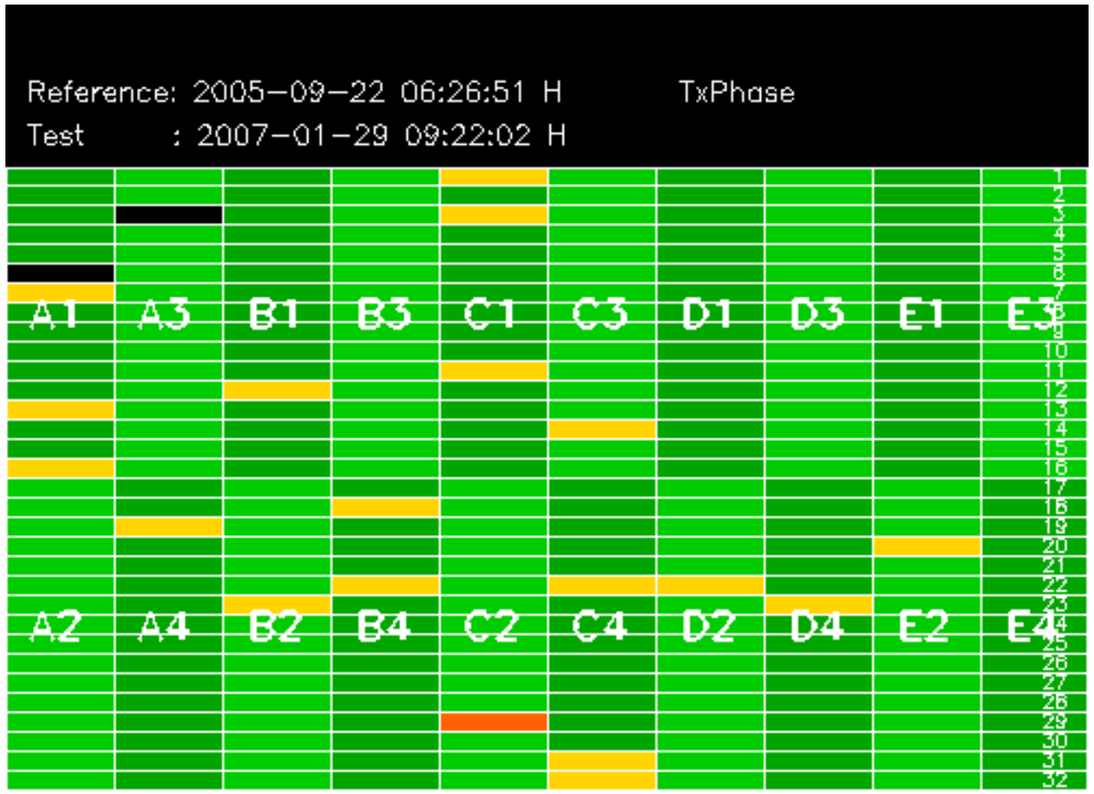
Summary of analysis for the last 3 days 2007013[901]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20070130_000819_000002452055_00102_25707_9211.N1 </td> <td>0 </td> <td>68 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20070130_063931_000000852055_00106_25711_9762.N1 </td> <td>0 </td> <td>1 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
25700
25705
25710
25715
25720
25725
25730
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
70
60
50
40
30
20
10
0
25700
25705
25710
25715
25720
25725
25730
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 : 2007-01-29 09:22:02 H
TxPhase
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 : 2007-01-29 09:22:02 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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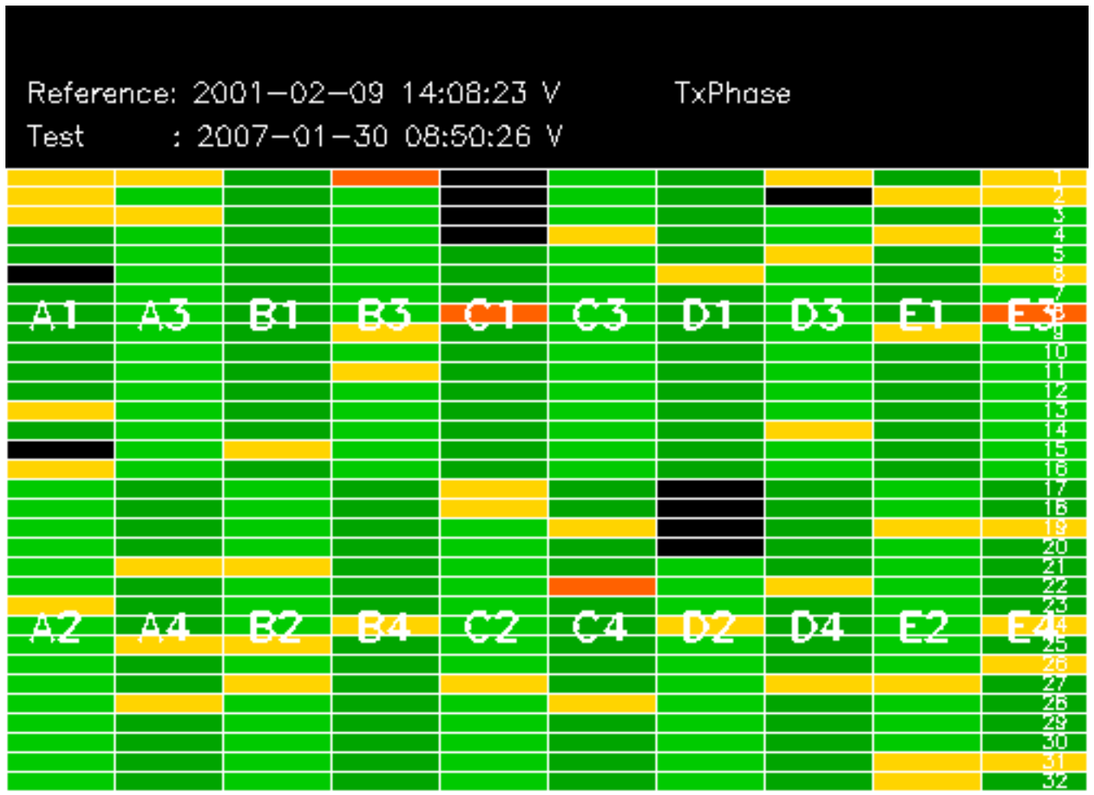
Reference: 2001-02-09 14:08:23 V
Test : 2007-01-30 08:50:26 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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