PRELIMINARY REPORT OF 060227

last update on Mon Feb 27 17:08:13 GMT 2006

1. Introduction
2. Summary
   - Instrument Unavailability
   - Auxiliary files used
   - Browse Visual Inspection
   - Module Stepping Results
   - Data Analysis
3. Module Stepping
4. Internal Calibration pulses
   - Daily statistics
   - Cyclic statistics
   - cal pulses monitoring (all rows)
5. Raw Data Statistics
   - raw data mean I and Q
   - raw data stdev I and Q
   - raw gain imbalance
6. TLM analysis
7. Wave Doppler analysis
   - Unbiased Doppler Error for WVS
   - Absolute Doppler for WVS
   - Doppler evolution versus ANX for WVS
   - Unbiased Doppler Error for GM1
   - Absolute Doppler for GM1
   - Doppler evolution versus ANX for GM1

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 2006-02-26 00:00:00 to 2006-02-27 17:08:13

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

PDHS-E					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

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	20060227 084147
H	20060225 030237

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

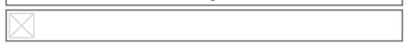
4.1.2 - Evolution for GM1

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	-4.003201	0.009229	0.013590
7	P1	-3.000078	0.011025	0.019321
11	P1	-4.080656	0.022354	0.024242
15	P1	-6.061177	0.020637	-0.006557
19	P1	-3.268329	0.006740	-0.033720
22	P1	-4.461591	0.016369	0.030361
26	P1	-4.218052	0.110498	-0.176491
30	P1	-5.770205	0.010421	-0.006582
3	P1	-16.938829	0.263375	-0.181378
7	P1	-16.670910	0.111100	-0.034892
11	P1	-16.559719	0.331306	0.091747
15	P1	-13.105244	0.107272	0.222674
19	P1	-13.898363	0.062163	-0.014584
22	P1	-15.663598	0.514147	0.367047
26	P1	-15.736969	0.326910	0.121832
30	P1	-16.523998	0.271390	0.179920

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.479799	0.089251	0.193473
7	P2	-22.409939	0.094242	0.038330
11	P2	-16.248280	0.099459	0.033555
15	P2	-7.175466	0.100799	0.046394
19	P2	-9.143127	0.094131	0.044770
22	P2	-17.932453	0.091793	0.040580
26	P2	-16.206413	0.097851	0.024878
30	P2	-19.636126	0.084244	0.016179

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.194724	0.006939	0.012455
7	P3	-8.194724	0.006939	0.012455
11	P3	-8.194724	0.006939	0.012455
15	P3	-8.194724	0.006939	0.012455
19	P3	-8.194724	0.006939	0.012455
22	P3	-8.194724	0.006939	0.012455
26	P3	-8.194724	0.006939	0.012455
30	P3	-8.194724	0.006939	0.012455

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	-3.880830	4.934120	-0.609072
7	P1	-2.892656	5.172359	-0.644763
11	P1	-3.061928	5.206899	-0.717805
15	P1	-3.700550	5.163524	-0.811104
19	P1	-3.512780	5.007168	-0.561720
22	P1	-5.294457	4.593690	-0.600042
26	P1	-6.052789	4.860817	-0.893695
30	P1	-5.336098	4.550591	-0.489848
3	P1	-11.673450	3.231999	-0.543598
7	P1	-10.064780	3.568844	-0.559808
11	P1	-10.316849	3.560013	-0.666207
15	P1	-10.862219	3.543111	-0.729274
19	P1	-15.503745	2.599107	-0.241306
22	P1	-20.385504	3.082178	-0.061460
26	P1	-16.441851	3.258891	0.419006
30	P1	-18.336634	2.305087	-0.393291

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.208673	3.400932	0.323277
7	P2	-22.594187	3.959623	0.557946
11	P2	-11.357404	3.686855	-0.058854
15	P2	-4.978574	4.795510	-0.459790
19	P2	-6.984595	4.315753	-0.419665

22	P2	-8.259171	4.050880	-0.346399
26	P2	-23.852907	4.068222	0.424549
30	P2	-22.012739	3.847468	0.314974

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.029118	0.002935	0.015422
7	P3	-8.029109	0.002938	0.015541
11	P3	-8.029037	0.002931	0.015369
15	P3	-8.029120	0.002929	0.015499
19	P3	-8.029104	0.002936	0.015664
22	P3	-8.029039	0.002933	0.015102
26	P3	-8.029220	0.002940	0.015517
30	P3	-8.029026	0.002942	0.015371

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	0.000552023
	stdev	1.74000e-07
MEAN Q	mean	0.000518074
	stdev	2.16203e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.138186
	stdev	0.00115876
STDEV Q	mean	0.138536
	stdev	0.00117697

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006022[567]
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

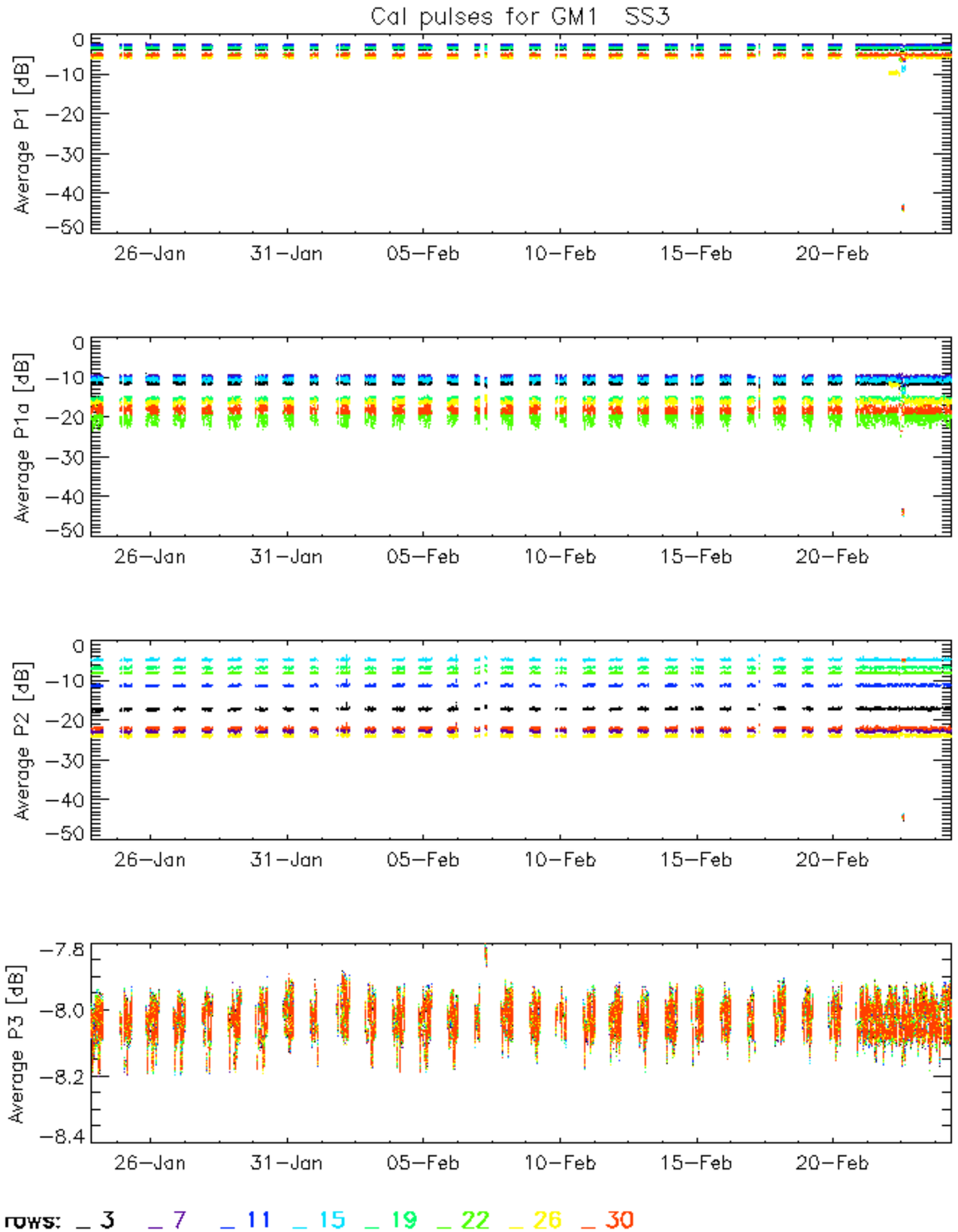
7.4 - Unbiased Doppler Error for GM1

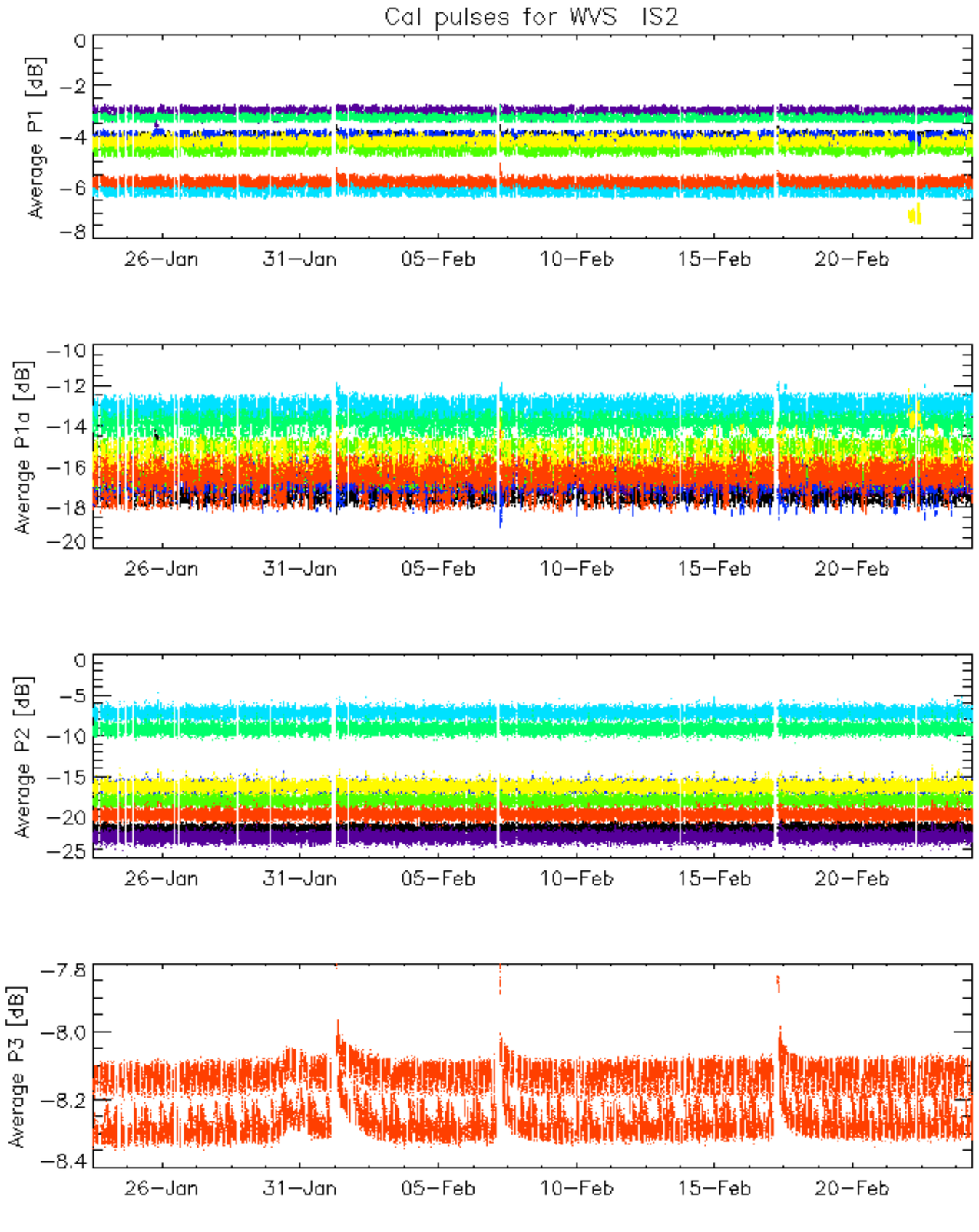
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

7.5 - Absolute Doppler for GM1

Evolution of Absolute Doppler
☒
Acsending
☒
Descending

7.6 - Doppler evolution versus ANX for GM1


Cal pulses for GM1 SS3
Average P1 [dB]
0
−10
−20
−30
−40
−50
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb
Average P1a [dB]
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

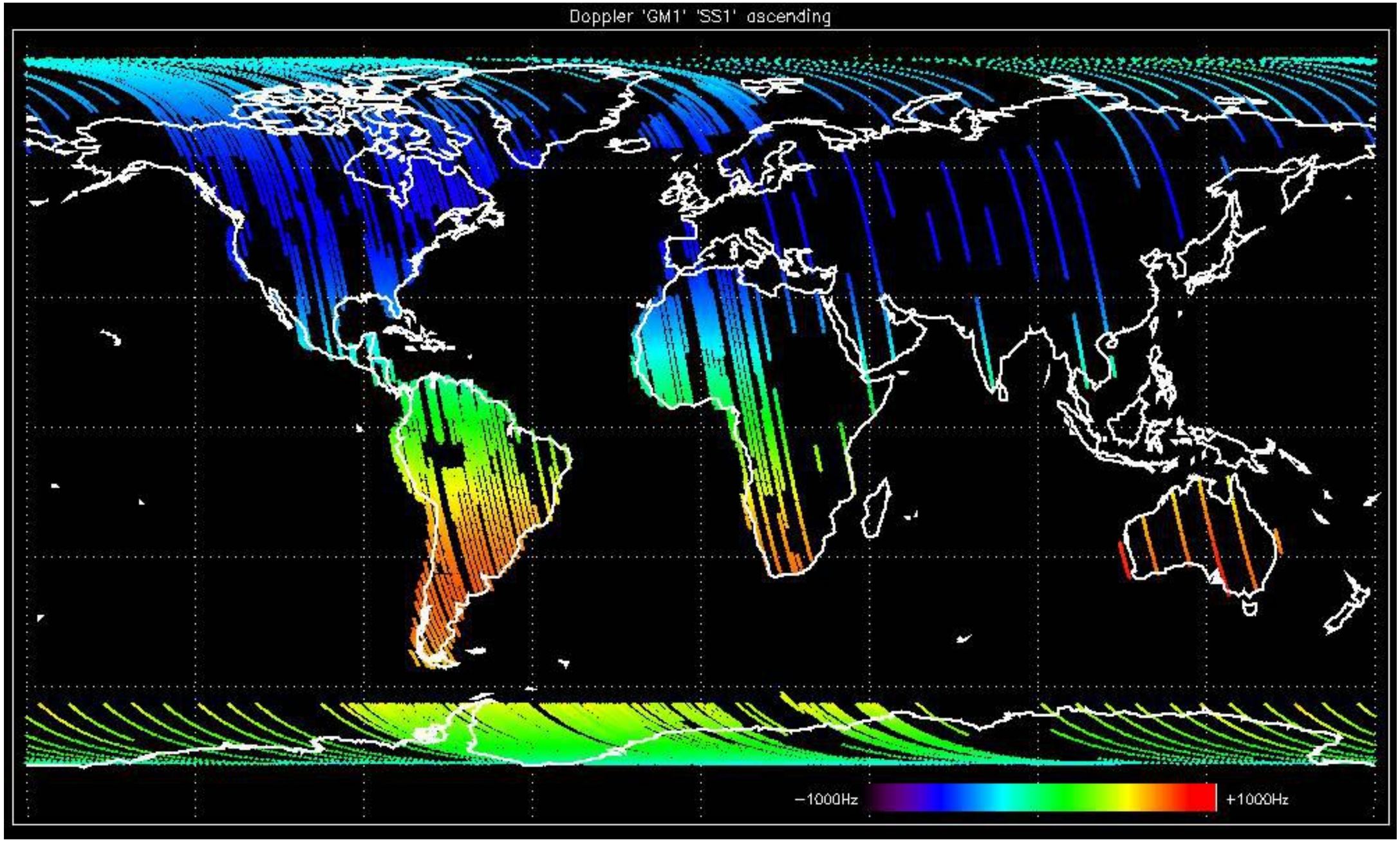

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb
Average P1a [dB]
−10
−12
−14
−16
−18
−20
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 26 30

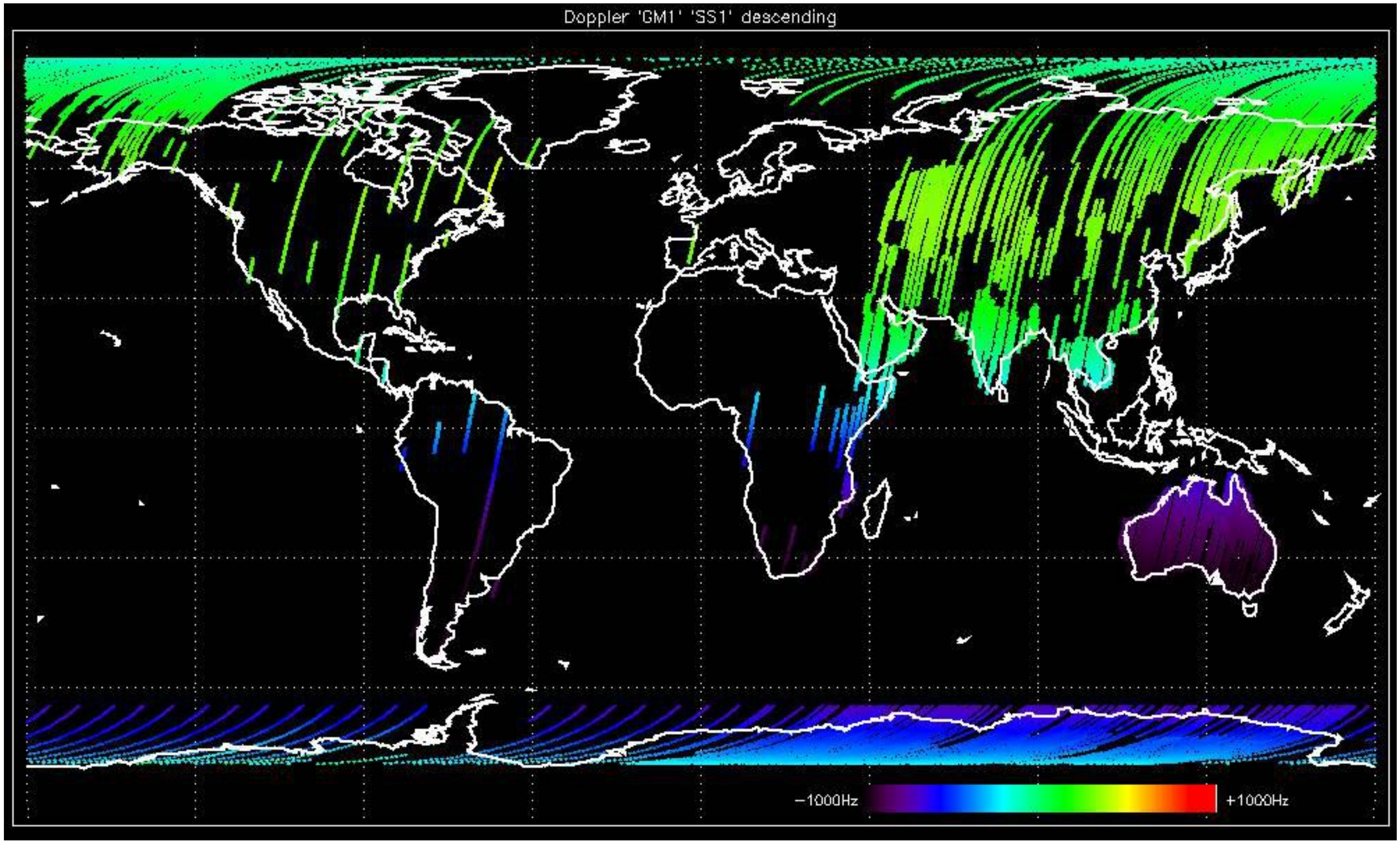
No anomalies observed on available browse products

