# REPORT OF 040325

### last update on Thu Mar 25 16:46:16 GMT 2004



## 1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA_WVS_1P) products, which are the available few hours after the acquisition, on the high rate browse (BP) products and on the Module Stepping (MS) product.

## 2 - Summary

### 2.1 - Instrument Unavailability

No unavailabilities during the reported period.

### 2.2 - Browse Visual Inspection

No anomalies observed on available browse products

### 2.3 - Data Analysis

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

# 3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
MS OF 24-MAR-2004 are missing.

| Polarisation | Start Time |
|---|---|
| V | 20040323 202833 |
| H | 20040323 202713 |

**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

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## 4.2 - Cyclic statistics

### P1 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|---|---|---|---|---|
| 3 | P1 | -3.607155 | 0.005924 | 0.048045 |
| 7 | P1 | -3.316018 | 0.009462 | 0.050925 |
| 11 | P1 | -4.795595 | 0.264215 | 0.765831 |
| 15 | P1 | -5.006520 | 0.034382 | 0.018309 |
| 19 | P1 | -3.348548 | 0.072948 | -0.023516 |
| 22 | P1 | -4.544875 | 0.070884 | -0.003000 |
| 24 | P1 | -5.098536 | 0.091380 | 0.036806 |
| 28 | P1 | -4.580697 | 0.076392 | -0.051992 |

### P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|---|---|---|---|---|
| 3 | P2 | -22.382807 | 0.081391 | -0.028372 |
| 7 | P2 | -22.890896 | 0.130687 | -0.021633 |
| 11 | P2 | -16.012417 | 0.163860 | 0.058106 |
| 15 | P2 | -7.173504 | 0.090842 | 0.014492 |
| 19 | P2 | -9.485534 | 0.178167 | 0.003661 |
| 22 | P2 | -17.673717 | 0.103242 | 0.039741 |
| 24 | P2 | -21.031878 | 0.114352 | -0.033055 |
| 28 | P2 | -16.592232 | 0.087565 | -0.010046 |

### P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|---|---|---|---|---|
| 3 | P3 | -8.127242 | 0.002989 | 0.006494 |
| 7 | P3 | -8.127251 | 0.002988 | 0.006543 |
| 11 | P3 | -8.127264 | 0.002988 | 0.006613 |
| 15 | P3 | -8.127278 | 0.002990 | 0.006713 |
| 19 | P3 | -8.127275 | 0.002990 | 0.006708 |
| 22 | P3 | -8.127268 | 0.002989 | 0.006652 |
| 24 | P3 | -8.127259 | 0.002988 | 0.006611 |

| | | | | |
|---|---|---|---|---|
| 28 | P3 | -8.127222 | 0.002983 | 0.006588 |

### 4.3 - cal pulses monitoring (all rows)



## 5 - RAW data statistics

No anomalies observed.

### 5.1 - Input mean I/Q

| channel | stat | DSS-B |
|---|---|---|
| MEAN I | mean | 0.000468908 |
| | stdev | 2.37948e-07 |
| MEAN Q | mean | 0.000487681 |
| | stdev | 2.62322e-07 |



### 5.2 - Input stdev I/Q

| channel | stat | DSS-B |
|---|---|---|
| STDEV I | mean | 0.127215 |
| | stdev | 0.00113299 |
| STDEV Q | mean | 0.127450 |
| | stdev | 0.00114575 |



### 5.3 - Gain imbalance I/Q



## 6 - Doppler Analysis

## 6.1 - Unbiased Doppler Error

| Evolution of unbiased Doppler error (Real - Expected) |
| --- |
| Acsending |
| Descending |

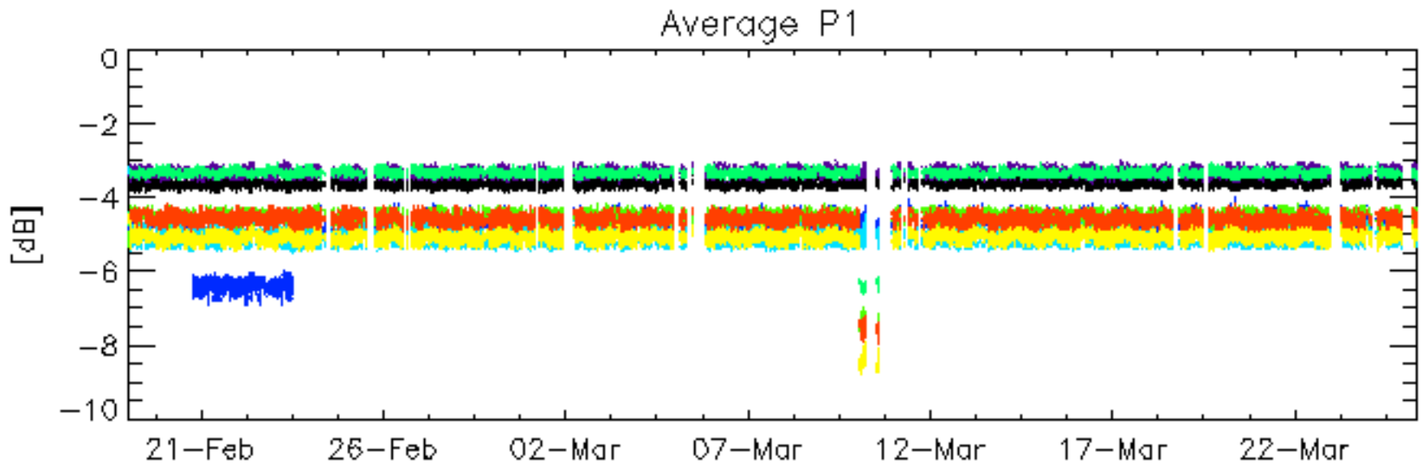
## 6.2 - Absolute Doppler

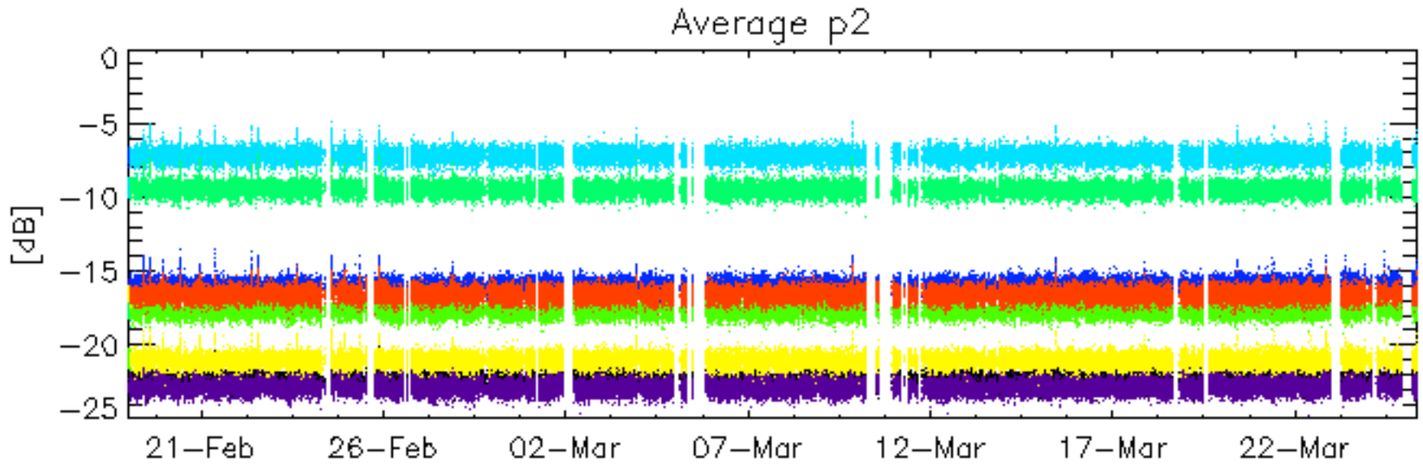
| Evolution of Absolute Doppler |
| --- |
| Acsending |
| Descending |

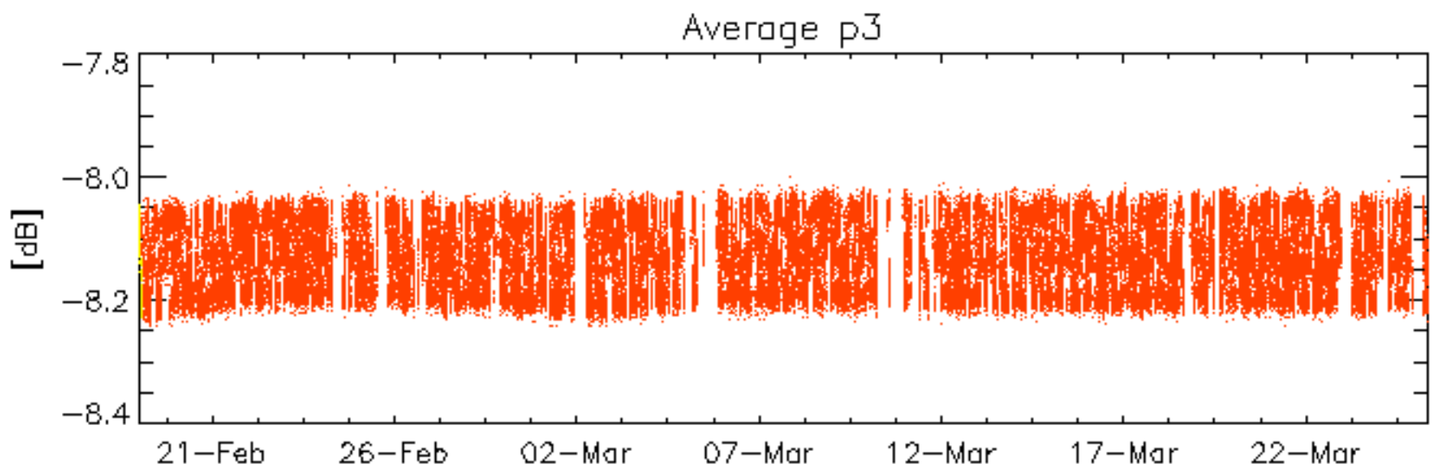
## 6.3 - Doppler evolution versus ANX

| Evolution Doppler error versus ANX |
| --- |
| ☒ |

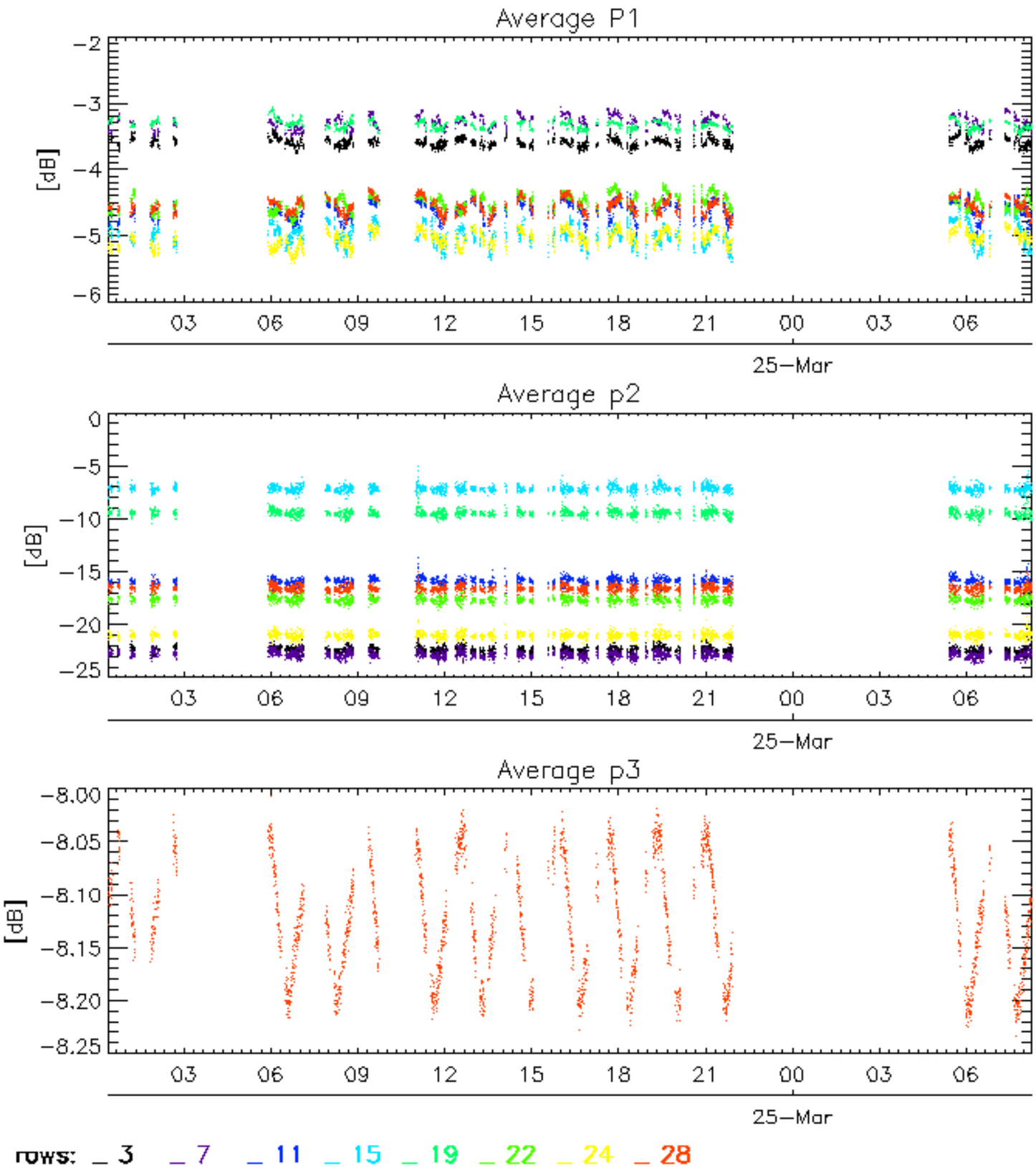
| Evolution Doppler error versus ANX |
| --- |
| ☒ |



