

PRELIMINARY REPORT OF 060105

last update on Thu Jan 5 16:42:04 GMT 2006

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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 2006-01-04 00:00:00 to 2006-01-05 16:42:04

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

| | | | | | |
|---------------------------------------------------------------|----|---|---|---|----|
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 38 | 0 | 5 | 0 | 25 |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 38 | 0 | 5 | 0 | 25 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 38 | 0 | 5 | 0 | 25 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 38 | 0 | 5 | 0 | 25 |

| PDHS-E | | | | | |
|---------------------------------------------------------------|-----|-----|-----|-----|-----|
| AUXILIARY FILE | WVS | GM1 | IMM | APM | WSM |
| ASA_CON_AXVIEC20051013_151540_20050916_195733_20061231_000000 | 44 | 53 | 33 | 4 | 70 |
| ASA_XCA_AXVIEC20051219_162245_20050916_195733_20061231_000000 | 44 | 53 | 33 | 4 | 70 |
| ASA_INS_AXVIEC20051219_161945_20030211_000000_20061231_000000 | 44 | 53 | 33 | 4 | 70 |
| ASA_XCH_AXVIEC20051219_162547_20020301_000000_20081231_000000 | 44 | 53 | 33 | 4 | 70 |

2.3 - Browse Visual Inspection

No anomalies observed on available browse products

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 | 20060104 170153 |
| H | 20060105 062640 |

MSM in V/V 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"/> |

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 | -3.792768 | 0.220960 | -1.212113 |
| 7 | P1 | -2.807306 | 0.114263 | -0.850141 |
| 11 | P1 | -4.132840 | 0.037186 | 0.103397 |
| 15 | P1 | -5.317247 | 1.510537 | -3.385169 |
| 19 | P1 | -3.090274 | 0.060163 | -0.646957 |
| 22 | P1 | -4.449955 | 0.023714 | -0.190372 |
| 26 | P1 | -4.355076 | 0.056777 | 0.593954 |
| 30 | P1 | -5.681098 | 0.032157 | -0.401328 |
| 3 | P1 | -16.056982 | 2.512994 | -4.251448 |
| 7 | P1 | -15.606820 | 2.425306 | -4.249855 |
| 11 | P1 | -16.376339 | 0.469564 | -0.972523 |
| 15 | P1 | -12.827934 | 0.807418 | -2.118079 |
| 19 | P1 | -13.541059 | 0.343177 | -1.474165 |
| 22 | P1 | -15.933593 | 0.612352 | -0.373072 |
| 26 | P1 | -15.228813 | 0.965237 | -2.398526 |
| 30 | P1 | -15.797764 | 2.200179 | -3.707909 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -21.754902 | 0.113534 | 0.358873 |
| 7 | P2 | -22.532087 | 0.105271 | 0.052595 |
| 11 | P2 | -16.452707 | 0.129725 | 0.434432 |
| 15 | P2 | -7.265173 | 0.106213 | 0.105979 |
| 19 | P2 | -9.206017 | 0.104437 | 0.022314 |
| 22 | P2 | -17.895266 | 0.110971 | -0.213667 |
| 26 | P2 | -16.344574 | 0.130753 | 0.490552 |
| 30 | P2 | -19.762190 | 0.114043 | 0.392293 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 7 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 11 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 15 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 19 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 22 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 26 | P3 | -8.231939 | 0.007703 | 0.031517 |
| 30 | P3 | -8.231939 | 0.007703 | 0.031517 |

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 | -3.713072 | 0.008471 | -0.032365 |
| 7 | P1 | -2.767147 | 0.007766 | 0.000133 |
| 11 | P1 | -2.875561 | 0.009520 | 0.007475 |
| 15 | P1 | -3.424703 | 0.017080 | -0.061594 |
| 19 | P1 | -3.392525 | 0.014299 | 0.003396 |
| 22 | P1 | -5.123930 | 0.019325 | -0.006429 |
| 26 | P1 | -5.854521 | 0.015751 | -0.018702 |
| 30 | P1 | -5.276473 | 0.033366 | 0.032231 |
| 3 | P1 | -11.492855 | 0.039287 | -0.048251 |
| 7 | P1 | -9.963118 | 0.047564 | 0.058458 |
| 11 | P1 | -10.056916 | 0.056477 | -0.039346 |
| 15 | P1 | -10.568090 | 0.072036 | -0.099801 |
| 19 | P1 | -15.518181 | 0.073335 | 0.039943 |
| 22 | P1 | -20.913176 | 0.961695 | 0.534516 |

| | | | | |
|----|----|------------|----------|----------|
| 26 | P1 | -17.097994 | 0.296861 | 0.406249 |
| 30 | P1 | -18.172705 | 0.280158 | 0.135763 |

P2 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|------------|------------|-----------------|
| 3 | P2 | -17.570400 | 0.030070 | 0.176933 |
| 7 | P2 | -23.024933 | 0.056262 | 0.199589 |
| 11 | P2 | -11.551737 | 0.020083 | 0.191890 |
| 15 | P2 | -4.985067 | 0.021726 | 0.082253 |
| 19 | P2 | -6.970519 | 0.021762 | 0.049848 |
| 22 | P2 | -8.212736 | 0.022181 | -0.000994 |
| 26 | P2 | -24.042015 | 0.030021 | 0.096855 |
| 30 | P2 | -22.134180 | 0.017428 | 0.031067 |

P3 Cyclic statistics

| row | pulse | mean (dB) | stdev (dB) | slope(dB/cycle) |
|-----|-------|-----------|------------|-----------------|
| 3 | P3 | -8.075986 | 0.002471 | 0.019961 |
| 7 | P3 | -8.076127 | 0.002470 | 0.020441 |
| 11 | P3 | -8.076246 | 0.002450 | 0.019987 |
| 15 | P3 | -8.076101 | 0.002454 | 0.020195 |
| 19 | P3 | -8.076158 | 0.002470 | 0.020460 |
| 22 | P3 | -8.076025 | 0.002457 | 0.020353 |
| 26 | P3 | -8.076045 | 0.002443 | 0.020820 |
| 30 | P3 | -8.075917 | 0.002456 | 0.019626 |

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 | 0.000475760 |
| | stdev | 2.13196e-07 |
| MEAN Q | mean | 0.000476594 |
| | stdev | 2.33037e-07 |



5.2 - Input stdev I/Q

| channel | stat | DSS-B |
|---------|-------|------------|
| STDEV I | mean | 0.131017 |
| | stdev | 0.00116614 |
| STDEV Q | mean | 0.131316 |
| | stdev | 0.00118037 |



5.3 - Gain imbalance I/Q



6 - Telemetry analysis

Summary of analysis for the last 3 days 2006010[345]

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_1PNPDE20060104_004520_000001852044_00016_20110_5463.N1 | 1 | 0 |
| ASA_IMM_1PNPDE20060104_155357_000000402044_00025_20119_5538.N1 | 1 | 0 |
| ASA_WSM_1PNPDE20060105_010633_000002812044_00031_20125_7017.N1 | 0 | 44 |





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)

| |
|---------------------------------------------------------------------------------|
|  |
| Ascending |
|  |
| Descending |

7.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler

| |
|-----------------------------------------------------------------------------------|
|  |
| Ascending |
|  |
| 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)

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

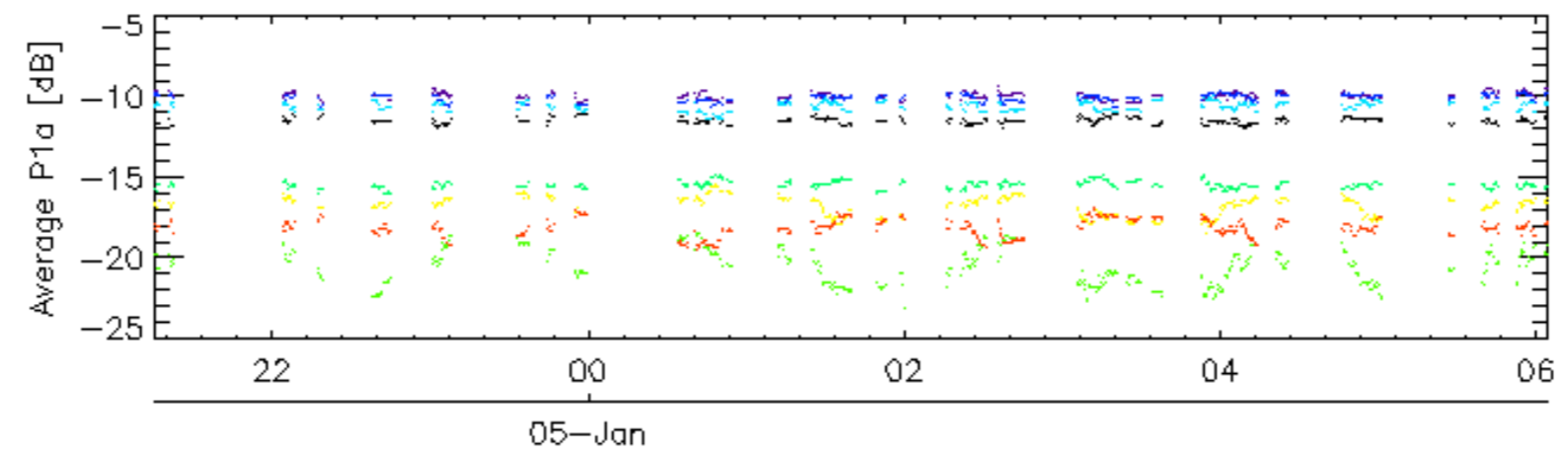
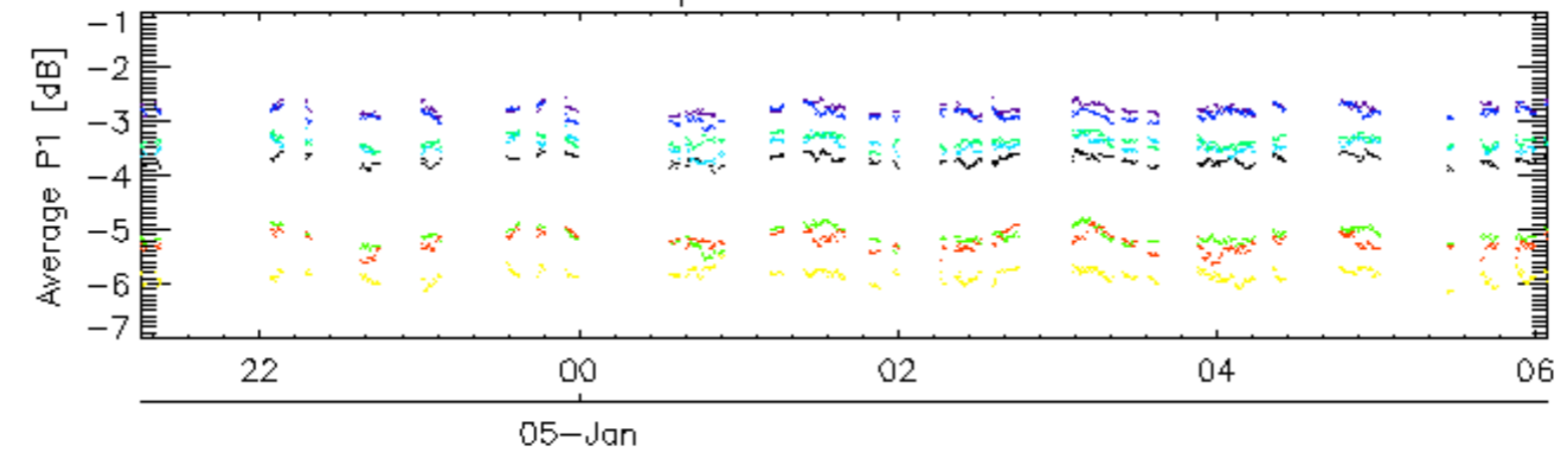
7.5 - Absolute Doppler for GM1

| |
|--------------------------------------|
| Evolution of Absolute Doppler |
| <input type="checkbox"/> |
| Ascending |
| <input type="checkbox"/> |
| Descending |

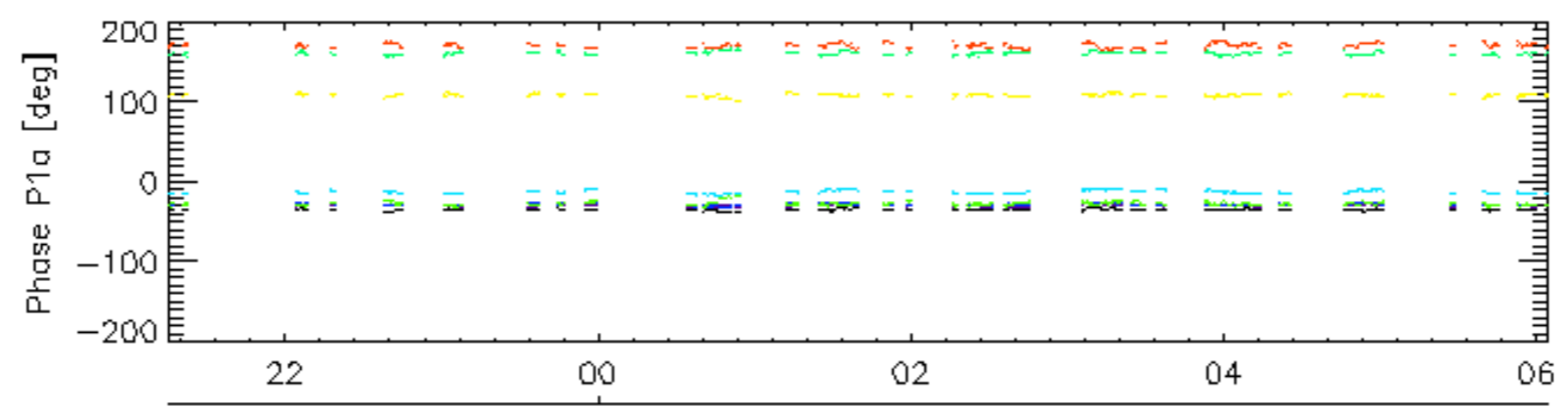
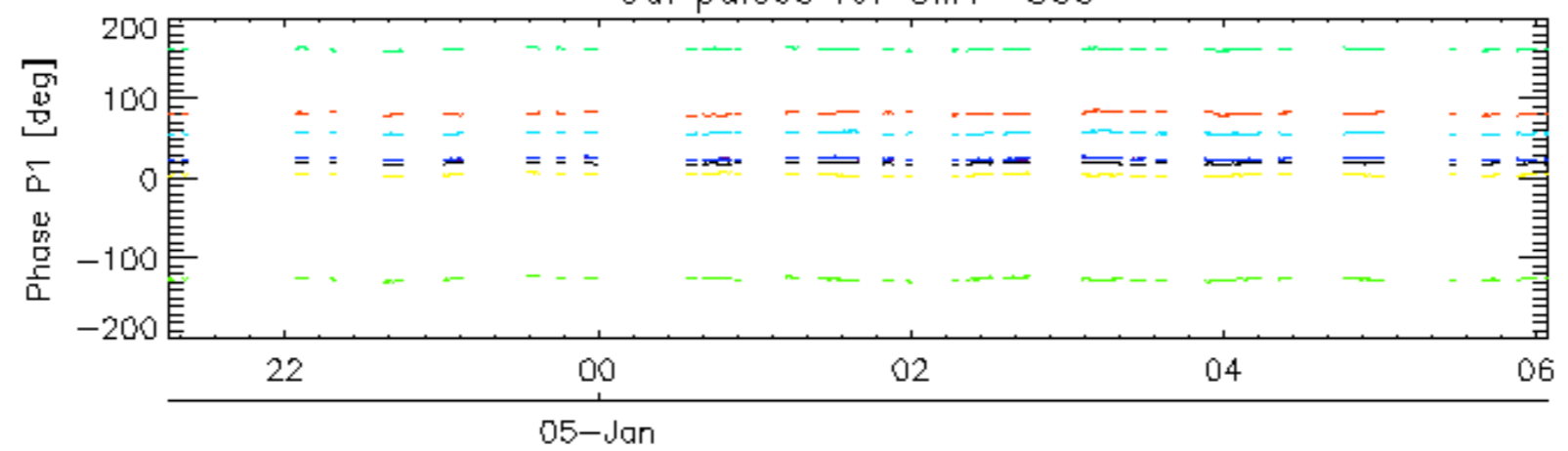
7.6 - Doppler evolution versus ANX for GM1

| |
|-------------------------------------------|
| Evolution Doppler error versus ANX |
| <input type="checkbox"/> |

