

# 1. MIPAS Daily Report for level 1 products

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### 1.1 General Info

This report contains a daily analysis on parameters extracted from MIPAS level 1 data (The MIP\_NL\_\_1P product).

#### 1.1.1 Report summary

The table below shows general characteristics of the data that are included into this report.

| Item                                     | Value                                    |
|------------------------------------------|------------------------------------------|
| Report version                           | v1.42 15-10-2013                         |
| Time of report generation                | 03AUG2015 11:41:21                       |
| Data source version                      | MIPAS/7.11-W                             |
| Processing scope for products            | 02MAR2005 00:00:00 to 03MAR2005 00:00:00 |
| Start time of first product within scope | 01MAR2005 22:48:54                       |
| Stop time of last product within scope   | 03MAR2005 01:38:23                       |
| Total number of level 1 products         | 8                                        |
| Number of level 1 products with errors   | 0                                        |

#### 1.1.2 Summary per product

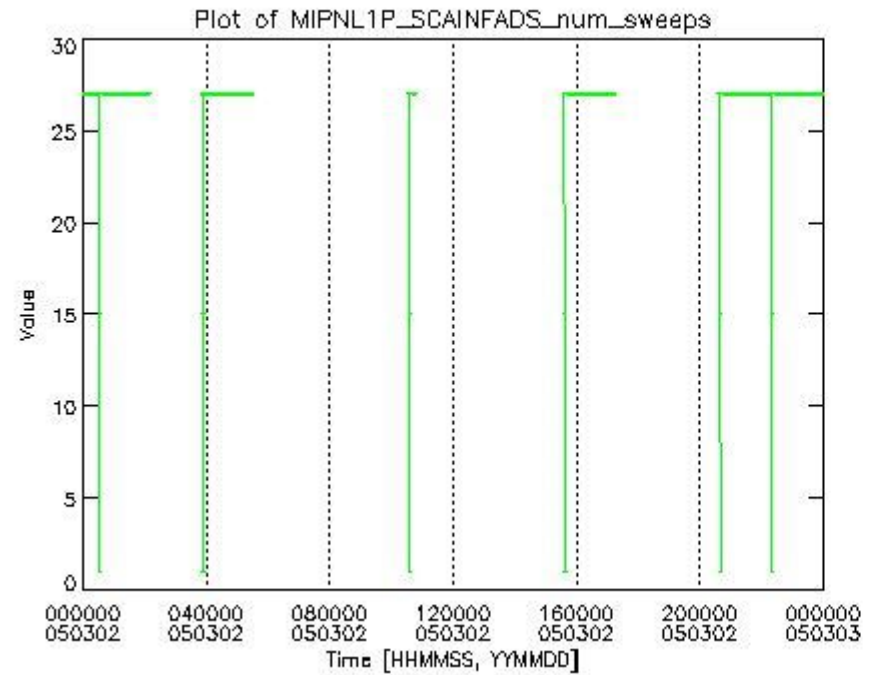
The following table shows a summary for each product used in this report.

| # | Product name                                                   | Start time         | Stop time          | Prod err | Slice position (prod/tot) | #sweeps SPH |
|---|----------------------------------------------------------------|--------------------|--------------------|----------|---------------------------|-------------|
| 0 | MIP_NL__1PWDSI20050301_224854_000060302035_00116_15701_0000.N1 | 01MAR2005 22:48:54 | 02MAR2005 00:29:24 | 0        | 0/0                       | 27          |
| 1 | MIP_NL__1PWDSI20050302_002930_000060302035_00117_15702_0000.N1 | 02MAR2005 00:29:30 | 02MAR2005 02:10:00 | 0        | 0/0                       | 27          |
| 2 | MIP_NL__1PWDSI20050302_035042_000060302035_00119_15704_0000.N1 | 02MAR2005 03:50:42 | 02MAR2005 05:31:12 | 0        | 0/0                       | 27          |
| 3 | MIP_NL__1PWDSI20050302_103306_000008242035_00123_15708_0000.N1 | 02MAR2005 10:33:06 | 02MAR2005 10:46:49 | 0        | 0/0                       | 27          |
| 4 | MIP_NL__1PWDSI20050302_153453_000060302035_00126_15711_0000.N1 | 02MAR2005 15:34:53 | 02MAR2005 17:15:23 | 0        | 0/0                       | 27          |
| 5 | MIP_NL__1PWDSI20050302_203641_000060302035_00129_15714_0000.N1 | 02MAR2005 20:36:41 | 02MAR2005 22:17:11 | 0        | 0/0                       | 27          |
| 6 | MIP_NL__1PWDSI20050302_221717_000060302035_00130_15715_0000.N1 | 02MAR2005 22:17:17 | 02MAR2005 23:57:47 | 0        | 0/0                       | 27          |
| 7 | MIP_NL__1PWDSI20050302_235753_000060302035_00131_15716_0000.N1 | 02MAR2005 23:57:53 | 03MAR2005 01:38:23 | 0        | 0/0                       | 27          |

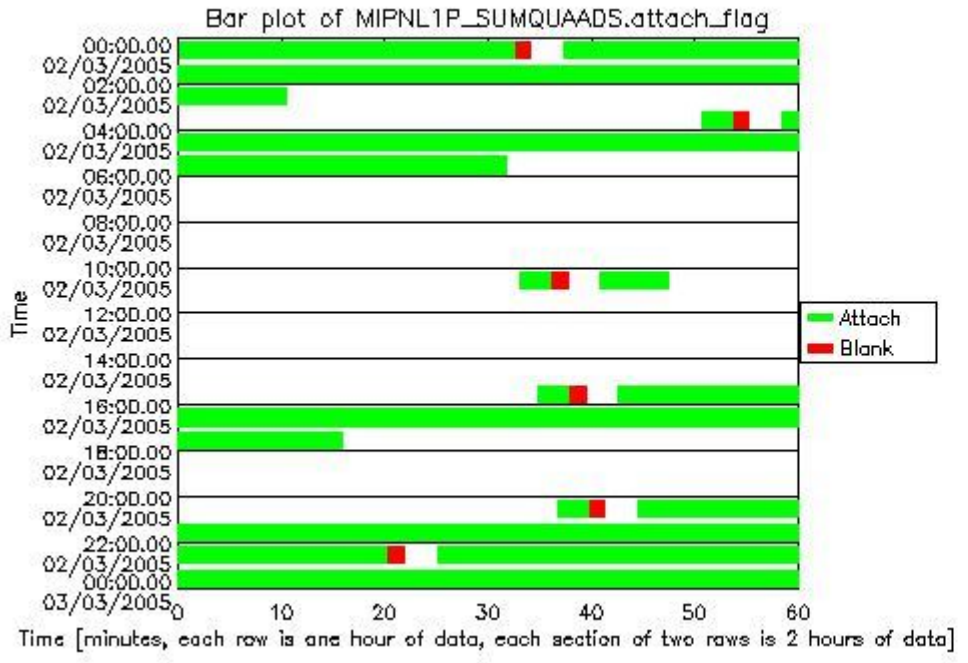
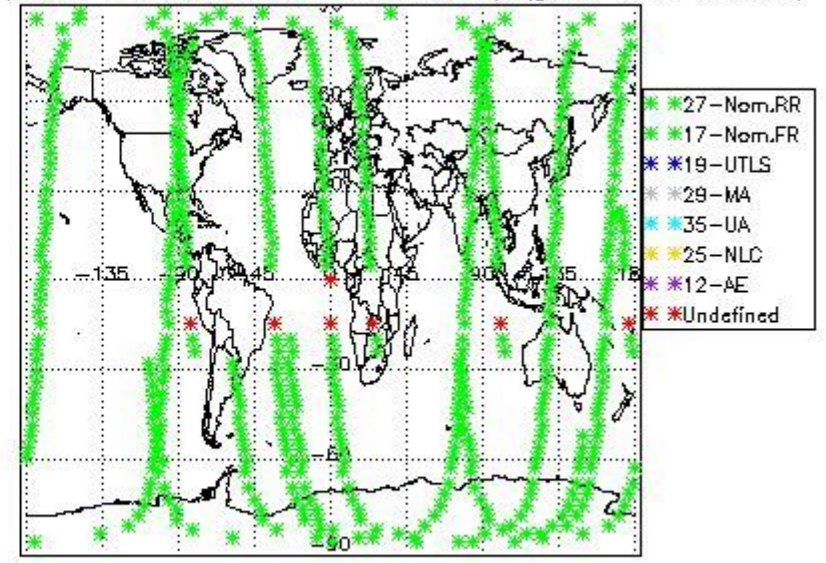
## 1.2 Product Quality Indicators

This report contains an analysis on product quality related parameters within the MIP\_NL\_\_1P product.

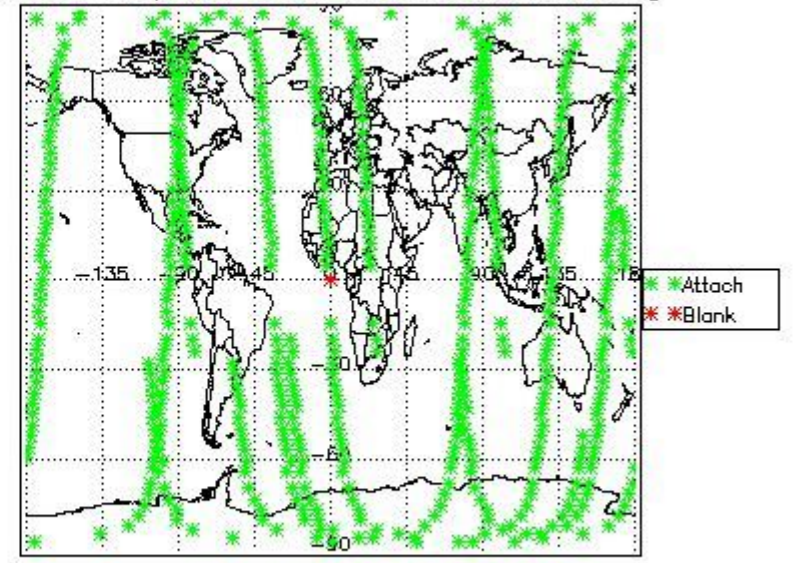
### 1.2.1 Trends and geolocation of Summary Quality and Scan Information ADS



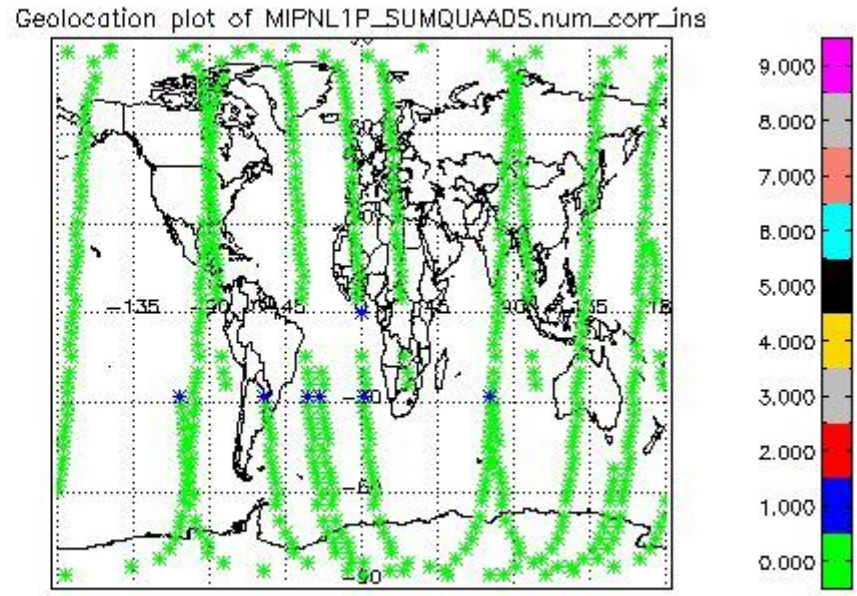
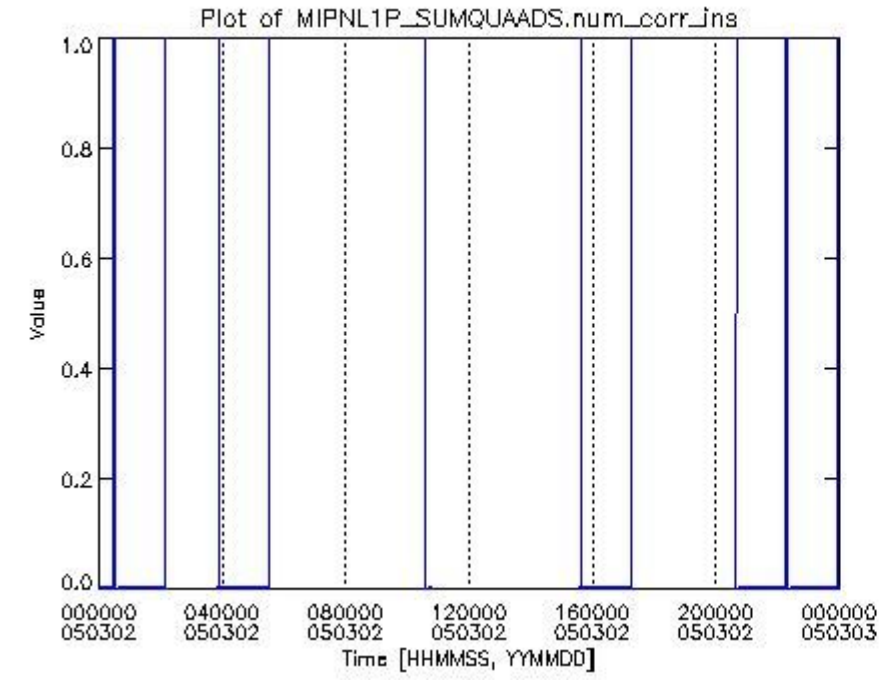
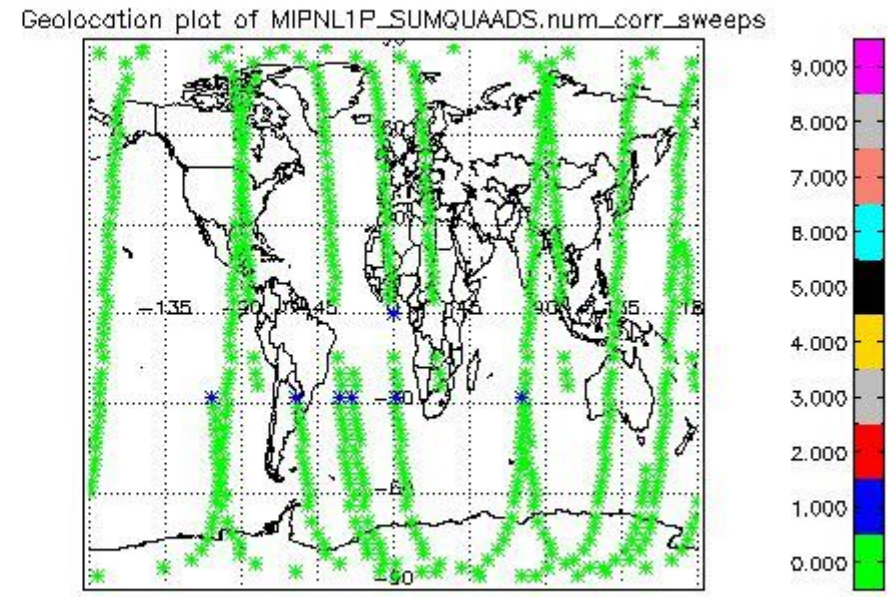
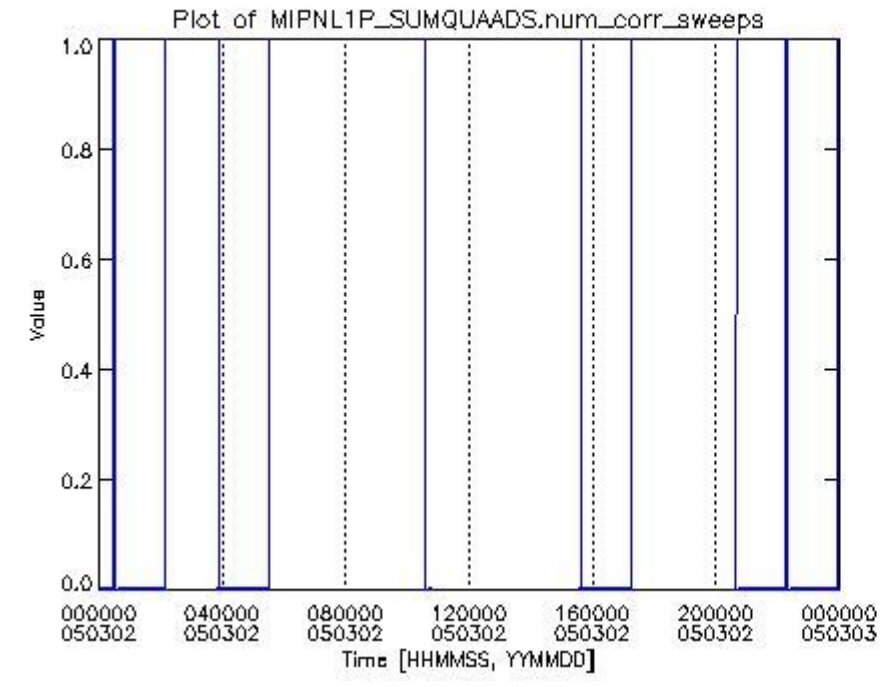
Geolocation plot of MIPNL1P\_SCAINFADS\_num\_sweeps(green color=0 errors)

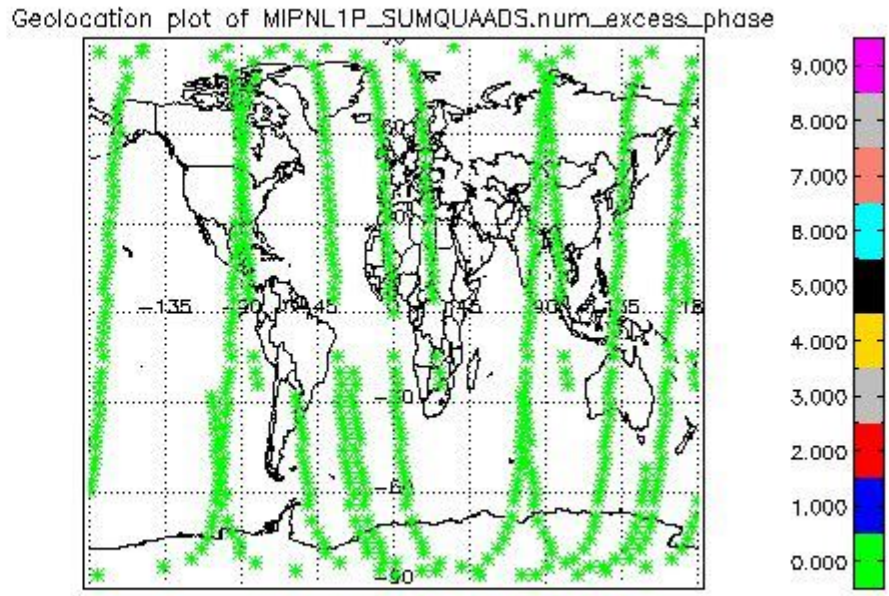
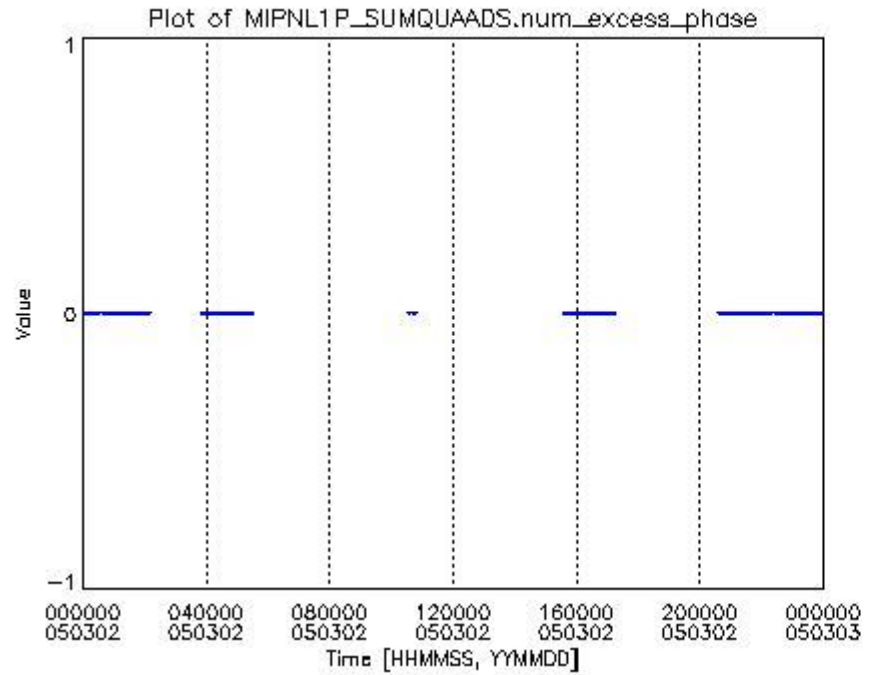
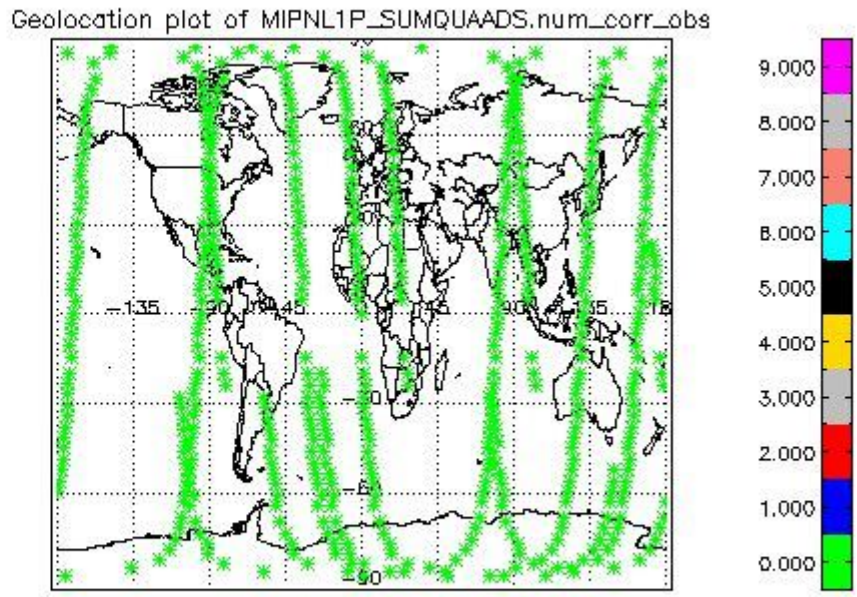
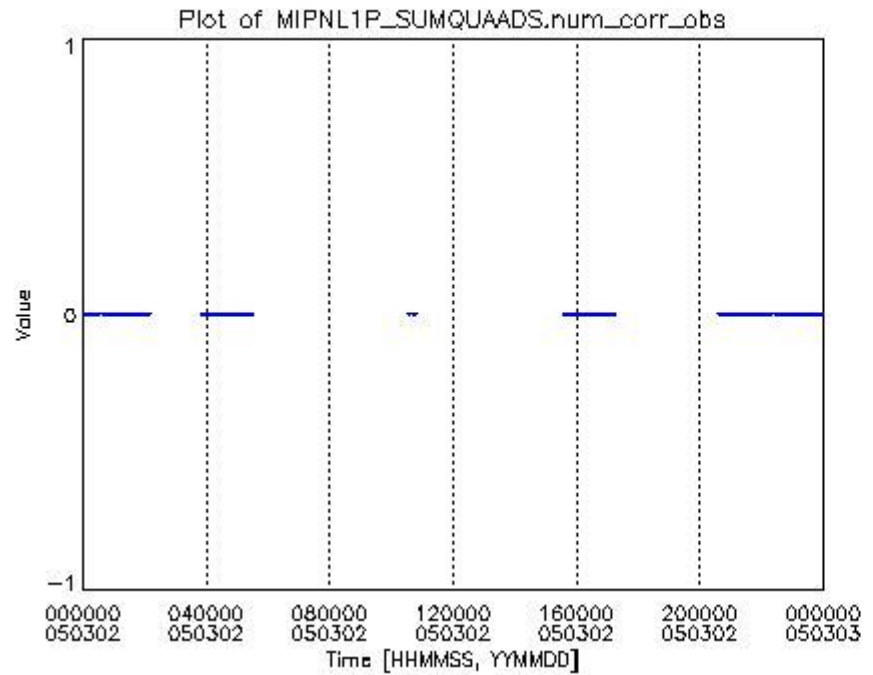


Geolocation plot of MIPNL1P\_SUMQUAADS.attach\_flag

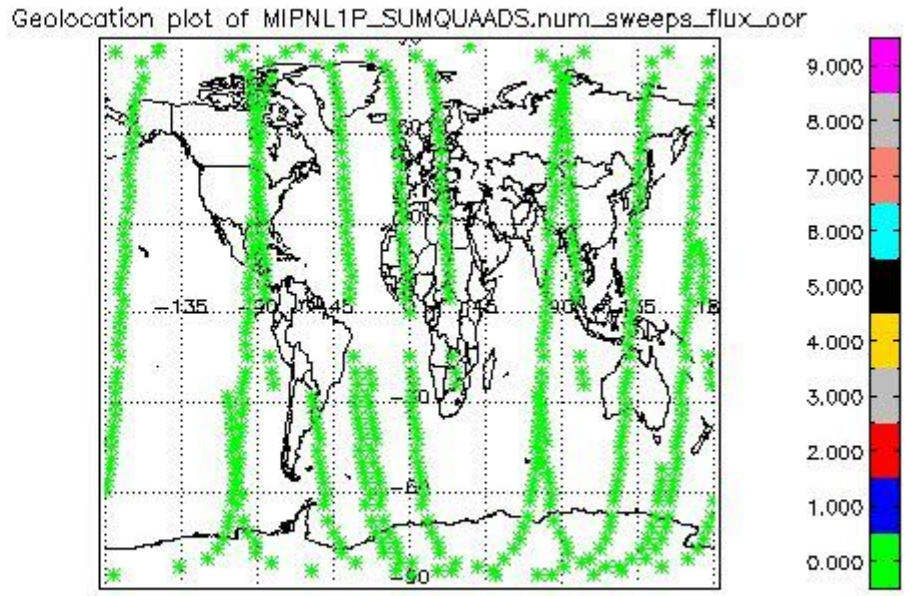
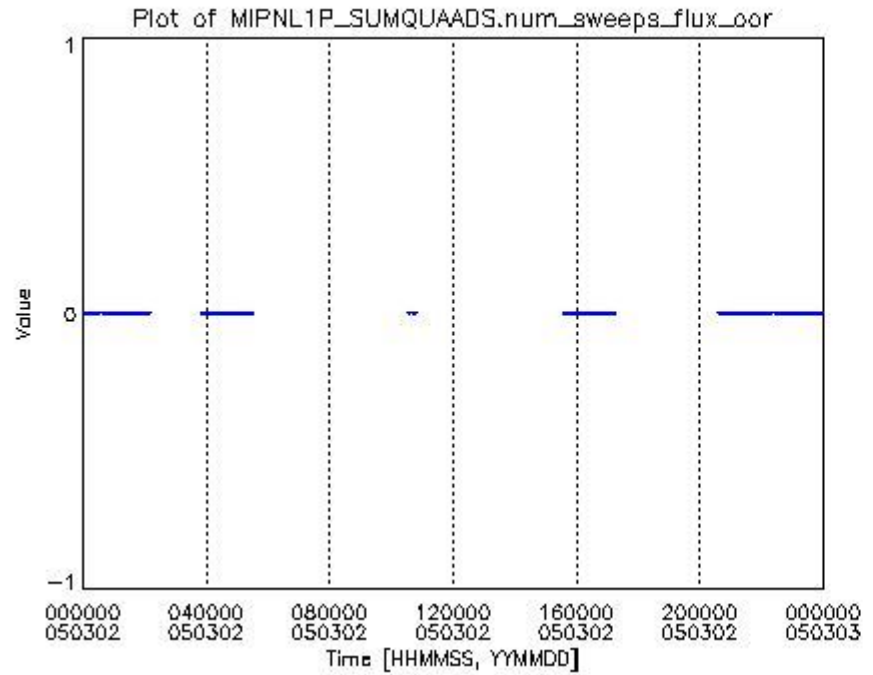
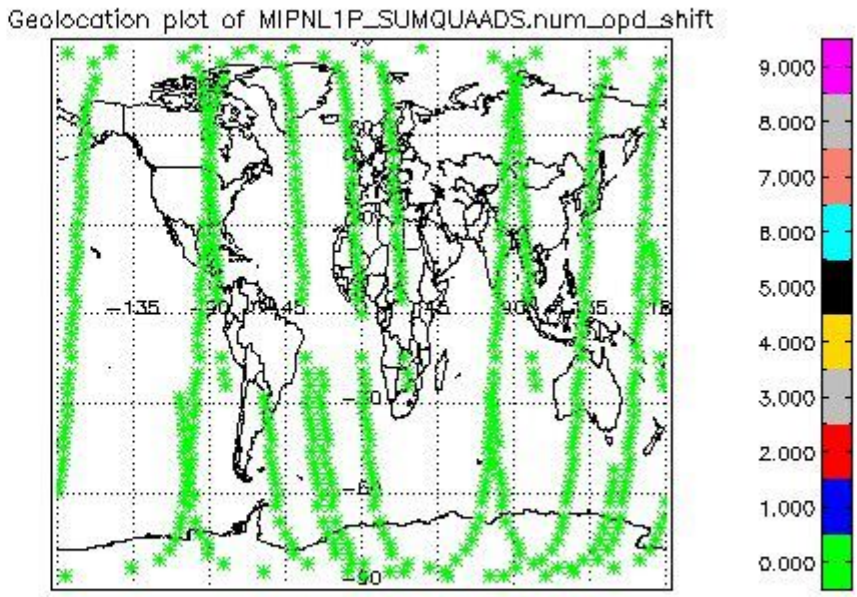
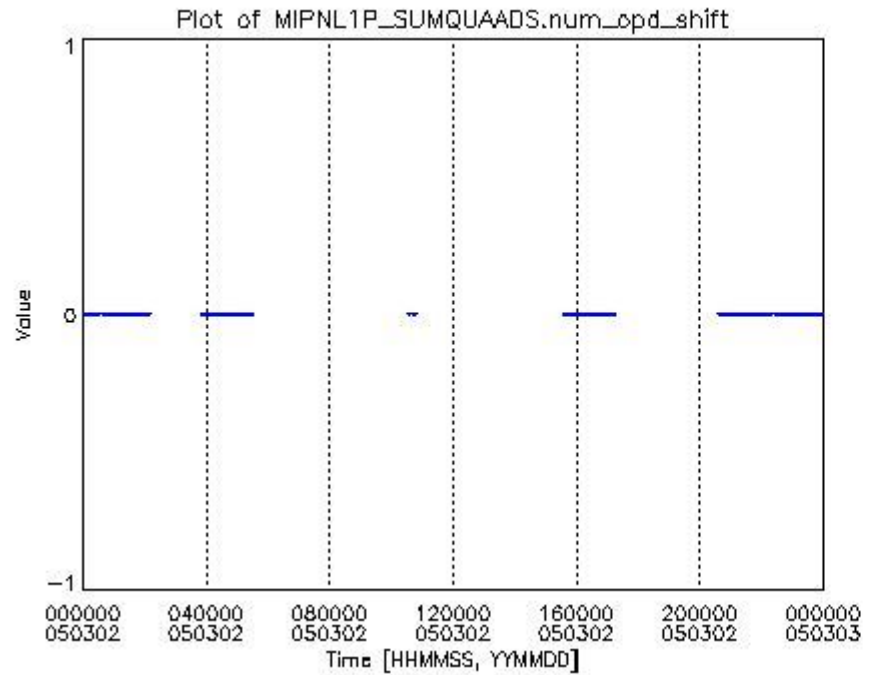






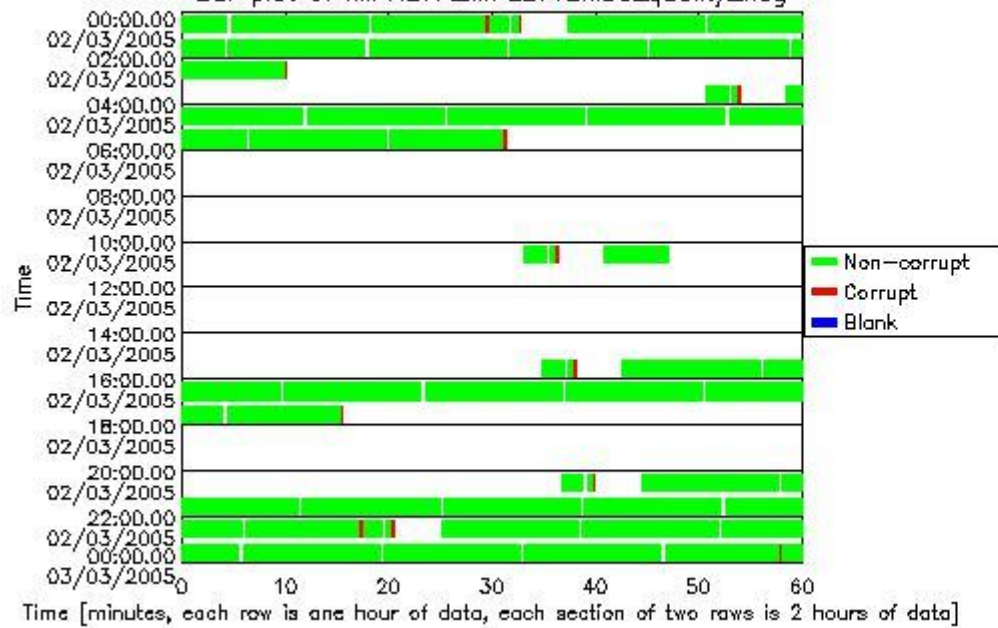




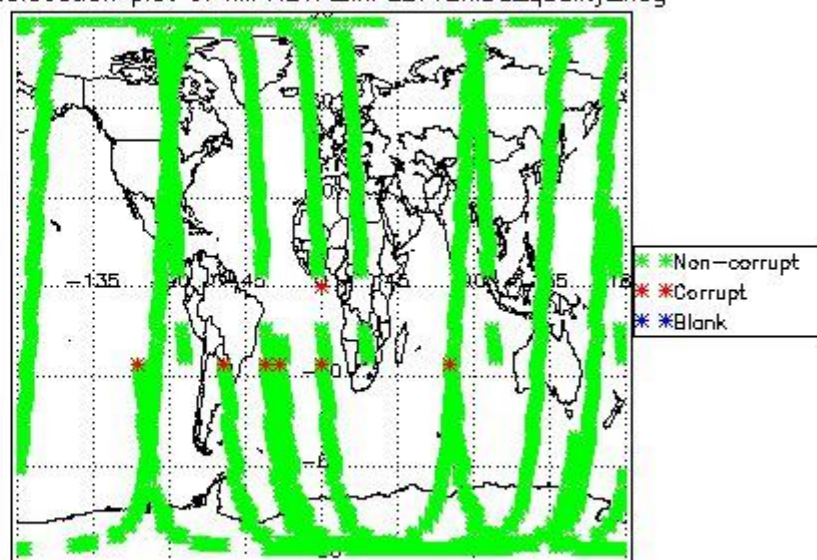


1.2.2 Trends and geolocation of MIPAS LEVEL 1 MDS

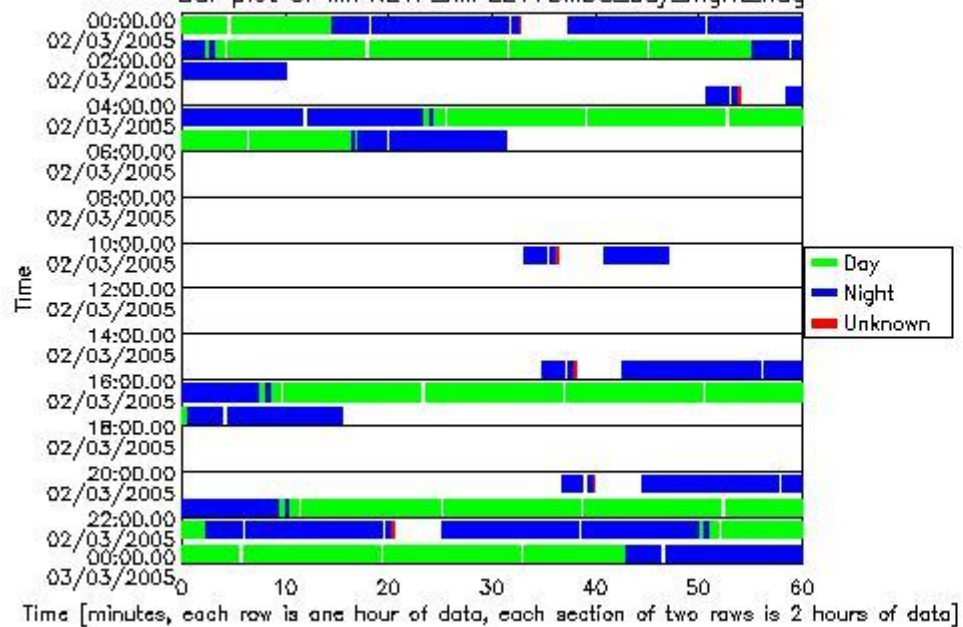
Bar plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag



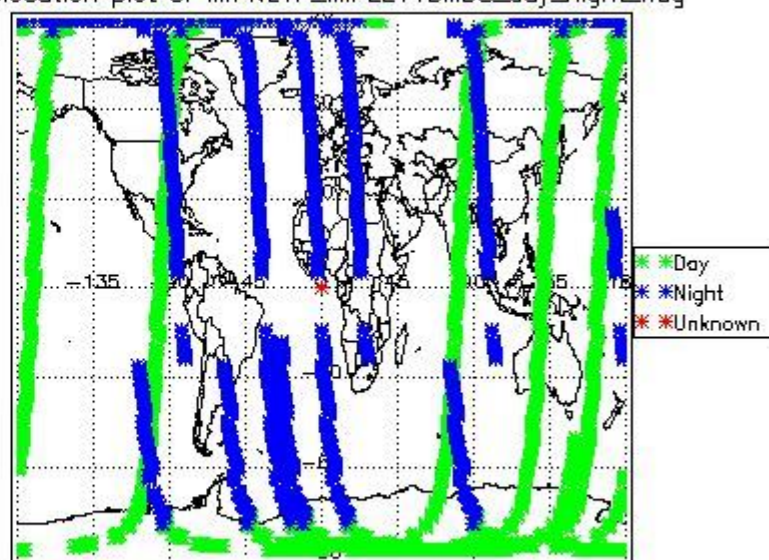
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag



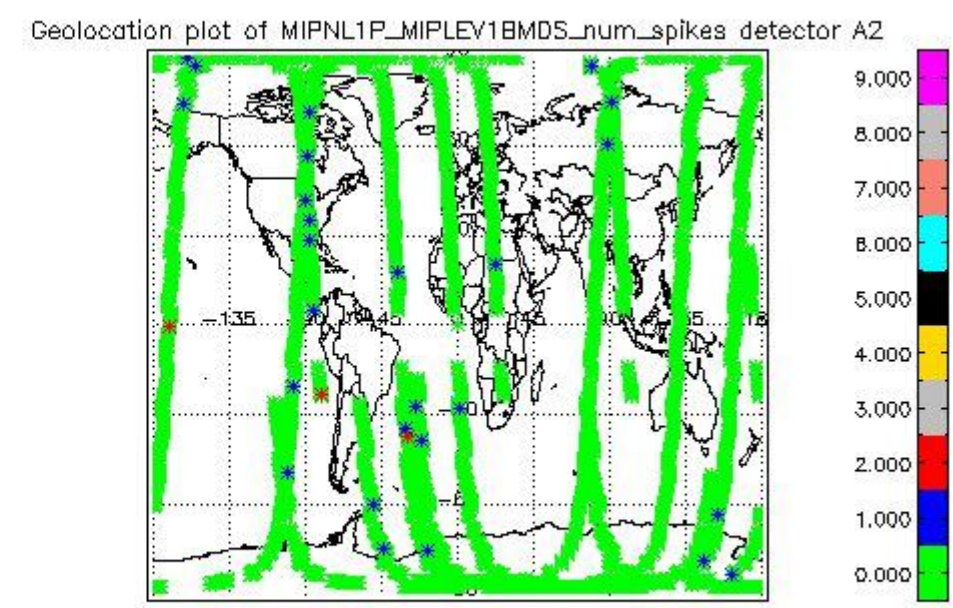
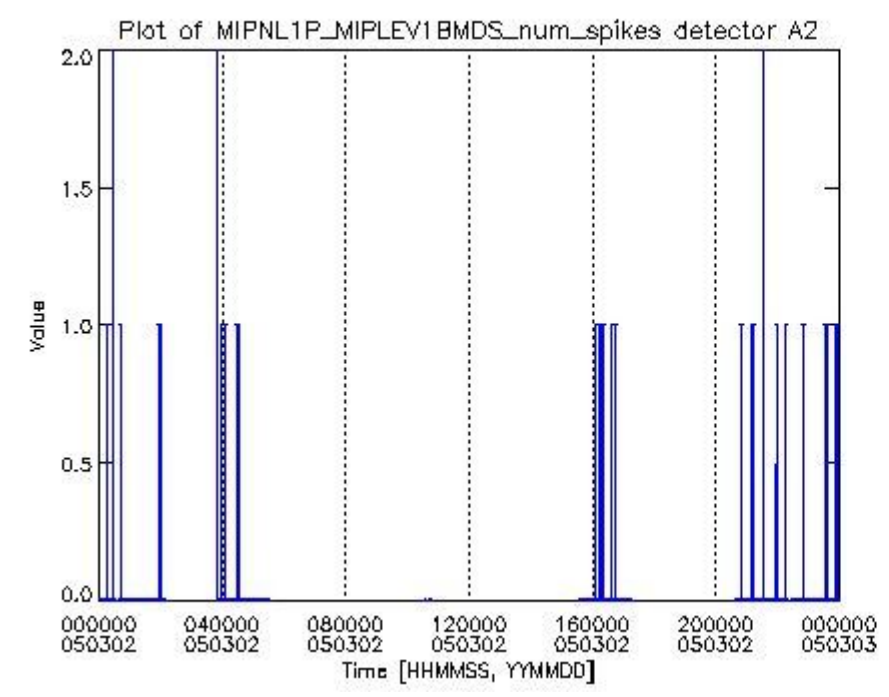
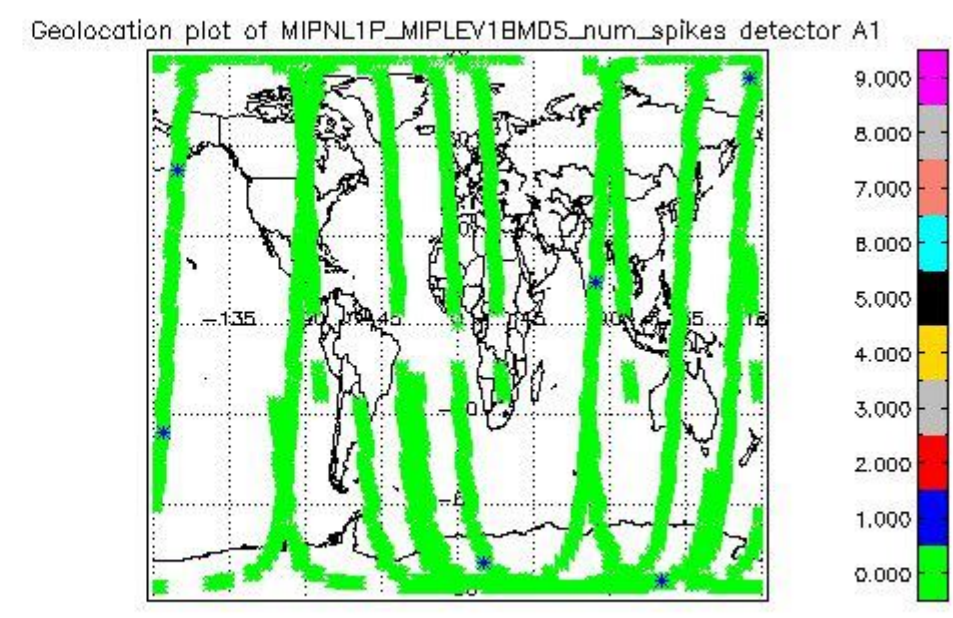
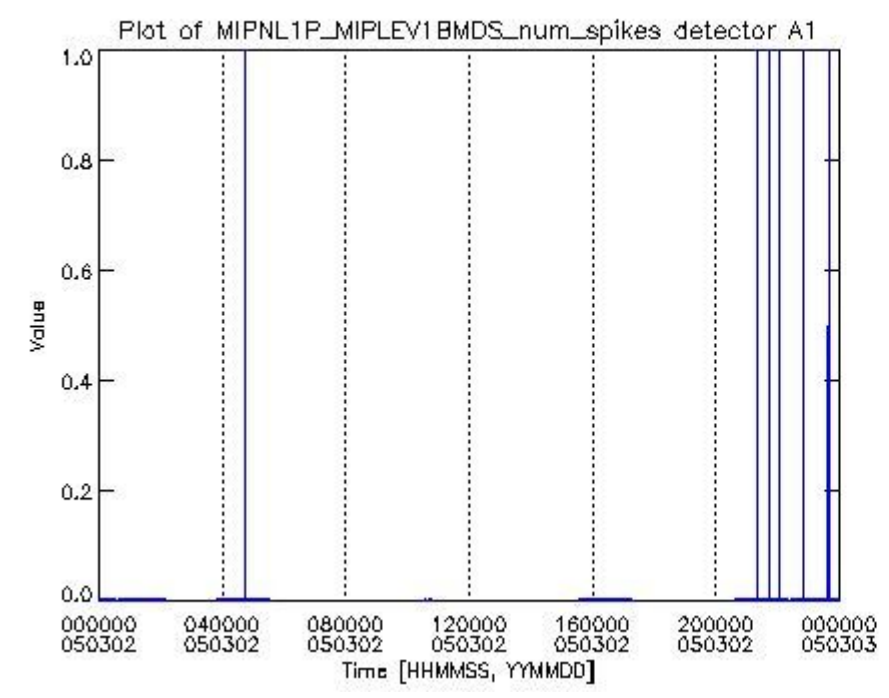
Bar plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag

