PRELIMINARY REPORT OF 050221

last update on Mon Feb 21 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 2005-02-20 00:00:00 to 2005-02-21 10:50:01

PDHS-K					
AUXILIARY FILE	WVS	GM1	IMM	APM	WSM

ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	28	44	2	2	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	28	44	2	2	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	28	44	2	2	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	28	44	2	2	4

PDHS-E					
AUXILIARY FILE	**WVS**	**GM1**	**IMM**	**APM**	**WSM**
ASA_INS_AXVIEC20041215_180208_20030211_000000_20051231_000000	37	51	4	7	4
ASA_XCA_AXVIEC20041027_164238_20040412_000000_20051231_000000	37	51	4	7	4
ASA_CON_AXVIEC20041215_175442_20030601_000000_20051231_000000	37	51	4	7	4
ASA_XCH_AXVIEC20041215_180350_20020301_000000_20051231_000000	37	51	4	7	4

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	20050219 204905
H	20050220 183652

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	-3.384223	0.008588	0.046831
7	P1	-3.082208	0.007667	-0.009537
11	P1	-4.676035	0.019454	-0.030745
15	P1	-5.652477	0.030523	-0.001553
19	P1	-3.666614	0.004154	-0.007476
22	P1	-4.542019	0.013771	0.044991
26	P1	-4.942644	0.013963	-0.008107
30	P1	-7.162391	0.017328	-0.034409
3	P1	-15.930282	0.088367	-0.100295
7	P1	-15.514260	0.059675	0.004751
11	P1	-20.899197	0.251983	-0.078458
15	P1	-11.587508	0.028614	0.032050
19	P1	-14.208490	0.025578	-0.107976
22	P1	-15.812497	0.351571	0.217577
26	P1	-17.603287	0.225020	-0.012747
30	P1	-17.925365	0.401413	-0.009476

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.168295	0.085027	0.146564
7	P2	-22.362713	0.103993	0.131433
11	P2	-14.575418	0.101604	0.177511
15	P2	-7.079989	0.094253	0.050061
19	P2	-9.670834	0.093680	0.050879
22	P2	-16.986012	0.093434	0.111599
26	P2	-16.468393	0.091239	0.043552
30	P2	-18.899147	0.079256	0.034837

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.174928	0.005679	0.027630
7	P3	-8.174928	0.005679	0.027630
11	P3	-8.174928	0.005679	0.027630
15	P3	-8.174928	0.005679	0.027630
19	P3	-8.174928	0.005679	0.027630
22	P3	-8.174928	0.005679	0.027630
26	P3	-8.174825	0.005678	0.027404
30	P3	-8.174825	0.005678	0.027404

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1


P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-2.766547	0.019903	0.081436
7	P1	-2.986457	0.079631	-0.038167
11	P1	-3.969464	0.024131	-0.034965
15	P1	-3.543360	0.023434	-0.036109
19	P1	-3.593067	0.014215	0.015670
22	P1	-5.712133	0.054410	-0.069887
26	P1	-7.310128	0.031410	0.056762
30	P1	-6.250468	0.041845	0.067565
3	P1	-10.755566	0.094542	0.024593
7	P1	-10.212430	0.197832	-0.147525
11	P1	-12.561056	0.129081	-0.032714
15	P1	-11.752352	0.082815	0.032246
19	P1	-15.577817	0.055644	0.019122
22	P1	-24.239622	1.421006	-0.408013
26	P1	-15.581931	0.237199	0.205227
30	P1	-20.118034	0.938706	-0.291637

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-17.878868	0.046683	0.130545
7	P2	-22.421455	0.133193	0.062595
11	P2	-10.347025	0.055588	0.241401
15	P2	-4.997068	0.020682	0.038742
19	P2	-6.861032	0.031042	0.076983
22	P2	-7.164633	0.051628	0.114348
26	P2	-23.870611	0.101183	0.035810
30	P2	-21.935596	0.060687	0.045044

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.007419	0.002519	0.028745
7	P3	-8.007482	0.002527	0.029065
11	P3	-8.007456	0.002533	0.028817
15	P3	-8.007400	0.002528	0.028552
19	P3	-8.007479	0.002539	0.029043
22	P3	-8.007482	0.002525	0.028996
26	P3	-8.007351	0.002528	0.028530
30	P3	-8.007459	0.002529	0.028436

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	0.000466432
	stdev	2.17949e-07
MEAN Q	mean	0.000536891
	stdev	2.30154e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.128771
	stdev	0.000974163
STDEV Q	mean	0.129012
	stdev	0.000984697

5.3 - Gain imbalance I/Q

6 - Telemetry analysis

Summary of analysis for the last 3 days 2005022[901]
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_GM1_1PNPDK20050220_170523_000002532034_00484_15568_2863.N1	0	8

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

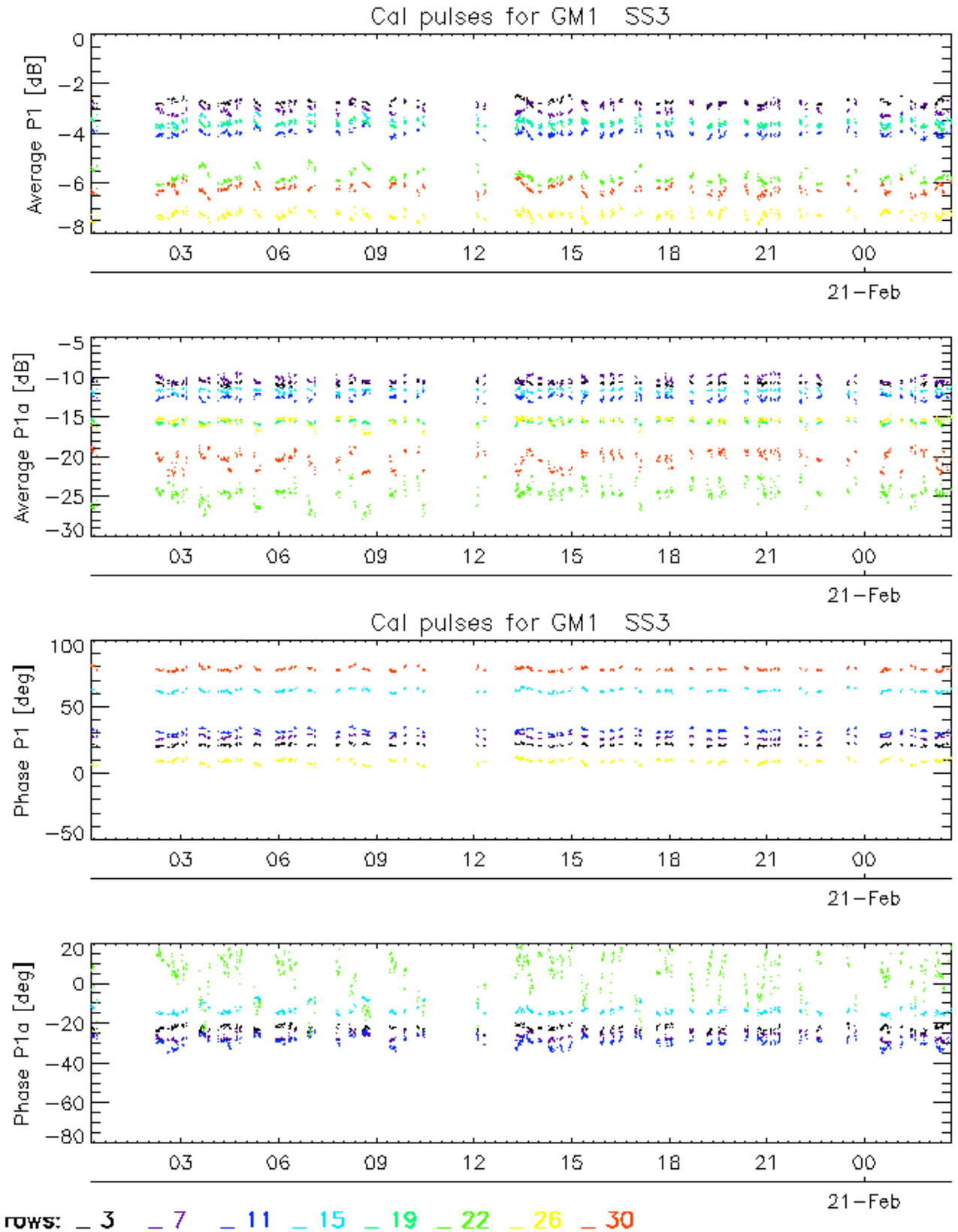
Descending

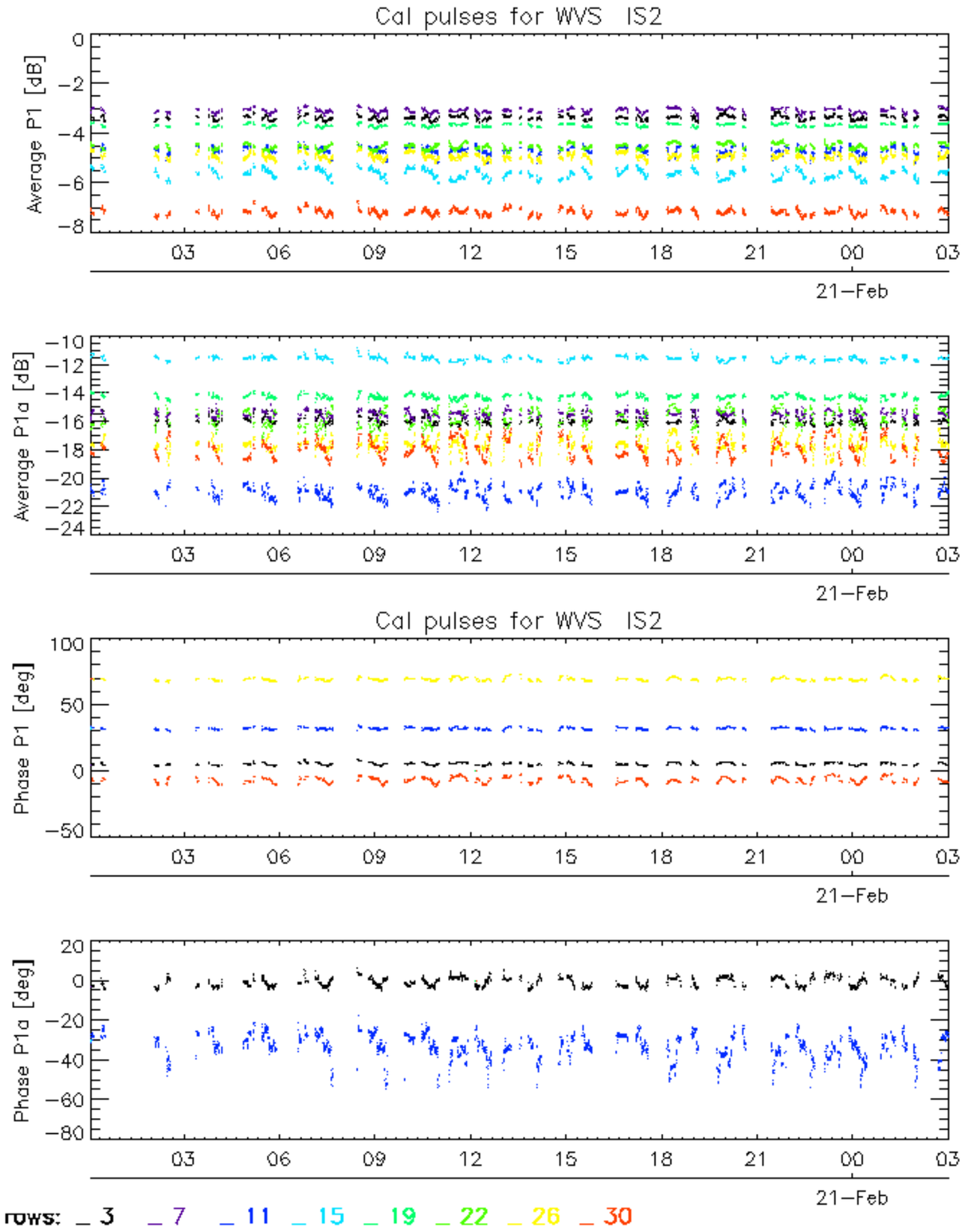
7.5 - Absolute Doppler for GM1

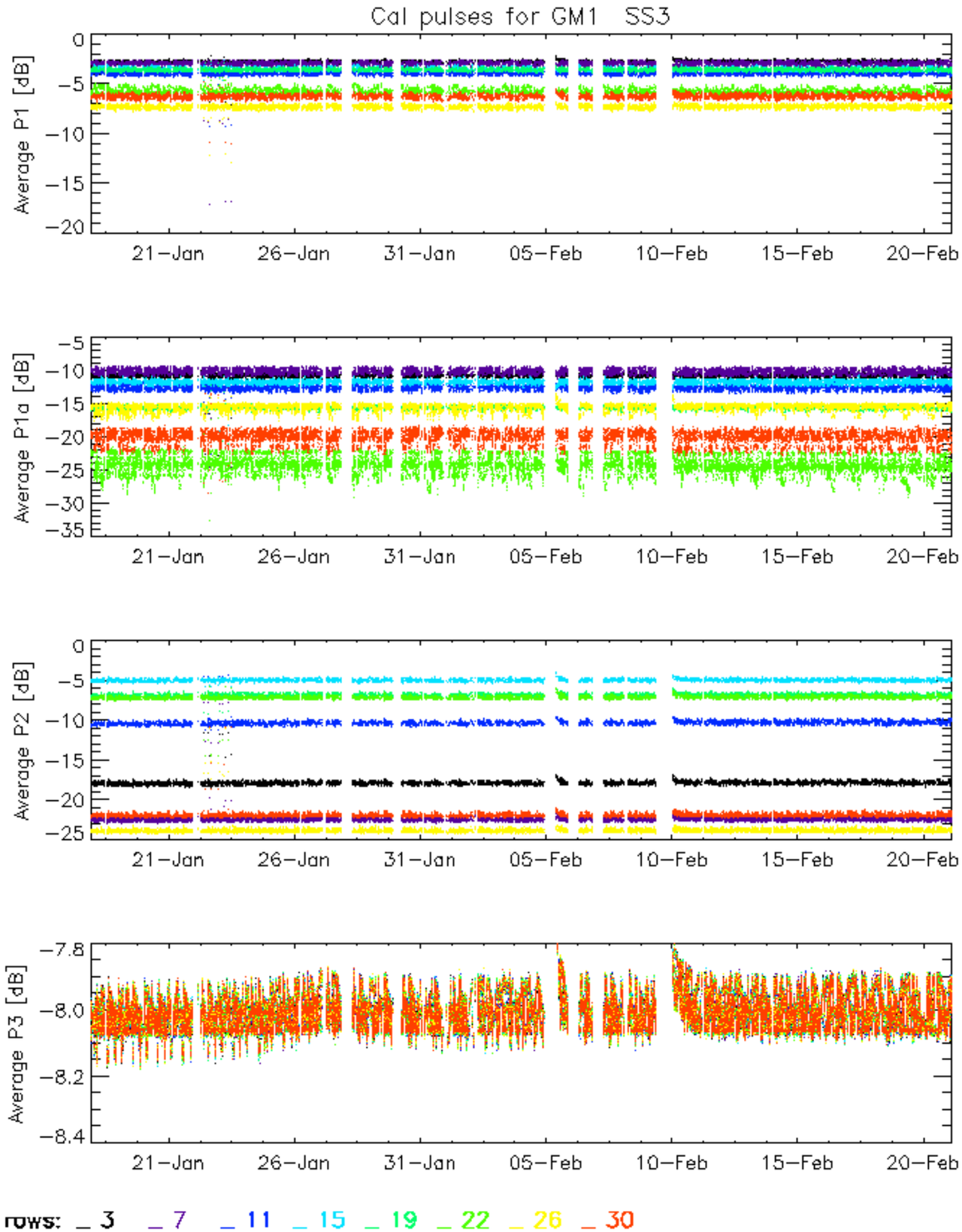
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

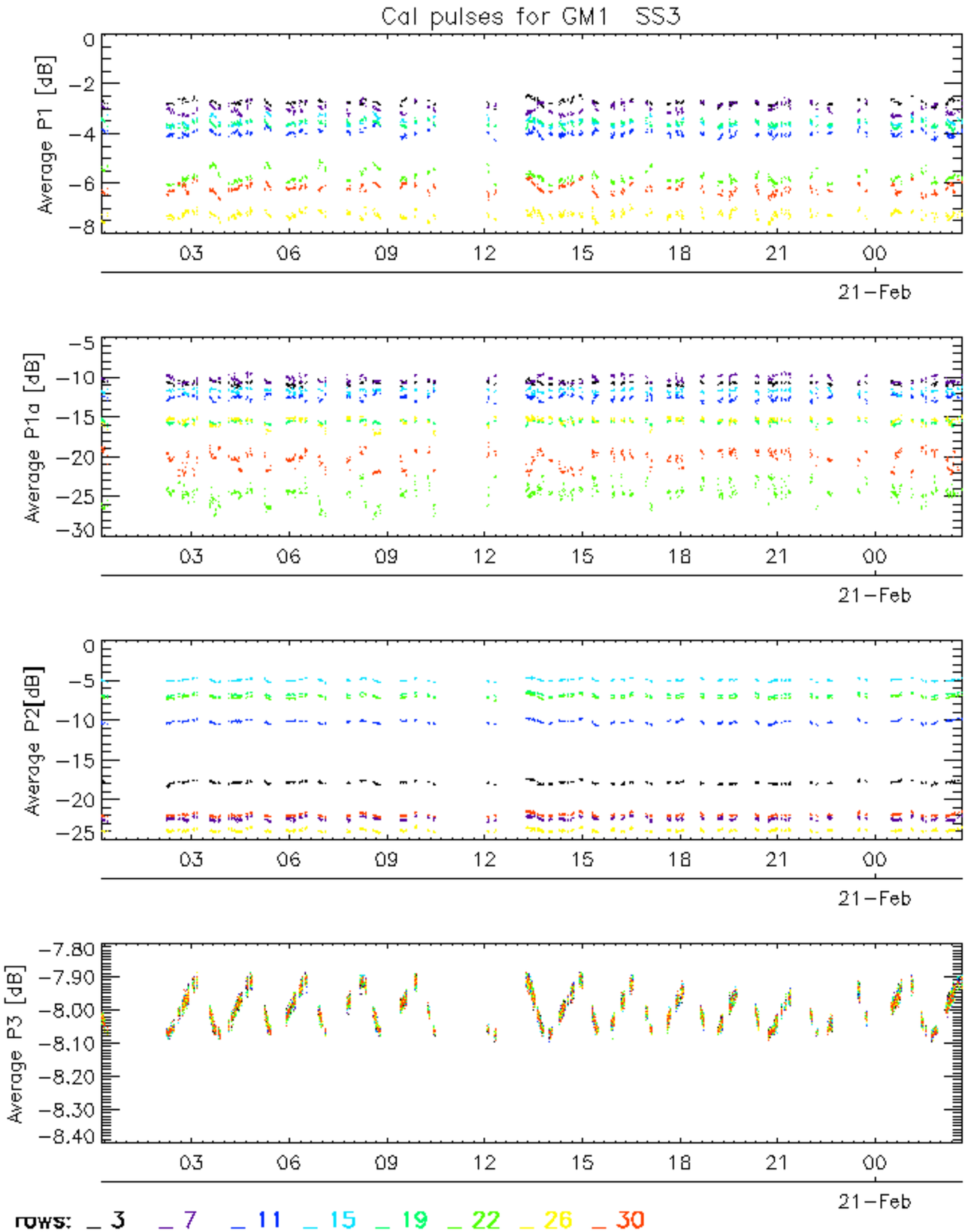
7.6 - Doppler evolution versus ANX for GM1