Cal pulses for GM1 SS3

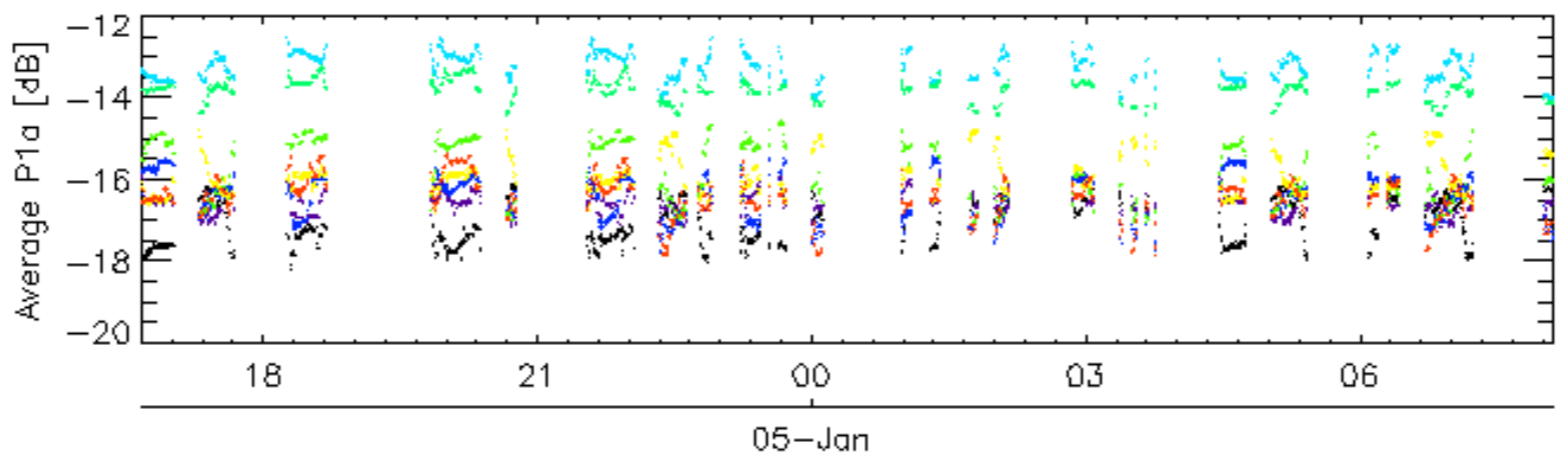
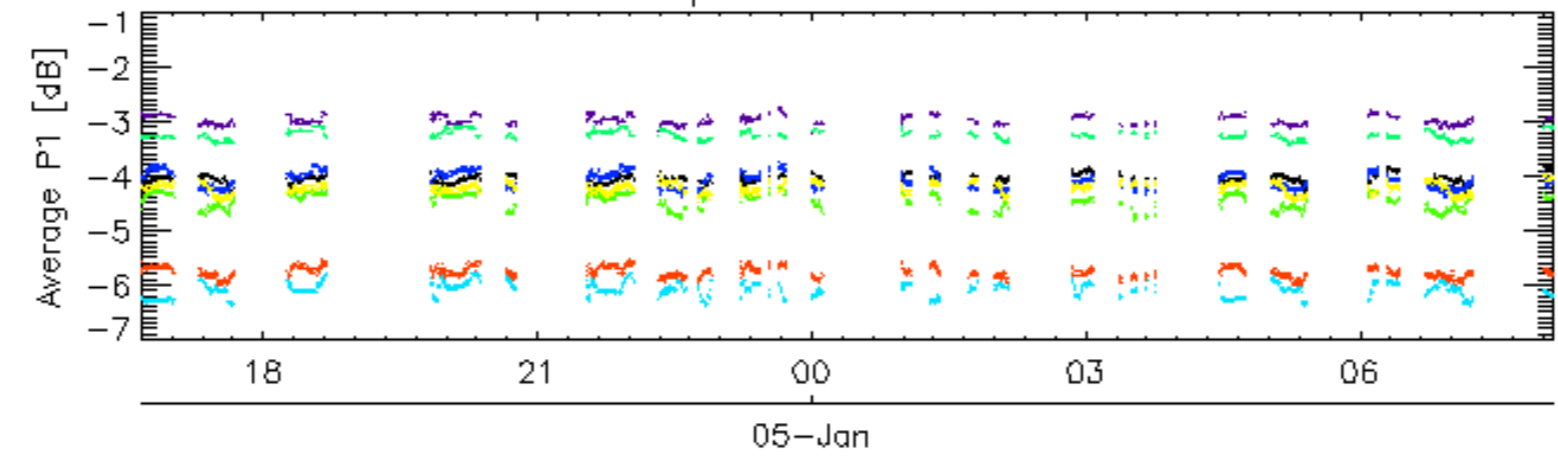


Cal pulses for GM1 SS3

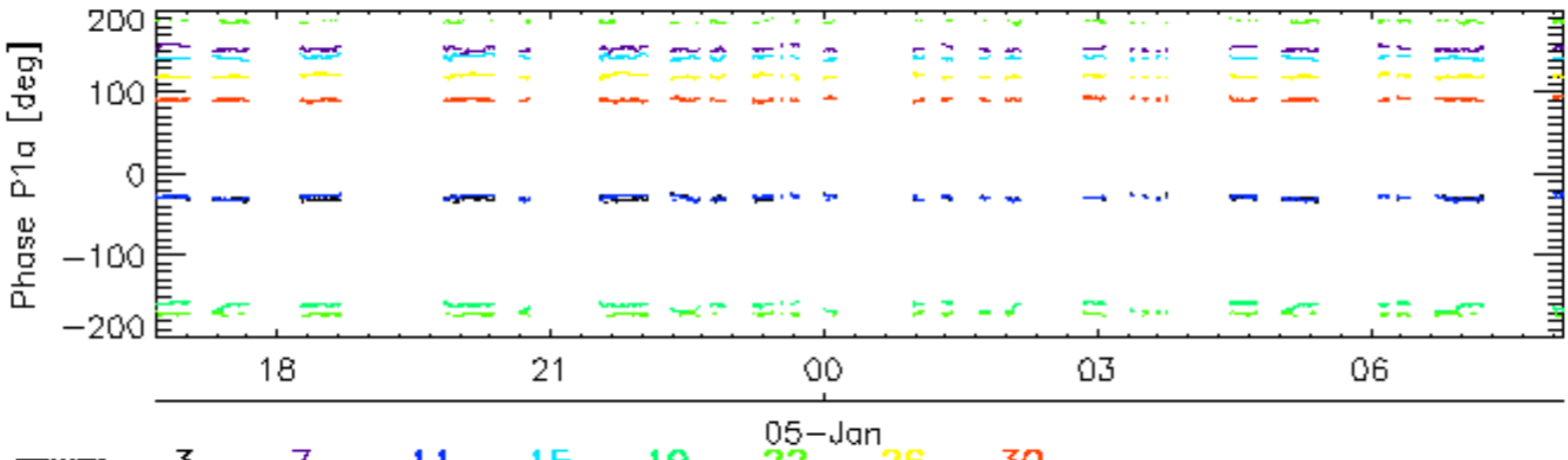
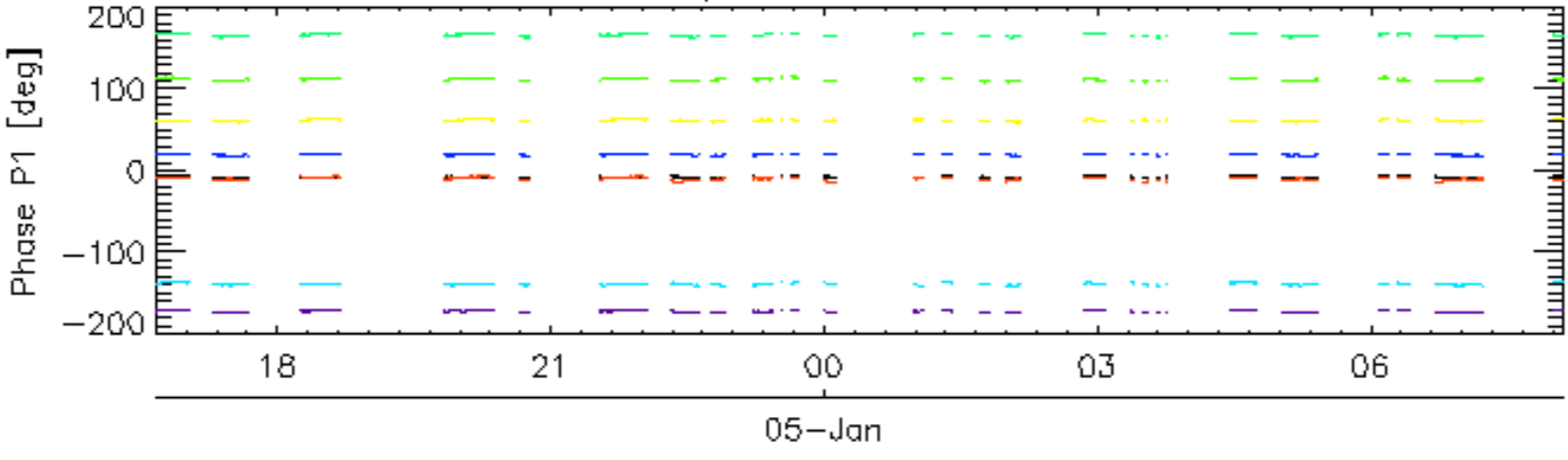


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for WVS IS2

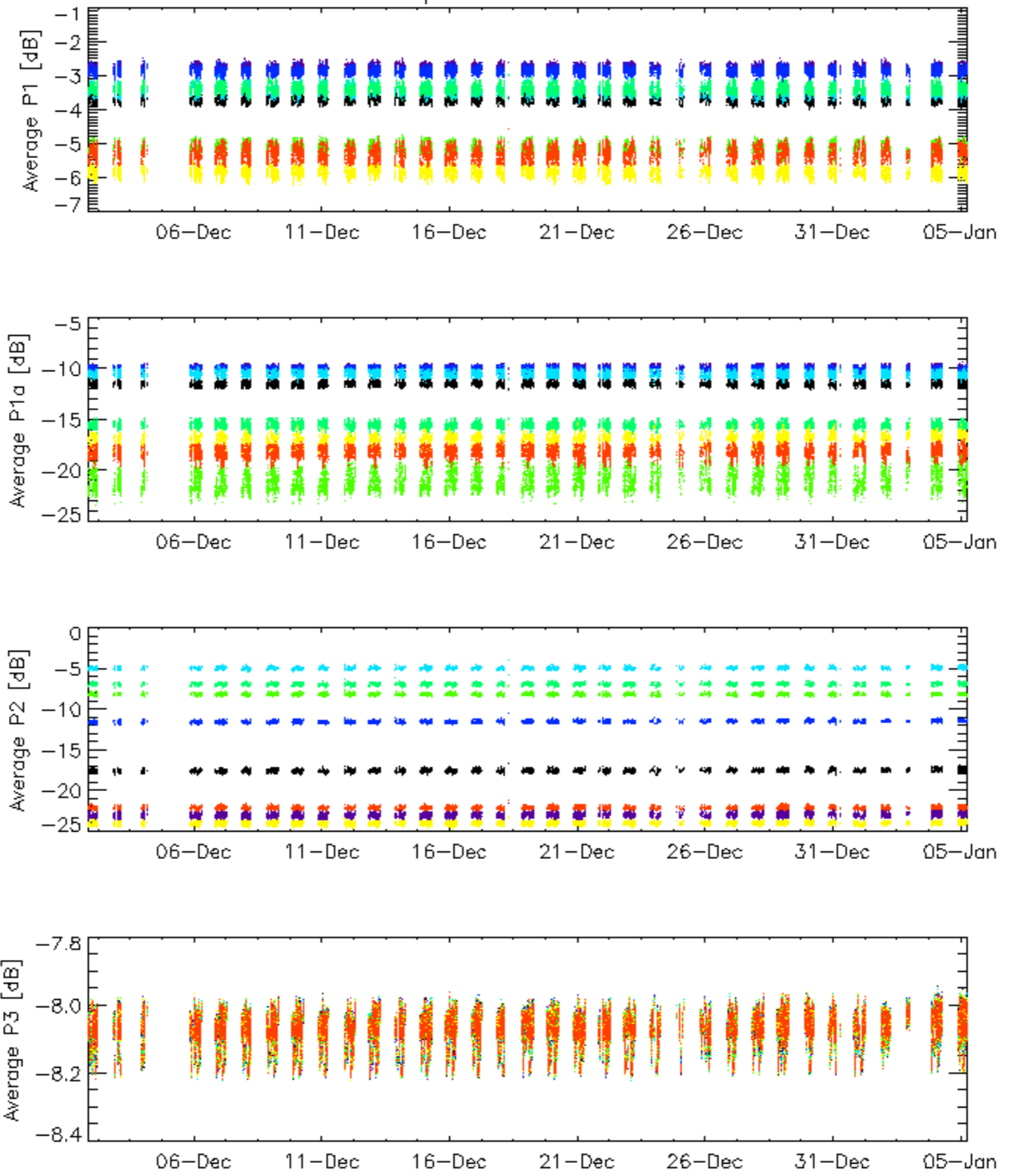


Cal pulses for WVS IS2



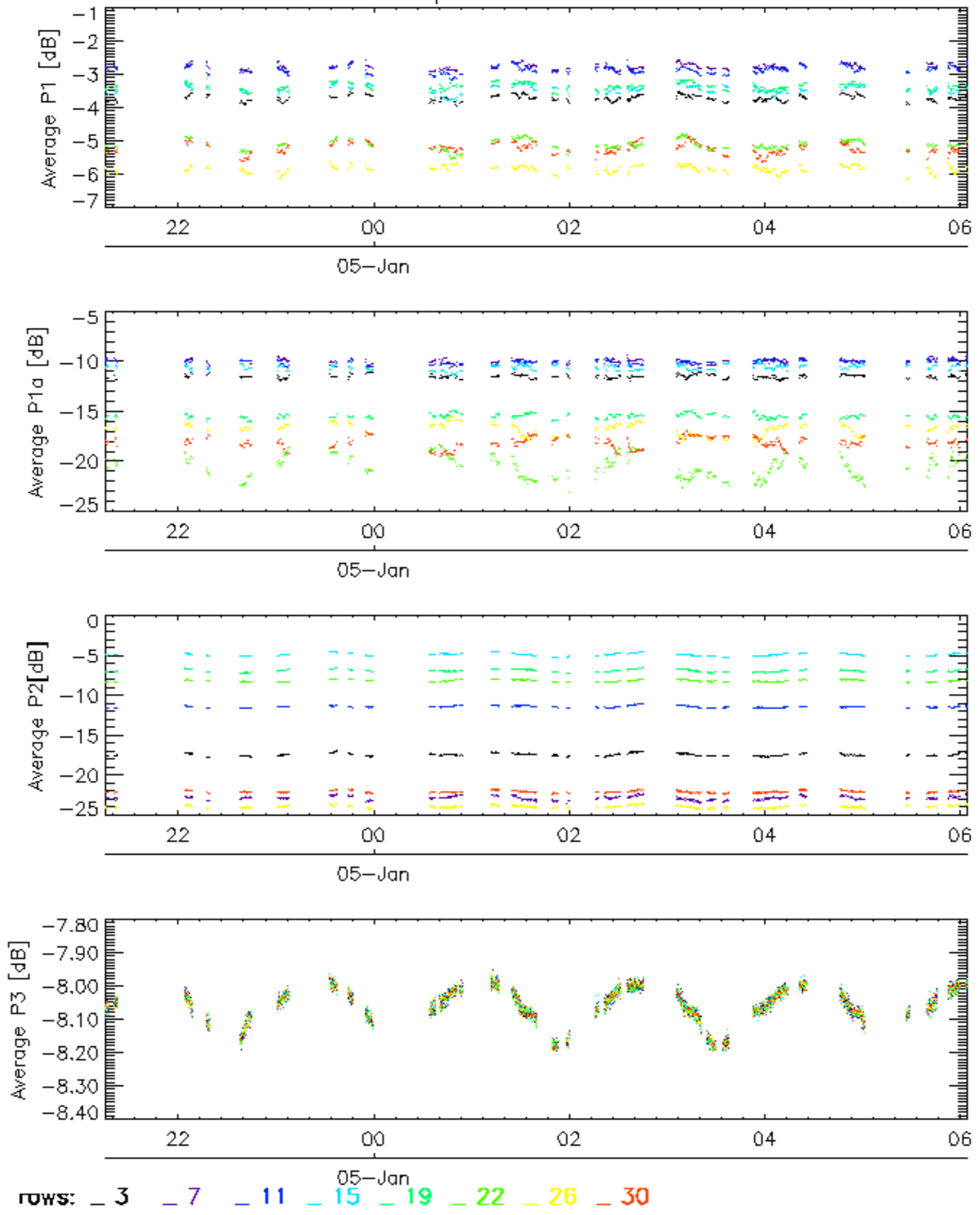
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