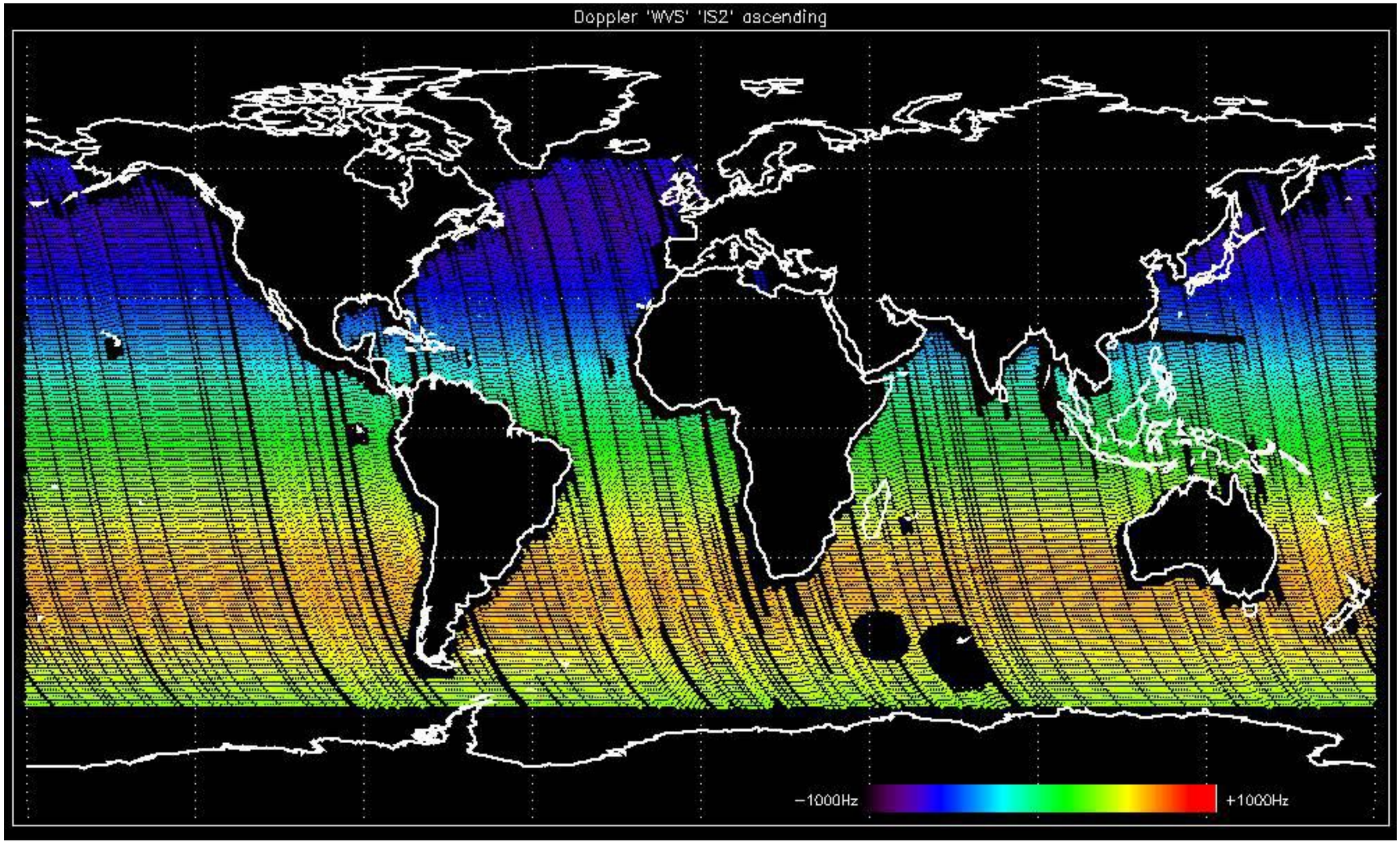
No anomalies observed.

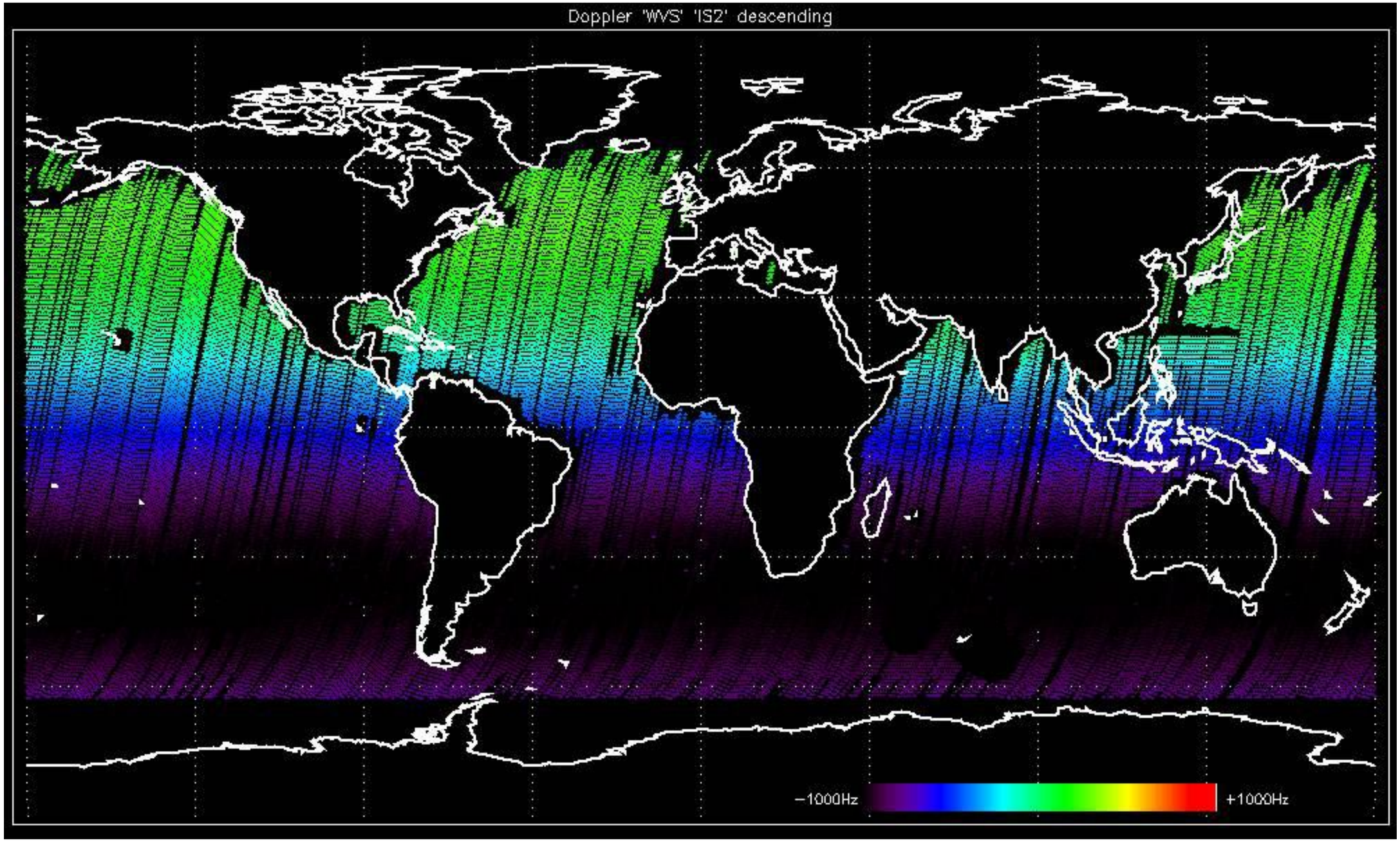
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

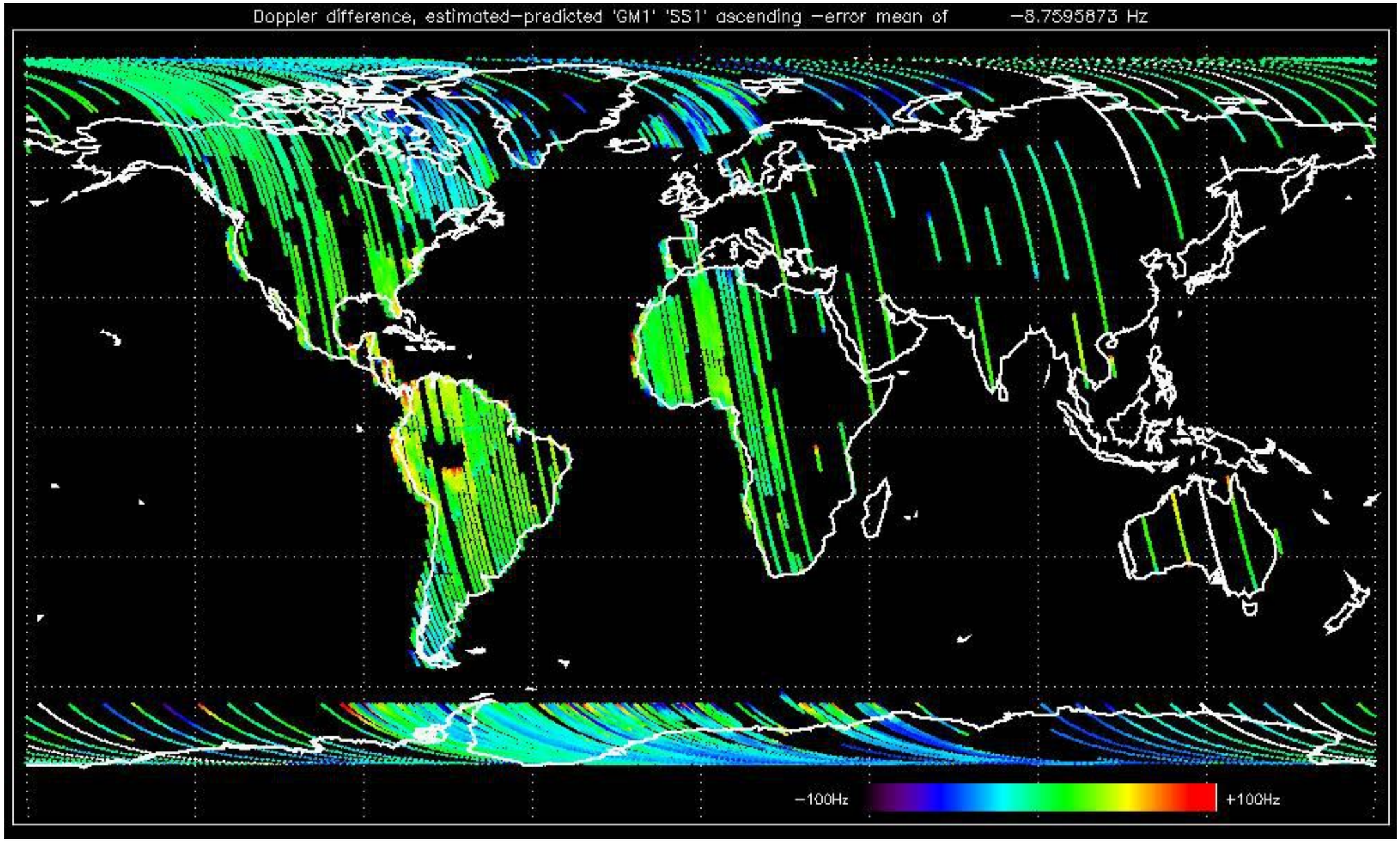
Preliminary report.The data is not yet controled