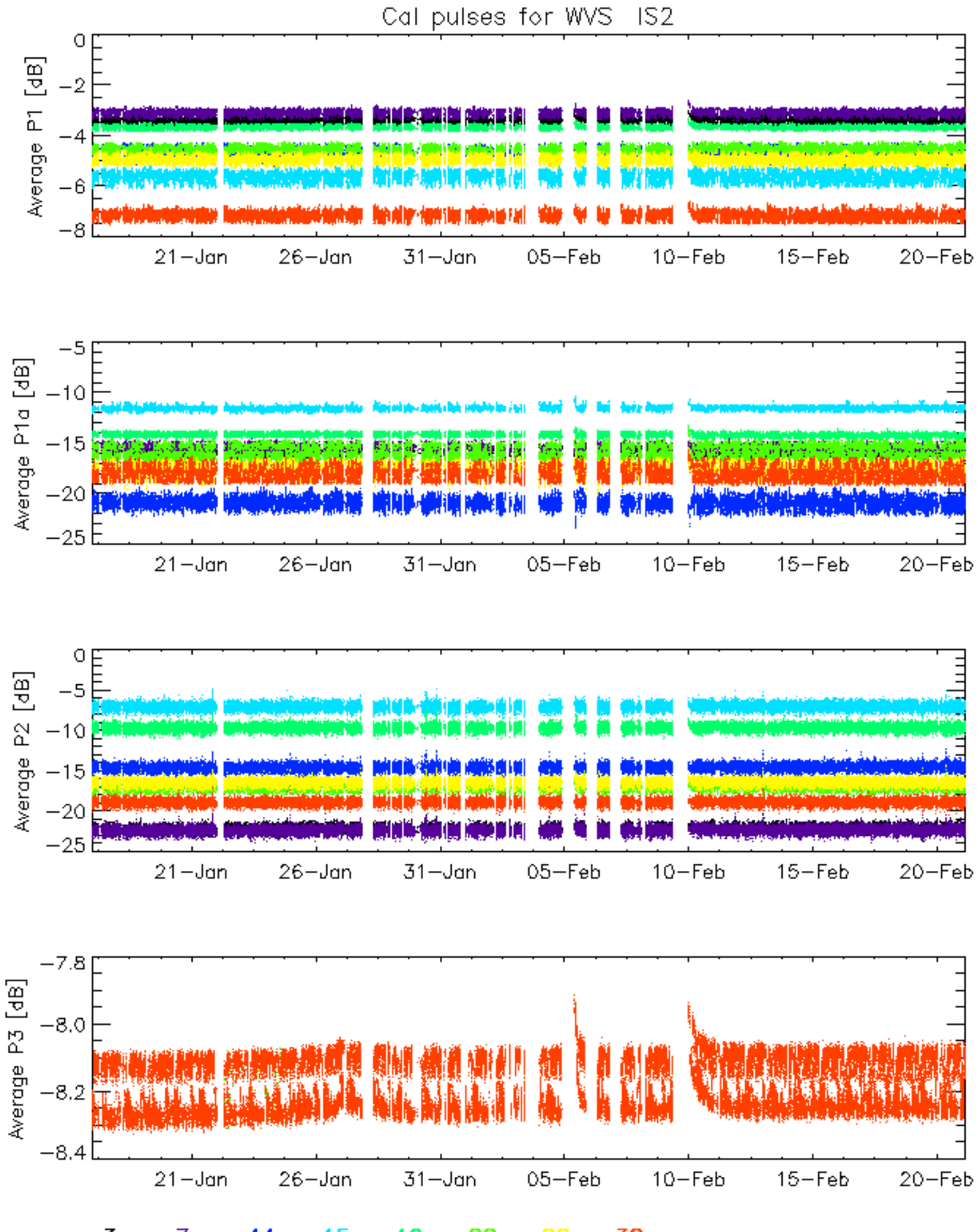
Evolution Doppler error versus ANX
☒

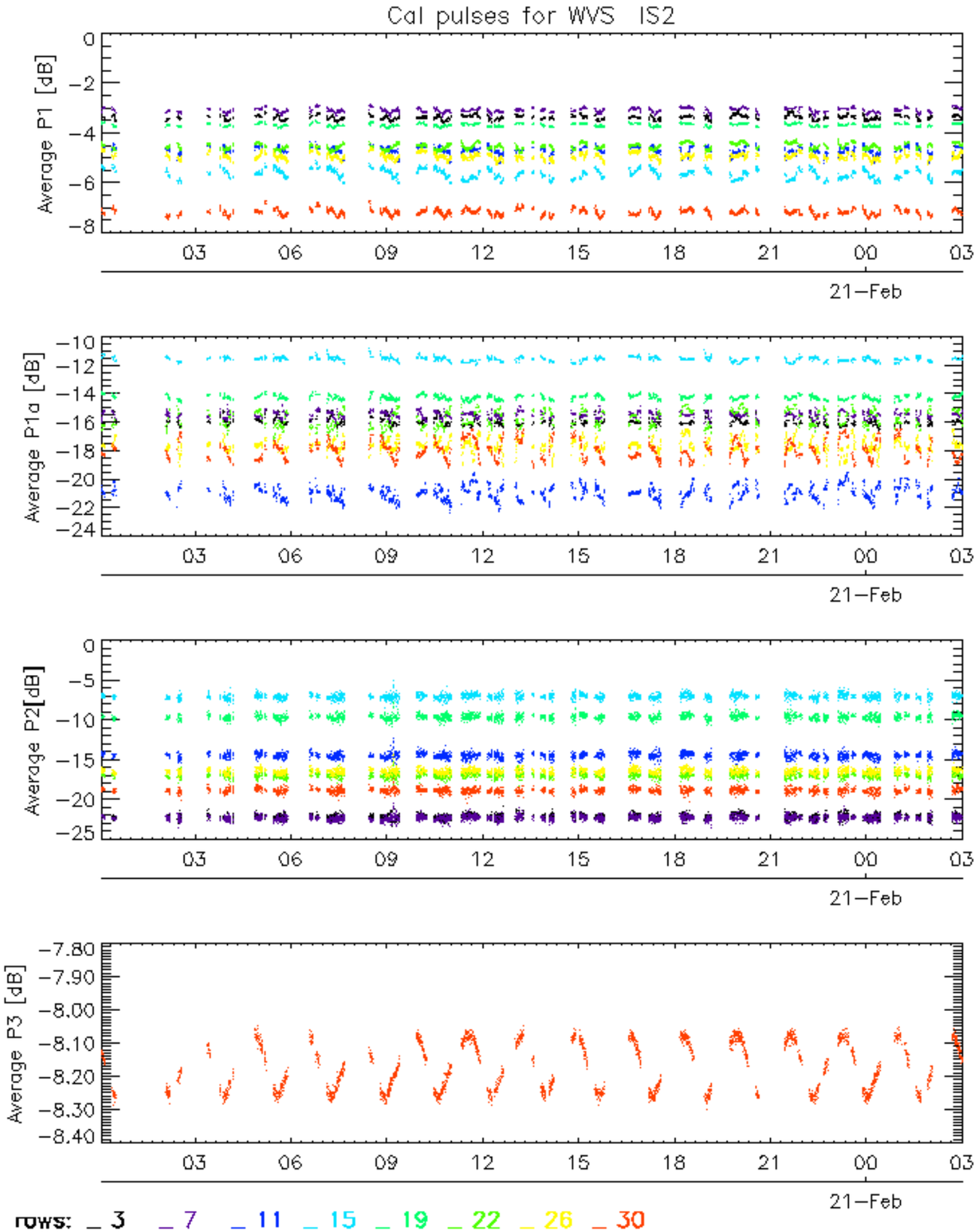

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
21−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Cal pulses for GM1 SS3
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
rows: 3 7 11 15 19 22 26 30


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
21−Feb
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Cal pulses for WVS IS2
Phase P1 [deg]
100
50
0
−50
Phase P1a [deg]
20
0
−20
−40
−60
−80
rows: 3 7 11 15 19 22 26 30

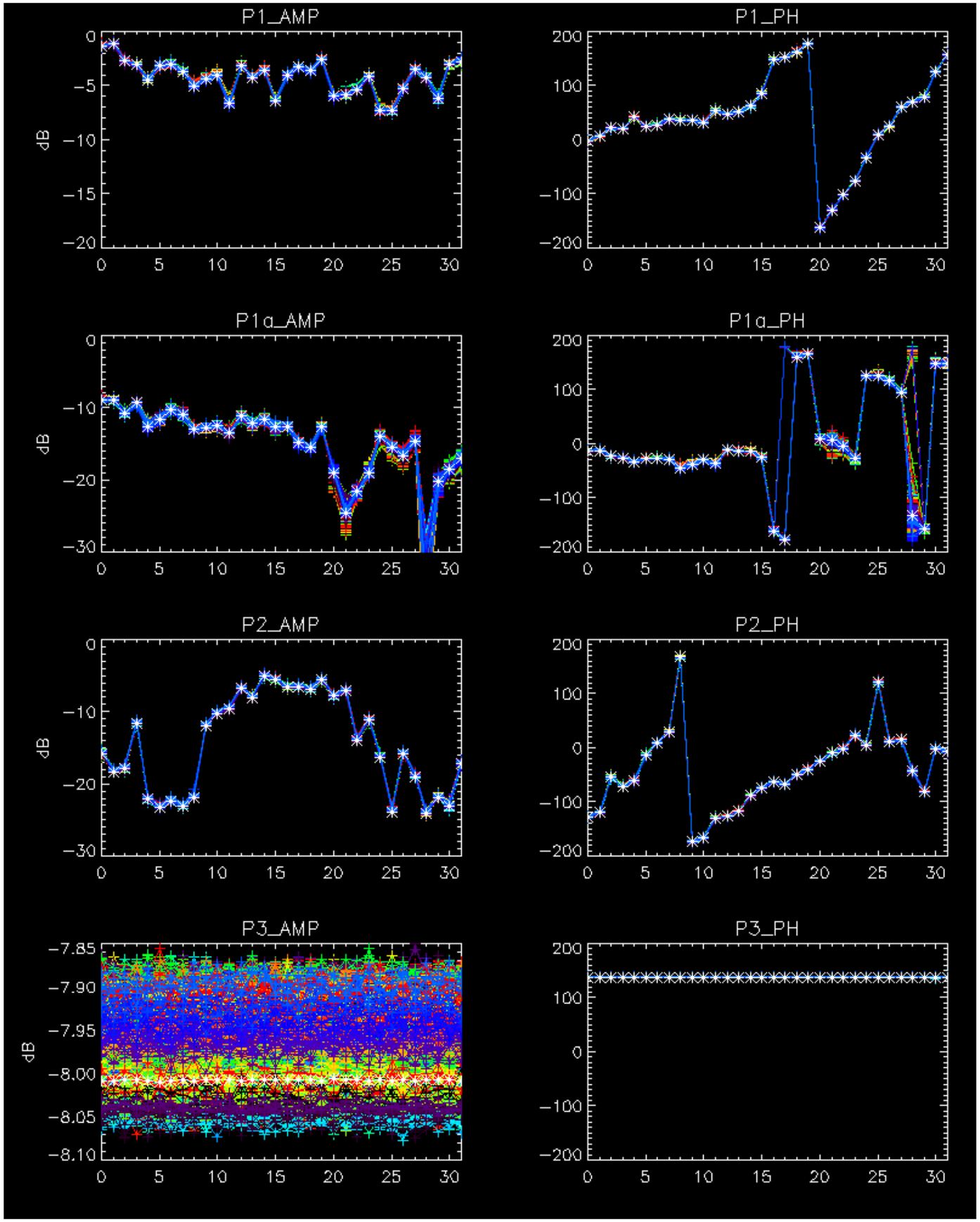

Cal pulses for GM1 SS3
Average P1 [dB]
0
−5
−10
−15
−20
Average P1a [dB]
−5
−10
−15
−20
−25
−30
−35
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

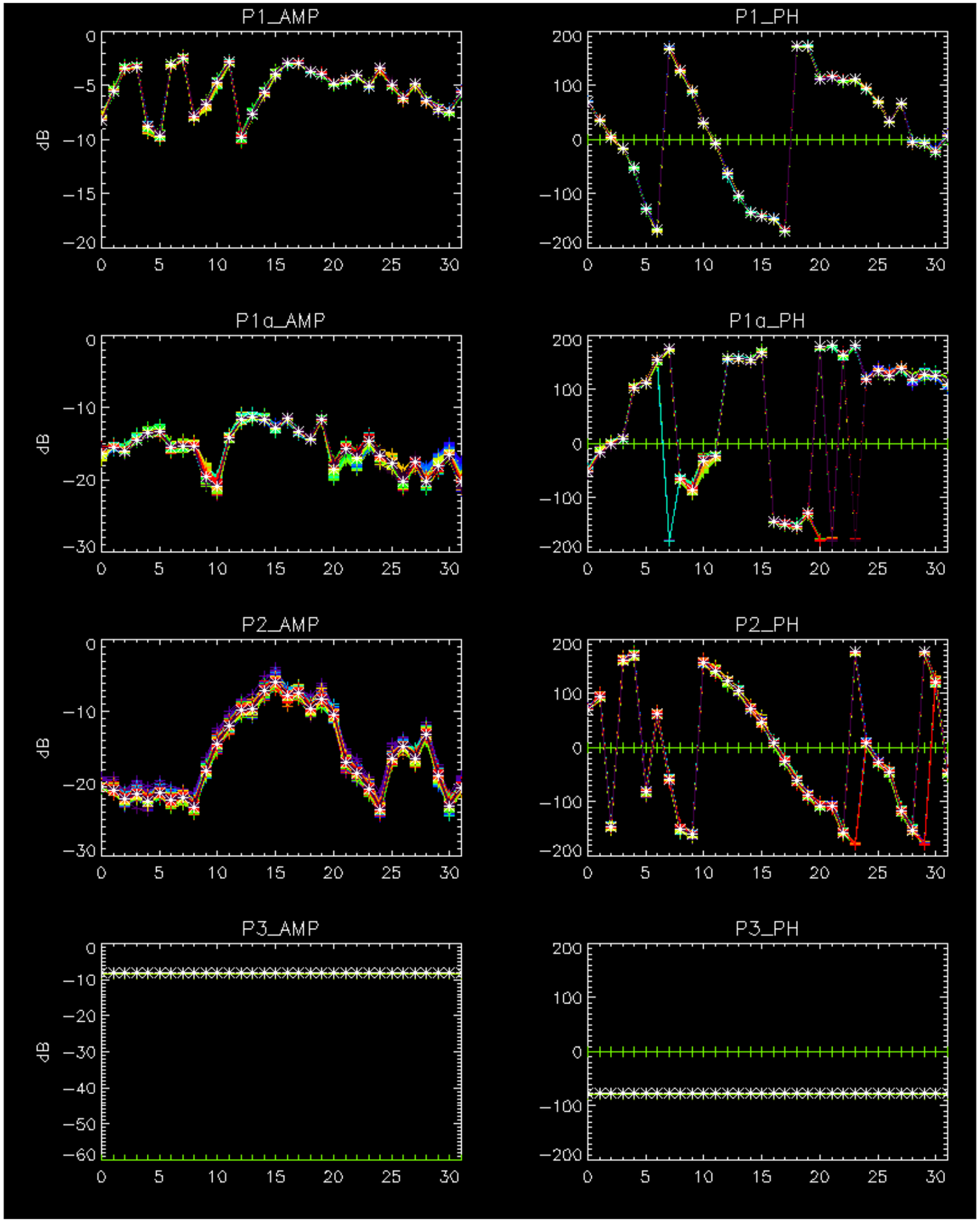

Cal pulses for GM1 SS3
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
21−Feb
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30


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


Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
03
06
09
12
15
18
21
00
03
21−Feb
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
−24
Average P2[dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

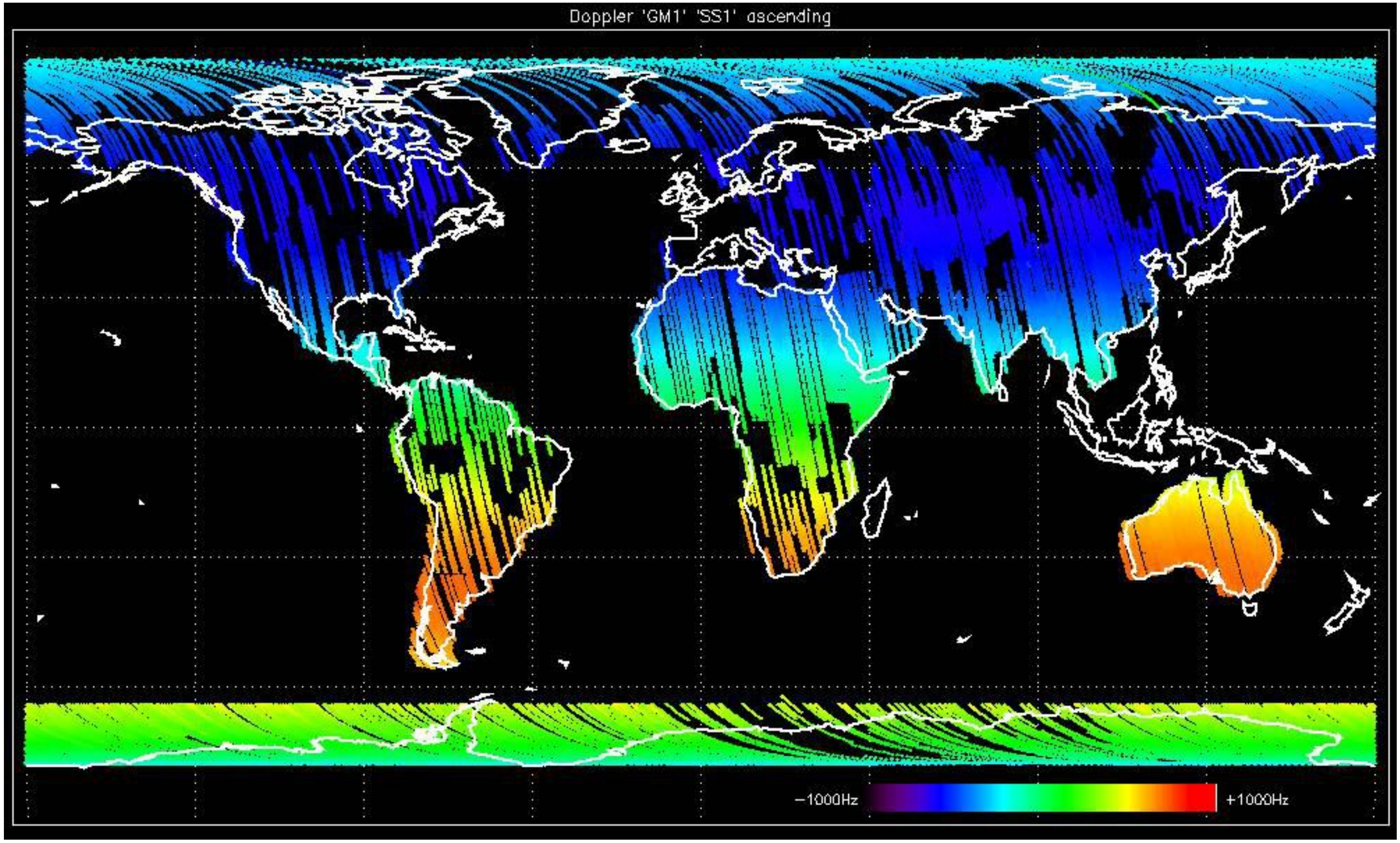
No anomalies observed.

