REPORT OF 041130

last update on Tue Nov 30 12:11:07 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

ASAR unavailable from 29-NOV-2004 00:42:03 until 29-NOV-2004 03:09:35 due the PSU for tile C-1-1 Off.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products

2.3 - Data Analysis

-Nominal trend after instrument HEATER/REFUSE mode due the PSU for tile C-1-1 Off.
-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	20041129 084157
H	20041127 030247

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

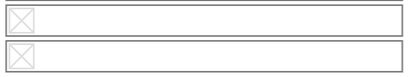
4 - Internal calibration Results

Nominal trend after the instrument unavailability occurred on 29-NOV-2004 from 00:42:03 to 03:09:35 due the PSU for Tile C1-1 Off.

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	-3.464508	0.006664	0.039152
7	P1	-3.260341	0.030800	0.377356
11	P1	-4.607024	0.017566	-0.018590
15	P1	-5.660302	0.029272	0.004596
19	P1	-3.612139	0.005443	-0.046988
22	P1	-4.578717	0.015993	0.013972
26	P1	-4.878340	0.061538	-0.117604
30	P1	-7.080890	0.014573	-0.034282
3	P1	-16.000681	0.110699	0.084215

7	P1	-14.589573	0.585478	-2.023893
11	P1	-20.687433	0.213334	-0.135242
15	P1	-11.659193	0.038967	0.072892
19	P1	-14.086308	0.029596	-0.094714
22	P1	-16.177513	0.427224	0.153050
26	P1	-17.693962	0.732717	-0.279992
30	P1	-17.944569	0.288993	0.134500

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.371098	0.088703	0.024082
7	P2	-22.610201	0.138854	-0.008454
11	P2	-15.037014	0.129190	0.104058
15	P2	-7.155781	0.110522	-0.019910
19	P2	-9.712359	0.132997	0.013015
22	P2	-17.228186	0.103438	0.064098
26	P2	-16.509638	0.111835	0.000326
30	P2	-19.038795	0.084110	0.054719

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.203109	0.006748	0.000249
7	P3	-8.203110	0.006748	0.000251
11	P3	-8.203110	0.006748	0.000251
15	P3	-8.203113	0.006748	0.000253
19	P3	-8.203115	0.006748	0.000251
22	P3	-8.203116	0.006748	0.000248
26	P3	-8.203115	0.006748	0.000247
30	P3	-8.203073	0.006744	-0.000397

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	-2.804973	0.011120	-0.002515
7	P1	-2.953473	0.021617	-0.023657
11	P1	-3.904874	0.022745	-0.040787
15	P1	-3.487604	0.027289	-0.013600
19	P1	-3.590871	0.012553	-0.003885
22	P1	-5.607118	0.067106	0.001170
26	P1	-6.431505	0.086225	-0.177388
30	P1	-6.273199	0.041238	-0.028114
3	P1	-10.602886	0.052024	-0.023784
7	P1	-10.088135	0.131684	-0.066305
11	P1	-12.383151	0.116053	-0.100573
15	P1	-11.724172	0.064308	-0.055634
19	P1	-15.621427	0.052505	0.008729
22	P1	-24.005247	2.095394	-0.125409
26	P1	-15.107574	0.469810	0.021731
30	P1	-20.233061	0.993977	0.181503

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.057196	0.040593	0.017272
7	P2	-22.670292	0.030513	0.023860
11	P2	-10.831082	0.036639	0.143581
15	P2	-5.053826	0.027949	-0.009893
19	P2	-6.961265	0.035501	-0.007824
22	P2	-7.349488	0.029475	0.057704
26	P2	-23.945932	0.021623	-0.010426
30	P2	-22.084780	0.019287	0.041718

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.043081	0.003360	0.008536

7	P3	-8.043036	0.003372	0.008126
11	P3	-8.043110	0.003363	0.007924
15	P3	-8.042958	0.003369	0.008553
19	P3	-8.043084	0.003369	0.008313
22	P3	-8.043139	0.003367	0.008511
26	P3	-8.043104	0.003359	0.008135
30	P3	-8.043022	0.003370	0.008384

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	0.000448351
	stdev	2.34741e-07
MEAN Q	mean	0.000510439
	stdev	2.51320e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.125462
	stdev	0.000983284
STDEV Q	mean	0.125692

stdev	0.000991644

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

No anomalies detected in 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

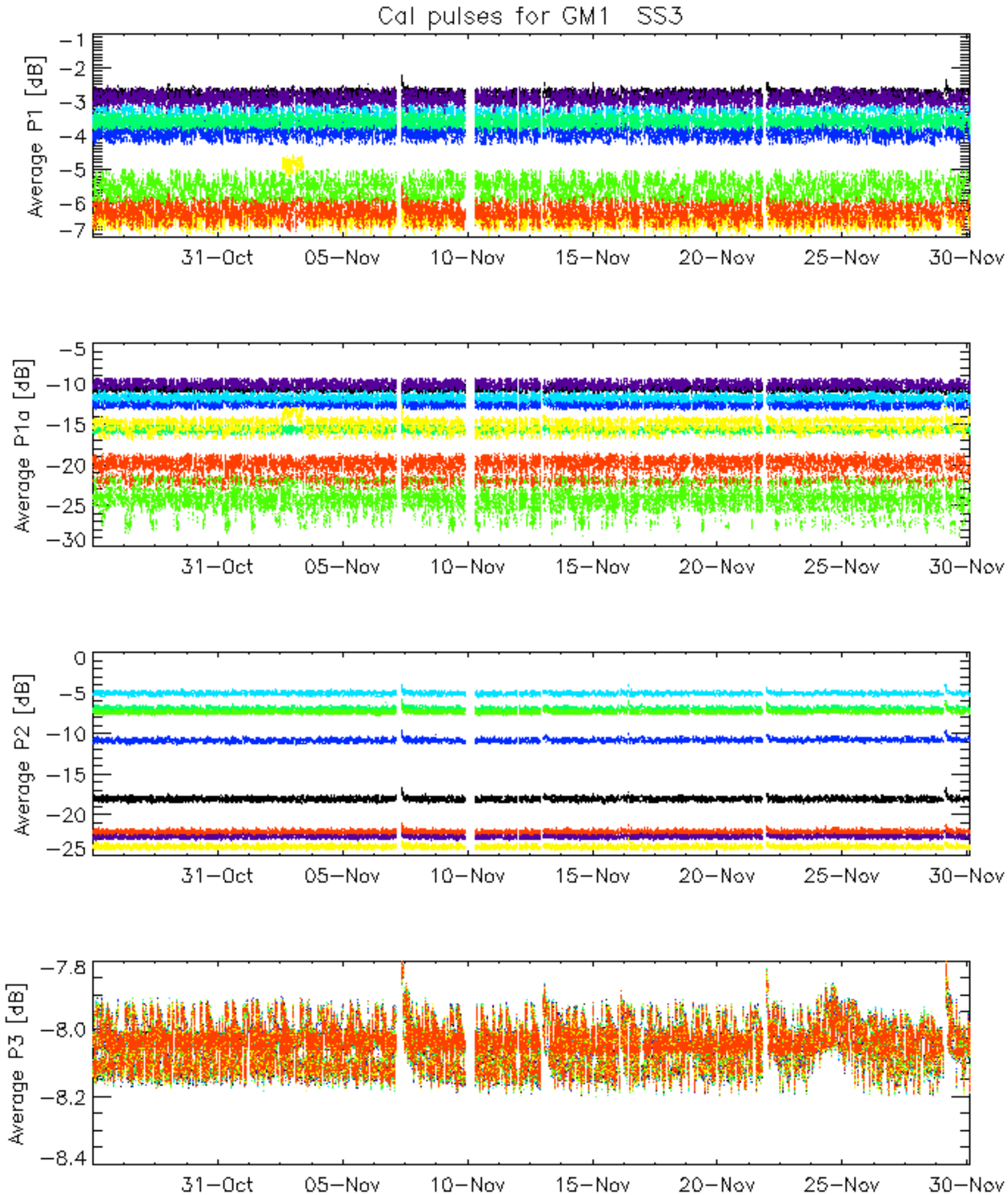
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

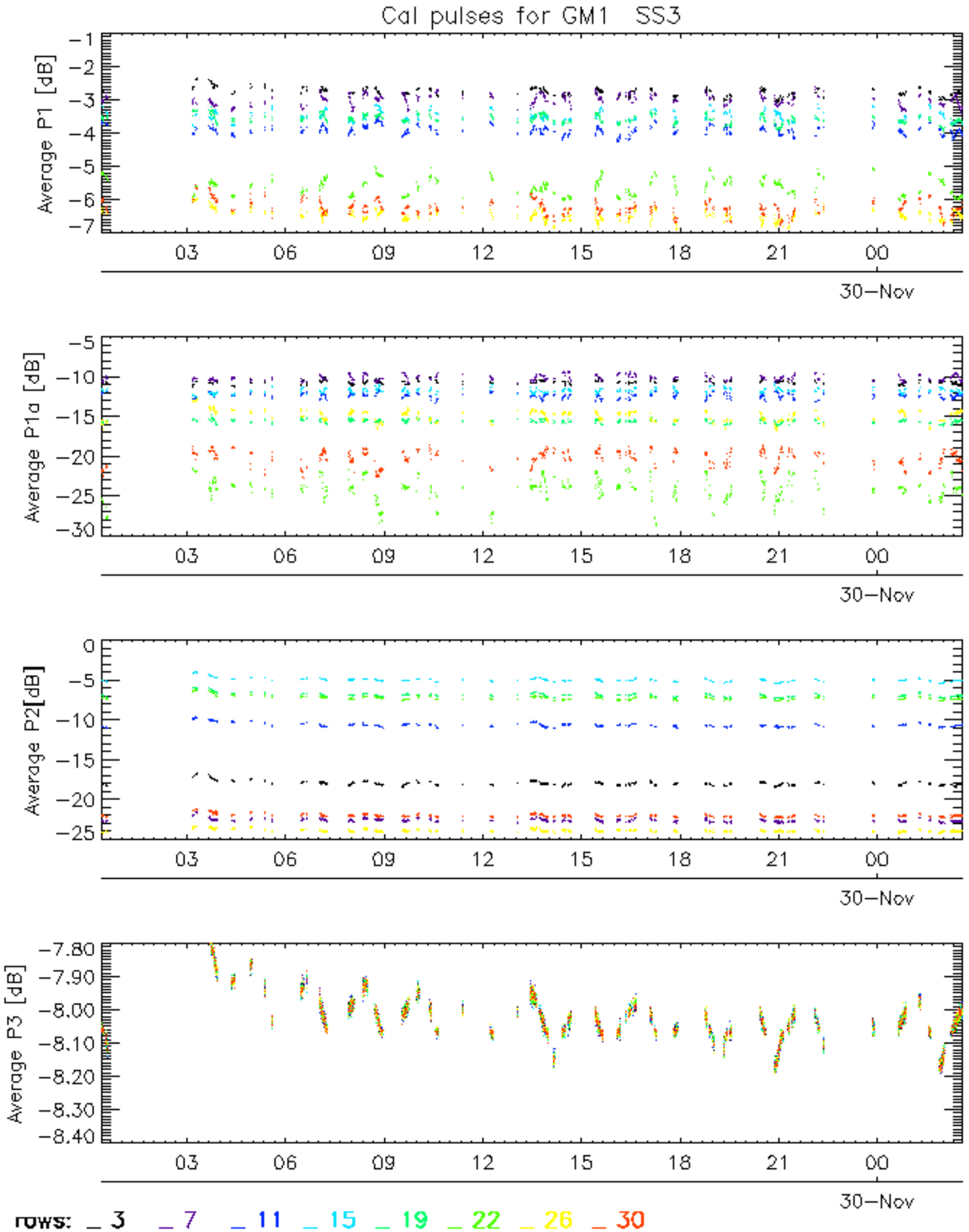
6.5 - Absolute Doppler for GM1

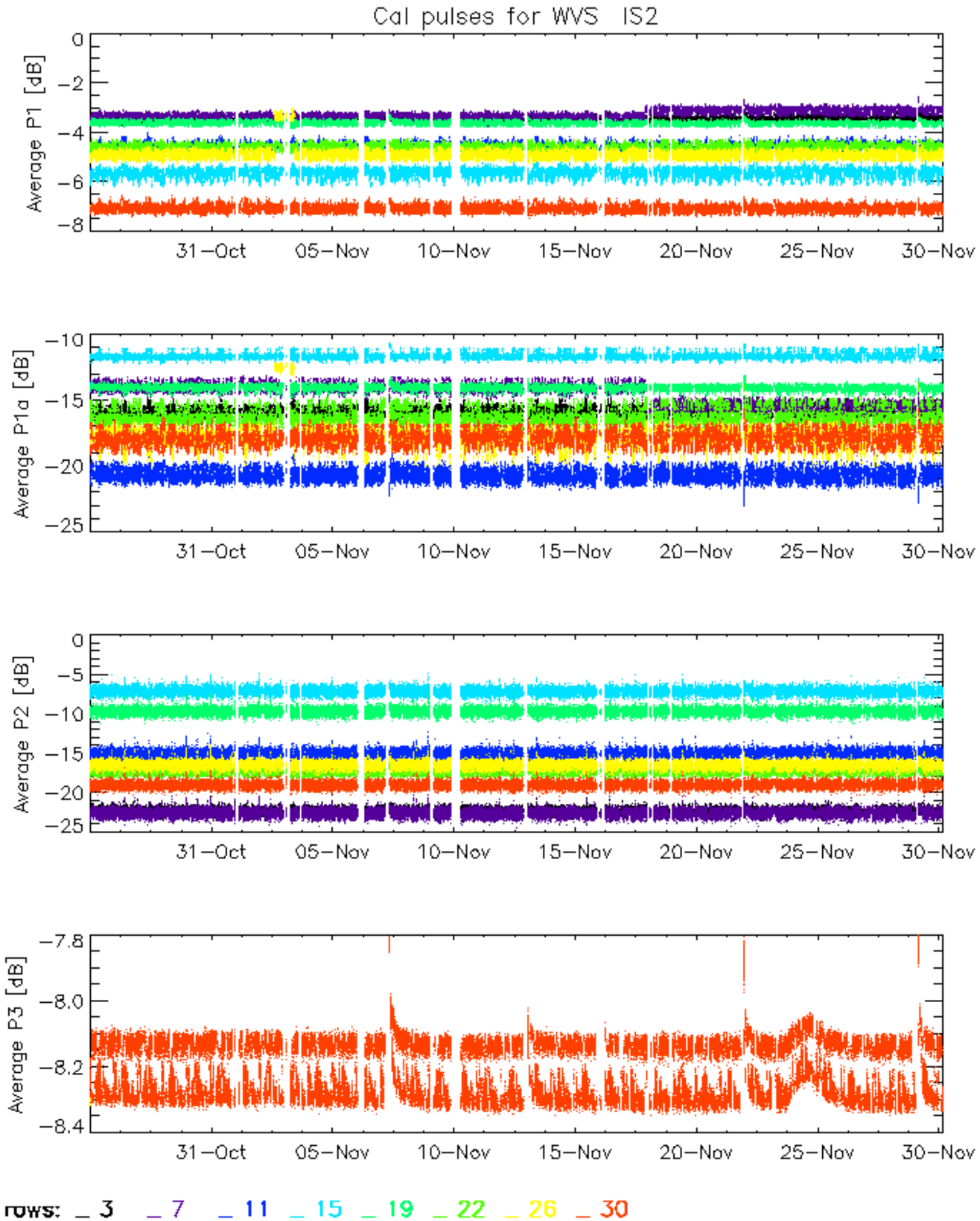
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

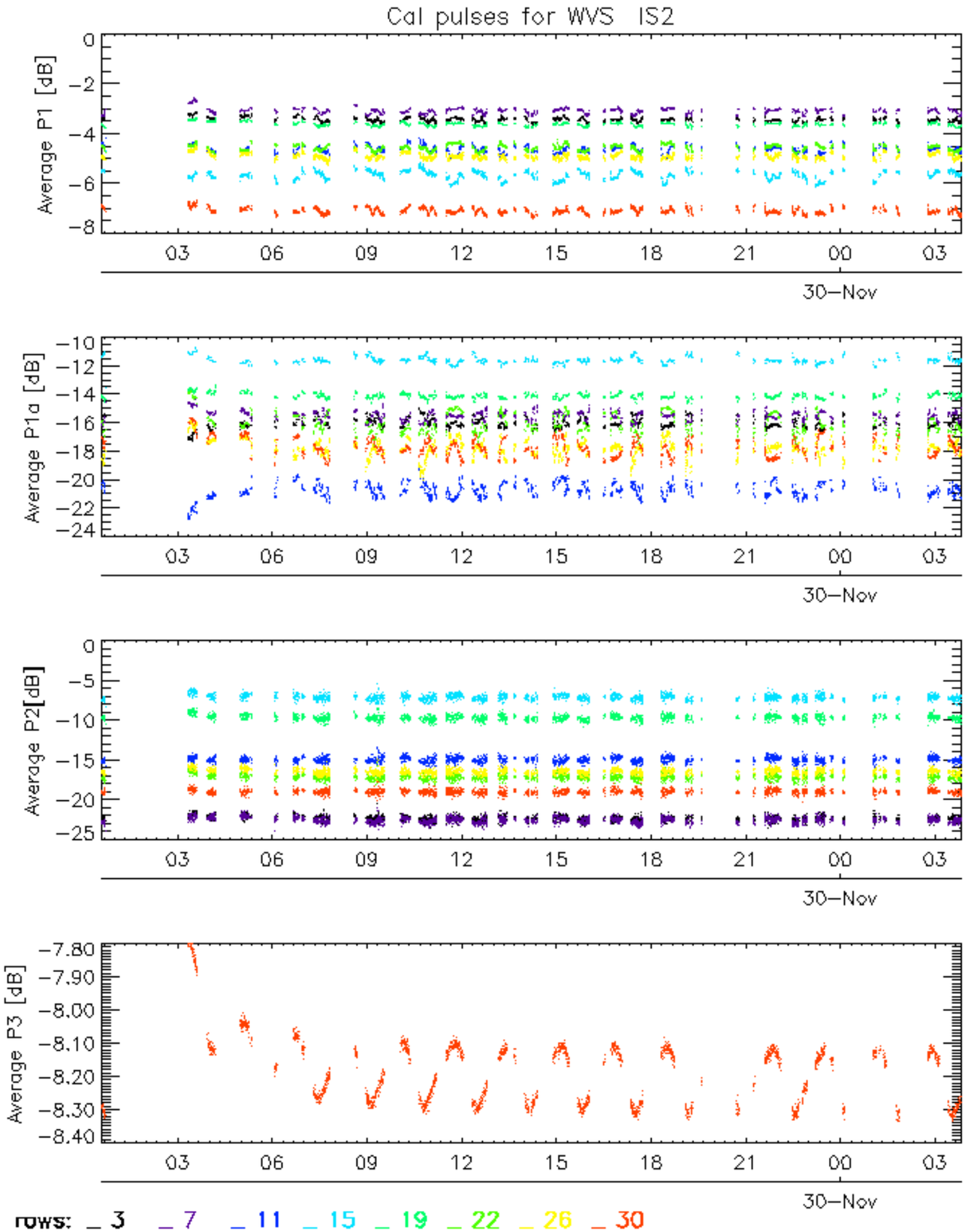
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒