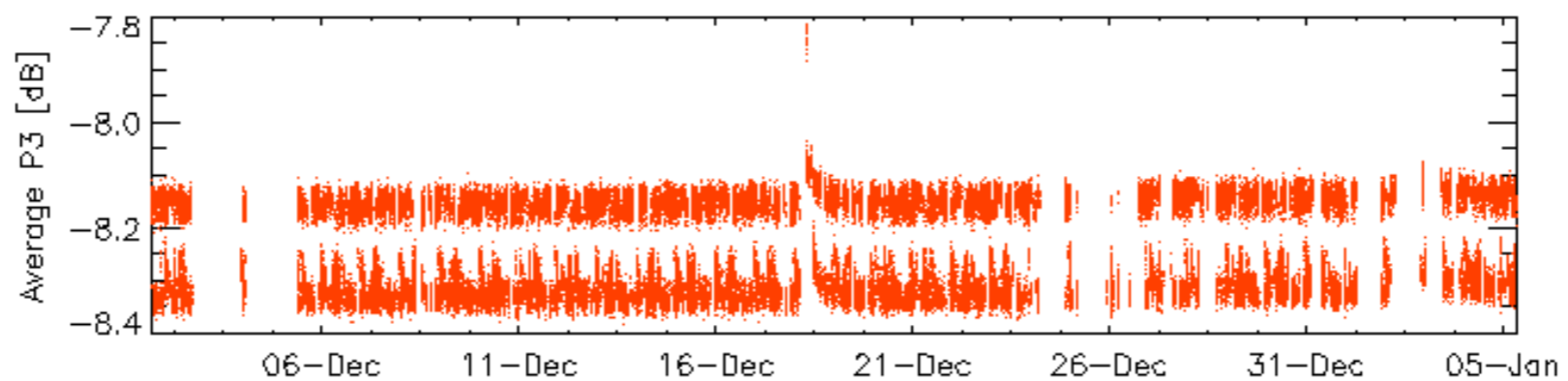
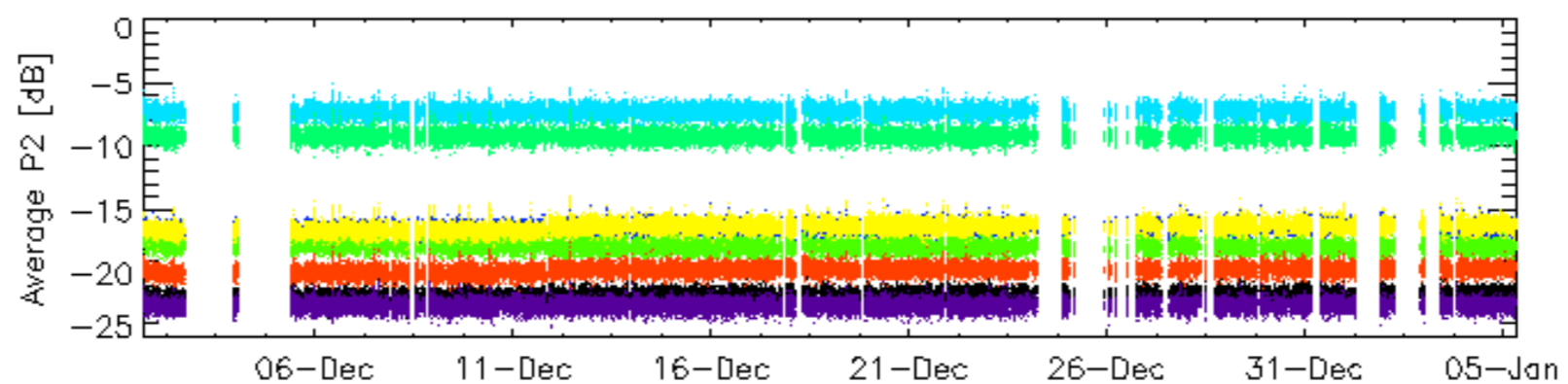
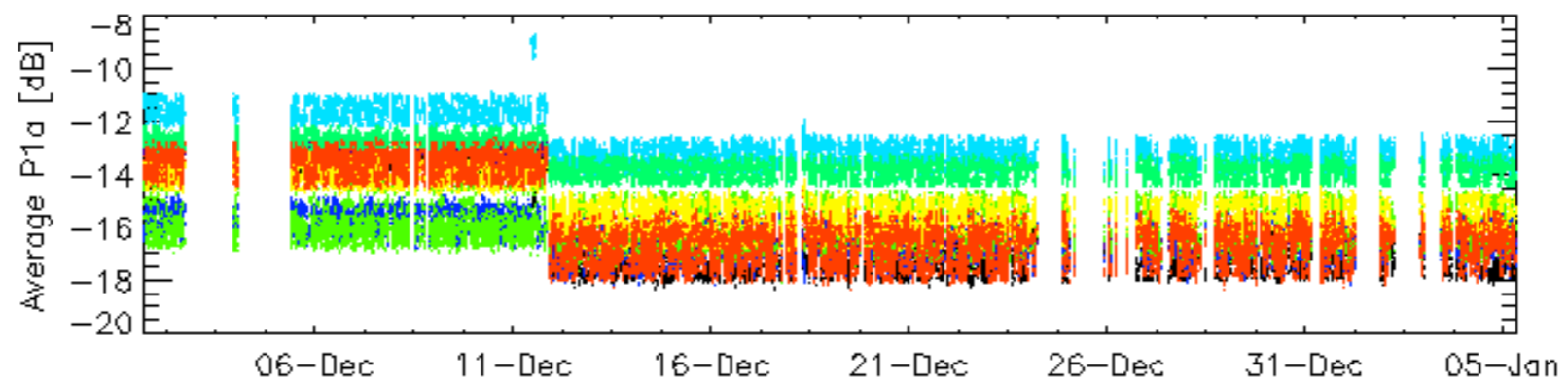
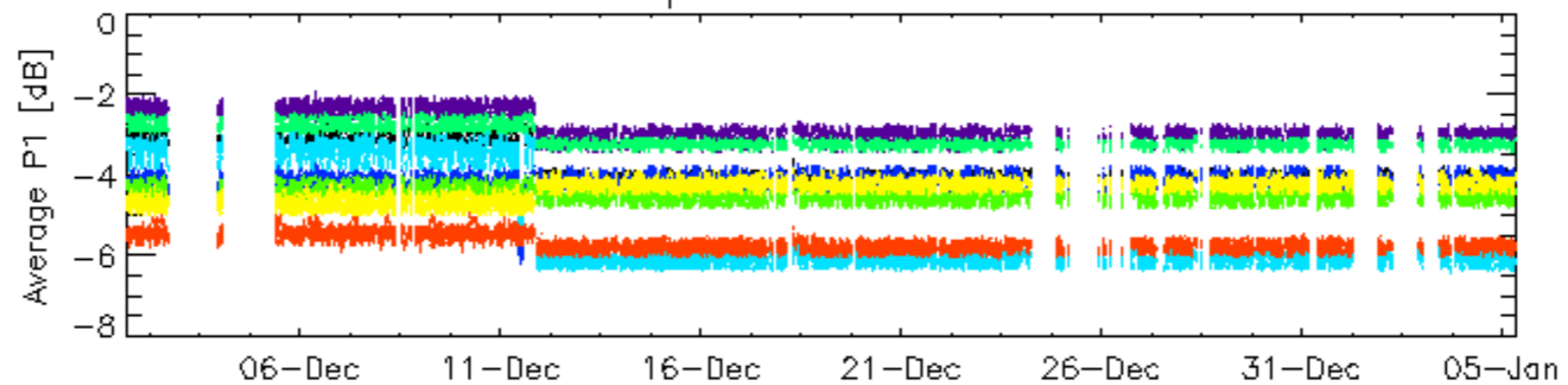


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

Cal pulses for GM1 SS3

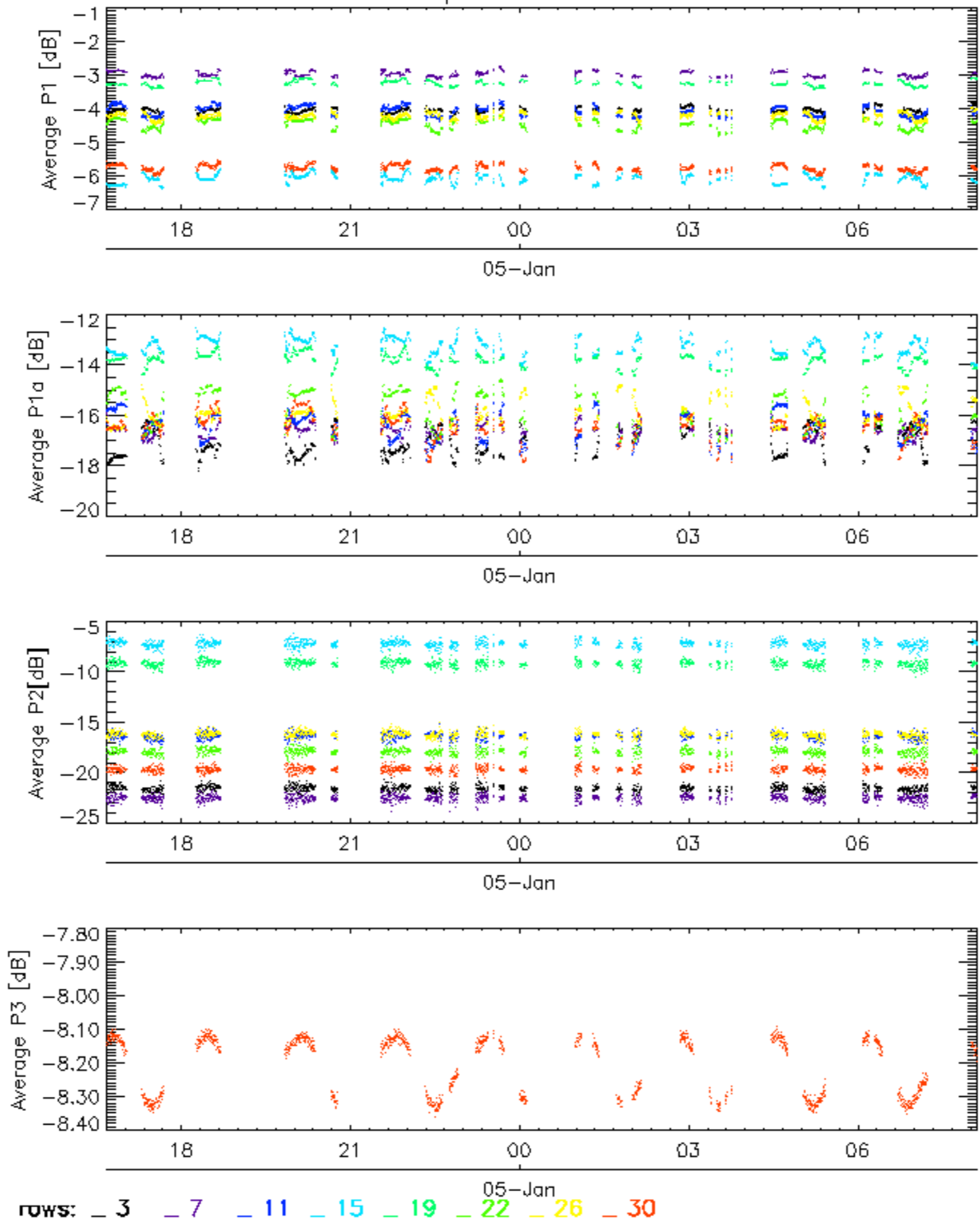


Cal pulses for WVS IS2



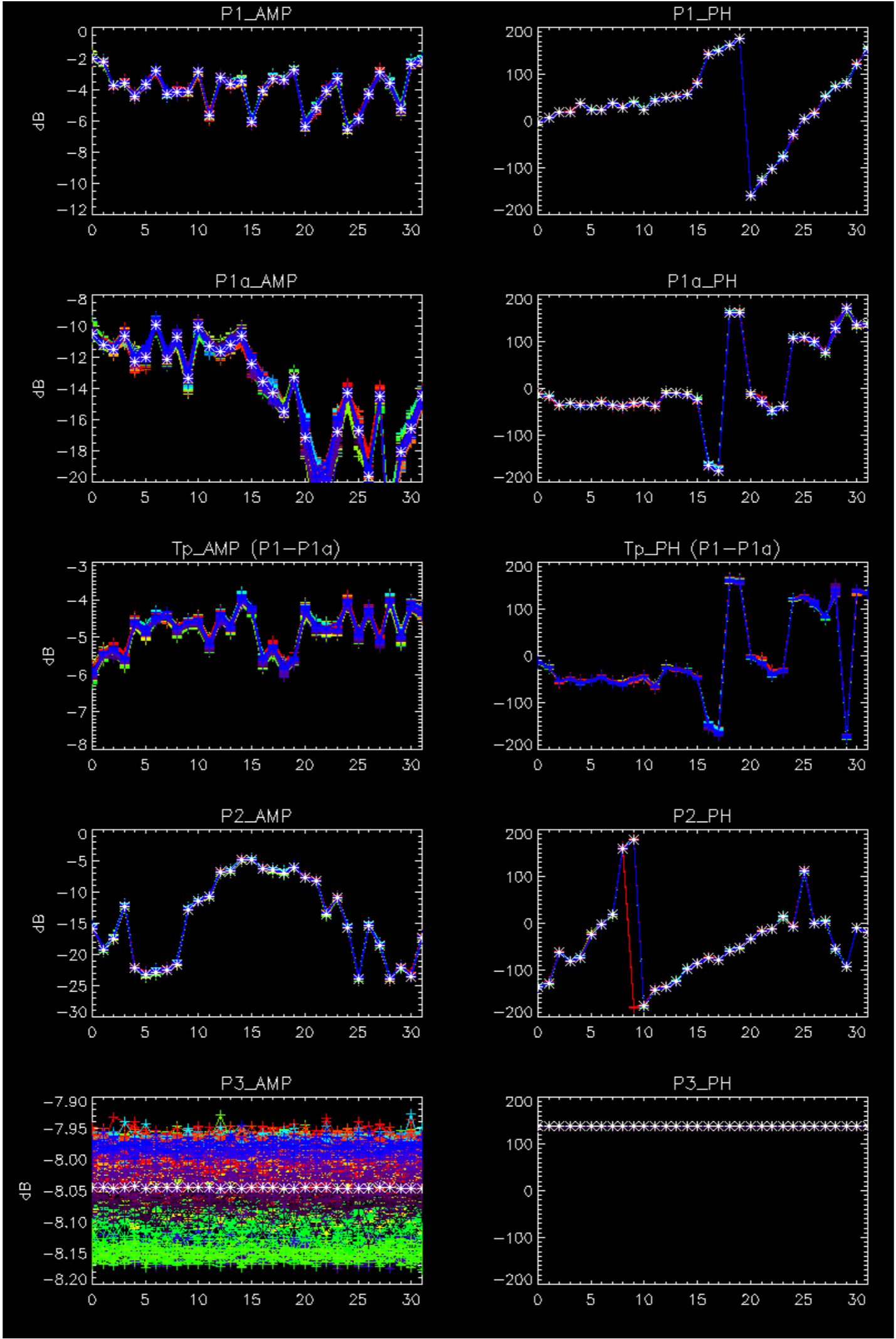
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

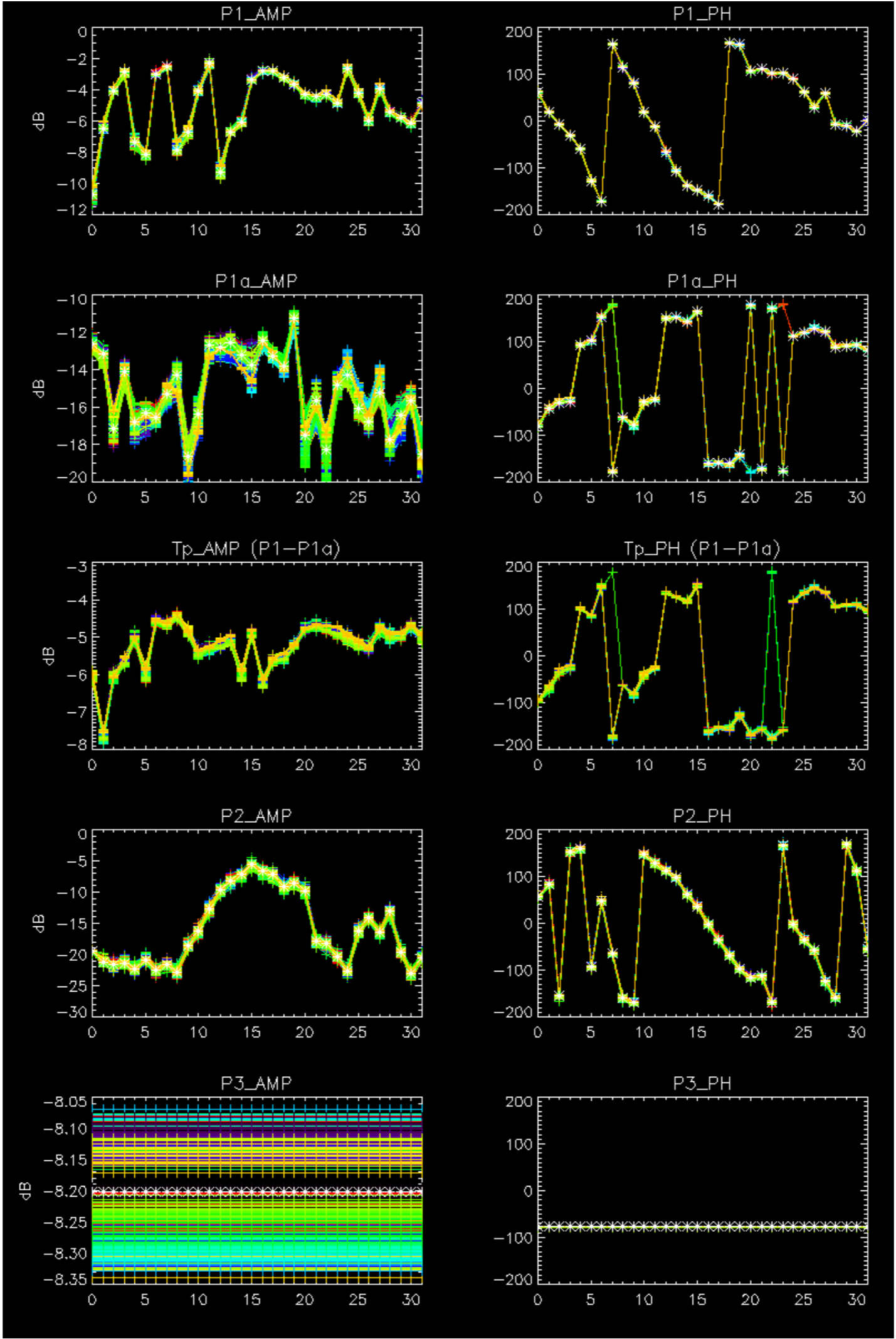
Cal pulses for WVS IS2



No anomalies observed on available browse products

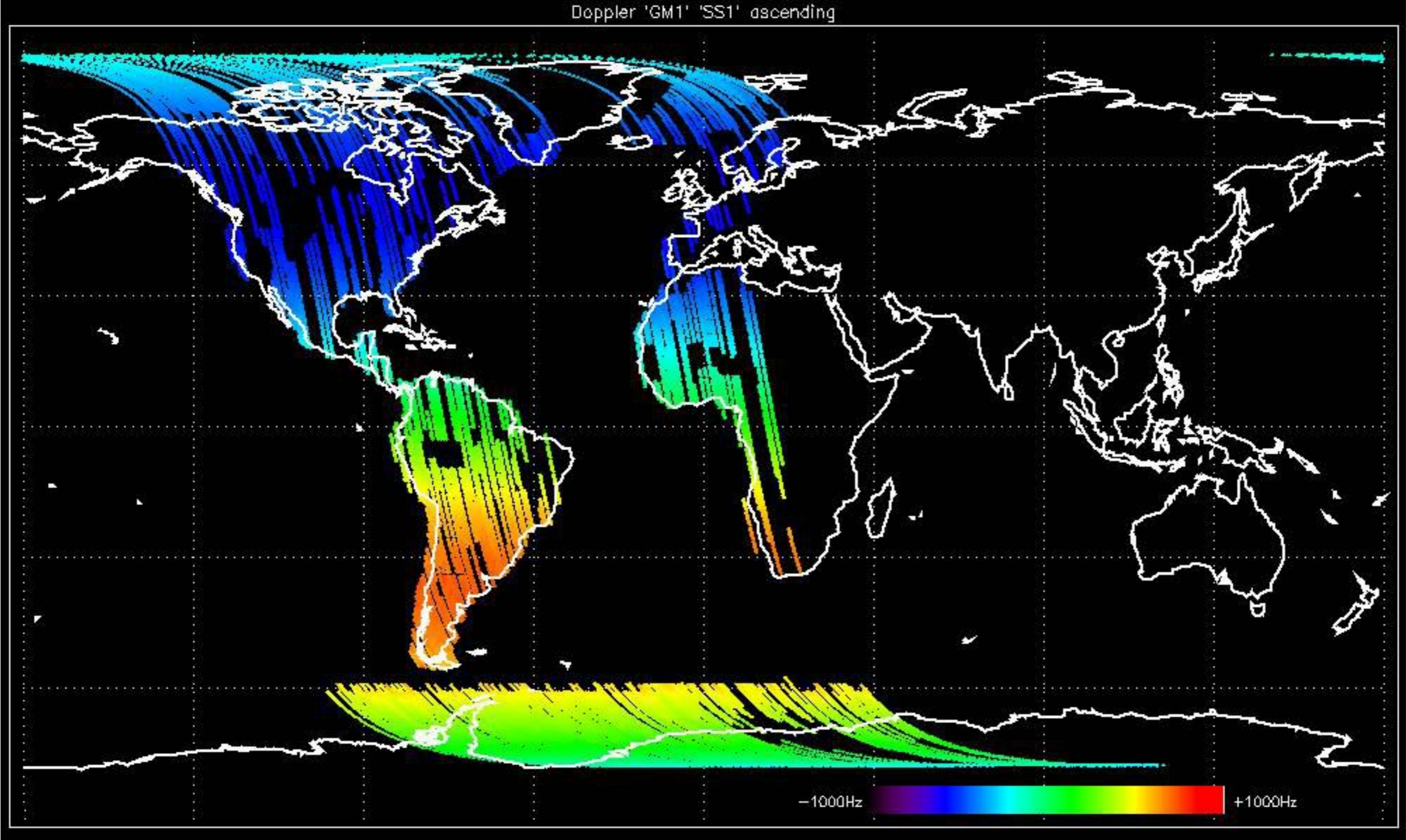
No anomalies observed.



