

PRELIMINARY REPORT OF 070114

last update on Sun Jan 14 16:43:02 GMT 2007

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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 2007-01-13 00:00:00 to 2007-01-14 16:43:02

| | | | | | |
|----------------|-----|-----|-----|-----|-----|
| PDHS-K | | | | | |
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |

| | | | | | |
|---|----|----|----|---|---|
| ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000 | 39 | 68 | 13 | 0 | 0 |
| ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000 | 39 | 68 | 13 | 0 | 0 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 39 | 68 | 13 | 0 | 0 |
| ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000 | 39 | 68 | 13 | 0 | 0 |

| PDHS-E | | | | | |
|---|-----|-----|-----|-----|-----|
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20061107_090002_20050916_195733_20071231_000000 | 41 | 42 | 60 | 6 | 36 |
| ASA_XCA_AXVIEC20061221_143253_20050916_195733_20071231_000000 | 41 | 42 | 60 | 6 | 36 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 41 | 42 | 60 | 6 | 36 |
| ASA_INS_AXVIEC20061220_105425_20030211_000000_20071231_000000 | 41 | 42 | 60 | 6 | 36 |

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 | 20070114 053207 |
| H | 20070113 060345 |

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 |
|--------------------------|------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

4.1.1 - Evolution for WVS

| Evolution of cal pulses for WVS |
|---------------------------------|
| <input type="checkbox"/> |
| <input type="checkbox"/> |

4.1.2 - Evolution for GM1

| Evolution of cal pulses for GM1 |
|---------------------------------|
| <input type="checkbox"/> |
| <input type="checkbox"/> |

4.2 - Cyclic statistics

4.2.1 - Evolution for WVS

| Evolution of cal pulses for WVS |
|---------------------------------|
| <input type="checkbox"/> |

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 | -3.964497 | 0.007470 | -0.007954 |
| 7 | P1 | -3.140667 | 0.048985 | 0.019780 |
| 11 | P1 | -4.118058 | 0.025243 | 0.002018 |
| 15 | P1 | -6.333962 | 0.016334 | -0.007861 |
| 19 | P1 | -3.681654 | 0.005985 | -0.044751 |
| 22 | P1 | -4.676670 | 0.016116 | -0.032051 |
| 26 | P1 | -3.954359 | 0.009852 | 0.007612 |
| 30 | P1 | -5.915781 | 0.008694 | -0.023931 |
| 3 | P1 | -16.524349 | 0.256758 | 0.022220 |
| 7 | P1 | -17.277060 | 0.186279 | 0.079526 |
| 11 | P1 | -17.268419 | 0.456274 | -0.084222 |
| 15 | P1 | -13.041807 | 0.127791 | 0.043704 |
| 19 | P1 | -15.077024 | 0.110728 | -0.094540 |
| 22 | P1 | -15.817987 | 0.554668 | 0.117489 |
| 26 | P1 | -15.029153 | 0.187654 | -0.009274 |
| 30 | P1 | -17.542669 | 0.496877 | 0.040433 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -20.790901 | 0.089866 | 0.017645 |
| 7 | P2 | -21.674570 | 0.088508 | 0.050459 |
| 11 | P2 | -15.536672 | 0.099540 | 0.019412 |
| 15 | P2 | -7.096419 | 0.103883 | 0.026282 |
| 19 | P2 | -9.178166 | 0.097701 | 0.044210 |
| 22 | P2 | -18.226877 | 0.090563 | 0.010380 |
| 26 | P2 | -16.597551 | 0.102968 | 0.019987 |
| 30 | P2 | -19.439186 | 0.084933 | 0.033242 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 7 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 11 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 15 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 19 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 22 | P3 | -8.238241 | 0.008535 | -0.007734 |
| 26 | P3 | -8.238263 | 0.008535 | -0.007677 |
| 30 | P3 | -8.238263 | 0.008535 | -0.007677 |

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1



P1a Cyclic statistics

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

P1 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P1 | -3.920723 | 0.013930 | -0.000895 |
| 7 | P1 | -2.475295 | 0.073430 | 0.021021 |
| 11 | P1 | -2.830776 | 0.015908 | 0.042623 |
| 15 | P1 | -3.708264 | 0.032038 | -0.030384 |
| 19 | P1 | -3.551206 | 0.018760 | -0.023304 |
| 22 | P1 | -5.005192 | 0.022656 | 0.032682 |
| 26 | P1 | -6.042367 | 0.025570 | -0.035820 |
| 30 | P1 | -5.350769 | 0.037178 | -0.033595 |
| 3 | P1 | -11.724647 | 0.079187 | 0.021094 |
| 7 | P1 | -10.040600 | 0.092089 | 0.093972 |
| 11 | P1 | -10.358380 | 0.091190 | 0.001653 |
| 15 | P1 | -10.734481 | 0.153471 | -0.009140 |
| 19 | P1 | -15.745901 | 0.109102 | -0.082090 |
| 22 | P1 | -21.550758 | 1.447814 | 0.169972 |
| 26 | P1 | -15.985582 | 0.318288 | 0.157904 |
| 30 | P1 | -17.917116 | 0.365175 | -0.134545 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -16.433470 | 0.098318 | 0.059163 |
| 7 | P2 | -22.189346 | 0.235736 | 0.027676 |
| 11 | P2 | -10.837366 | 0.101725 | 0.024532 |
| 15 | P2 | -4.962779 | 0.205219 | 0.027128 |
| 19 | P2 | -6.946777 | 0.202465 | 0.028419 |
| 22 | P2 | -8.235204 | 0.113507 | 0.007369 |
| 26 | P2 | -24.343576 | 0.158763 | -0.037760 |
| 30 | P2 | -21.908867 | 0.130405 | 0.069791 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.088046 | 0.003349 | -0.006417 |
| 7 | P3 | -8.087729 | 0.003329 | -0.005911 |
| 11 | P3 | -8.087980 | 0.003349 | -0.006063 |
| 15 | P3 | -8.087855 | 0.003343 | -0.006997 |
| 19 | P3 | -8.087898 | 0.003351 | -0.006231 |
| 22 | P3 | -8.087769 | 0.003355 | -0.006911 |
| 26 | P3 | -8.088116 | 0.003353 | -0.006142 |
| 30 | P3 | -8.087900 | 0.003334 | -0.005663 |

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 | 0.000567430 |
| | stdev | 1.65018e-07 |
| MEAN Q | mean | 0.000505242 |
| | stdev | 2.12816e-07 |



5.2 - Input stdev I/Q

| channel | stat | DSS-B |
|---------|-------|------------|
| STDEV I | mean | 0.140213 |
| | stdev | 0.00119024 |
| STDEV Q | mean | 0.140612 |
| | stdev | 0.00121037 |



5.3 - Gain imbalance I/Q



6 - Telemetry analysis

Summary of analysis for the last 3 days 2007011[234]

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_1PNPDE20070113_024624_000001482054_00361_25465_5301.N1 | 1 | 1 |
| ASA_IMM_1PNPDE20070113_182645_000000352054_00371_25475_5884.N1 | 0 | 17 |
| ASA_GM1_1PNPDK20070112_072909_000005072054_00350_25454_3551.N1 | 0 | 24 |
| ASA_WSM_1PNPDE20070112_143842_000003232054_00354_25458_4789.N1 | 0 | 8 |
| ASA_WSM_1PNPDE20070112_171324_000002322054_00356_25460_4821.N1 | 0 | 4 |







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)

| |
|---|
|  |
|---|

| |
|-----------|
| Ascending |
|-----------|



| |
|------------|
| Descending |
|------------|

7.5 - Absolute Doppler for GM1

| |
|--------------------------------------|
| Evolution of Absolute Doppler |
|--------------------------------------|



| |
|-----------|
| Ascending |
|-----------|



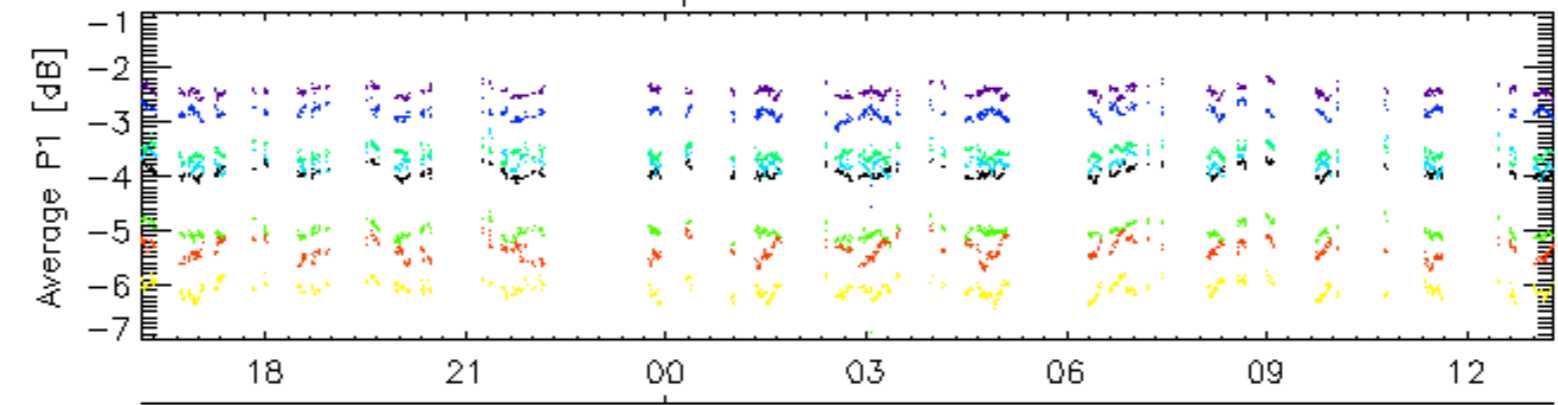
| |
|------------|
| Descending |
|------------|

7.6 - Doppler evolution versus ANX for GM1

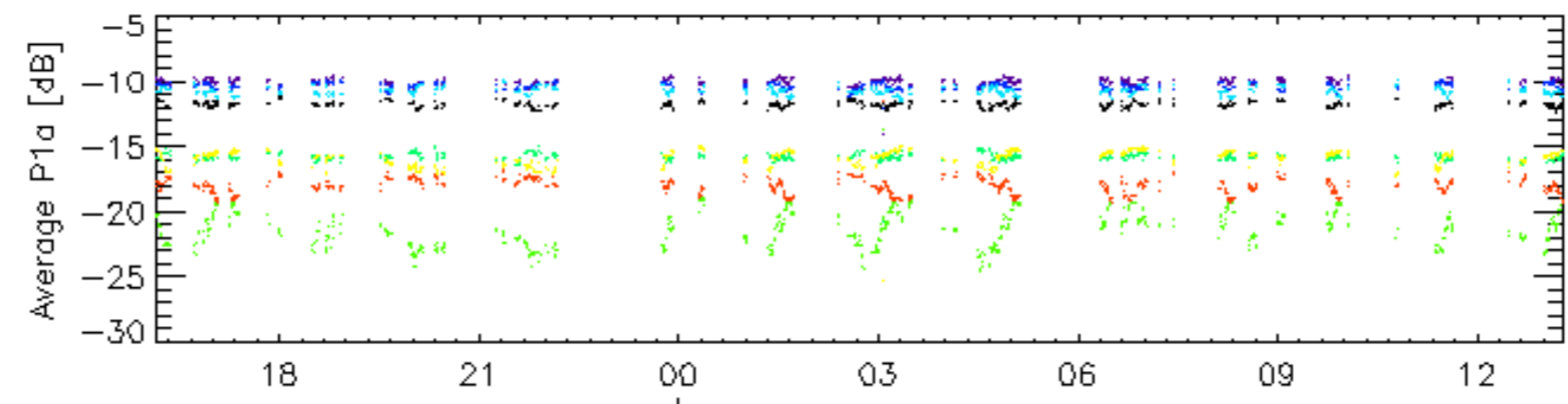
| |
|---|
| Evolution Doppler error versus ANX |
|---|



Cal pulses for GM1 SS3

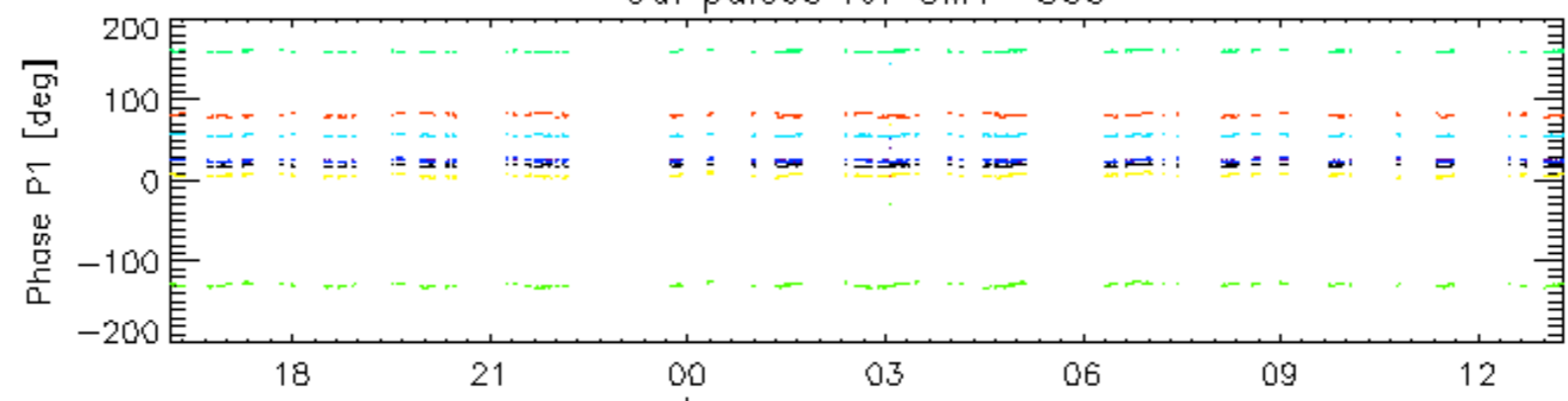


14-Jan

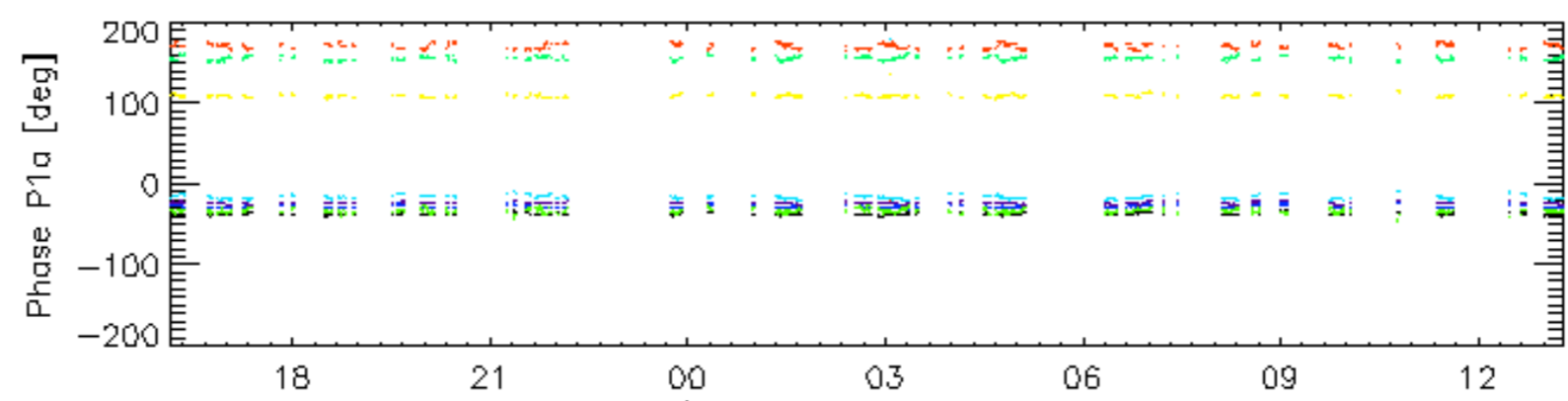


14-Jan

Cal pulses for GM1 SS3

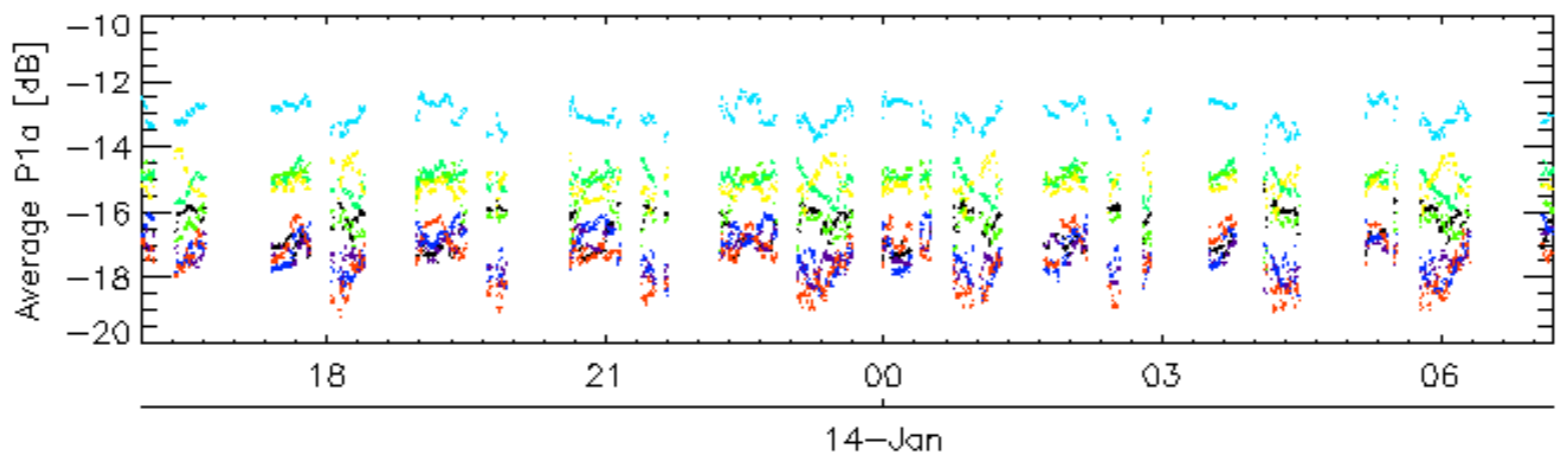
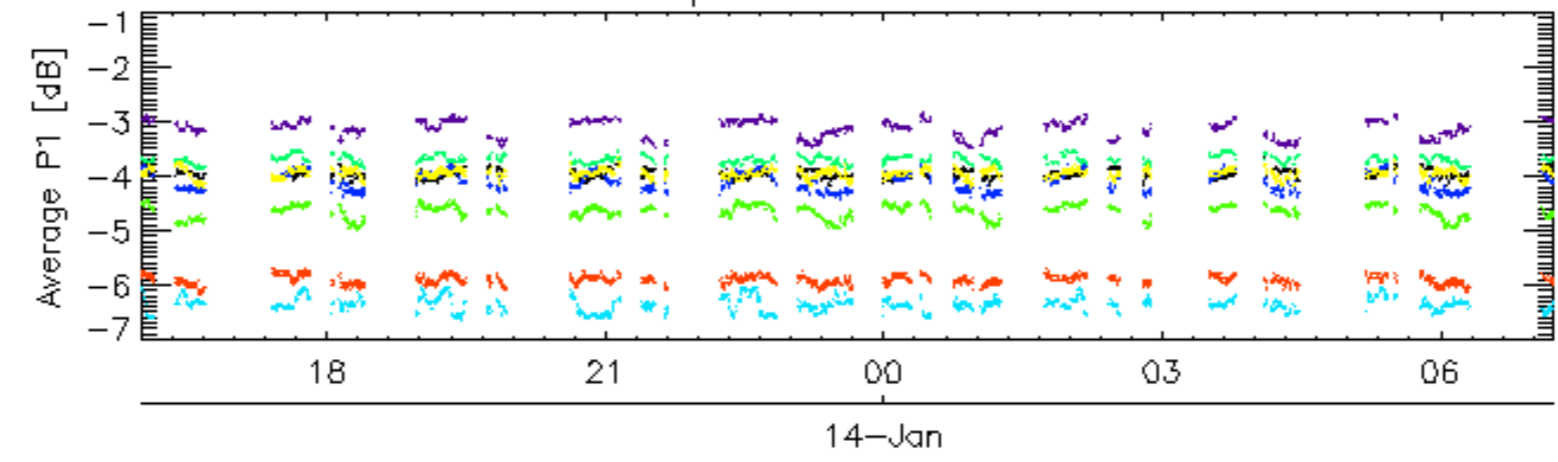


