

# 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                | 06AUG2015 09:32:50                       |
| Data source version                      | MIPAS/7.11-W                             |
| Processing scope for products            | 07OCT2006 00:00:00 to 08OCT2006 00:00:00 |
| Start time of first product within scope | 06OCT2006 23:35:01                       |
| Stop time of last product within scope   | 08OCT2006 00:42:53                       |
| Total number of level 1 products         | 9  |
| Number of level 1 products with errors   | 3  |

#### 1.1.2 Summary per product

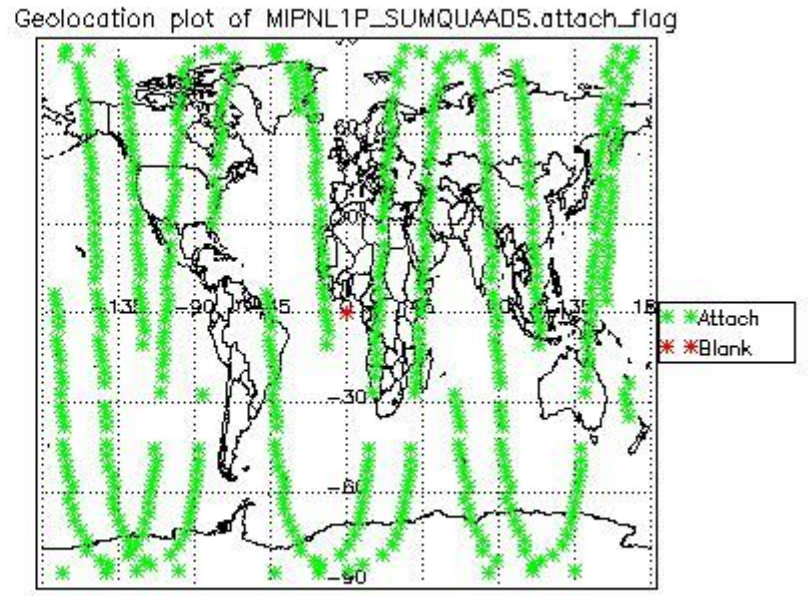
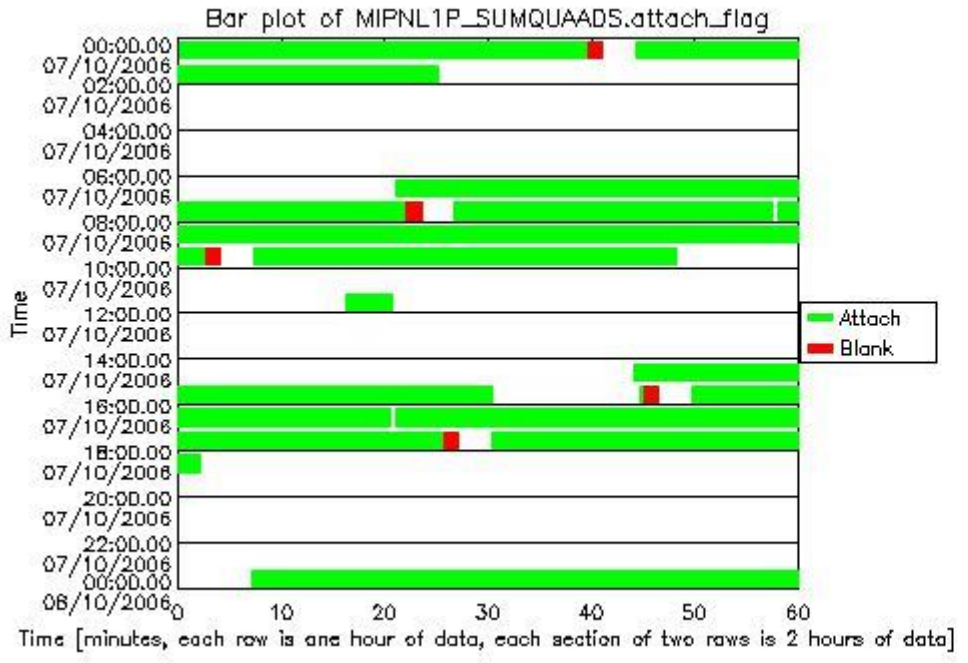
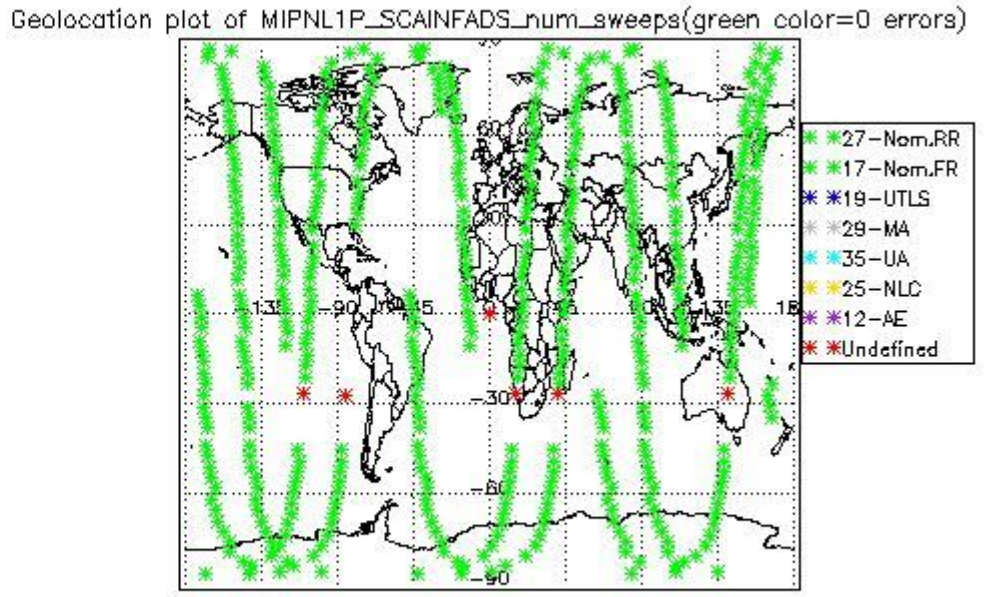
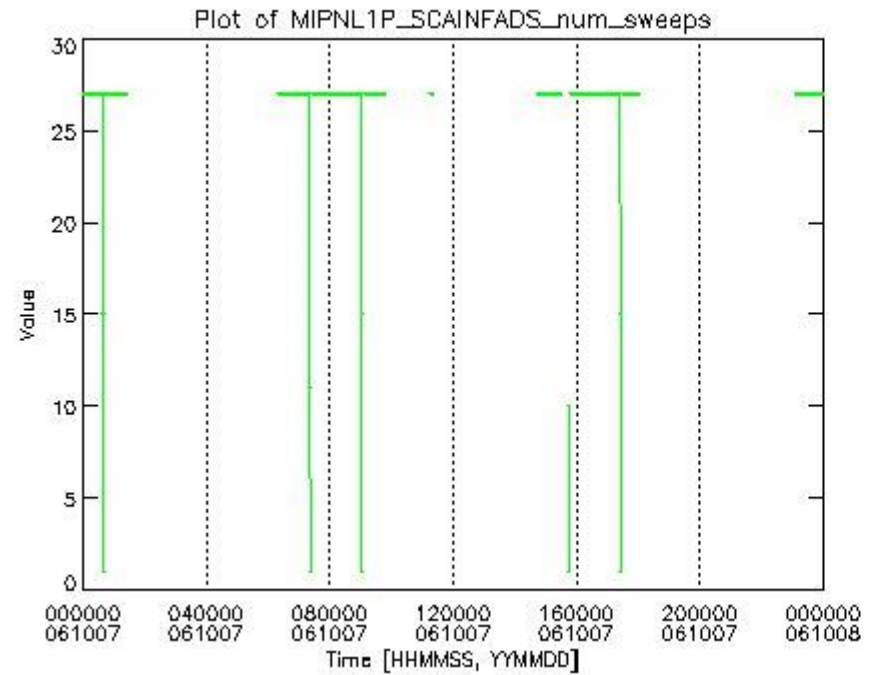
The following table shows a summary for each product used in this report.

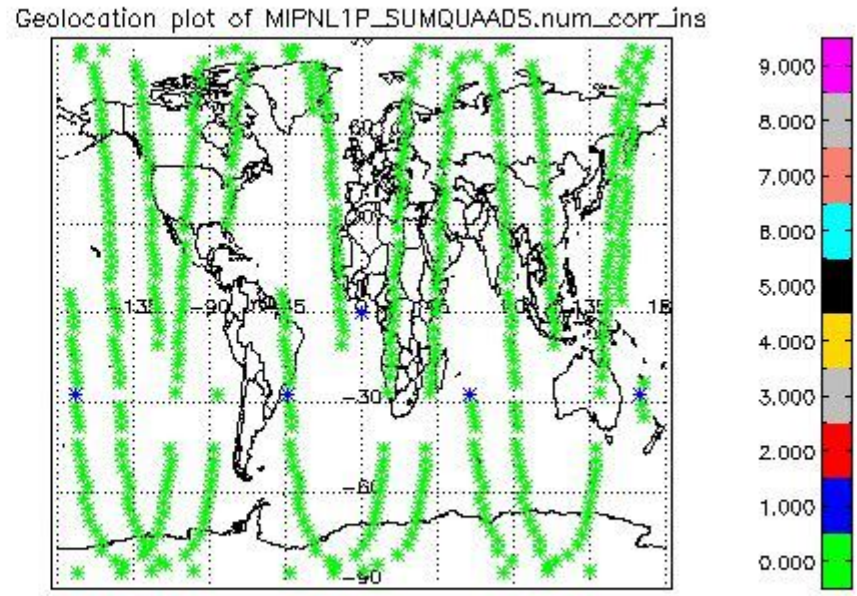
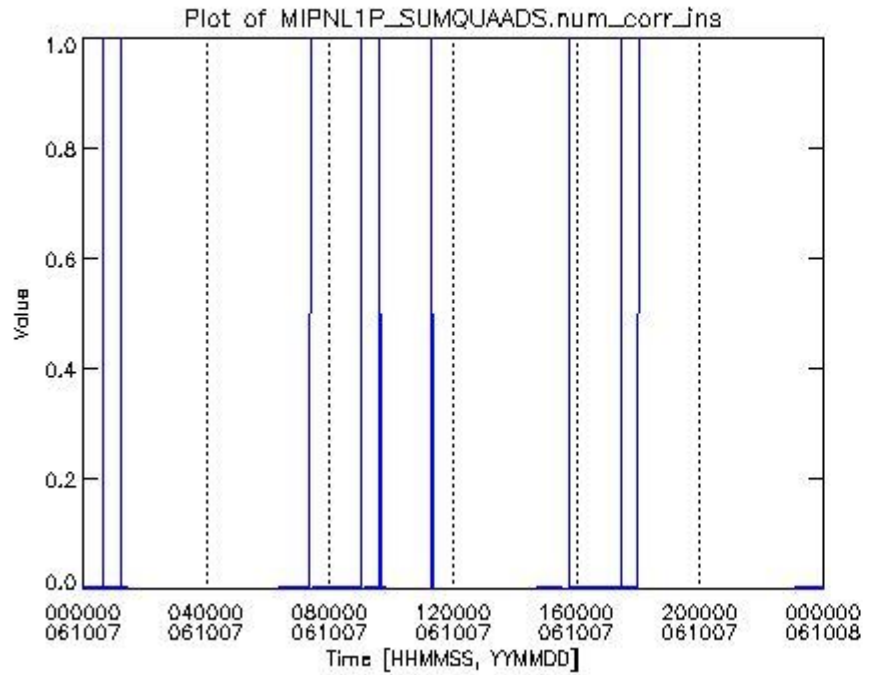
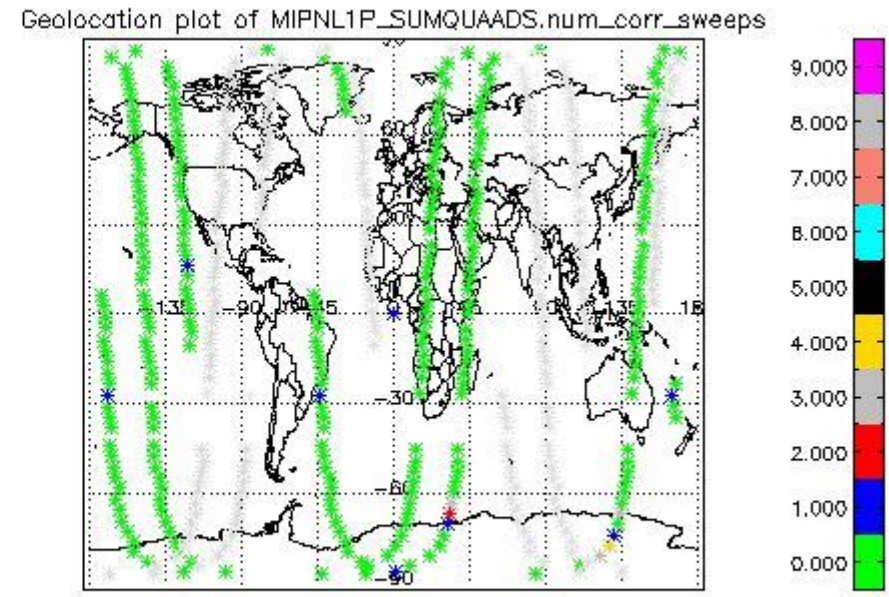
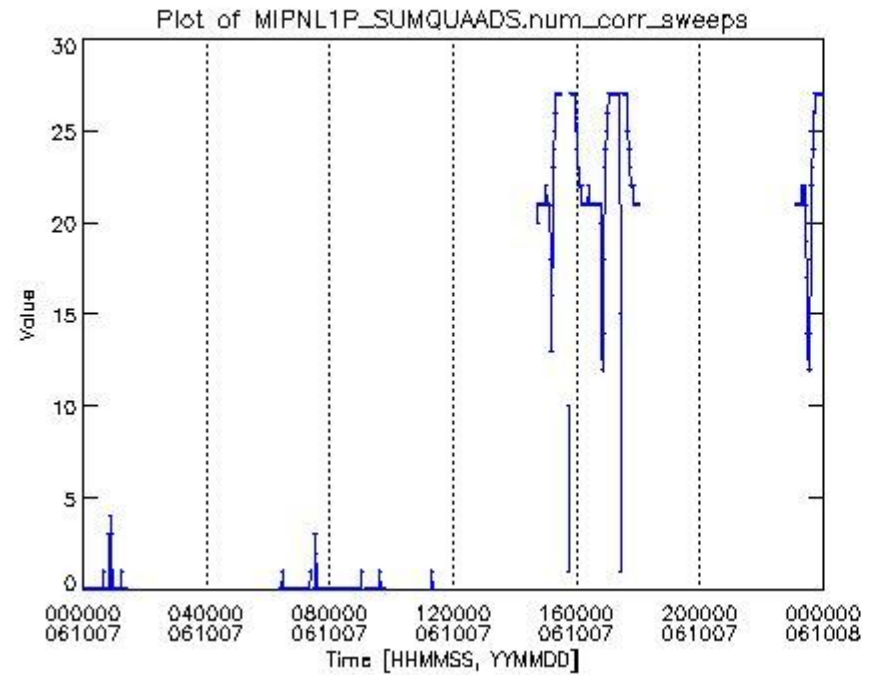
| # | Product name   | Start time         | Stop time          | Prod err | Slice position (prod/tot) | #sweeps SPH |
|---|--|--------------------|--------------------|----------|---------------------------|-------------|
| 0 | MIP_NL__1PWDSI20061006_233501_000060302051_00460_24061_0000.N1 | 06OCT2006 23:35:01 | 07OCT2006 01:15:31 | 0        | 0/0                       | 27          |
| 1 | MIP_NL__1PWDSI20061007_011537_000005402051_00461_24062_0000.N1 | 07OCT2006 01:15:37 | 07OCT2006 01:24:36 | 0        | 0/0                       | 27          |
| 2 | MIP_NL__1PWDSI20061007_062105_000057502051_00464_24065_0000.N1 | 07OCT2006 06:21:05 | 07OCT2006 07:56:54 | 0        | 0/0                       | 27          |
| 3 | MIP_NL__1PWDSI20061007_075801_000060302051_00465_24066_0000.N1 | 07OCT2006 07:58:01 | 07OCT2006 09:38:31 | 0        | 0/0                       | 27          |
| 4 | MIP_NL__1PWDSI20061007_093837_000060362051_00466_24067_0000.N1 | 07OCT2006 09:38:37 | 07OCT2006 11:19:12 | 0        | 0/0                       | 27          |
| 5 | MIP_NL__1PWDSI20061007_111918_000000552051_00467_24068_0000.N1 | 07OCT2006 11:19:18 | 07OCT2006 11:20:13 | 0        | 0/0                       | 27          |
| 6 | MIP_NL__1PWDSI20061007_144404_000057512051_00469_24070_0000.N1 | 07OCT2006 14:44:04 | 07OCT2006 16:19:54 | 1        | 0/0                       | 27          |
| 7 | MIP_NL__1PWDSI20061007_162101_000060302051_00470_24071_0000.N1 | 07OCT2006 16:21:01 | 07OCT2006 18:01:30 | 1        | 0/0                       | 27          |
| 8 | MIP_NL__1PWDSI20061007_230704_000057502051_00474_24075_0000.N1 | 07OCT2006 23:07:04 | 08OCT2006 00:42:53 | 1        | 0/0                       | 27          |

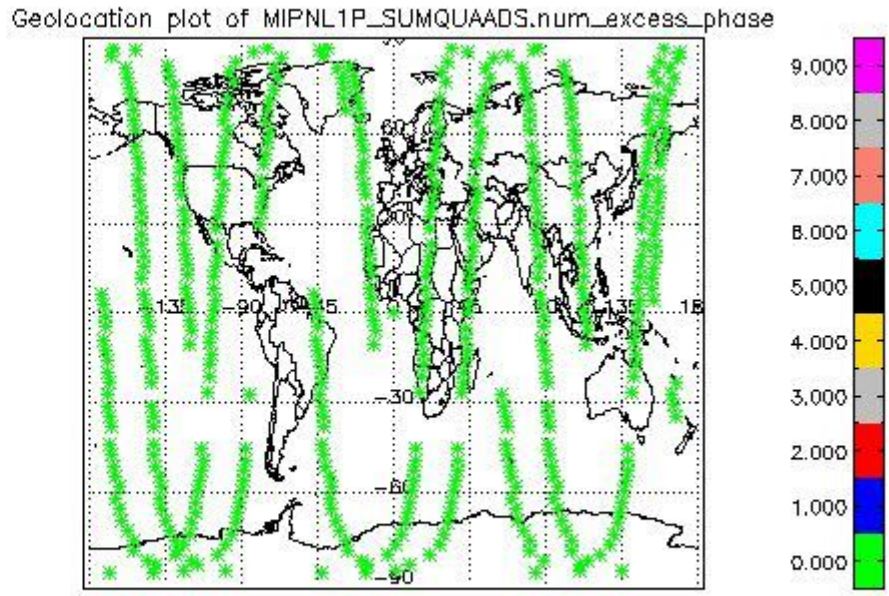
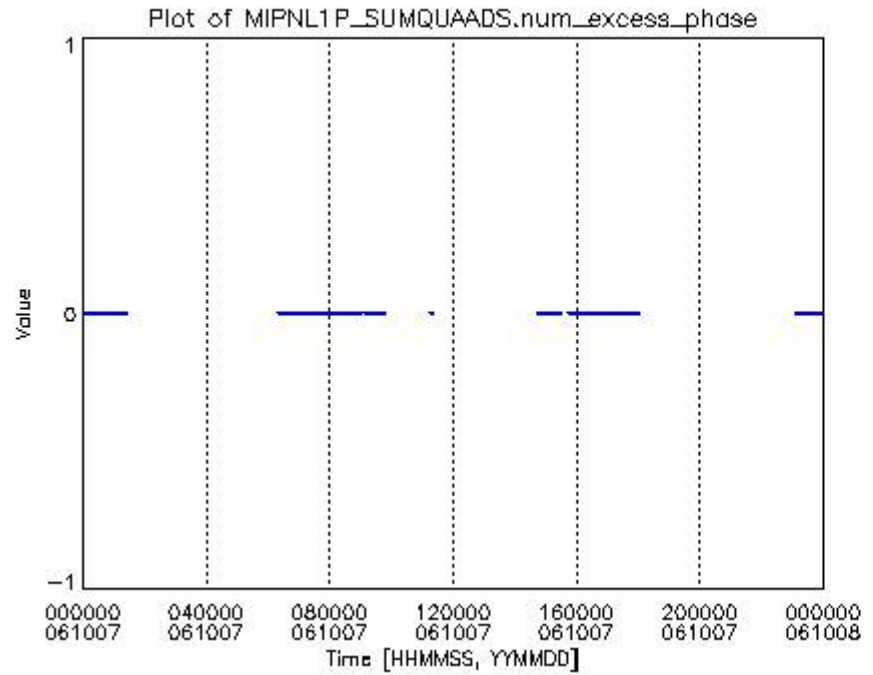
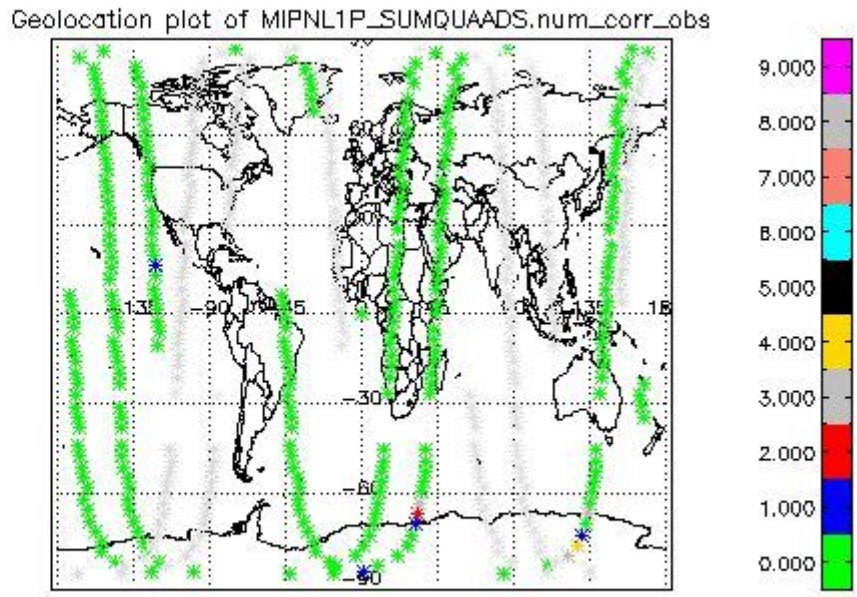
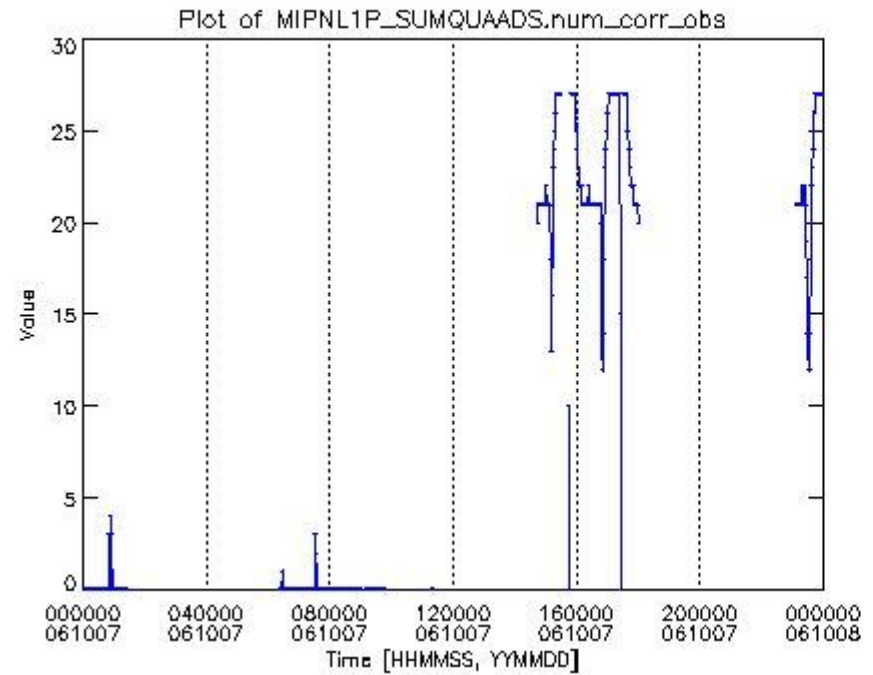
### 1.2 Product Quality Indicators

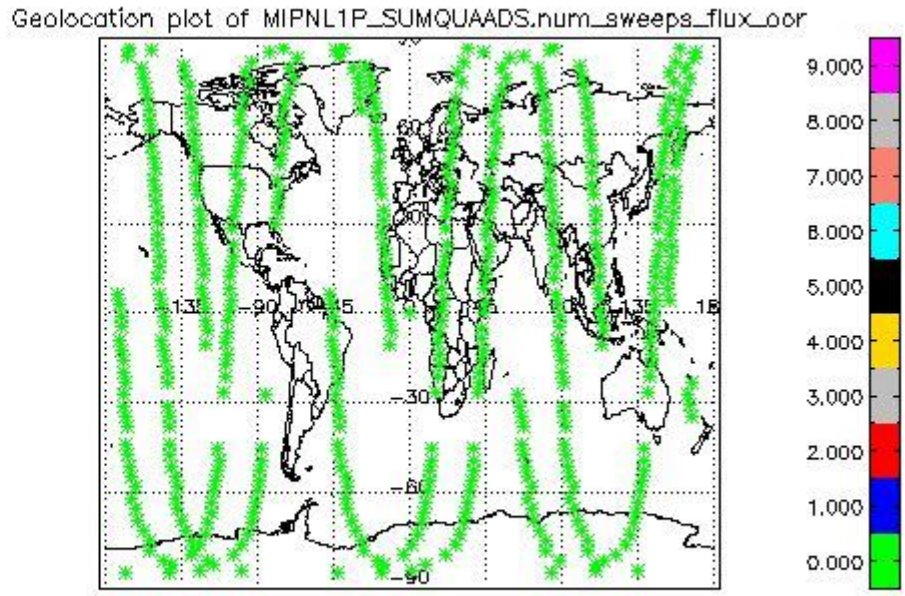
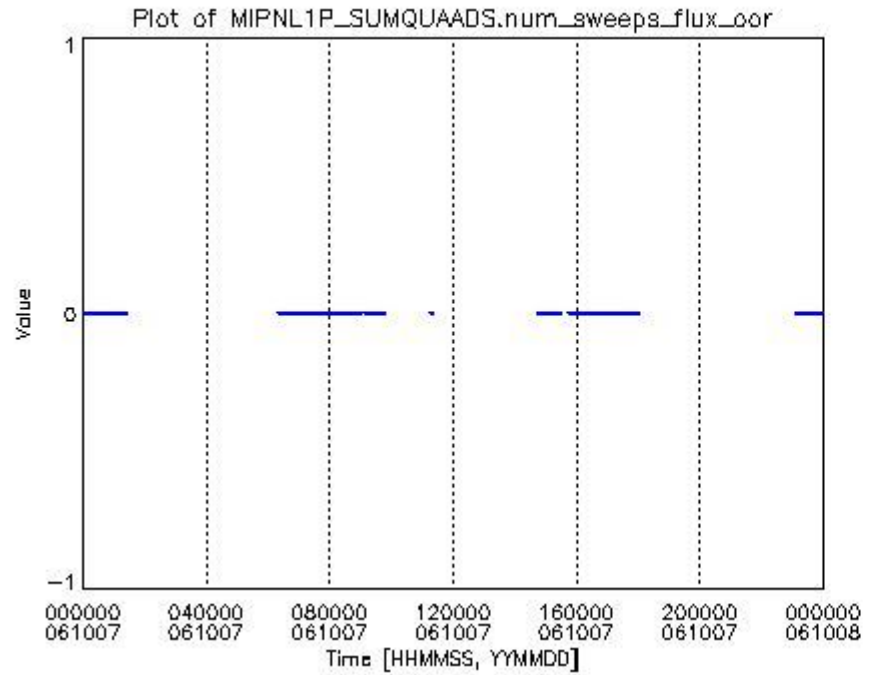
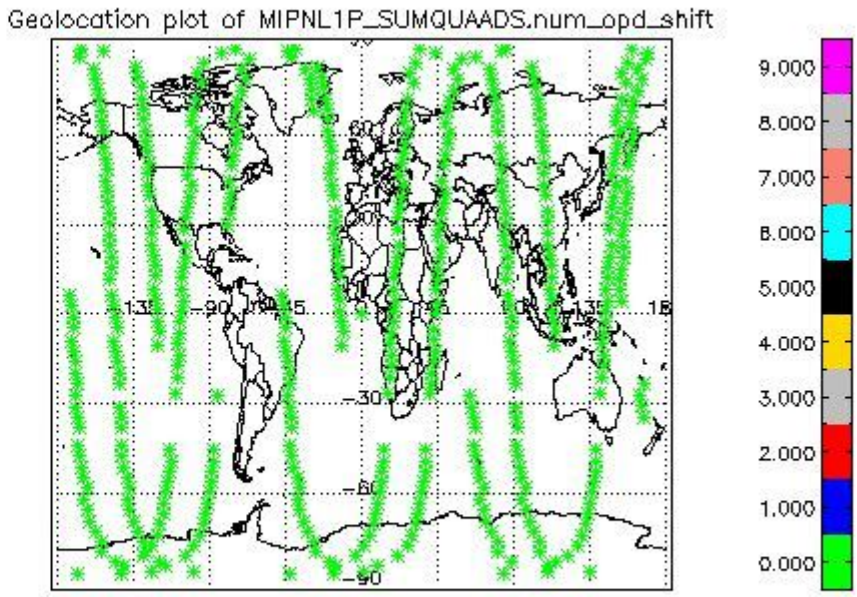
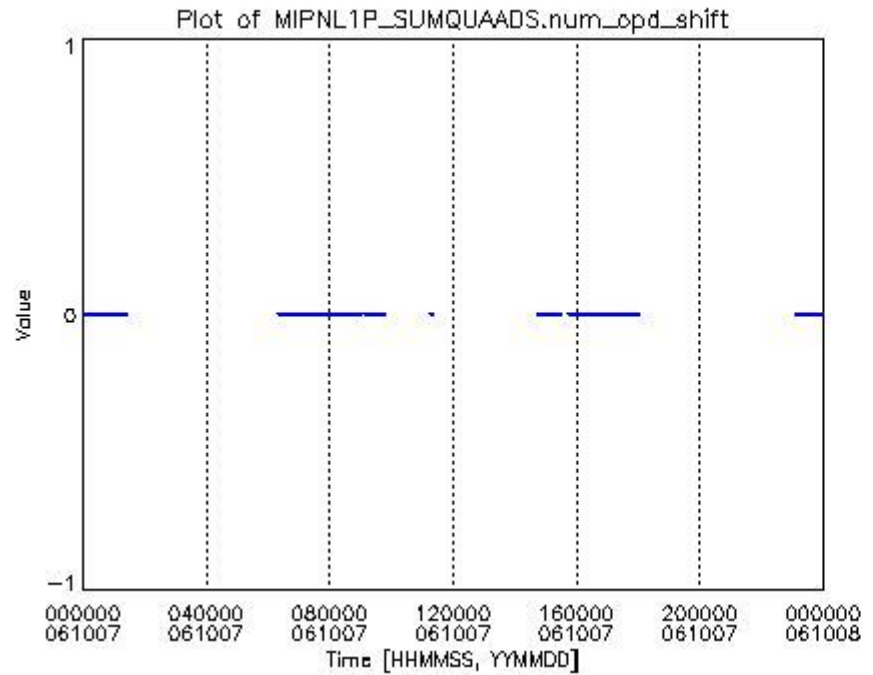
This report contains an analysis on product quality related parameters within the MIP\_NL\_\_1P product.

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



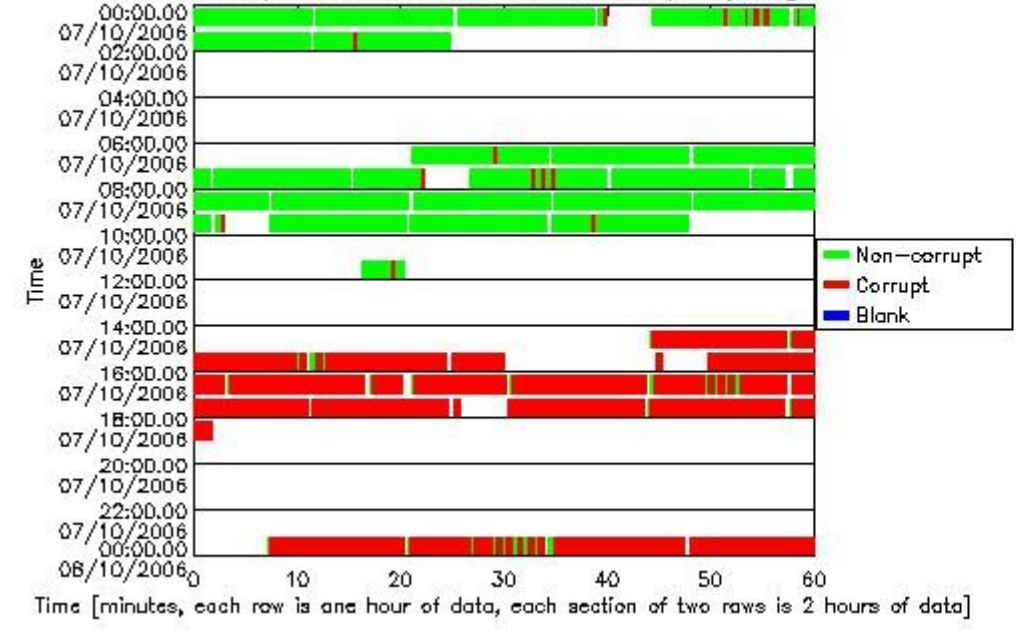




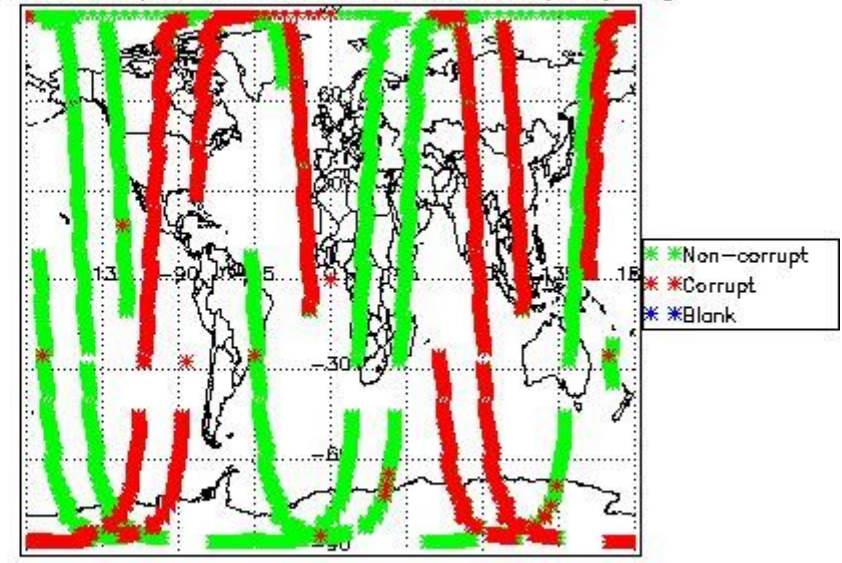


1.2.2 Trends and geolocation of MIPAS LEVEL 1 MDS

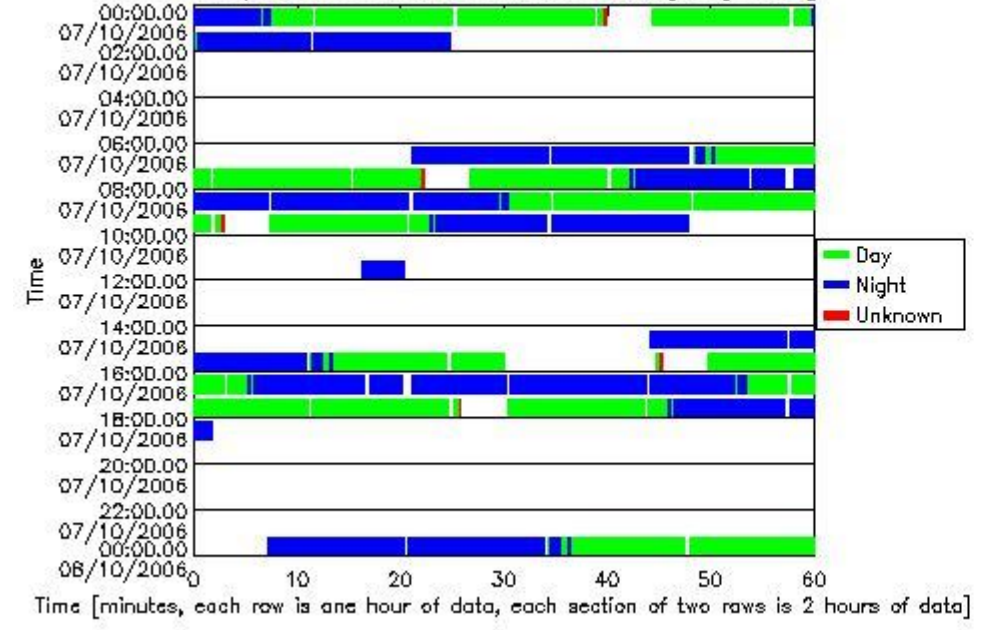
Bar plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag



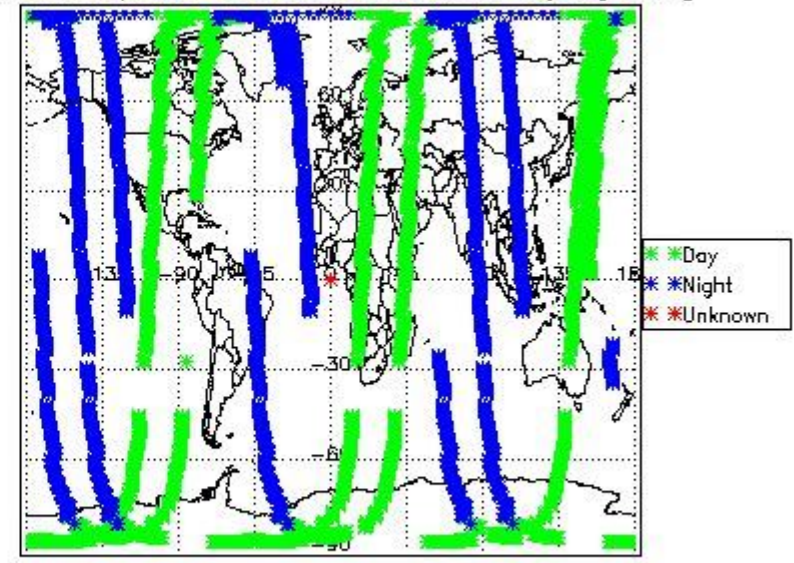
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag