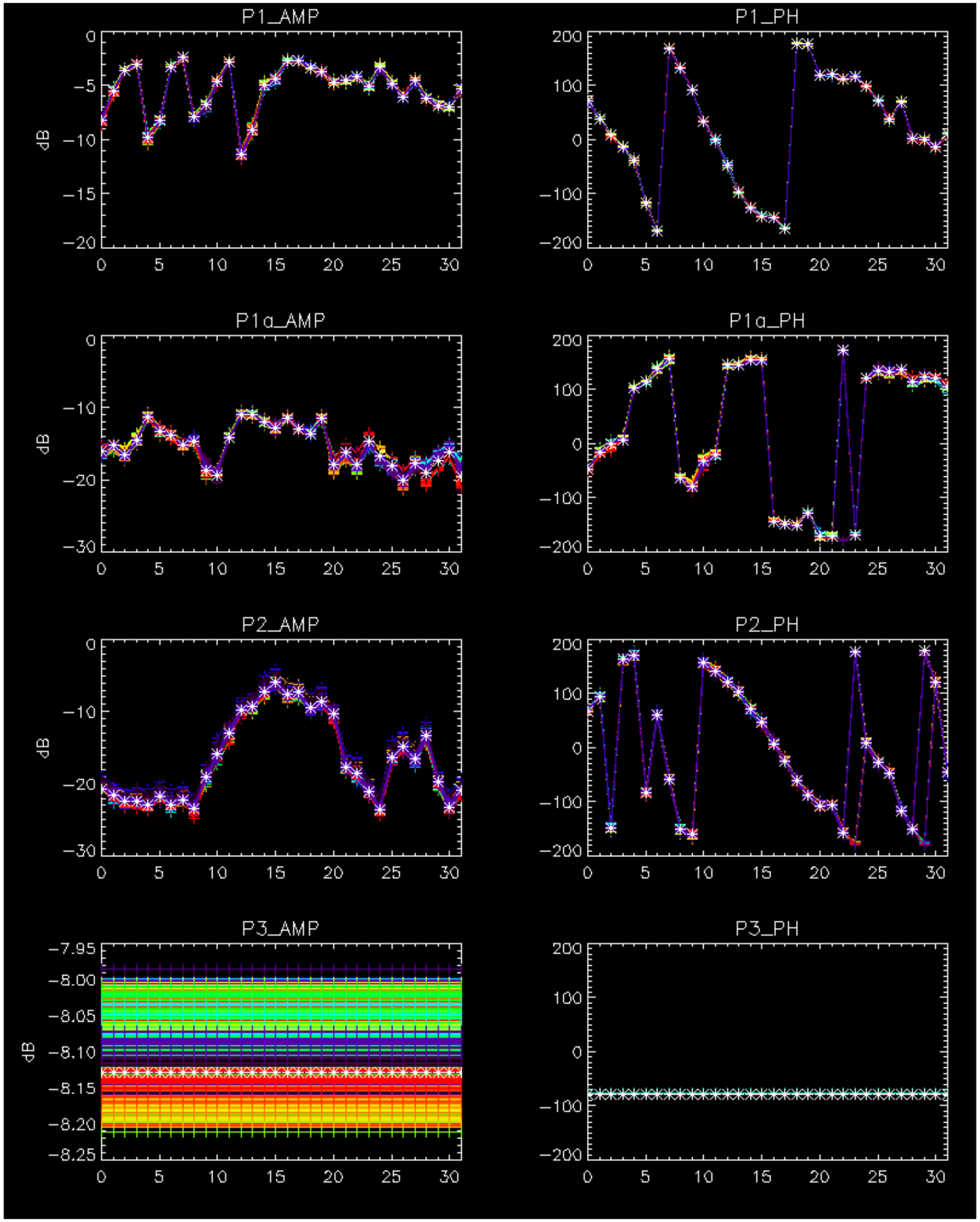




rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 28


Average P1
[dB]
−2
−3
−4
−5
−6
03
06
09
12
15
18
21
00
03
06
25−Mar
Average p2
[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
06
25−Mar
Average p3
[dB]
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
03
06
09
12
15
18
21
00
03
06
25−Mar
rows: 3 7 11 15 19 22 24 28

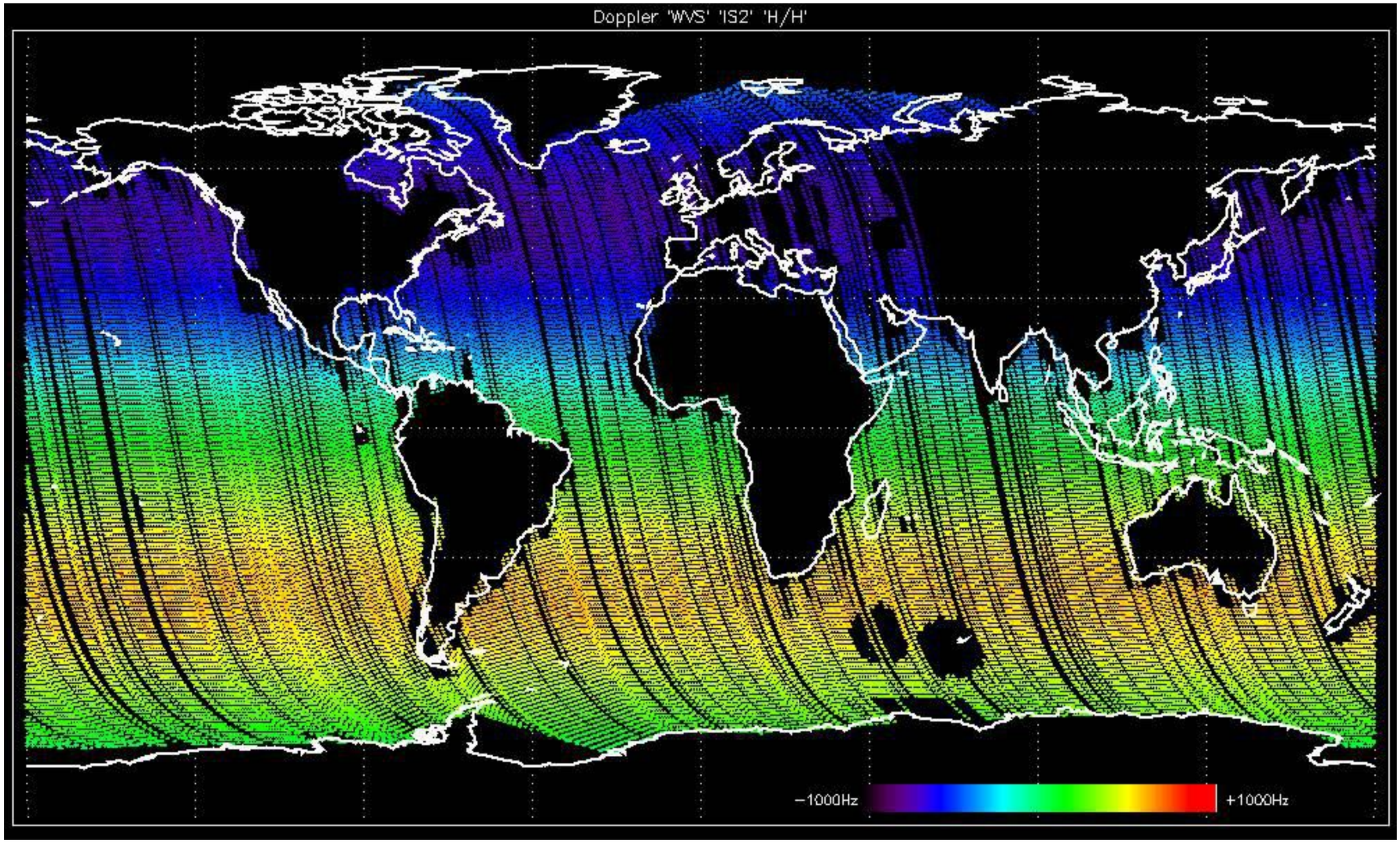
No anomalies observed on available browse products

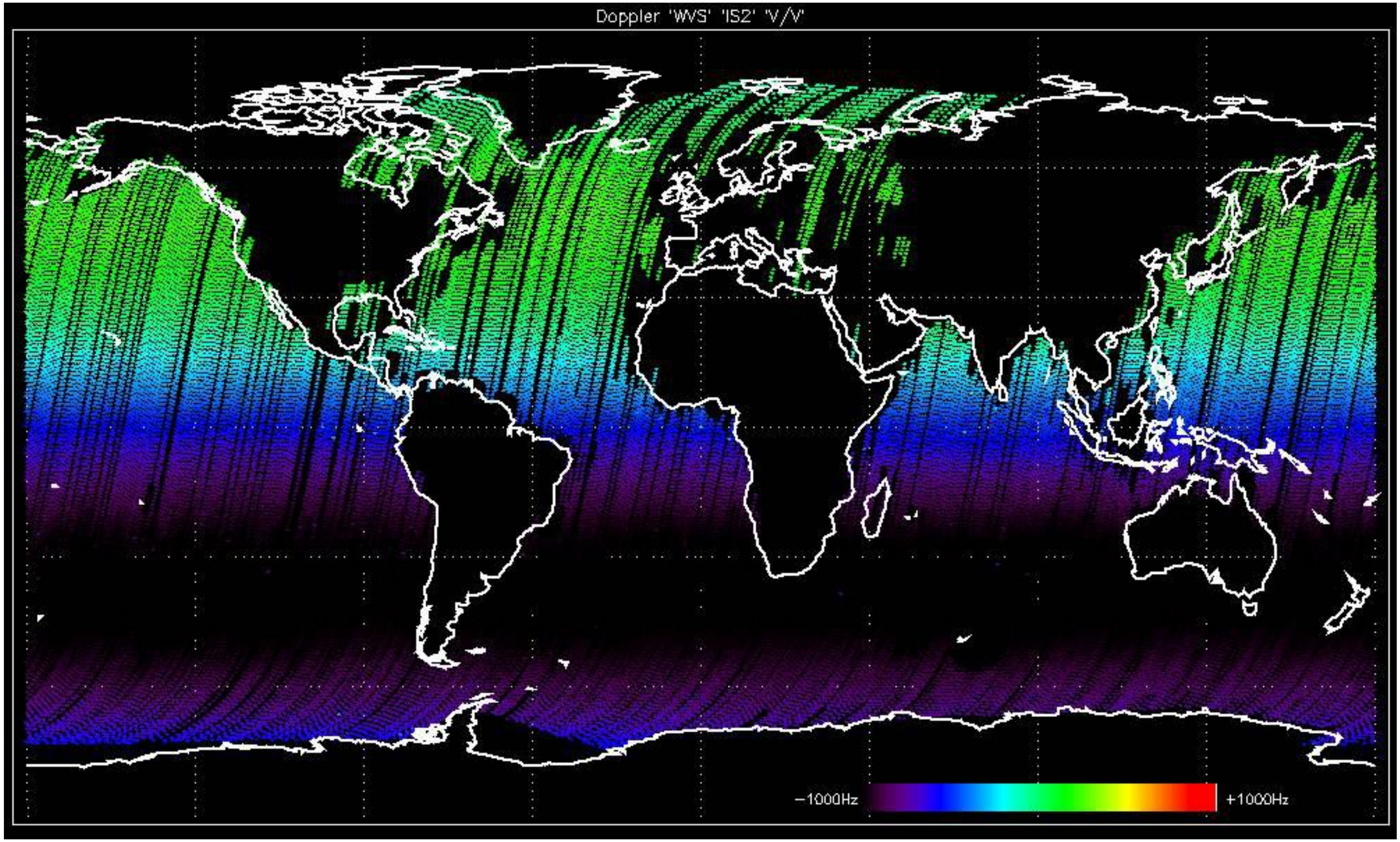
No anomalies observed.

