PRELIMINARY REPORT OF 060122

last update on Sun Jan 22 16:48:02 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 2006-01-21 00:00:00 to 2006-01-22 16:48:02

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

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	45	0	8	0	30
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	45	0	8	0	30
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	45	0	8	0	30
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	45	0	8	0	30

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	46	53	32	14	55
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	46	53	32	14	55
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	46	53	32	14	55
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	46	53	32	14	55

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	20060118 043726
H	20060121 030235

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	-4.043695	0.007381	0.057799
7	P1	-2.998454	0.014069	0.000632
11	P1	-4.103101	0.022623	0.003296
15	P1	-6.065094	0.016977	0.009269
19	P1	-3.244886	0.005724	-0.029735
22	P1	-4.487487	0.020187	0.011523
26	P1	-4.217338	0.012316	0.026077
30	P1	-5.773722	0.009896	-0.006259
3	P1	-16.968040	0.248919	0.152605
7	P1	-16.590422	0.126830	-0.086159
11	P1	-16.605598	0.318324	-0.008030
15	P1	-13.254201	0.122942	0.133288
19	P1	-13.879463	0.075264	-0.021395
22	P1	-15.937469	0.569072	0.208830
26	P1	-15.772109	0.259563	-0.004648
30	P1	-16.613024	0.347261	0.072566

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.637253	0.096909	0.144593
7	P2	-22.490551	0.097868	0.089717
11	P2	-16.322876	0.103610	0.091755
15	P2	-7.226014	0.103521	0.054341
19	P2	-9.184469	0.098809	0.053871
22	P2	-17.942661	0.095767	0.010745
26	P2	-16.226562	0.100639	0.034484
30	P2	-19.660732	0.084374	0.046738

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.218416	0.007509	0.023944
7	P3	-8.218416	0.007509	0.023944
11	P3	-8.218416	0.007509	0.023944
15	P3	-8.218416	0.007509	0.023944
19	P3	-8.218416	0.007509	0.023944
22	P3	-8.218416	0.007509	0.023944
26	P3	-8.218416	0.007509	0.023944
30	P3	-8.218416	0.007509	0.023944

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	-3.721928	0.008602	-0.012312
7	P1	-2.757732	0.007686	0.041697
11	P1	-2.867343	0.010889	0.014247
15	P1	-3.453296	0.018370	-0.047902
19	P1	-3.381318	0.013657	0.027517
22	P1	-5.122401	0.021582	0.011863
26	P1	-5.855100	0.015594	0.001248
30	P1	-5.254564	0.030339	0.051382
3	P1	-11.517045	0.033660	-0.046878
7	P1	-9.929385	0.050607	0.077345
11	P1	-10.069734	0.051342	-0.040248
15	P1	-10.614476	0.081149	-0.062757
19	P1	-15.482658	0.063282	0.075652
22	P1	-20.680626	1.145284	0.450270
26	P1	-16.889427	0.327004	0.436518
30	P1	-18.154261	0.308233	0.000058

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.462885	0.031934	0.242140
7	P2	-22.905033	0.057662	0.241359
11	P2	-11.461846	0.020000	0.171027
15	P2	-4.935692	0.023431	0.098730
19	P2	-6.933299	0.022188	0.096818
22	P2	-8.198482	0.022974	0.032056
26	P2	-23.989683	0.025307	0.112745
30	P2	-22.106546	0.017146	0.057717

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.061289	0.002422	0.039420
7	P3	-8.061244	0.002425	0.040070
11	P3	-8.061368	0.002433	0.040336
15	P3	-8.061227	0.002430	0.039793
19	P3	-8.061379	0.002428	0.039818
22	P3	-8.061241	0.002420	0.038957
26	P3	-8.061136	0.002419	0.039448
30	P3	-8.061290	0.002426	0.039371

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	0.000551974
	stdev	1.76377e-07
MEAN Q	mean	0.000514530
	stdev	2.18539e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.138422
	stdev	0.00122010
STDEV Q	mean	0.138777
	stdev	0.00123936

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006012[012]
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_1PNPDE20060120_004243_000001222044_00245_20339_0521.N1	1	0
ASA_IMM_1PNPDE20060120_155104_000001122044_00254_20348_0574.N1	1	0
ASA_WSM_1PNPDE20060121_184457_000003042044_00271_20365_1874.N1	0	64

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

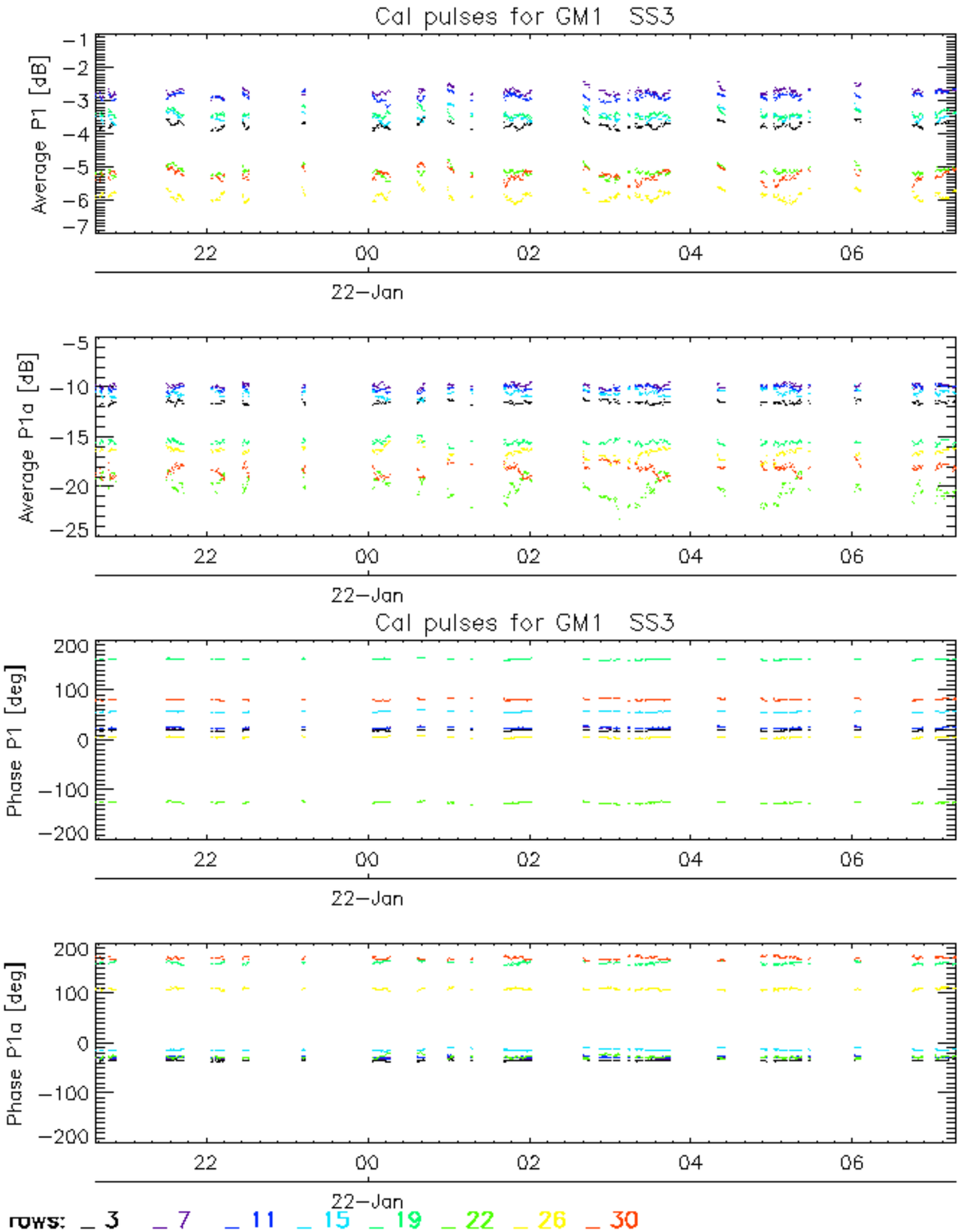
Descending

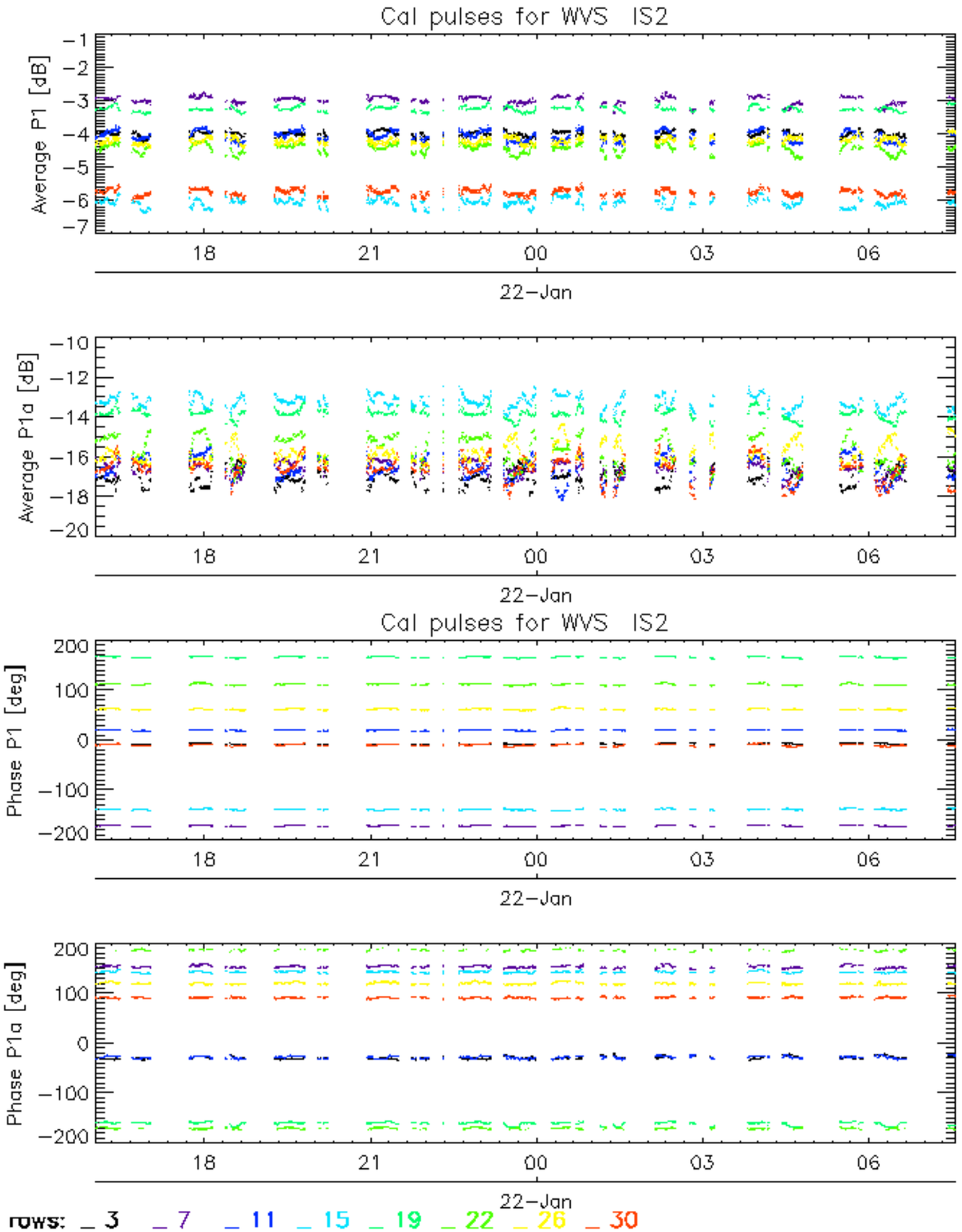
7.5 - Absolute Doppler for GM1

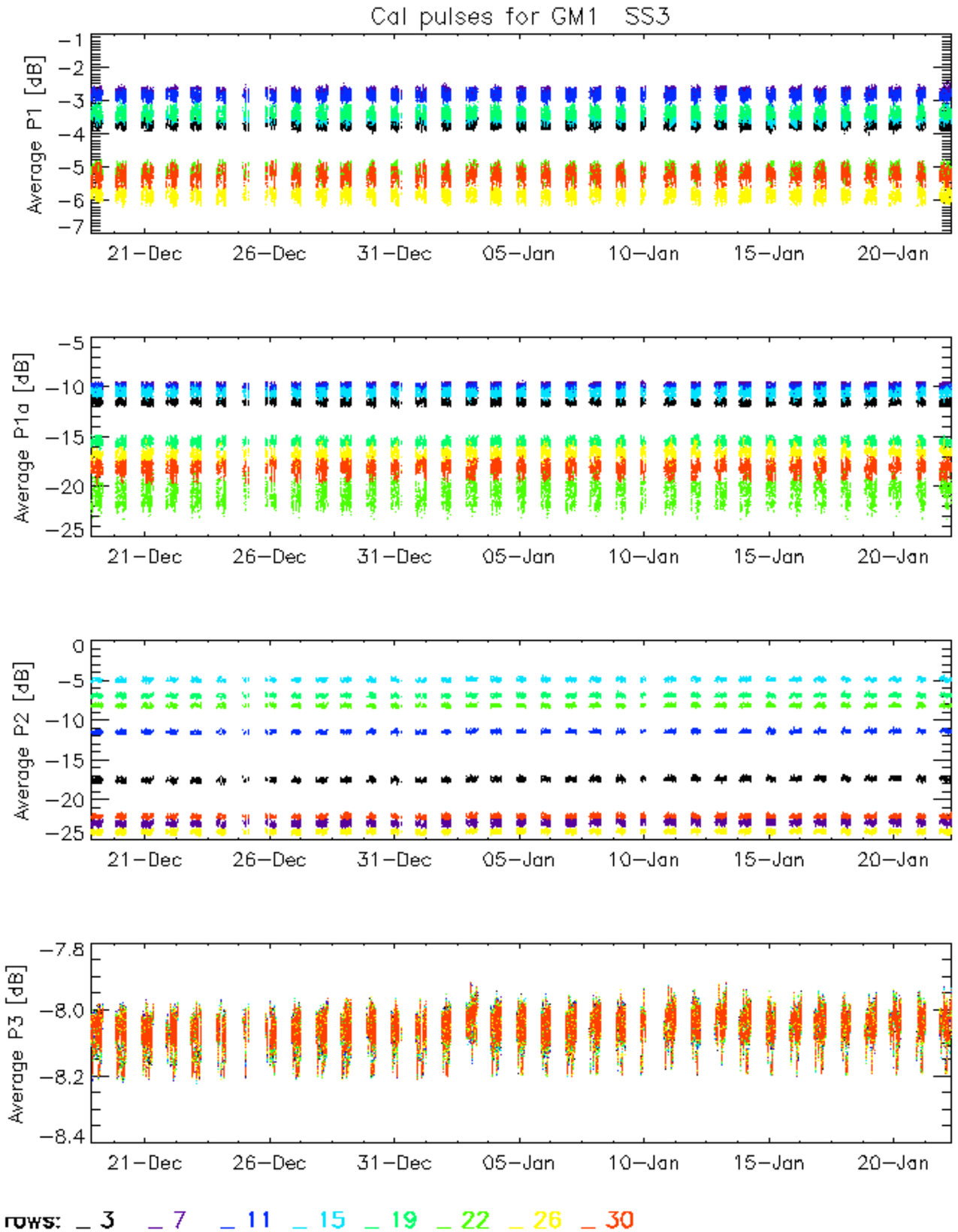
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

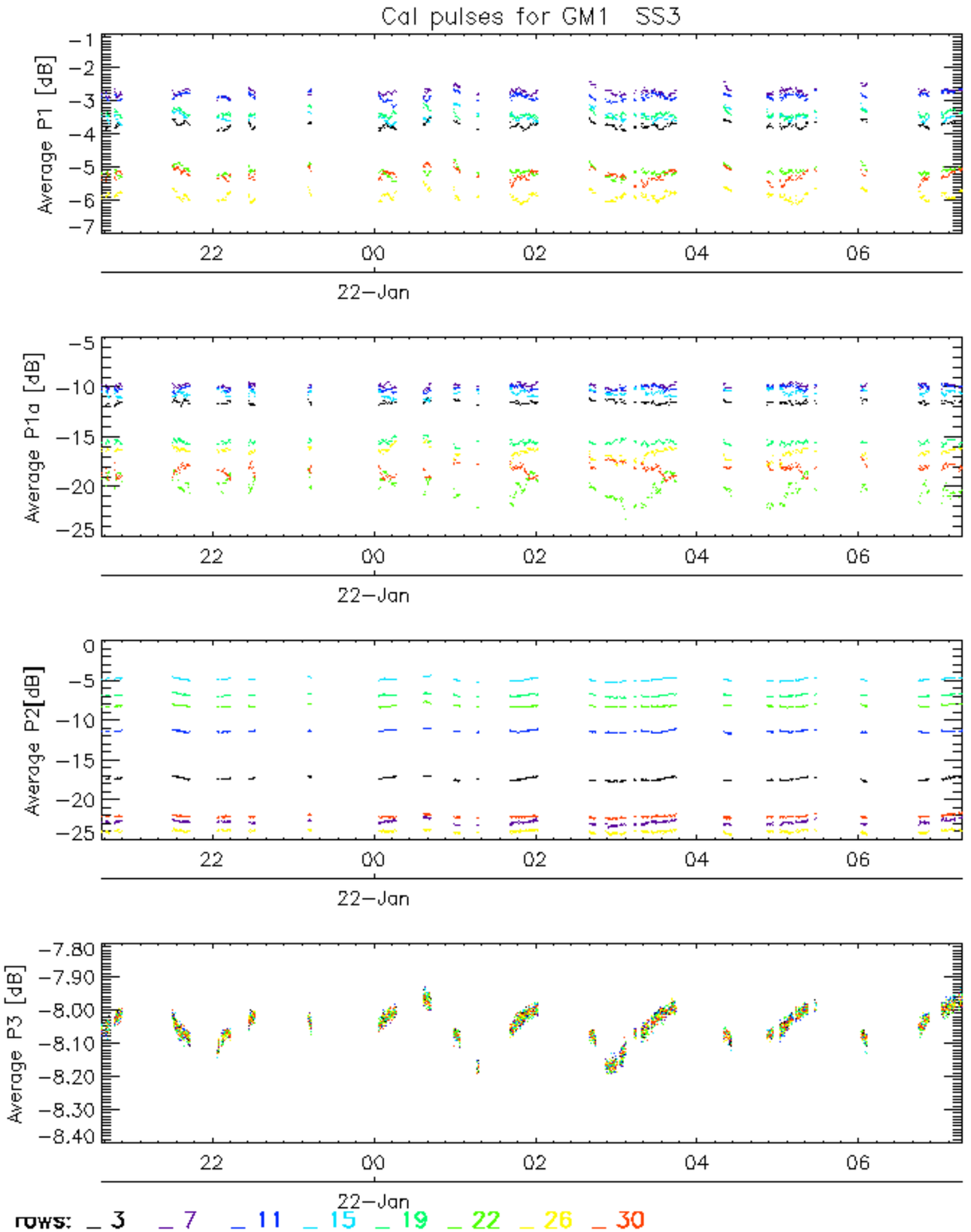
7.6 - Doppler evolution versus ANX for GM1

