

# 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	31AUG2015 12:38:54
Data source version	MIPAS/7.11-W
Processing scope for products	16FEB2009 00:00:00 to 17FEB2009 00:00:00
Start time of first product within scope	15FEB2009 23:11:56
Stop time of last product within scope	17FEB2009 00:20:16
Total number of level 1 products	15
Number of level 1 products with errors	0

#### 1.1.2 Summary per product

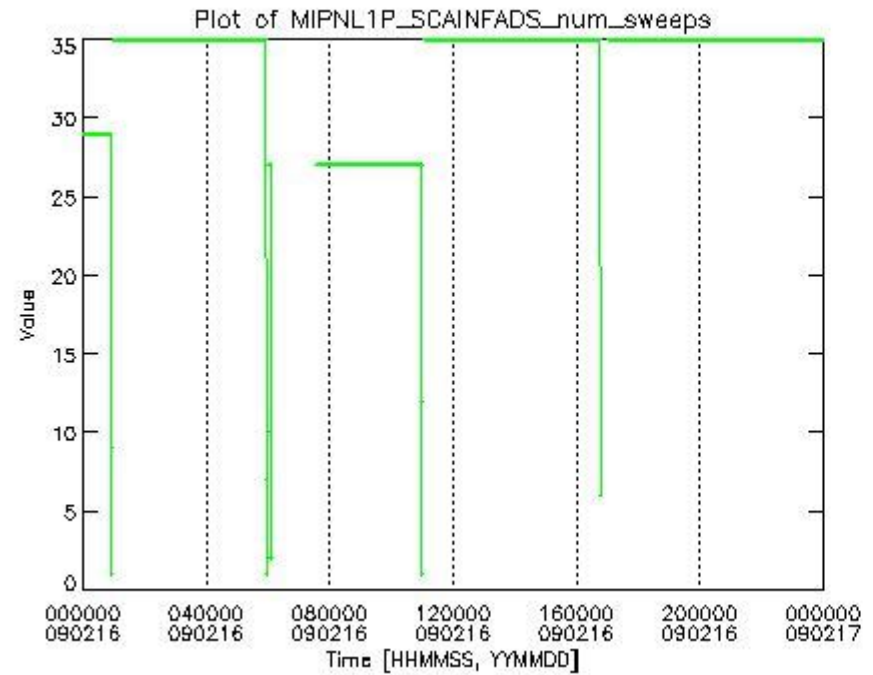
The following table shows a summary for each product used in this report.

#	Product name	Start time	Stop time	Prod err	Slice position (prod/tot)	#sweeps SPH
0	MIP_NL__1PWDSI20090215_231156_000060572076_00288_36414_0000.N1	15FEB2009 23:11:56	16FEB2009 00:52:53	0	0/0	29
1	MIP_NL__1PWDSI20090216_005259_000060172076_00289_36415_0000.N1	16FEB2009 00:52:59	16FEB2009 02:33:16	0	0/0	35
2	MIP_NL__1PWDSI20090216_023351_000059972076_00290_36416_0000.N1	16FEB2009 02:33:51	16FEB2009 04:13:48	0	0/0	35
3	MIP_NL__1PWDSI20090216_041354_000059972076_00291_36417_0000.N1	16FEB2009 04:13:54	16FEB2009 05:53:50	0	0/0	35
4	MIP_NL__1PWDSI20090216_055425_000060992076_00292_36418_0000.N1	16FEB2009 05:54:25	16FEB2009 06:06:04	0	0/0	35
5	MIP_NL__1PWDSI20090216_073424_000060762076_00293_36419_0000.N1	16FEB2009 07:34:24	16FEB2009 09:15:40	0	0/0	27
6	MIP_NL__1PWDSI20090216_091546_000059842076_00294_36420_0000.N1	16FEB2009 09:15:46	16FEB2009 10:55:30	0	0/0	27
7	MIP_NL__1PWDSI20090216_105536_000060762076_00295_36421_0000.N1	16FEB2009 10:55:36	16FEB2009 12:36:52	0	0/0	35
8	MIP_NL__1PWDSI20090216_123727_000059972076_00296_36422_0000.N1	16FEB2009 12:37:27	16FEB2009 14:17:24	0	0/0	35
9	MIP_NL__1PWDSI20090216_141730_000059972076_00297_36423_0000.N1	16FEB2009 14:17:30	16FEB2009 15:57:26	0	0/0	35
10	MIP_NL__1PWDSI20090216_155801_000060672076_00298_36424_0000.N1	16FEB2009 15:58:01	16FEB2009 17:39:07	0	0/0	35
11	MIP_NL__1PWDSI20090216_173914_000060262076_00299_36425_0000.N1	16FEB2009 17:39:14	16FEB2009 19:19:39	0	0/0	35
12	MIP_NL__1PWDSI20090216_191945_000059972076_00300_36426_0000.N1	16FEB2009 19:19:45	16FEB2009 20:59:41	0	0/0	35
13	MIP_NL__1PWDSI20090216_205948_000060262076_00301_36427_0000.N1	16FEB2009 20:59:48	16FEB2009 22:40:13	0	0/0	35
14	MIP_NL__1PWDSI20090216_224019_000059972076_00302_36428_0000.N1	16FEB2009 22:40:19	17FEB2009 00:20:16	0	0/0	35

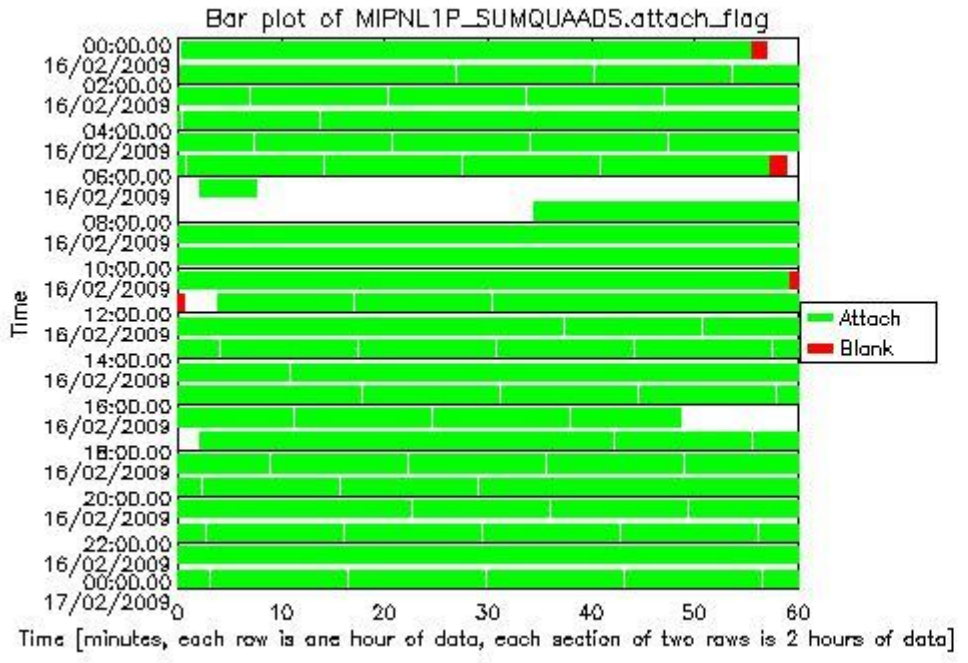
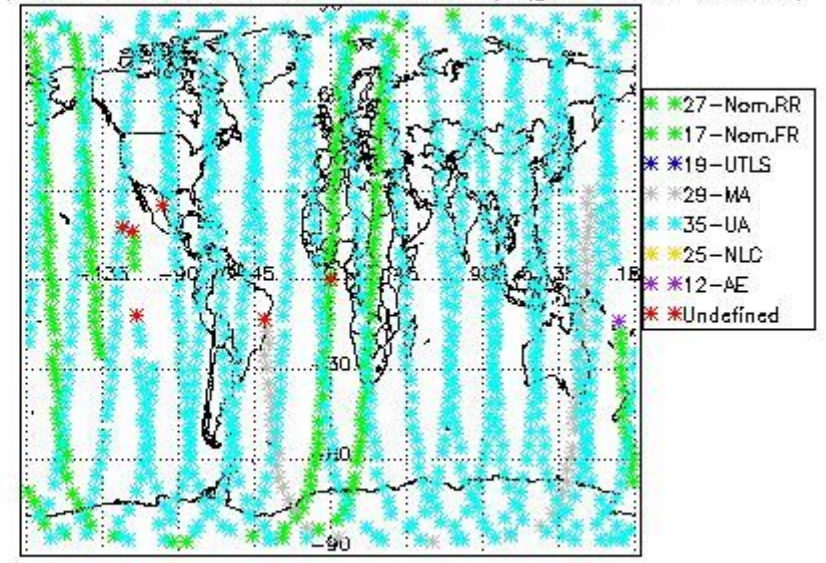
### 1.2 Product Quality Indicators

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

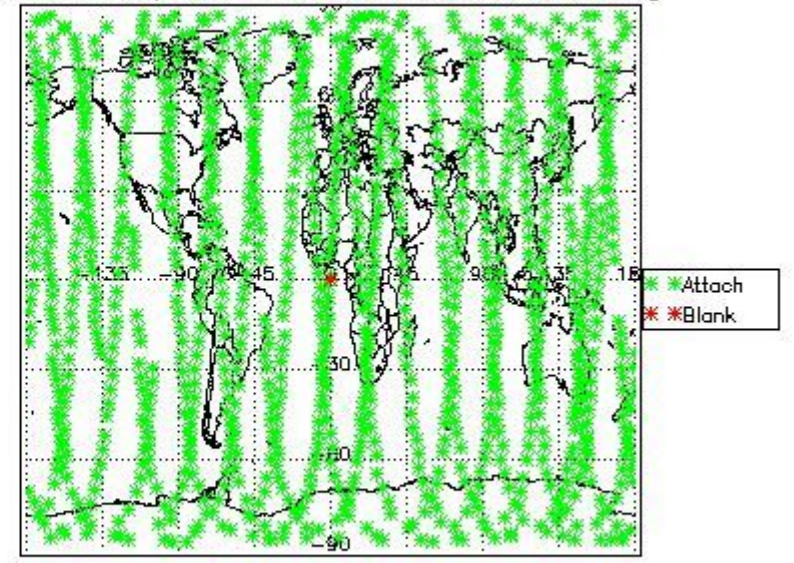
#### 1.2.1 Trends and geolocation of Summary Quality and Scan Information ADS

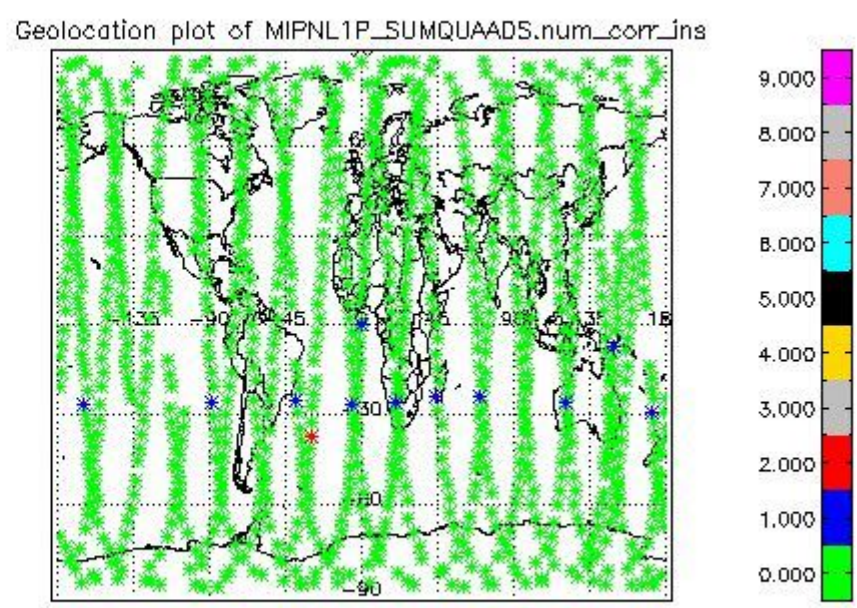
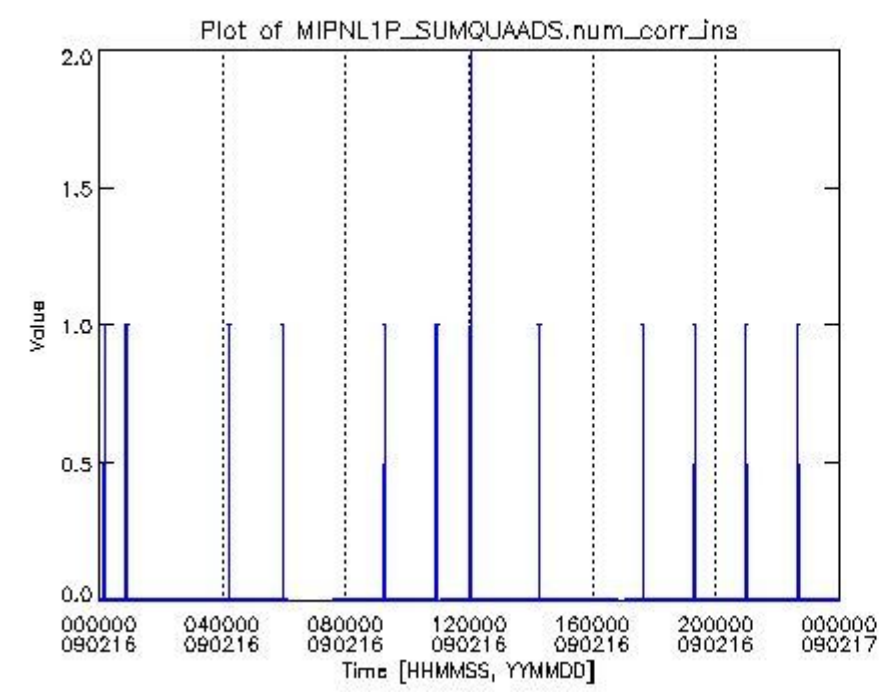
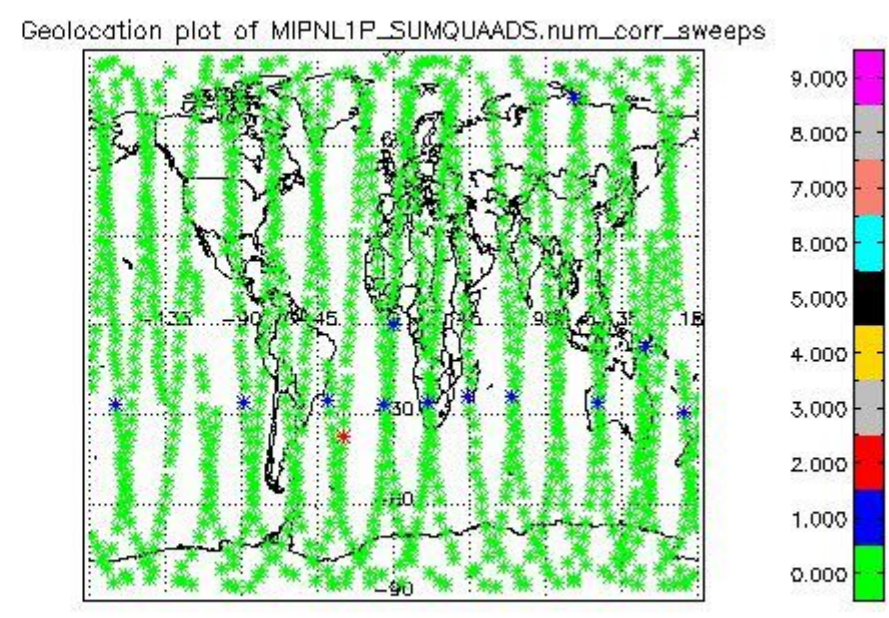
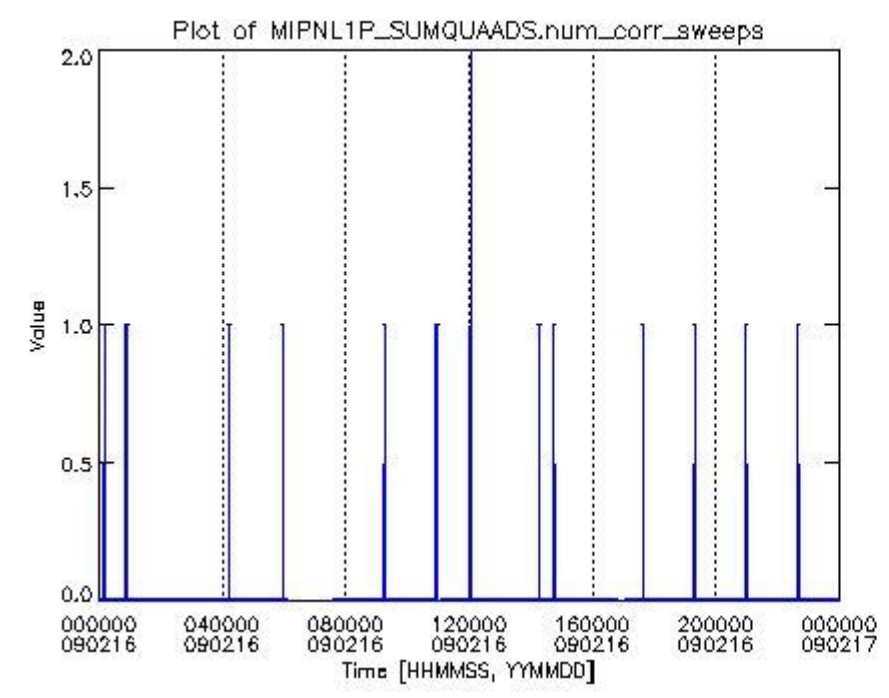


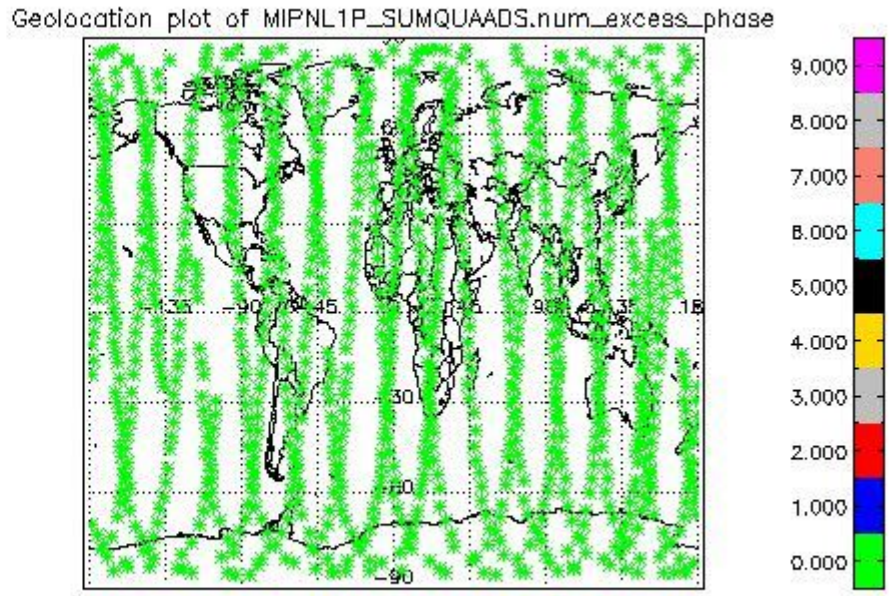
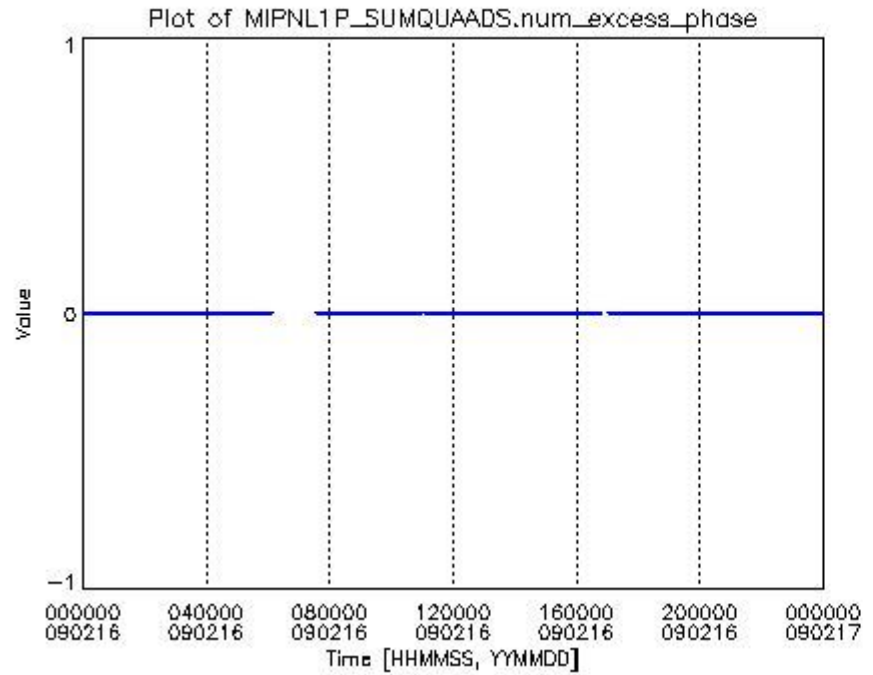
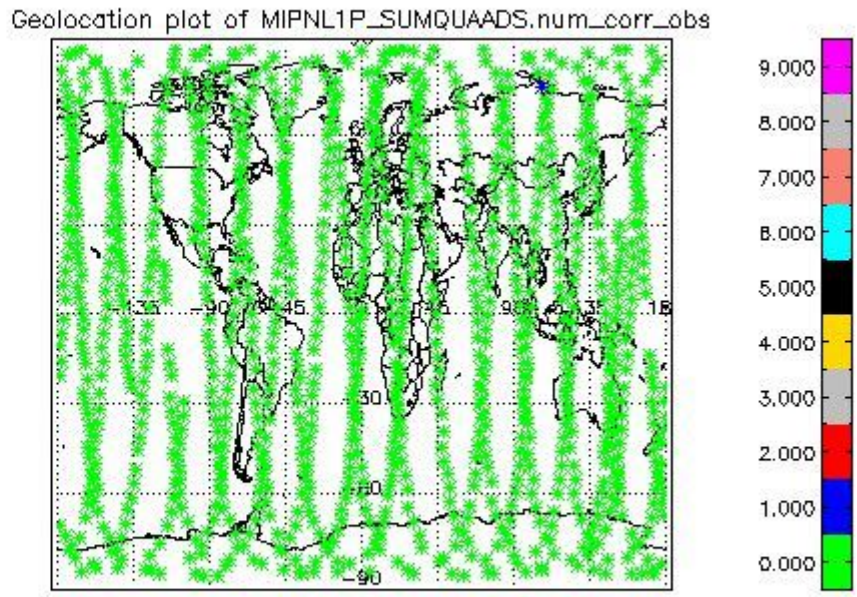
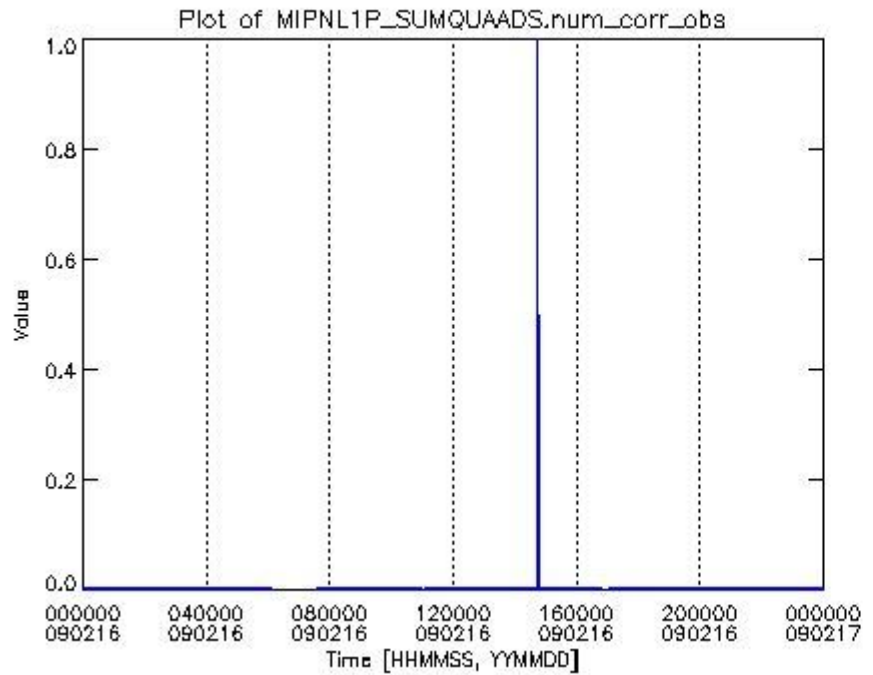
Geolocation plot of MIPNL1P\_SCAINFADS\_num\_sweeps(green color=0 errors)

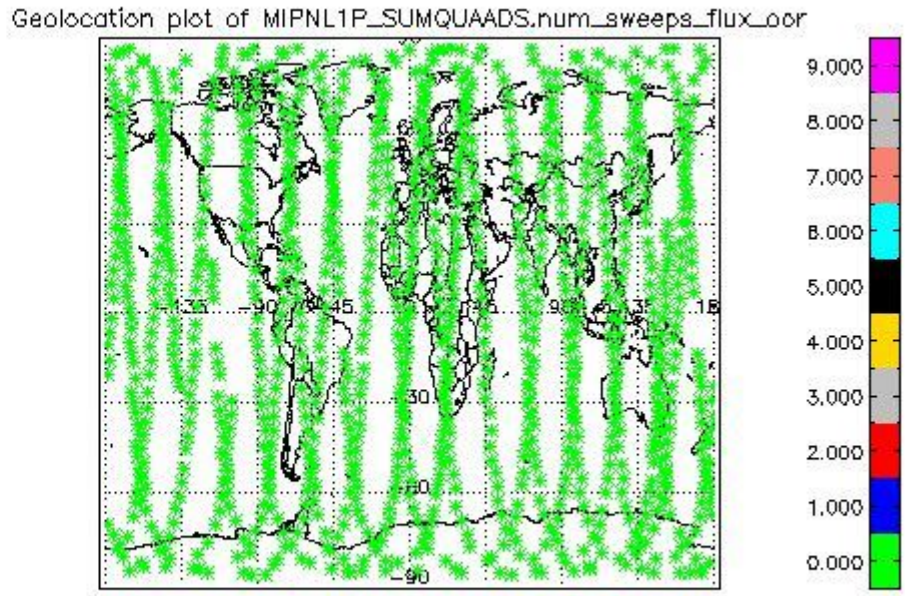
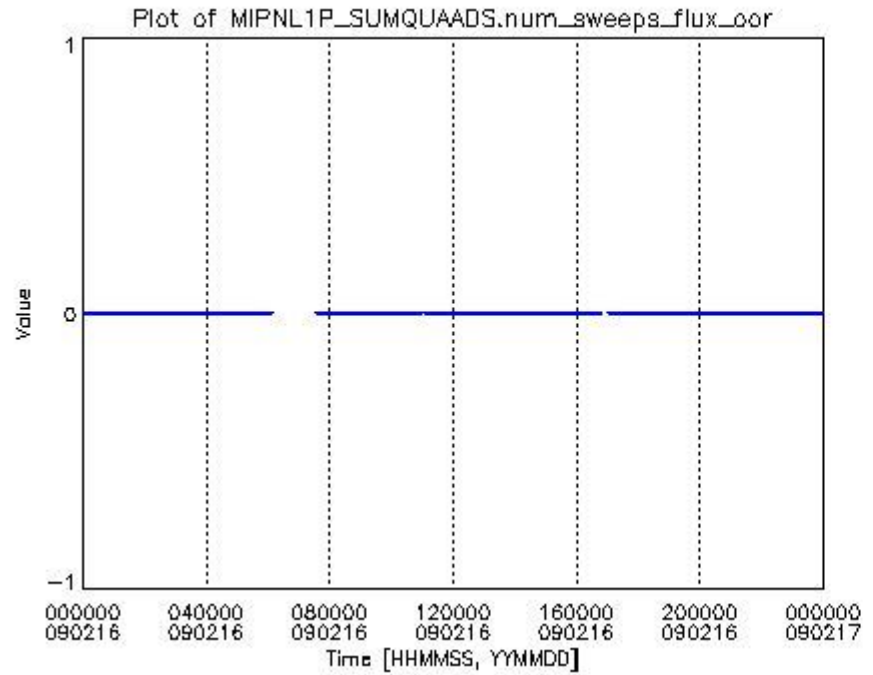
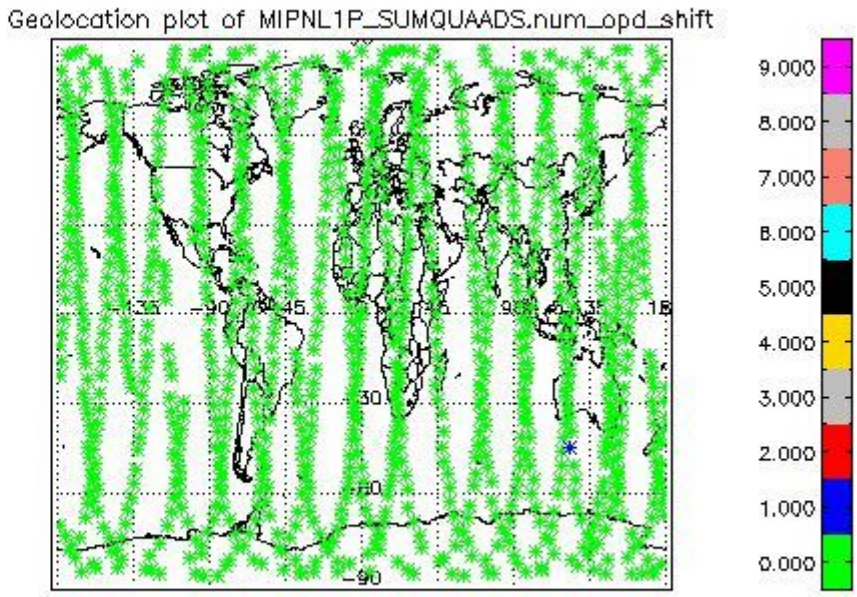
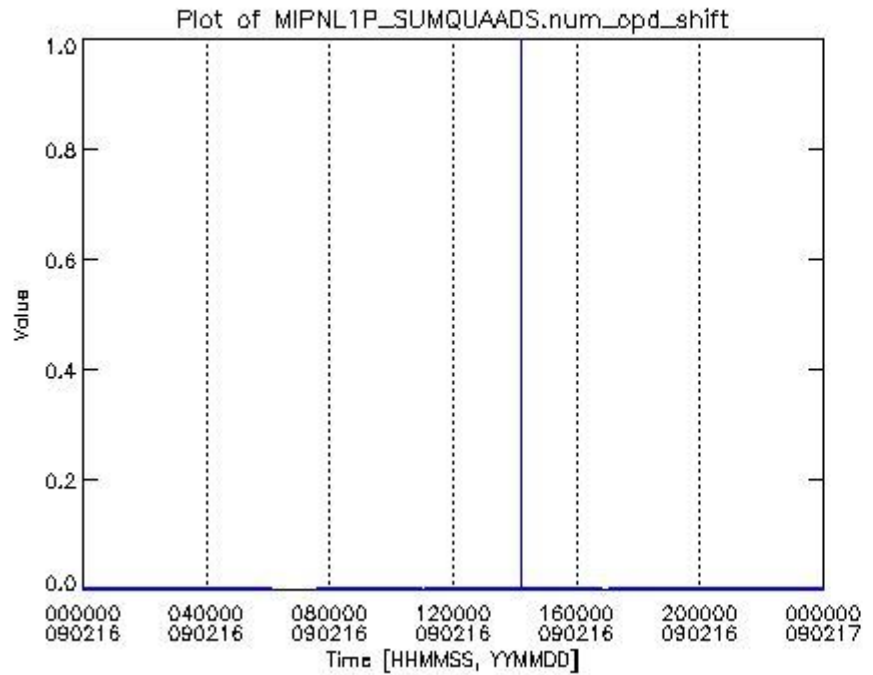


