

PRELIMINARY REPORT OF 070316

ATTENTION: This report is automatically generated no comments are provided on data analysis

last update on Mon Mar 19 14:59:57 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 2007-03-18 00:00:00 to 2007-03-19 14:59:57

| PDHS-K | | | | | |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000 | 40 | 65 | 8 | 3 | 19 |
| ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000 | 40 | 65 | 8 | 3 | 19 |
| ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 40 | 65 | 8 | 3 | 19 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 40 | 65 | 8 | 3 | 19 |

| PDHS-E | | | | | |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20070222_190441_20070204_165113_20071231_000000 | 48 | 51 | 71 | 9 | 26 |
| ASA_INS_AXVIEC20070306_164819_20070307_060000_20071231_000000 | 48 | 51 | 71 | 9 | 26 |
| ASA_XCA_AXVIEC20070222_185842_20070204_165113_20071231_000000 | 48 | 51 | 71 | 9 | 26 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 48 | 51 | 71 | 9 | 26 |

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 | 20070319 084149 |

| | |
|---|-----------------|
| H | 20070319 015926 |
|---|-----------------|

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) |
|-----|-------|------------|------------|-----------------|
| 3 | P1a | -15.122355 | 0.122786 | -0.075510 |
| 7 | P1a | -17.463785 | 0.107745 | -0.164782 |
| 11 | P1a | -17.270784 | 0.317097 | 0.135965 |
| 15 | P1a | -12.898513 | 0.078973 | -0.110023 |
| 19 | P1a | -15.159806 | 0.075147 | -0.052138 |
| 22 | P1a | -15.320811 | 0.949435 | 0.348315 |
| 26 | P1a | -14.981392 | 0.896548 | 0.371398 |
| 30 | P1a | -17.337605 | 0.423996 | 0.064181 |

P1t Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P1 | -5.745110 | 0.010358 | -0.066963 |
| 7 | P1 | -3.135788 | 0.008221 | -0.020183 |
| 11 | P1 | -4.165963 | 0.014384 | -0.049873 |
| 15 | P1 | -6.382796 | 0.015290 | -0.020937 |
| 19 | P1 | -3.777578 | 0.008287 | -0.064360 |
| 22 | P1 | -4.617864 | 0.145140 | 0.194073 |
| 26 | P1 | -3.898787 | 0.089767 | 0.176354 |
| 30 | P1 | -5.872421 | 0.153465 | 0.166439 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -22.663868 | 0.092263 | 0.026408 |
| 7 | P2 | -21.616842 | 0.081473 | 0.008978 |

| | | | | |
|----|----|------------|----------|-----------|
| 11 | P2 | -15.538218 | 0.097934 | 0.051724 |
| 15 | P2 | -7.078193 | 0.093344 | -0.071743 |
| 19 | P2 | -9.112058 | 0.083656 | -0.029747 |
| 22 | P2 | -18.105124 | 0.073519 | 0.026040 |
| 26 | P2 | -16.552750 | 0.085163 | -0.080771 |
| 30 | P2 | -19.347881 | 0.078168 | 0.037376 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 7 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 11 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 15 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 19 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 22 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 26 | P3 | -8.240812 | 0.006407 | -0.017649 |
| 30 | P3 | -8.240812 | 0.006407 | -0.017649 |

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 | -11.081746 | 0.057452 | -0.077142 |
| 7 | P1a | -10.070945 | 0.178634 | -0.026015 |
| 11 | P1a | -10.680867 | 0.074518 | -0.115078 |
| 15 | P1a | -10.956131 | 0.143007 | 0.073575 |
| 19 | P1a | -15.693379 | 0.072622 | -0.157846 |
| 22 | P1a | -20.846312 | 1.666061 | 0.867588 |
| 26 | P1a | -15.234159 | 0.304055 | 0.183127 |
| 30 | P1a | -18.362616 | 0.708542 | 0.545643 |

P1t Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P1 | -8.406272 | 0.053299 | -0.078919 |
| 7 | P1 | -2.425772 | 0.034476 | -0.019235 |
| 11 | P1 | -2.923712 | 0.023104 | 0.001347 |
| 15 | P1 | -3.847212 | 0.045820 | -0.027165 |
| 19 | P1 | -3.556540 | 0.011227 | -0.041482 |
| 22 | P1 | -5.030824 | 0.038893 | 0.176968 |
| 26 | P1 | -5.941303 | 0.057053 | 0.120159 |
| 30 | P1 | -5.269711 | 0.026508 | 0.018102 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -18.100334 | 0.035237 | -0.028976 |
| 7 | P2 | -21.950247 | 0.058834 | -0.007254 |
| 11 | P2 | -10.637703 | 0.032107 | 0.033902 |
| 15 | P2 | -4.824274 | 0.029511 | 0.015133 |
| 19 | P2 | -6.809271 | 0.031859 | 0.010761 |
| 22 | P2 | -8.075724 | 0.036301 | 0.023127 |
| 26 | P2 | -24.291485 | 0.040316 | 0.068256 |
| 30 | P2 | -21.725571 | 0.041706 | 0.072318 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.058820 | 0.003861 | 0.014888 |
| 7 | P3 | -8.058734 | 0.003847 | 0.014932 |
| 11 | P3 | -8.058731 | 0.003846 | 0.015481 |
| 15 | P3 | -8.058847 | 0.003855 | 0.016307 |
| 19 | P3 | -8.058837 | 0.003859 | 0.016811 |
| 22 | P3 | -8.058765 | 0.003849 | 0.015251 |
| 26 | P3 | -8.058547 | 0.003833 | 0.016670 |
| 30 | P3 | -8.058688 | 0.003850 | 0.015009 |

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 | 0.000694559 |
| | stdev | 3.11476e-07 |
| MEAN Q | mean | 0.000239468 |
| | stdev | 2.80169e-07 |



5.2 - Input stdev I/Q

| channel | stat | DSS-B |
|---------|-------|------------|
| STDEV I | mean | 0.0794627 |
| | stdev | 0.00186154 |
| STDEV Q | mean | 0.0791384 |
| | stdev | 0.00191017 |



5.3 - Gain imbalance I/Q



6 - Telemetry analysis

Summary of analysis for the last 3 days 2007031[456]

The assumption 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_1PNPDE20070316_210538_000000342056_00258_26364_4589.N1 | 1 | 0 |
| ASA_IMM_1PNPDK20070315_133248_000000812056_00239_26345_1572.N1 | 0 | 2 |
| ASA_IMM_1PNPDK20070316_092324_000000372056_00251_26357_2261.N1 | 0 | 1 |
| ASA_GM1_1PNPDK20070314_201257_000009242056_00228_26334_0828.N1 | 0 | 22 |
| ASA_GM1_1PNPDK20070316_142640_000002772056_00254_26360_3264.N1 | 0 | 7 |
| ASA_WSM_1PNPDE20070314_141836_000000852056_00225_26331_1665.N1 | 0 | 37 |
| ASA_WSM_1PNPDE20070314_153245_000000612056_00226_26332_1616.N1 | 3 | 801 |
| ASA_WSM_1PNPDE20070316_141502_000000852056_00254_26360_4383.N1 | 0 | 15 |
| ASA_WSM_1PNPDK20070315_094718_000000862056_00237_26343_1332.N1 | 0 | 29 |
| ASA_WSM_1PNPDK20070316_070403_000002452056_00249_26355_2248.N1 | 0 | 3 |
| ASA_APM_1PNPDE20070315_070600_000002082056_00235_26341_2835.N1 | 12 | 0 |
| ASA_APM_1PNPDK20070316_093722_000000432056_00251_26357_2257.N1 | 0 | 1 |





7 - Doppler Analysis

Preliminary report. The data is not yet controlled



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

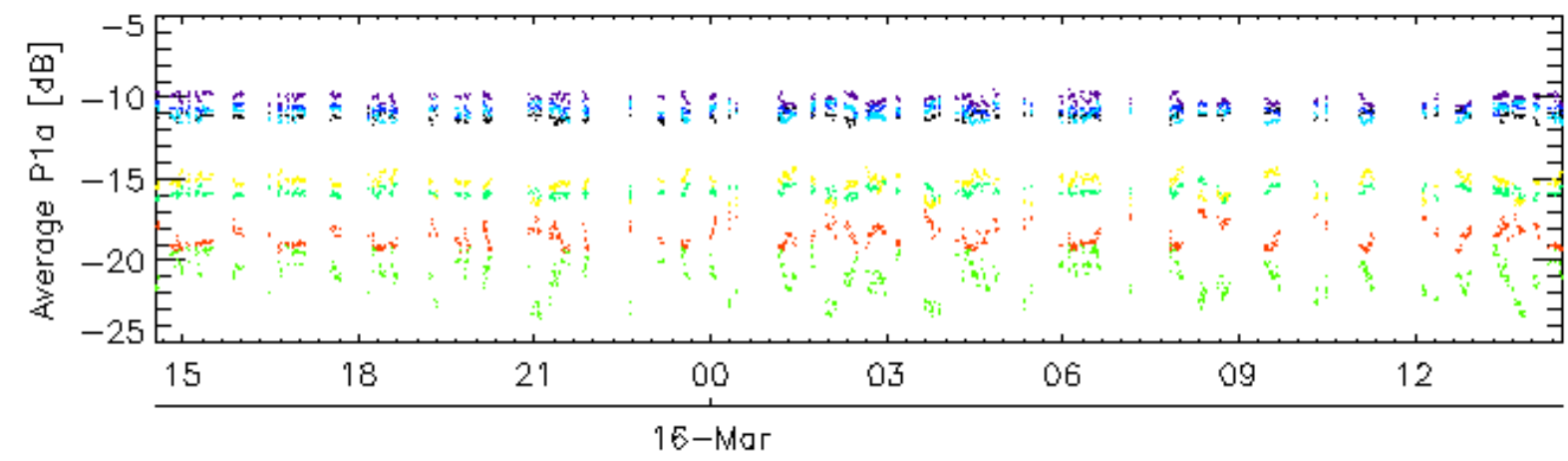
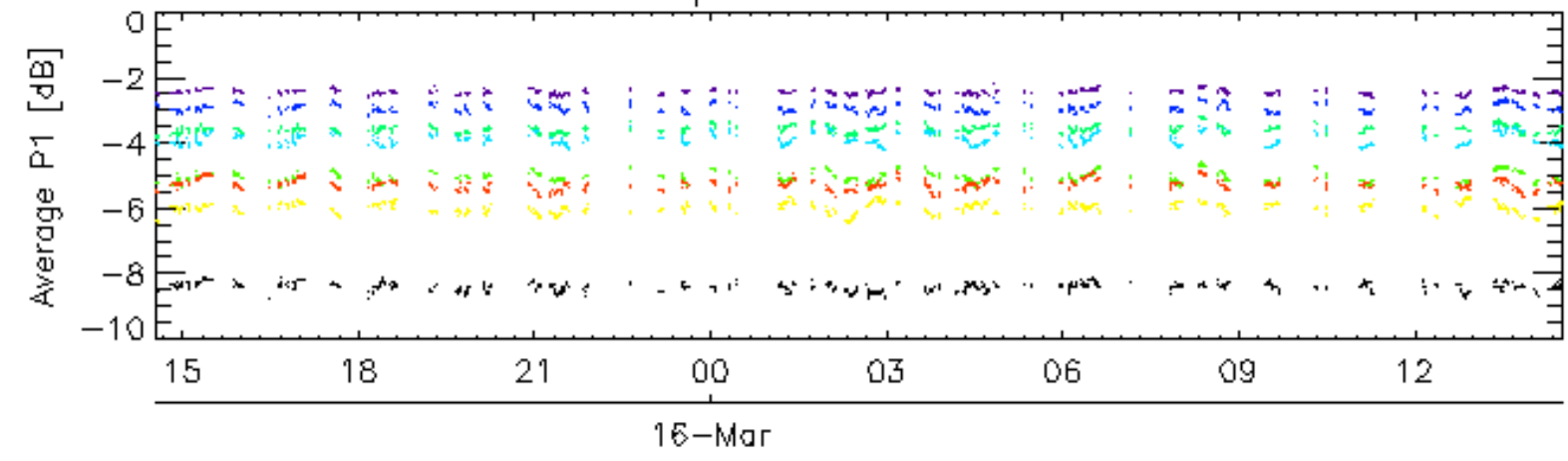
Acsending

Descending

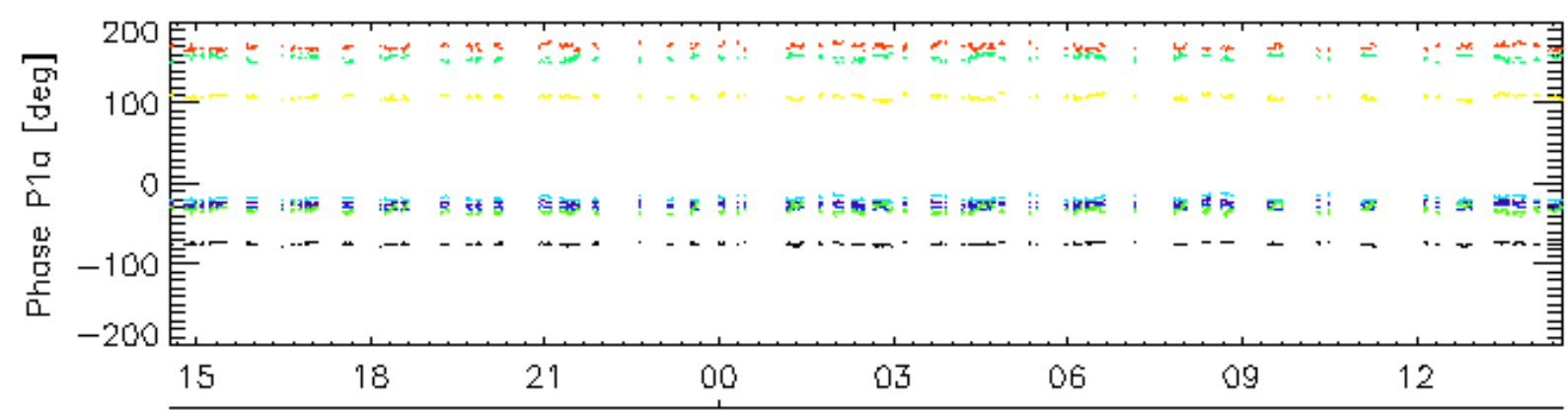
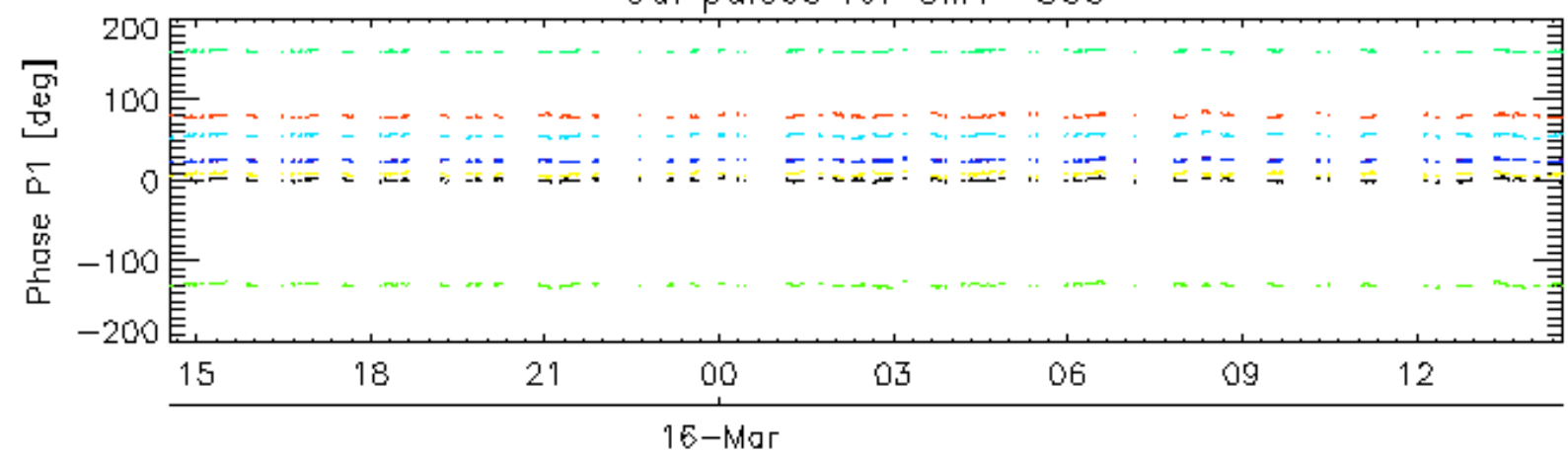
7.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX