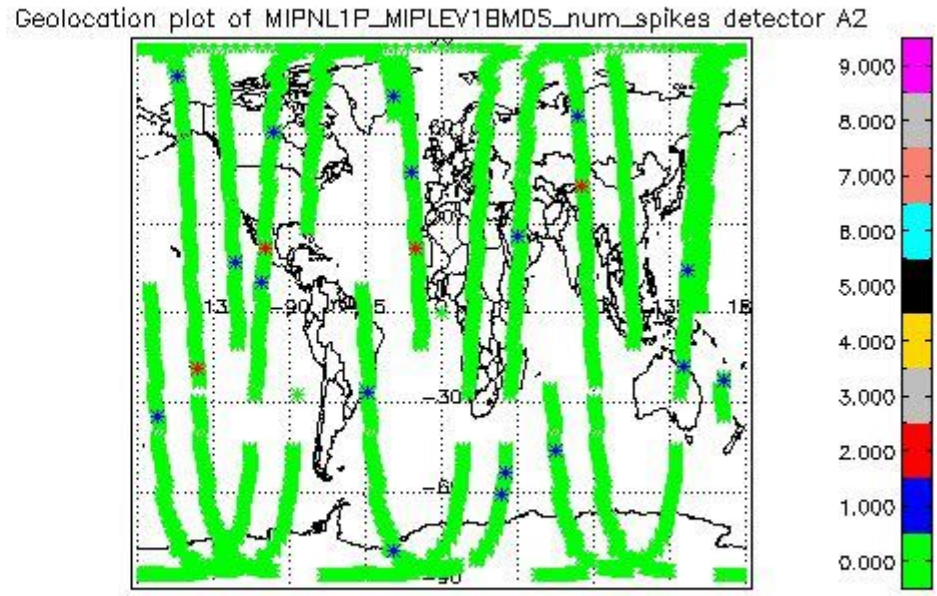
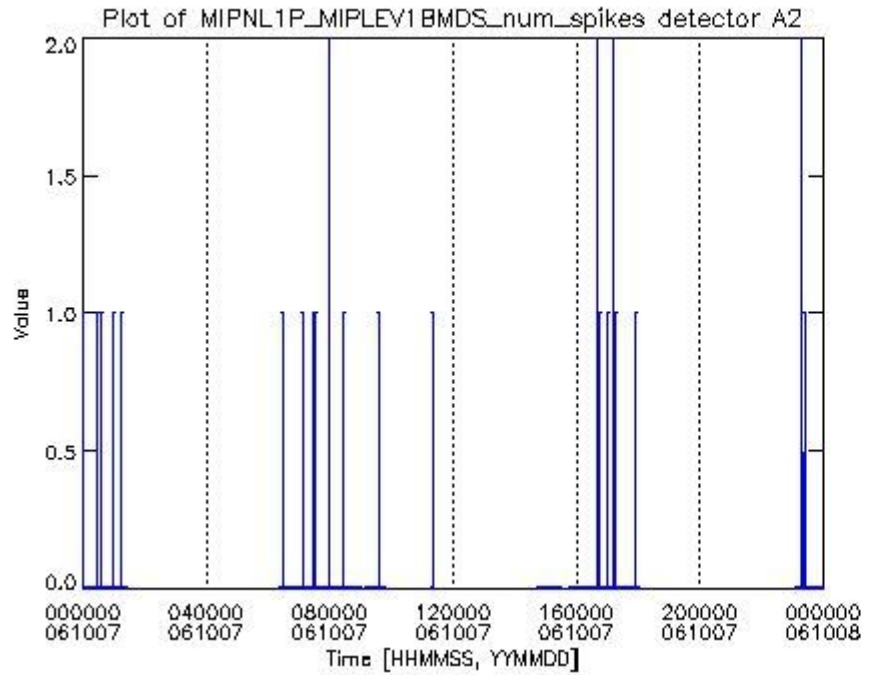
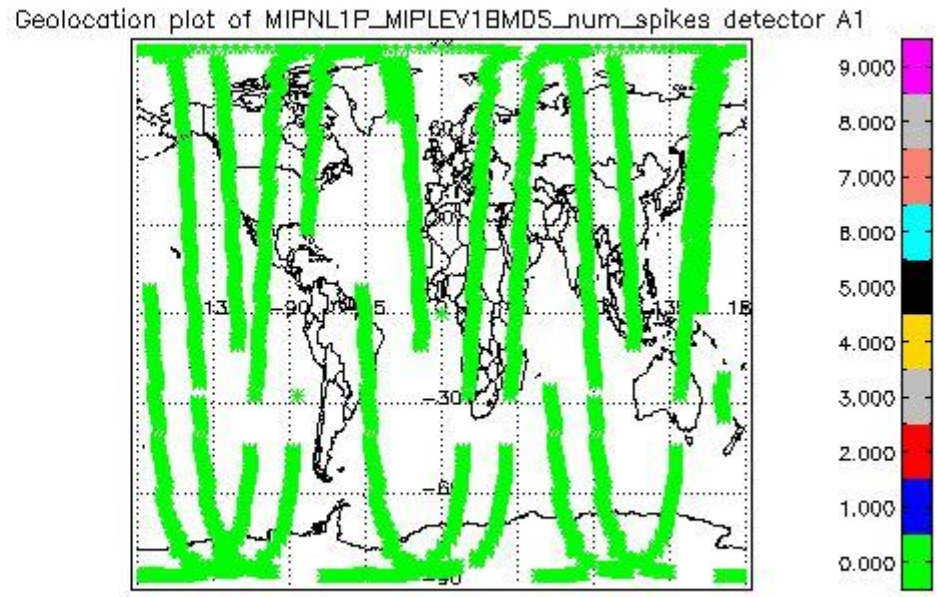
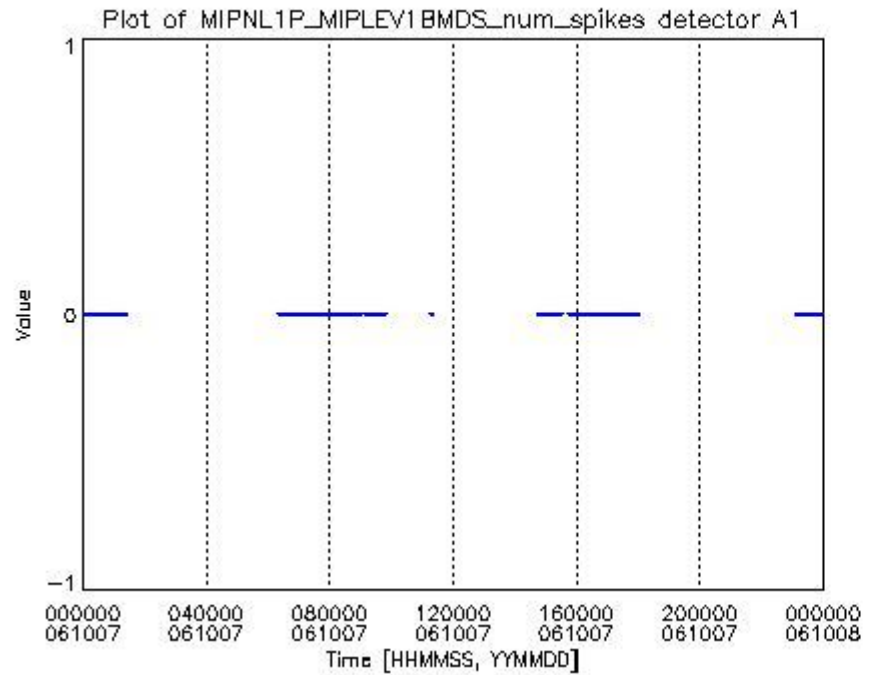


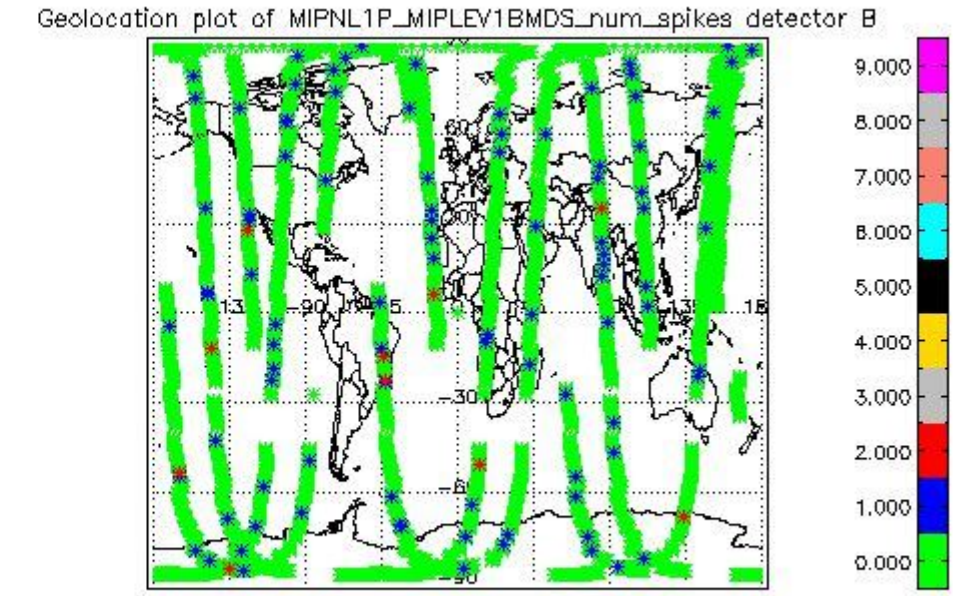
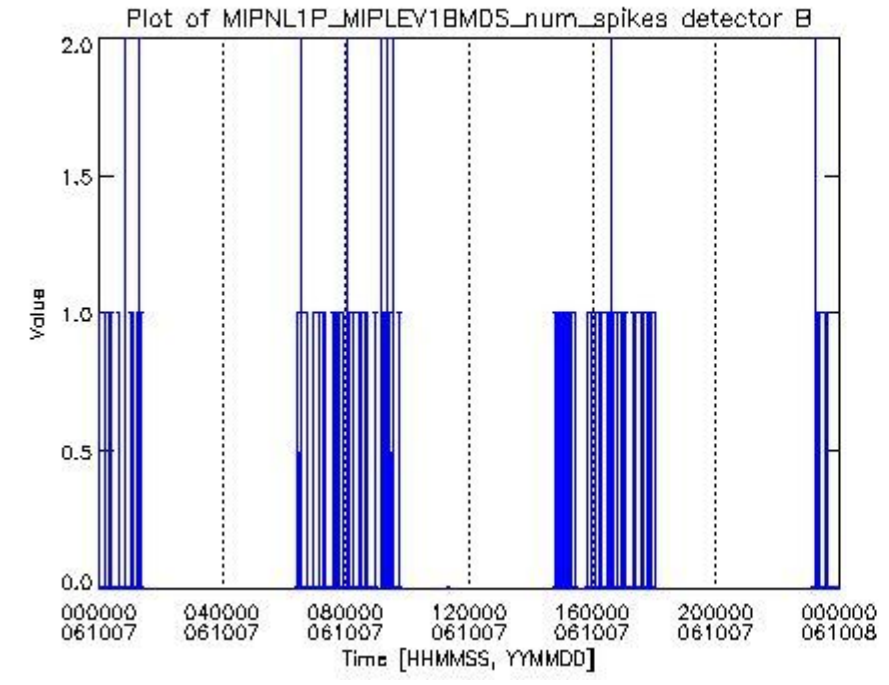
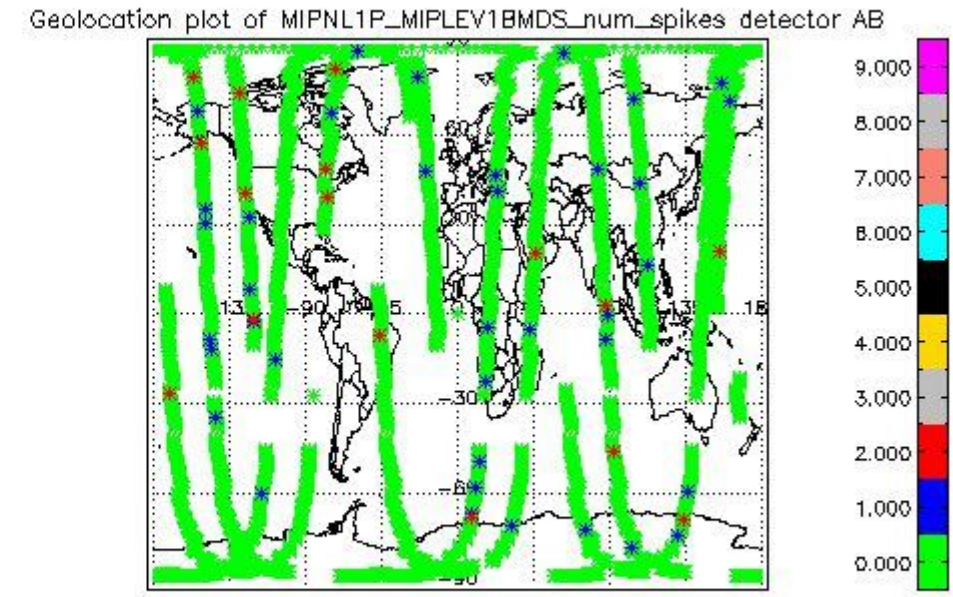
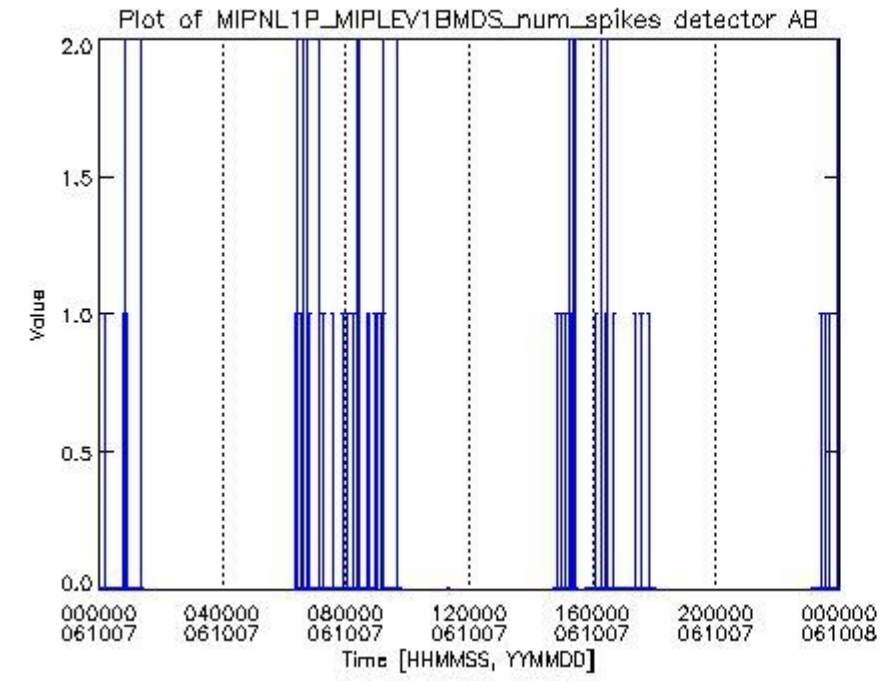
Bar plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag



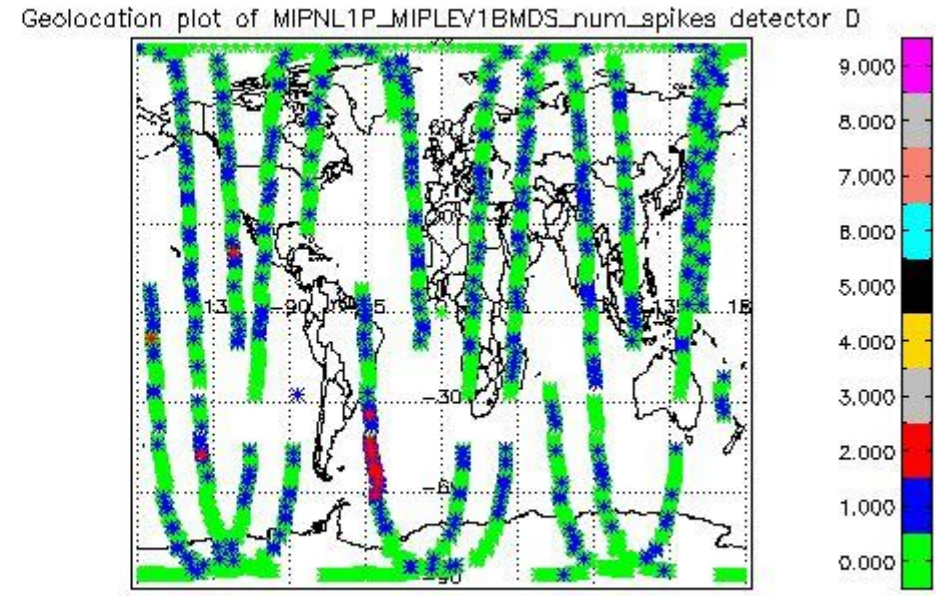
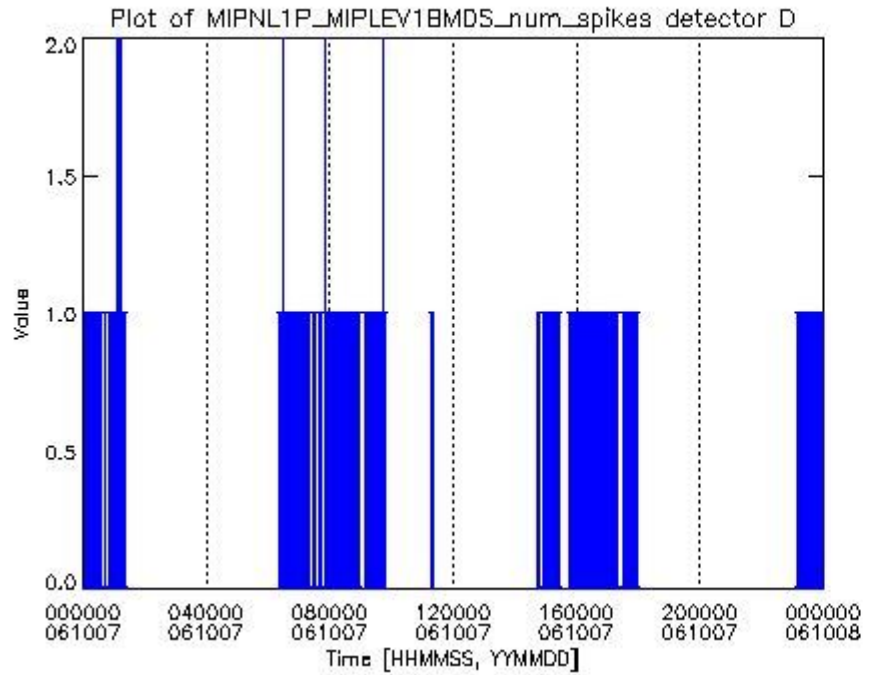
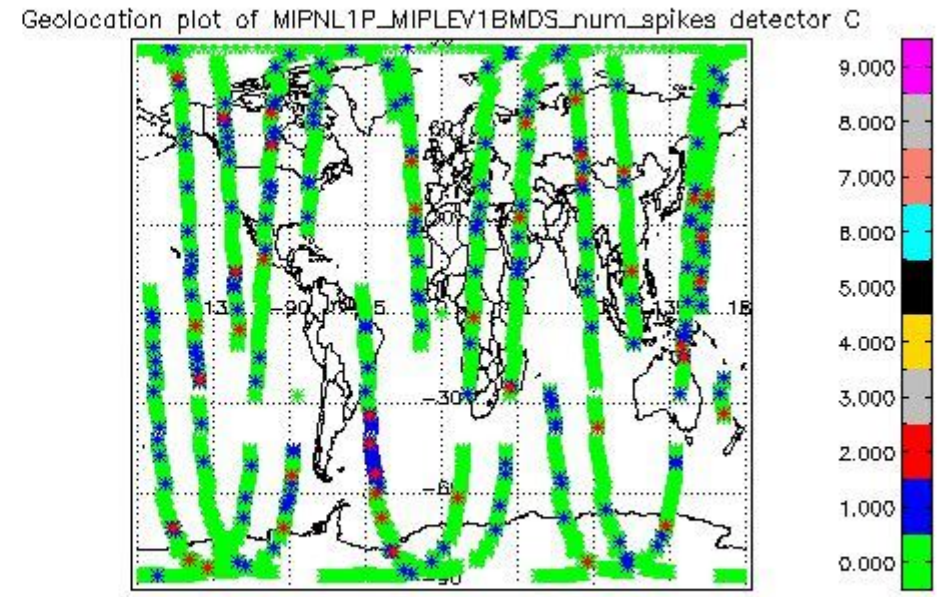
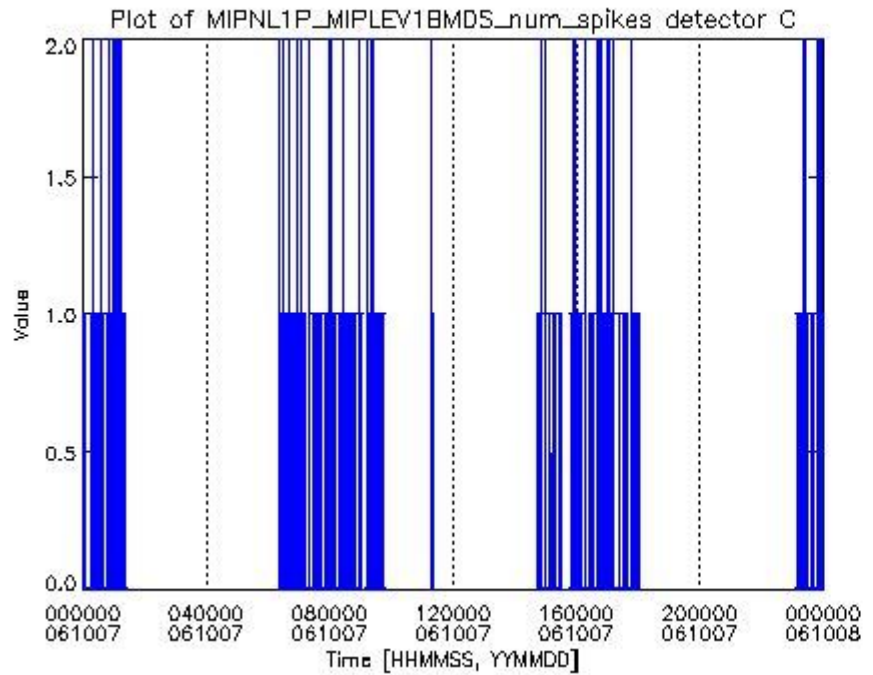
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag

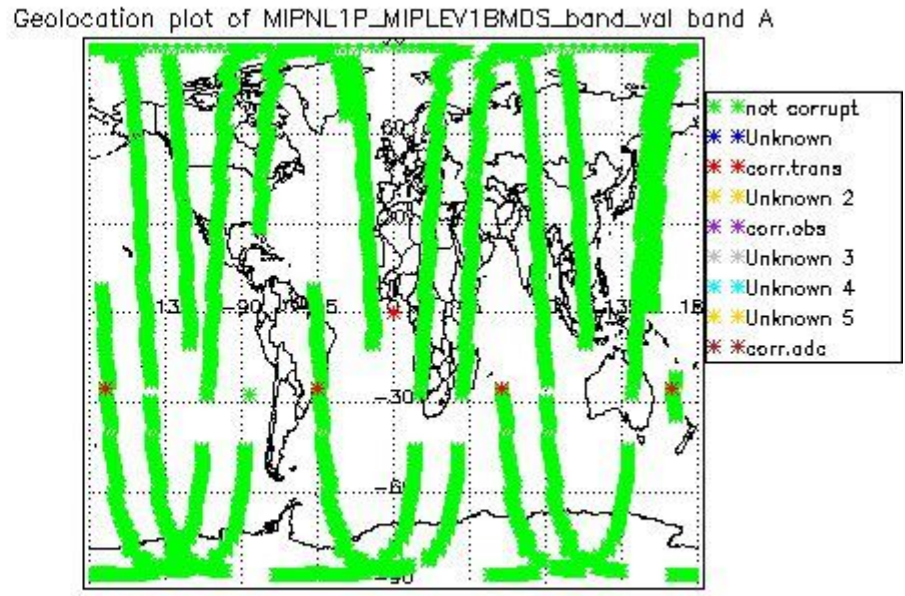
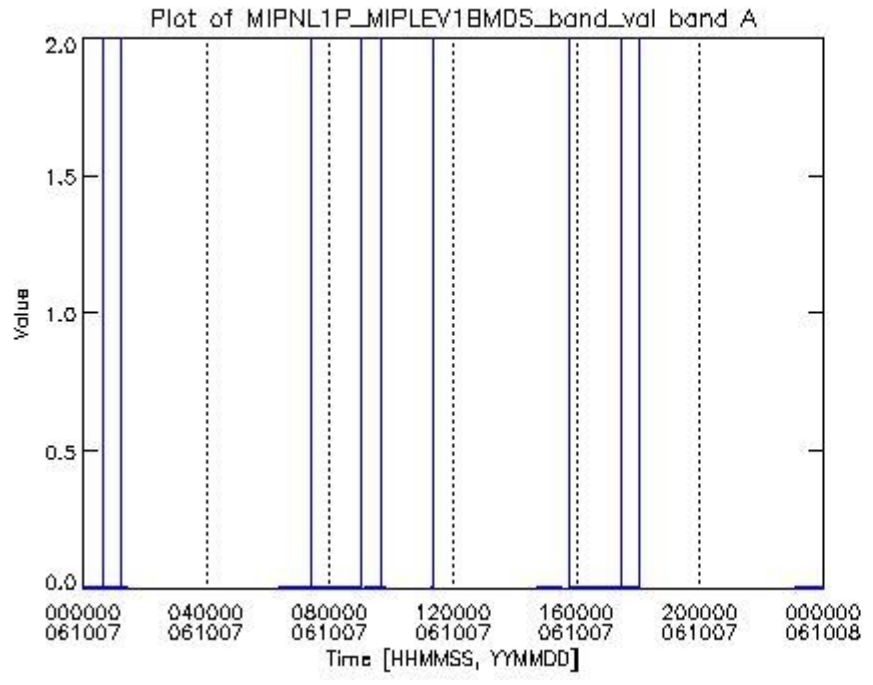
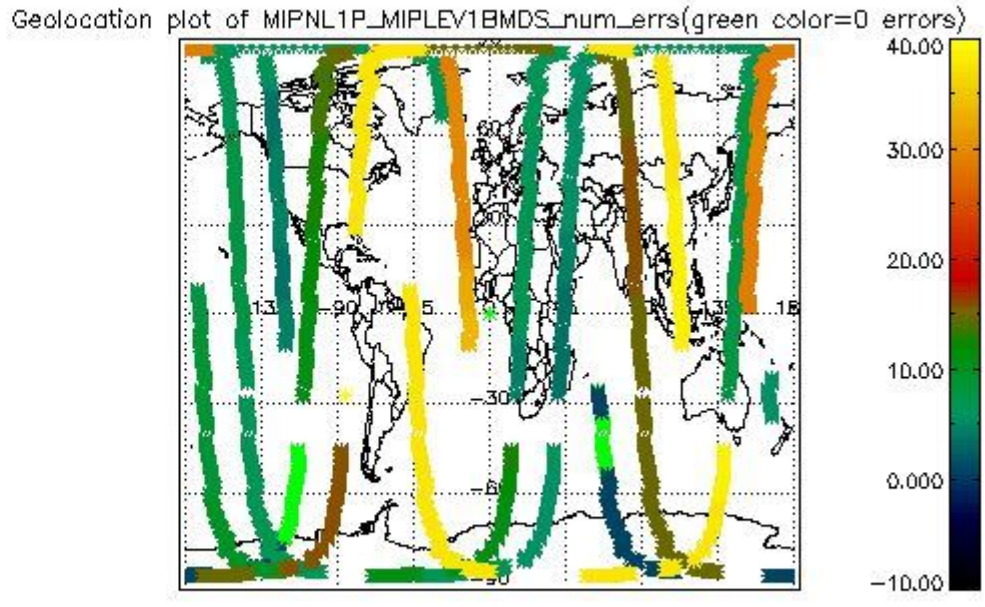
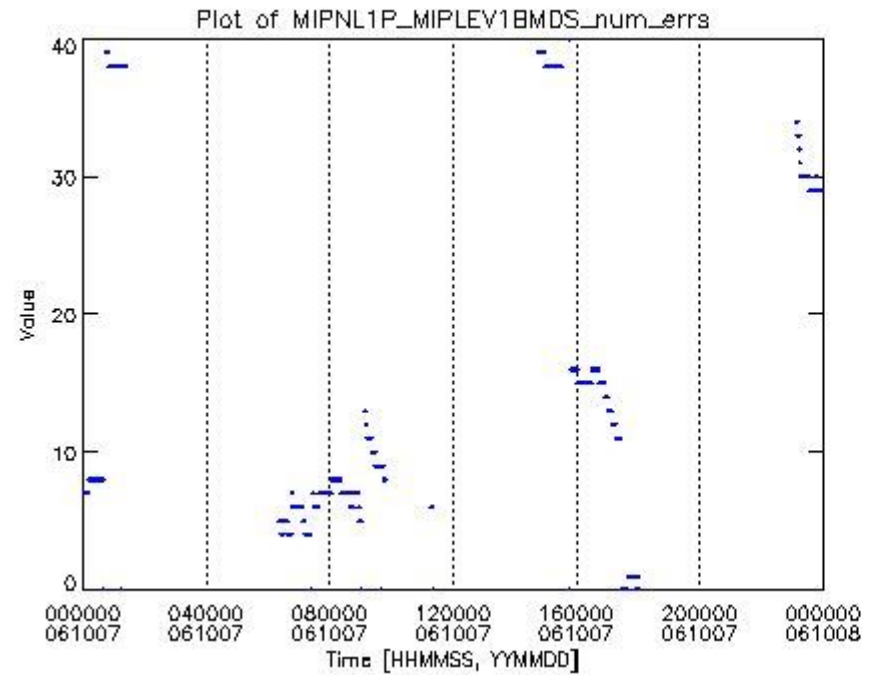


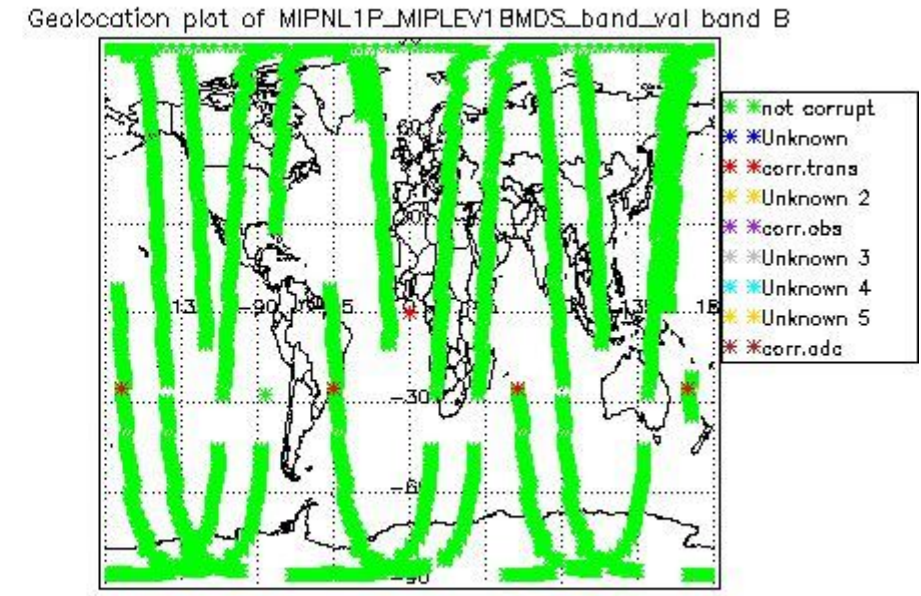
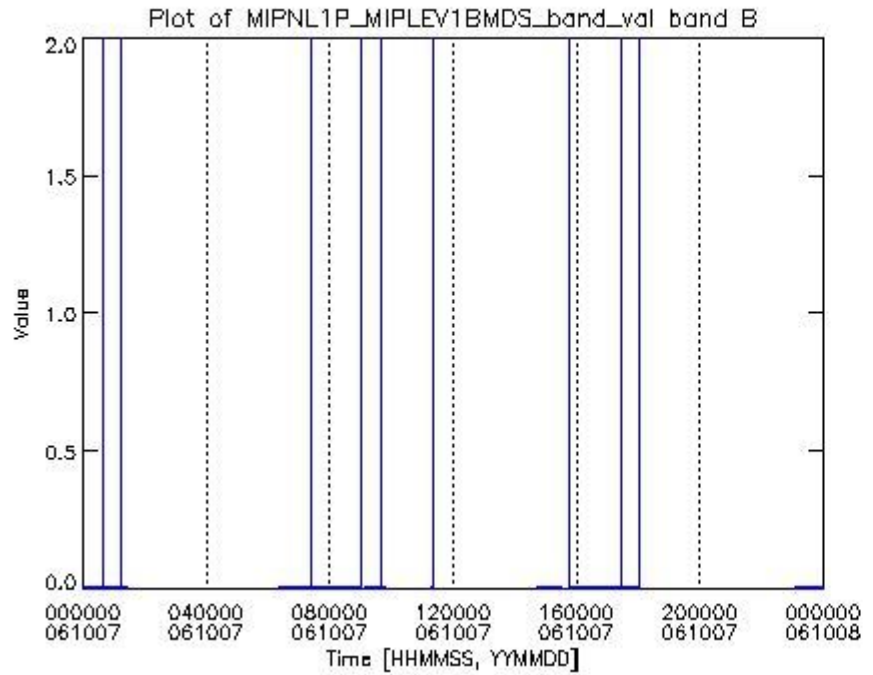
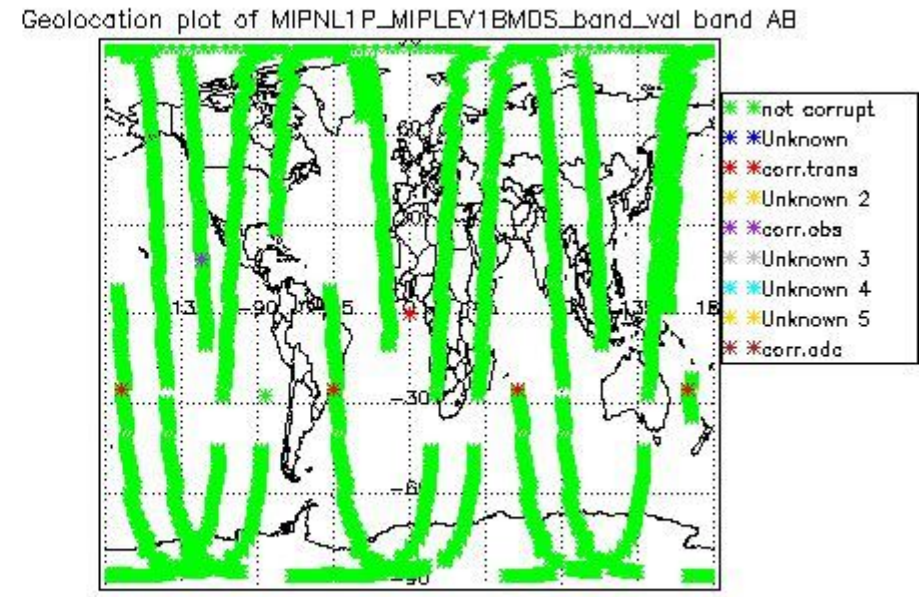
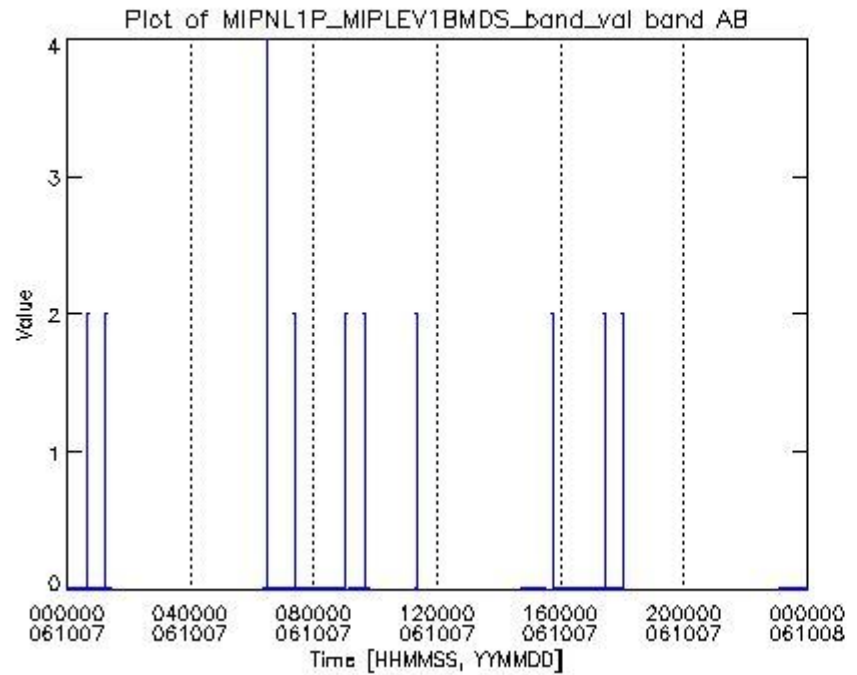


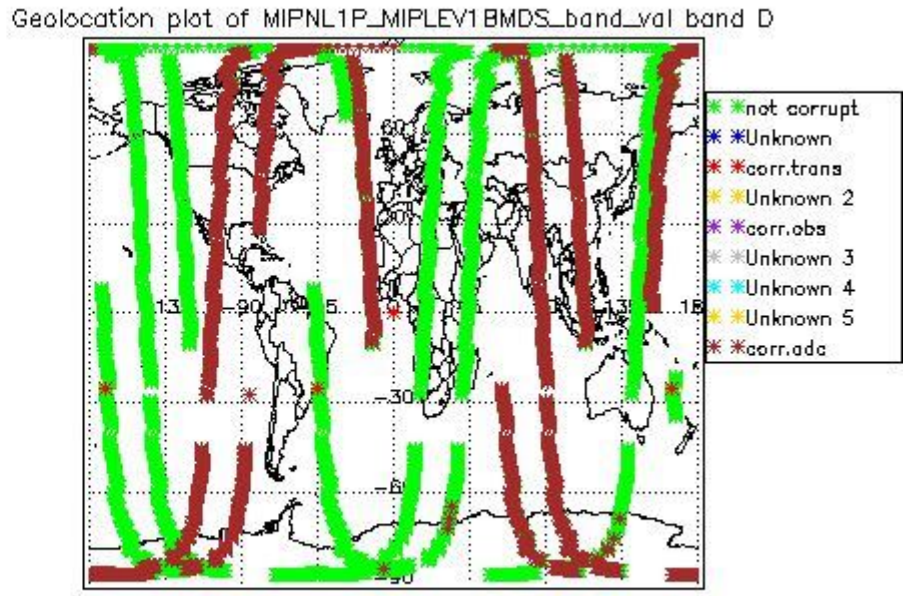
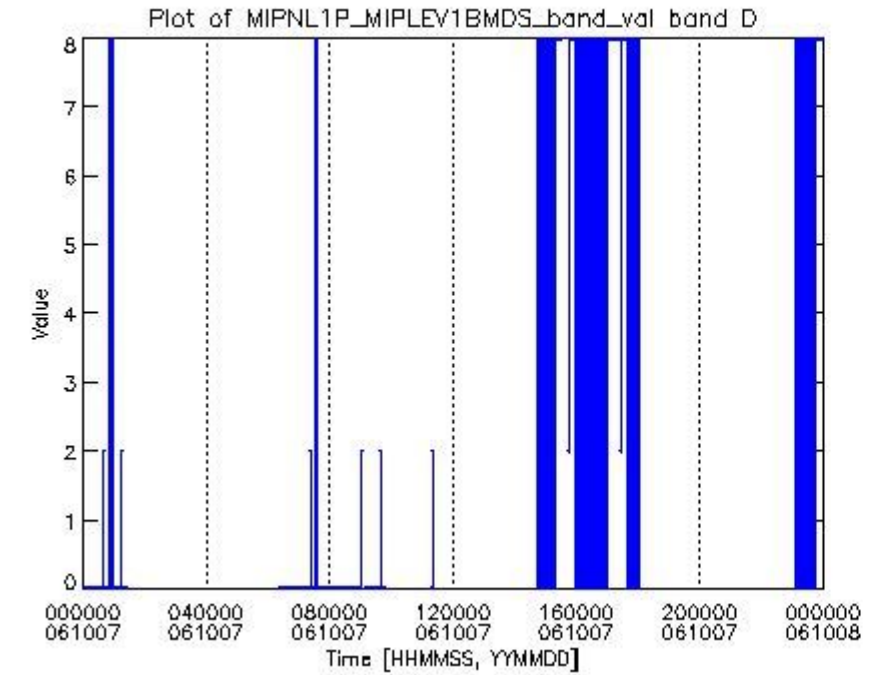
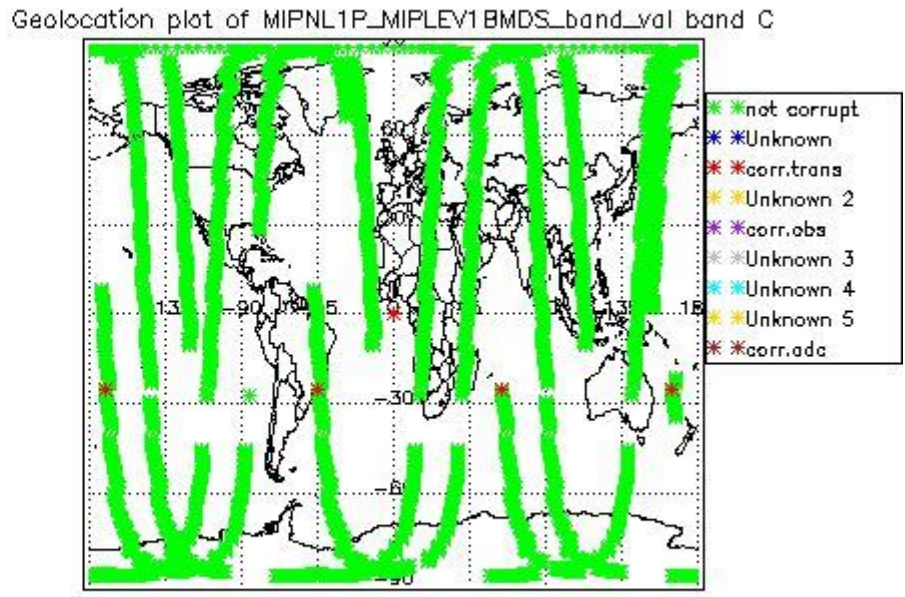
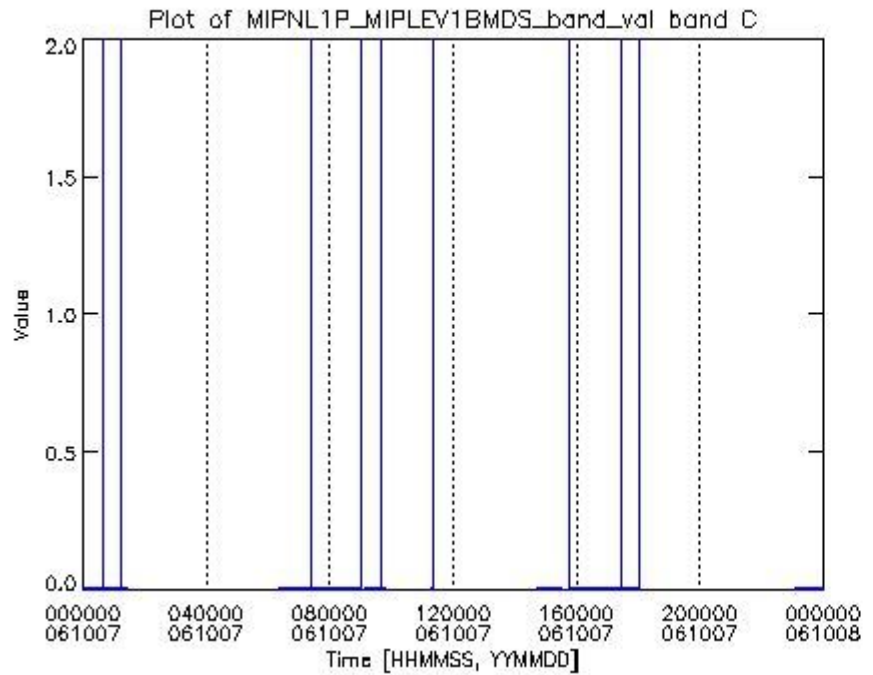




