REPORT OF 041121

last update on Tue Nov 23 09:59:12 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 went on to heater refuse on 21-NOV-2004 19:36:58 till 21-NOV-2004 22:19:32 UTC (orbit 14267 to 14269)
Anomaly report EN-UNA-2004/0290

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

Anomaly detected on the single mode A1-6 that stopped transmitting in V pol.
The anomaly reported started on 17-NOV-2004 21:11:30 UTC. Please see report of 18-NOV-2004 for detailed description.

Polarisation	Start Time
V	20041120 064406
H	20041119 071543

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
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☒

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	-3.473169	0.006474	0.018869
7	P1	-3.337304	0.019010	0.124998
11	P1	-4.603512	0.016527	-0.001700
15	P1	-5.663971	0.028814	0.041822
19	P1	-3.598576	0.005518	-0.062835
22	P1	-4.582600	0.015108	-0.012438
26	P1	-4.868729	0.062324	-0.023063
30	P1	-7.073361	0.014785	-0.030406
3	P1	-16.025036	0.105253	0.153100
7	P1	-14.173255	0.245578	-0.755556
11	P1	-20.641888	0.203310	-0.215491

15	P1	-11.673313	0.035526	0.059314
19	P1	-14.060022	0.027530	-0.091409
22	P1	-16.216803	0.397558	-0.006668
26	P1	-17.704048	0.724732	0.019780
30	P1	-17.980268	0.274838	0.094339

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.374596	0.089110	-0.024447
7	P2	-22.614161	0.136056	-0.058164
11	P2	-15.068028	0.126648	0.071512
15	P2	-7.149843	0.110115	-0.064325
19	P2	-9.711940	0.131326	-0.023659
22	P2	-17.247536	0.104282	0.034475
26	P2	-16.508118	0.112560	-0.041913
30	P2	-19.051846	0.084592	0.010850

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.202048	0.006346	-0.033218
7	P3	-8.202047	0.006346	-0.033221
11	P3	-8.202046	0.006346	-0.033223
15	P3	-8.202048	0.006346	-0.033223
19	P3	-8.202049	0.006346	-0.033230
22	P3	-8.202052	0.006346	-0.033234
26	P3	-8.202053	0.006346	-0.033239
30	P3	-8.201973	0.006346	-0.033194

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	-2.802292	0.011315	-0.017261
7	P1	-2.953452	0.023263	-0.002121
11	P1	-3.900437	0.022380	-0.006581
15	P1	-3.488186	0.026991	0.013471
19	P1	-3.589218	0.012124	-0.008139
22	P1	-5.616530	0.066902	0.066262
26	P1	-6.419548	0.081920	-0.064311
30	P1	-6.260644	0.041154	-0.053183
3	P1	-10.597633	0.052533	0.010079
7	P1	-10.078456	0.135751	-0.070242
11	P1	-12.358600	0.116278	-0.089393
15	P1	-11.711246	0.064898	-0.062214
19	P1	-15.616487	0.053459	-0.028795
22	P1	-23.937458	1.993345	-0.411249
26	P1	-15.106026	0.467839	-0.144140
30	P1	-20.268183	1.007041	0.040707

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.055285	0.041599	-0.029428
7	P2	-22.675587	0.032343	-0.015902
11	P2	-10.853397	0.037191	0.032239
15	P2	-5.044702	0.029602	-0.065906
19	P2	-6.950283	0.036466	-0.087773
22	P2	-7.361810	0.030521	0.037182
26	P2	-23.937319	0.023417	-0.068730
30	P2	-22.090519	0.019572	-0.008954

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.041720	0.003493	-0.024529
7	P3	-8.041739	0.003503	-0.024709
11	P3	-8.041770	0.003506	-0.024942

15	P3	-8.041665	0.003501	-0.024733
19	P3	-8.041712	0.003500	-0.025028
22	P3	-8.041788	0.003496	-0.024837
26	P3	-8.041751	0.003486	-0.024597
30	P3	-8.041719	0.003510	-0.024660

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	0.000460326
	stdev	2.25143e-07
MEAN Q	mean	0.000532103
	stdev	2.40901e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.126122
	stdev	0.000952825
STDEV Q	mean	0.126343
	stdev	0.000961241

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

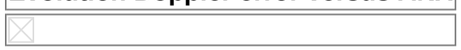
6.2 - Absolute Doppler for WVS

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

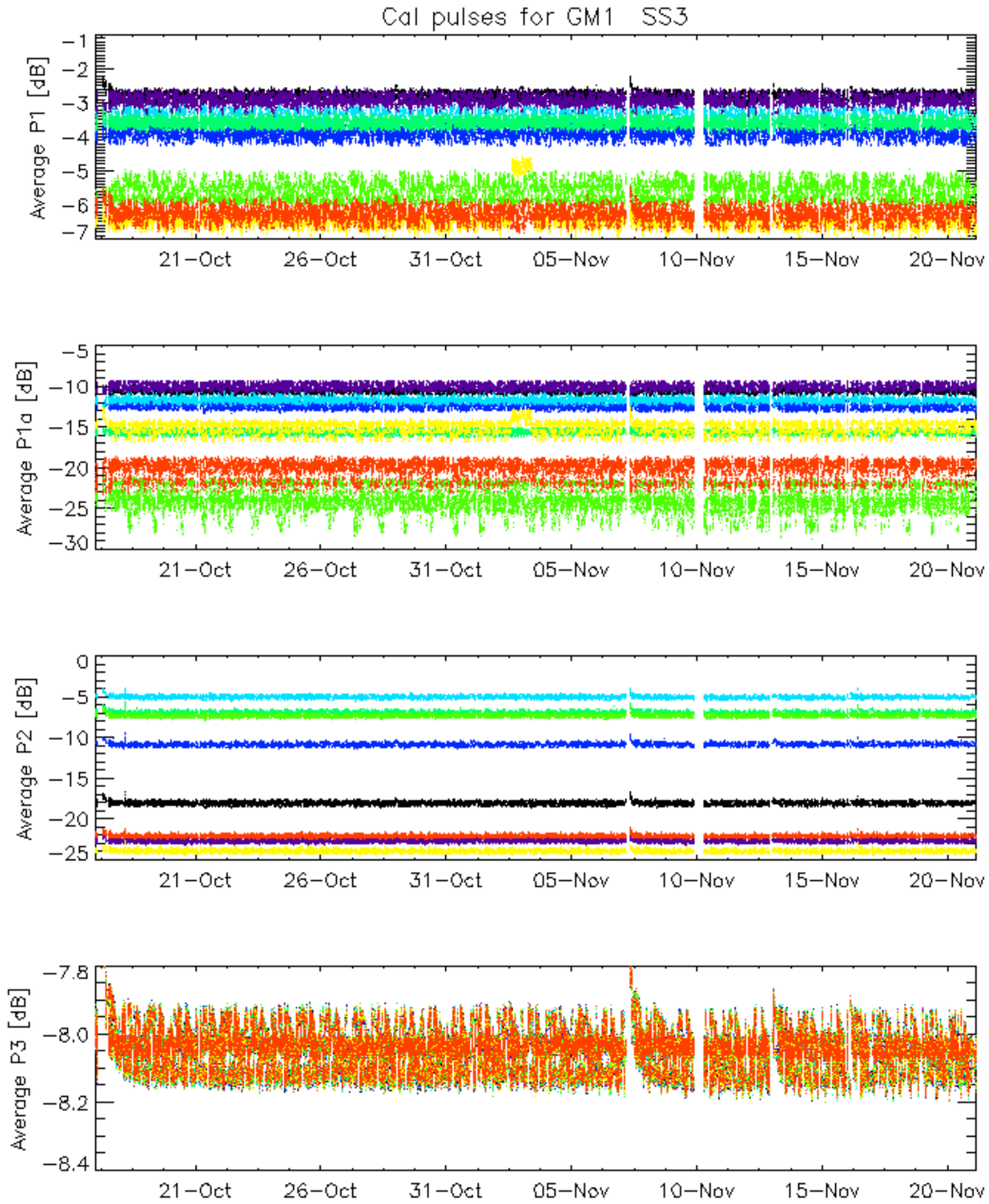
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

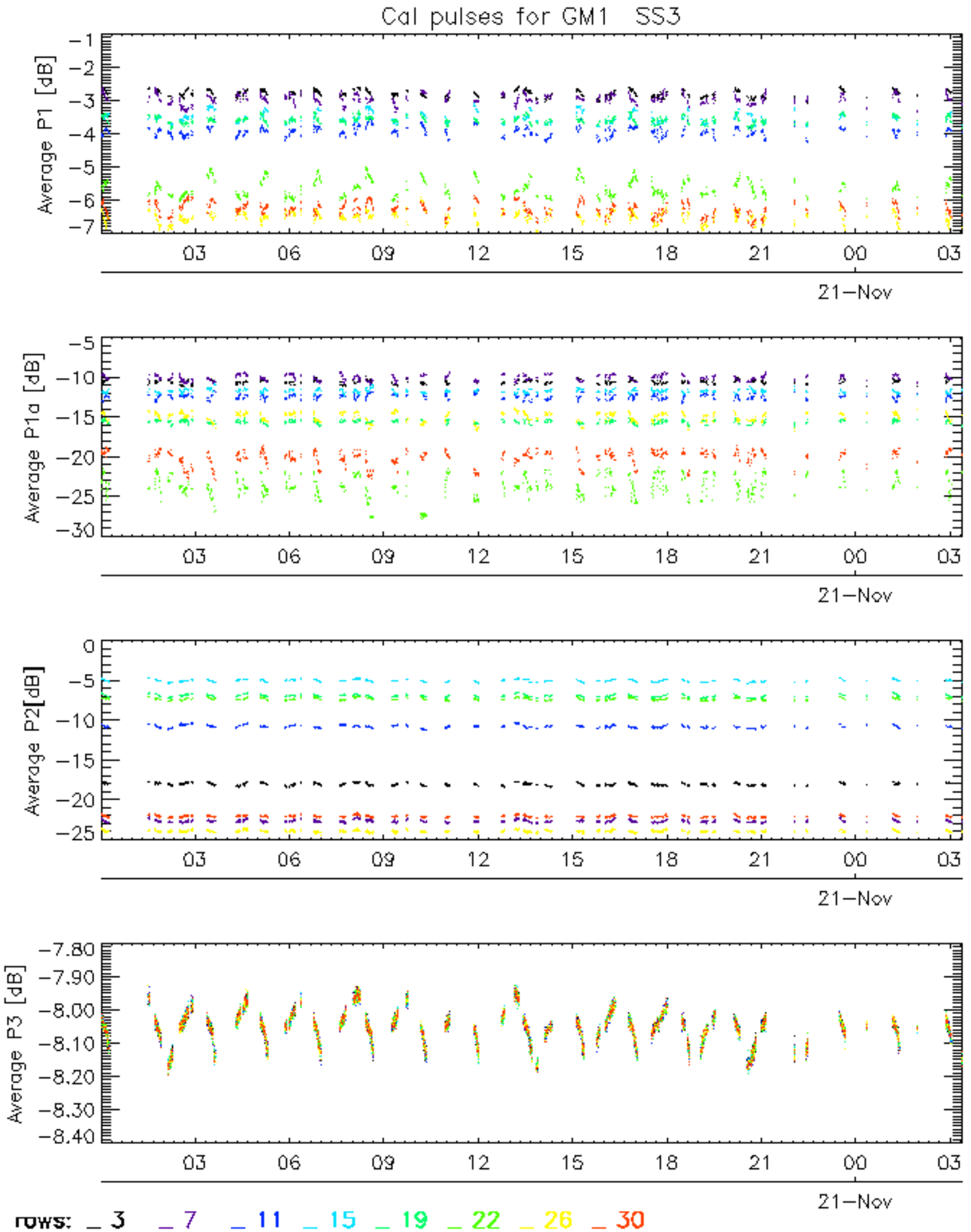
6.5 - Absolute Doppler for GM1

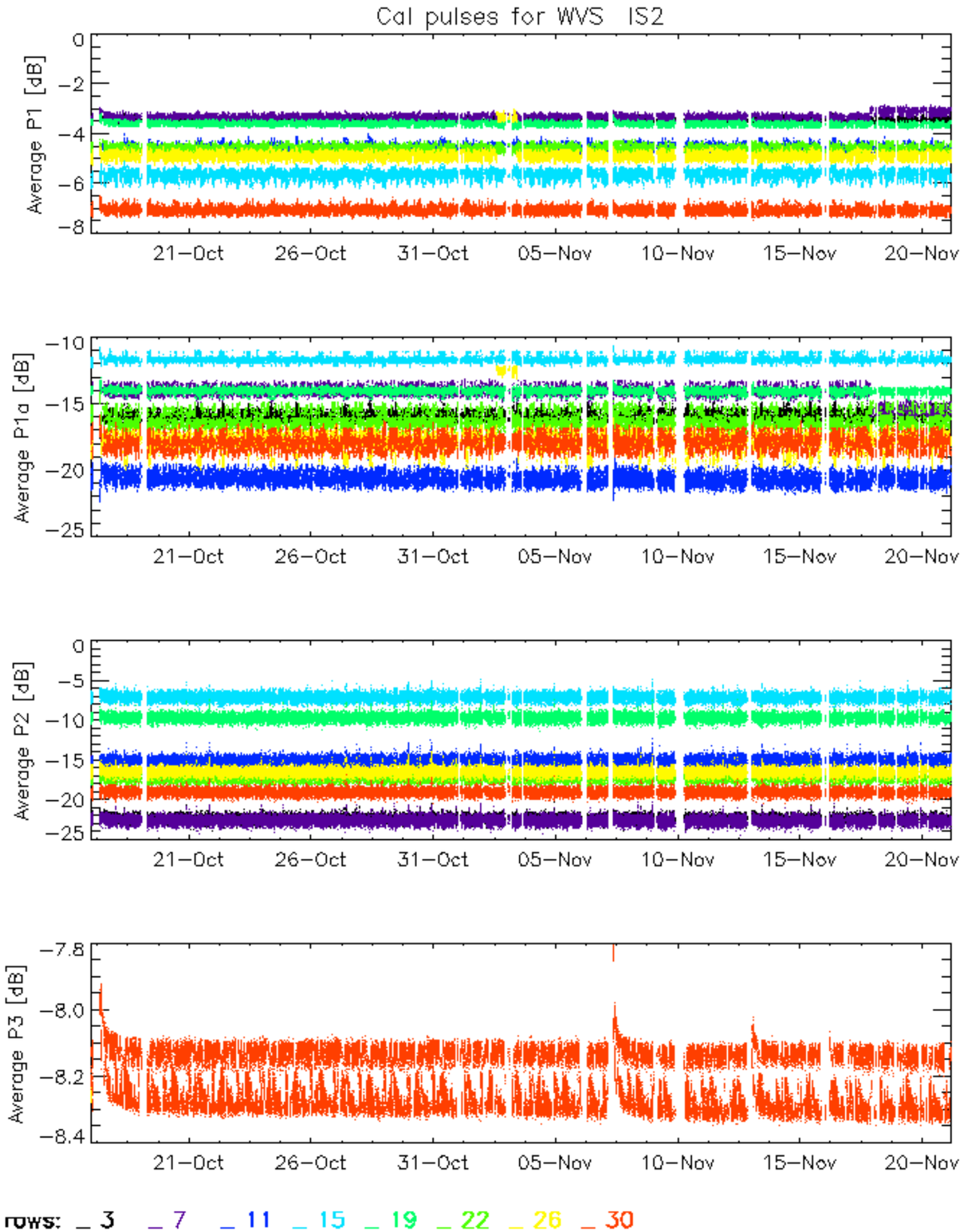
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

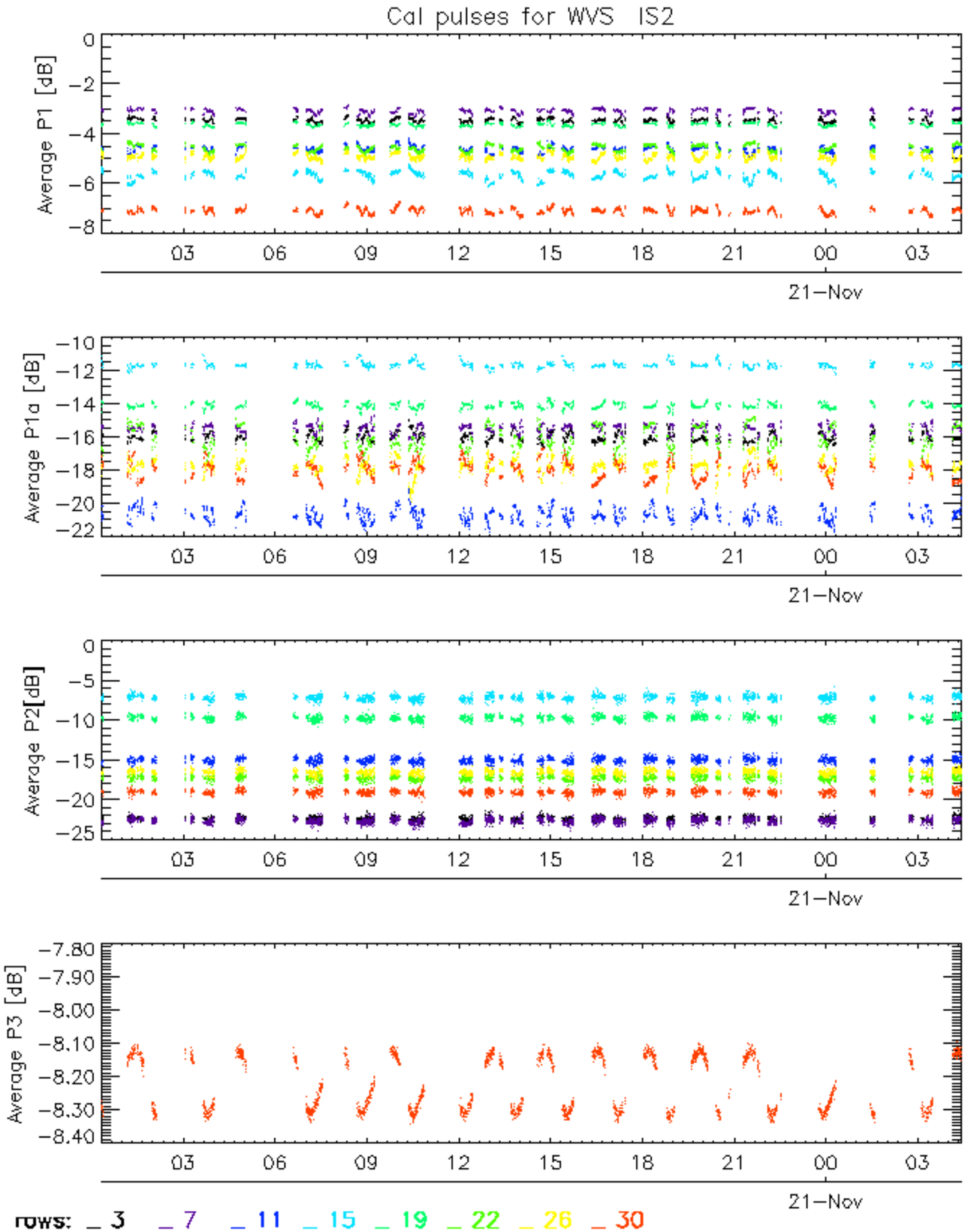
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒

