PRELIMINARY REPORT OF 041013

ATTENTION: This report is automatically generated no comments are provided on data analysis

last update on Wed Oct 13 13:41:07 GMT 2004

1. Introduction
2. Summary
    - Instrument Unavailability
    - 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. 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 - Browse Visual Inspection

2.3 - Data Analysis

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

3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

Polarisation	Start Time
V	20041012 085036
H	20041009 084450

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒

MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

4 - Internal calibration Results

No anomalies observed.

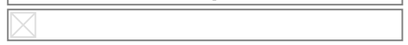
4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1



4.2 - Cyclic statistics

4.2.1 - Evolution for WVS

Evolution of cal pulses for WVS

P1a Cyclic statistics

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

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.475434	0.024121	-0.003124
7	P1	-3.343114	0.023046	-0.009945
11	P1	-4.644042	0.036267	0.064962
15	P1	-5.747938	0.080359	0.114896
19	P1	-3.532558	0.079962	0.039051
22	P1	-4.566381	0.110604	0.067020
24	P1	-5.002285	0.122619	0.152493
30	P1	-7.066509	0.146525	0.101400

3	P1	-16.179075	0.406502	0.255269
7	P1	-14.029152	0.064018	-0.048743
11	P1	-20.329390	0.239092	-0.259377
15	P1	-11.747512	0.041449	0.077293
19	P1	-14.068053	1.109339	0.321565
22	P1	-16.035172	0.397524	-0.317866
24	P1	-14.480778	0.289486	-0.197454
30	P1	-18.016878	0.569626	-0.211020

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.321115	0.088861	-0.058727
7	P2	-22.596199	0.120521	-0.026491
11	P2	-15.154269	0.124155	0.086567
15	P2	-7.072708	0.103233	-0.054179
19	P2	-9.583927	0.133271	-0.064060
22	P2	-17.292488	0.107886	0.045676
24	P2	-20.775848	0.090992	-0.048451
30	P2	-19.123299	0.083670	0.091191

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.164702	0.004737	-0.035613
7	P3	-8.164702	0.004737	-0.035619
11	P3	-8.164702	0.004737	-0.035620
15	P3	-8.164702	0.004737	-0.035616
19	P3	-8.164701	0.004737	-0.035624
22	P3	-8.164699	0.004736	-0.035631
24	P3	-8.164698	0.004736	-0.035636
30	P3	-8.164764	0.004748	-0.036604

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	-2.843525	0.049494	0.005587
7	P1	-3.017576	0.103257	0.102387
11	P1	-3.895927	0.065877	0.017913
15	P1	-3.520647	0.081964	0.089023
19	P1	-3.538231	0.098357	0.062909
22	P1	-5.713559	0.134239	0.176677
24	P1	-3.979208	0.058870	0.042719
30	P1	-6.215220	0.094107	0.027030
3	P1	-10.893292	0.176124	0.052931
7	P1	-10.101644	0.175466	0.080419
11	P1	-12.202606	0.127150	-0.156545
15	P1	-11.692778	0.082705	0.028906
19	P1	-15.720772	2.106806	0.601480
22	P1	-23.434013	1.657478	-0.626818
24	P1	-18.058002	0.366655	-0.299795
30	P1	-20.388235	1.232445	-0.022798

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.992416	0.048273	-0.090451
7	P2	-22.710772	0.066677	0.028398
11	P2	-10.875935	0.054886	0.013088
15	P2	-4.975893	0.028968	-0.083858
19	P2	-6.788697	0.042579	-0.105248
22	P2	-7.399074	0.042061	-0.008474
24	P2	-11.081284	0.054565	-0.101596
30	P2	-22.116346	0.039830	0.014129

P3 Cyclic statistics

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

3	P3	-8.012207	0.003556	-0.029948
7	P3	-8.012156	0.003549	-0.029672
11	P3	-8.012274	0.003543	-0.029862
15	P3	-8.012254	0.003543	-0.029706
19	P3	-8.012189	0.003547	-0.029748
22	P3	-8.012239	0.003553	-0.029693
24	P3	-8.012313	0.003570	-0.029865
30	P3	-8.012173	0.003558	-0.029846

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	0.000484204
	stdev	2.12621e-07
MEAN Q	mean	0.000550333
	stdev	2.32007e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128195
	stdev	0.000944062

STDEV Q	mean	0.128421
	stdev	0.000953821

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

Preliminary report.The data is not yet controled

6.1 - Unbiased Doppler Error for WVS

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

6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
Acsending
Descending

6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX

6.4 - Unbiased Doppler Error for GM1

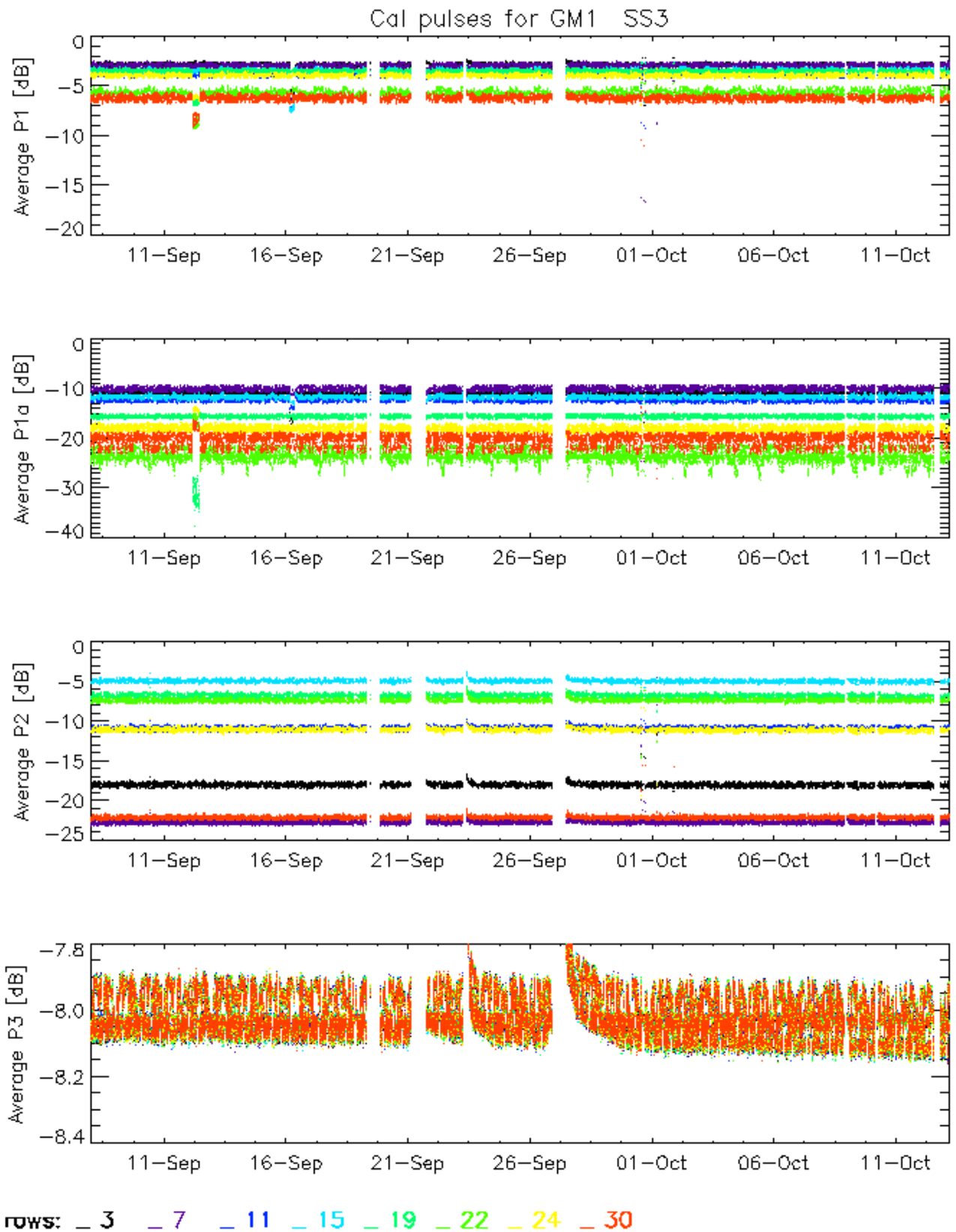
Evolution of unbiased Doppler error (Real - Expected)
Acsending
Descending

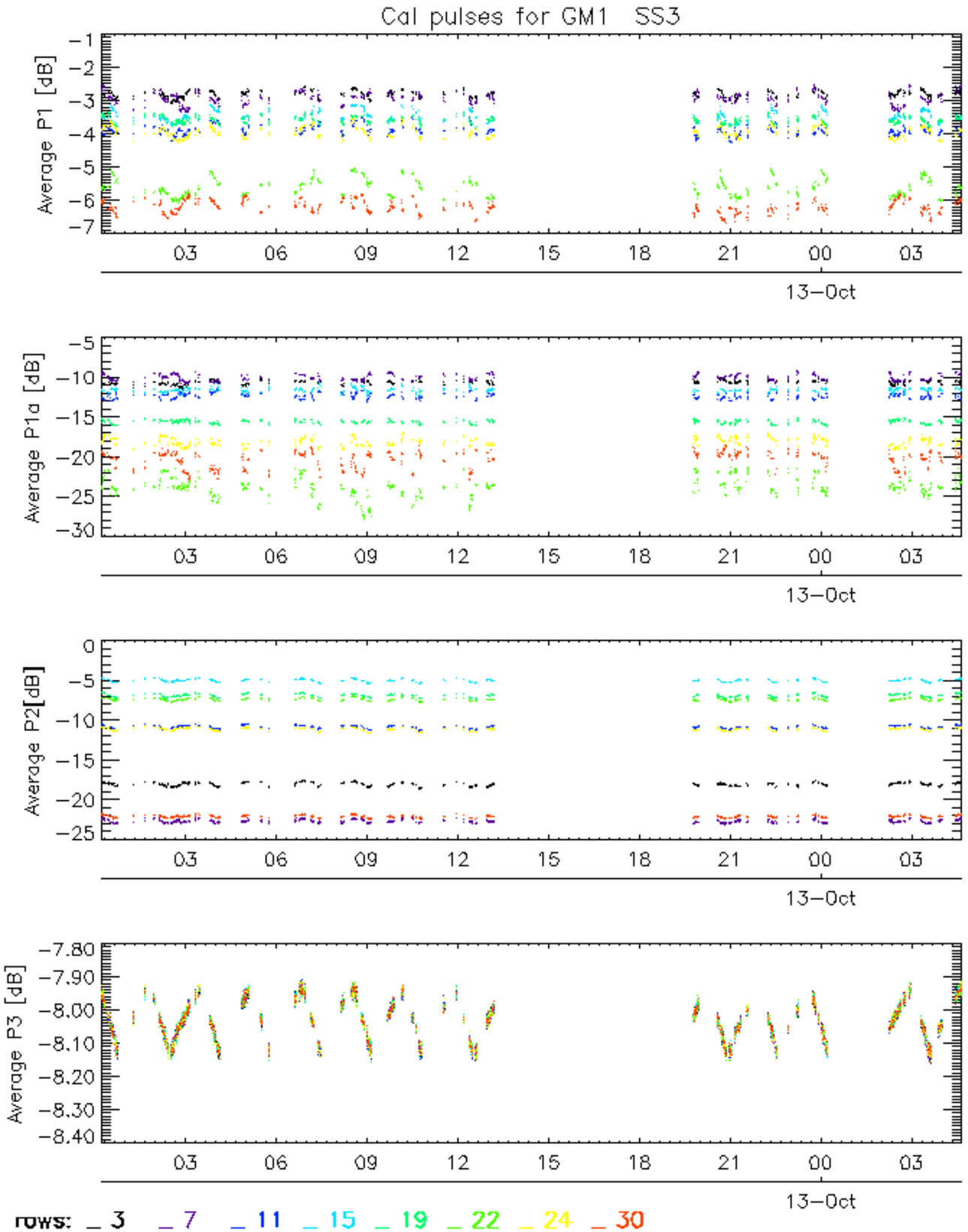
6.5 - Absolute Doppler for GM1

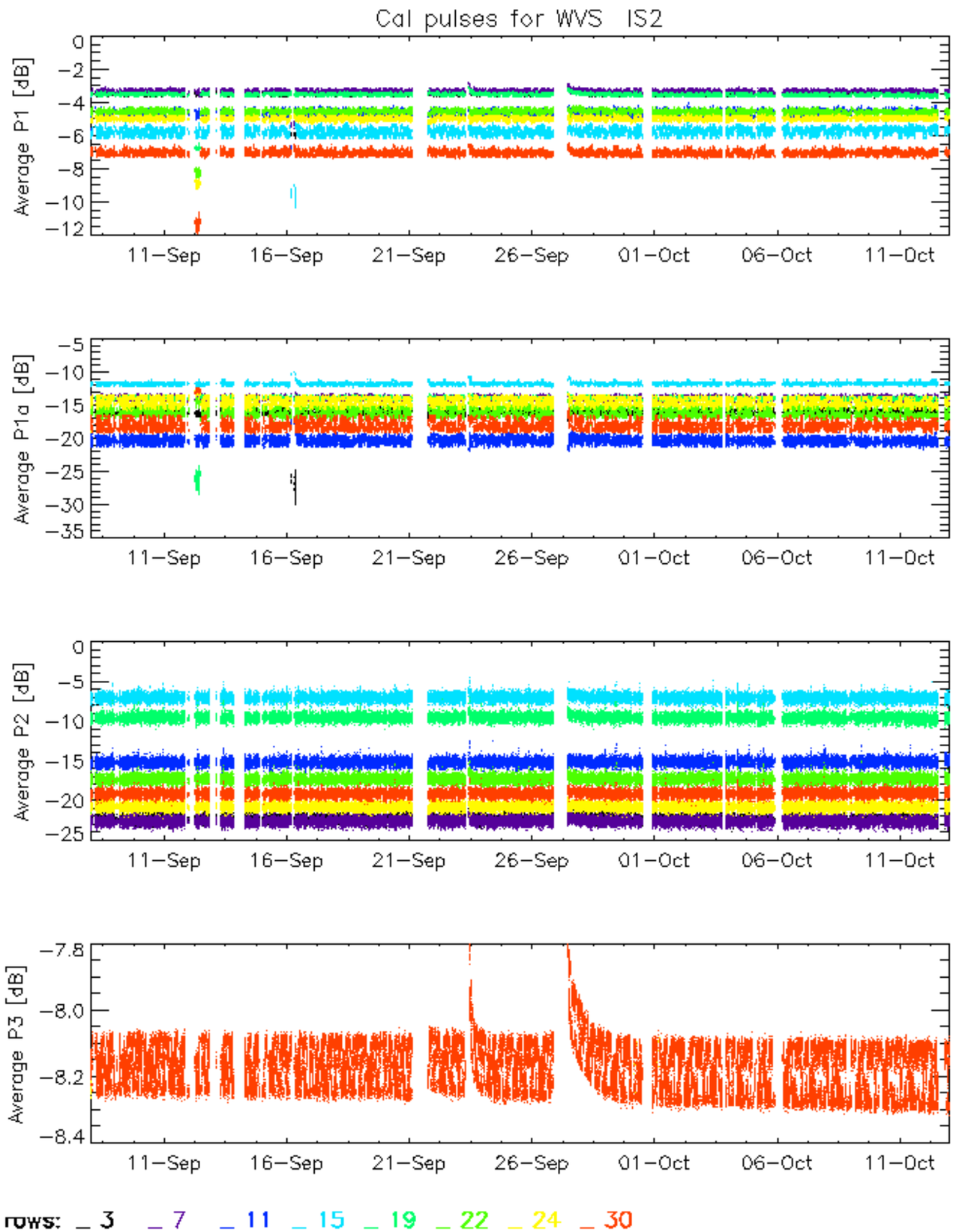
Evolution of Absolute Doppler
Acsending
Descending