Geolocation plot of MIPNL1P\_SUMQUAADS.attach\_flag

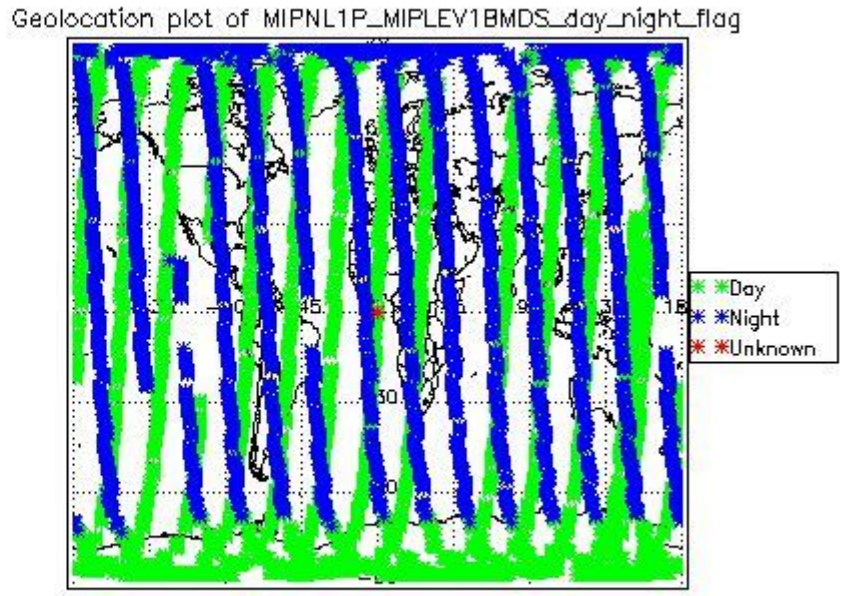
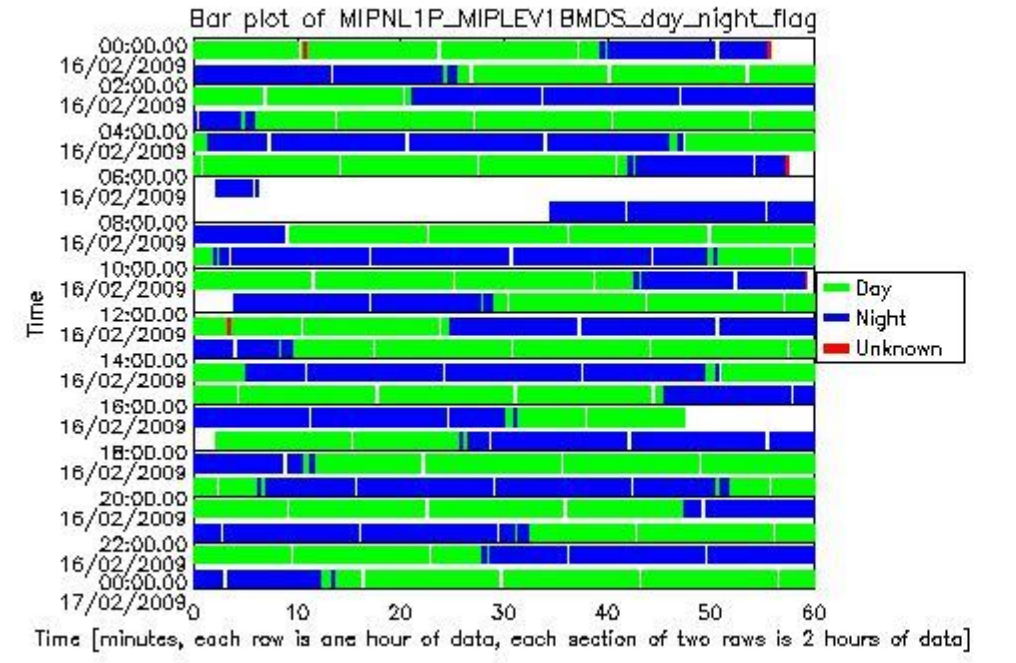
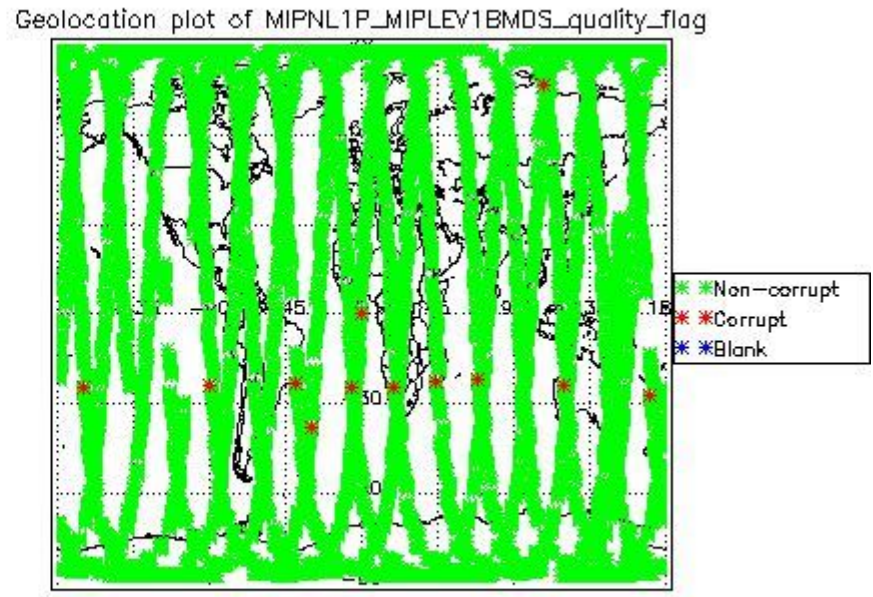
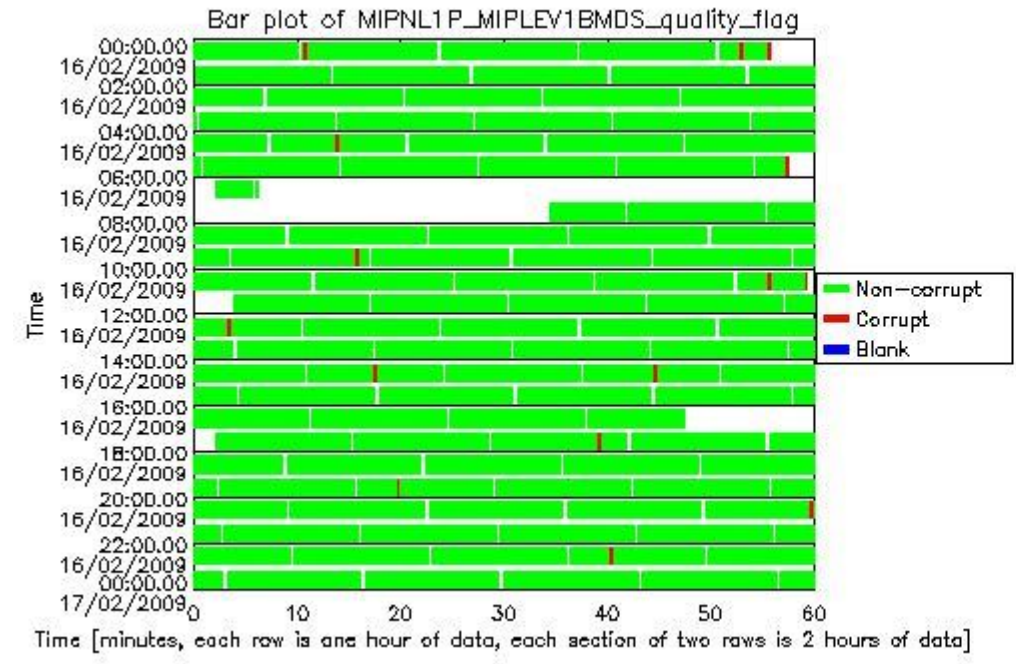


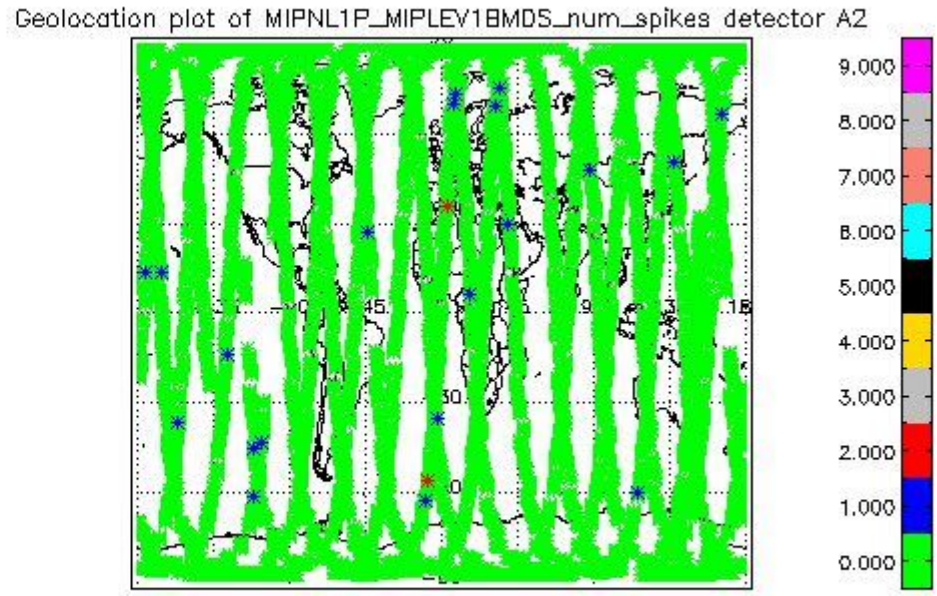
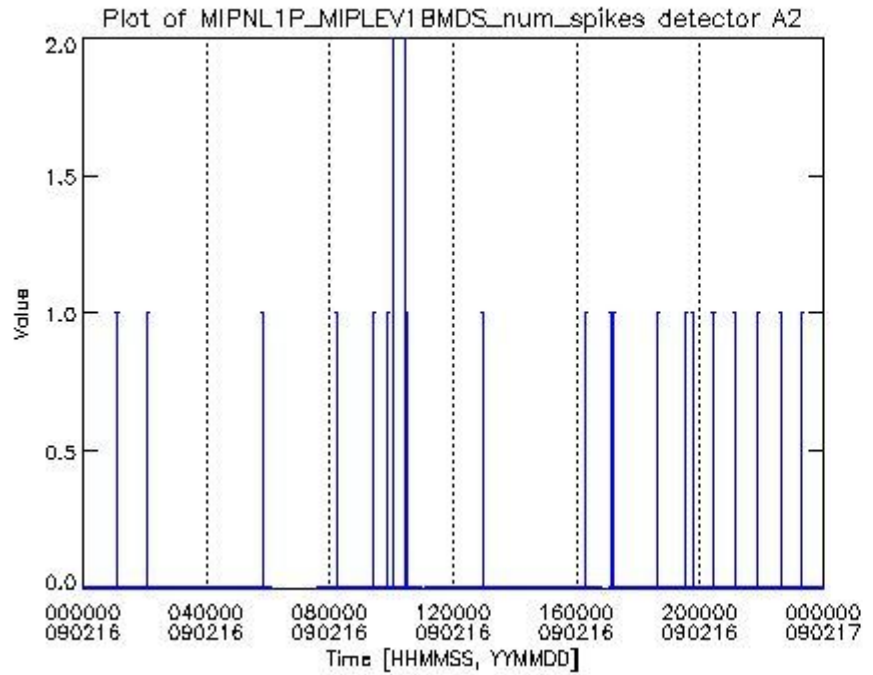
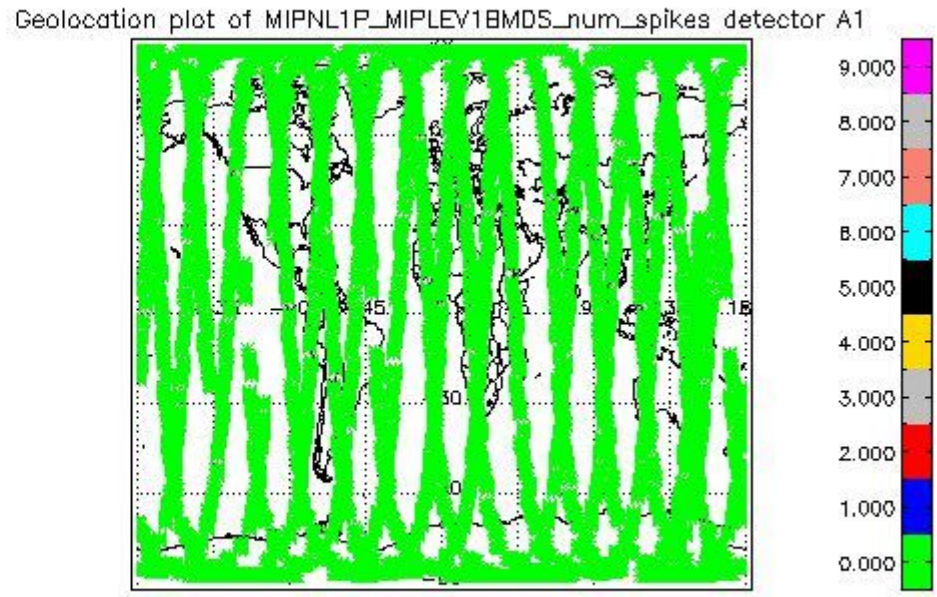
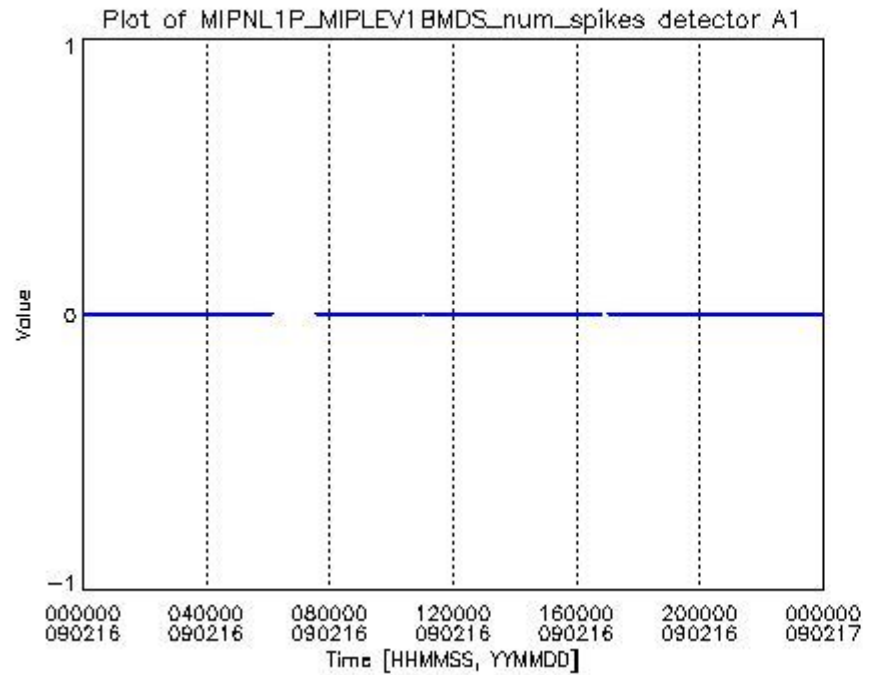


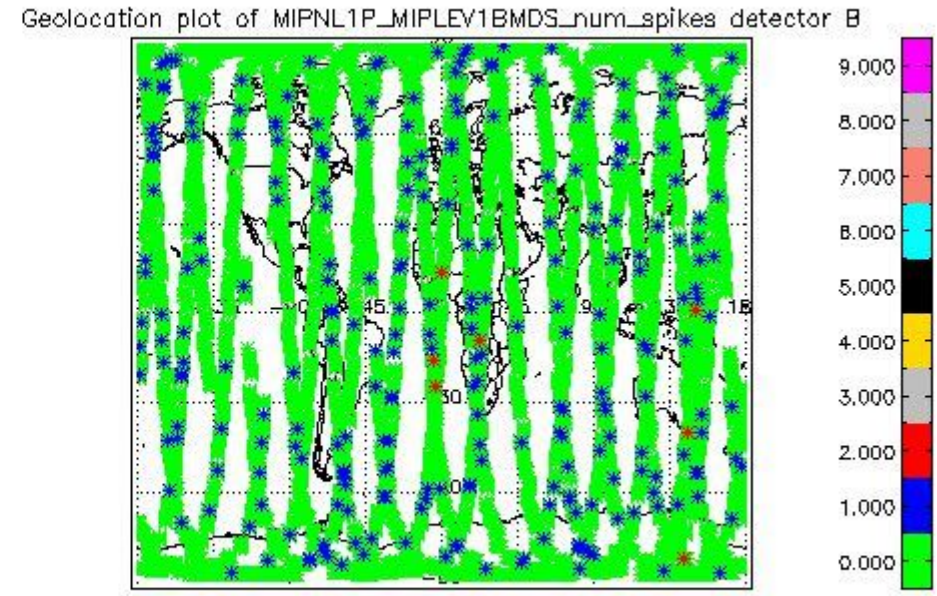
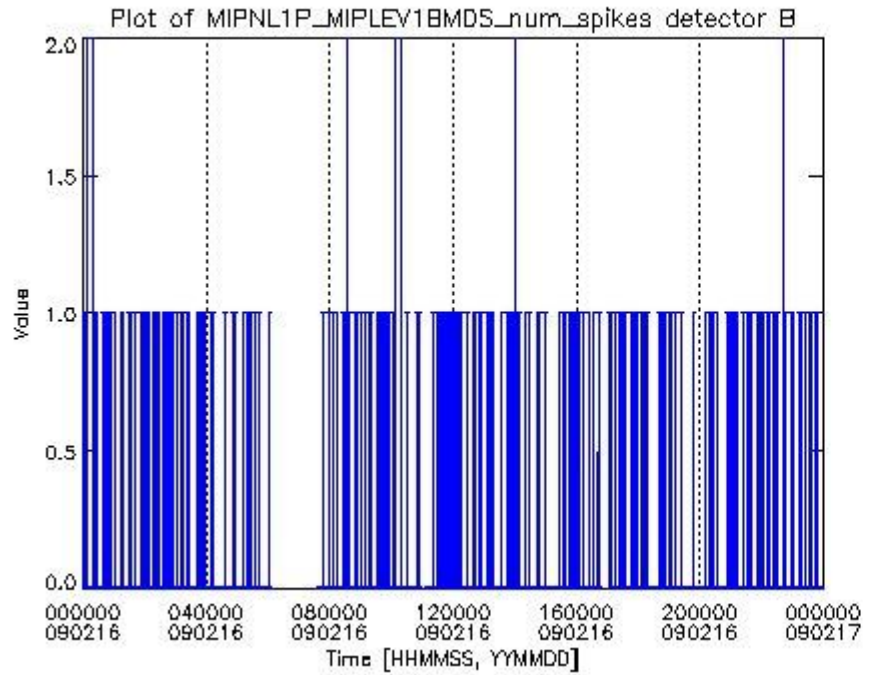
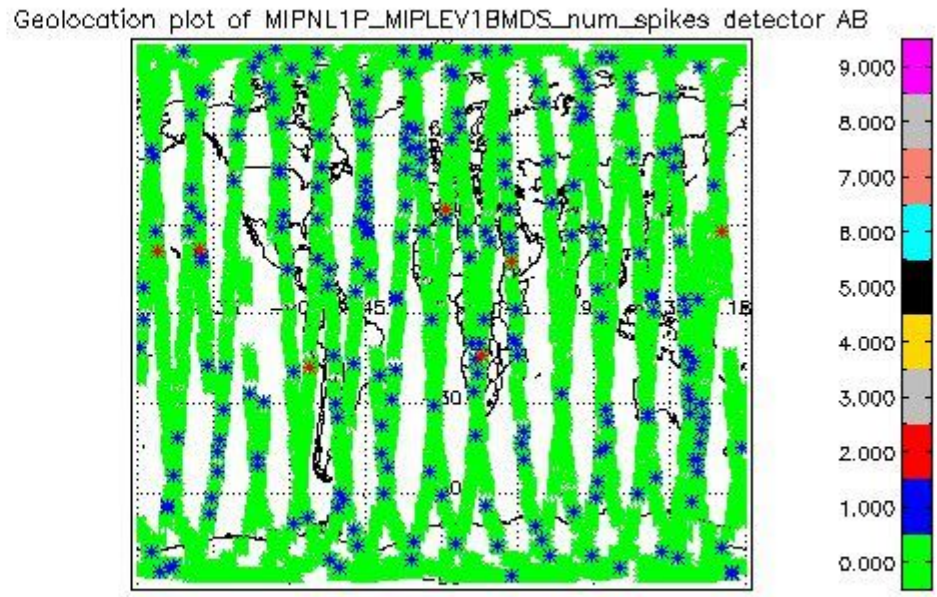
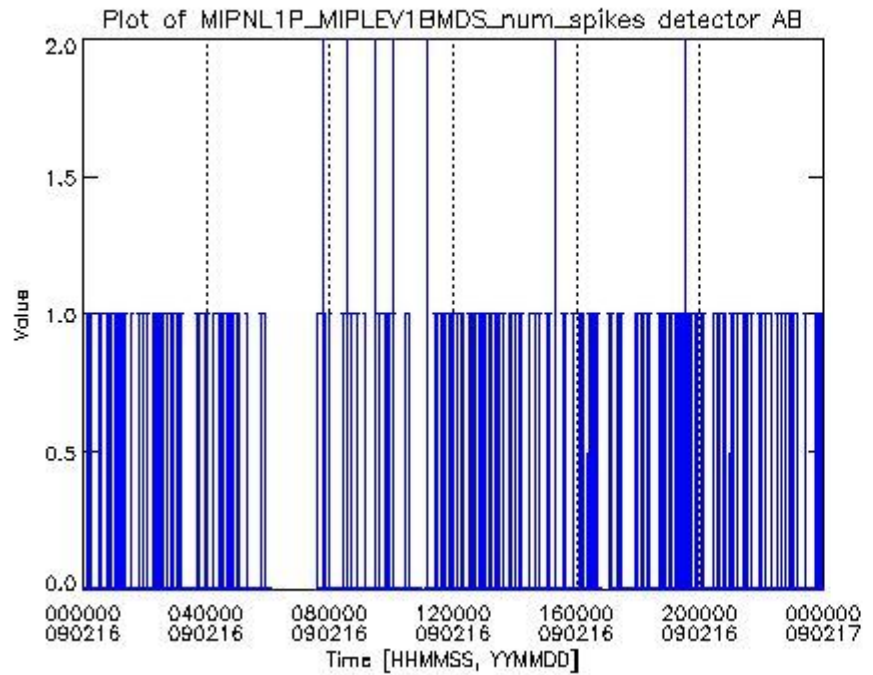




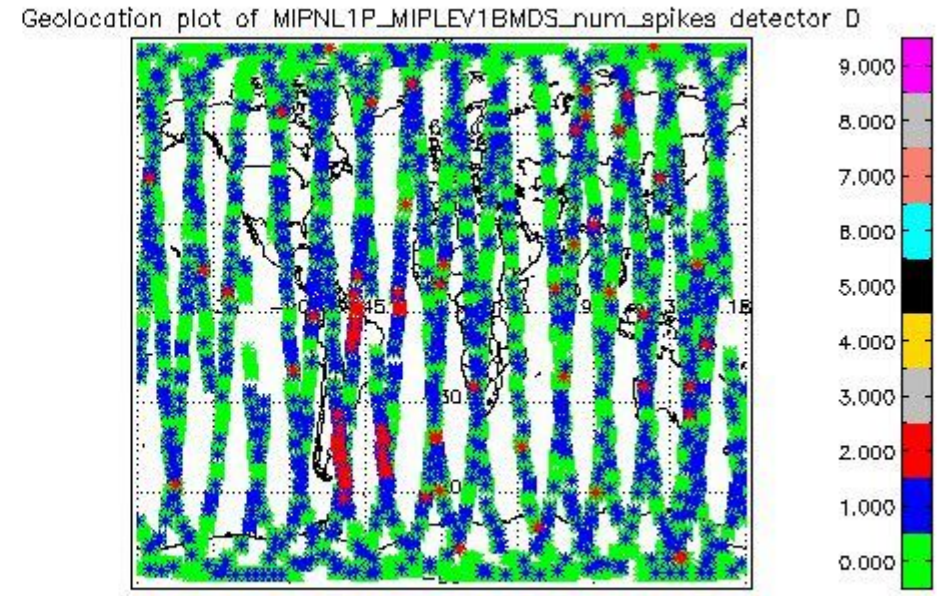
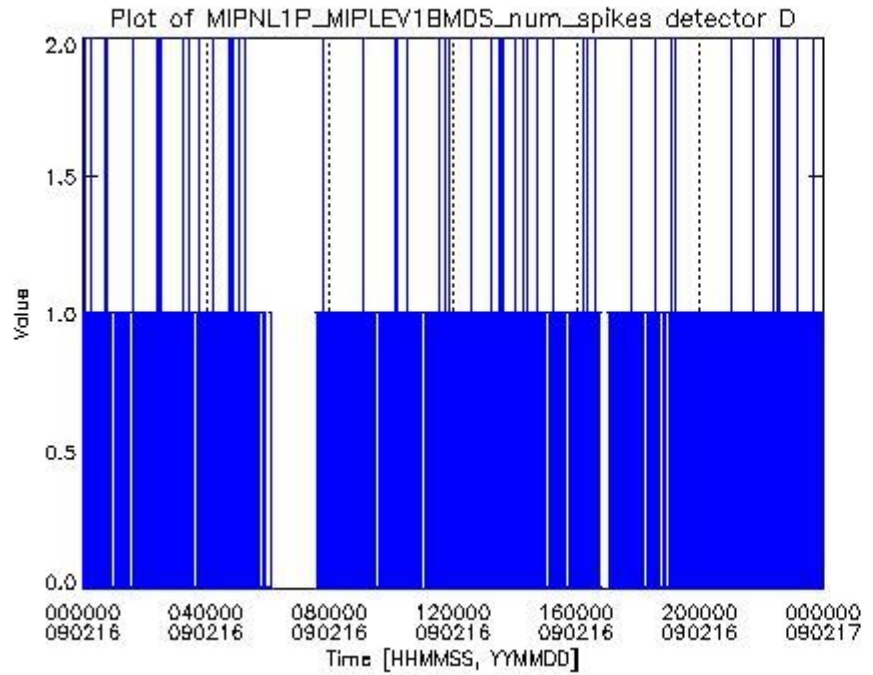
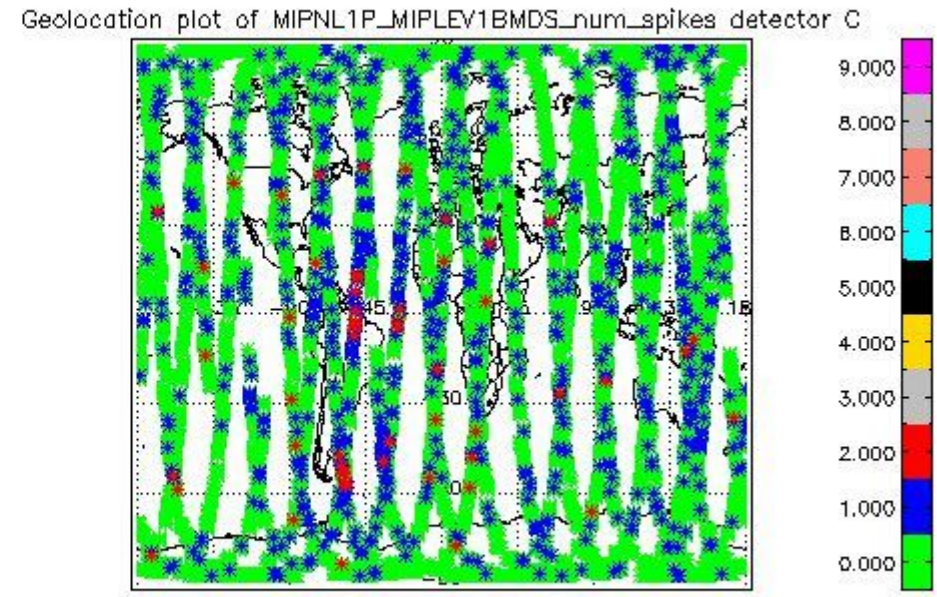
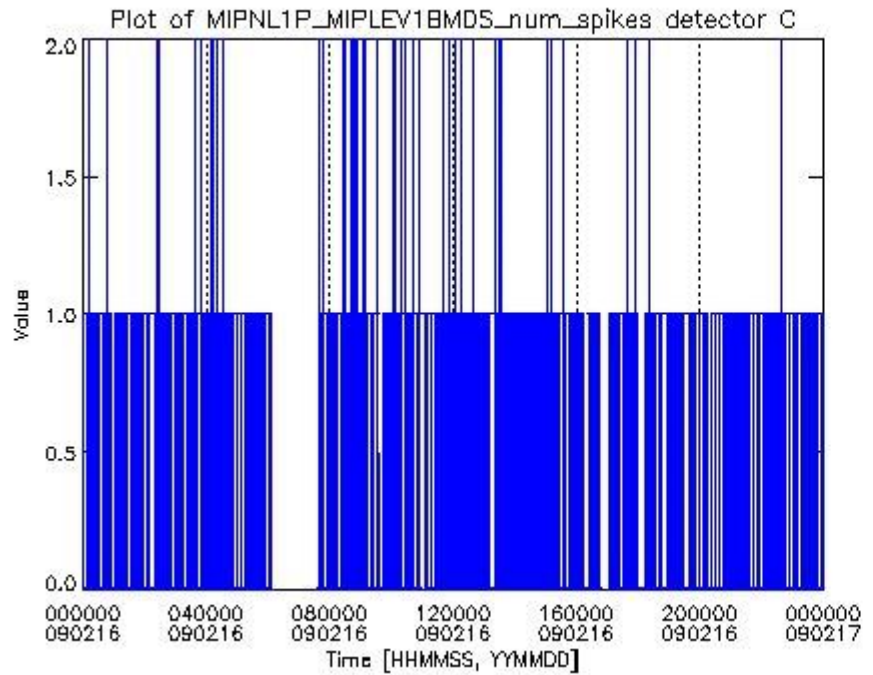
1.2.2 Trends and geolocation of MIPAS LEVEL 1 MDS

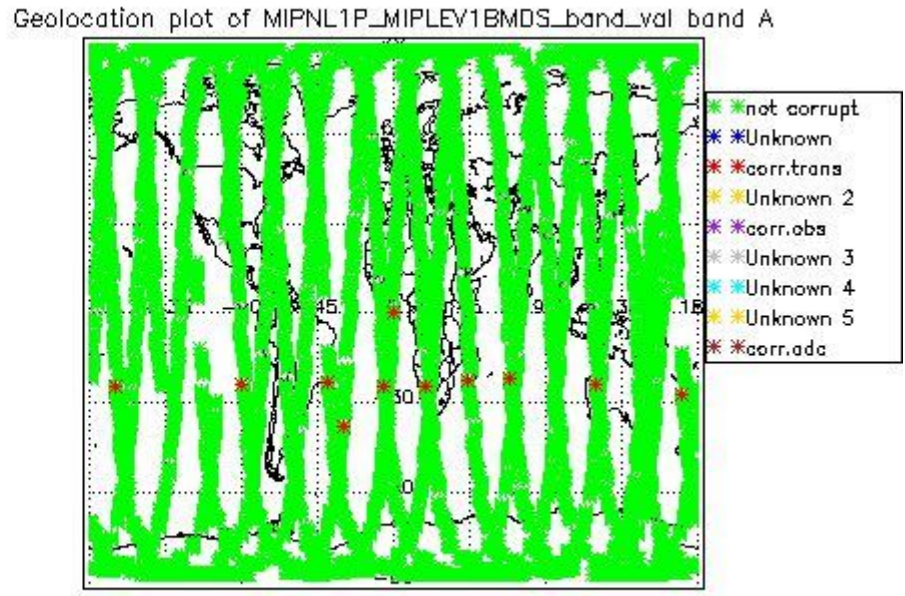
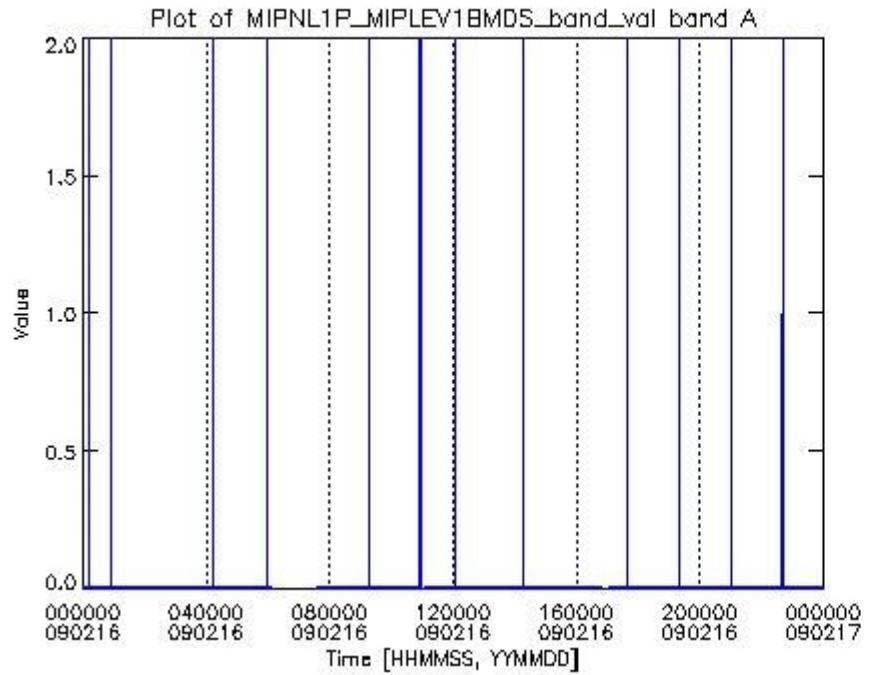
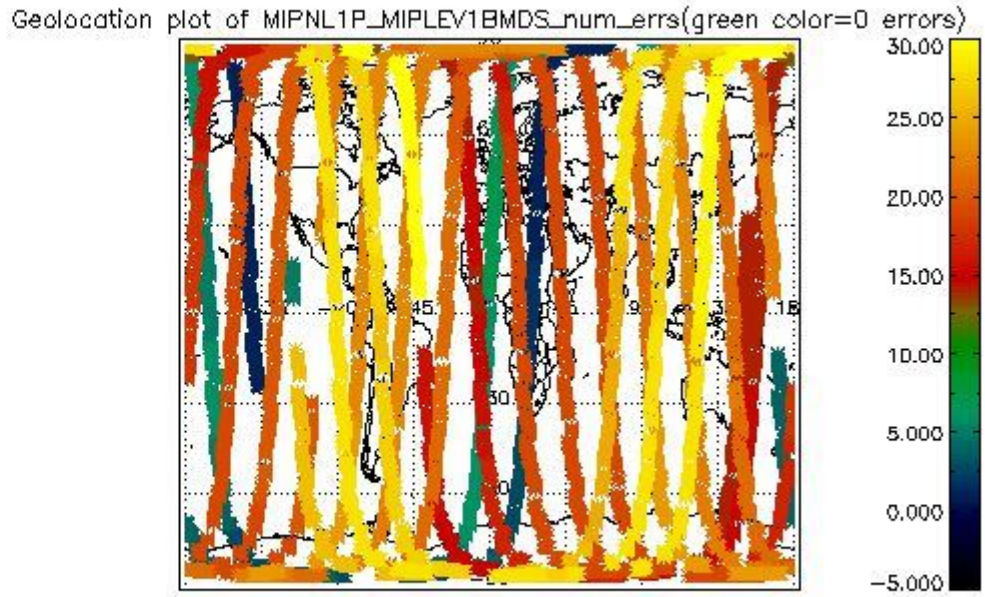
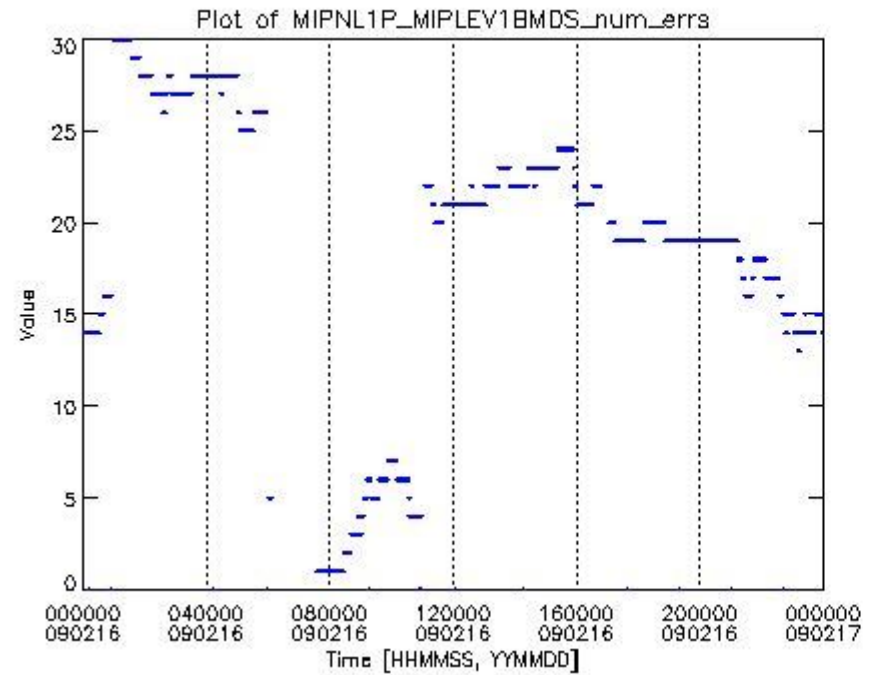