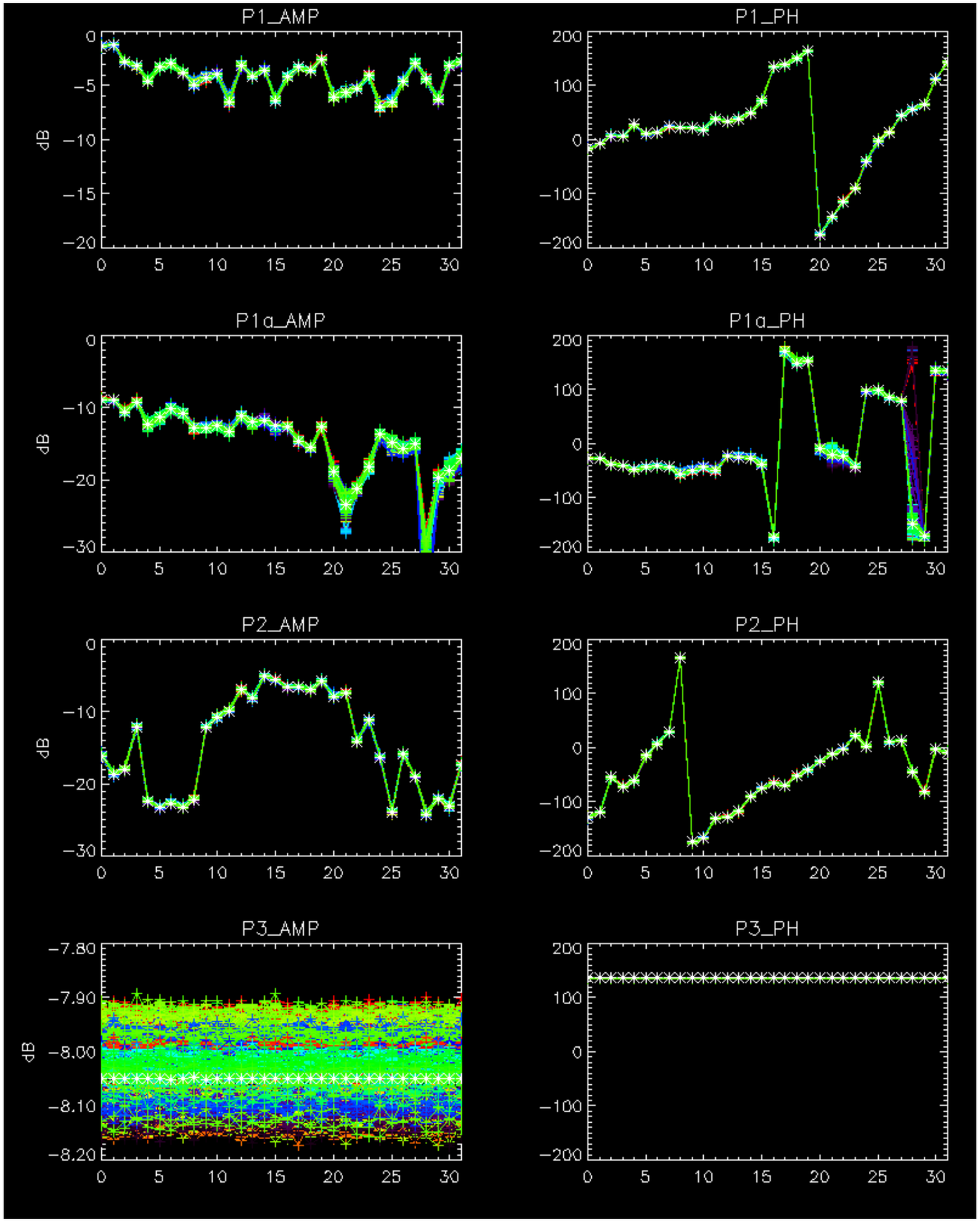

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

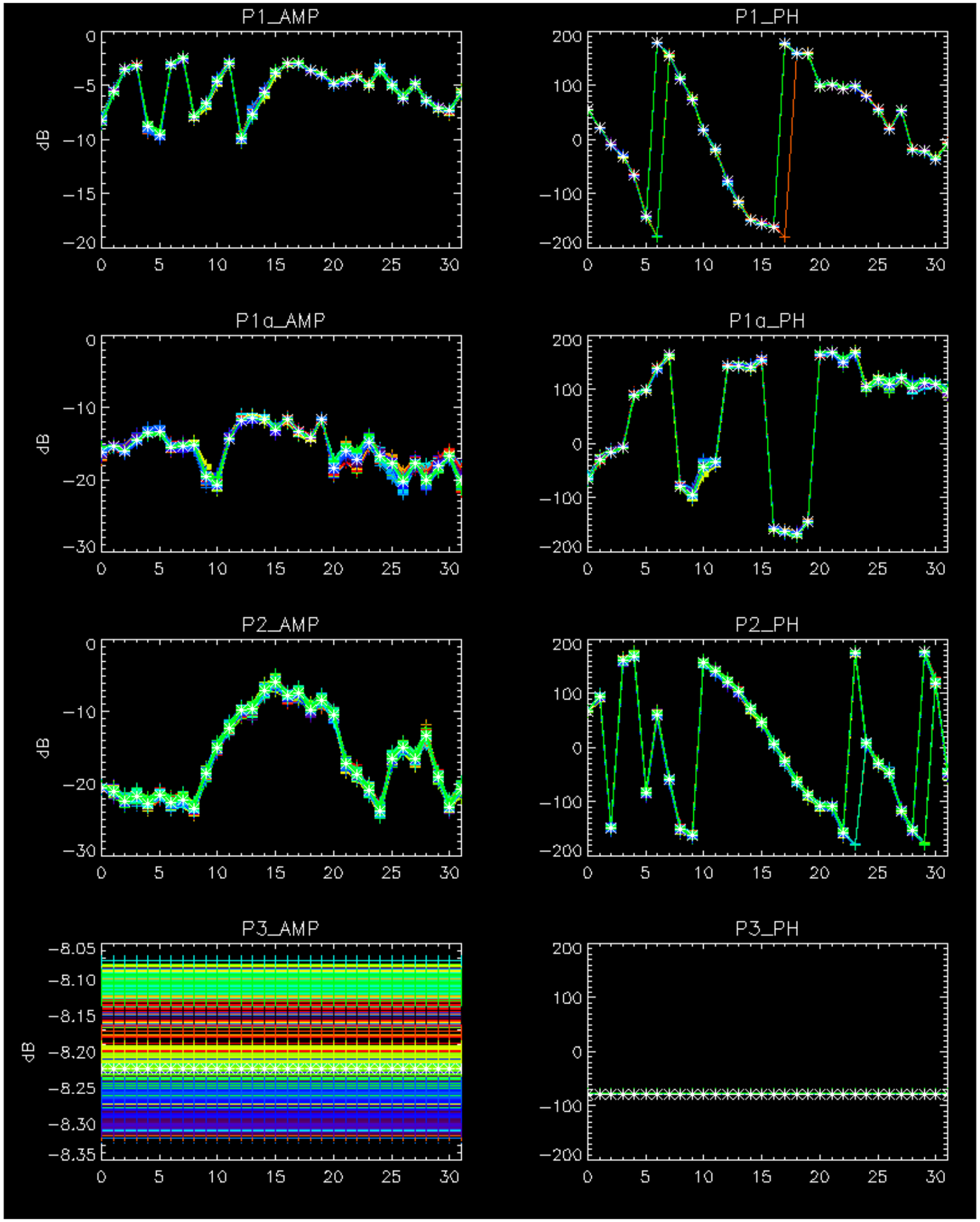

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
21−Nov
Average P1a [dB]
−5
−10
−15
−20
−25
−30
03
06
09
12
15
18
21
00
03
21−Nov
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
21−Nov
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
20−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
03
06
09
12
15
18
21
00
03
21−Nov
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2[dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

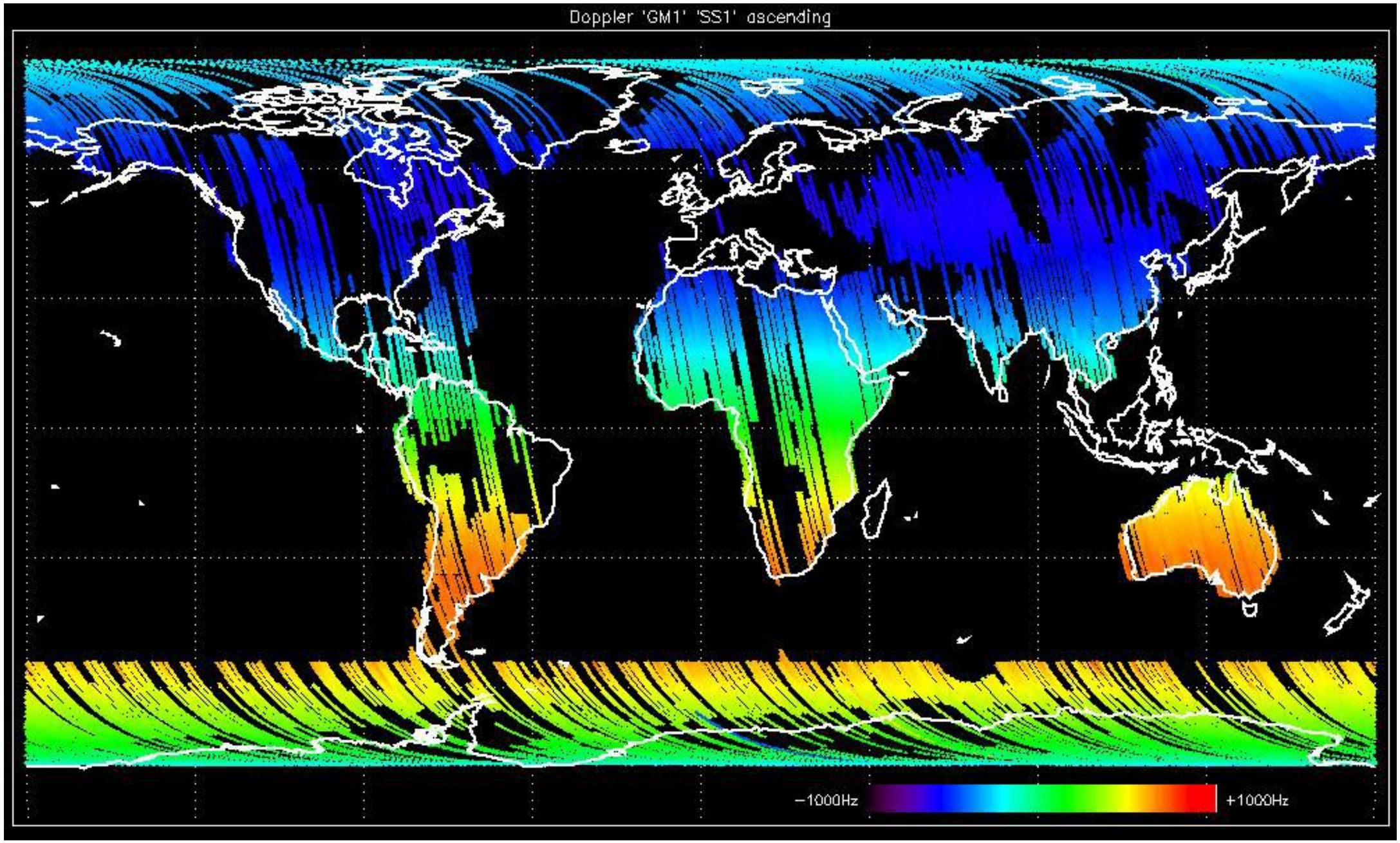
No anomalies observed.

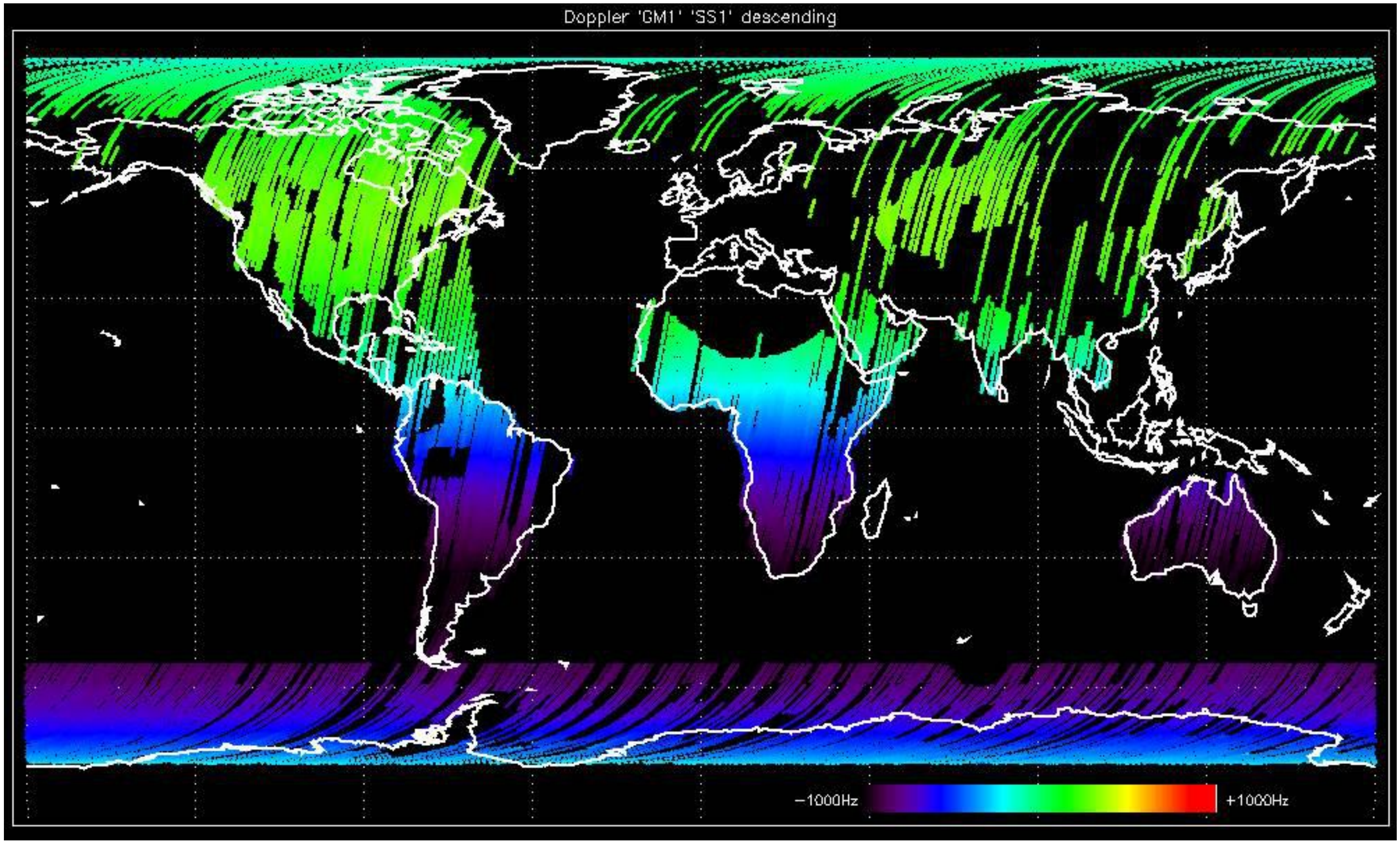

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.80
−7.90
−8.00
−8.10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