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

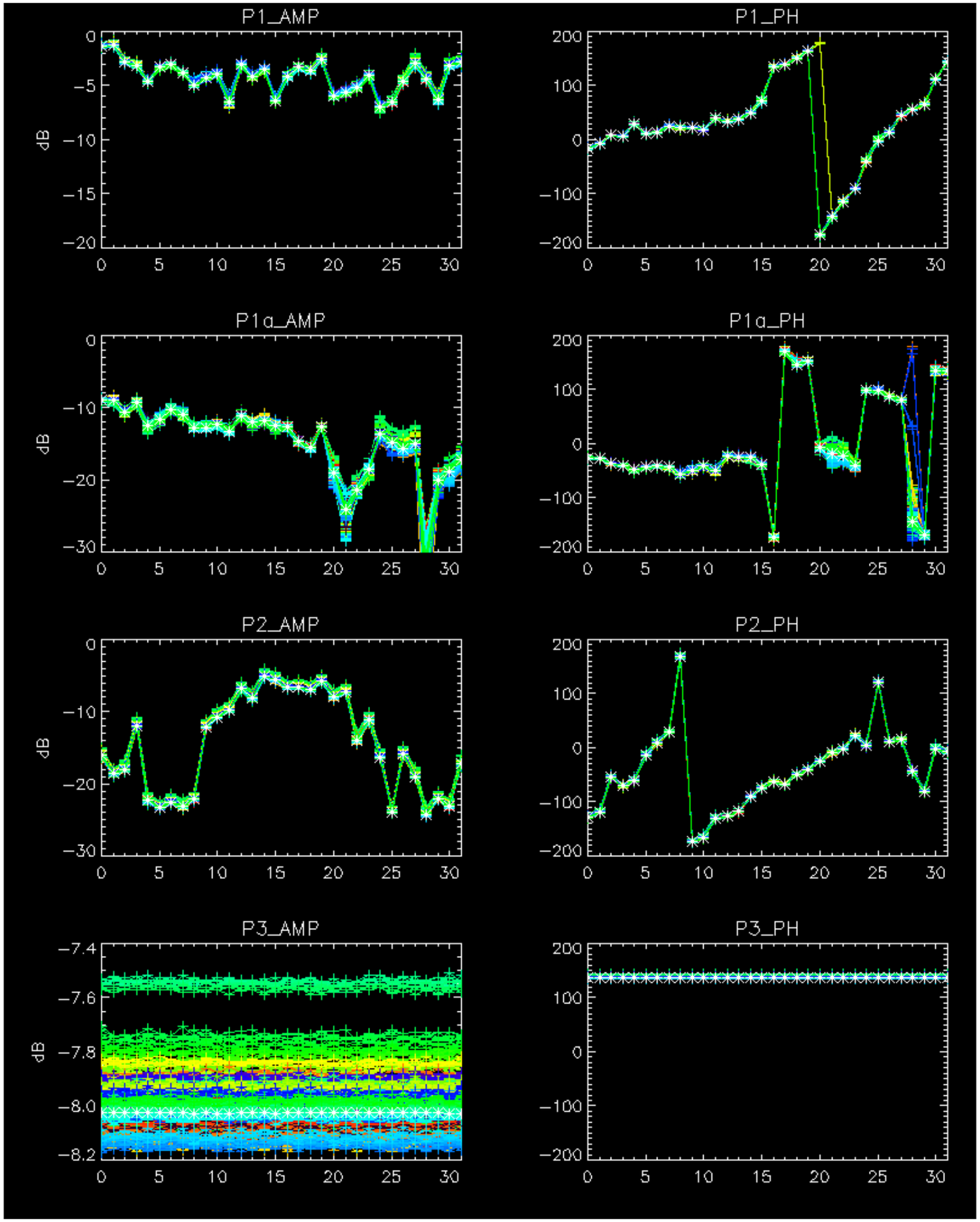

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
30−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
30−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
30−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
30−Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

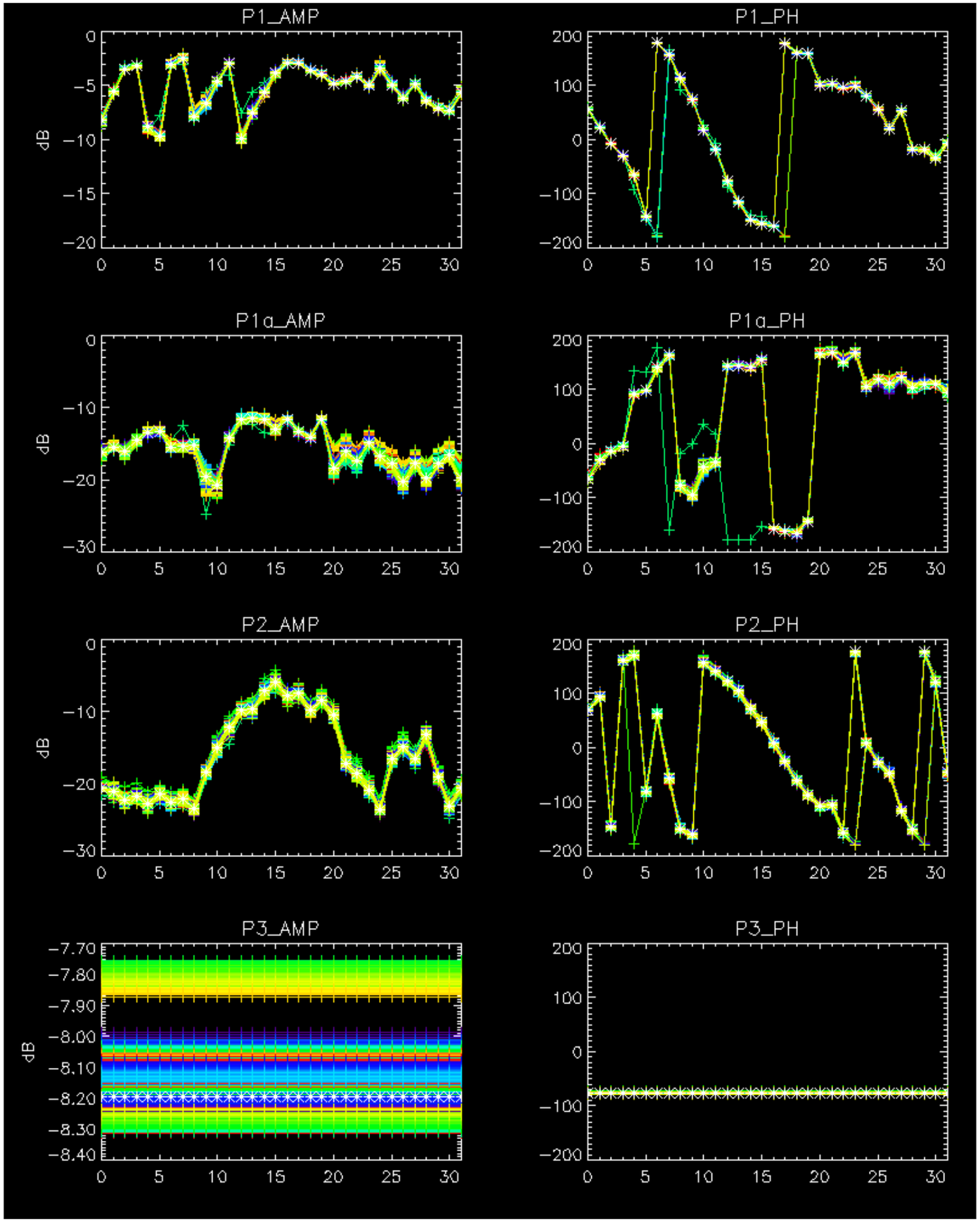

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov
Average P1a [dB]
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2[dB]
0
−5
−10
−15
−20
−25
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
30−Nov
rows: 3 7 11 15 19 22 26 30

No anomalies observed on available browse products

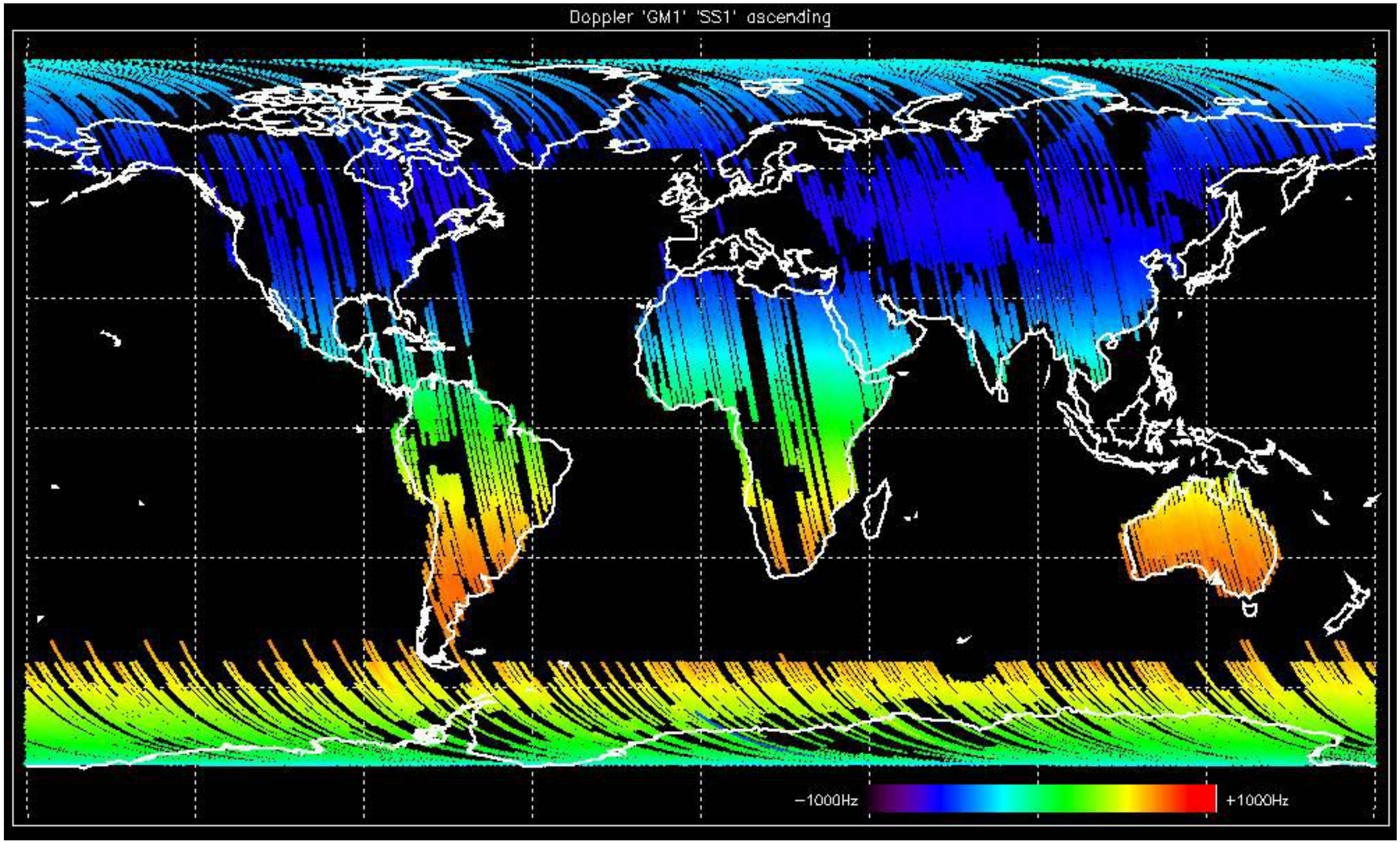
Nominal trend after the instrument unavailability occurred on 29-NOV-2004 from 00:42:03 to 03:09:35 due the PSU for Tile C1-1 Off.

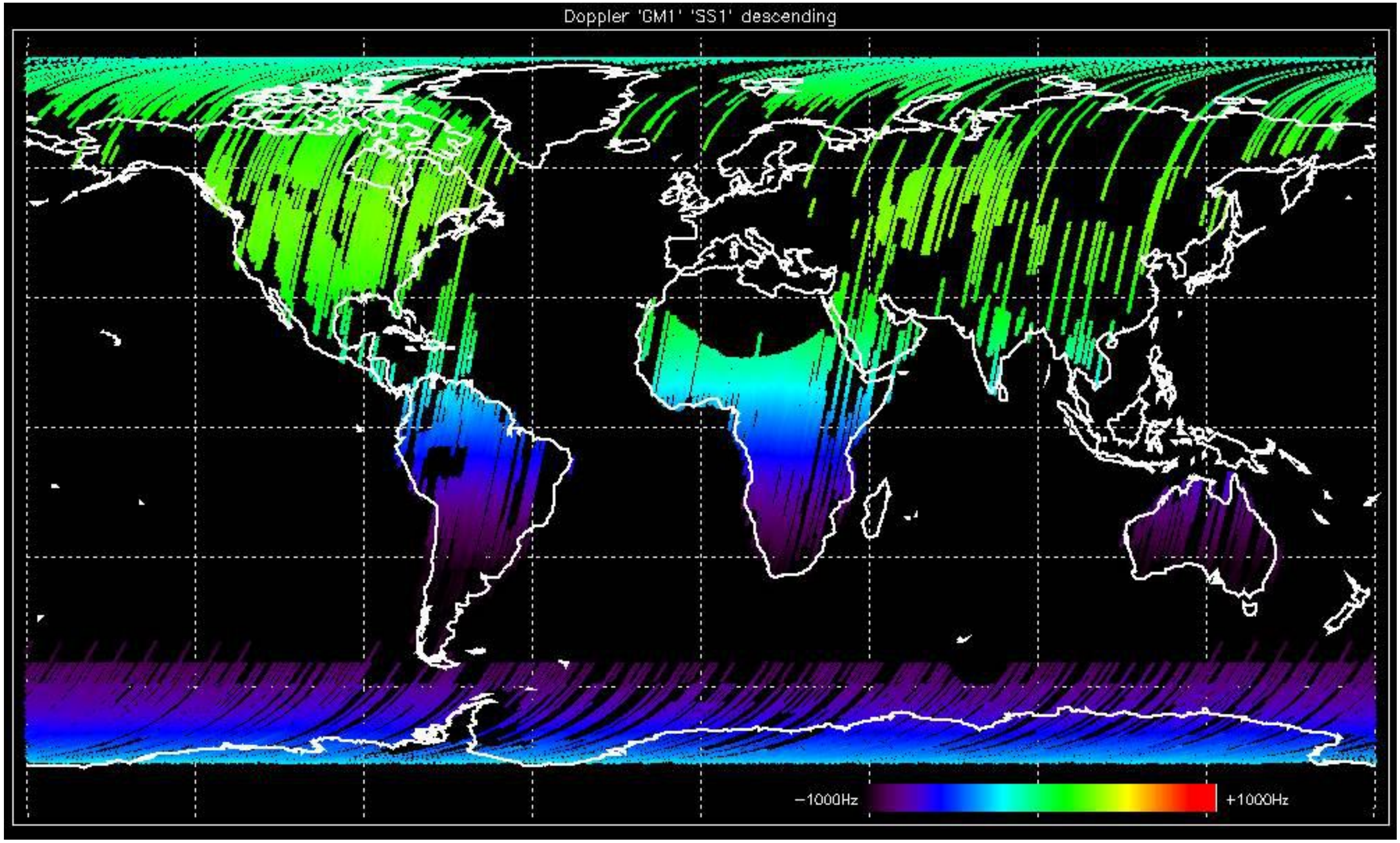

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.4
−7.6
−7.8
−8.0
−8.2
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