Cal pulses for GM1 SS3

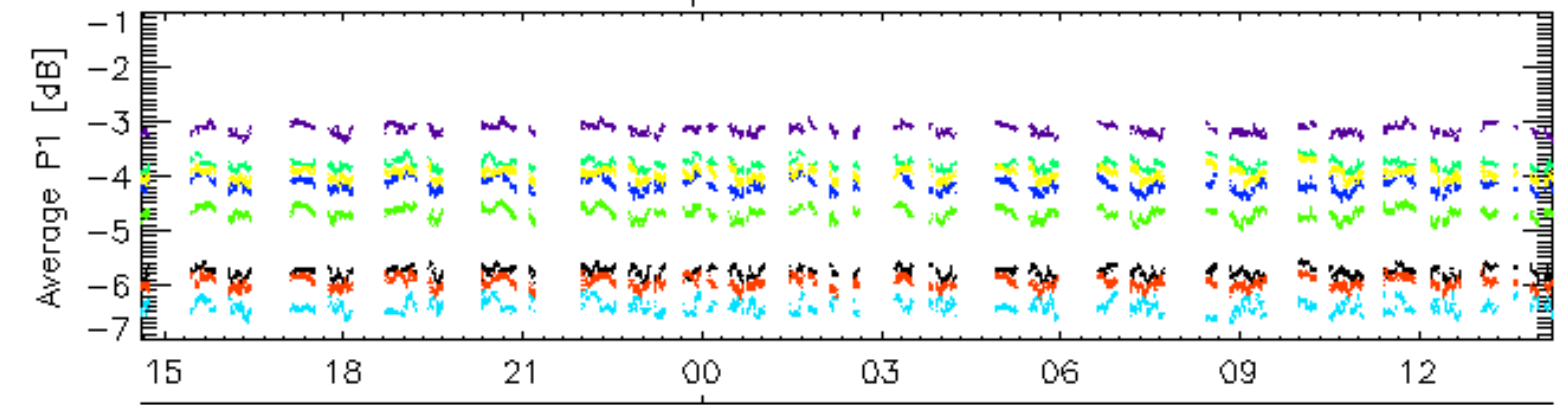


Cal pulses for GM1 SS3

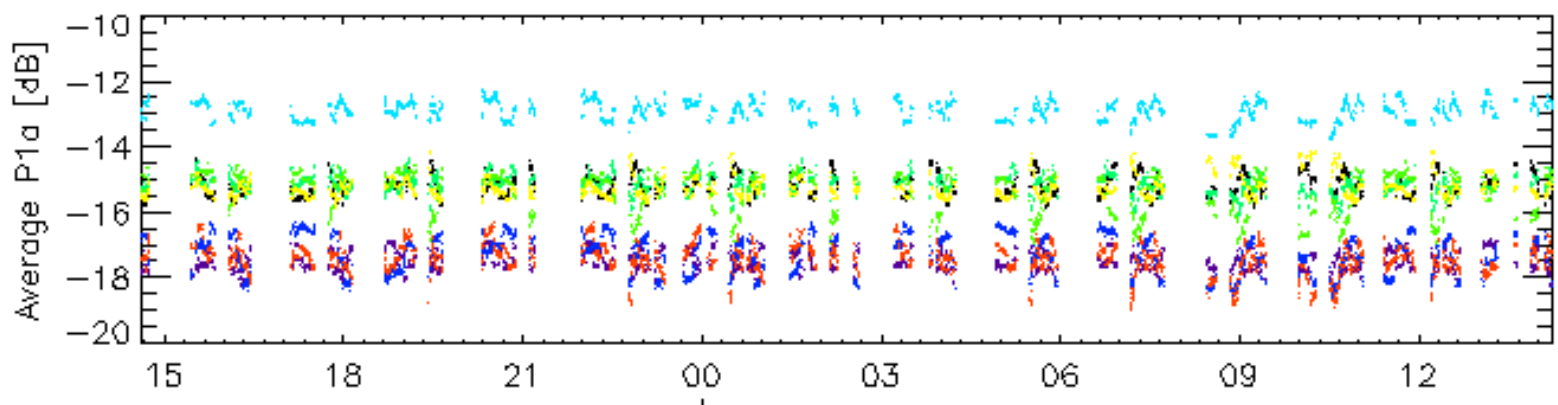


rows: 3 7 11 15 19 22 26 30

Cal pulses for WVS IS2

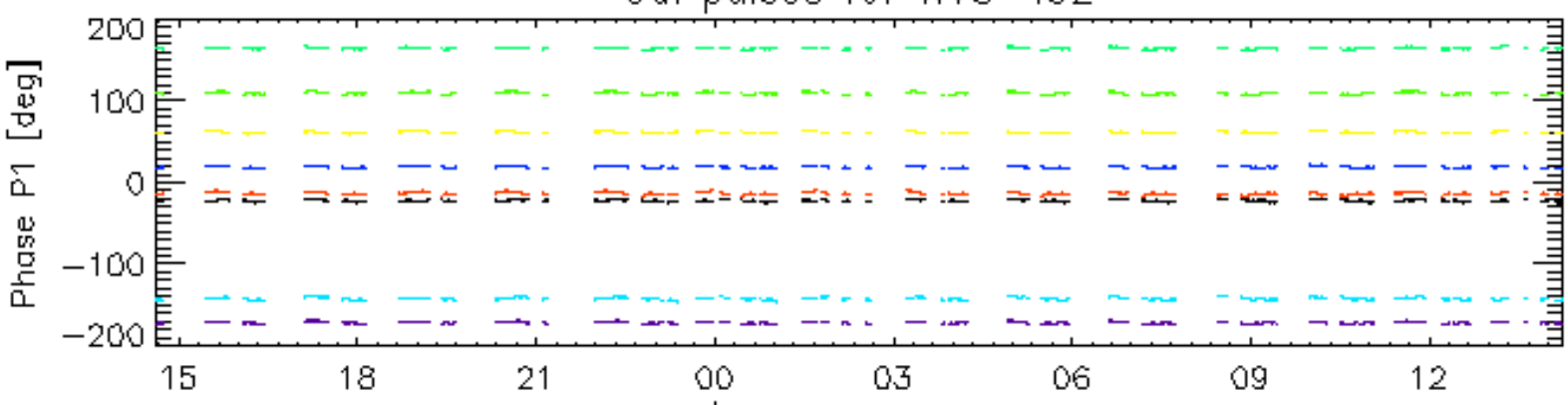


16-Mar

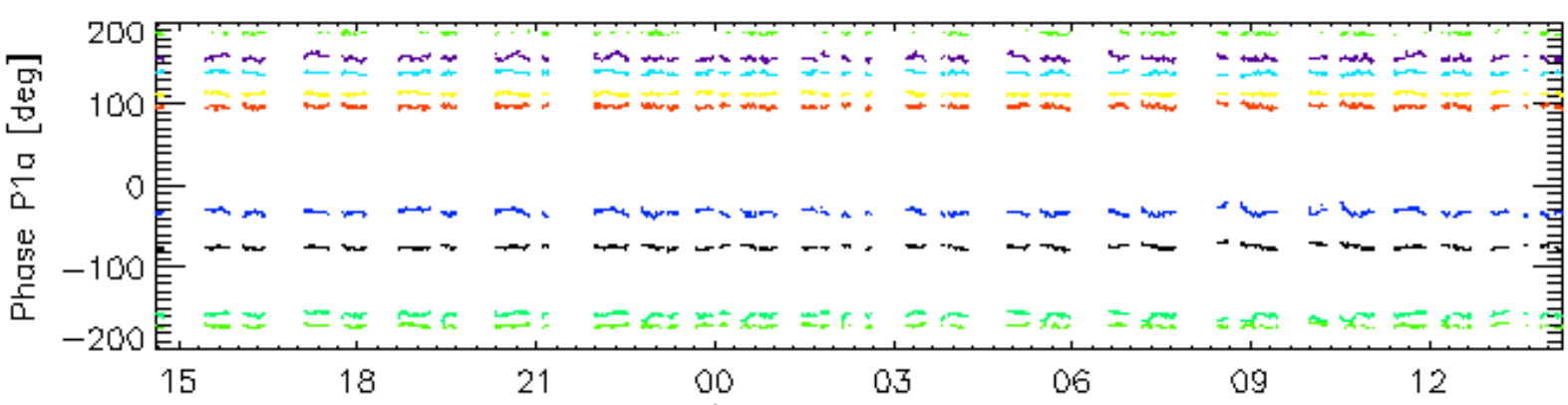


16-Mar

Cal pulses for WVS IS2



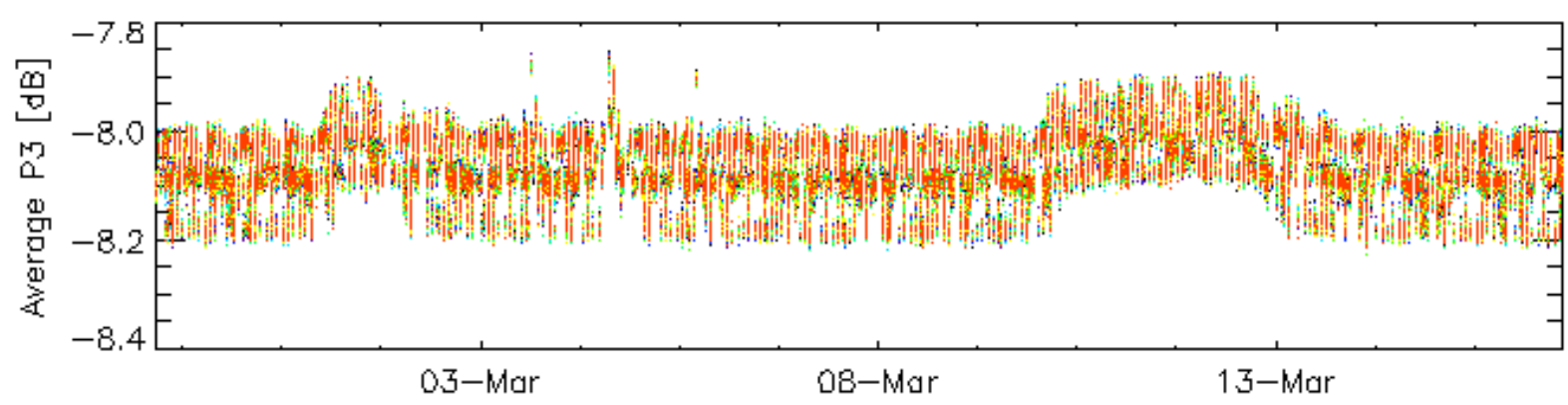
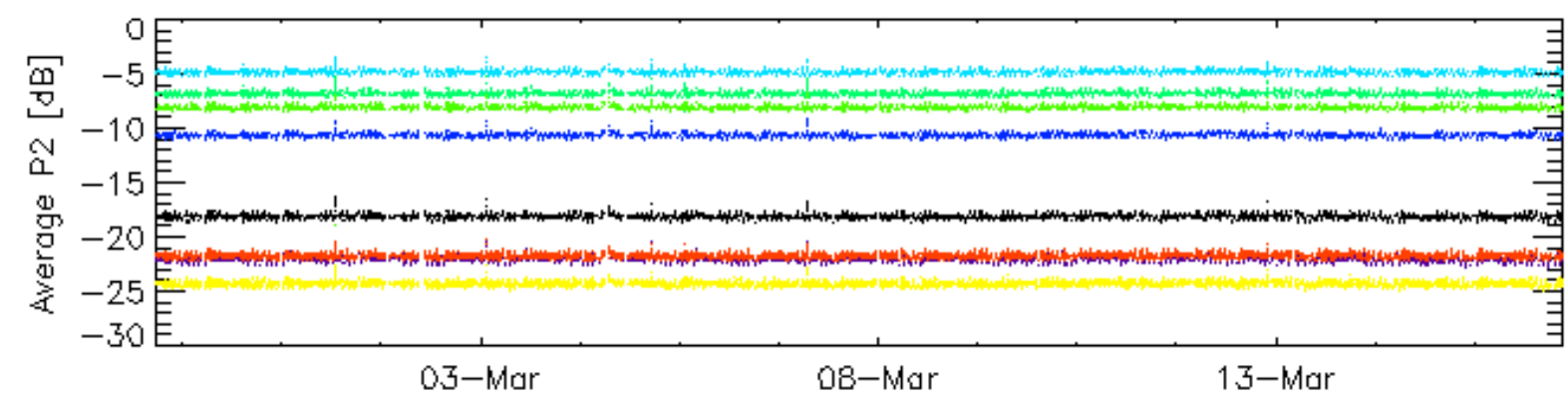
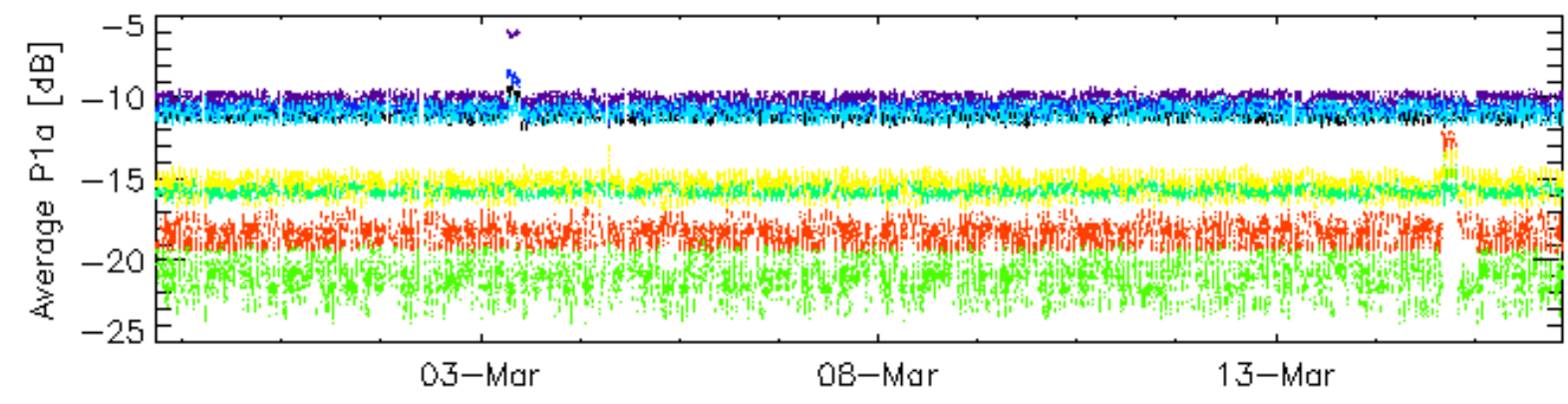
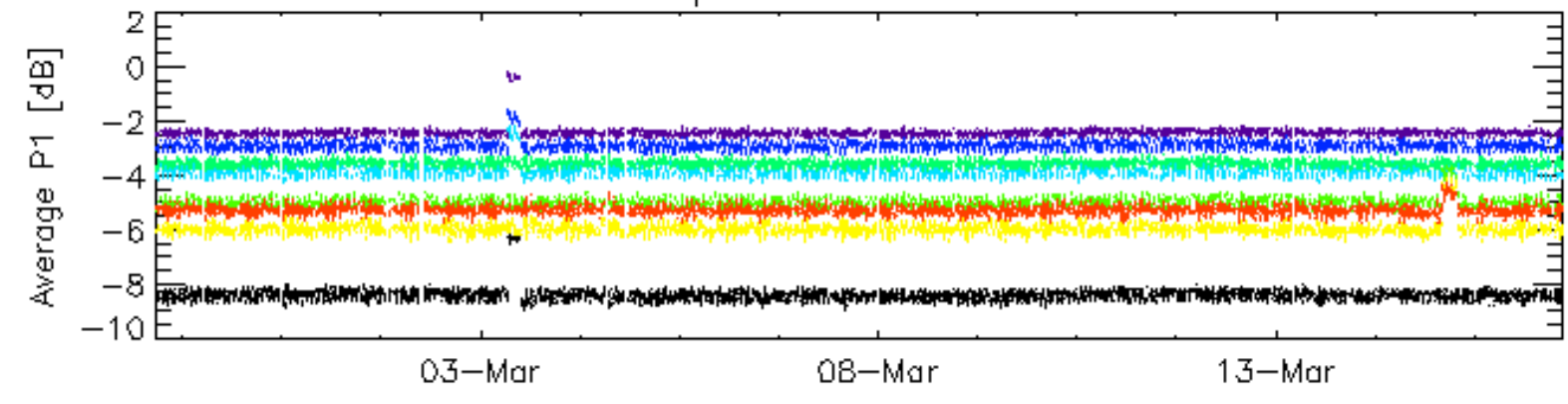
16-Mar



16-Mar

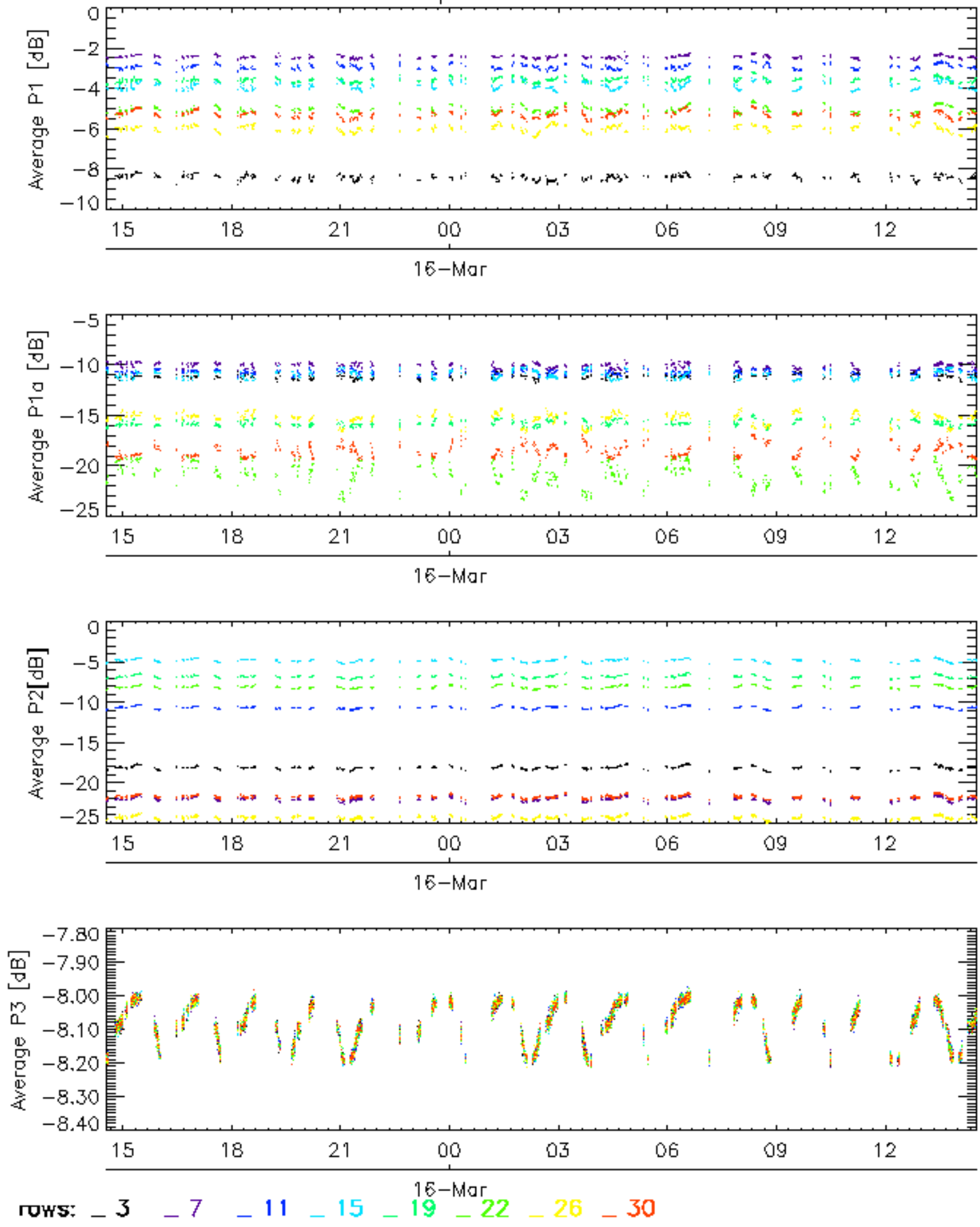
rows: 3 7 11 15 19 22 26 30

Cal pulses for GM1 SS3

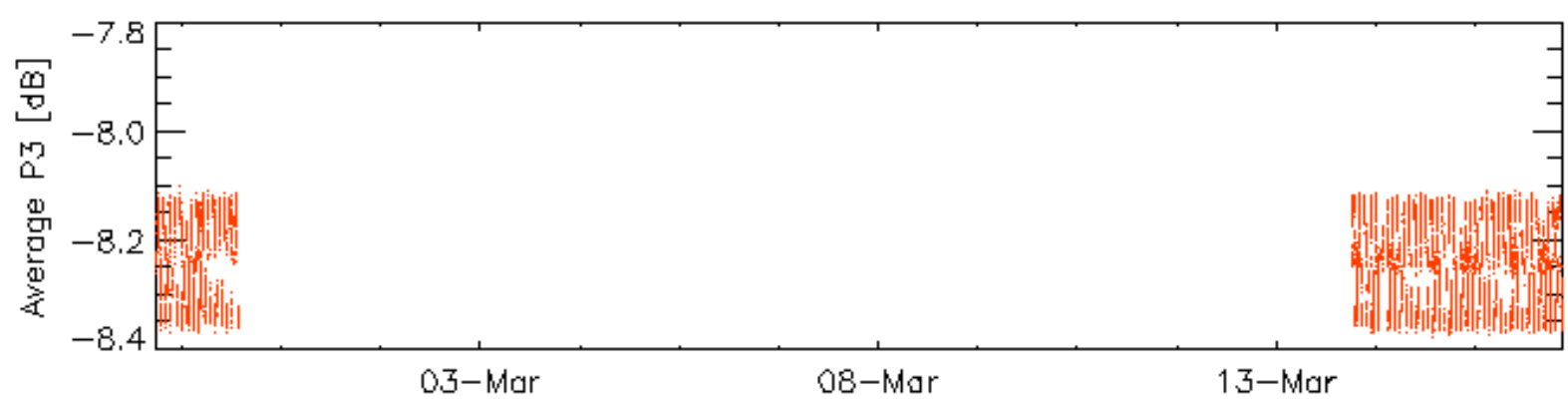
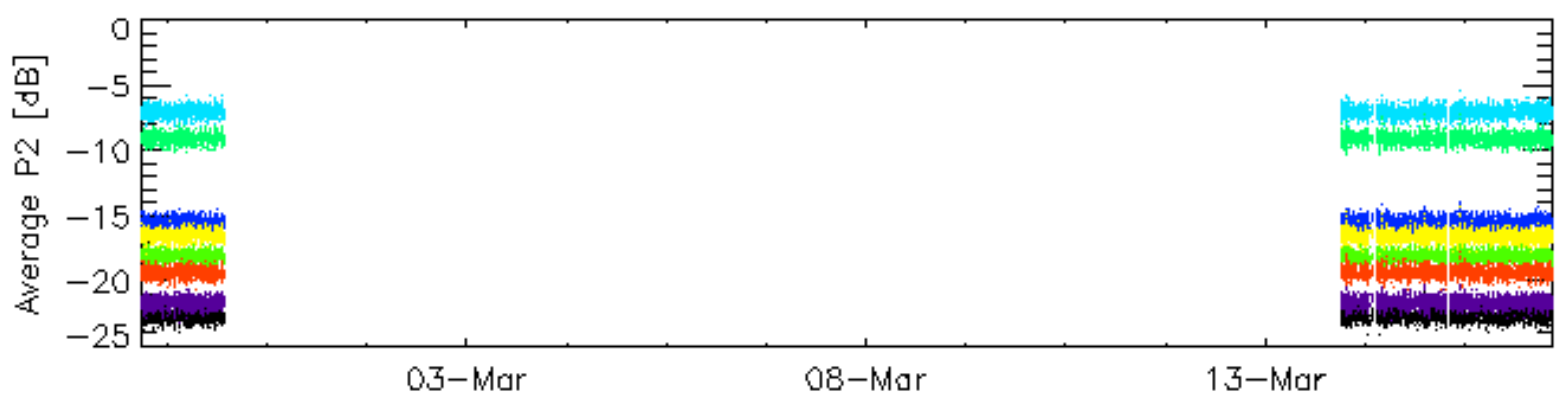
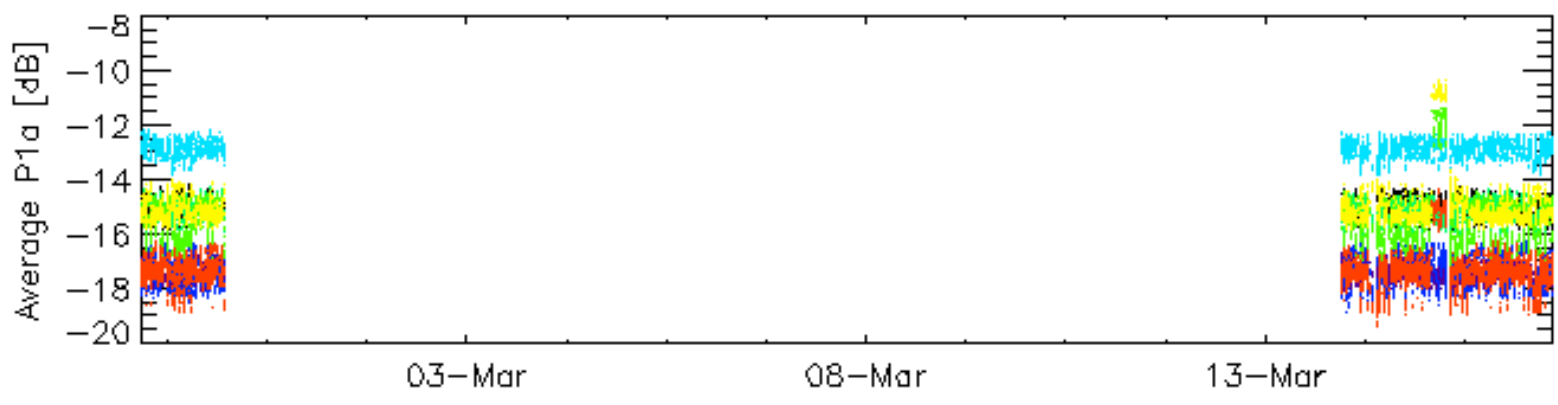
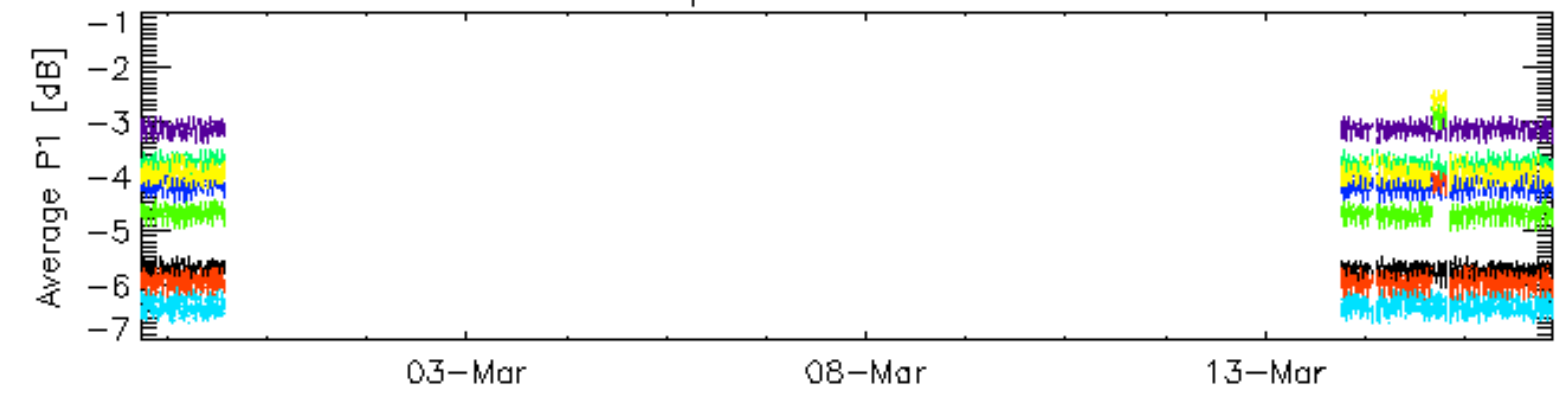