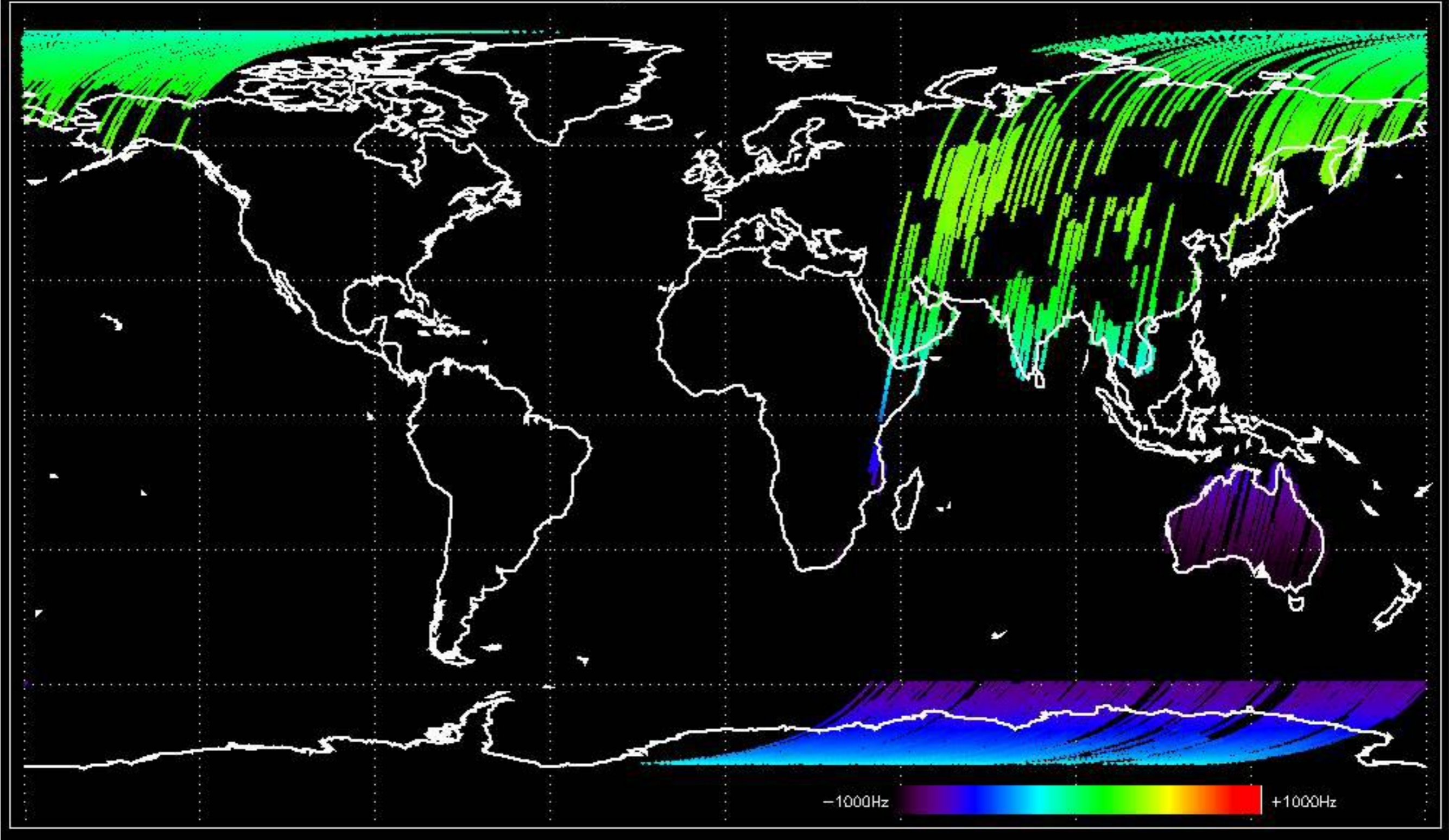


- Stable wave internal calibration pulses gain and phase.
- Stable raw data statistics.
- Nominal Doppler behavior.

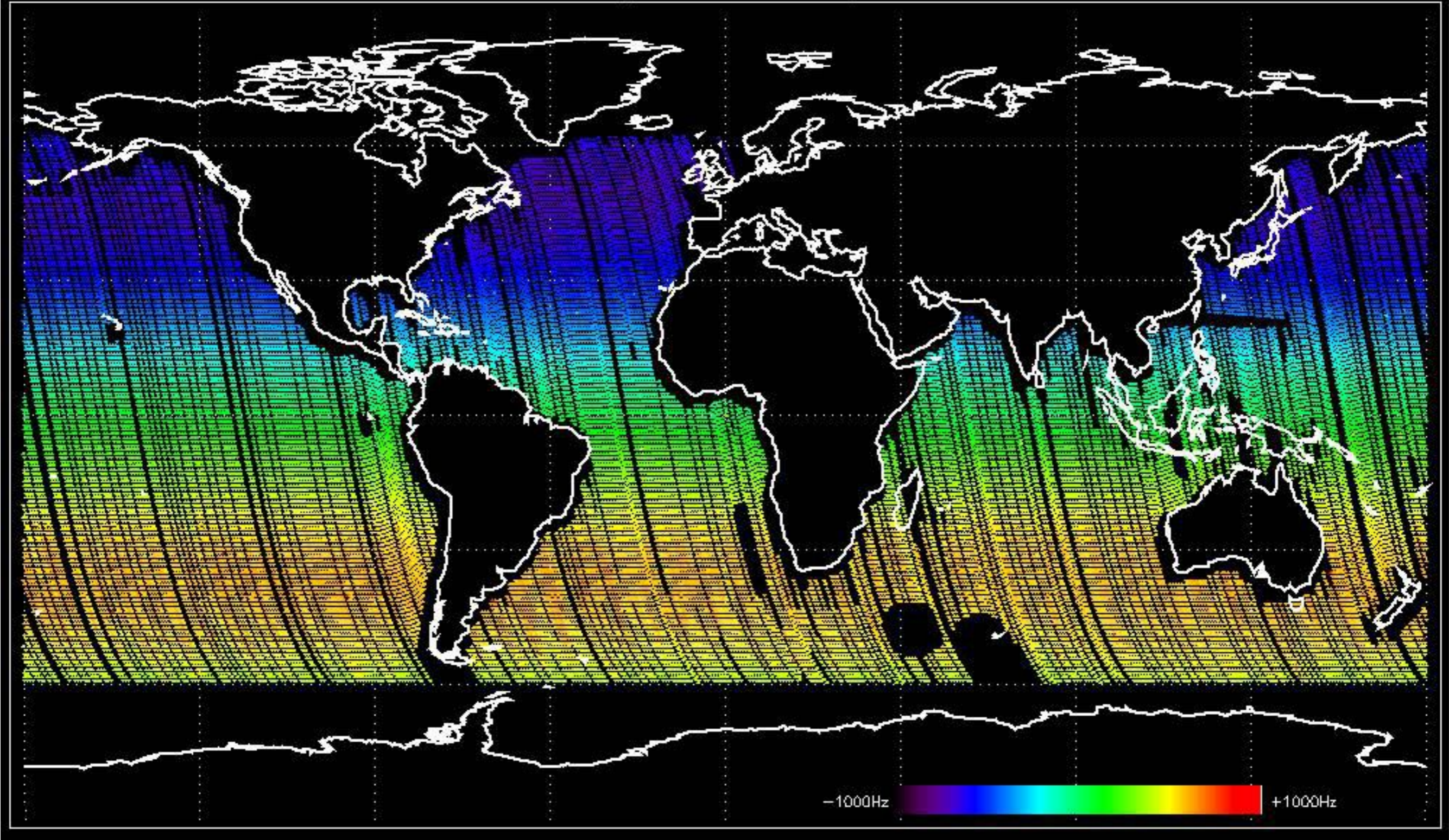
Doppler 'GM1' 'SS1' ascending



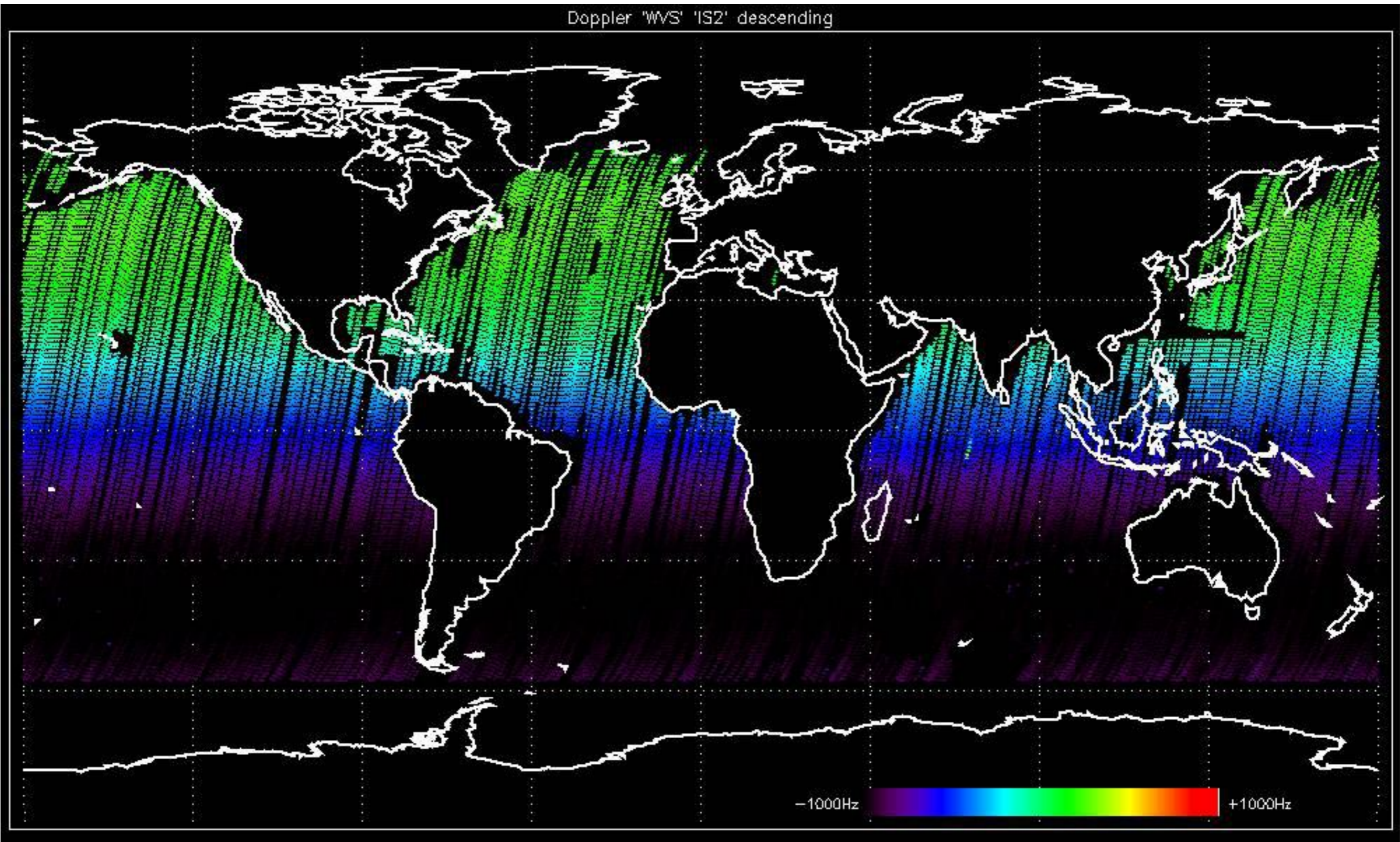
Doppler 'GM1' 'SS1' descending



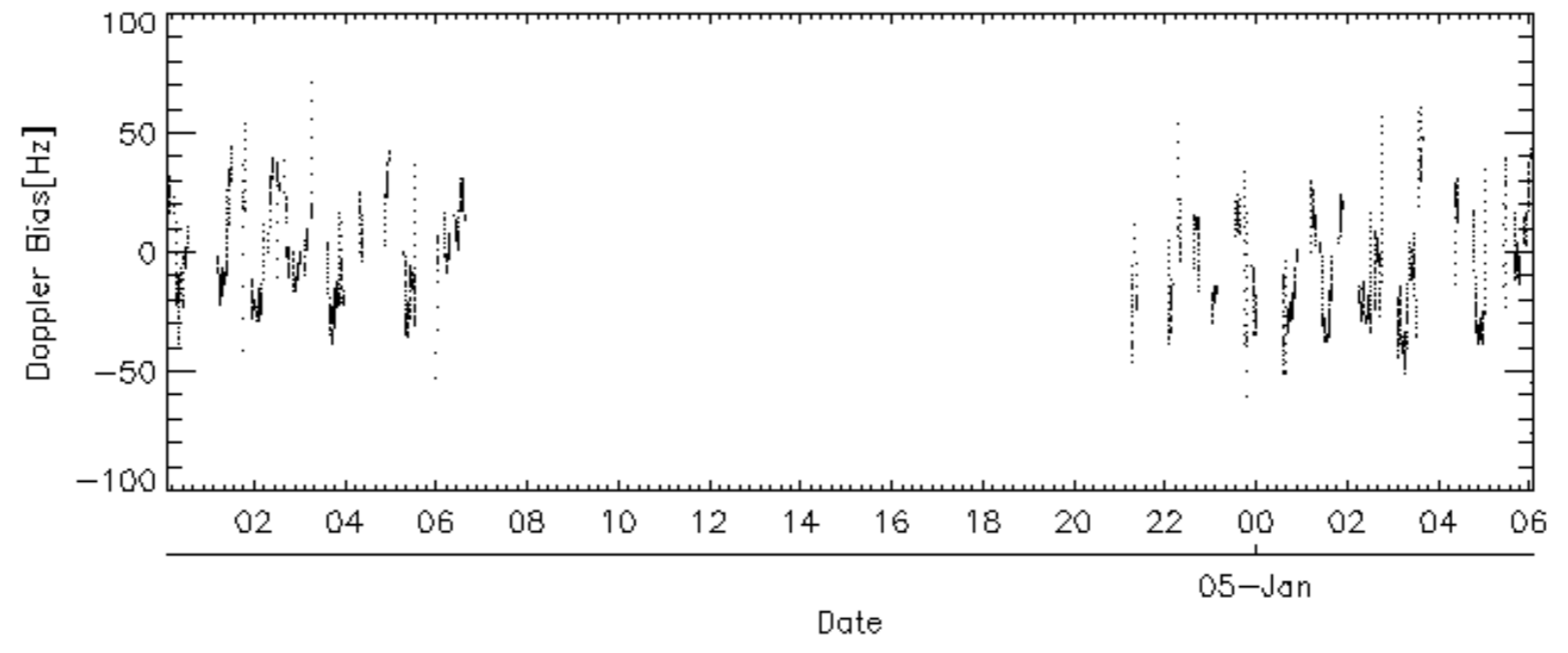
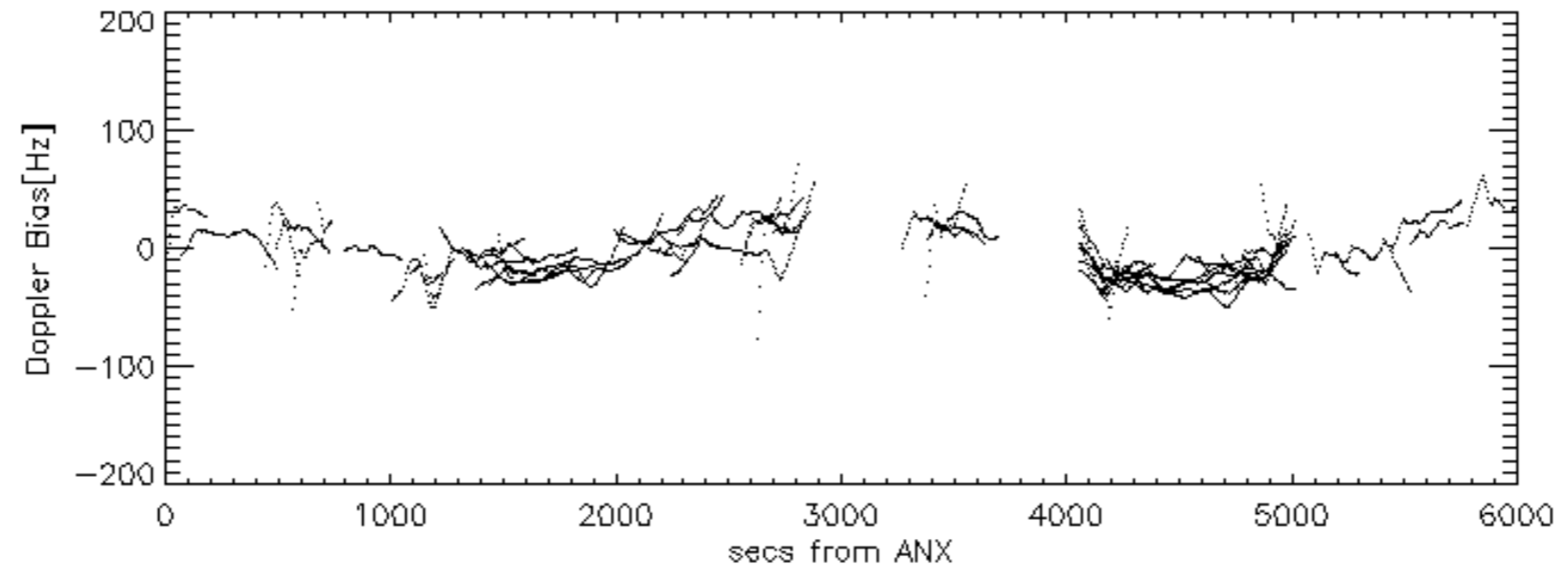
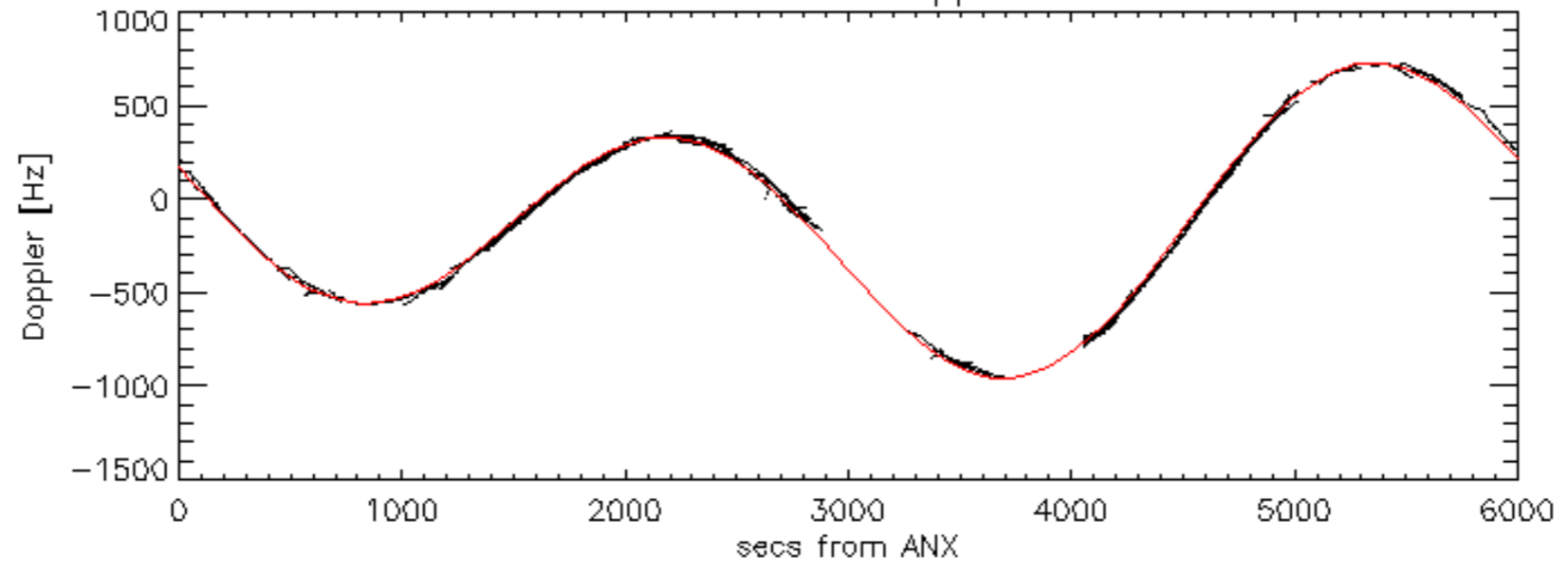
Doppler 'WVS' 'IS2' ascending