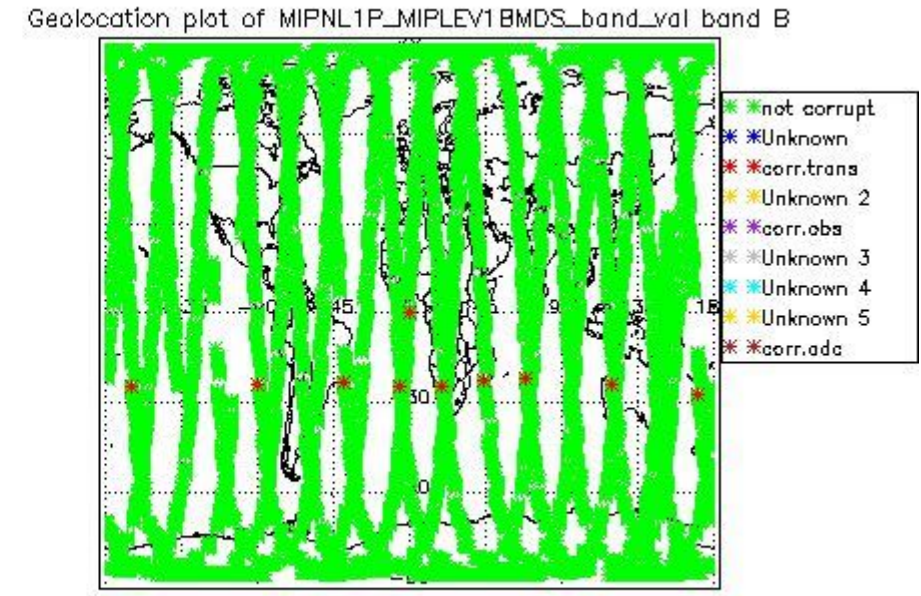
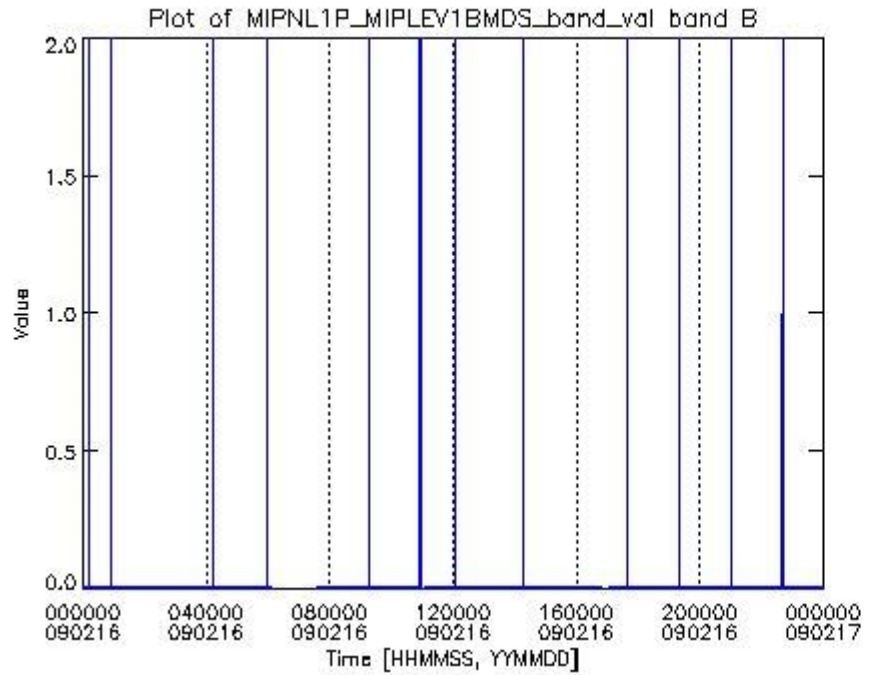
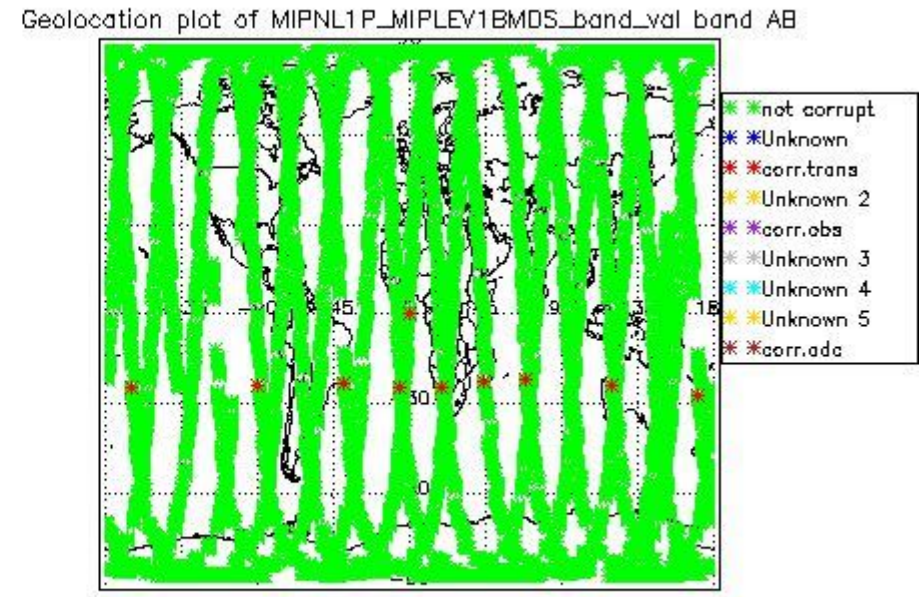
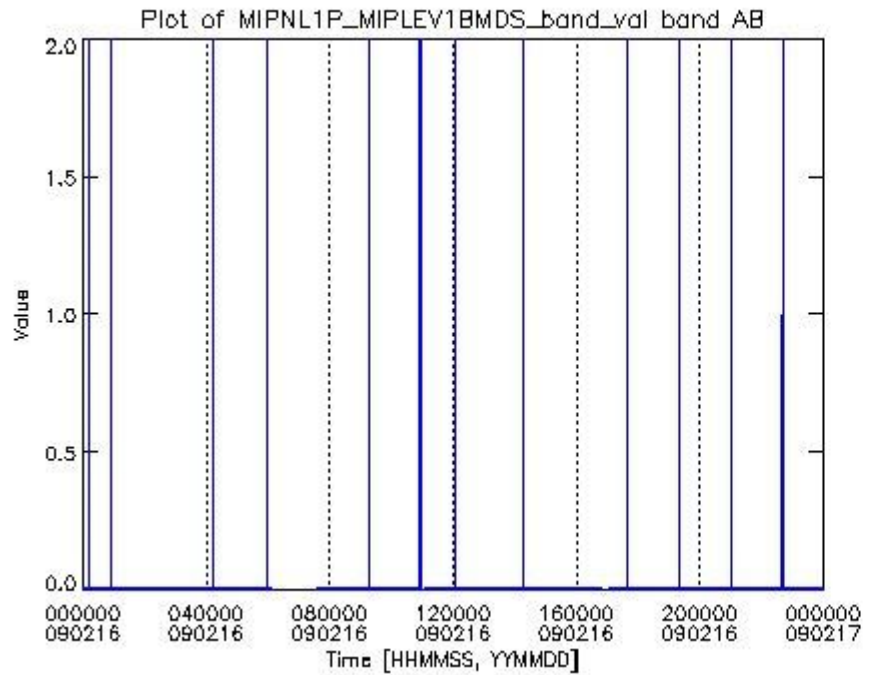


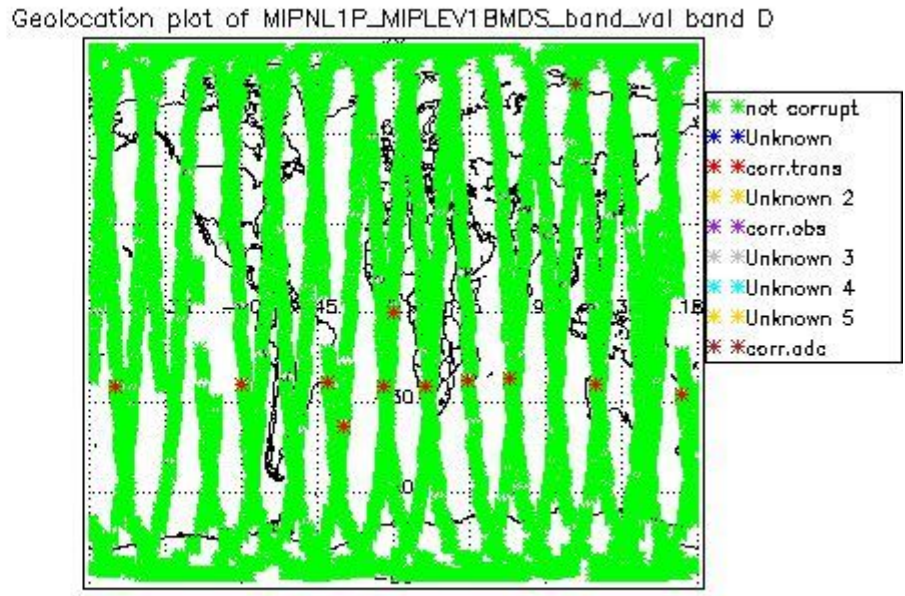
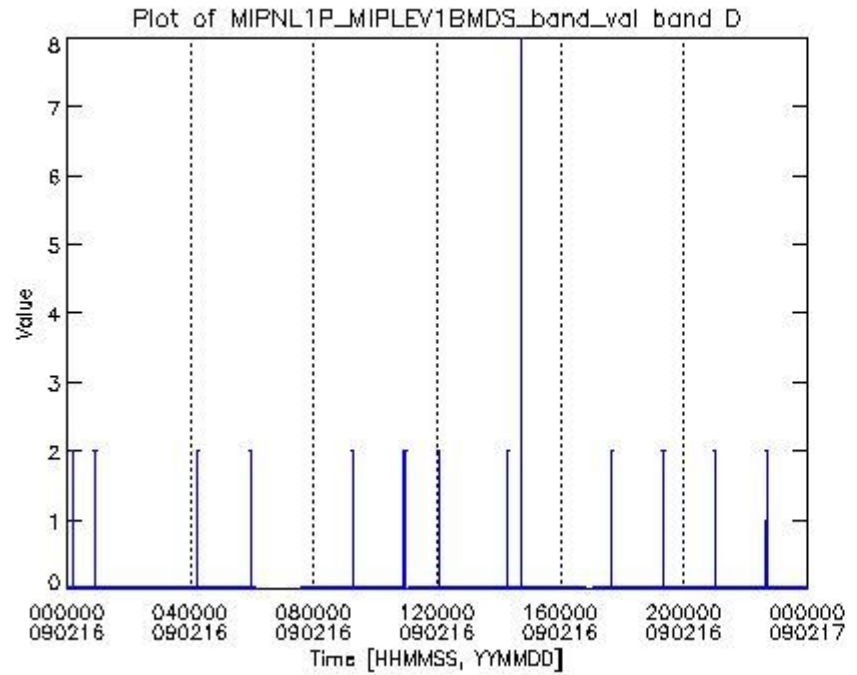
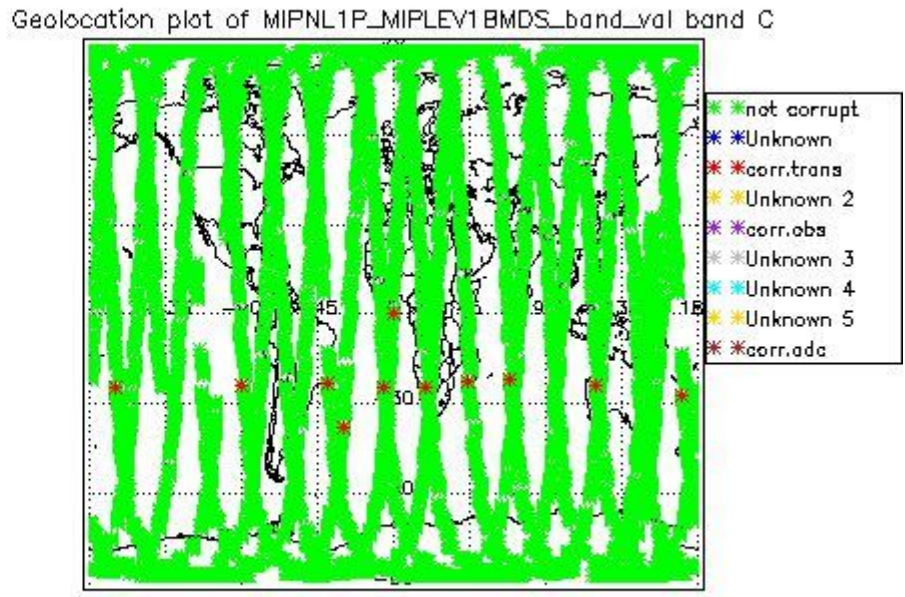
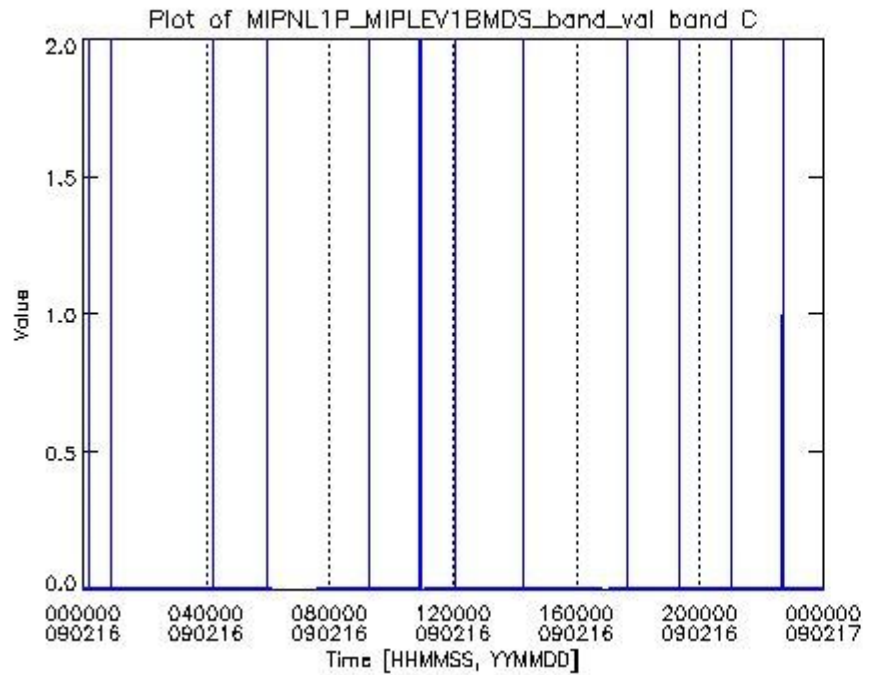




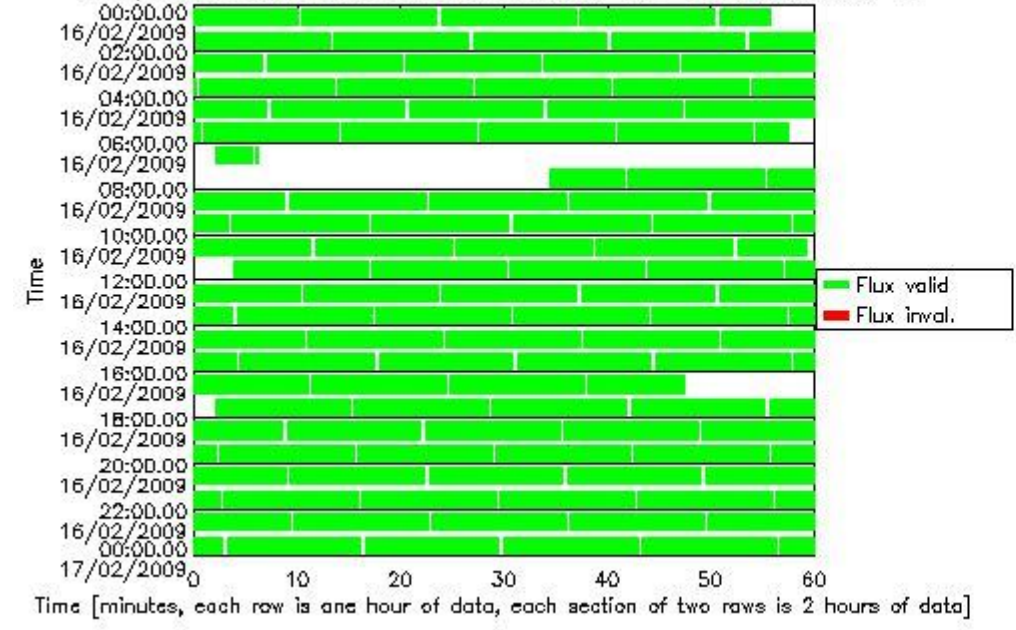




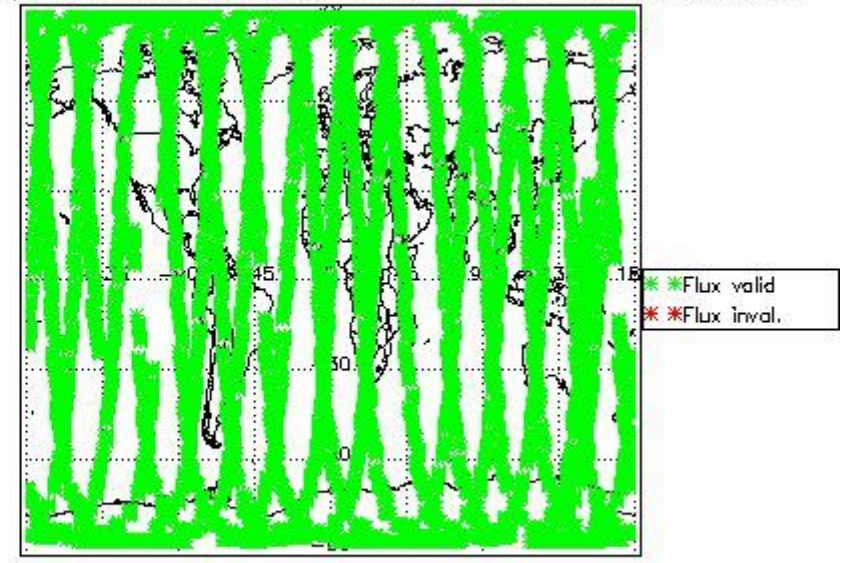




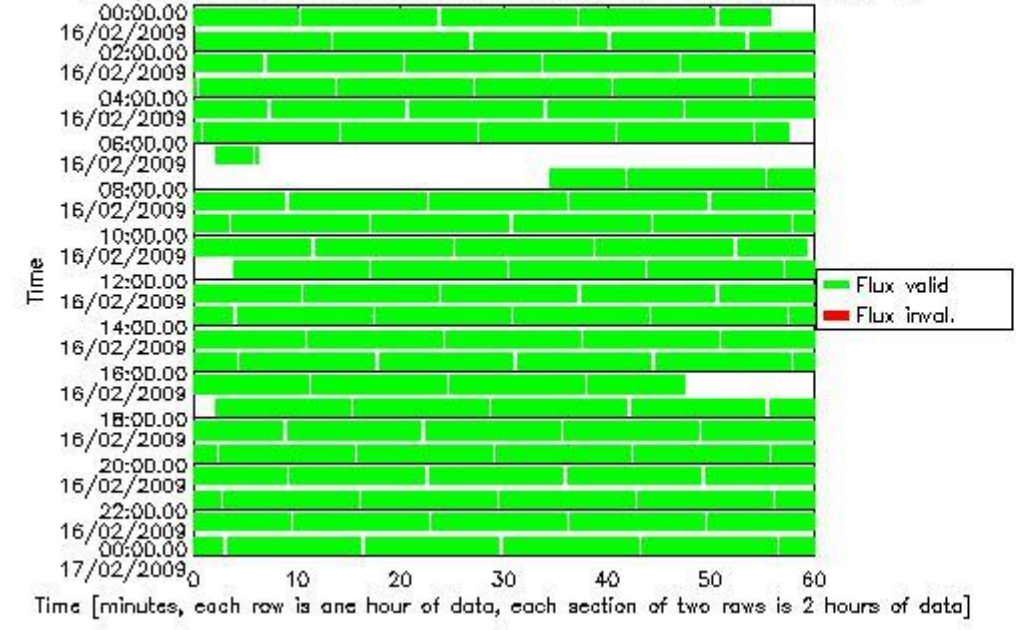
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



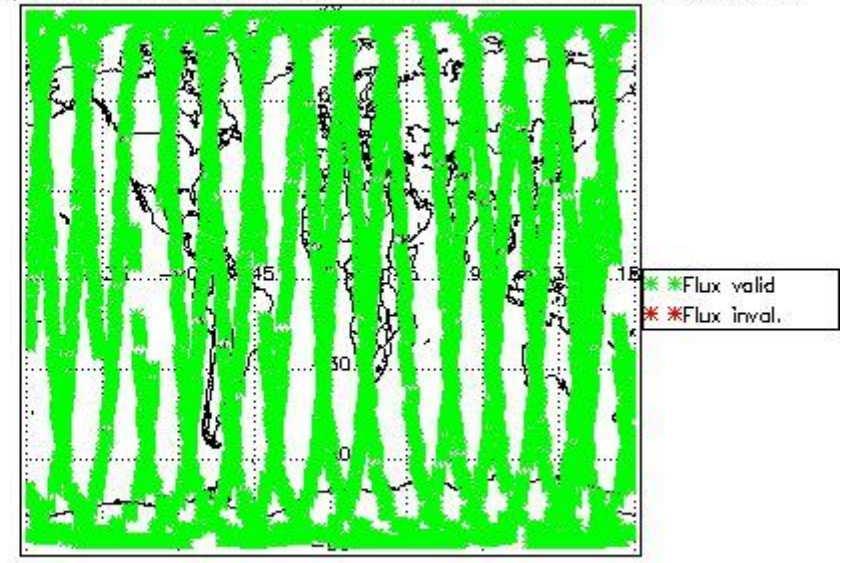
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1

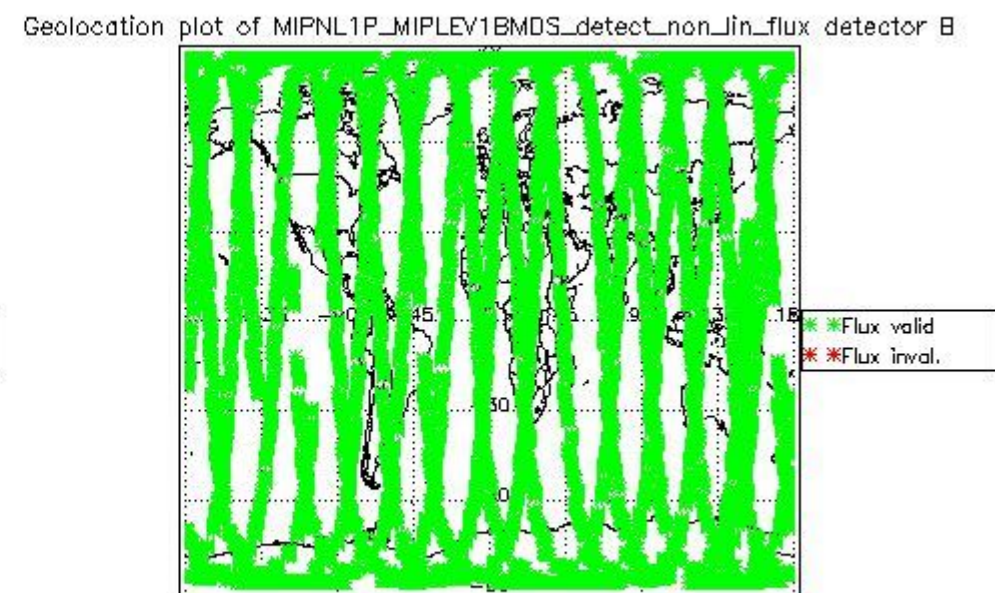
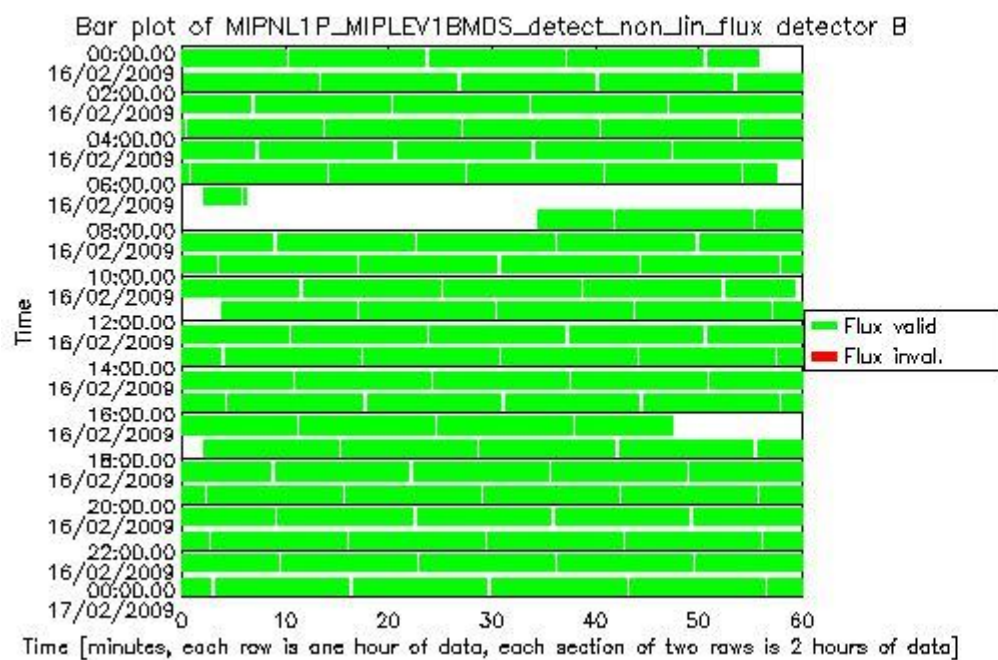
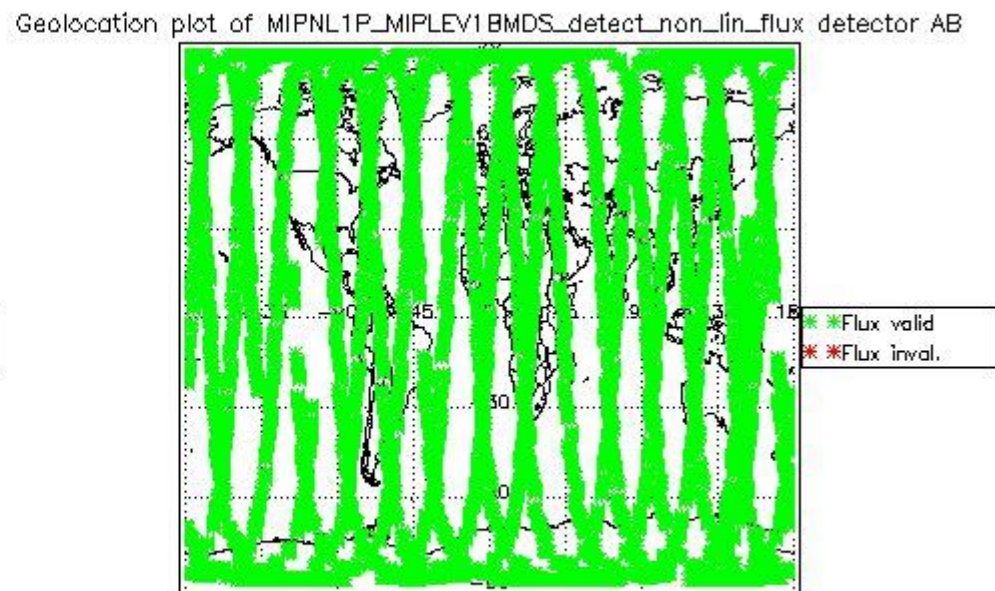
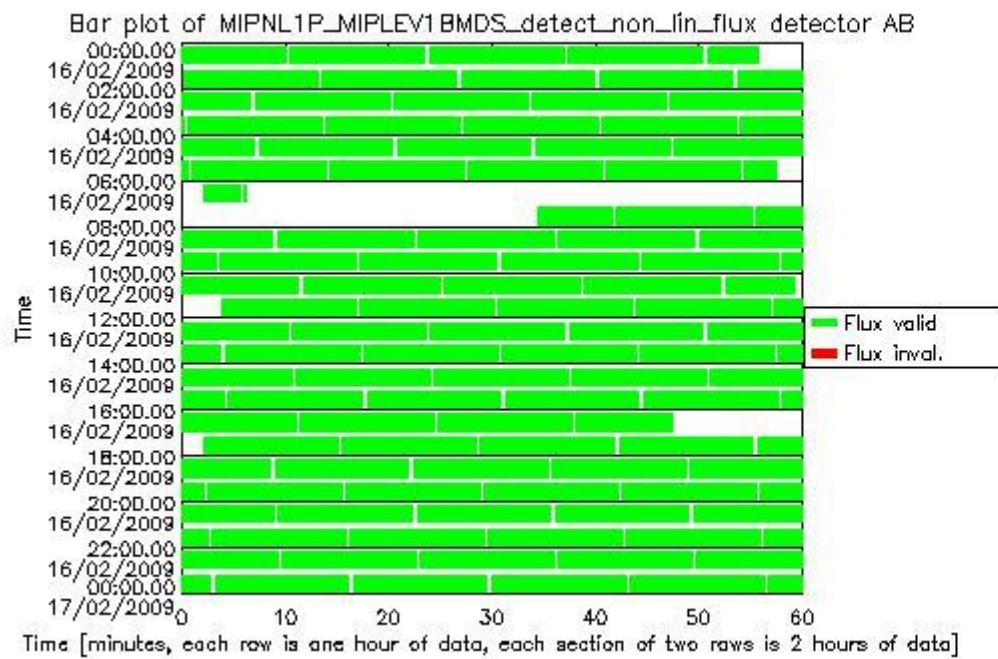


Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



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





### 1.2.3 Scan information ADS

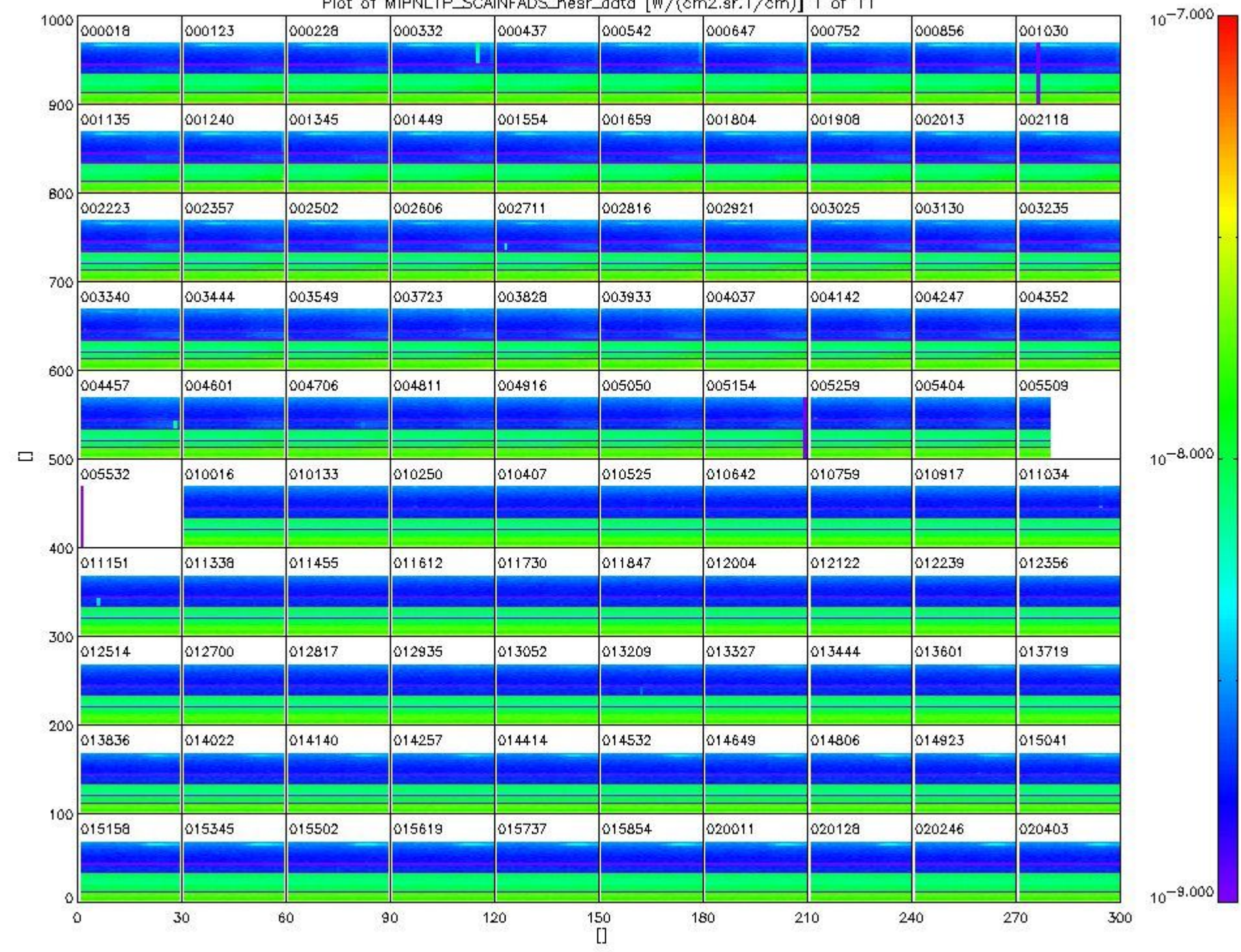
The following plots each contain 100 squares. Each square contains one NESR-scan (from MIPNL1P\_SCAINFADS\_nesr\_data).

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

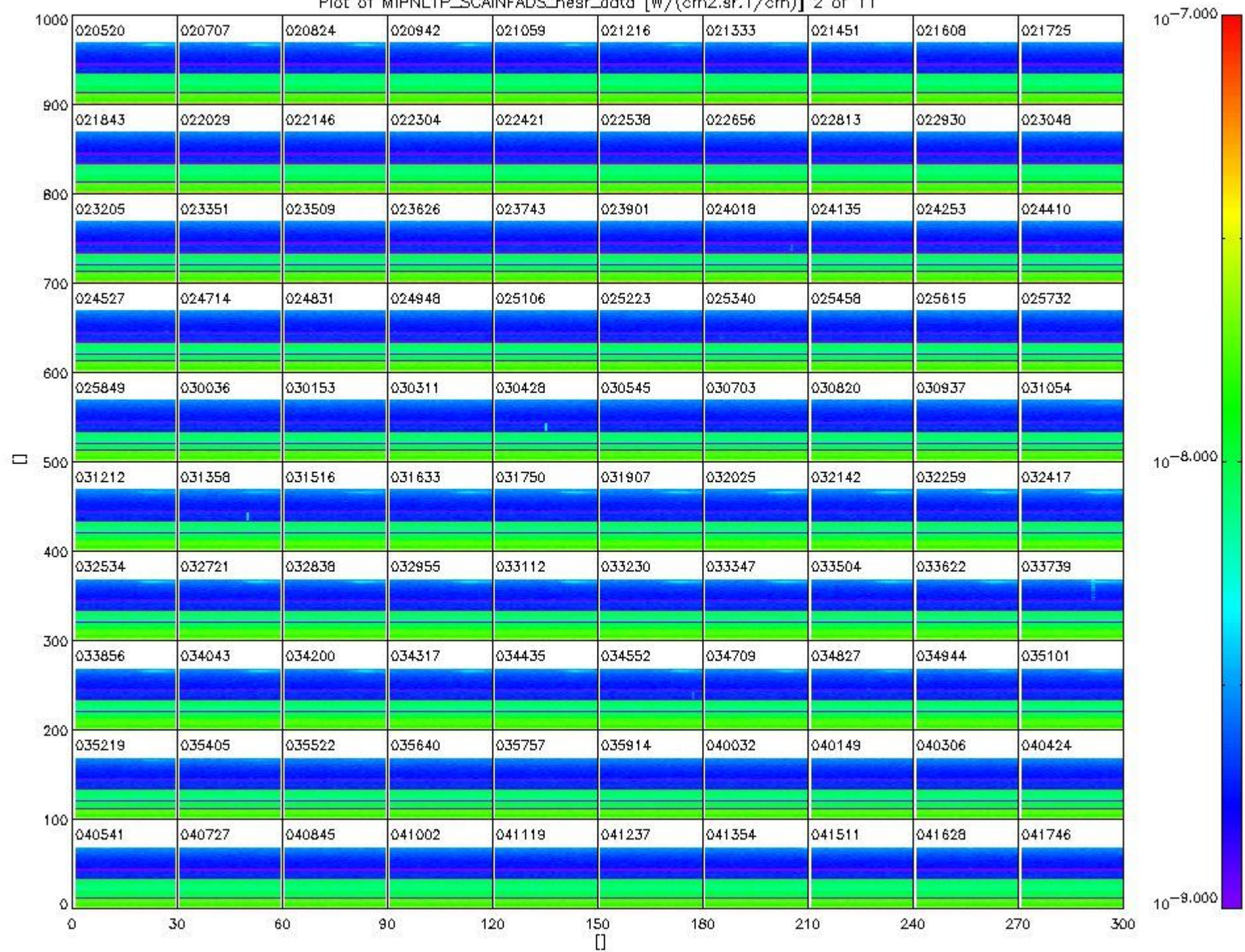
The vertical axis shows the NESR data point index (starts at 0), which relates to wavenumber.

