PRELIMINARY REPORT OF 051003

last update on Mon Oct 3 10:50:01 GMT 2005

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 - Auxiliary files

Summary of the auxiliary files used from 2005-10-02 00:00:00 to 2005-10-03 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	29	65	7	0	0
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	29	65	7	0	0
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	29	65	7	0	0
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	29	65	7	0	0

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20050324_172815_20030601_000000_20051231_000000	40	57	29	13	62
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	40	57	29	13	62
ASA_XCA_AXVIEC20050803_152145_20040412_000000_20051231_000000	40	57	29	13	62
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	40	57	29	13	62

2.3 - Browse Visual Inspection

2.4 - Data Analysis

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

3 - Module Stepping Mode

No anomalies observed on available MS products:

Polarisation	Start Time
V	20051001 064406
H	20051002 061229

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	-3.502689	0.079889	-0.346129
7	P1	-3.030879	0.040494	0.462062
11	P1	-4.384523	0.163765	1.059897
15	P1	-5.870930	0.055223	-0.539740
19	P1	-3.333332	0.217852	0.940649
22	P1	-4.524527	0.025006	0.295625
26	P1	-4.561523	0.113741	0.815218
30	P1	-6.270823	0.659797	2.279426
3	P1	-15.880009	1.918128	0.310153
7	P1	-16.618198	5.236639	-0.557726
11	P1	-19.237200	14.171604	8.807386
15	P1	-13.390928	10.697294	-2.486705
19	P1	-13.891517	0.322355	1.355487
22	P1	-17.207836	25.095703	-0.081442
26	P1	-18.004204	22.737055	2.061091
30	P1	-17.856583	9.421766	2.742755

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.800600	0.103035	-0.258190
7	P2	-22.408758	0.320316	-1.288545
11	P2	-15.526391	3.063394	-4.937569
15	P2	-7.173360	0.122440	-0.233035
19	P2	-9.243442	0.219347	0.554851
22	P2	-17.293846	0.281370	-1.324394
26	P2	-16.266808	0.142553	0.643214
30	P2	-19.335888	0.268277	-1.162686

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.169095	0.004682	-0.034856
7	P3	-8.169095	0.004682	-0.034856
11	P3	-8.169095	0.004682	-0.034856
15	P3	-8.169095	0.004682	-0.034856
19	P3	-8.169095	0.004682	-0.034856
22	P3	-8.169095	0.004682	-0.034856
26	P3	-8.169095	0.004682	-0.034856
30	P3	-8.169095	0.004682	-0.034856

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	-3.173663	0.298733	-1.310736
7	P1	-2.969298	0.072856	0.183796
11	P1	-3.414127	0.363013	1.745656
15	P1	-3.515281	0.035527	0.373188
19	P1	-3.394642	0.079760	0.379297
22	P1	-5.282747	0.222725	0.759759
26	P1	-6.243261	0.944373	2.188484
30	P1	-5.508198	0.526643	1.468606
3	P1	-11.430654	0.518165	-0.514239
7	P1	-11.622857	21.710829	1.442170
11	P1	-13.124868	41.439693	4.654306
15	P1	-12.924953	36.594666	2.284830
19	P1	-15.314552	0.227617	-0.037663
22	P1	-22.579288	7.104993	7.171867
26	P1	-16.925116	6.328174	-2.450693
30	P1	-19.727341	2.022421	1.686333

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.565388	0.070718	-0.478693
7	P2	-22.629580	0.368458	-1.528135
11	P2	-10.831400	1.343749	-3.331590
15	P2	-4.962635	0.051581	0.270510
19	P2	-6.765666	0.122078	-0.139640
22	P2	-7.590921	0.305813	-1.573550
26	P2	-23.892241	0.042755	0.161243
30	P2	-22.048786	0.069743	-0.173305

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.011307	0.003405	-0.033202
7	P3	-8.011266	0.003414	-0.033629
11	P3	-8.011107	0.003410	-0.032928
15	P3	-8.011131	0.003411	-0.033242
19	P3	-8.011339	0.003400	-0.033290
22	P3	-8.011089	0.003409	-0.033392
26	P3	-8.011331	0.003410	-0.033559
30	P3	-8.011284	0.003421	-0.033666

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	0.000517325
	stdev	1.91127e-07
MEAN Q	mean	0.000518422
	stdev	2.19269e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.134071
	stdev	0.00106531
STDEV Q	mean	0.134377
	stdev	0.00107938

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005100[123]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

Filename	num_gaps	num_missing_lines
ASA_WSM_1PNPDE20051003_020026_000000852041_00189_18780_2057.N1	0	22

7 - Doppler Analysis

Preliminary report.The data is not yet controled

7.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)

Acsending

Descending

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

Acsending
Descending

7.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX


7.4 - Unbiased Doppler Error for GM1

Evolution of unbiased Doppler error (Real - Expected)

Acsending

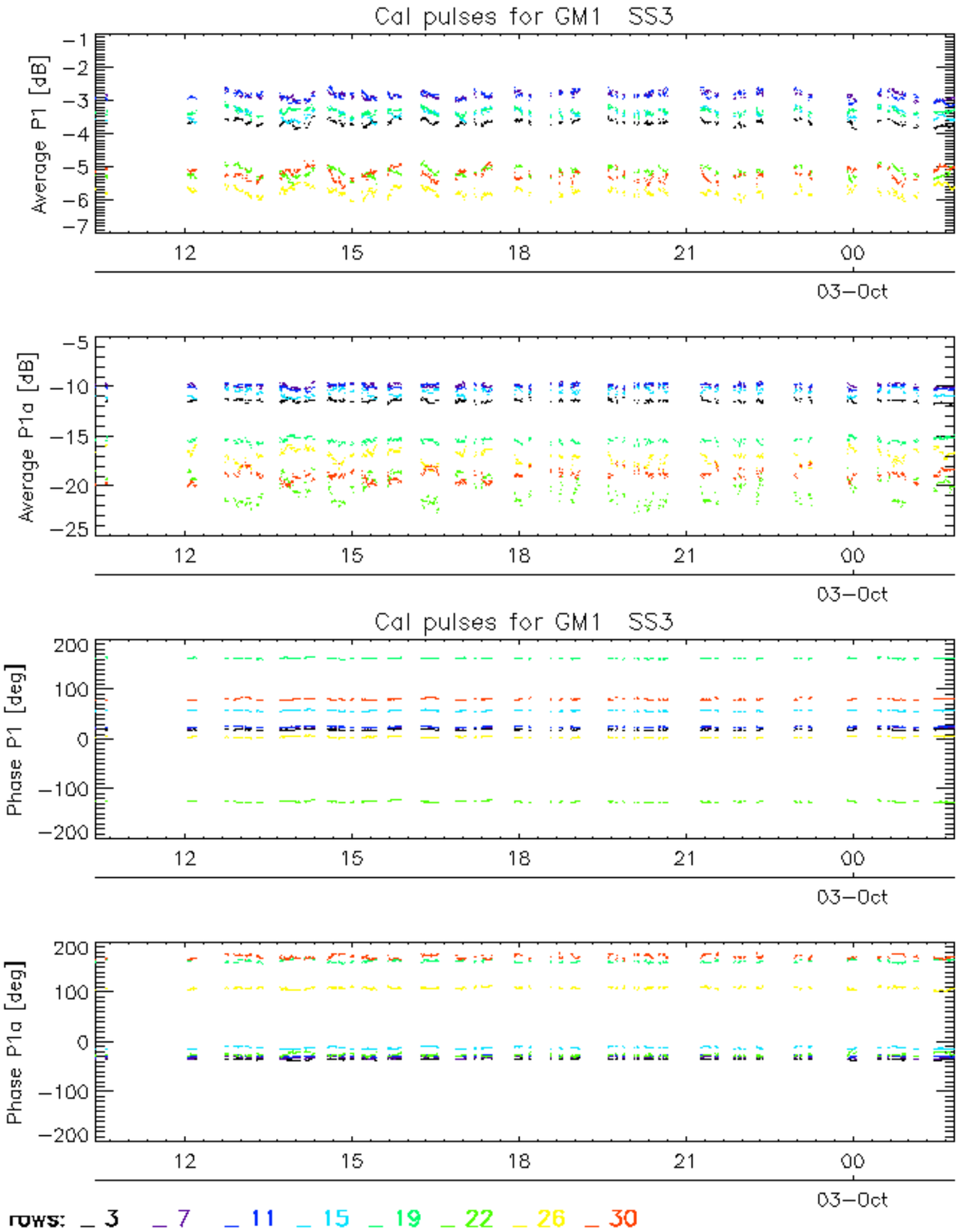
Descending

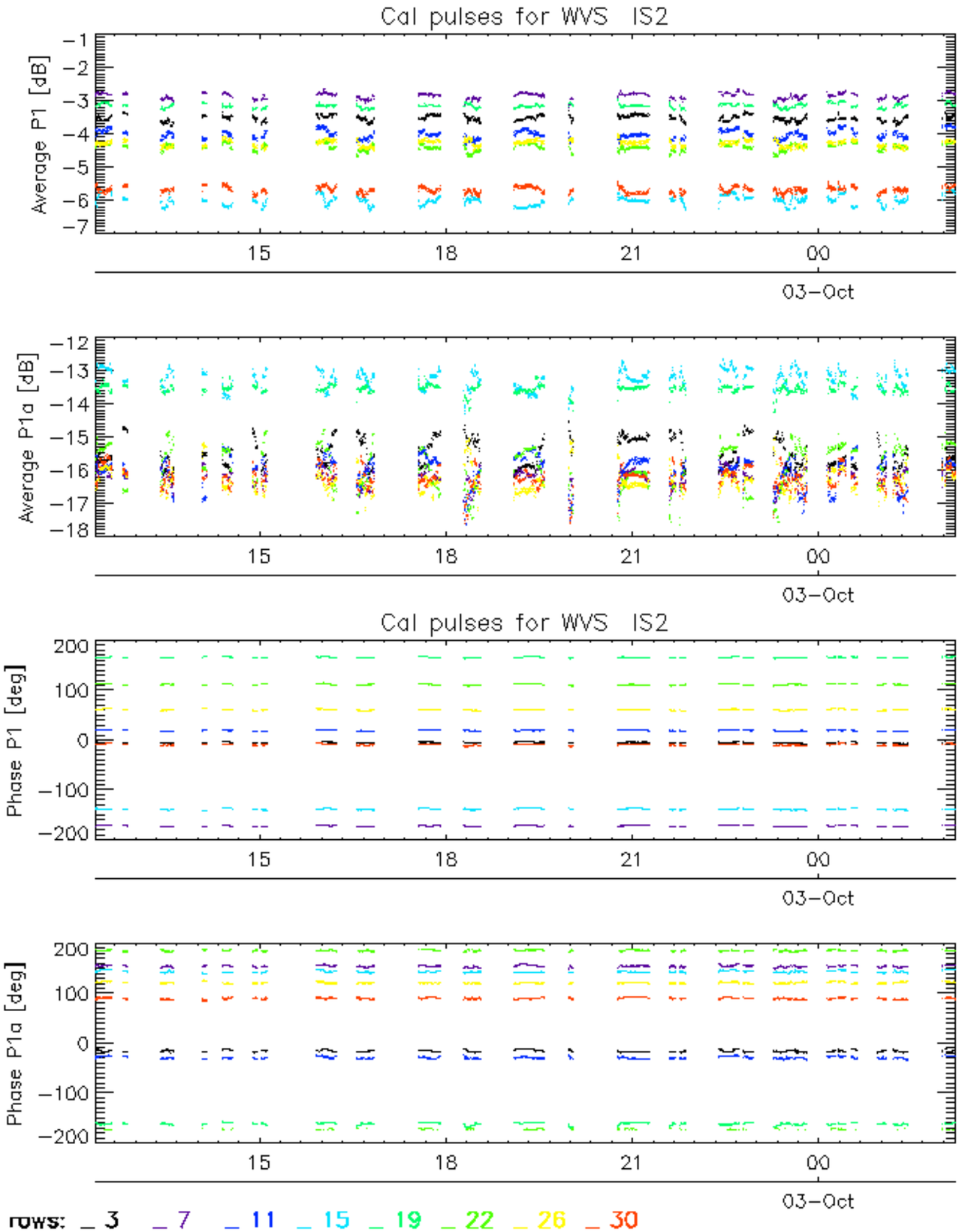
7.5 - Absolute Doppler for GM1

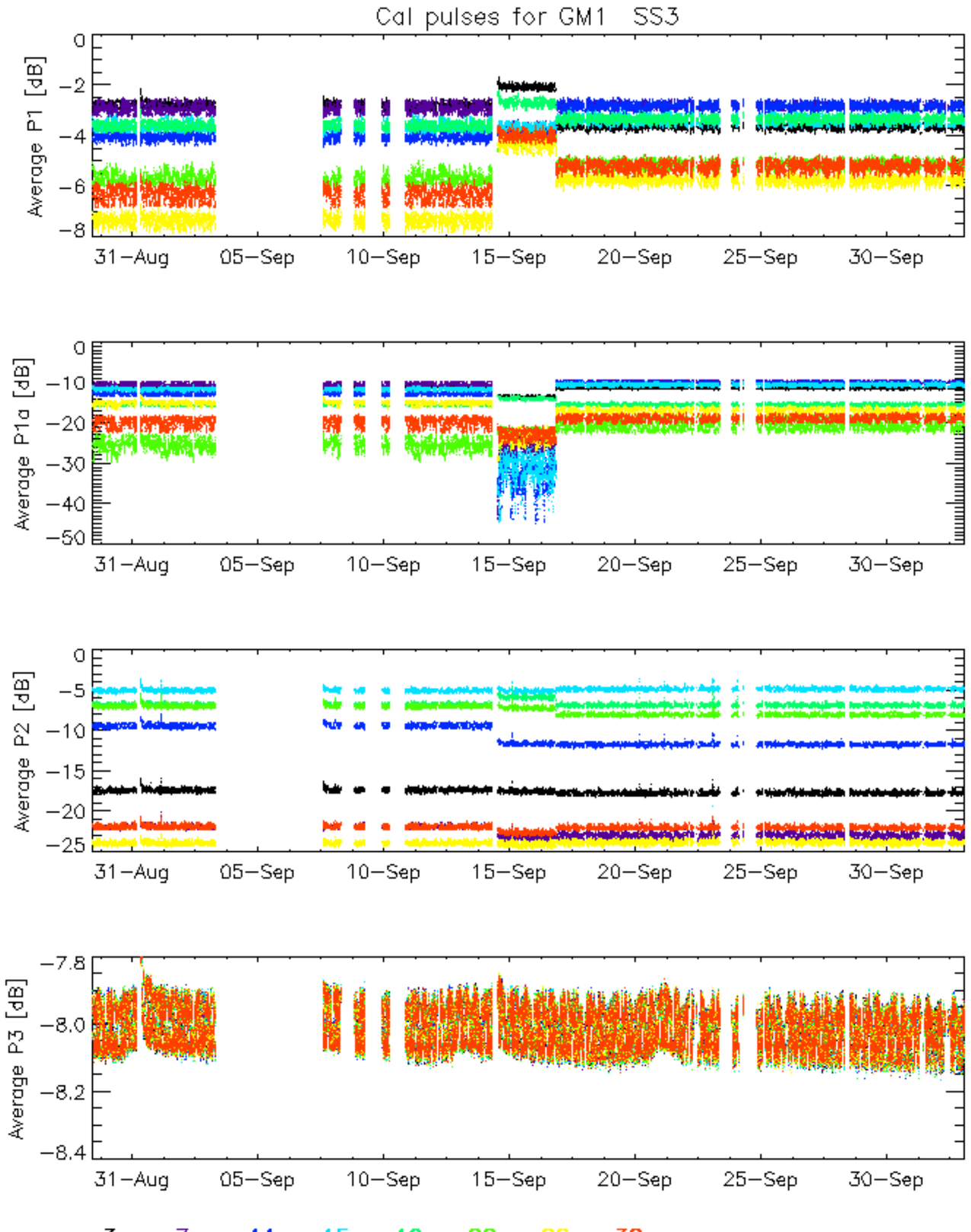
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

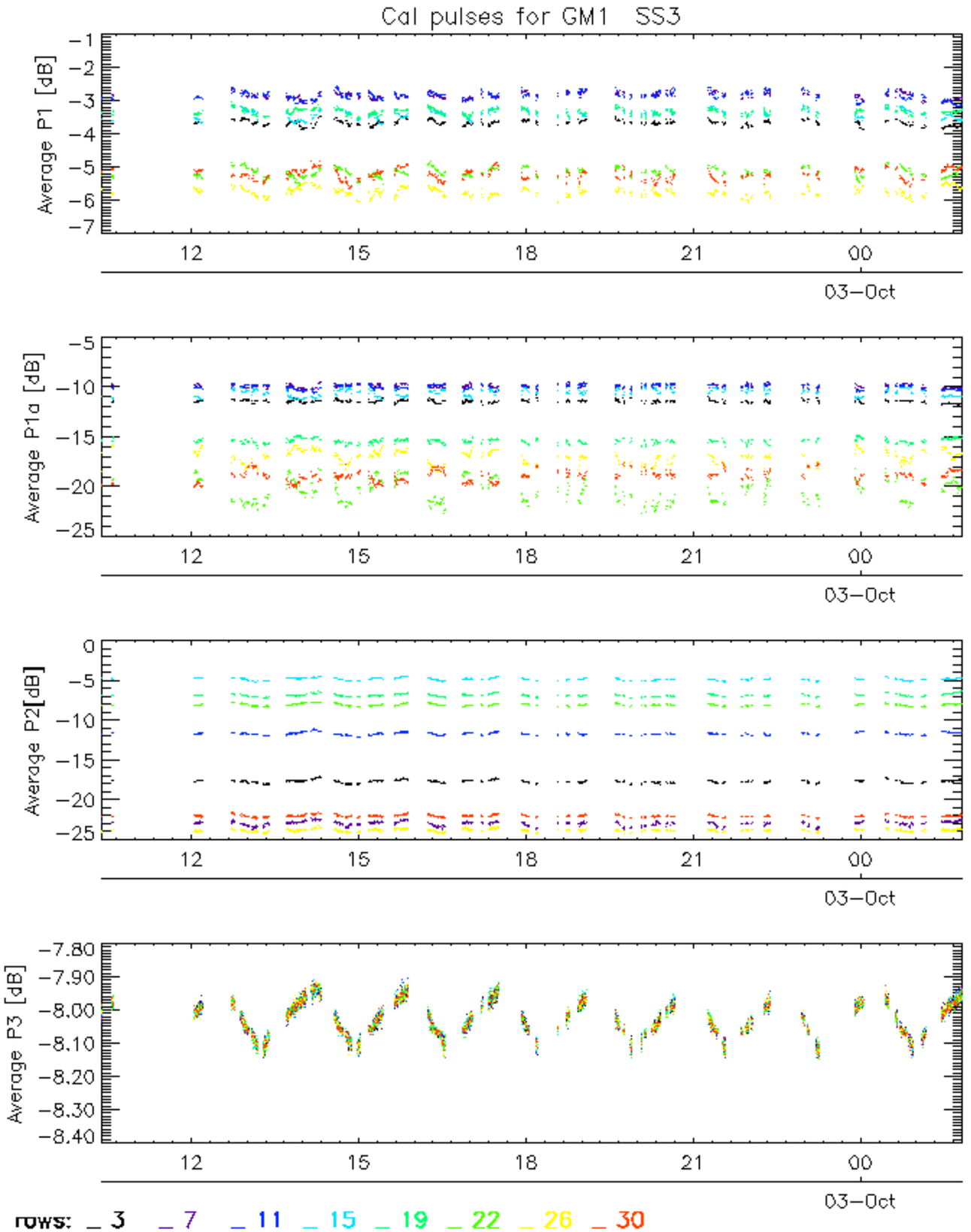
7.6 - Doppler evolution versus ANX for GM1

