PRELIMINARY REPORT OF 060516

last update on Tue May 16 16:38:39 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 2006-05-15 00:00:00 to 2006-05-16 16:38:39

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	39	64	10	1	19
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	39	64	10	1	19
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	39	64	10	1	19
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	39	64	10	1	19

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000	33	48	38	28	43
ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000	33	48	38	28	43
ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000	33	48	38	28	43
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	33	48	38	28	43

2.3 - Browse Visual Inspection

No anomalies observed on available browse products

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	20060514 053210
H	20060515 050033

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	-3.971944	0.011569	0.019326
7	P1	-3.069209	0.013554	-0.088042
11	P1	-4.097667	0.015271	-0.038449
15	P1	-6.111913	0.011824	-0.079068
19	P1	-3.311367	0.007829	-0.009513
22	P1	-4.523704	0.010878	-0.008516
26	P1	-4.025667	0.020373	0.101207
30	P1	-5.741639	0.019602	-0.021835
3	P1	-16.651478	0.309336	0.150394
7	P1	-17.015656	0.149906	-0.303056
11	P1	-16.796984	0.318068	-0.413940
15	P1	-13.136483	0.139888	-0.223864
19	P1	-14.179517	0.049198	-0.236141
22	P1	-16.096600	0.447395	-0.194043
26	P1	-15.393536	0.268182	0.399511
30	P1	-16.847235	0.328054	-0.452870

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-21.275270	0.084953	0.126076
7	P2	-22.169991	0.100529	0.155551
11	P2	-16.012722	0.112121	0.157385
15	P2	-7.168281	0.095011	-0.010104
19	P2	-9.157214	0.088224	-0.021968
22	P2	-18.075535	0.086203	-0.112244
26	P2	-16.328875	0.091815	-0.101002
30	P2	-19.604078	0.086190	0.019645

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.191903	0.004036	-0.002115
7	P3	-8.191903	0.004036	-0.002115
11	P3	-8.191903	0.004036	-0.002115
15	P3	-8.191903	0.004036	-0.002115
19	P3	-8.191903	0.004036	-0.002115
22	P3	-8.191903	0.004036	-0.002115
26	P3	-8.191918	0.004037	-0.002079
30	P3	-8.191918	0.004037	-0.002079

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	-3.745123	0.038516	0.012189
7	P1	-2.645870	0.101148	0.116936
11	P1	-2.875263	0.031030	0.058772
15	P1	-3.506227	0.029420	0.053211
19	P1	-3.386218	0.013911	-0.010653
22	P1	-5.109894	0.022445	0.064943
26	P1	-5.824104	0.021700	-0.031416
30	P1	-5.185727	0.044245	-0.001152
3	P1	-11.592957	0.133361	-0.007752
7	P1	-9.976622	0.154250	-0.001191
11	P1	-10.216687	0.082994	0.070899
15	P1	-10.660810	0.129081	0.170152
19	P1	-15.466683	0.087539	-0.080401
22	P1	-20.750898	1.294941	-0.437217

26	P1	-16.427206	0.394359	-0.190184
30	P1	-18.194162	0.487665	0.427134

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.944016	0.069661	0.107601
7	P2	-22.514778	0.175818	-0.025745
11	P2	-11.195429	0.049188	0.018100
15	P2	-4.880063	0.041880	-0.052543
19	P2	-6.866688	0.041274	-0.017406
22	P2	-8.167194	0.052610	-0.052963
26	P2	-24.063747	0.124909	-0.081400
30	P2	-22.054174	0.086322	-0.002056

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.025428	0.003597	0.007563
7	P3	-8.025462	0.003611	0.007090
11	P3	-8.025564	0.003597	0.007611
15	P3	-8.025290	0.003614	0.007891
19	P3	-8.025537	0.003606	0.007772
22	P3	-8.025528	0.003604	0.007598
26	P3	-8.025317	0.003594	0.007898
30	P3	-8.025393	0.003600	0.007645

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	0.000539699
	stdev	1.88241e-07
MEAN Q	mean	0.000512187
	stdev	2.28063e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.135313
	stdev	0.00118873
STDEV Q	mean	0.135664
	stdev	0.00120570

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2006051[456]
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_IMM_1PNPDE20060516_003808_000000502047_00403_22000_5316.N1	1	0
ASA_IMM_1PNPDK20060514_125915_000001272047_00382_21979_1748.N1	1	0
ASA_WSM_1PNPDE20060514_014737_000000862047_00375_21972_9156.N1	0	45
ASA_WSM_1PNPDK20060515_140121_000000852047_00397_21994_5187.N1	0	32

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

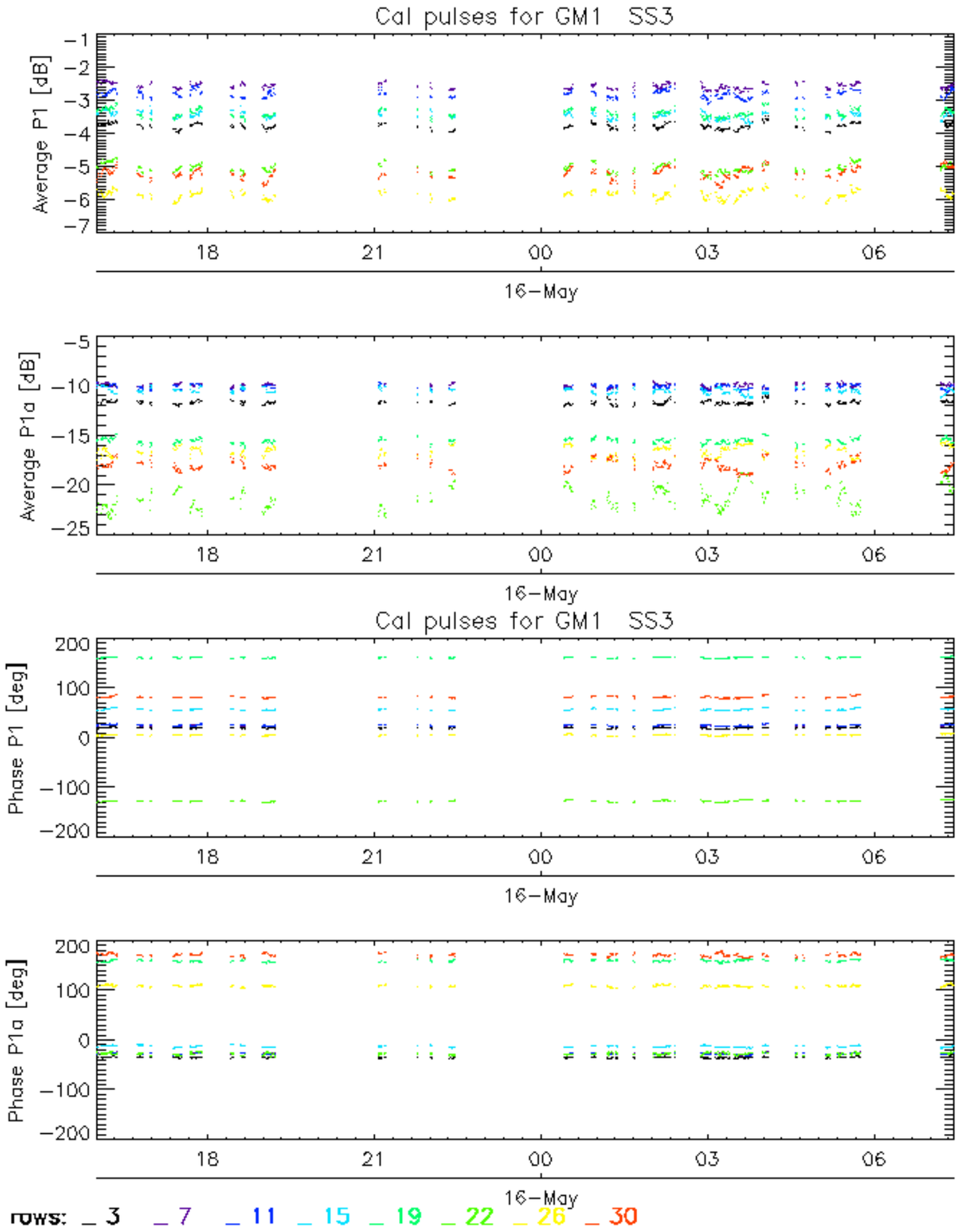
Evolution of Absolute Doppler

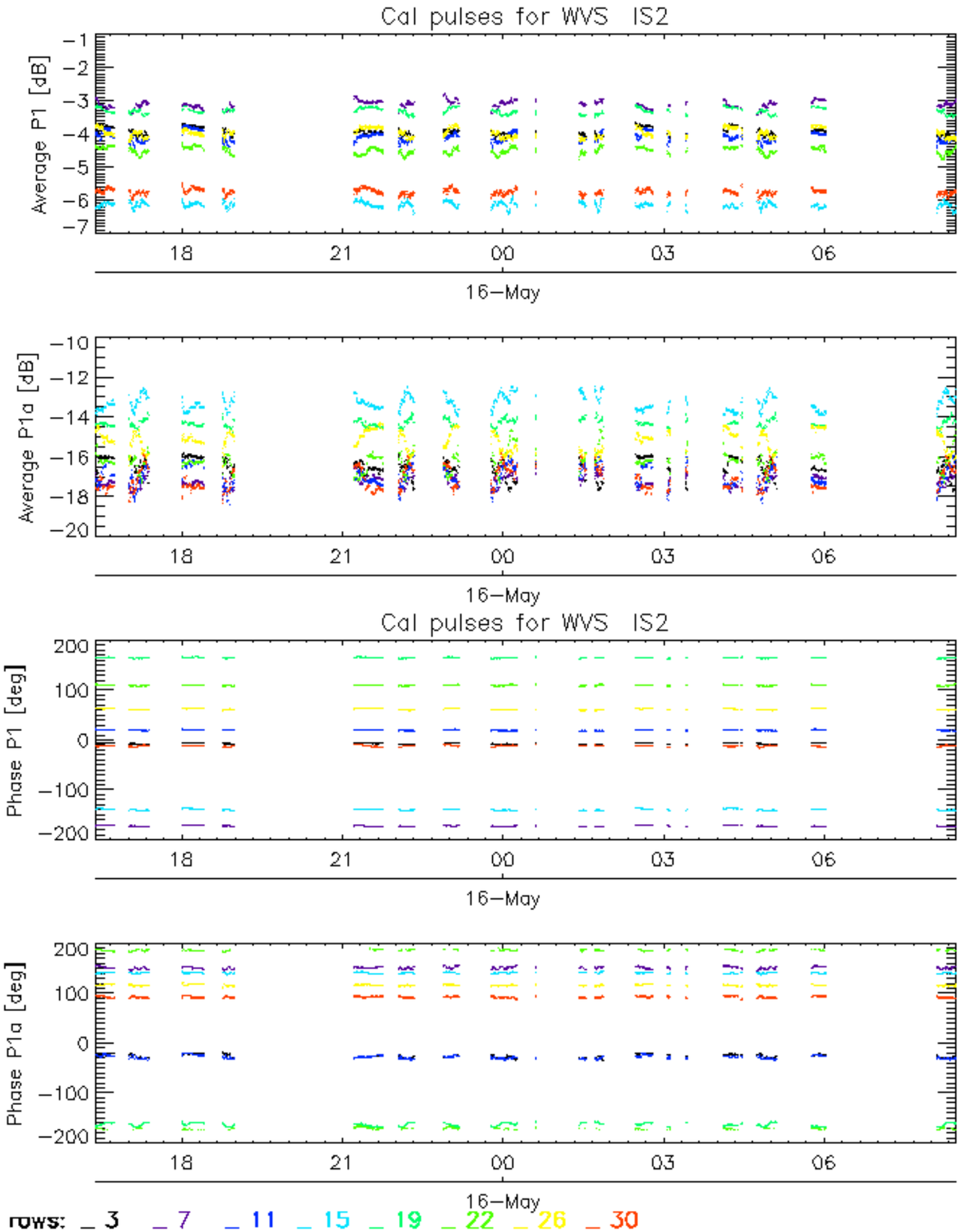
Acsending

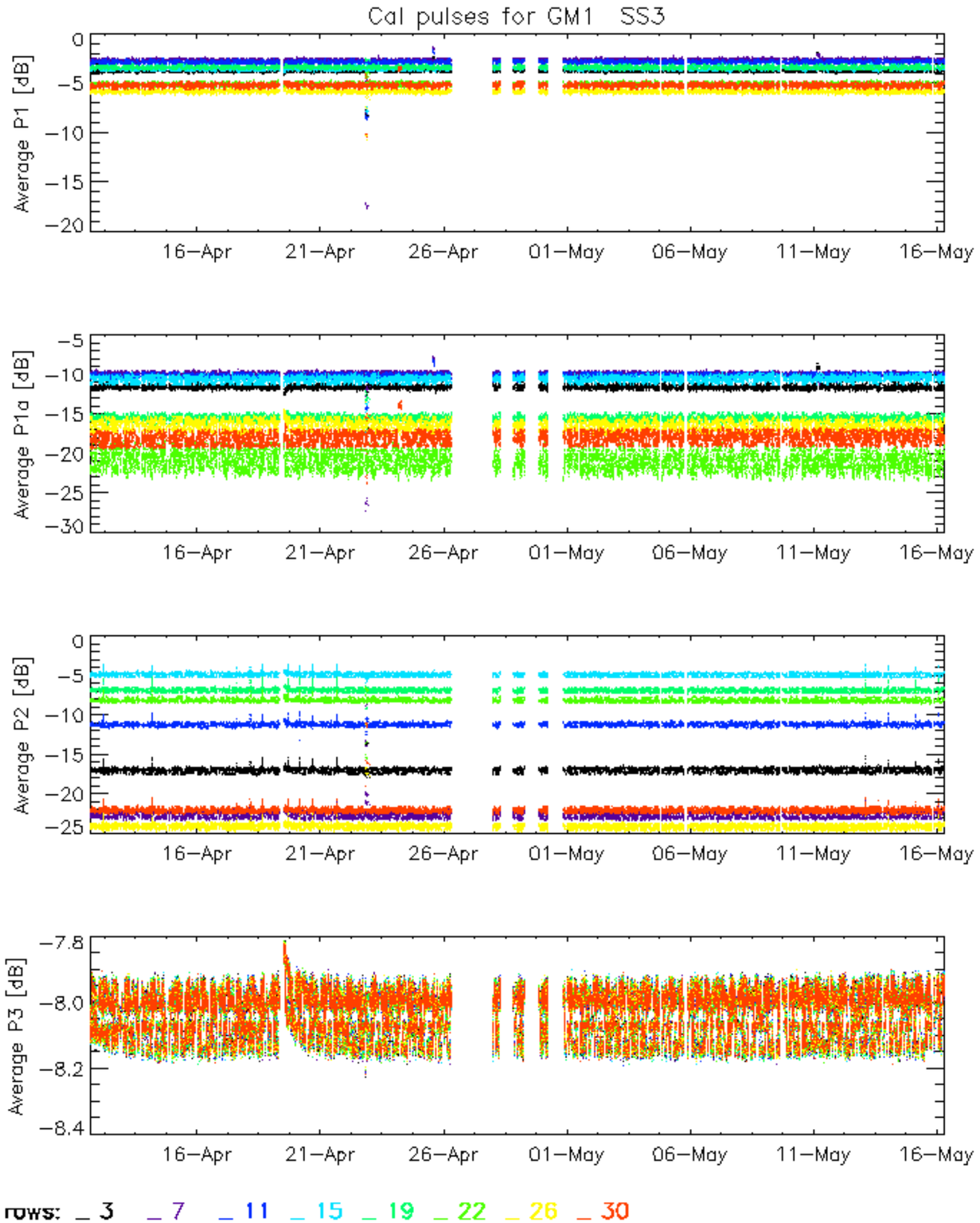
Descending

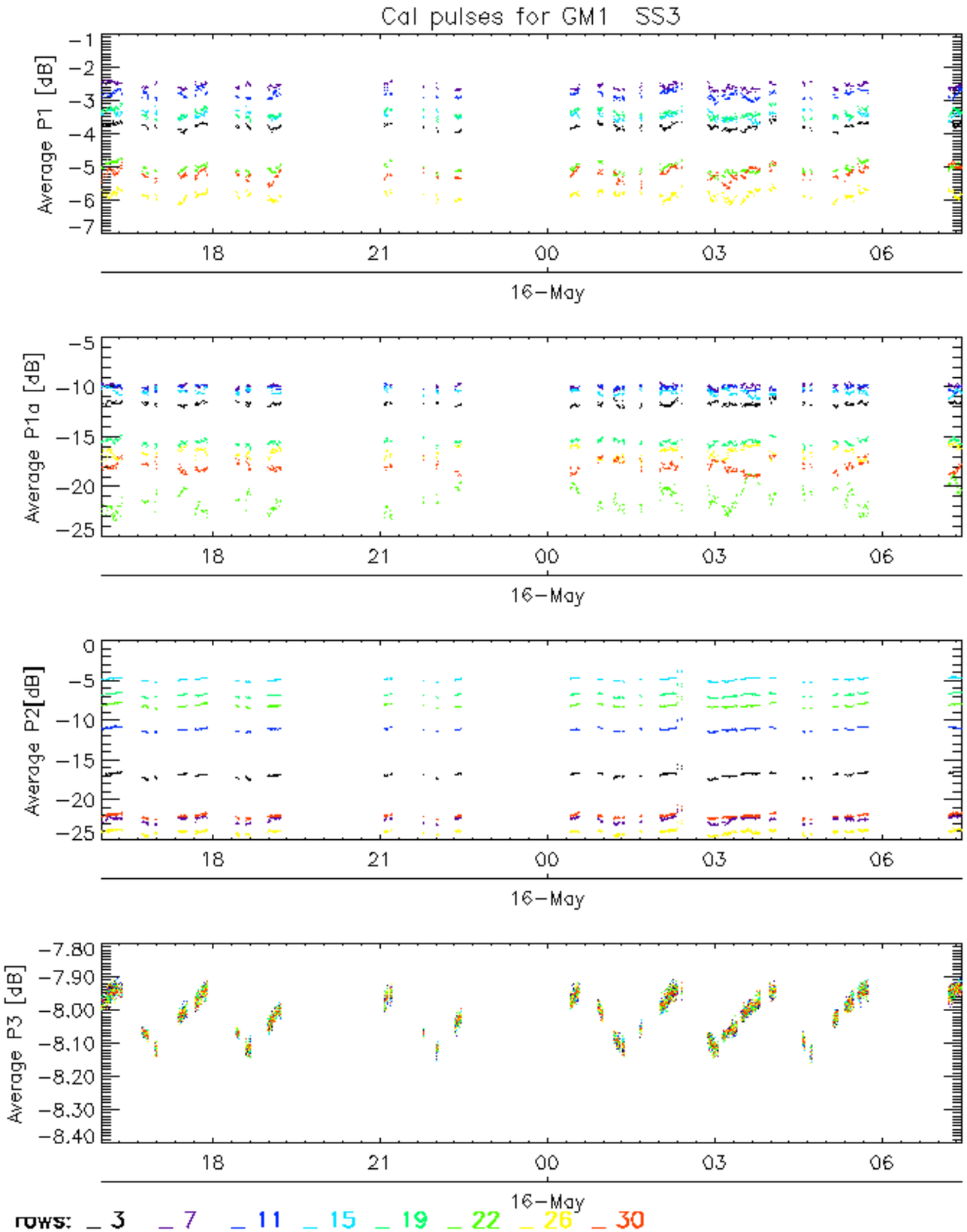
7.6 - Doppler evolution versus ANX for GM1