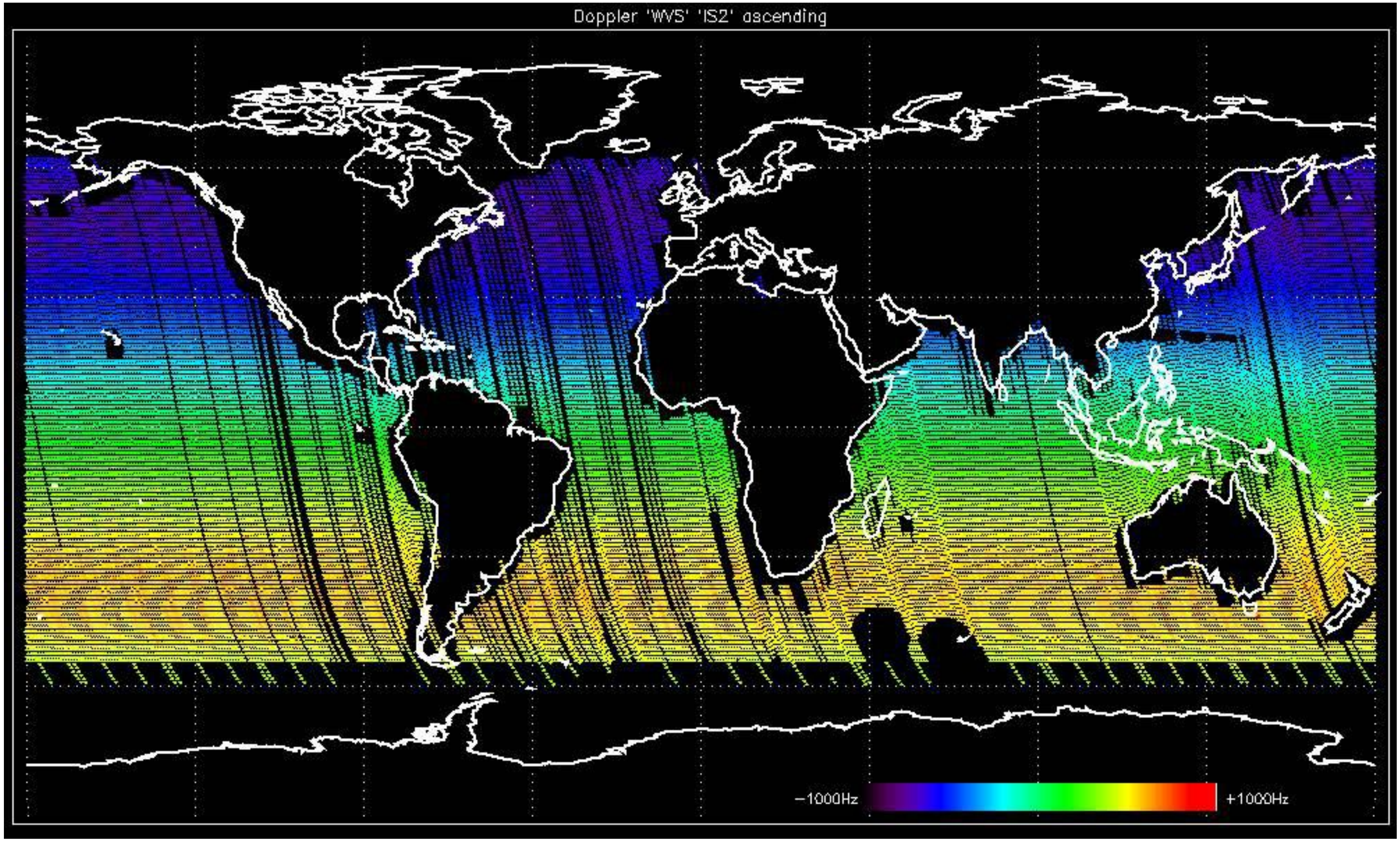

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.05
−8.10
−8.15
−8.20
−8.25
−8.30
−8.35
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

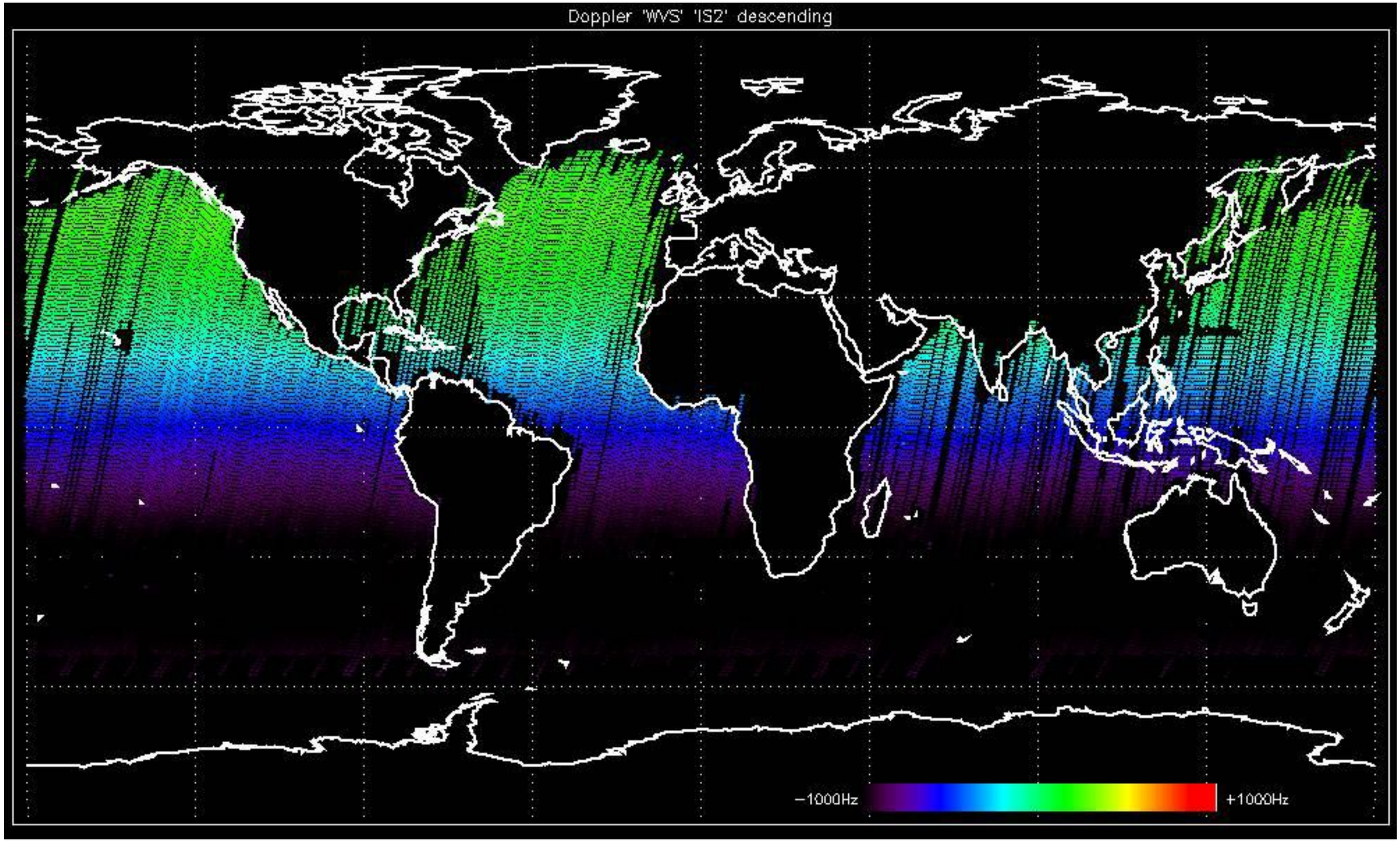
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

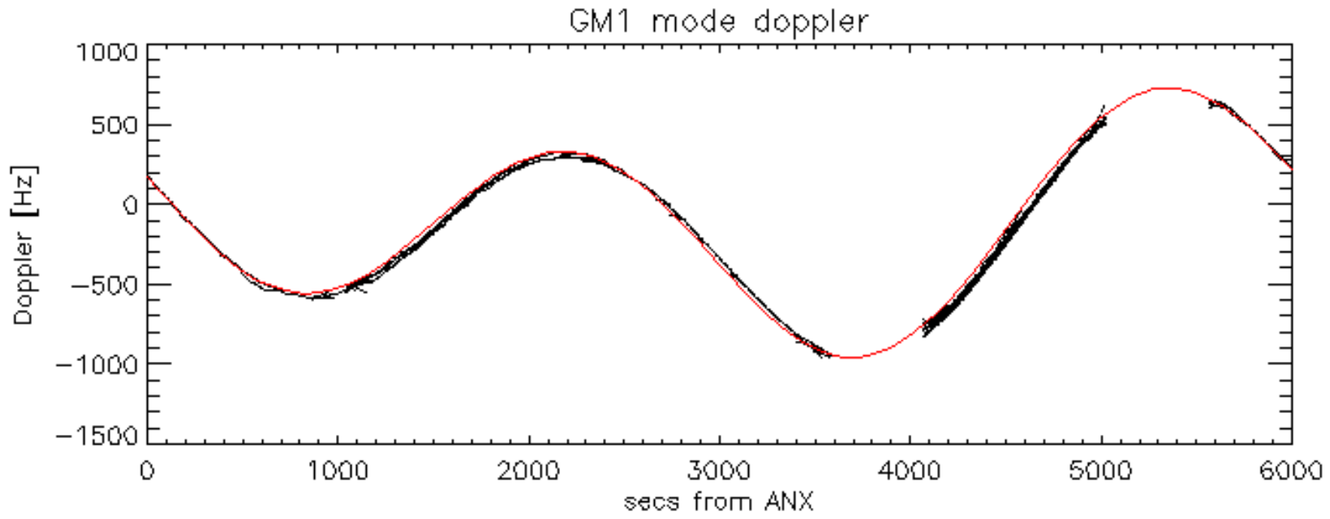
Preliminary report.The data is not yet controled

