REPORT OF 041020

last update on Wed Oct 20 13:24:42 GMT 2004

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

No anomalies observed on available browse products

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 any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No MS products available for the reported day.

Polarisation	Start Time
V	20041018 054055
H	20041015 071545

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.

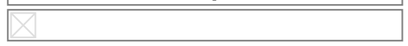
4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

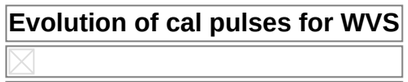
Evolution of cal pulses for GM1



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	-3.477386	0.023919	0.014034
7	P1	-3.348668	0.023305	-0.006906
11	P1	-4.634618	0.034946	0.104214
15	P1	-5.728635	0.077967	0.167991
19	P1	-3.525751	0.006220	-0.104036
22	P1	-4.553196	0.013025	-0.080255
24	P1	-4.972608	0.011092	0.034896
30	P1	-7.039691	0.017514	-0.025676
3	P1	-16.147108	0.402995	0.308732
7	P1	-14.035632	0.065103	-0.022719

11	P1	-20.378643	0.245895	-0.391342
15	P1	-11.730122	0.042766	0.087452
19	P1	-13.992497	0.026730	-0.073820
22	P1	-16.104345	0.396347	-0.461147
24	P1	-14.539121	0.260439	-0.266152
30	P1	-18.030363	0.355010	0.010300

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.329138	0.089149	-0.088660
7	P2	-22.593887	0.122383	-0.056876
11	P2	-15.137302	0.123213	0.062274
15	P2	-7.084465	0.104757	-0.098487
19	P2	-9.613150	0.133021	-0.164905
22	P2	-17.280697	0.109107	0.039096
24	P2	-20.782051	0.090439	-0.050165
30	P2	-19.106585	0.083247	0.108582

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.169719	0.005368	-0.046126
7	P3	-8.169718	0.005368	-0.046128
11	P3	-8.169717	0.005368	-0.046130
15	P3	-8.169717	0.005368	-0.046134
19	P3	-8.169713	0.005368	-0.046141
22	P3	-8.169707	0.005368	-0.046165
24	P3	-8.169707	0.005368	-0.046168
30	P3	-8.169634	0.005367	-0.046260

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	-2.836272	0.049709	0.097588
7	P1	-3.005951	0.101131	0.169044
11	P1	-3.899163	0.066485	0.073570
15	P1	-3.511439	0.083242	0.142942
19	P1	-3.533394	0.013596	-0.094995
22	P1	-5.667777	0.055633	0.116472
24	P1	-3.964110	0.021588	0.000750
30	P1	-6.206140	0.051839	-0.067847
3	P1	-10.833748	0.194745	0.469269
7	P1	-10.094131	0.174656	0.062776
11	P1	-12.231039	0.133237	-0.137951
15	P1	-11.691678	0.082821	0.082107
19	P1	-15.593313	0.061212	-0.049803
22	P1	-23.582323	1.381752	-0.543699
24	P1	-18.113003	0.233674	-0.067671
30	P1	-20.381926	1.132937	0.177263

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.005655	0.049113	-0.087547
7	P2	-22.703466	0.066233	0.025644
11	P2	-10.872144	0.052783	-0.021323
15	P2	-4.990807	0.030413	-0.093180
19	P2	-6.823173	0.044914	-0.192176
22	P2	-7.393800	0.042030	0.012580
24	P2	-11.102791	0.055312	-0.127244
30	P2	-22.111256	0.039284	0.035702

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.016858	0.003793	-0.032898

7	P3	-8.016838	0.003791	-0.032773
11	P3	-8.016968	0.003778	-0.032825
15	P3	-8.016884	0.003784	-0.032646
19	P3	-8.016955	0.003782	-0.032789
22	P3	-8.016895	0.003784	-0.032663
24	P3	-8.016964	0.003810	-0.032975
30	P3	-8.016881	0.003796	-0.032657

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	0.000477609
	stdev	2.17267e-07
MEAN Q	mean	0.000548741
	stdev	2.34187e-07

☒

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.127453
	stdev	0.000932391
STDEV Q	mean	0.127673

stdev	0.000941468

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

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

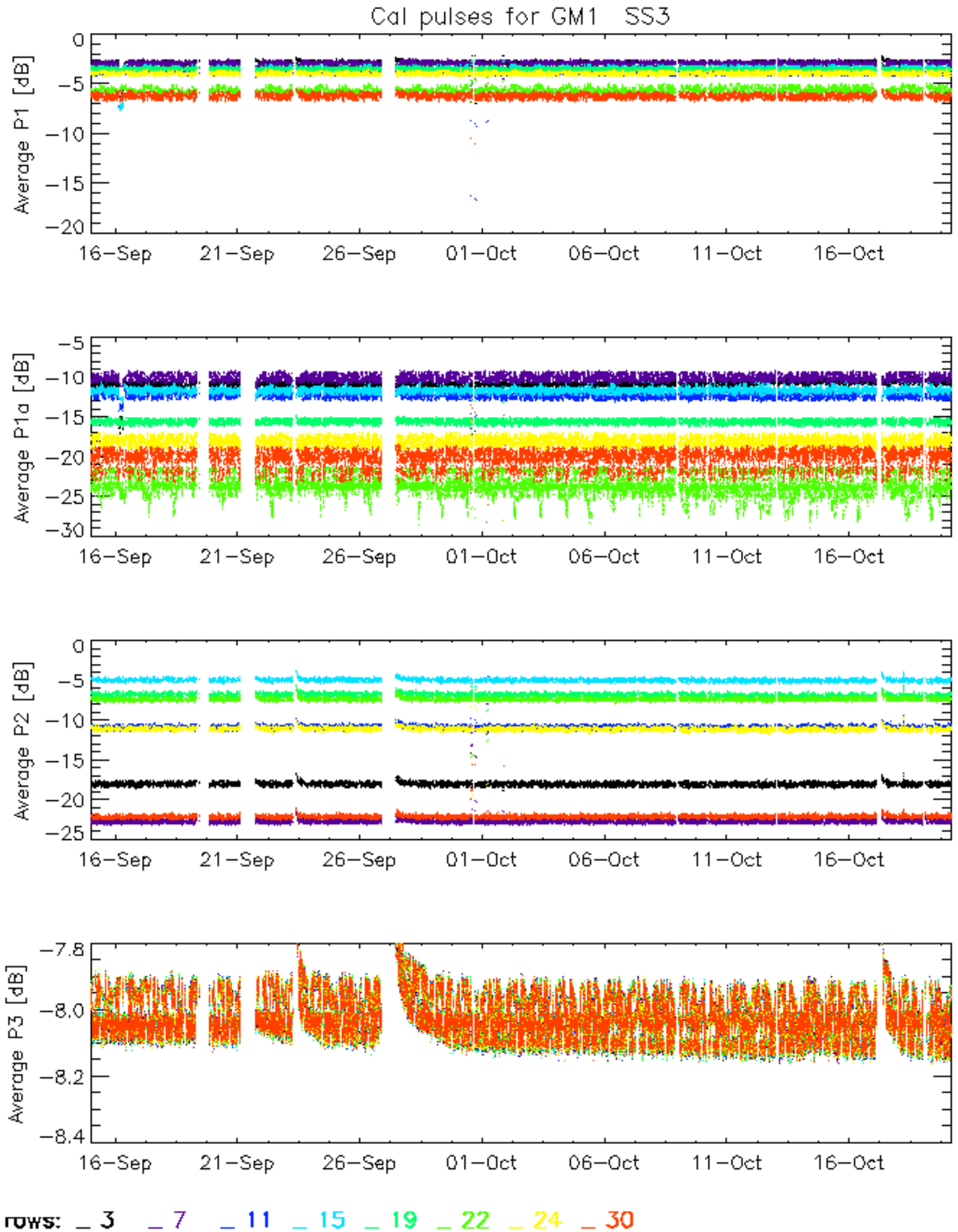
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

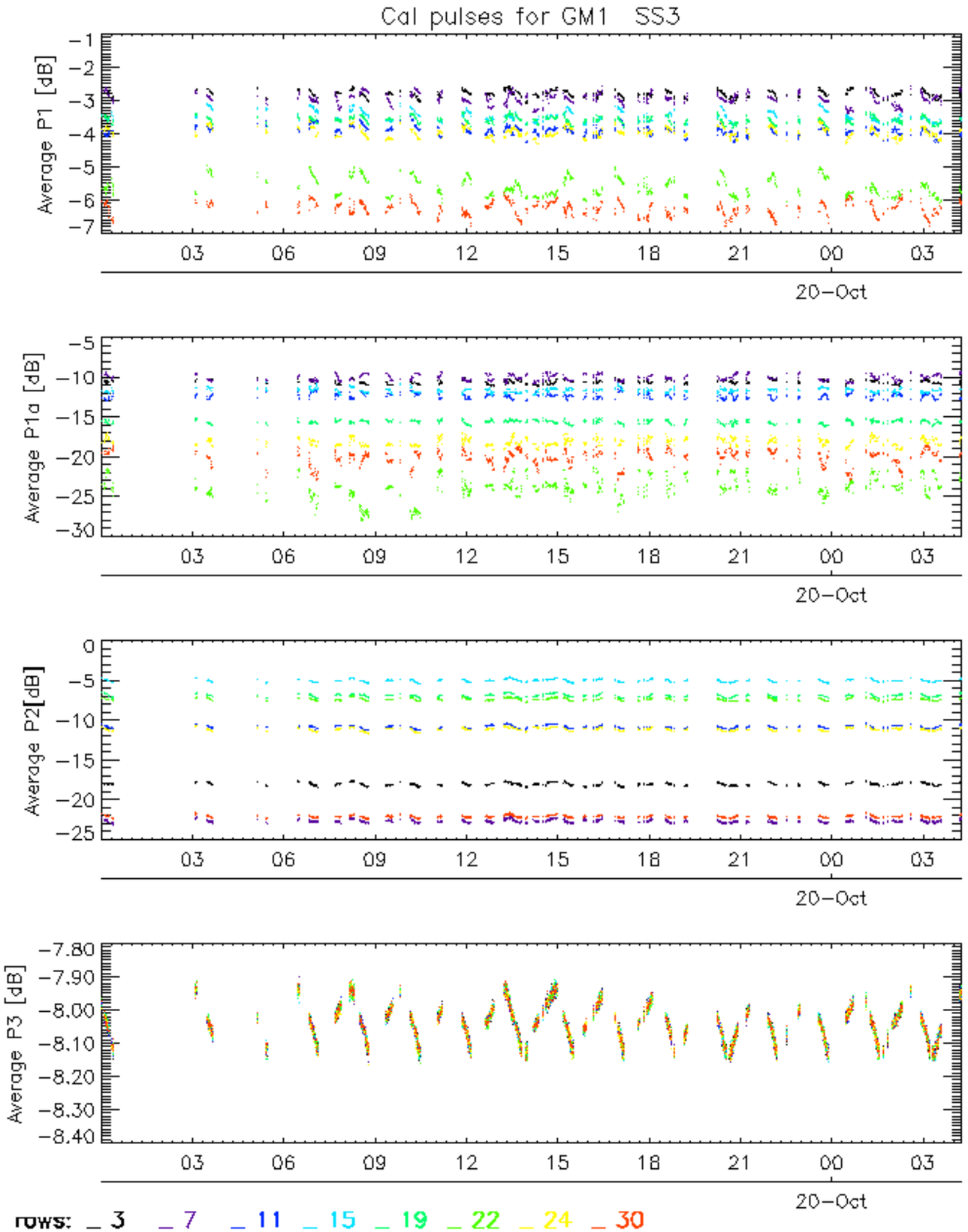
6.5 - Absolute Doppler for GM1

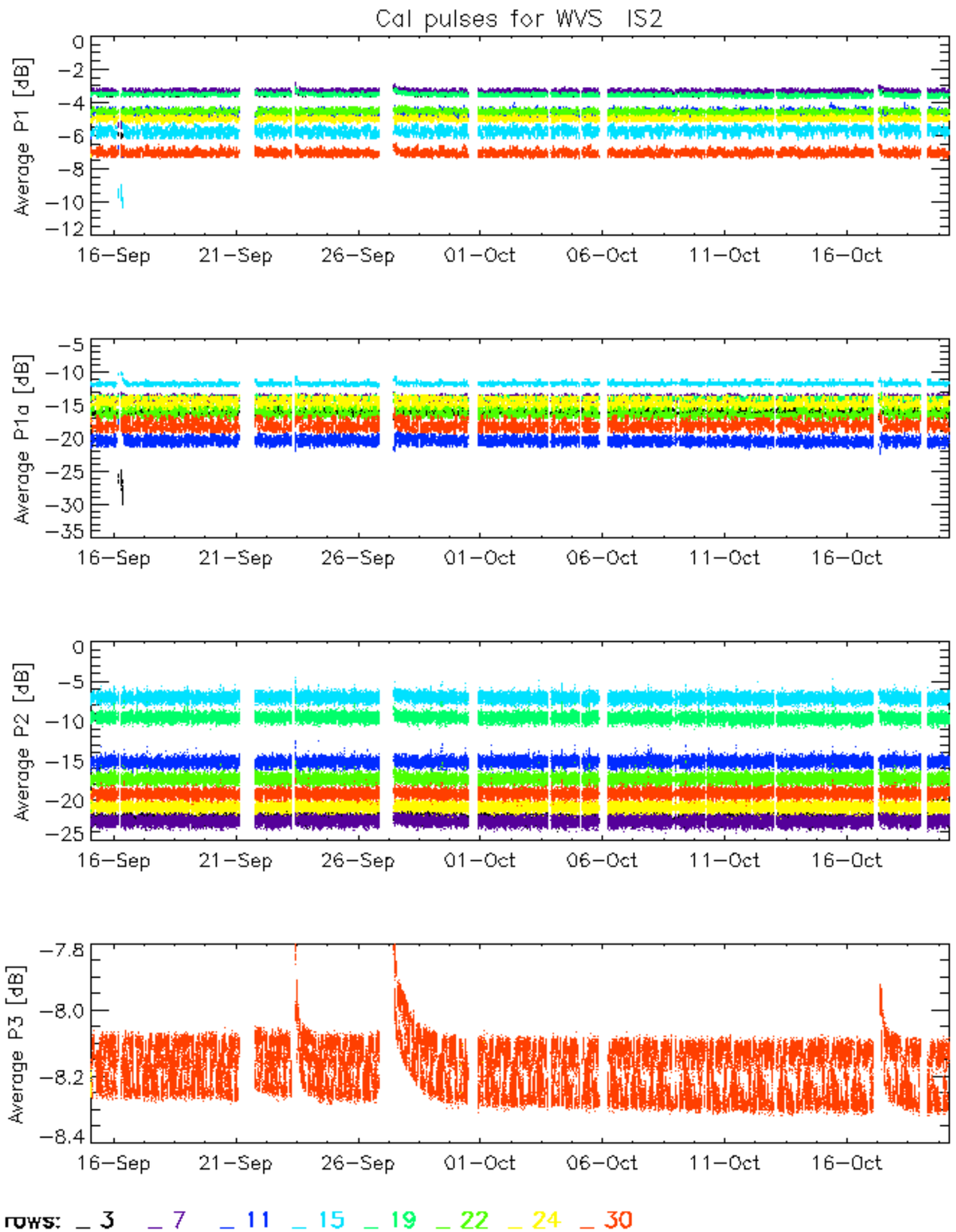
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

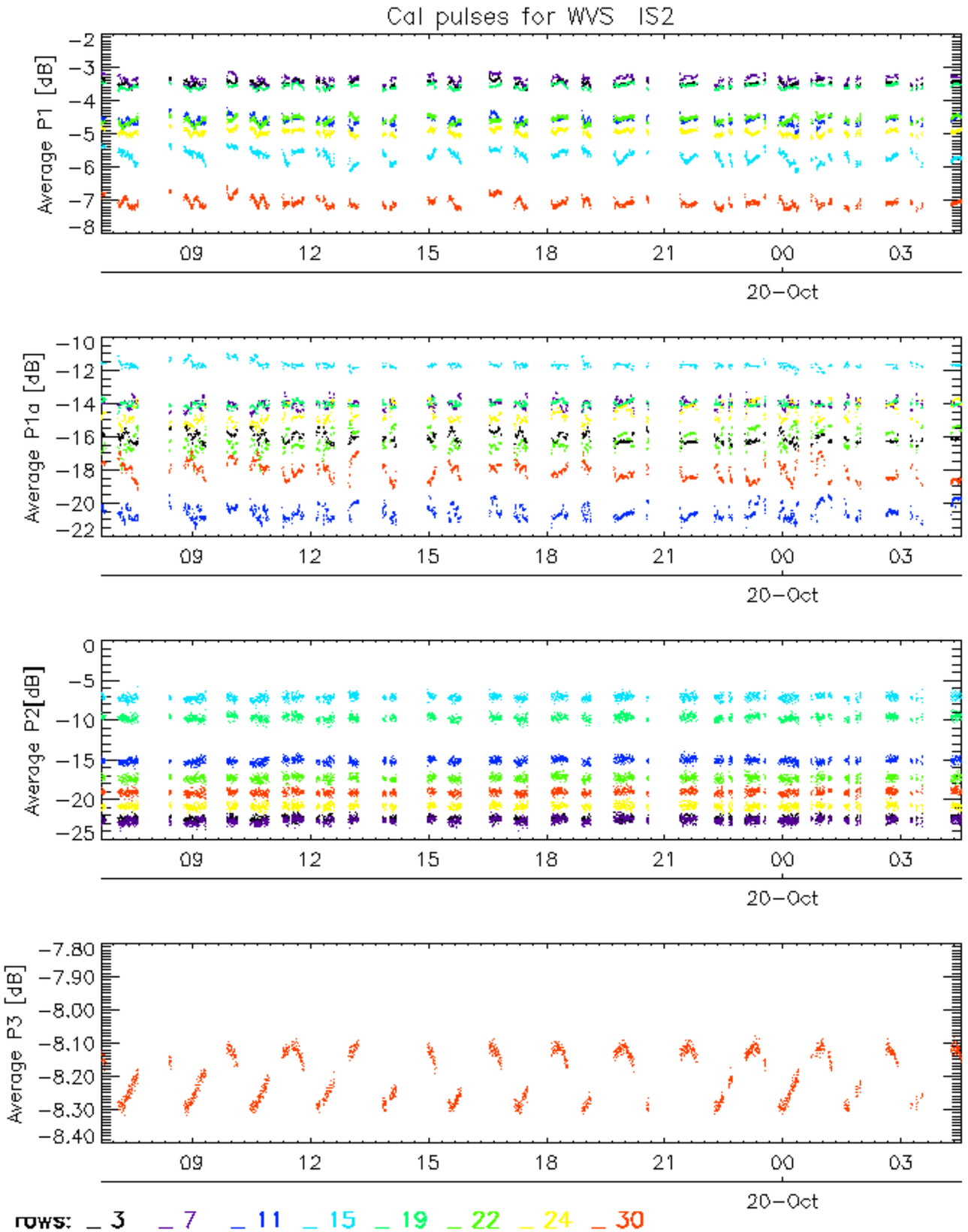
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒