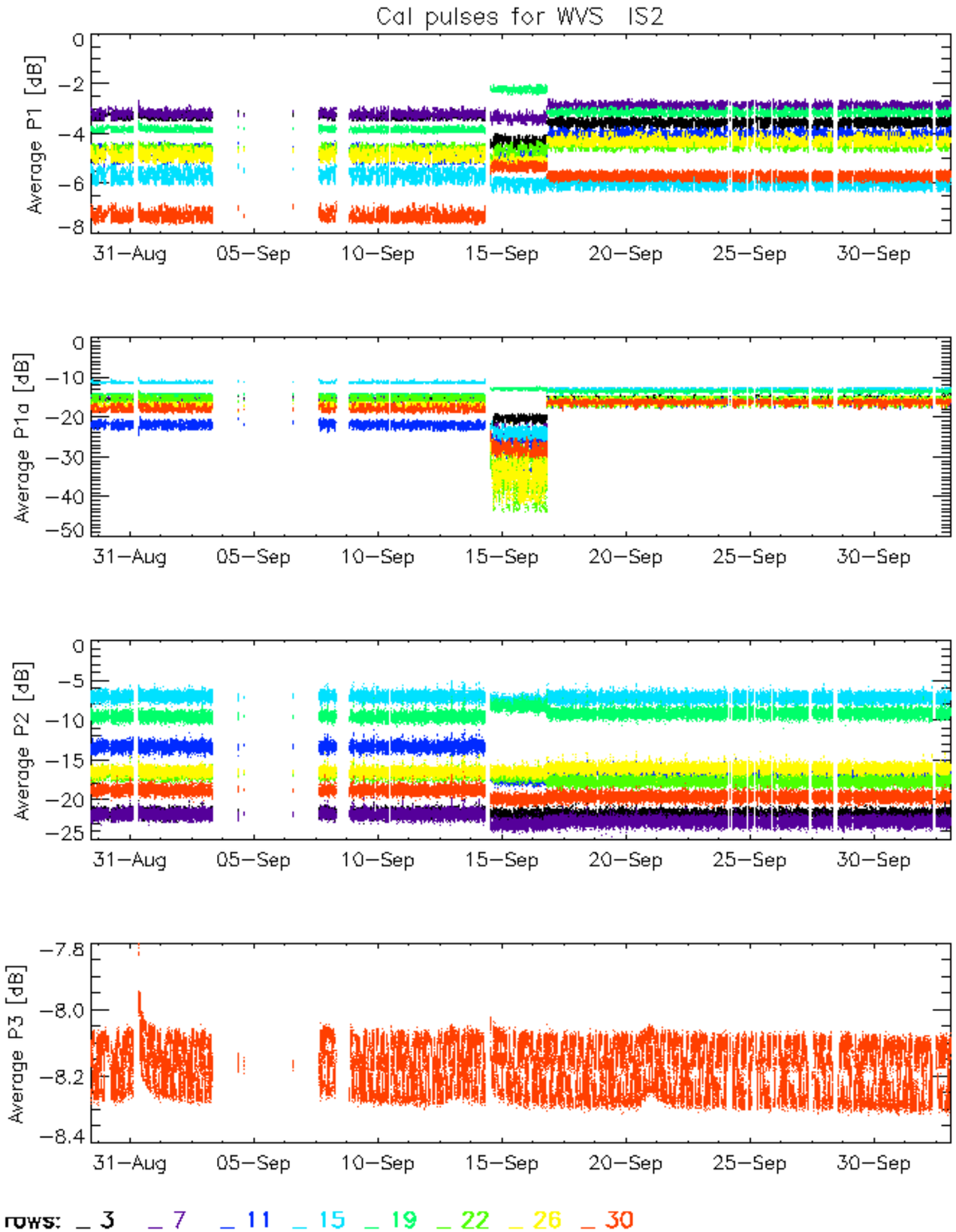
Evolution Doppler error versus ANX
☒

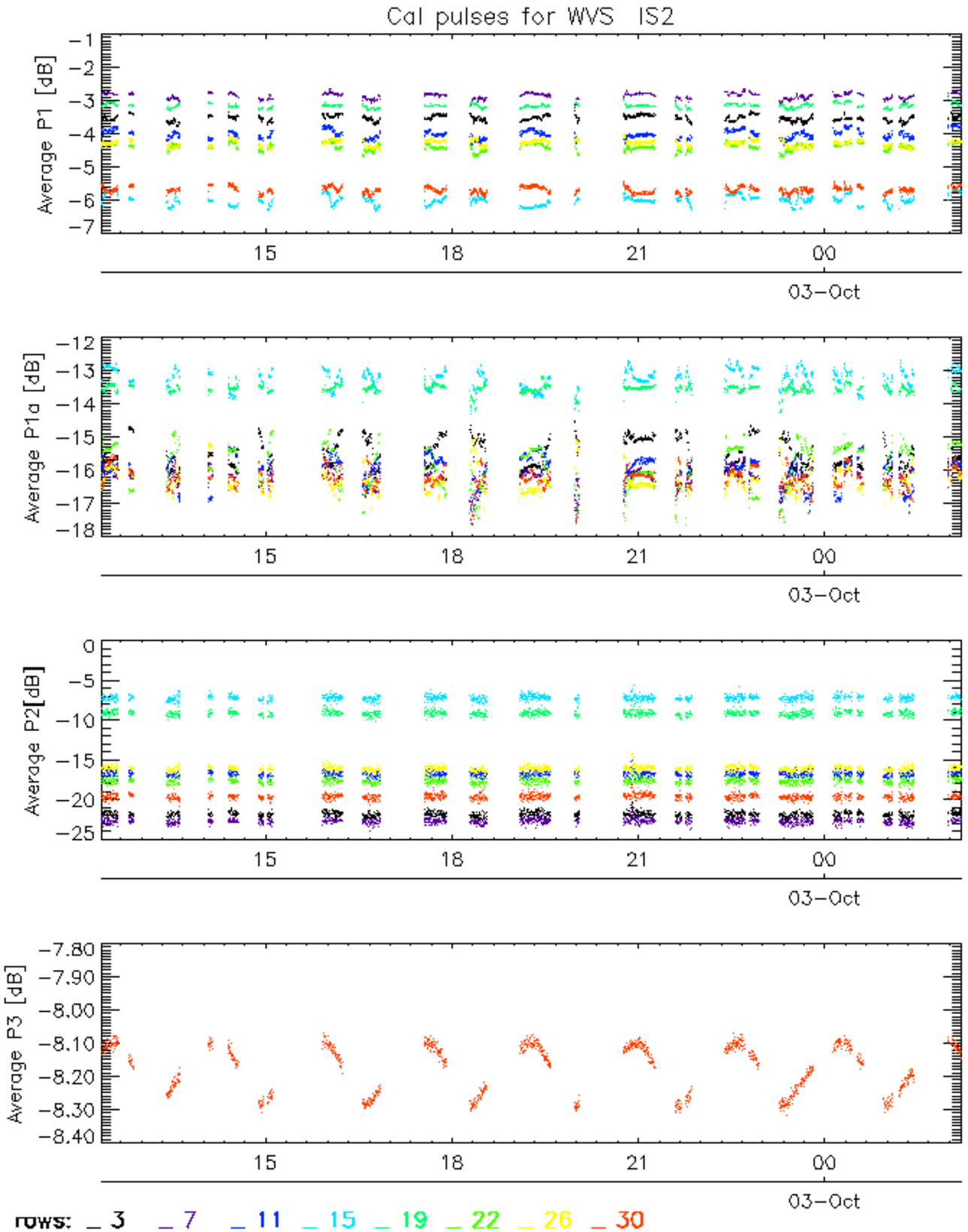

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
12
15
18
21
00
03−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
12
15
18
21
00
03−Oct
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
12
15
18
21
00
03−Oct
Phase P1a [deg]
200
100
0
−100
−200
12
15
18
21
00
03−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
15
18
21
00
03−Oct
Average P1a [dB]
−12
−13
−14
−15
−16
−17
−18
15
18
21
00
03−Oct
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
15
18
21
00
03−Oct
Phase P1a [deg]
200
100
0
−100
−200
15
18
21
00
03−Oct
rows: 3 7 11 15 19 22 26 30

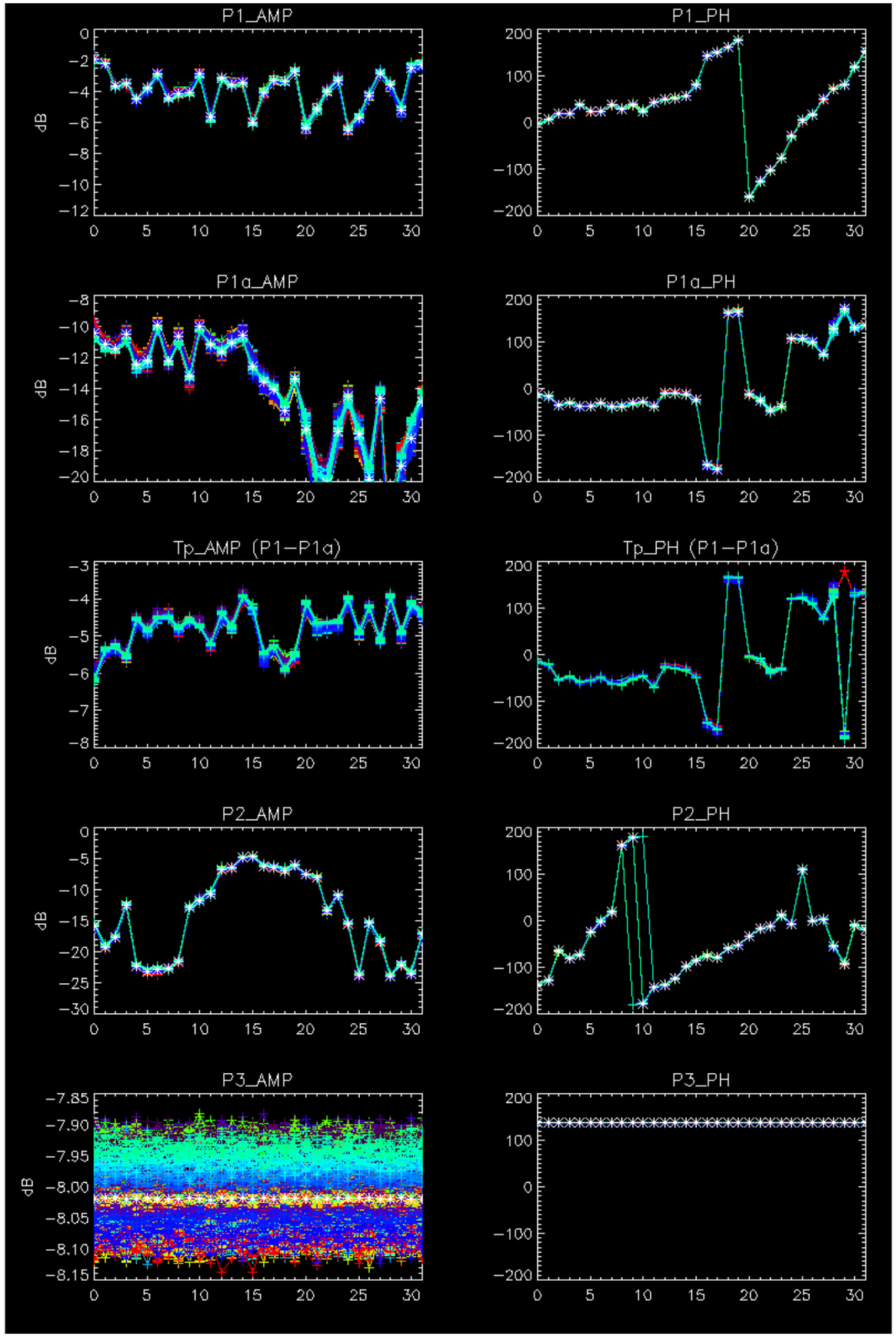

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
0
−10
−20
−30
−40
−50
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

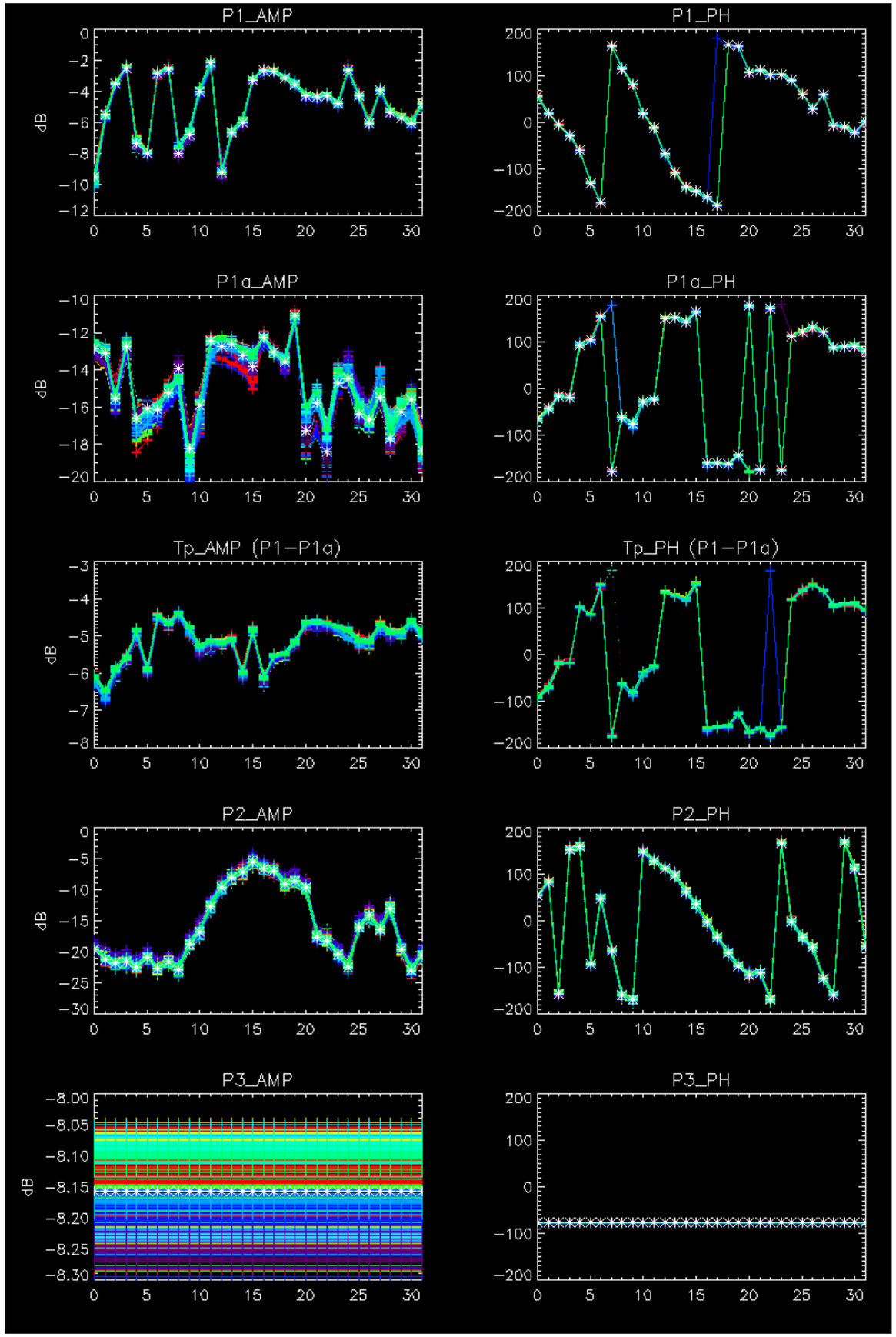

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
12
15
18
21
00
03−Oct
Average P1a [dB]
−5
−10
−15
−20
−25
12
15
18
21
00
03−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
00
03−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
12
15
18
21
00
03−Oct
rows: _ 3 _ 7 _ 11 _ 15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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep
Average P1a [dB]
0
−10
−20
−30
−40
−50
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]
−1
−2
−3
−4
−5
−6
−7
15
18
21
00
03−Oct
Average P1a [dB]
−12
−13
−14
−15
−16
−17
−18
15
18
21
00
03−Oct
Average P2[dB]
0
−5
−10
−15
−20
−25
15
18
21
00
03−Oct
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
15
18
21
00
03−Oct
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

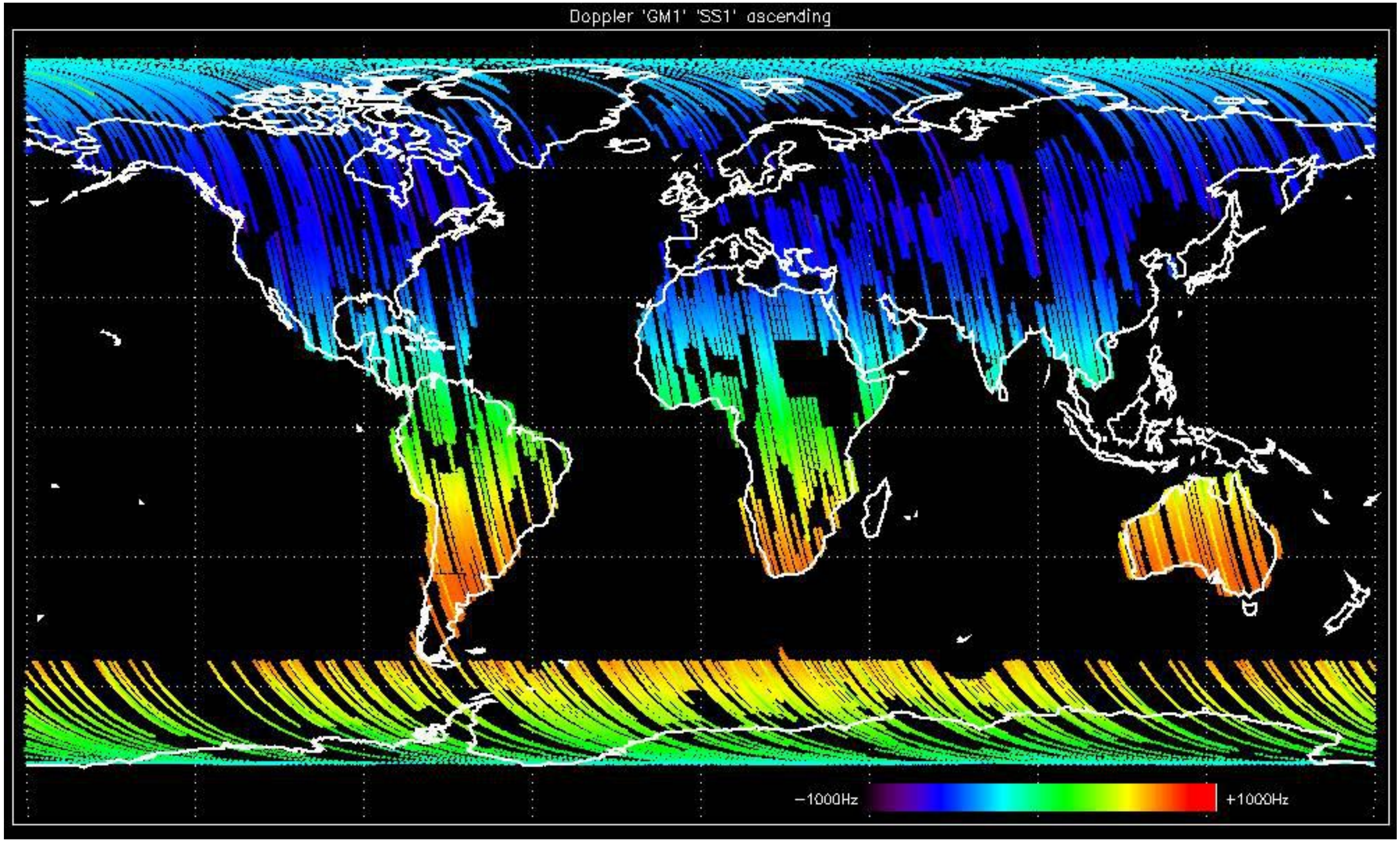
No anomalies observed.