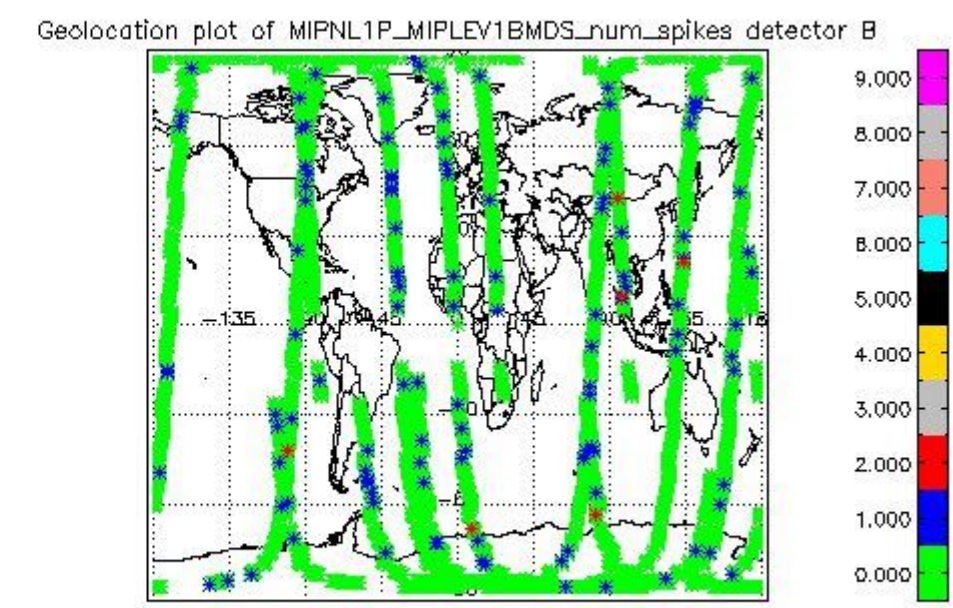
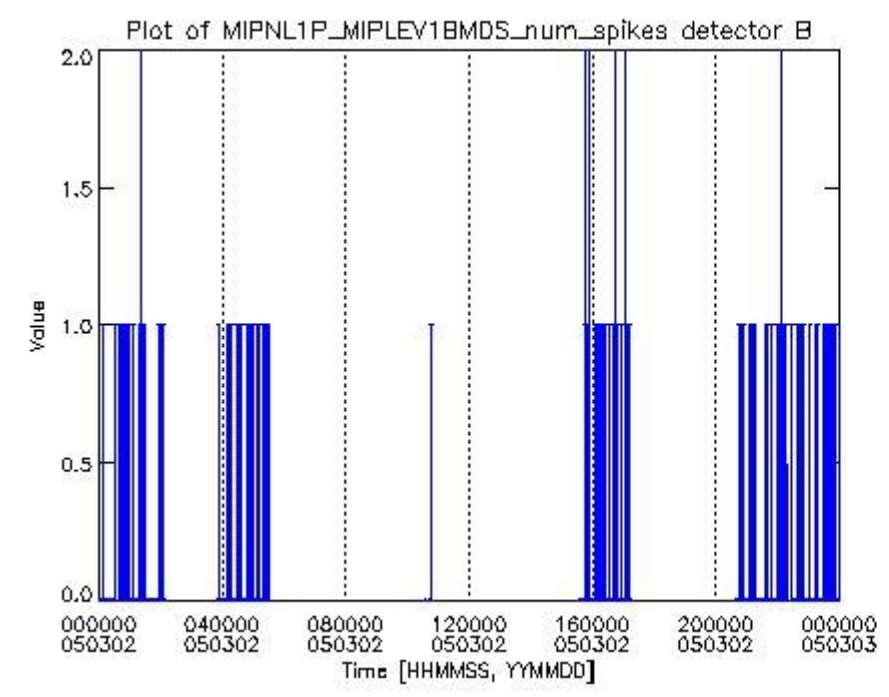
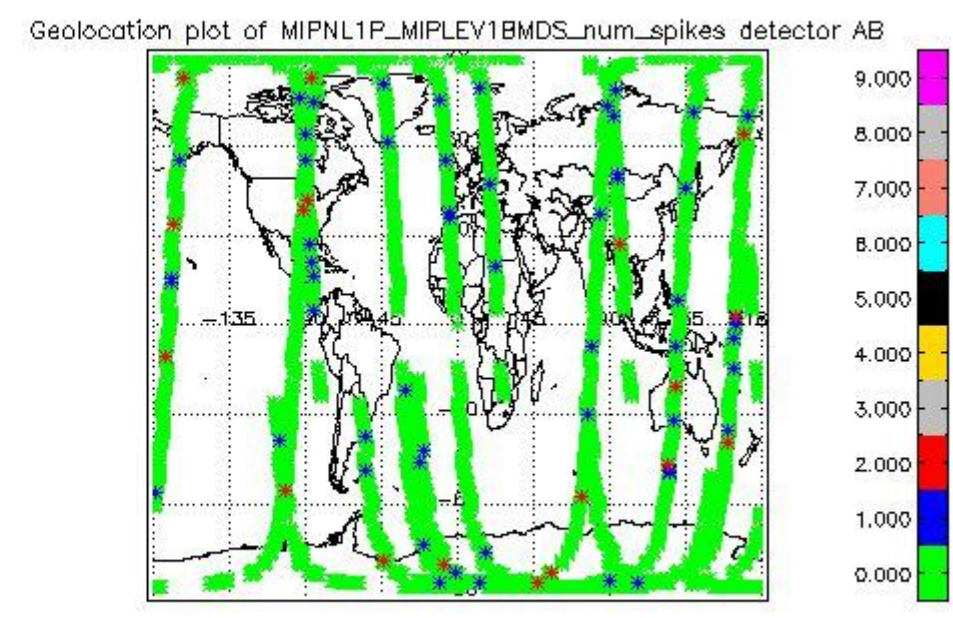
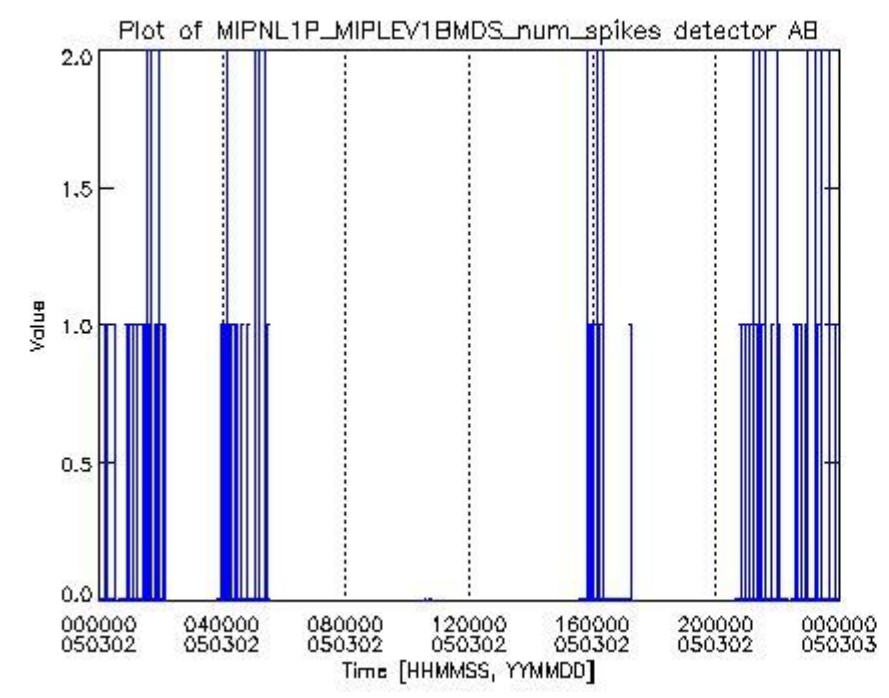


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag

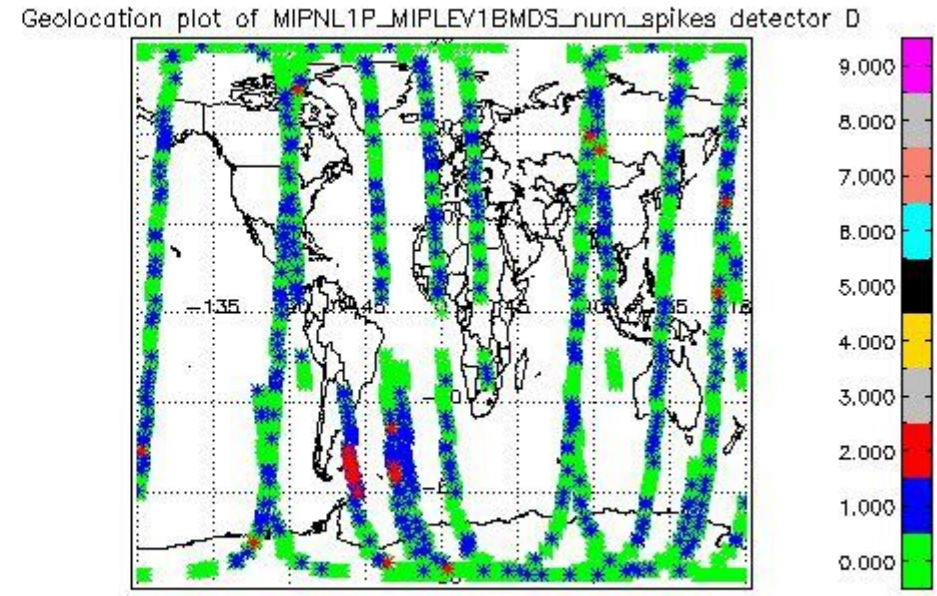
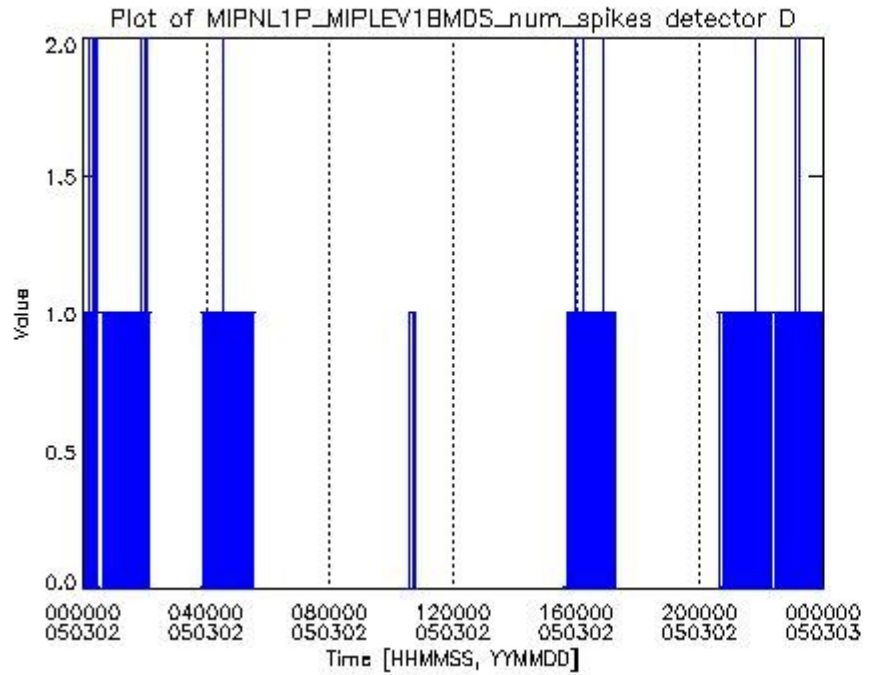
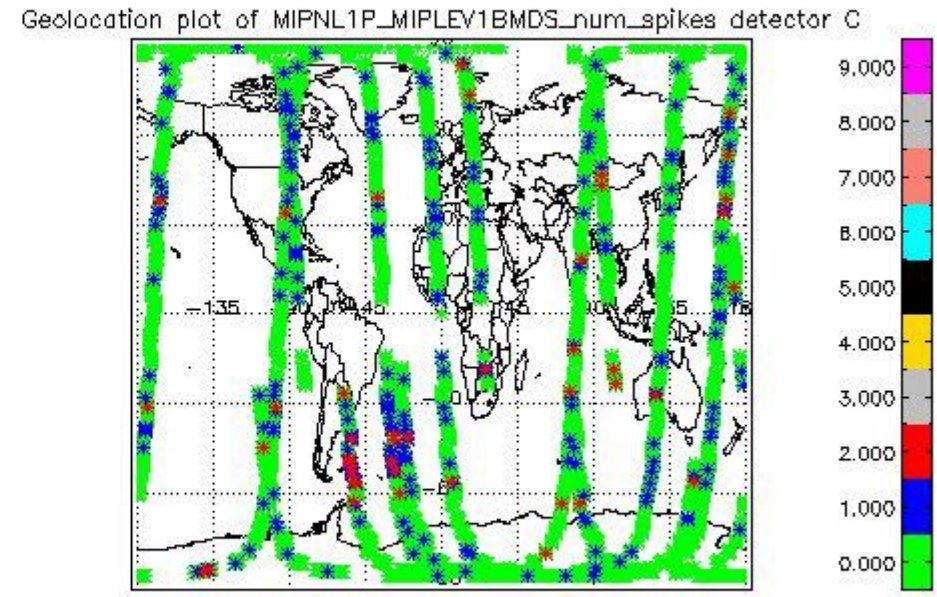
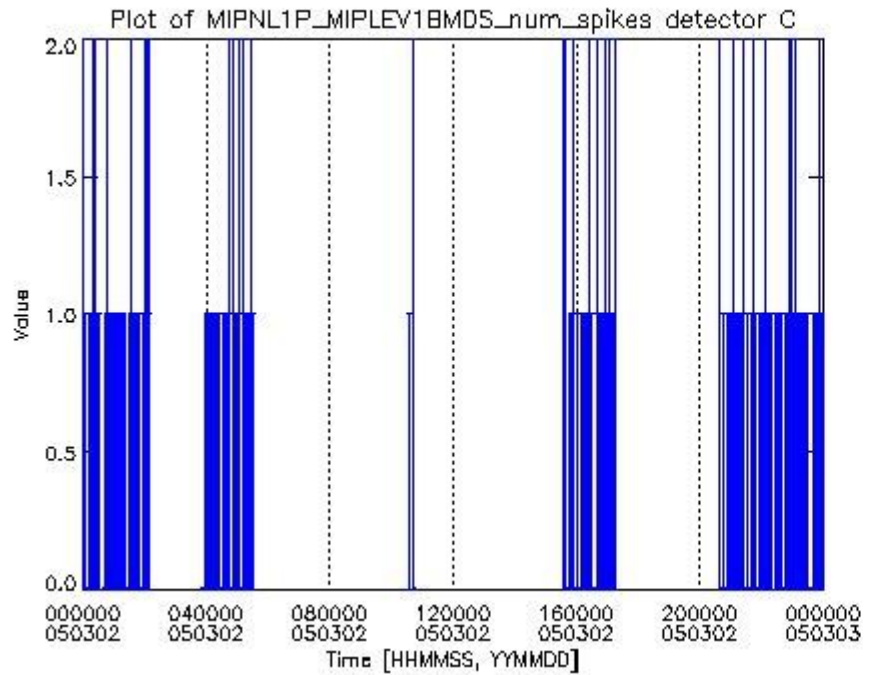


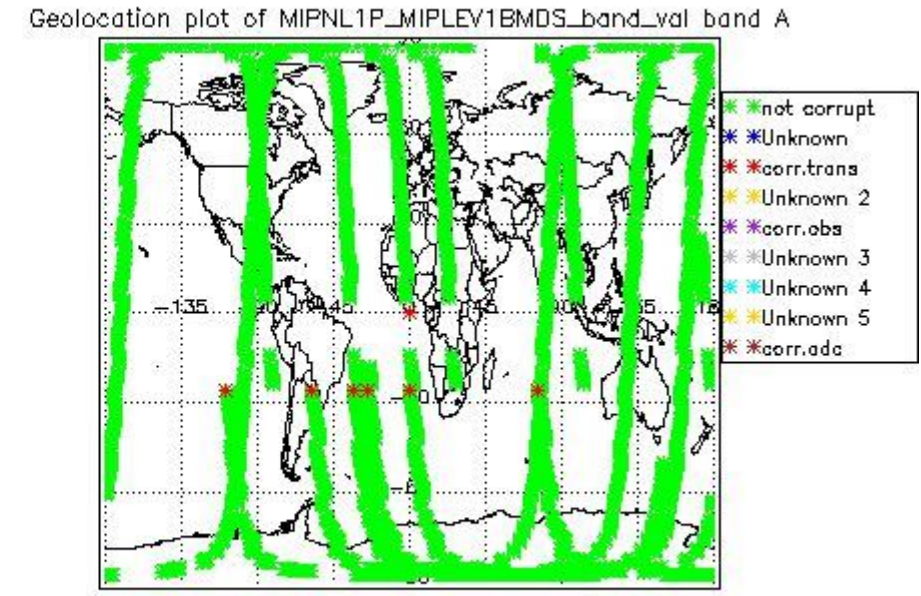
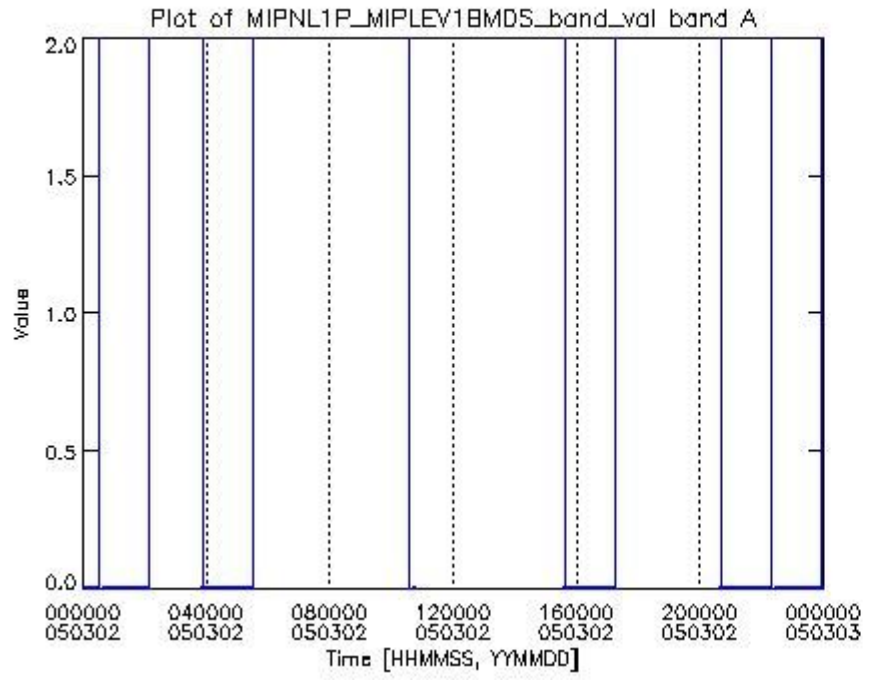
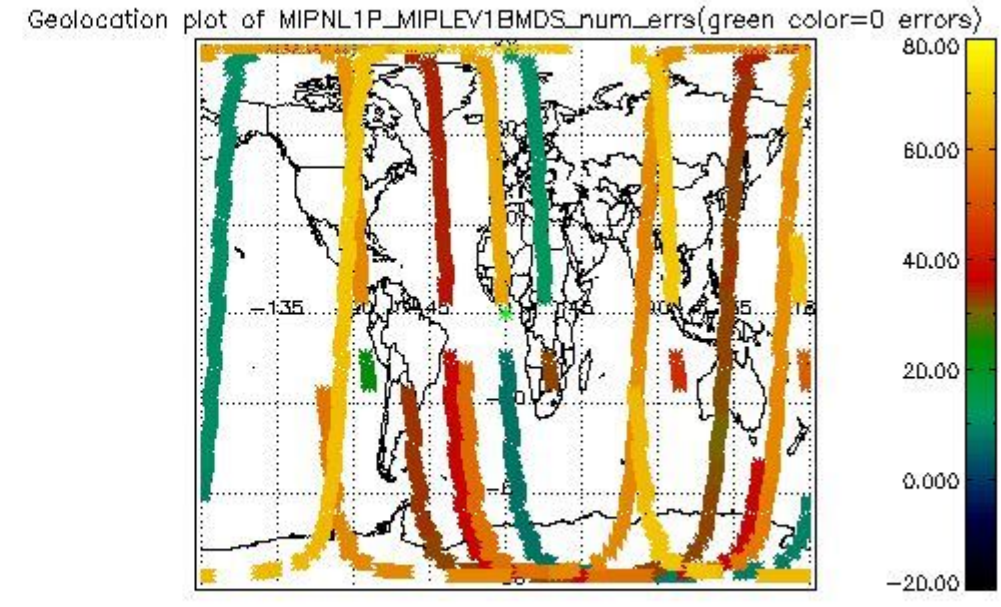
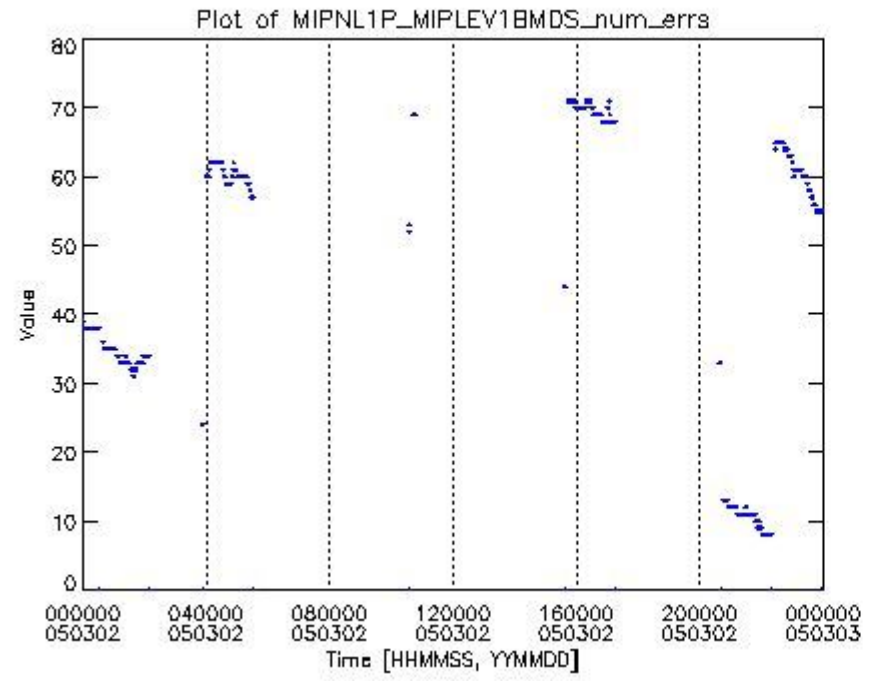






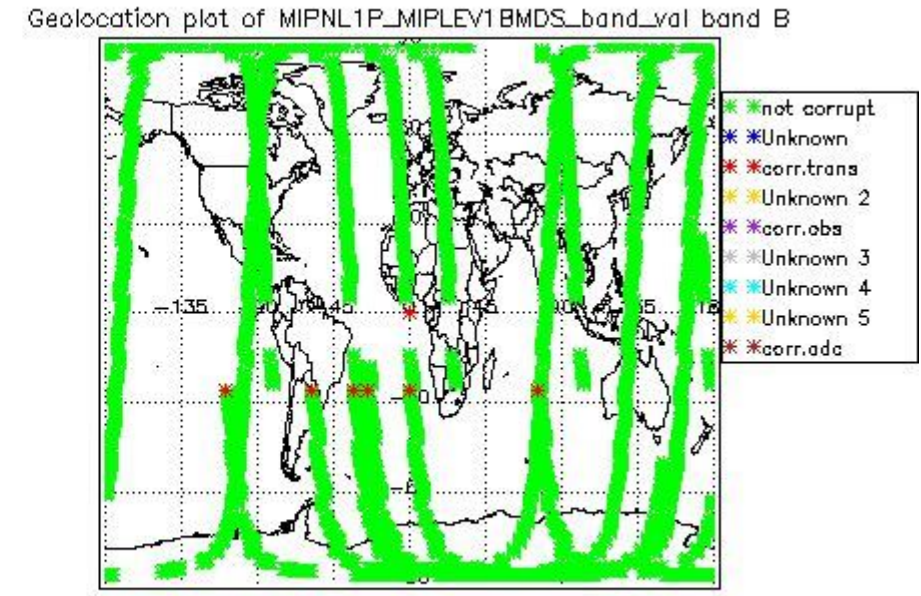
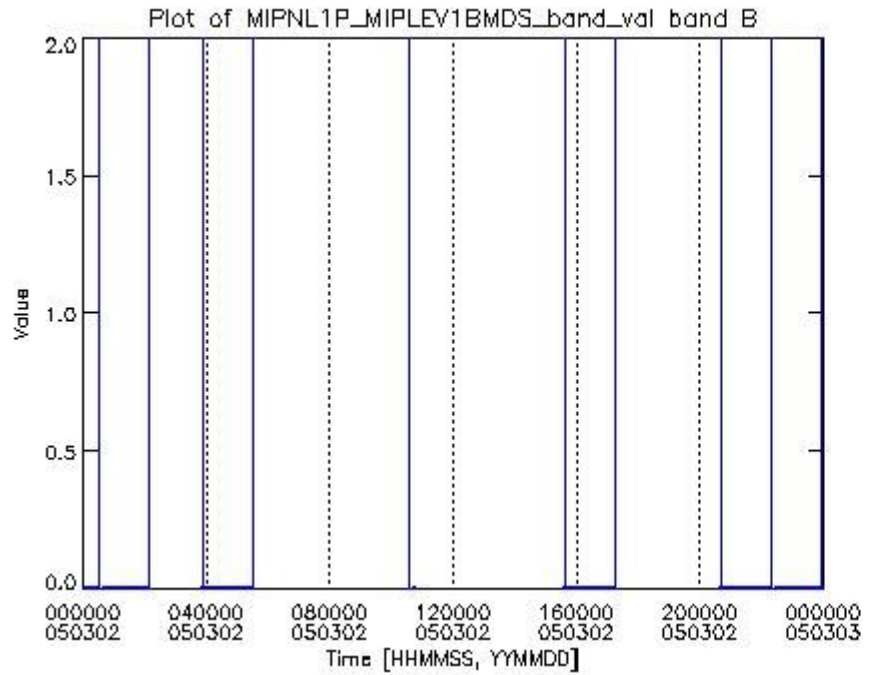
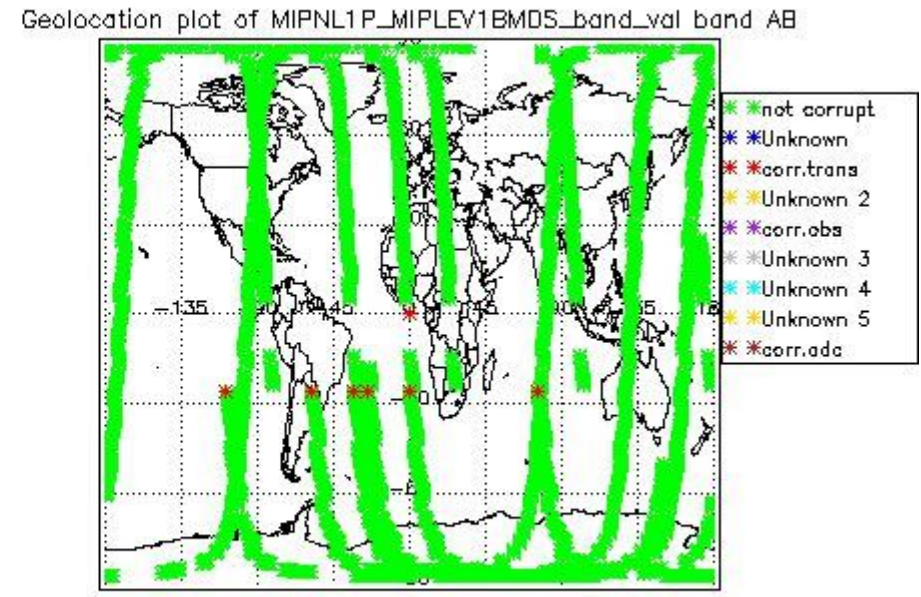
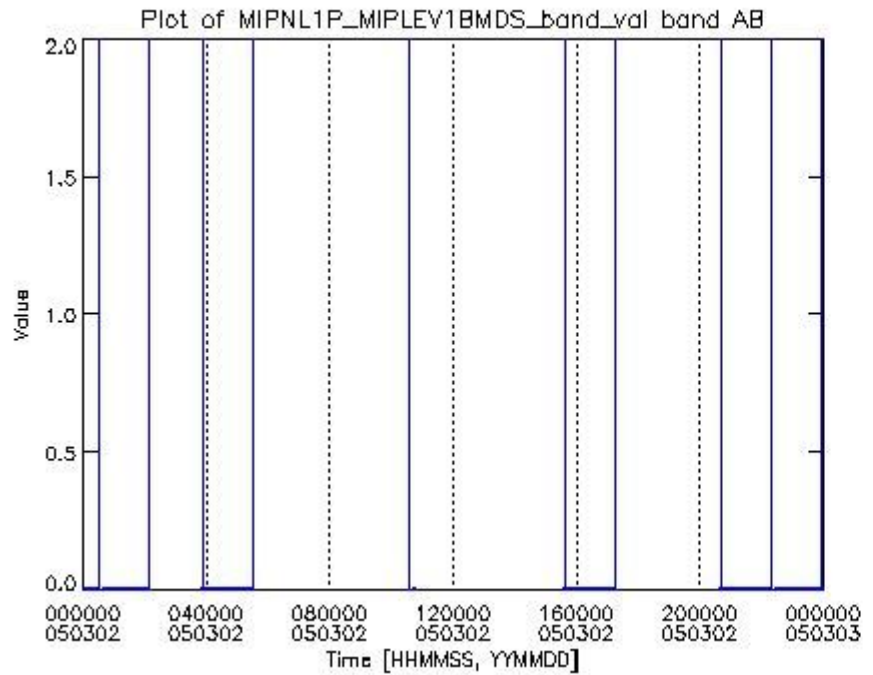


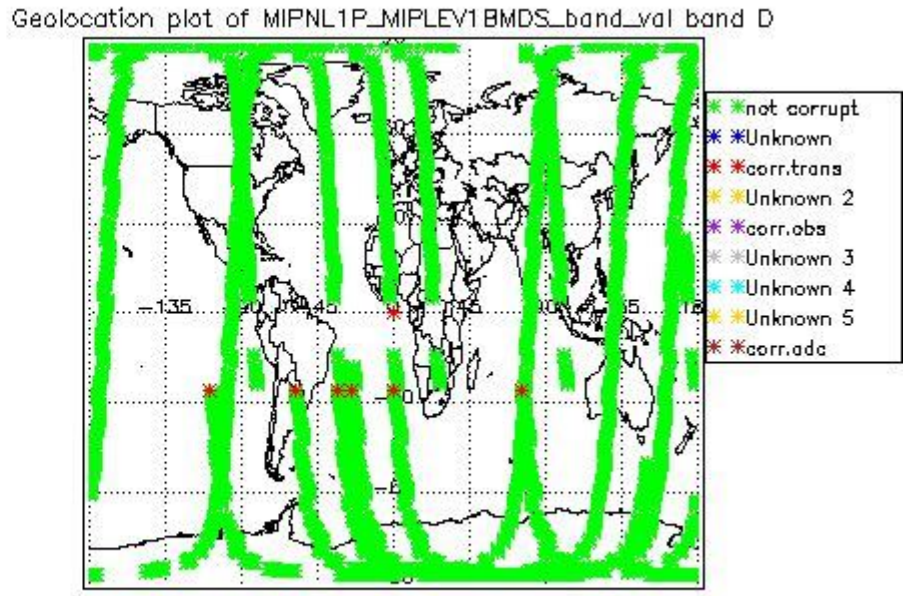
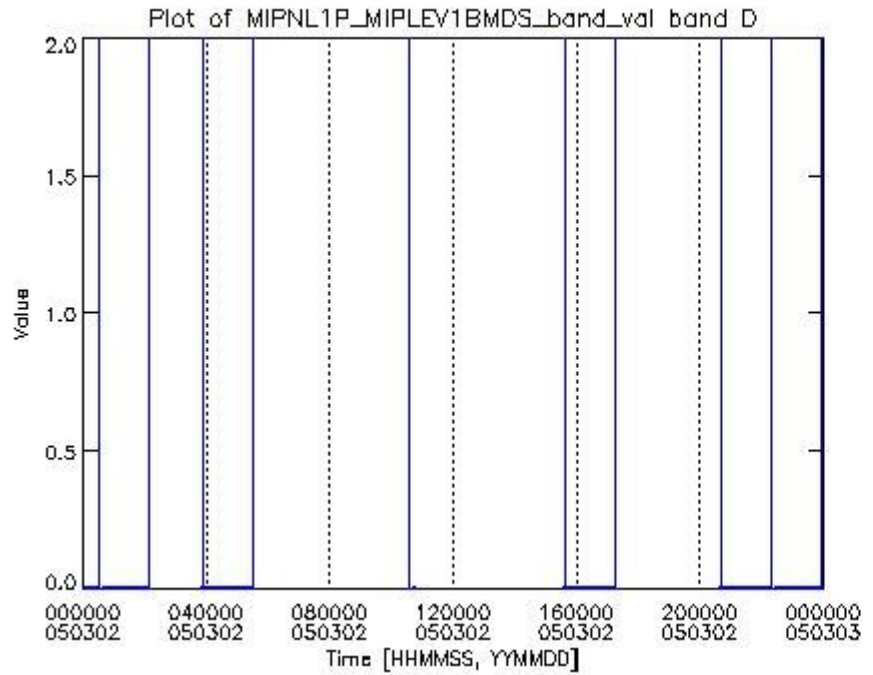
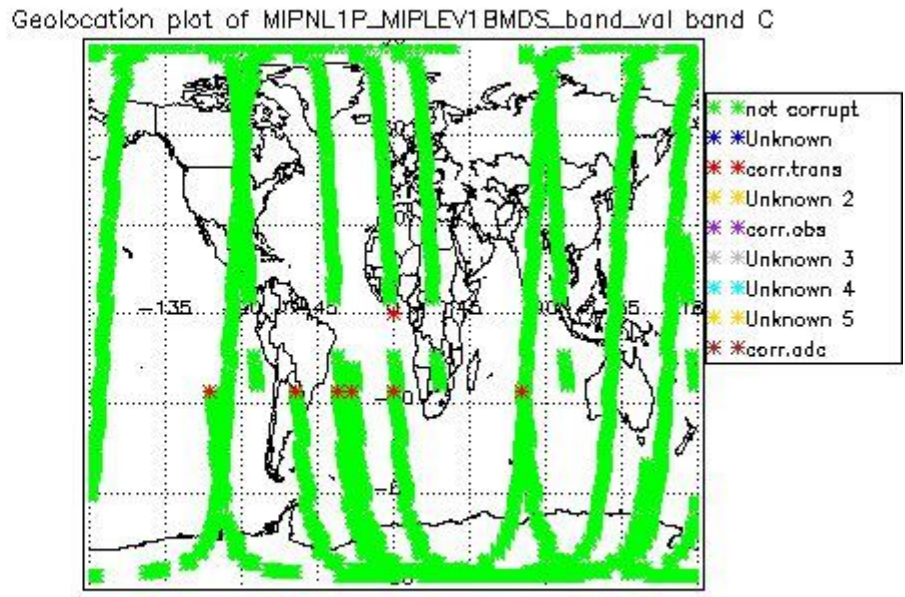
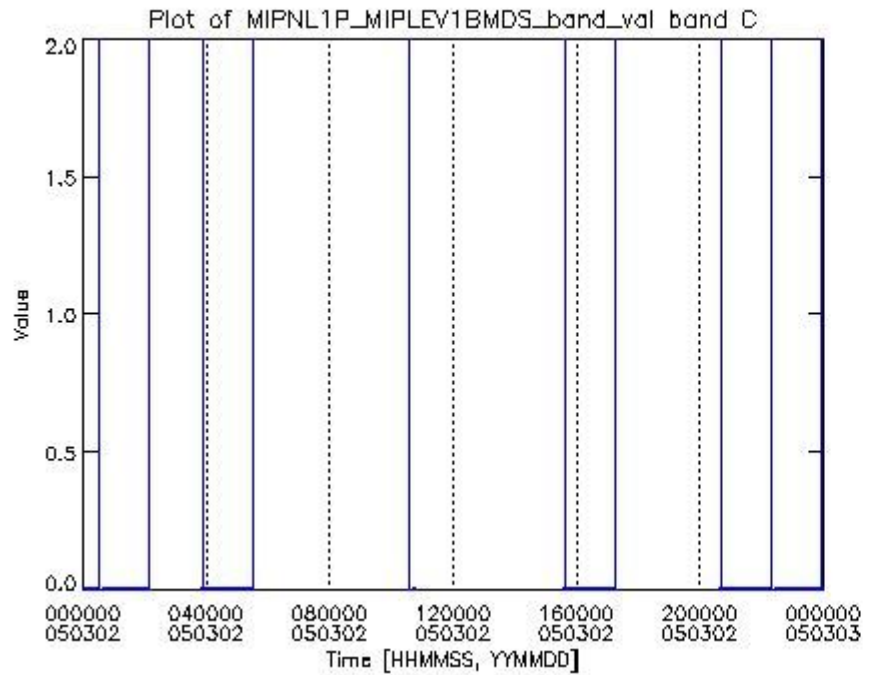




- \*not corrupt
- \*Unknown
- \*corr.trans
- \*Unknown 2
- \*corr.obs
- \*Unknown 3
- \*Unknown 4
- \*Unknown 5
- \*corr.adc

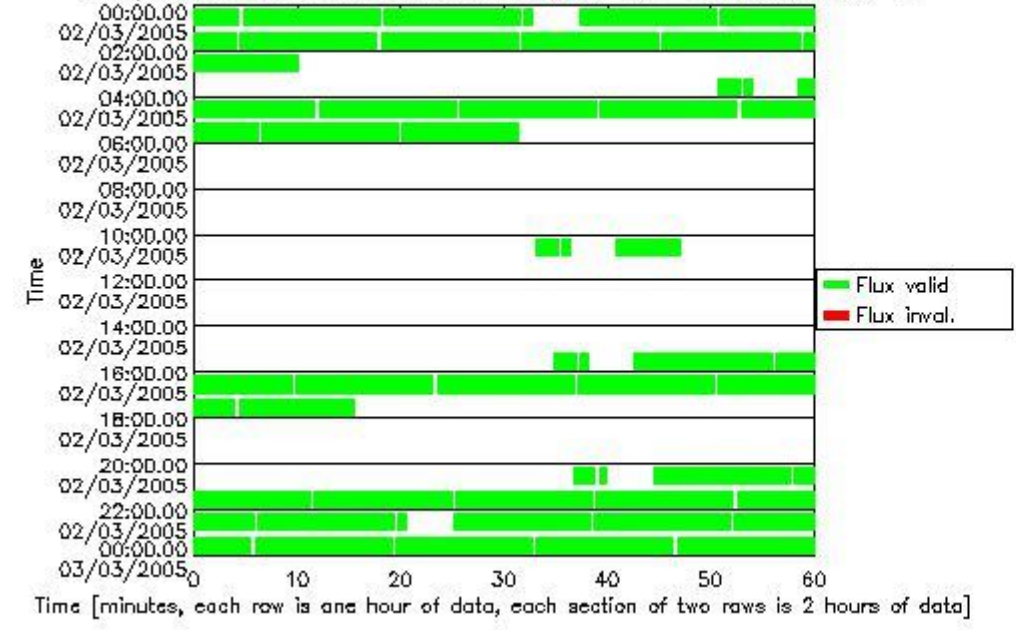




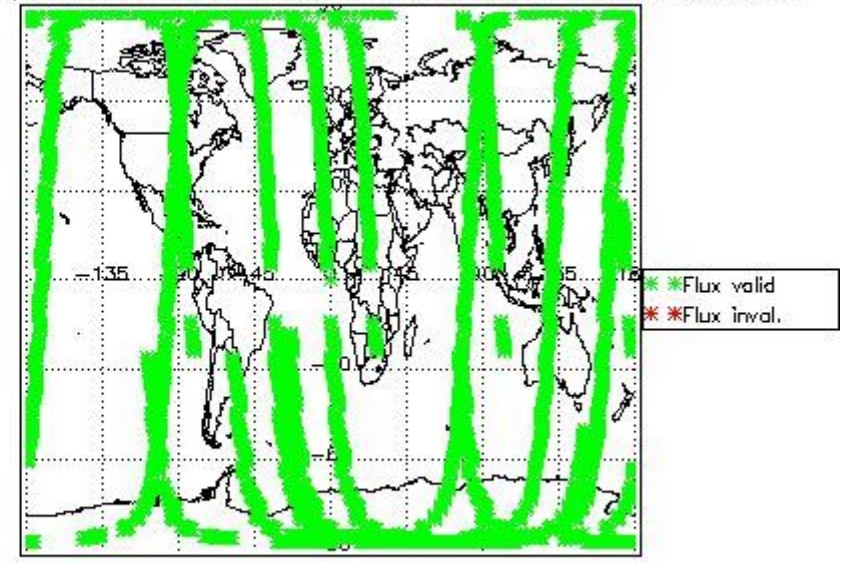




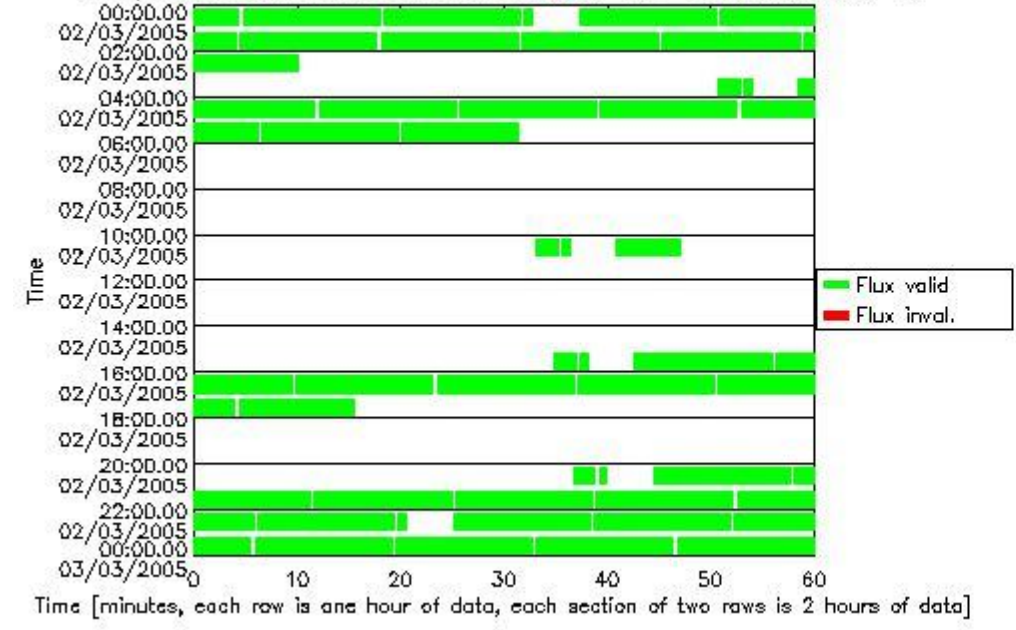
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



