PRELIMINARY REPORT OF 040805

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

last update on Thu Aug 5 13:01:53 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 starting from 04-AUG-2004 09:19:00.000 until 04-AUG-2004 09:26:00.000.
Antenna reset due to anomaly detected on TX tile D3.

2.2 - Browse Visual Inspection

No browse product available for the reported period.

2.3 - Data Analysis

-Anomaly detected on internal calibration pulses on Tx:
-> P1 and P1a (rows 1 to 16) cal. pulses are affected by a power drop.
-> Anomaly started over 04-AUG-2004 around 02:00:00

-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.
Anomaly detected on Tx tile D3 (rows 1 to 16) as visible in the MS products analysis shown below:

- ASA_MS__0PNPDK20040804_081900_000000152029_00121_12700_0041.N1

Polarisation	Start Time
V	20040803 085037
H	20040804 081900

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

-Anomaly detected on internal calibration pulses on Tx tile D3:
-> P1 and P1a (rows 1 to 16) cal. pulses are affected by a power drop.
-> Anomaly started over 04-AUG-2004 around 02:00:00

4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

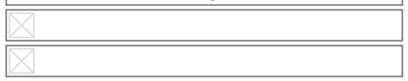
4.1.2 - Evolution for GM1

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	-3.496801	0.051984	-0.078658
7	P1	-3.335460	0.044397	-0.078562
11	P1	-4.638717	0.116076	-0.135146
15	P1	-5.754203	0.128464	-0.123632
19	P1	-3.450119	0.004781	-0.015778
22	P1	-4.562439	0.010732	-0.002613
24	P1	-4.954438	0.017175	0.009804
30	P1	-6.898179	0.025686	-0.043294
3	P1	-16.263746	0.488753	-0.221568
7	P1	-13.958554	0.077884	-0.005359
11	P1	-20.029345	0.322641	-0.033001
15	P1	-11.772840	0.068199	0.100219
19	P1	-13.850326	0.034690	-0.043117
22	P1	-16.307638	0.332874	-0.033781
24	P1	-14.595524	0.270180	0.003177
30	P1	-17.669481	0.423487	-0.060839

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.325363	0.078401	0.044394
7	P2	-22.702322	0.118794	0.060522
11	P2	-15.444148	0.145603	0.091763
15	P2	-7.101657	0.088513	0.054528
19	P2	-9.560987	0.160200	0.050830
22	P2	-17.408508	0.104919	0.115764
24	P2	-20.758699	0.083352	0.008367
30	P2	-19.348076	0.078282	0.117264

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.143042	0.001911	-0.004478
7	P3	-8.143037	0.001911	-0.004487
11	P3	-8.143038	0.001911	-0.004511
15	P3	-8.143030	0.001912	-0.004555
19	P3	-8.143030	0.001912	-0.004570
22	P3	-8.143030	0.001912	-0.004562
24	P3	-8.143030	0.001912	-0.004548
30	P3	-8.143112	0.001905	-0.004006

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	-2.957495	0.201788	0.263179
7	P1	-2.986037	0.233162	-0.395143
11	P1	-3.872791	0.168874	-0.163727
15	P1	-3.845574	0.662689	0.951993
19	P1	-3.428150	0.037038	-0.188180
22	P1	-5.686903	0.050145	0.134057
24	P1	-3.927386	0.057195	0.258416
30	P1	-6.165193	0.078564	-0.072243
3	P1	-10.785701	0.593786	0.329388
7	P1	-10.005188	0.274534	-0.433063
11	P1	-11.974344	0.209991	-0.315666
15	P1	-11.727989	0.242553	0.484714
19	P1	-15.365568	0.499786	-0.930091
22	P1	-22.448242	4.725026	-3.084927
24	P1	-17.532173	0.308547	-0.650006
30	P1	-20.804510	3.091018	1.706856

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.023418	0.080246	0.121972
7	P2	-22.815481	0.240449	0.066696
11	P2	-10.987850	0.174272	-0.250702
15	P2	-4.947544	0.042362	-0.040839

19	P2	-6.828536	0.057009	0.165230
22	P2	-7.516915	0.101178	0.143735
24	P2	-11.024484	0.146234	-0.078864
30	P2	-22.257401	0.120918	0.013895

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.983228	0.003623	-0.017665
7	P3	-7.983313	0.003622	-0.017630
11	P3	-7.983290	0.003623	-0.017774
15	P3	-7.983206	0.003627	-0.017675
19	P3	-7.983261	0.003632	-0.017977
22	P3	-7.983333	0.003611	-0.017926
24	P3	-7.983221	0.003643	-0.017886
30	P3	-7.983299	0.003617	-0.017602

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	0.000488032
	stdev	2.16688e-07
MEAN Q	mean	0.000529229
	stdev	2.49344e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128587
	stdev	0.00104230
STDEV Q	mean	0.128833
	stdev	0.00105358