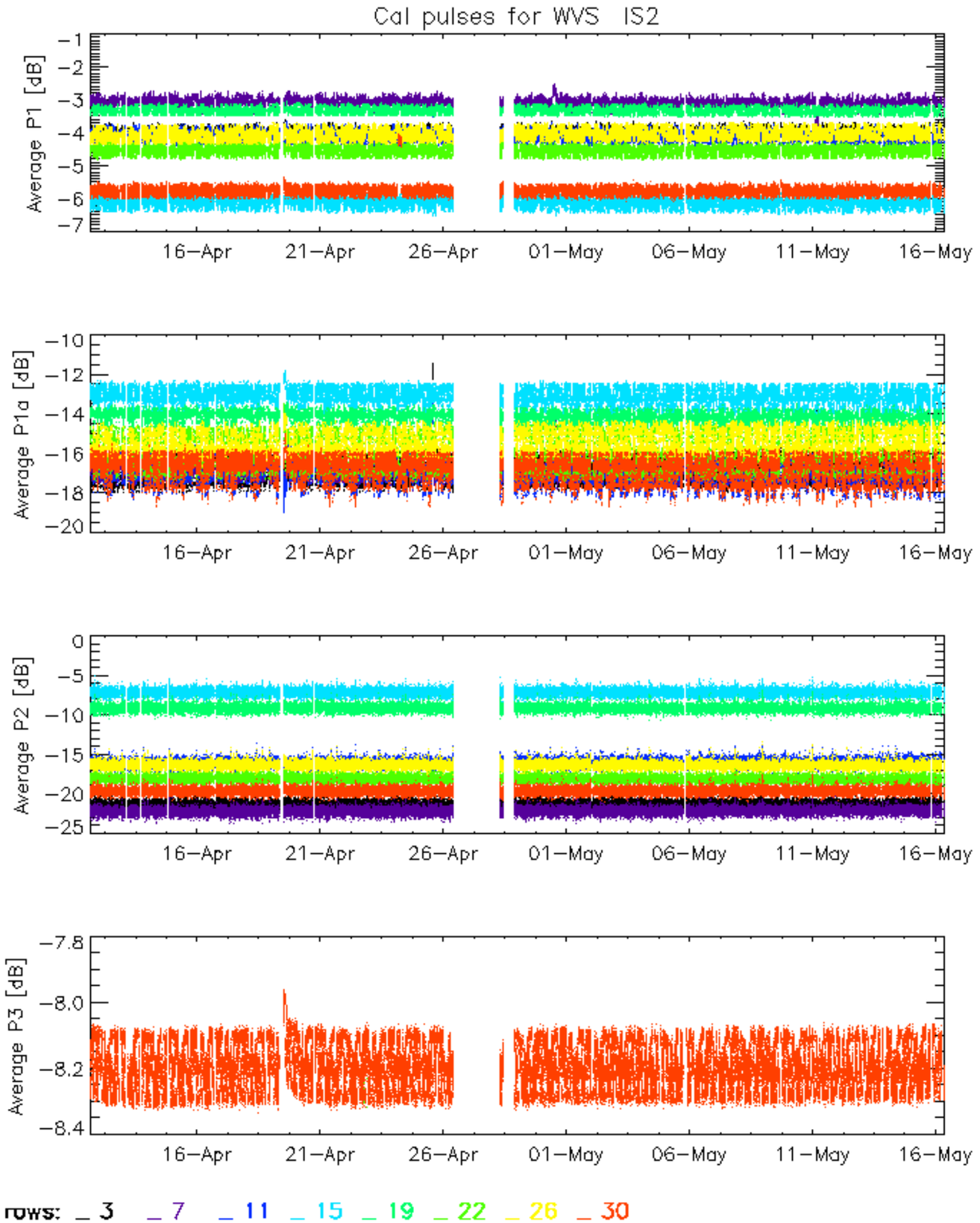
Evolution Doppler error versus ANX

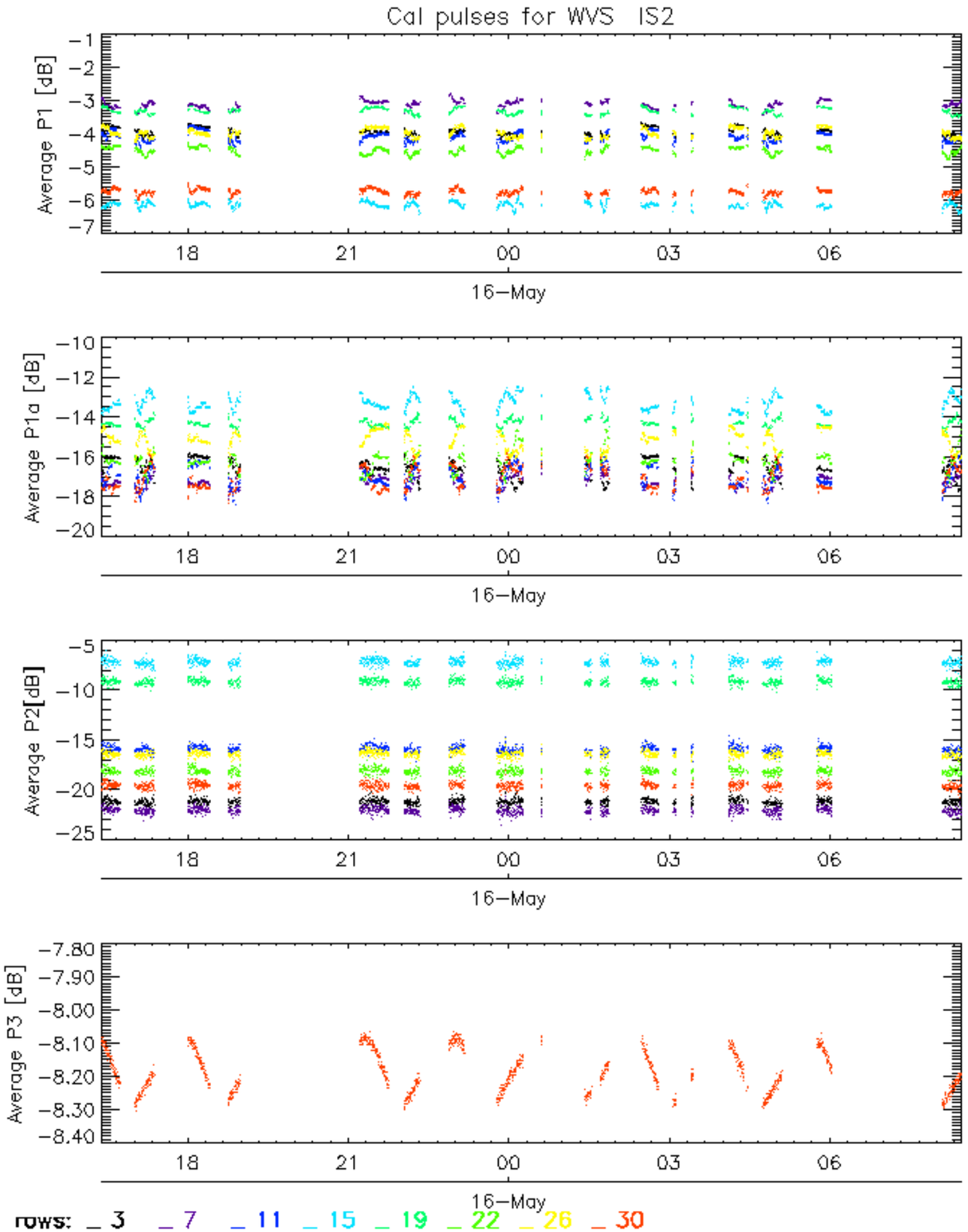


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
16−May
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
16−May
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
16−May
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
16−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
16−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
16−May
Cal pulses for WVS IS2
Phase P1 [deg]
200
100
0
−100
−200
18
21
00
03
06
16−May
Phase P1a [deg]
200
100
0
−100
−200
18
21
00
03
06
16−May
rows: 3 7 11 15 19 22 26 30


Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
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
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
16−May
rows: 3 7 11 15 19 22 26 30

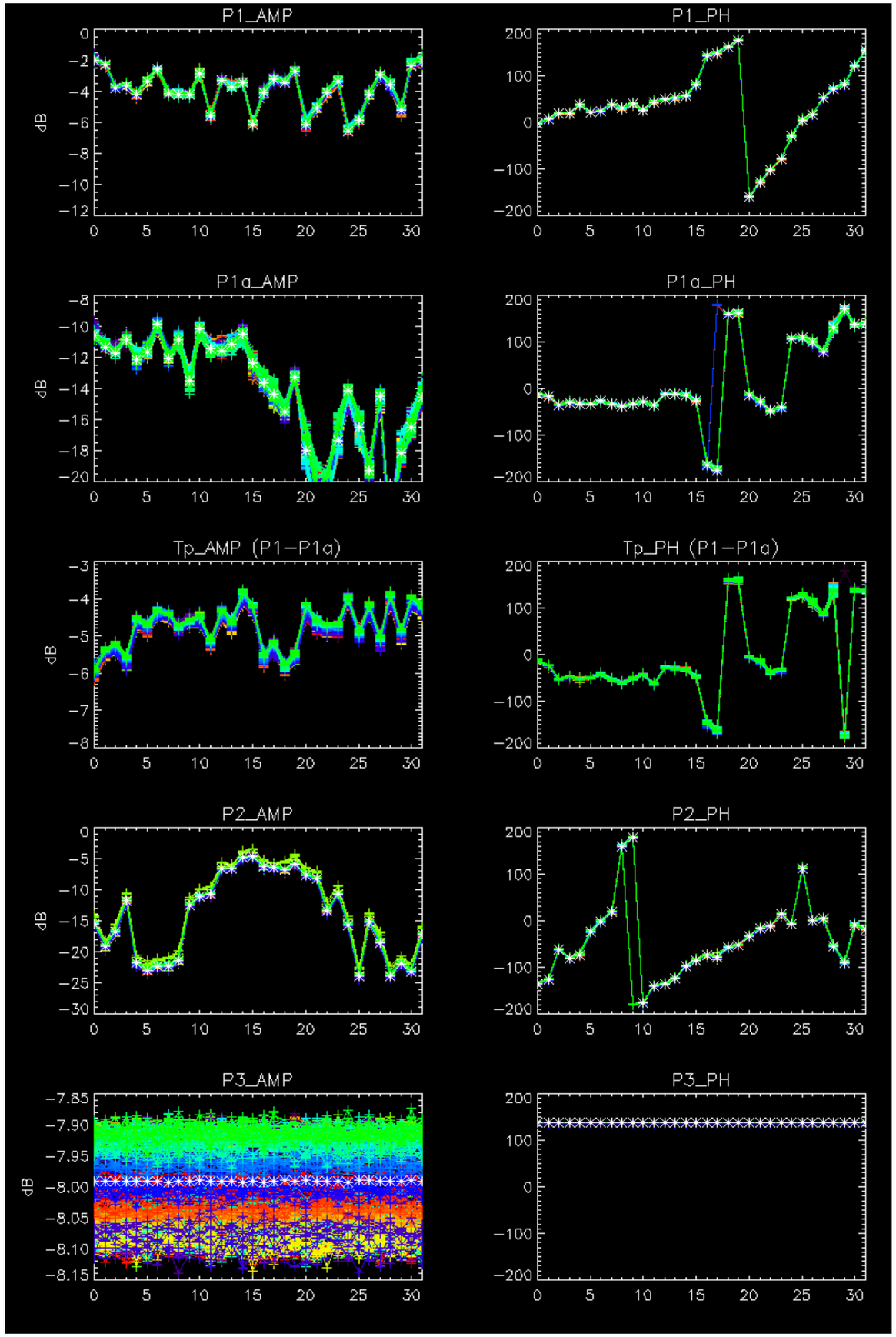

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
16−May
Average P1a [dB]
−5
−10
−15
−20
−25
18
21
00
03
06
16−May
Average P2[dB]
0
−5
−10
−15
−20
−25
18
21
00
03
06
16−May
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
16−May
rows: _ 3 _ 7 _ 11 _ 15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

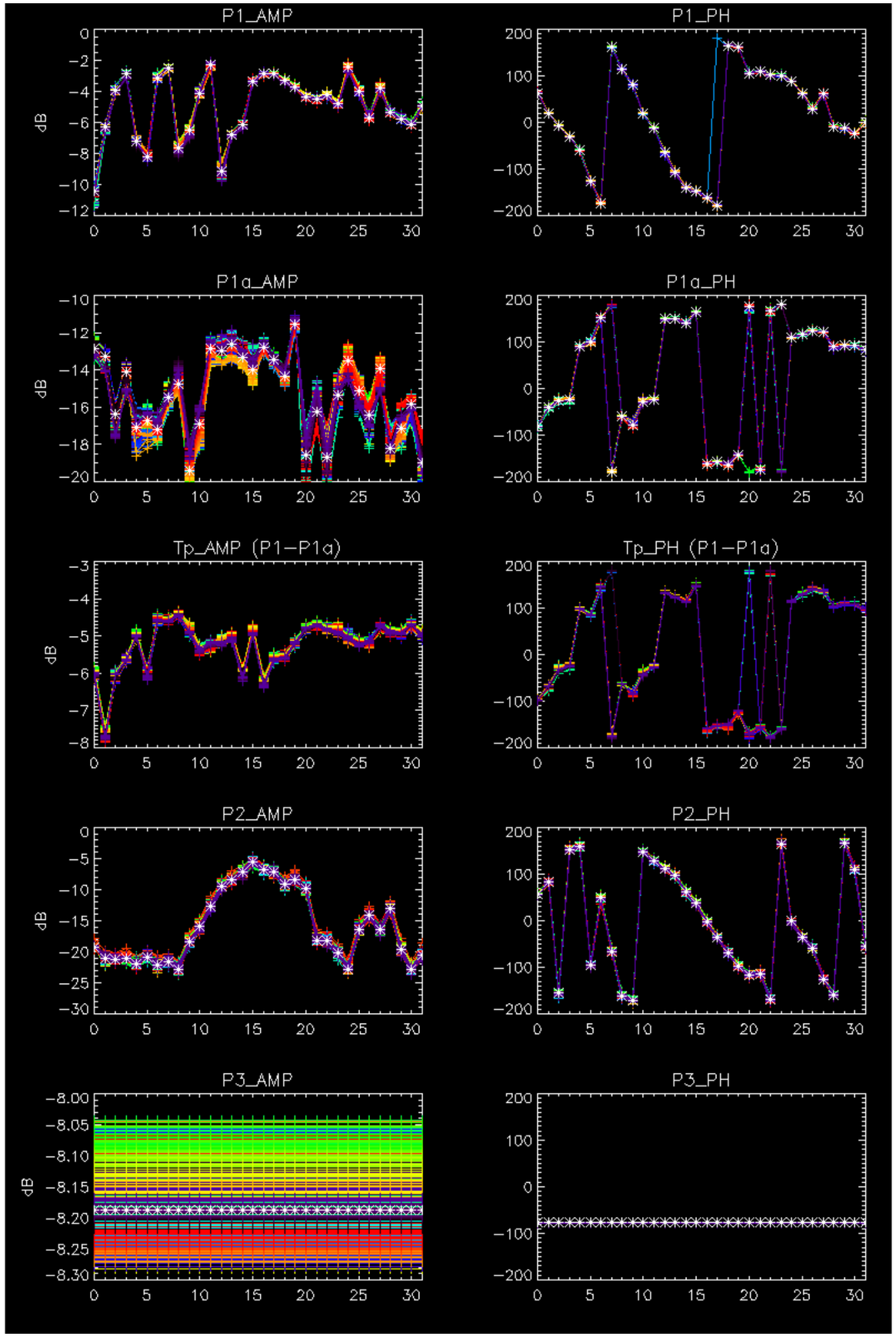

Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
16−Apr
21−Apr
26−Apr
01−May
06−May
11−May
16−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
18
21
00
03
06
16−May
Average P1a [dB]
−10
−12
−14
−16
−18
−20
18
21
00
03
06
16−May
Average P2[dB]
−5
−10
−15
−20
−25
18
21
00
03
06
16−May
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
18
21
00
03
06
16−May
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No anomalies observed on available browse products

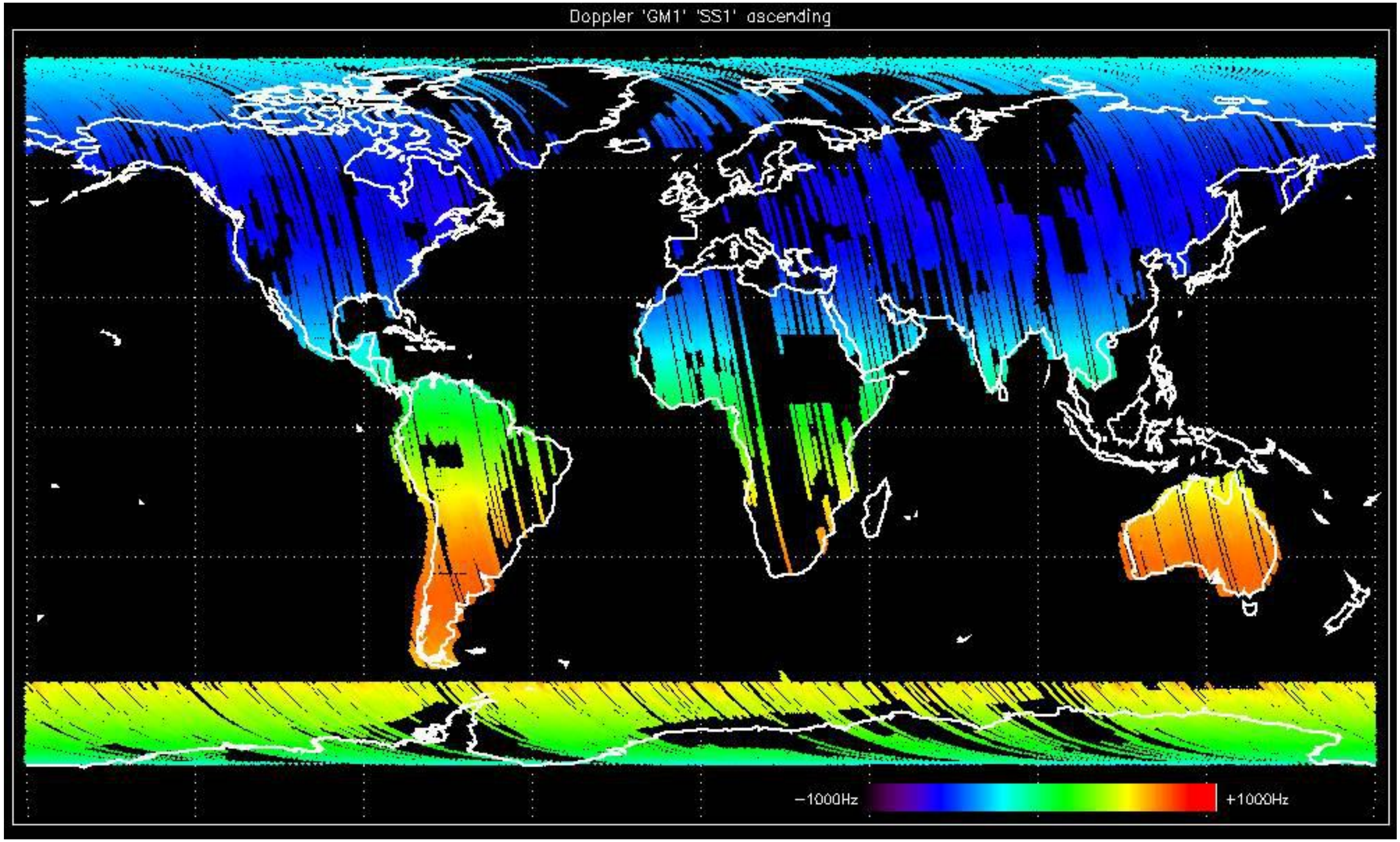
No anomalies observed.