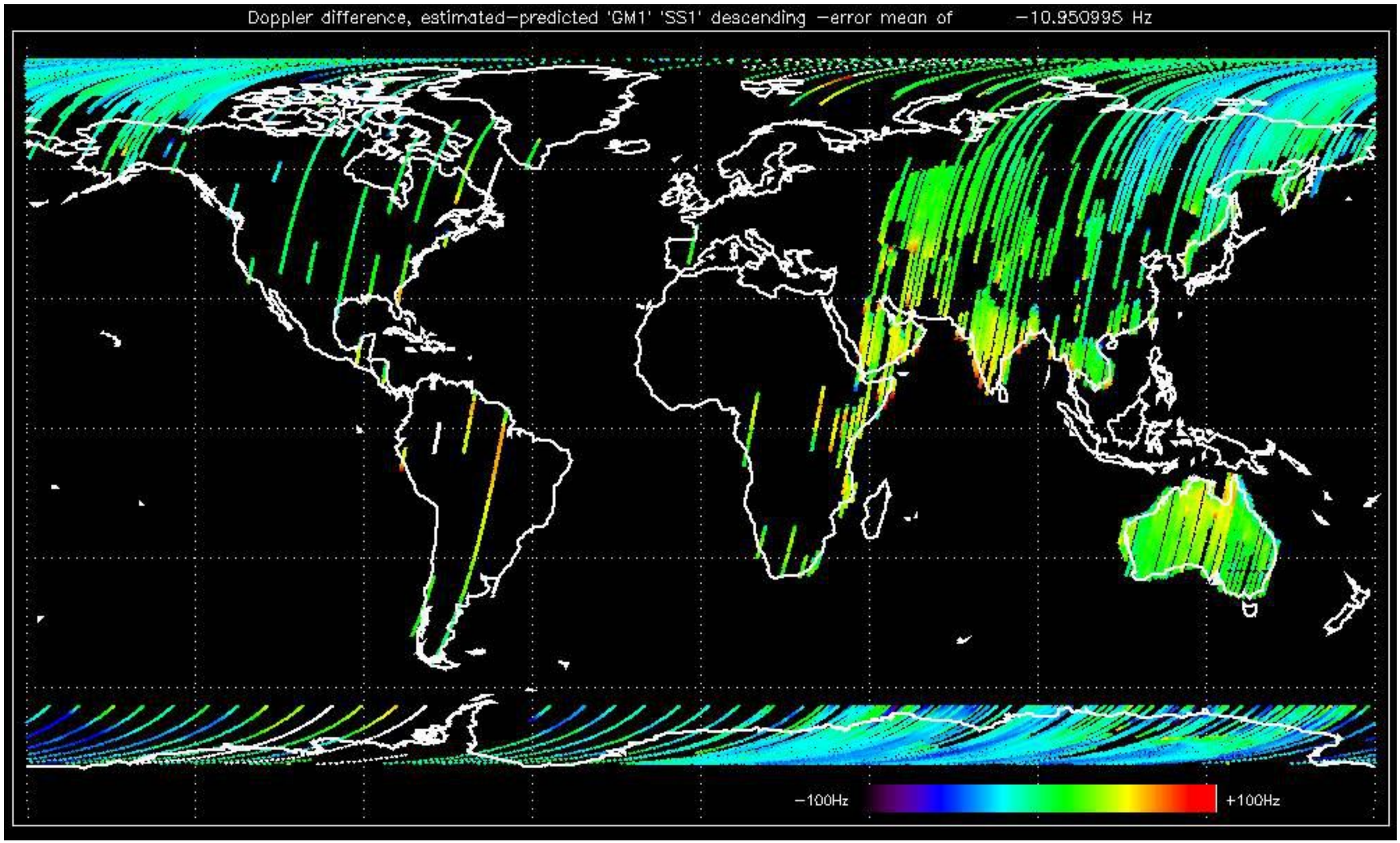

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

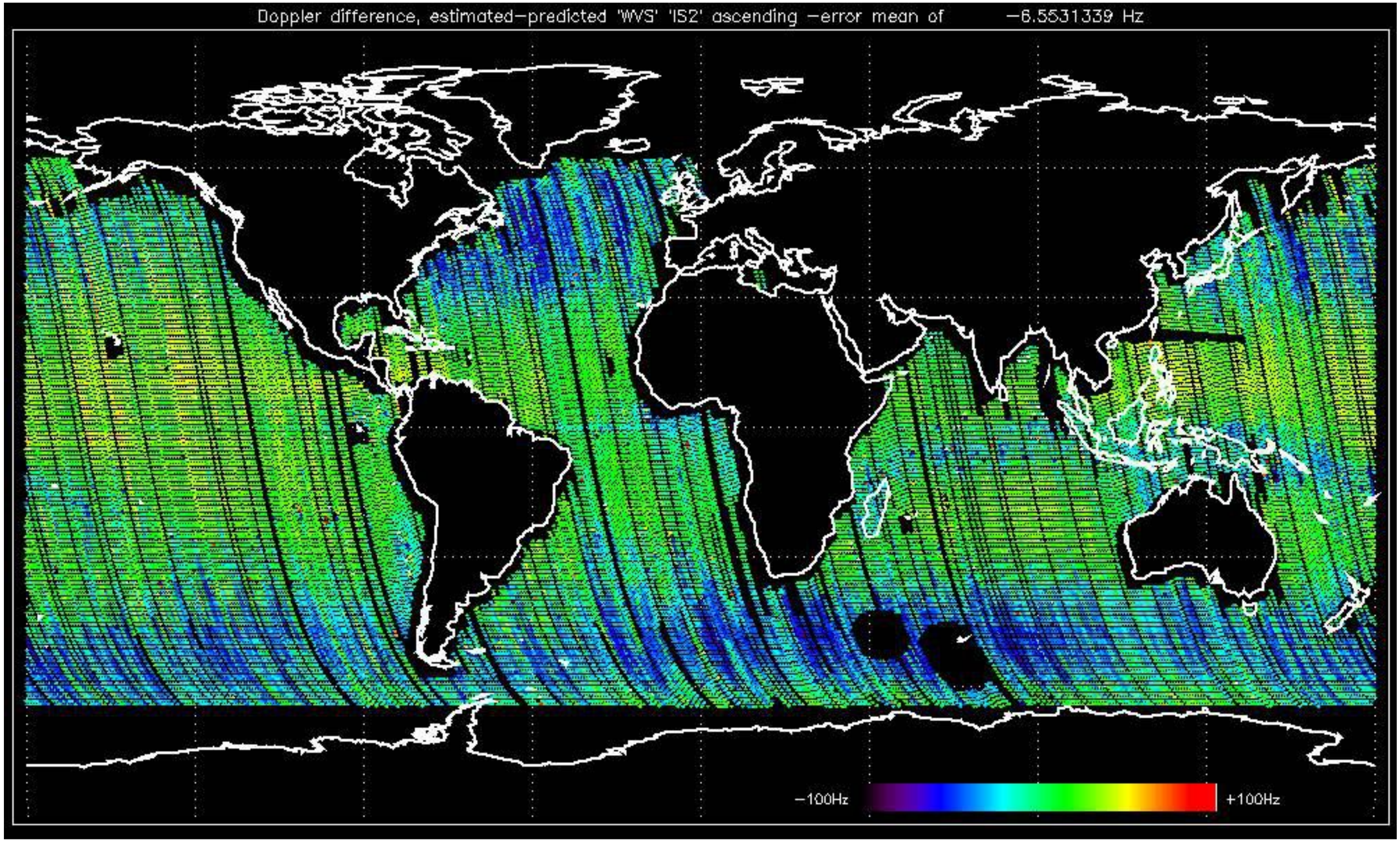

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

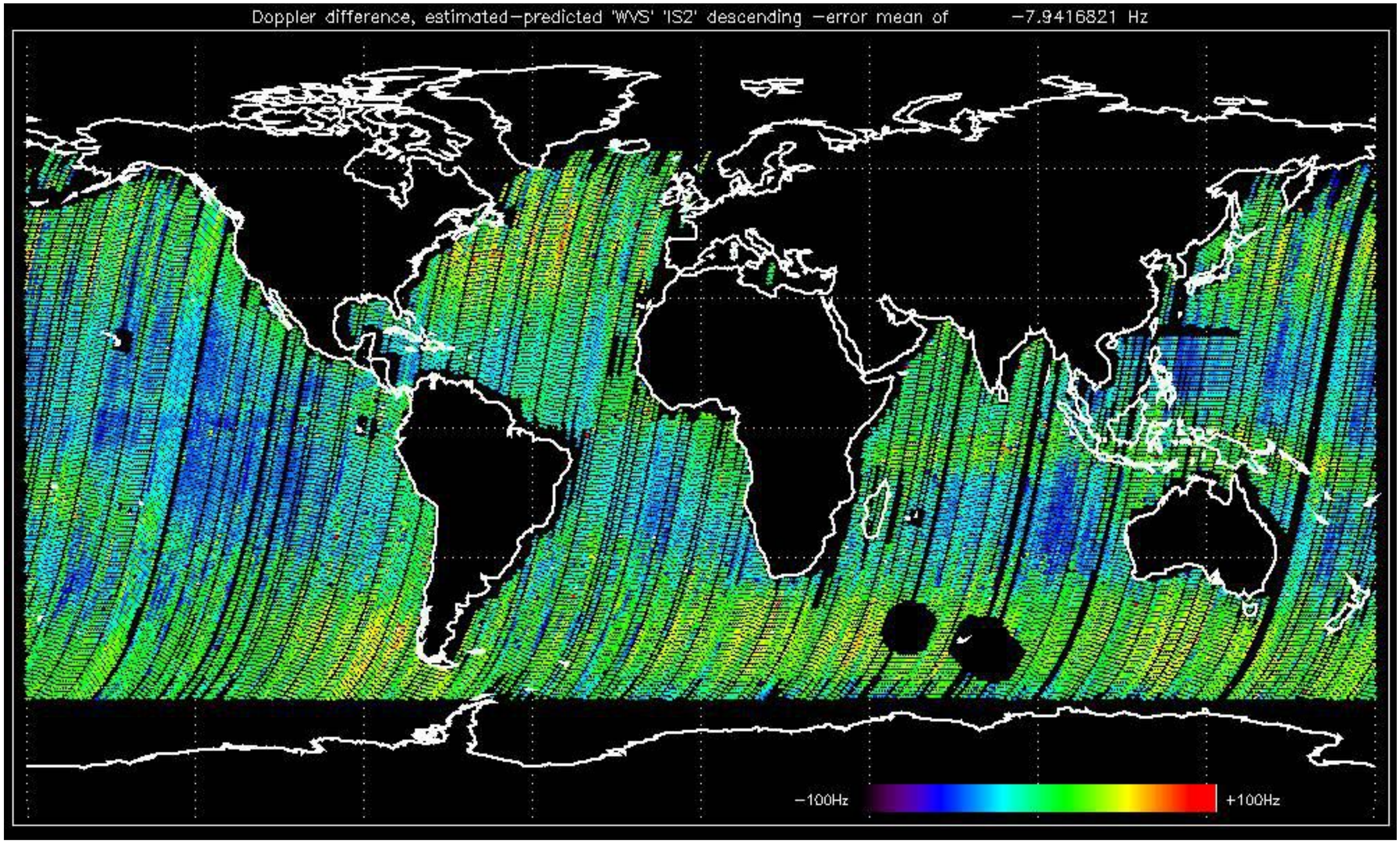

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −8.7595873 Hz
−100Hz
+100Hz

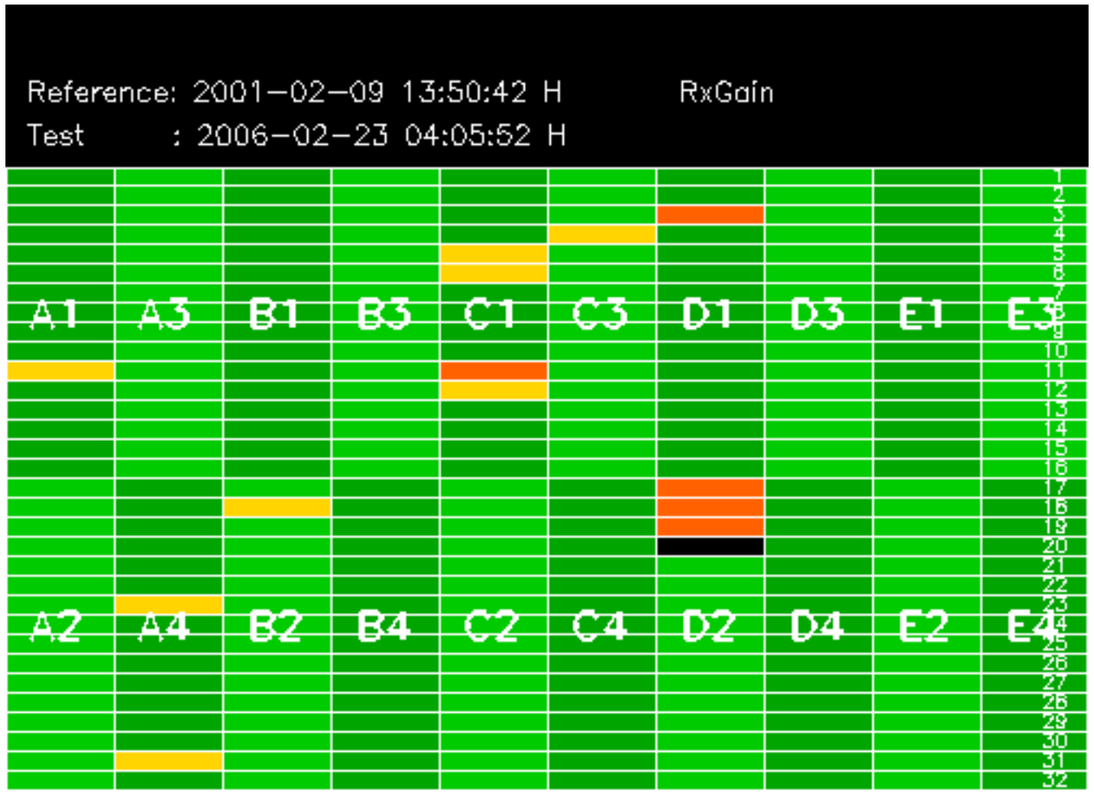

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −10.950995 Hz
−100Hz
+100Hz

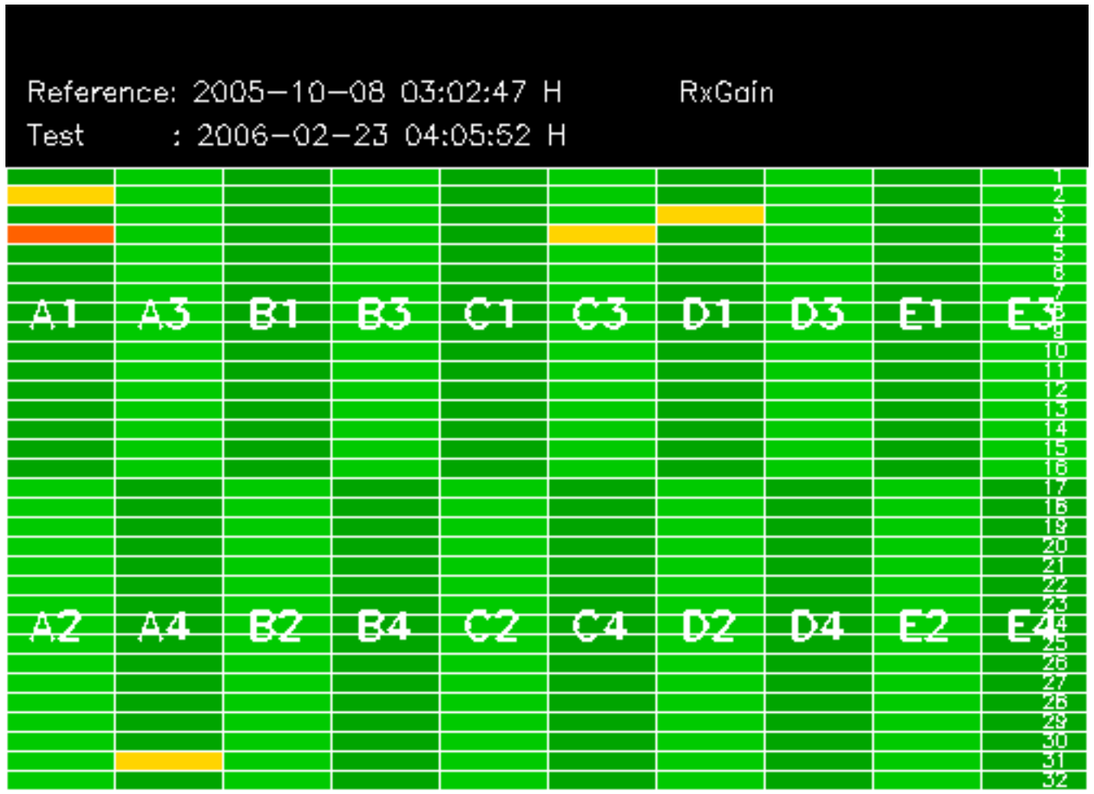

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −6.5531339 Hz
−100Hz
+100Hz

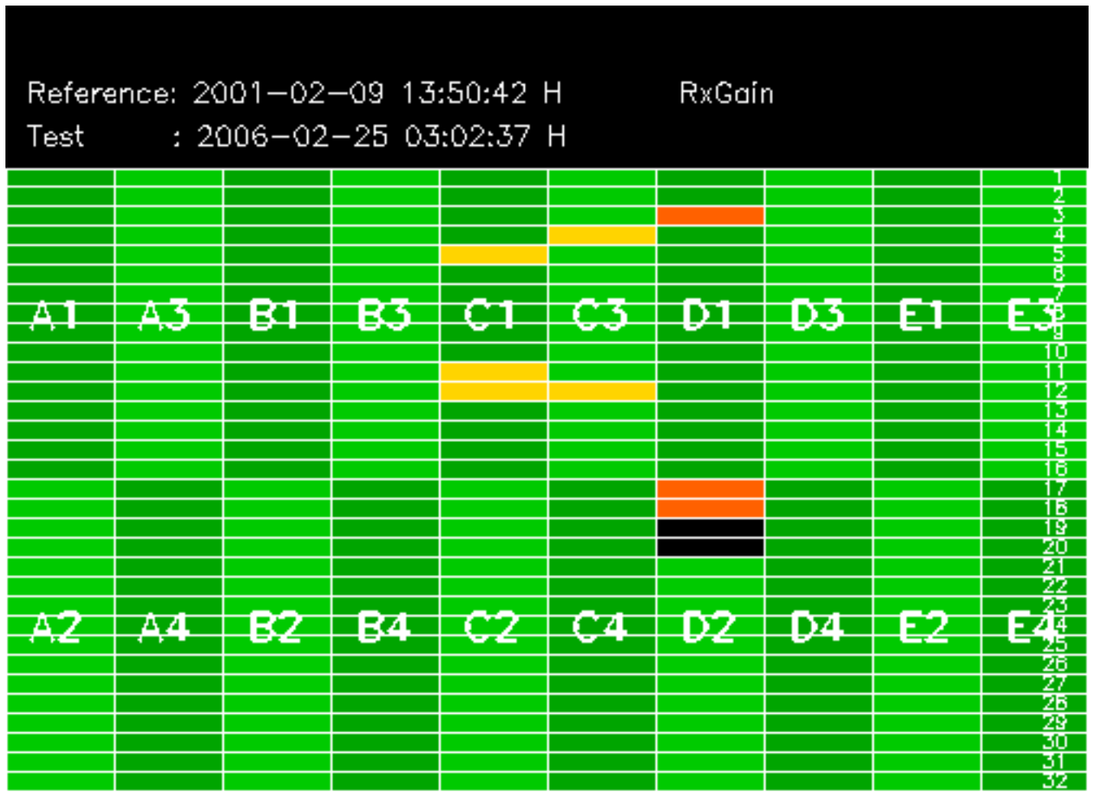

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −7.9416821 Hz
−100Hz
+100Hz

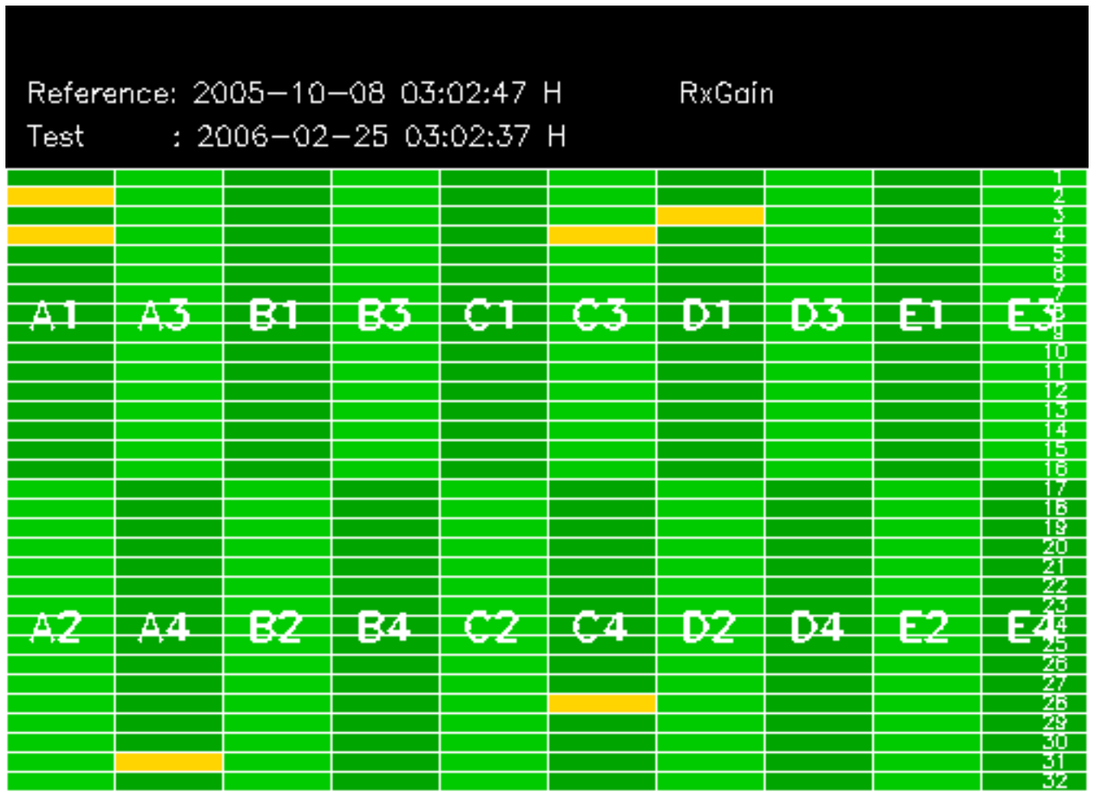
No anomalies observed on available MS products:

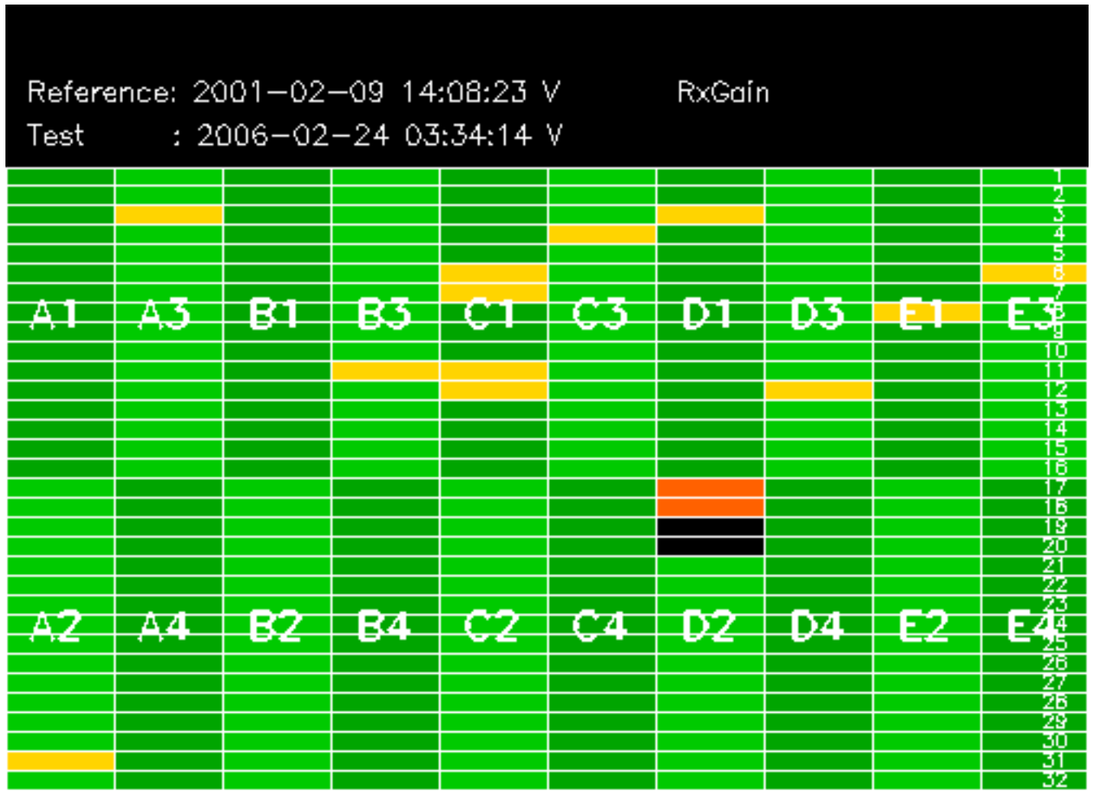
No anomalies observed.

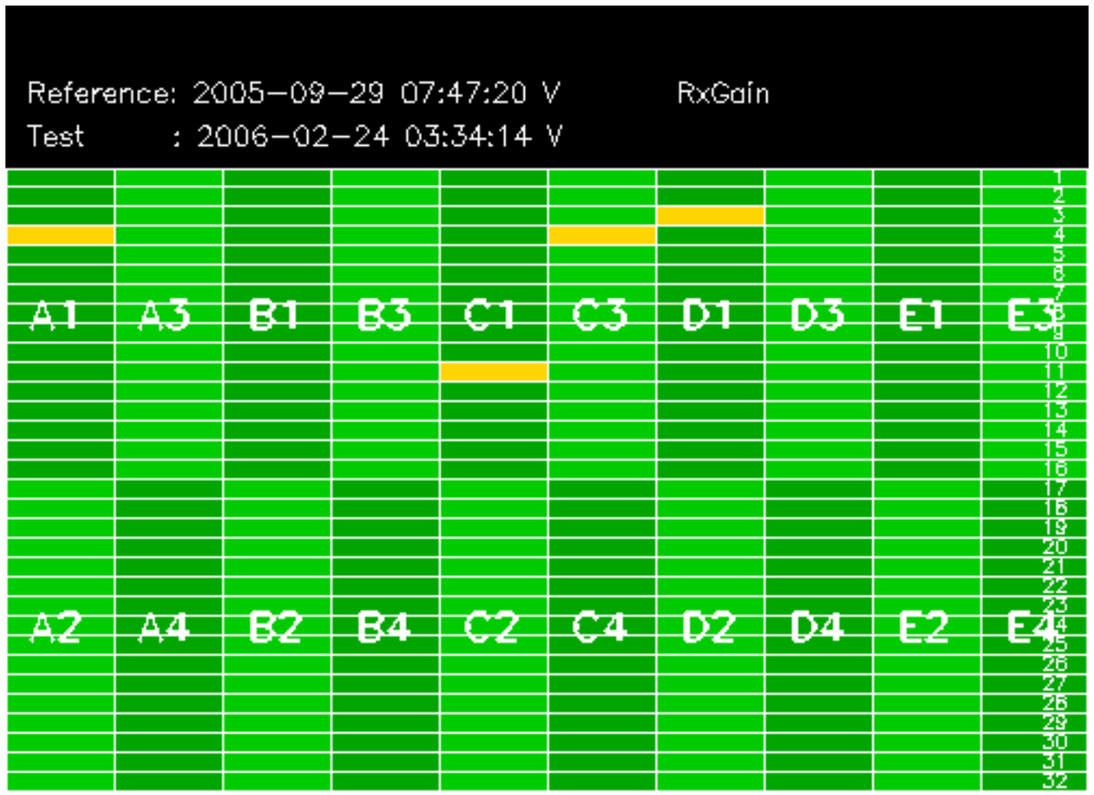

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-23 04:05:52 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