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

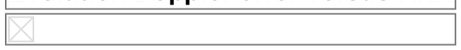
6.5 - Absolute Doppler for GM1

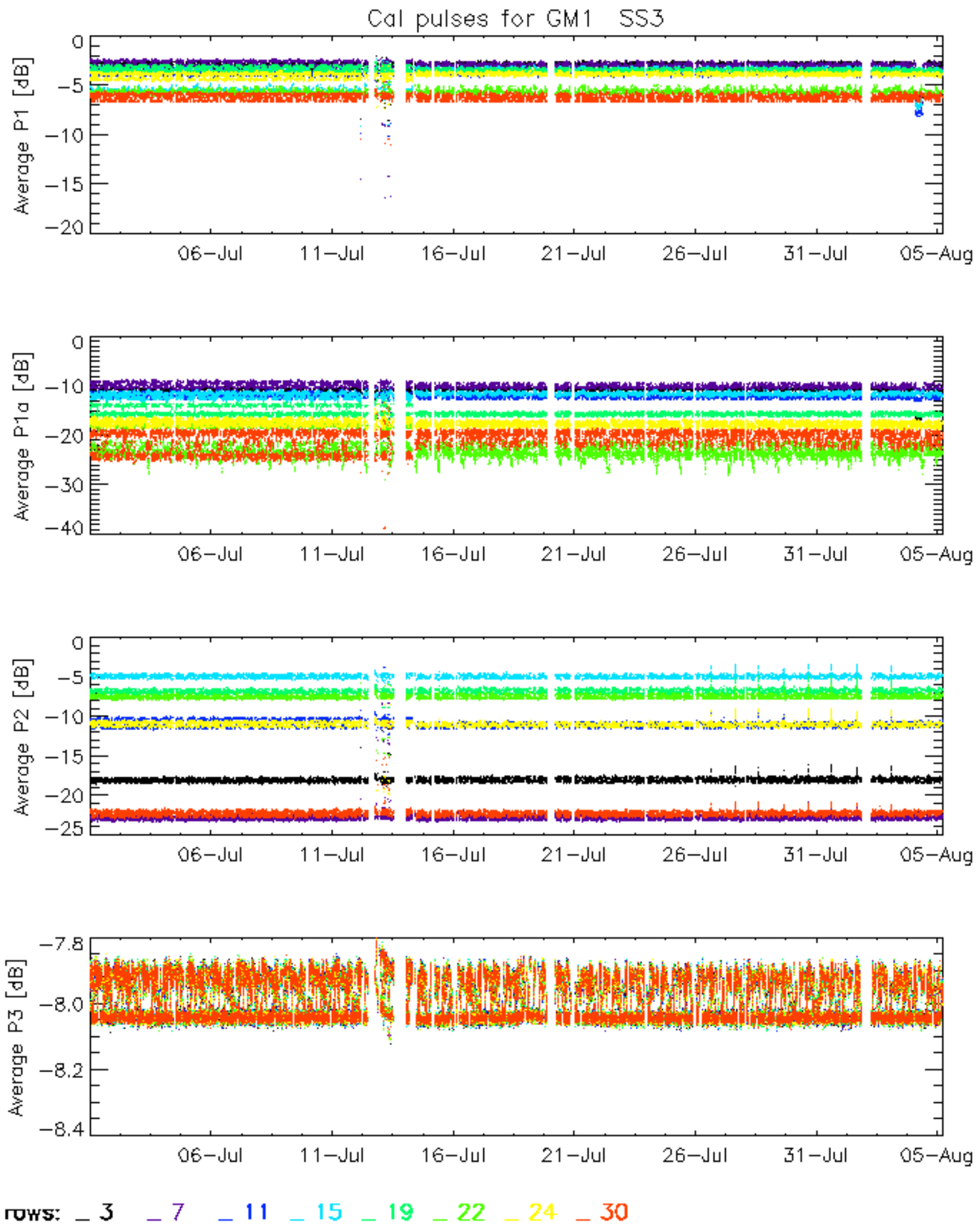
Evolution of Absolute Doppler

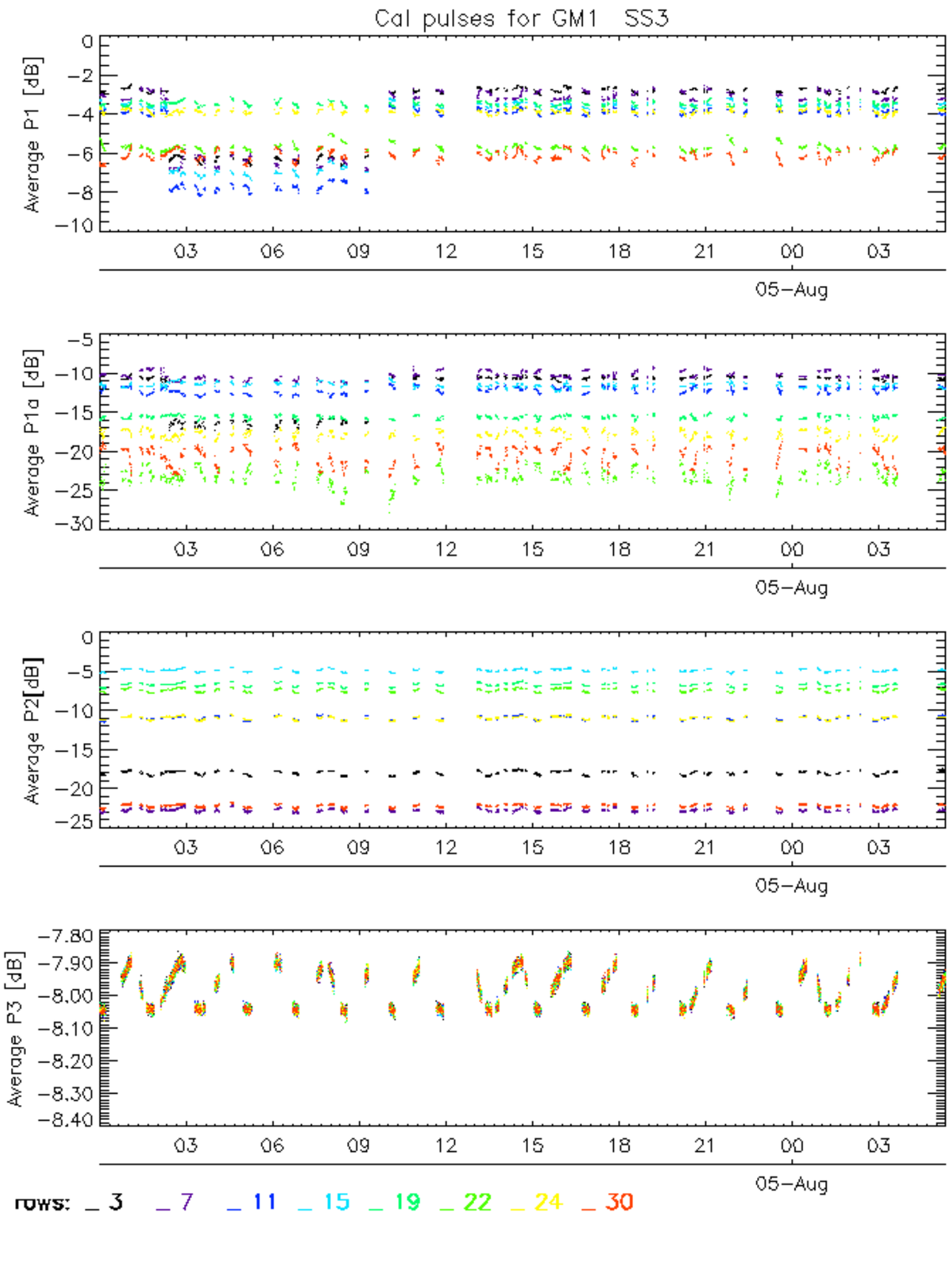
Acsending

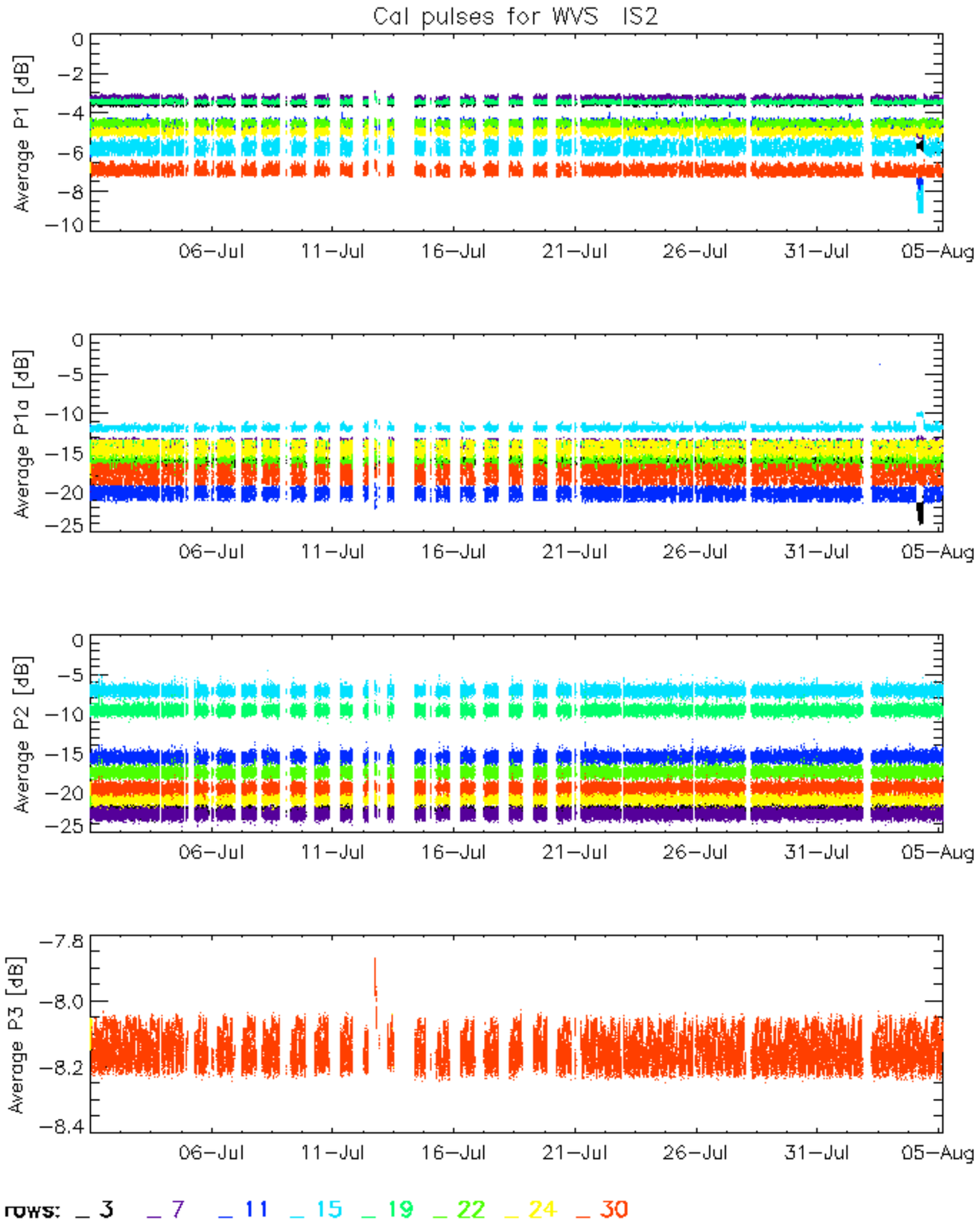
Descending

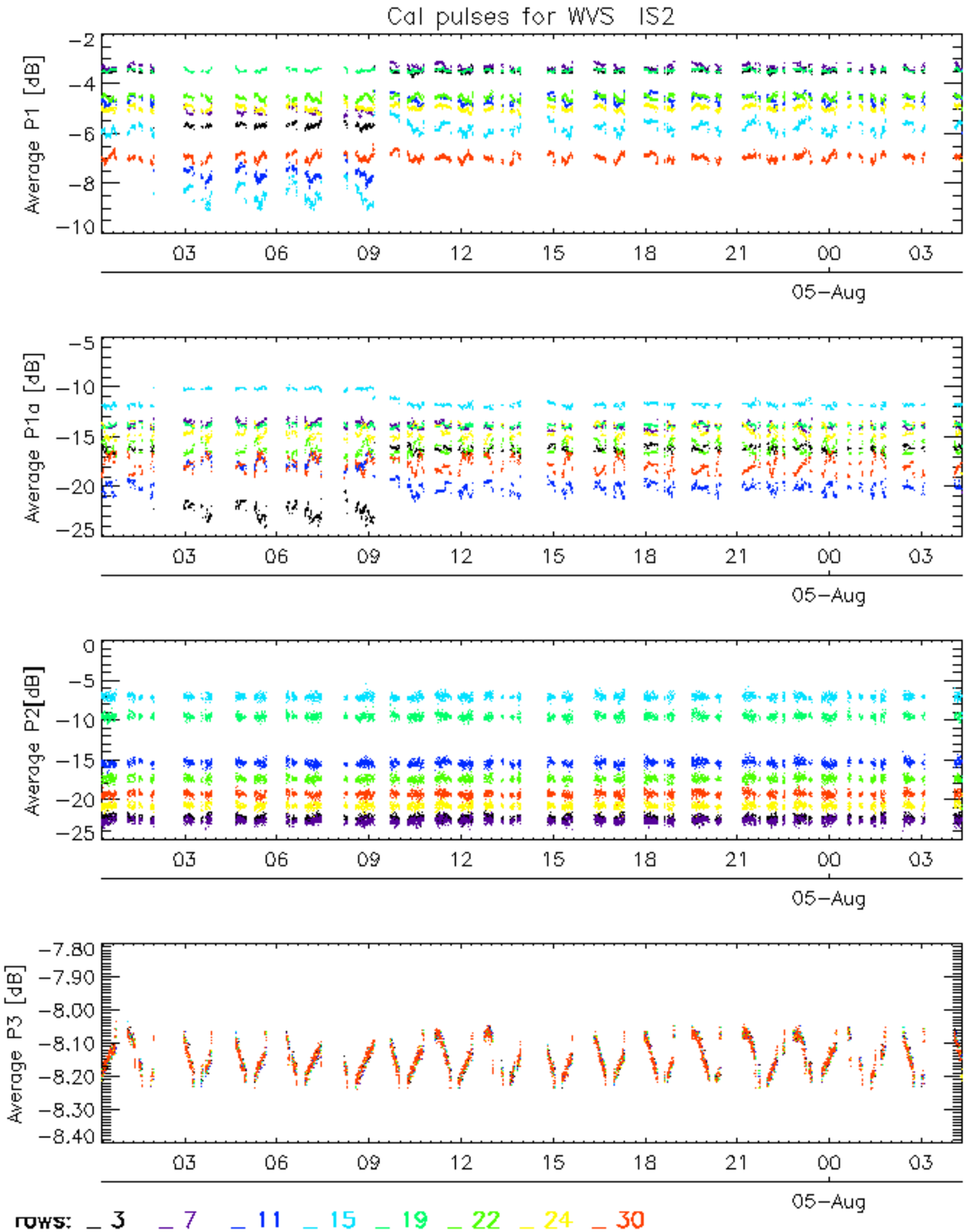
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX



Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
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
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

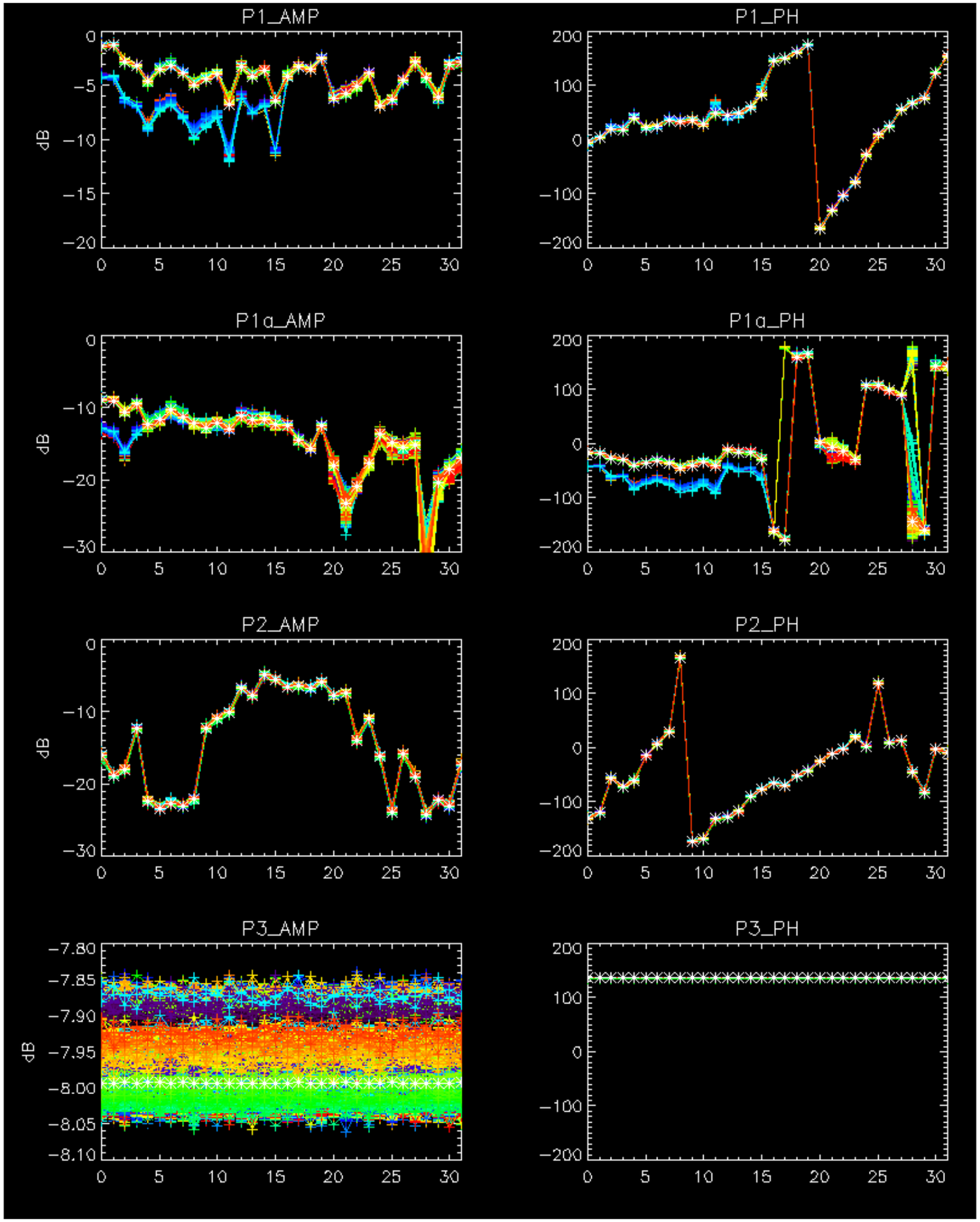

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
−10
03
06
09
12
15
18
21
00
03
05−Aug
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

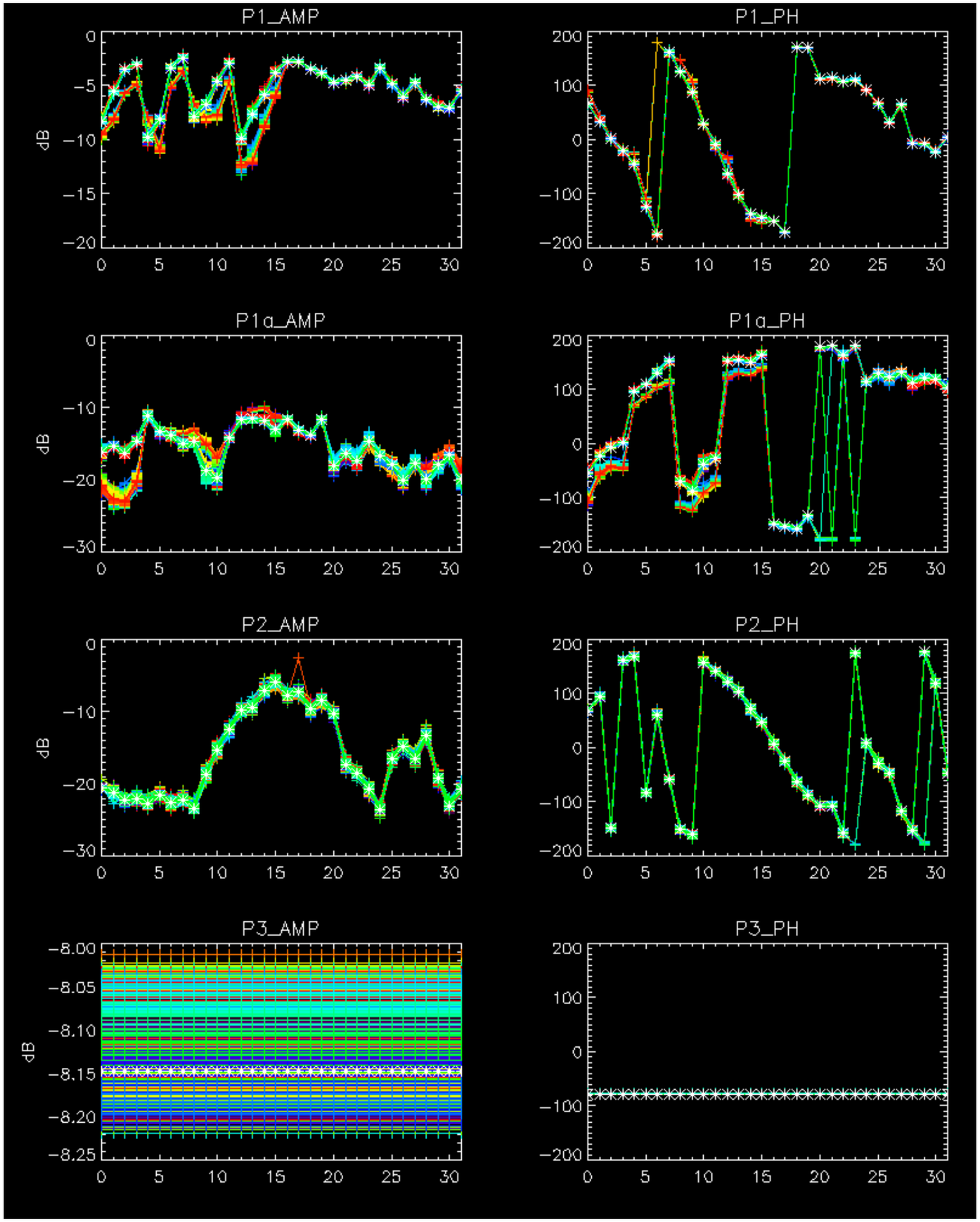

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
−10
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug
Average P1a [dB]
0
−5
−10
−15
−20
−25
Average P2 [dB]
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: 3 7 11 15 19 22 24 30


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

No browse product available for the reported period.

-Anomaly detected on internal calibration pulses on Tx tile D3:
 -> P1 and P1a (rows 1 to 16) cal. pulses are affected by a power drop.
 -> Anomaly started over 04-AUG-2004 around 02:00:00


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
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

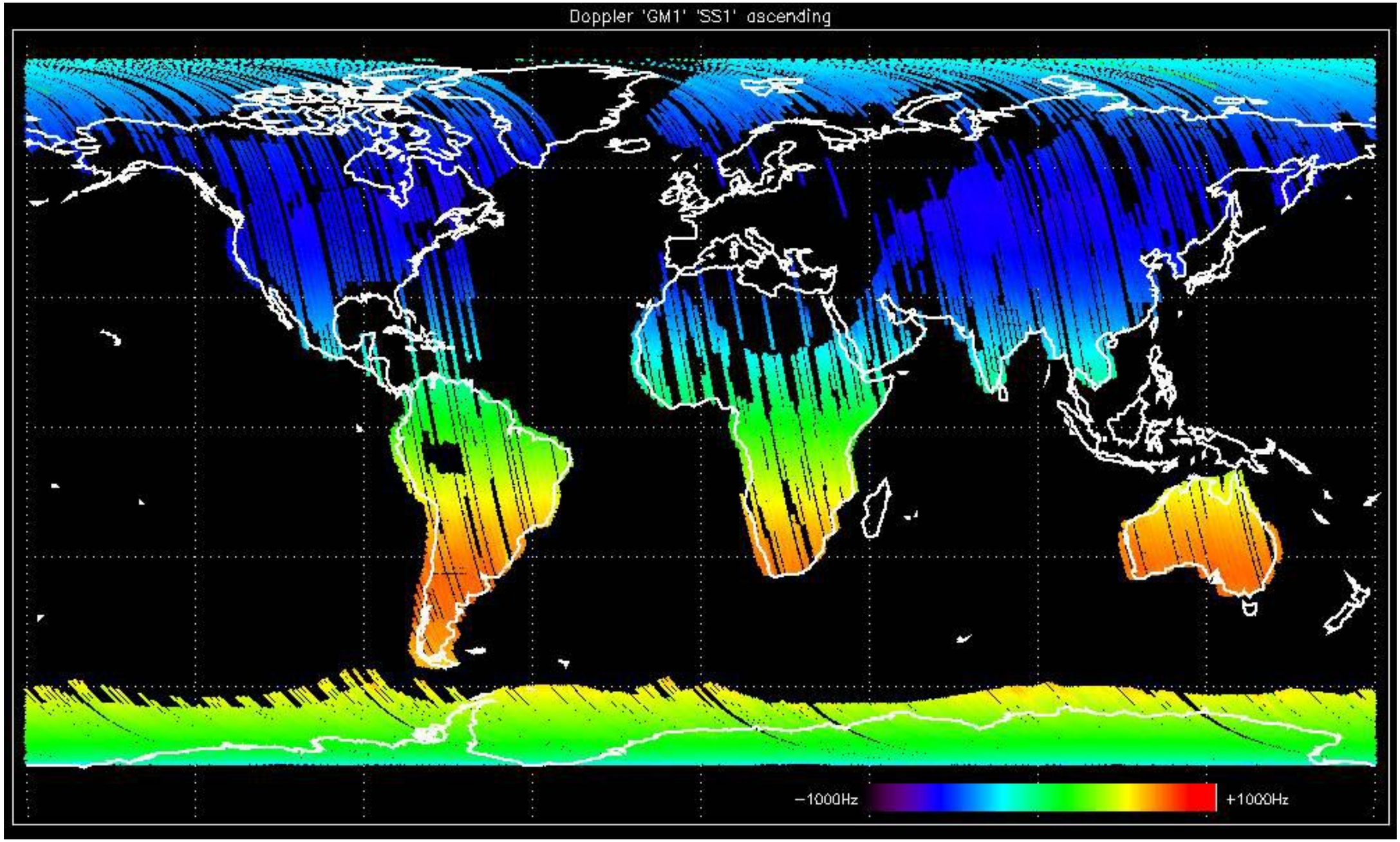

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

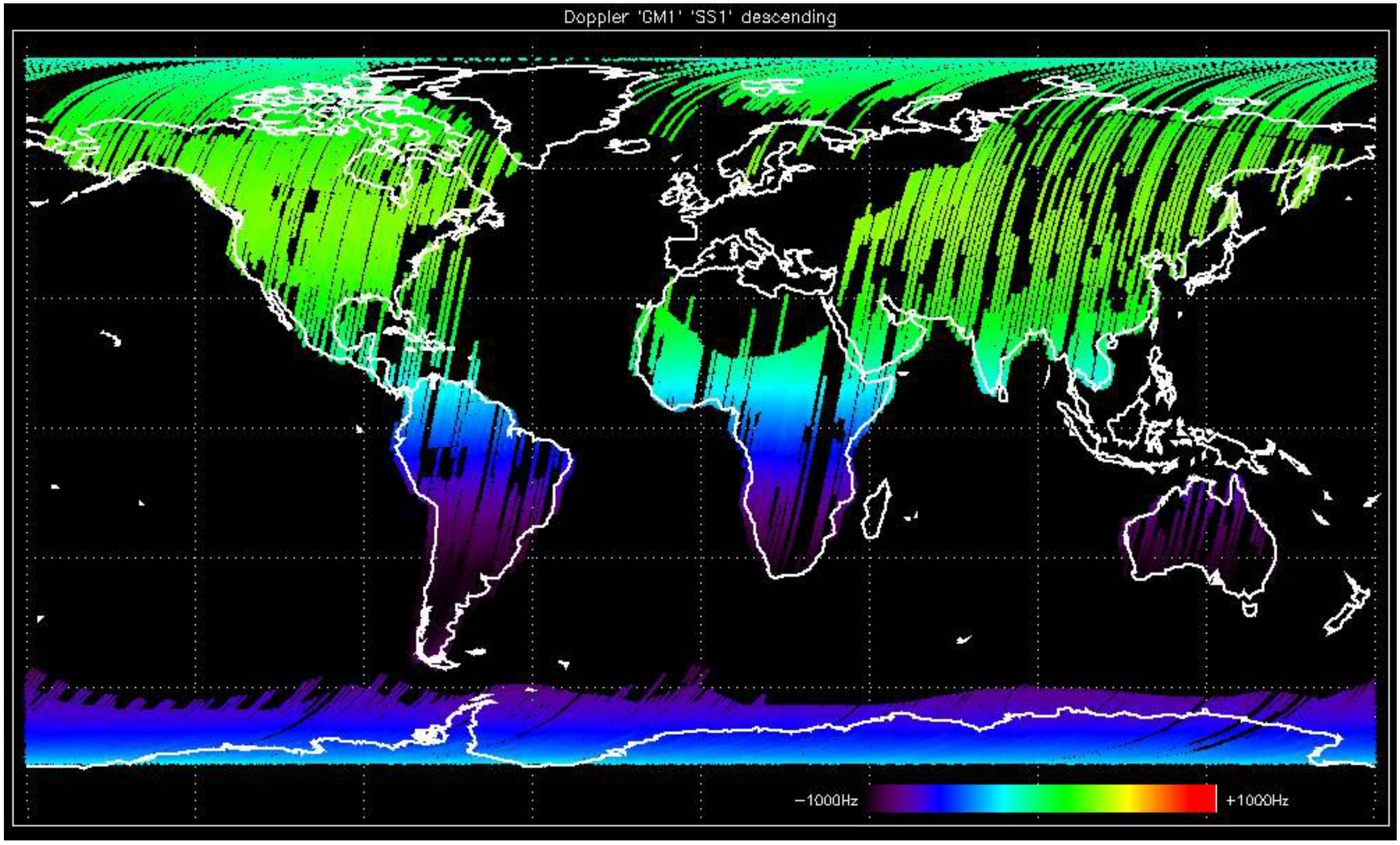
-Anomaly detected on internal calibration pulses on Tx:
 -> P1 and P1a (rows 1 to 16) cal. pulses are affected by a power drop.
 -> Anomaly started over 04-AUG-2004 around 02:00:00