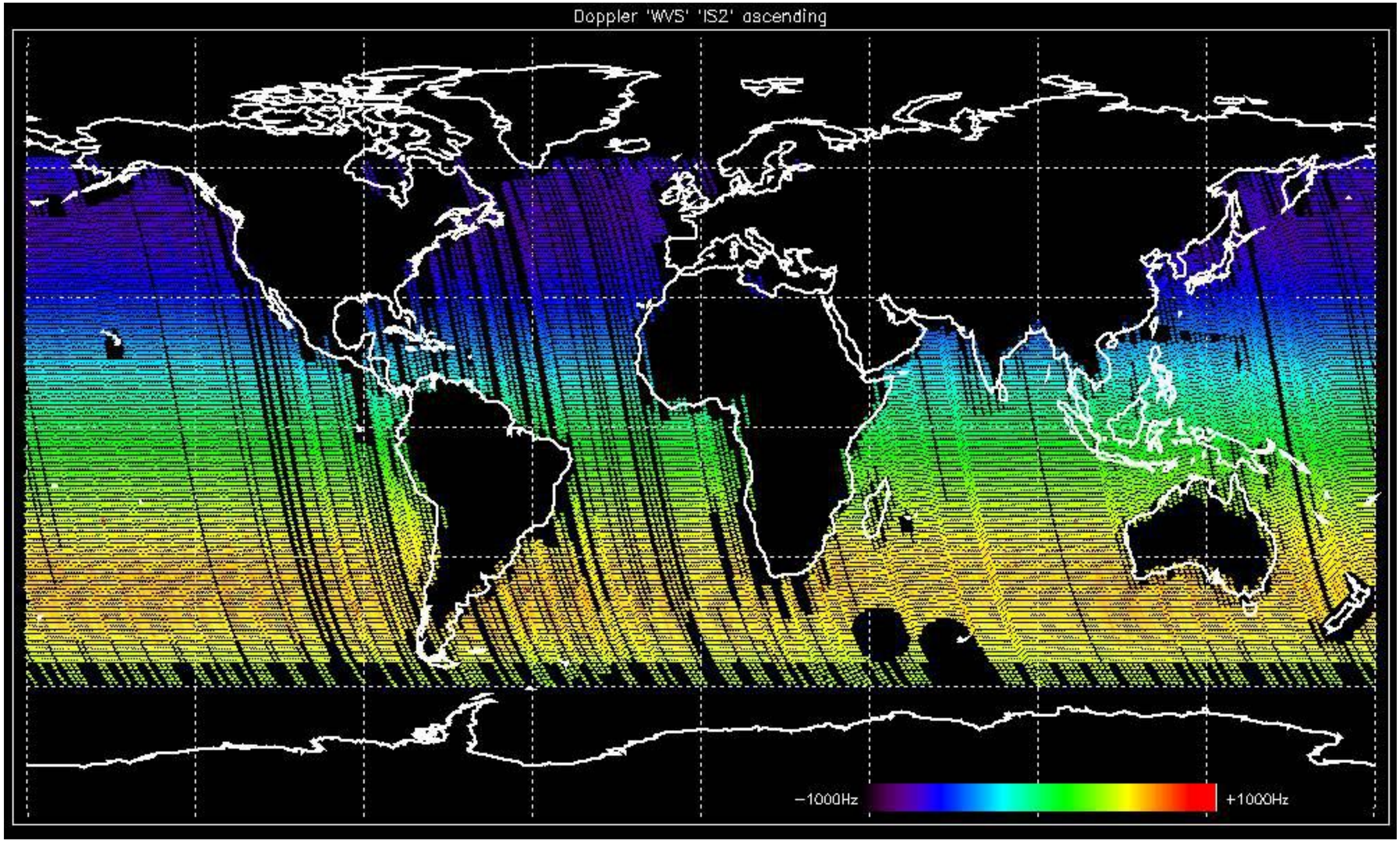

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.70
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

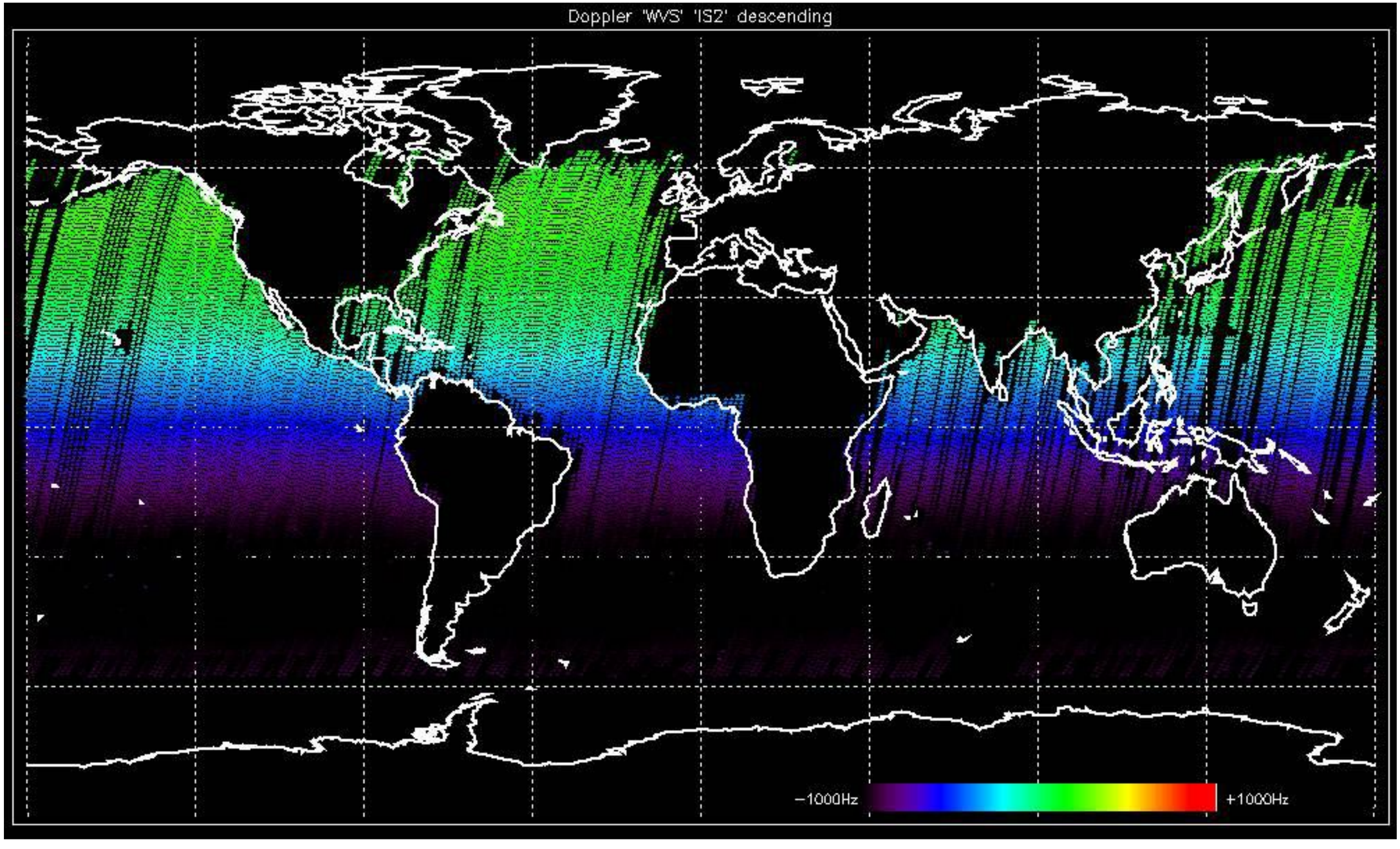
-Nominal trend after instrument HEATER/REFUSE mode due the PSU for tile C-1-1 Off.
-Stable raw data statistics.
-Nominal Doppler behavior.

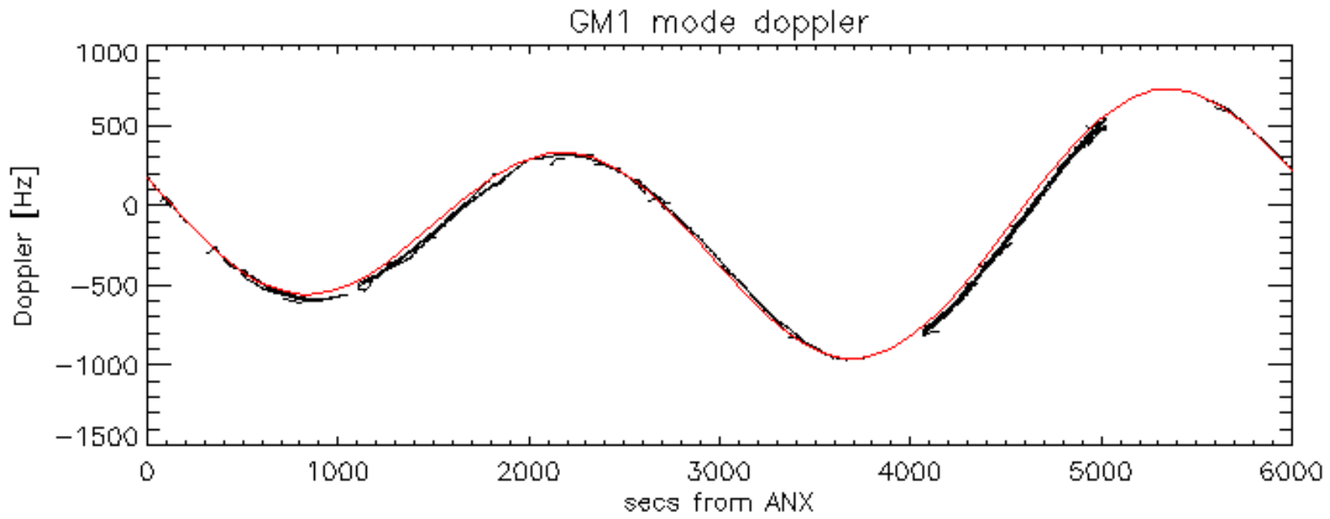
No anomalies detected in Doppler evolution.
Doppler analysis performed over the last 35 days.