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

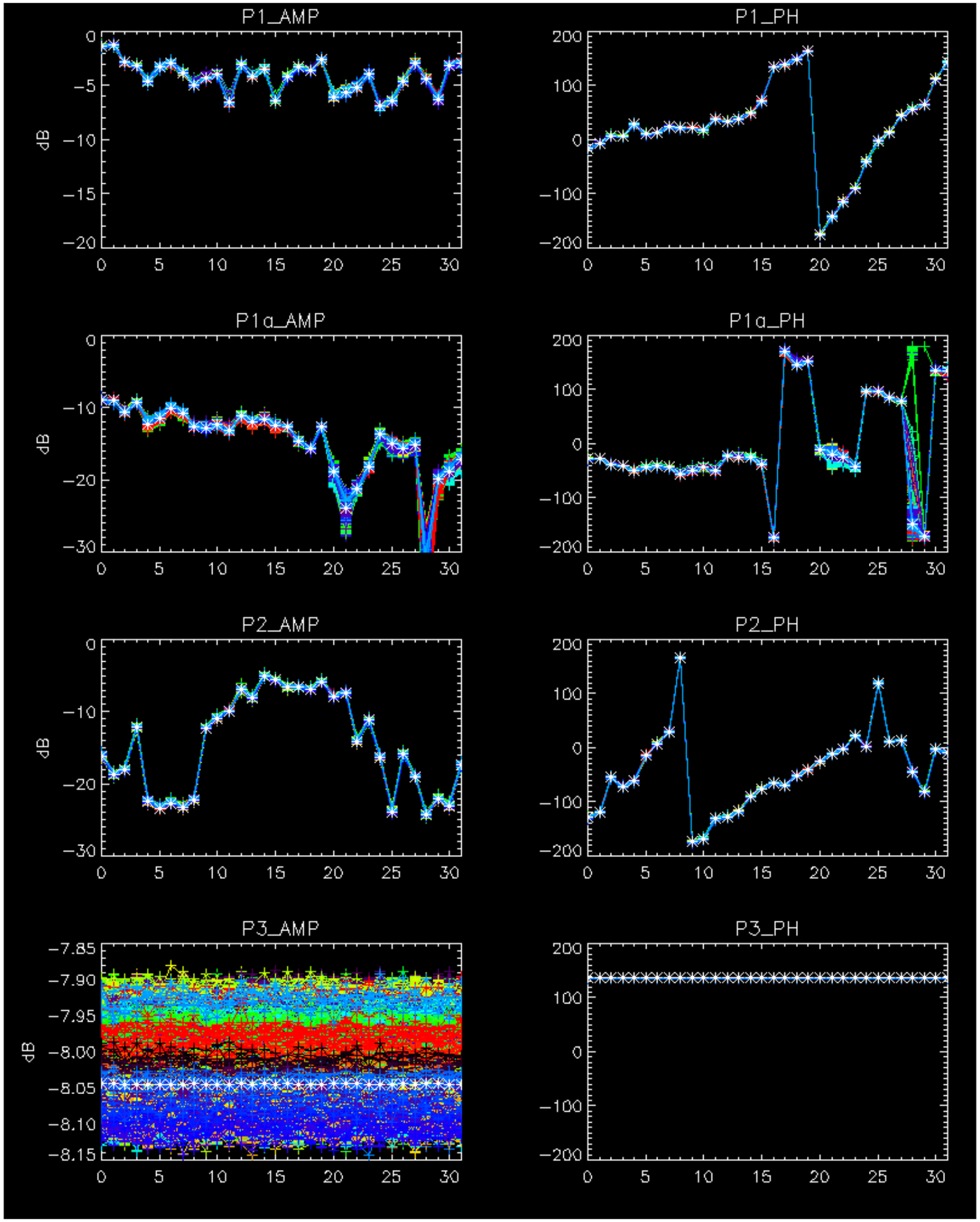

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
20−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
20−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
20−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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

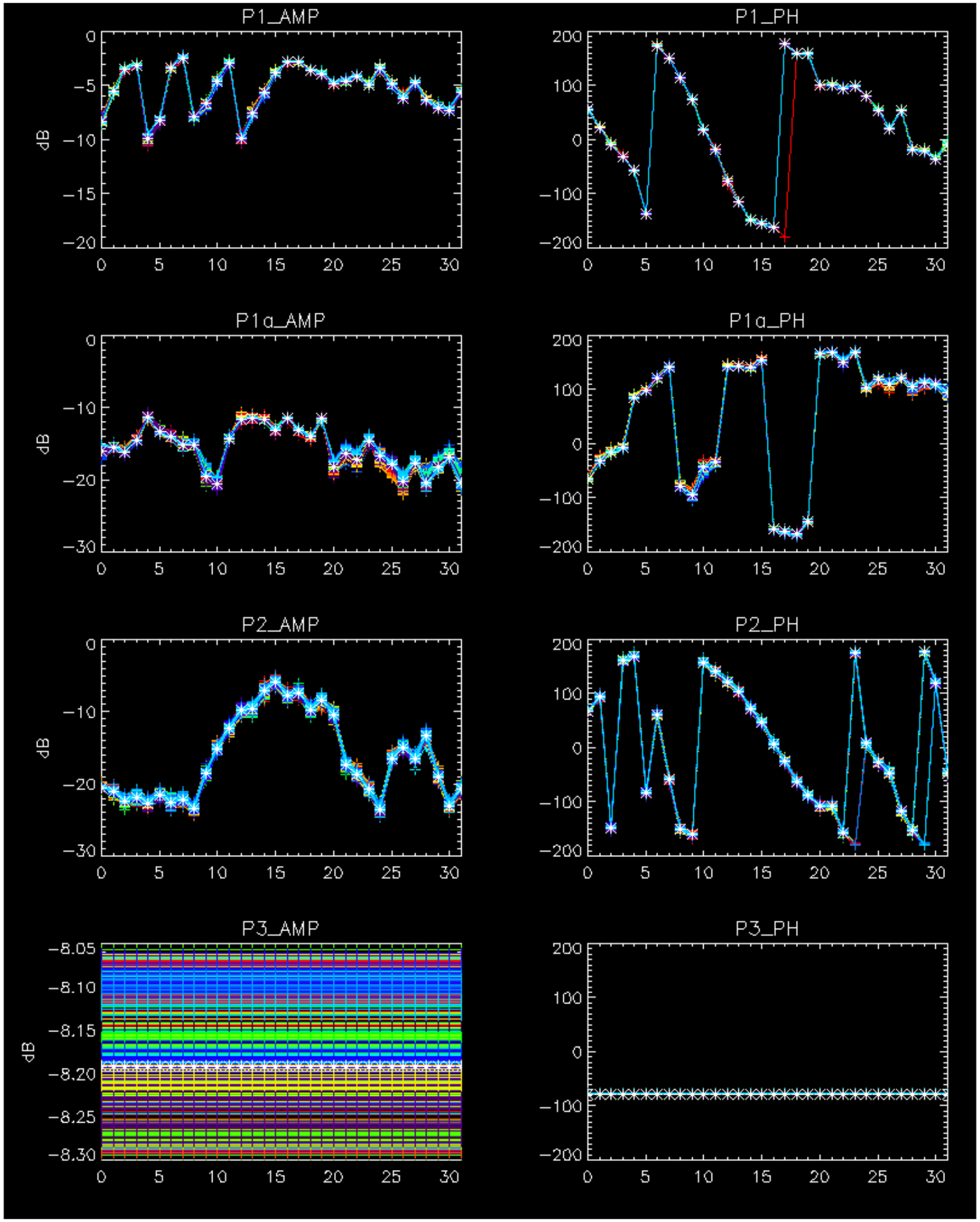

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
−12
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


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

No anomalies observed on available browse products

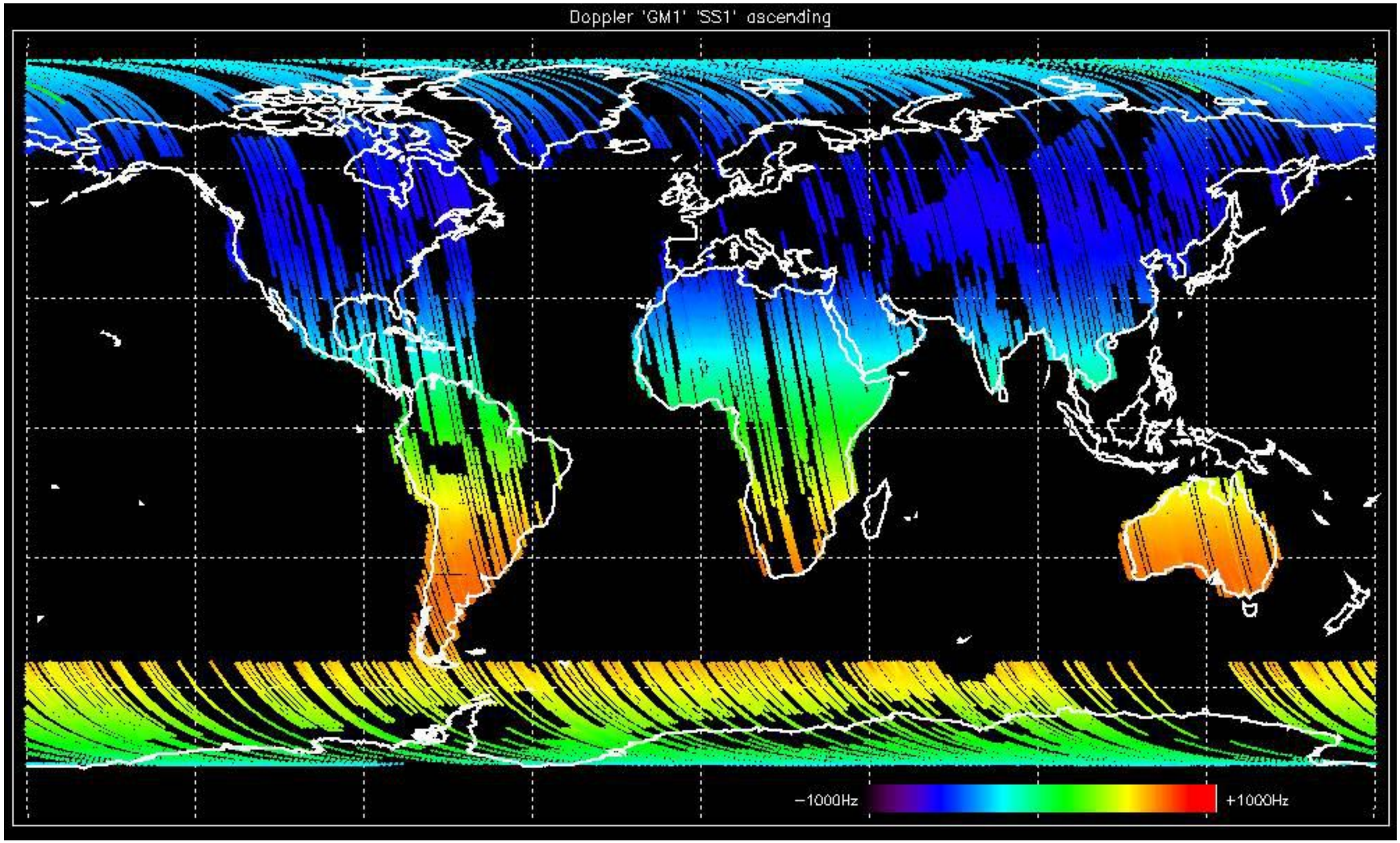
No anomalies observed.

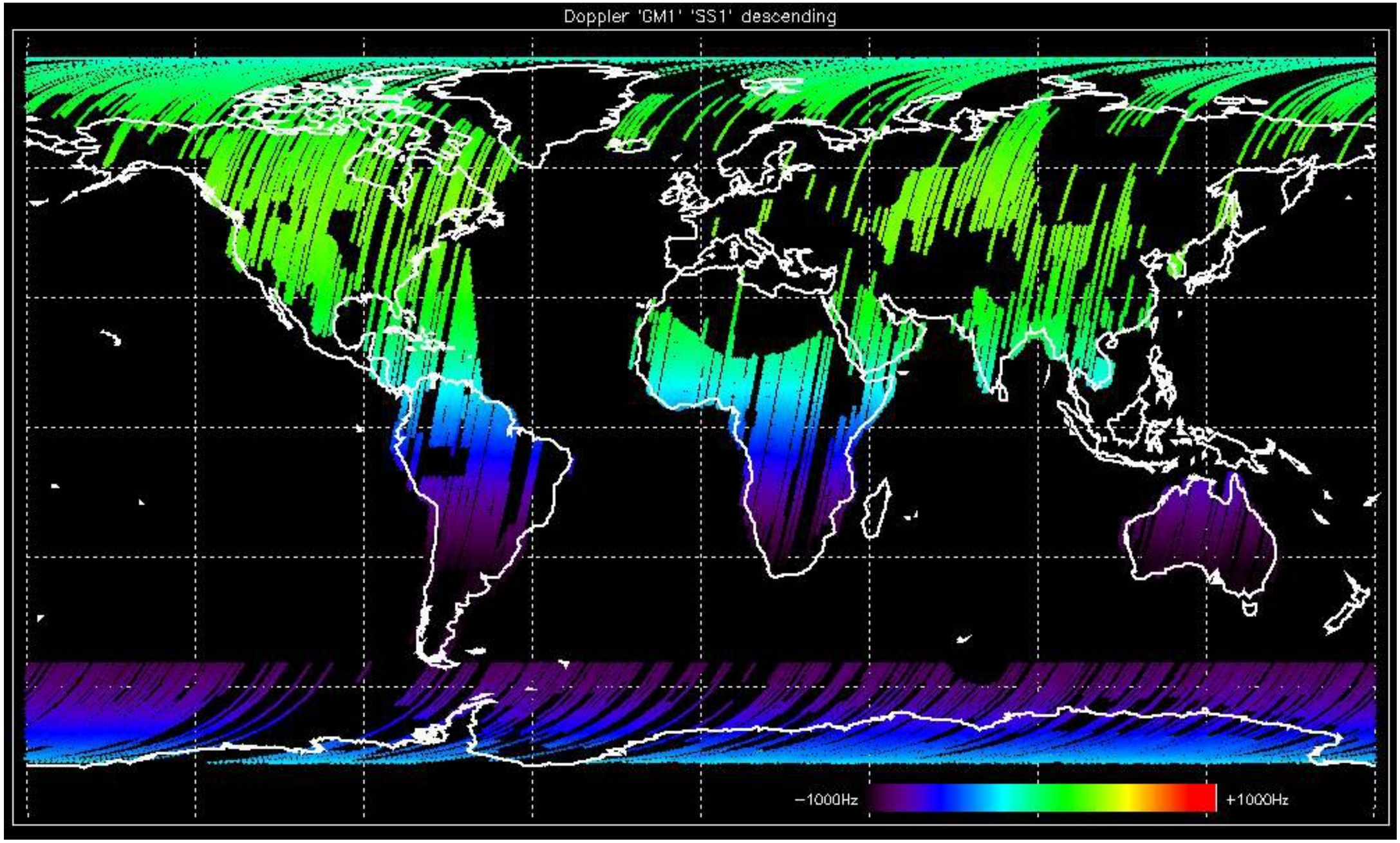

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00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