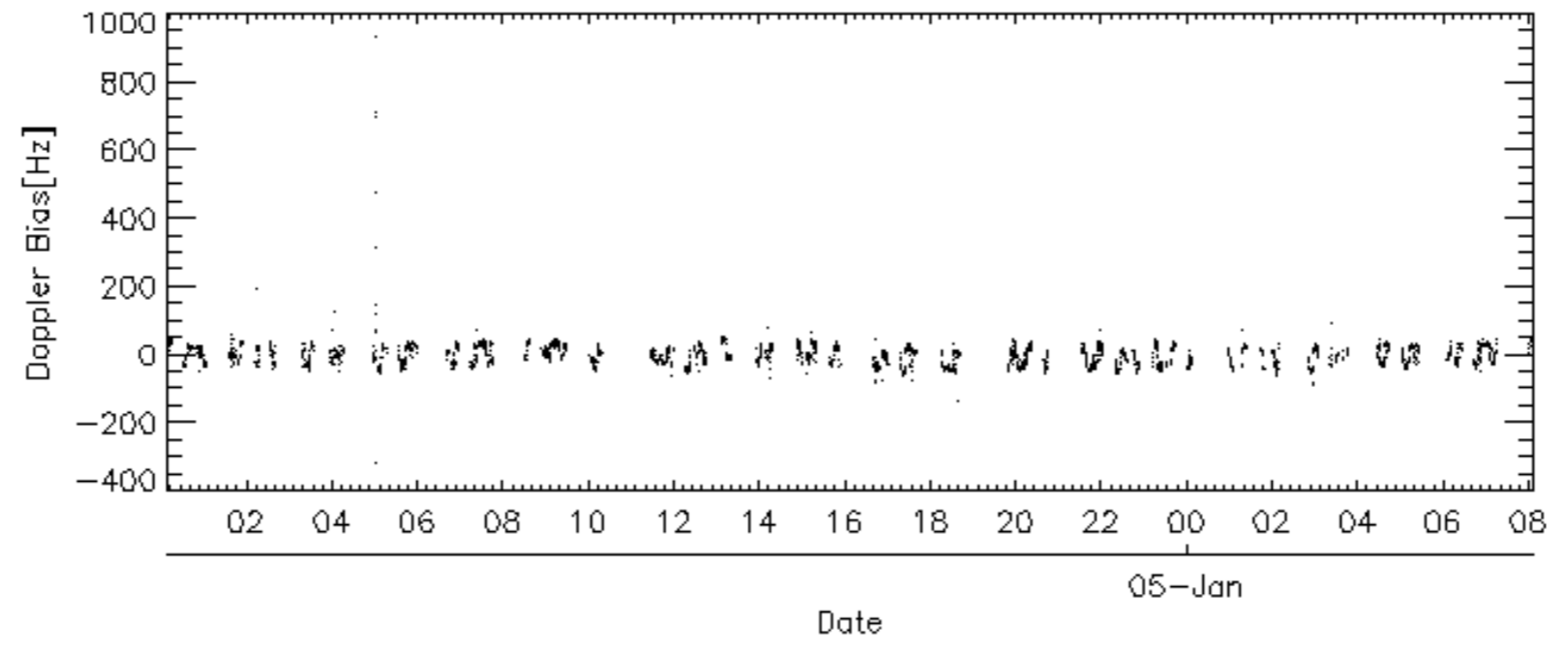
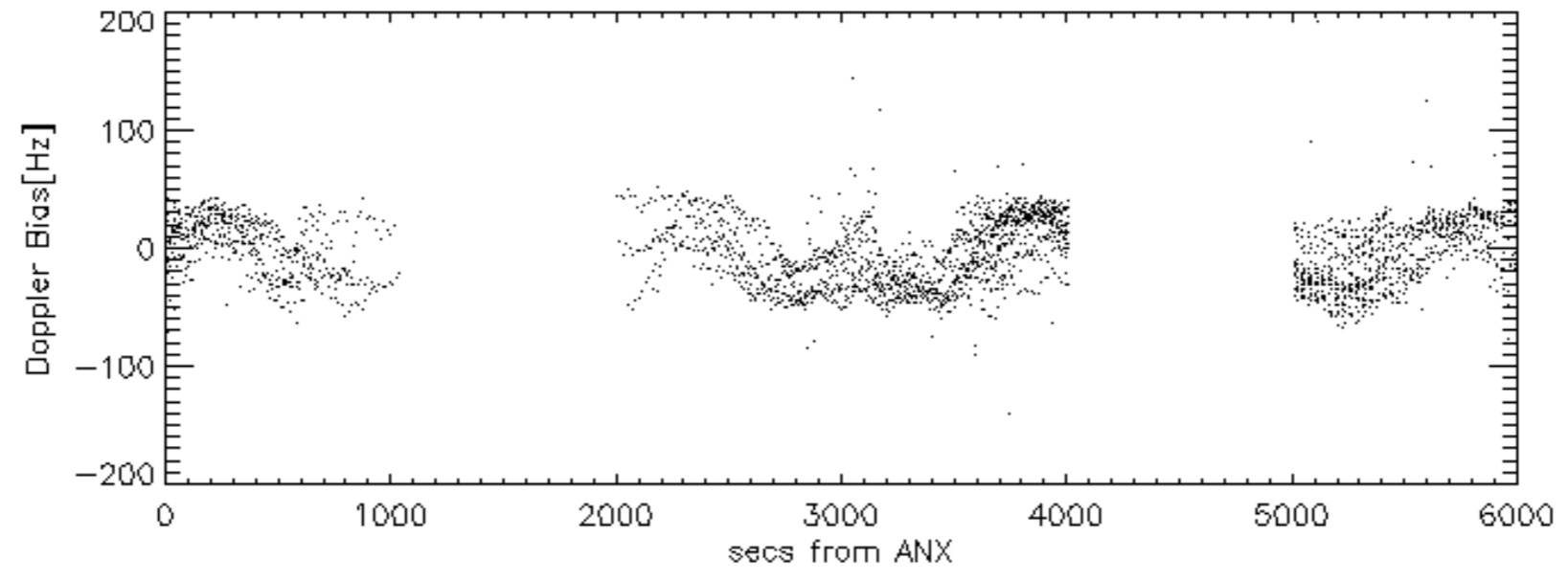
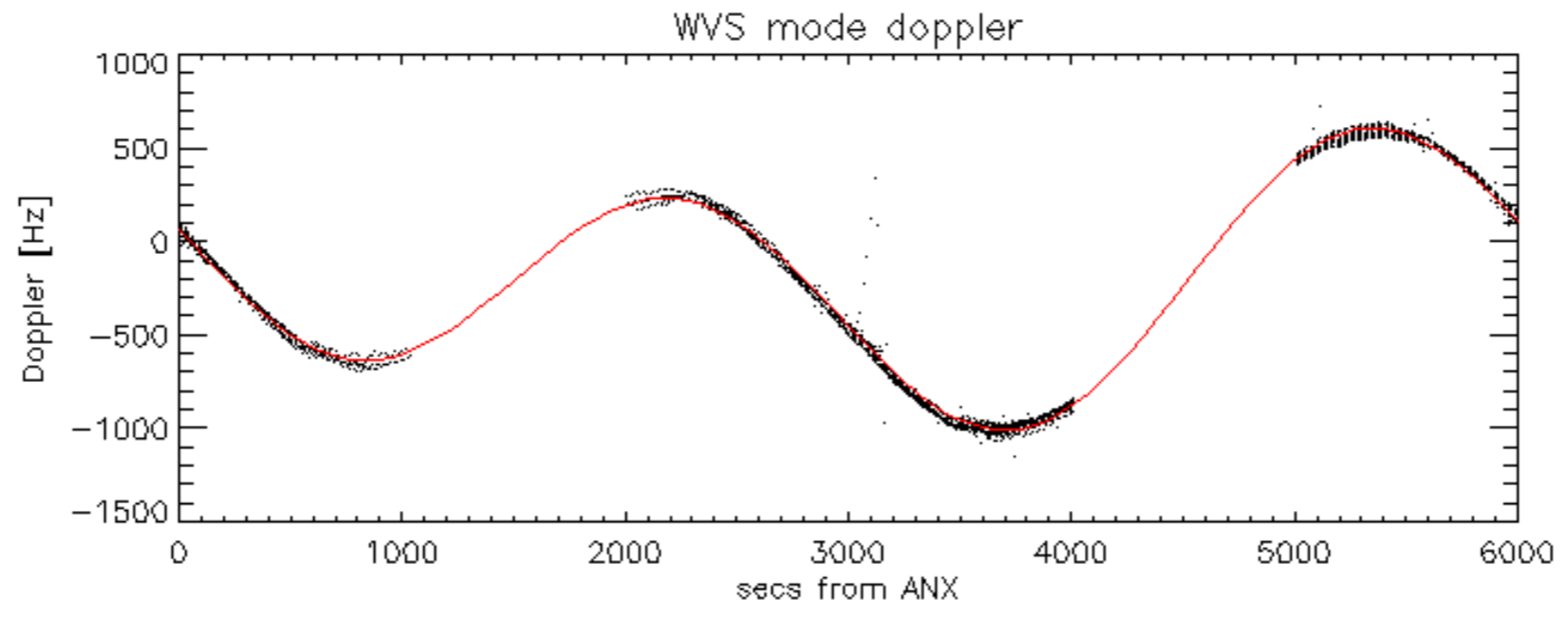


