PRELIMINARY REPORT OF 070205

last update on Mon Feb 5 16:12:56 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 2007-02-04 00:00:00 to 2007-02-05 16:12:56

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	21	40	3	1	15
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	21	40	3	1	15
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	21	40	3	1	15
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	21	40	3	1	15

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

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	20070201 074712
H	20070204 153516

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
☒
☒

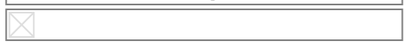
4.1.2 - Evolution for GM1

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	-11.598933	0.111629	2.373310
7	P1a	-10.059388	0.062583	-1.065377
11	P1a	-10.589634	0.085374	-1.594972
15	P1a	-11.224883	1.050705	-8.906064
19	P1a	-15.440646	0.693425	7.028402
22	P1a	-20.611462	5.568663	17.962435
26	P1a	-15.622318	0.414604	-0.914296
30	P1a	-19.065485	4.627353	-18.222737

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.507628	0.459512	-6.454634
7	P1	-2.566177	0.009600	-0.486875
11	P1	-3.077671	0.086380	-2.477734
15	P1	-4.148909	0.807296	-7.999537
19	P1	-3.519690	0.060250	1.910886
22	P1	-5.221652	0.096512	-2.509276
26	P1	-5.700154	0.430290	5.702895
30	P1	-5.380270	0.059132	-1.177587

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.291267	0.173955	-2.235320
7	P2	-22.028603	0.149089	1.582946
11	P2	-10.904547	0.111064	1.688982
15	P2	-5.137374	0.095173	0.355595
19	P2	-7.265077	0.081303	0.283340
22	P2	-8.363281	0.078777	-0.391650
26	P2	-24.257143	0.103831	1.676231
30	P2	-21.701578	0.071849	0.041974

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.224520	0.007452	0.023753
7	P3	-8.224520	0.007452	0.023753
11	P3	-8.224520	0.007452	0.023753
15	P3	-8.224520	0.007452	0.023753
19	P3	-8.224520	0.007452	0.023753
22	P3	-8.224520	0.007452	0.023753
26	P3	-8.224520	0.007452	0.023753
30	P3	-8.224520	0.007452	0.023753

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	-11.707930	0.057949	0.922474
7	P1a	-10.012774	0.042076	0.097895
11	P1a	-10.493328	0.060330	-0.196808
15	P1a	-10.829500	0.130927	-0.237628
19	P1a	-15.749846	0.060844	-0.126608
22	P1a	-20.952509	1.390436	1.664645
26	P1a	-15.503024	0.256933	0.236968
30	P1a	-18.315216	0.366458	-0.255164

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.426479	0.675274	-7.422633
7	P1	-2.439696	0.006488	0.018407
11	P1	-2.847832	0.017236	0.019133
15	P1	-3.769953	0.033558	-0.081846
19	P1	-3.548940	0.013515	-0.056728
22	P1	-5.021966	0.024030	0.031266

26	P1	-6.000775	0.022042	-0.076295
30	P1	-5.289410	0.024368	0.039915

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.340870	0.116913	-1.681257
7	P2	-22.039915	0.048312	-0.107806
11	P2	-10.700846	0.031283	-0.025962
15	P2	-4.843198	0.026619	-0.014457
19	P2	-6.843851	0.027352	-0.010713
22	P2	-8.154291	0.029180	-0.089537
26	P2	-24.259848	0.031690	-0.079767
30	P2	-21.800861	0.034381	0.036460

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.056401	0.002541	0.003825
7	P3	-8.056190	0.002539	0.003648
11	P3	-8.056271	0.002542	0.006499
15	P3	-8.056326	0.002522	0.004192
19	P3	-8.056207	0.002522	0.005493
22	P3	-8.056442	0.002537	0.003596
26	P3	-8.056318	0.002530	0.004410
30	P3	-8.056252	0.002532	0.006075

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	0.000690398
	stdev	2.68166e-07
MEAN Q	mean	0.000288938
	stdev	2.07972e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.0572817
	stdev	0.000925113
STDEV Q	mean	0.0568466
	stdev	0.000936112

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007020[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

Acsending

Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

Acsending

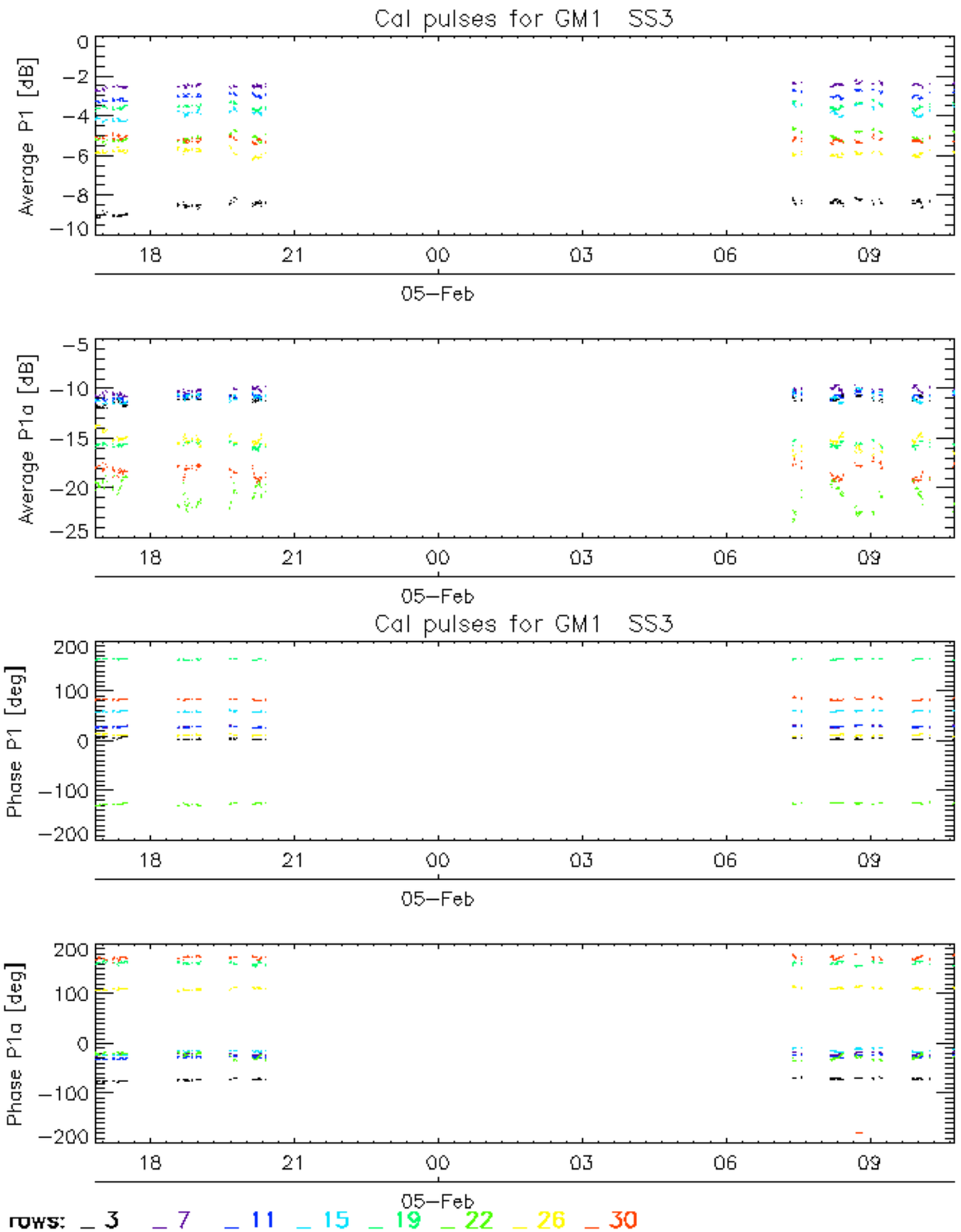

Descending

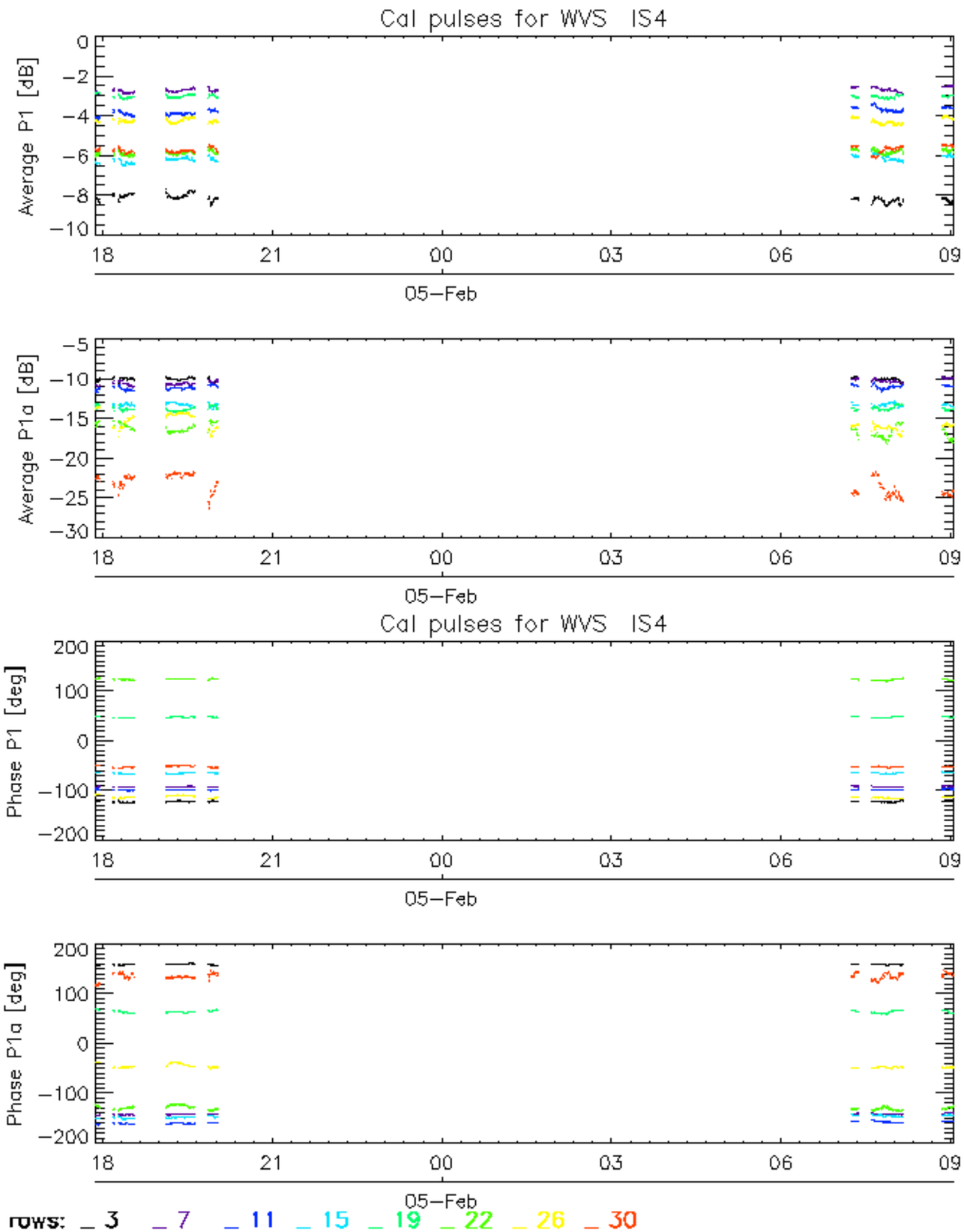
7.5 - Absolute Doppler for GM1

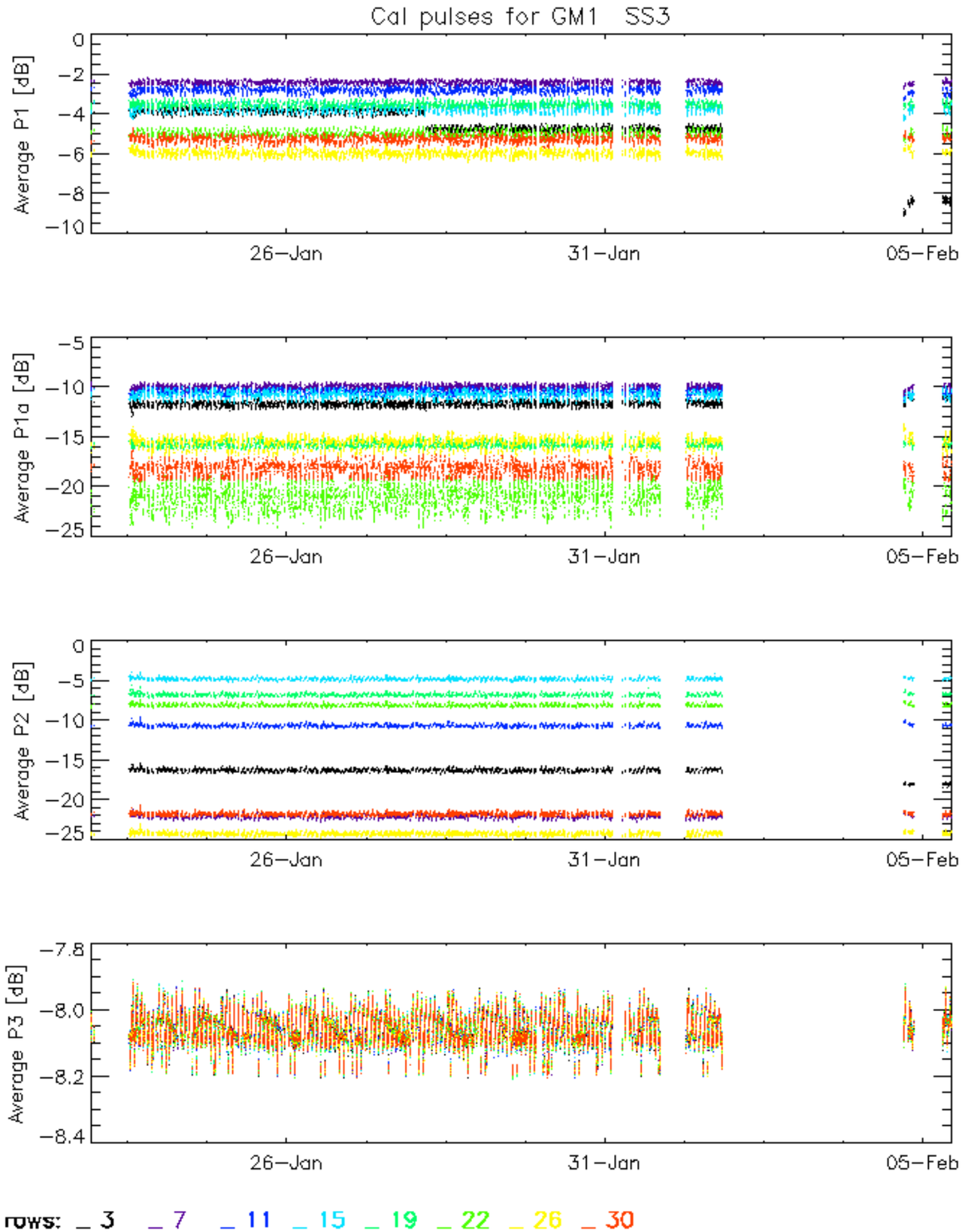
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

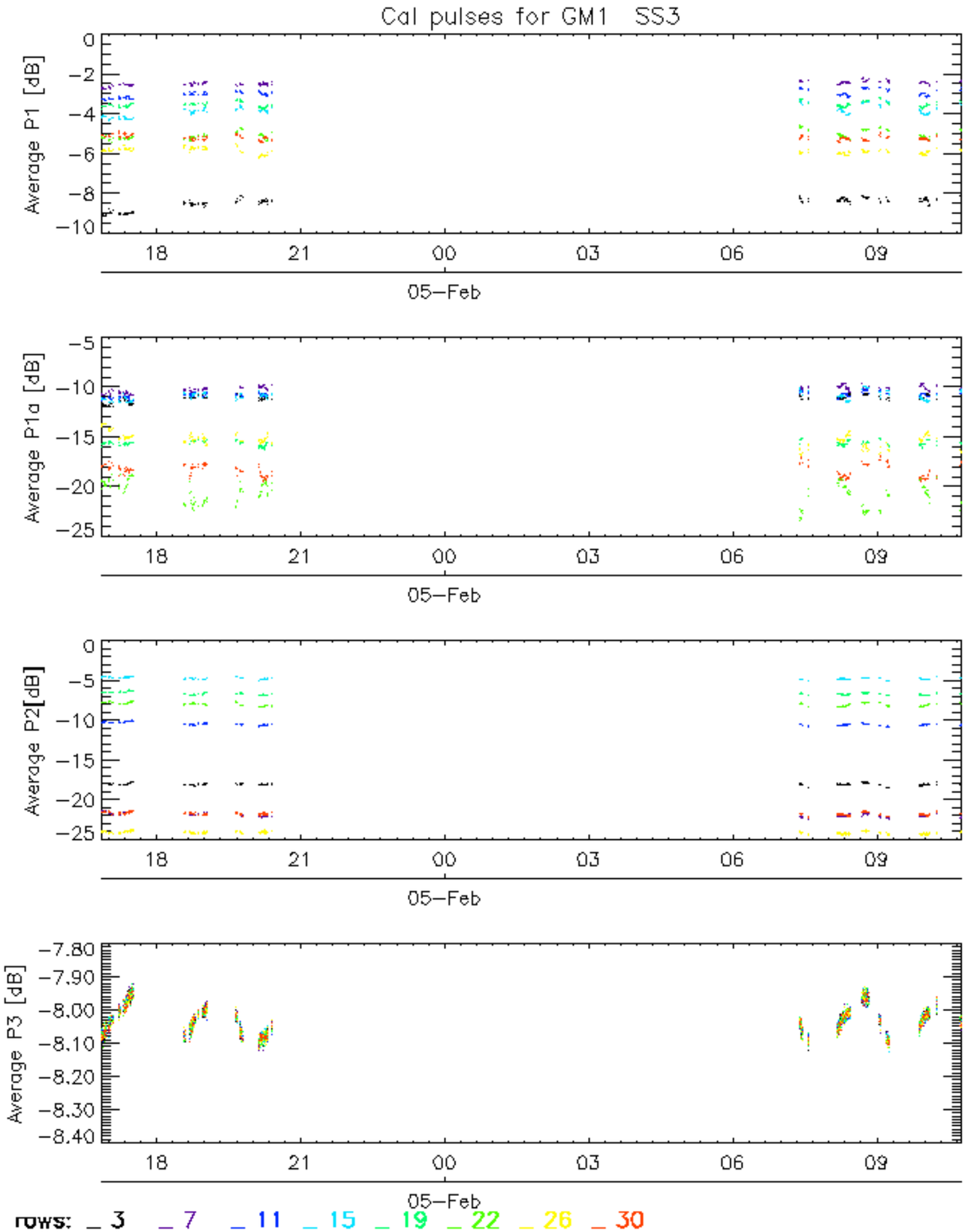
7.6 - Doppler evolution versus ANX for GM1