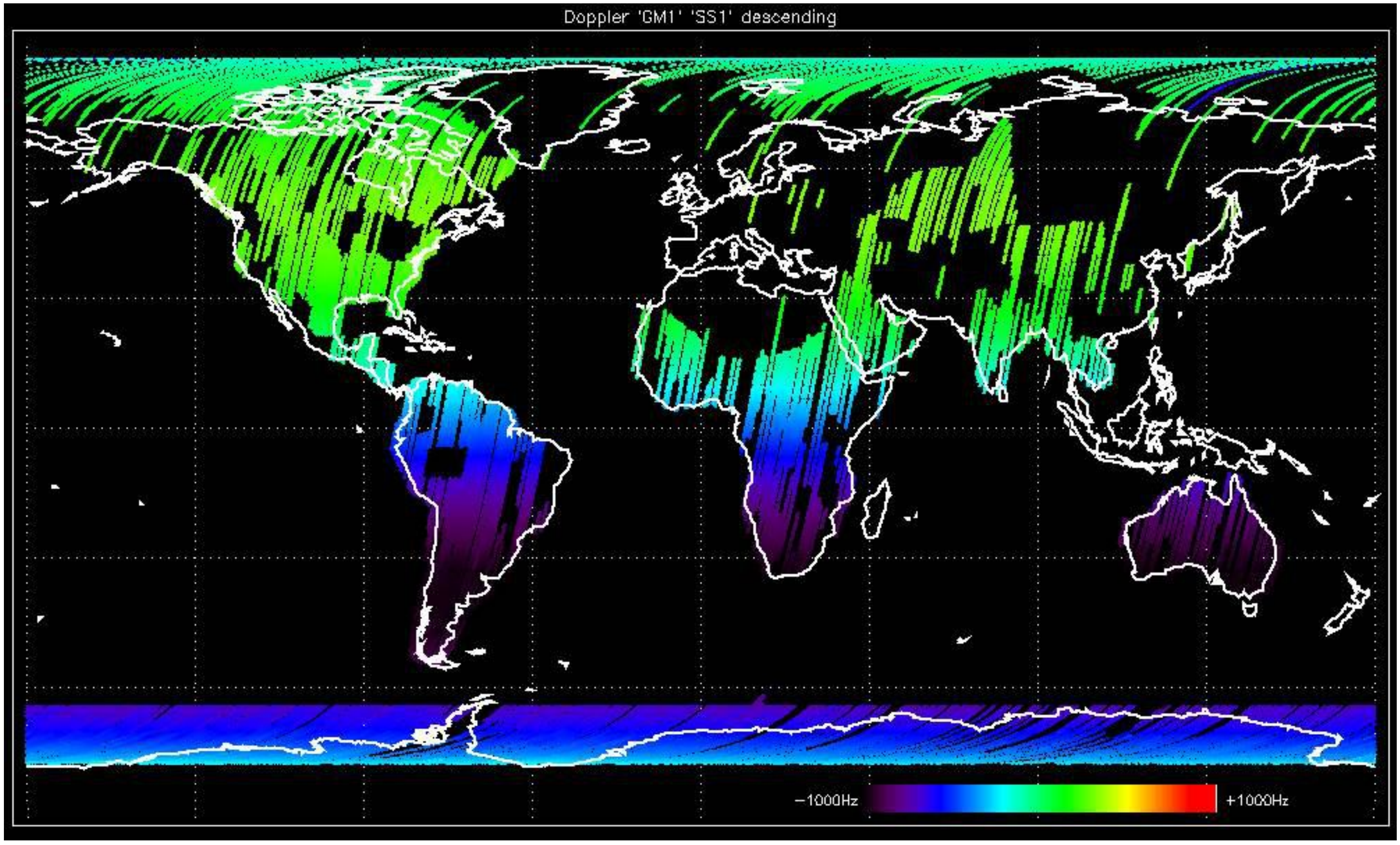

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

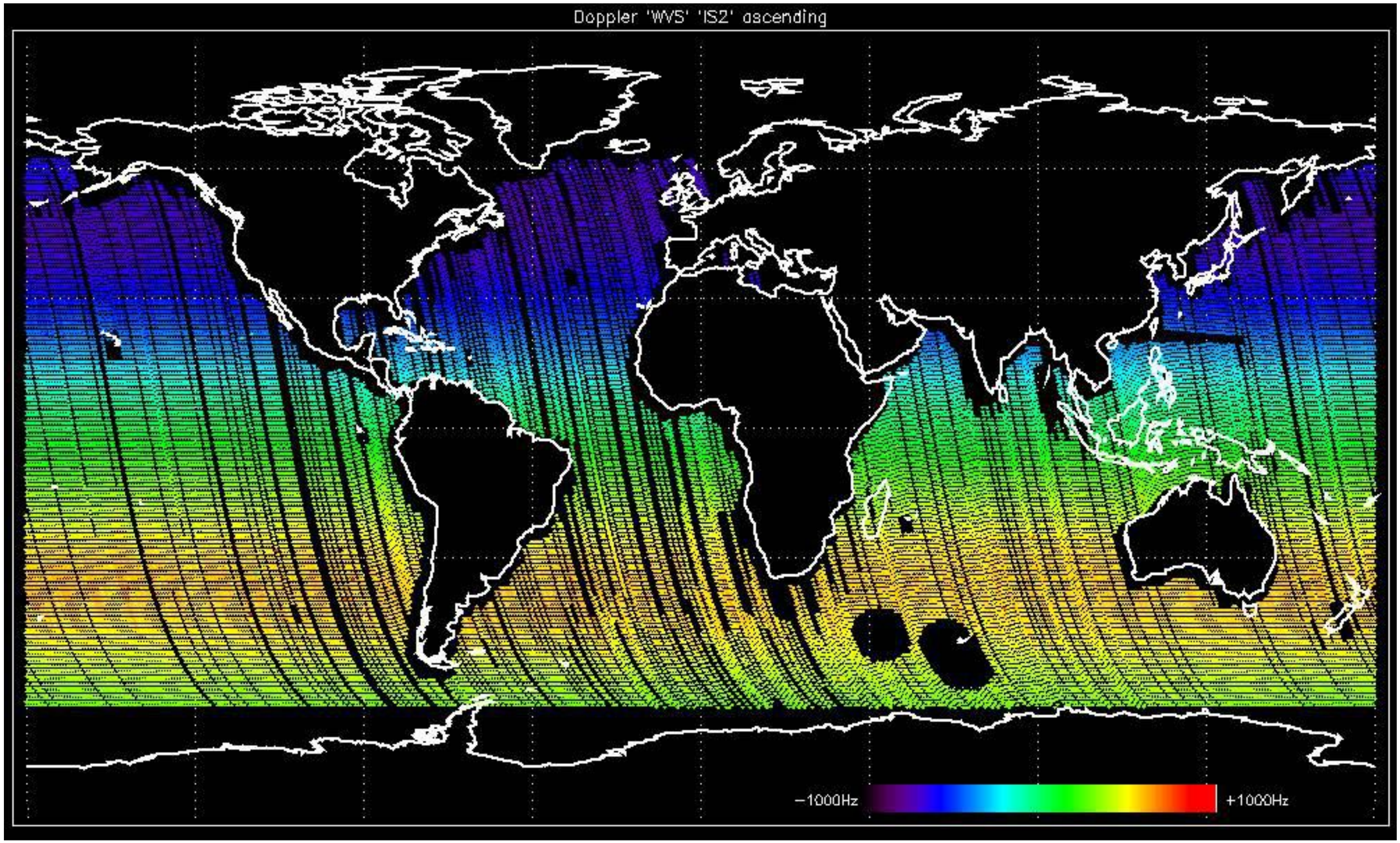

P1_AMP
P1_PH
P1a_AMP
P1a_PH
P2_AMP
P2_PH
P3_AMP
P3_PH
dB

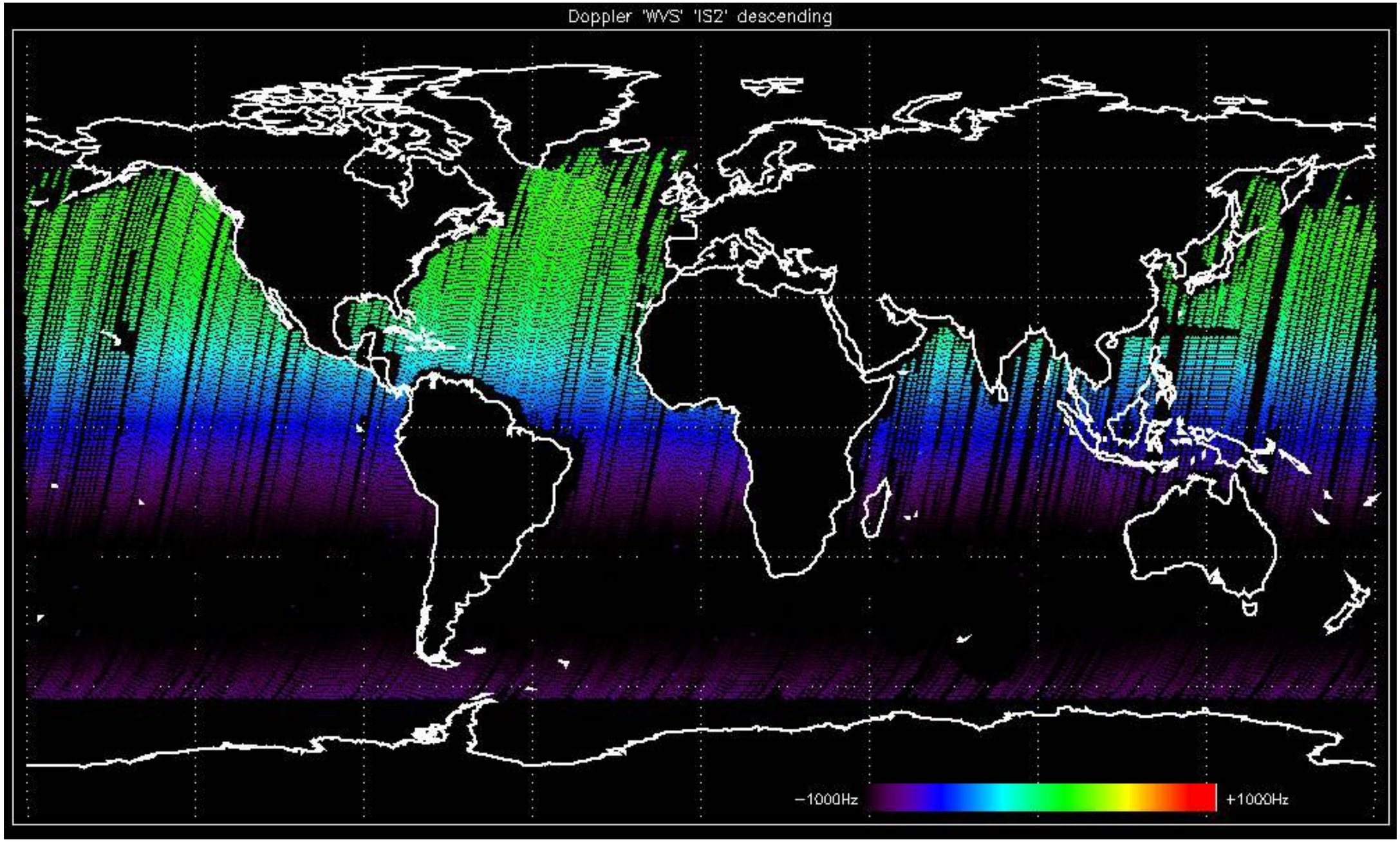
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

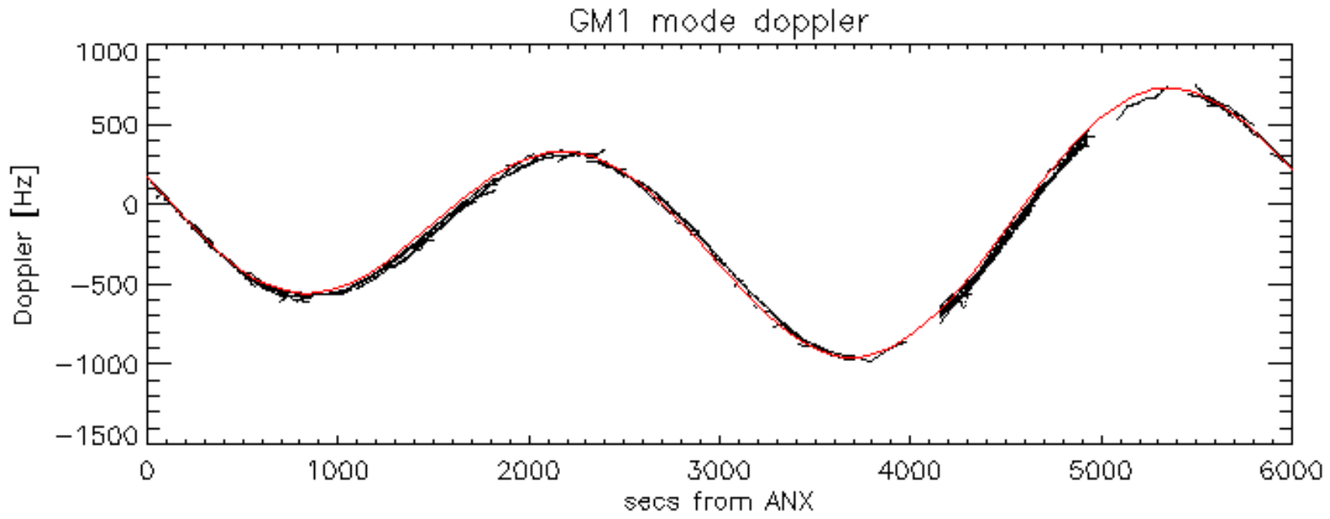
Preliminary report.The data is not yet controled