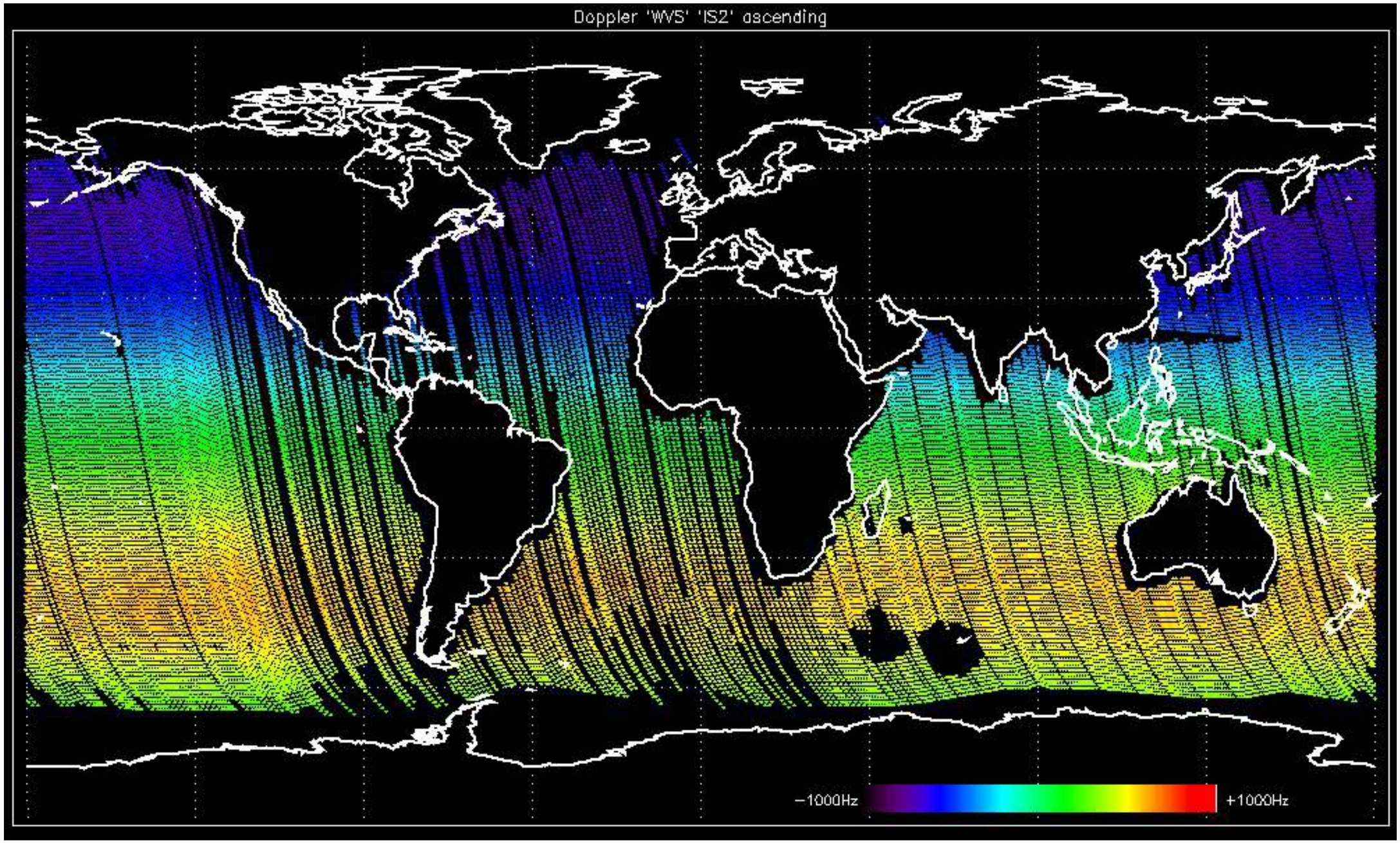
-Stable raw data statistics.

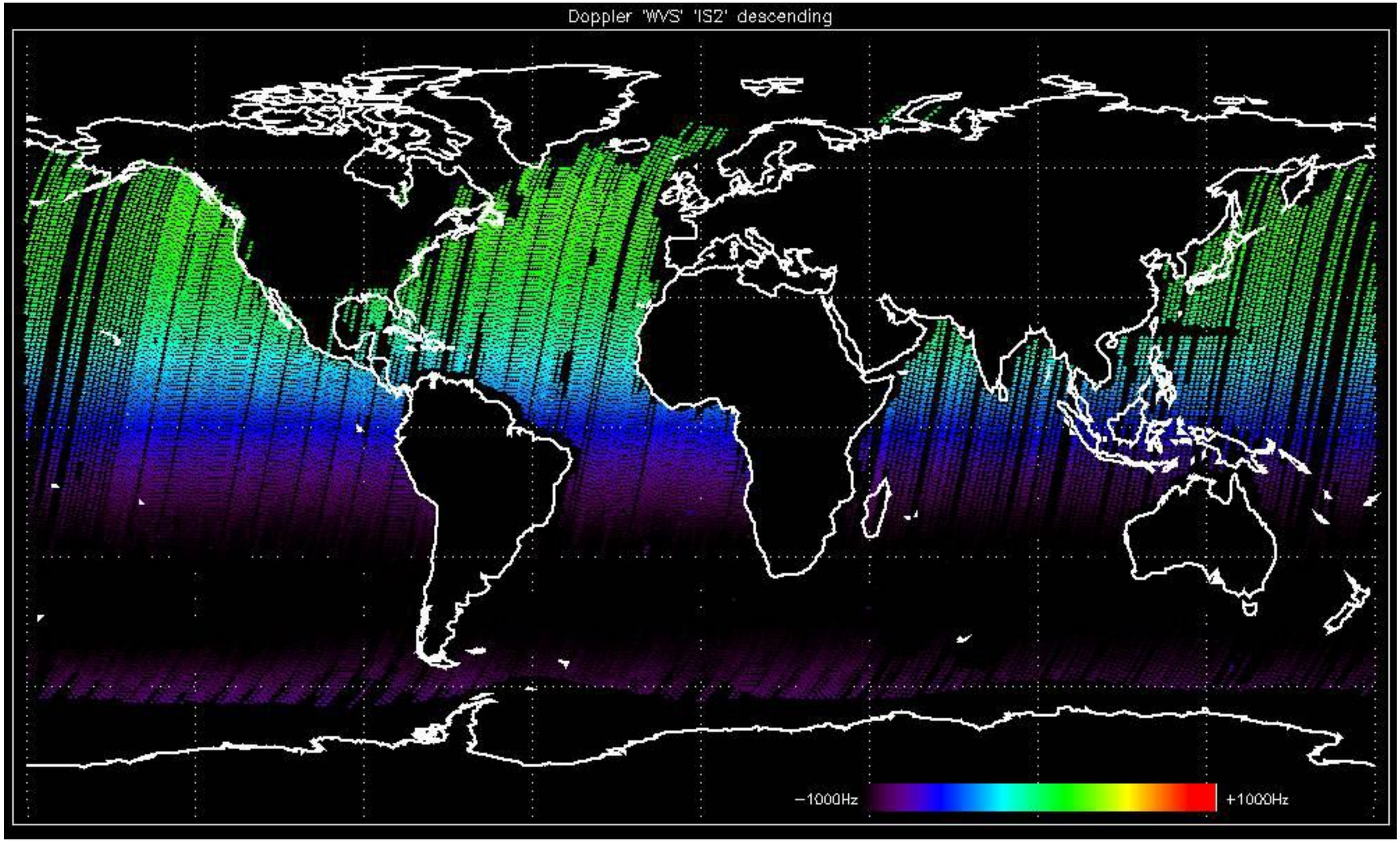
-Nominal Doppler behavior.

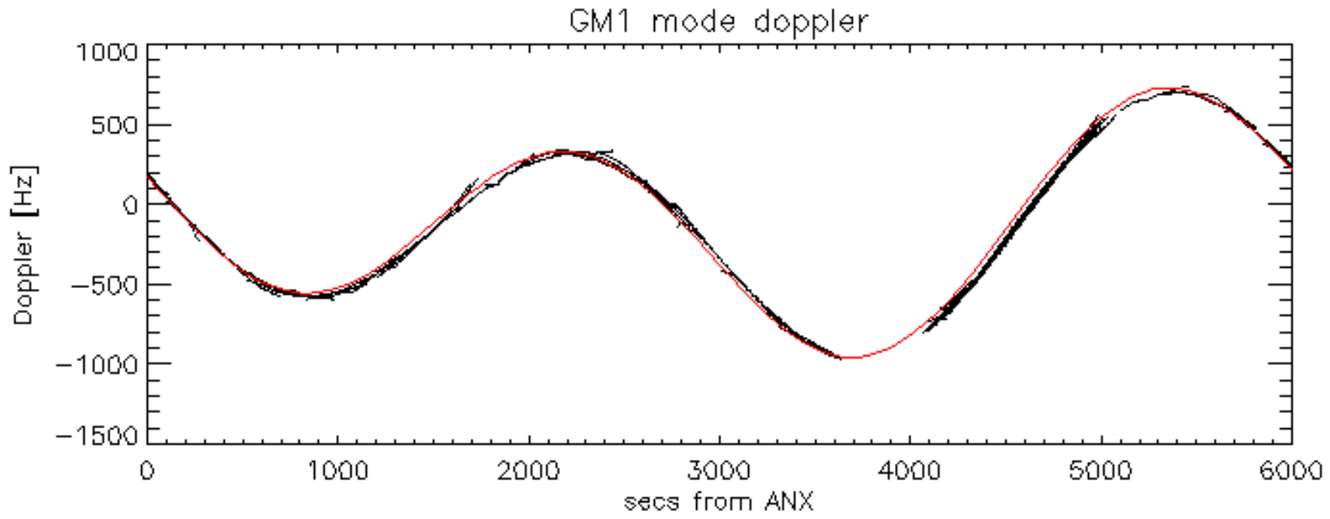
No anomalies observed Doppler evolution.
Doppler analysis performed over the last 35 days