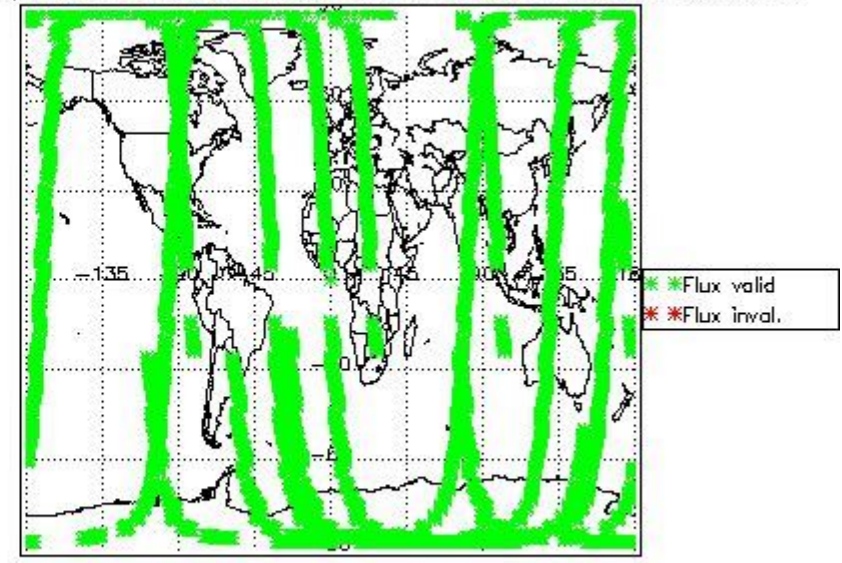
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



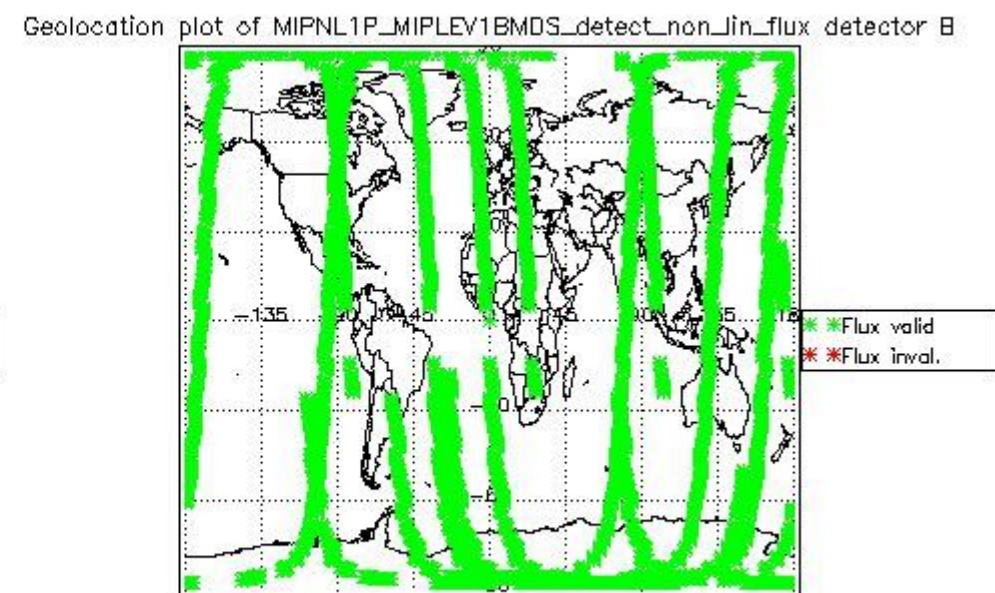
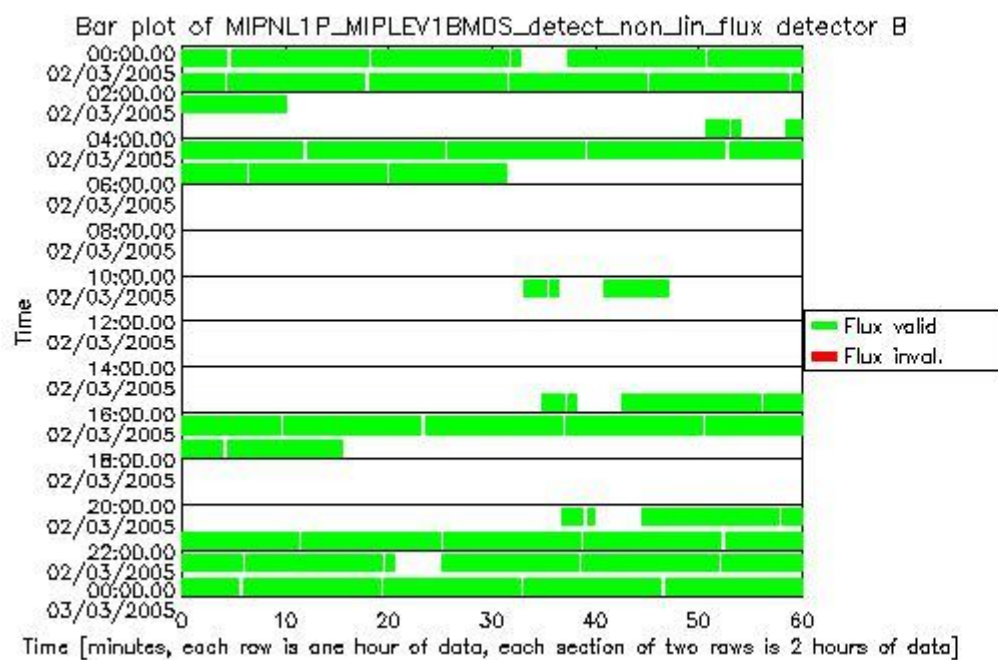
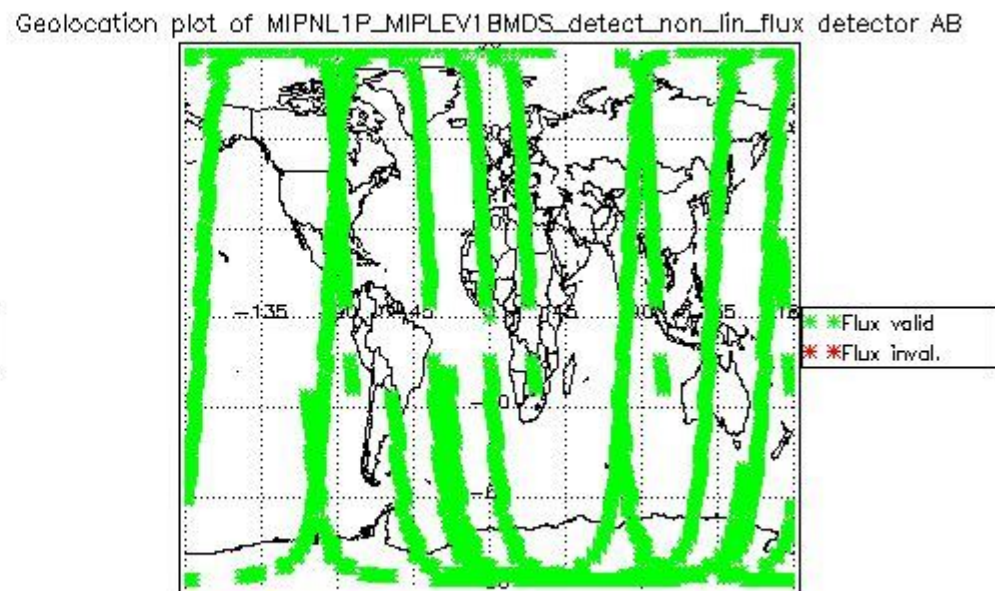
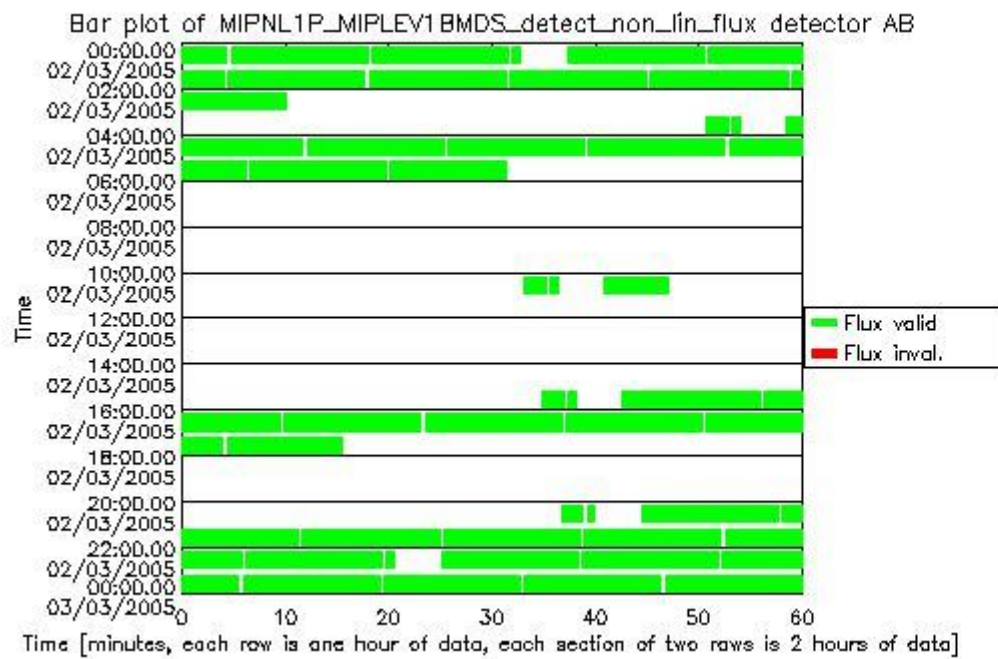
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2







### 1.2.3 Scan information ADS

The following plots each contain 100 squares. Each square contains one NESR-scan (from MIPNL1P\_SCAINFADS\_nesr\_data).

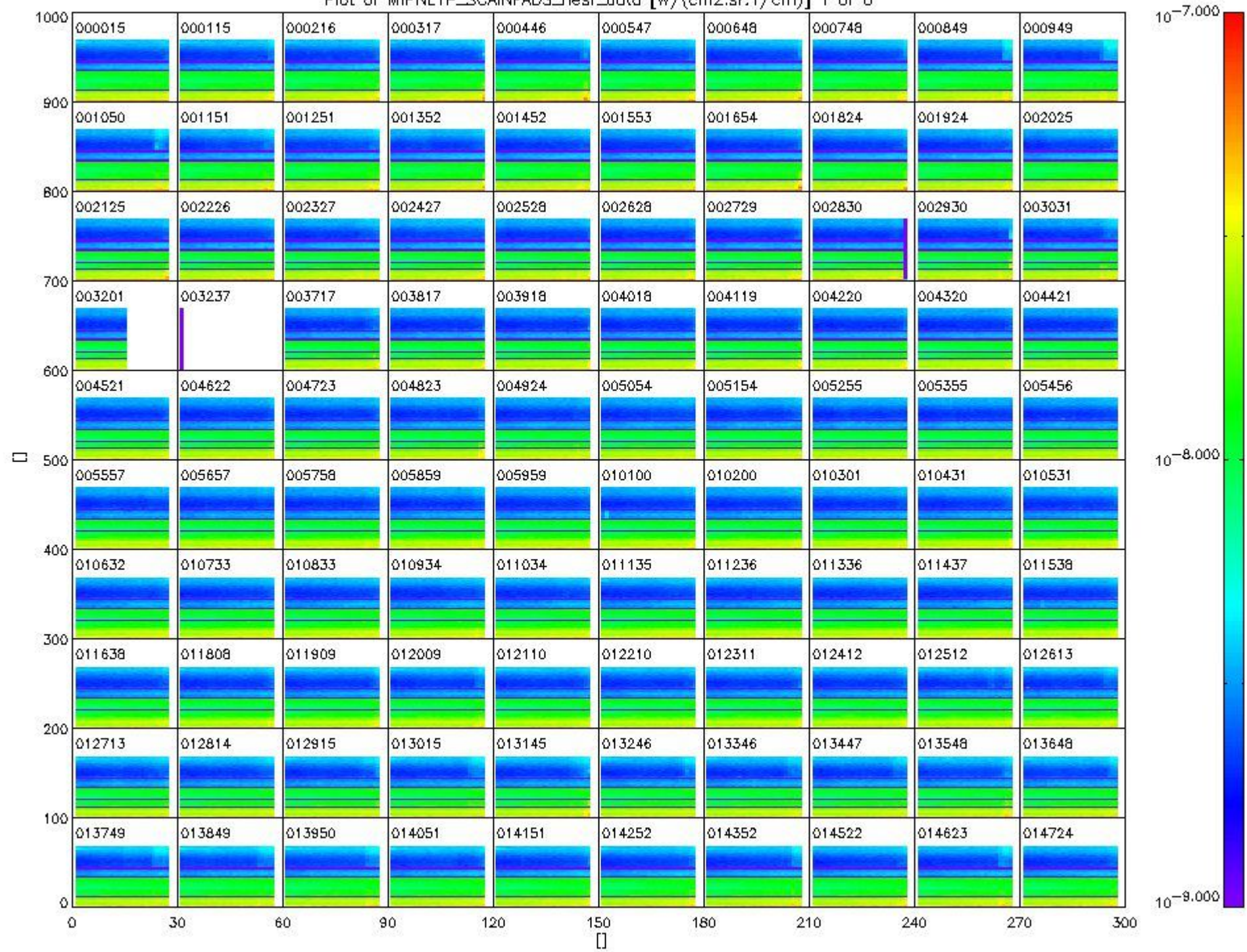
The horizontal axis represents the sweep ID (starts at 1).

The vertical axis shows the NESR data point index (starts at 0), which relates to wavenumber.

The data values themselves are indicated by colours (as indicated on the right of the plot). Please refer to the plot header for data units.



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 1 of 6

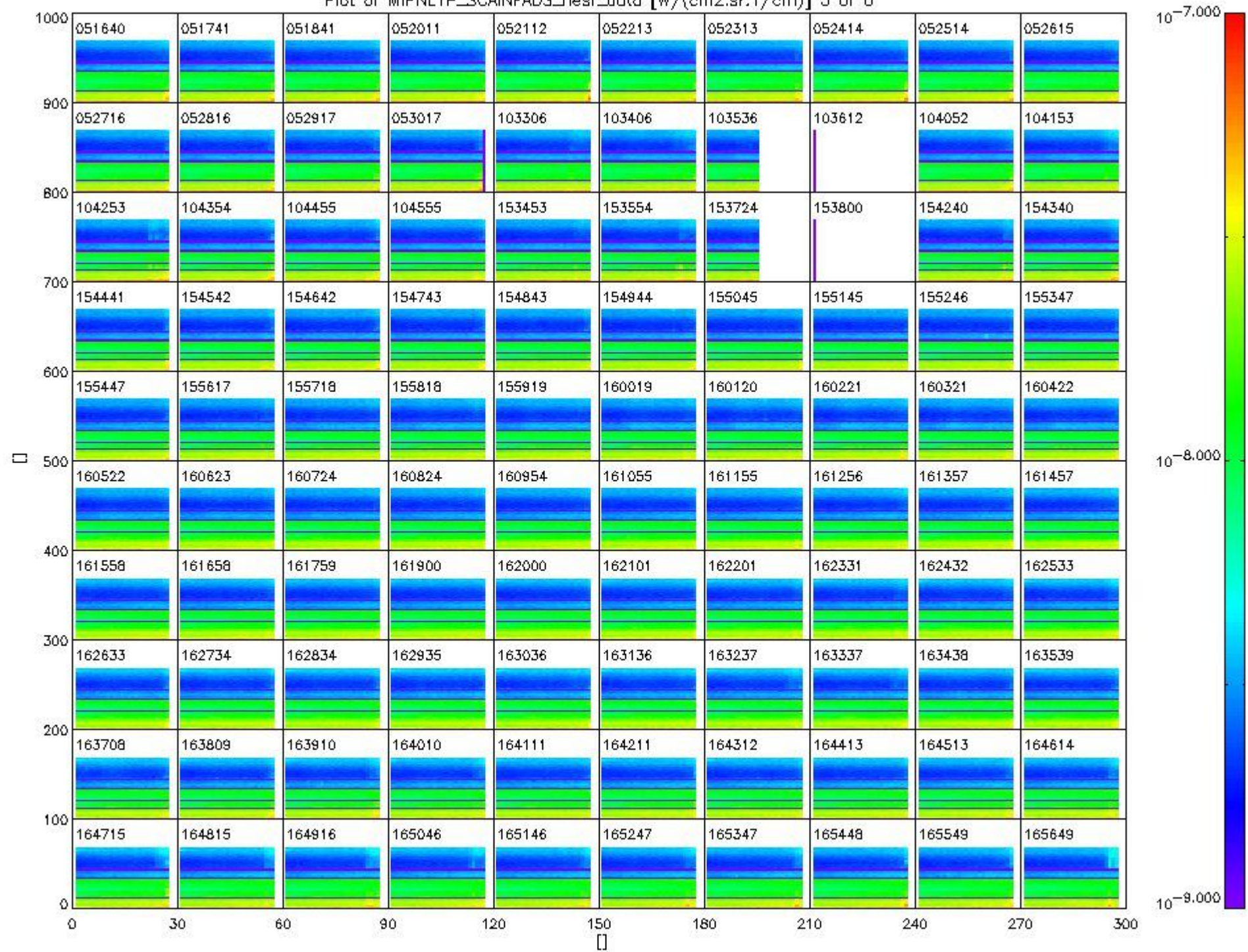






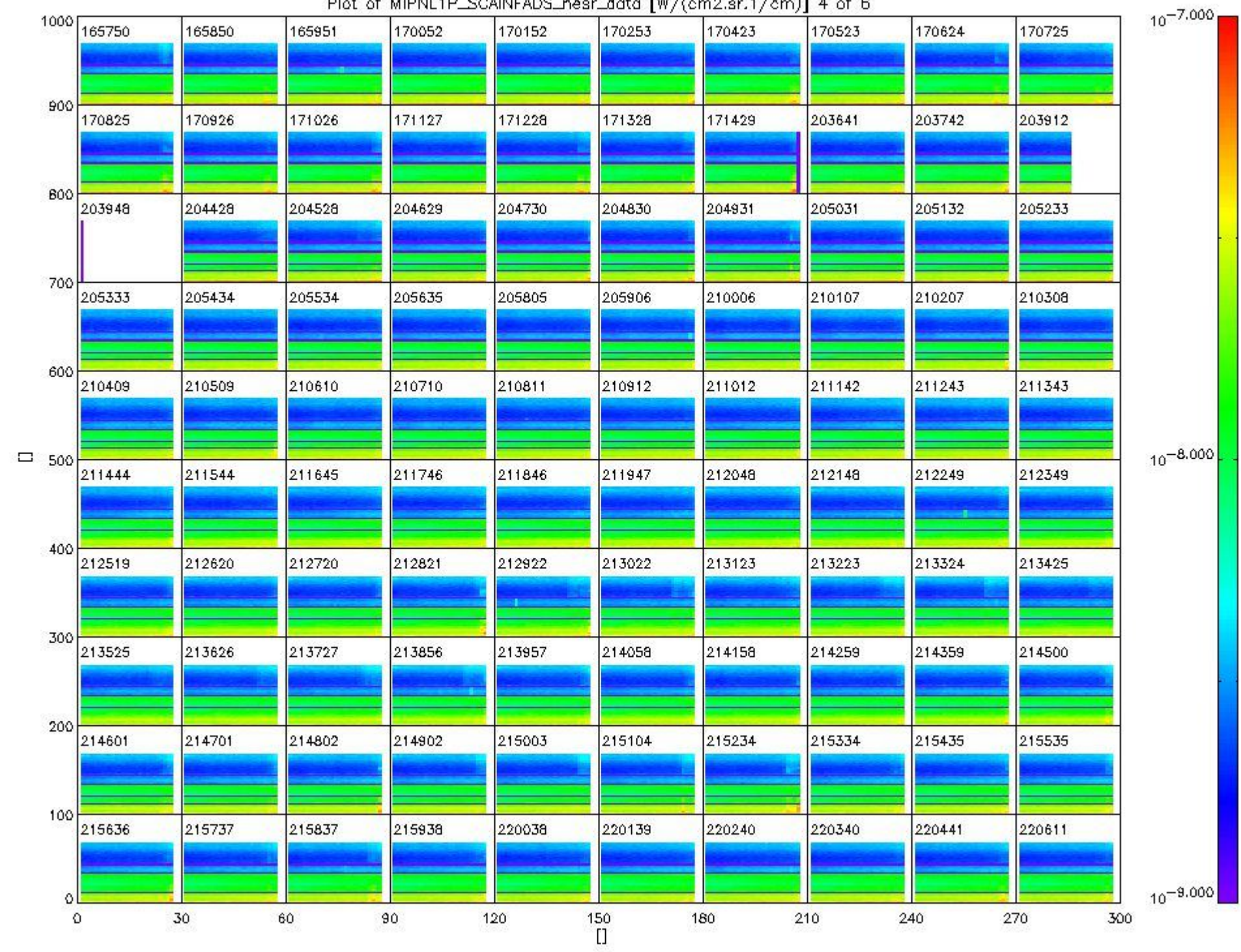


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 3 of 6



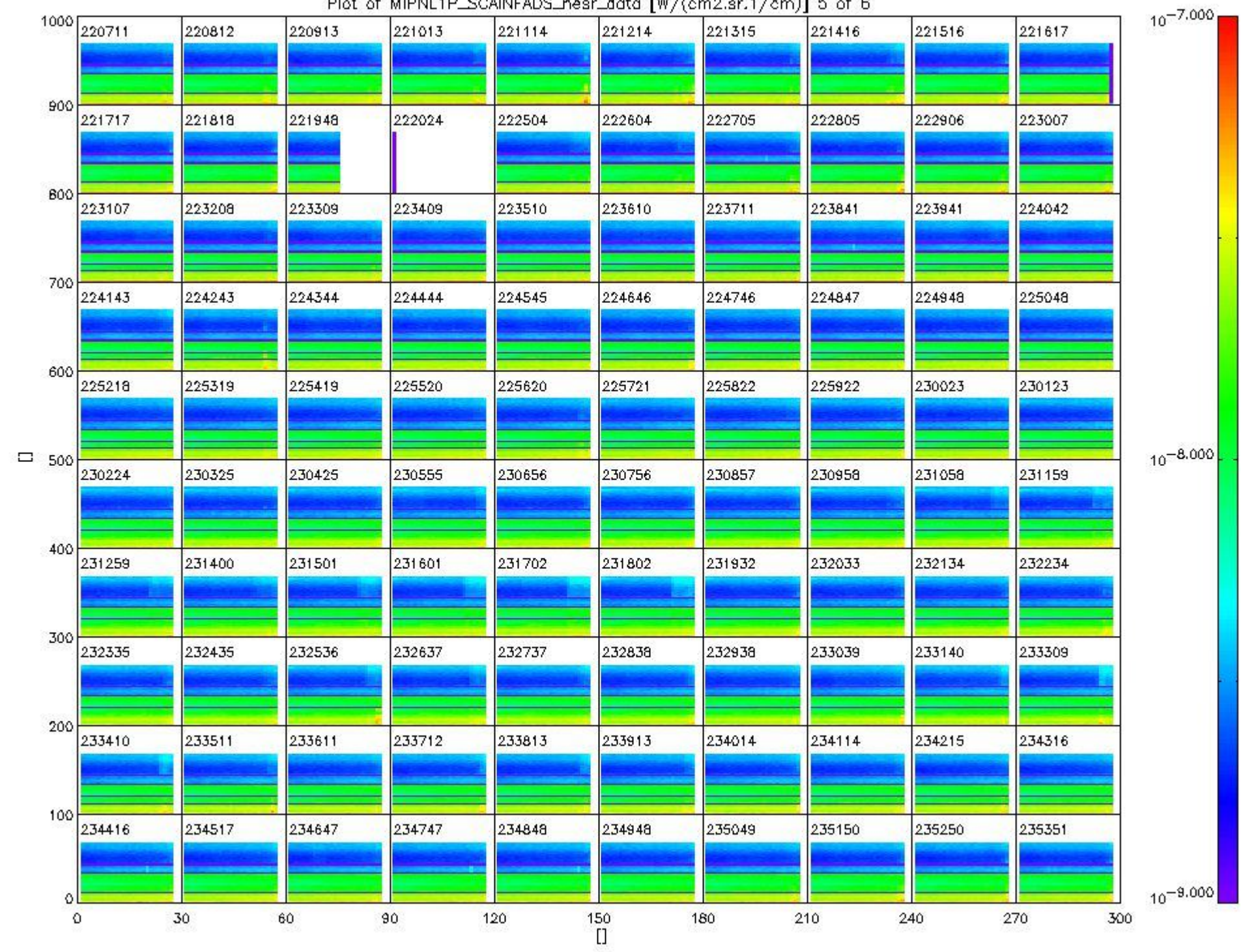


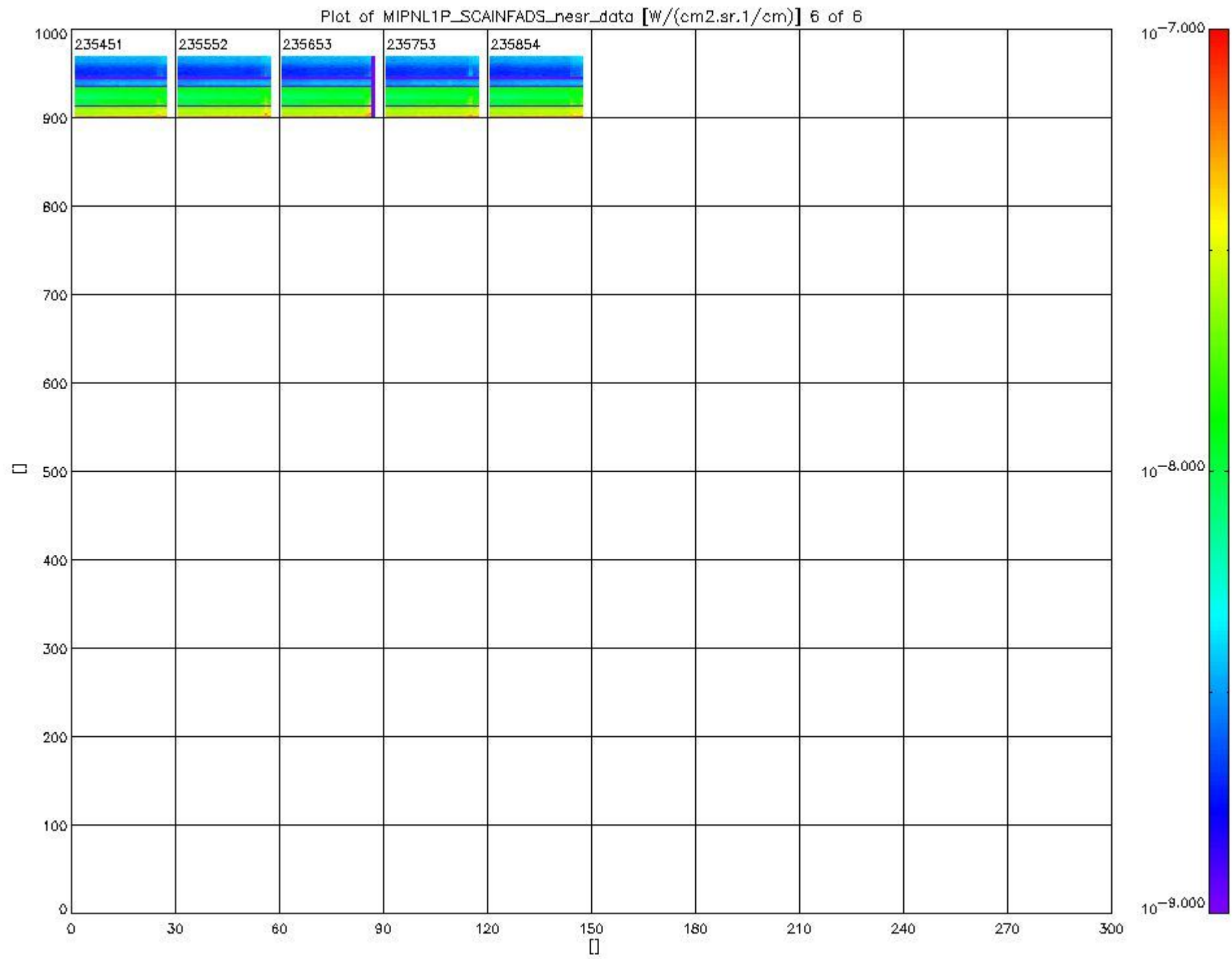
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 4 of 6





Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 5 of 6





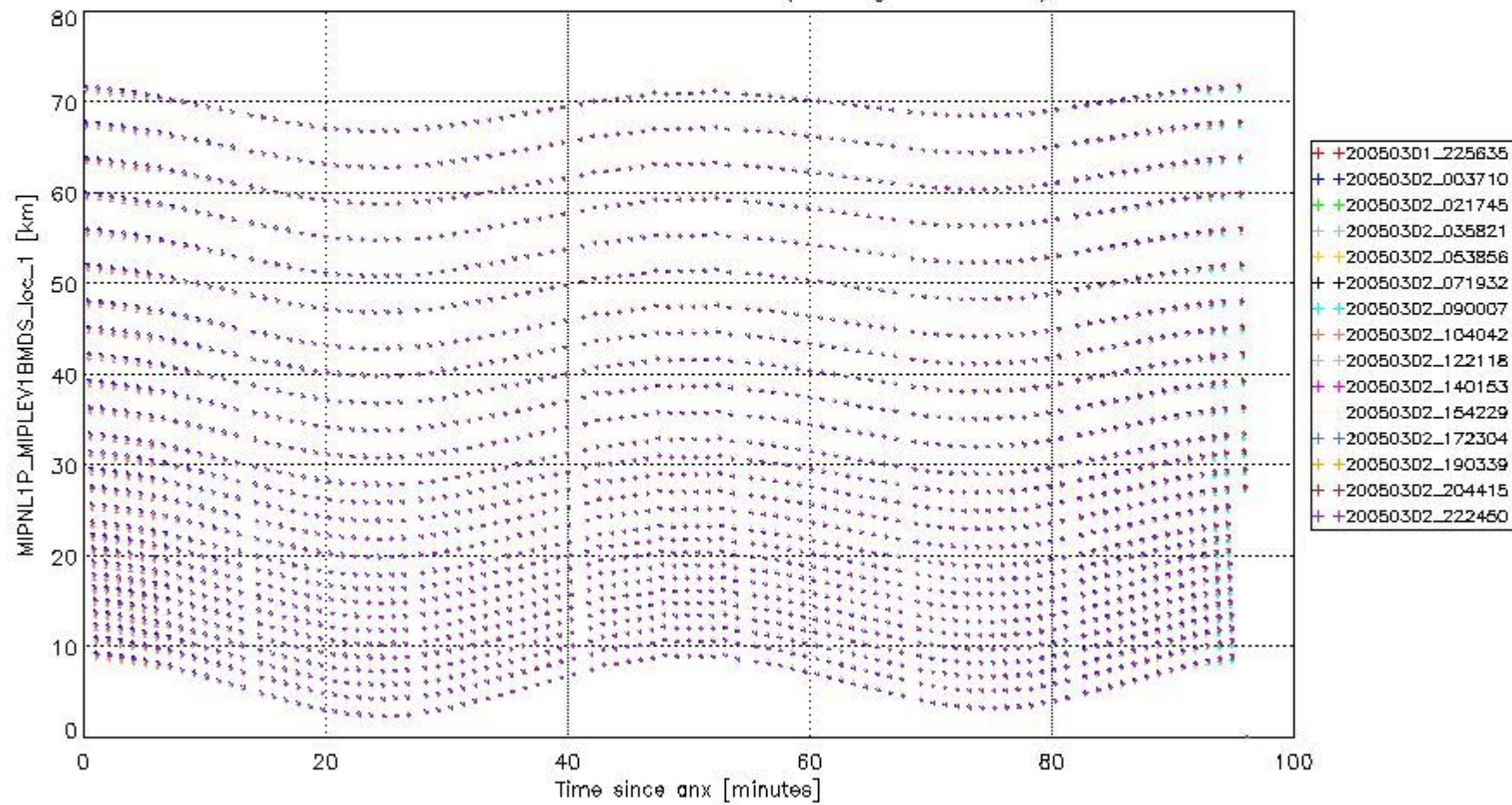
### 1.3 Physical Quality Indicators

#### 1.3.1 Tangent altitude





Plot of MIPNL1P\_MIPLEV1BMD5\_loc\_1 against relative time within orbit.  
The colours indicate distinct orbits (see legend for anx).



### 1.3.2 Cloud top height

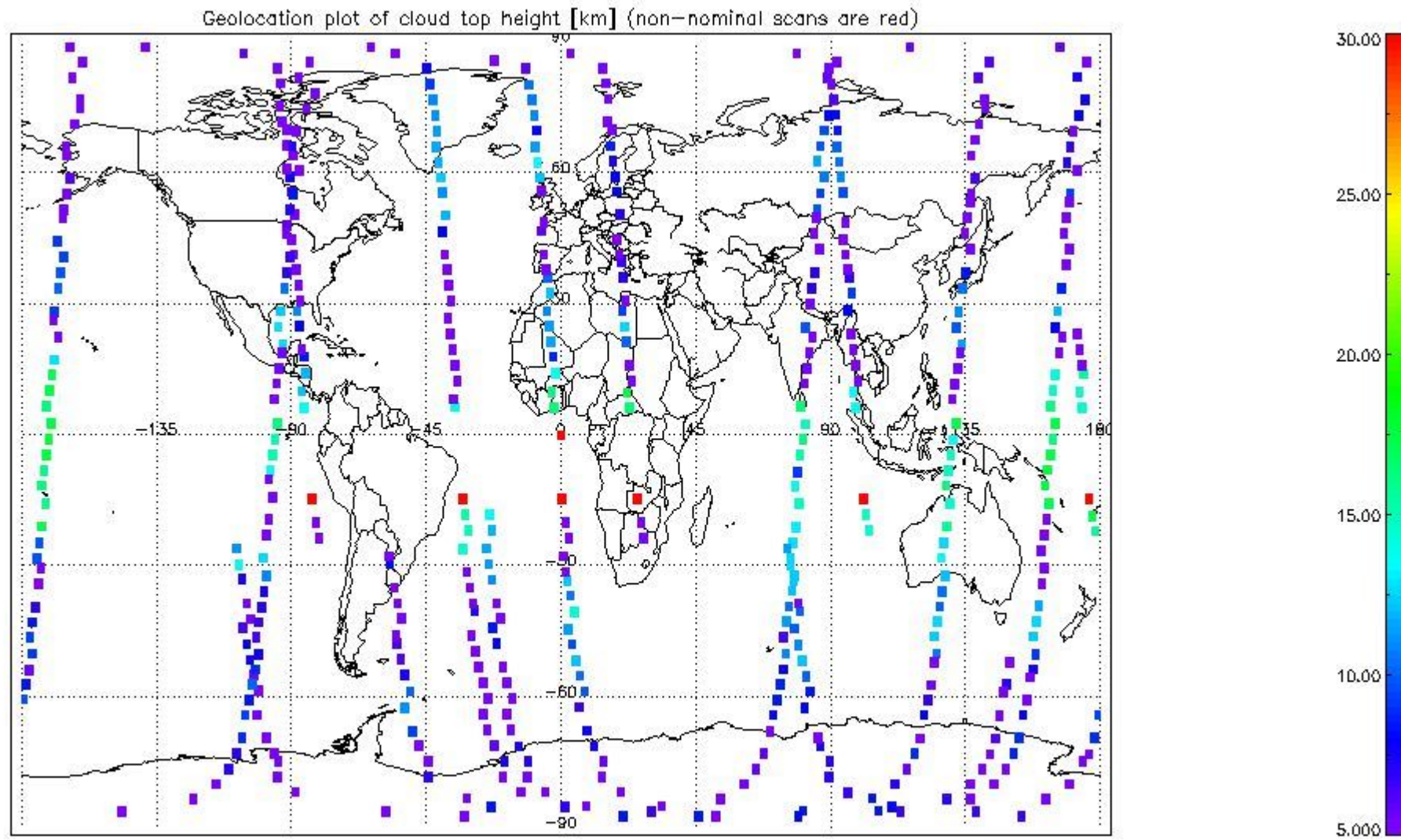
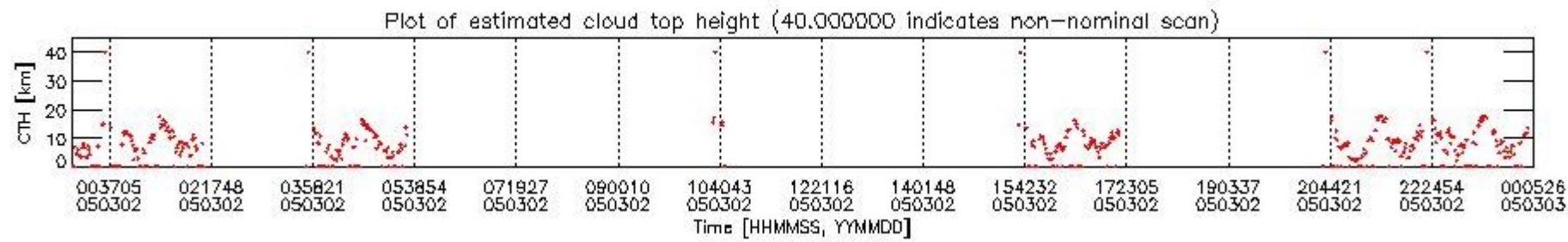
The following plots show an estimation of cloud top height, based on the ratio of two microwindows. Reference: R. Spang, J.J. Remedios and M.P. Barkley, "Colour indices for the detection and differentiation of cloud types in infra-red limb emission spectra", Adv Space Res, 33:1041-1047, (2004)

The non-nominal scans mentioned in the plots are scans that are rejected by the cloud top height algorithm for several reasons:

- Unconsidered instrument mode. The algorithm only considers nominal (39169) and special event (39172) instrument modes.
- Incomplete scan (missing sweeps)
- Special measurement modes that do not include the troposphere.

| Item                            | Value                                              |
|---------------------------------|----------------------------------------------------|
| Microwindow 1 description       | Average of band A pixels for cloud top detection 1 |
| Microwindow 2 description       | Average of band A pixels cloud top detection 2     |
| cloud index threshold (mw1/mw2) | 1.8000000                                          |
| Tangent height limit            | 40.000000                                          |



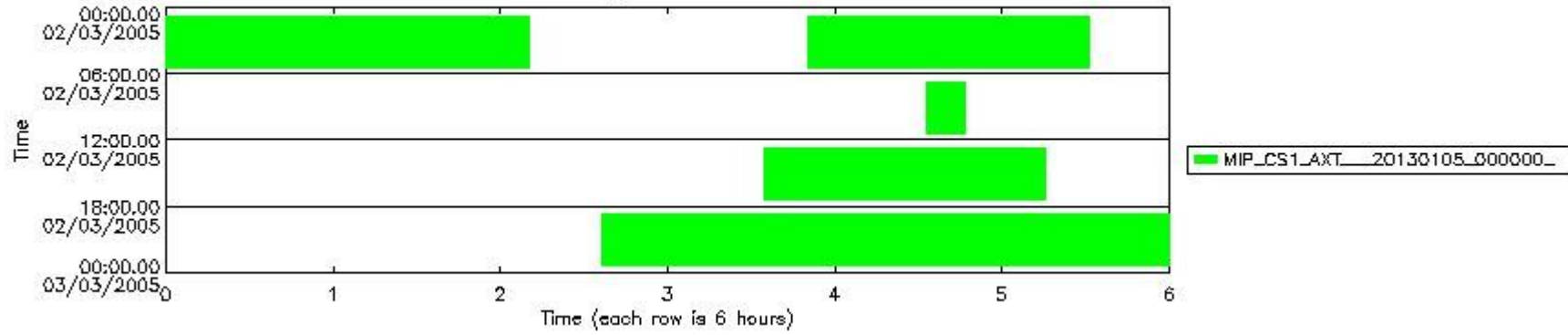


## 1.4 ADF monitoring

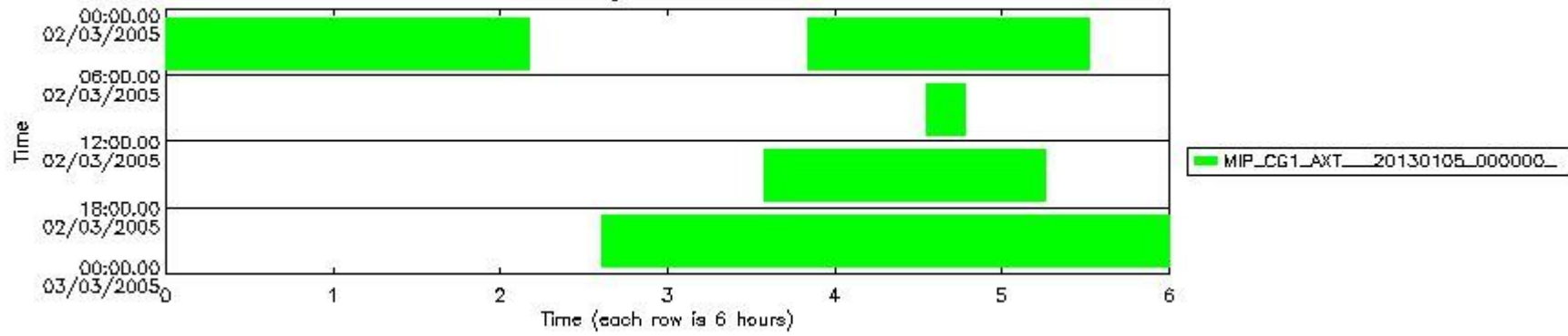
| Number | ADF                                                           |
|--------|---------------------------------------------------------------|
| 0      | AUX_FRA_AXVFOS20070125_155153_20050301_000000_20050303_000000 |
| 1      | AUX_FRA_AXVFOS20070125_155155_20050302_000000_20050304_000000 |
| 2      | DOR_VOR_AXVF-P20120424_174000_20050301_215528_20050303_002328 |
| 3      | DOR_VOR_AXVF-P20120424_174000_20050302_215528_20050304_002328 |
| 4      | MIP_CA1_AXT_20130105_000000_20050226_000000_20050326_000000   |
| 5      | MIP_CG1_AXT_20130105_000000_20050228_230000_20050328_230000   |
| 6      | MIP_CL1_AXT_20080729_075920_20020401_000000_20161214_000000   |
| 7      | MIP_CO1_AXT_20130105_000000_20050226_000000_20050326_000000   |
| 8      | MIP_CS1_AXT_20130105_000000_20050226_000000_20050326_000000   |
| 9      | MIP_MW1_AXT_20120105_091859_20020401_000000_20161214_000000   |
| 10     | MIP_PS1_AXT_20130718_100321_20040809_000000_20161214_000000   |

| Number | Product name                                                   | #CS1 | #CG1 | #CL1 | #CA1 | #CO1 | #MW1 | #PS1 | #FPO | #FRA |
|--------|----------------------------------------------------------------|------|------|------|------|------|------|------|------|------|
| 0      | MIP_NL__1PWDSI20050301_224854_000060302035_00116_15701_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 0    |
| 1      | MIP_NL__1PWDSI20050302_002930_000060302035_00117_15702_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 2      | MIP_NL__1PWDSI20050302_035042_000060302035_00119_15704_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 3      | MIP_NL__1PWDSI20050302_103306_000008242035_00123_15708_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 4      | MIP_NL__1PWDSI20050302_153453_000060302035_00126_15711_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 5      | MIP_NL__1PWDSI20050302_203641_000060302035_00129_15714_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 6      | MIP_NL__1PWDSI20050302_221717_000060302035_00130_15715_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 3    | 1    |
| 7      | MIP_NL__1PWDSI20050302_235753_000060302035_00131_15716_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 3    | 1    |

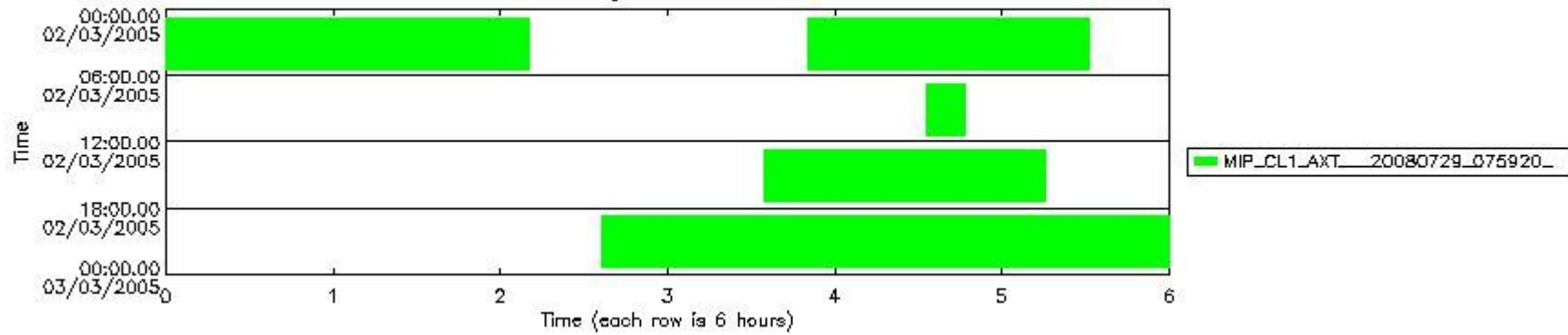
Bar plot of ADFs used for ILS&SPECTRAL CAL FILE.  
See legend for details.



