PRELIMINARY REPORT OF 070202

last update on Fri Feb 2 16:15:26 GMT 2007

Due to an ASAR test acquisition campaign, the daily analysis on WVS products
will be based on IS4 instead of IS2 during the following periods:

From orbit 25621 (23-Jan-2007) to 25720 (30-Jan-2007) in HH polarization
From orbit 26122 (27-Feb-2007) to 26221 (06-Mar-2007) in HH polarization
From orbit 25721 (30-Jan-2007) to 25820 (06-Feb-2007) in VV polarization
From orbit 26222 (06-Mar-2007) to 26321 (13-Mar-2007) in VV polarization

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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 2007-02-01 00:00:00 to 2007-02-02 16:15:26

PDHS-K					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000	26	47	3	2	19
ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000	26	47	3	2	19
ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000	26	47	3	2	19
ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000	26	47	3	2	19

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**

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	20070201 074712
H	20070129 092202

MSM in V/V polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

MSM in H/H polarisation

Pre-launch Reference	DDS-B (2003-06-12) reference
☒	☒
☒	☒
☒	☒
☒	☒

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS
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☒

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1
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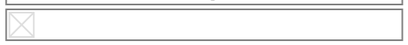
4.2 - Cyclic statistics

4.2.1 - Evolution for WVS

Evolution of cal pulses for WVS



P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.632374	0.060981	1.352395
7	P1a	-10.051219	0.058589	-0.930433
11	P1a	-10.578210	0.079851	-1.421436
15	P1a	-11.179232	0.975350	-8.749740
19	P1a	-15.477183	0.644496	6.879716
22	P1a	-20.702837	5.289577	17.691356
26	P1a	-15.623668	0.405208	-1.157171
30	P1a	-18.972275	4.292058	-17.886136

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.427750	0.170859	-4.185784
7	P1	-2.563220	0.009128	-0.459076
11	P1	-3.062267	0.076601	-2.314103
15	P1	-4.104788	0.733501	-7.718744
19	P1	-3.530476	0.056007	1.832098
22	P1	-5.208337	0.090066	-2.446157
26	P1	-5.731699	0.392866	5.496183
30	P1	-5.372979	0.057407	-1.101110

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.250107	0.096824	-0.827694
7	P2	-22.037743	0.147066	1.508876
11	P2	-10.913787	0.107930	1.634136
15	P2	-5.140176	0.095367	0.306500
19	P2	-7.267156	0.081461	0.251113
22	P2	-8.361385	0.078974	-0.389276
26	P2	-24.268717	0.098296	1.512882
30	P2	-21.701874	0.072055	0.039587

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.224777	0.007456	0.017438
7	P3	-8.224777	0.007456	0.017438
11	P3	-8.224777	0.007456	0.017438
15	P3	-8.224777	0.007456	0.017438
19	P3	-8.224777	0.007456	0.017438
22	P3	-8.224777	0.007456	0.017438
26	P3	-8.224777	0.007456	0.017438
30	P3	-8.224777	0.007456	0.017438

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1


P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1a	-11.725379	0.045898	0.473535
7	P1a	-10.006449	0.038969	0.363822
11	P1a	-10.484060	0.057016	0.109375
15	P1a	-10.826220	0.128797	-0.176097
19	P1a	-15.753777	0.060566	-0.314021
22	P1a	-20.964102	1.387539	1.659369
26	P1a	-15.510402	0.249366	0.021303
30	P1a	-18.313028	0.366020	-0.231542

P1\t Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-4.306520	0.189776	-4.684466
7	P1	-2.438515	0.006318	0.066745
11	P1	-2.843058	0.016127	0.207733
15	P1	-3.766813	0.032135	0.014126
19	P1	-3.549177	0.013449	-0.082054
22	P1	-5.020184	0.023502	0.106122

26	P1	-6.003987	0.021754	-0.219626
30	P1	-5.291505	0.024581	-0.029919

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-16.290401	0.030816	-0.144425
7	P2	-22.044460	0.047401	-0.308514
11	P2	-10.706816	0.029965	-0.262349
15	P2	-4.845353	0.026815	-0.100254
19	P2	-6.848210	0.026630	-0.181020
22	P2	-8.157795	0.028381	-0.247222
26	P2	-24.263884	0.031303	-0.256021
30	P2	-21.801811	0.034320	0.011753

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.057155	0.002543	-0.024820
7	P3	-8.056997	0.002536	-0.027130
11	P3	-8.057051	0.002544	-0.022423
15	P3	-8.057116	0.002525	-0.025775
19	P3	-8.057004	0.002523	-0.024565
22	P3	-8.057200	0.002538	-0.025239
26	P3	-8.057107	0.002530	-0.025298
30	P3	-8.057025	0.002535	-0.022795

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	0.000688874
	stdev	2.65034e-07
MEAN Q	mean	0.000294805
	stdev	2.04300e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.0570757
	stdev	0.000931222
STDEV Q	mean	0.0566430
	stdev	0.000941751

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2007020[112]
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

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
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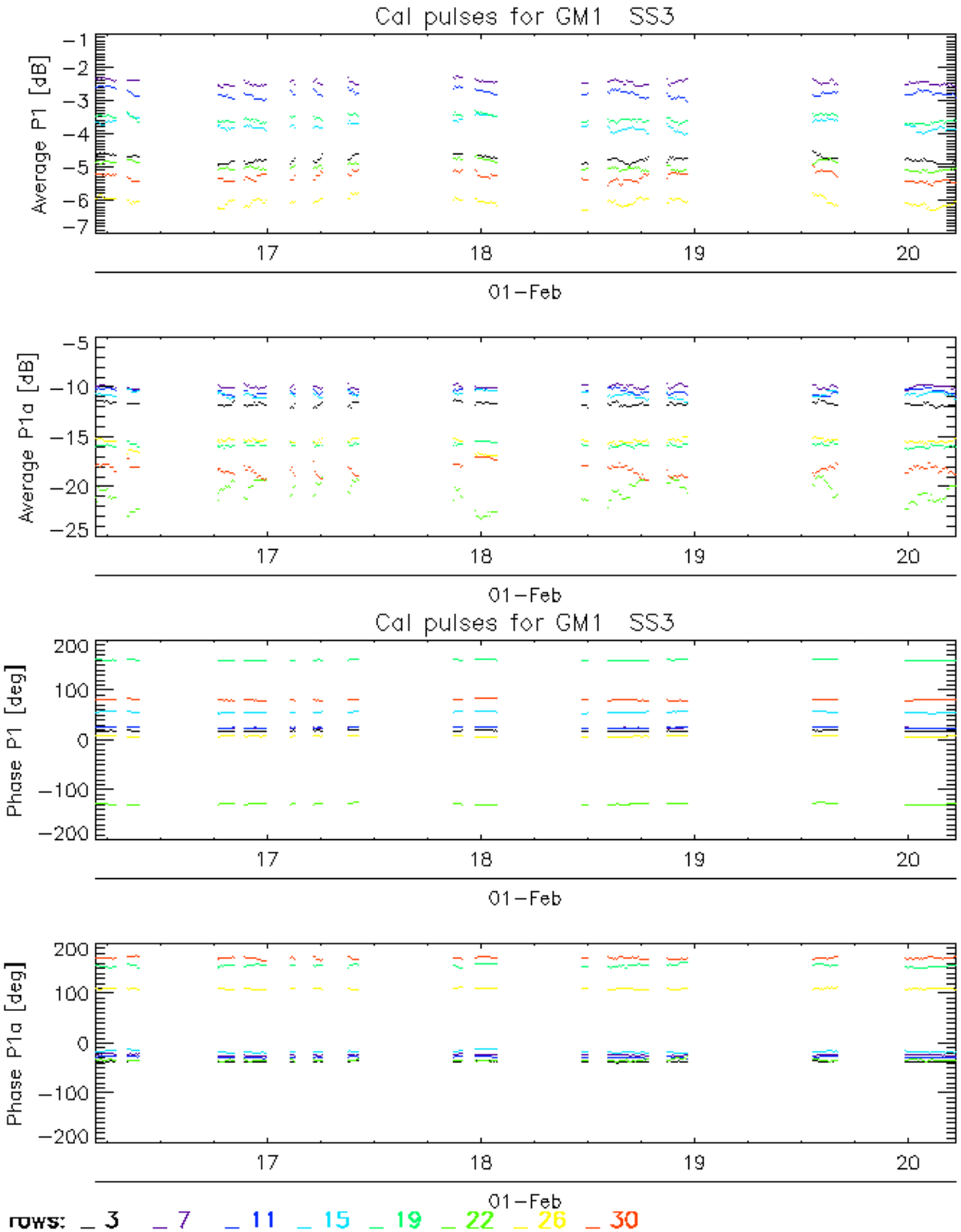
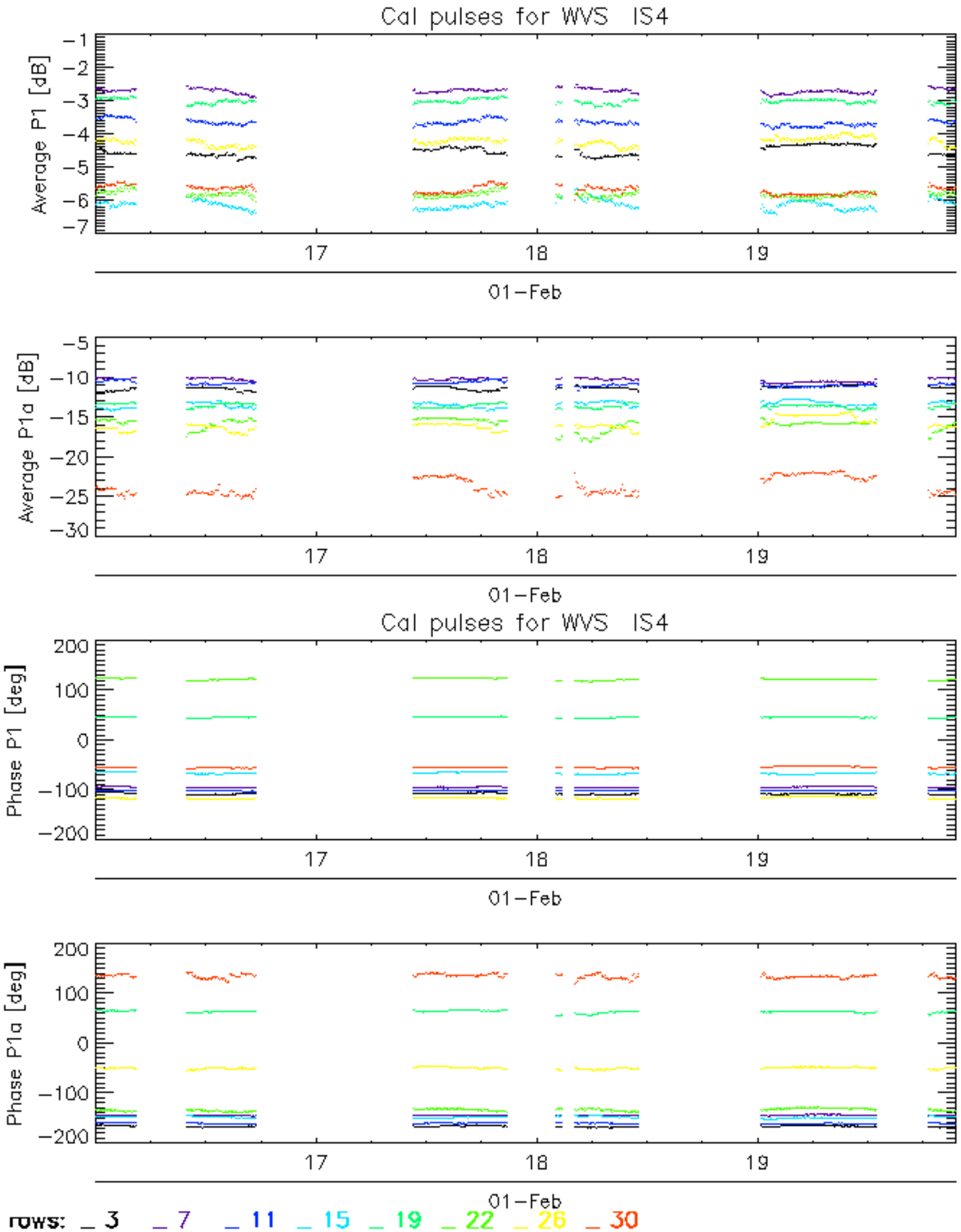
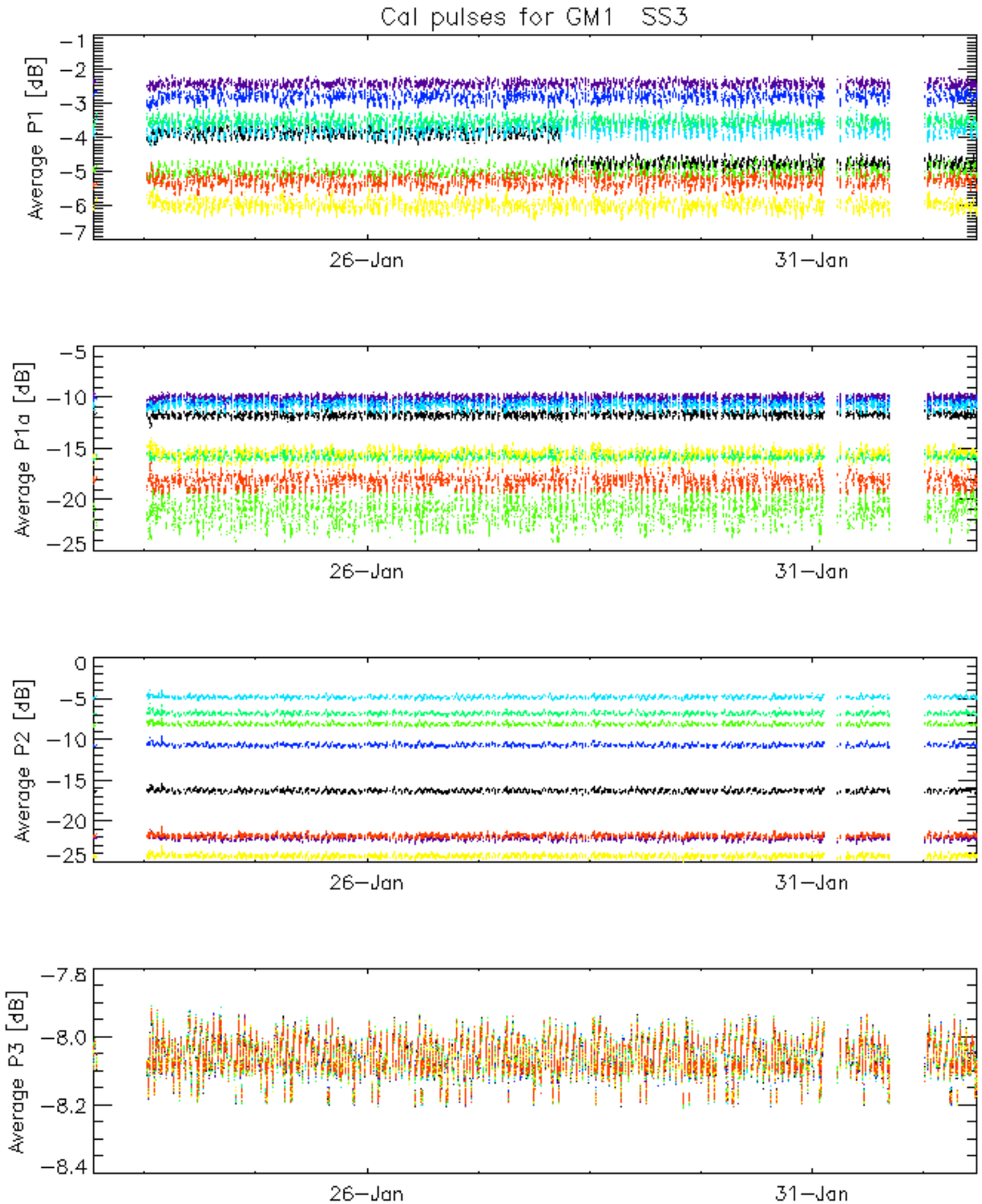
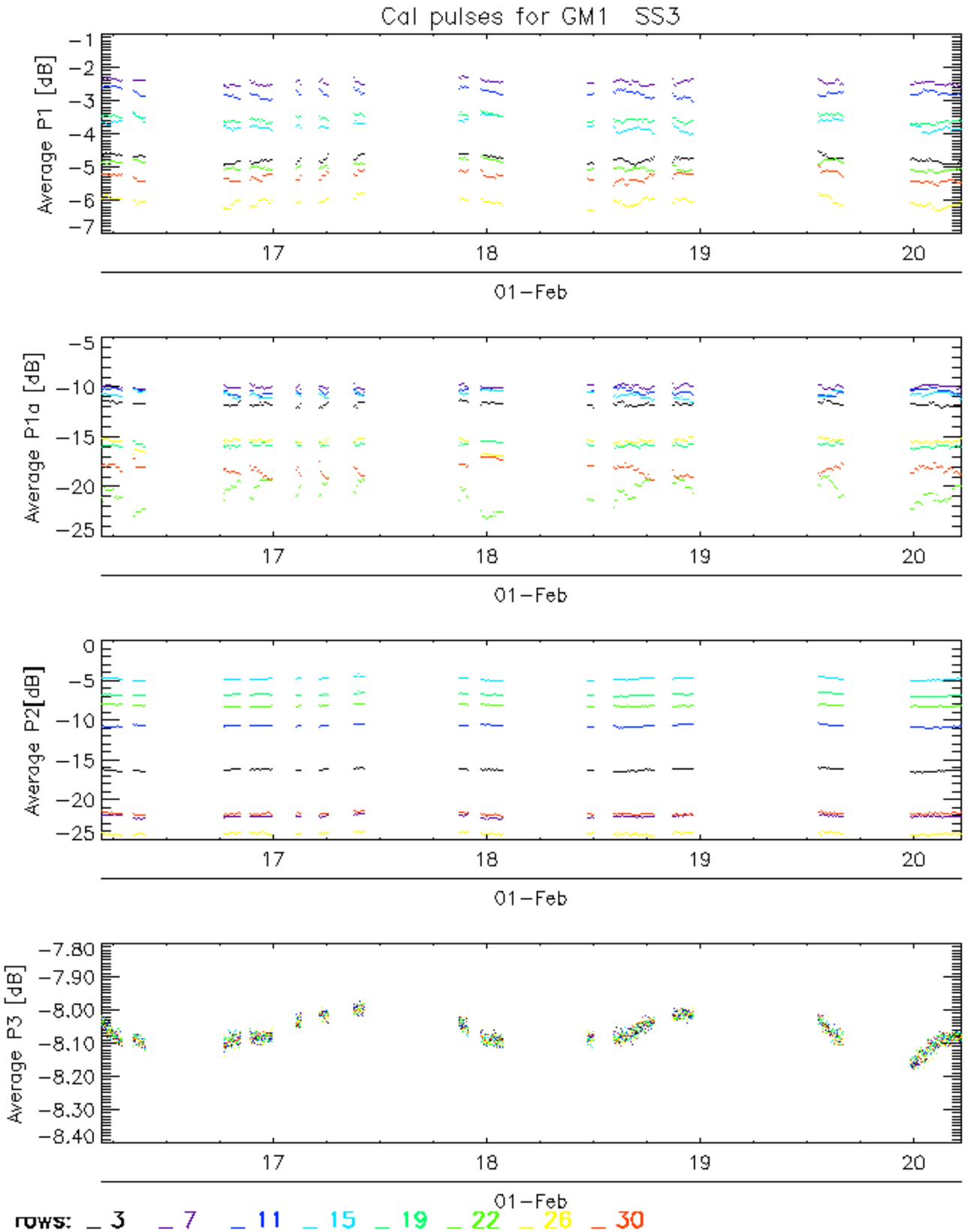
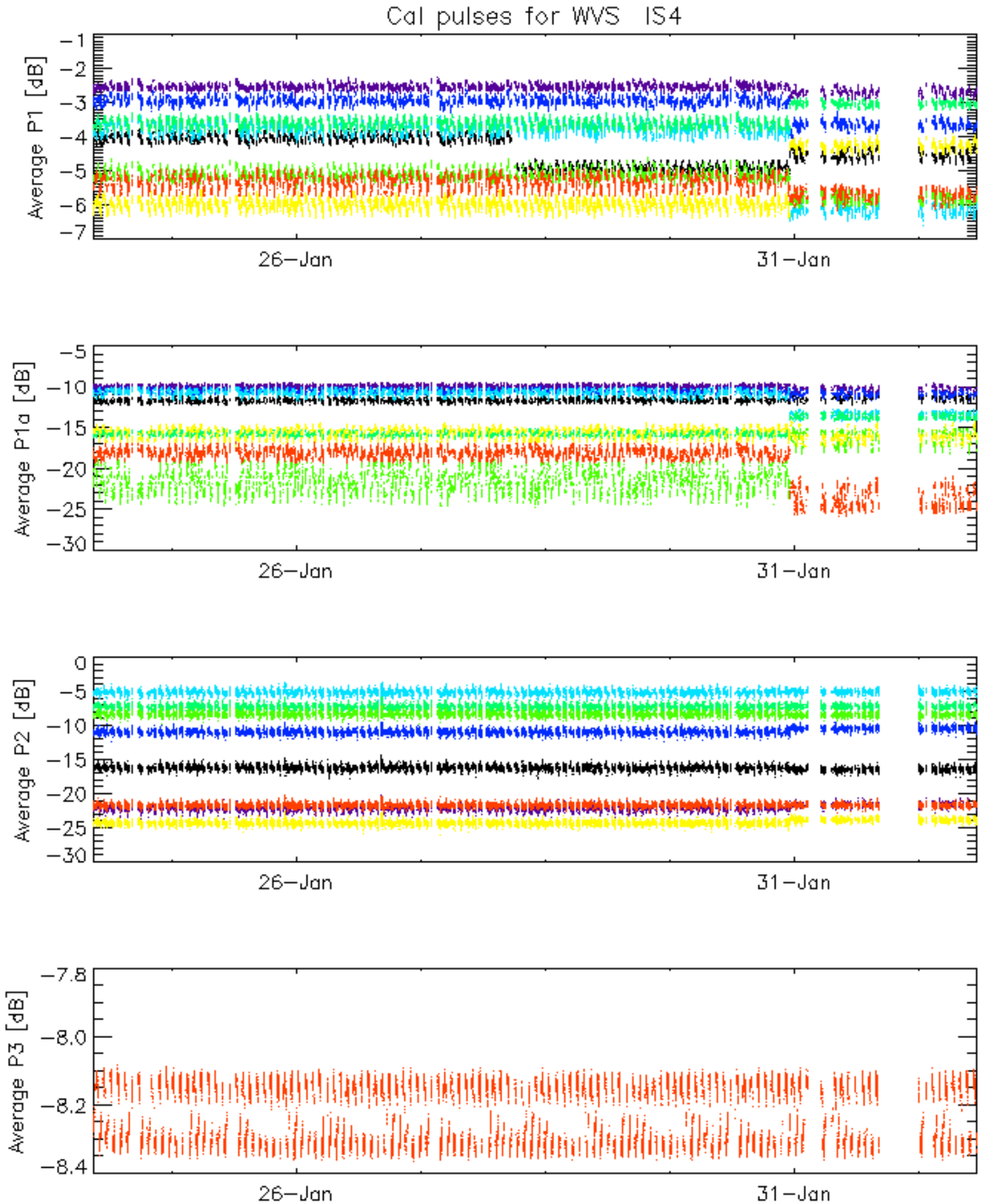
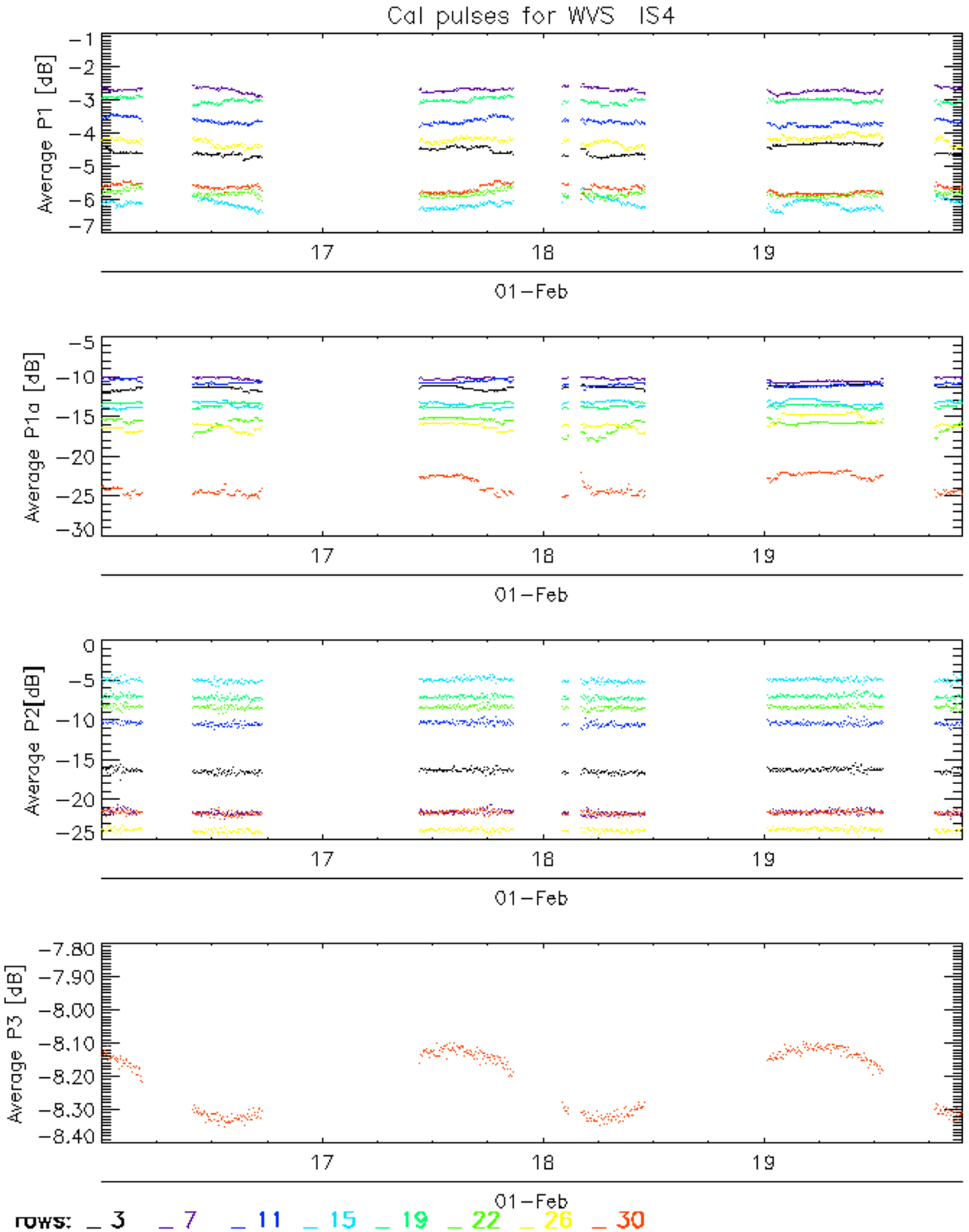