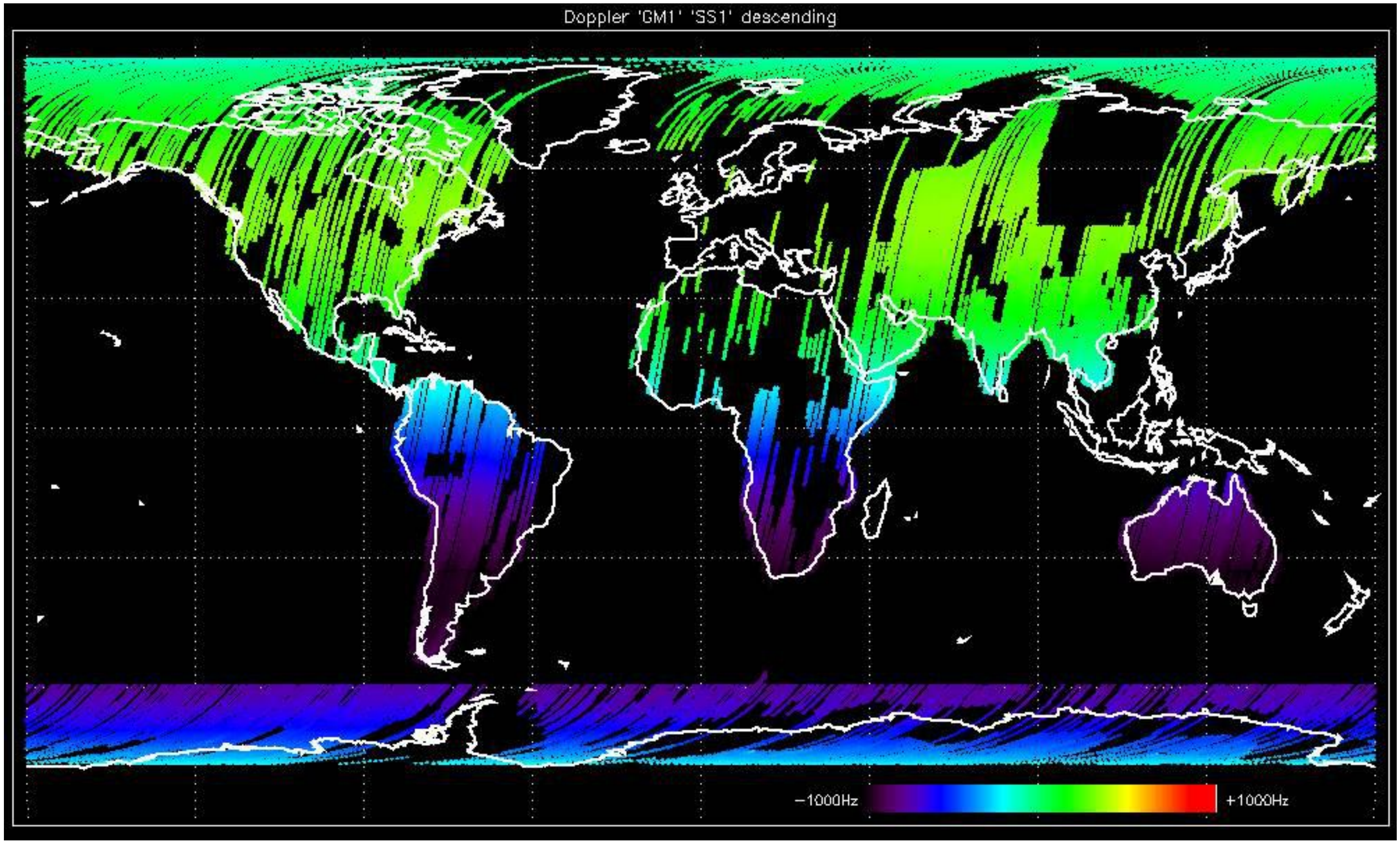

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

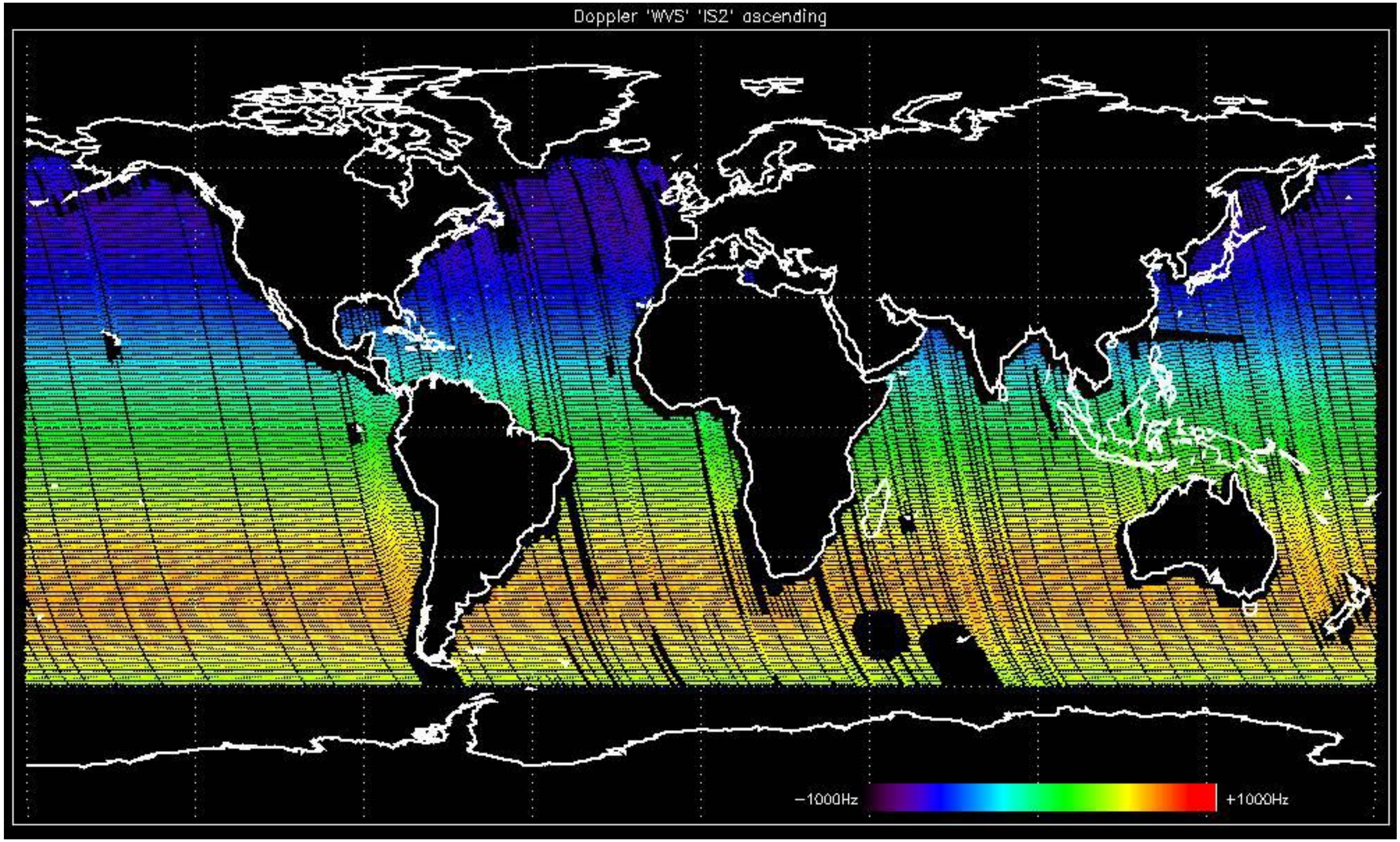

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

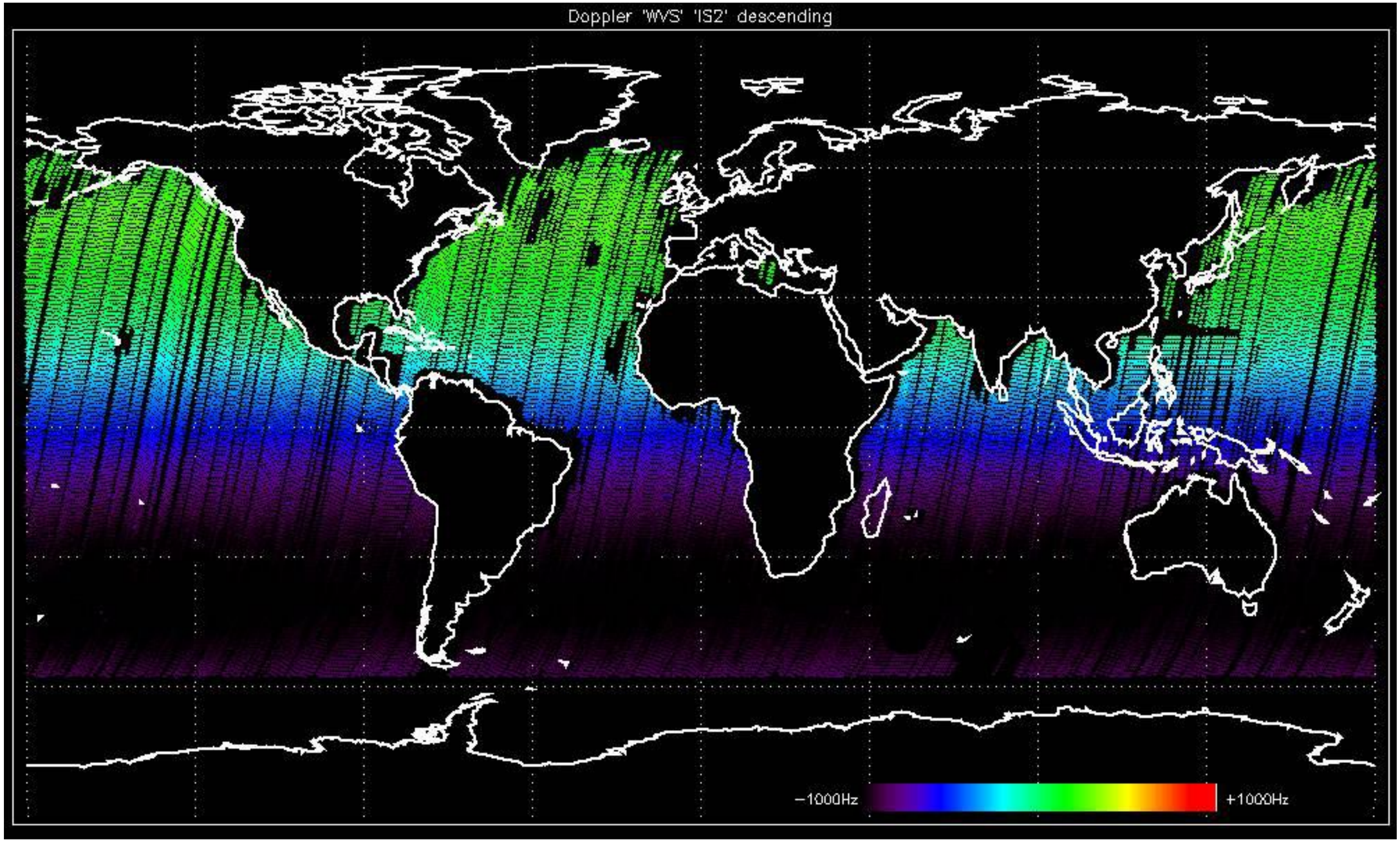
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

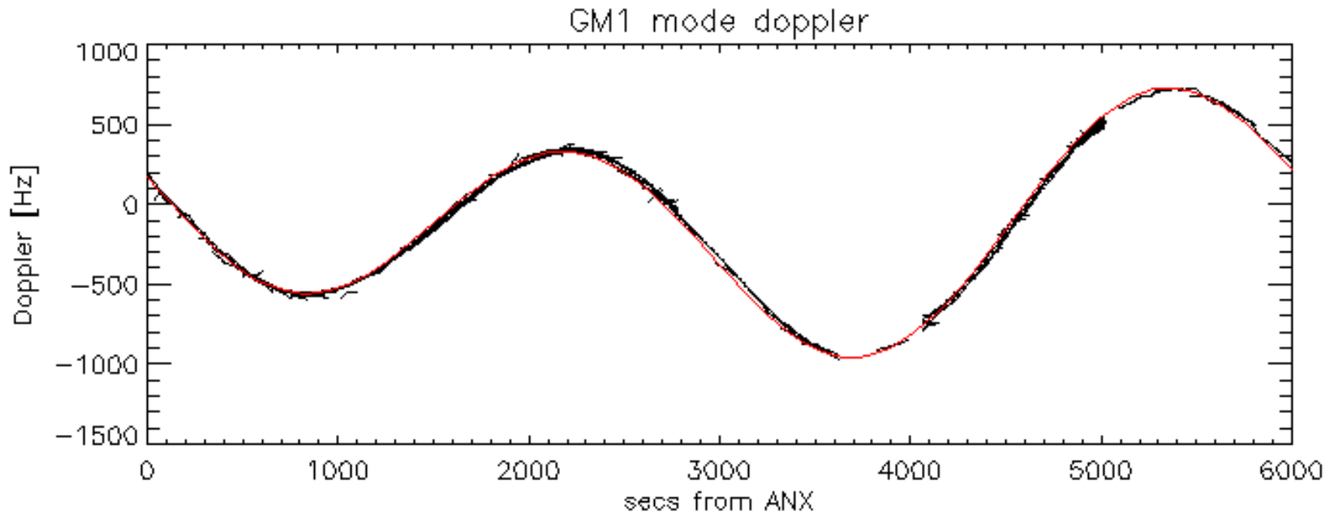
Preliminary report.The data is not yet controled