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

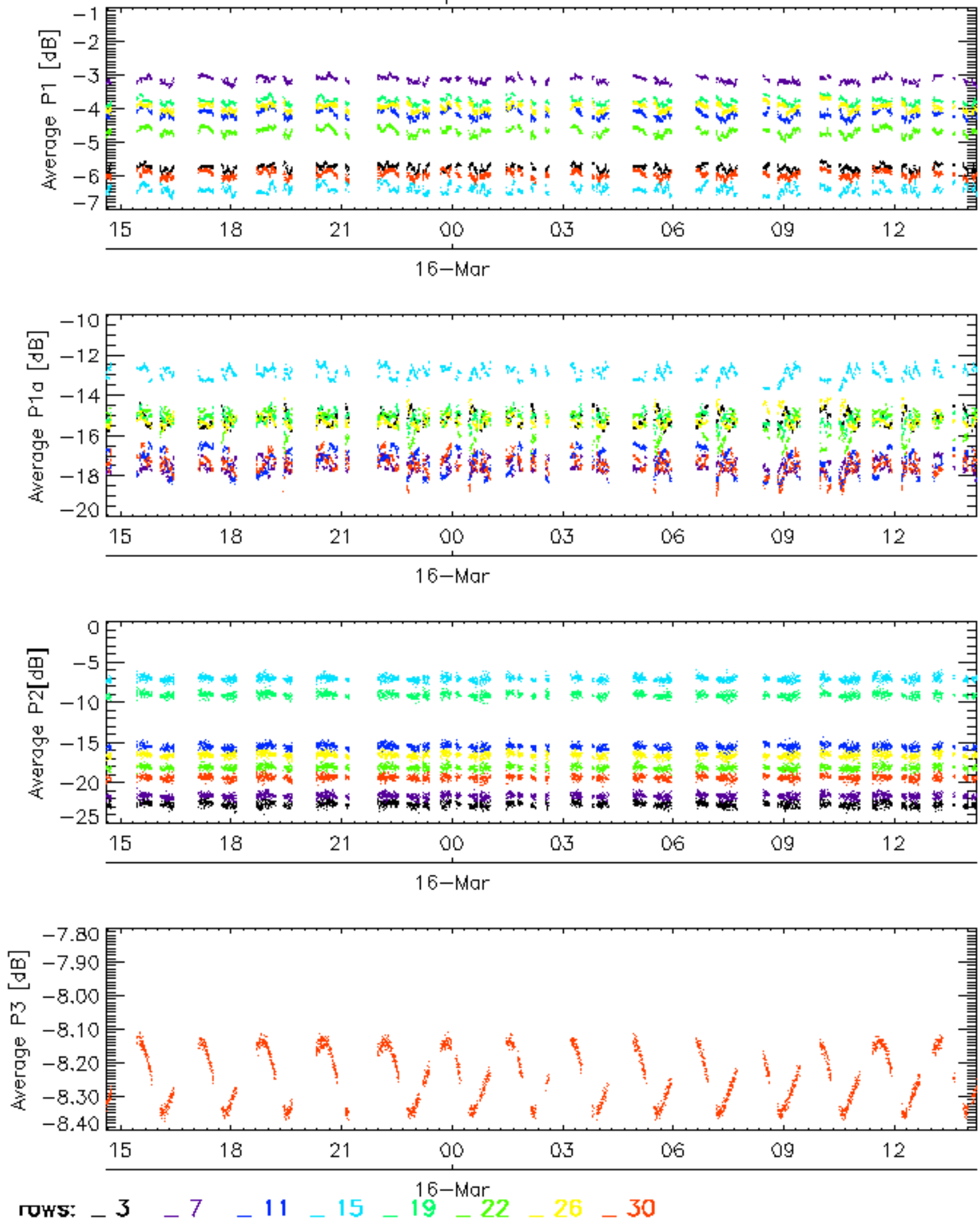


Cal pulses for WVS IS2

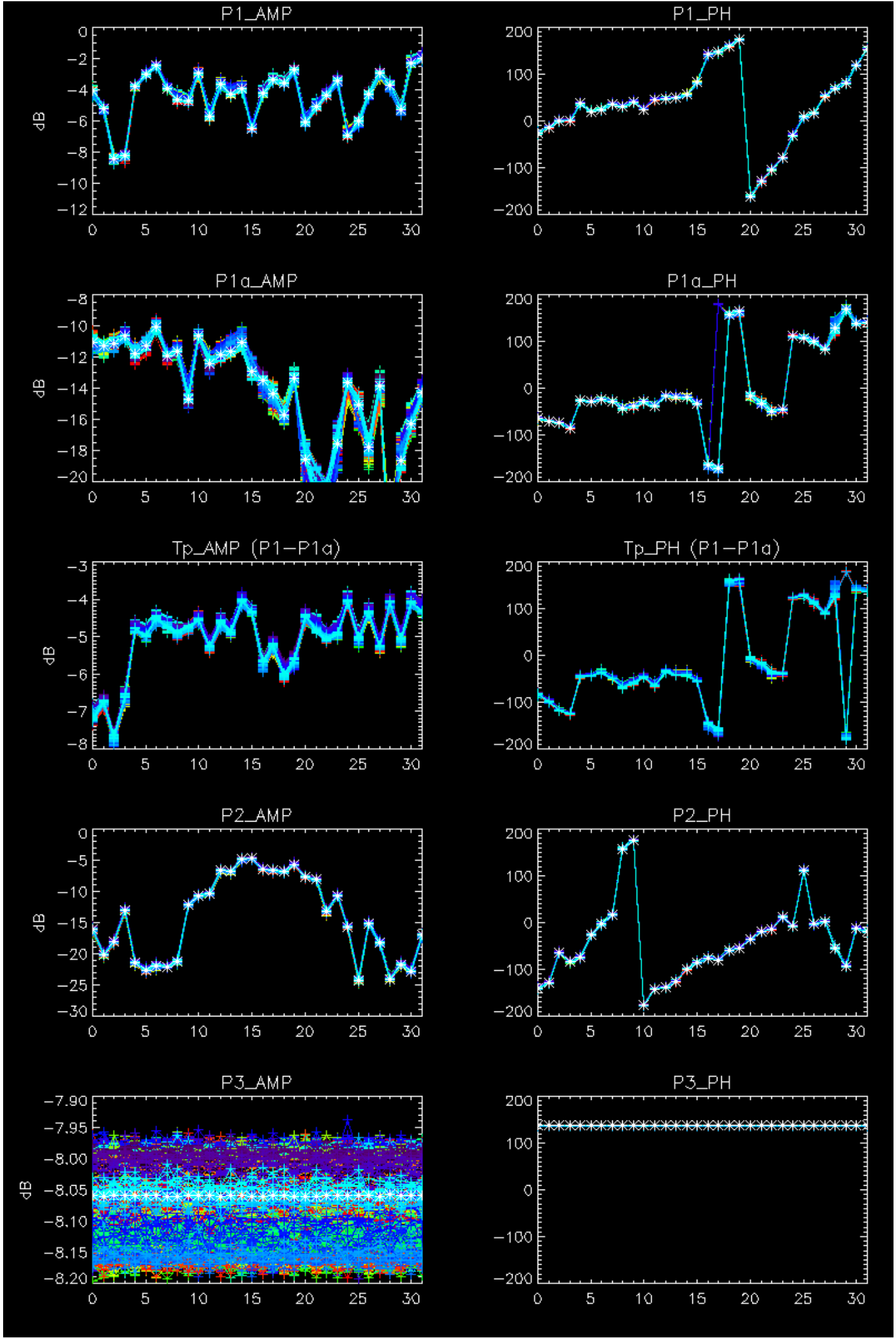


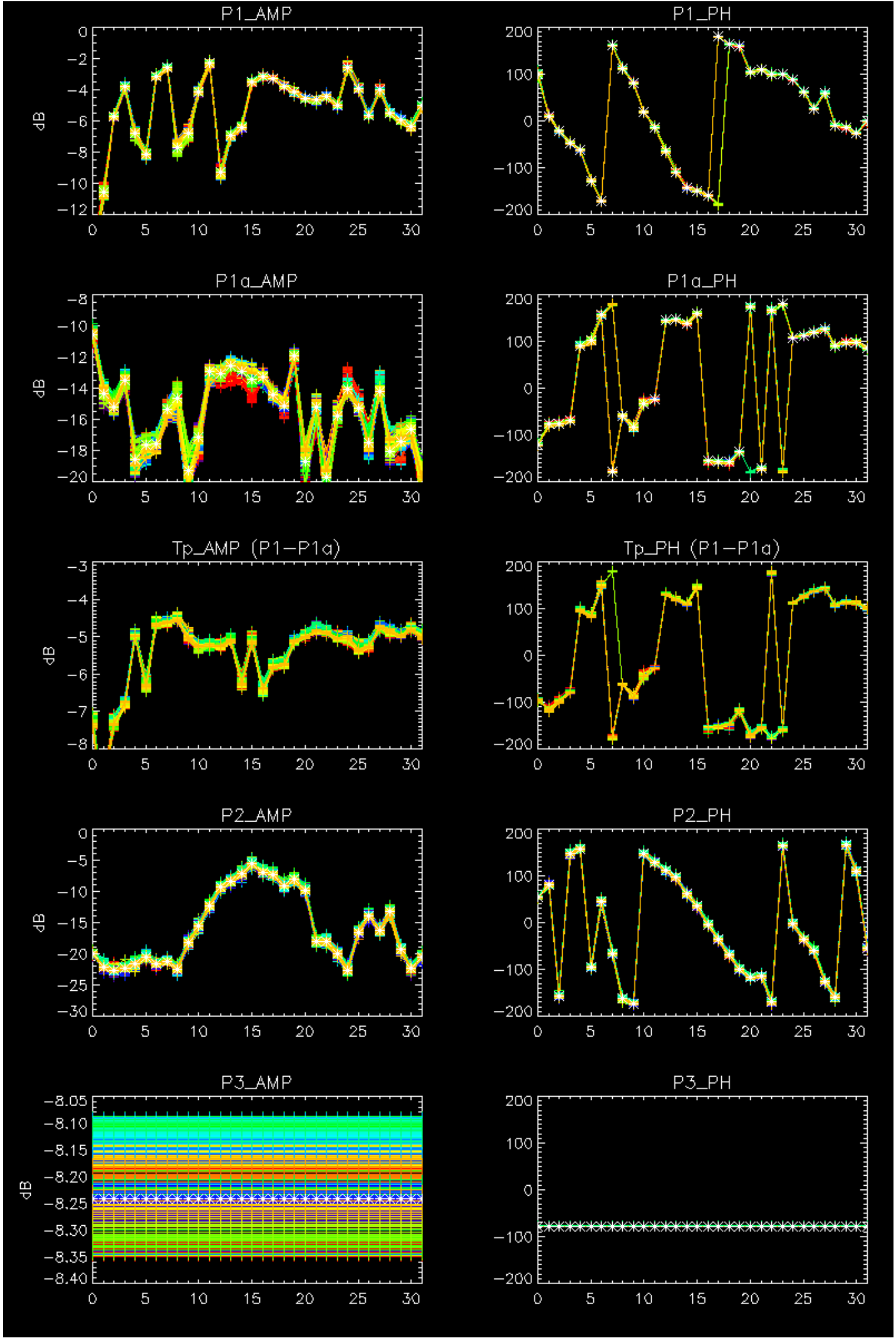
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS2



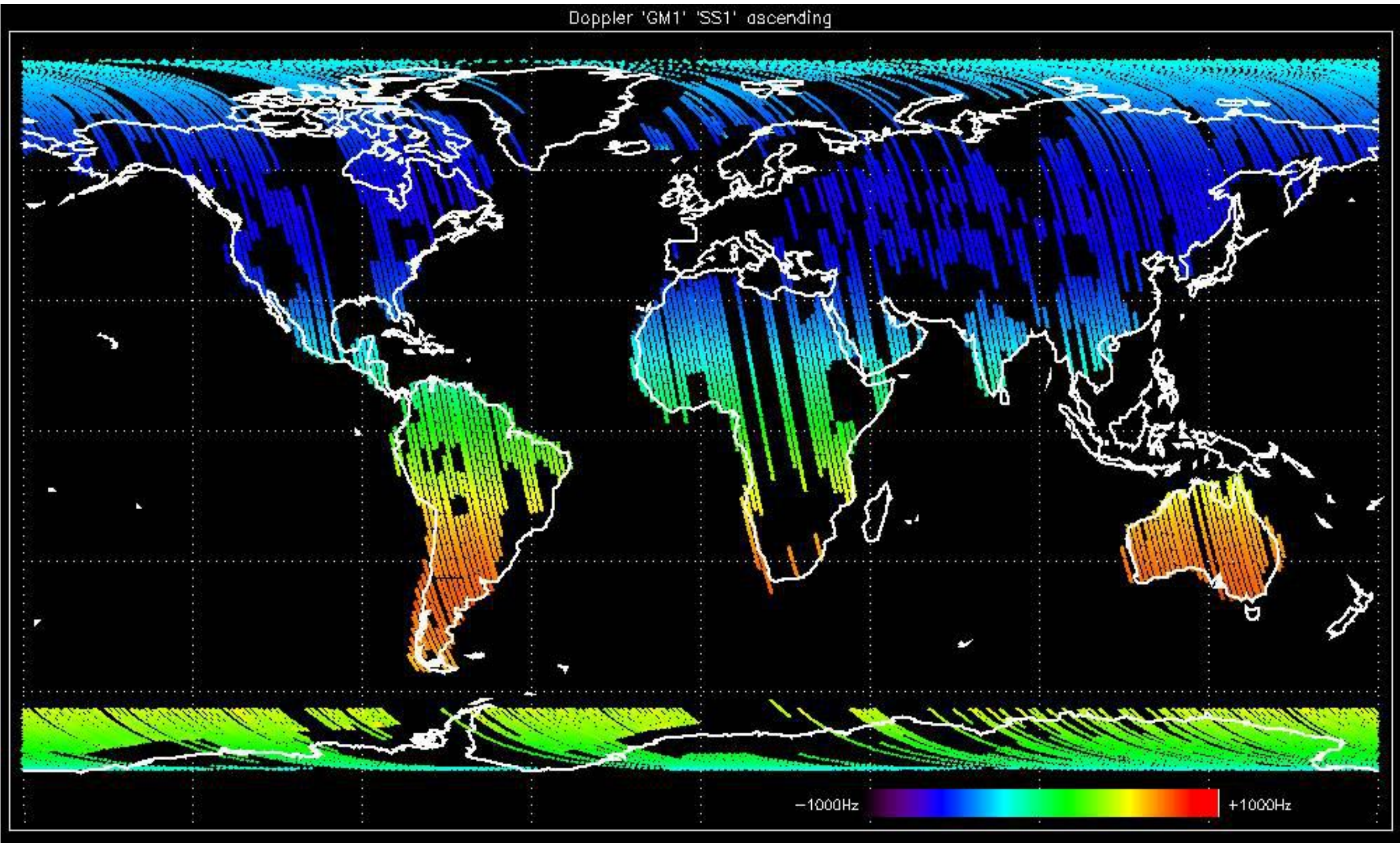
No anomalies observed.