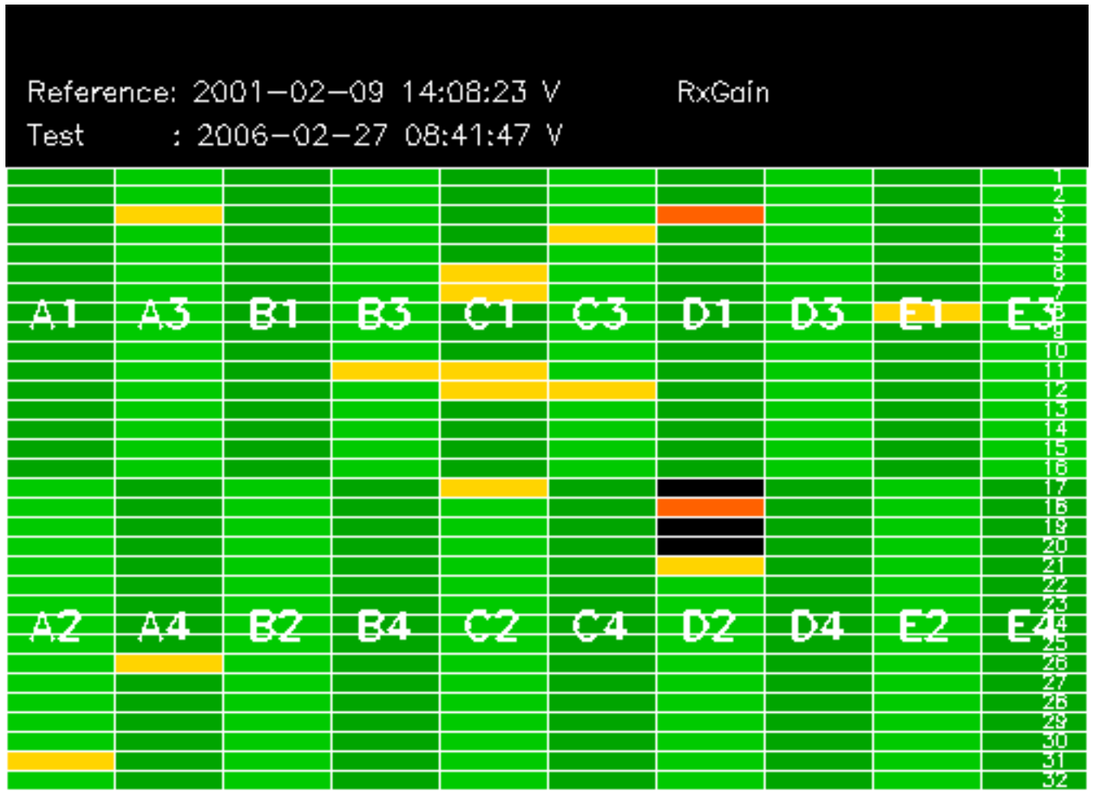

Reference: 2005-10-08 03:02:47 H
Test : 2006-02-23 04:05:52 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

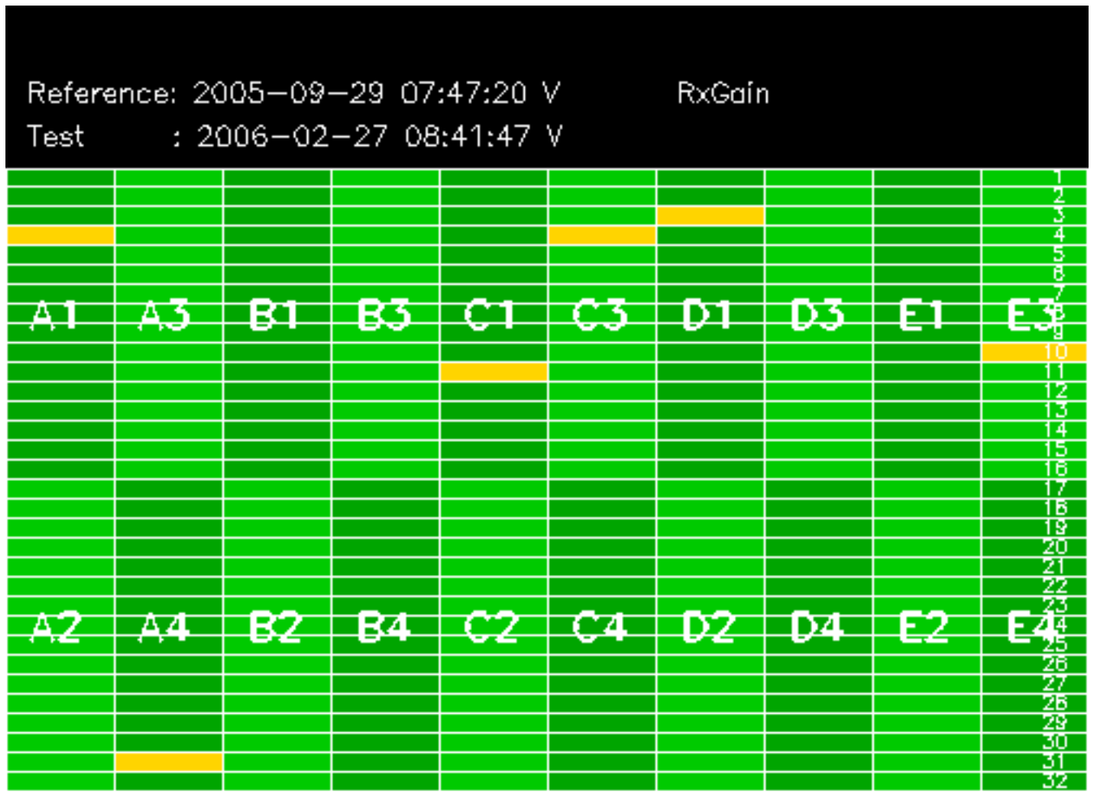

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-25 03:02:37 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

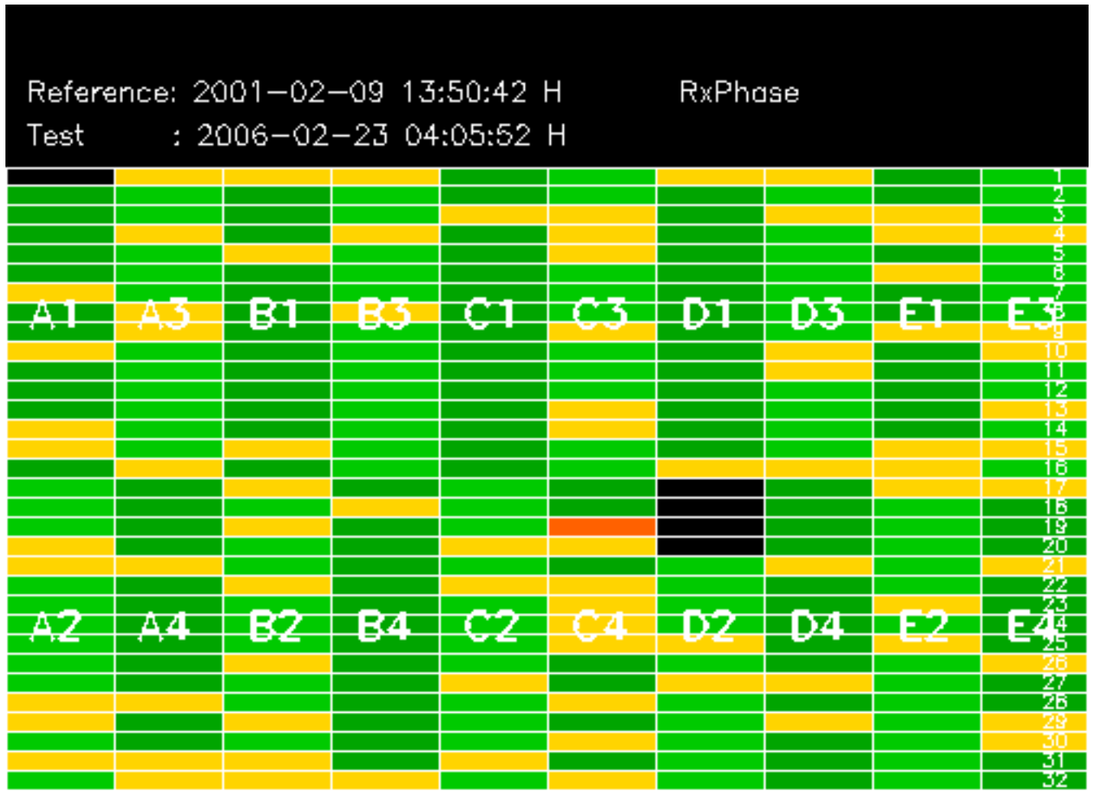

Reference: 2005-10-08 03:02:47 H
Test : 2006-02-25 03:02:37 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

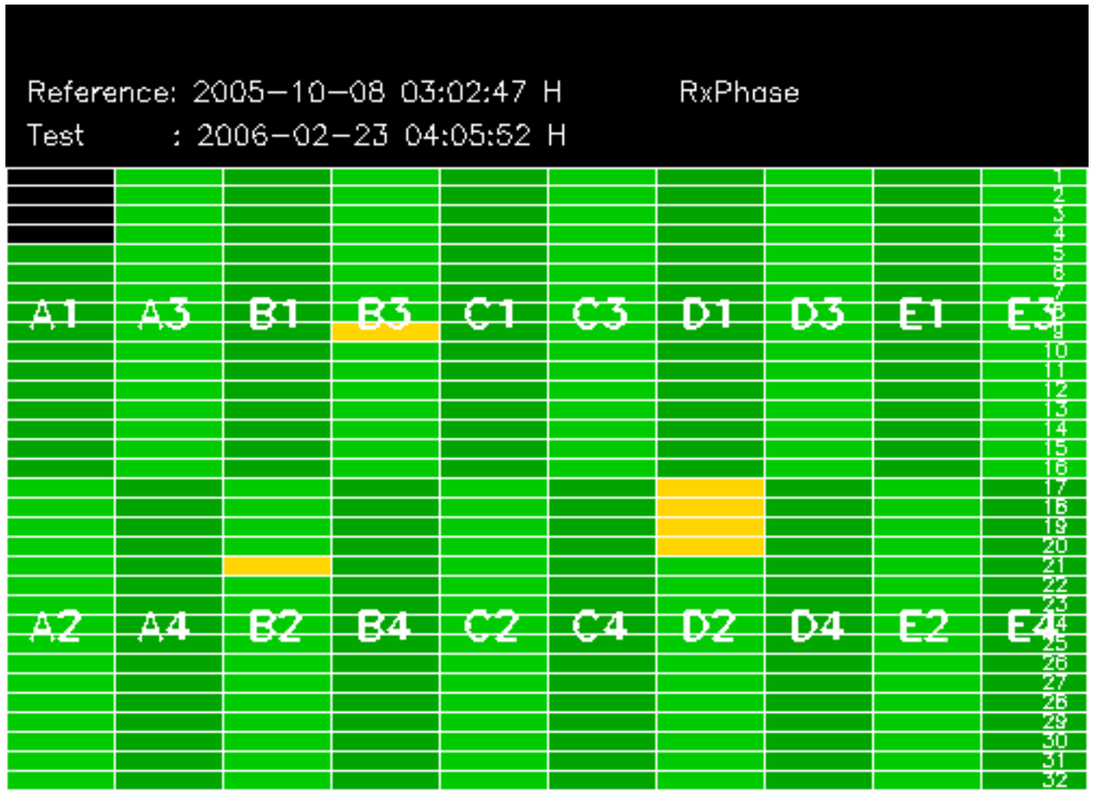

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-24 03:34:14 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

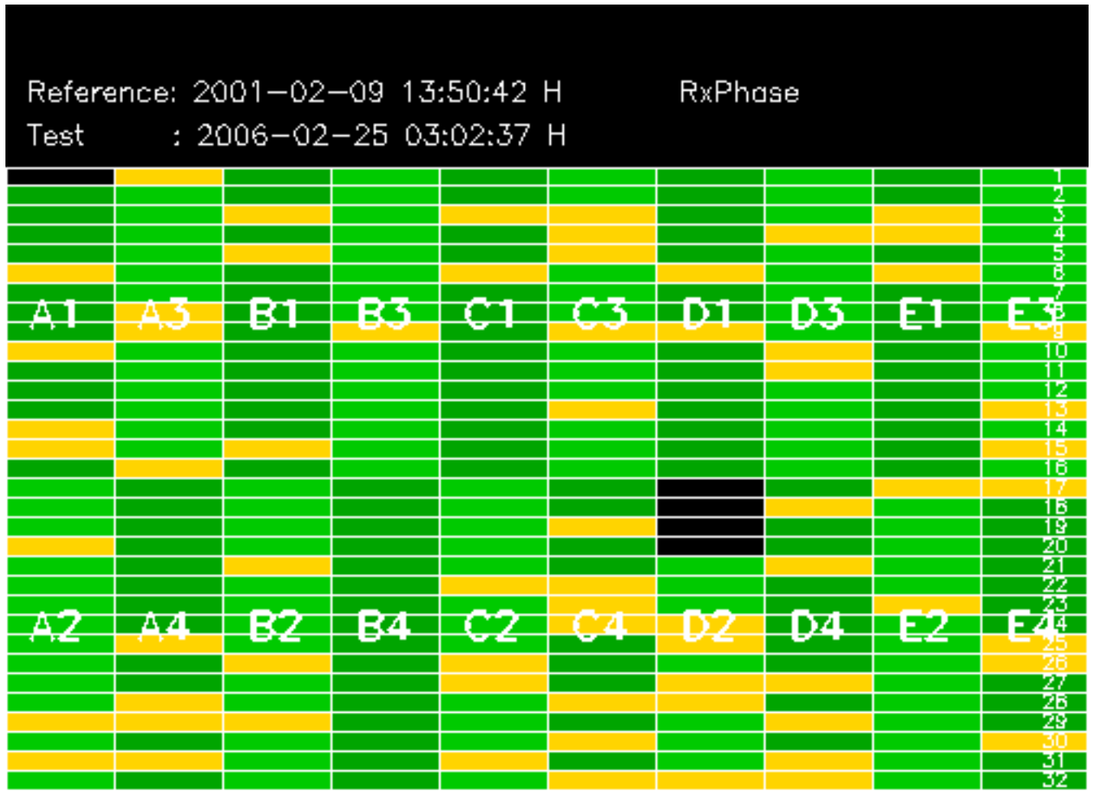

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-24 03:34:14 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

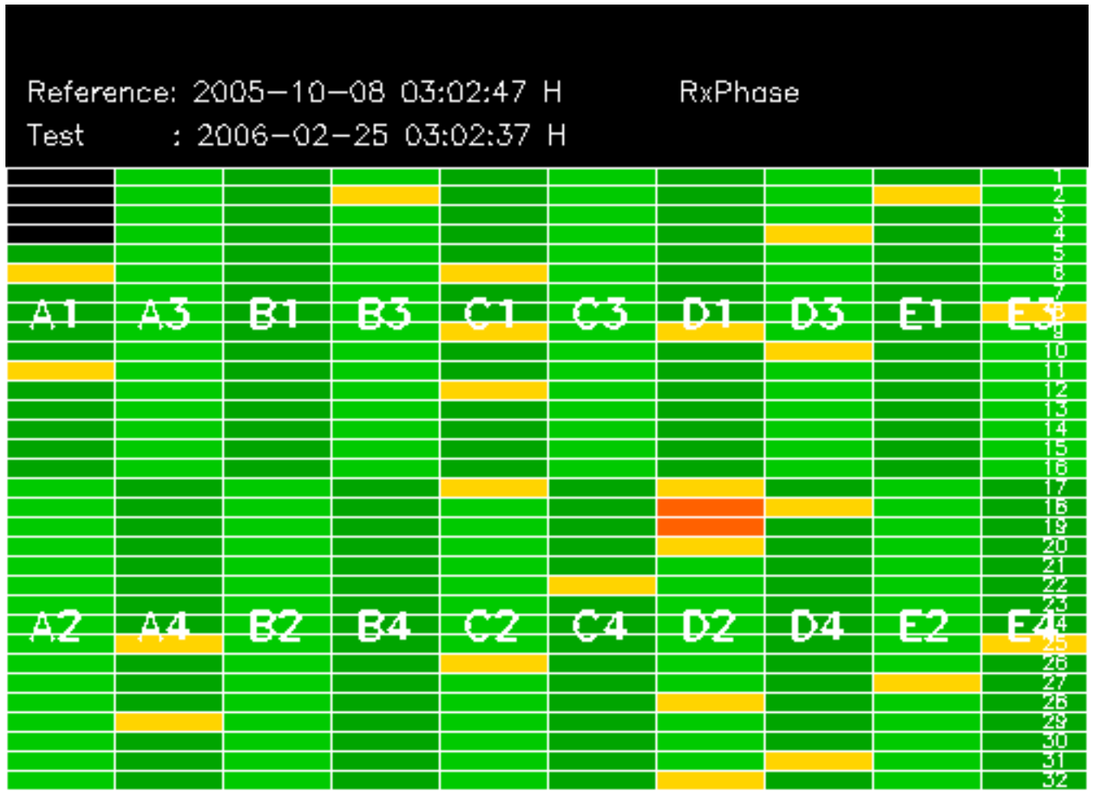

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-27 08:41:47 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

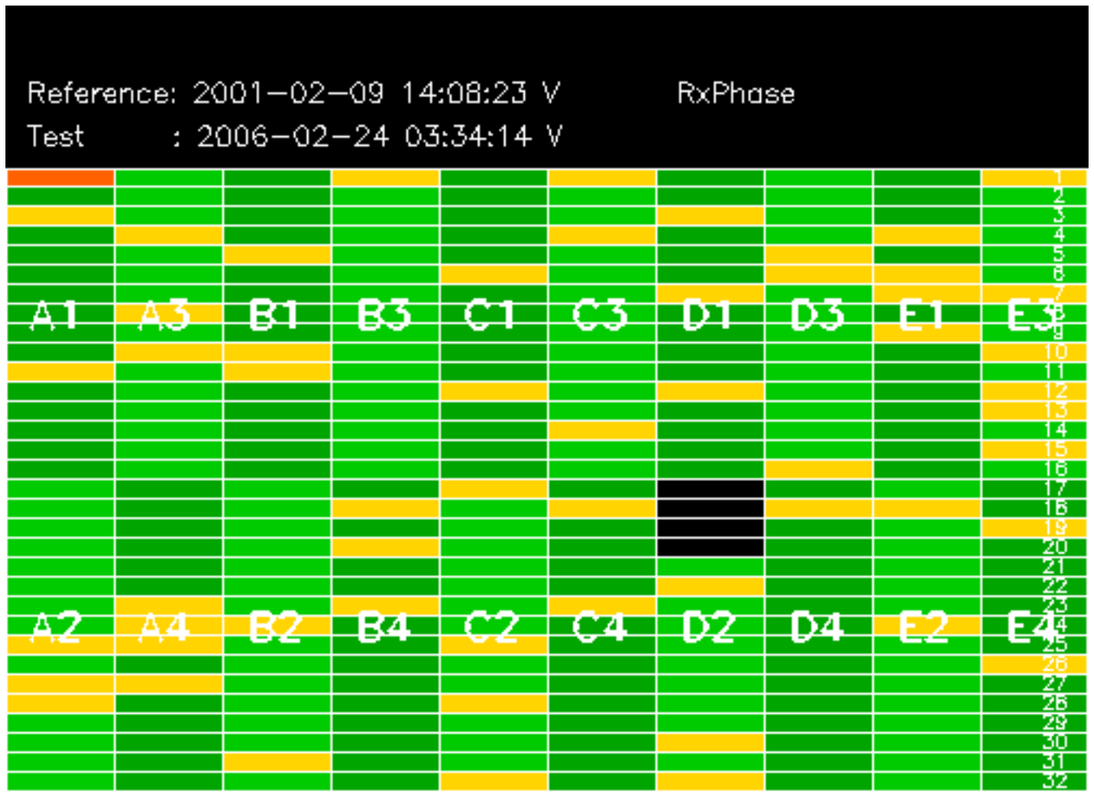

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-27 08:41:47 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