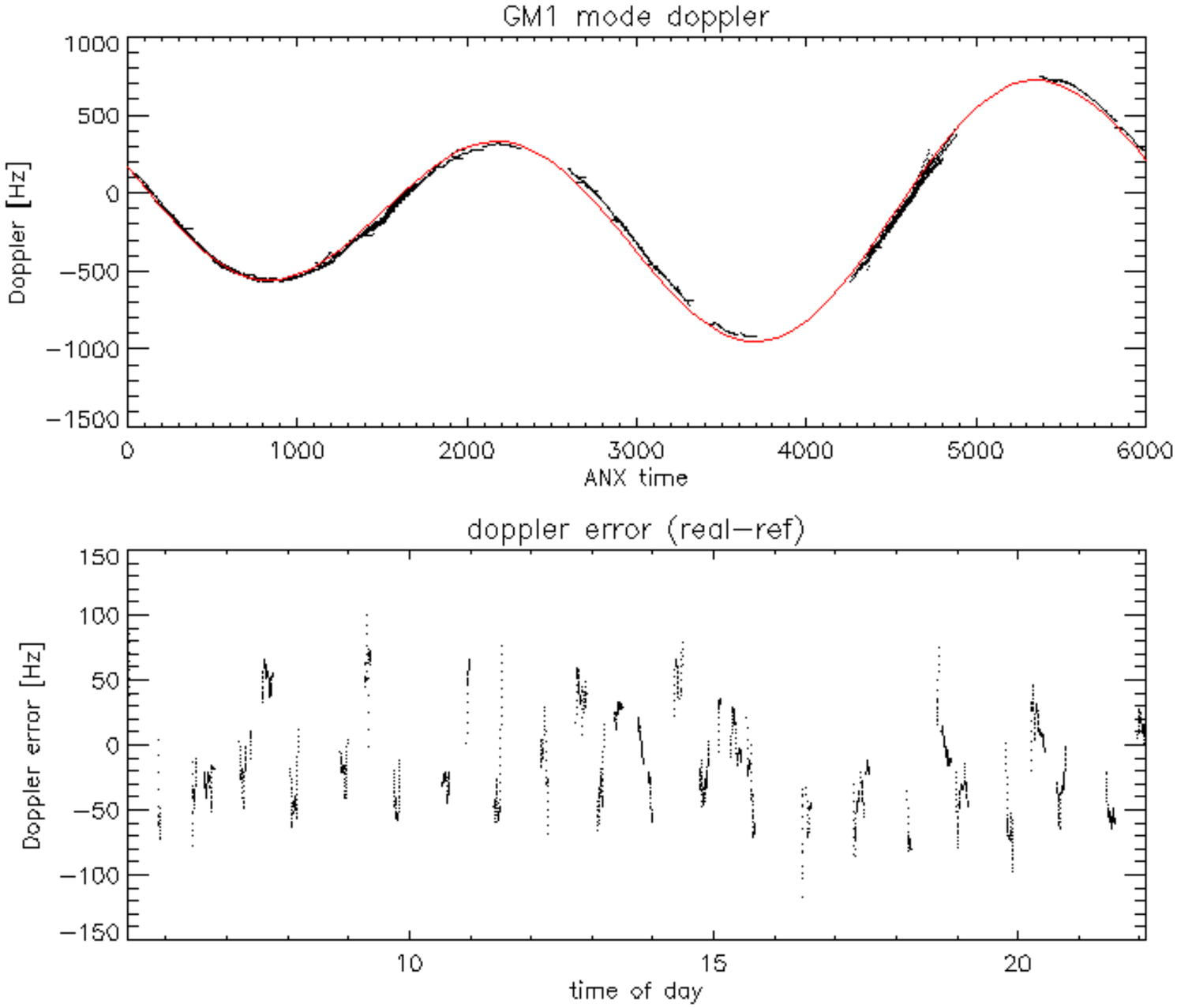

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.95
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

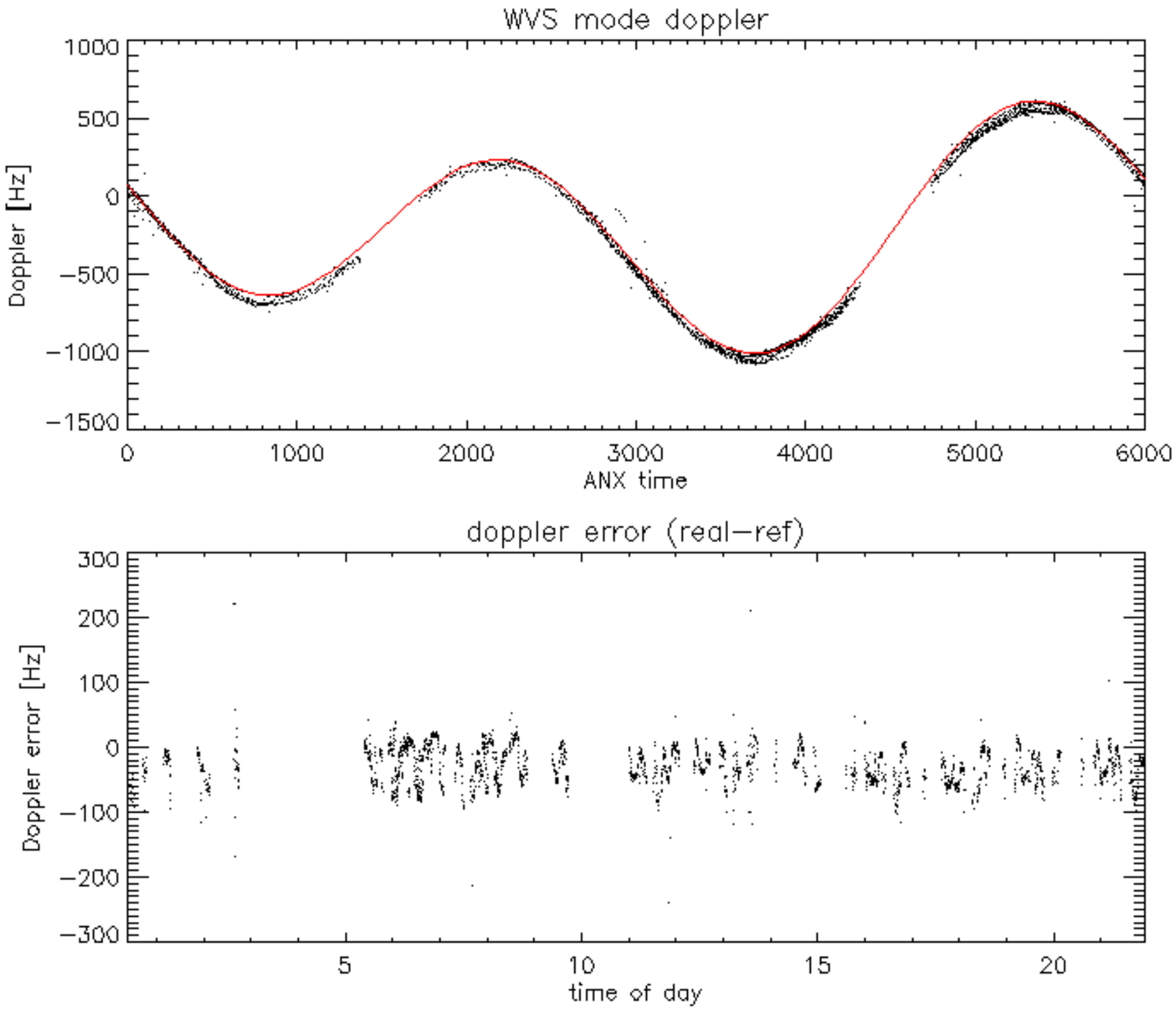
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

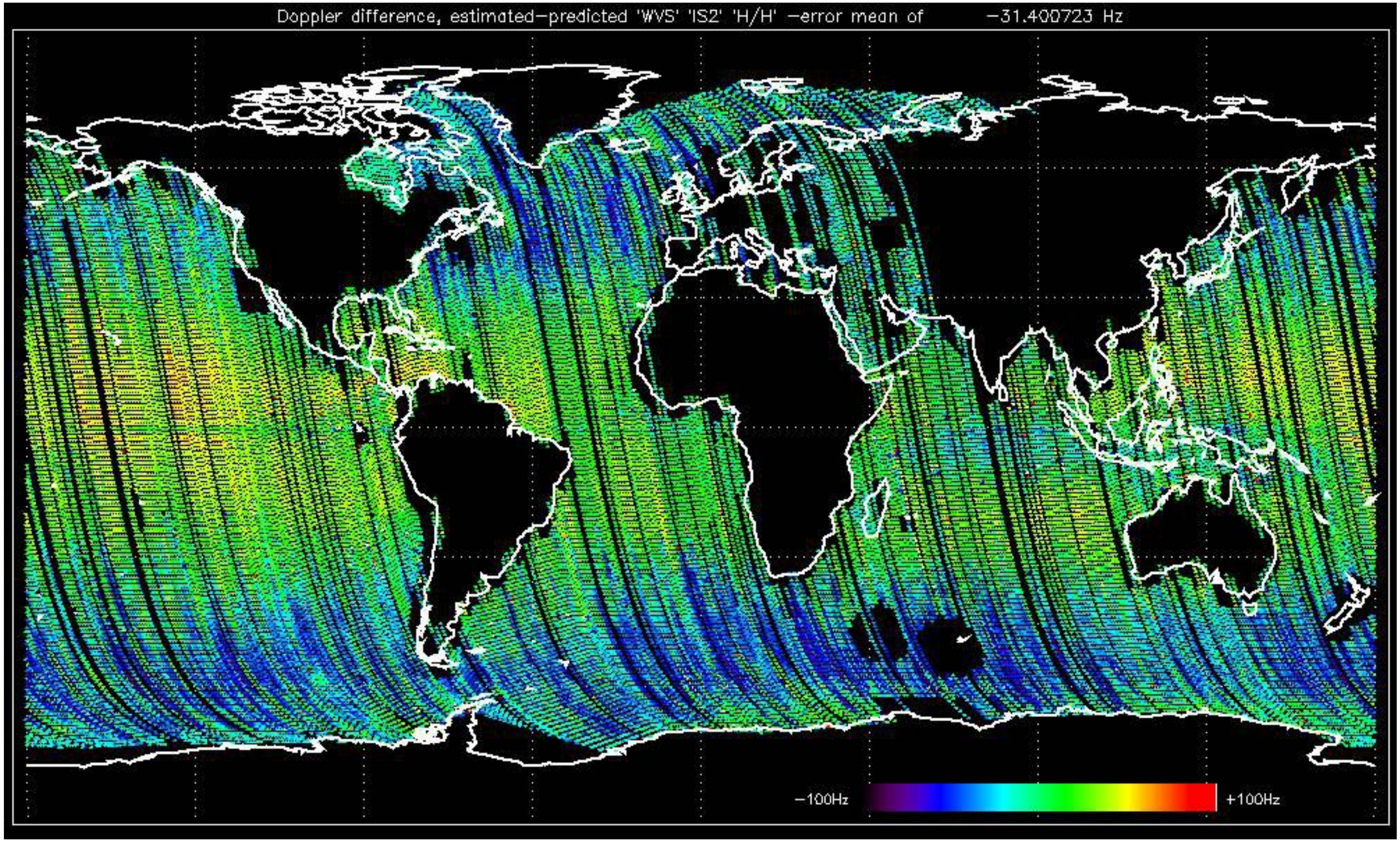
Preliminary report.The data is not yet controled