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 11

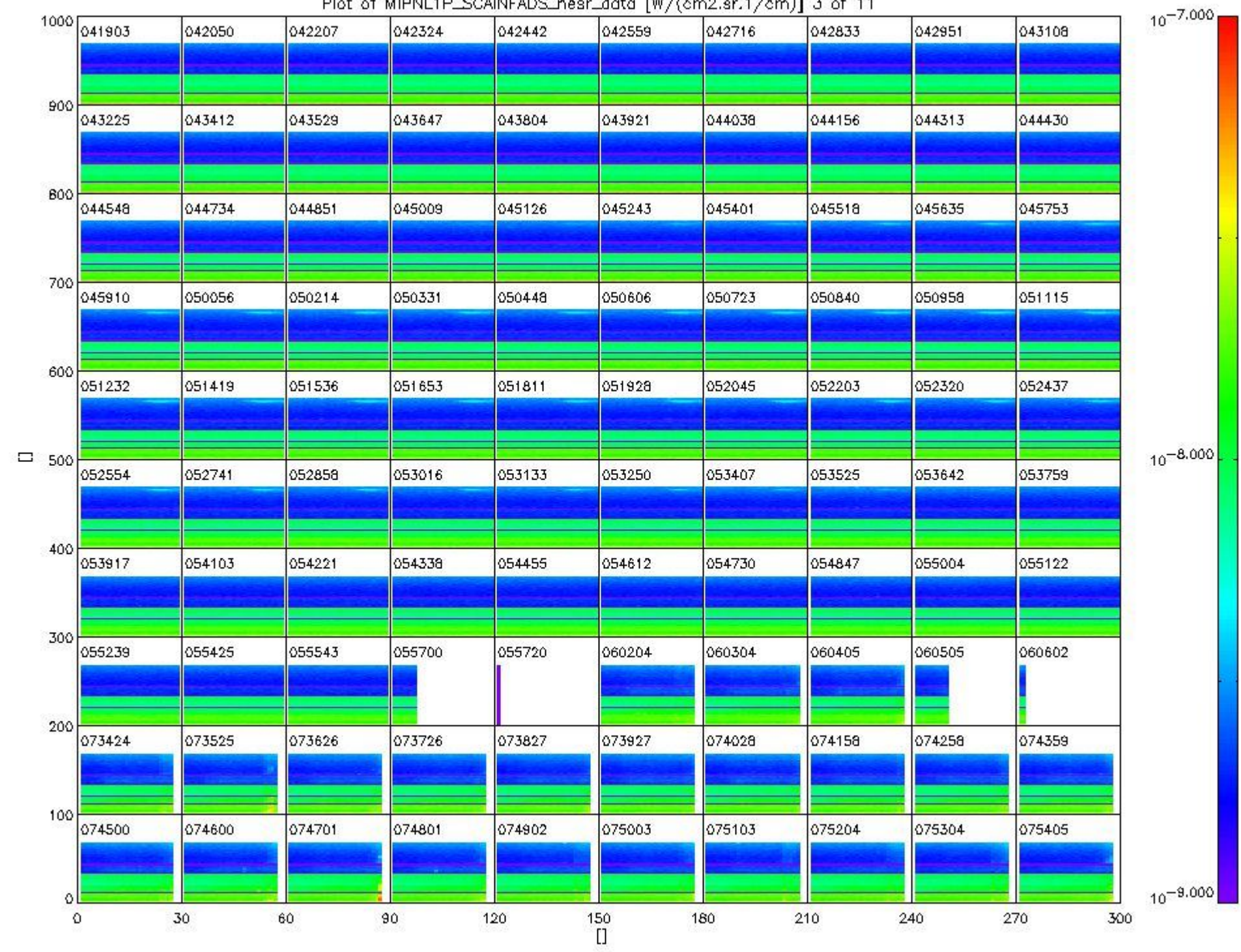


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 2 of 11



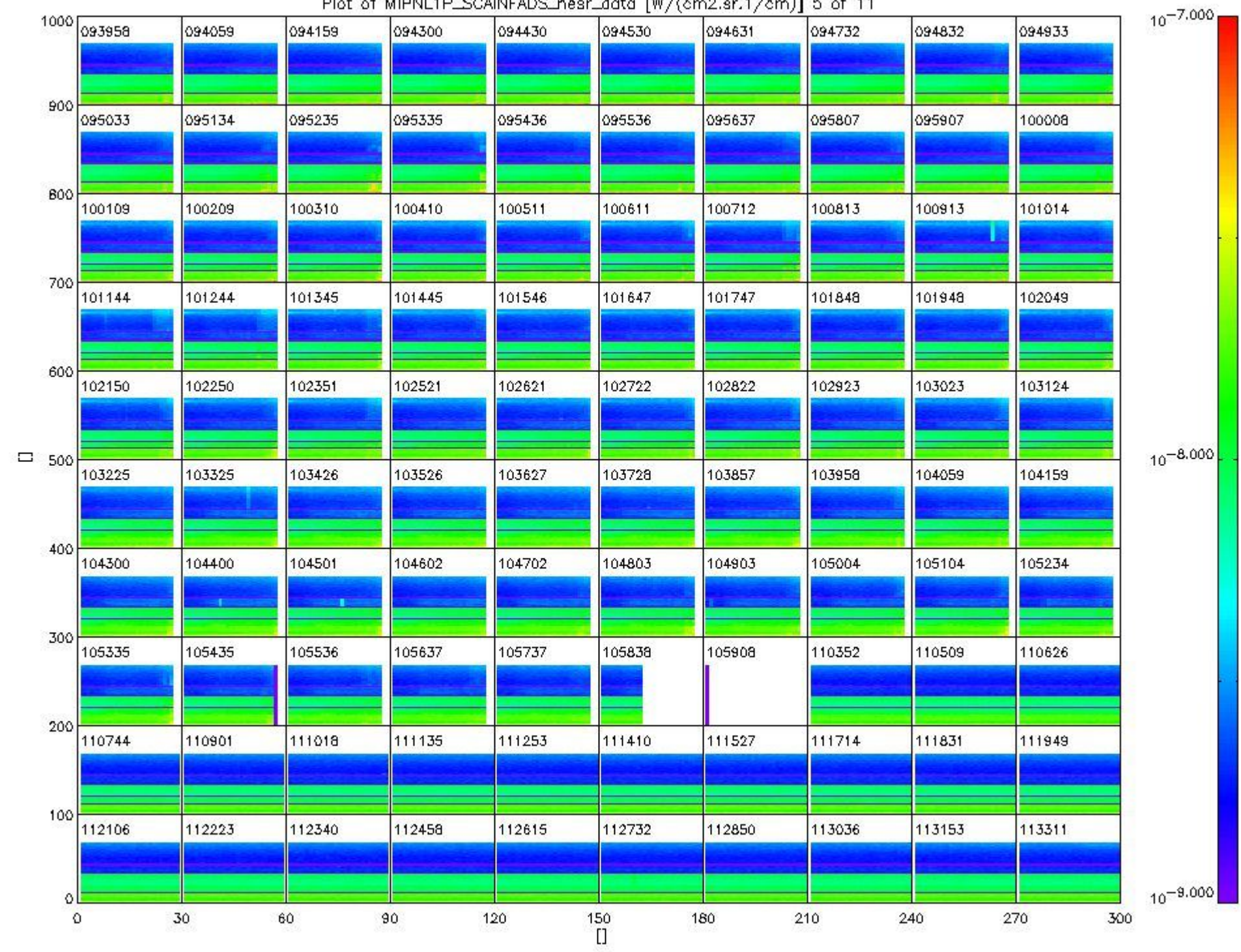


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 3 of 11





Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 5 of 11

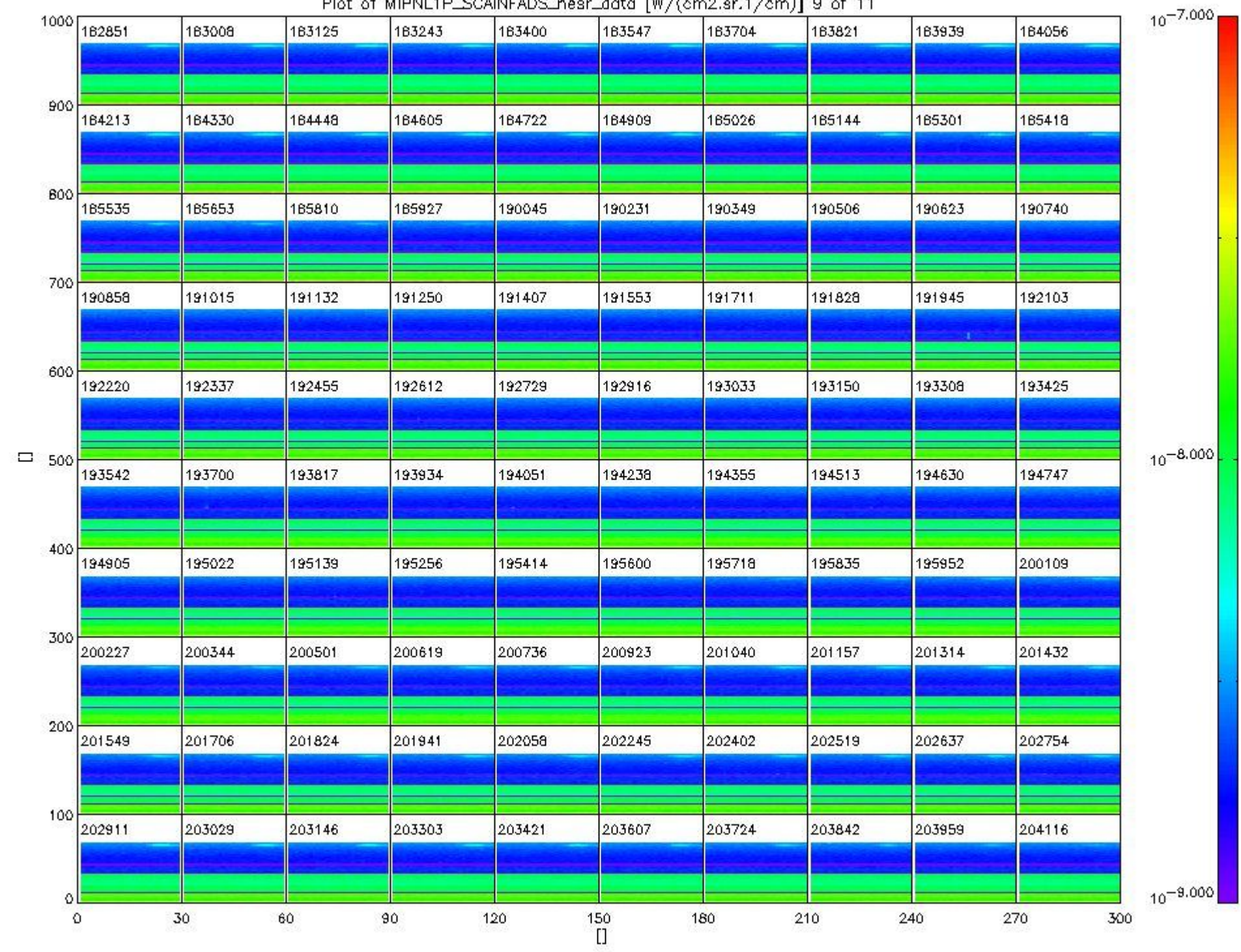




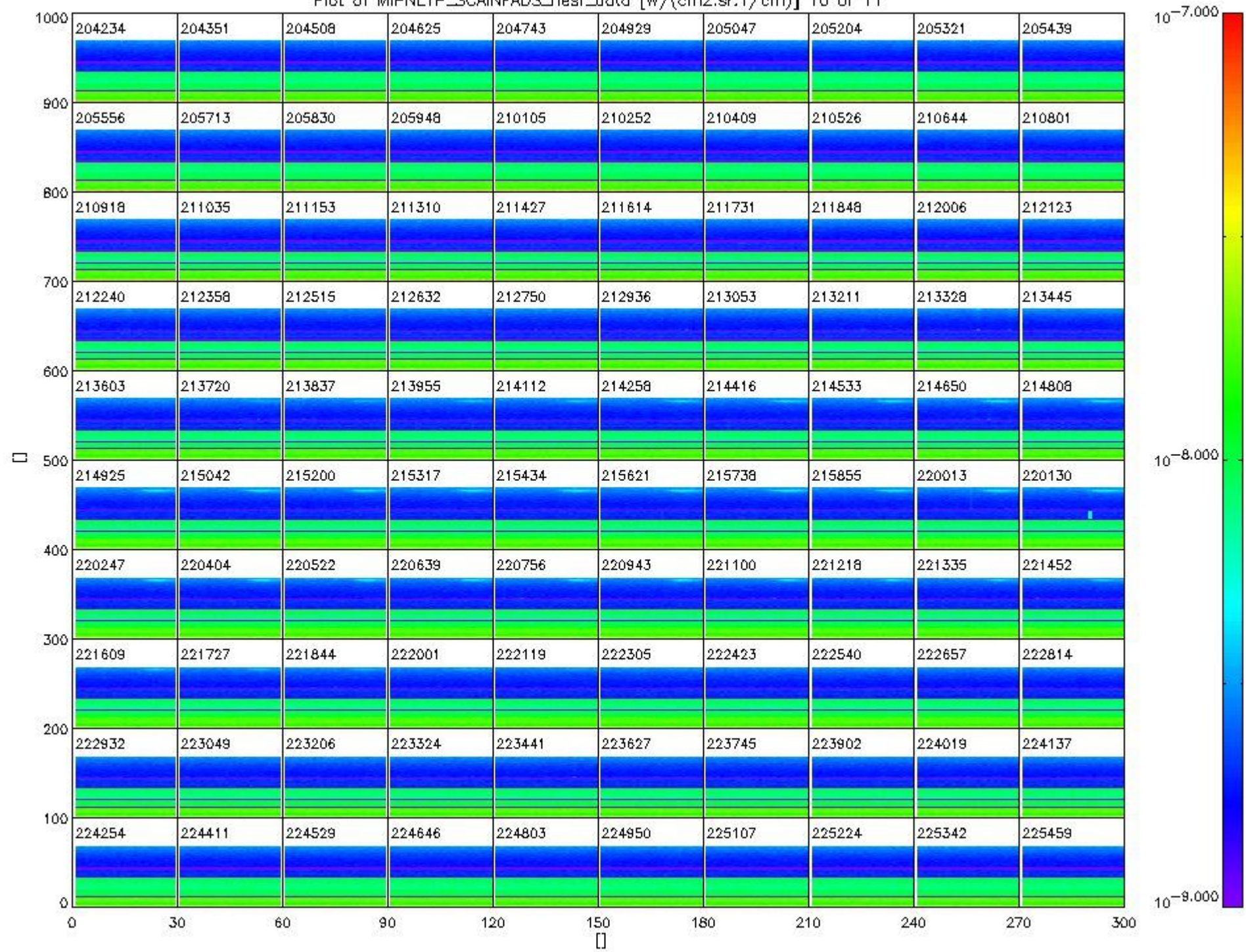




Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm2.sr.1/cm)] 9 of 11



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 10 of 11



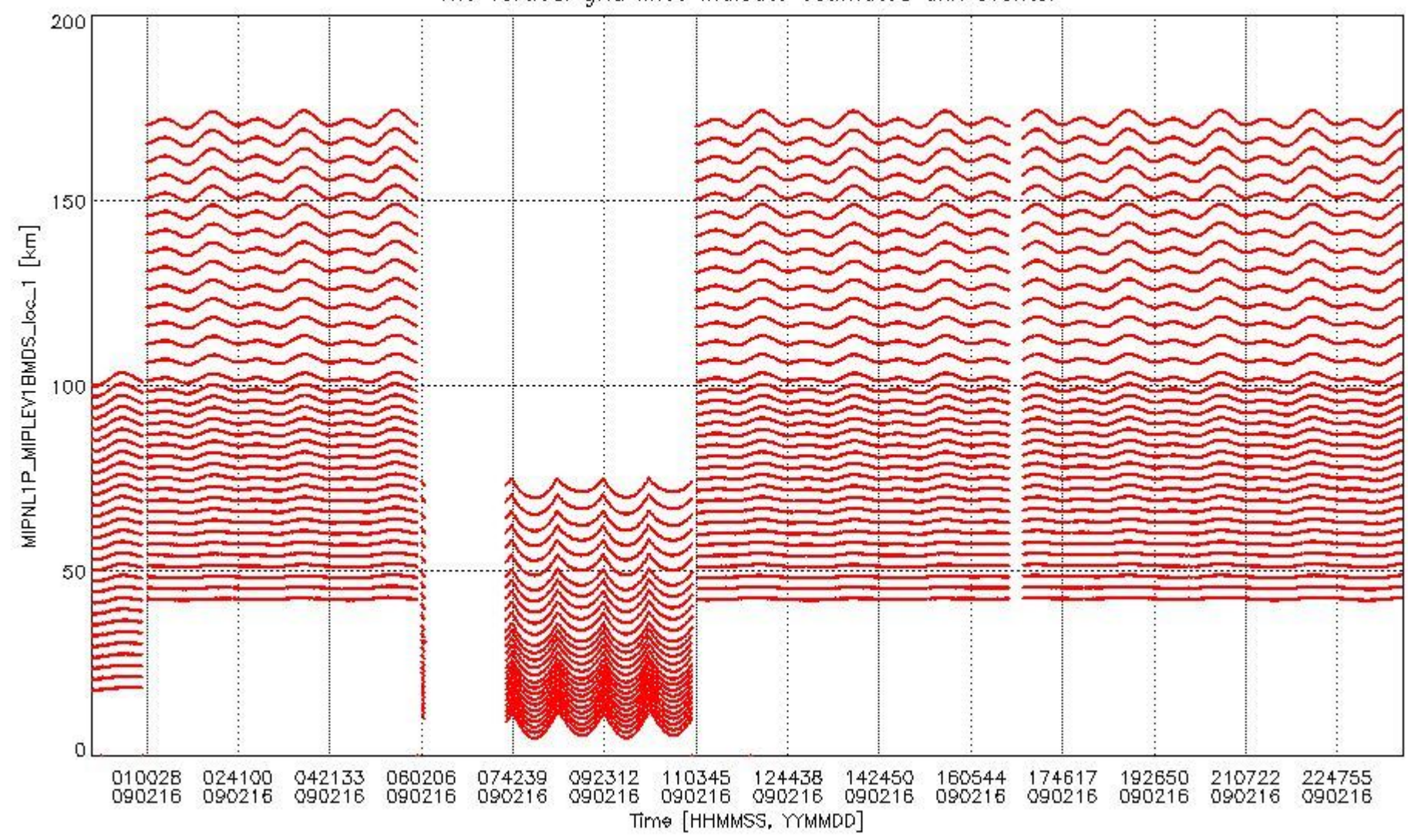




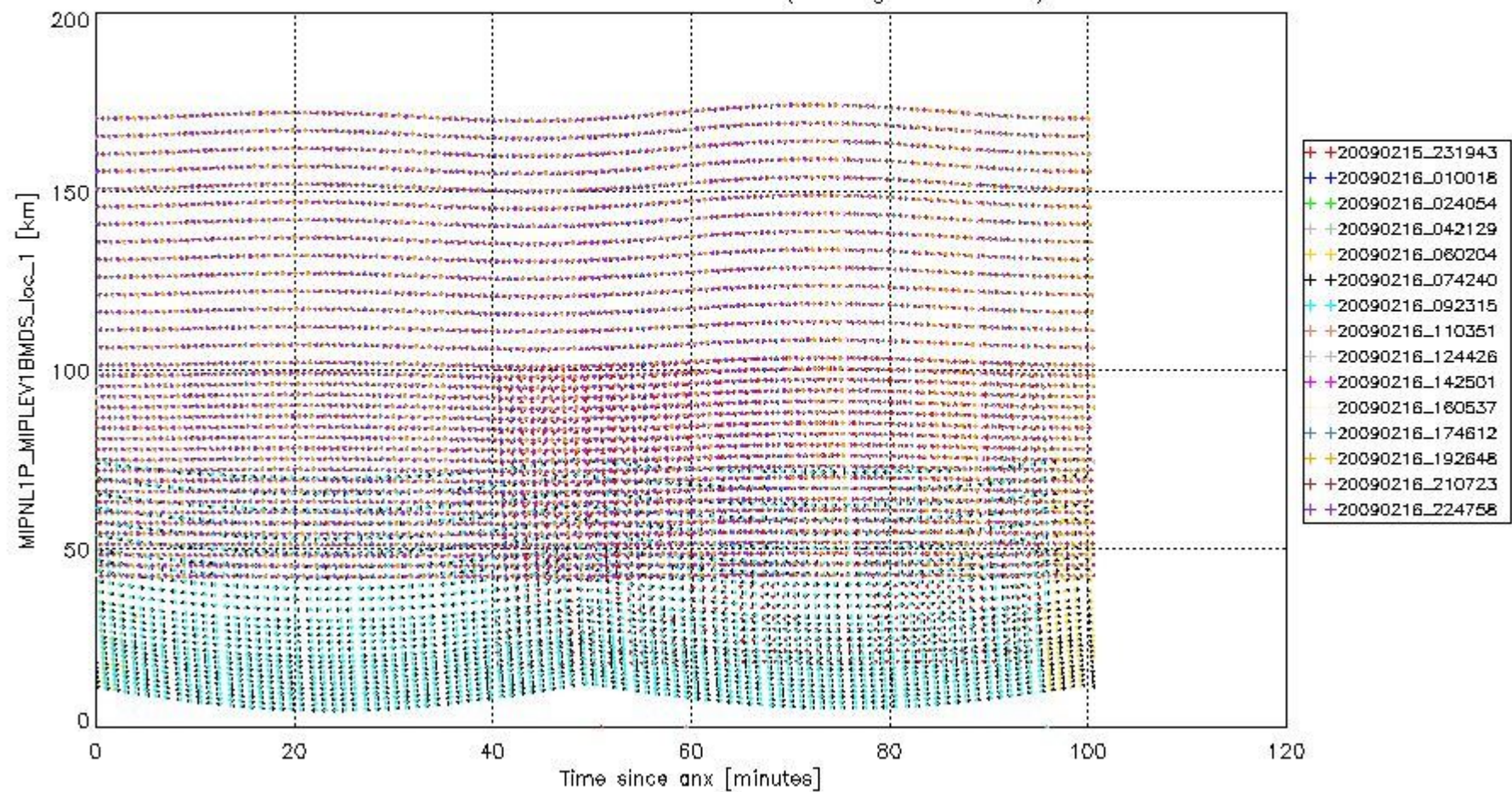
### 1.3 Physical Quality Indicators

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



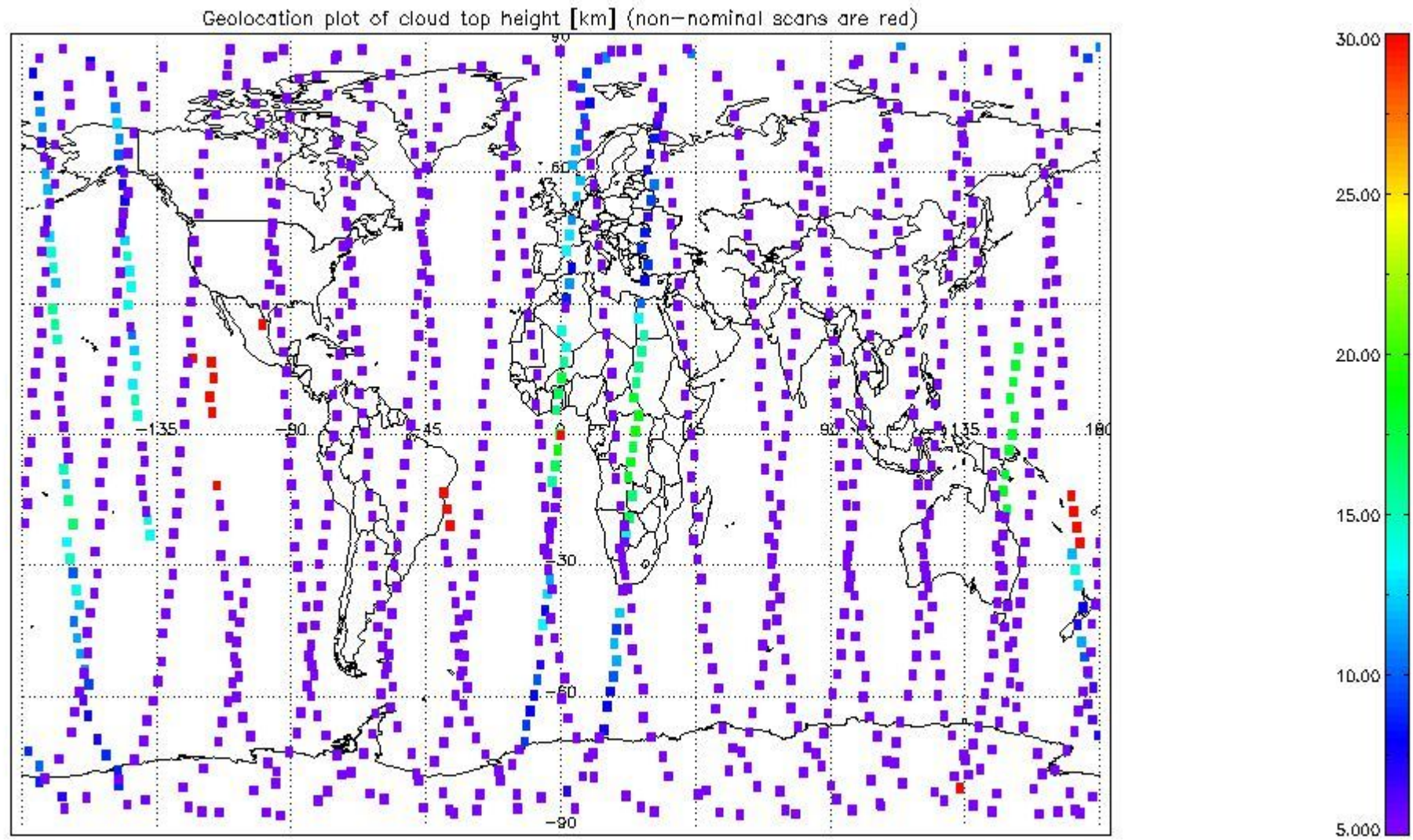
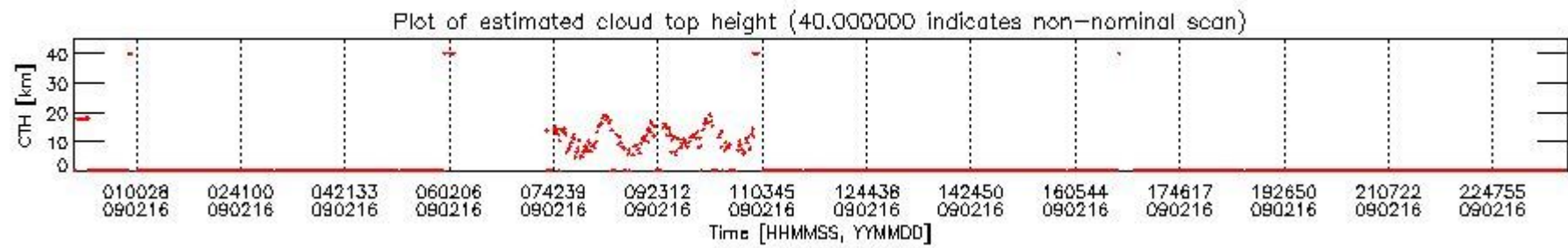
### 1.3.2 Cloud top height

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

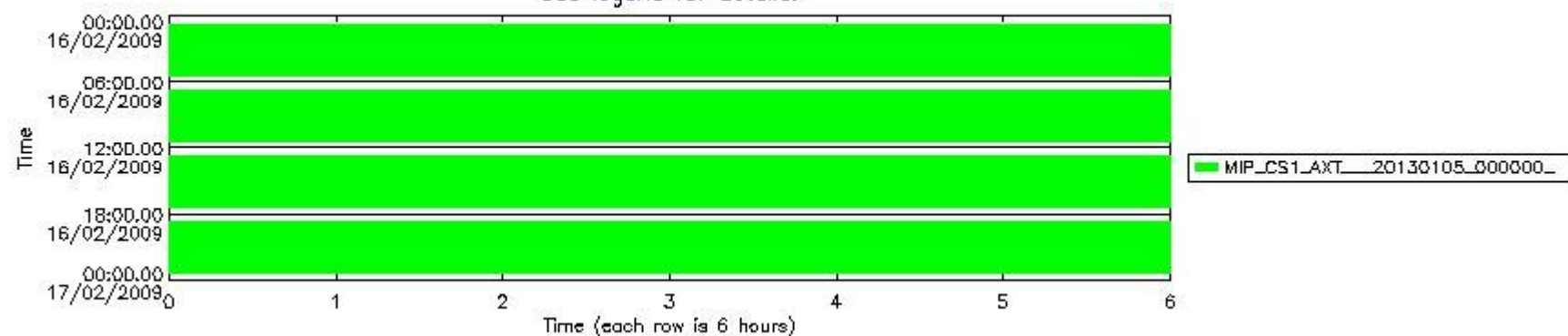


## 1.4 ADF monitoring

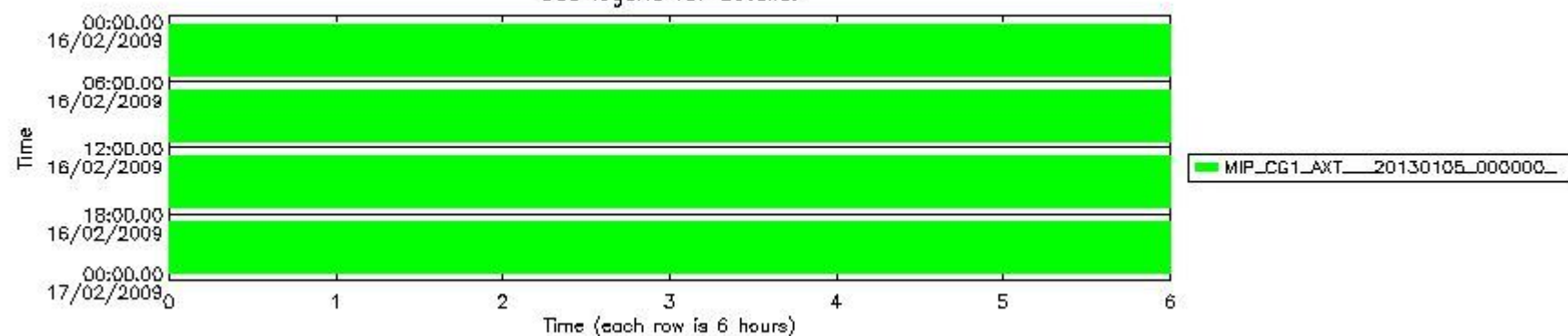
Number	ADF
0	AUX_FRA_AXVFOS20090219_180505_20090215_000000_20090217_000000
1	AUX_FRA_AXVFOS20090220_180500_20090216_000000_20090218_000000
2	DOR_VOR_AXVF-P20120425_202900_20090215_215526_20090217_002326
3	DOR_VOR_AXVF-P20120425_203100_20090216_215526_20090218_002326
4	MIP_CA1_AXT_20130105_000000_20090215_000000_20090315_000000
5	MIP_CG1_AXT_20130105_000000_20090215_000000_20090315_000000
6	MIP_CL1_AXT_20080729_075920_20020401_000000_20161214_000000
7	MIP_CO1_AXT_20130105_000000_20090215_000000_20090315_000000
8	MIP_CS1_AXT_20130105_000000_20090215_000000_20090315_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__1PWDSI20090215_231156_000060572076_00288_36414_0000.N1	8	5	6	4	7	9	10	2	0
1	MIP_NL__1PWDSI20090216_005259_000060172076_00289_36415_0000.N1	8	5	6	4	7	9	10	2	1
2	MIP_NL__1PWDSI20090216_023351_000059972076_00290_36416_0000.N1	8	5	6	4	7	9	10	2	1
3	MIP_NL__1PWDSI20090216_041354_000059972076_00291_36417_0000.N1	8	5	6	4	7	9	10	2	1
4	MIP_NL__1PWDSI20090216_055425_0000606992076_00292_36418_0000.N1	8	5	6	4	7	9	10	2	1
5	MIP_NL__1PWDSI20090216_073424_000060762076_00293_36419_0000.N1	8	5	6	4	7	9	10	2	1
6	MIP_NL__1PWDSI20090216_091546_000059842076_00294_36420_0000.N1	8	5	6	4	7	9	10	2	1
7	MIP_NL__1PWDSI20090216_105536_000060762076_00295_36421_0000.N1	8	5	6	4	7	9	10	2	1
8	MIP_NL__1PWDSI20090216_123727_000059972076_00296_36422_0000.N1	8	5	6	4	7	9	10	2	1
9	MIP_NL__1PWDSI20090216_141730_000059972076_00297_36423_0000.N1	8	5	6	4	7	9	10	2	1
10	MIP_NL__1PWDSI20090216_155801_000060672076_00298_36424_0000.N1	8	5	6	4	7	9	10	2	1
11	MIP_NL__1PWDSI20090216_173914_000060262076_00299_36425_0000.N1	8	5	6	4	7	9	10	2	1
12	MIP_NL__1PWDSI20090216_191945_000059972076_00300_36426_0000.N1	8	5	6	4	7	9	10	2	1
13	MIP_NL__1PWDSI20090216_205948_000060262076_00301_36427_0000.N1	8	5	6	4	7	9	10	2	1
14	MIP_NL__1PWDSI20090216_224019_000059972076_00302_36428_0000.N1	8	5	6	4	7	9	10	3	1

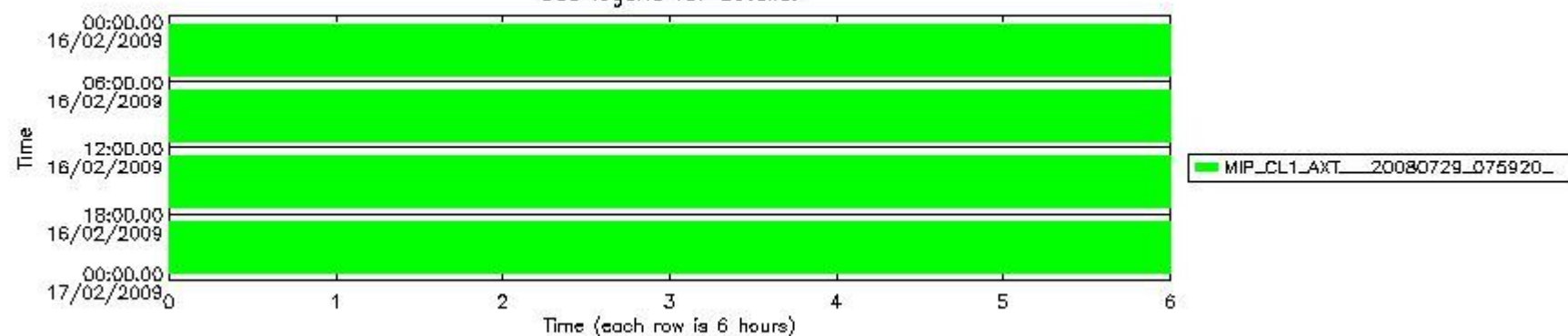
Bar plot of ADFs used for ILS&SPECTRAL CAL FILE.  
See legend for details.