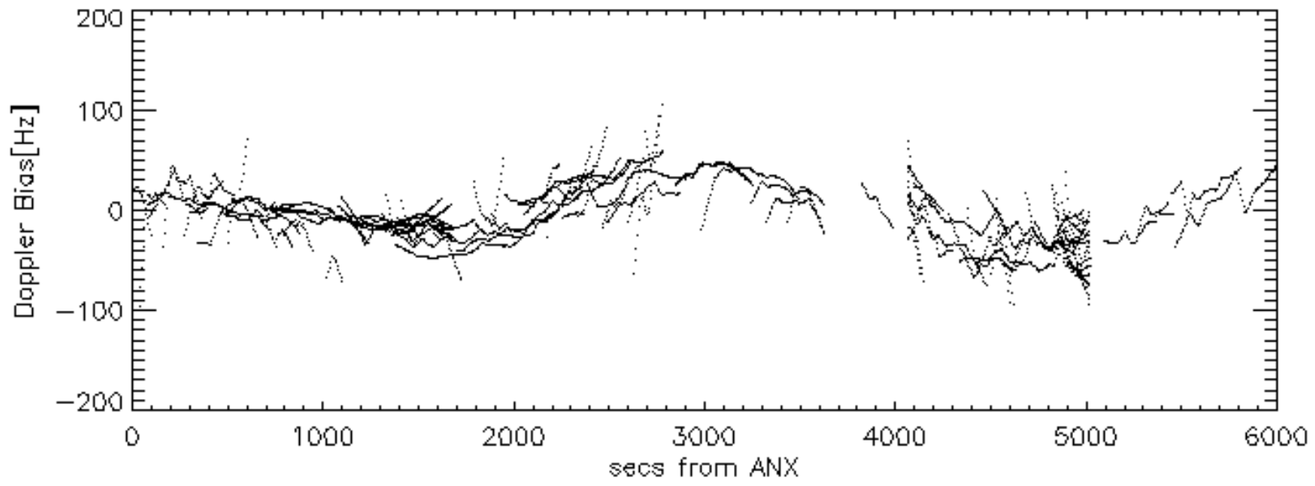

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

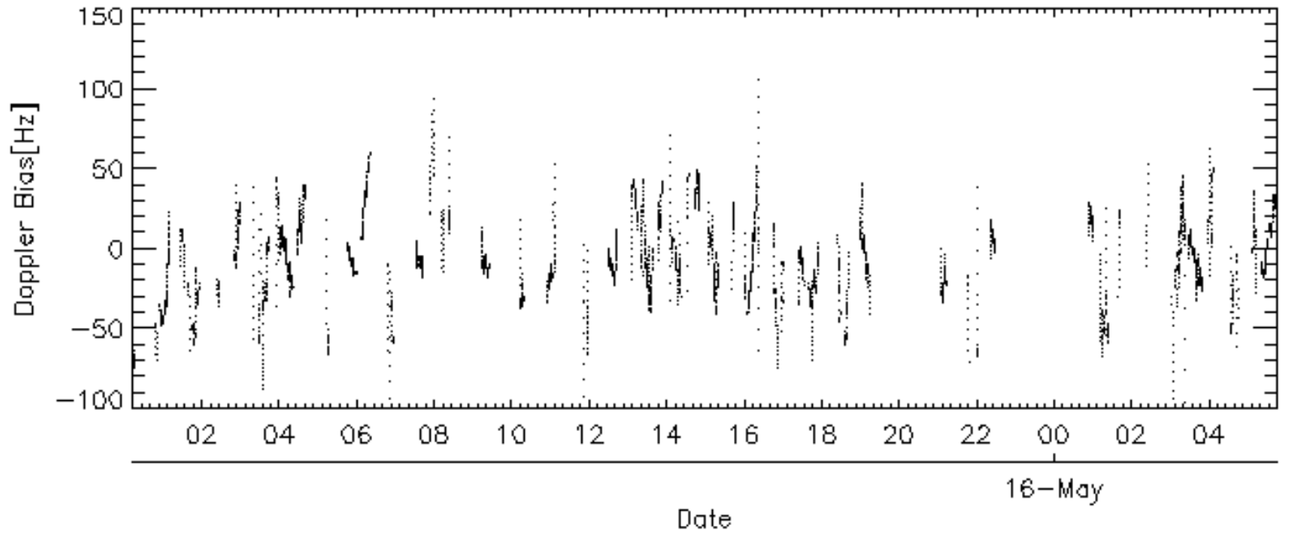

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

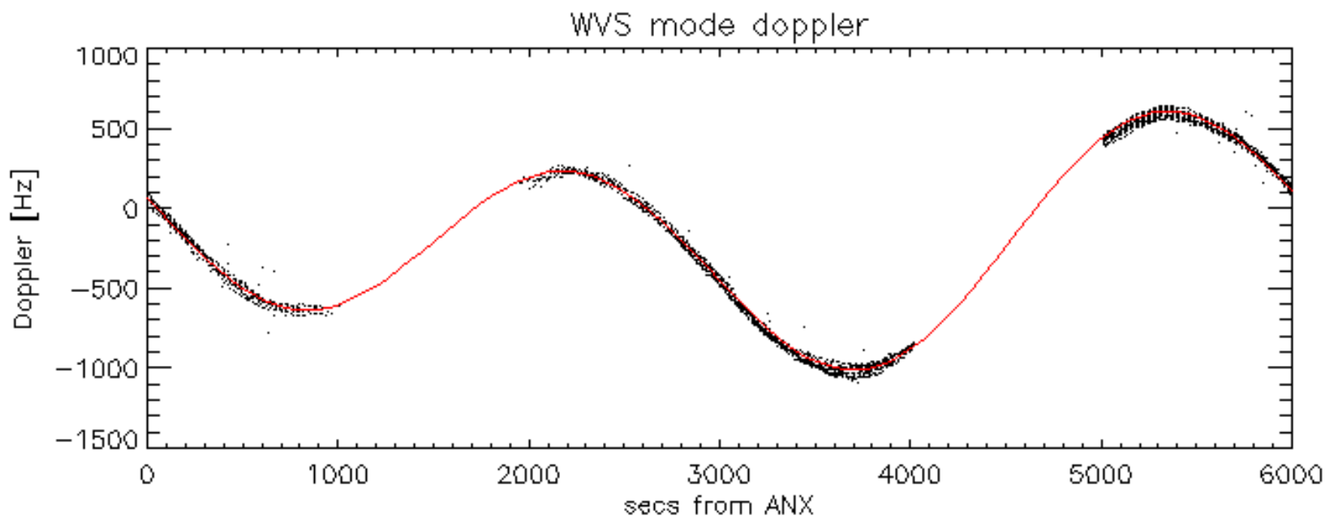

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

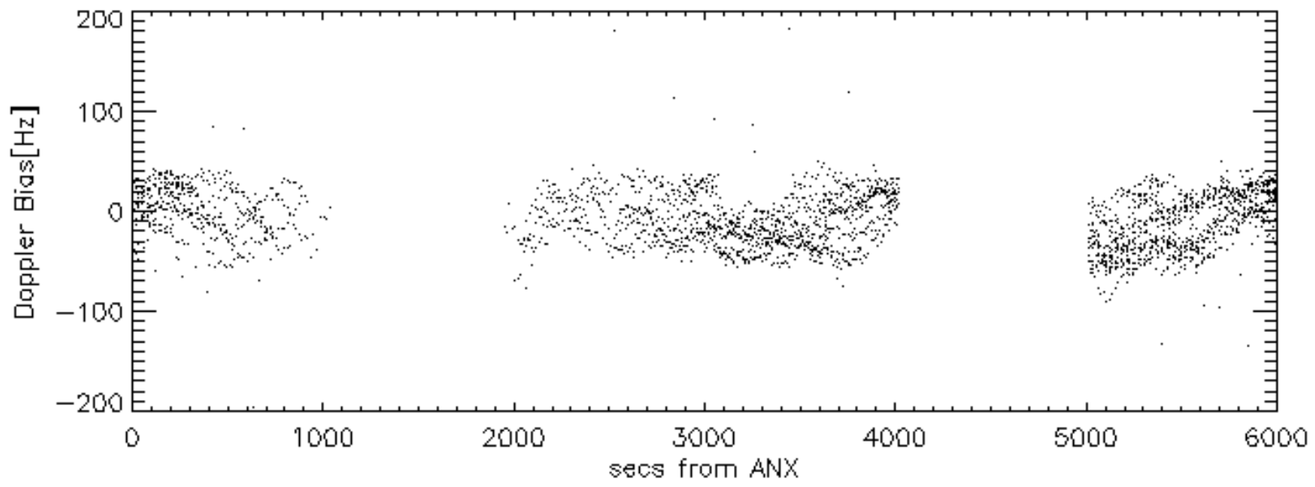

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

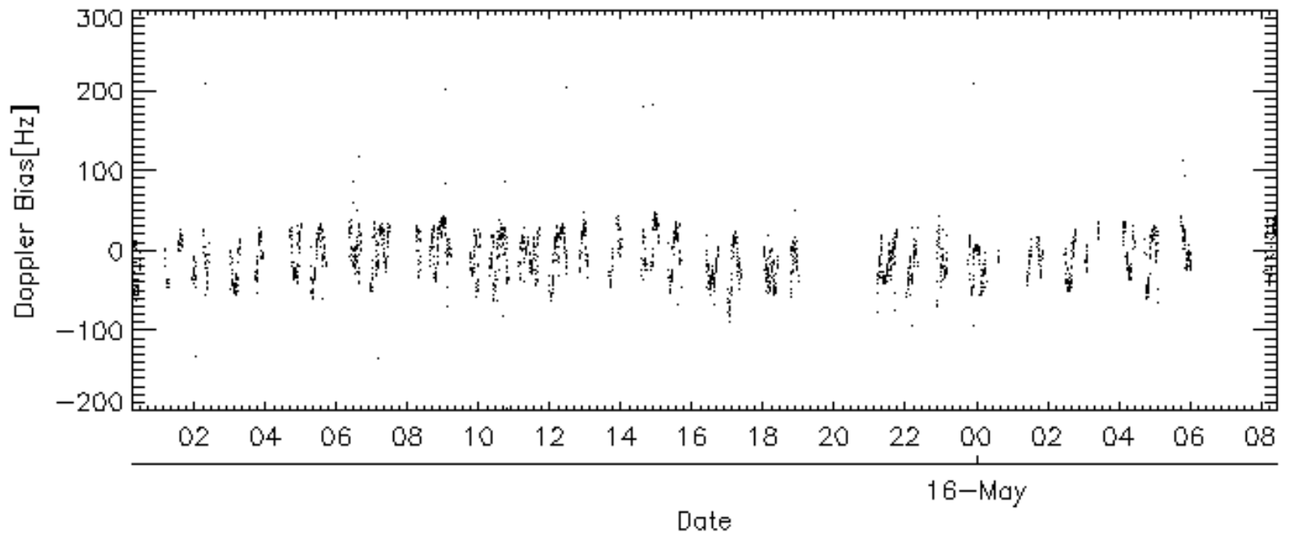

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

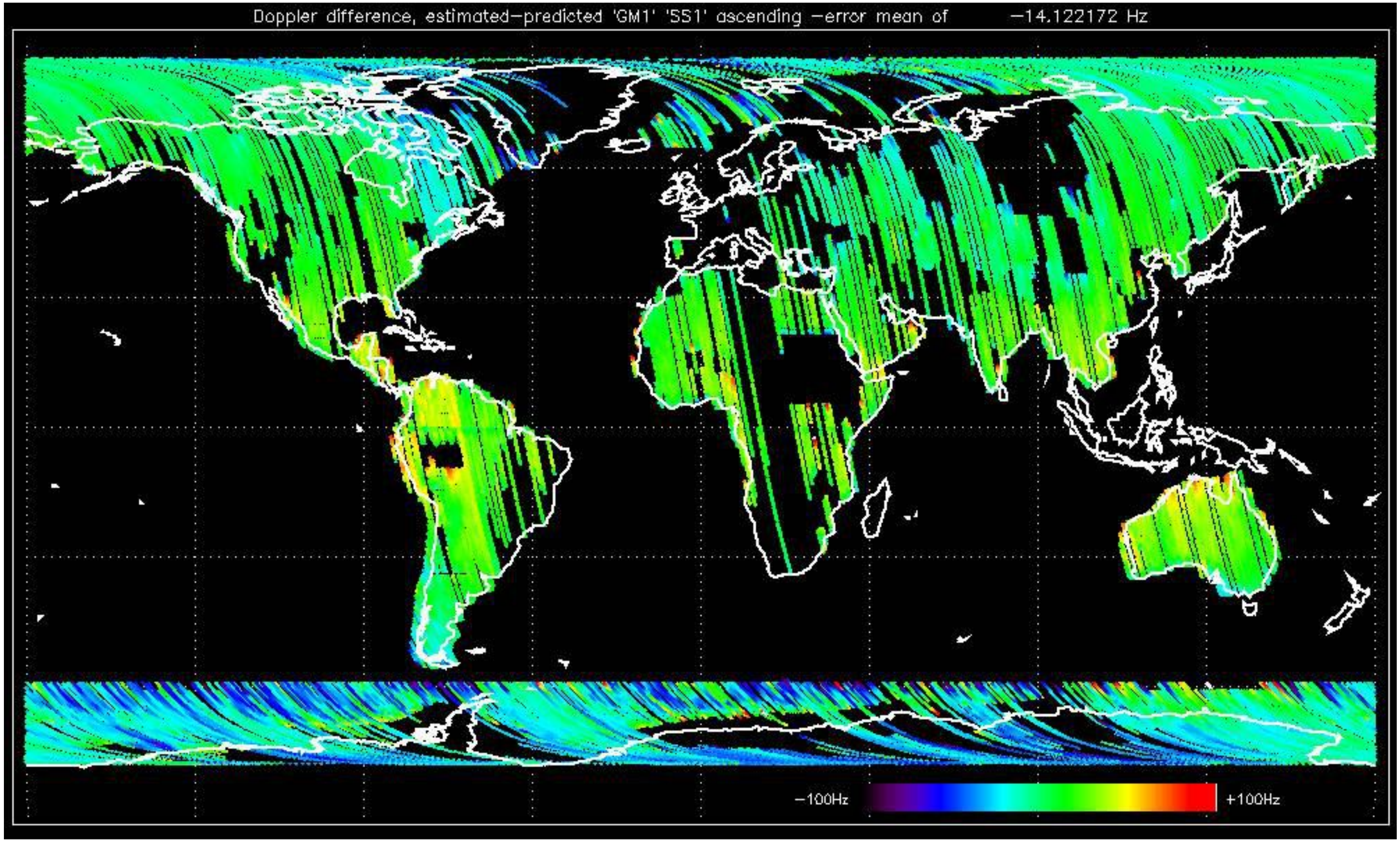

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

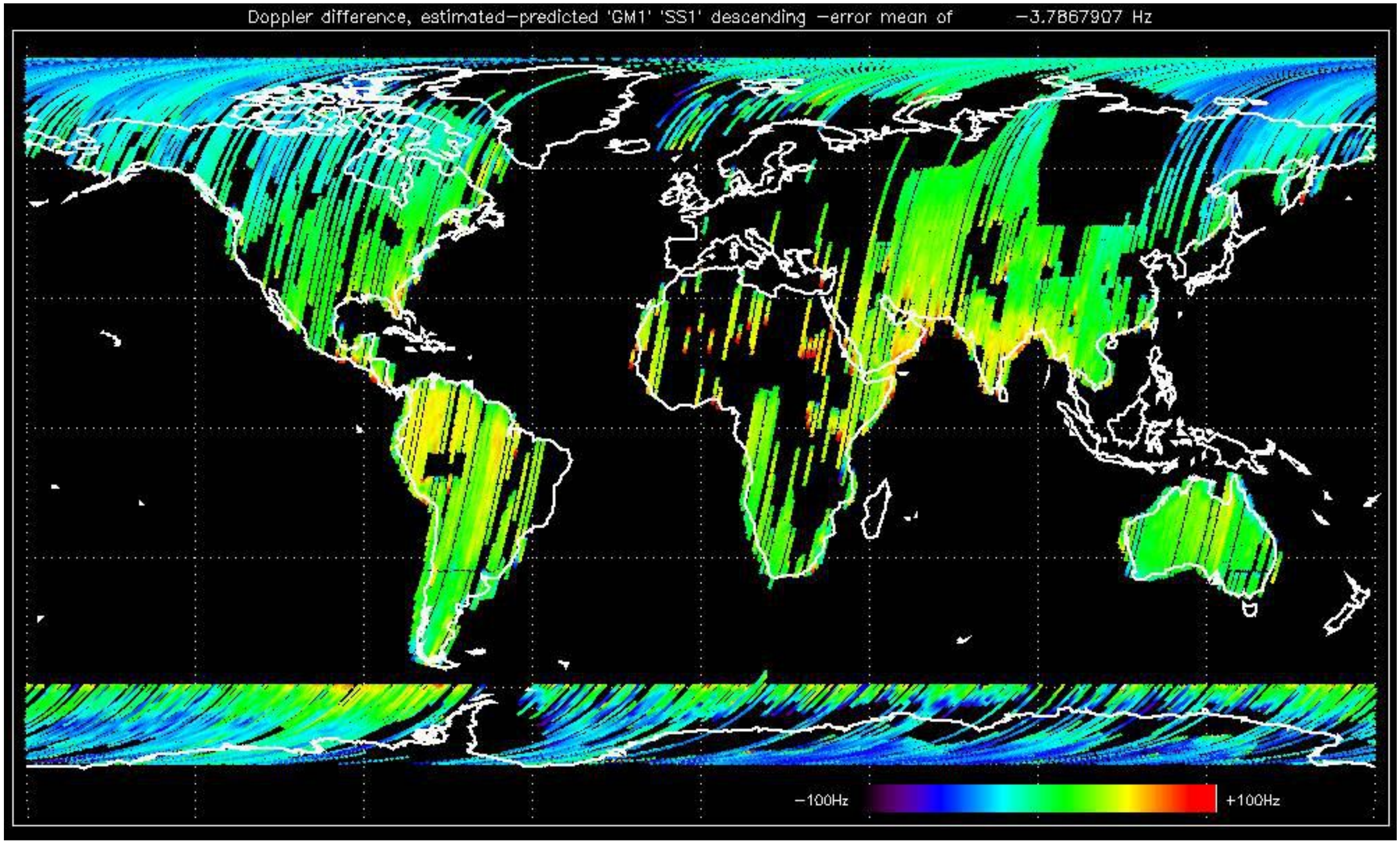

Doppler Bias[Hz]
150
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
02
04
16−May
Date

