PRELIMINARY REPORT OF 060601

last update on Thu Jun 1 09:41:25 GMT 2006

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 2006-05-31 00:00:00 to 2006-06-01 09:41:25

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	26	44	13	0	15
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	26	44	13	0	15
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	26	44	13	0	15
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	26	44	13	0	15

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	39	51	18	25	49
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	39	51	18	25	49
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	39	51	18	25	49
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	39	51	18	25	49

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	20060530 085029
H	20060531 081852

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	-3.959264	0.016860	0.047526
7	P1	-3.104487	0.017217	-0.066360
11	P1	-4.107958	0.017818	0.001890
15	P1	-6.132804	0.019974	0.004050
19	P1	-3.319625	0.008394	-0.034244
22	P1	-4.518409	0.011309	0.034260
26	P1	-3.988206	0.018670	0.051978
30	P1	-5.748456	0.008105	0.020290
3	P1	-16.580196	0.260336	0.229087
7	P1	-17.125519	0.184953	-0.223681
11	P1	-16.916990	0.311595	-0.050888
15	P1	-13.214644	0.209423	-0.049969
19	P1	-14.258888	0.047215	-0.086962
22	P1	-16.157190	0.382460	-0.067066
26	P1	-15.275870	0.247866	0.060165
30	P1	-17.017525	0.361701	-0.227782

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.214756	0.081417	0.142582
7	P2	-22.097652	0.098608	0.169773
11	P2	-15.940851	0.110786	0.143609
15	P2	-7.163345	0.092627	0.032778
19	P2	-9.165124	0.084938	0.002589
22	P2	-18.120733	0.082495	-0.074362
26	P2	-16.365374	0.087659	-0.055283
30	P2	-19.582607	0.085460	0.085702

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.186681	0.003875	0.028470
7	P3	-8.186681	0.003875	0.028470
11	P3	-8.186681	0.003875	0.028470
15	P3	-8.186681	0.003875	0.028470
19	P3	-8.186681	0.003875	0.028470
22	P3	-8.186681	0.003875	0.028470
26	P3	-8.186681	0.003875	0.028470
30	P3	-8.186681	0.003875	0.028470

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	-3.774566	0.068135	-0.088230
7	P1	-2.606580	0.033552	0.064327
11	P1	-2.864030	0.024433	0.006822
15	P1	-3.493906	0.049843	-0.005525
19	P1	-3.395119	0.013876	-0.020030
22	P1	-5.086430	0.019785	0.037486
26	P1	-5.838118	0.014777	-0.022320
30	P1	-5.188385	0.026122	0.011415
3	P1	-11.614488	0.081612	-0.025754
7	P1	-9.960346	0.055214	0.066000
11	P1	-10.195739	0.086518	0.019741
15	P1	-10.617882	0.147822	-0.030469
19	P1	-15.508179	0.074883	-0.076569
22	P1	-20.882723	1.239985	-0.056289
26	P1	-16.486206	0.348388	0.015173
30	P1	-18.022423	0.385043	0.263969

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.900549	0.062903	0.103580
7	P2	-22.522617	0.120394	0.069855
11	P2	-11.184816	0.041889	0.057245
15	P2	-4.903197	0.043386	-0.020646
19	P2	-6.876548	0.041154	0.002775
22	P2	-8.192453	0.038693	-0.037914
26	P2	-24.103216	0.061324	-0.031300
30	P2	-22.062611	0.050206	-0.006210

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.019151	0.004379	0.028692
7	P3	-8.019235	0.004377	0.028647
11	P3	-8.019220	0.004352	0.028708
15	P3	-8.019073	0.004367	0.028274
19	P3	-8.019248	0.004375	0.028694
22	P3	-8.019234	0.004349	0.028761
26	P3	-8.019125	0.004354	0.027959
30	P3	-8.019149	0.004370	0.028338

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	0.000530725
	stdev	1.90261e-07
MEAN Q	mean	0.000513465
	stdev	2.29341e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.134121
	stdev	0.00116901
STDEV Q	mean	0.134459
	stdev	0.00118571

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006053[011]
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_1PNPDE20060530_071020_000004832048_00106_22204_1609.N1	0	1
ASA_WSM_1PNPDE20060531_171618_000001472048_00127_22225_1873.N1	0	65
ASA_APM_1PNPDE20060530_143046_000000882048_00111_22209_2800.N1	0	21

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

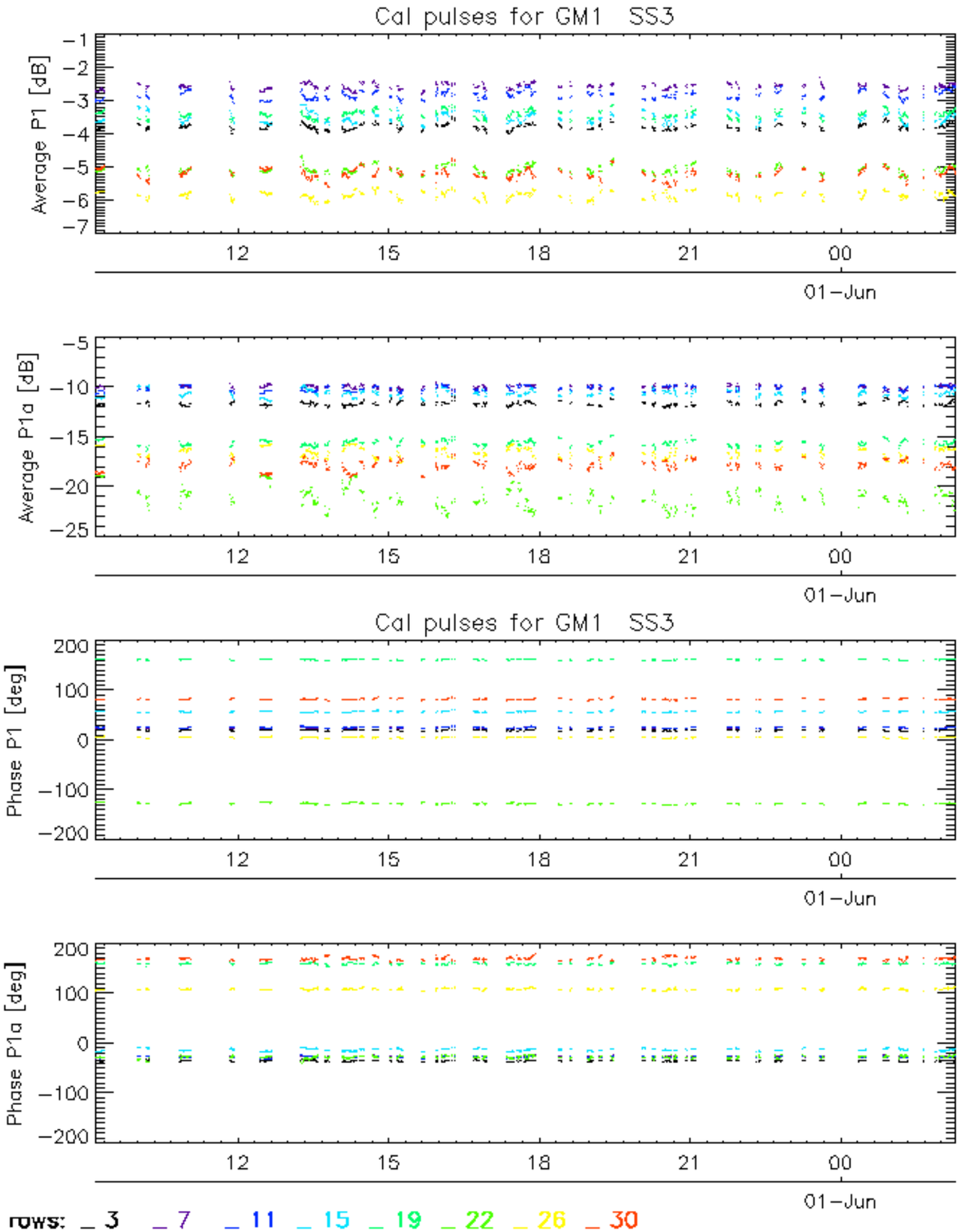

Descending

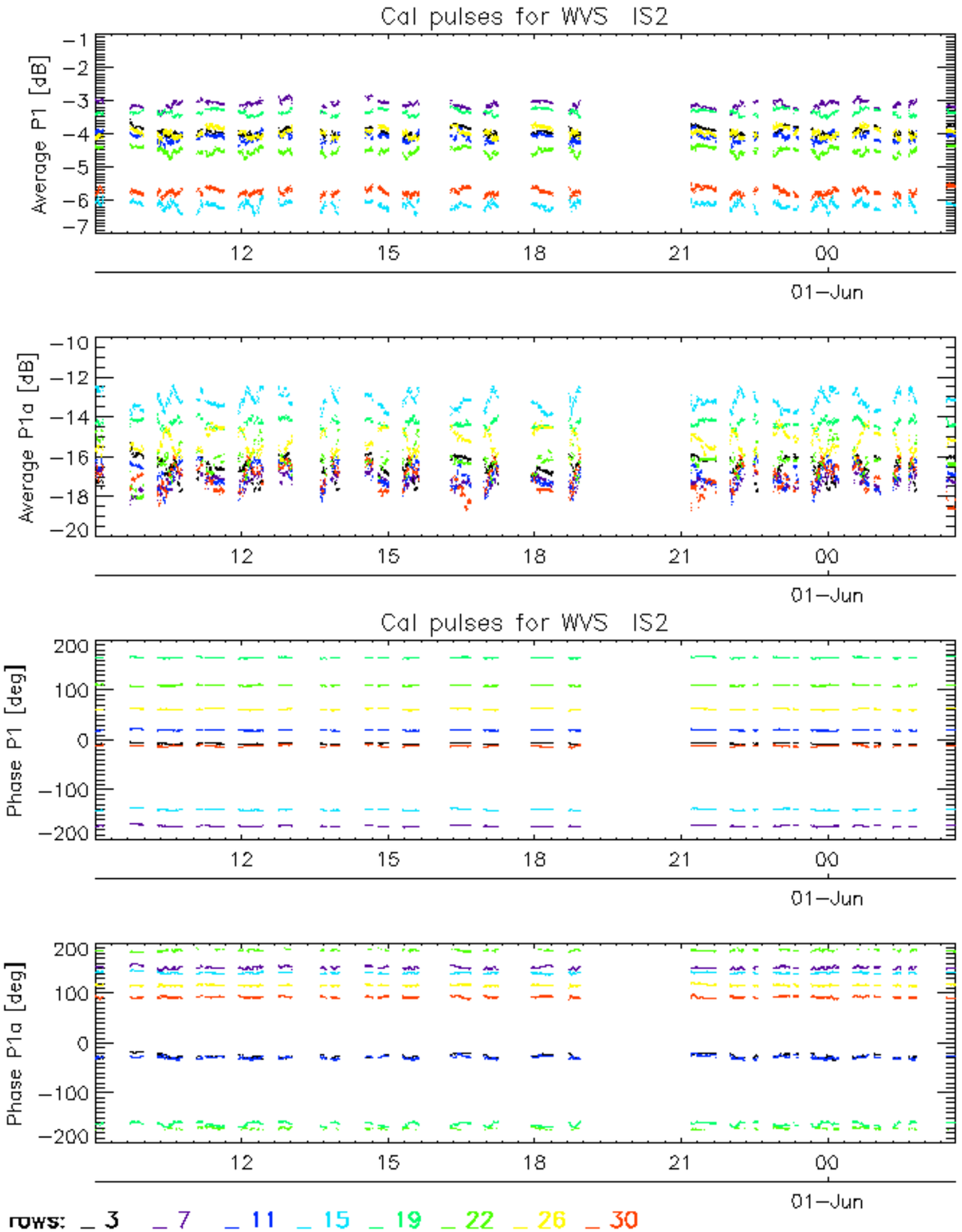
7.5 - Absolute Doppler for GM1

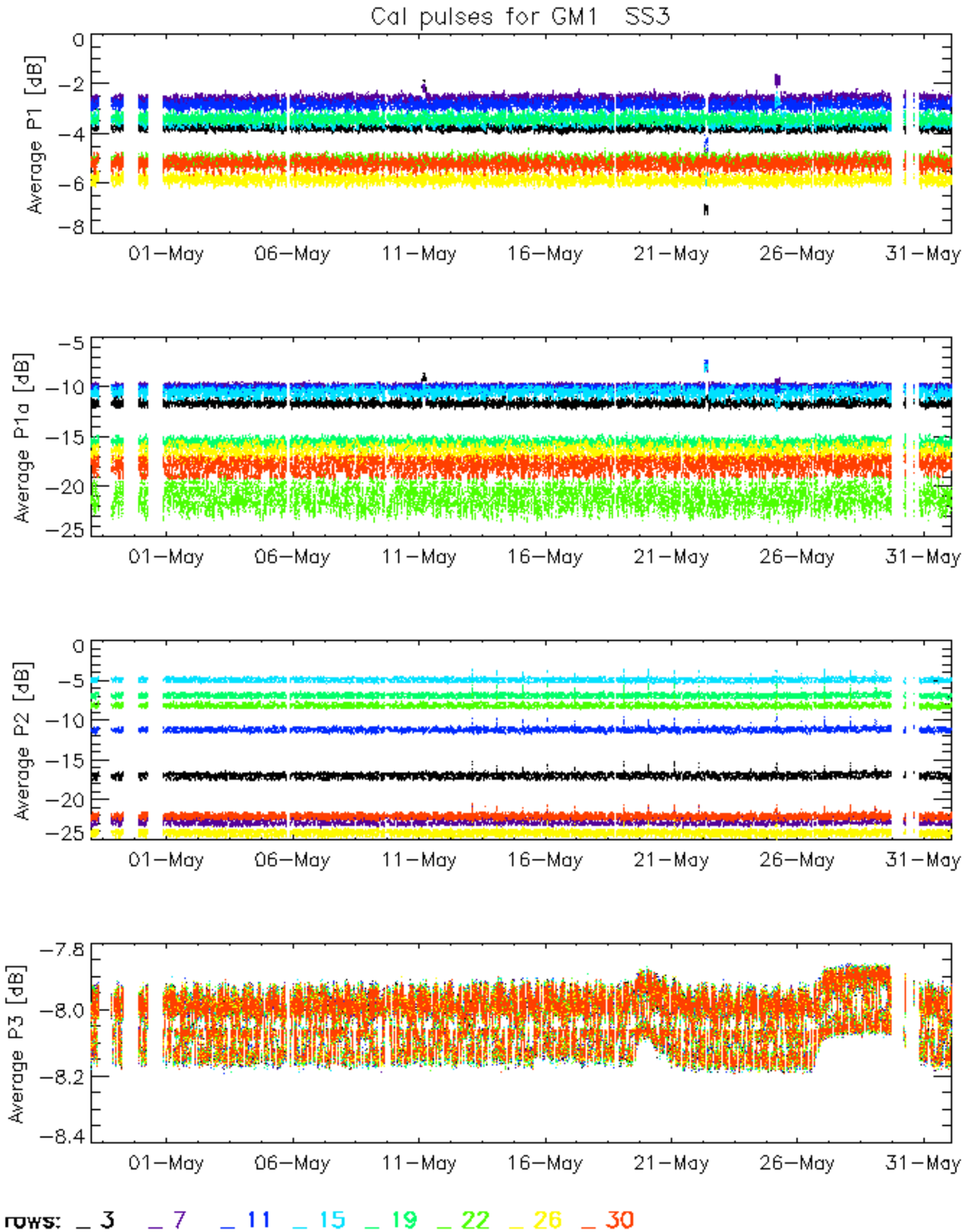
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

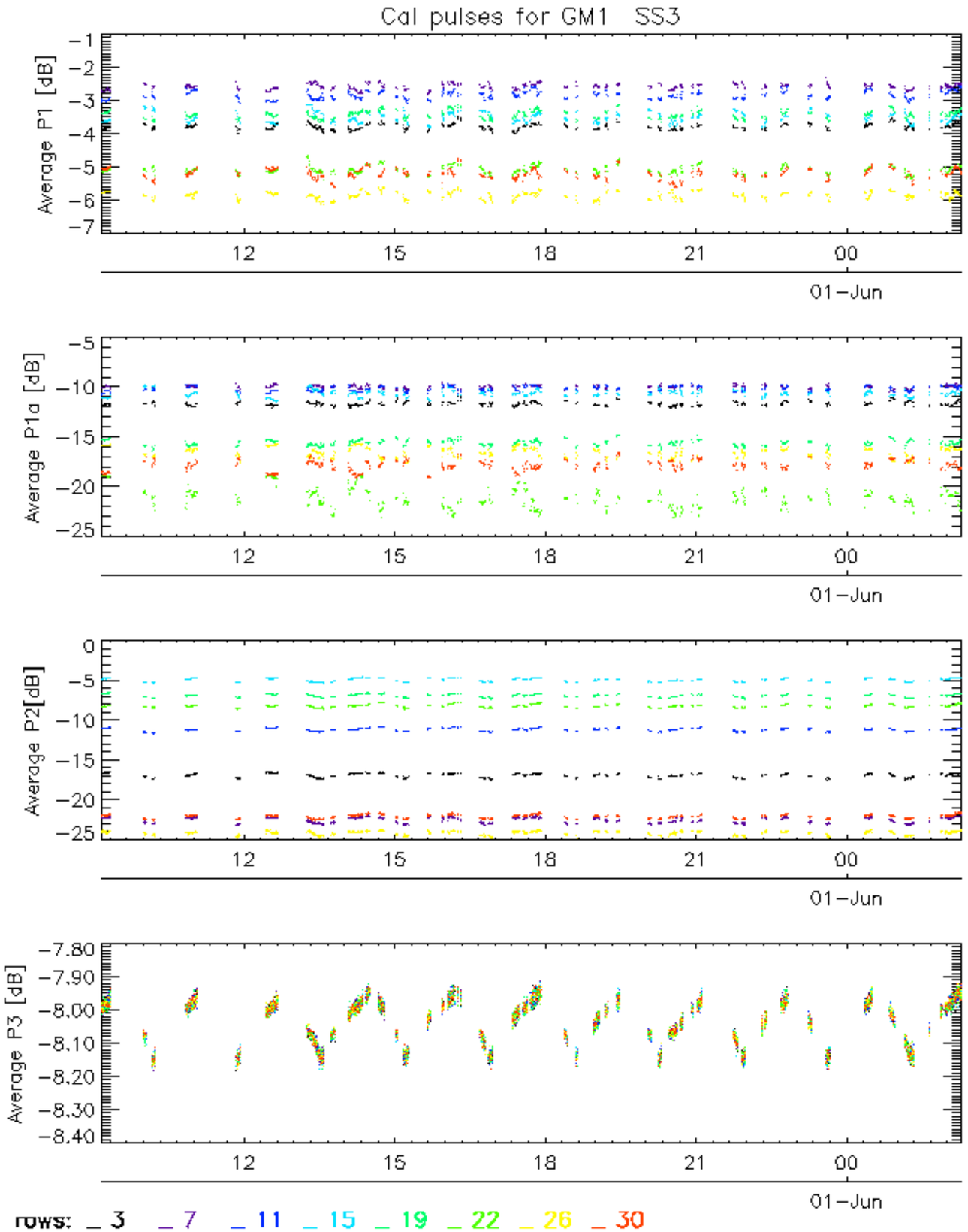
7.6 - Doppler evolution versus ANX for GM1