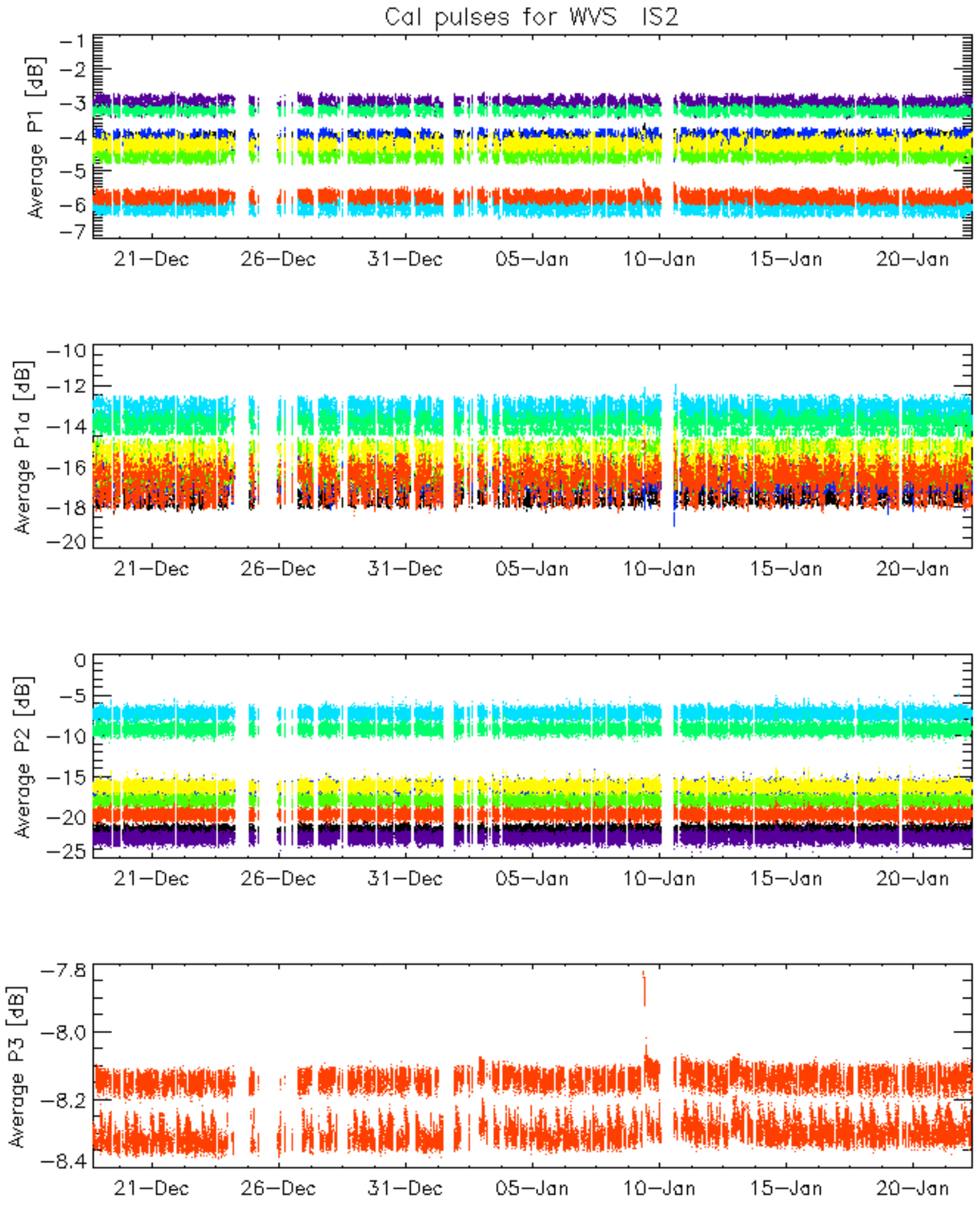
Evolution Doppler error versus ANX
☒

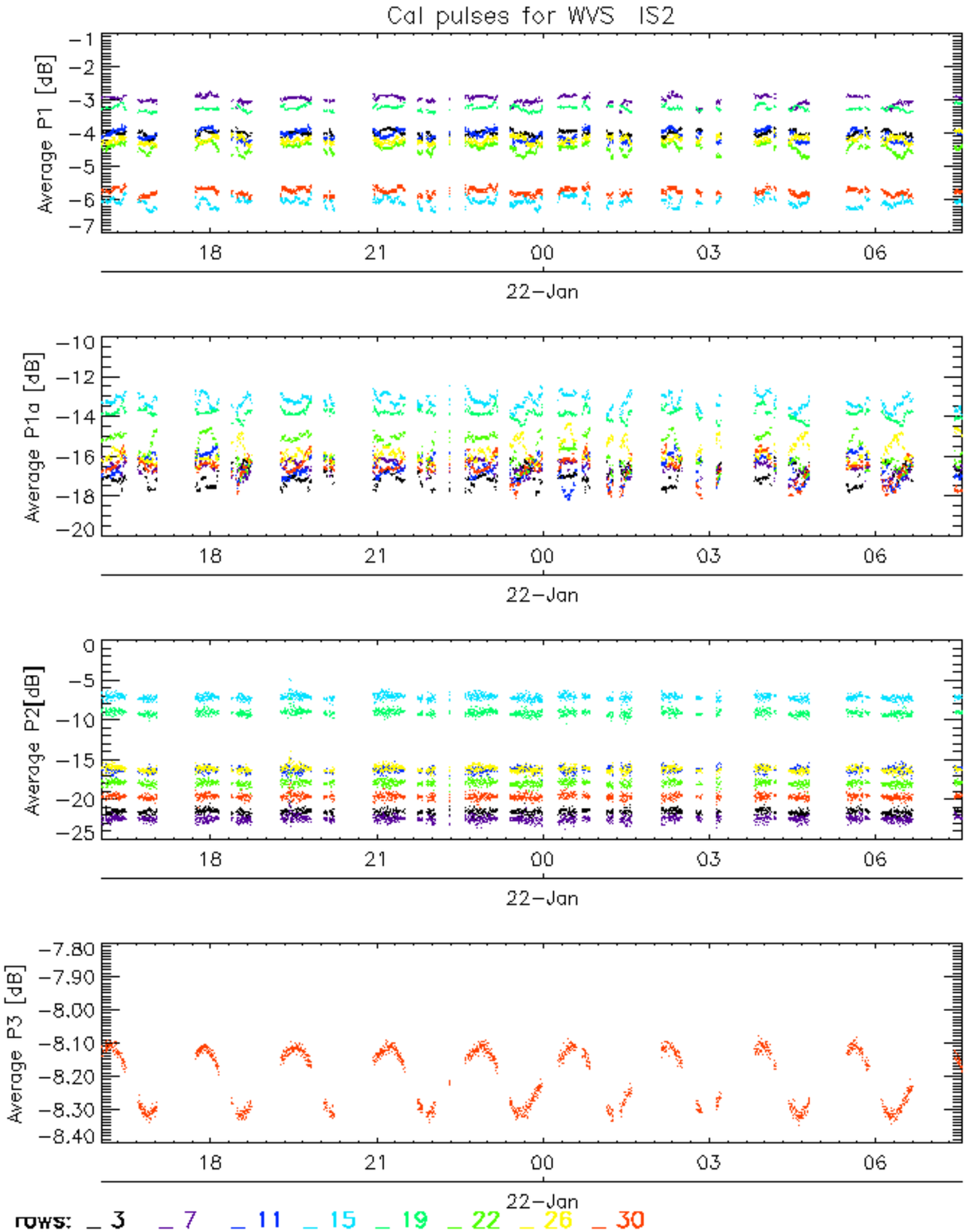

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
22
00
02
04
06
22−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
22
00
02
04
06
22−Jan
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
22
00
02
04
06
22−Jan
Phase P1a [deg]
200
100
0
−100
−200
22
00
02
04
06
22−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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

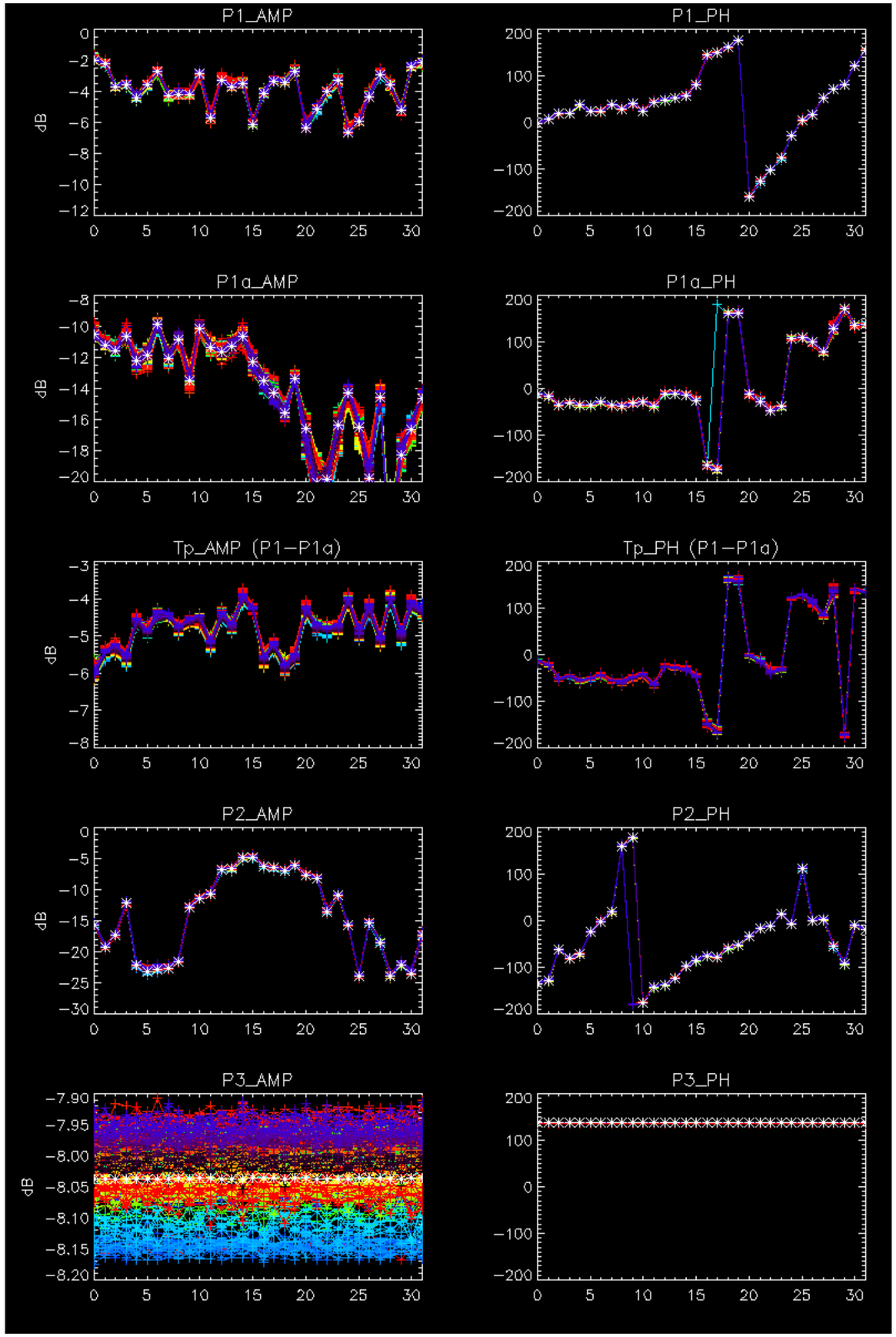

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
20−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

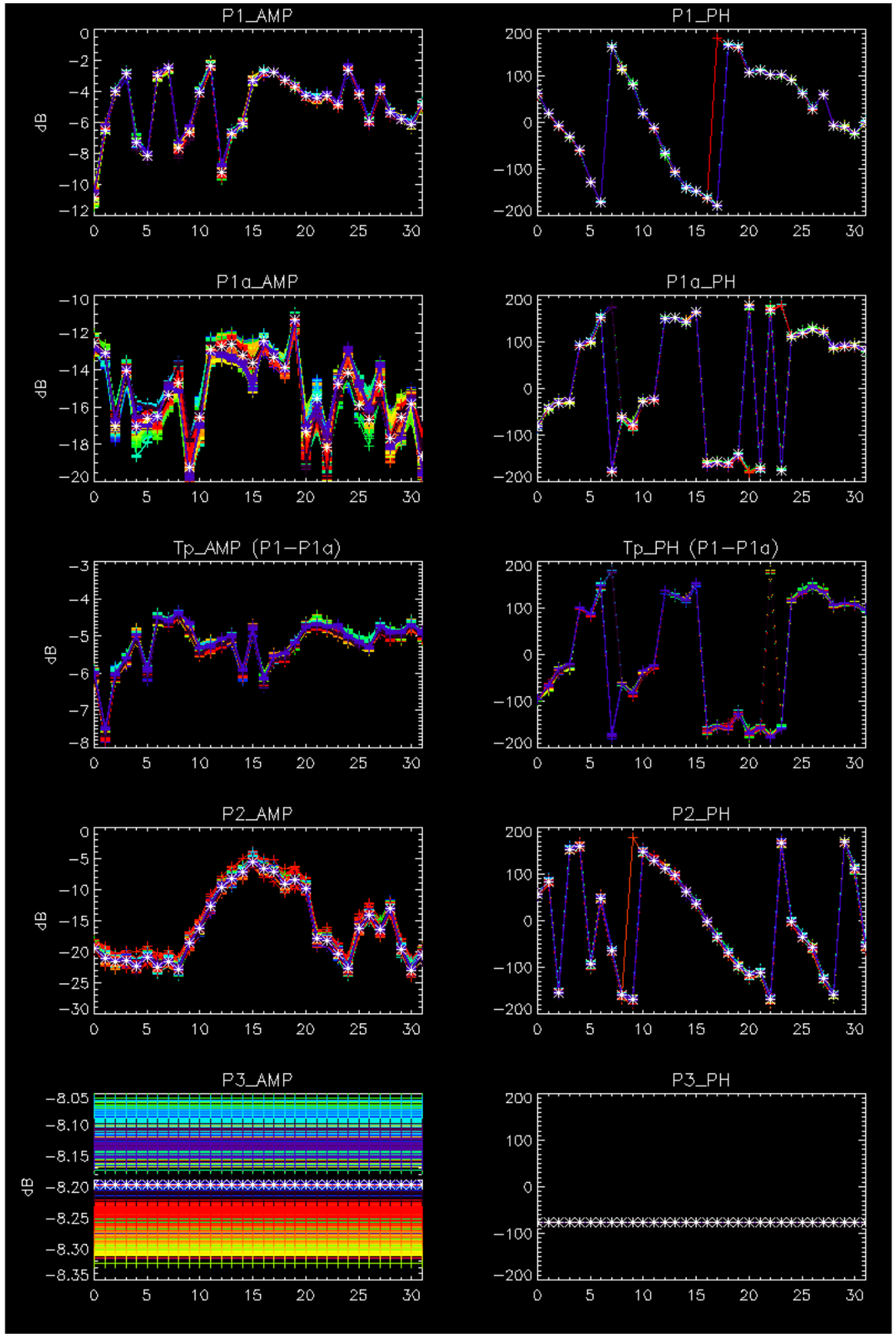

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
22
00
02
04
06
22−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
22
00
02
04
06
22−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
22
00
02
04
06
22−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
22
00
02
04
06
22−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 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
20−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
18
21
00
03
06
22−Jan
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
22−Jan
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
22−Jan
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
22−Jan
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

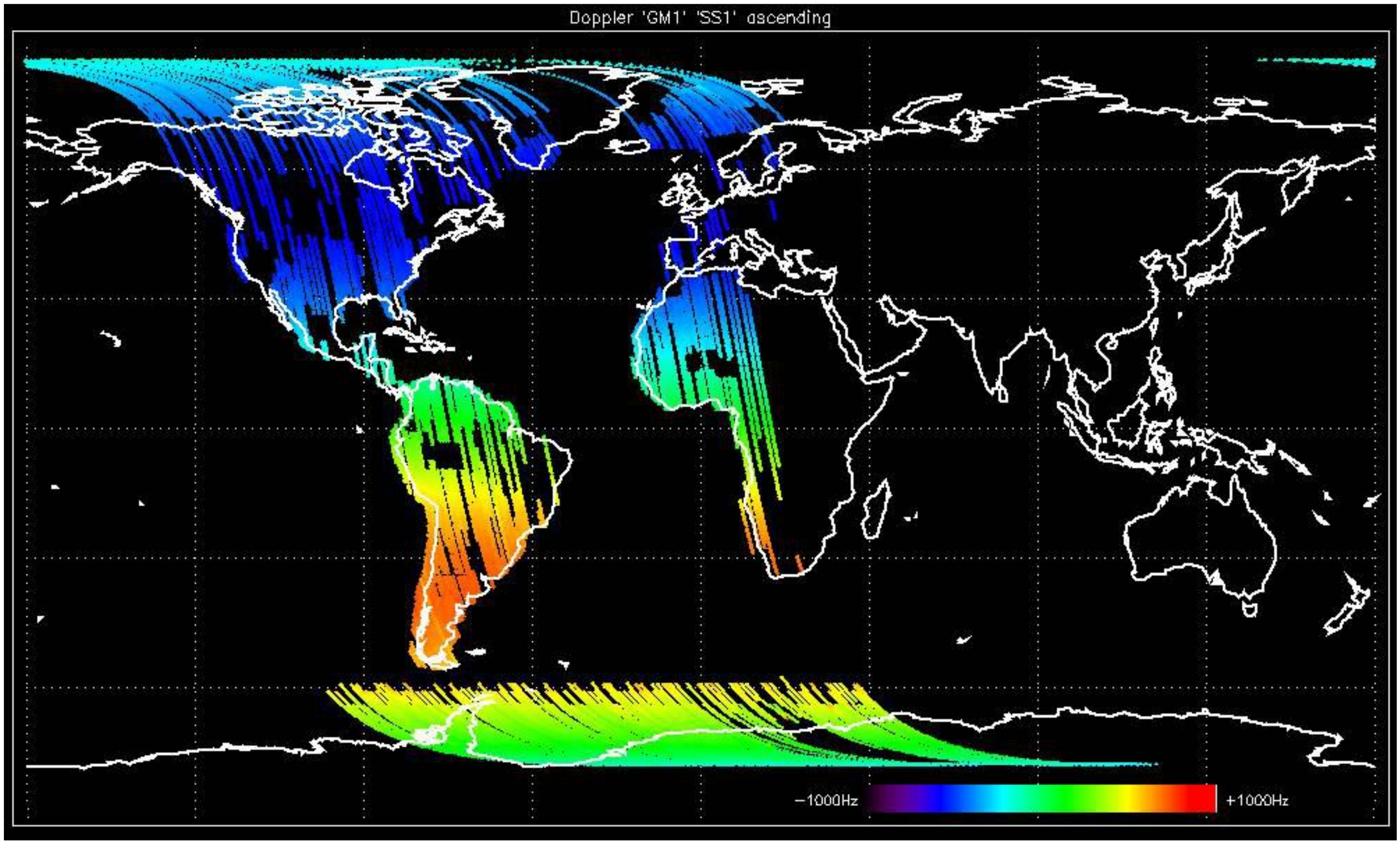
No anomalies observed.