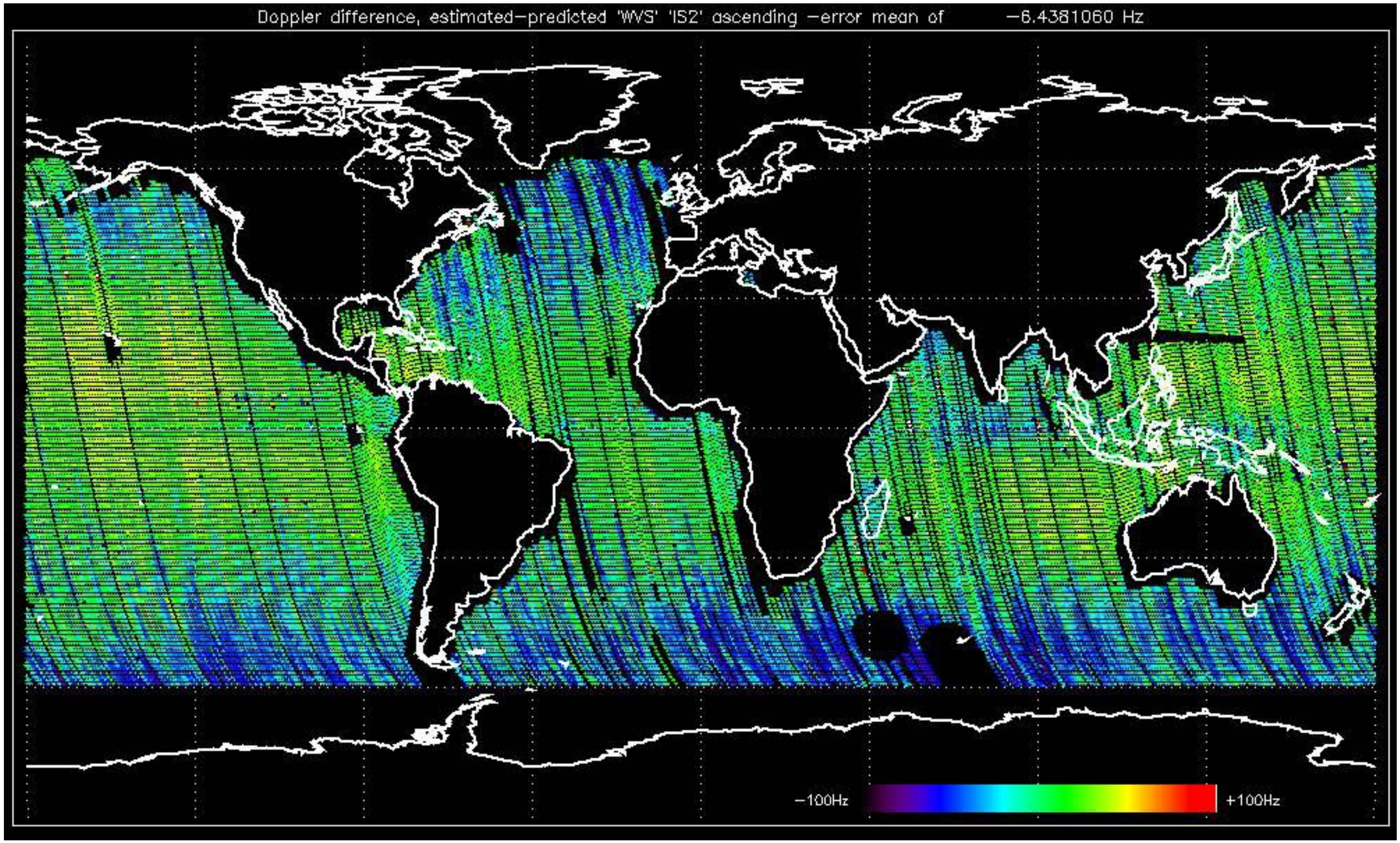

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

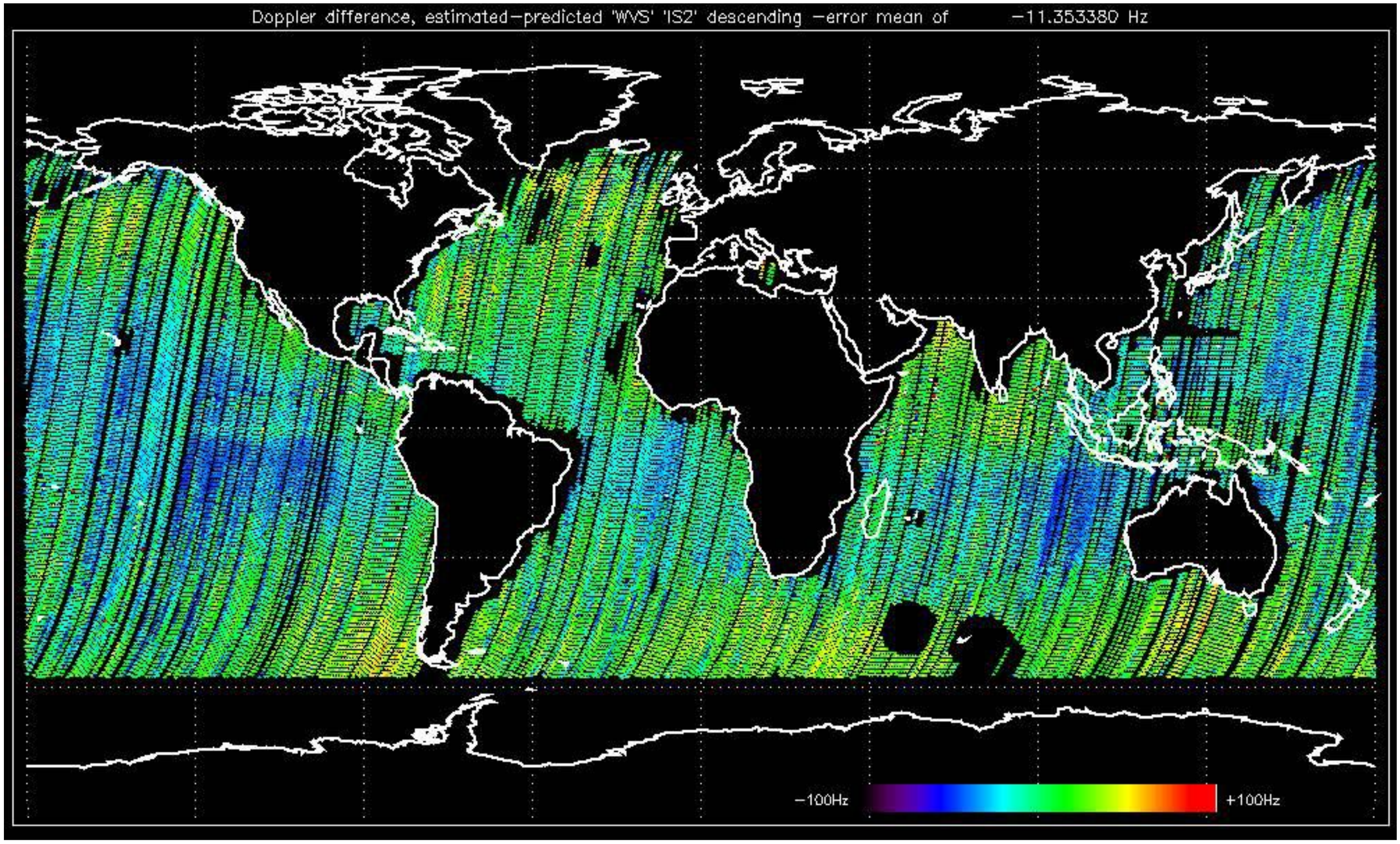

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −14.122172 Hz
−100Hz
+100Hz

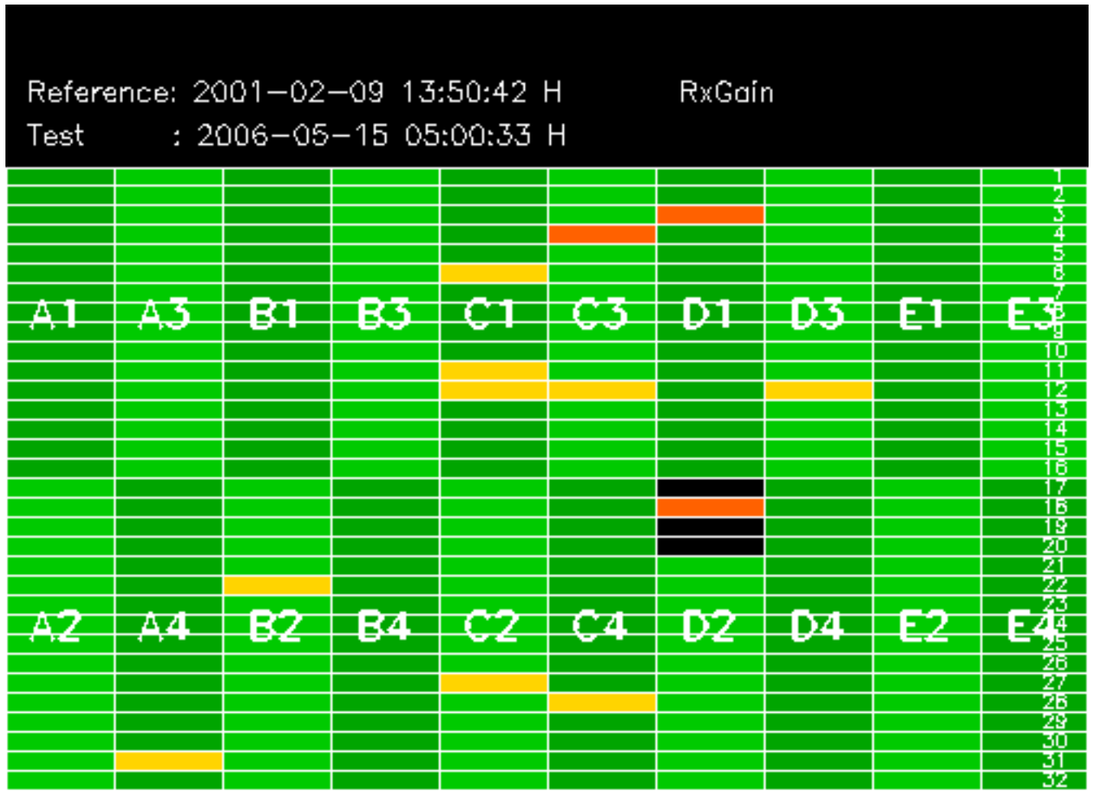

Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -3.7867907 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −6.4381060 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −11.353380 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2006-05-15 05:00:33 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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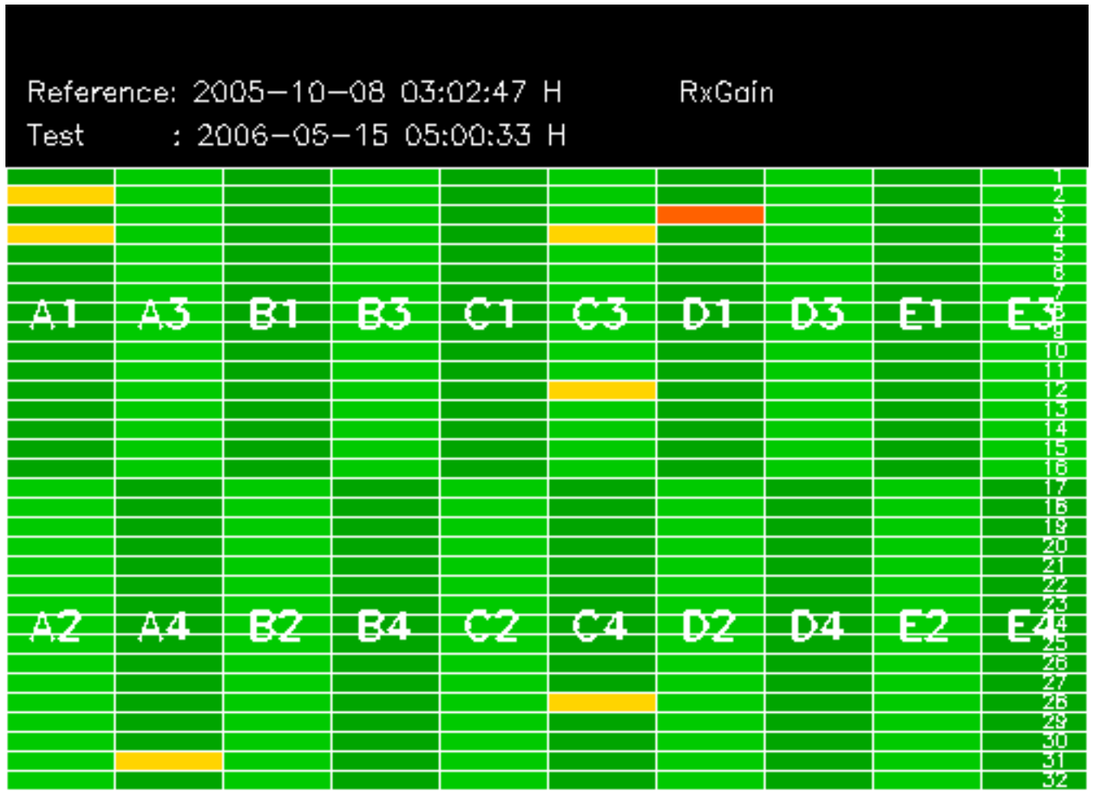
Reference: 2005-10-08 03:02:47 H
Test : 2006-05-15 05:00:33 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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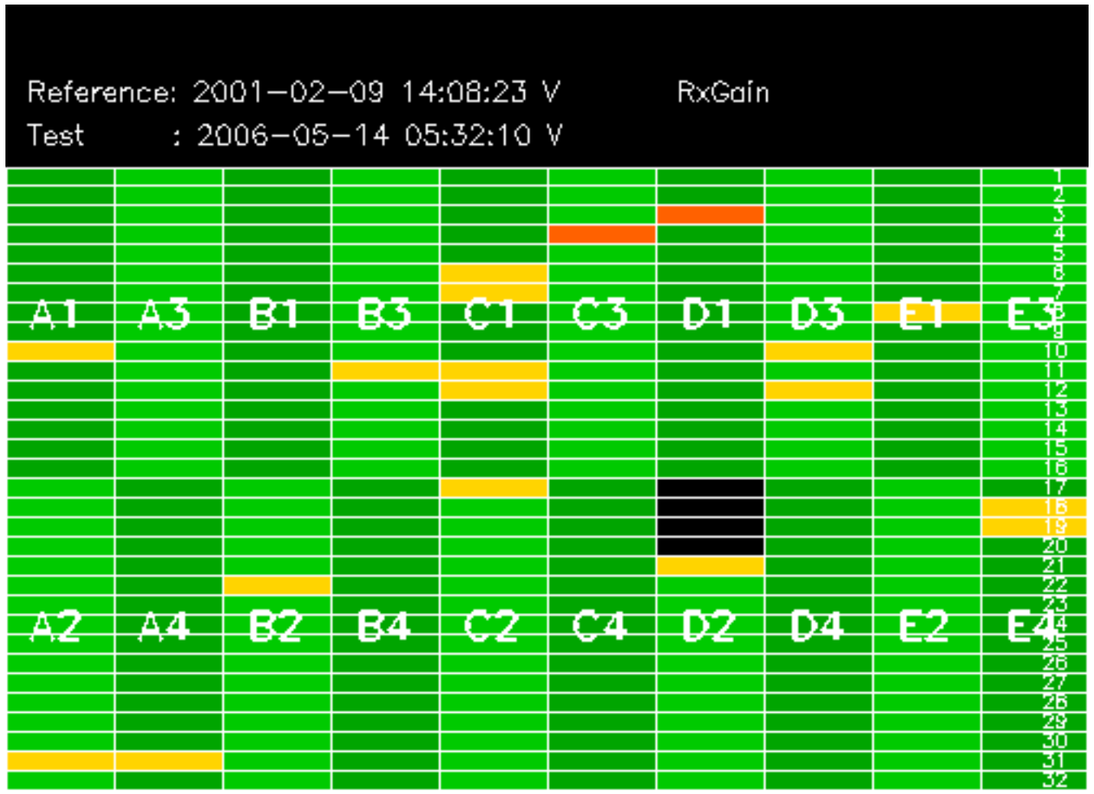
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-14 05:32:10 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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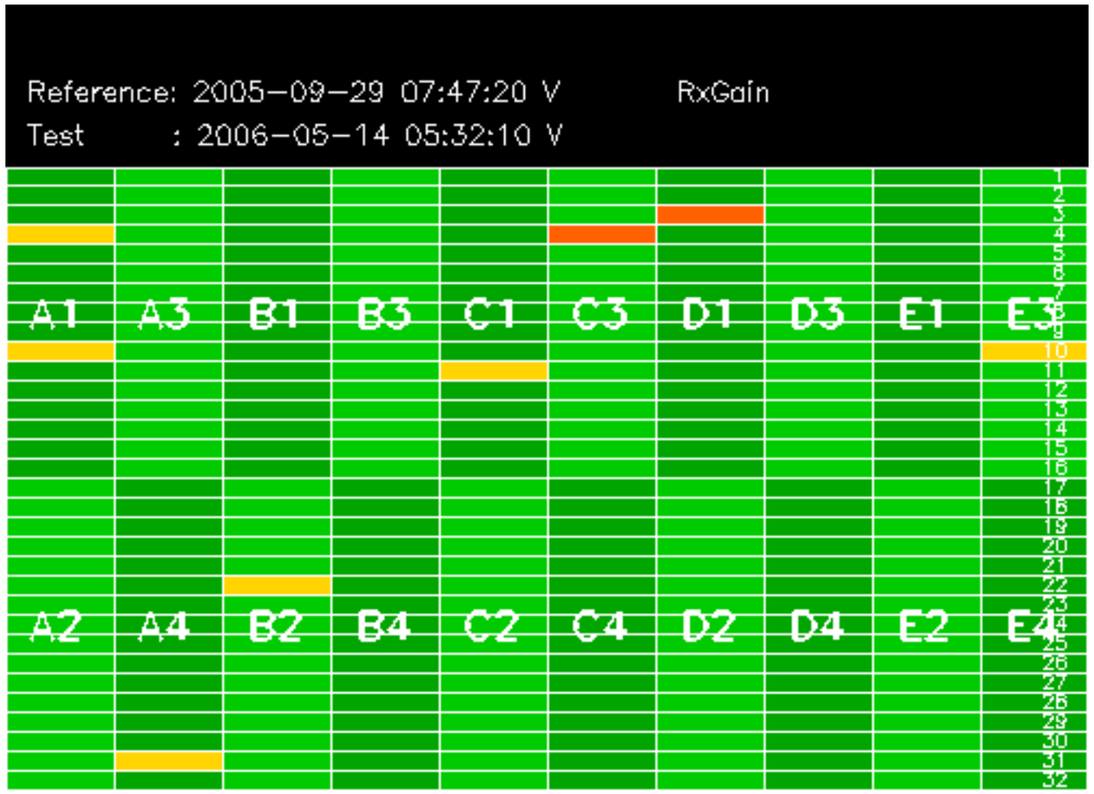
Reference: 2005-09-29 07:47:20 V
Test : 2006-05-14 05:32:10 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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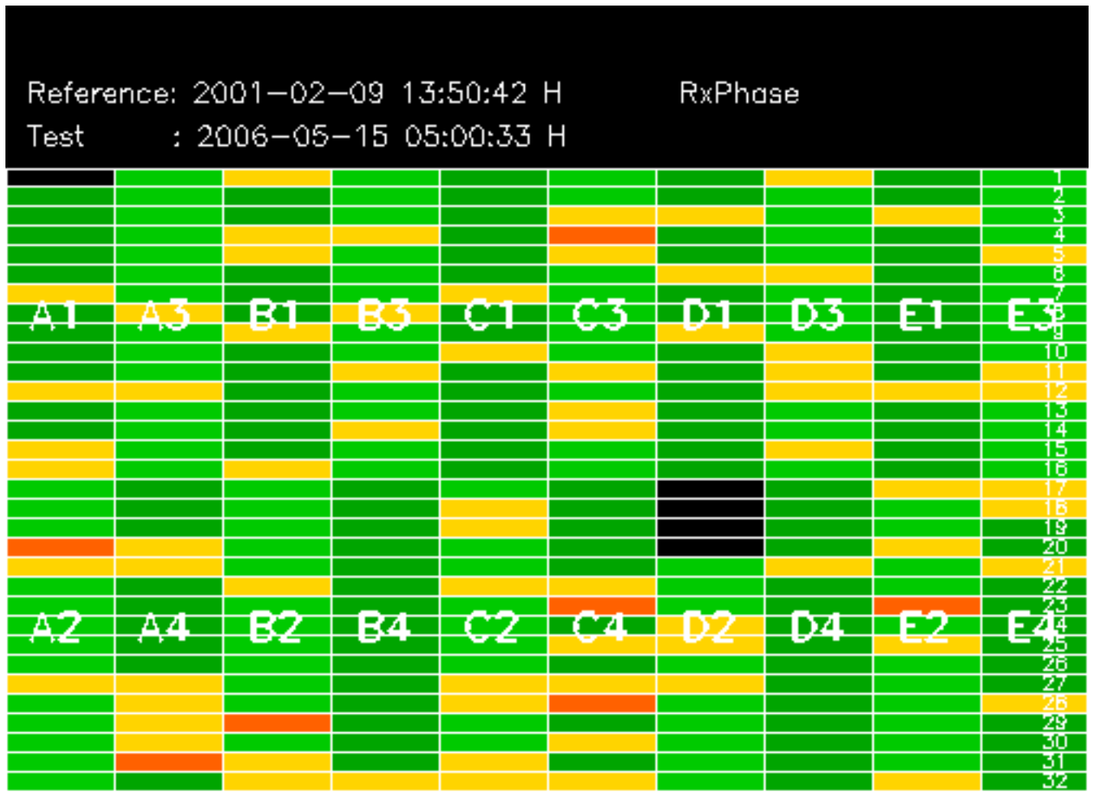
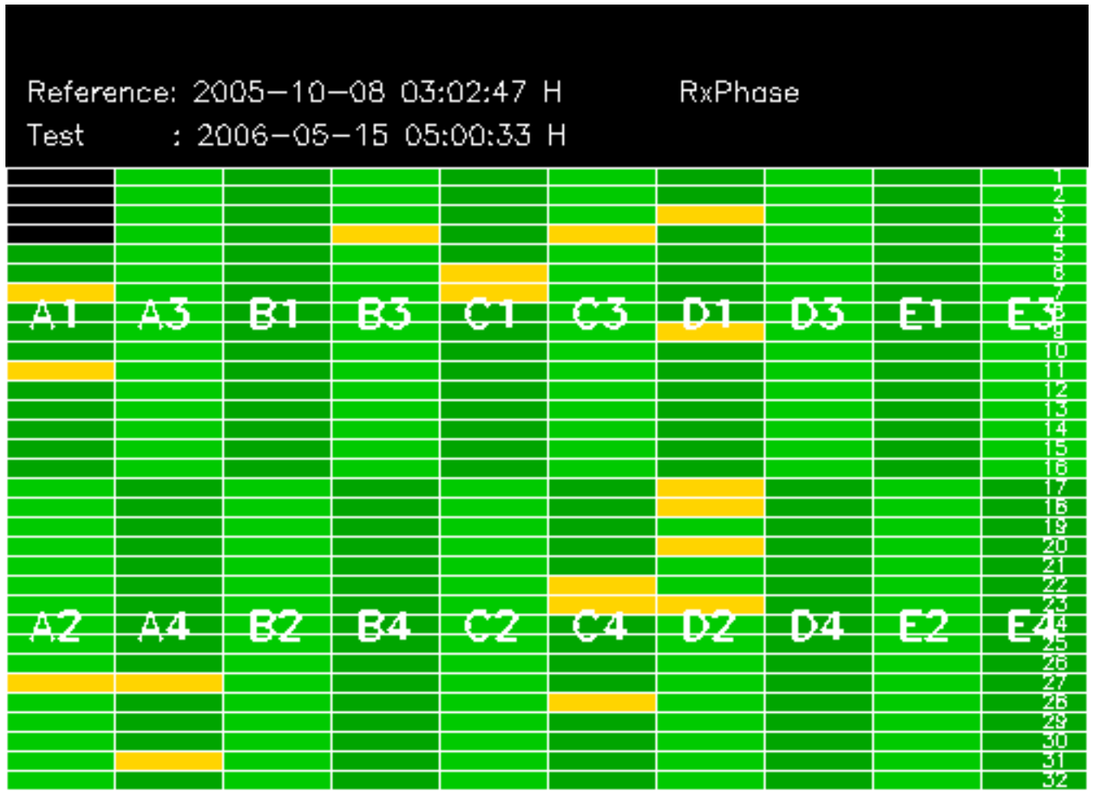