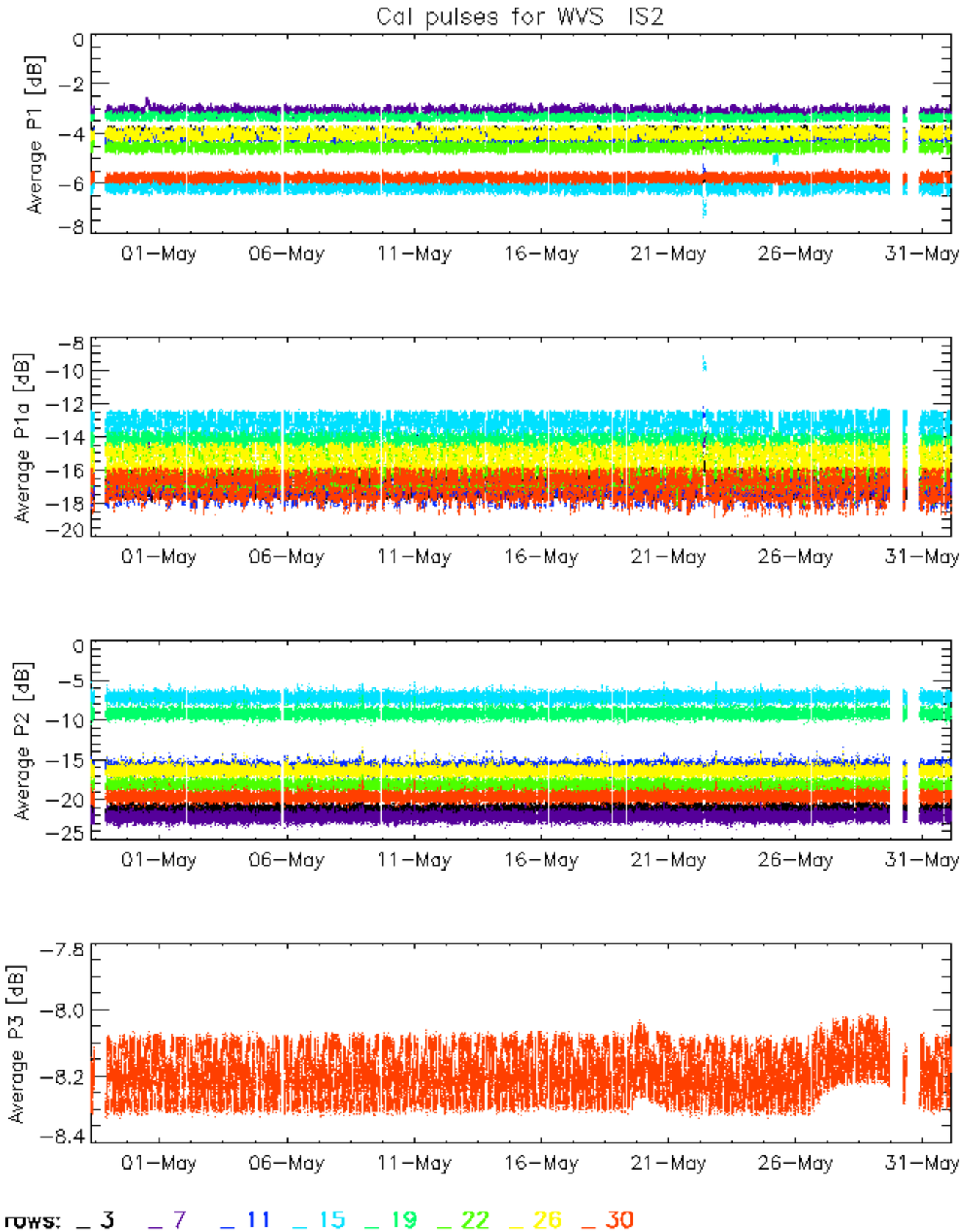
Evolution Doppler error versus ANX
☒

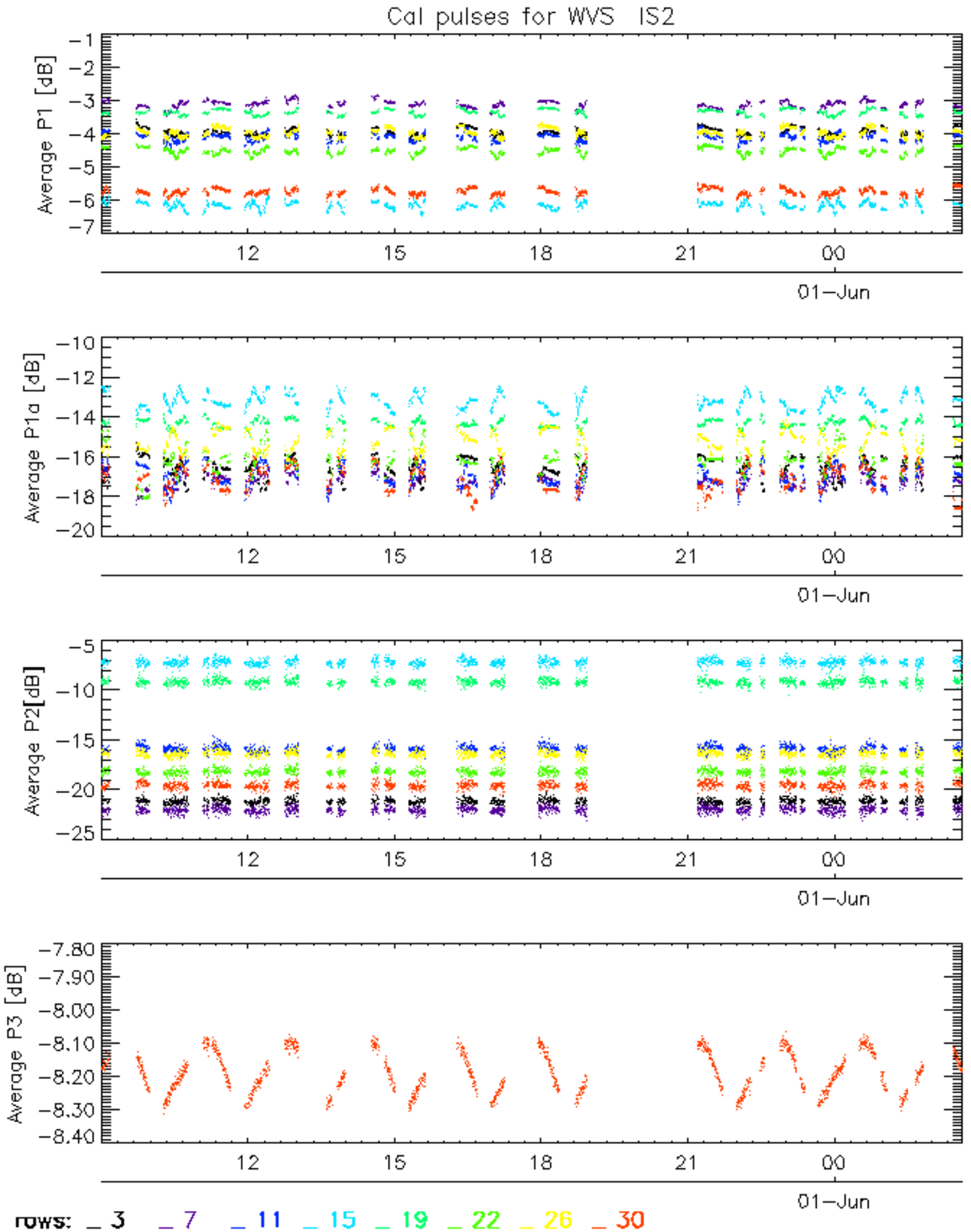

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
12
15
18
21
00
01−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
12
15
18
21
00
01−Jun
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
12
15
18
21
00
01−Jun
Phase P1a [deg]
200
100
0
−100
−200
12
15
18
21
00
01−Jun
rows: _ 3 _ 7 _ 11 _ 15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


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
12
15
18
21
00
01−Jun
Average P1a [dB]
−10
−12
−14
−16
−18
−20
12
15
18
21
00
01−Jun
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
12
15
18
21
00
01−Jun
Phase P1a [deg]
200
100
0
−100
−200
12
15
18
21
00
01−Jun
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

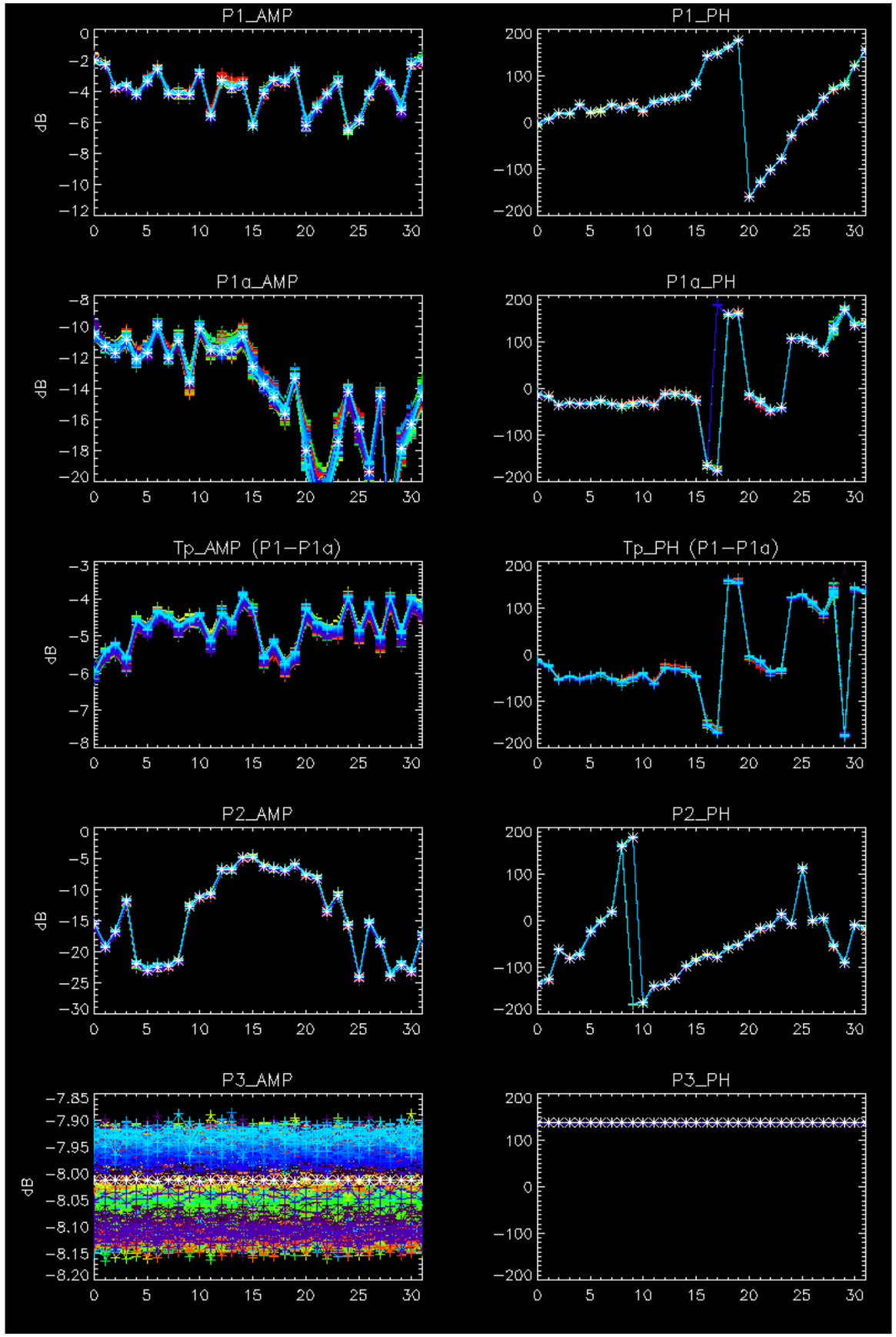

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
Average P1a [dB]
−5
−10
−15
−20
−25
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
01−May
06−May
11−May
16−May
21−May
26−May
31−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

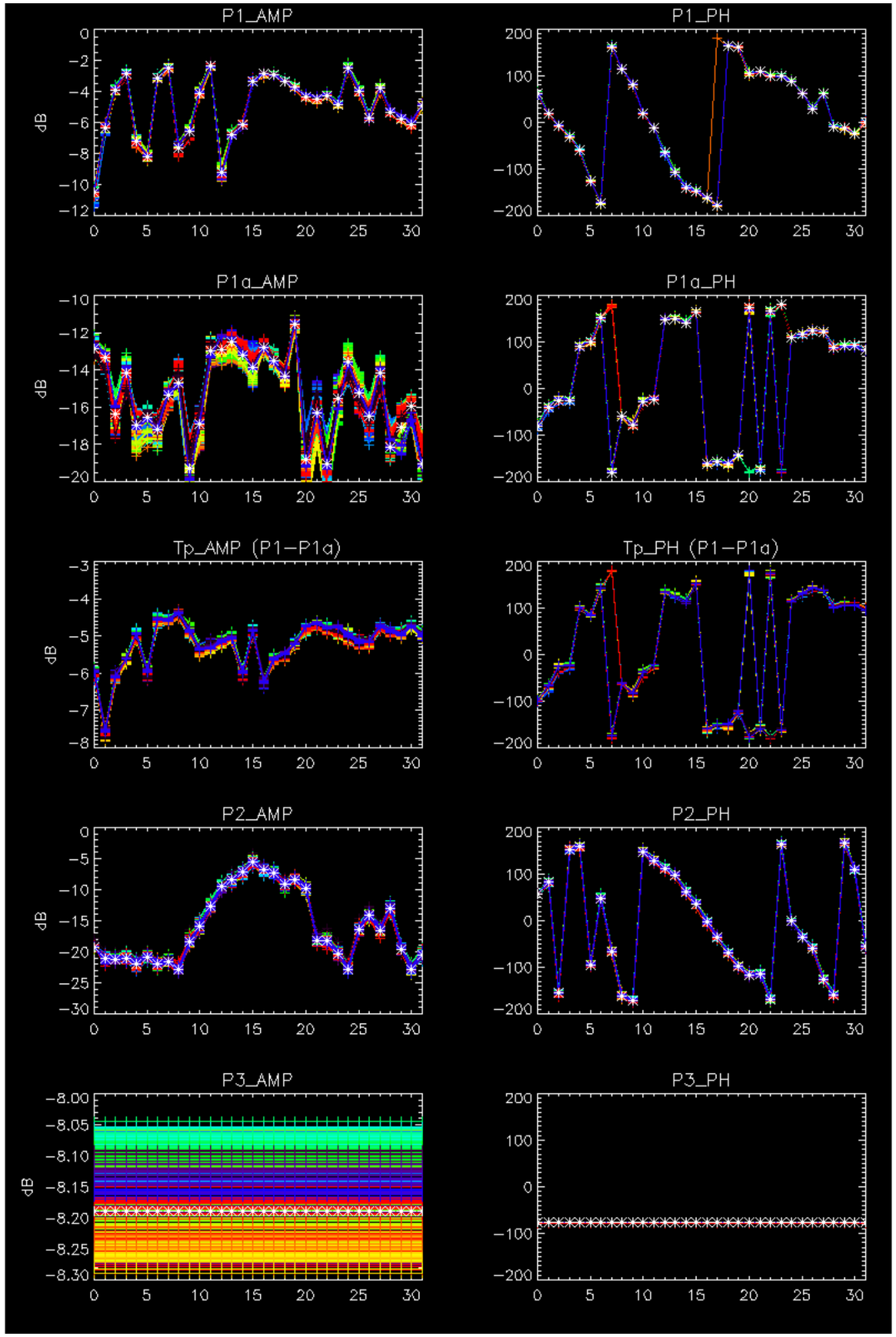

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
12
15
18
21
00
01−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
12
15
18
21
00
01−Jun
Average P2[dB]
0
−5
−10
−15
−20
−25
12
15
18
21
00
01−Jun
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
12
15
18
21
00
01−Jun
rows: _ 3 _ 7 _ 11 _ 15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


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

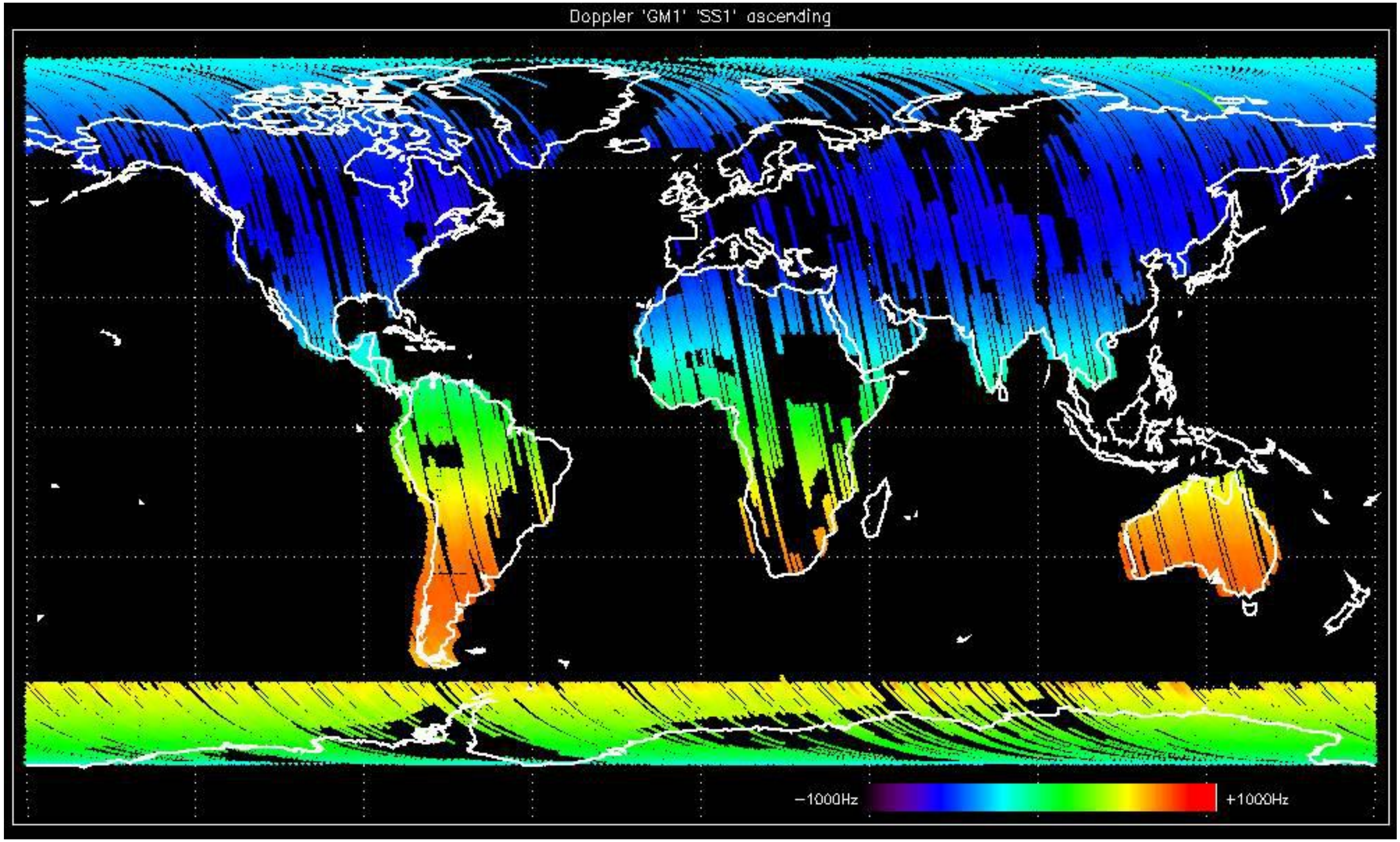
No anomalies observed.