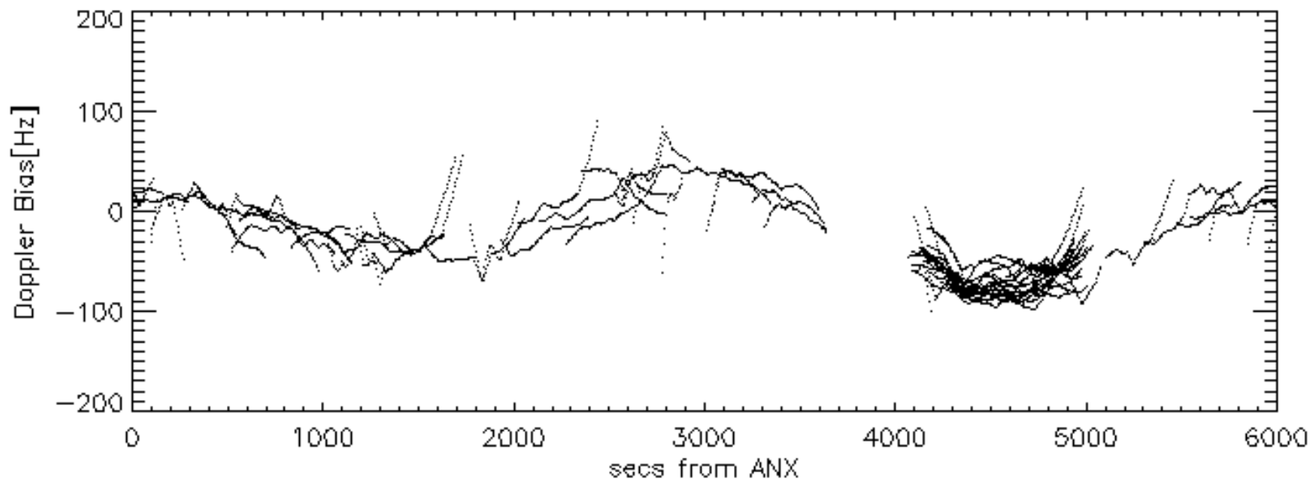

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

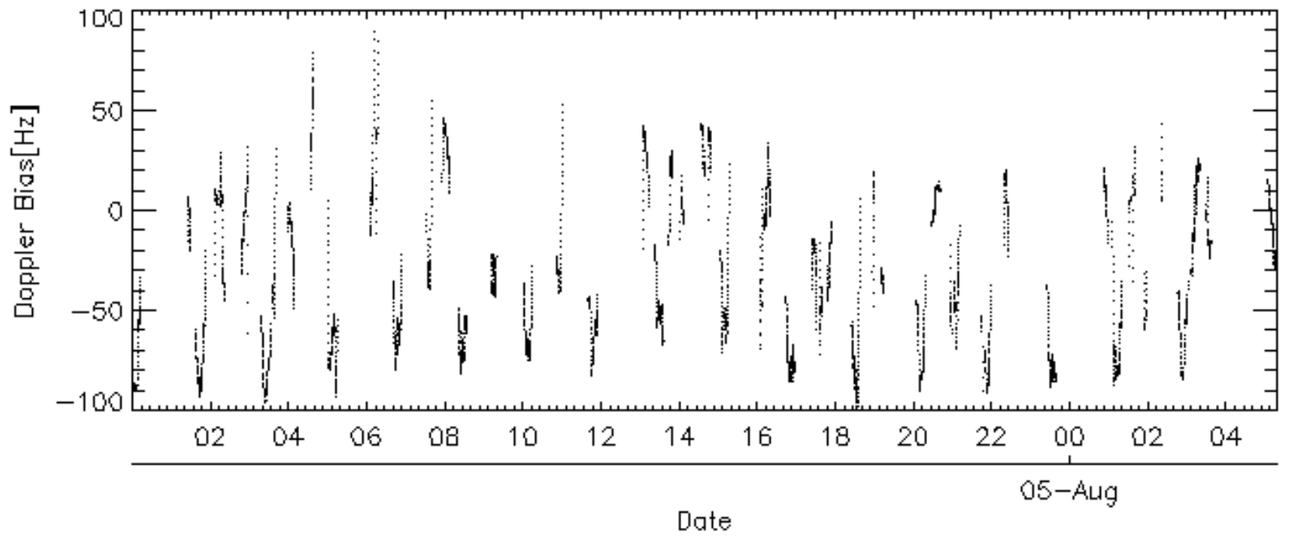

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

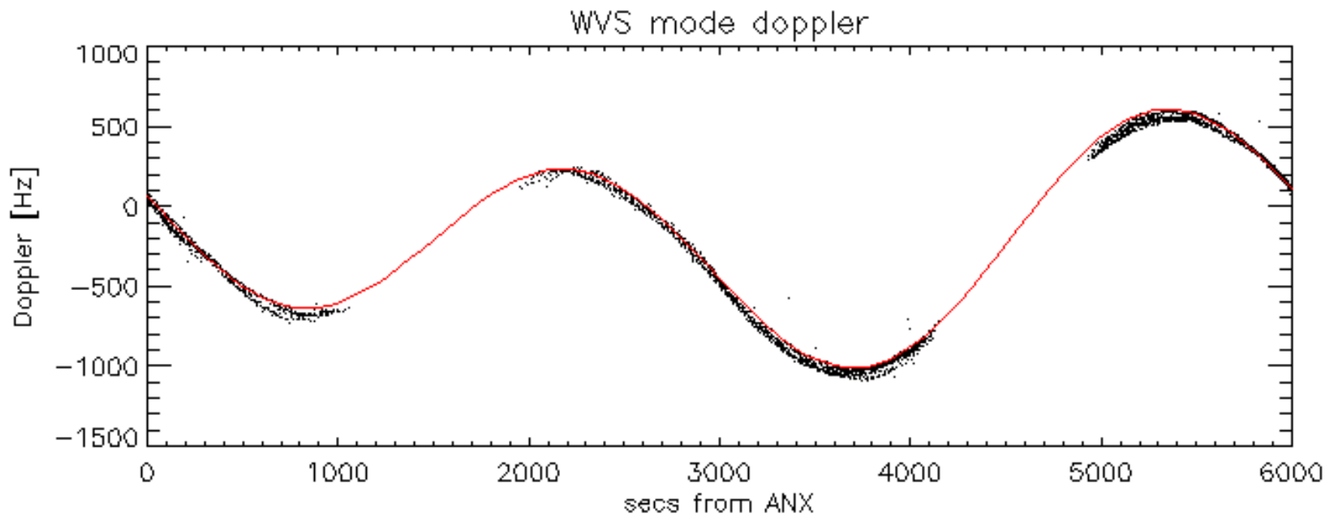

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

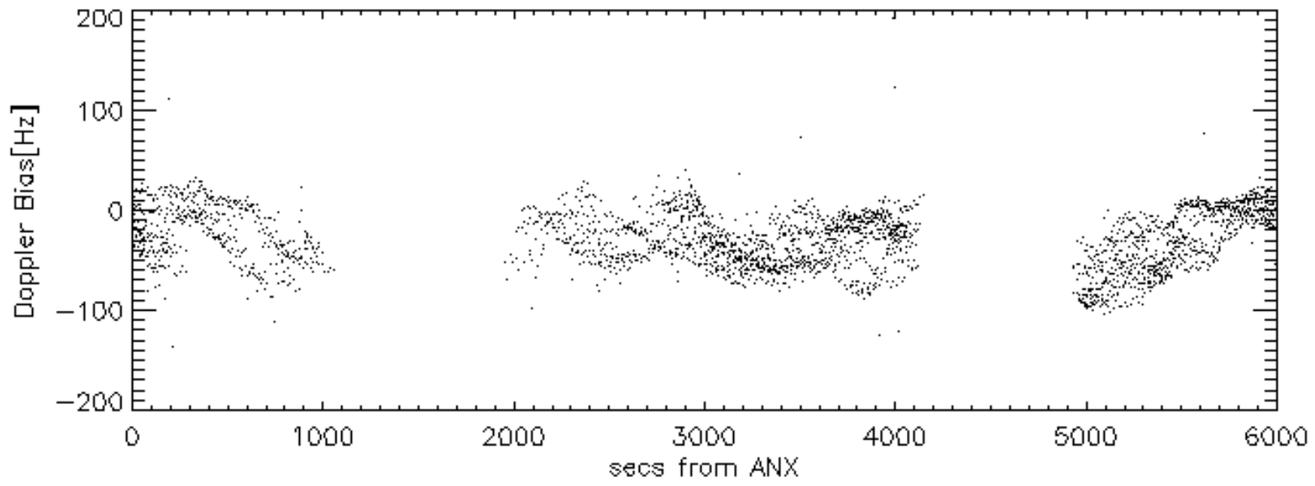

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

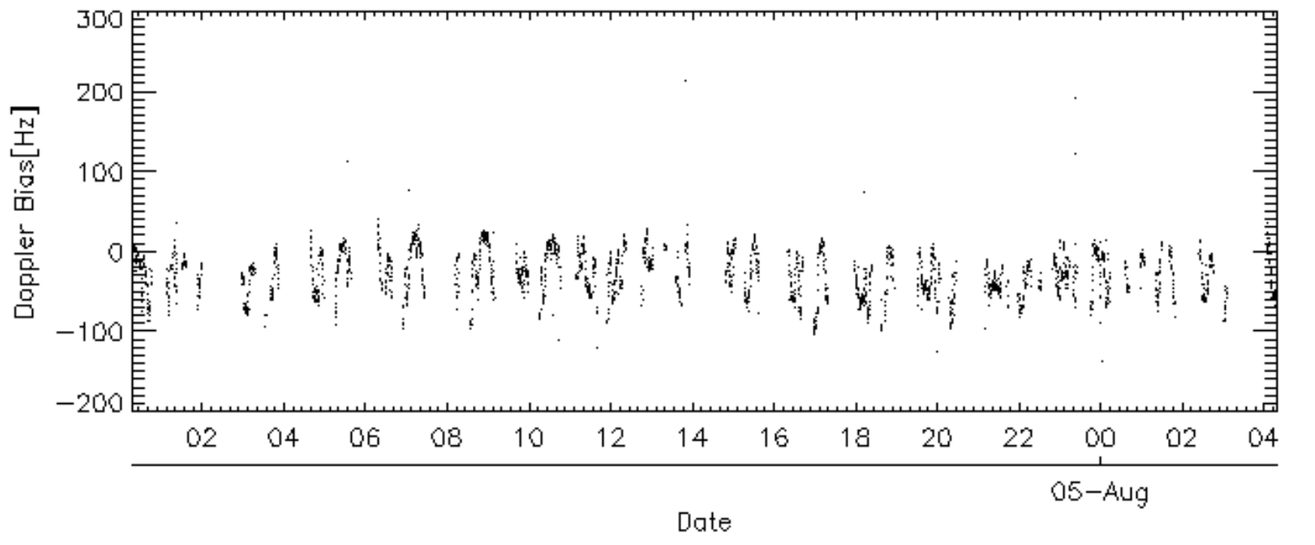

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

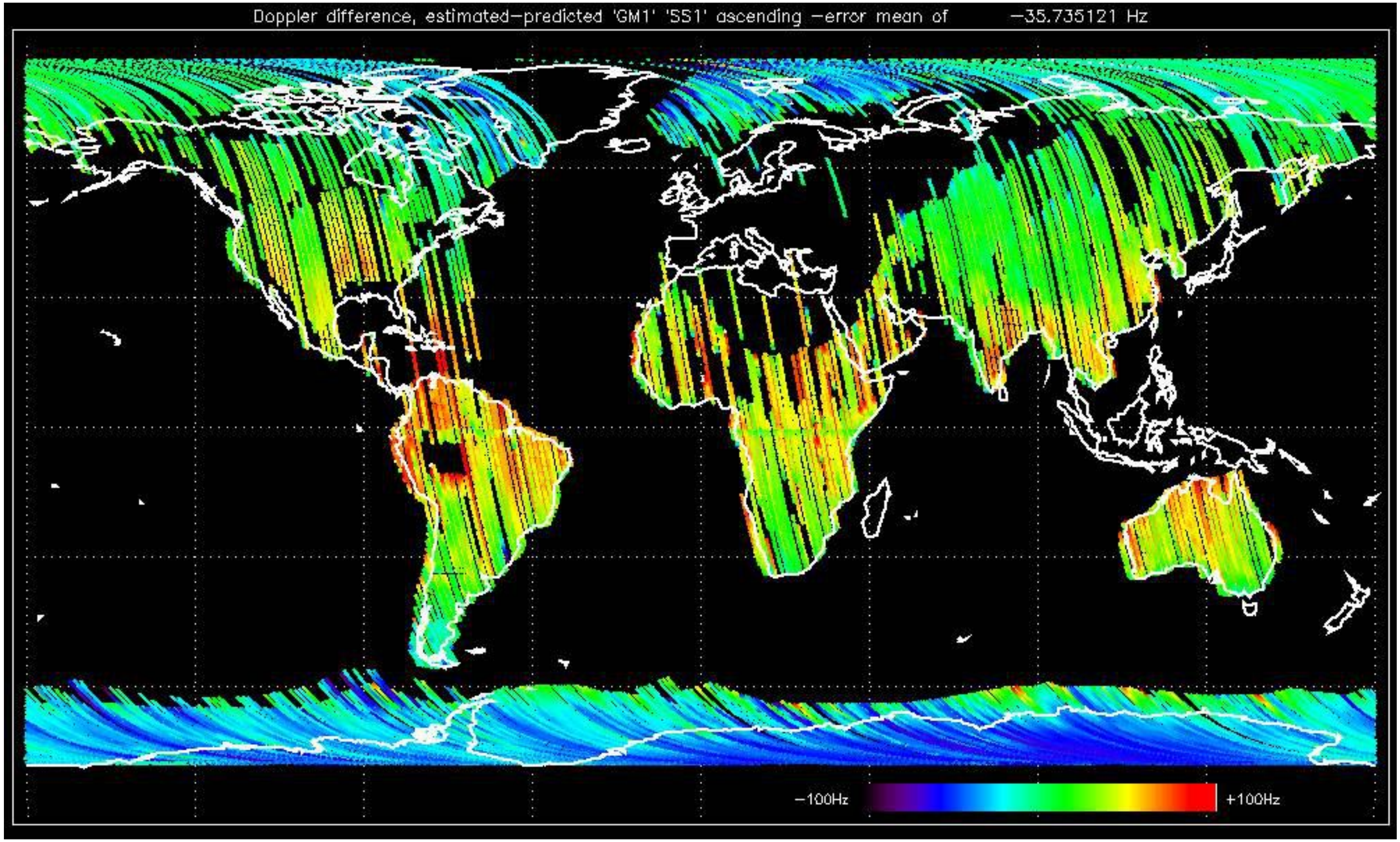

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

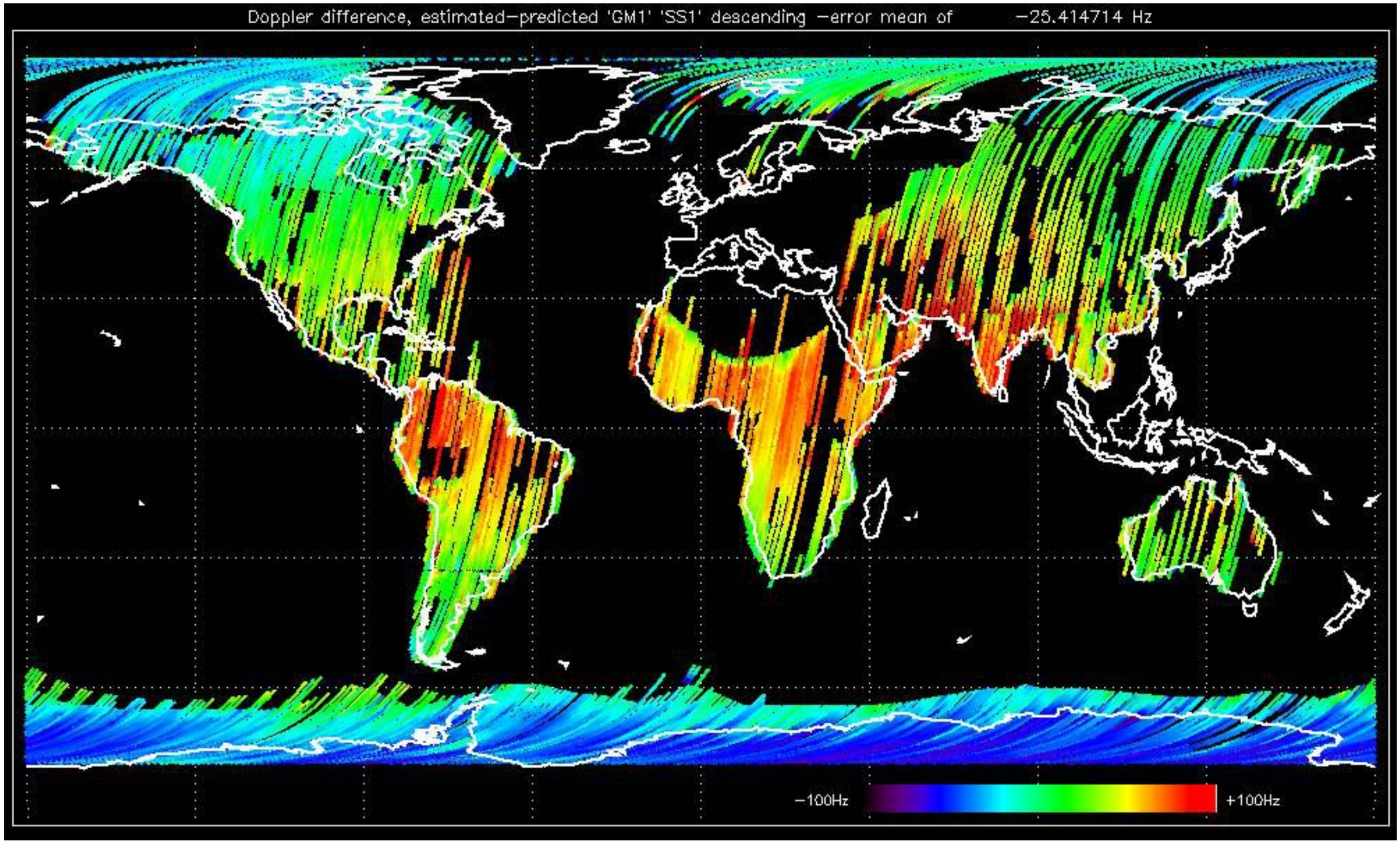

Doppler Bias[Hz]
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
02
04
05−Aug
Date