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
17
18
19
20
01−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
17
18
19
20
01−Feb
Cal pulses for GM1 SS3
Phase P1 [deg]
200
100
0
−100
−200
17
18
19
20
01−Feb
Phase P1a [deg]
200
100
0
−100
−200
17
18
19
20
01−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
17
18
19
01−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
17
18
19
01−Feb
Cal pulses for WVS IS4
Phase P1 [deg]
200
100
0
−100
−200
17
18
19
01−Feb
Phase P1a [deg]
200
100
0
−100
−200
17
18
19
01−Feb
rows: 3 7 11 15 19 22 26 30

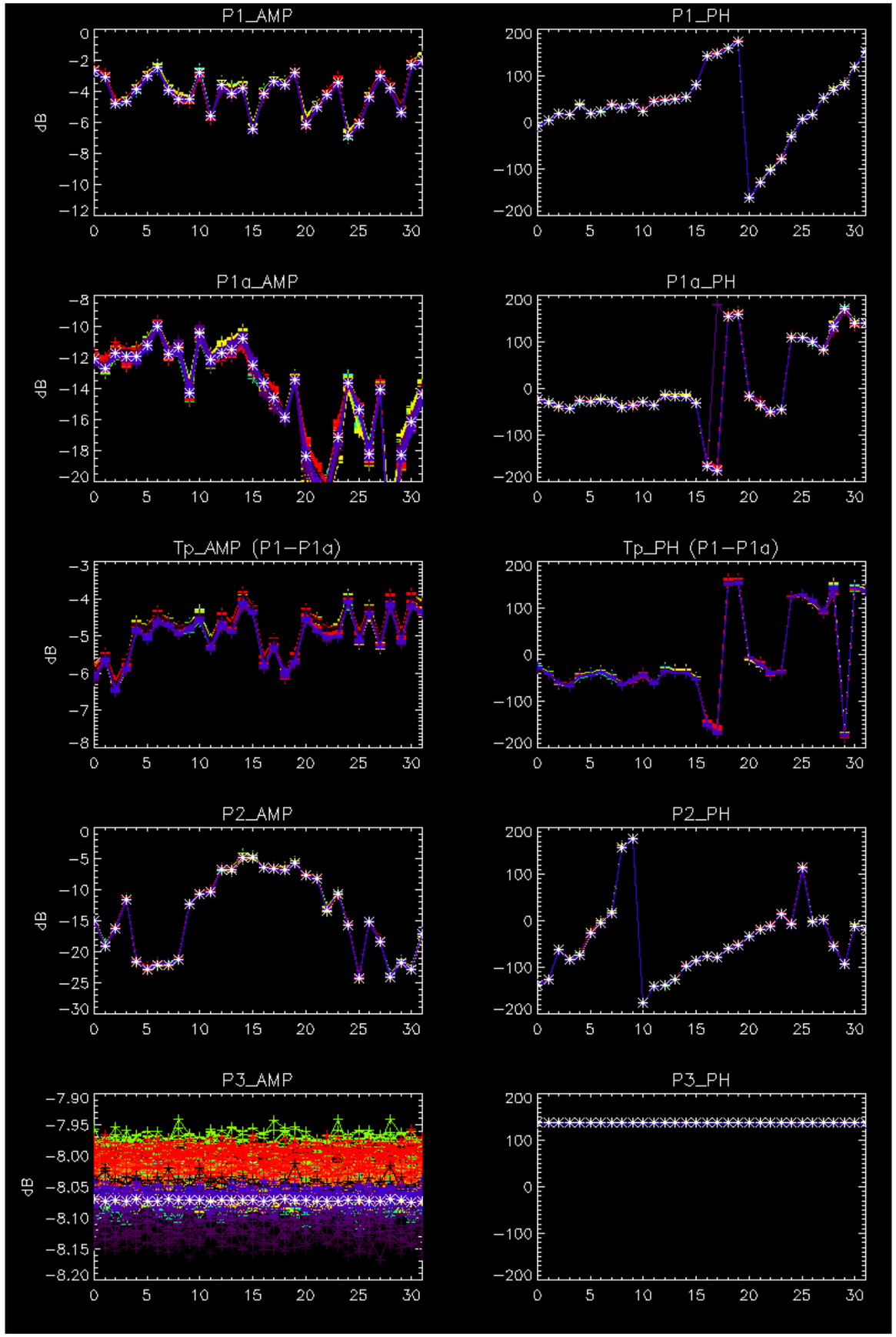

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
26−Jan
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
26−Jan
31−Jan
Average P2 [dB]
0
−5
−10
−15
−20
−25
26−Jan
31−Jan
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
rows: 3 7 11 15 19 22 26 30

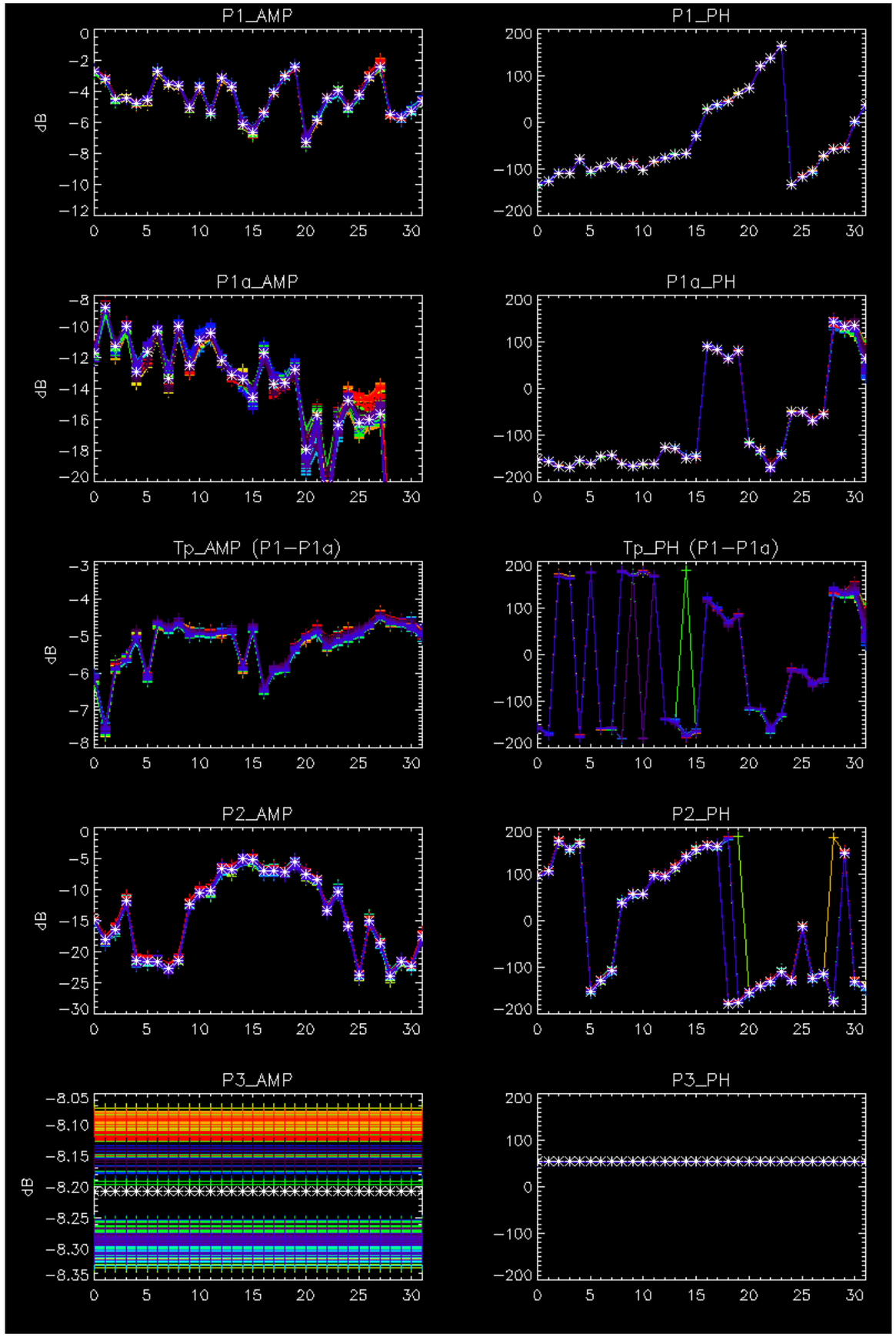

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
17
18
19
20
01−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
17
18
19
20
01−Feb
Average P2[dB]
0
−5
−10
−15
−20
−25
17
18
19
20
01−Feb
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
17
18
19
20
01−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
26−Jan
31−Jan
Average P1a [dB]
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
Average P2 [dB]
0
−5
−10
−15
−20
−25
−30
26−Jan
31−Jan
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
26−Jan
31−Jan
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS4
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
17
18
19
01−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
17
18
19
01−Feb
Average P2[dB]
0
−5
−10
−15
−20
−25
17
18
19
01−Feb
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
17
18
19
01−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

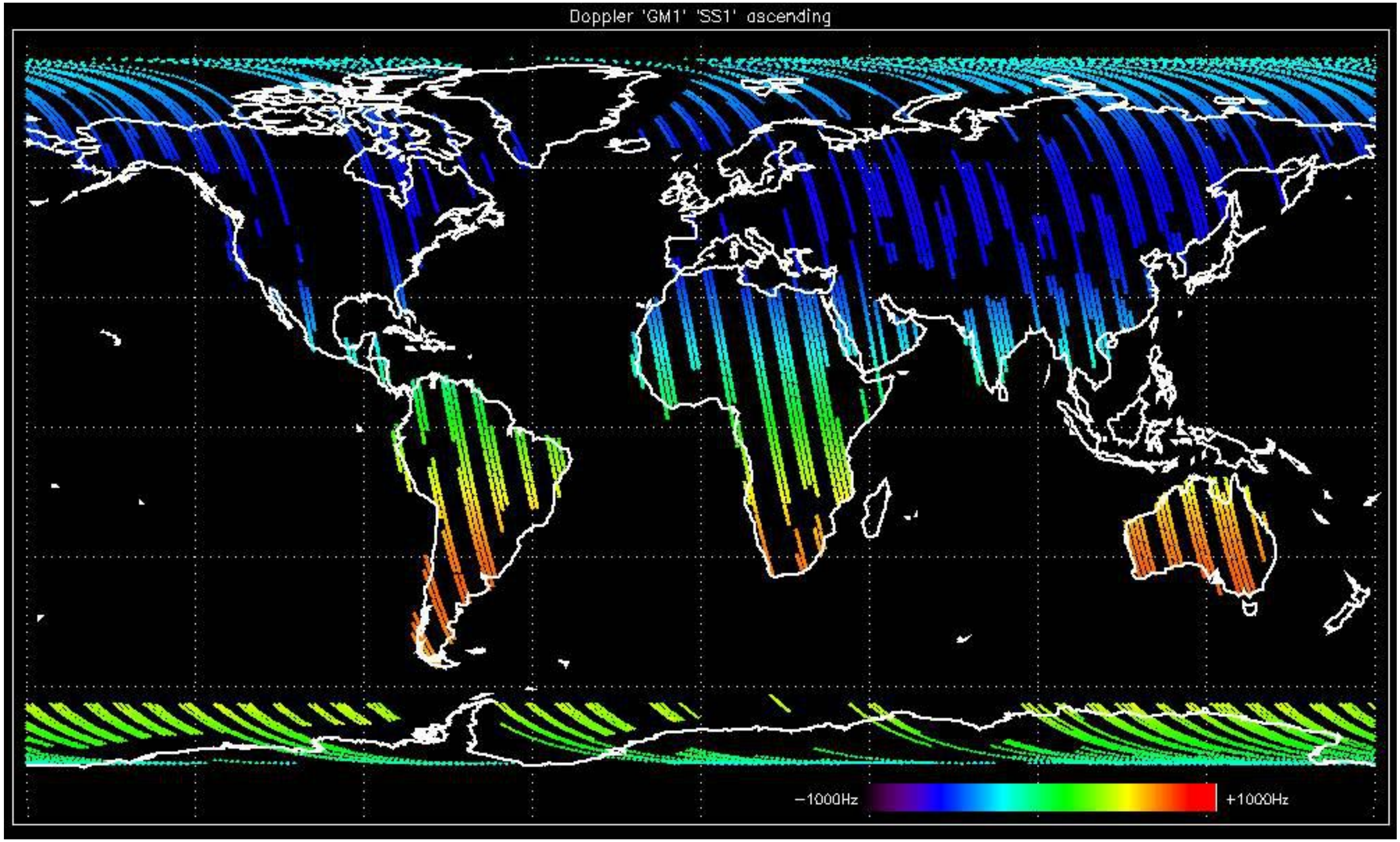
No anomalies observed.