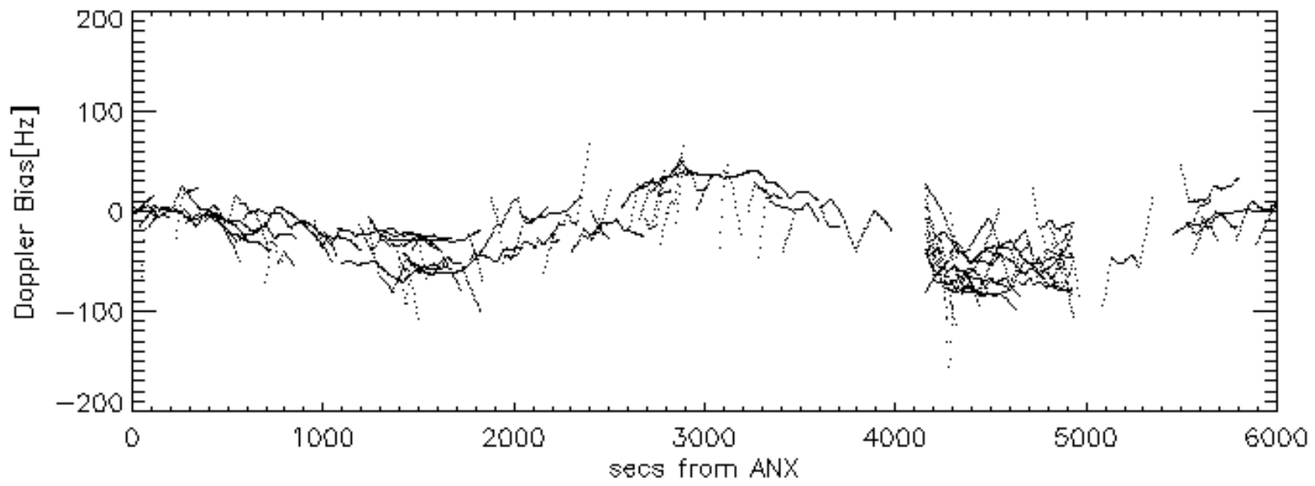

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

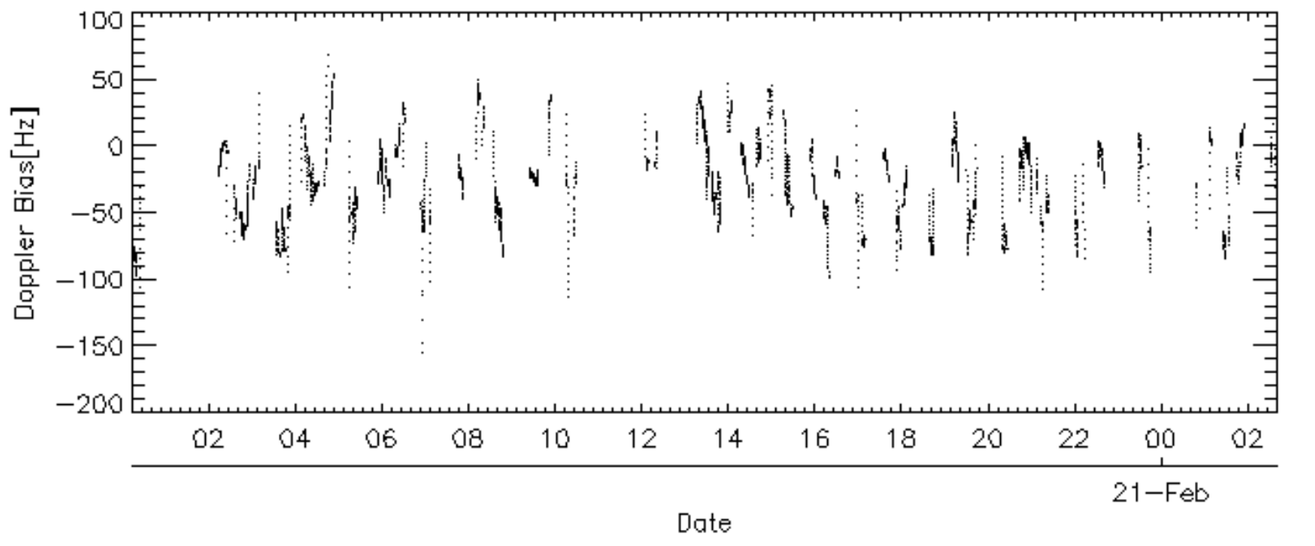

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

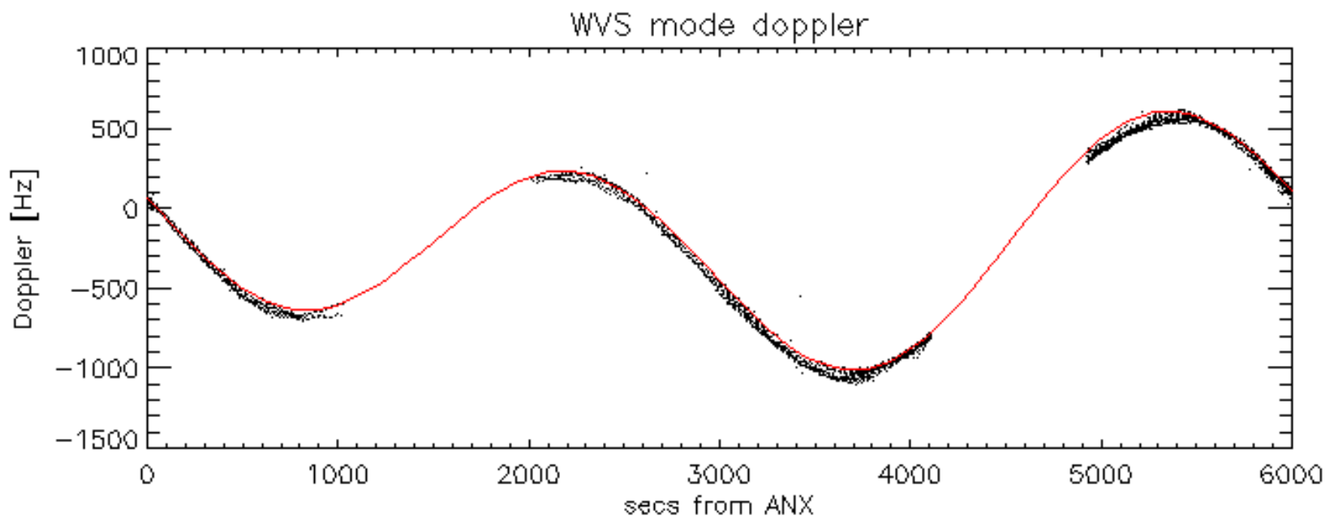

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

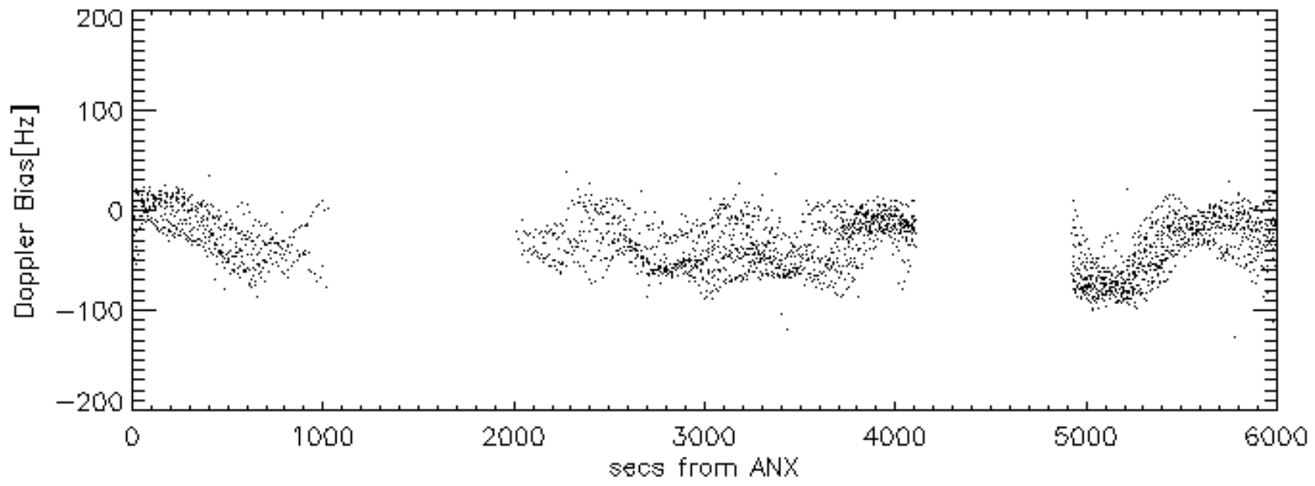

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

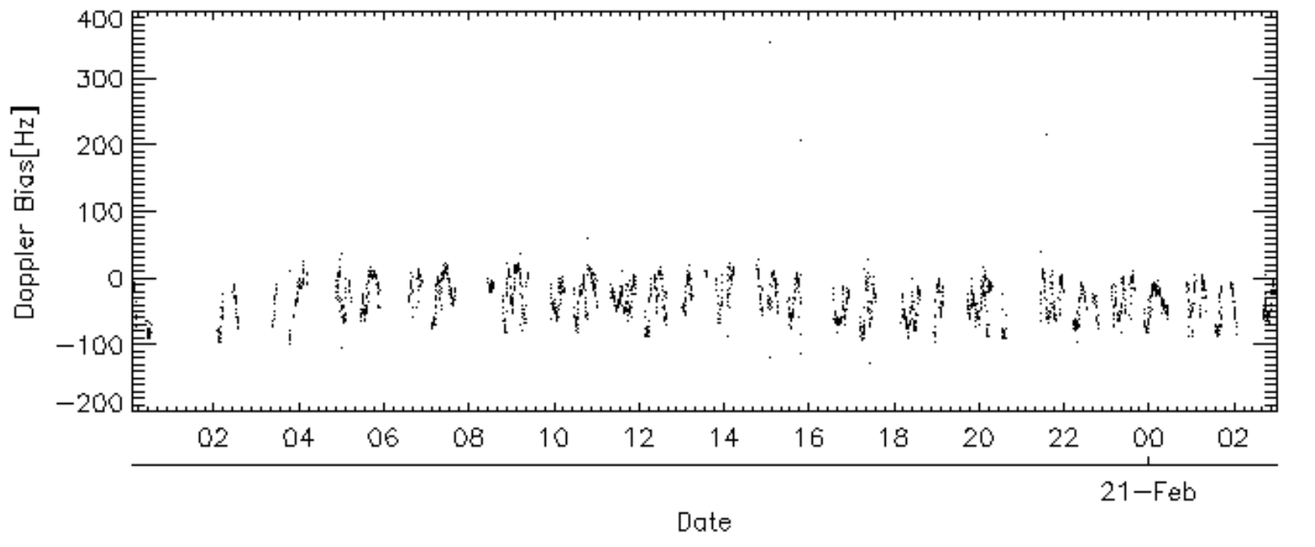

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

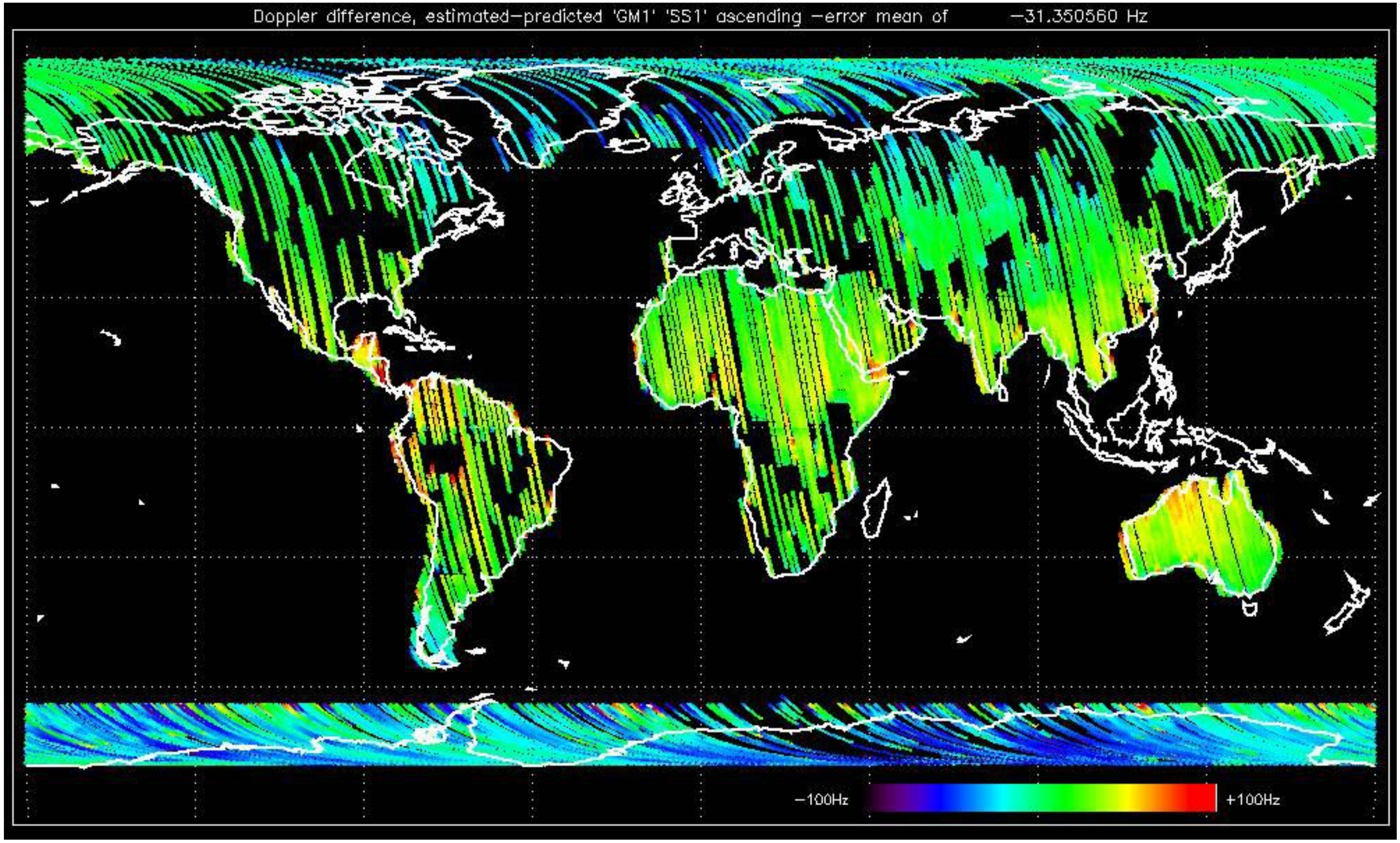

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX

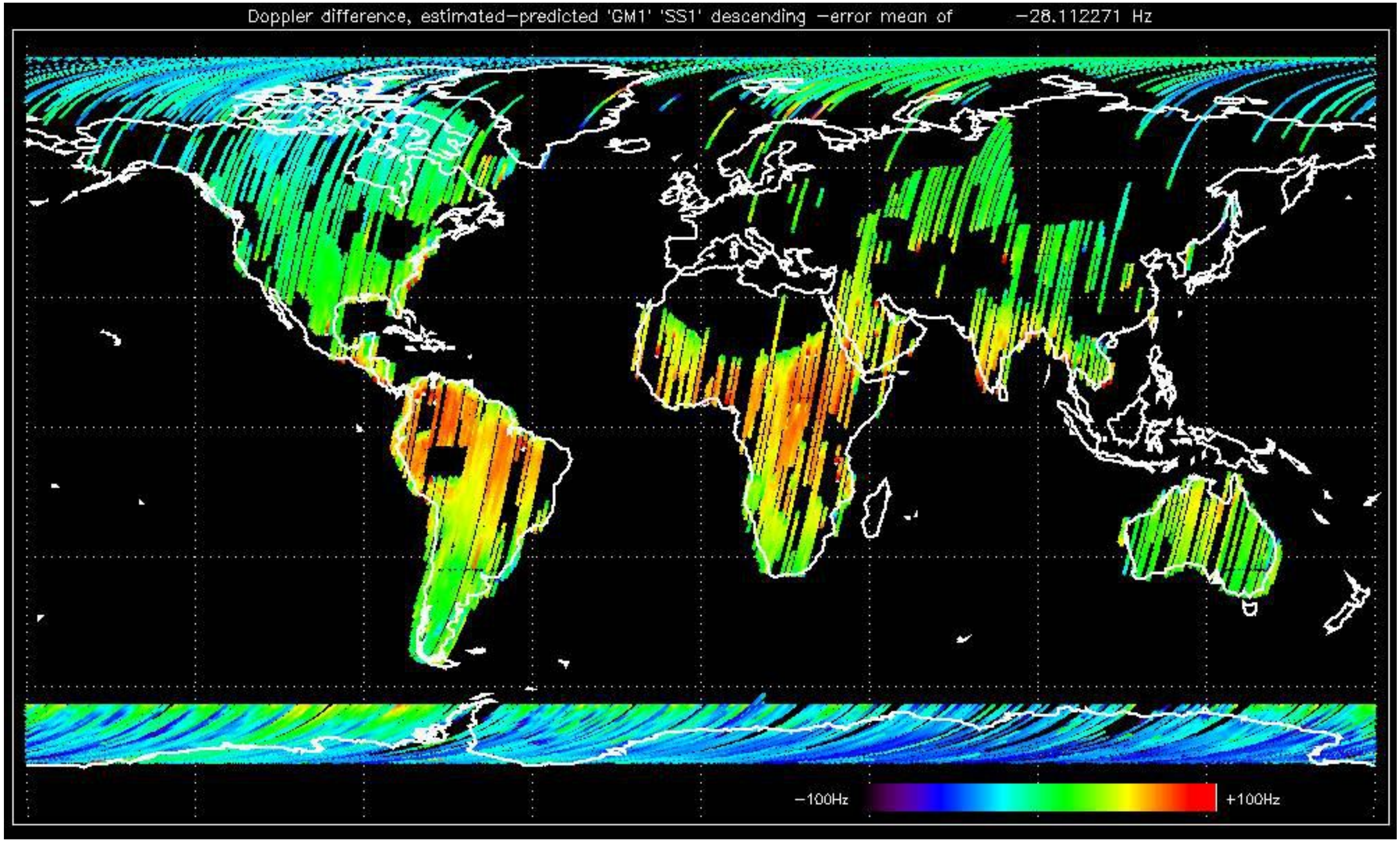

Doppler Bias[Hz]
100
50
0
−50
−100
−150
−200
02
04
06
08
10
12
14
16
18
20
22
00
02
21−Feb
Date

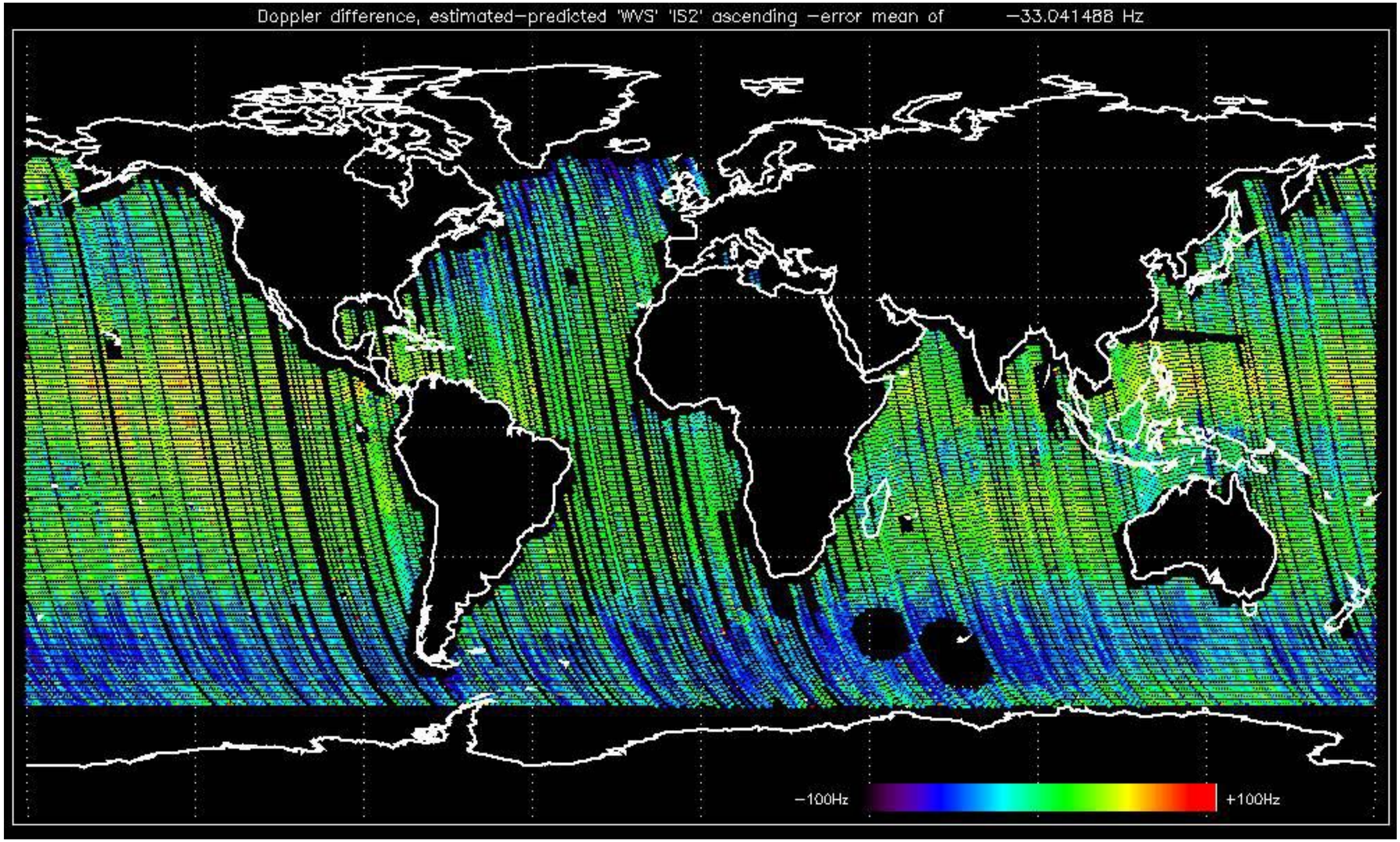

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX

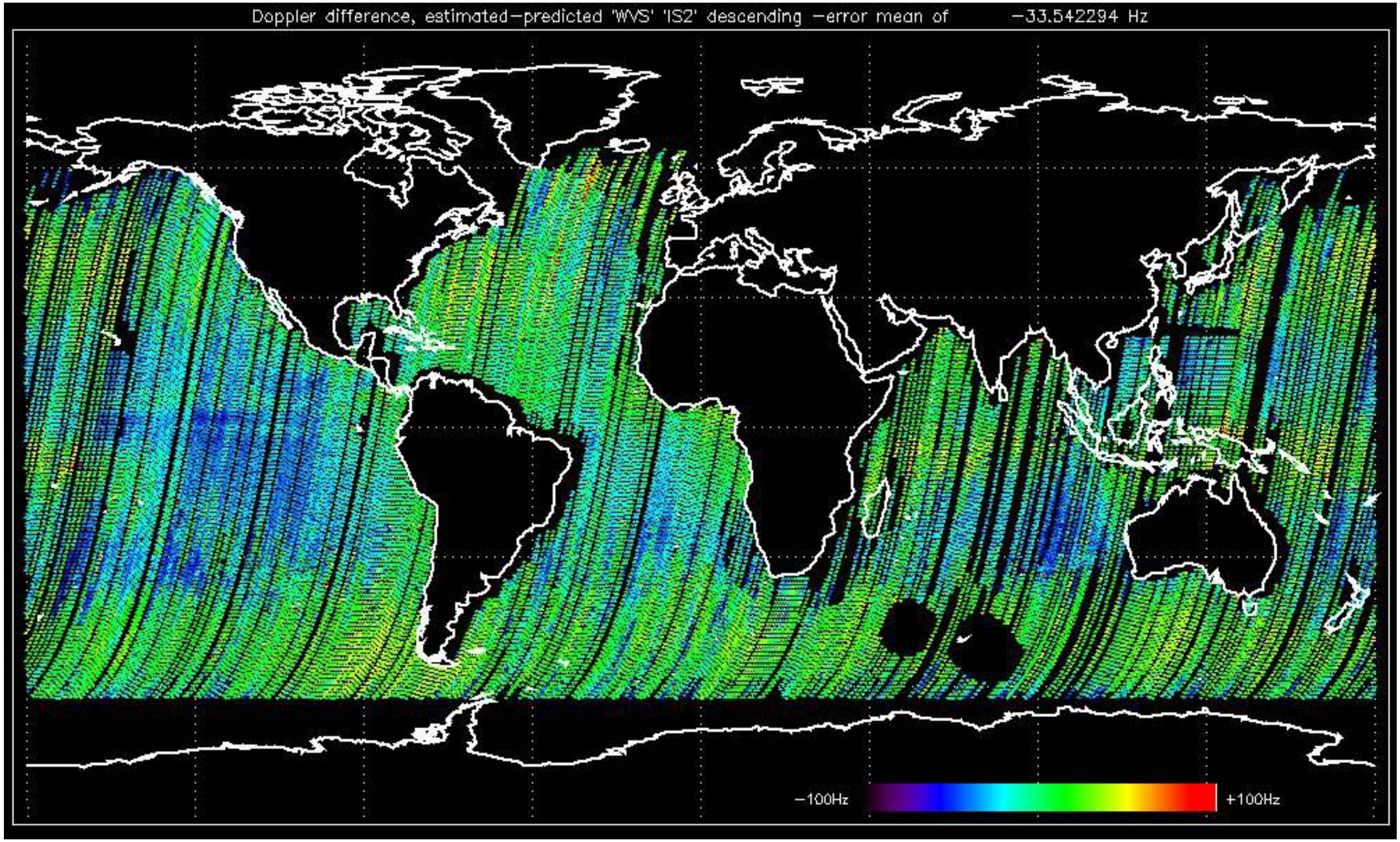

Doppler Bias[Hz]
200
100
0
−100
−200
0
1000
2000
3000
4000
5000
6000
secs from ANX