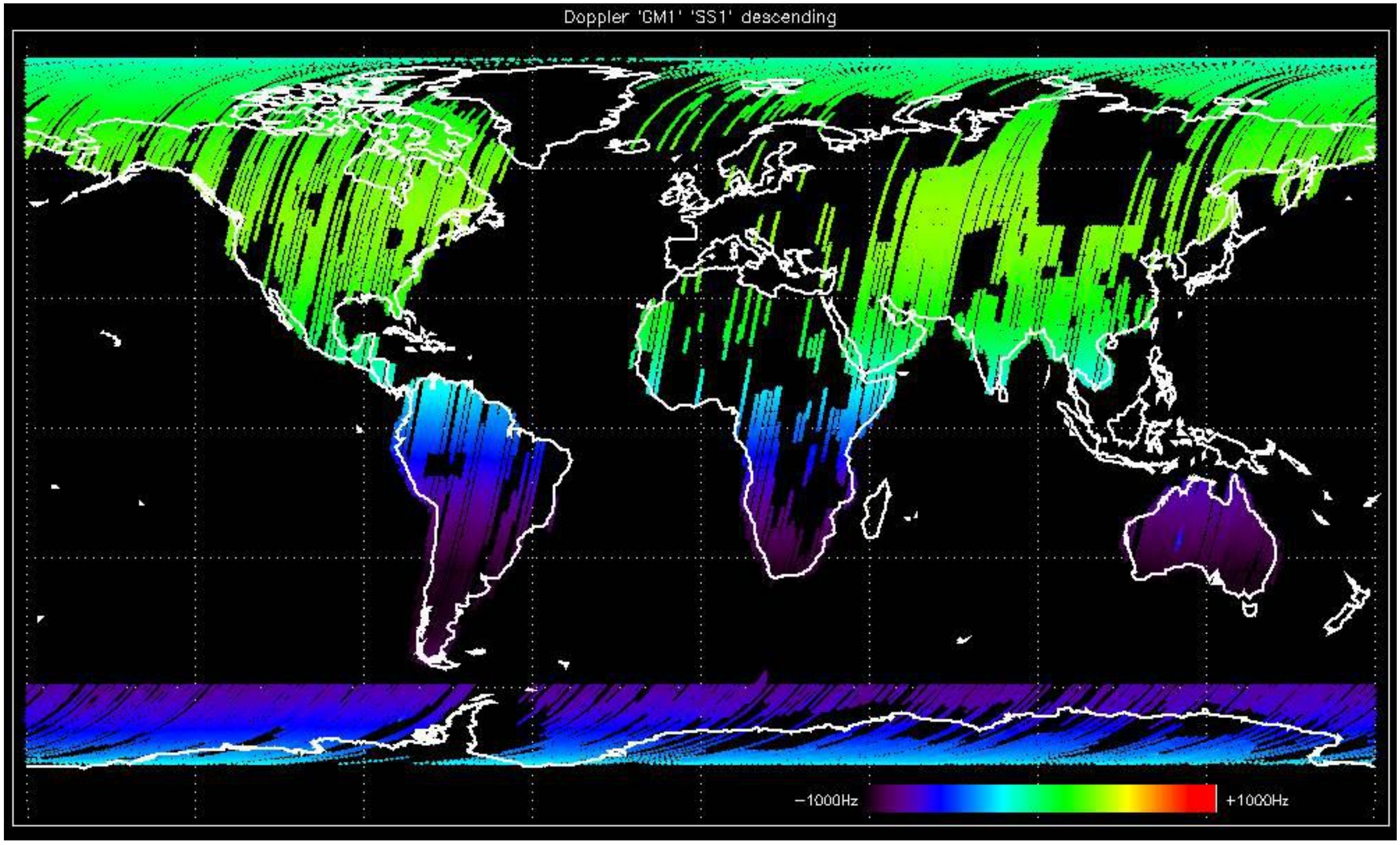

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

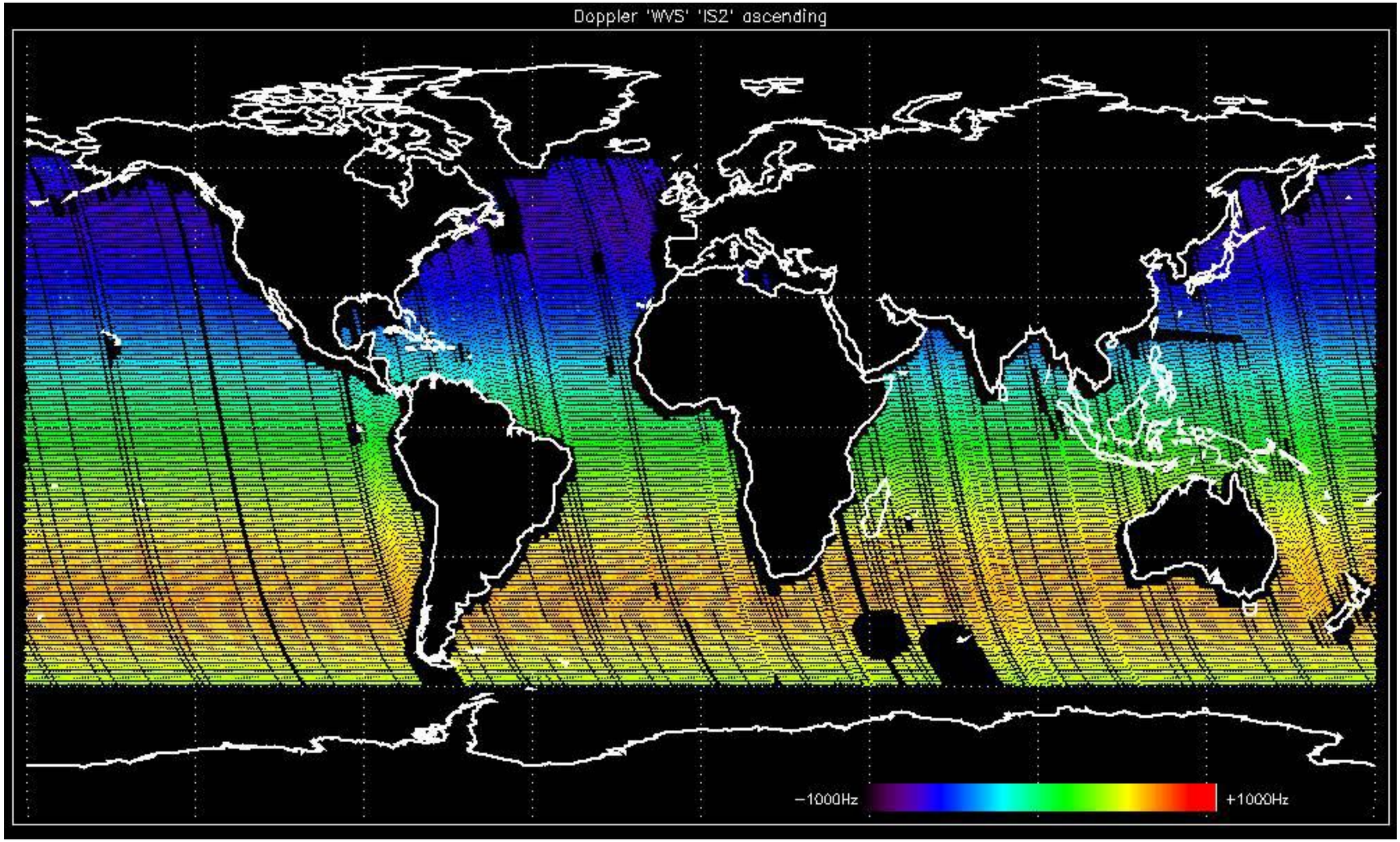

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

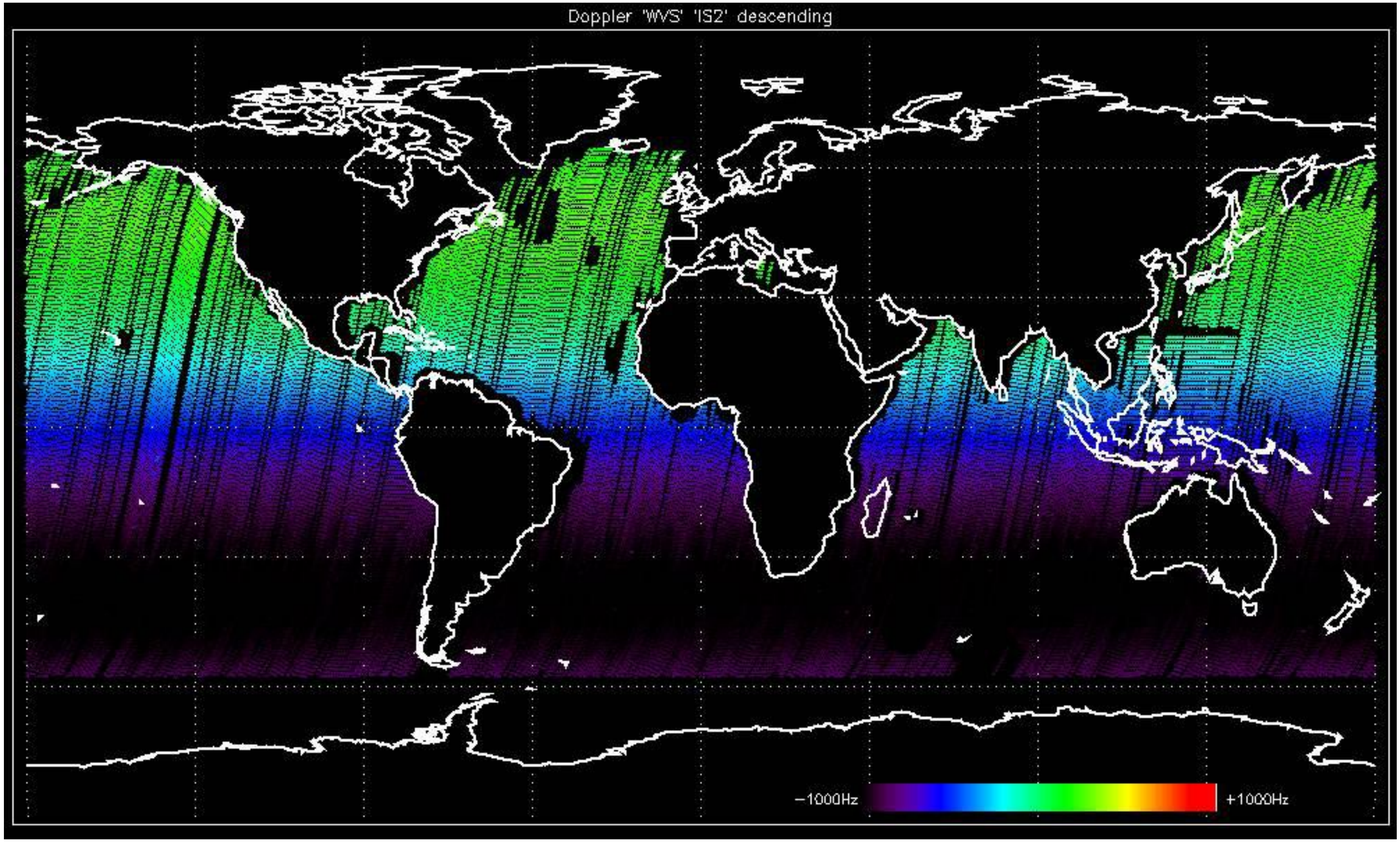
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

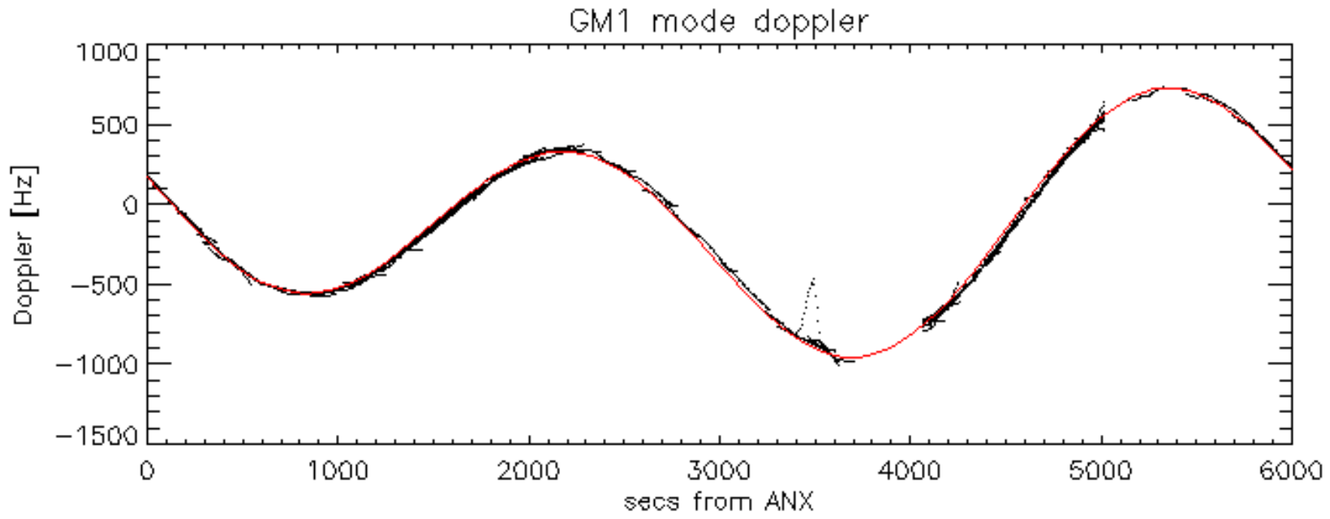
Preliminary report.The data is not yet controled