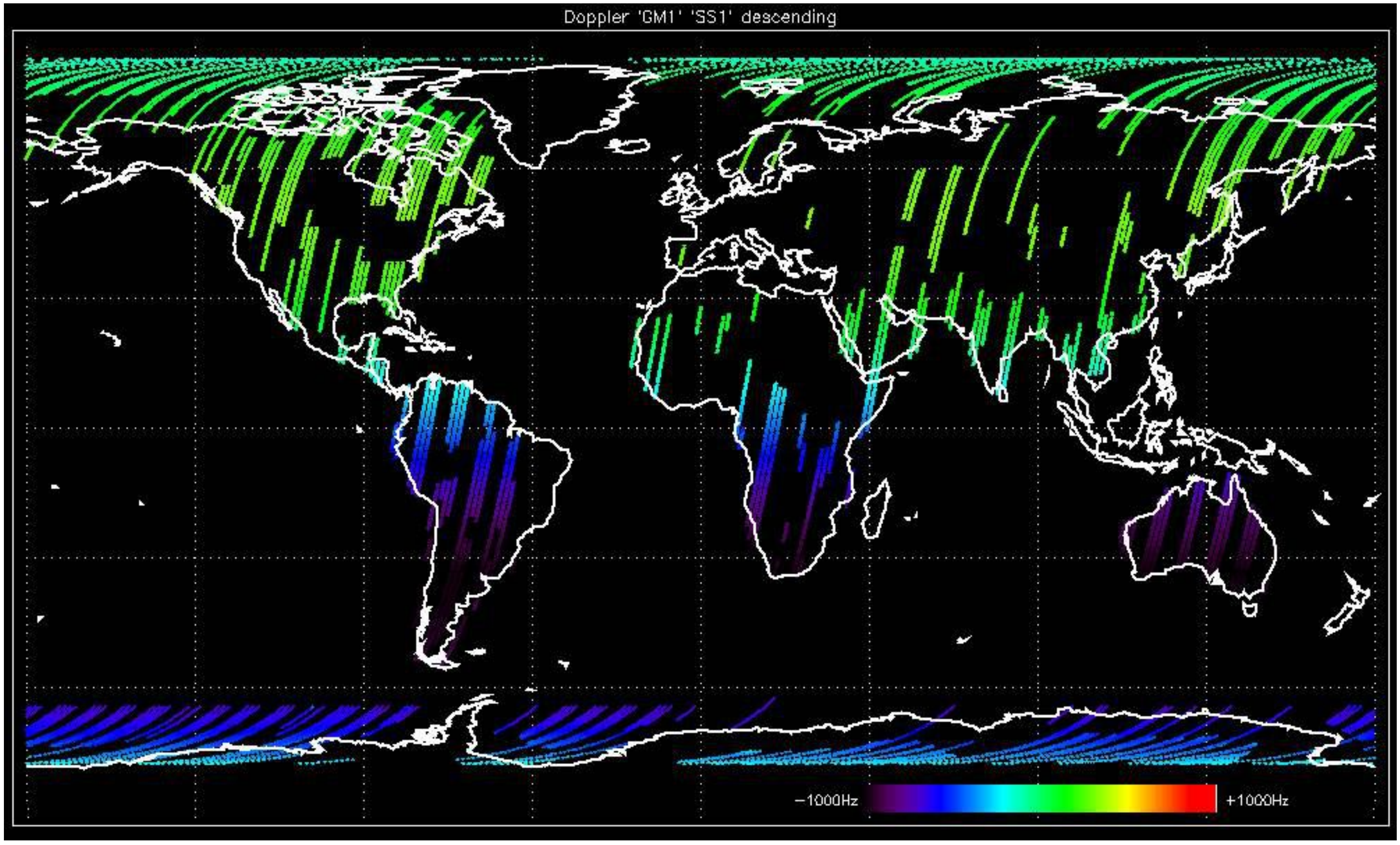

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

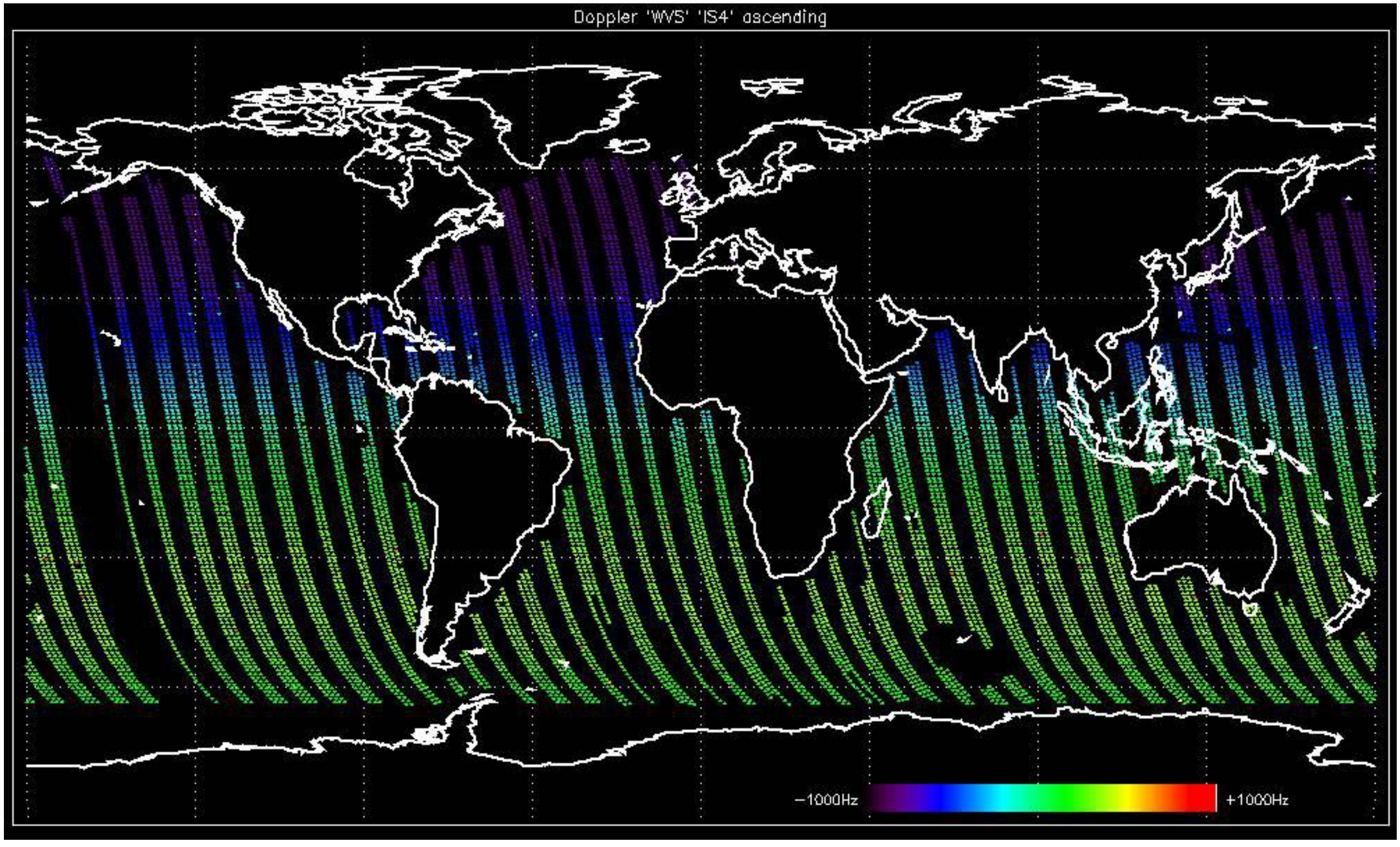

P1_AMP
dB
P1_PH
P1a_AMP
dB
P1a_PH
Tp_AMP (P1−P1a)
dB
Tp_PH (P1−P1a)
P2_AMP
dB
P2_PH
P3_AMP
dB
P3_PH

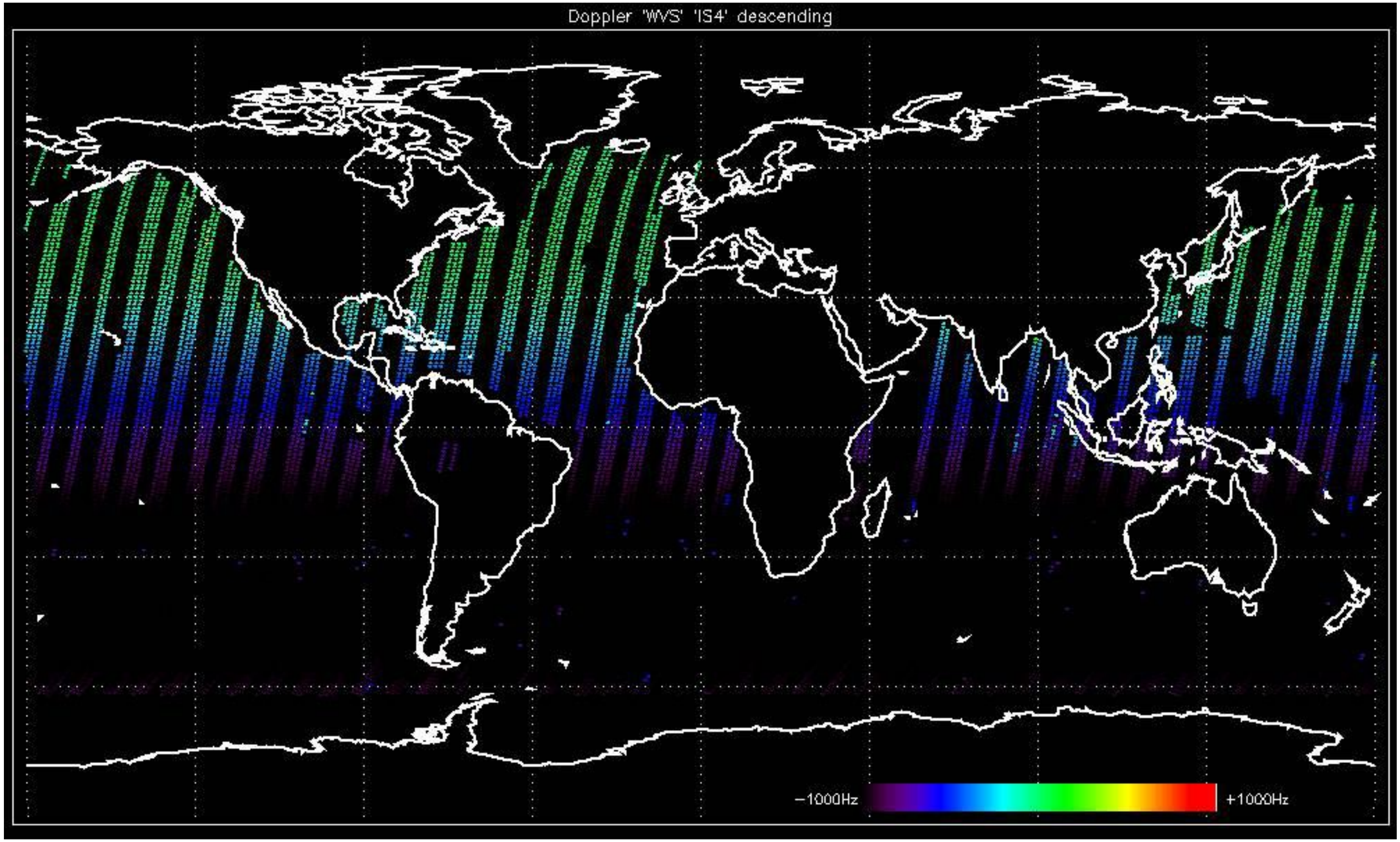
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

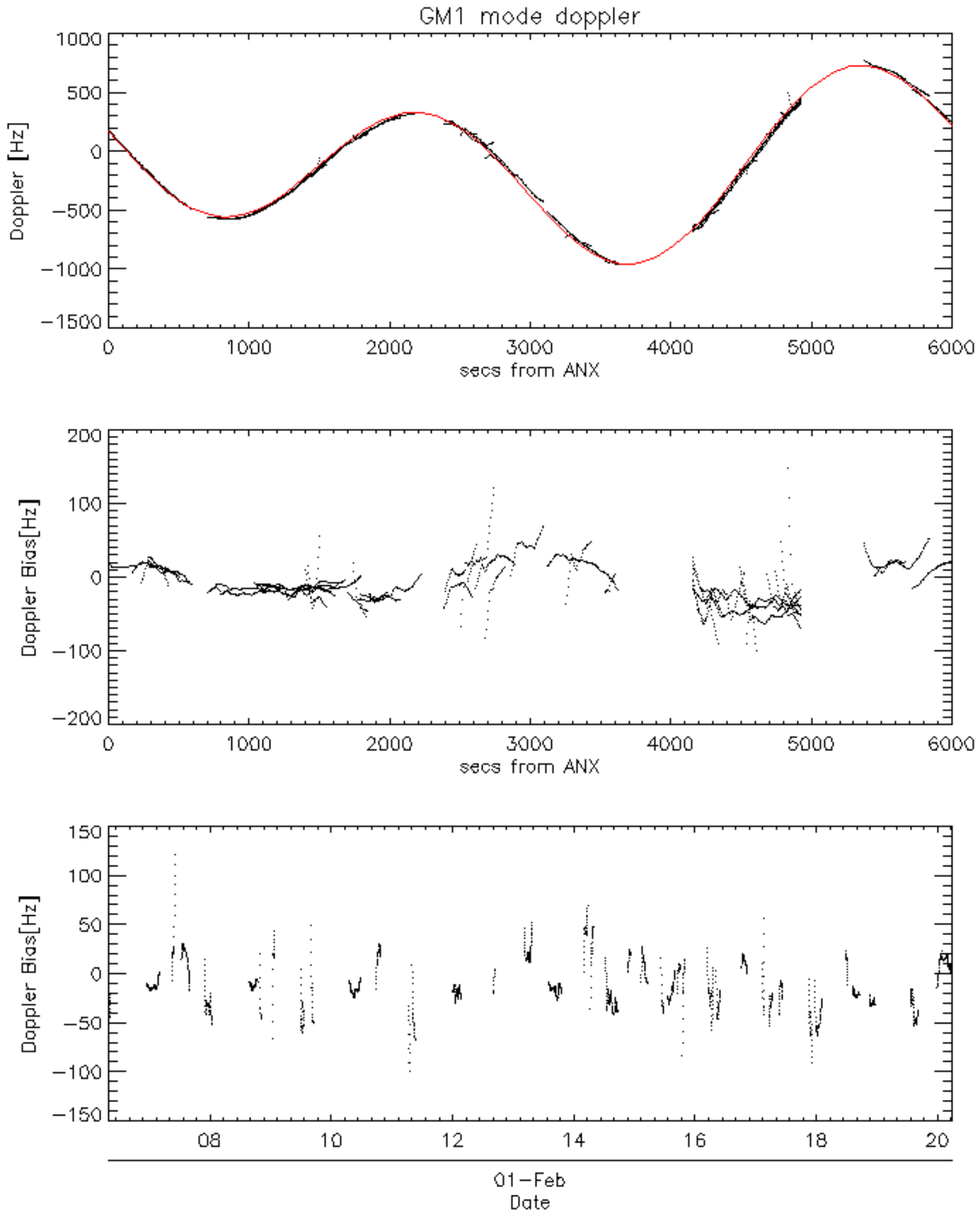
Preliminary report.The data is not yet controled