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


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −31.350560 Hz
−100Hz
+100Hz


Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -28.112271 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −33.041488 Hz
−100Hz
+100Hz

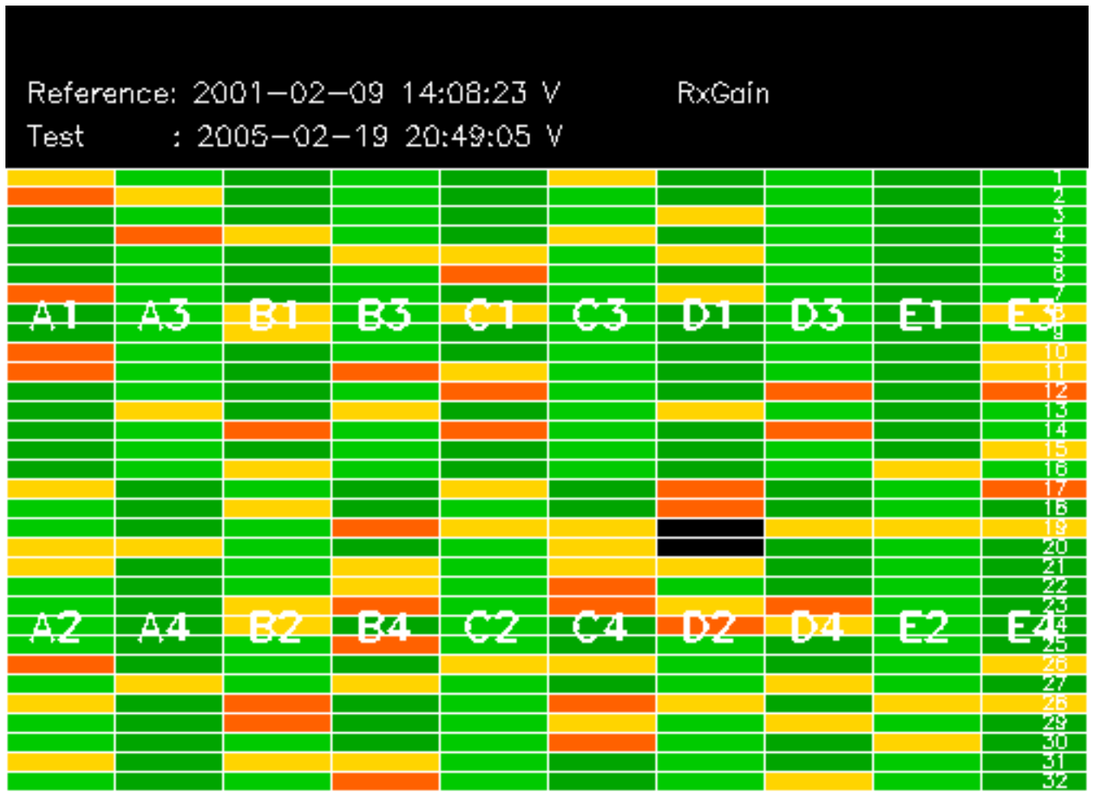

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −33.542294 Hz
−100Hz
+100Hz

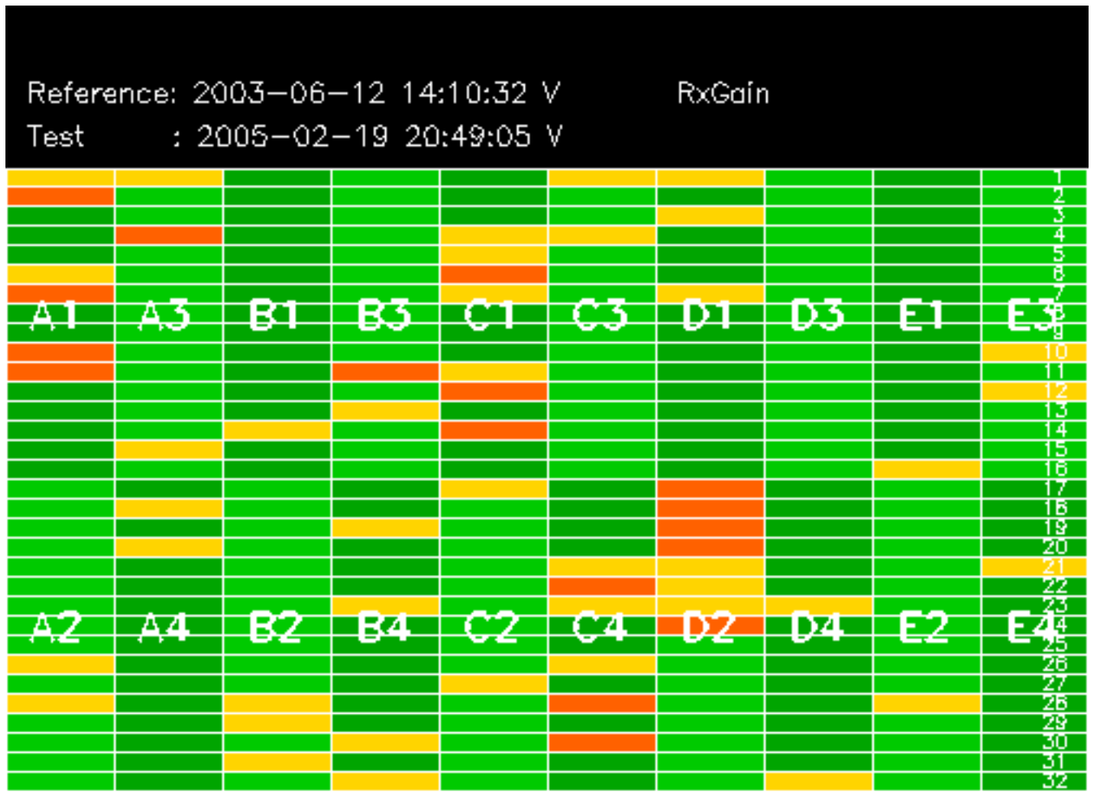
No anomalies observed on available MS products:

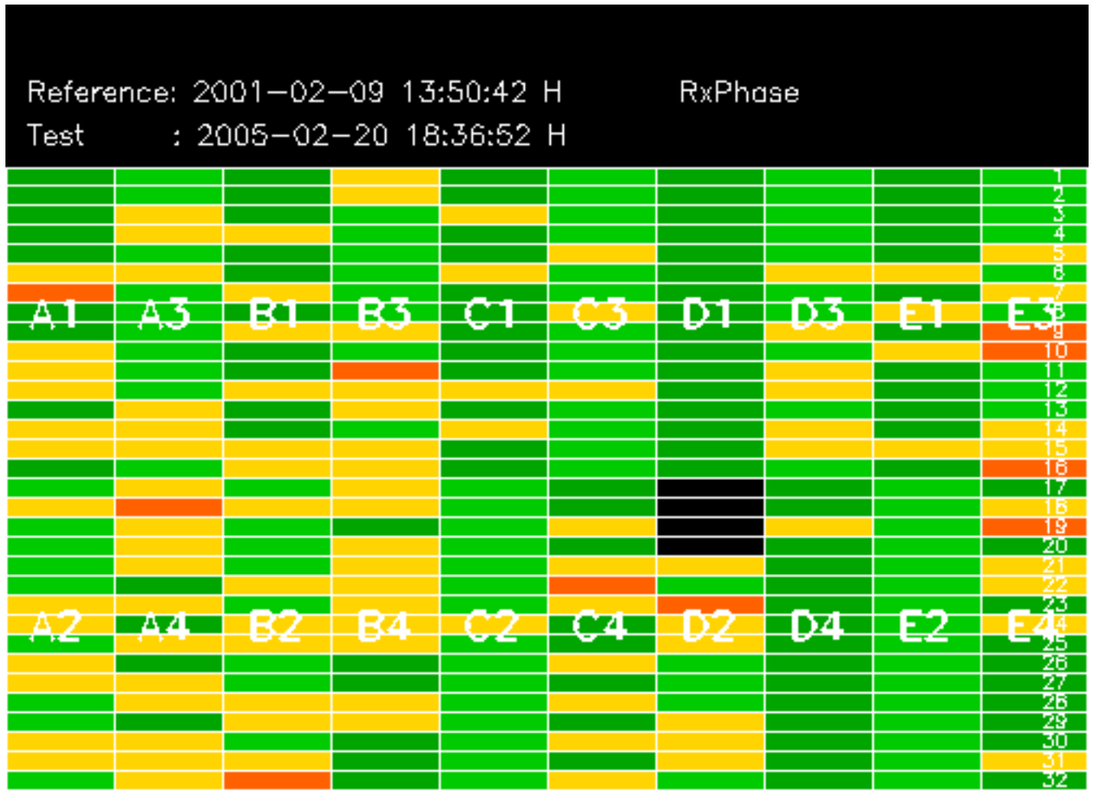
No anomalies observed.

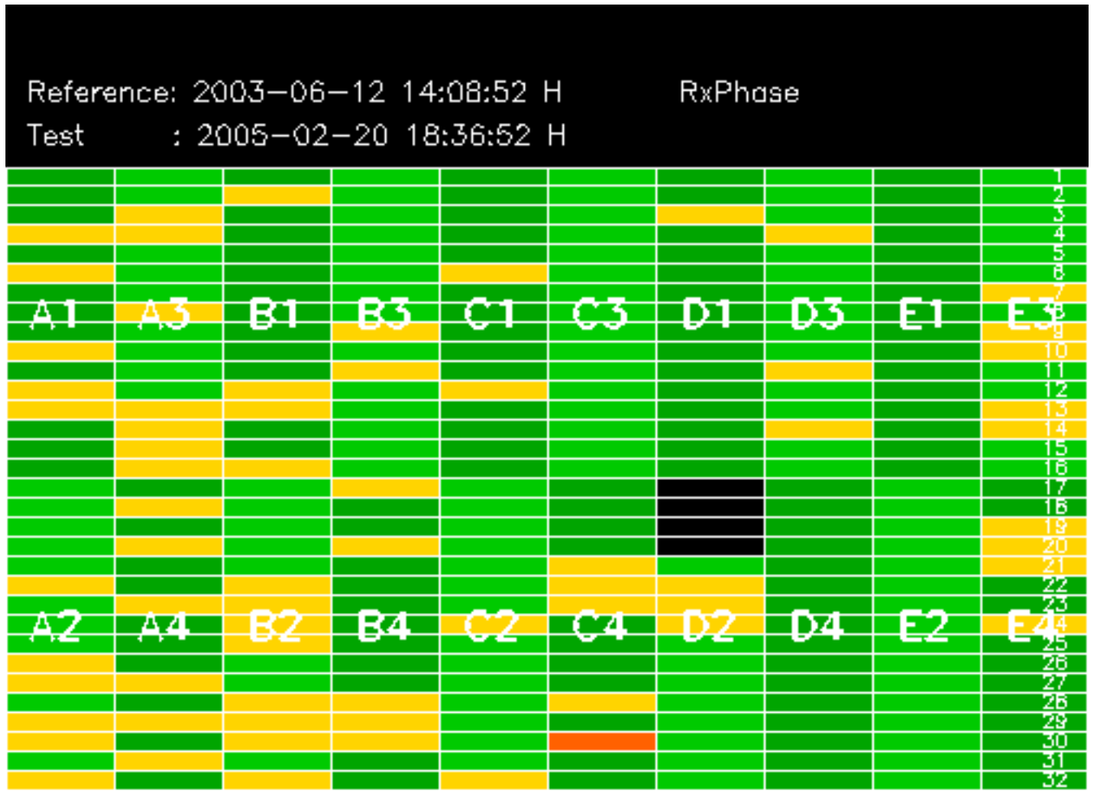

Reference: 2001-02-09 13:50:42 H
Test : 2005-02-20 18:36:52 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

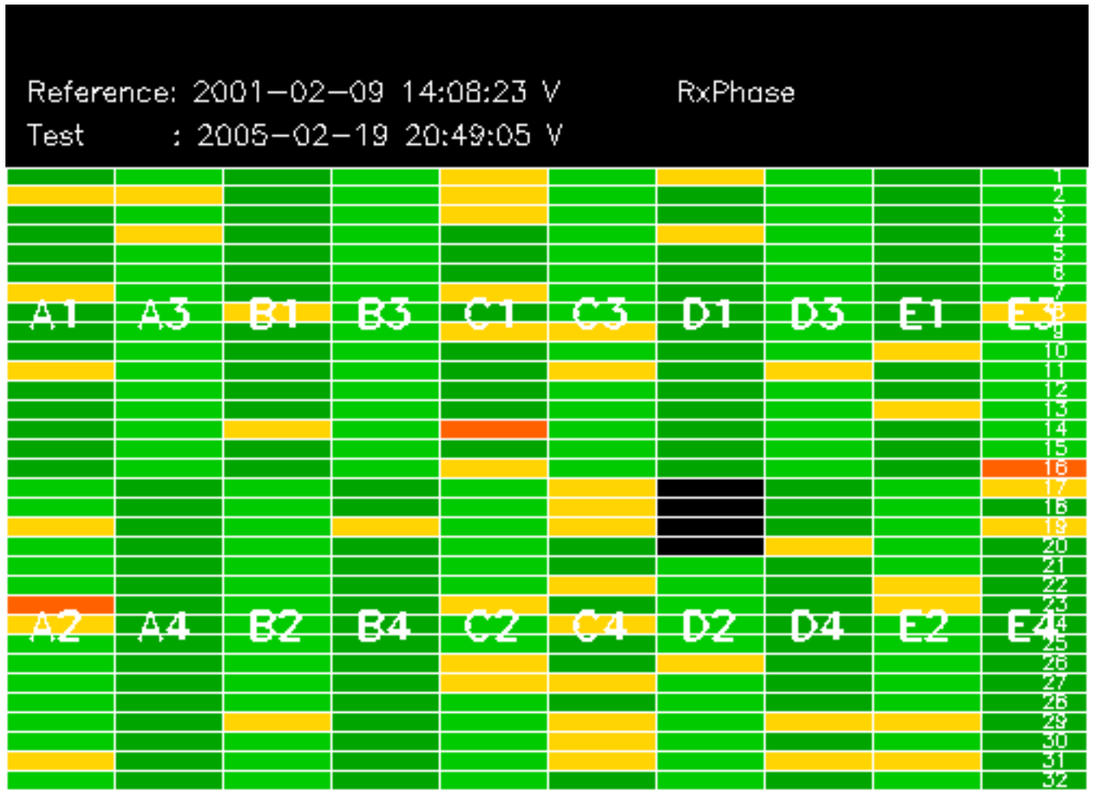

Reference: 2003-06-12 14:08:52 H
Test : 2005-02-20 18:36:52 H
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

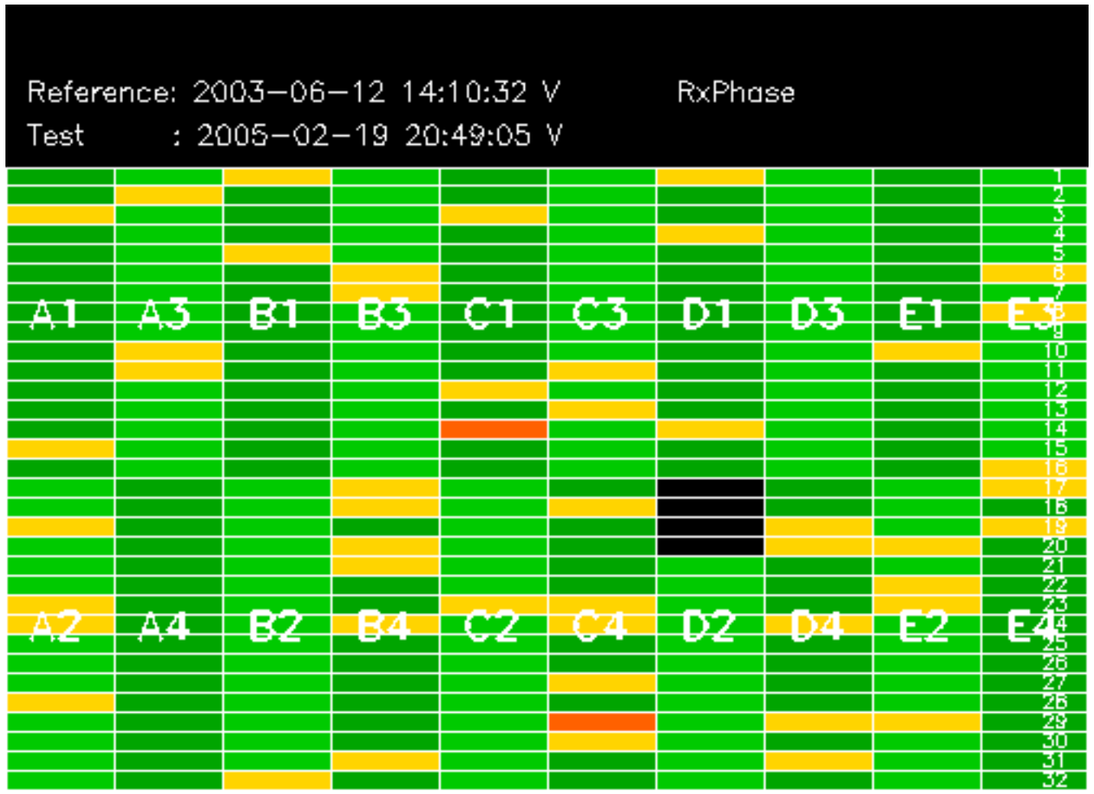

Reference: 2001-02-09 14:08:23 V
Test : 2005-02-19 20:49:05 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