14-Jan

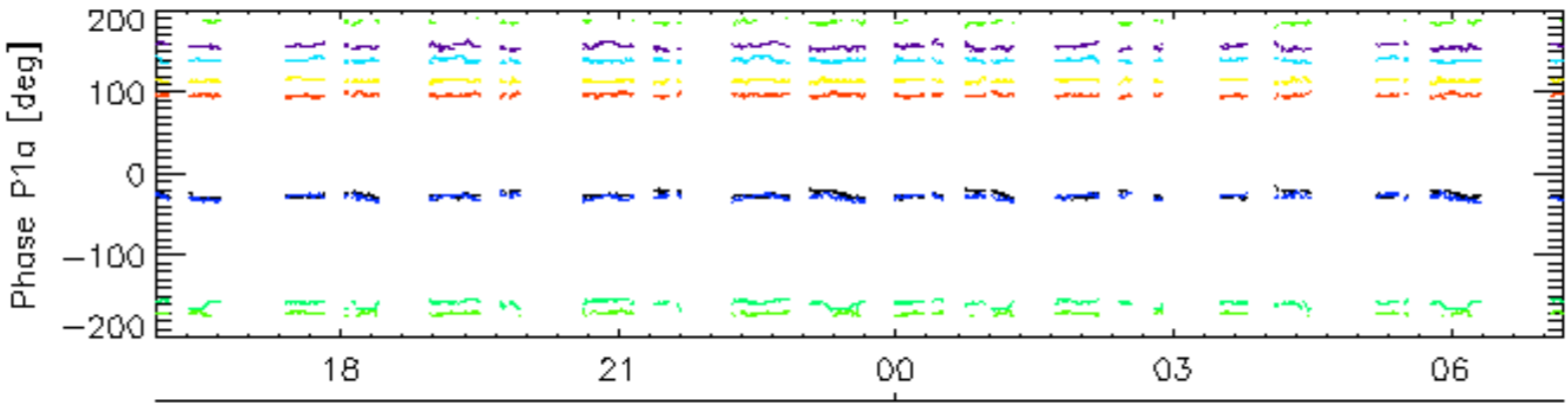
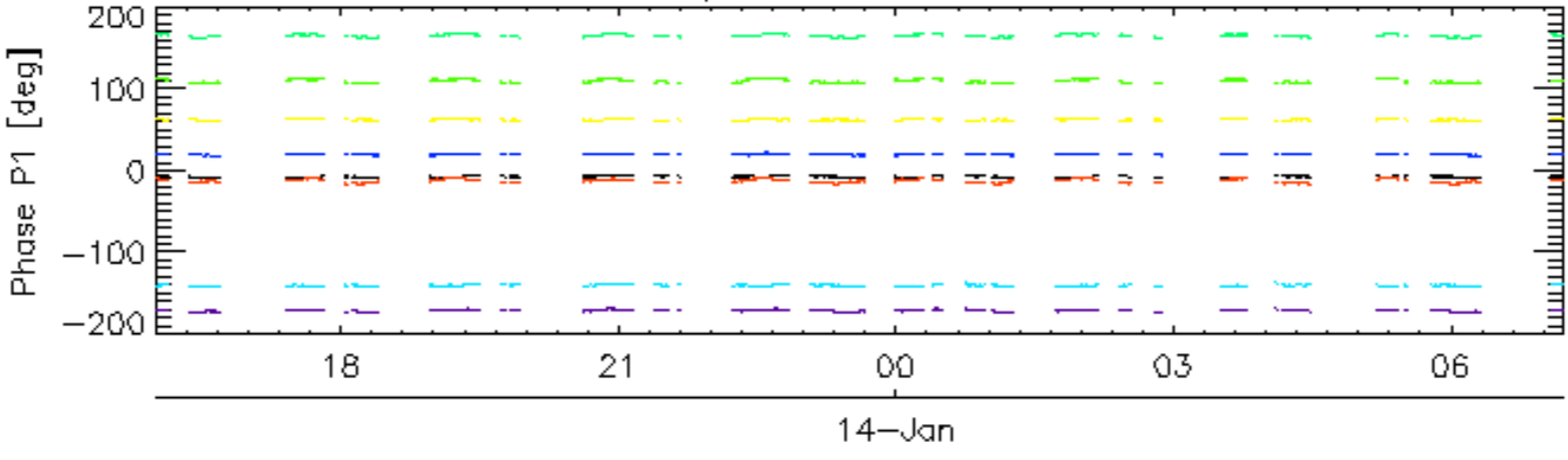


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS2

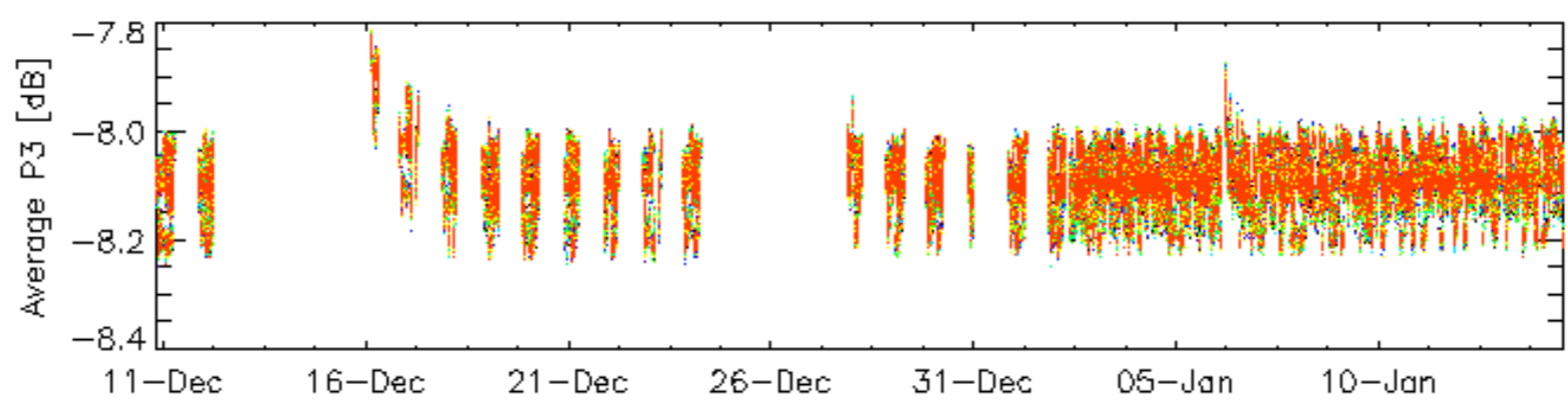
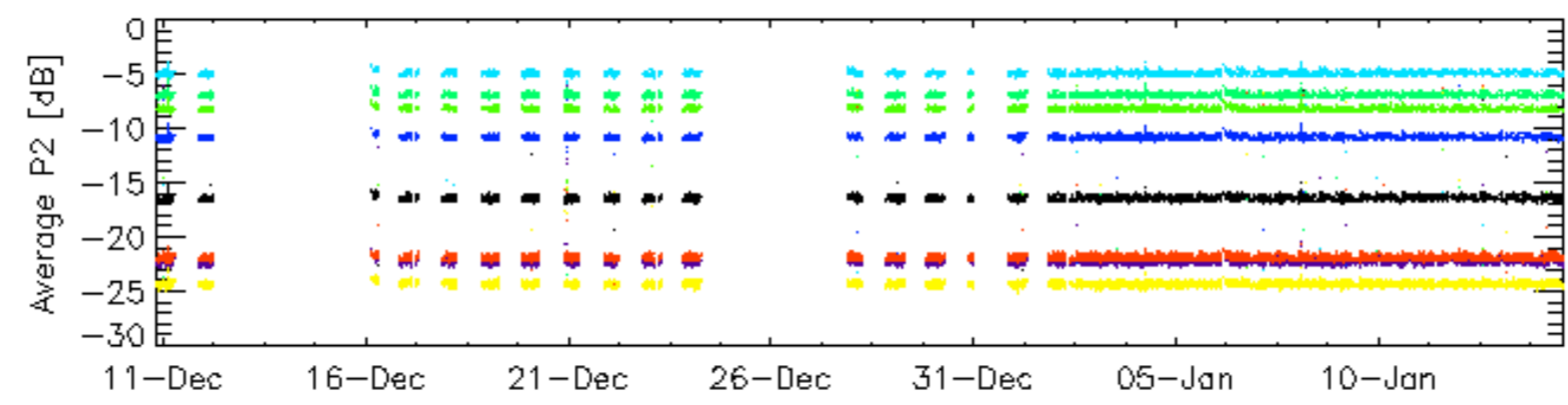
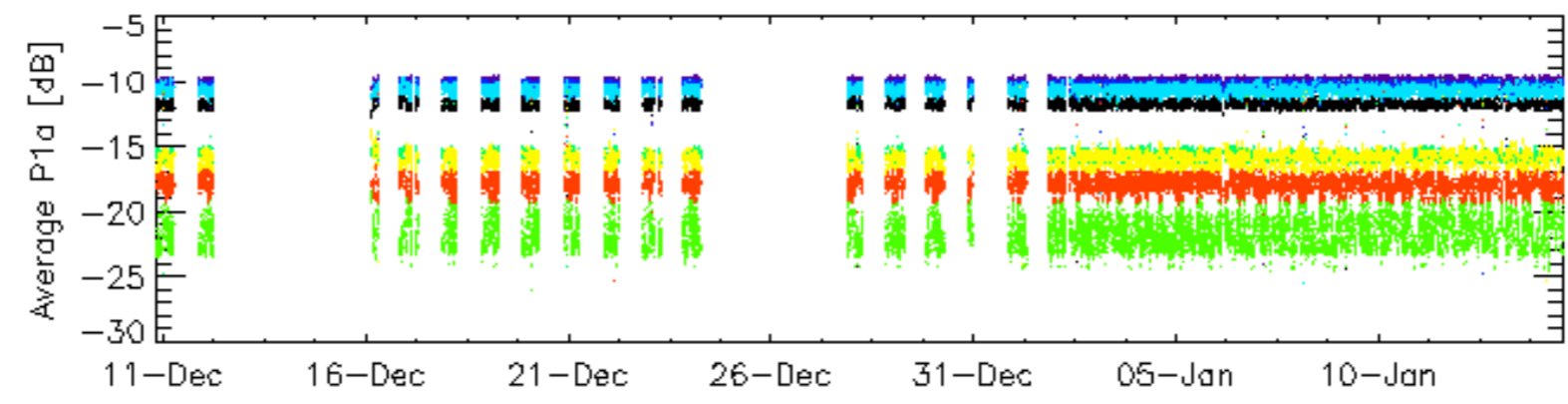
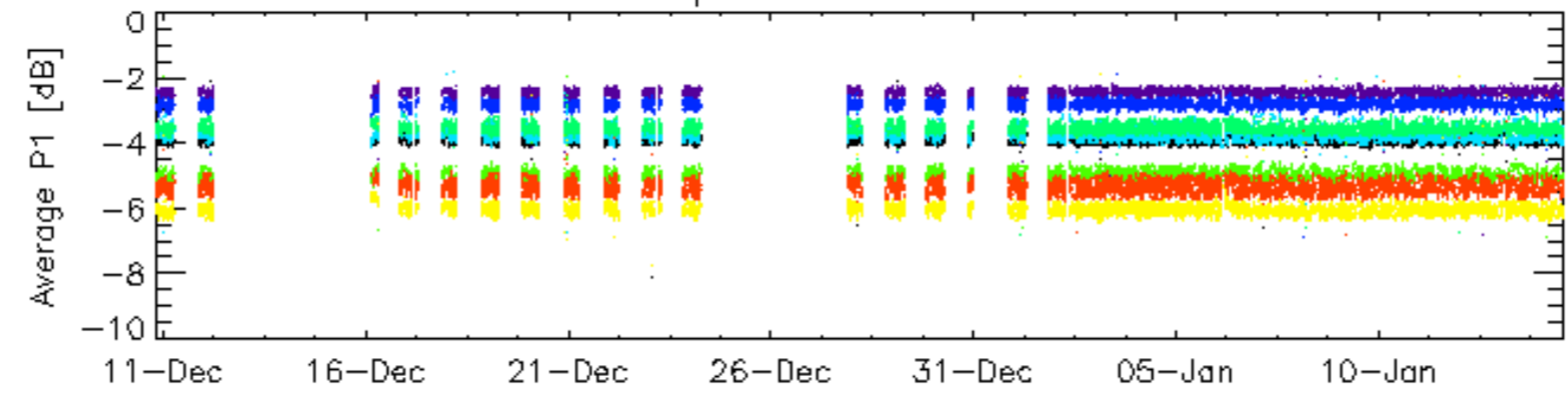


Cal pulses for WVS IS2



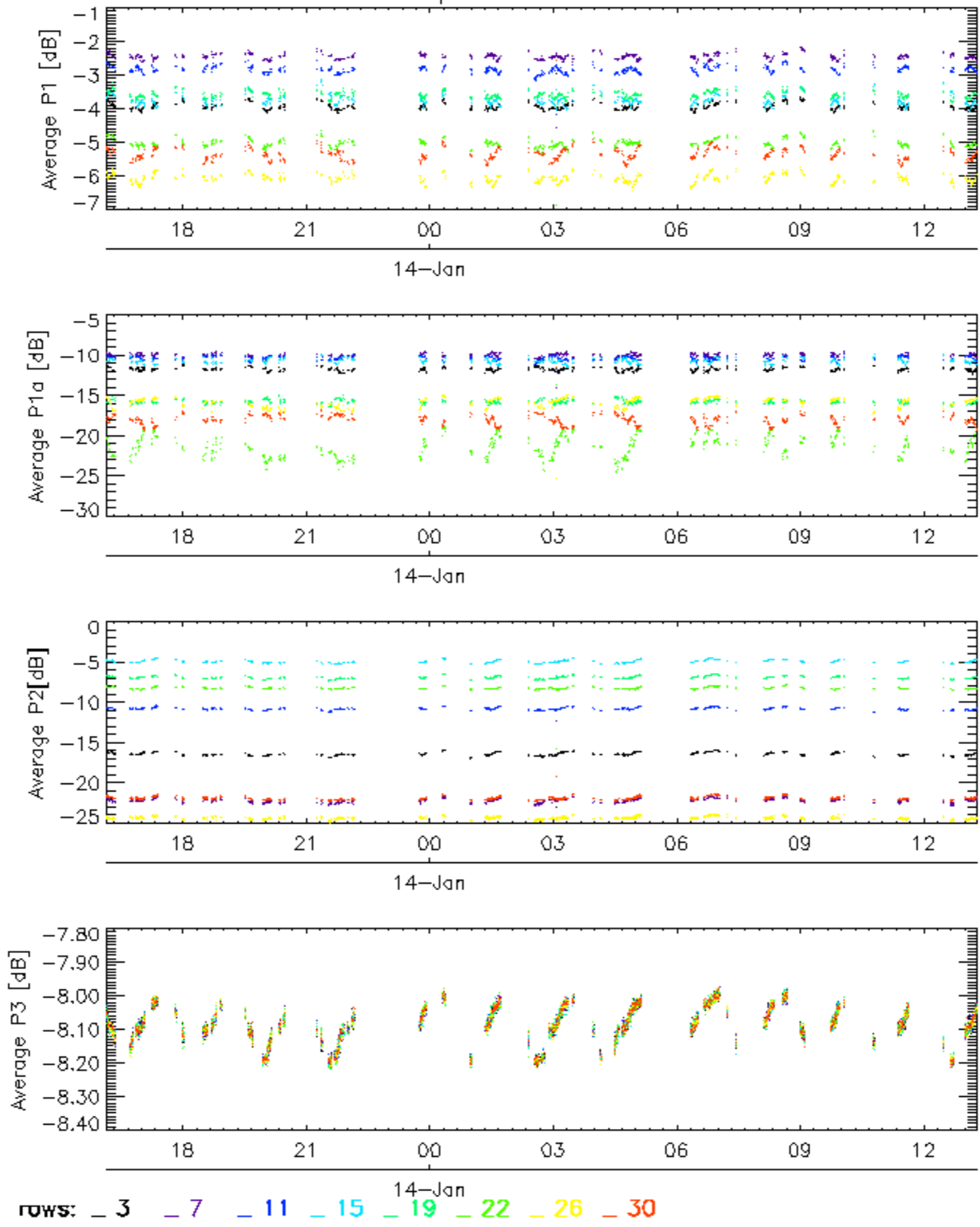
rows: 3 7 11 15 19 22 26 30

Cal pulses for GM1 SS3

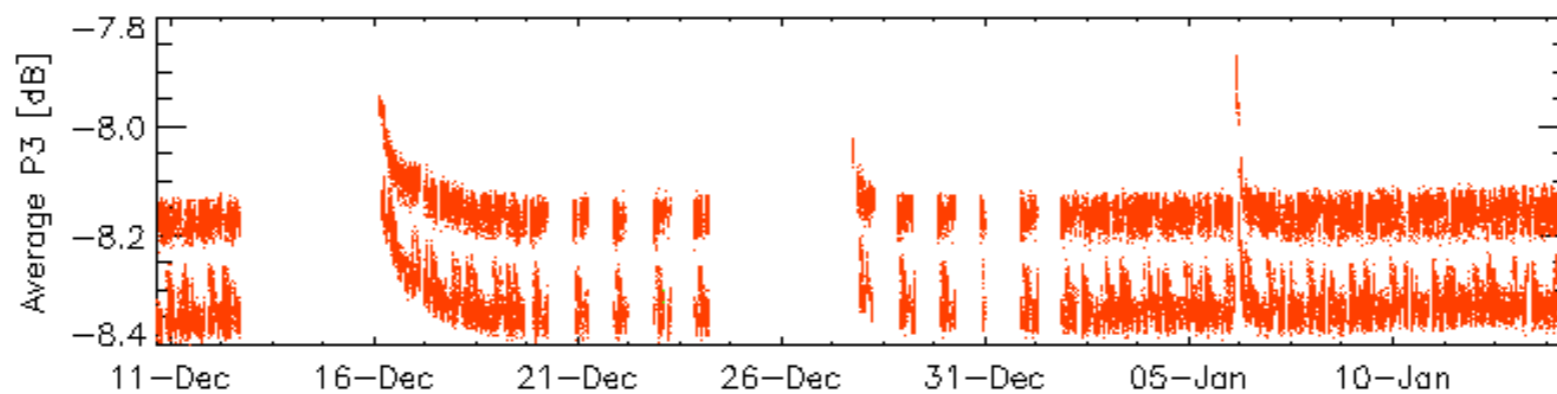
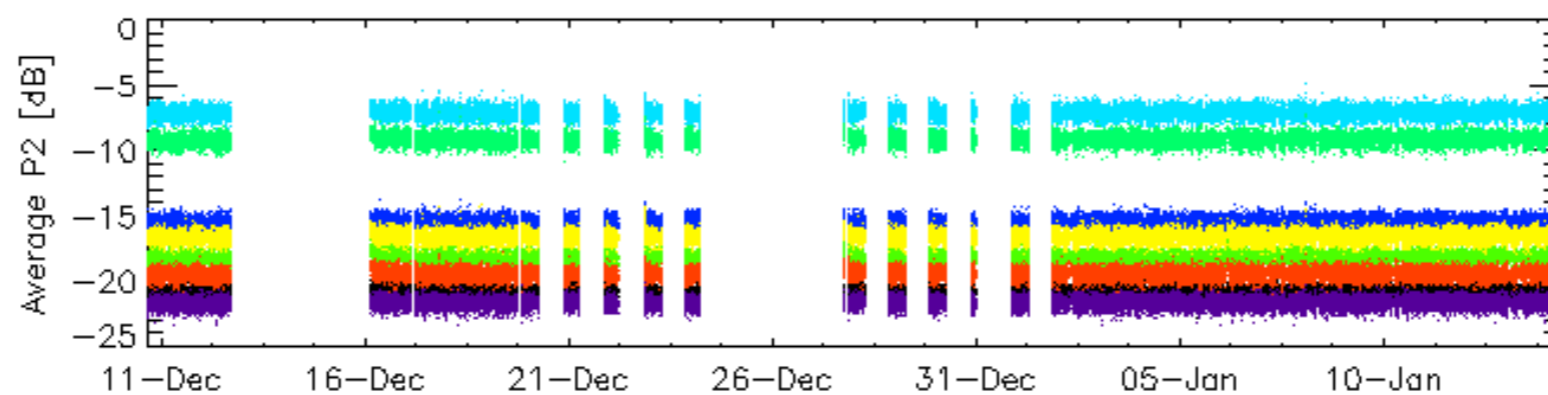
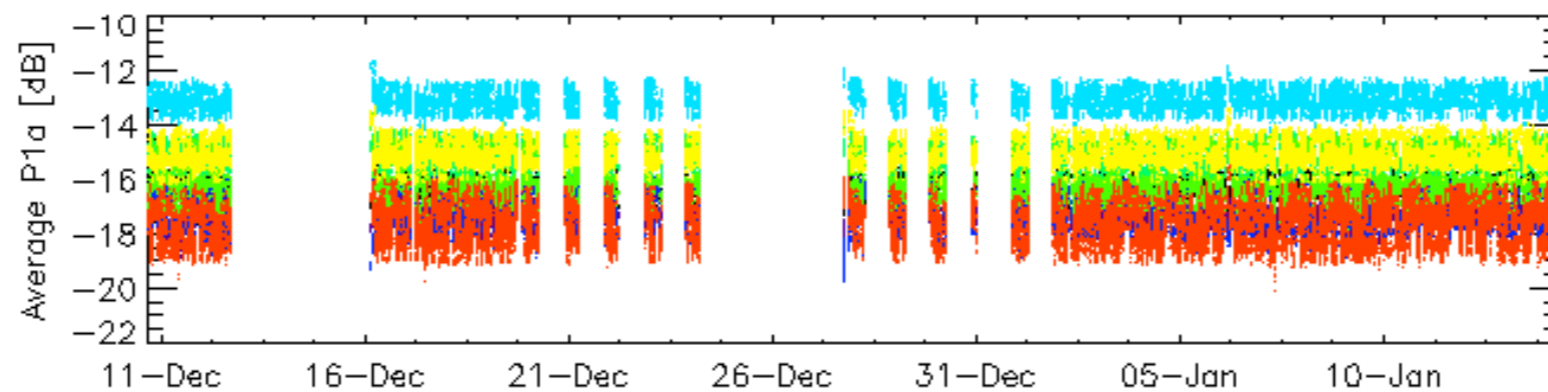
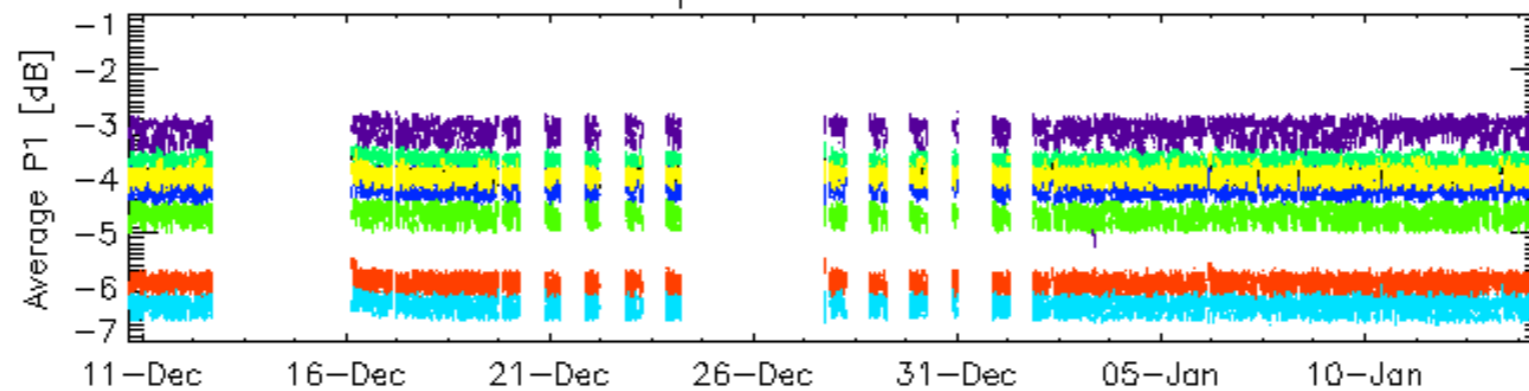