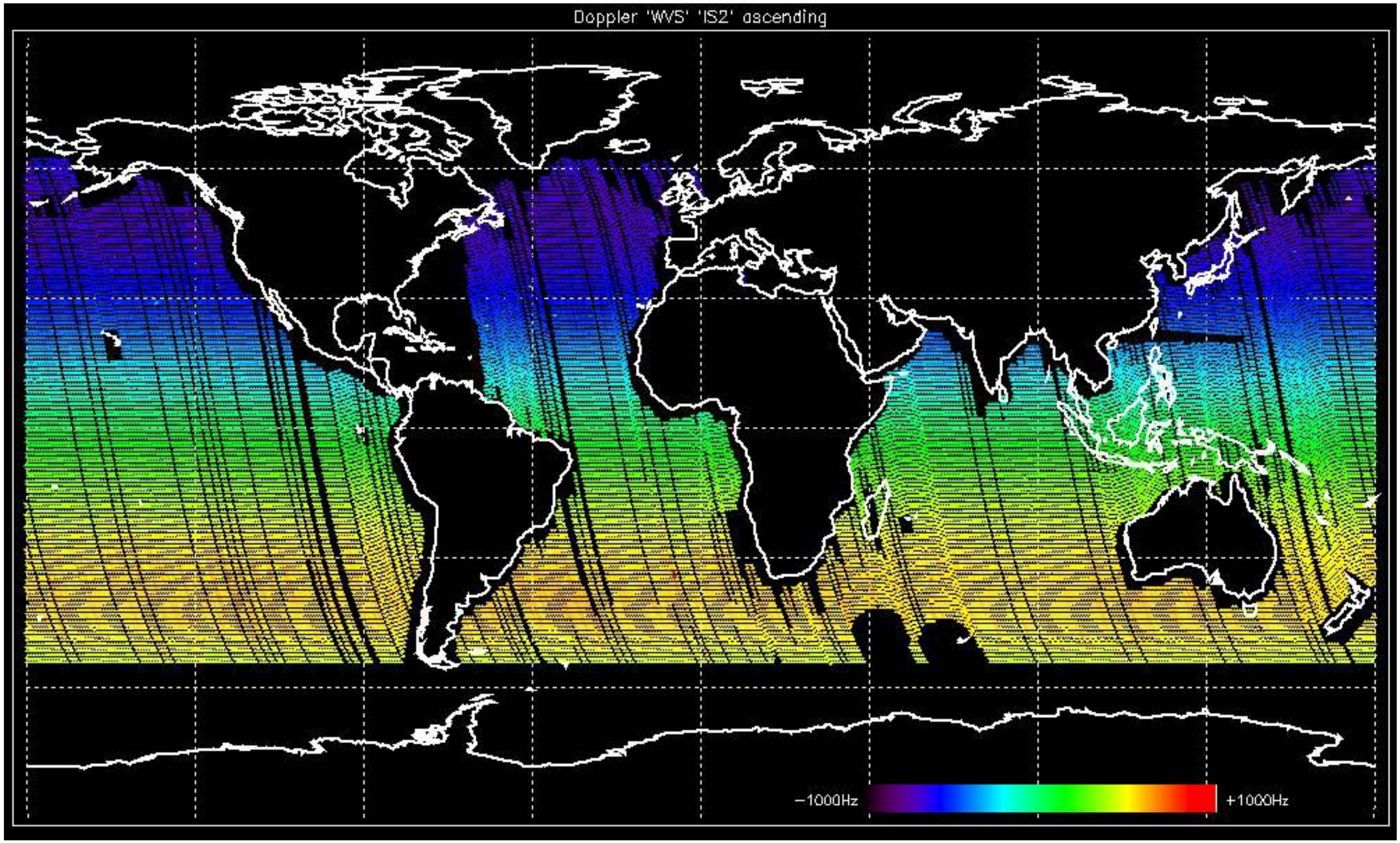

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20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

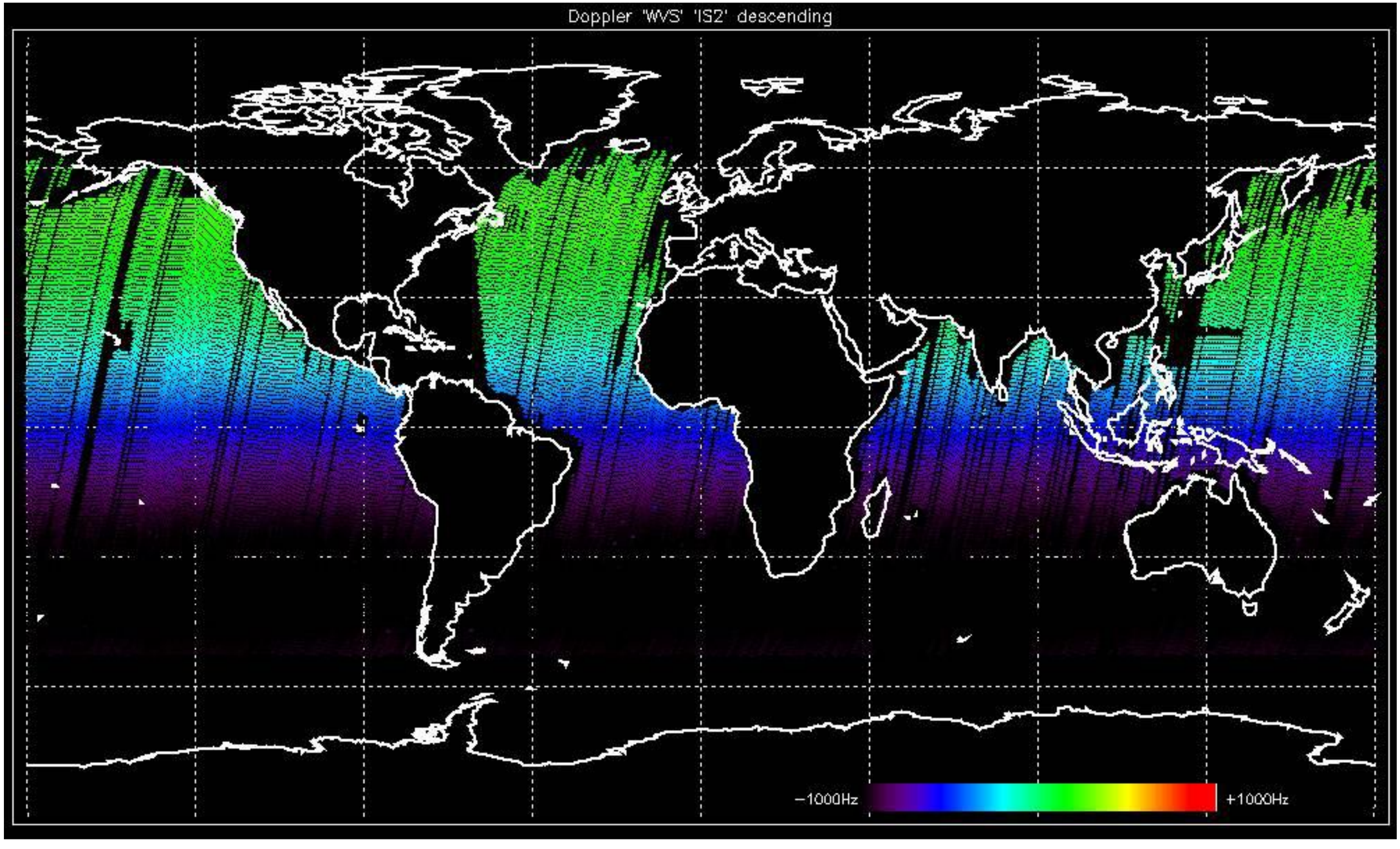
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

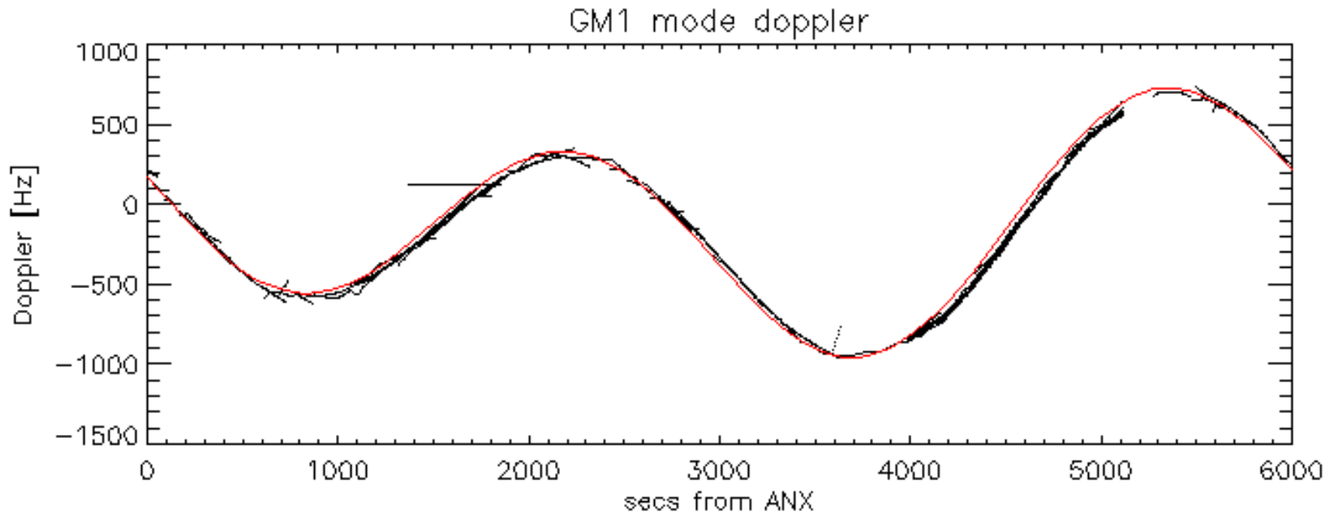
No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