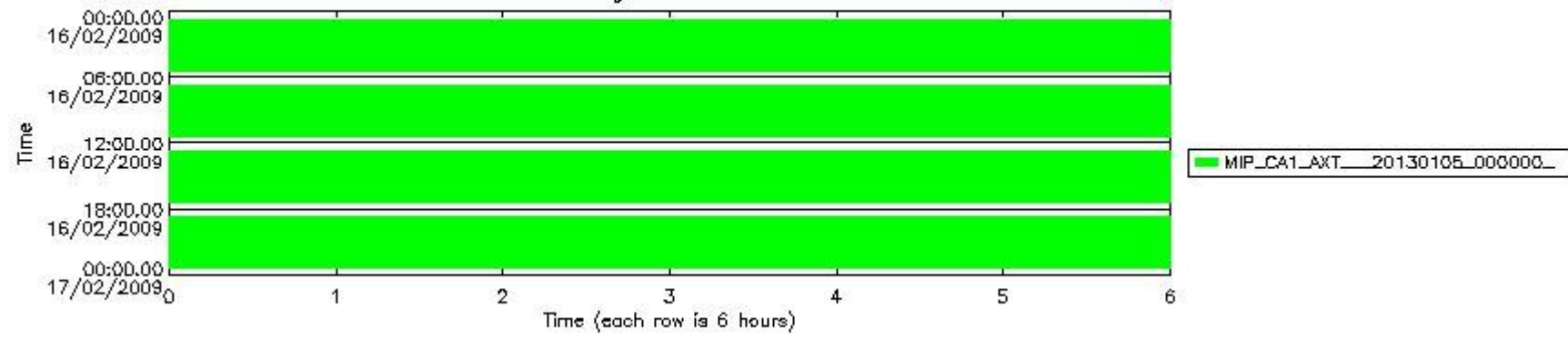
Bar plot of ADFs used for GAIN CALIBRATION FILE.  
See legend for details.



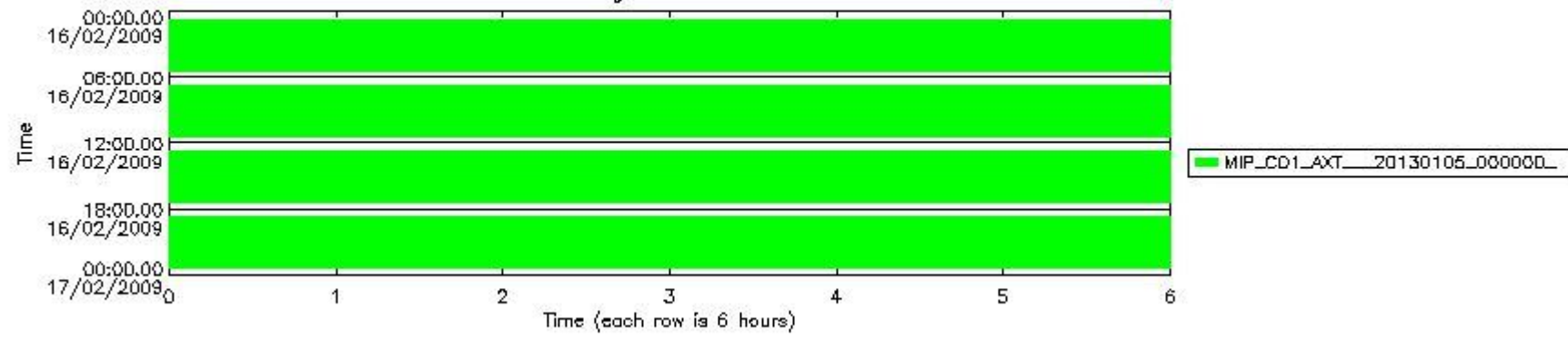
Bar plot of ADFs used for LINE OF SIGHT FILE.  
See legend for details.



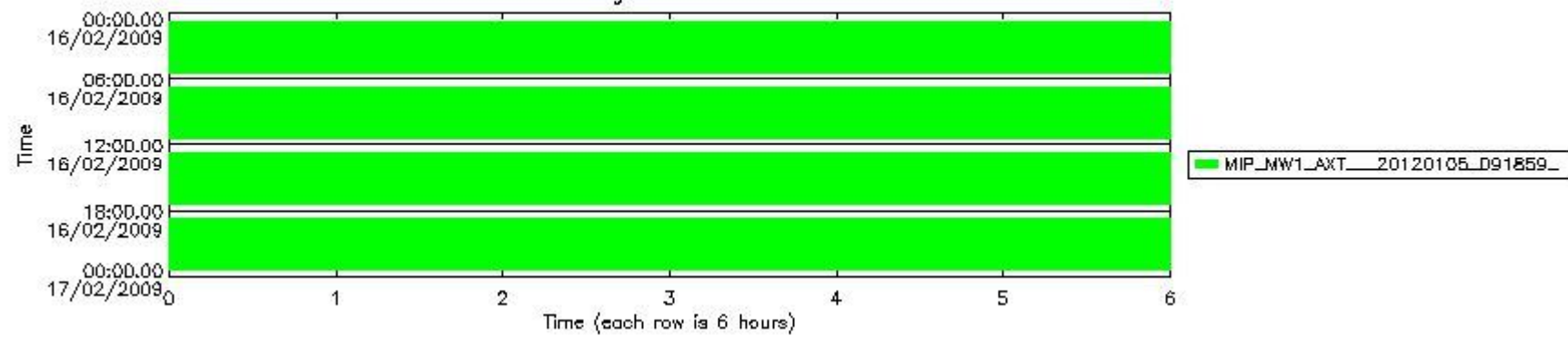
Bar plot of ADFs used for INSTRUMENT CHAR FILE.  
See legend for details.



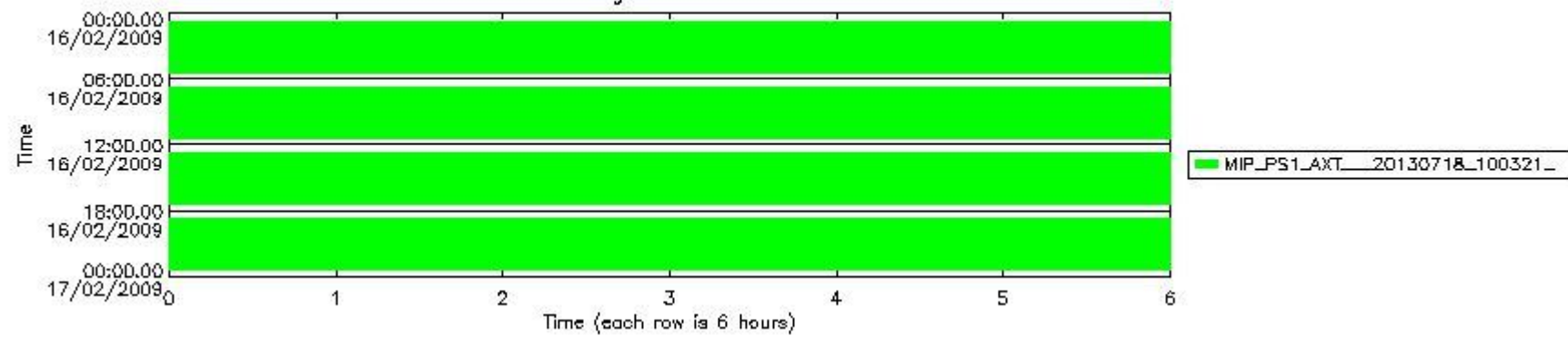
Bar plot of ADFs used for OFFSET VALIDATION FILE.  
See legend for details.



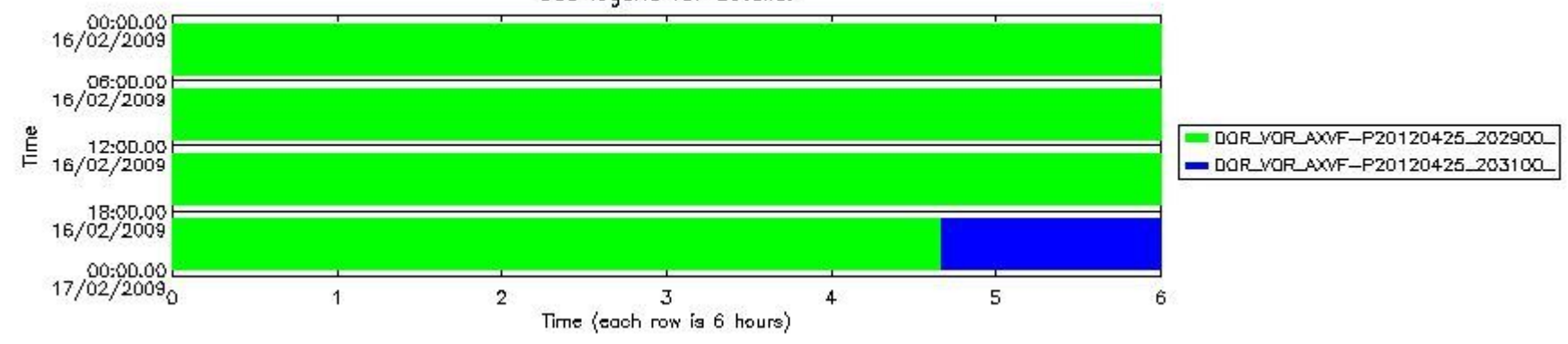
Bar plot of ADFs used for MICROWINDOWS FILE.  
See legend for details.



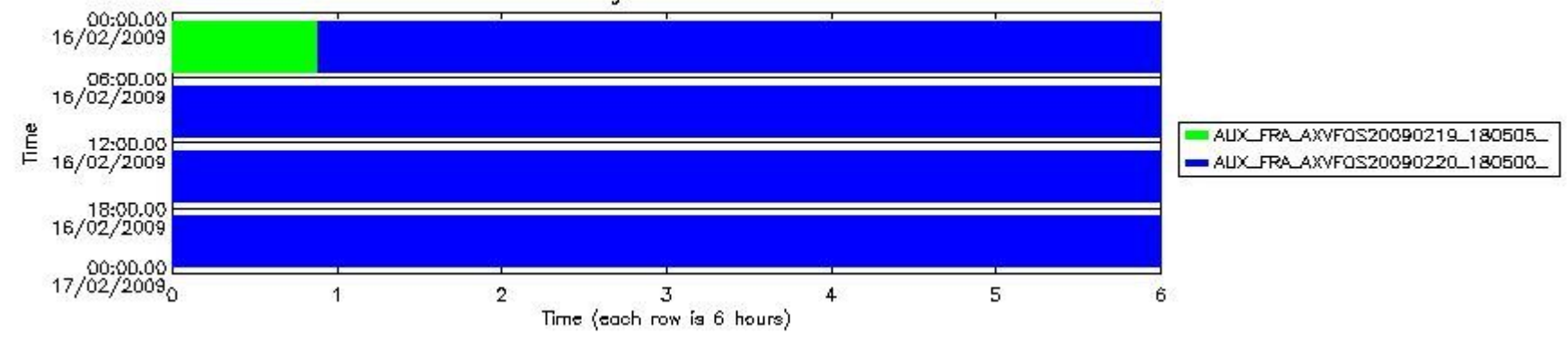
Bar plot of ADFs used for PROCESS PARAMETERS FILE.  
See legend for details.

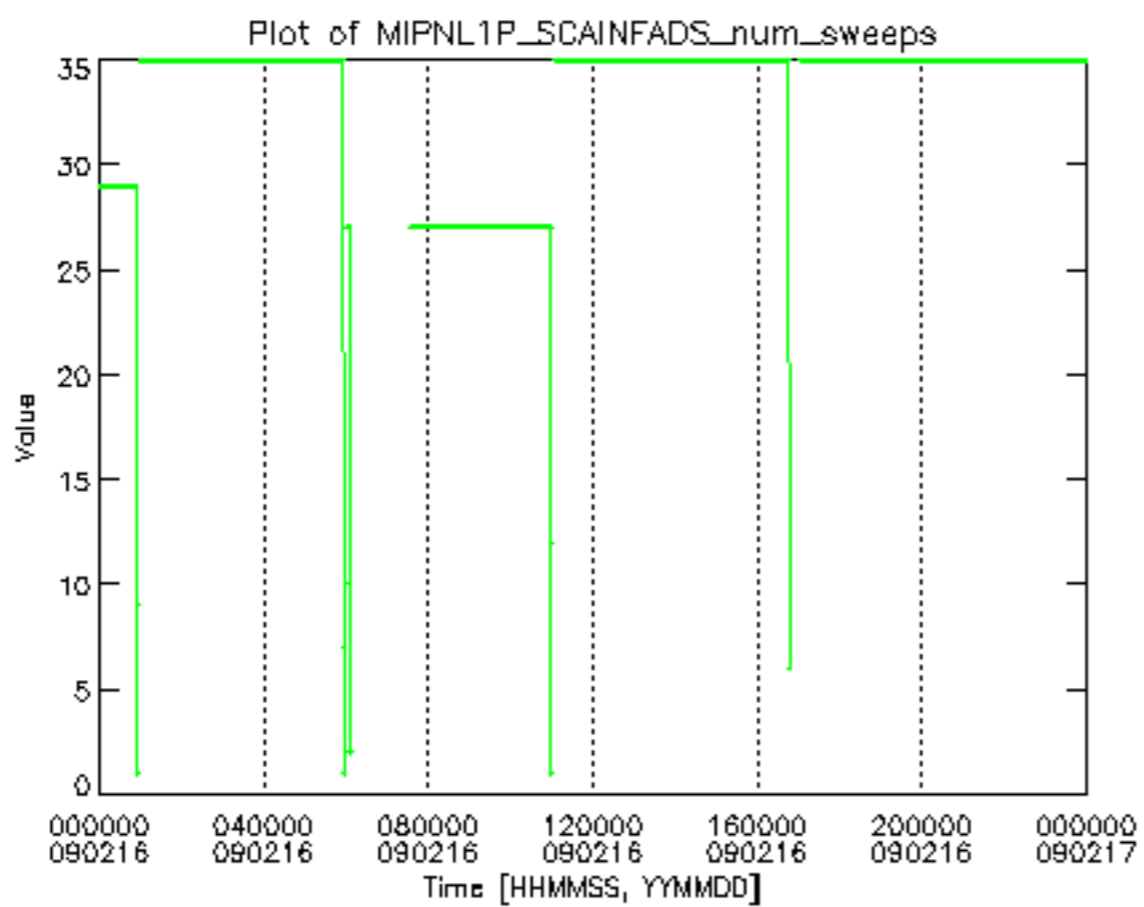


Bar plot of ADFs used for ORBIT DATA FILE.  
See legend for details.

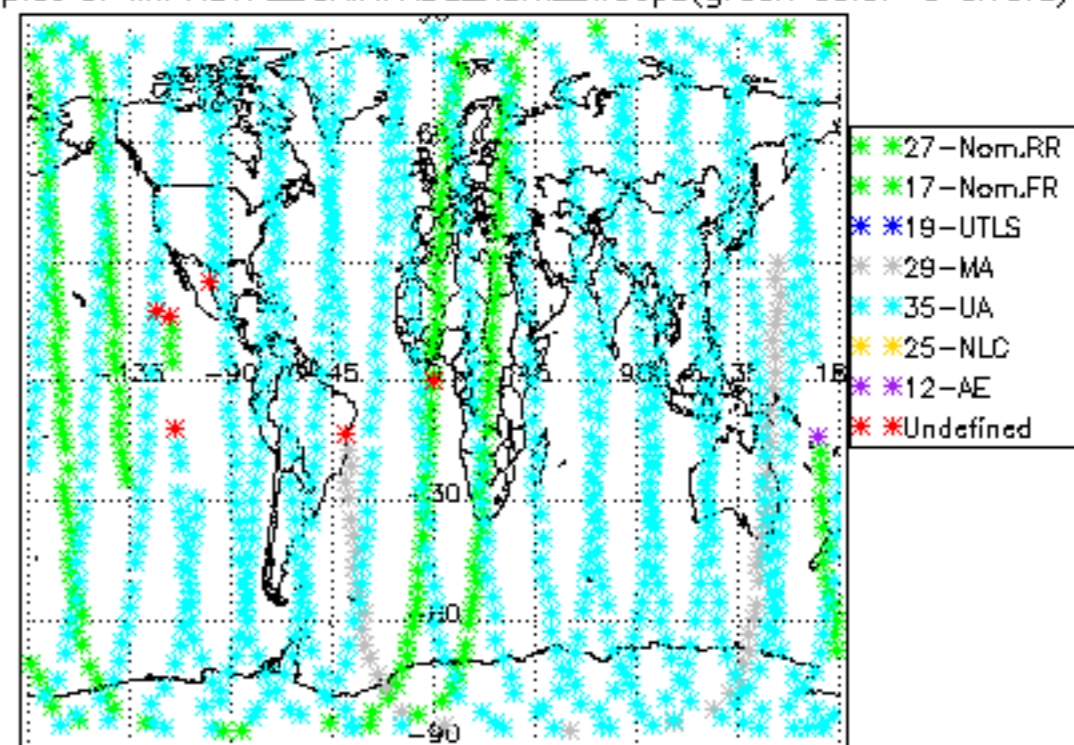


Bar plot of ADFs used for RESTITUTED ATTITUDE FILE.  
See legend for details.

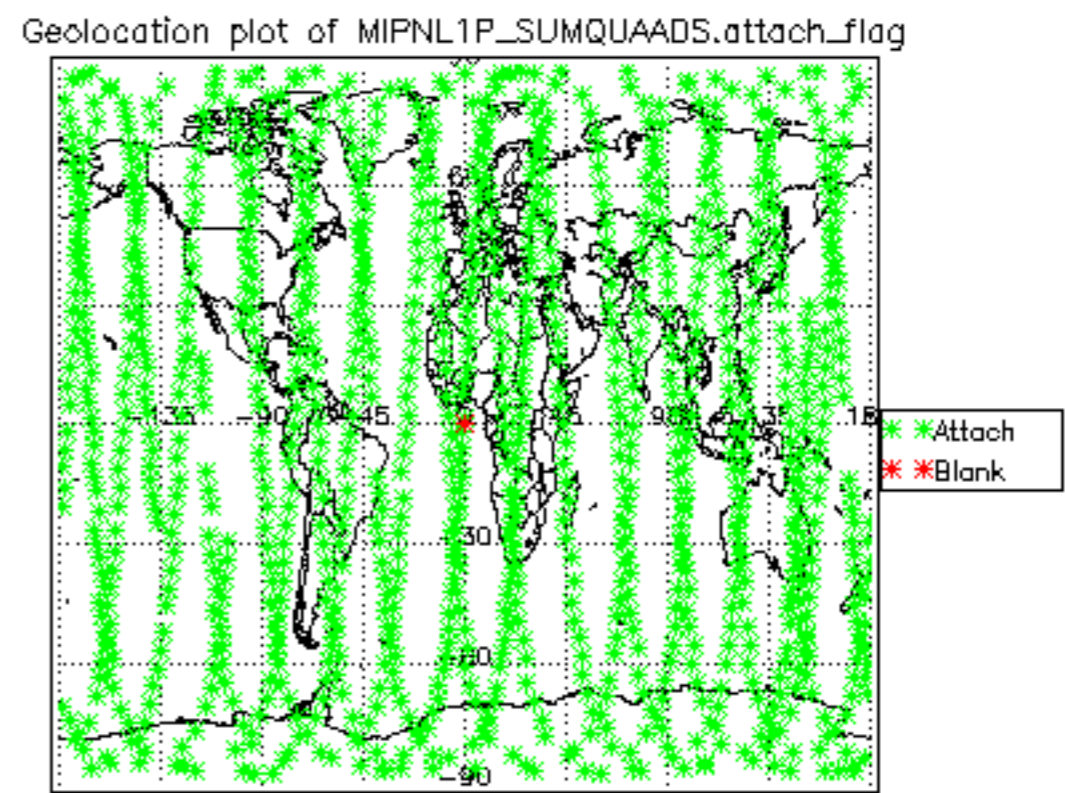
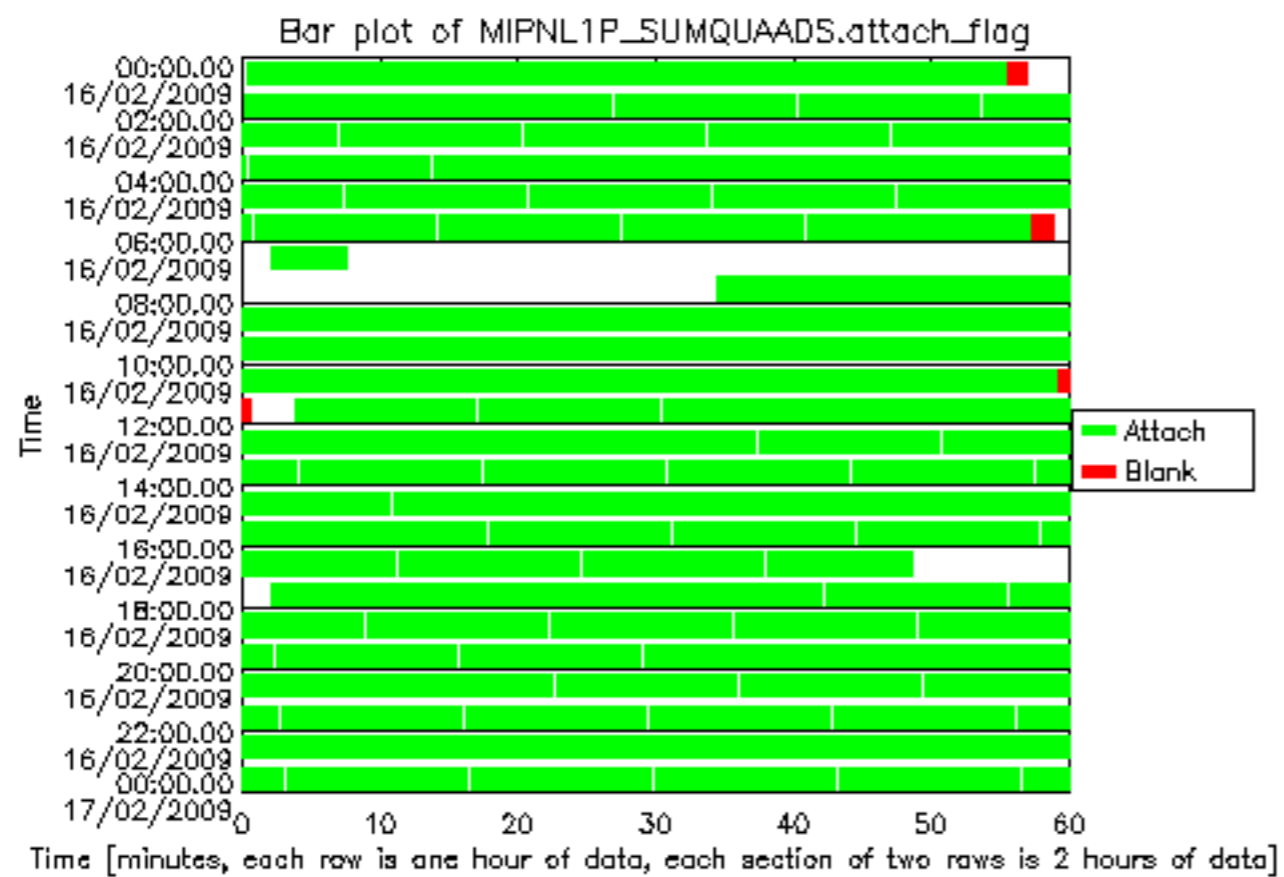


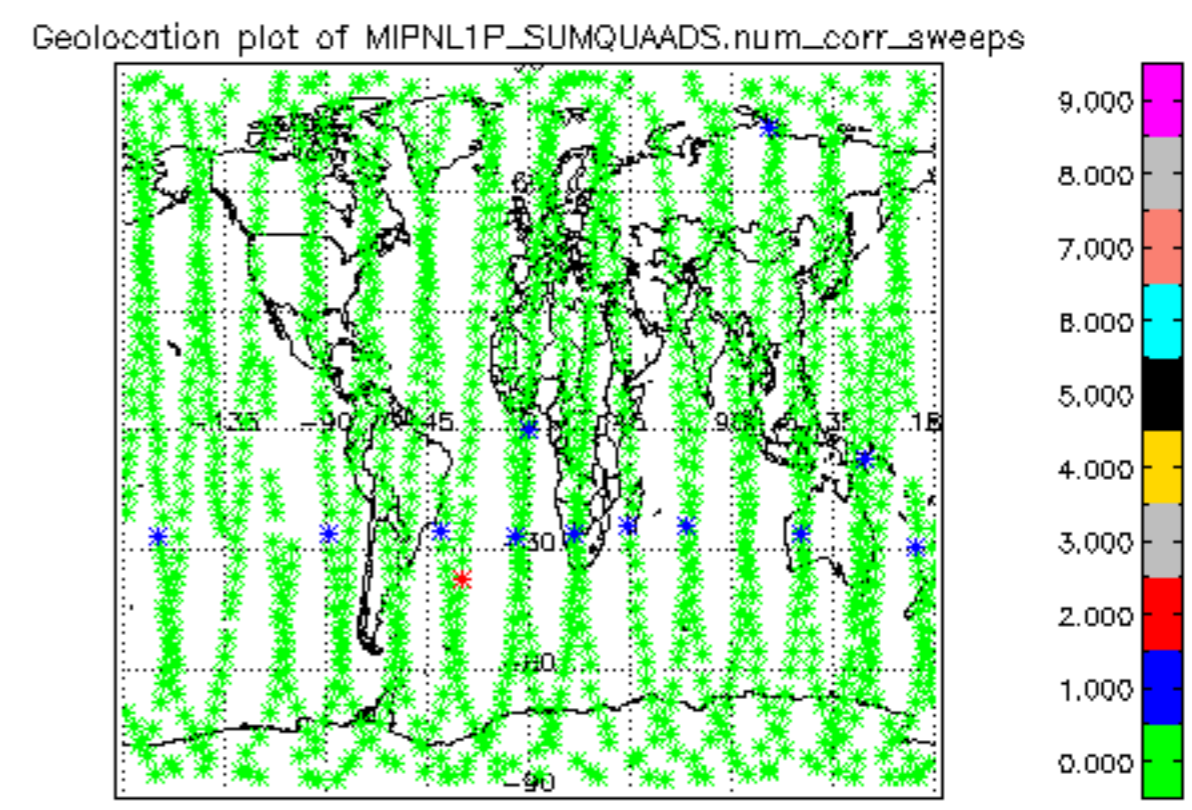
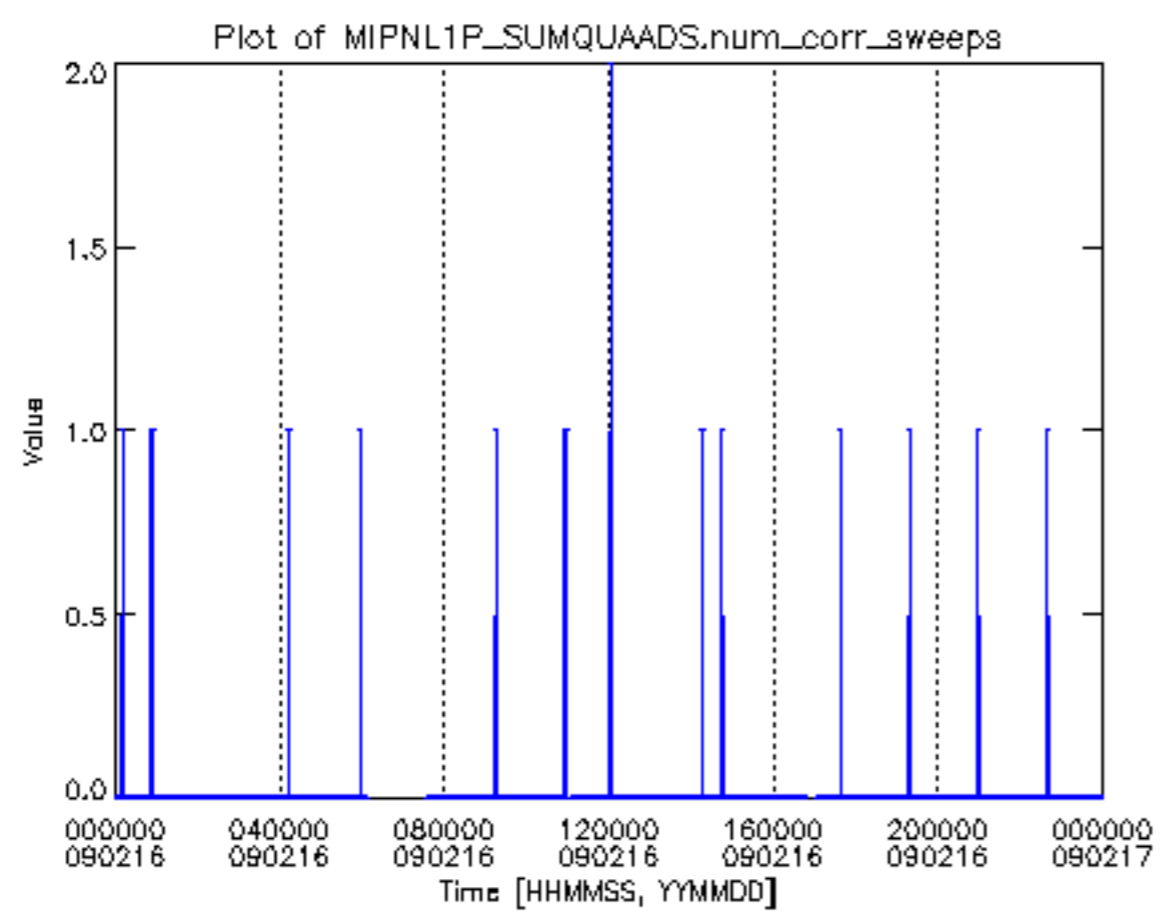


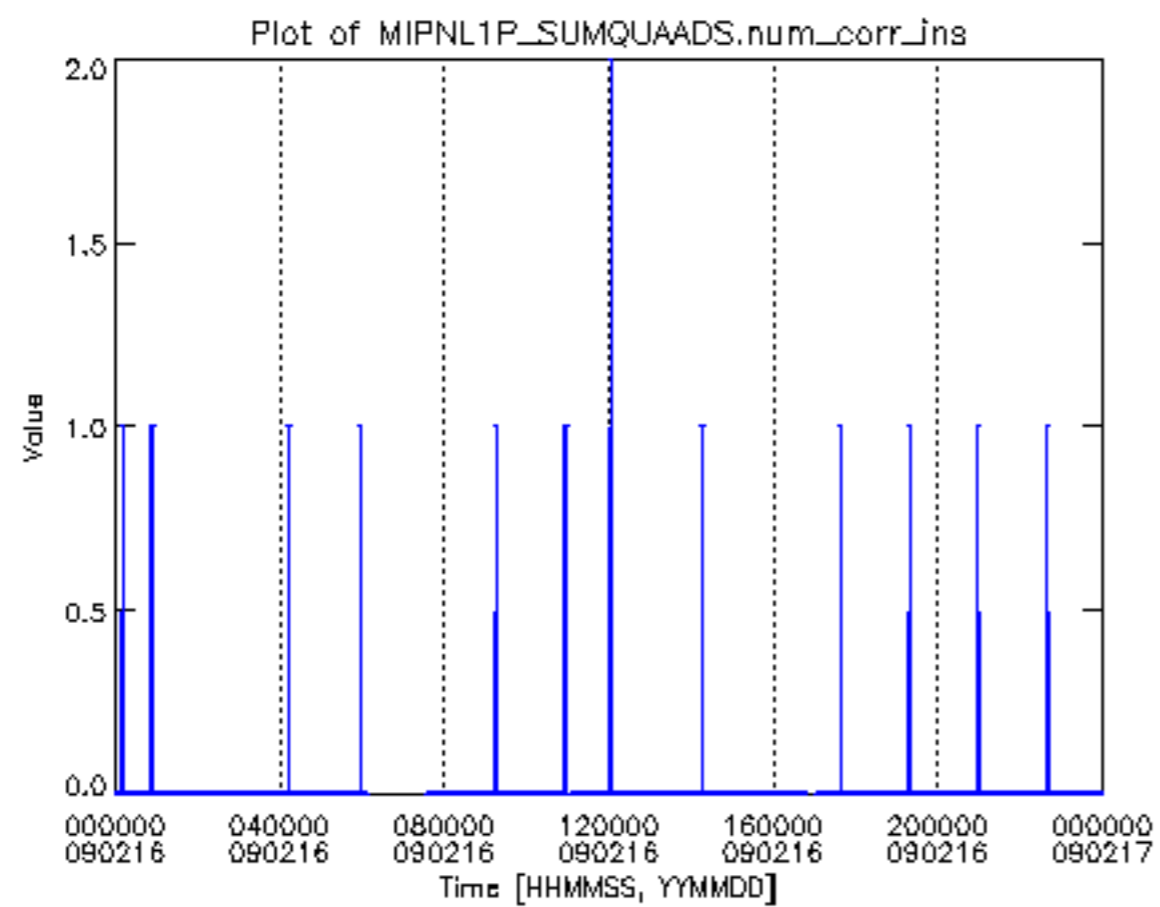
Geolocation plot of MIPNL1P\_SCAINFADS\_num\_sweeps(green color=0 errors)