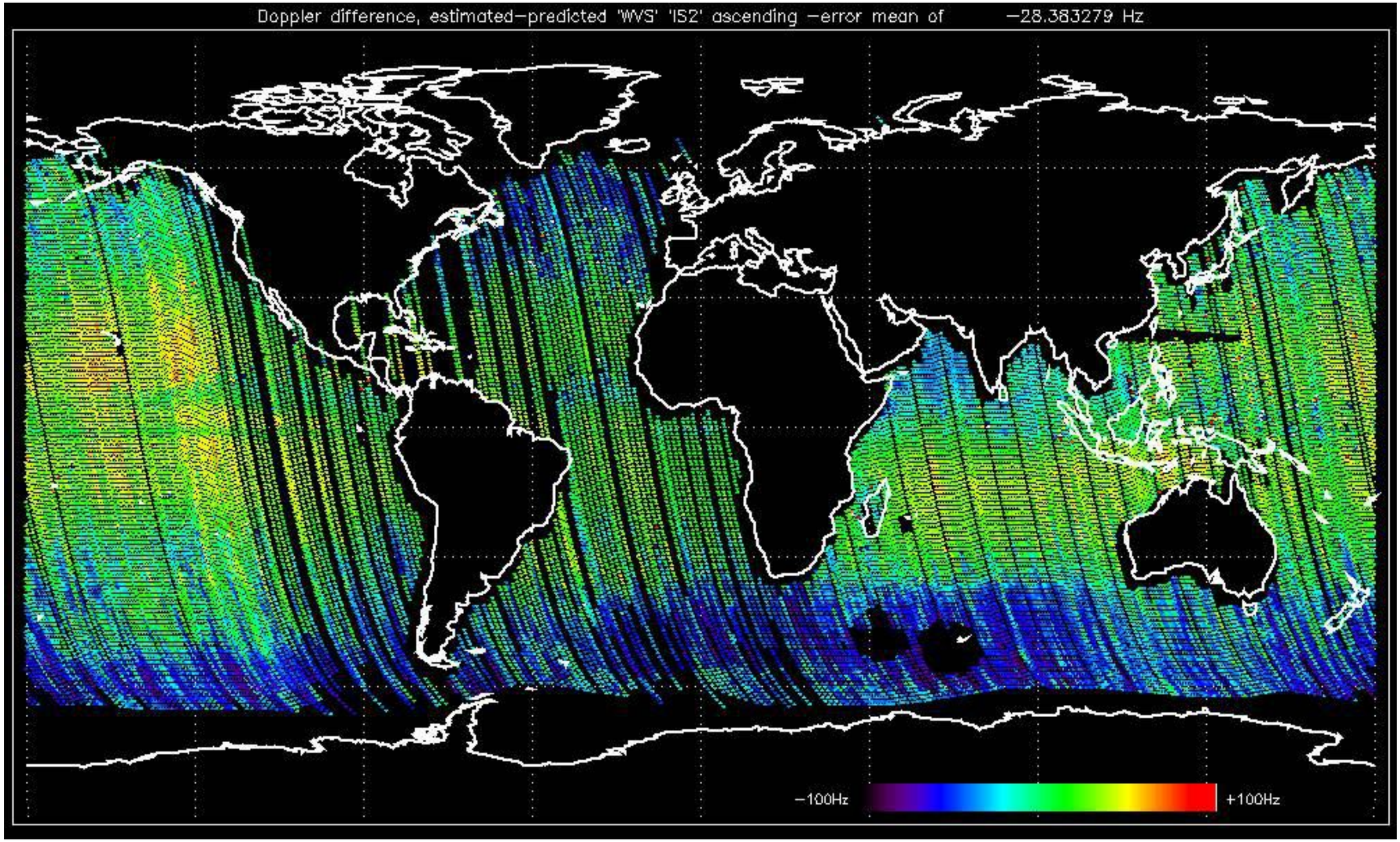

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

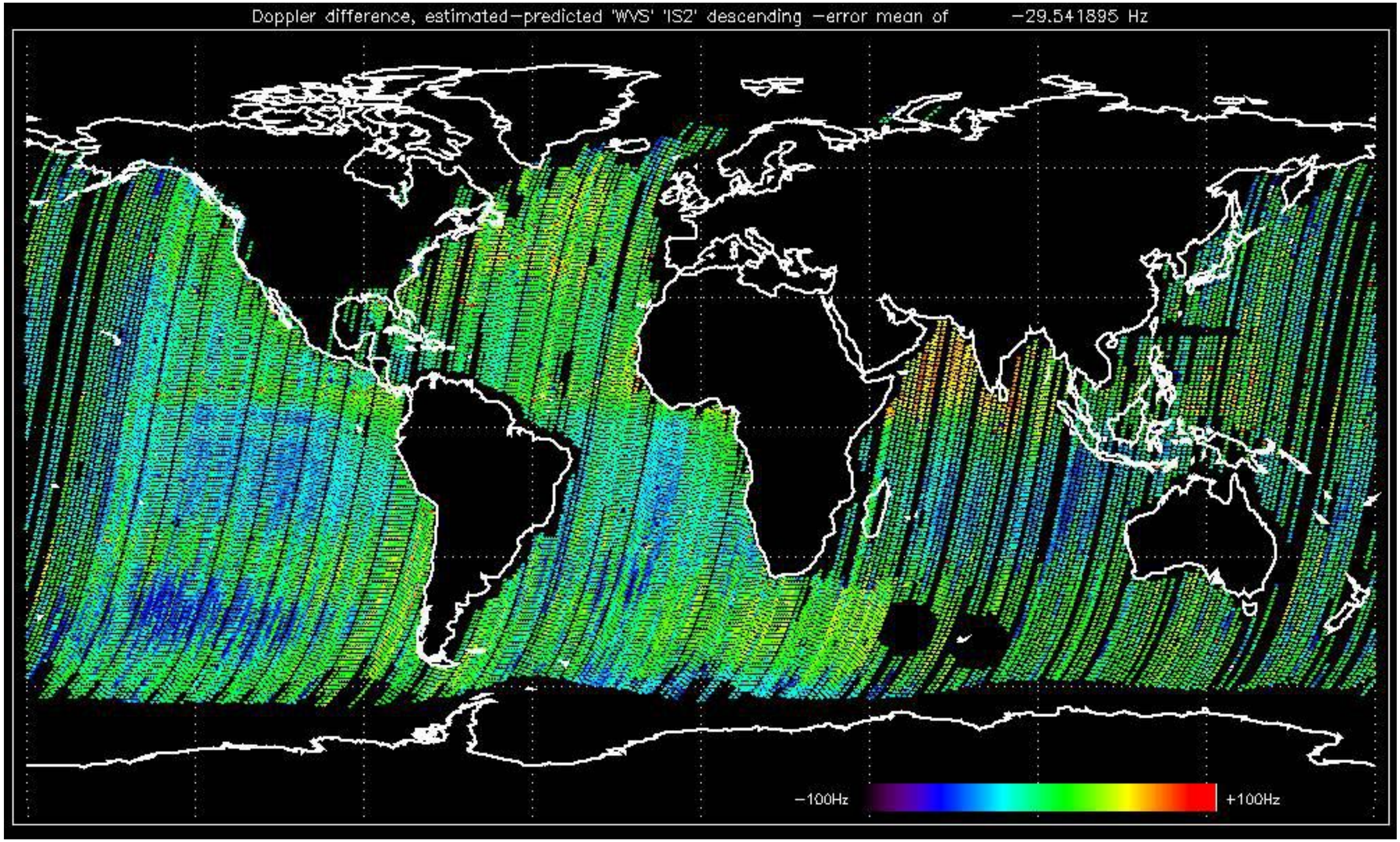

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −35.735121 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -25.414714 Hz
-100Hz
+100Hz

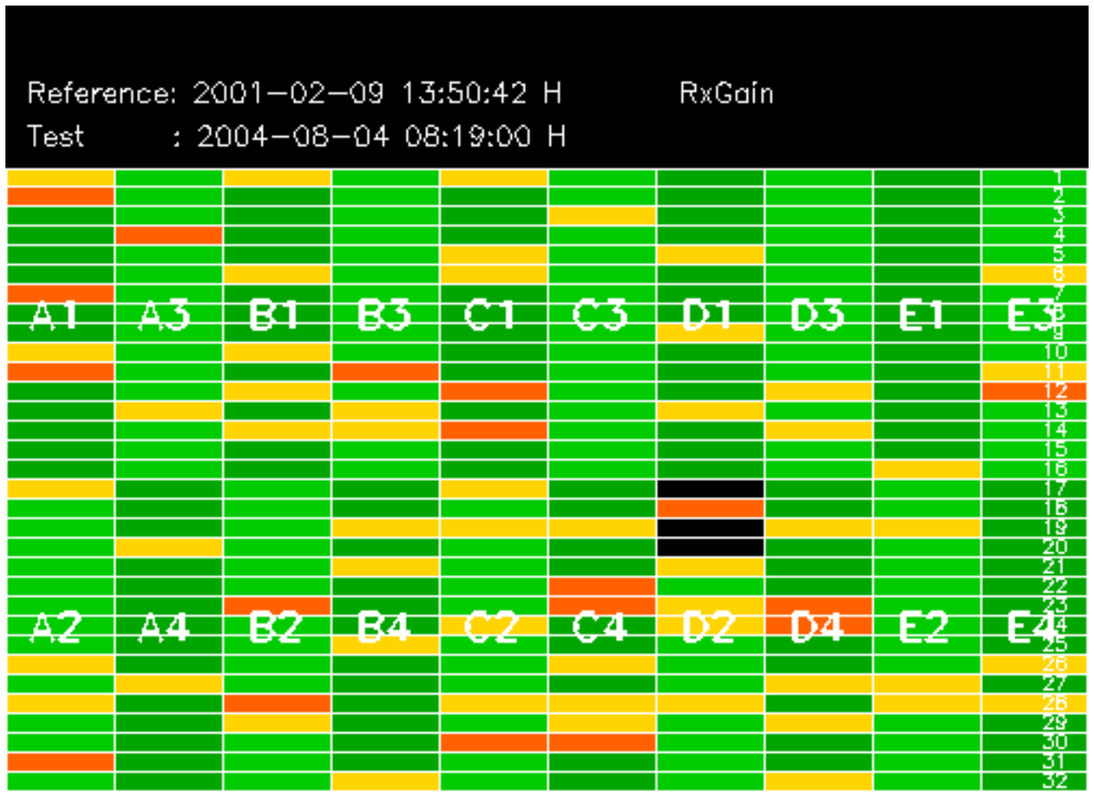

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −28.383279 Hz
−100Hz
+100Hz

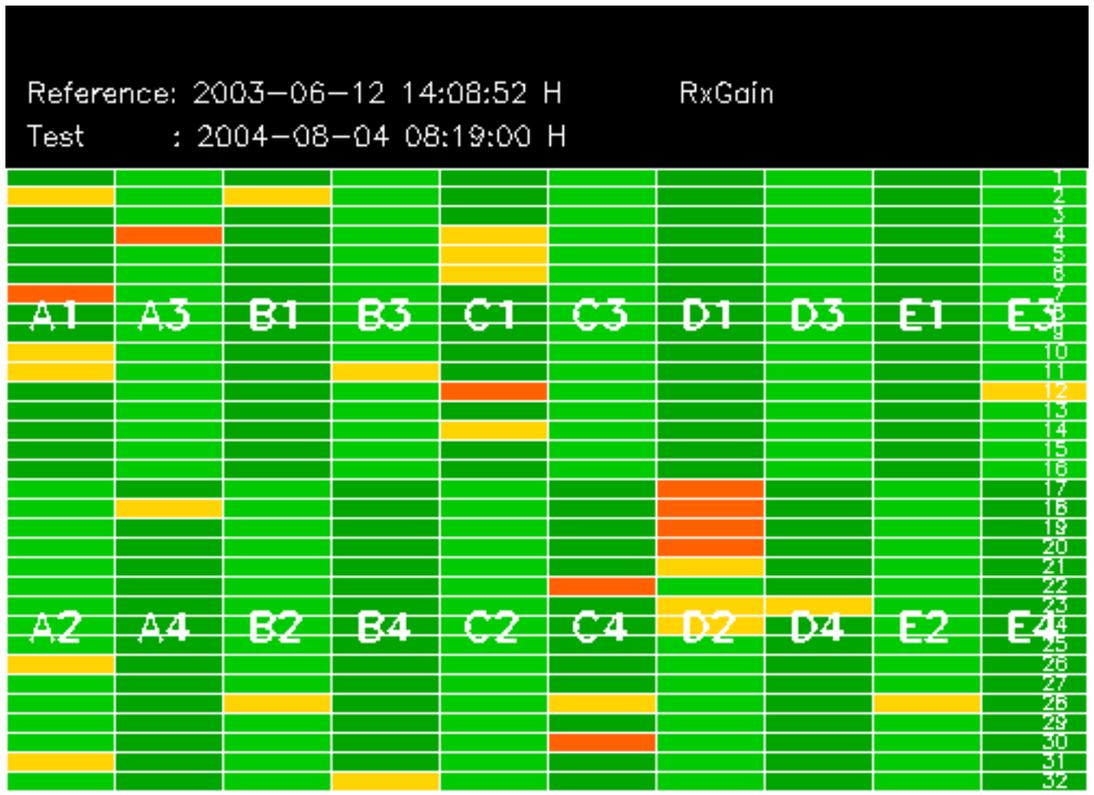

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −29.541895 Hz
−100Hz
+100Hz

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.
Anomaly detected on Tx tile D3 (rows 1 to 16) as visible in the MS products analysis shown below:

- ASA_MS__0PNPDK20040804_081900_000000152029_00121_12700_0041.N1

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
RxGain
Test : 2004-08-04 08:19:00 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 : 2004-08-04 08:19:00 H
RxGain
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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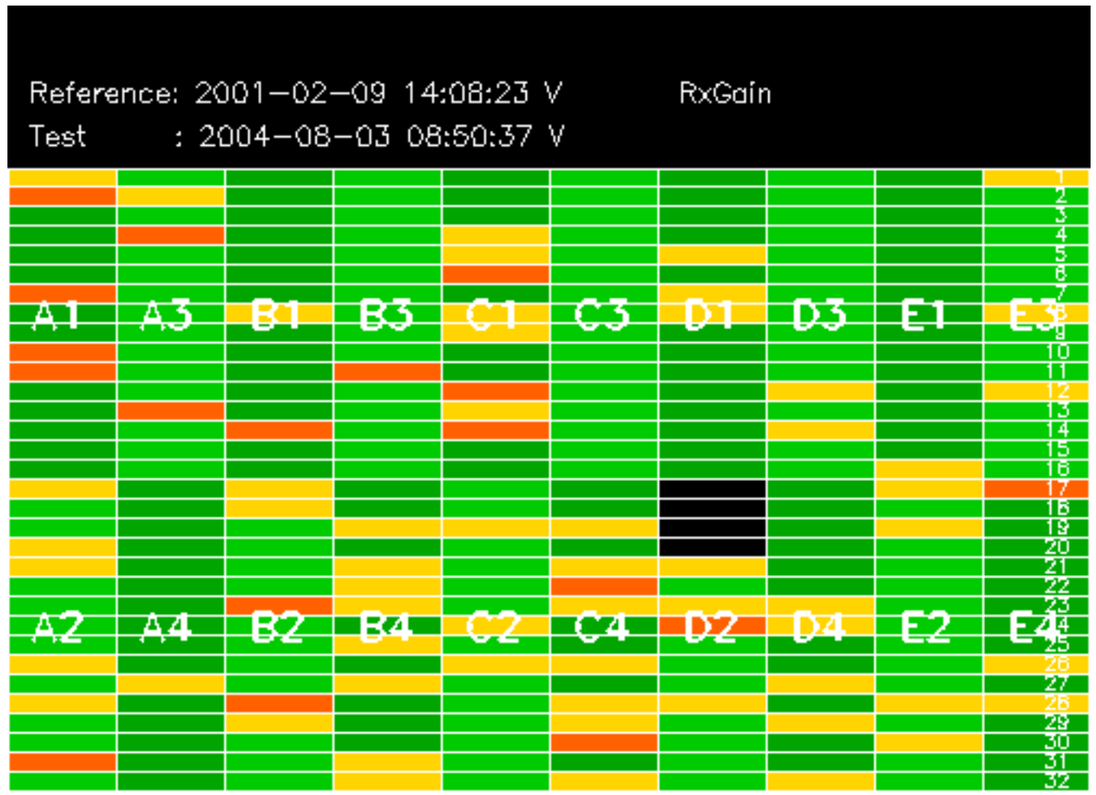
Reference: 2001-02-09 14:08:23 V
Test : 2004-08-03 08:50:37 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
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8
9
10
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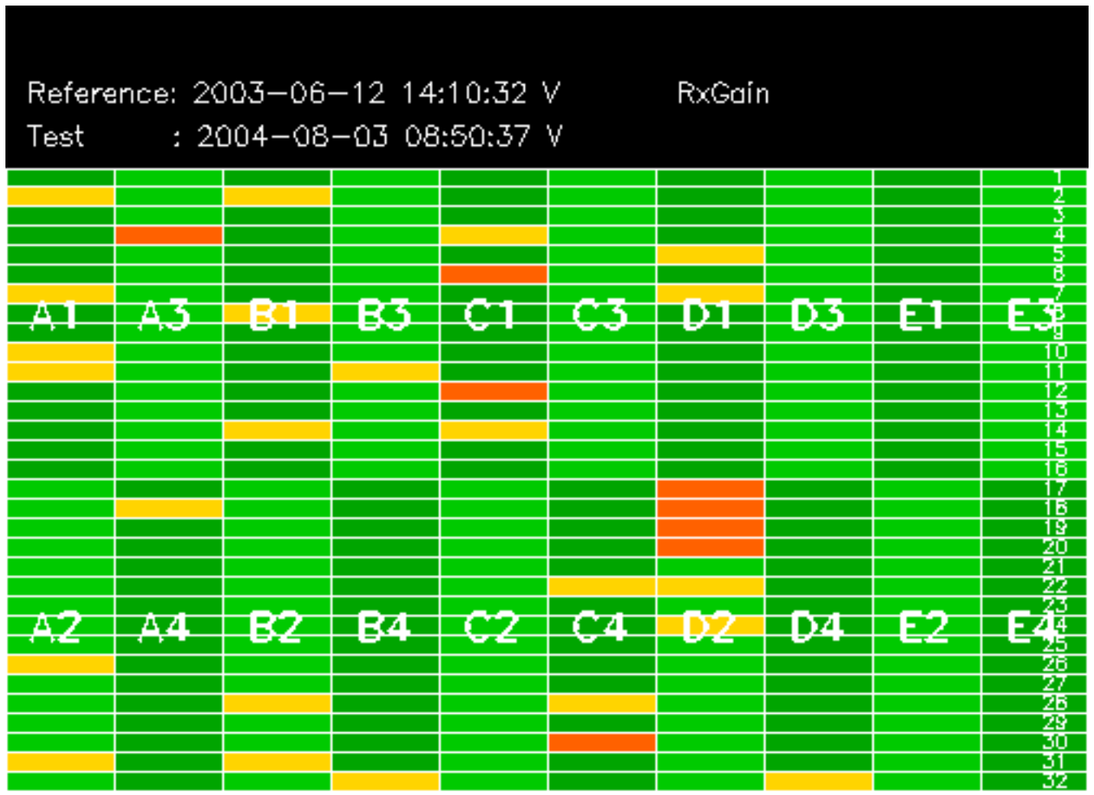
31
32


Reference: 2003-06-12 14:10:32 V
Test : 2004-08-03 08:50:37 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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9
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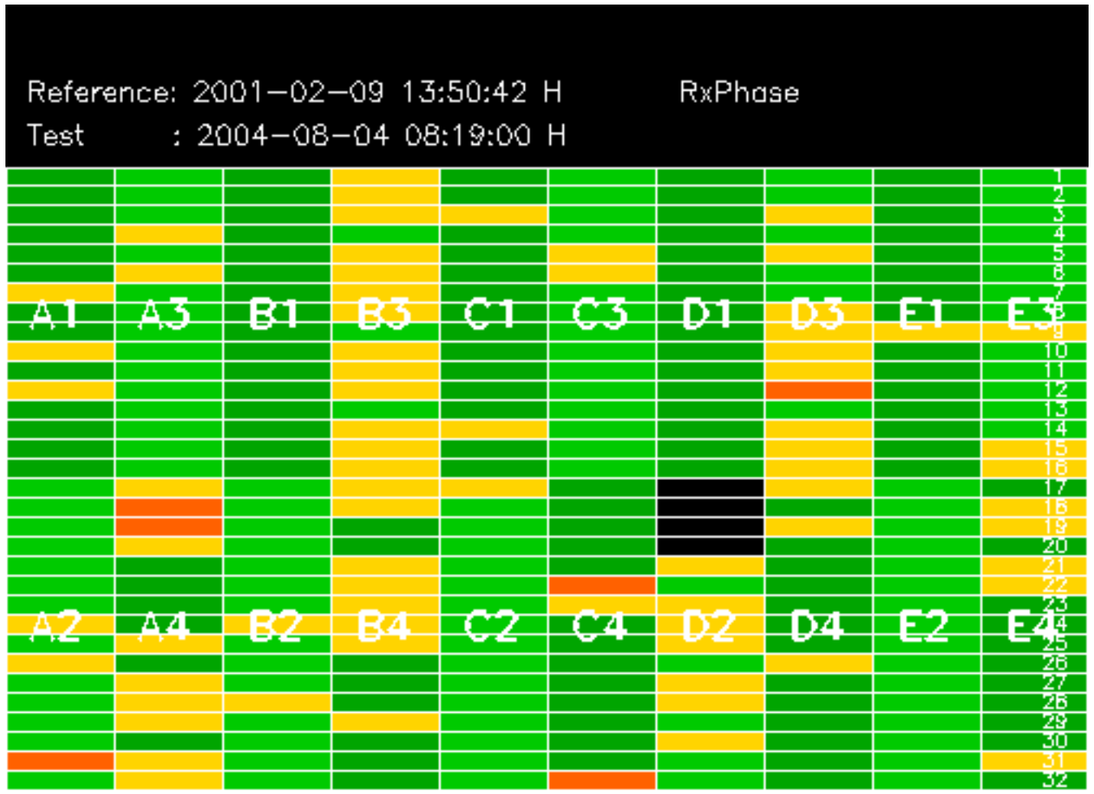
32