Bar plot of ADFs used for GAIN CALIBRATION FILE.  
See legend for details.

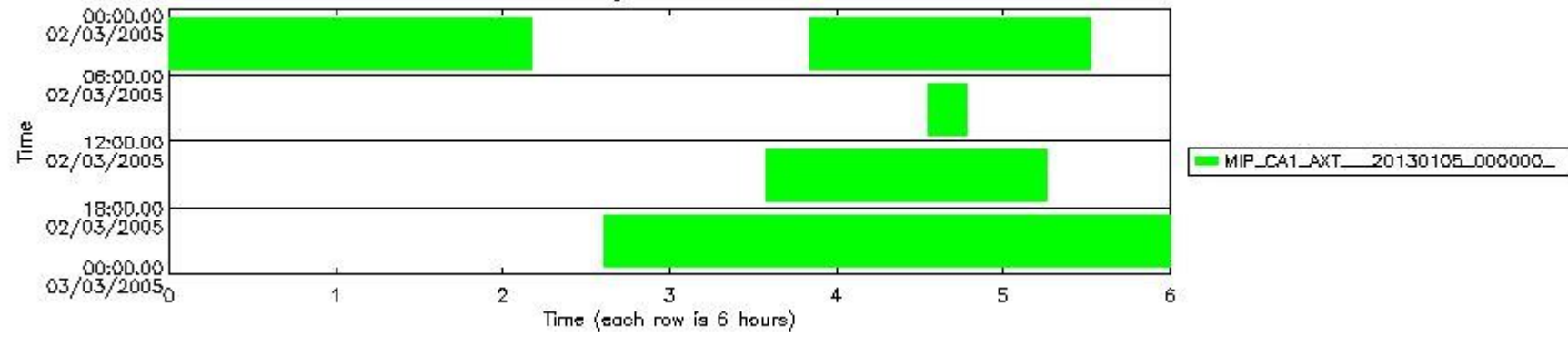


Bar plot of ADFs used for LINE OF SIGHT FILE.  
See legend for details.

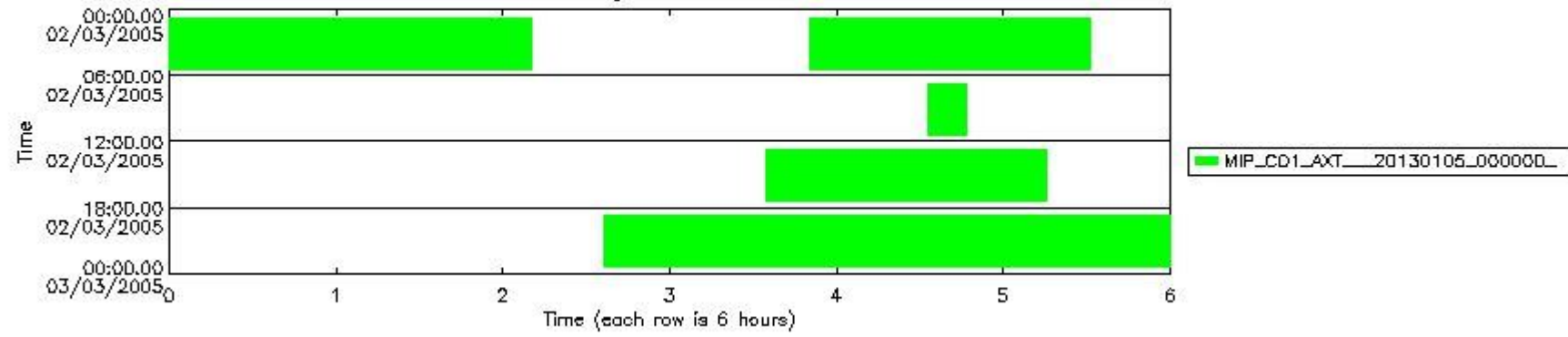




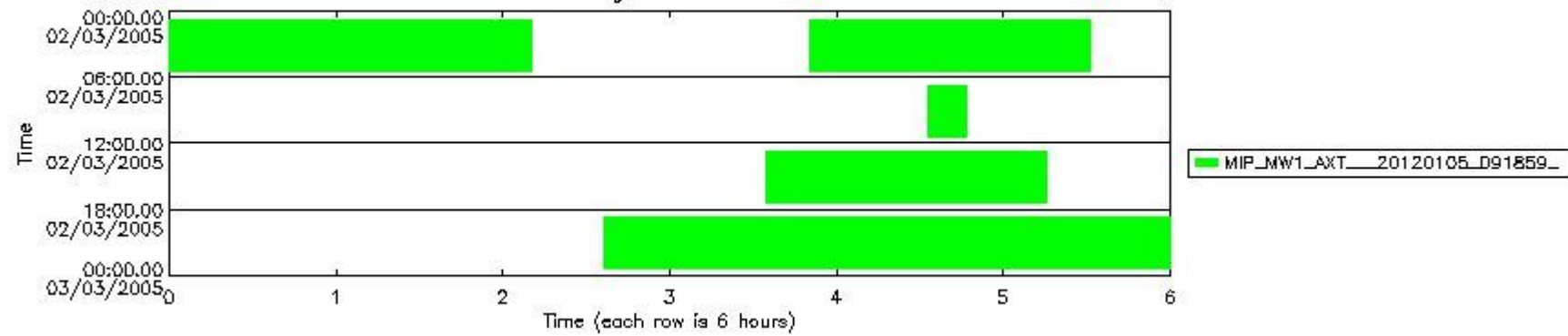
Bar plot of ADFs used for INSTRUMENT CHAR FILE.  
See legend for details.



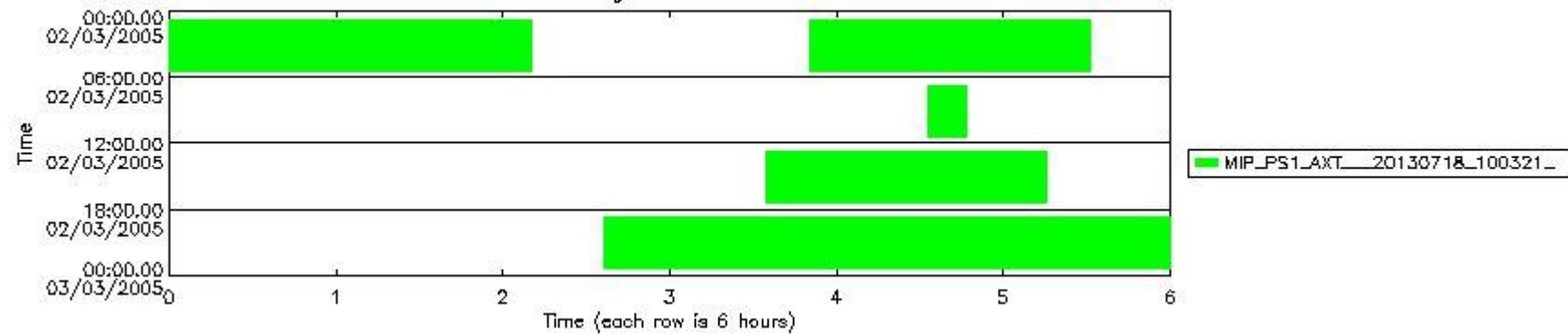
Bar plot of ADFs used for OFFSET VALIDATION FILE.  
See legend for details.



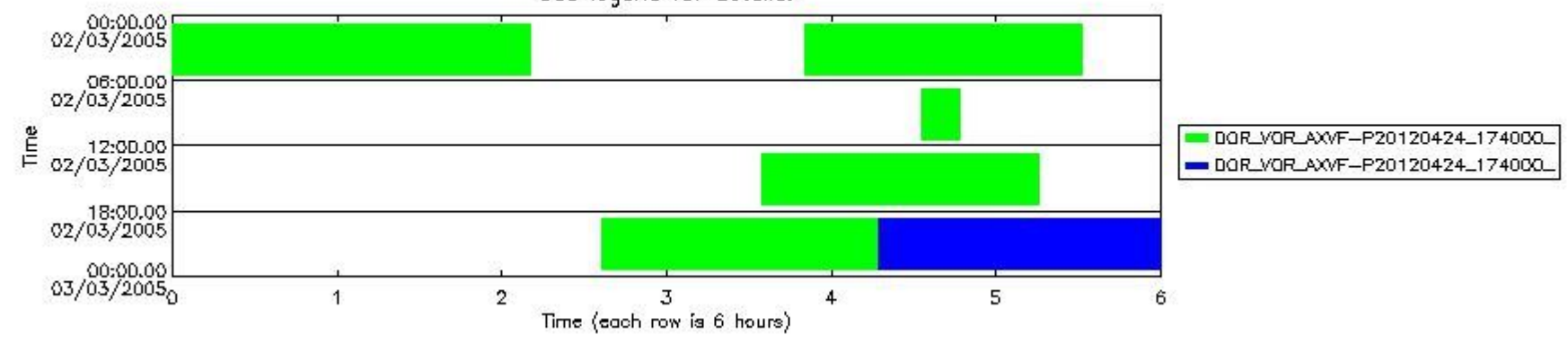
Bar plot of ADFs used for MICROWINDOWS FILE.  
See legend for details.



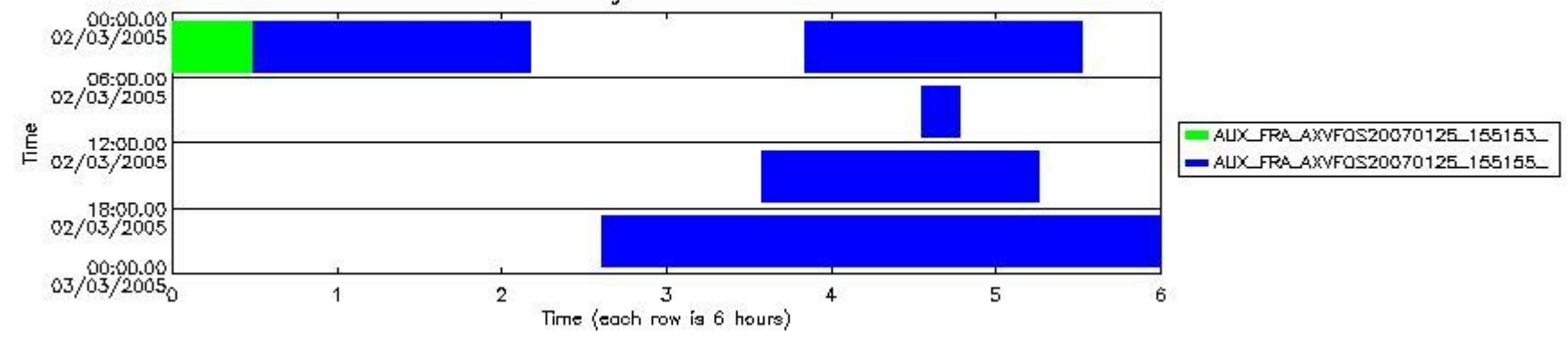
Bar plot of ADFs used for PROCESS PARAMETERS FILE.  
See legend for details.



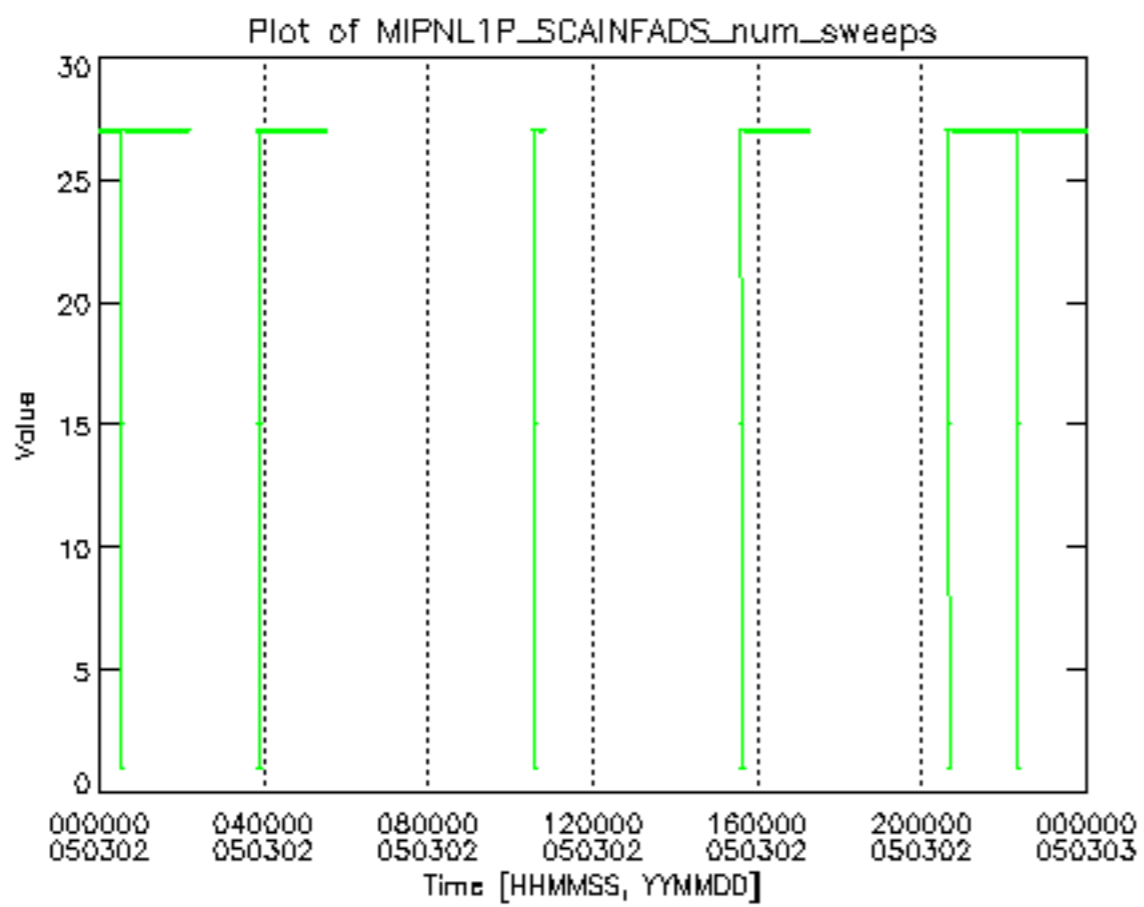
Bar plot of ADFs used for ORBIT DATA FILE.  
See legend for details.



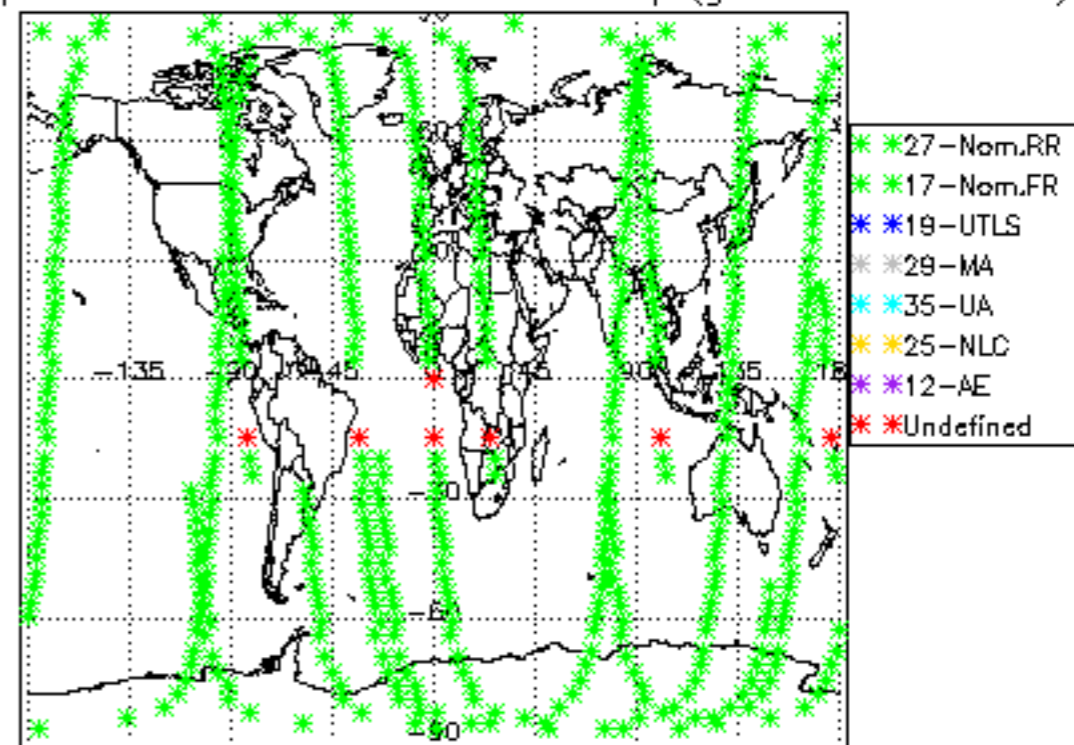
Bar plot of ADFs used for RESTITUTED ATTITUDE FILE.  
See legend for details.

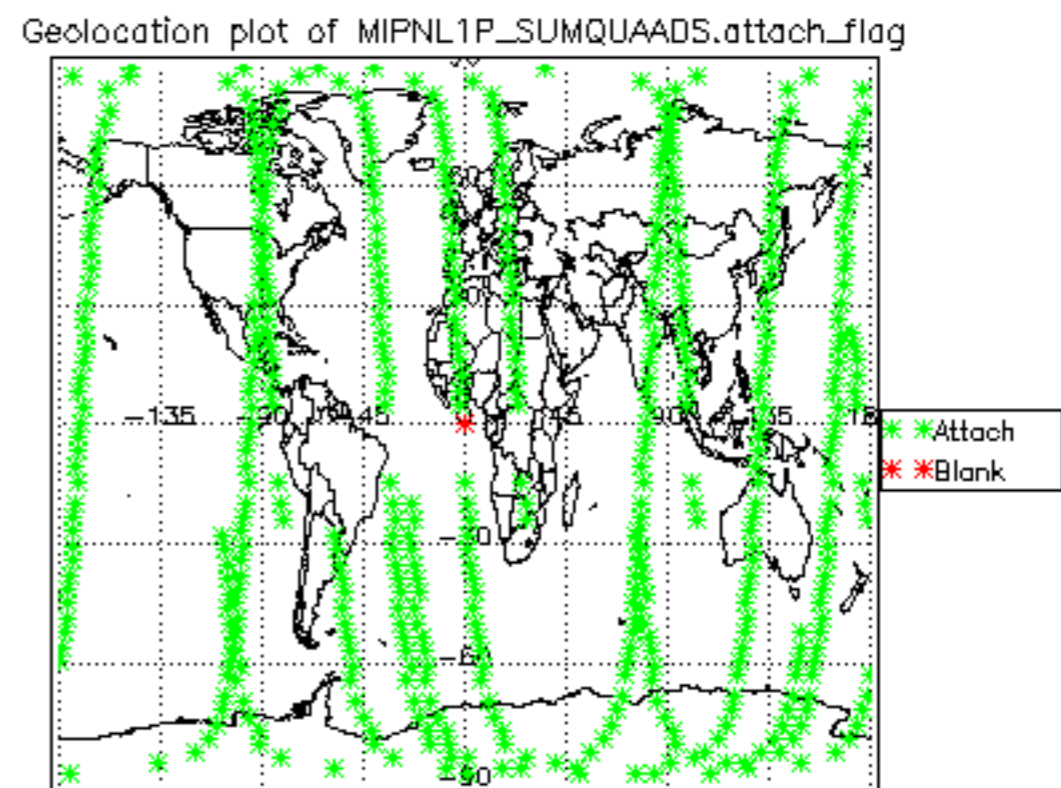
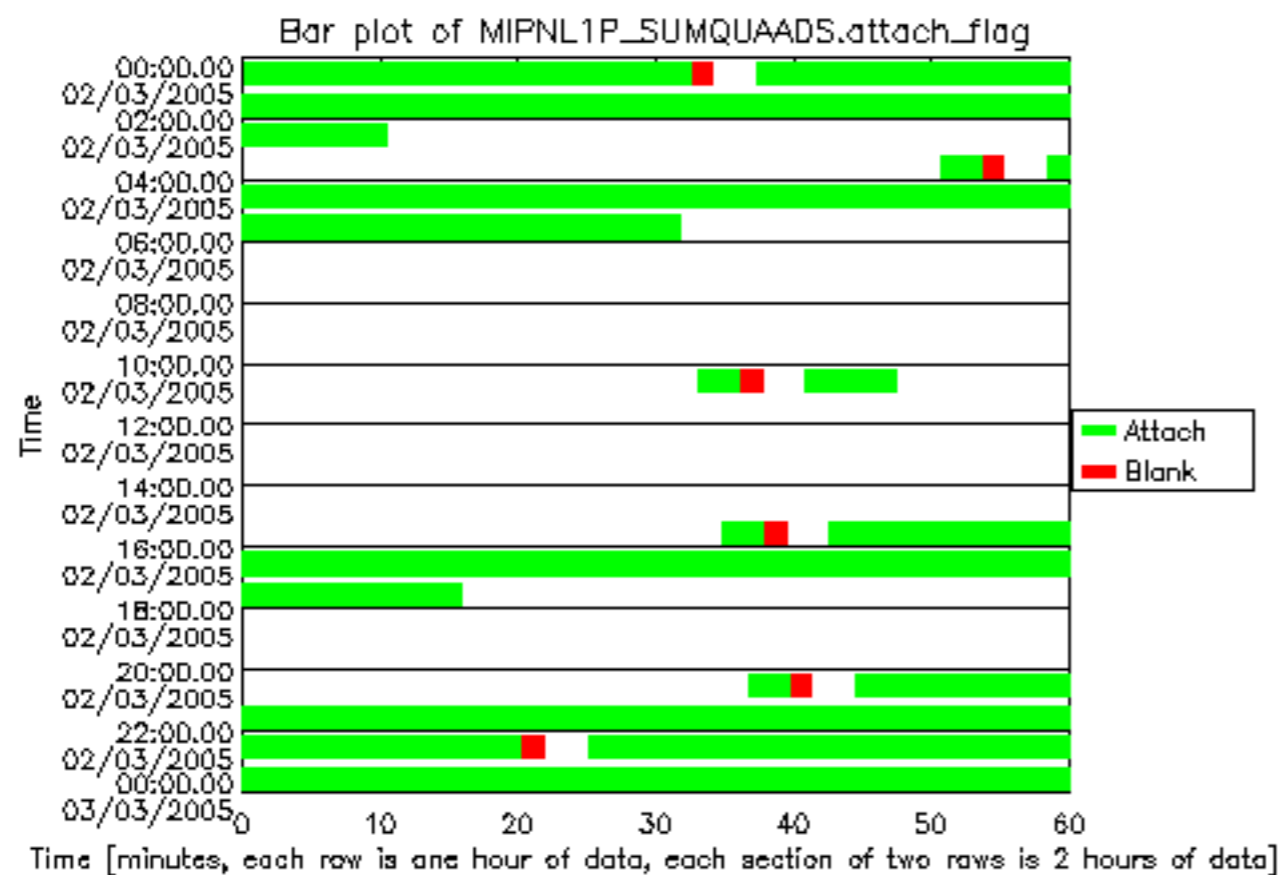




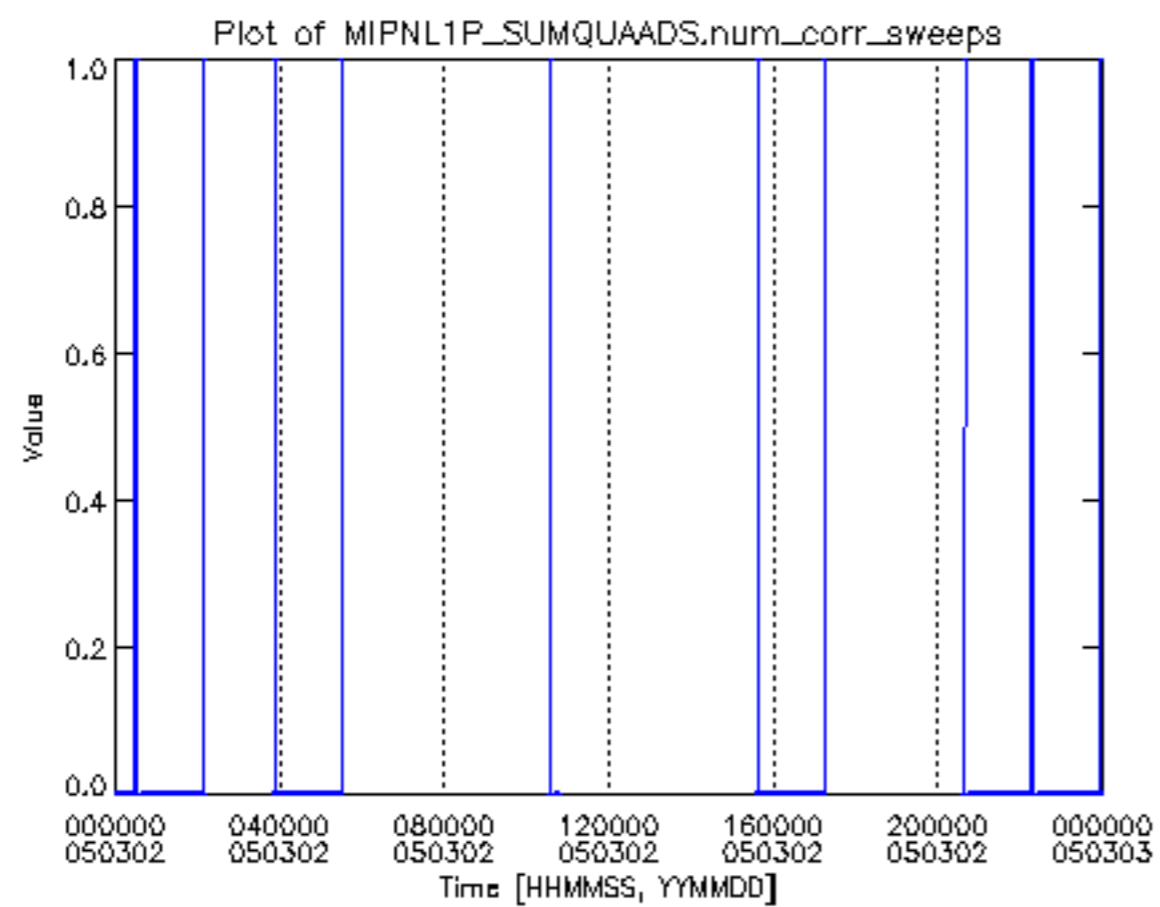


Geolocation plot of MIPNL1P\_SCAINFADS\_num\_sweeps (green color=0 errors)

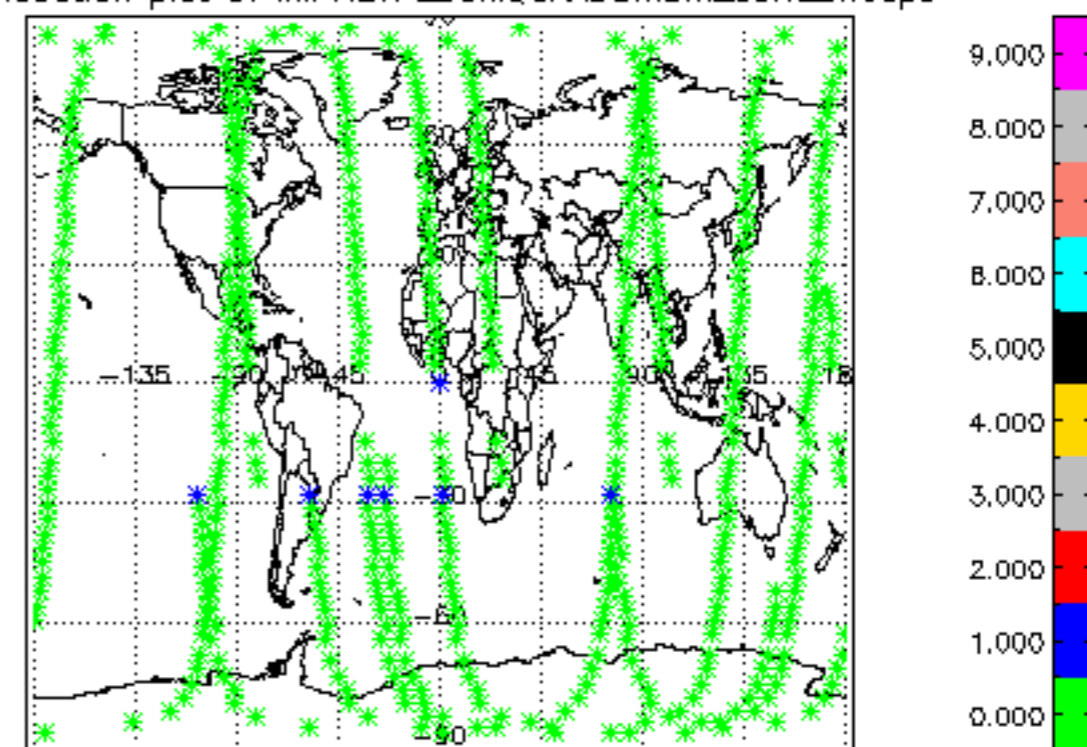


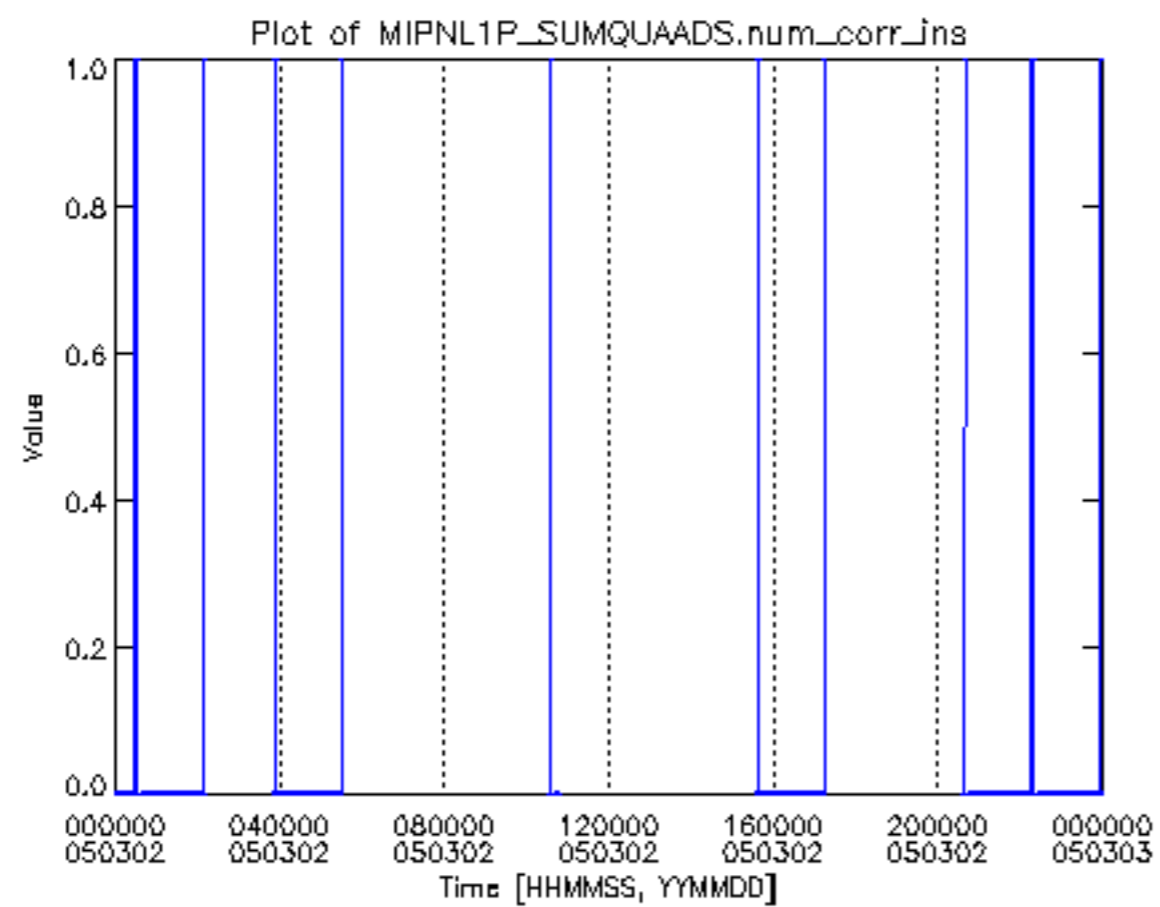




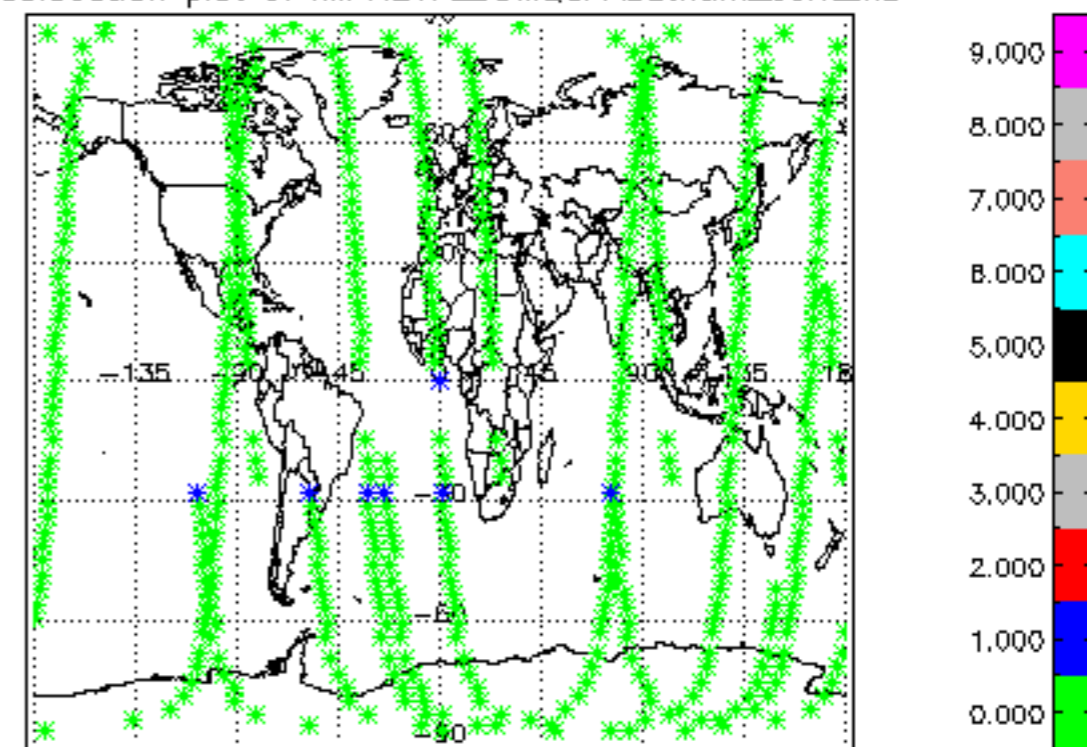


Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_sweeps

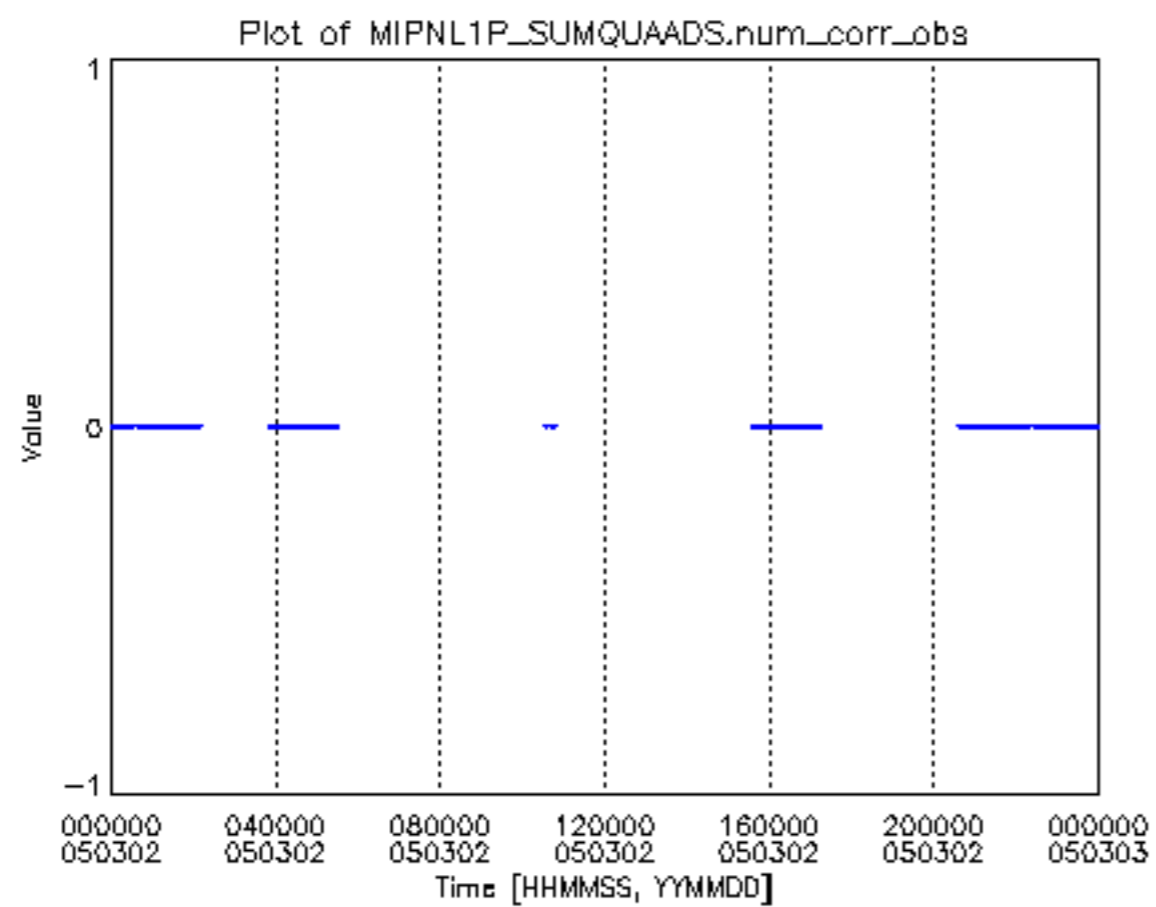




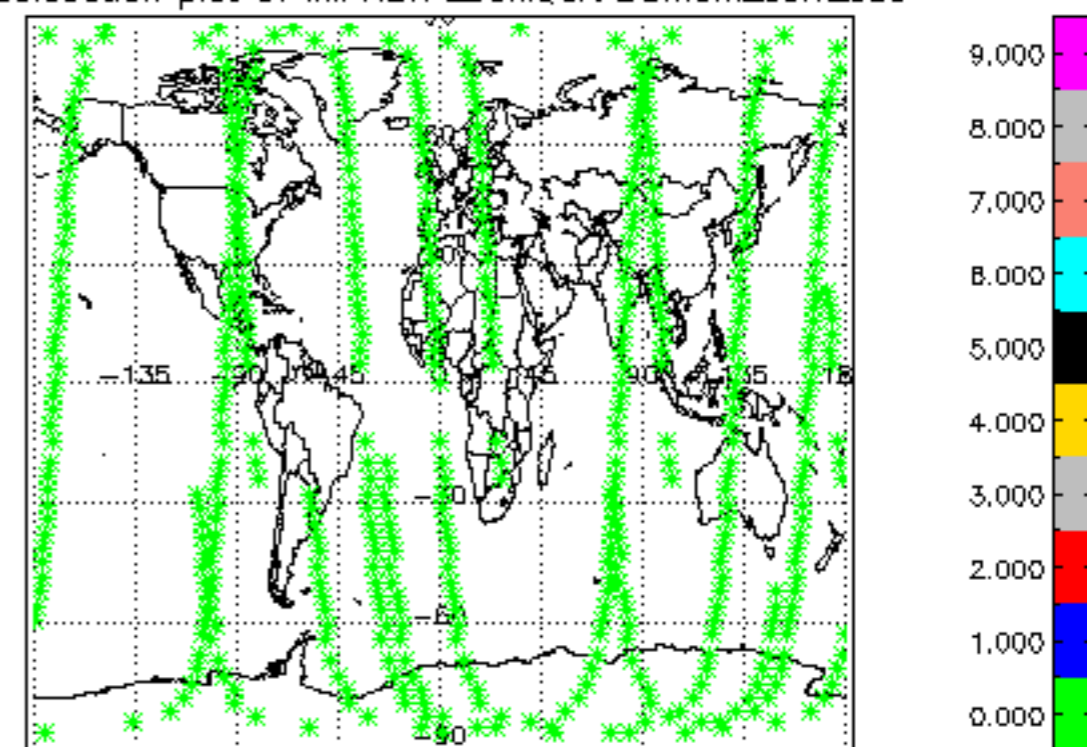
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_ins