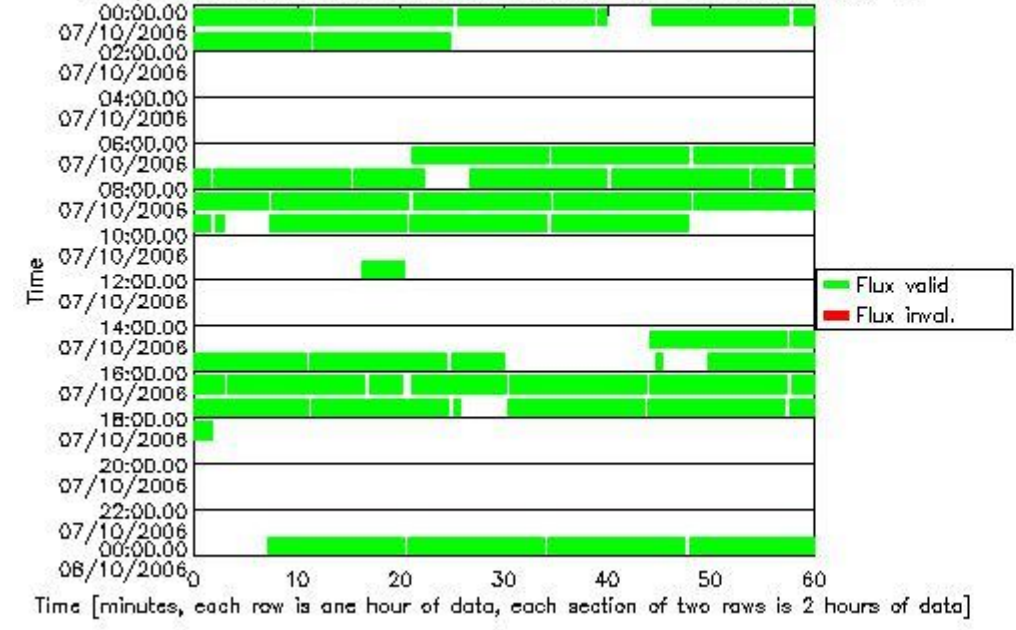




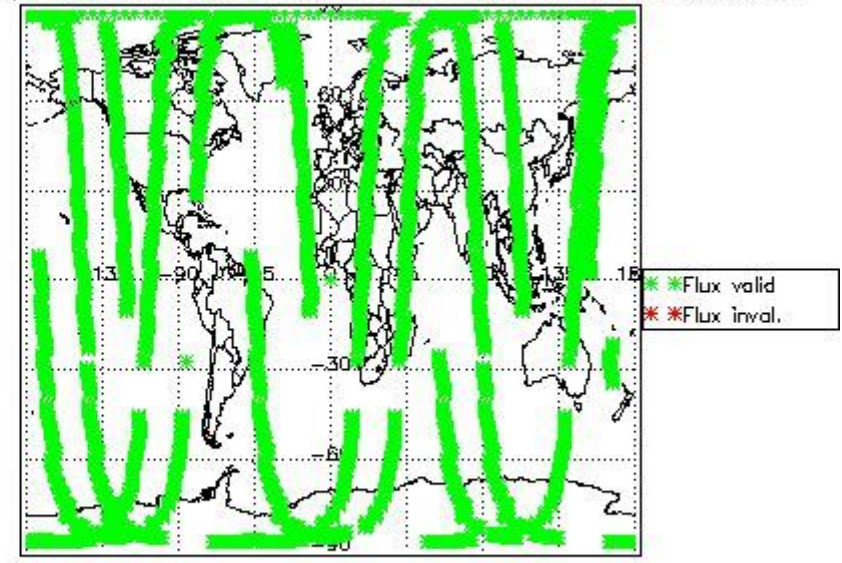




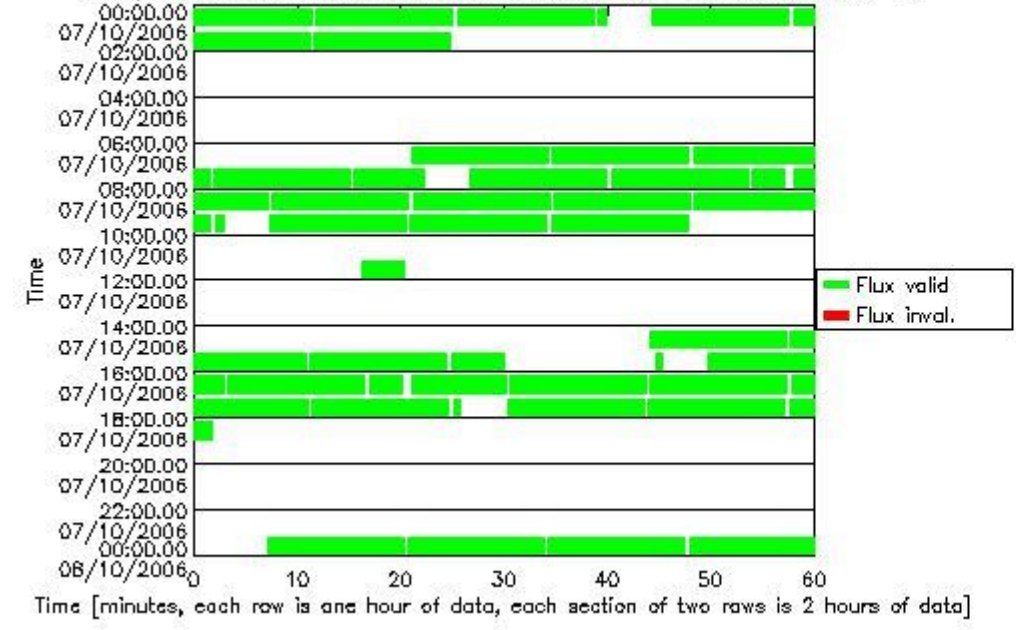
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



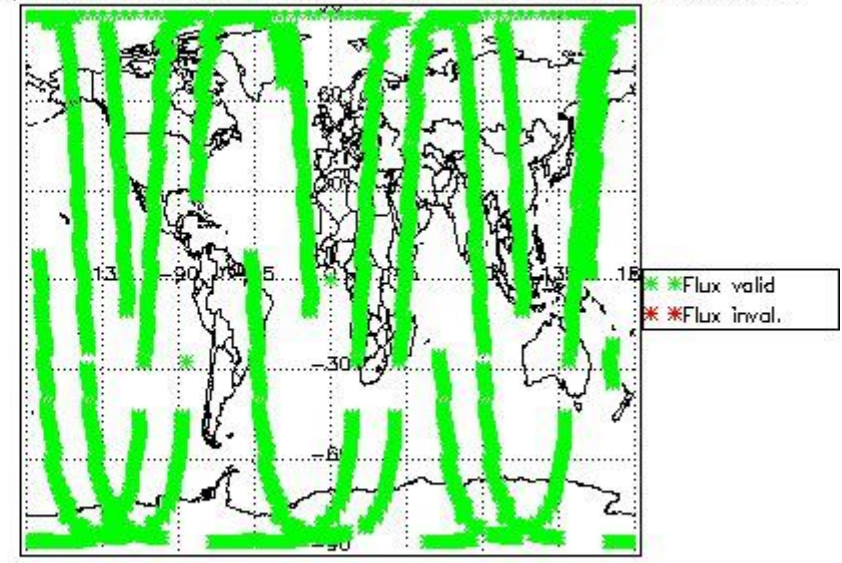
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1

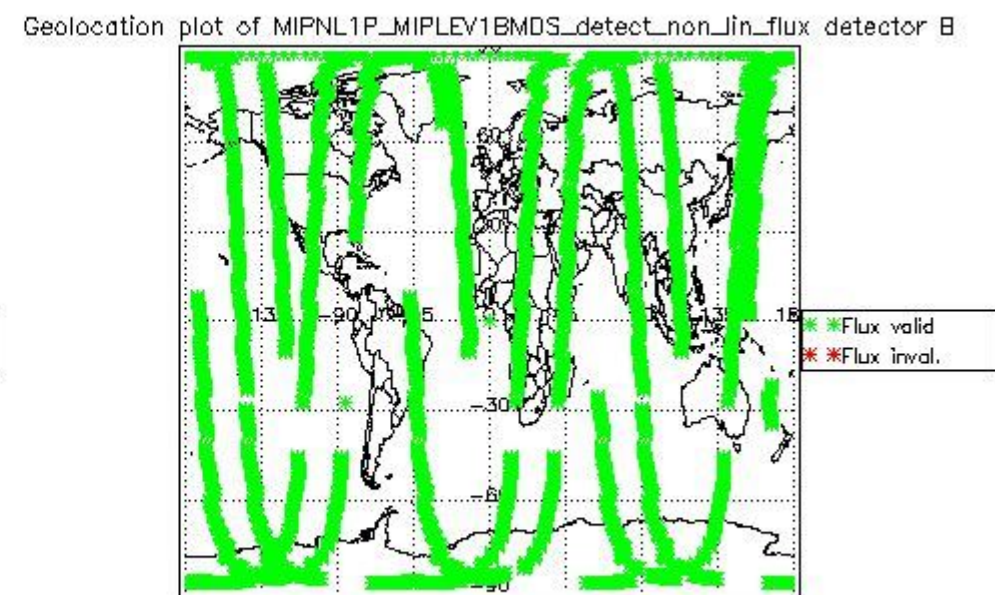
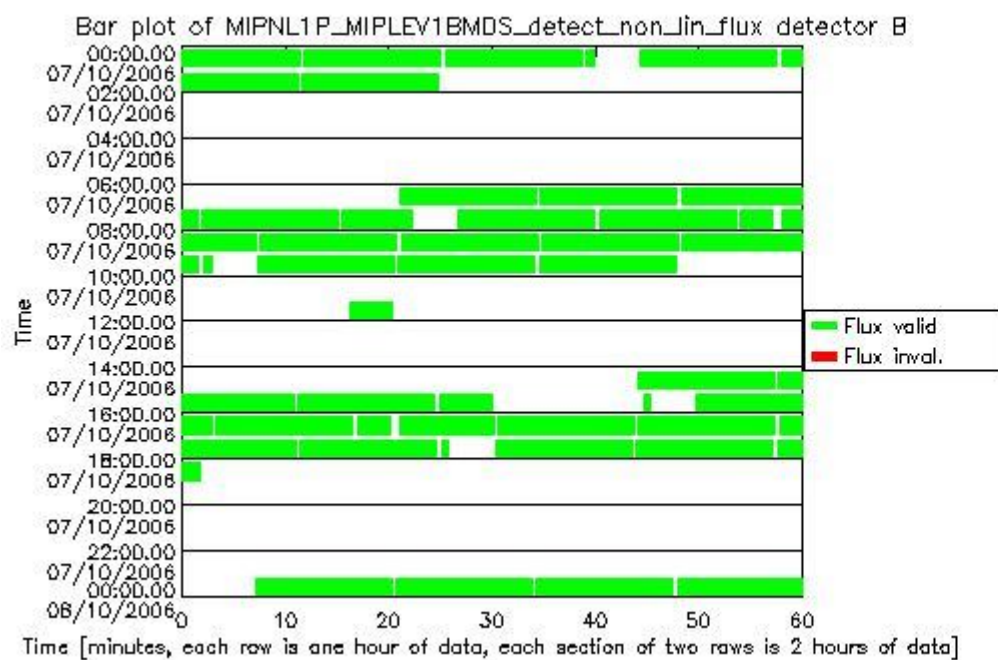
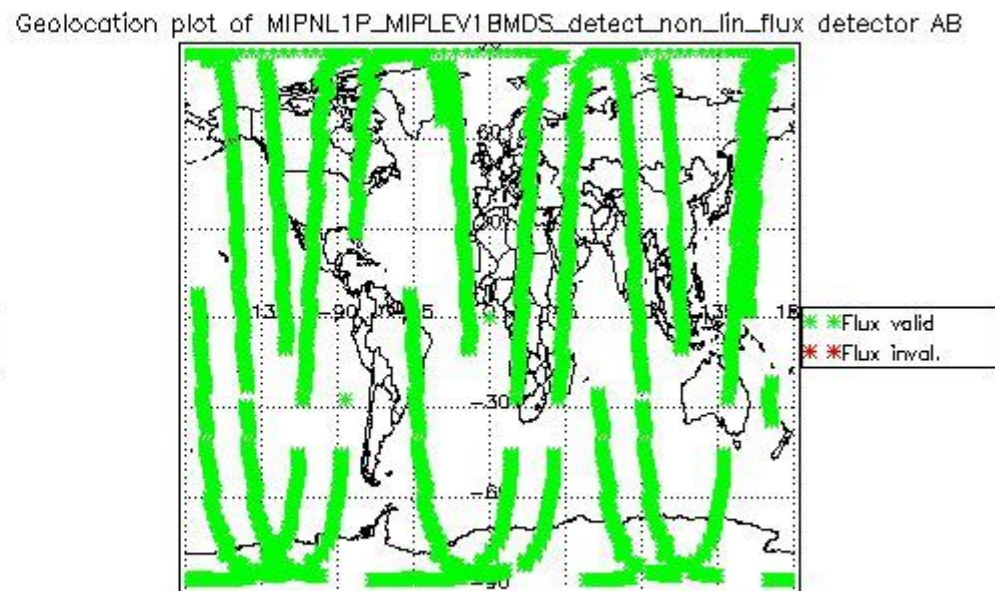
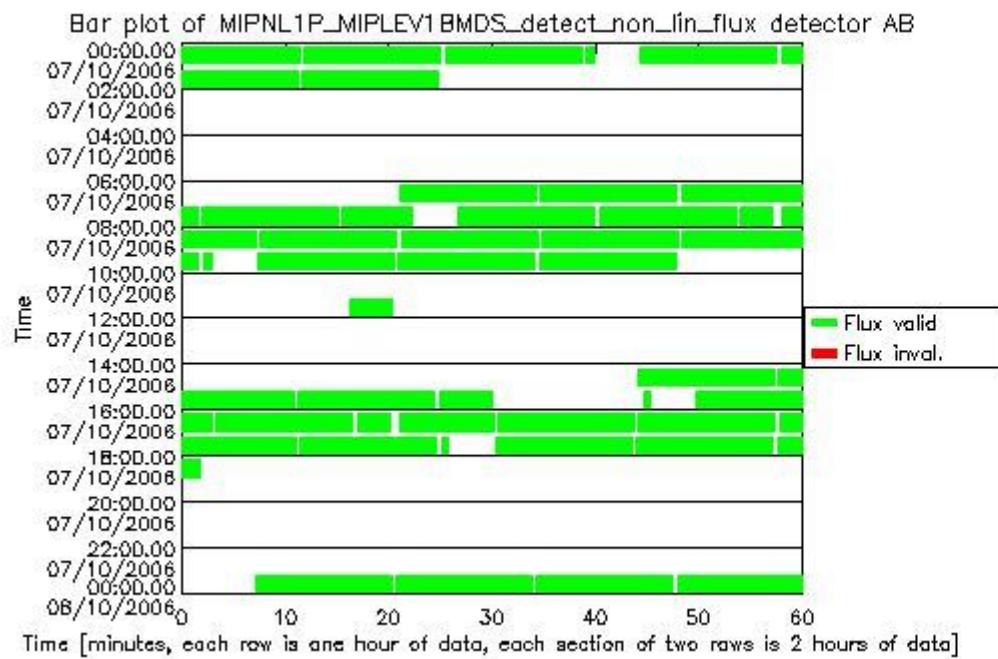


Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



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





### 1.2.3 Scan information ADS

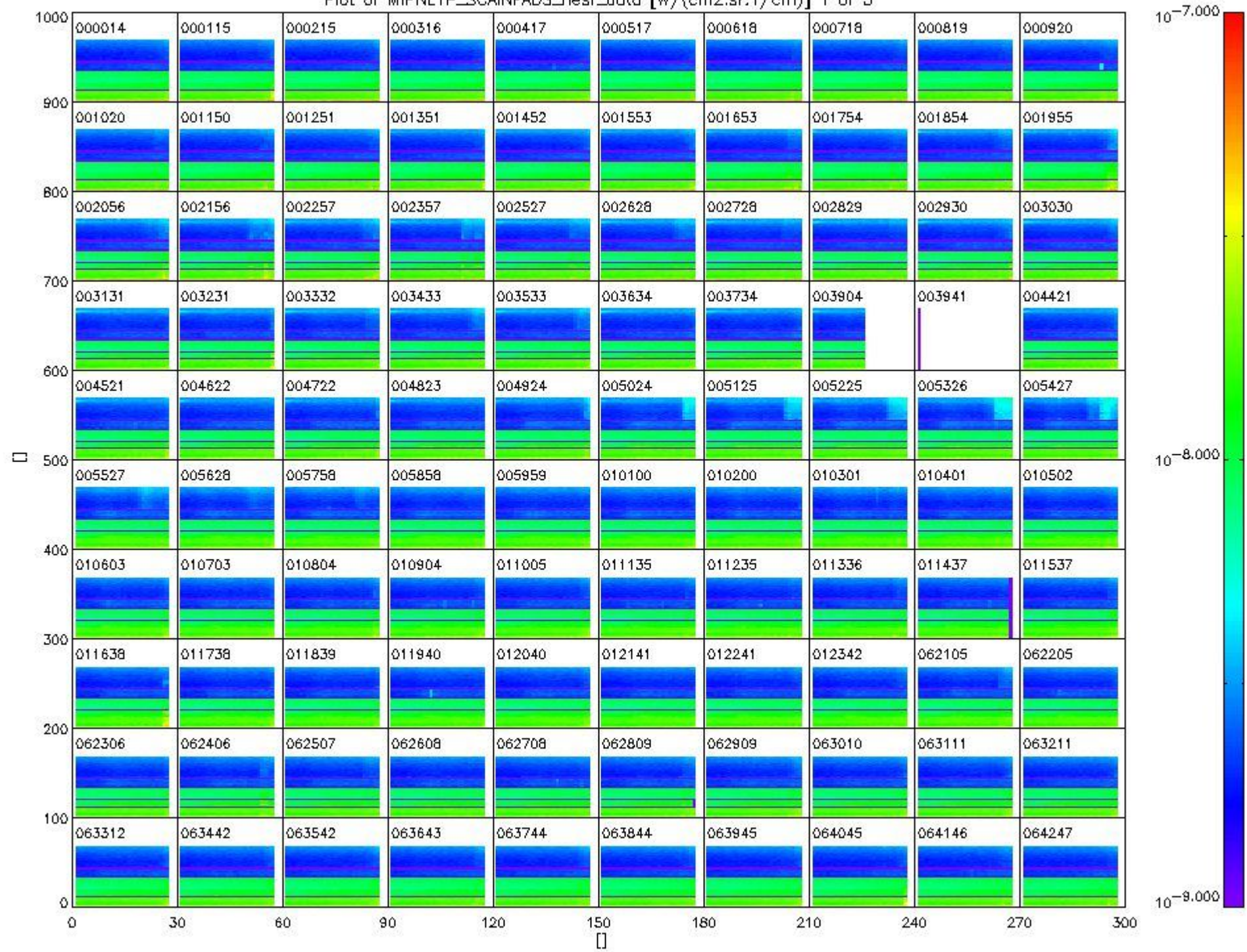
The following plots each contain 100 squares. Each square contains one NESR-scan (from MIPNL1P\_SCAINFADS\_nesr\_data).

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.

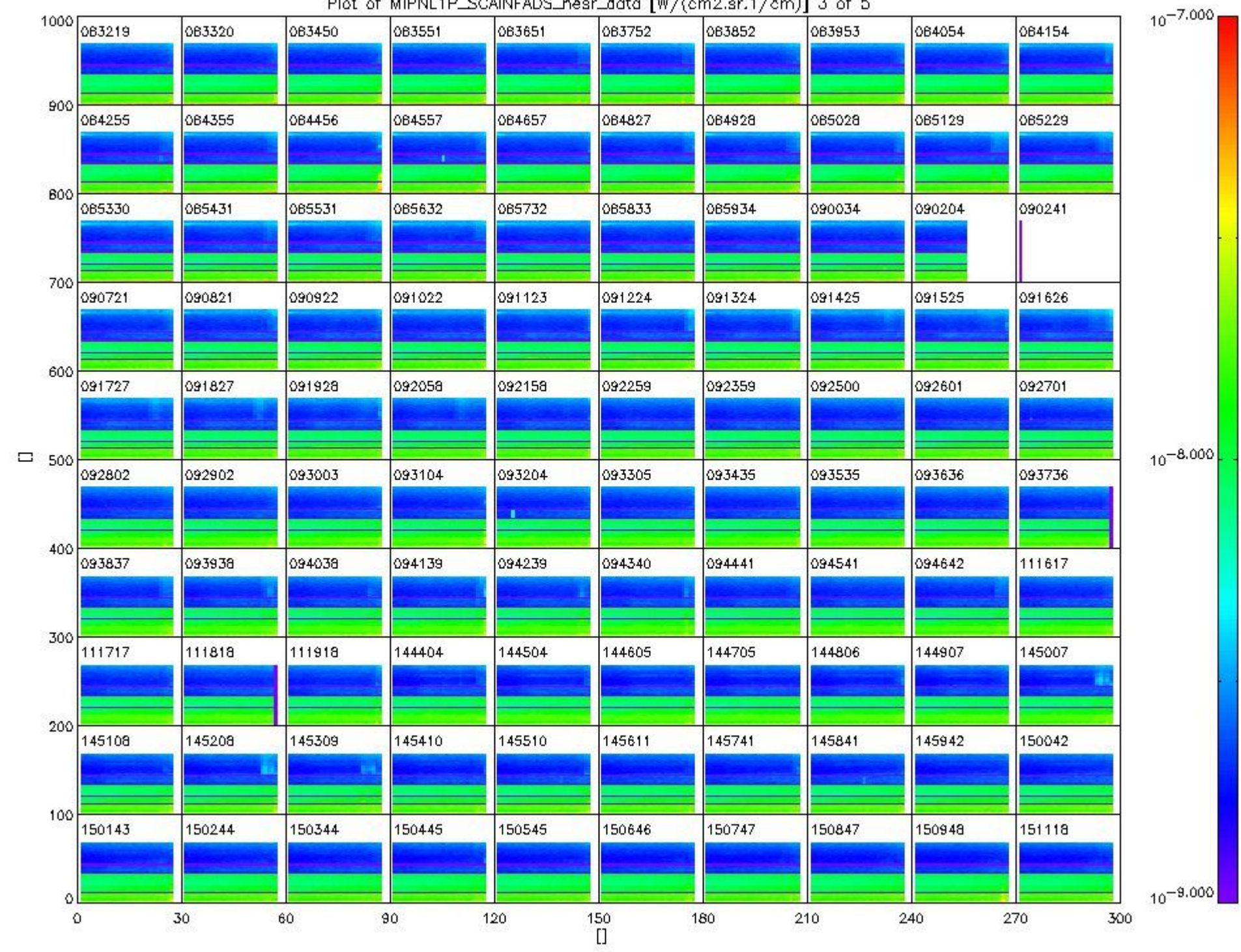
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 1 of 5



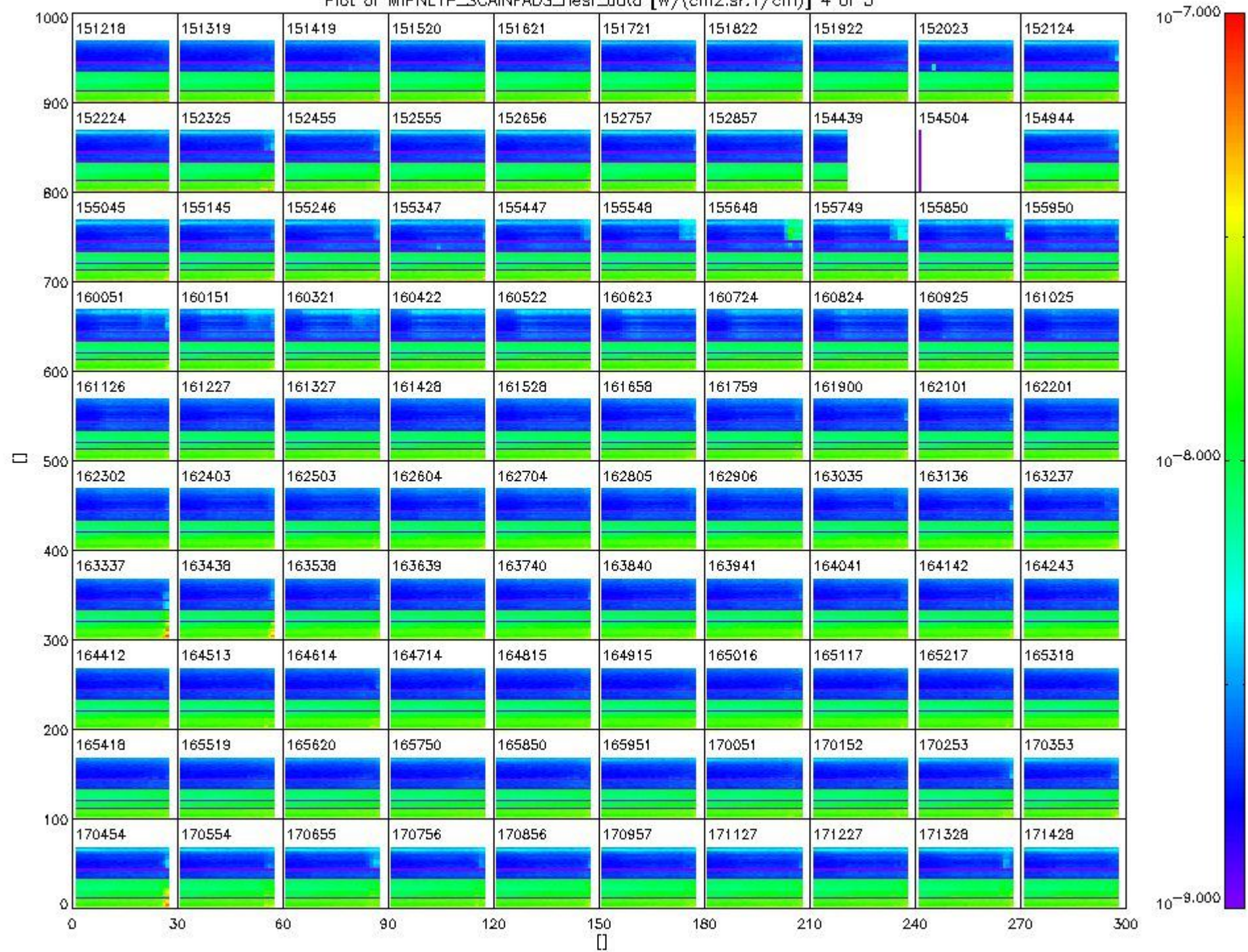


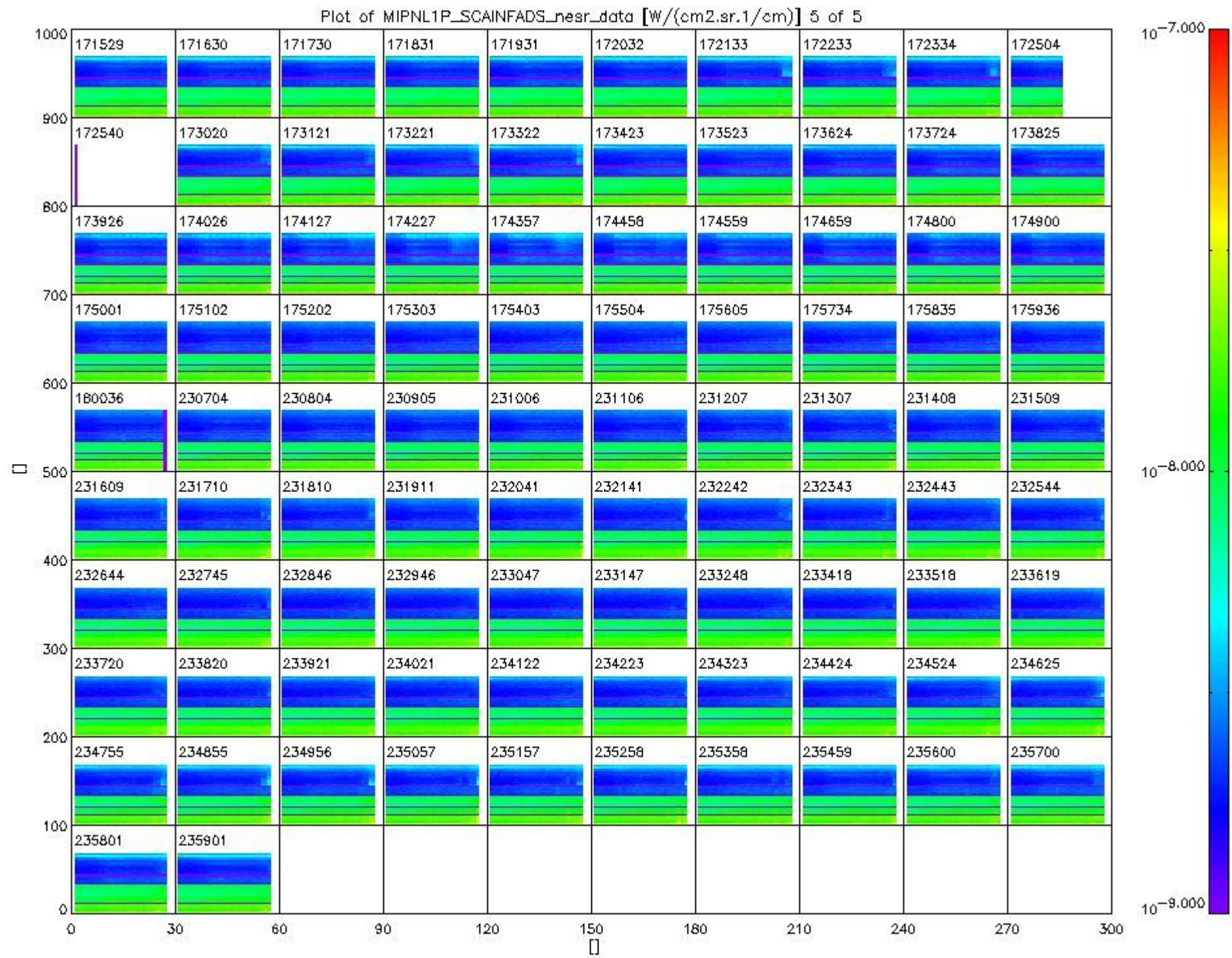


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 3 of 5



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 4 of 5

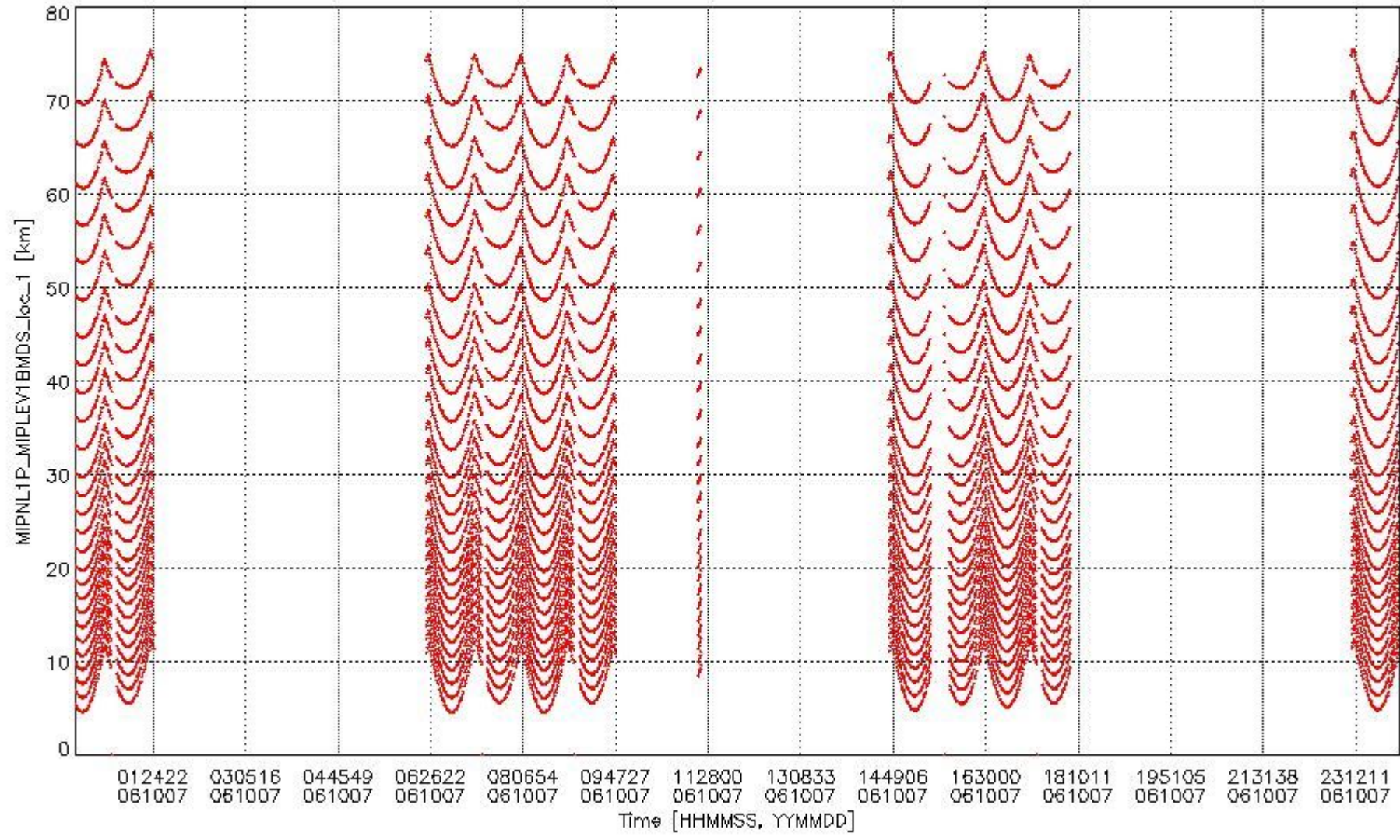




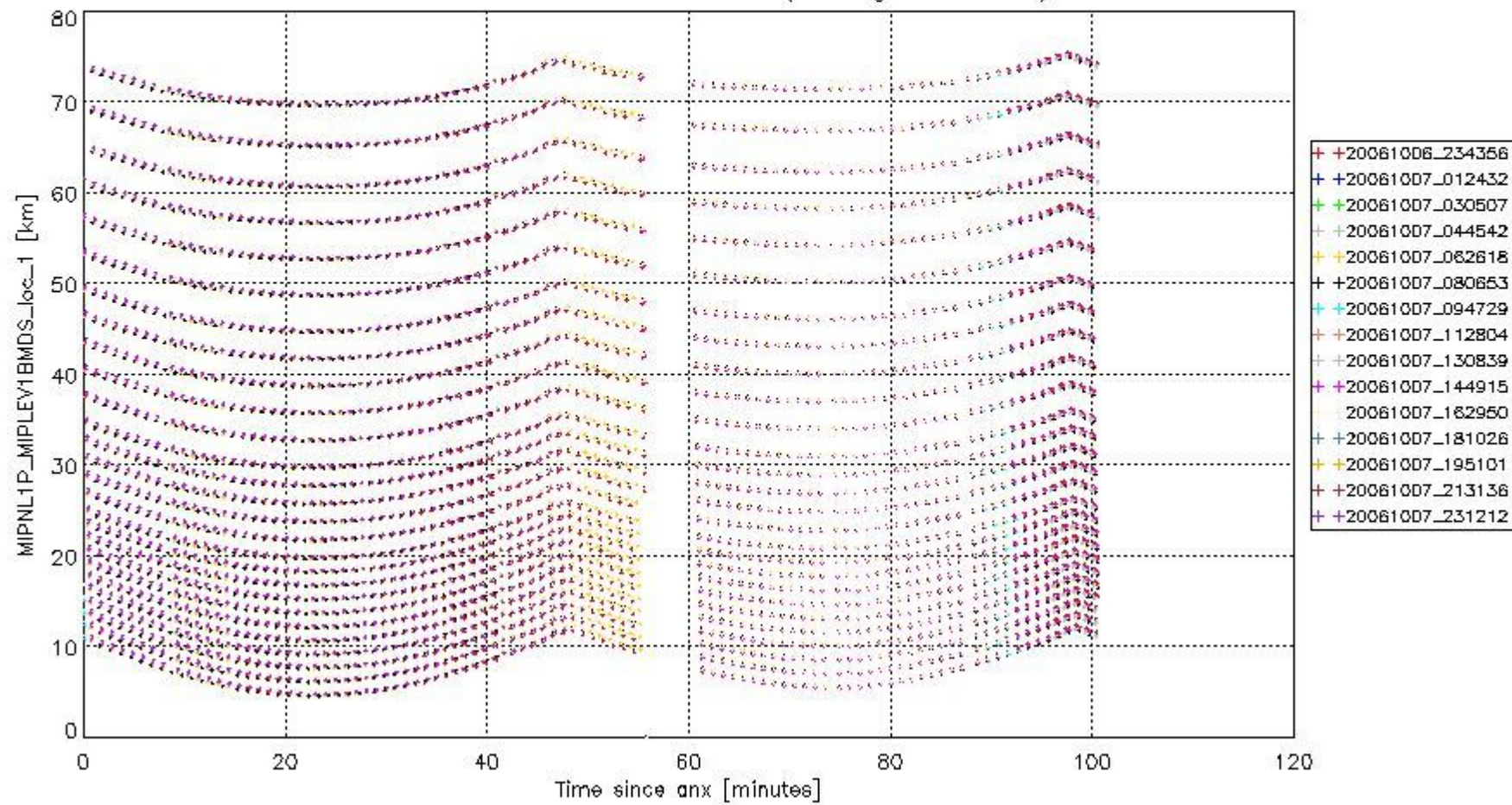
## 1.3 Physical Quality Indicators

### 1.3.1 Tangent altitude

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



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



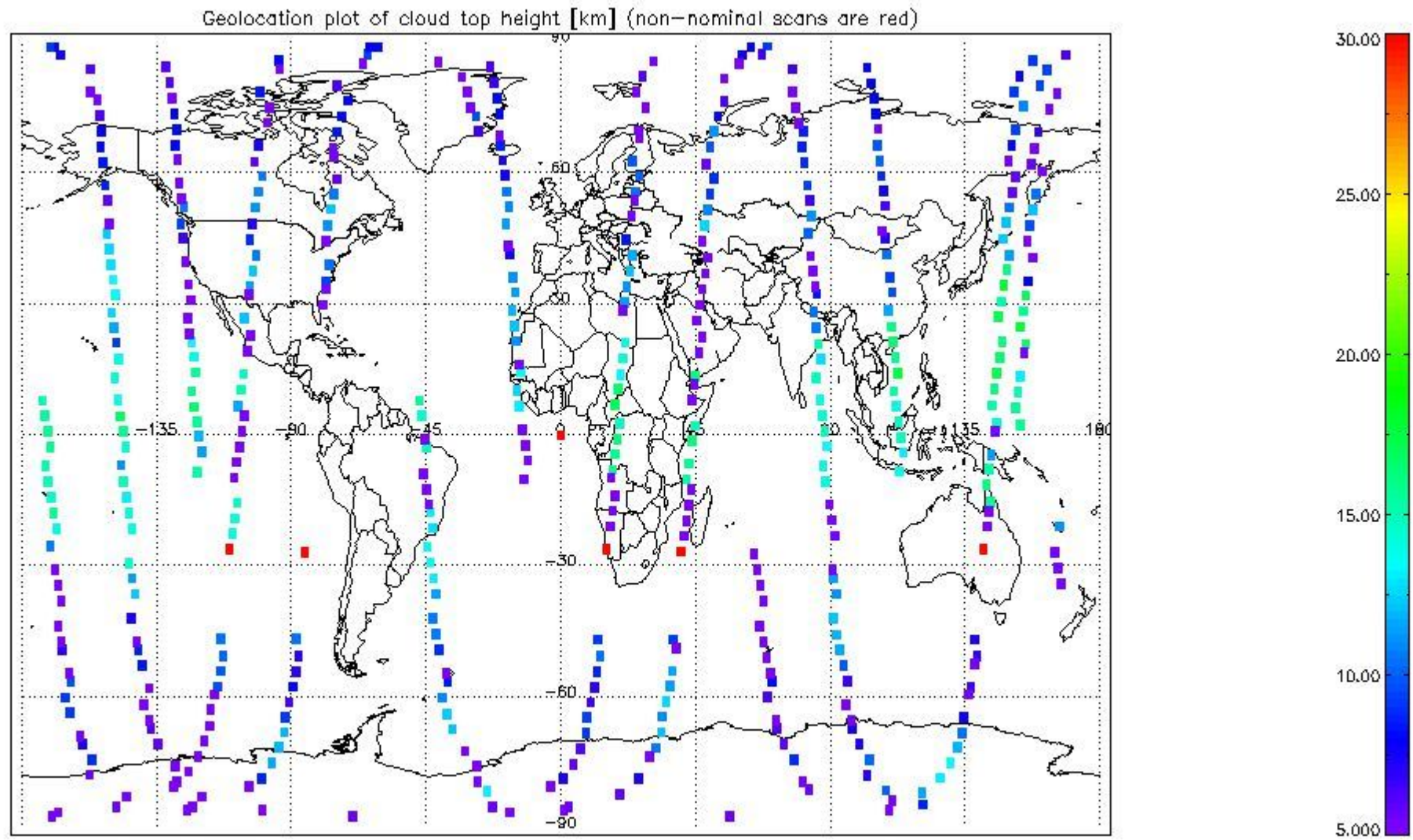
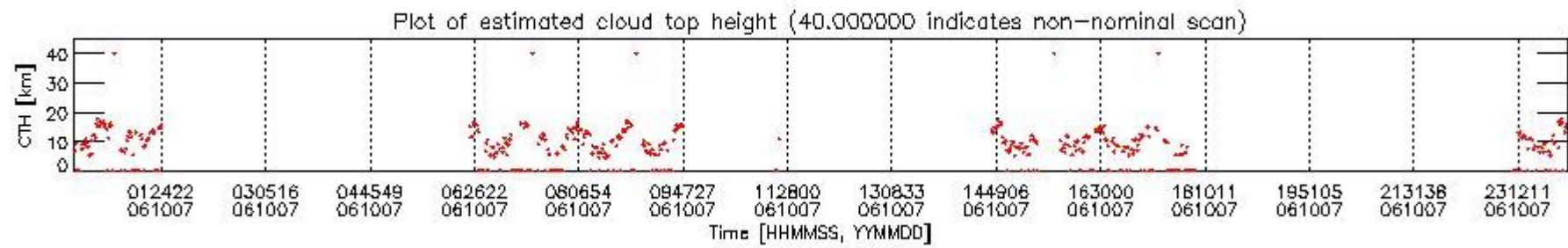
### 1.3.2 Cloud top height