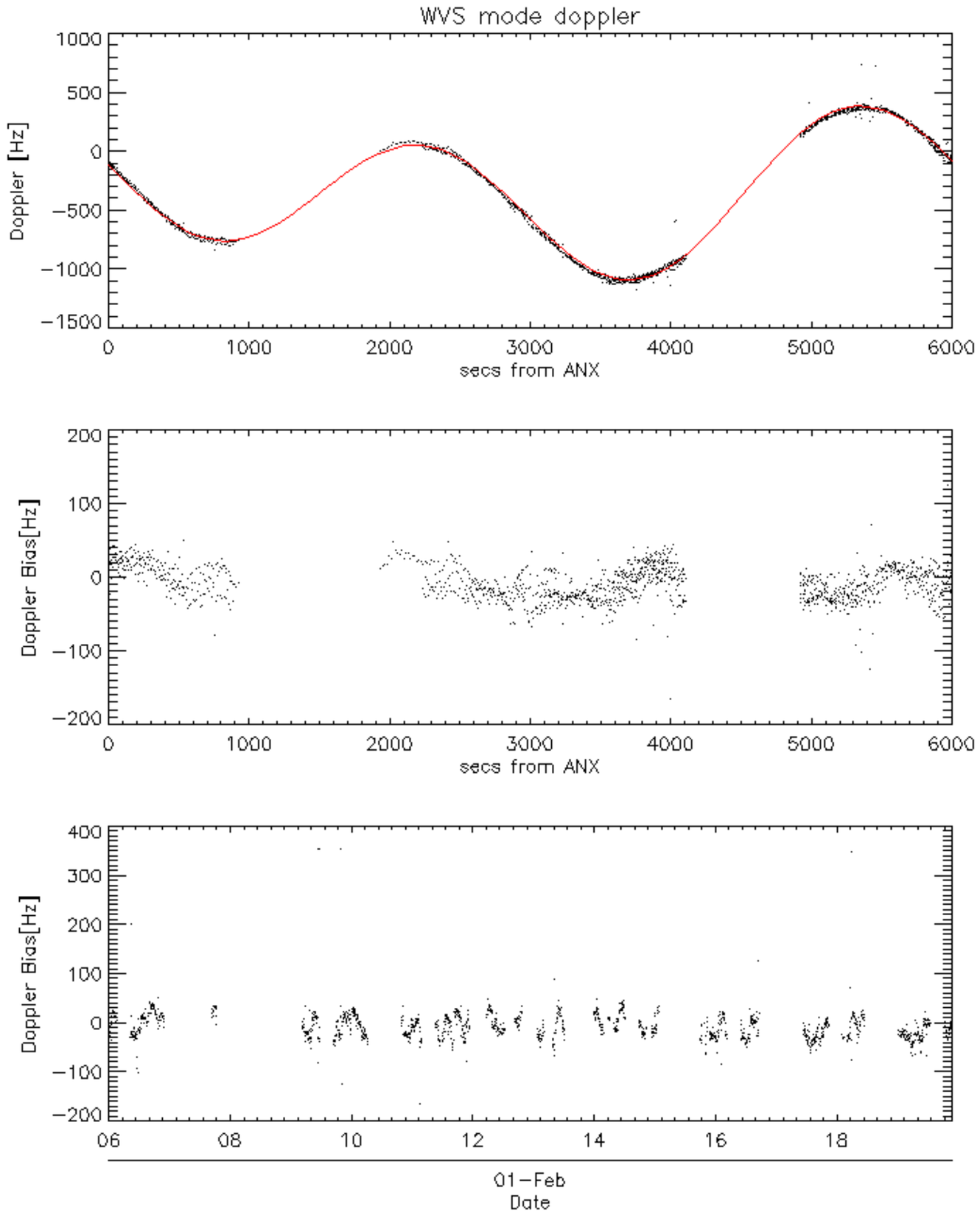

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

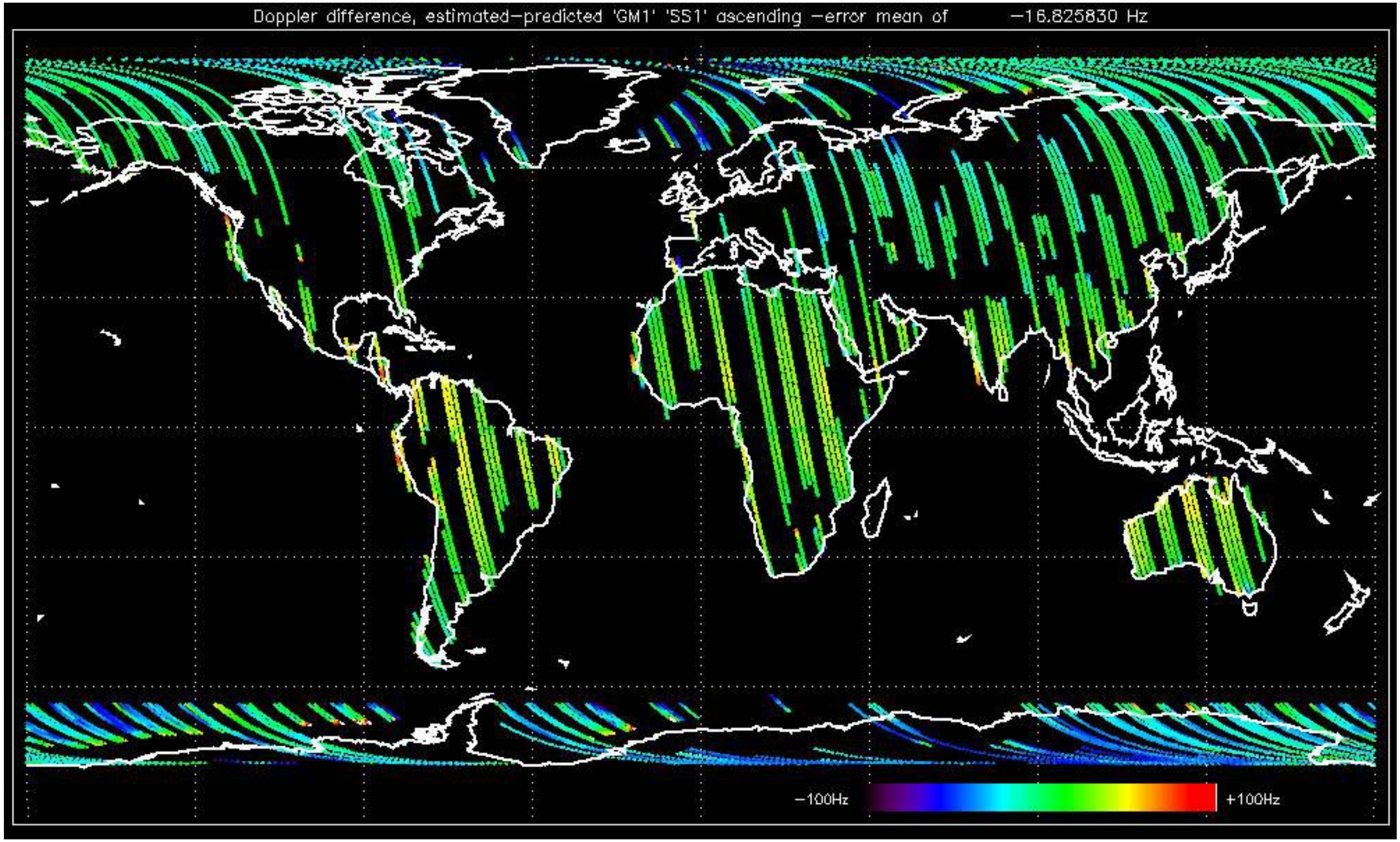

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

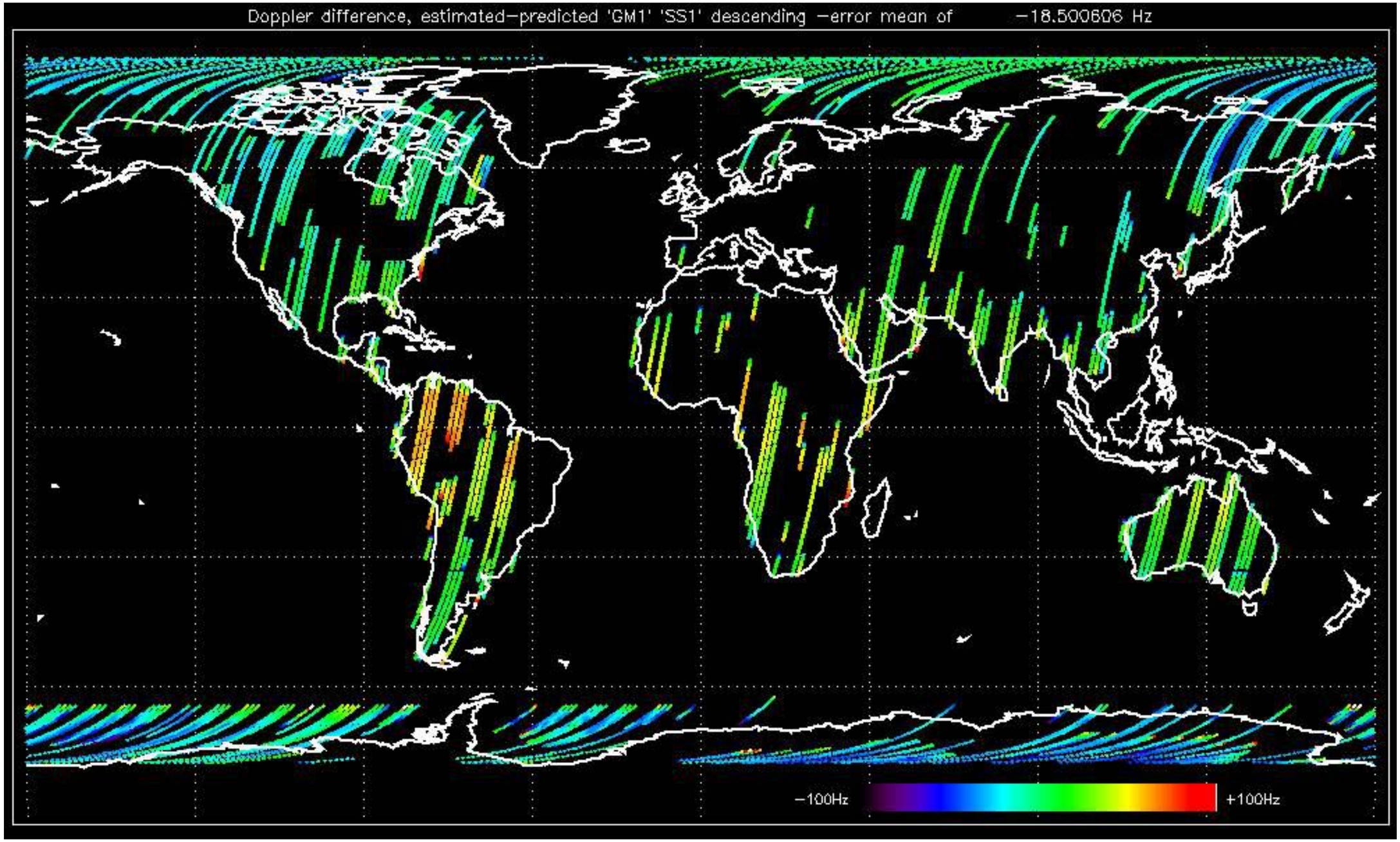

Doppler 'WVS' 'IS4' ascending
−1000Hz
+1000Hz

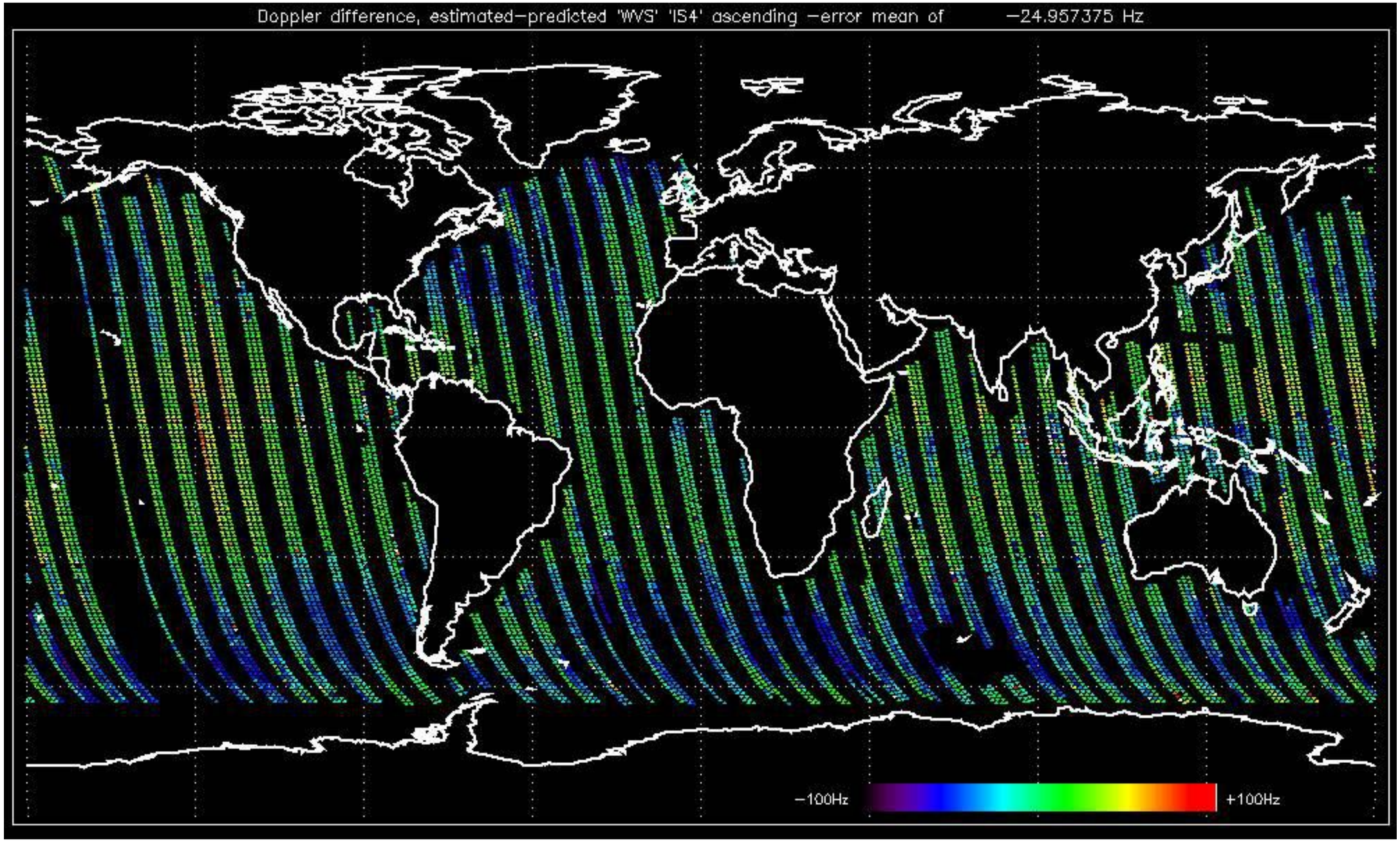

Doppler 'WVS' 'IS4' descending
−1000Hz
+1000Hz

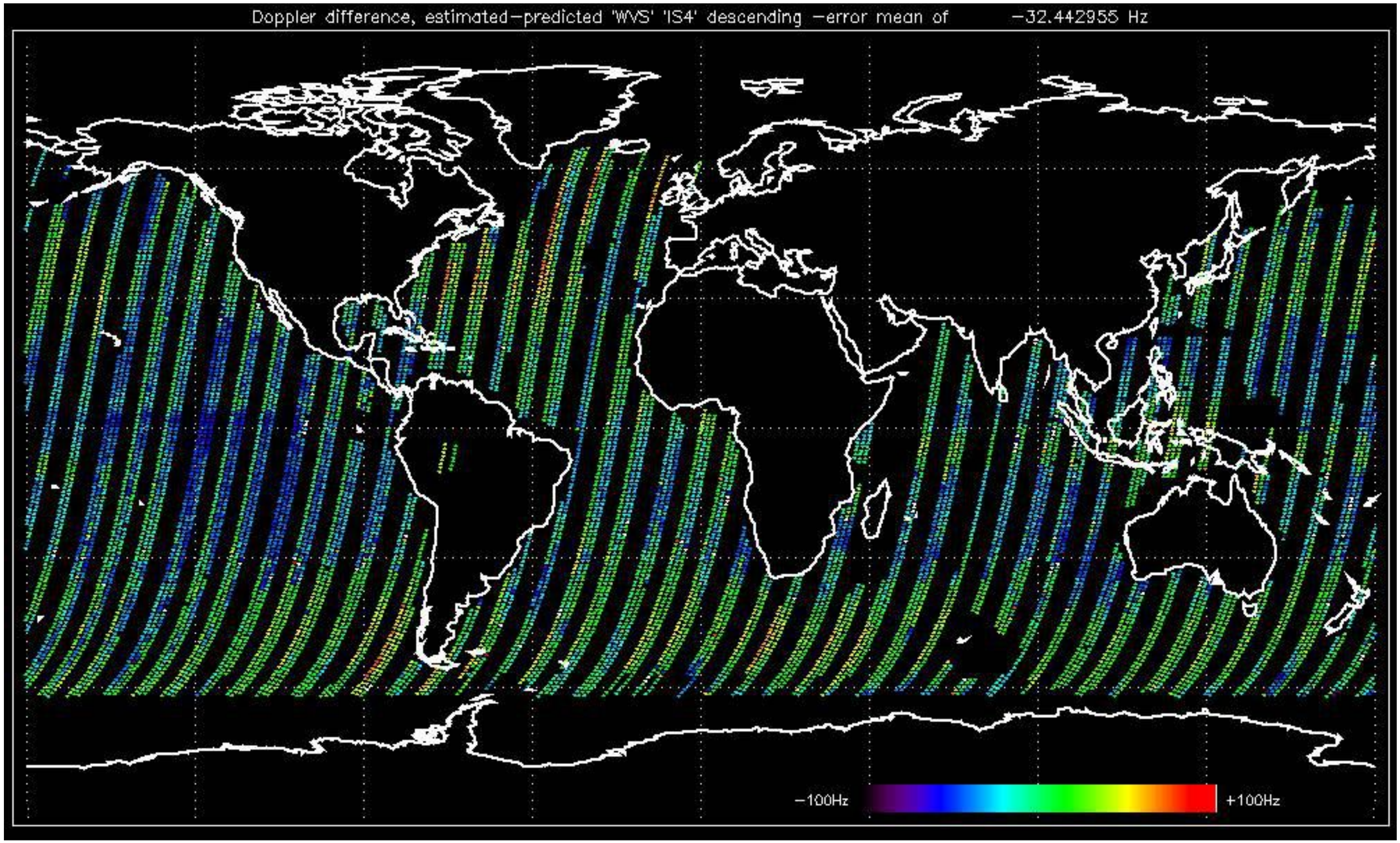

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
150
100
50
0
−50
−100
−150
08
10
12
14
16
18
20
01−Feb
Date


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]
400
300
200
100
0
−100
−200
06
08
10
12
14
16
18
01−Feb
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −16.825830 Hz
−100Hz
+100Hz

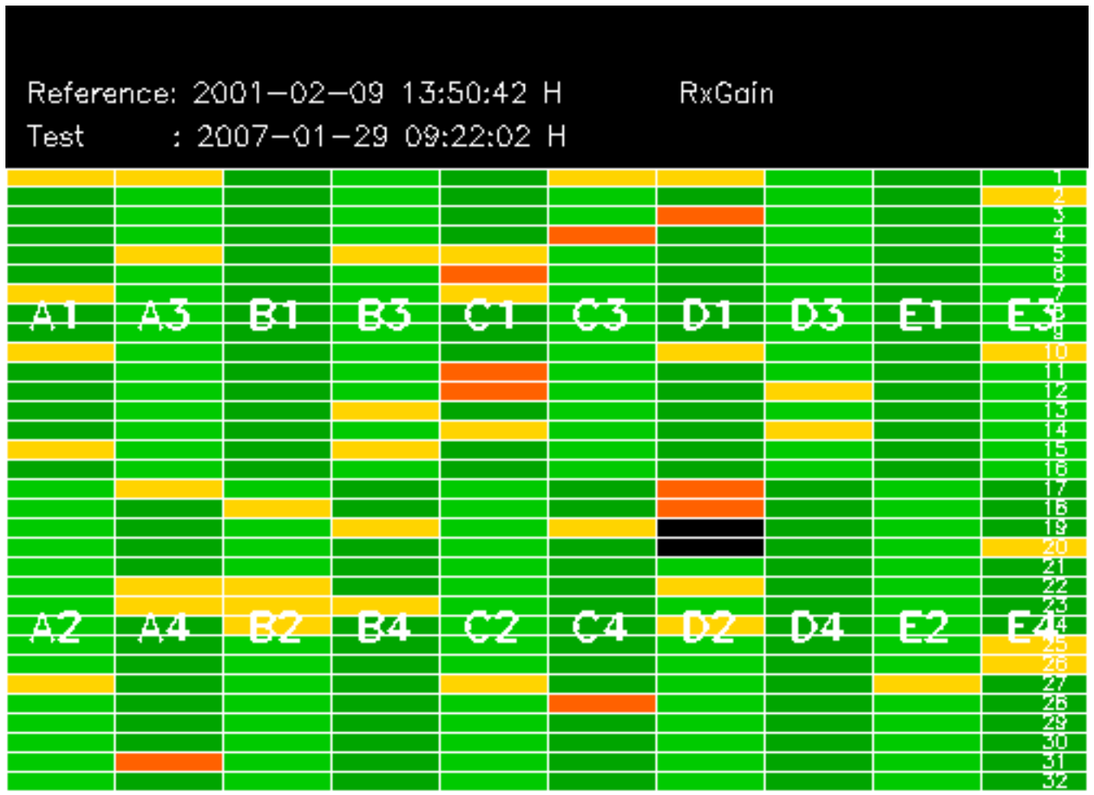

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −18.500606 Hz
−100Hz
+100Hz

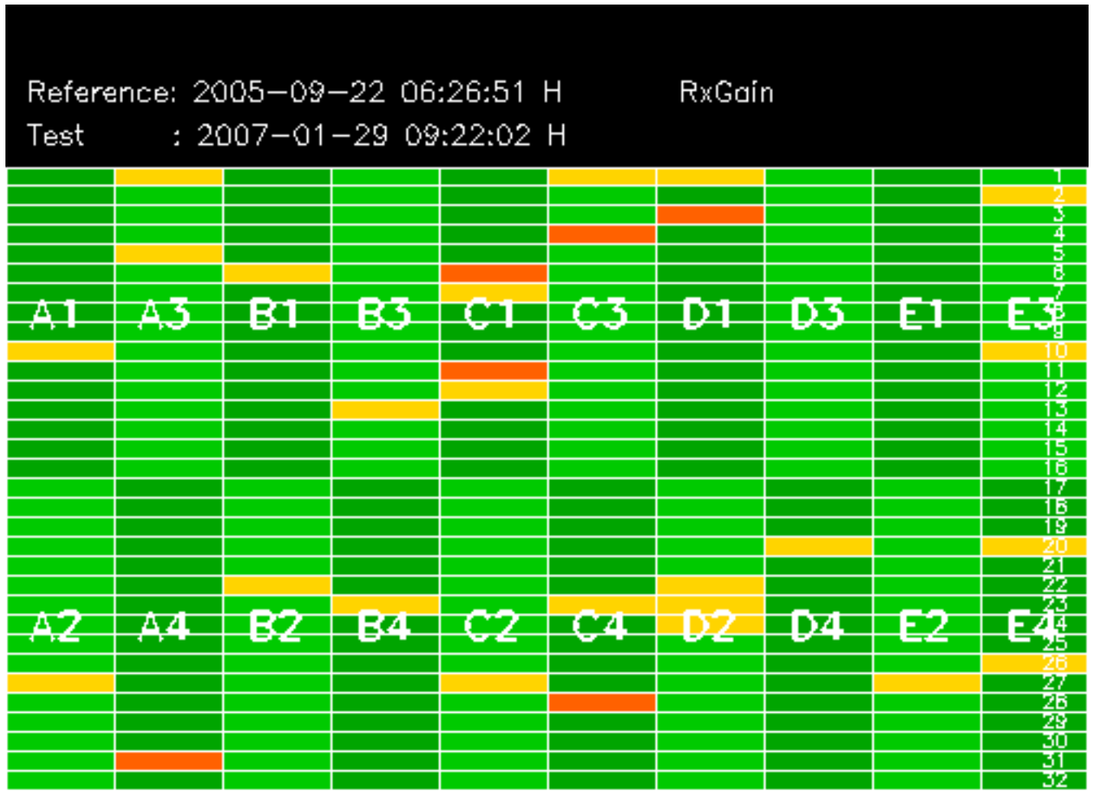

Doppler difference, estimated−predicted 'WVS' 'IS4' ascending −error mean of −24.957375 Hz
−100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS4' descending −error mean of −32.442955 Hz
−100Hz
+100Hz