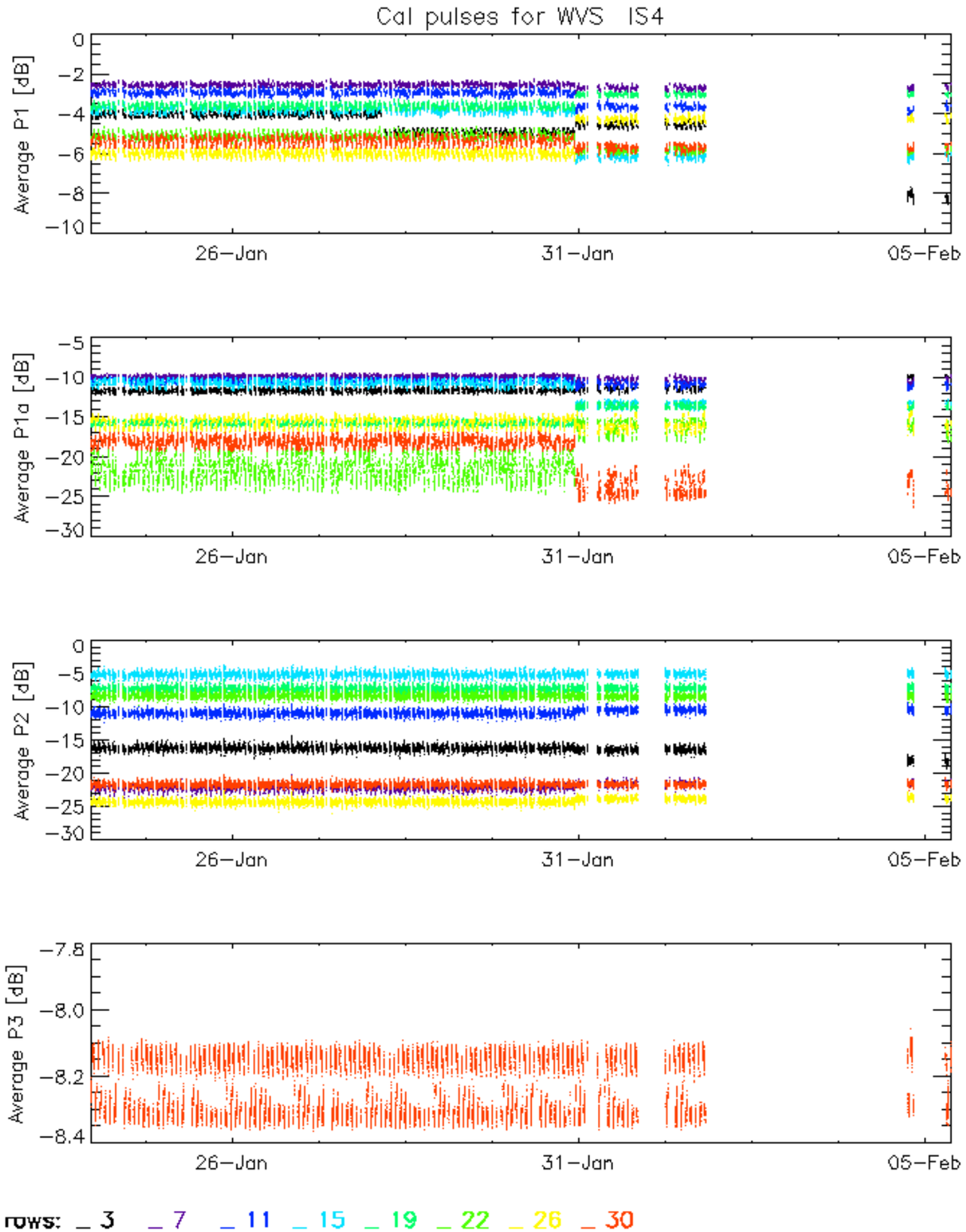
Evolution Doppler error versus ANX
☒

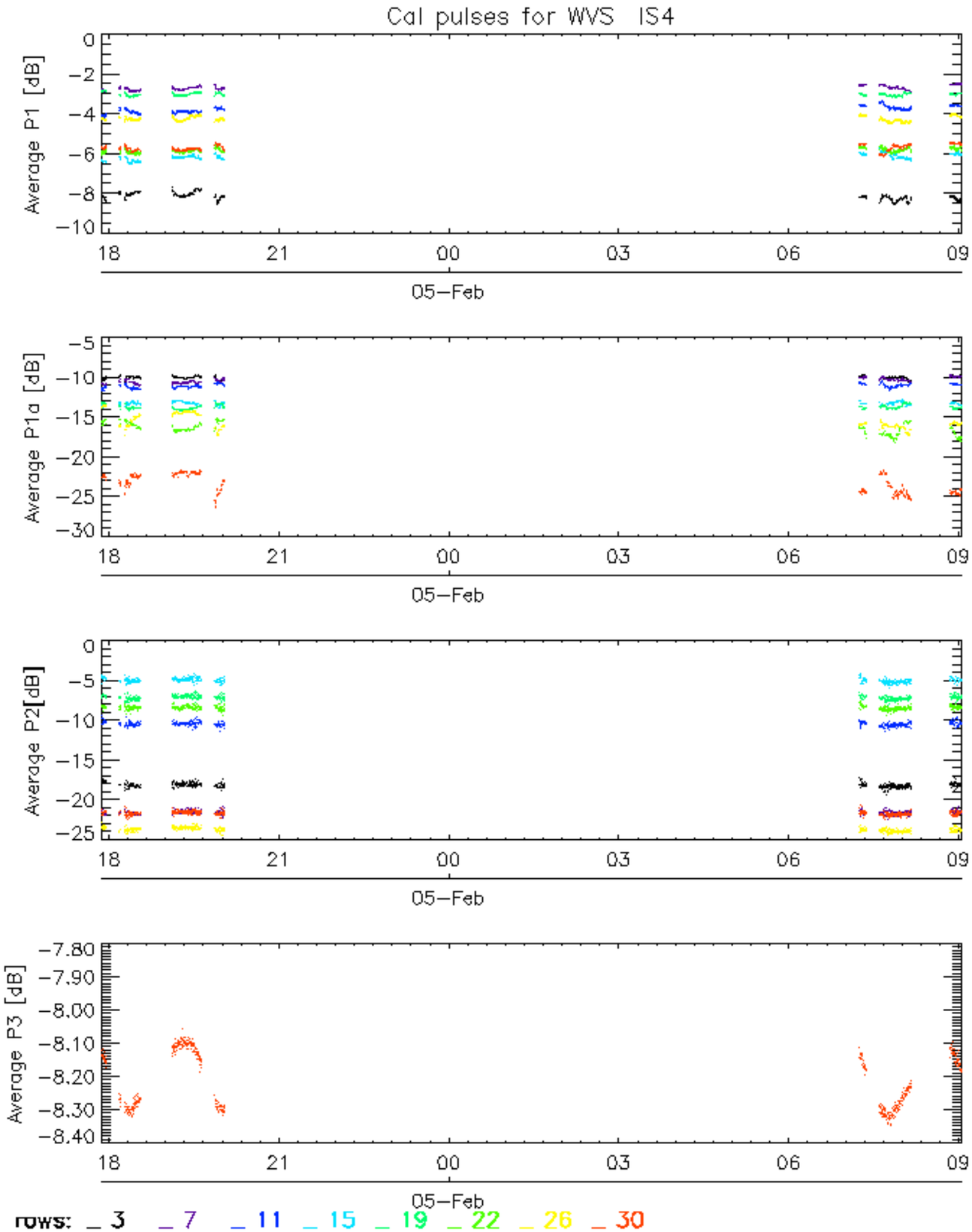

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
09
05−Feb
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
09
05−Feb
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
09
05−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for WVS IS4
Phase P1 [deg]
200
100
0
−100
−200
Phase P1a [deg]
rows: 3 7 11 15 19 22 26 30

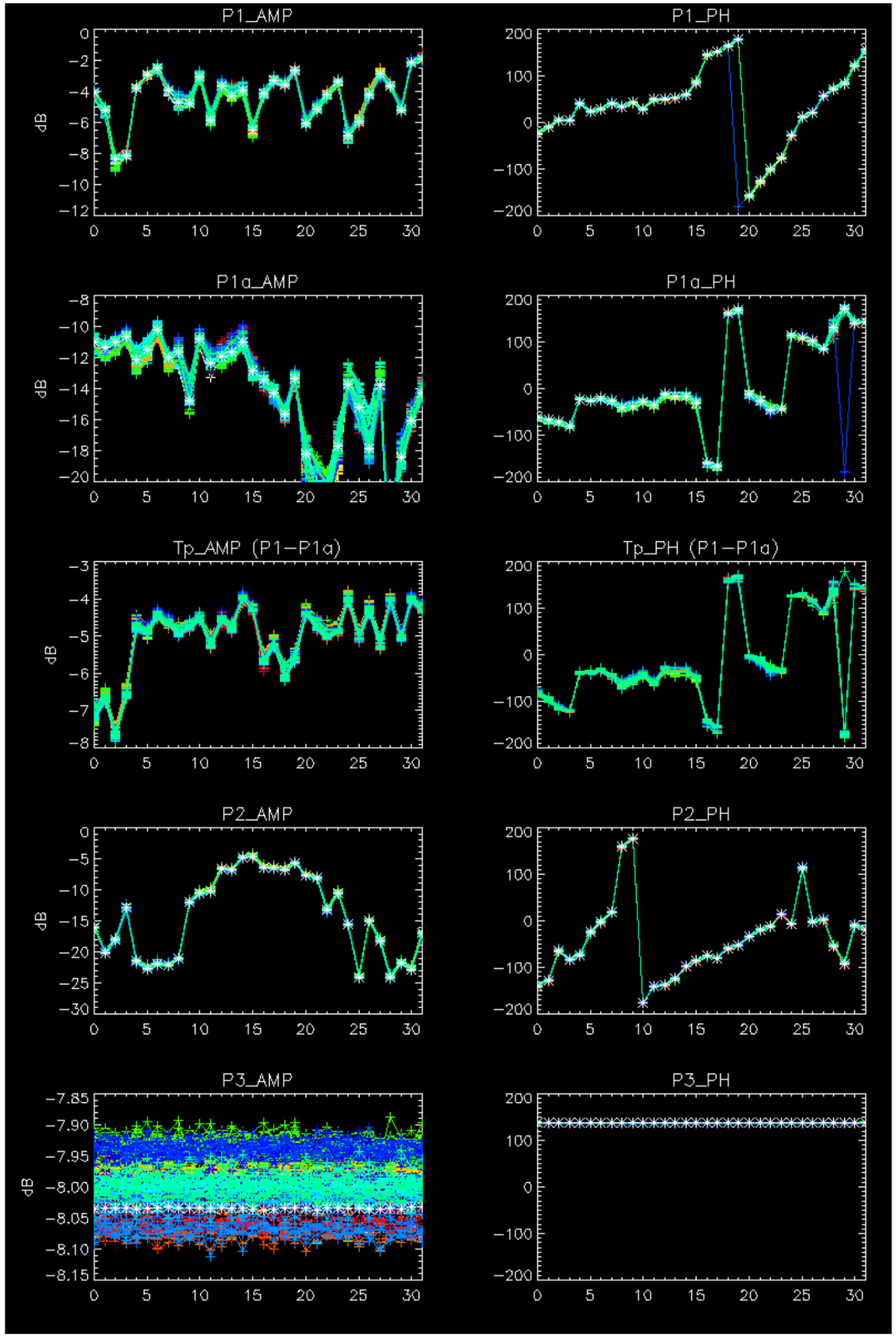

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
26−Jan
31−Jan
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
26−Jan
31−Jan
05−Feb
Average P2 [dB]
0
−5
−10
−15
−20
−25
26−Jan
31−Jan
05−Feb
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
05−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

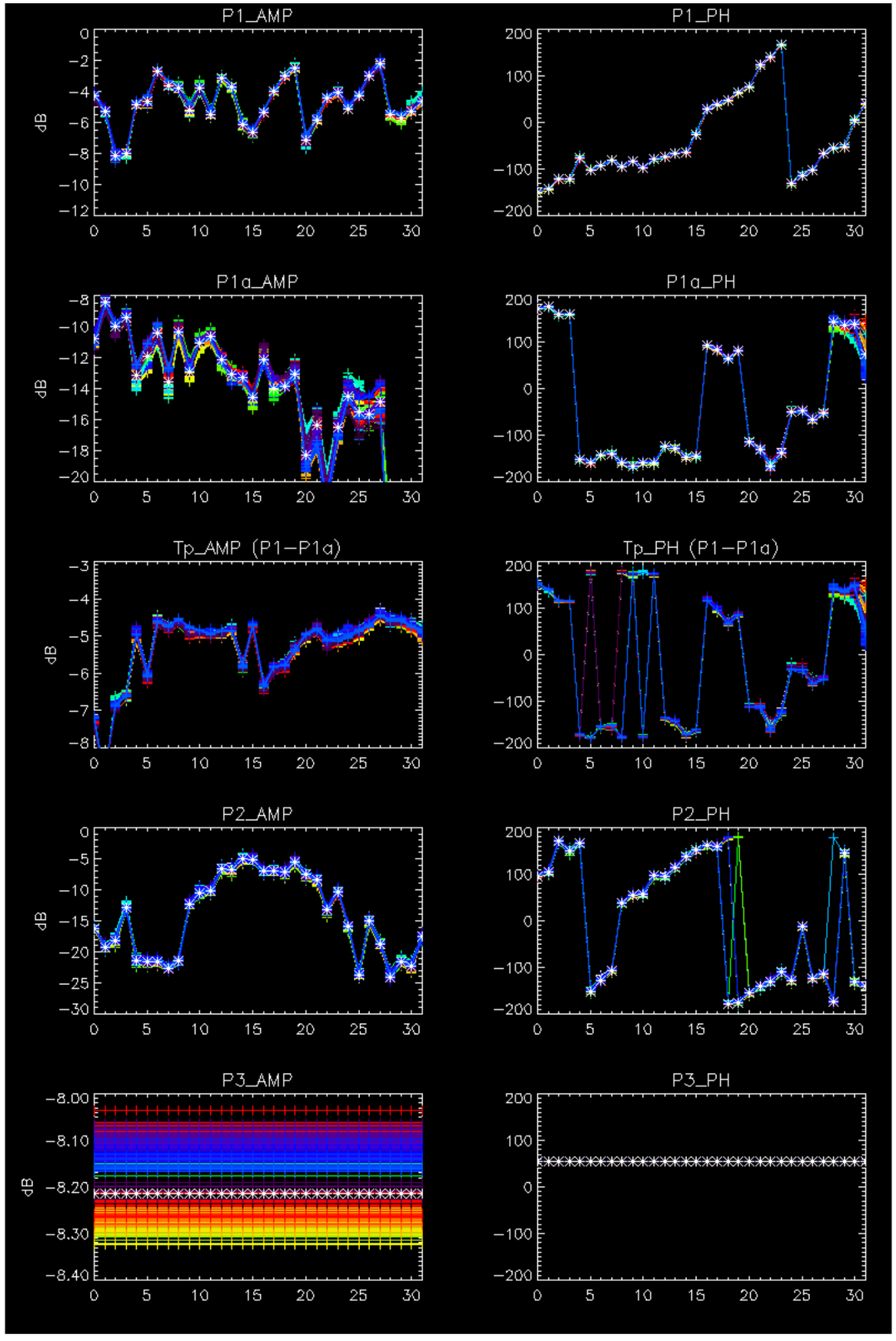

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
09
05−Feb
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
09
05−Feb
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
09
05−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
0
−2
−4
−6
−8
−10
26−Jan
31−Jan
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
05−Feb
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
05−Feb
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
05−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
0
−2
−4
−6
−8
−10
18
21
00
03
06
09
05−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
18
21
00
03
06
09
05−Feb
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
09
05−Feb
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
09
05−Feb
rows: 3 7 11 15 19 22 26 30

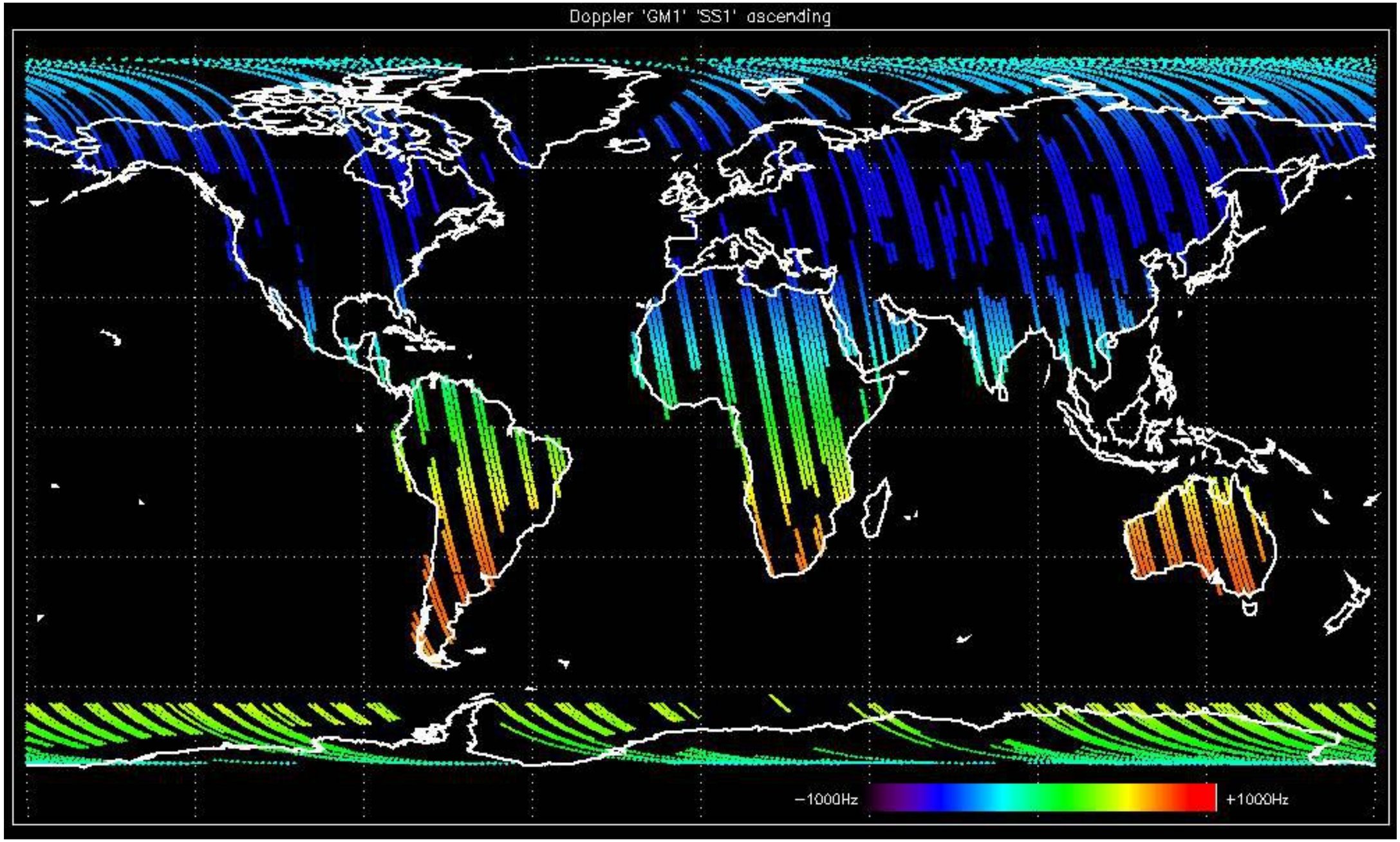
No anomalies observed.