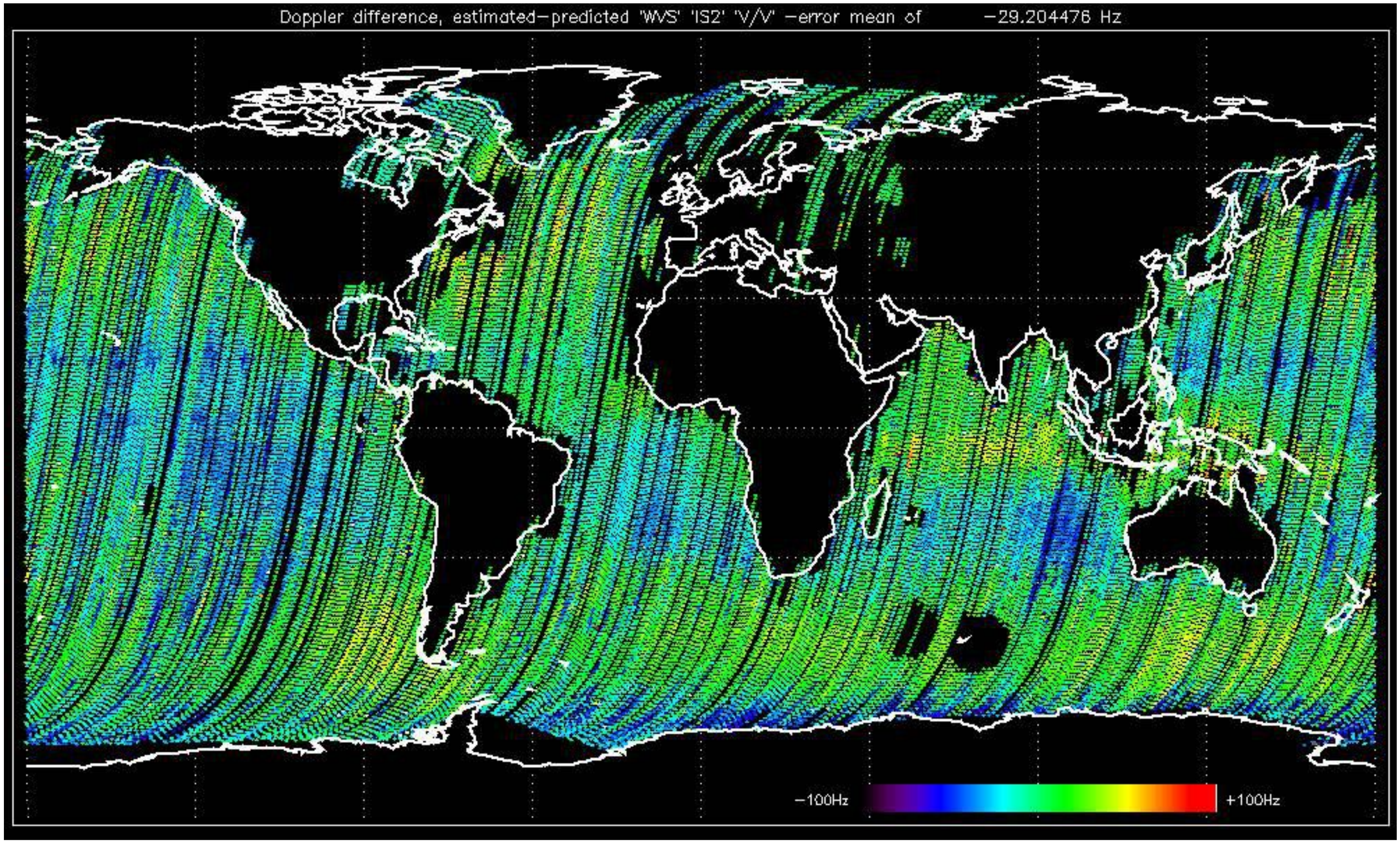

Doppler 'WVS' 'IS2' 'H/H'
−1000Hz
+1000Hz


Doppler 'WVS' 'IS2' 'V/V'
−1000Hz
+1000Hz


GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
150
100
50
0
−50
−100
−150
10
15
20
time of day

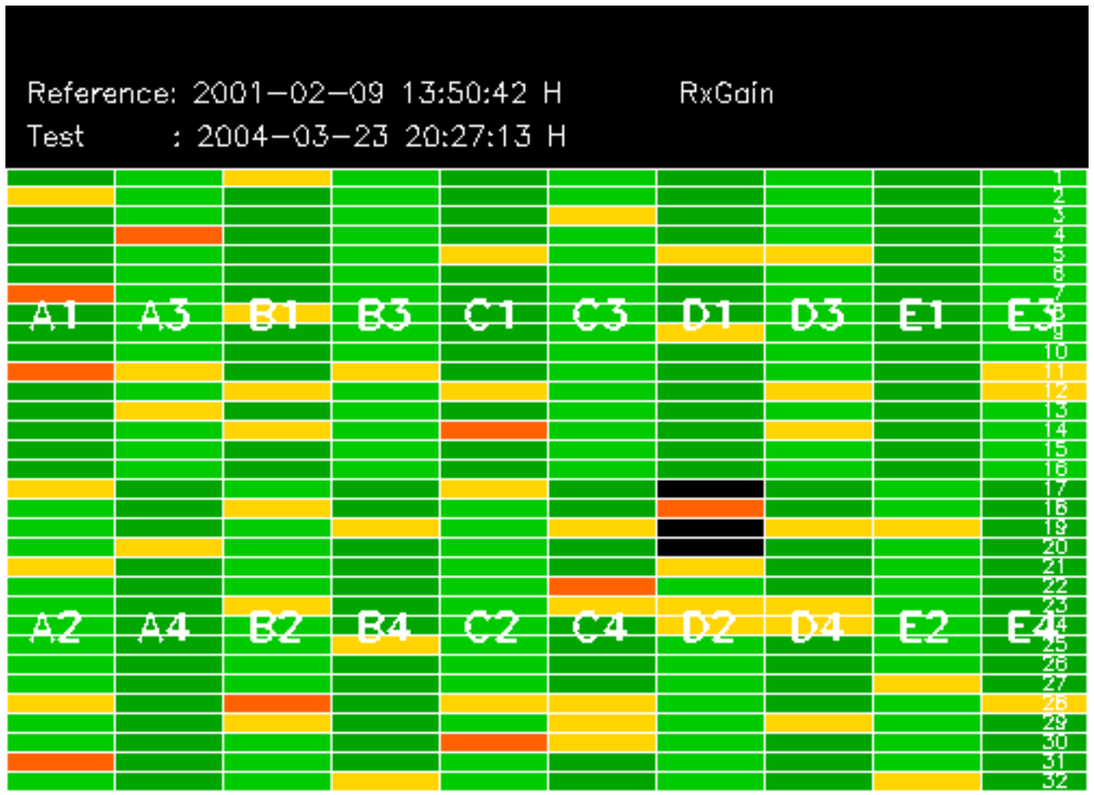

WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
ANX time
doppler error (real−ref)
Doppler error [Hz]
300
200
100
0
−100
−200
−300
5
10
15
20
time of day

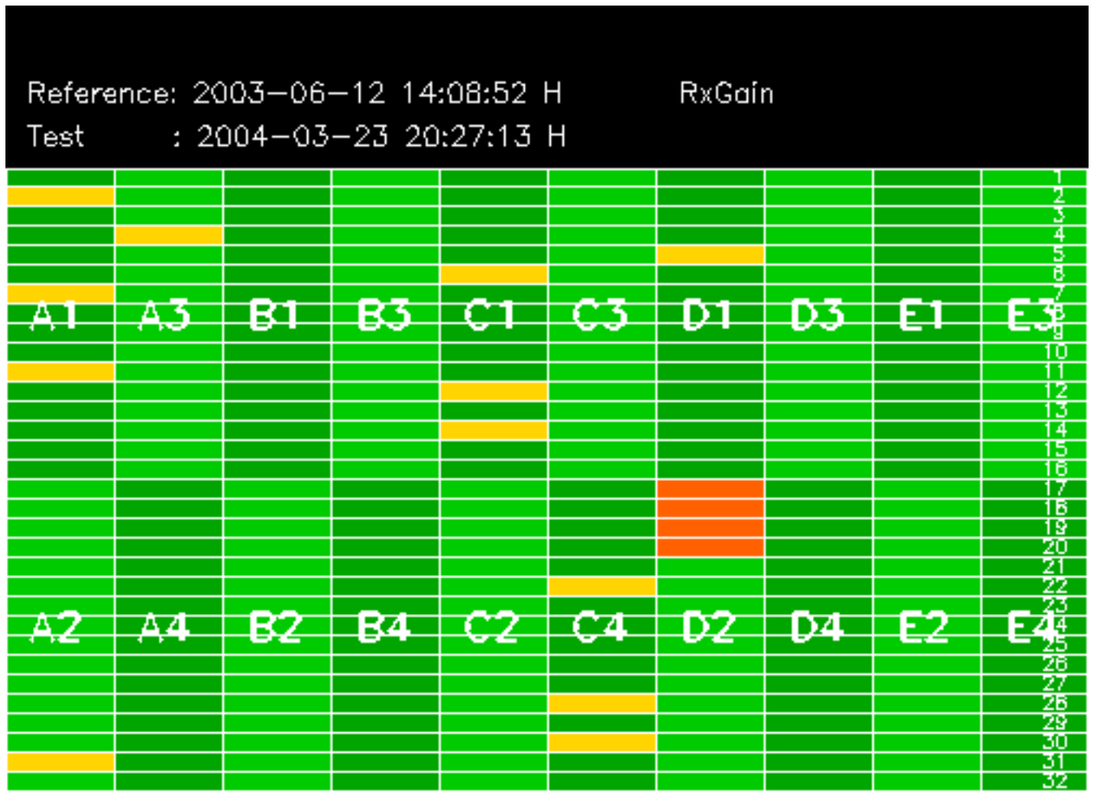

Doppler difference, estimated-predicted 'WVS' 'IS2' 'H/H' -error mean of -31.400723 Hz
-100Hz
+100Hz


Doppler difference, estimated−predicted 'WVS' 'IS2' 'V/V' −error mean of −29.204476 Hz
−100Hz
+100Hz

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
MS OF 24-MAR-2004 are missing.

No anomalies observed.


Reference: 2001-02-09 13:50:42 H
Test : 2004-03-23 20:27:13 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 : 2004-03-23 20:27:13 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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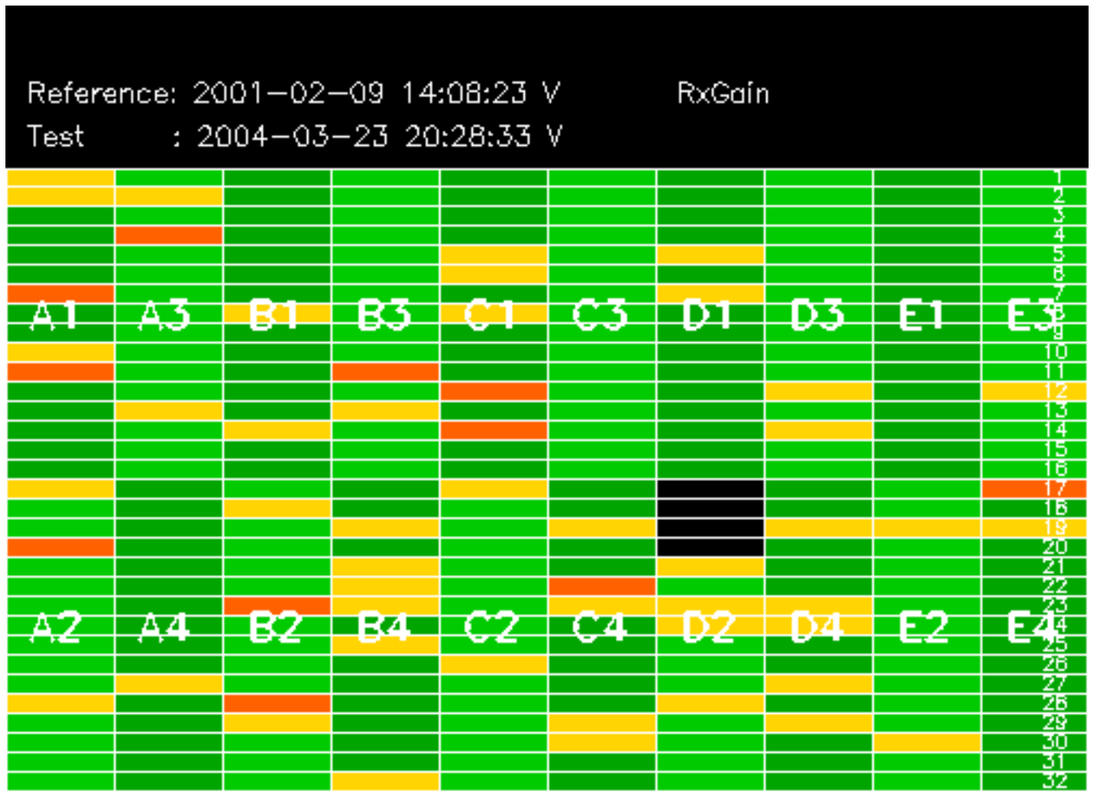
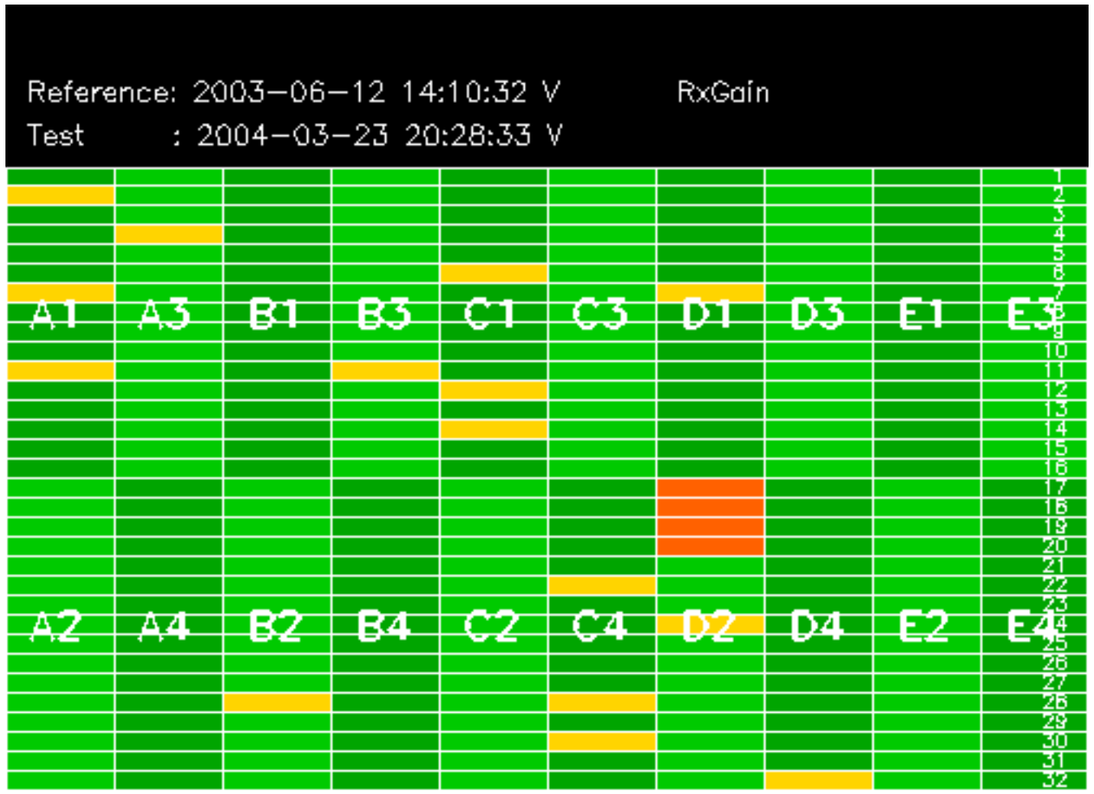