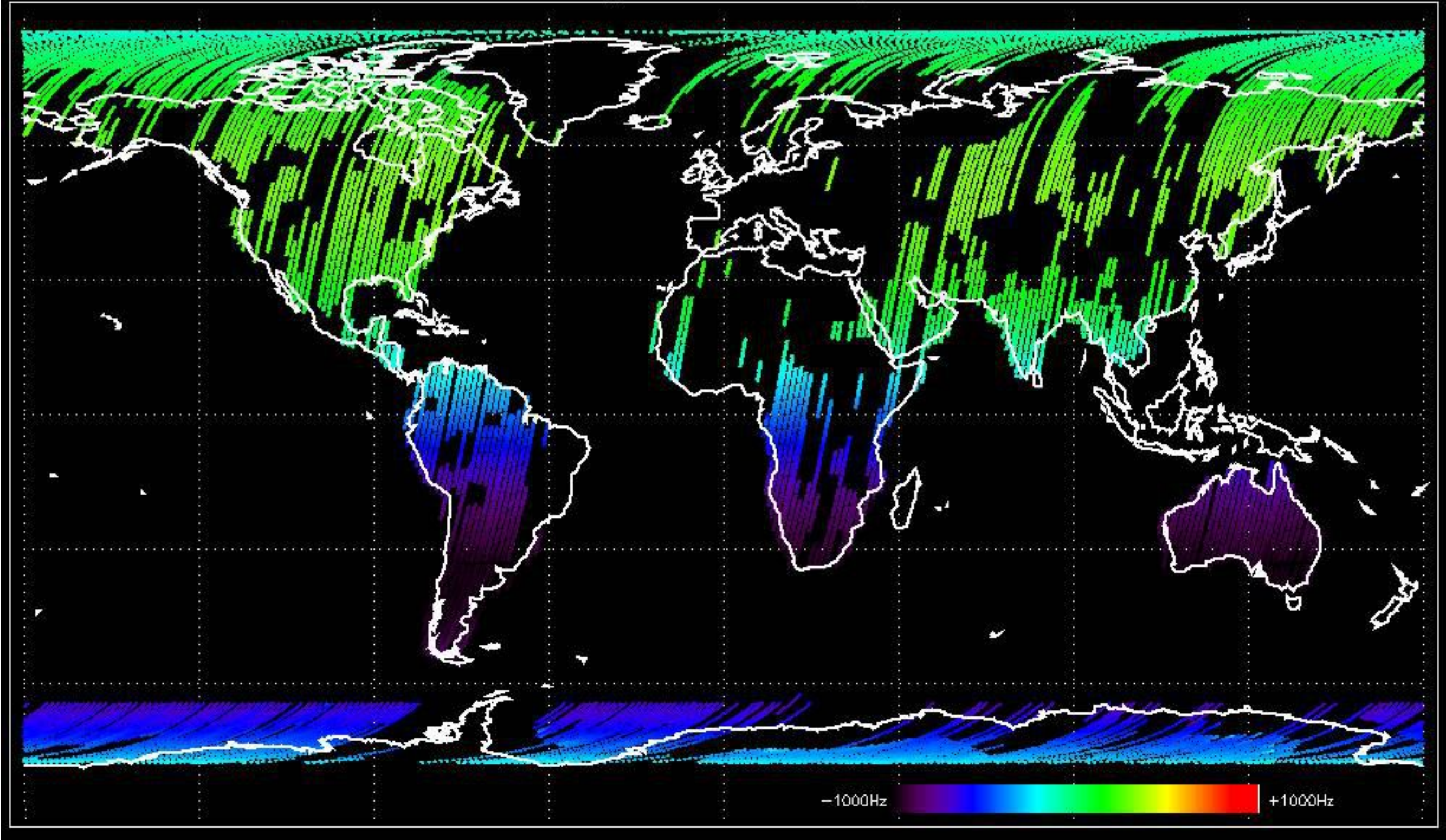


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

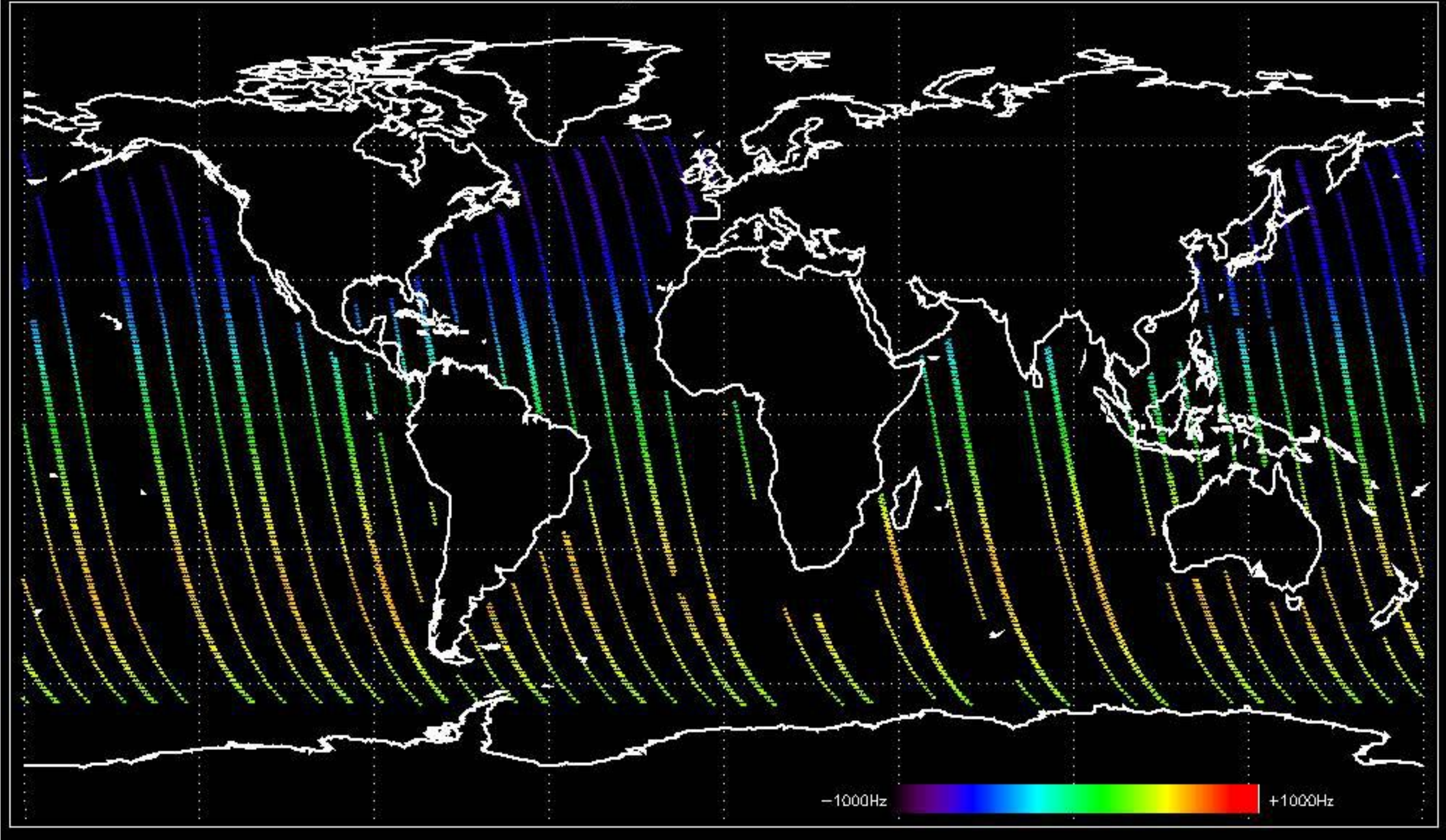
Doppler 'GM1' 'SS1' ascending



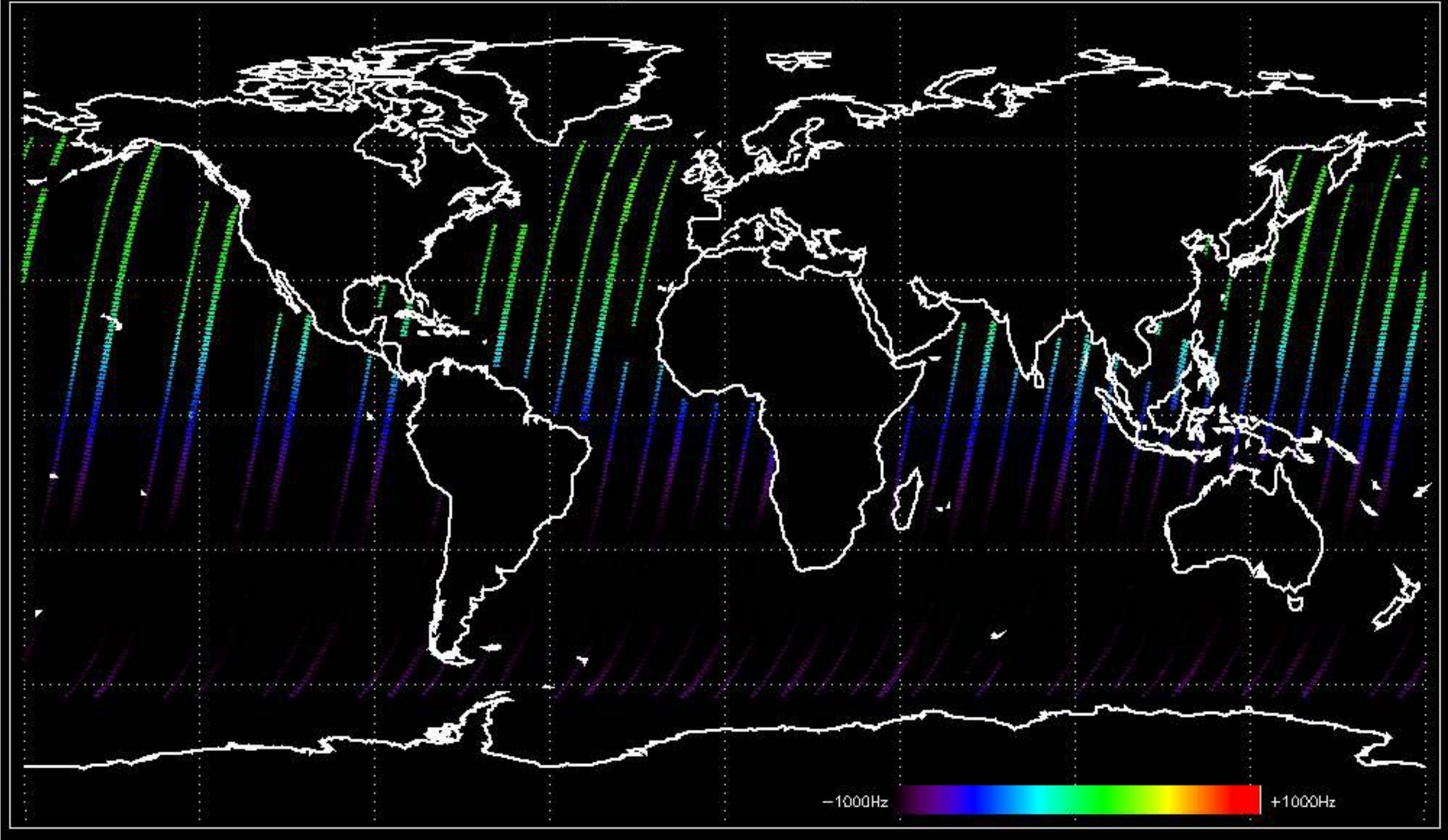
Doppler 'GM1' 'SS1' descending



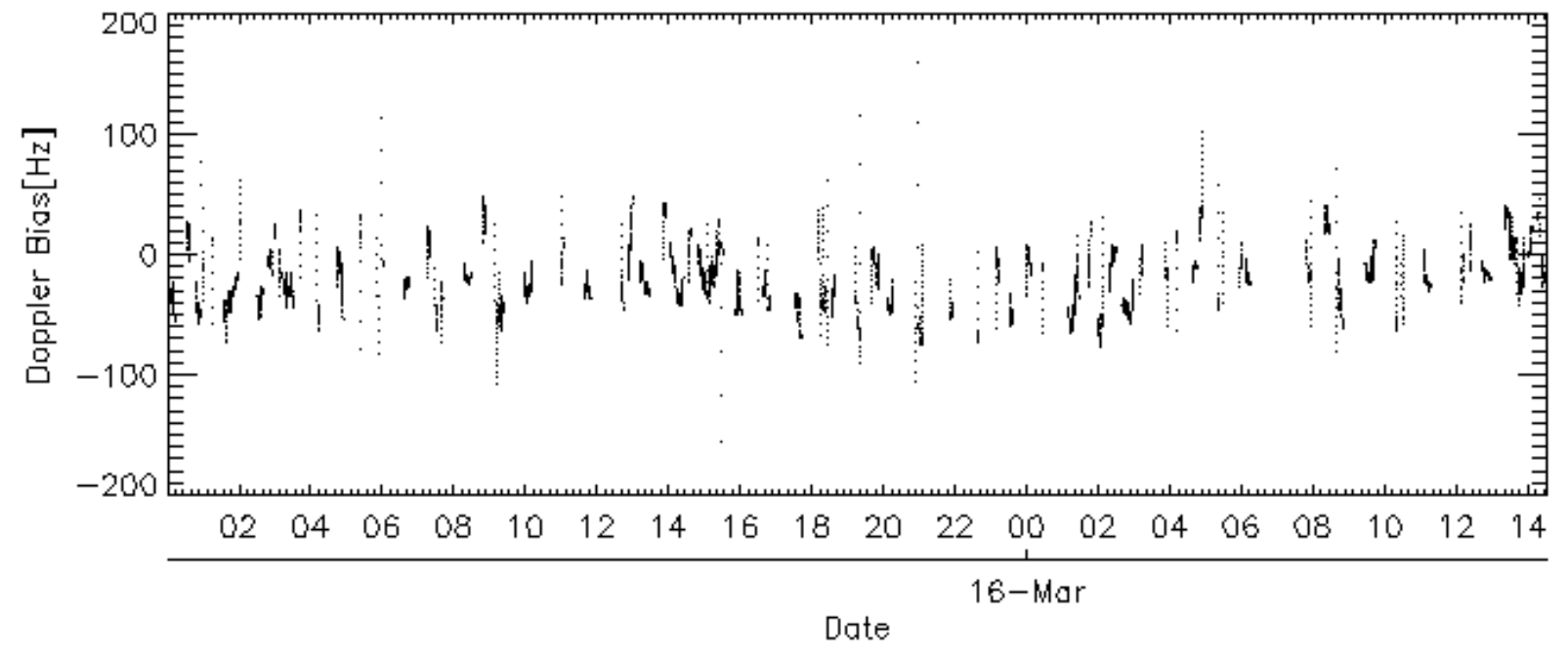
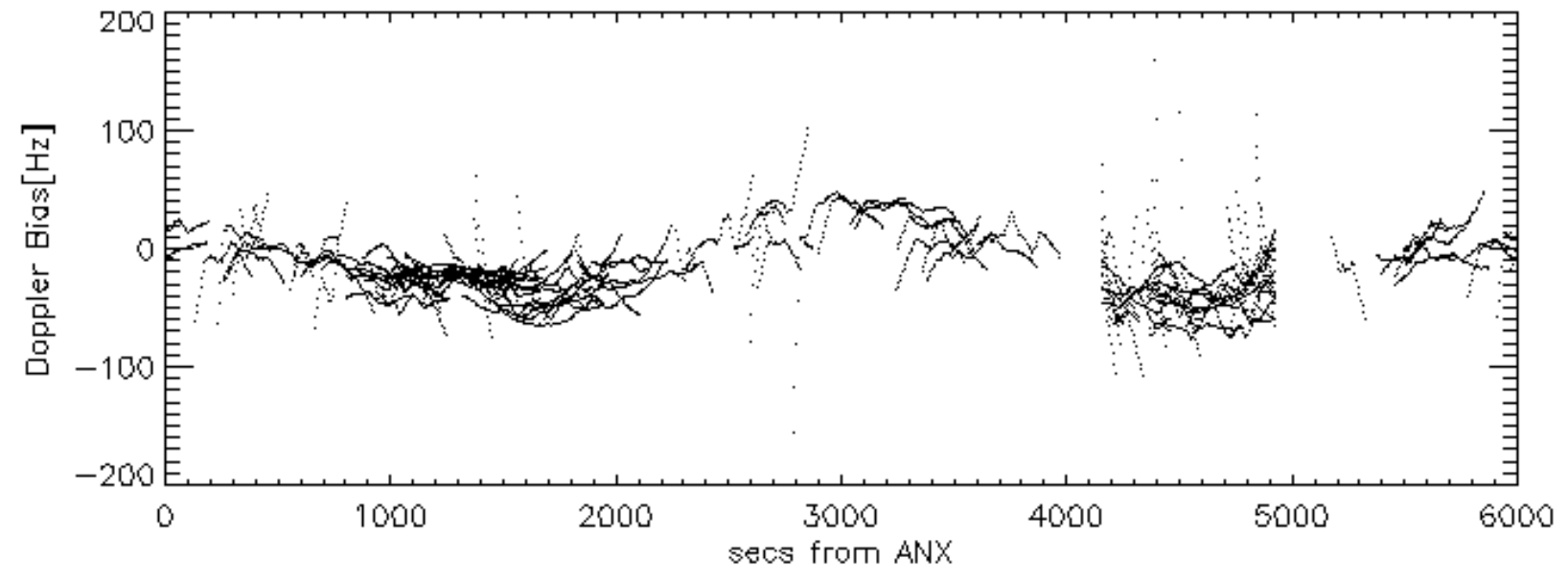
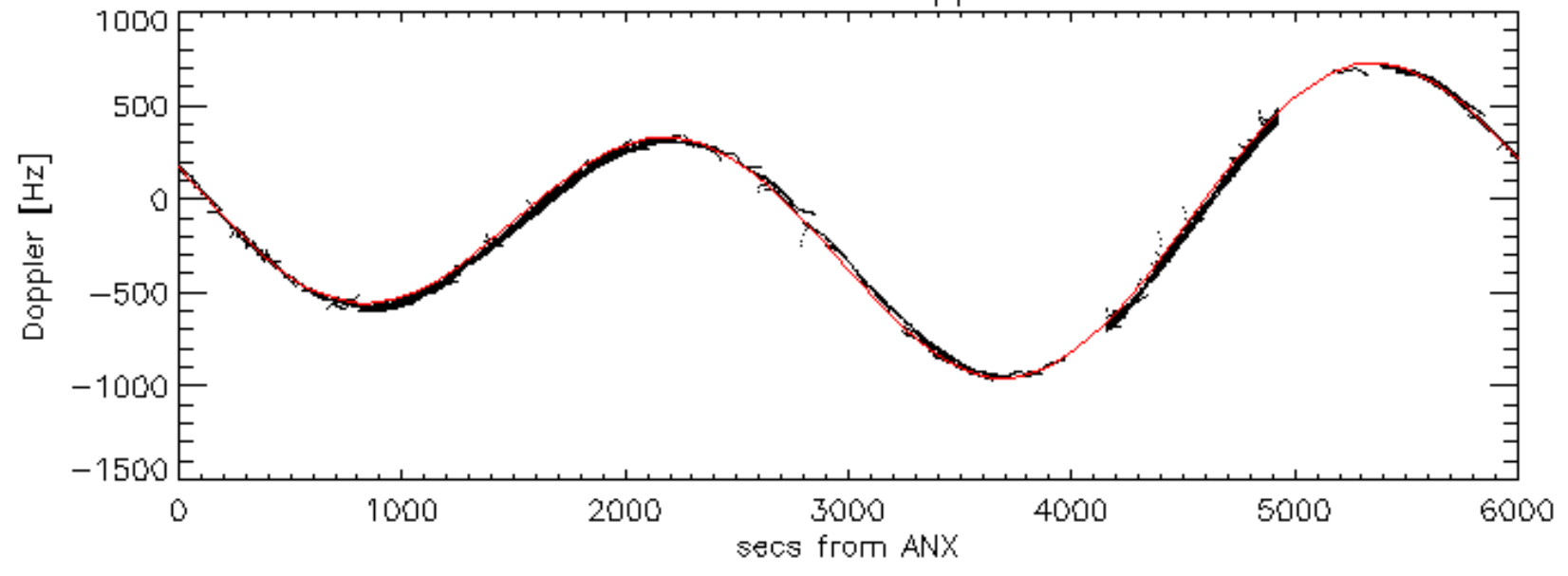
Doppler 'WVS' 'IS2' ascending