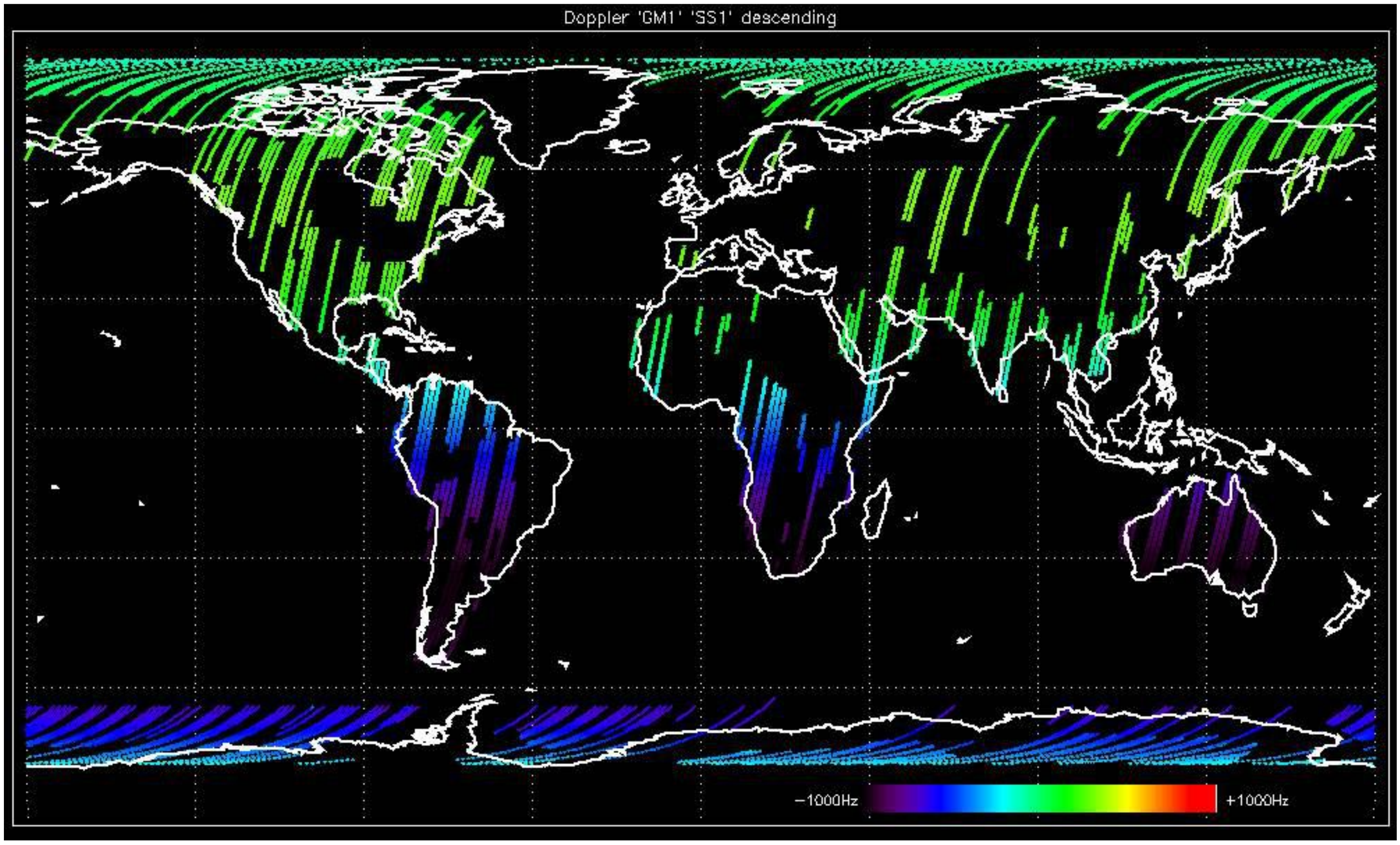

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

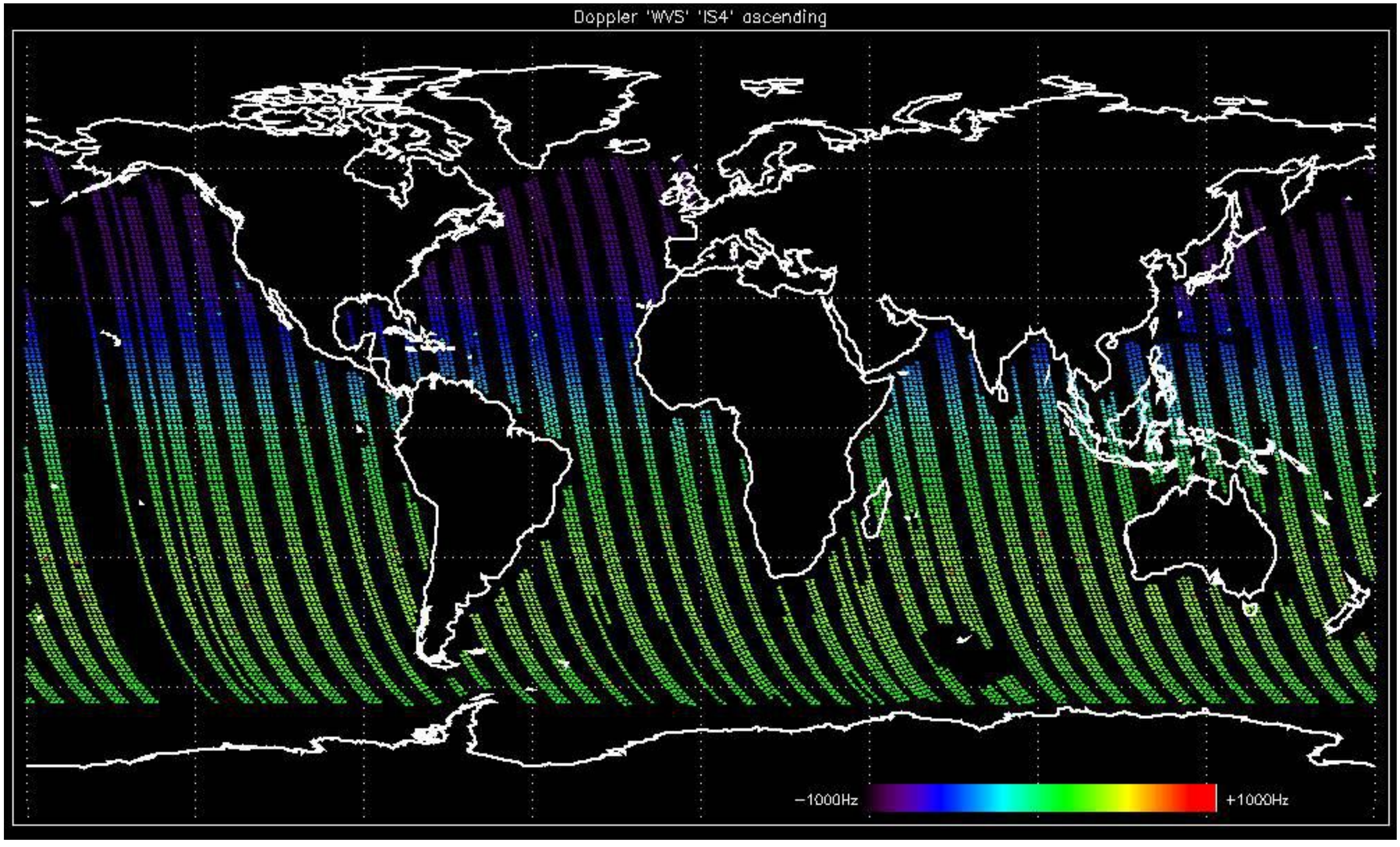

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

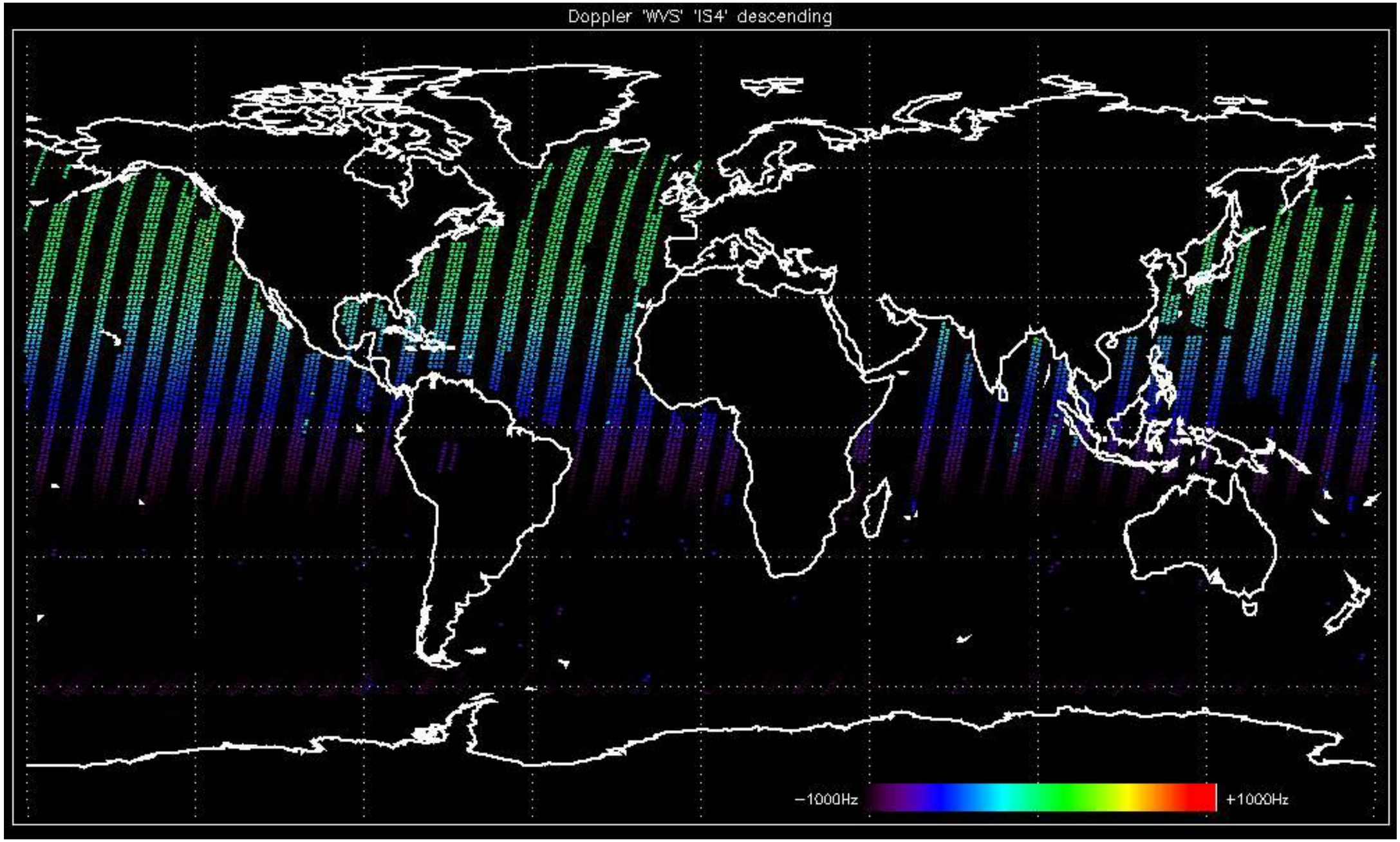
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

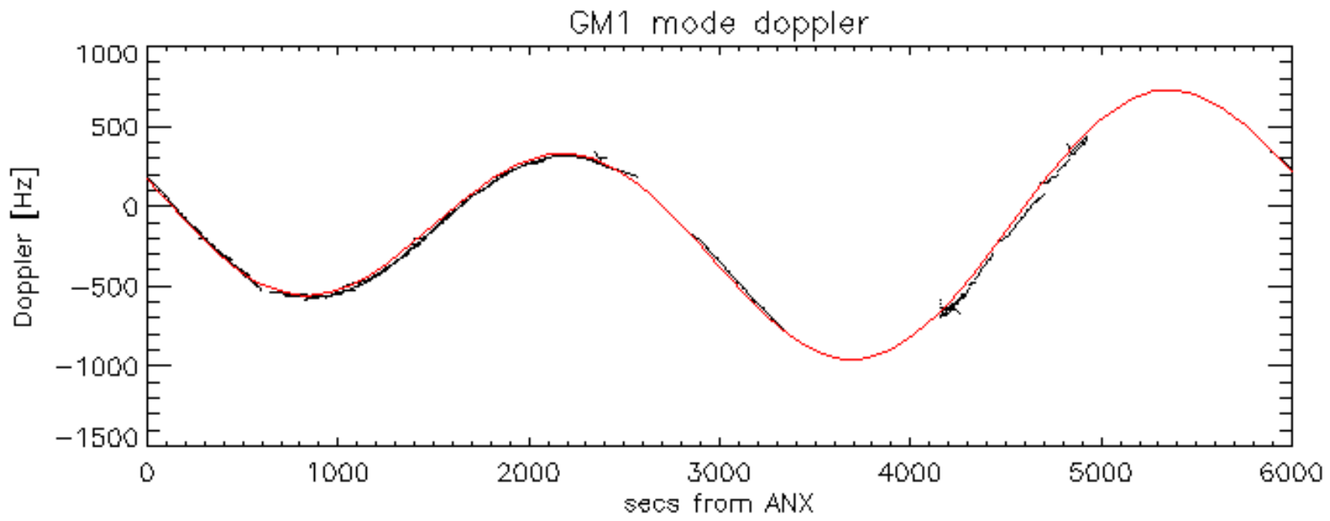
Preliminary report.The data is not yet controled