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  |

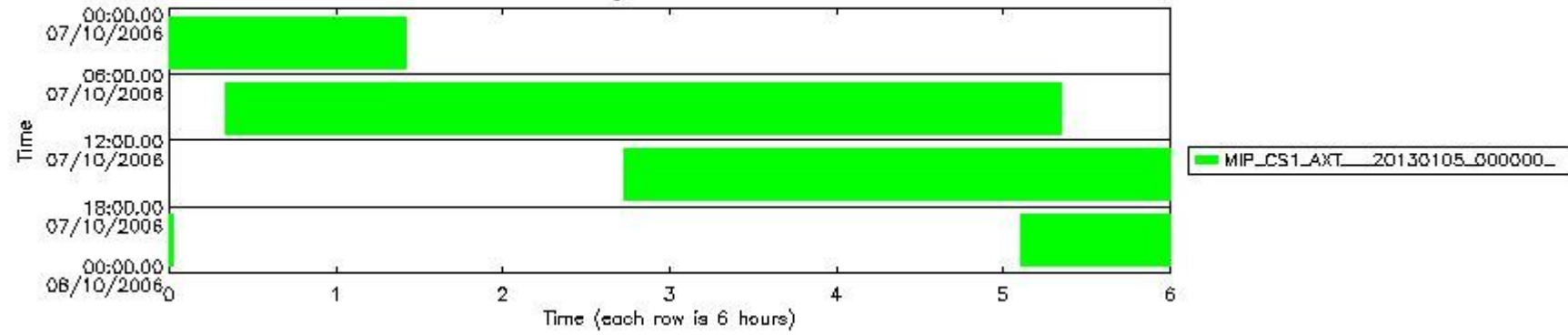


## 1.4 ADF monitoring

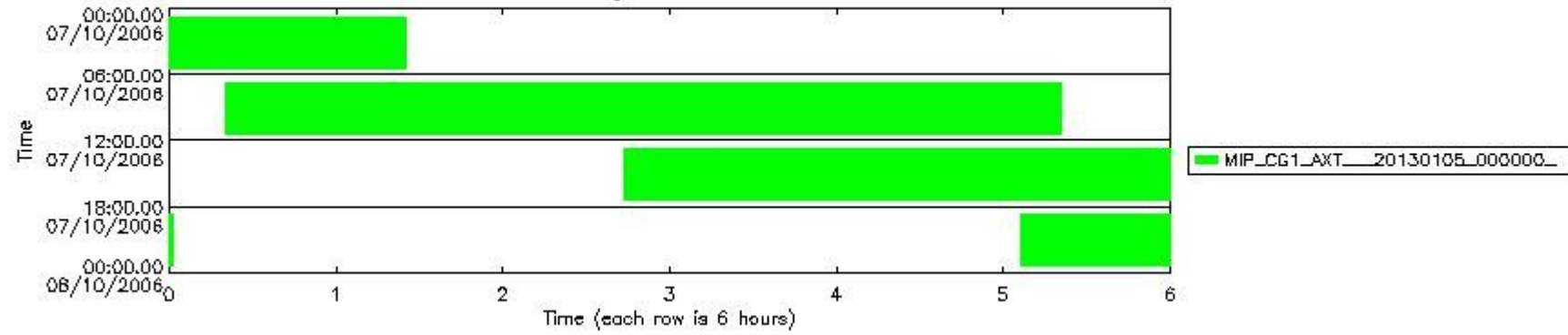
| Number | ADF   |
|--------|---|
| 0      | AUX_FRA_AXVFOS20070125_151128_20061006_000000_20061008_000000 |
| 1      | AUX_FRA_AXVFOS20070125_151131_20061007_000000_20061009_000000 |
| 2      | DOR_VOR_AXVF-P20120425_130200_20061006_215527_20061008_002327 |
| 3      | DOR_VOR_AXVF-P20120425_130300_20061007_215527_20061009_002327 |
| 4      | MIP_CA1_AXT_20130105_000000_20061002_000000_20061102_000000   |
| 5      | MIP_CG1_AXT_20130105_000000_20061002_000000_20061102_000000   |
| 6      | MIP_CL1_AXT_20080729_075920_20020401_000000_20161214_000000   |
| 7      | MIP_CO1_AXT_20130105_000000_20061002_000000_20061102_000000   |
| 8      | MIP_CS1_AXT_20130105_000000_20061002_000000_20061102_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_1PWDSI20061006_233501_000060302051_00460_24061_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 0    |
| 1      | MIP_NL_1PWDSI20061007_011537_000005402051_00461_24062_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 2      | MIP_NL_1PWDSI20061007_062105_000057502051_00464_24065_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 3      | MIP_NL_1PWDSI20061007_075801_000060302051_00465_24066_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 4      | MIP_NL_1PWDSI20061007_093837_000060362051_00466_24067_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 5      | MIP_NL_1PWDSI20061007_111918_000000552051_00467_24068_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 6      | MIP_NL_1PWDSI20061007_144404_000057512051_00469_24070_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 7      | MIP_NL_1PWDSI20061007_162101_000060302051_00470_24071_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 2    | 1    |
| 8      | MIP_NL_1PWDSI20061007_230704_000057502051_00474_24075_0000.N1 | 8    | 5    | 6    | 4    | 7    | 9    | 10   | 3    | 1    |

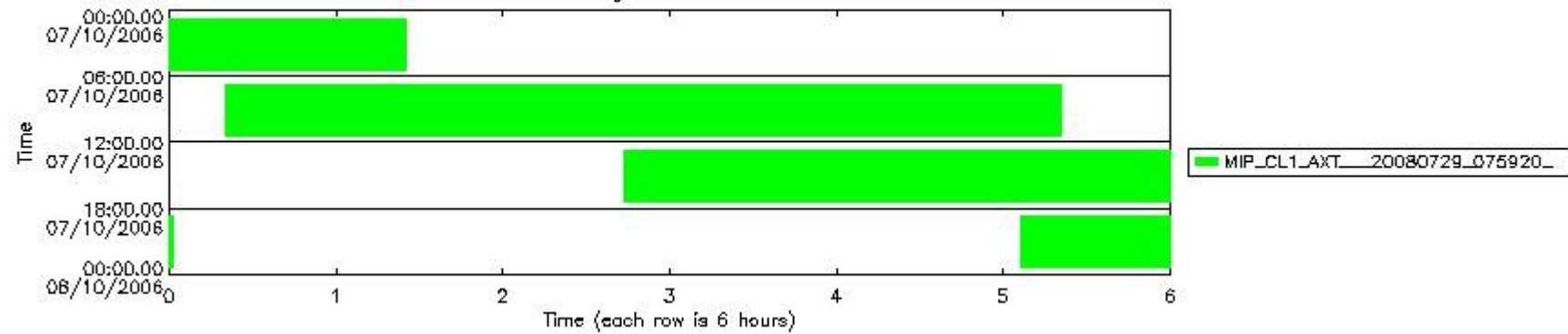
Bar plot of ADFs used for ILS&SPECTRAL CAL FILE.  
See legend for details.



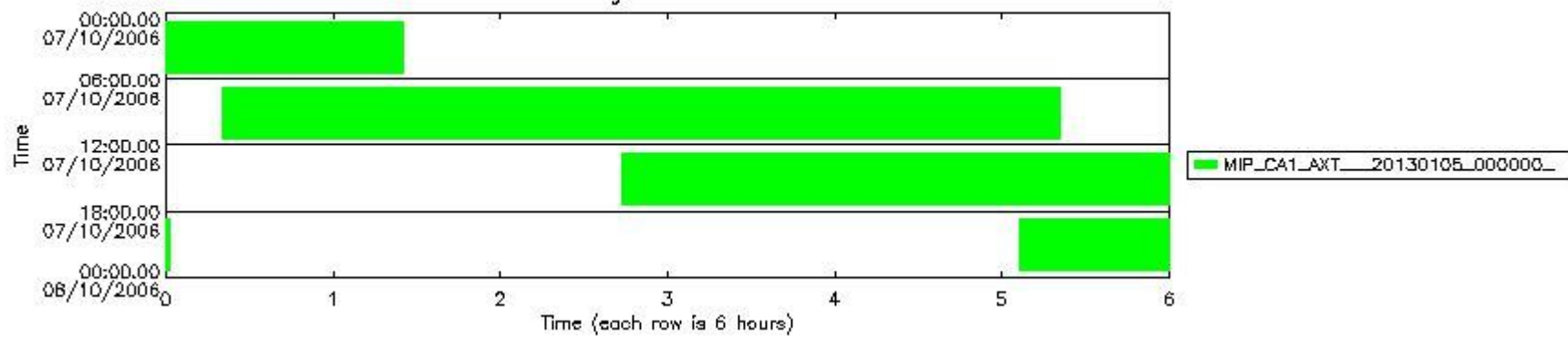
Bar plot of ADFs used for GAIN CALIBRATION FILE.  
See legend for details.



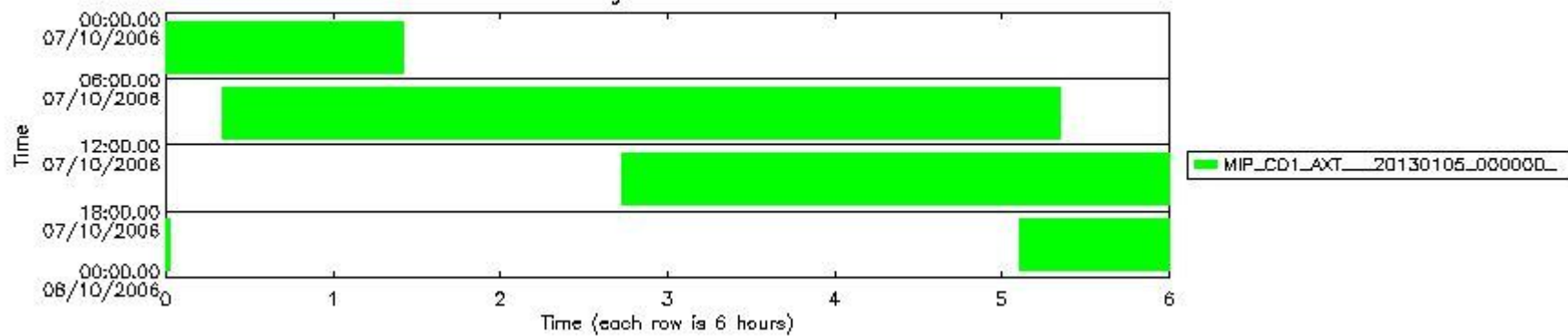
Bar plot of ADFs used for LINE OF SIGHT FILE.  
See legend for details.



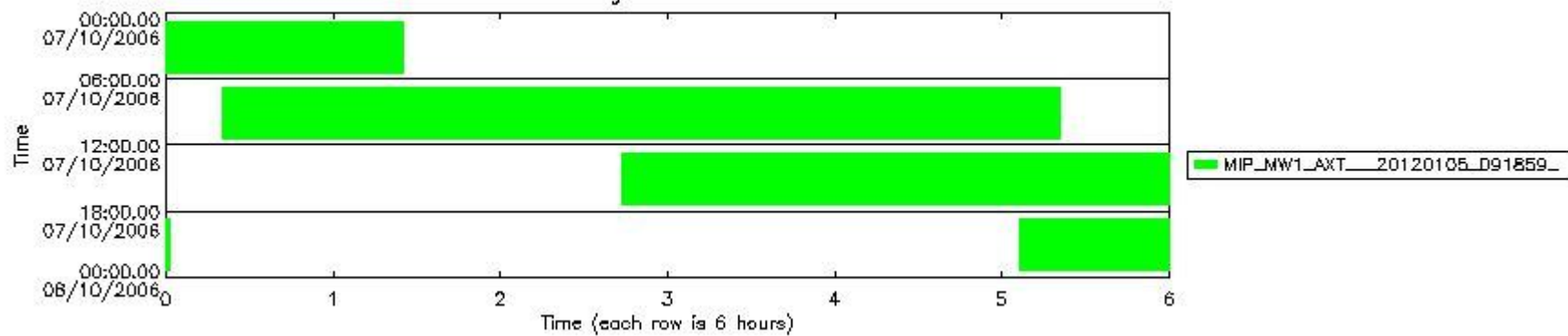
Bar plot of ADFs used for INSTRUMENT CHAR FILE.  
See legend for details.



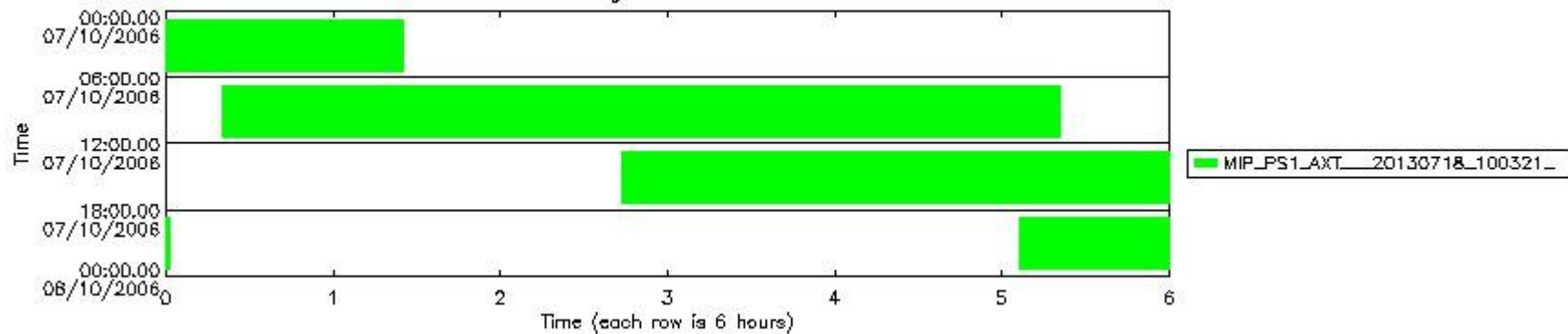
Bar plot of ADFs used for OFFSET VALIDATION FILE.  
See legend for details.



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

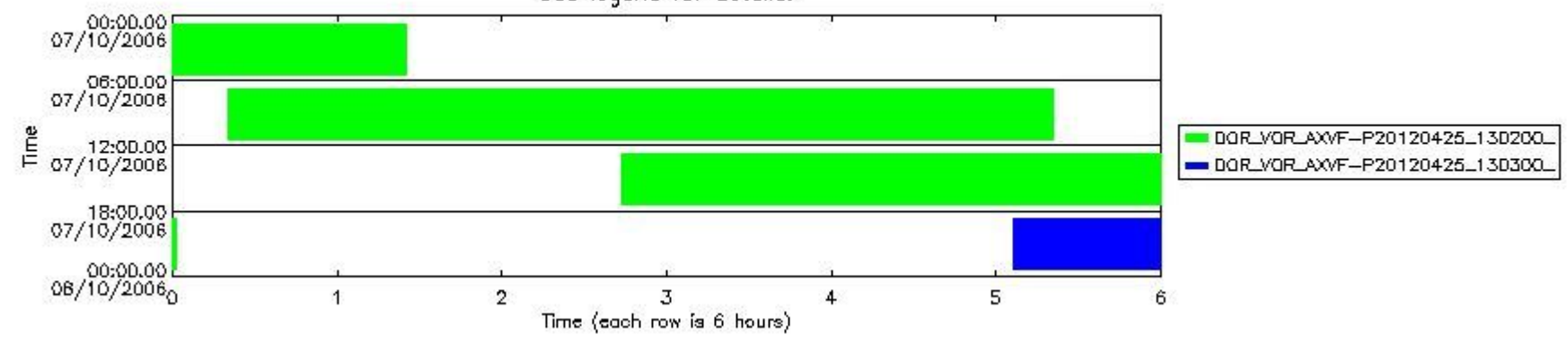


Bar plot of ADFs used for PROCESS PARAMETERS FILE.  
See legend for details.

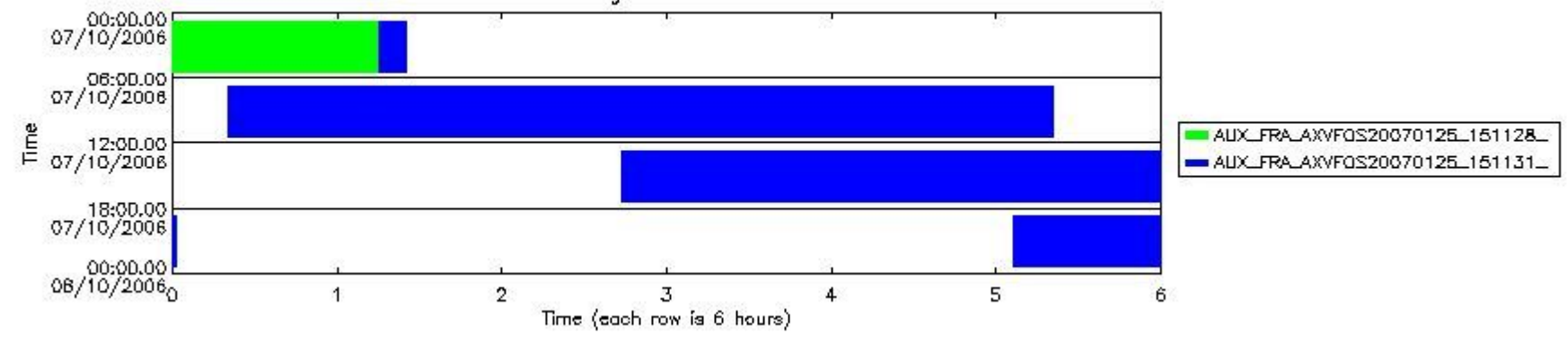


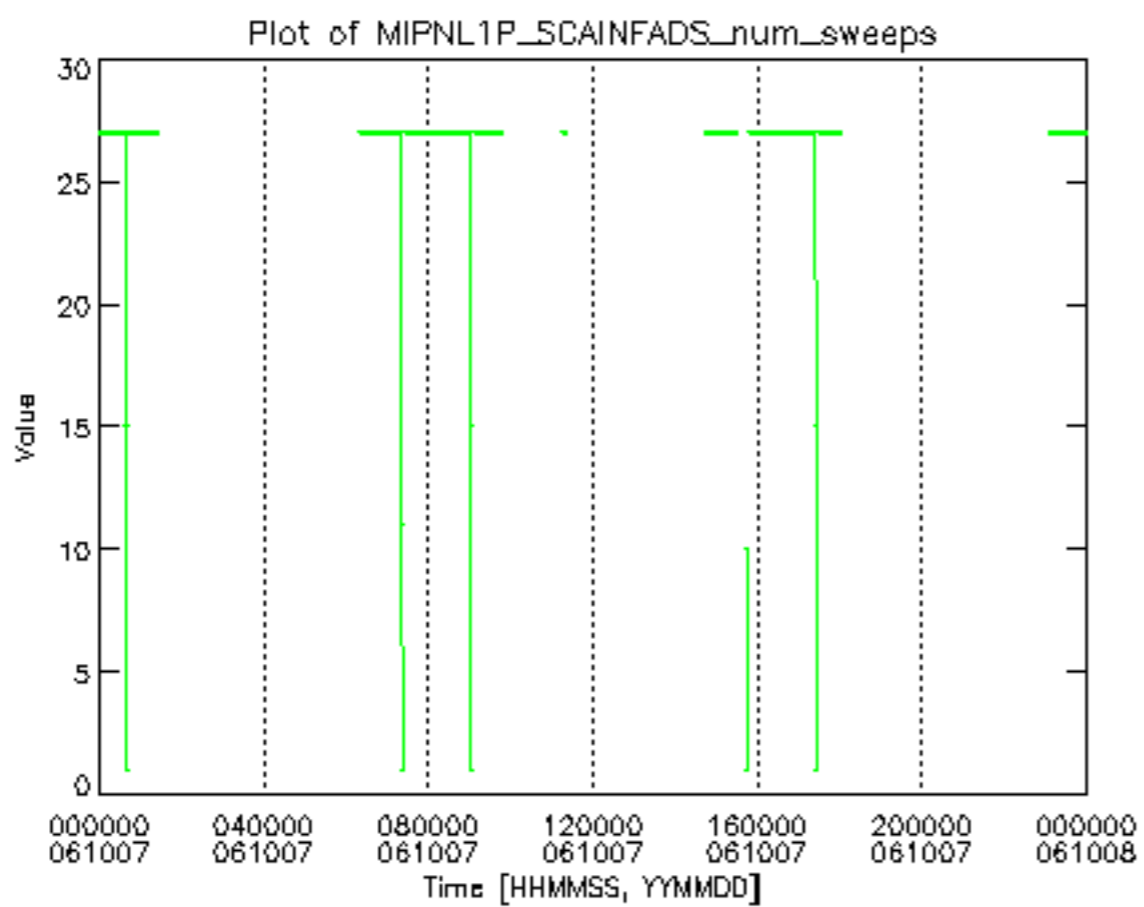


Bar plot of ADFs used for ORBIT DATA FILE.  
See legend for details.

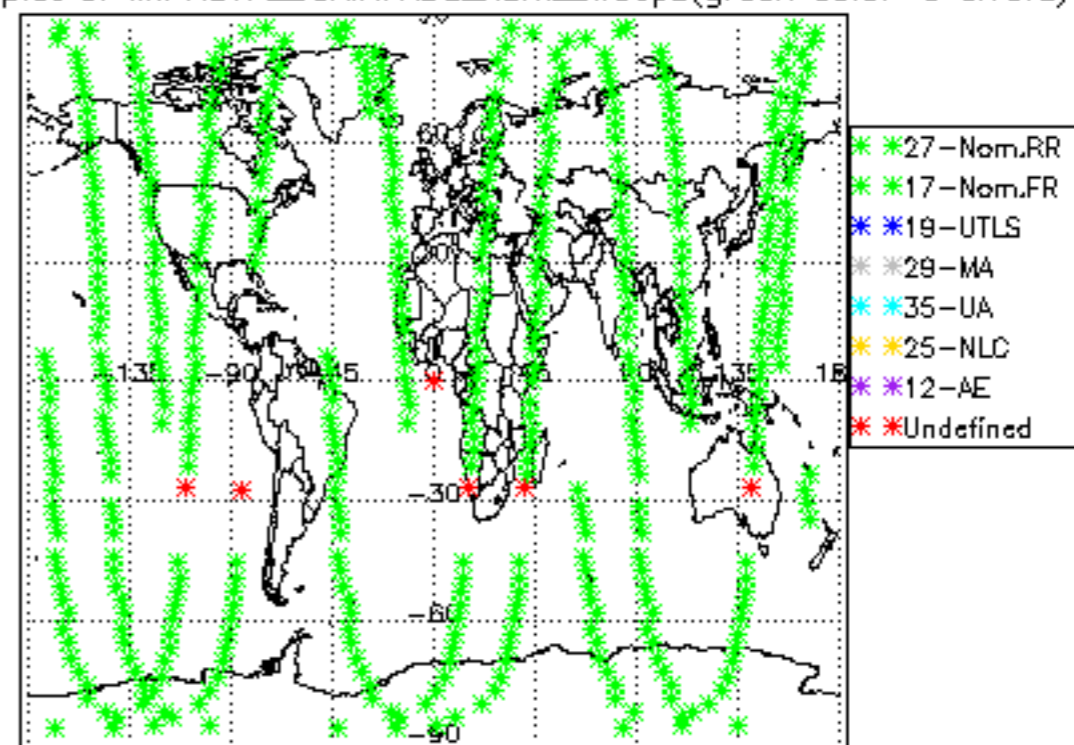


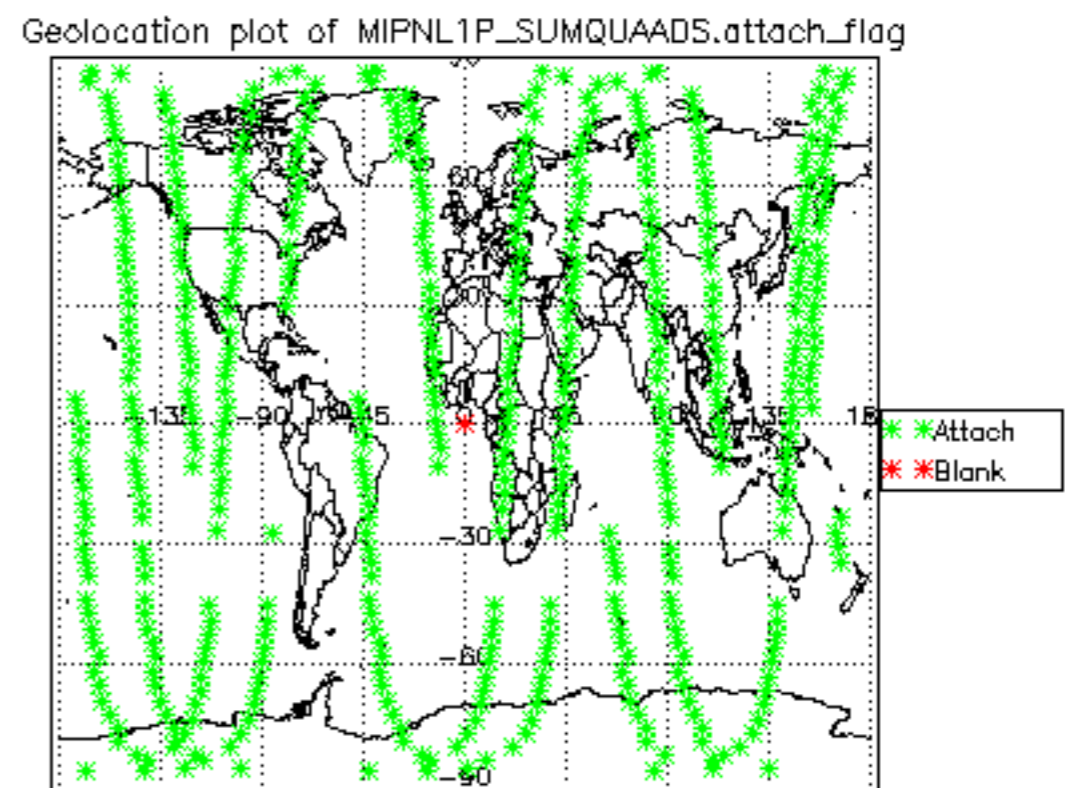
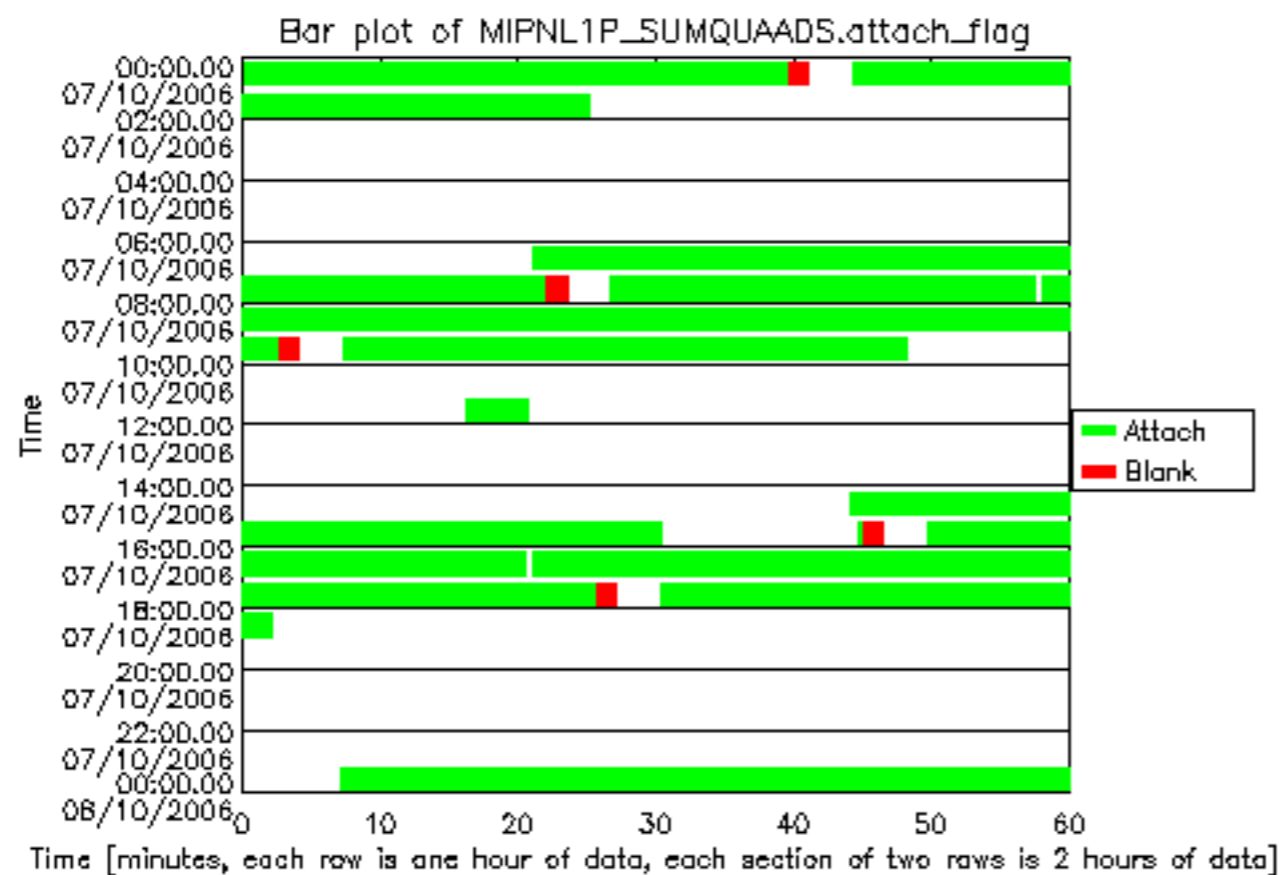
Bar plot of ADFs used for RESTITUTED ATTITUDE FILE.  
See legend for details.

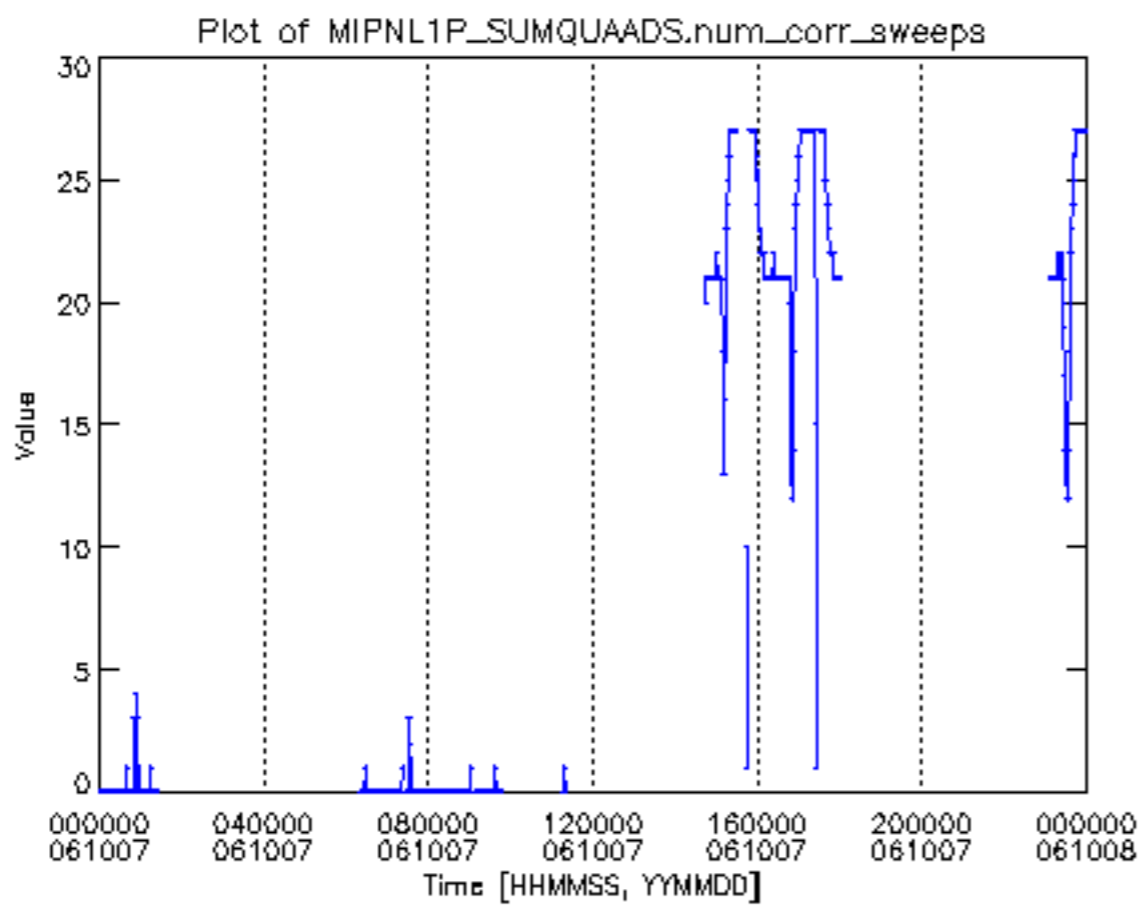




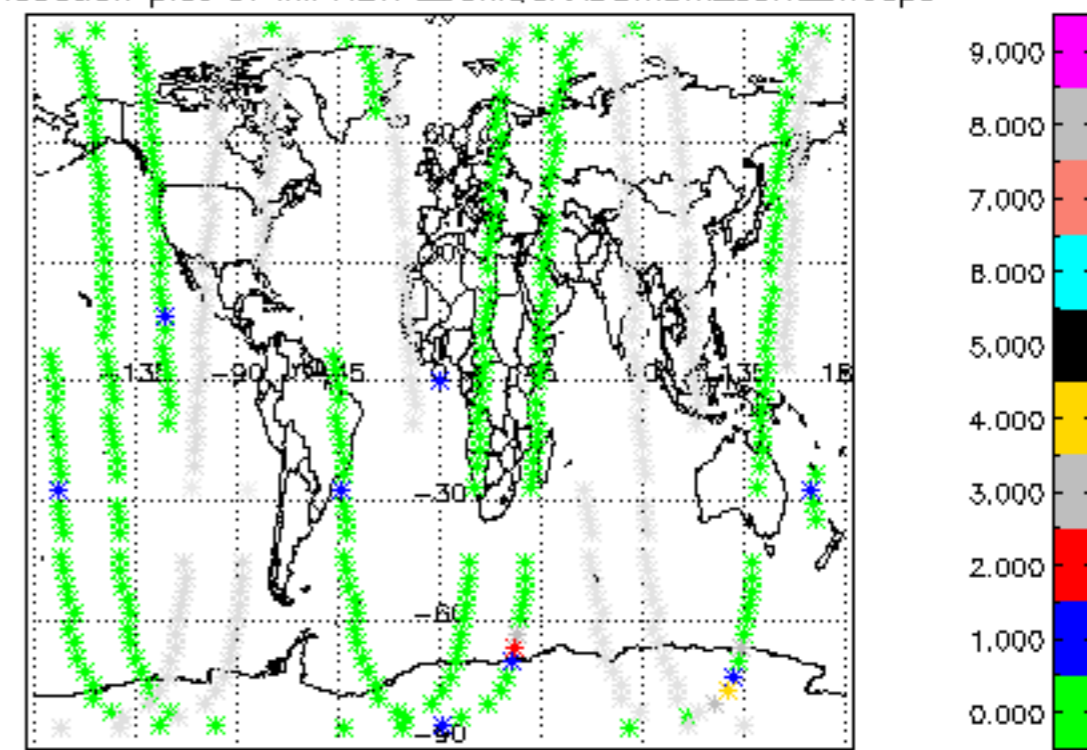
Geolocation plot of MIPNL1P\_SCAINFADS\_num\_sweeps (green color=0 errors)