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

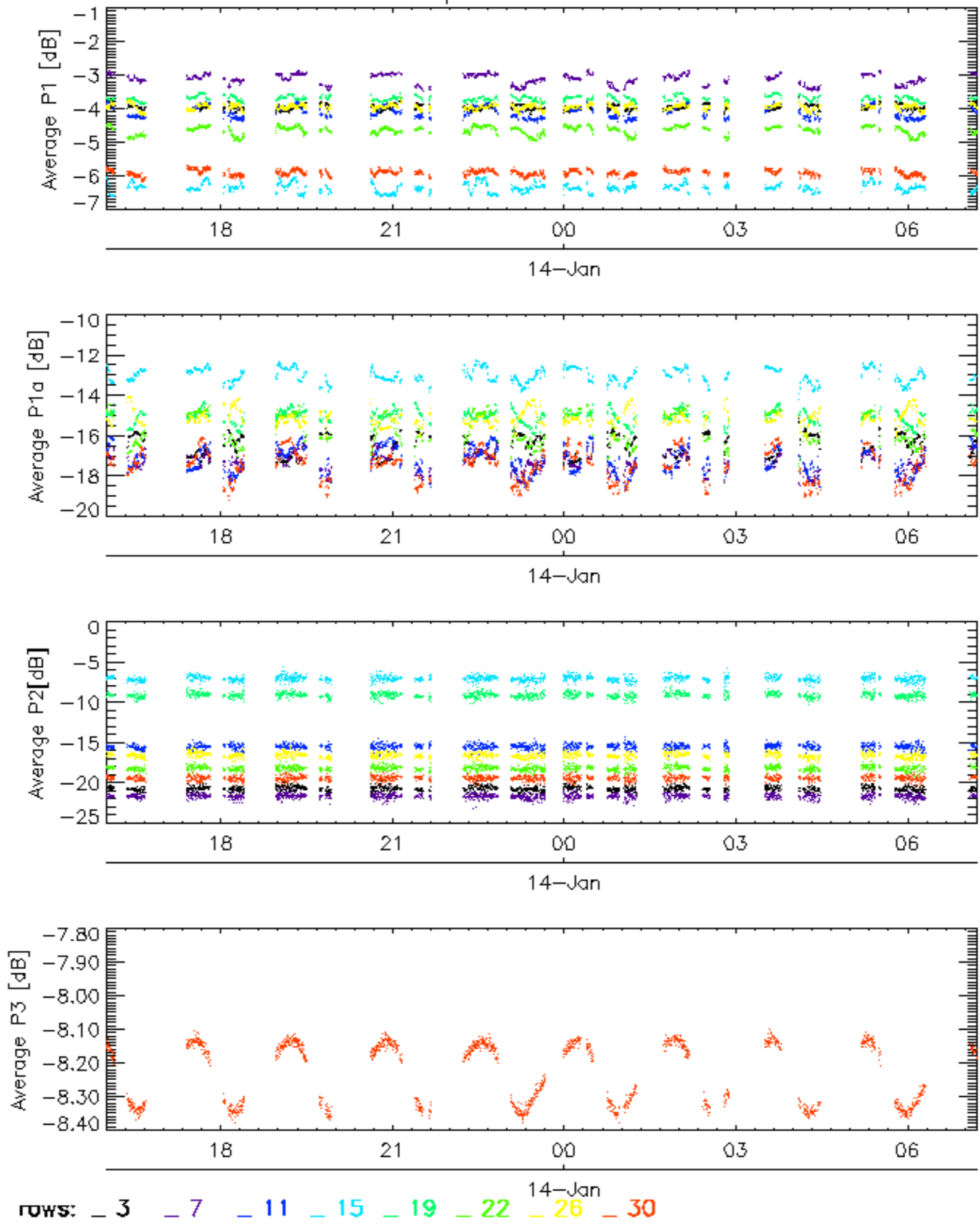


Cal pulses for WVS IS2

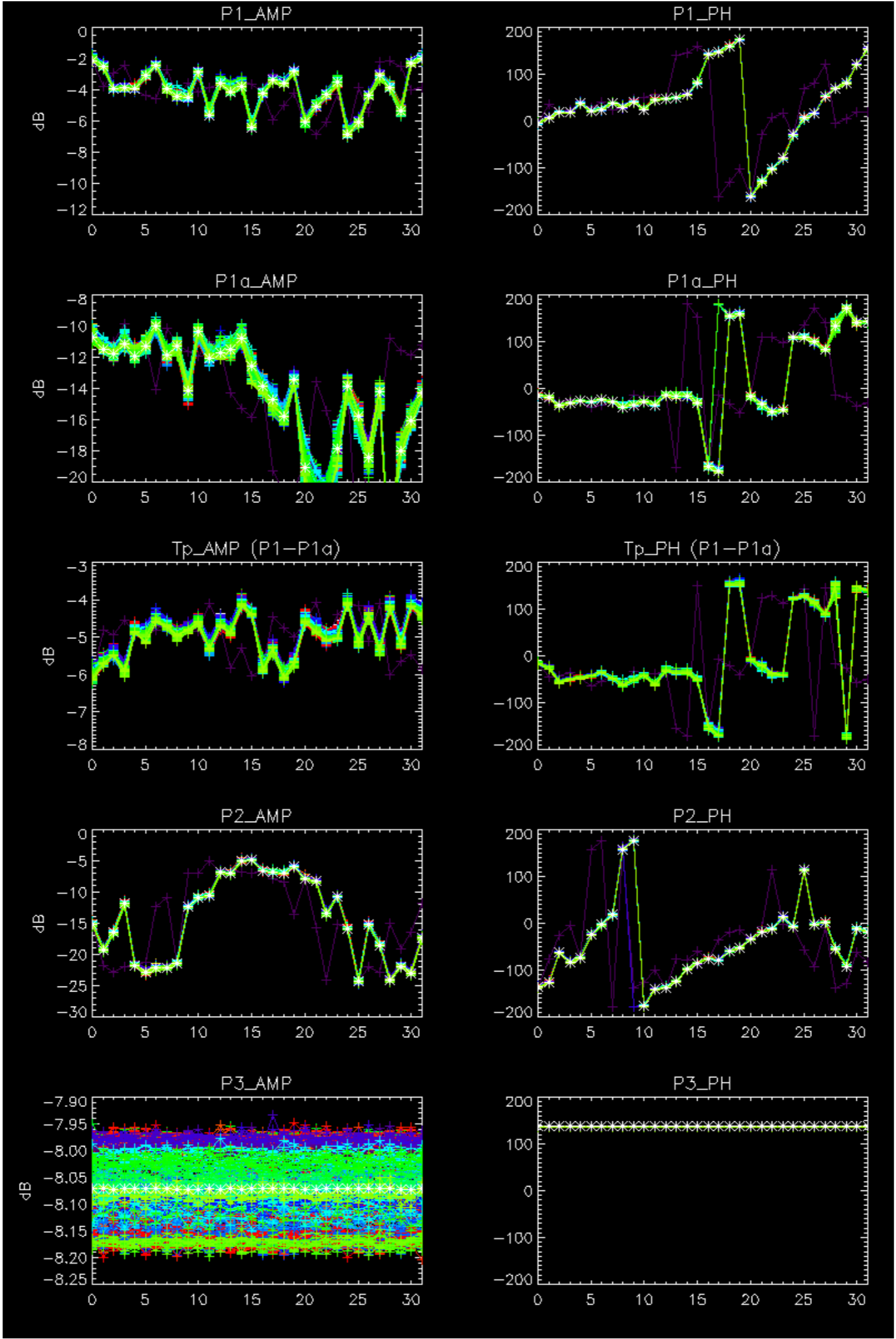


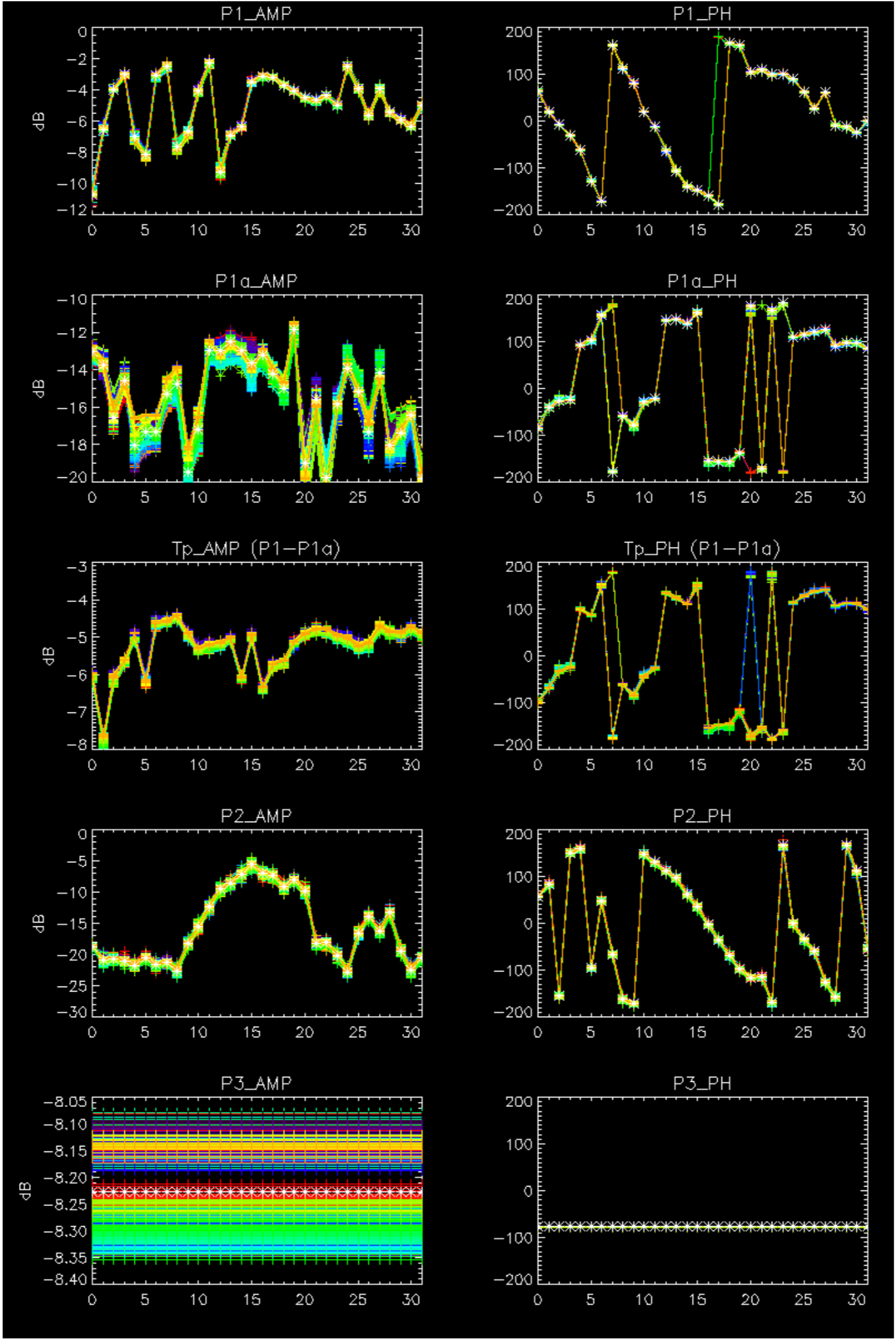
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS2



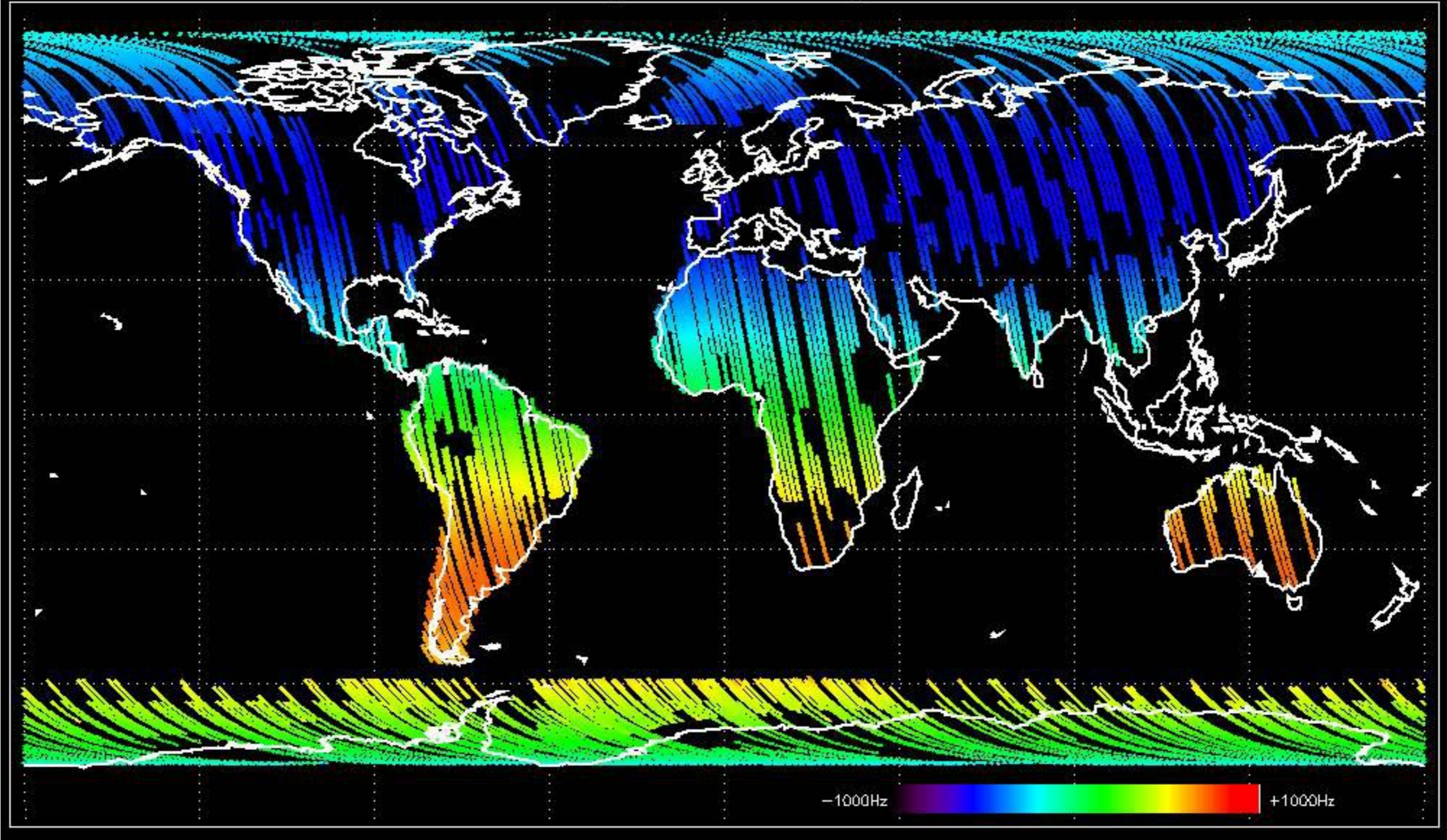
No anomalies observed.