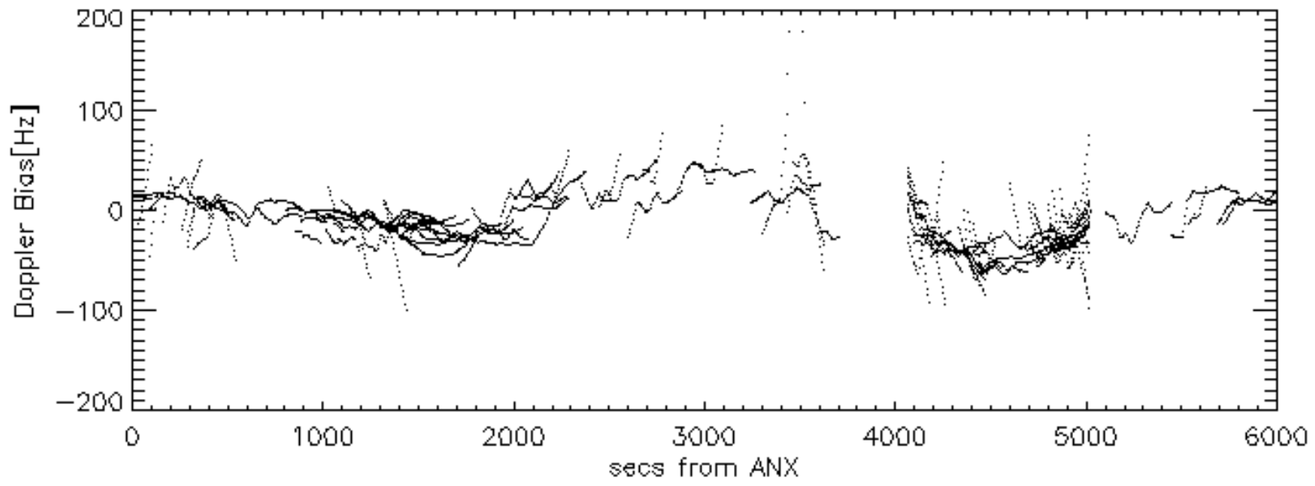

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

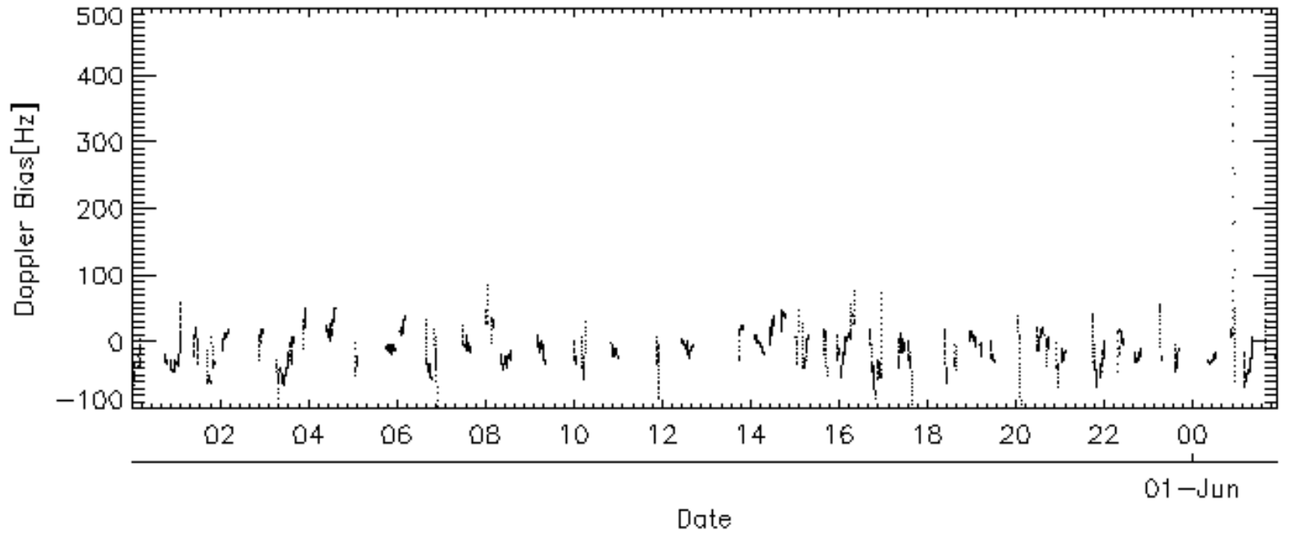

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz


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

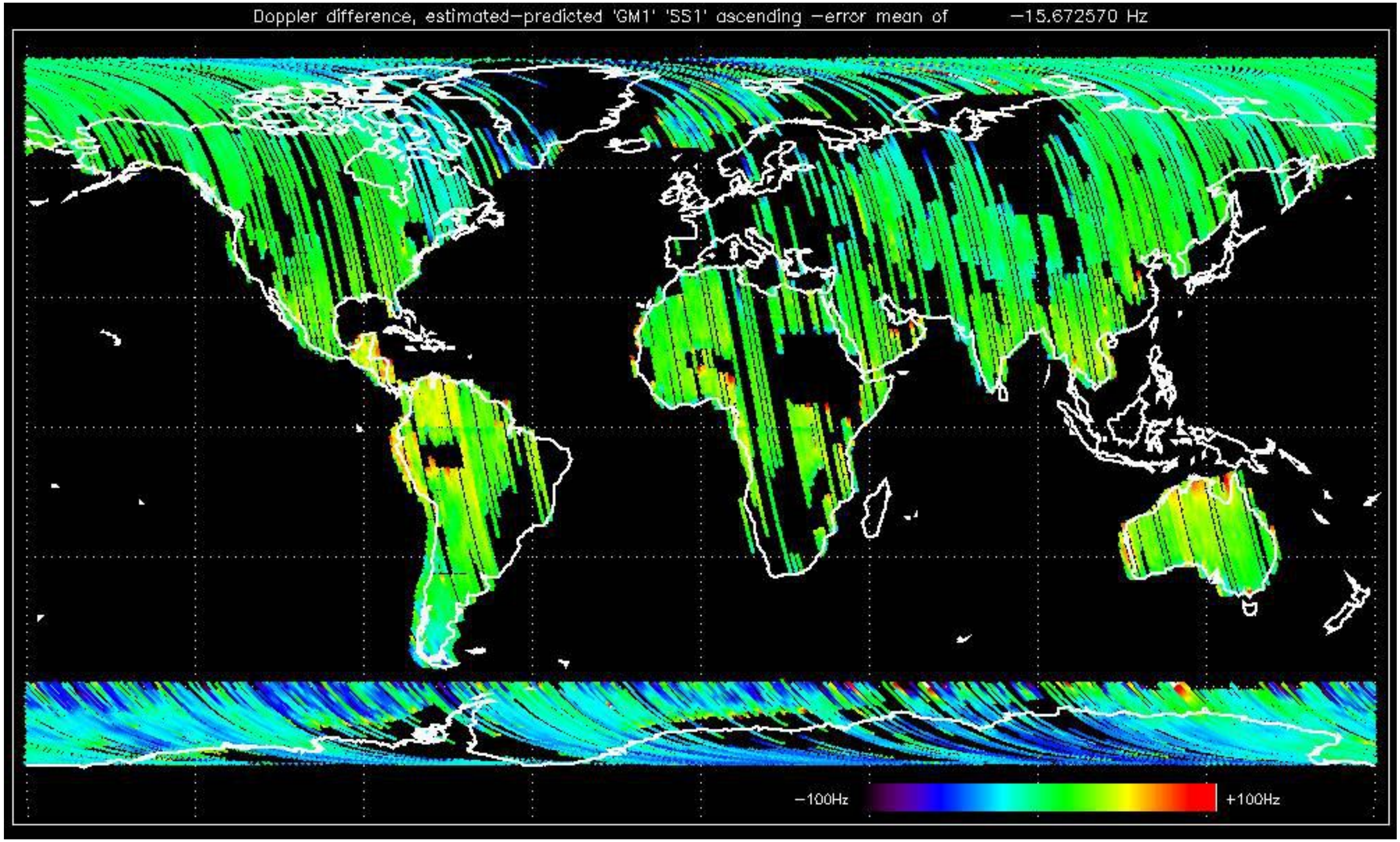

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

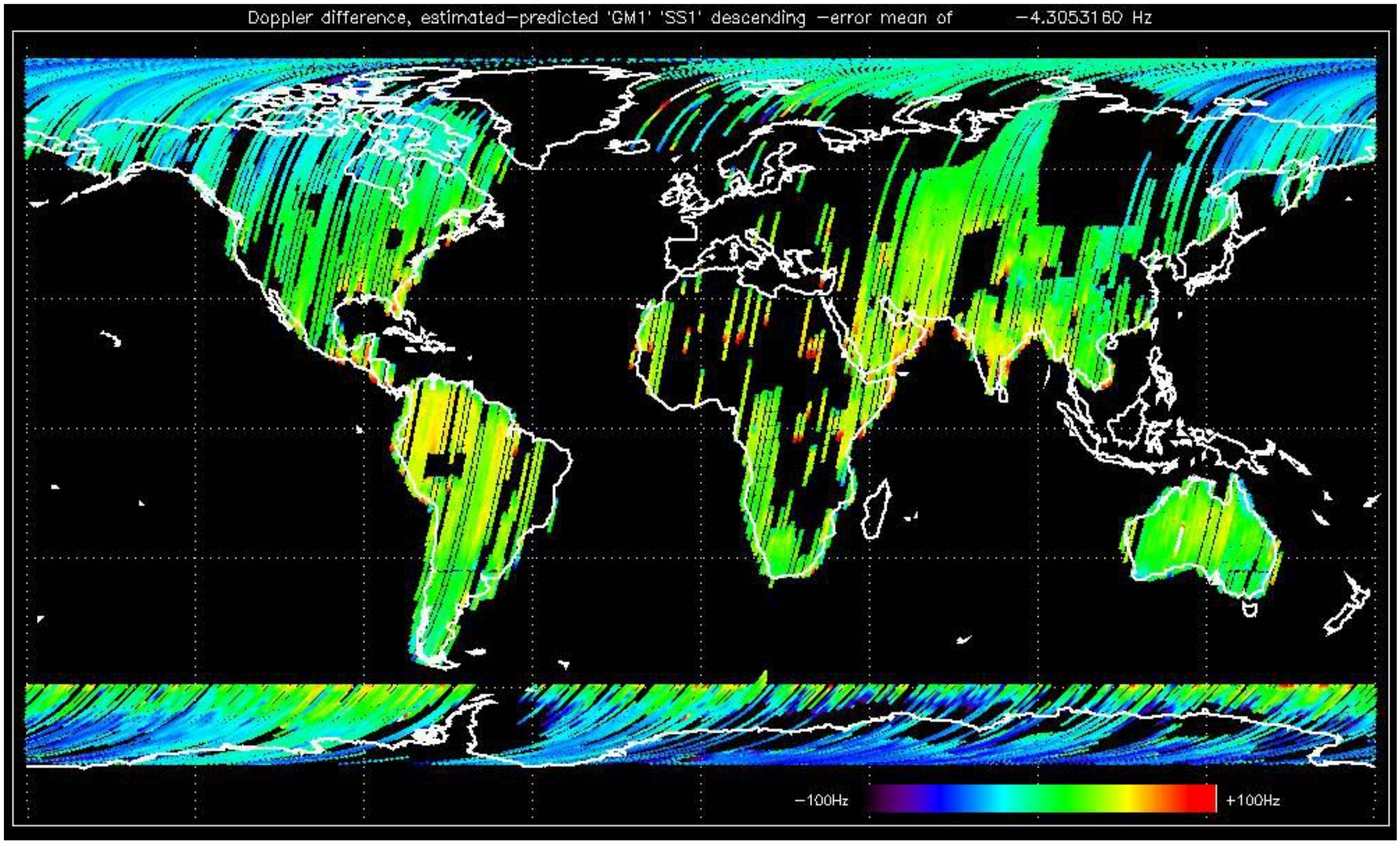

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

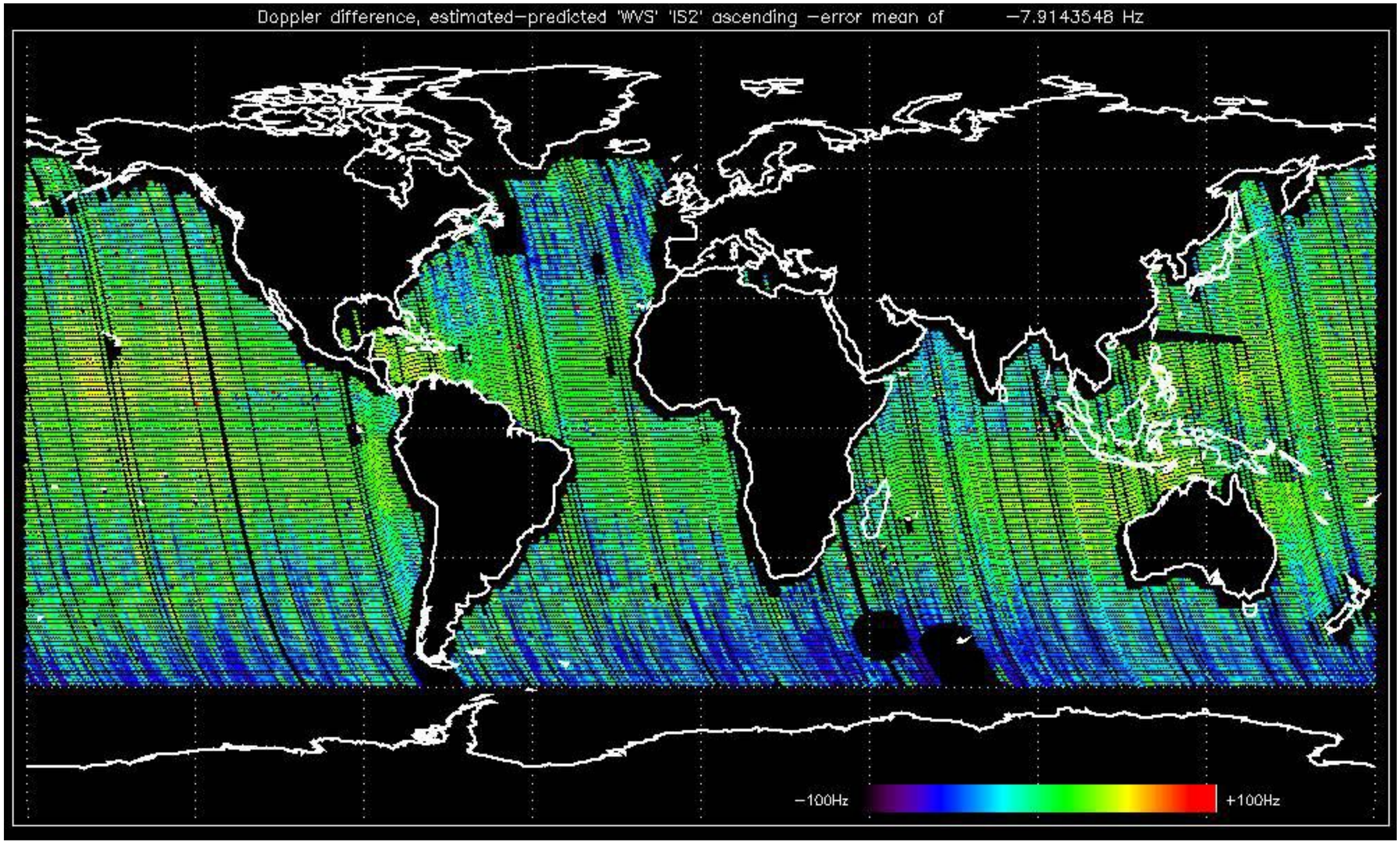

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

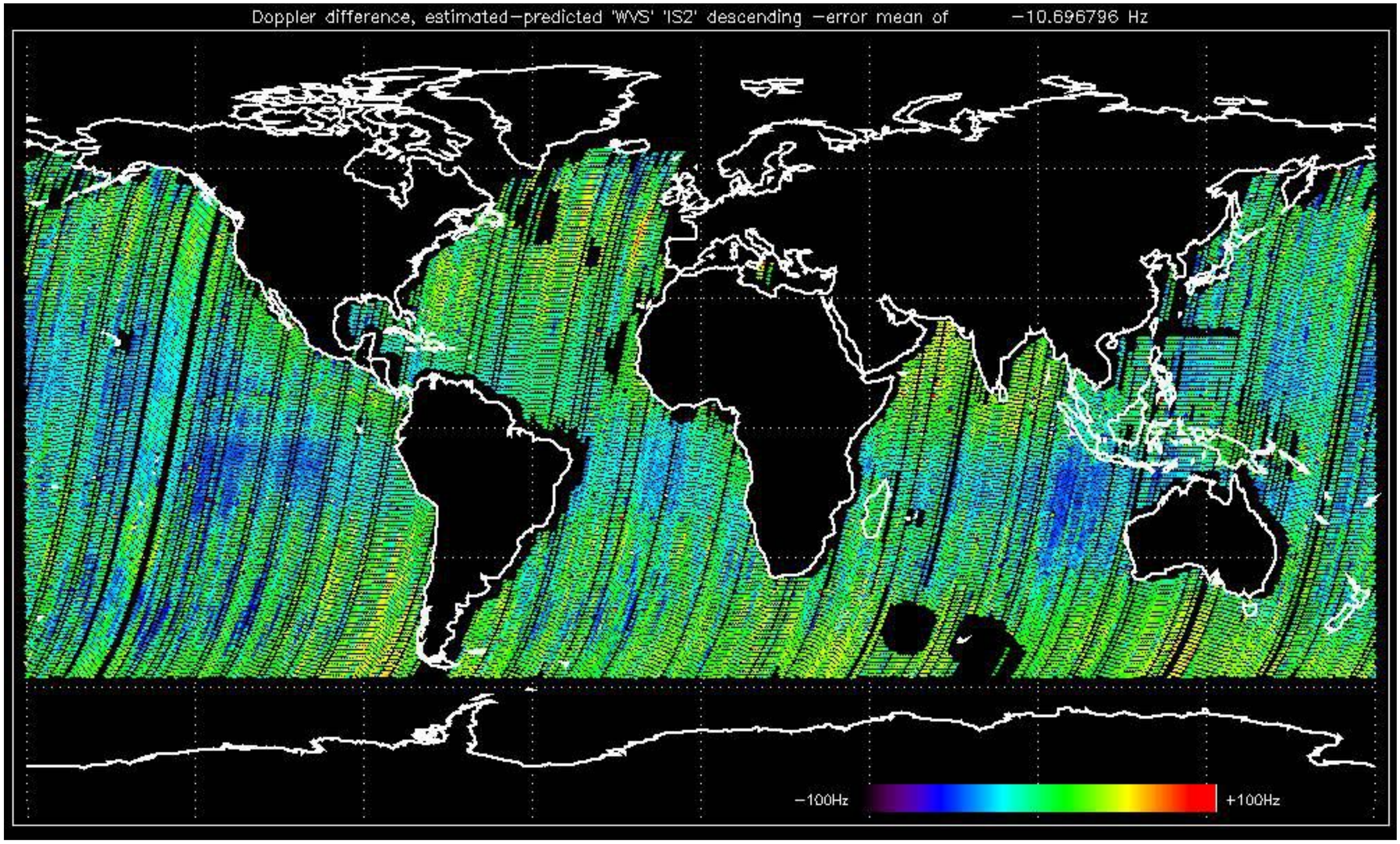

Doppler Bias[Hz]
500
400
300
200
100
0
−100
02
04
06
08
10
12
14
16
18
20
22
00
01—Jun
Date

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
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
−300
02
04
06
08
10
12
14
16
18
20
22
00
02
01−Jun
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −15.672570 Hz
−100Hz
+100Hz