Doppler 'WVS' 'IS2' descending

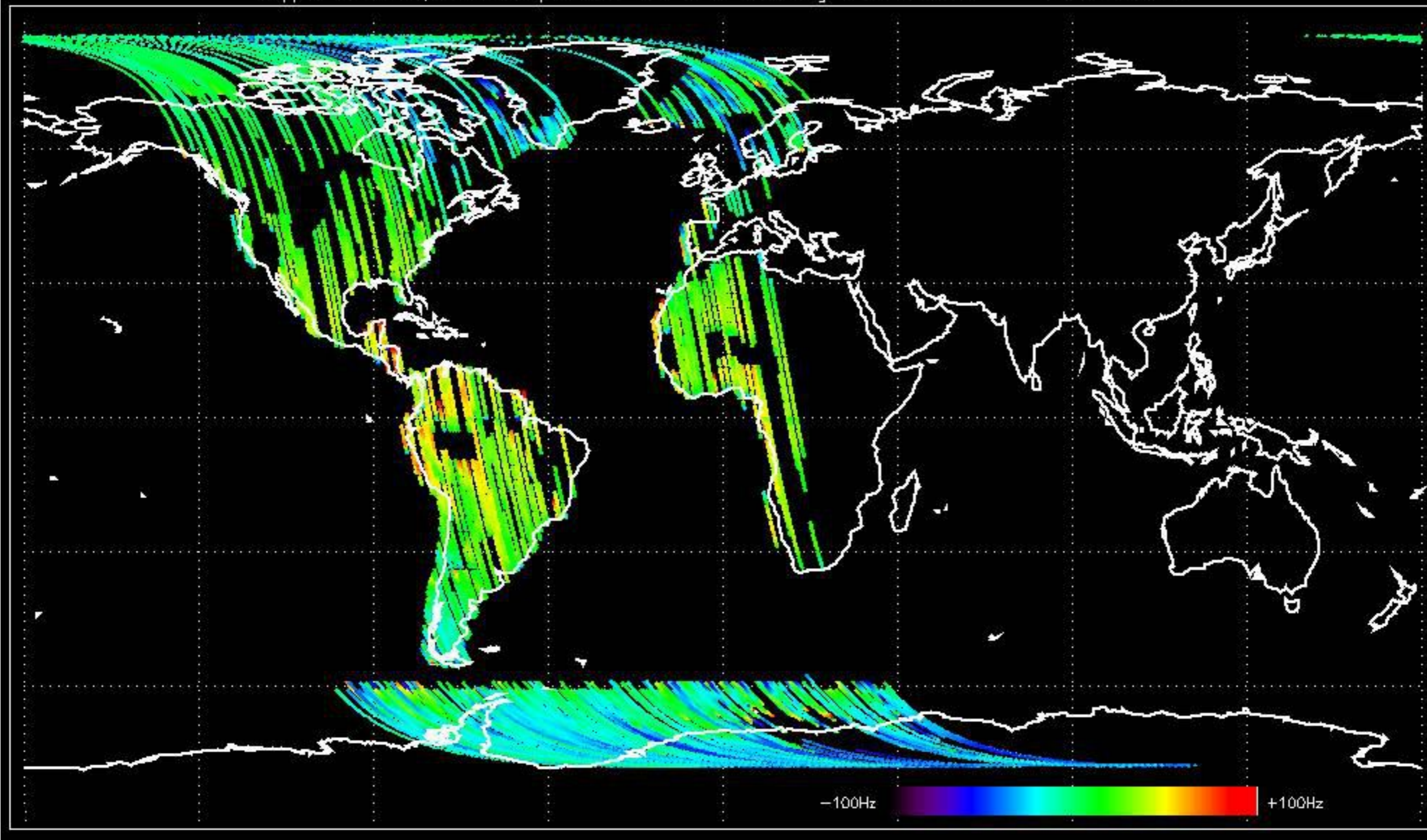


GM1 mode doppler

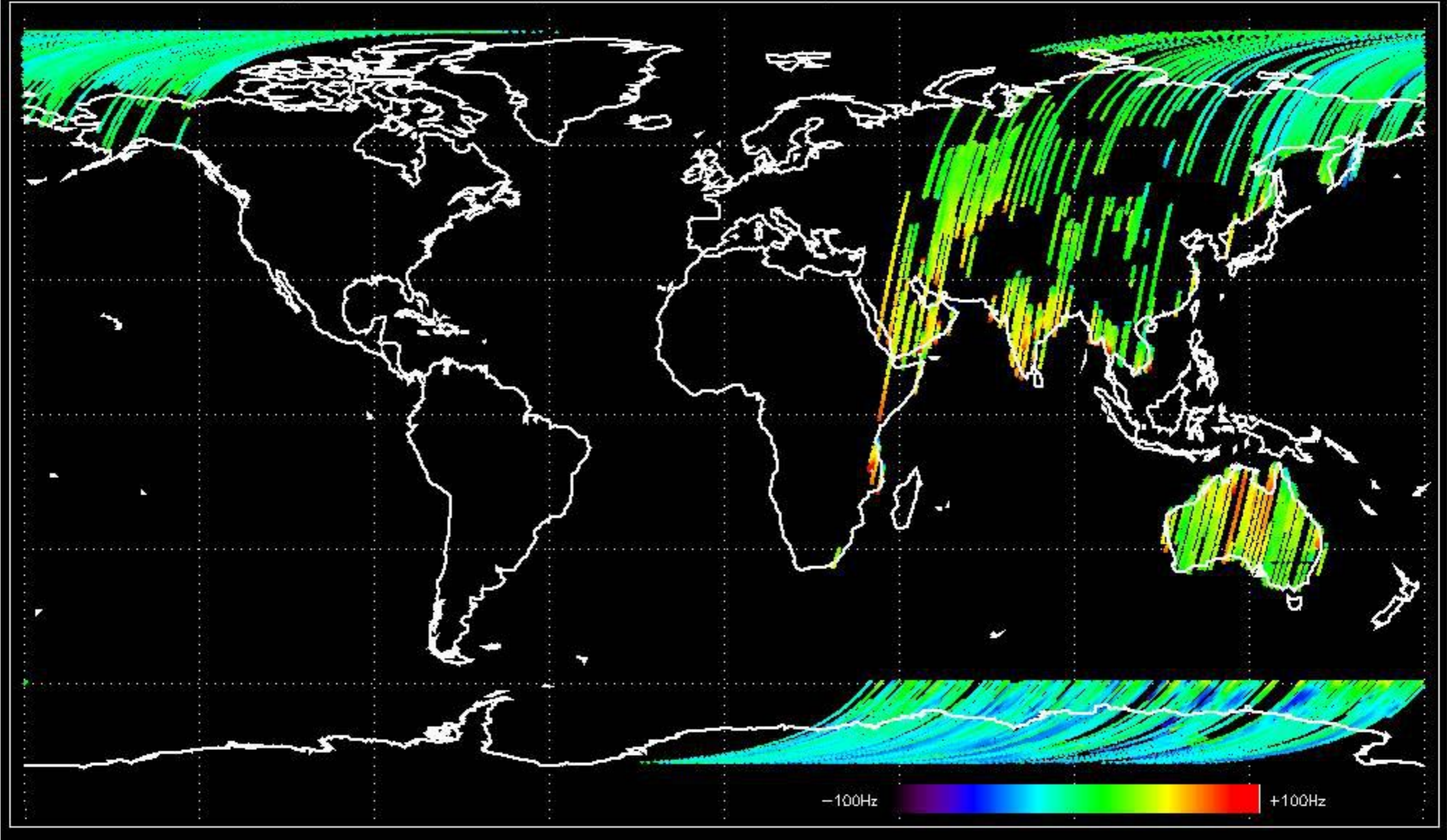




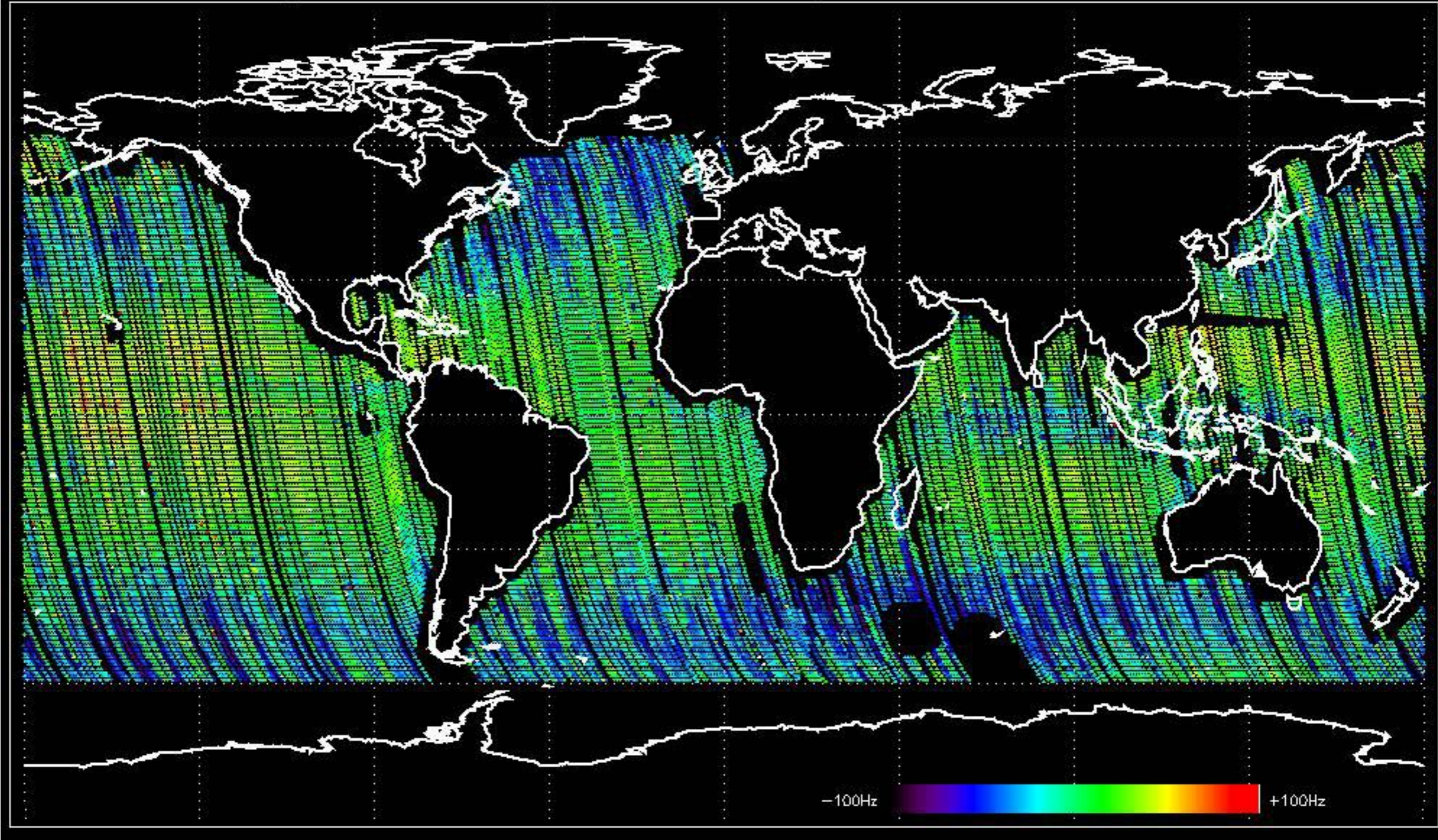
Doppler difference, estimated-predicted 'GM1' 'SS1' ascending -error mean of -13.666629 Hz



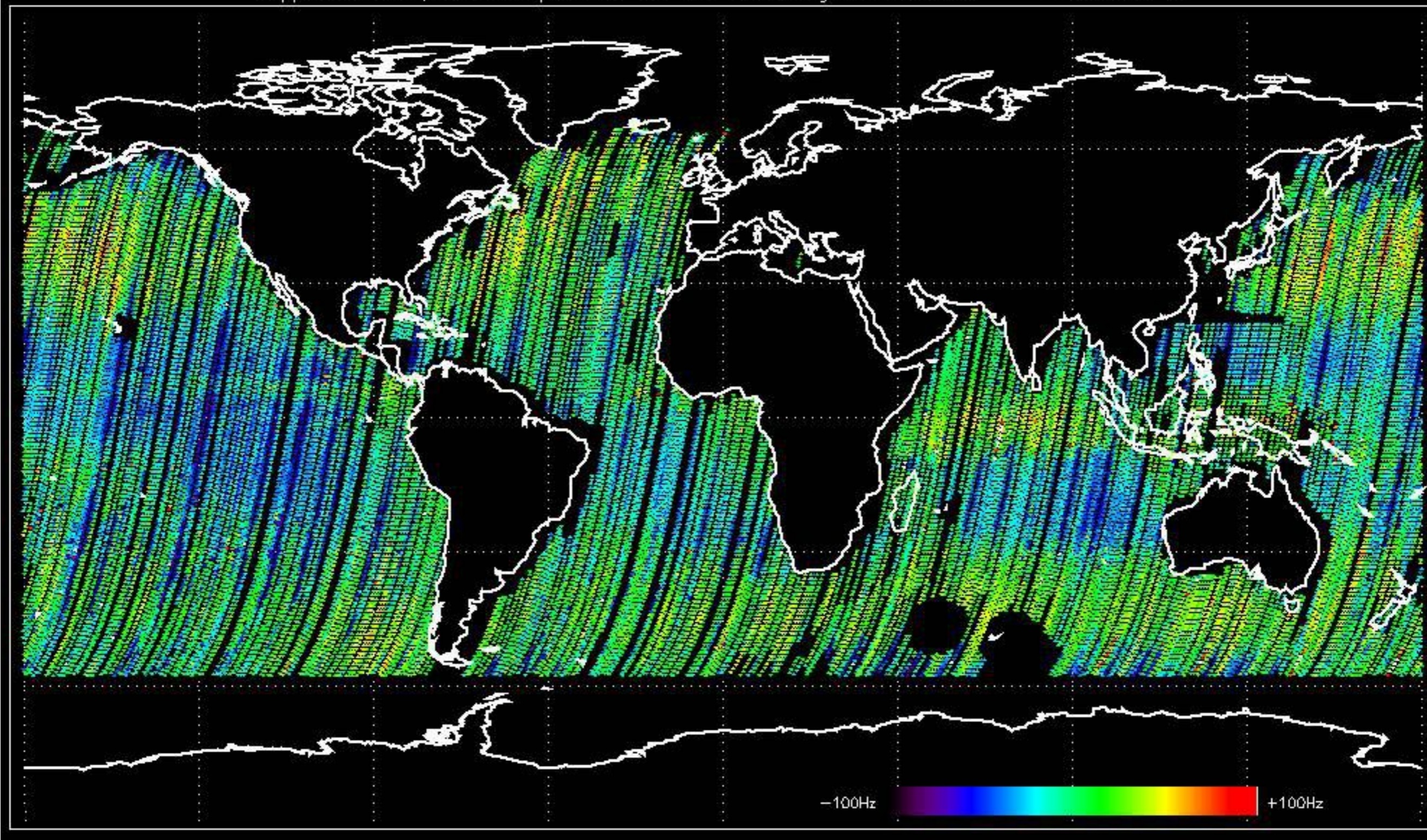
Doppler difference, estimated-predicted 'GM1' 'SS1' descending -error mean of -18.622782 Hz



Doppler difference, estimated-predicted 'WVS' 'IS2' ascending -error mean of -10.305638 Hz

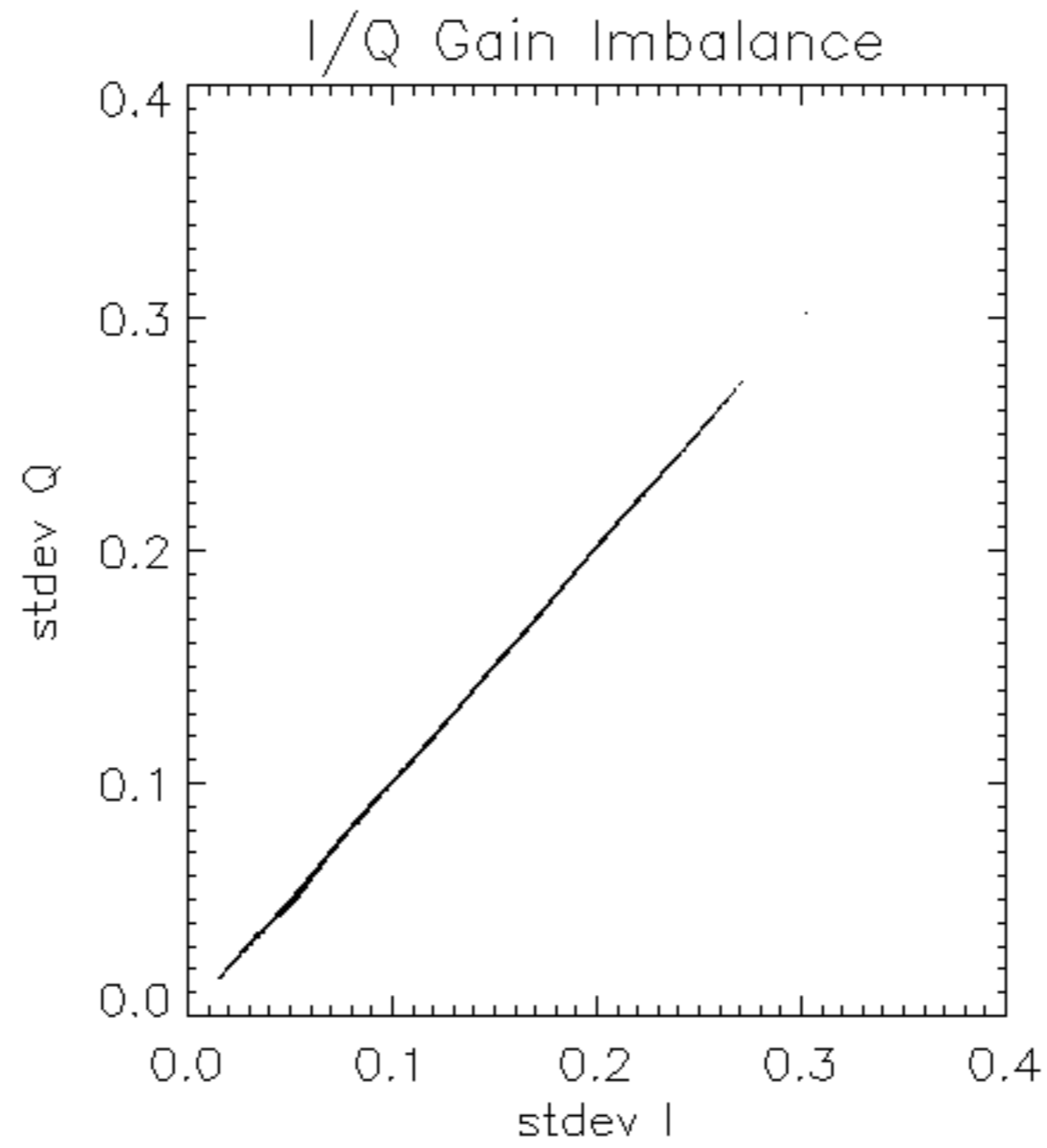


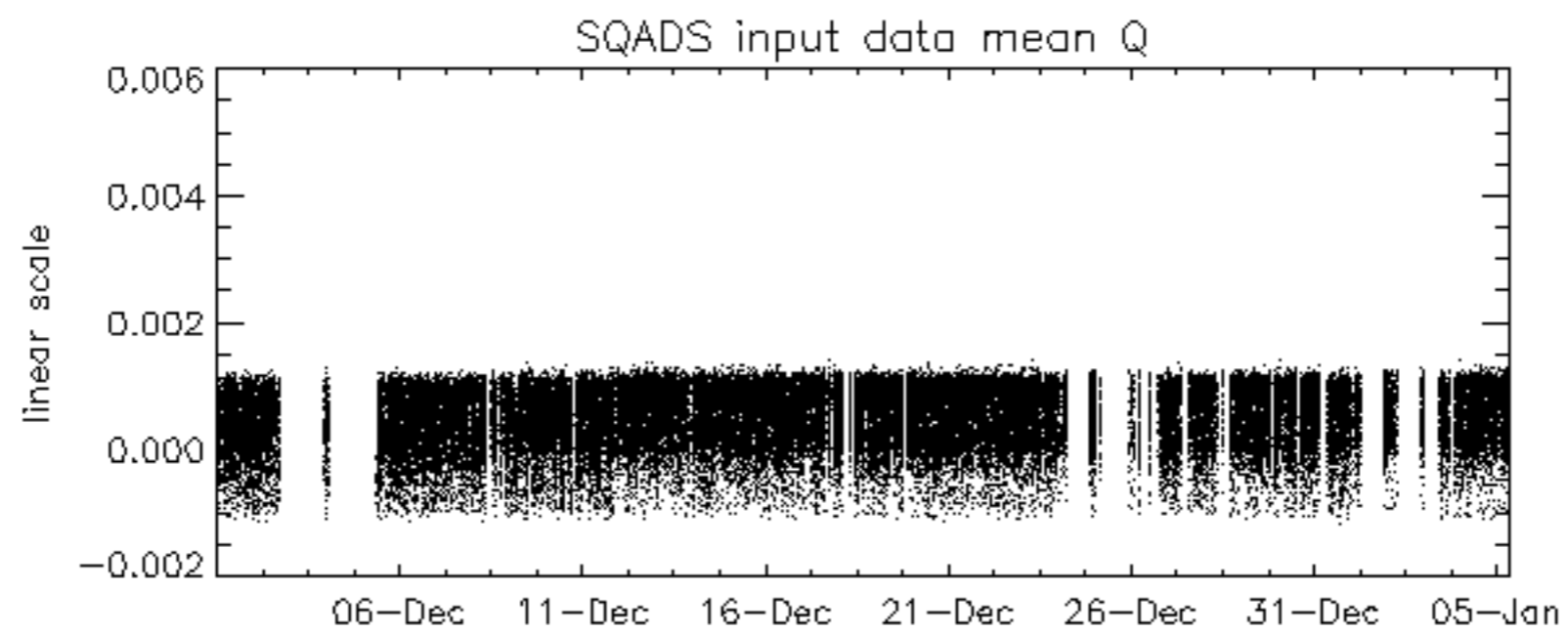
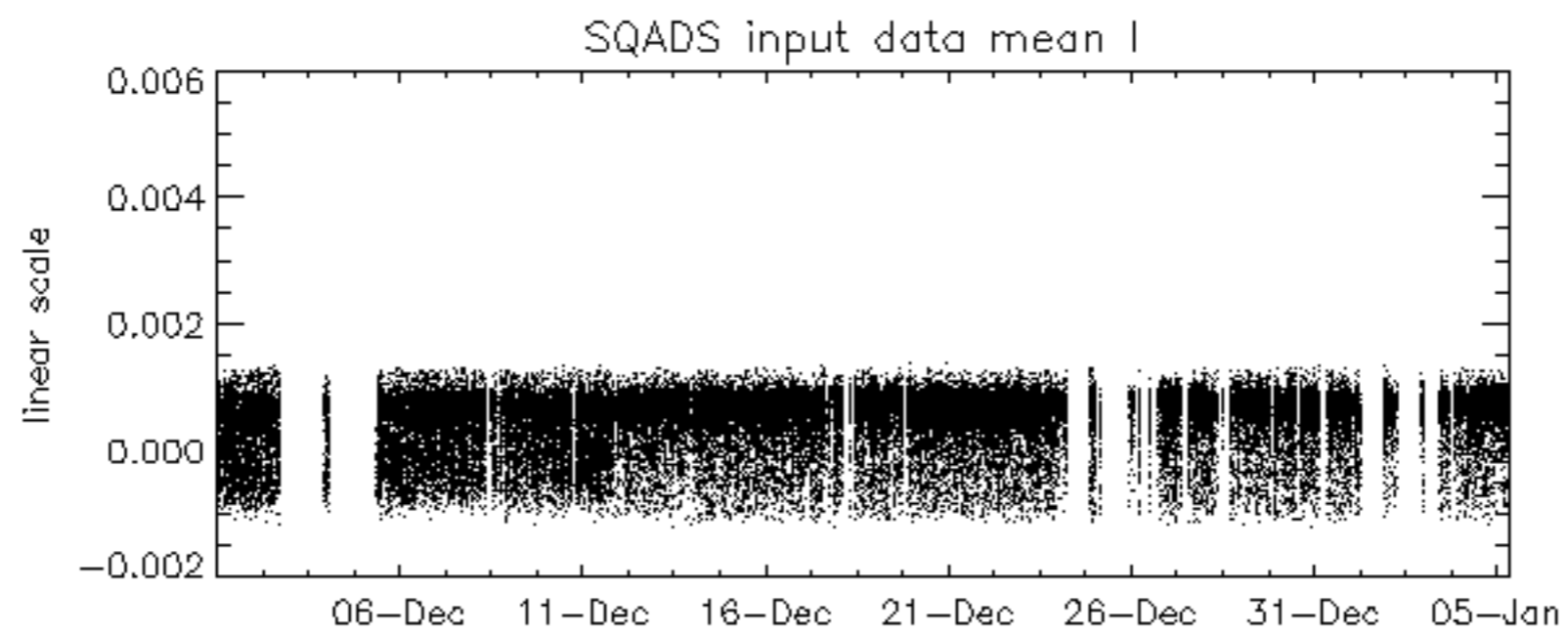
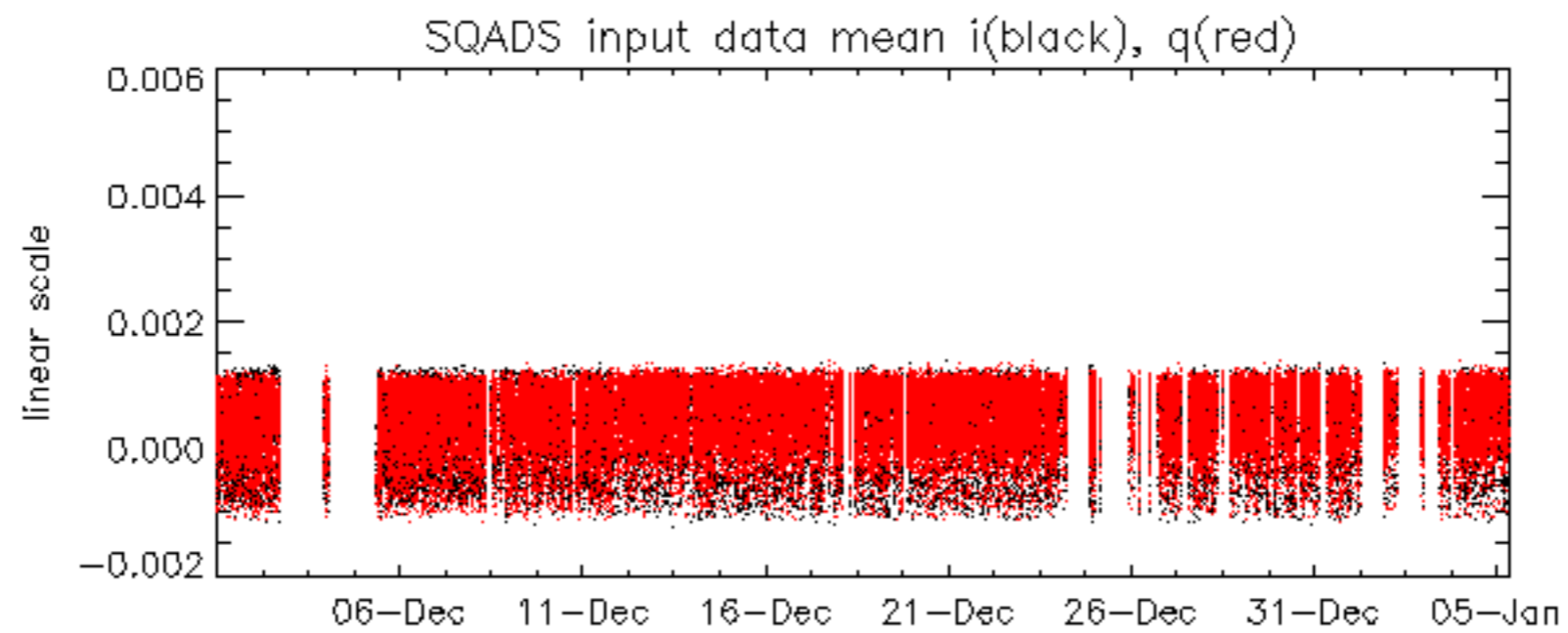
Doppler difference, estimated-predicted 'WVS' 'IS2' descending -error mean of -12.774530 Hz