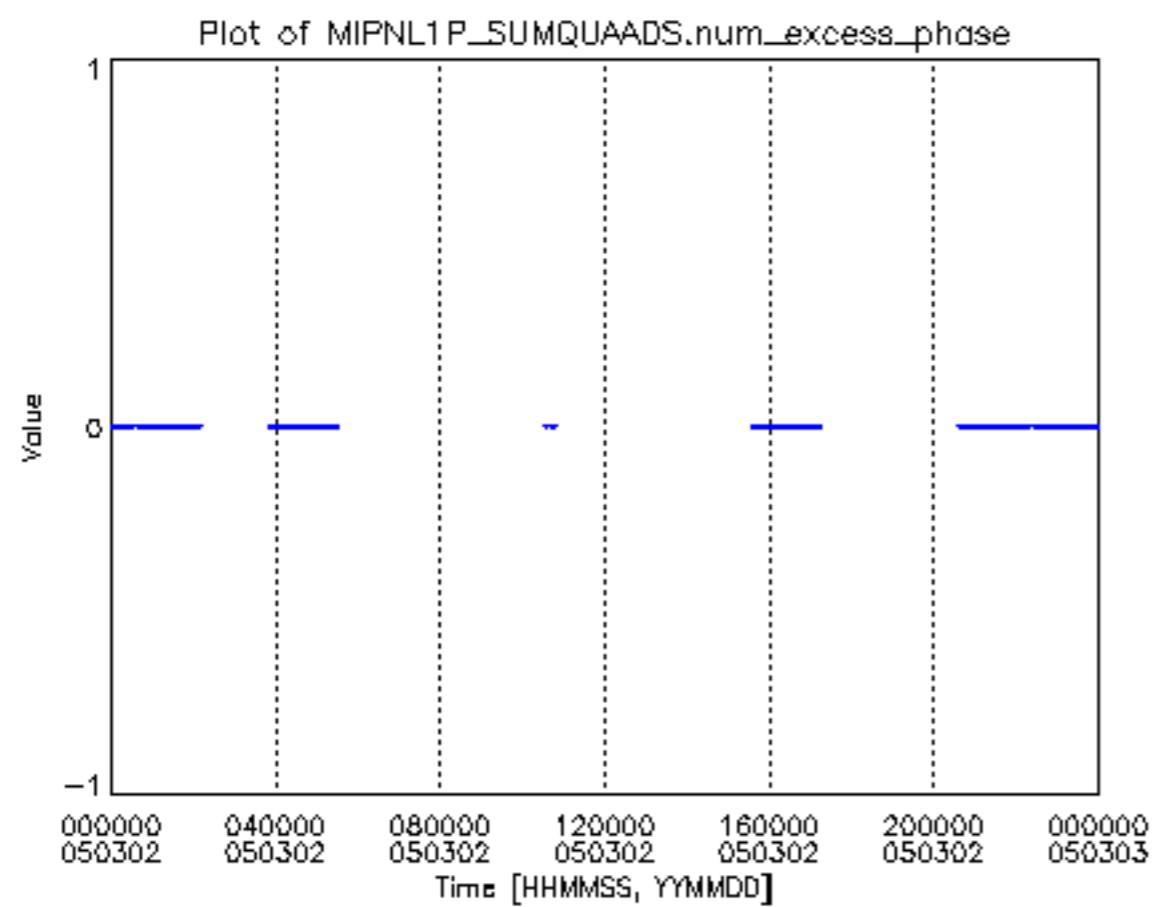




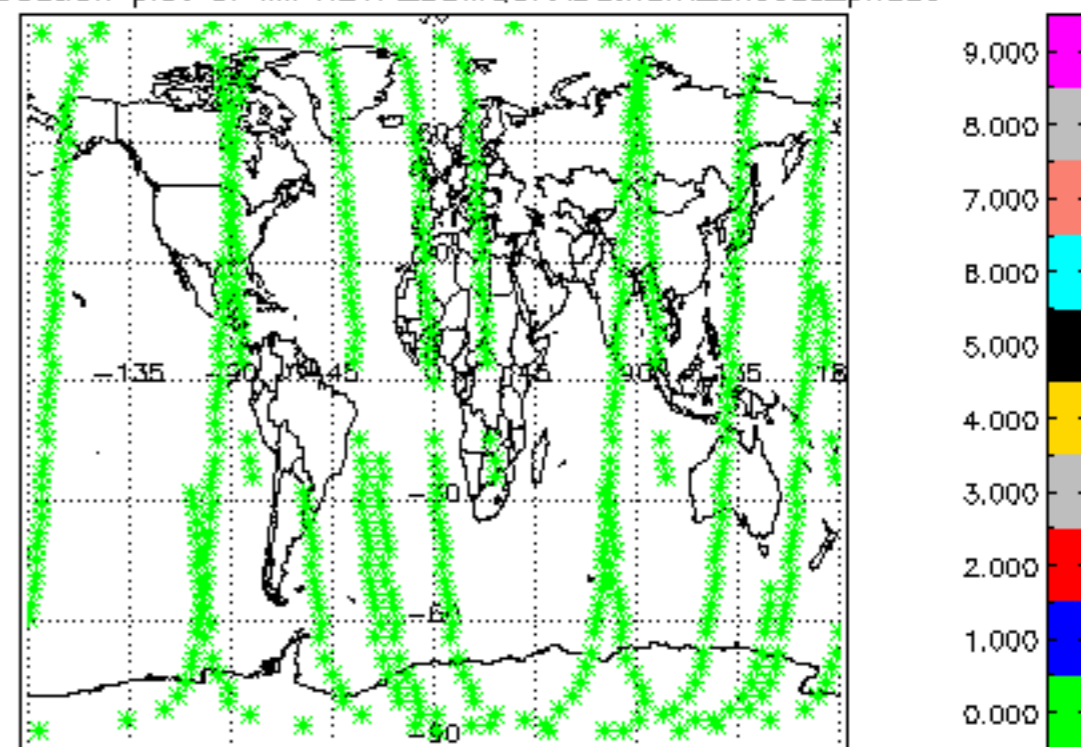


Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_obs

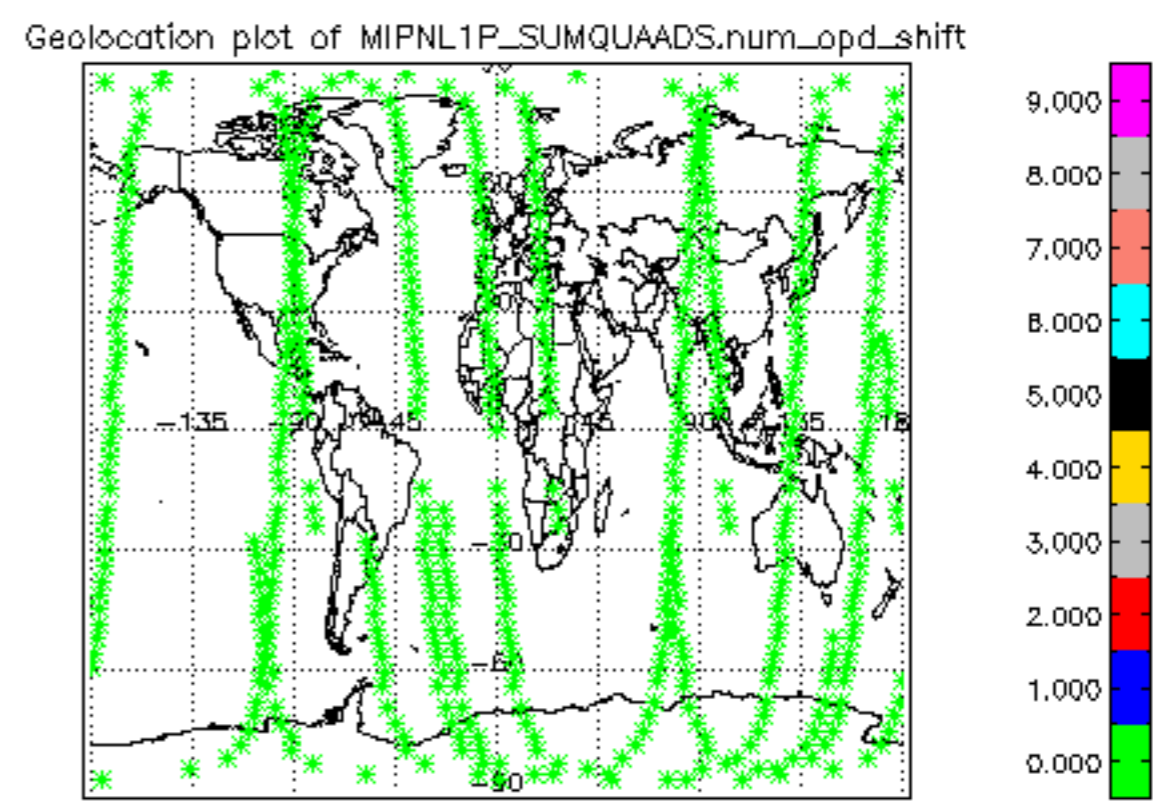
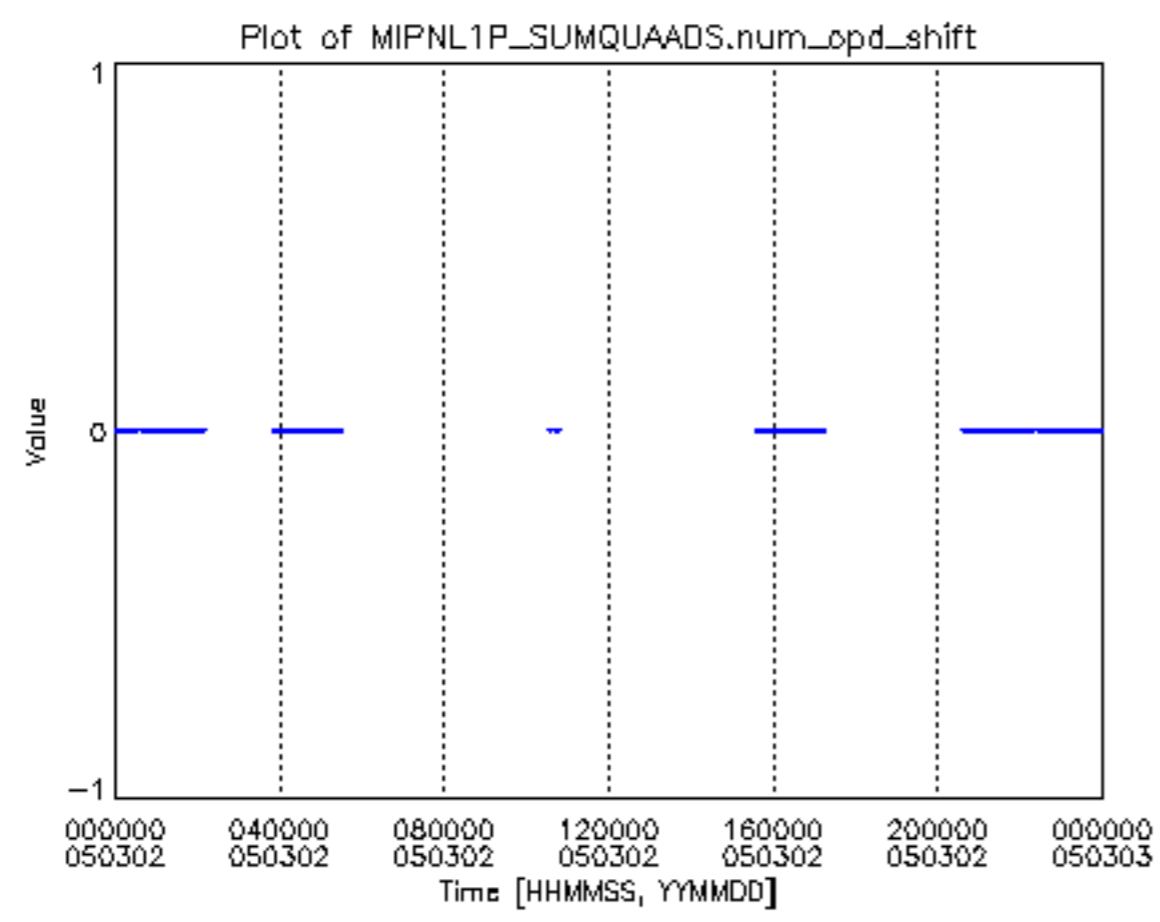


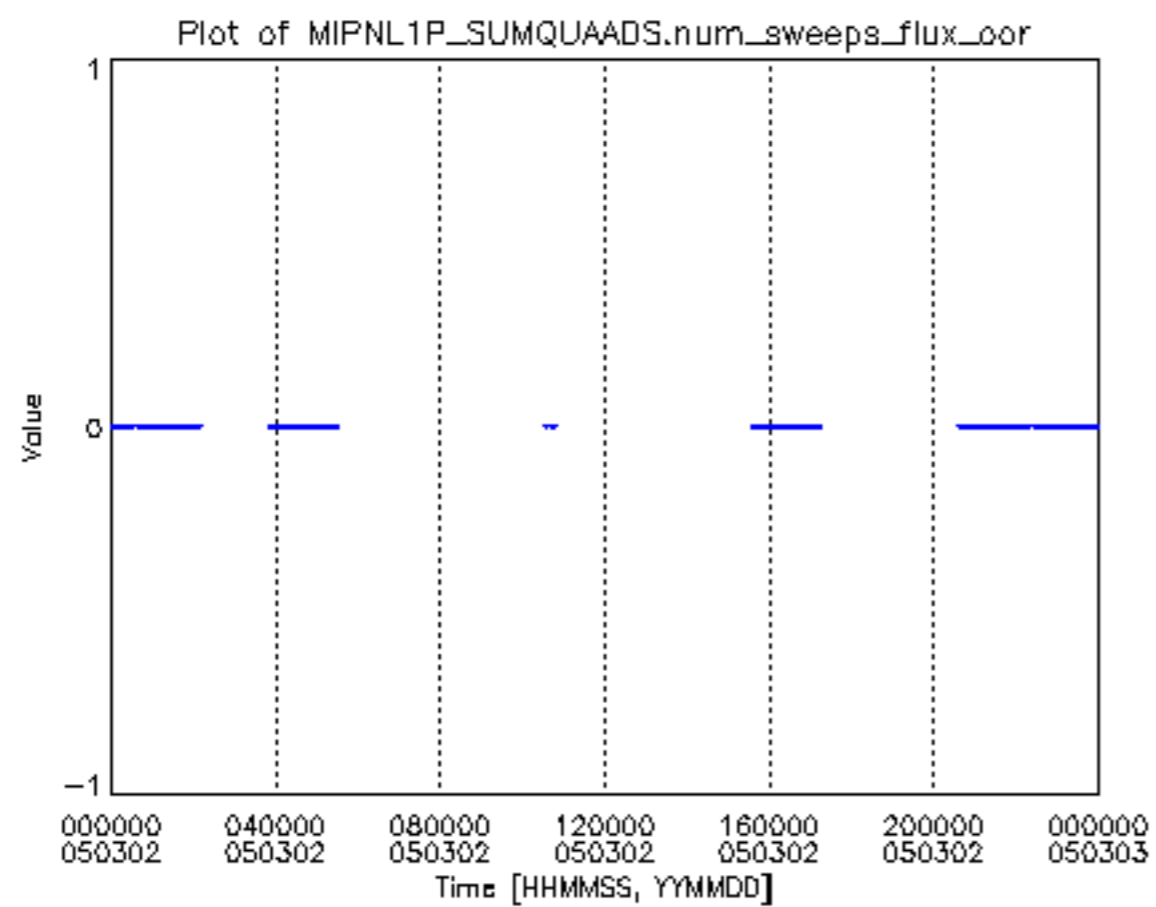


Geolocation plot of MIPNL1P\_SUMQUAADS.num\_excess\_phase

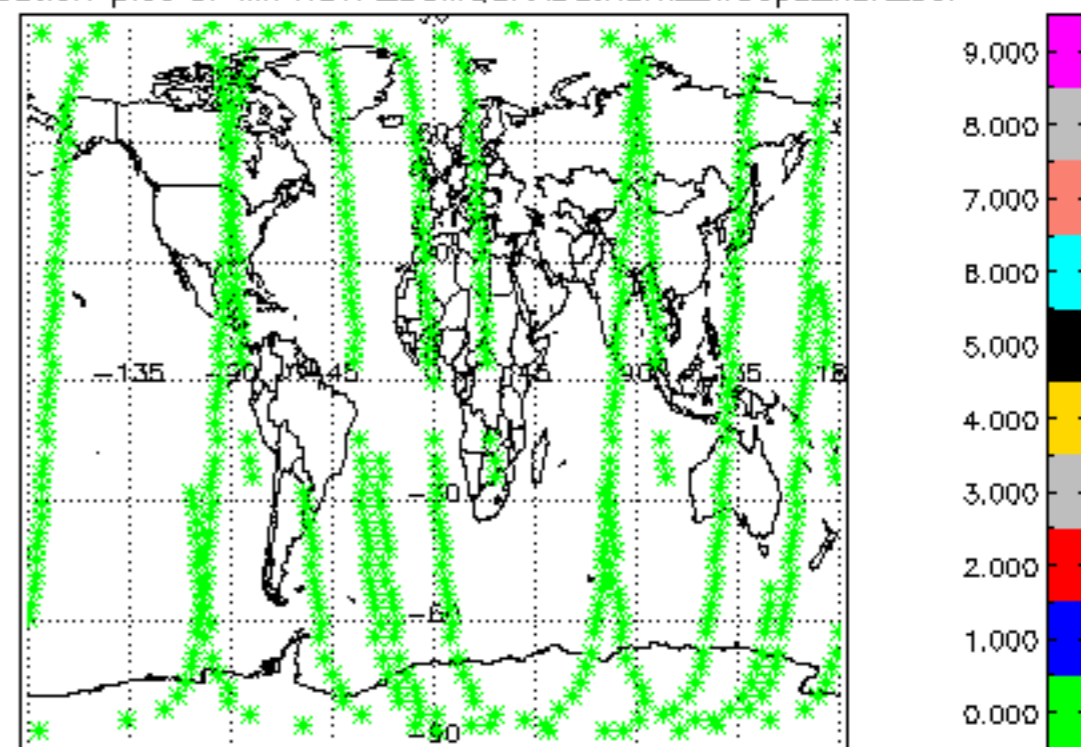




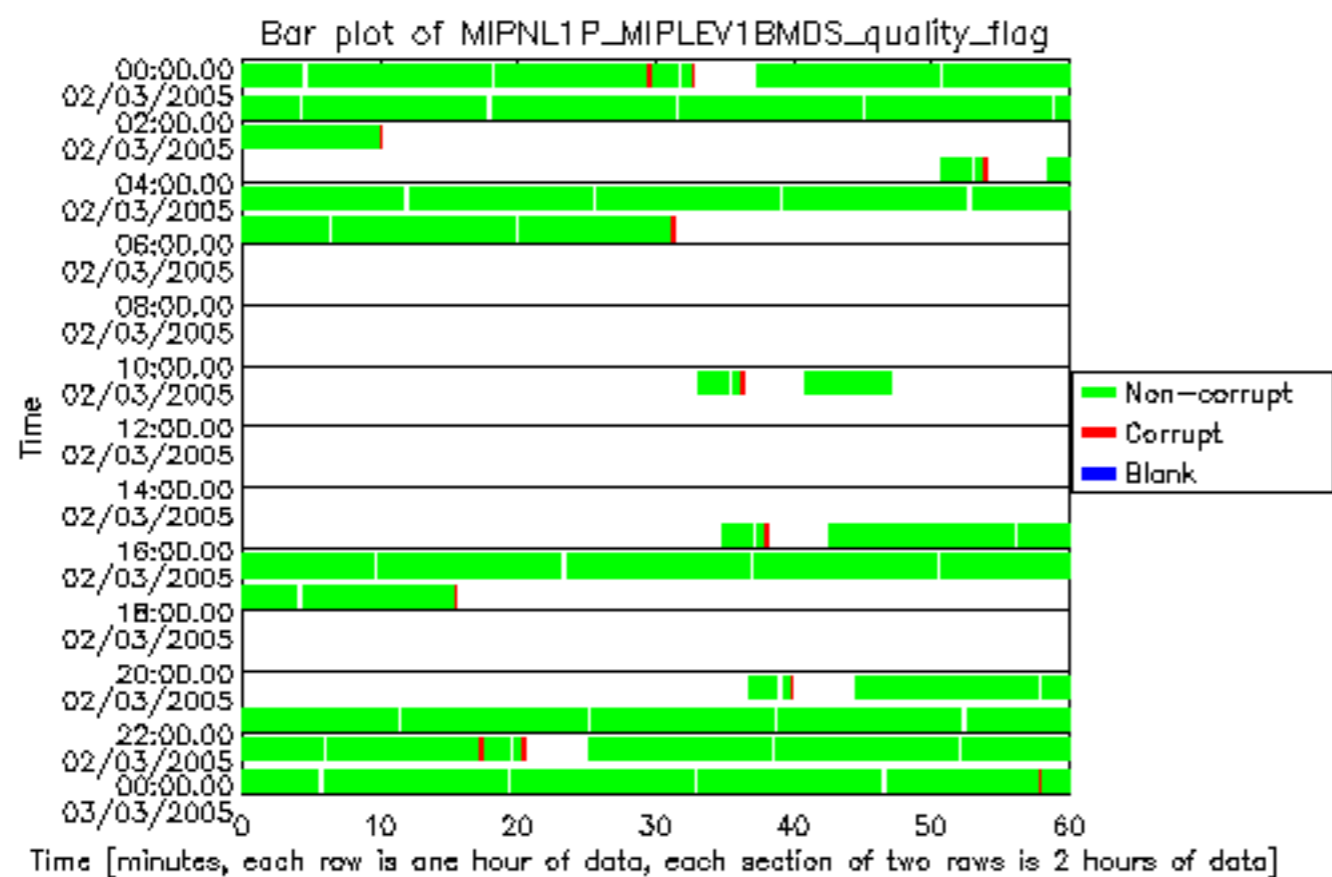




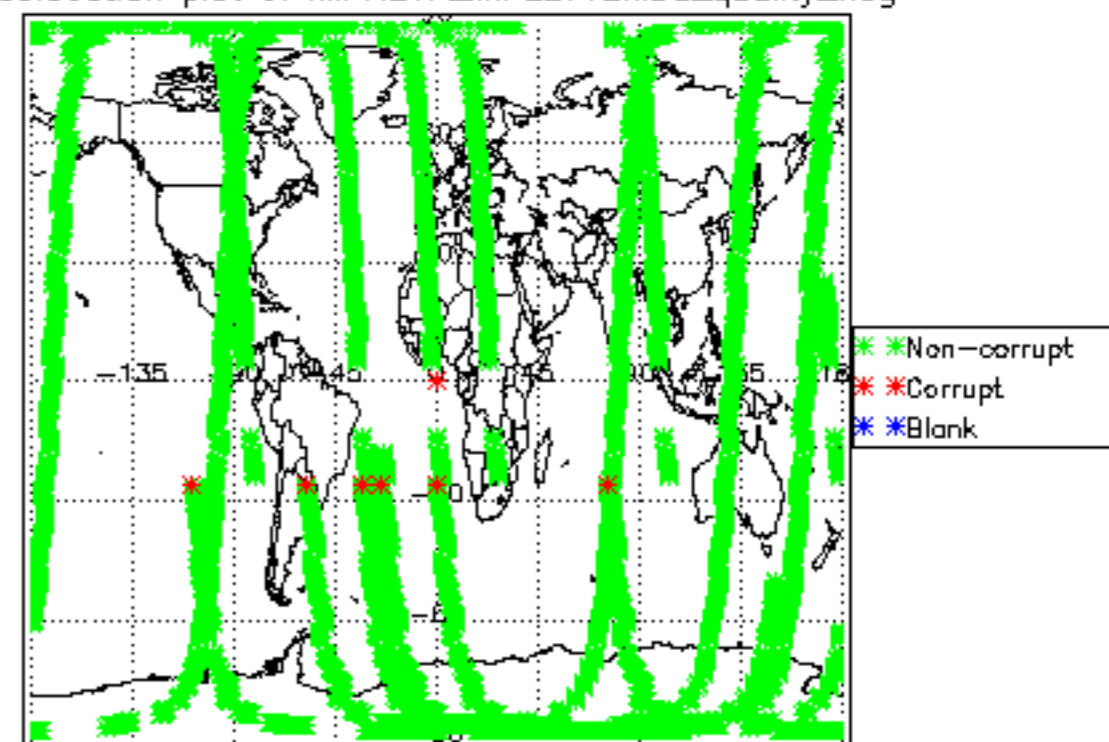
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_sweeps\_flux\_oor

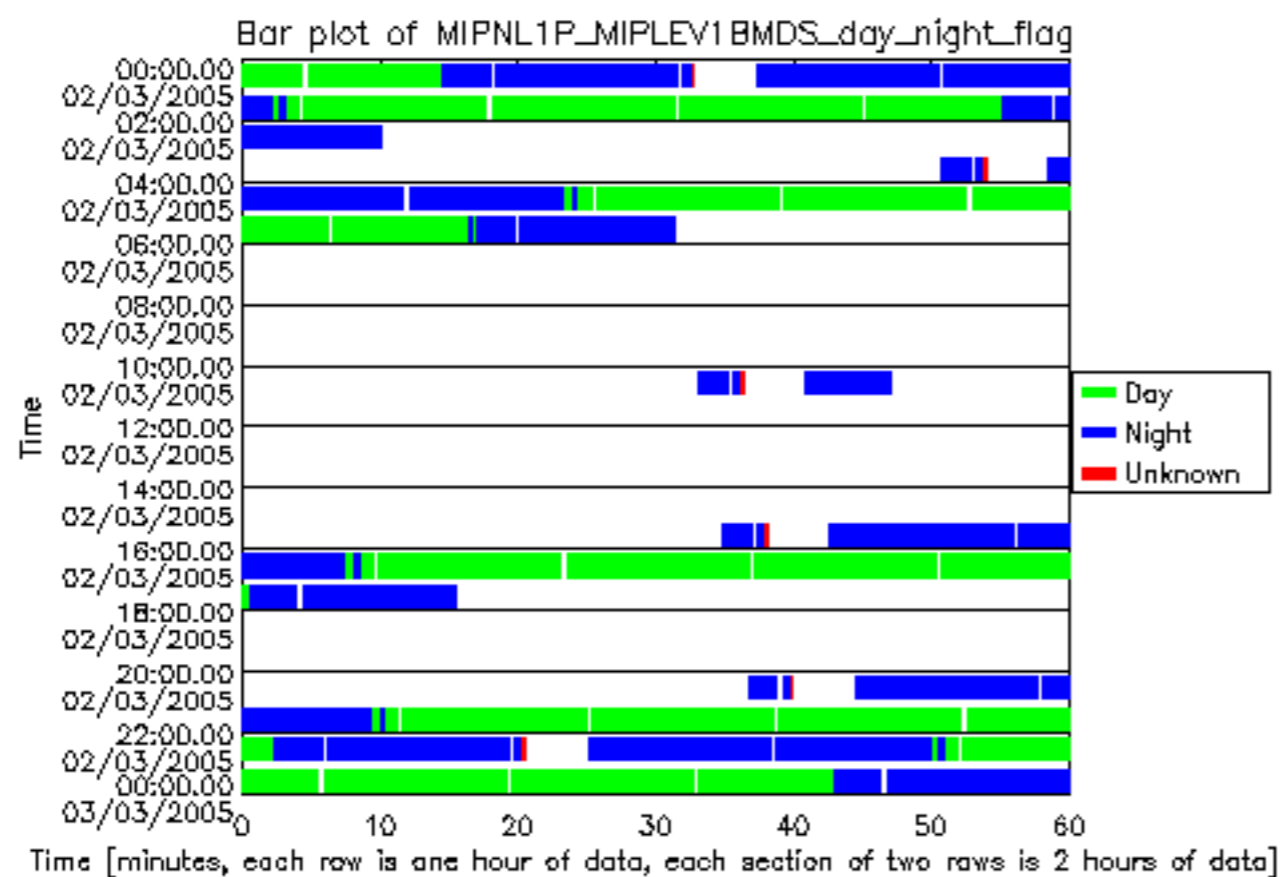




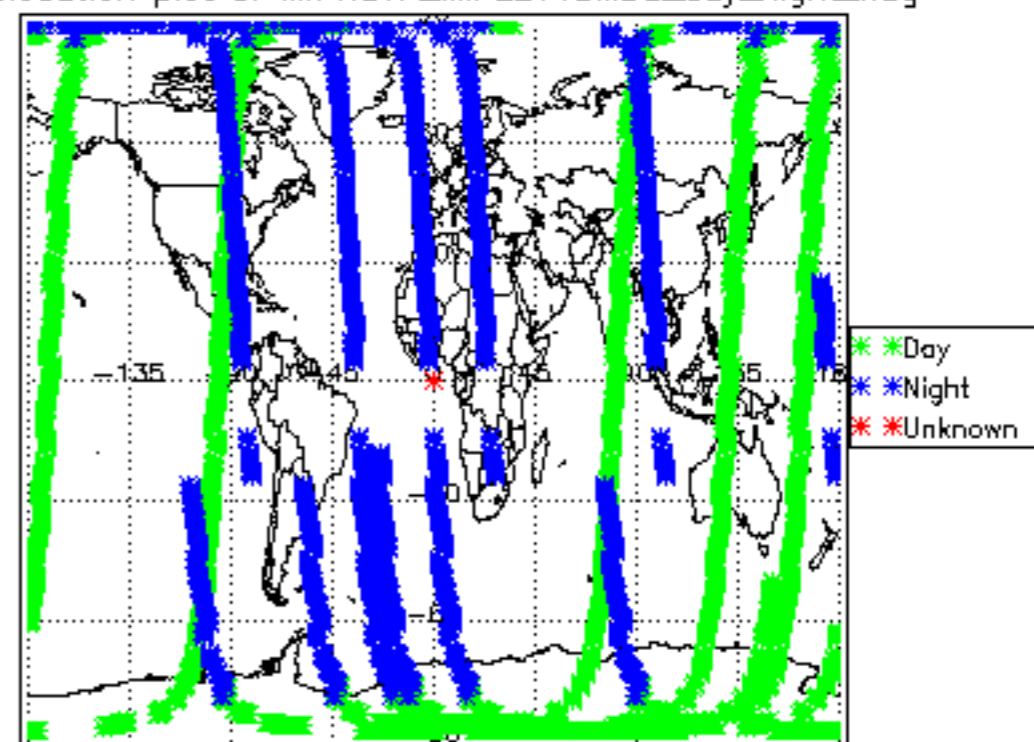


### Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag

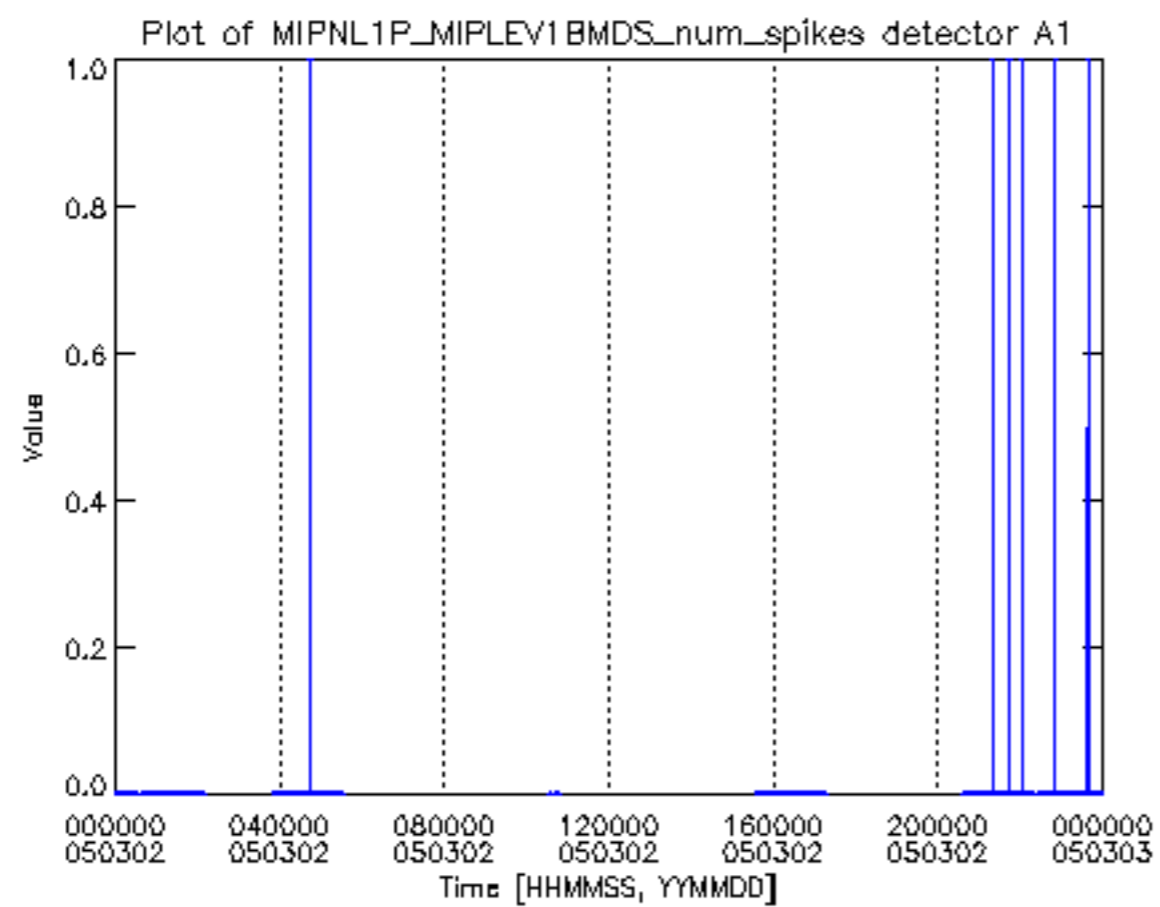




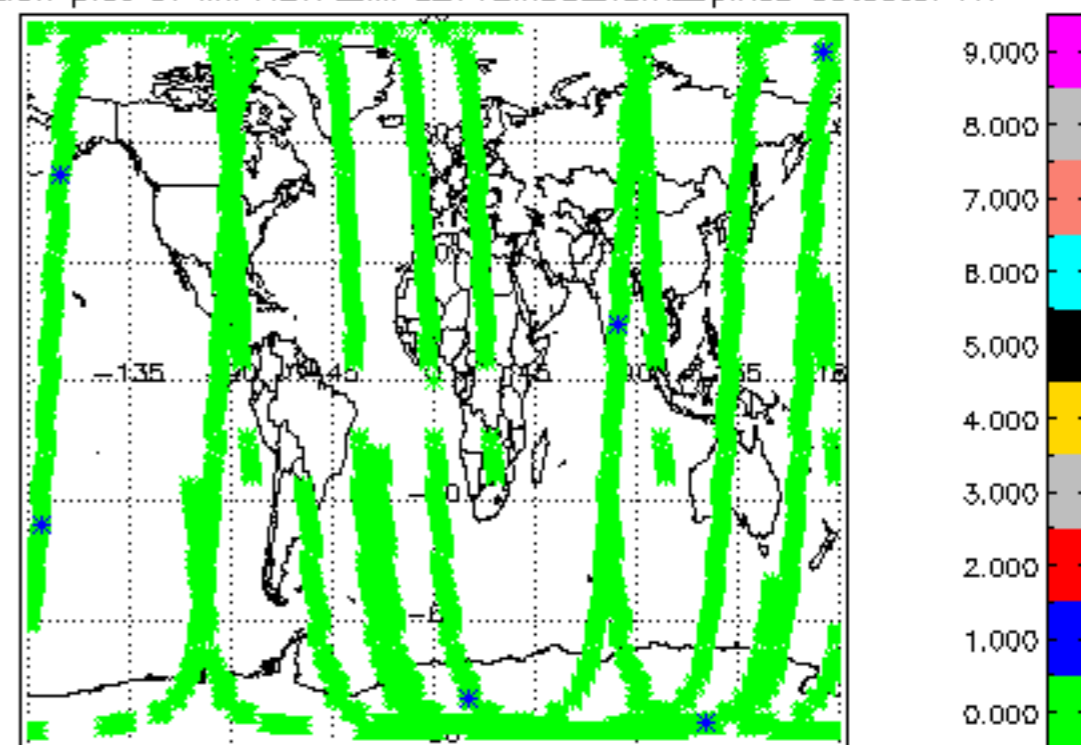
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag

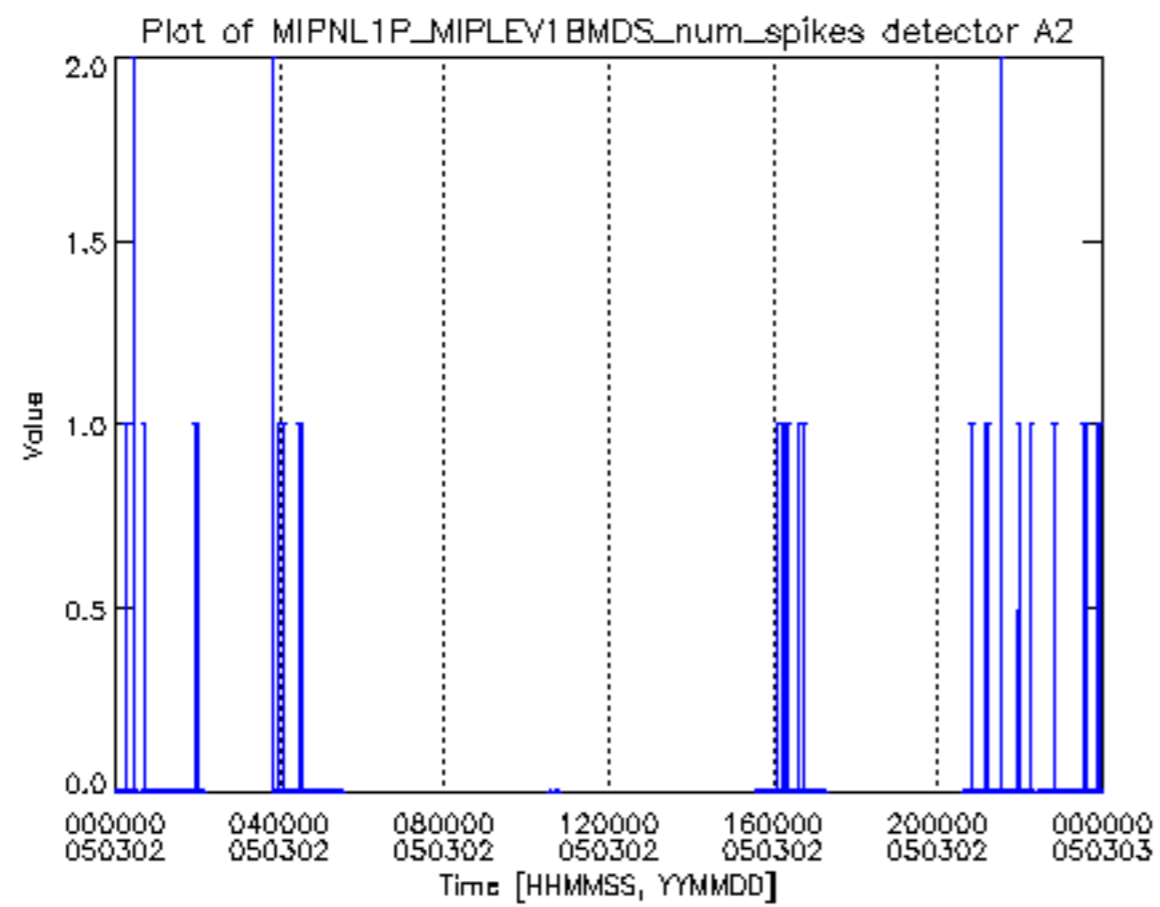




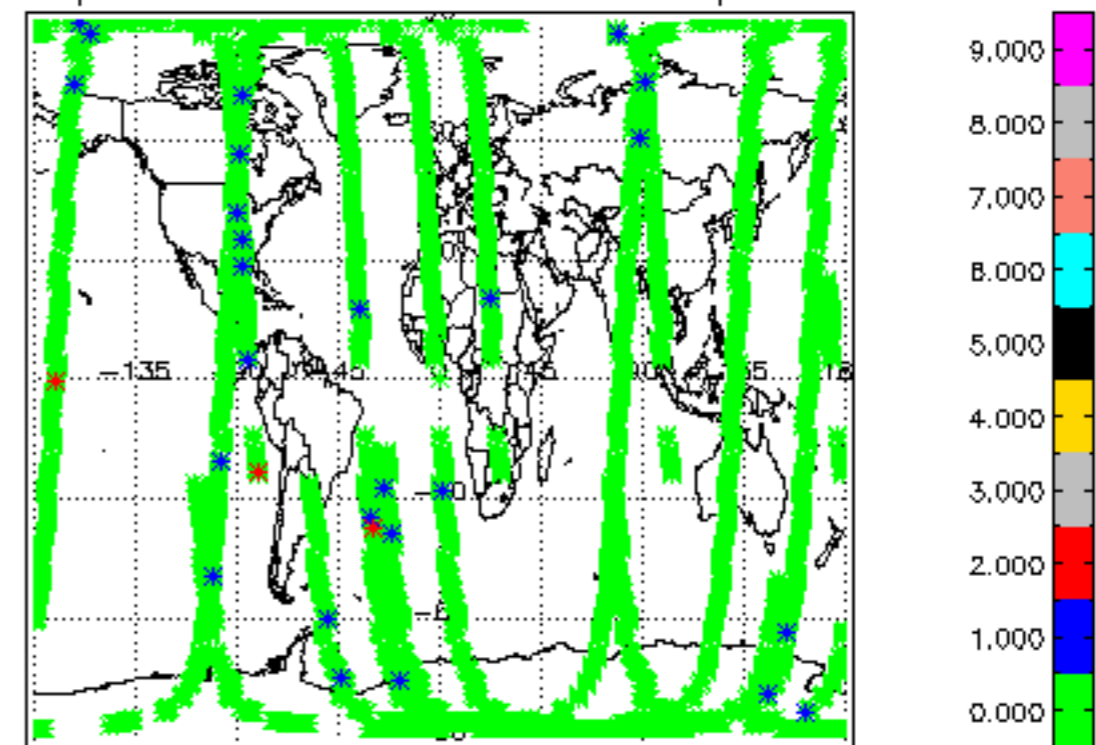


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector A1

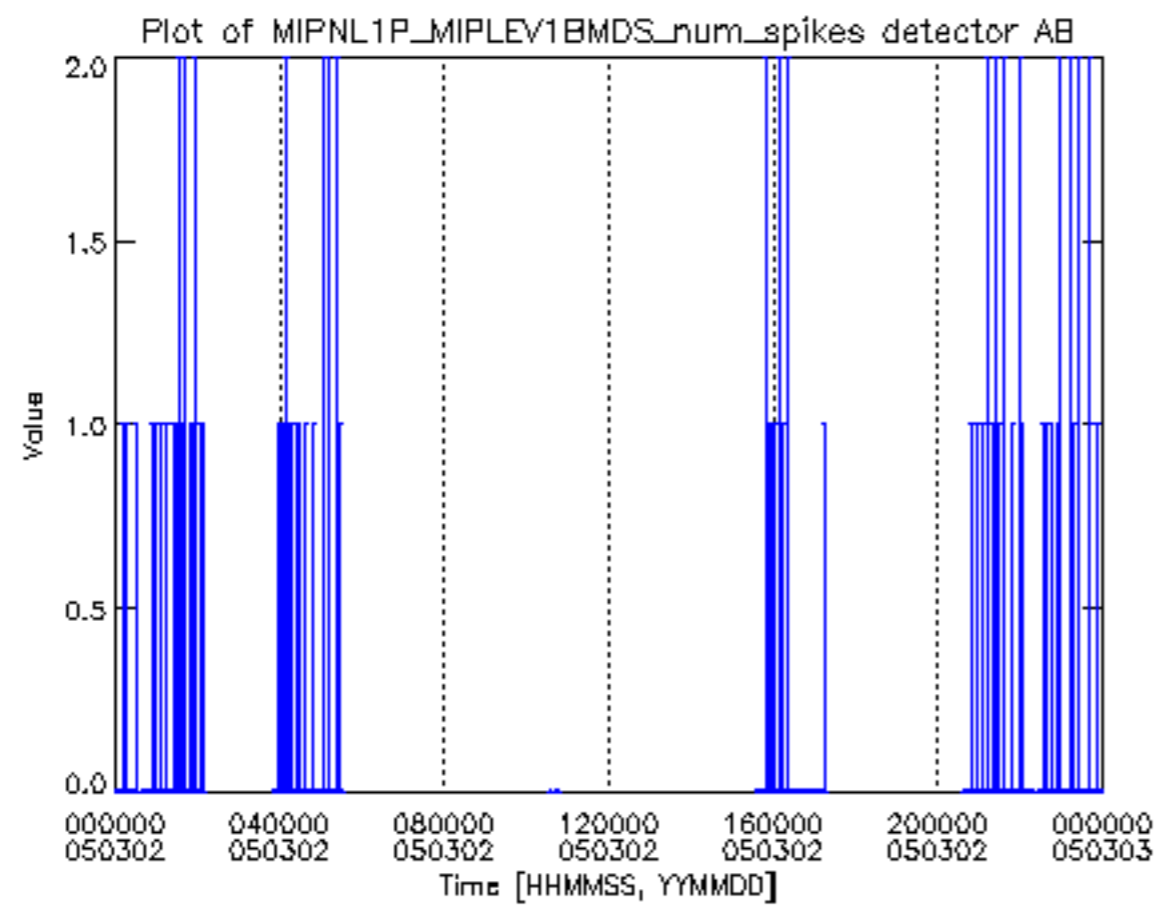




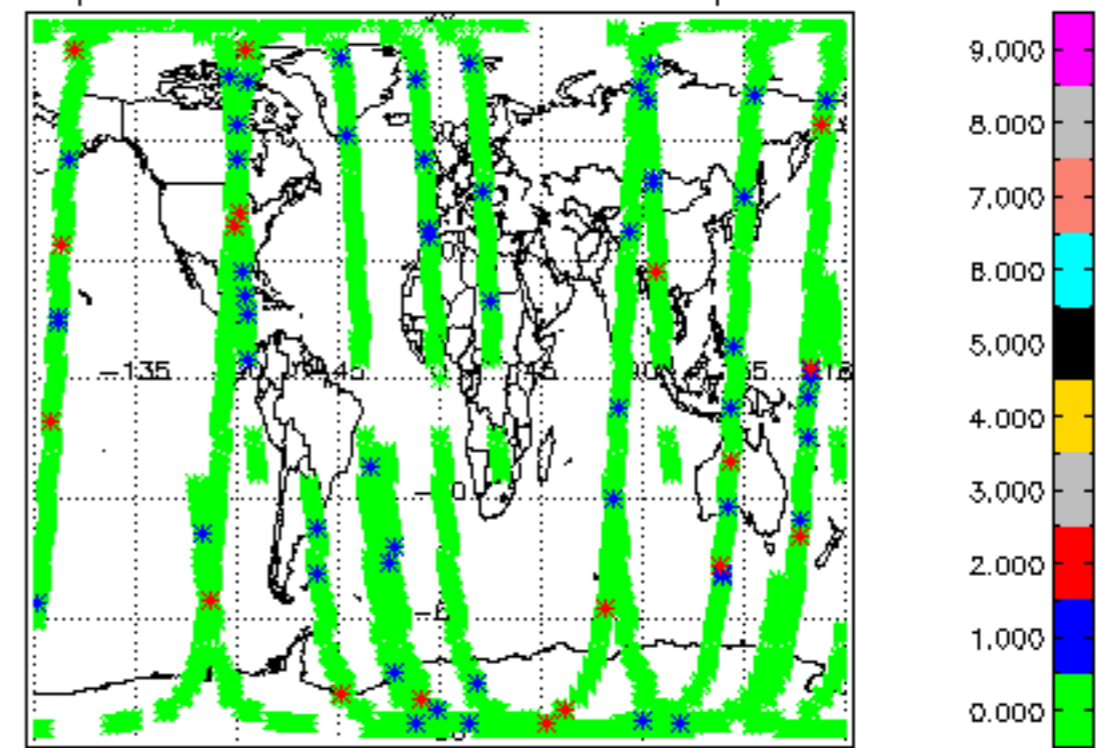
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector A2