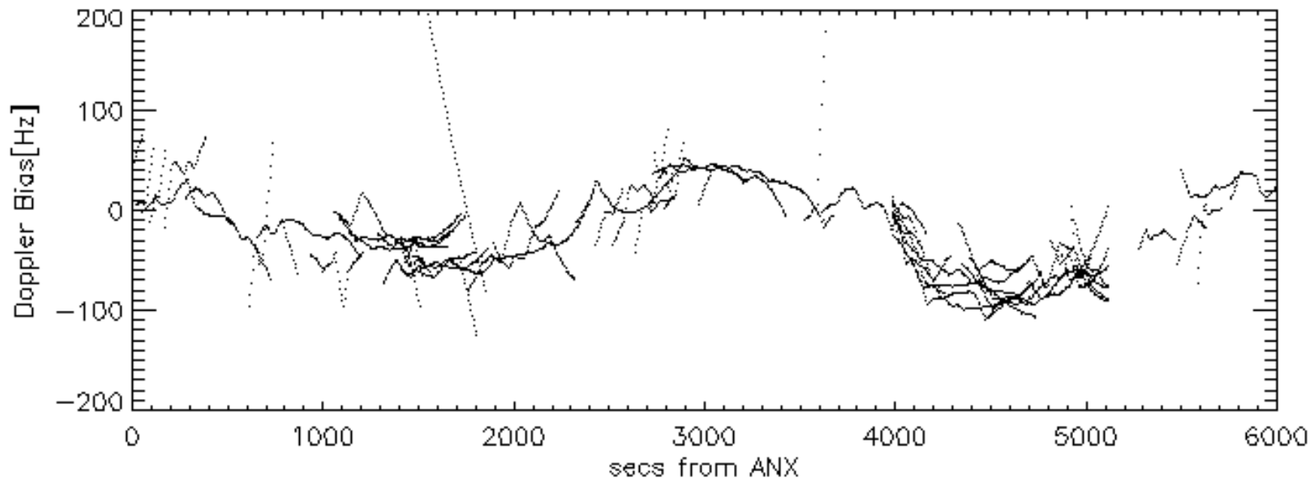

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

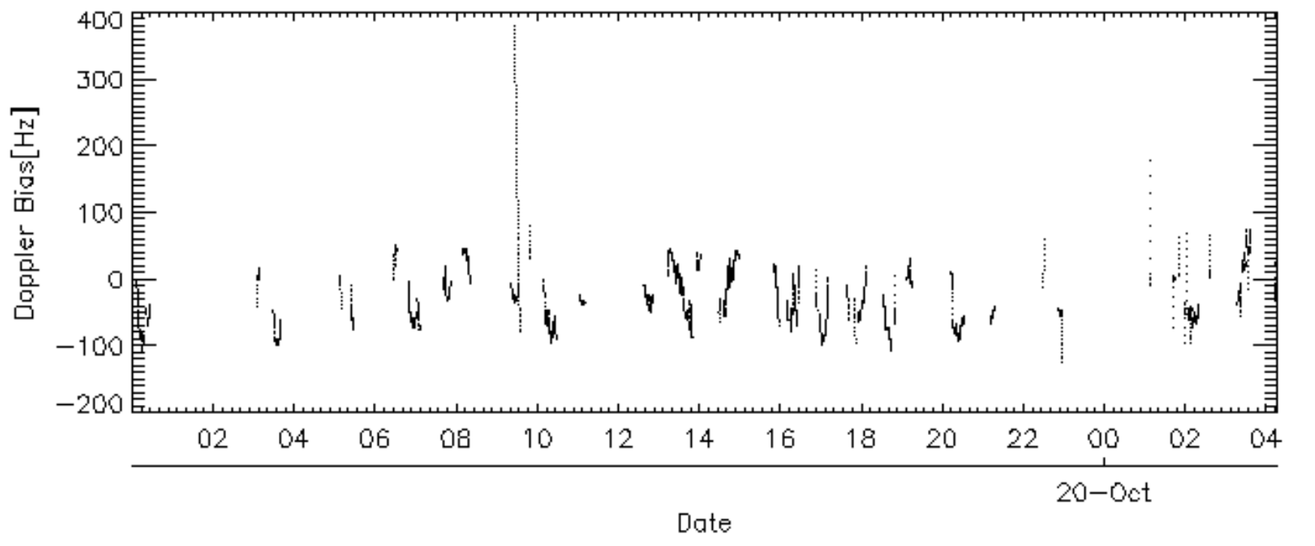

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

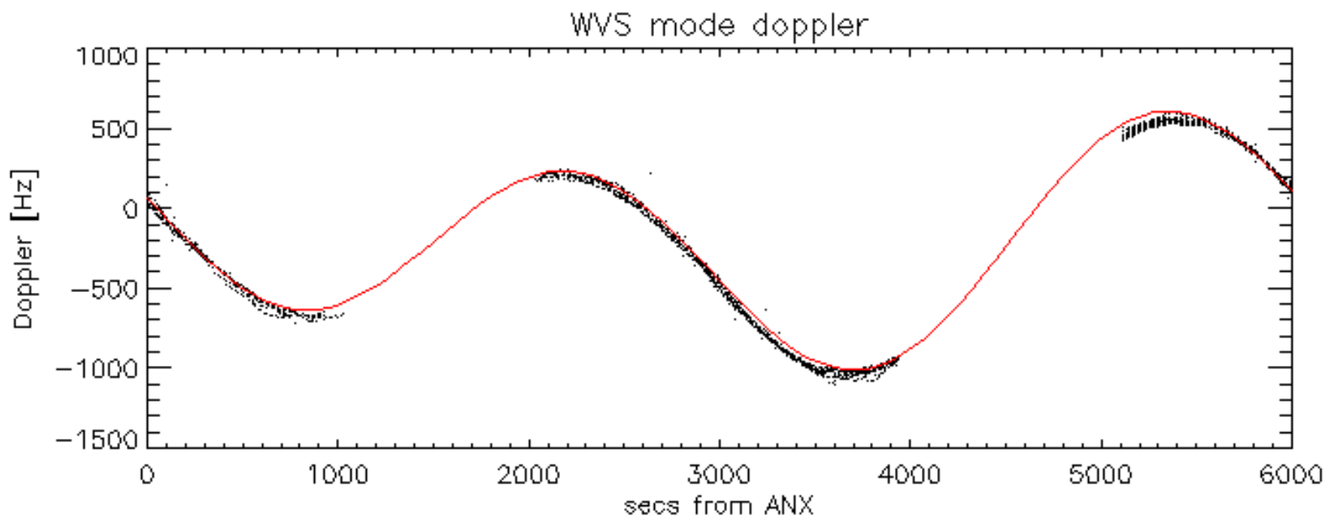

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

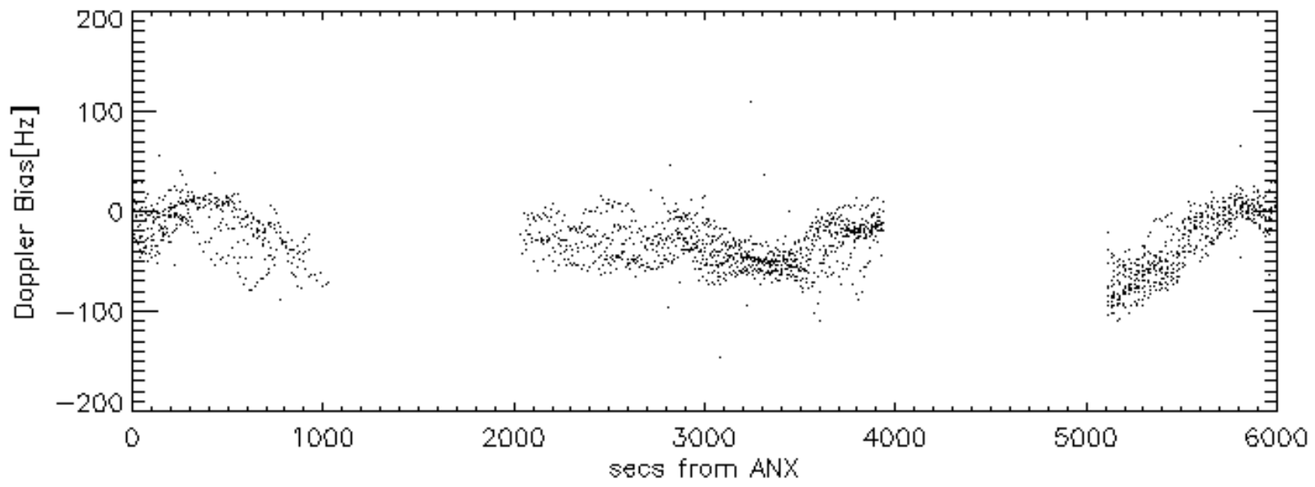

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

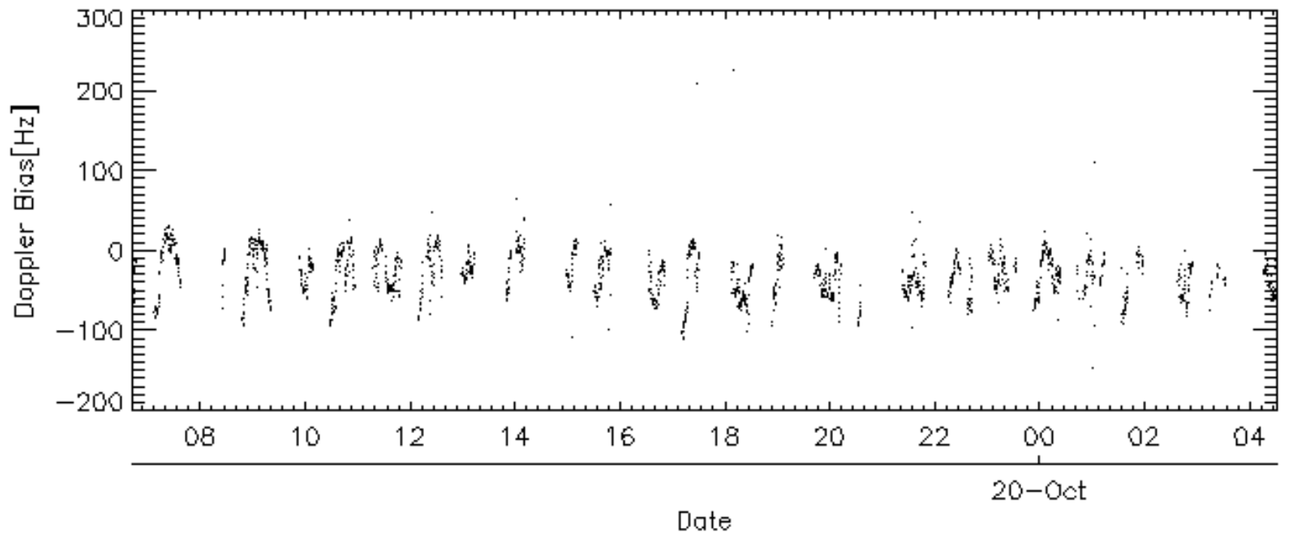

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

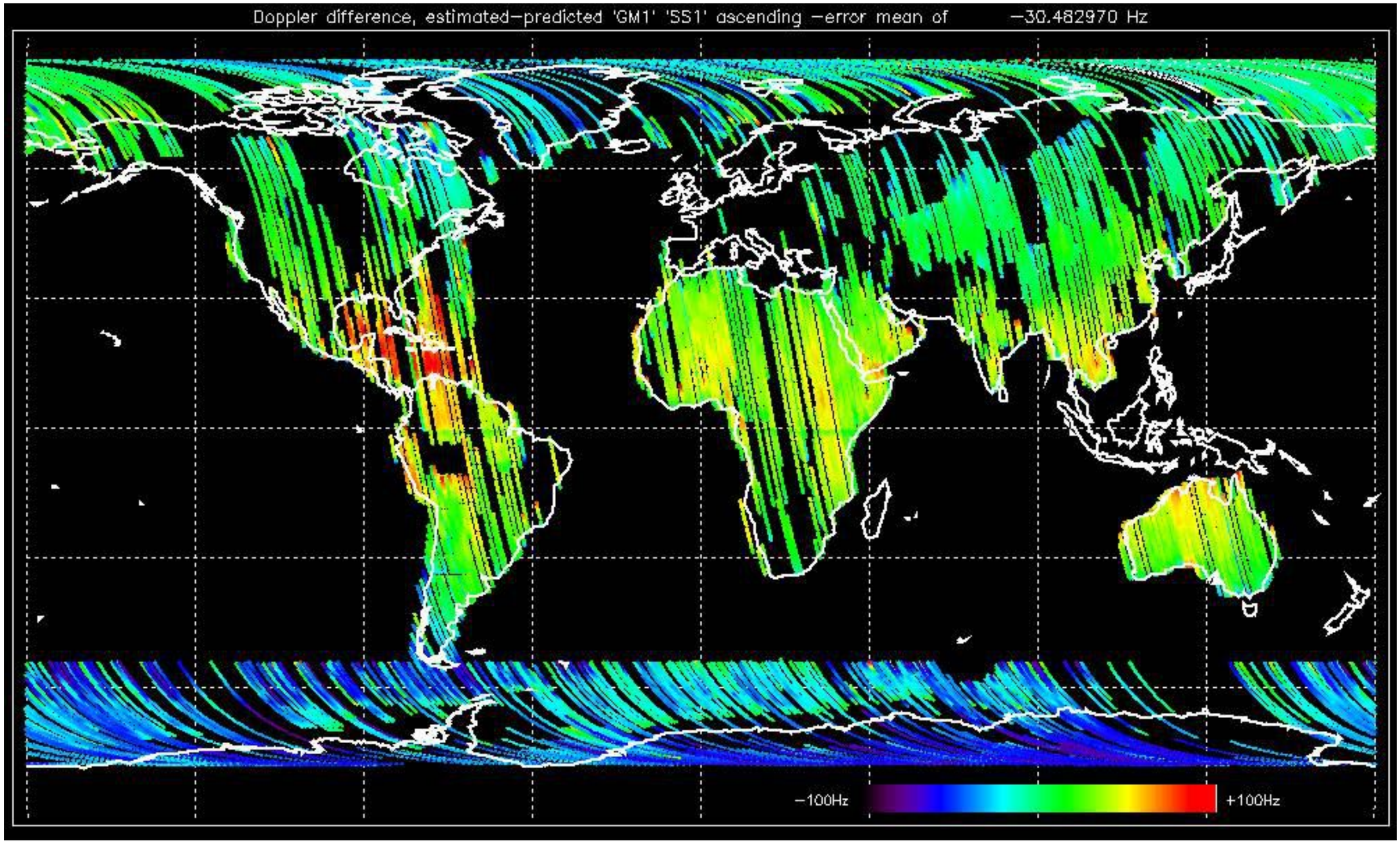

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

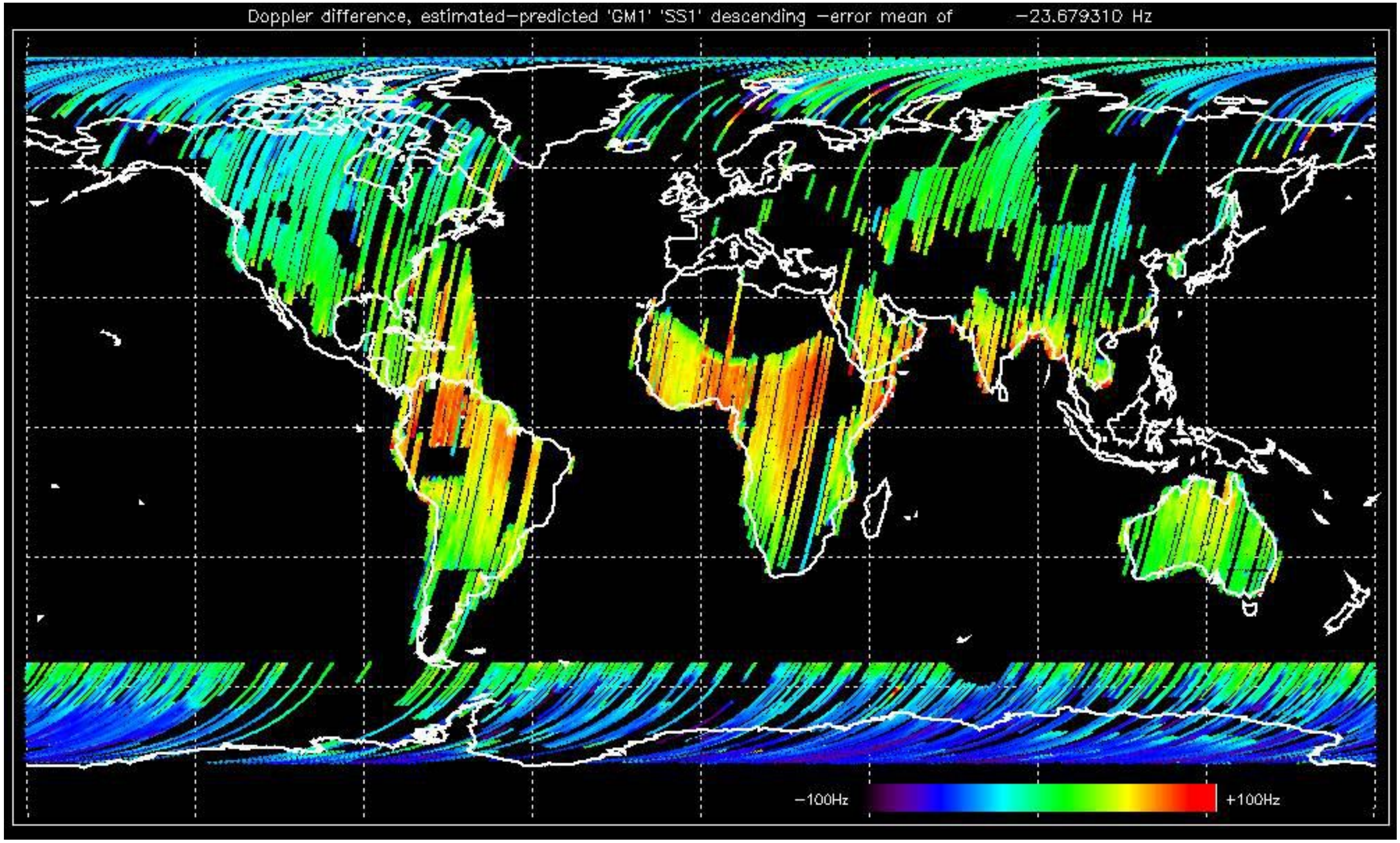

Doppler Bias[Hz]
400
300
200
100
0
−100
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
04
20−Oct
Date