No anomalies observed on available MS products:

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-29 09:22:02 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-29 09:22:02 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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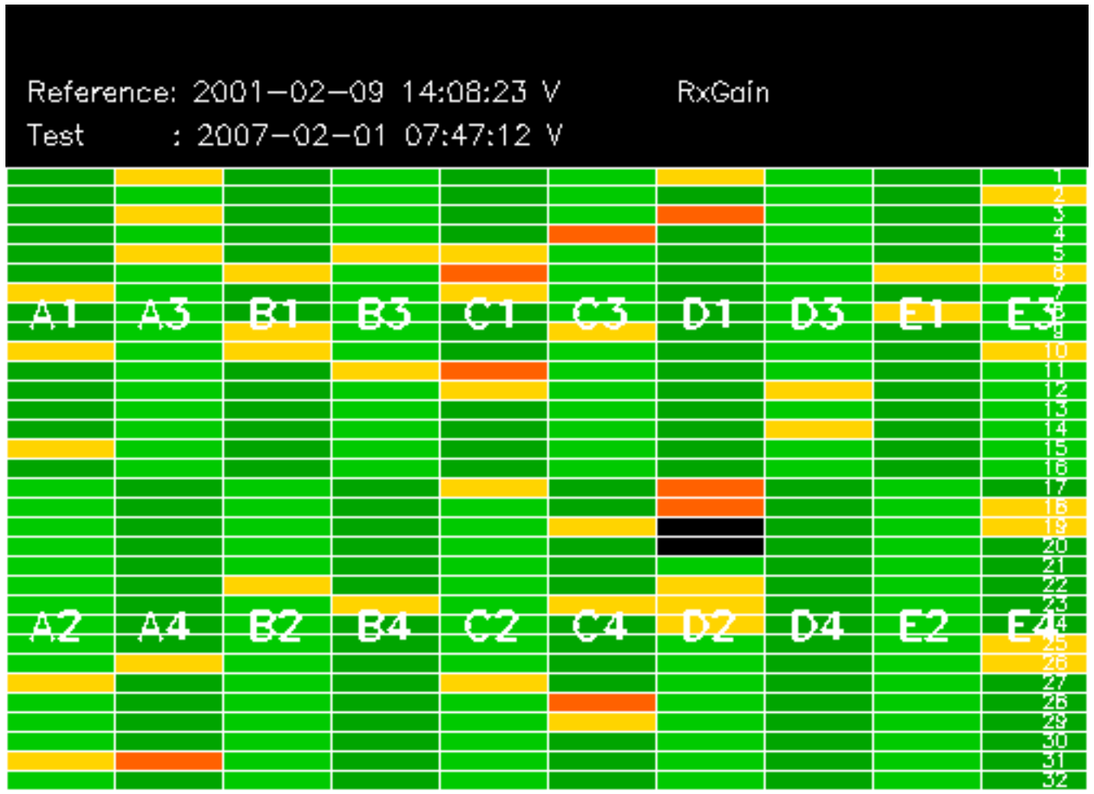
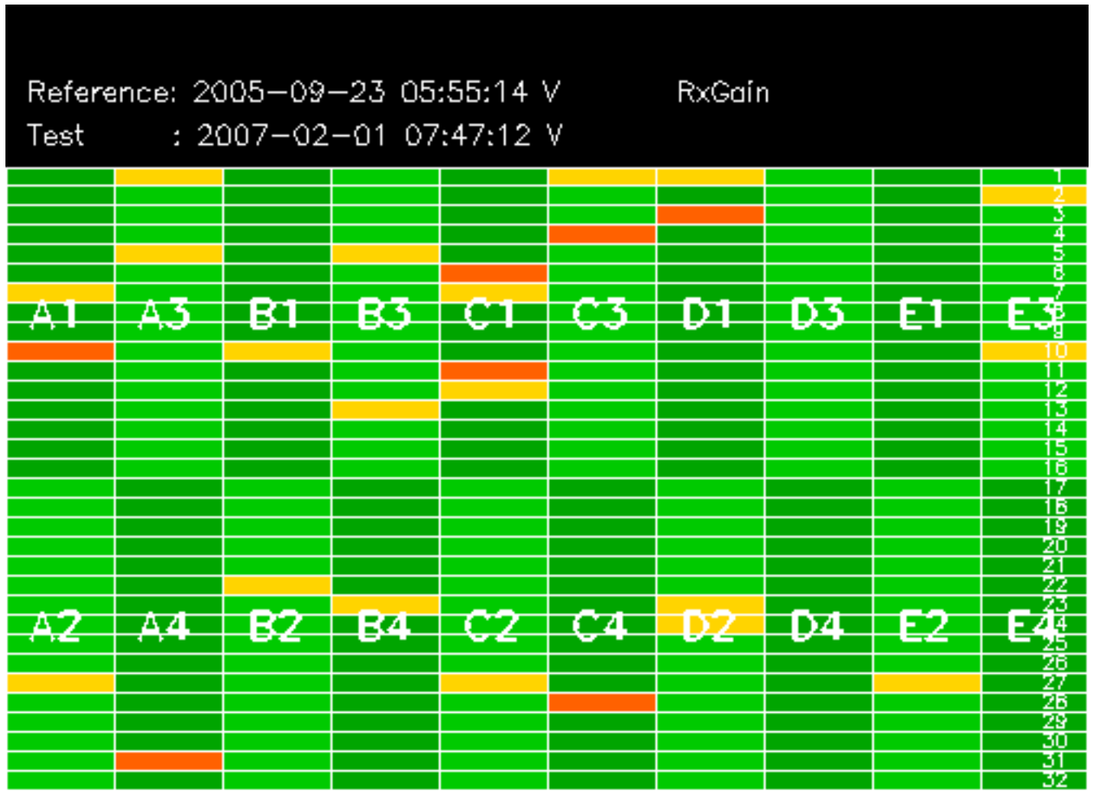

Reference: 2001-02-09 14:08:23 V
RxGain
Test : 2007-02-01 07:47:12 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 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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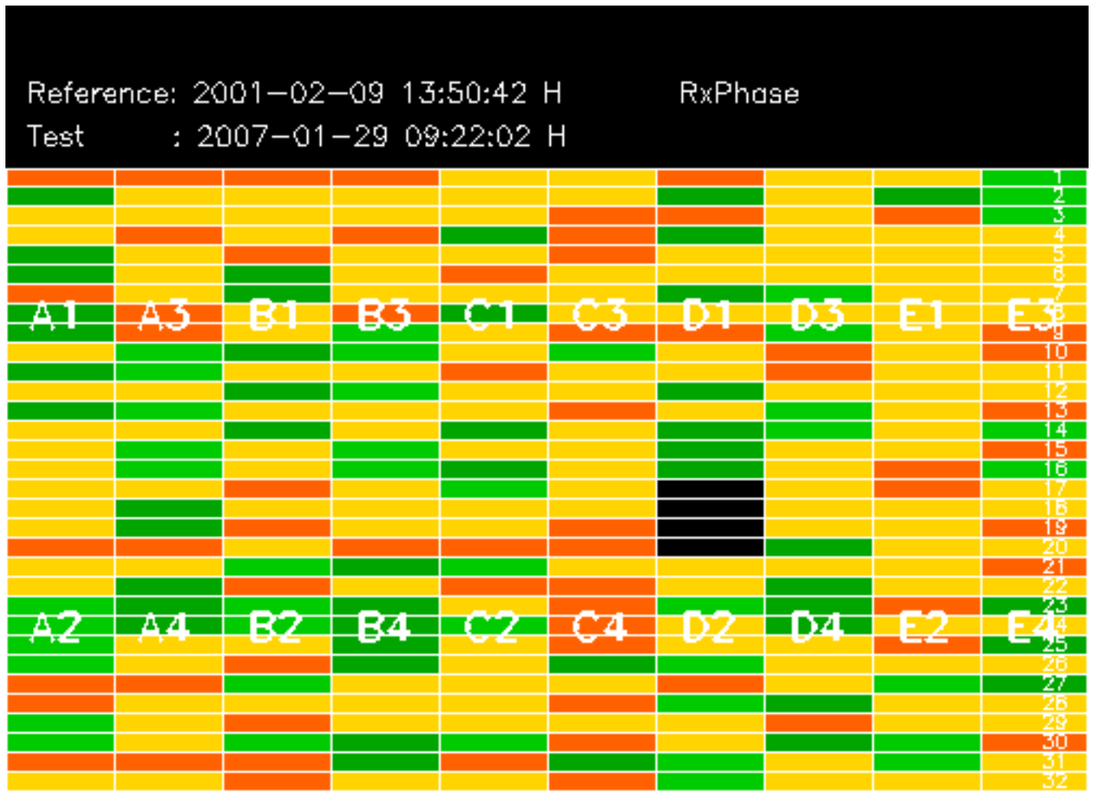
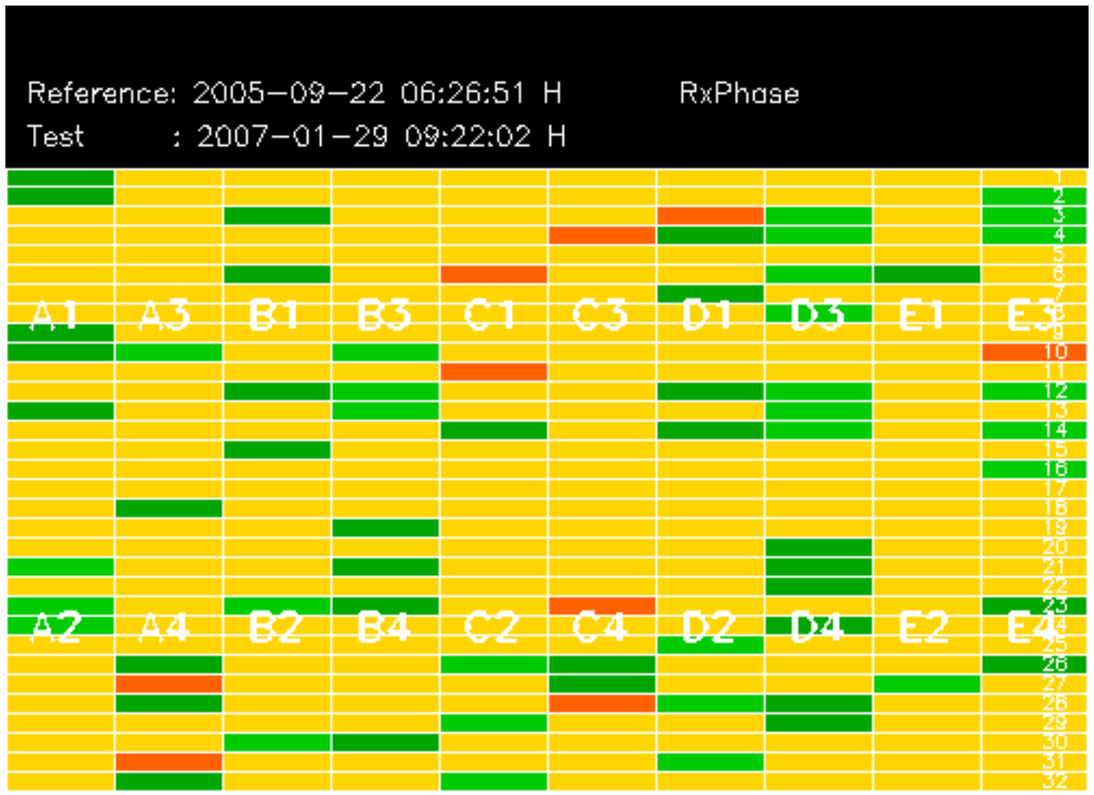
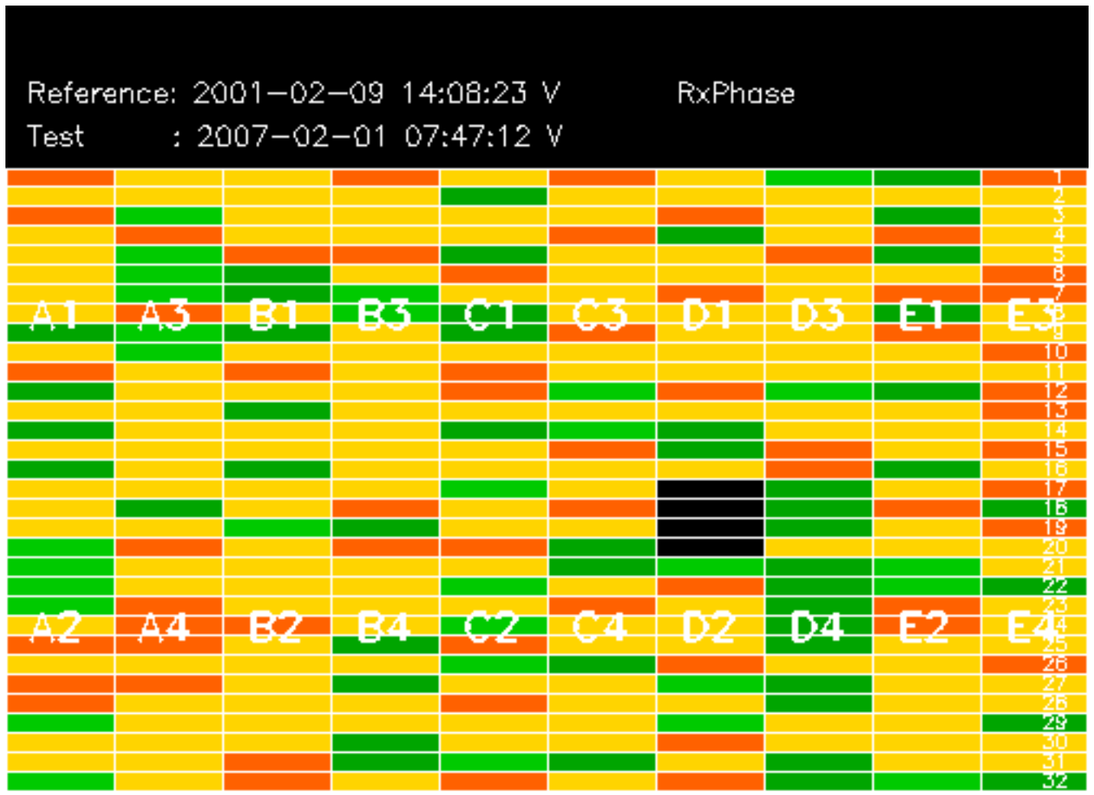
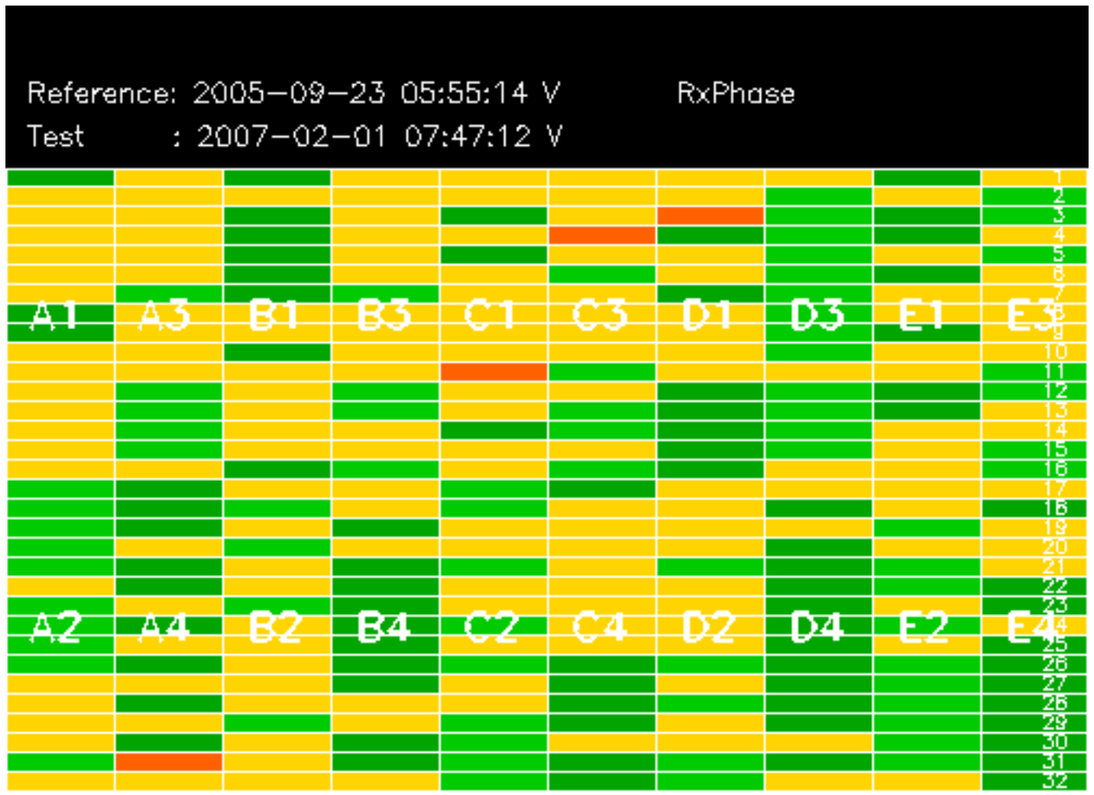
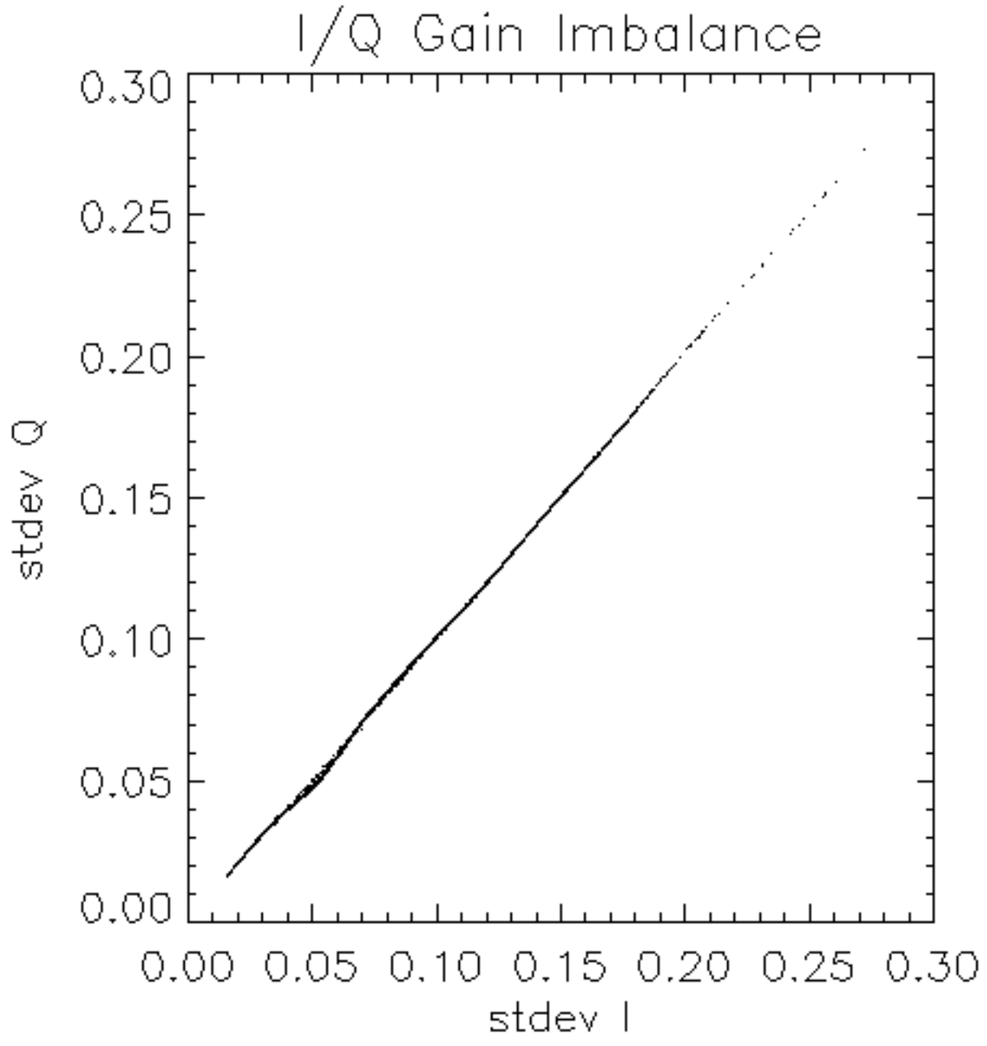
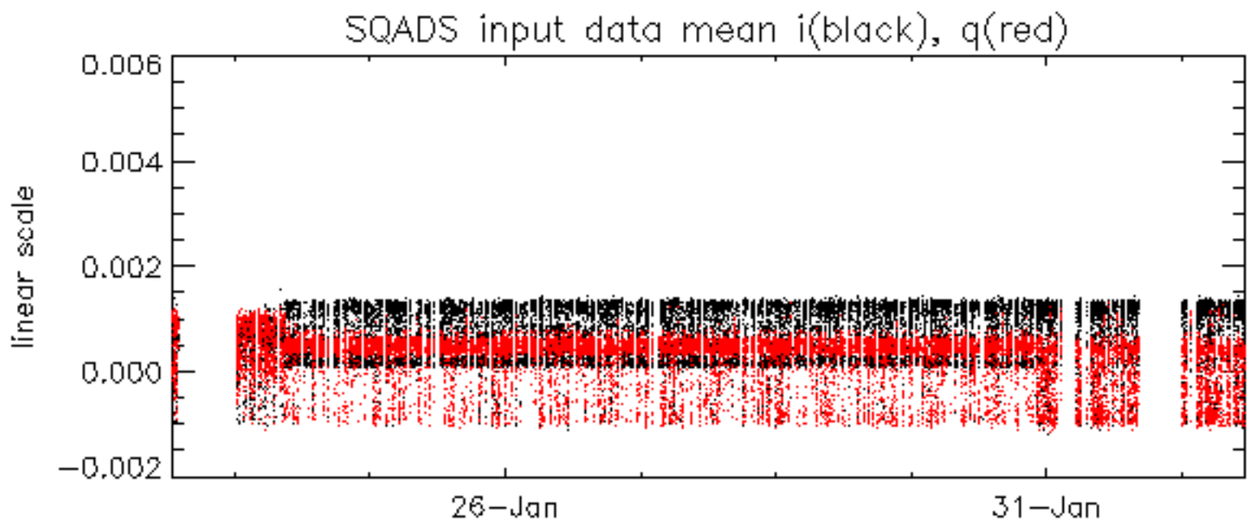