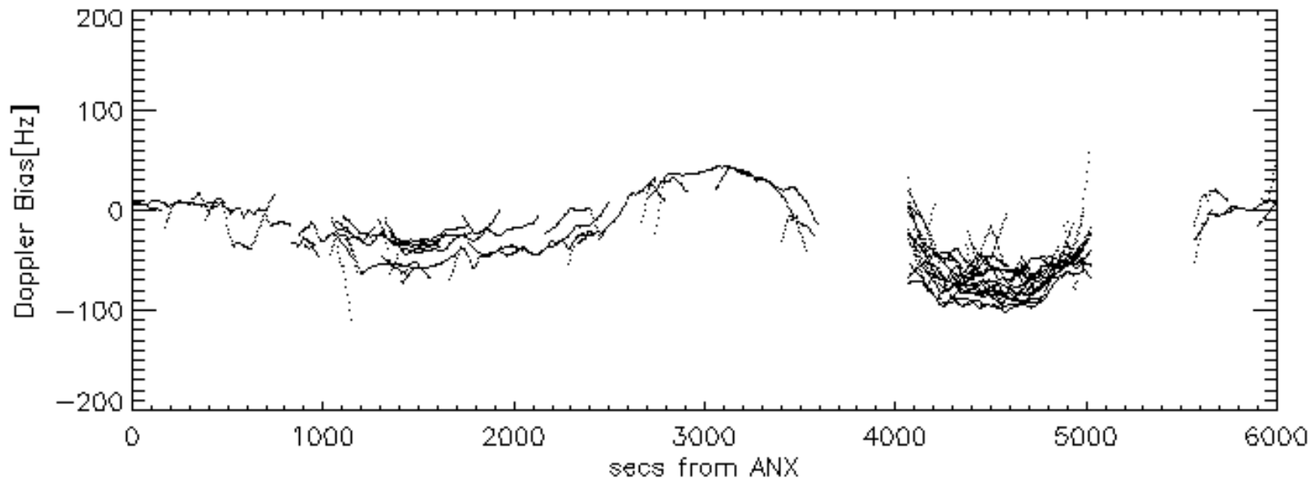

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

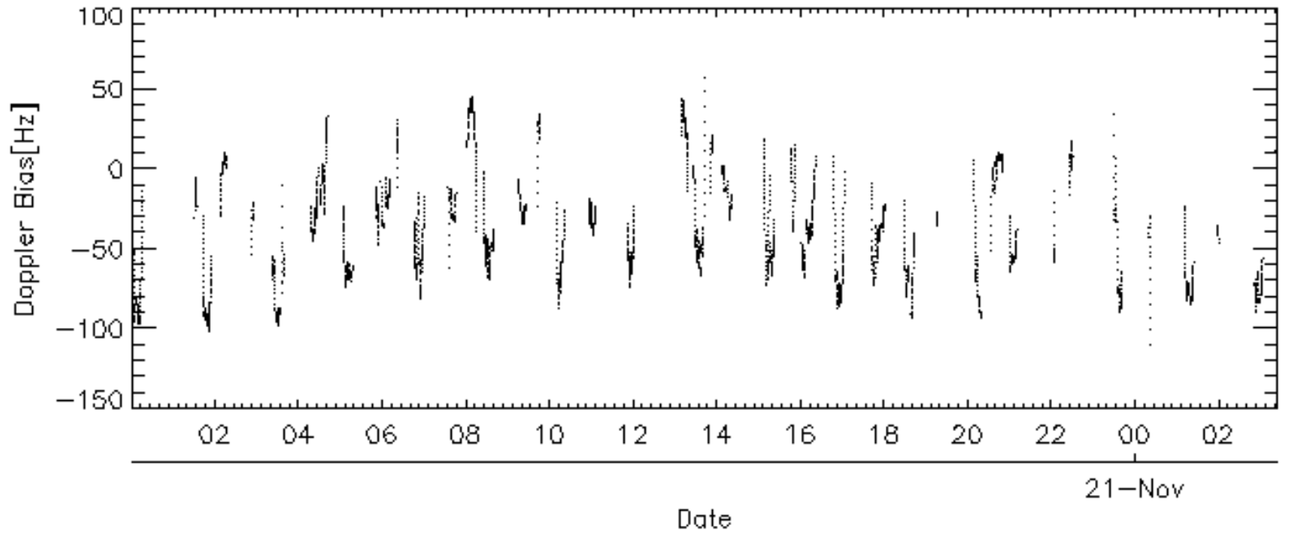

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

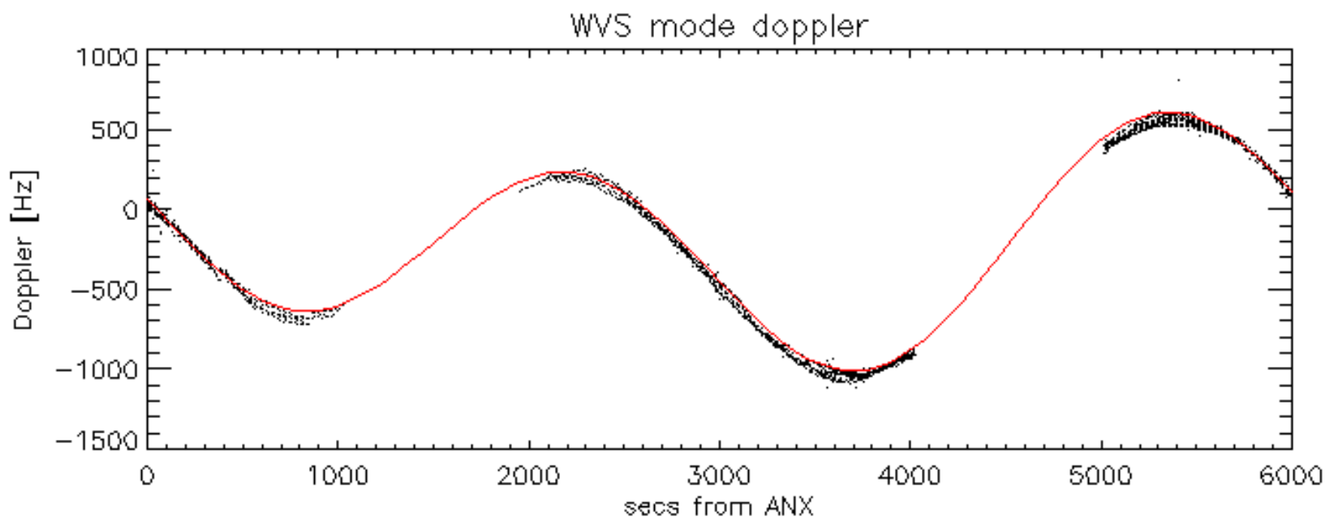

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

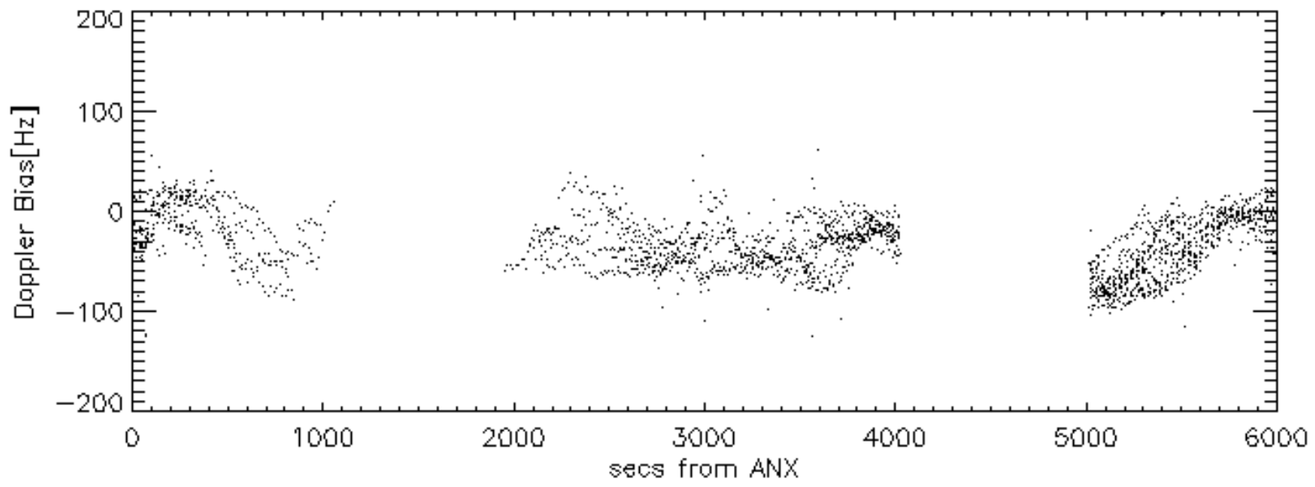

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

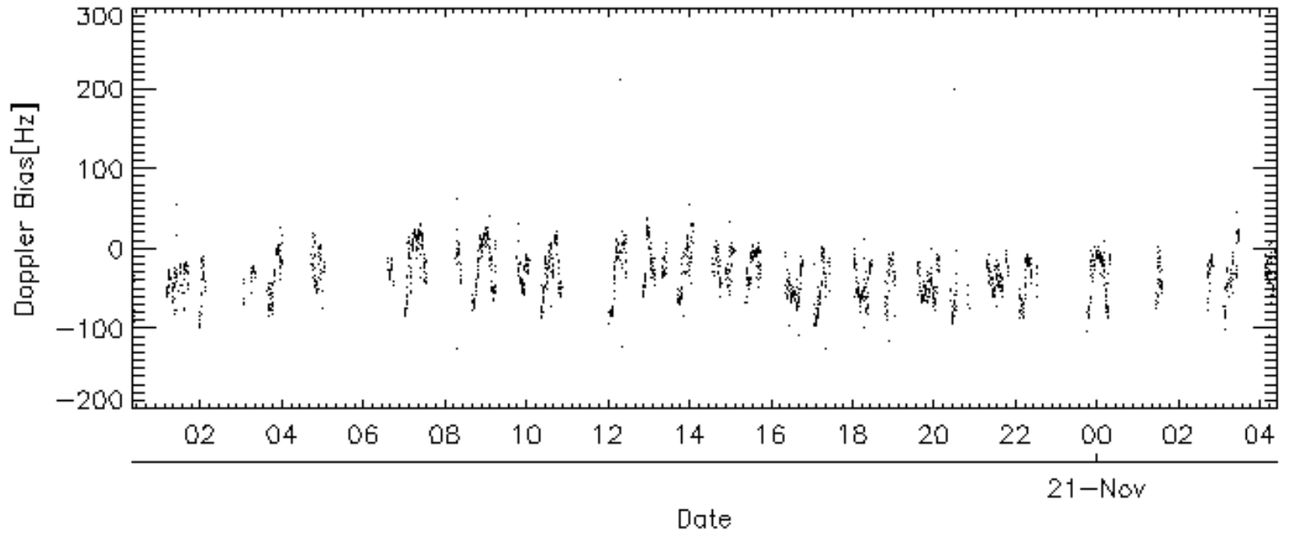

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

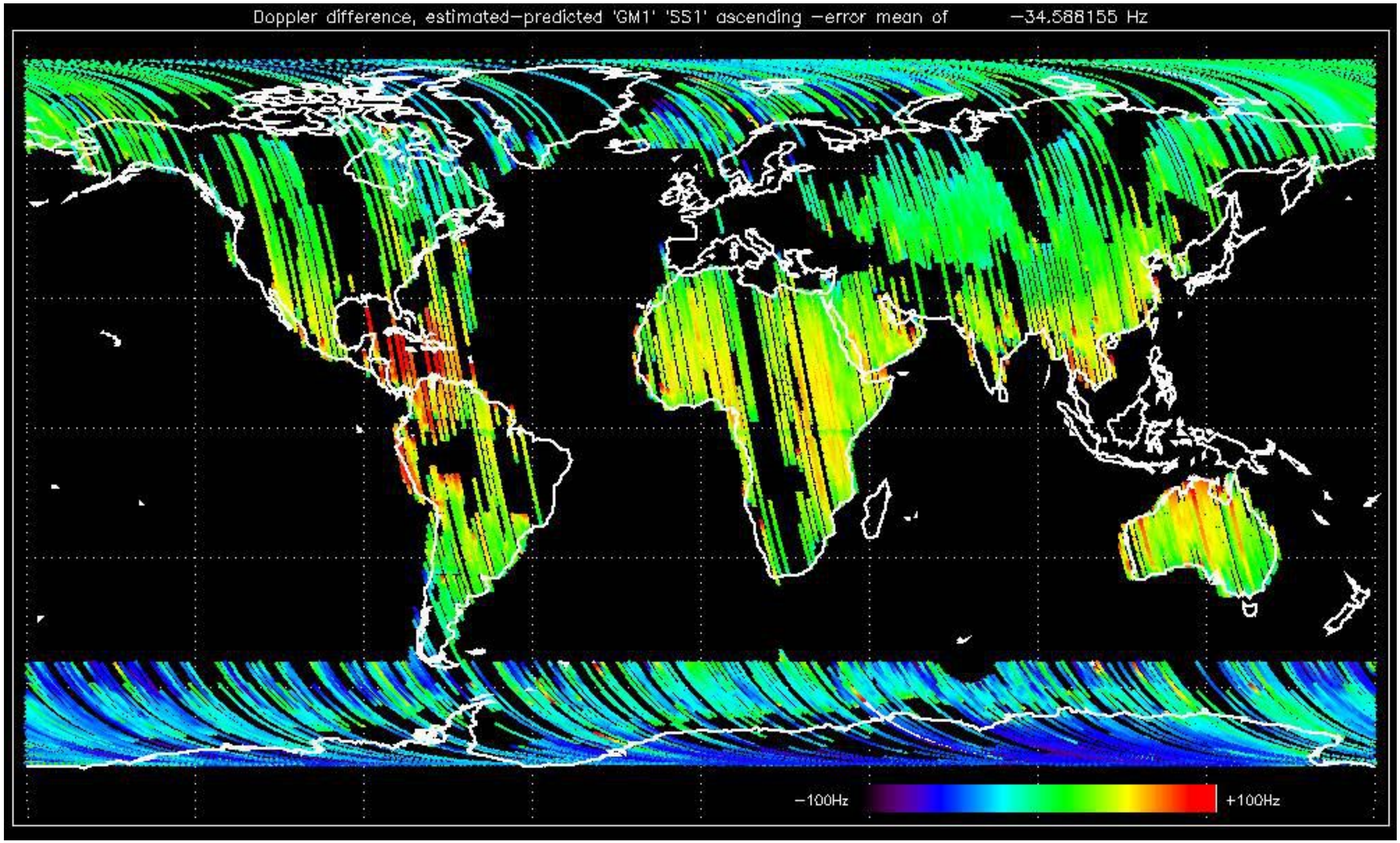

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

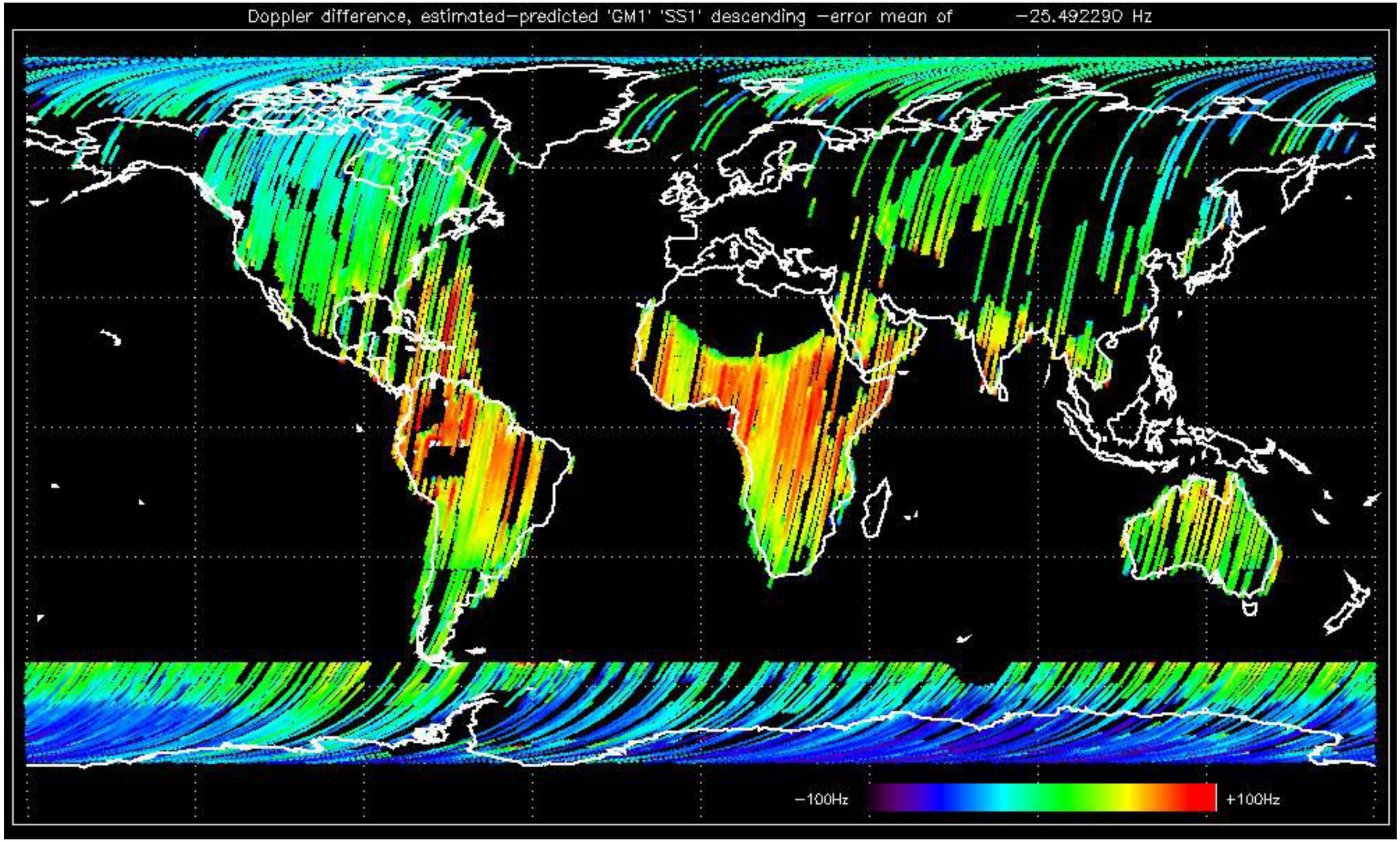

Doppler Bias[Hz]
100
50
0
−50
−100
−150
02
04
06
08
10
12
14
16
18
20
22
00
02
21−Nov
Date