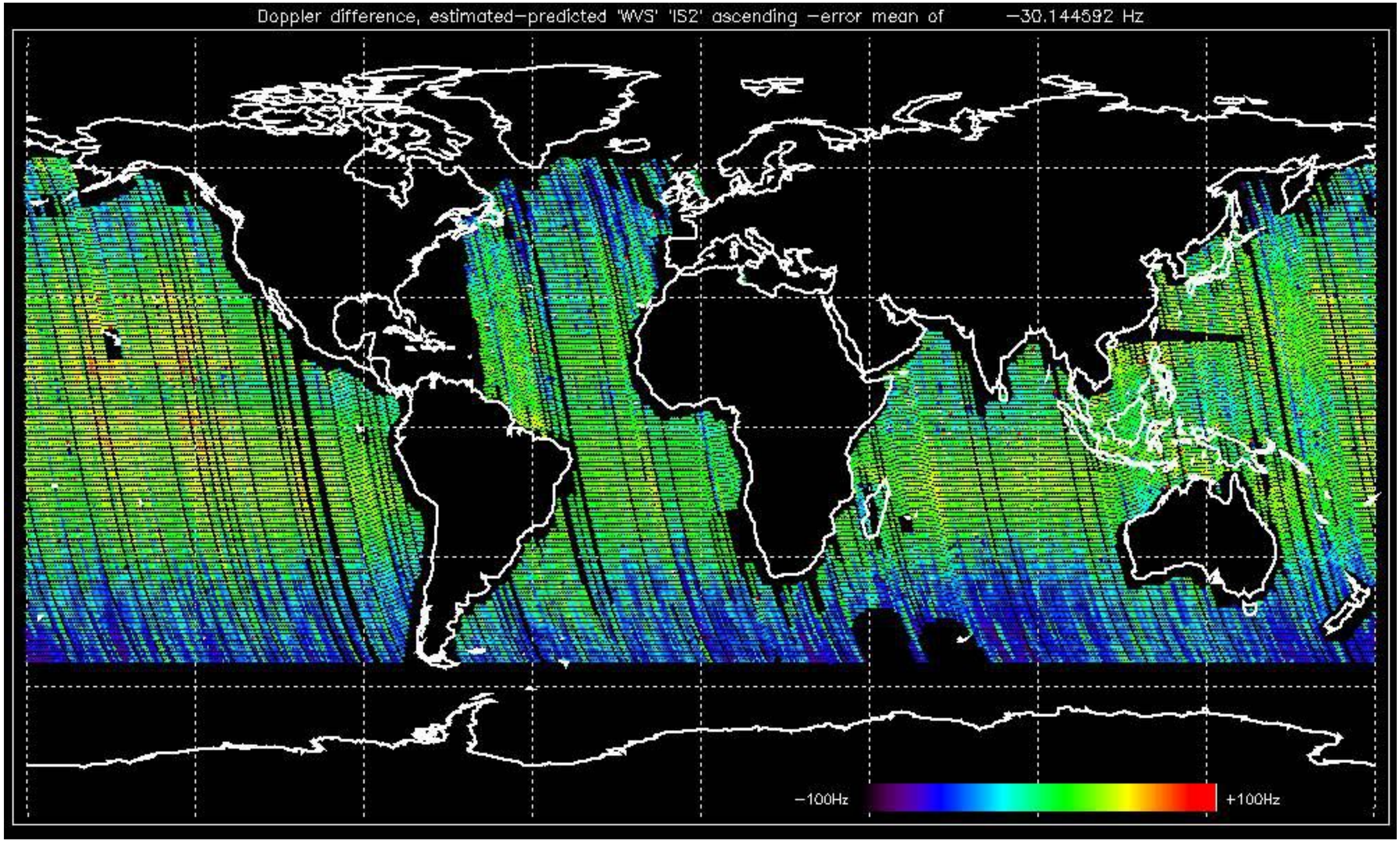

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

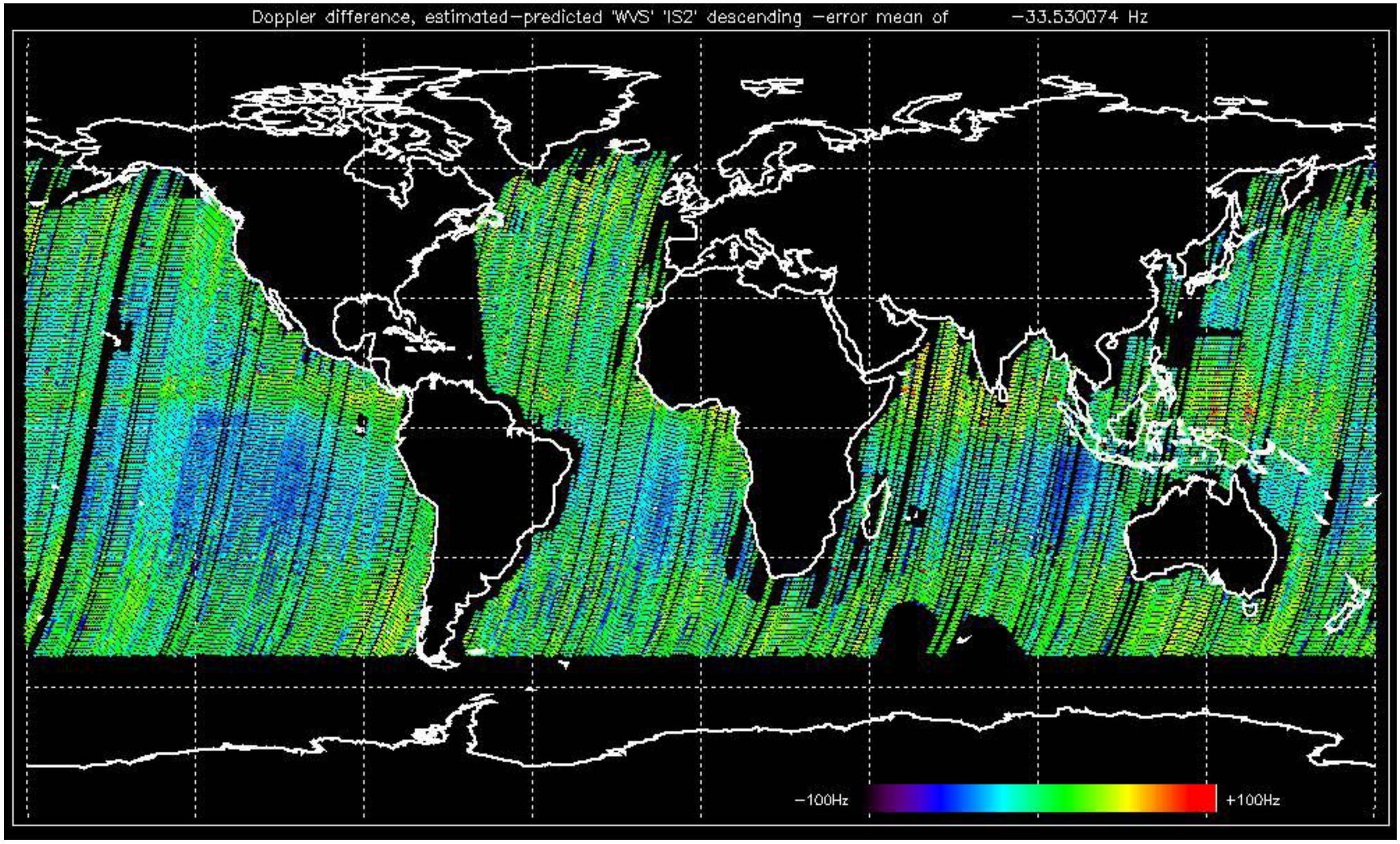

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −30.482970 Hz
−100Hz
+100Hz

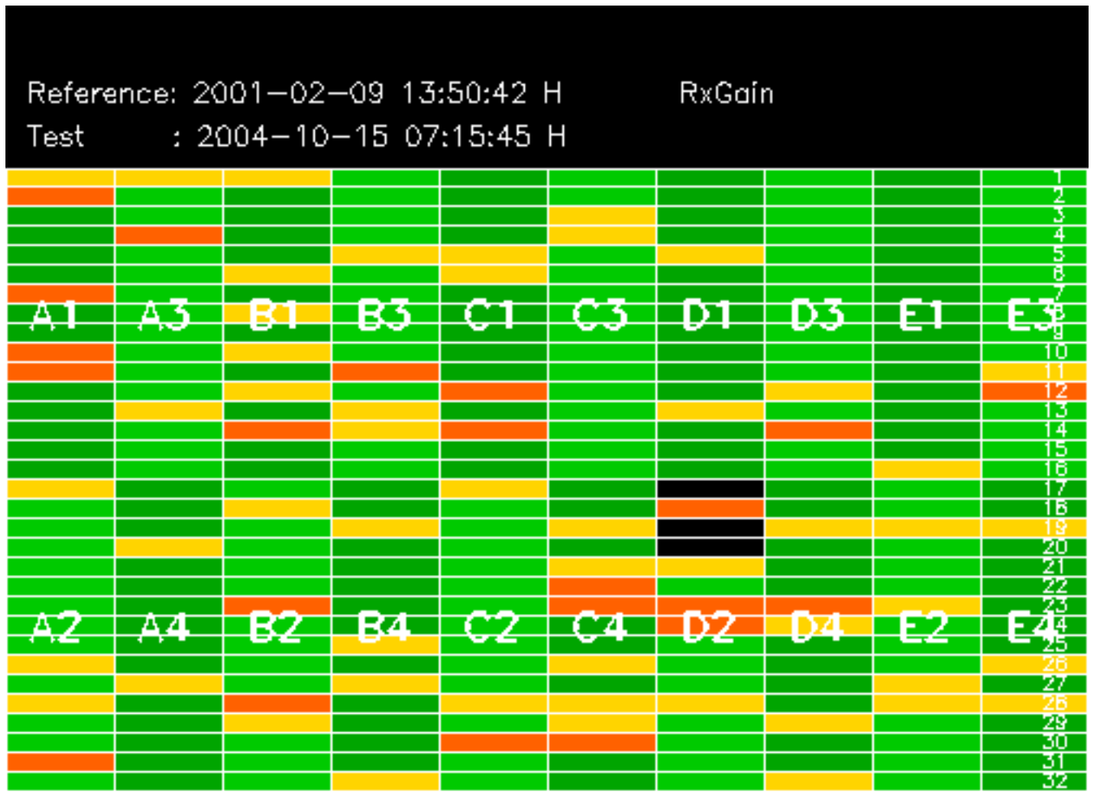

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -23.679310 Hz
-100Hz
+100Hz

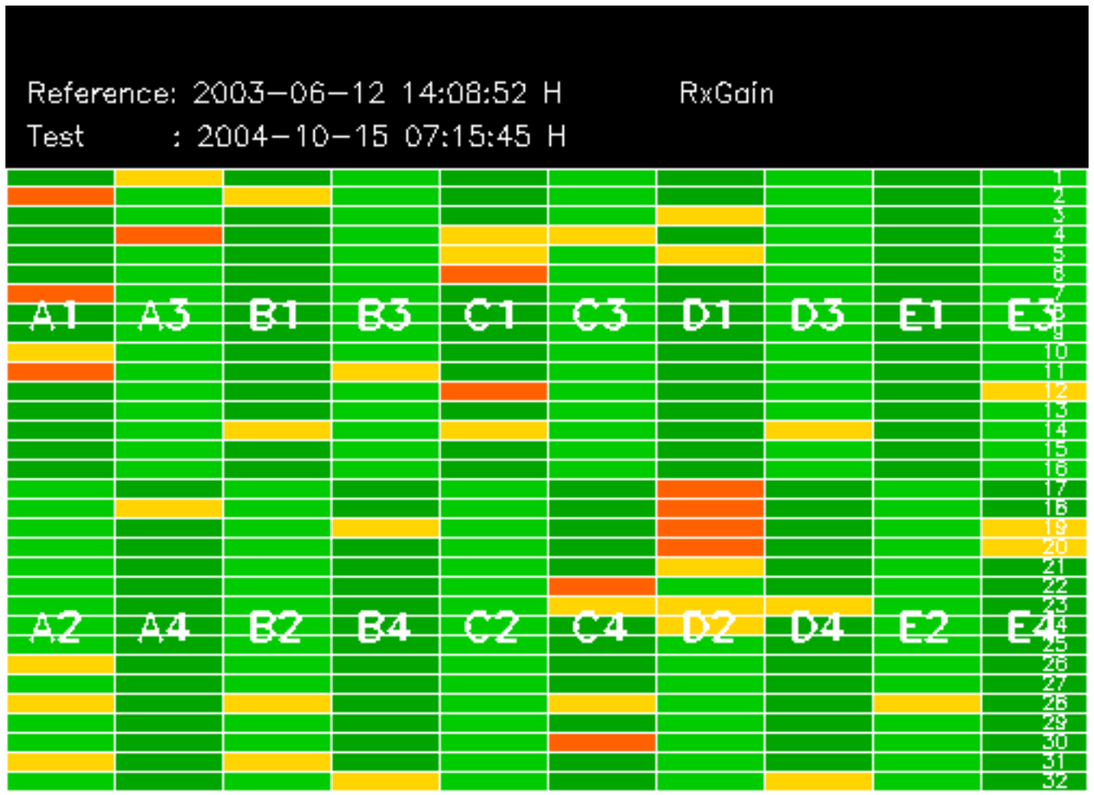

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −30.144592 Hz
−100Hz
+100Hz

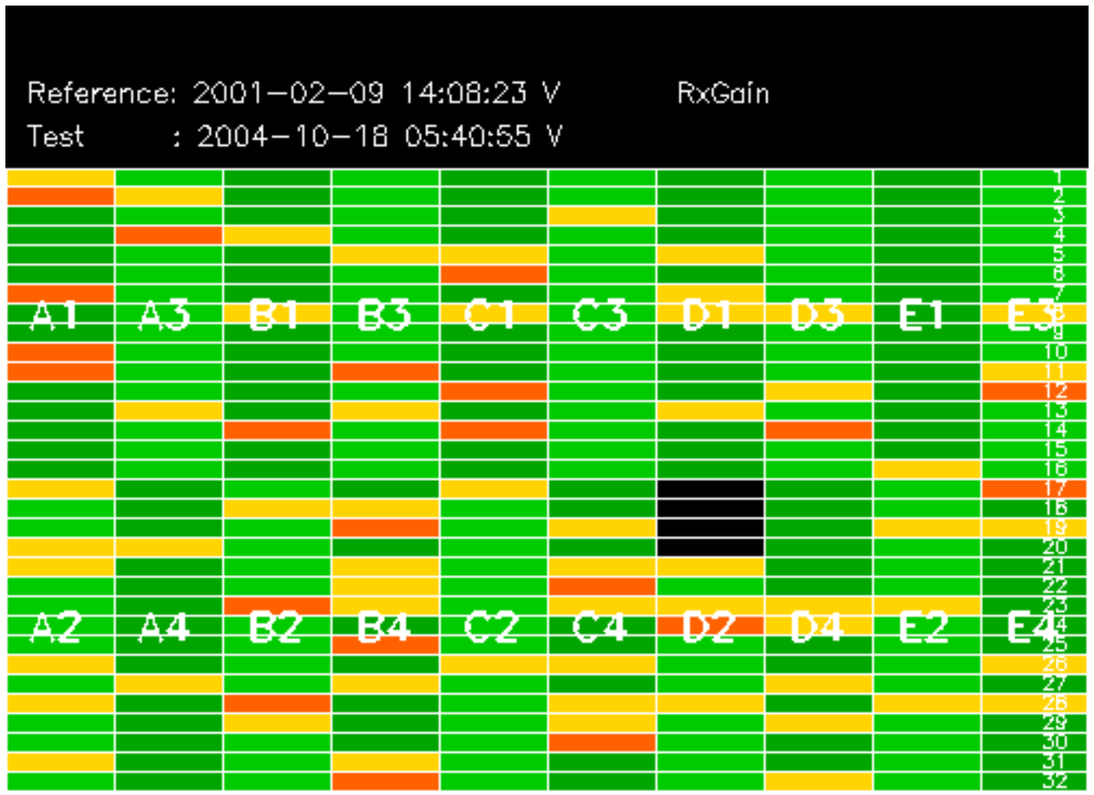

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −33.530074 Hz
−100Hz
+100Hz

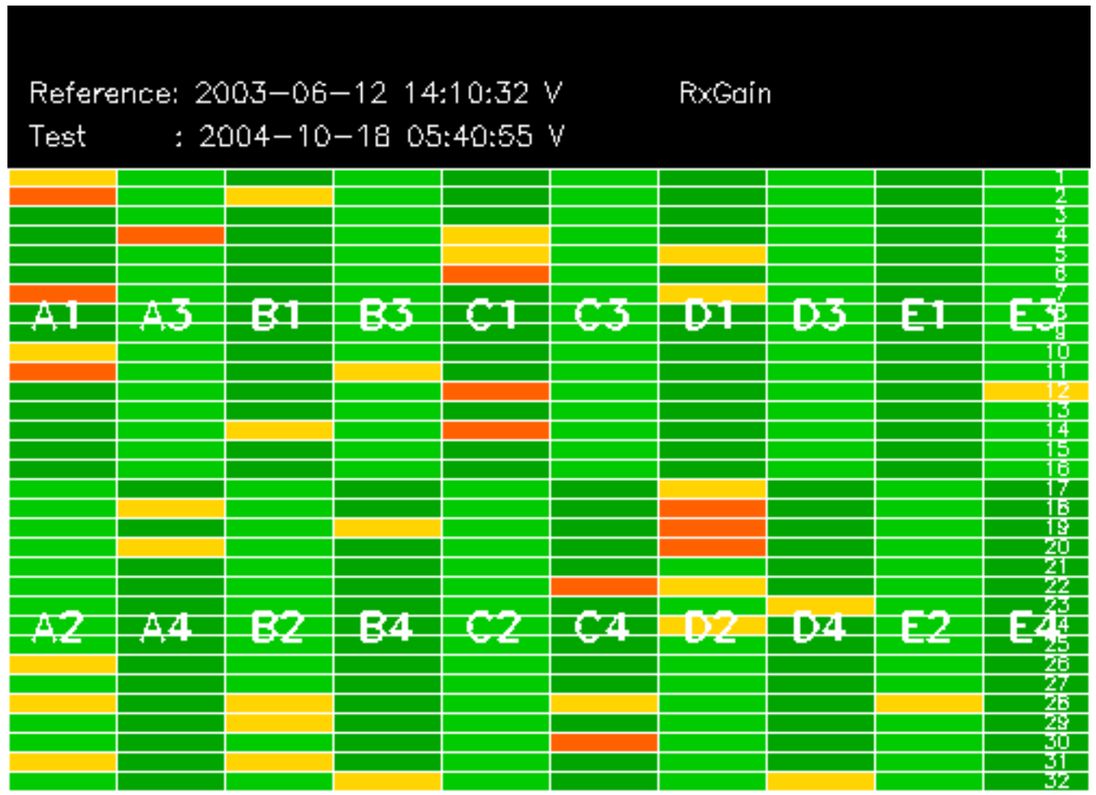
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No MS products available for the reported day.

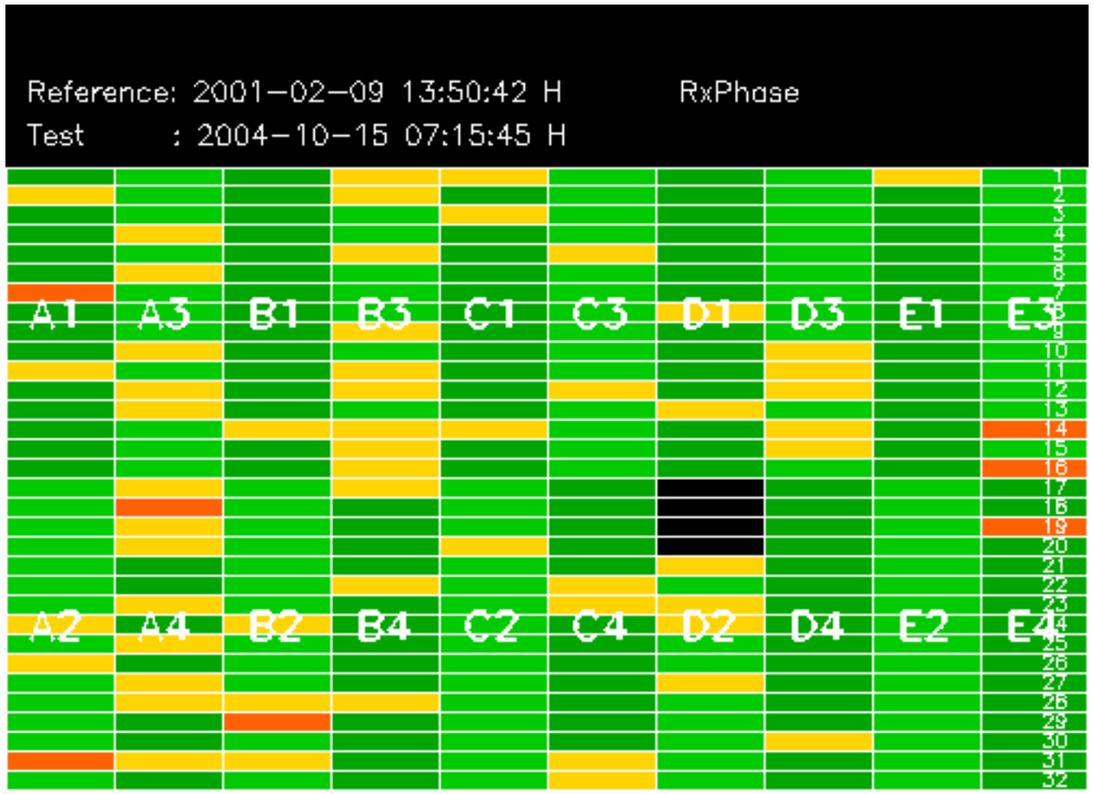
No anomalies observed.

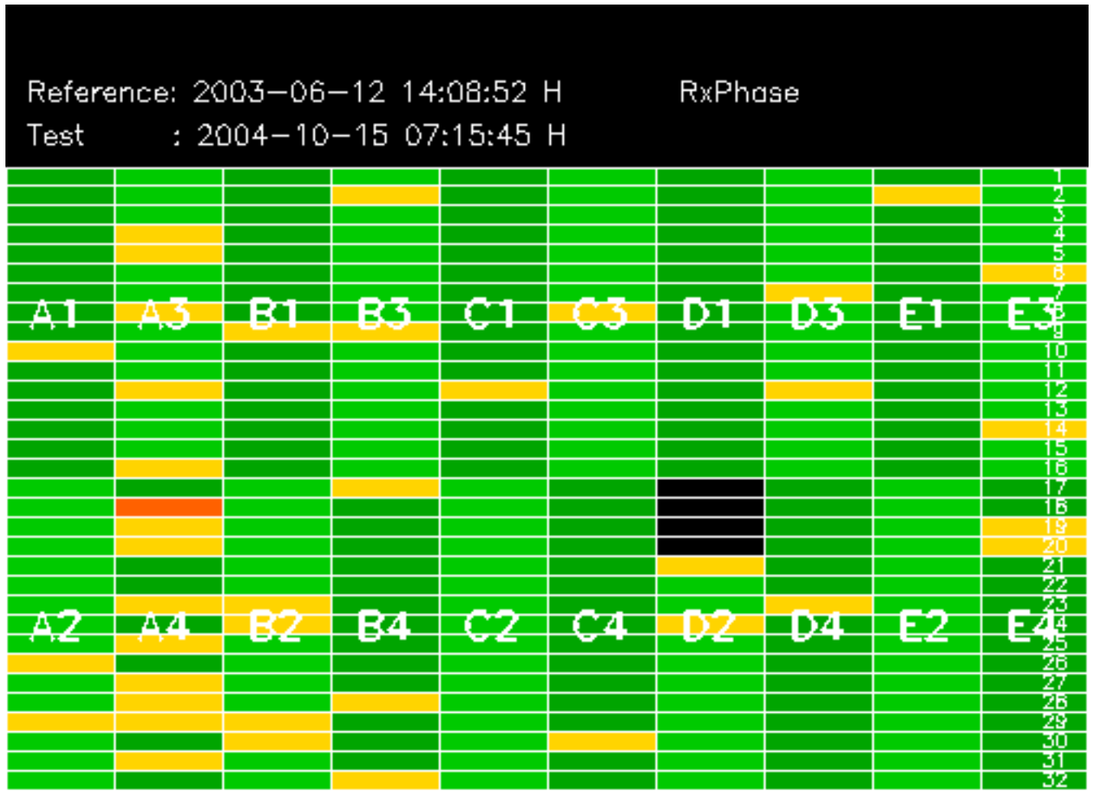

Reference: 2001-02-09 13:50:42 H
Test : 2004-10-15 07:15:45 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

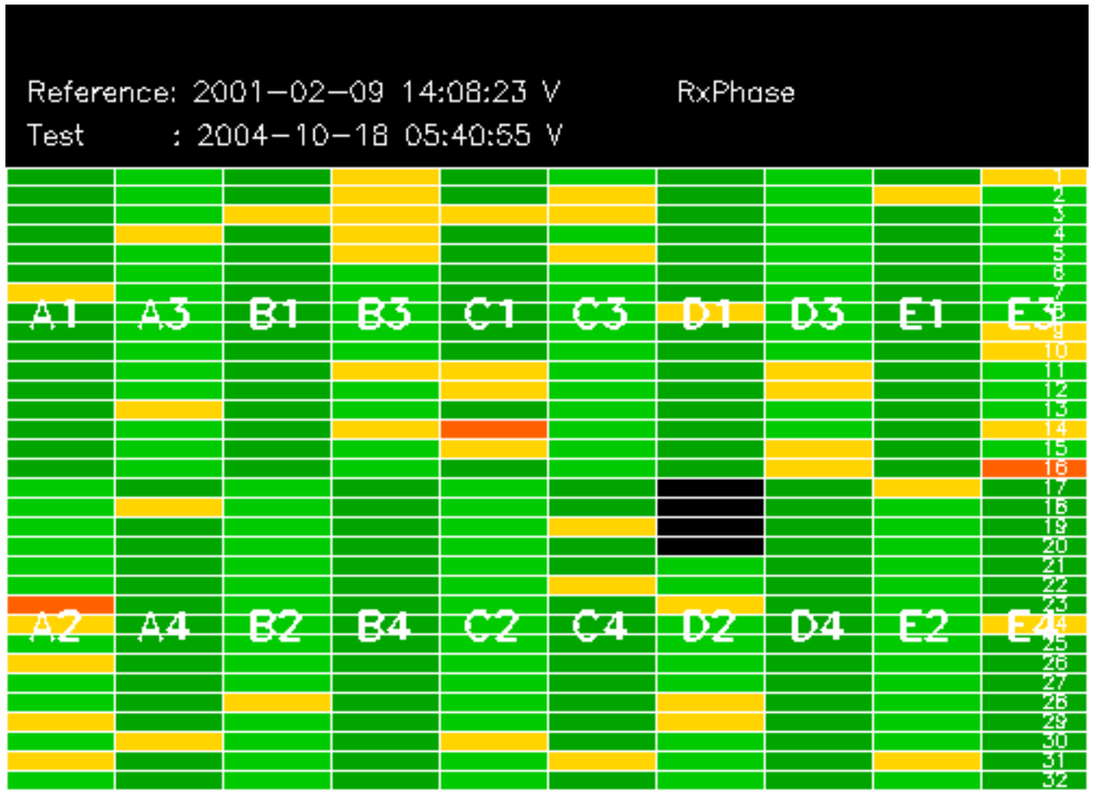

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-15 07:15:45 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