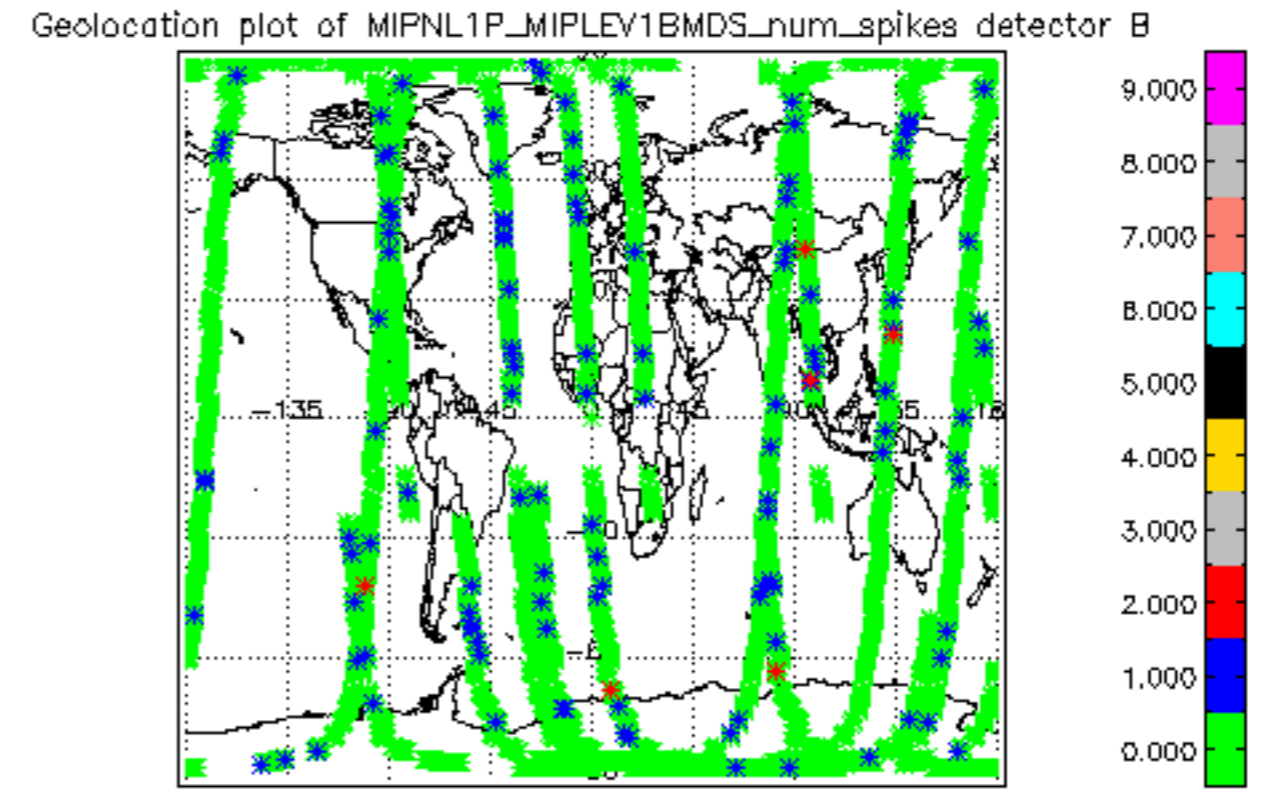
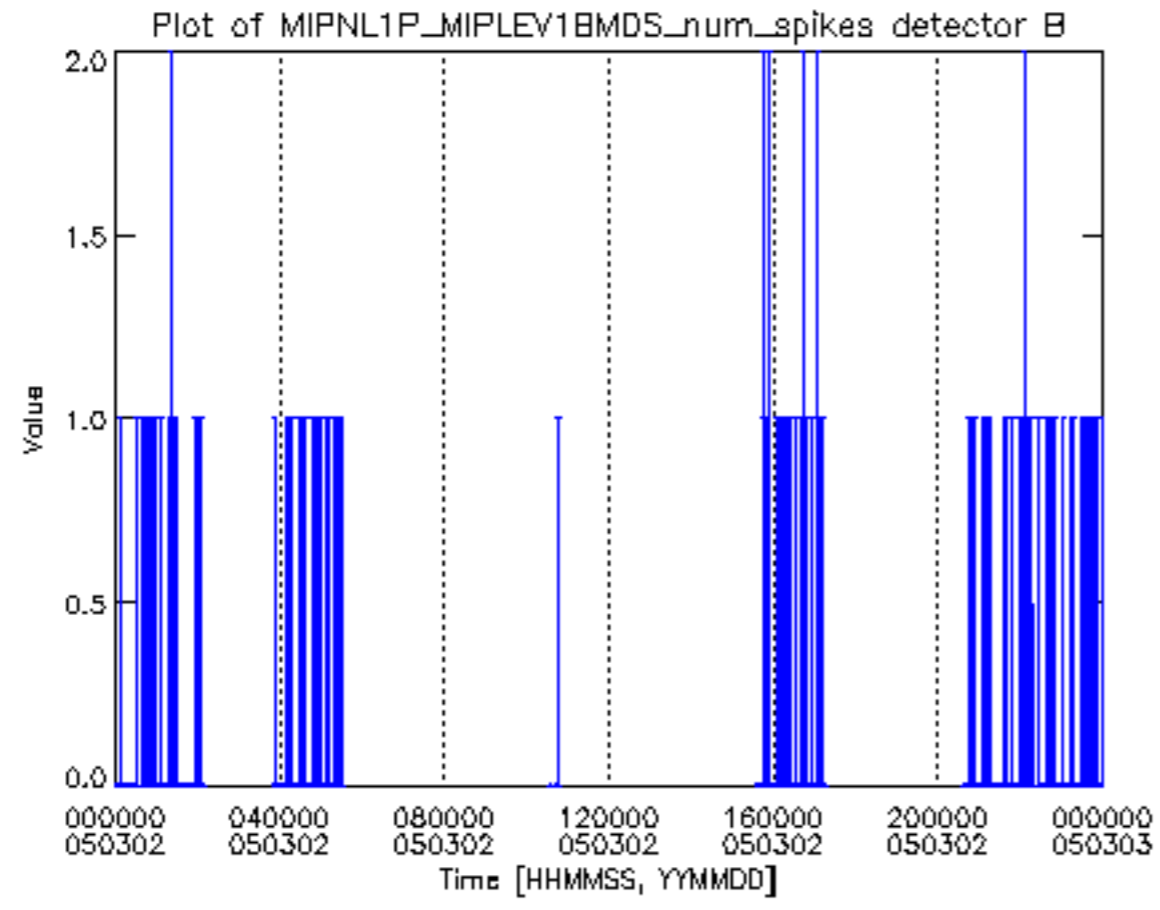




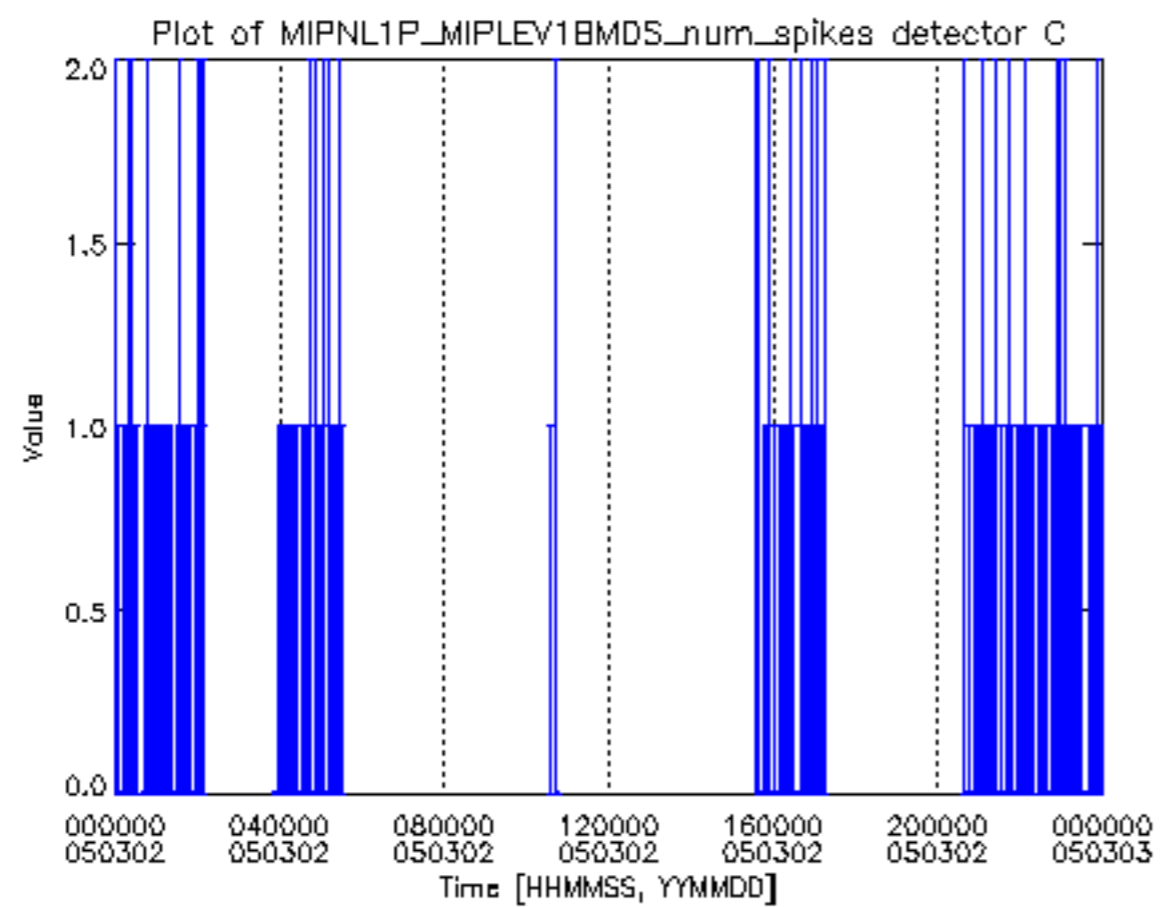


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector AB

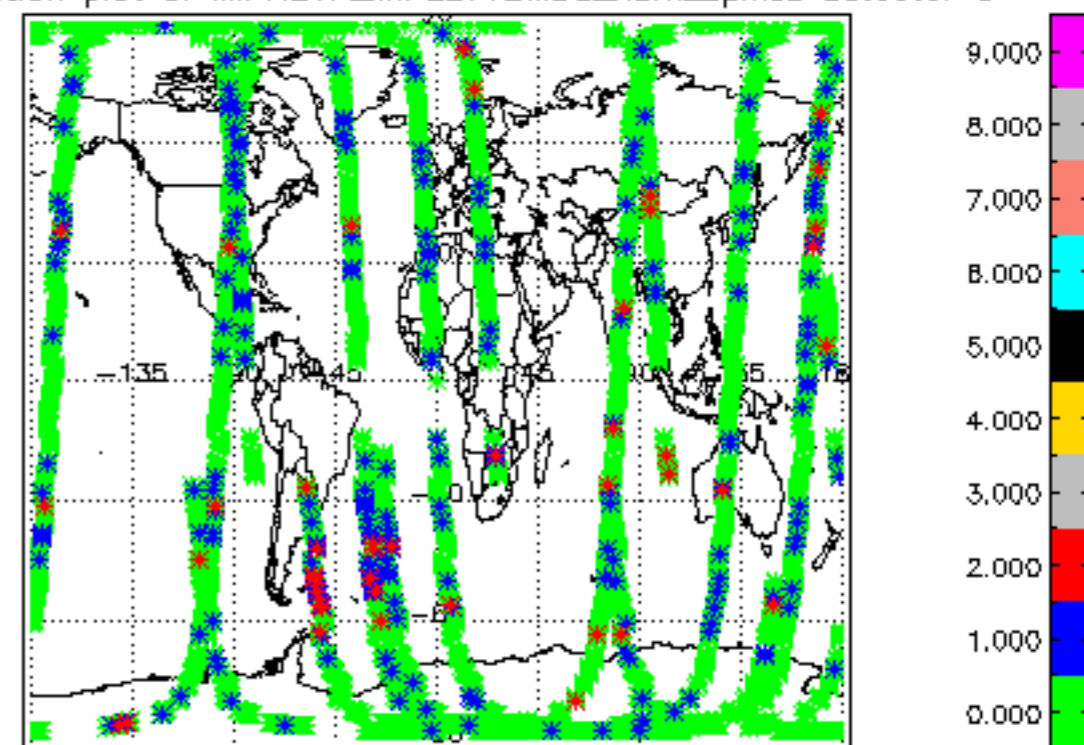


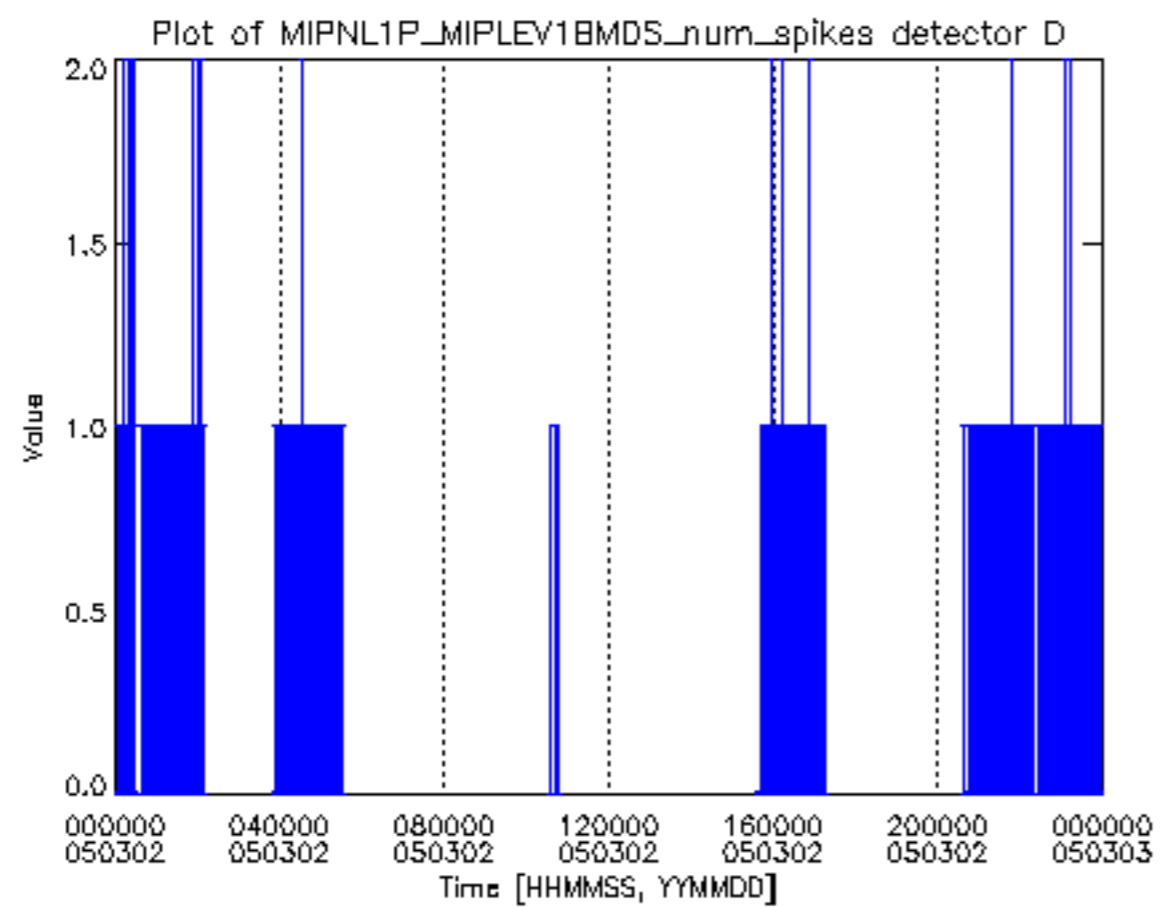




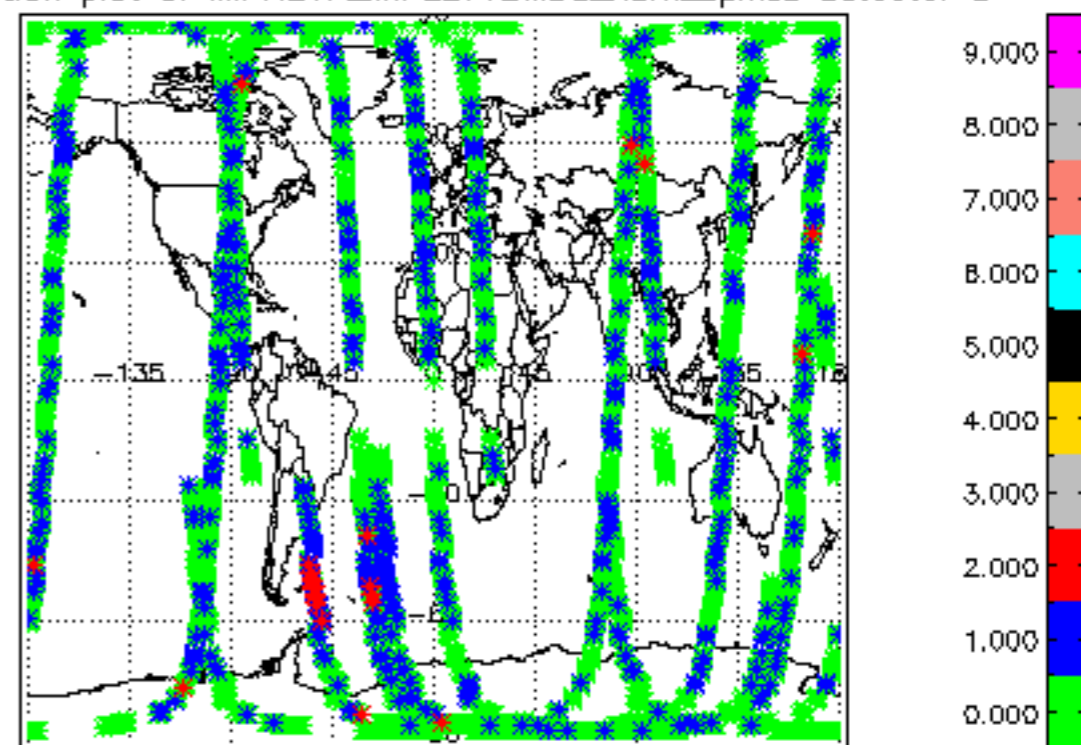


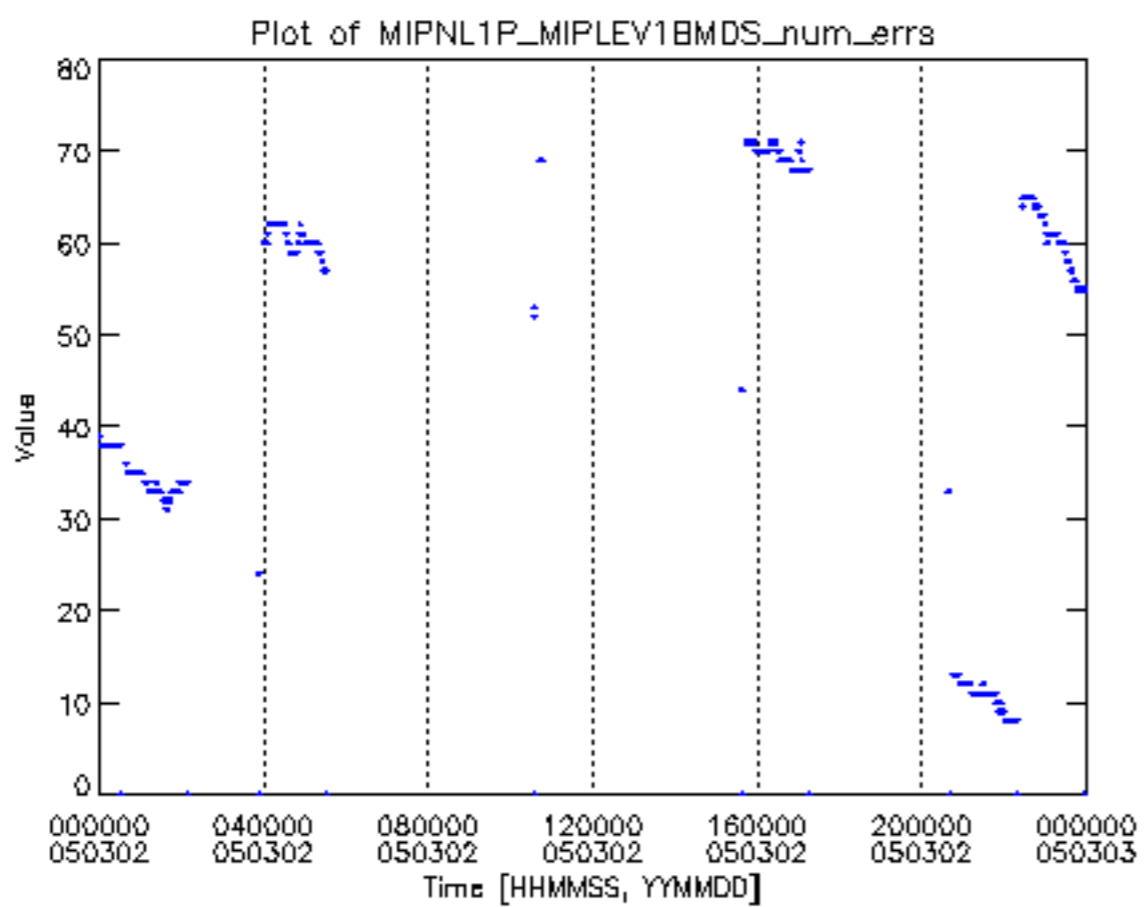
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector C



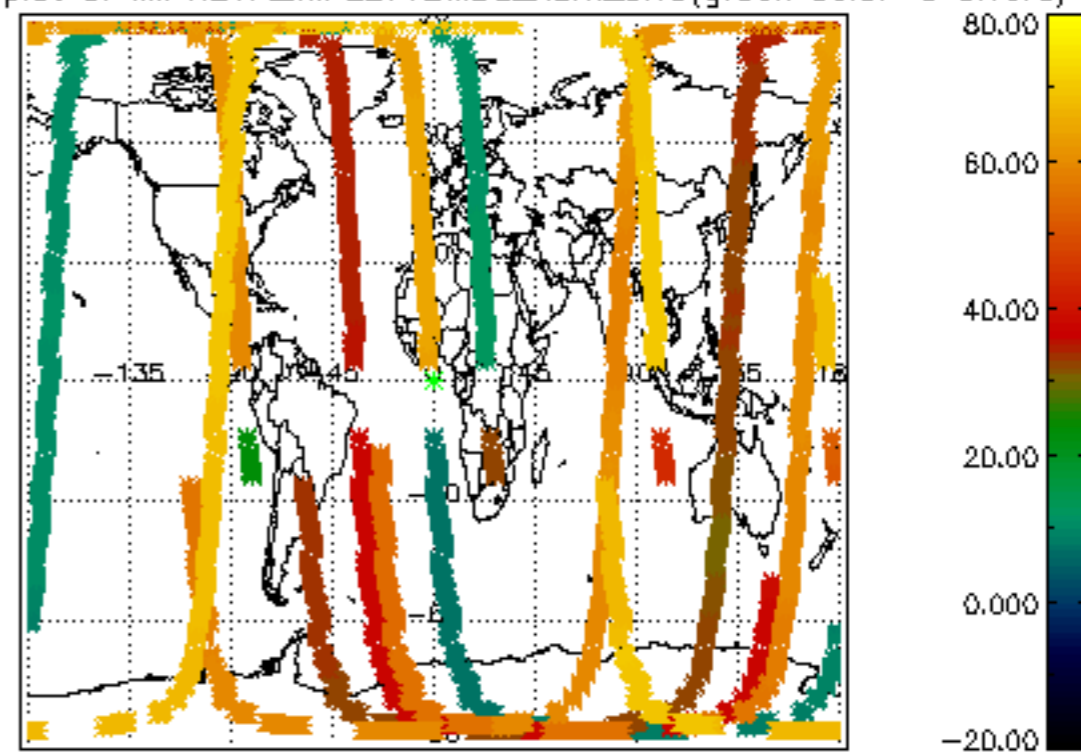


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector D

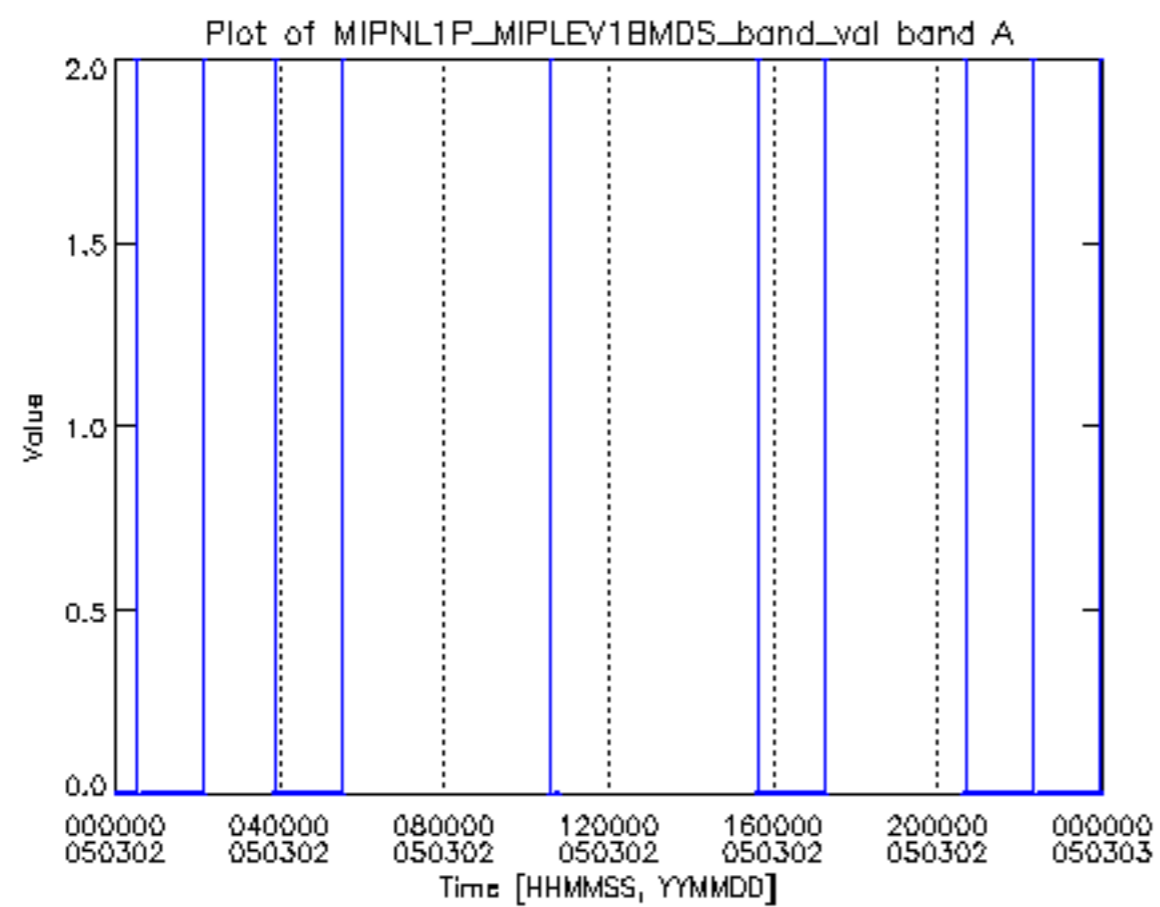




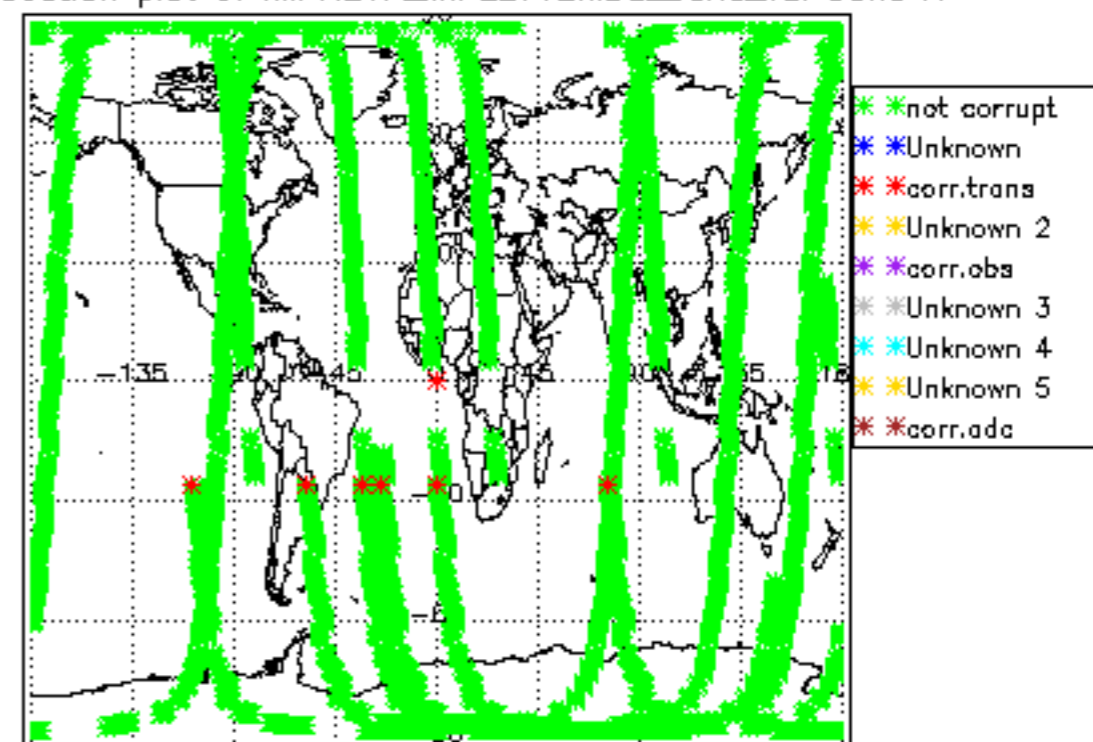
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_errs (green color=0 errors)

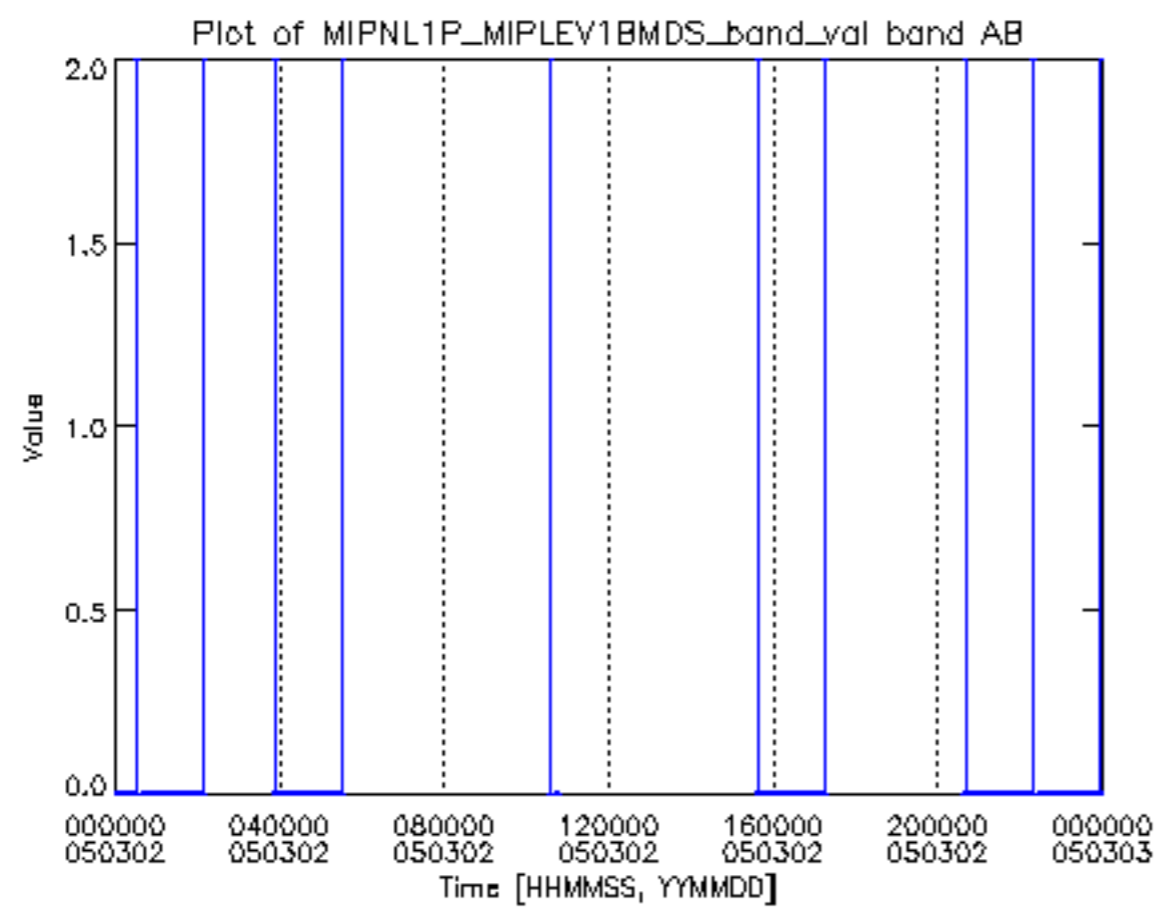




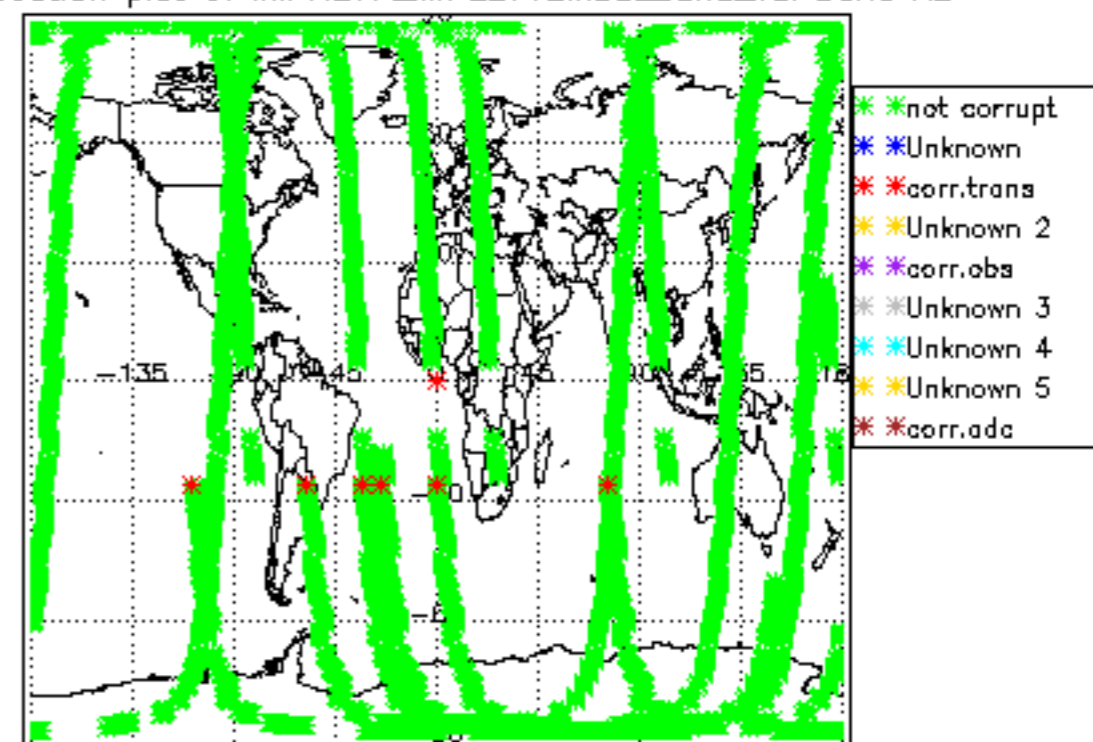


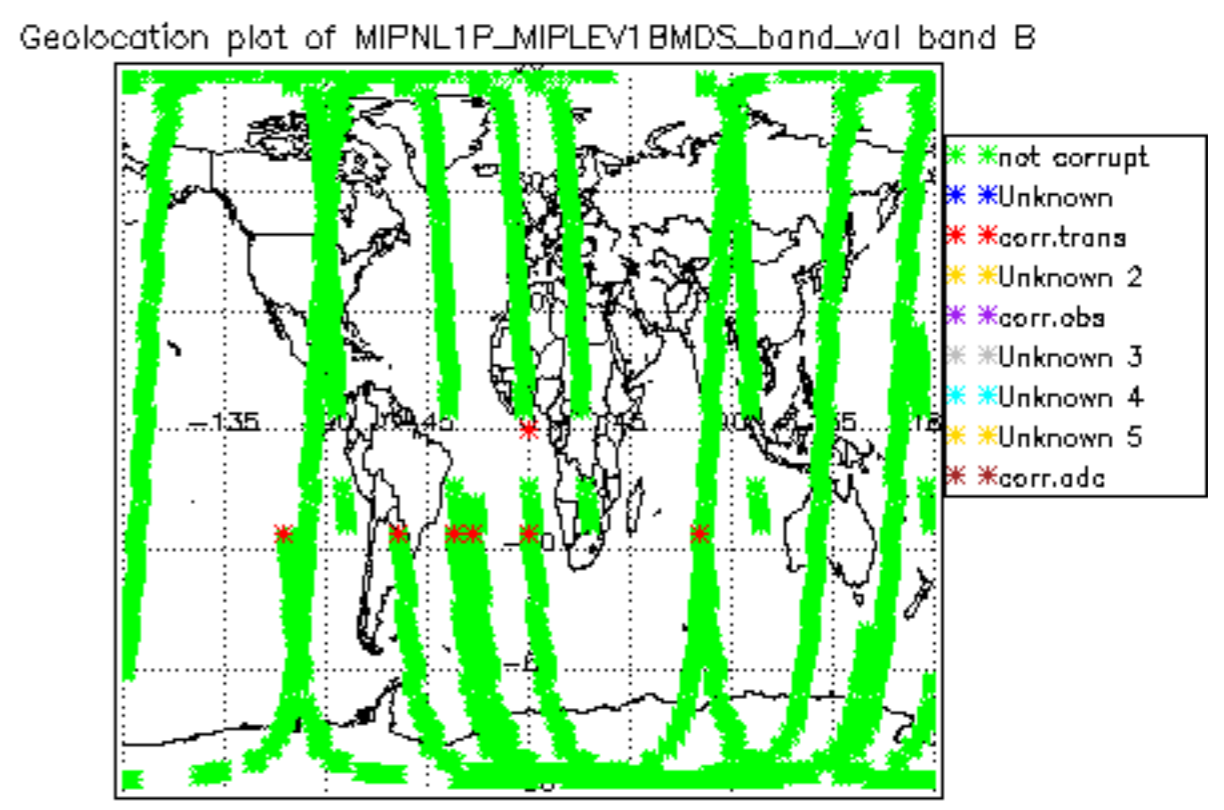
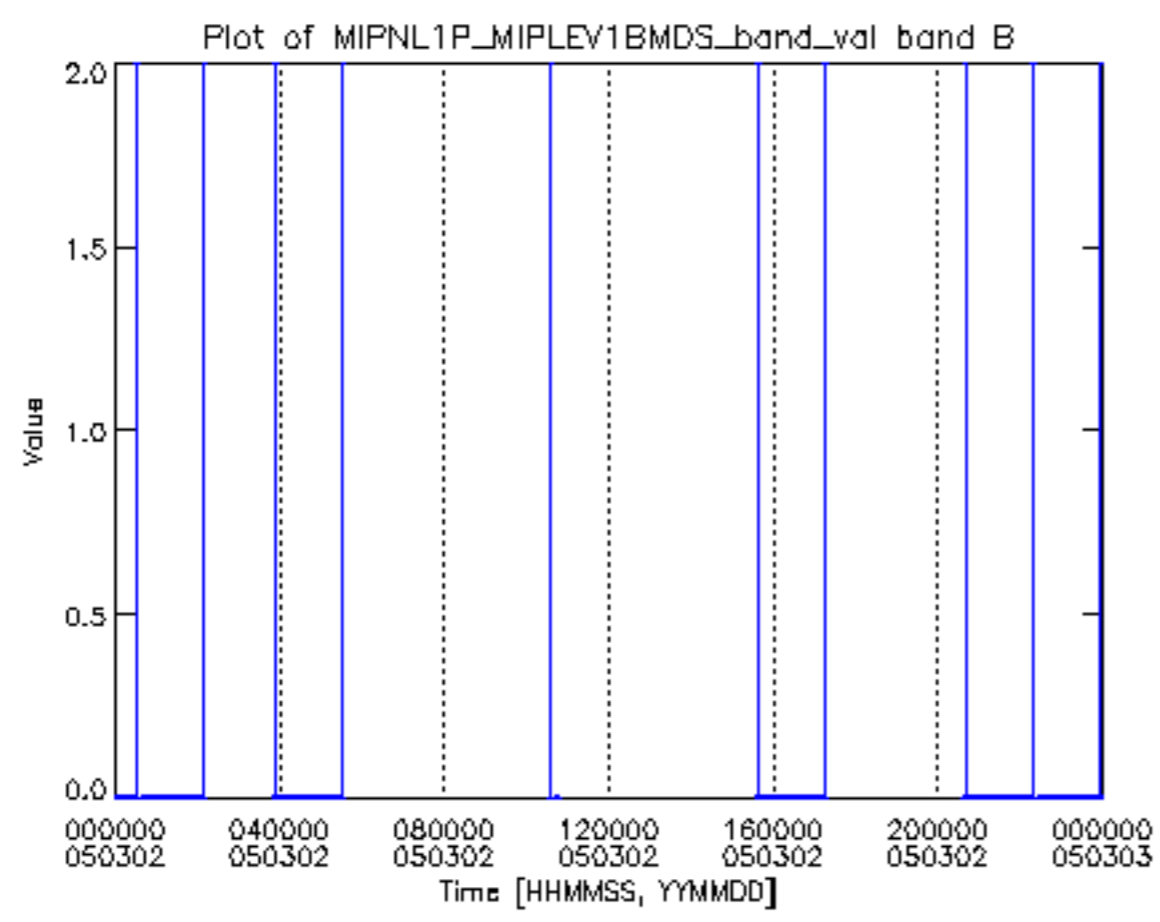
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band A