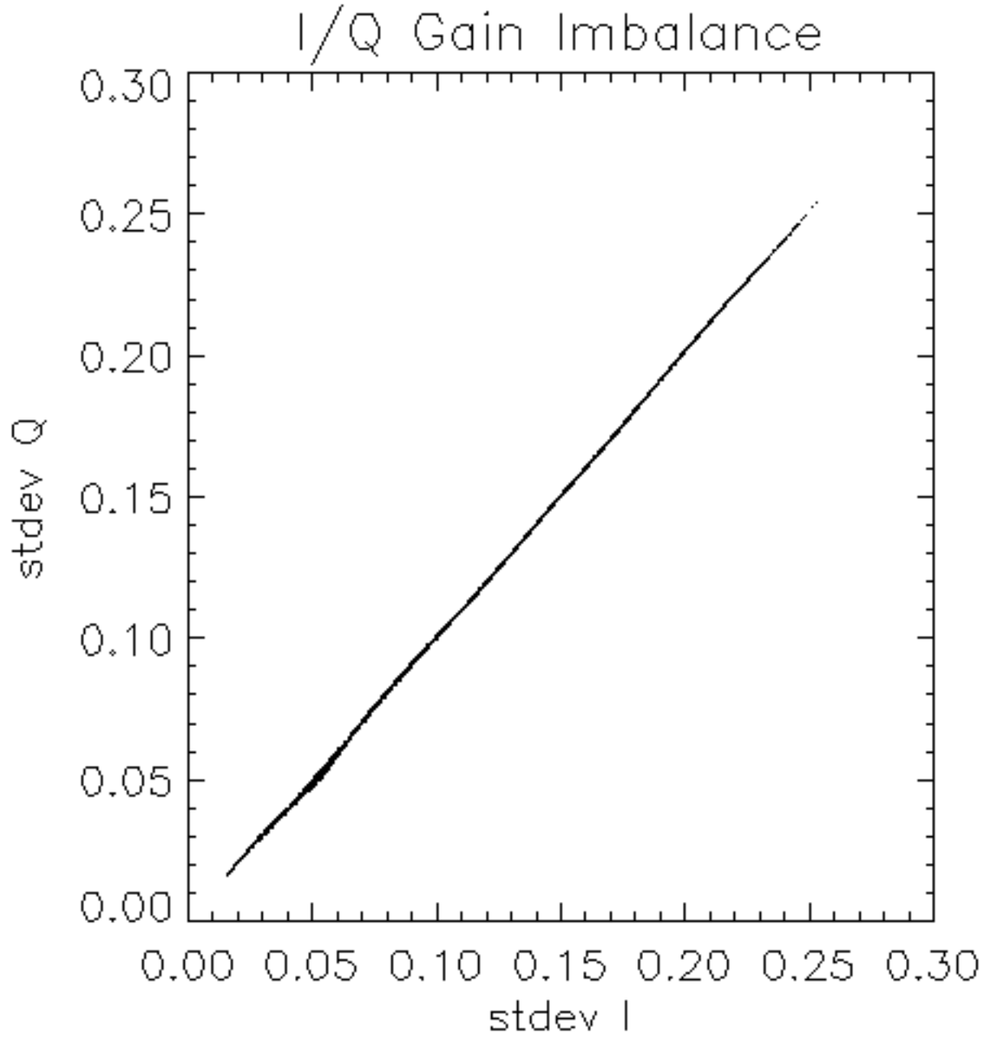

Reference: 2003-06-12 14:10:32 V
Test : 2005-02-19 20:49:05 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

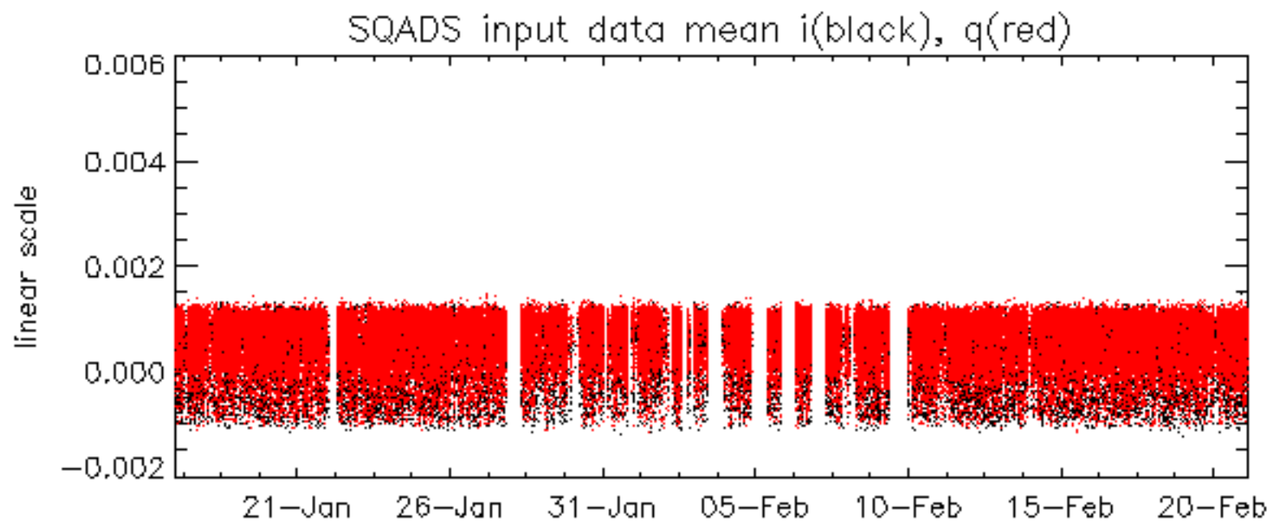

Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2005-02-20 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

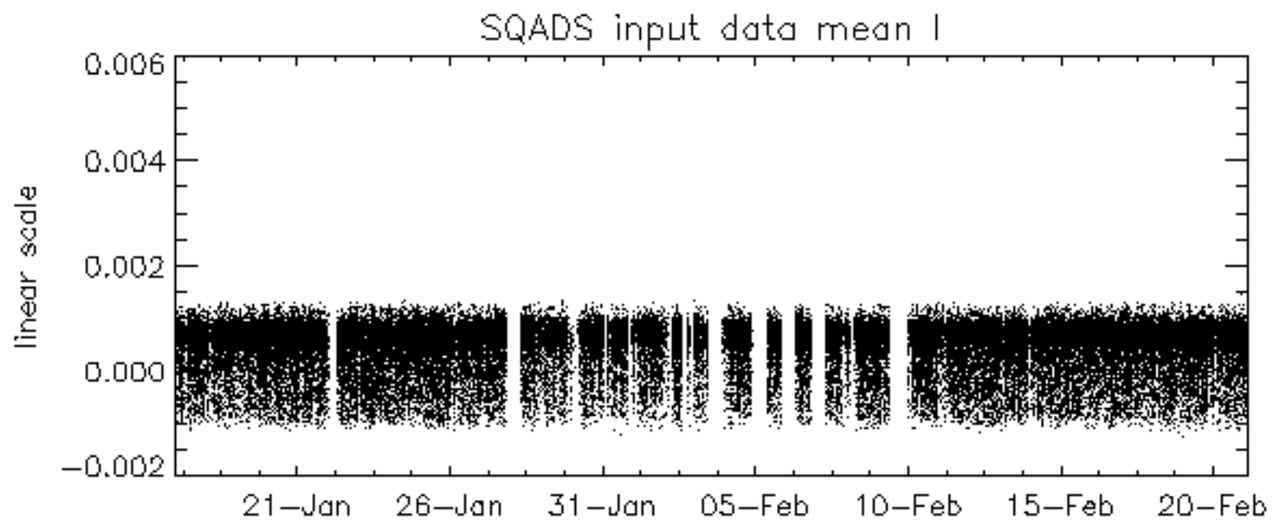

Reference: 2003-06-12 14:08:52 H
RxPhase
Test : 2005-02-20 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

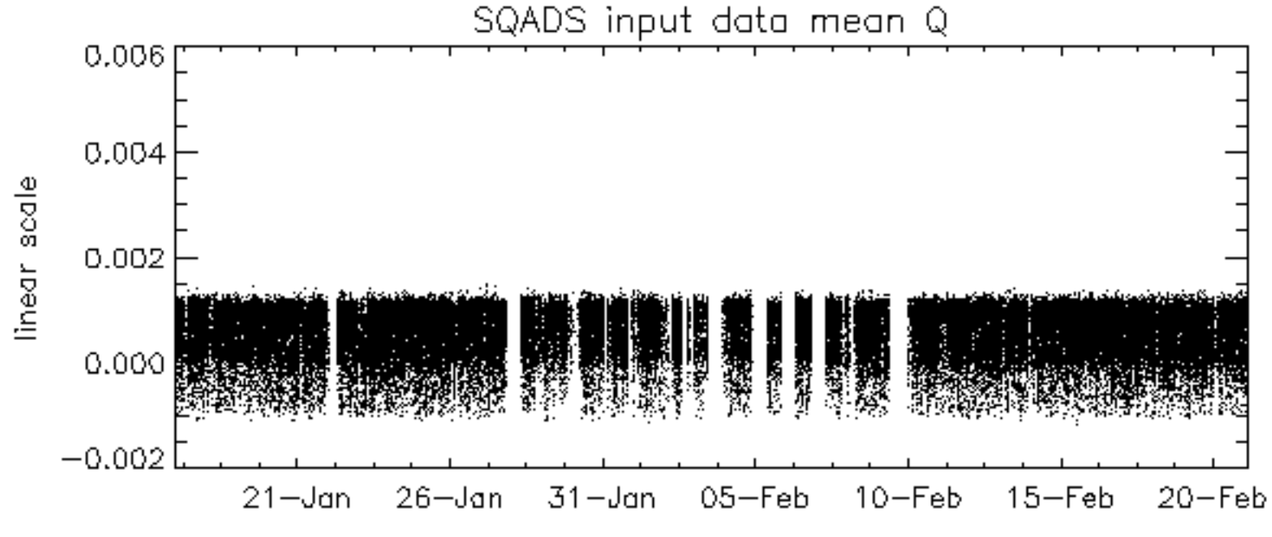

Reference: 2001-02-09 14:08:23 V
Test : 2005-02-19 20:49:05 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

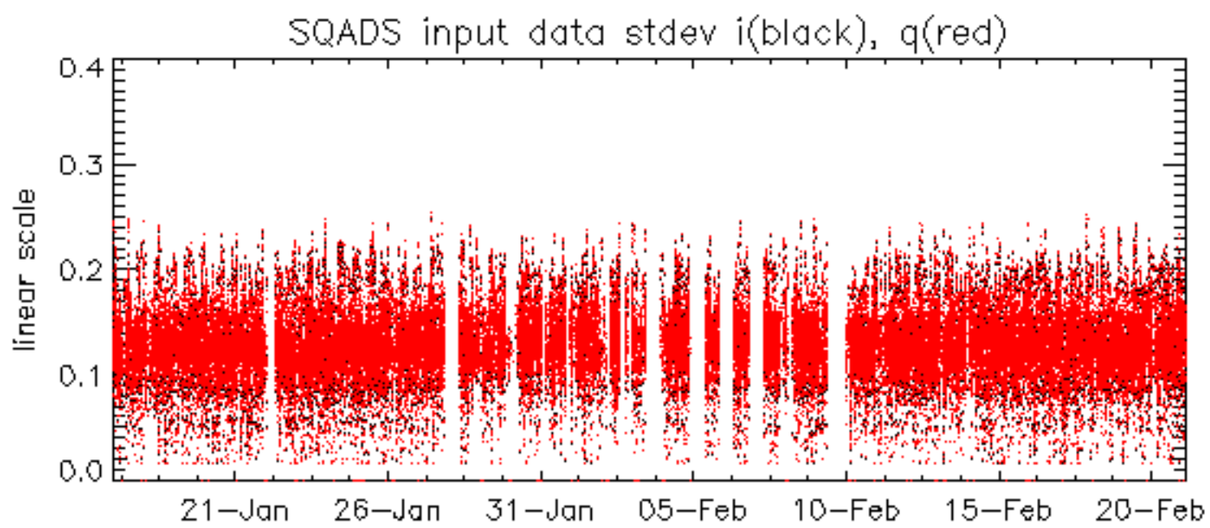

Reference: 2003-06-12 14:10:32 V
Test : 2005-02-19 20:49:05 V
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

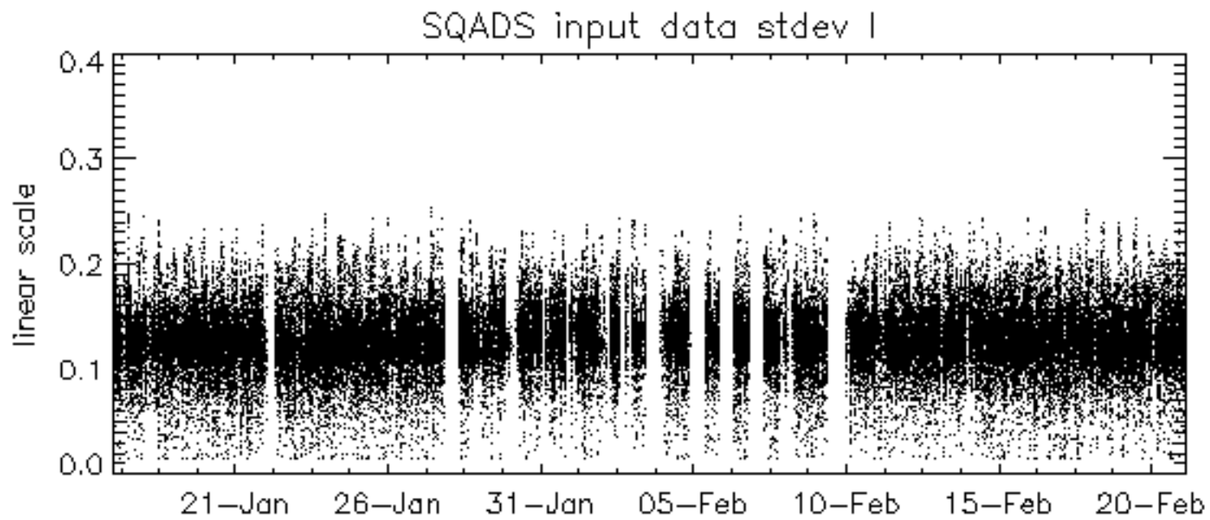

I/Q Gain Imbalance
0.30
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00 0.05 0.10 0.15 0.20 0.25 0.30
stdev I

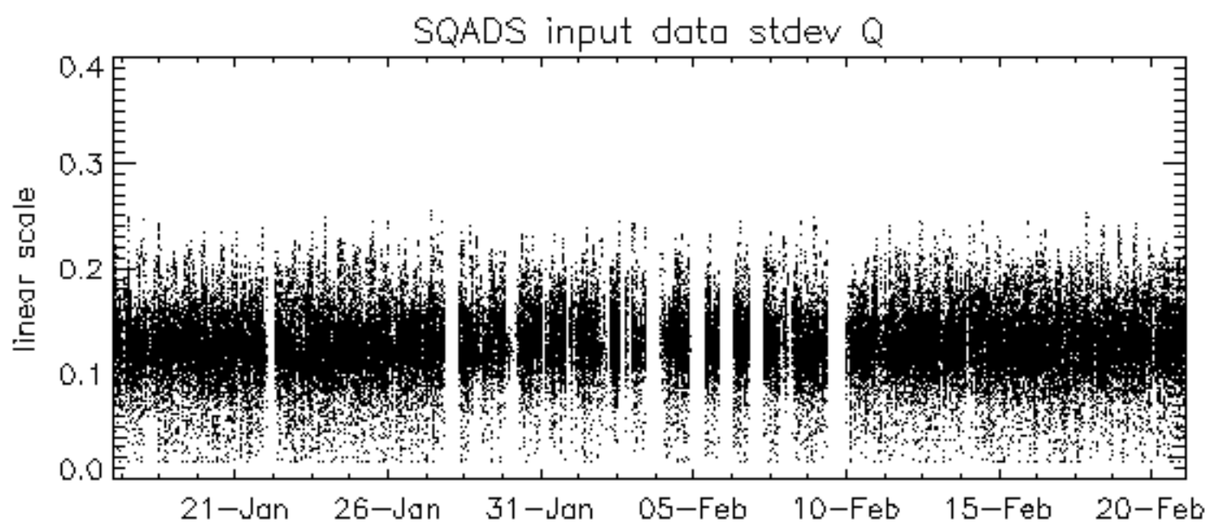

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

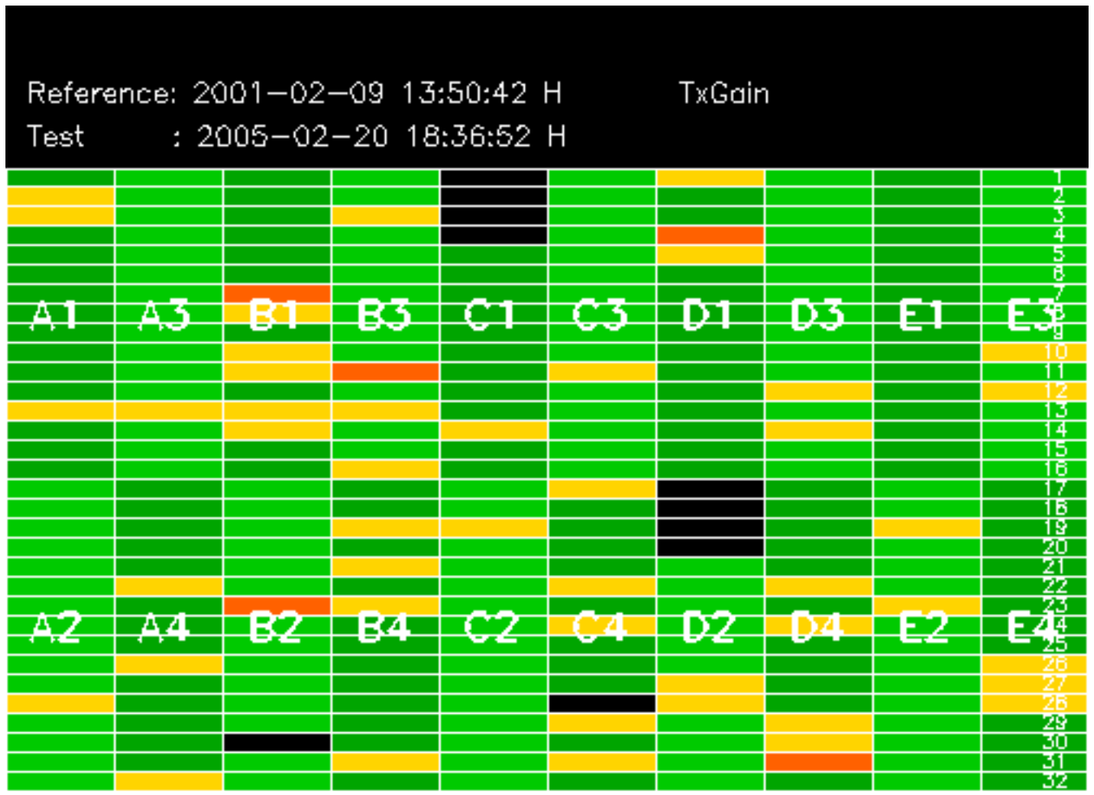

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

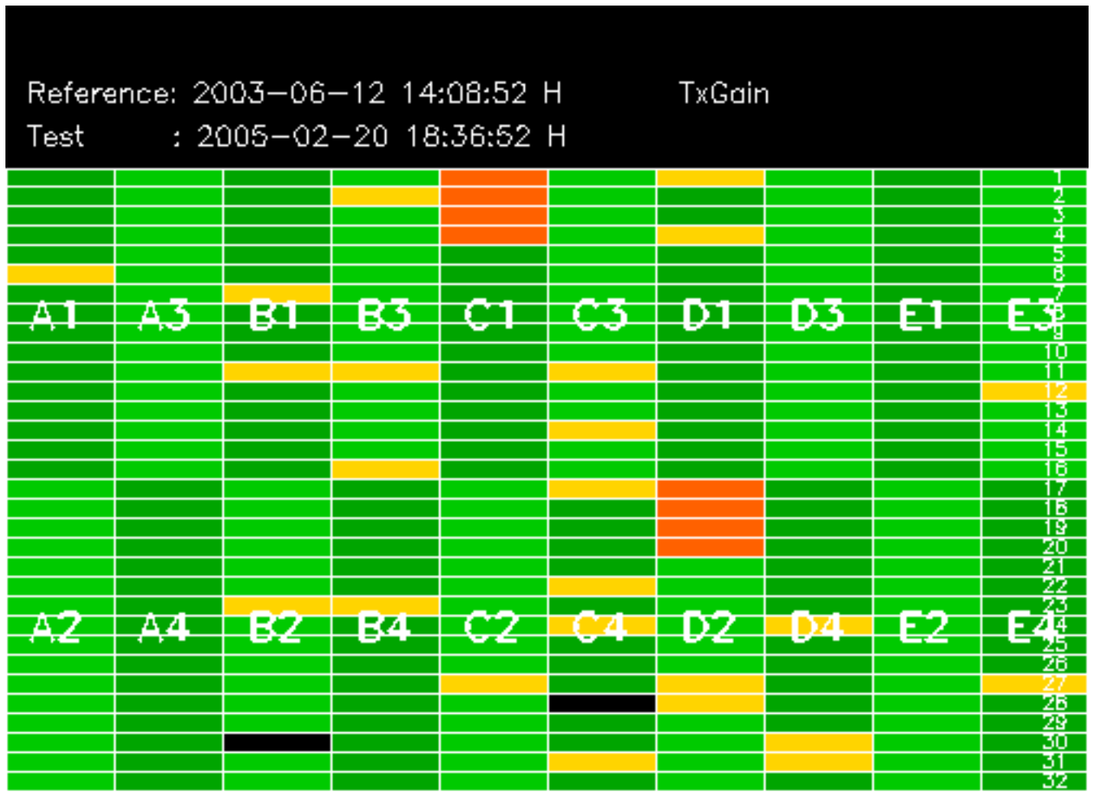

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Jan
26−Jan
31−Jan
05−Feb
10−Feb
15−Feb
20−Feb