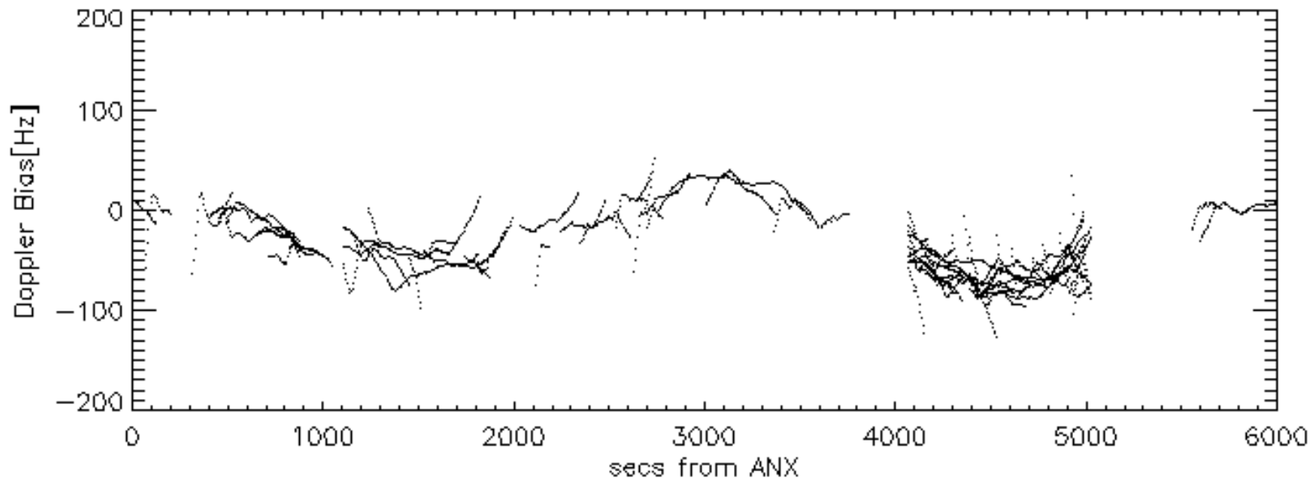

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

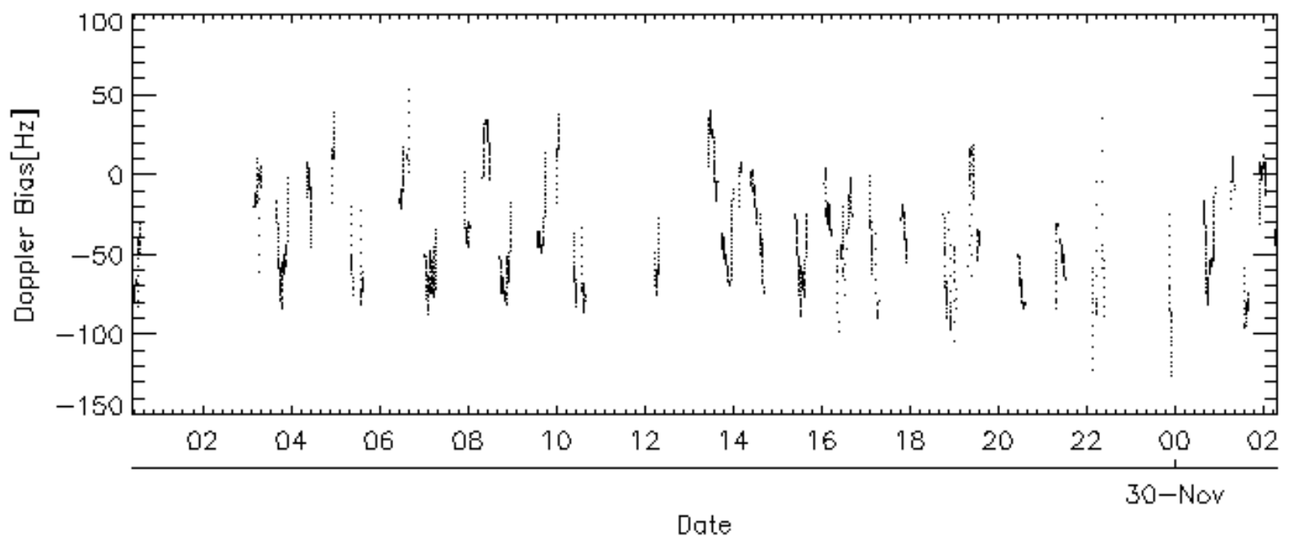

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

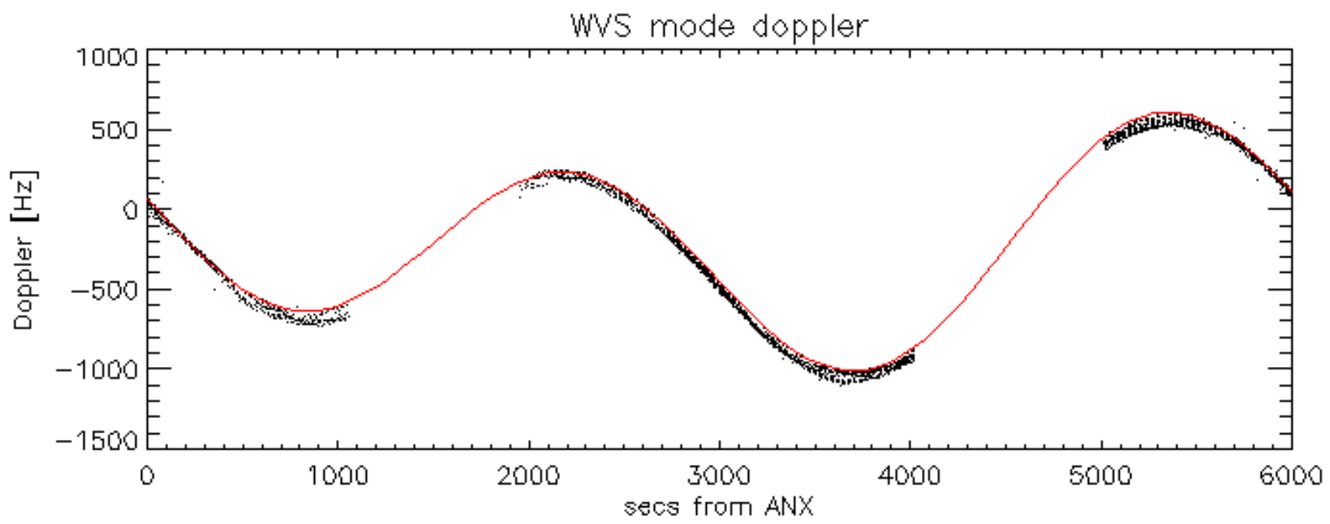

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

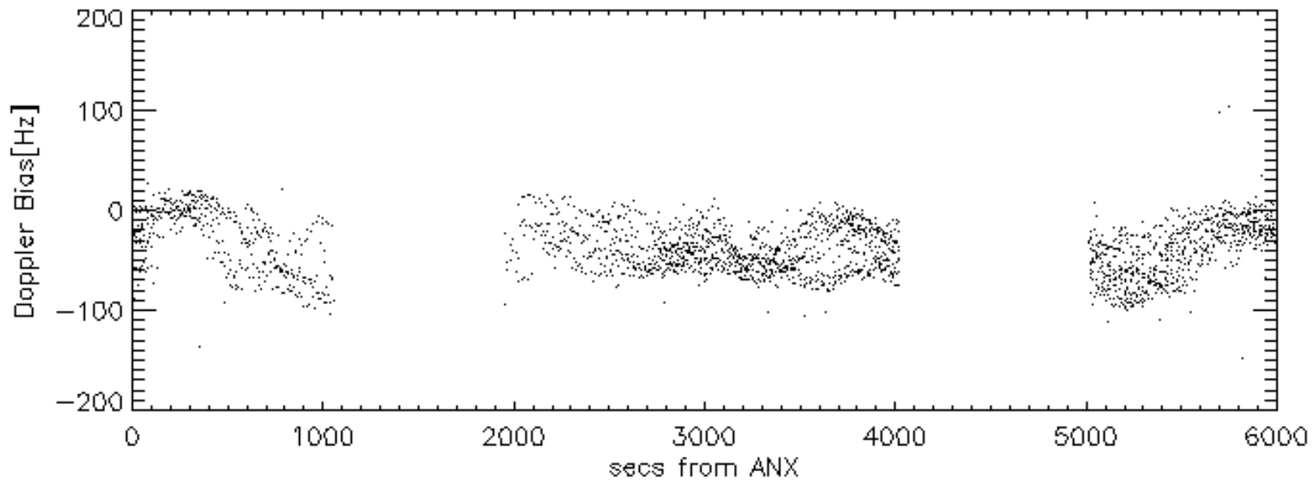

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

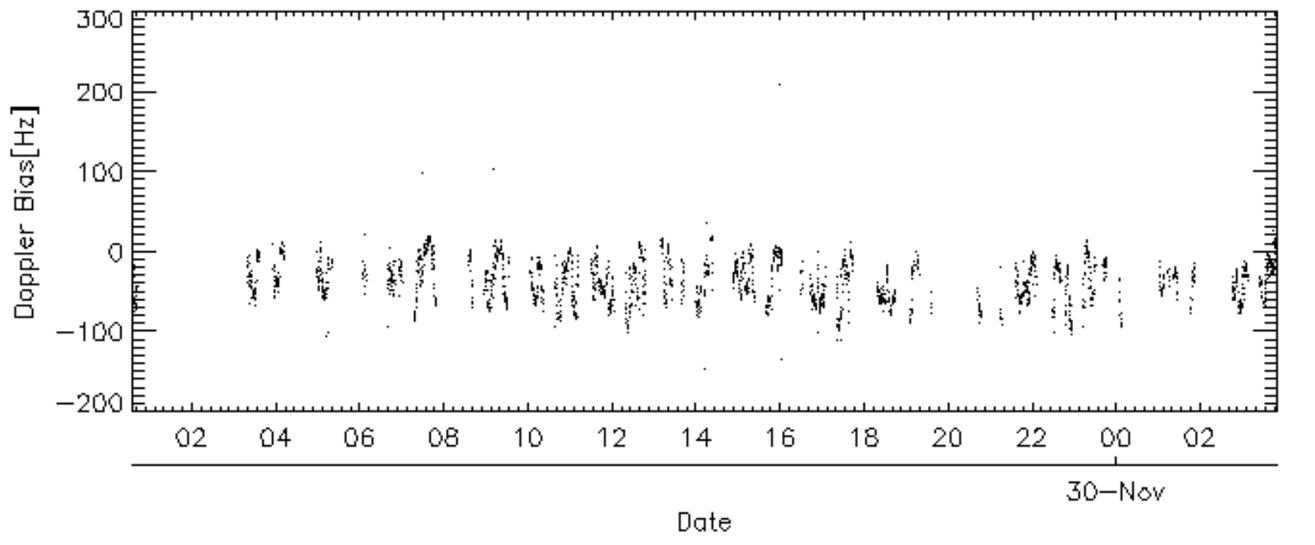

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

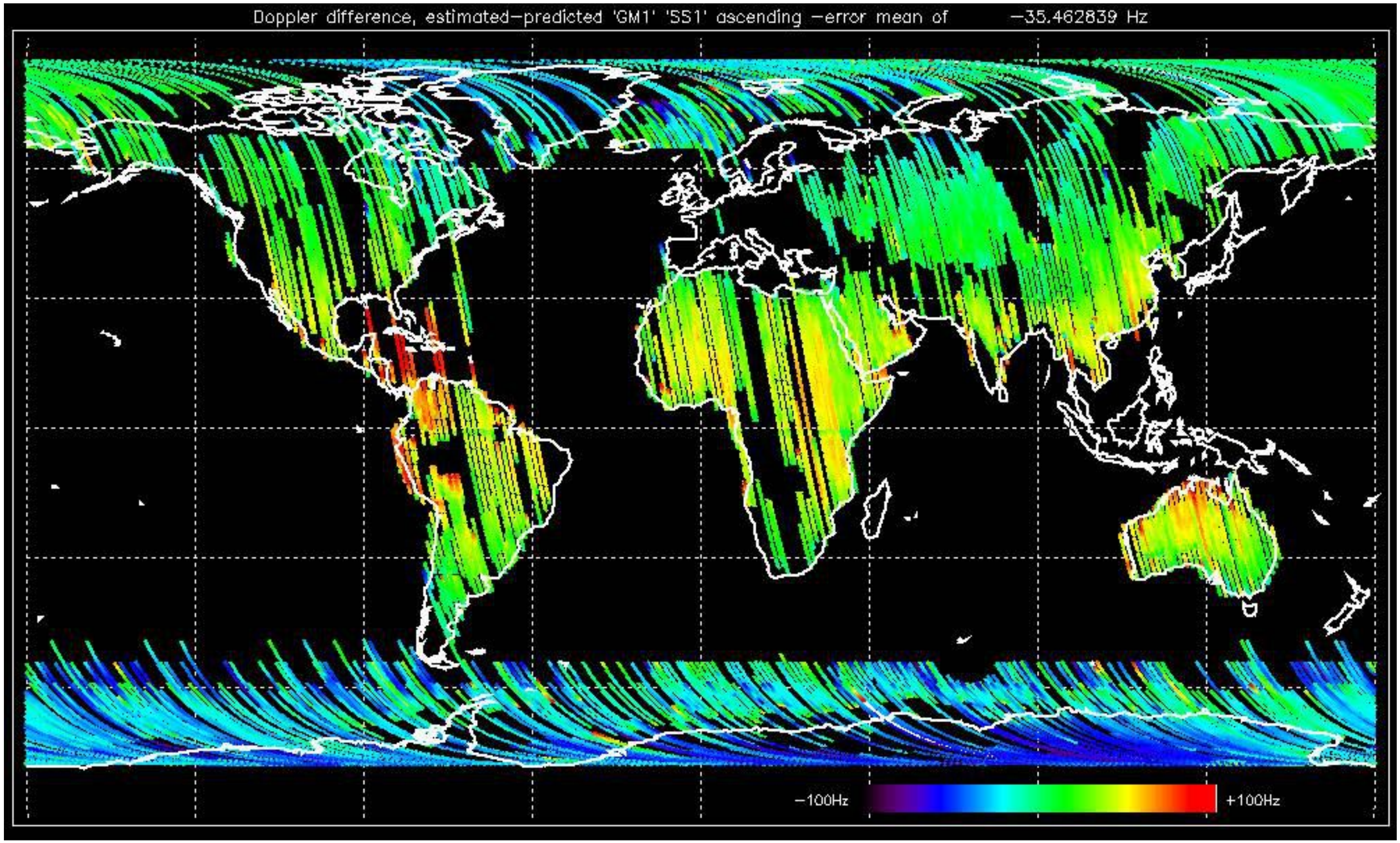

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

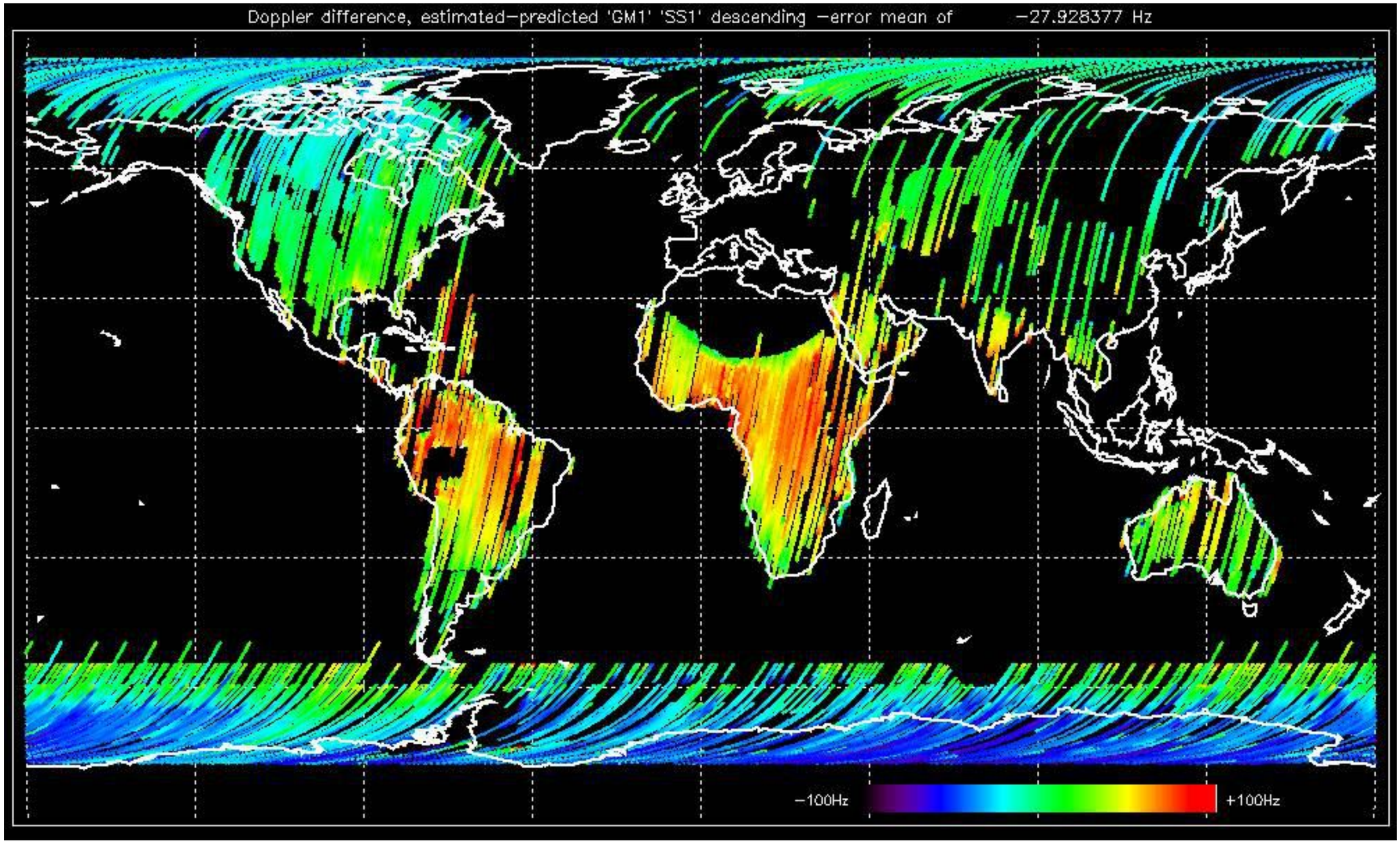

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
30−Nov
Date

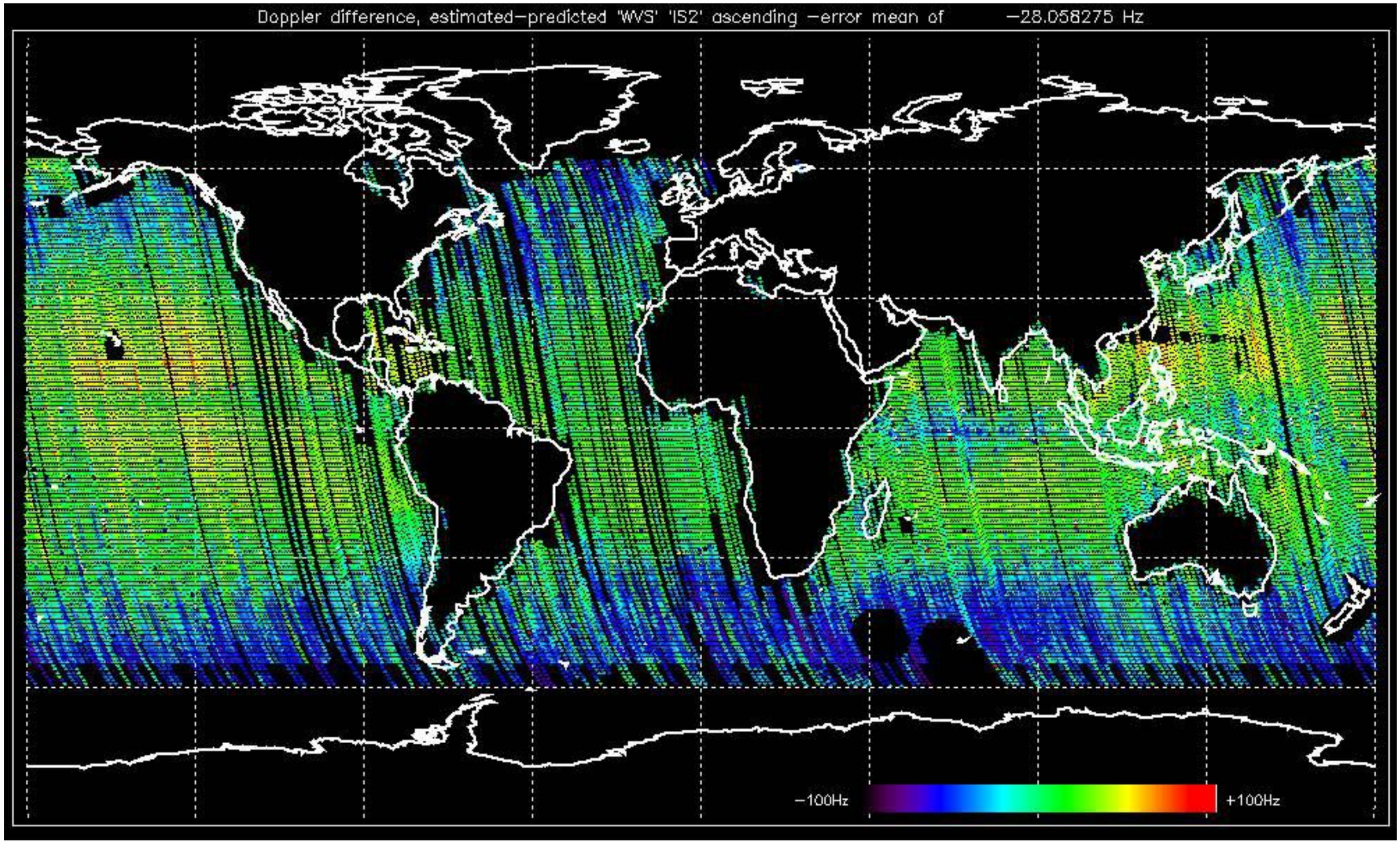

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

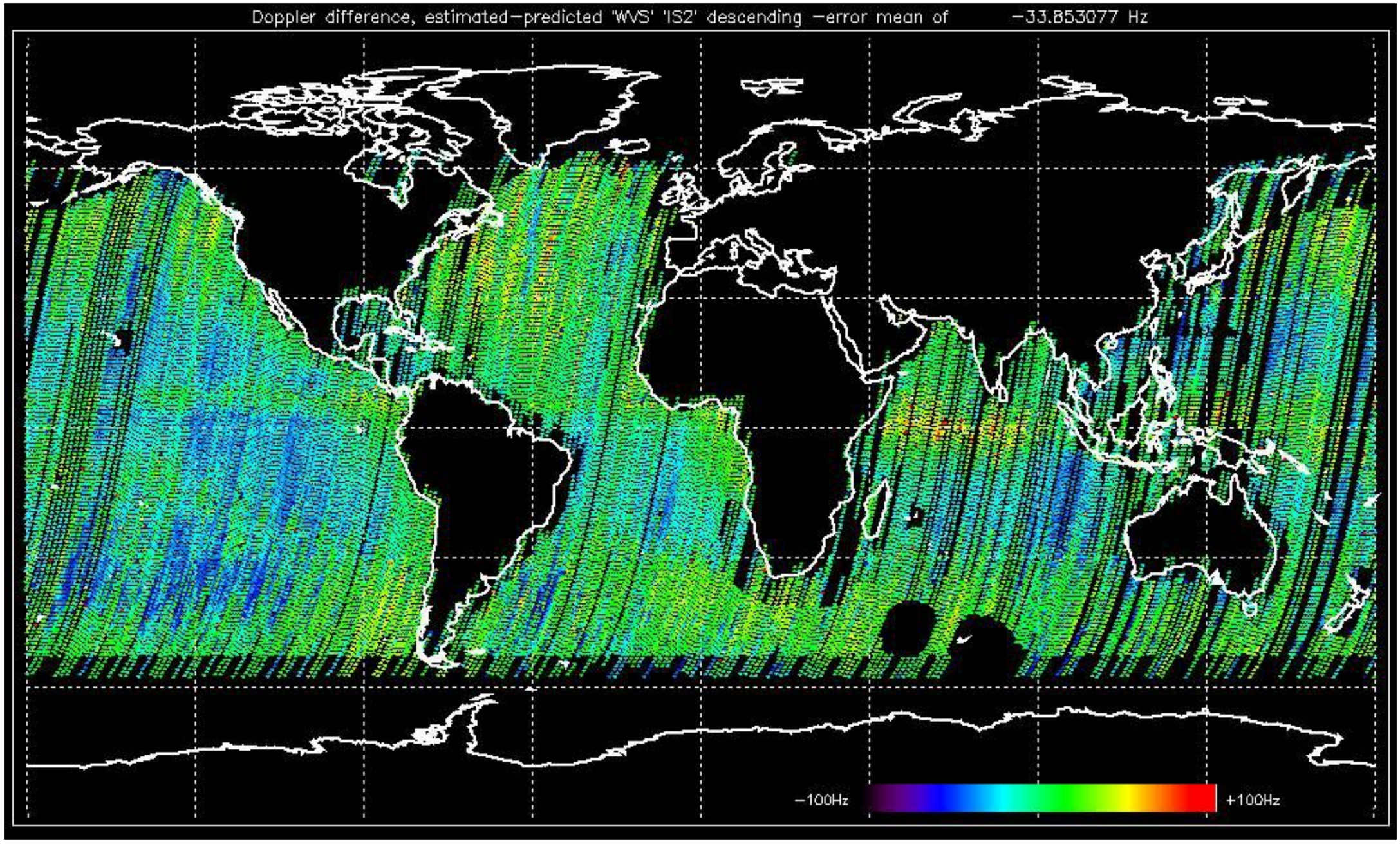

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −35.462839 Hz
−100Hz
+100Hz

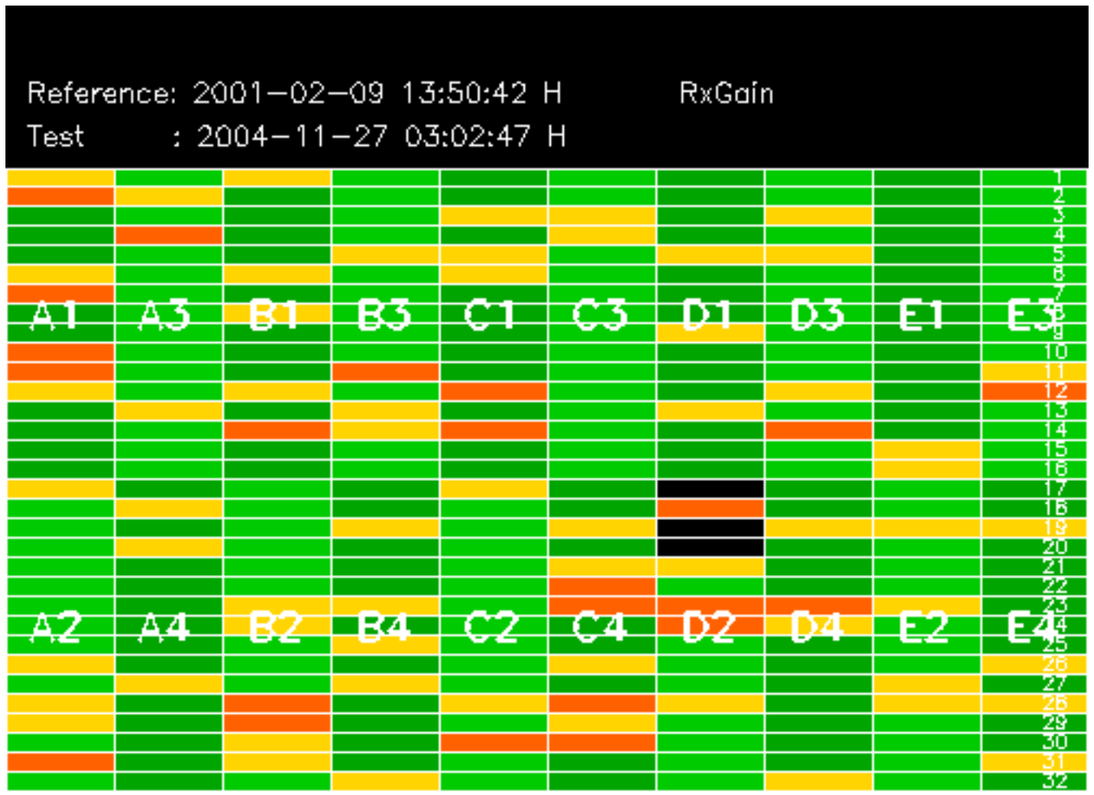