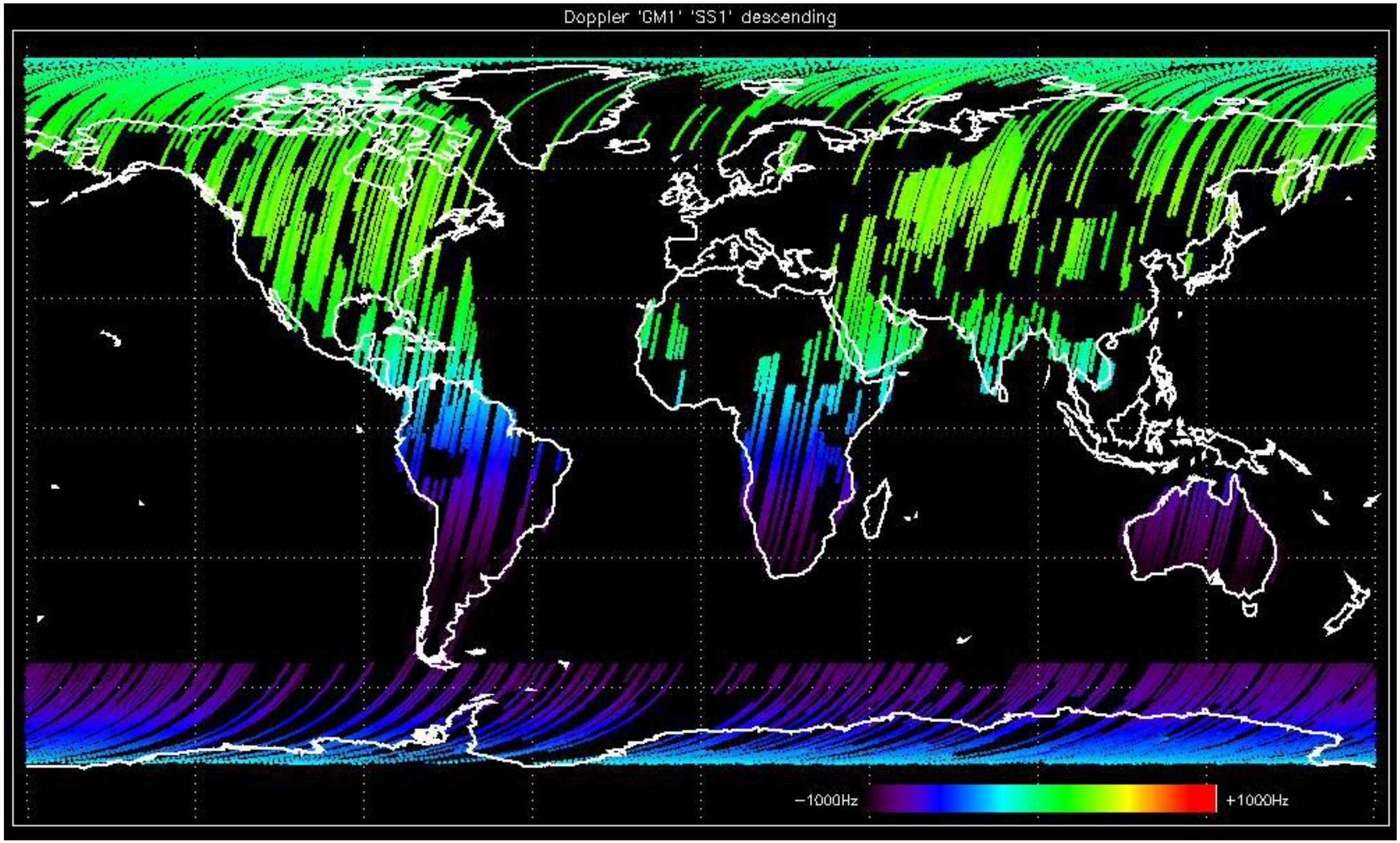

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

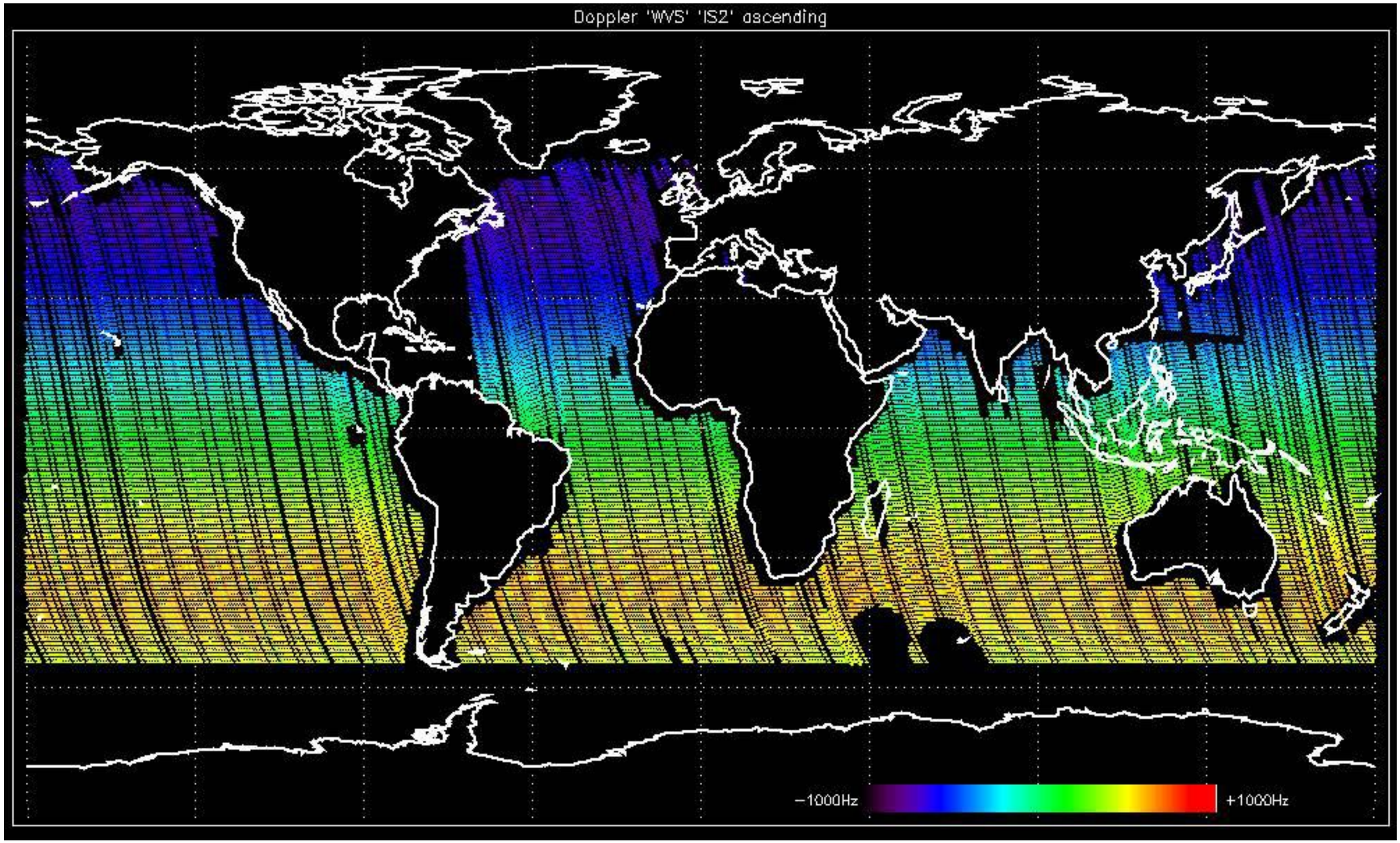

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

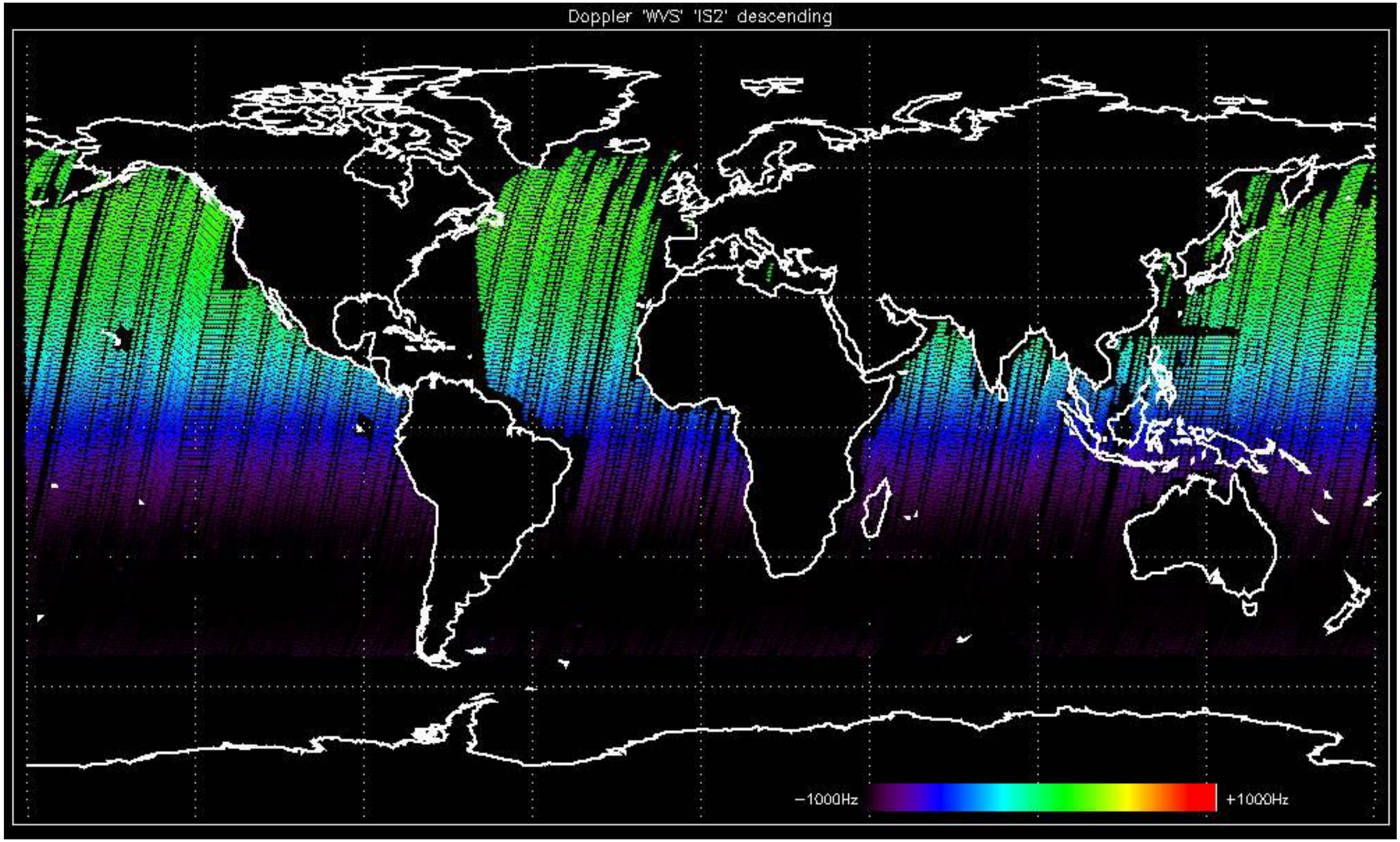
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

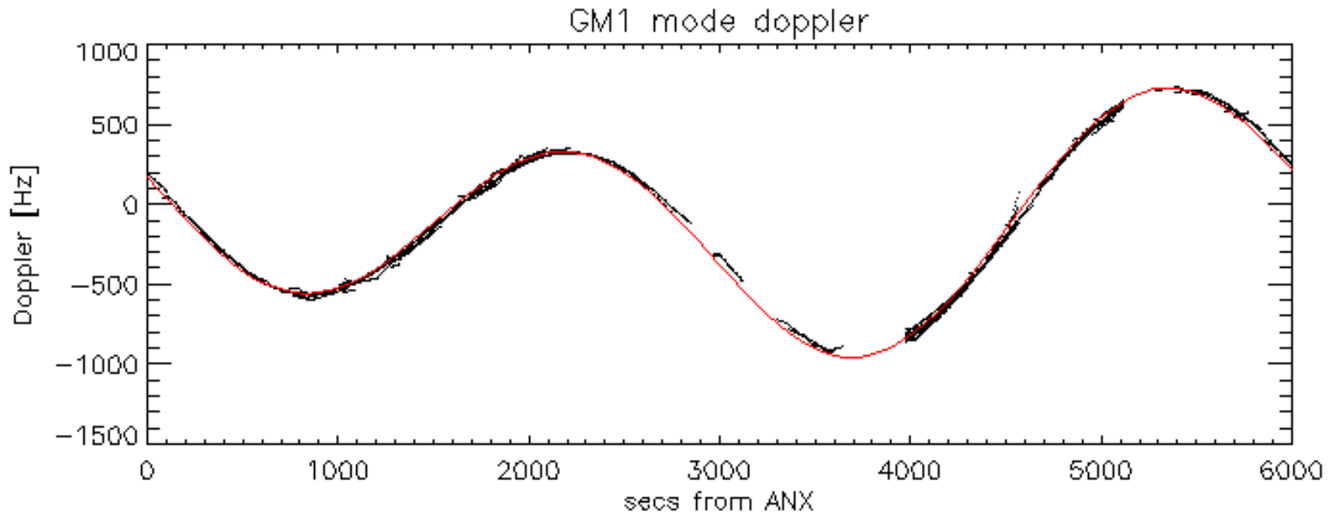
Preliminary report.The data is not yet controled