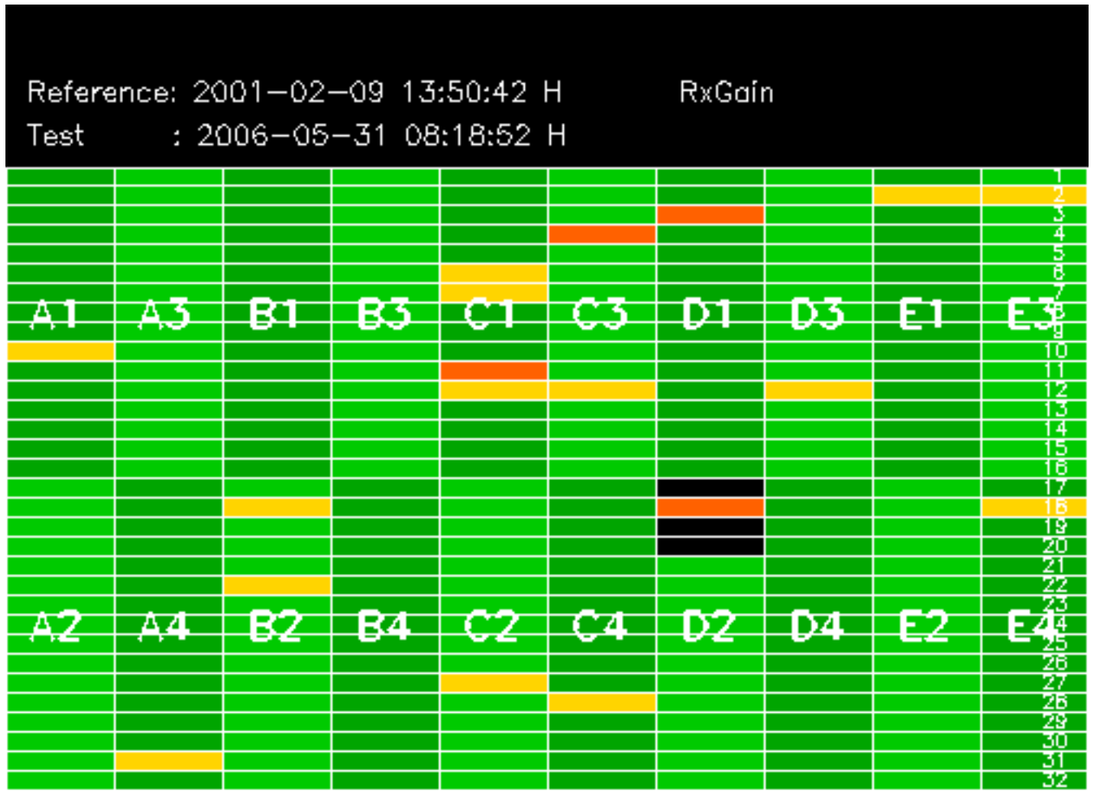

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −4.3053160 Hz
−100Hz
+100Hz

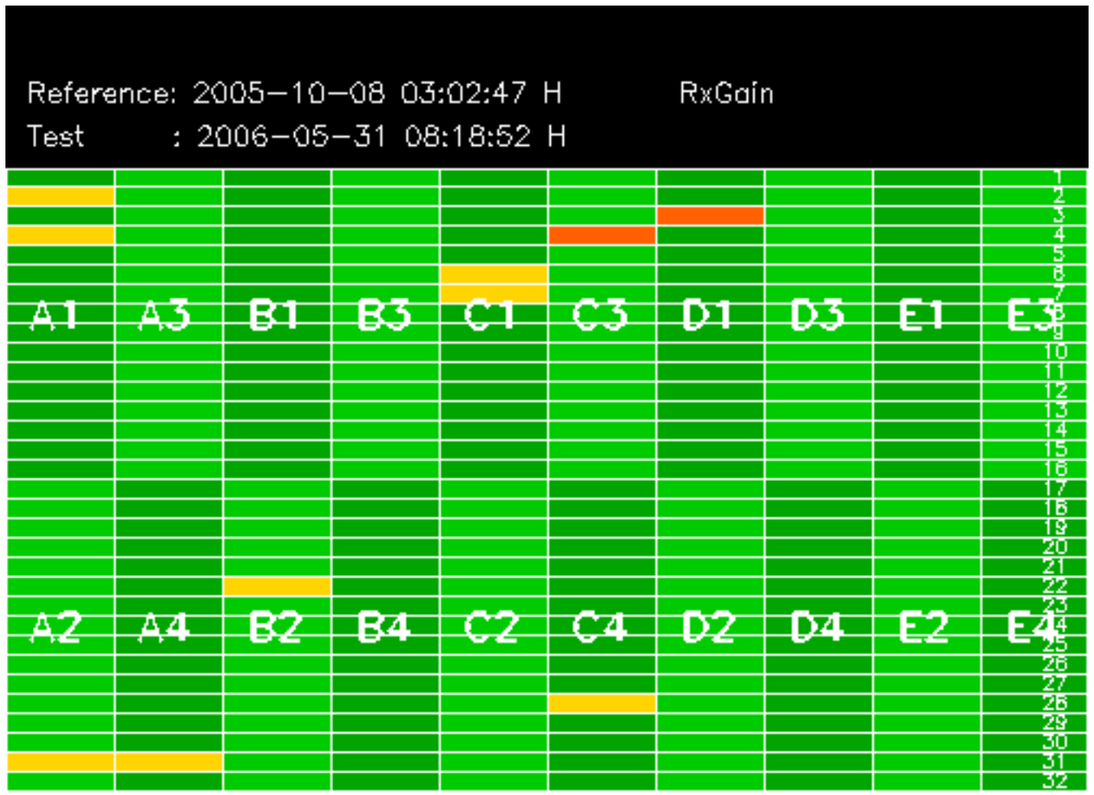

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −7.9143548 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −10.696796 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-05-31 08:18:52 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-05-31 08:18:52 H
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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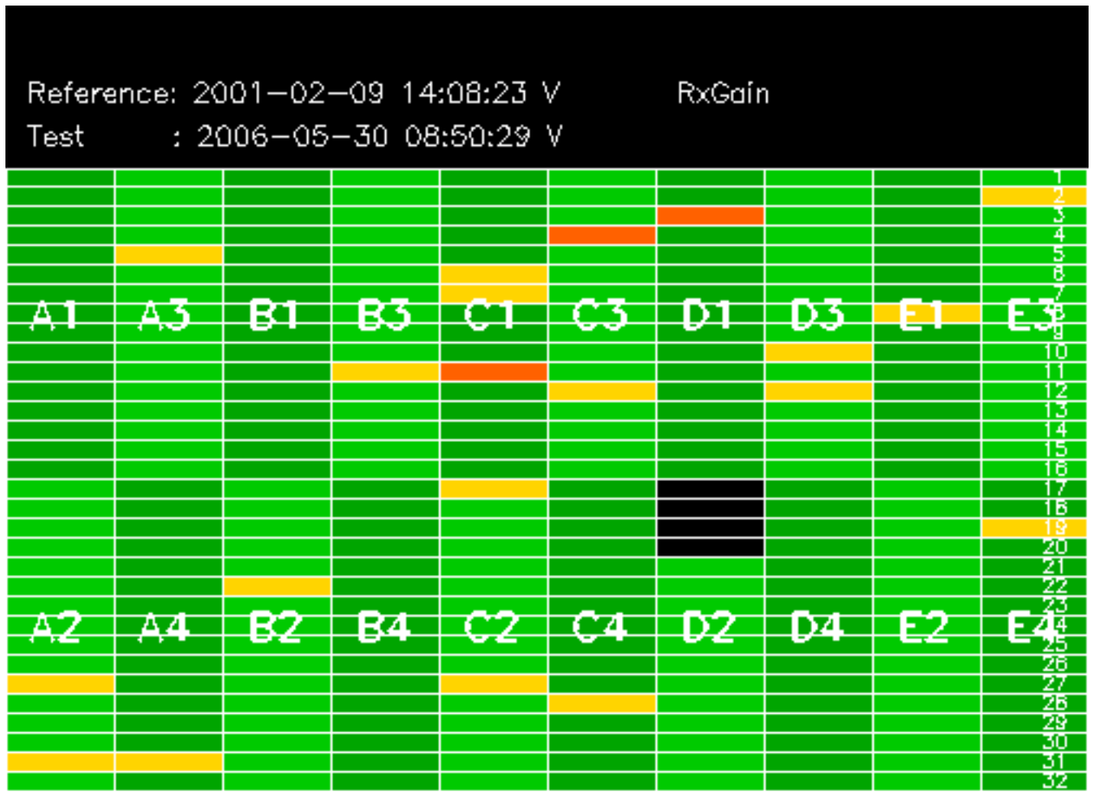
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-30 08:50:29 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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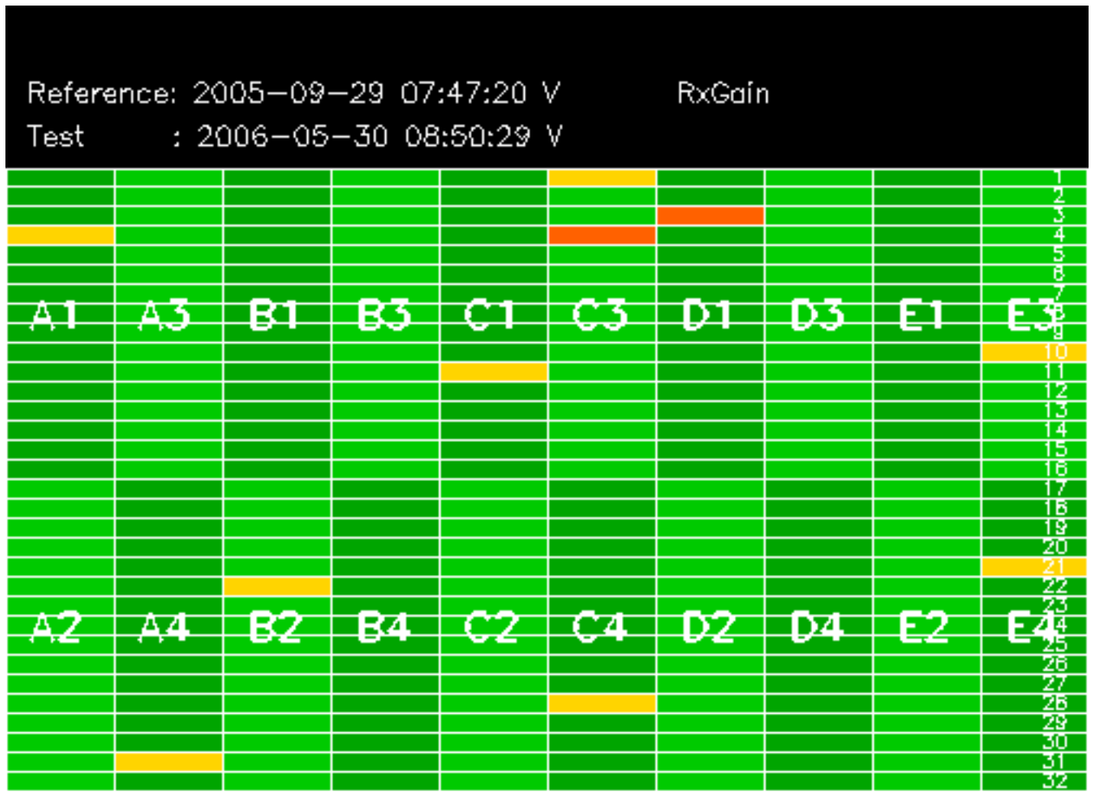
Reference: 2005-09-29 07:47:20 V
Test : 2006-05-30 08:50:29 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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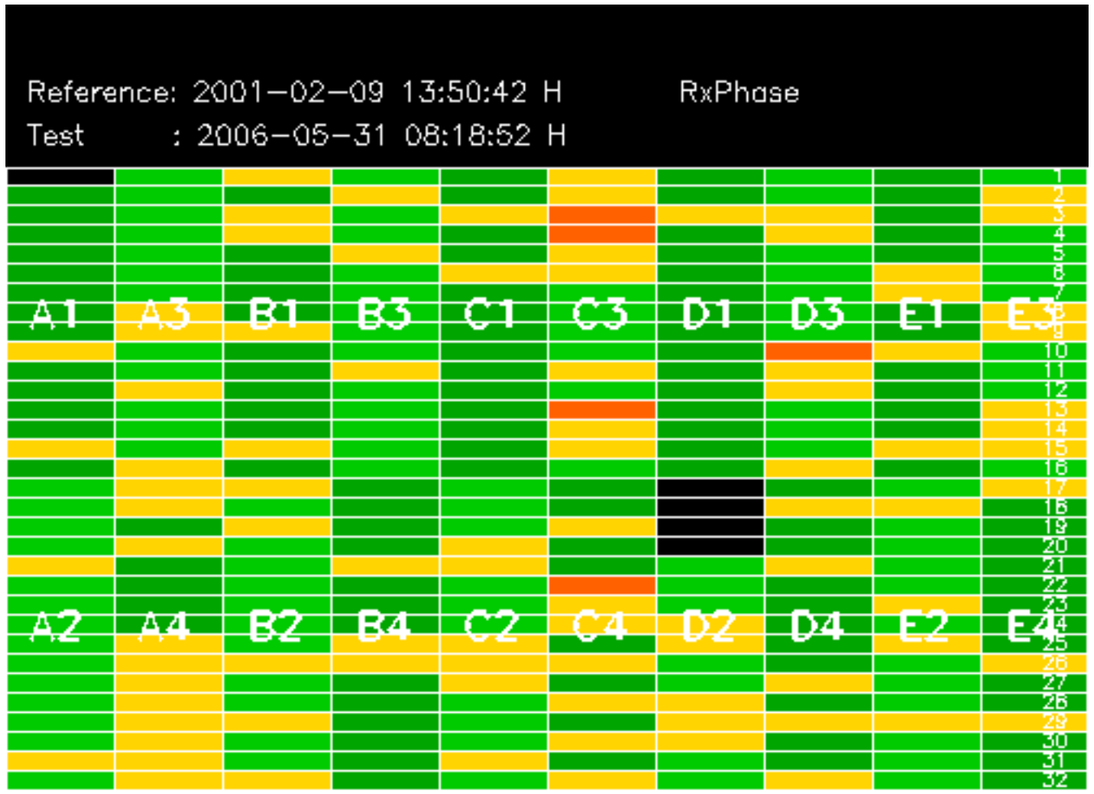
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-05-31 08:18:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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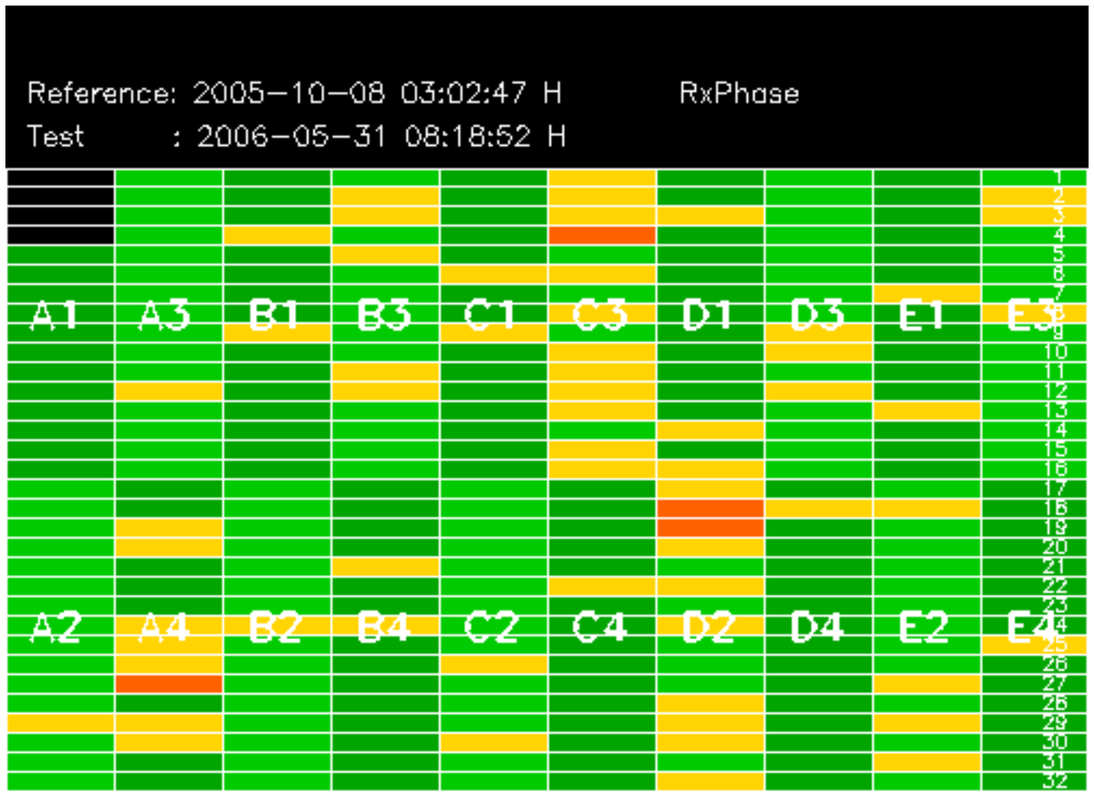
Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-05-31 08:18:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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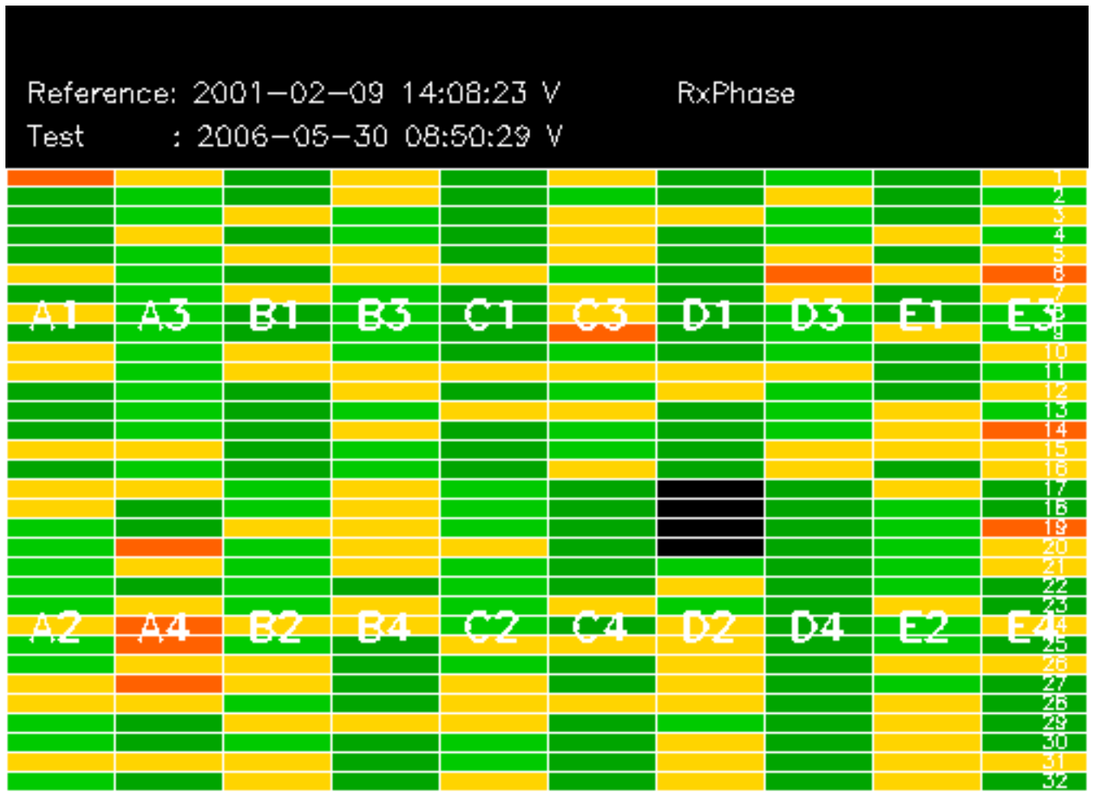
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-30 08:50:29 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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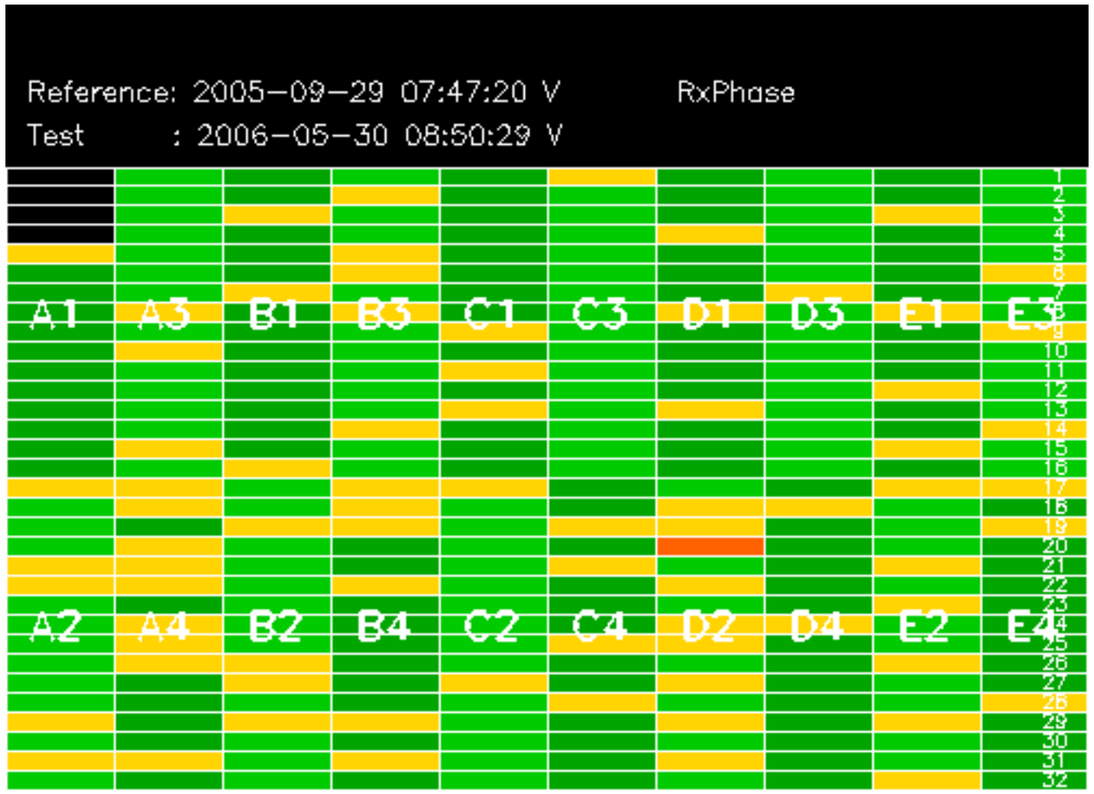
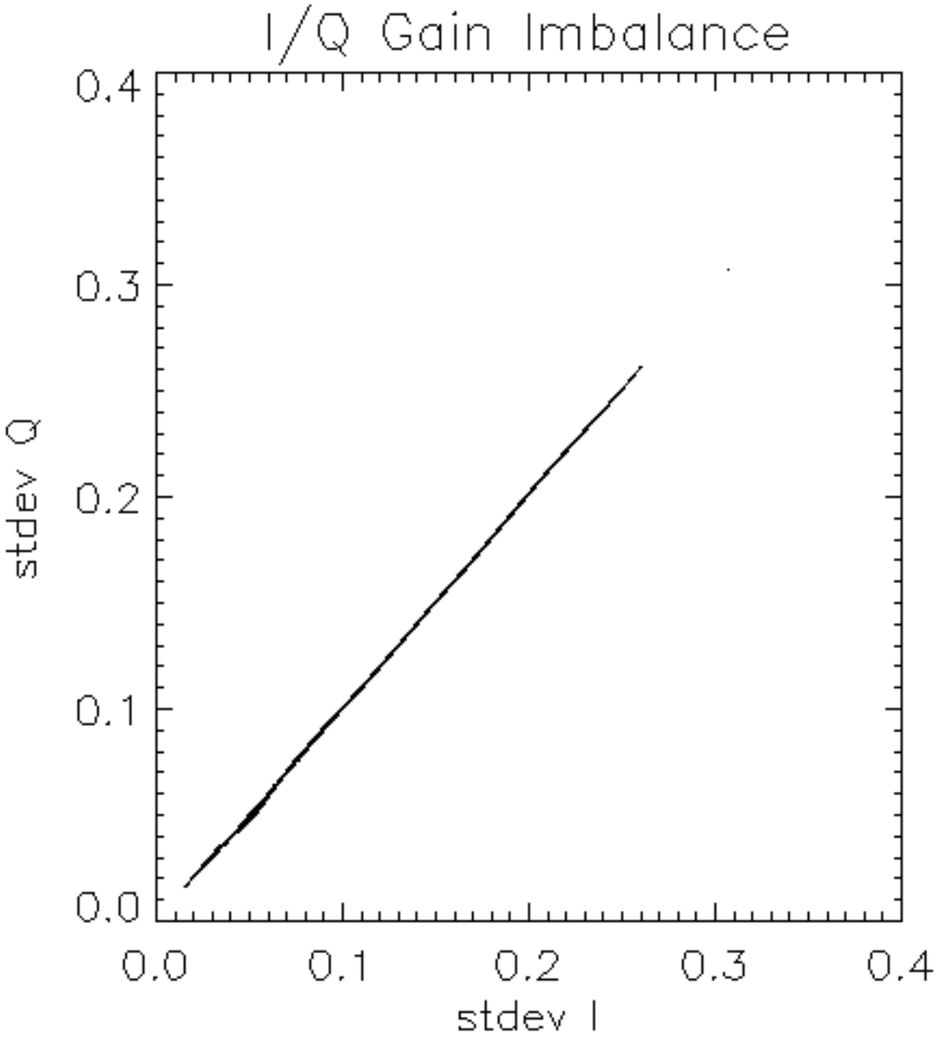
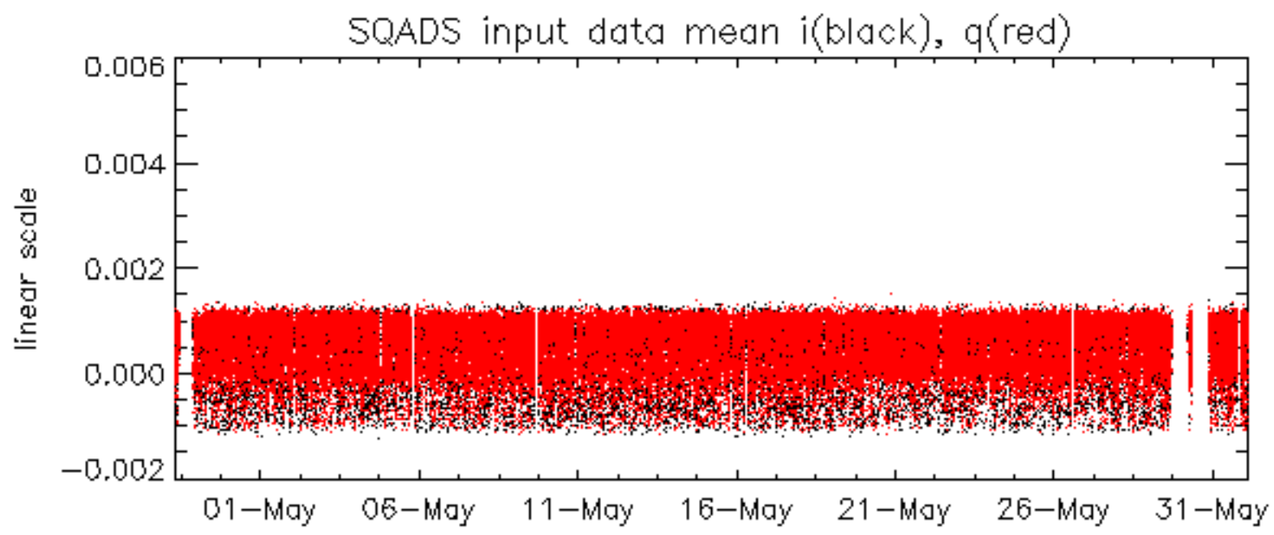
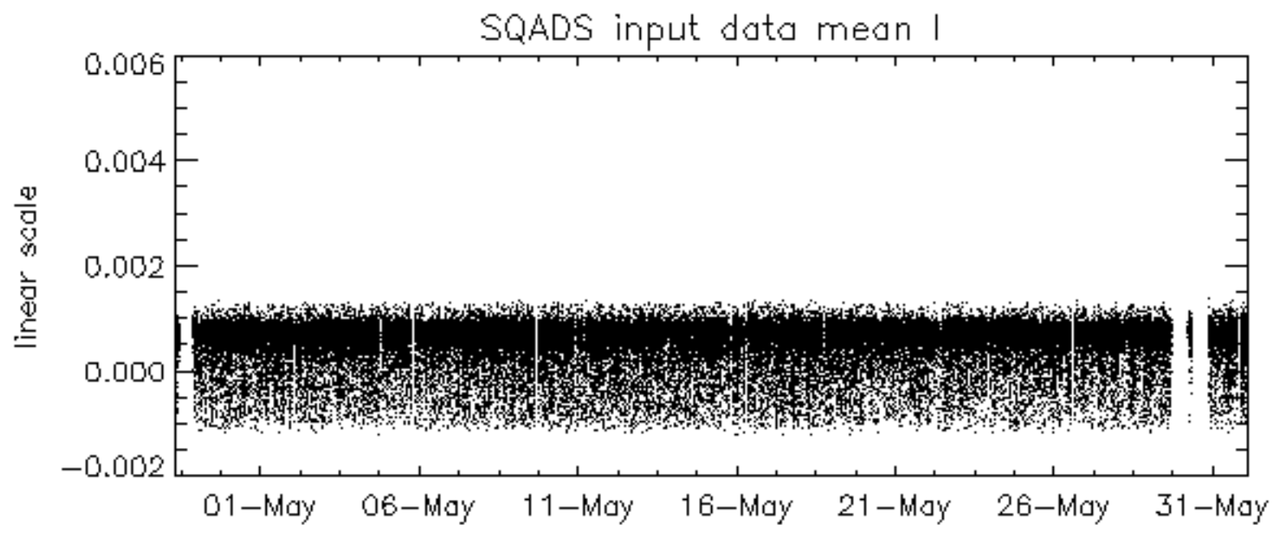
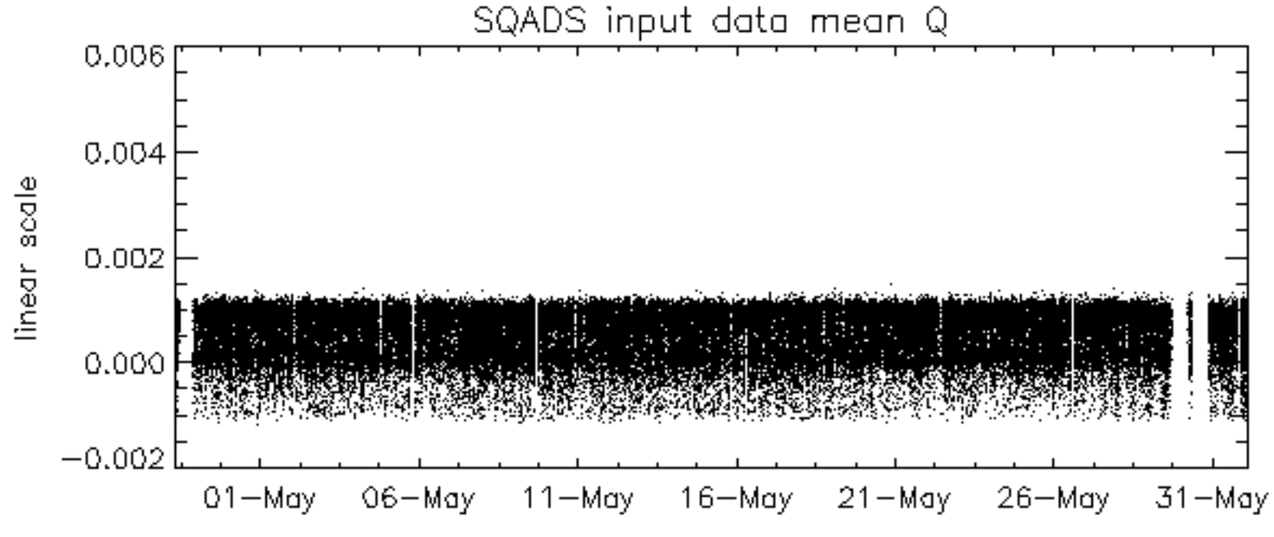
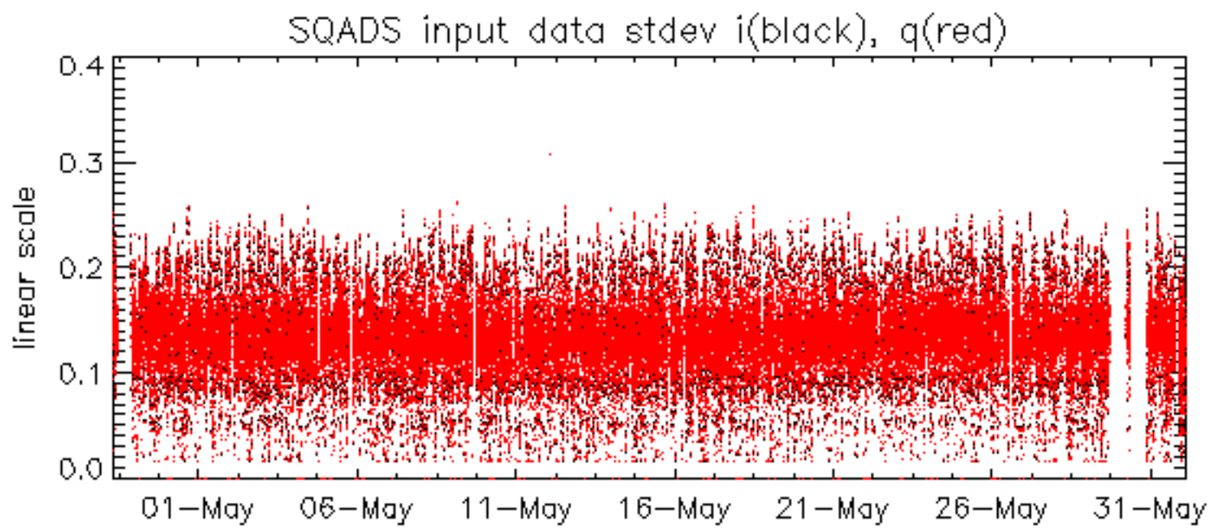