Reference: 2001-02-09 14:08:23 V
Test : 2004-03-23 20:28:33 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-03-23 20:28:33 V
RxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
1
2
3
4
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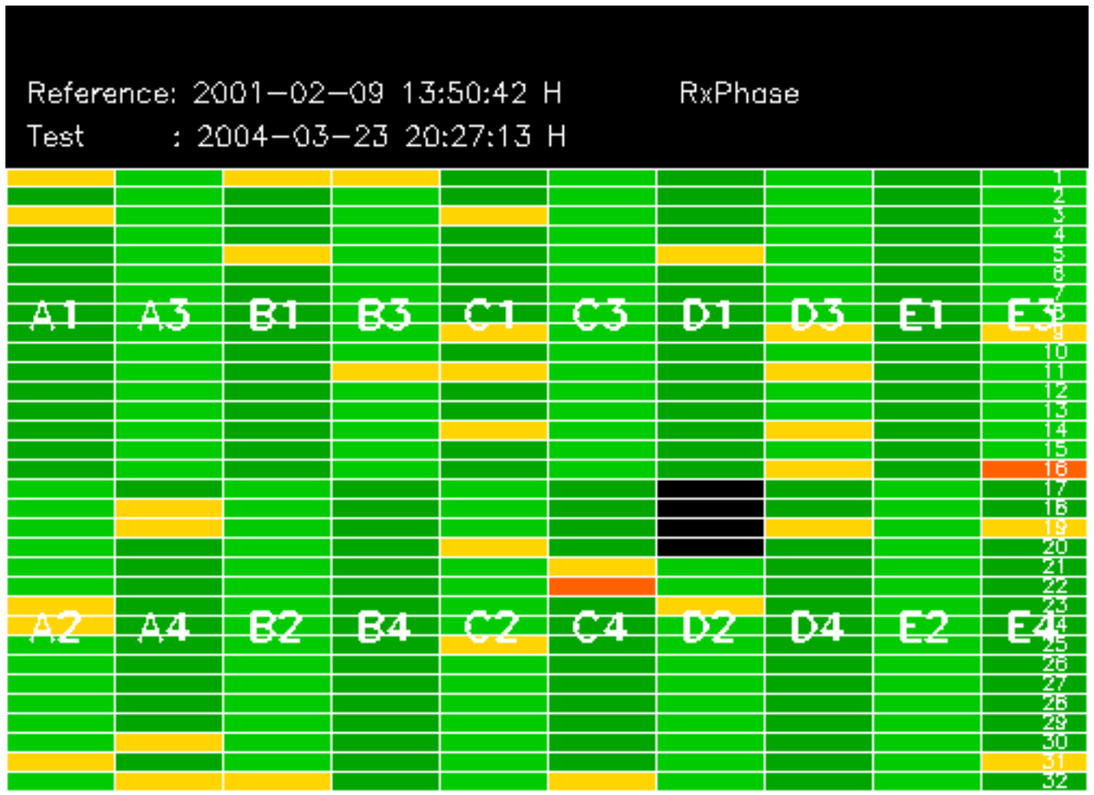
Reference: 2001-02-09 13:50:42 H
RxPhase
Test : 2004-03-23 20:27:13 H
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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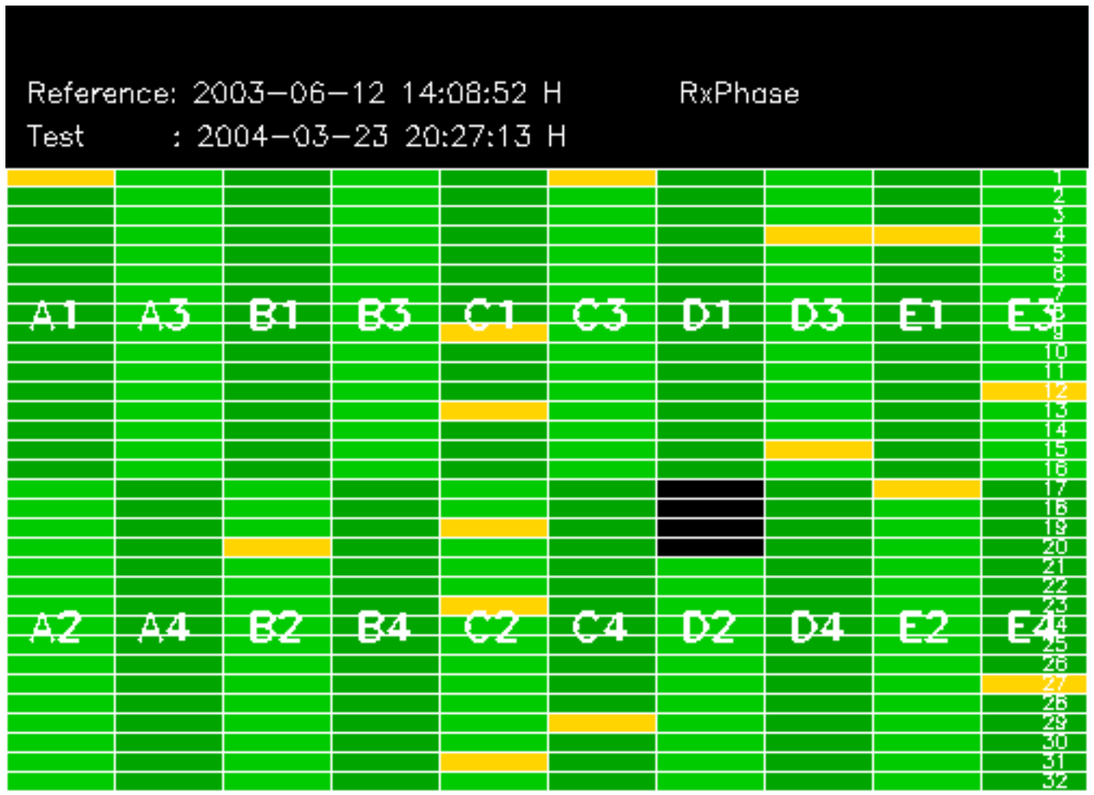
Reference: 2003-06-12 14:08:52 H
Test : 2004-03-23 20:27:13 H
RxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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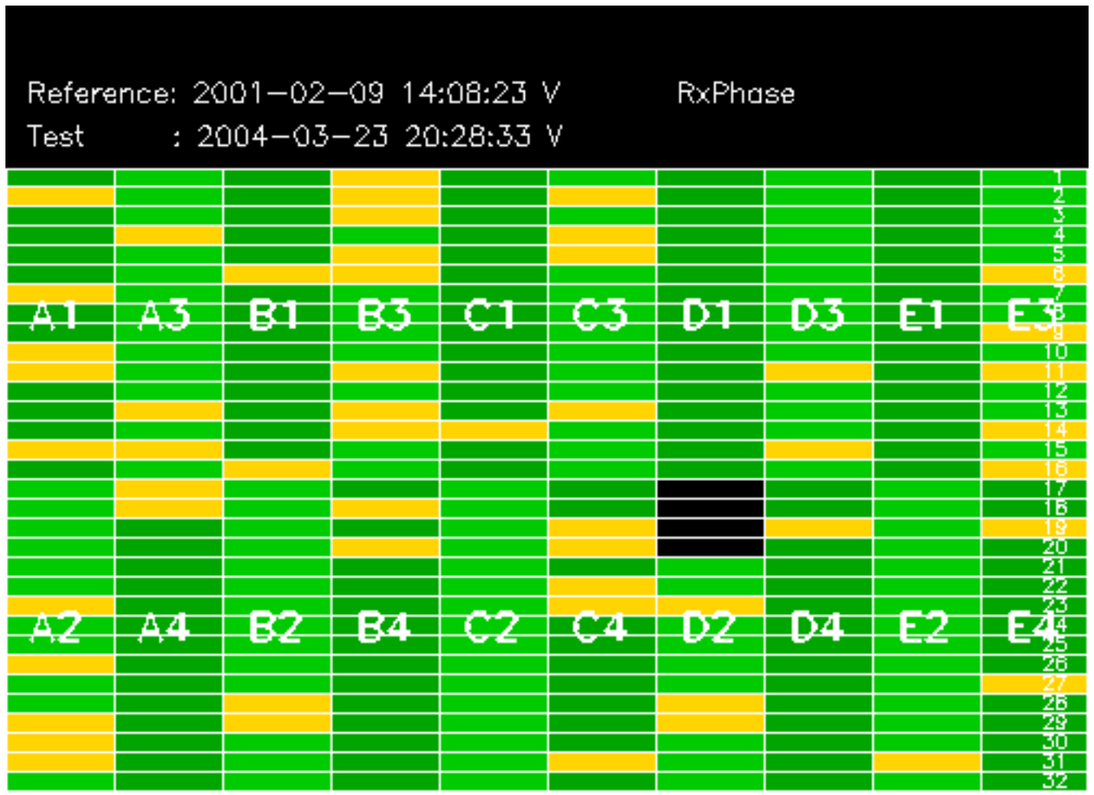
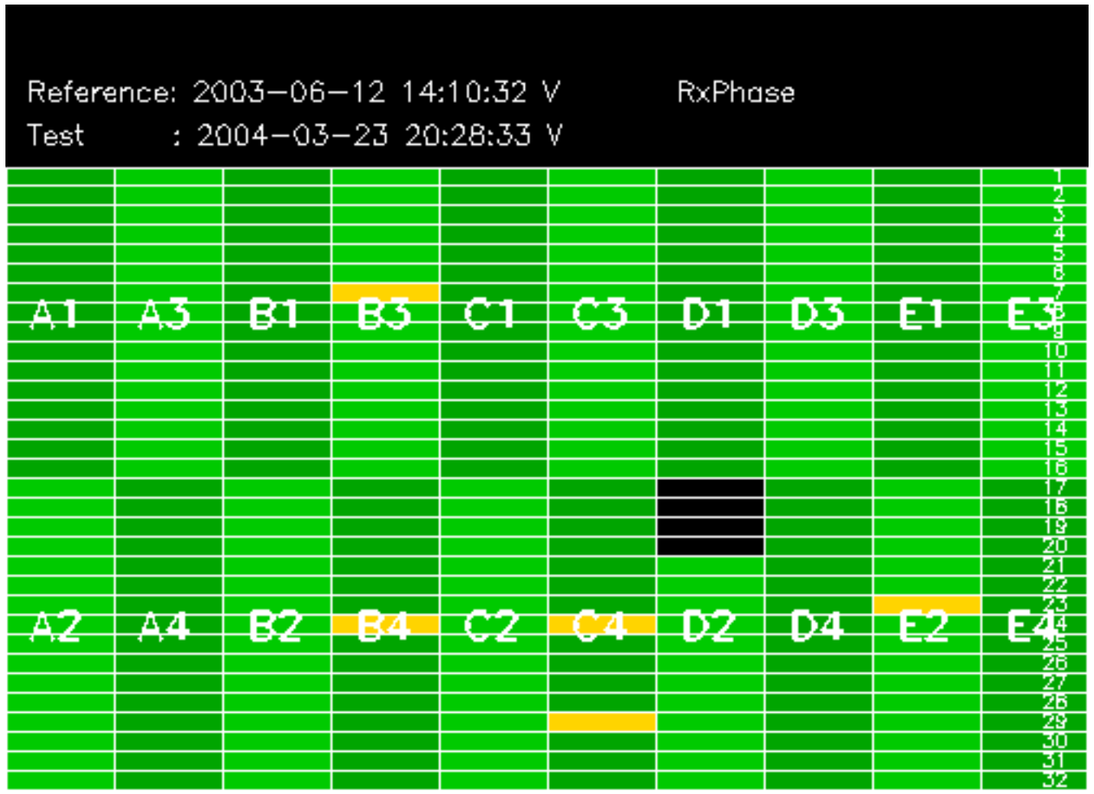