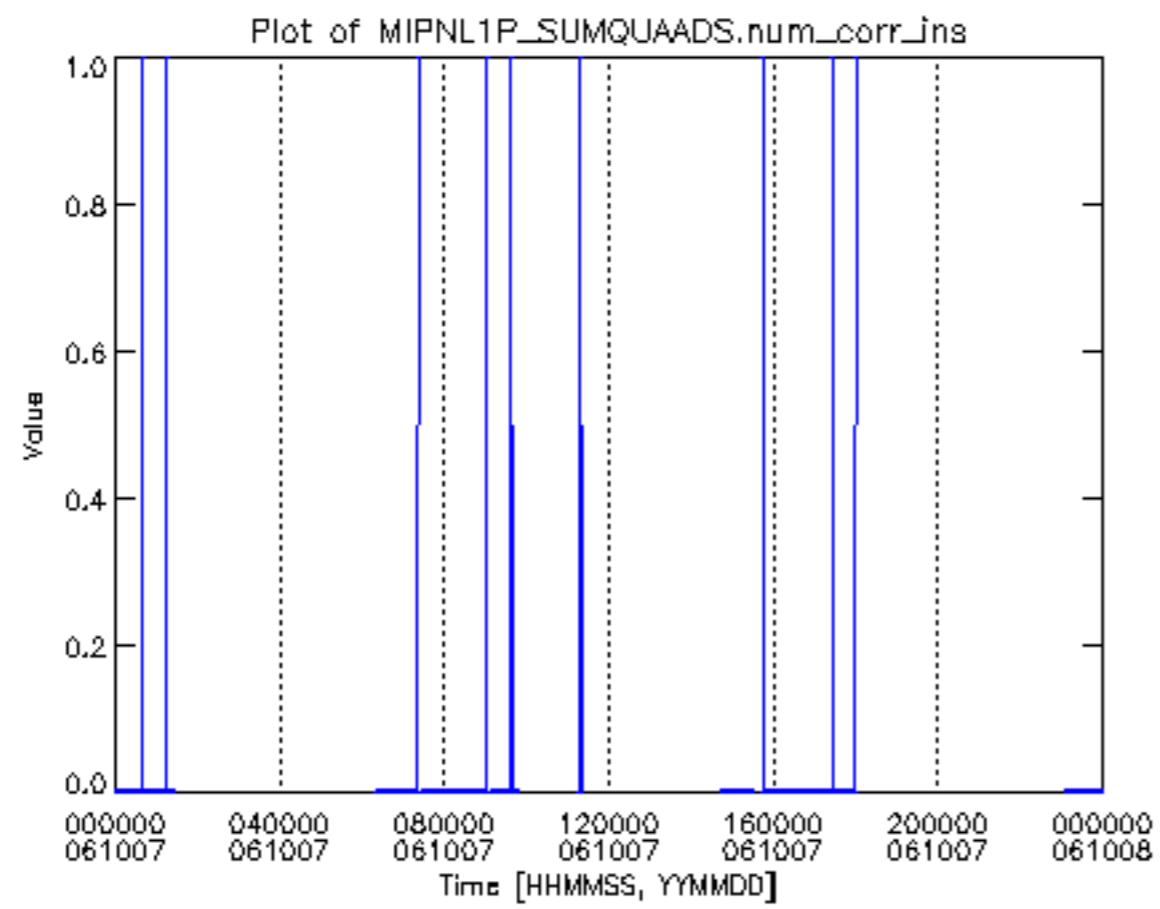




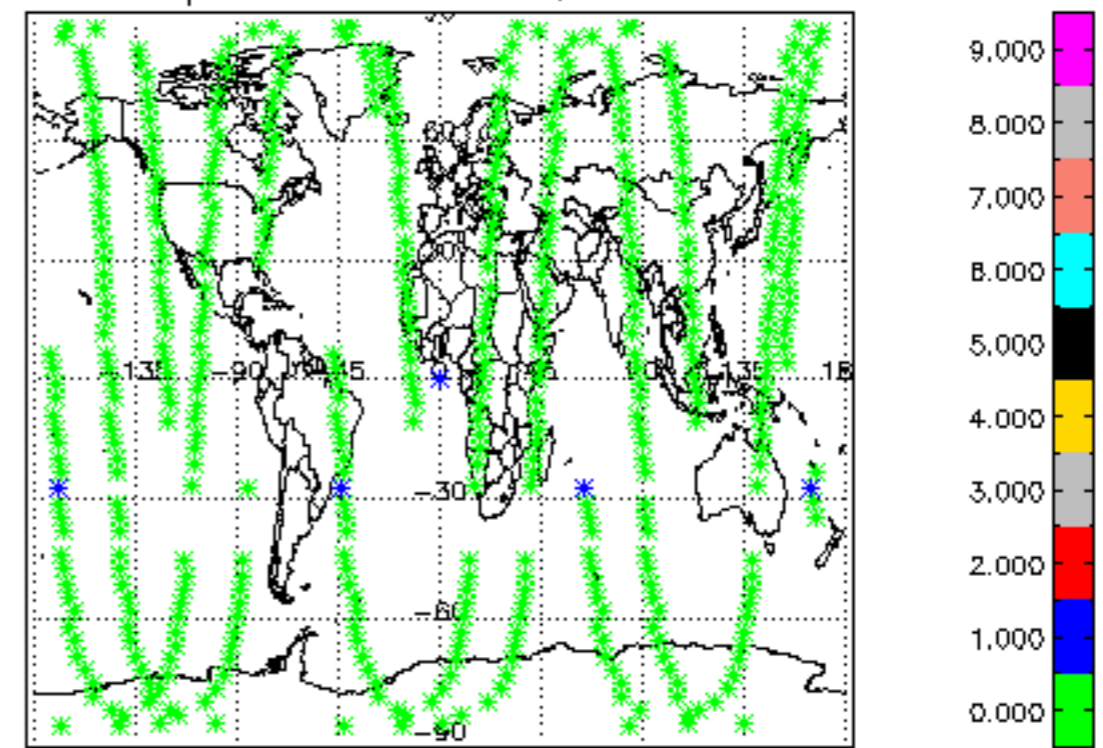


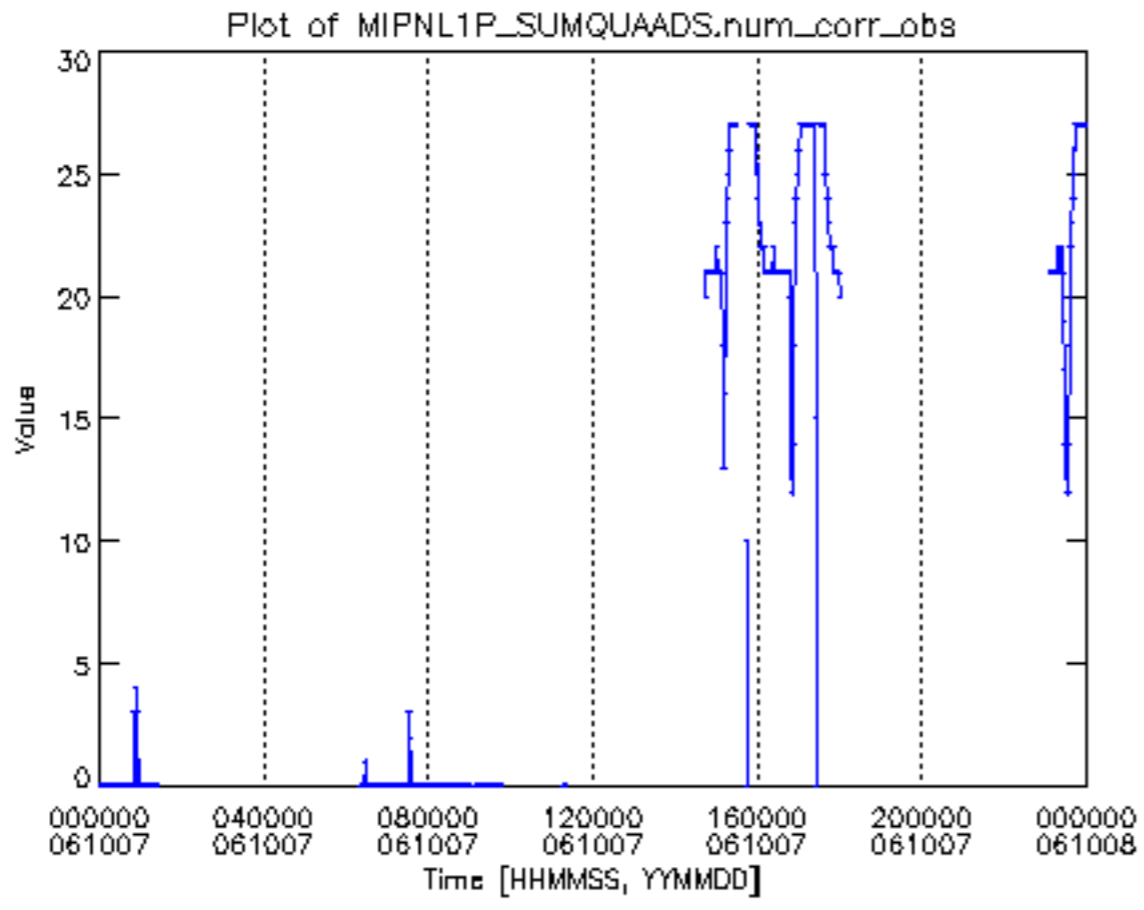
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_sweeps



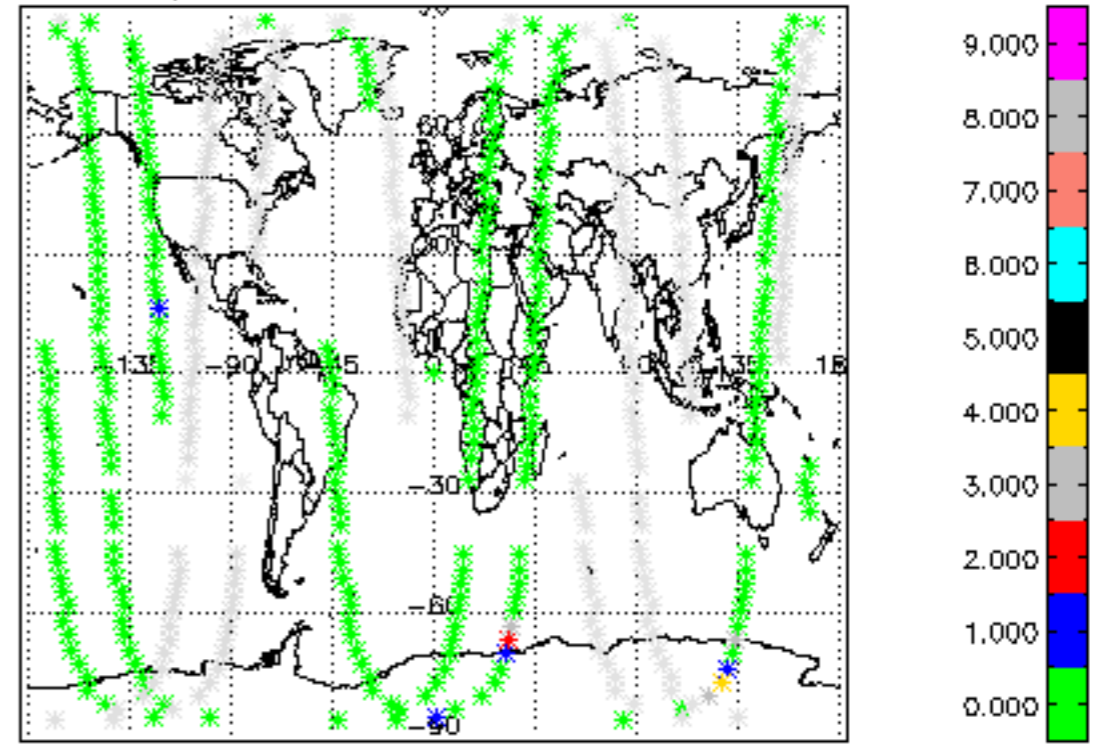


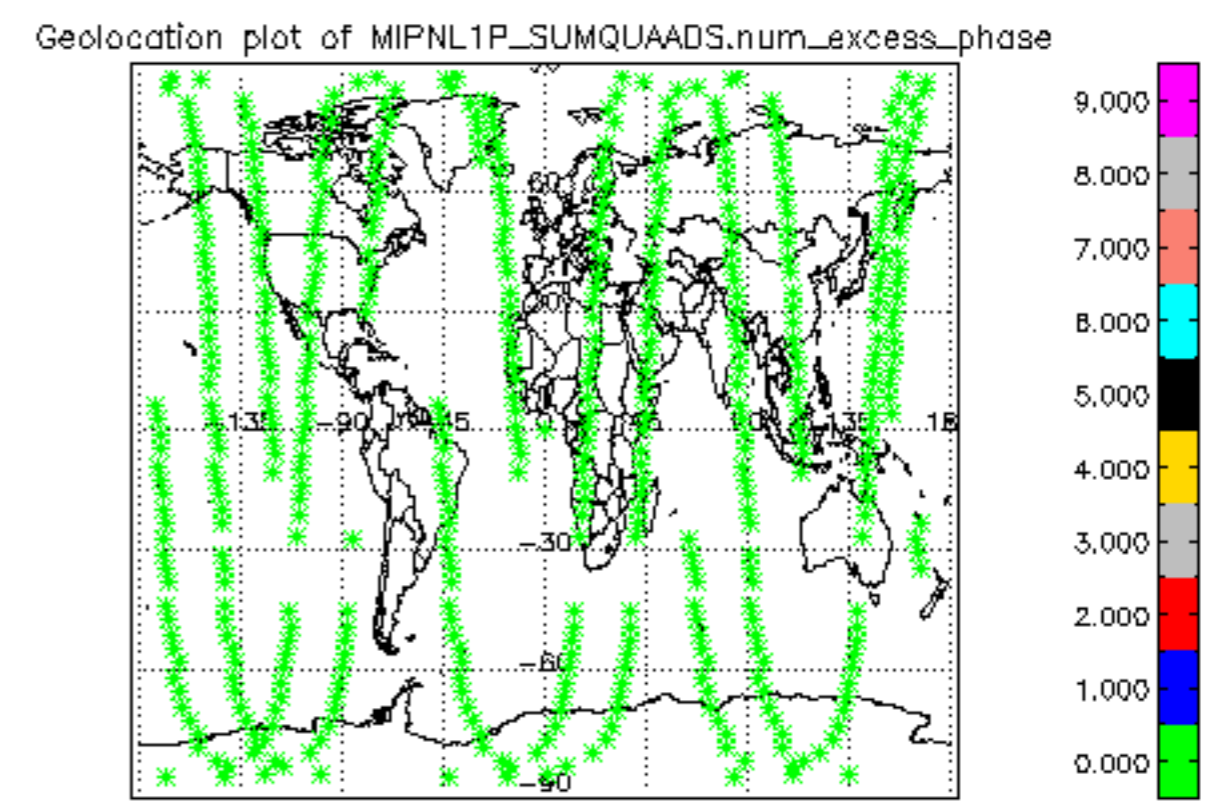
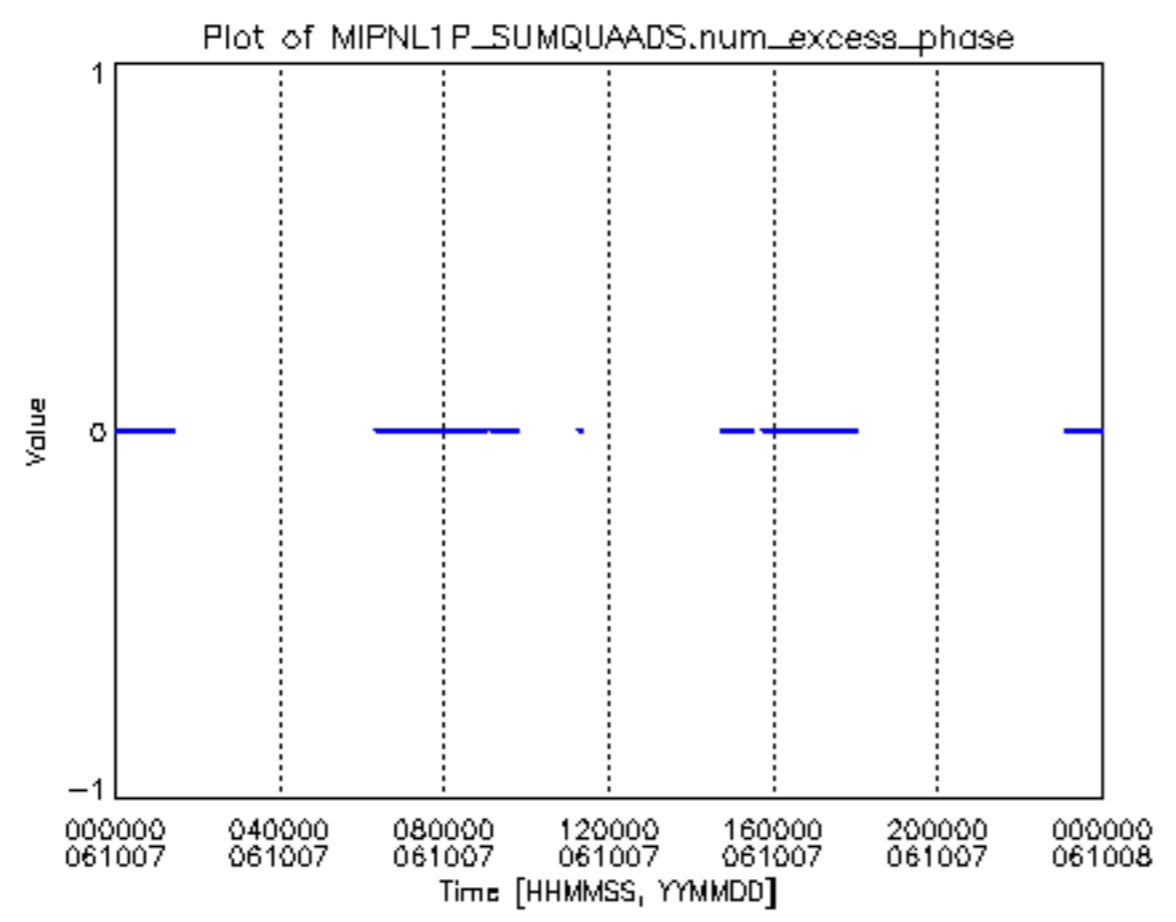
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_ins

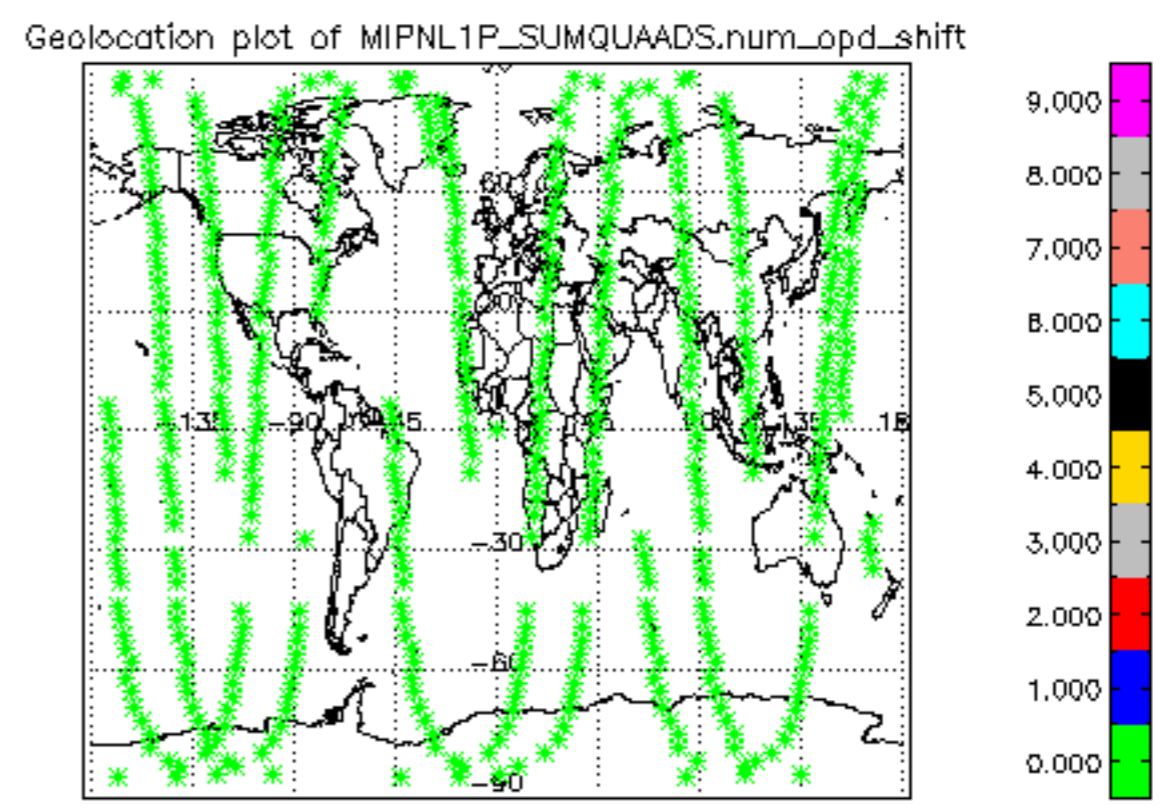
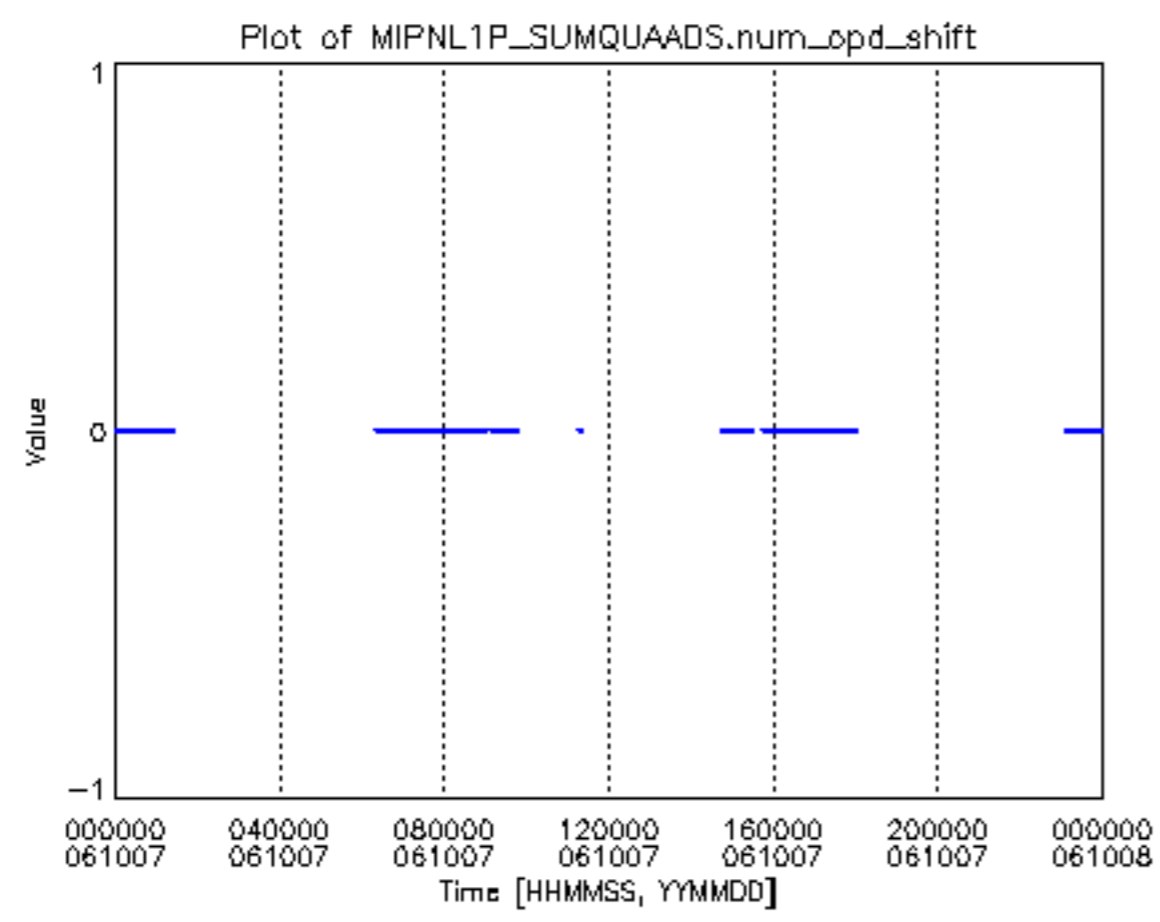




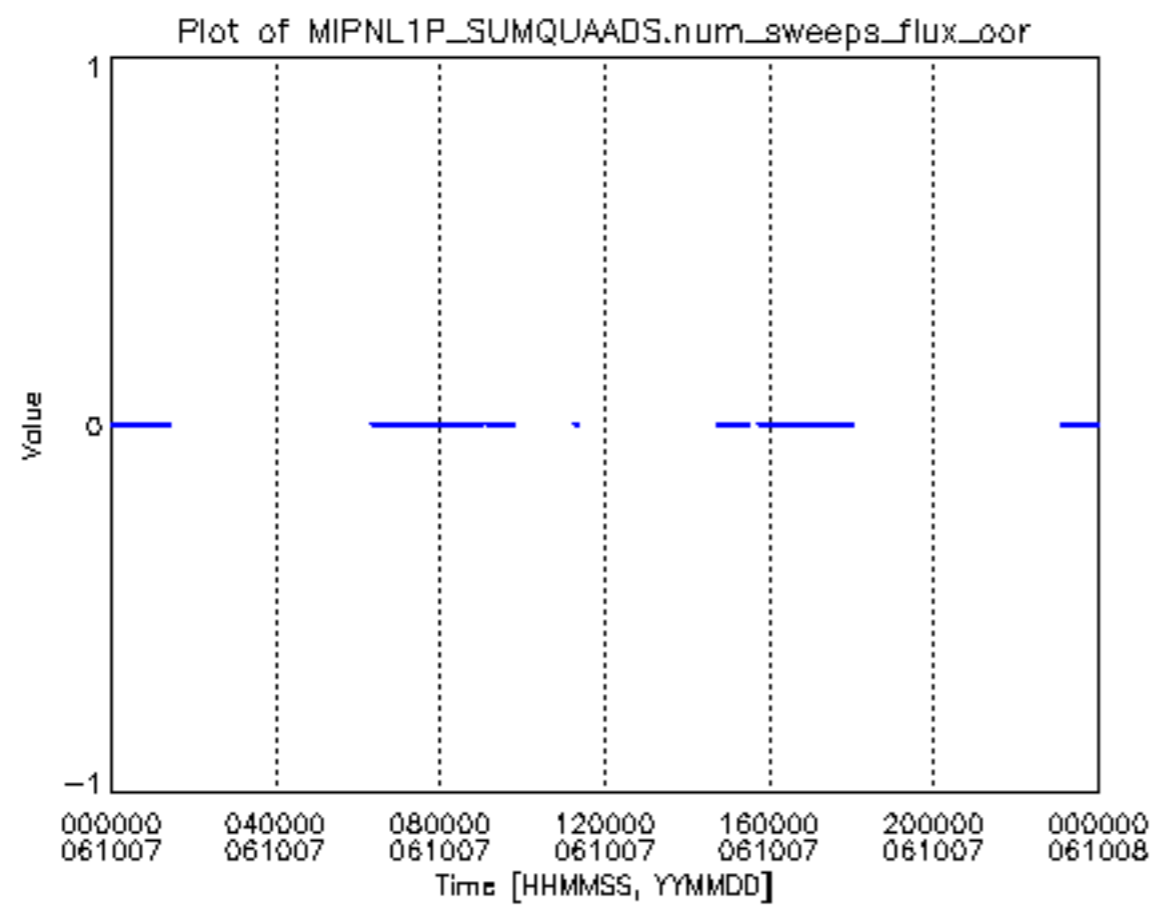
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_obs



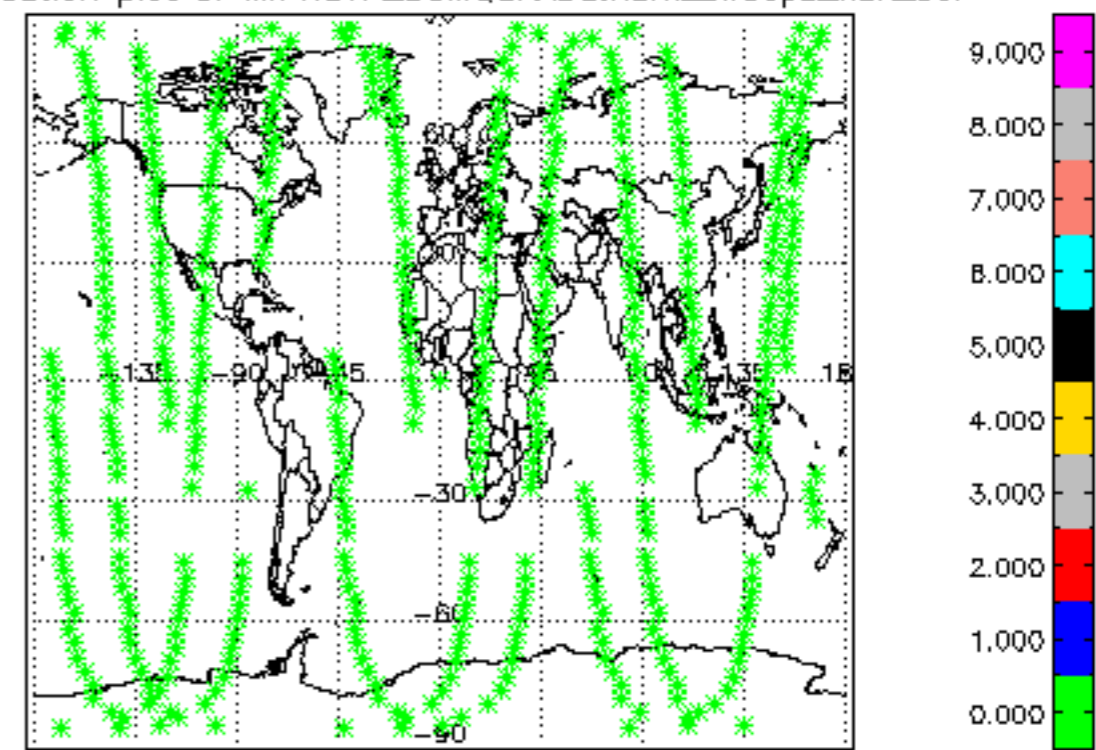


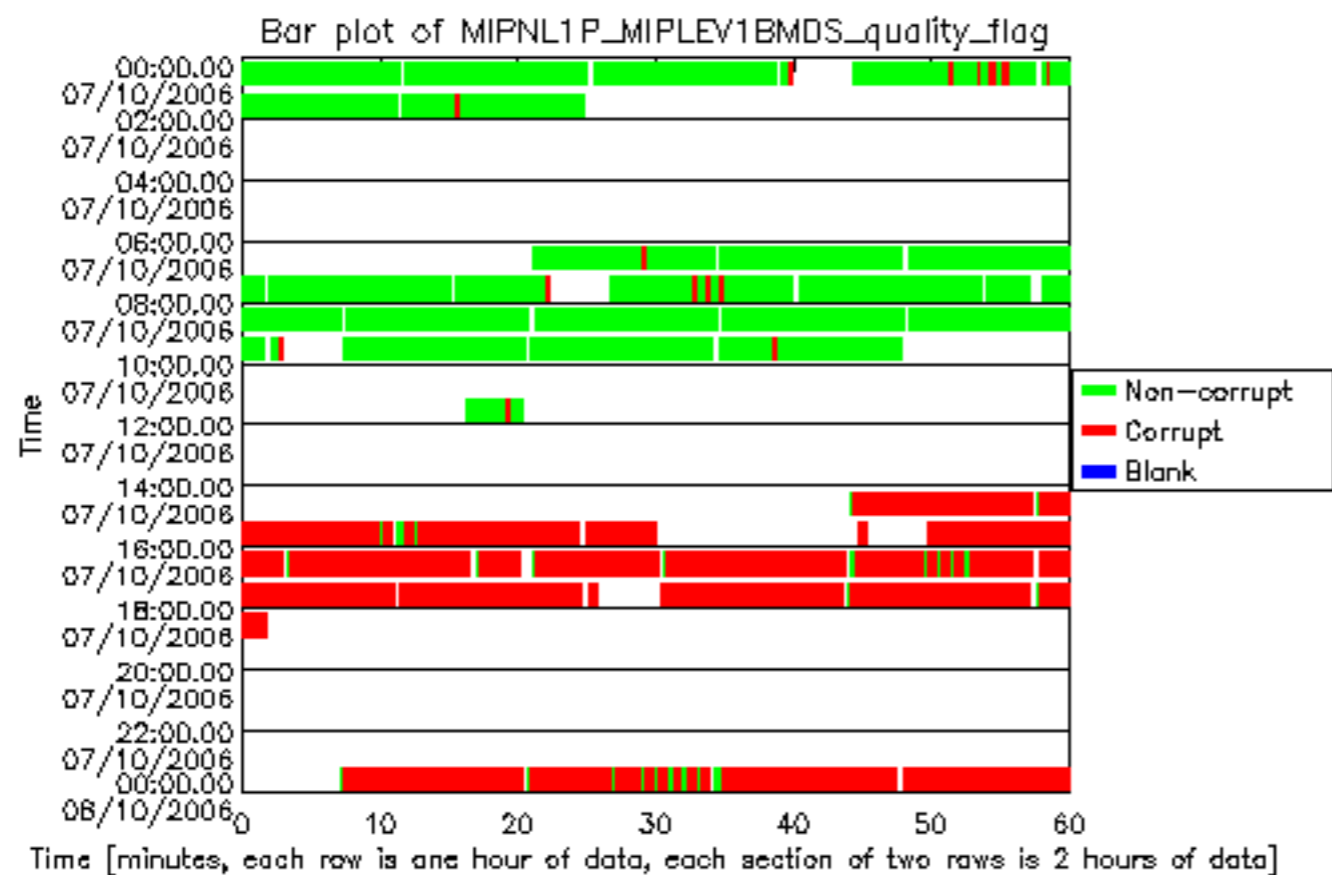




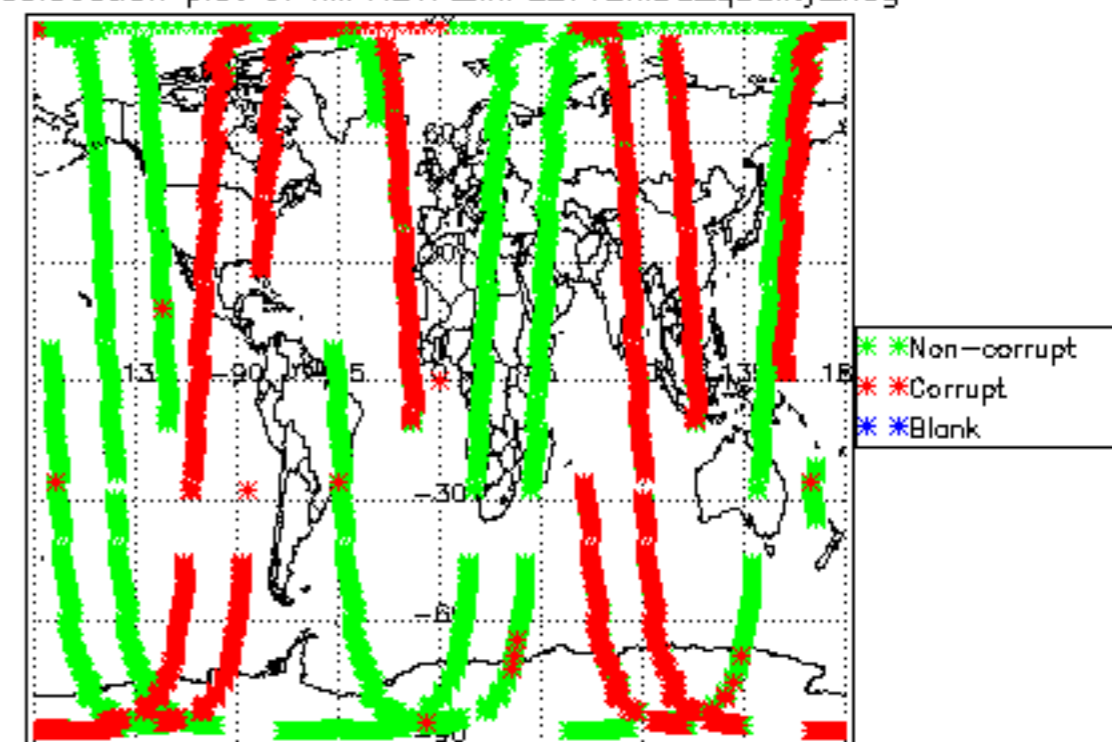


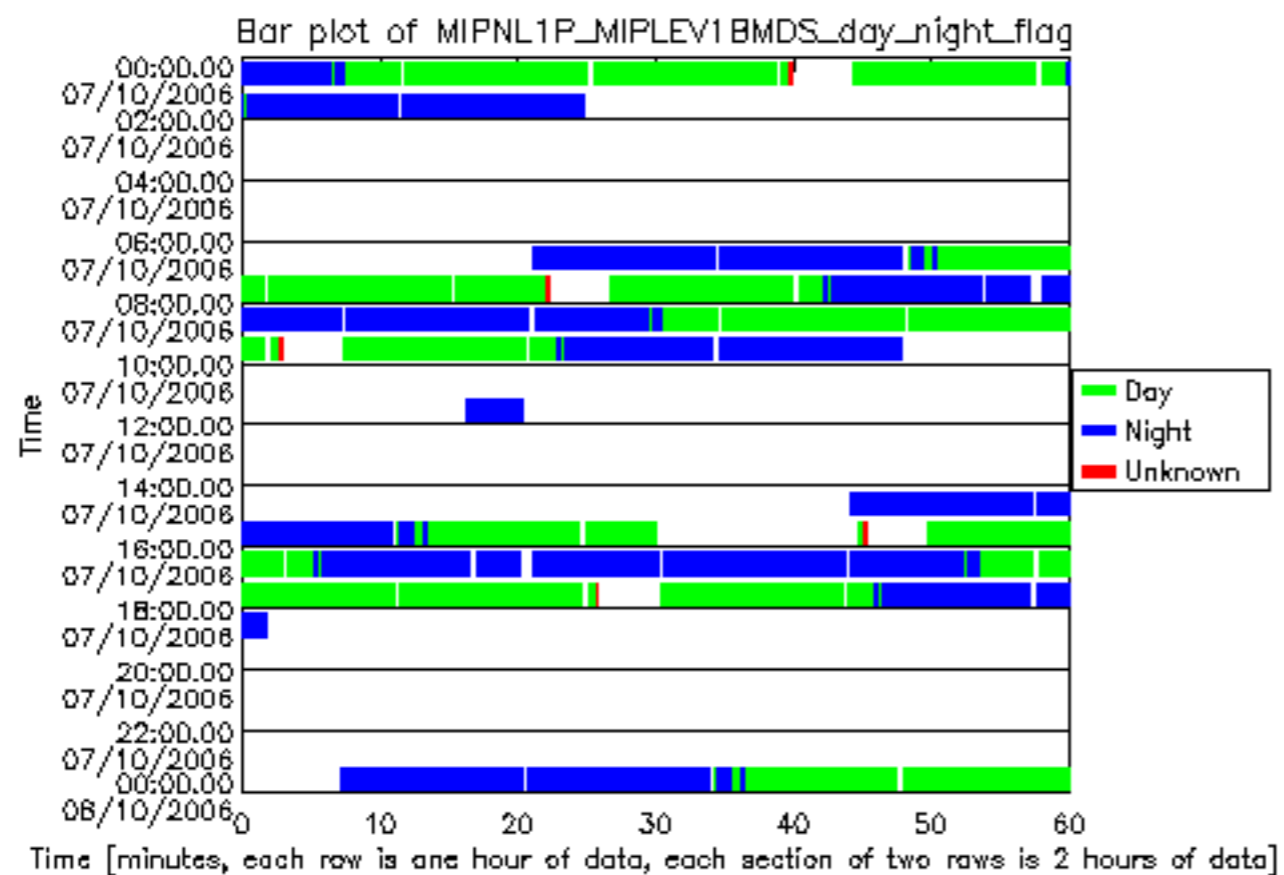
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_sweeps\_flux\_oor