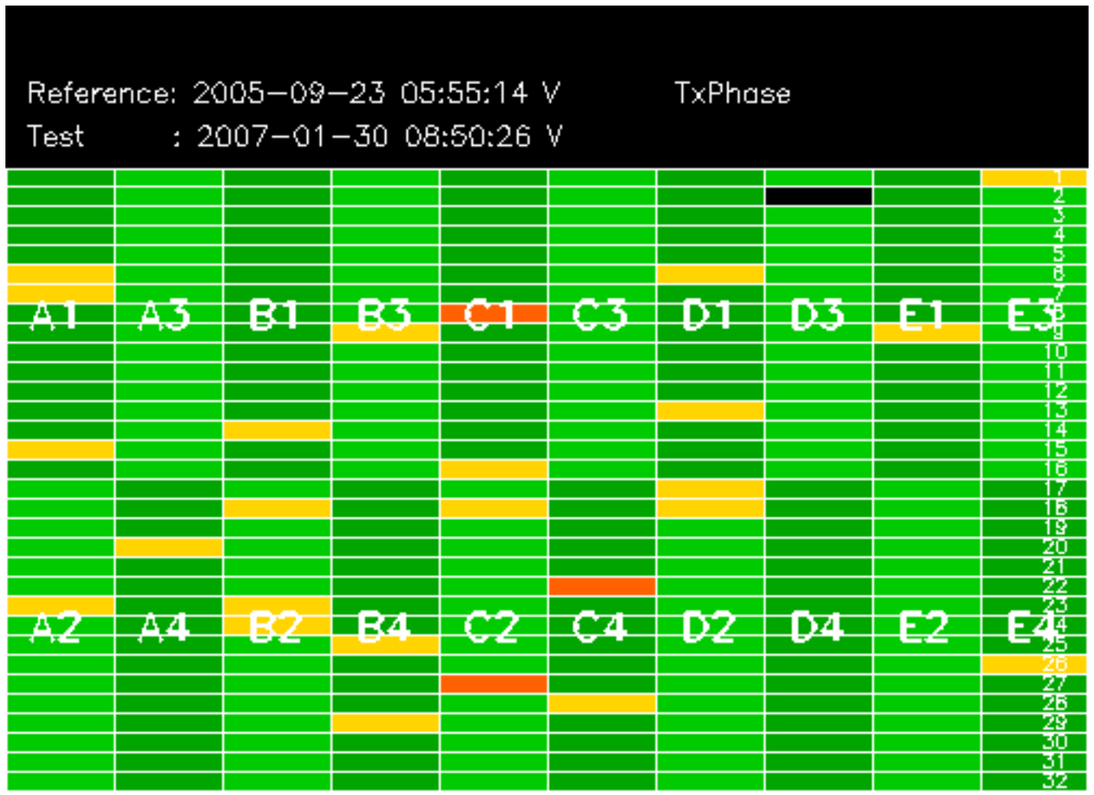
Reference: 2005-09-23 05:55:14 V
Test : 2007-01-30 08:50:26 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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3
4
5
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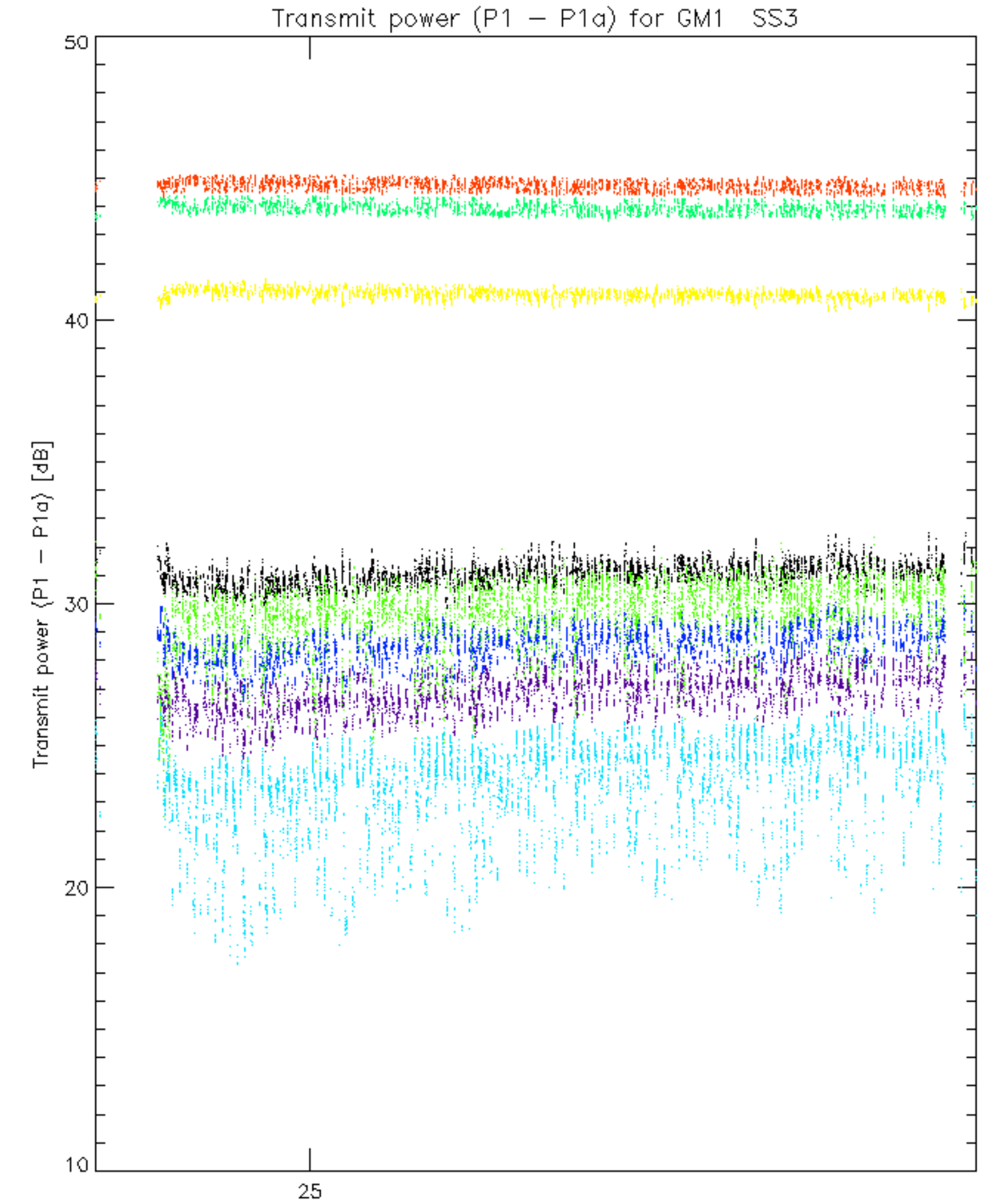