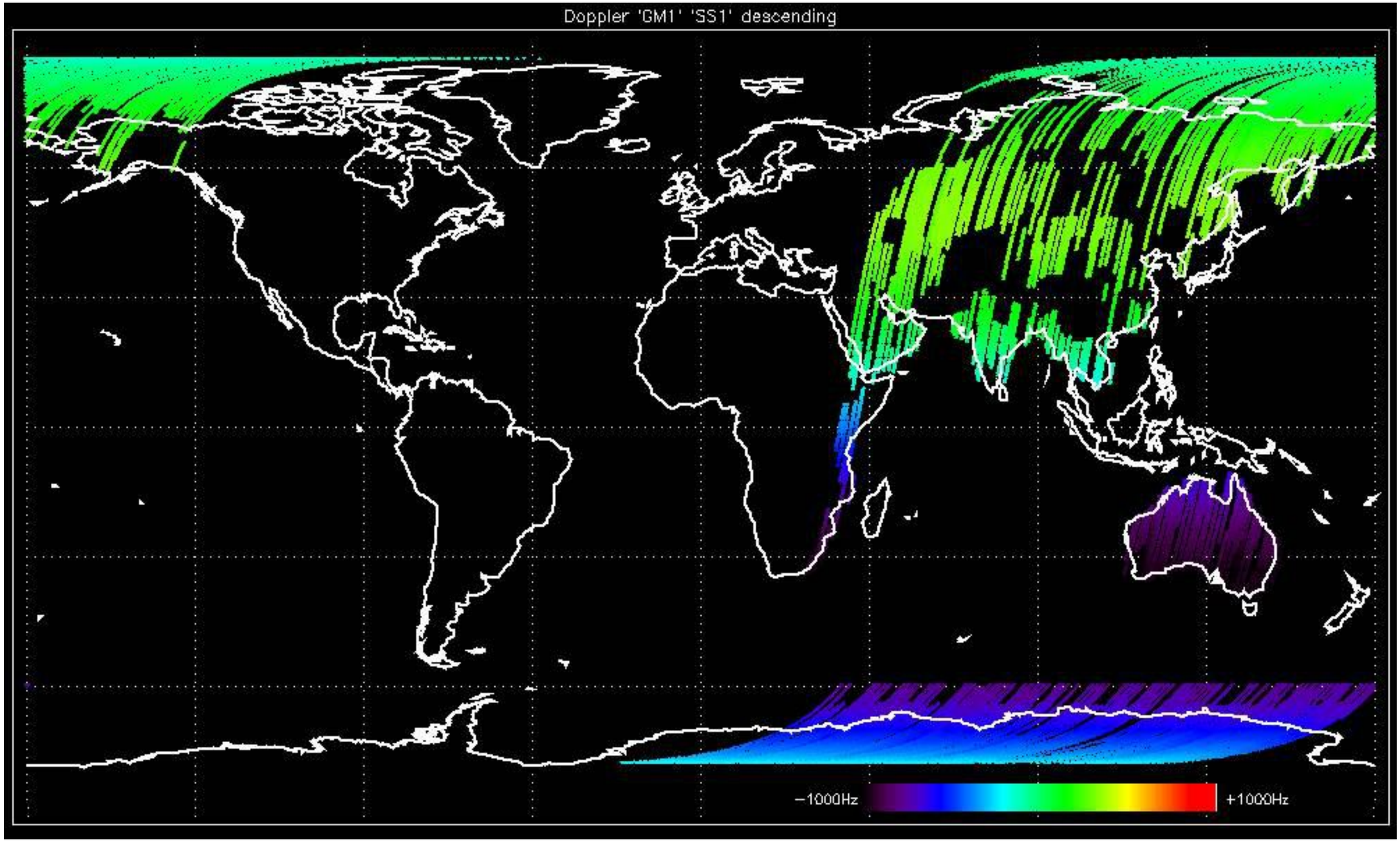

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

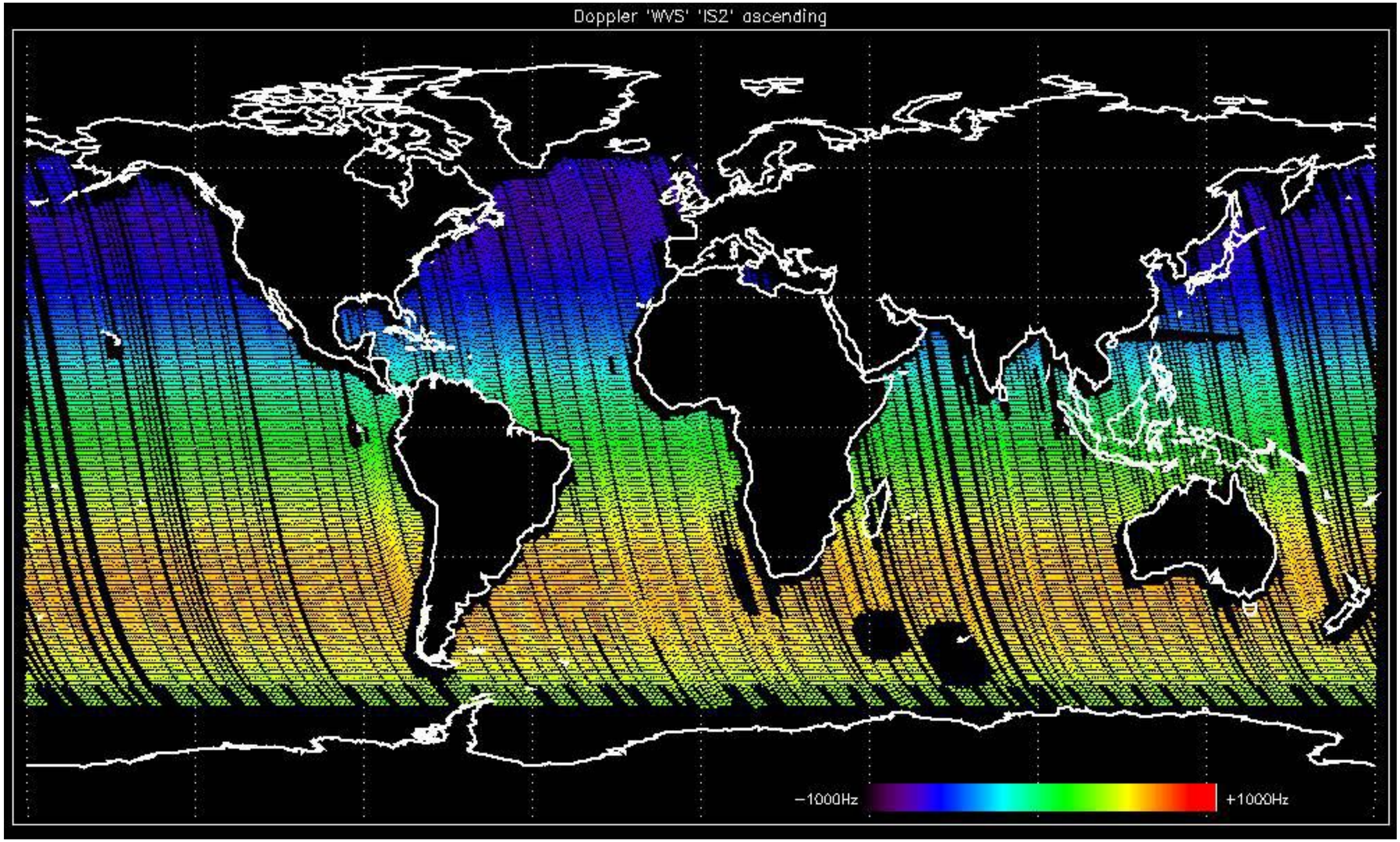

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

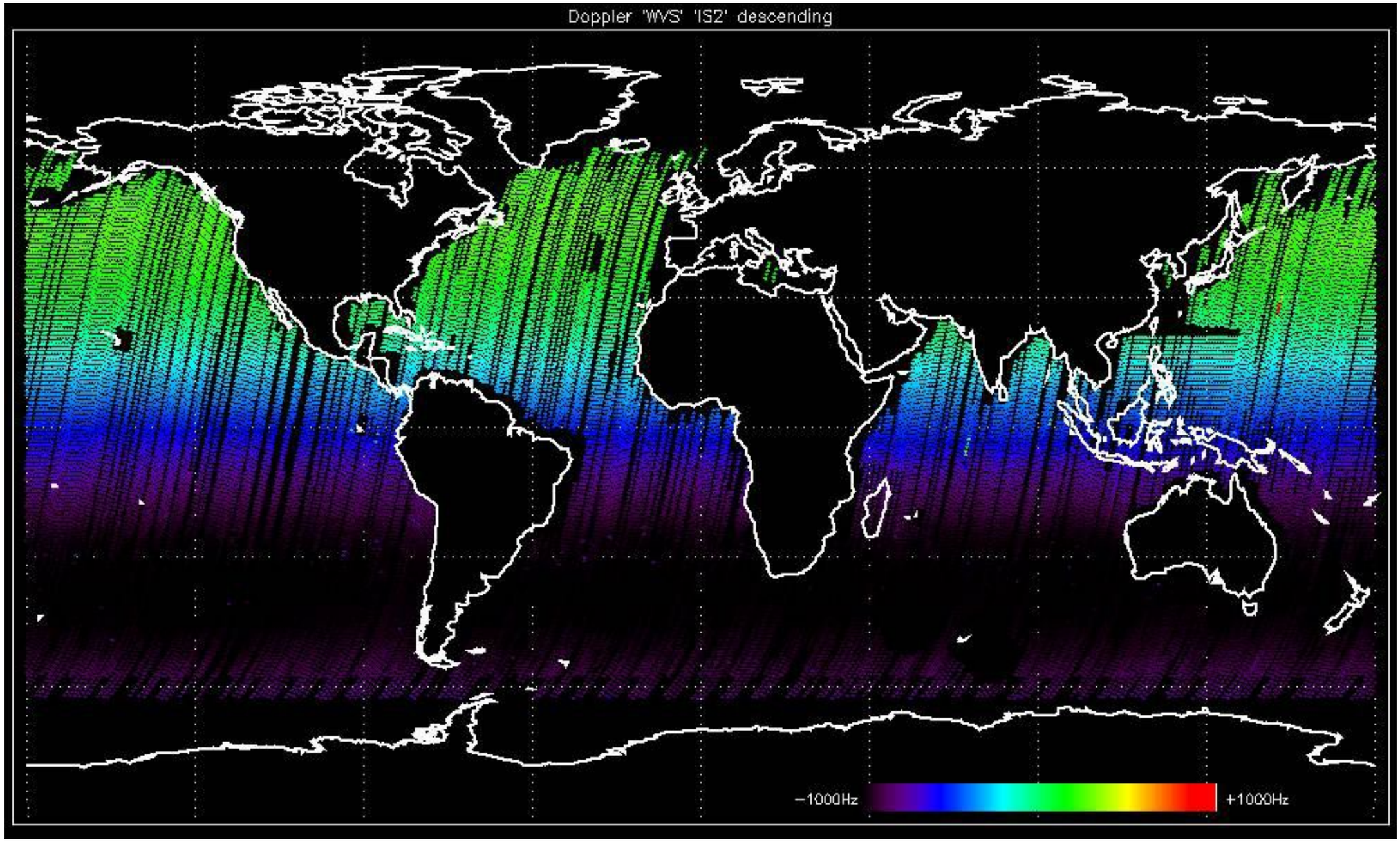
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

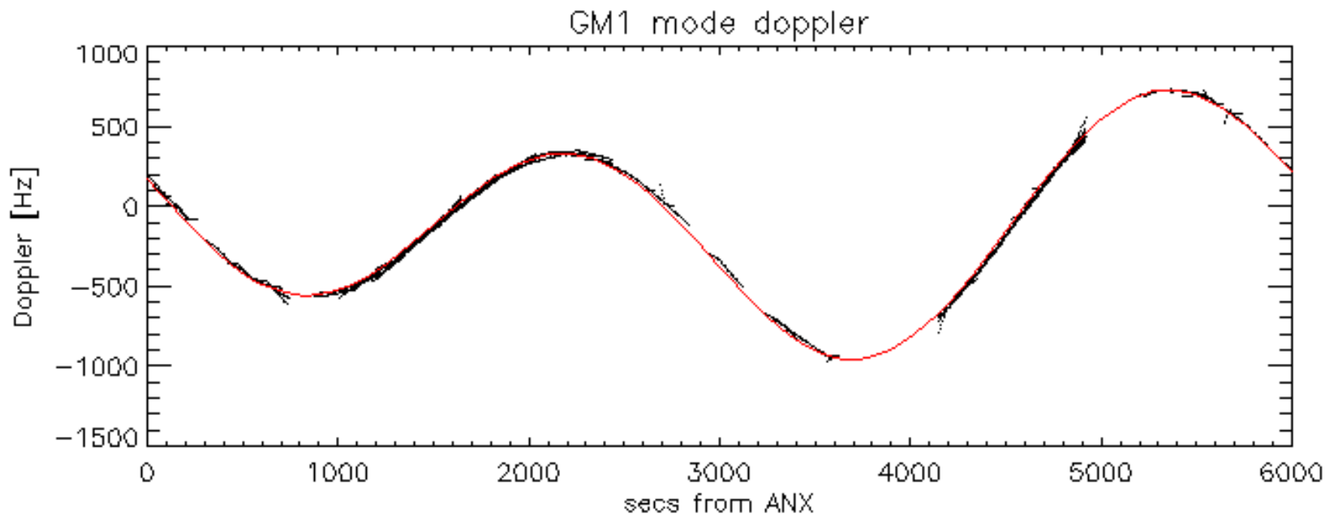
Preliminary report.The data is not yet controled