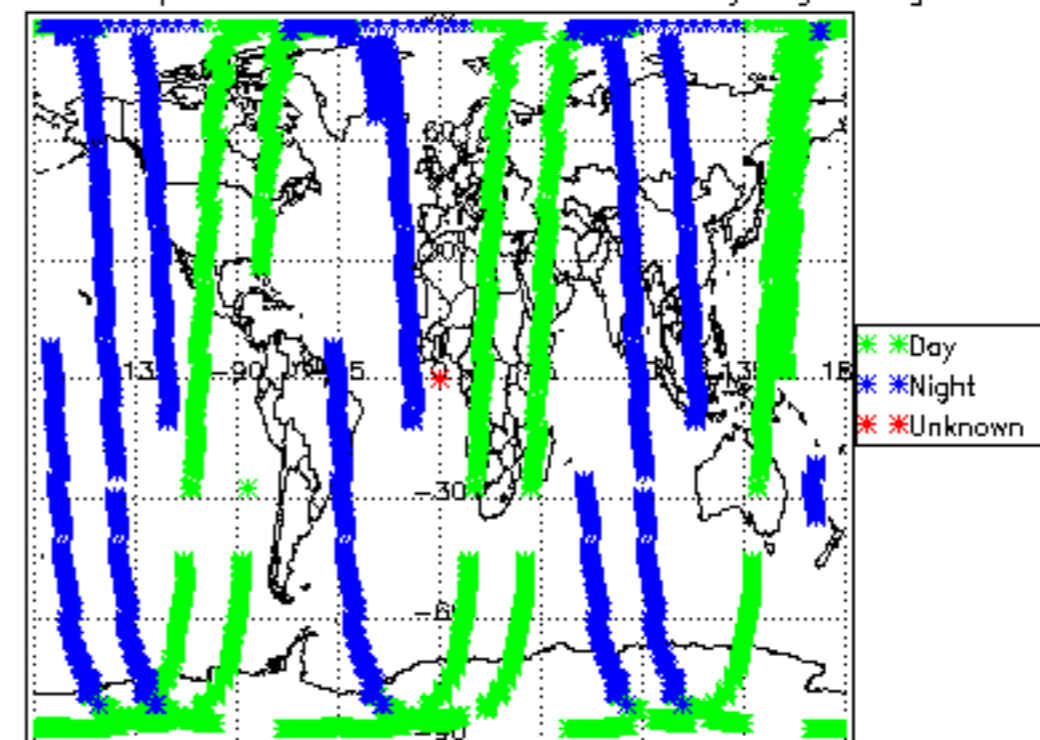


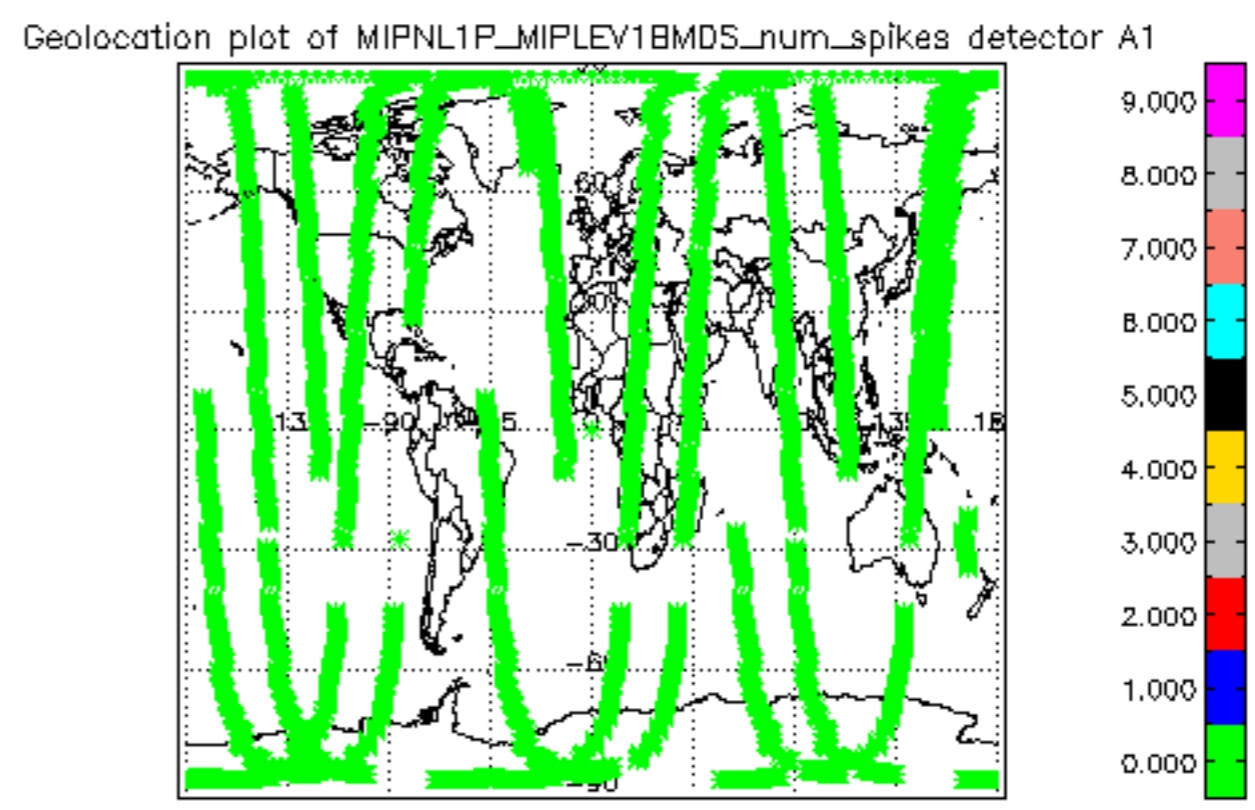
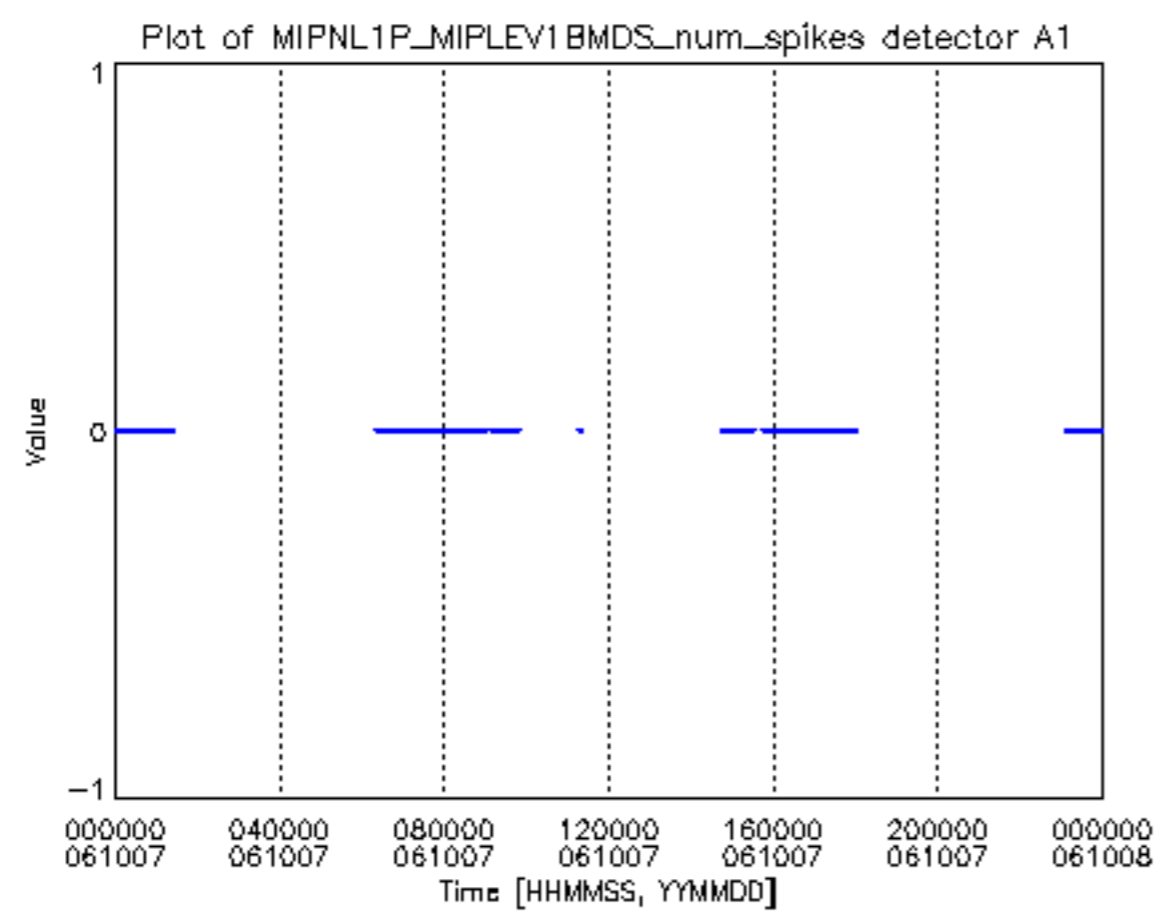
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag

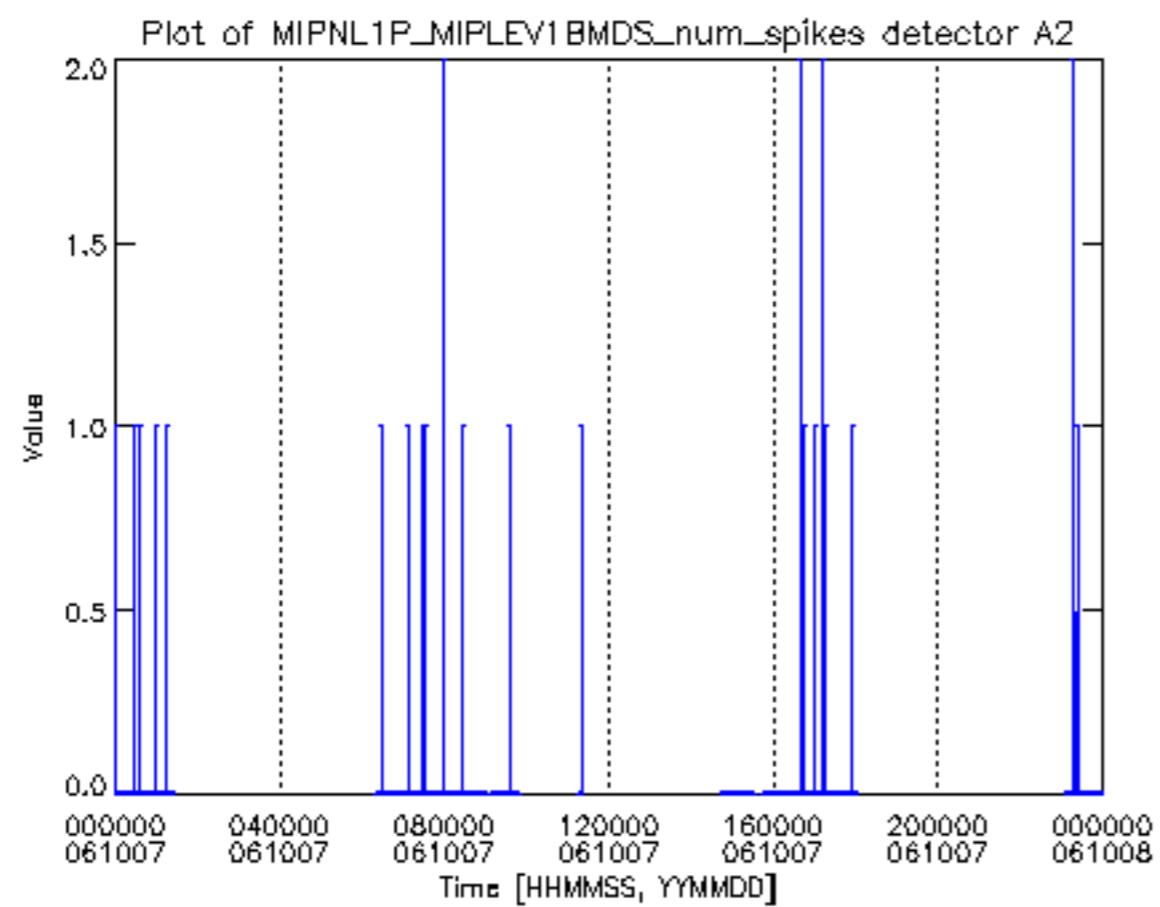




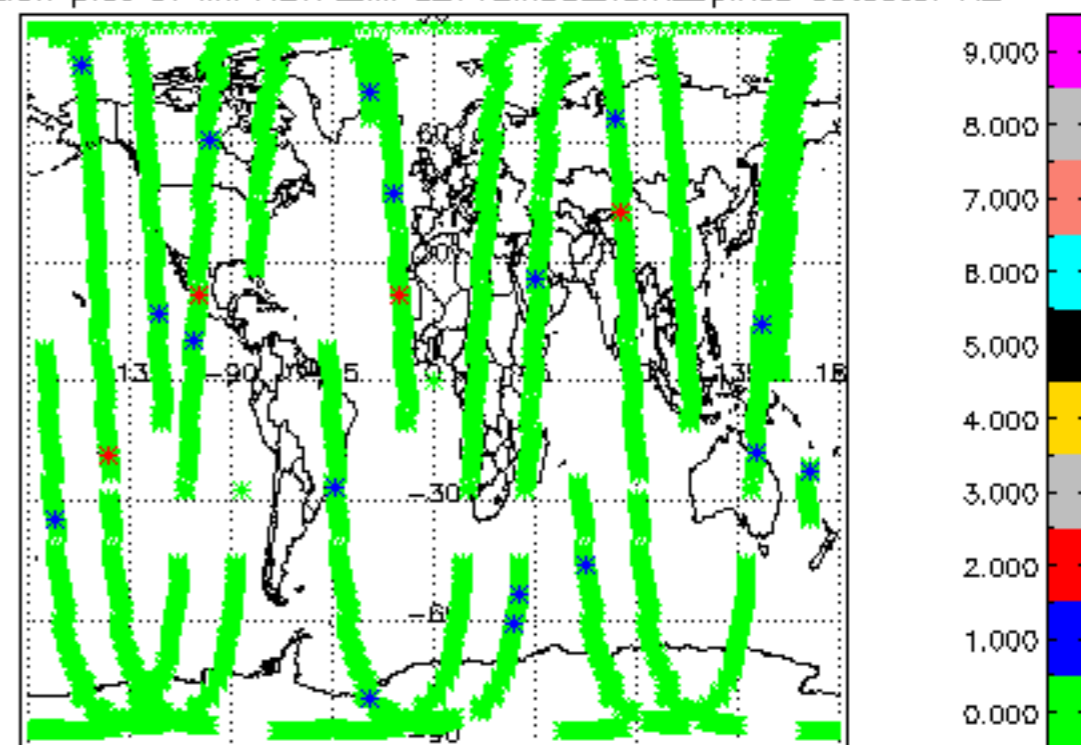
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag

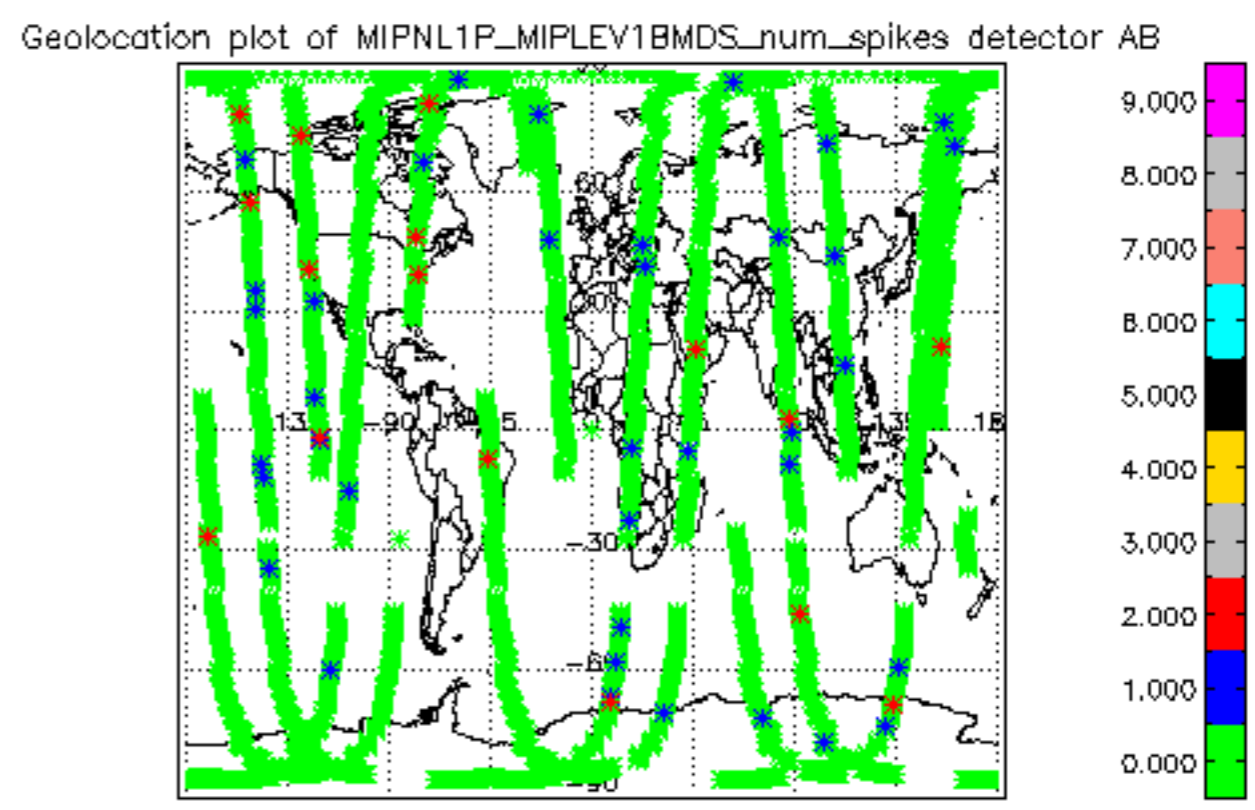
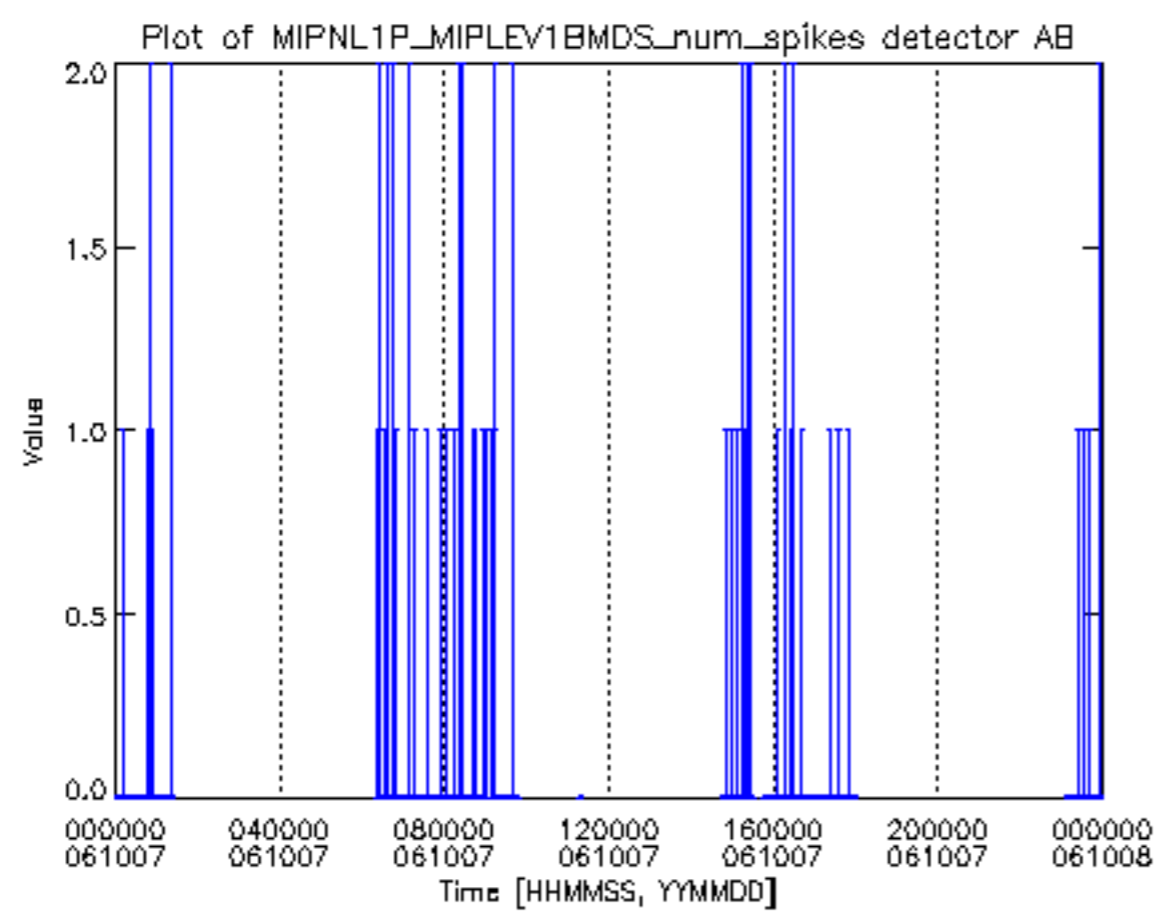


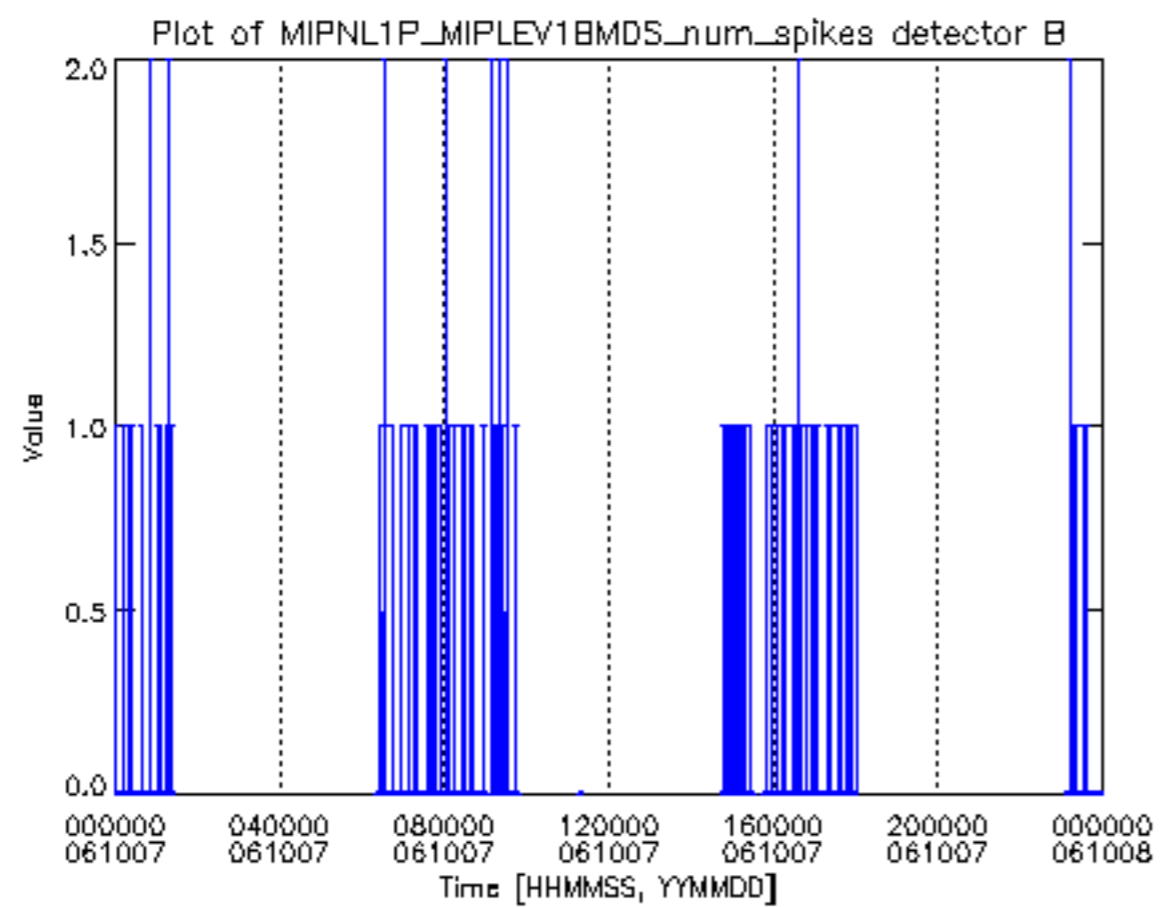




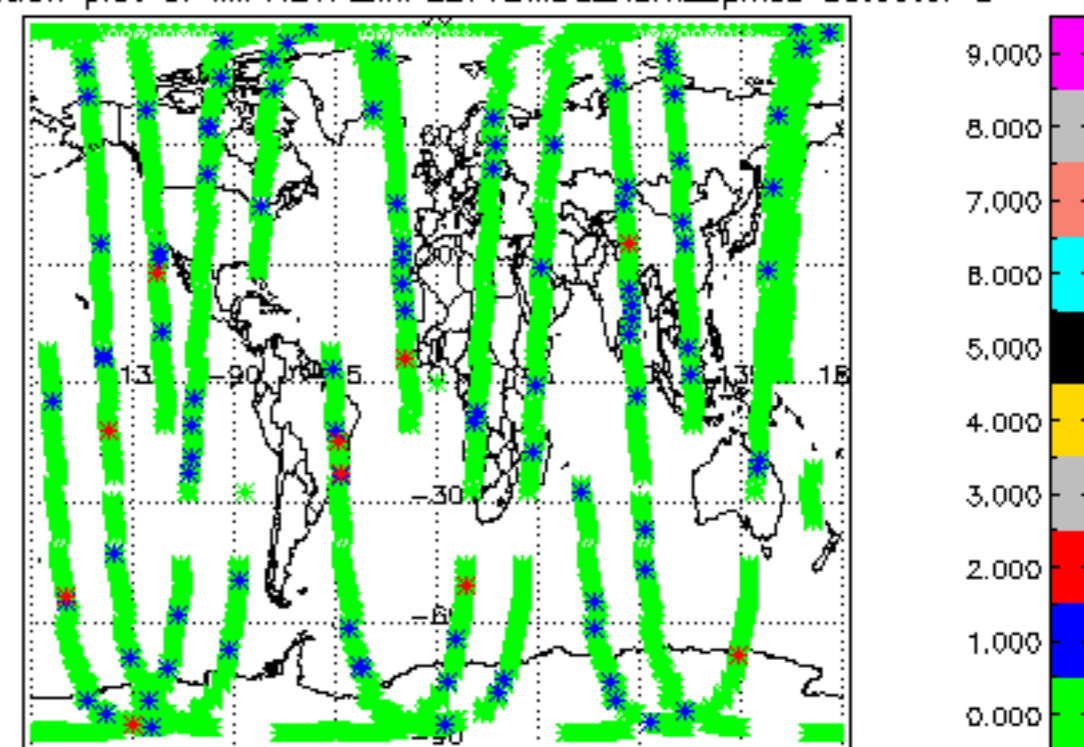
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector A2

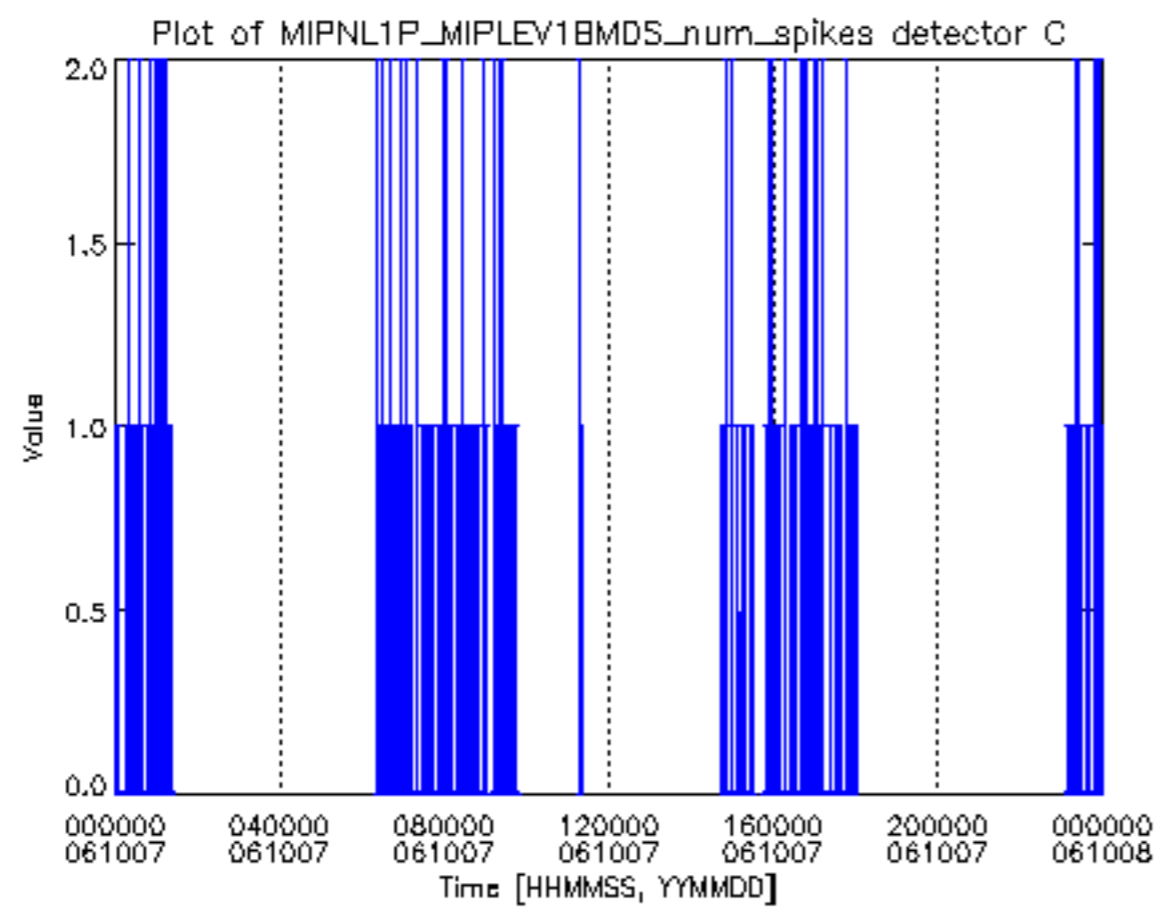




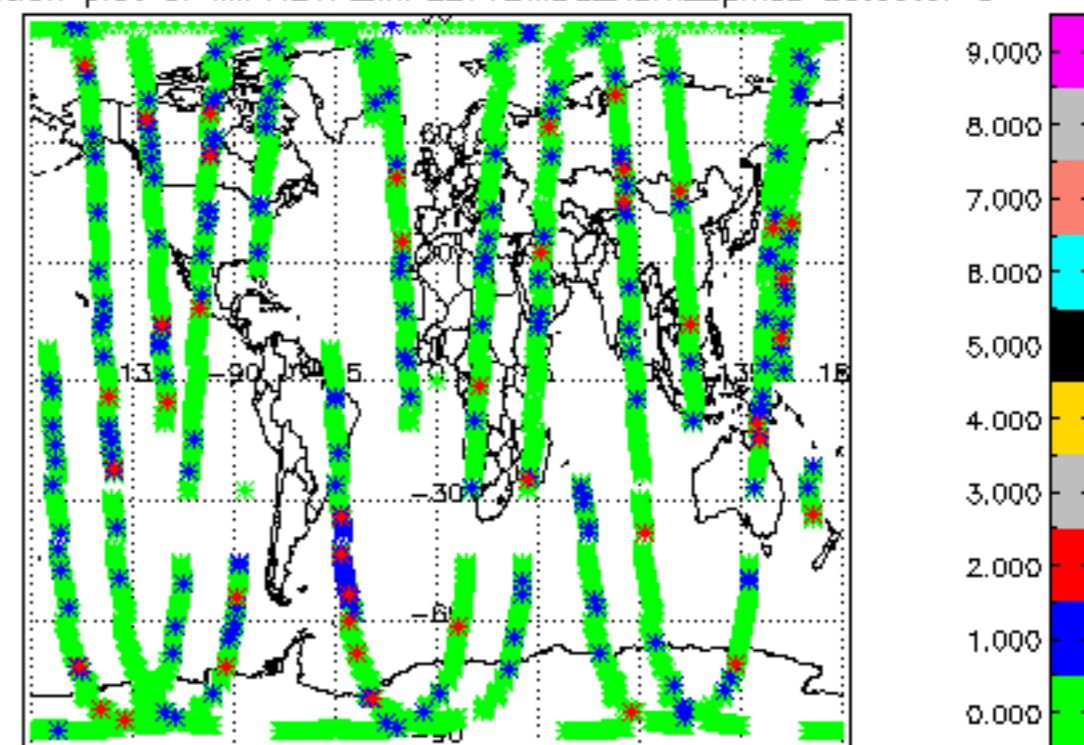


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector B

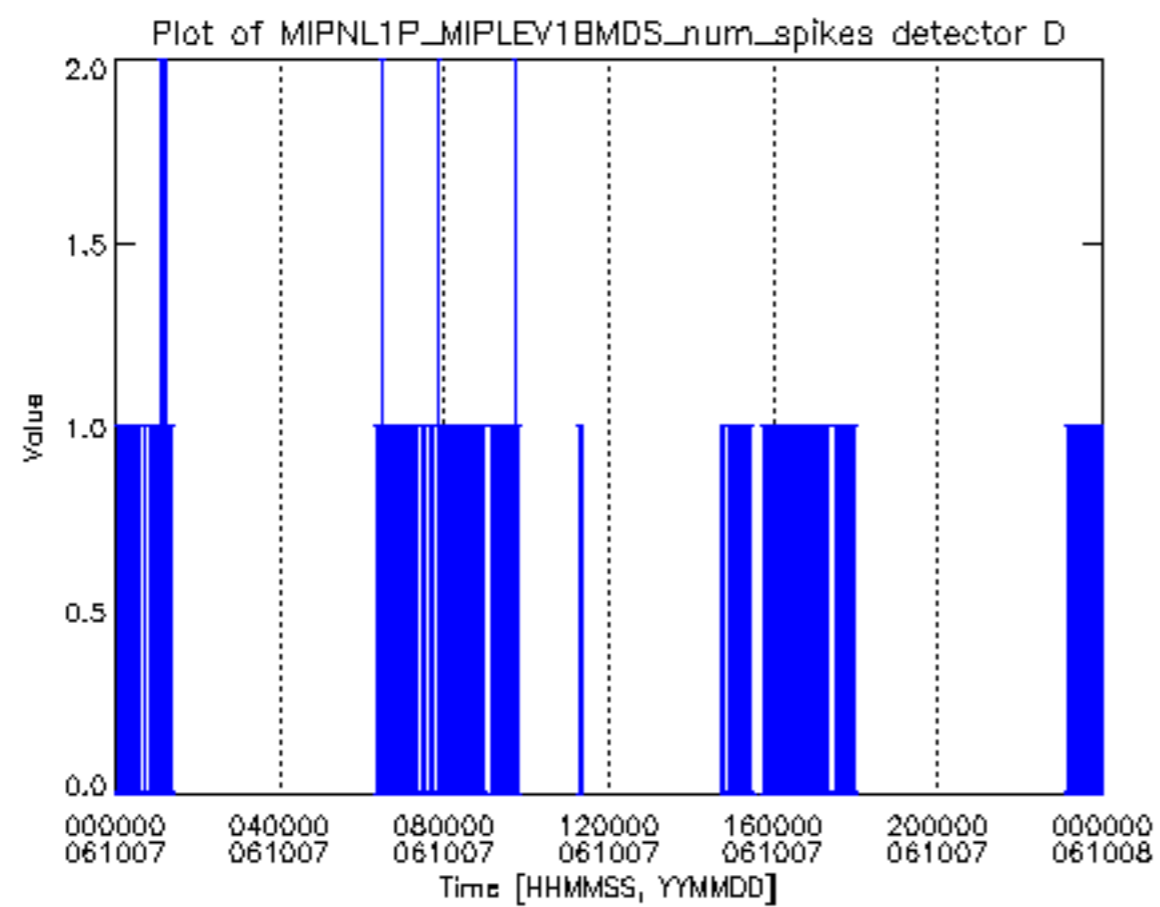




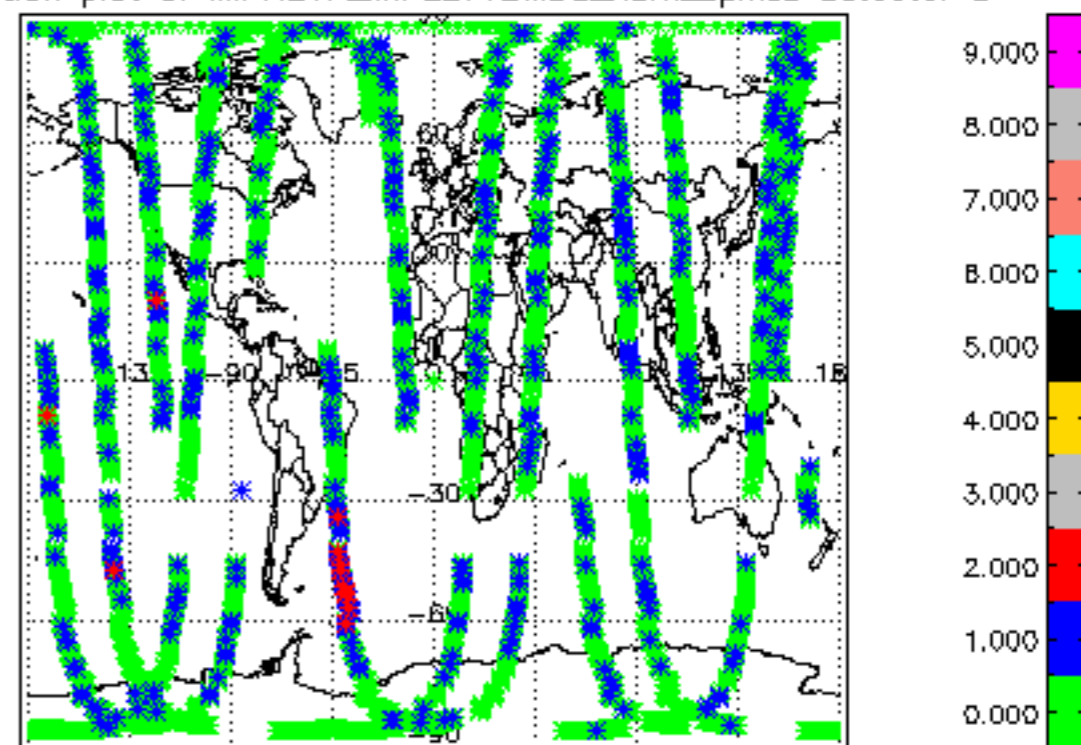
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector C