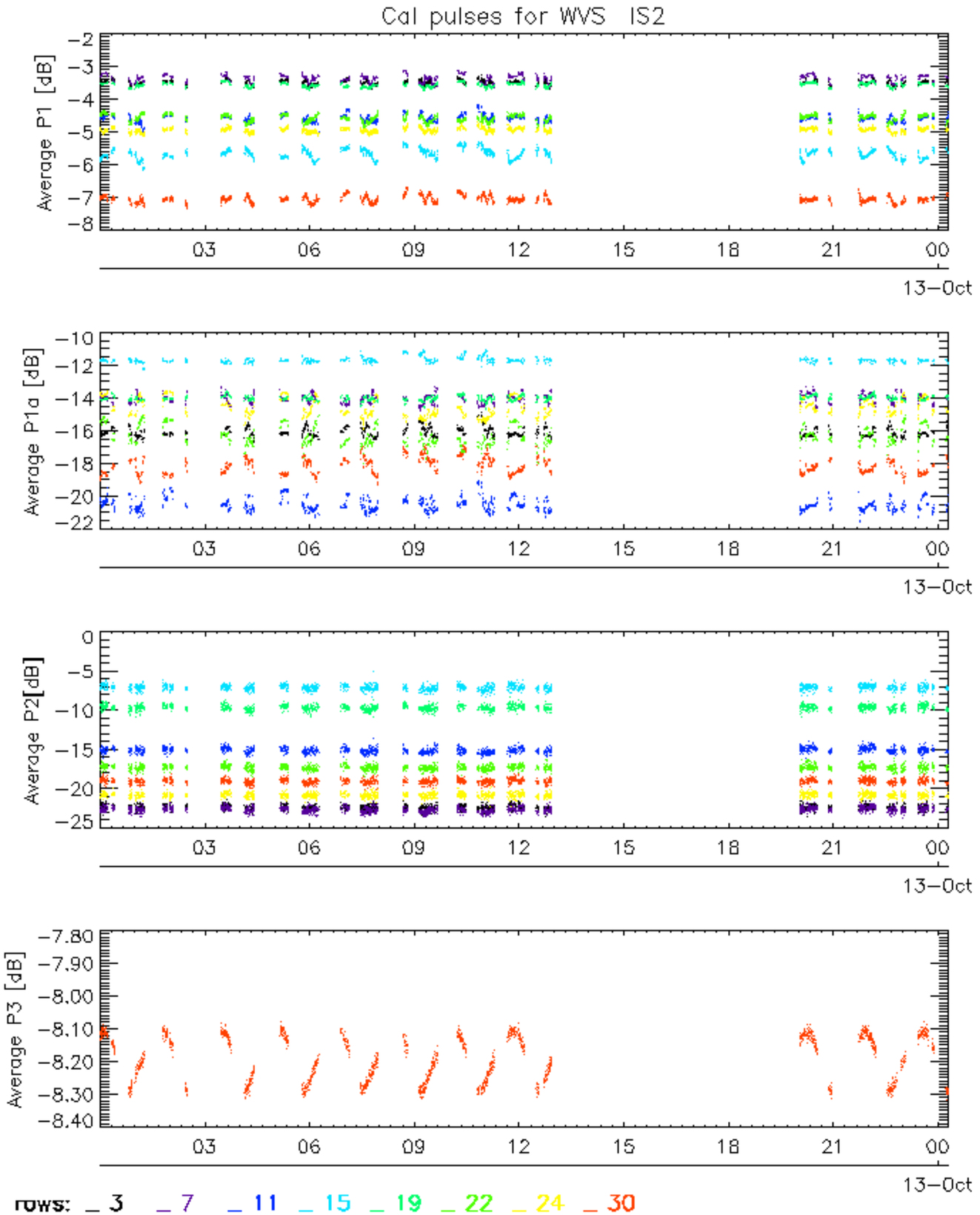
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

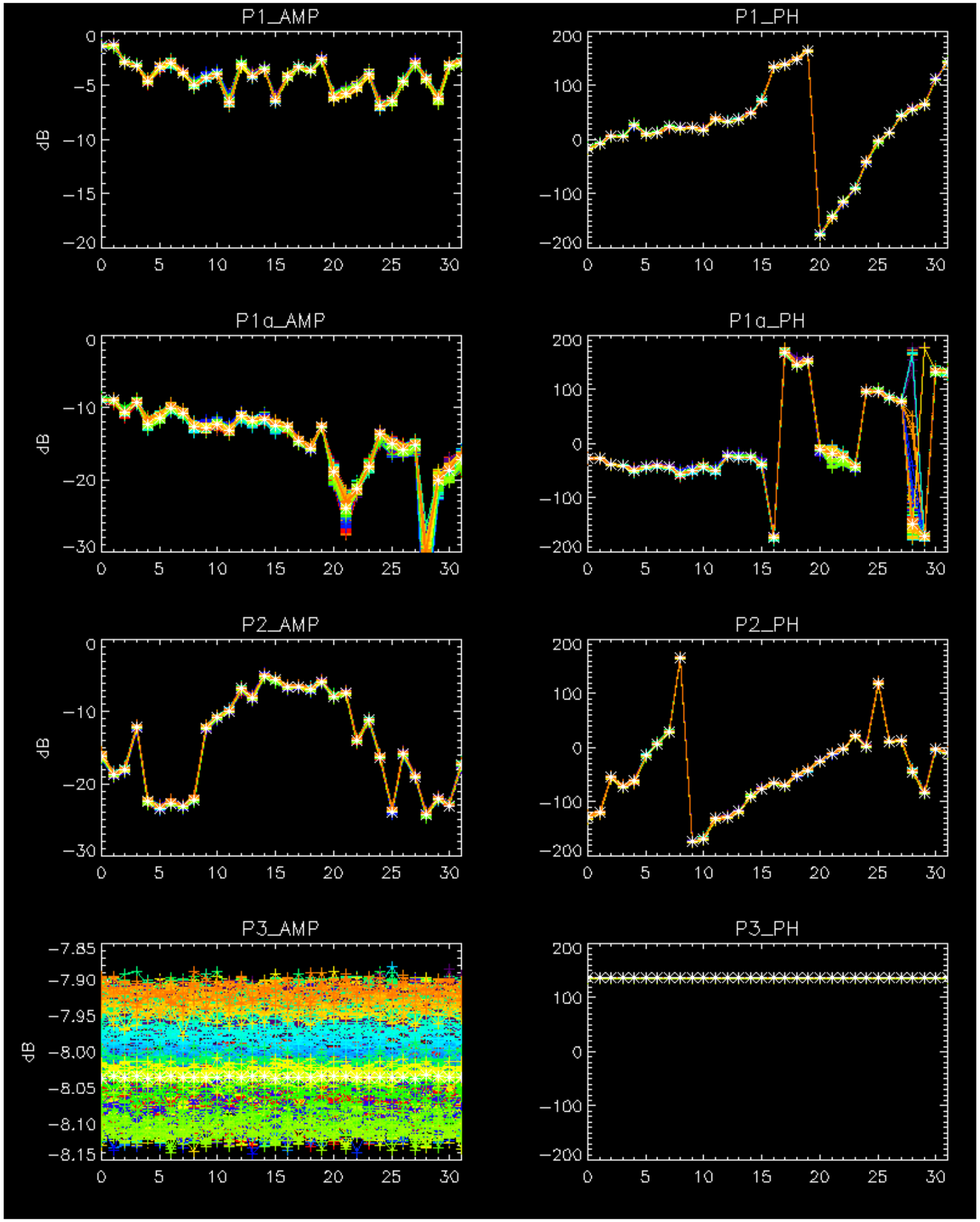

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
Average P1a [dB]
0
−10
−20
−30
−40
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

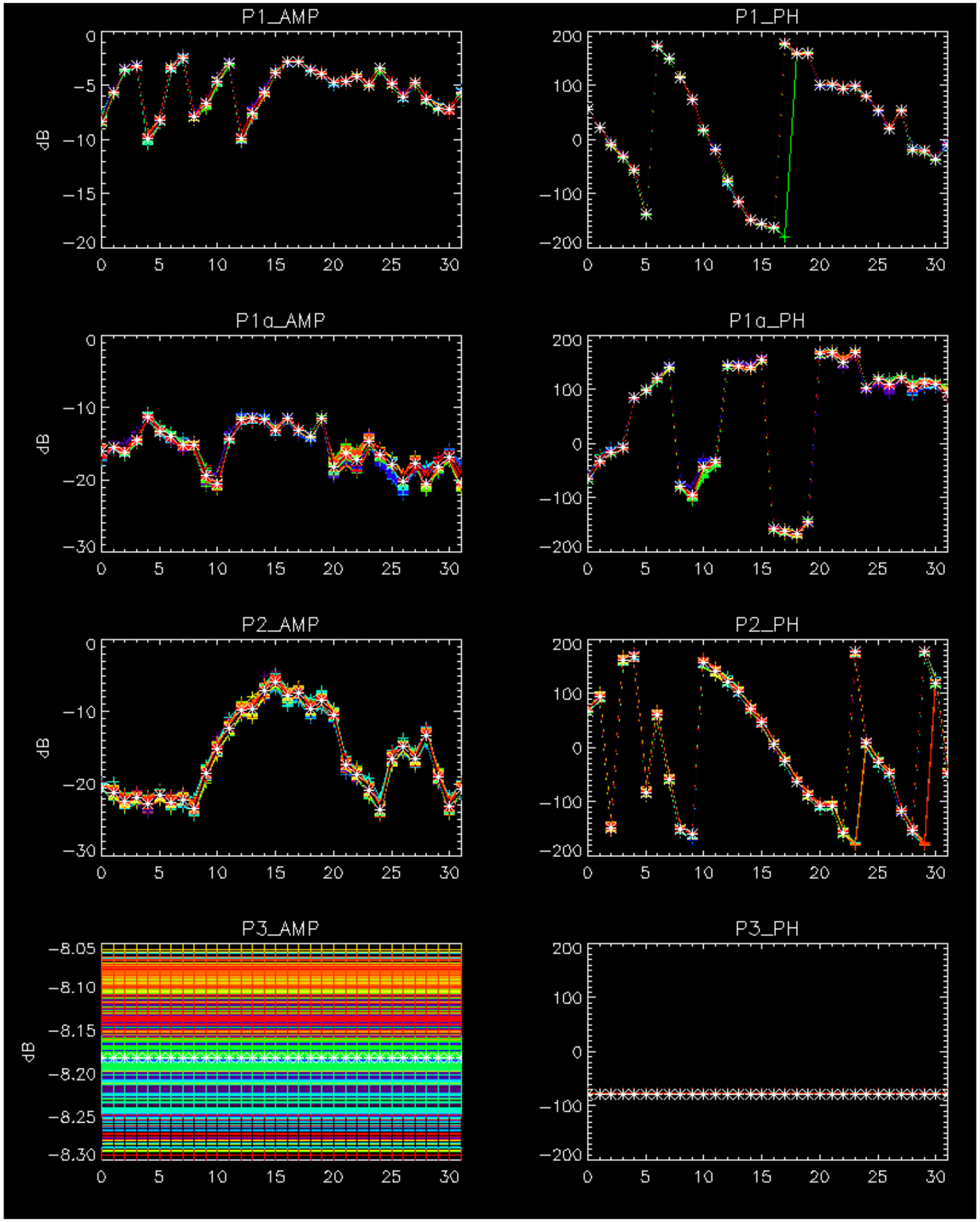

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
13−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
13−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
13−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
03
13−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
03
06
09
12
15
18
21
00
13−Oct
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
03
06
09
12
15
18
21
00
13−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
13−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
13−Oct
rows: 3 7 11 15 19 22 24 30

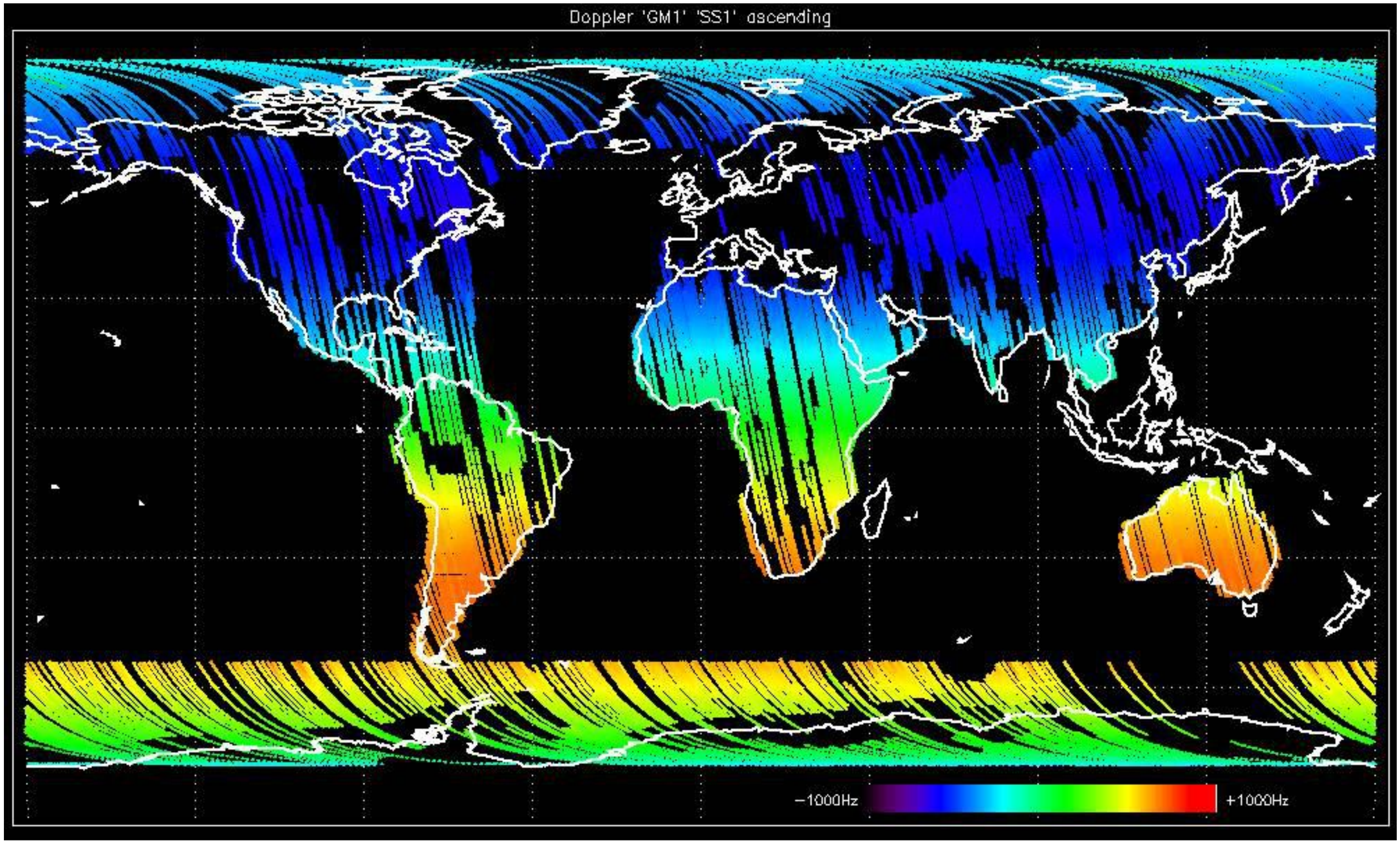
No anomalies observed.