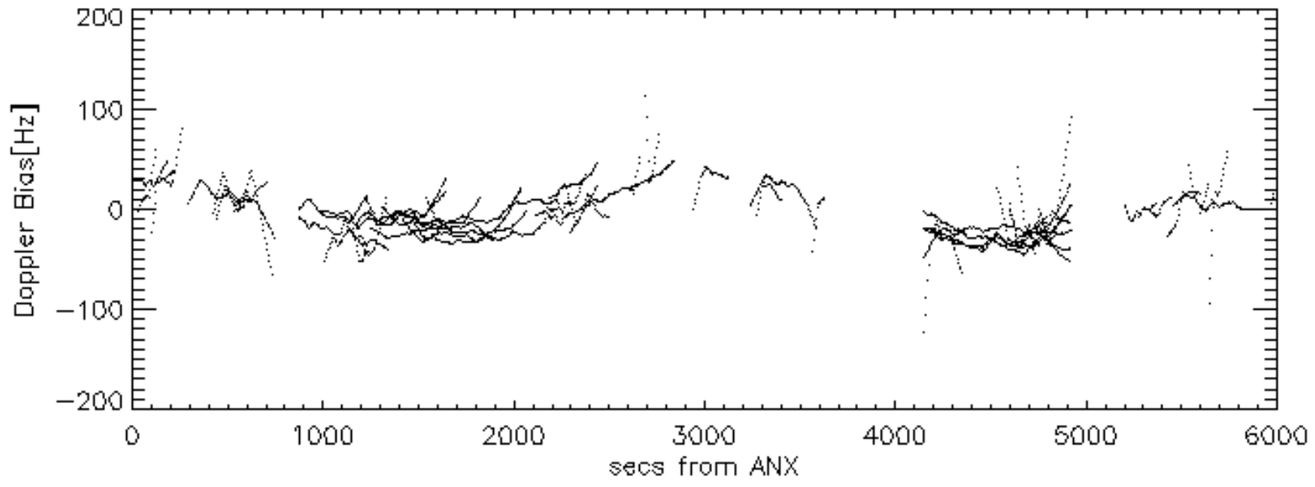

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

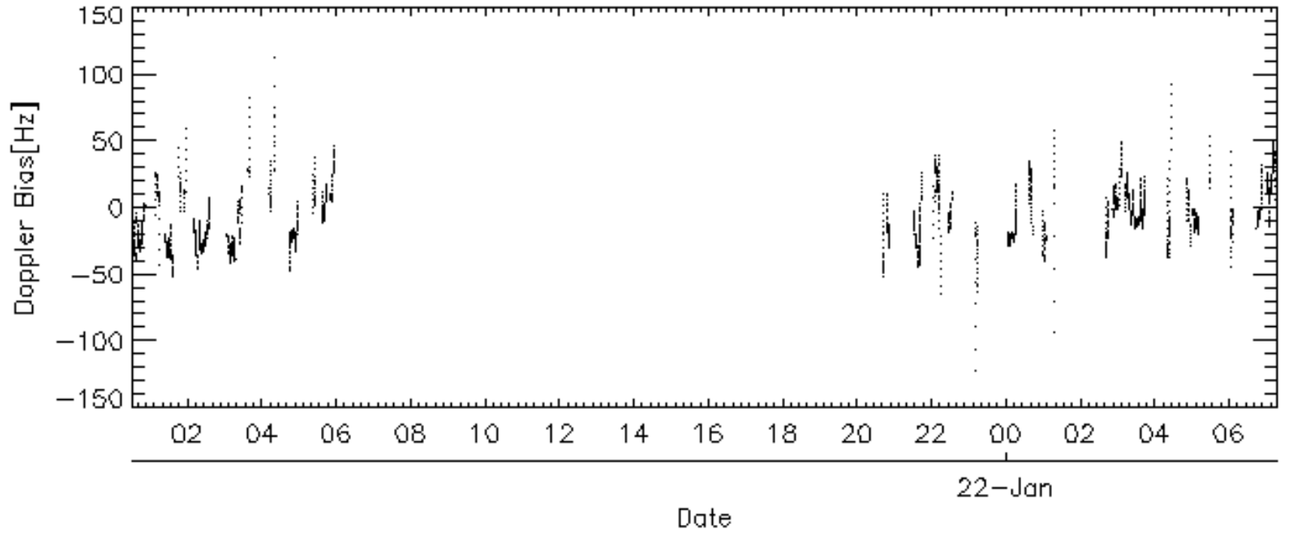

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

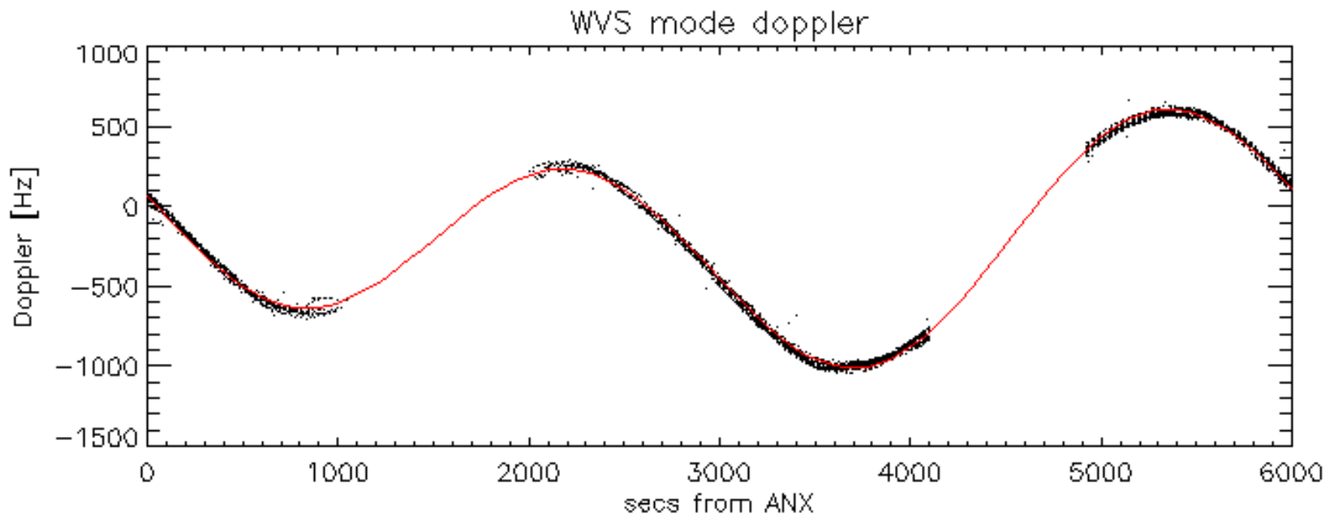

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

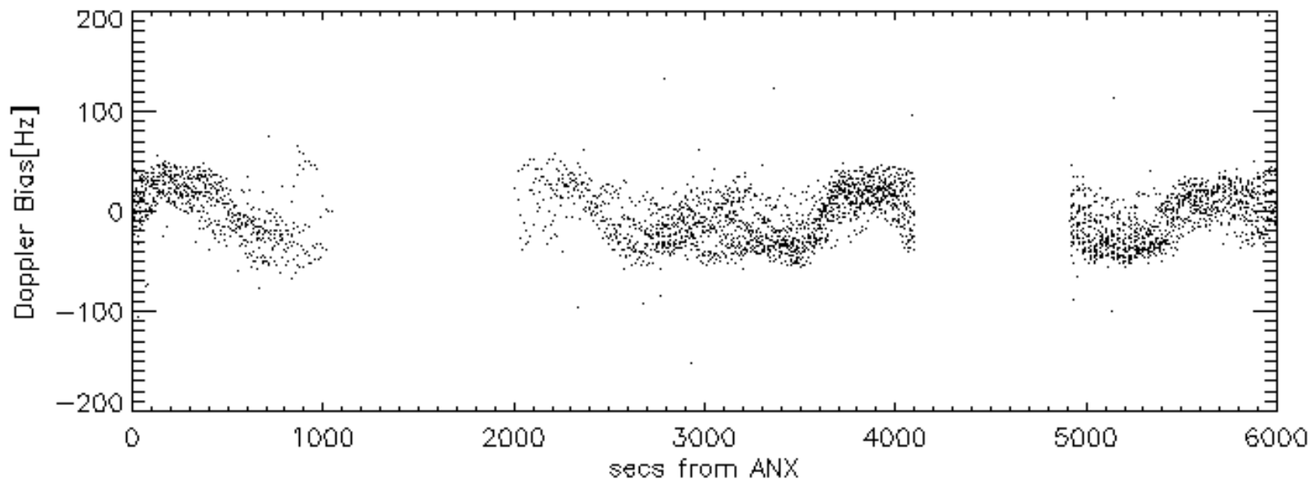

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

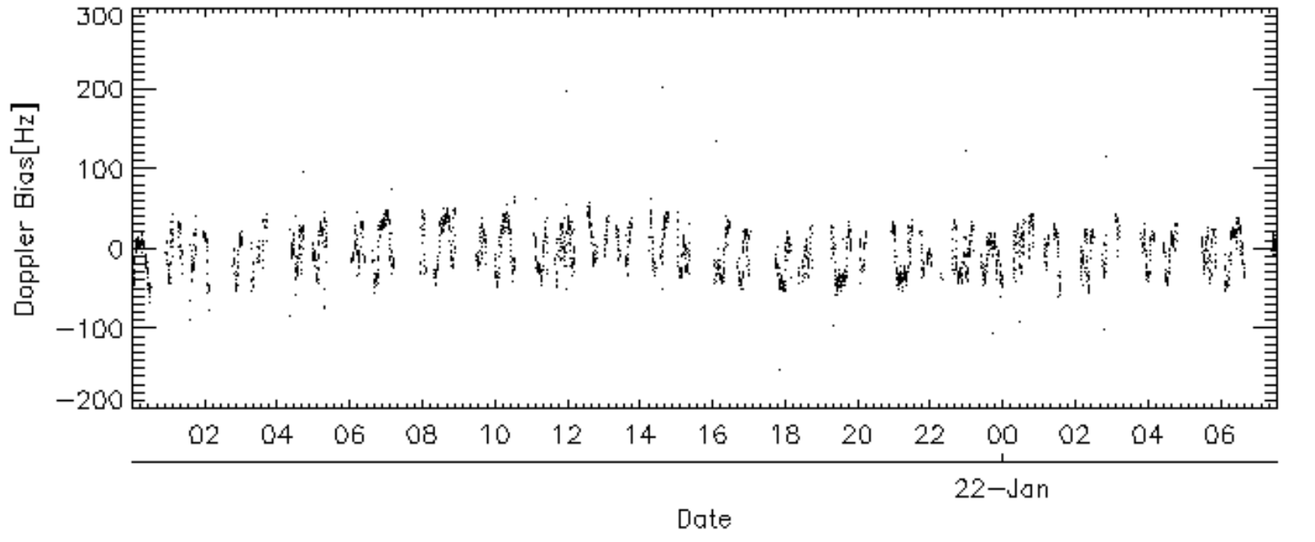

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

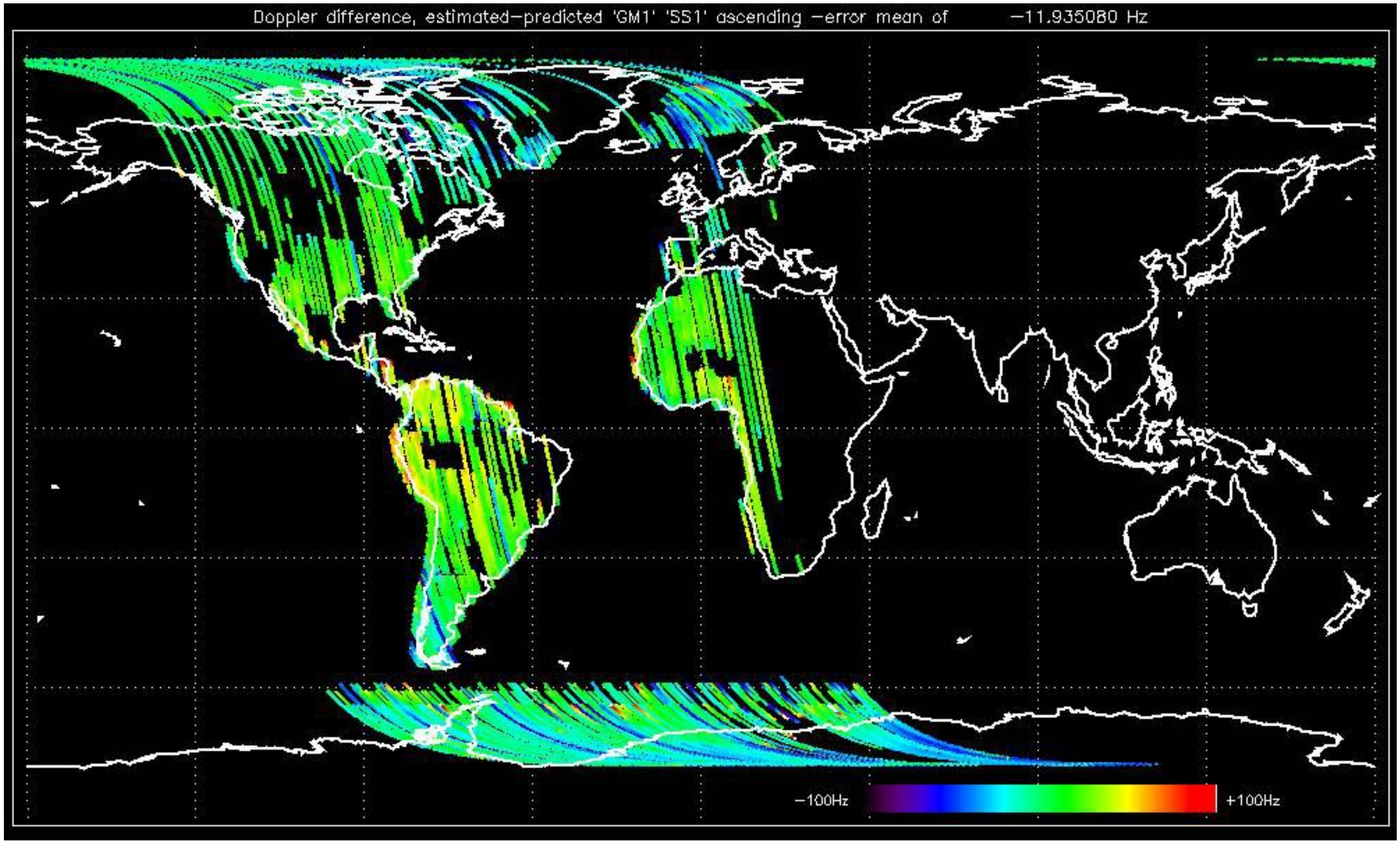

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

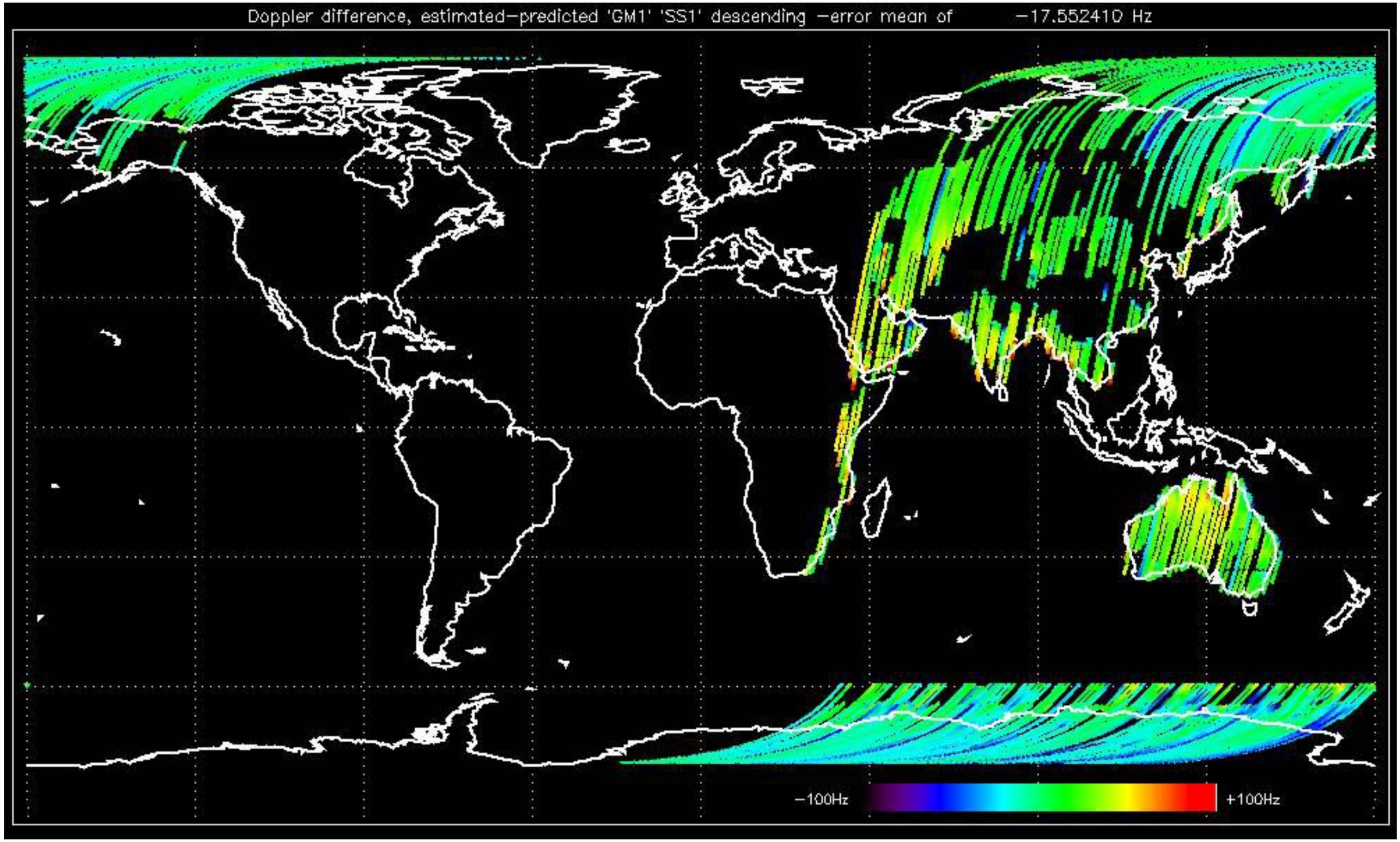

Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
22−Jan
Date

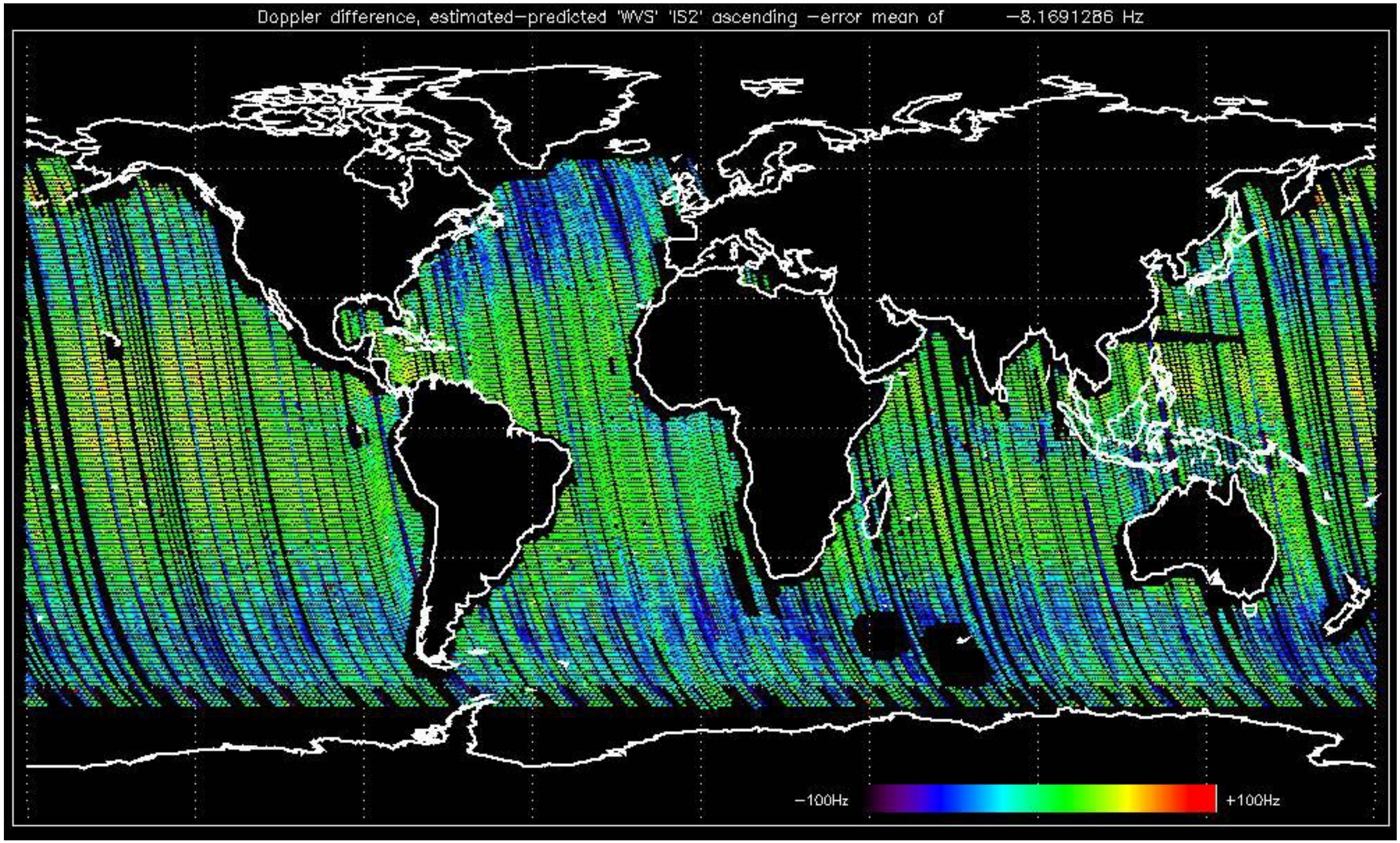

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

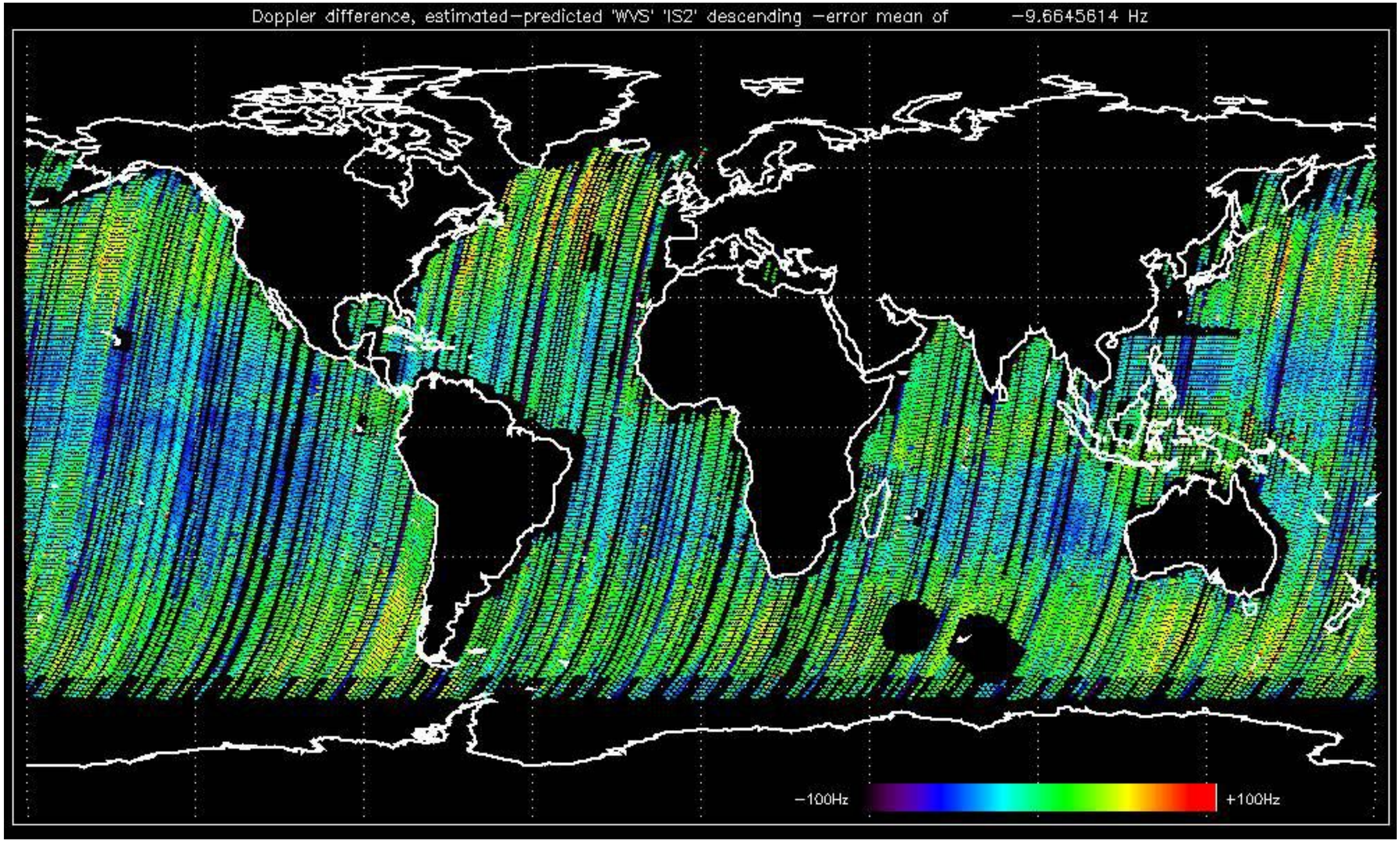

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −11.935080 Hz
−100Hz
+100Hz

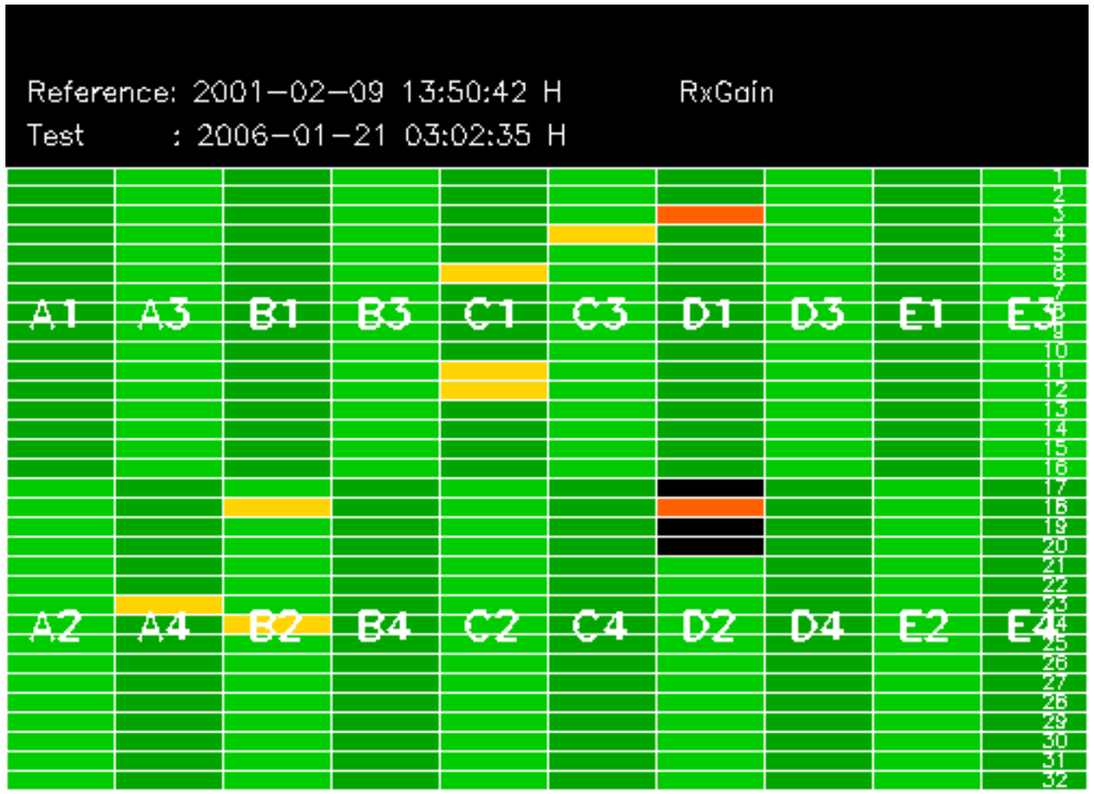