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2006-05-15 05:00:33 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-10-08 03:02:47 H
RxPhase
Test : 2006-05-15 05:00:33 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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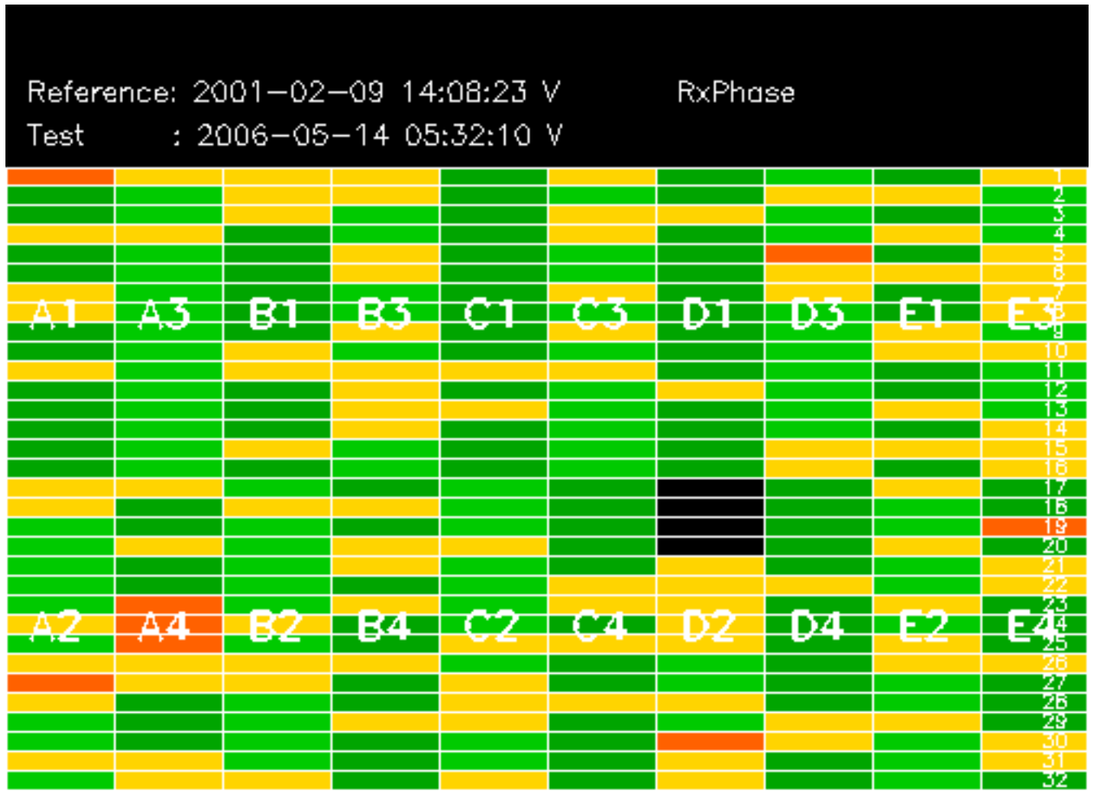
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-14 05:32:10 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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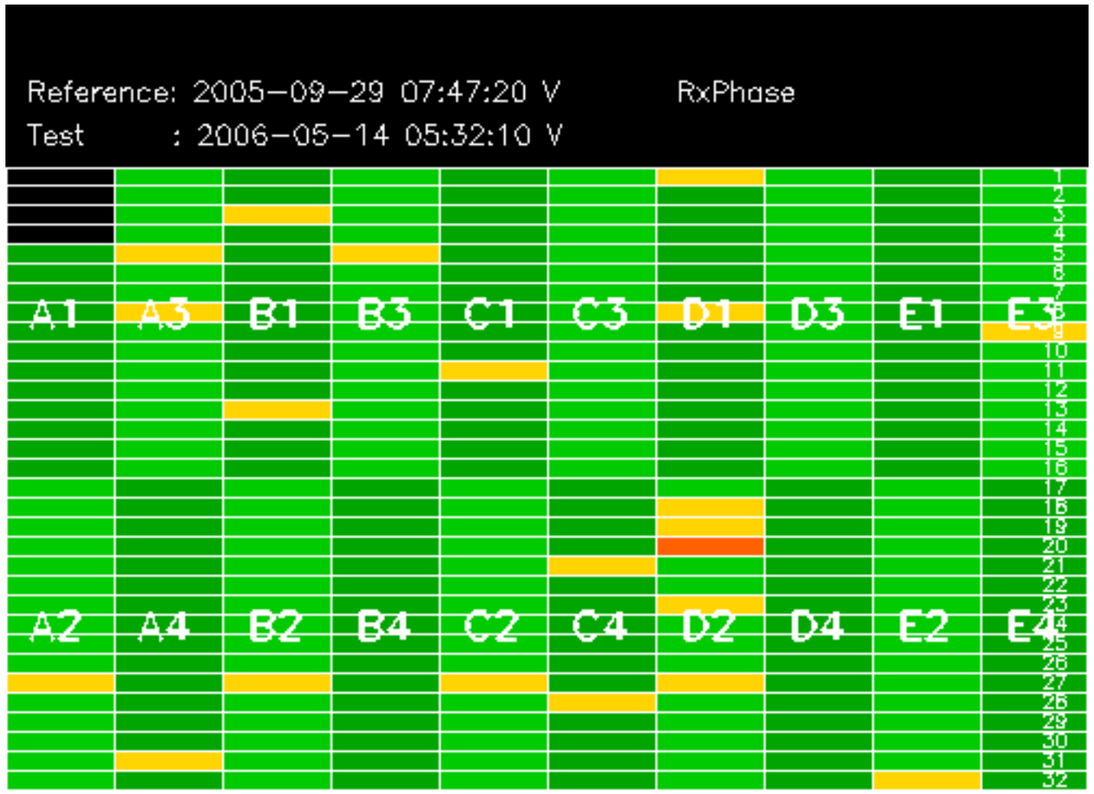
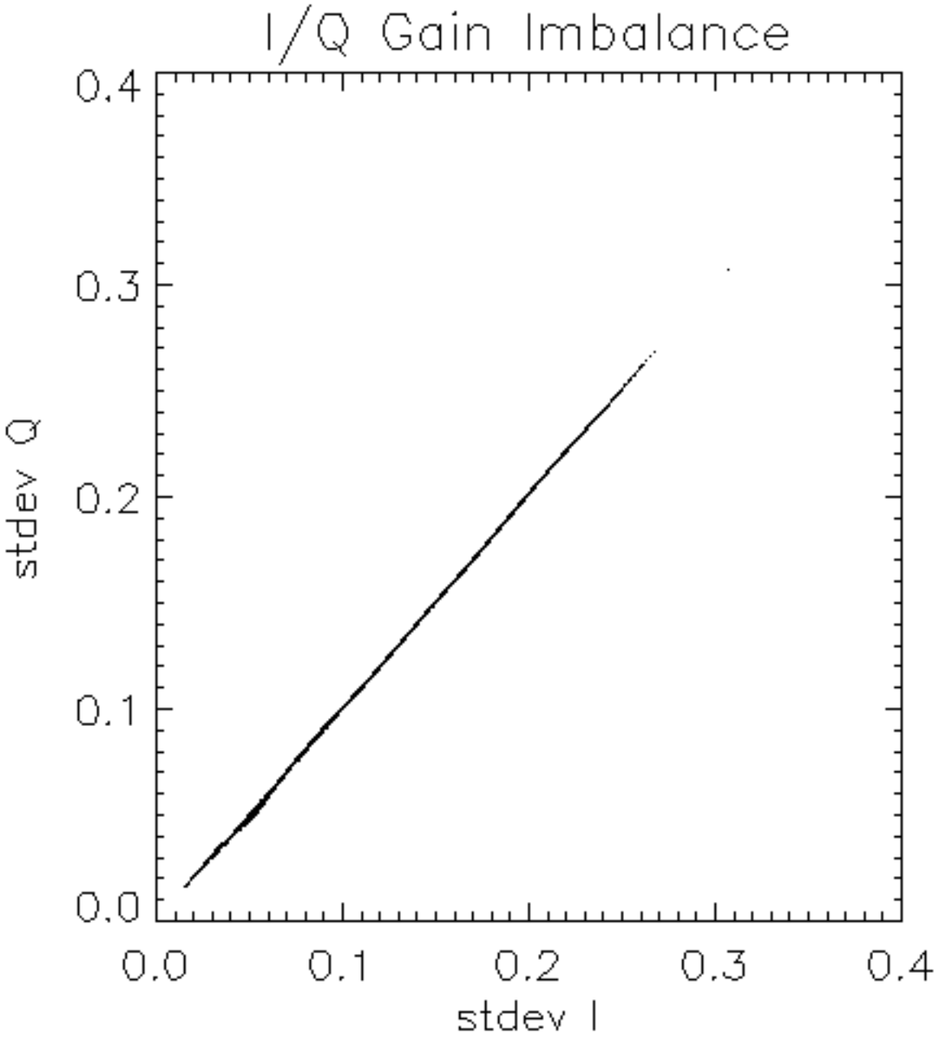
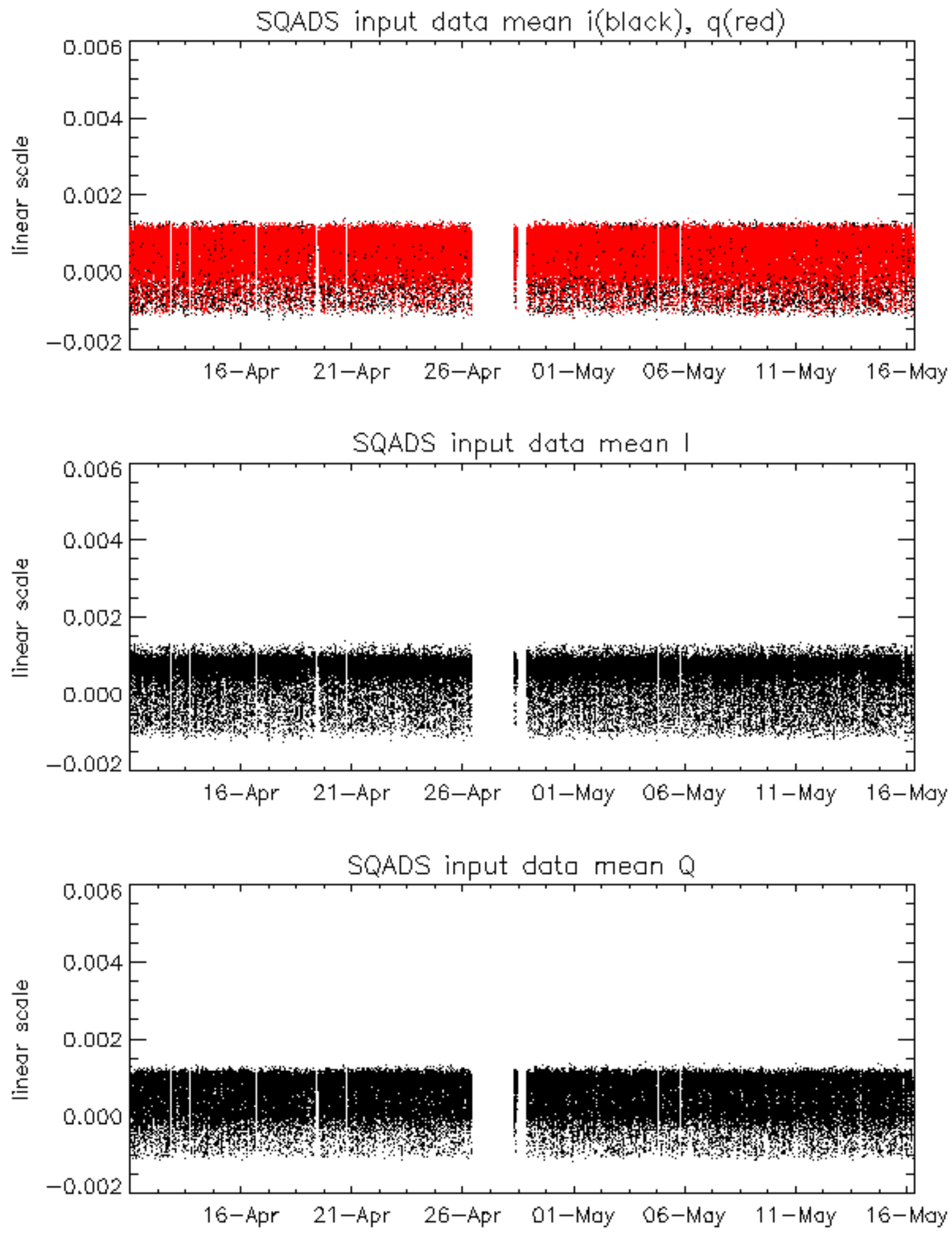
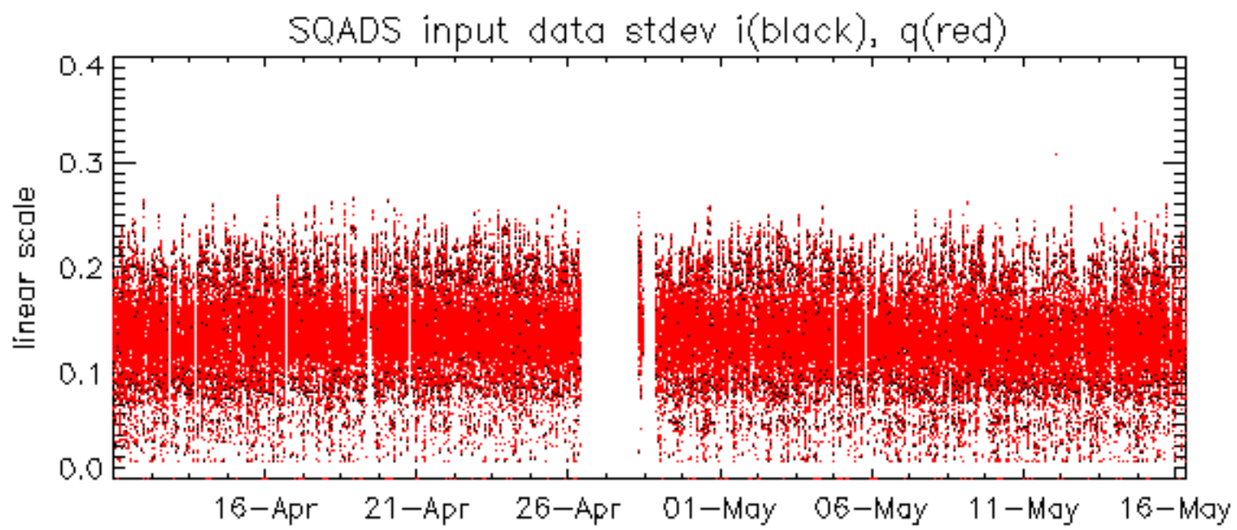
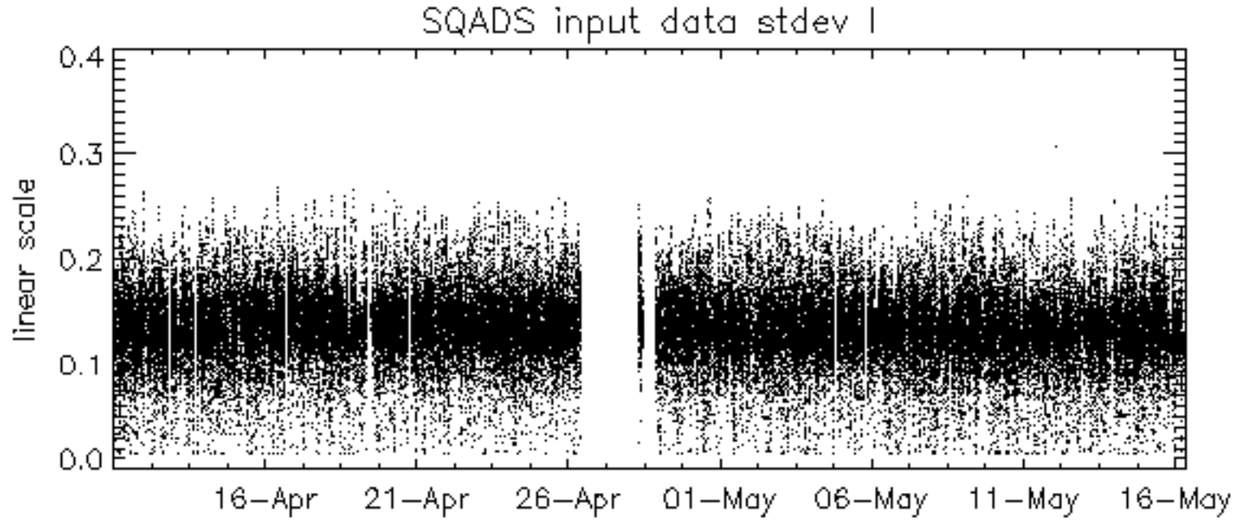
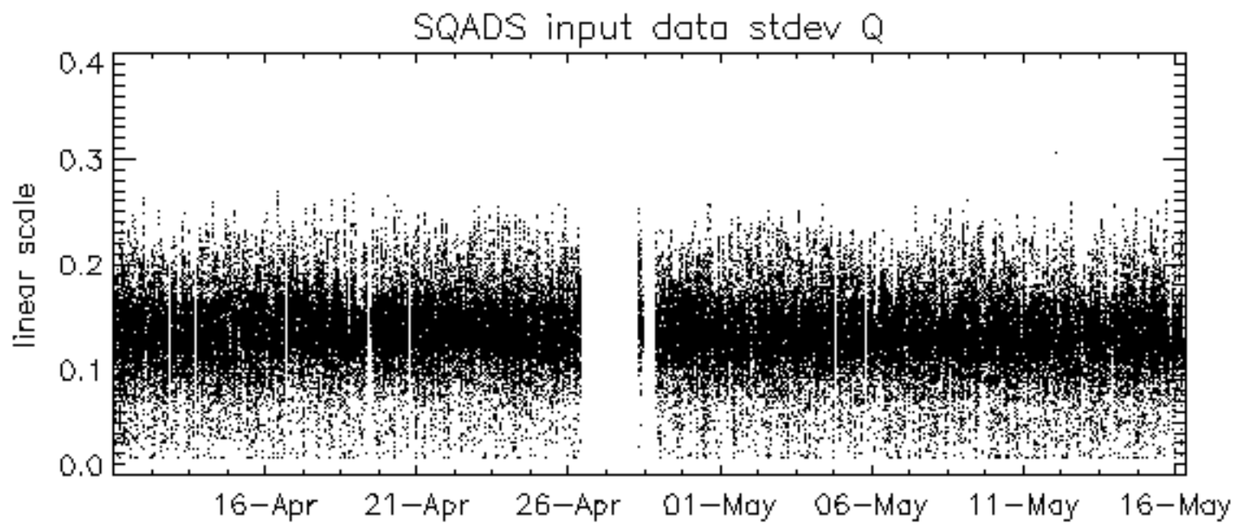

Reference: 2005-09-29 07:47:20 V
Test : 2006-05-14 05:32:10 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