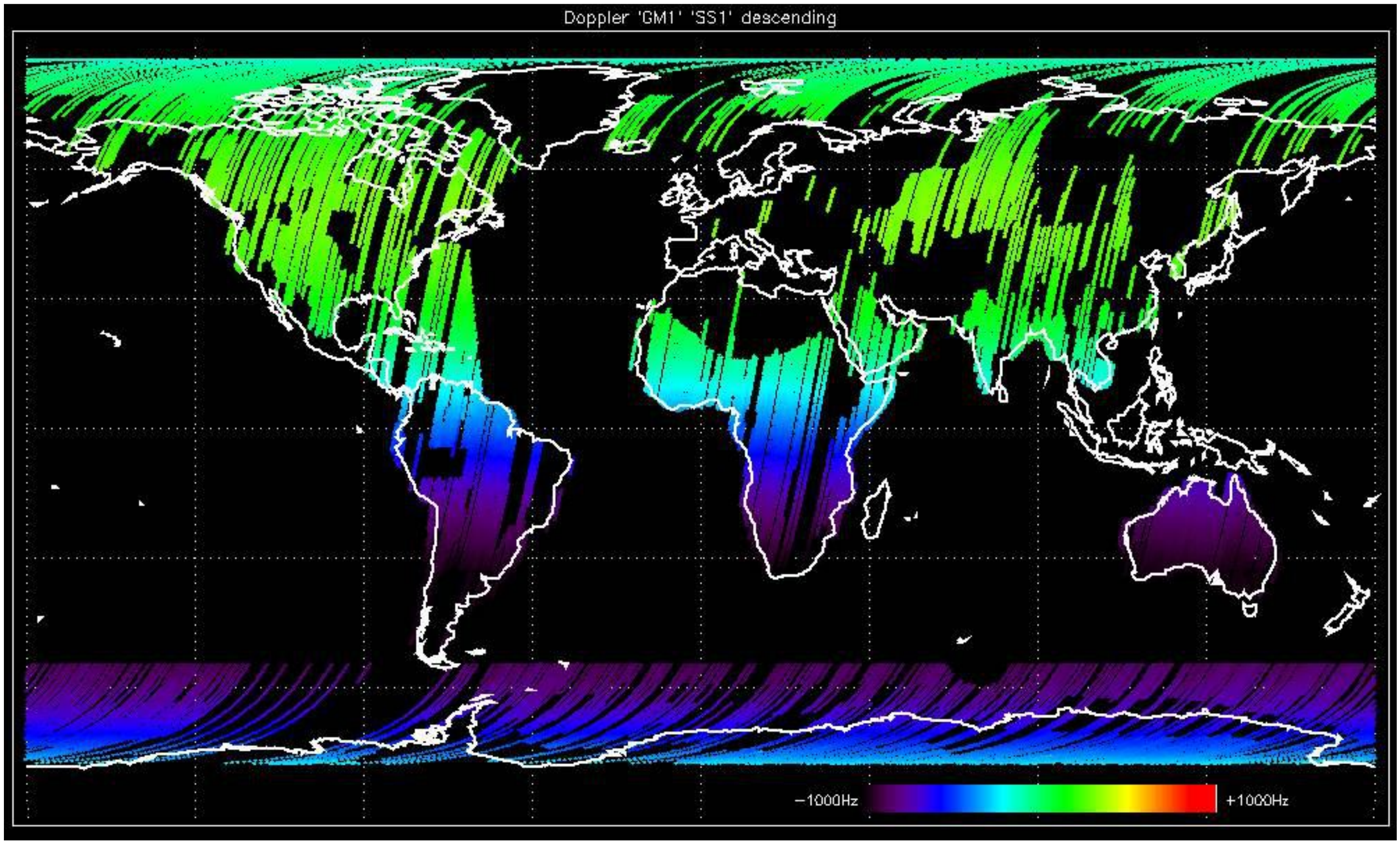

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
−8.15
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

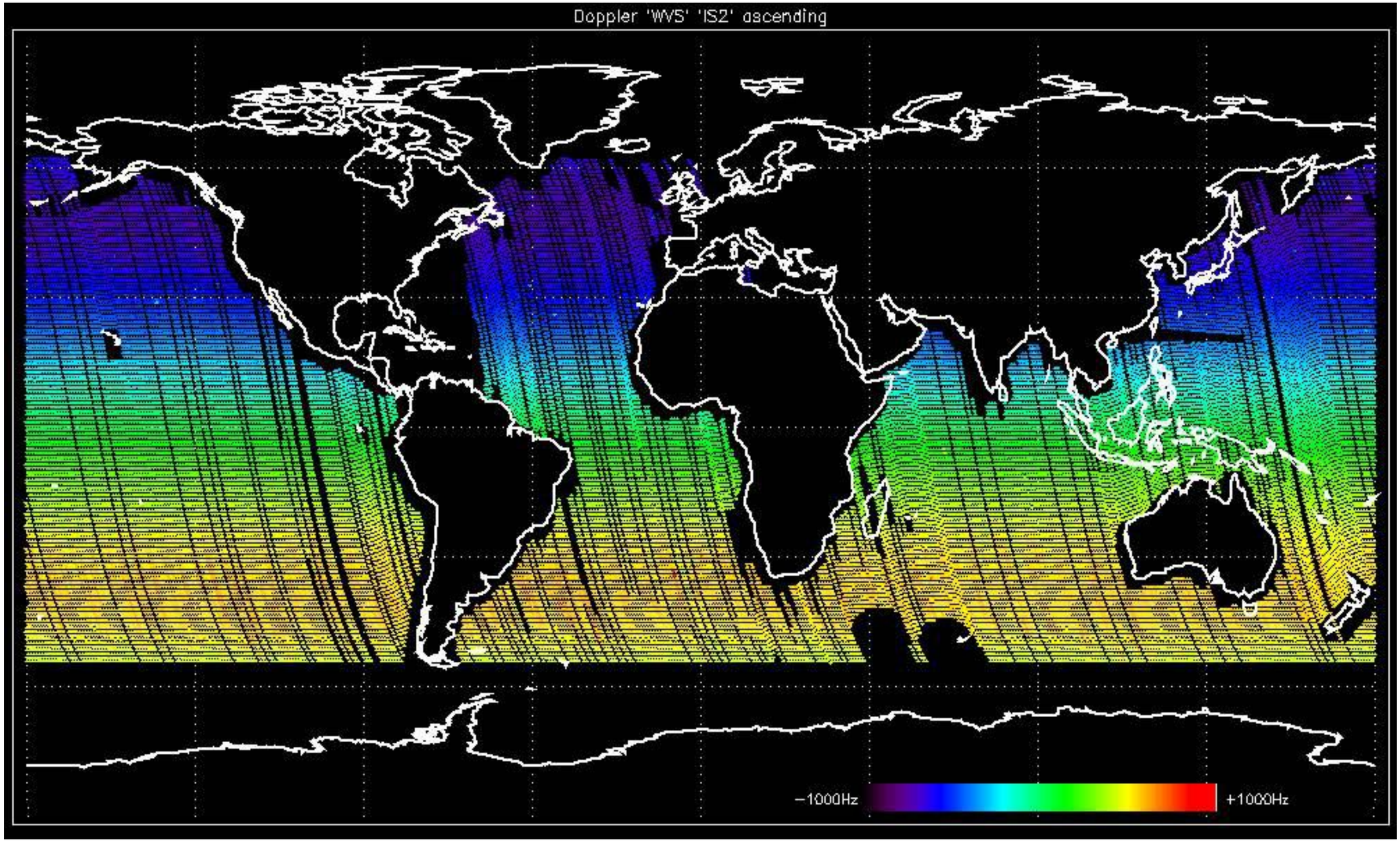

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20
−8.25
−8.30
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

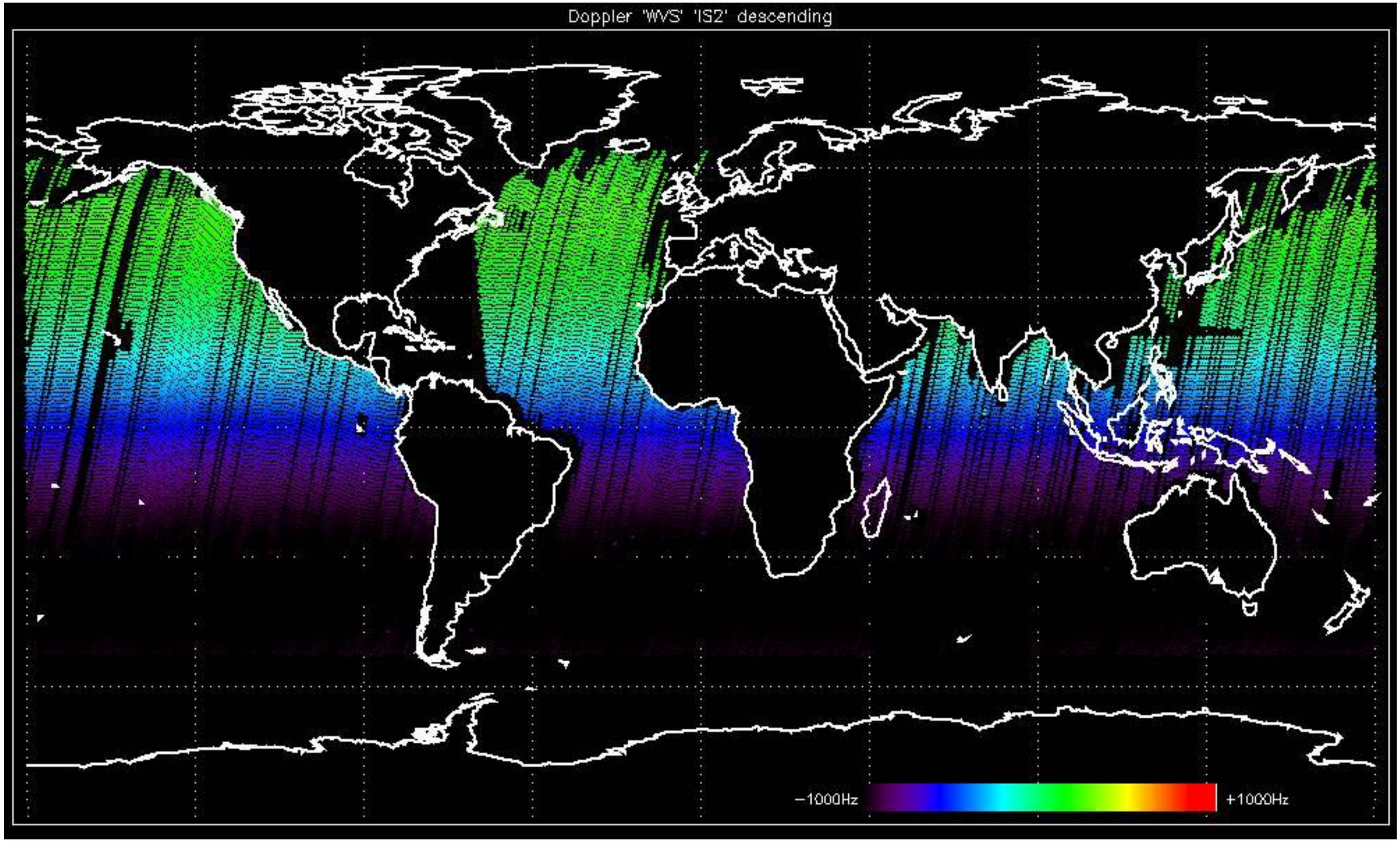
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

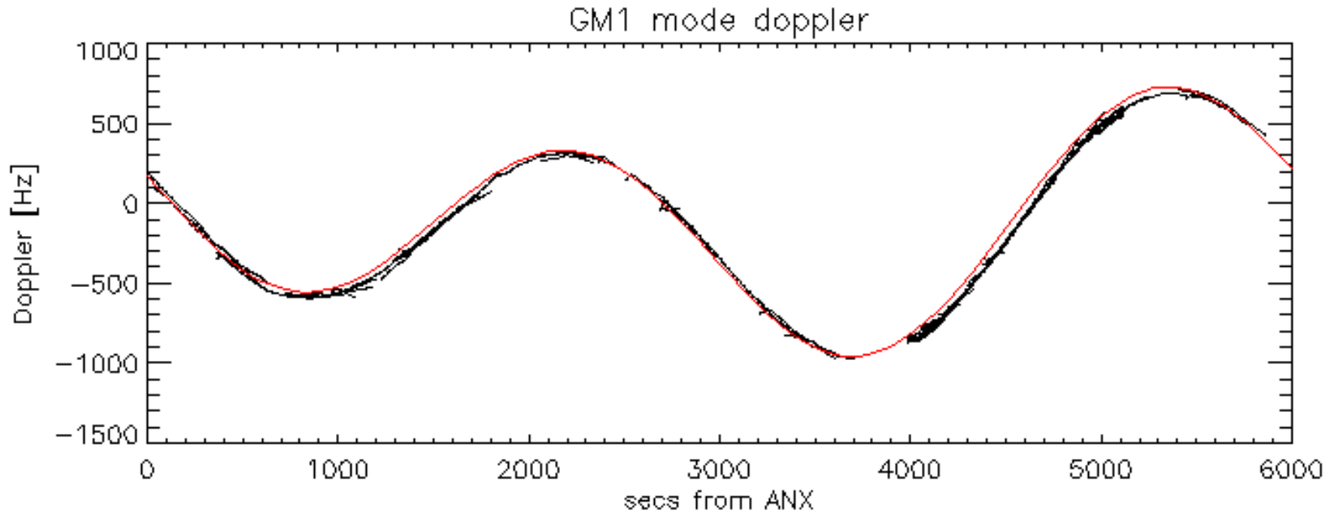
Preliminary report.The data is not yet controled