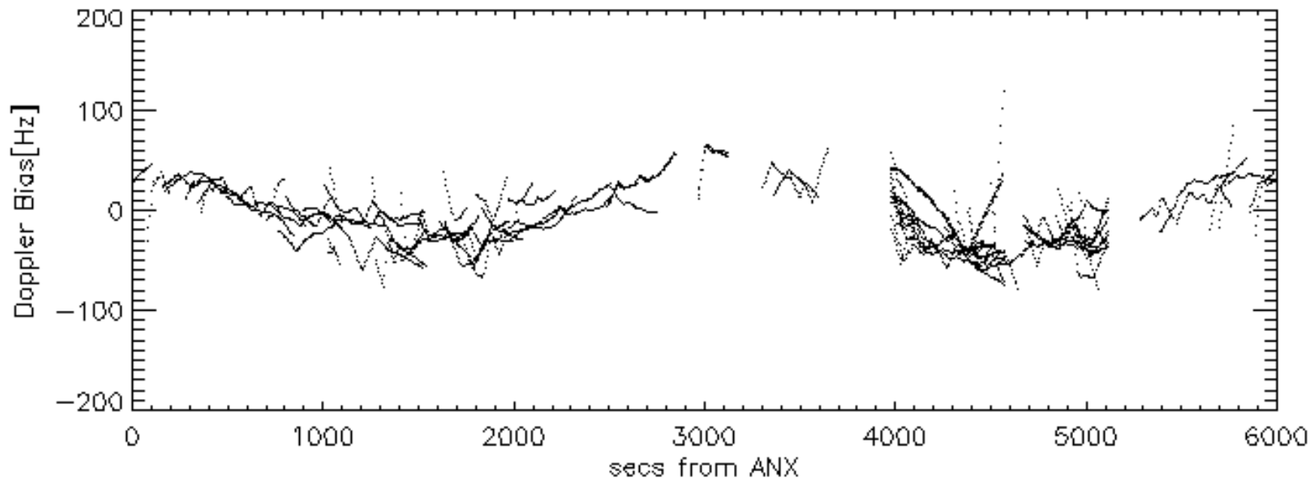

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

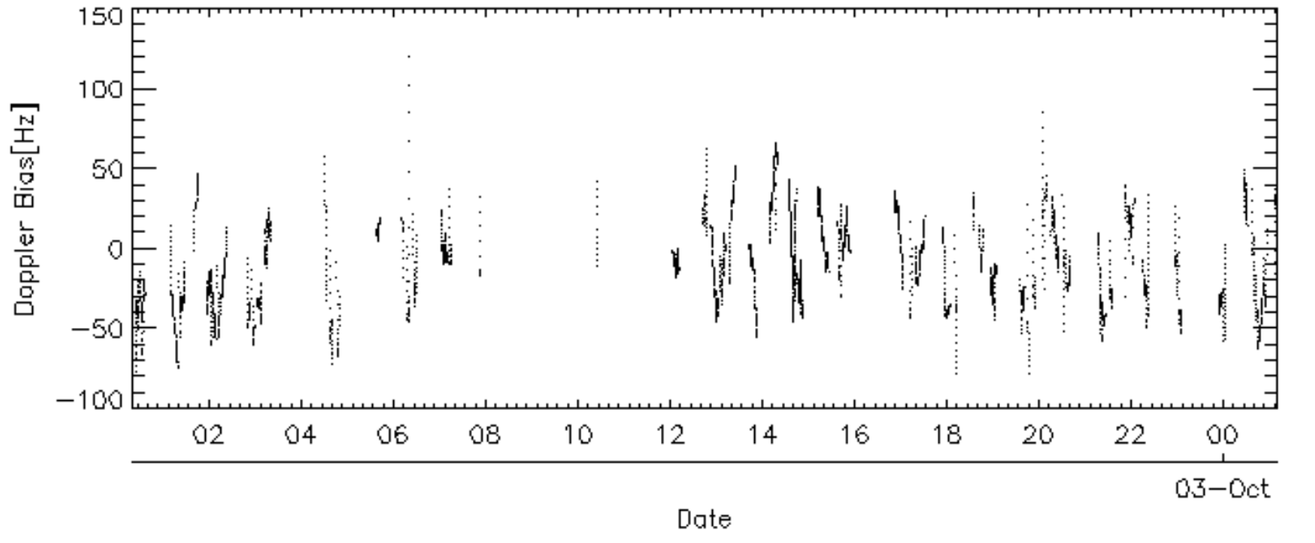

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

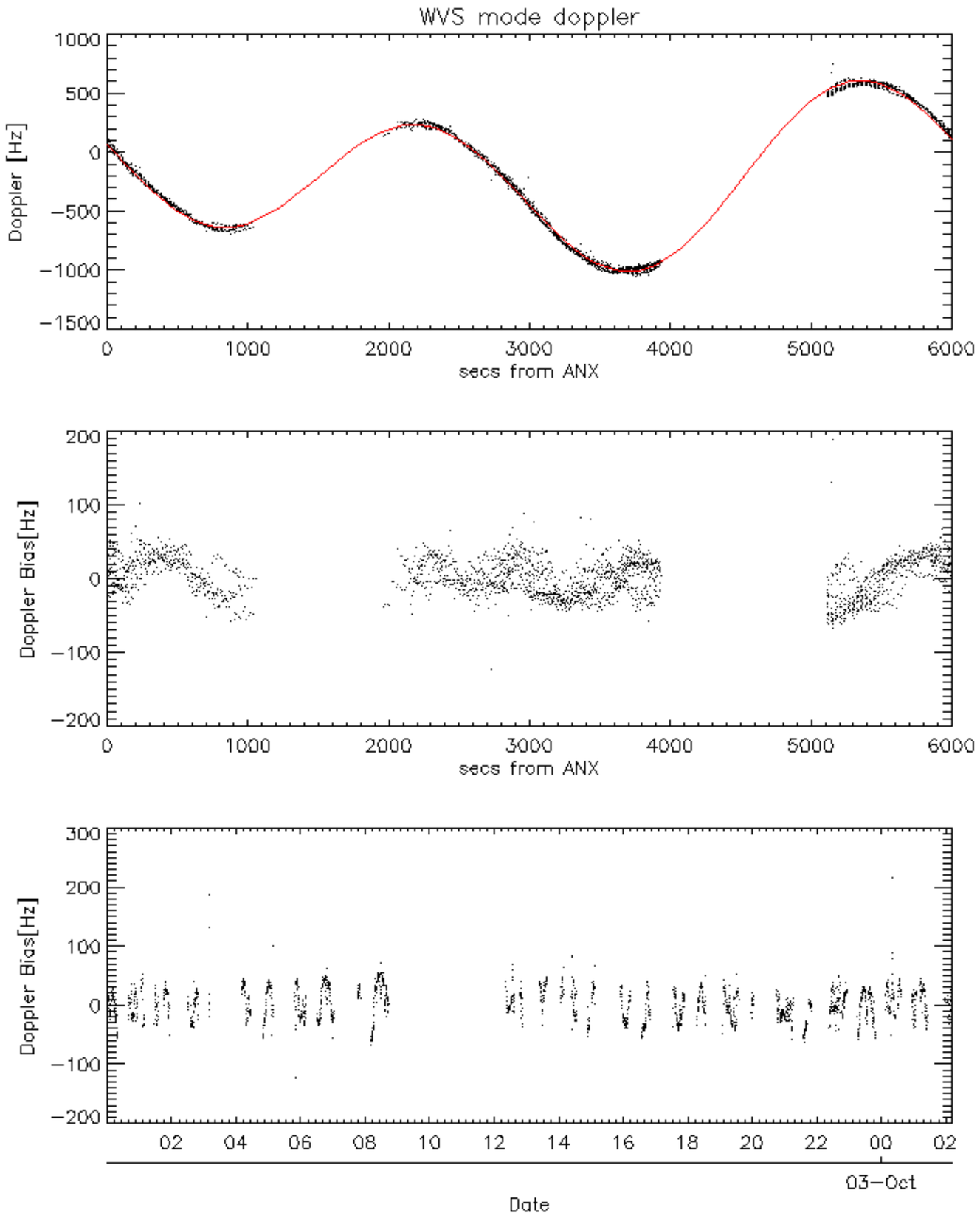

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

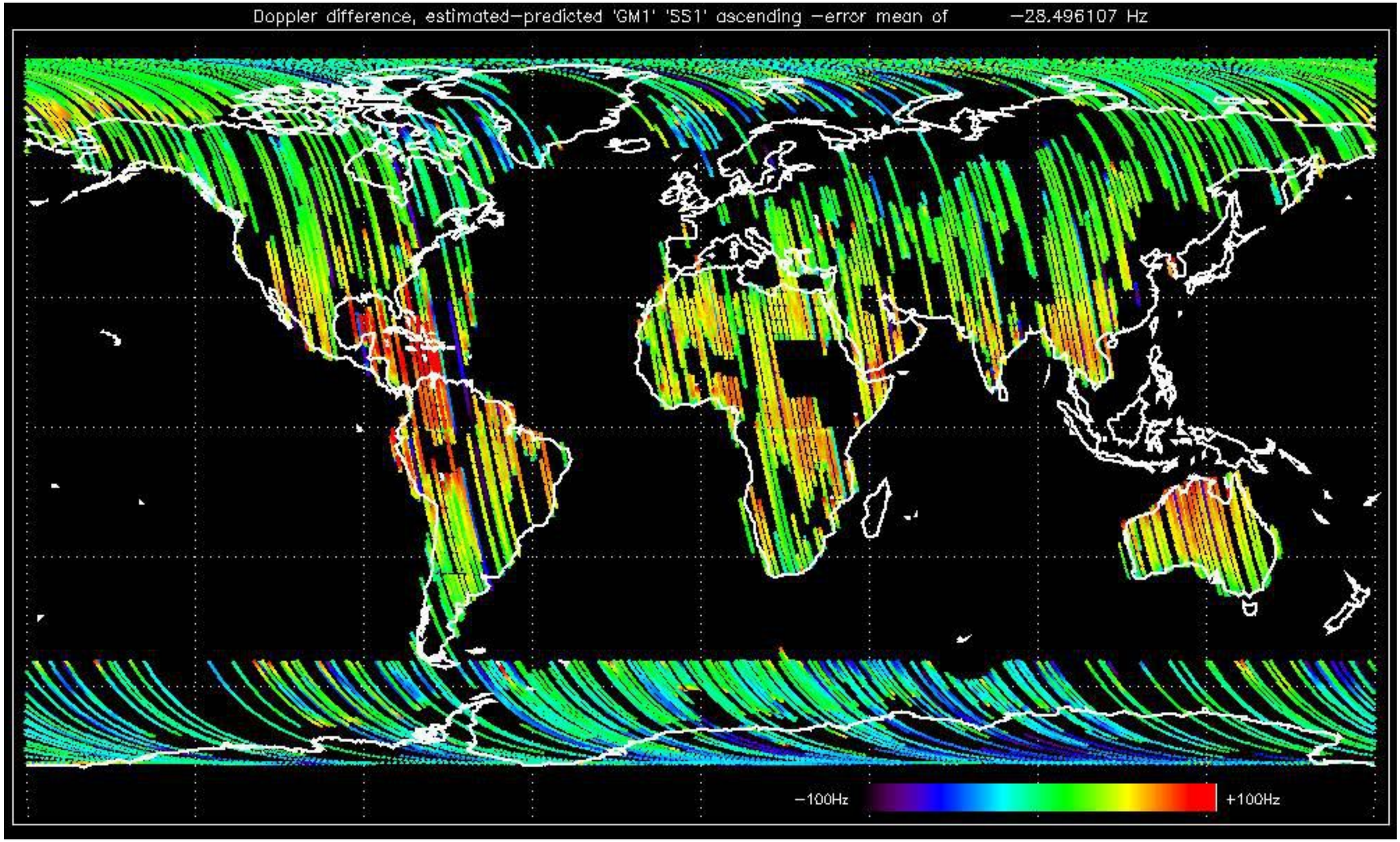

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

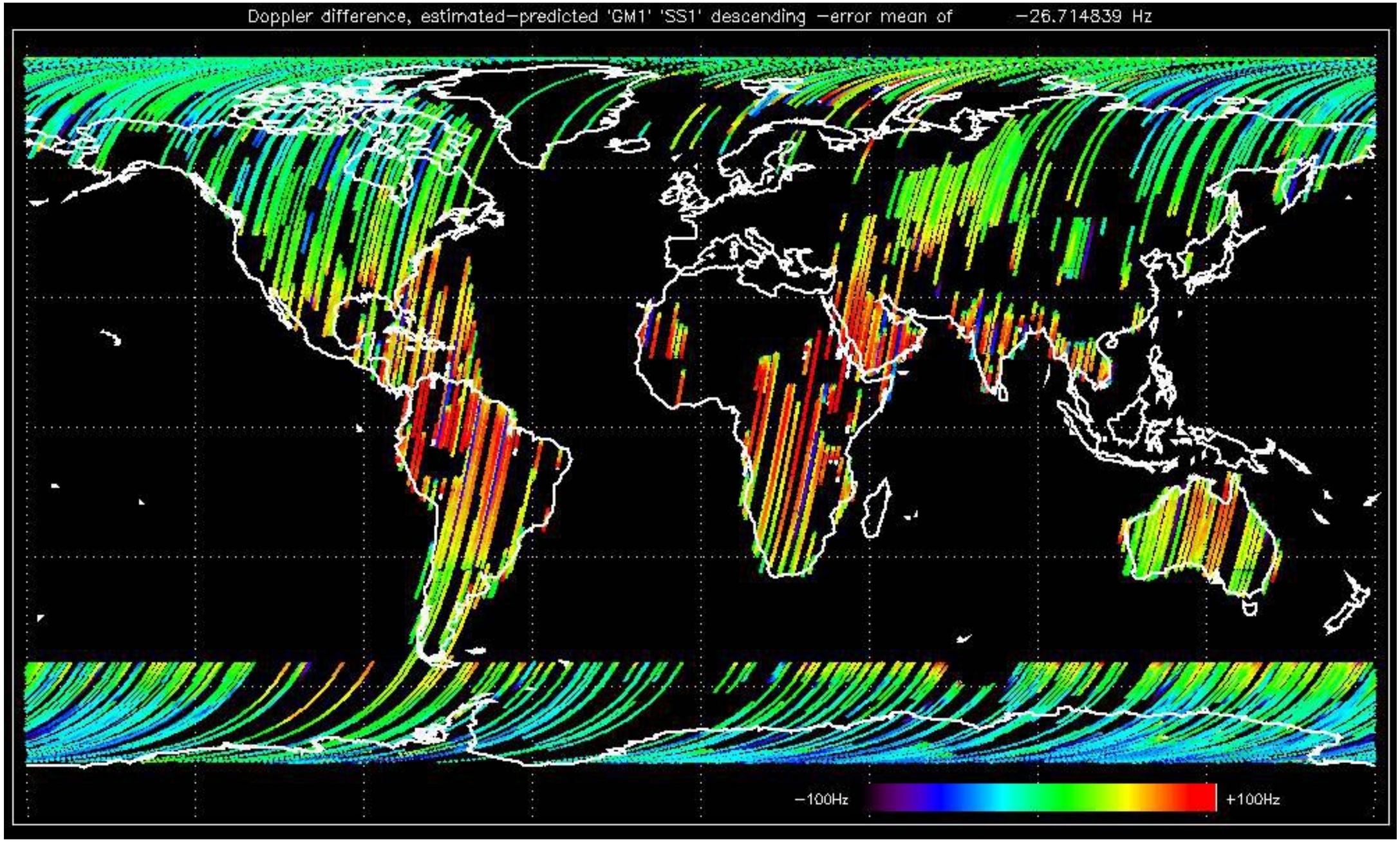

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

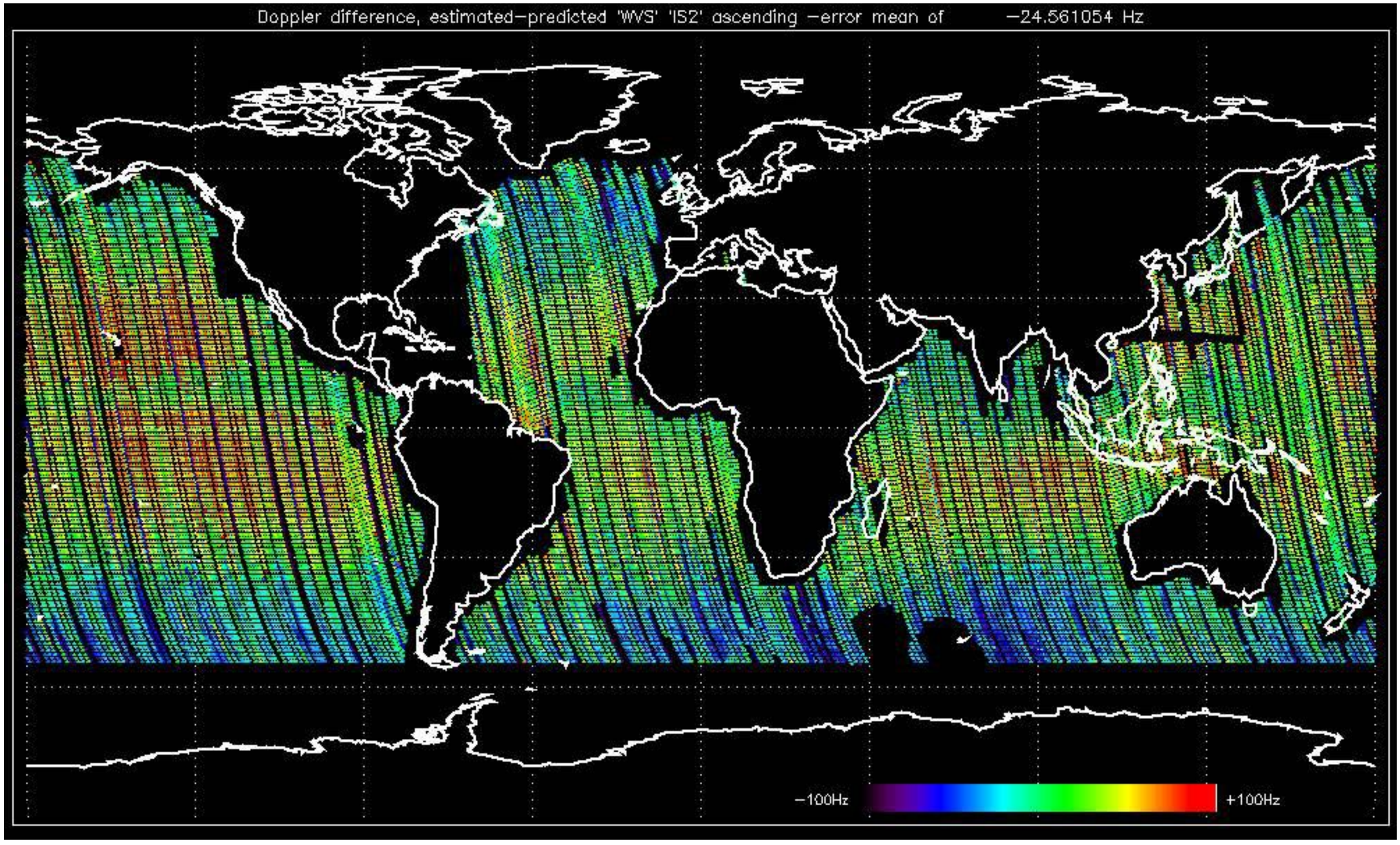

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

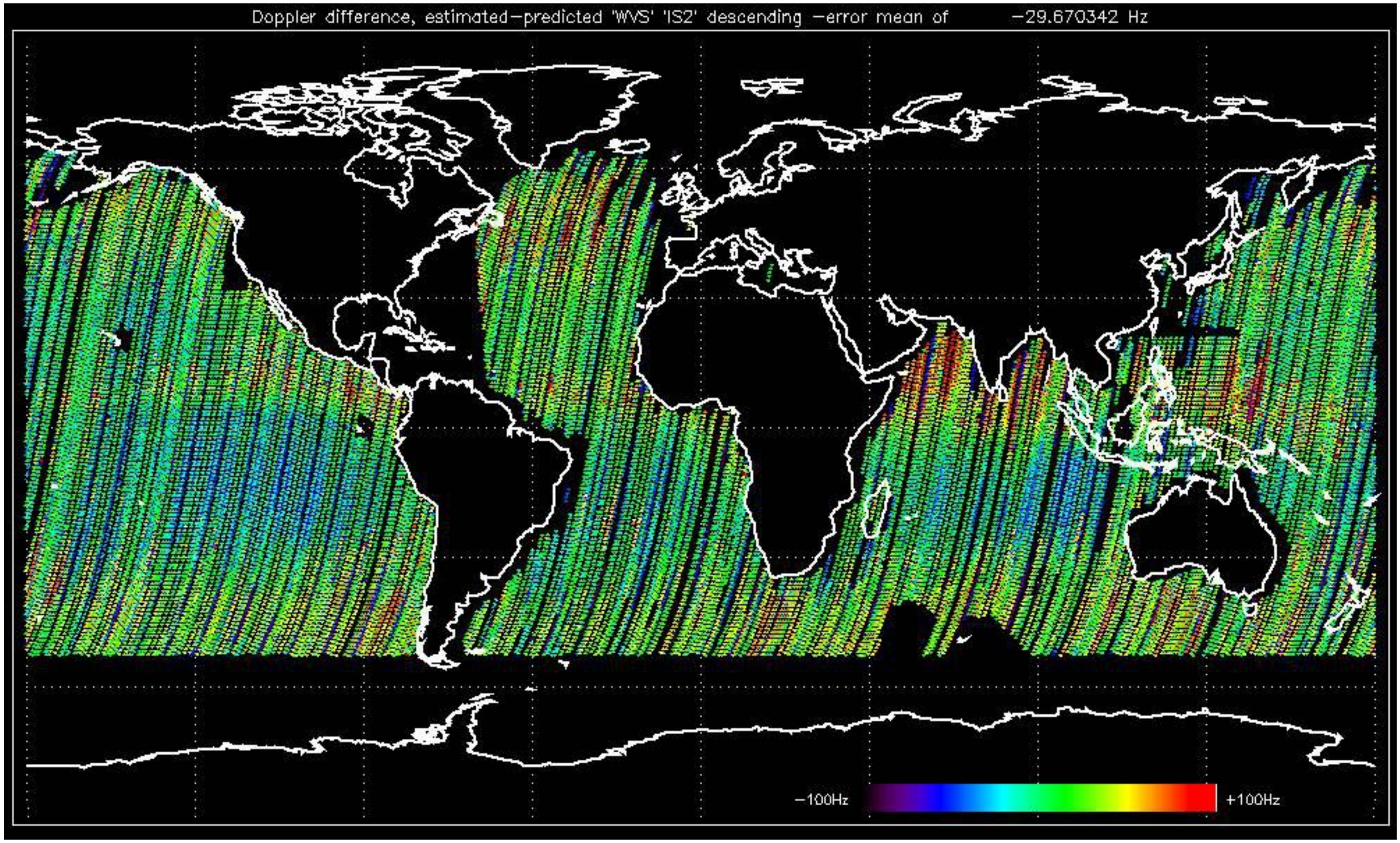

Doppler Bias[Hz]
150
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
03−Oct
Date


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
02
04
06
08
10
12
14
16
18
20
22
00
02
03−Oct
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −28.496107 Hz
−100Hz
+100Hz