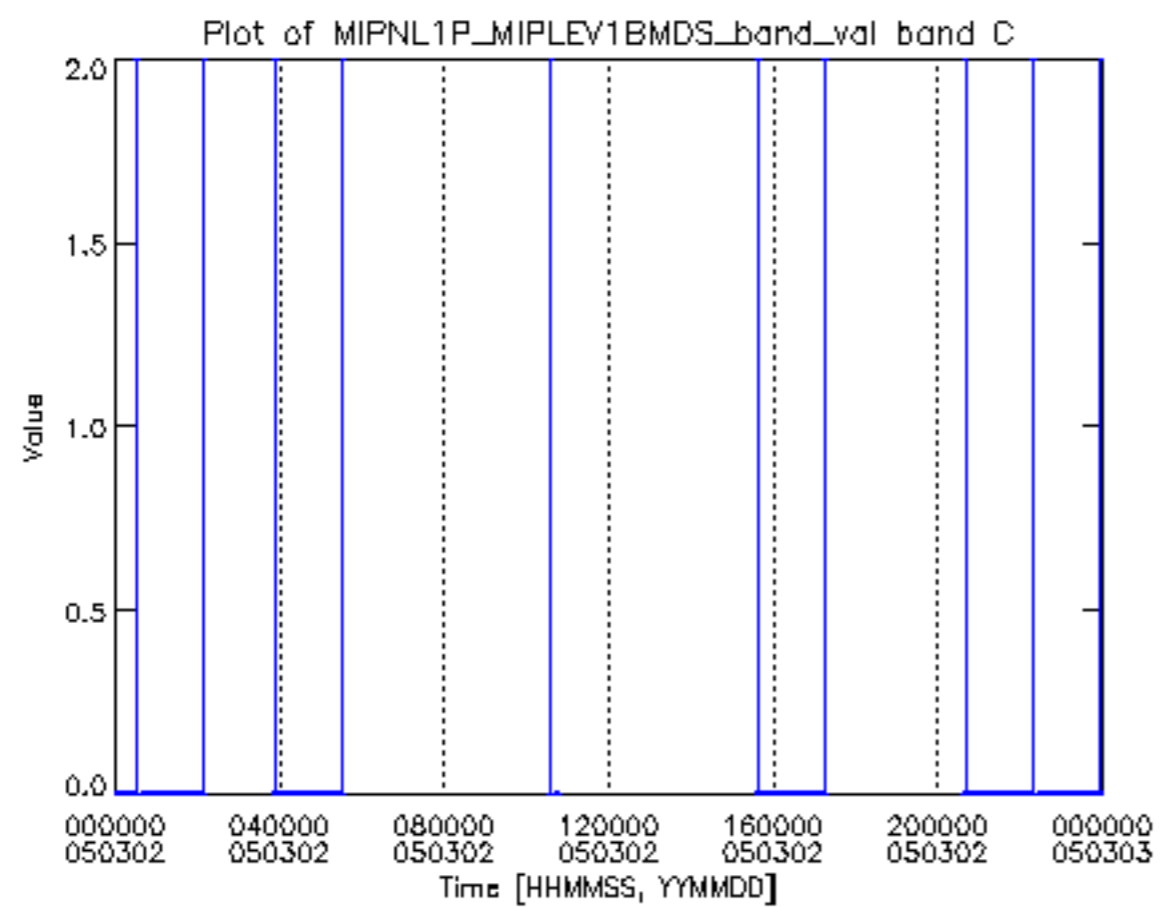


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band AB

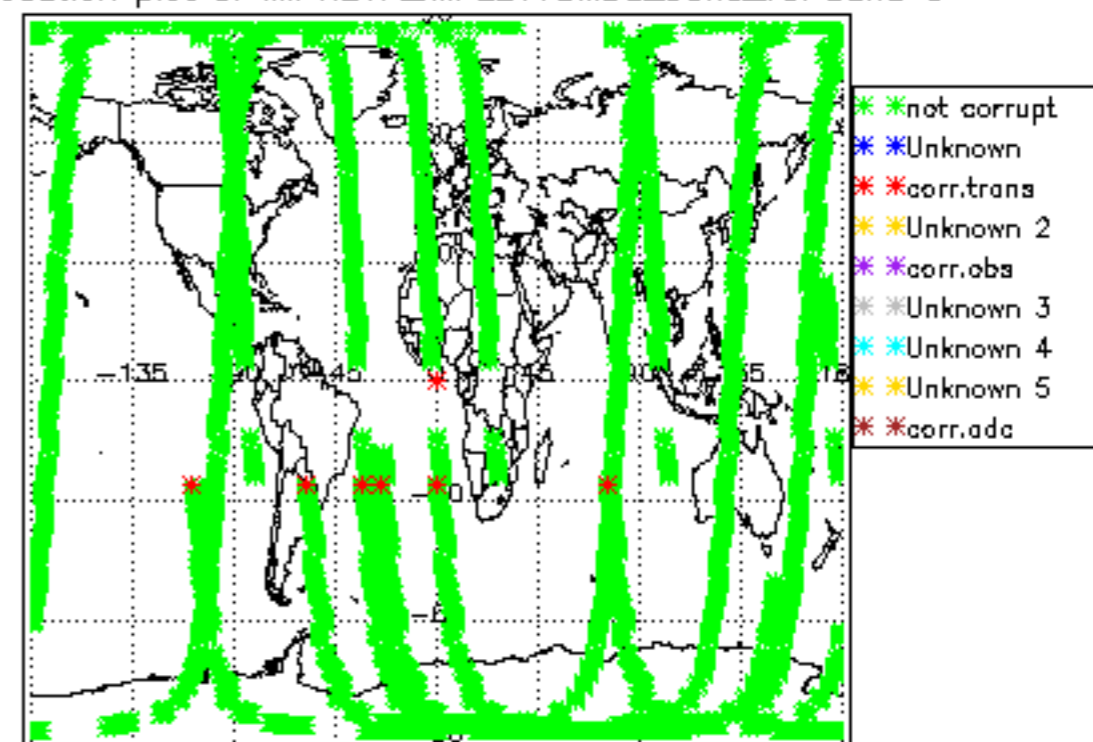


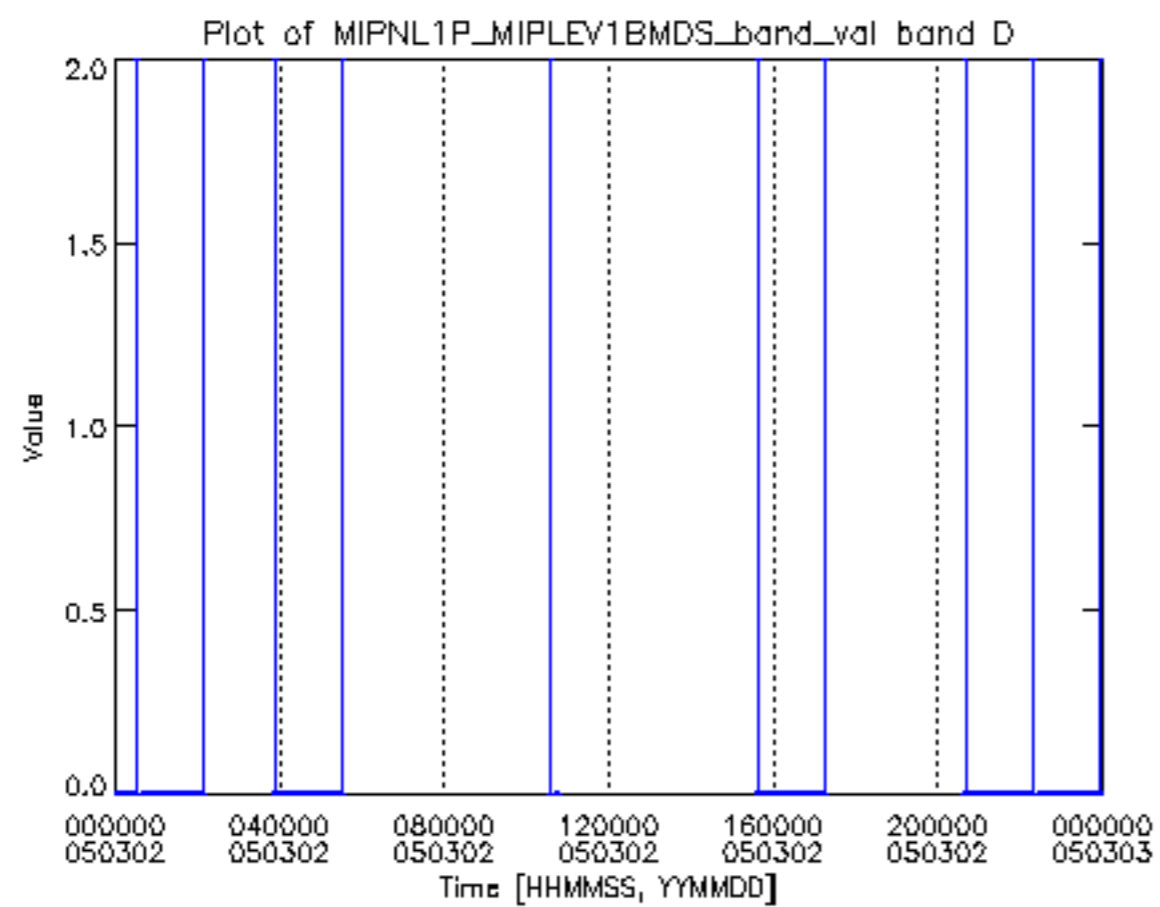




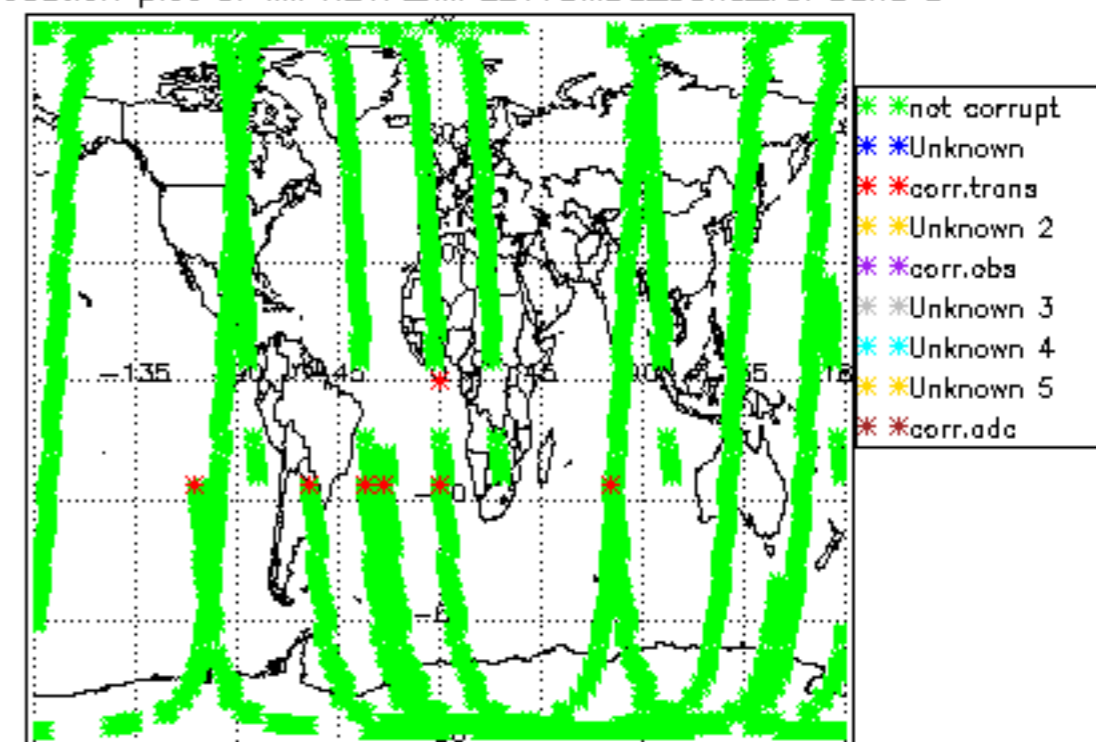


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band C

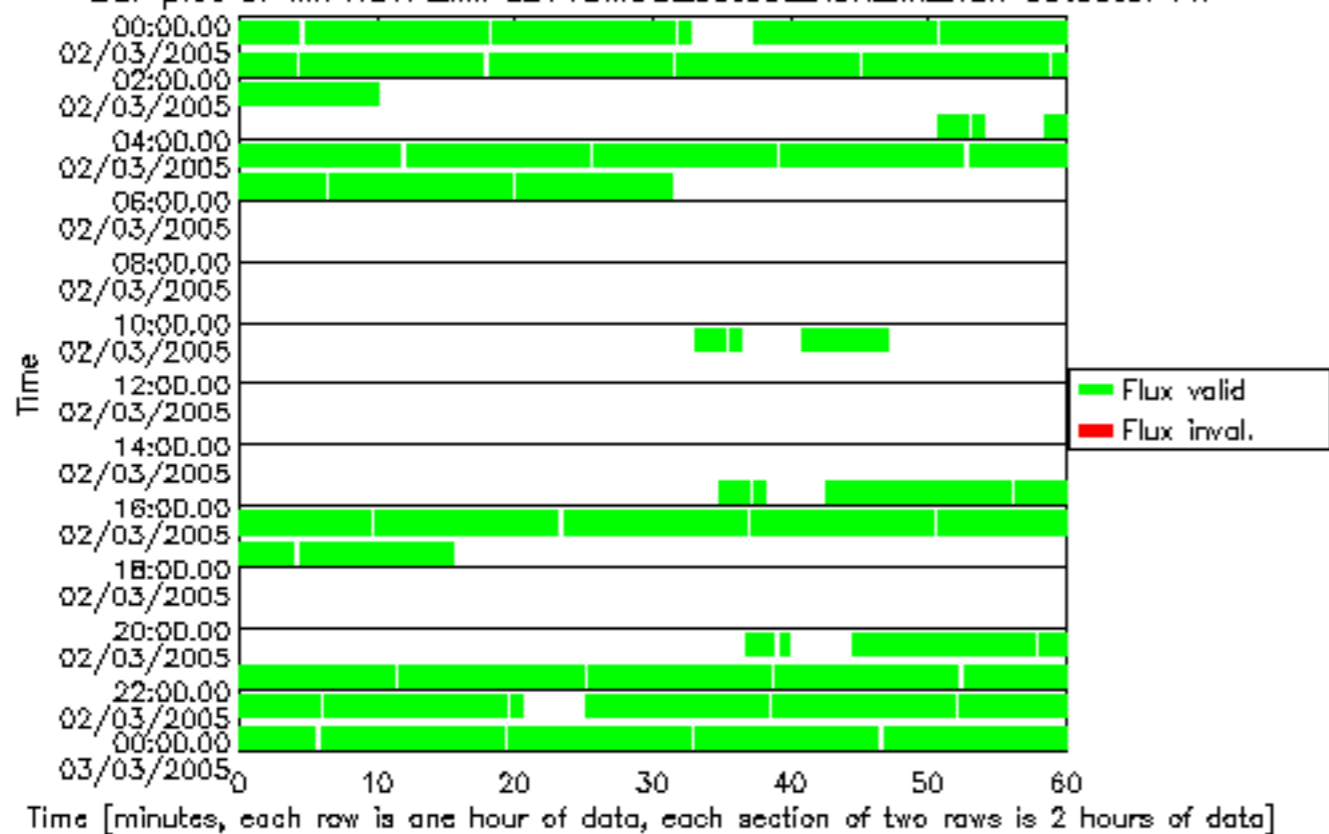




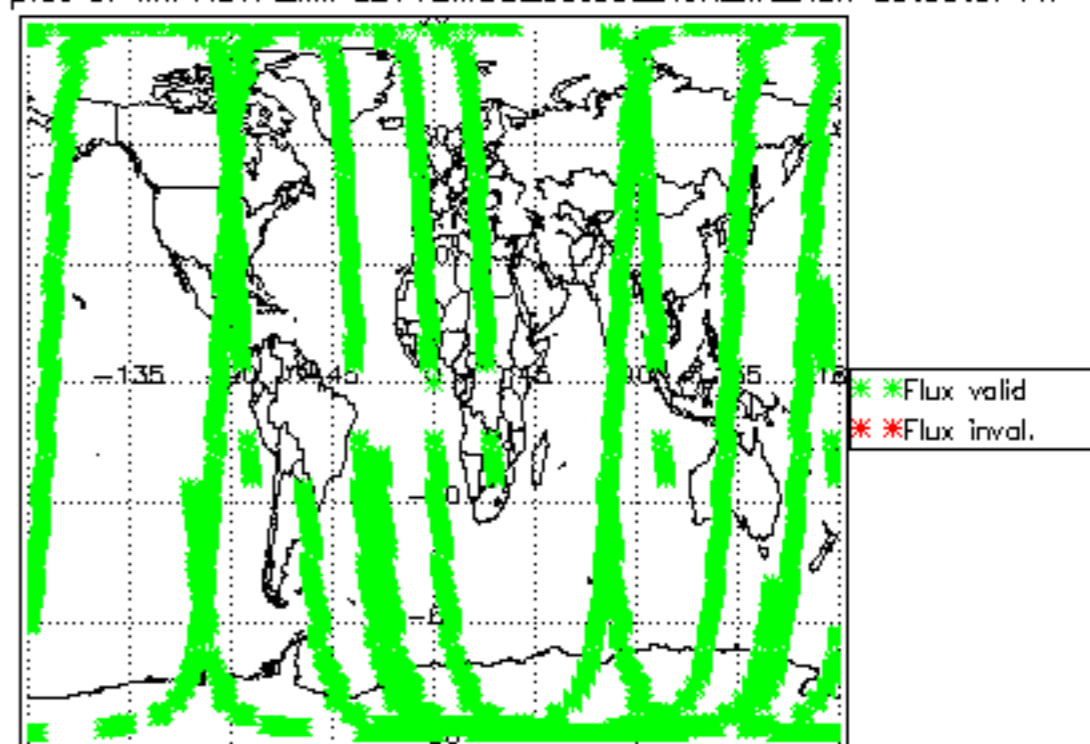
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band D



Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1

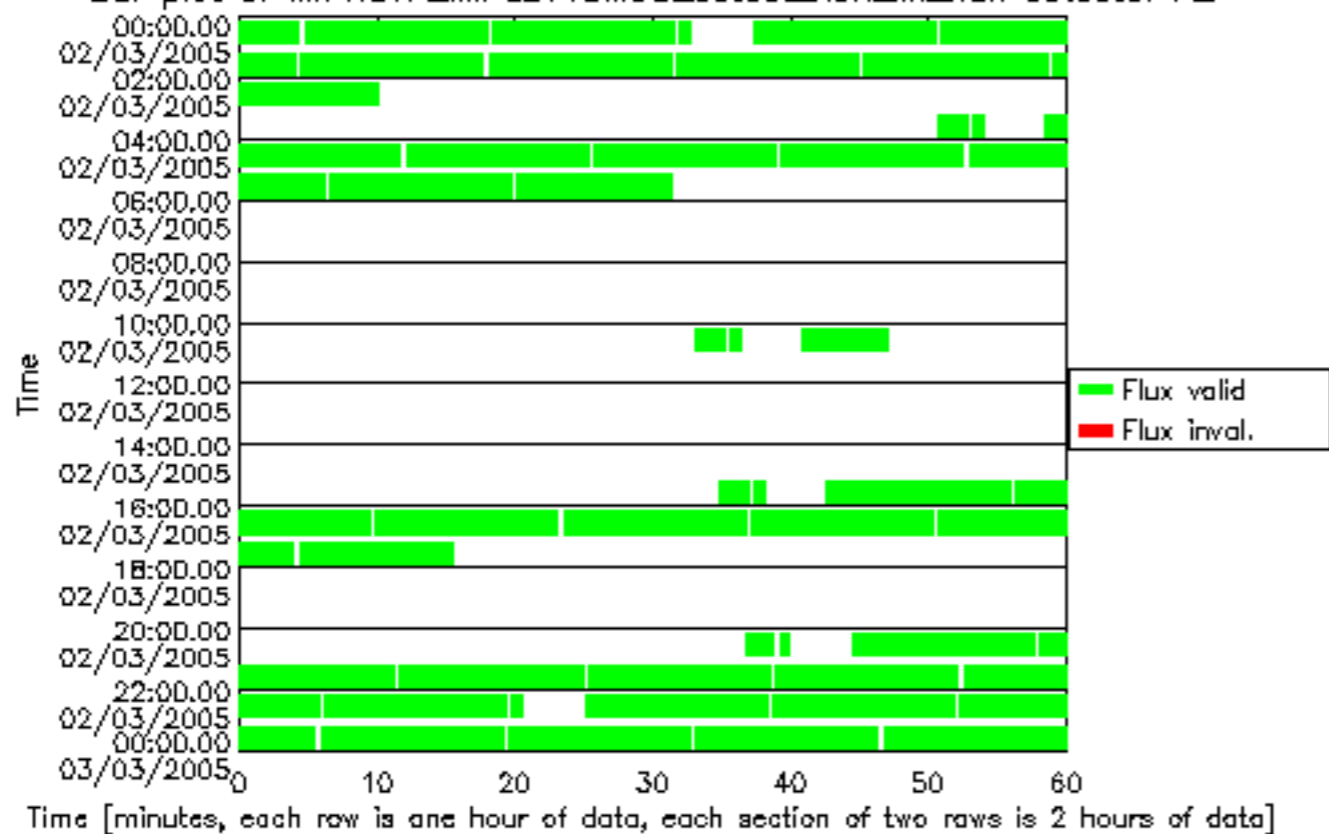


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1

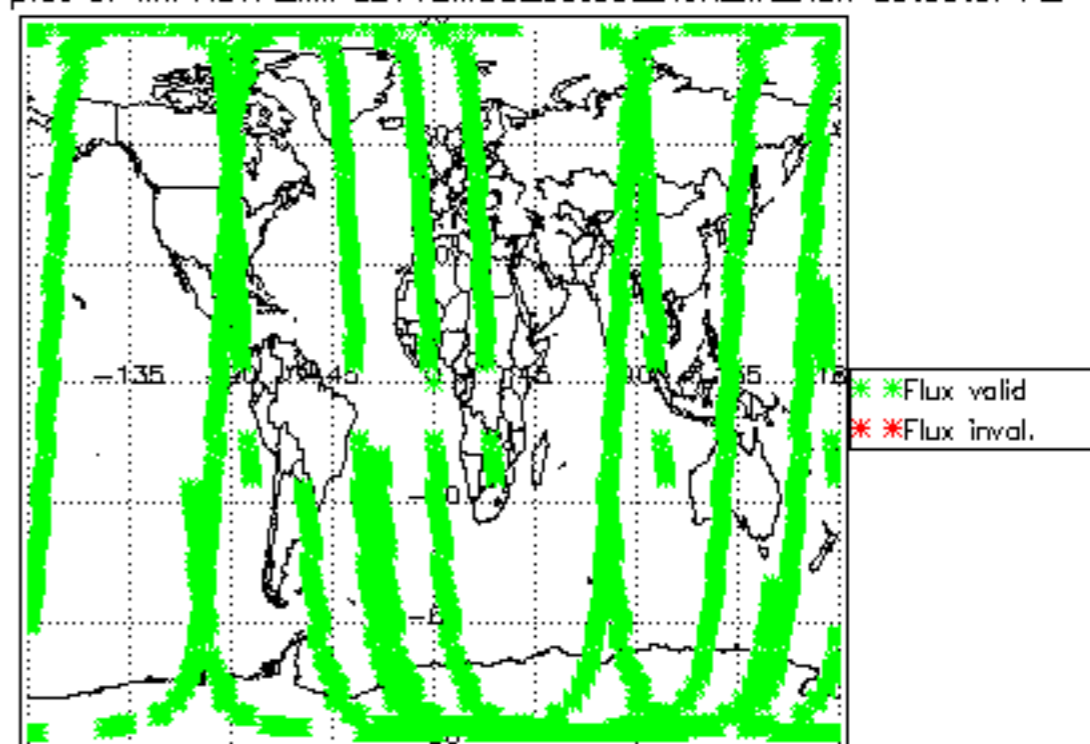


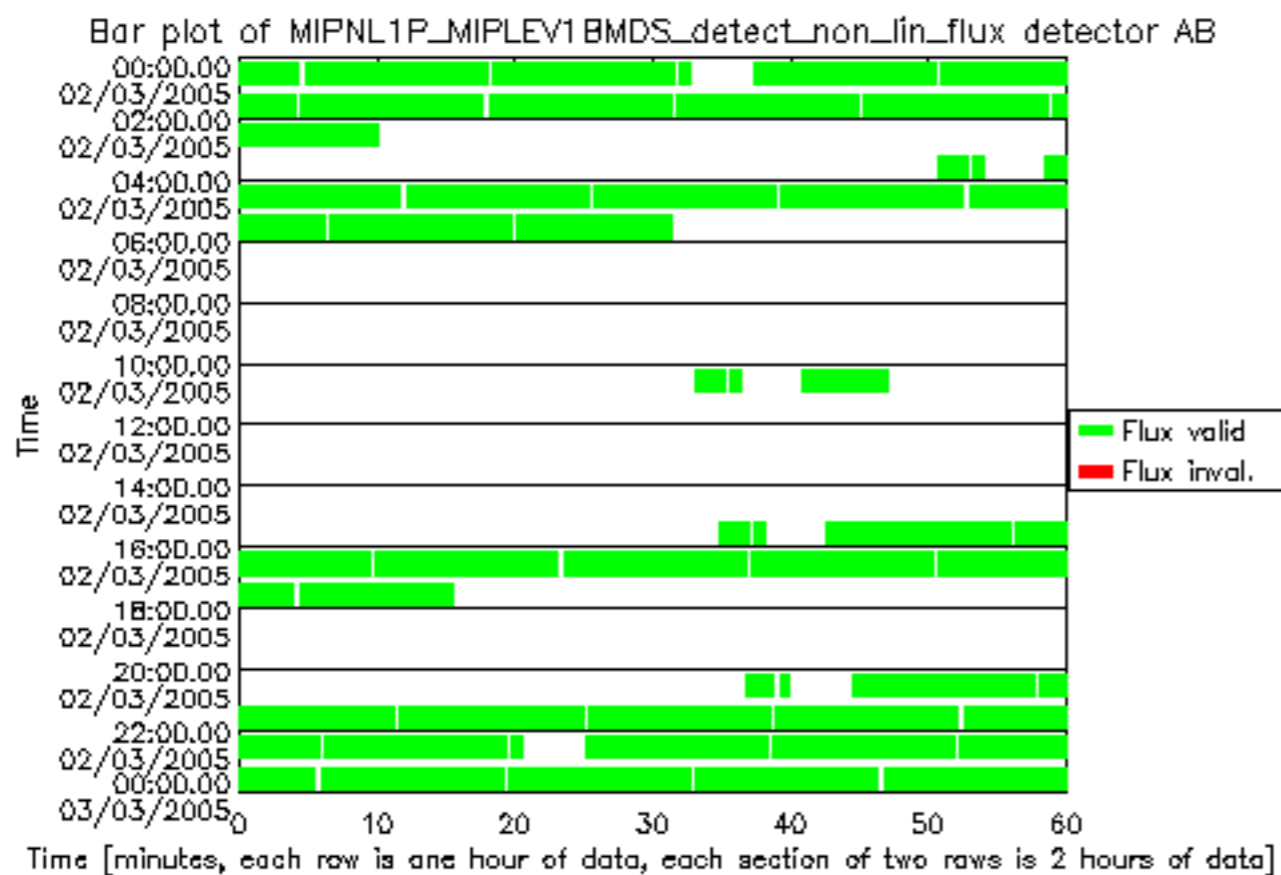


Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2

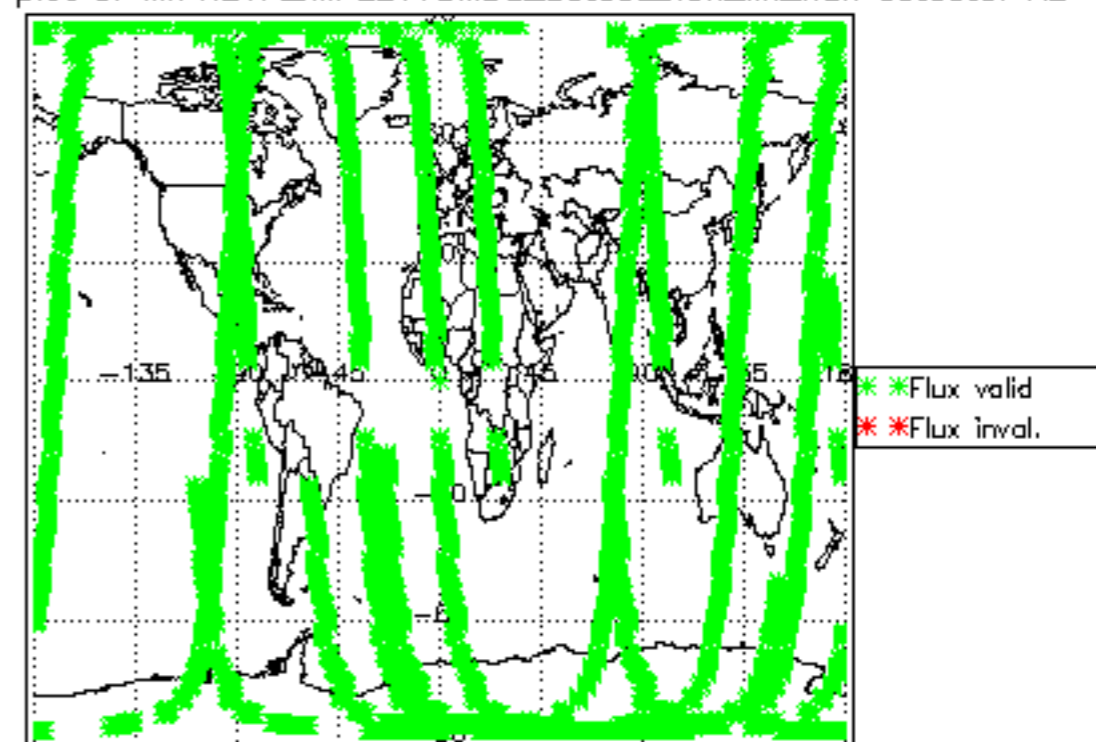


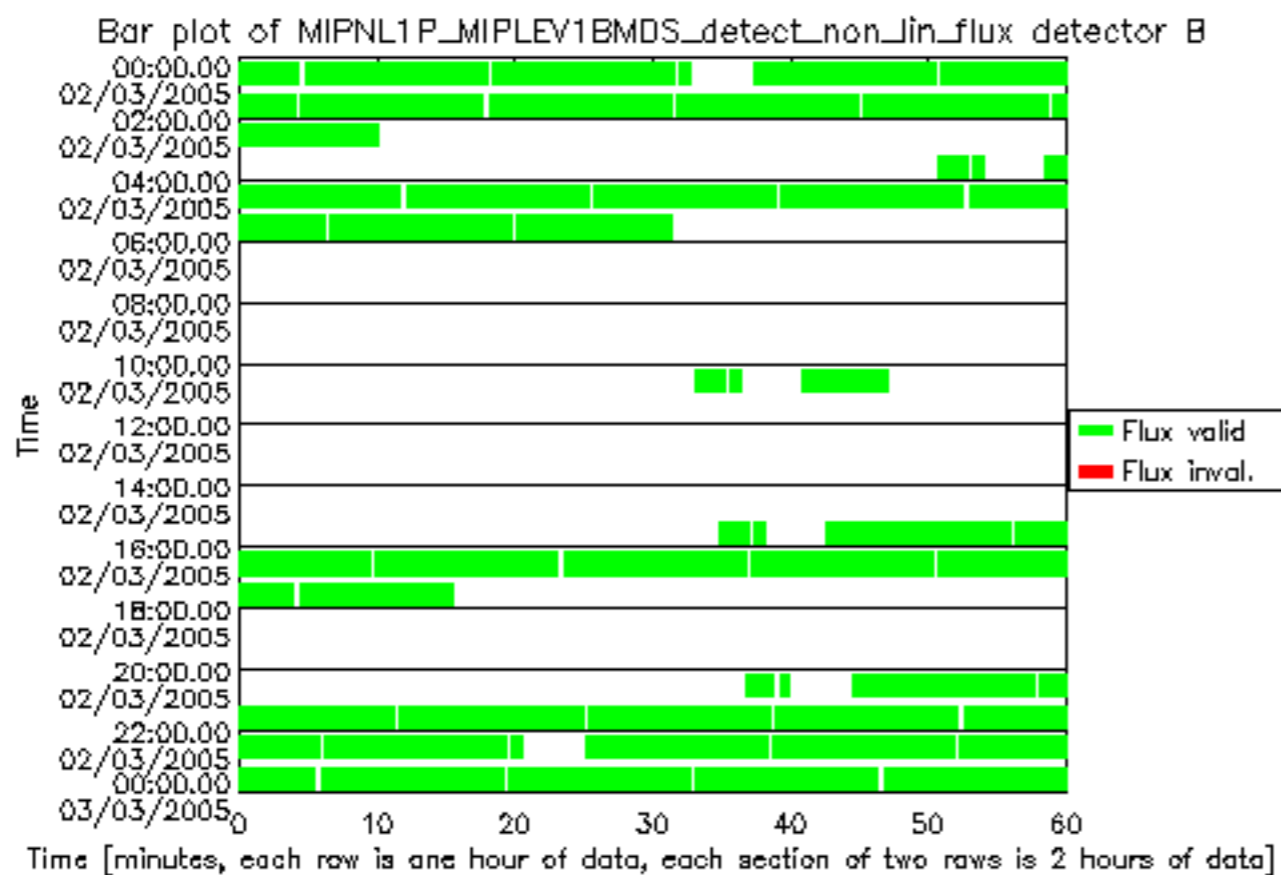
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