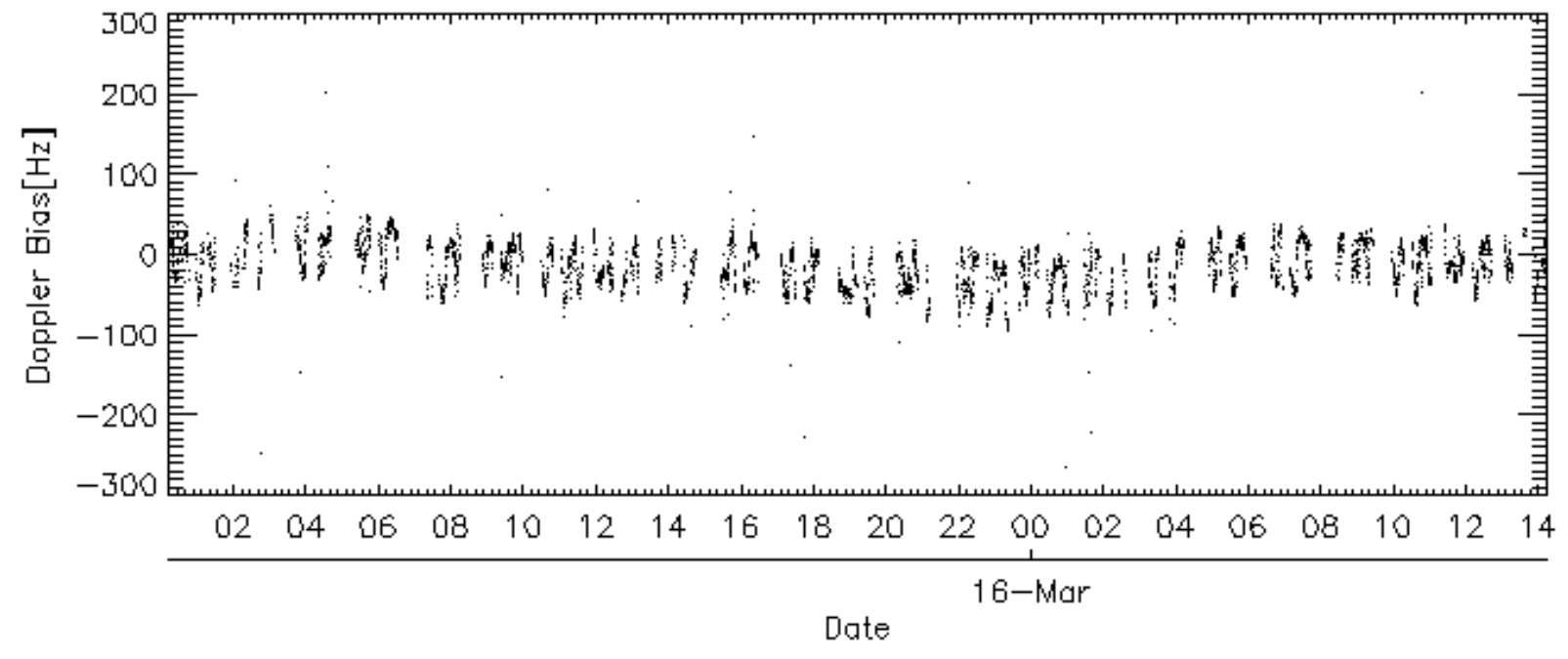
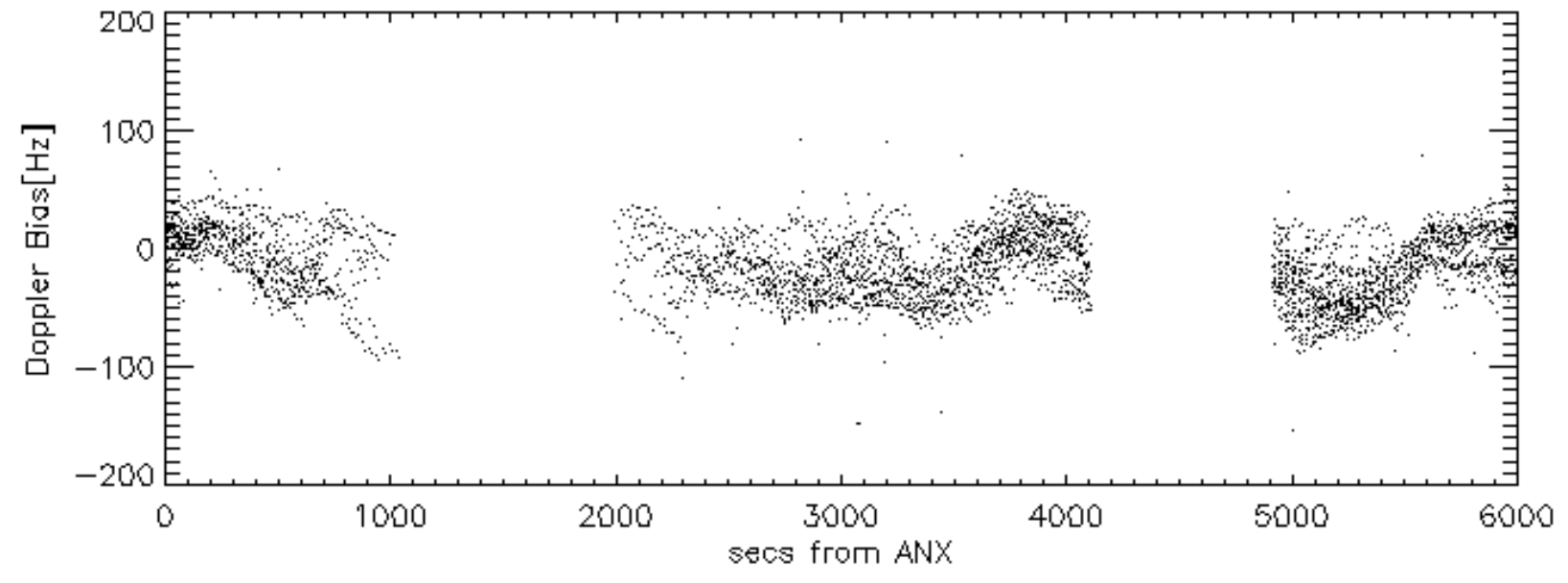
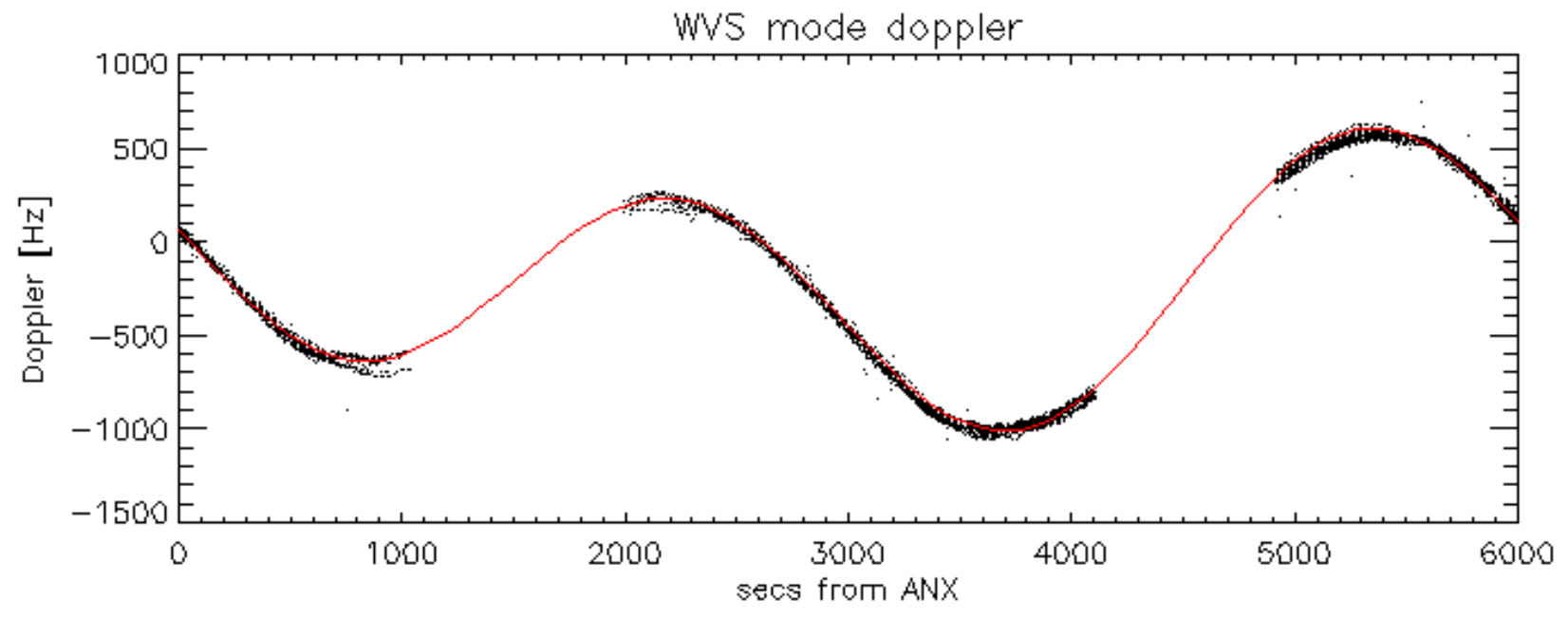


Doppler 'WVS' 'IS2' descending

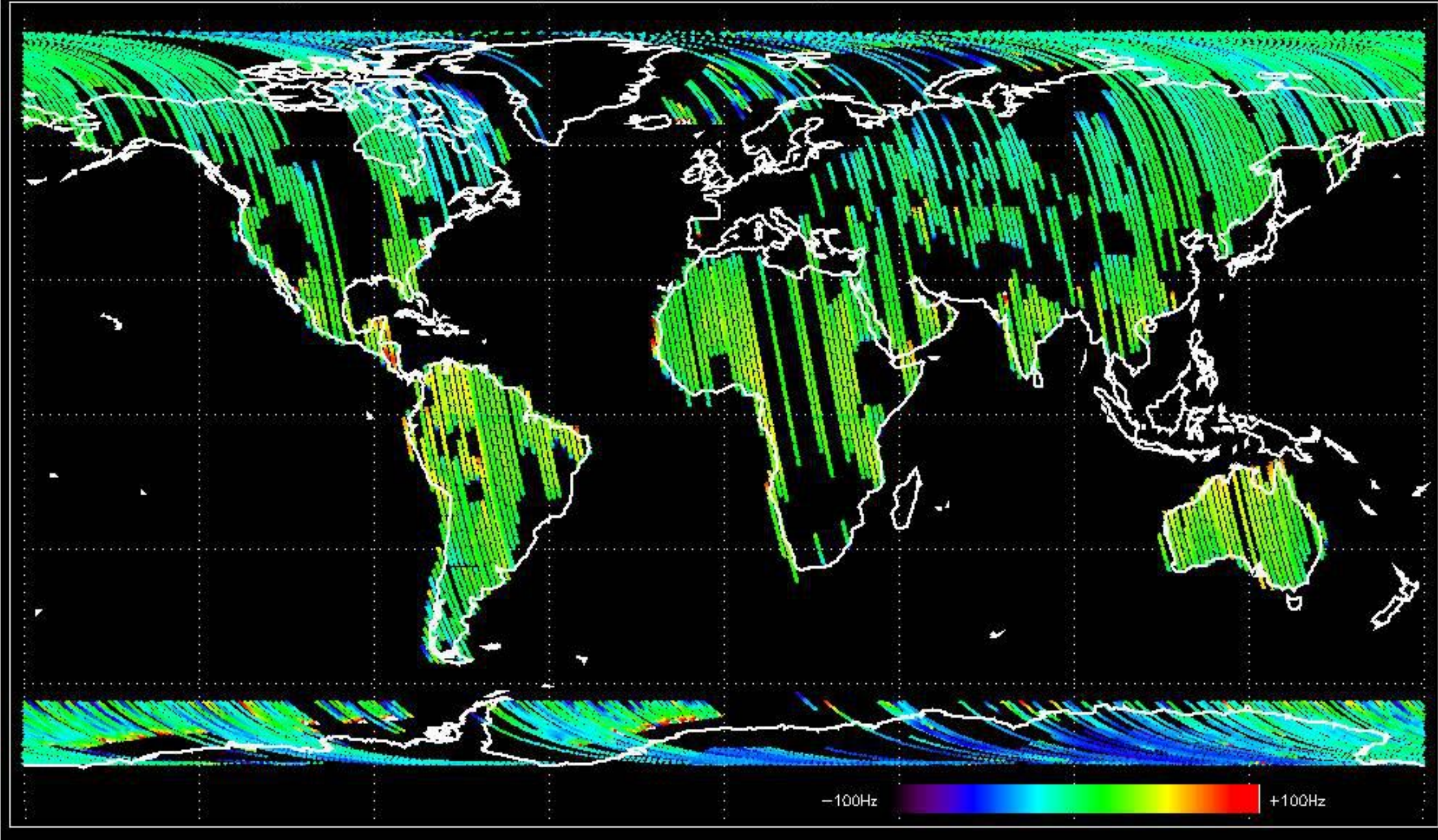


GM1 mode doppler

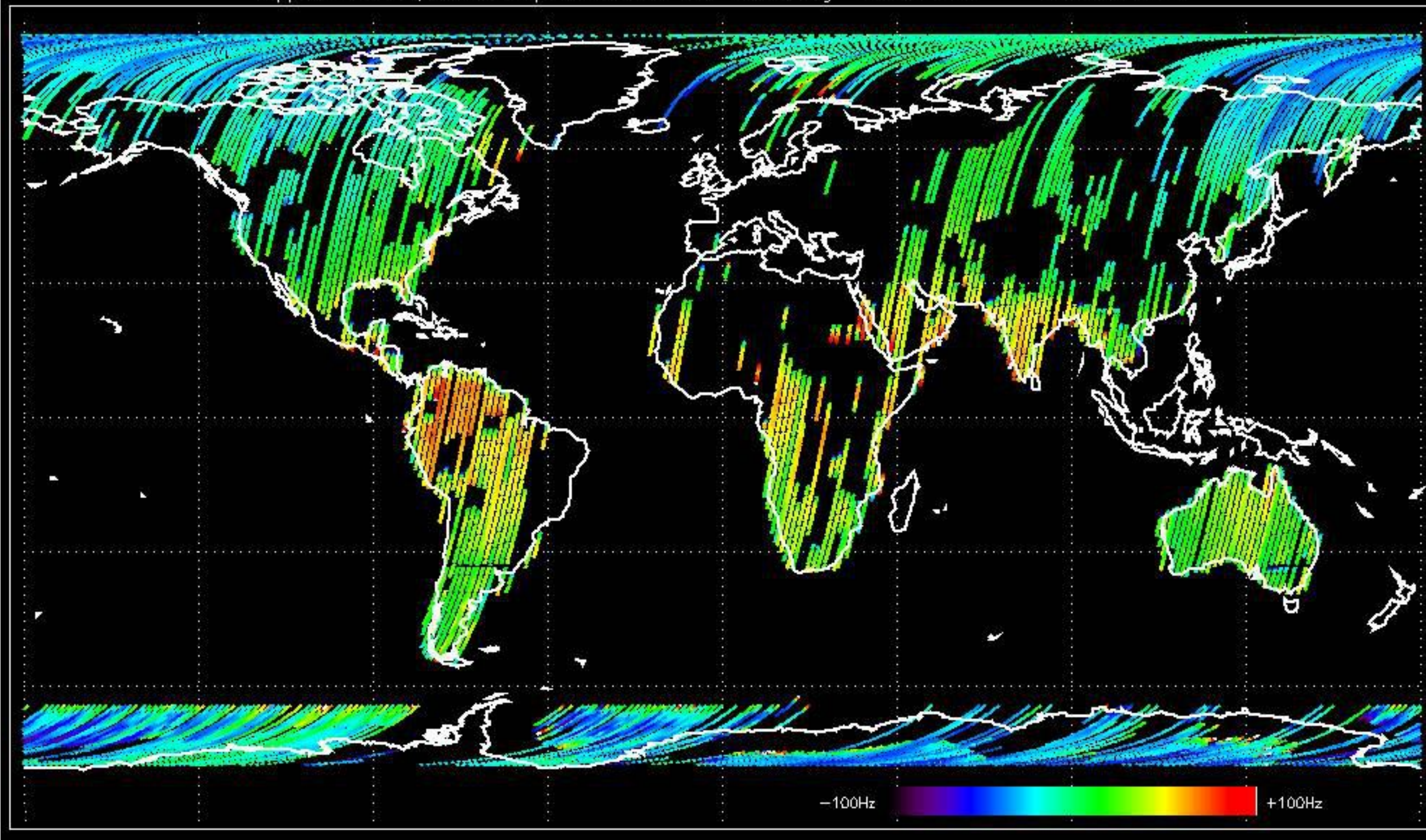




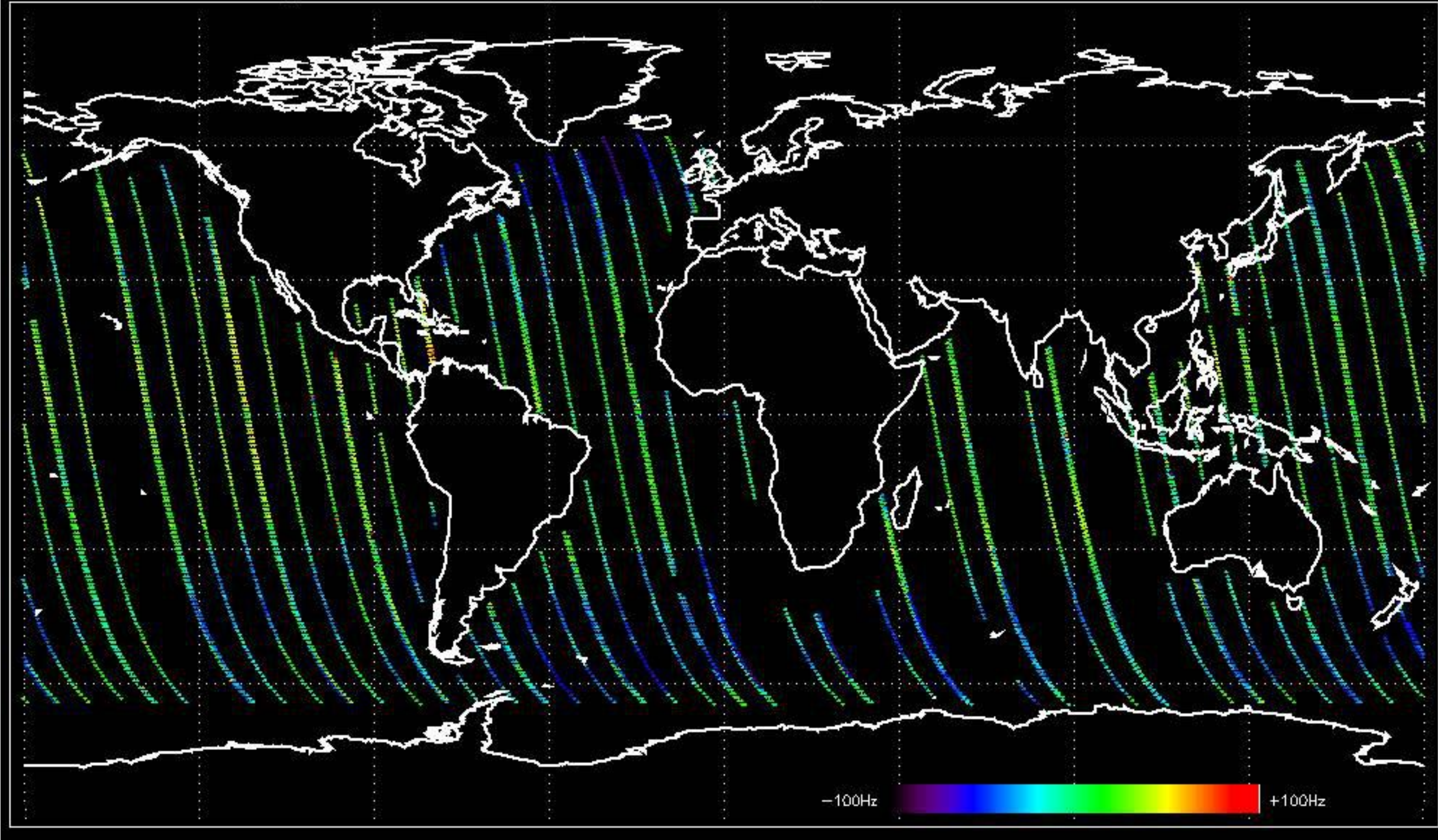
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -20.071449 Hz



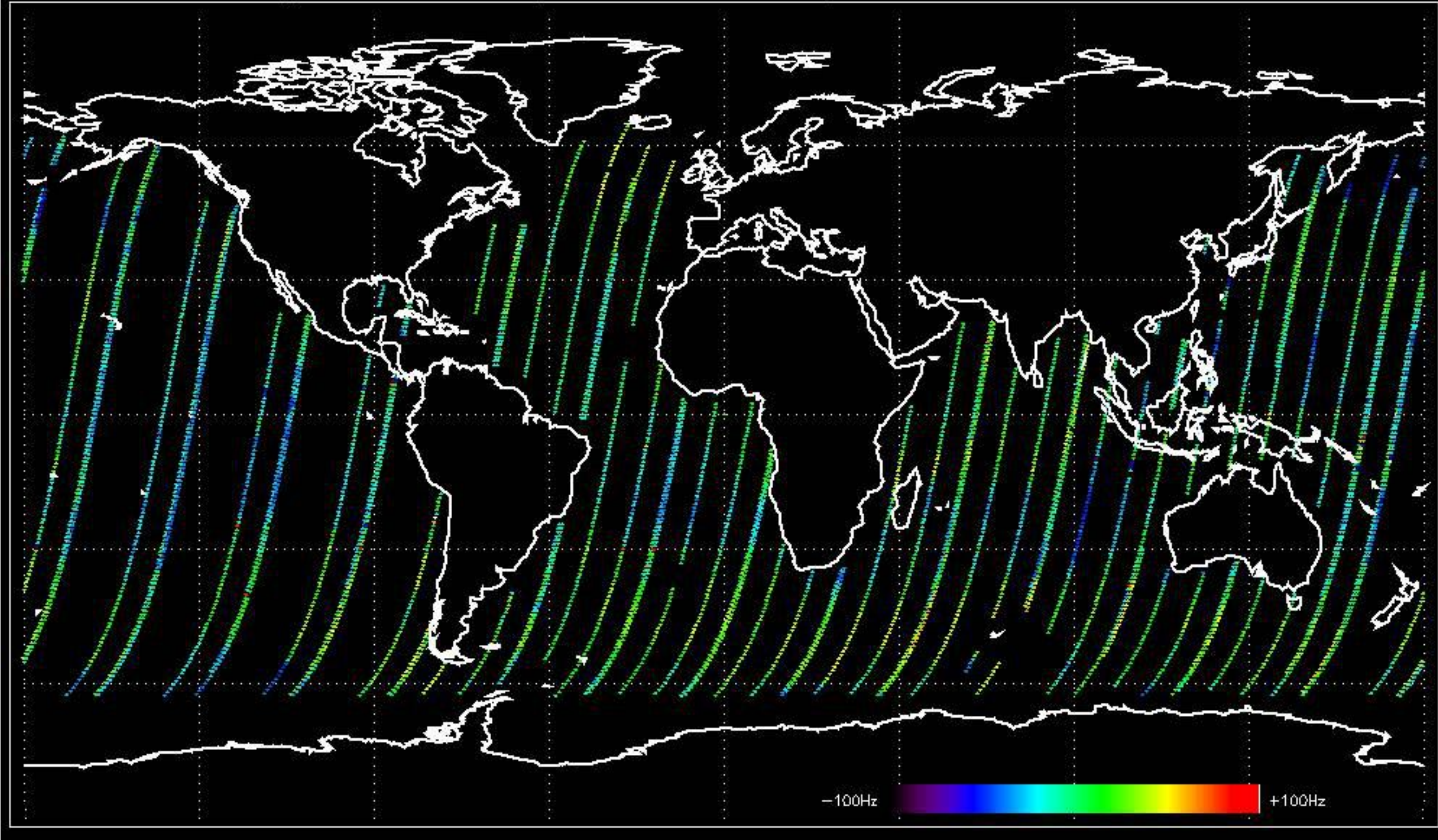
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.333724 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -13.806554 Hz