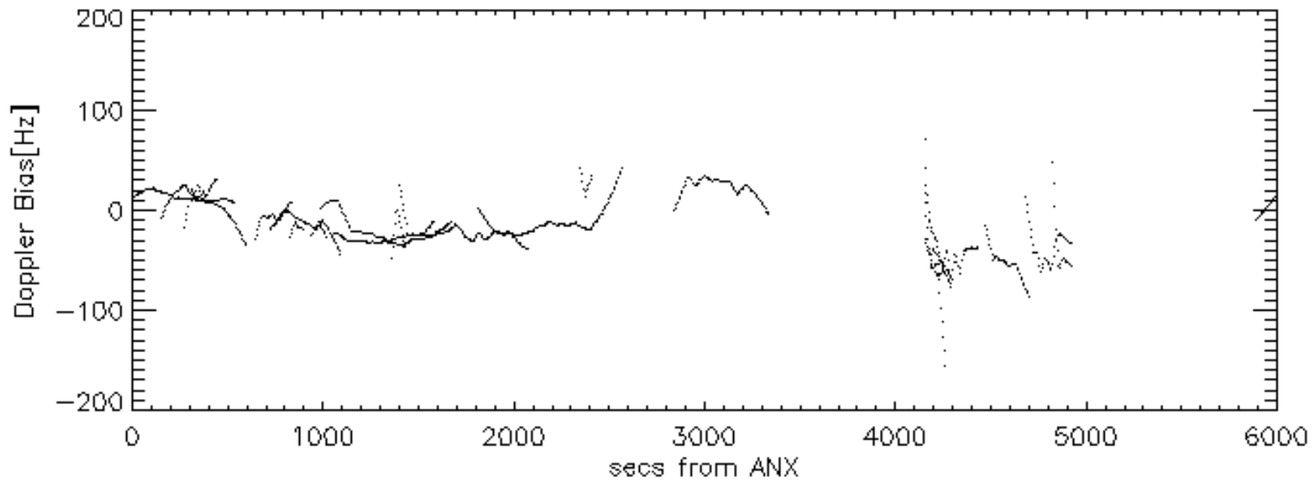

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

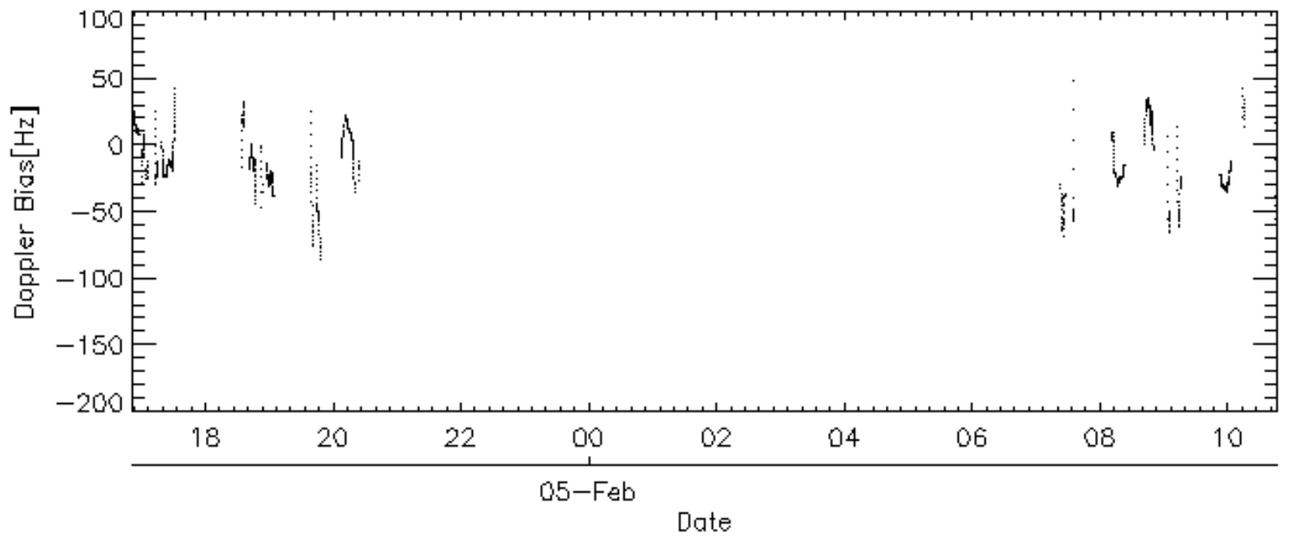

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

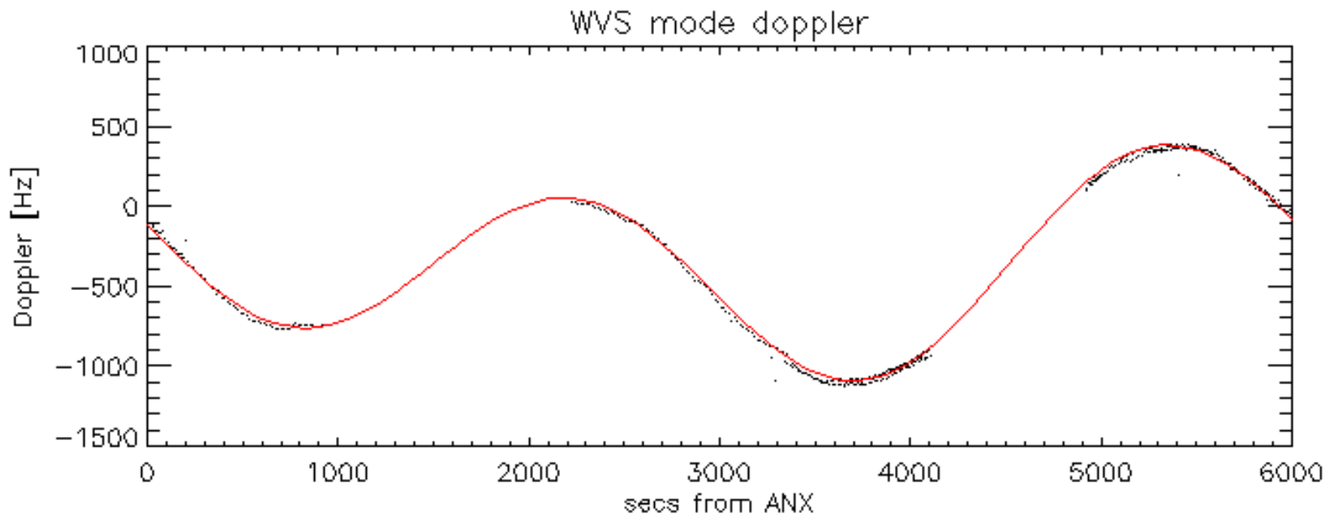

Doppler 'WVS' 'IS4' ascending
−1000Hz
+1000Hz

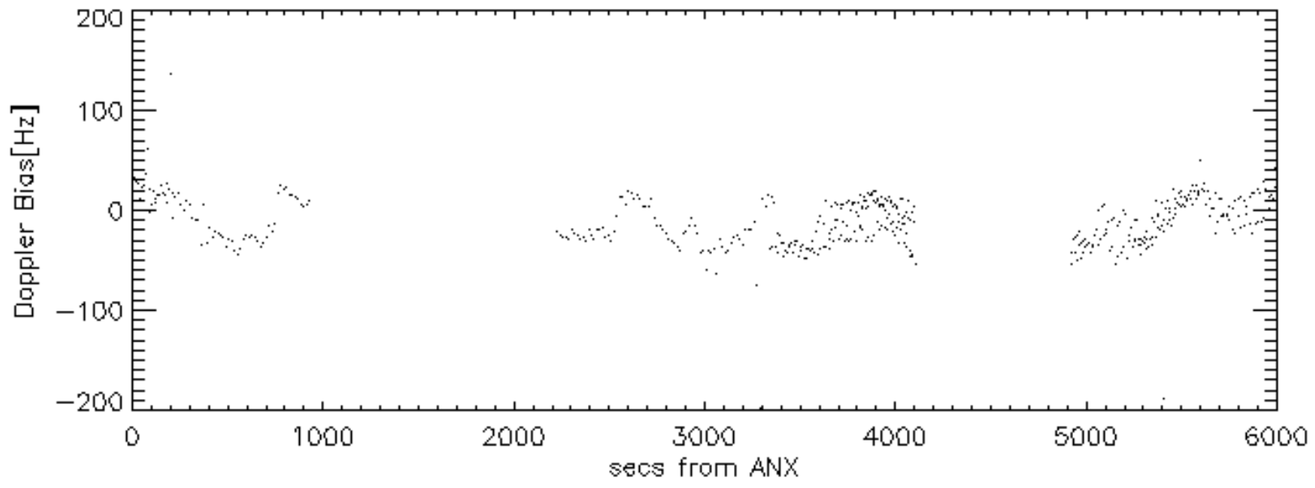

Doppler 'WVS' 'IS4' descending
−1000Hz
+1000Hz

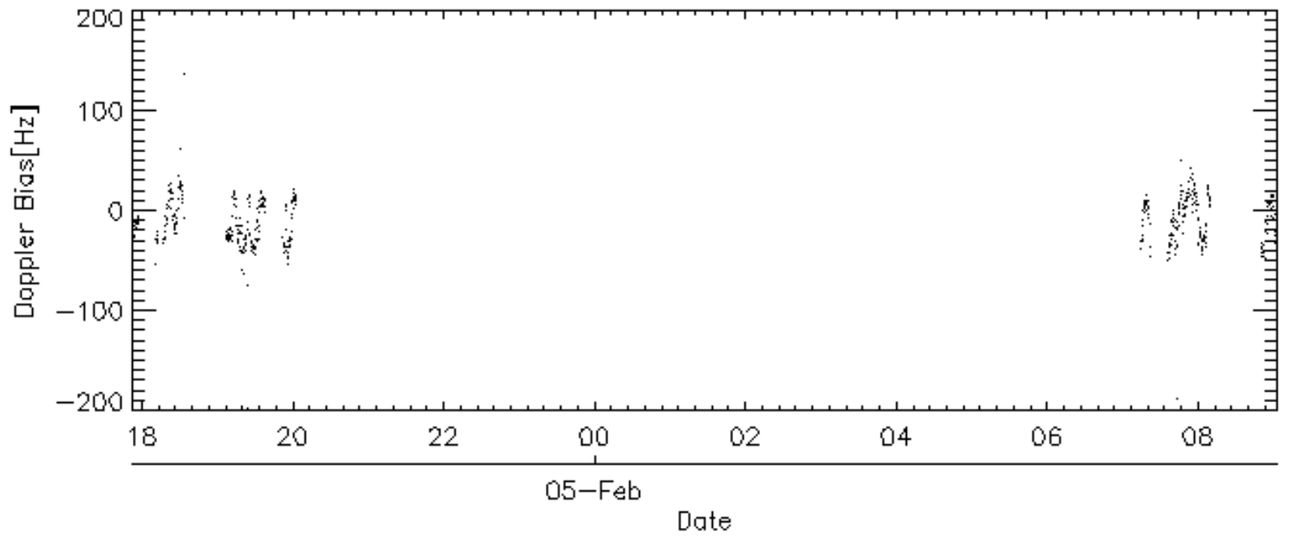

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

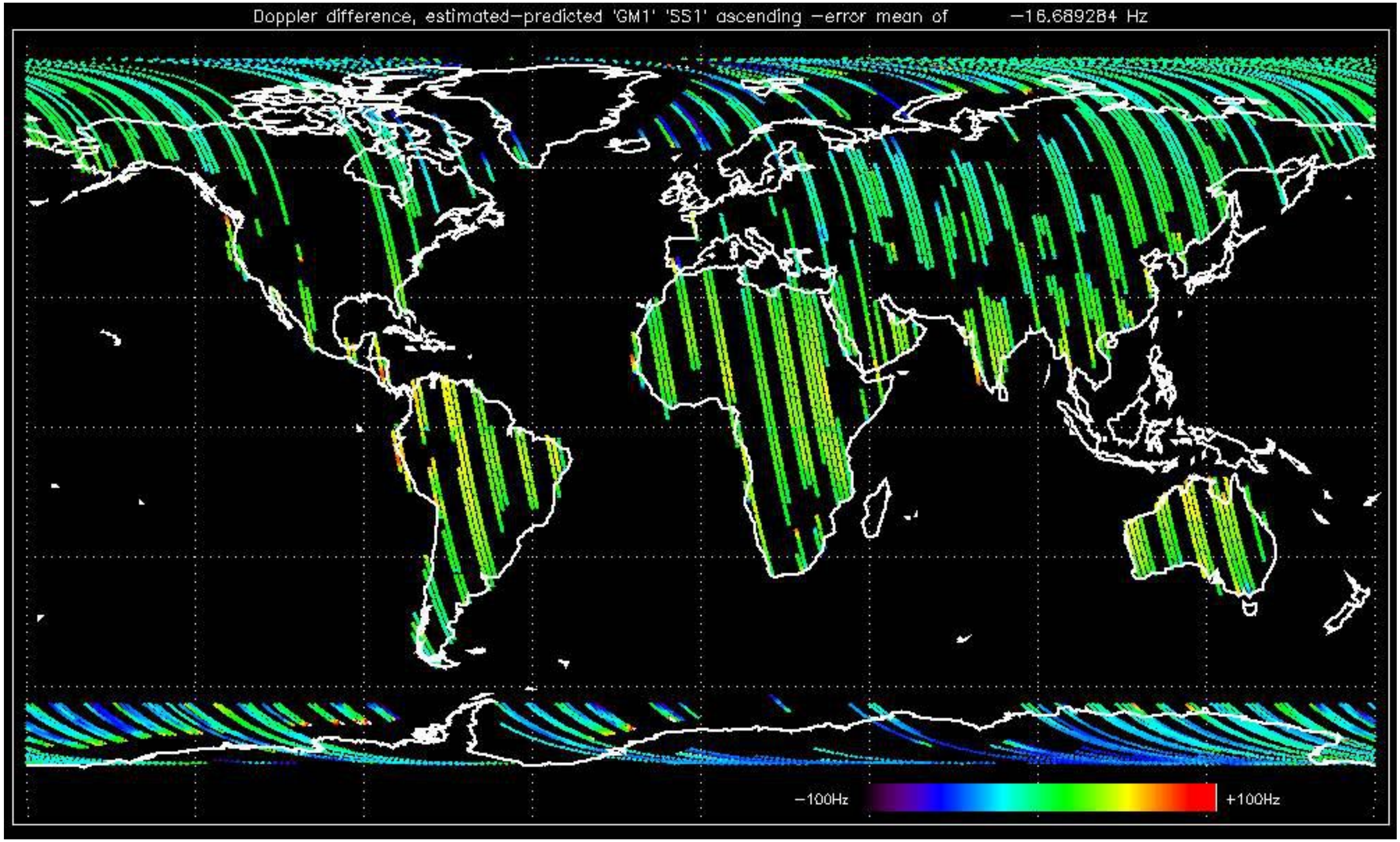

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

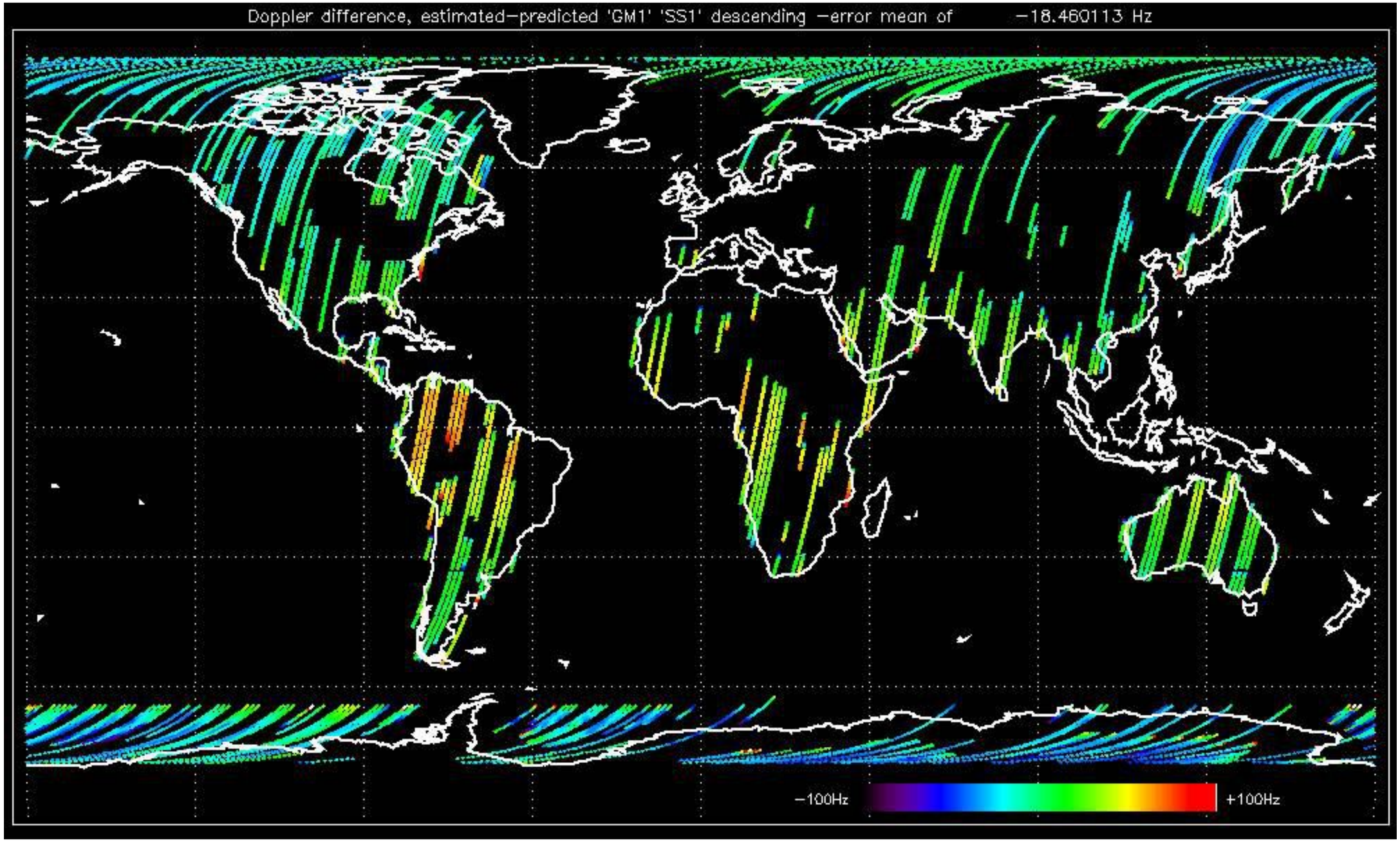

Doppler Bias[Hz]
100
50
0
−50
−100
−150
−200
18
20
22
00
02
04
06
08
10
05−Feb
Date

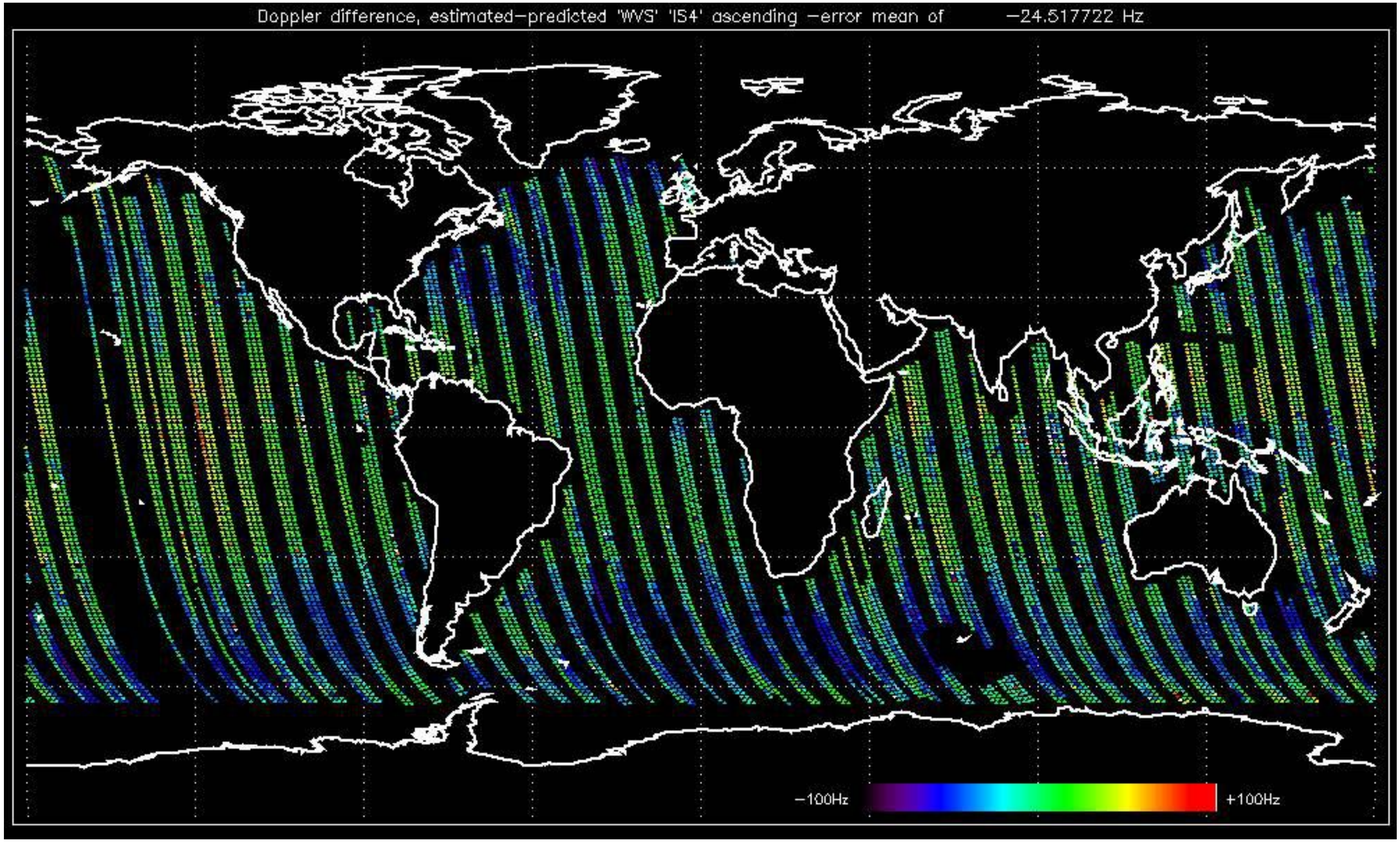

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

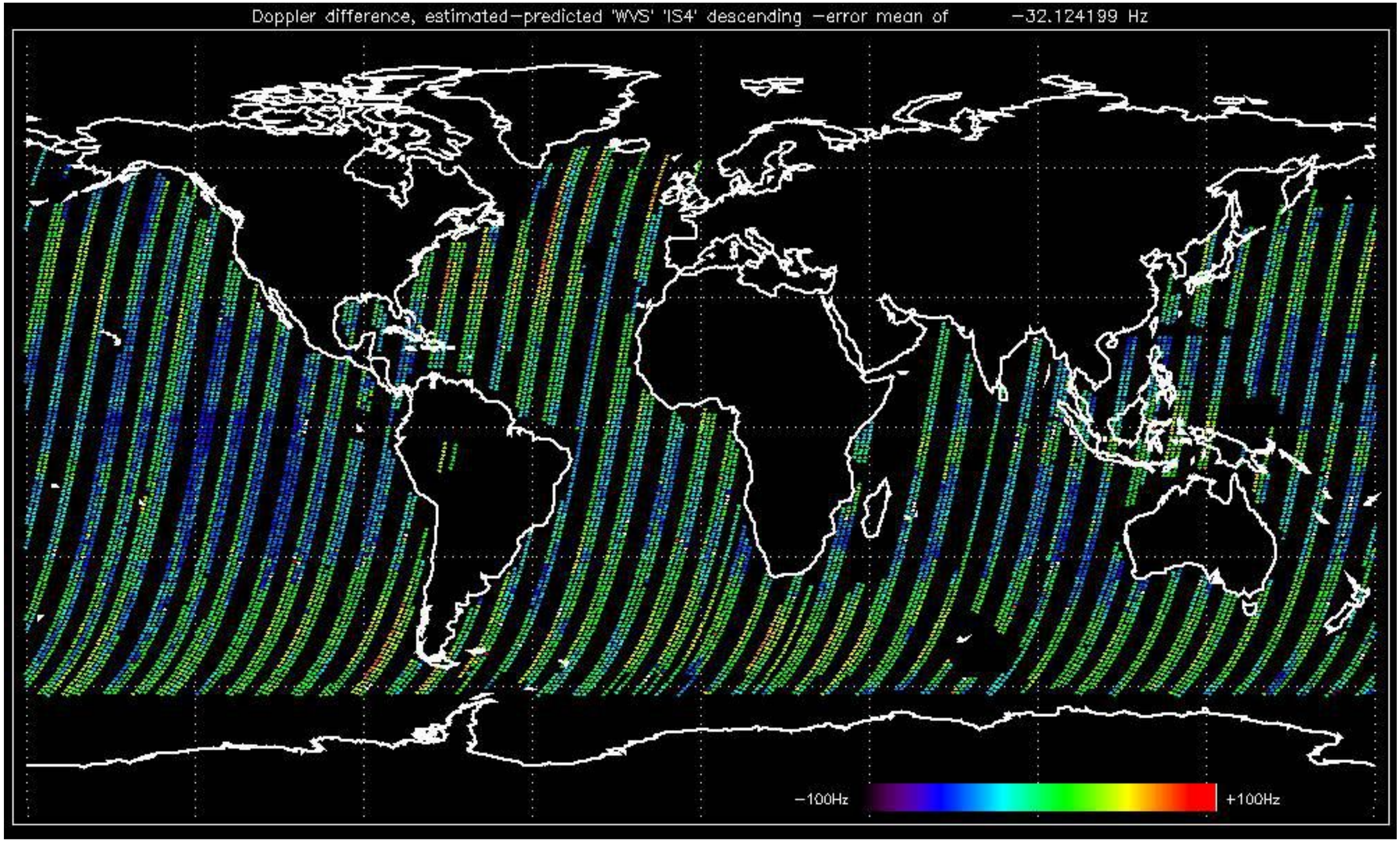

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


Doppler Bias[Hz]
200
100
0
−100
−200
18
20
22
00
02
04
06
08
05−Feb
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −16.689284 Hz
−100Hz
+100Hz