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -27.928377 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −28.058275 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −33.853077 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 : 2004-11-27 03:02:47 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
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18
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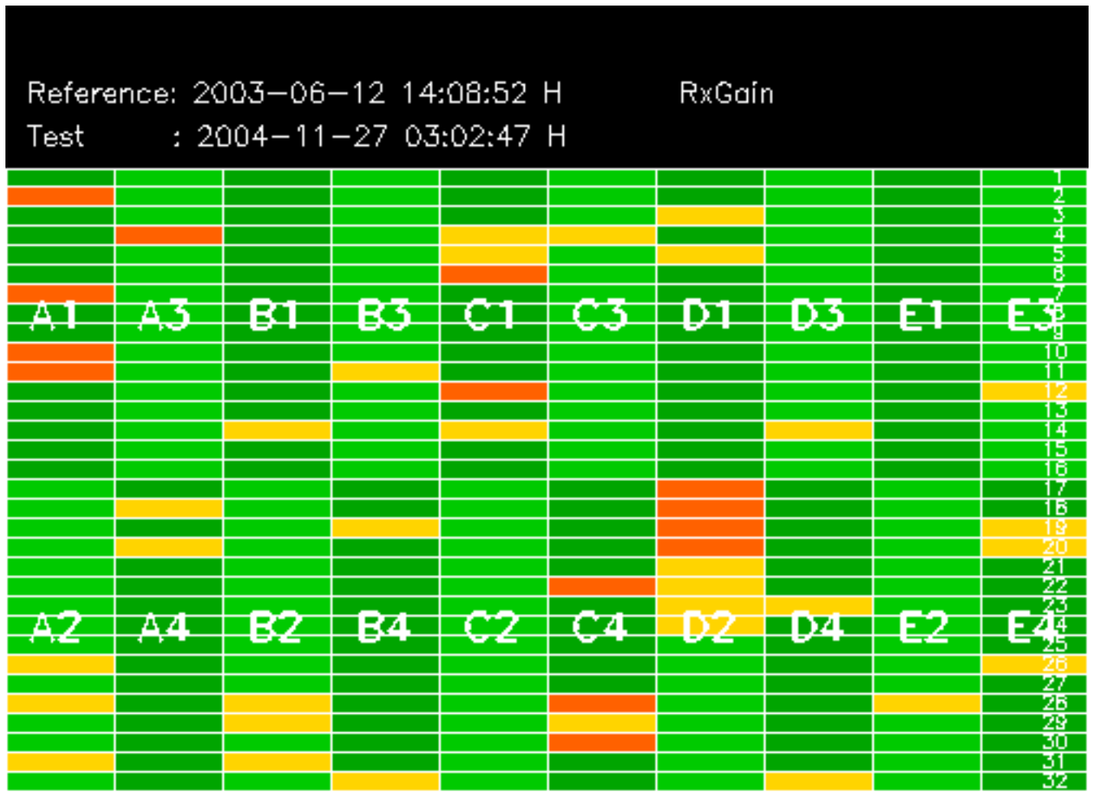
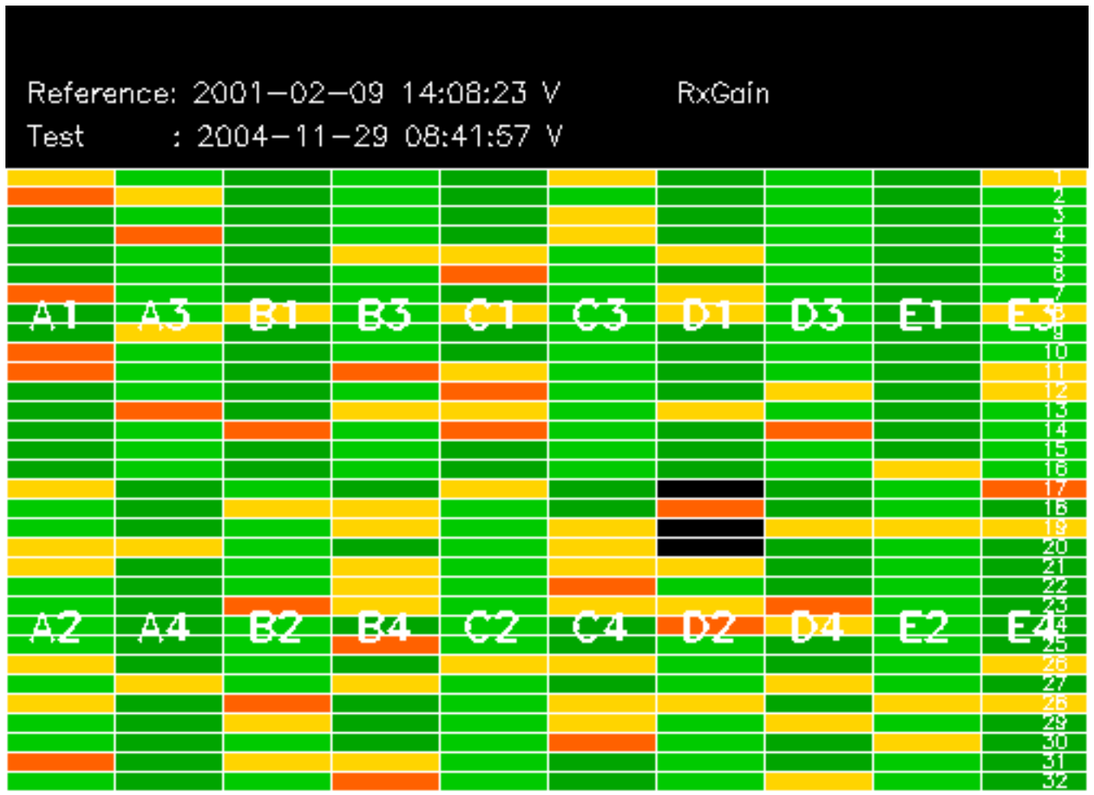
22
23
24
25
26
27
28
29
30
31
32


Reference: 2003-06-12 14:08:52 H
Test : 2004-11-27 03:02:47 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 : 2004-11-29 08:41:57 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
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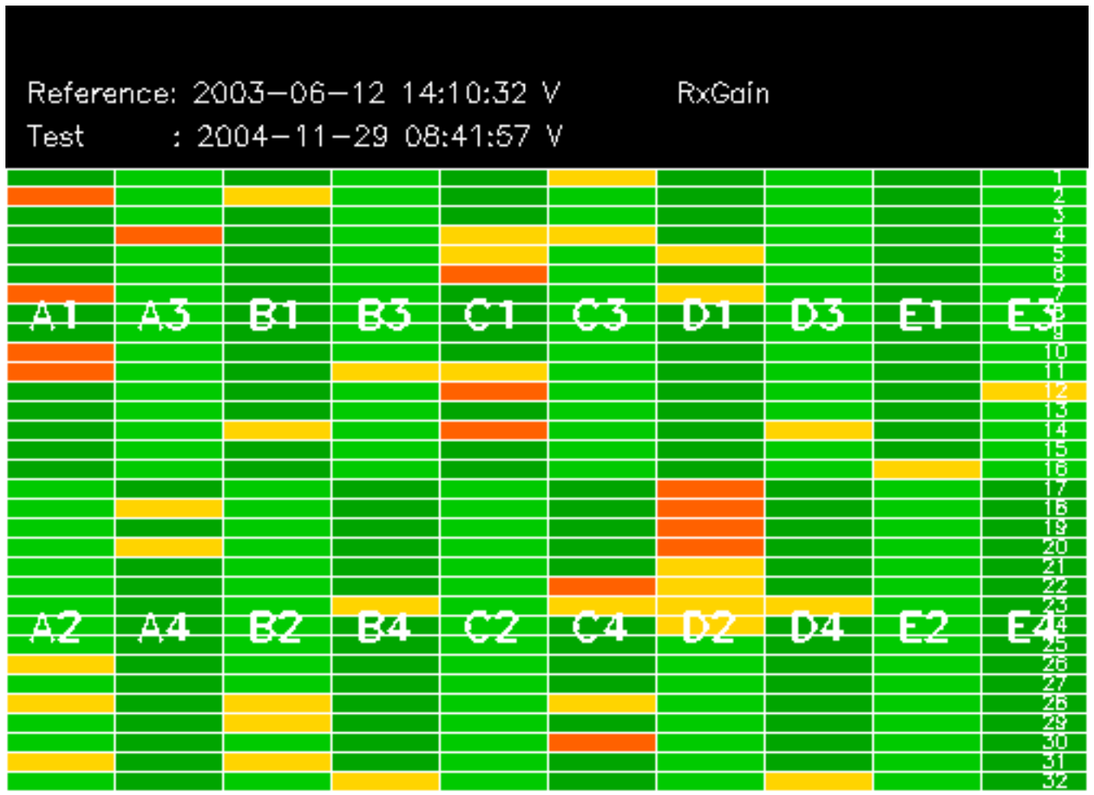
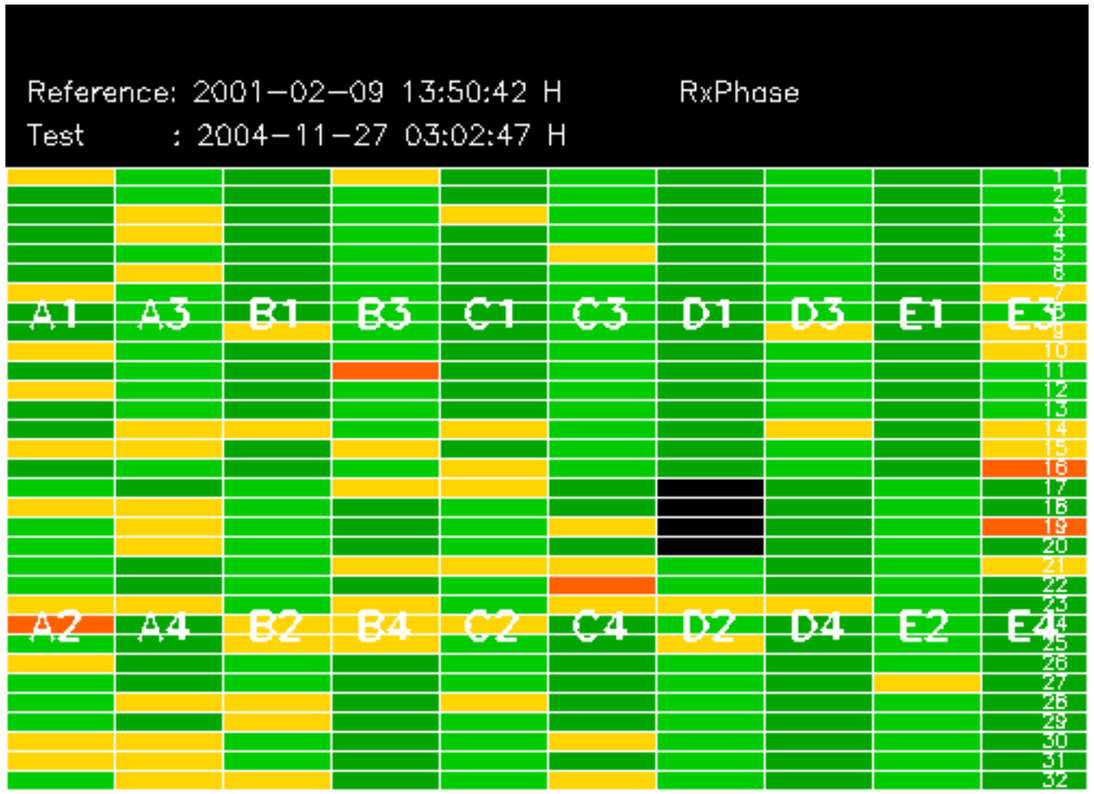
29
30
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2004-11-29 08:41:57 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 : 2004-11-27 03:02:47 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
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9
10
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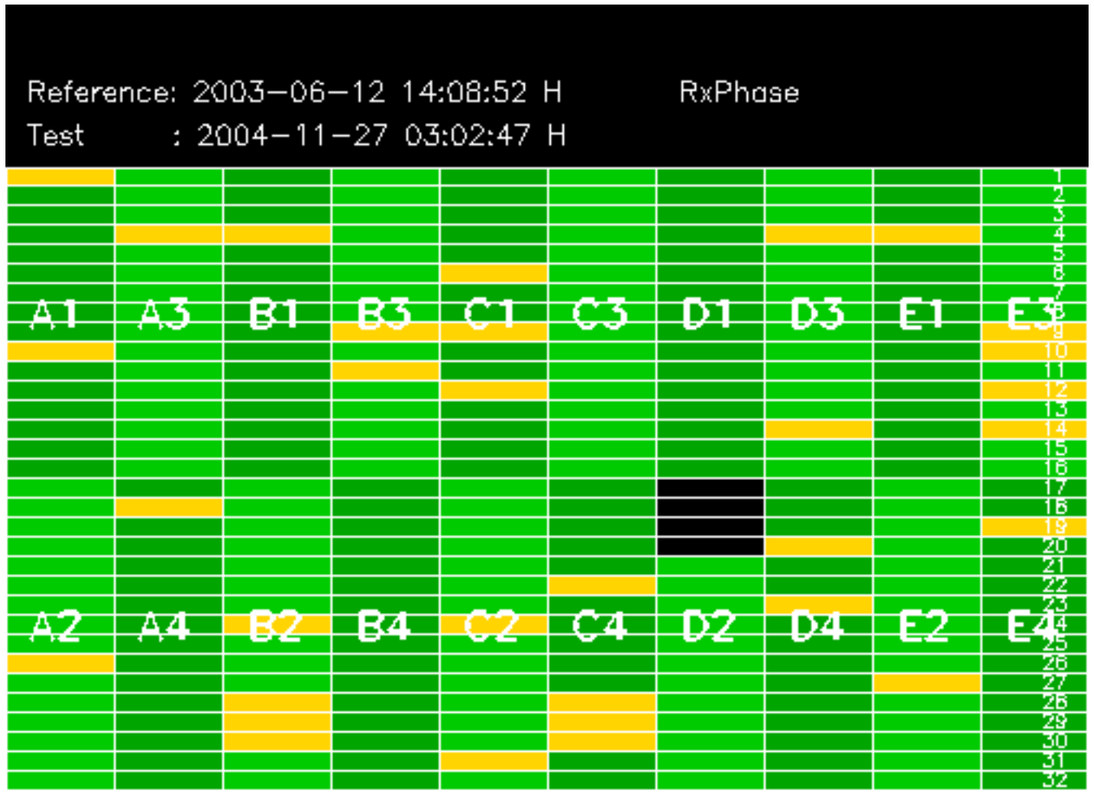
32