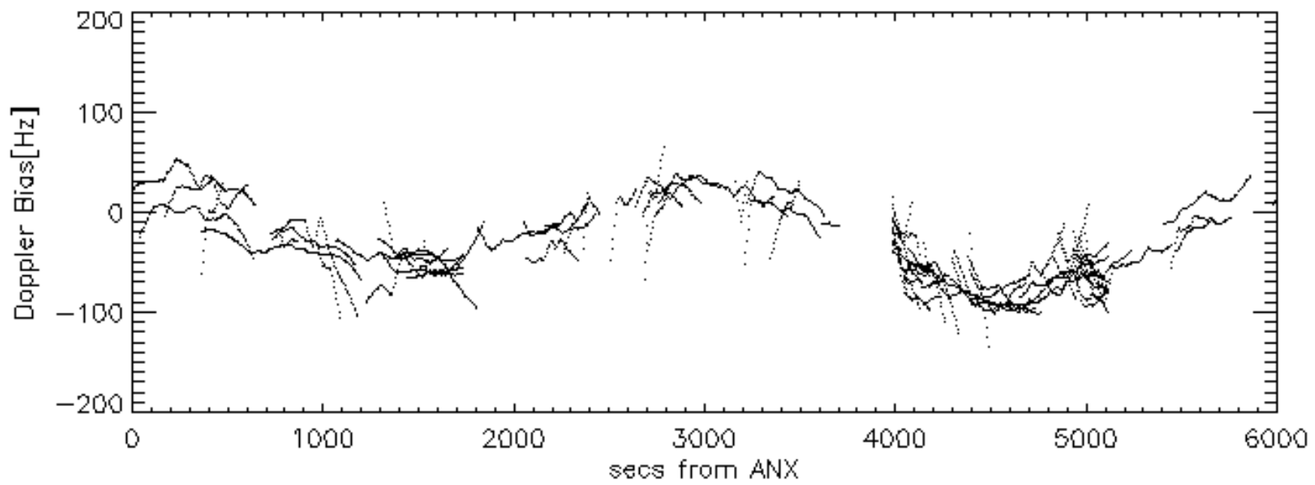

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

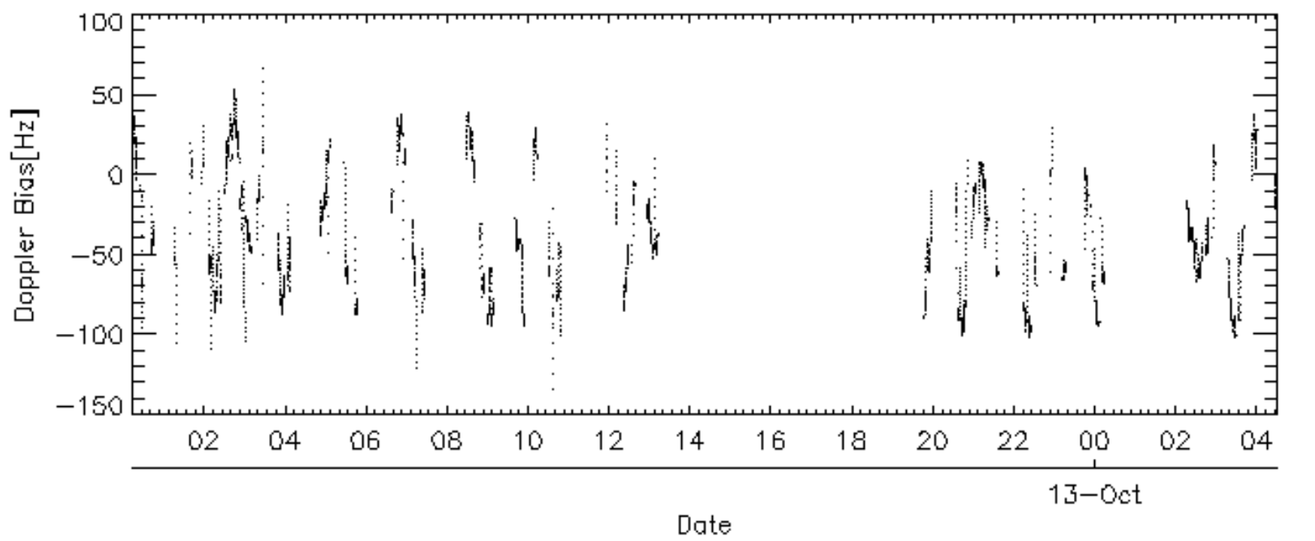

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

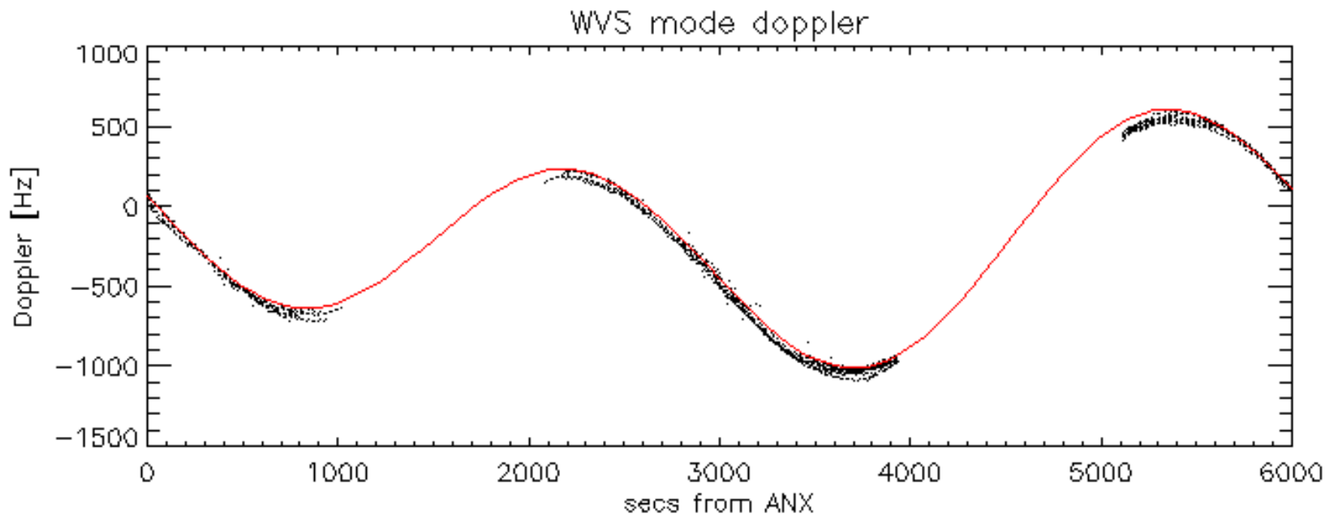

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

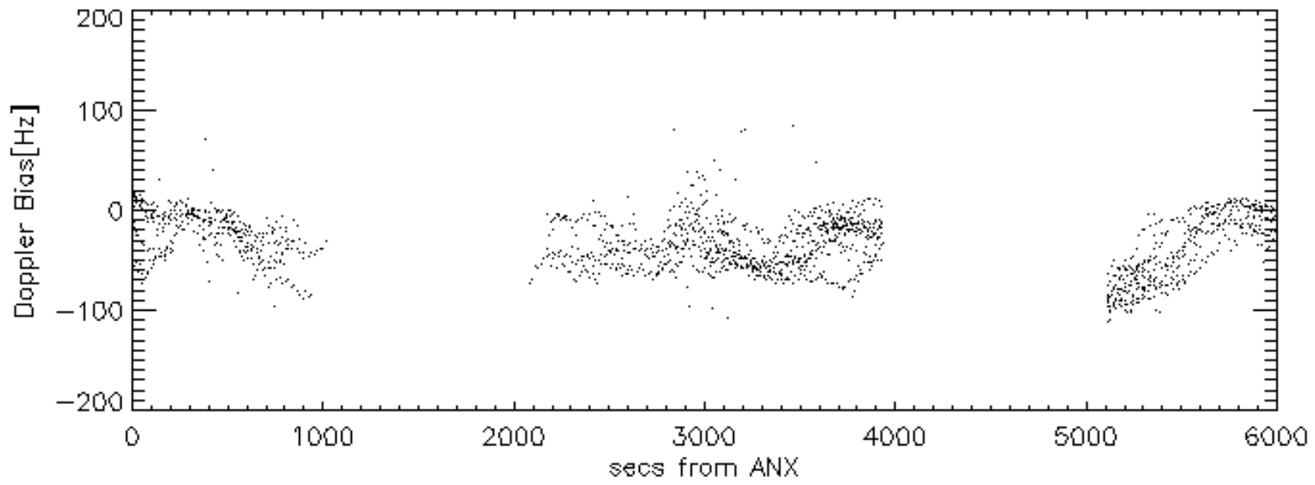

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

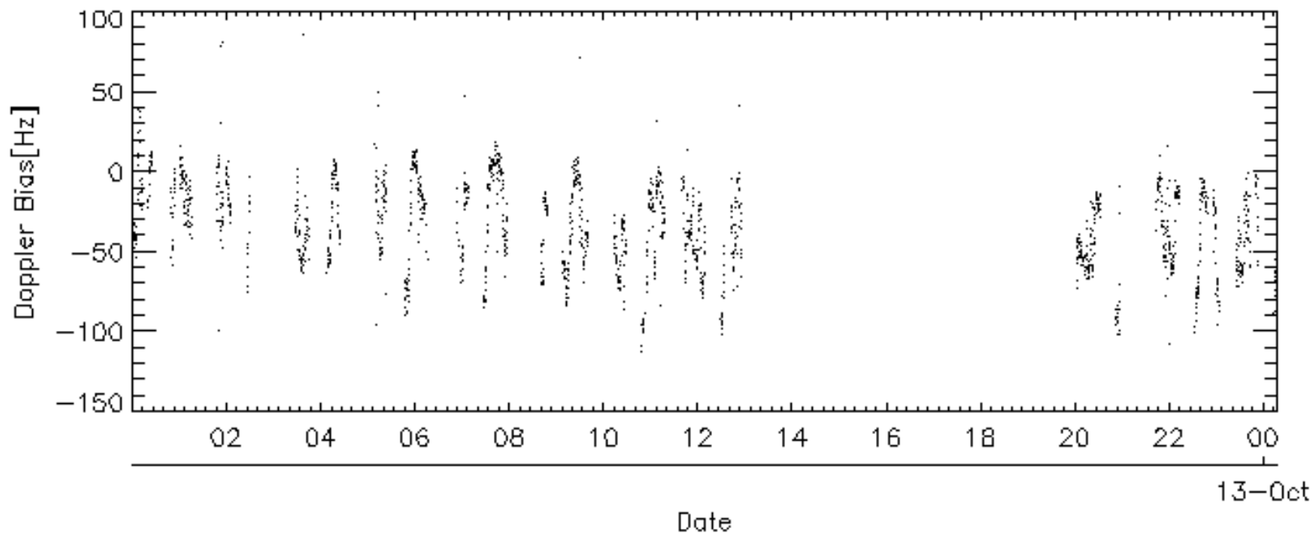

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

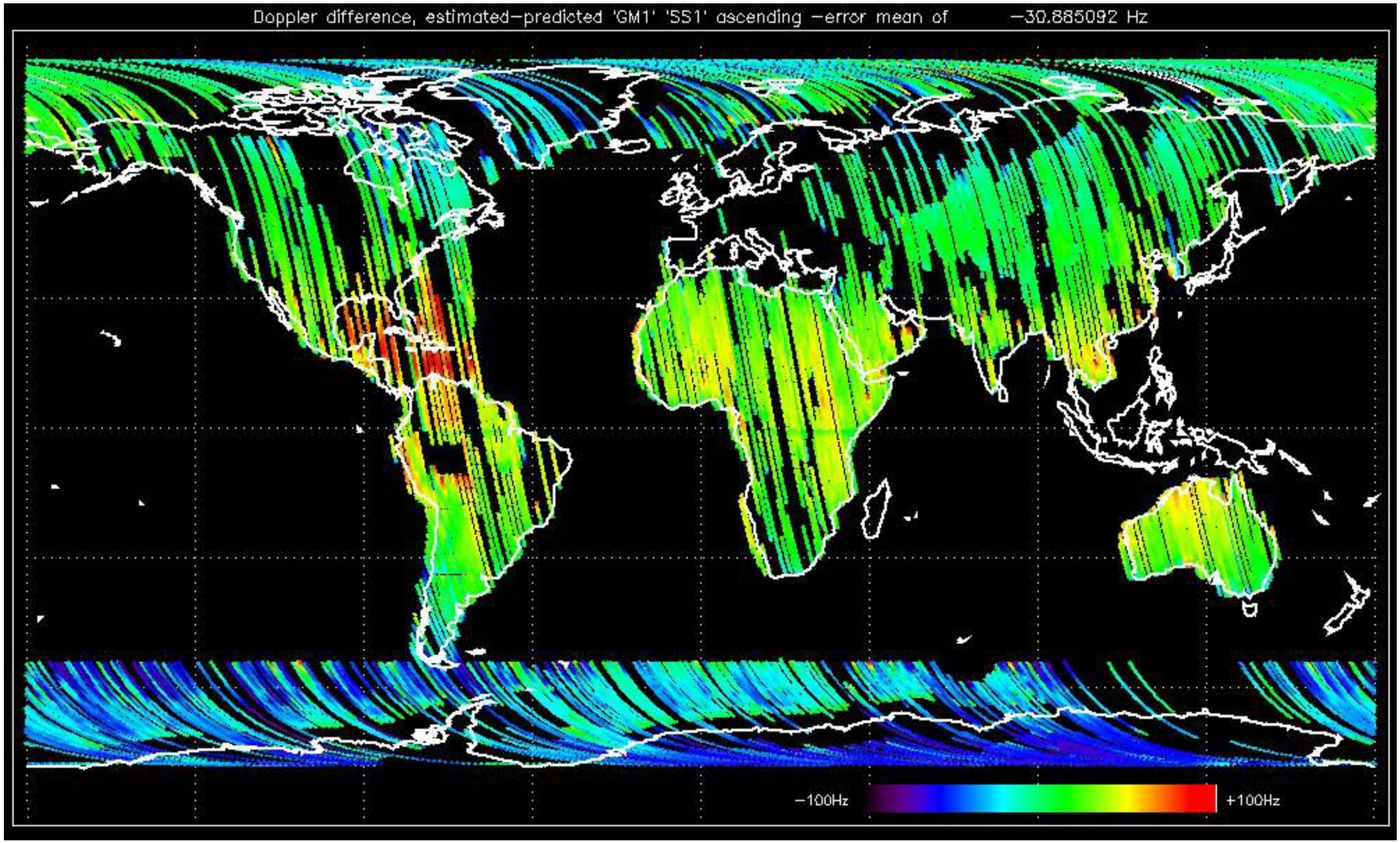

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

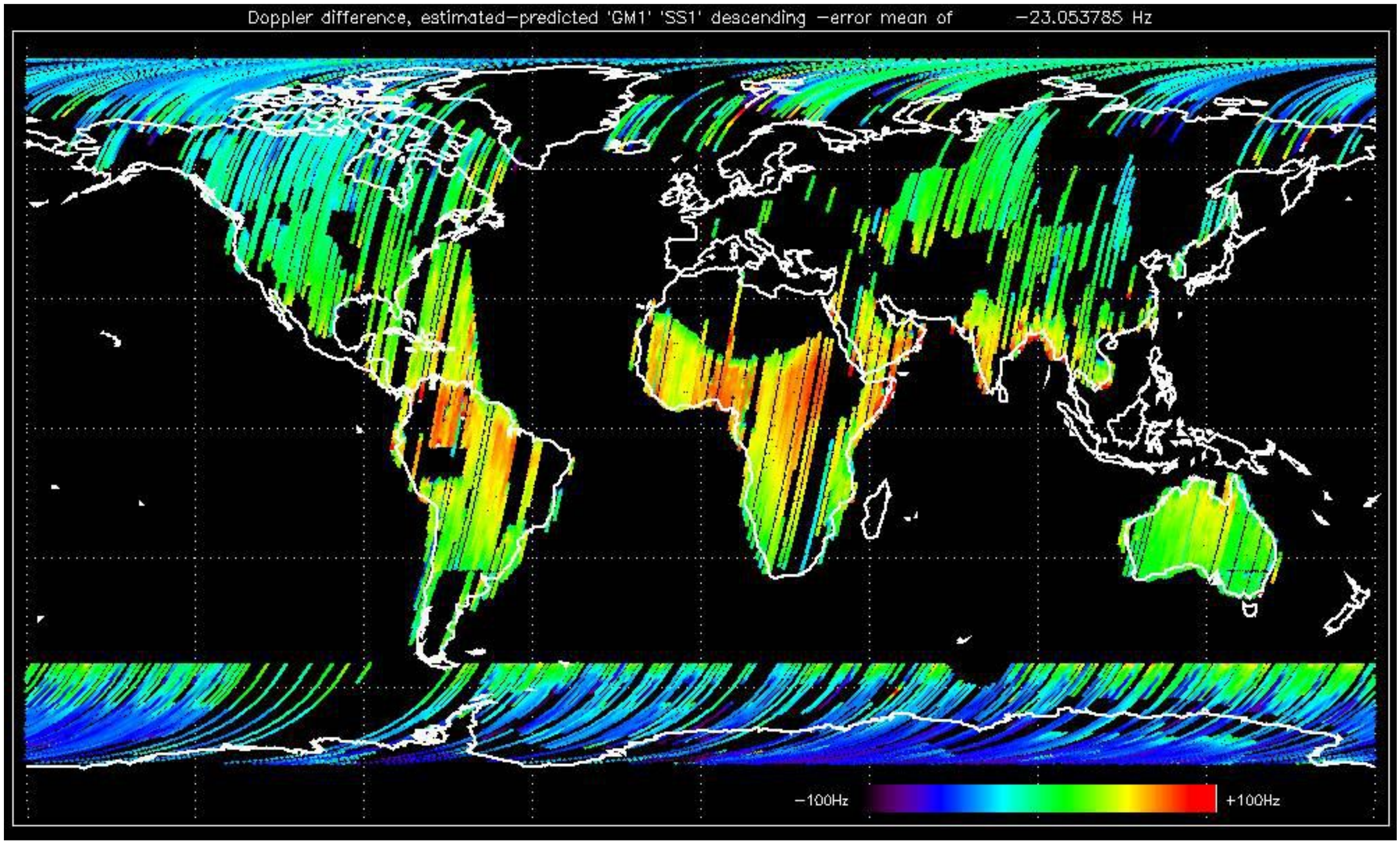

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
04
13−Oct
Date

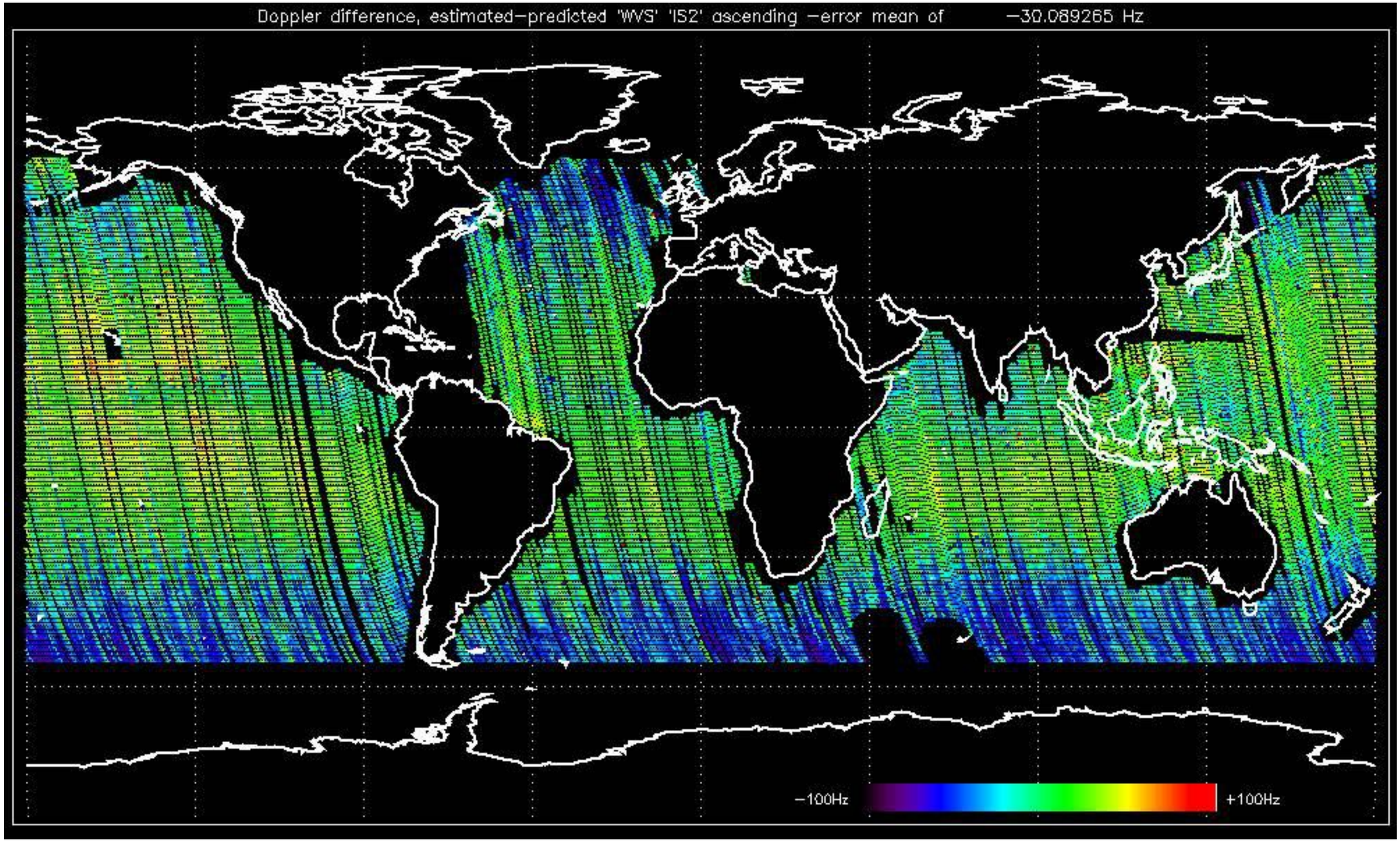