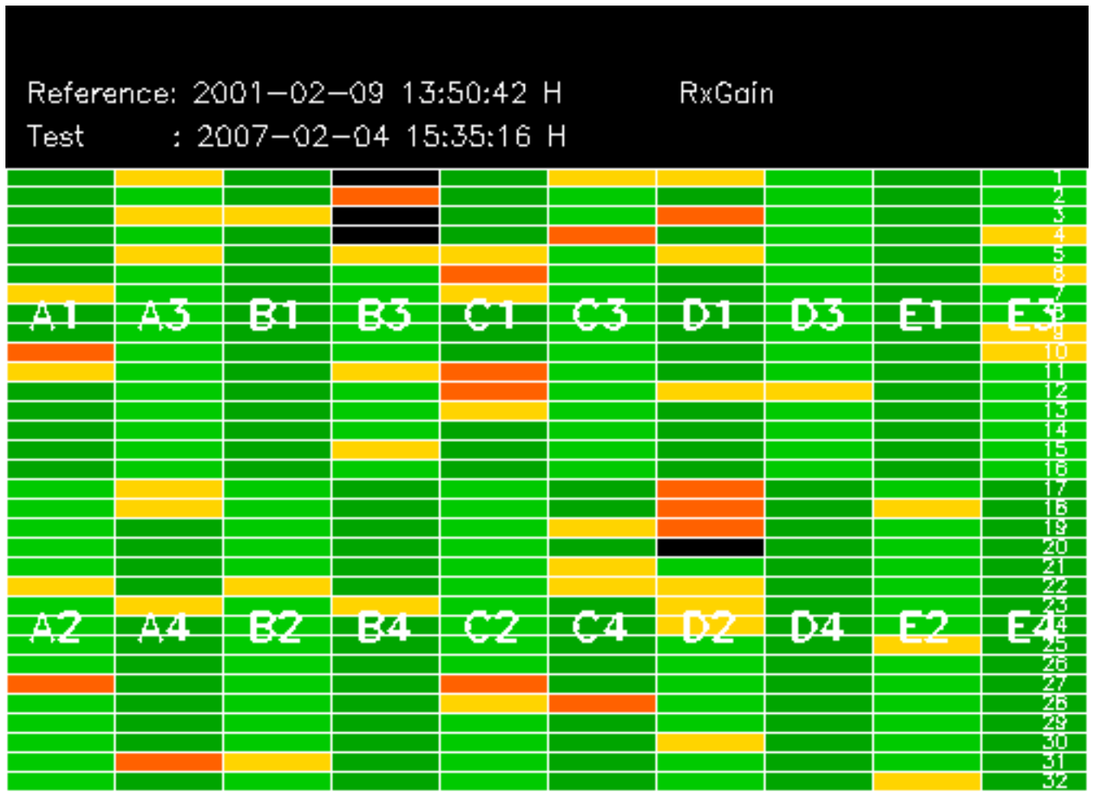

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.460113 Hz
-100Hz
+100Hz

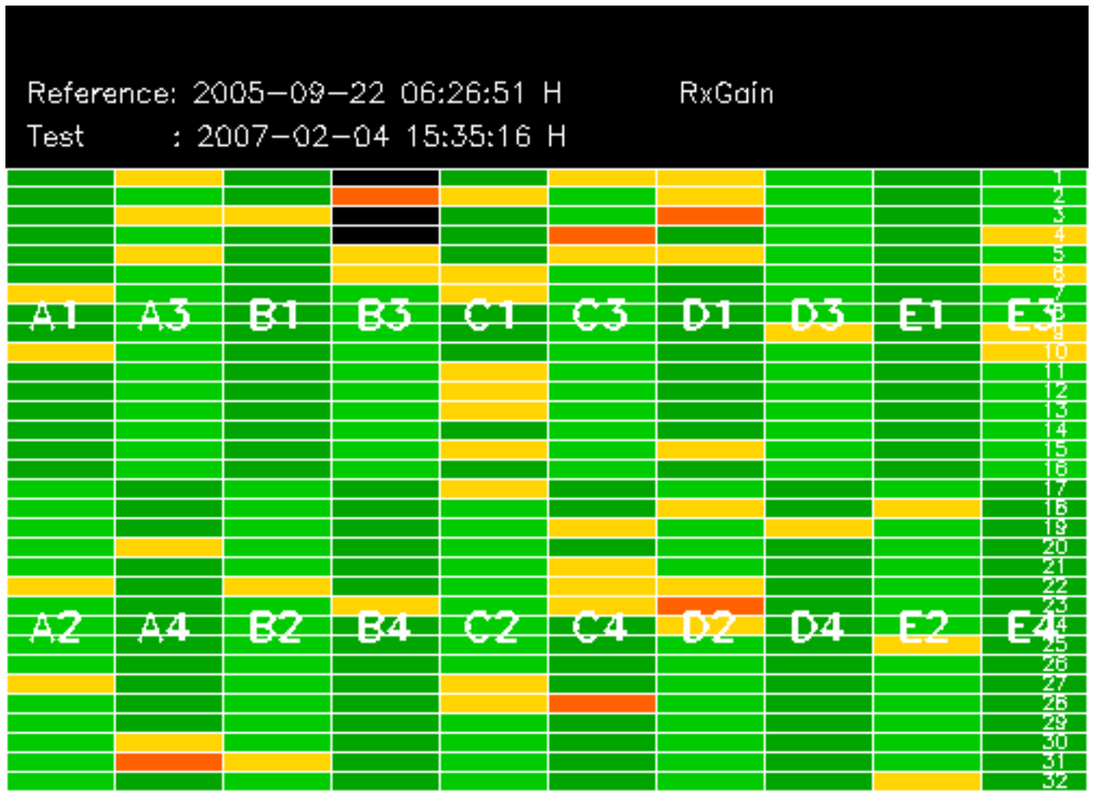

Doppler difference, estimated−predicted 'WVS' 'IS4' ascending −error mean of −24.517722 Hz
−100Hz
+100Hz

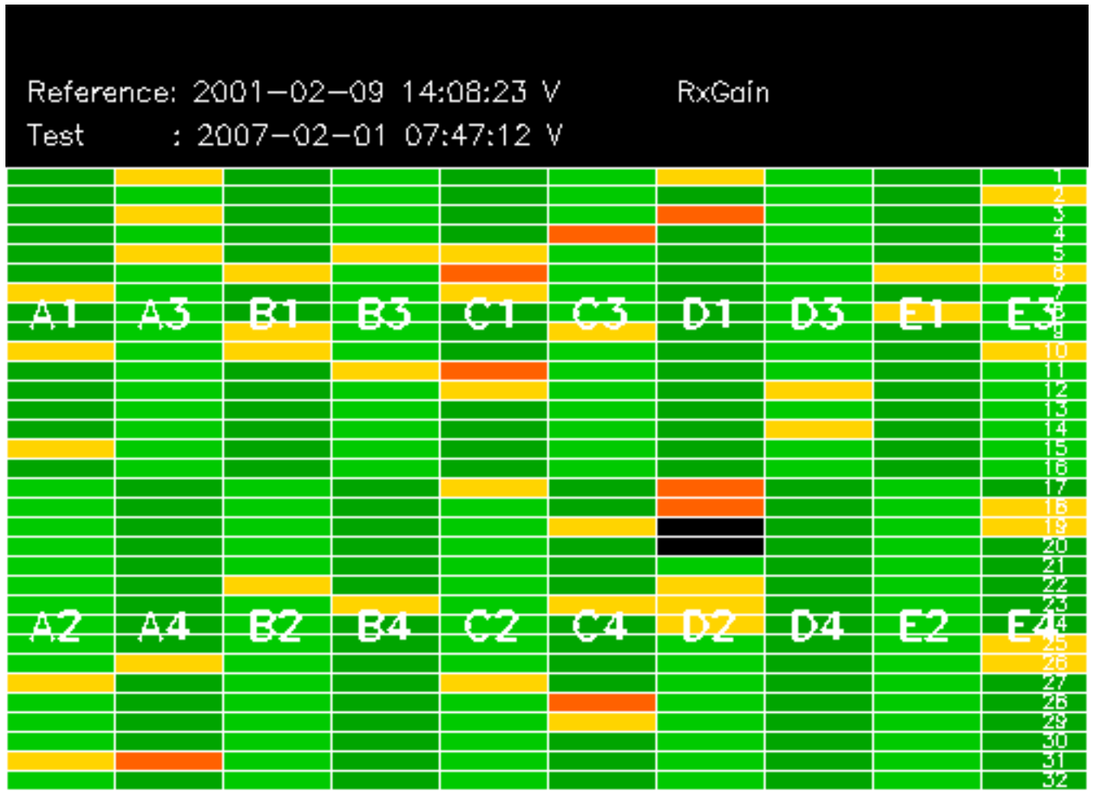

Doppler difference, estimated−predicted 'WVS' 'IS4' descending −error mean of −32.124199 Hz
−100Hz
+100Hz

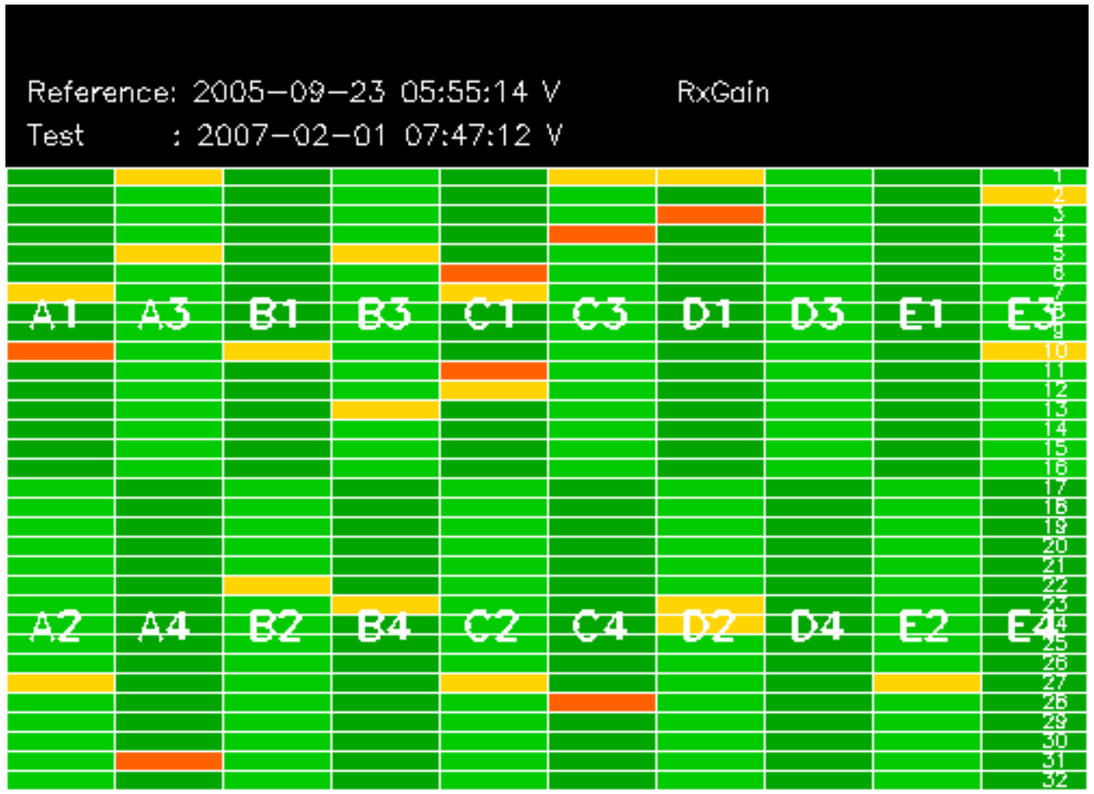
No anomalies observed on available MS products:

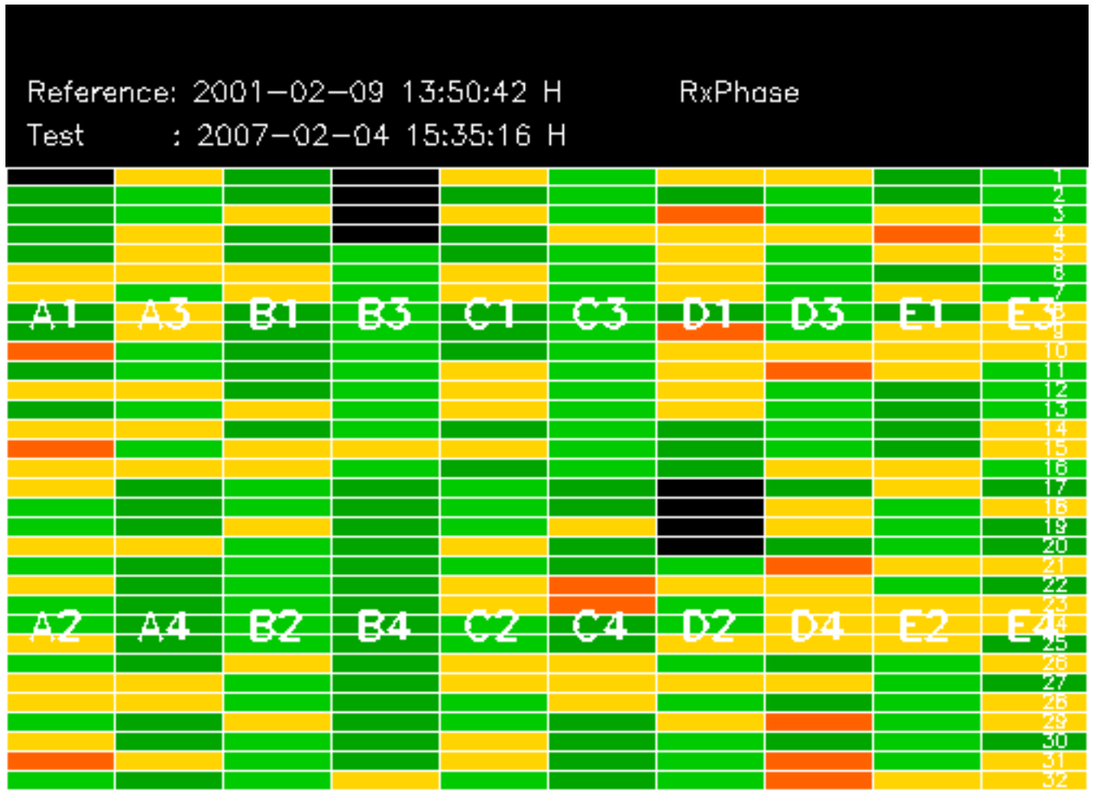
No anomalies observed.

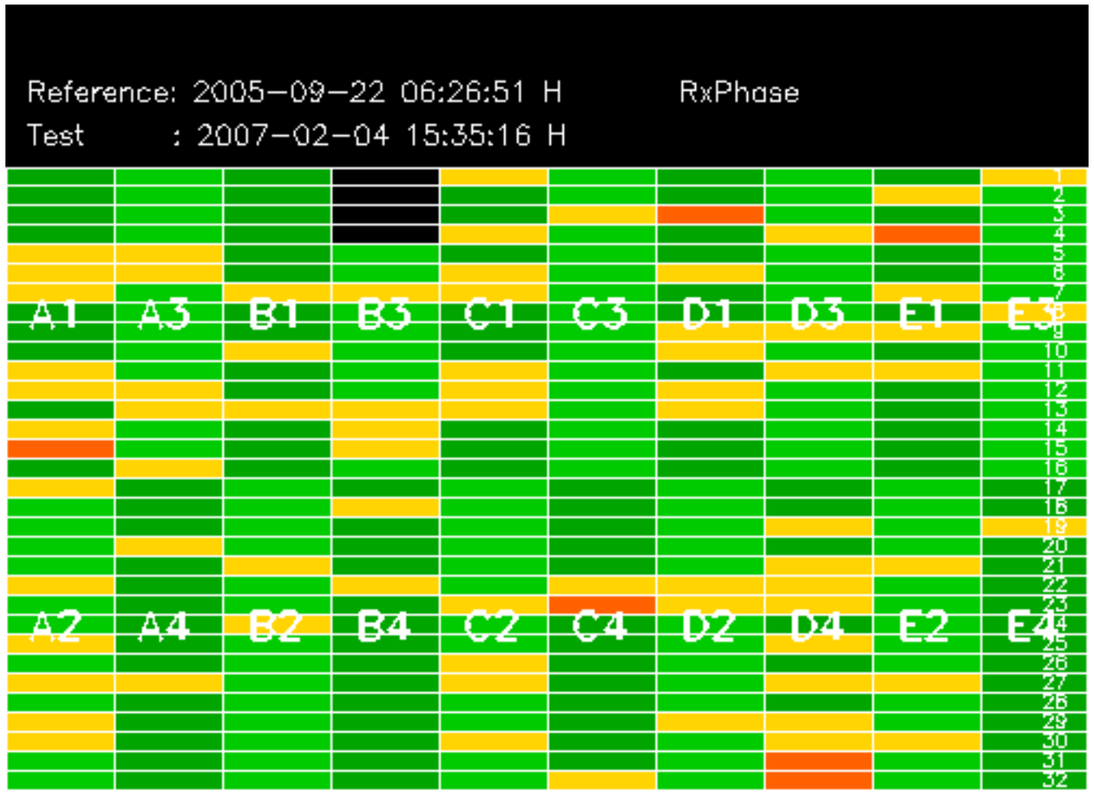

Reference: 2001-02-09 13:50:42 H
Test : 2007-02-04 15:35:16 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

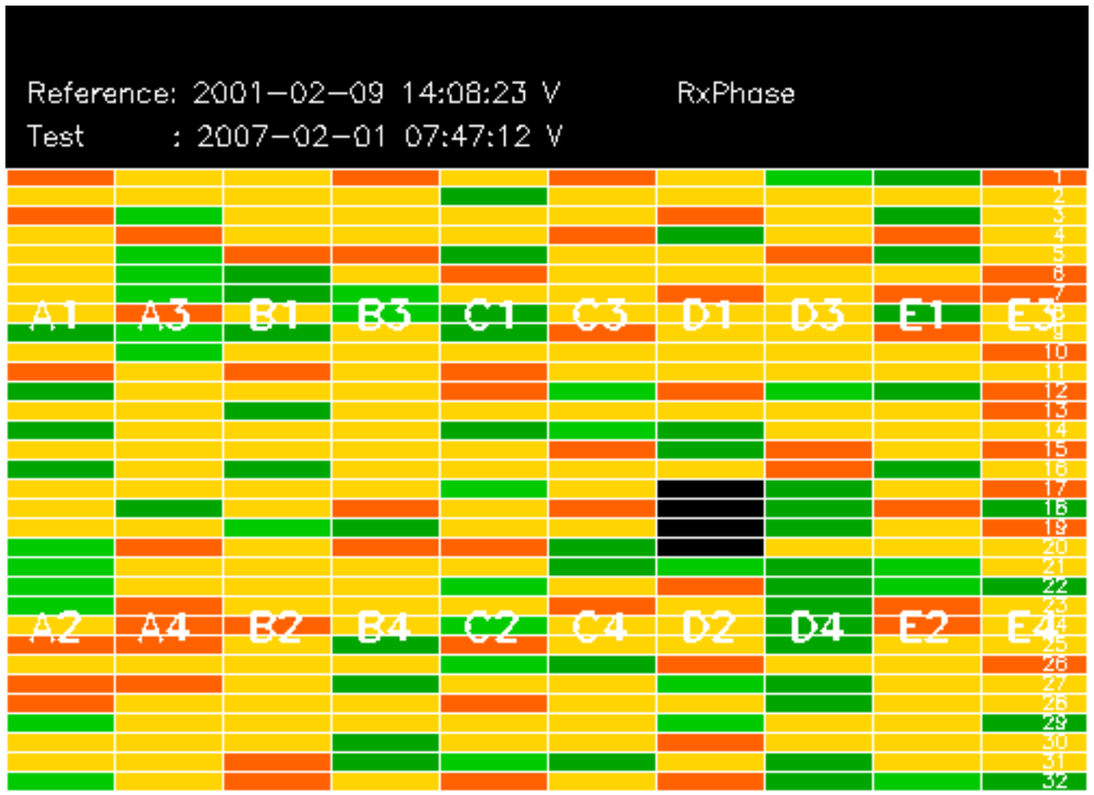

Reference: 2005-09-22 06:26:51 H
RxGain
Test : 2007-02-04 15:35:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

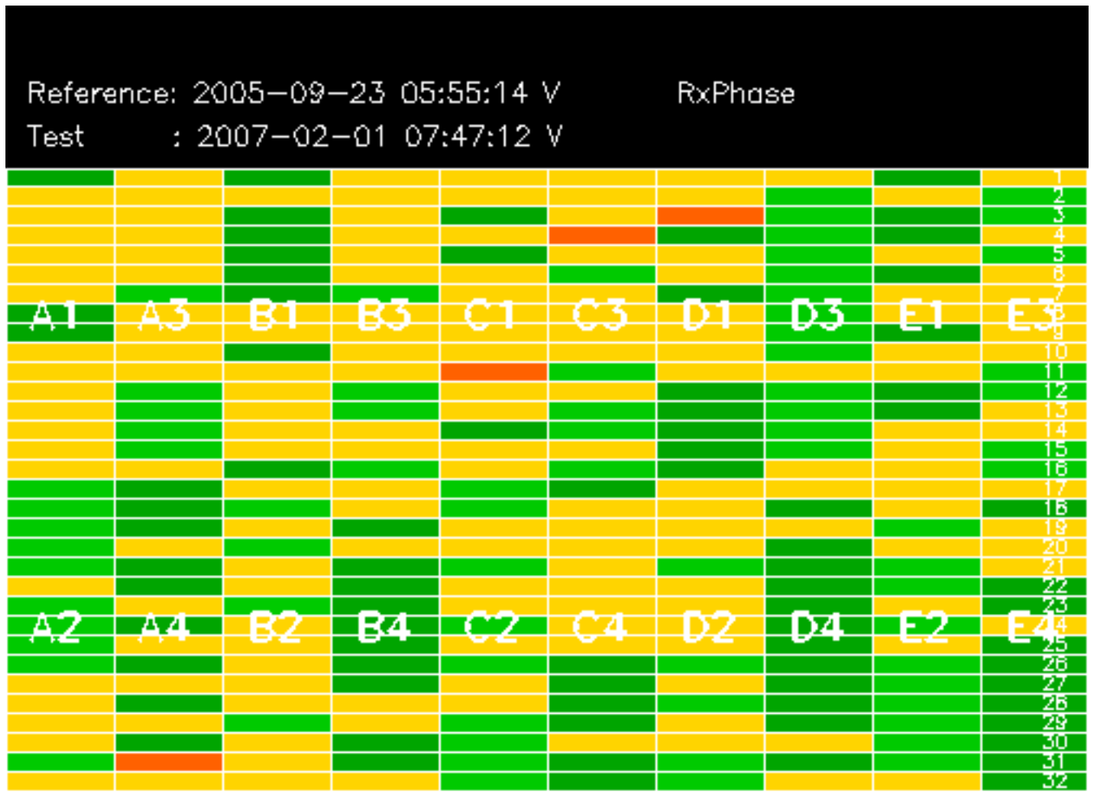

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2007-02-01 07:47:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