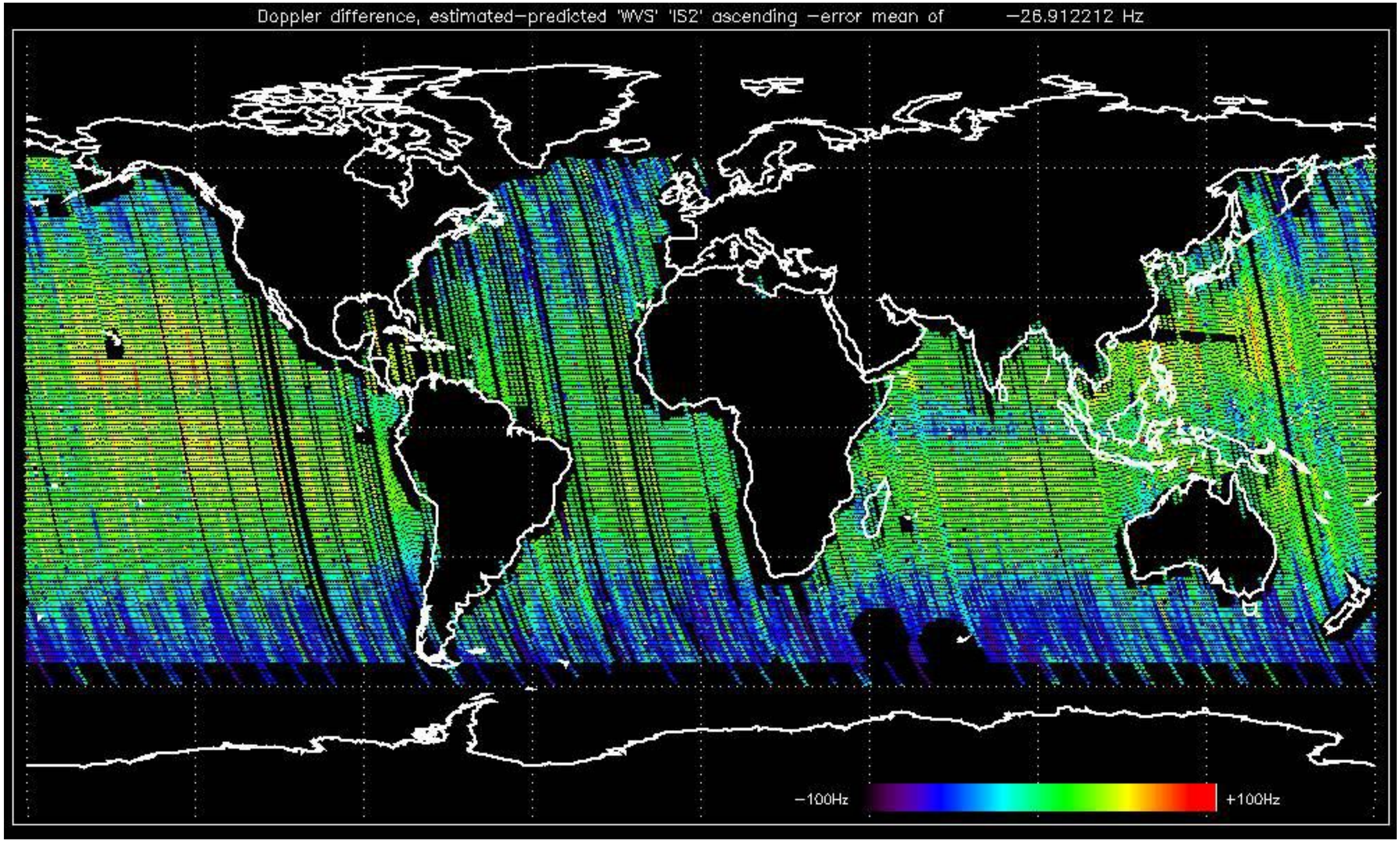

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

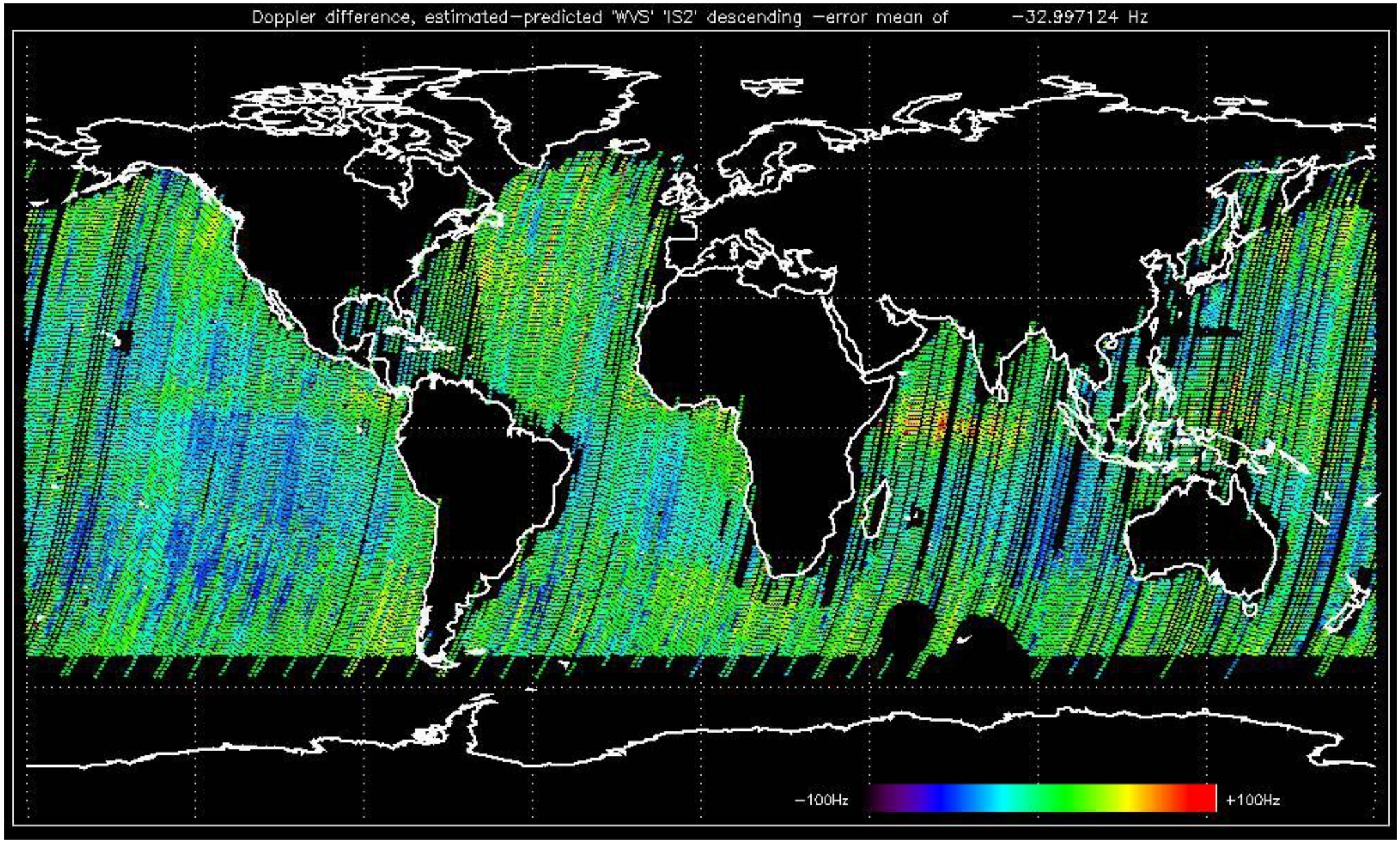

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −34.588155 Hz
−100Hz
+100Hz

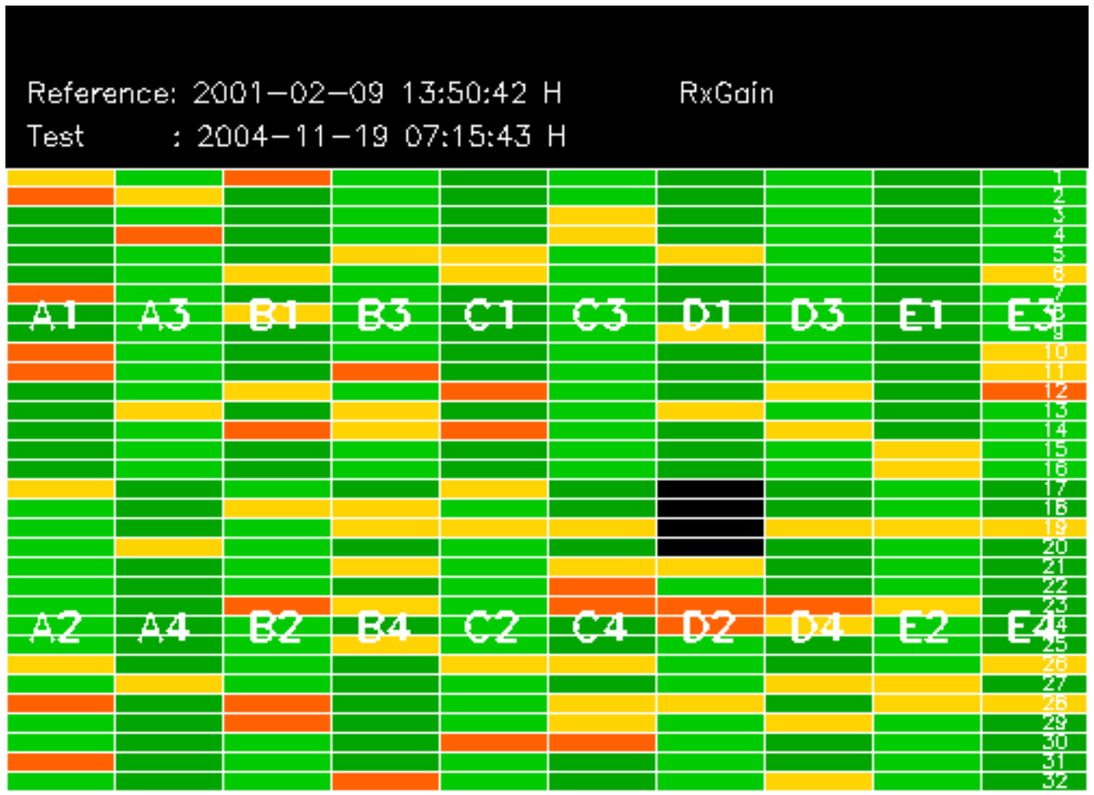

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -25.492290 Hz
-100Hz
+100Hz

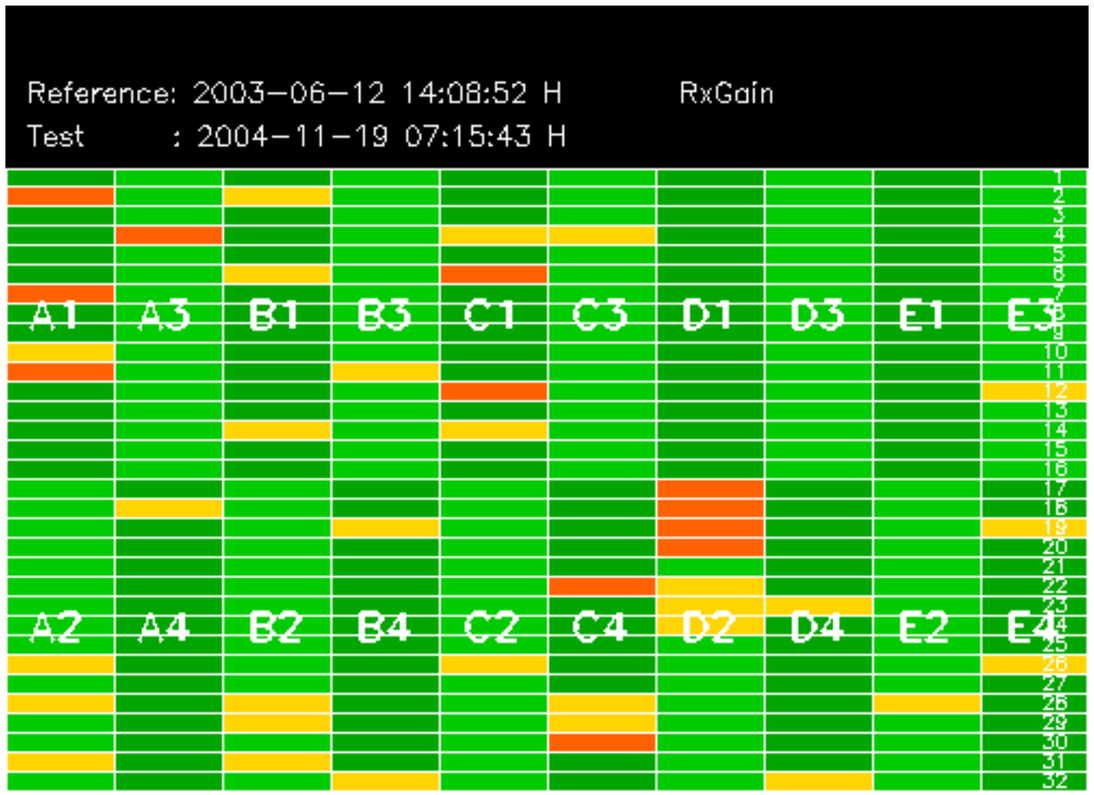

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −26.912212 Hz
−100Hz
+100Hz

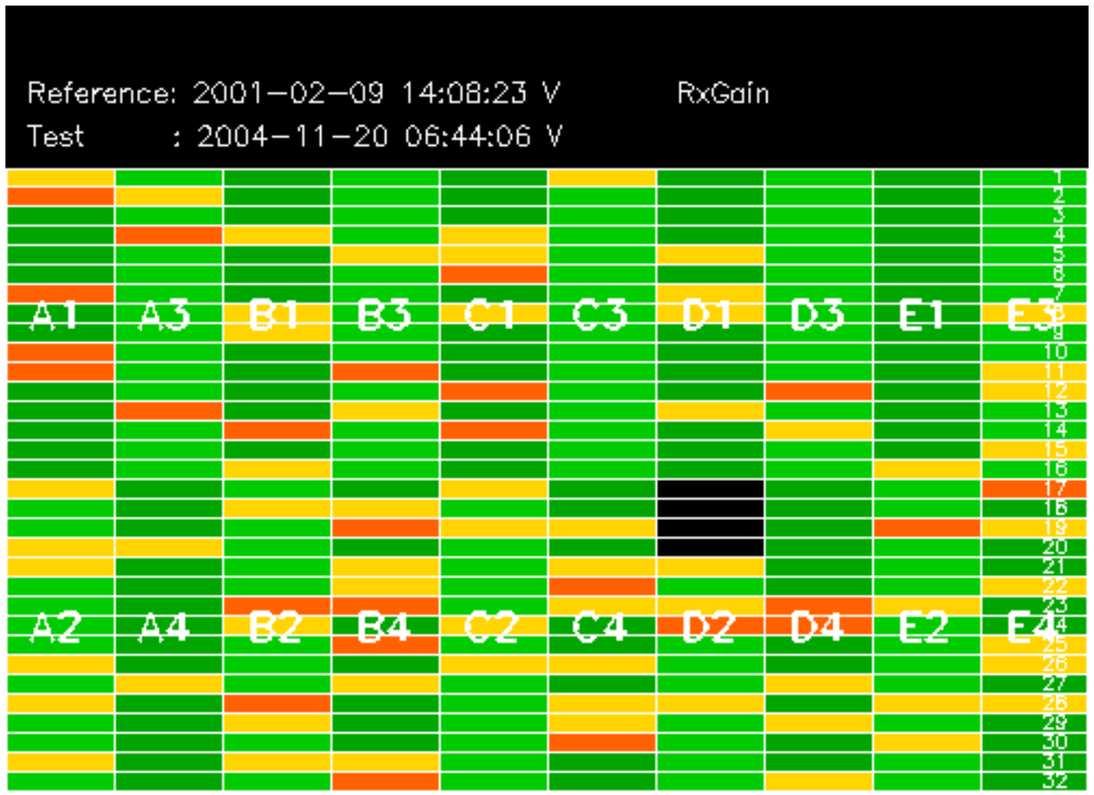

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −32.997124 Hz
−100Hz
+100Hz

Anomaly detected on the single mode A1-6 that stopped transmitting in V pol.
The anomaly reported started on 17-NOV-2004 21:11:30 UTC. Please see report of 18-NOV-2004 for detailed description.

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2004-11-19 07:15:43 H
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 : 2004-11-19 07:15:43 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 : 2004-11-20 06:44:06 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
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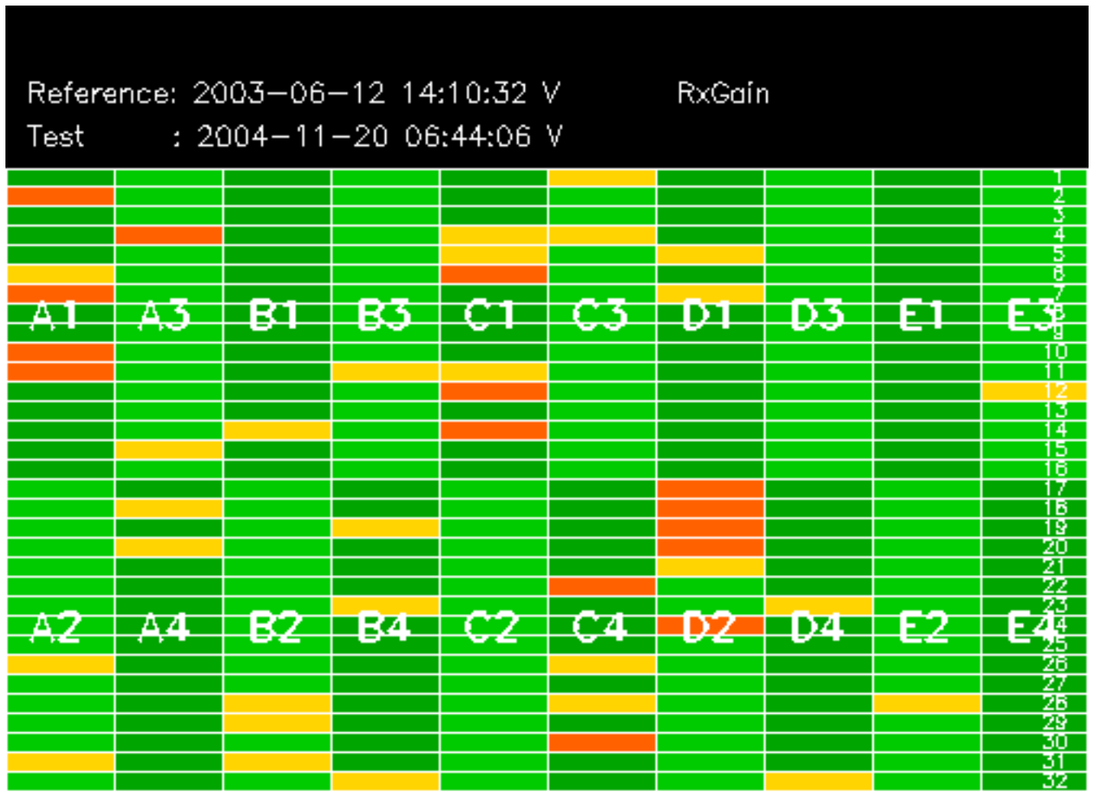
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-20 06:44:06 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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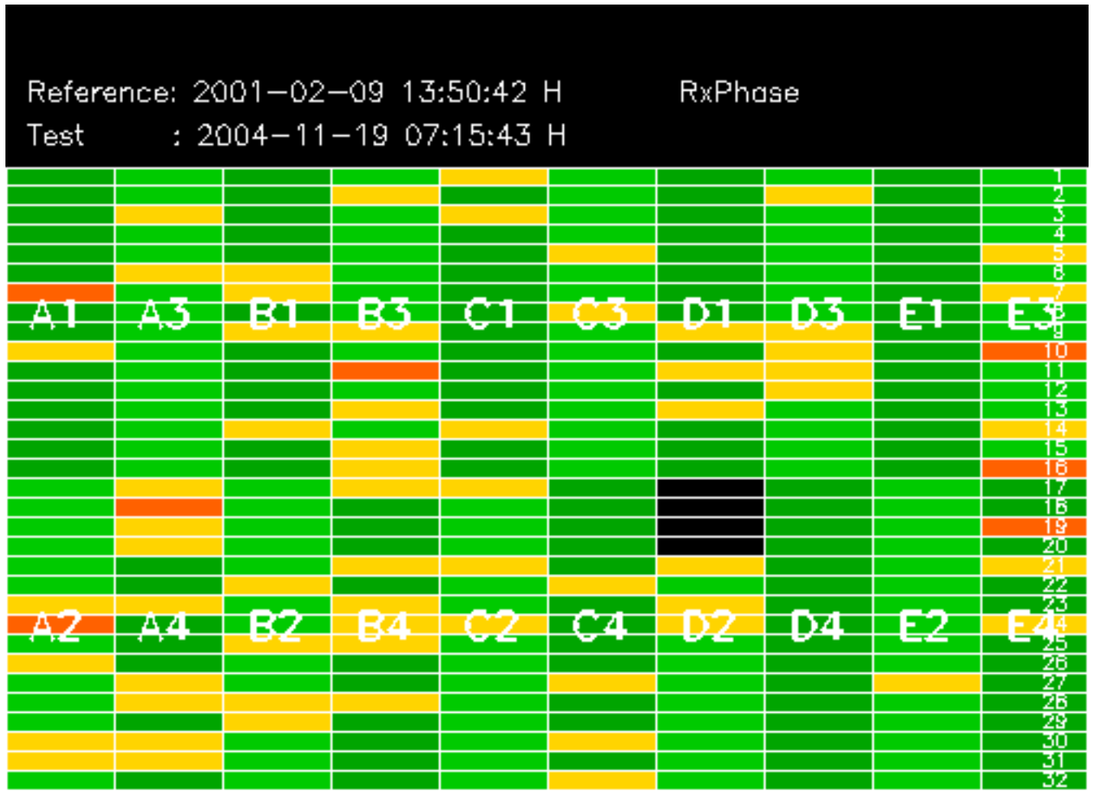
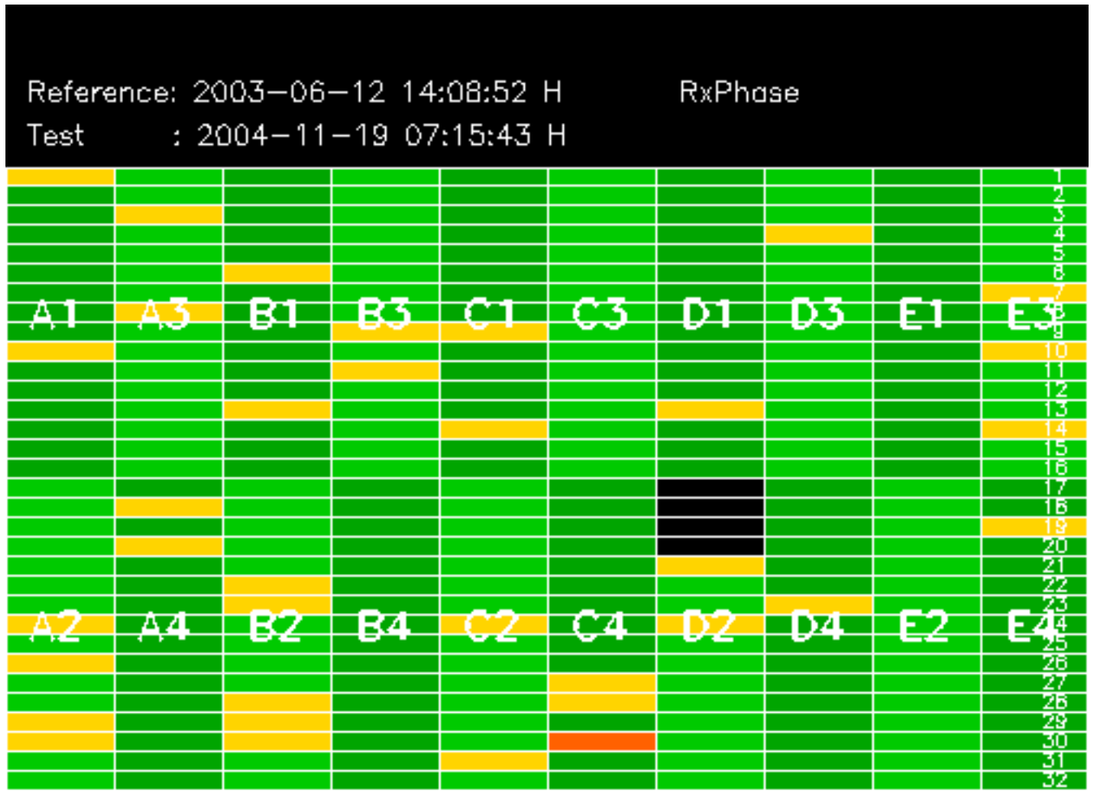
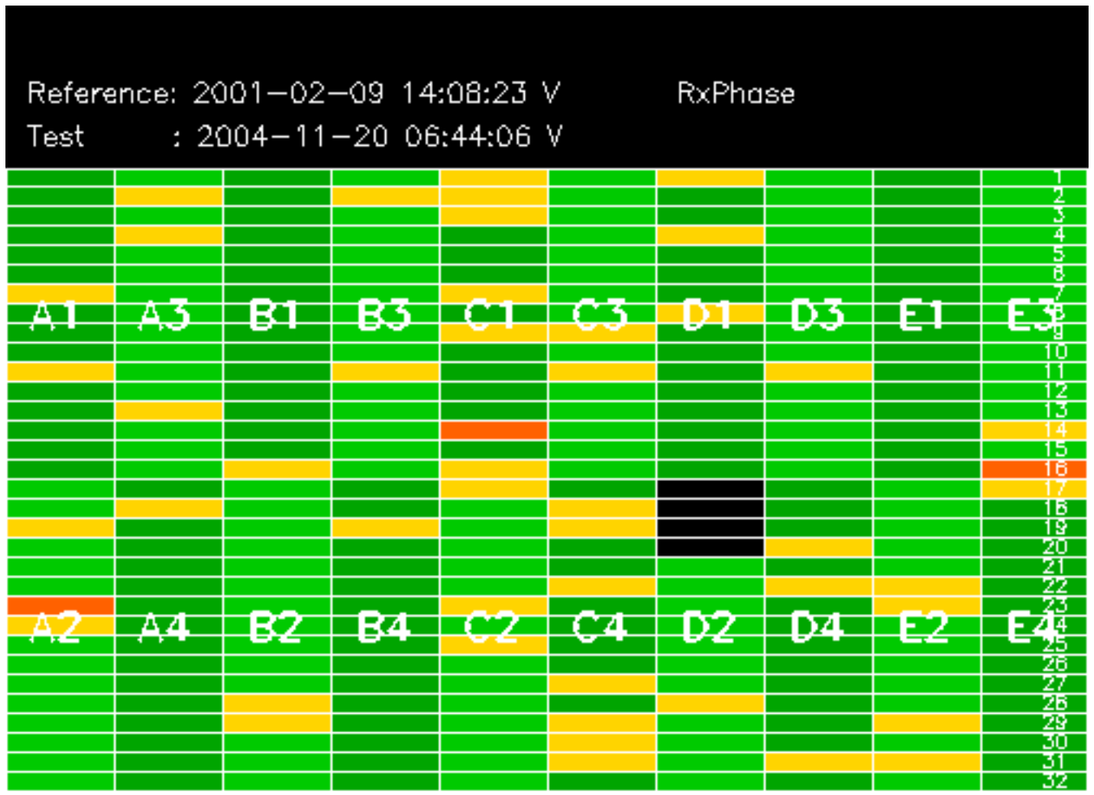