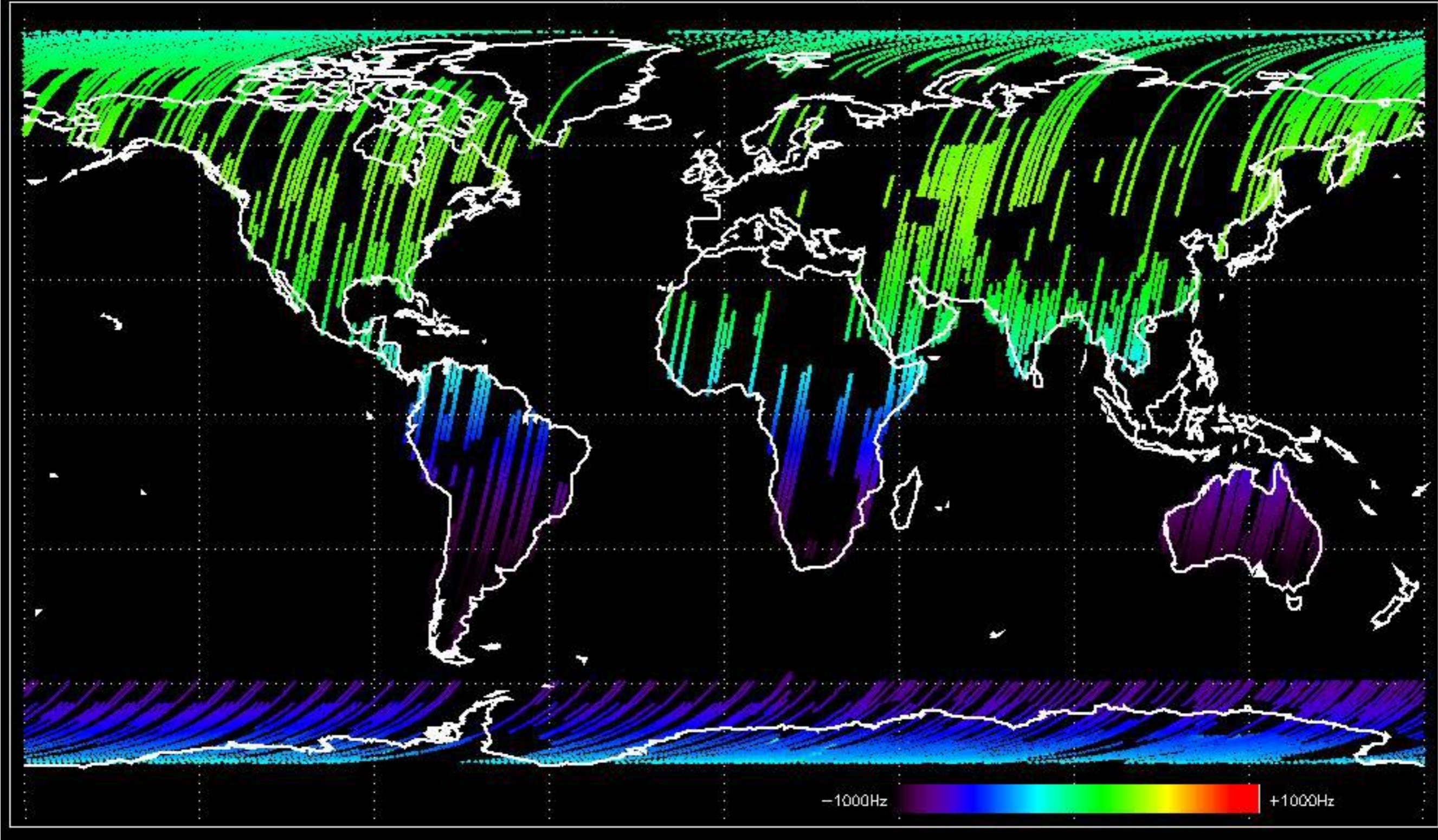


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

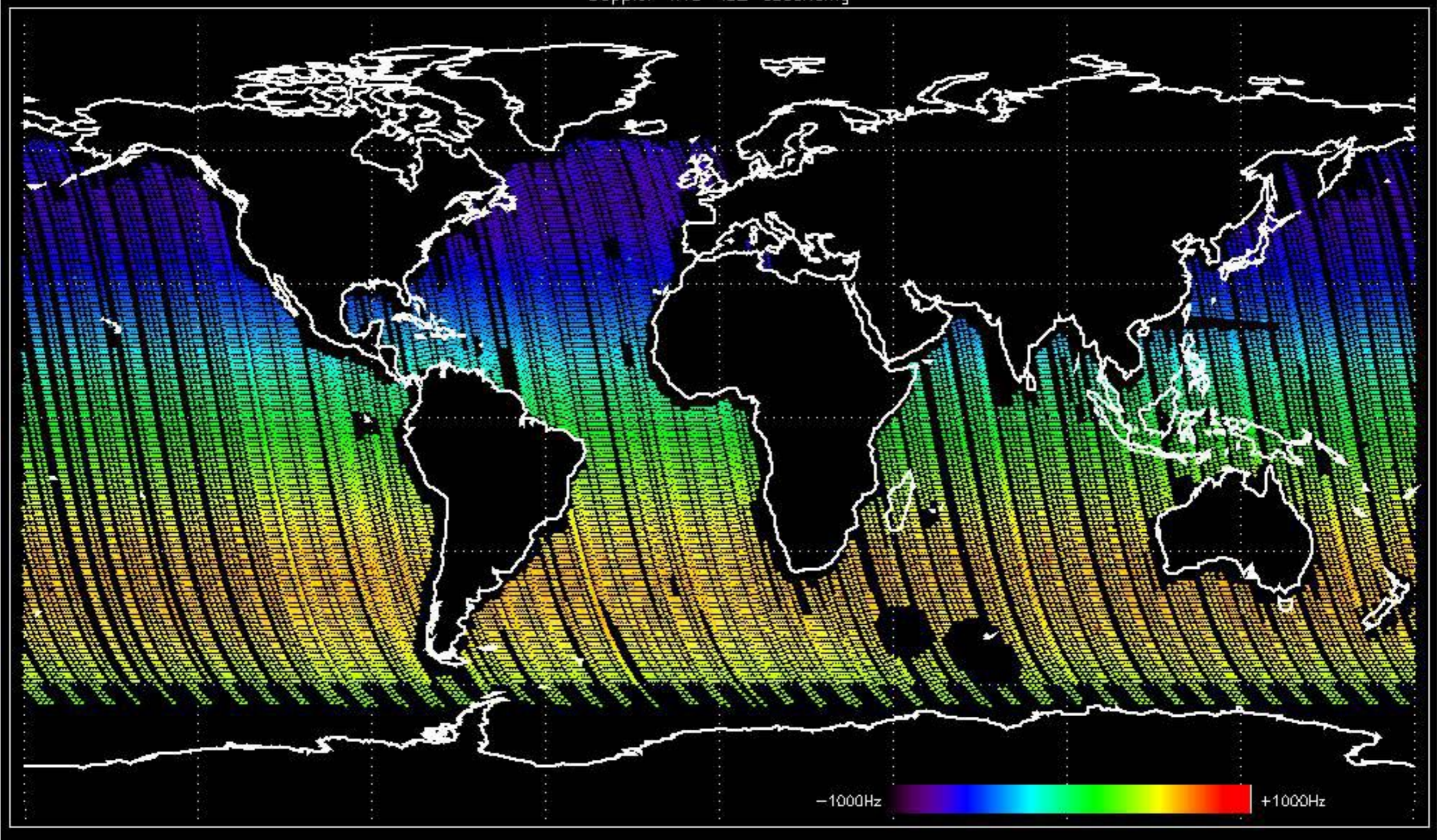
Doppler 'GM1' 'SS1' ascending



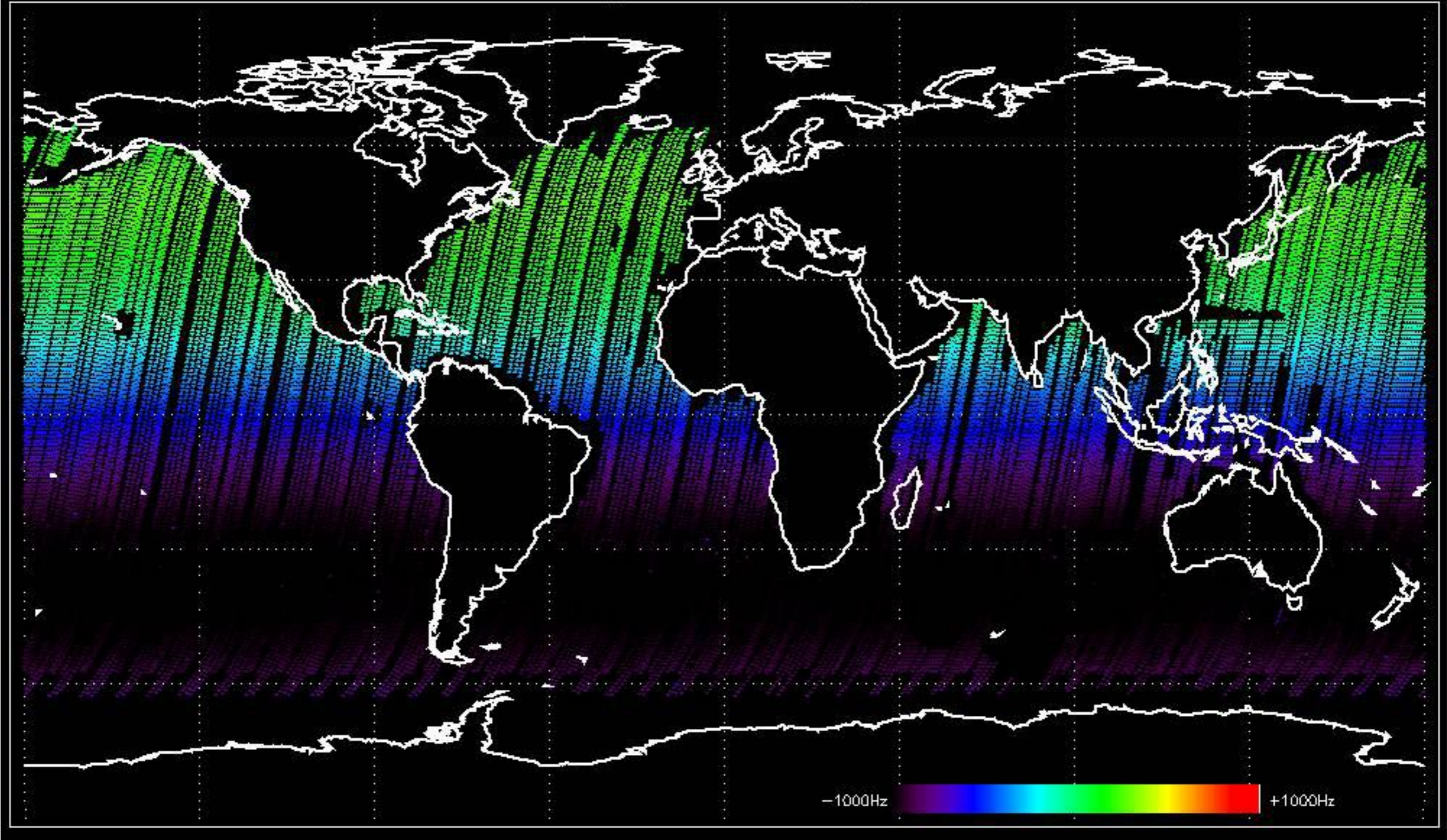
Doppler 'GM1' 'SS1' descending



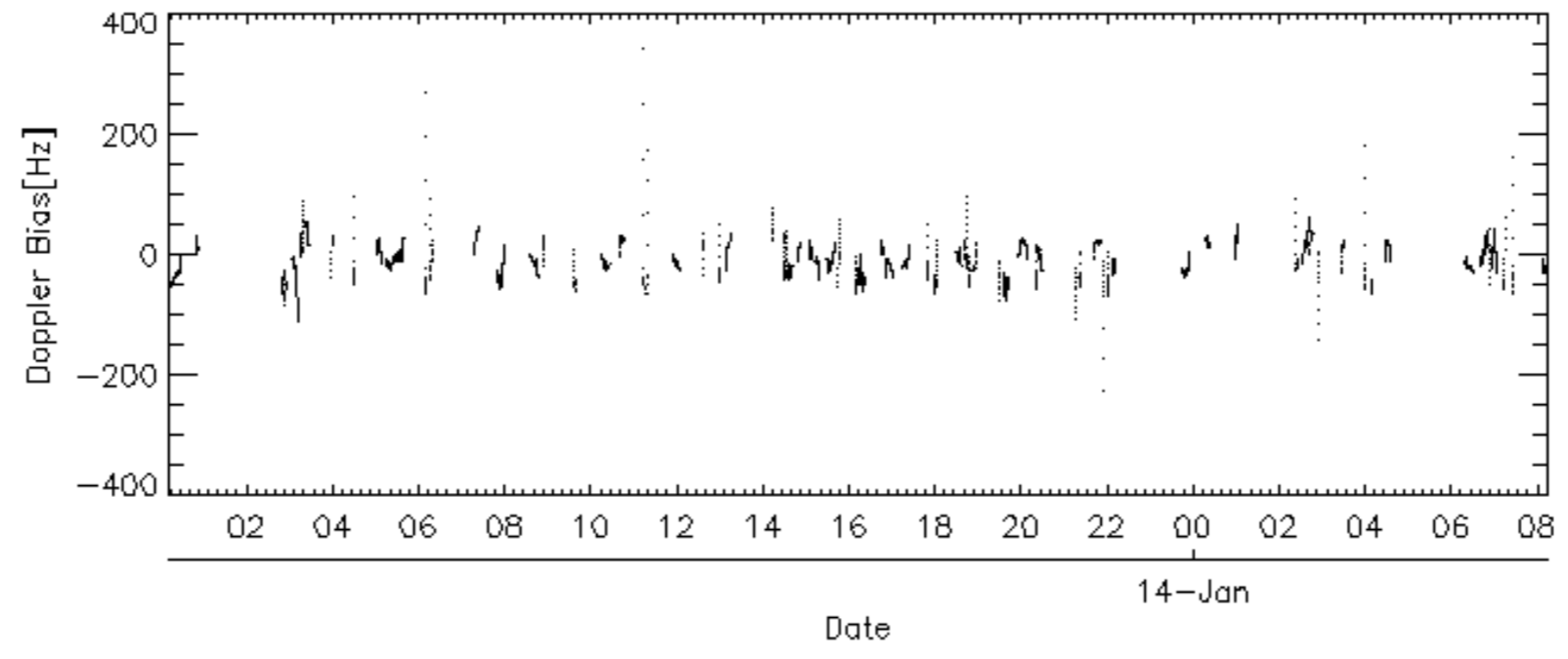
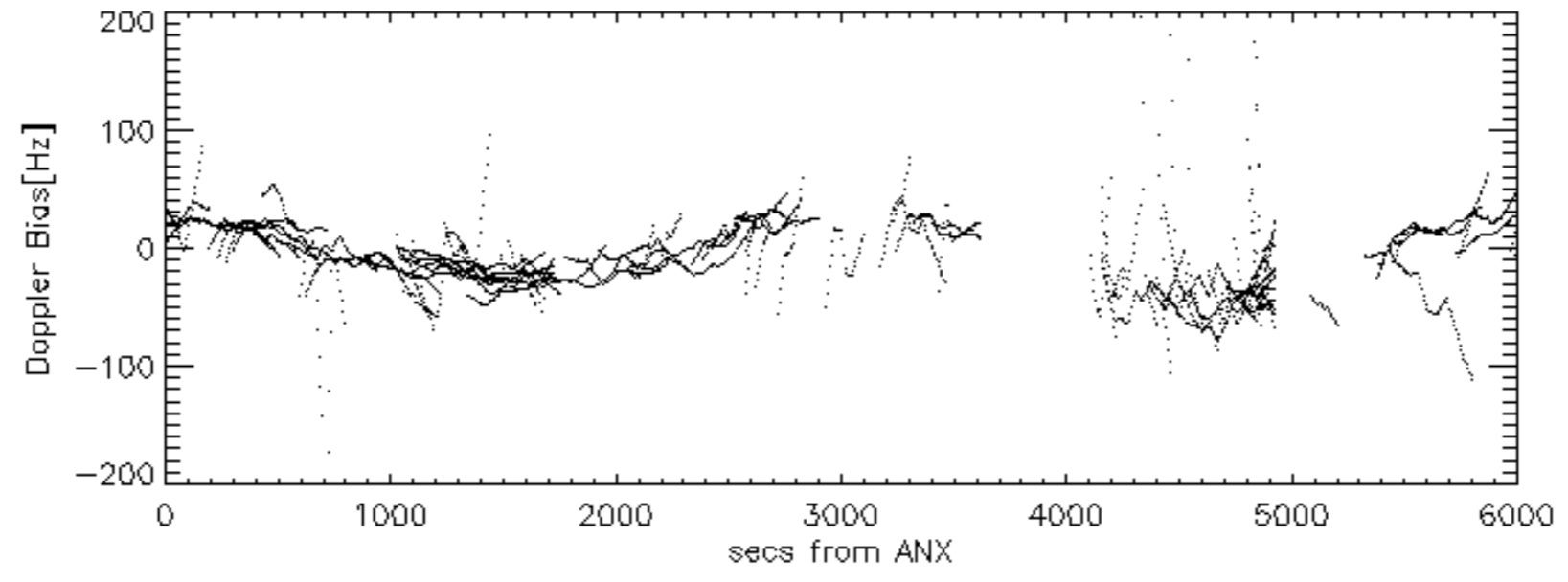
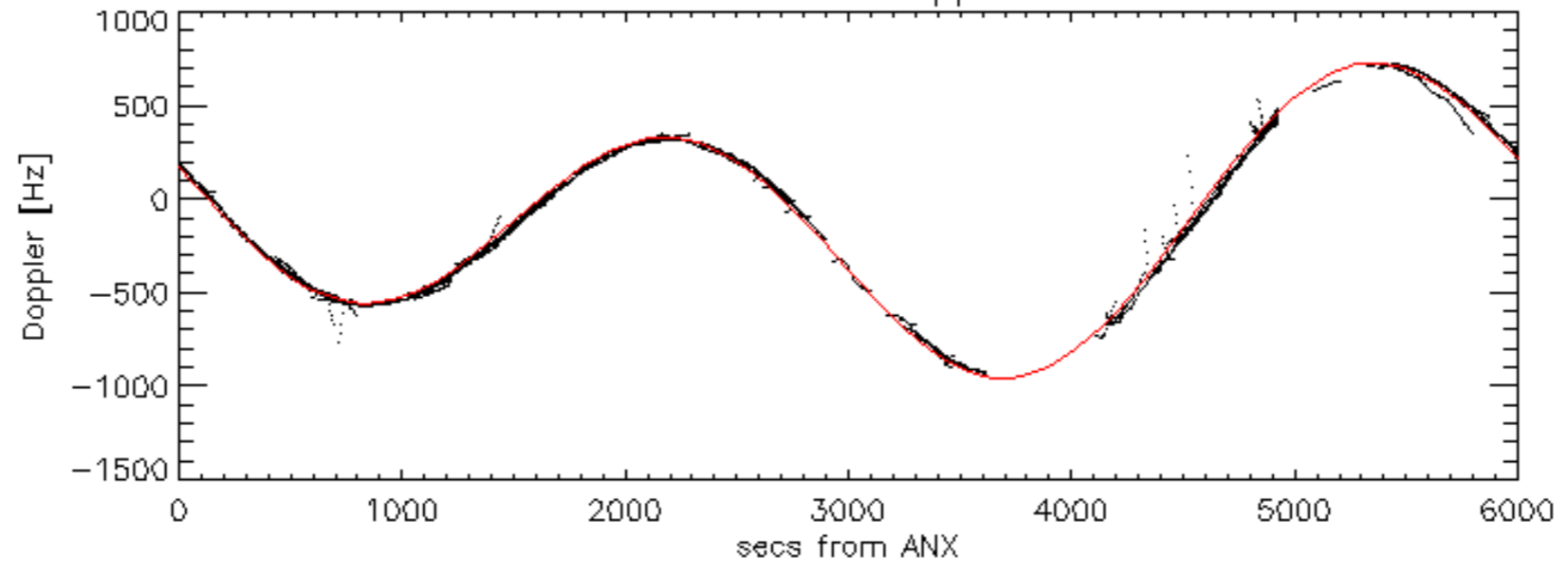
Doppler 'WVS' 'IS2' ascending