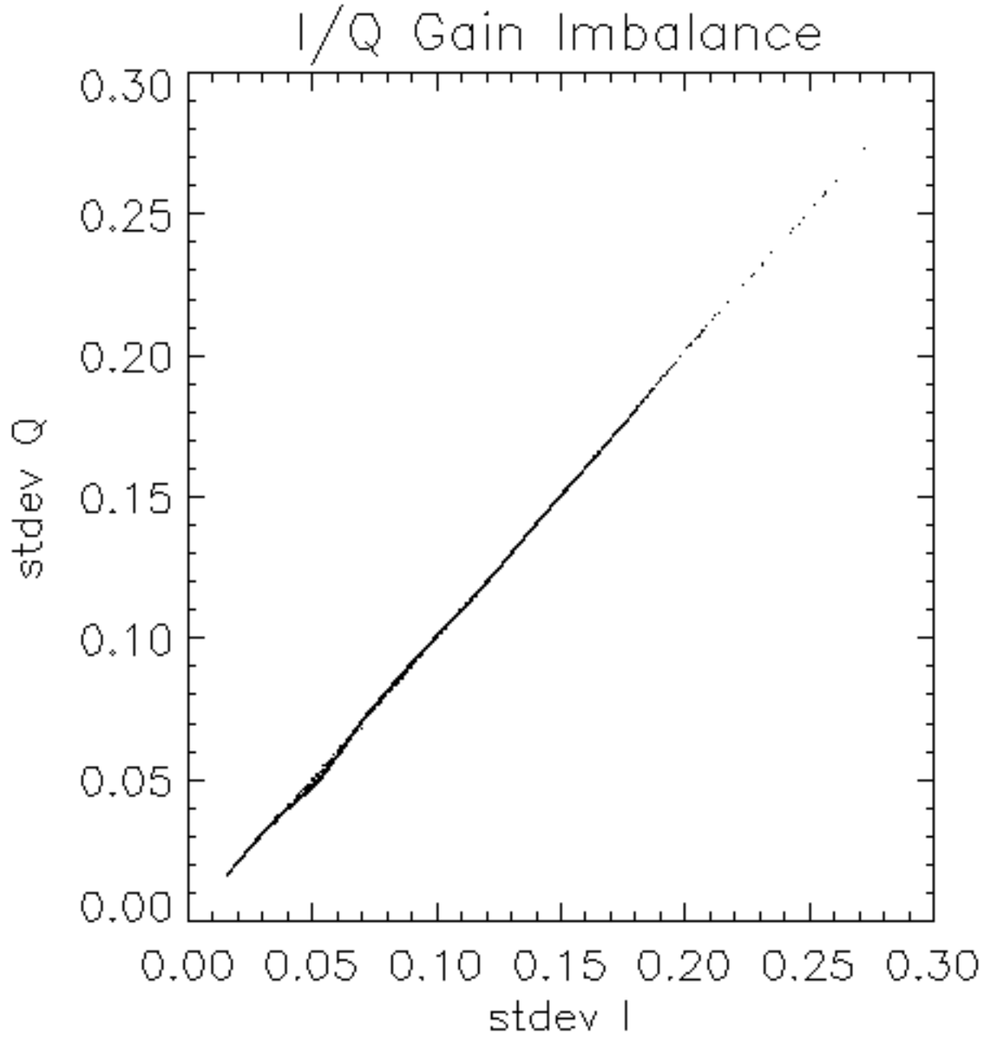

Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

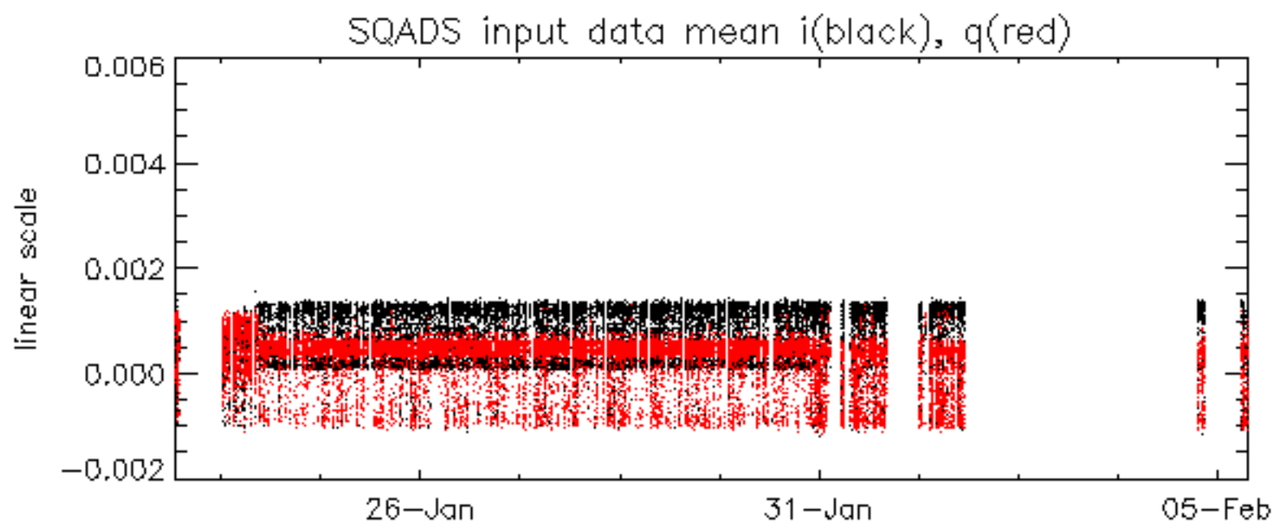

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-02-04 15:35:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

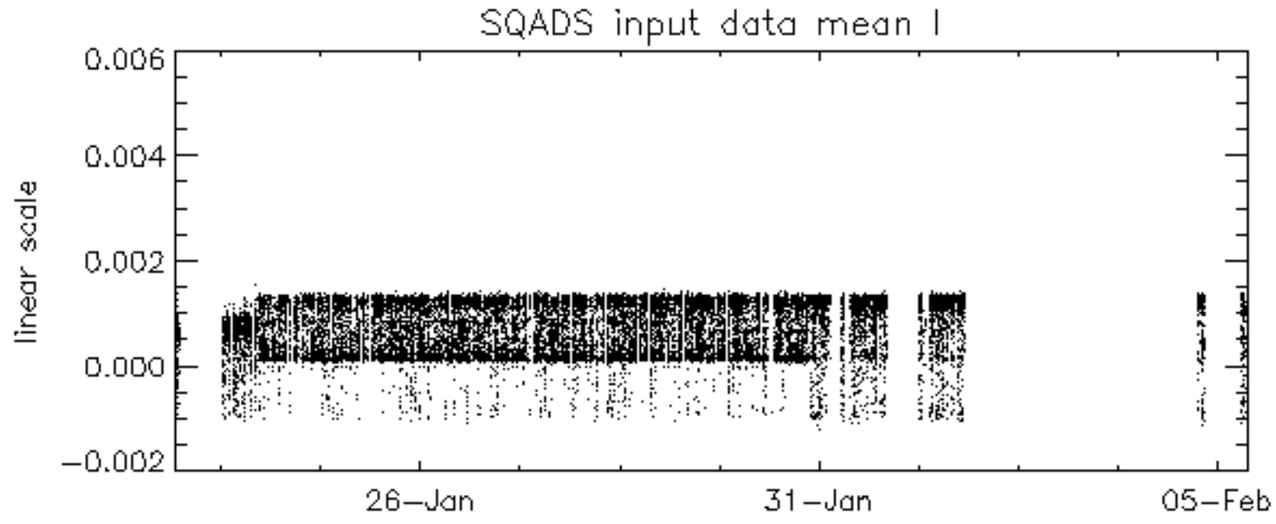

Reference: 2005-09-22 06:26:51 H
RxPhase
Test : 2007-02-04 15:35:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