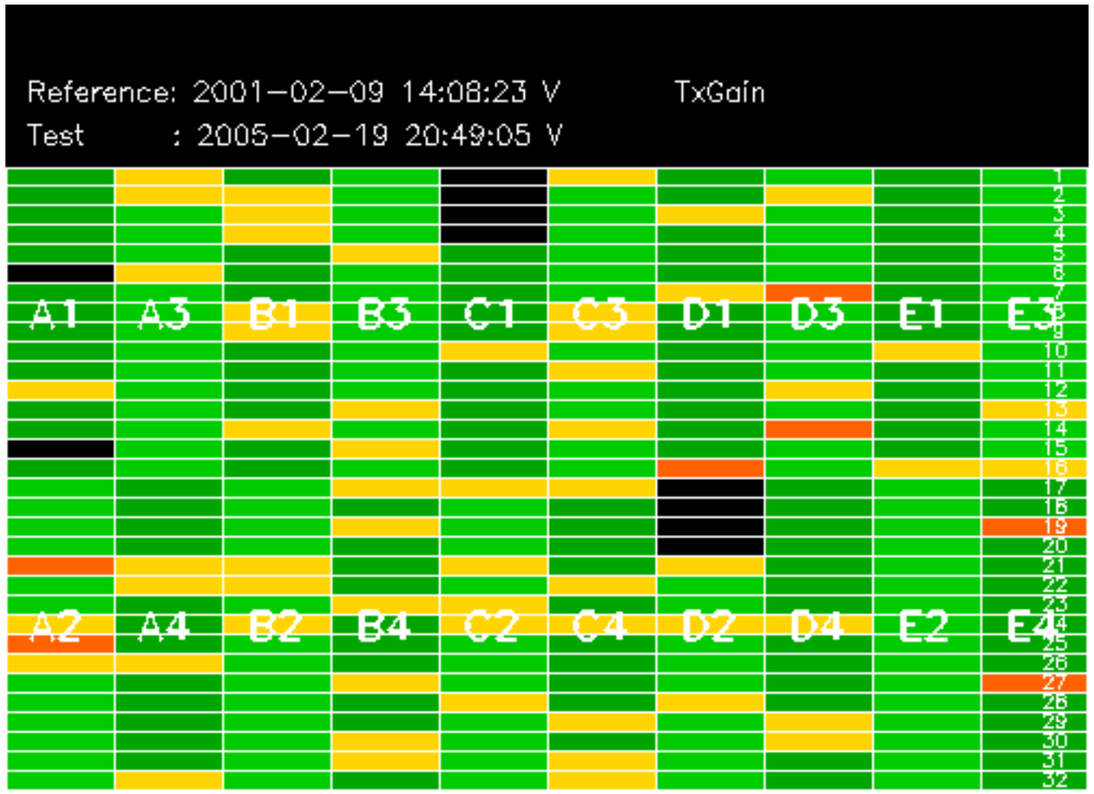

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21–Jan
26–Jan
31–Jan
05–Feb
10–Feb
15–Feb
20–Feb

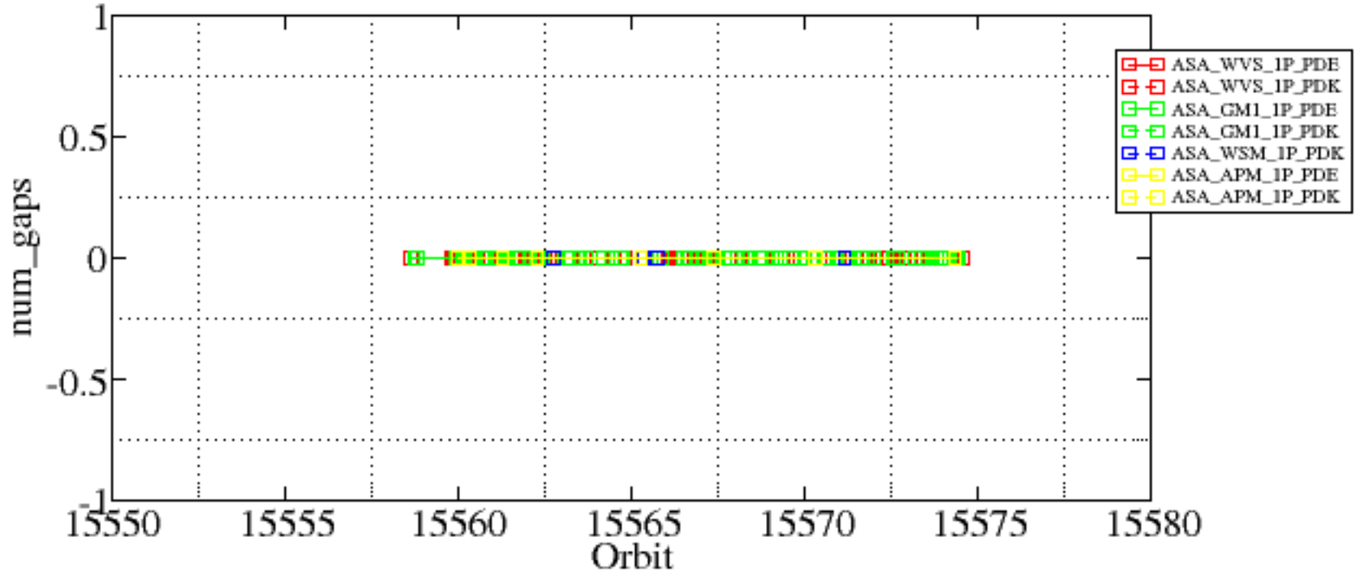

Reference: 2001-02-09 13:50:42 H
Test : 2005-02-20 18:36:52 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

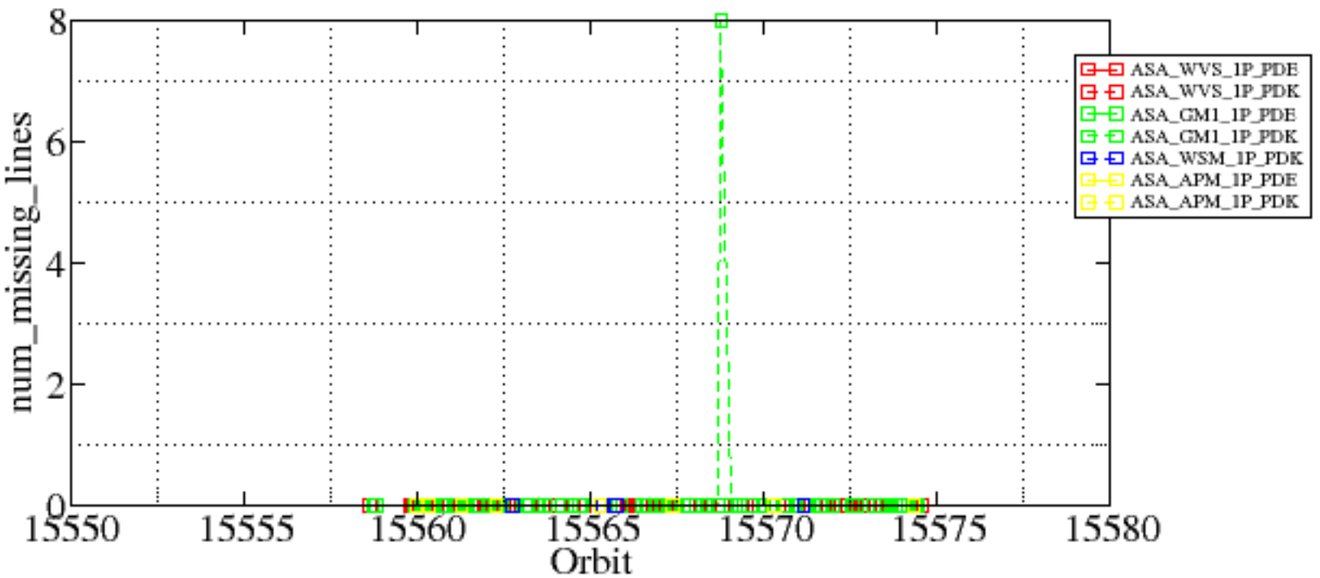

Reference: 2003-06-12 14:08:52 H
Test : 2005-02-20 18:36:52 H
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

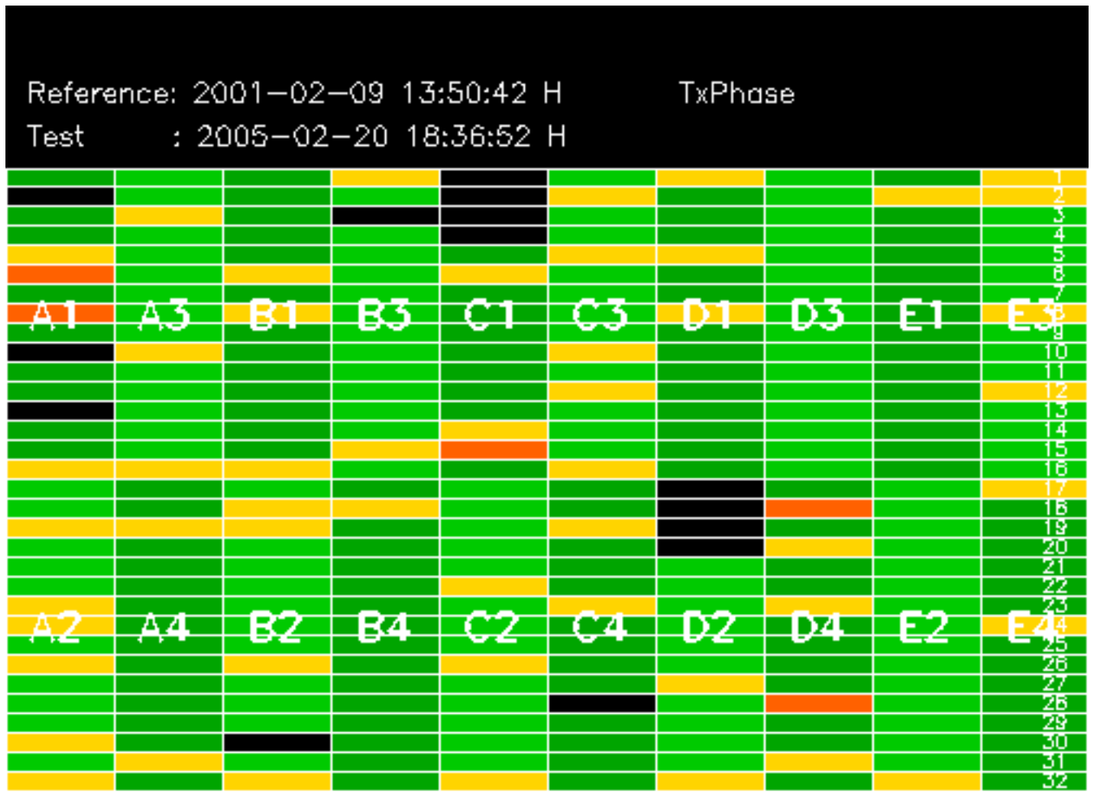

Reference: 2001-02-09 14:08:23 V
Test : 2005-02-19 20:49:05 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

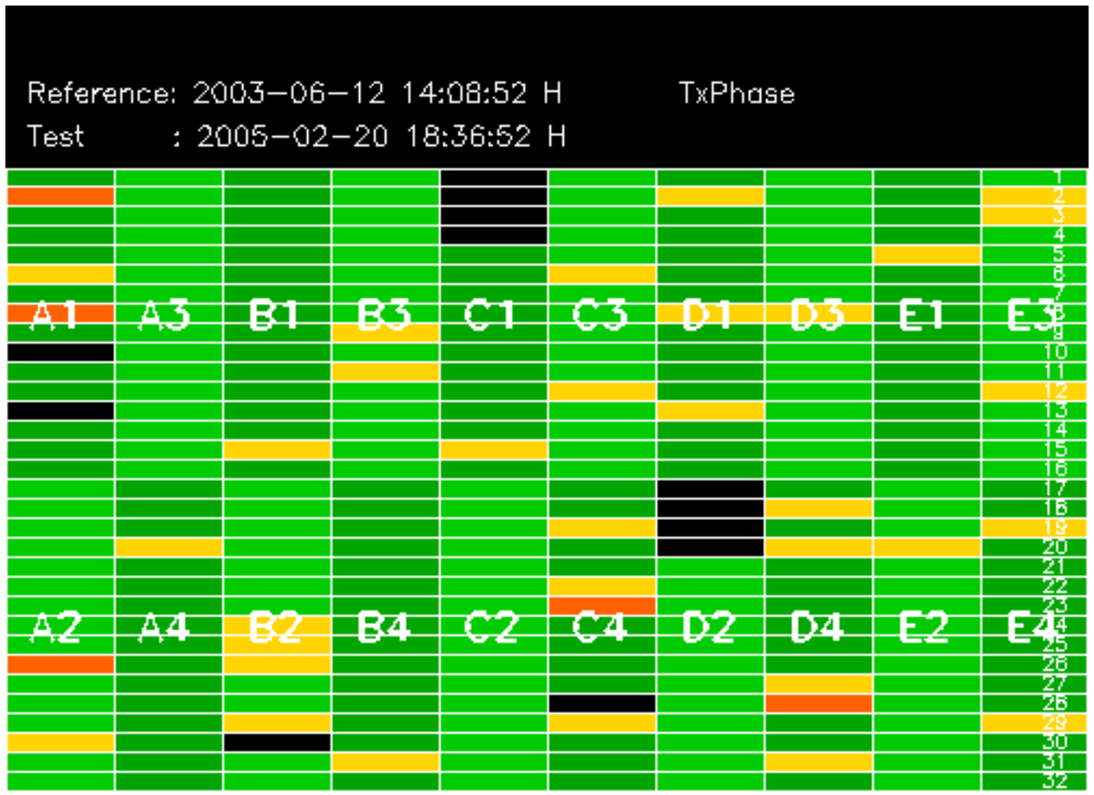

Reference: 2003-06-12 14:10:32 V
Test : 2005-02-19 20:49:05 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

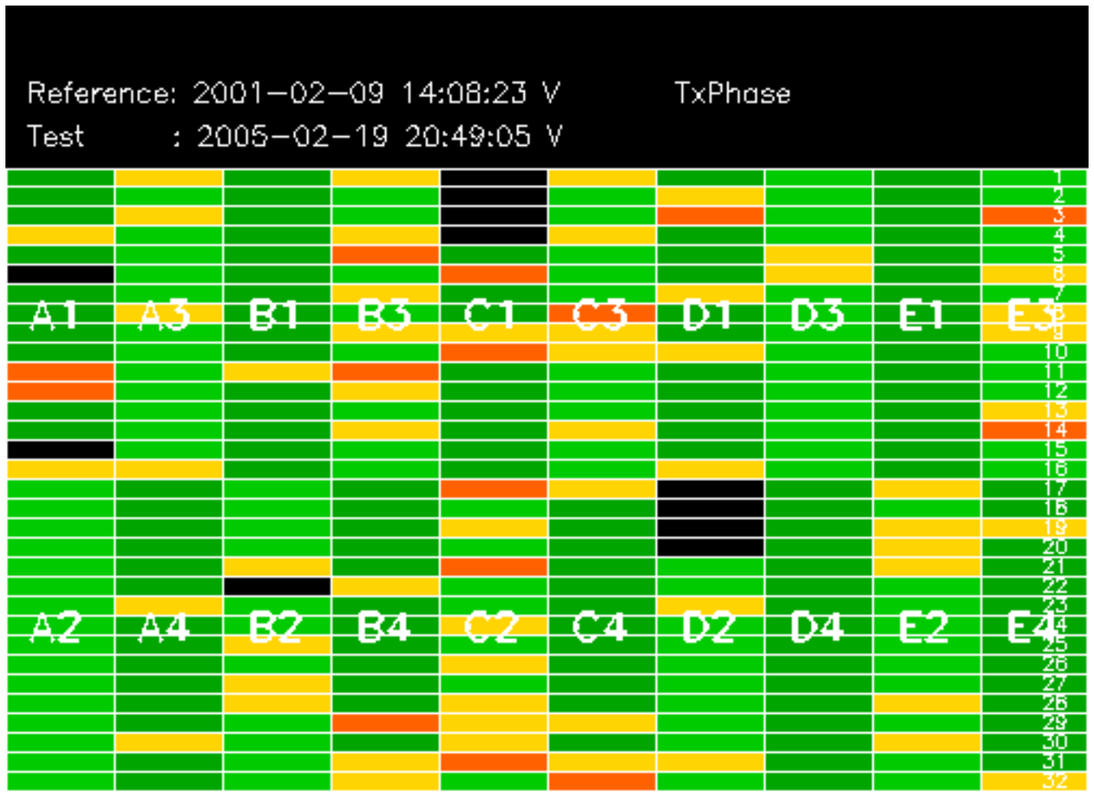
Summary of analysis for the last 3 days 2005022[901]
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems
<table border=1>
<tr> <th>Filename </th><th> num_gaps</th><th>num_missing_lines</th></tr>
<tr> <td>ASA_GM1_1PNPDK20050220_170523_000002532034_00484_15568_2863.N1 </td> <td>0 </td> <td>8 </td></tr>
</table>