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −17.552410 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −8.1691286 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −9.6645614 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-01-21 03:02:35 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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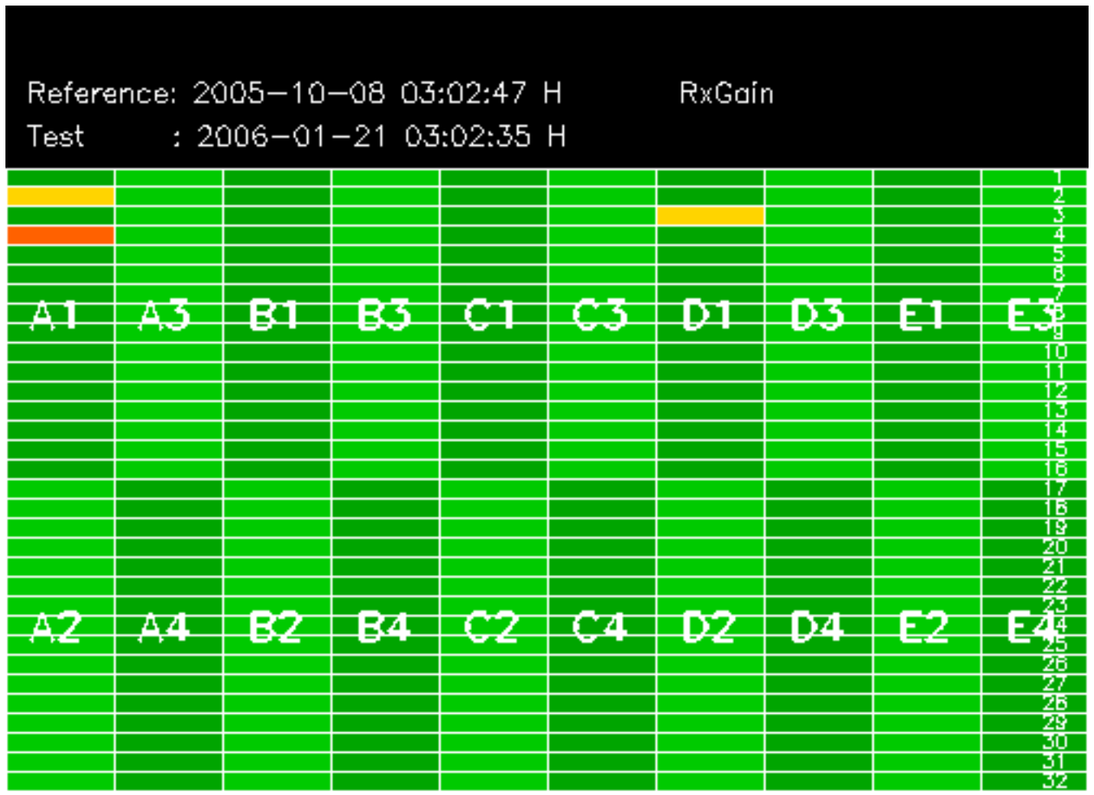
Reference: 2005-10-08 03:02:47 H
Test : 2006-01-21 03:02:35 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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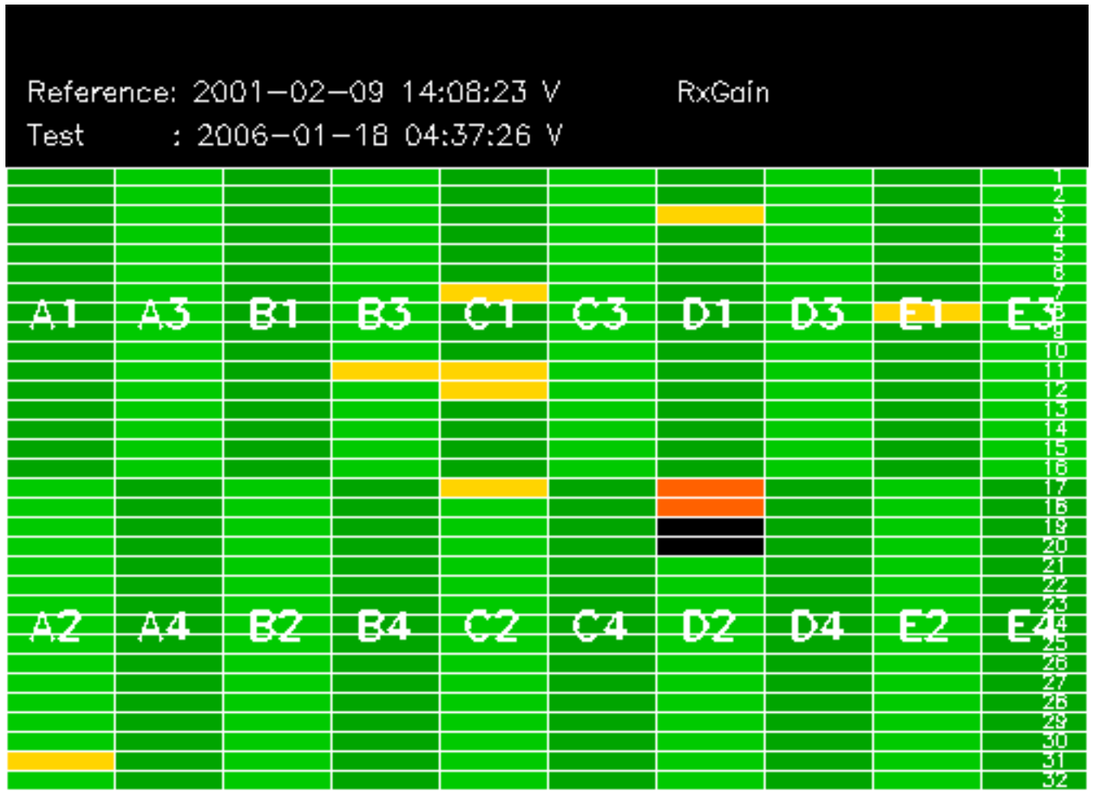
Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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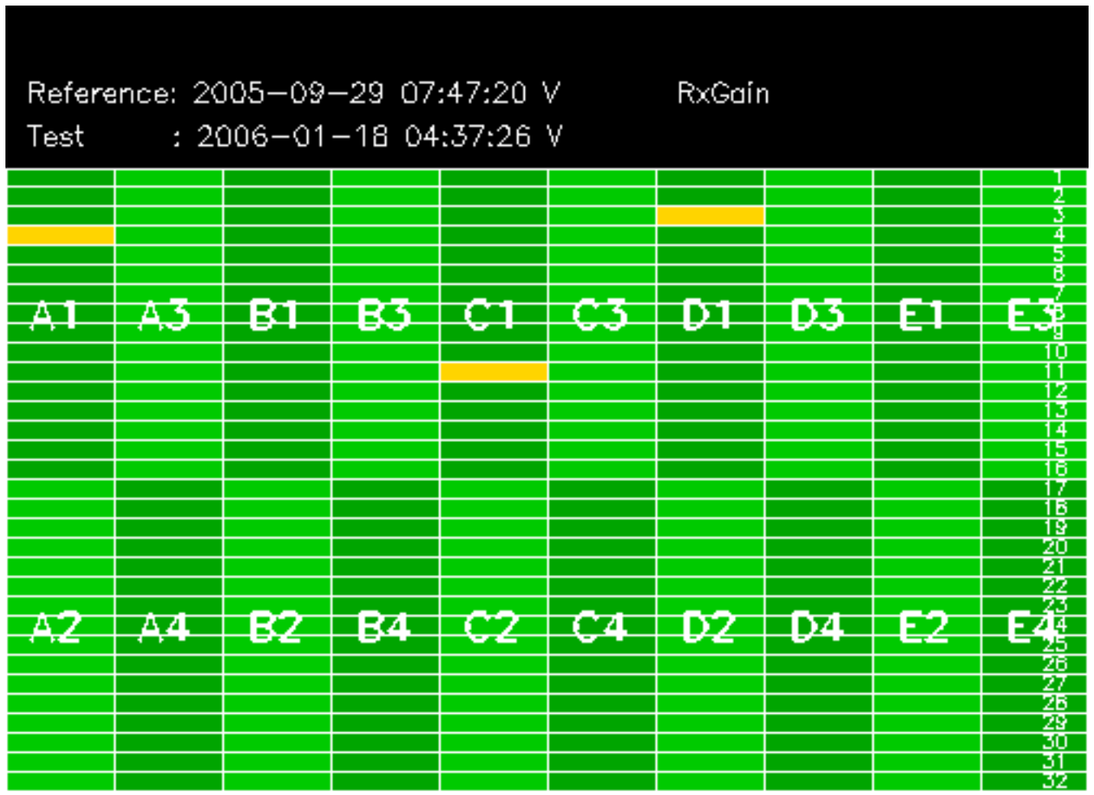
Reference: 2005-09-29 07:47:20 V
Test : 2006-01-18 04:37:26 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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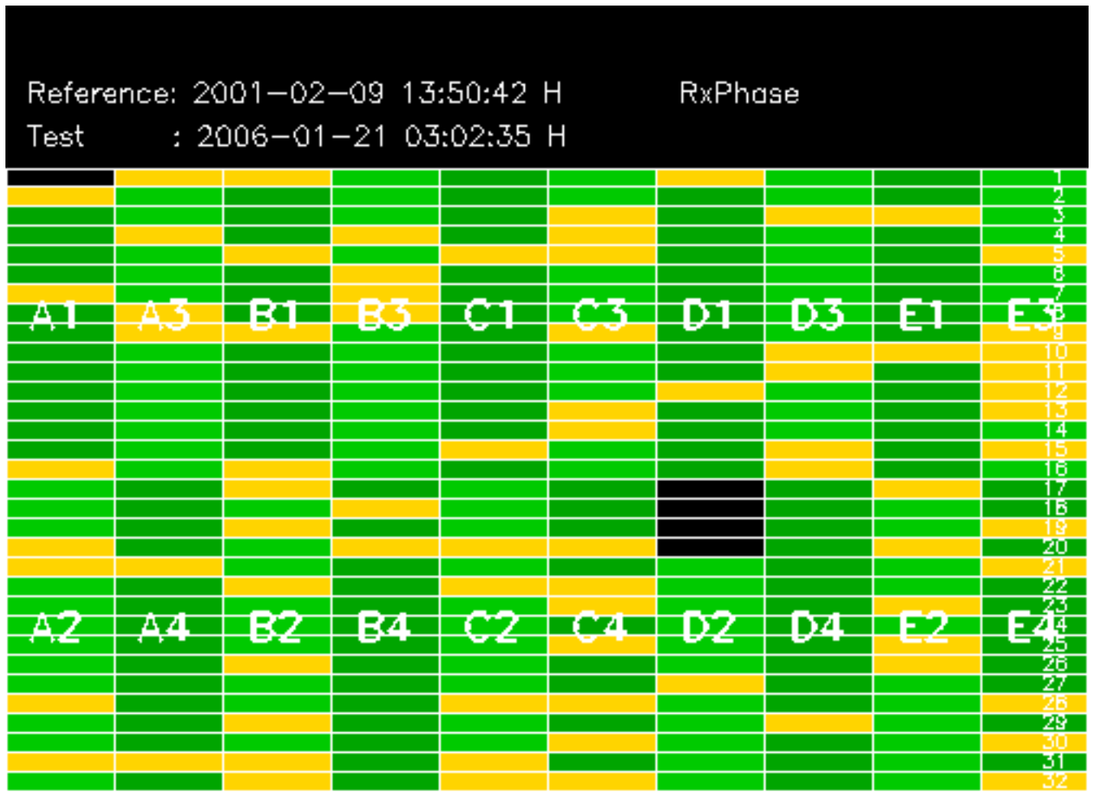
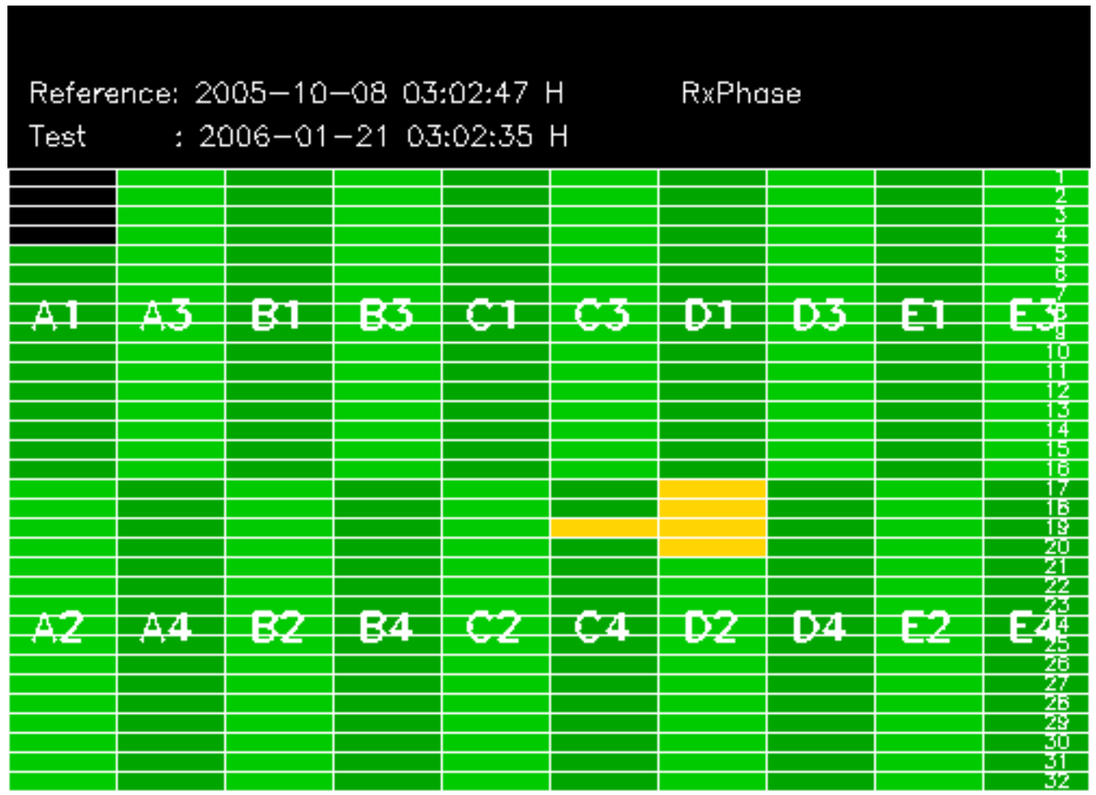
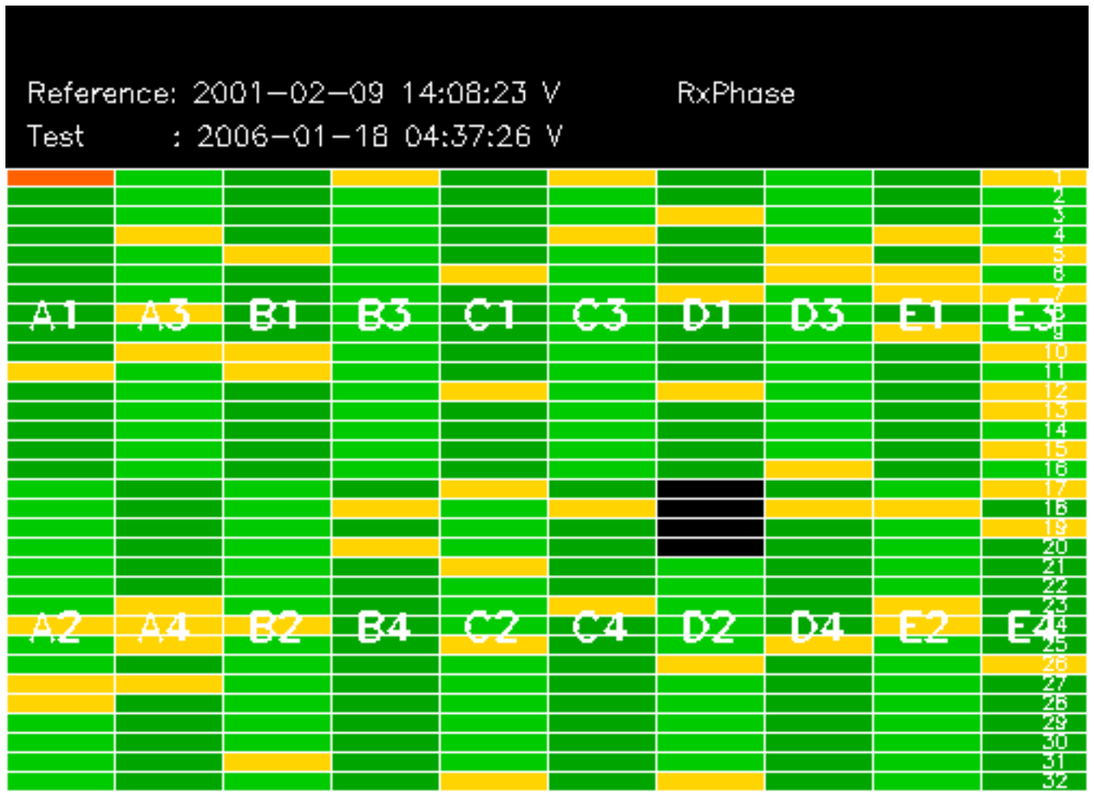
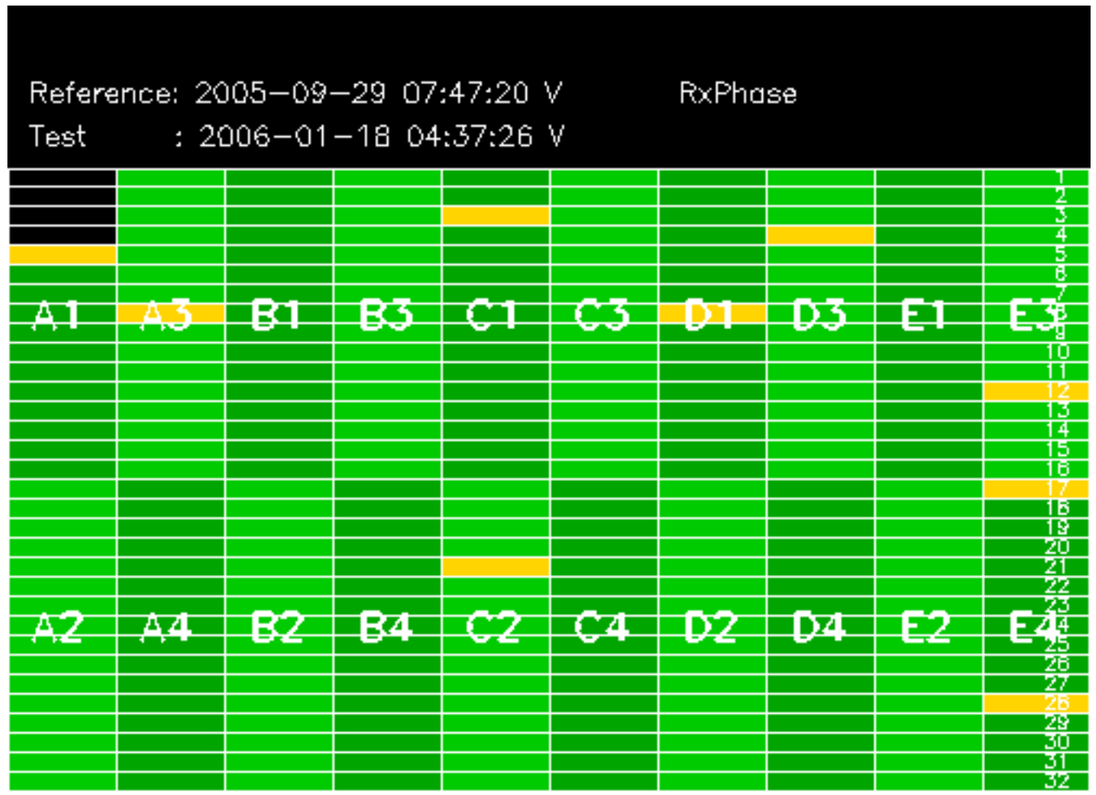