Reference: 2003-06-12 14:08:52 H
Test : 2004-11-27 03:02:47 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
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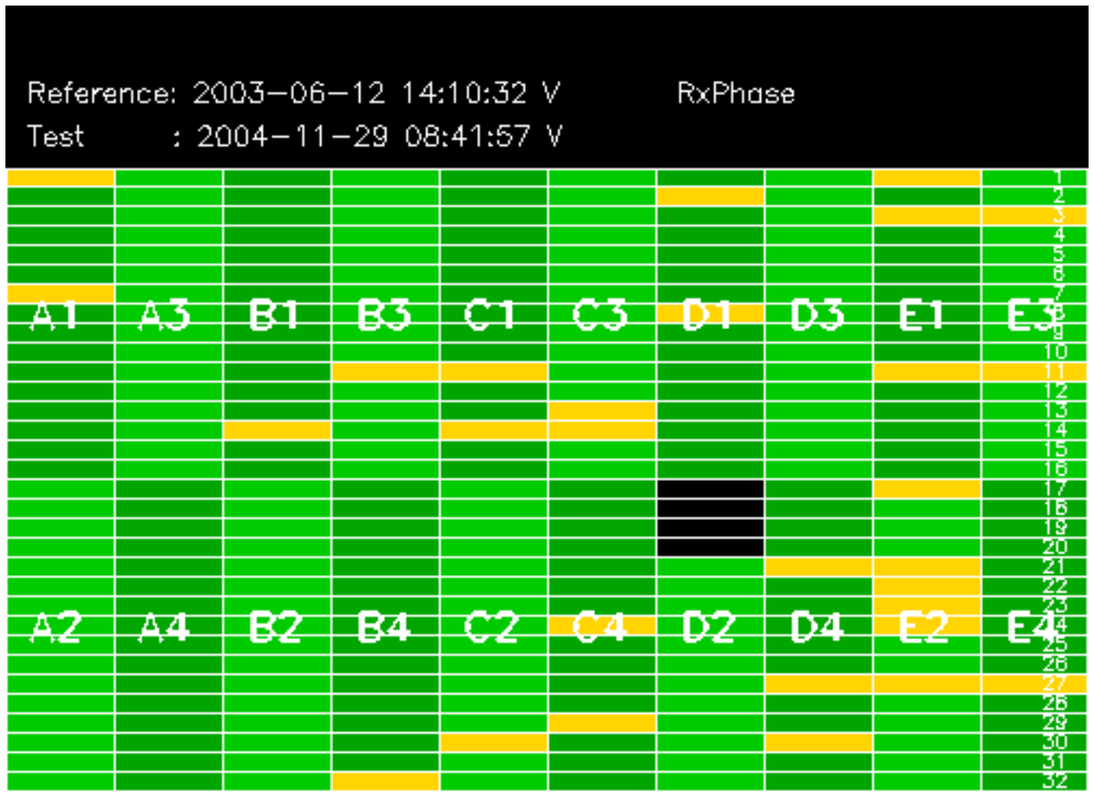
31
32


Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2004-11-29 08:41:57 V
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 : 2004-11-29 08:41:57 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
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9
10
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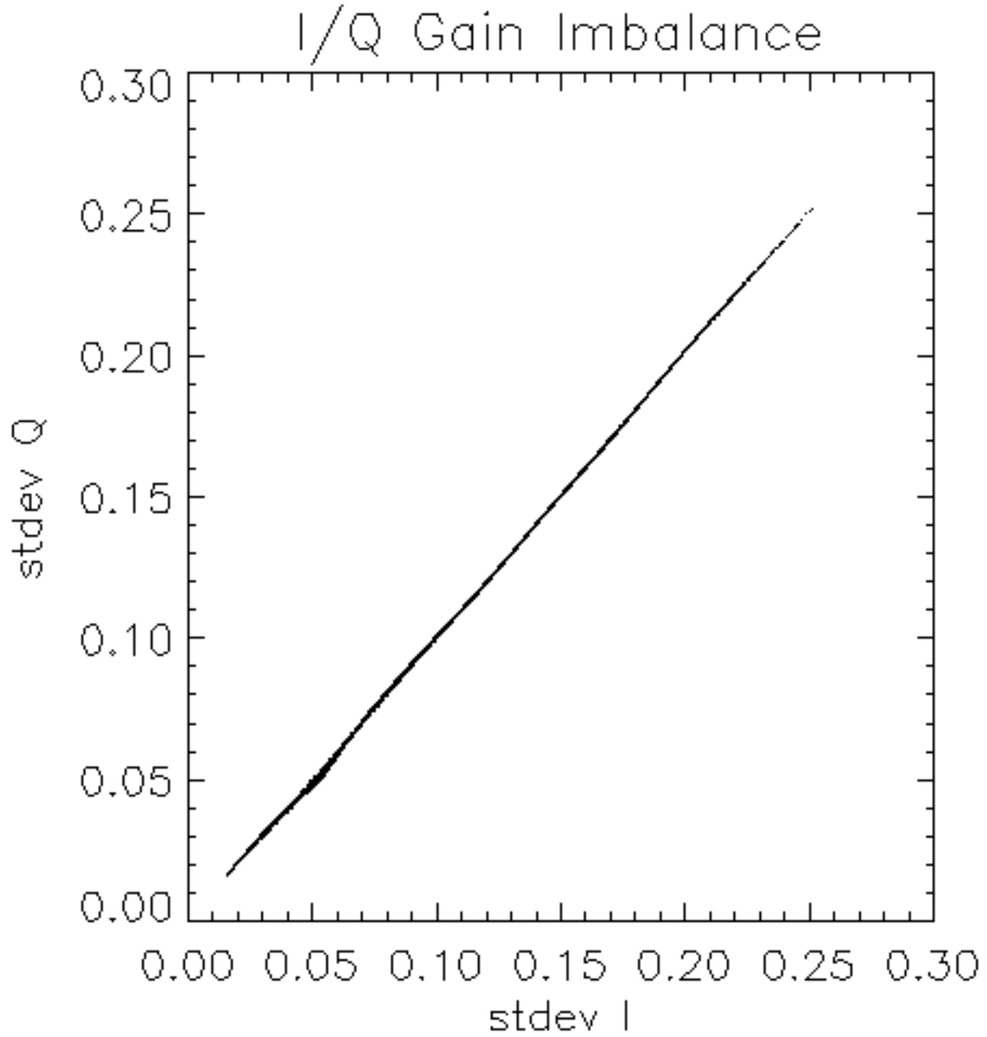
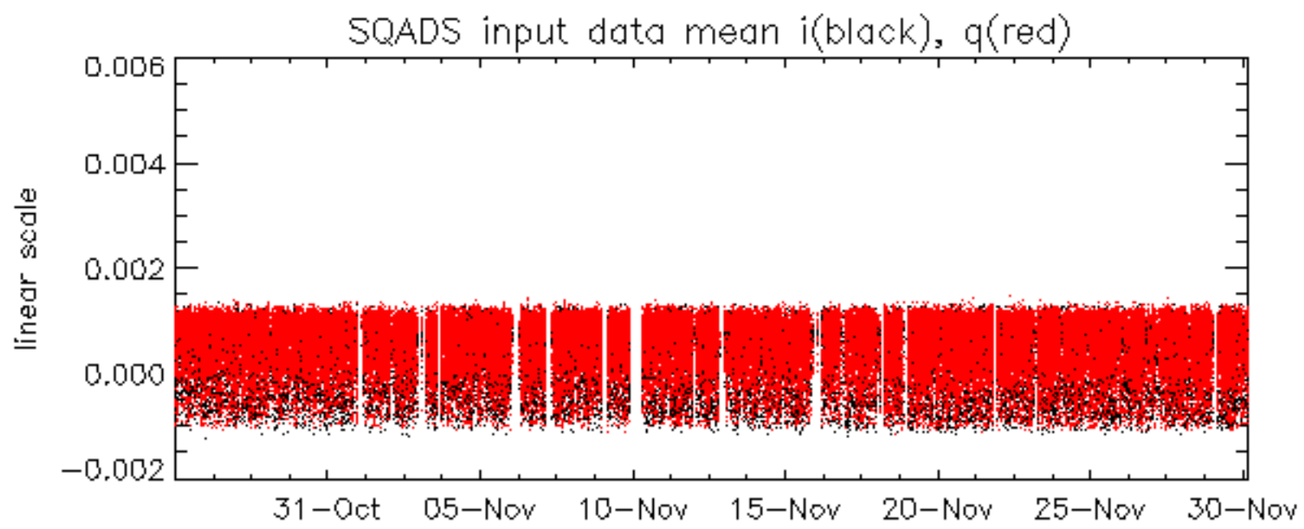
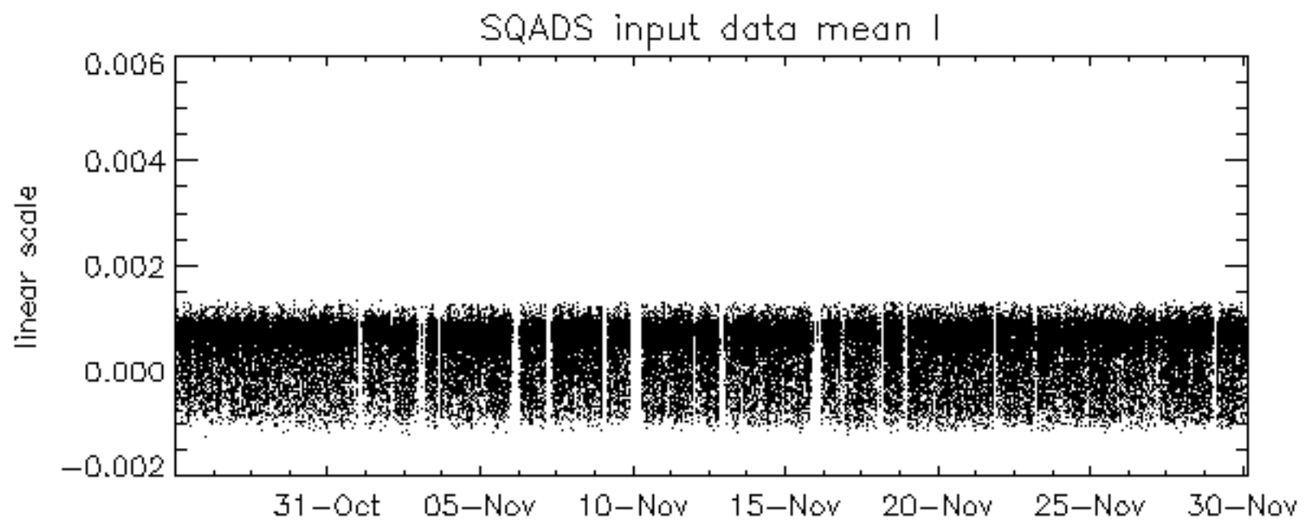
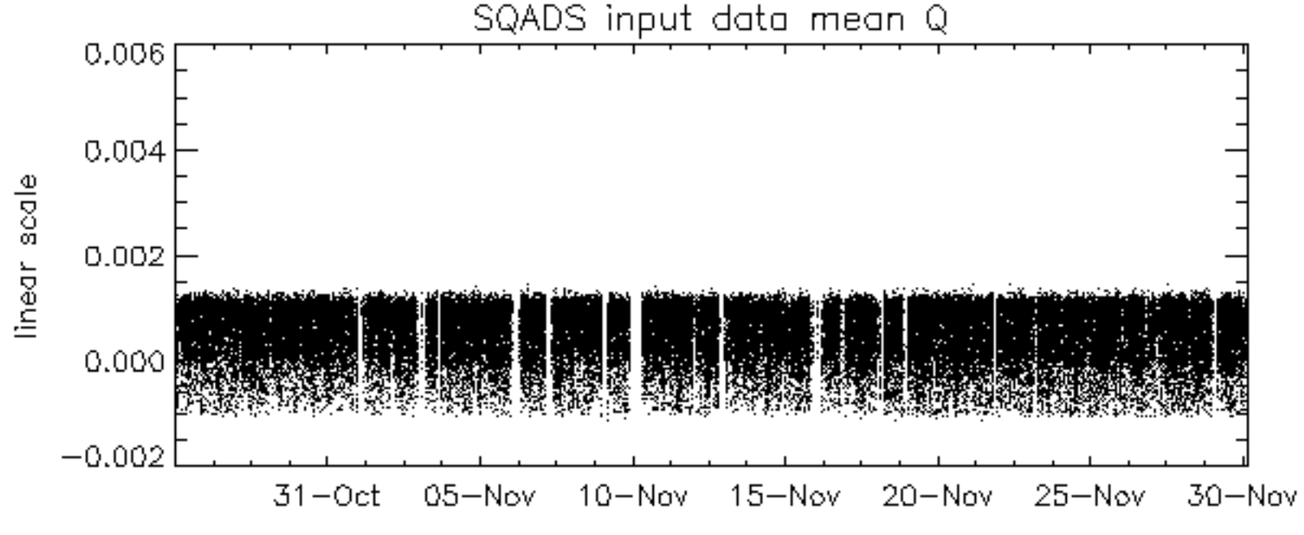
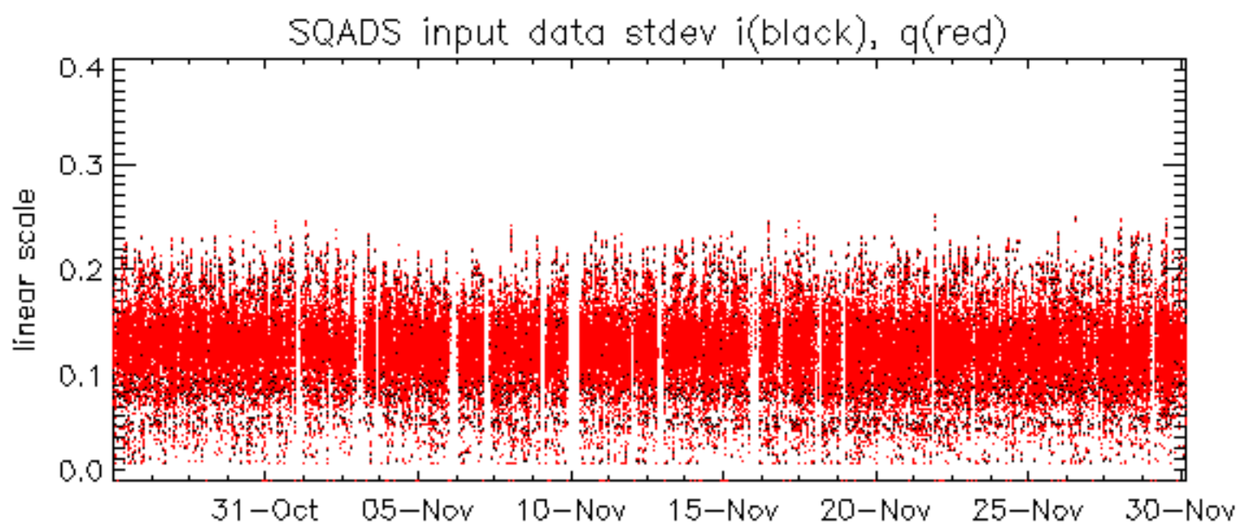
32