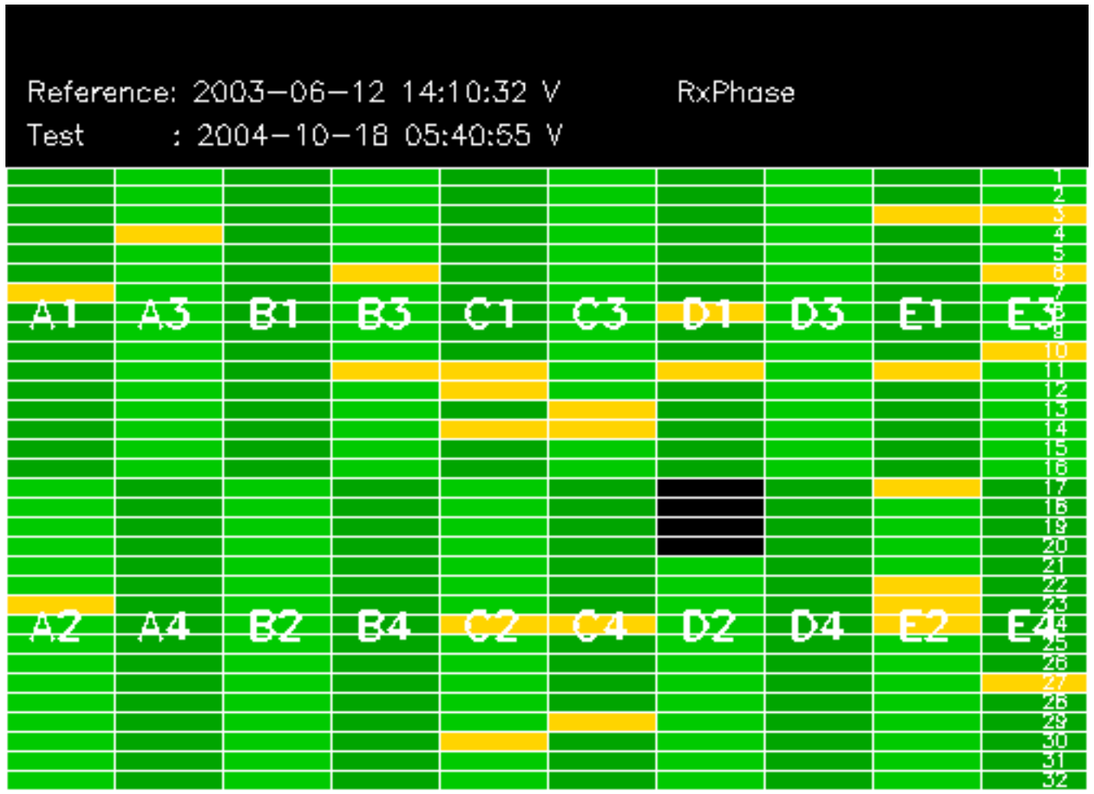

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-18 05:40:55 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

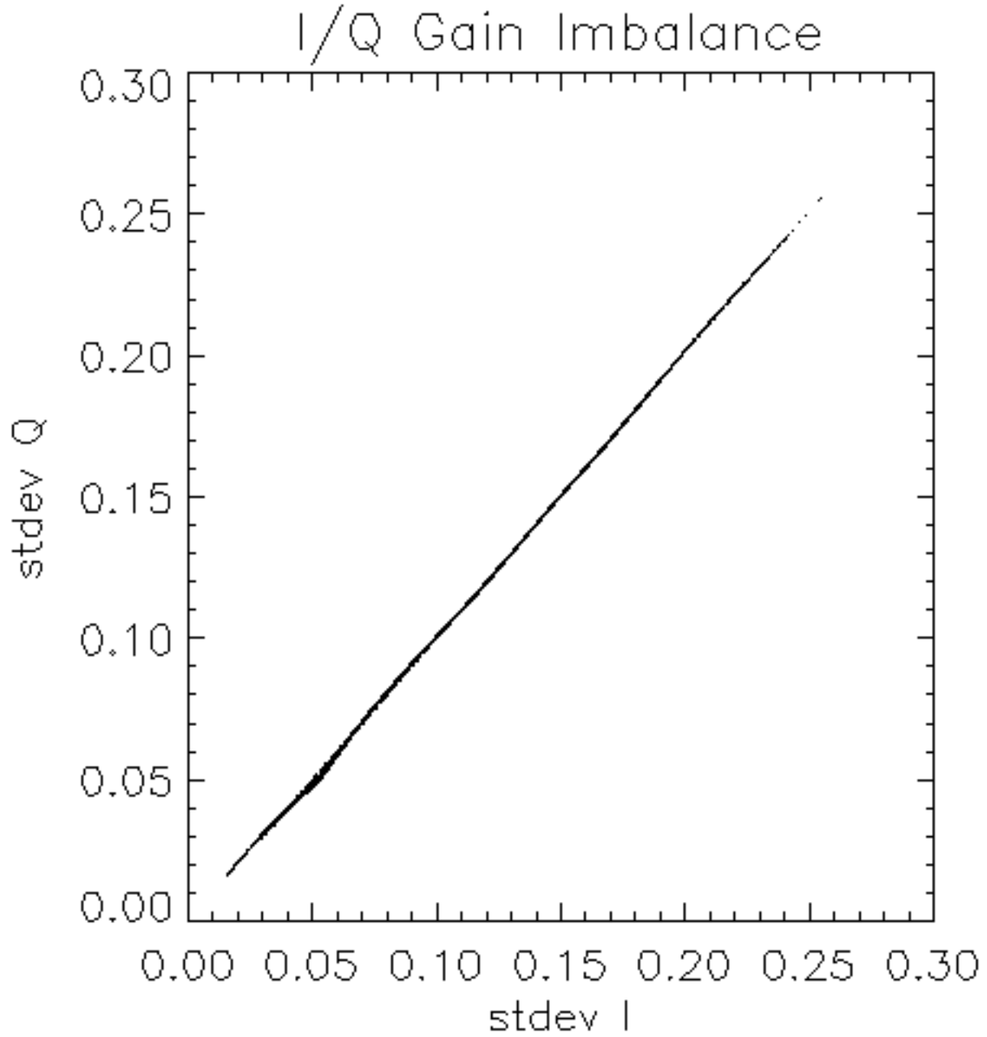

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-18 05:40:55 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

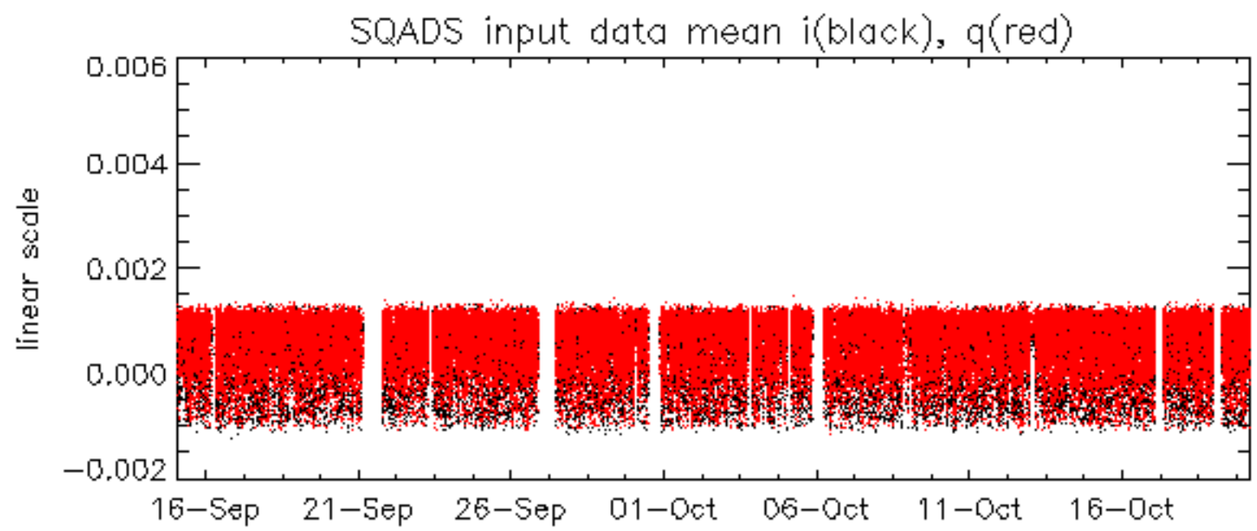

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-10-15 07:15:45 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

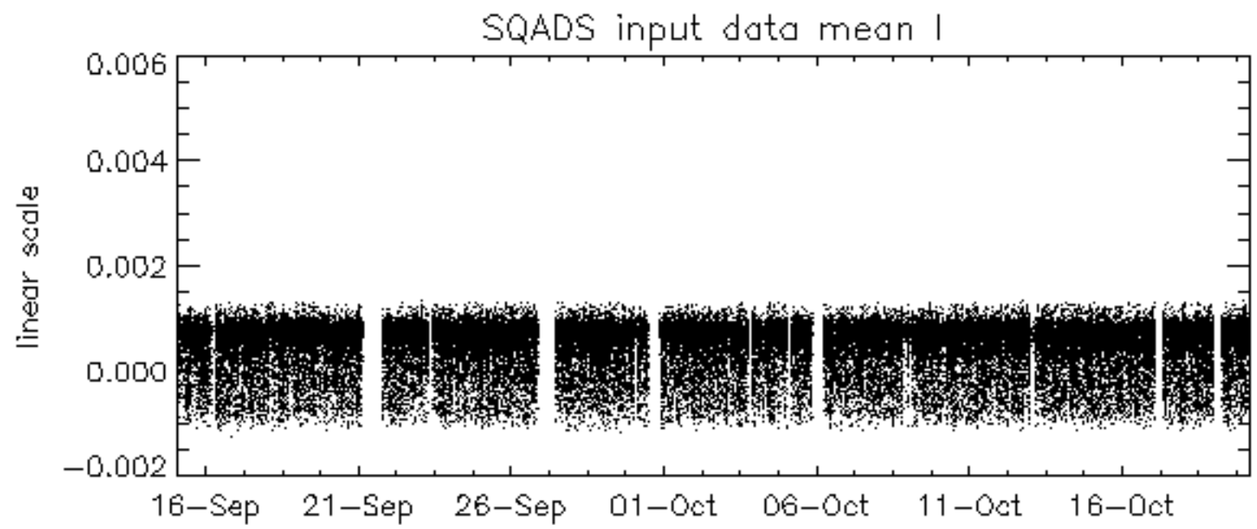

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-15 07:15:45 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

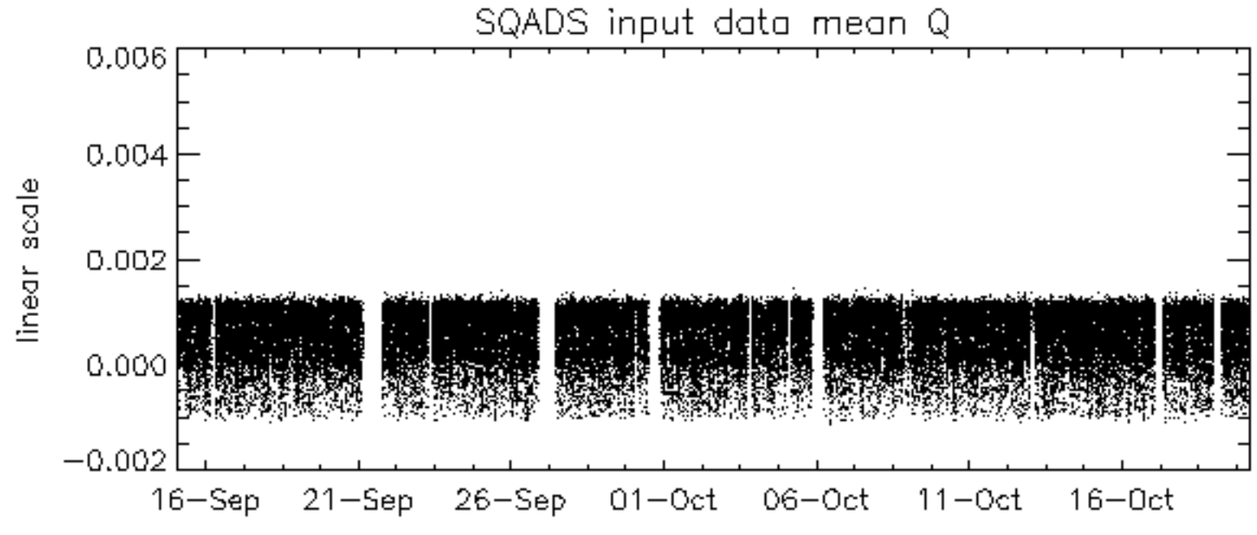

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-18 05:40:55 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

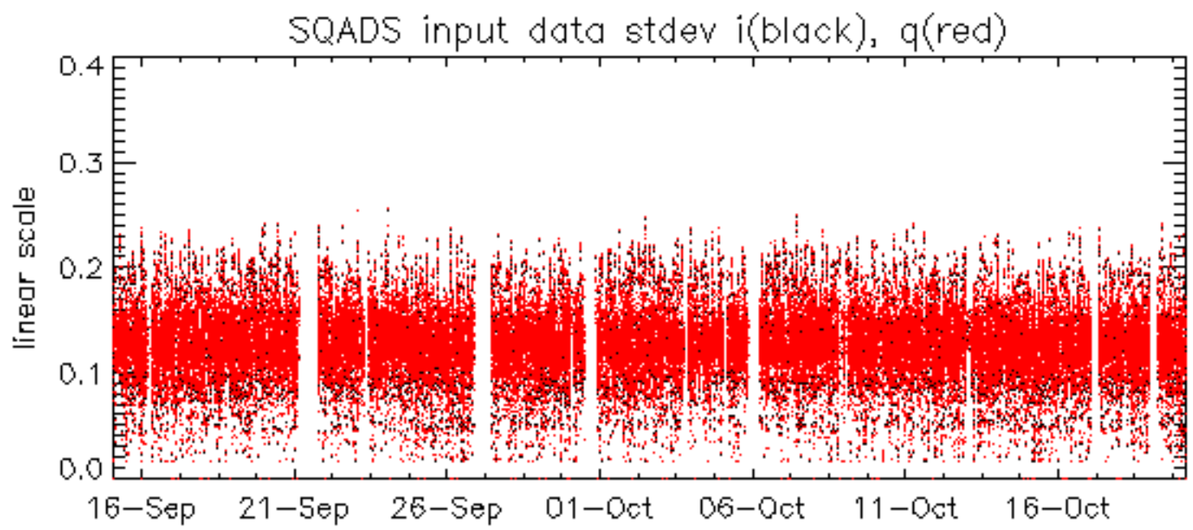

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-18 05:40:55 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