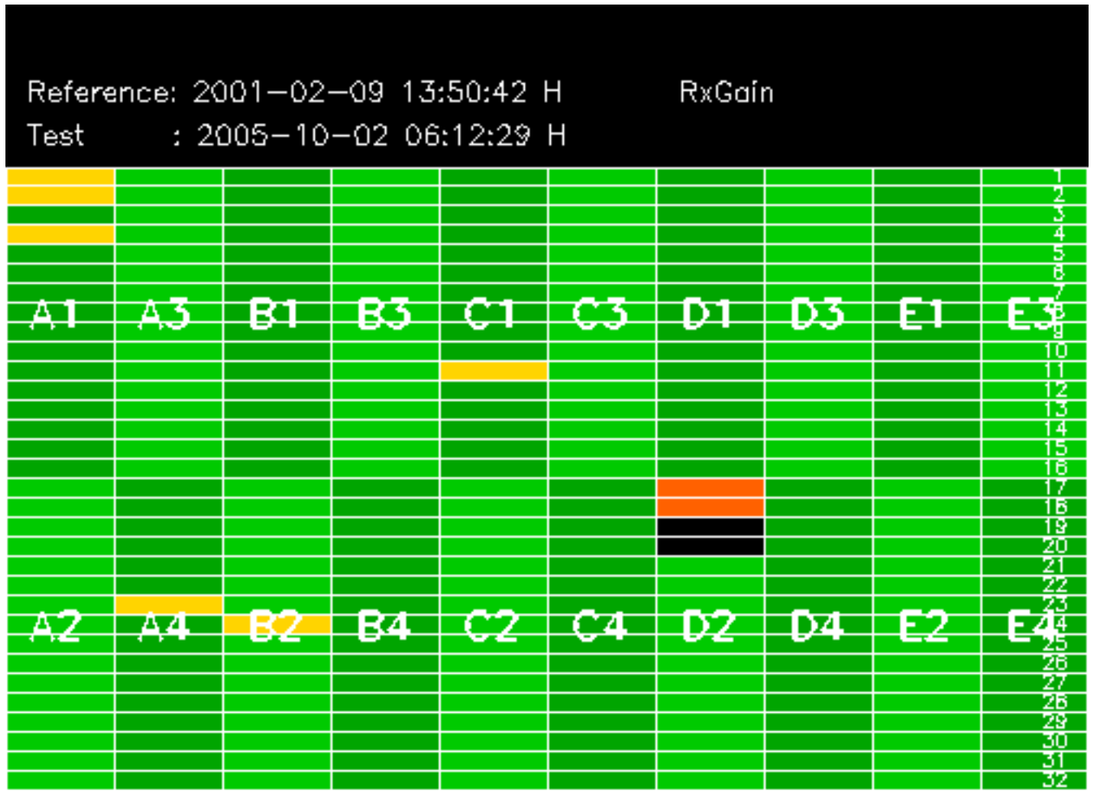

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -26.714839 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −24.561054 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −29.670342 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2005-10-02 06:12:29 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
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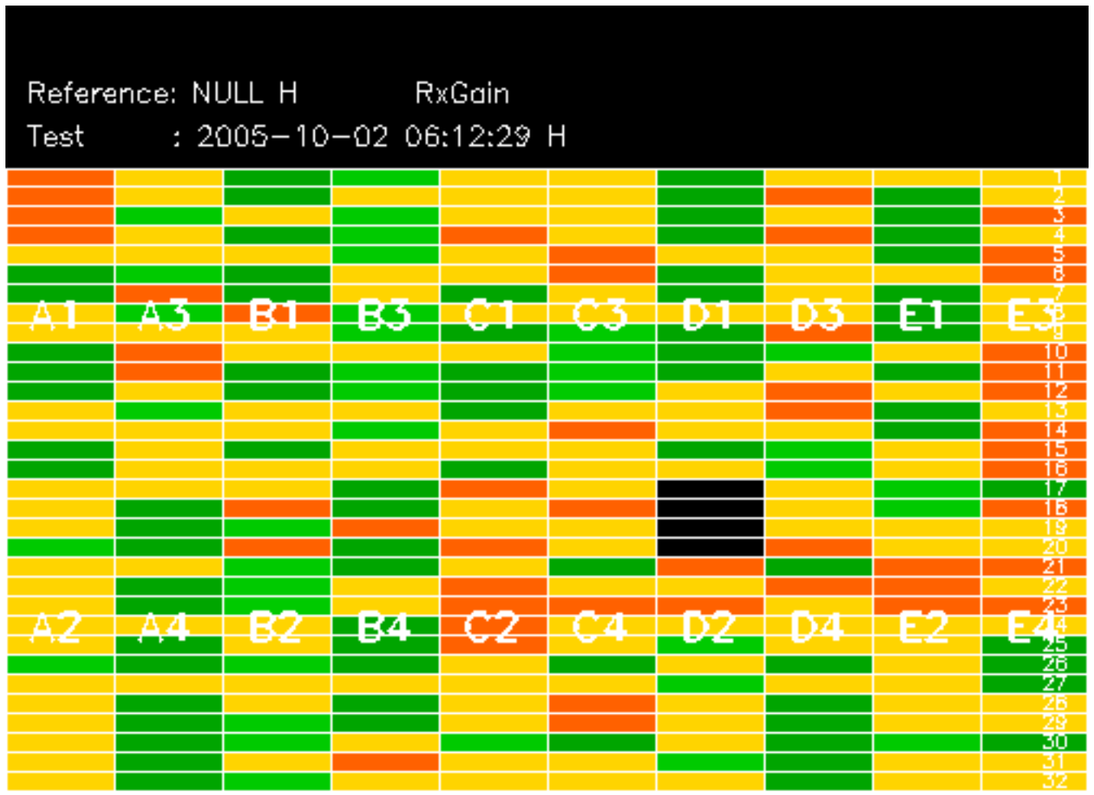
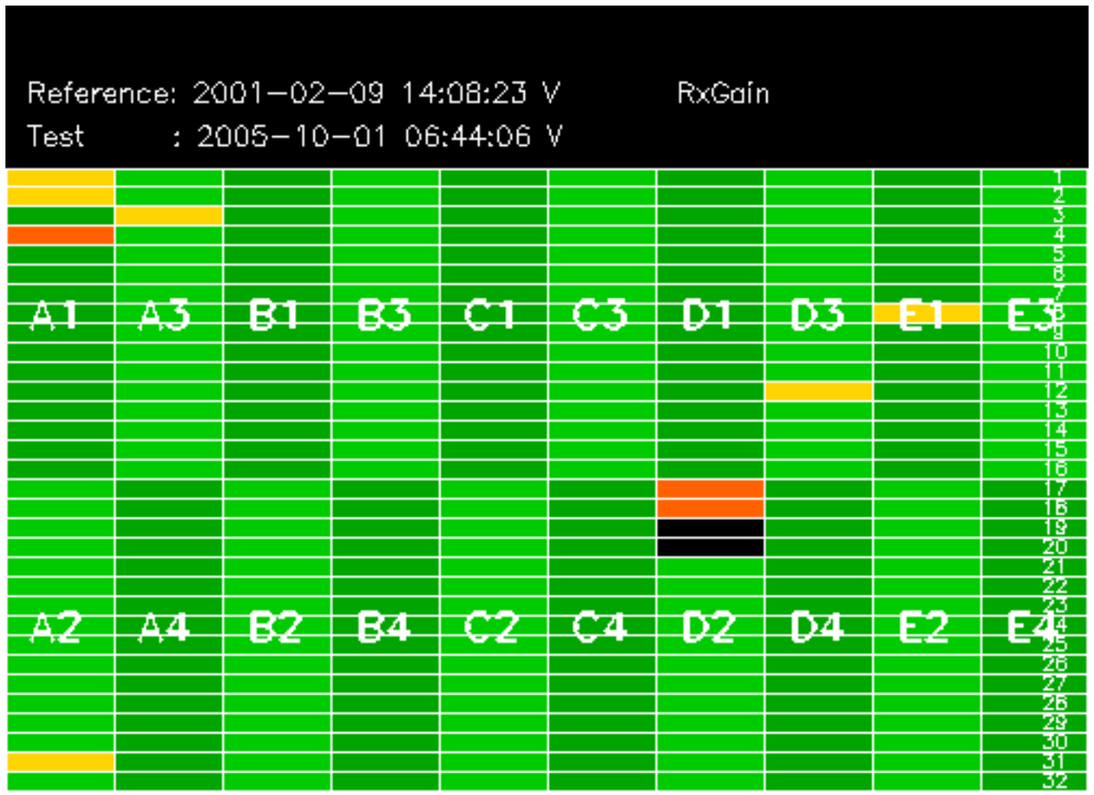

Reference: NULL H RxGain
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-10-01 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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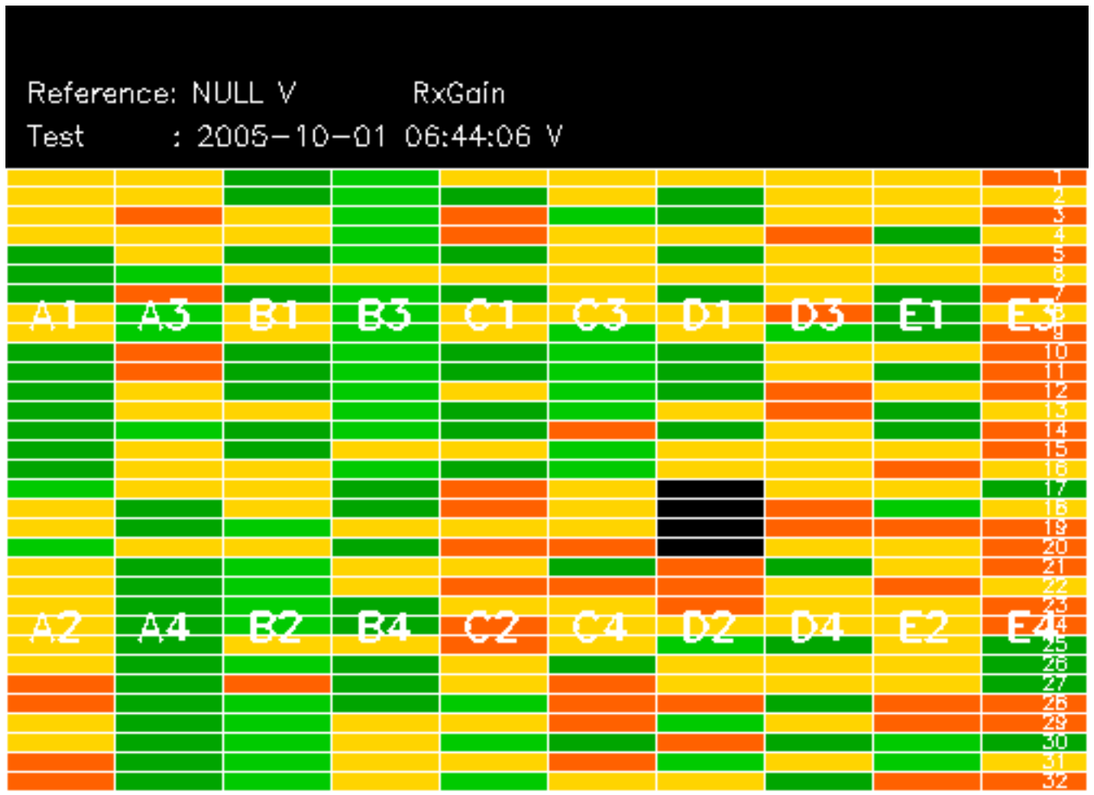
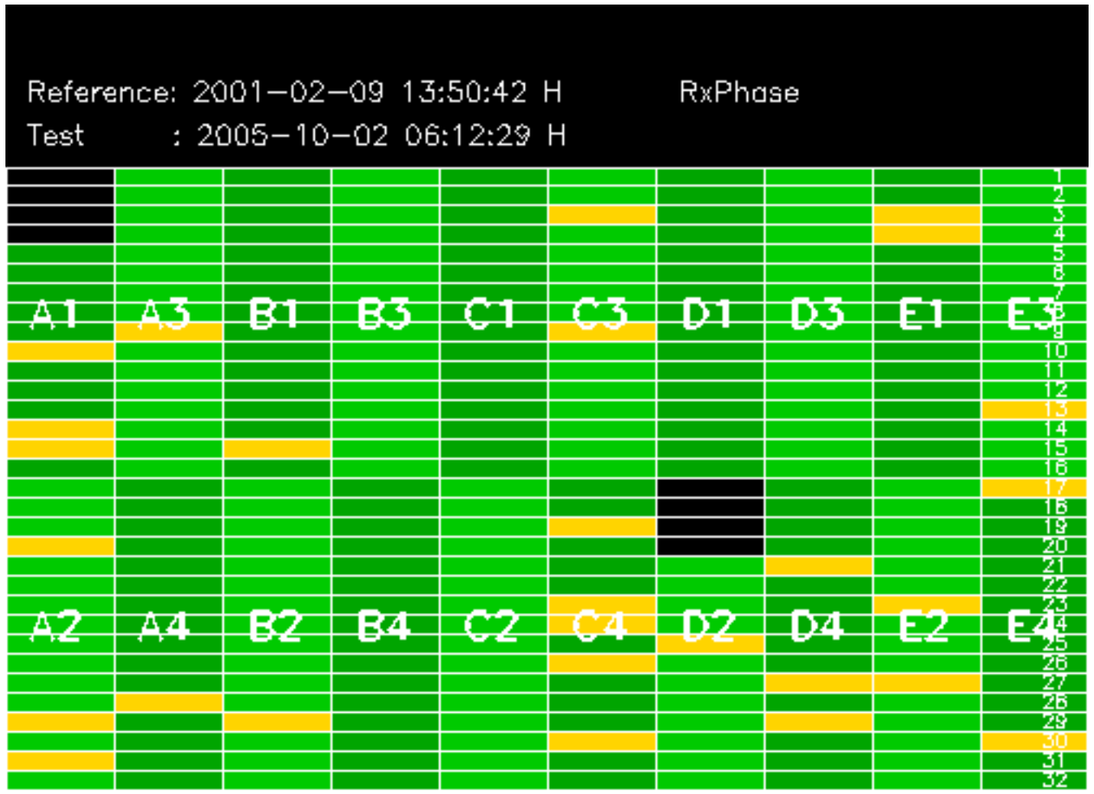