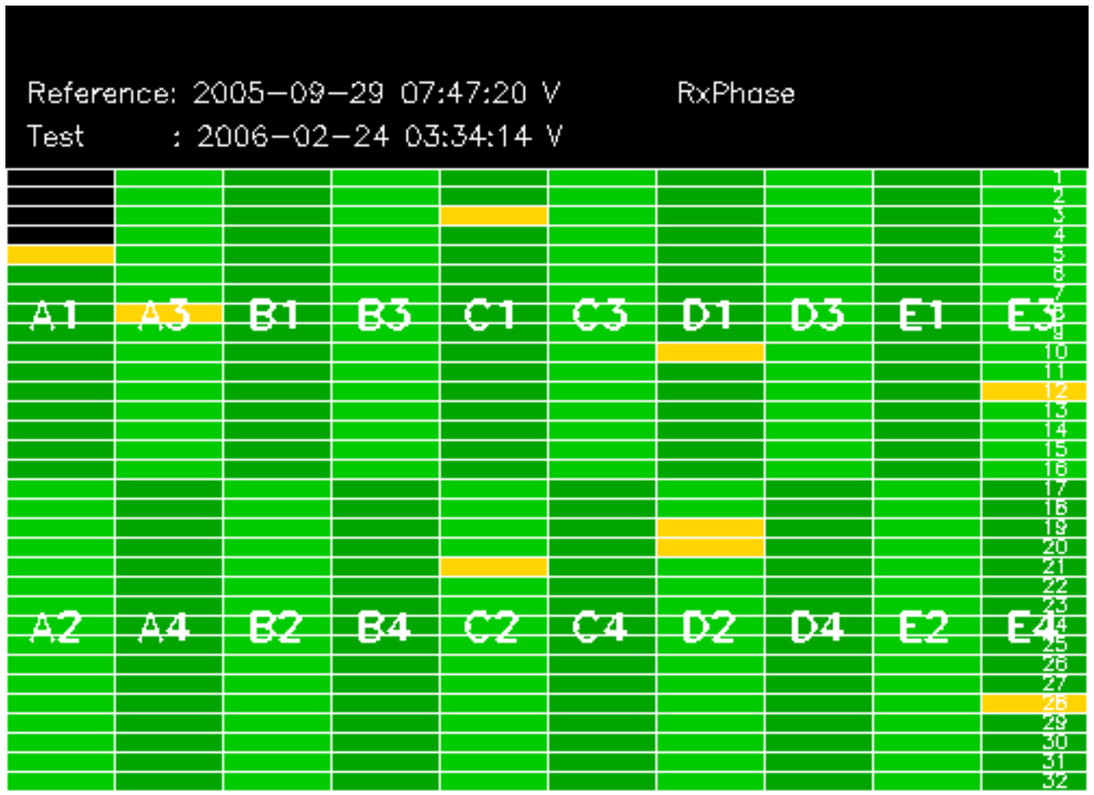

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-02-23 04:05:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

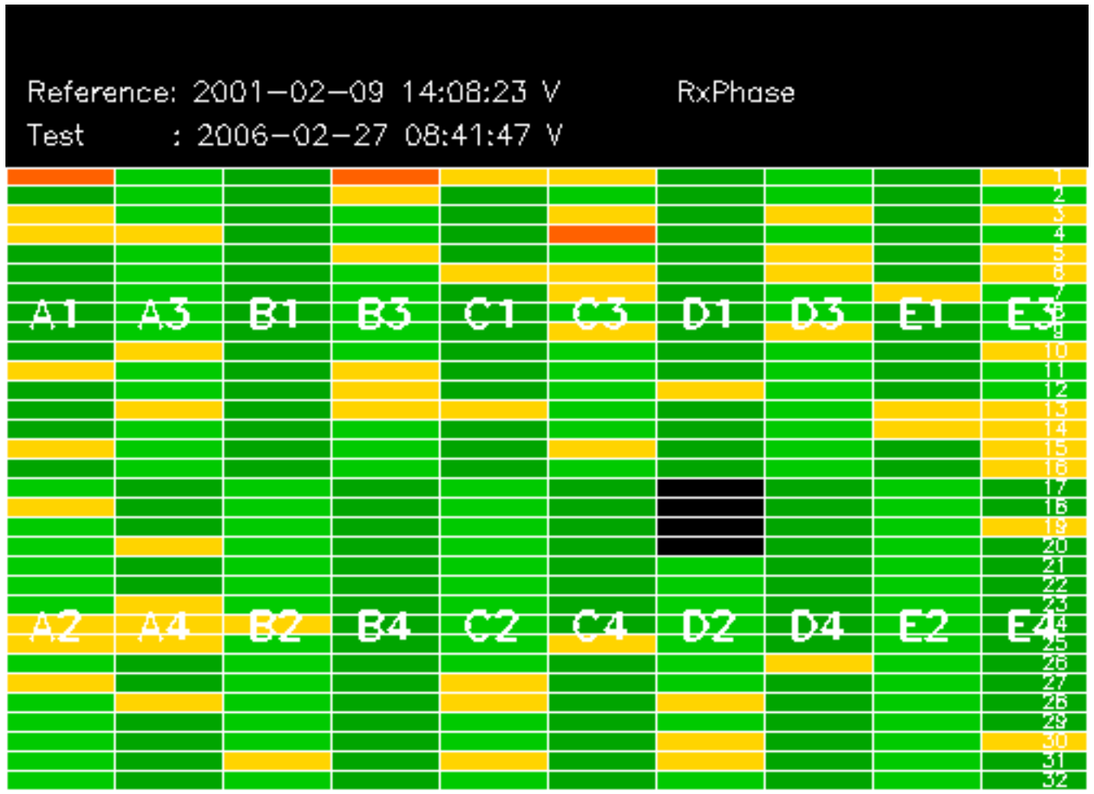

Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-02-23 04:05:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

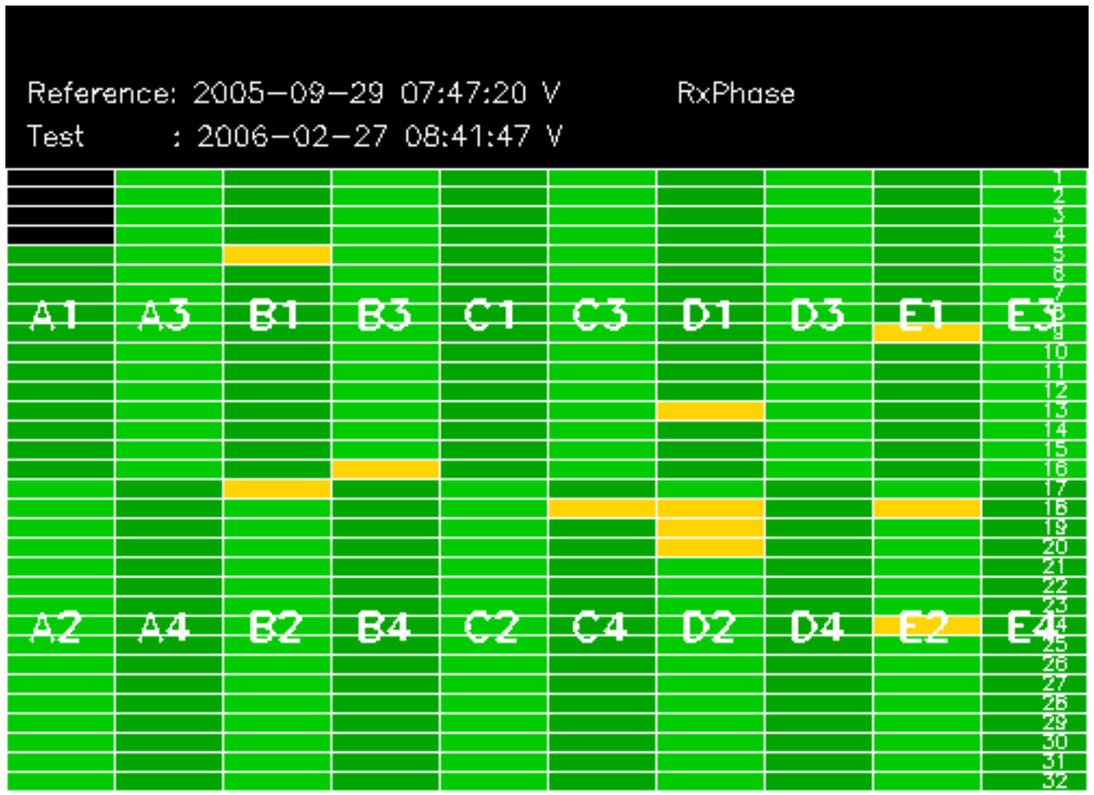

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-02-25 03:02:37 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

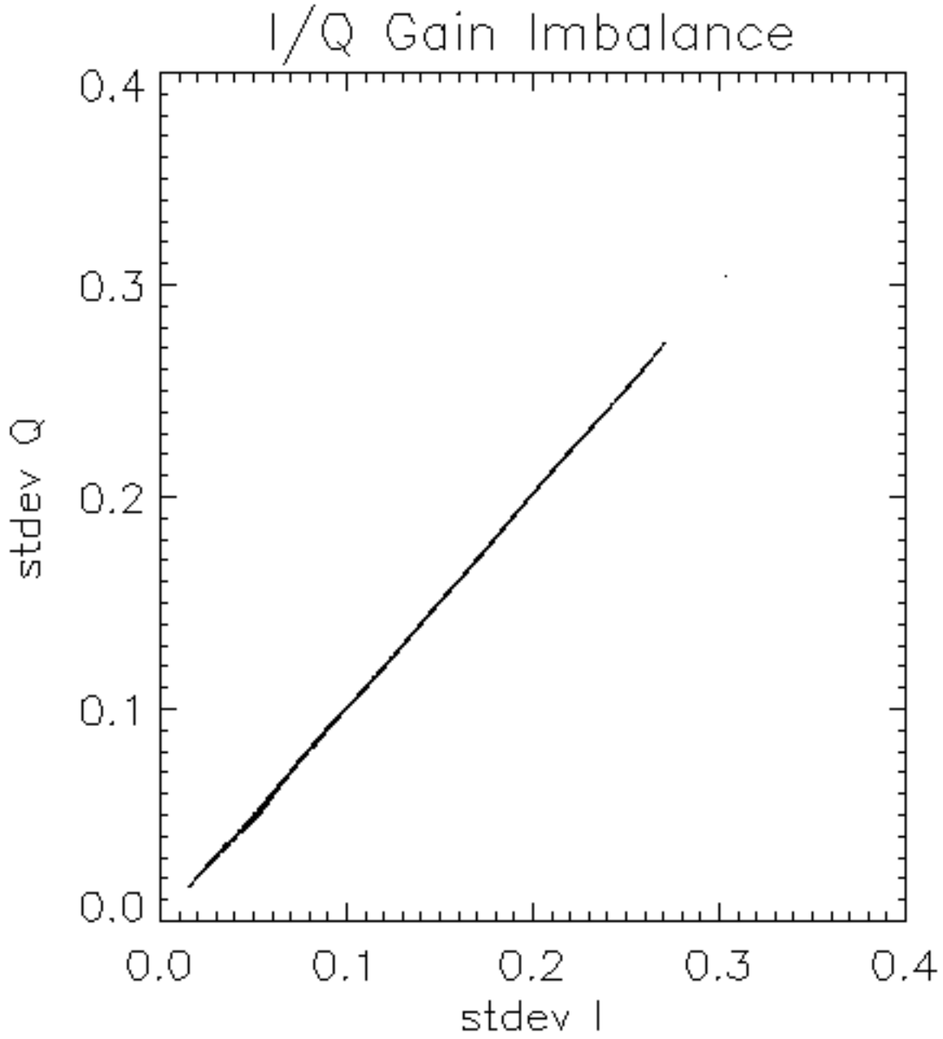

Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-02-25 03:02:37 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

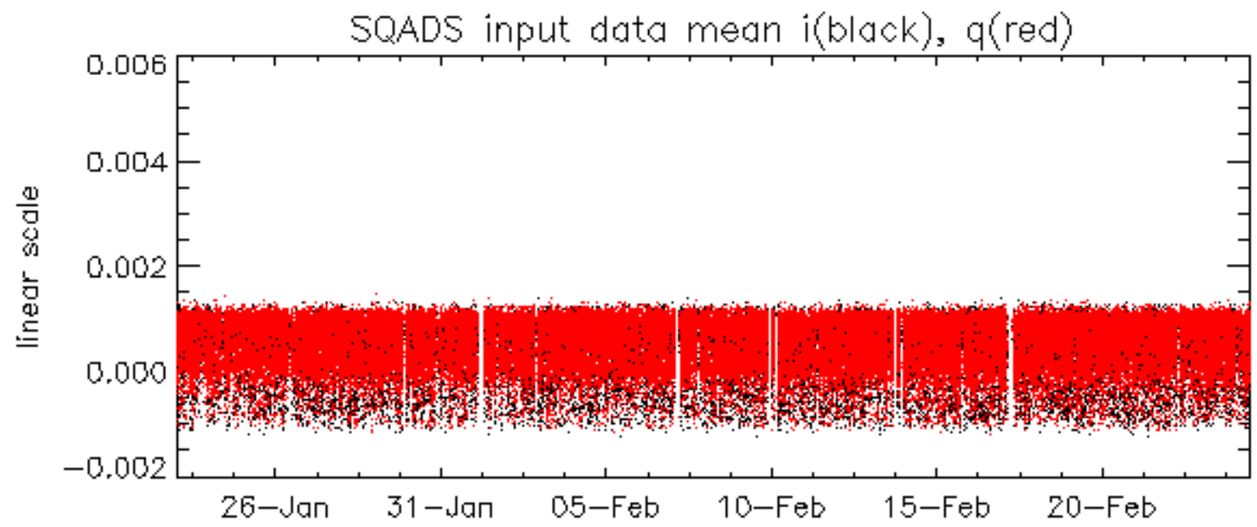

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-24 03:34:14 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

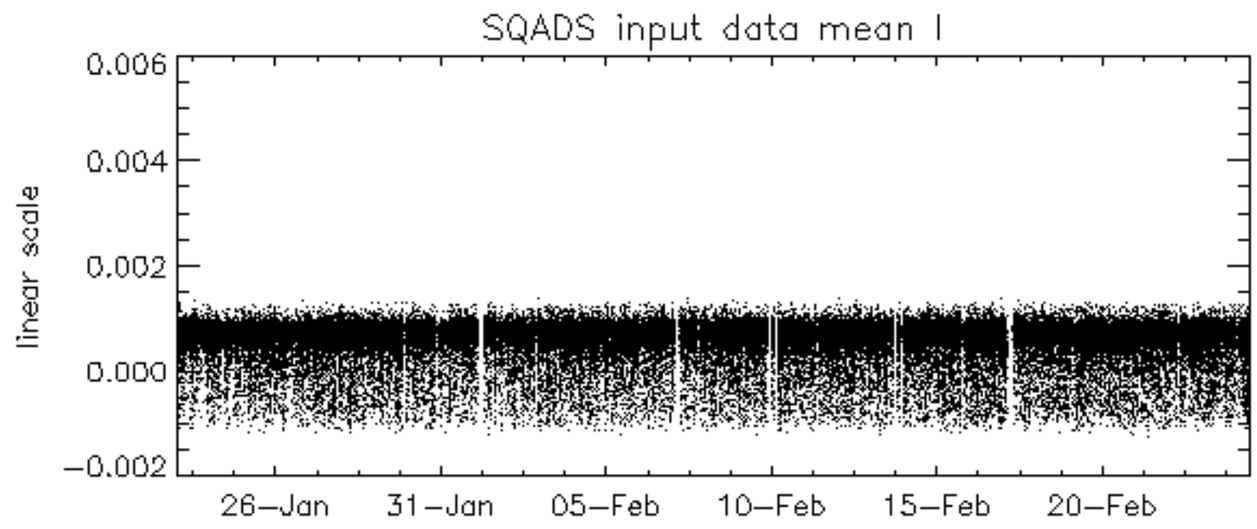

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-24 03:34:14 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

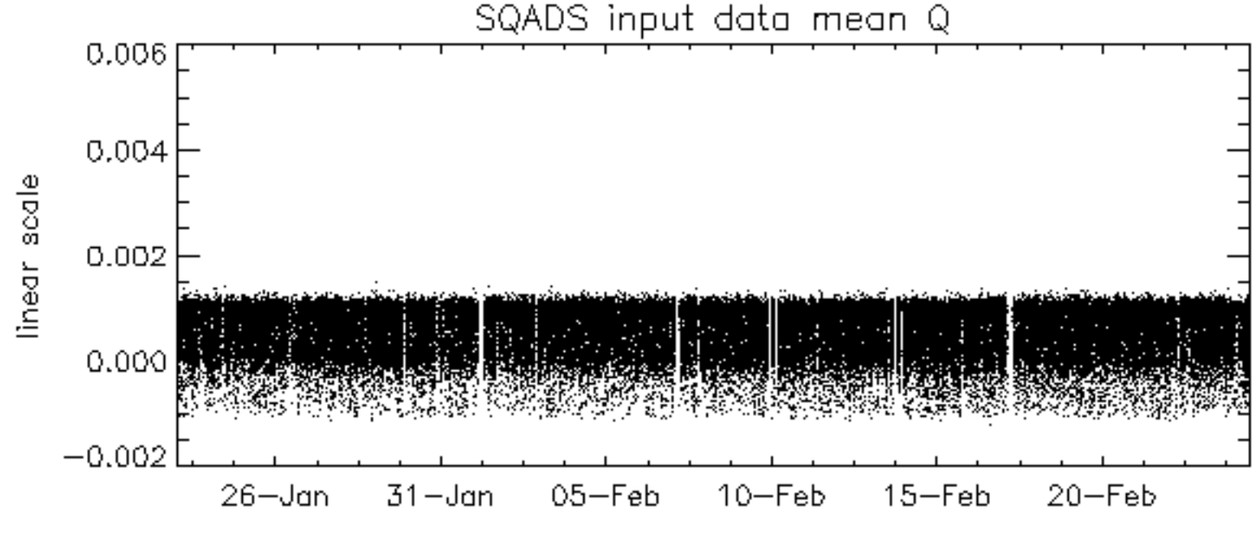

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-27 08:41:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

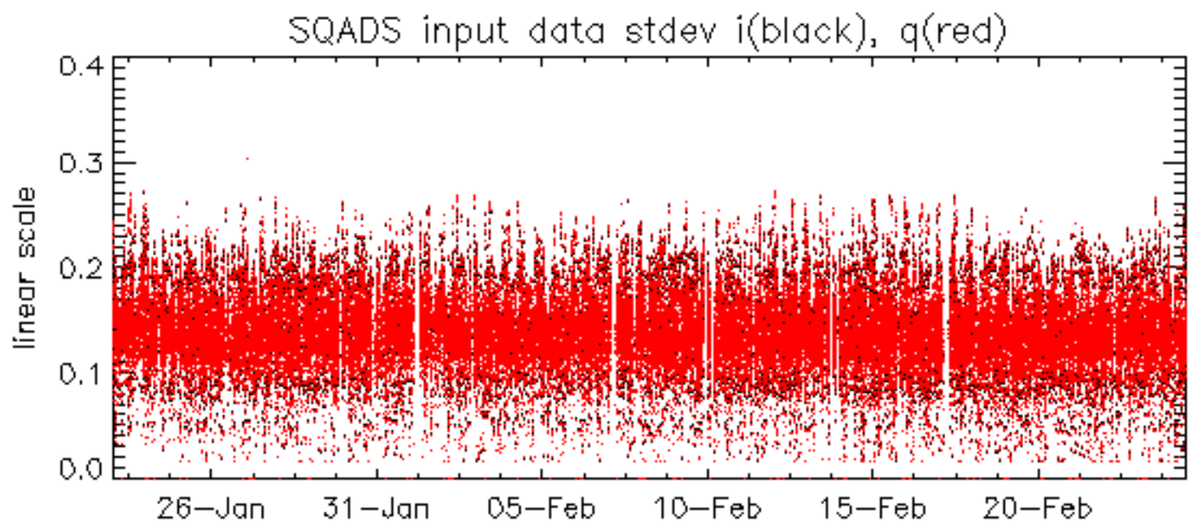

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-27 08:41:47 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