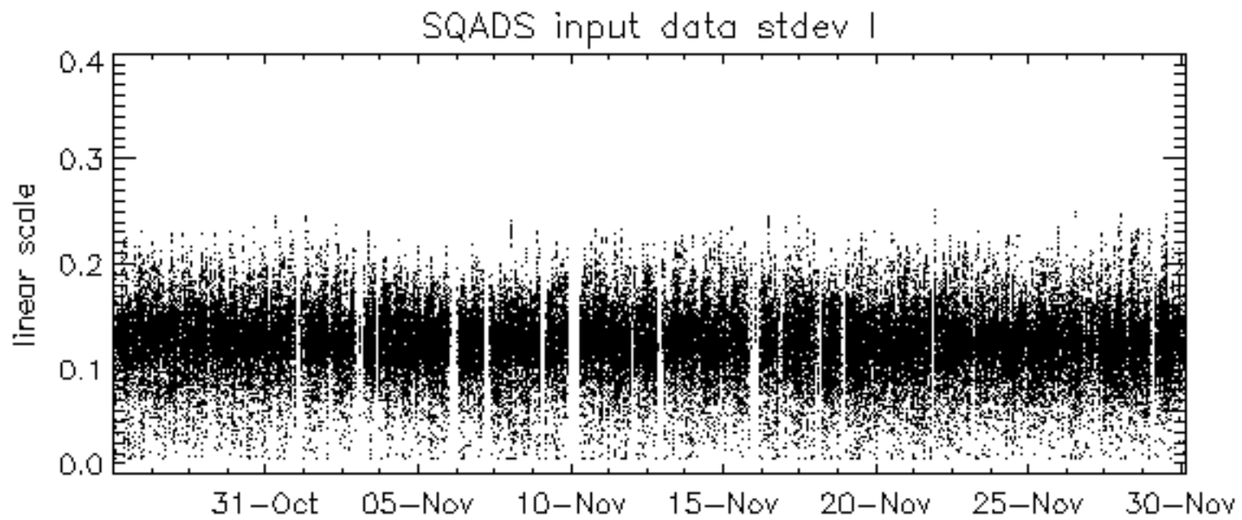

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

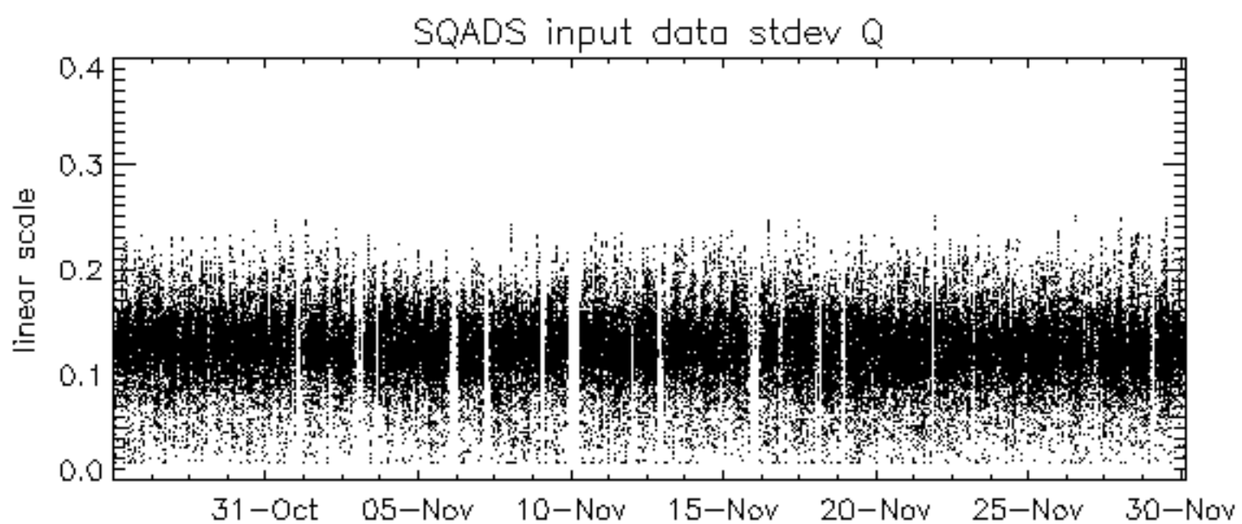

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov

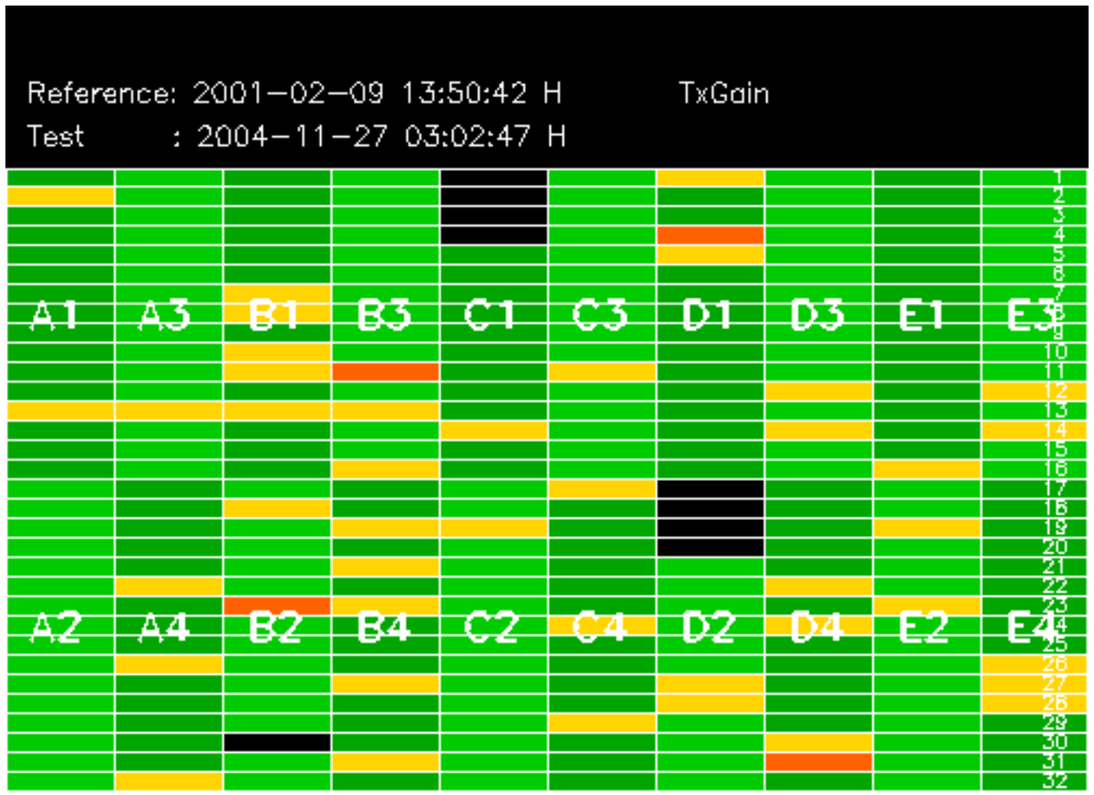

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov

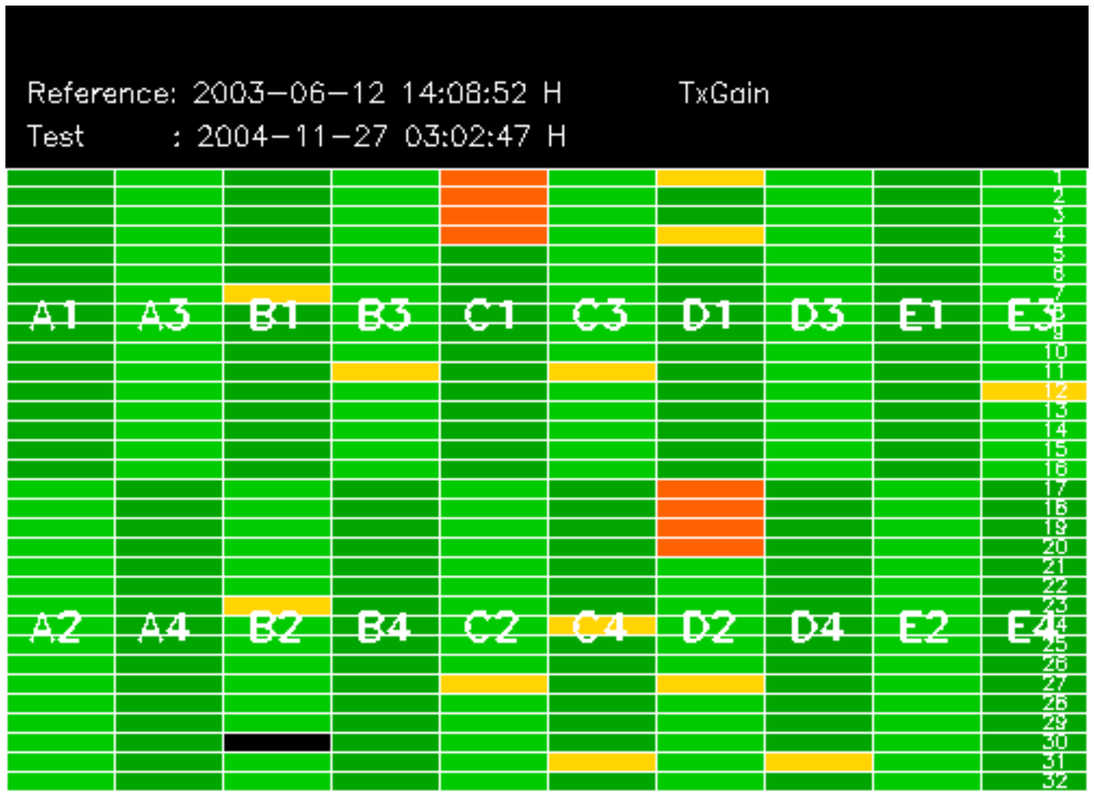

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov

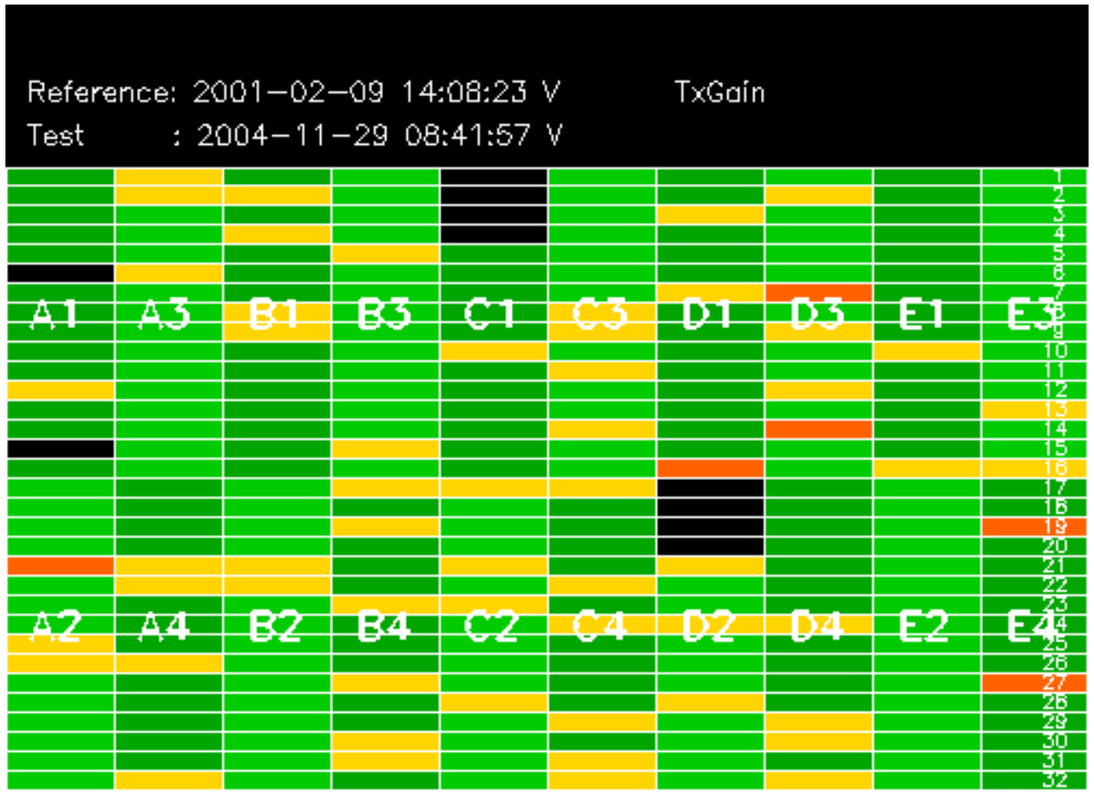

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov

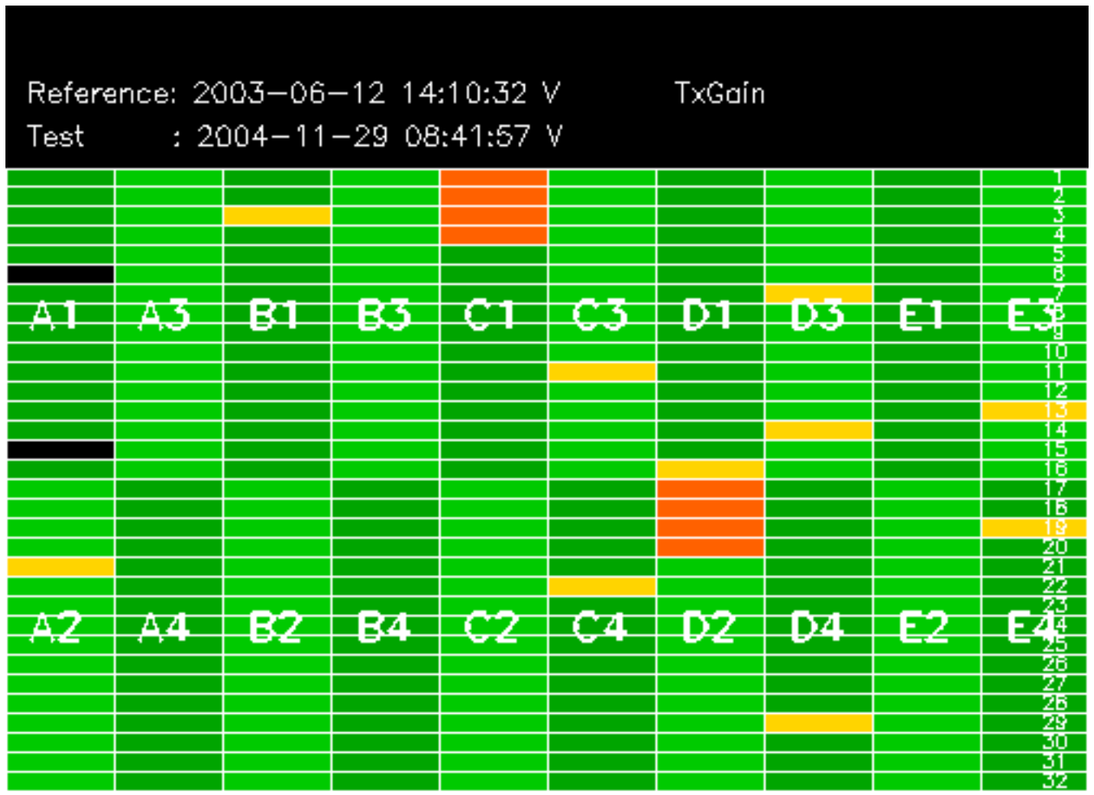

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov

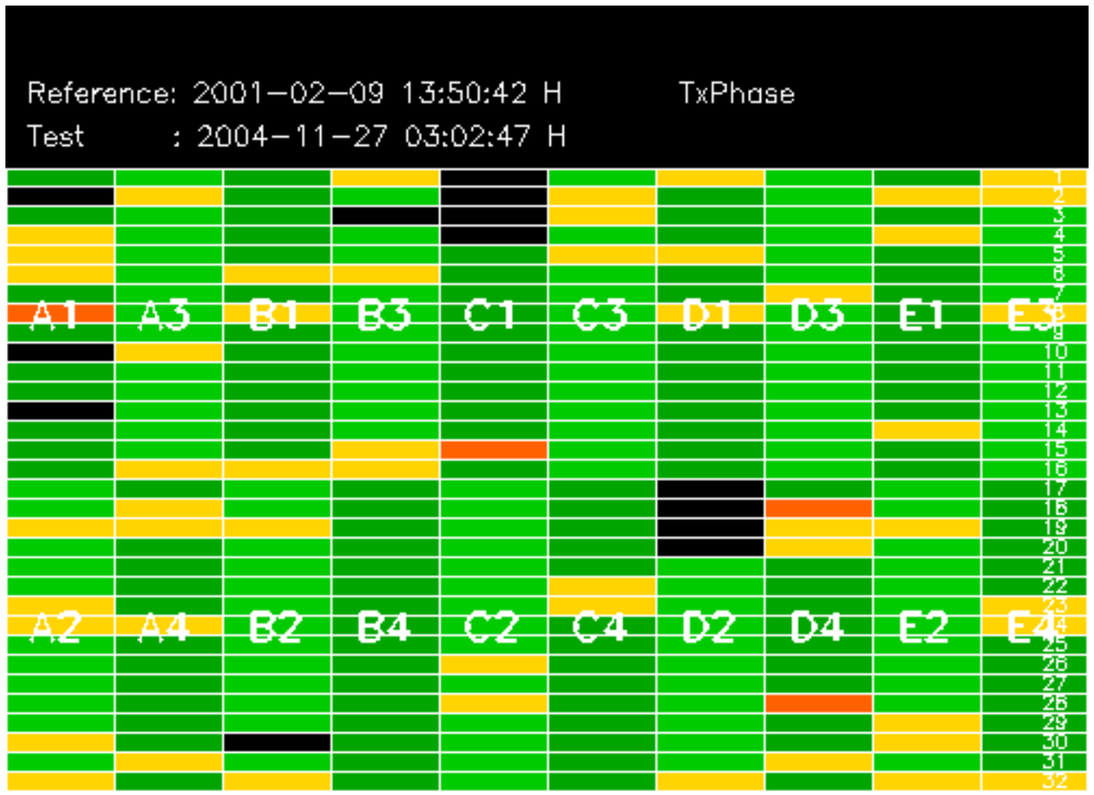

SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
25−Nov
30−Nov


Reference: 2001-02-09 13:50:42 H
Test : 2004-11-27 03:02:47 H
TxGain
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 : 2004-11-27 03:02:47 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 : 2004-11-29 08:41:57 V
TxGain
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 : 2004-11-29 08:41:57 V
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 13:50:42 H
TxPhase
Test : 2004-11-27 03:02:47 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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4