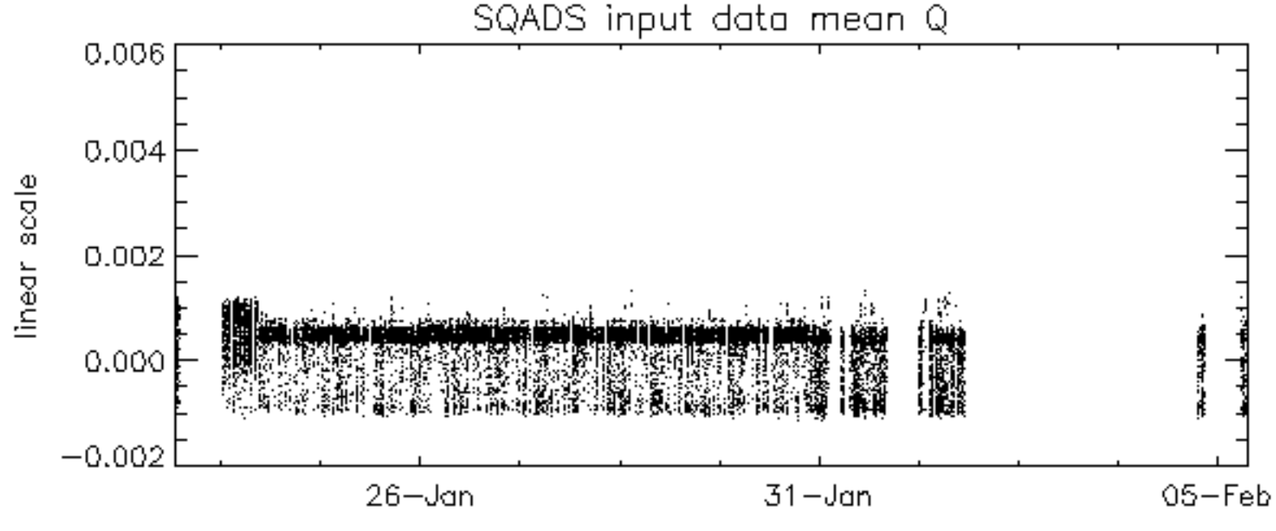

Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

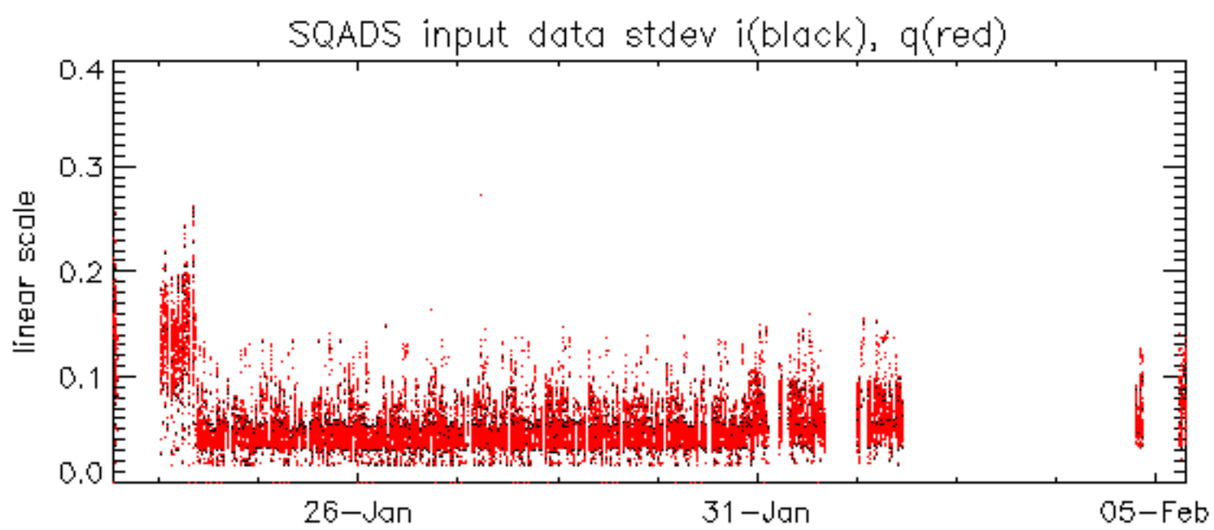

Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

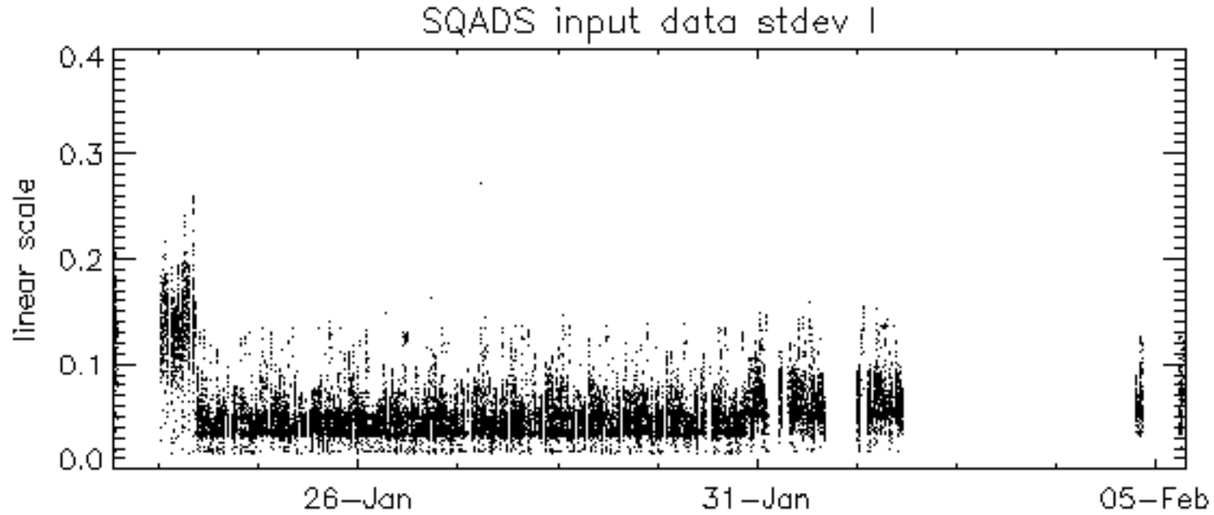

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

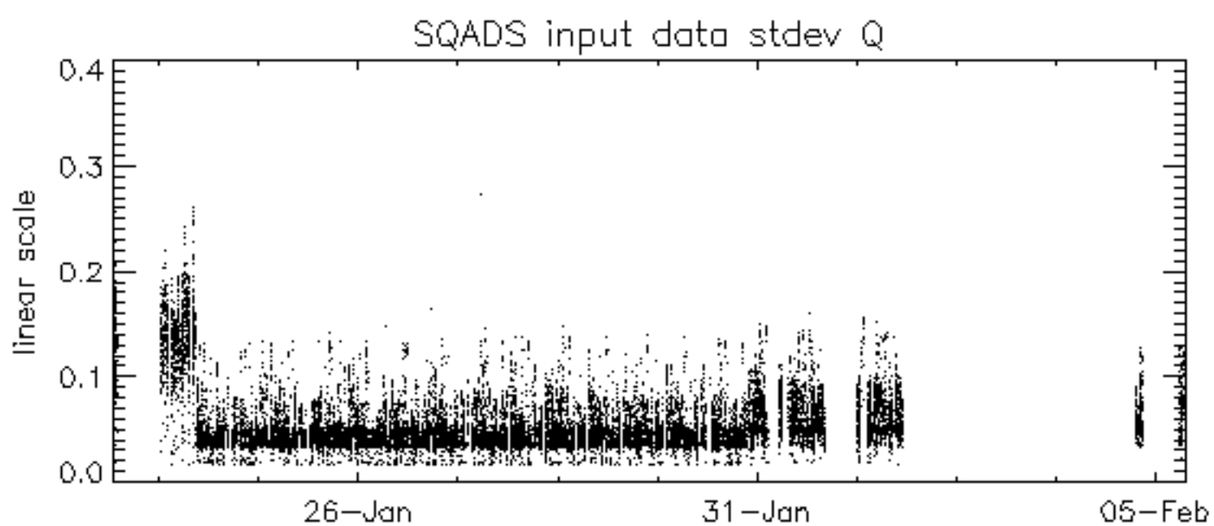

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb

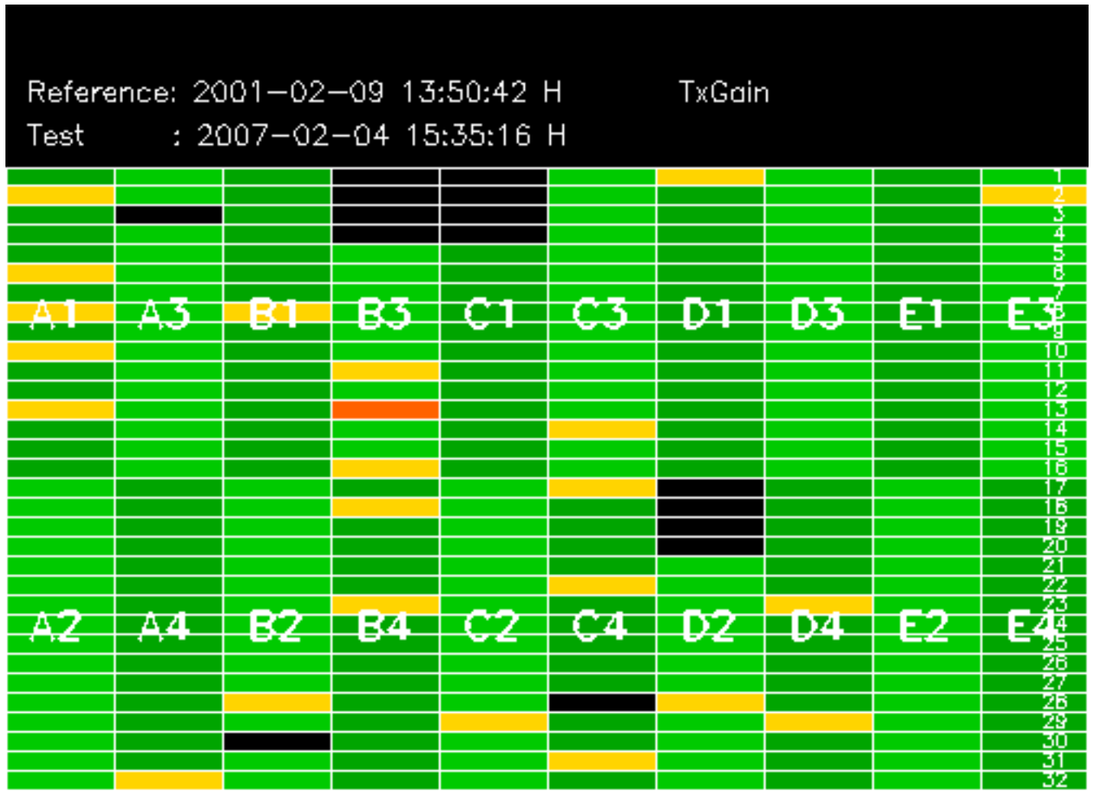

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb

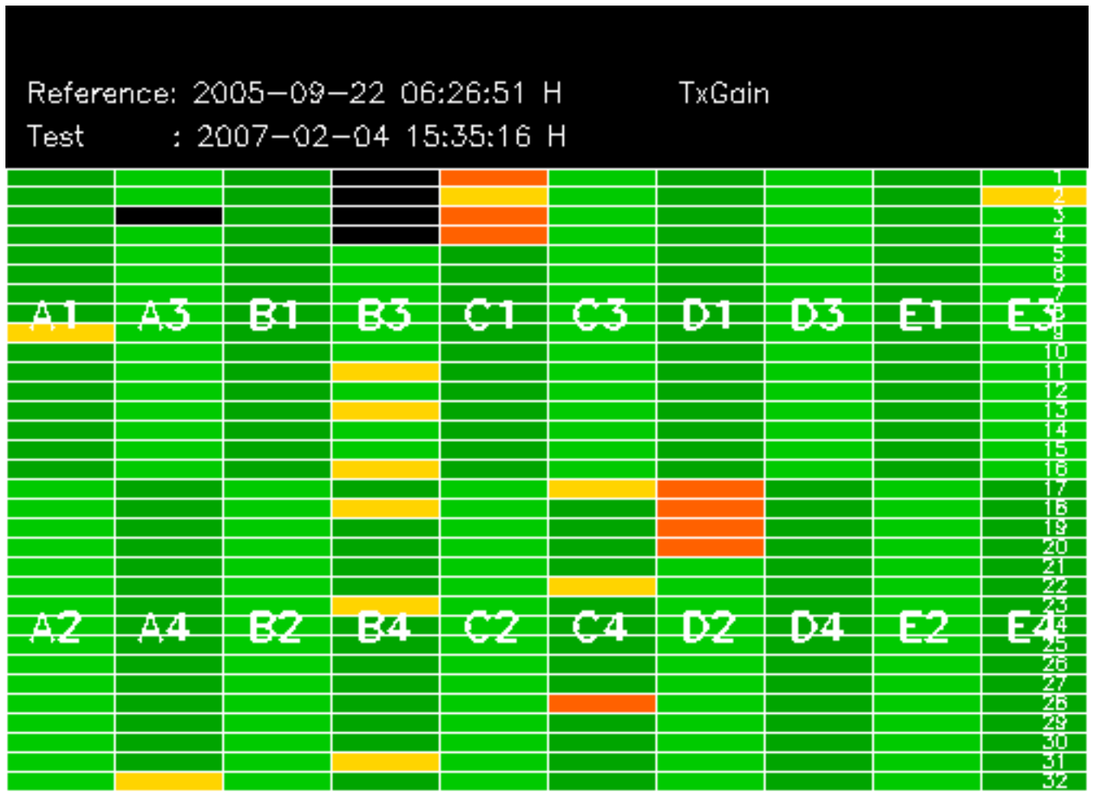

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb

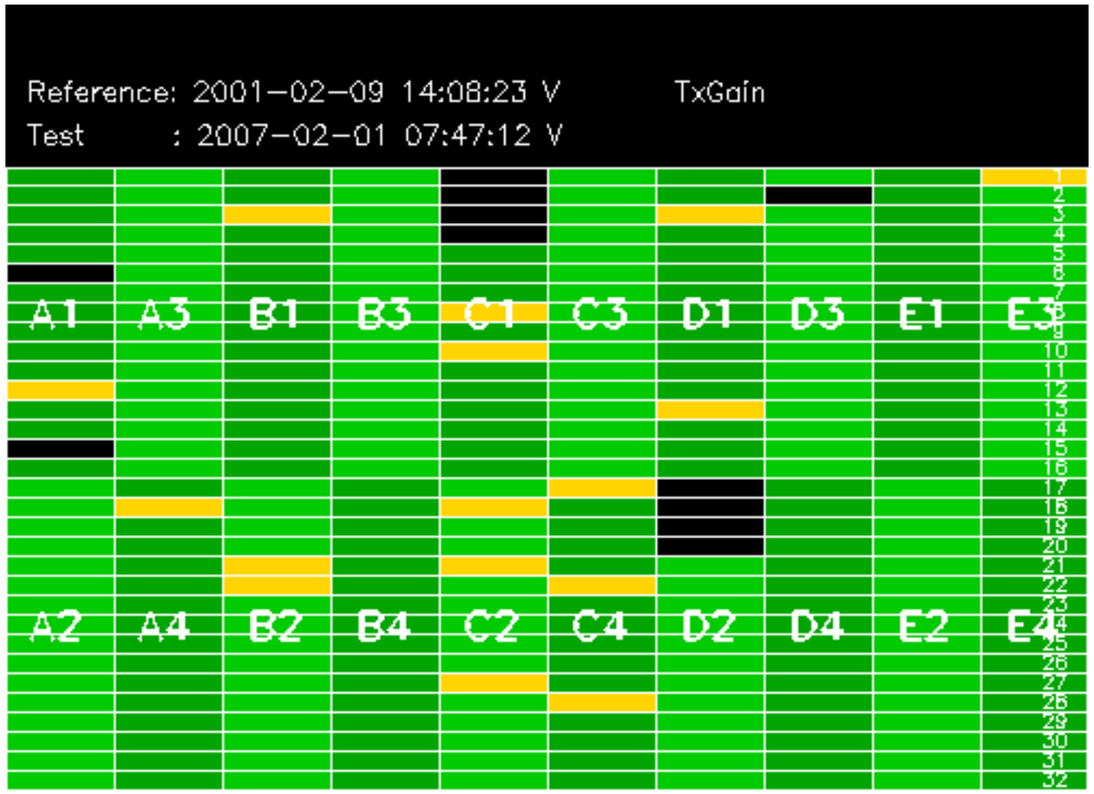

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb

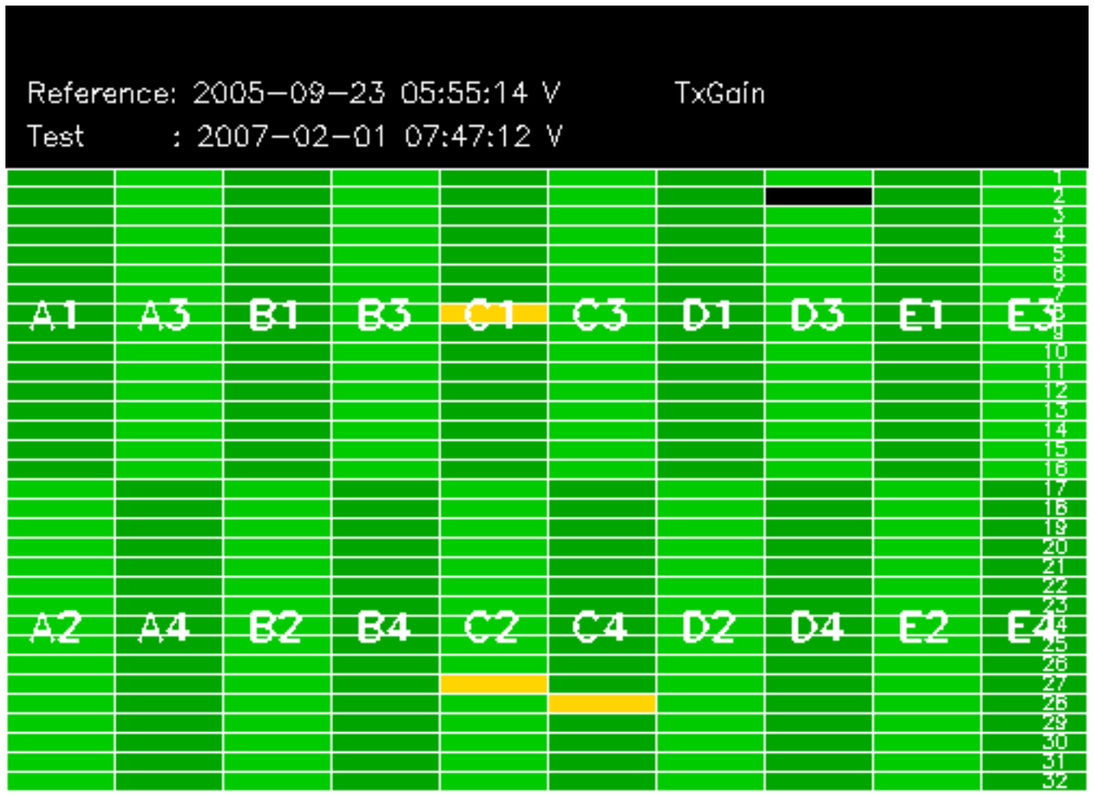

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb

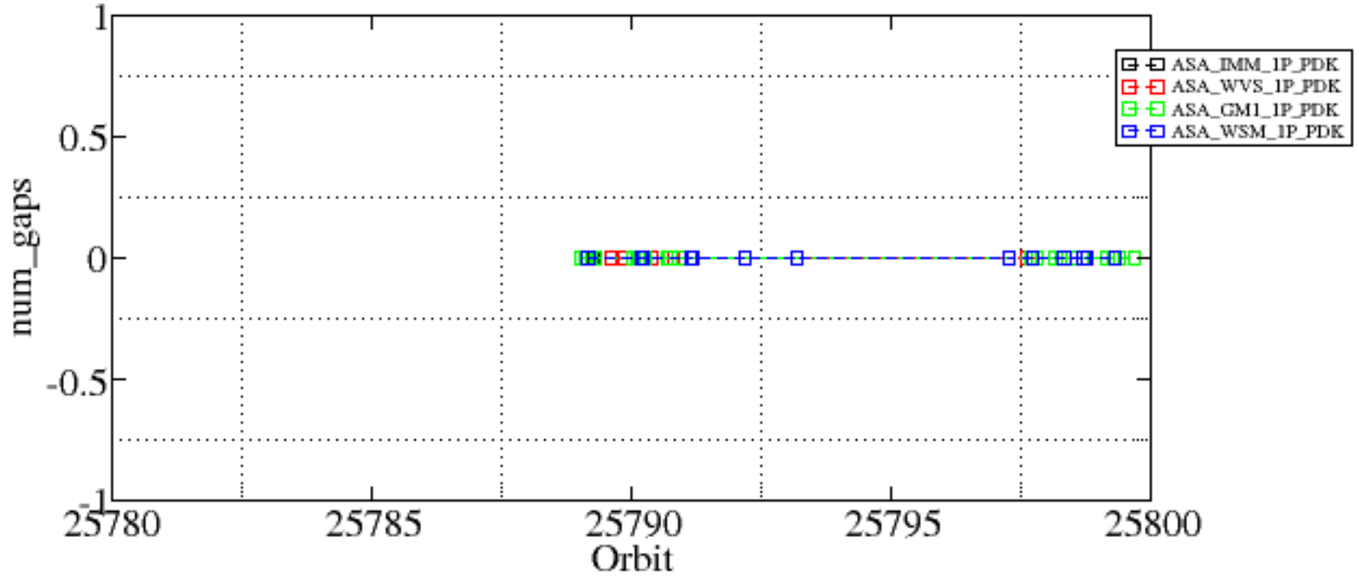

Reference: 2001-02-09 13:50:42 H
Test : 2007-02-04 15:35:16 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

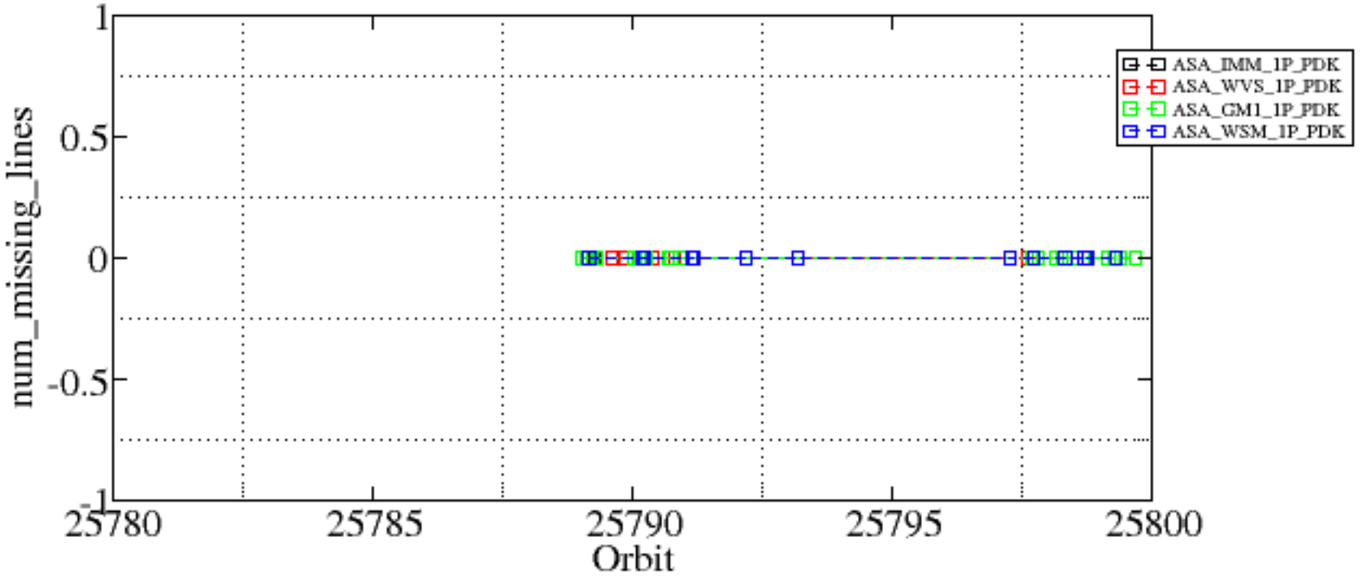

Reference: 2005-09-22 06:26:51 H
Test : 2007-02-04 15:35:16 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

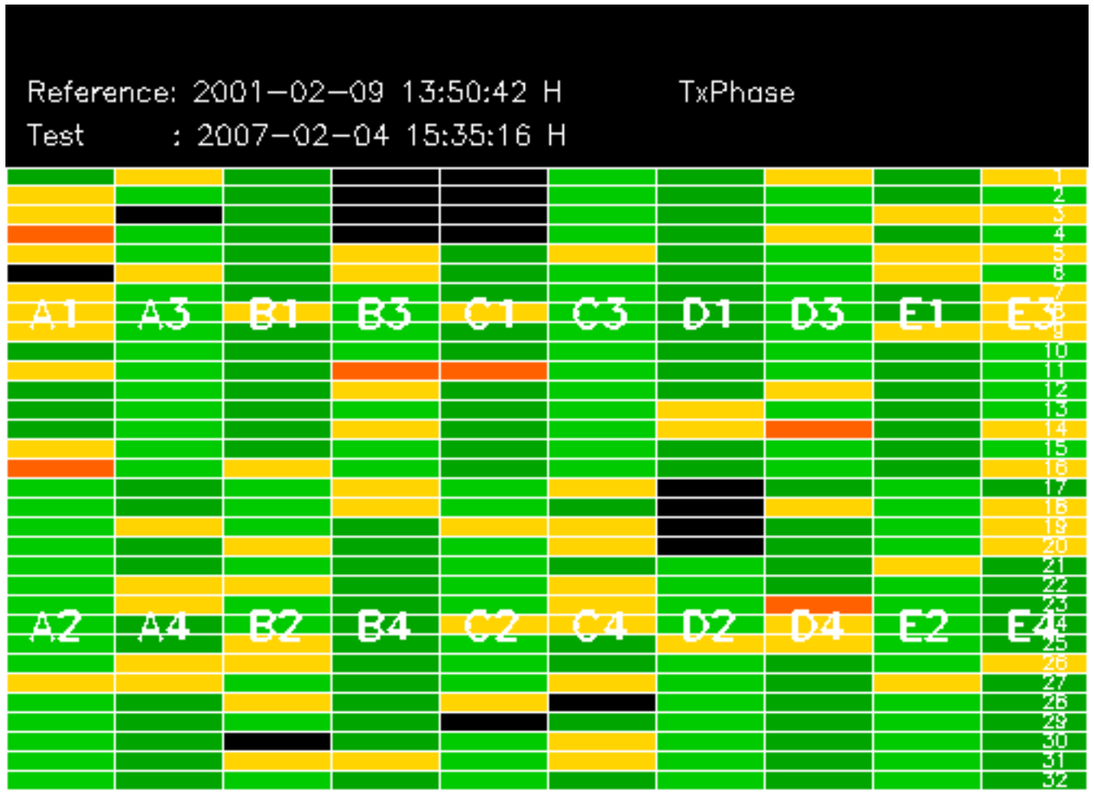

Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

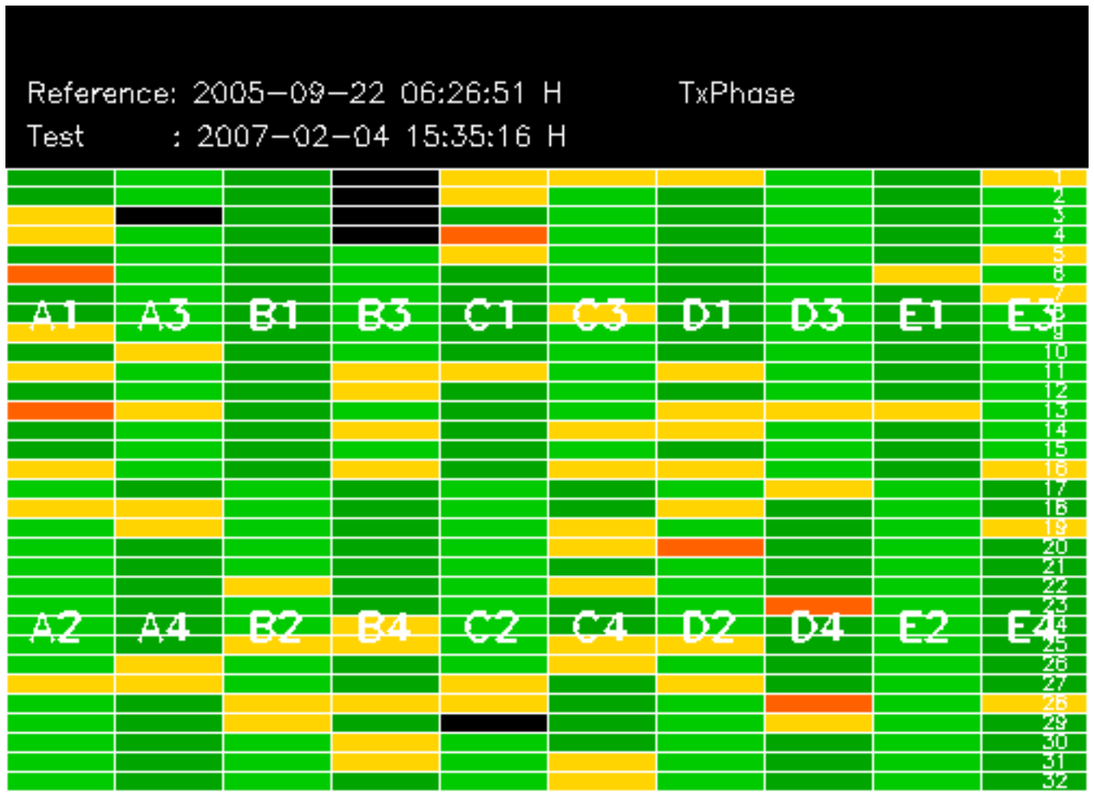

Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

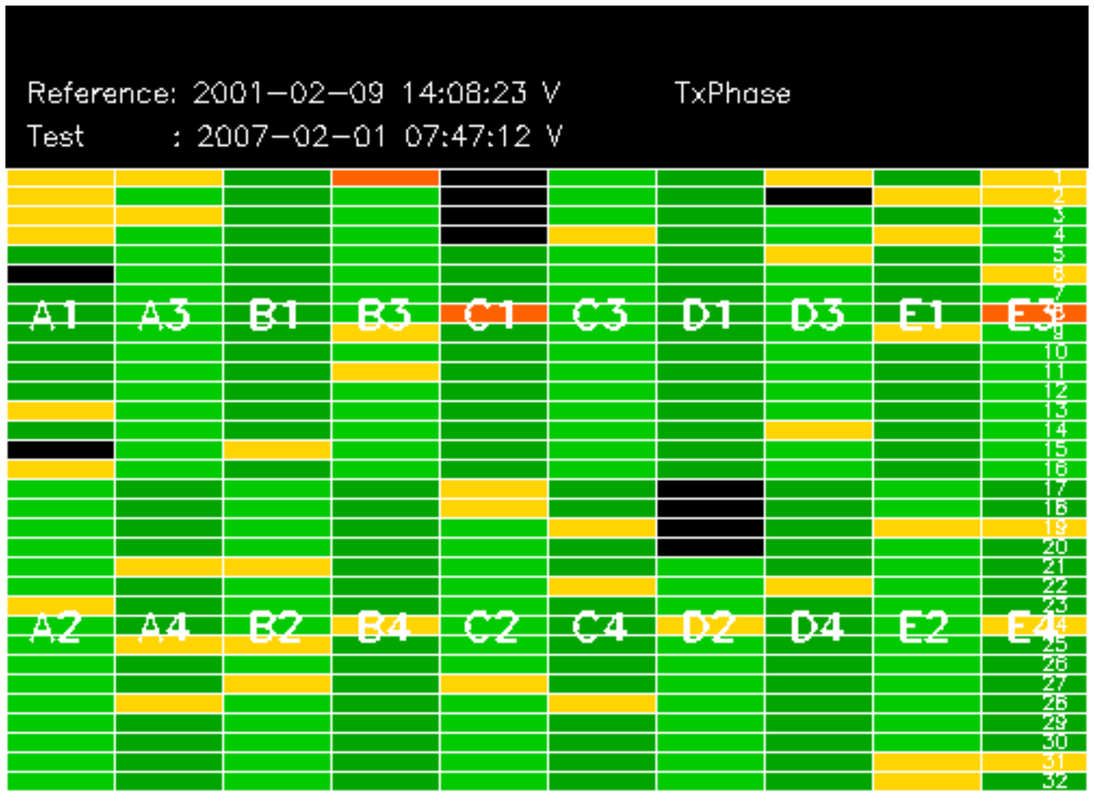
Summary of analysis for the last 3 days 2007020[345]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>