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2007-01-29 09:22:02 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

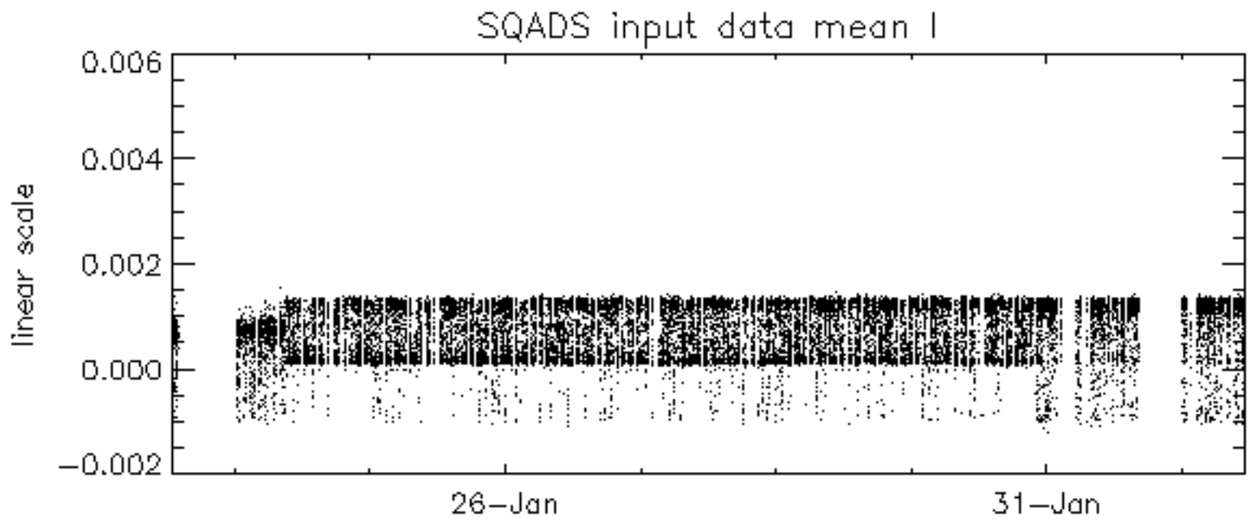

Reference: 2005-09-22 06:26:51 H
Test : 2007-01-29 09:22:02 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