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

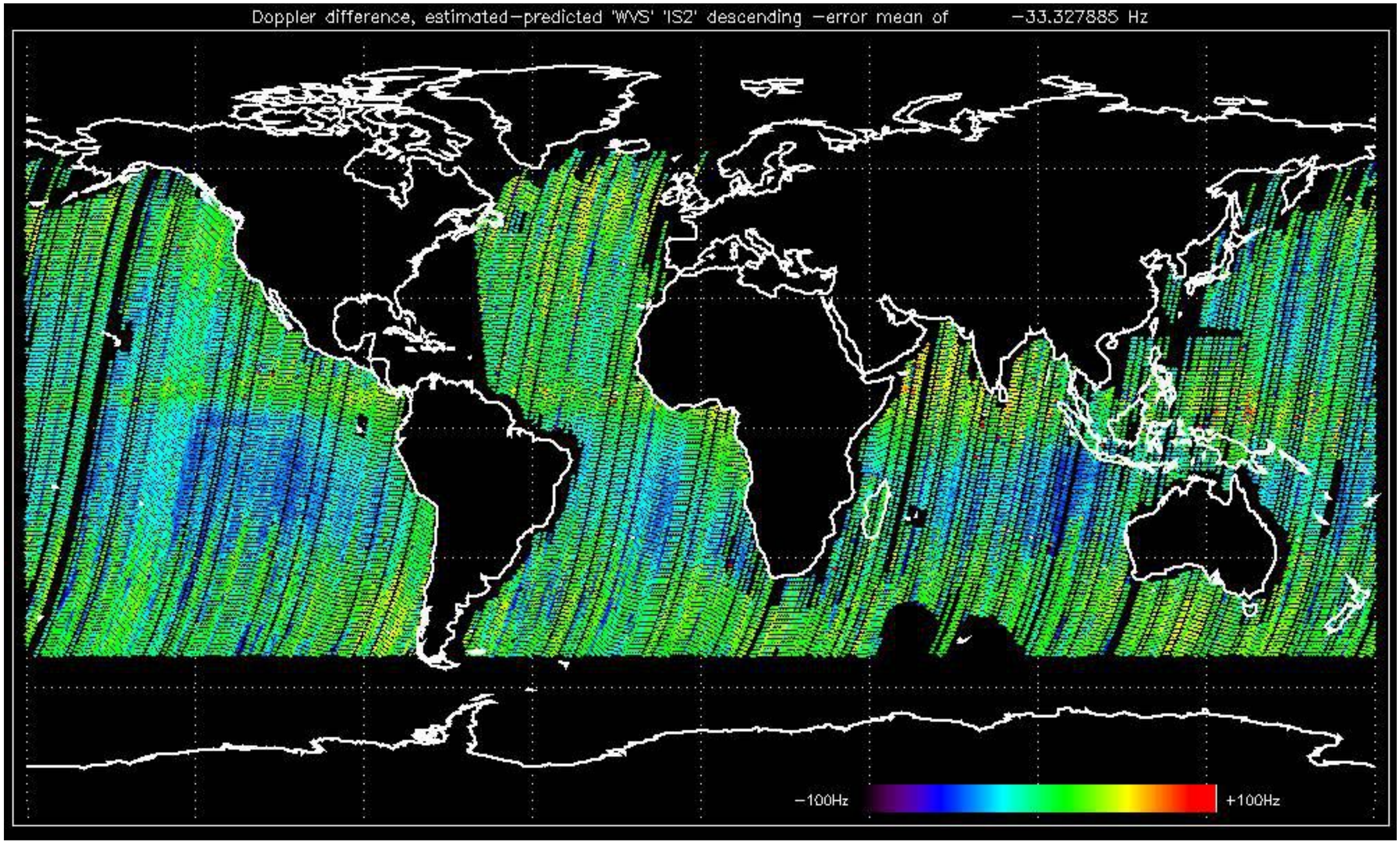

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −30.885092 Hz
−100Hz
+100Hz

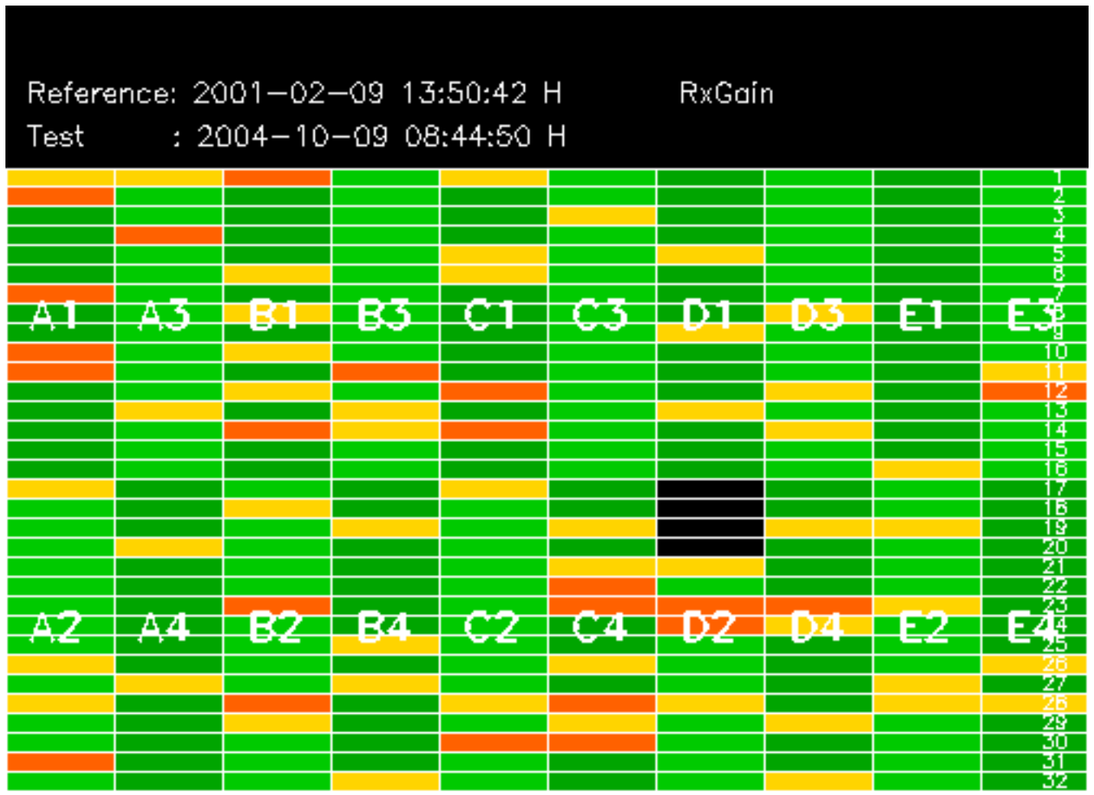

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.053785 Hz
−100Hz
+100Hz

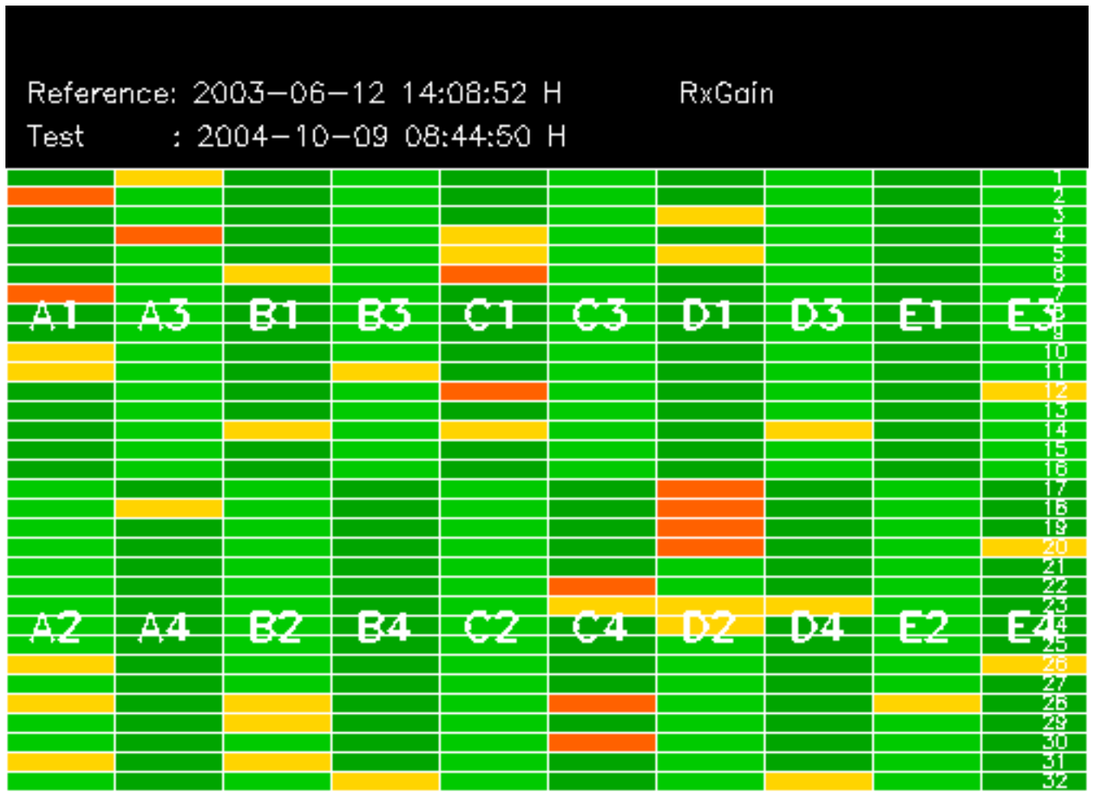

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −30.089265 Hz
−100Hz
+100Hz

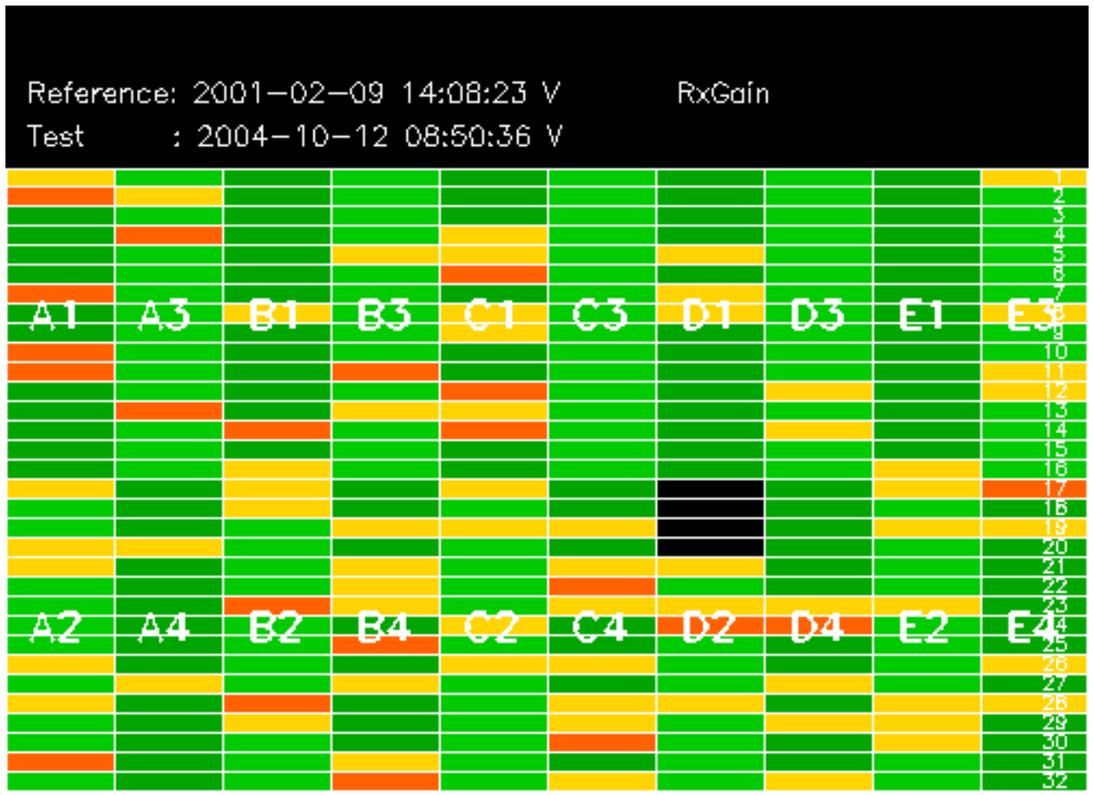

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −33.327885 Hz
−100Hz
+100Hz

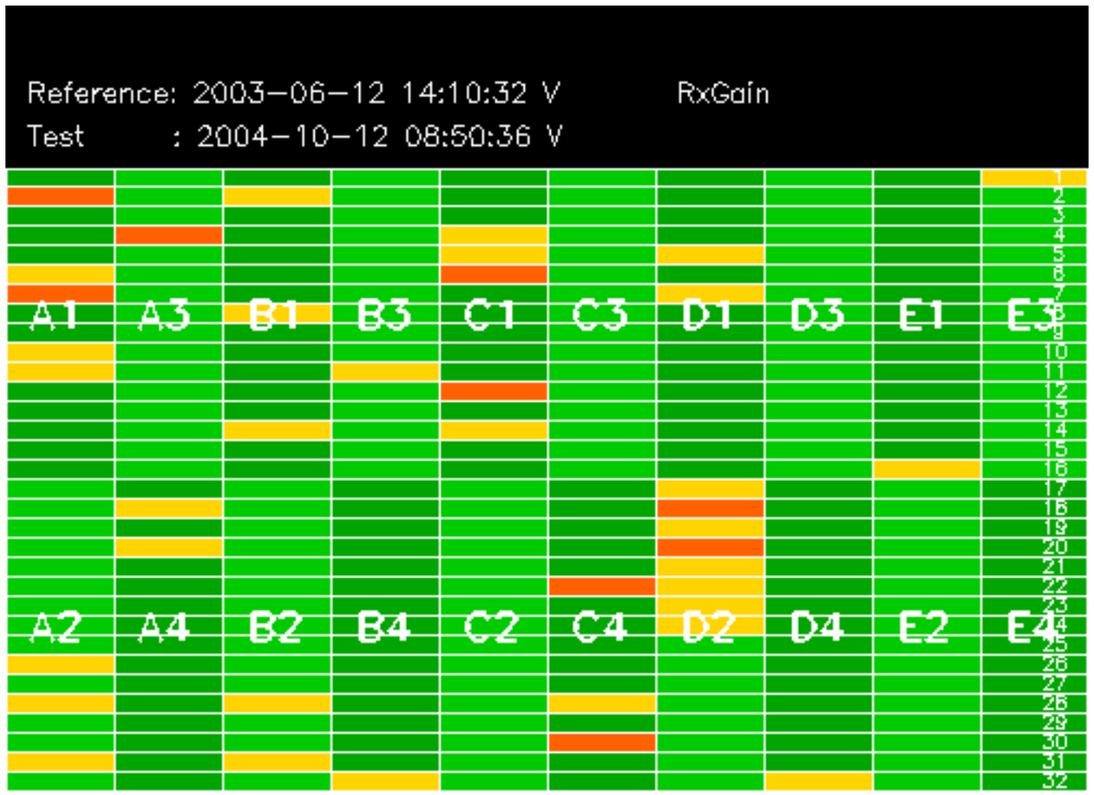
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

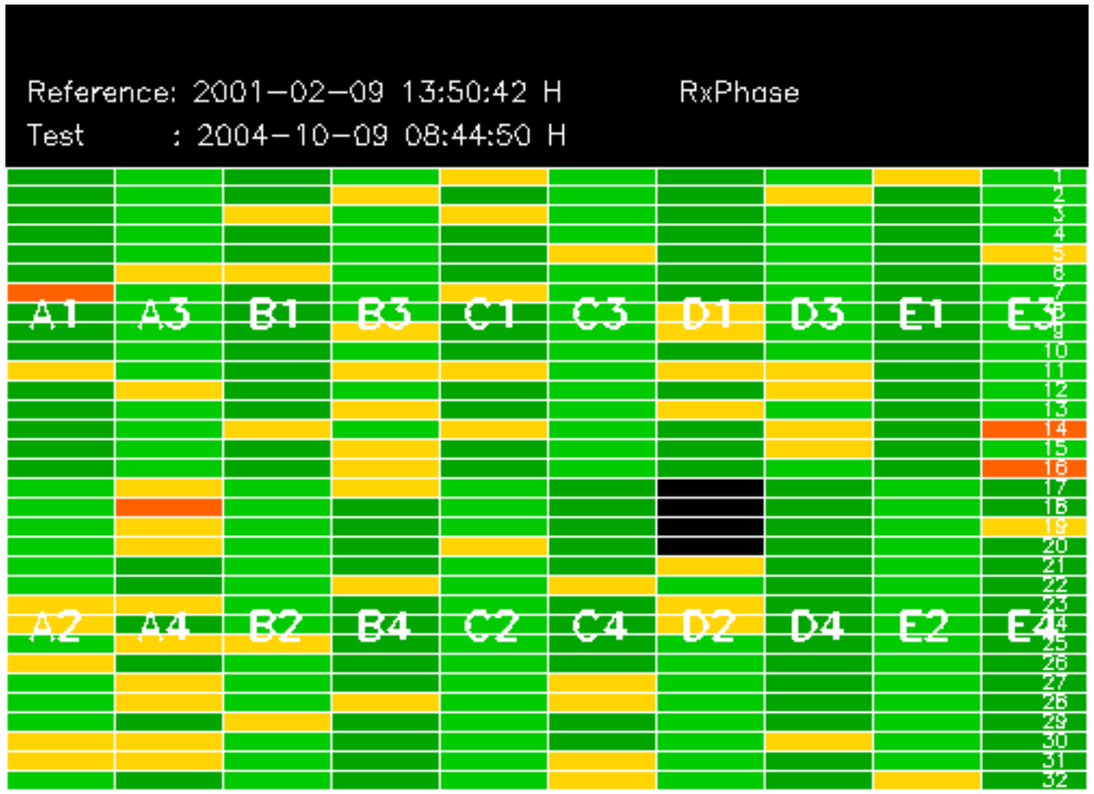
No anomalies observed.