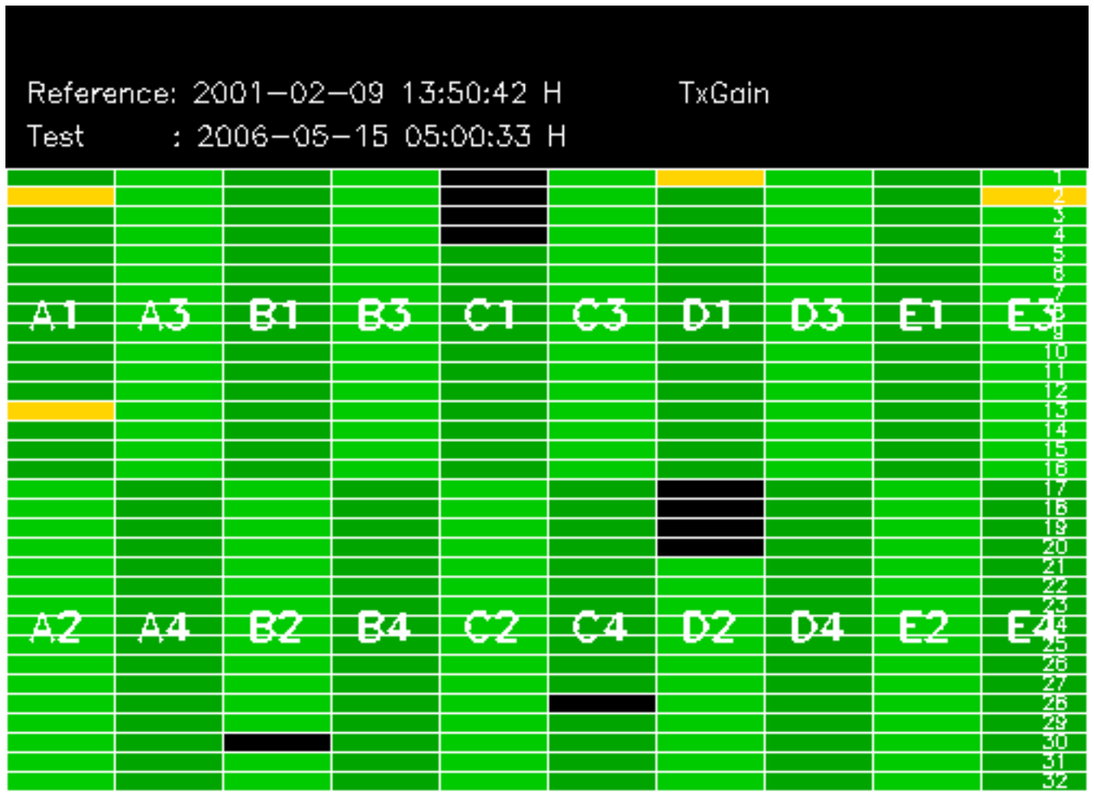

I/Q Gain Imbalance
0.4
0.3
0.2
0.1
0.0
stdev Q
0.0
0.1
0.2
0.3
0.4
stdev I


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


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


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


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


Reference: 2001-02-09 13:50:42 H
Test : 2006-05-15 05:00:33 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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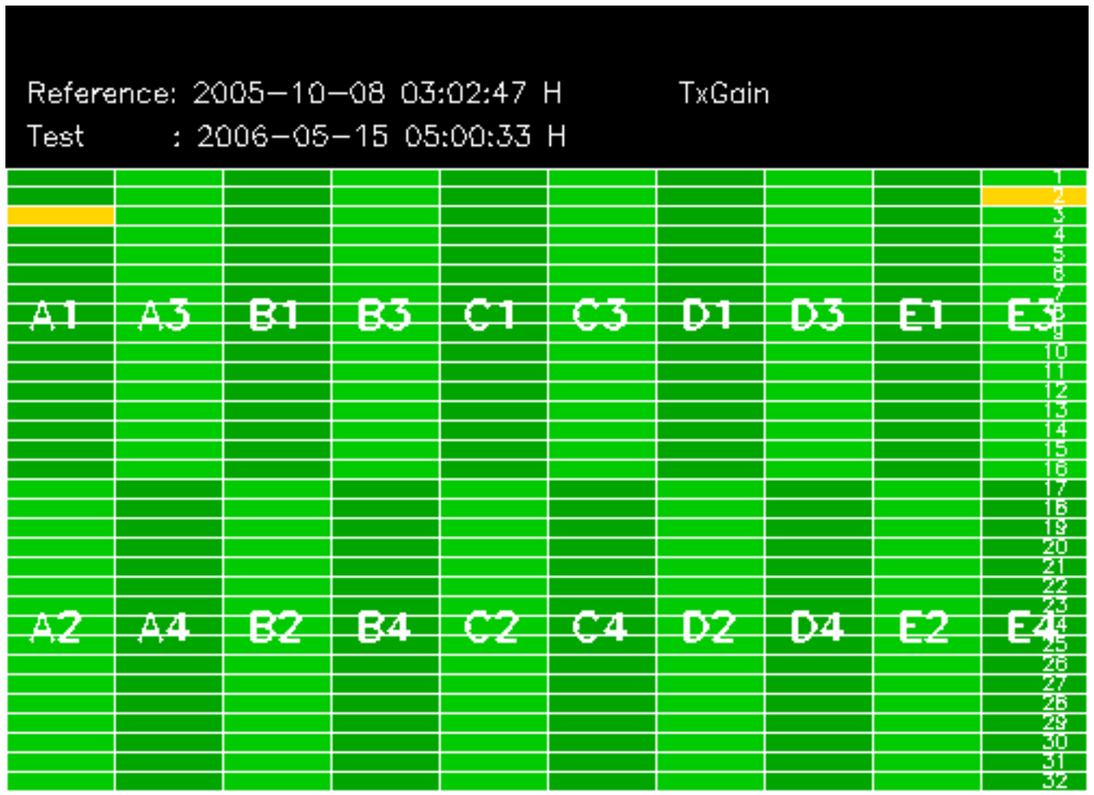
Reference: 2005-10-08 03:02:47 H
Test : 2006-05-15 05:00:33 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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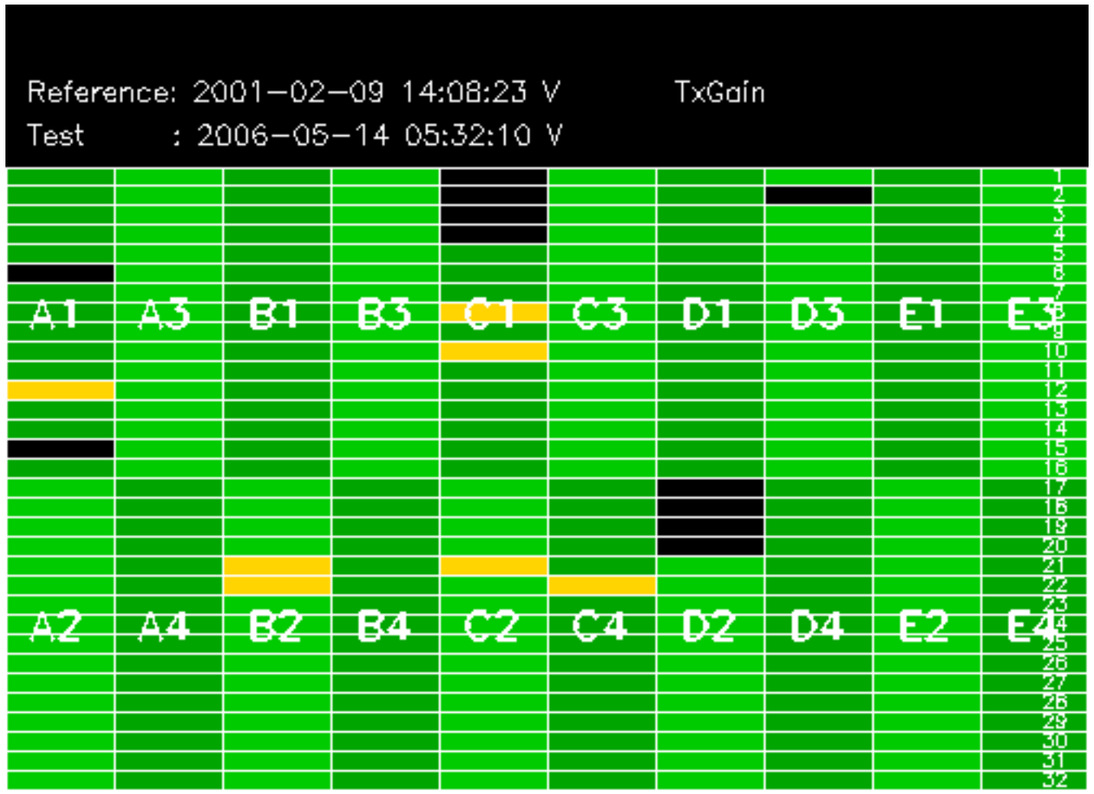
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-14 05:32:10 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
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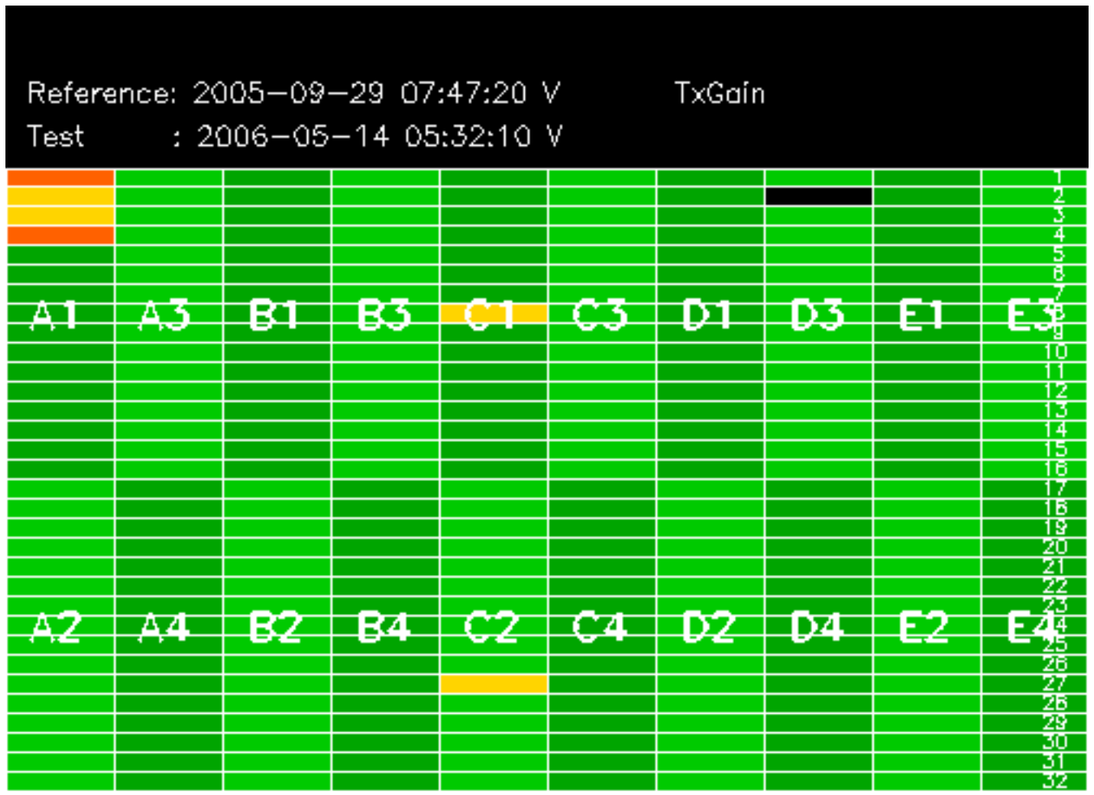
Reference: 2005-09-29 07:47:20 V
Test : 2006-05-14 05:32:10 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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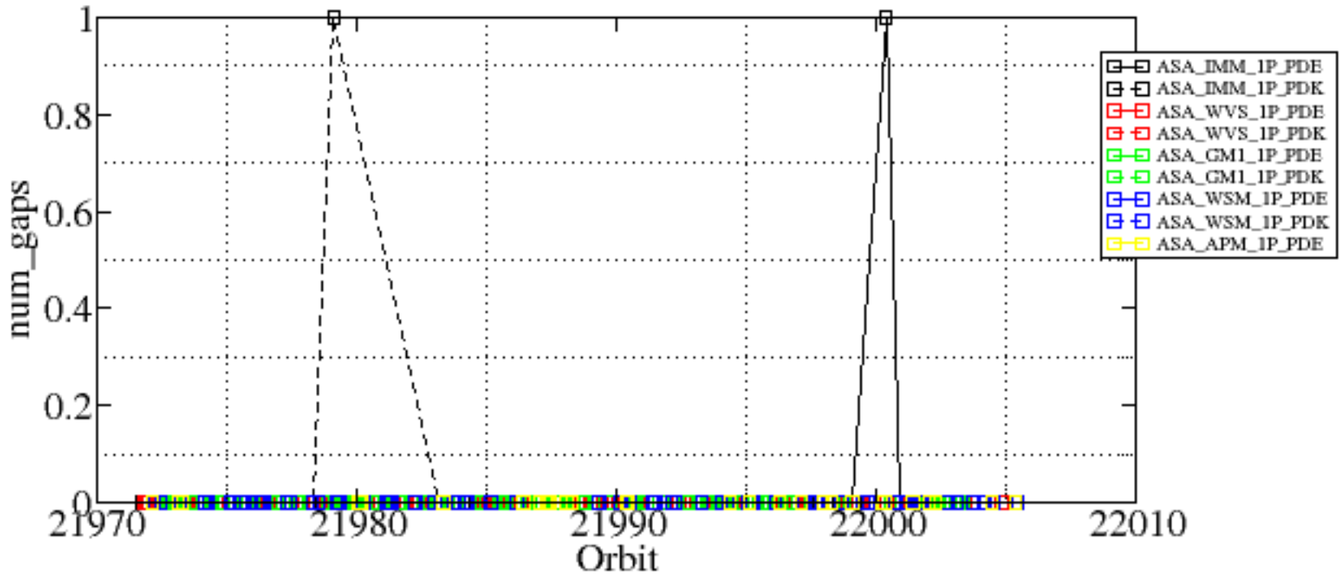
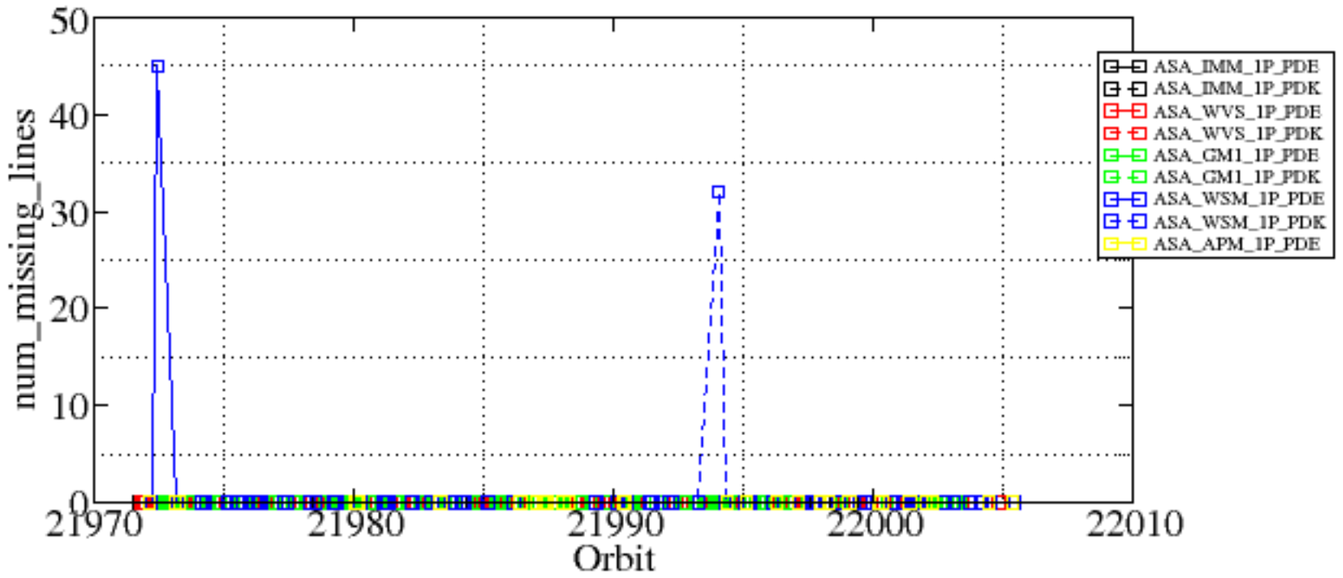
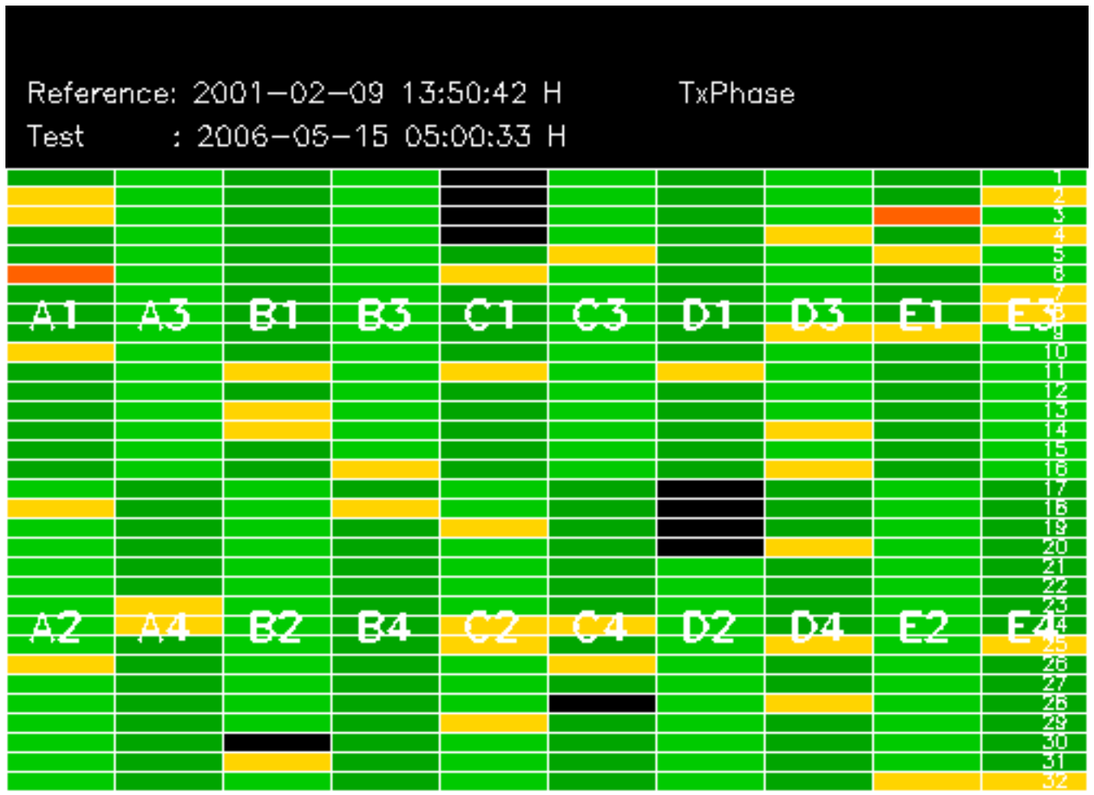
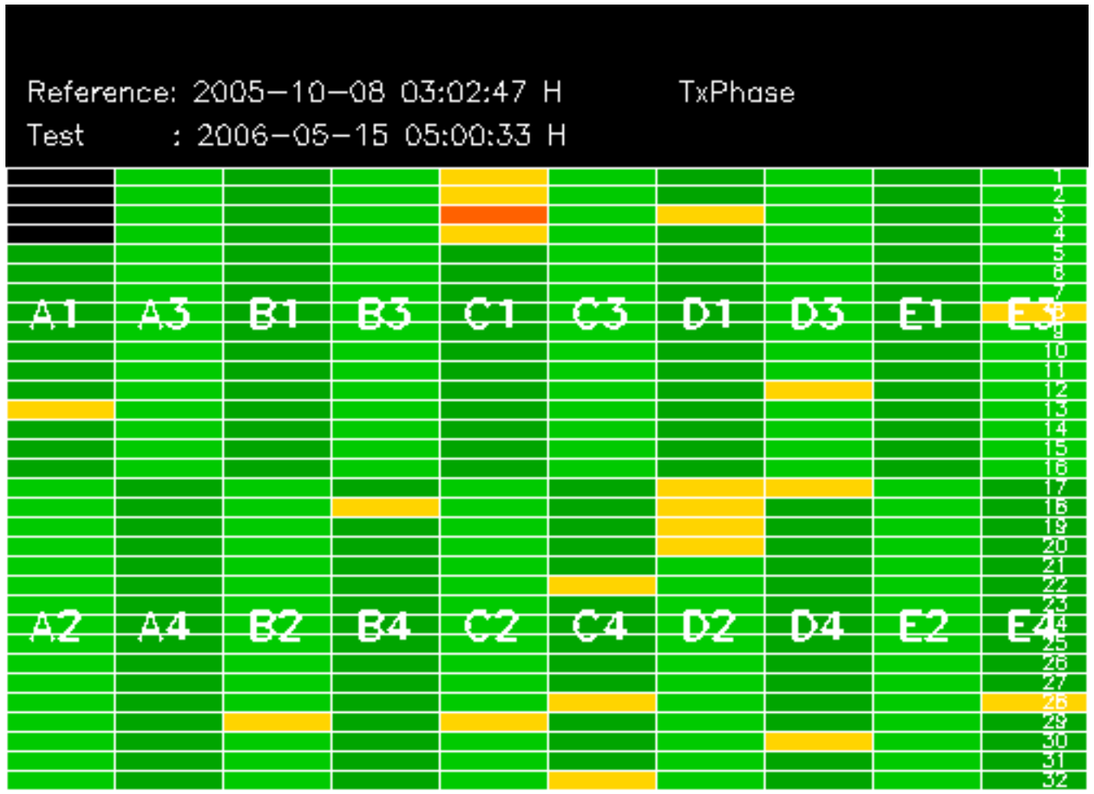
Summary of analysis for the last 3 days 2006051[456]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_IMM_1PNPDE20060516_003808_000000502047_00403_22000_5316.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_IMM_1PNPDK20060514_125915_000001272047_00382_21979_1748.N1 </td> <td>1 </td> <td>0 </td></tr>
<tr> <td>ASA_WSM_1PNPDE20060514_014737_000000862047_00375_21972_9156.N1 </td> <td>0 </td> <td>45 </td></tr>
<tr> <td>ASA_WSM_1PNPDK20060515_140121_000000852047_00397_21994_5187.N1 </td> <td>0 </td> <td>32 </td></tr>
</table>