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-08-04 08:19:00 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 : 2004-08-04 08:19:00 H
RxPhase
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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8
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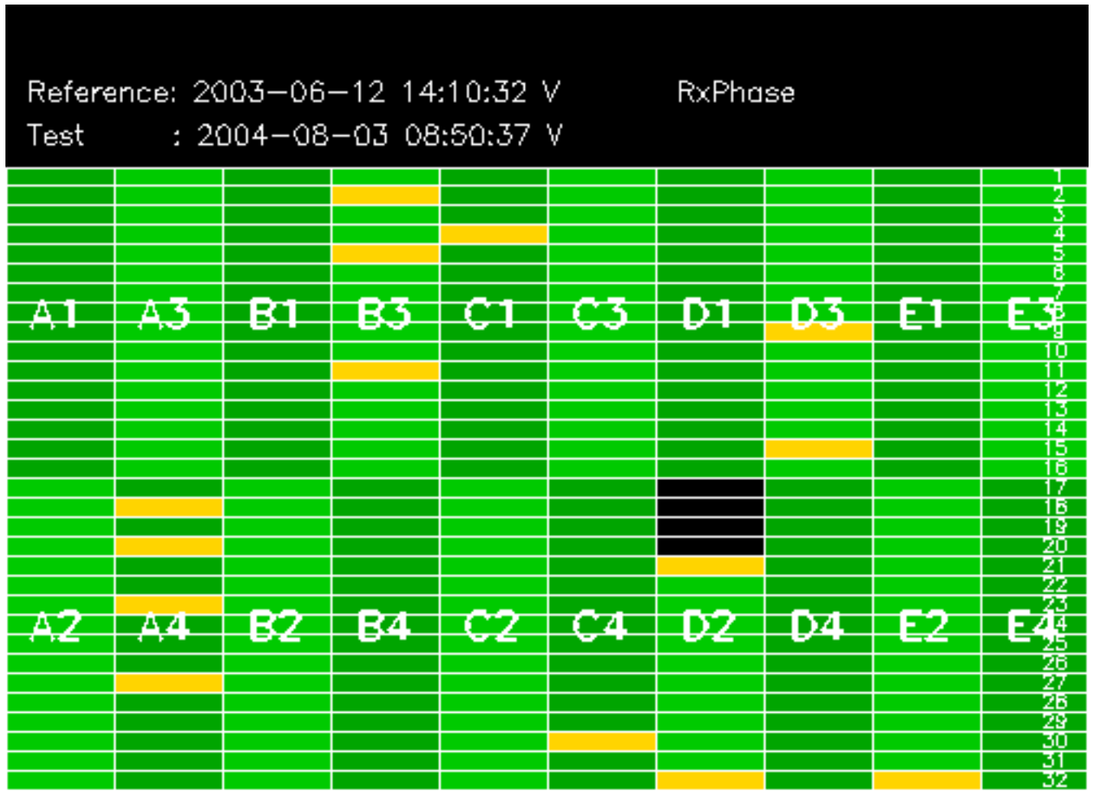
29
30
31
32


Reference: 2001-02-09 14:08:23 V
Test : 2004-08-03 08:50:37 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 : 2004-08-03 08:50:37 V
RxPhase
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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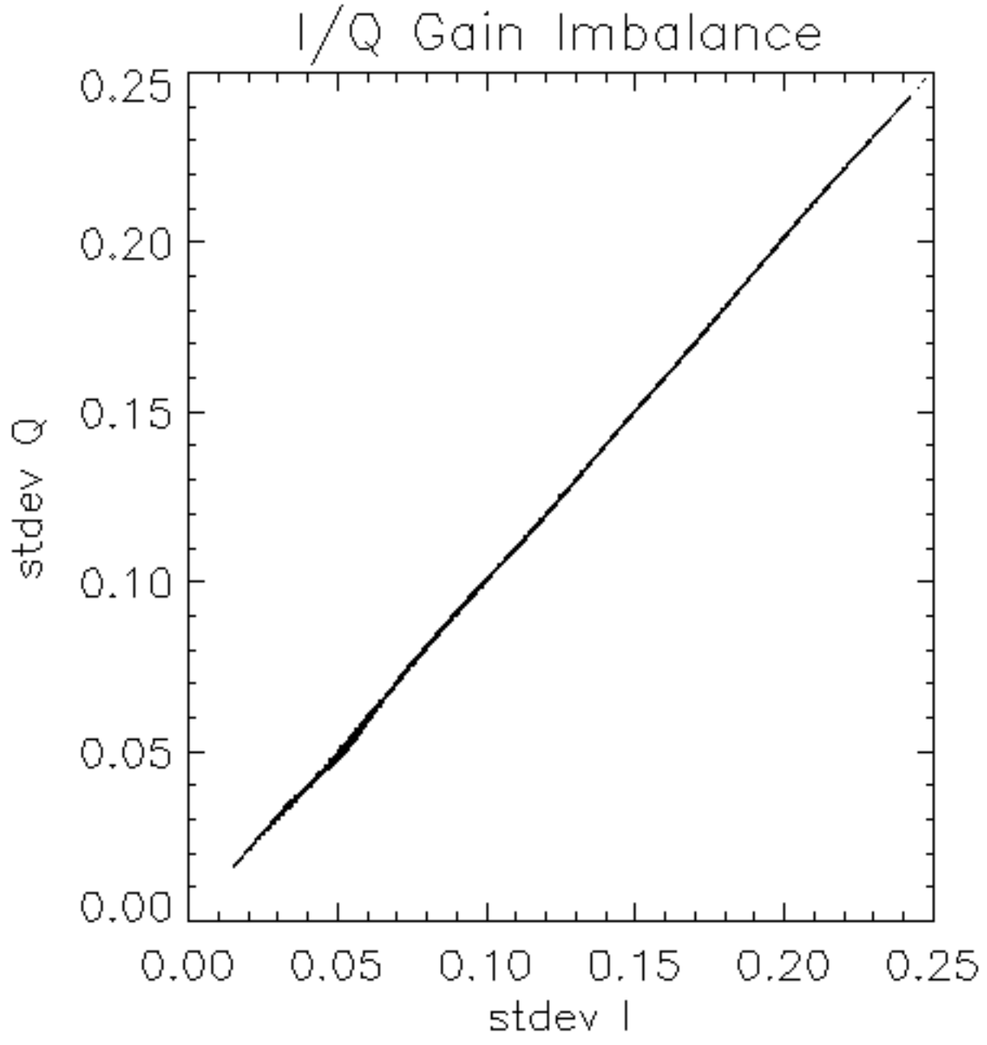
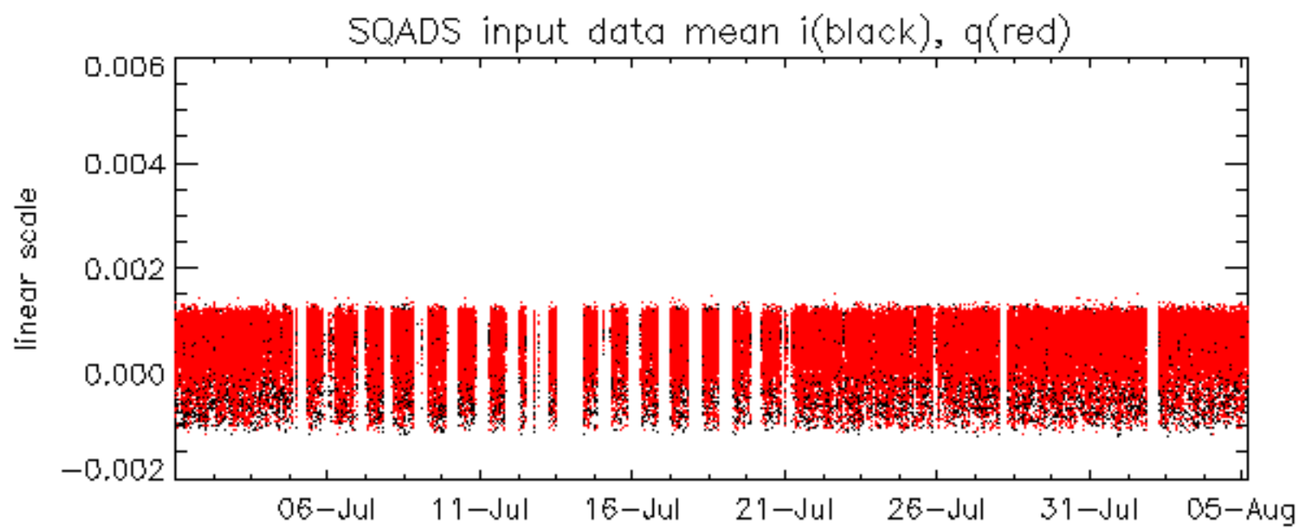
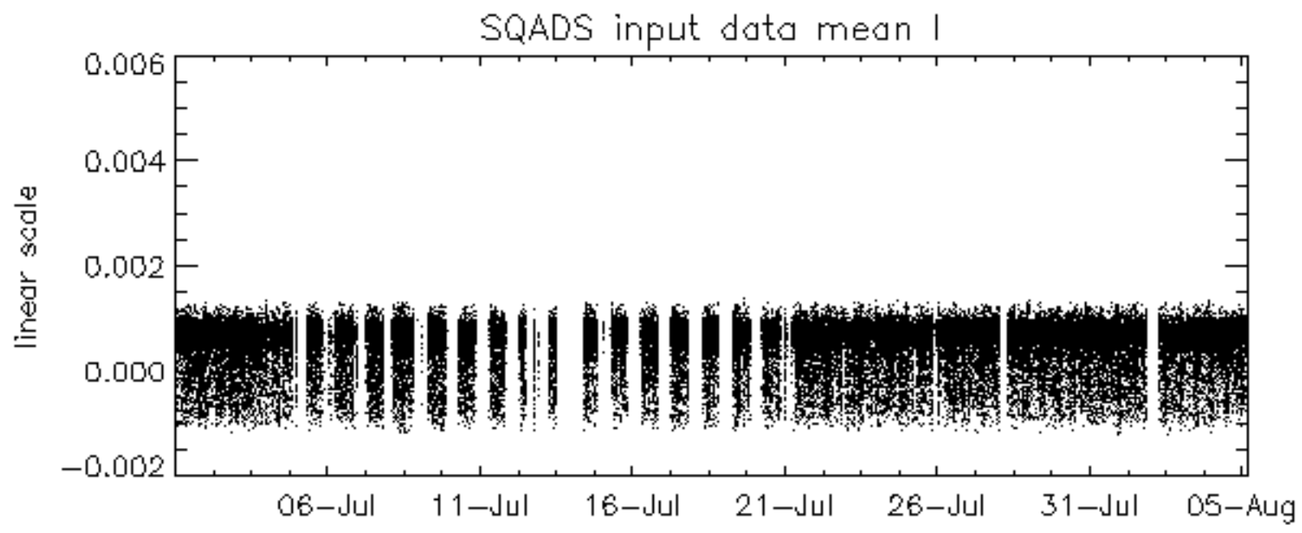
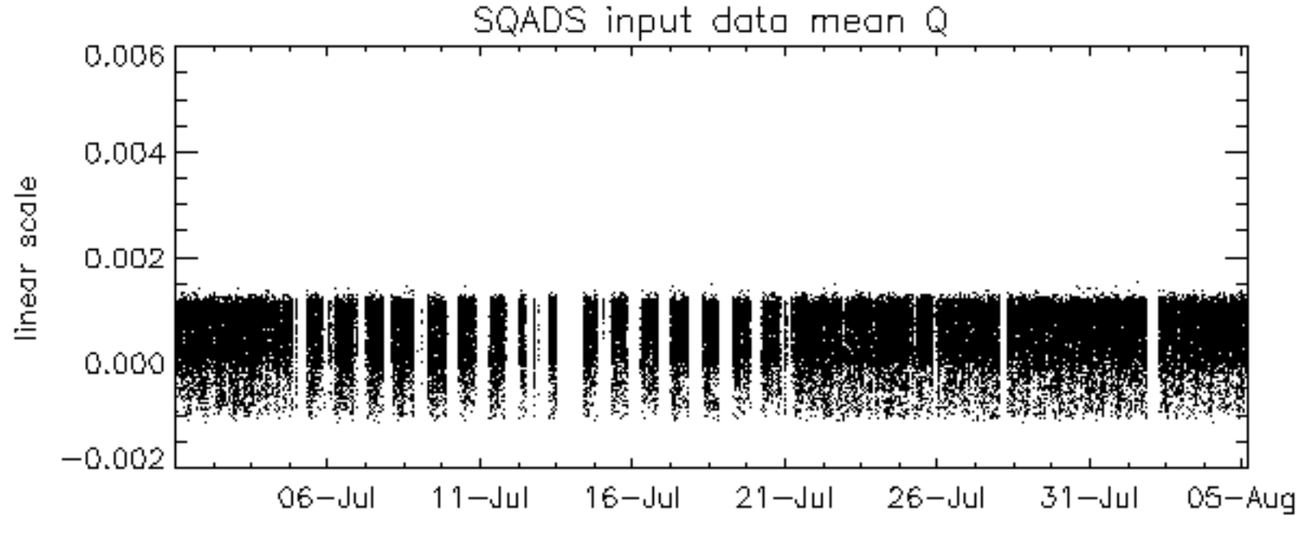
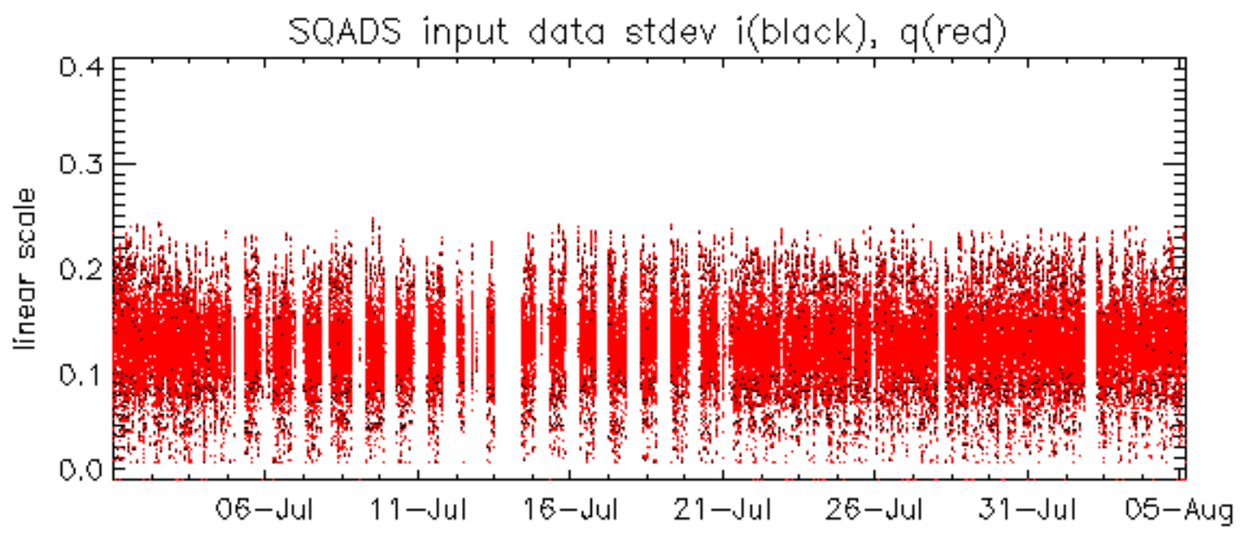
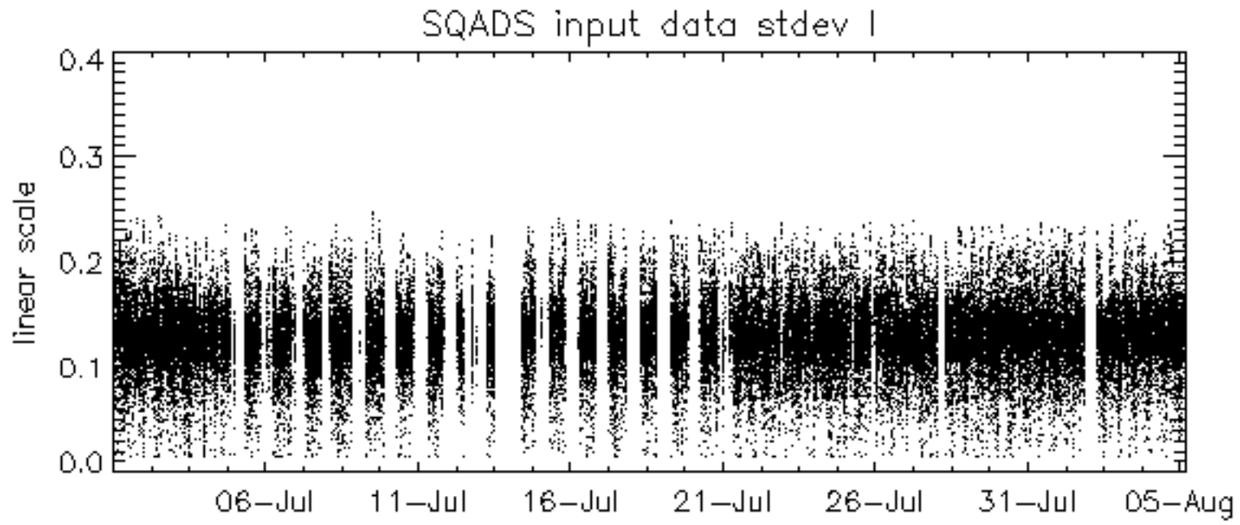