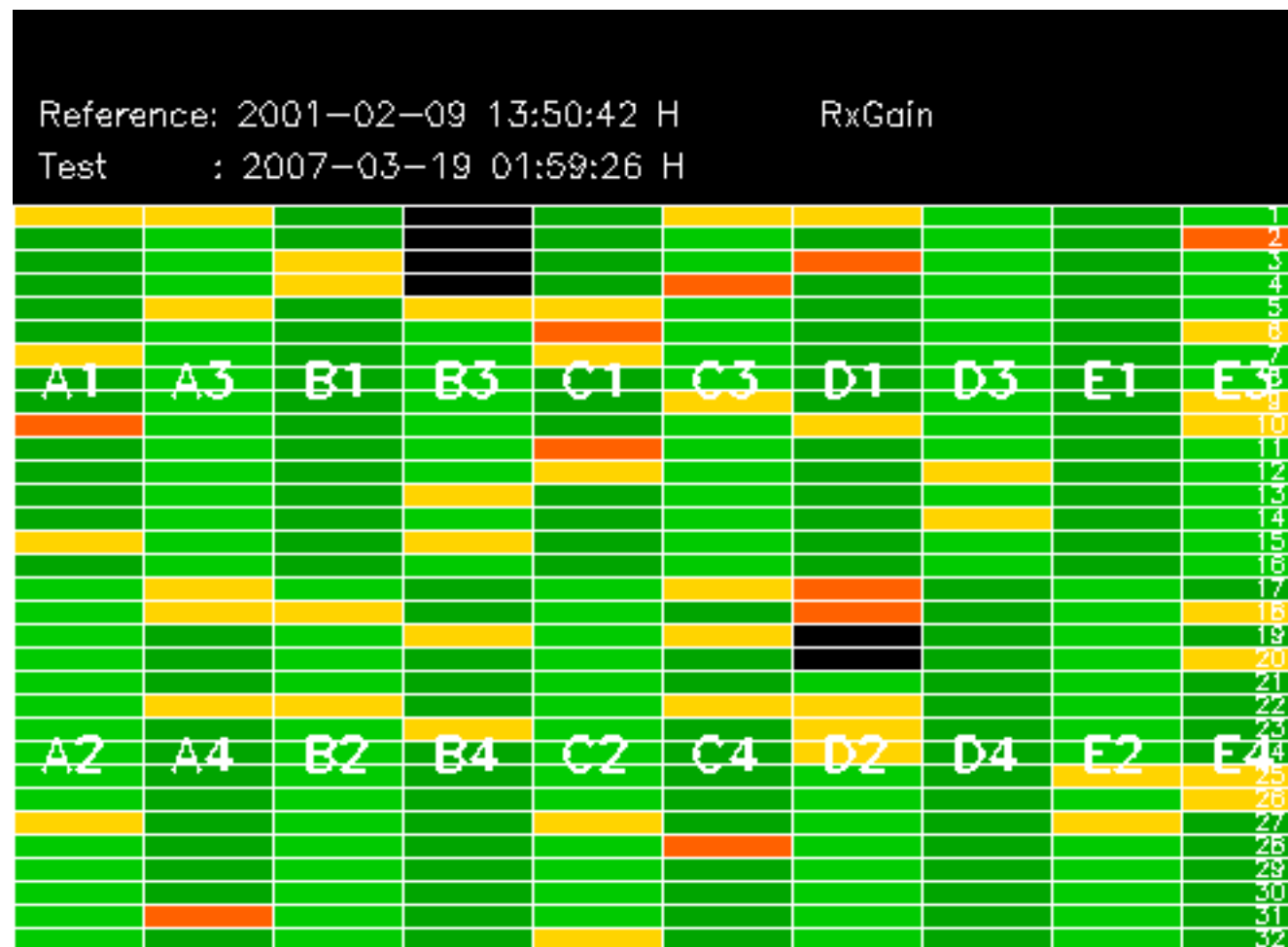


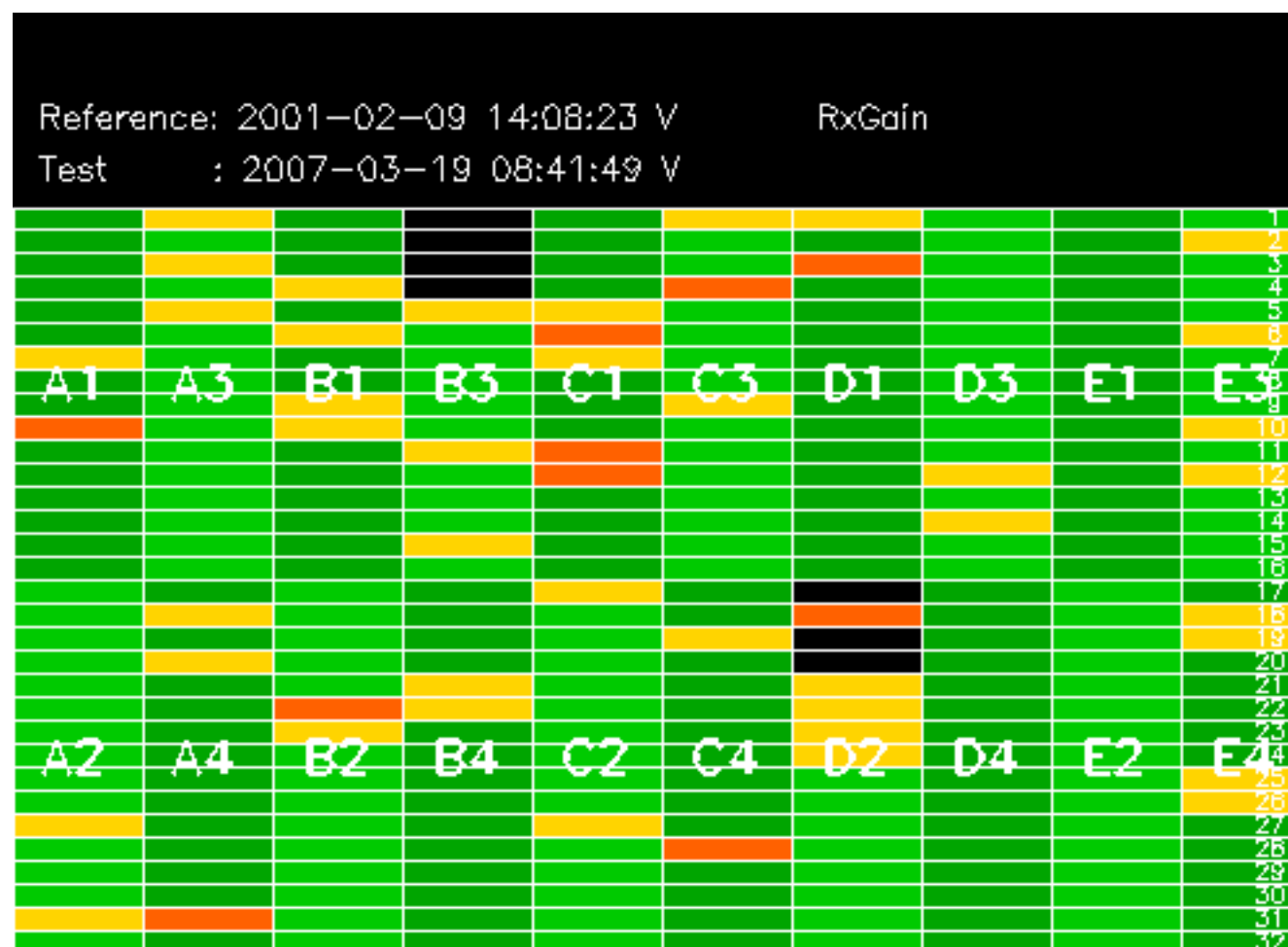
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -13.736687 Hz

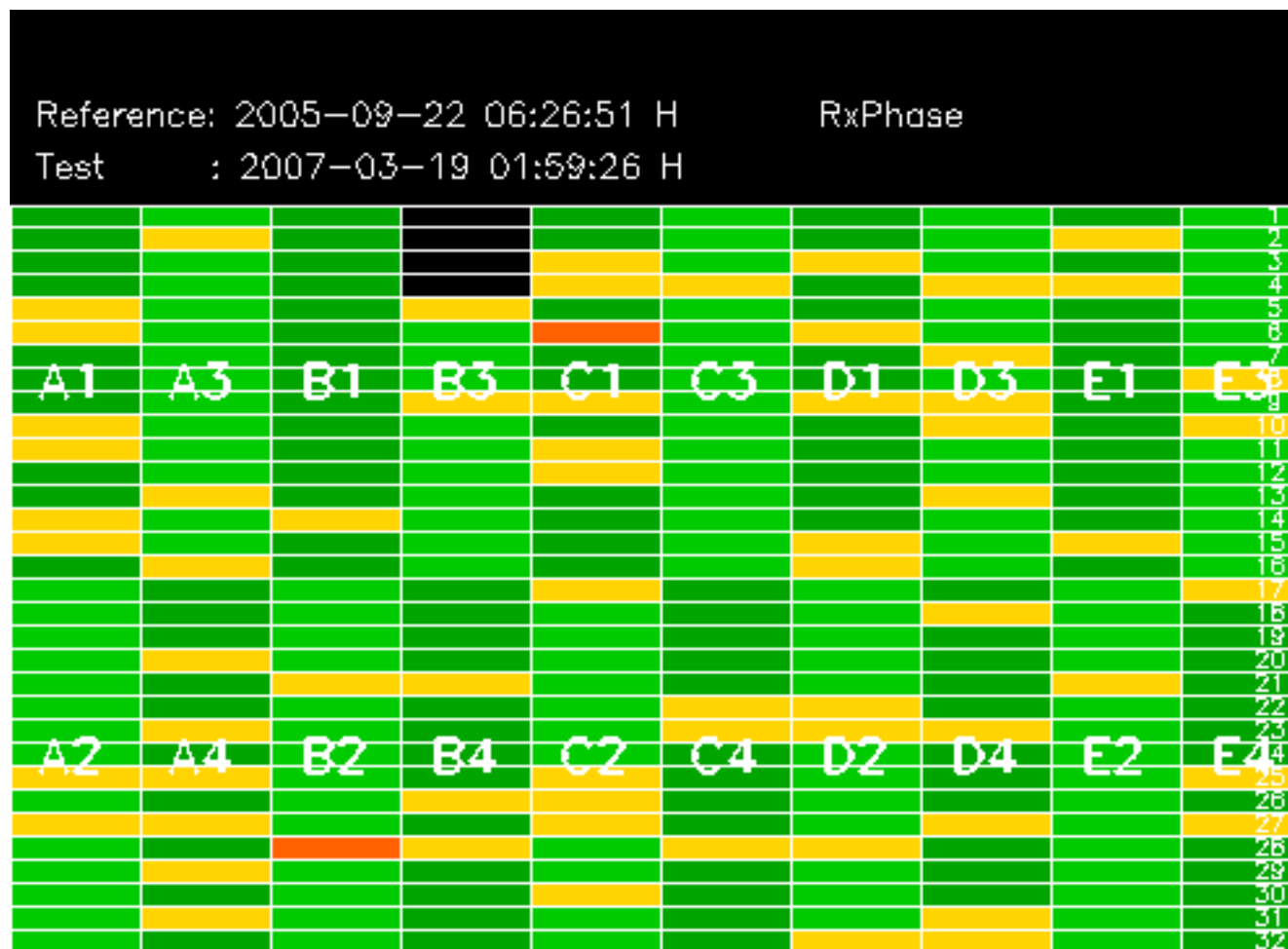


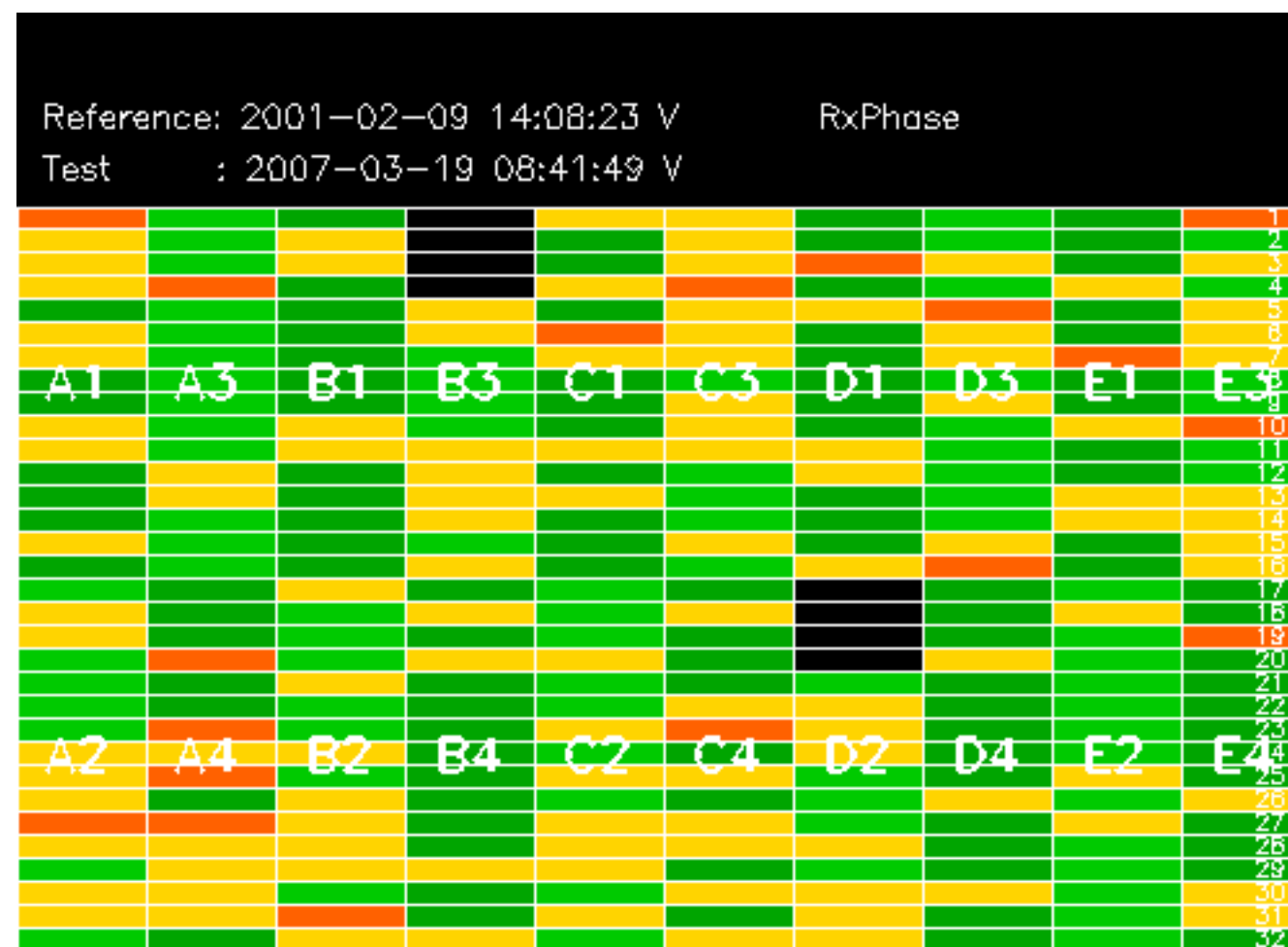
No anomalies observed on available MS products:

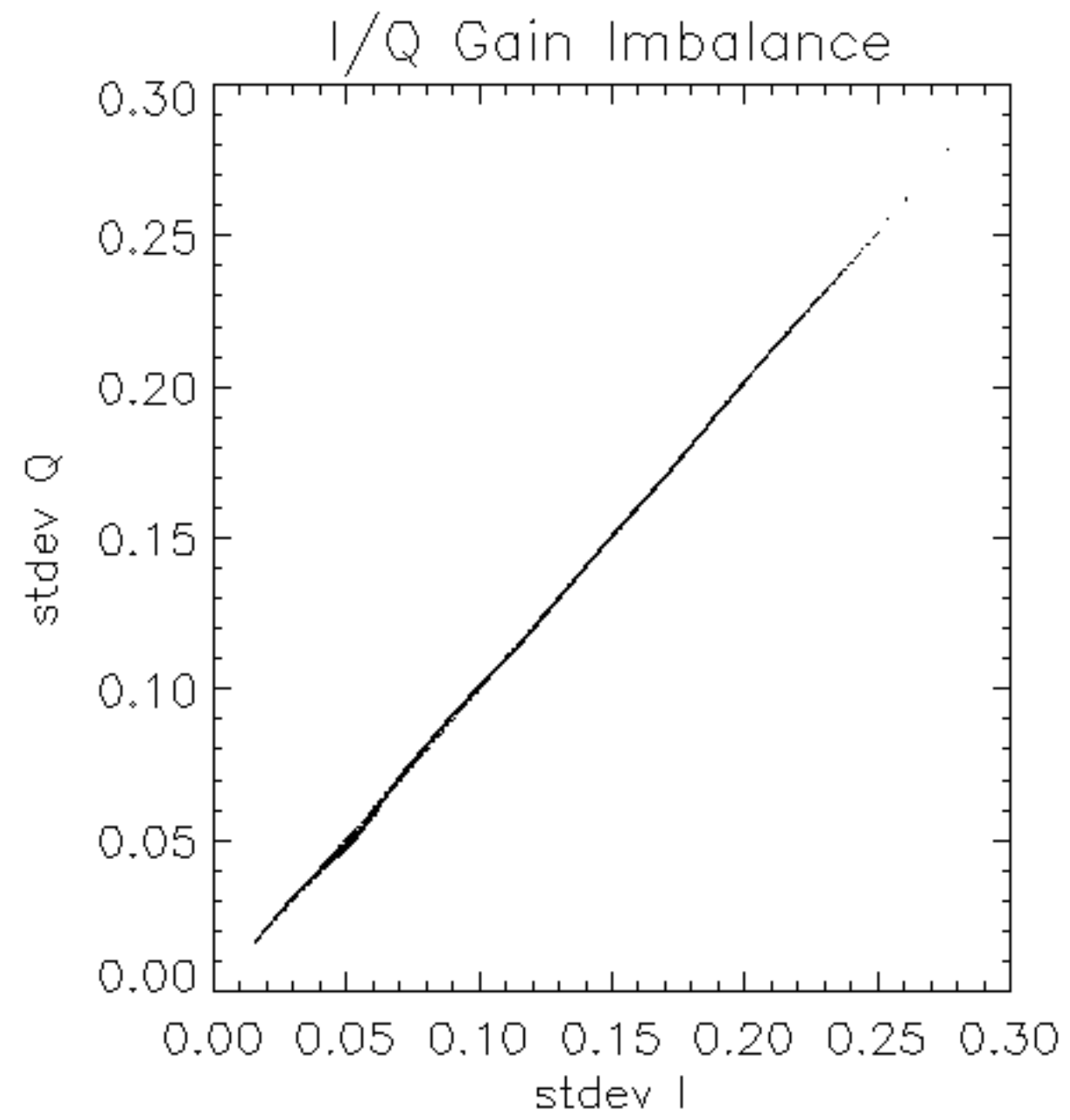
No anomalies observed.