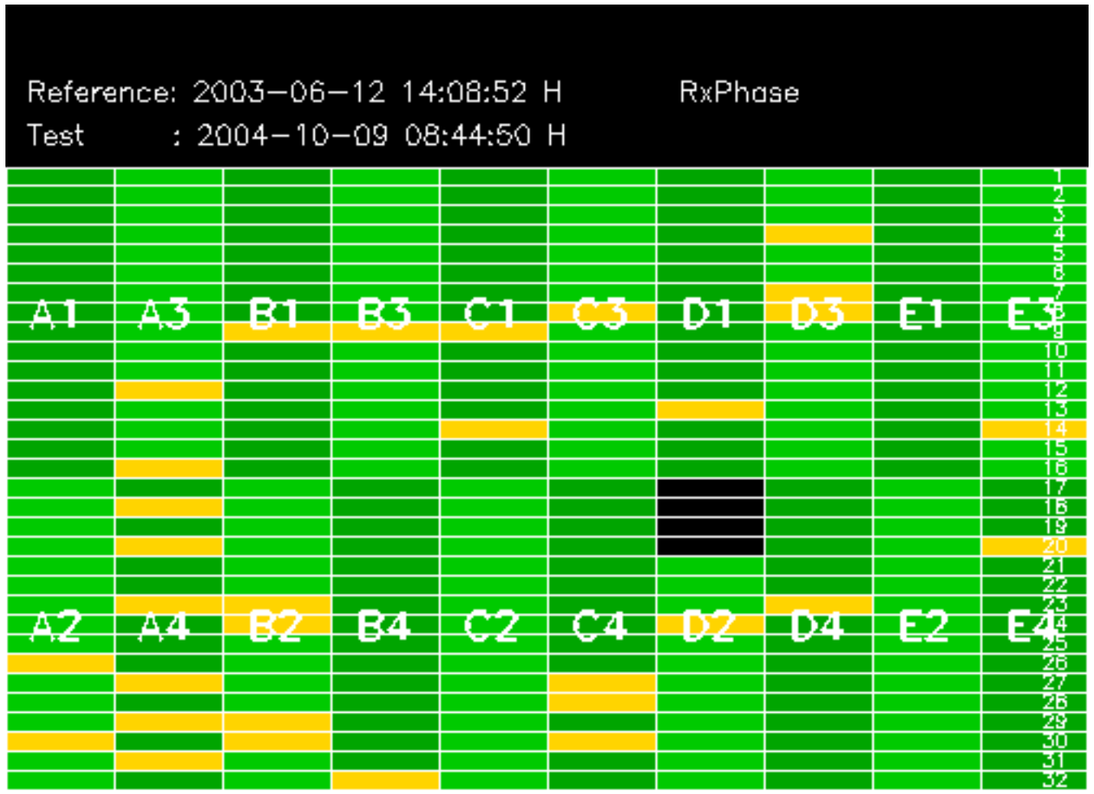

Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2004-10-09 08:44:50 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

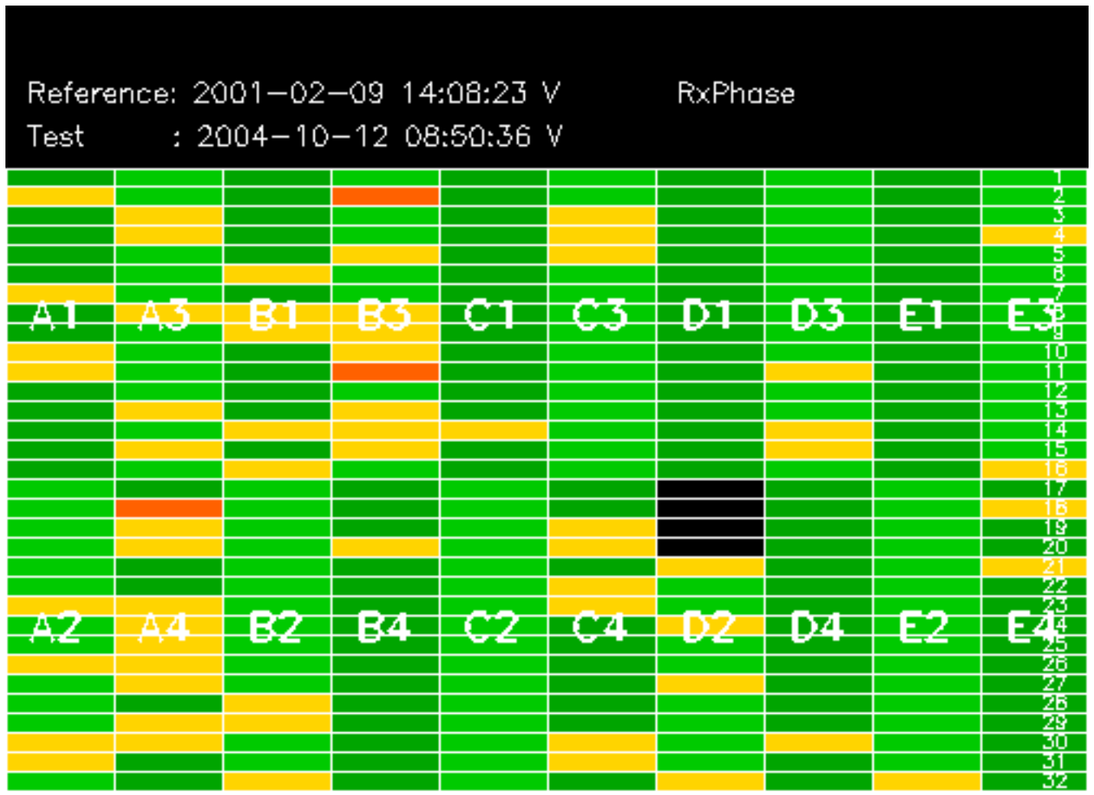

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-09 08:44:50 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

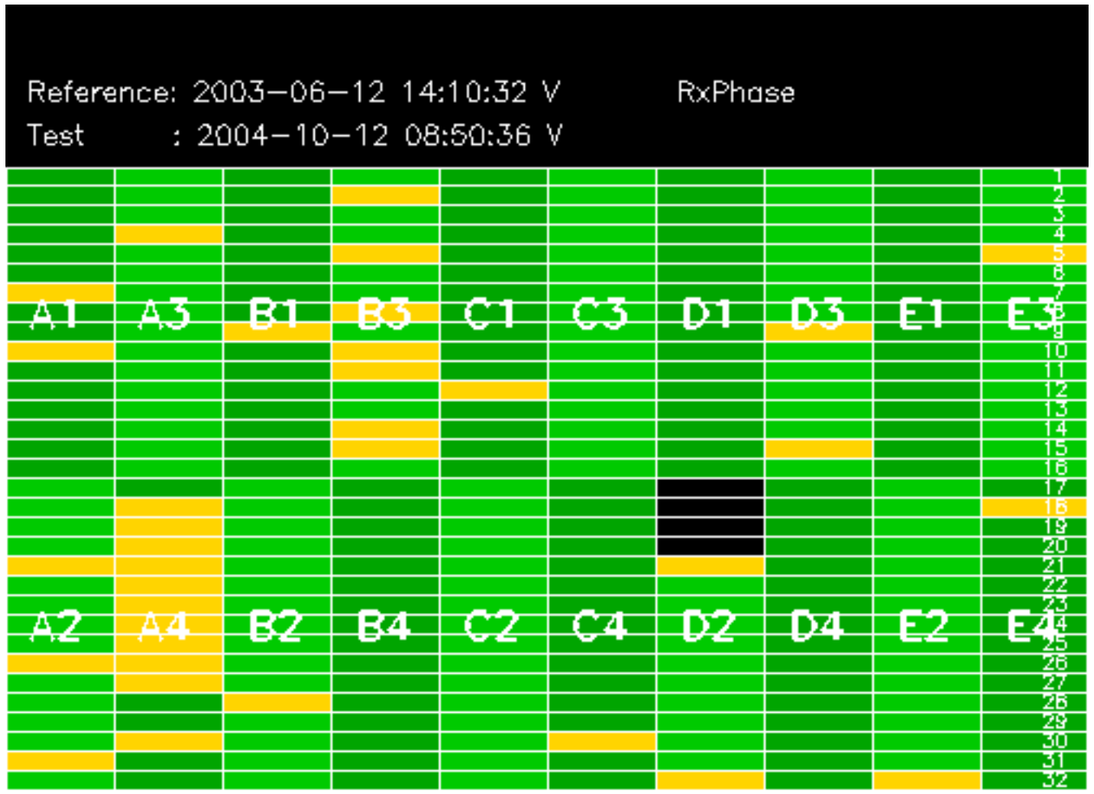

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-12 08:50:36 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

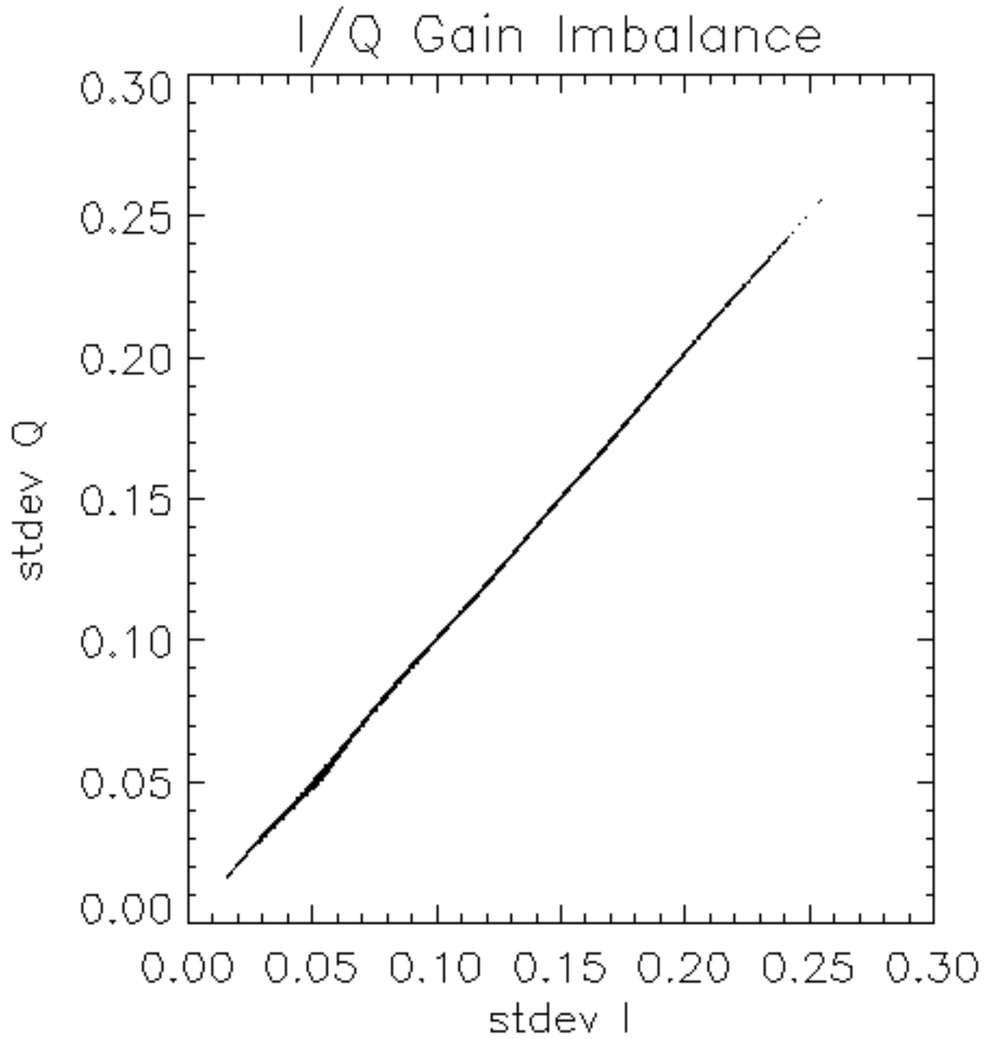

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-12 08:50:36 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

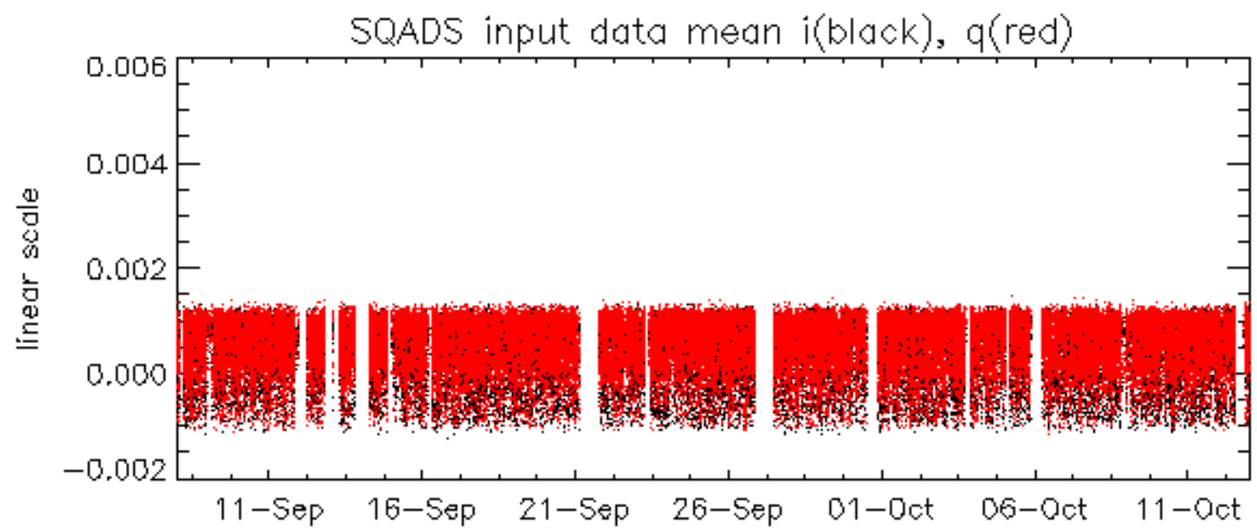

Reference: 2001-02-09 13:50:42 H
Test : 2004-10-09 08:44:50 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