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

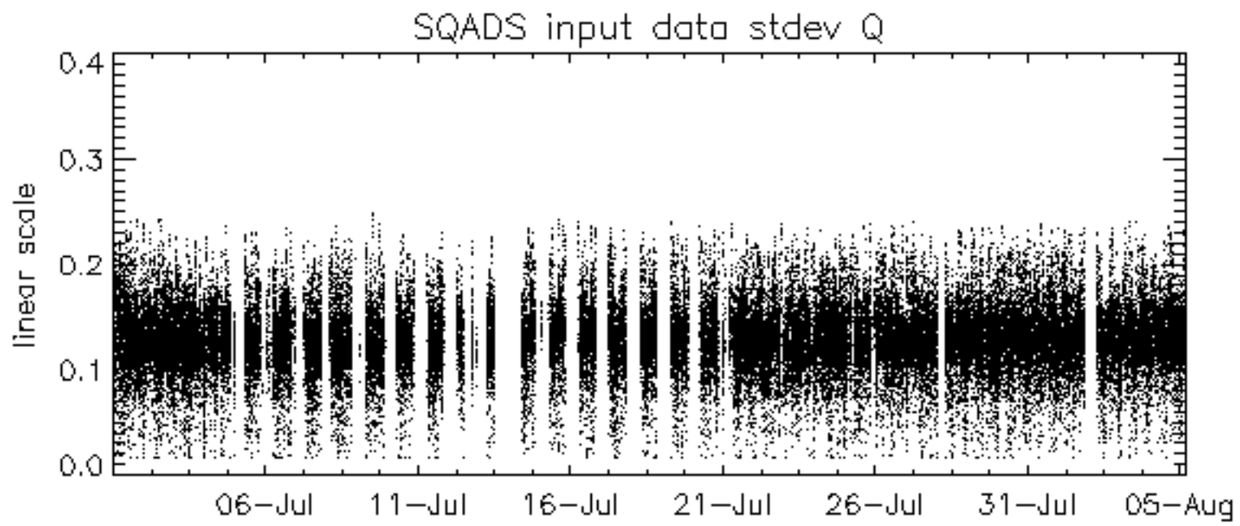

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug

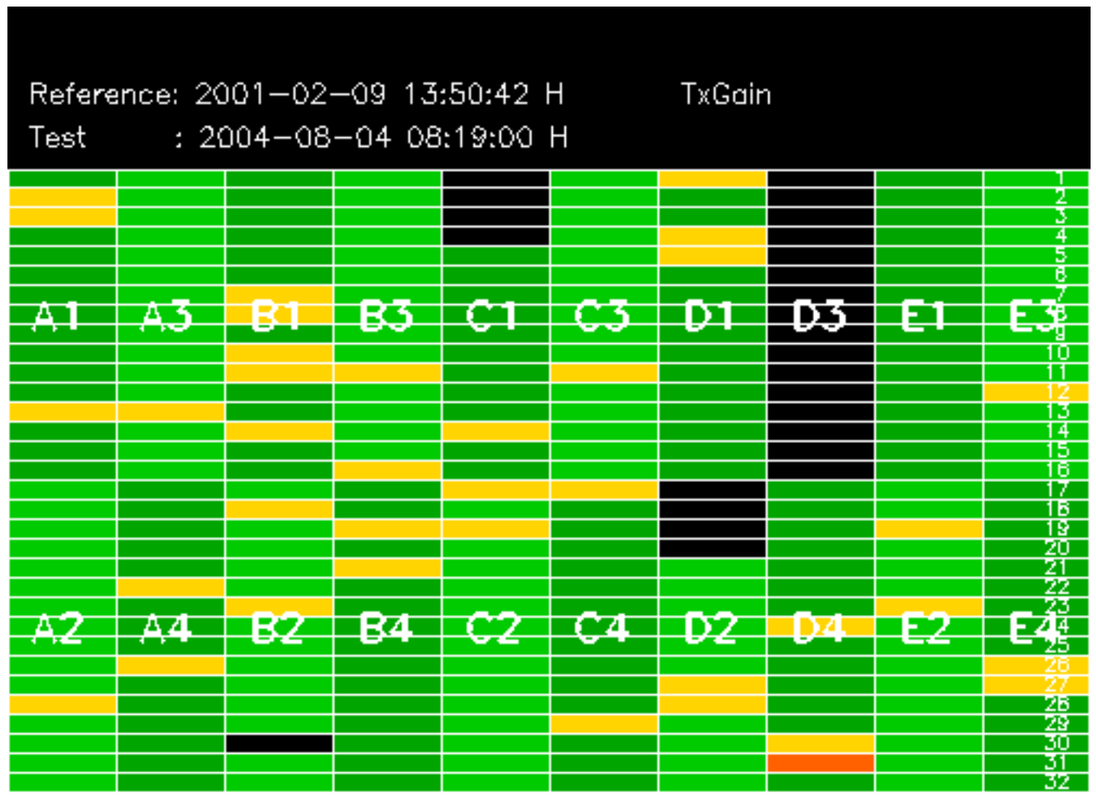

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug

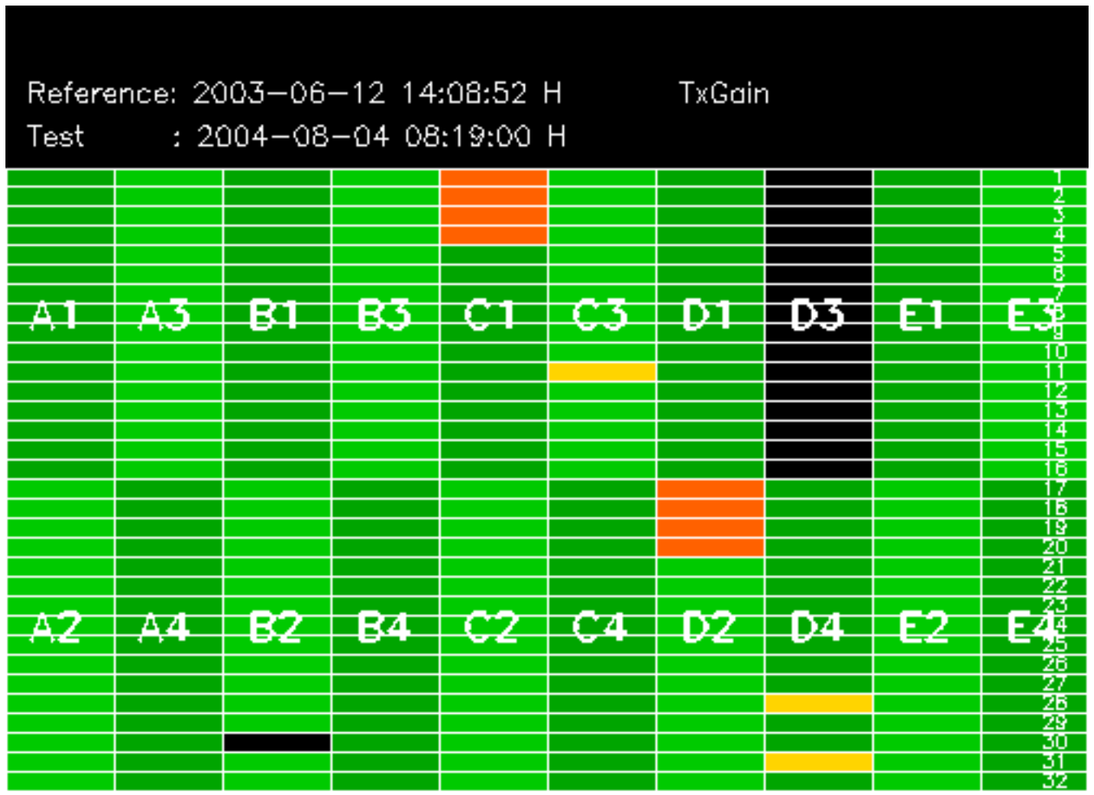

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
06−Jul
11−Jul
16−Jul
21−Jul
26−Jul
31−Jul
05−Aug


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
06-Jul
11-Jul
16-Jul
21-Jul
26-Jul
31-Jul
05-Aug


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
06-Jul
11-Jul
16-Jul
21-Jul
26-Jul
31-Jul
05-Aug


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
06-Jul
11-Jul
16-Jul
21-Jul
26-Jul
31-Jul
05-Aug