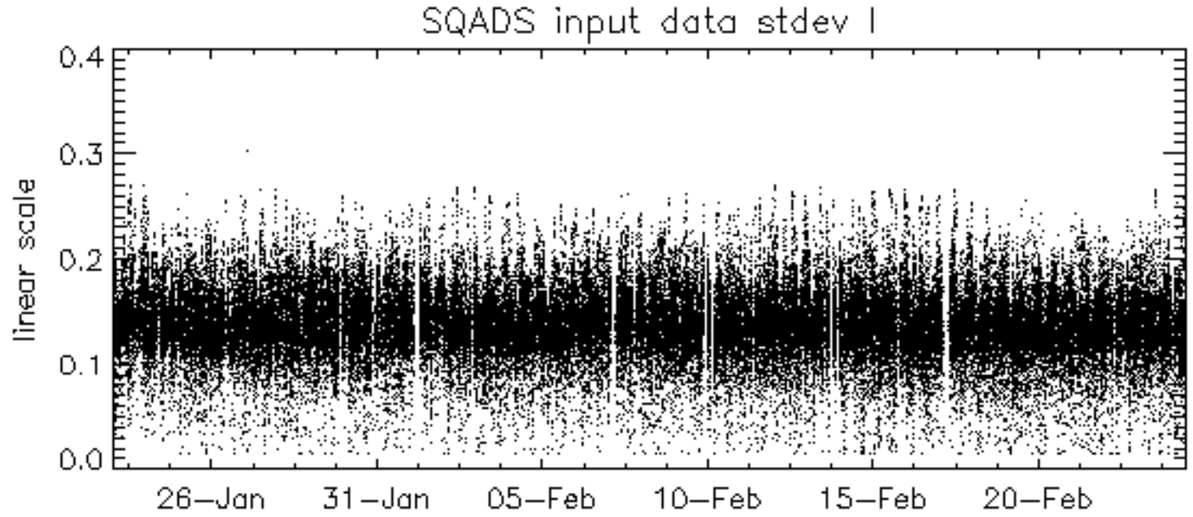

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I

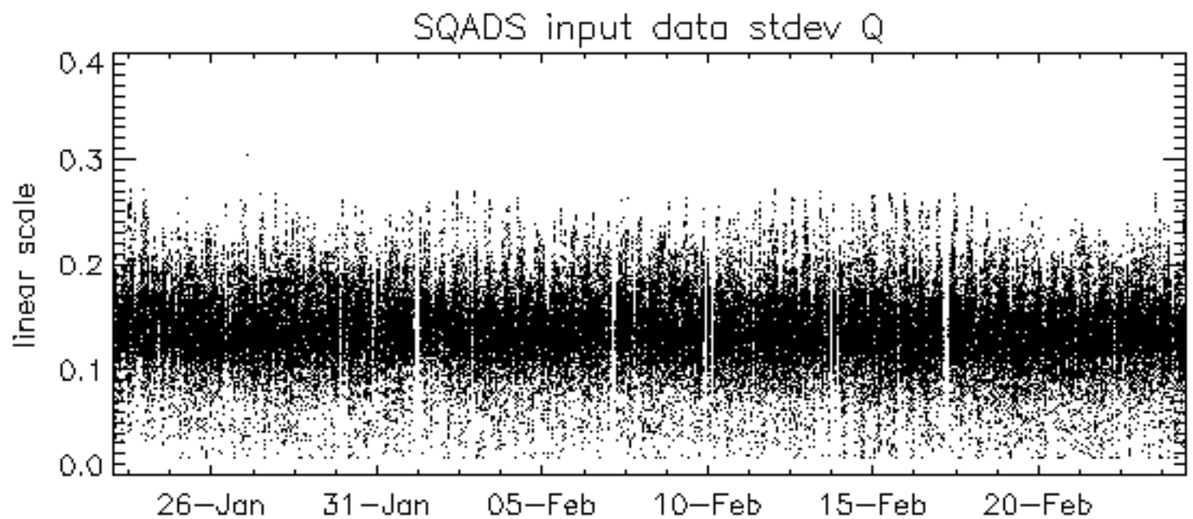

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

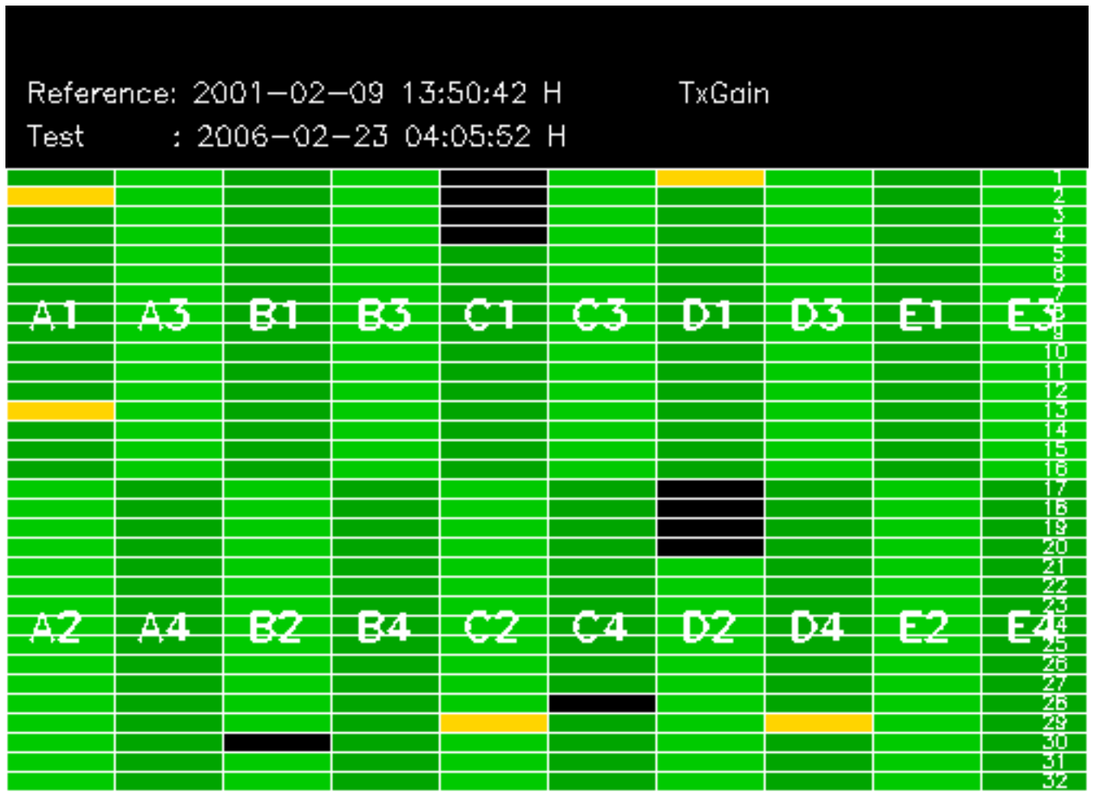

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

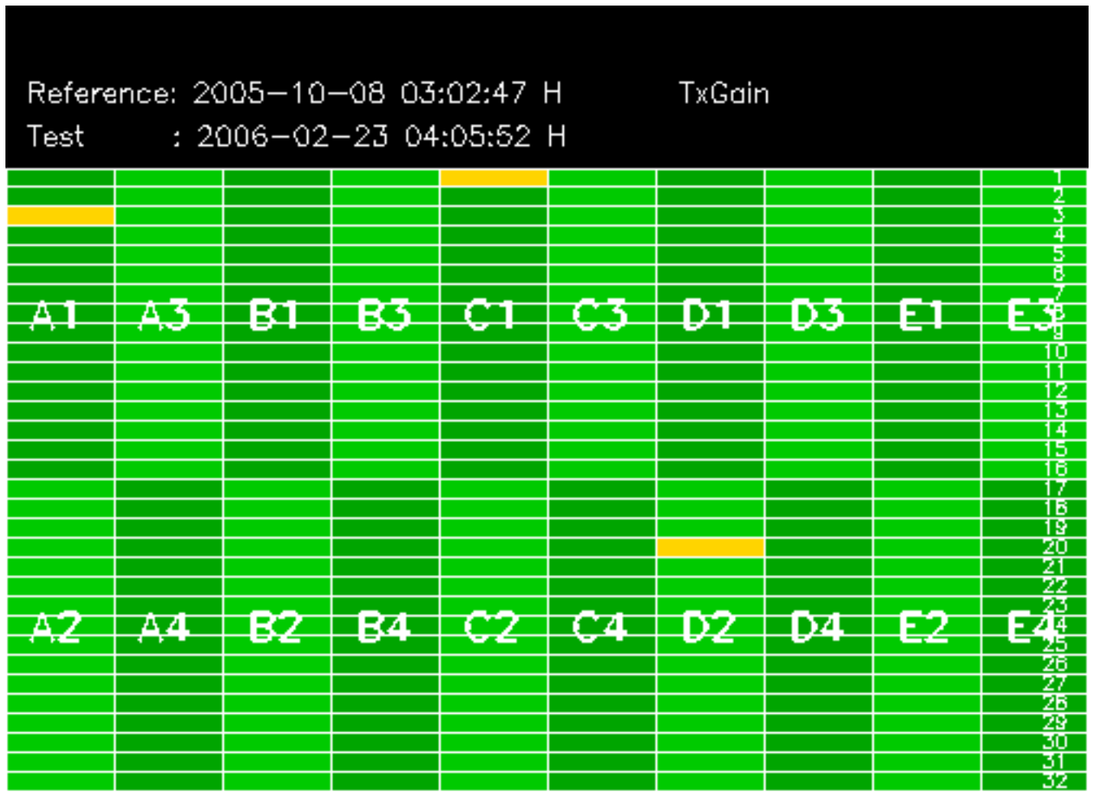

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

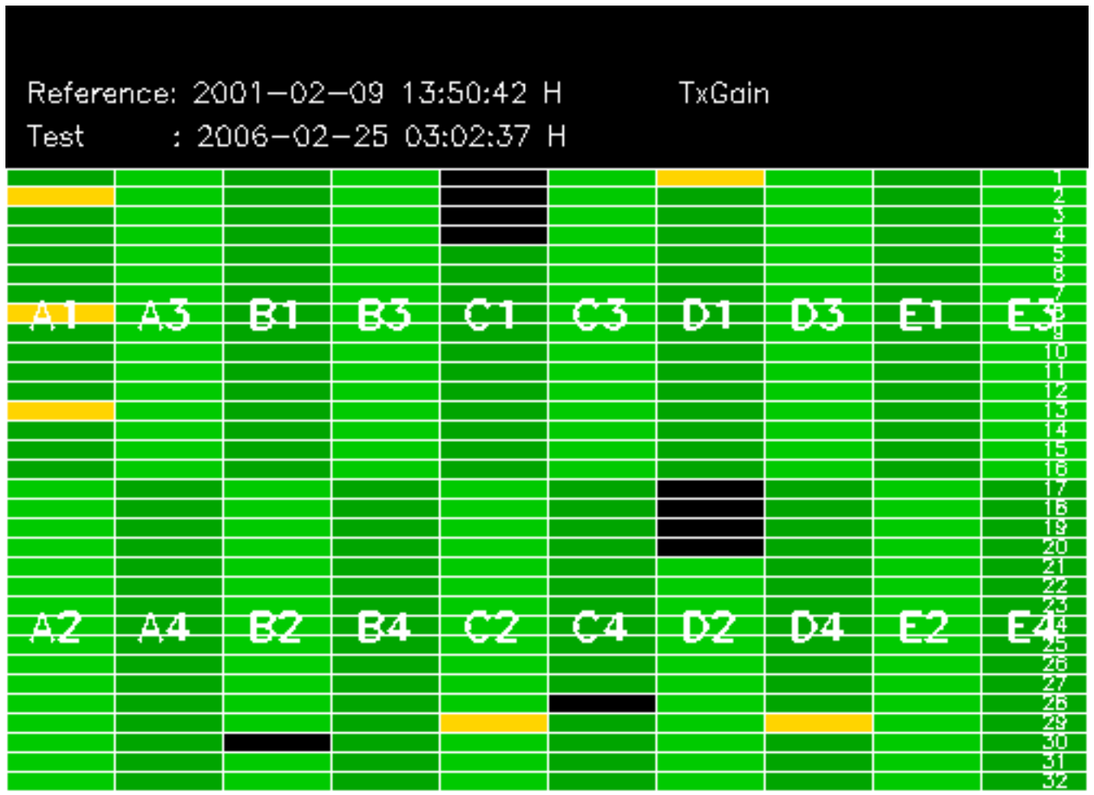

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb

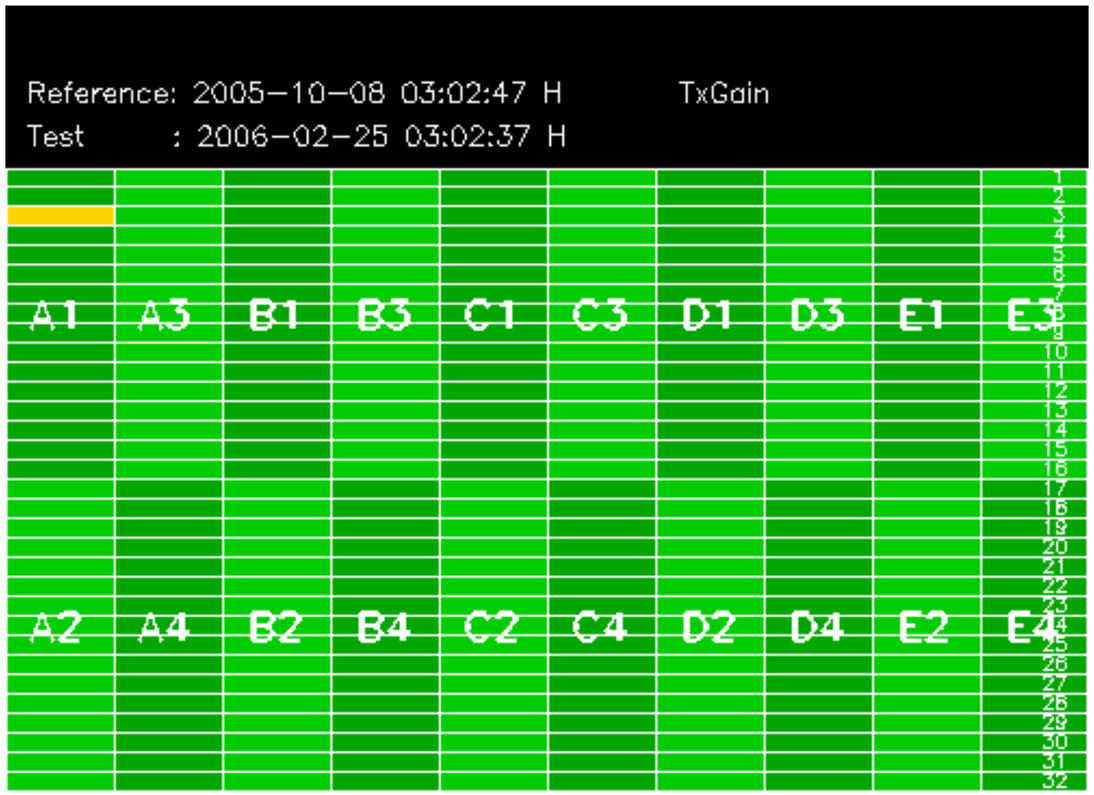

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb

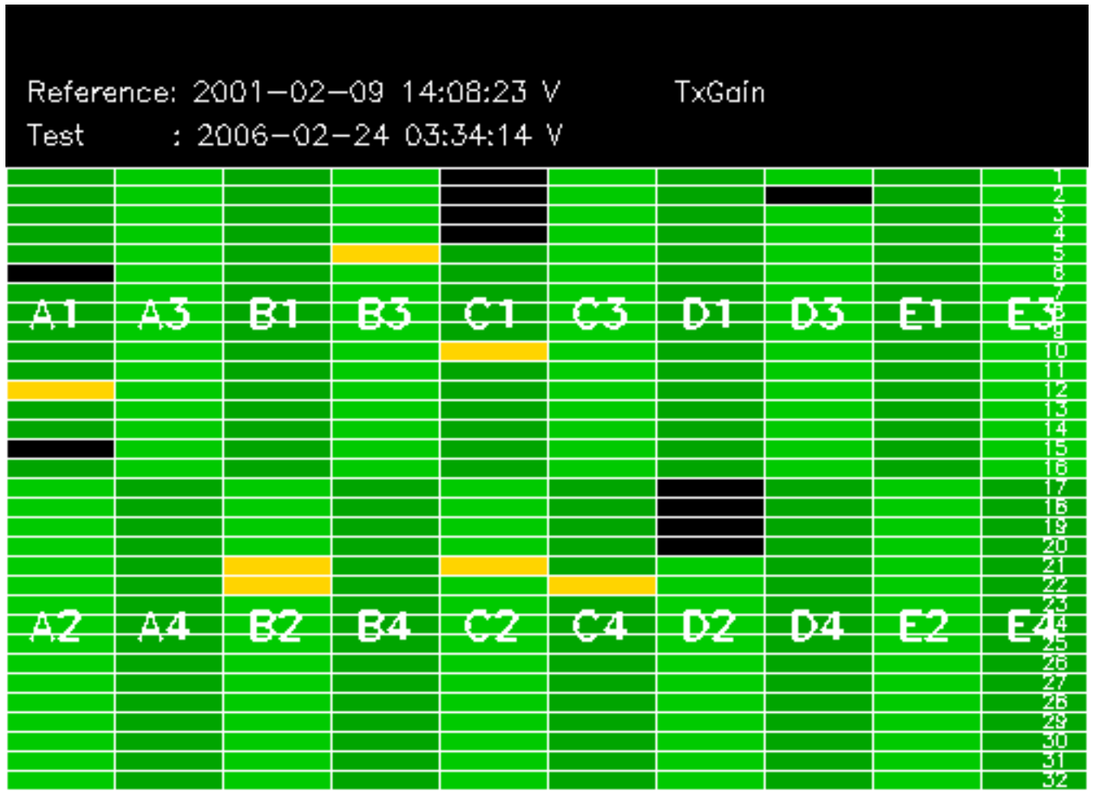

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb

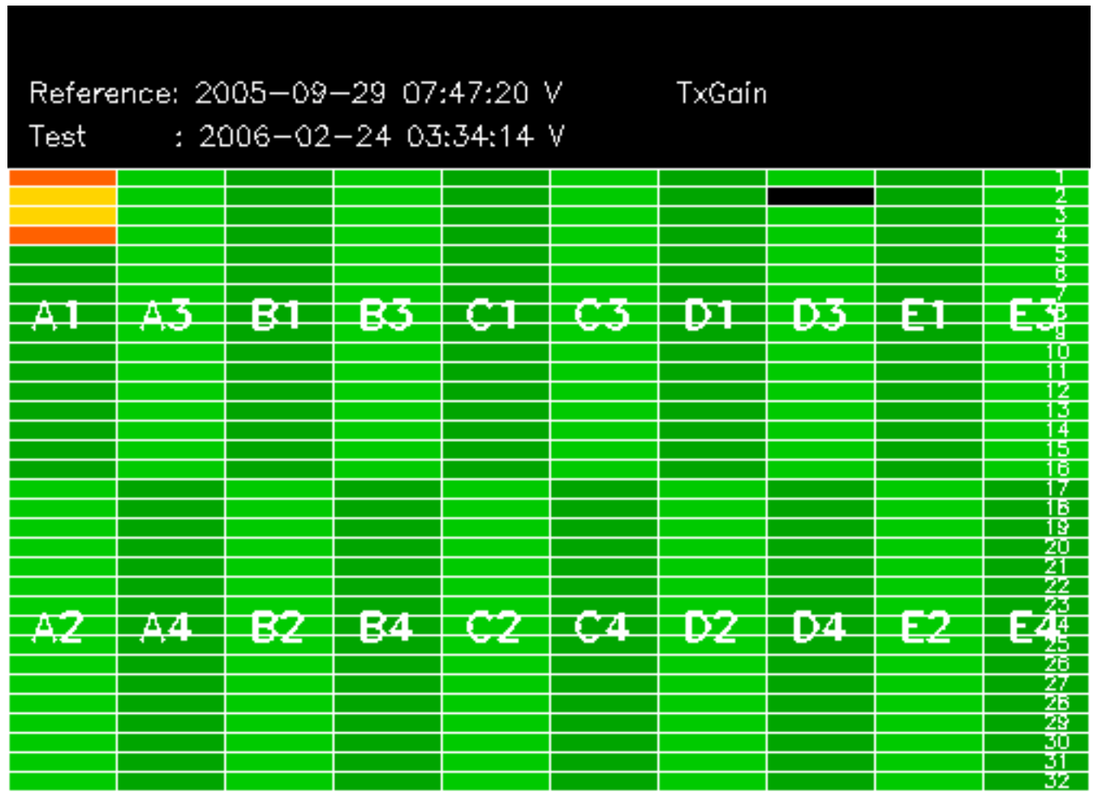

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-23 04:05:52 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