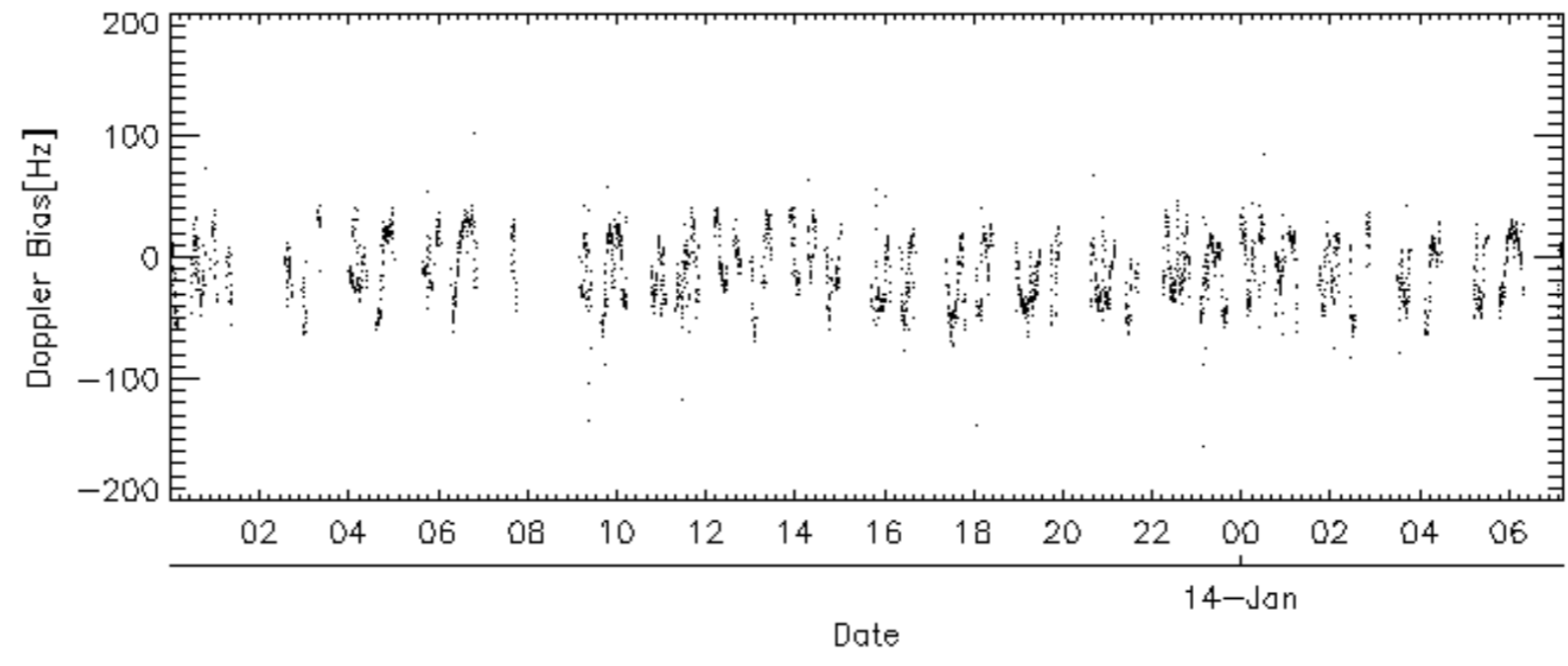
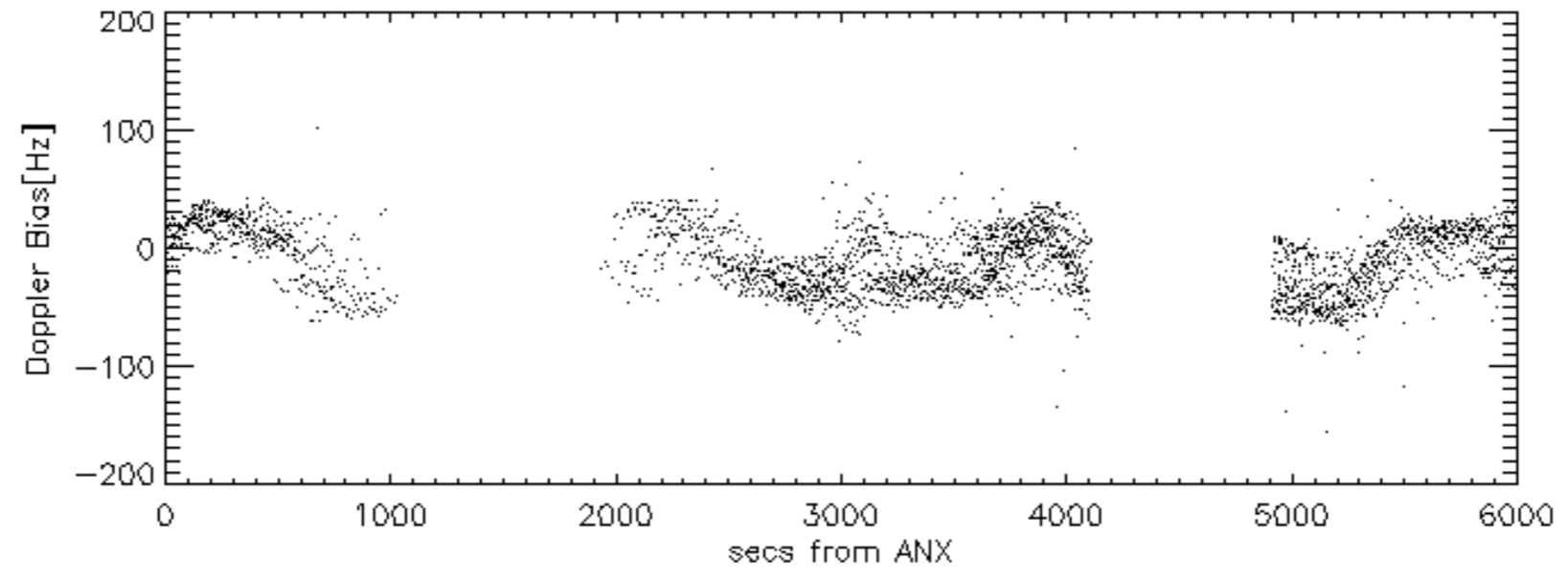
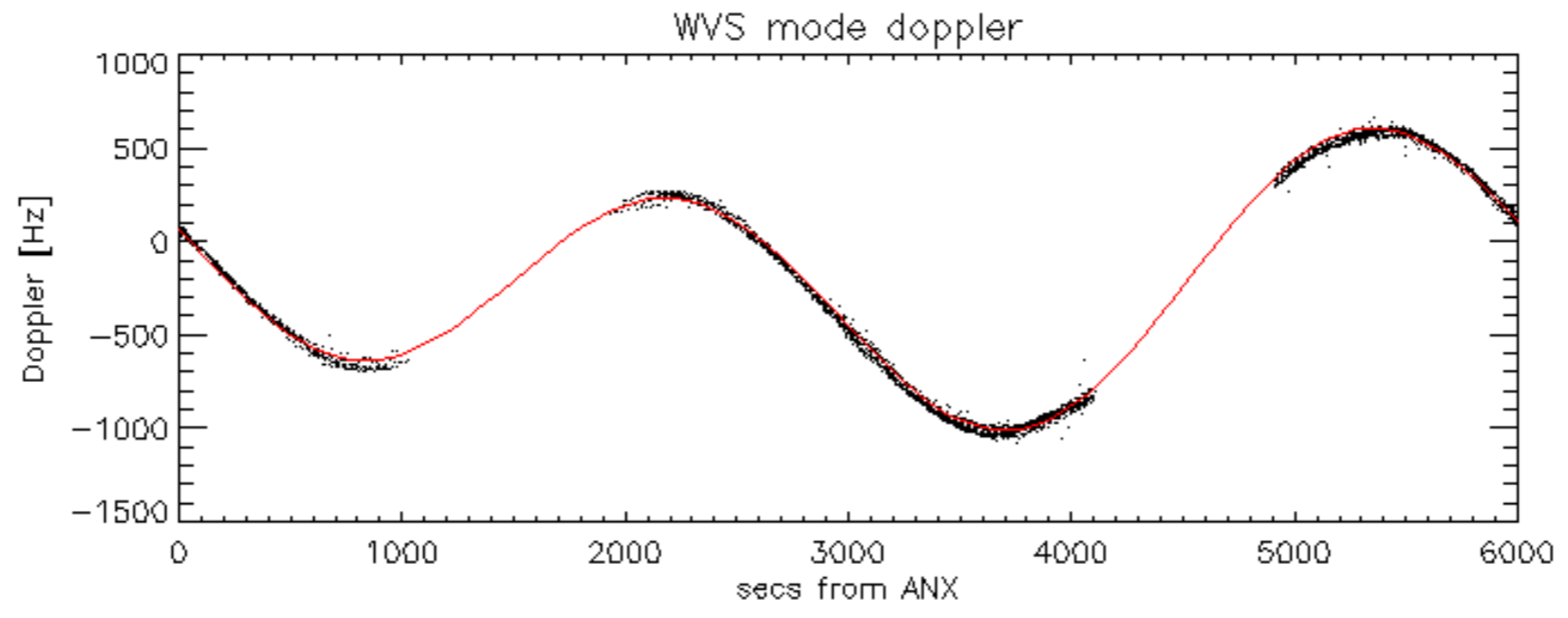


Doppler 'WVS' 'IS2' descending

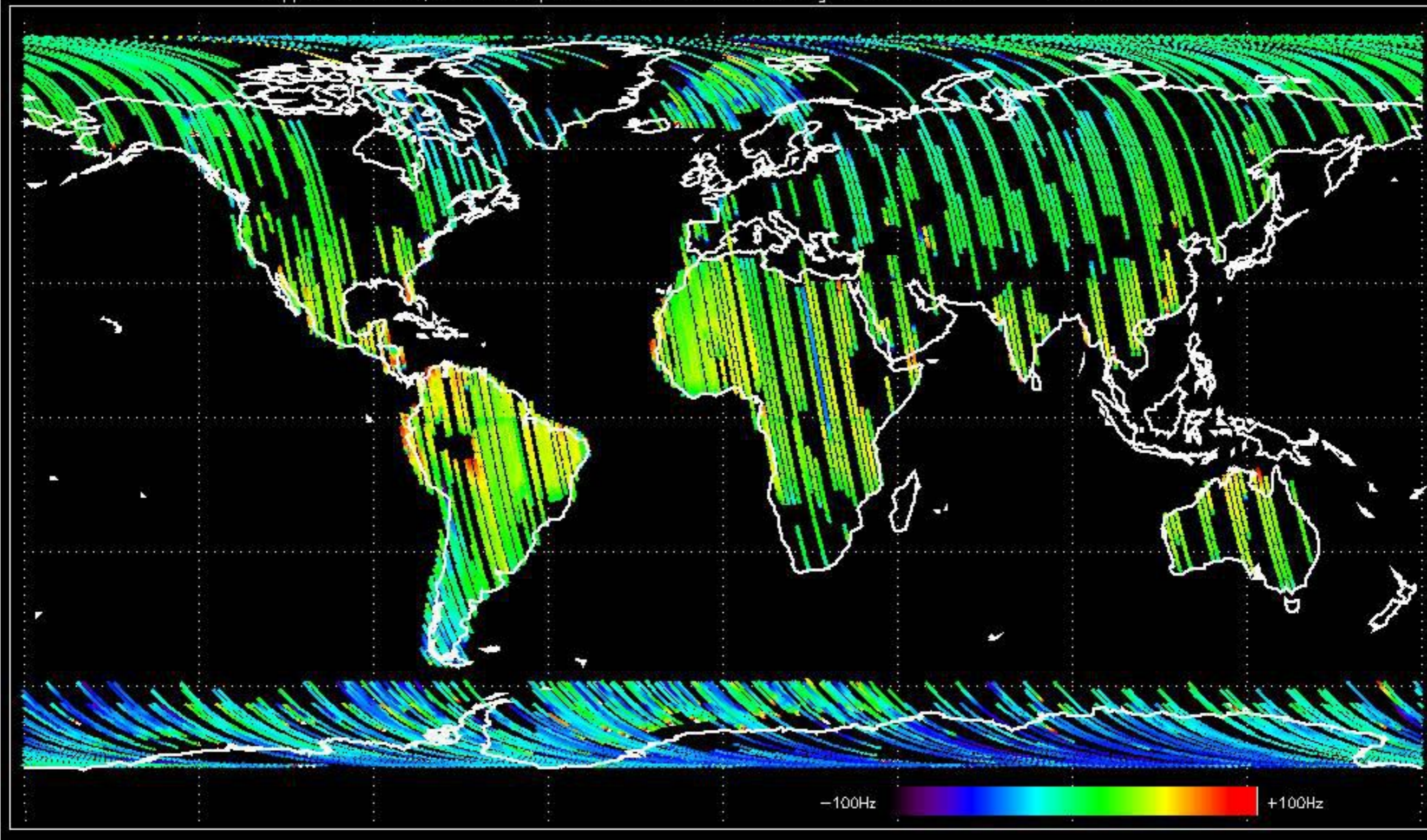


GM1 mode doppler

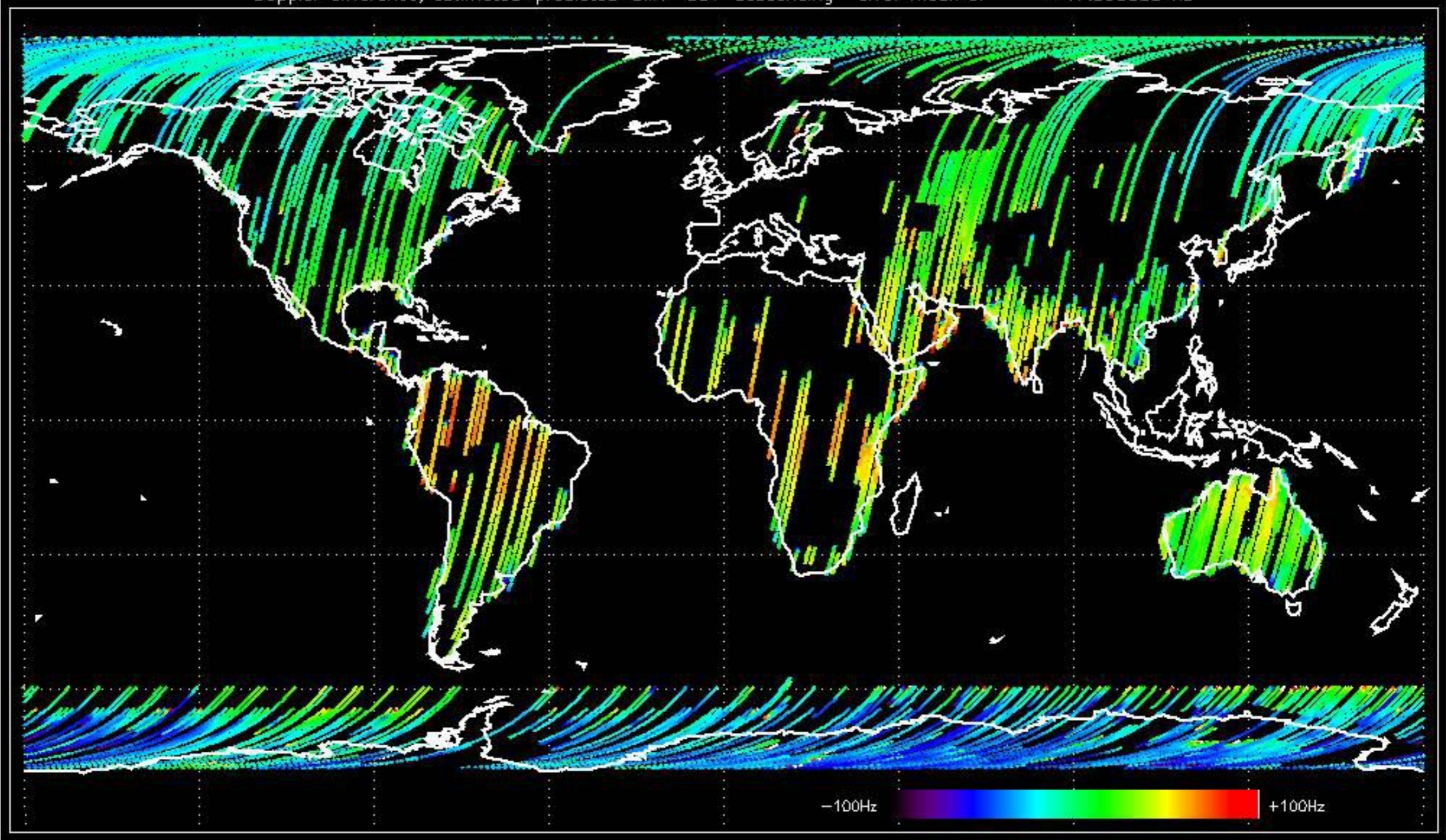




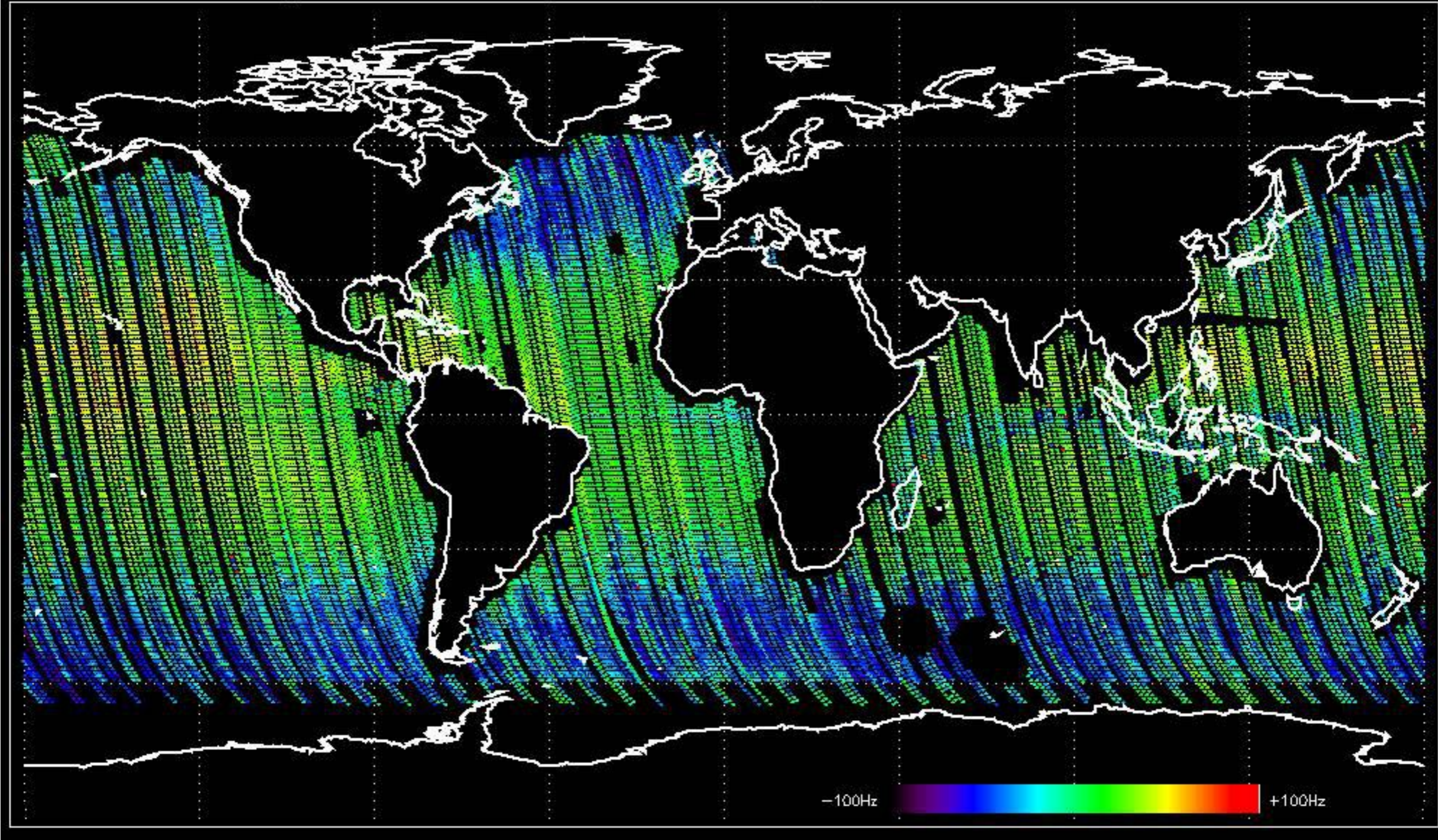
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -19.515877 Hz



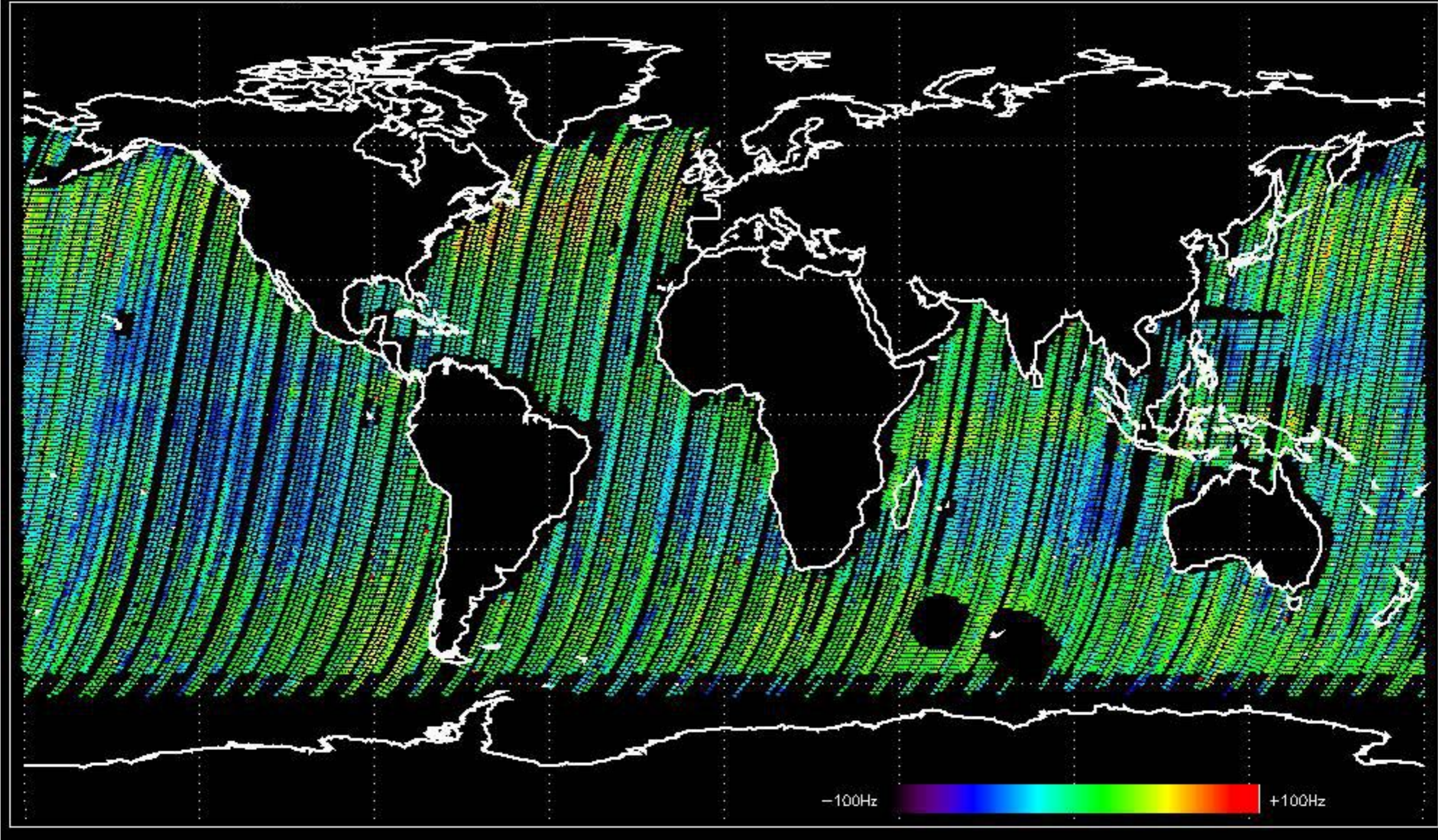
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -17.995088 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -11.622742 Hz