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-01-21 03:02:35 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-01-21 03:02:35 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 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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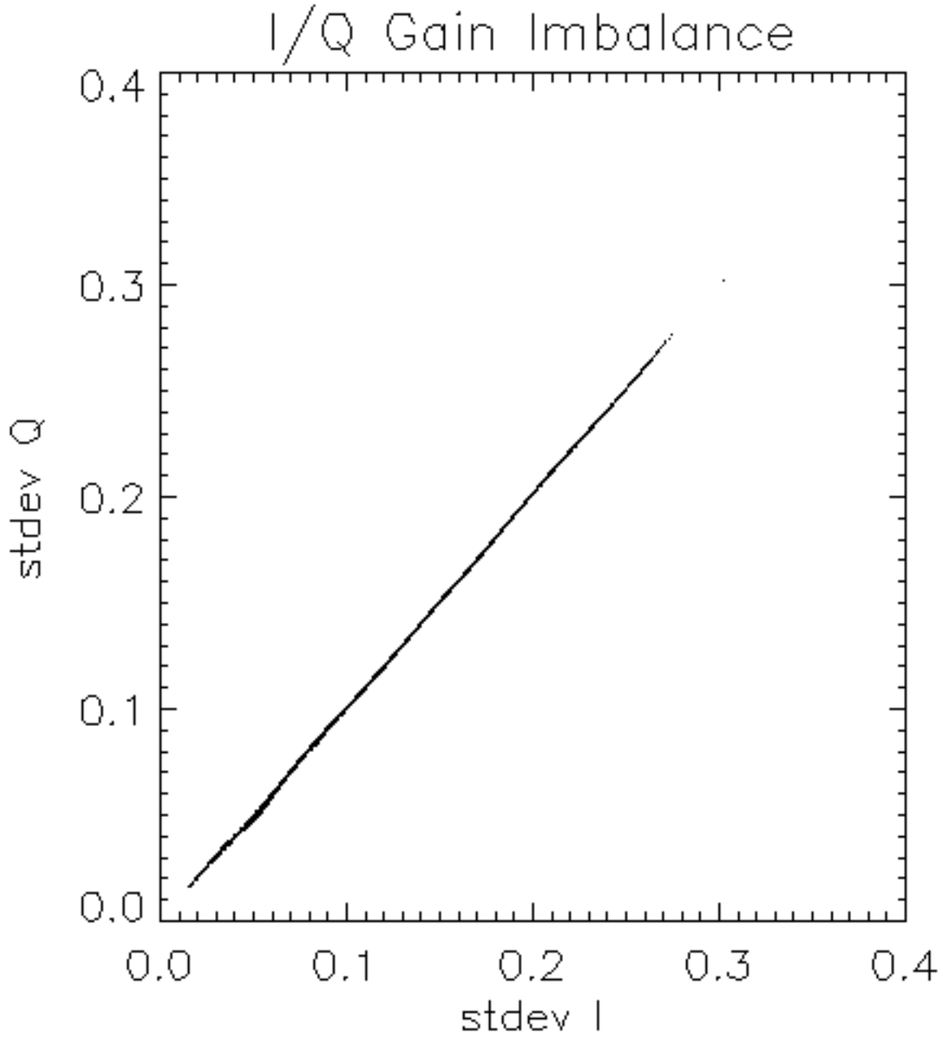
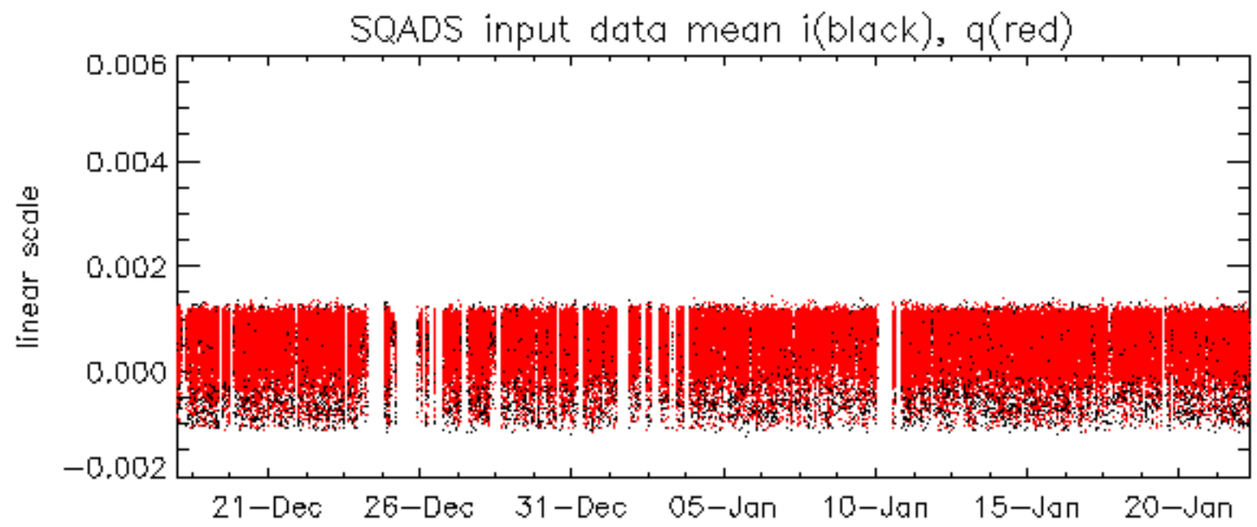
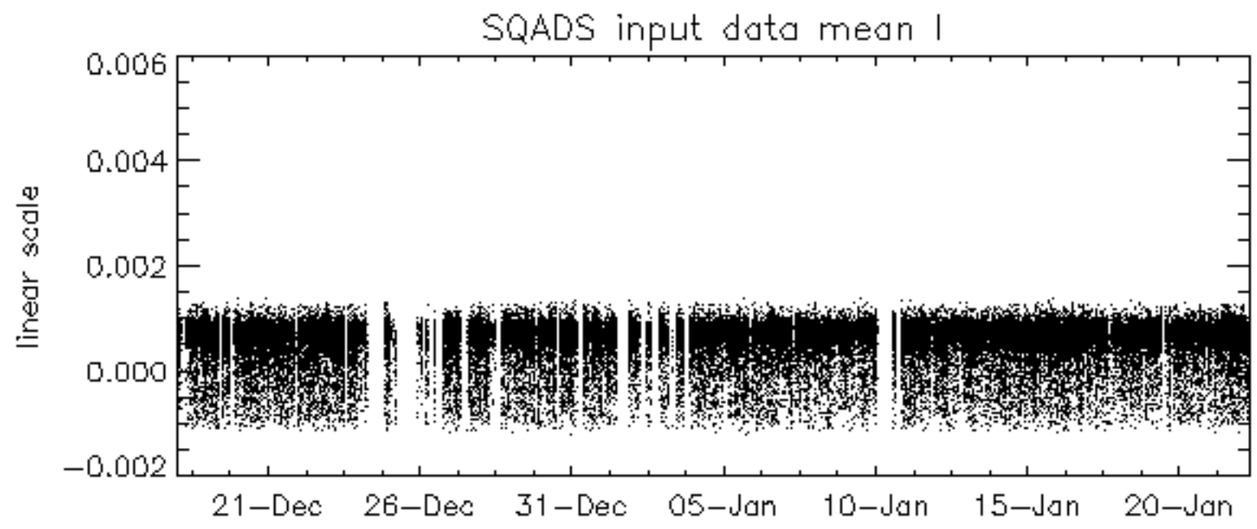
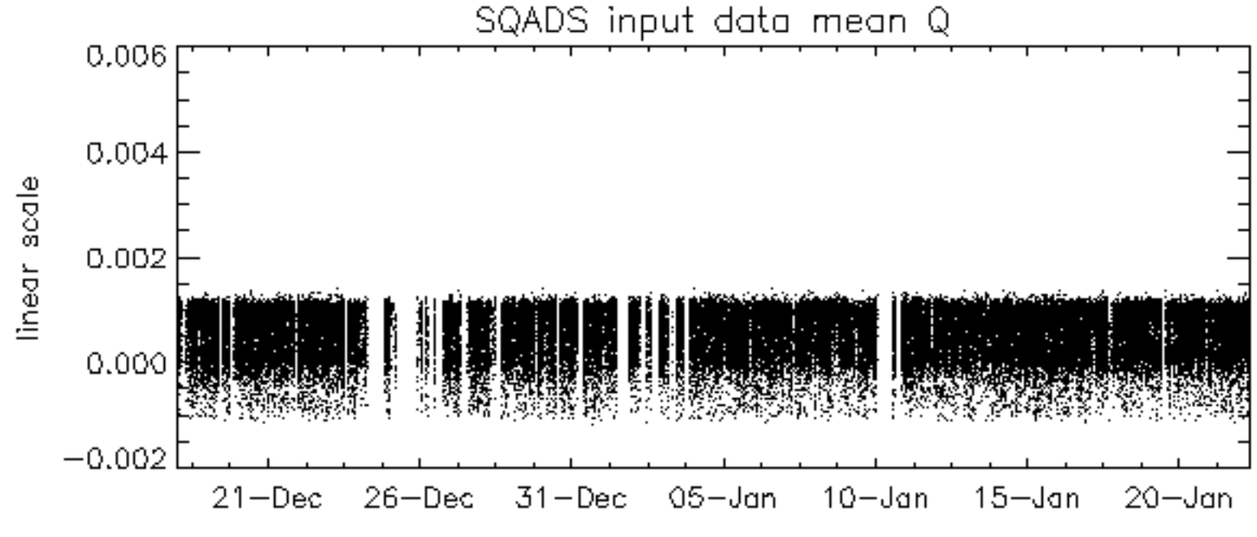
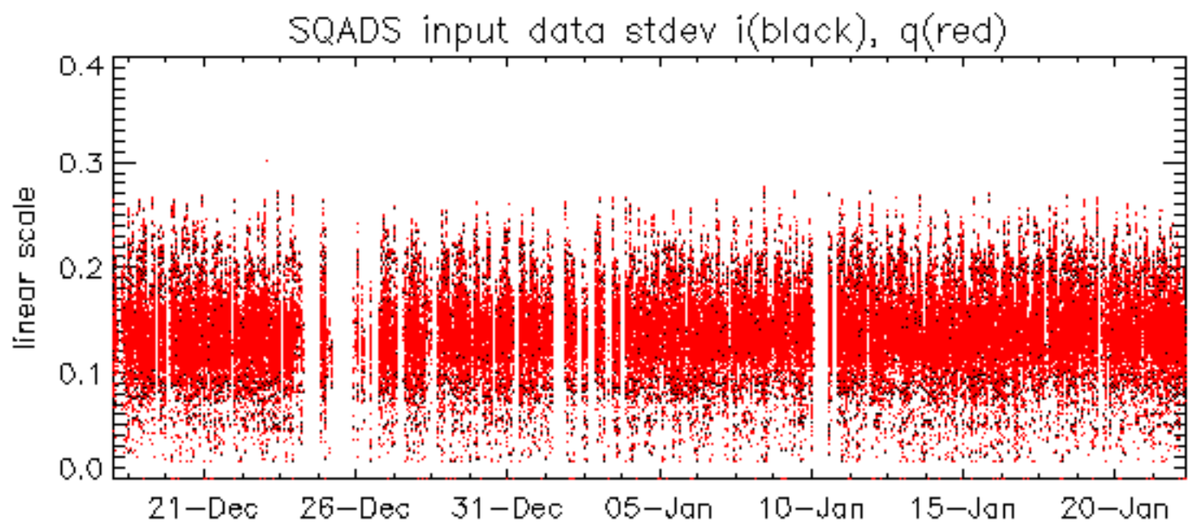
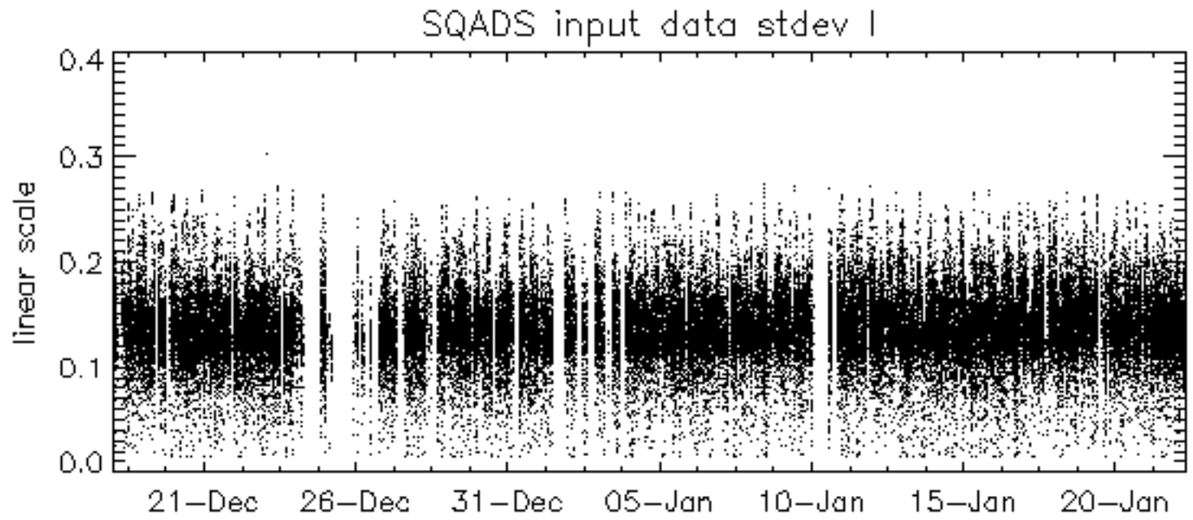

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

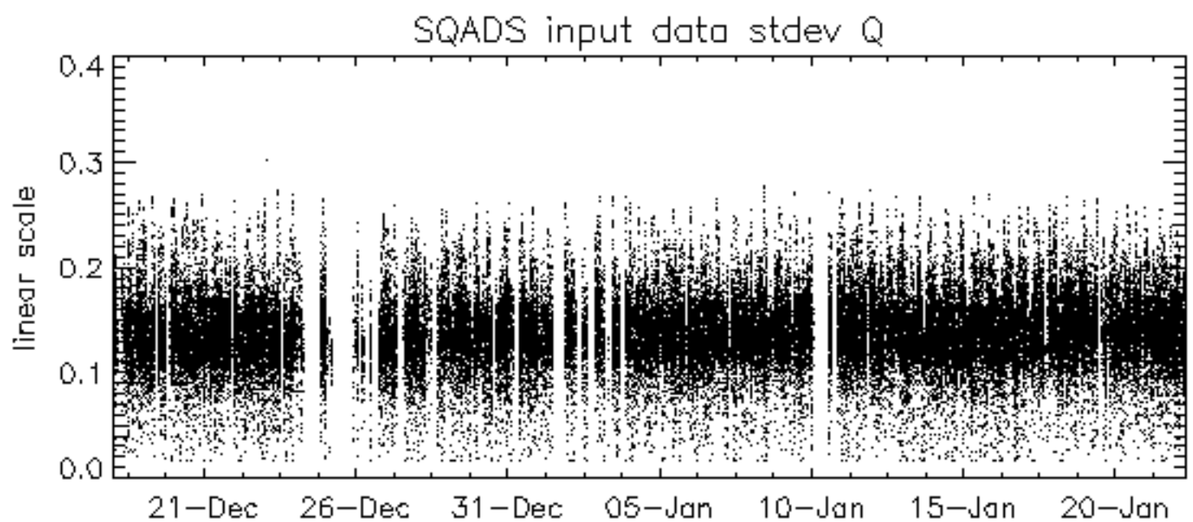

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
20−Jan

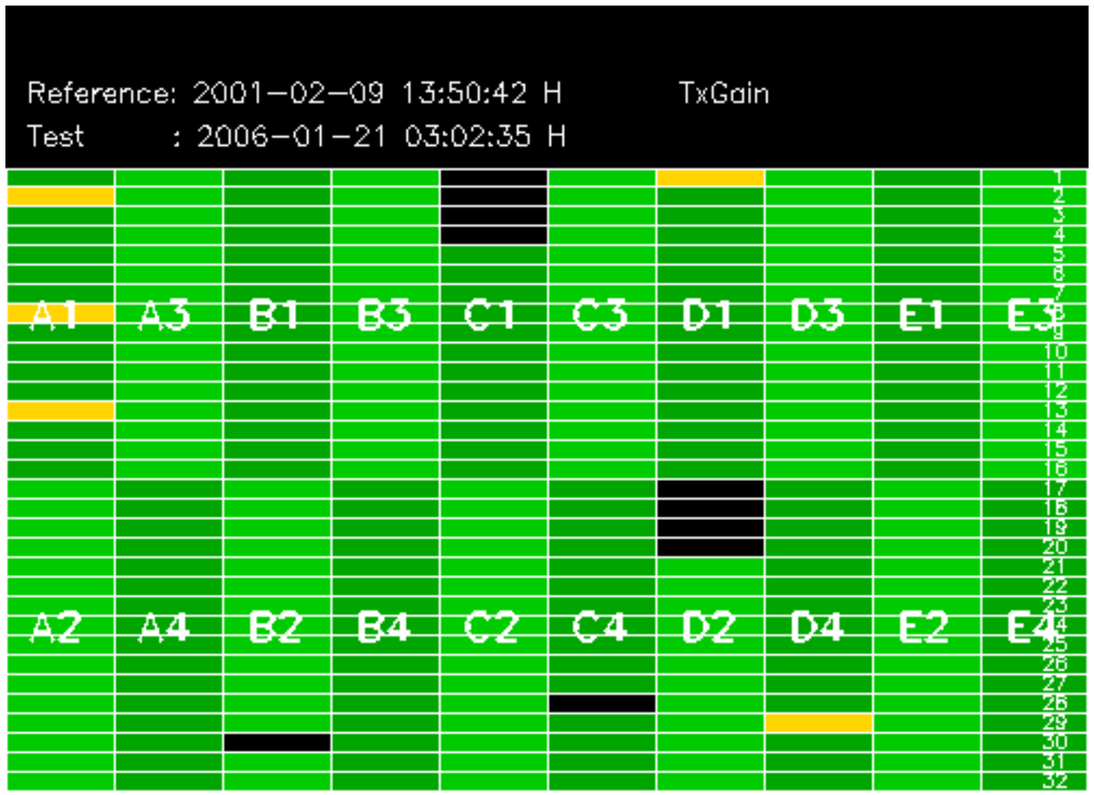

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Dec
26−Dec
31−Dec
05−Jan
10−Jan
15−Jan
20−Jan


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
20−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
20−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
20−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
20−Jan