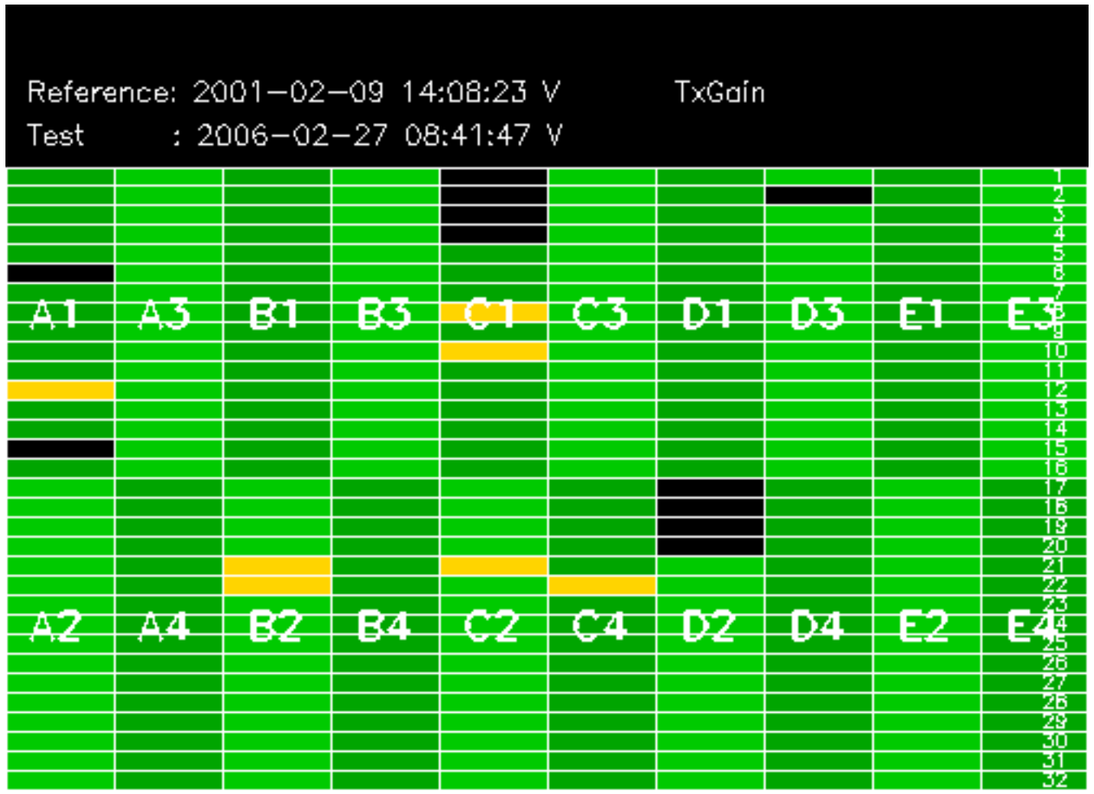

Reference: 2005-10-08 03:02:47 H
Test : 2006-02-23 04:05:52 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

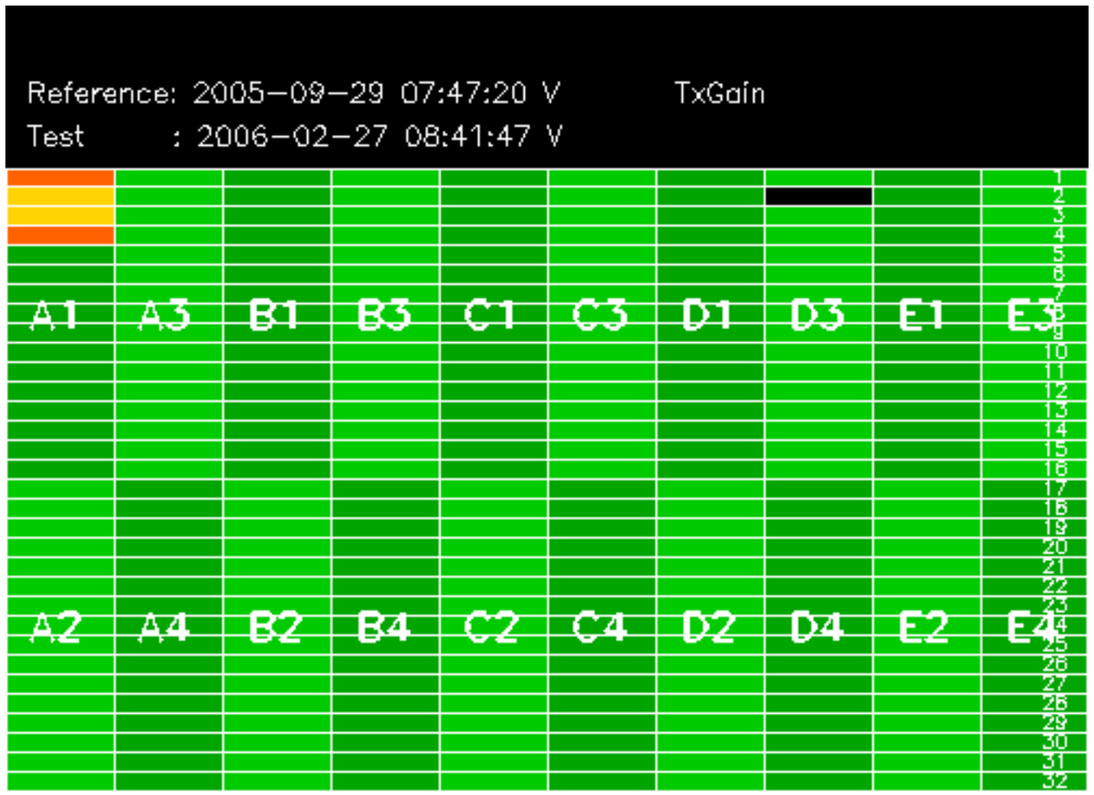

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-25 03:02:37 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2005-10-08 03:02:47 H
Test : 2006-02-25 03:02:37 H
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

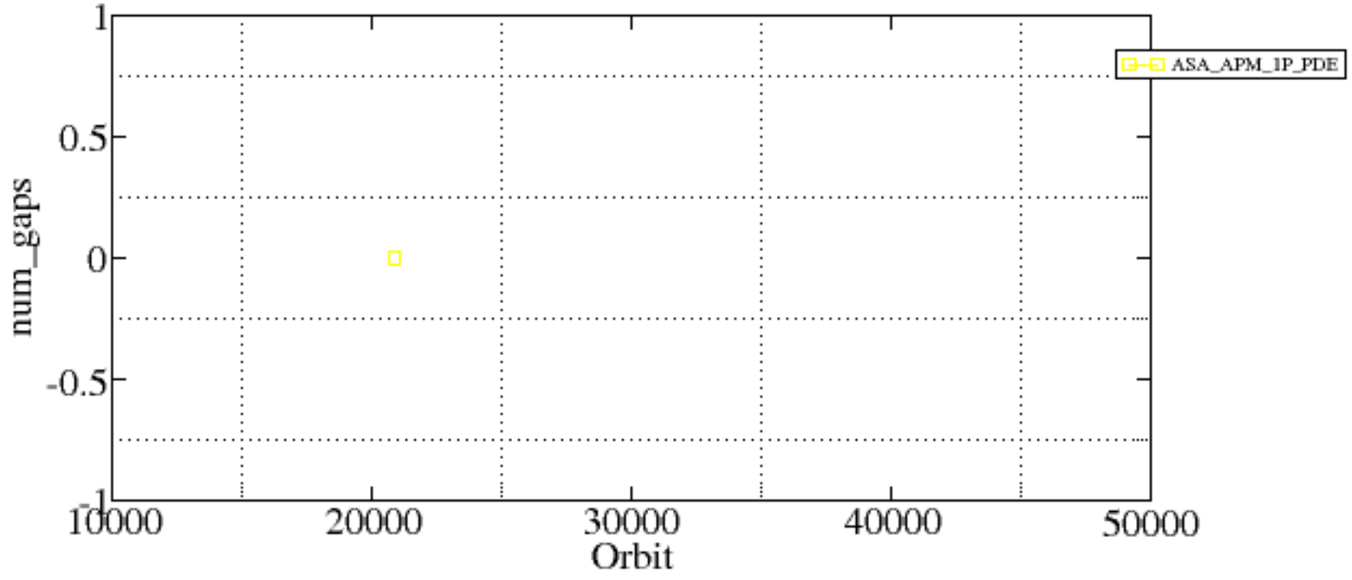

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-24 03:34:14 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

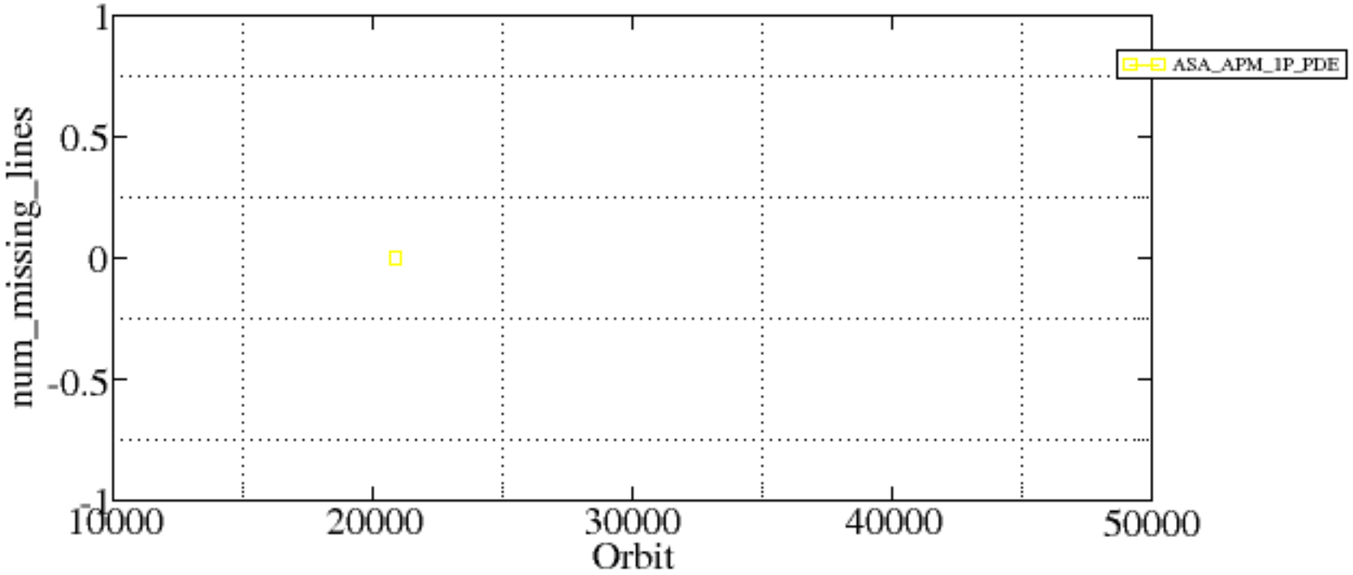

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-24 03:34:14 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

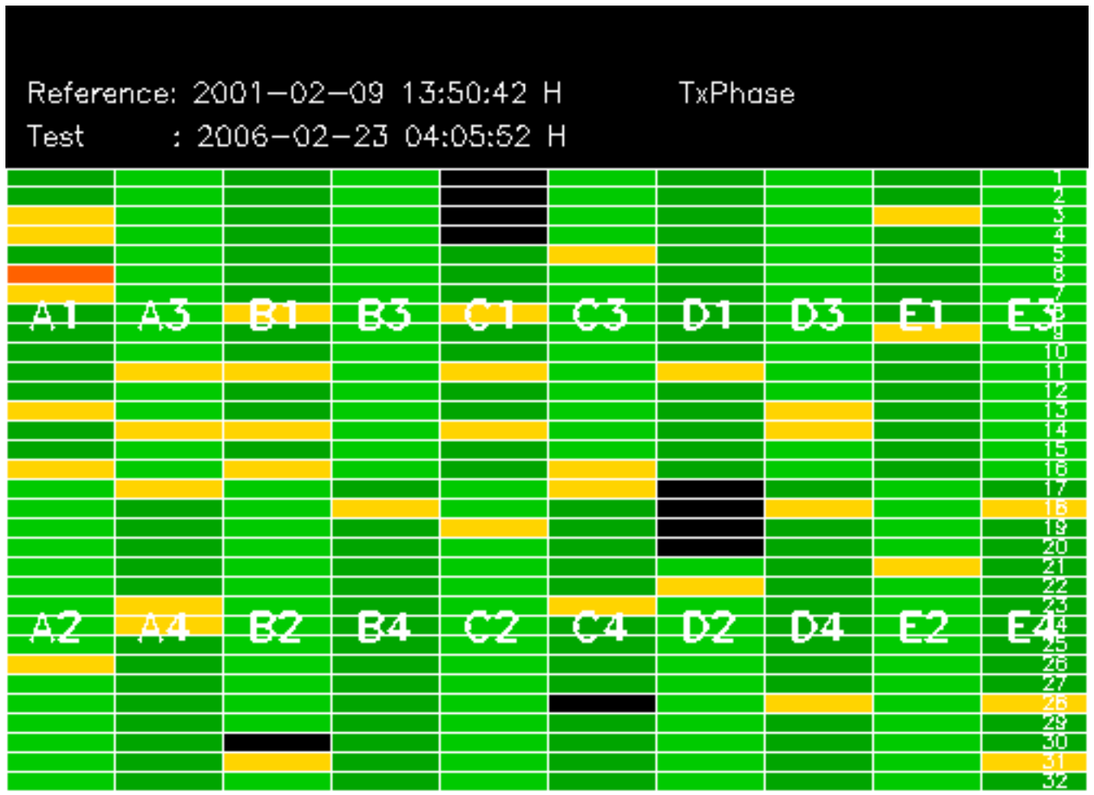

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-27 08:41:47 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

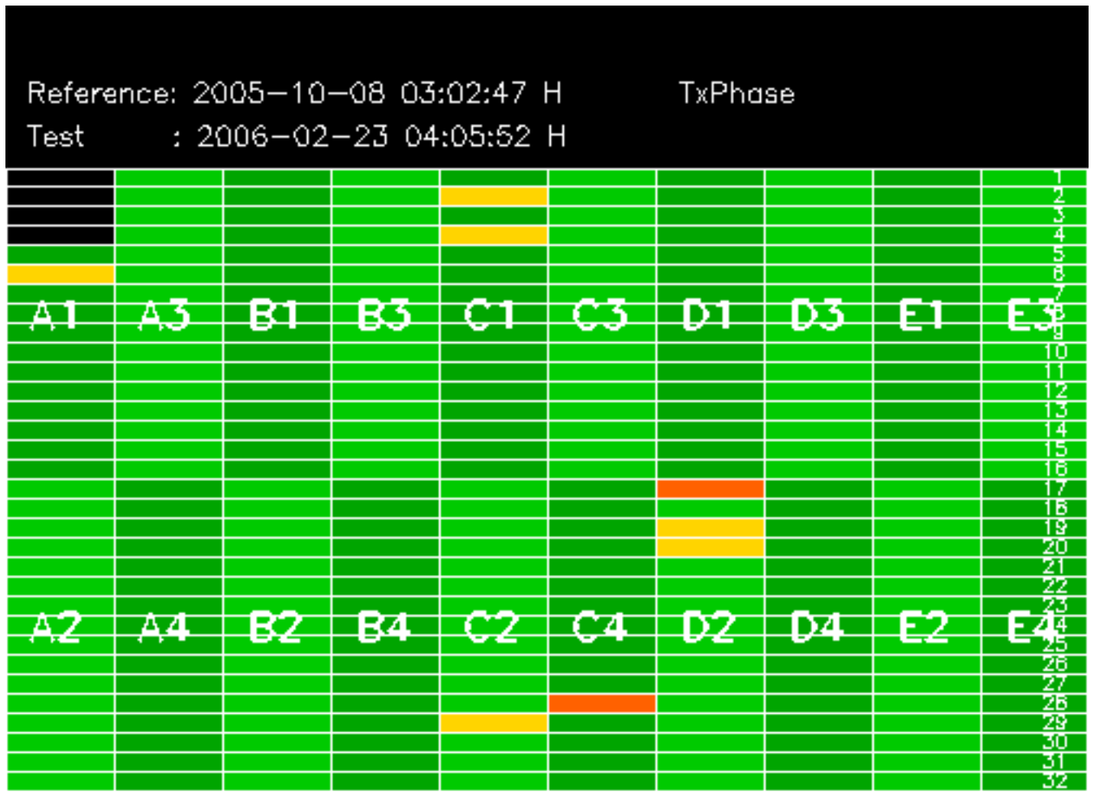

Reference: 2005-09-29 07:47:20 V
Test : 2006-02-27 08:41:47 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

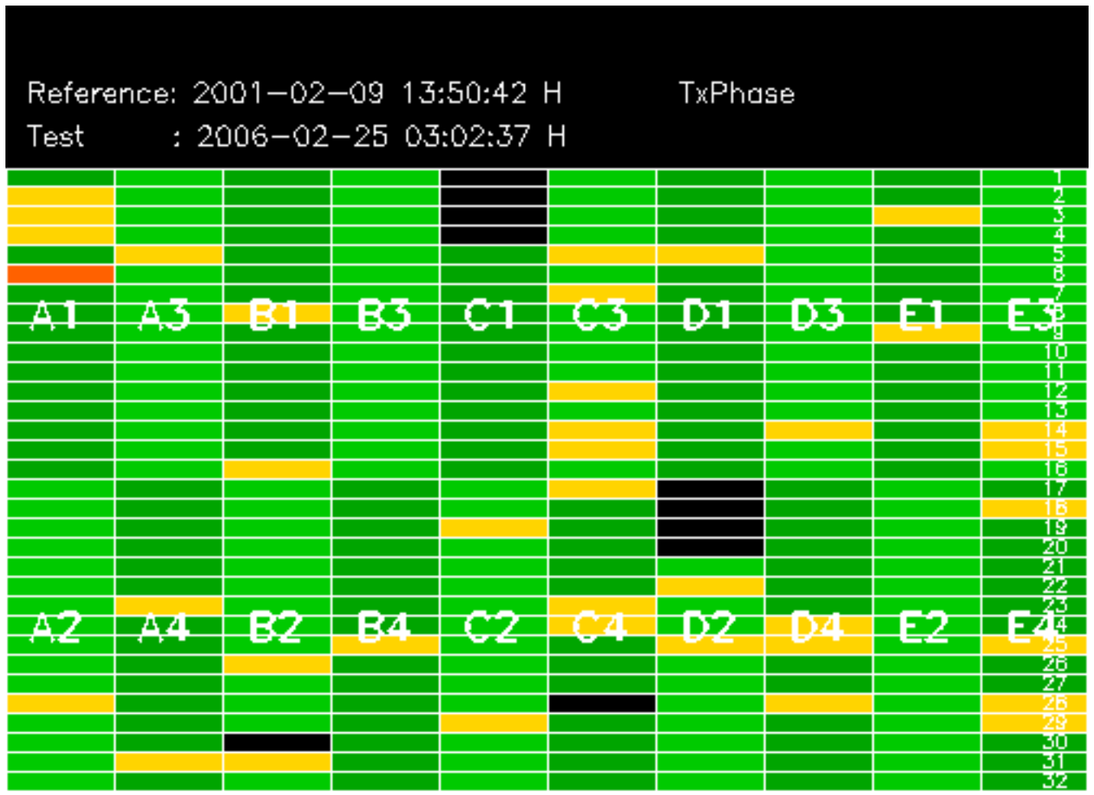
Summary of analysis for the last 3 days 2006022[567]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename   </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>