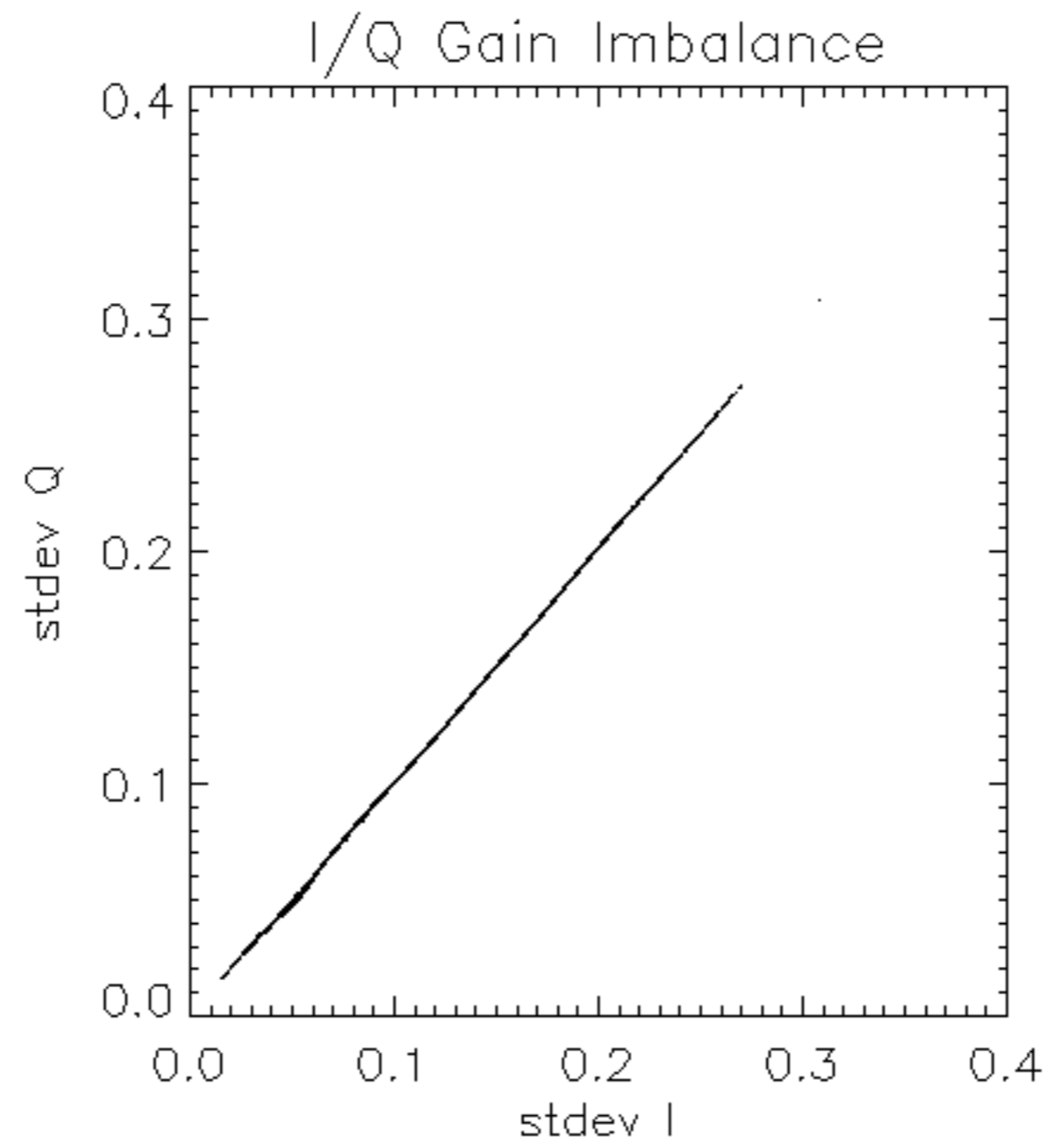


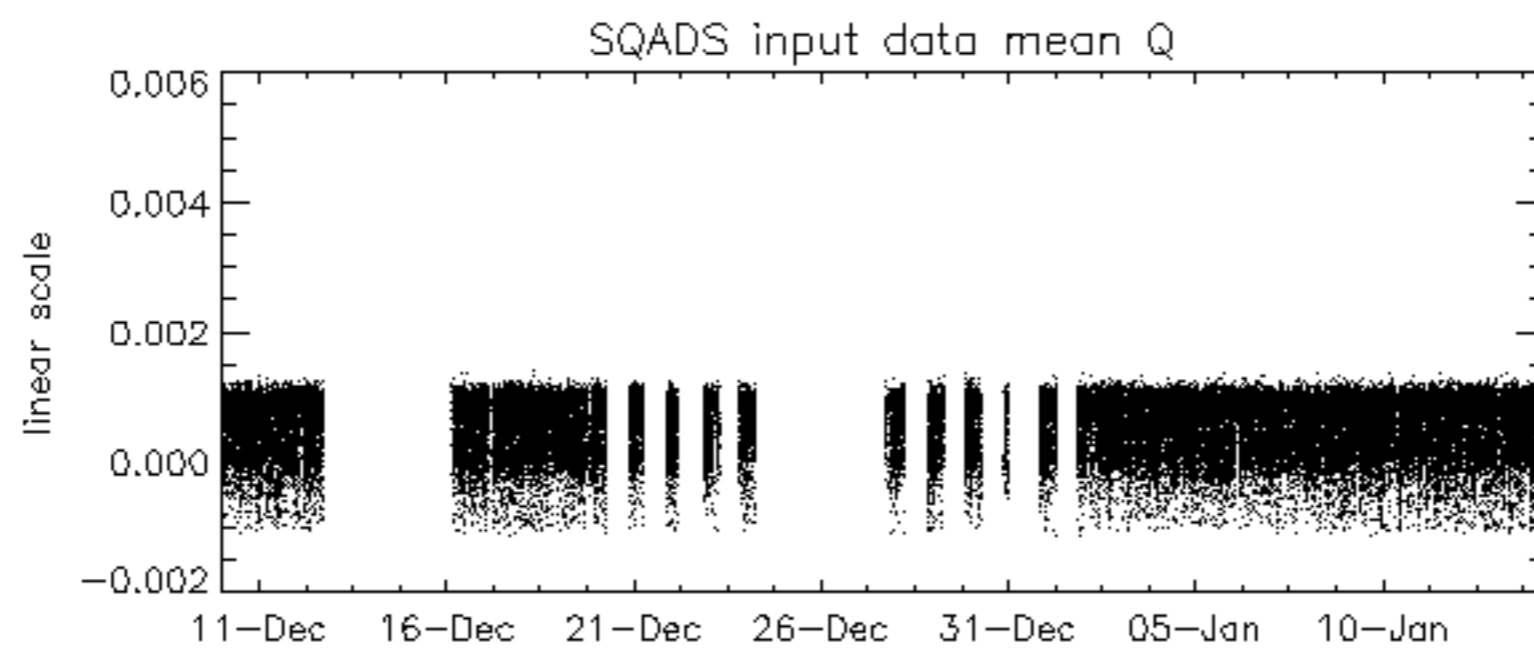
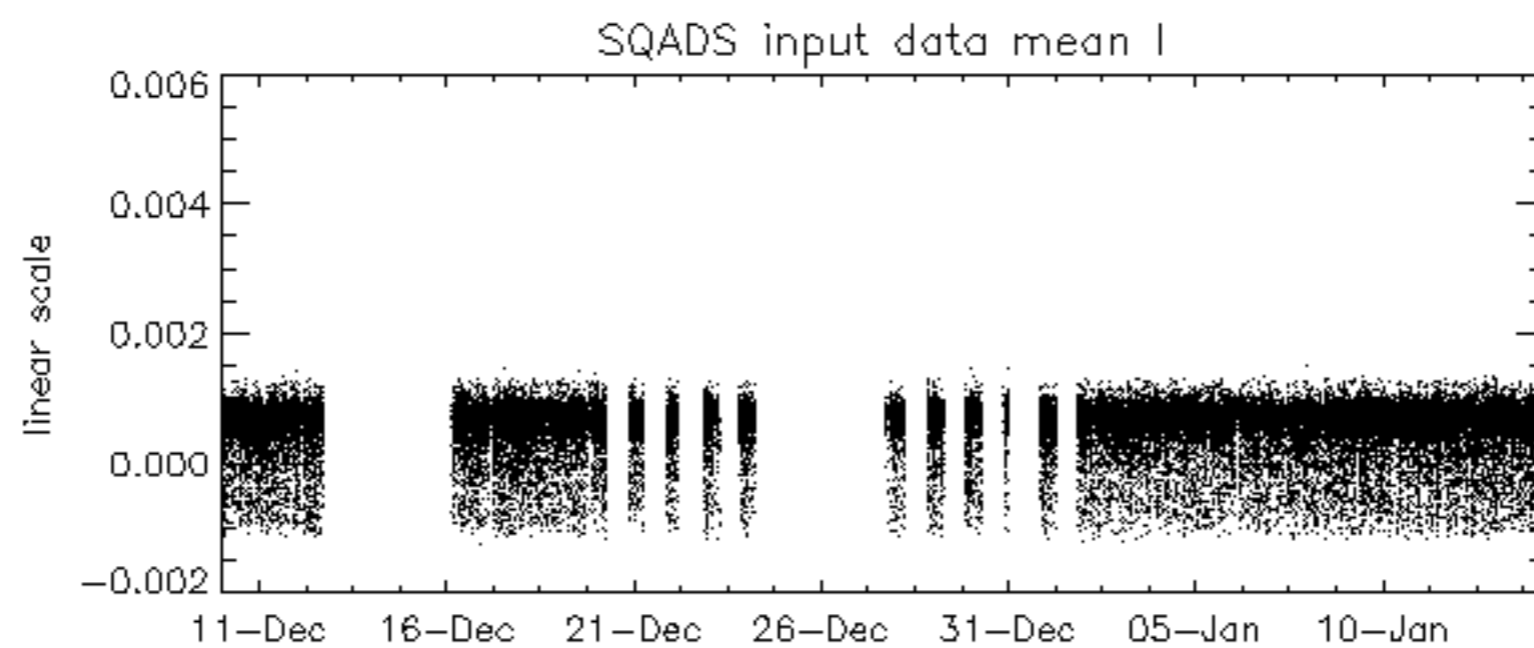
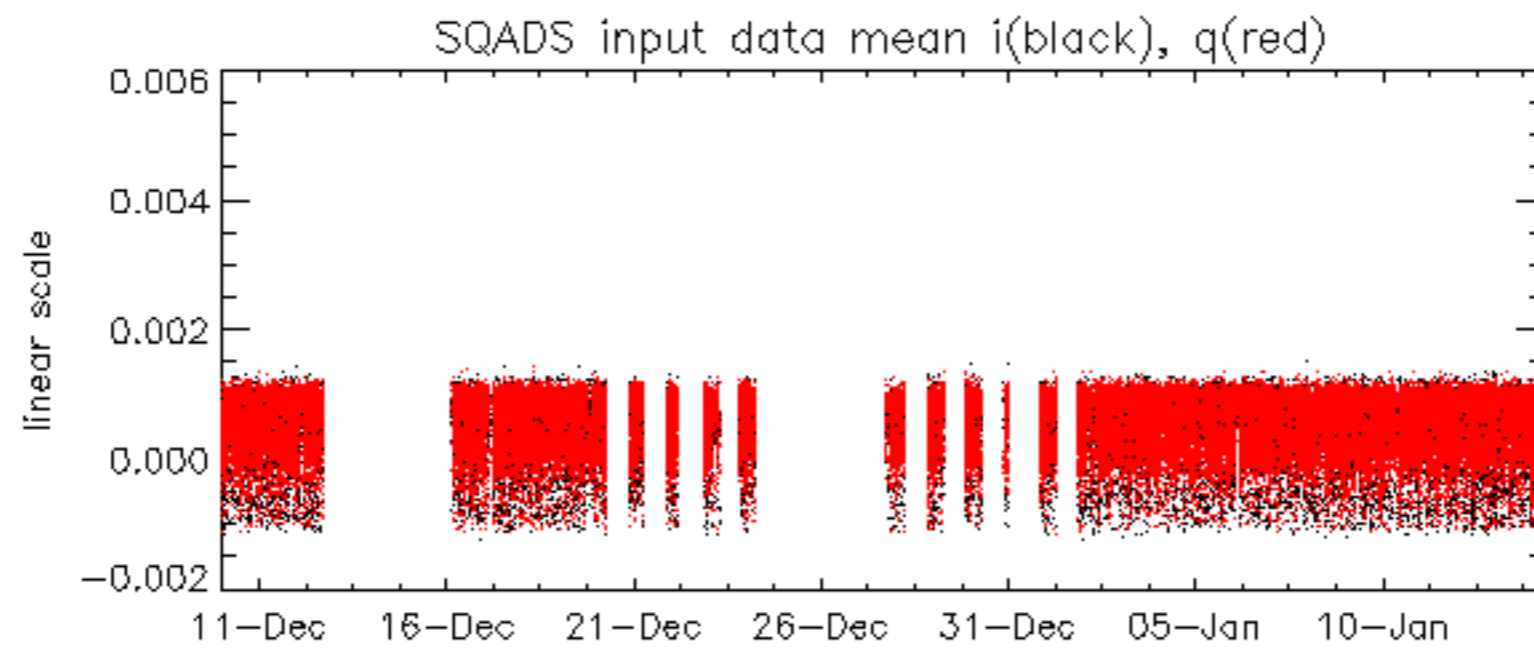
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -12.039944 Hz

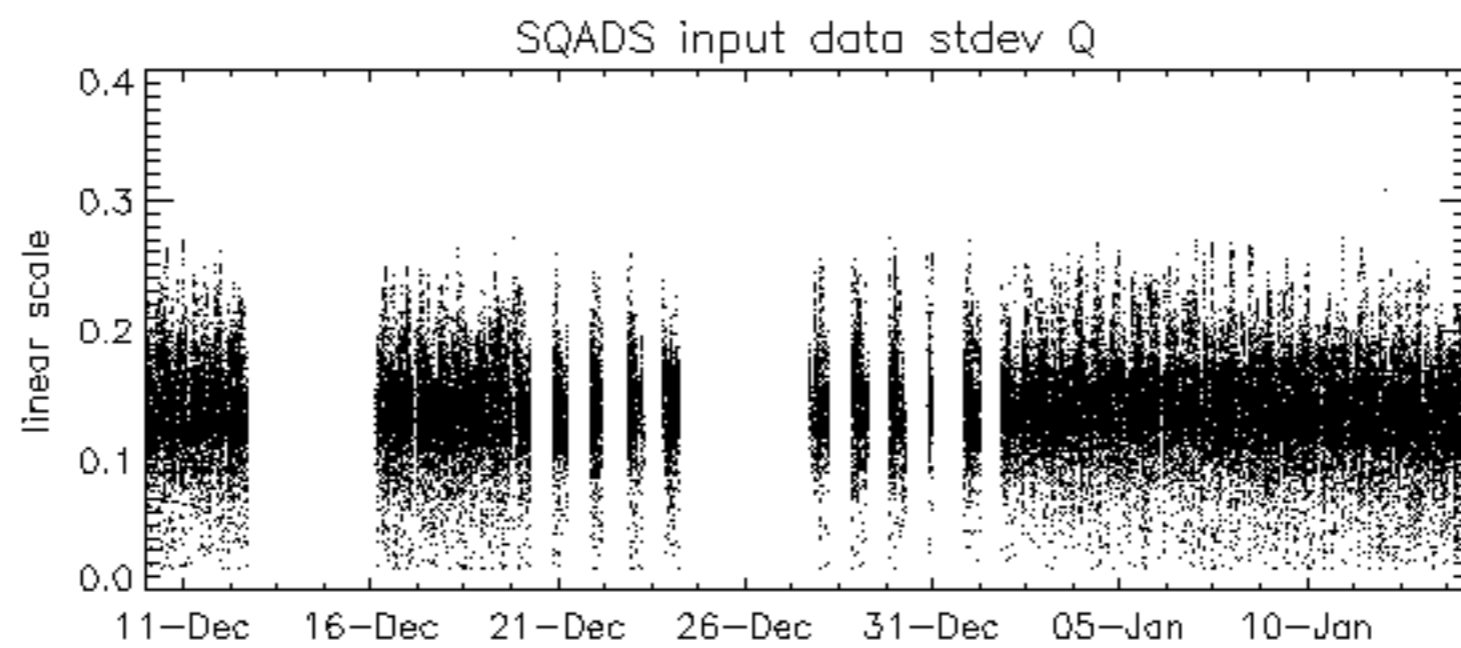
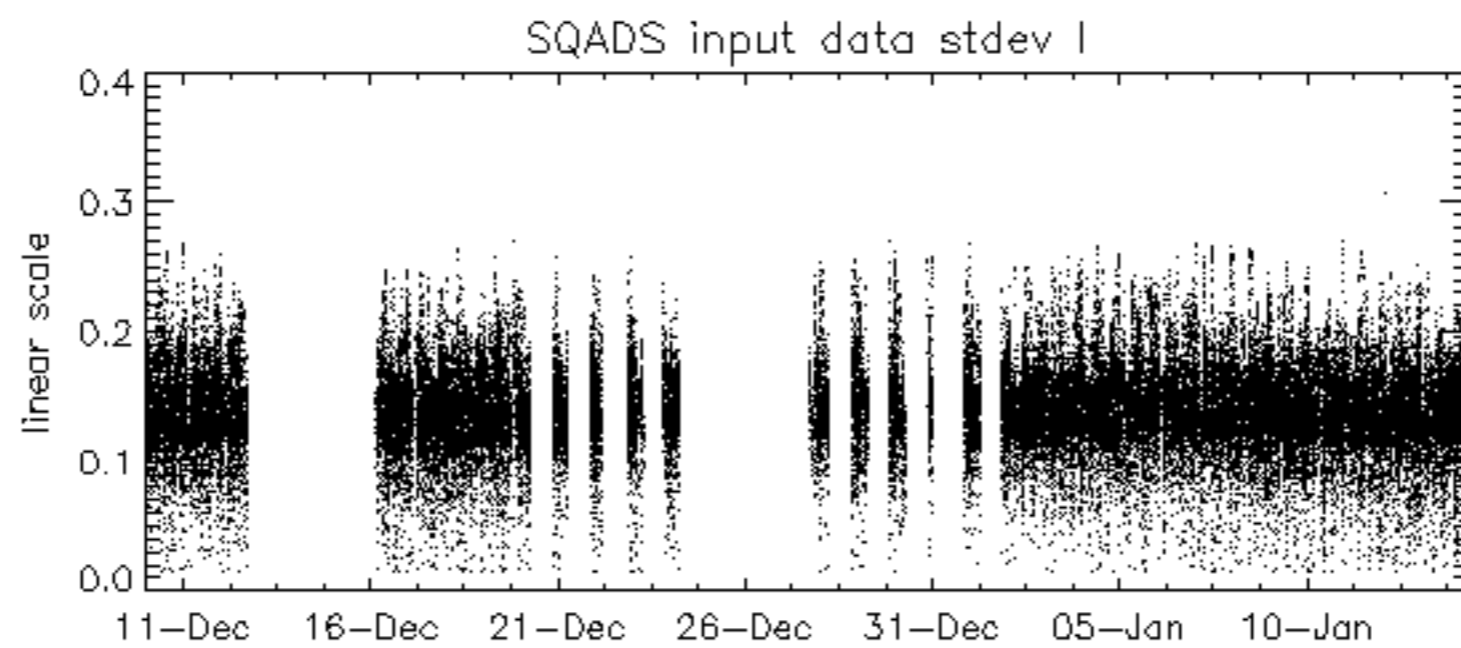
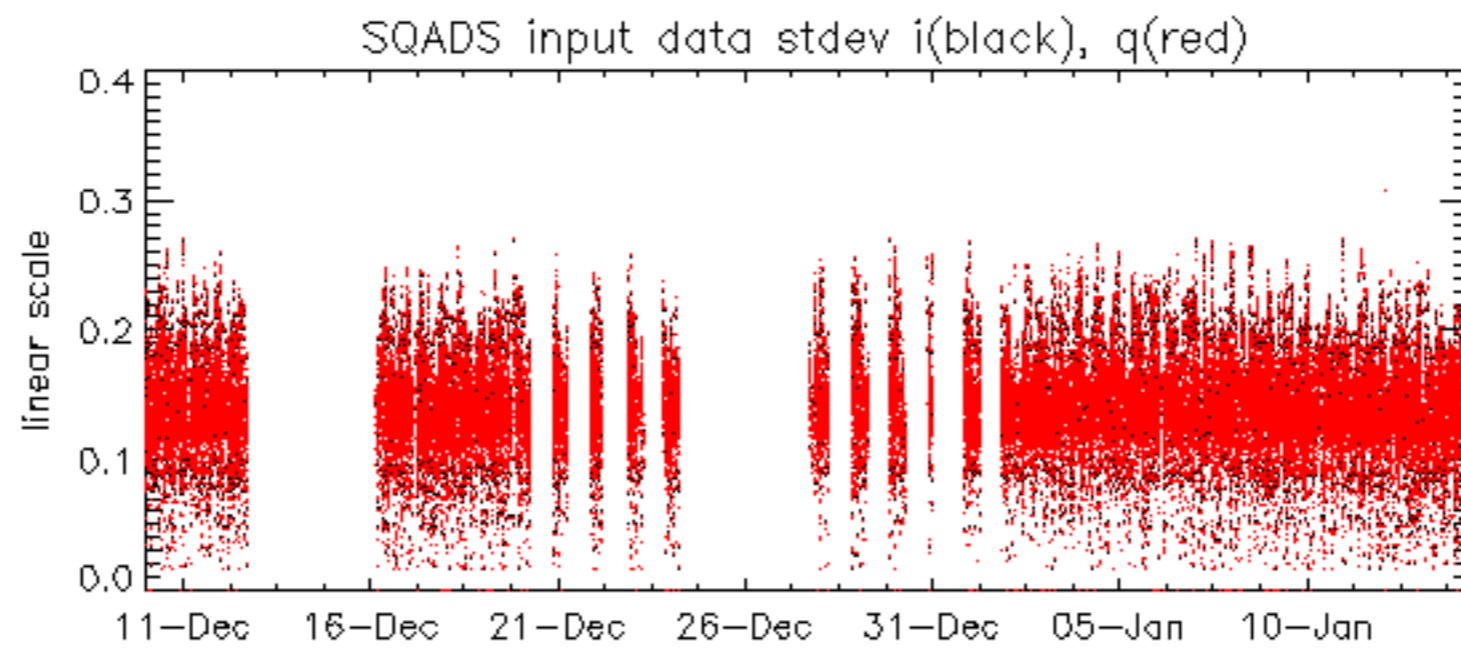