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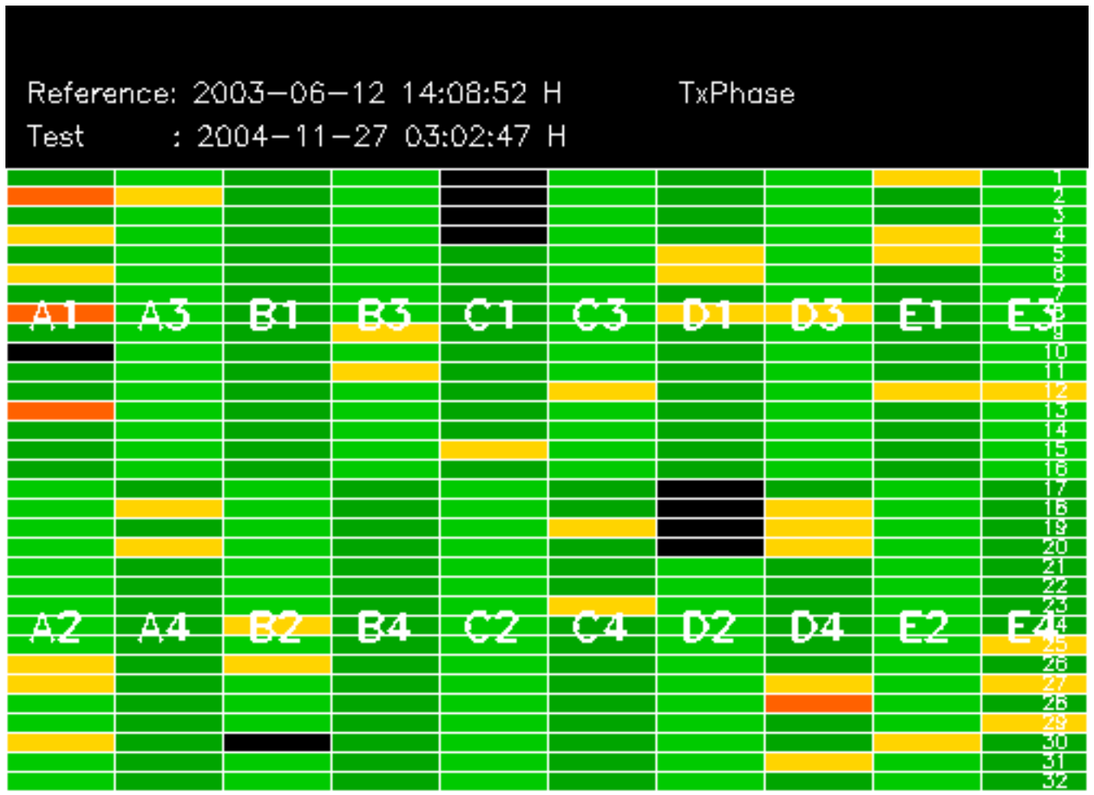
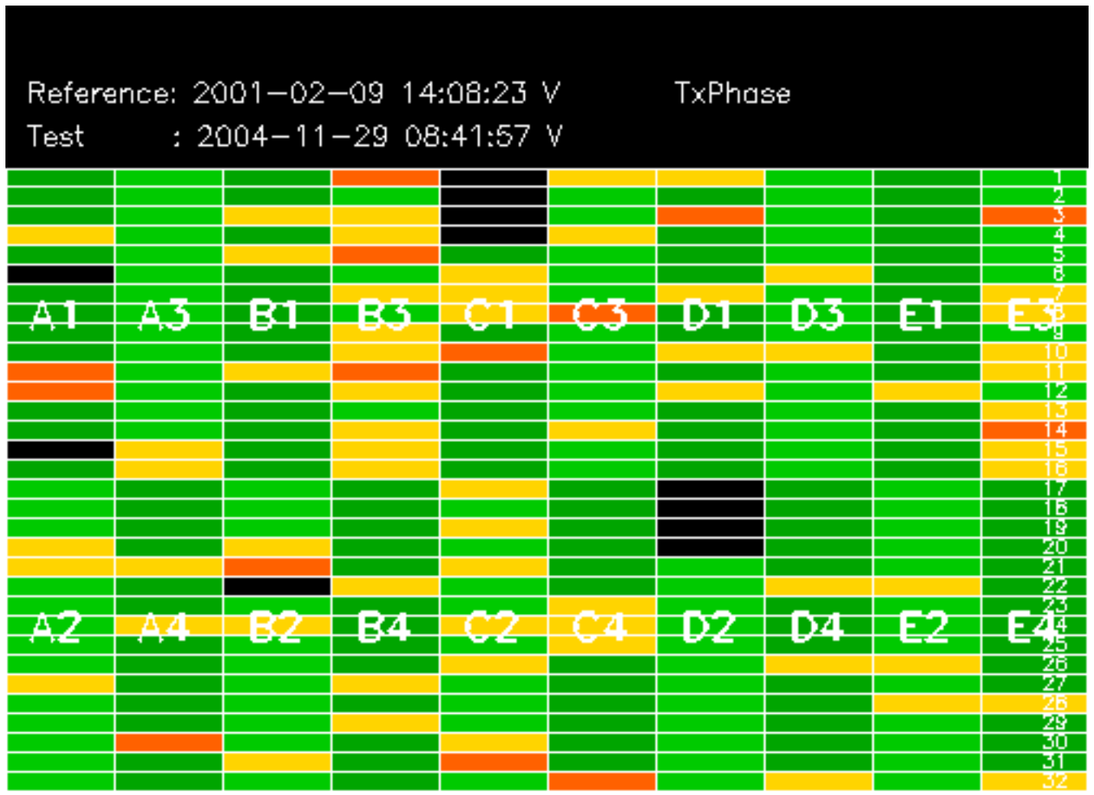
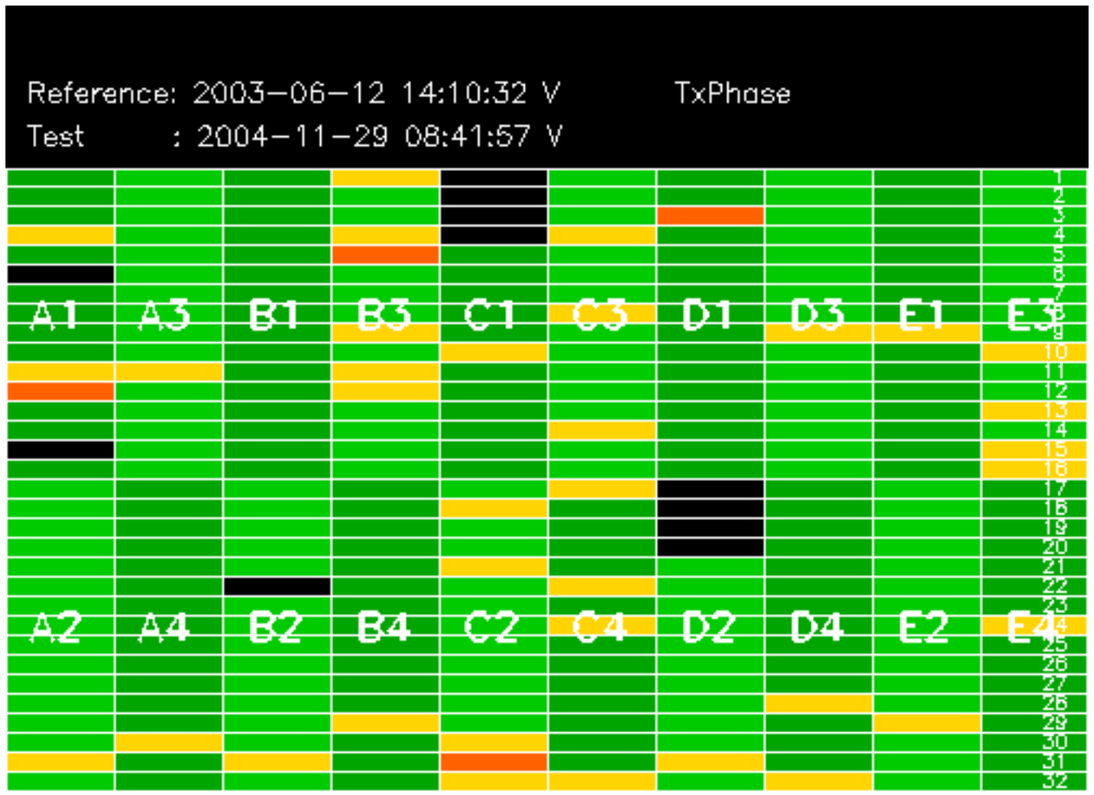

Reference: 2003-06-12 14:08:52 H
Test : 2004-11-27 03:02:47 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-11-29 08:41:57 V
TxPhase
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 : 2004-11-29 08:41:57 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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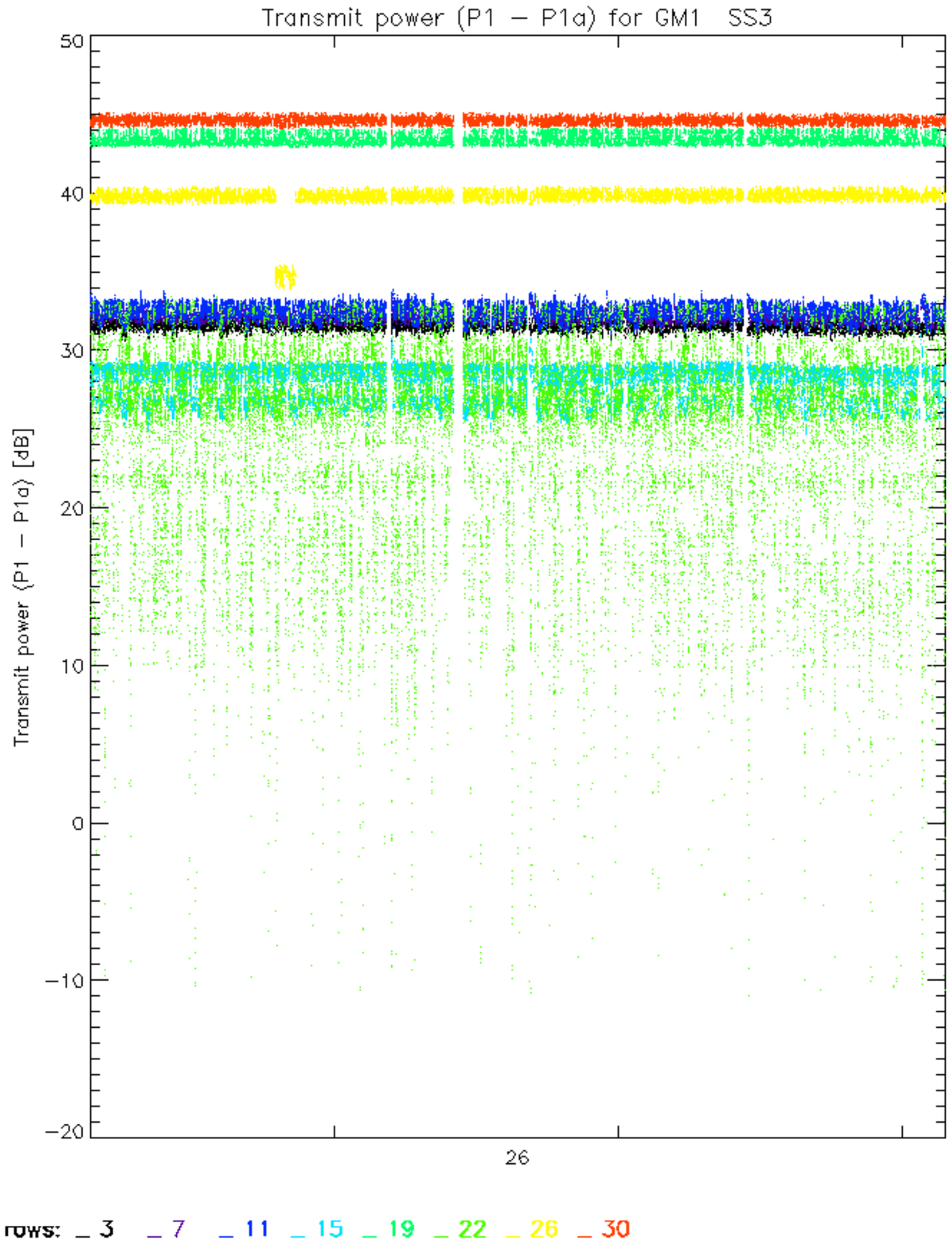
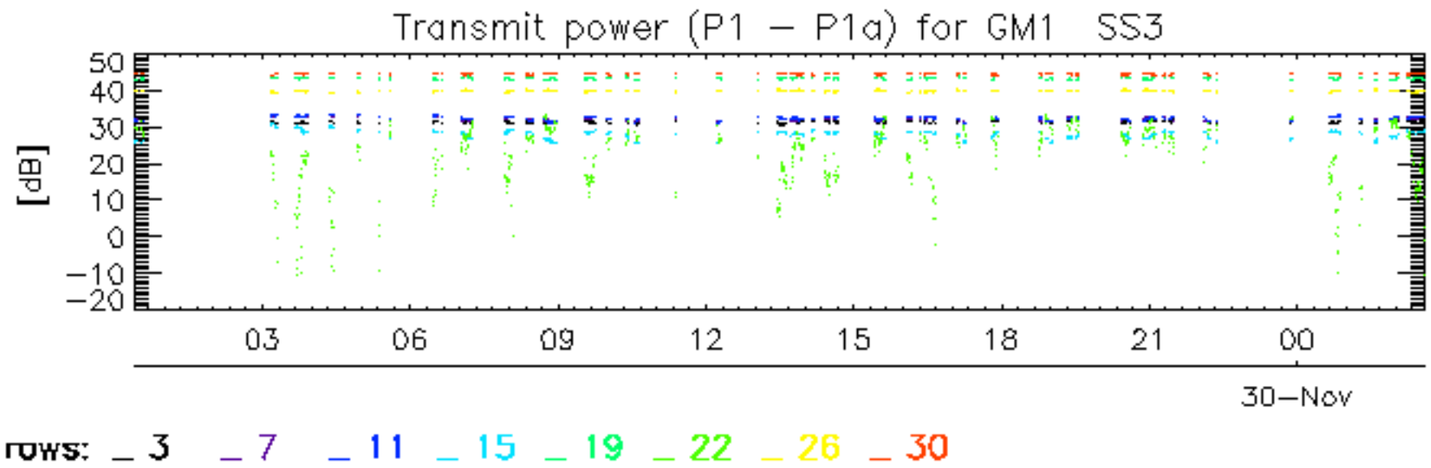
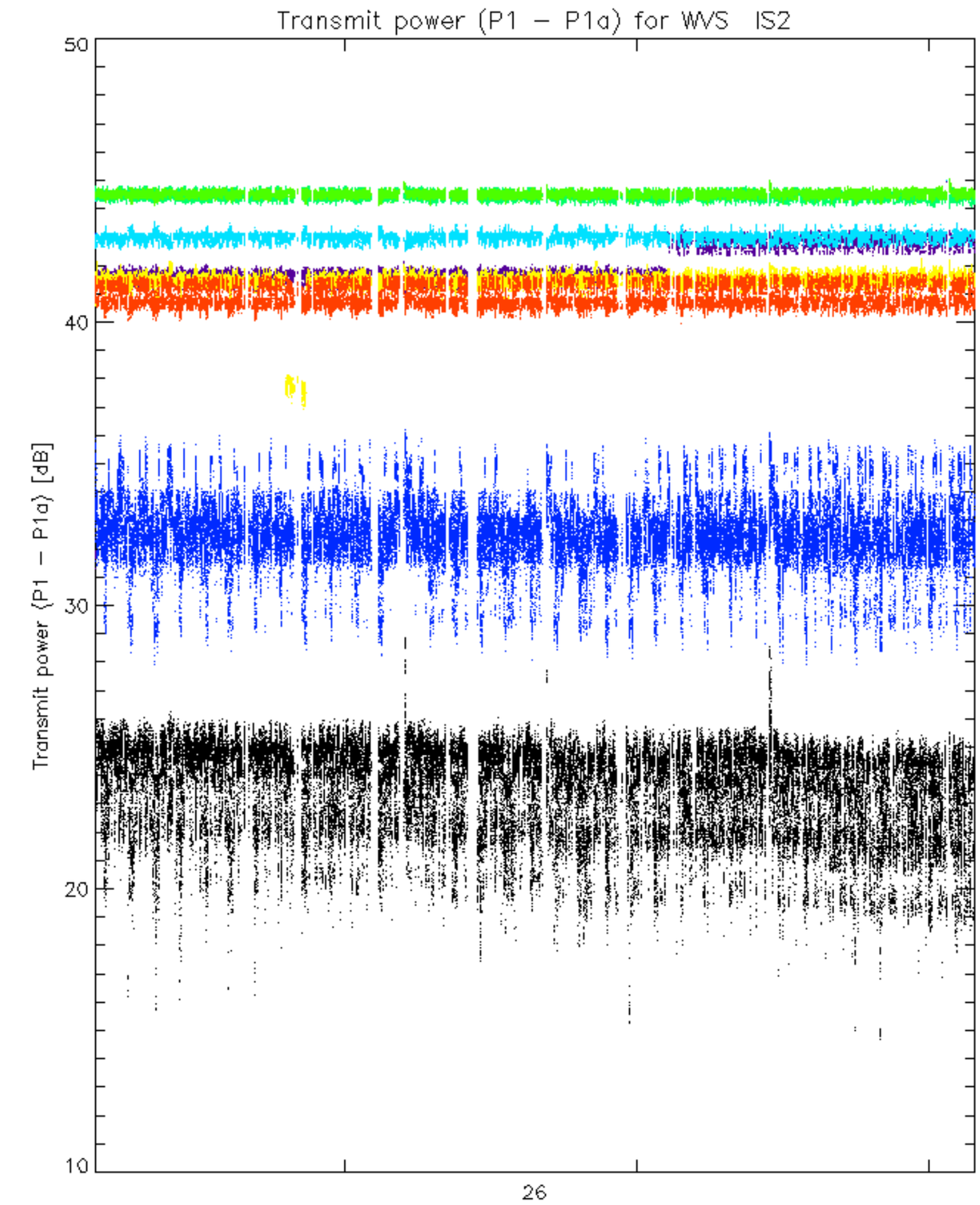
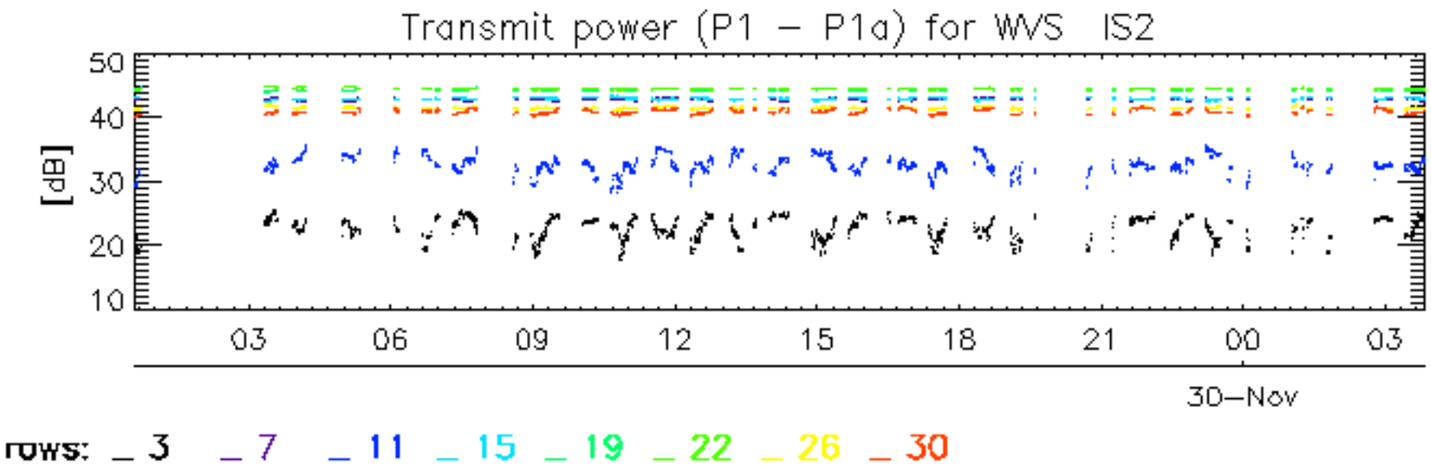

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
26
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
−20
03
06
09
12
15
18
21
00
30–Nov
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
26
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
50
40
30
20
10
03
06
09
12
15
18
21
00
03
30–Nov
rows: 3 7 11 15 19 22 26 30

ASAR unavailable from 29-NOV-2004 00:42:03 until 29-NOV-2004 03:09:35 due the PSU for tile C-1-1 Off.