num_gaps
1
0.8
0.6
0.4
0.2
0
21970
21980
21990
22000
22010
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
50
40
30
20
10
0
21970
21980
21990
22000
22010
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 : 2006-05-15 05:00:33 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 : 2006-05-15 05:00:33 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
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D4
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E4
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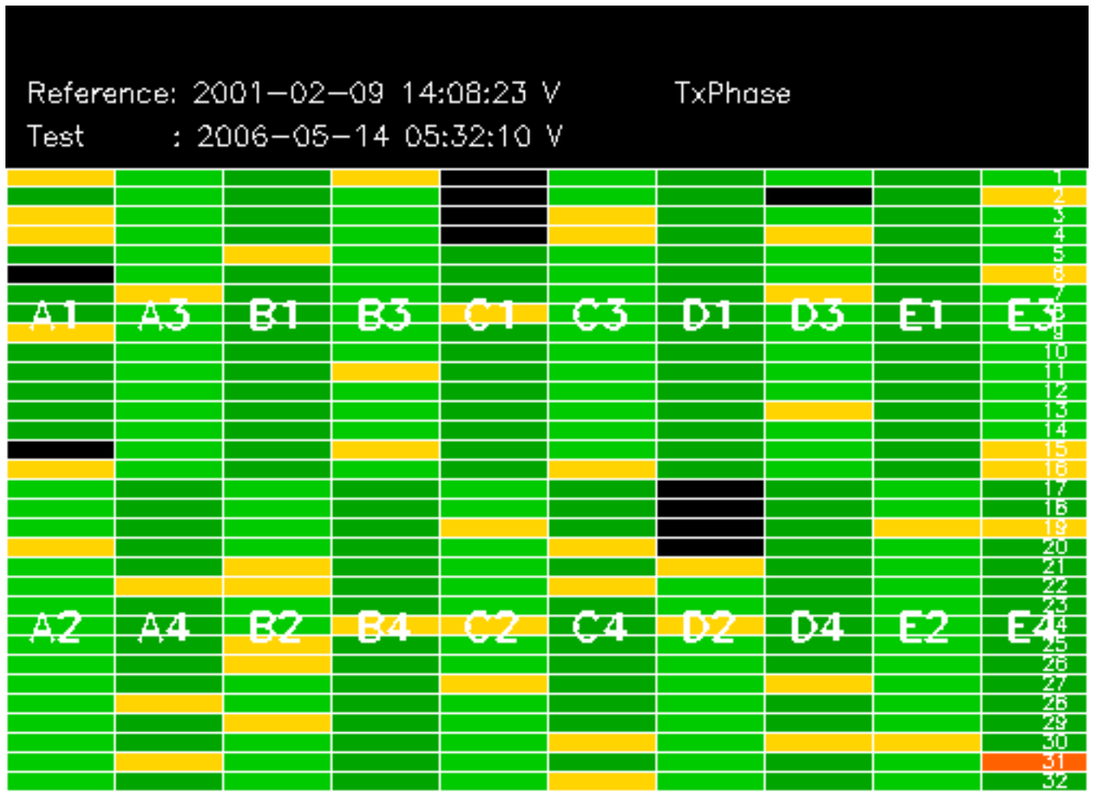
Reference: 2001-02-09 14:08:23 V
Test : 2006-05-14 05:32:10 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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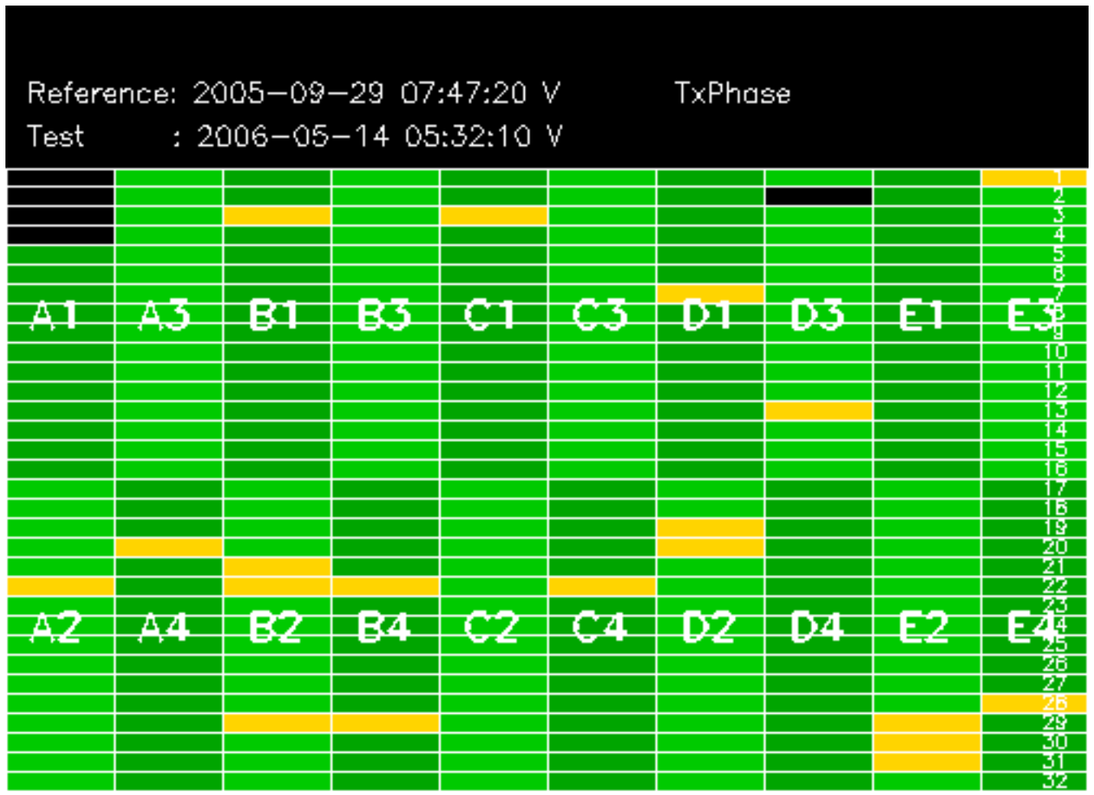
Reference: 2005-09-29 07:47:20 V
Test : 2006-05-14 05:32:10 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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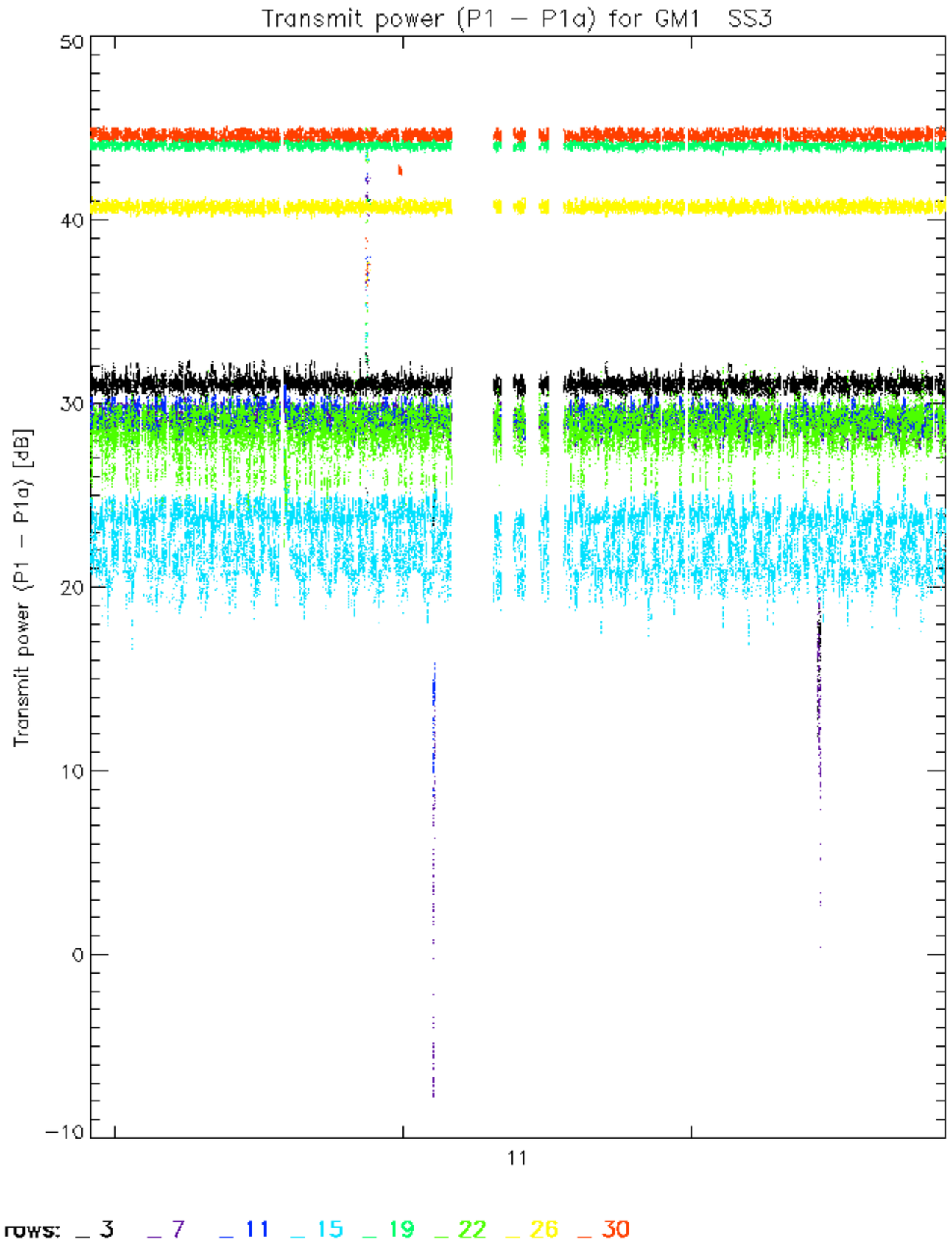
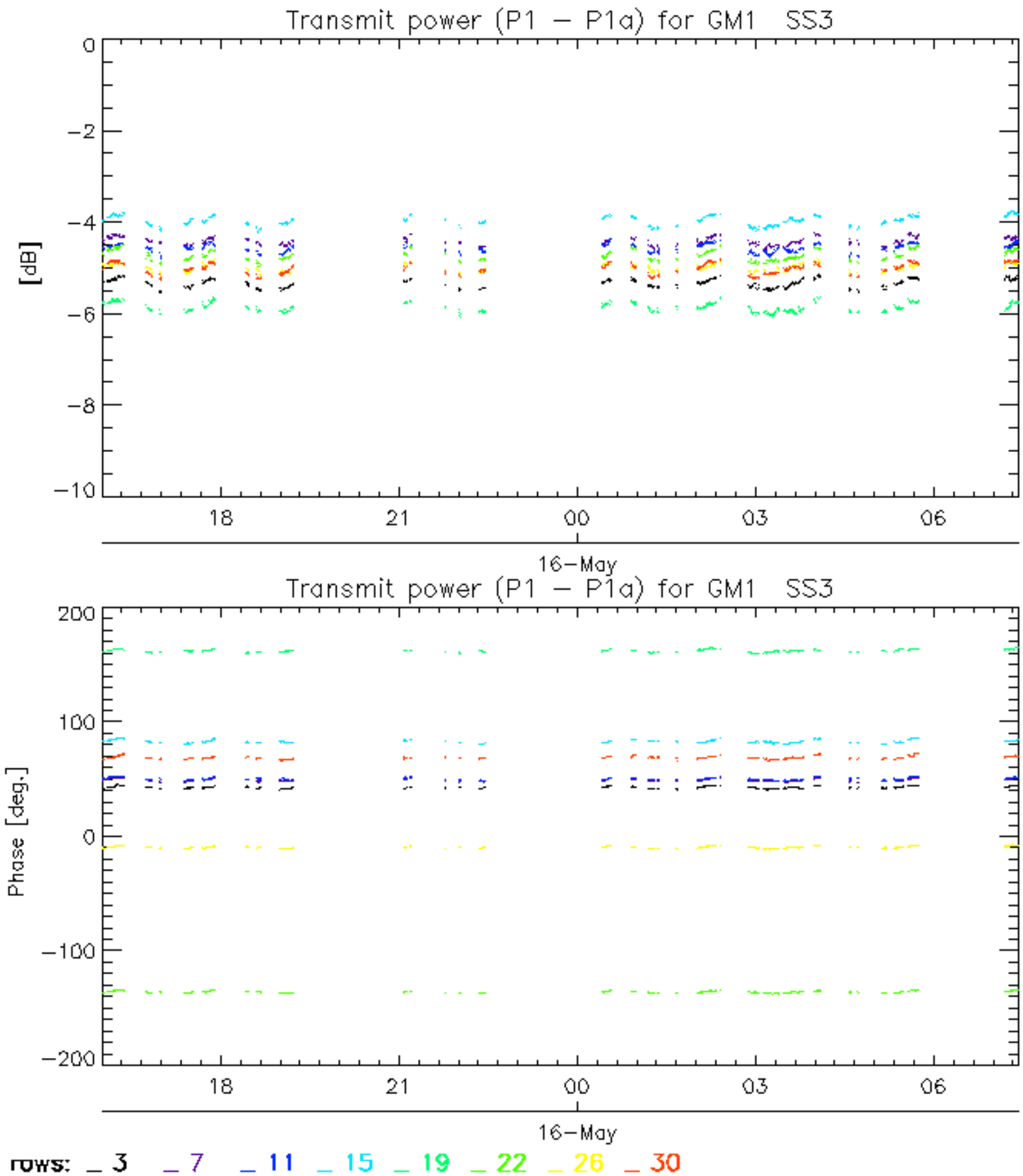
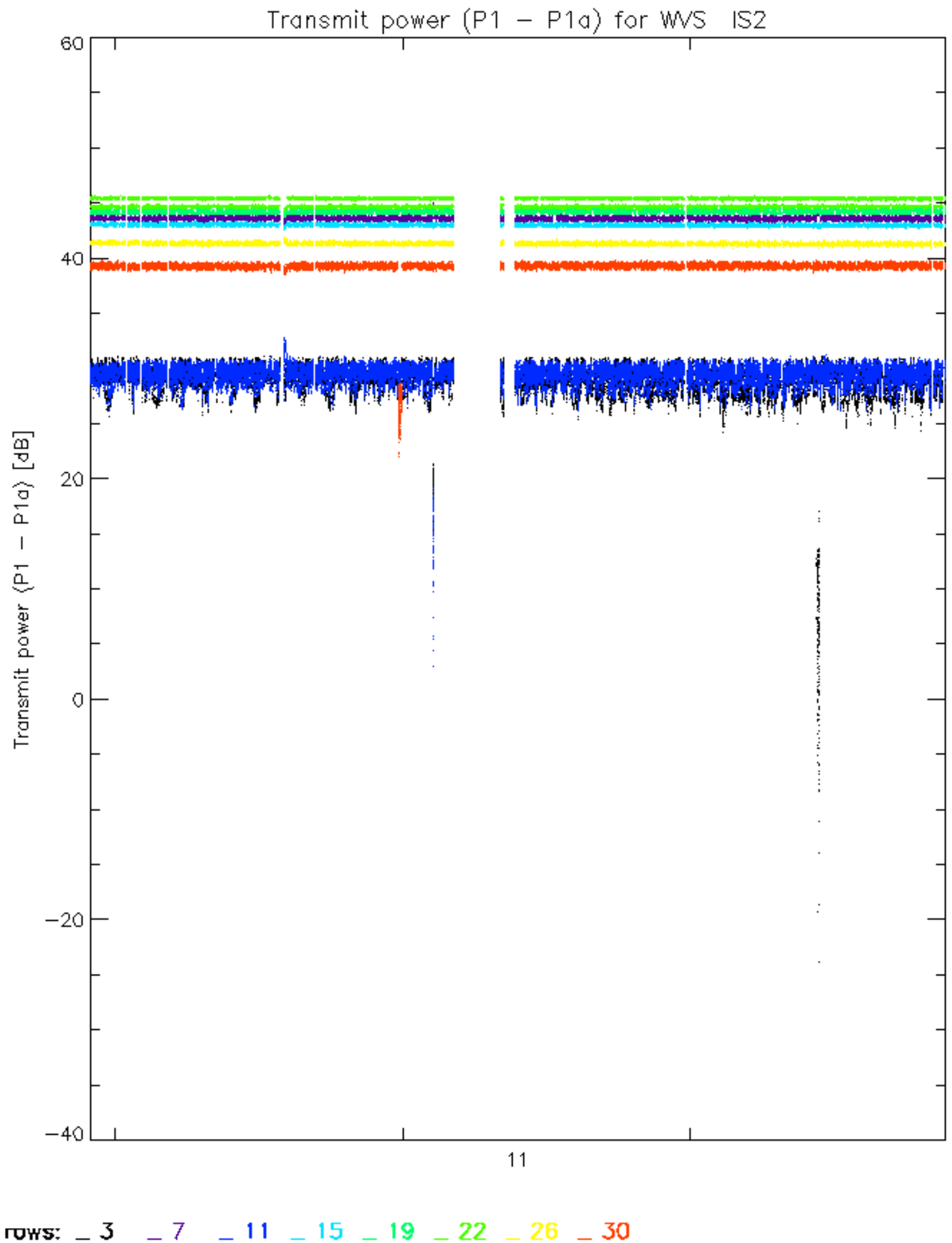
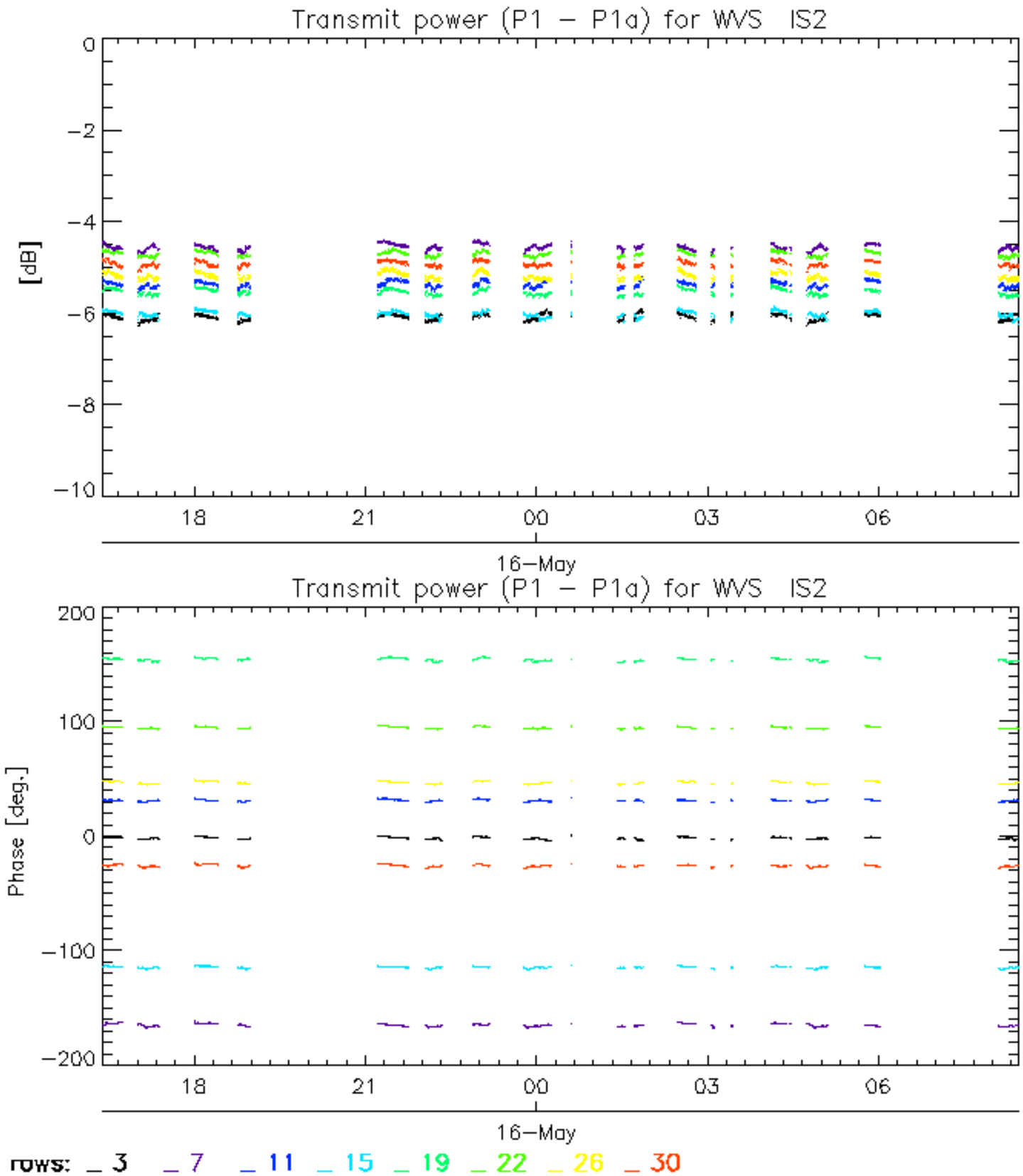

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
11
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
16−May
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
16−May
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
11
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
0
−2
−4
−6
−8
−10
[dB]
18
21
00
03
06
16–May
Transmit power (P1 – P1a) for WVS IS2
200
100
0
−100
−200
Phase [deg.]
18
21
00
03
06
16–May
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.