Reference: 2001-02-09 14:08:23 V
RxPhase
Test : 2004-03-23 20:28:33 V
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-03-23 20:28:33 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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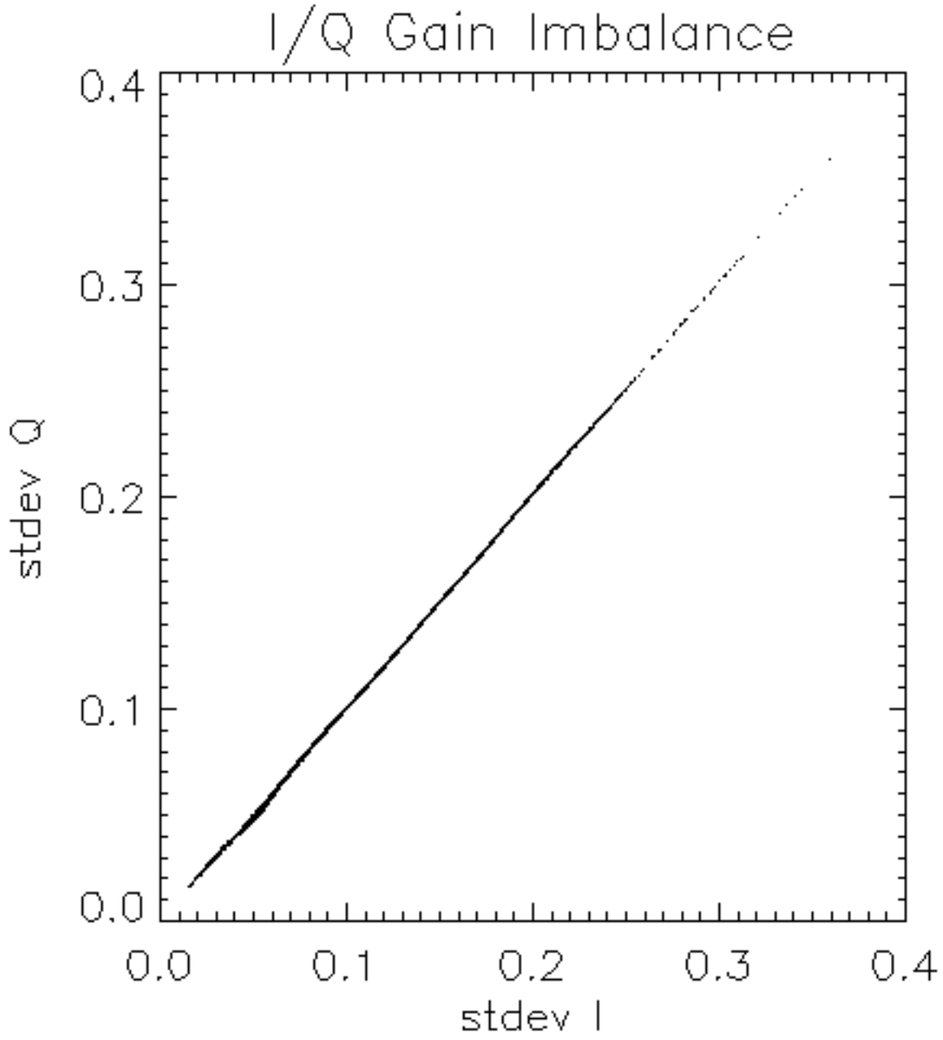
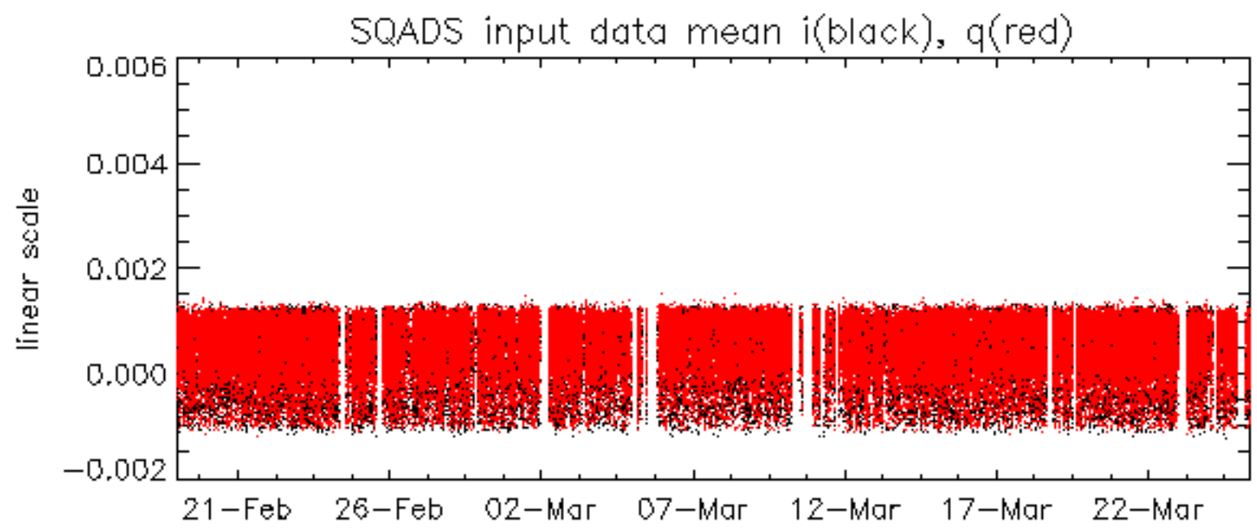
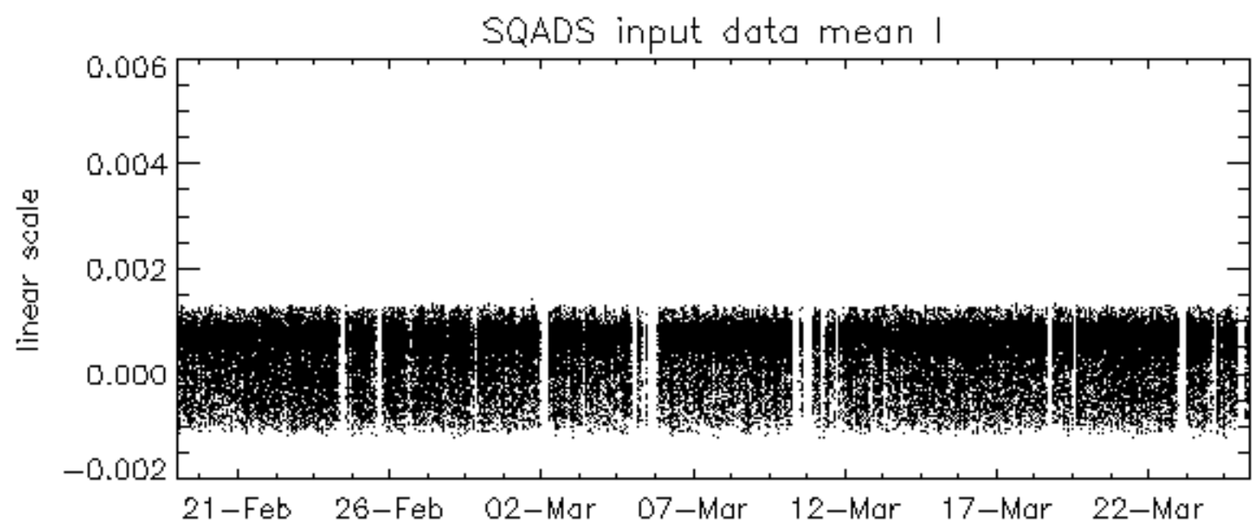
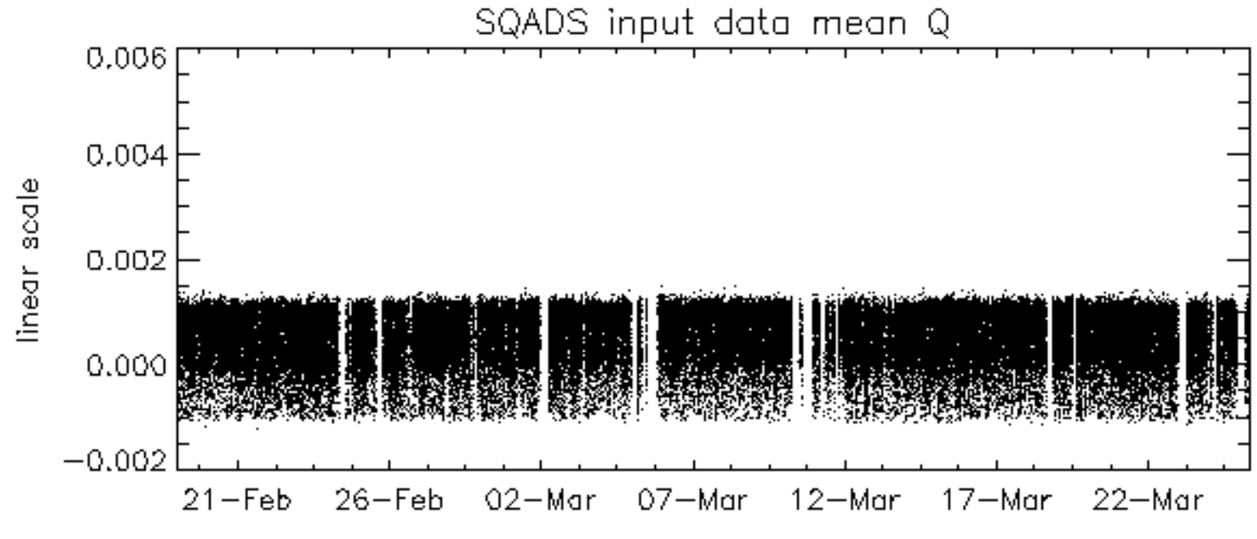
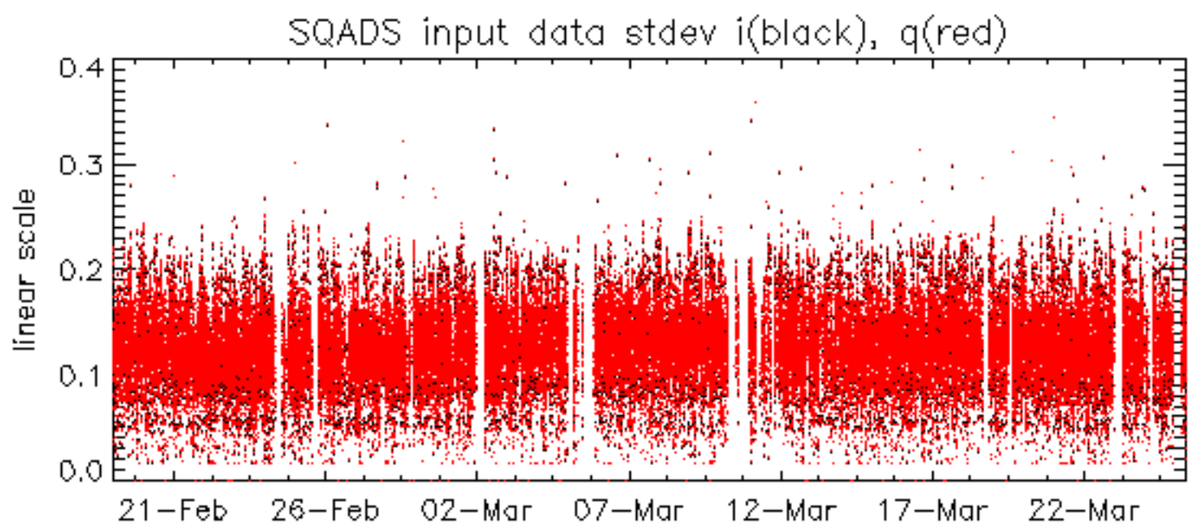
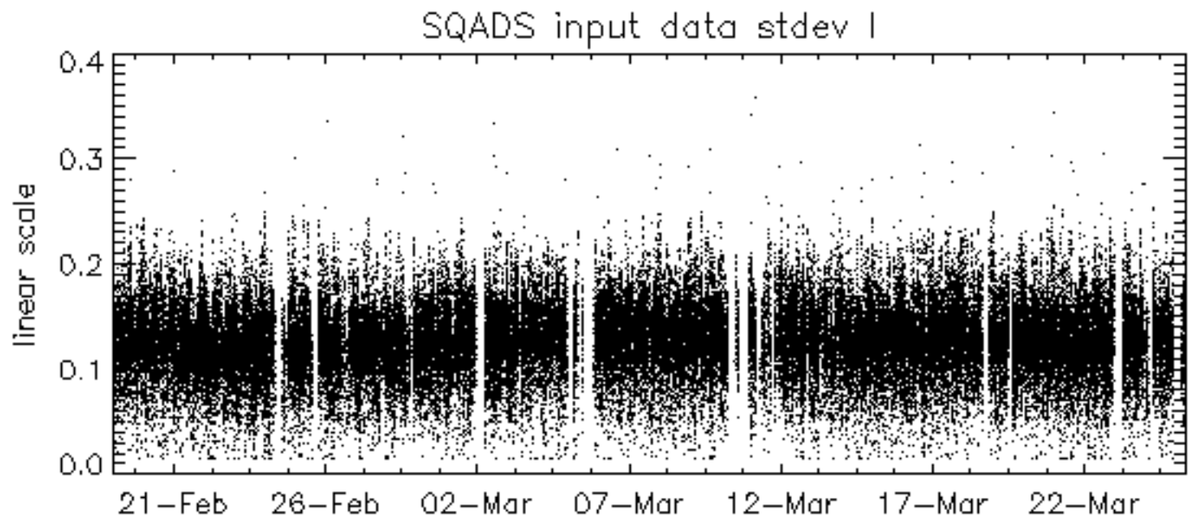