Reference: NULL V RxGain
Test : 2005-10-01 06:44:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-10-02 06:12:29 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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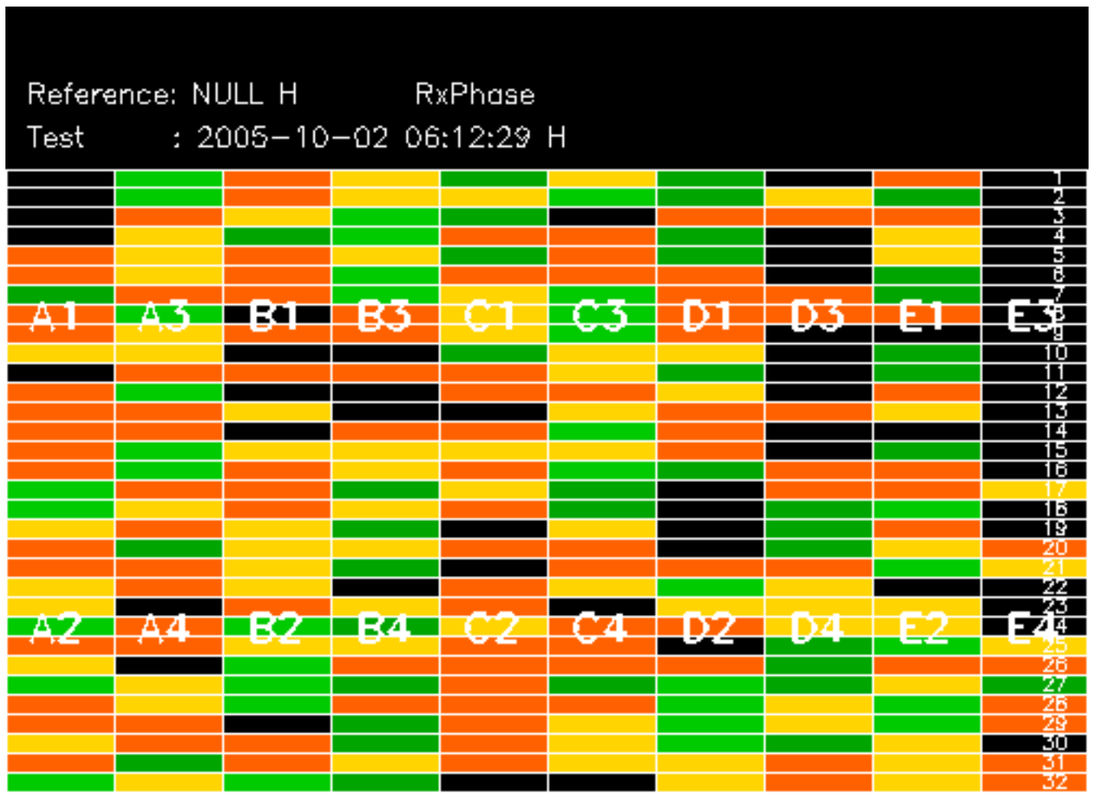
Reference: NULL H RxPhase
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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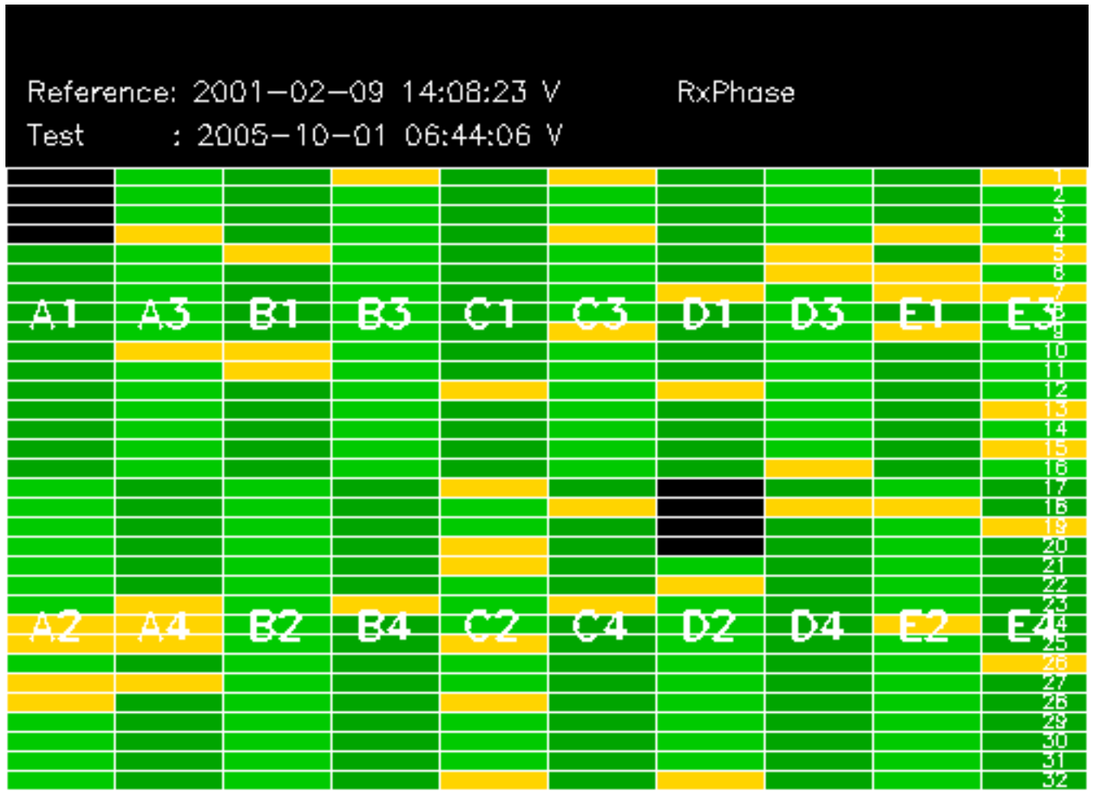
Reference: 2001-02-09 14:08:23 V
Test : 2005-10-01 06:44:06 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
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9
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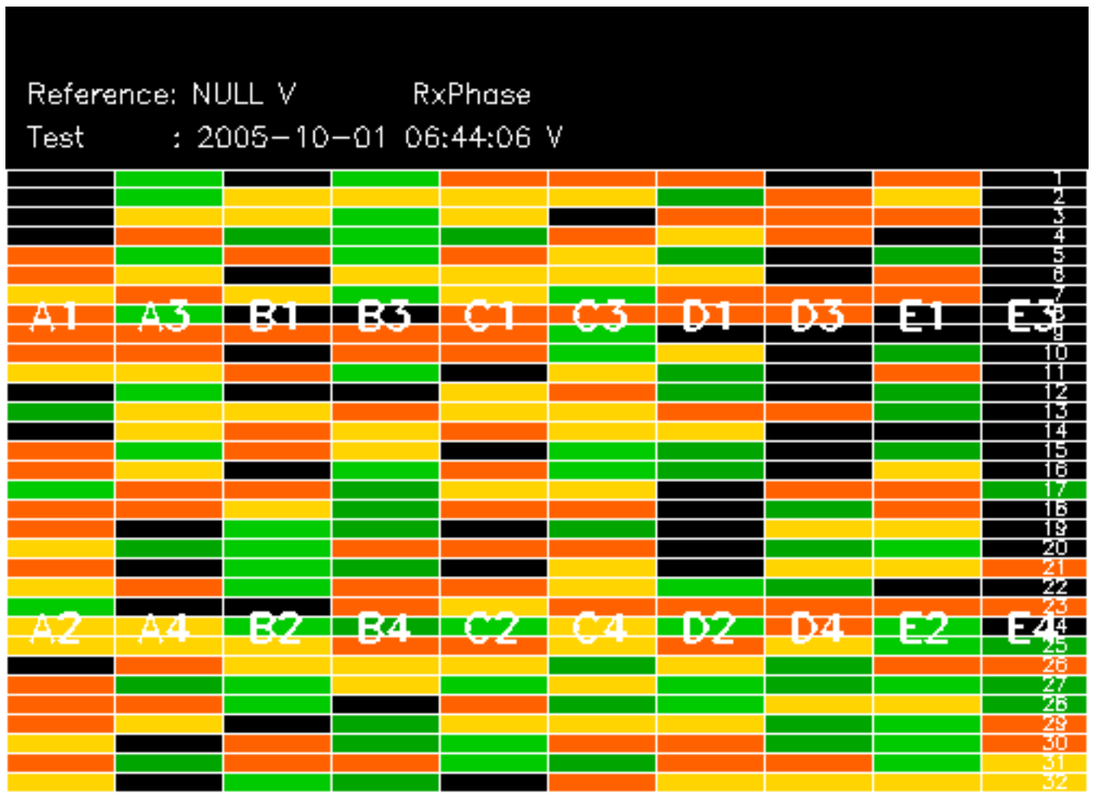
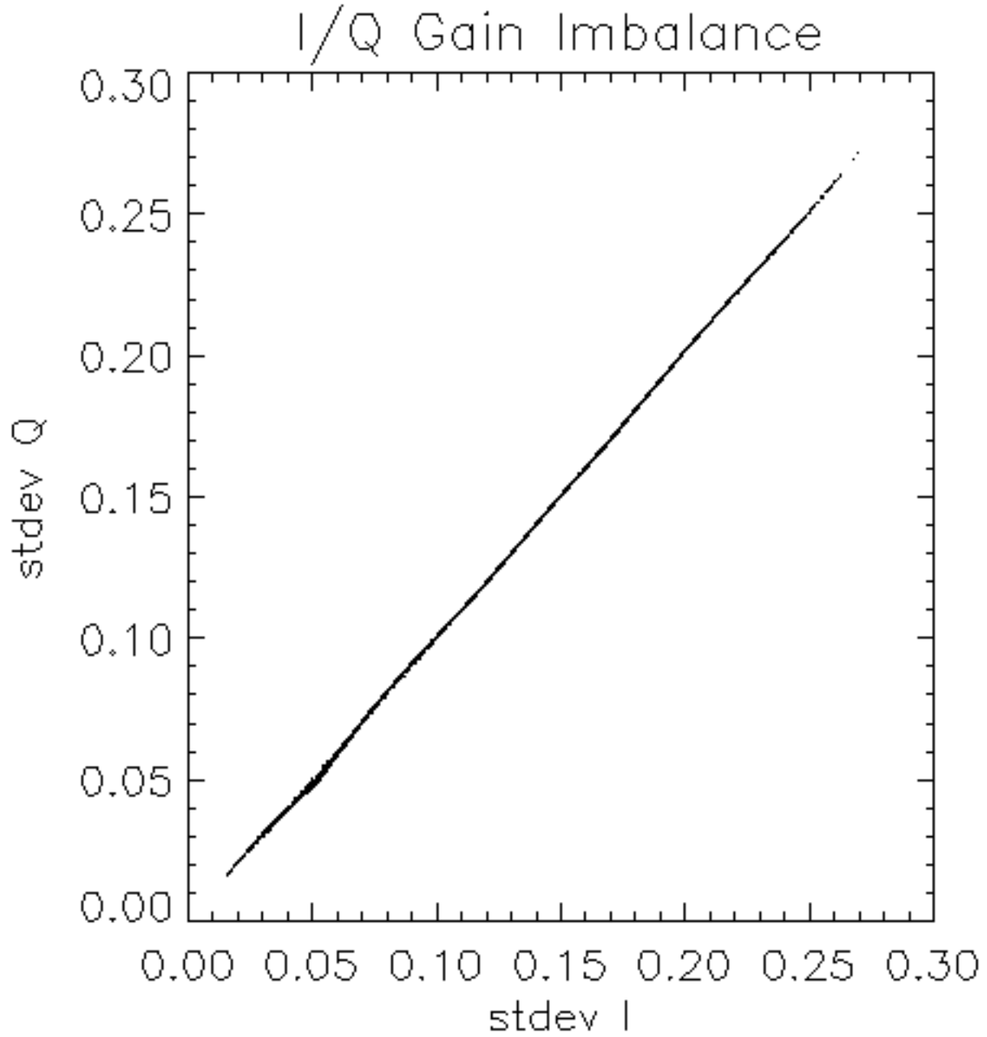
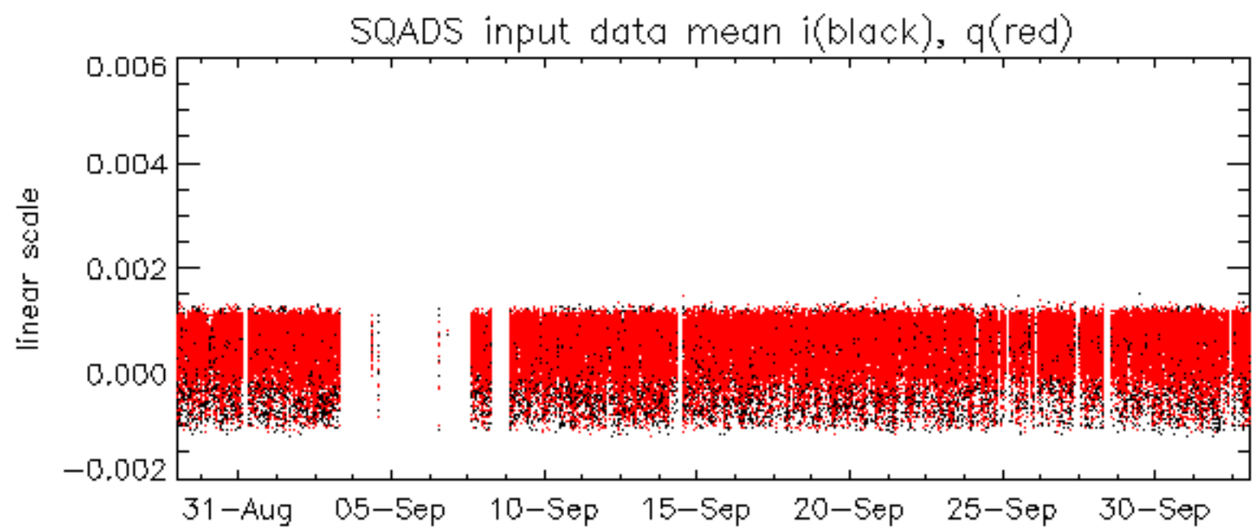
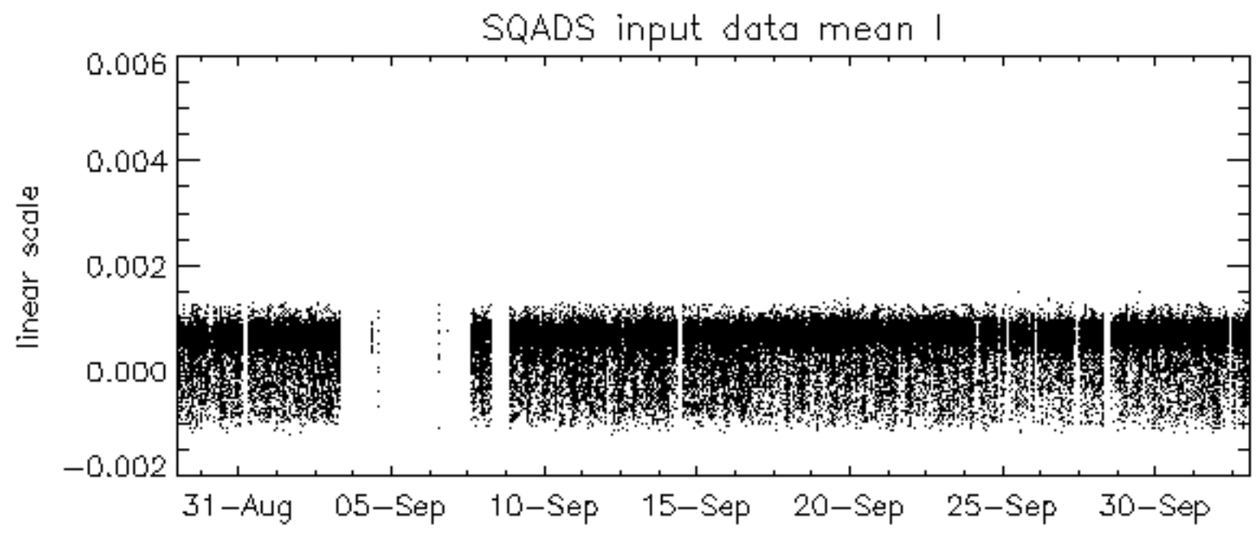
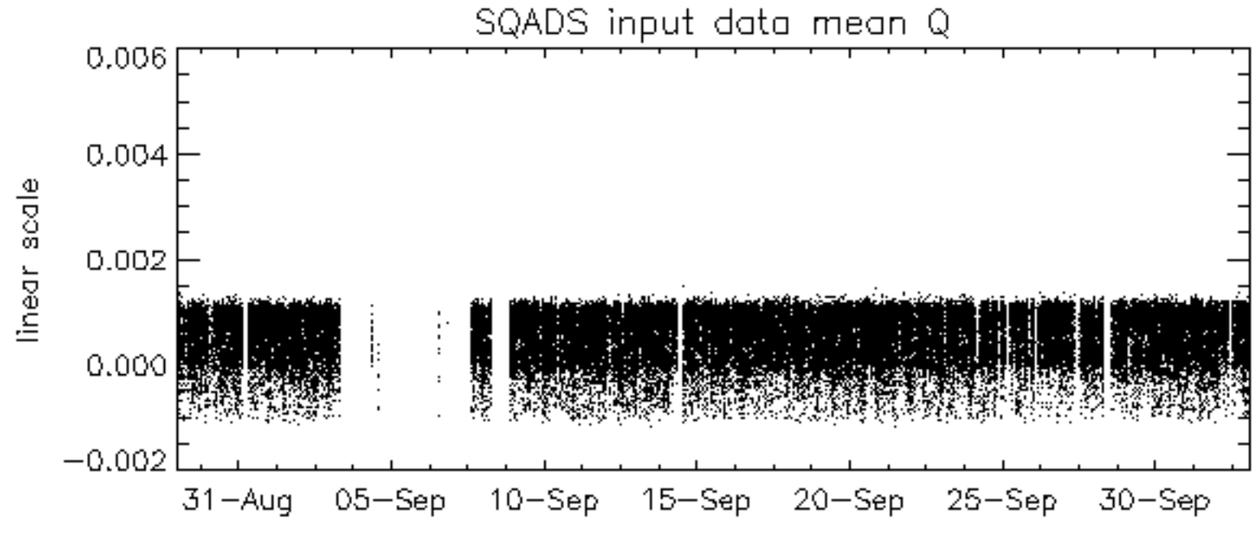
30
31
32

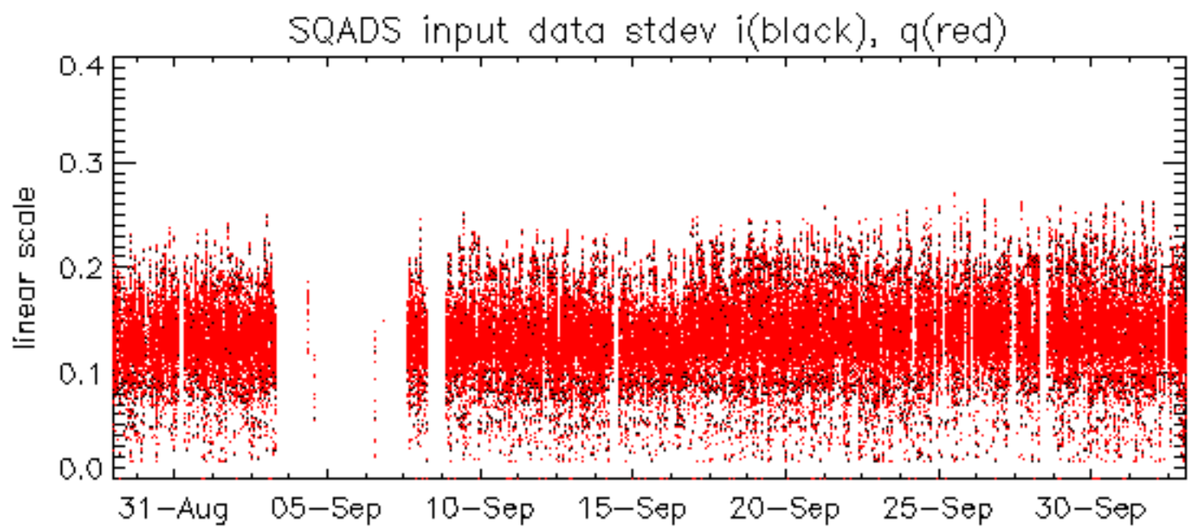

Reference: NULL V RxPhase
Test : 2005-10-01 06:44:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

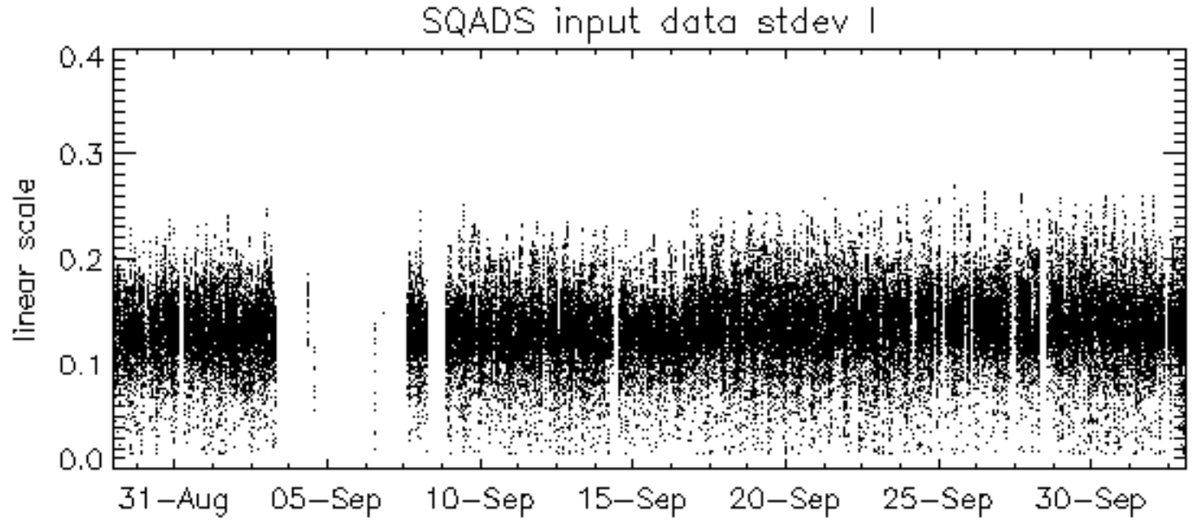

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

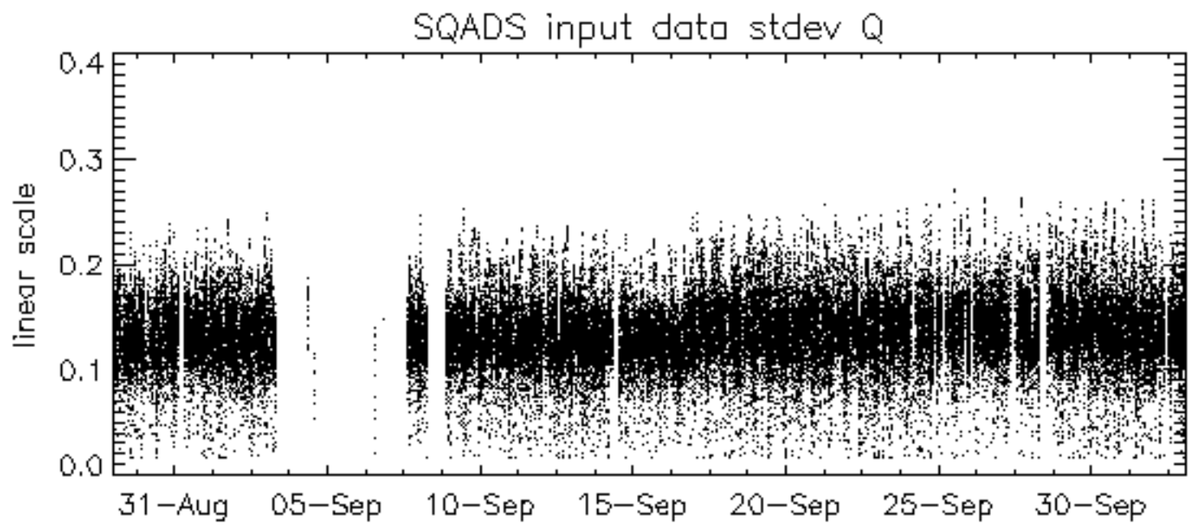

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep

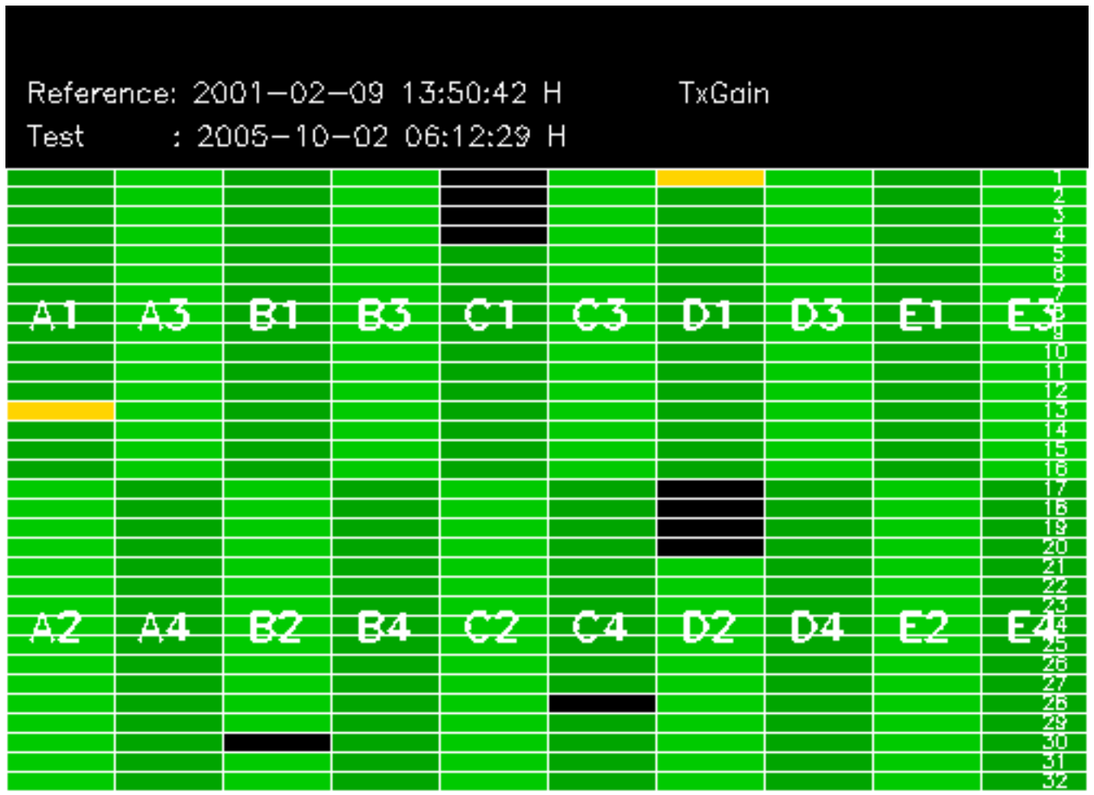

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−Aug
05−Sep
10−Sep
15−Sep
20−Sep
25−Sep
30−Sep