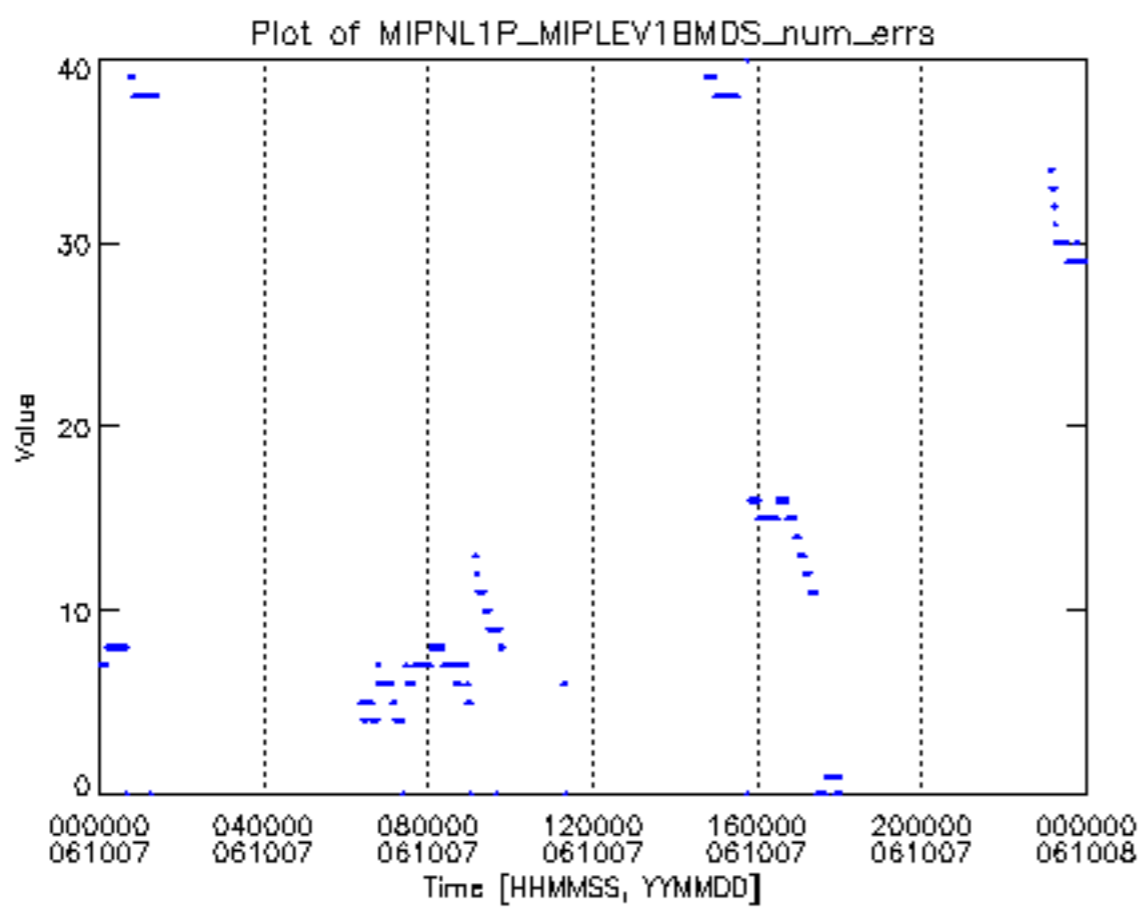




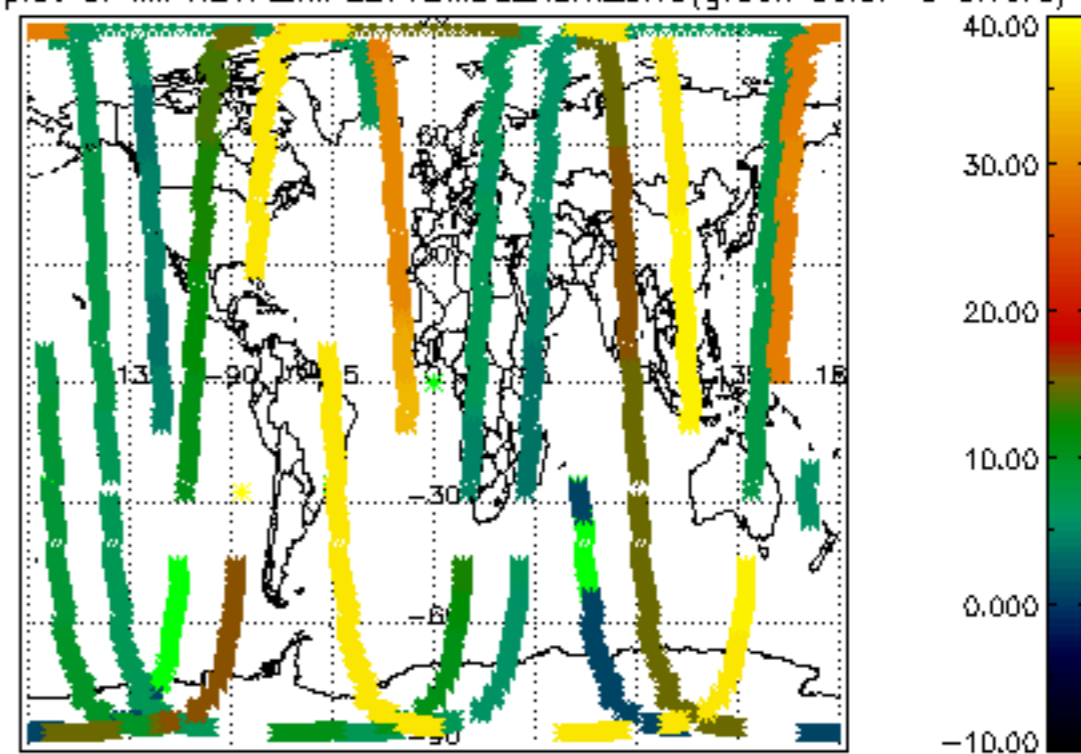


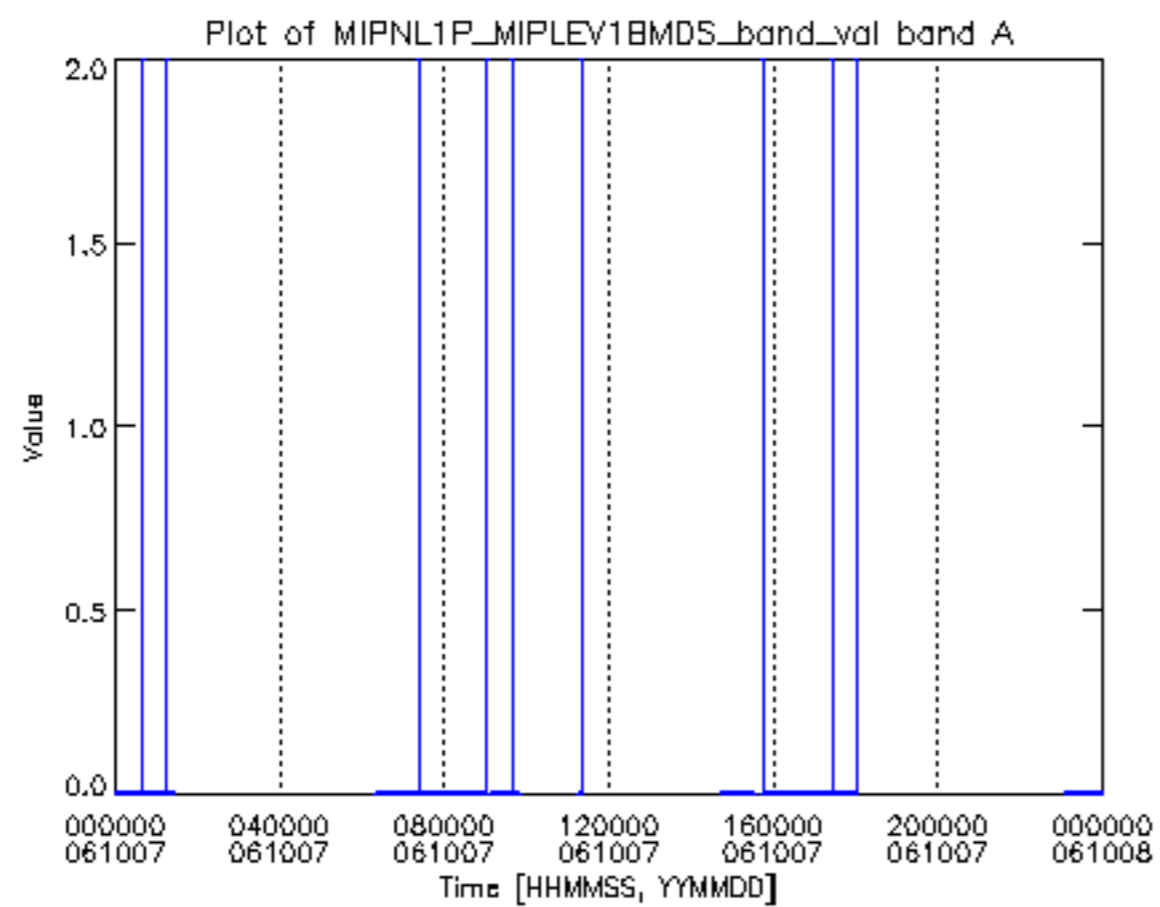
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector D



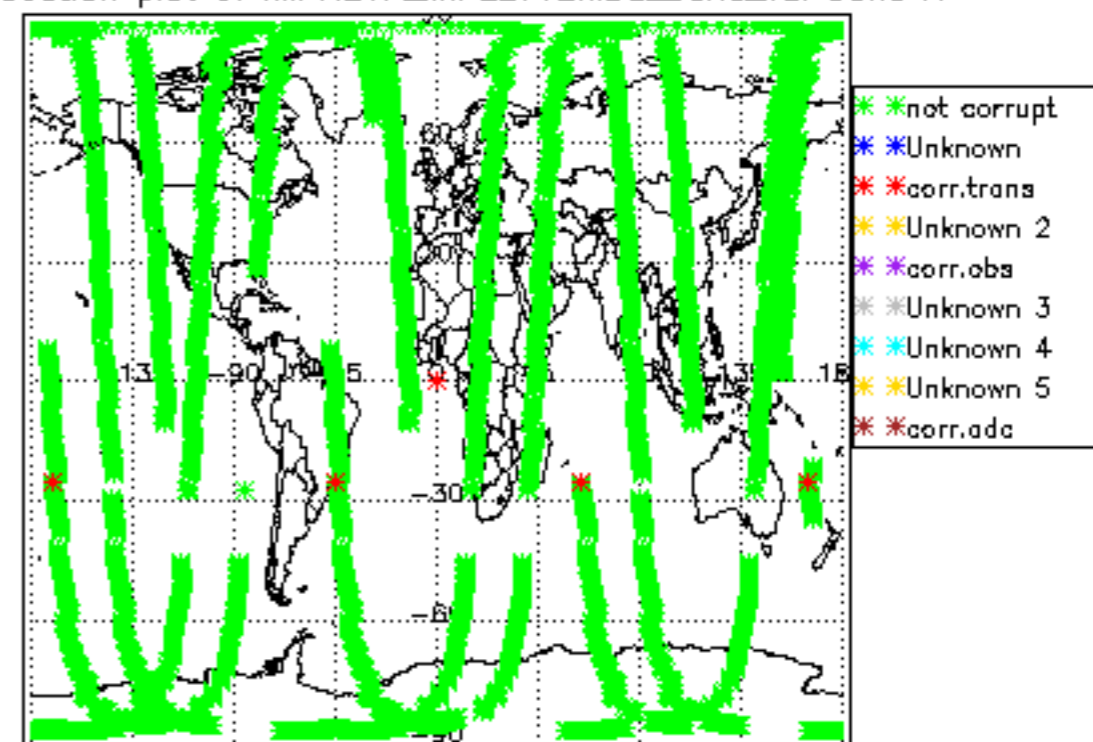


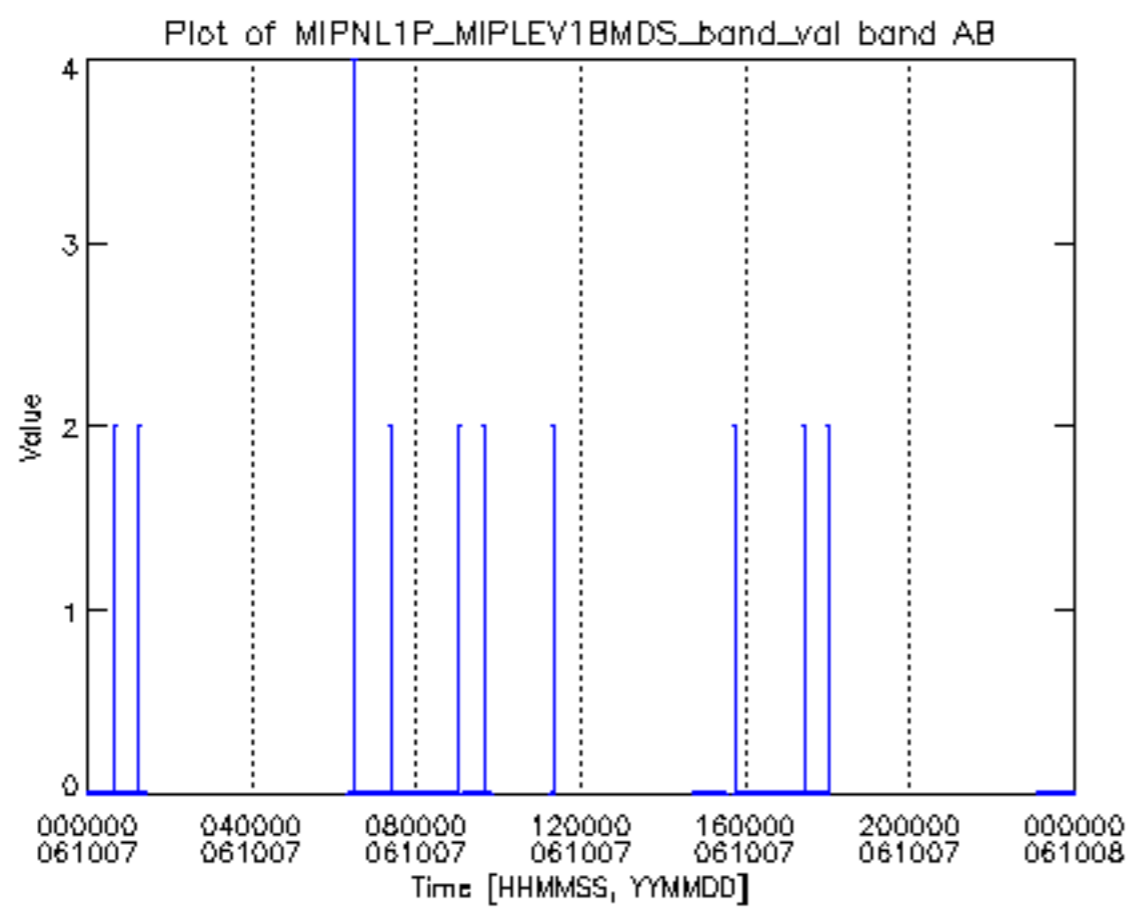
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_errs (green color=0 errors)



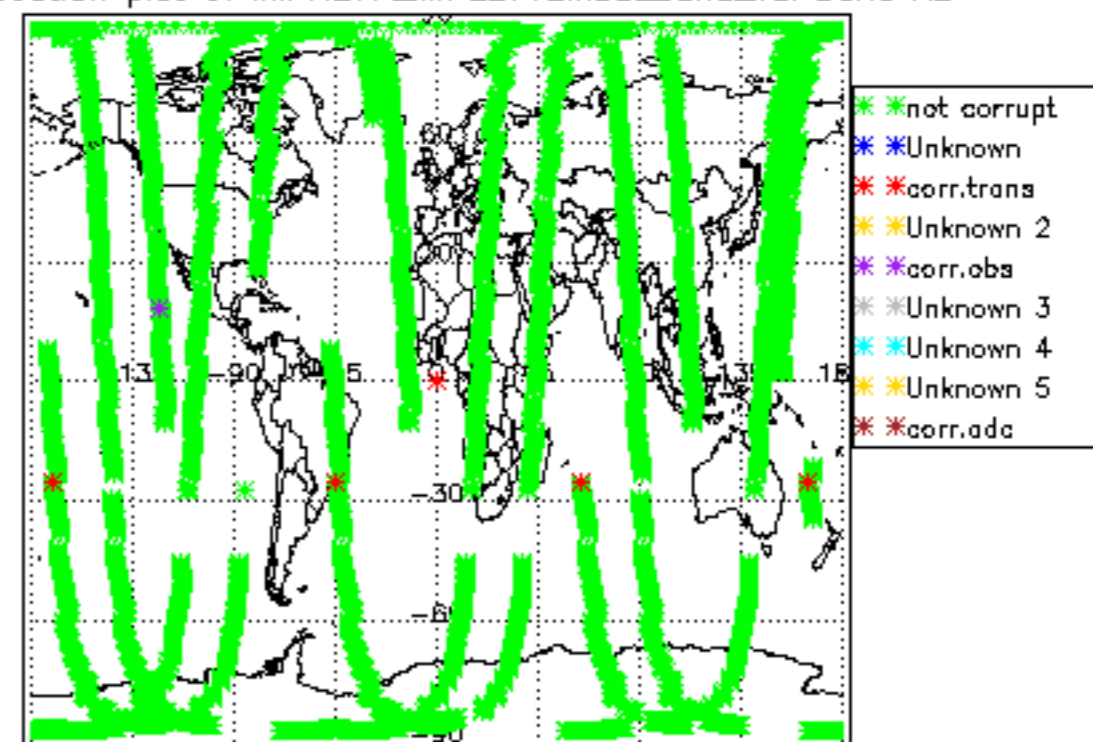


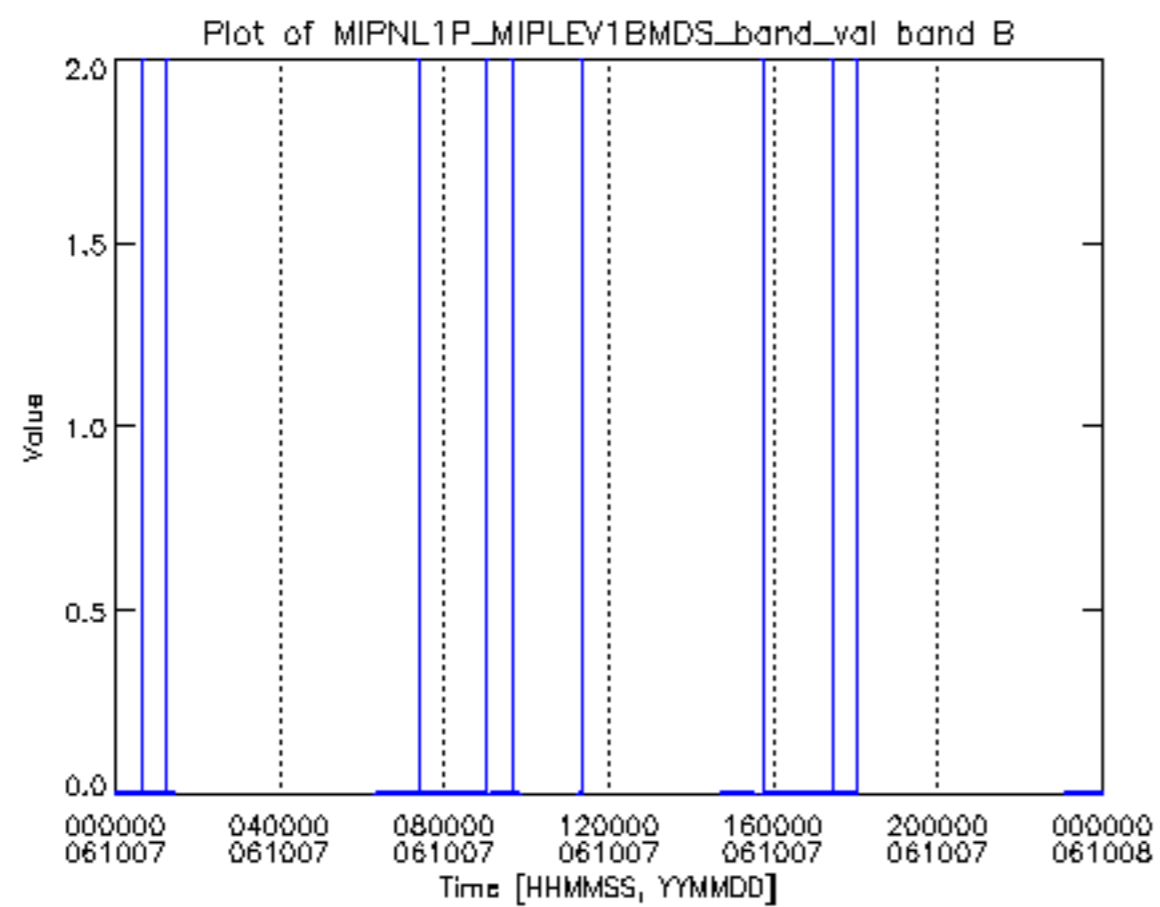
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band A



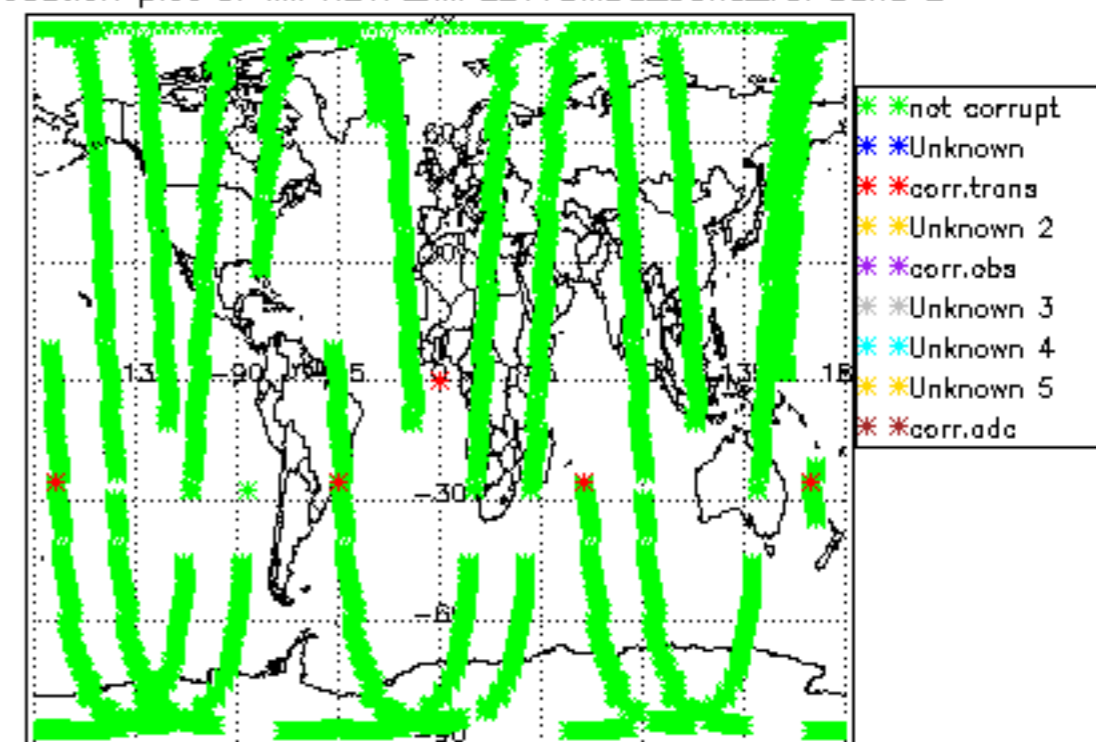


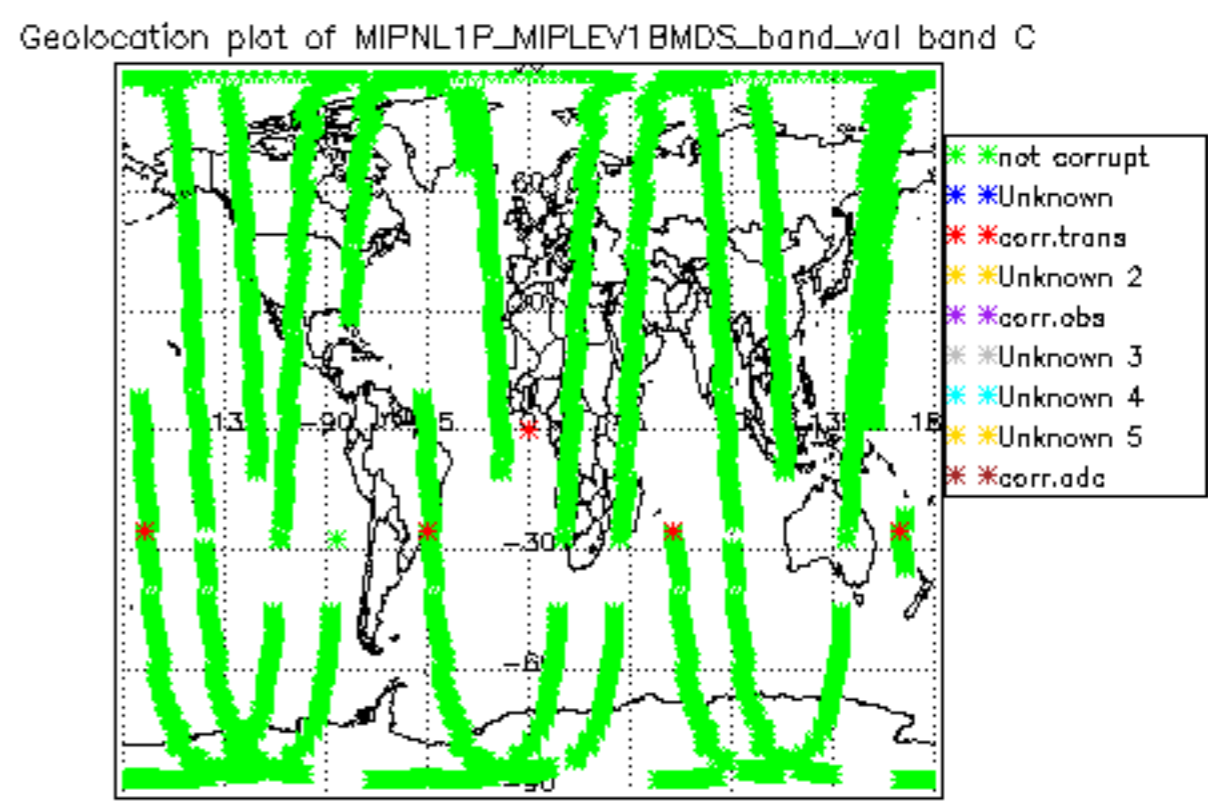
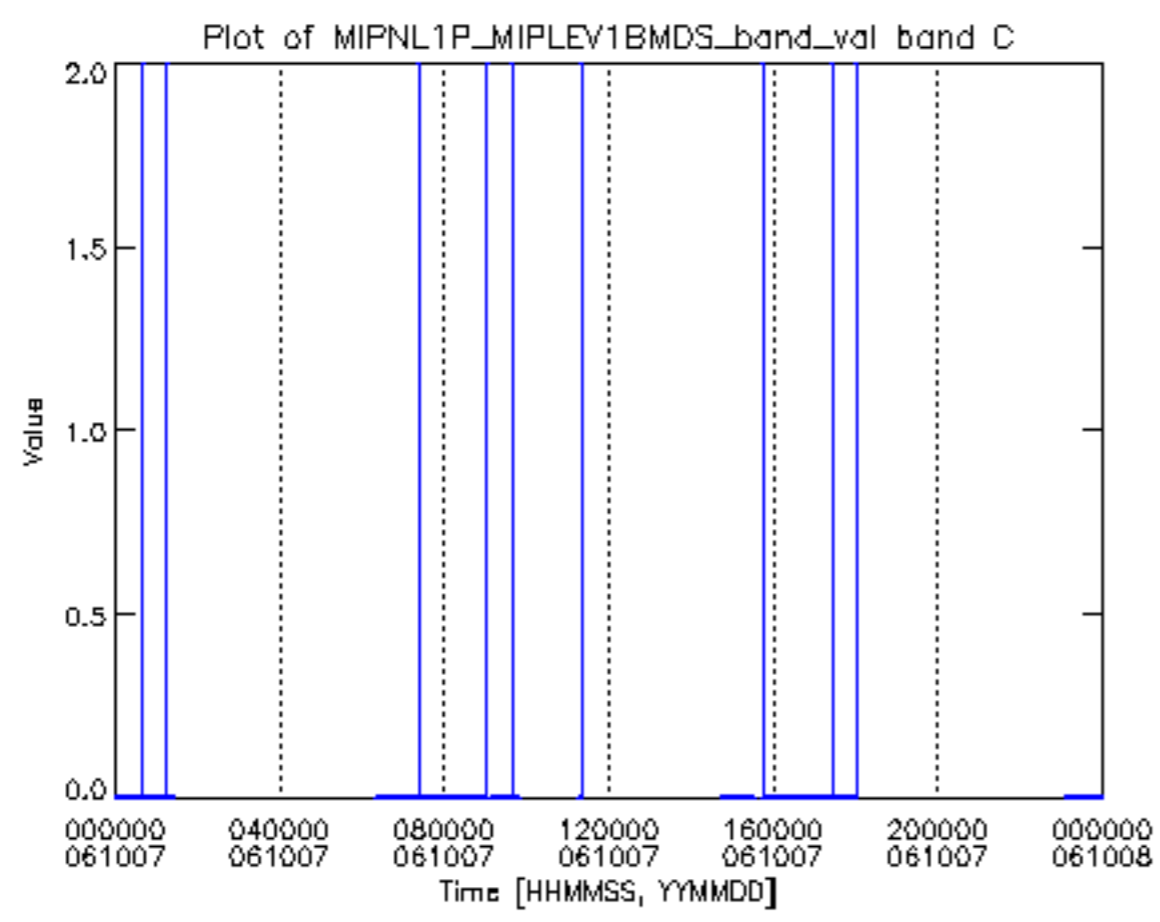
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band AB

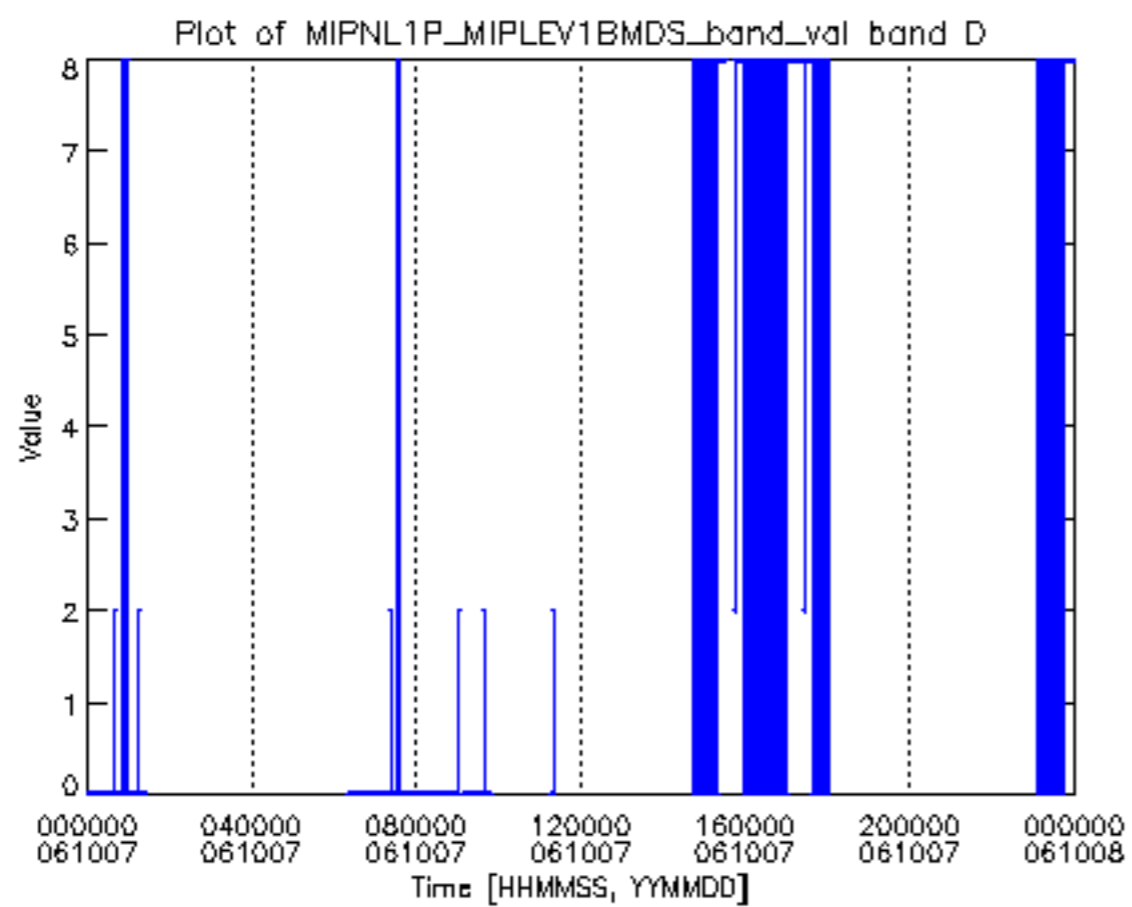




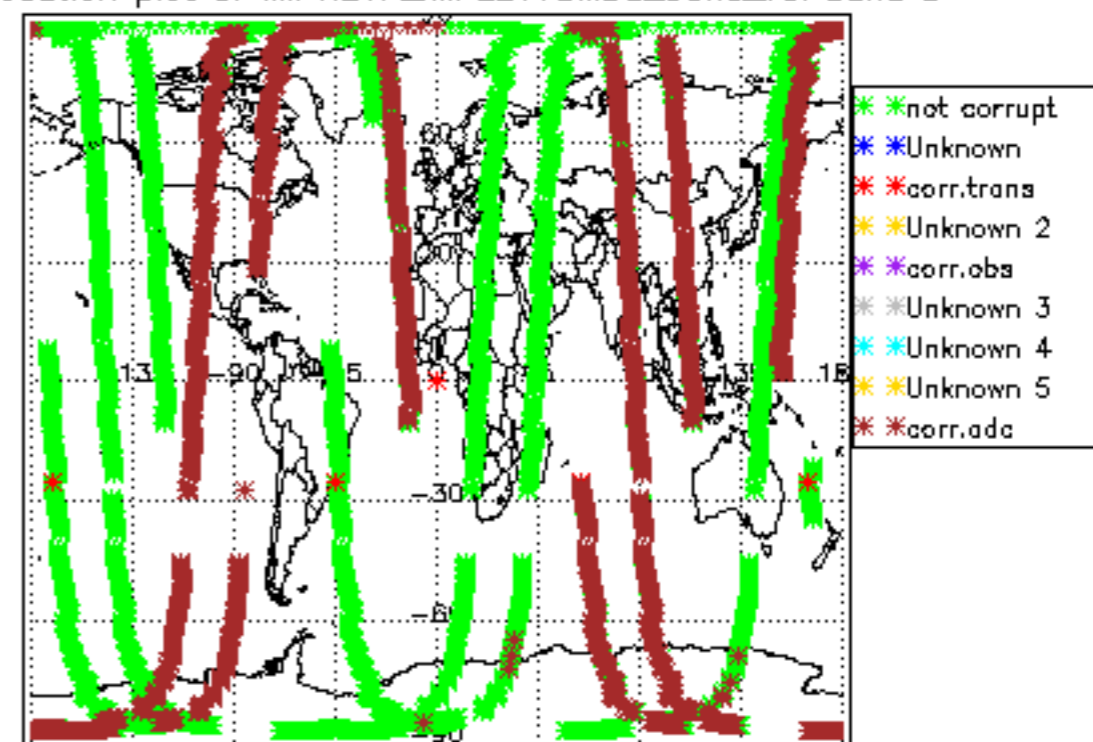
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band B



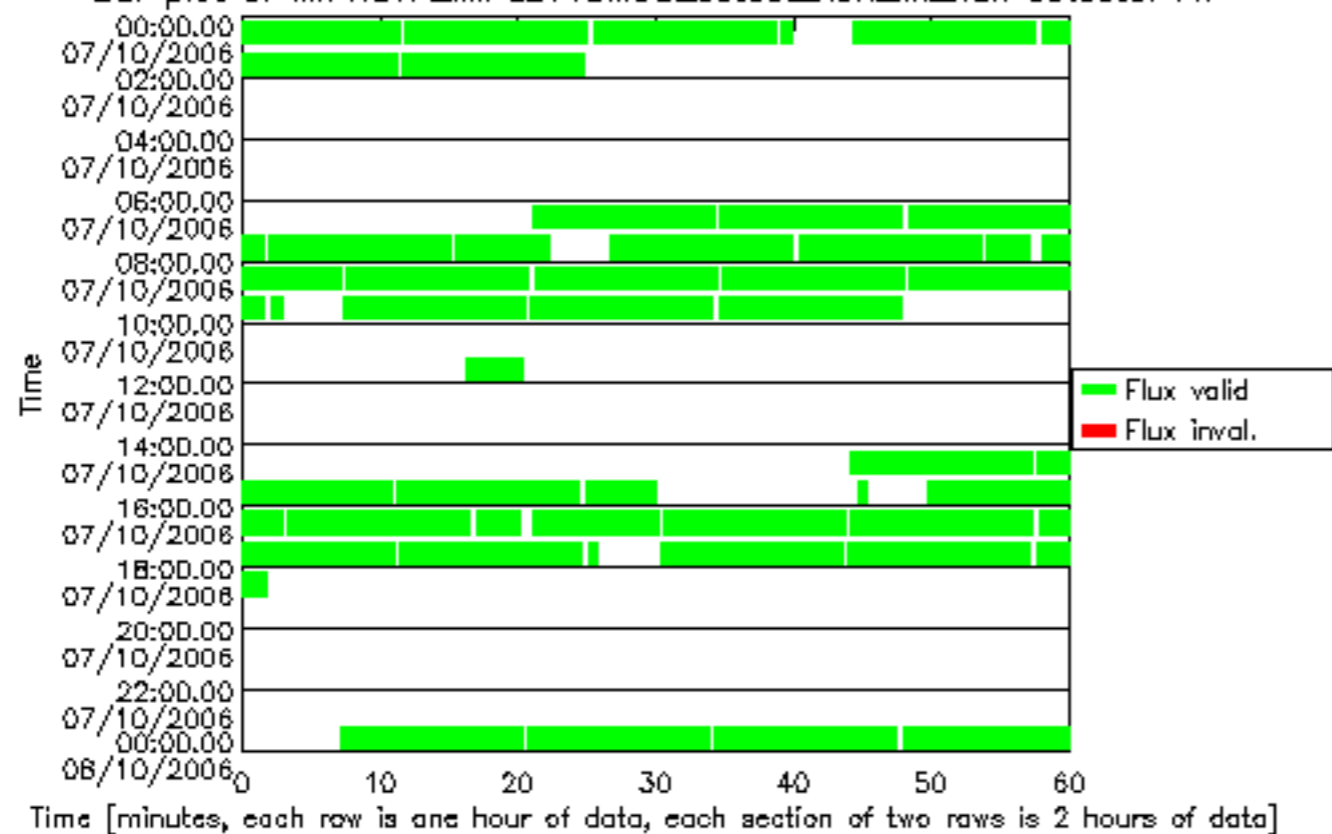




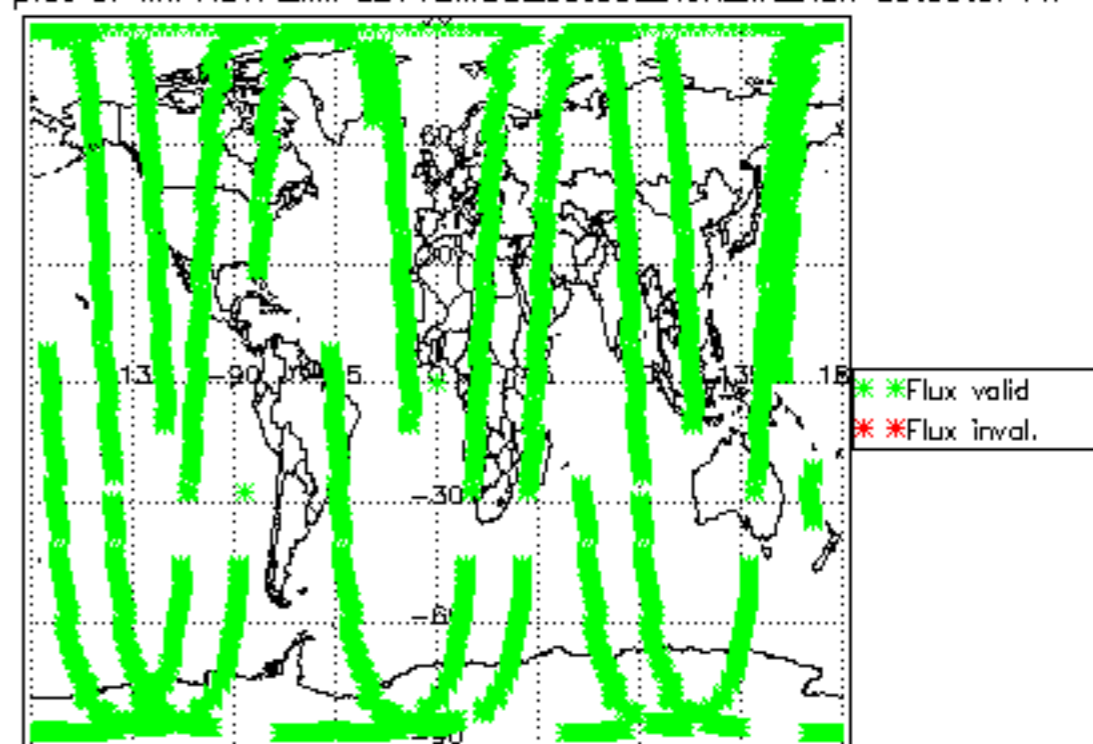
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band D