Reference: 2005-09-29 07:47:20 V
Test : 2006-05-30 08:50:29 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

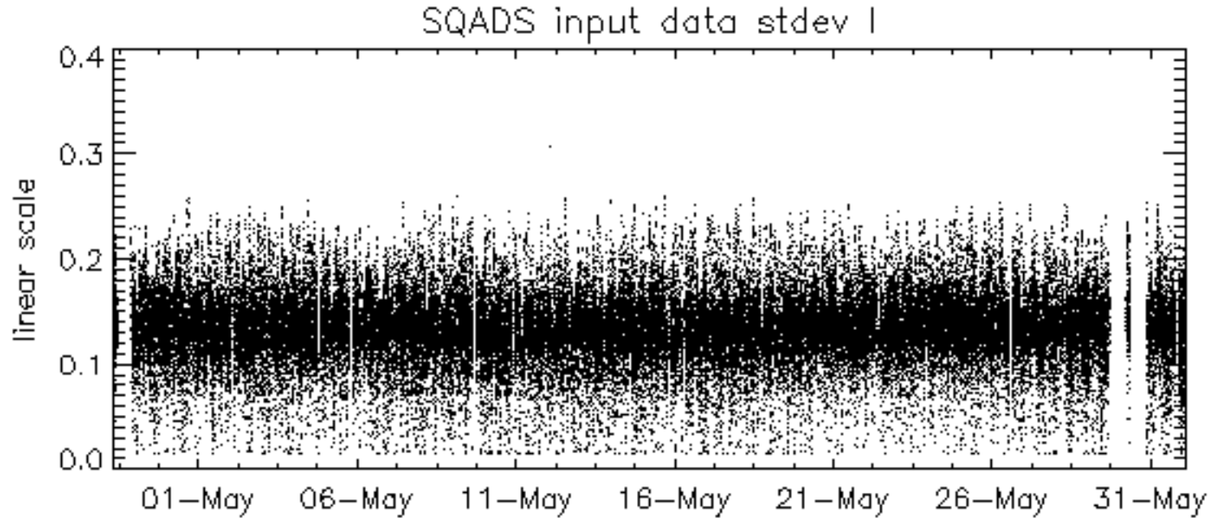

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4

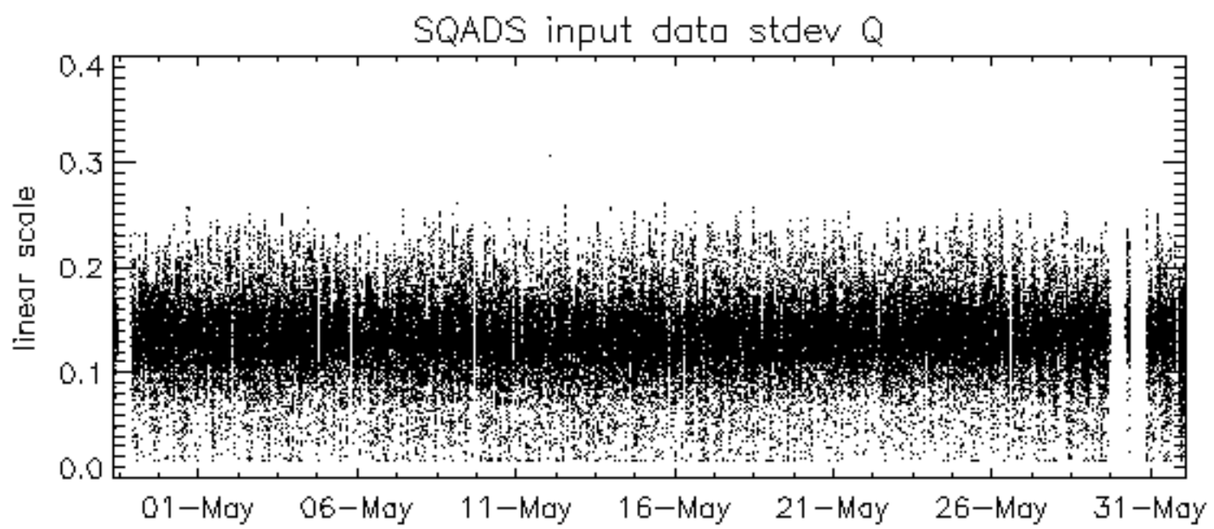

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
01−May
06−May
11−May
16−May
21−May
26−May
31−May

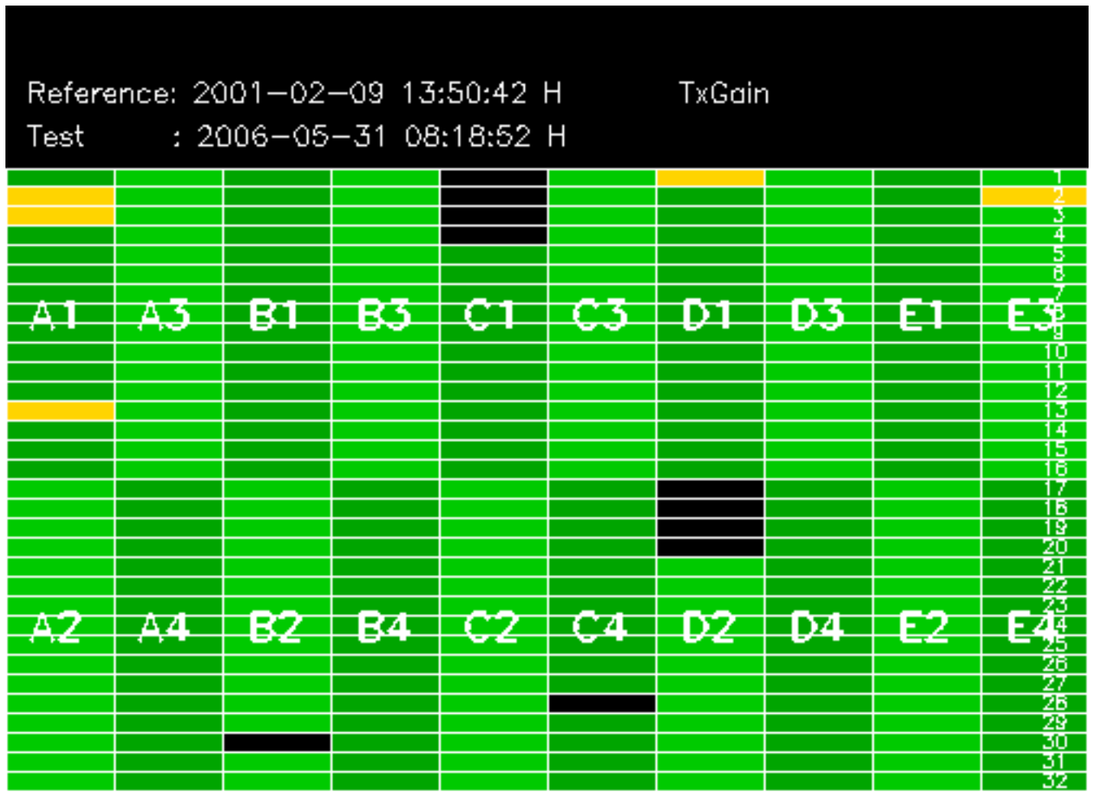

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
01−May
06−May
11−May
16−May
21−May
26−May
31−May