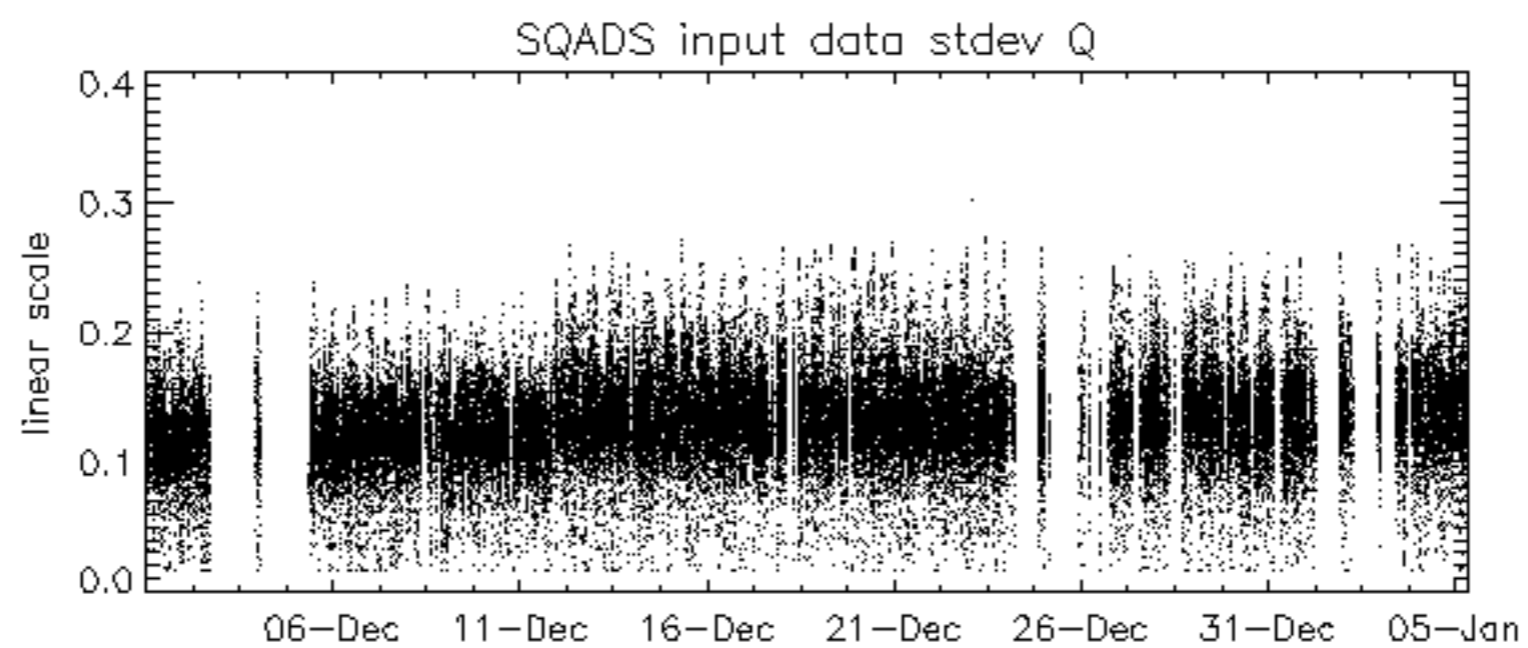
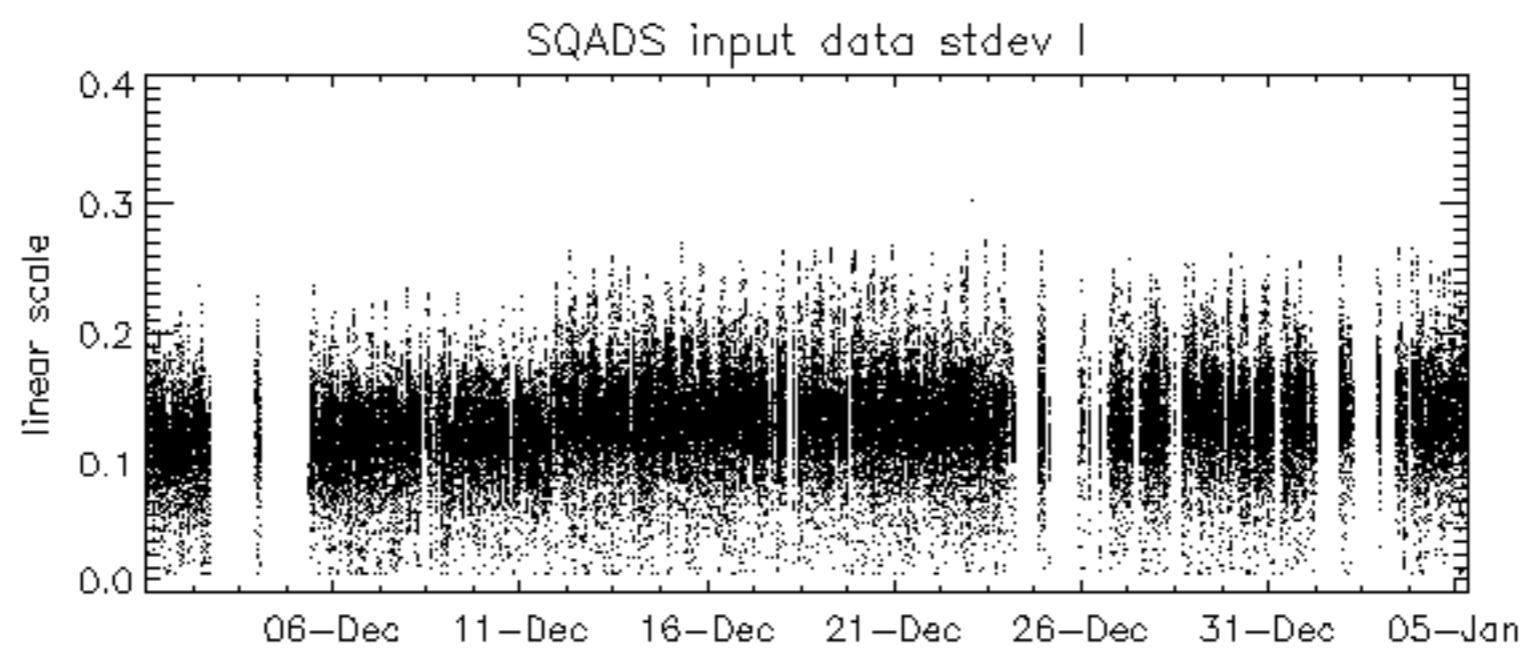
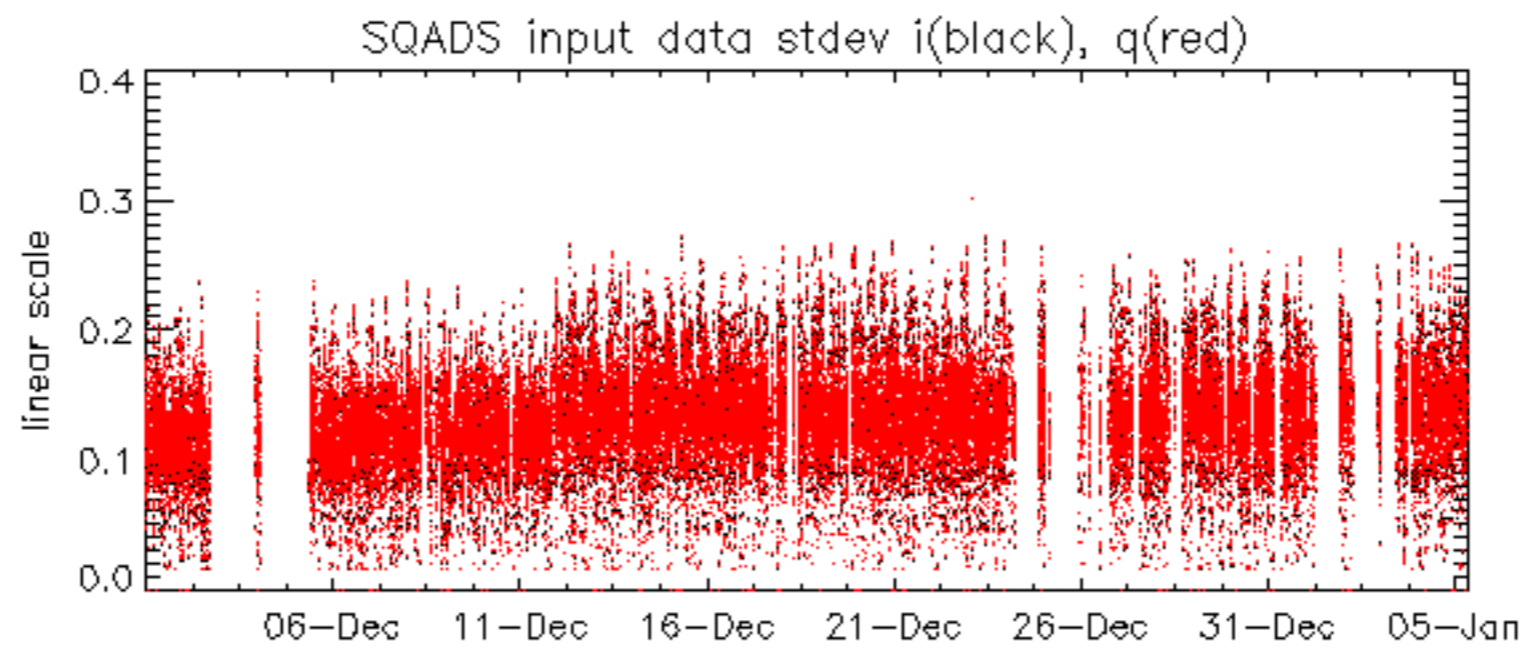


No anomalies observed on available MS products:

No anomalies observed.





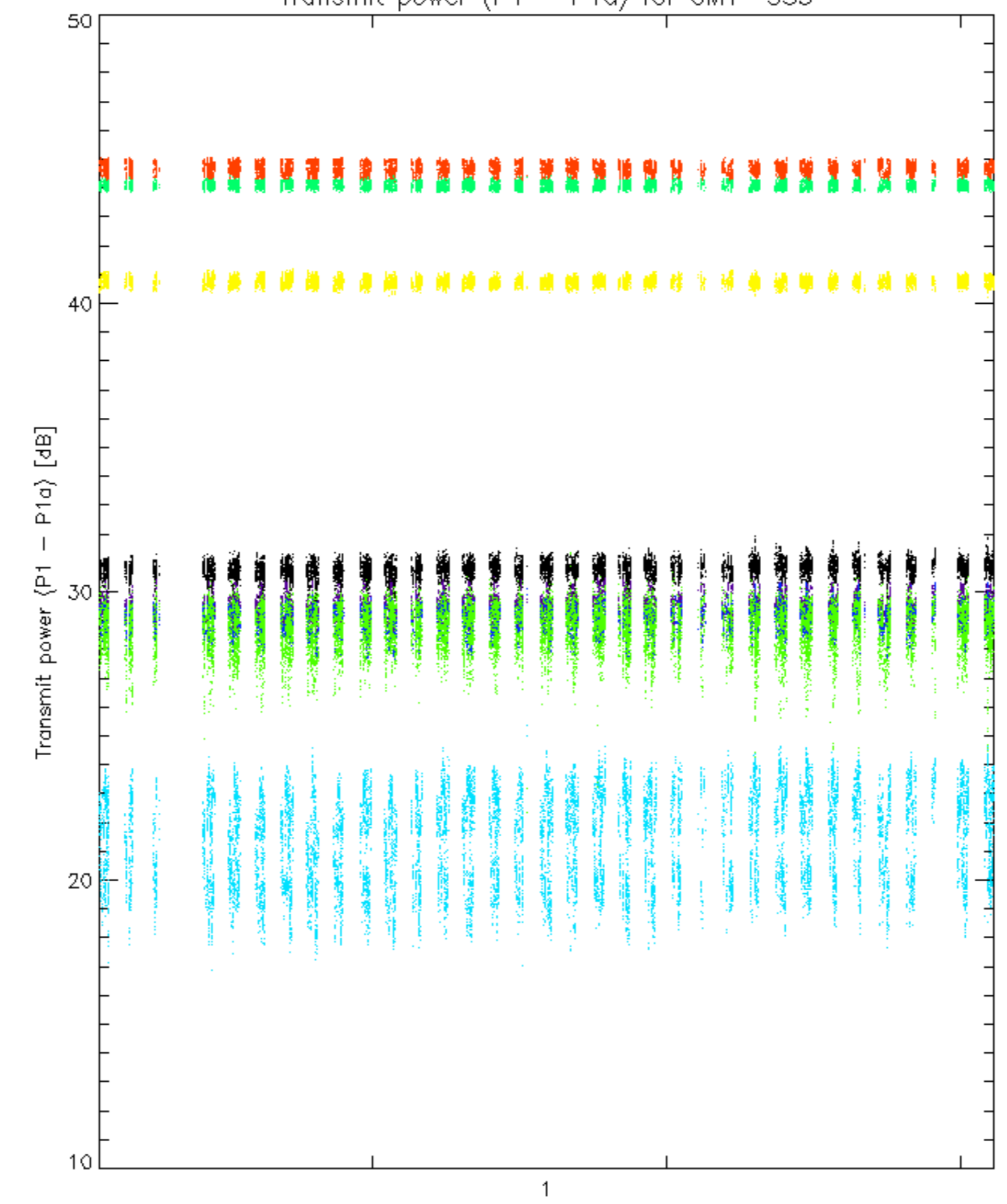


Summary of analysis for the last 3 days 2006010[345]