No anomalies observed on available MS products:

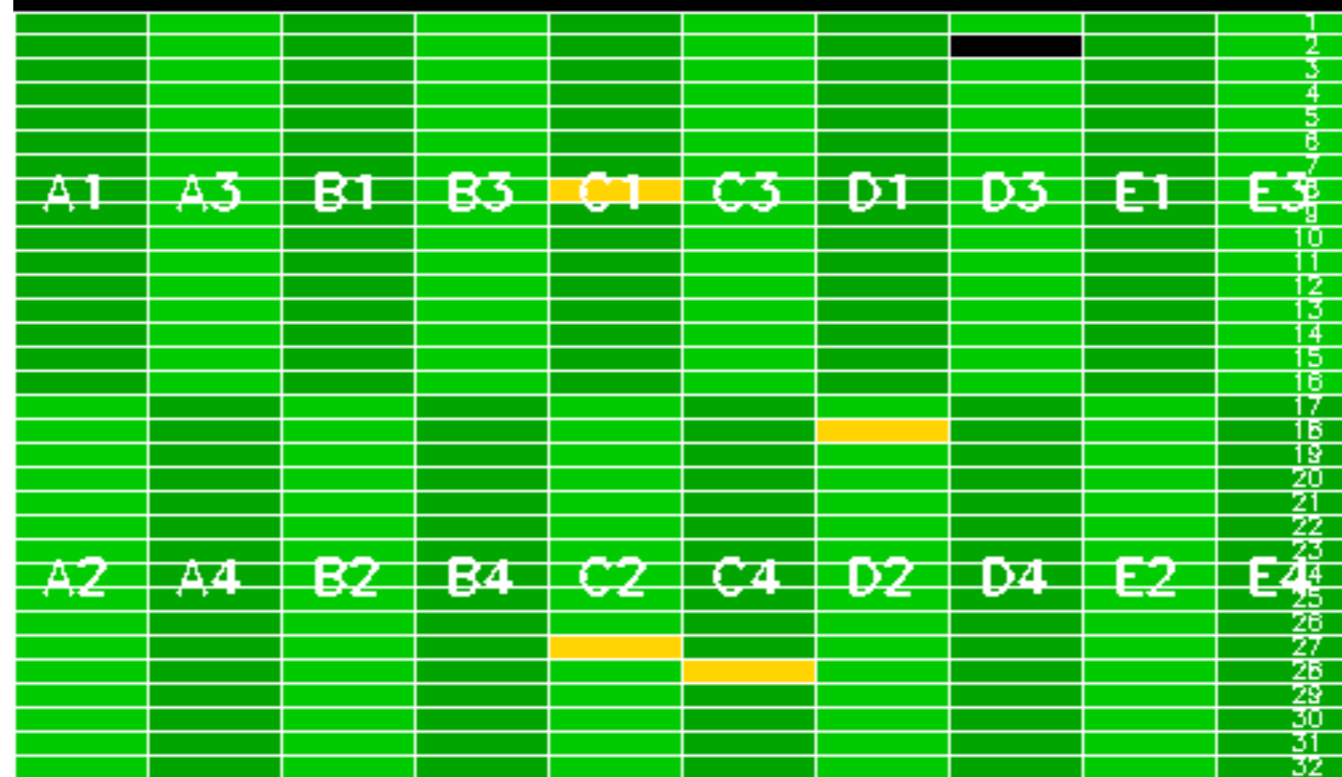
No anomalies observed.



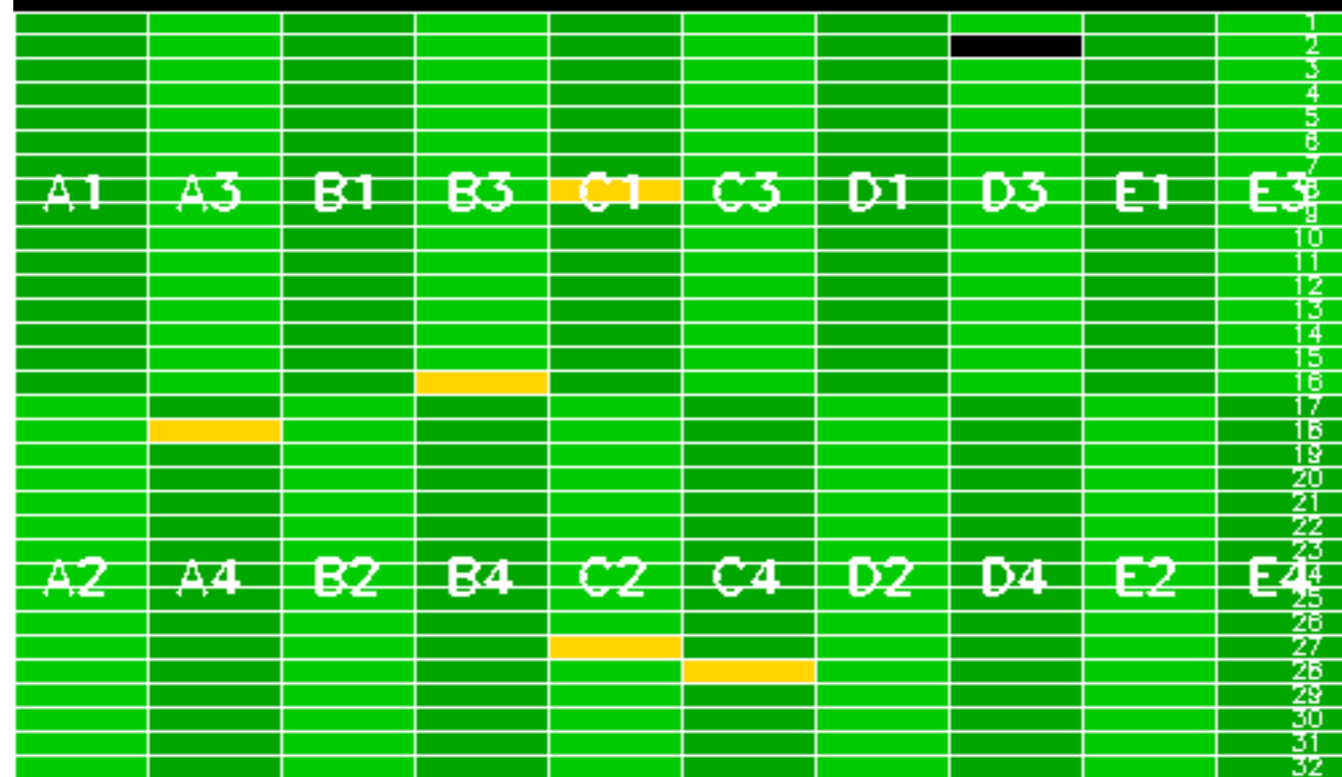




Reference: 2005-09-23 05:55:14 V TxGain
 Test : 2007-01-12 06:35:22 V



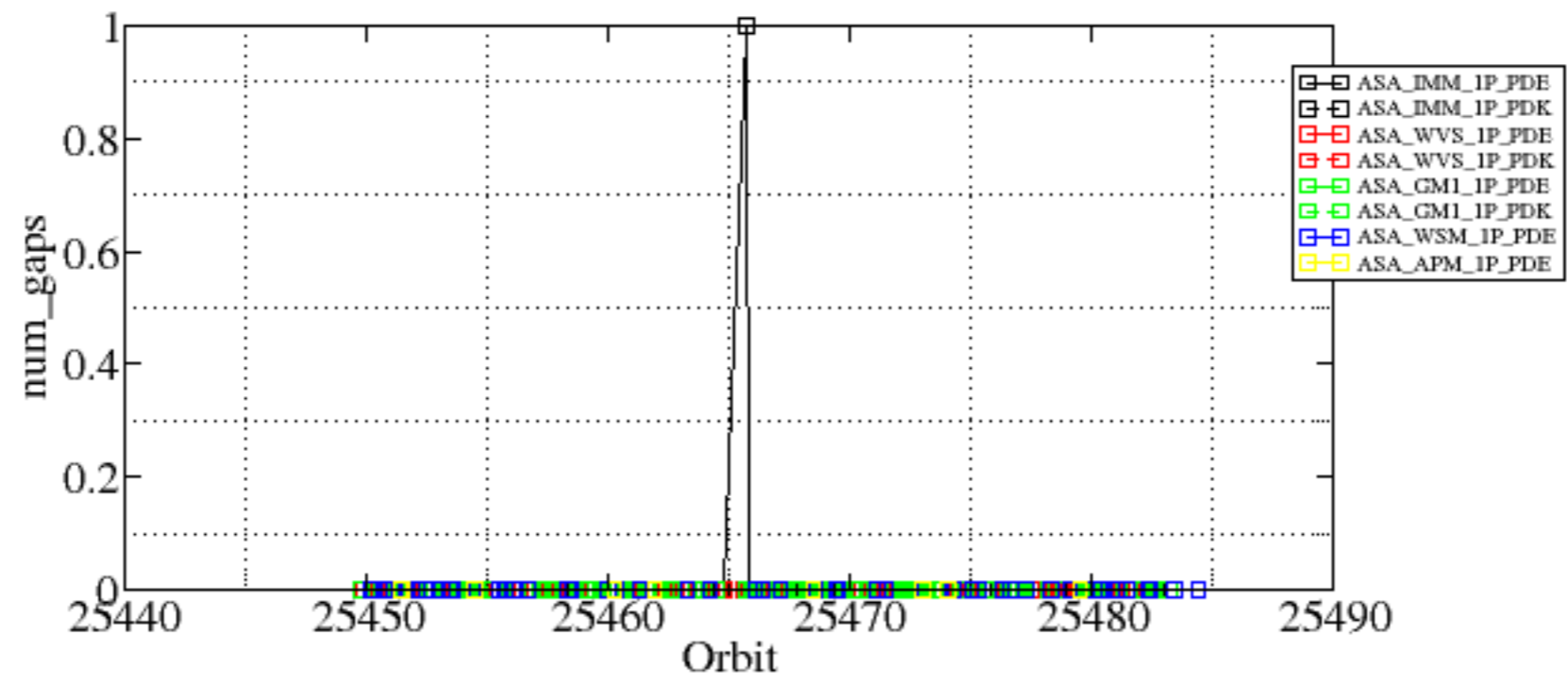
Reference: 2005-09-23 05:55:14 V TxGain
 Test : 2007-01-14 05:32:07 V

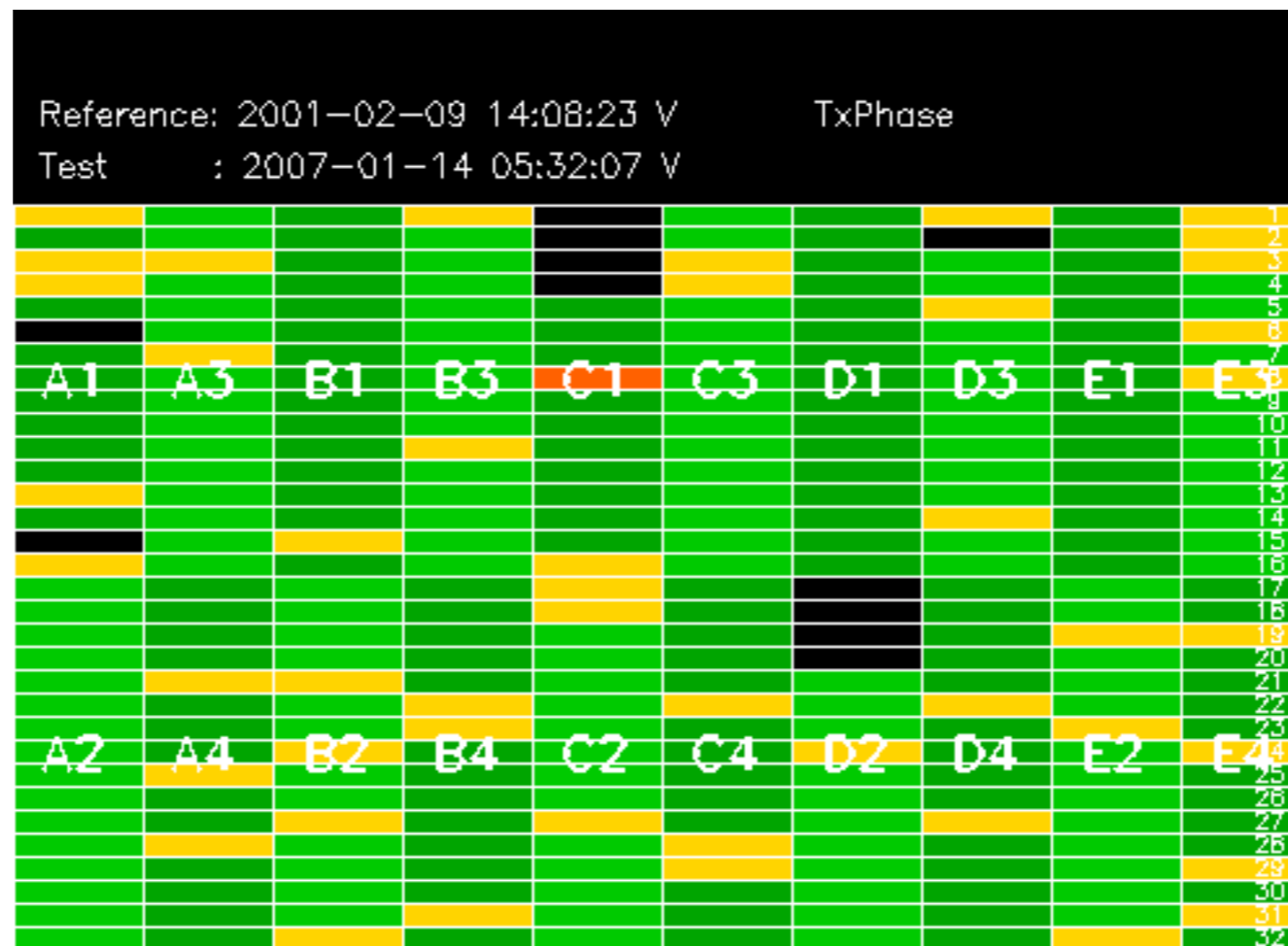


Summary of analysis for the last 3 days 2007011[234]

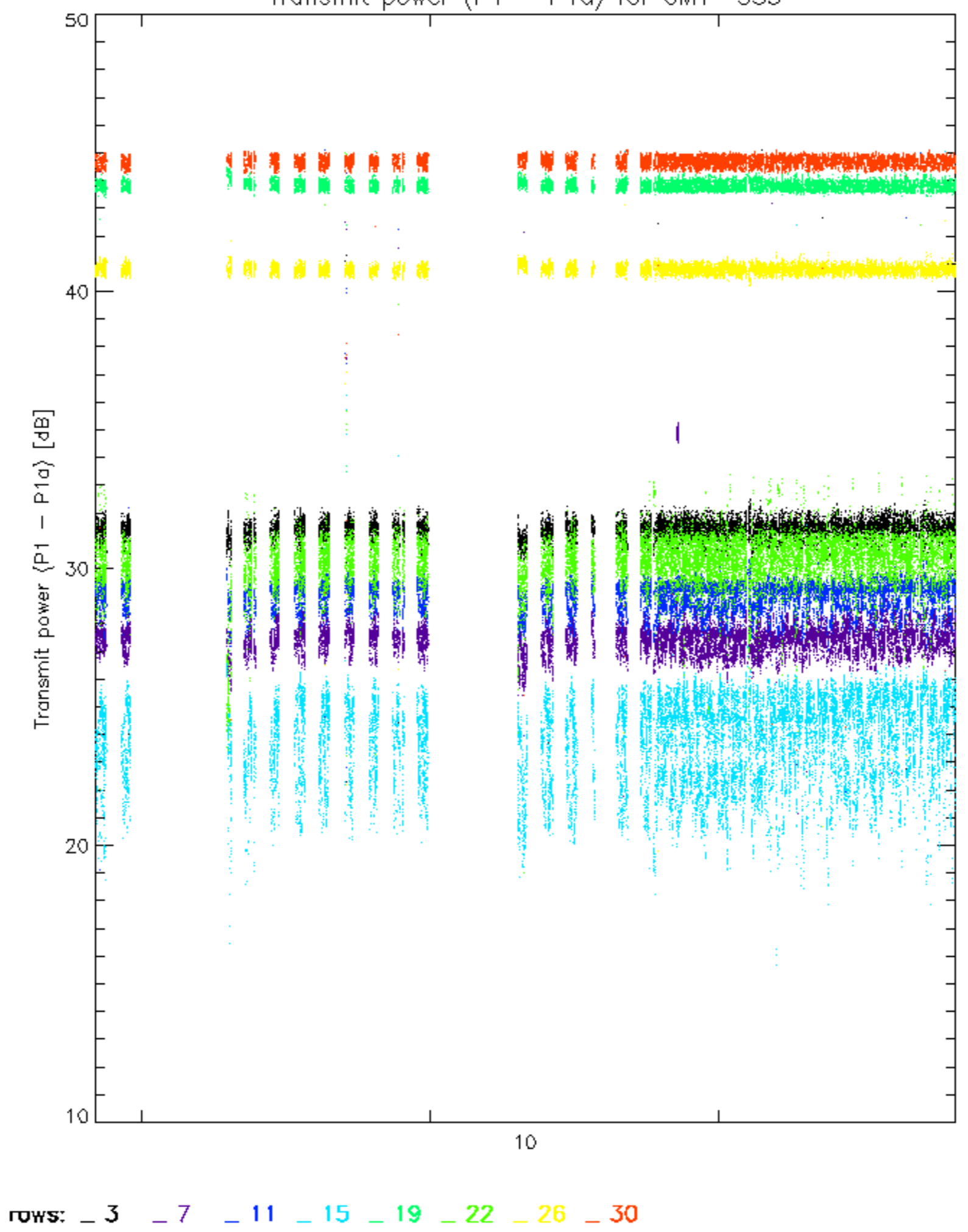
The assumption is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

| Filename | num_gaps | num_missing_lines |
|--|----------|-------------------|
| ASA_IMM_1PNPDE20070113_024624_000001482054_00361_25465_5301.N1 | 1 | 1 |
| ASA_IMM_1PNPDE20070113_182645_000000352054_00371_25475_5884.N1 | 0 | 17 |
| ASA_GM1_1PNPDK20070112_072909_000005072054_00350_25454_3551.N1 | 0 | 24 |
| ASA_WSM_1PNPDE20070112_143842_000003232054_00354_25458_4789.N1 | 0 | 8 |
| ASA_WSM_1PNPDE20070112_171324_000002322054_00356_25460_4821.N1 | 0 | 4 |