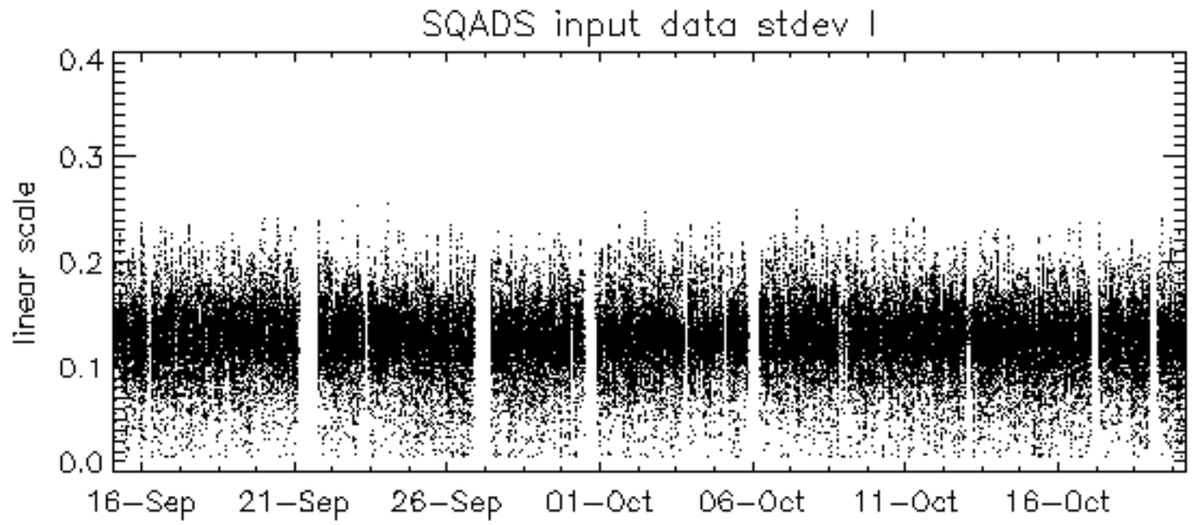

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

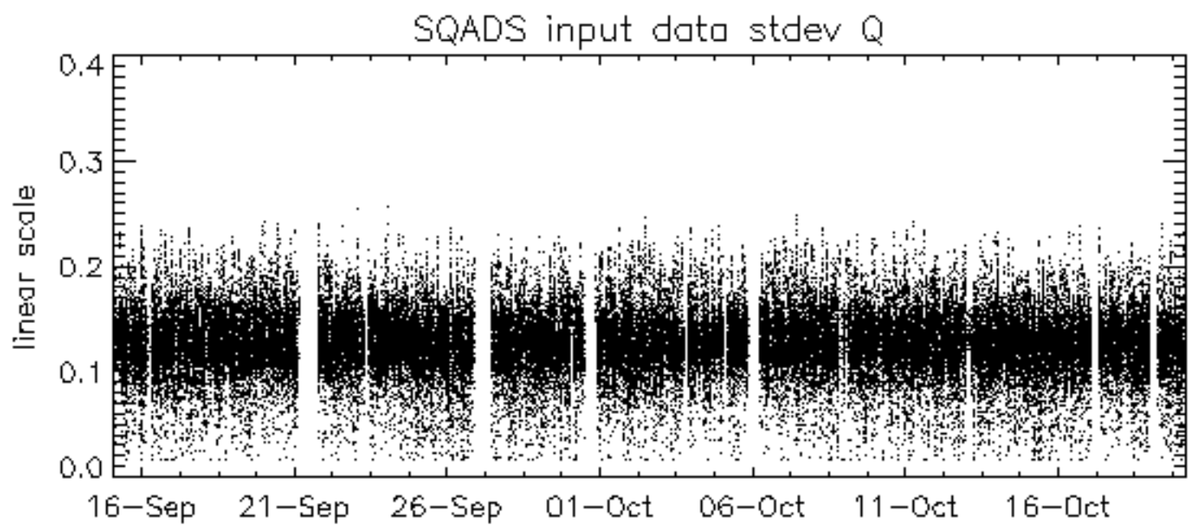

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

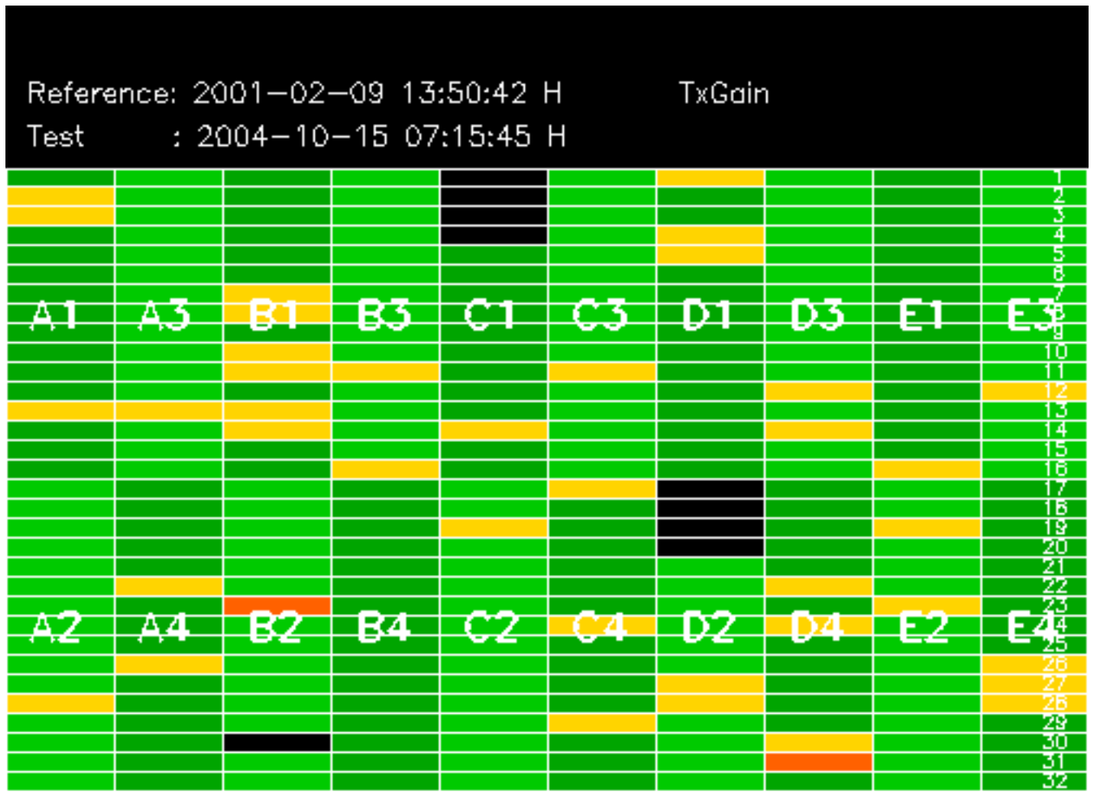

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

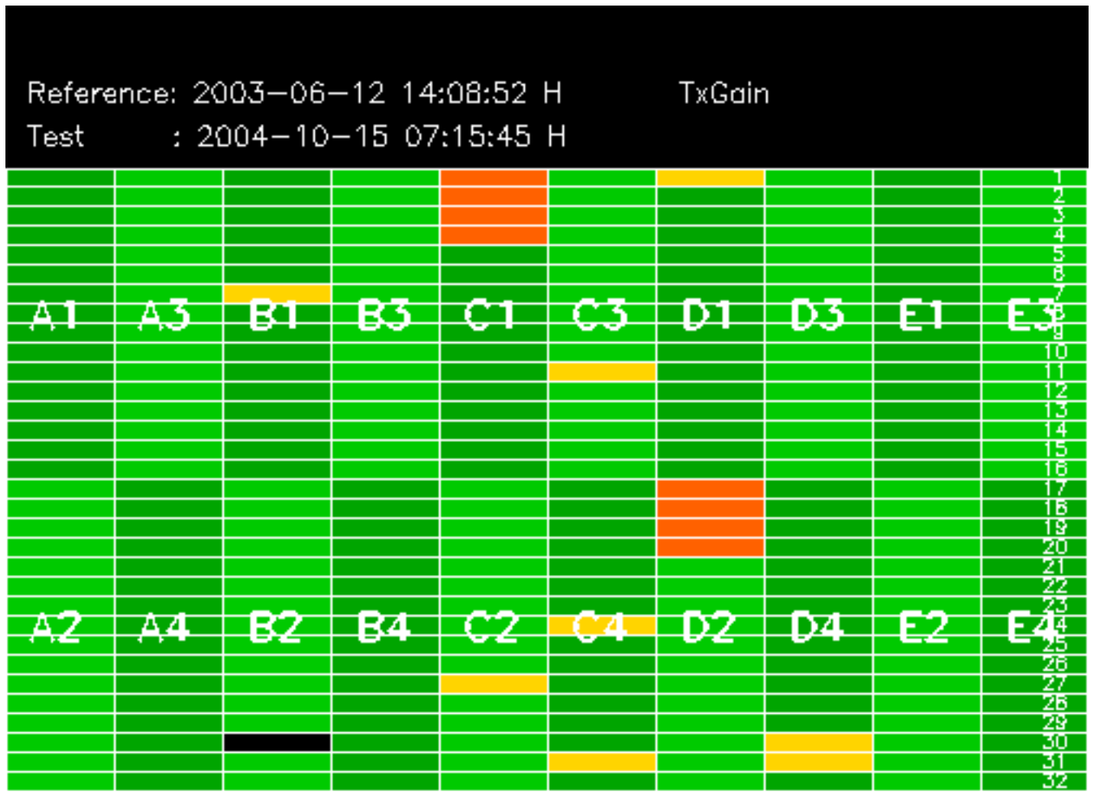

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

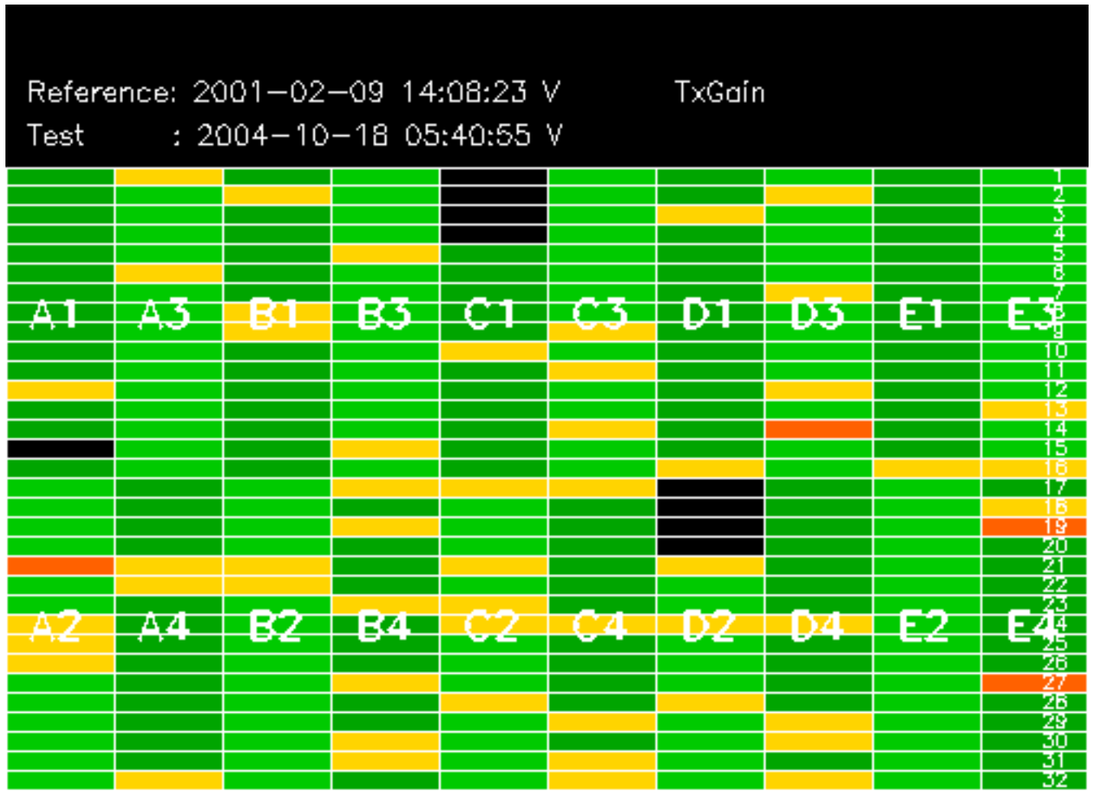

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

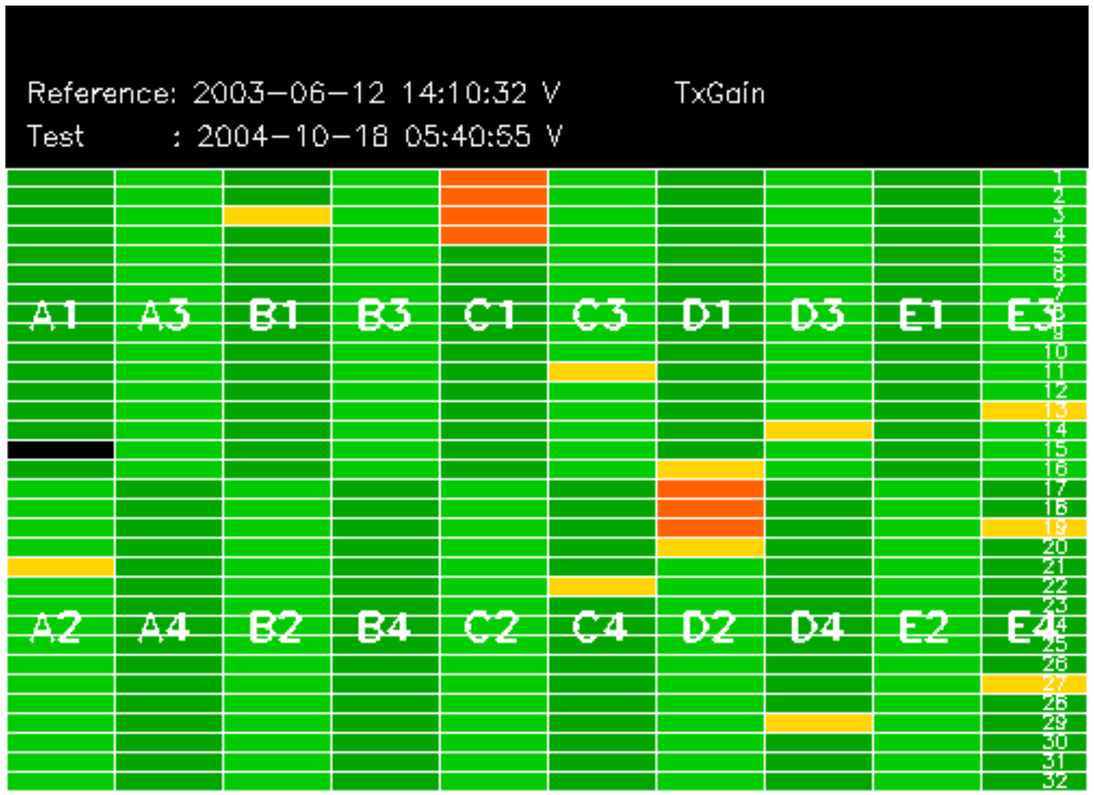

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

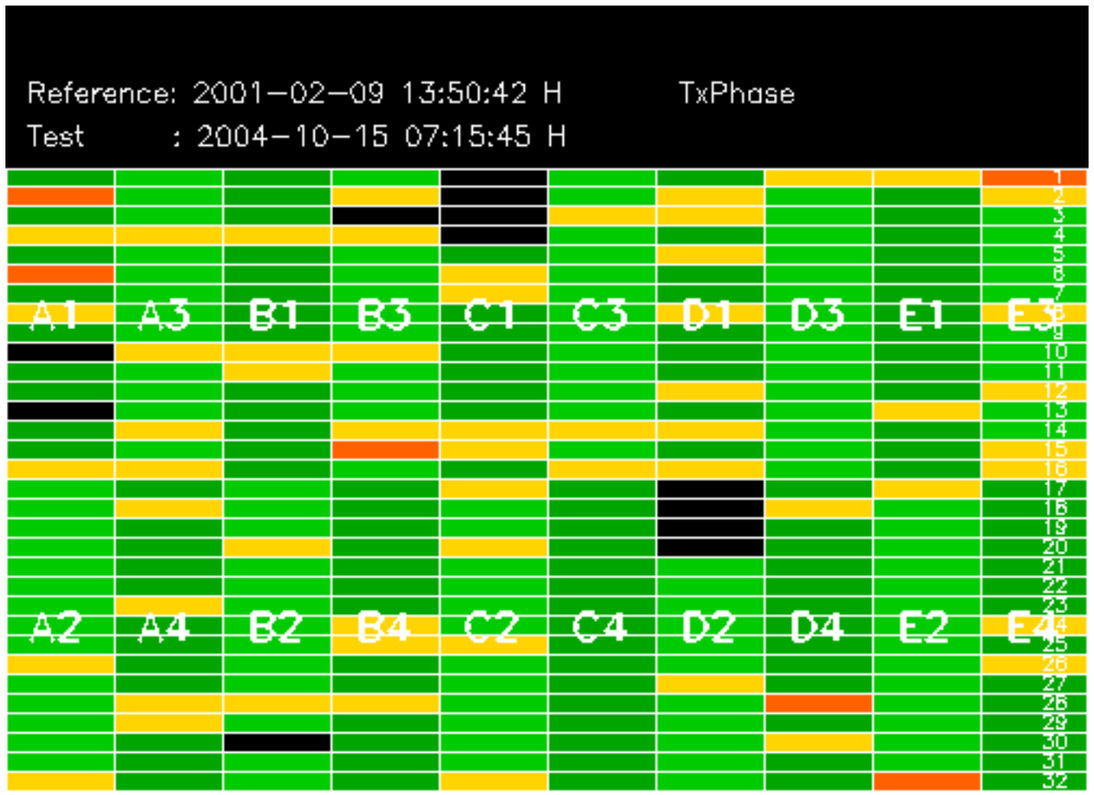

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
16−Sep
21−Sep
26−Sep
01−Oct
06−Oct
11−Oct
16−Oct

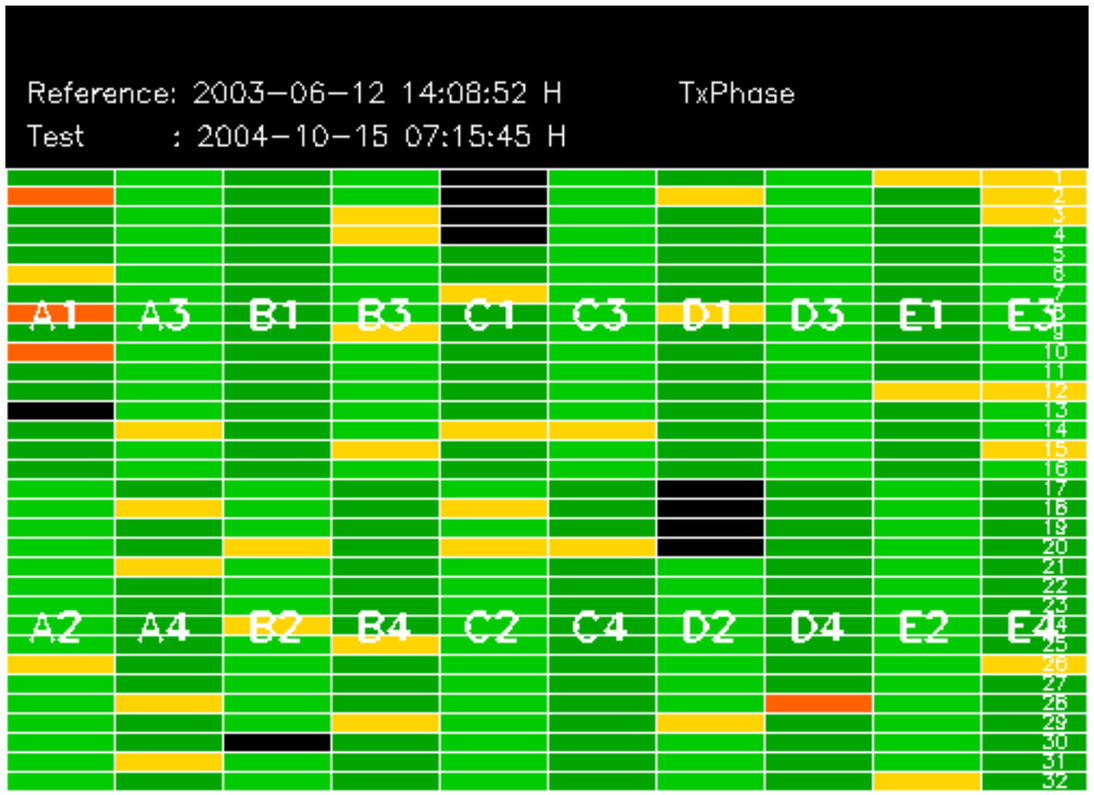

Reference: 2001-02-09 13:50:42 H
Test : 2004-10-15 07:15:45 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