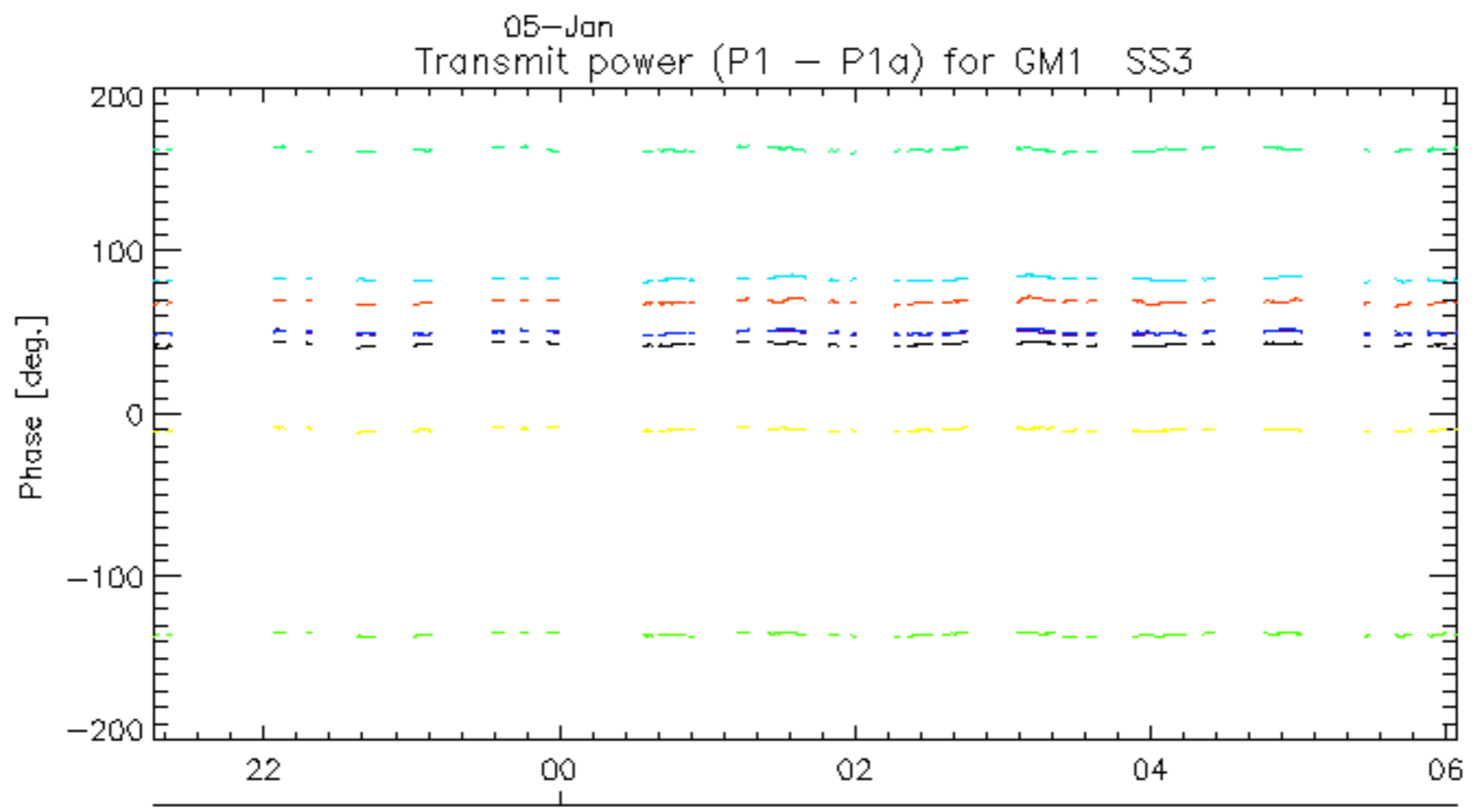
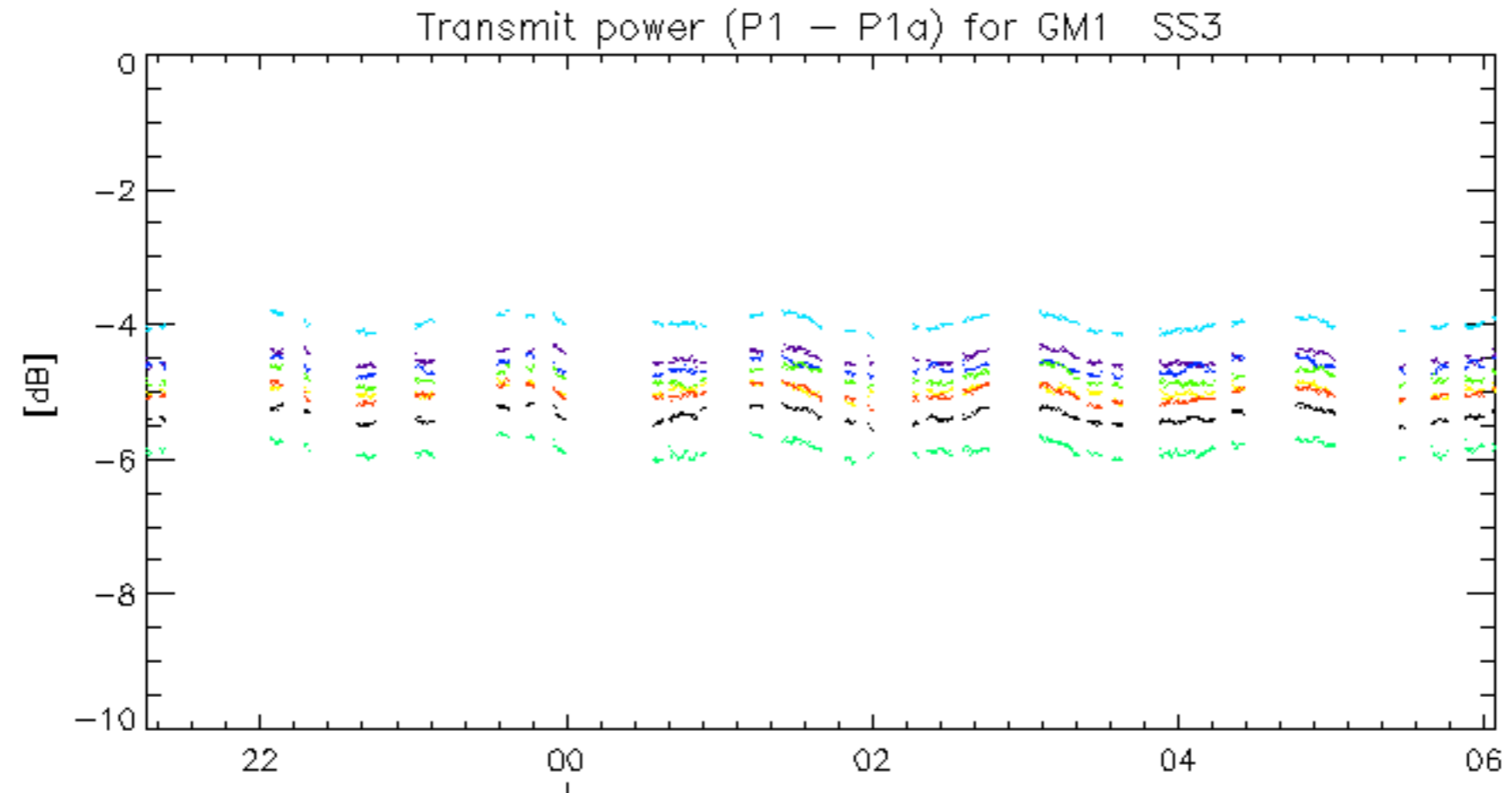
The assumption is taken that the SQADS num_gaps and num_missing_lines fields are reliable indicators of telemetry problems

| Filename | num_gaps | num_missing_lines |
|----------------------------------------------------------------|----------|-------------------|
| ASA_IMM_1PNPDE20060104_004520_000001852044_00016_20110_5463.N1 | 1 | 0 |
| ASA_IMM_1PNPDE20060104_155357_000000402044_00025_20119_5538.N1 | 1 | 0 |
| ASA_WSM_1PNPDE20060105_010633_000002812044_00031_20125_7017.N1 | 0 | 44 |

Transmit power (P1 - P1a) for GM1 SS3

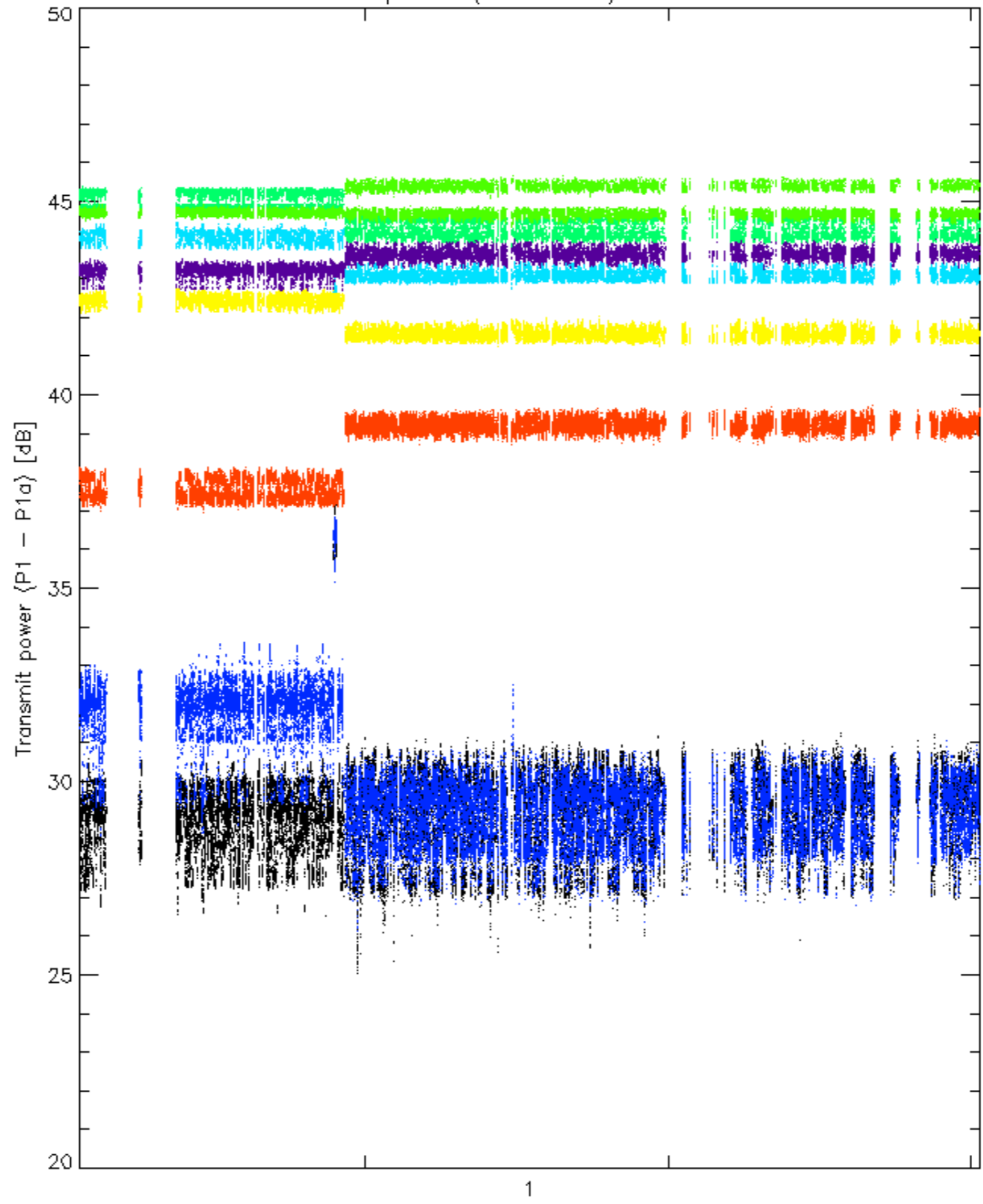


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

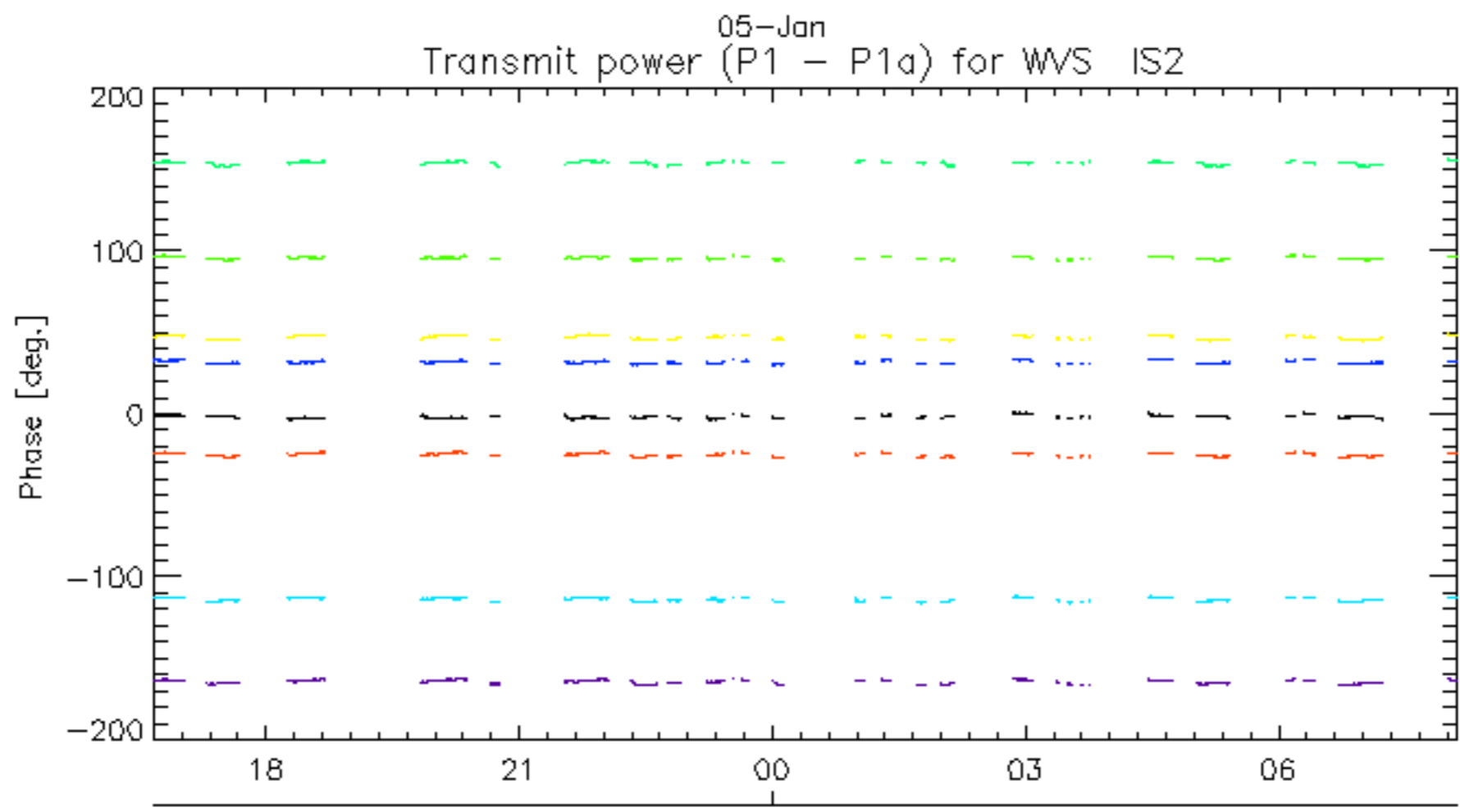
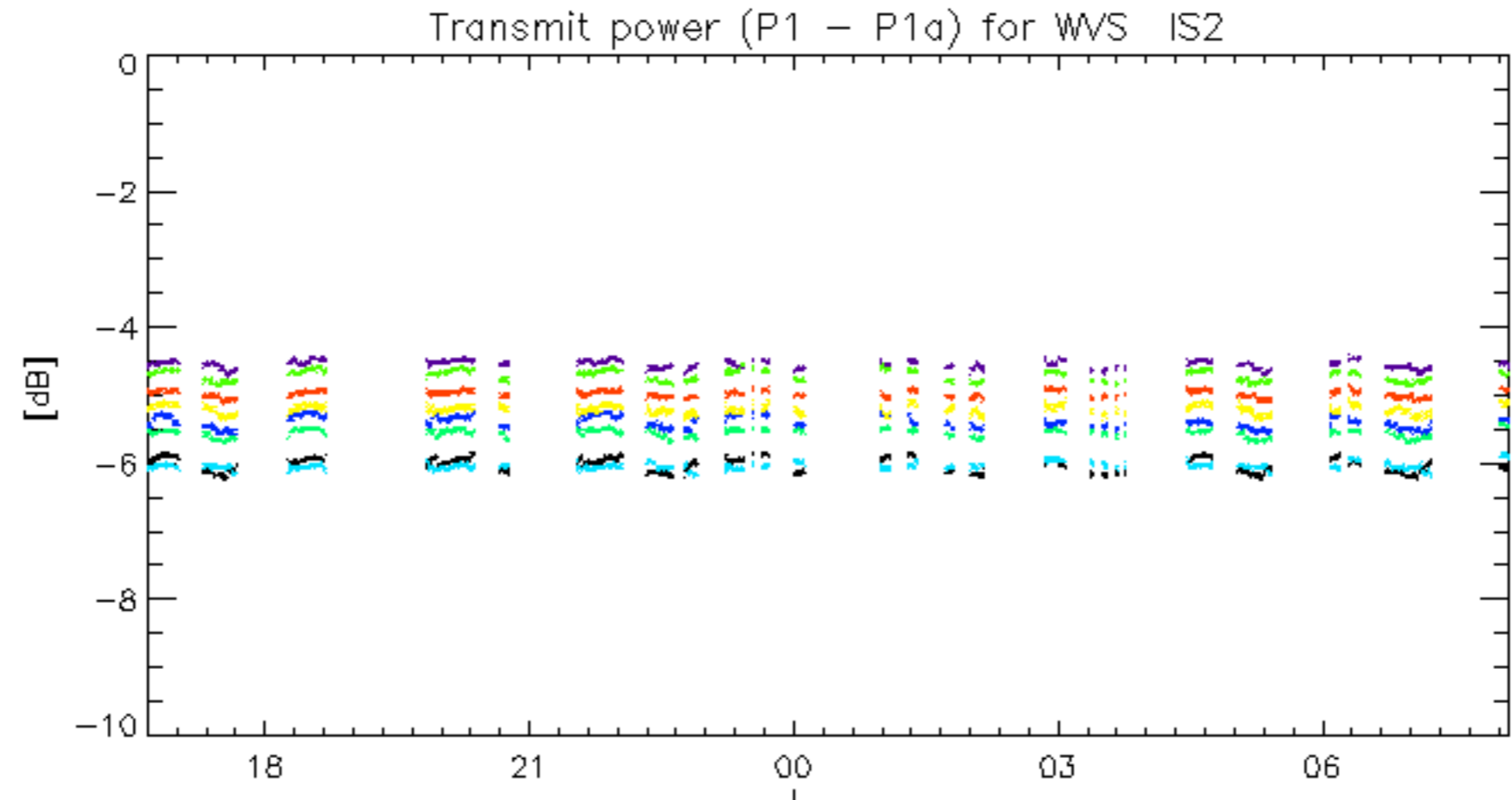


rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 26 _ 30

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.