Reference: 2001-02-09 13:50:42 H
Test : 2006-01-21 03:02:35 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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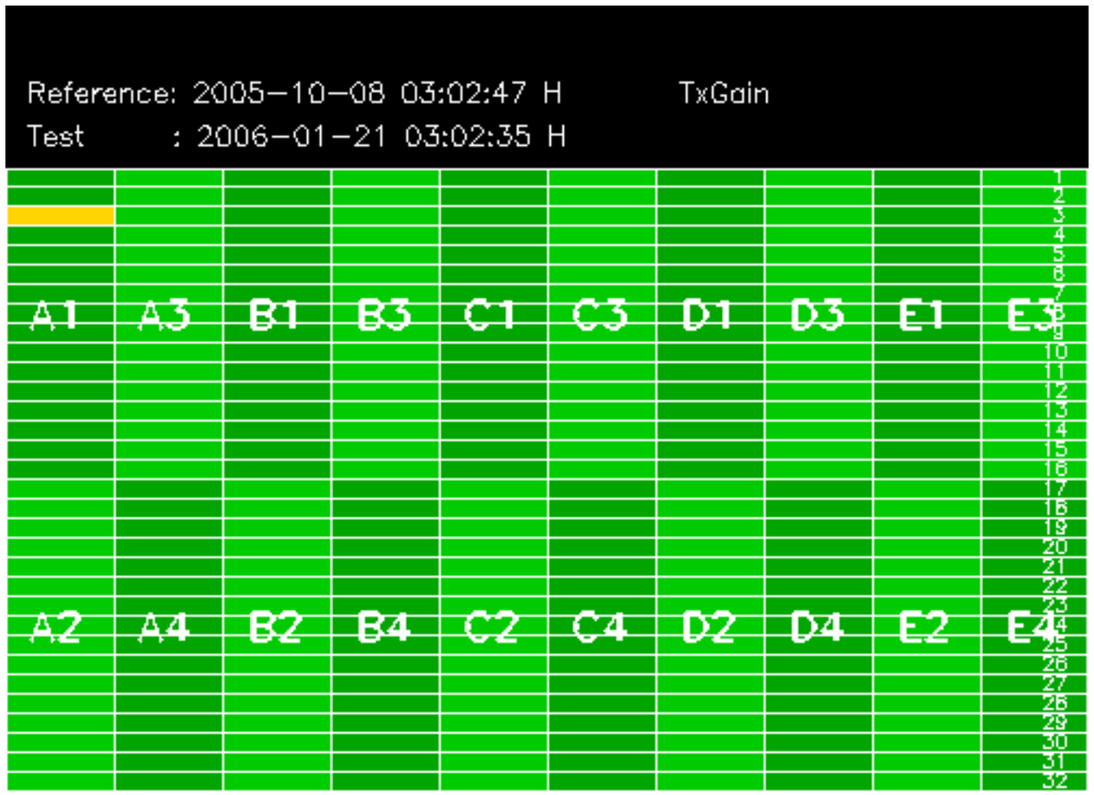
Reference: 2005-10-08 03:02:47 H
Test : 2006-01-21 03:02:35 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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E4
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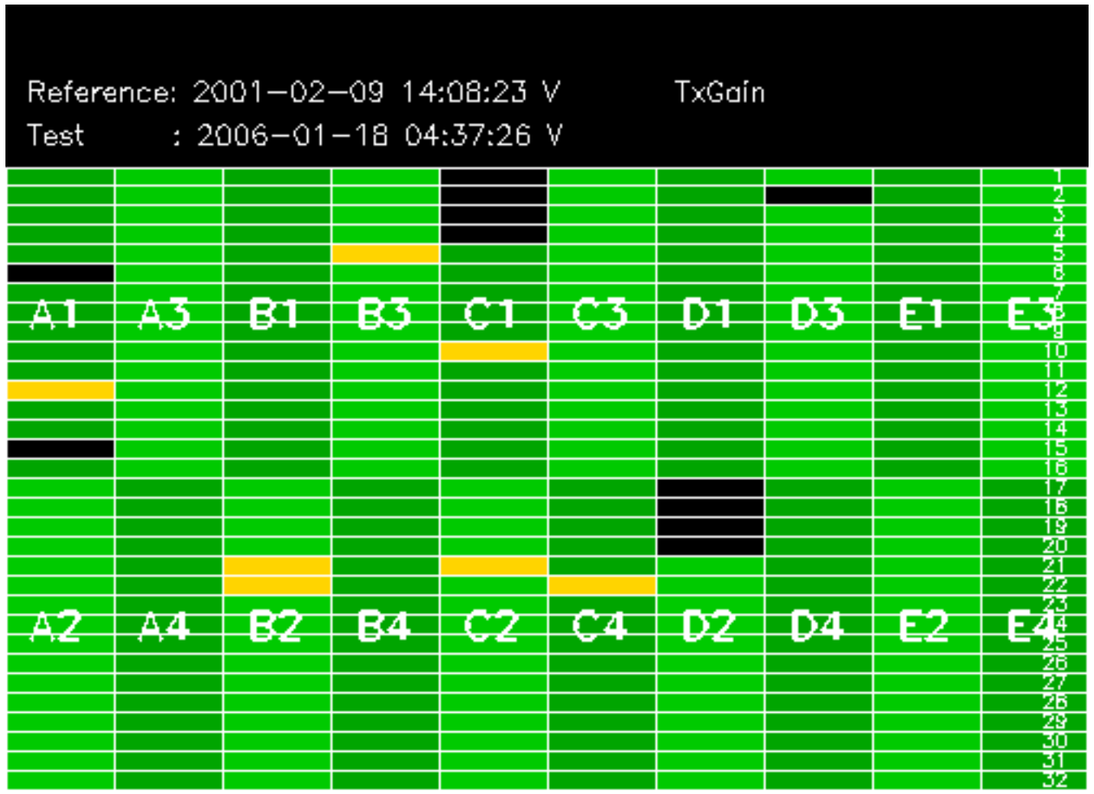
Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 04:37:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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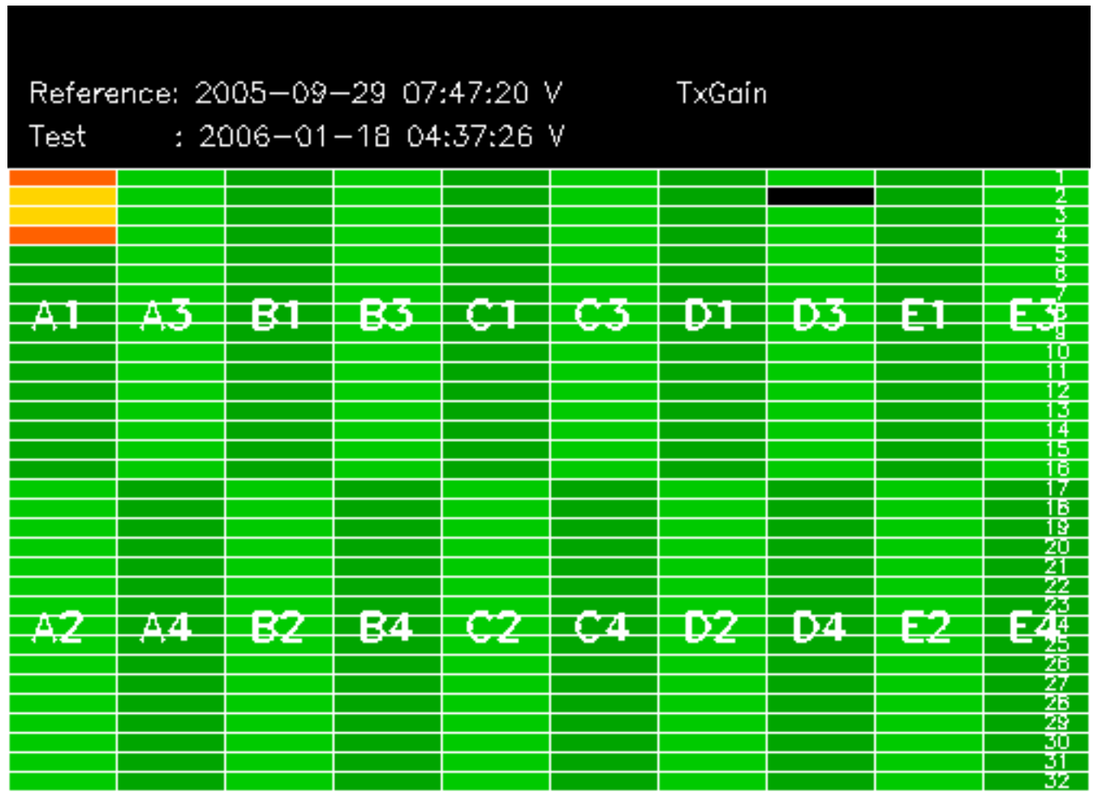
Reference: 2005-09-29 07:47:20 V
Test : 2006-01-18 04:37:26 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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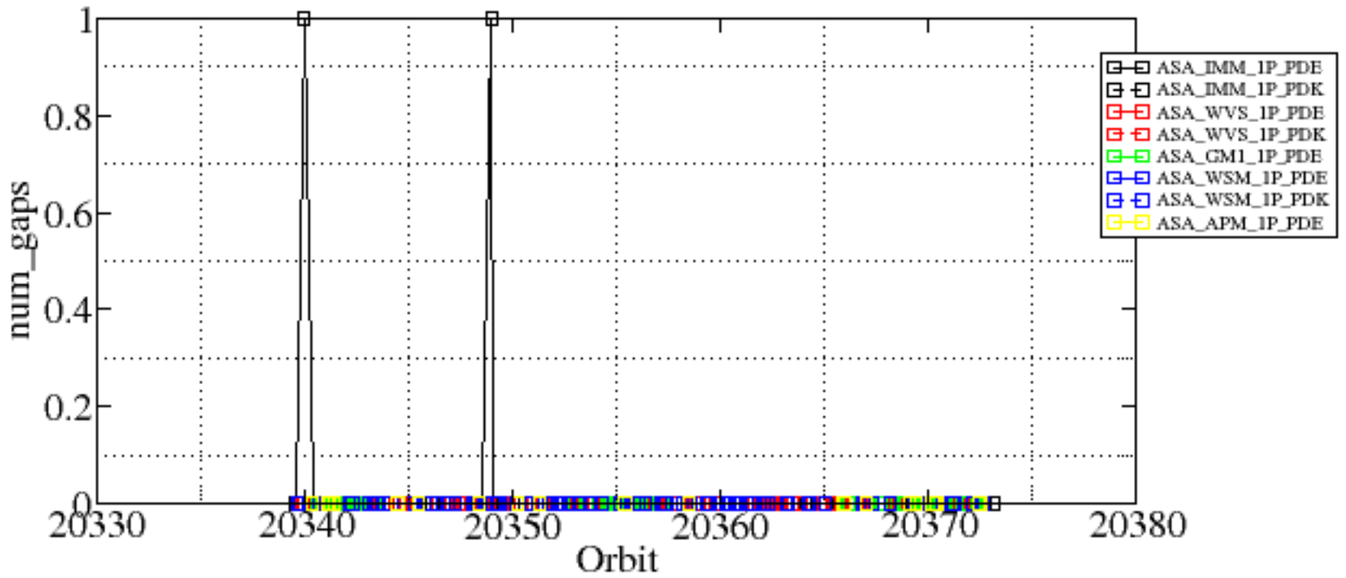
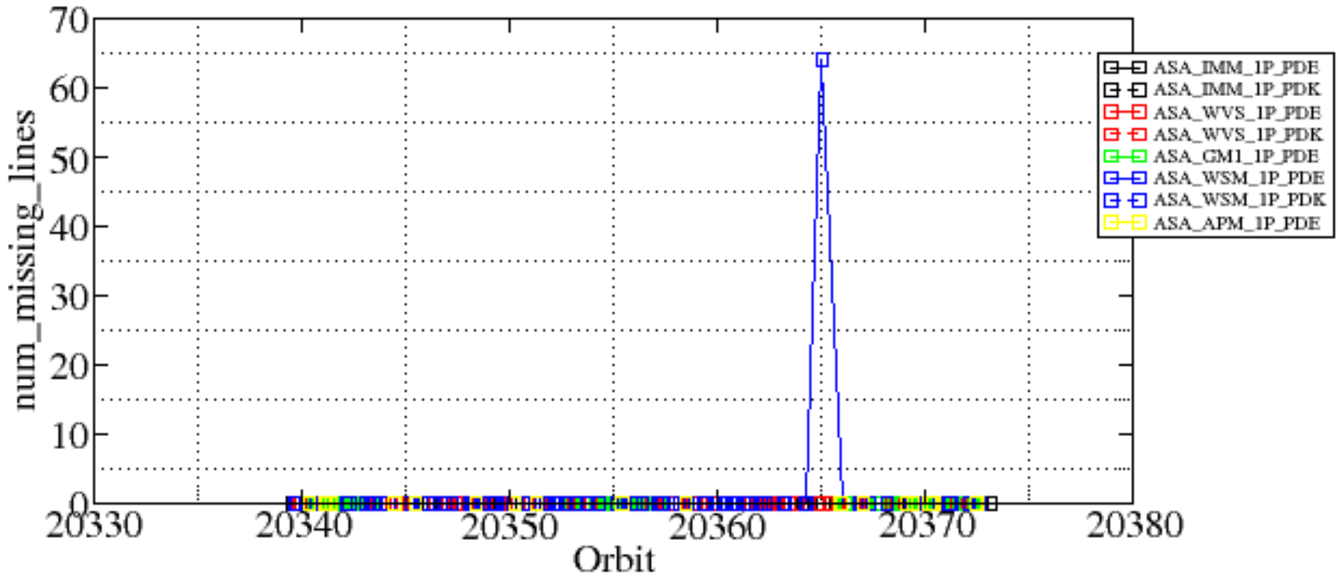
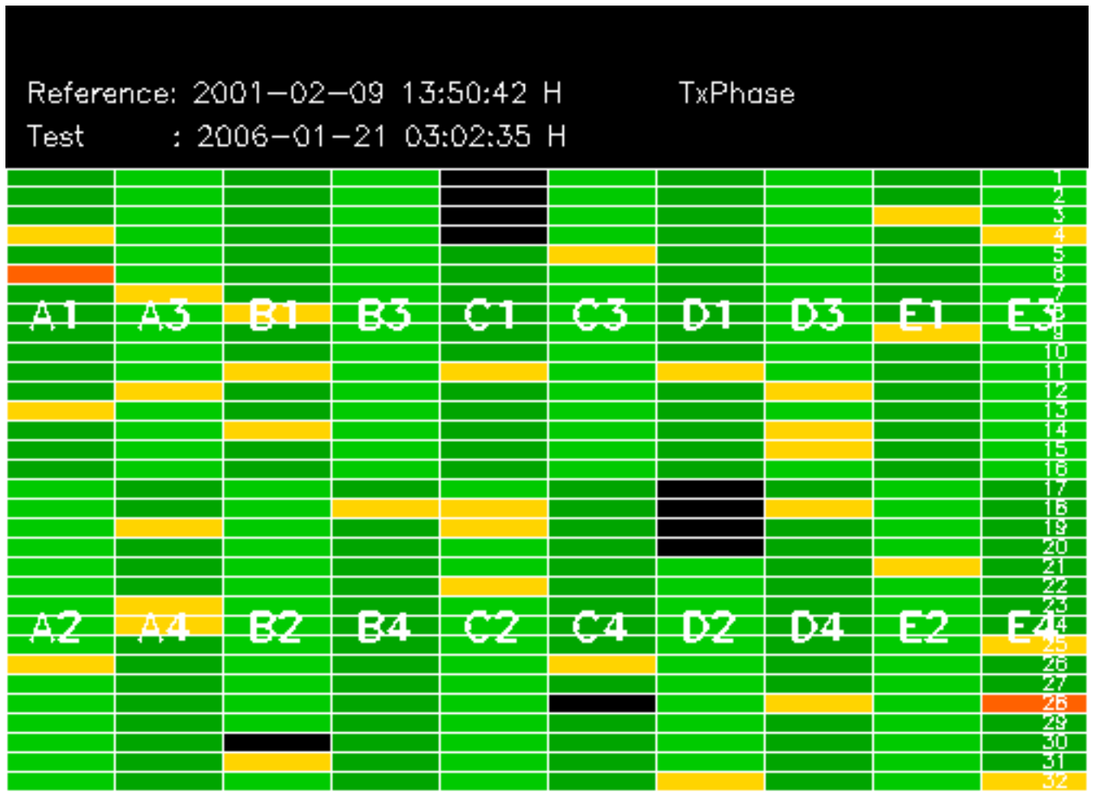
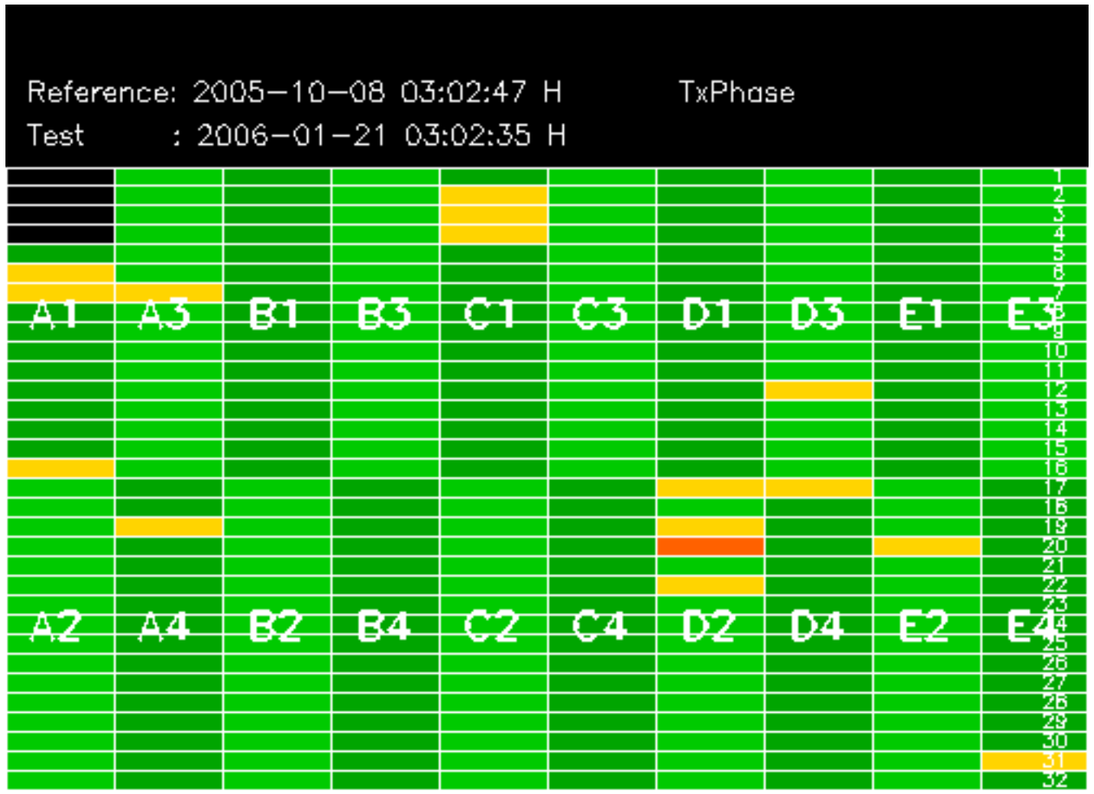
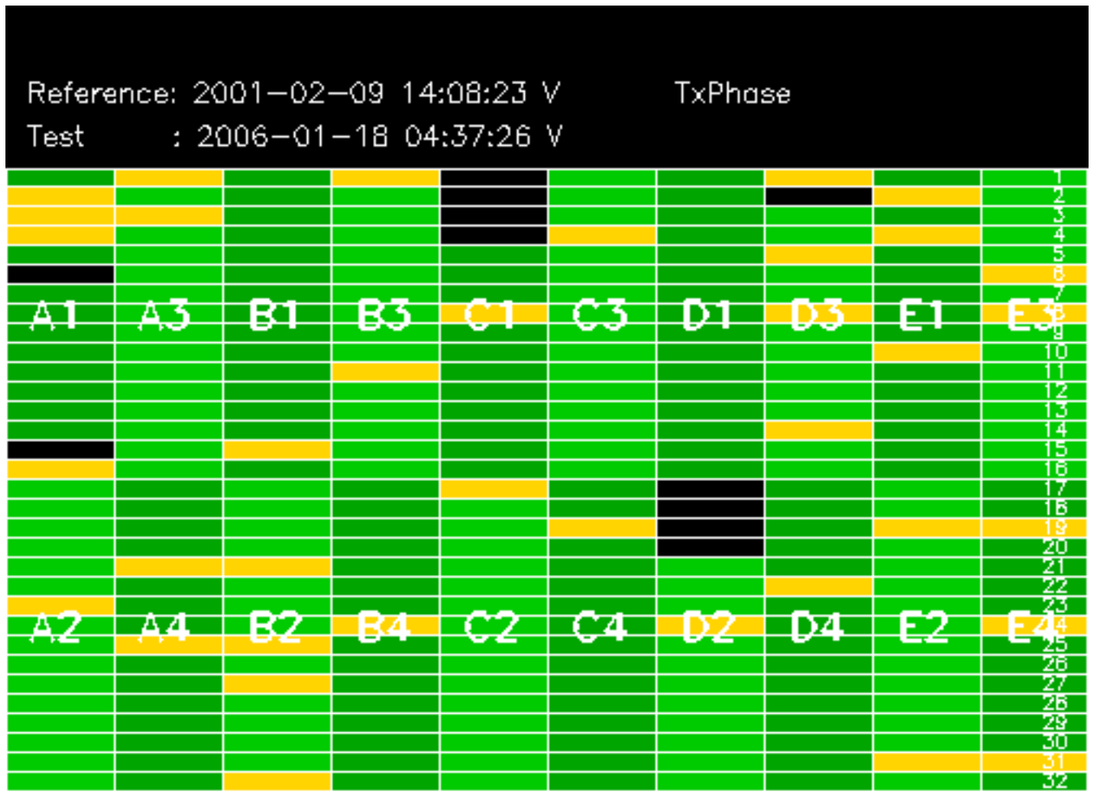
Summary of analysis for the last 3 days 2006012[012]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20060120_004243_000001222044_00245_20339_0521.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDE20060120_155104_000001122044_00254_20348_0574.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060121_184457_000003042044_00271_20365_1874.N1 </td> <td>0 </td> <td>64 </td></tr>
</table>