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-11-19 07:15:43 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-11-19 07:15:43 H
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
RxPhase
Test : 2004-11-20 06:44:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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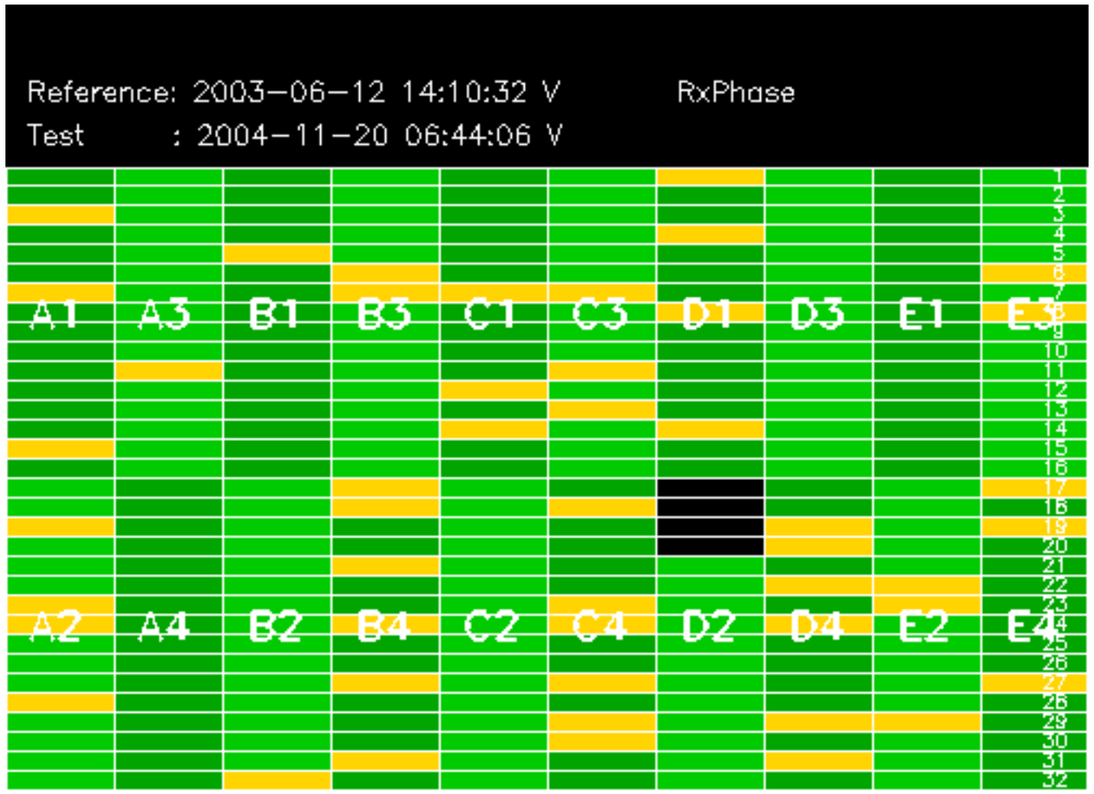
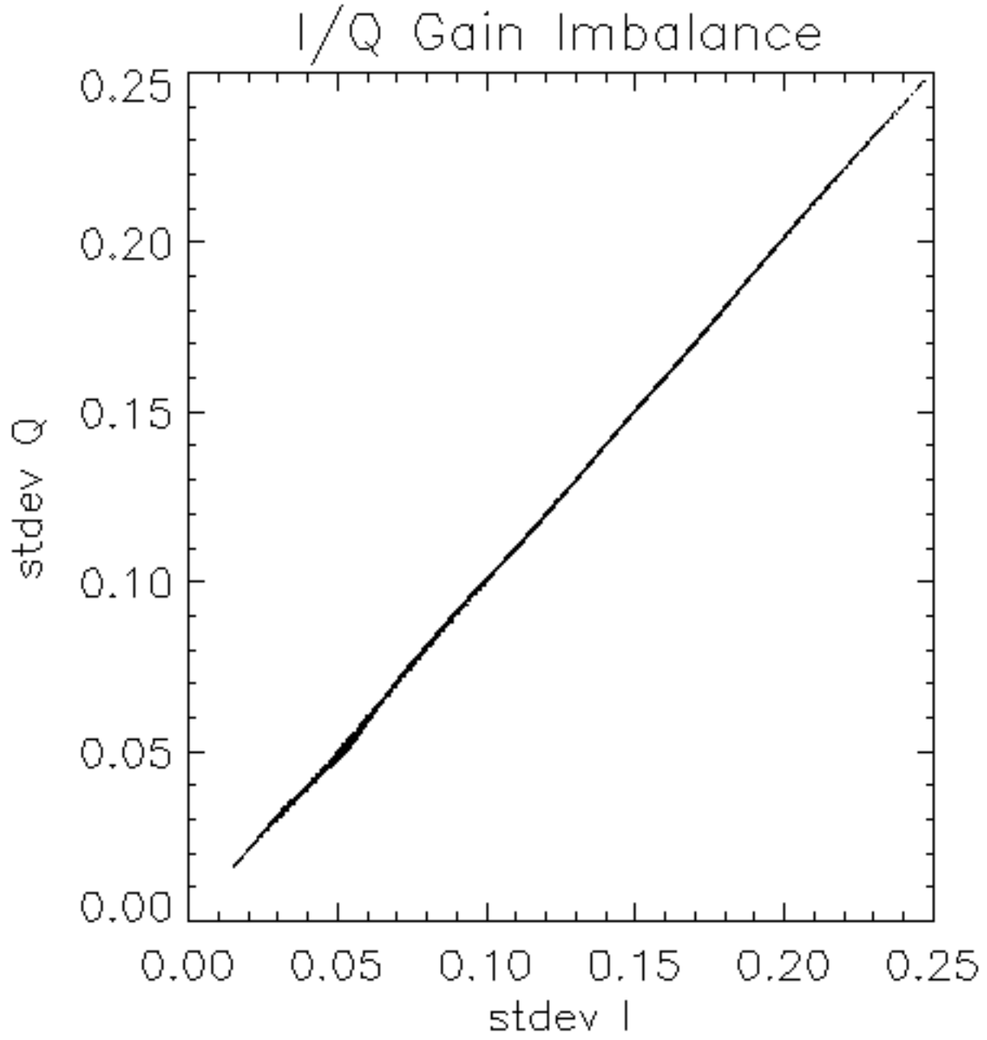
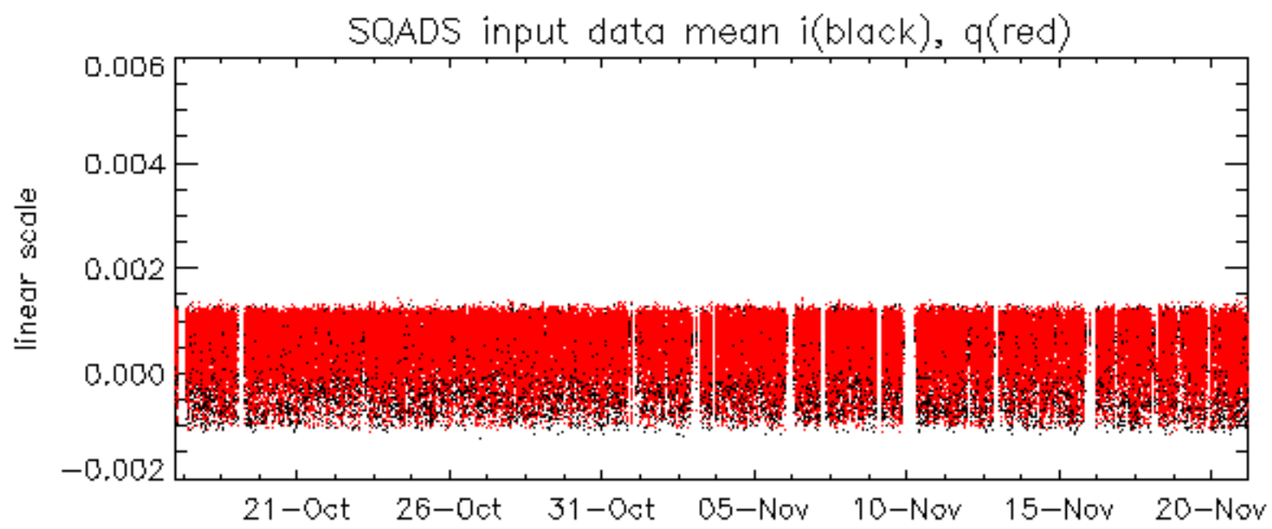
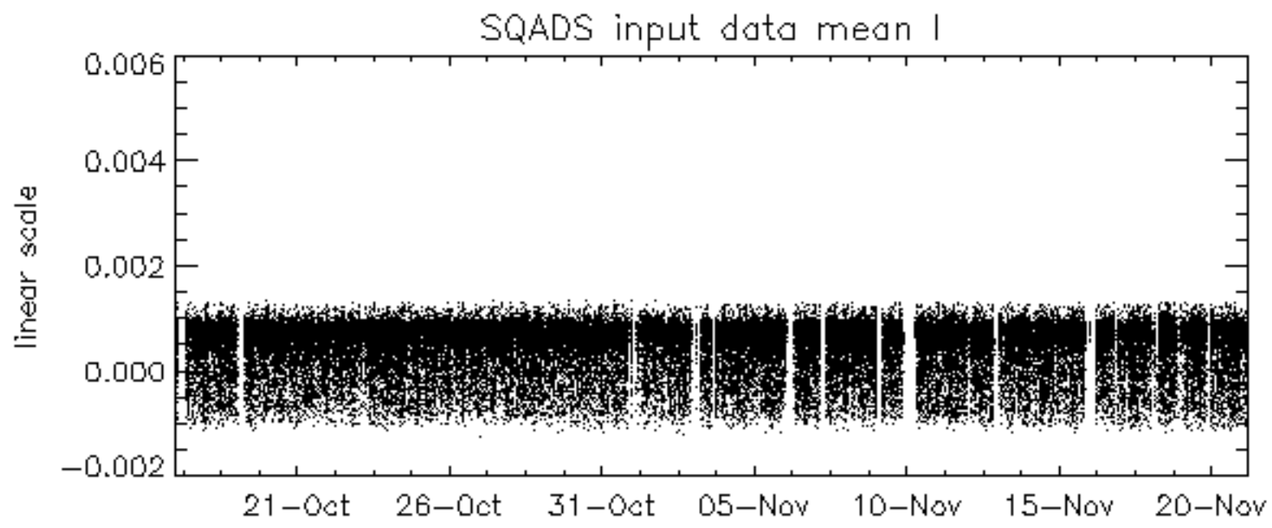
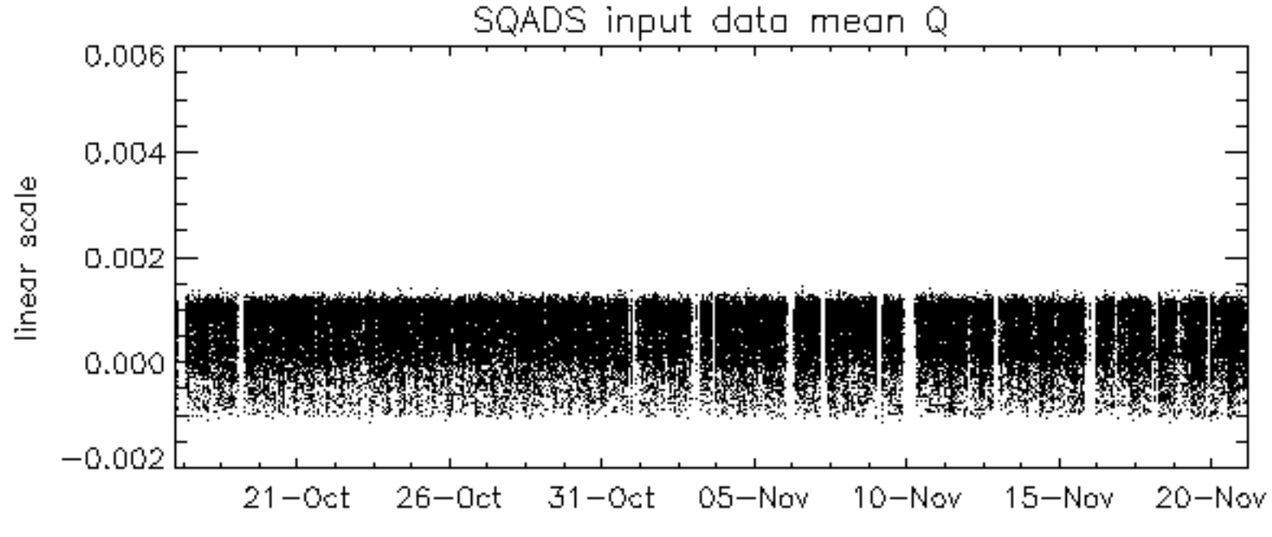
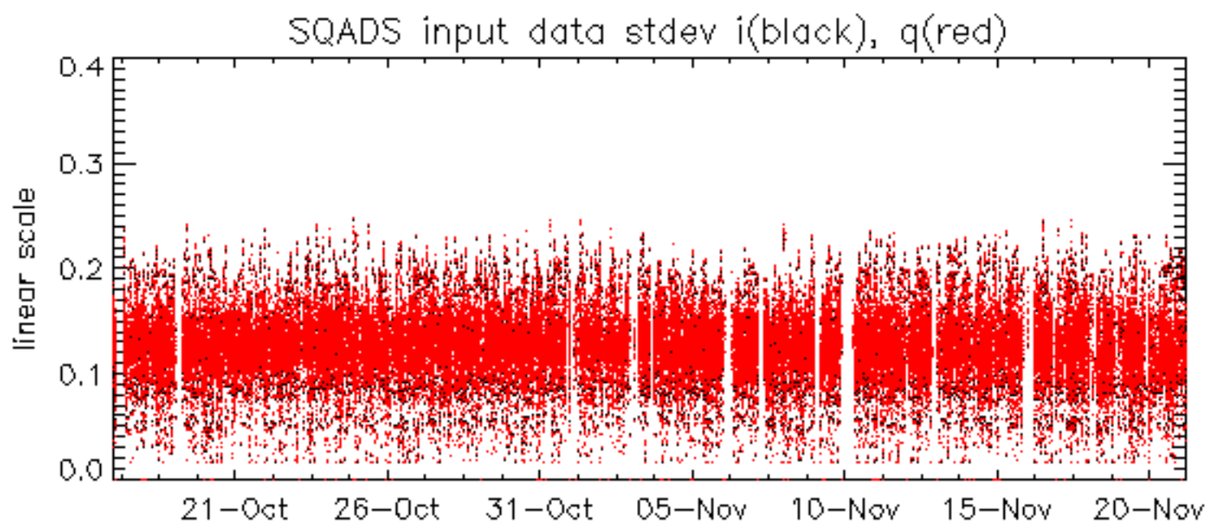

Reference: 2003-06-12 14:10:32 V
Test : 2004-11-20 06:44:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