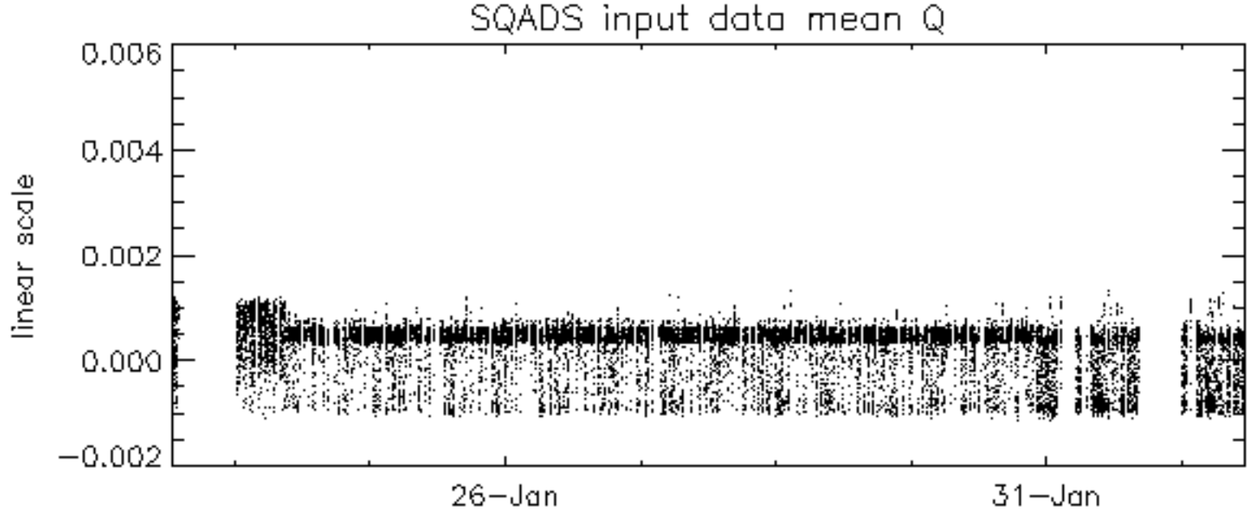

Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

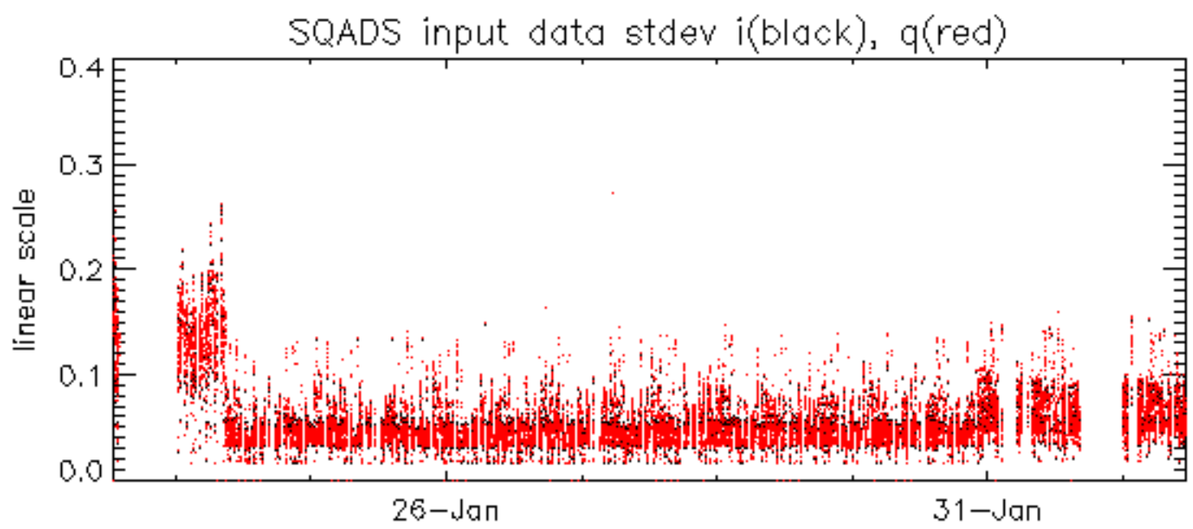

Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

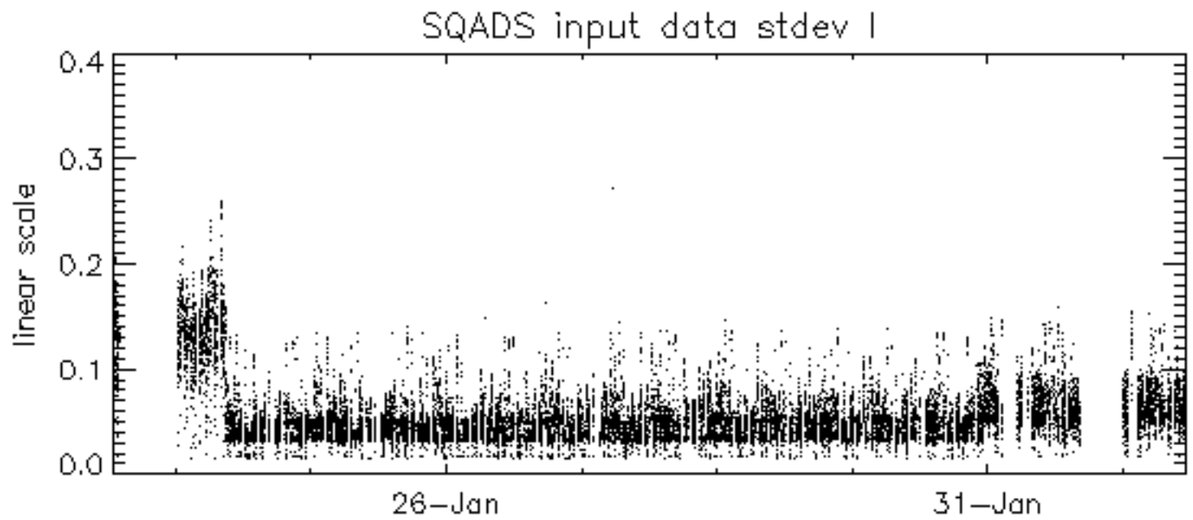

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

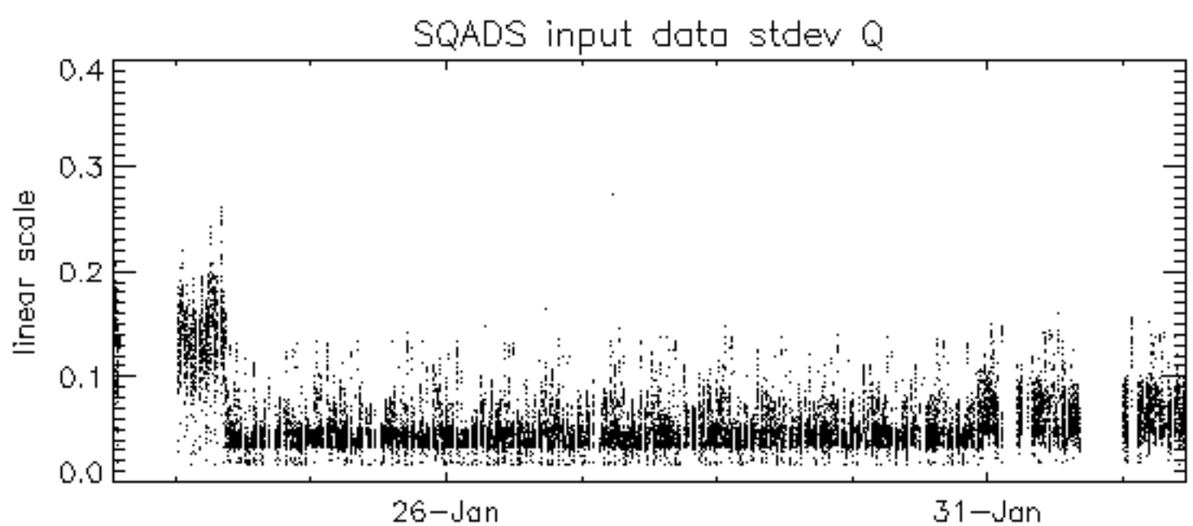

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan

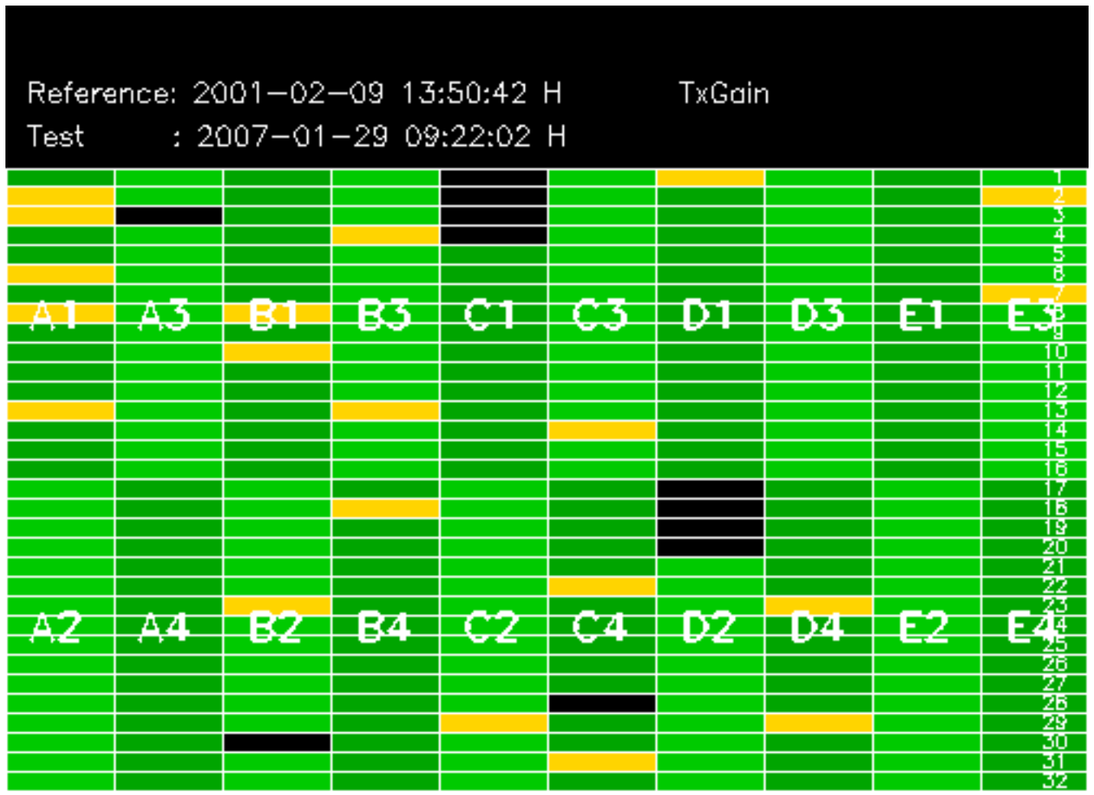

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan

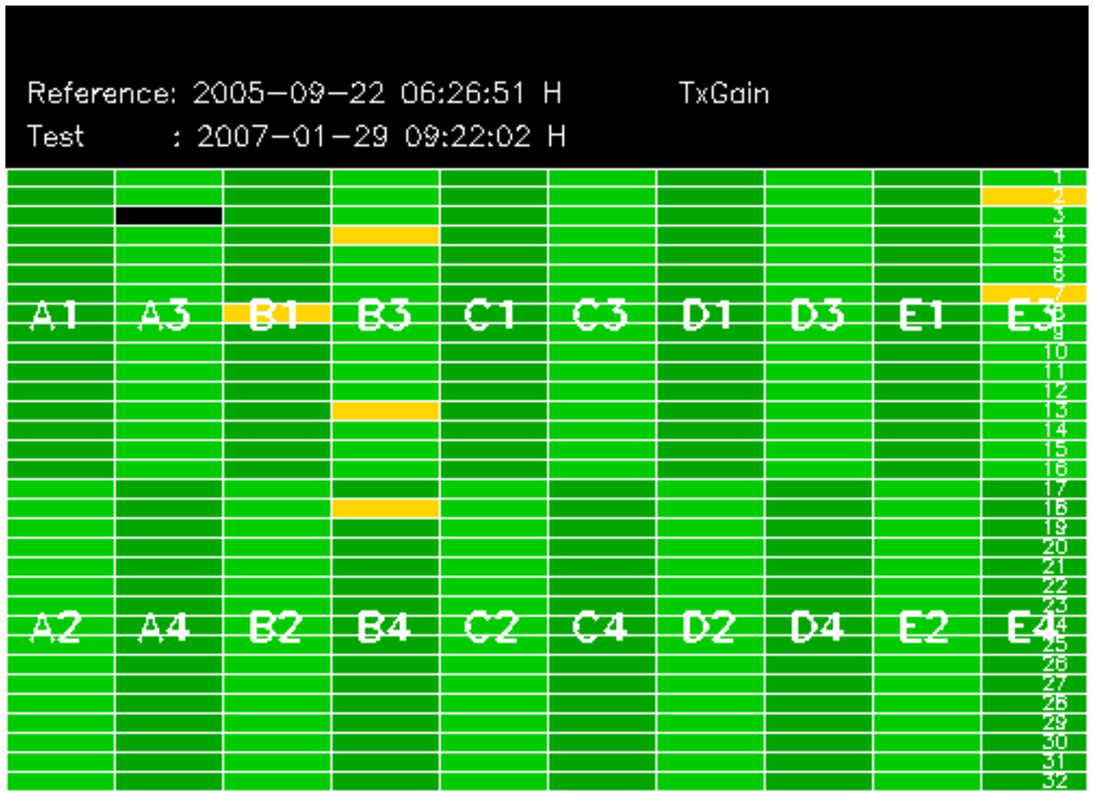

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
26−Jan
31−Jan


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
26–Jan
31–Jan


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-29 09:22:02 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-29 09:22:02 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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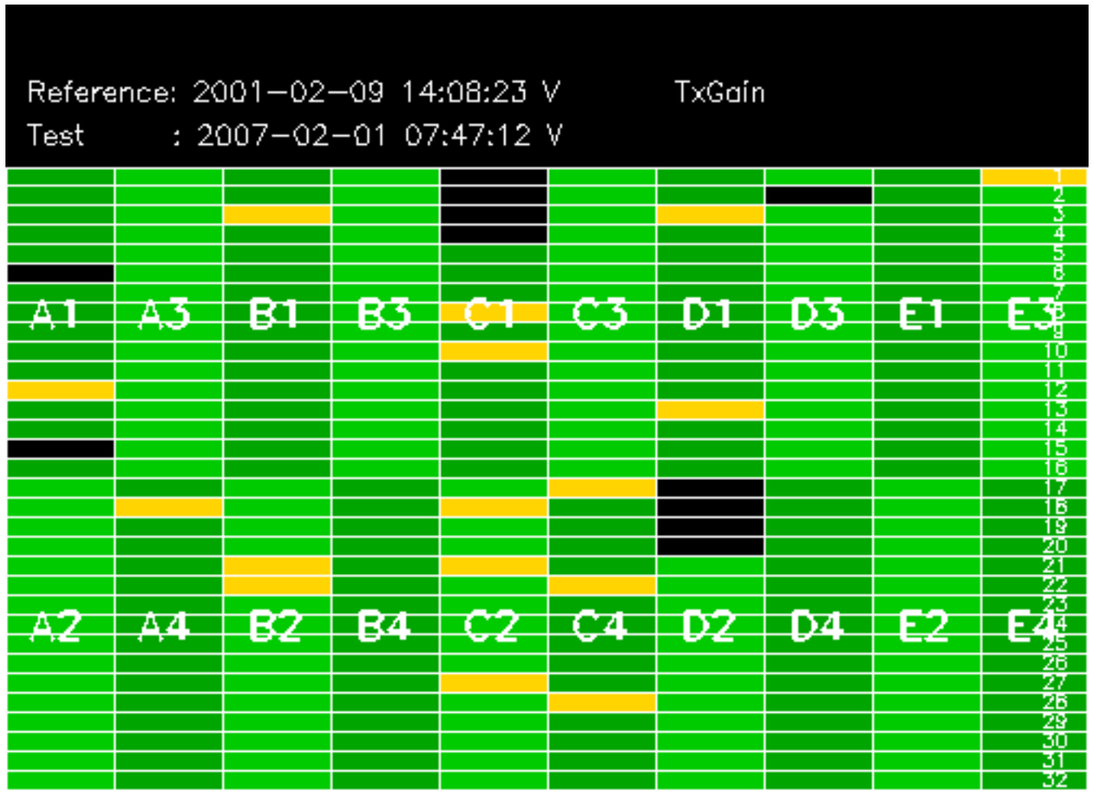
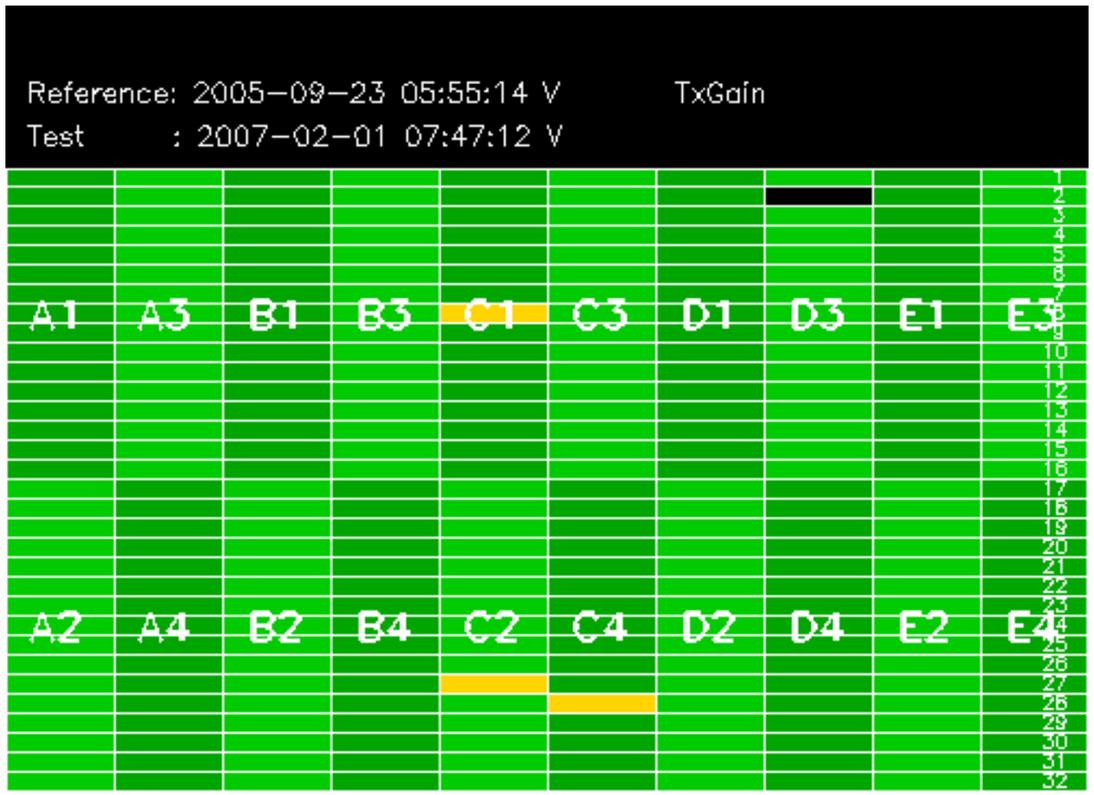

Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 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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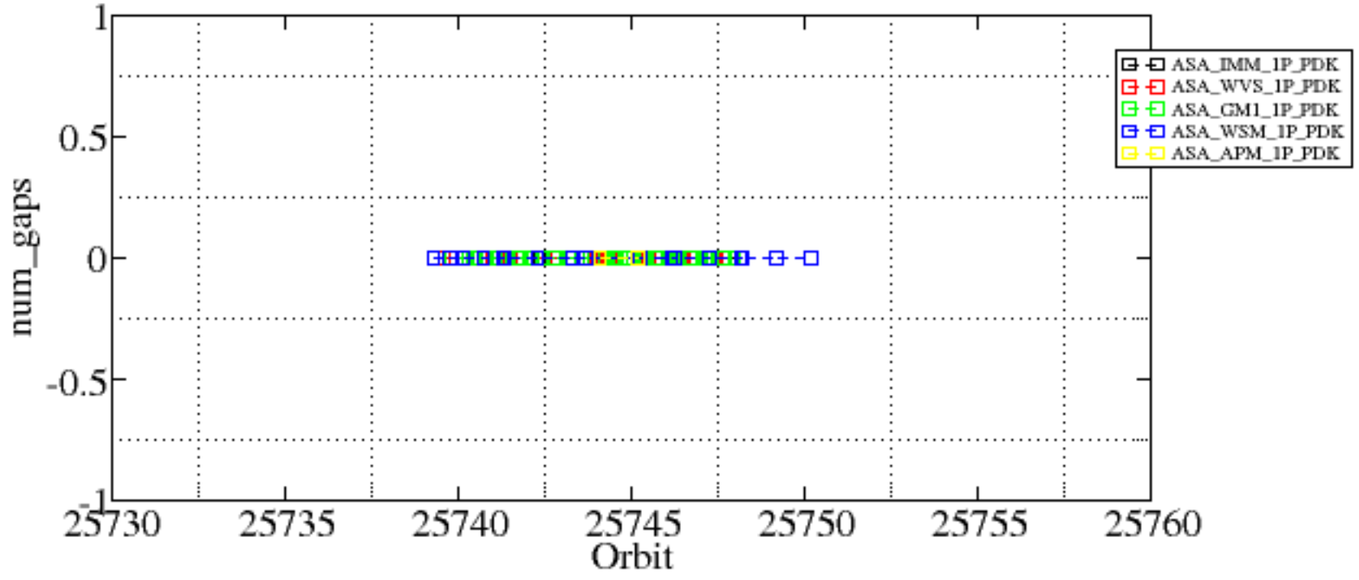
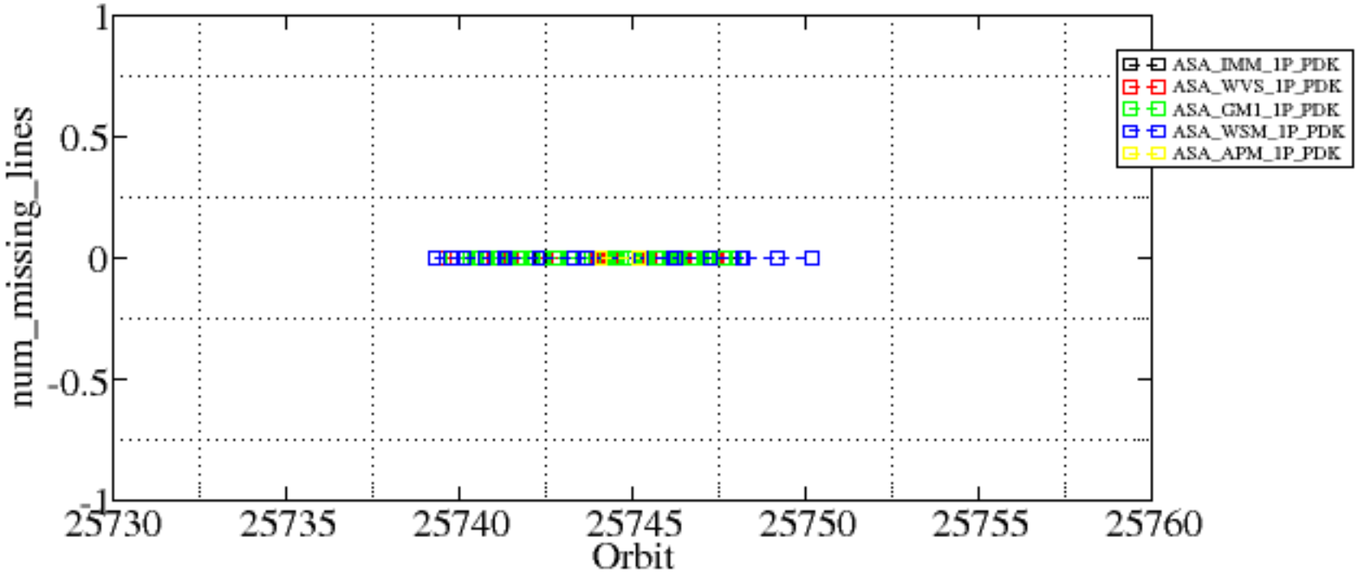
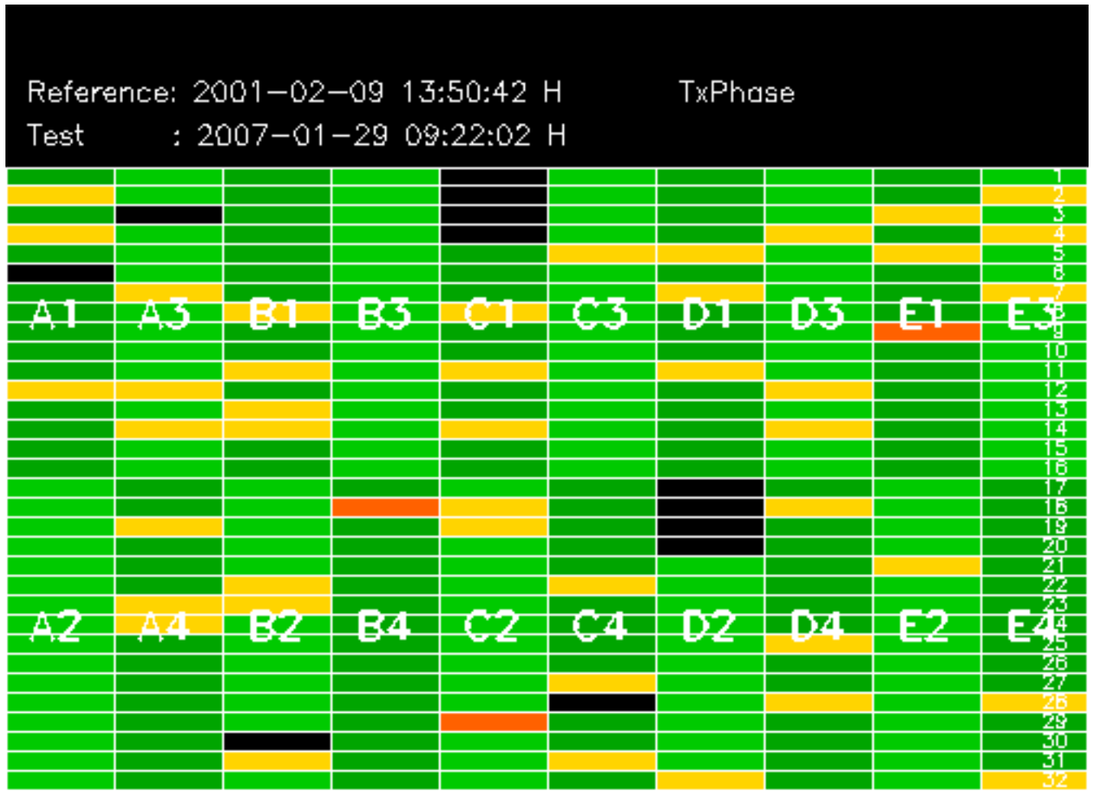
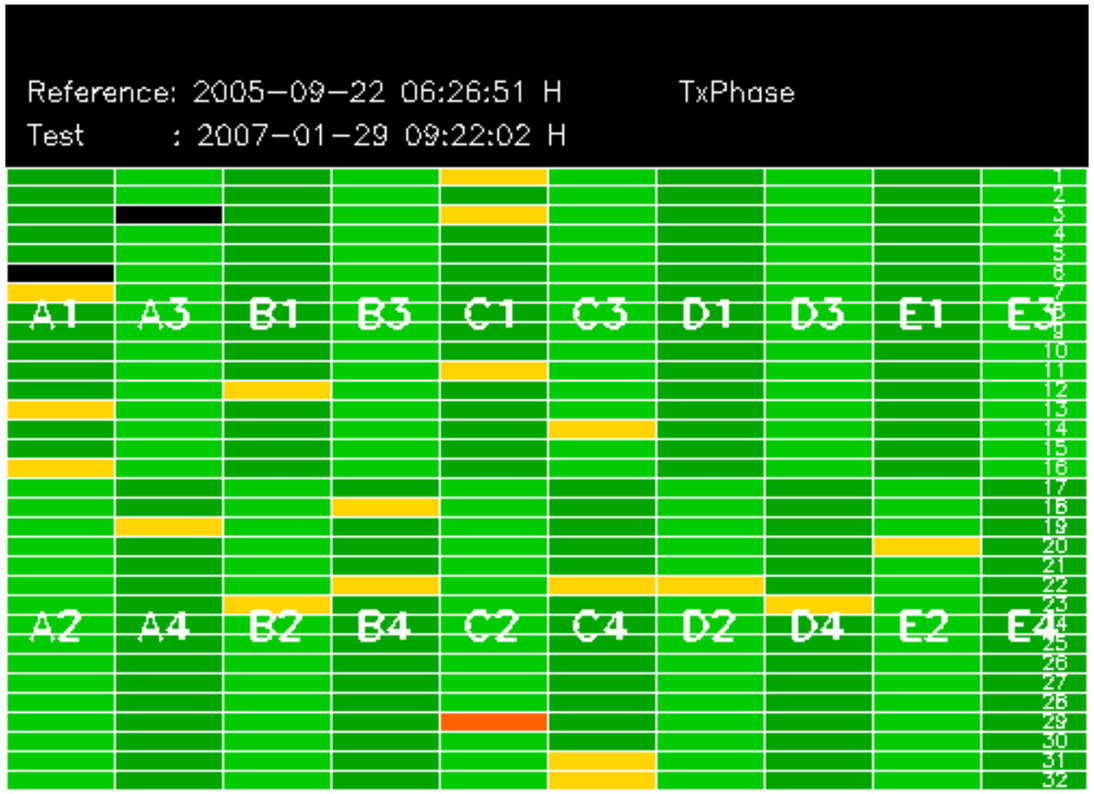
Summary of analysis for the last 3 days 2007020[112]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
</table>


num_gaps
1
0.5
0
-0.5
-1
25730
25735
25740
25745
25750
25755
25760
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDK
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDK


num_missing_lines
1
0.5
0
-0.5
-1
25730
25735
25740
25745
25750
25755
25760
Orbit
ASA_IMM_1P_PDK
ASA_WVS_1P_PDK
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDK