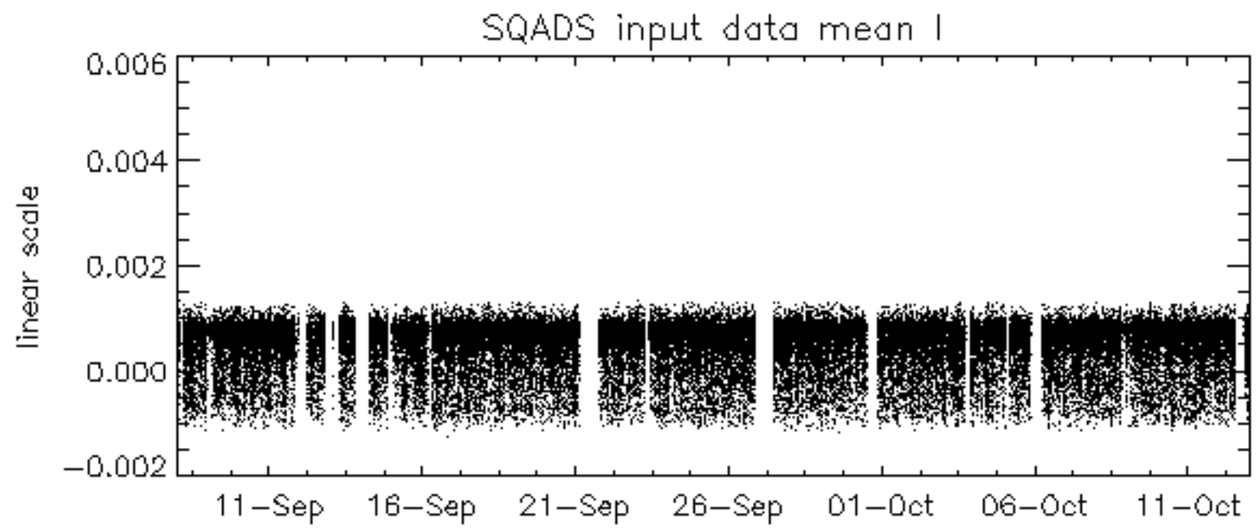

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2004-10-09 08:44:50 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

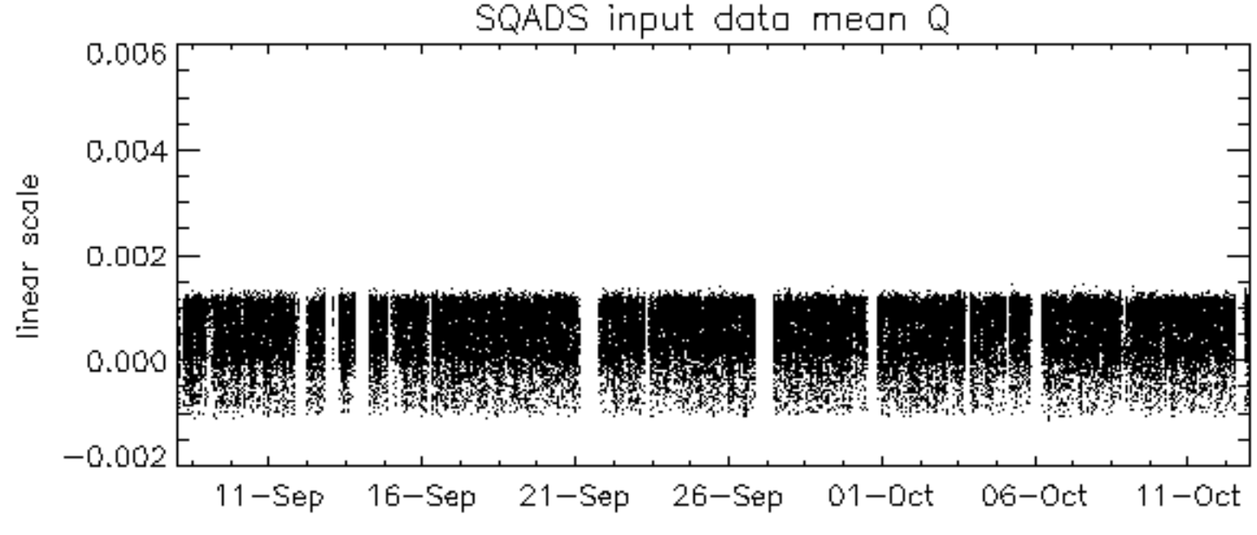

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-12 08:50:36 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

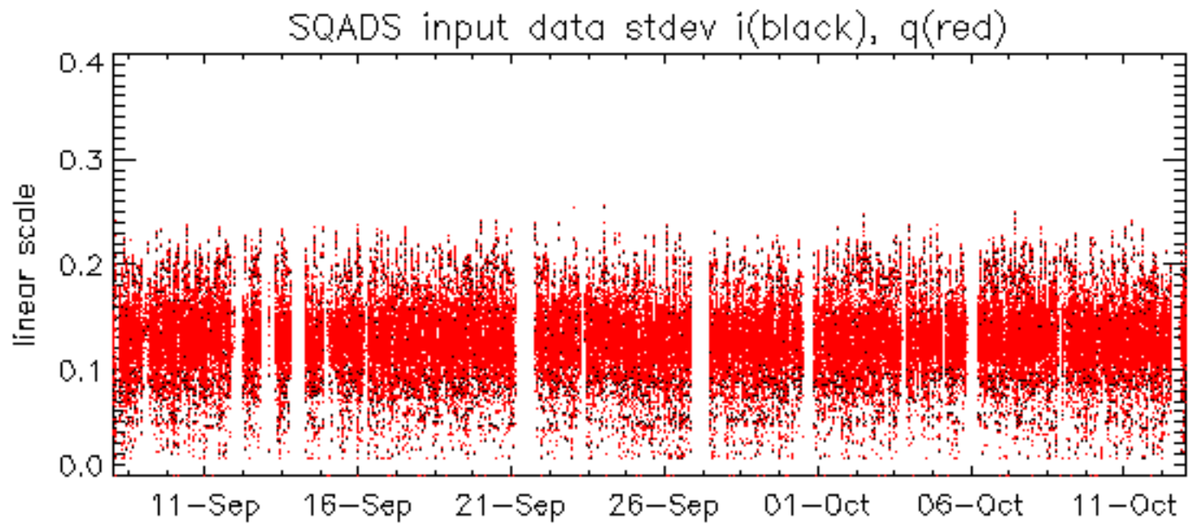

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-12 08:50:36 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