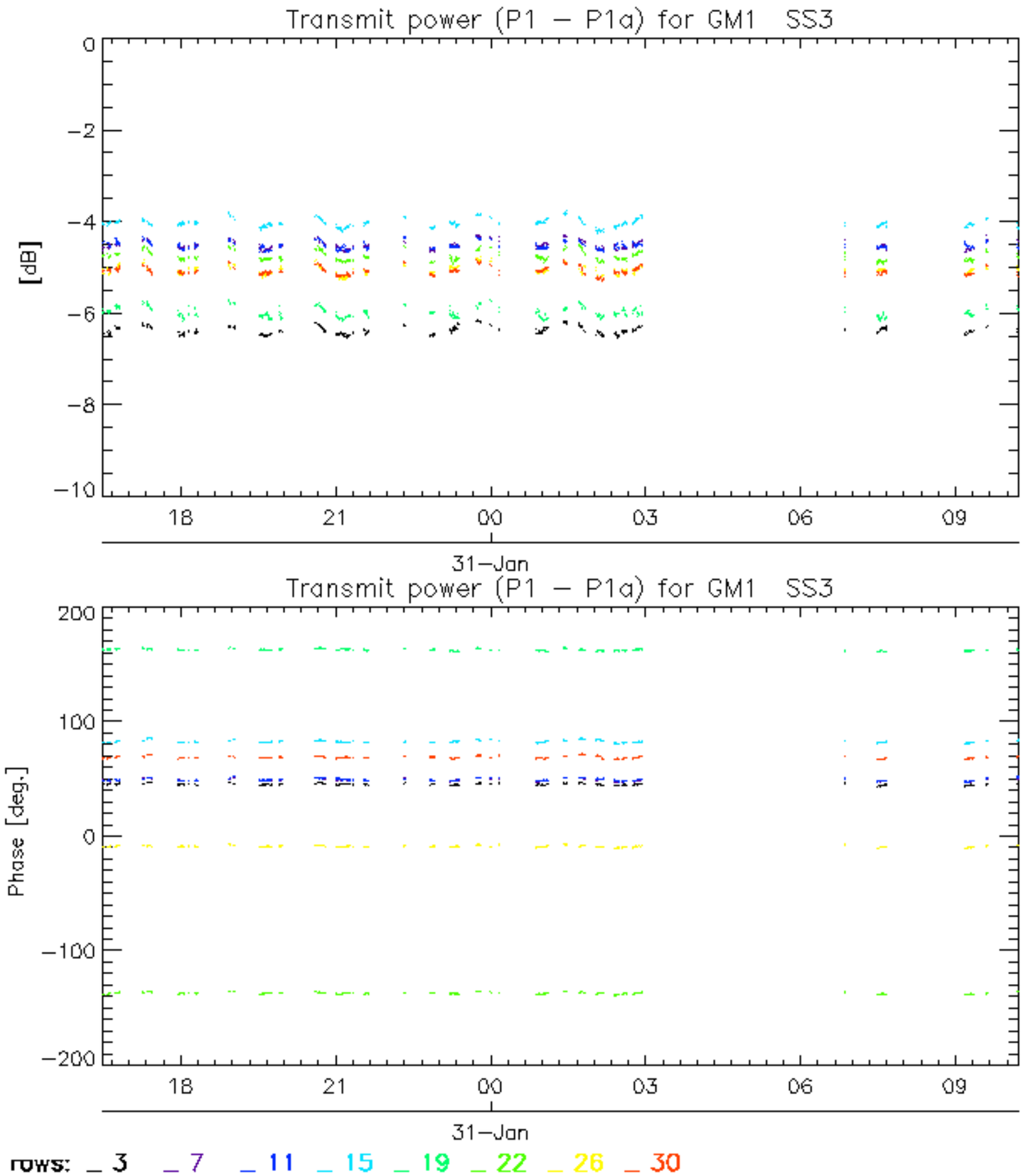
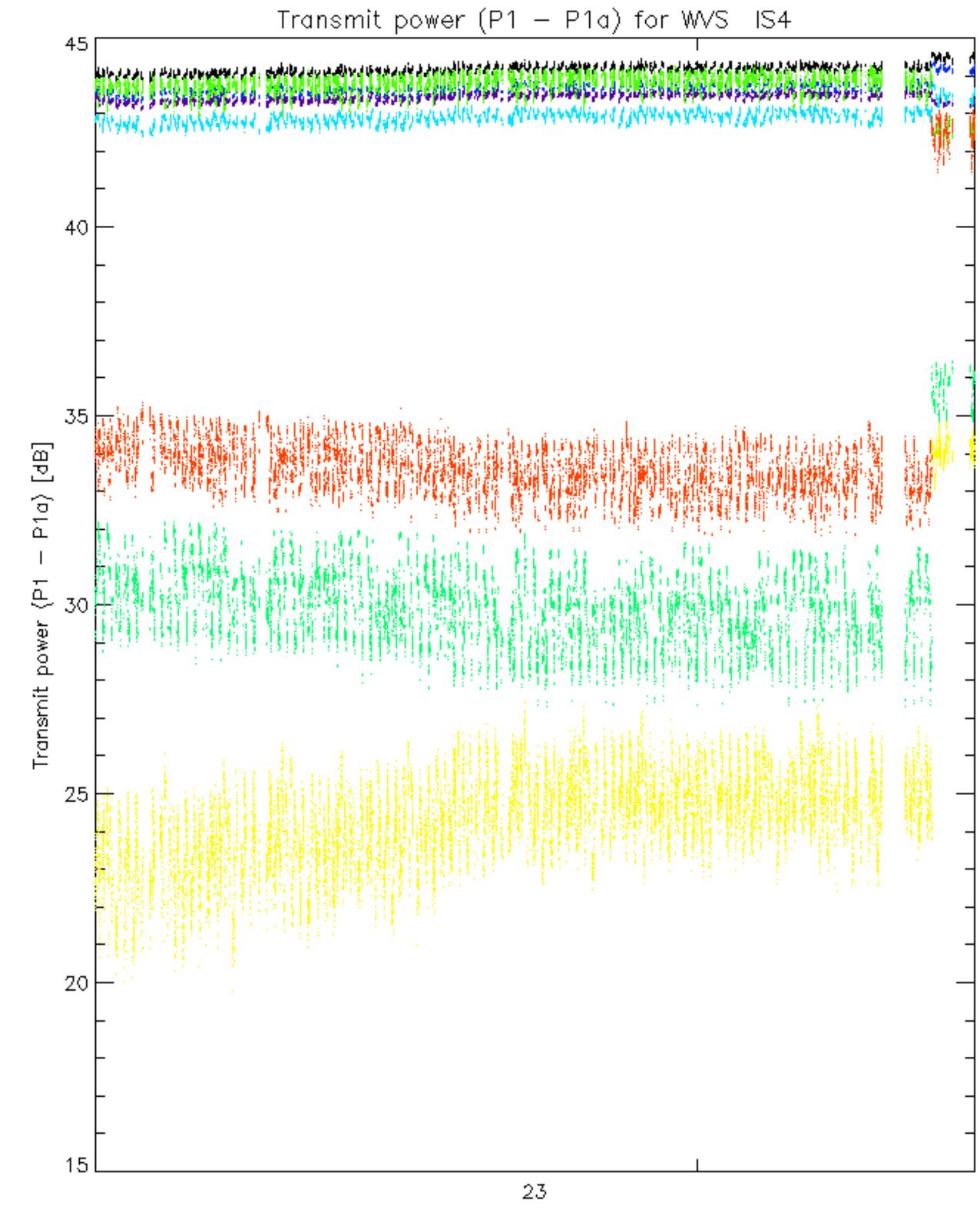
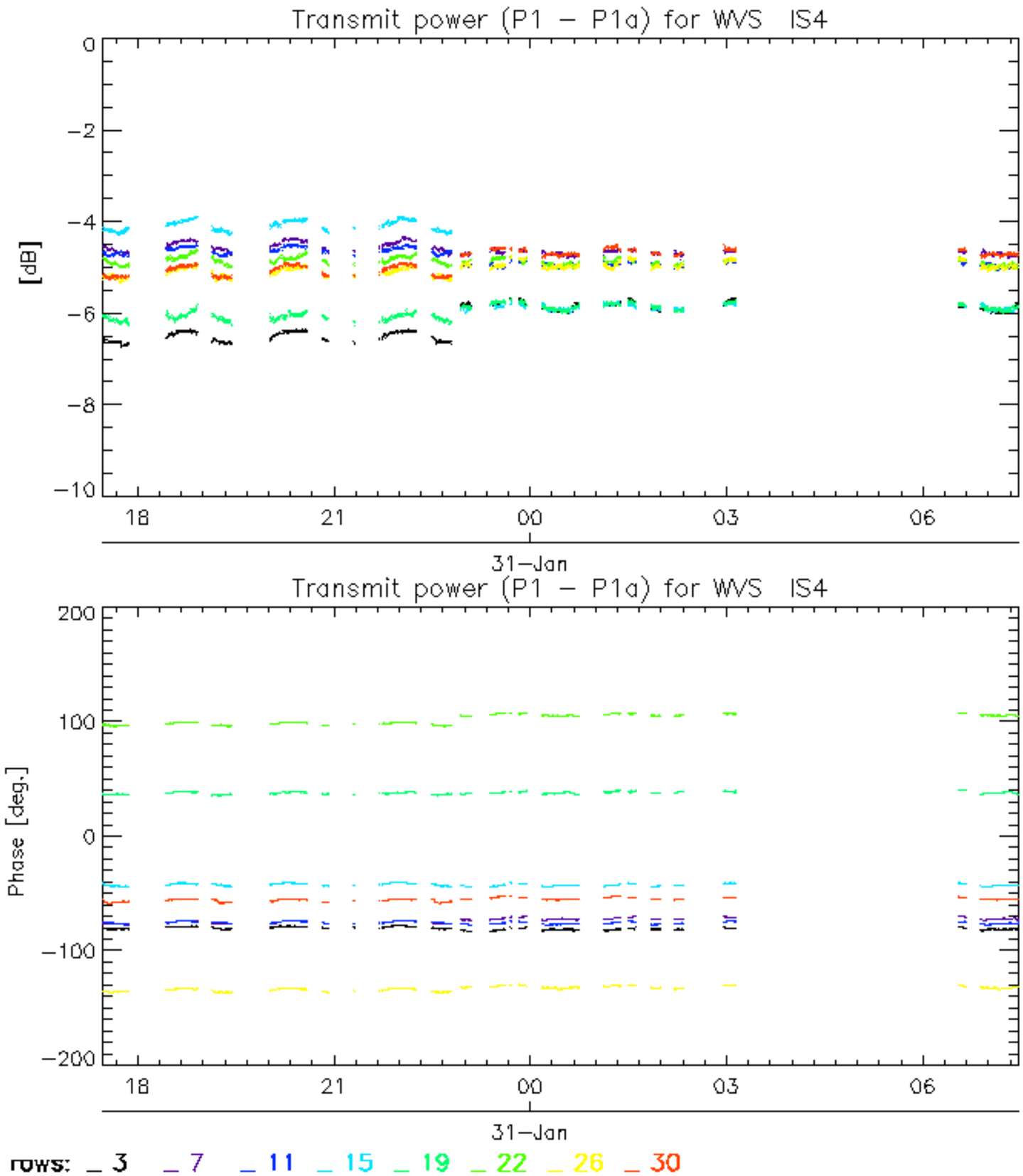

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
25
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
09
31–Jan
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
09
31–Jan
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS4
Transmit power (P1 – P1a) [dB]
45
40
35
30
25
20
15
23
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS4
[dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
31–Jan
Transmit power (P1 – P1a) for WVS IS4
Phase [deg.]
200
100
0
−100
−200
18
21
00
03
06
31–Jan
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.