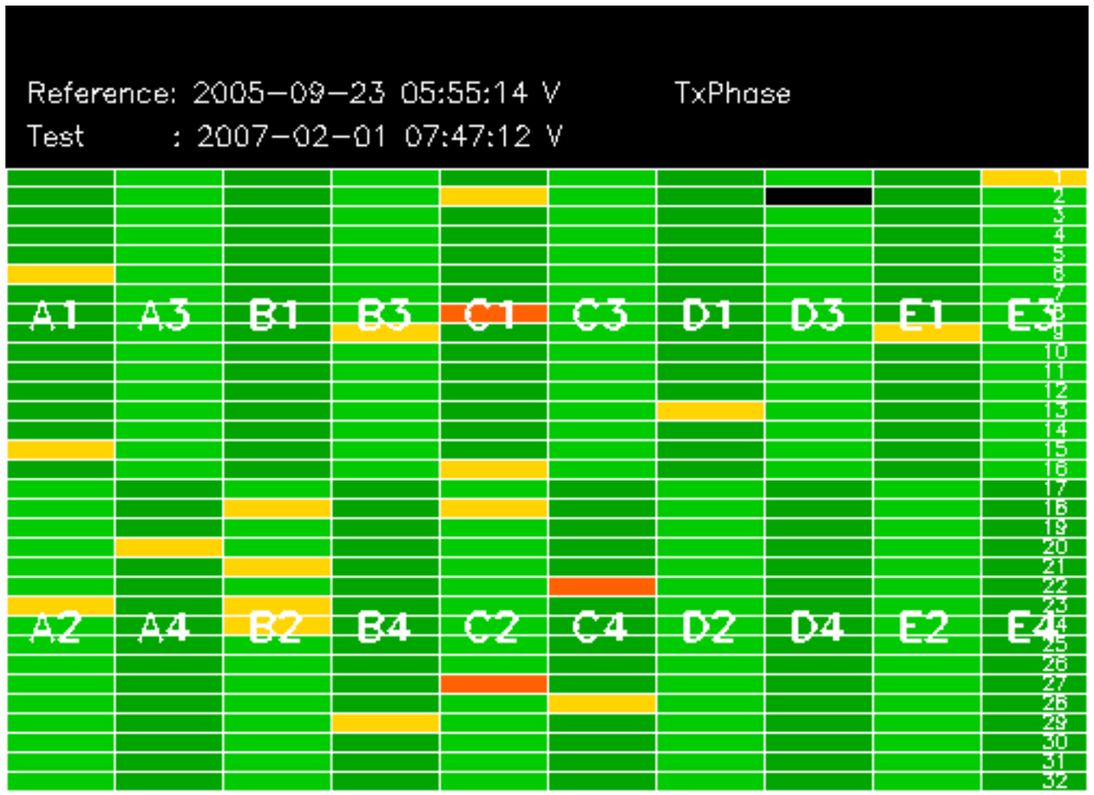

num_gaps
1
0.5
0
-0.5
-1
25780
25785
25790
25795
25800
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDK
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK

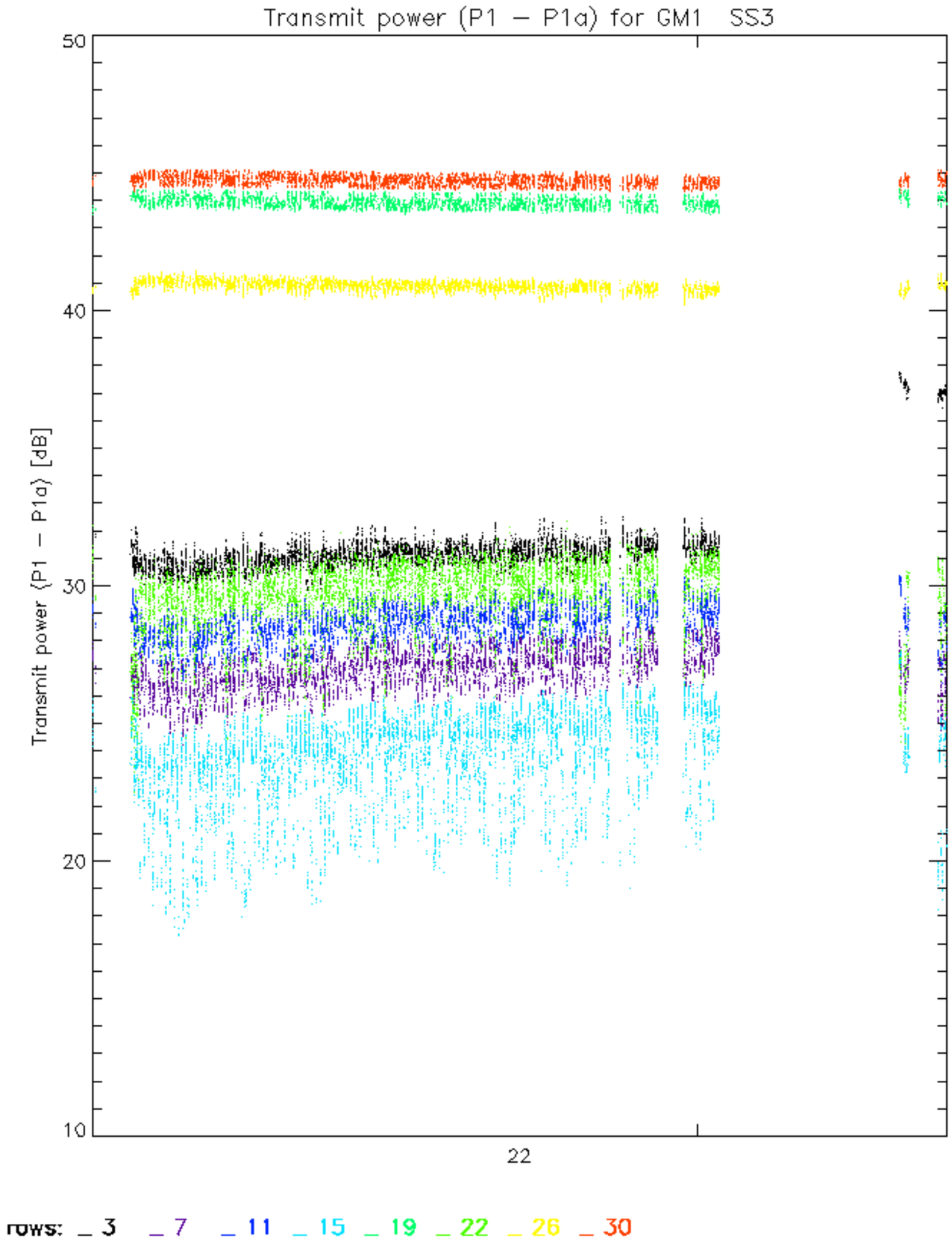

num_missing_lines
1
0.5
0
-0.5
-1
25780
25785
25790
25795
25800
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDK
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK

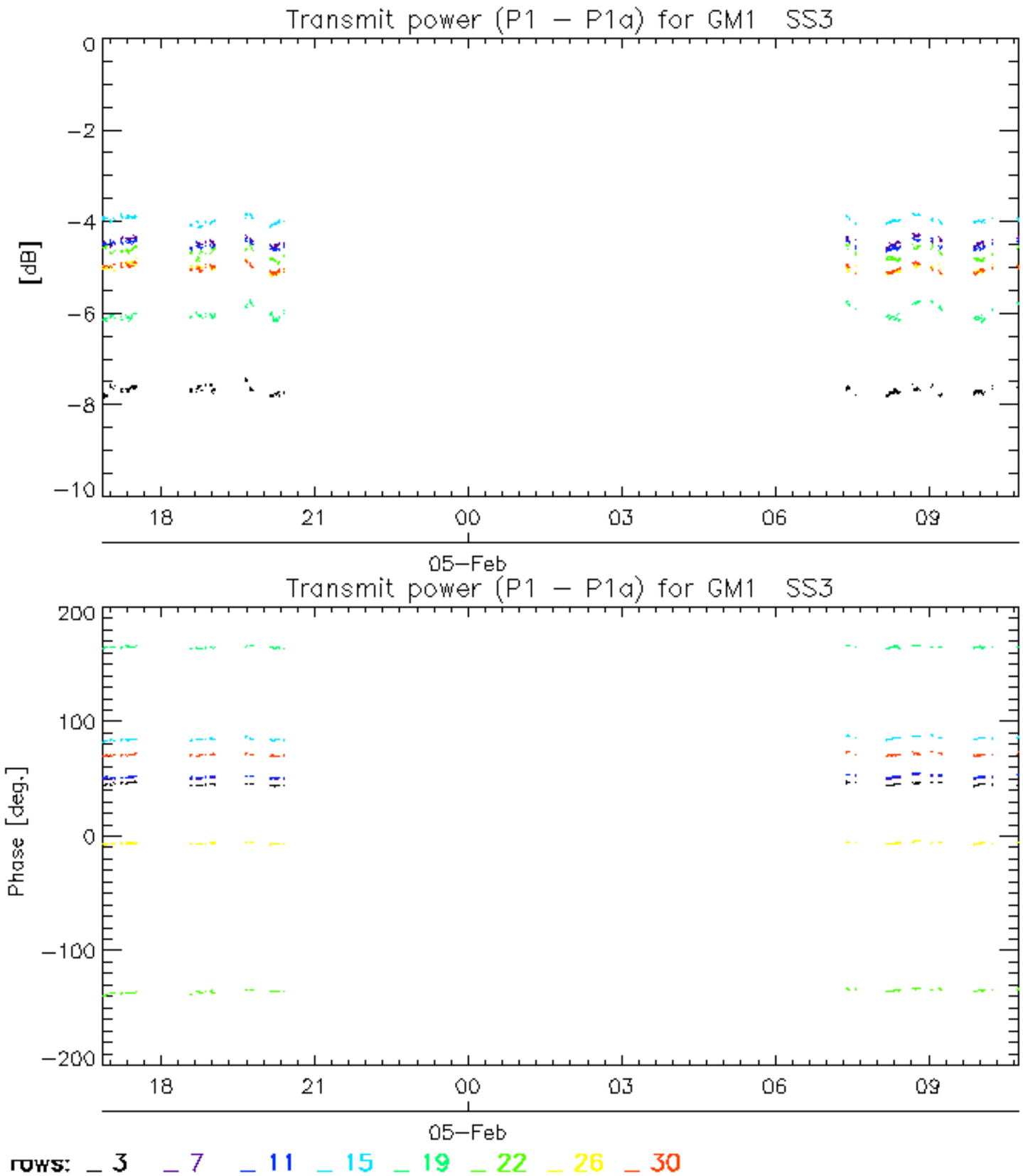

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2007-02-04 15:35:16 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

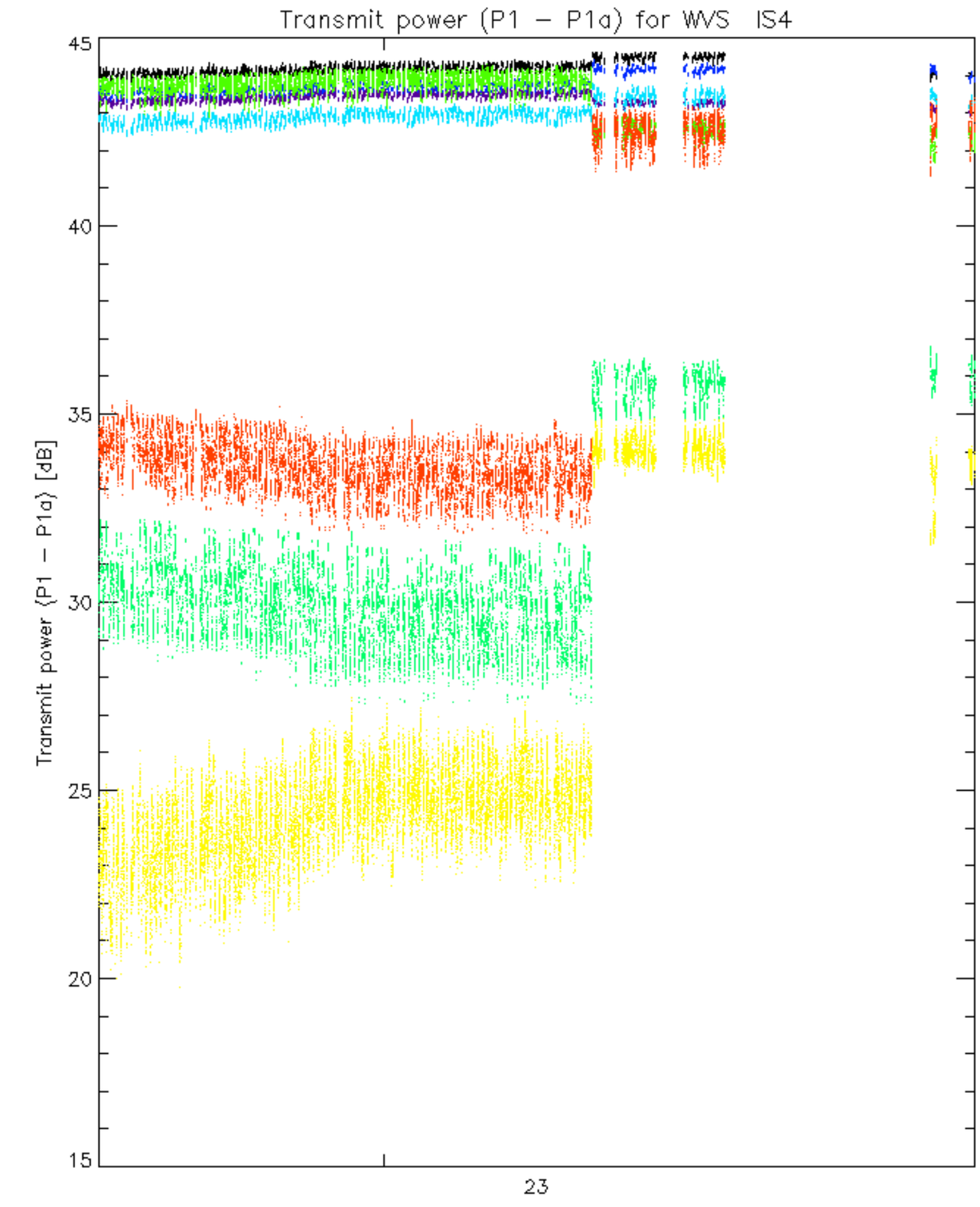

Reference: 2005-09-22 06:26:51 H
Test : 2007-02-04 15:35:16 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

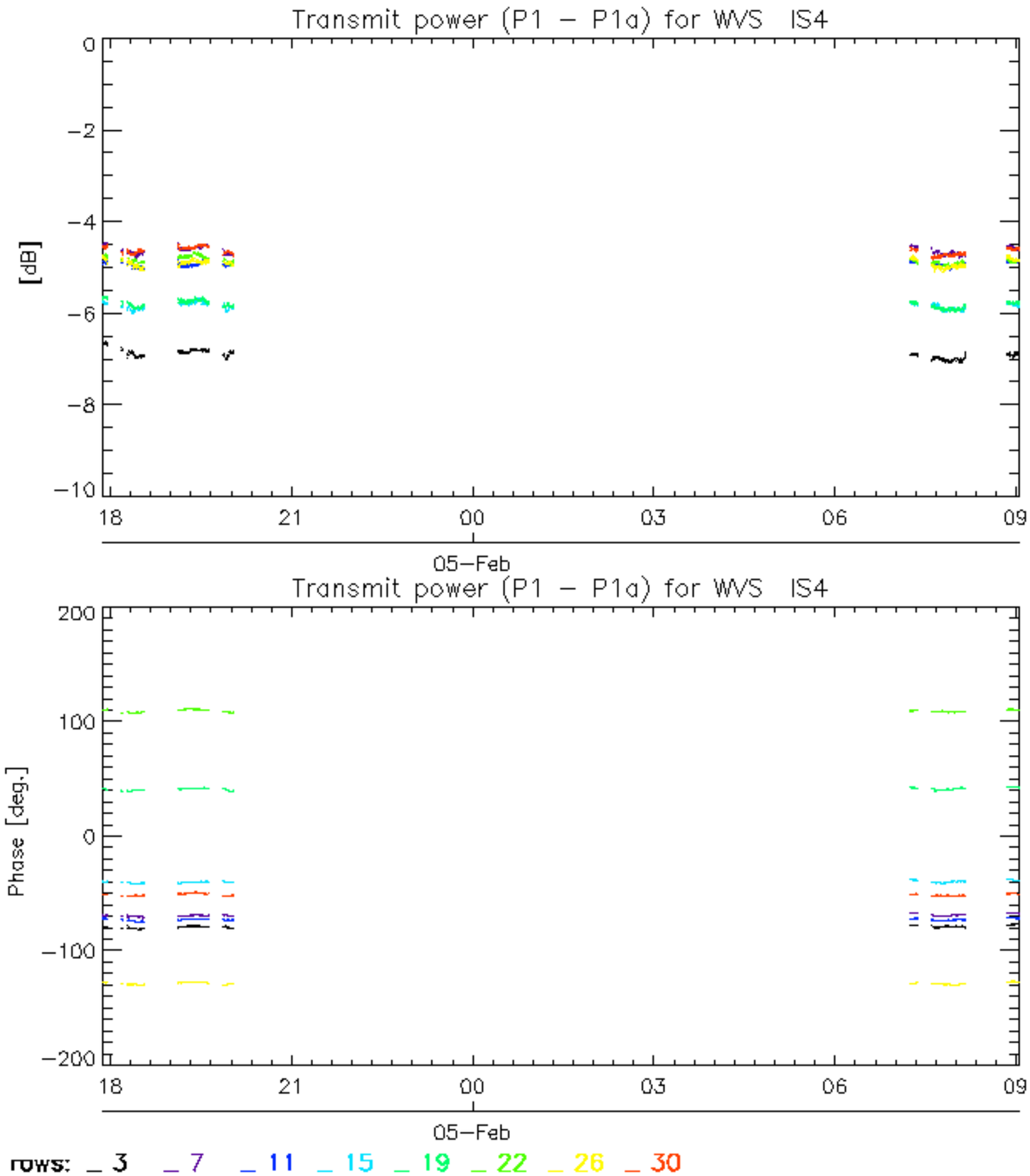

Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Transmit power (P1 – P1a) for GM1 SS3
50
40
30
20
10
Transmit power (P1 – P1a) [dB]
22
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
05–Feb
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
09
05–Feb
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
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
09
05–Feb
Transmit power (P1 – P1a) for WVS IS4
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
09
05–Feb
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.