Reference: 2001-02-09 13:50:42 H
Test : 2004-08-04 08:19:00 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 : 2004-08-04 08:19:00 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 : 2004-08-03 08:50:37 V
TxGain
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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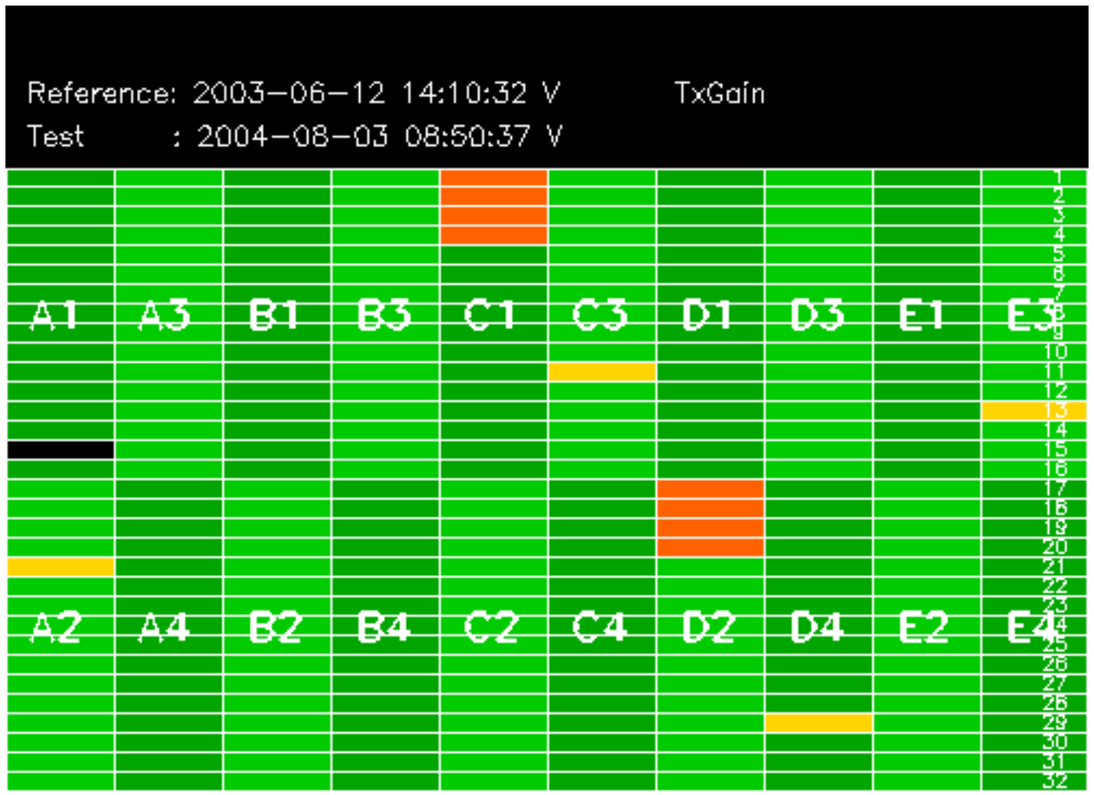
Reference: 2003-06-12 14:10:32 V
Test : 2004-08-03 08:50:37 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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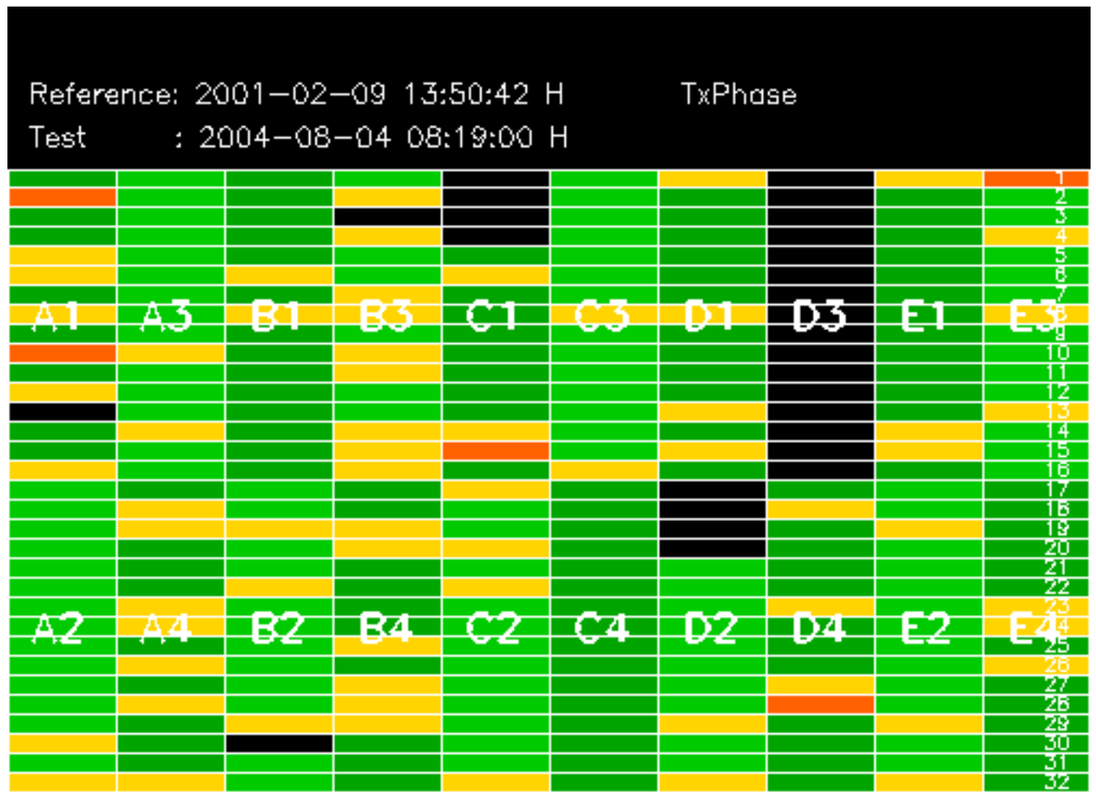
Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2004-08-04 08:19:00 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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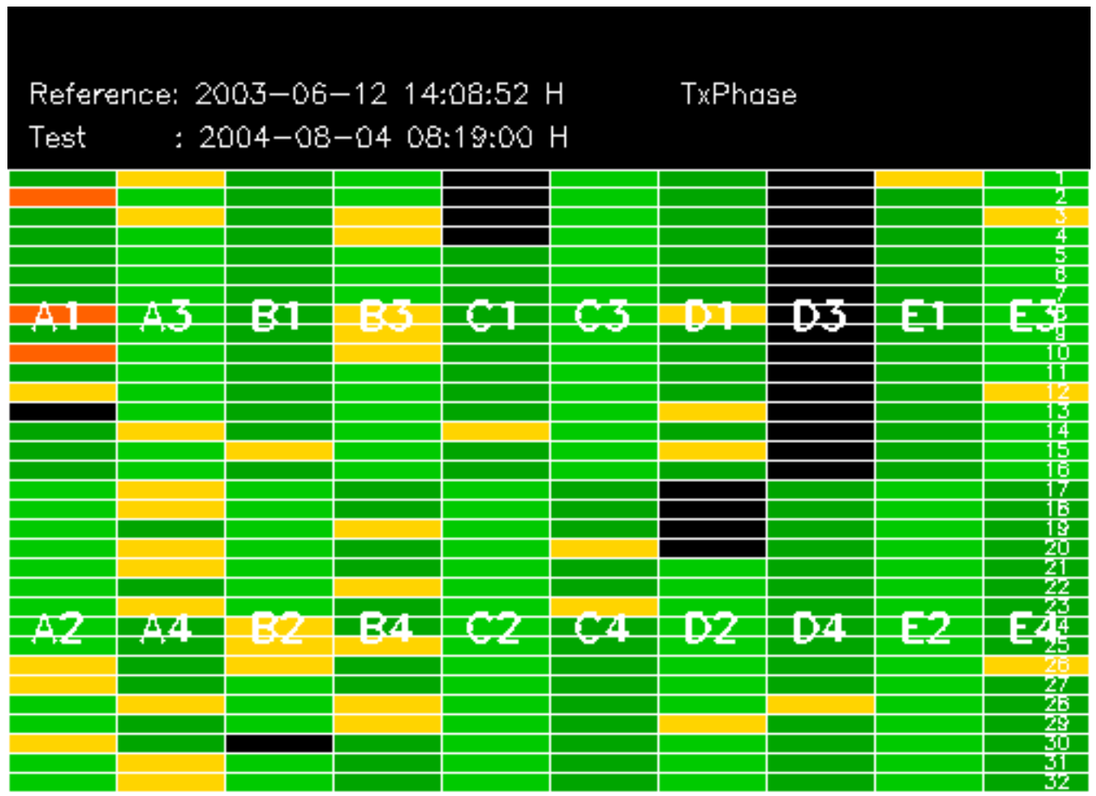
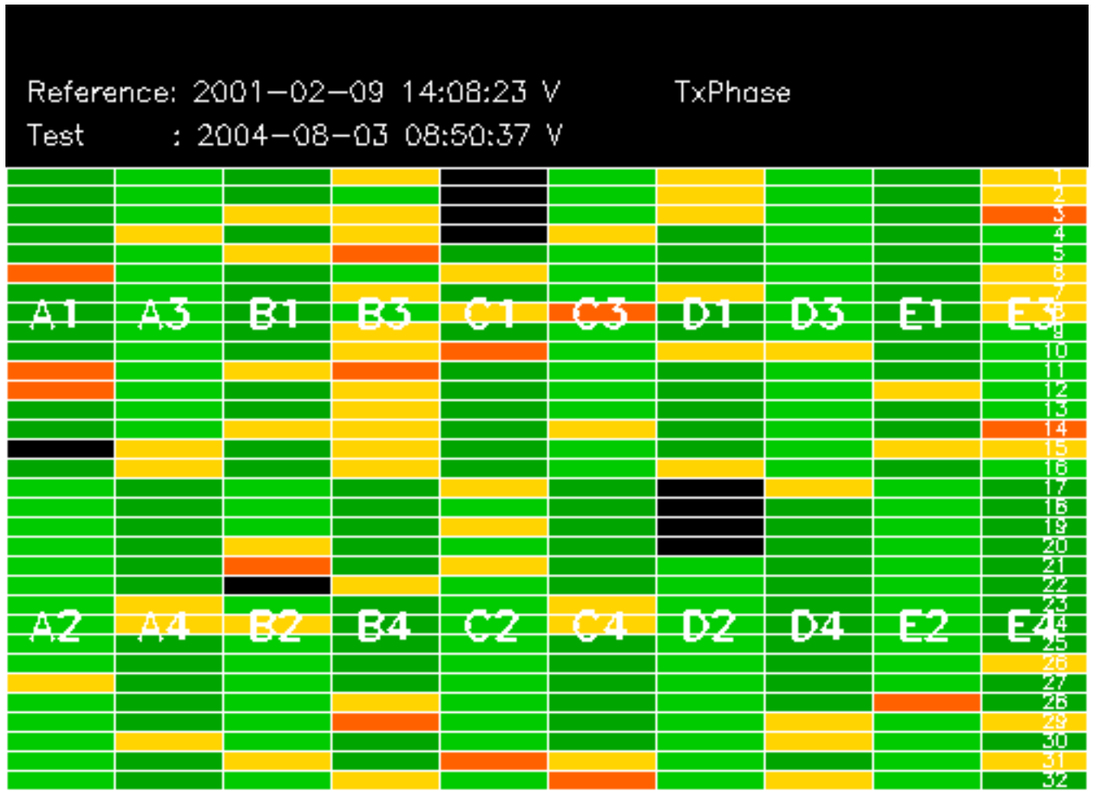
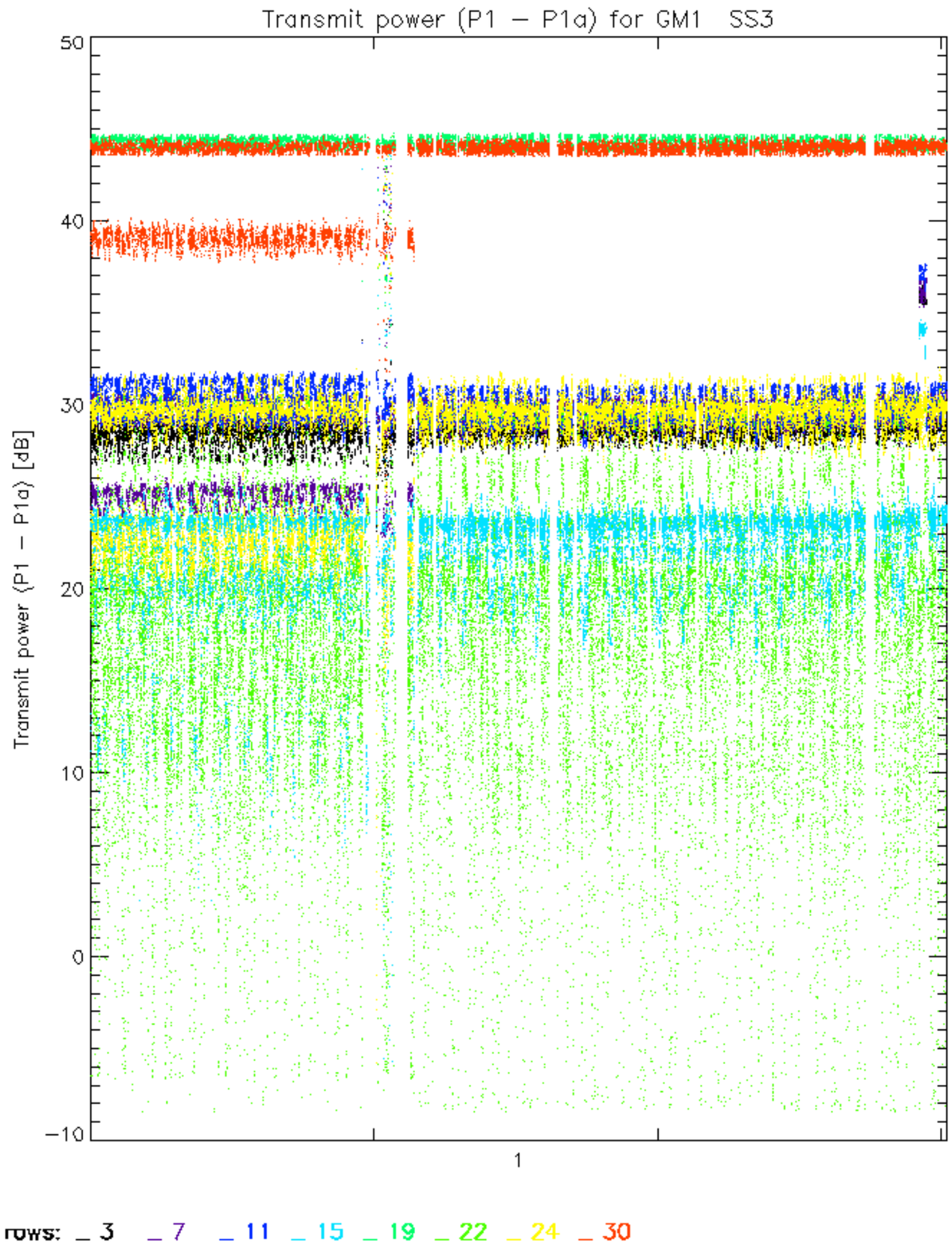
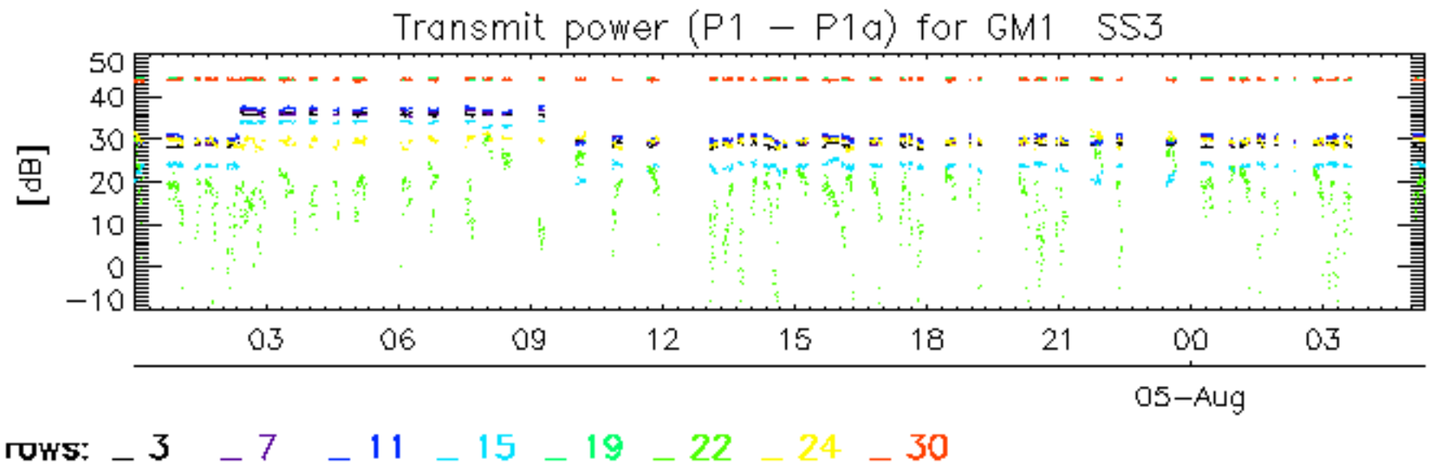
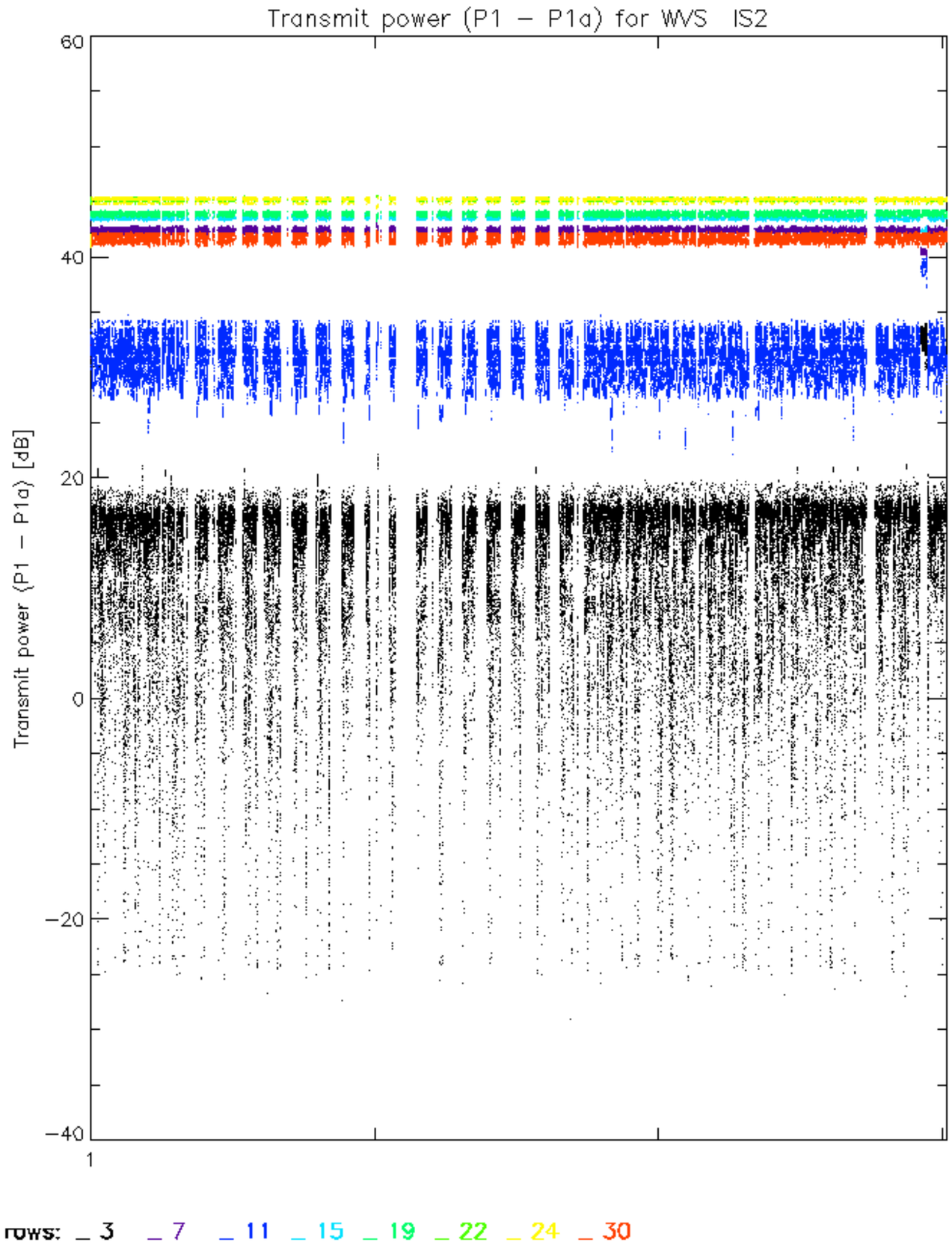

Reference: 2003-06-12 14:08:52 H
TxPhase
Test : 2004-08-04 08:19:00 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

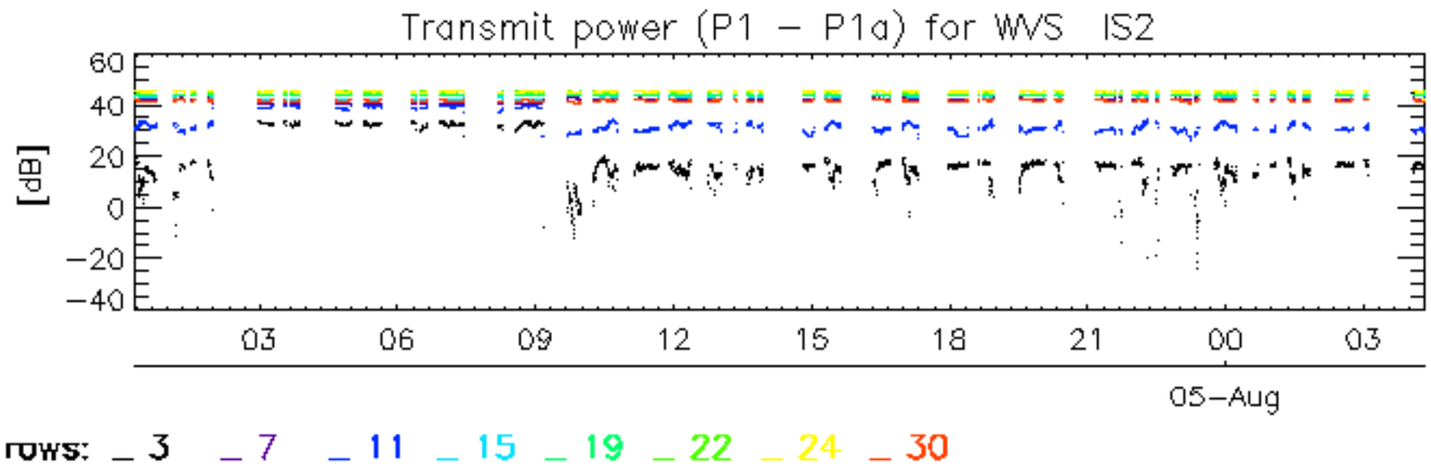

Reference: 2001-02-09 14:08:23 V
Test : 2004-08-03 08:50:37 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-08-03 08:50:37 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
1
rows: 3 7 11 15 19 22 24 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
05–Aug
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
−40
1
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
60
40
20
0
−20
−40
03
06
09
12
15
18
21
00
03
05–Aug
rows: 3 7 11 15 19 22 24 30

ASAR unavailable starting from 04-AUG-2004 09:19:00.000 until 04-AUG-2004 09:26:00.000.
Antenna reset due to anomaly detected on TX tile D3.