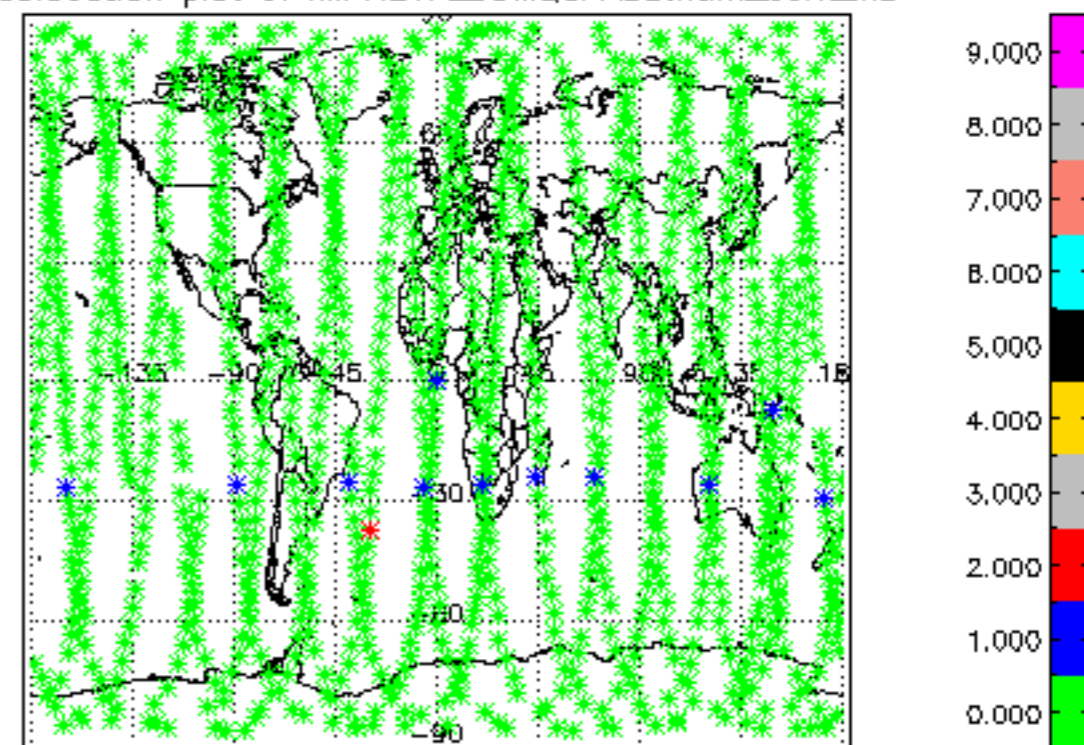


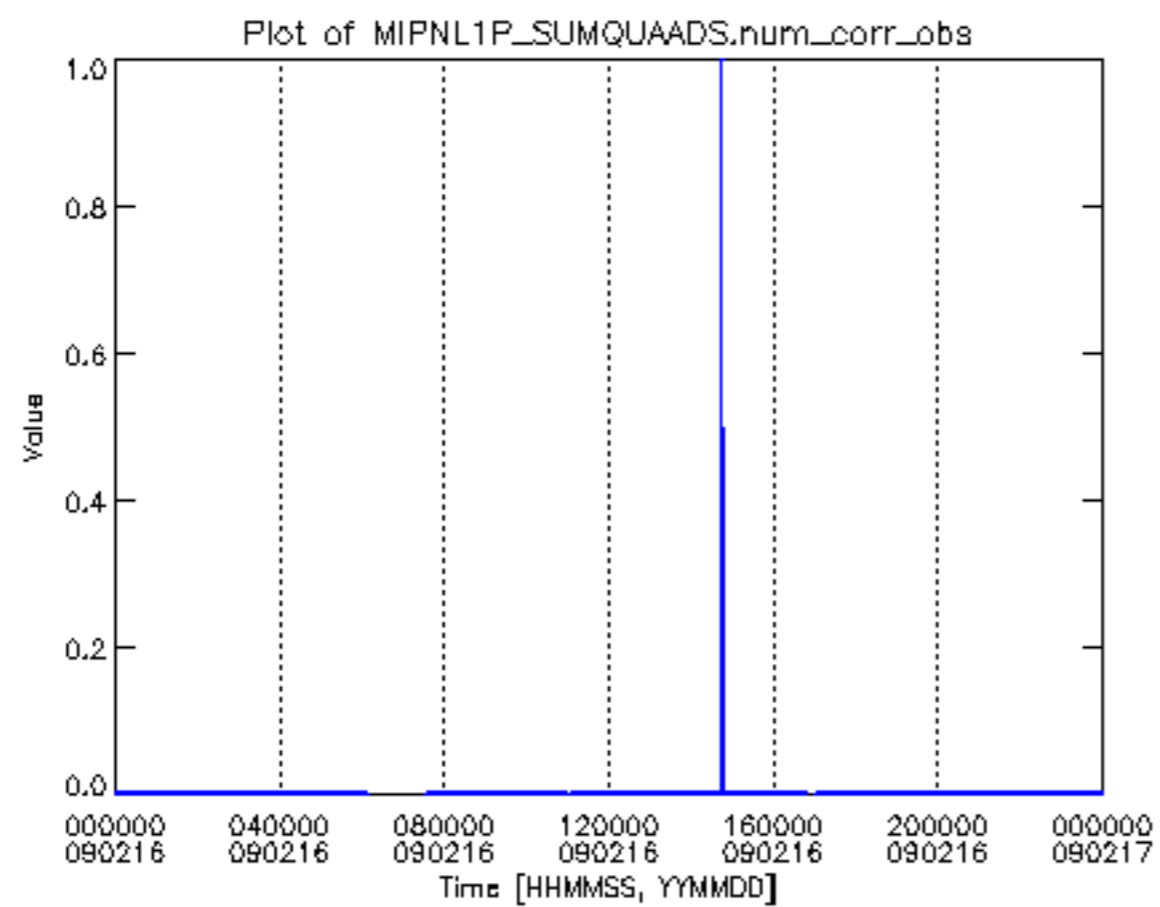




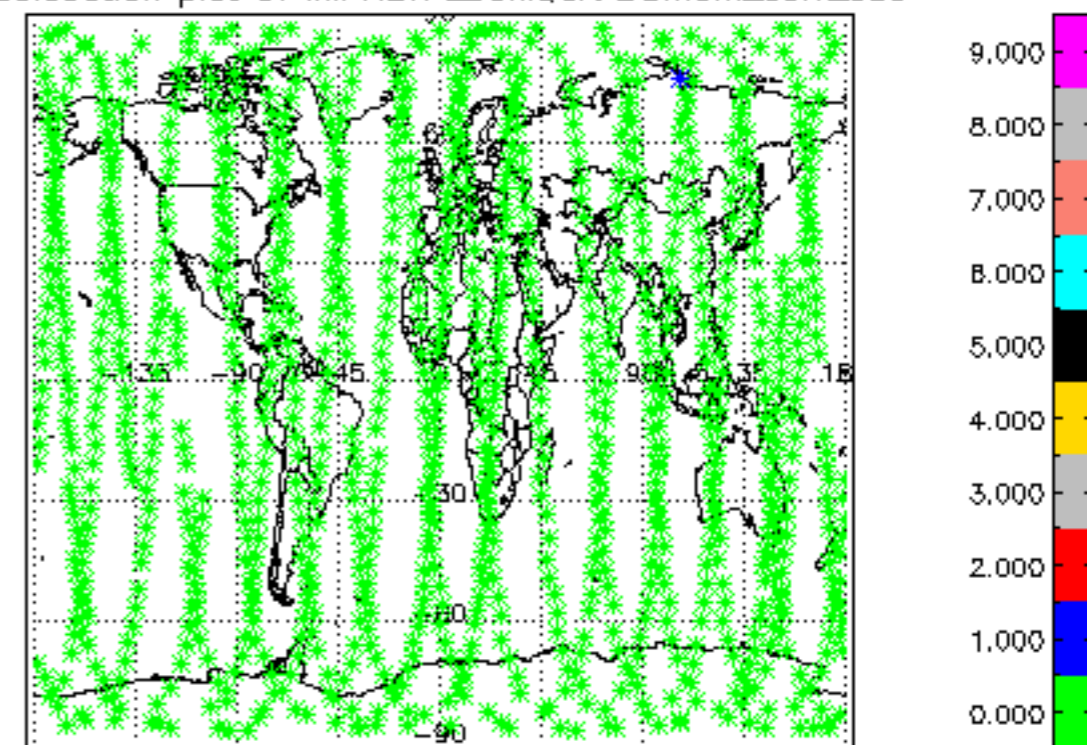


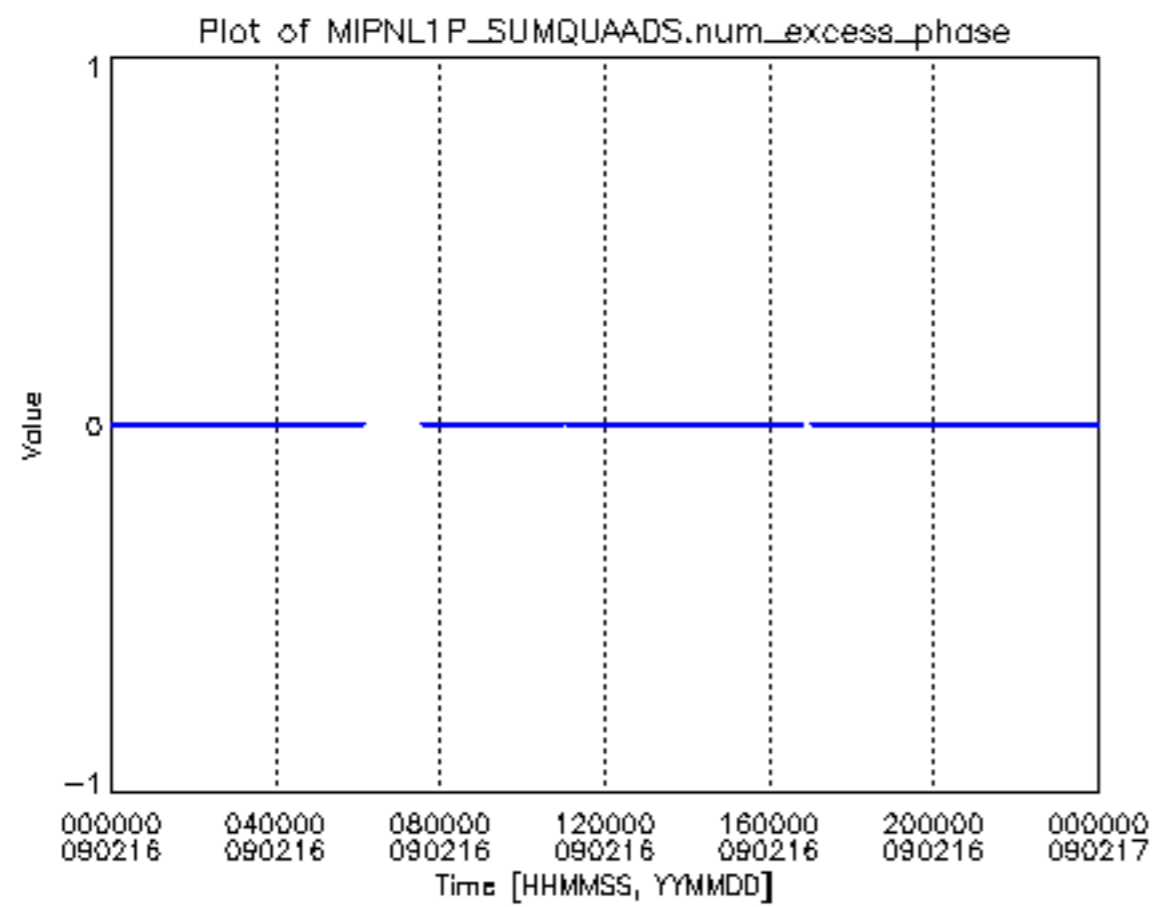
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_ins



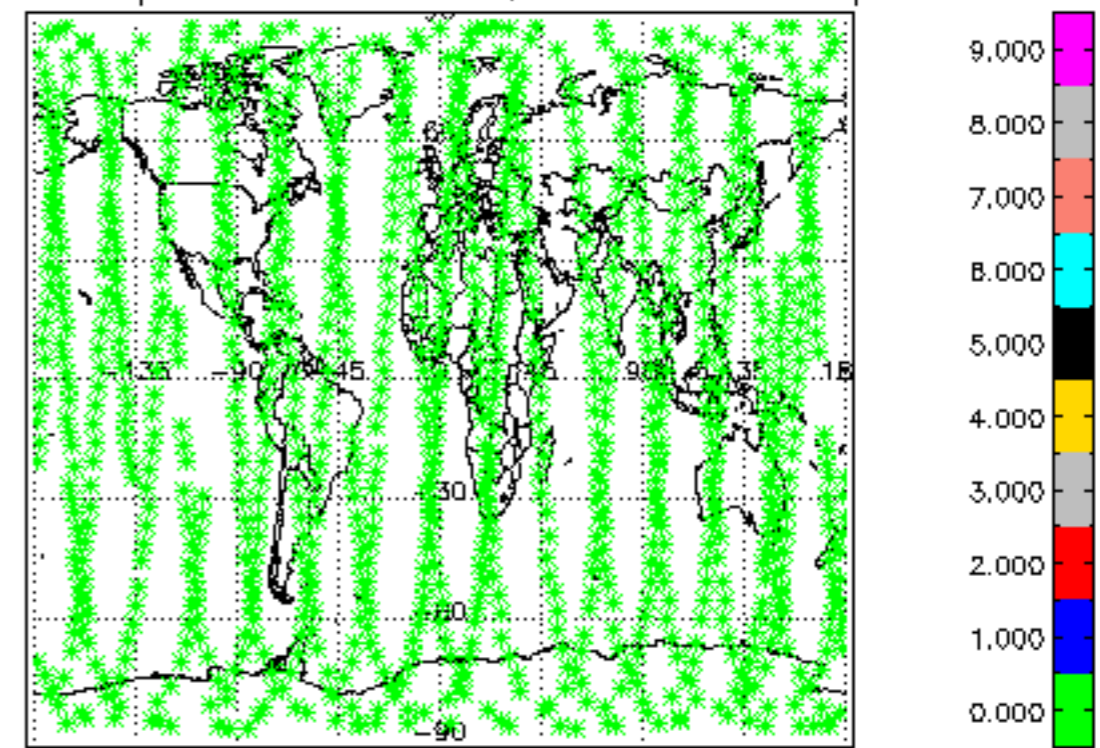


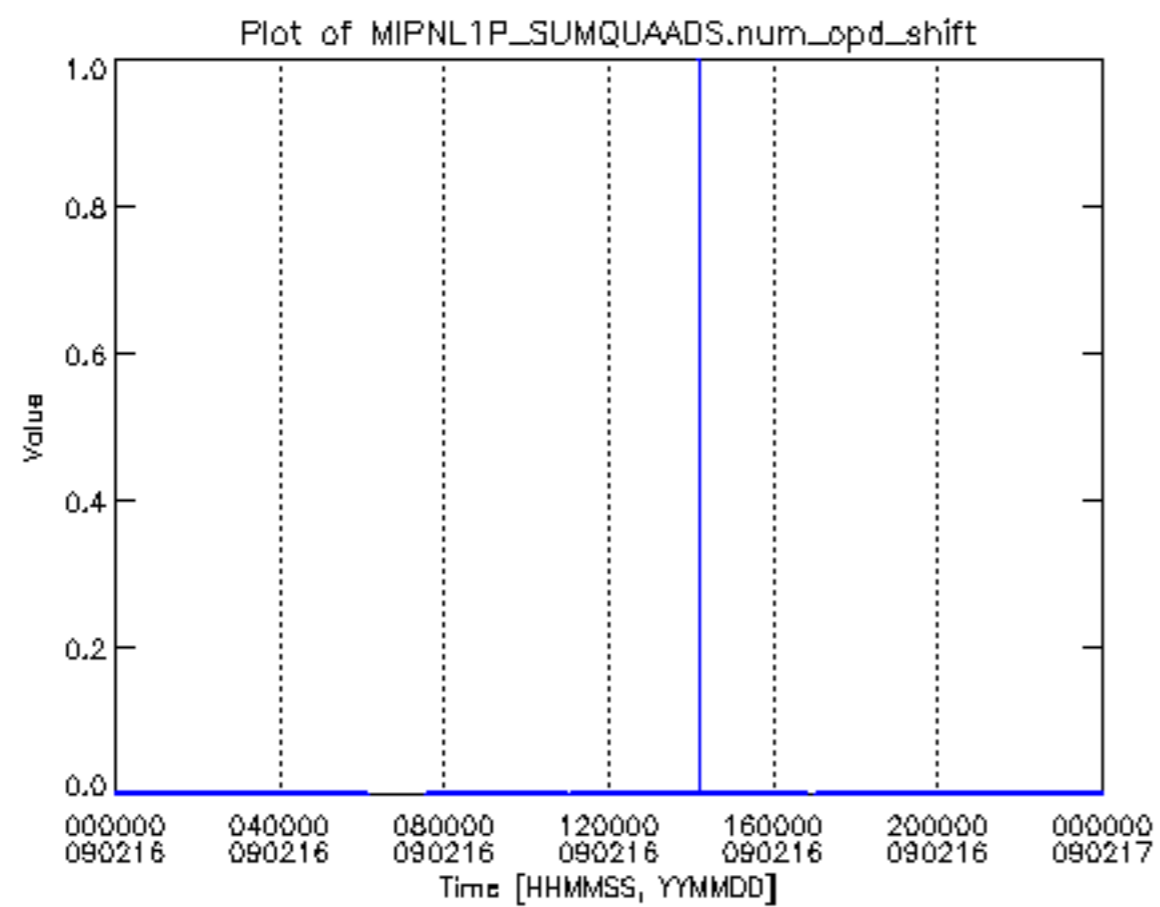
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_corr\_obs



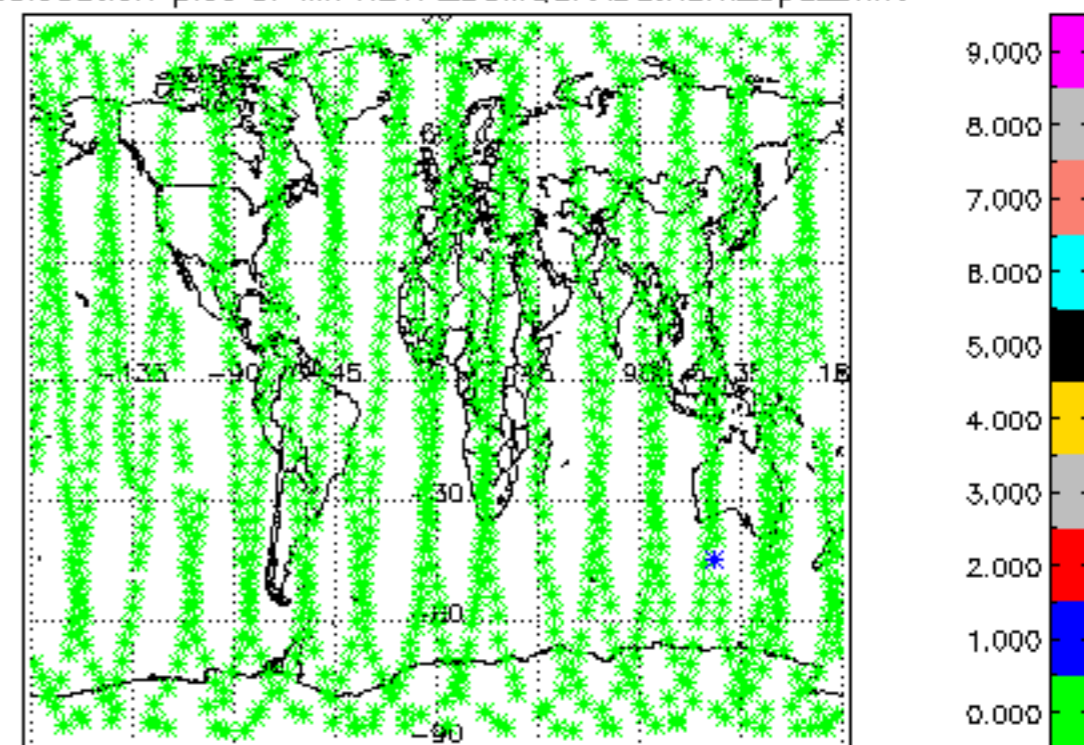


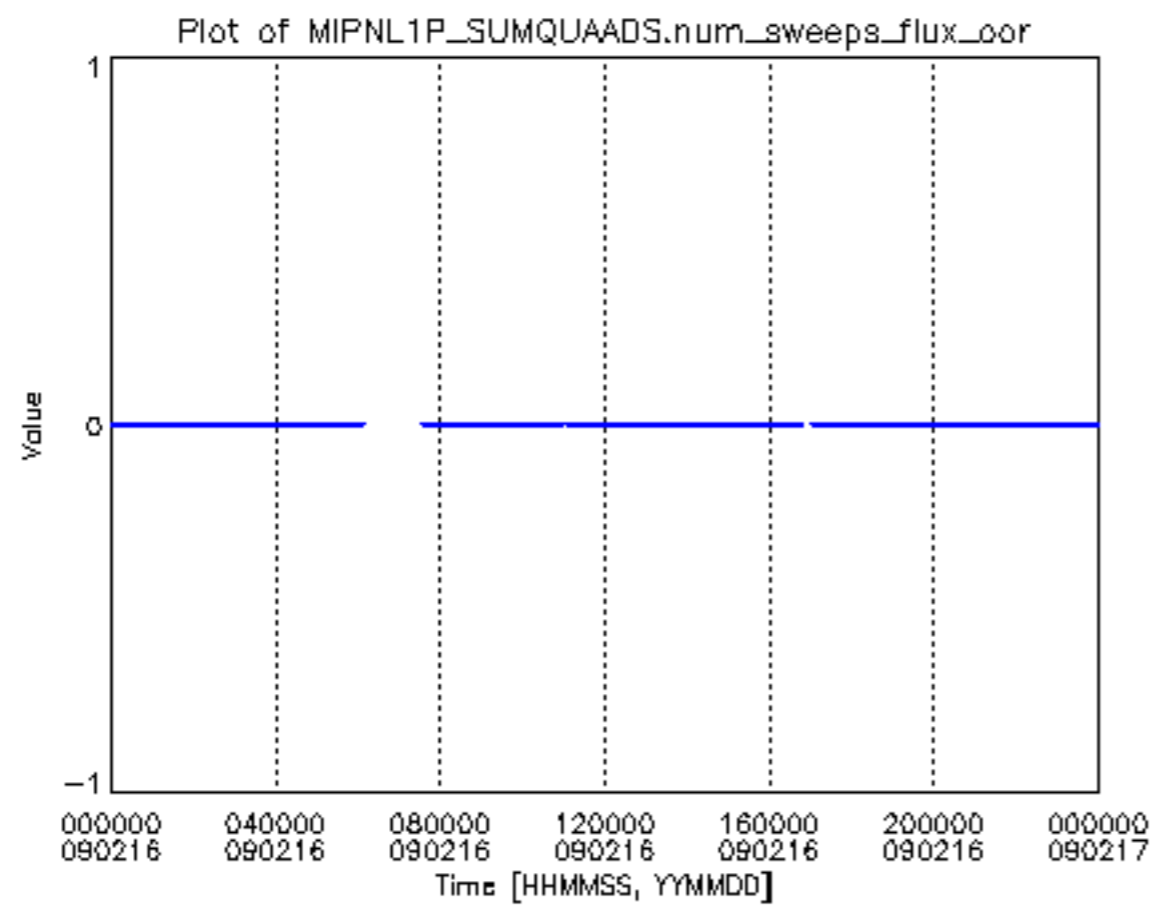
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_excess\_phase



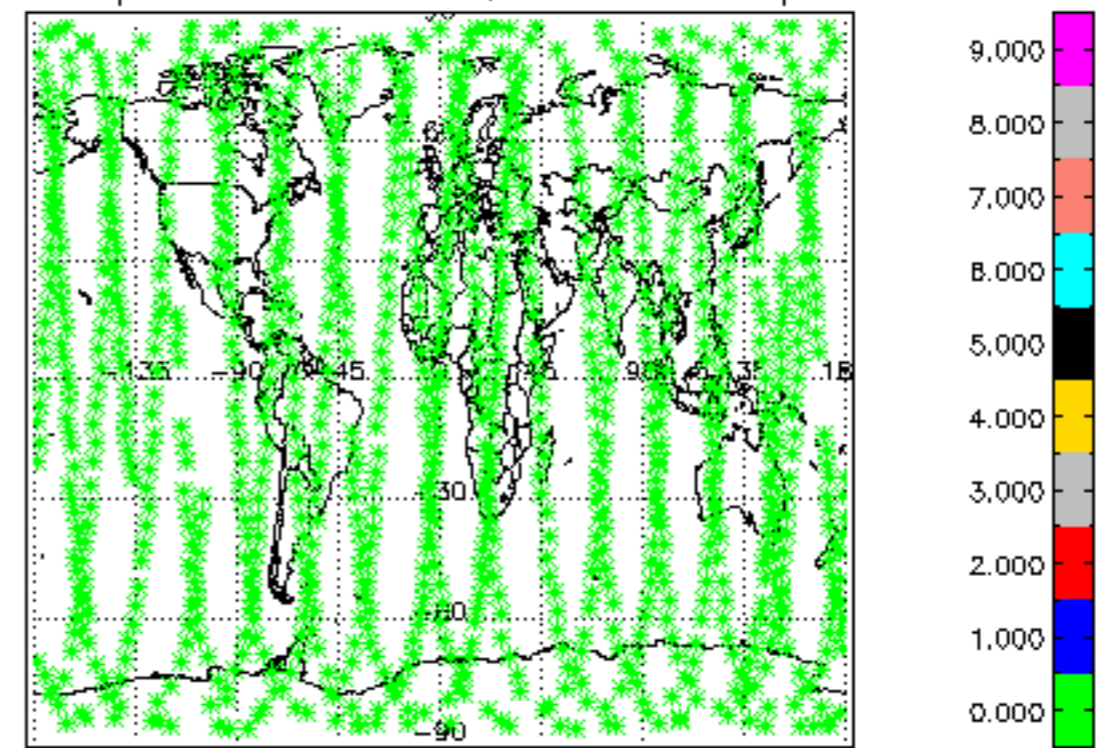


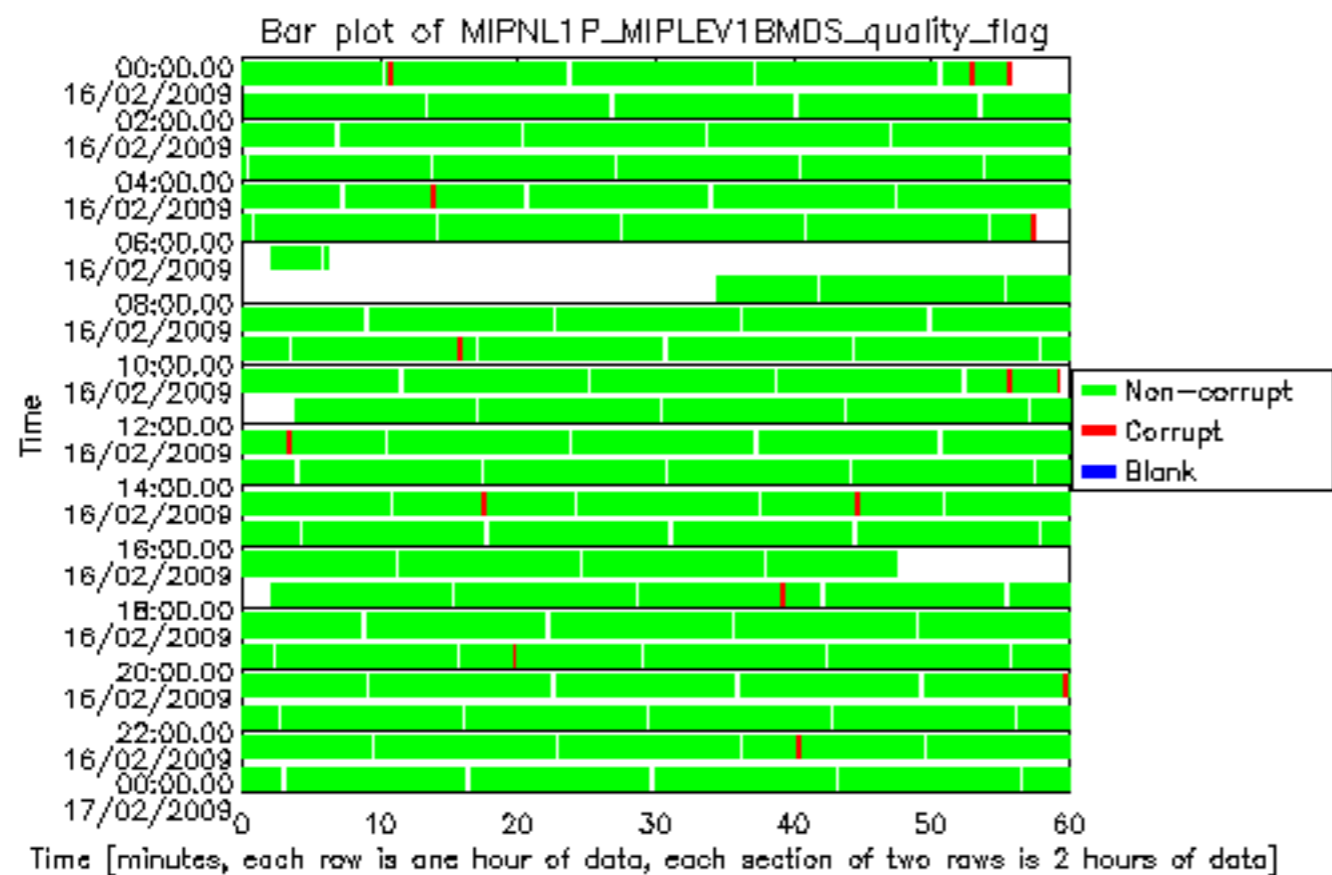
Geolocation plot of MIPNL1P\_SUMQUAADS.num\_opd\_shift



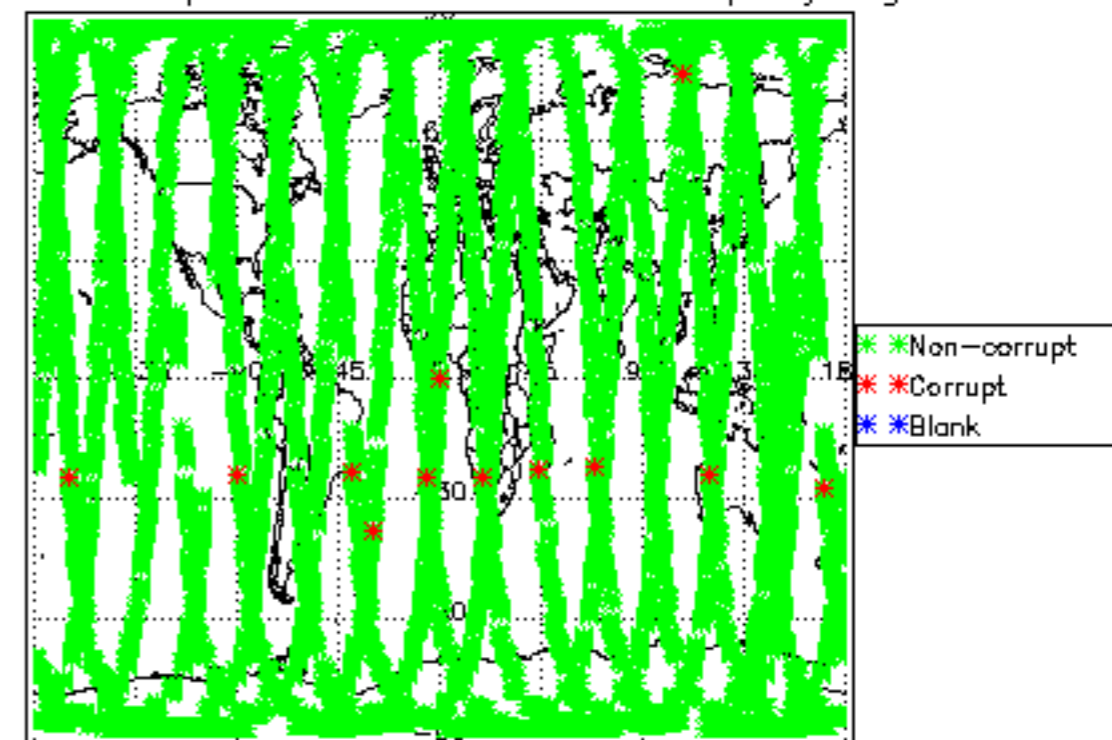


Geolocation plot of MIPNL1P\_SUMQUAADS.num\_sweeps\_flux\_oor

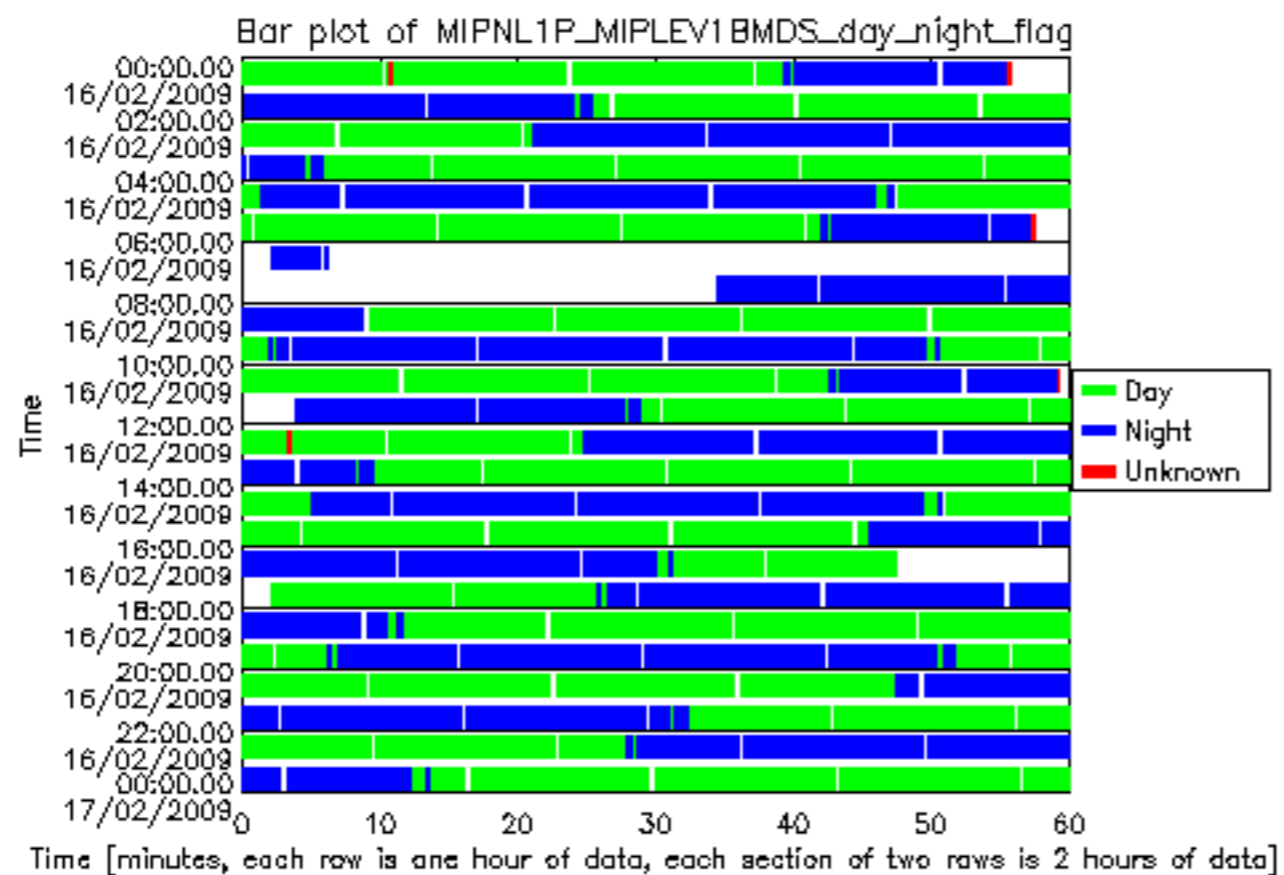




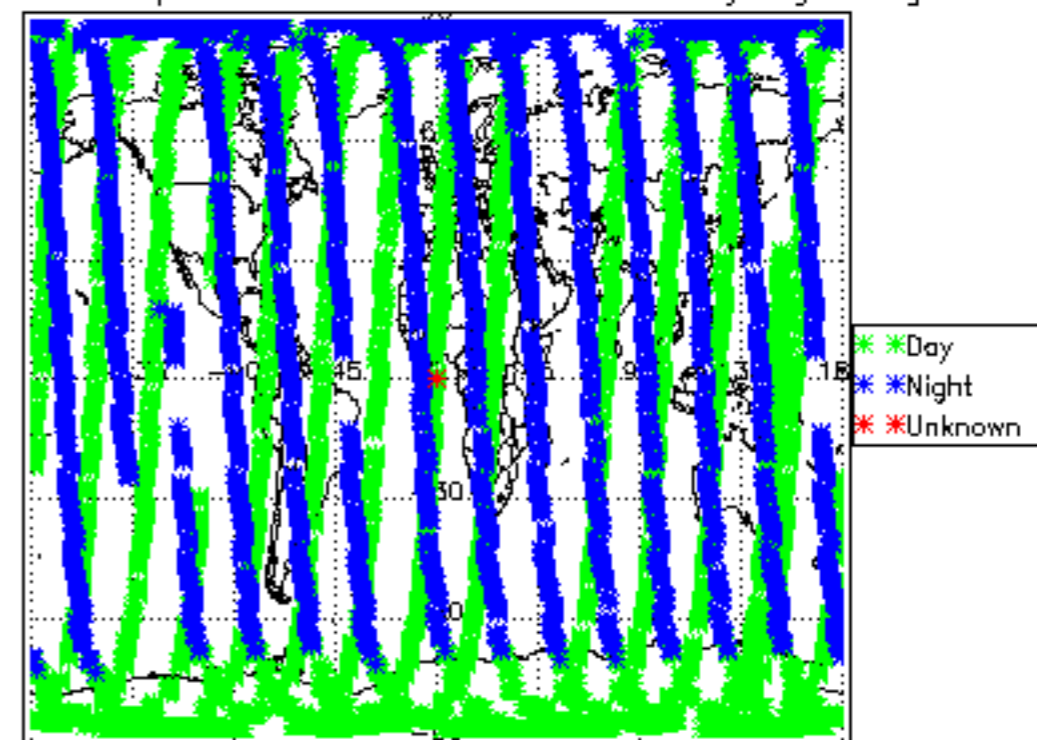
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_quality\_flag