I/Q Gain Imbalance
stdev Q
stdev I
0.0
0.1
0.2
0.3
0.4

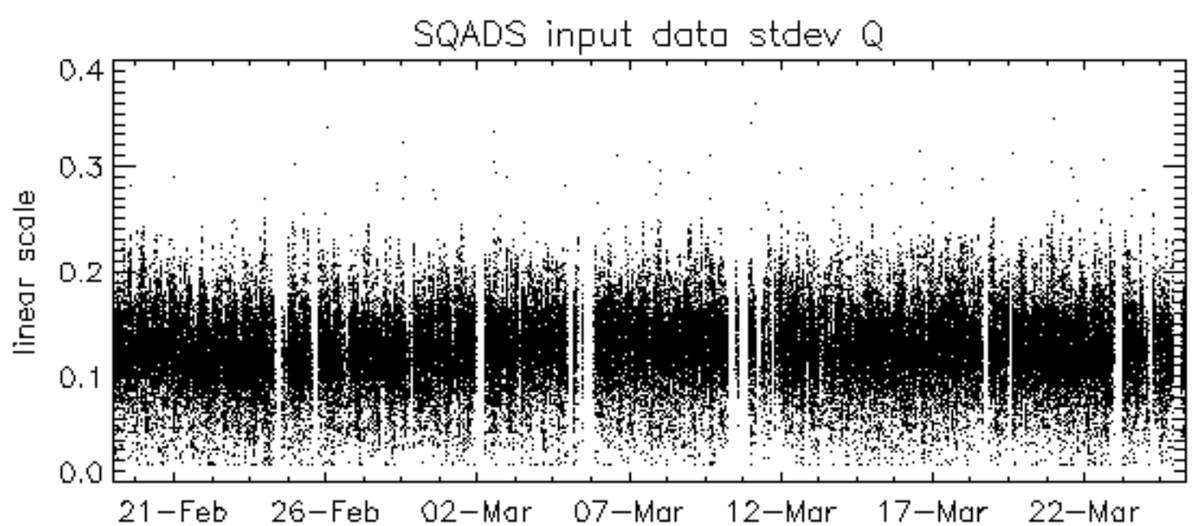

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar

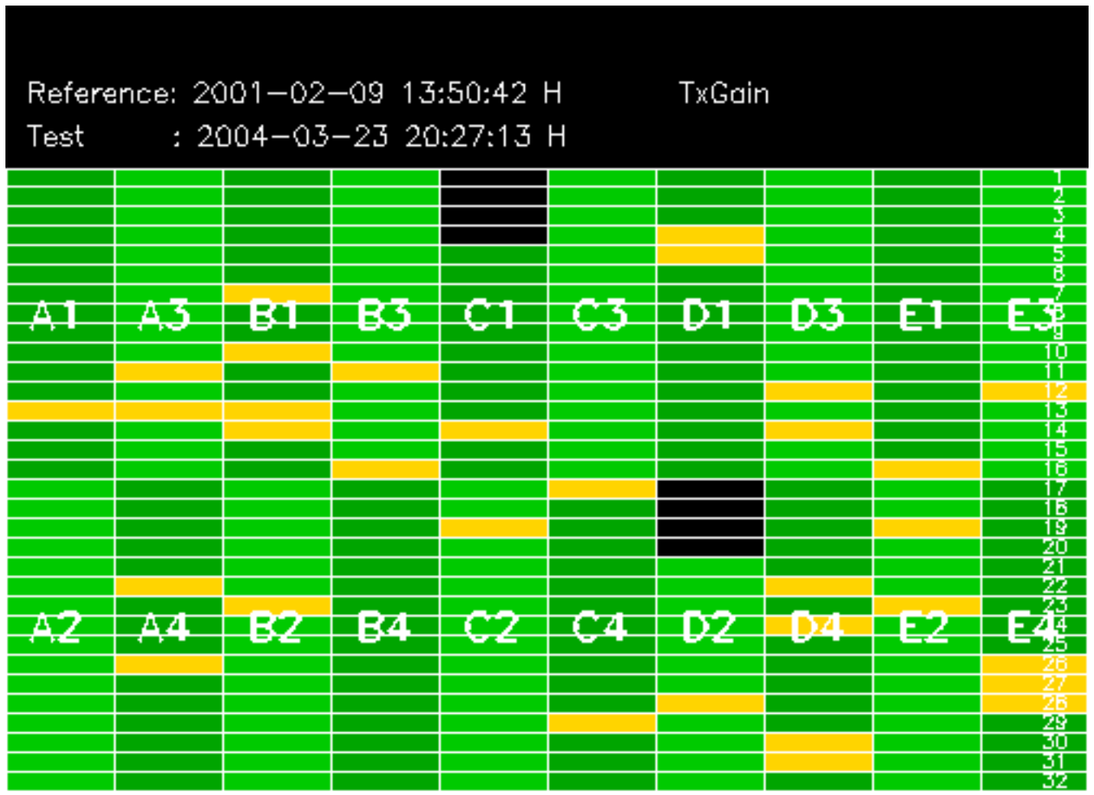

SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar

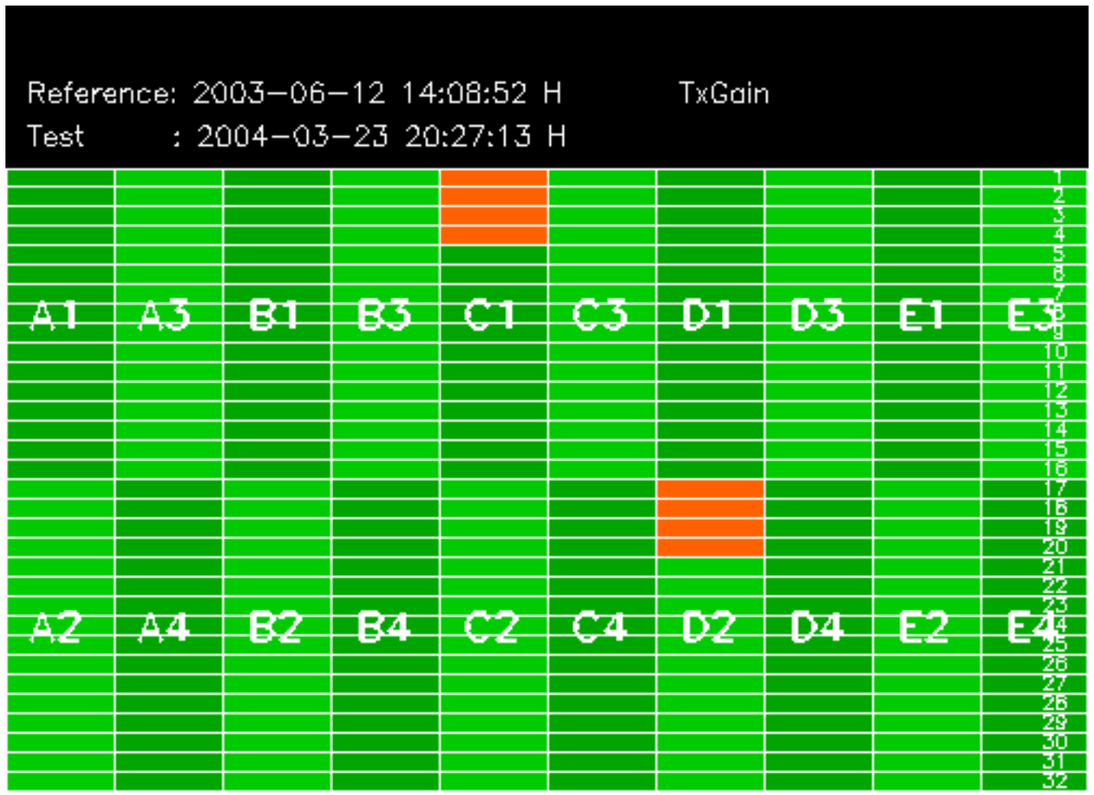

SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar


SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar


SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
21−Feb
26−Feb
02−Mar
07−Mar
12−Mar
17−Mar
22−Mar