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2005-10-02 06:12:29 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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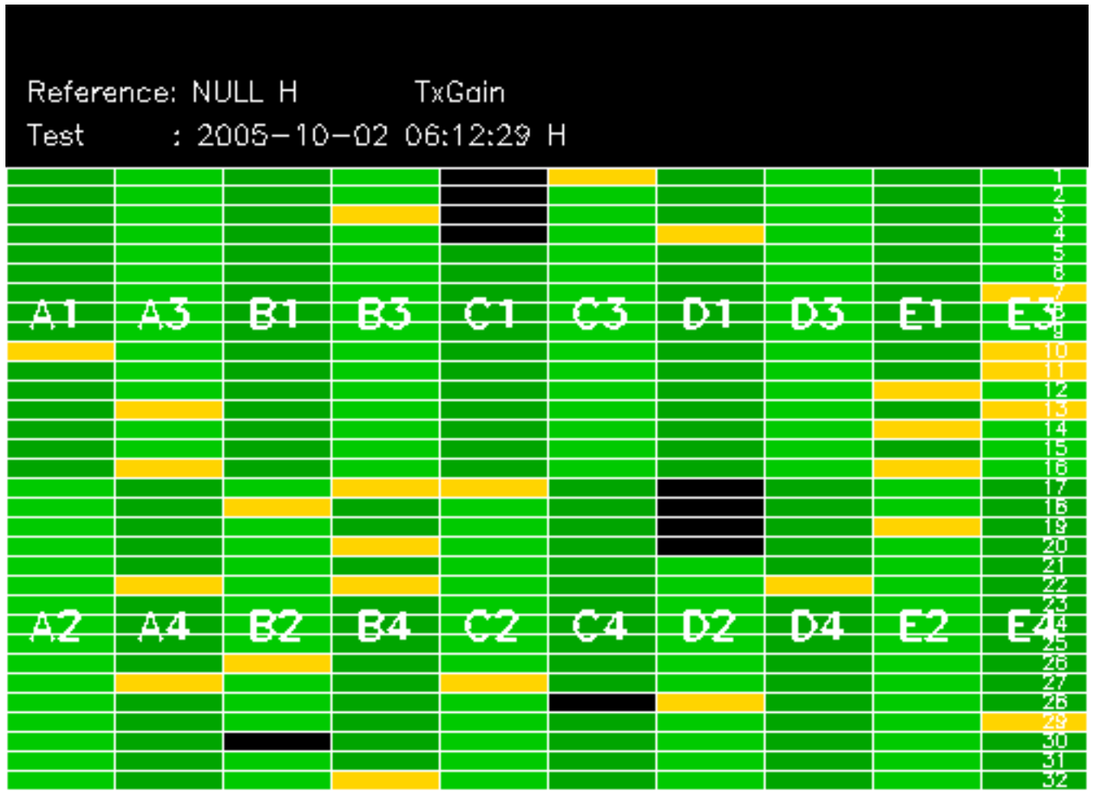
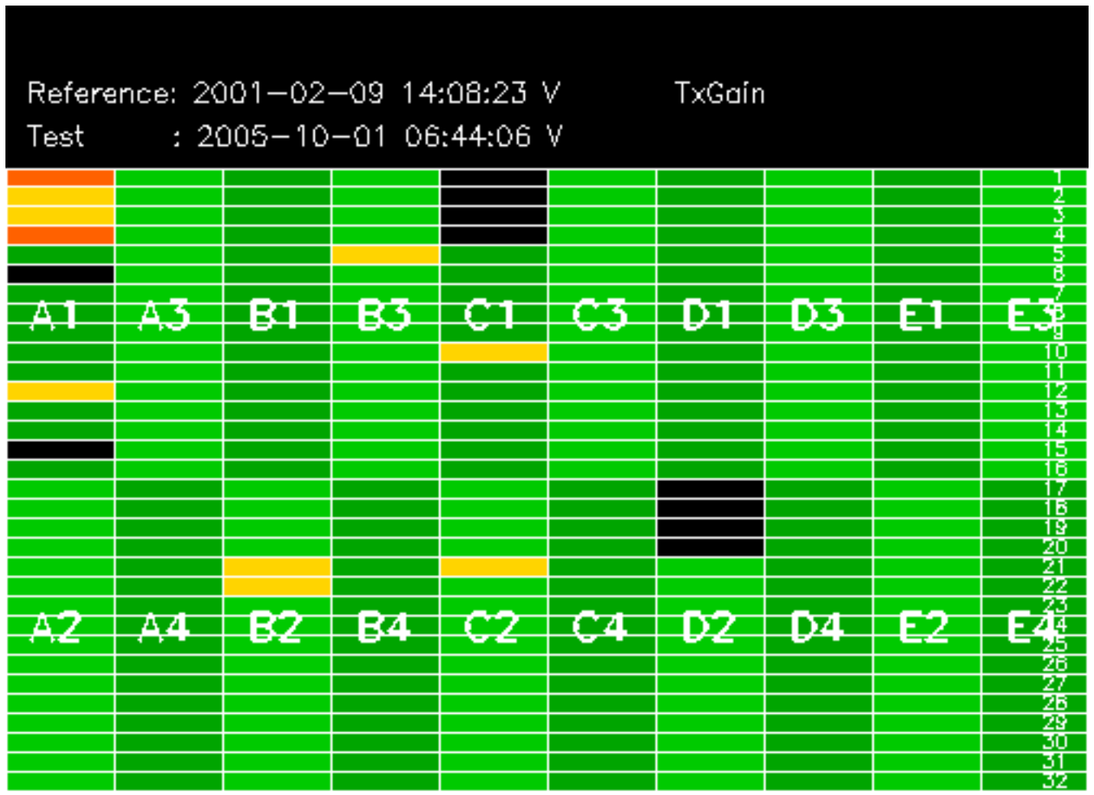

Reference: NULL H TxGain
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2001-02-09 14:08:23 V
Test : 2005-10-01 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
1
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3
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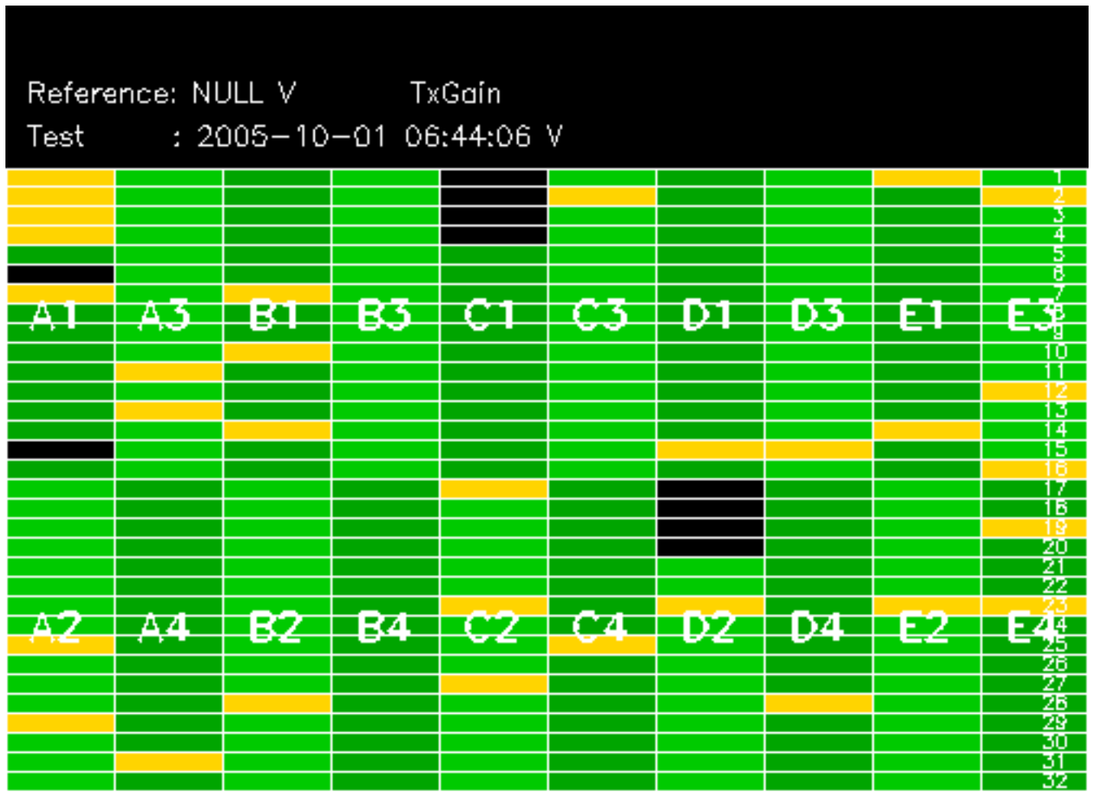
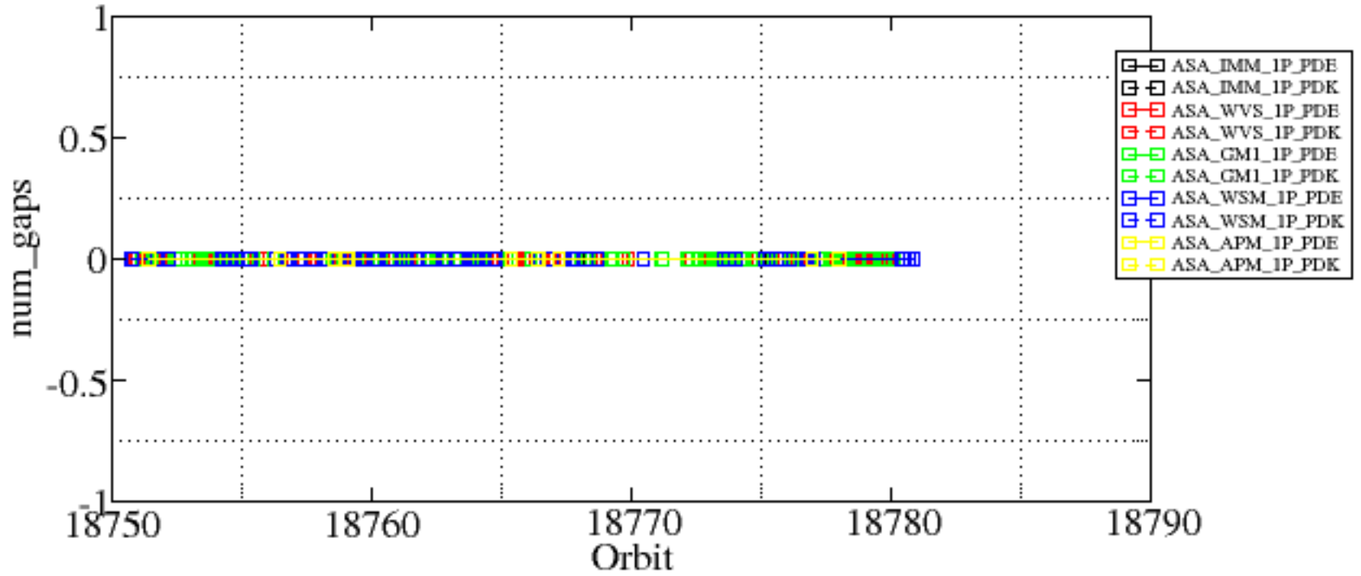
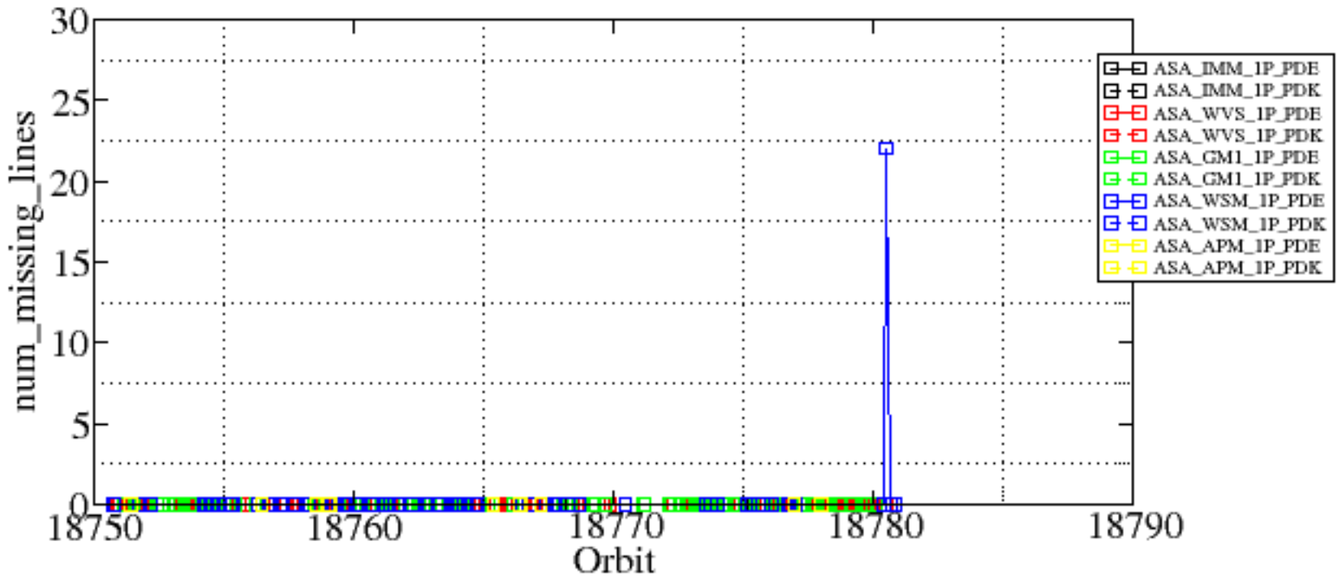
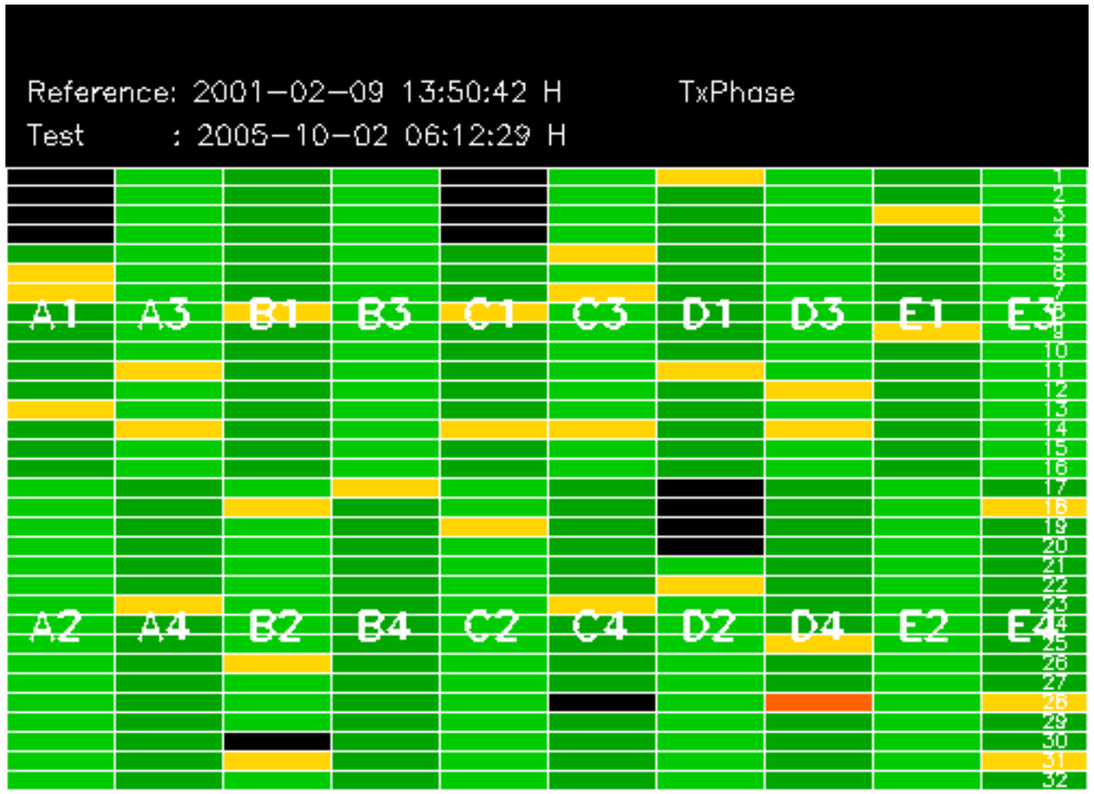

Reference: NULL V TxGain
Test : 2005-10-01 06:44:06 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

Summary of analysis for the last 3 days 2005100[123]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20051003_020026_000000852041_00189_18780_2057.N1 </td> <td>0 </td> <td>22 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
18750
18760
18770
18780
18790
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


num_missing_lines
30
25
20
15
10
5
0
18750
18760
18770
18780
18790
Orbit
ASA_IMM_1P_PDE
ASA_IMM_1P_PDK
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDE
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2005-10-02 06:12:29 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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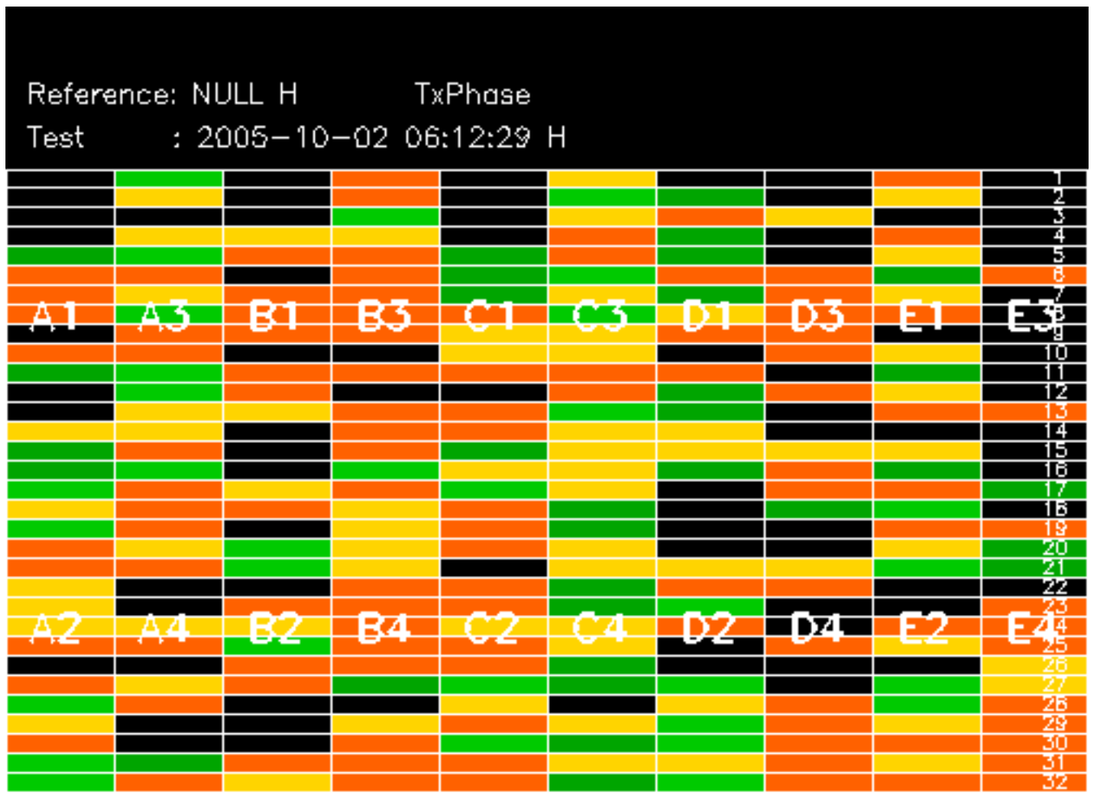
32