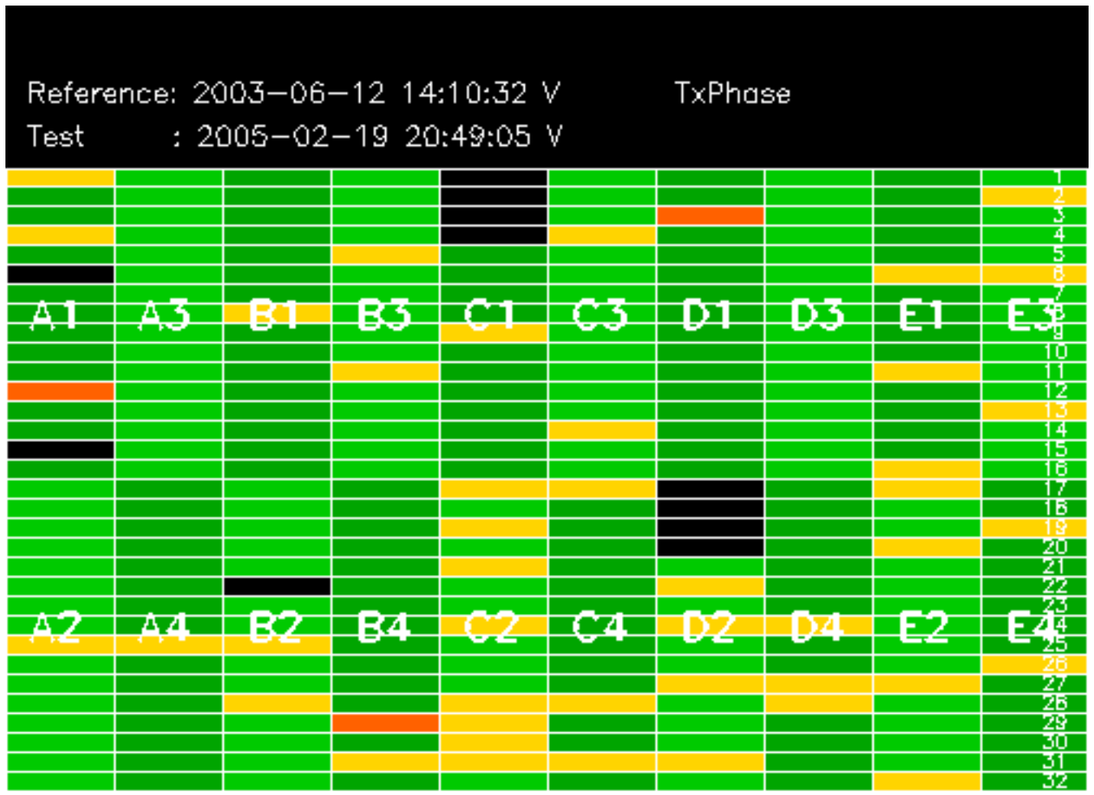

num_gaps
1
0.5
0
-0.5
-1
15550
15555
15560
15565
15570
15575
15580
Orbit
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

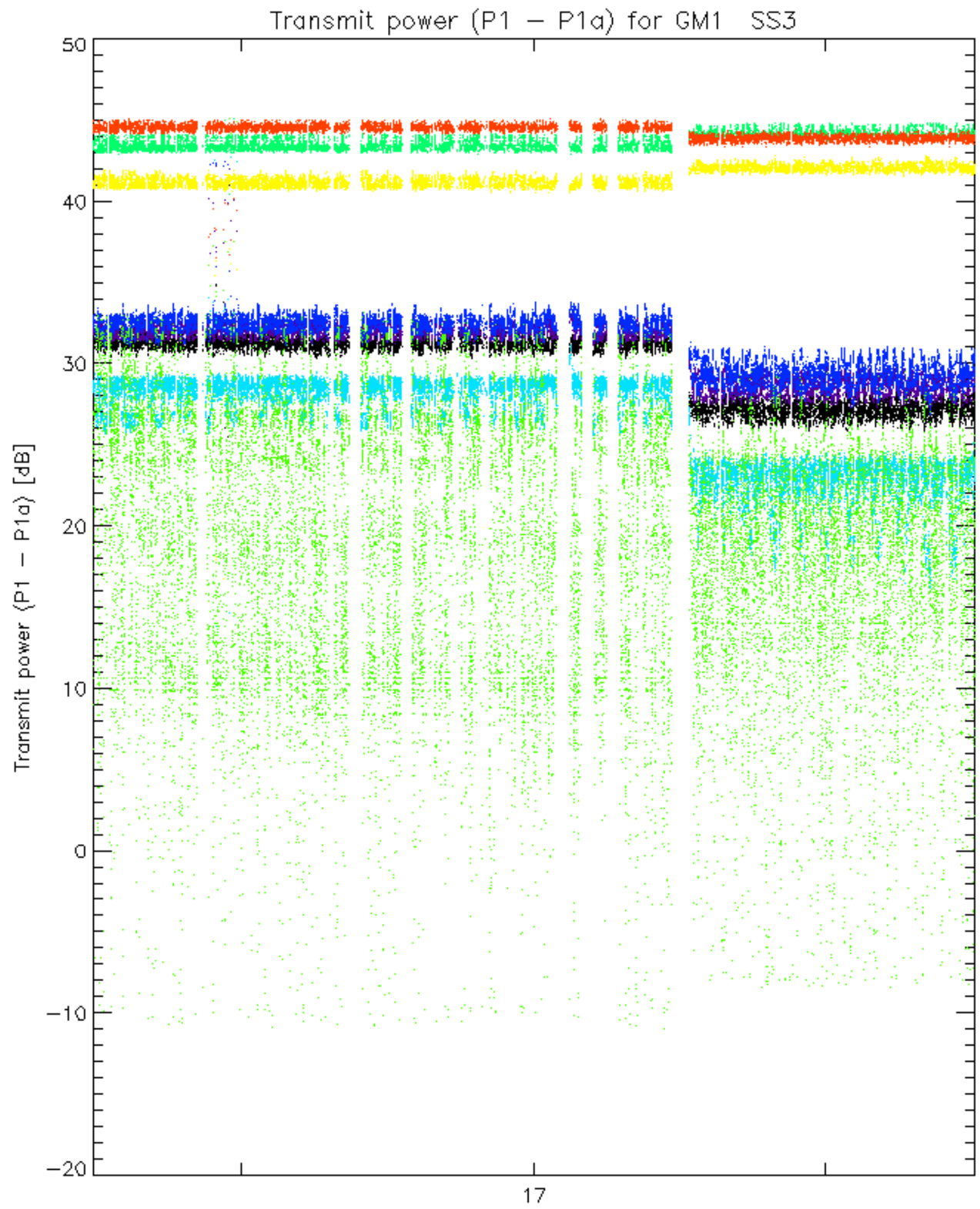

num_missing_lines
Orbit
0
2
4
6
8
15550
15555
15560
15565
15570
15575
15580
ASA_WVS_1P_PDE
ASA_WVS_1P_PDK
ASA_GM1_1P_PDE
ASA_GM1_1P_PDK
ASA_WSM_1P_PDK
ASA_APM_1P_PDE
ASA_APM_1P_PDK

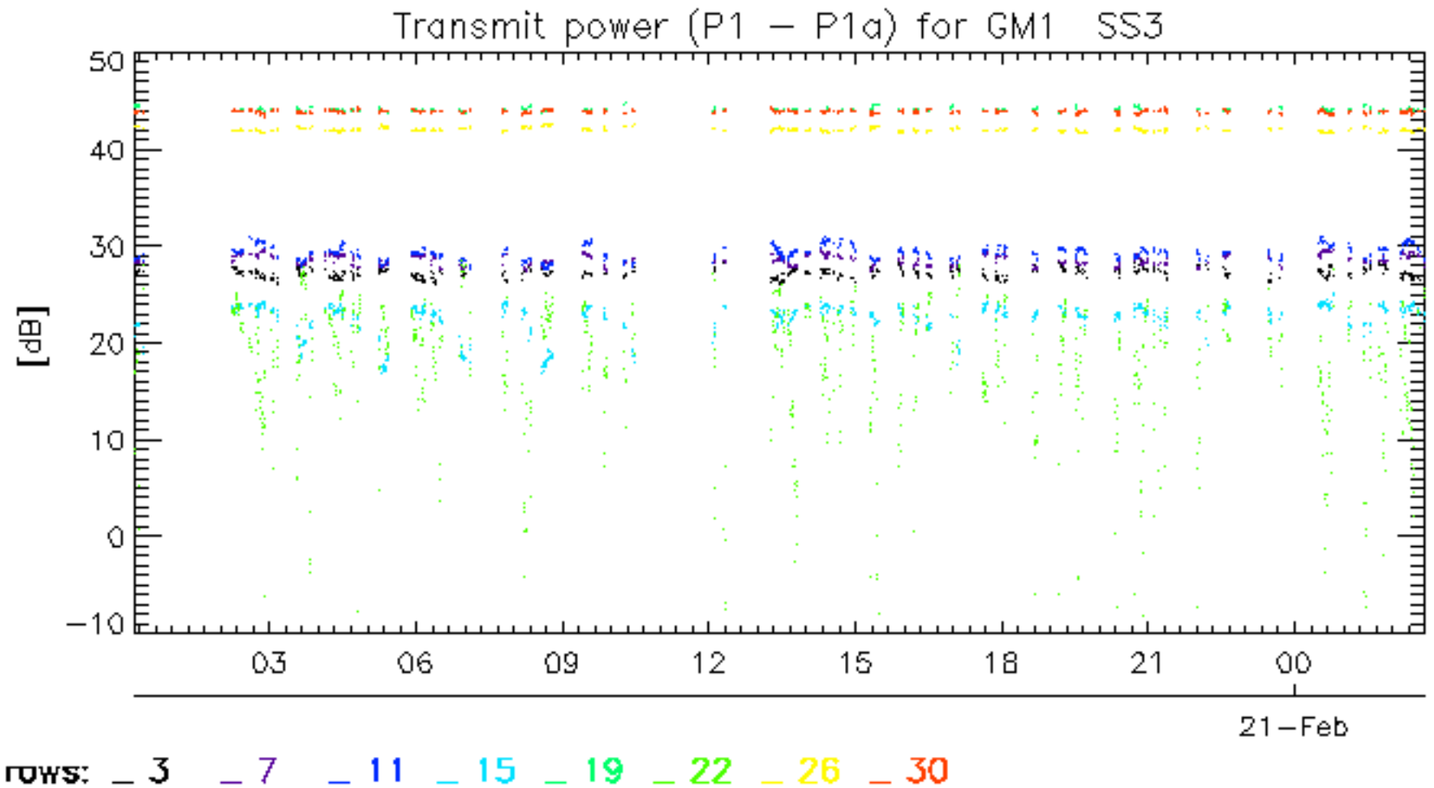

Reference: 2001-02-09 13:50:42 H
TxPhase
Test : 2005-02-20 18:36:52 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

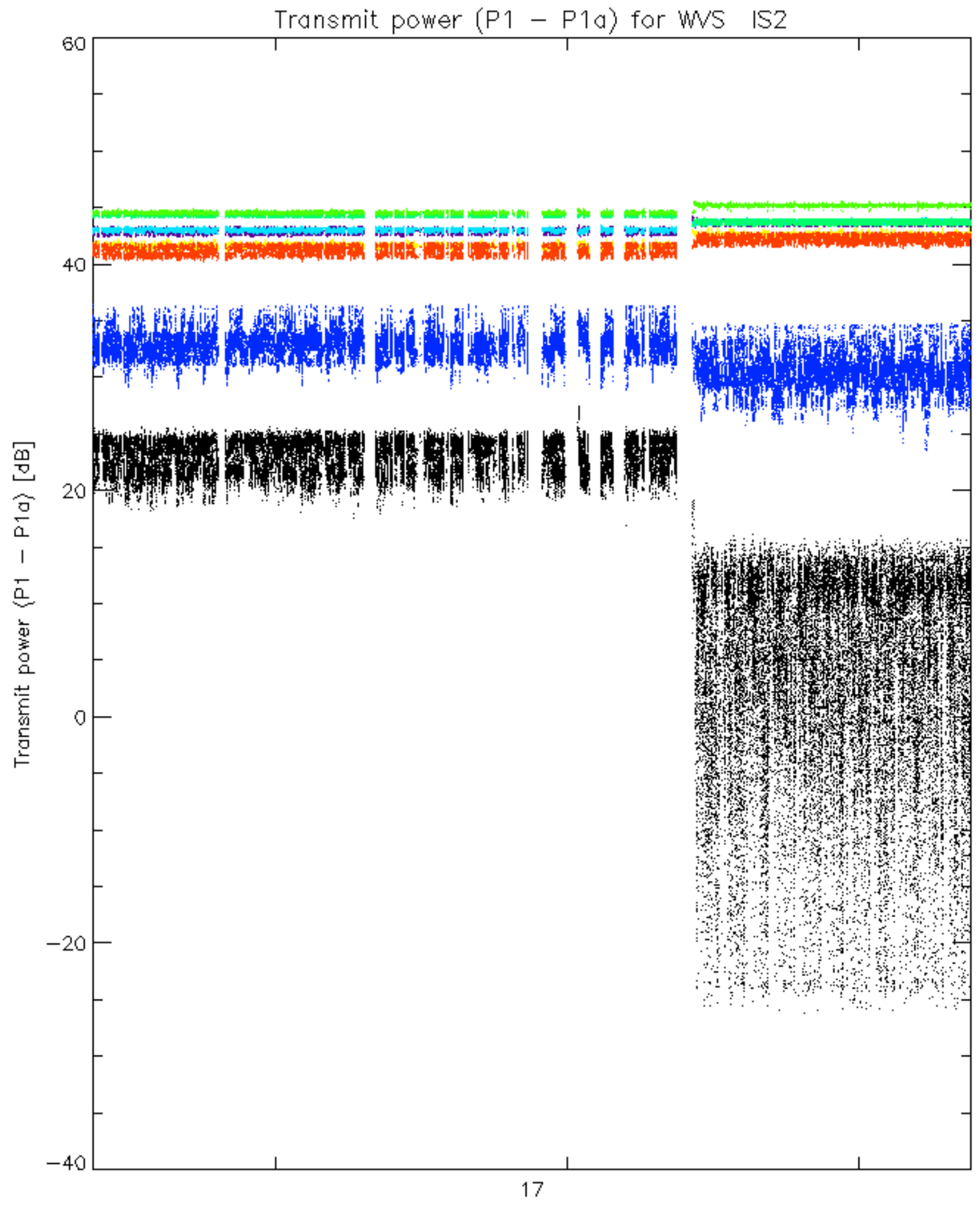

Reference: 2003-06-12 14:08:52 H
Test : 2005-02-20 18:36:52 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4

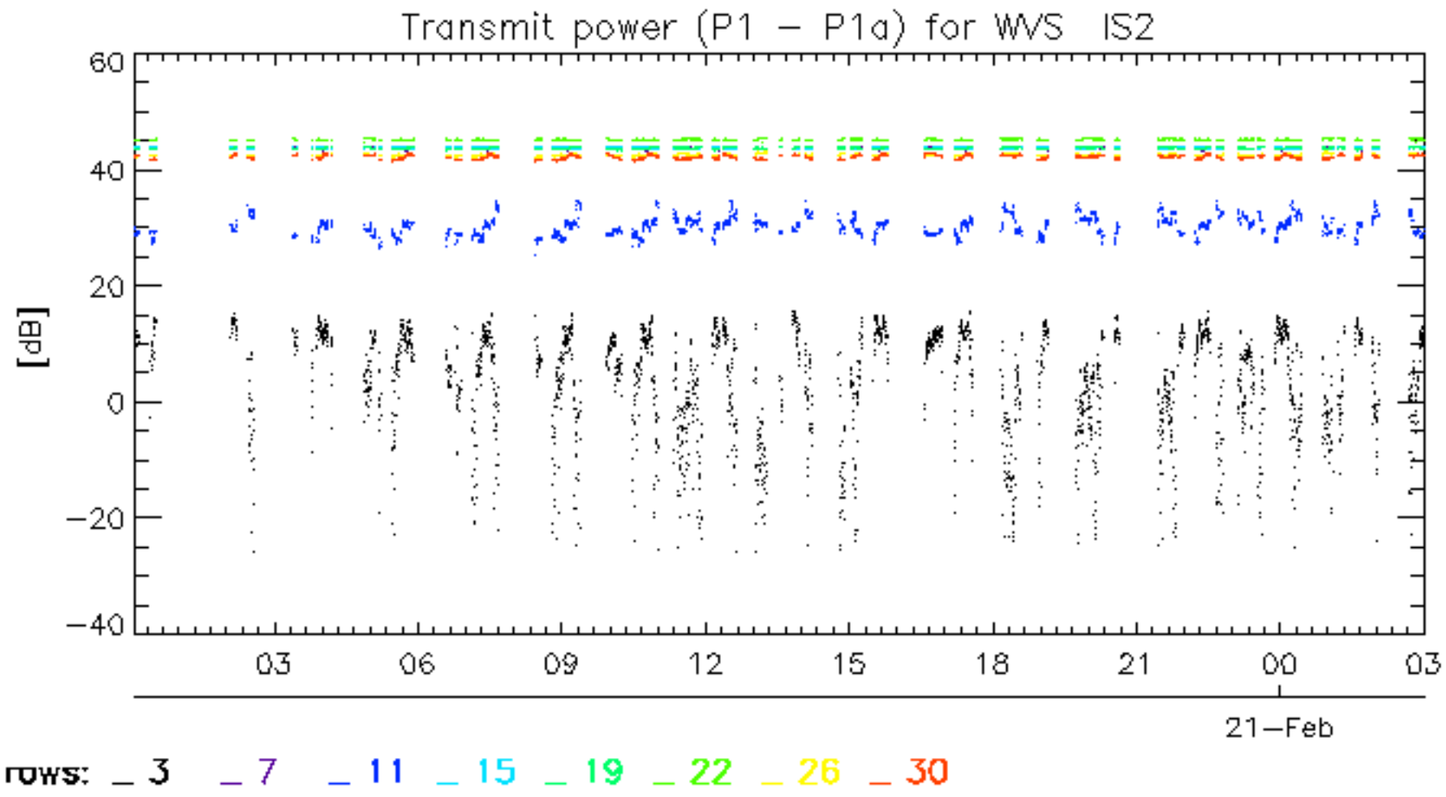

Reference: 2001-02-09 14:08:23 V
Test : 2005-02-19 20:49:05 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2005-02-19 20:49:05 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Transmit power (P1 – P1a) for GM1 SS3
Transmit power (P1 – P1a) [dB]
50
40
30
20
10
0
−10
−20
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
03
06
09
12
15
18
21
00
21−Feb
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
17
rows: 3 7 11 15 19 22 26 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
60
40
20
0
−20
−40
03
06
09
12
15
18
21
00
03
21–Feb
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.