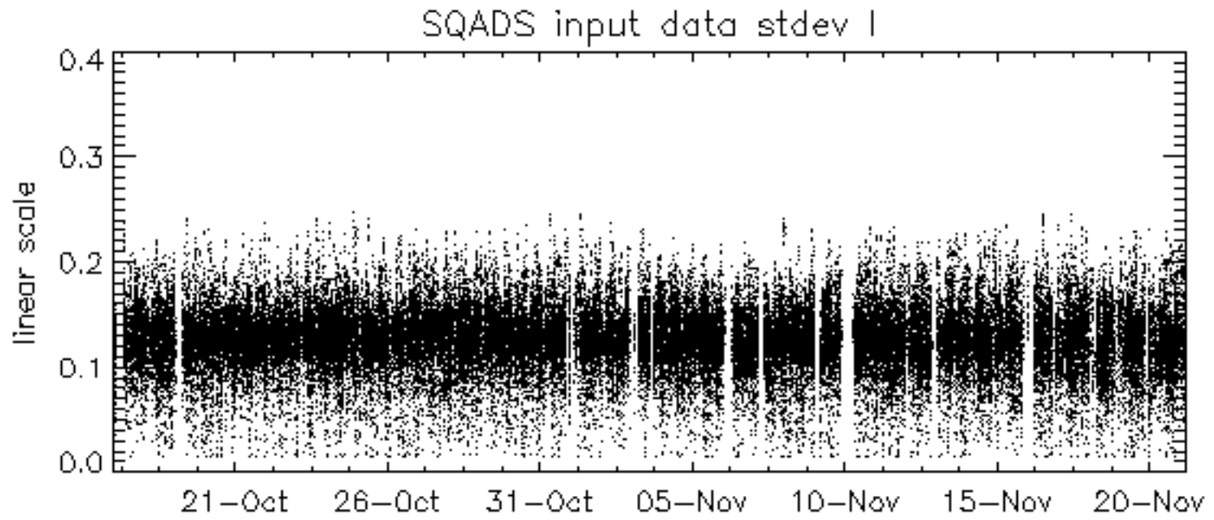

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

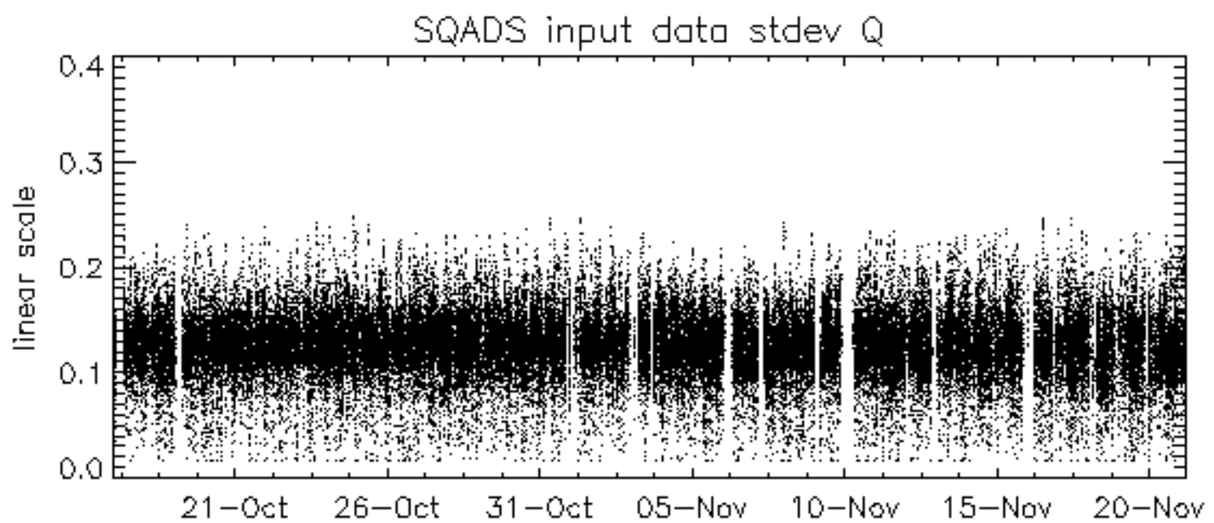

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov

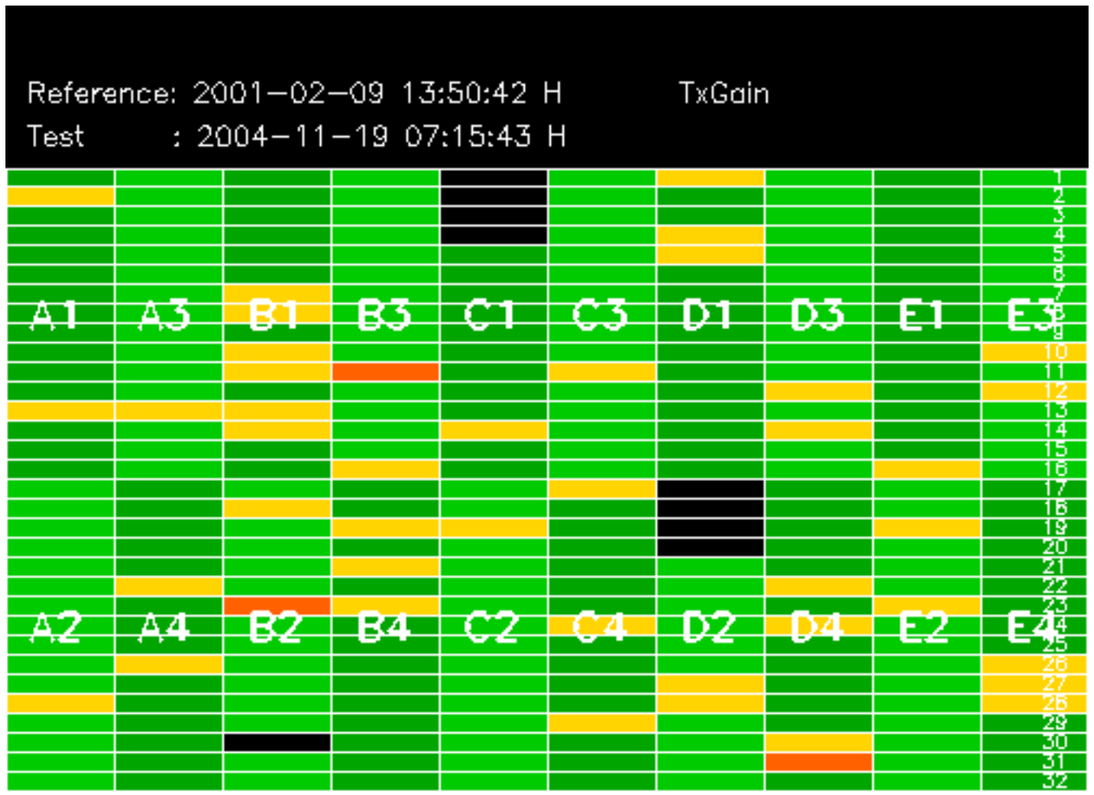

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov

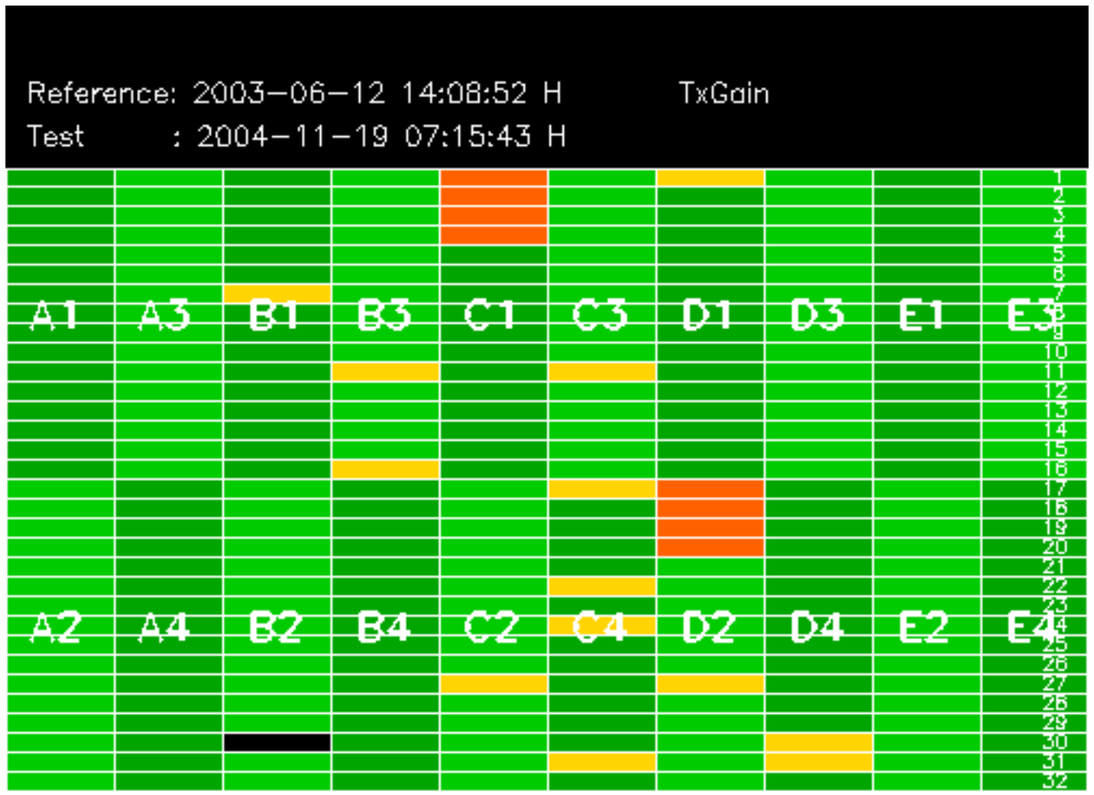

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Oct
26−Oct
31−Oct
05−Nov
10−Nov
15−Nov
20−Nov


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2004-11-19 07:15:43 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 : 2004-11-19 07:15:43 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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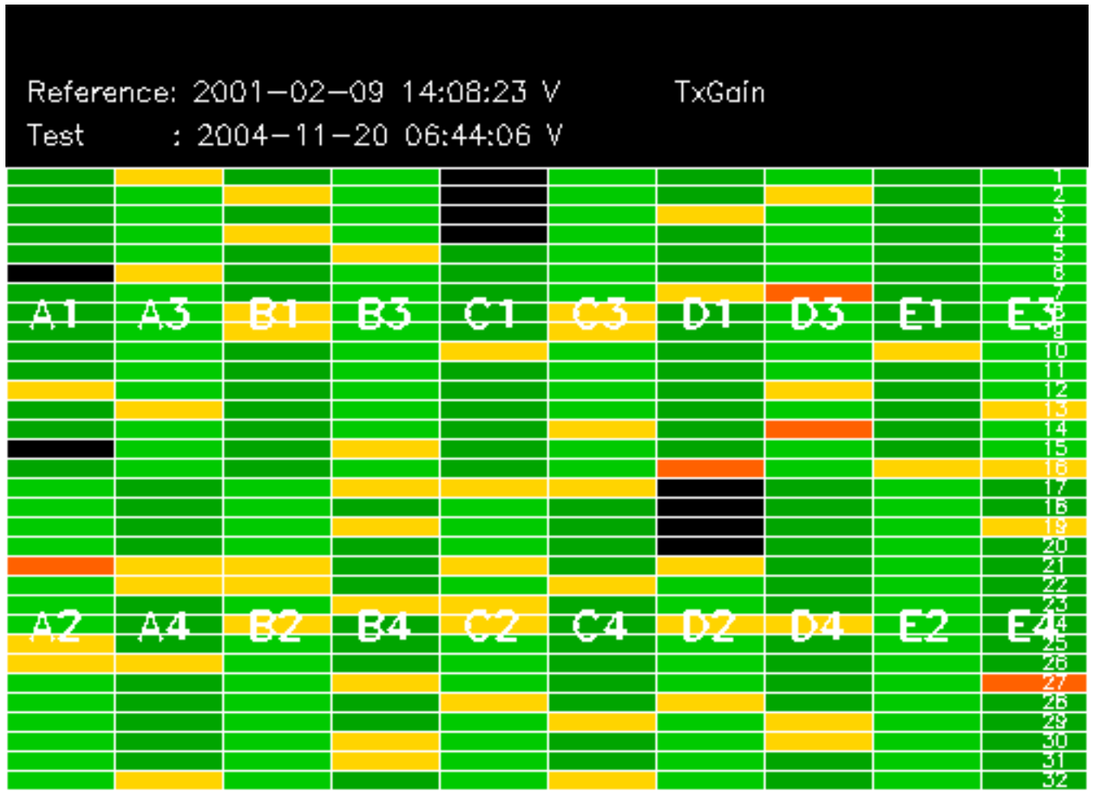
Reference: 2001-02-09 14:08:23 V
Test : 2004-11-20 06:44:06 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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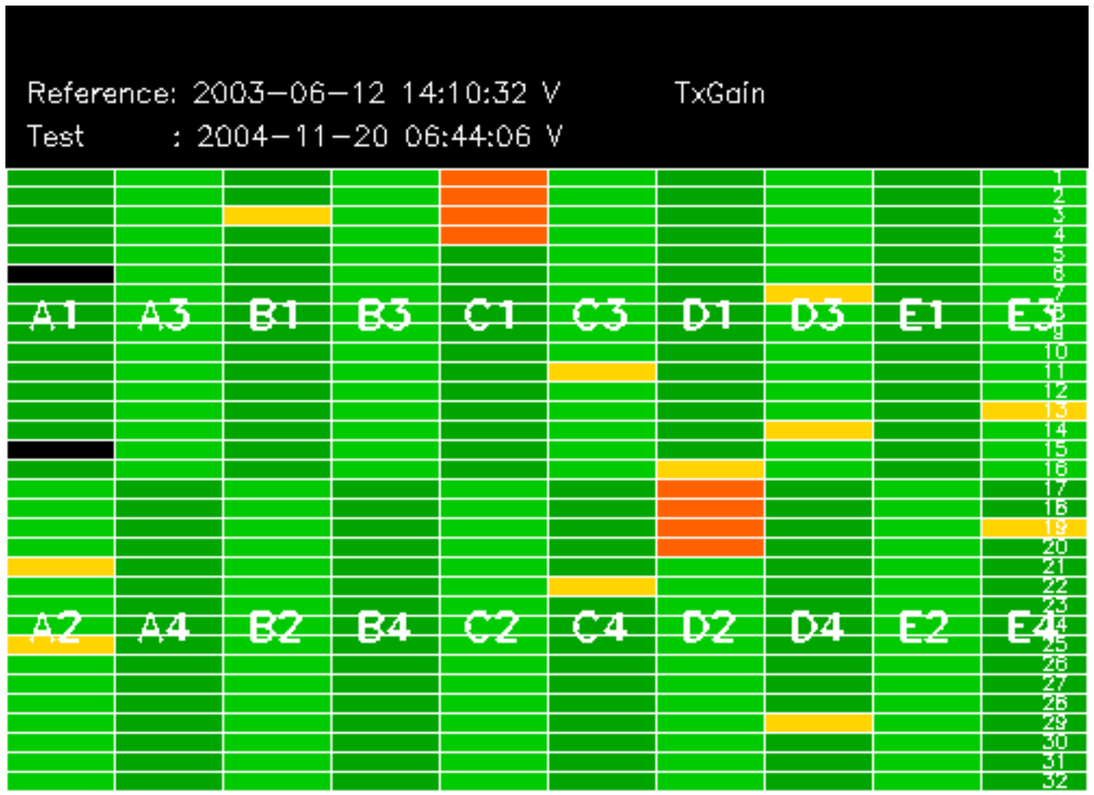
Reference: 2003-06-12 14:10:32 V
Test : 2004-11-20 06:44:06 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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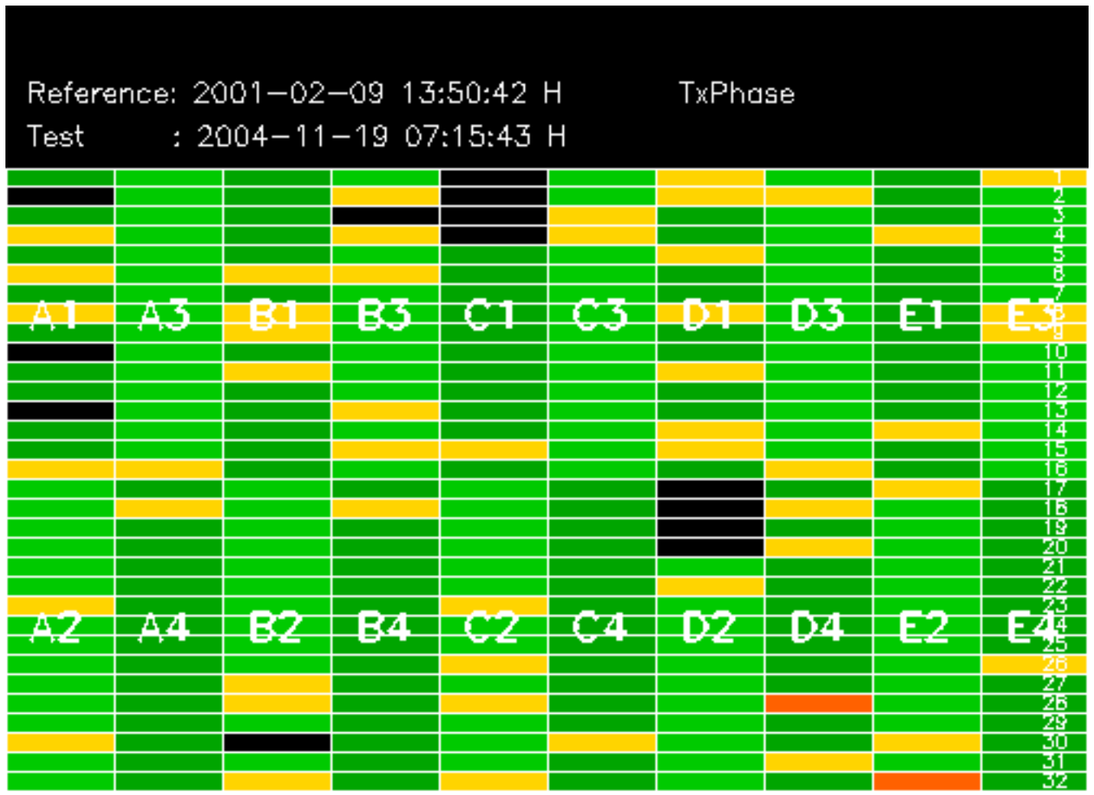
Reference: 2001-02-09 13:50:42 H
Test : 2004-11-19 07:15:43 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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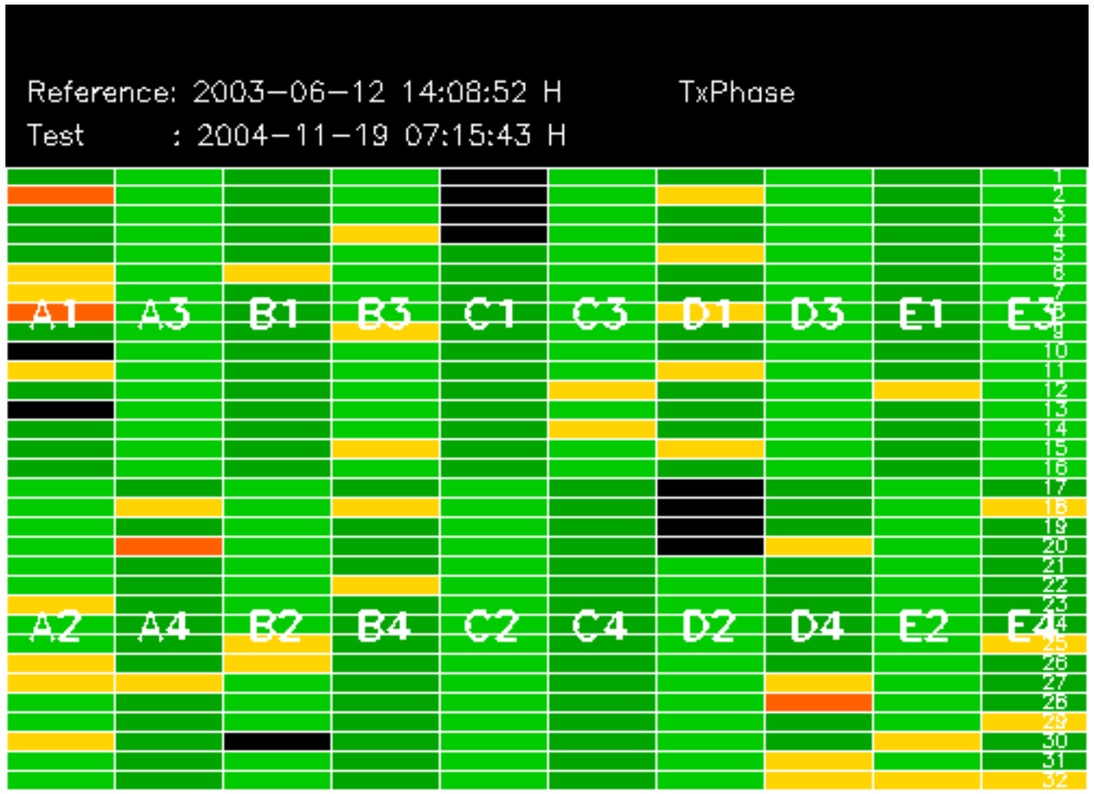
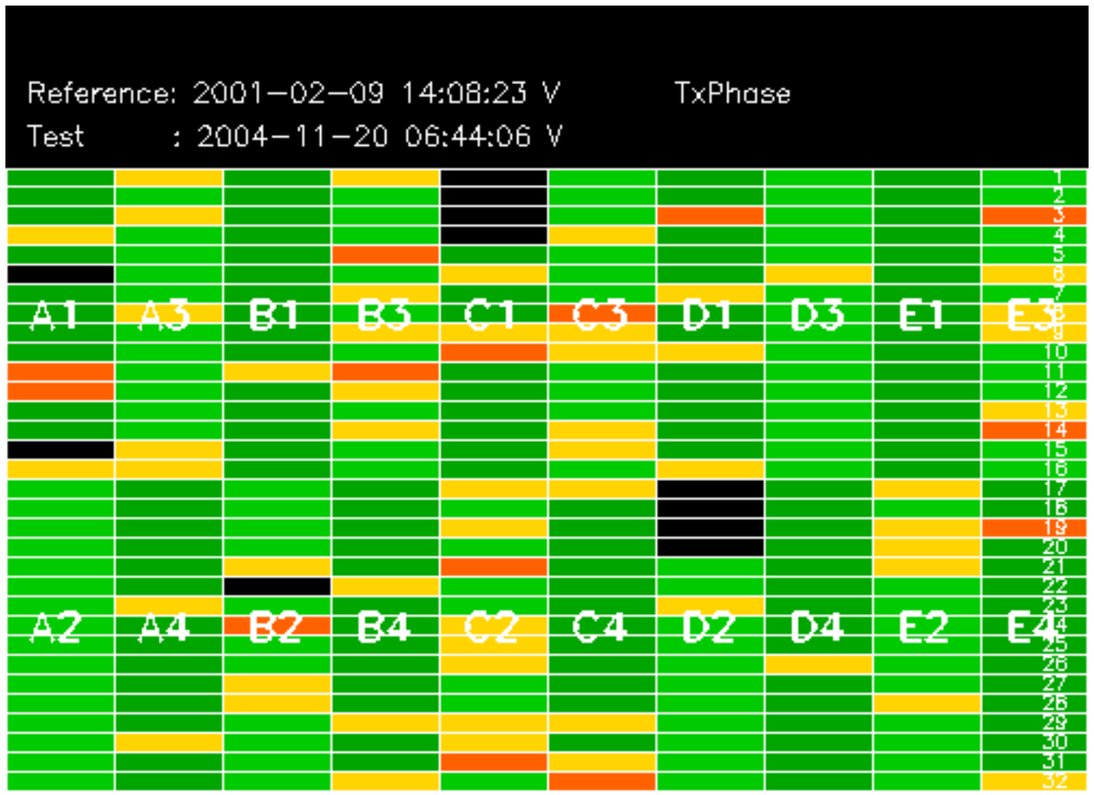
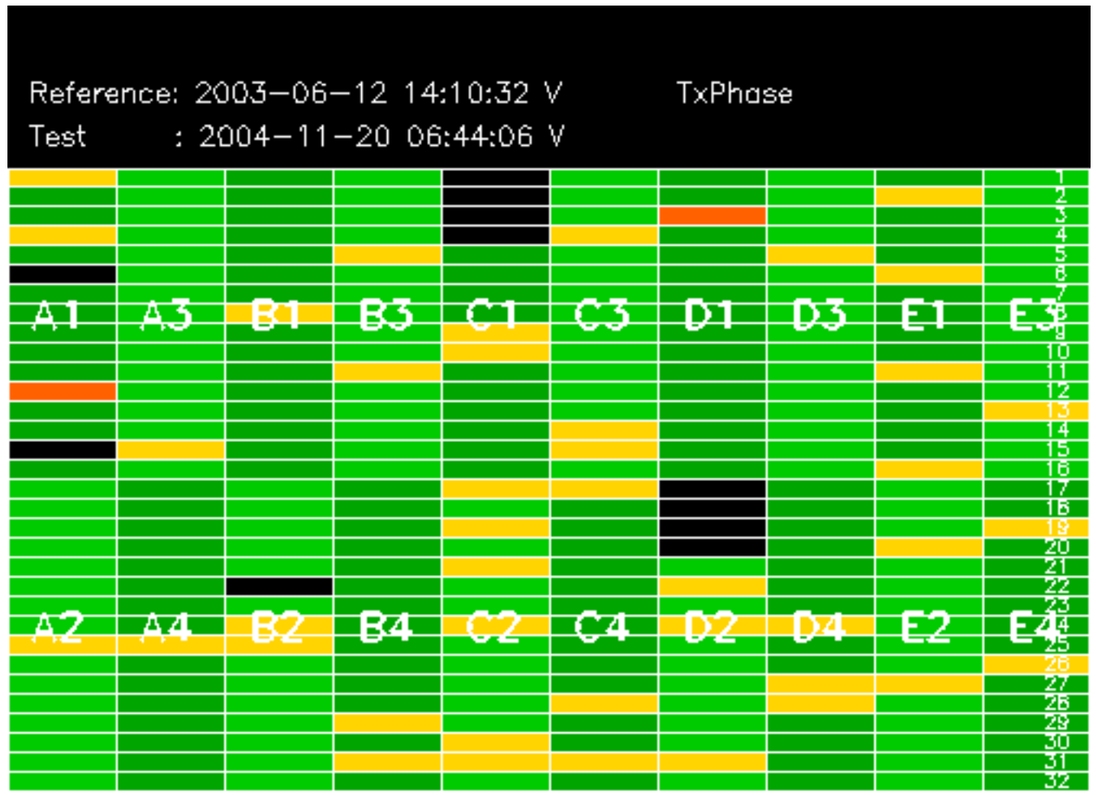