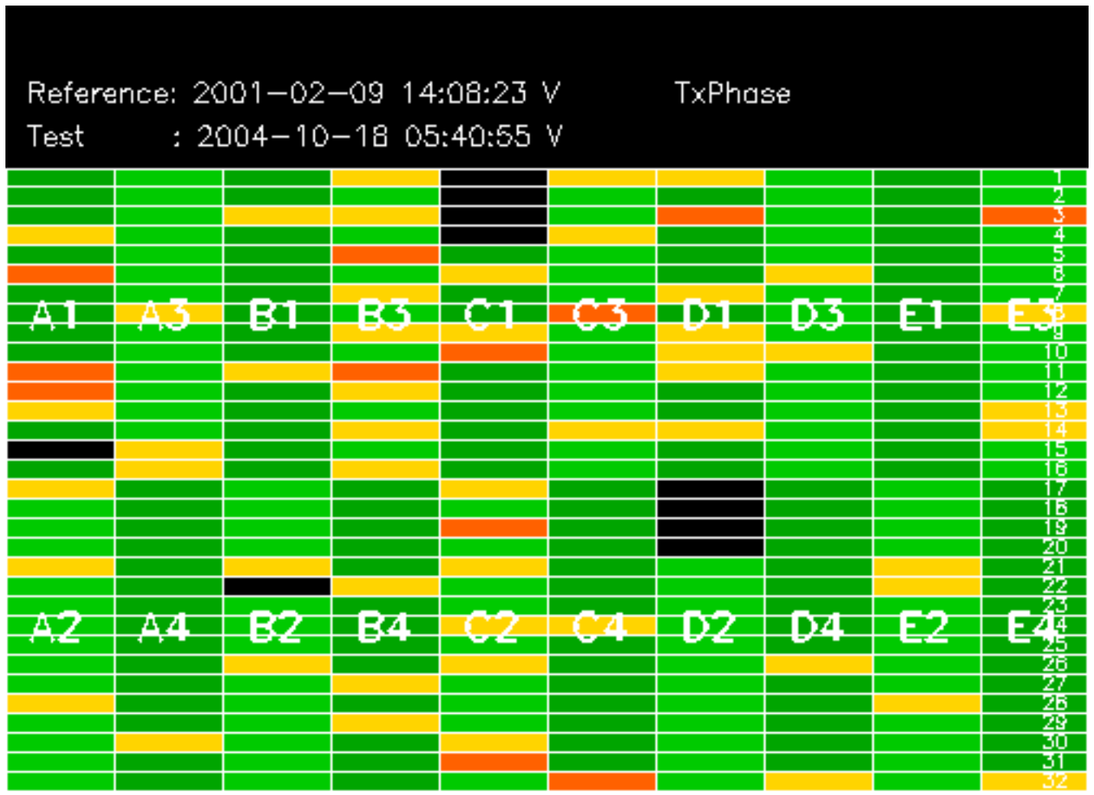

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-15 07:15:45 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

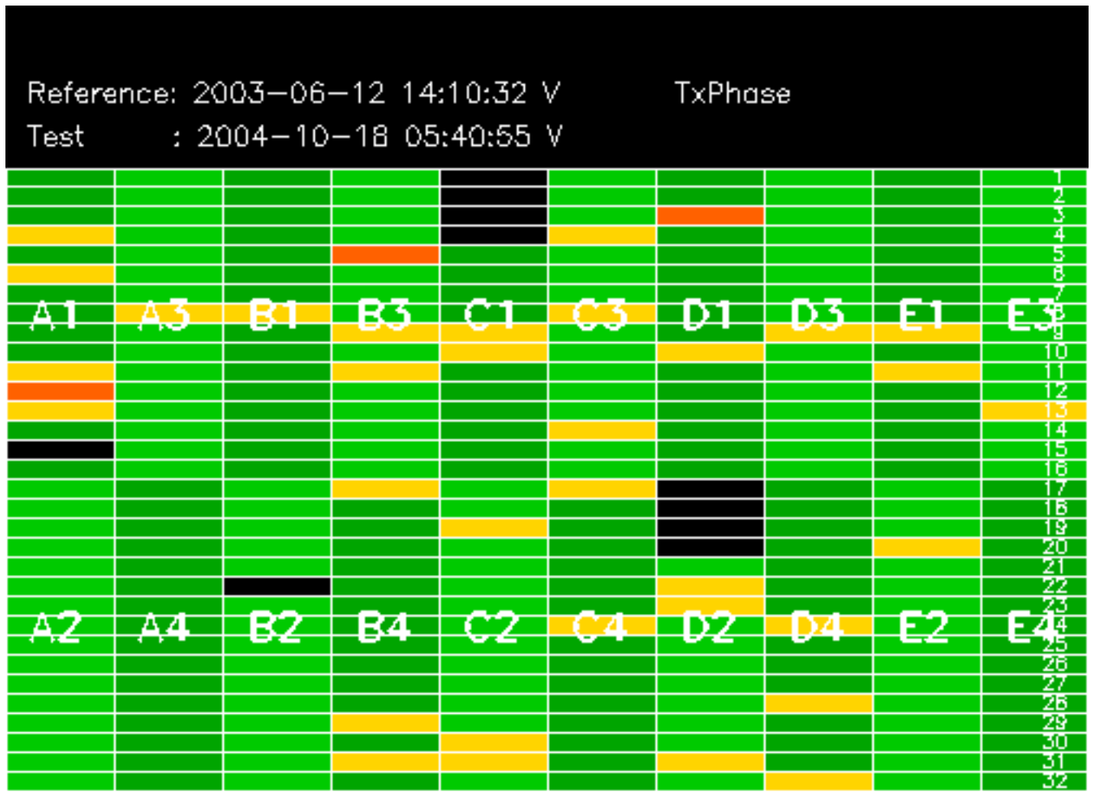

Reference: 2001-02-09 14:08:23 V
Test : 2004-10-18 05:40:55 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

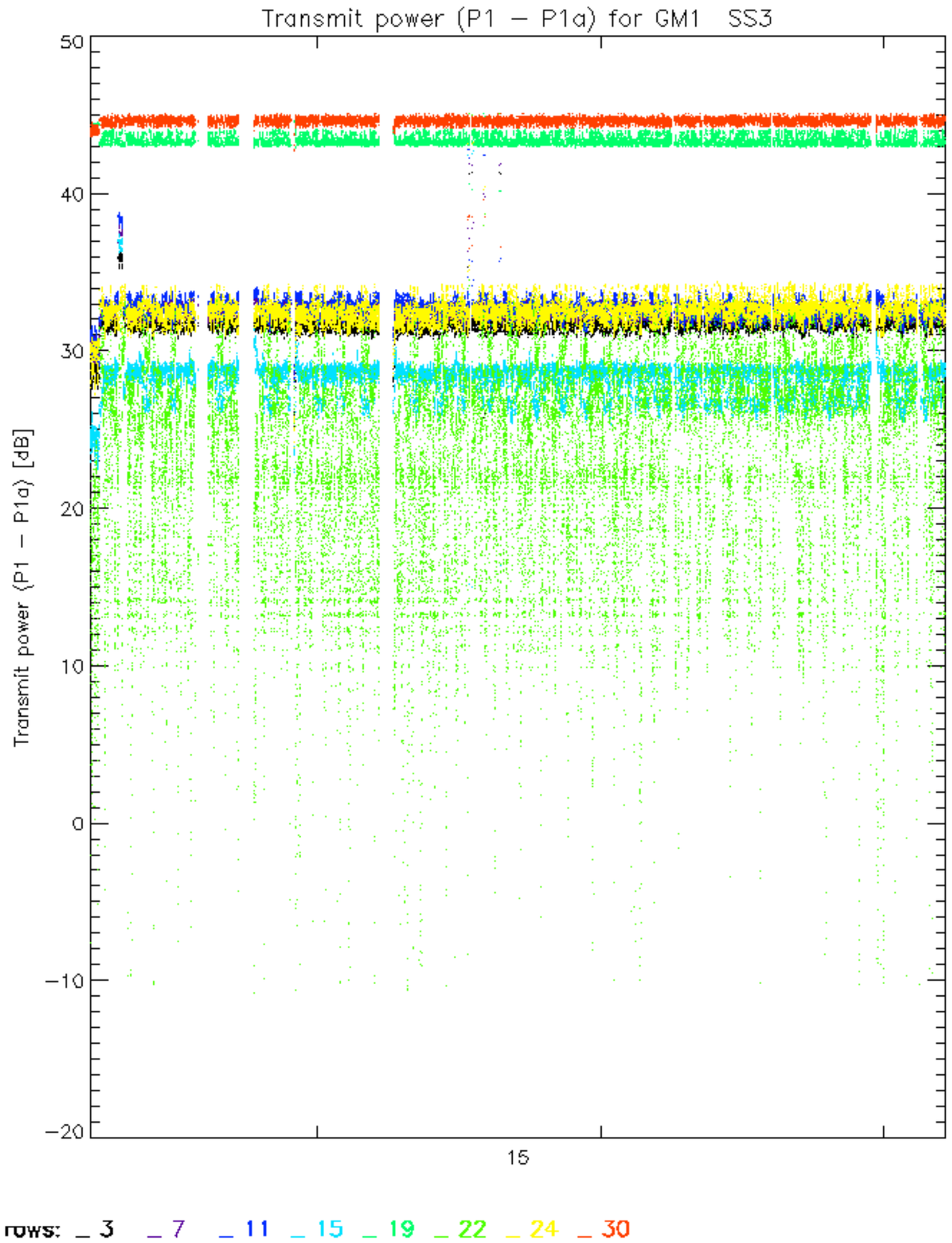

Reference: 2003-06-12 14:10:32 V
Test : 2004-10-18 05:40:55 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

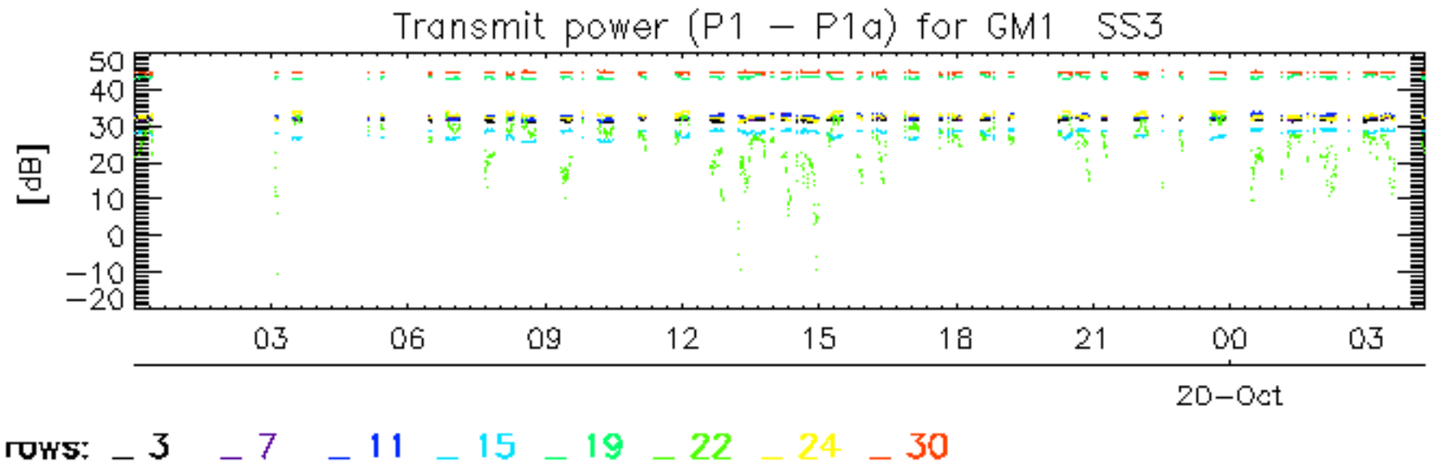

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-10-15 07:15:45 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

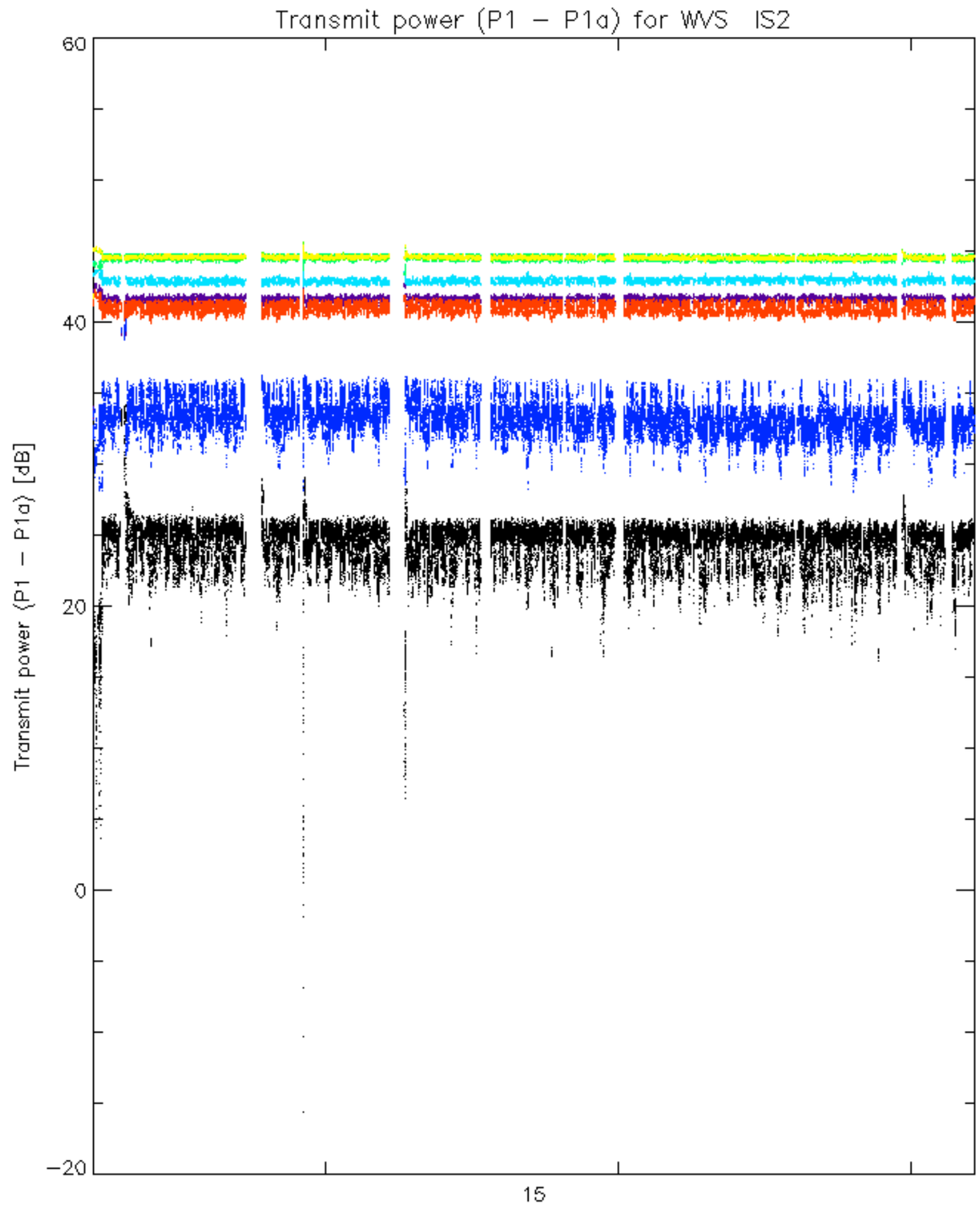

Reference: 2003-06-12 14:08:52 H
Test : 2004-10-15 07:15:45 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

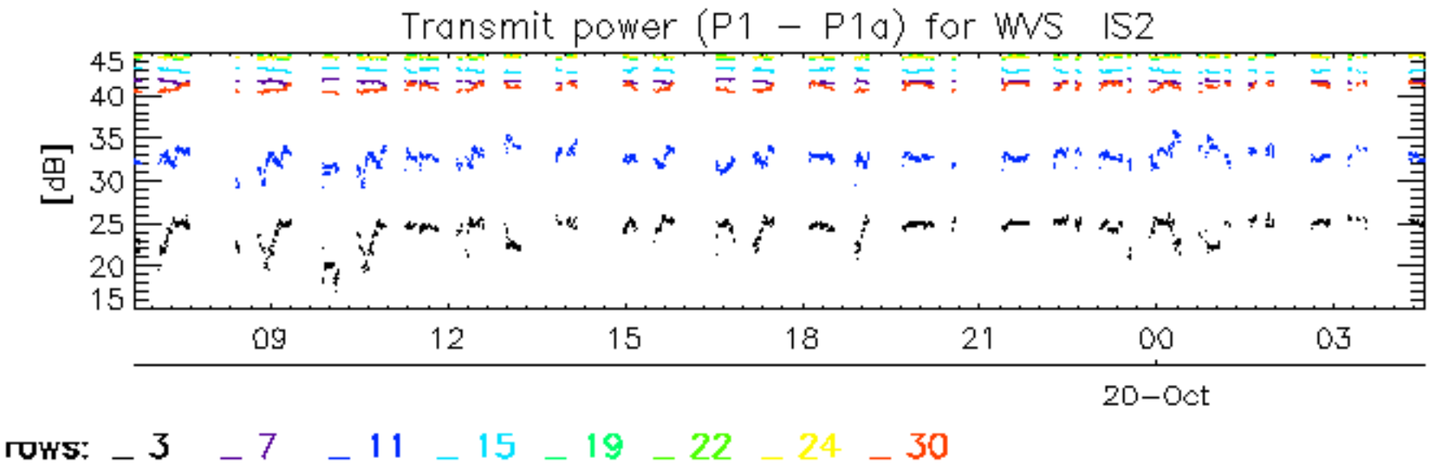

Reference: 2001-02-09 14:08:23 V
TxPhase
Test : 2004-10-18 05:40:55 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2004-10-18 05:40:55 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
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
15
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
−20
03
06
09
12
15
18
21
00
03
20−Oct
rows: 3
7
11
15
19
22
24
30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
60
40
20
0
−20
15
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
45
40
35
30
25
20
15
09
12
15
18
21
00
03
20–Oct
rows: 3 7 11 15 19 22 24 30

No unavailabilities during the reported period.