Reference: 2001-02-09 13:50:42 H
Test : 2004-03-23 20:27:13 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 : 2004-03-23 20:27:13 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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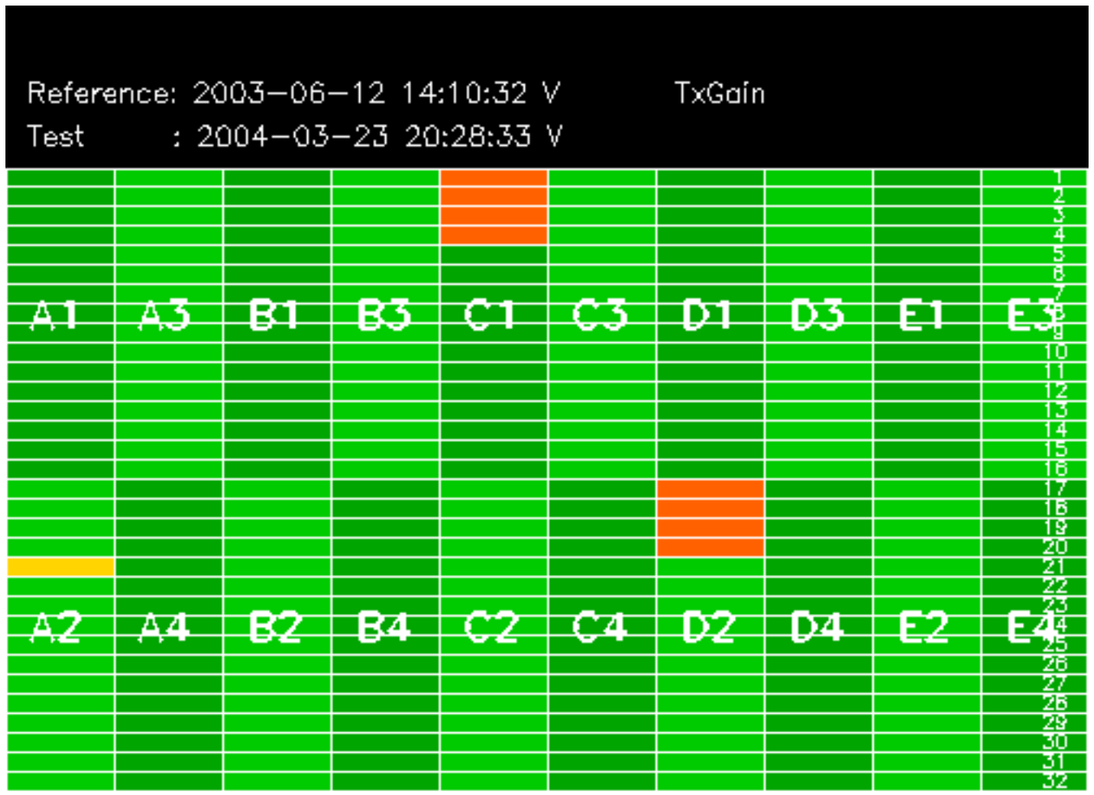
Reference: 2001-02-09 14:08:23 V
Test : 2004-03-23 20:28:33 V
TxGain
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:10:32 V
Test : 2004-03-23 20:28:33 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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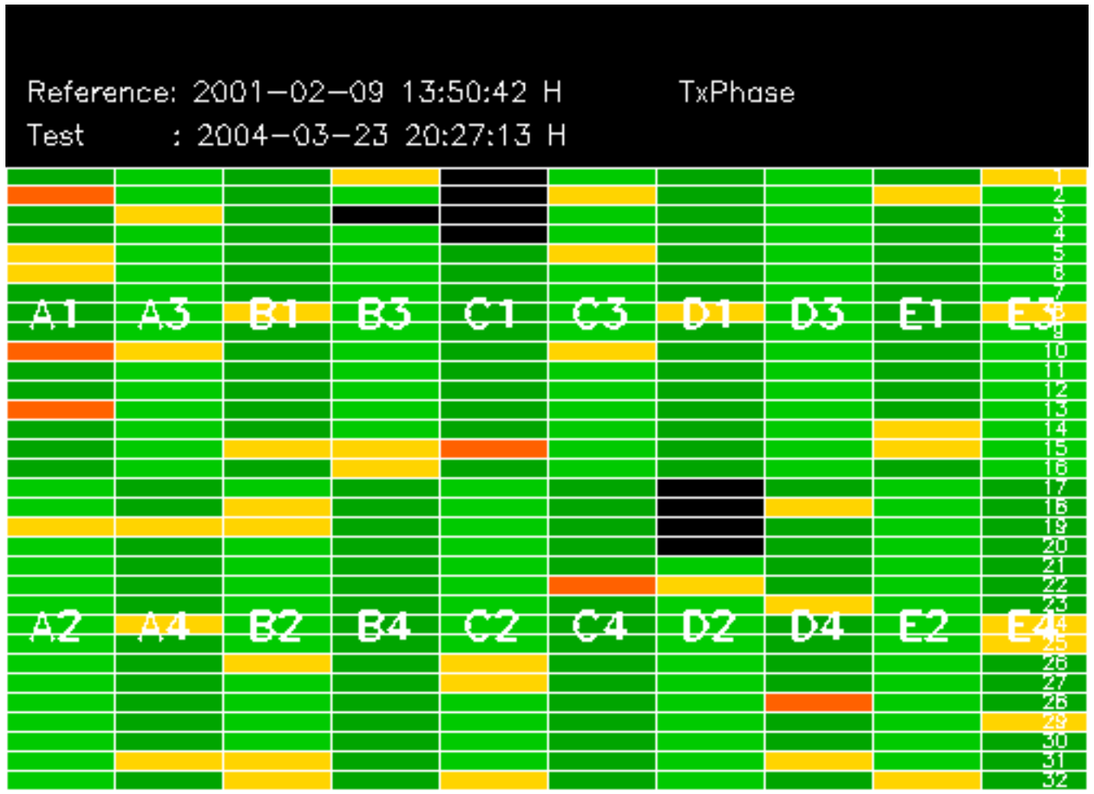
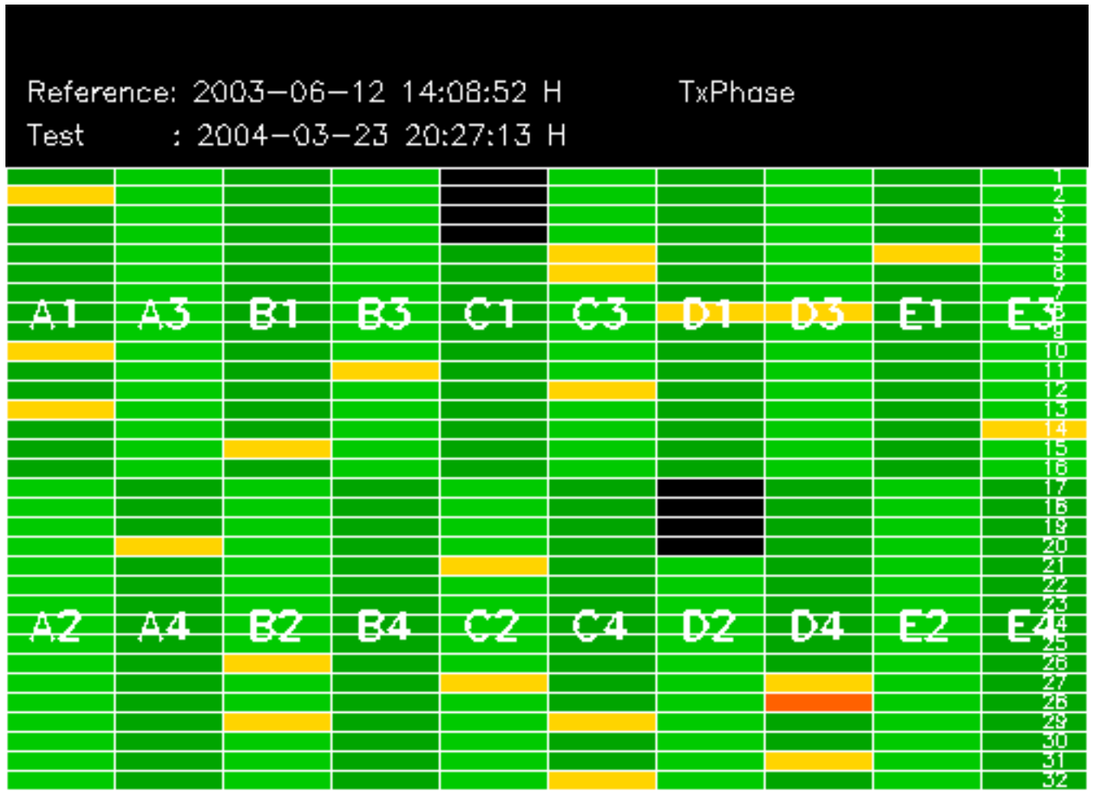

Reference: 2001-02-09 13:50:42 H
Test : 2004-03-23 20:27:13 H
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4


Reference: 2003-06-12 14:08:52 H
Test : 2004-03-23 20:27:13 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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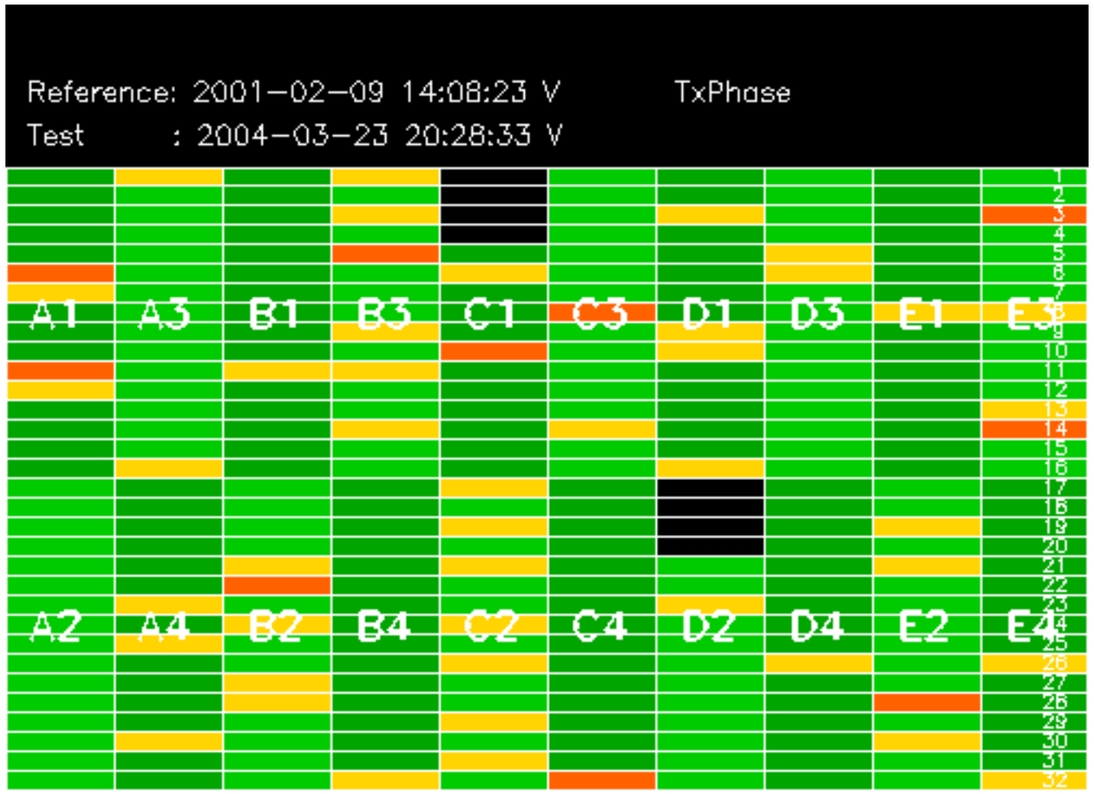
Reference: 2001-02-09 14:08:23 V
Test : 2004-03-23 20:28:33 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
B2
B4
C2
C4
D2
D4
E2
E4
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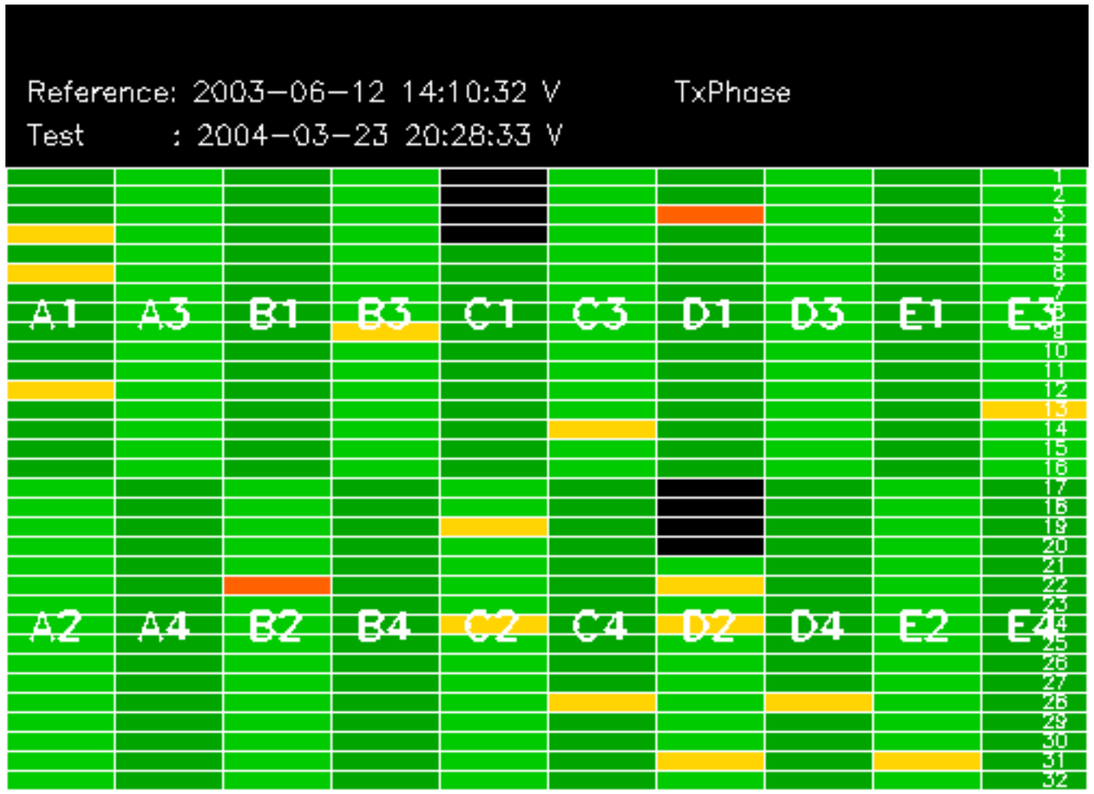
Reference: 2003-06-12 14:10:32 V
Test : 2004-03-23 20:28:33 V
TxPhase
A1
A3
B1
B3
C1
C3
D1
D3
E1
E3
A2
A4
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B4
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No unavailabilities during the reported period.