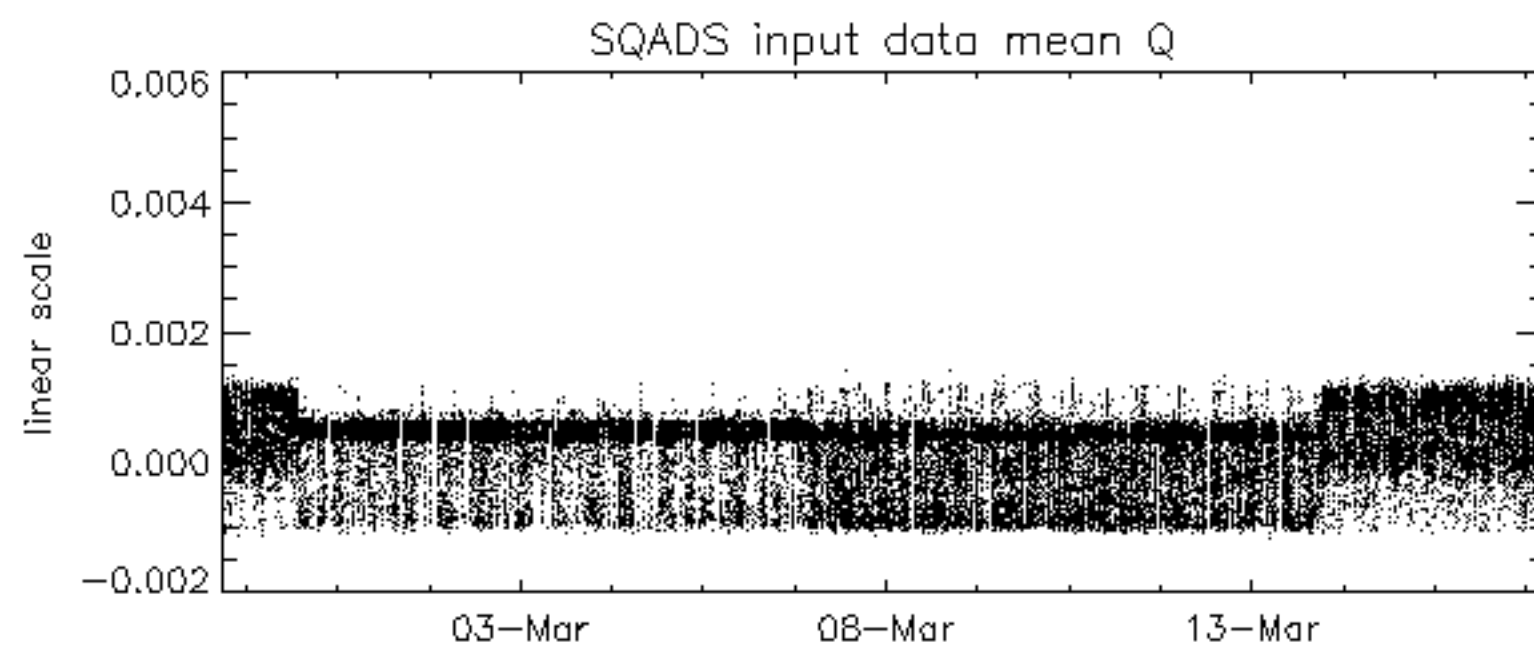
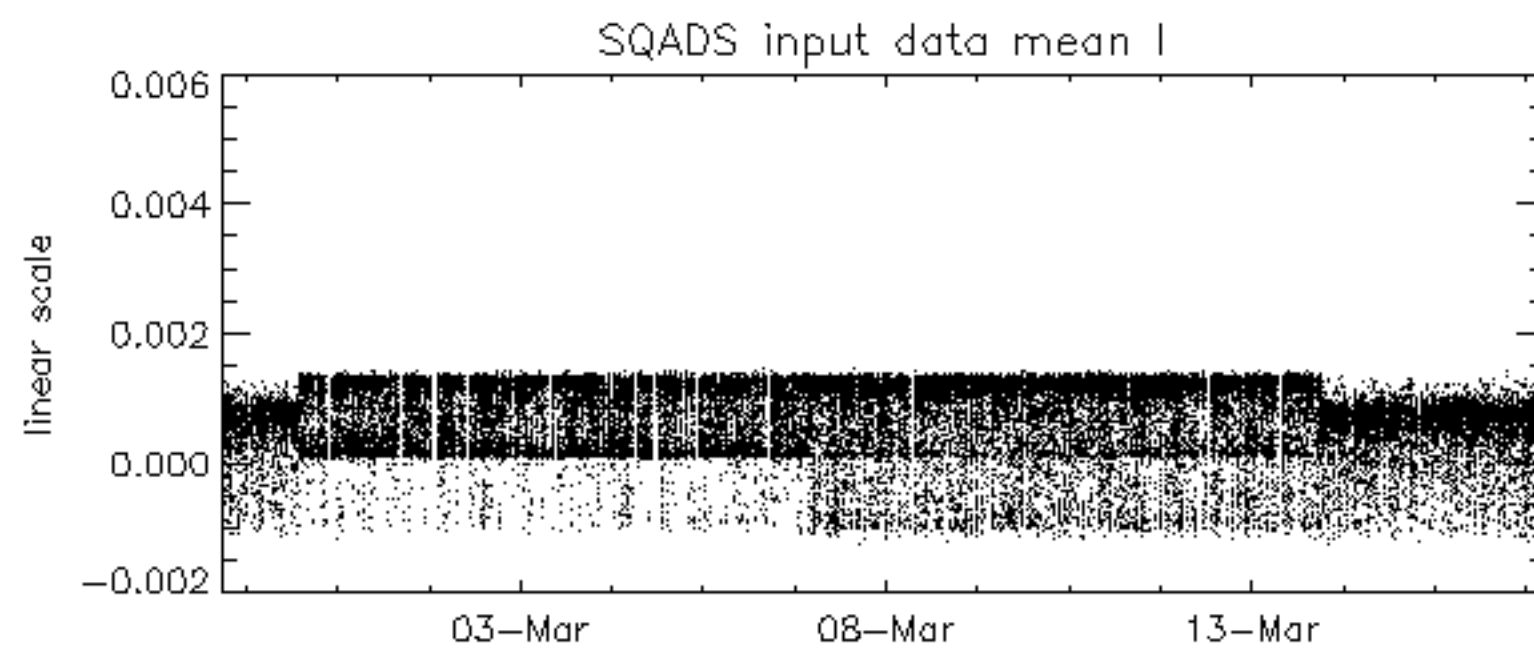
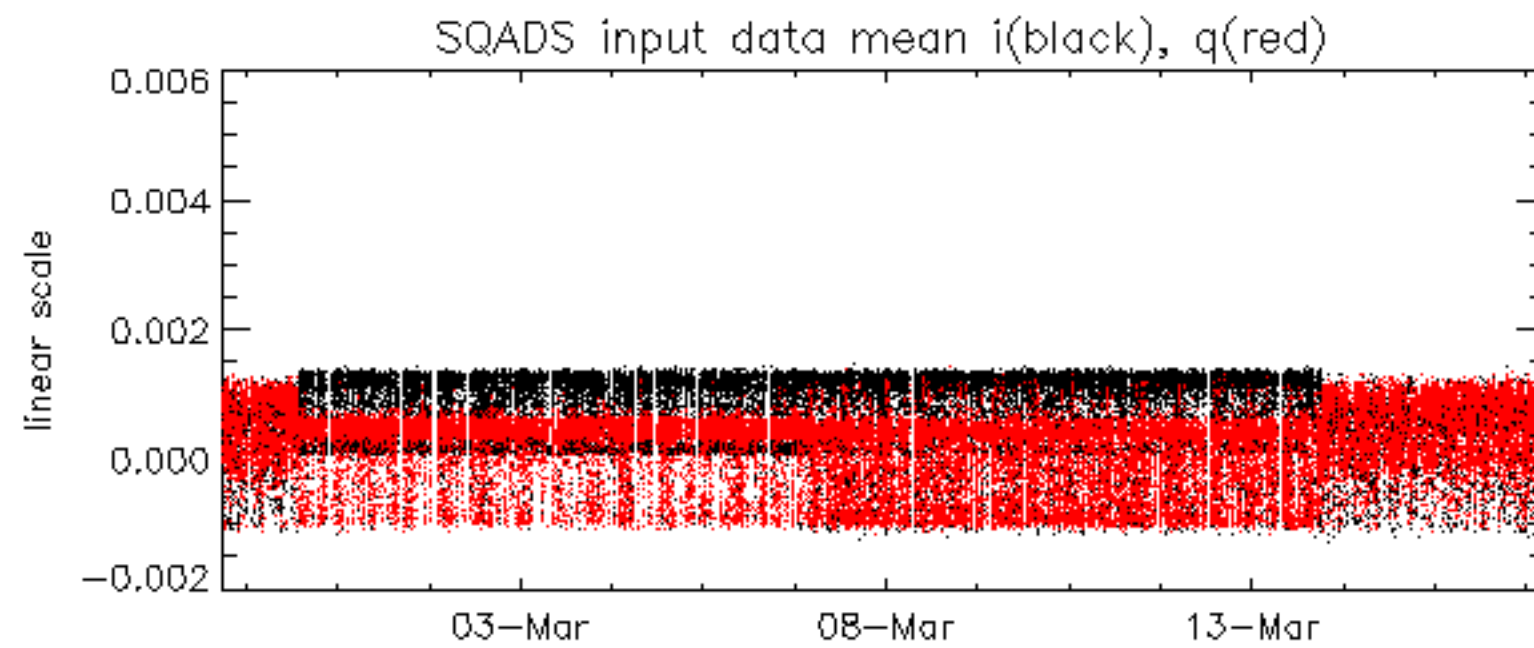


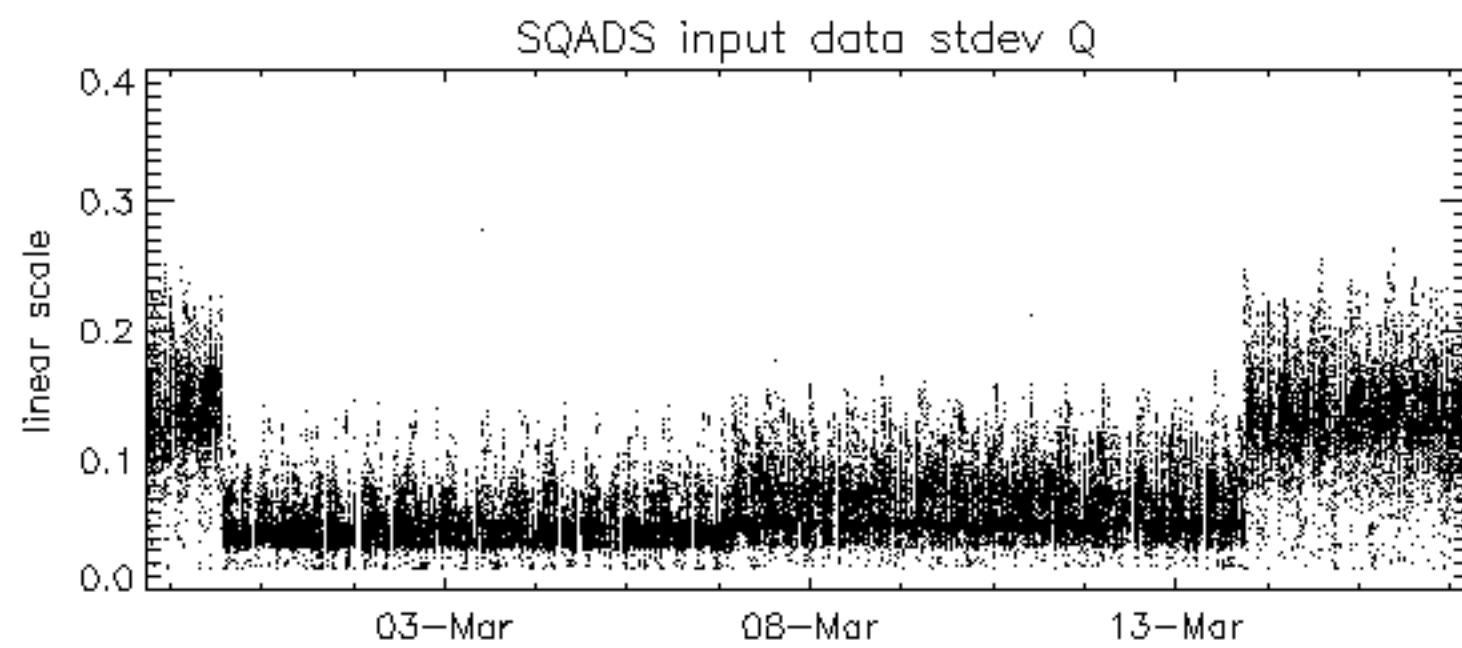
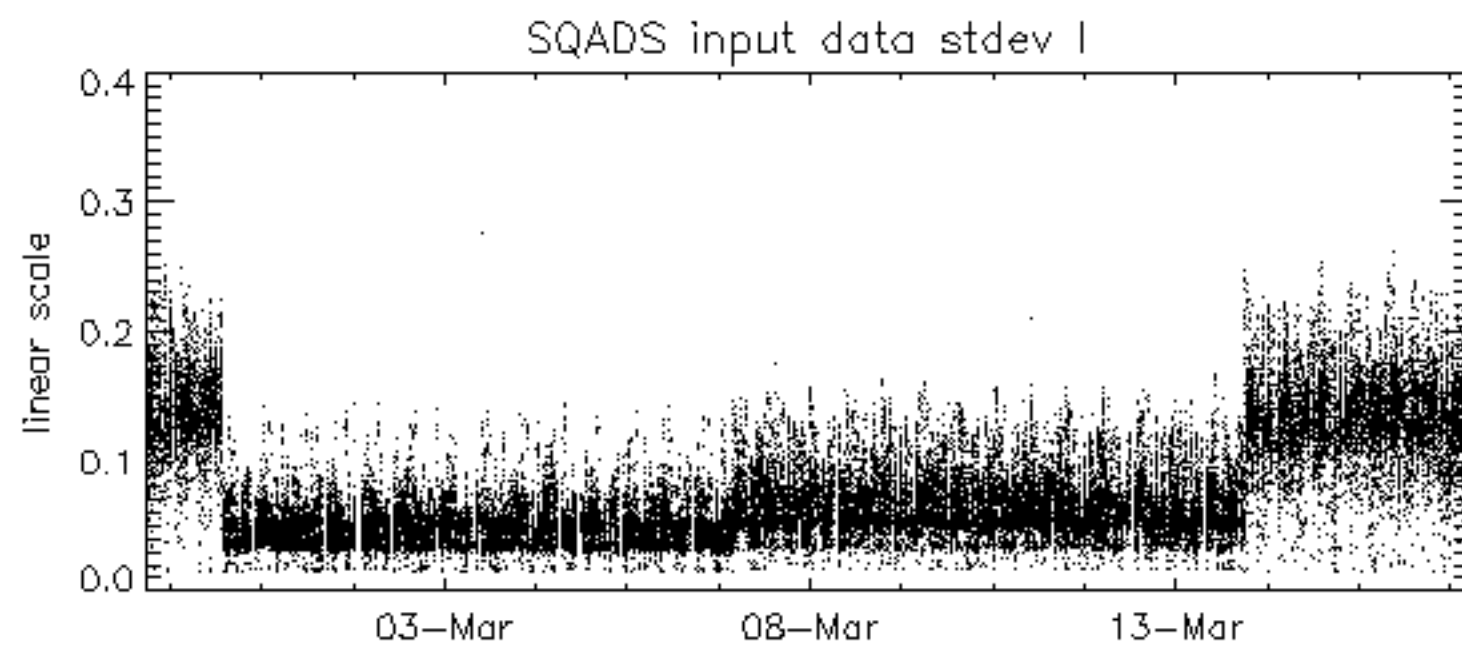
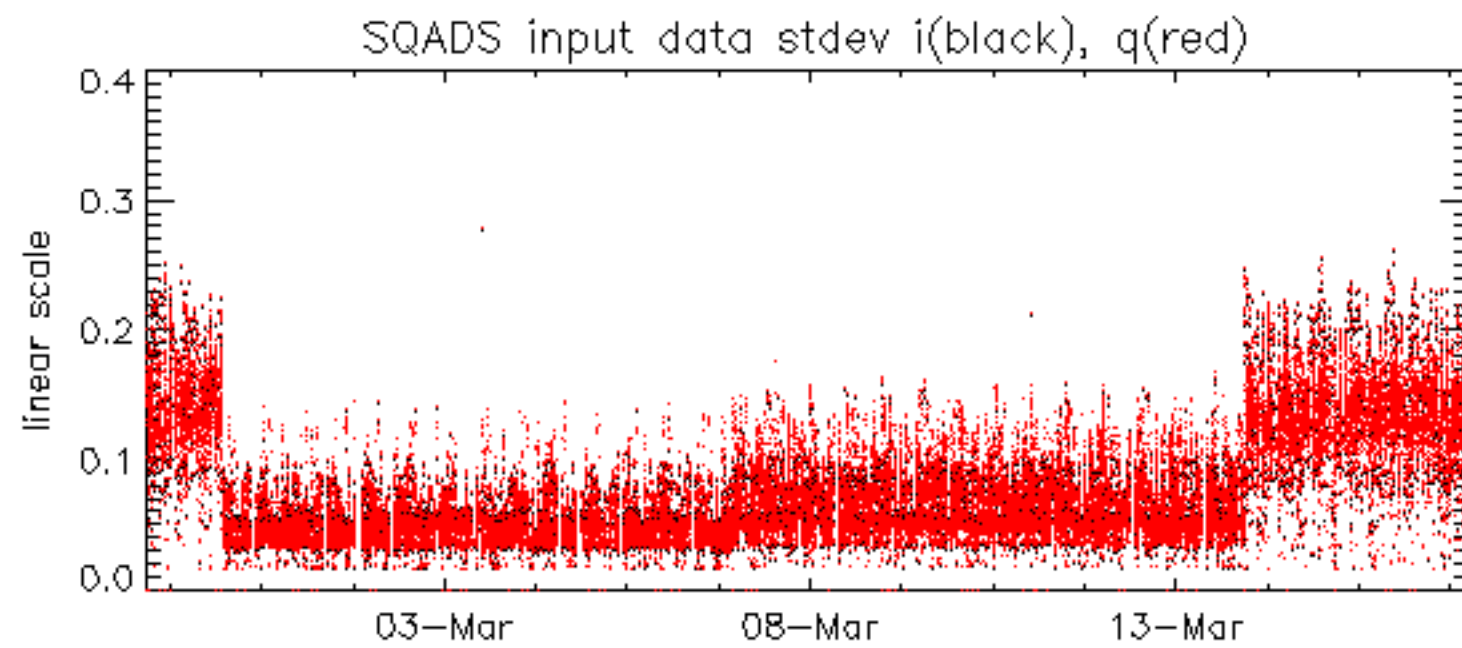










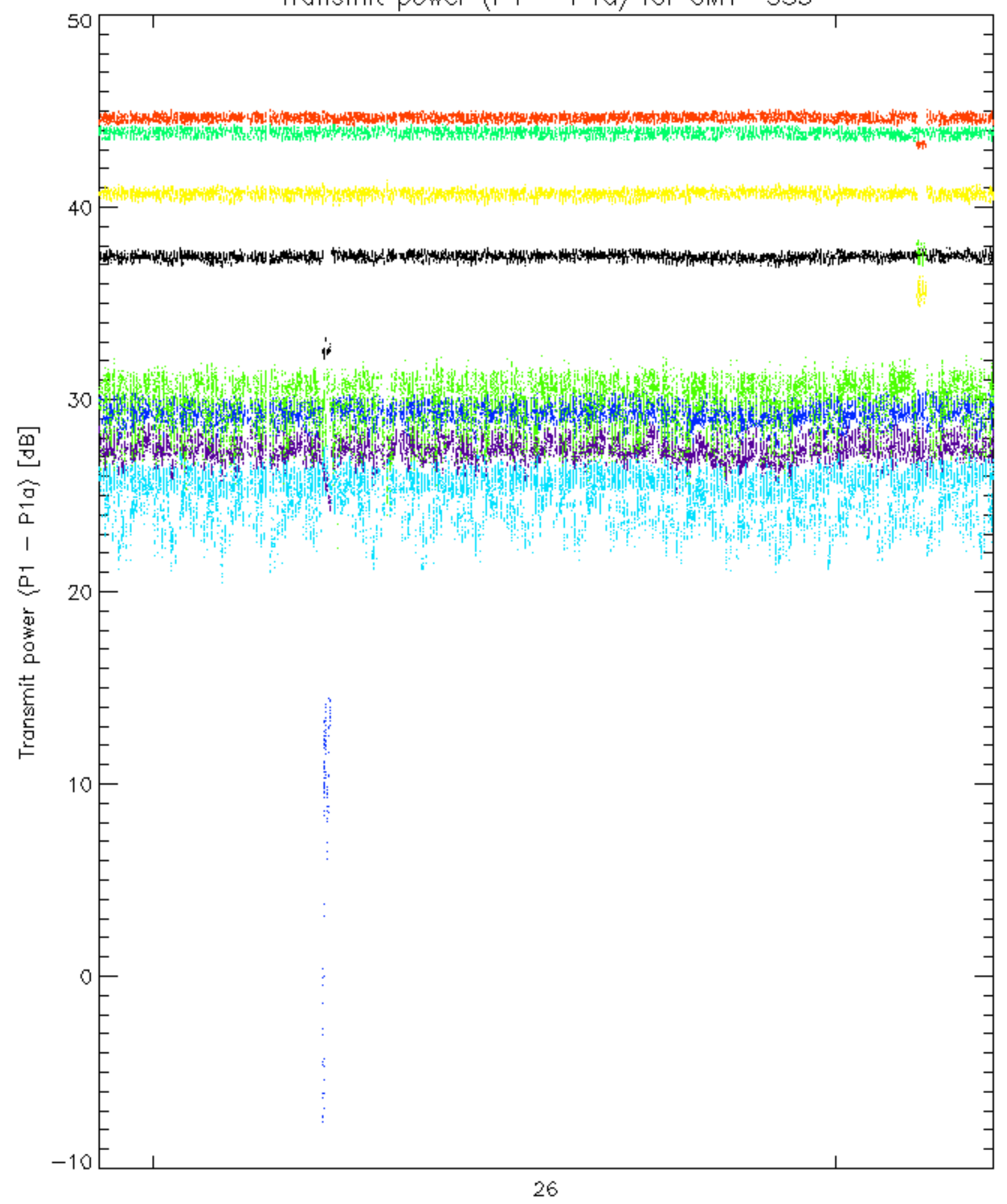


Summary of analysis for the last 3 days 2007031[456]