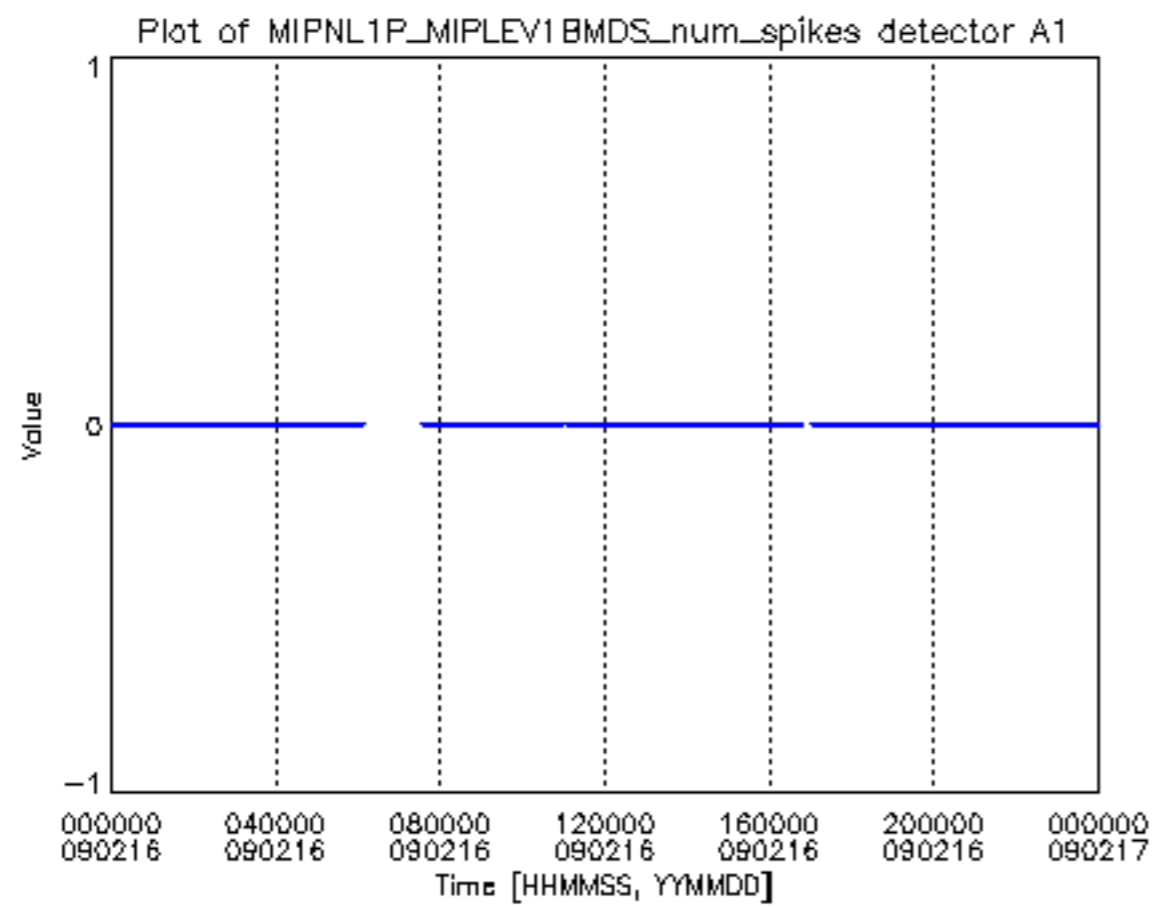




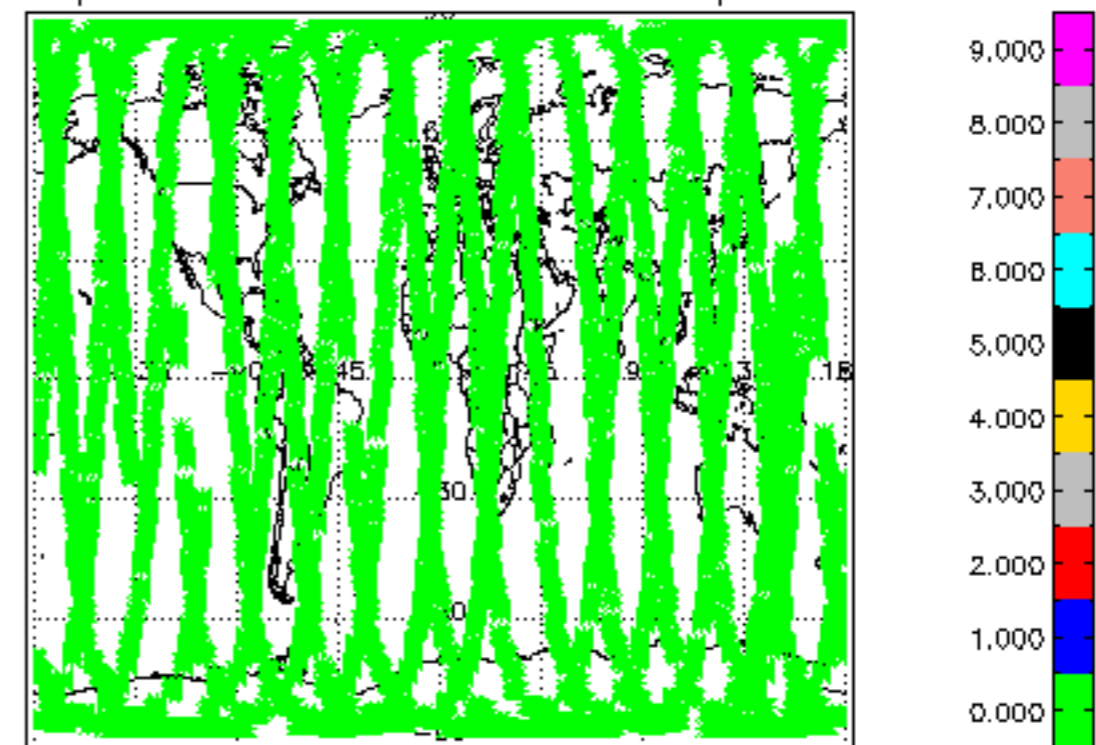


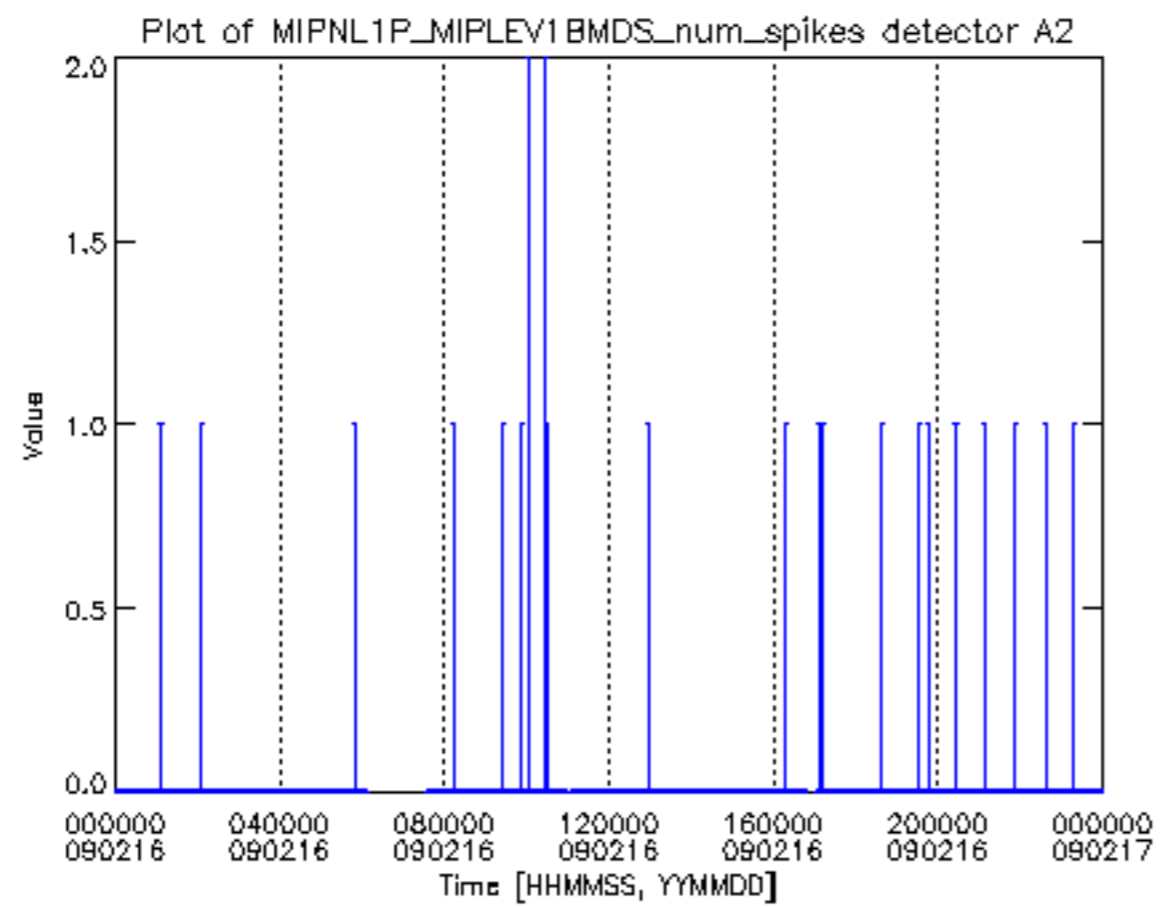
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_day\_night\_flag



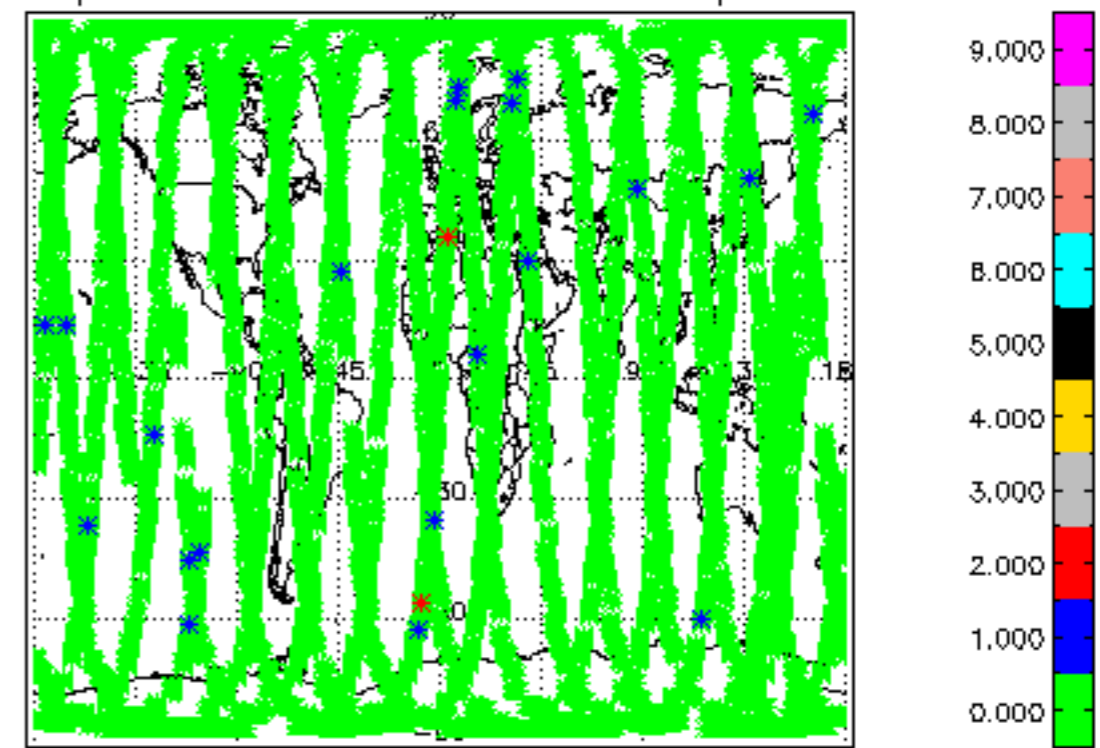


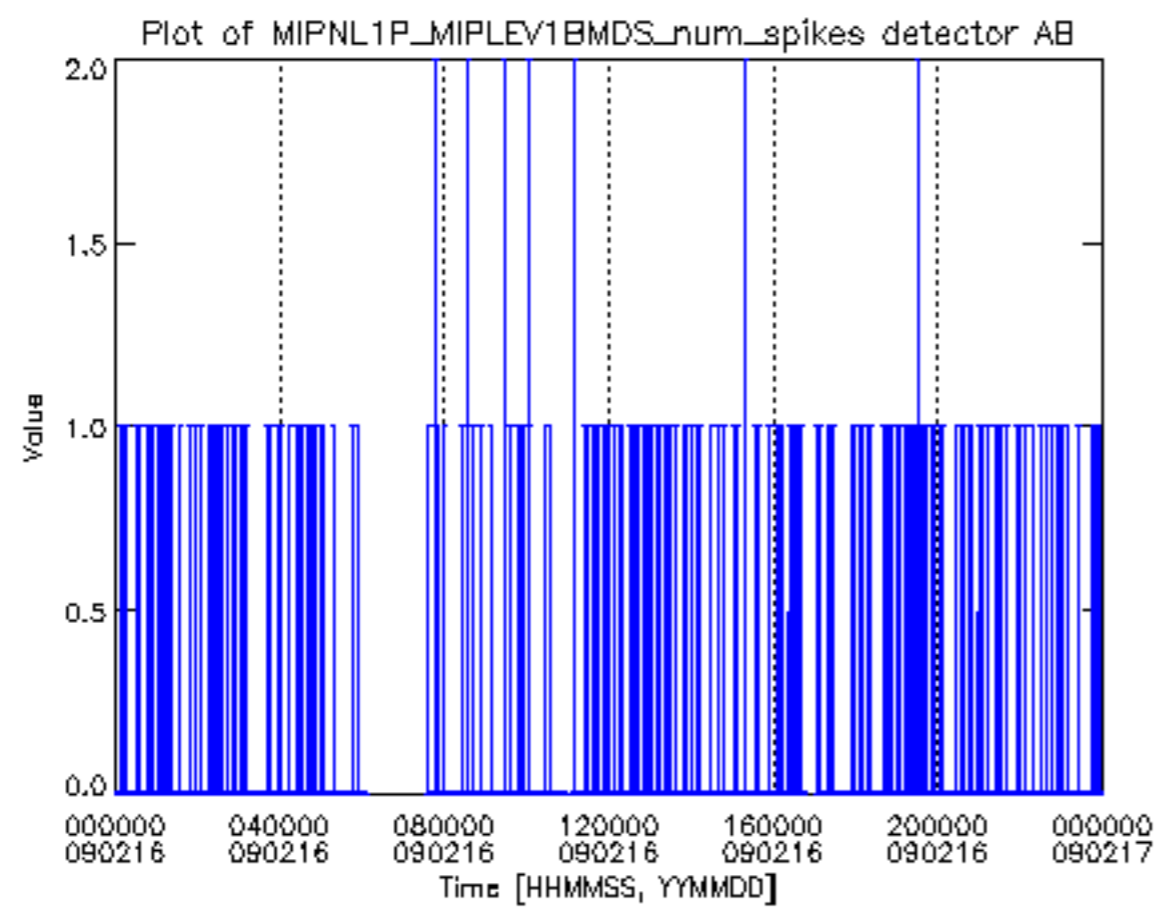
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector A1



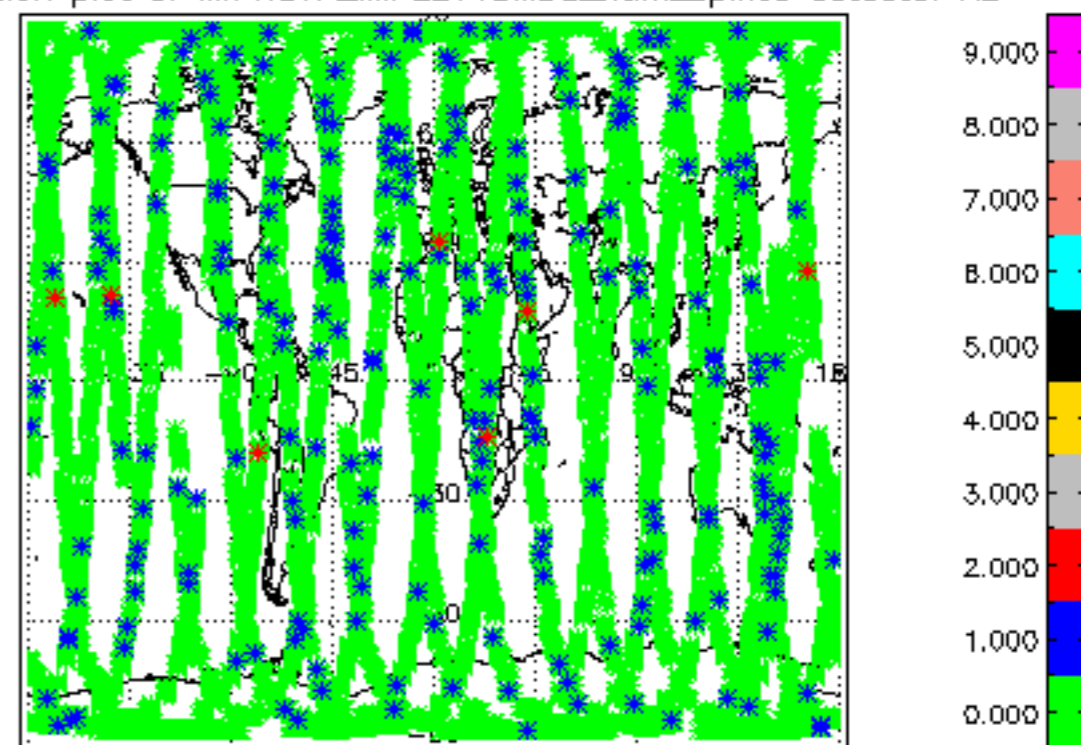


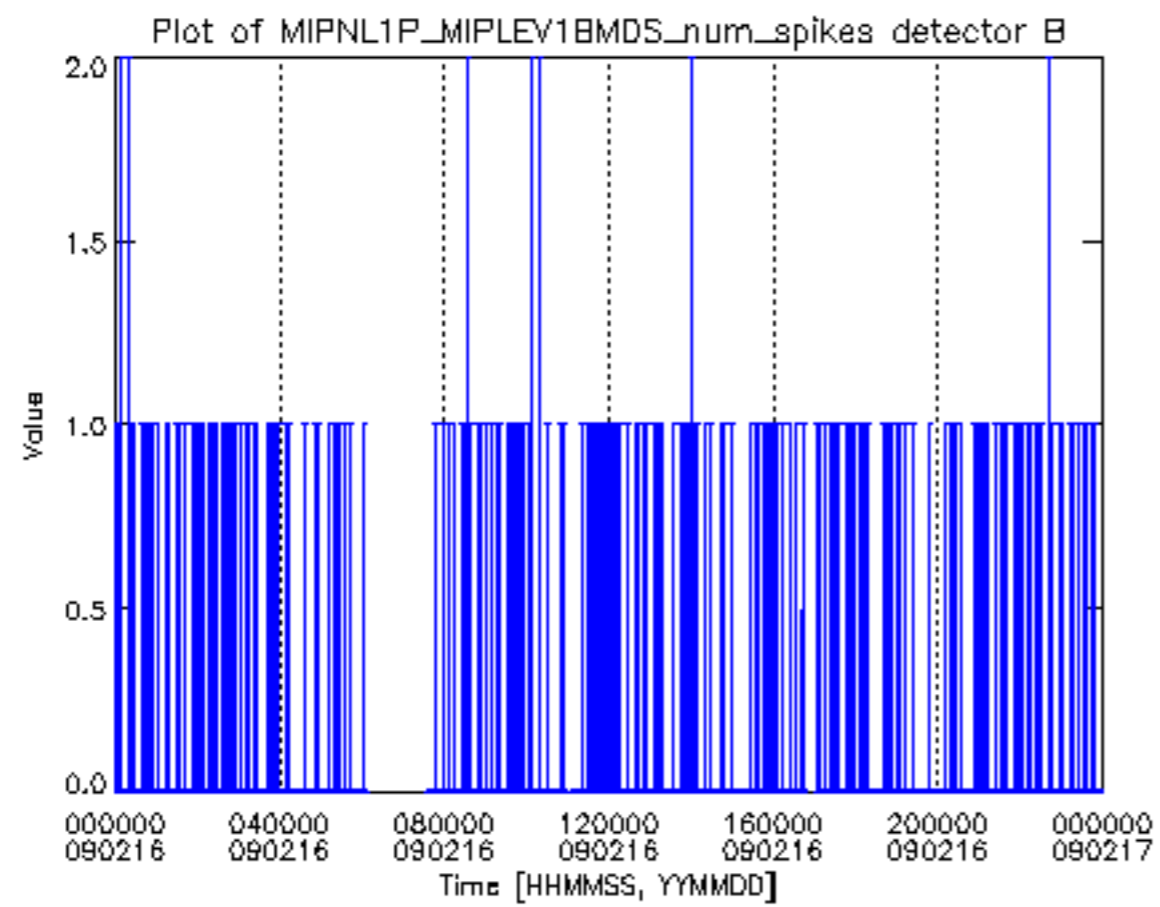
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector A2



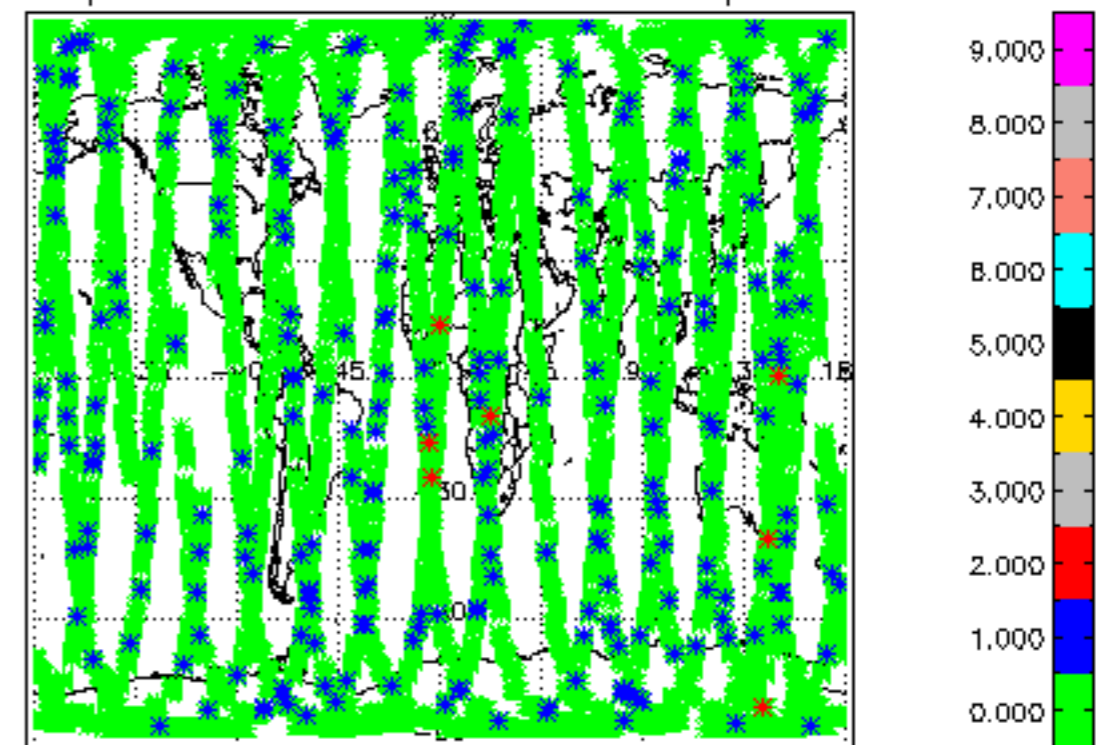


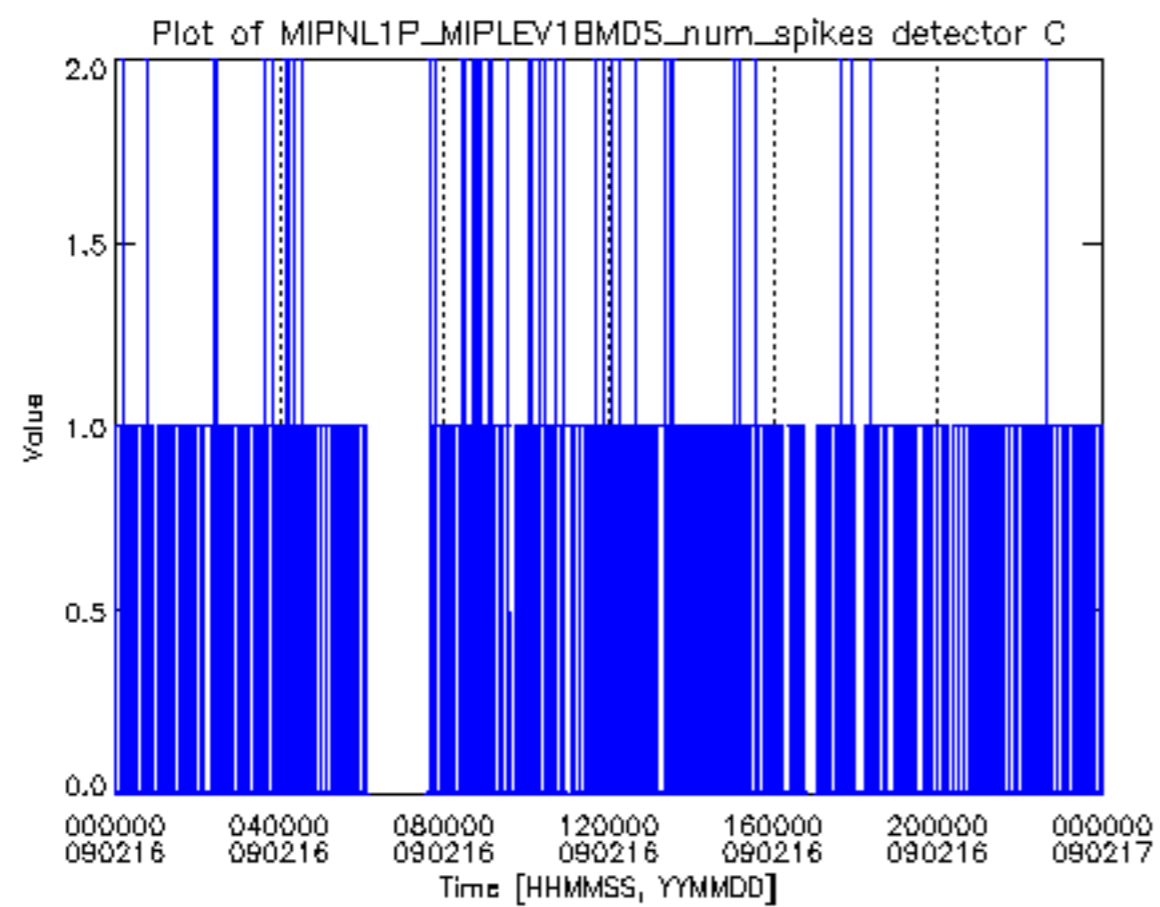
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector AB



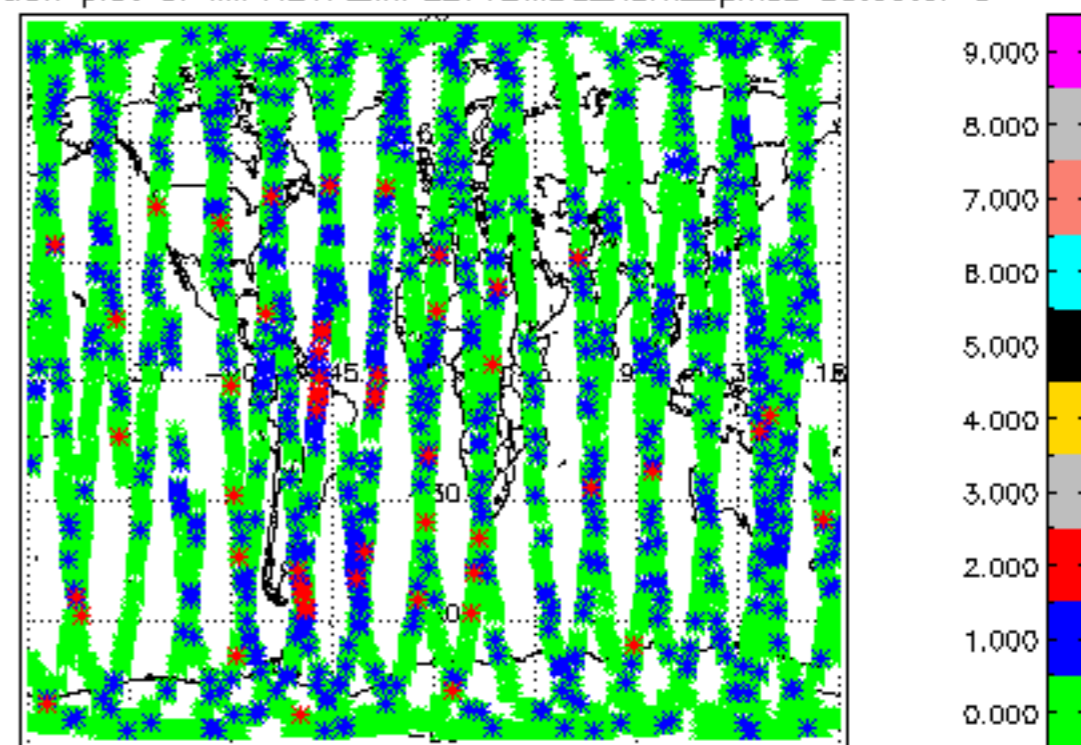


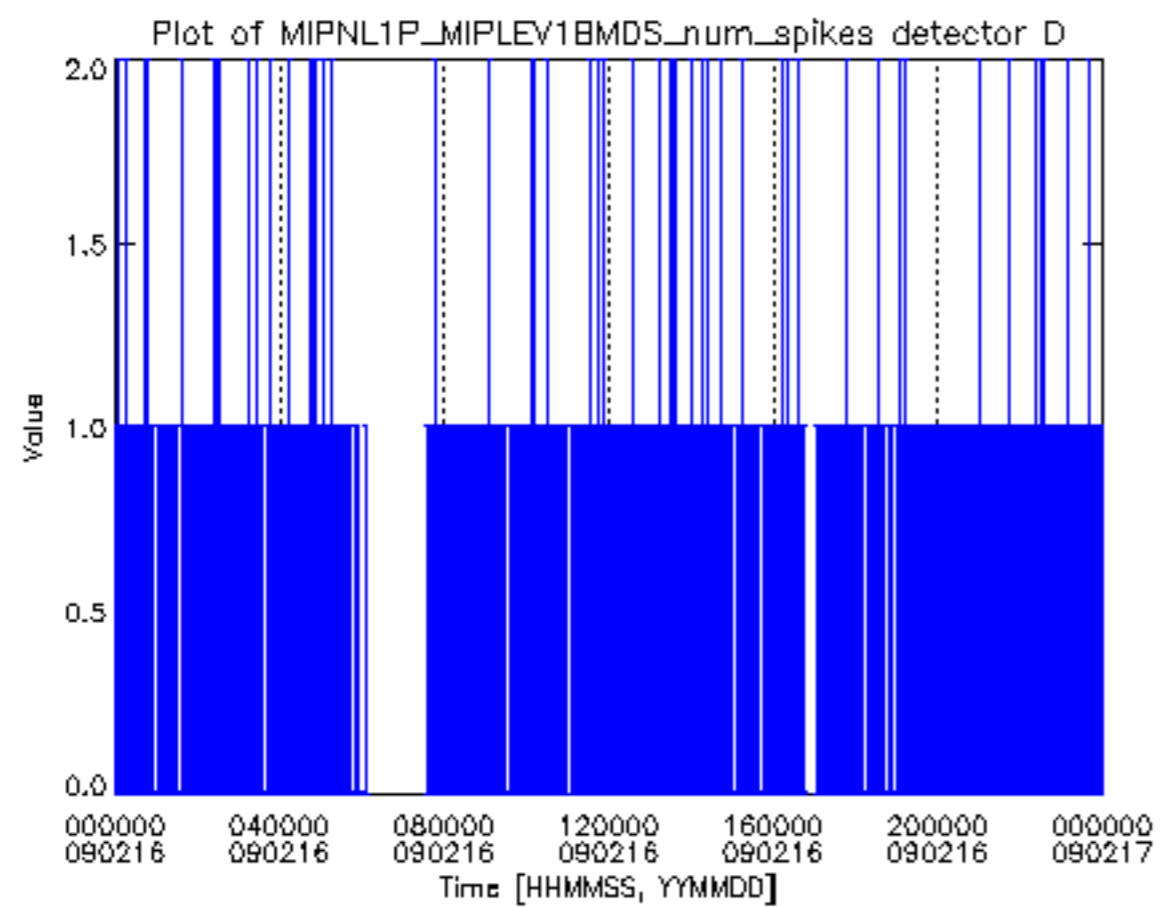
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector B