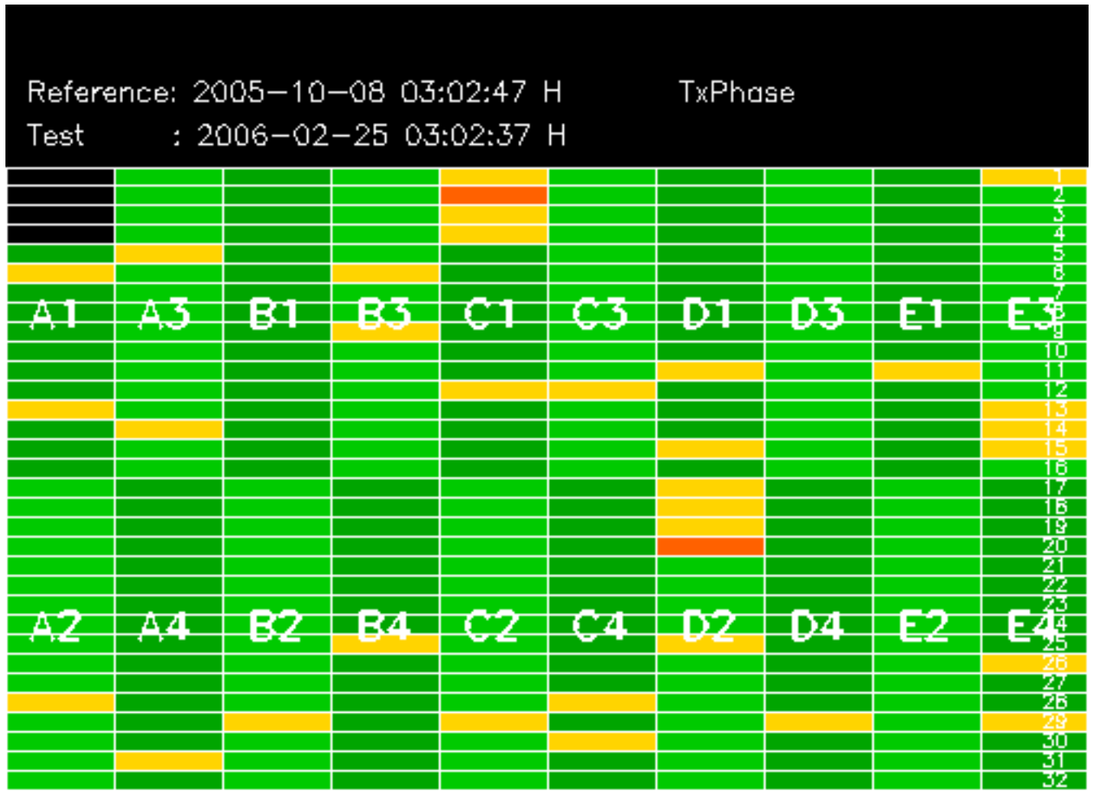

ASA_APM_1P_PDE
num_gaps
1
0.5
0
-0.5
-1
10000
20000
30000
40000
50000
Orbit

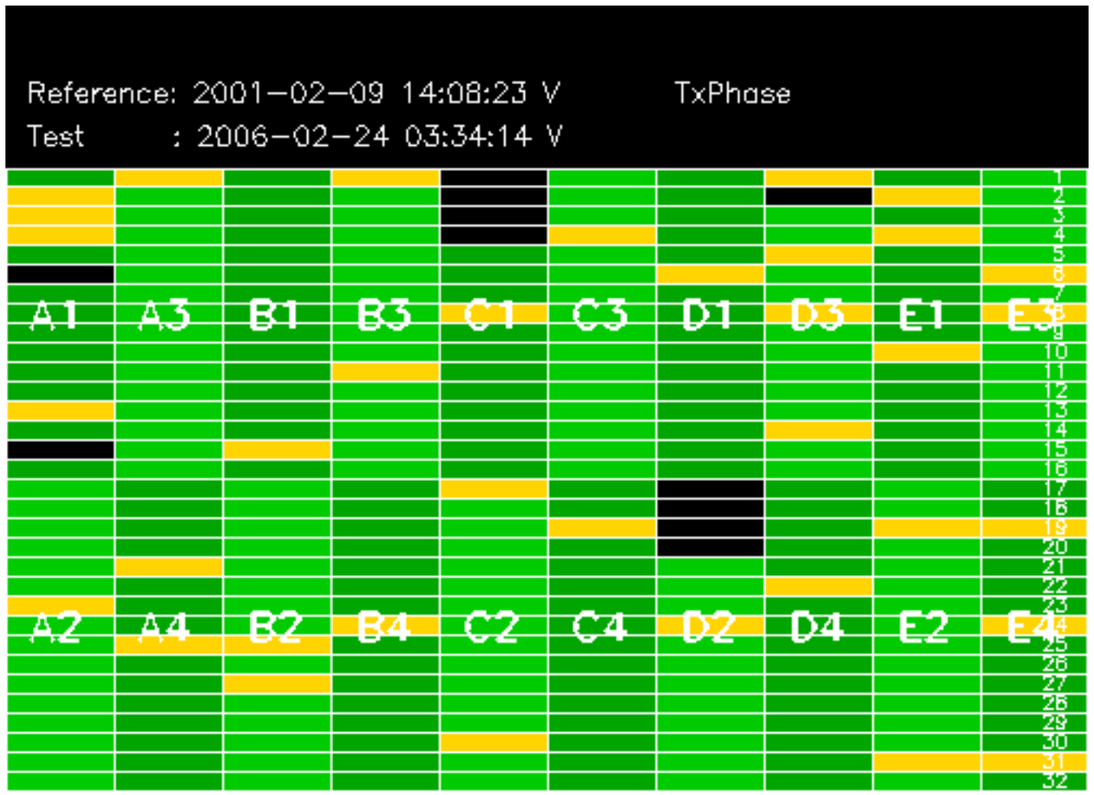

ASA_APM_1P_PDE
num_missing_lines
1
0.5
0
-0.5
-1
10000
20000
30000
40000
50000
Orbit

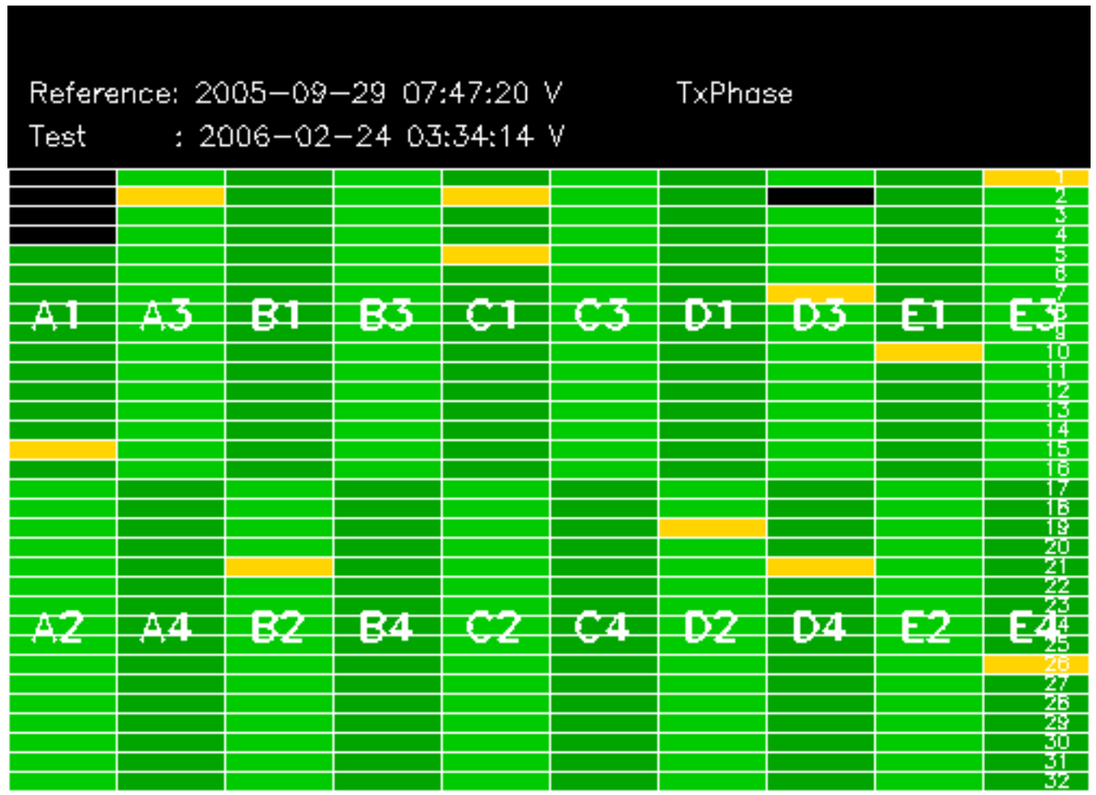

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-23 04:05:52 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-02-23 04:05:52 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

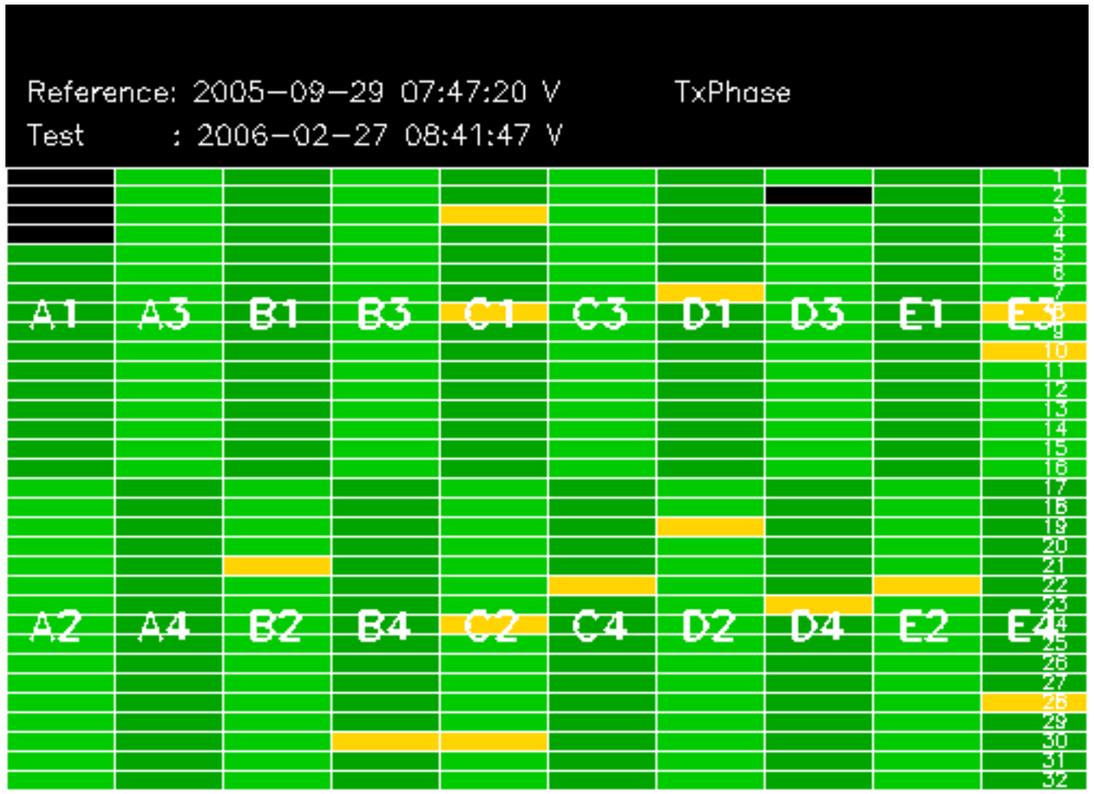

Reference: 2001-02-09 13:50:42 H
Test : 2006-02-25 03:02:37 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

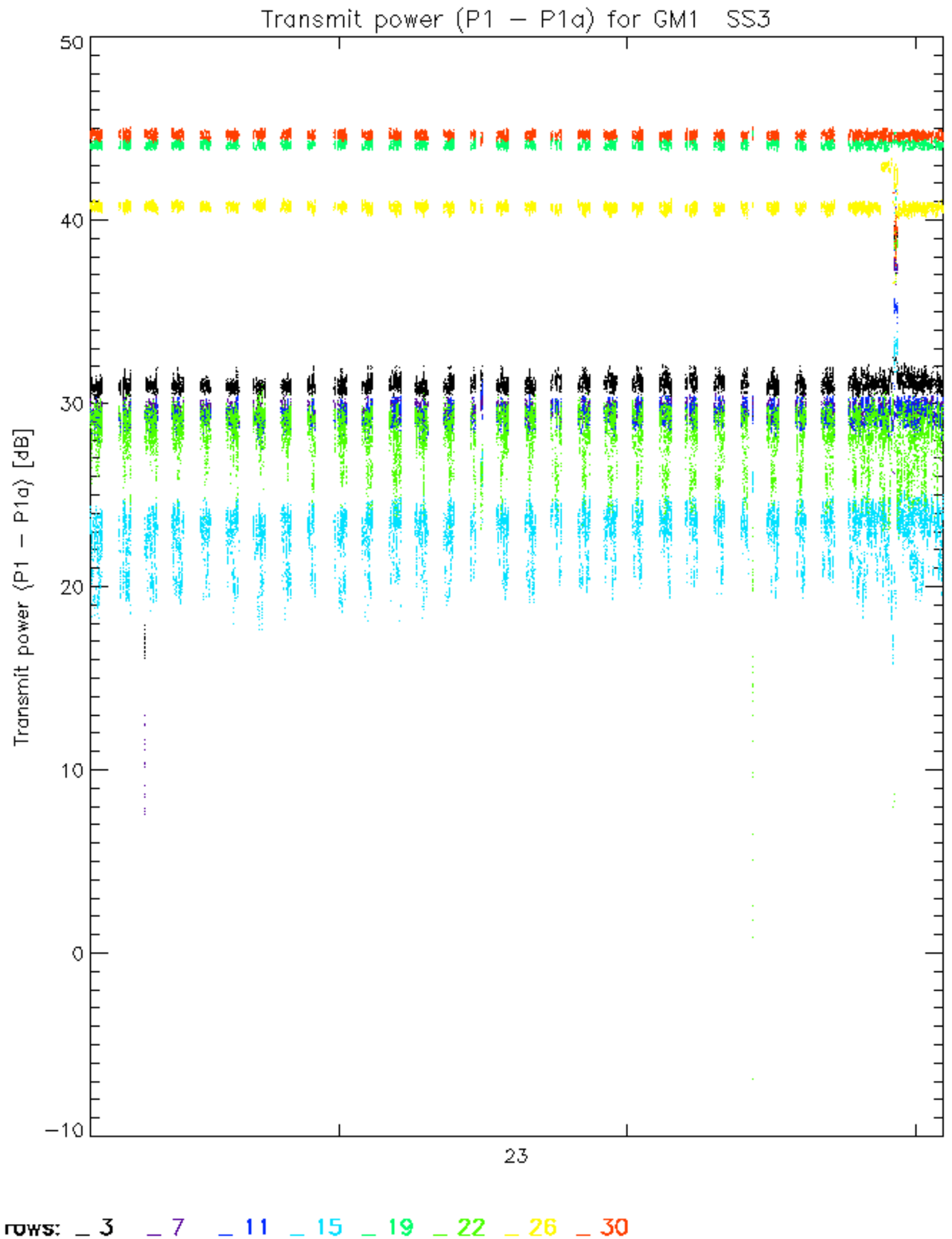

Reference: 2005-10-08 03:02:47 H
Test : 2006-02-25 03:02:37 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

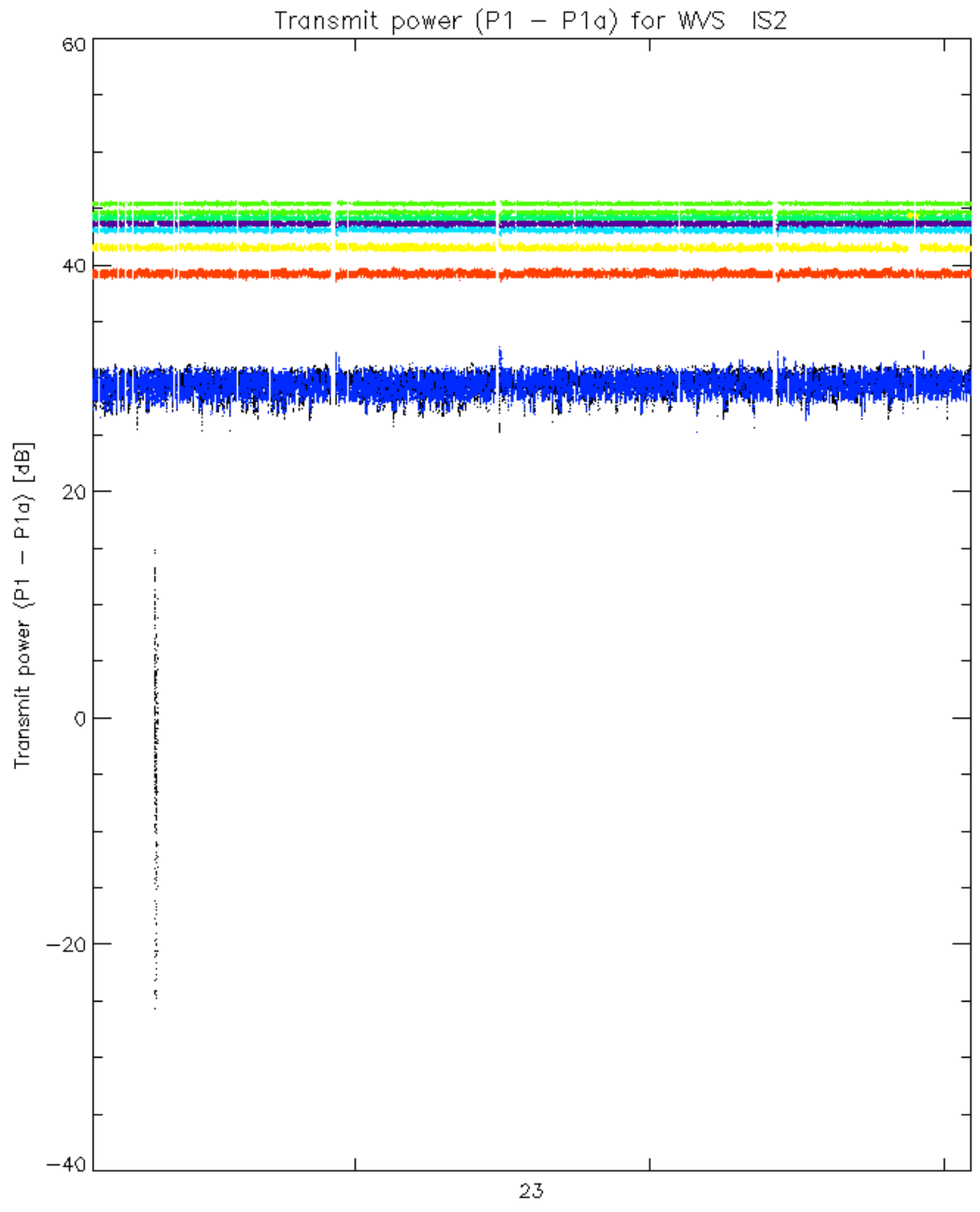

Reference: 2001-02-09 14:08:23 V
Test : 2006-02-24 03:34:14 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2005-09-29 07:47:20 V
Test : 2006-02-24 03:34:14 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: 2001-02-09 14:08:23 V
Test : 2006-02-27 08:41:47 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: 2005-09-29 07:47:20 V
Test : 2006-02-27 08:41:47 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
23
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
60
40
20
0
−20
−40
23
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.