Reference: 2001-02-09 13:50:42 H
Test : 2007-01-29 09:22:02 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2005-09-22 06:26:51 H
Test : 2007-01-29 09:22:02 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
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E4
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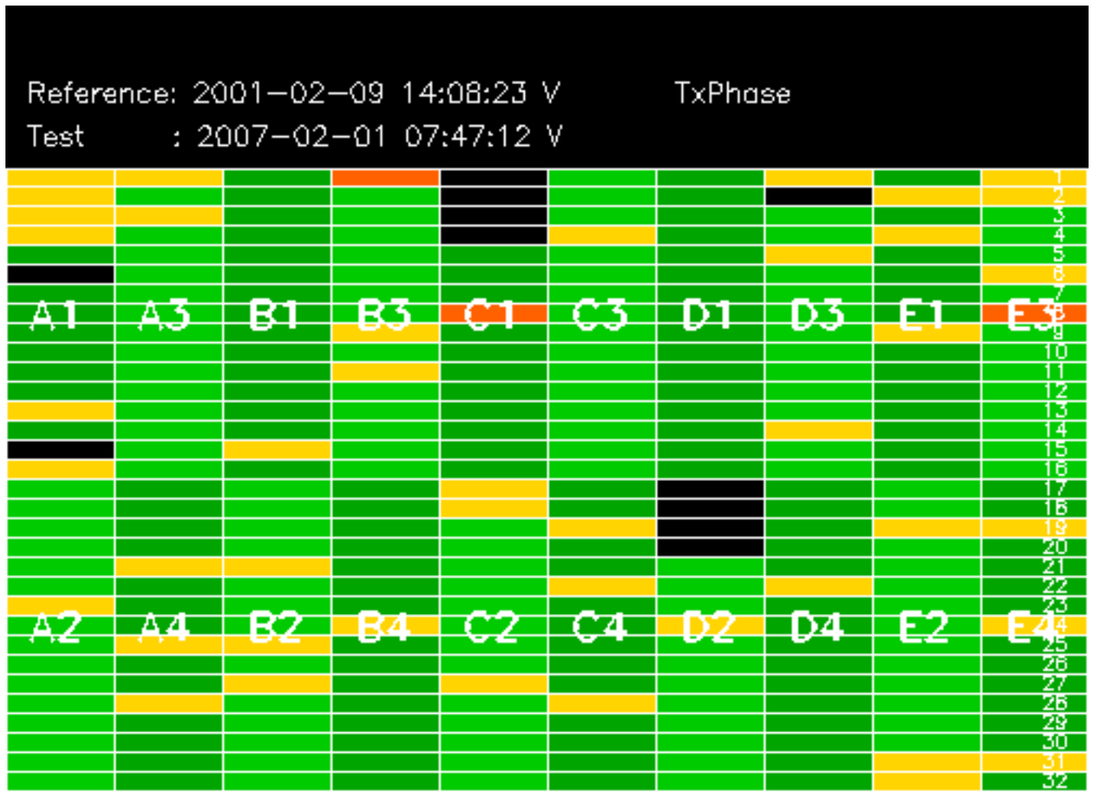
Reference: 2001-02-09 14:08:23 V
Test : 2007-02-01 07:47:12 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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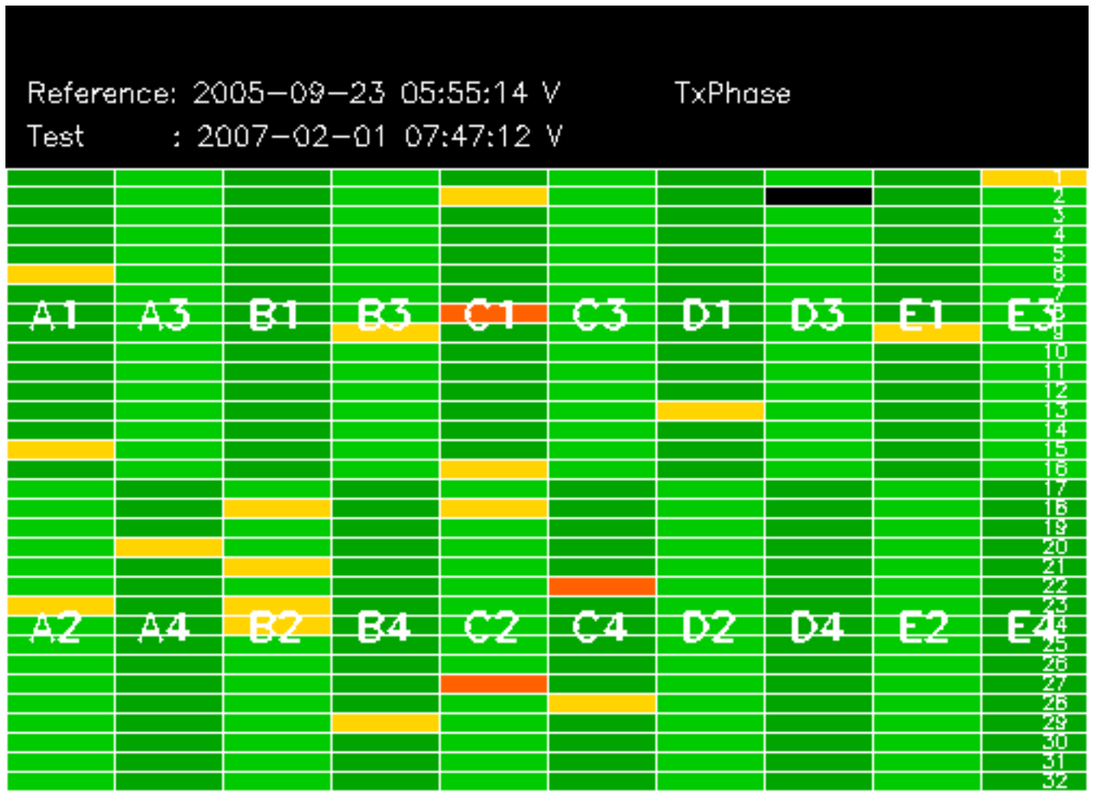
Reference: 2005-09-23 05:55:14 V
Test : 2007-02-01 07:47:12 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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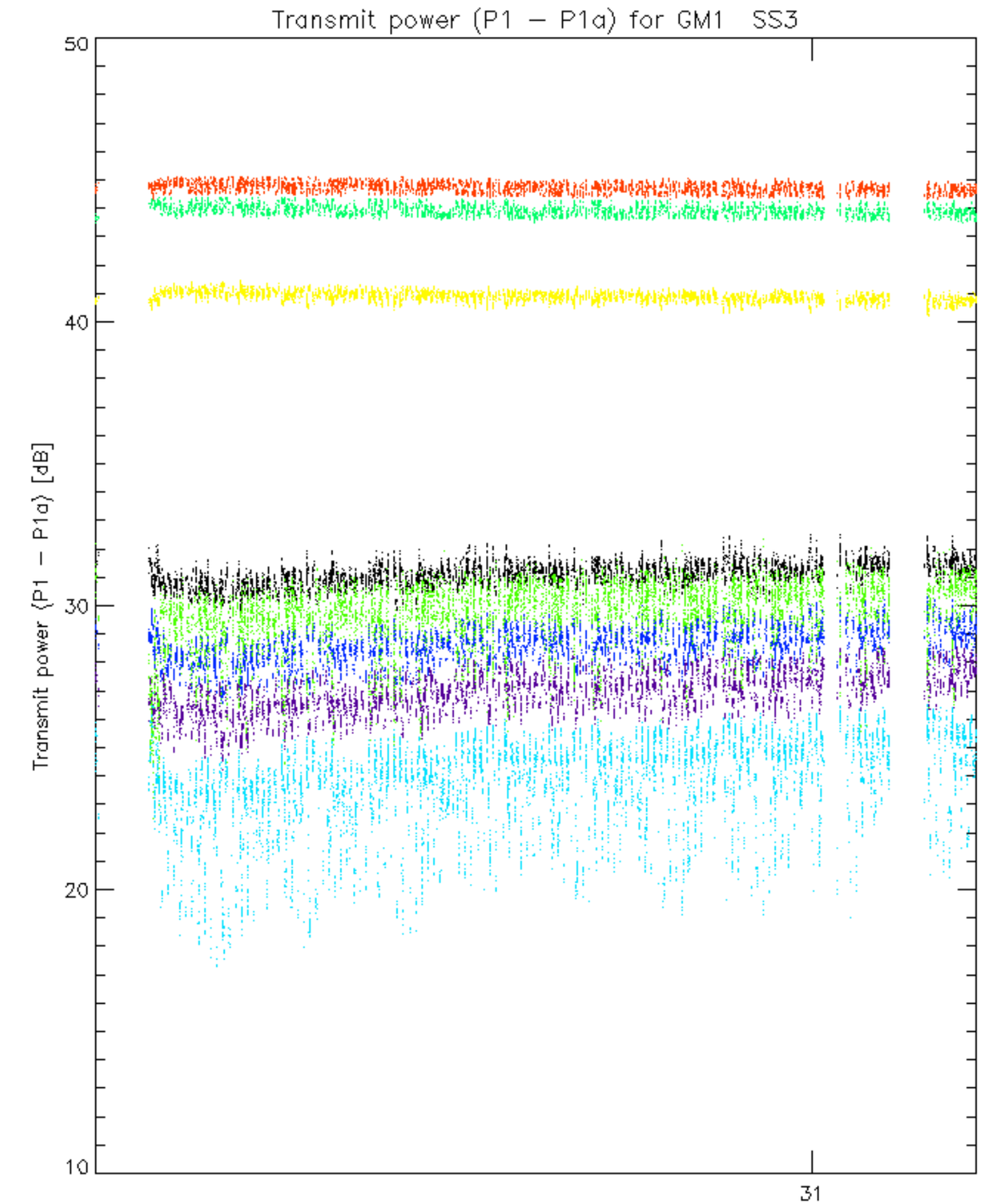
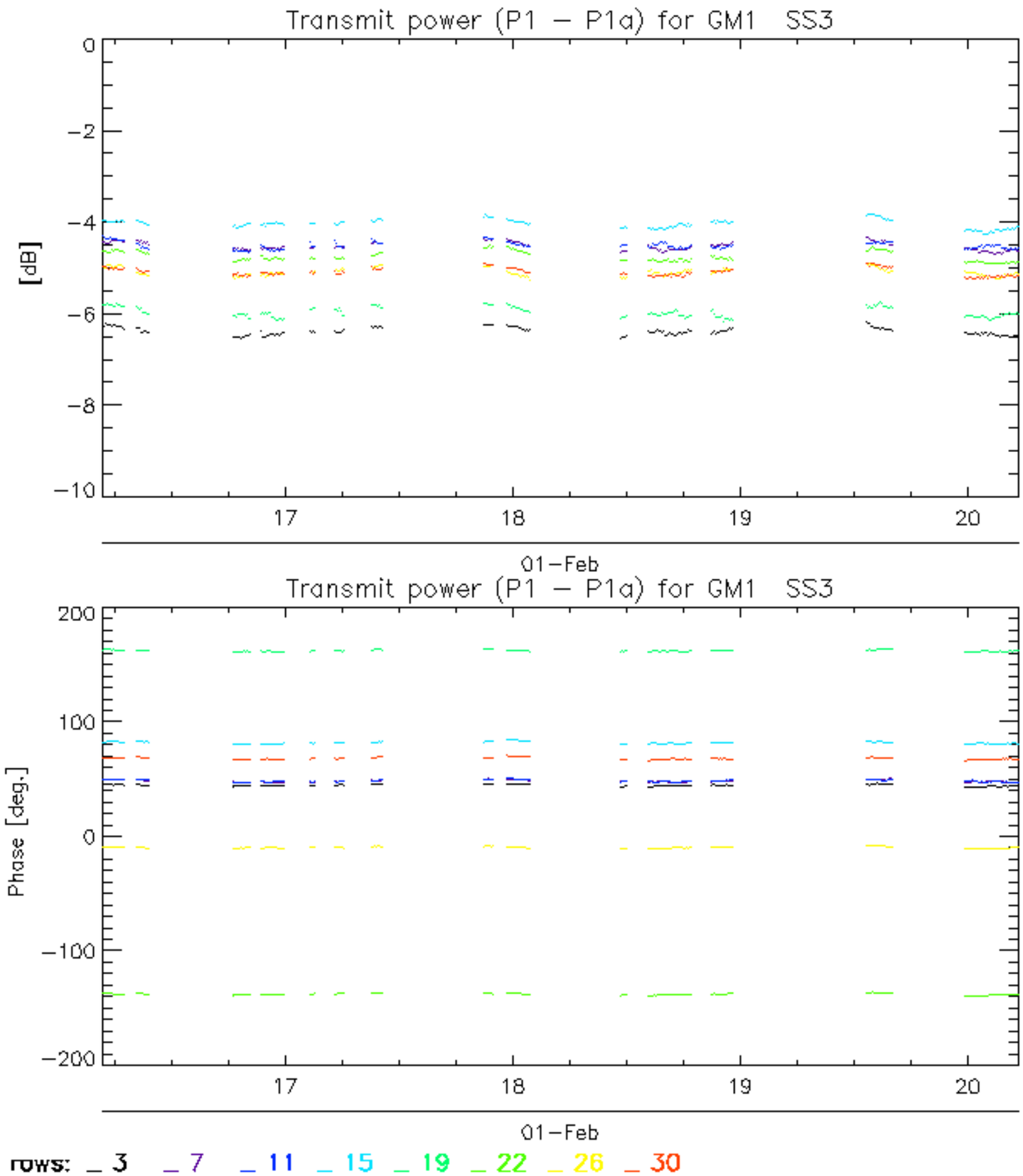
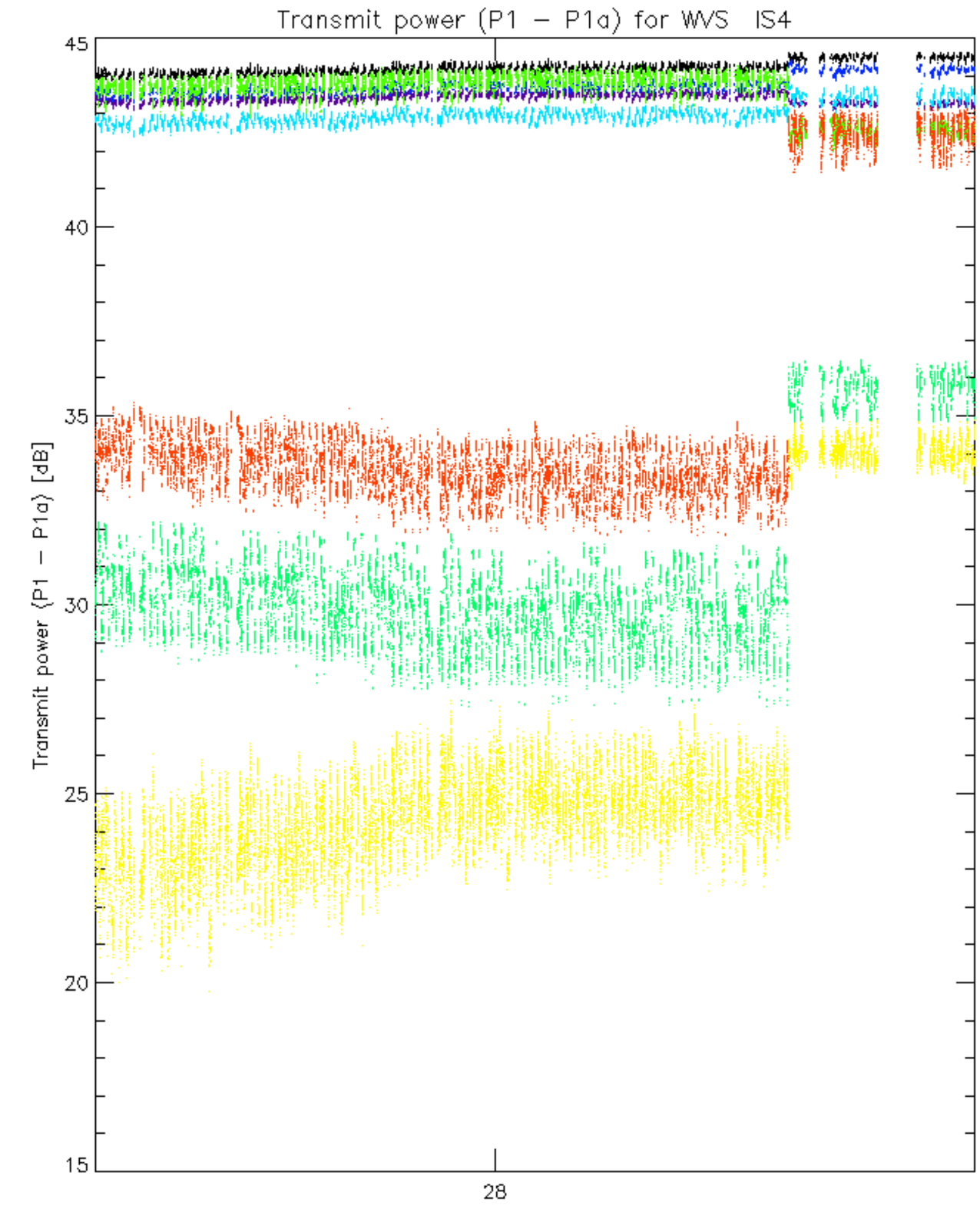
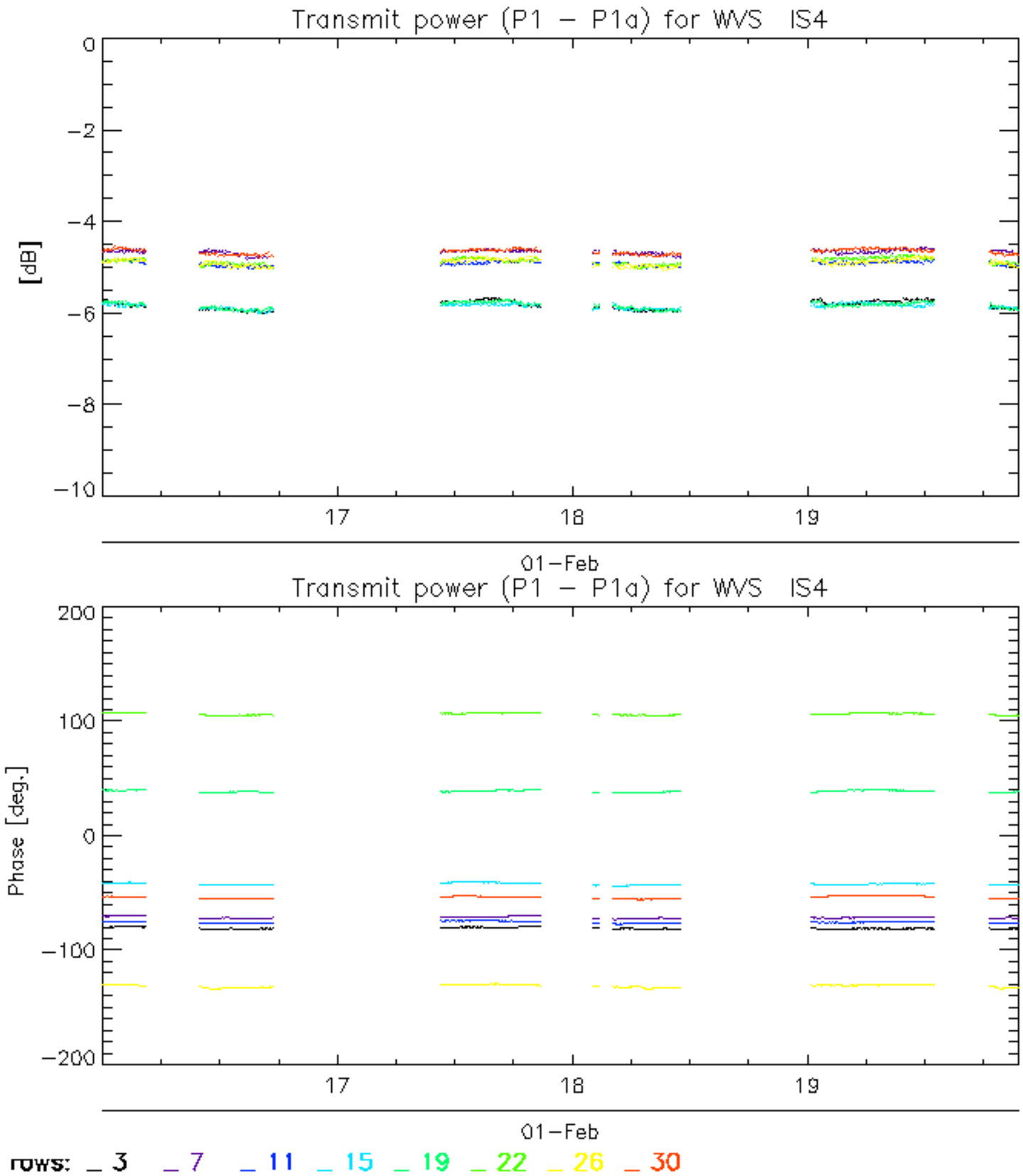

Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
31
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
0
−2
−4
−6
−8
−10
[dB]
17
18
19
20
01−Feb
Transmit power (P1 – P1a) for GM1 SS3
200
100
0
−100
−200
Phase [deg.]
17
18
19
20
01−Feb
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS4
Transmit power (P1 – P1a) [dB]
45
40
35
30
25
20
15
28
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS4
0
−2
−4
−6
−8
−10
[dB]
17
18
19
01−Feb
Transmit power (P1 – P1a) for WVS IS4
200
100
0
−100
−200
Phase [deg.]
17
18
19
01−Feb
rows: 3 7 11 15 19 22 26 30

No unavailabilities during the reported period.