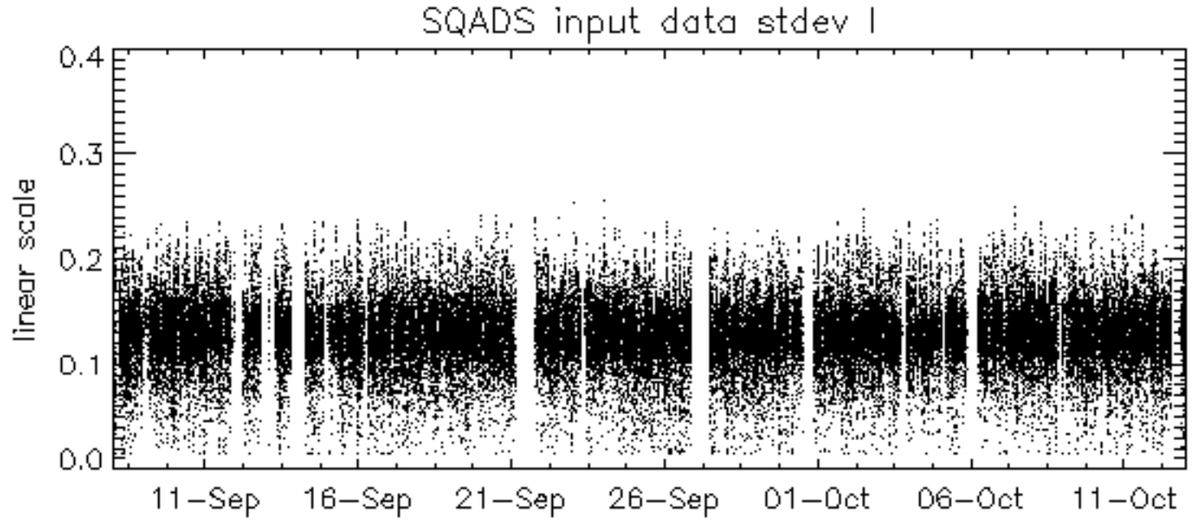

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

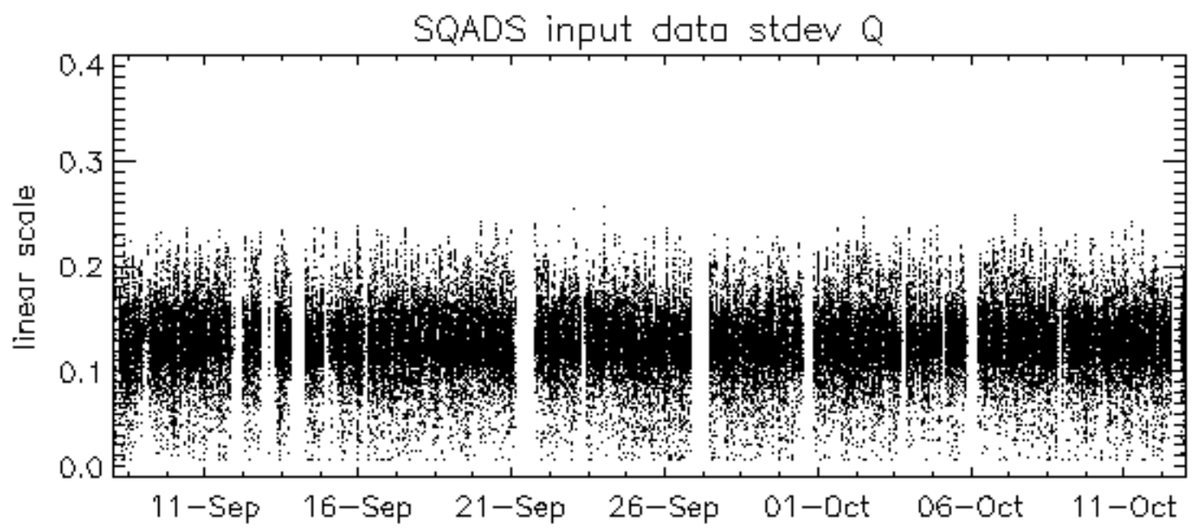

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

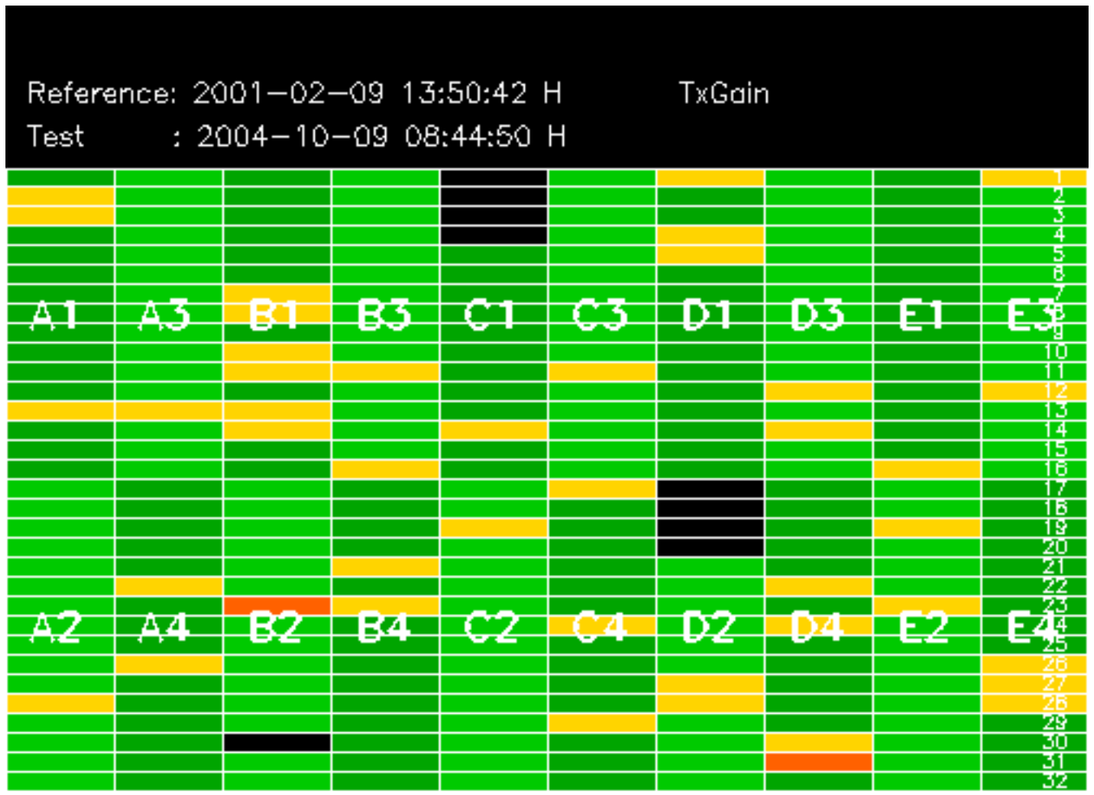

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

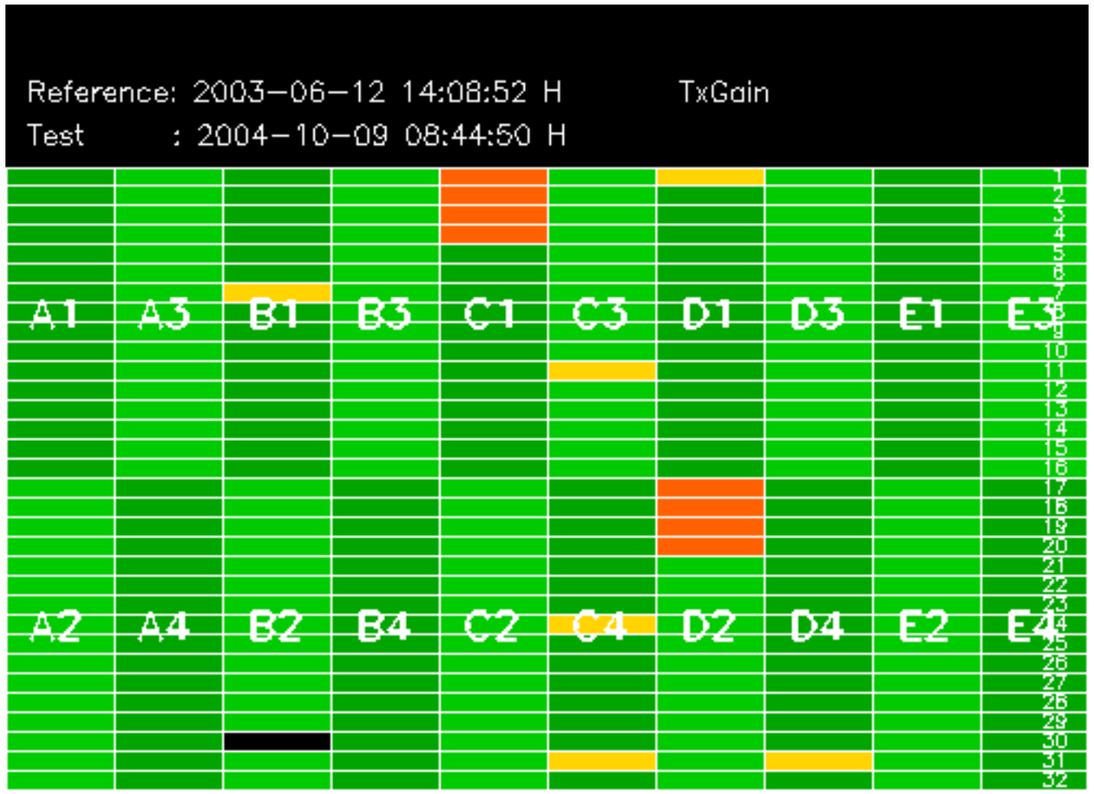

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

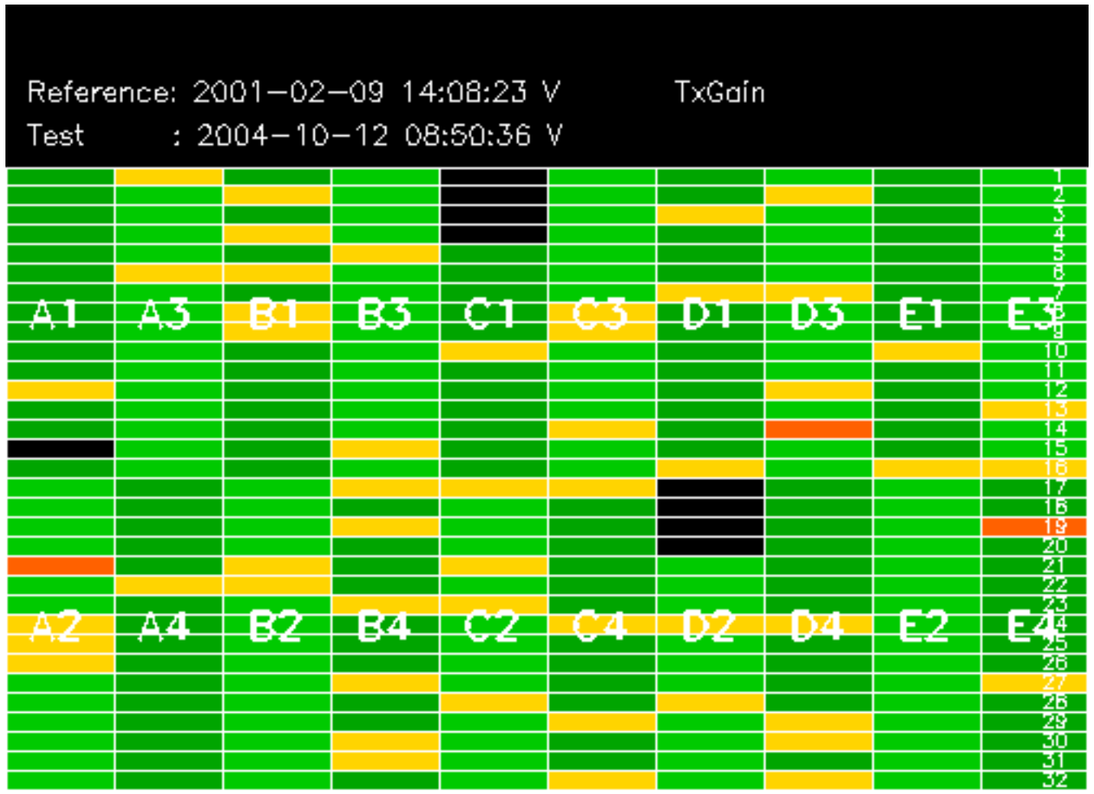

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

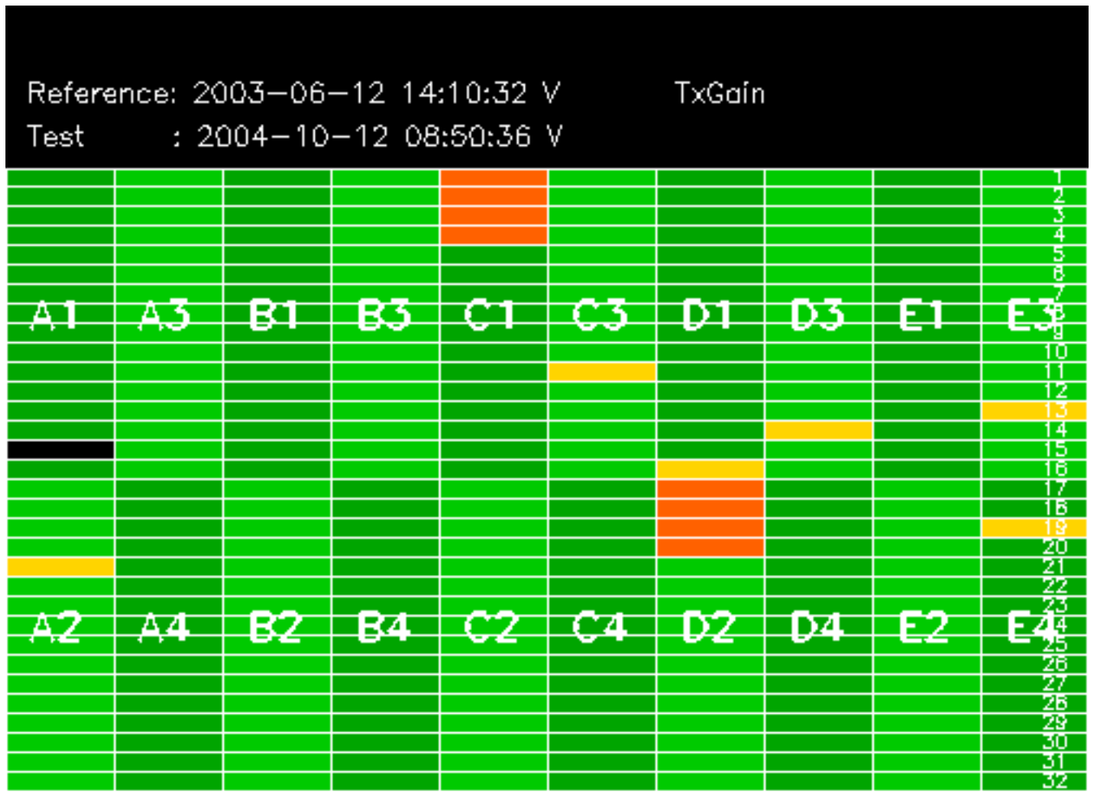

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

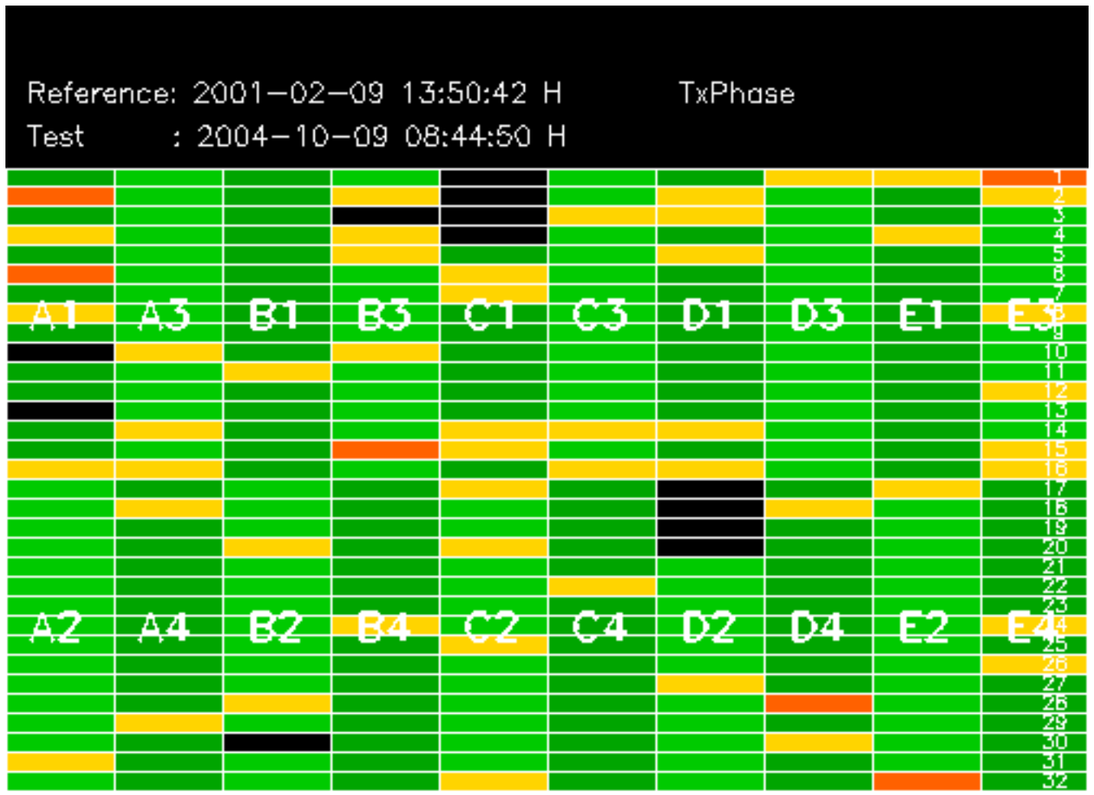

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
11−Sep
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct

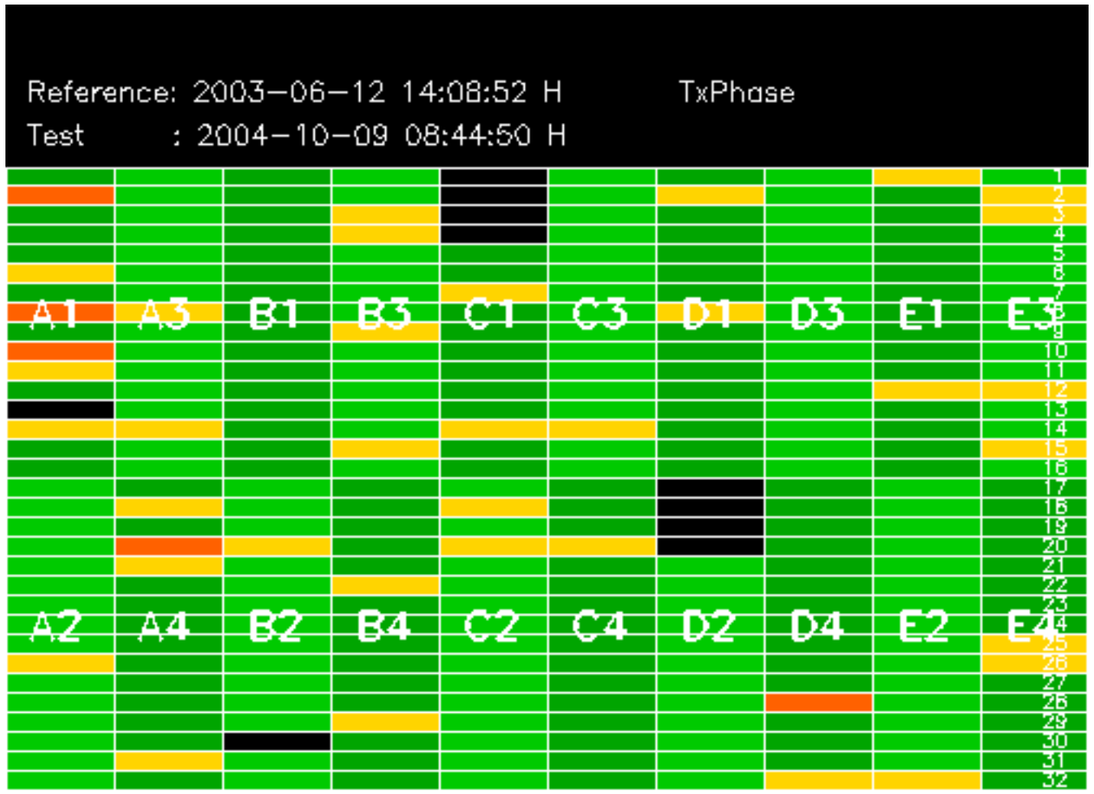

Reference: 2001-02-09 13:50:42 H
Test : 2004-10-09 08:44:50 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

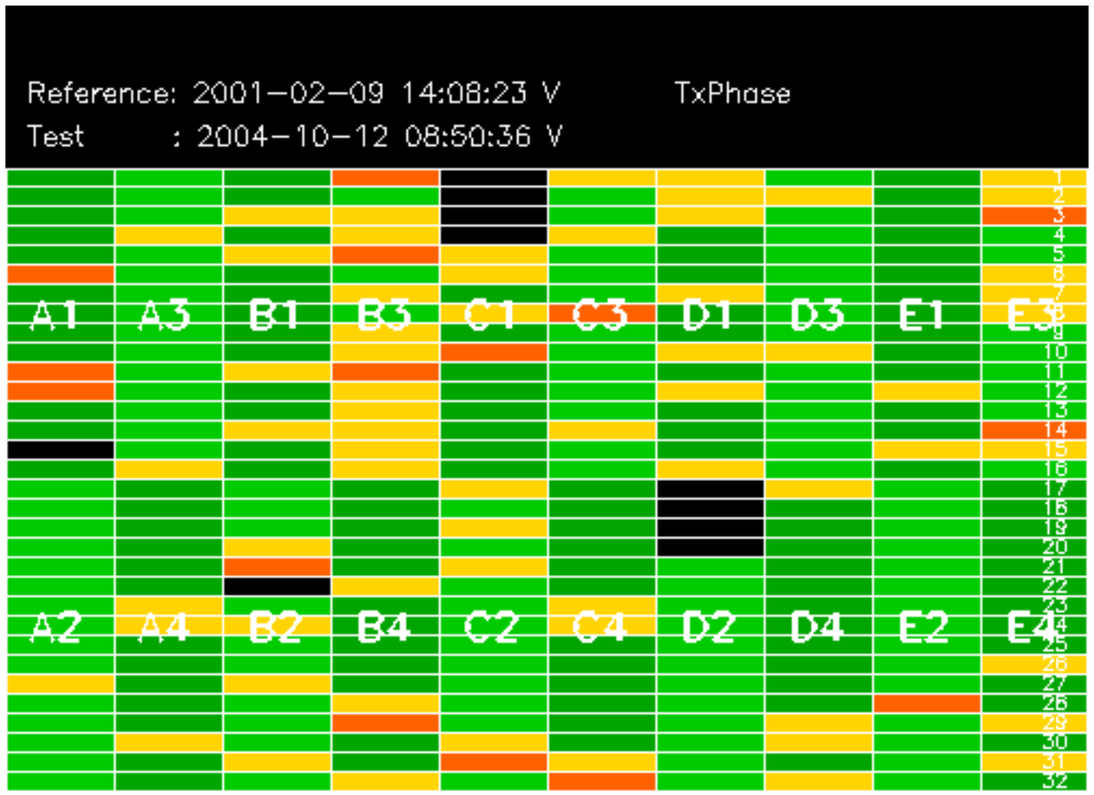

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-09 08:44:50 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

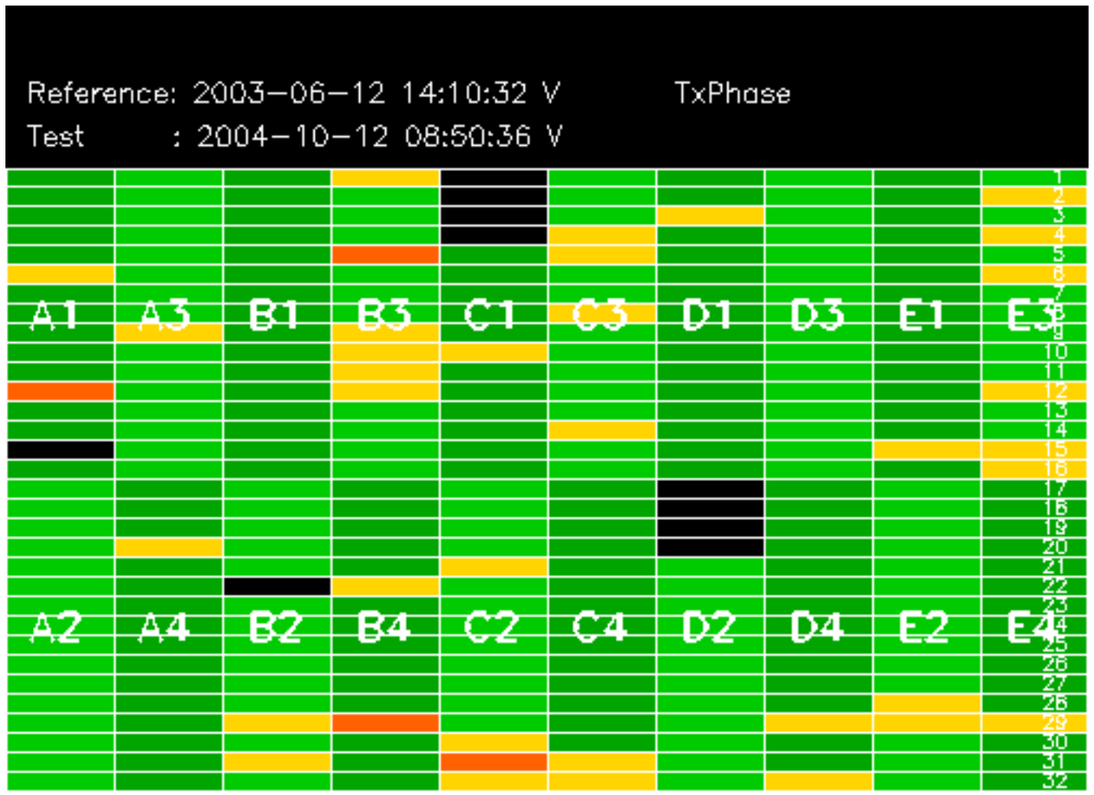

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-12 08:50:36 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2004-10-12 08:50:36 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 13:50:42 H
TxPhase
Test : 2004-10-09 08:44:50 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: 2003-06-12 14:08:52 H
Test : 2004-10-09 08:44:50 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 : 2004-10-12 08:50:36 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: 2003-06-12 14:10:32 V
Test : 2004-10-12 08:50:36 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

No unavailabilities during the reported period.