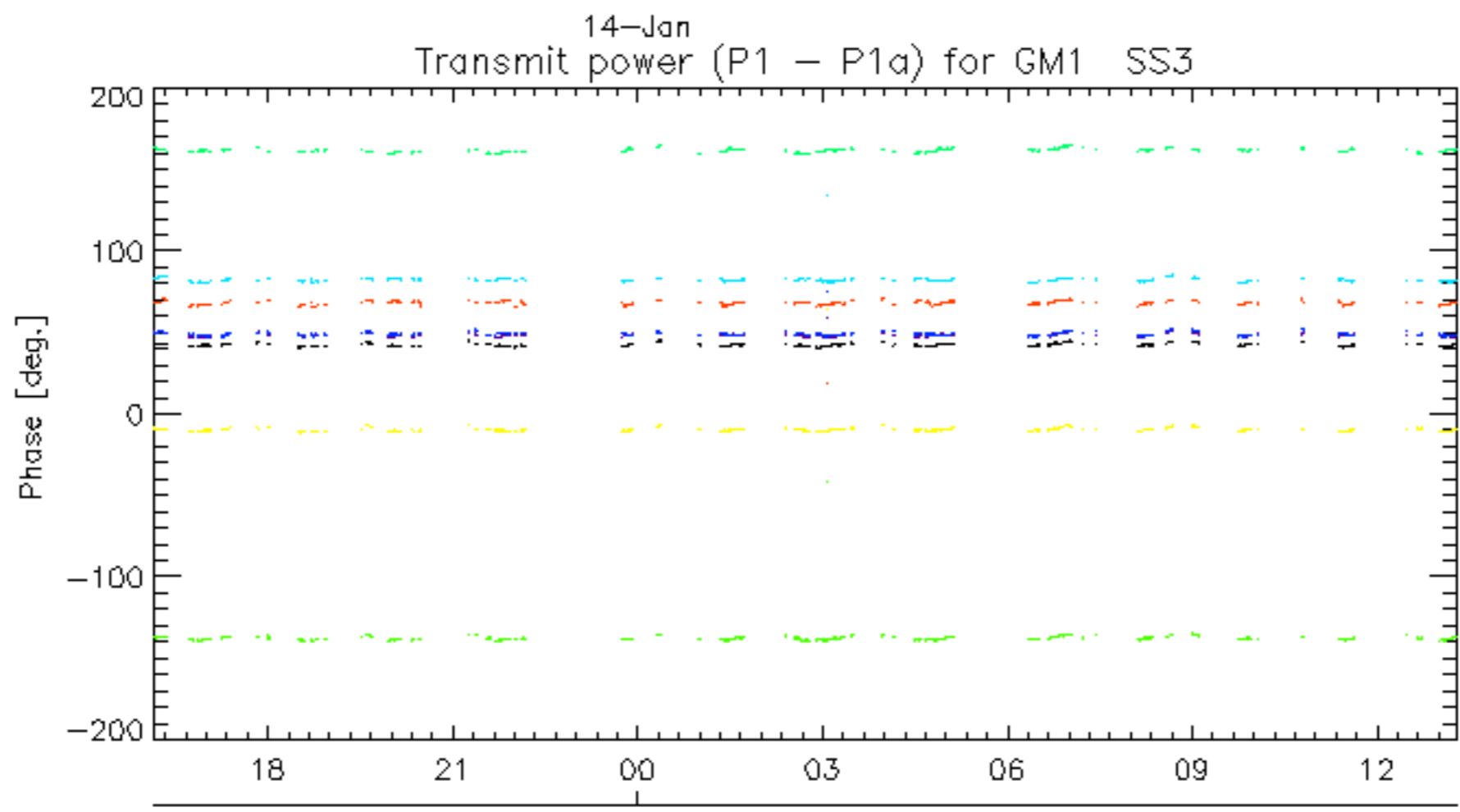
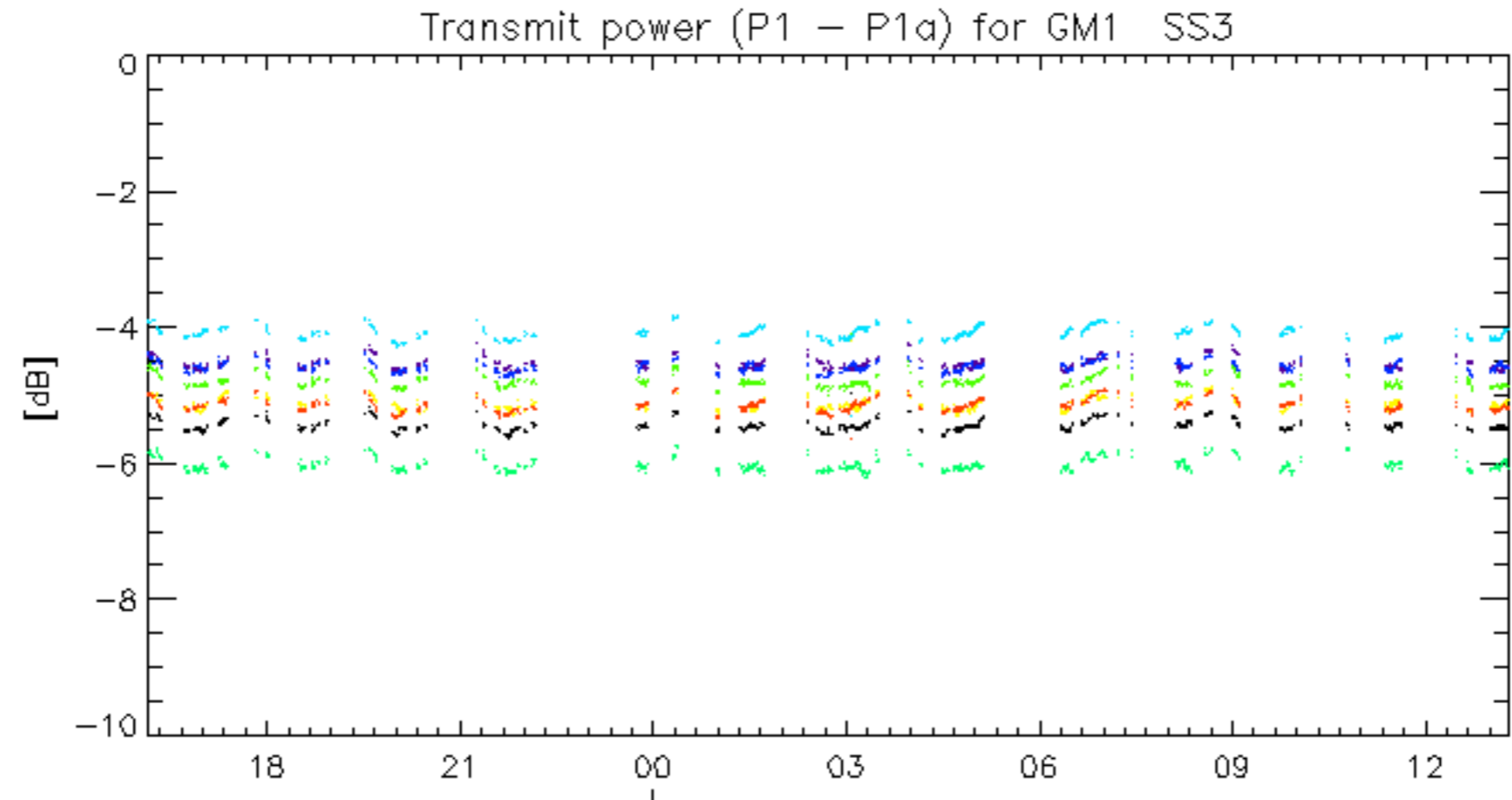




Transmit power (P1 - P1a) for GM1 SS3

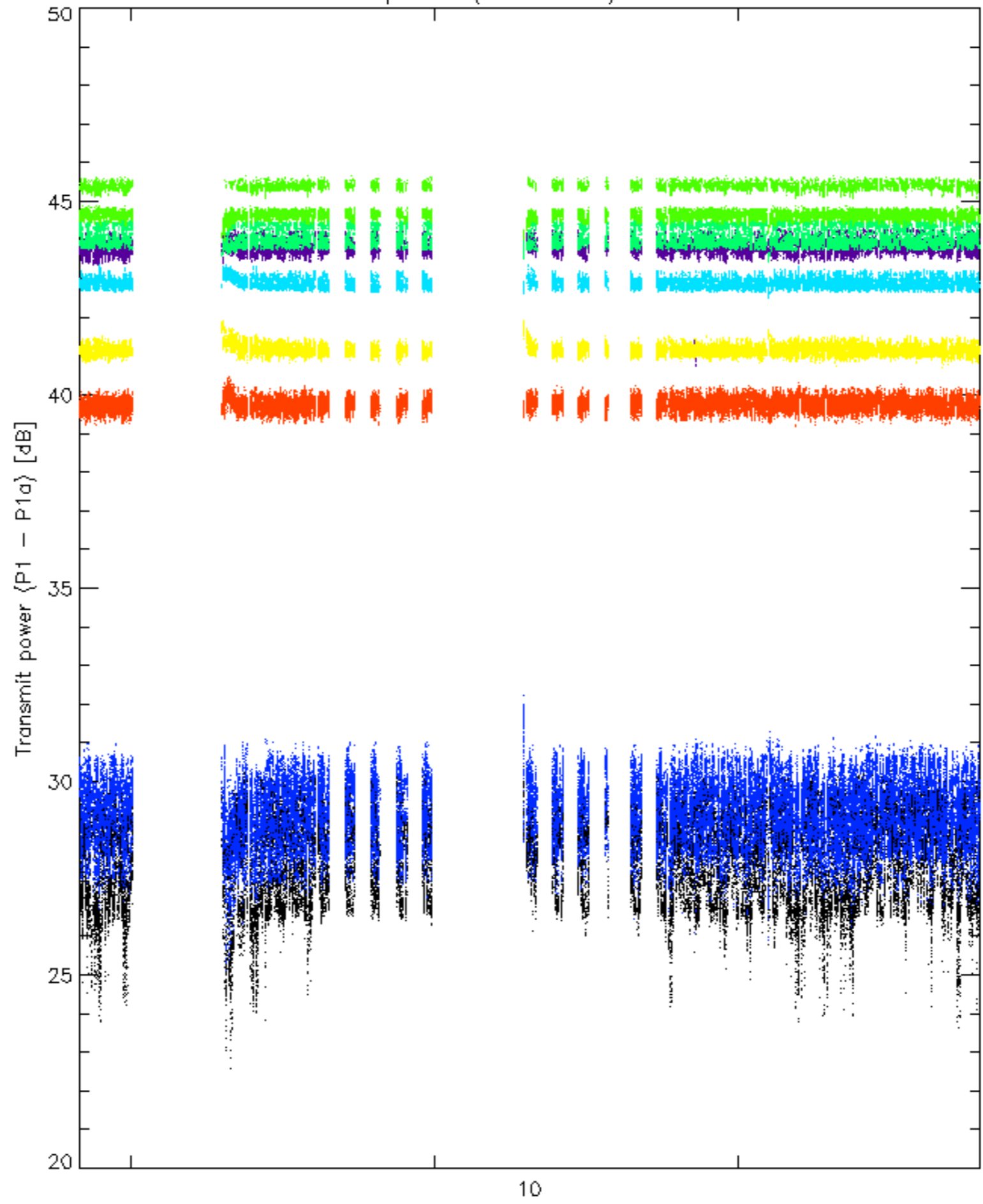


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

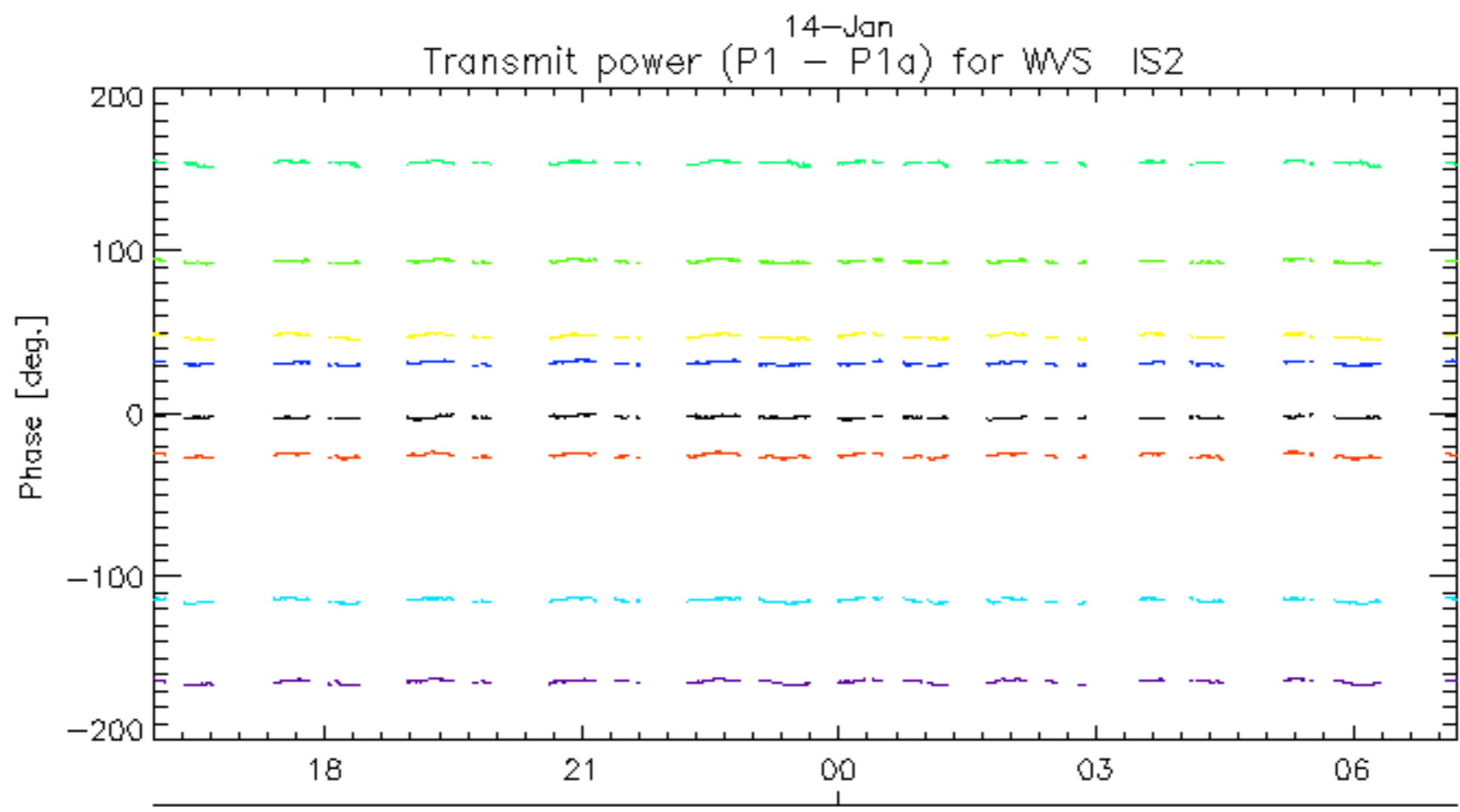
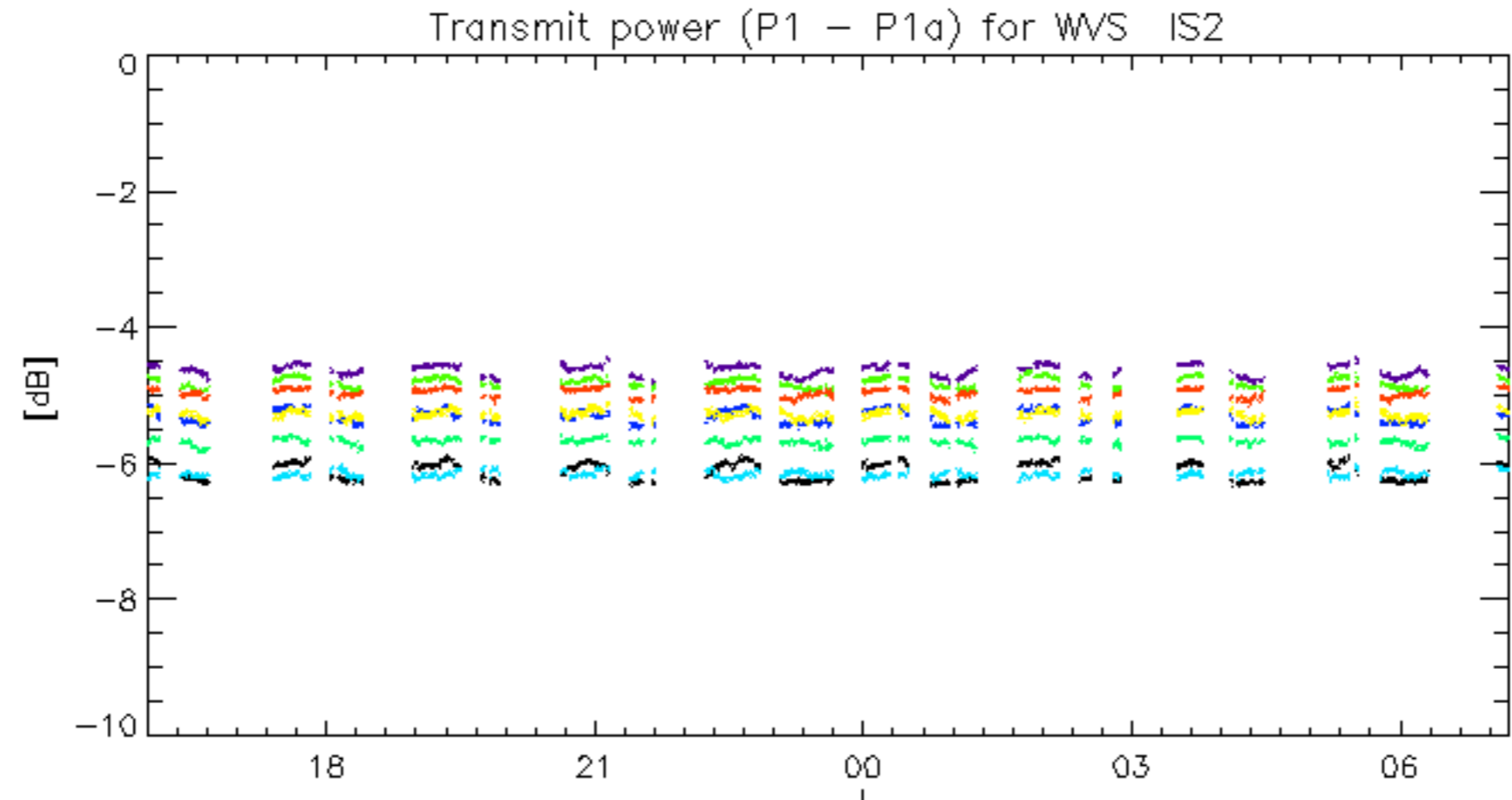


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

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.