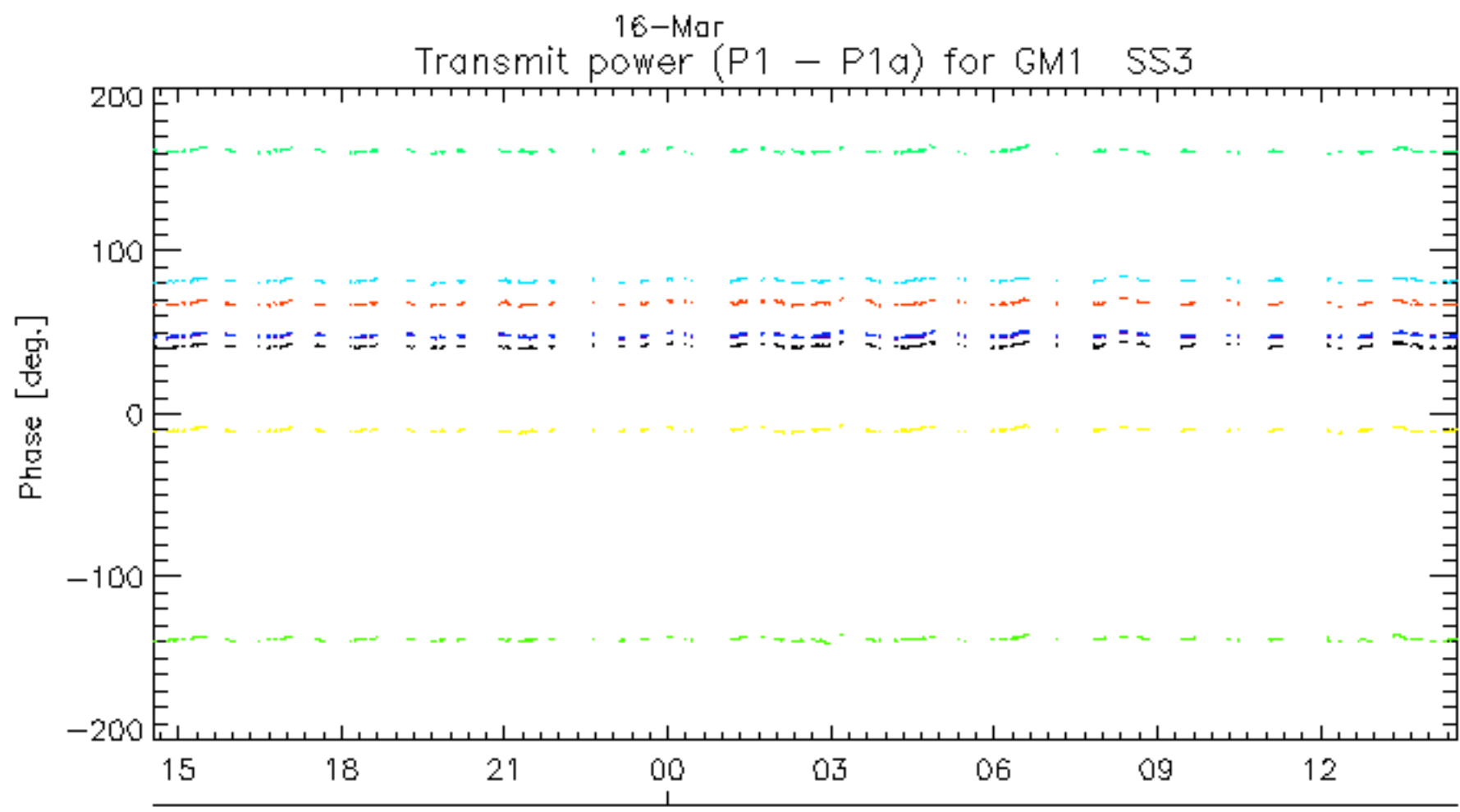
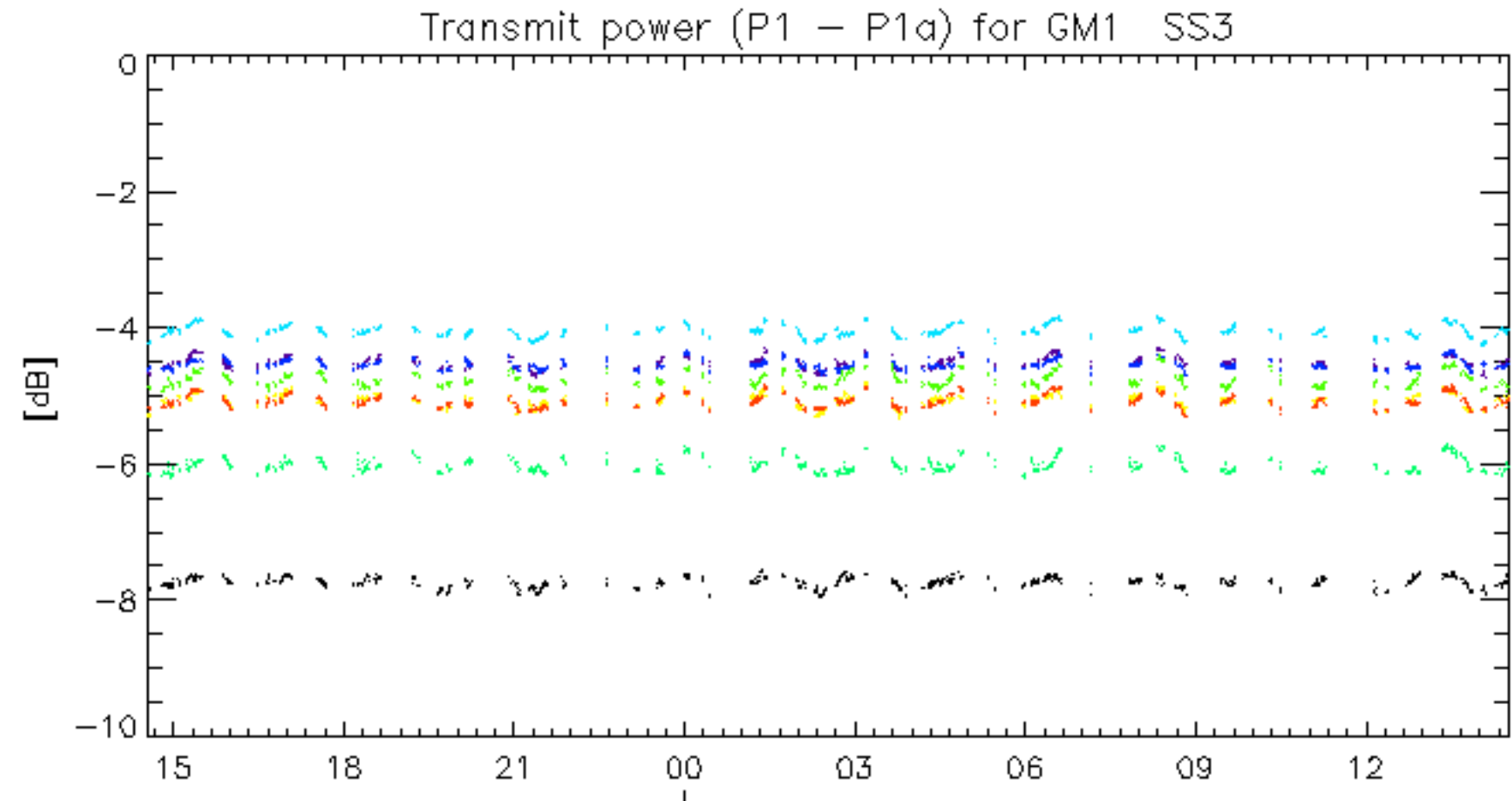
The assumptions is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

| Filename | num_gaps | num_missing_lines |
|--|----------|-------------------|
| ASA_IMM_1PNPDE20070316_210538_000000342056_00258_26364_4589.N1 | 1 | 0 |
| ASA_IMM_1PNPDK20070315_133248_000000812056_00239_26345_1572.N1 | 0 | 2 |
| ASA_IMM_1PNPDK20070316_092324_000000372056_00251_26357_2261.N1 | 0 | 1 |
| ASA_GM1_1PNPDK20070314_201257_000009242056_00228_26334_0828.N1 | 0 | 22 |
| ASA_GM1_1PNPDK20070316_142640_000002772056_00254_26360_3264.N1 | 0 | 7 |
| ASA_WSM_1PNPDE20070314_141836_000000852056_00225_26331_1665.N1 | 0 | 37 |
| ASA_WSM_1PNPDE20070314_153245_000000612056_00226_26332_1616.N1 | 3 | 801 |
| ASA_WSM_1PNPDE20070316_141502_000000852056_00254_26360_4383.N1 | 0 | 15 |
| ASA_WSM_1PNPDK20070315_094718_000000862056_00237_26343_1332.N1 | 0 | 29 |
| ASA_WSM_1PNPDK20070316_070403_000002452056_00249_26355_2248.N1 | 0 | 3 |
| ASA_APM_1PNPDE20070315_070600_000002082056_00235_26341_2835.N1 | 0 | 0 |
| ASA_APM_1PNPDK20070316_093722_000000432056_00251_26357_2257.N1 | 0 | 1 |

Transmit power (P1 - P1a) for GM1 SS3

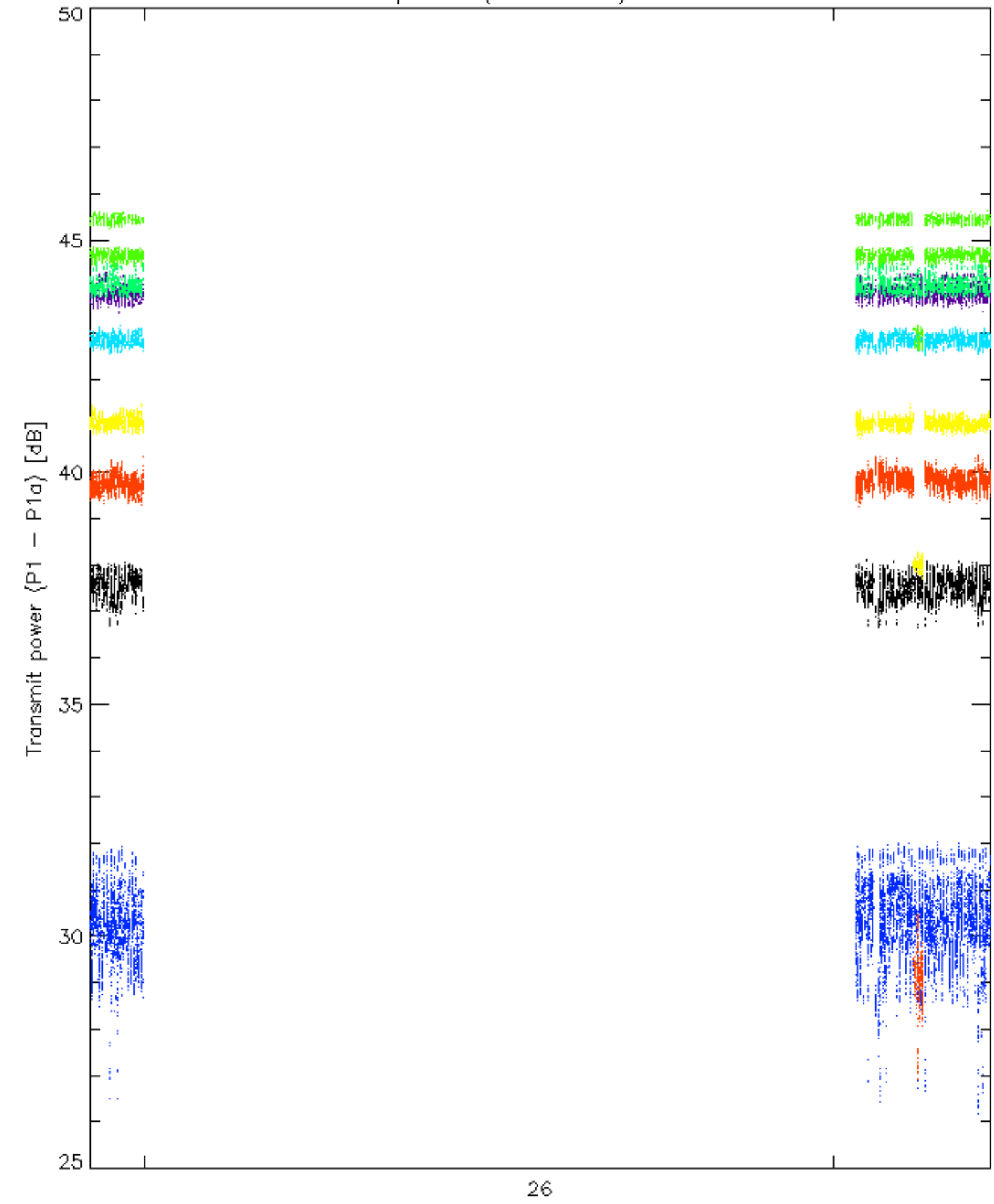


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

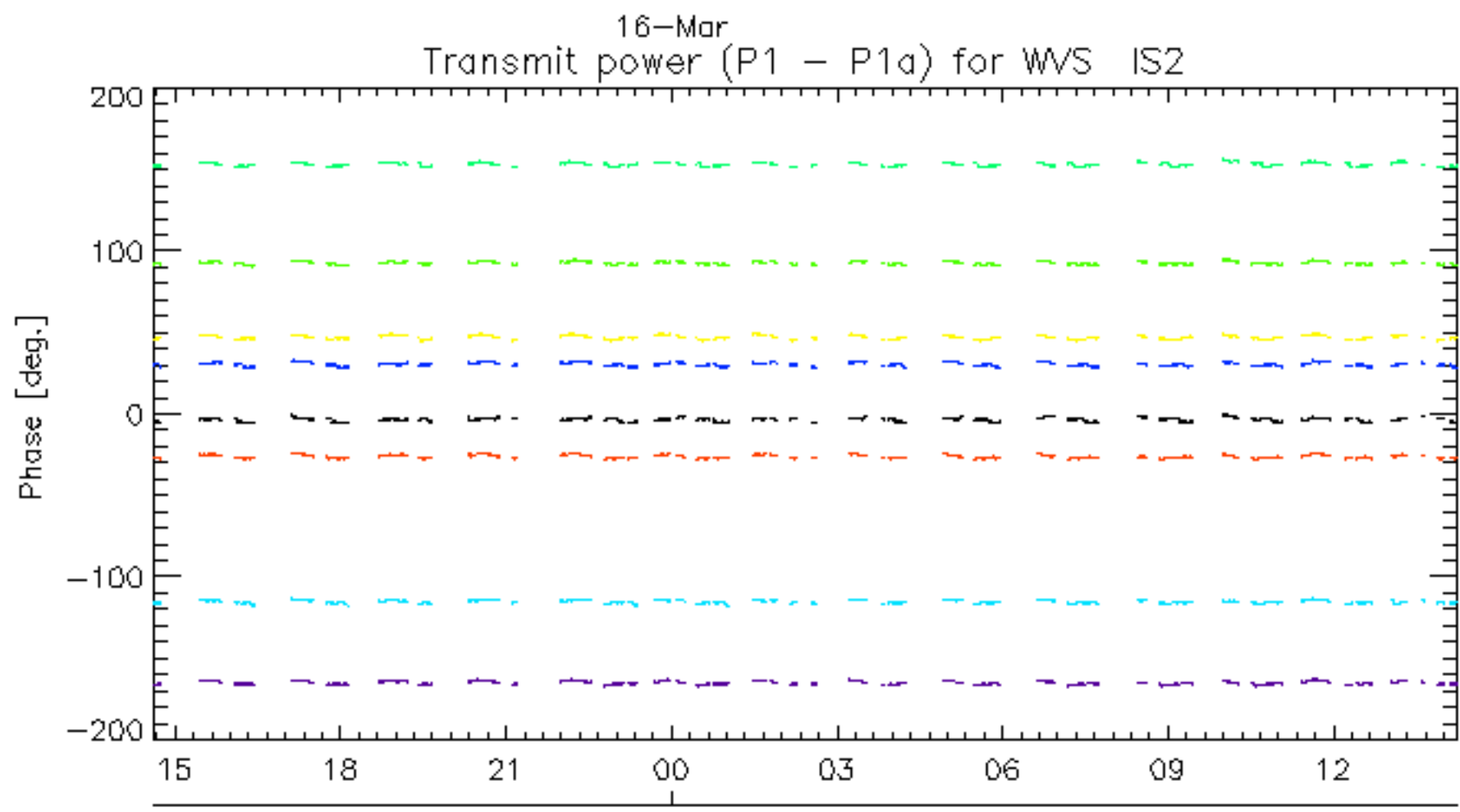
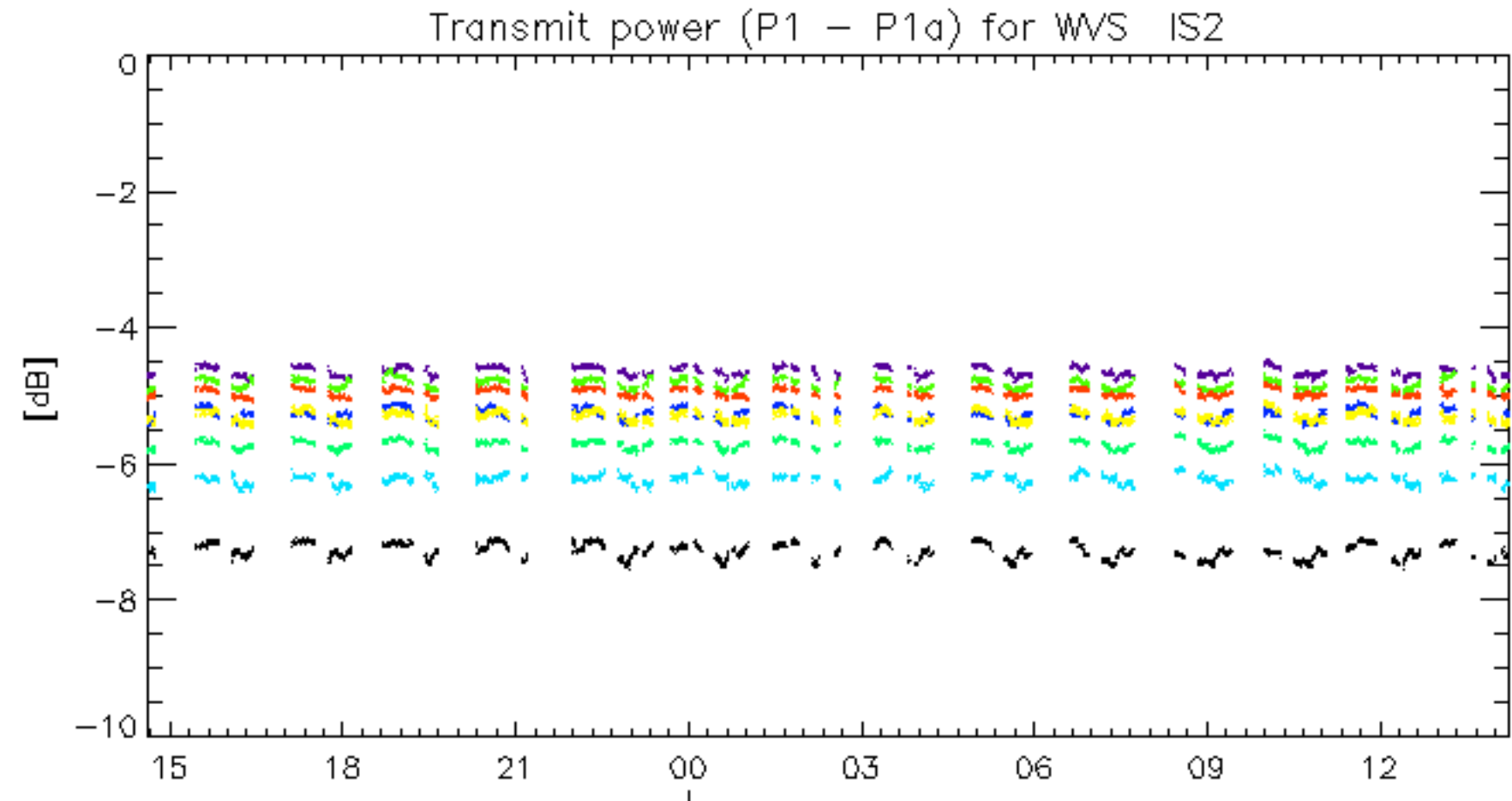


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Transmit power (P1 - P1a) for WVS IS2



rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30



rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

No unavailabilities during the reported period.