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

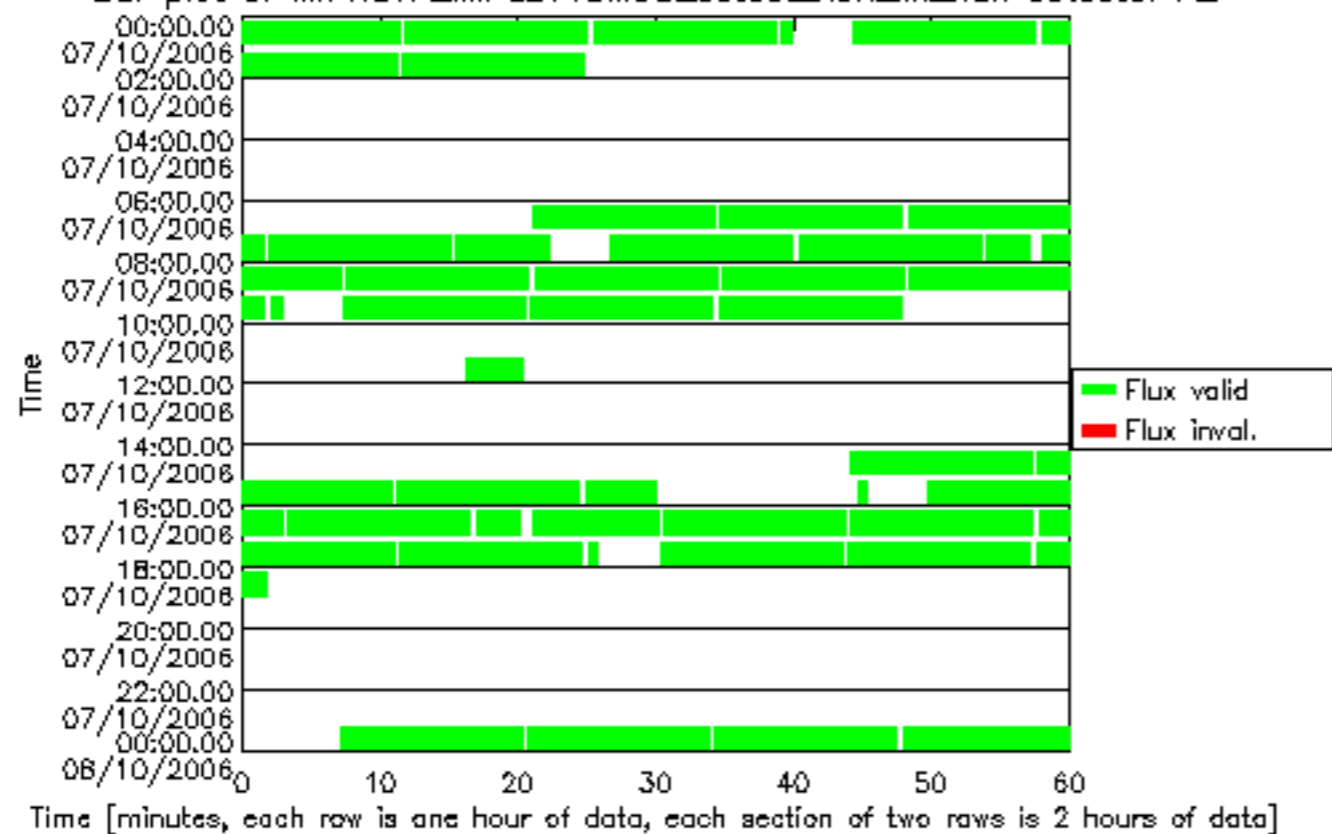


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1

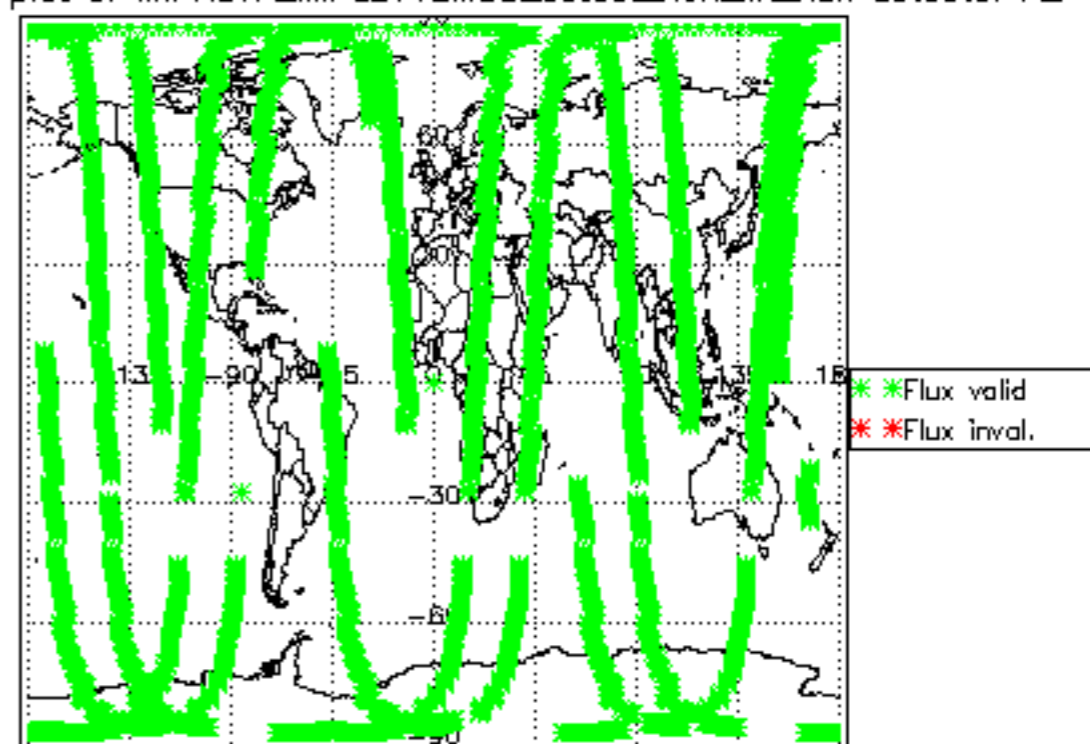




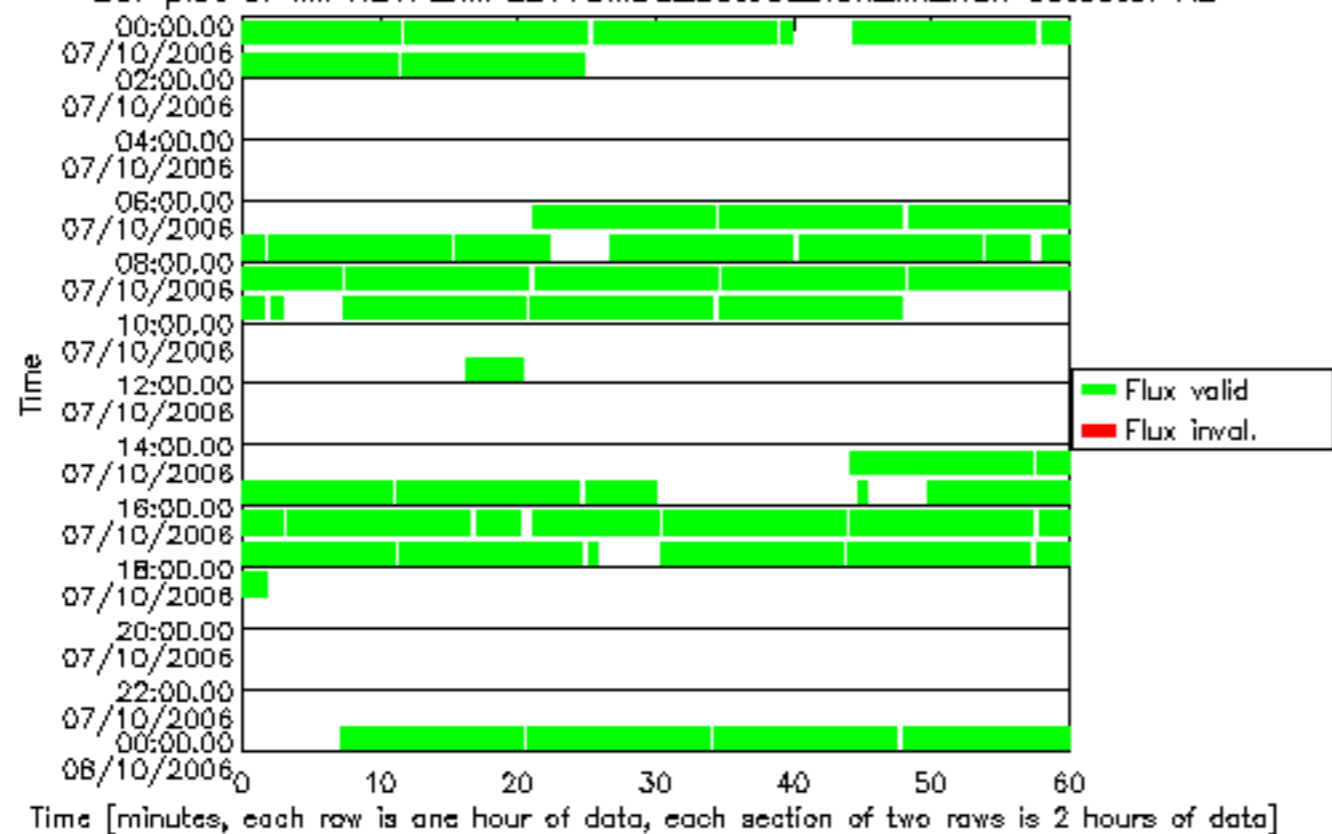
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



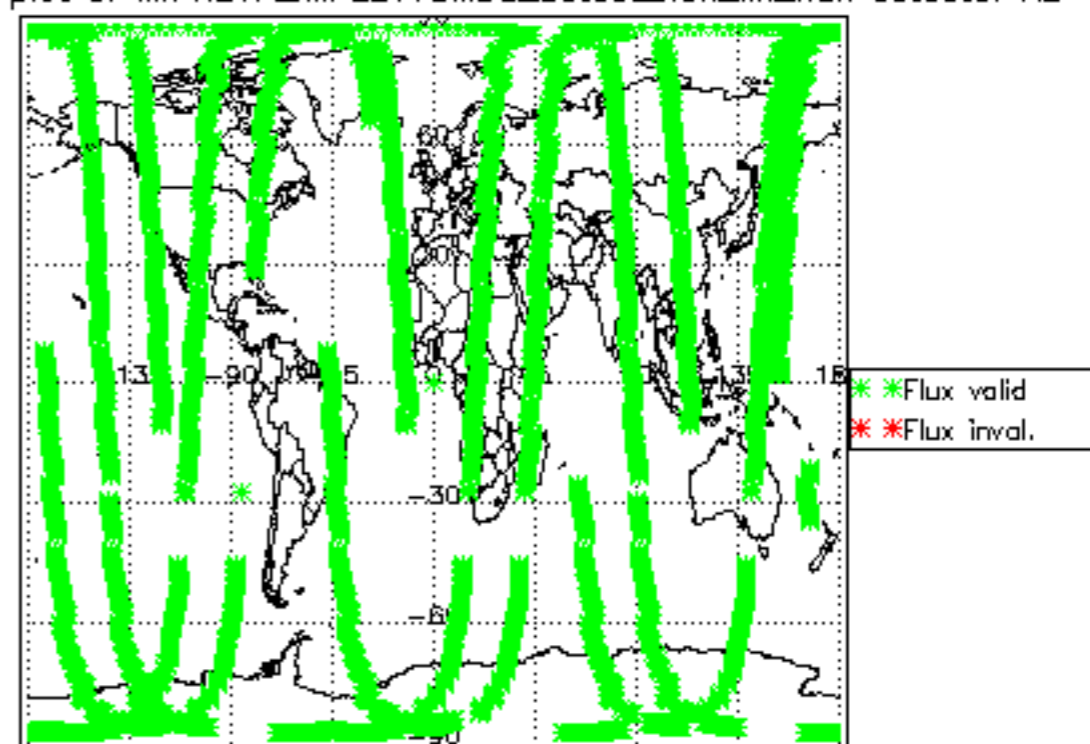
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2

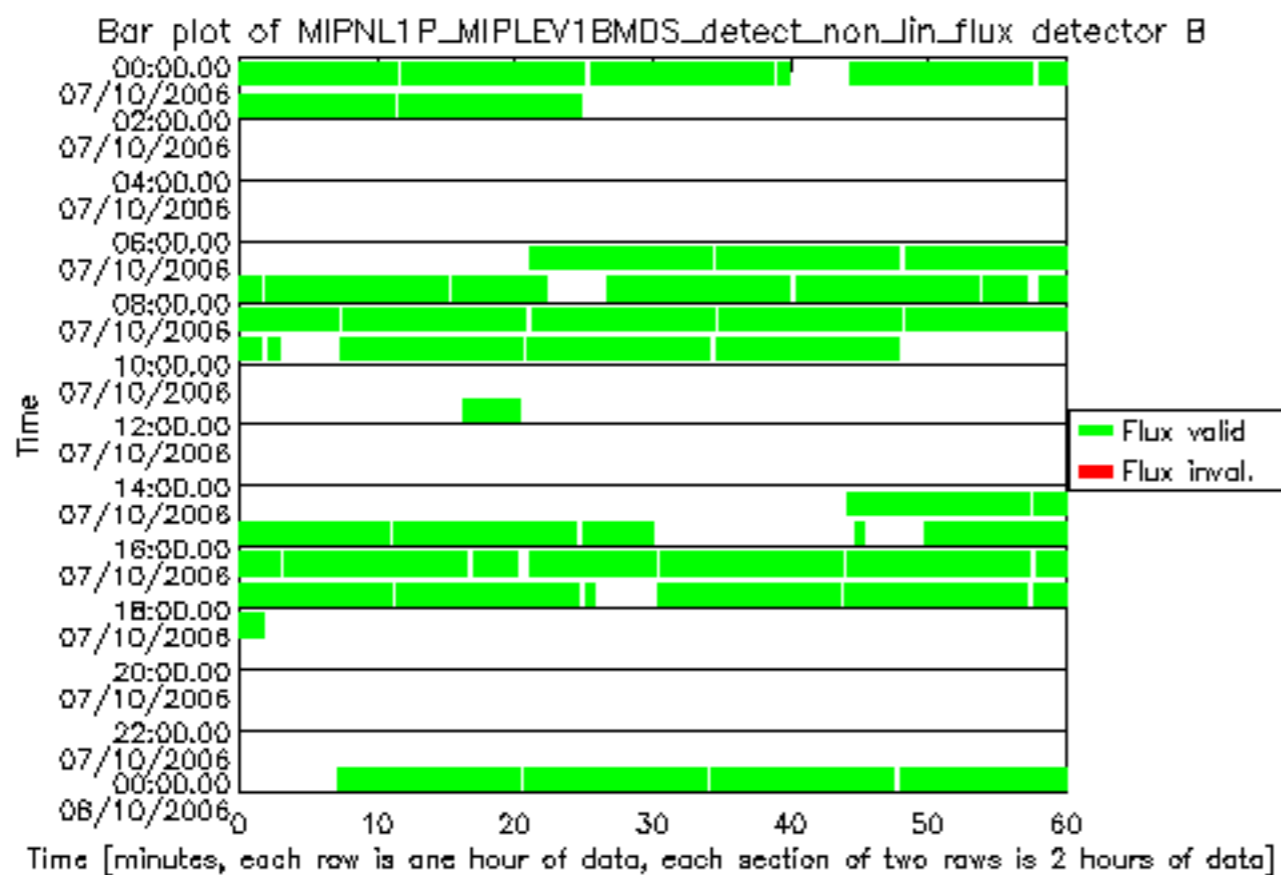


Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector AB

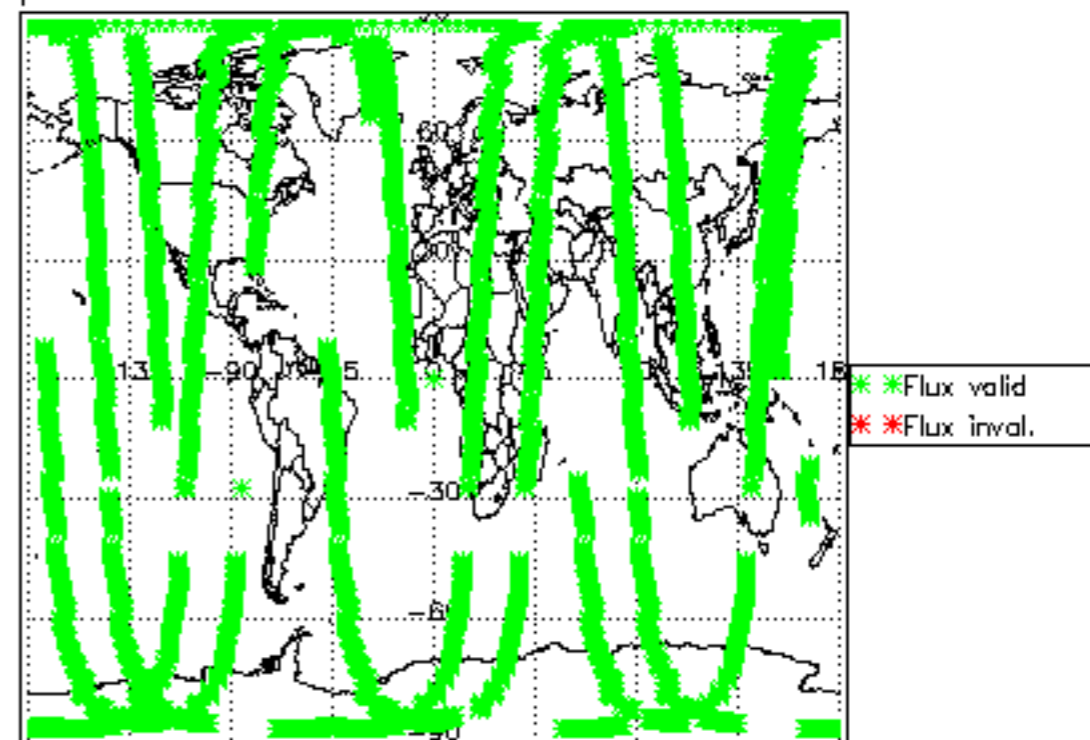


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector AB

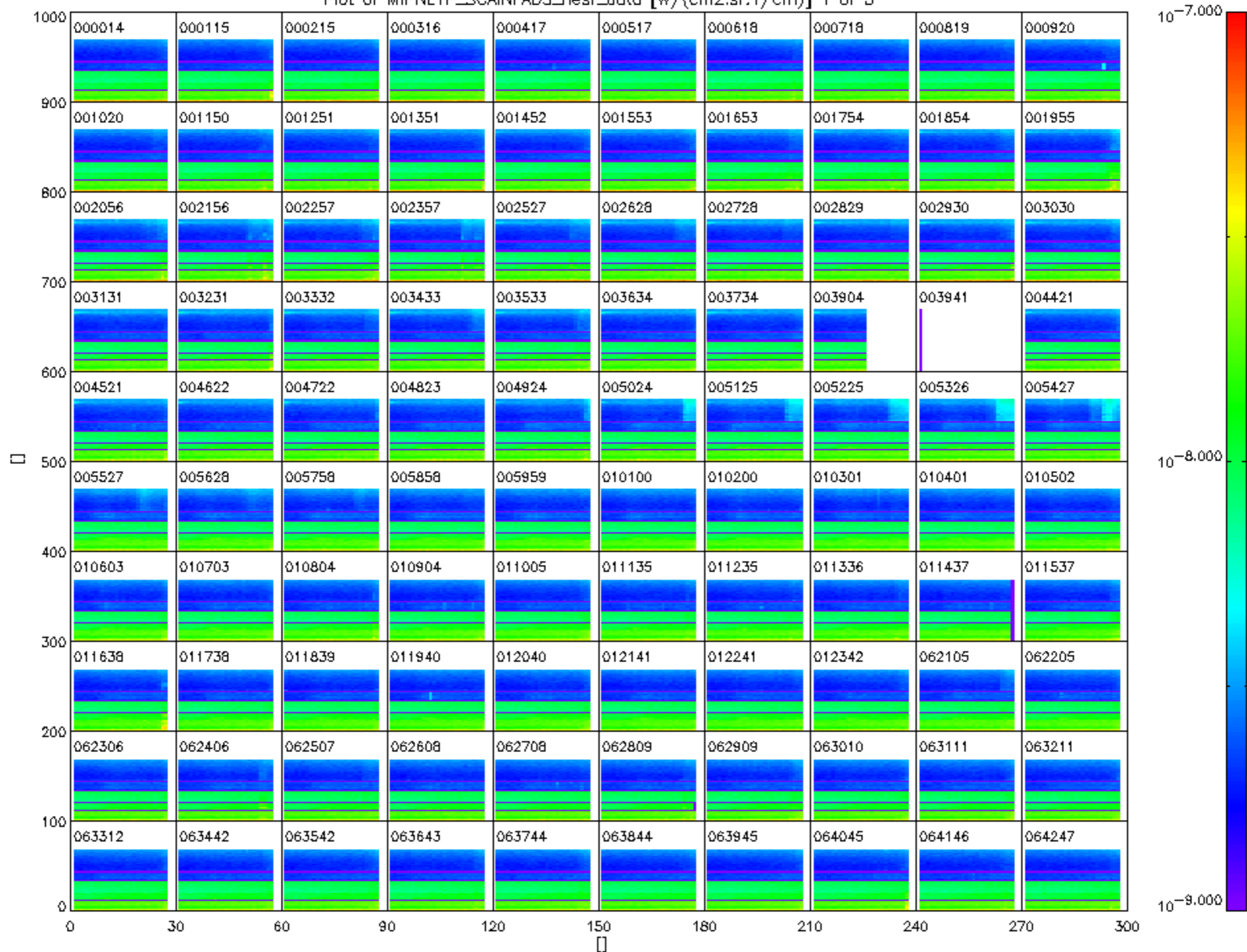




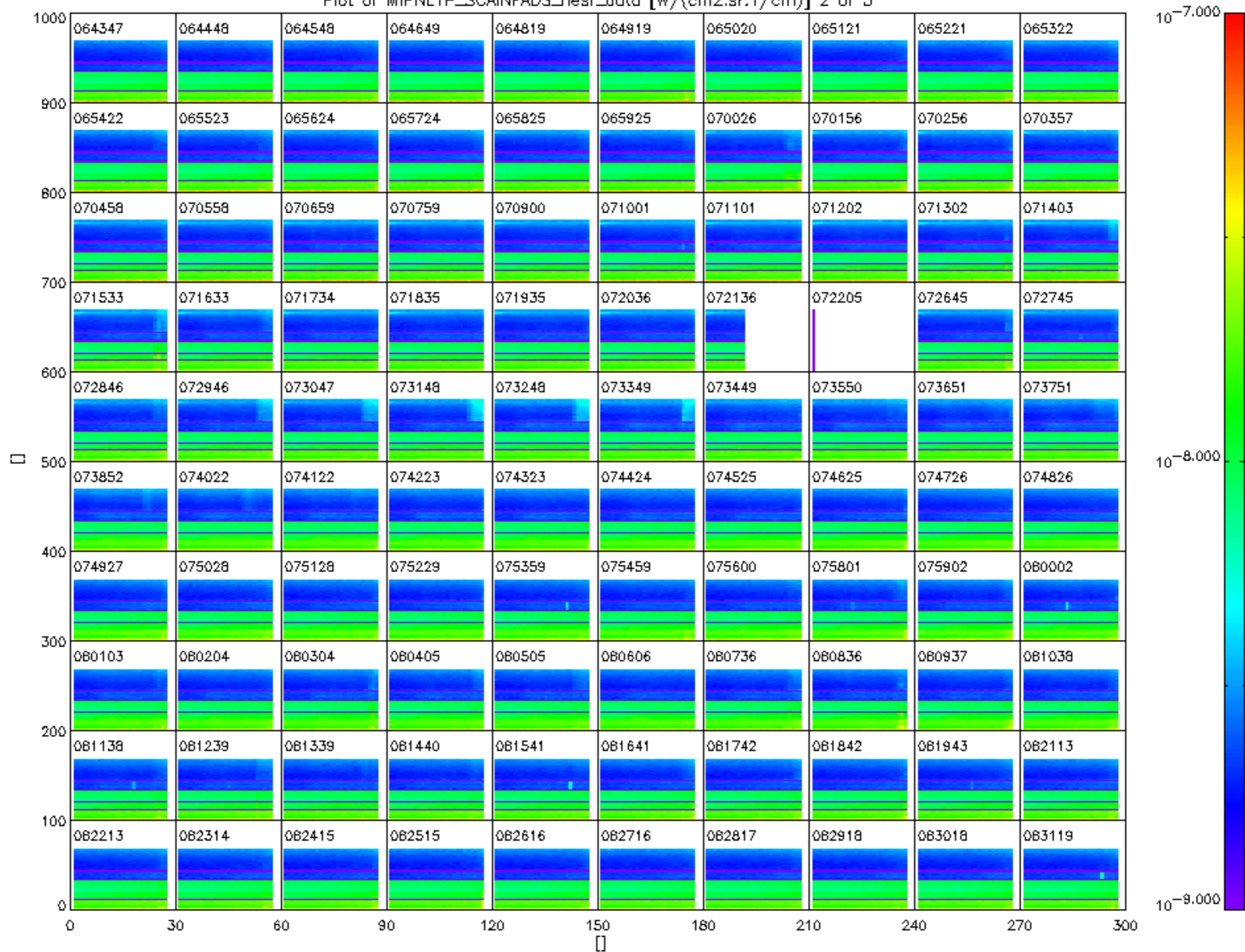
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector B



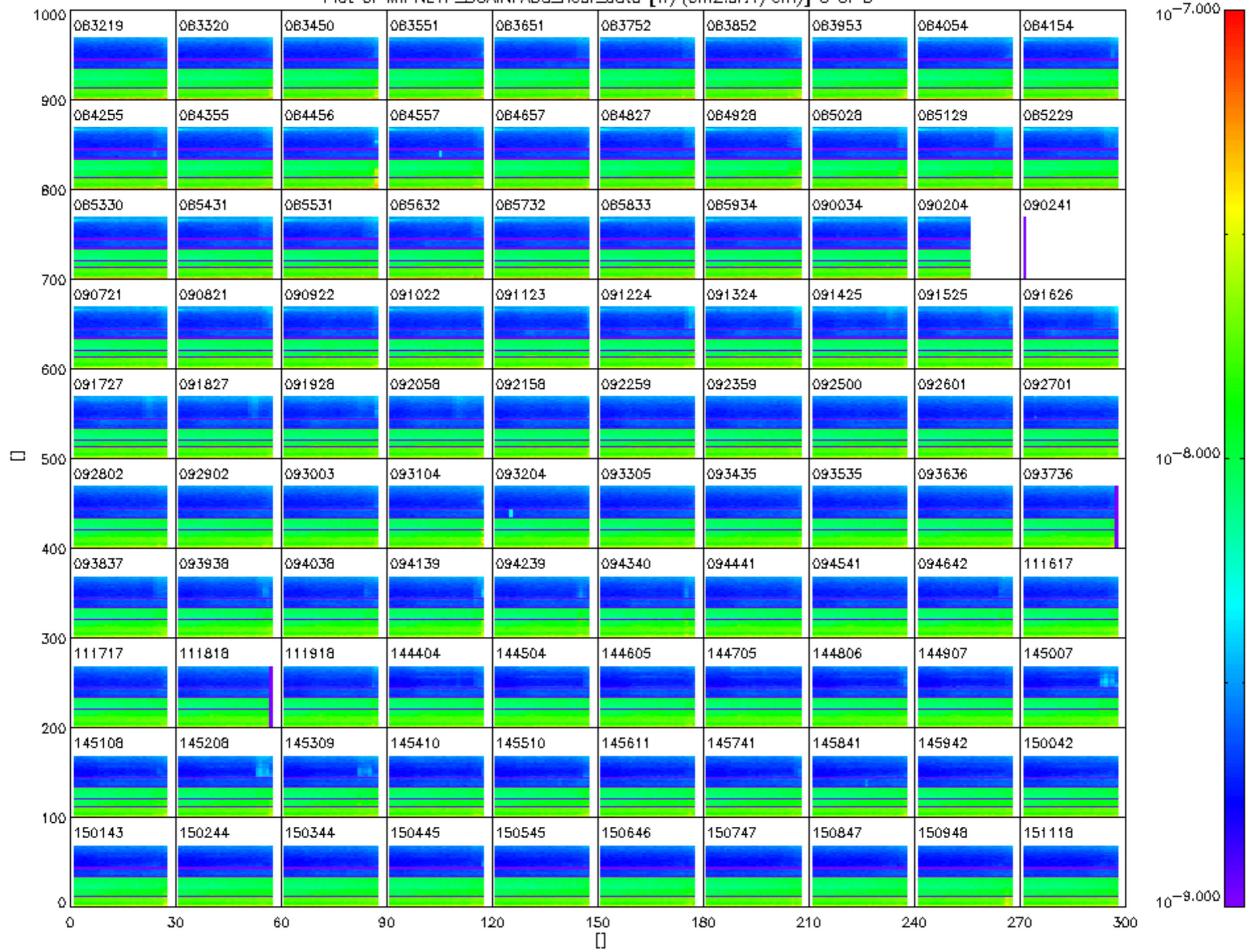
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 1 of 5



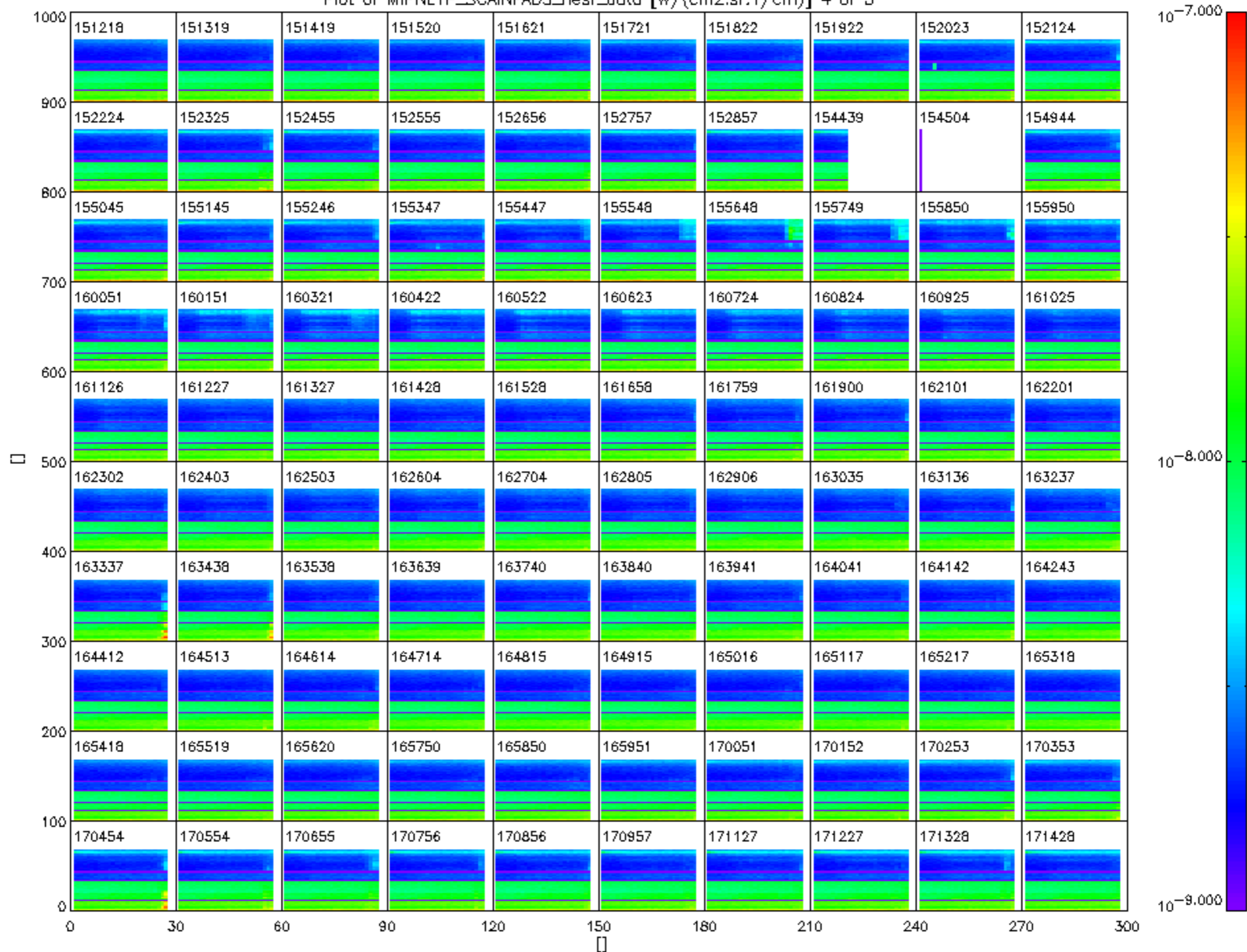
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 2 of 5



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 3 of 5



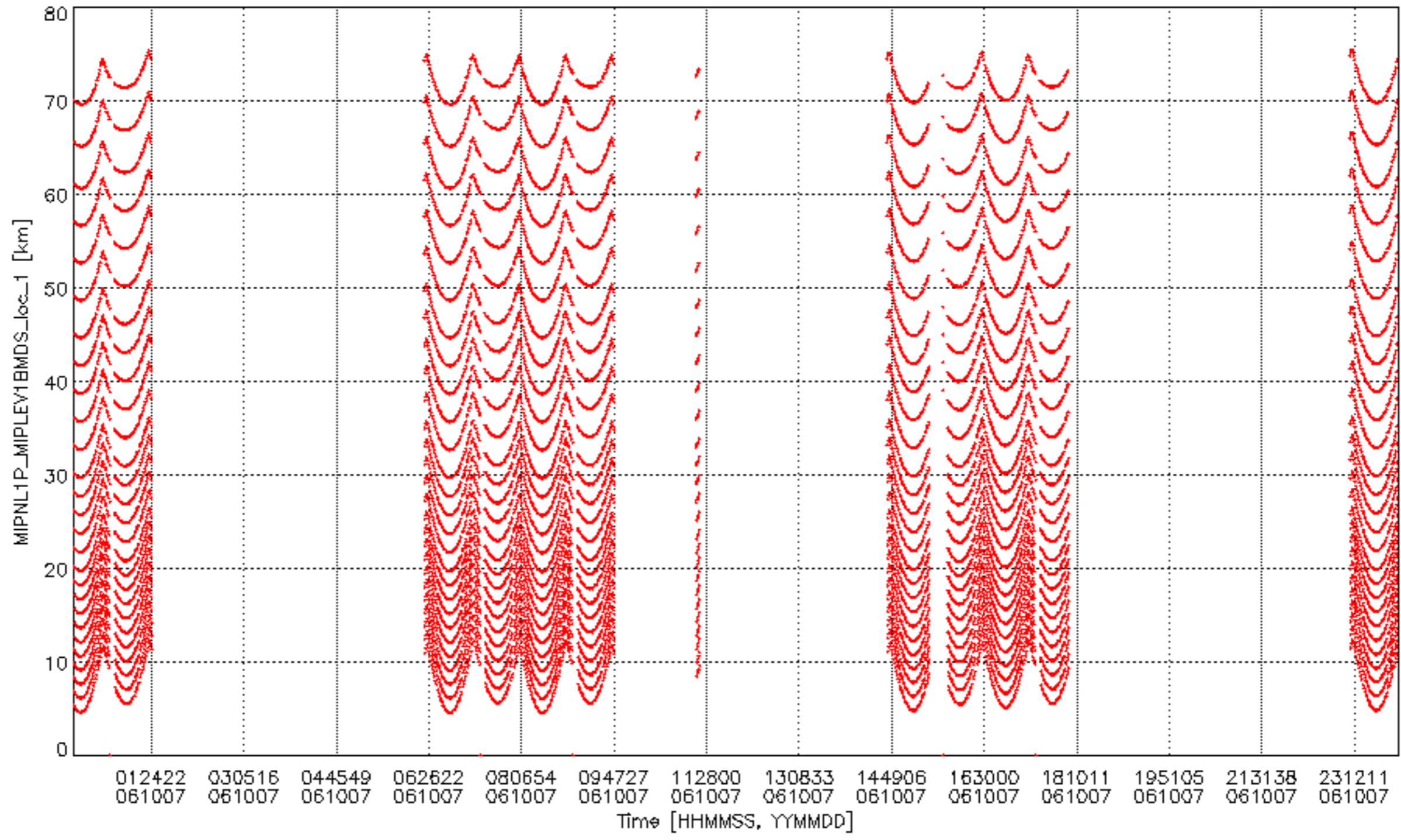
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 4 of 5



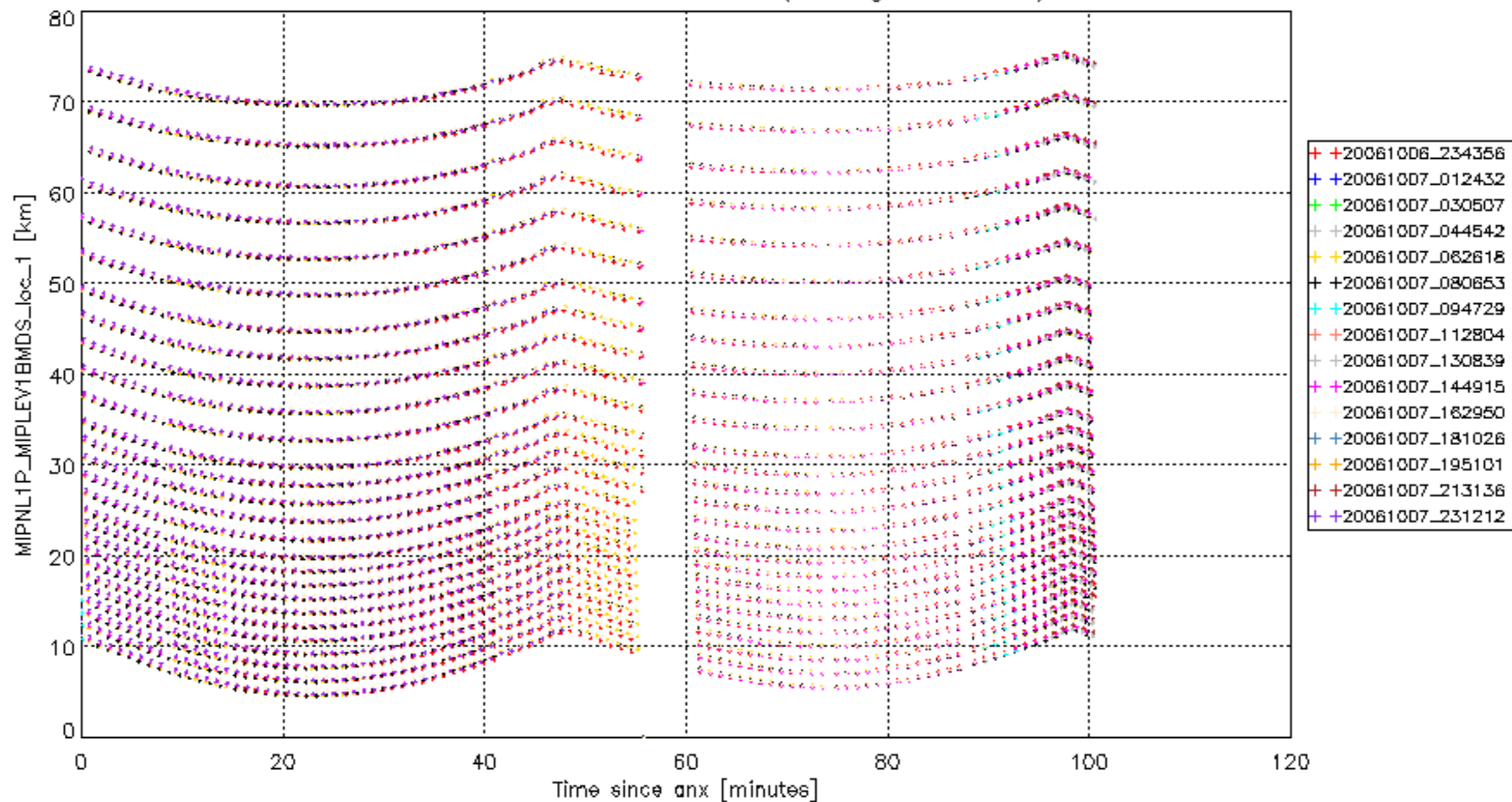


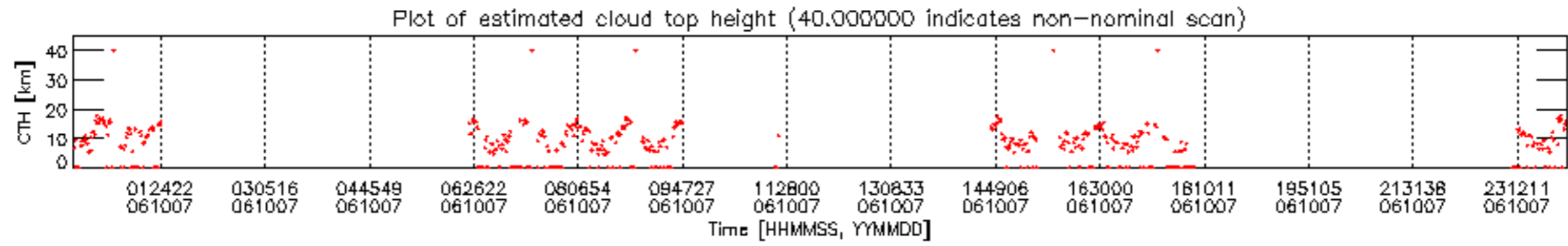


Plot of MIPNL1P\_MIPLEV1BMDS\_loc\_1 against time.  
The vertical grid lines indicate estimated anx events.



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)