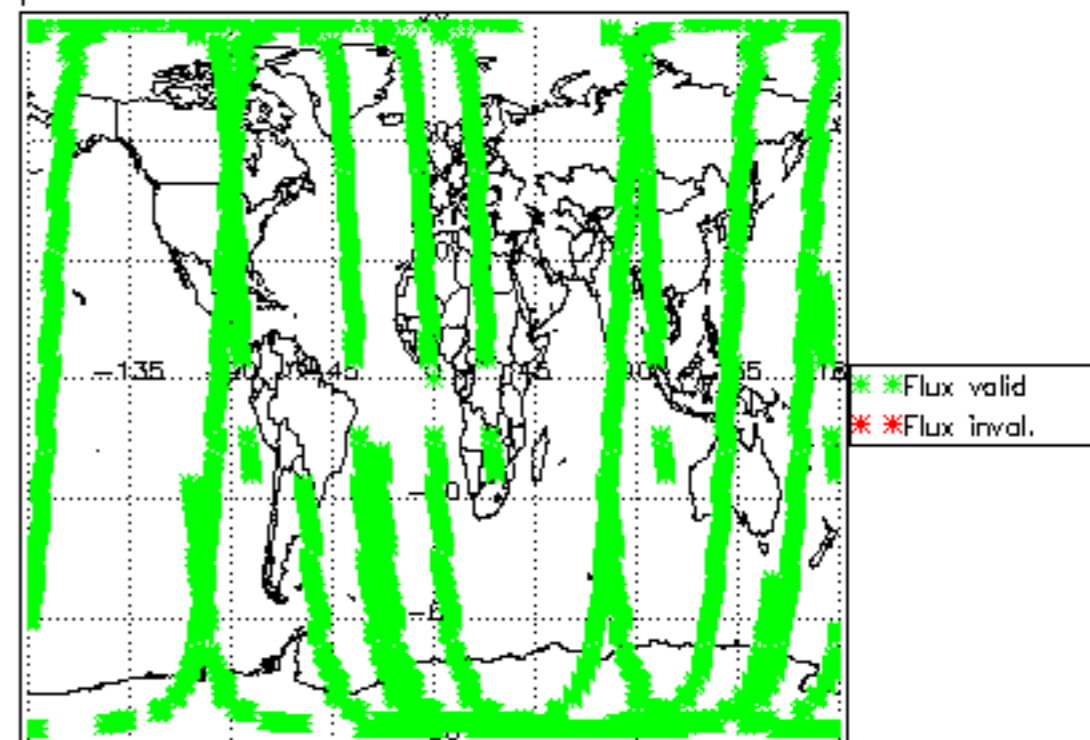


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector AB



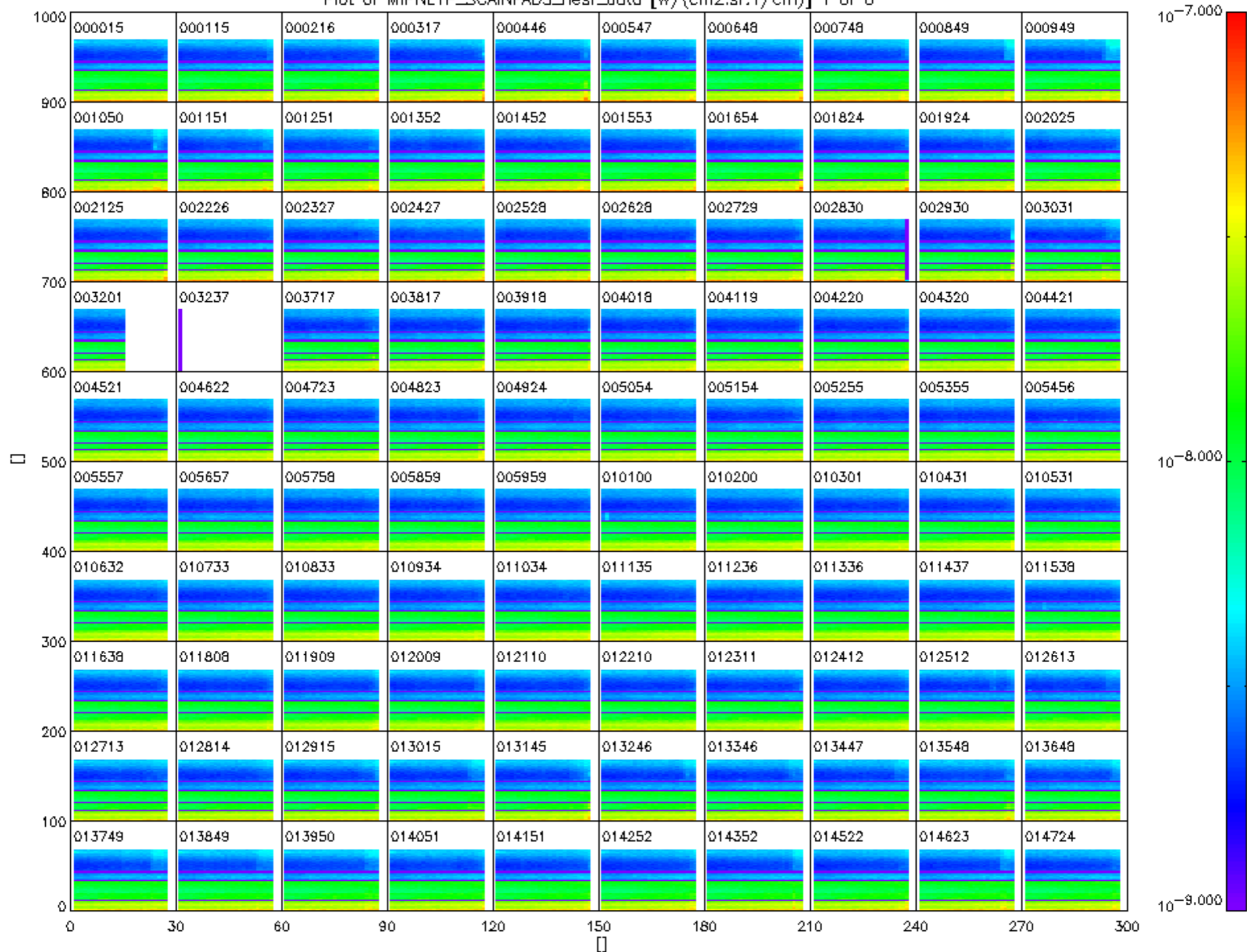


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector B

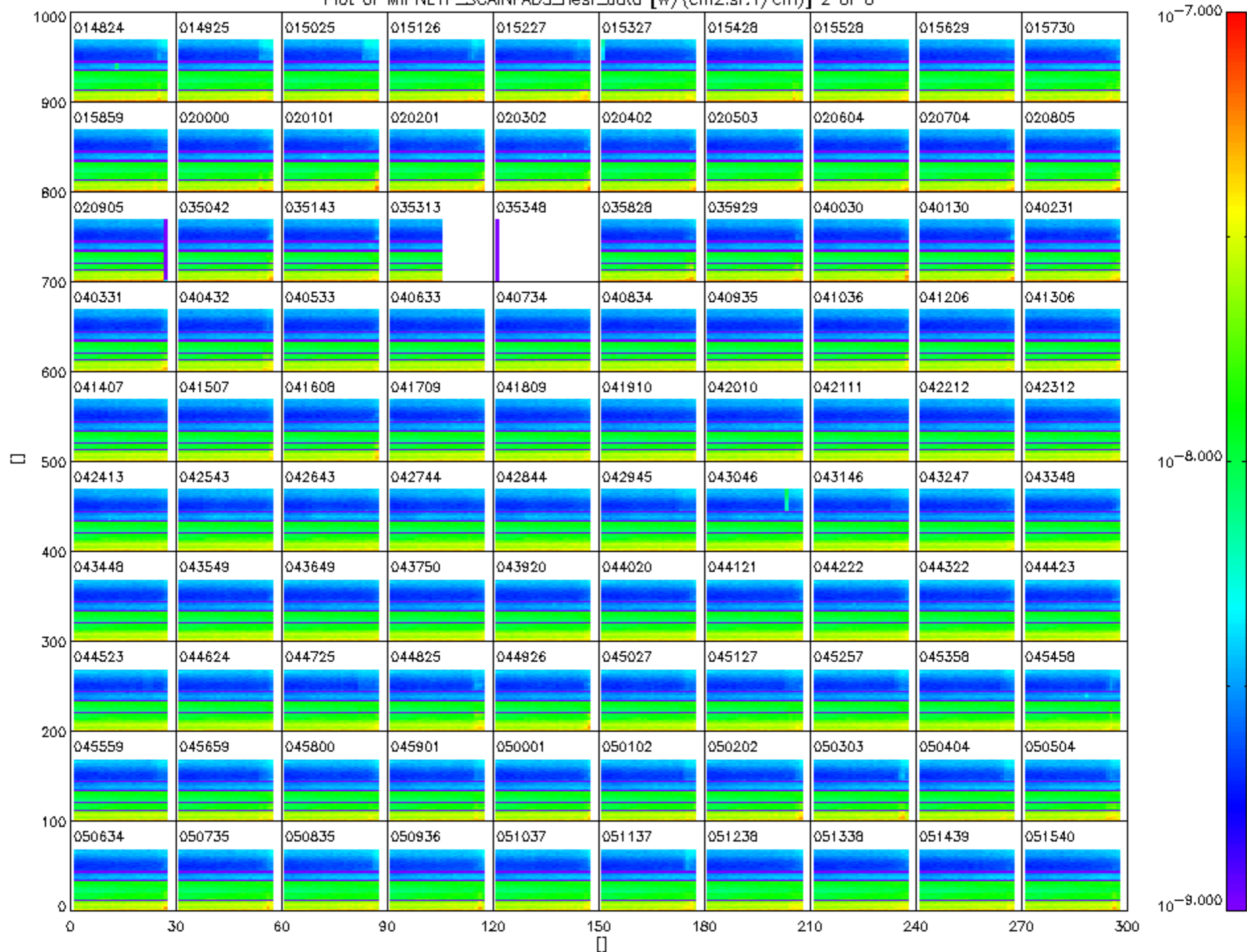




Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 1 of 6

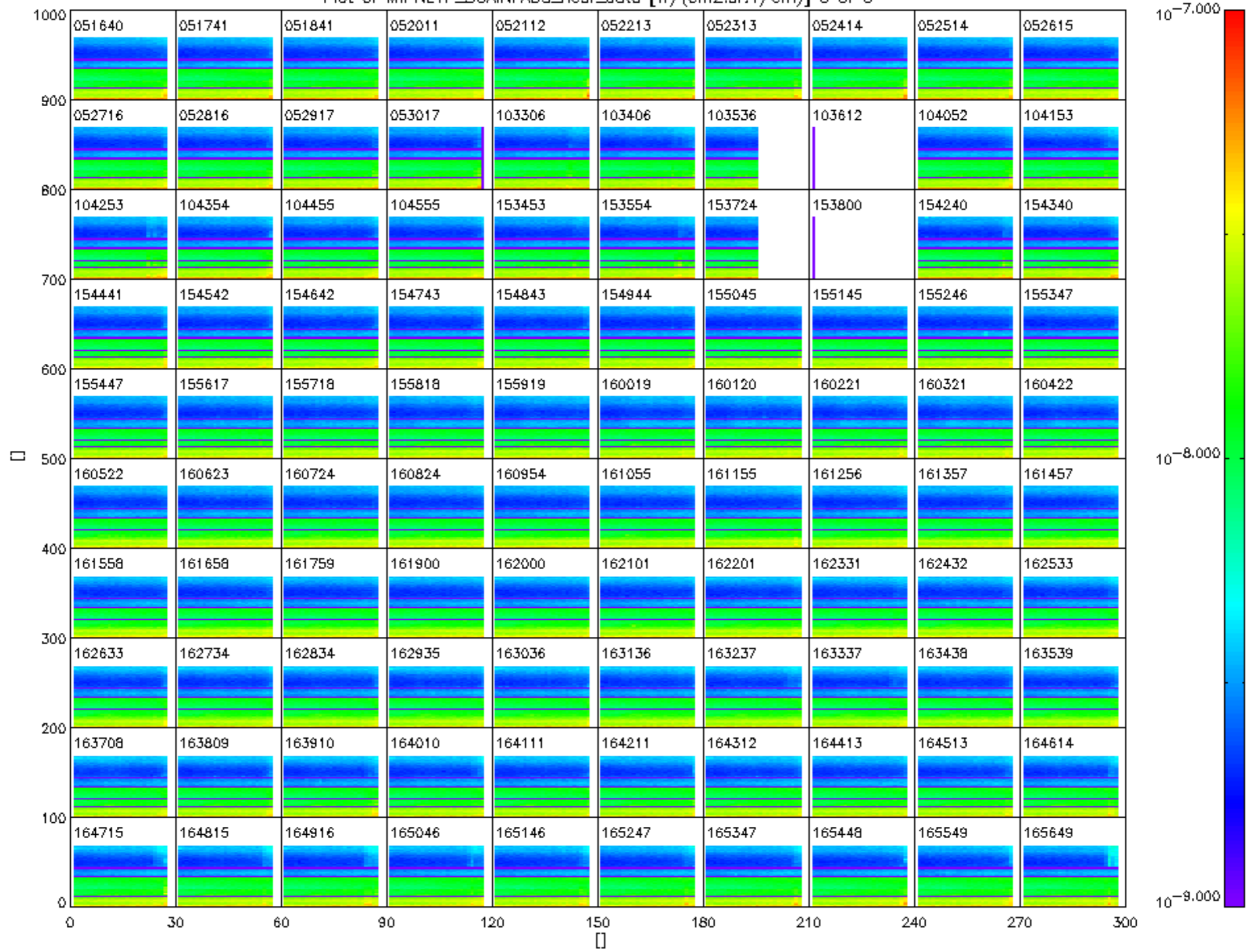


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 2 of 6



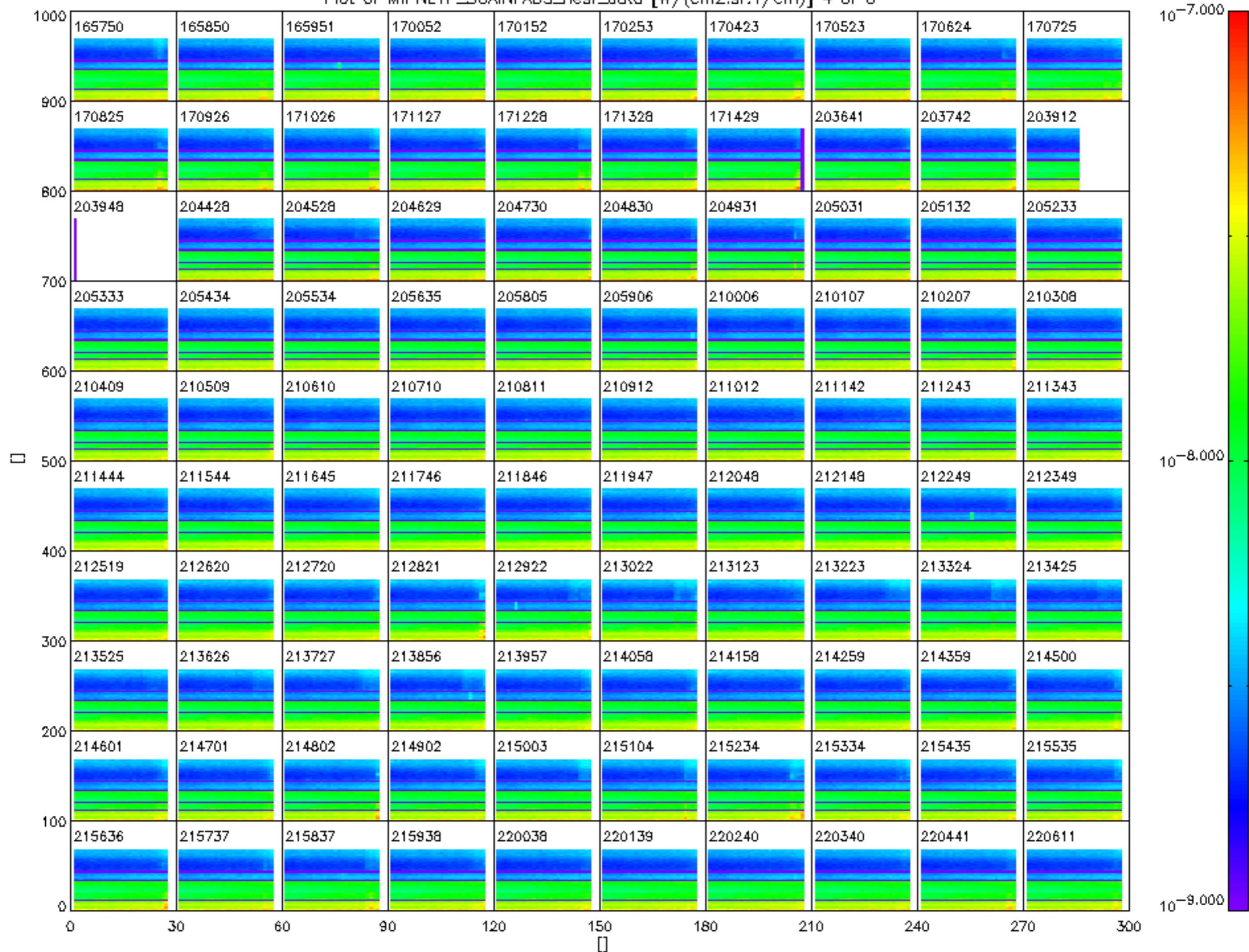


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 3 of 6

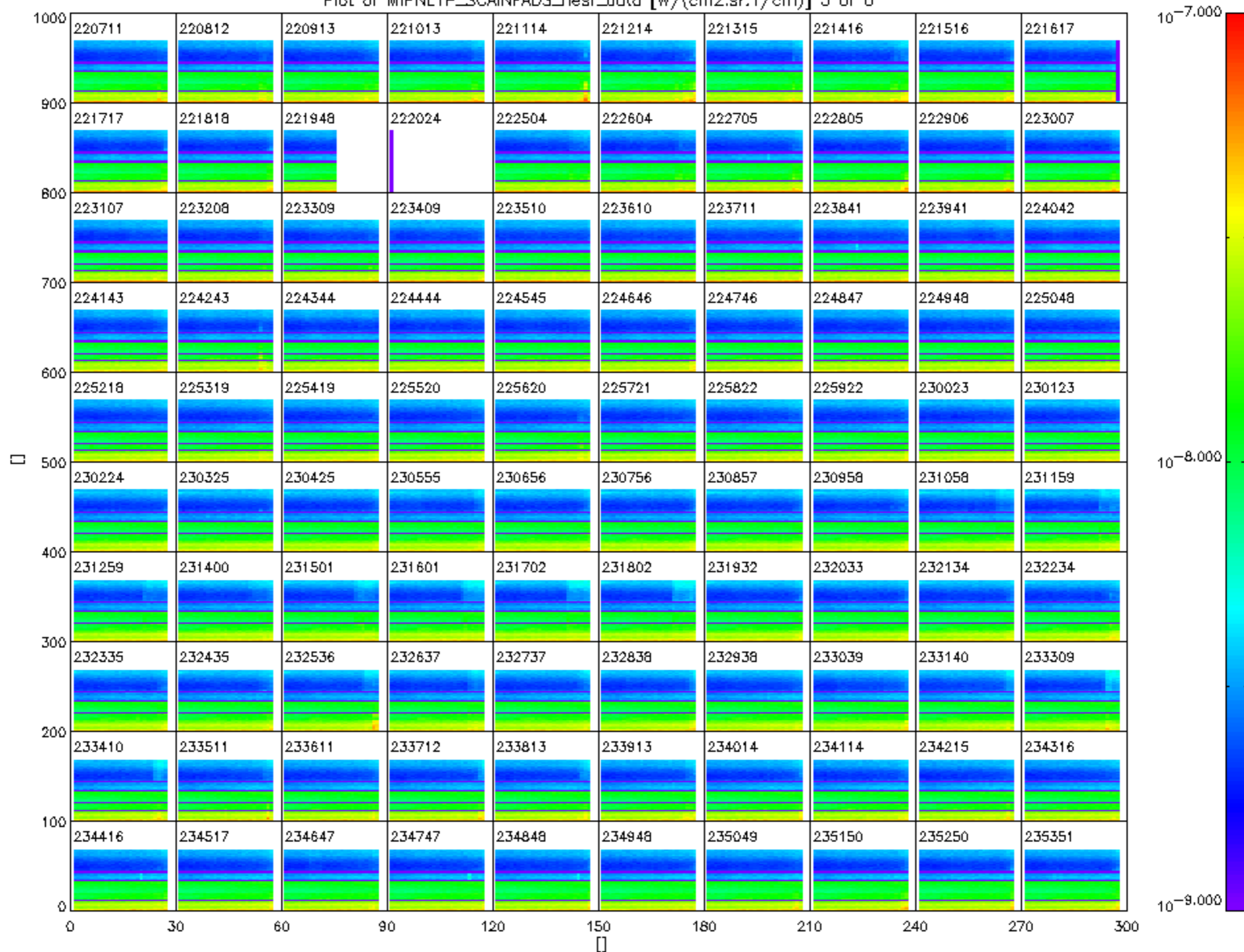




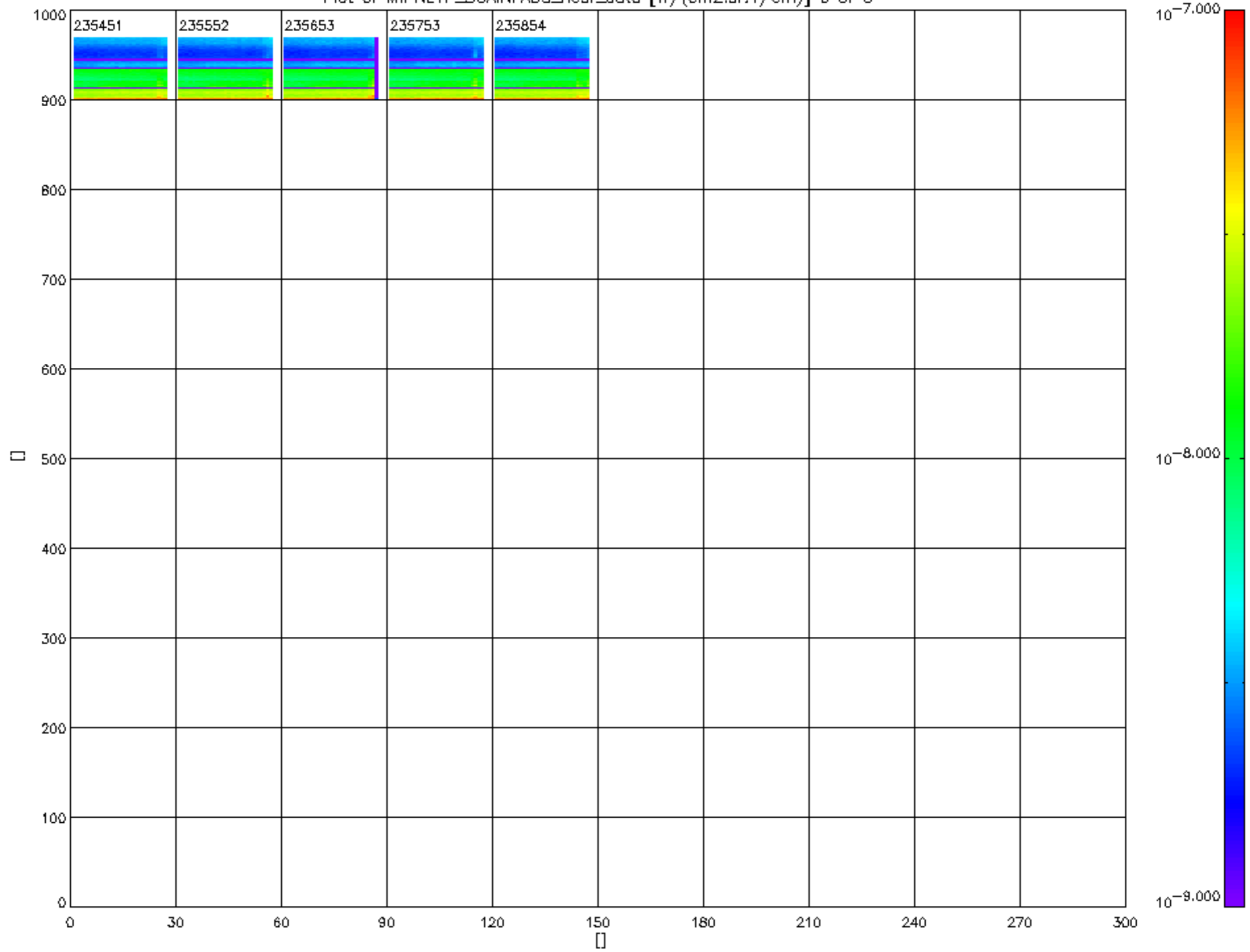
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 4 of 6



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 5 of 6

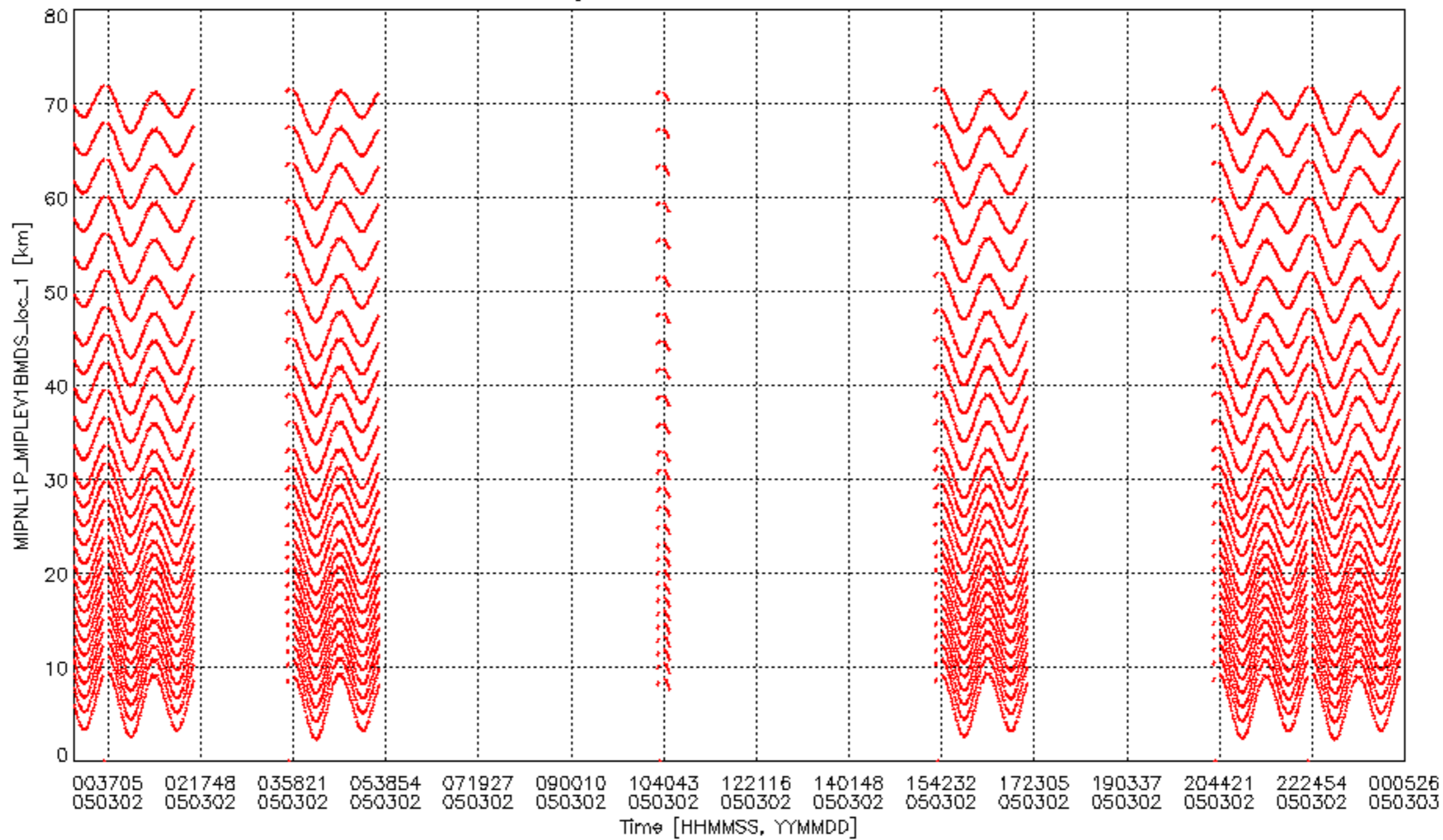


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 6 of 6

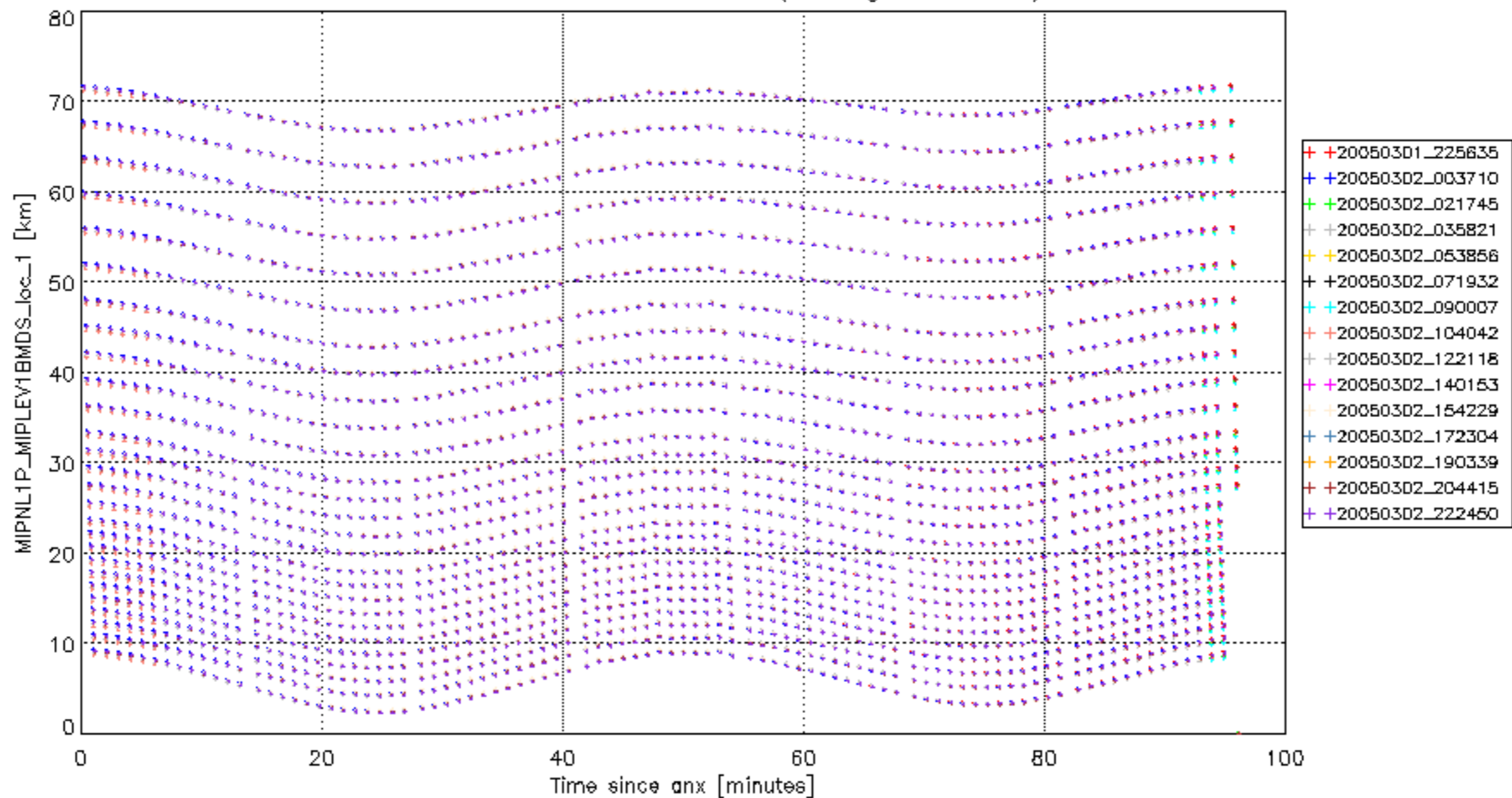


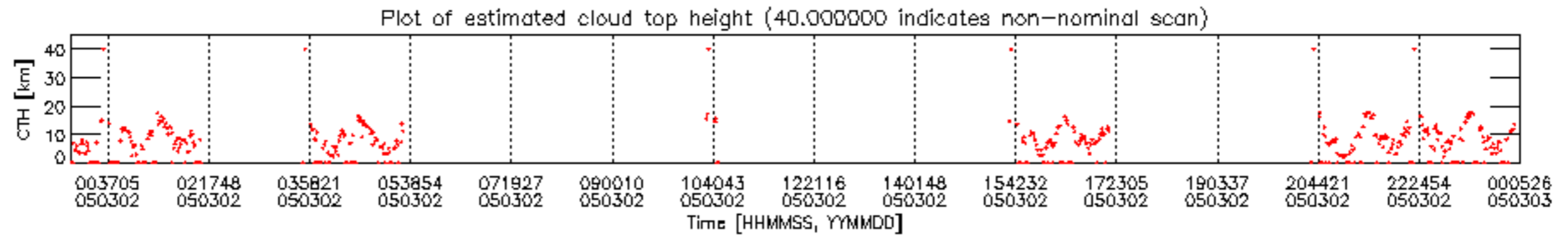


Plot of MIPNL1P\_MIPLEV1BMDS\_loc\_1 against time.  
The vertical grid lines indicate estimated anx events.



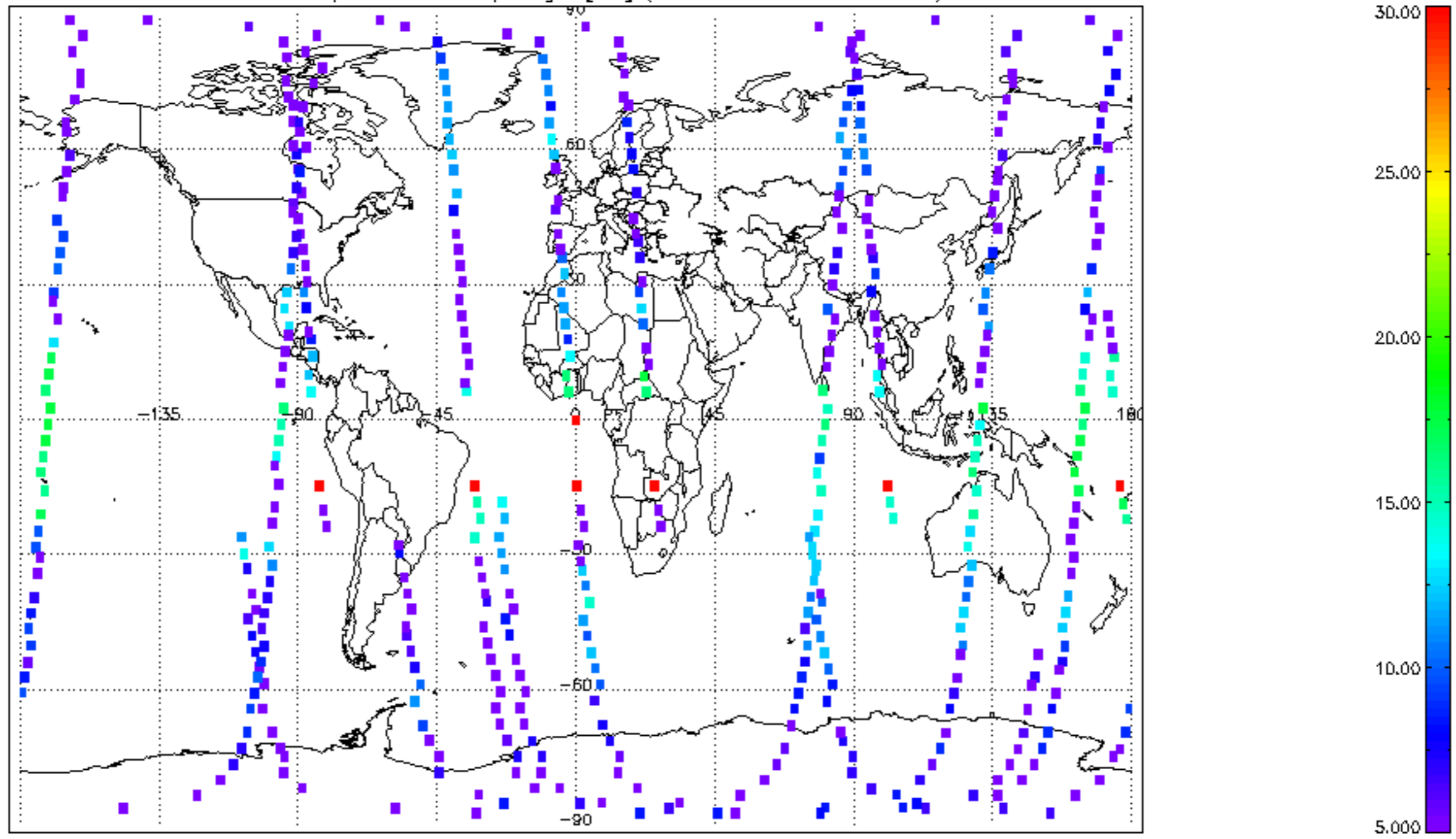
Plot of MIPNL1P\_MIPLEV1BMDS\_Joc\_1 against relative time within orbit.  
The colours indicate distinct orbits (see legend for anx).

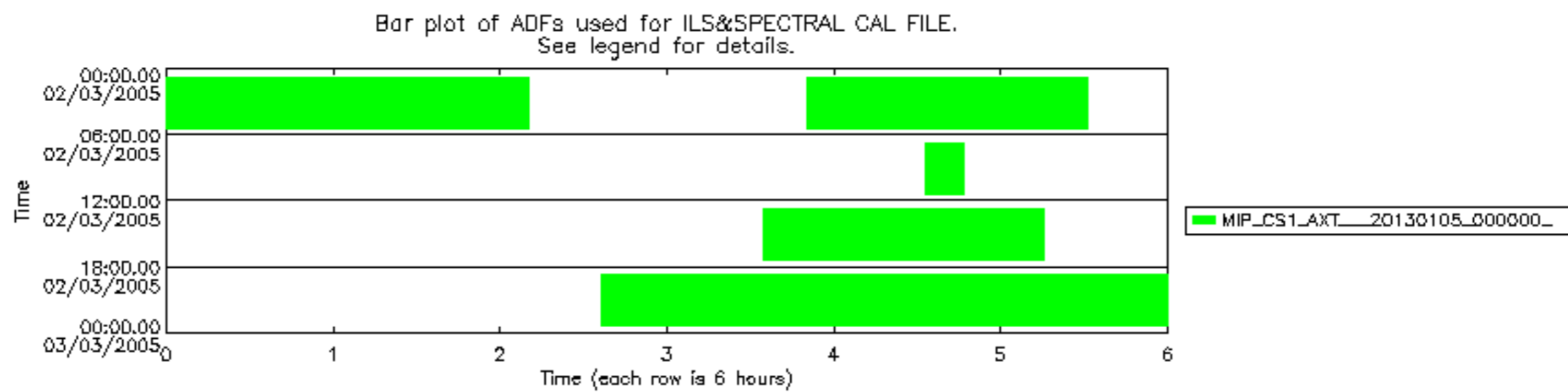


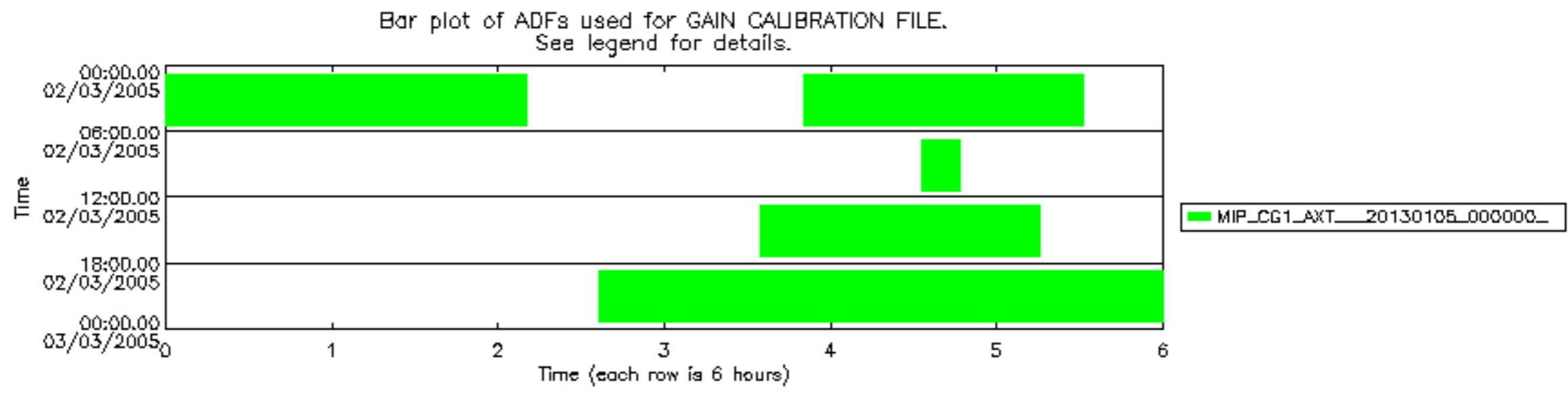




Geolocation plot of cloud top height [km] (non-nominal scans are red)

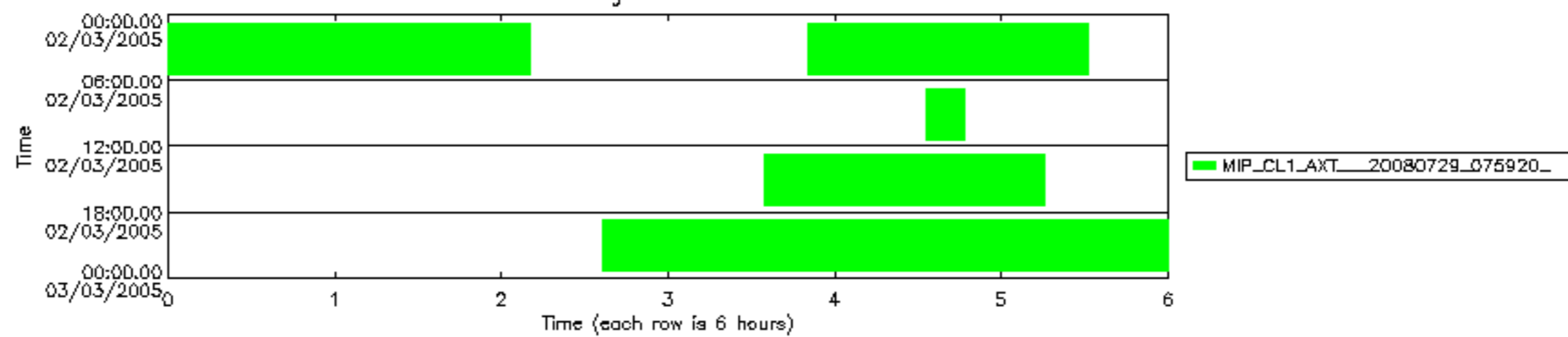


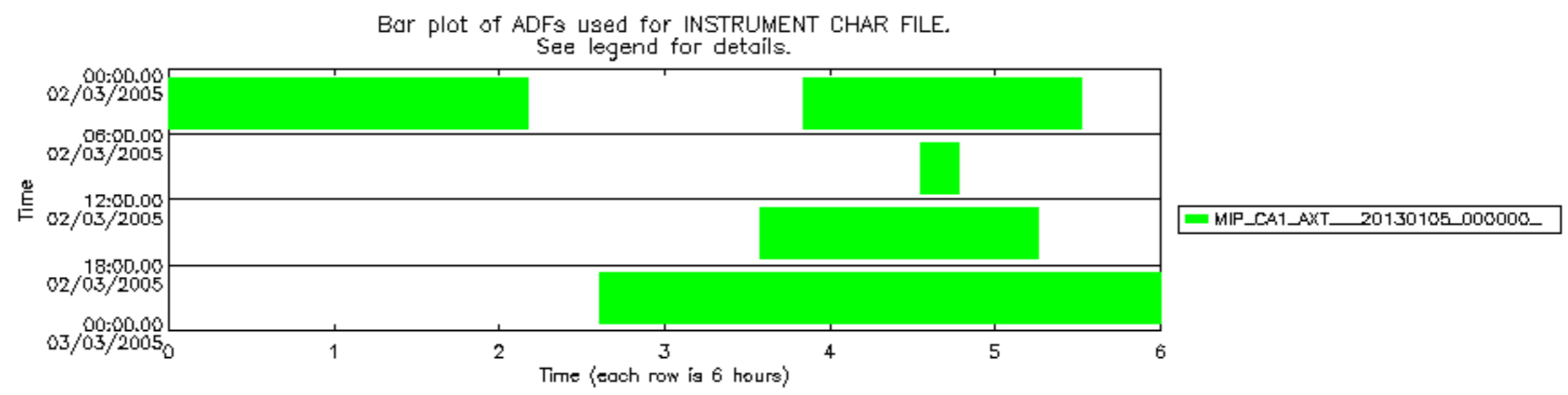


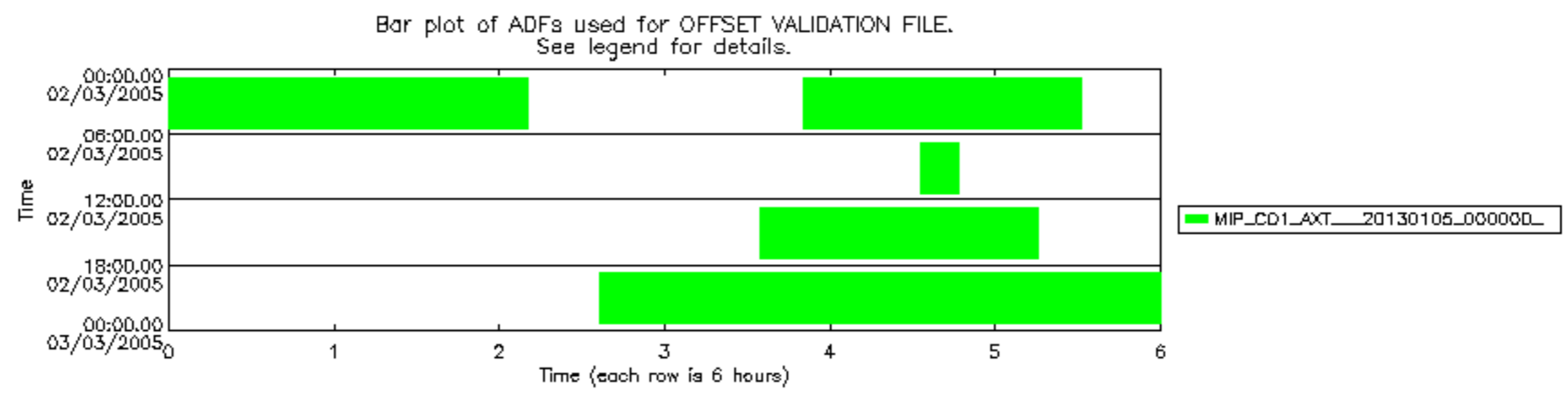




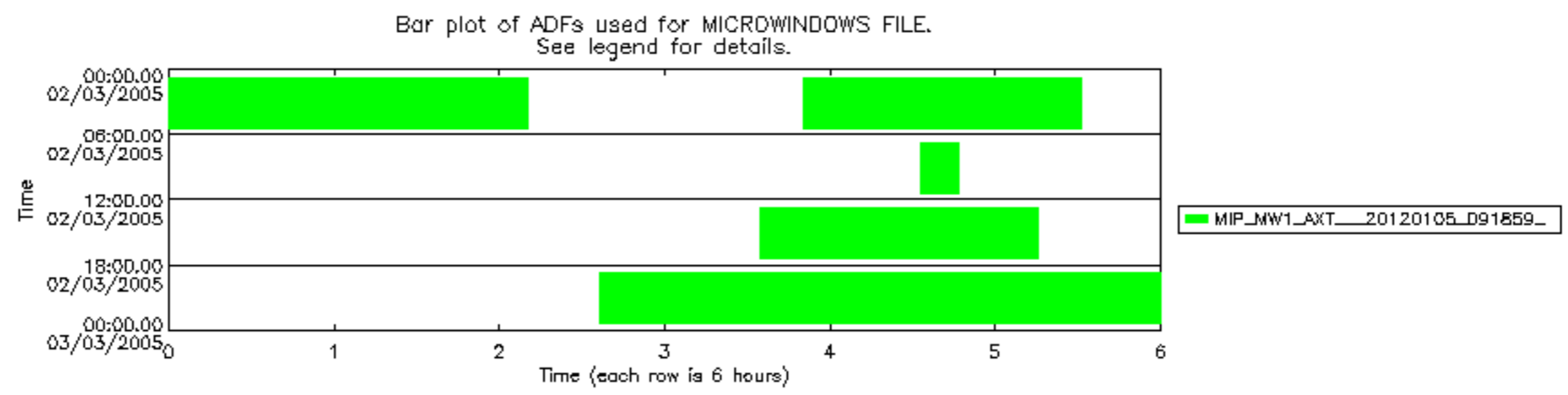
Bar plot of ADFs used for LINE OF SIGHT FILE.  
See legend for details.

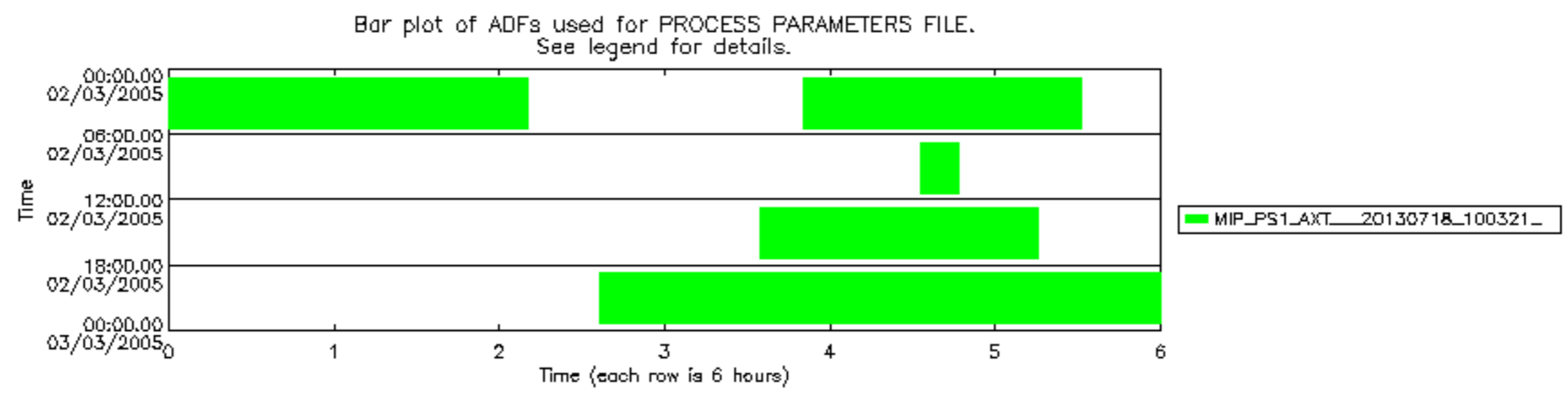


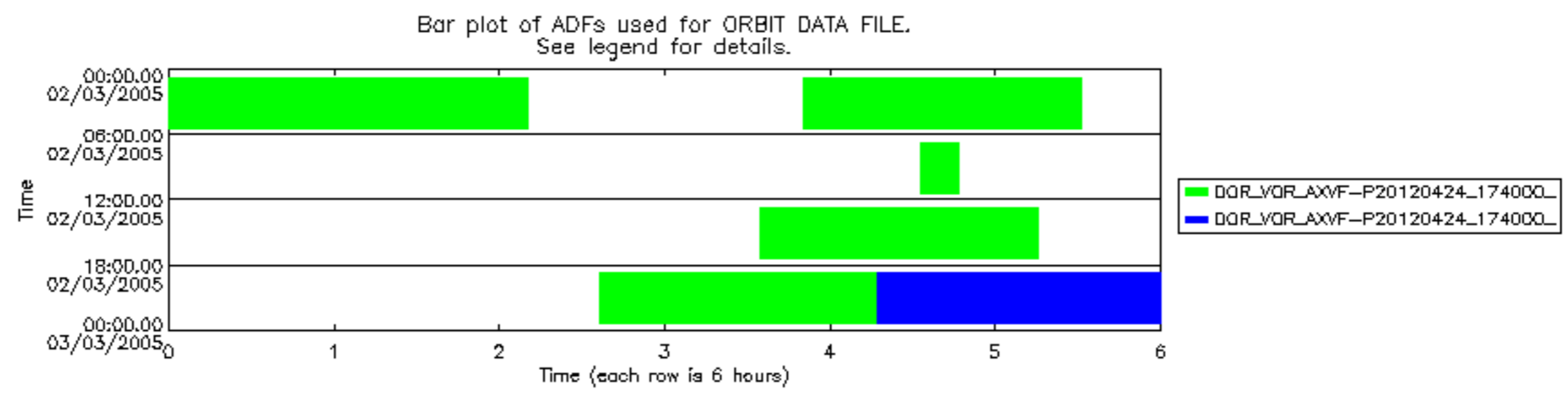














Bar plot of ADFs used for RESTITUTED ATTITUDE FILE.  
See legend for details.