Reference: NULL H TxPhase
Test : 2005-10-02 06:12:29 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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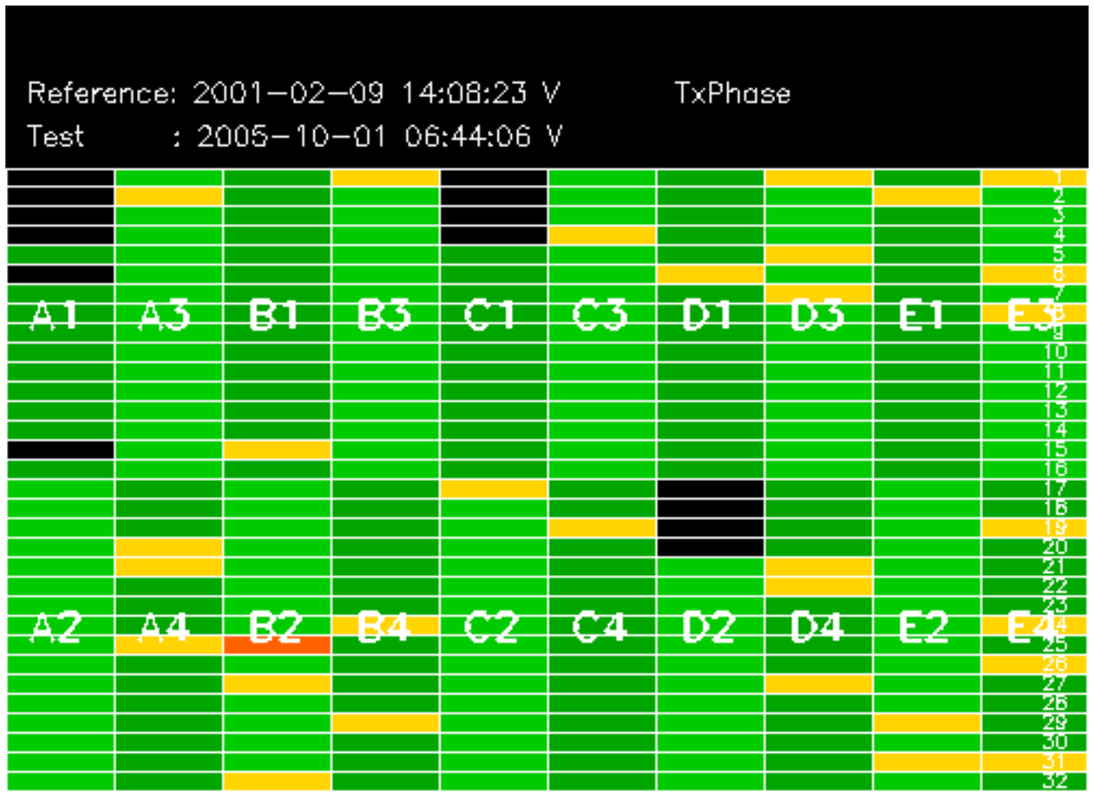
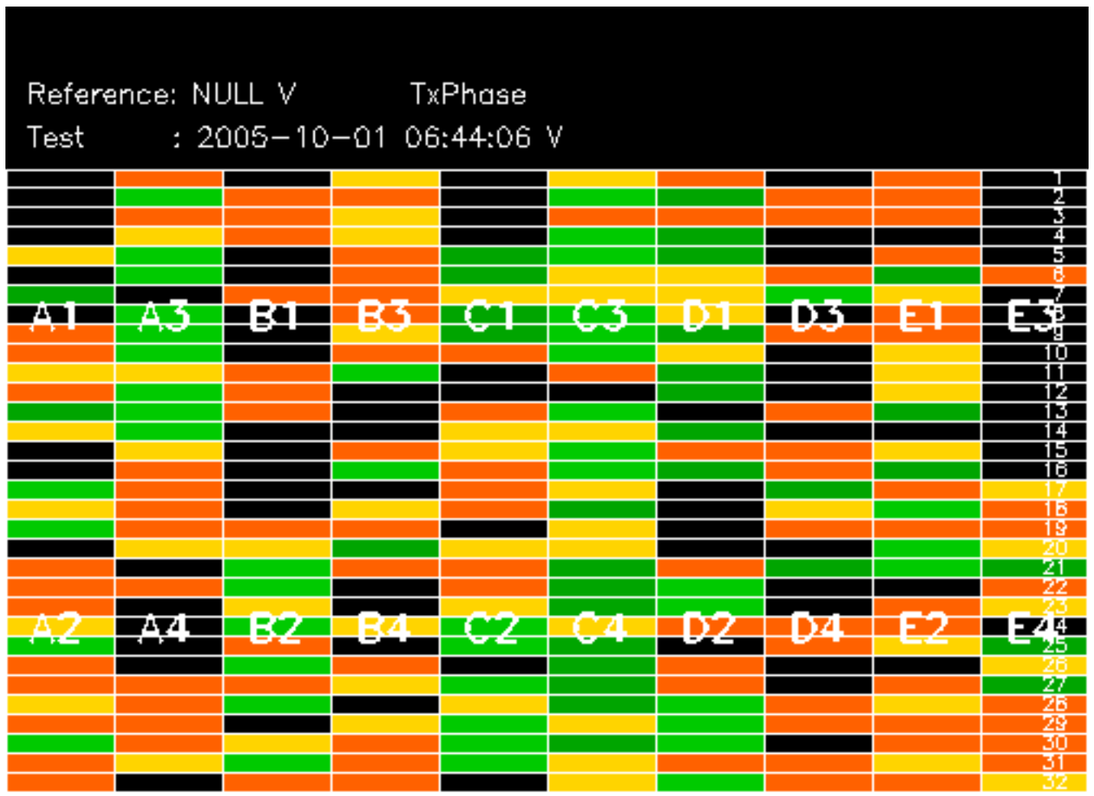
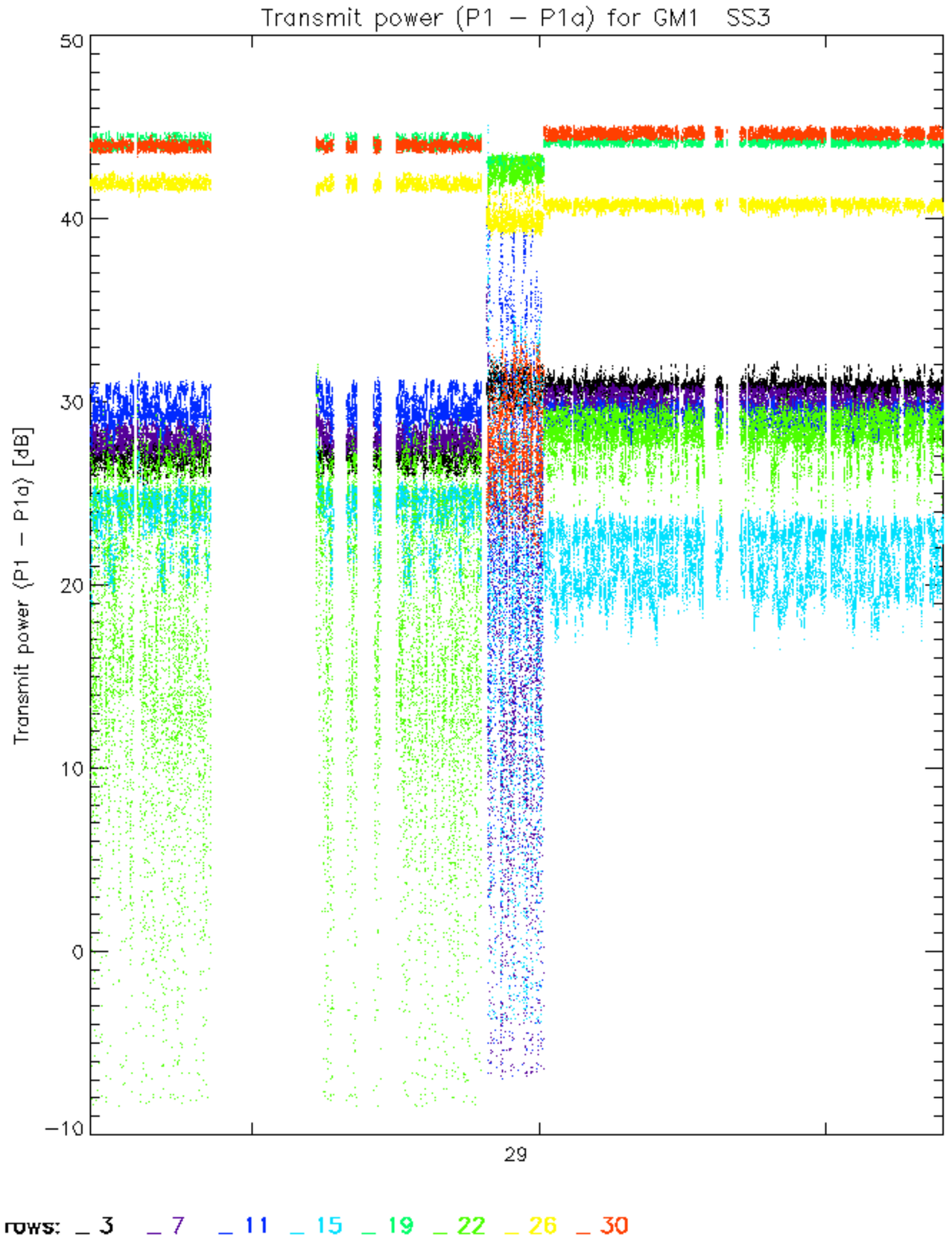
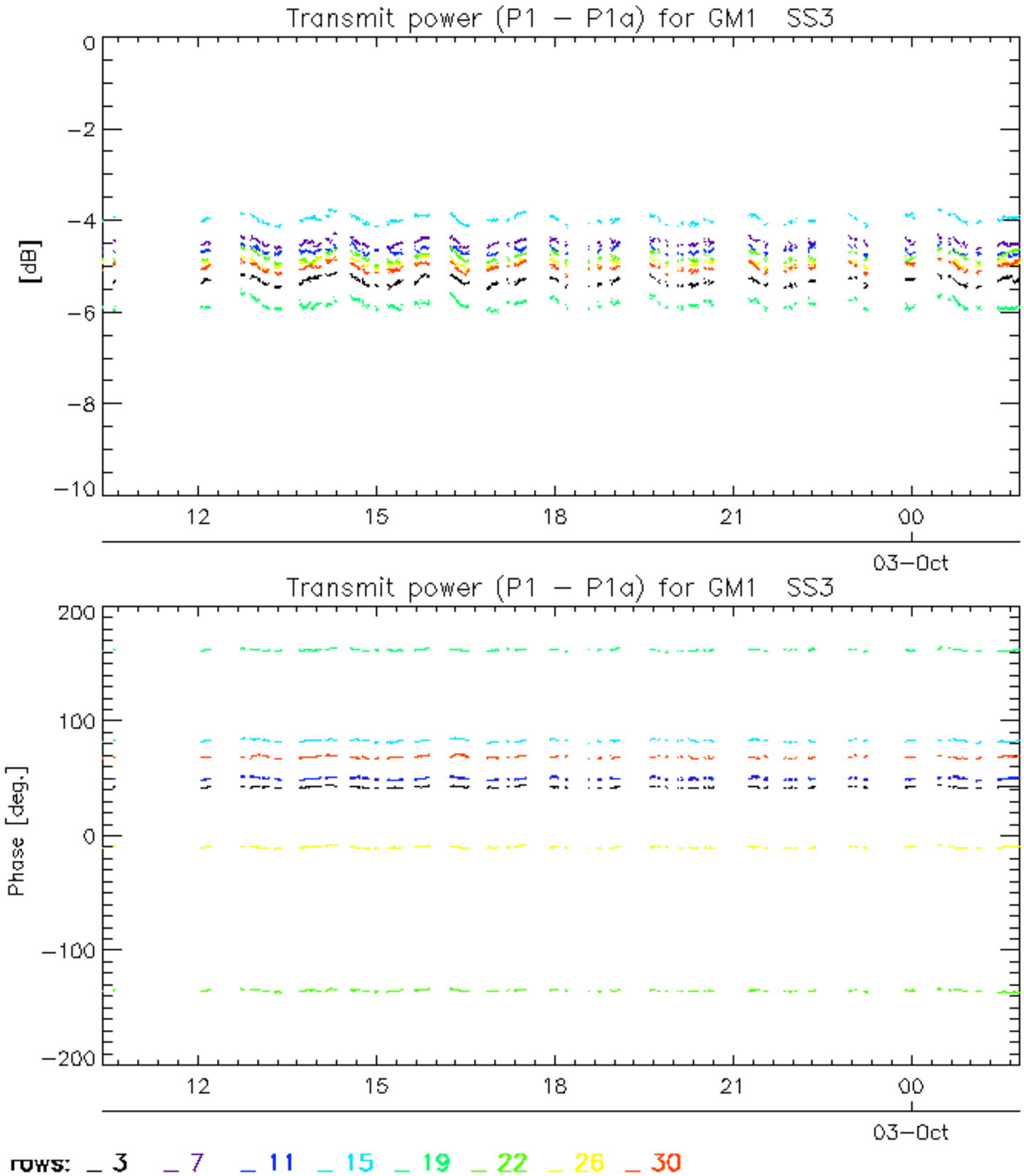
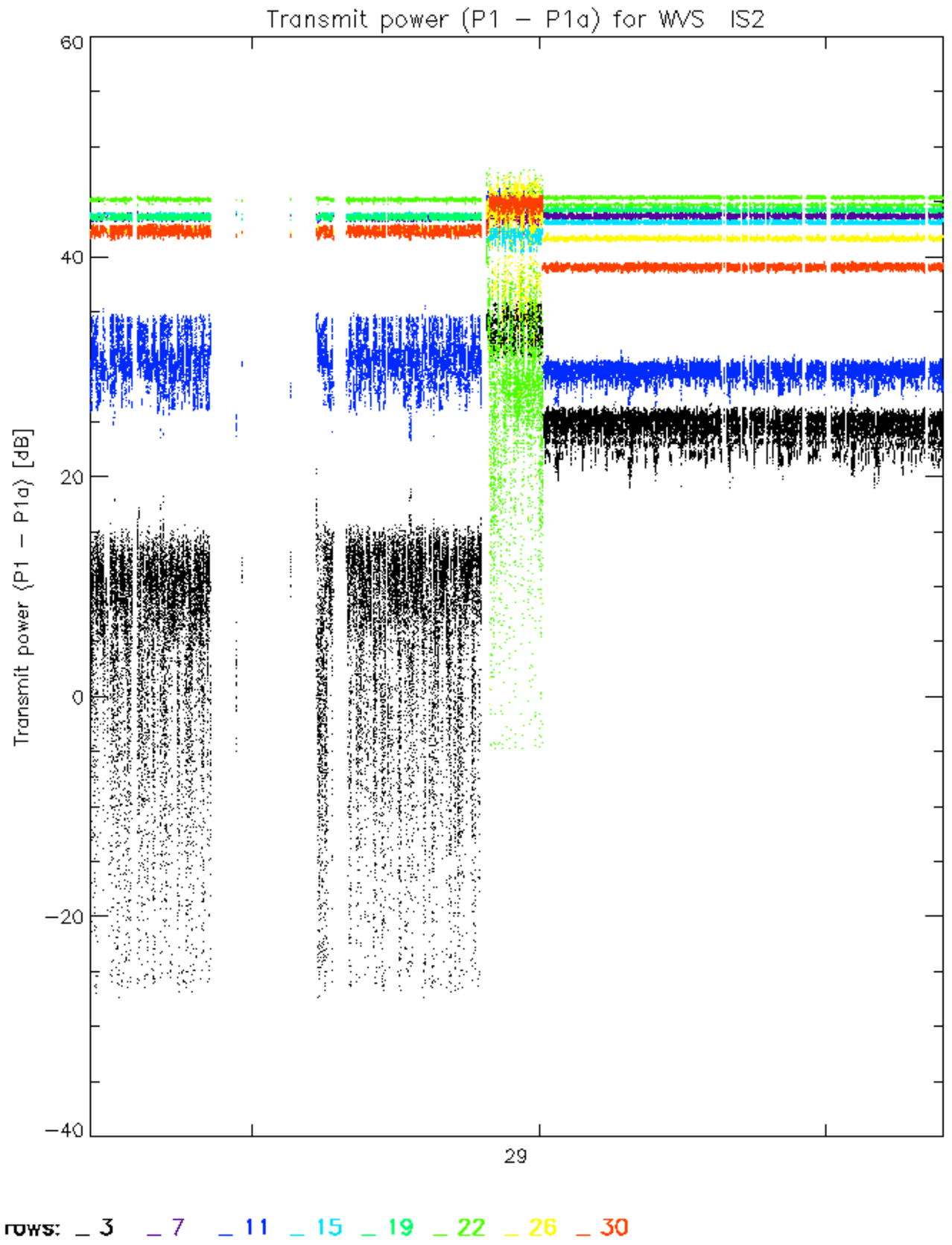
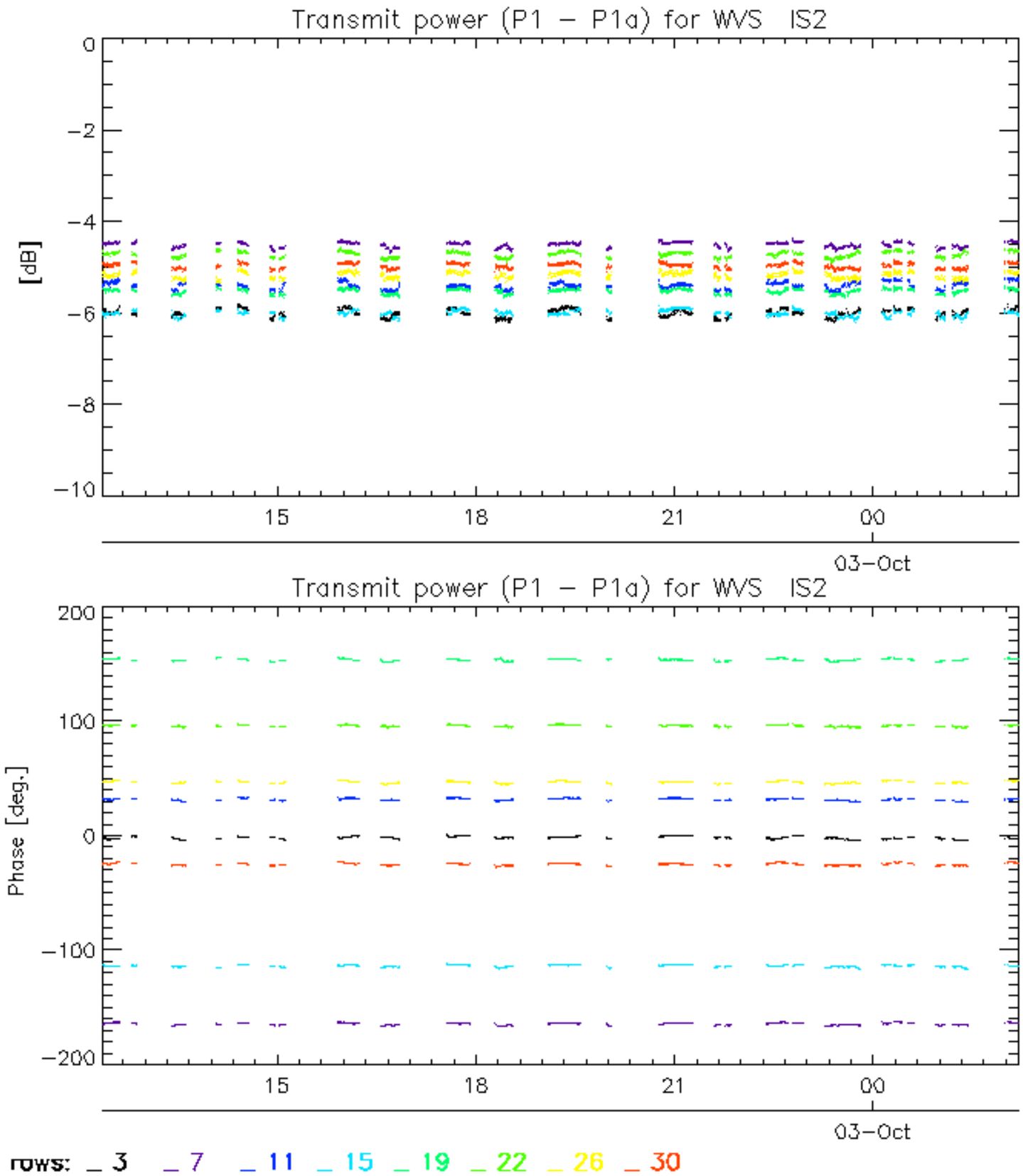

Reference: 2001-02-09 14:08:23 V
Test : 2005-10-01 06:44:06 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: NULL V TxPhase
Test : 2005-10-01 06:44:06 V
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
29
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
12
15
18
21
00
03–Oct
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
03–Oct
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
Transmit power (P1 – P1a) [dB]
60
40
20
0
−20
−40
29
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
15
18
21
00
03−Oct
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
15
18
21
00
03−Oct
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.