Reference: 2003-06-12 14:08:52 H
Test : 2004-11-19 07:15:43 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2004-11-20 06:44:06 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 : 2004-11-20 06:44:06 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
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E2
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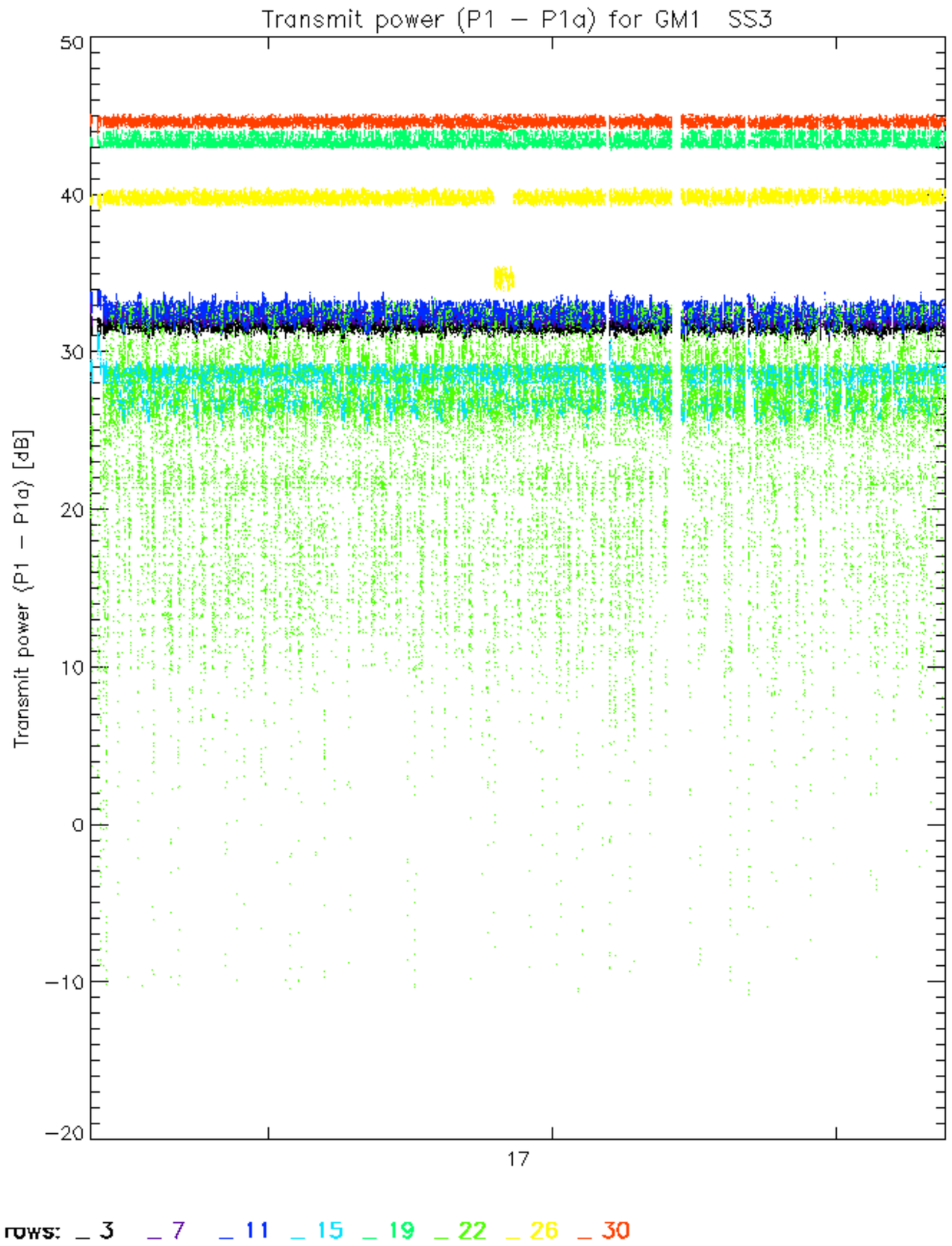
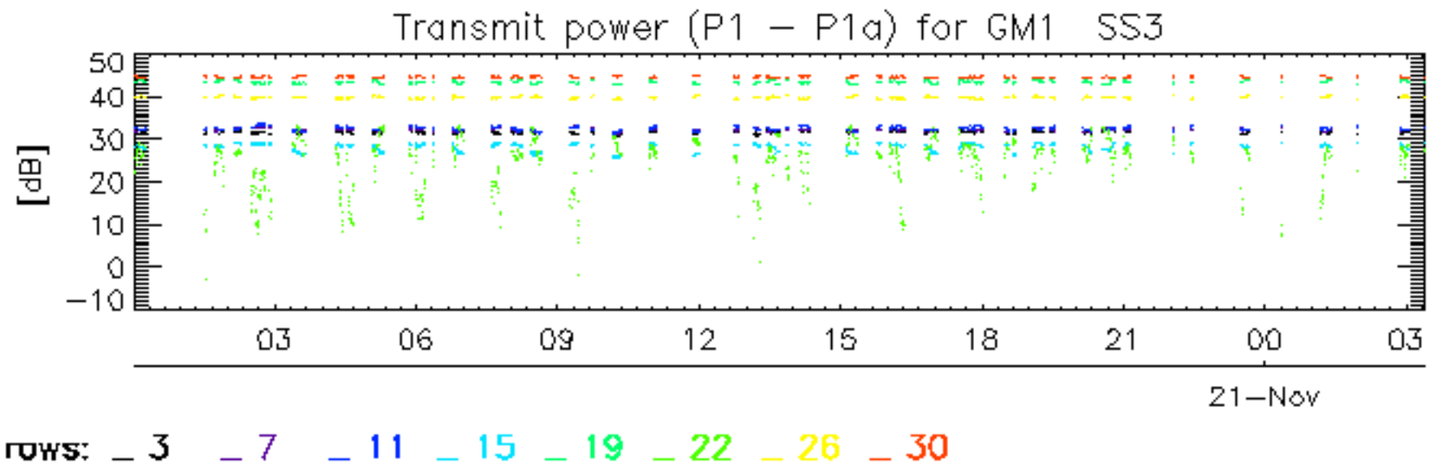
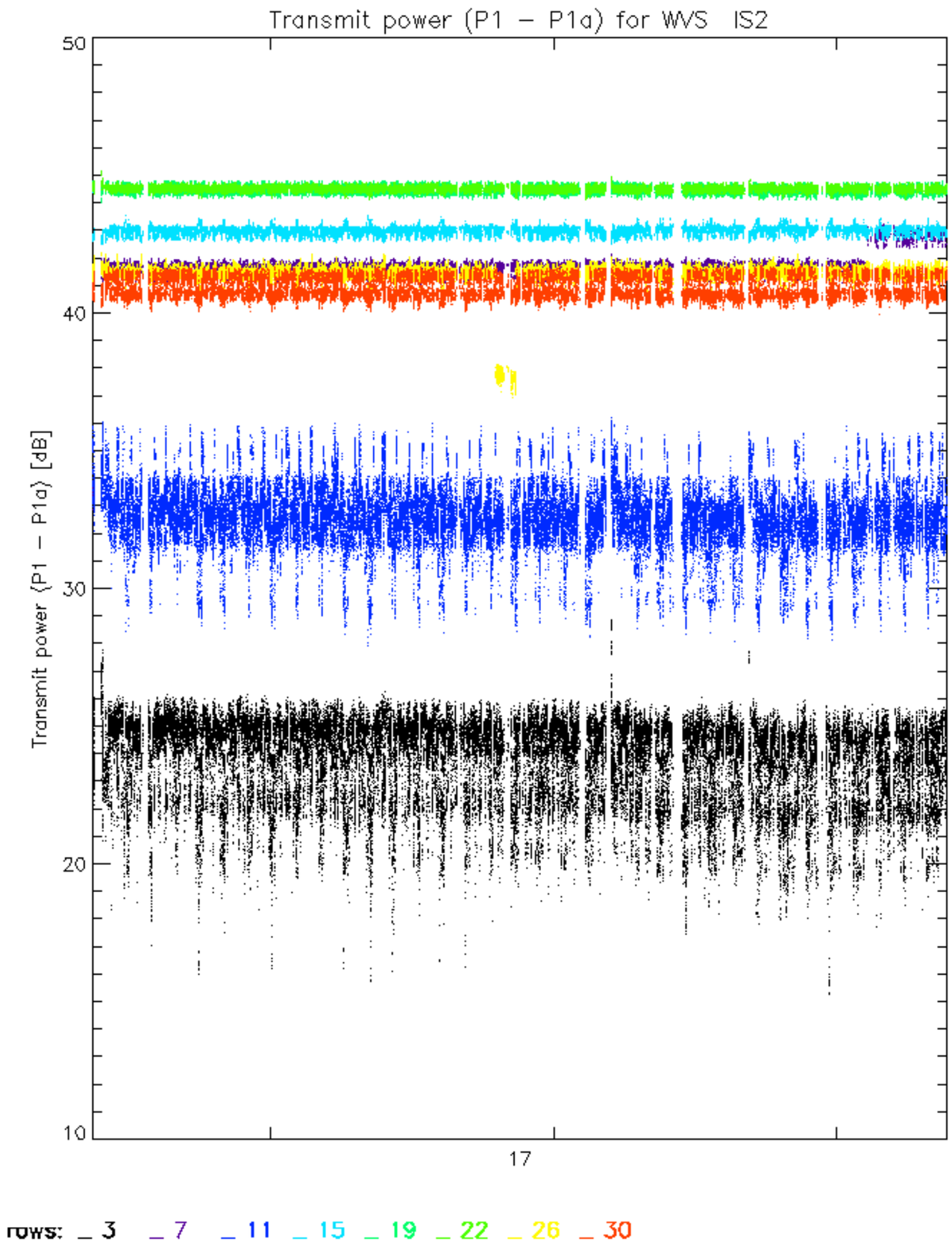
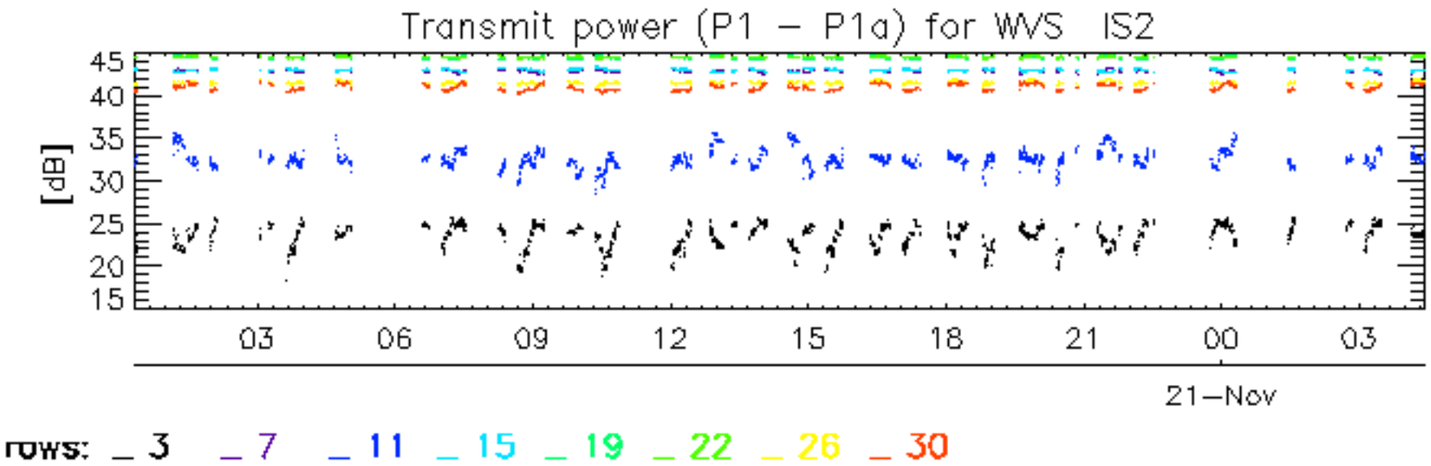

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
17
rows: 3 7 11 15 19 22 26 30


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


Transmit power (P1 – P1a) for WVS IS2
50
40
30
20
10
Transmit power ⟨P1 – P1a⟩ [dB]
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
45
40
35
30
25
20
15
03
06
09
12
15
18
21
00
03
21–Nov
rows: 3
7
11
15
19
22
26
30

ASAR went on to heater refuse on 21-NOV-2004 19:36:58 till 21-NOV-2004 22:19:32 UTC (orbit 14267 to 14269)
Anomaly report EN-UNA-2004/0290