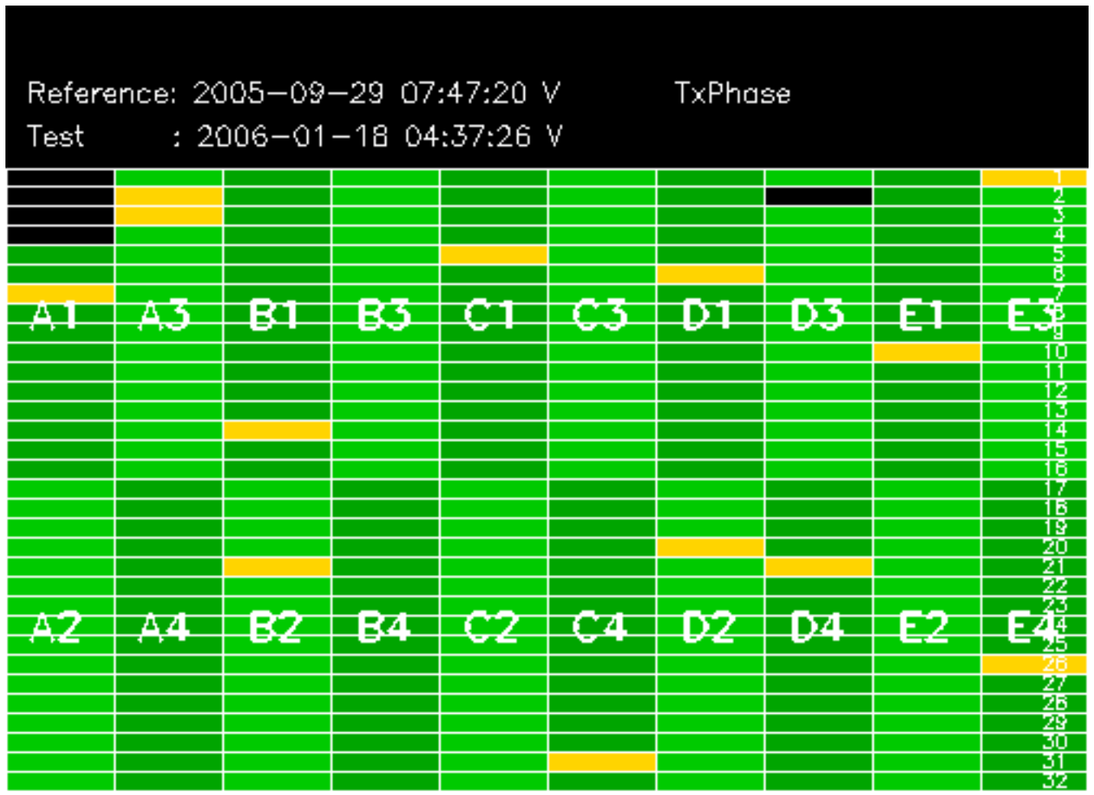

num_gaps
1
0.8
0.6
0.4
0.2
0
20330
20340
20350
20360
20370
20380
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE


num_missing_lines
70
60
50
40
30
20
10
0
20330
20340
20350
20360
20370
20380
Orbit
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 : 2006-01-21 03:02:35 H
TxPhase
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 : 2006-01-21 03:02:35 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2006-01-18 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
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31
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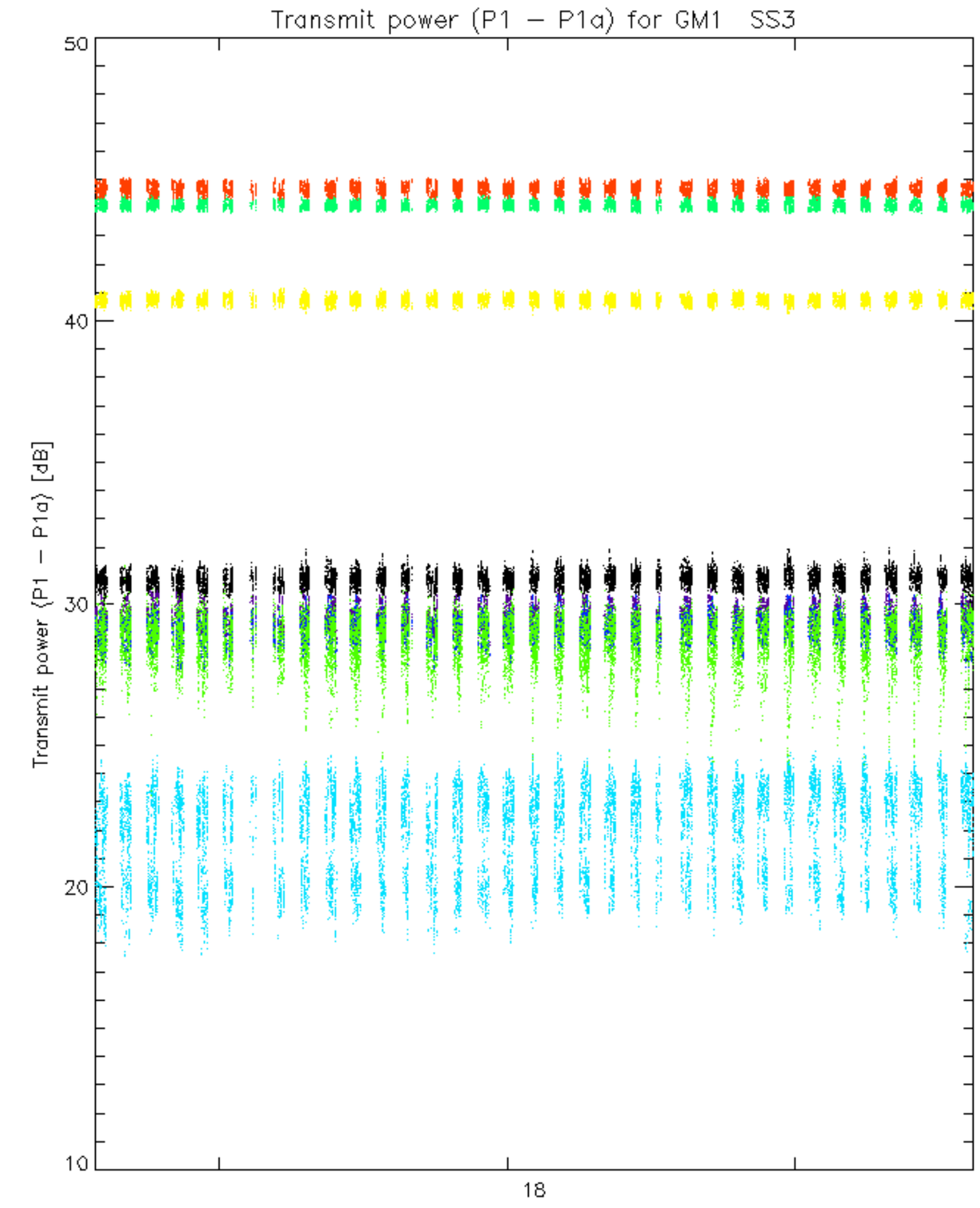
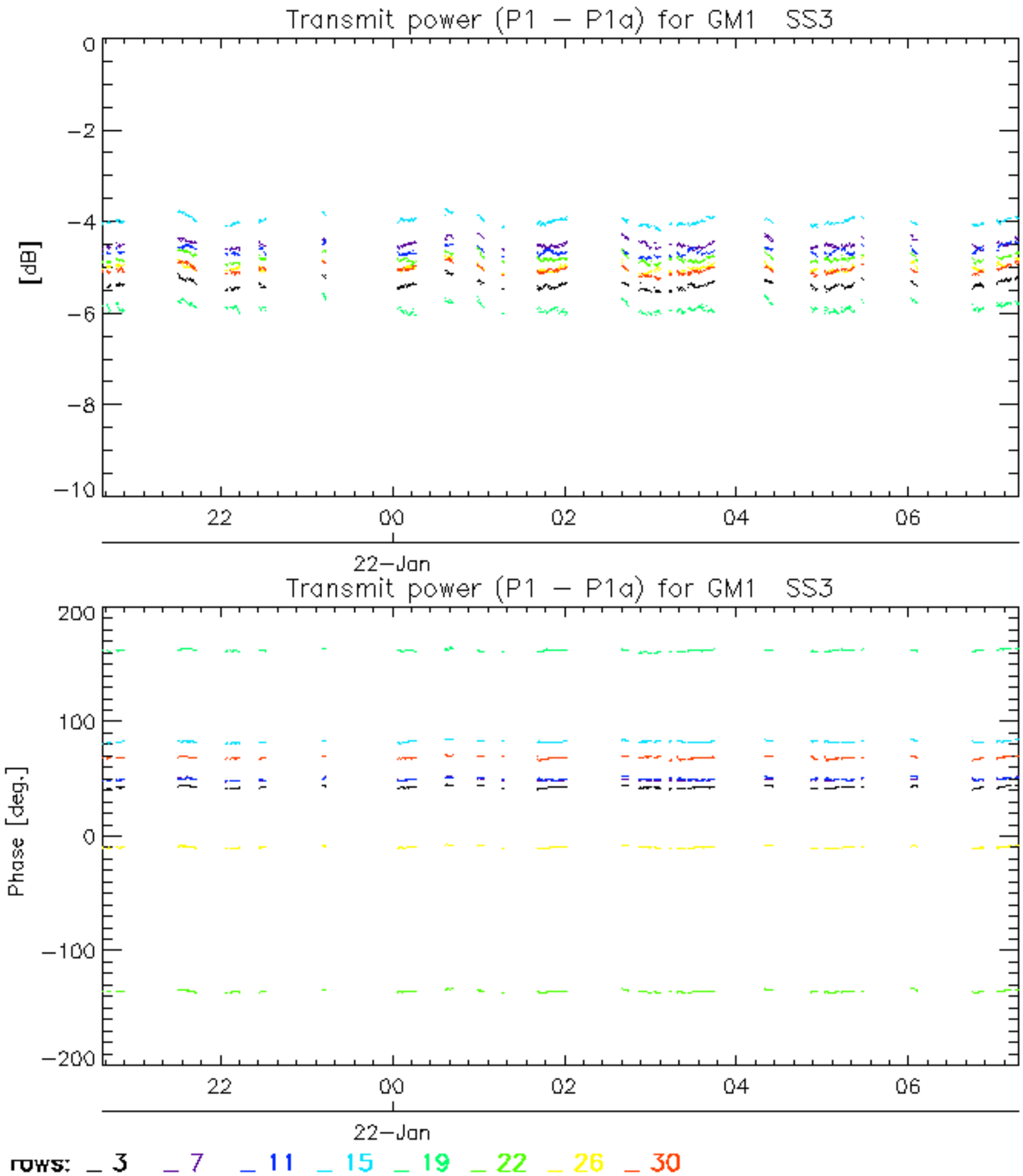
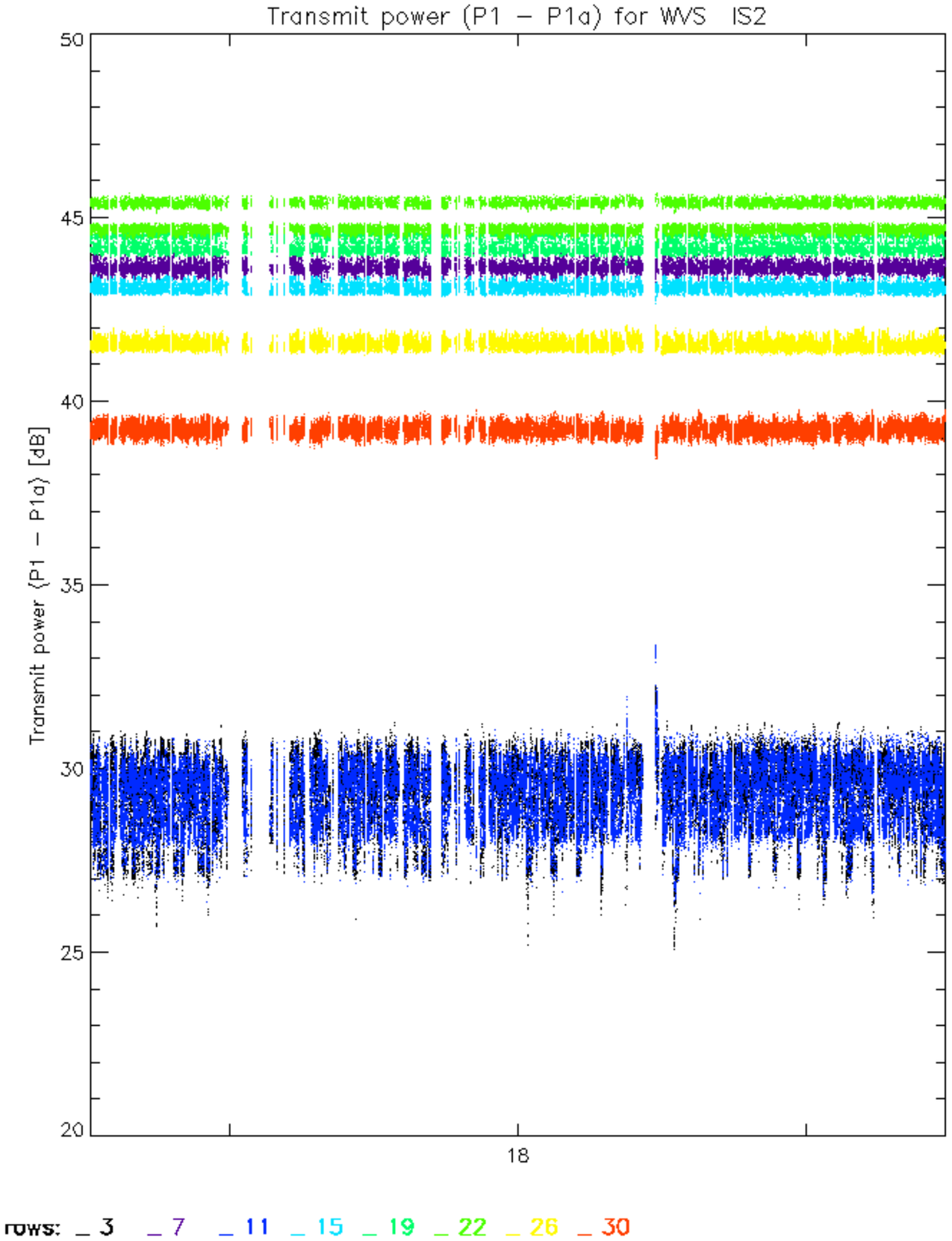
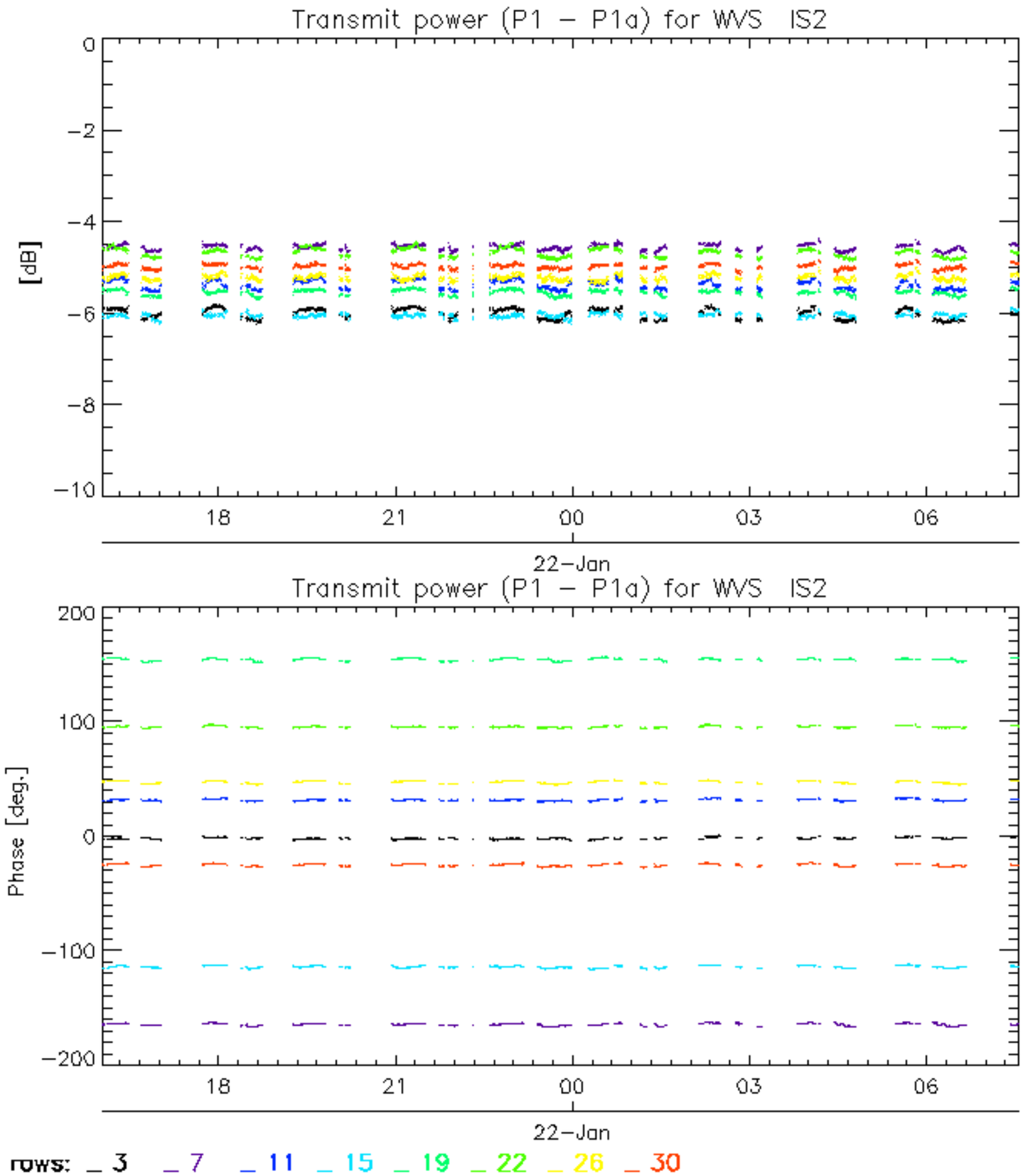

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
18
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
22
00
02
04
06
22–Jan
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
22
00
02
04
06
22–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
18
rows: 3 7 11 15 19 22 26 30


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

No unavailabilities during the reported period.