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2006-05-31 08:18:52 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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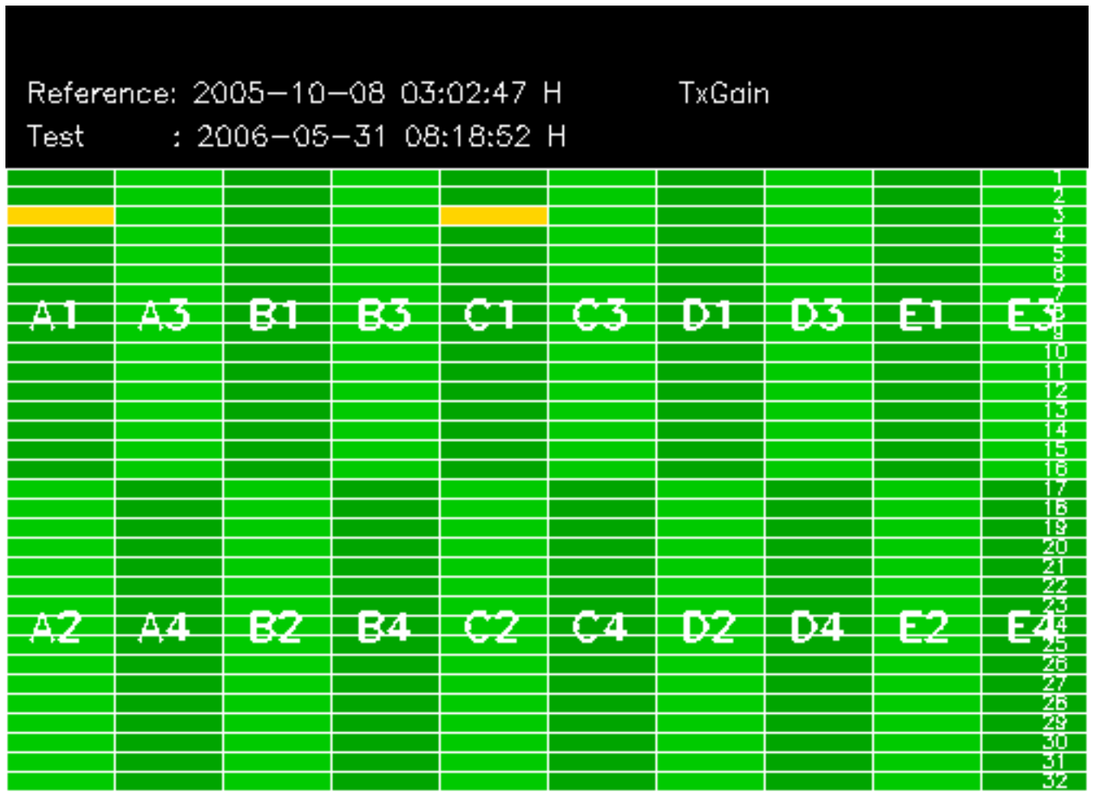
Reference: 2005-10-08 03:02:47 H
Test : 2006-05-31 08:18:52 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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Reference: 2001-02-09 14:08:23 V
Test : 2006-05-30 08:50:29 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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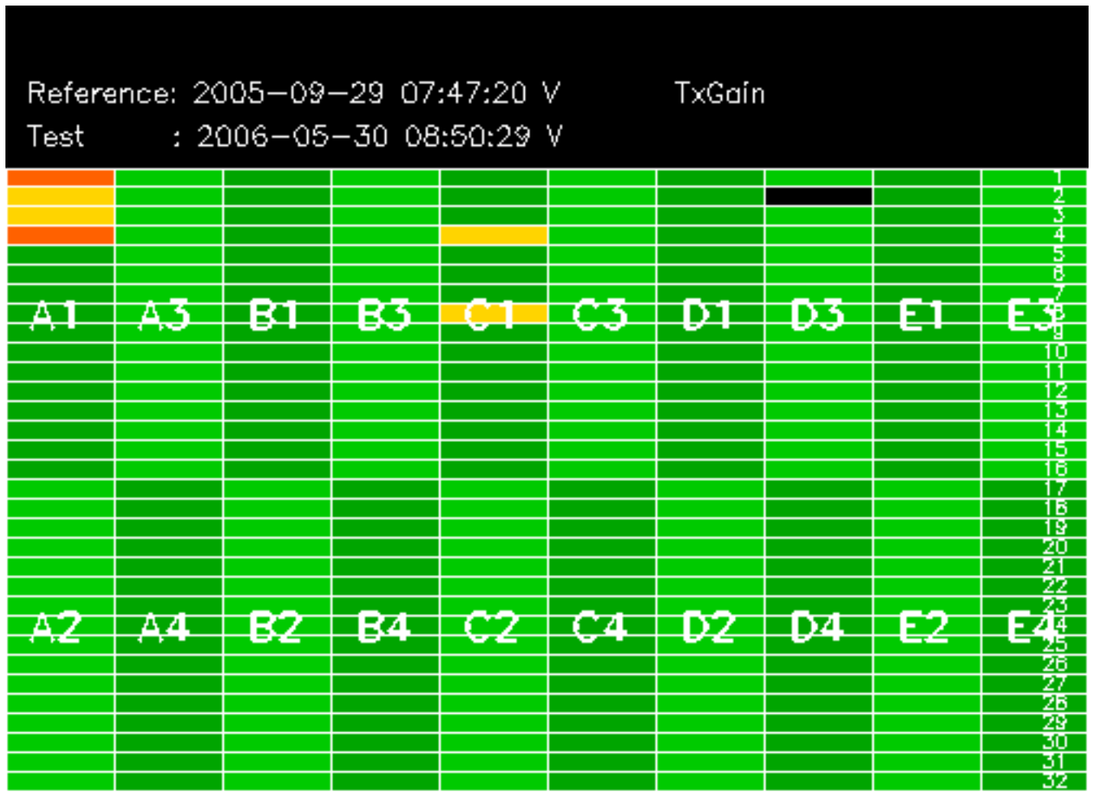
Reference: 2005-09-29 07:47:20 V
Test : 2006-05-30 08:50:29 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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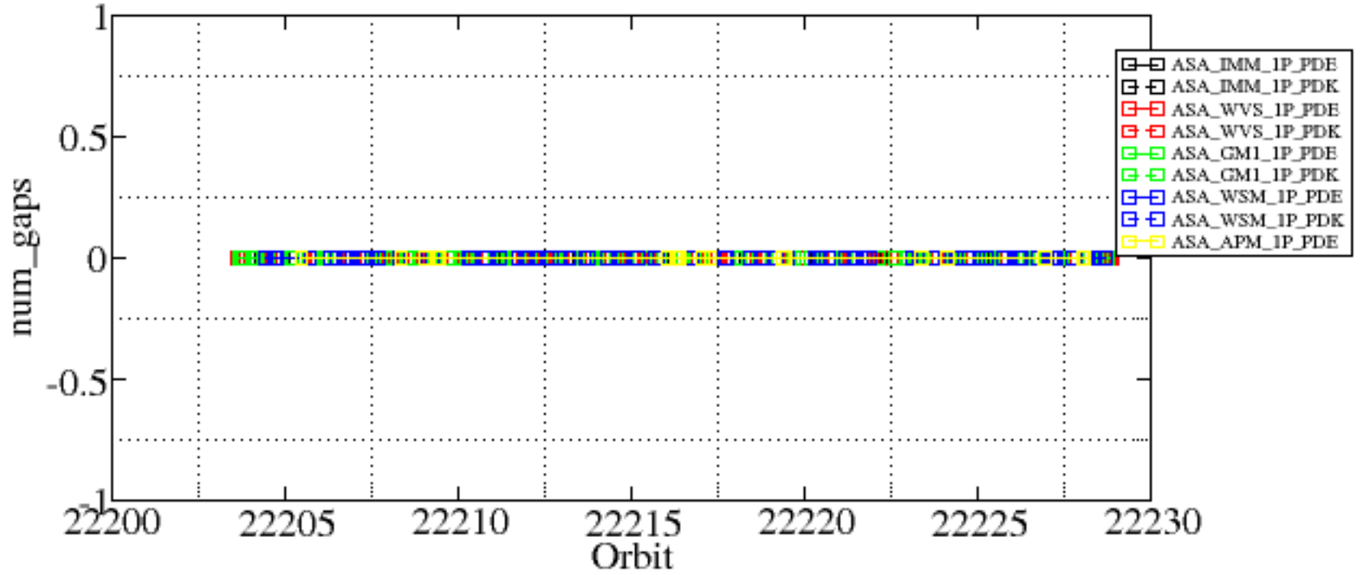
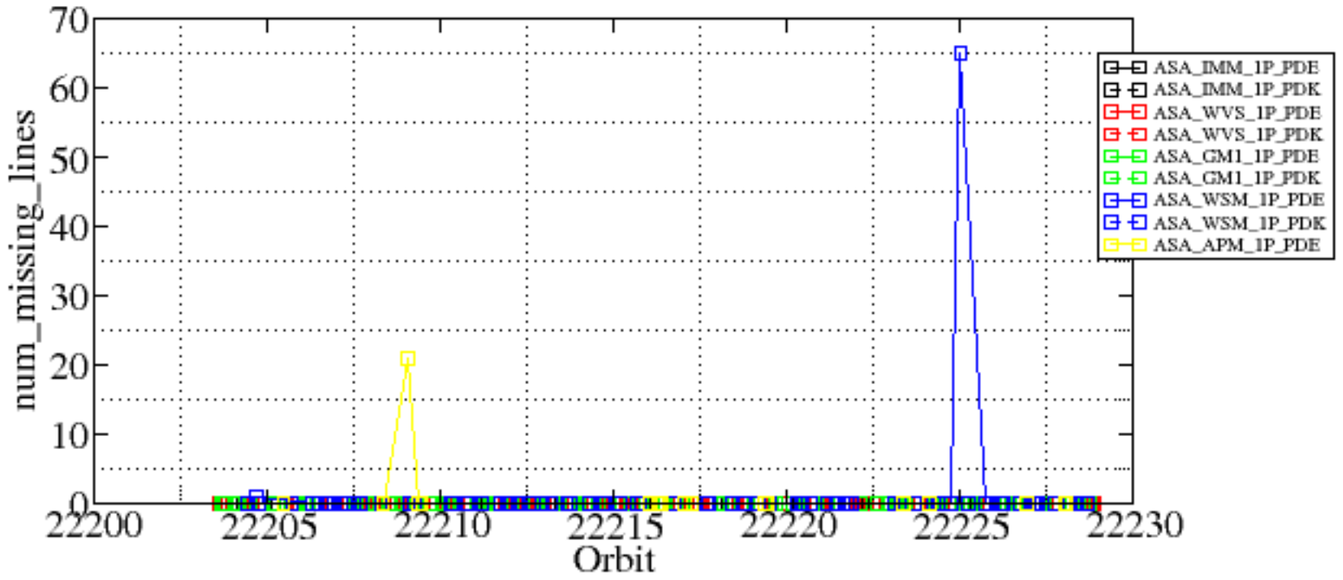
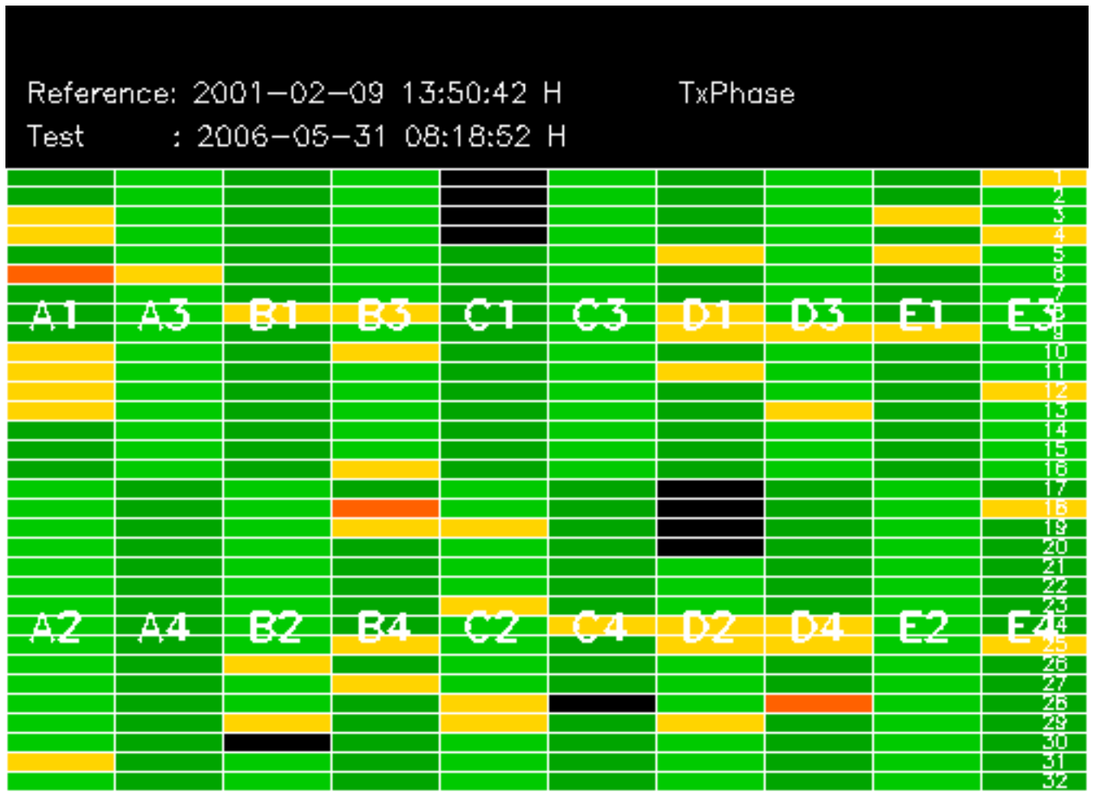
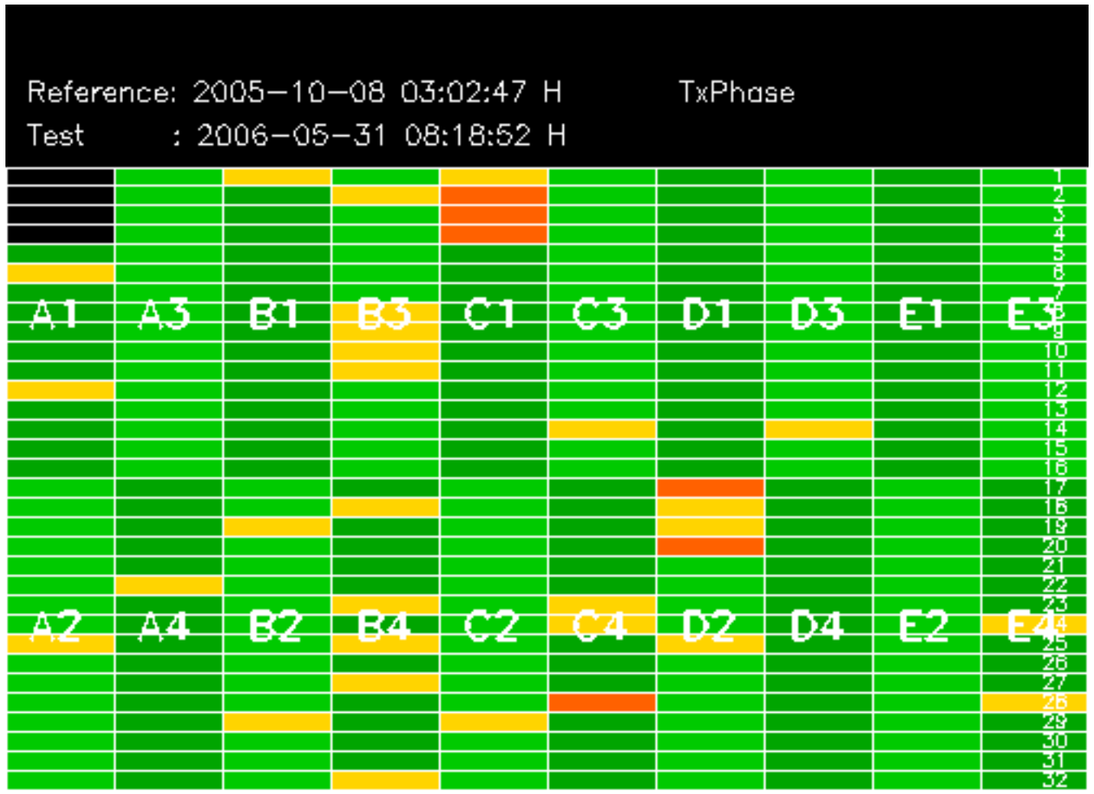
Summary of analysis for the last 3 days 2006053[011]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_WSM_1PNPDE20060530_071020_000004832048_00106_22204_1609.N1 </td> <td>0 </td> <td>1 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060531_171618_000001472048_00127_22225_1873.N1 </td> <td>0 </td> <td>65 </td></tr>
<tr> <td>ASA_APM_1PNPDE20060530_143046_000000882048_00111_22209_2800.N1 </td> <td>0 </td> <td>21 </td></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
22200
22205
22210
22215
22220
22225
22230
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


num_missing_lines
70
60
50
40
30
20
10
0
22200
22205
22210
22215
22220
22225
22230
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


Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2006-05-31 08:18:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
Test : 2006-05-31 08:18:52 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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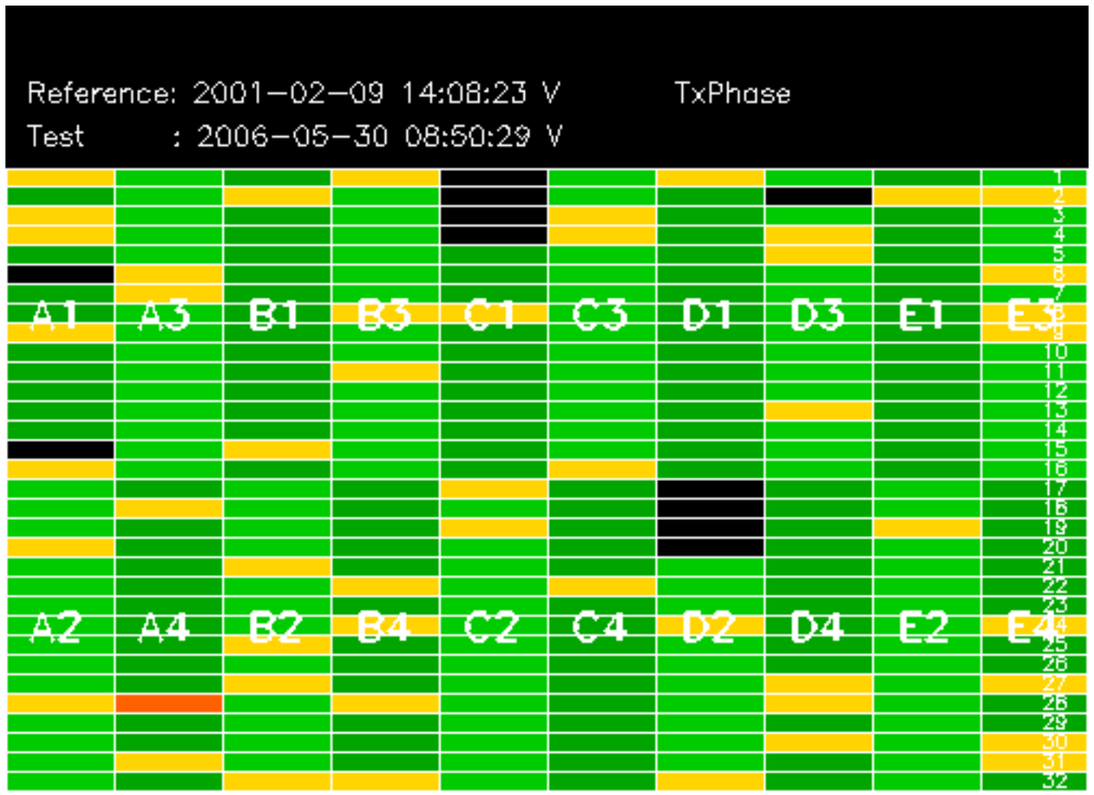
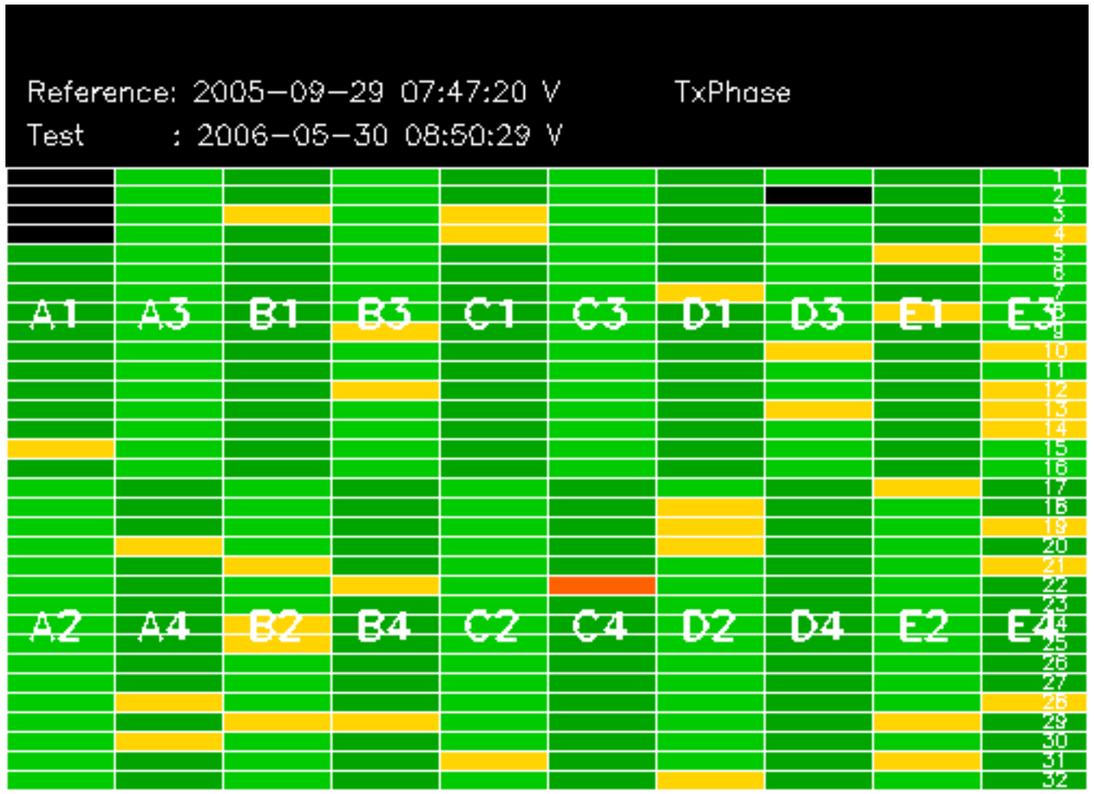

Reference: 2001-02-09 14:08:23 V
Test : 2006-05-30 08:50:29 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-29 07:47:20 V
Test : 2006-05-30 08:50:29 V
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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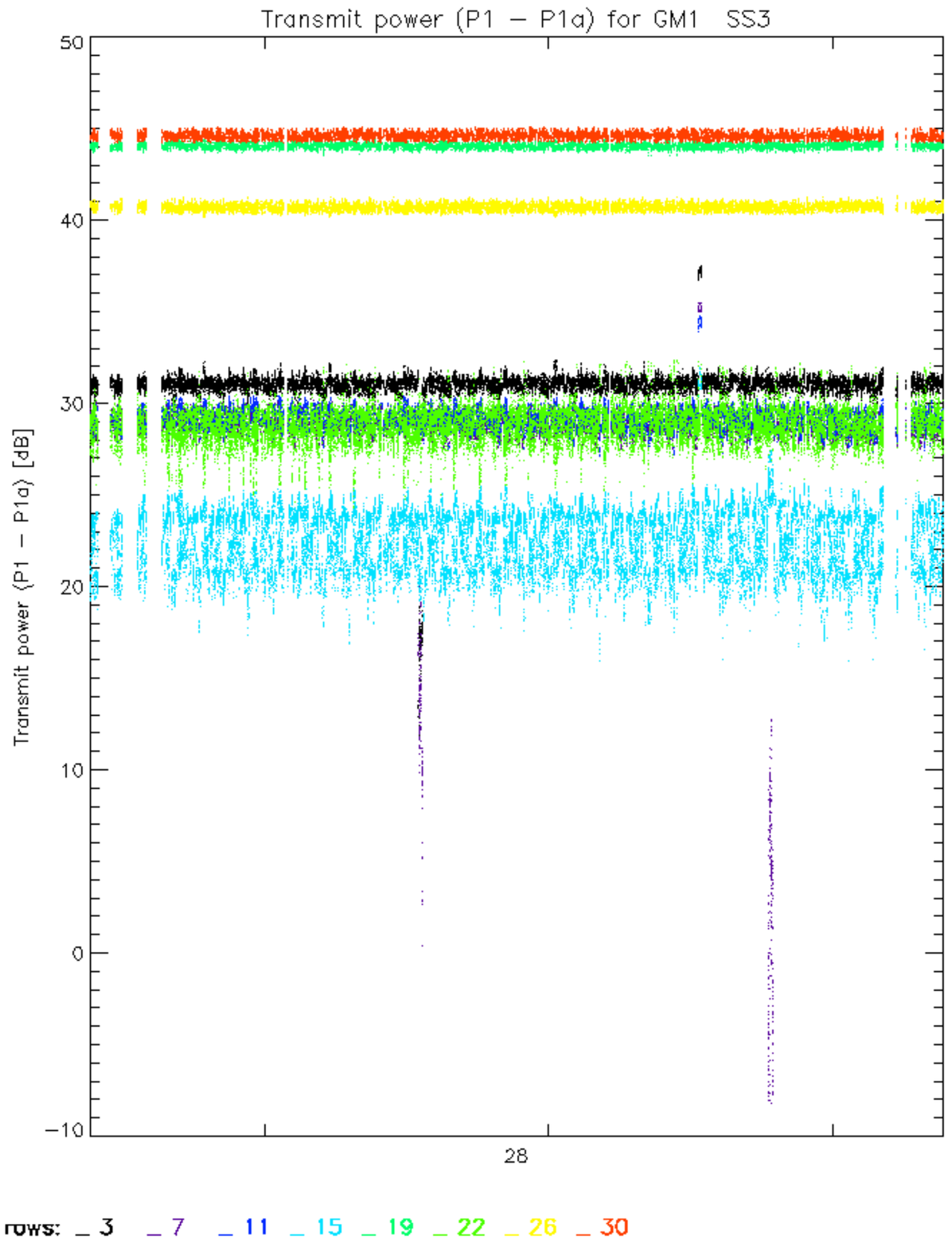
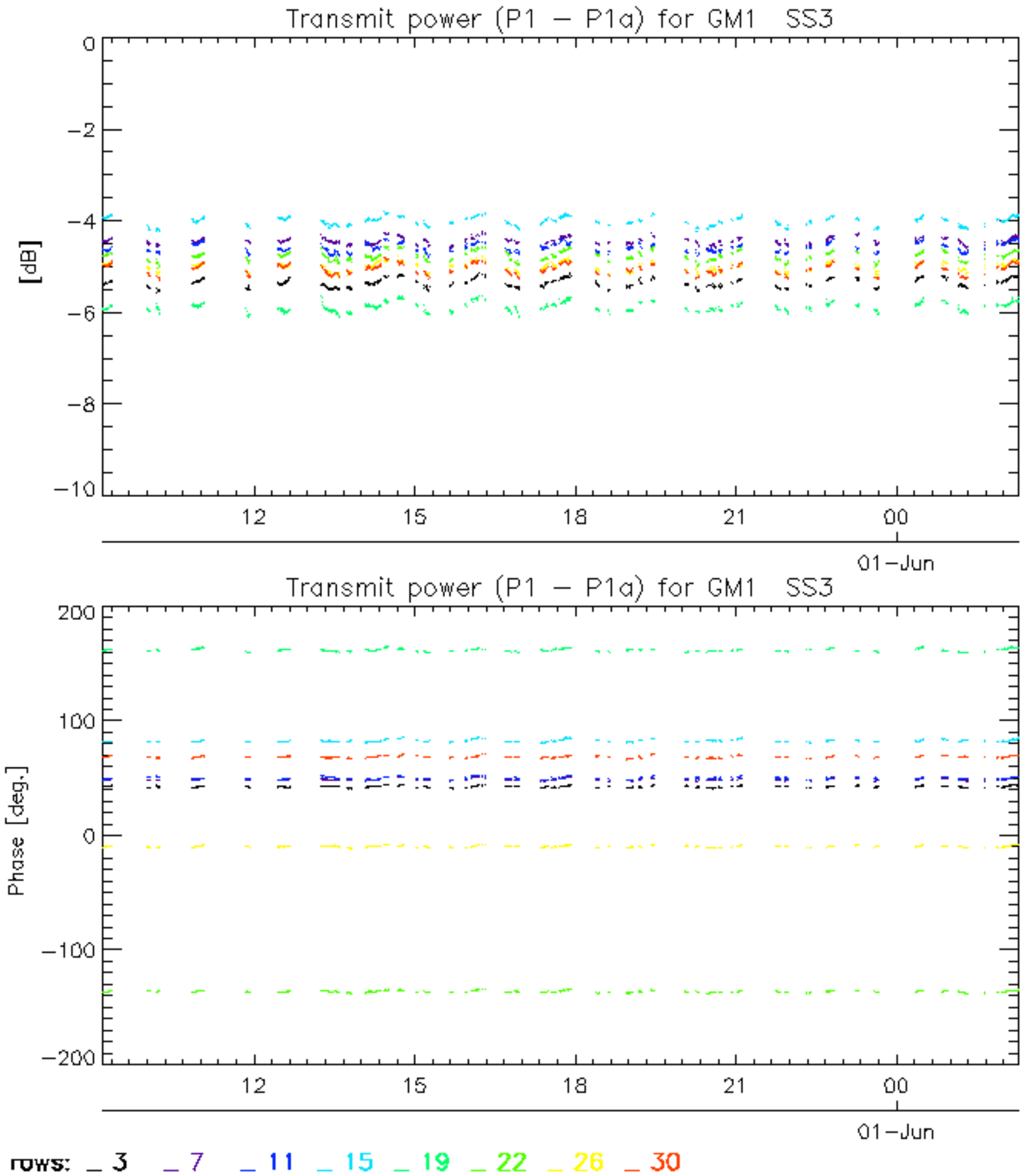
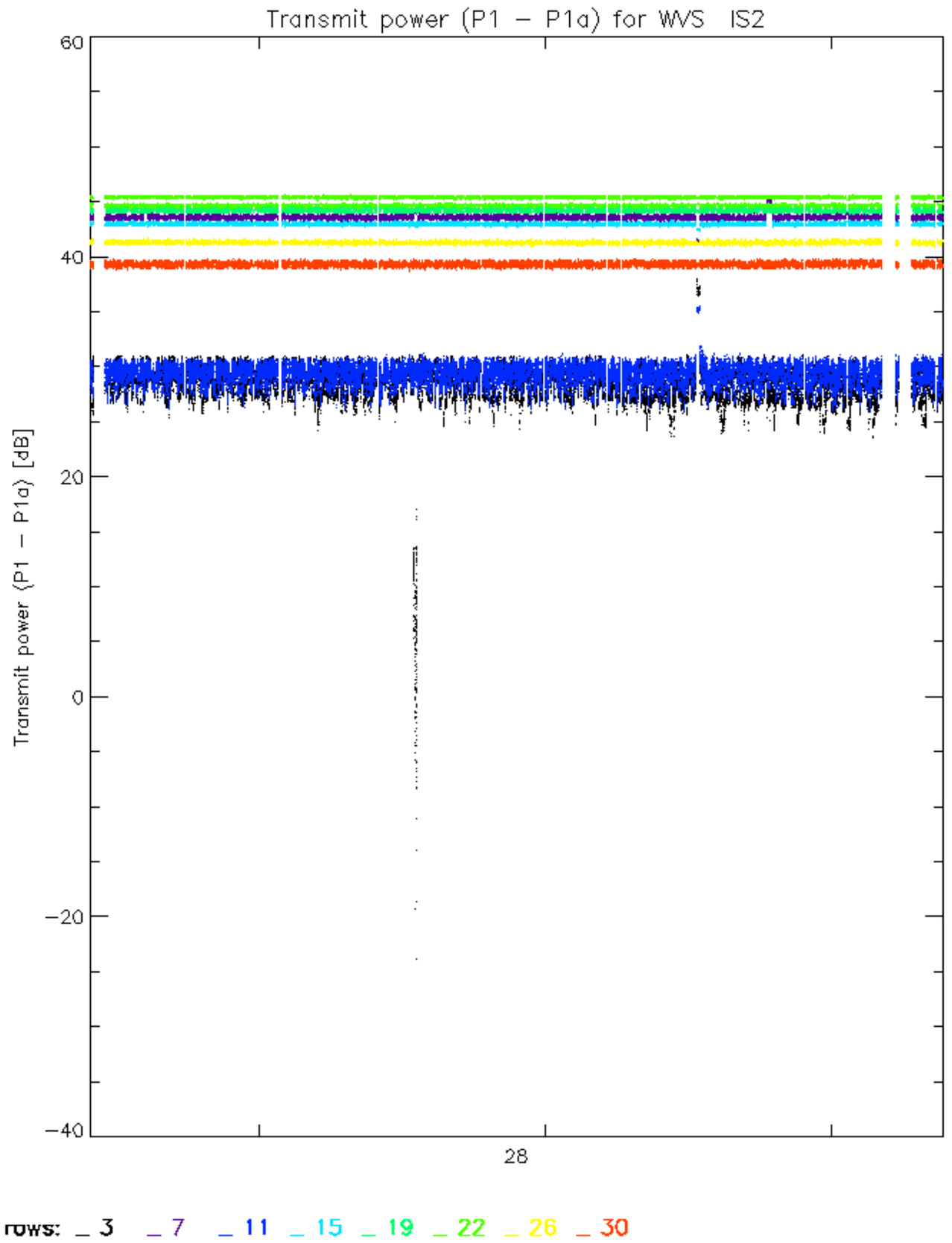
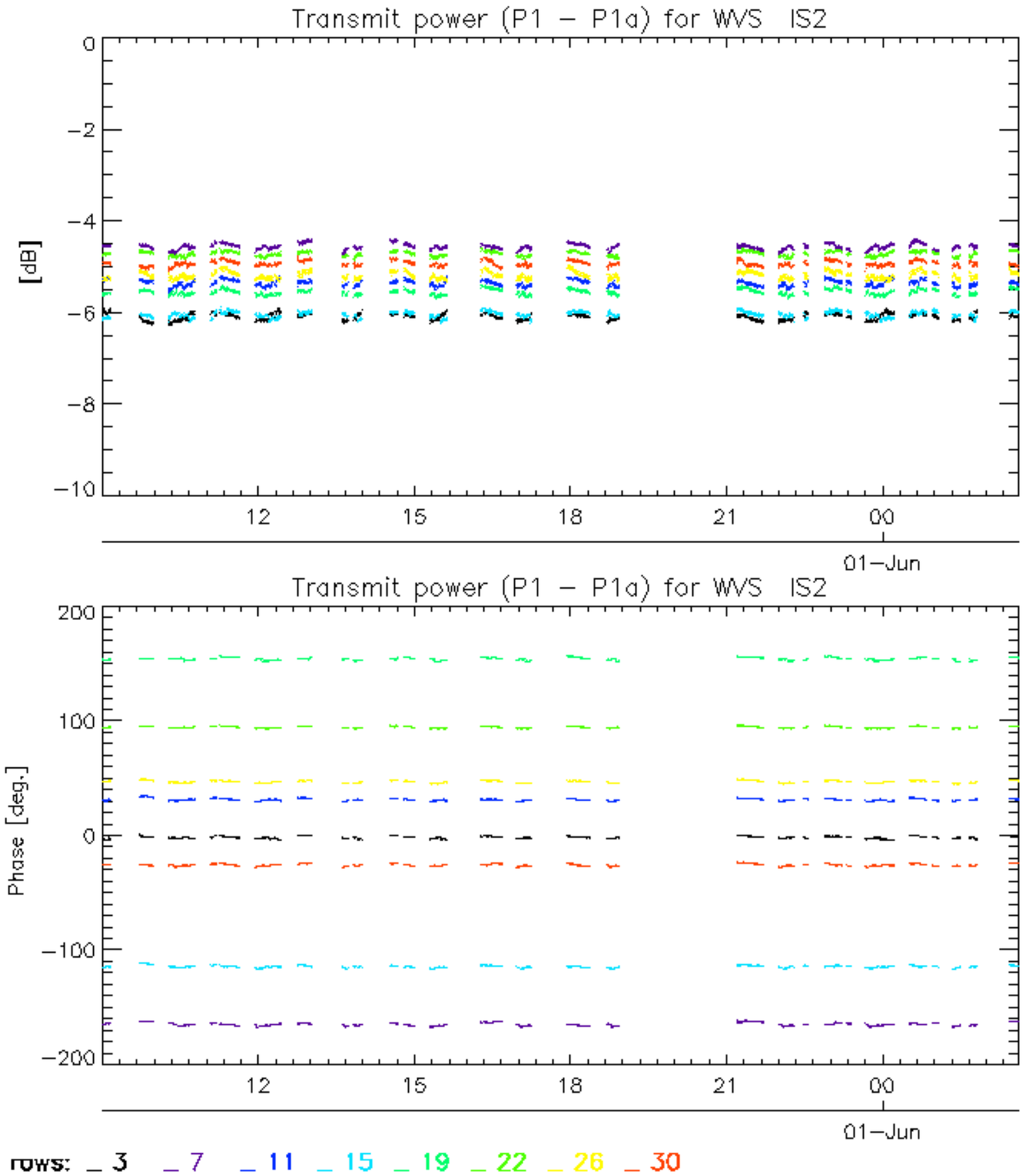

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
28
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
12
15
18
21
00
01−Jun
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
01−Jun
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
28
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
12
15
18
21
00
01–Jun
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
12
15
18
21
00
01–Jun
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.