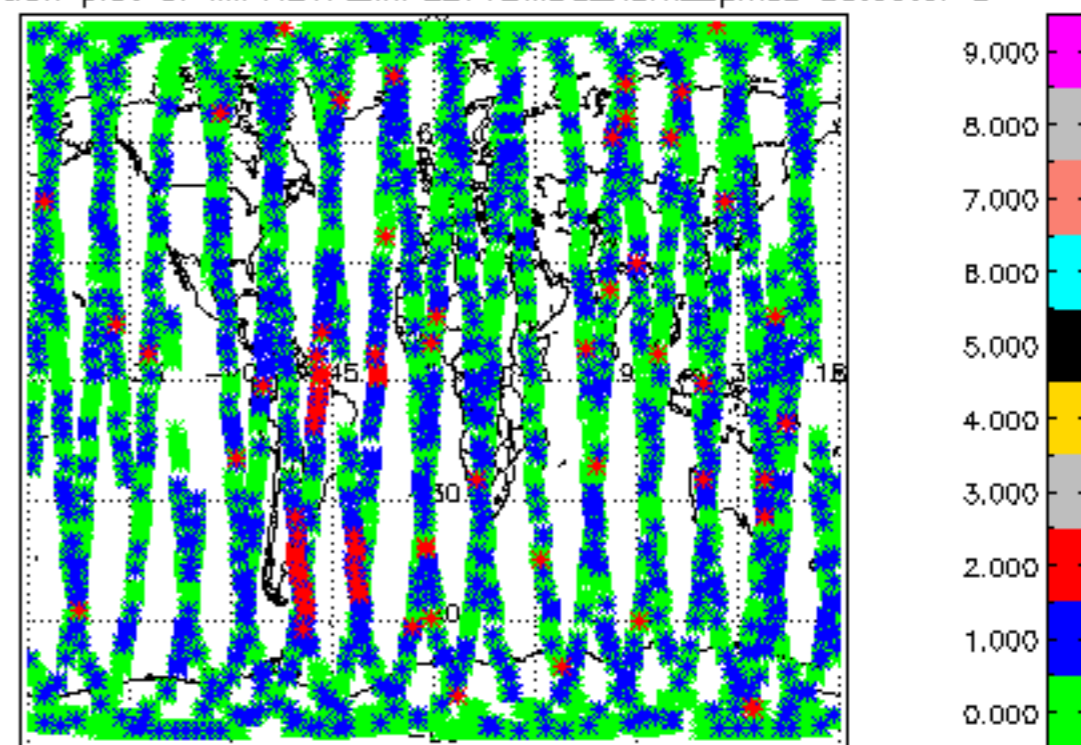


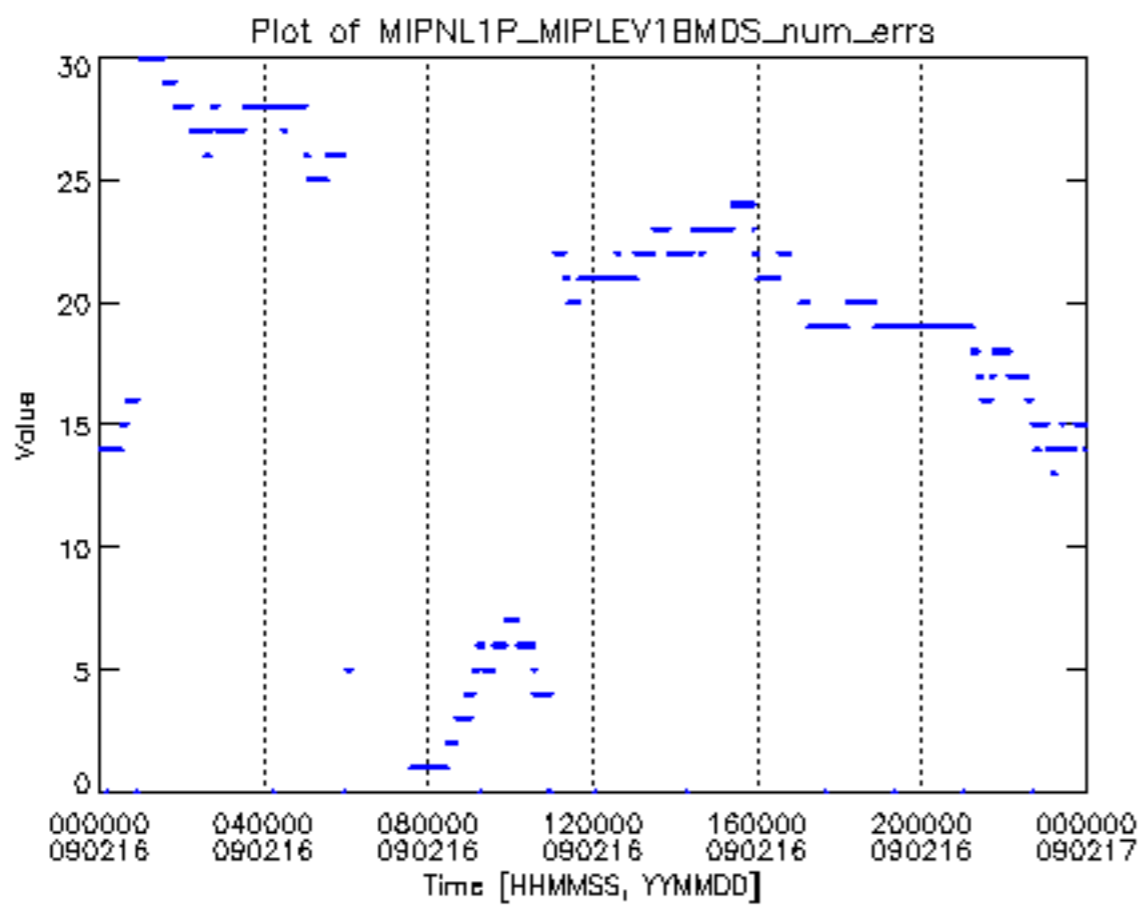
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector C



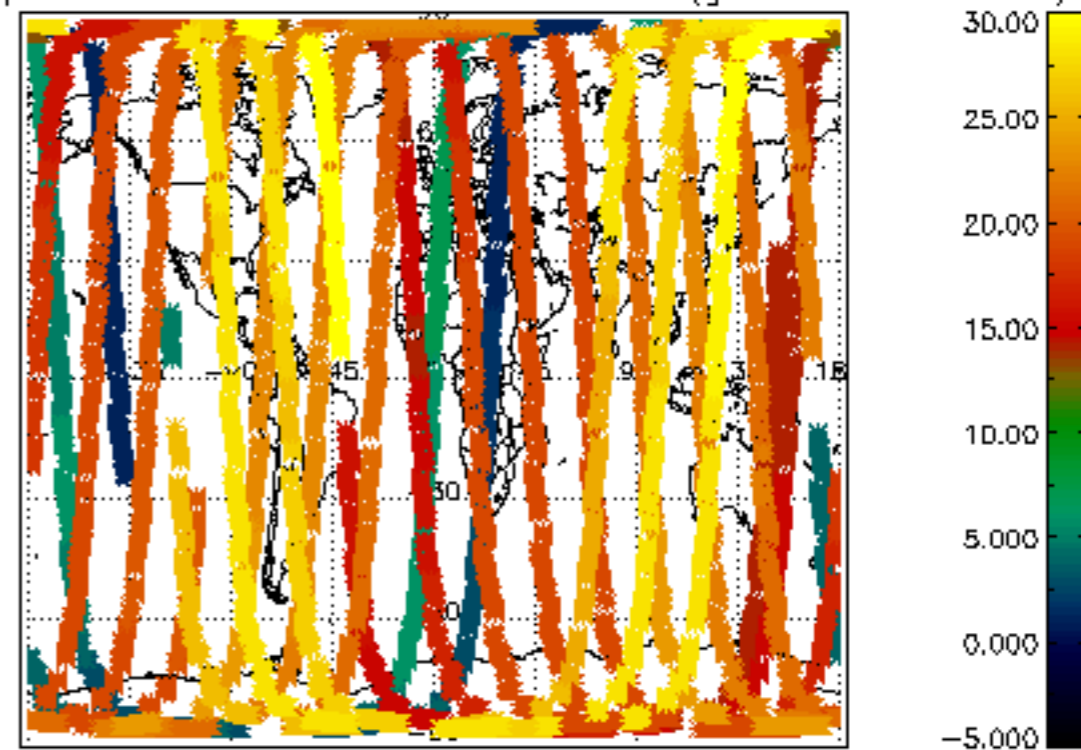


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_spikes detector D

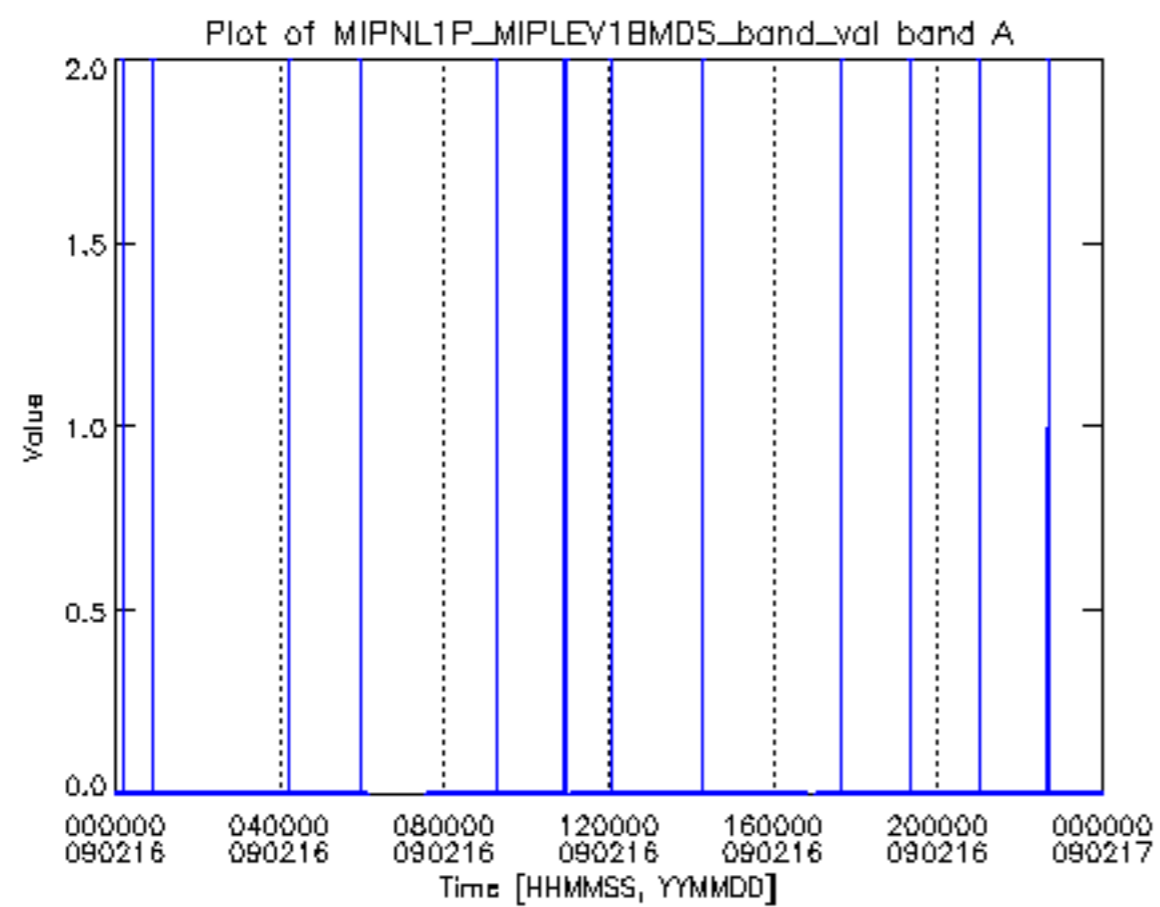




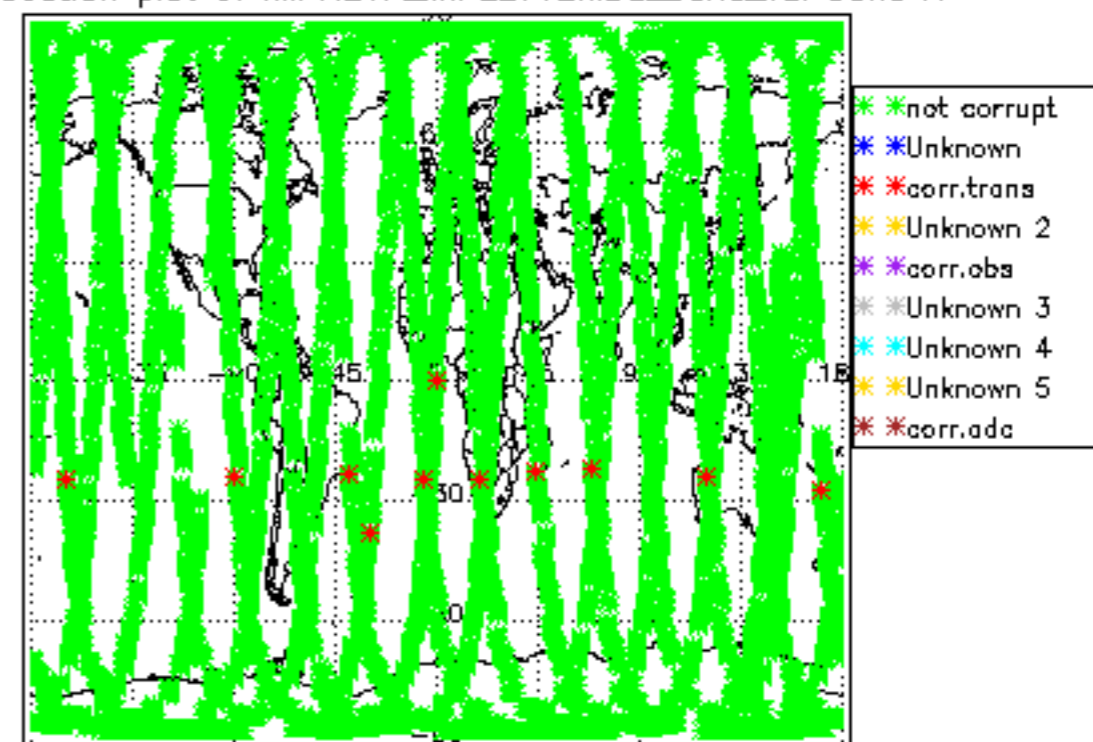
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_num\_errs(green color=0 errors)

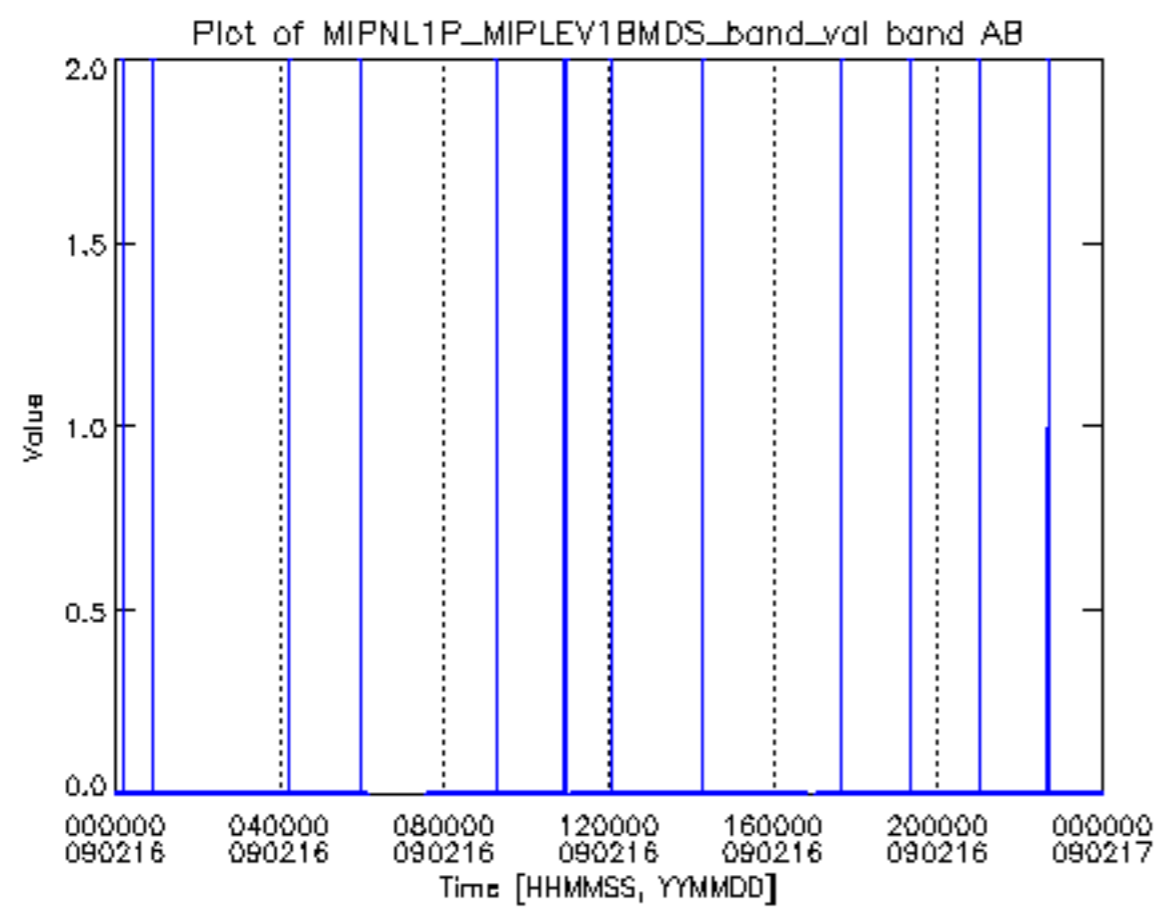




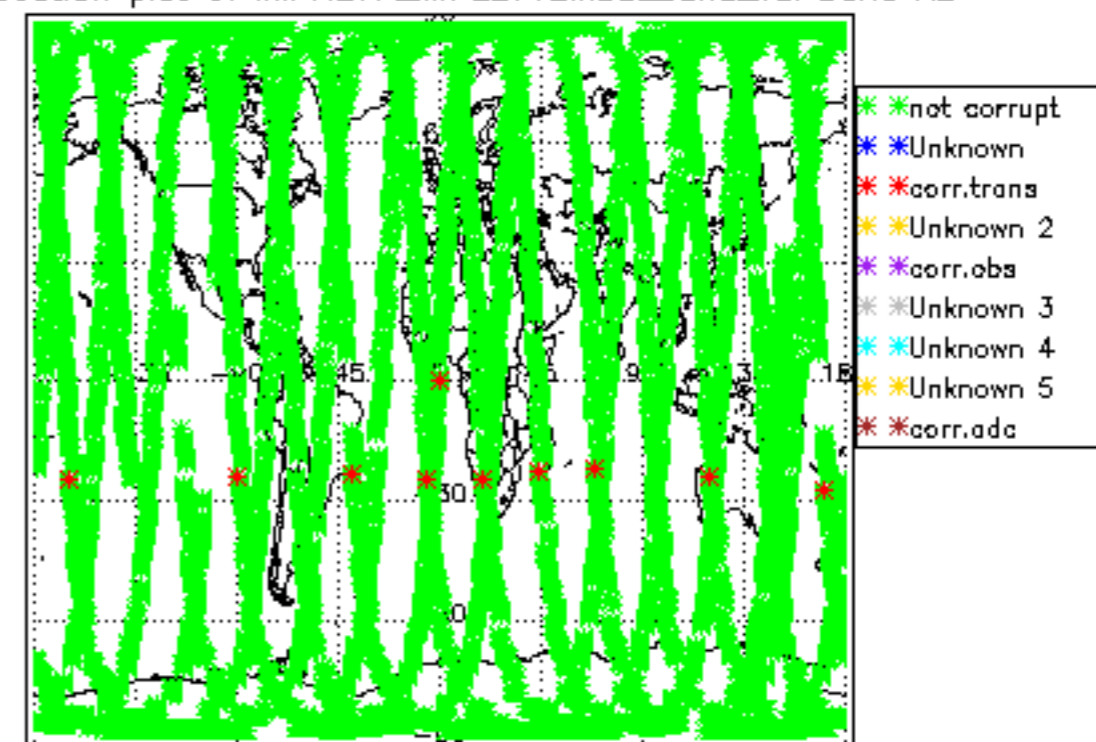


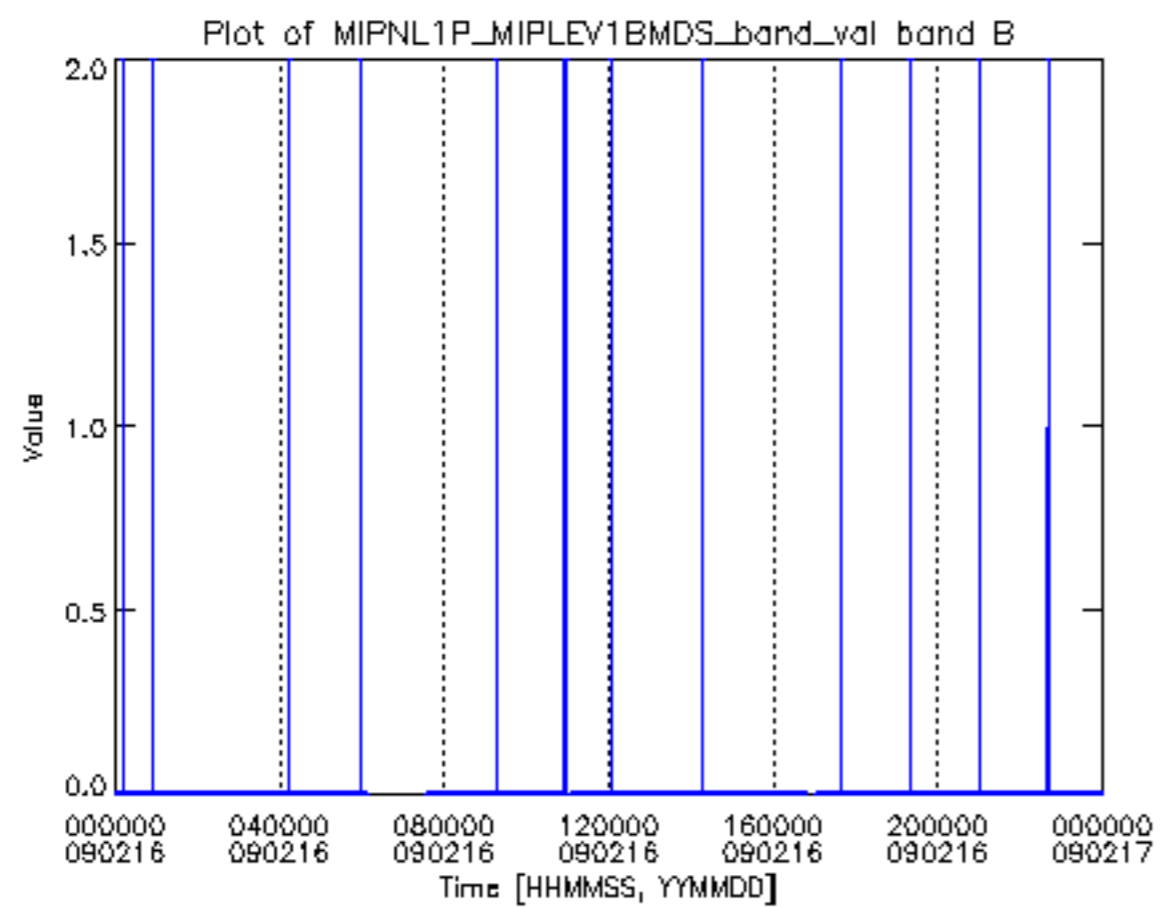
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band A



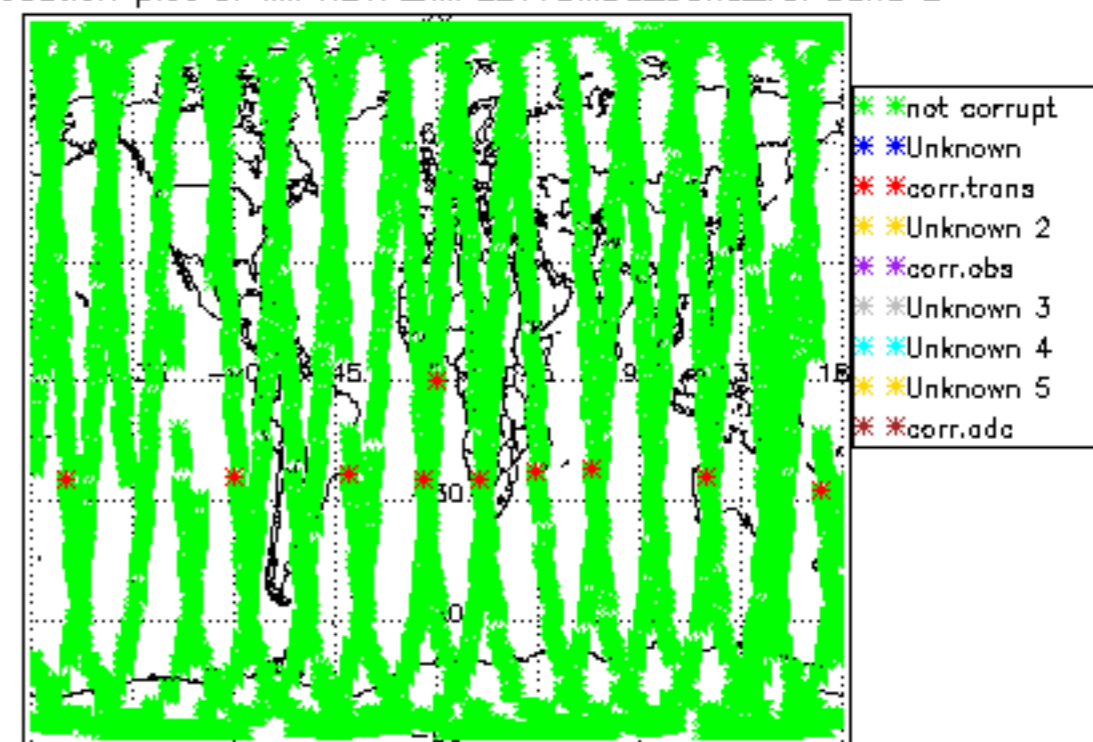


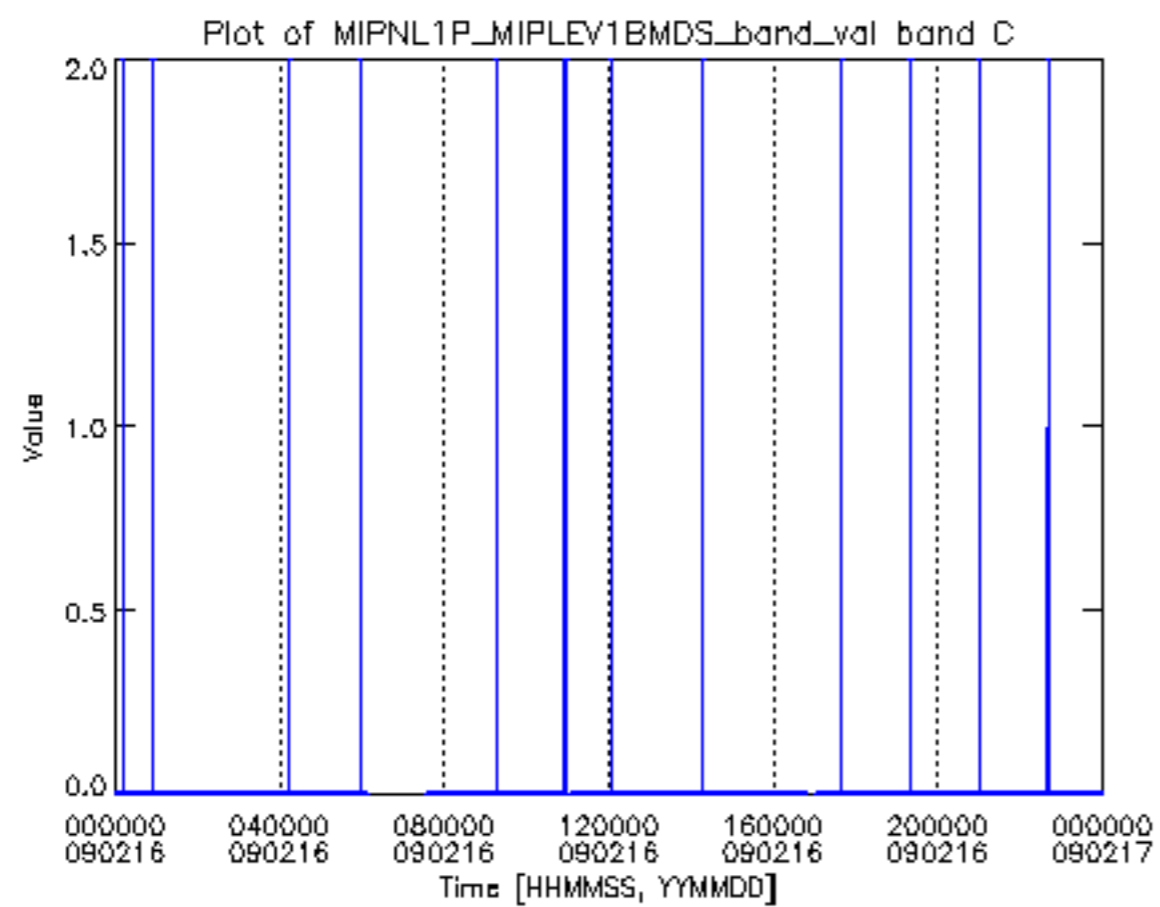
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band AB



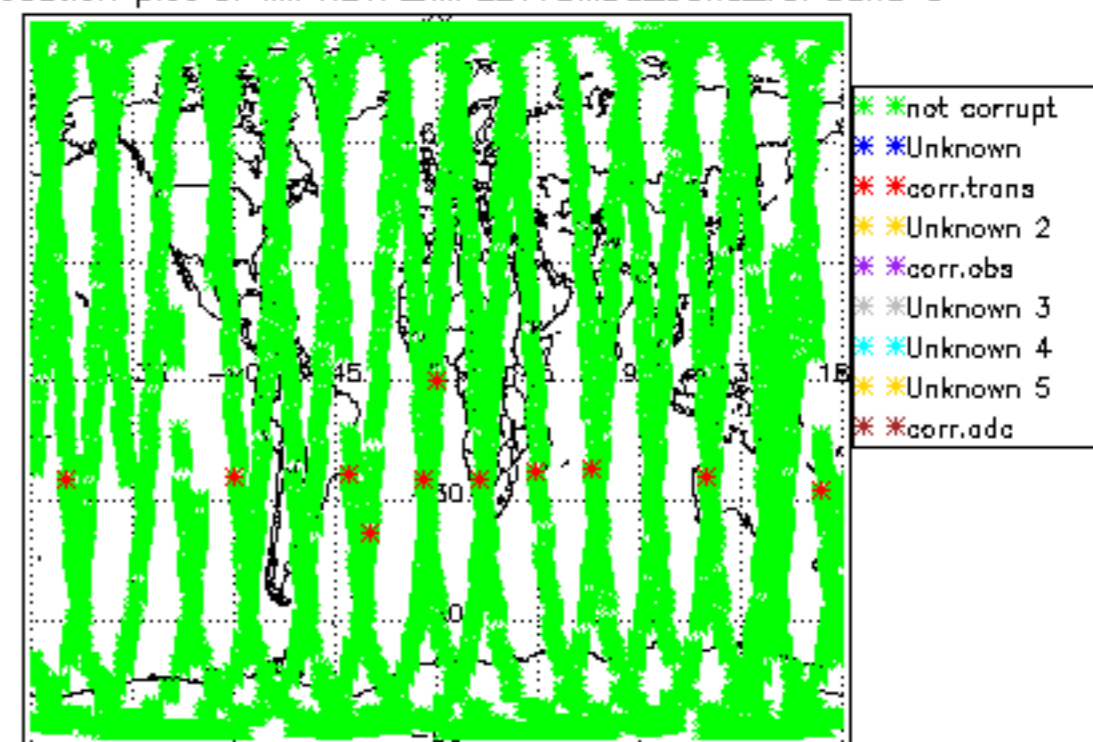


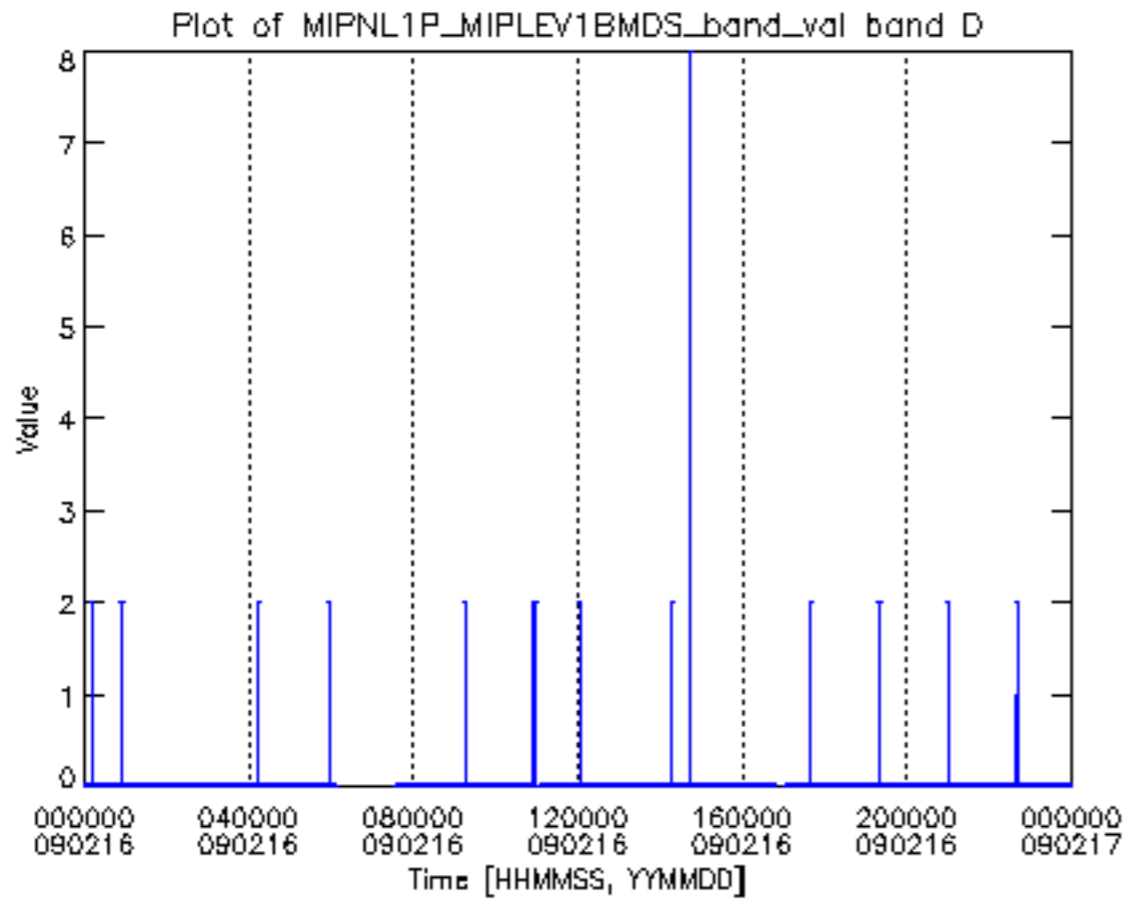
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band B



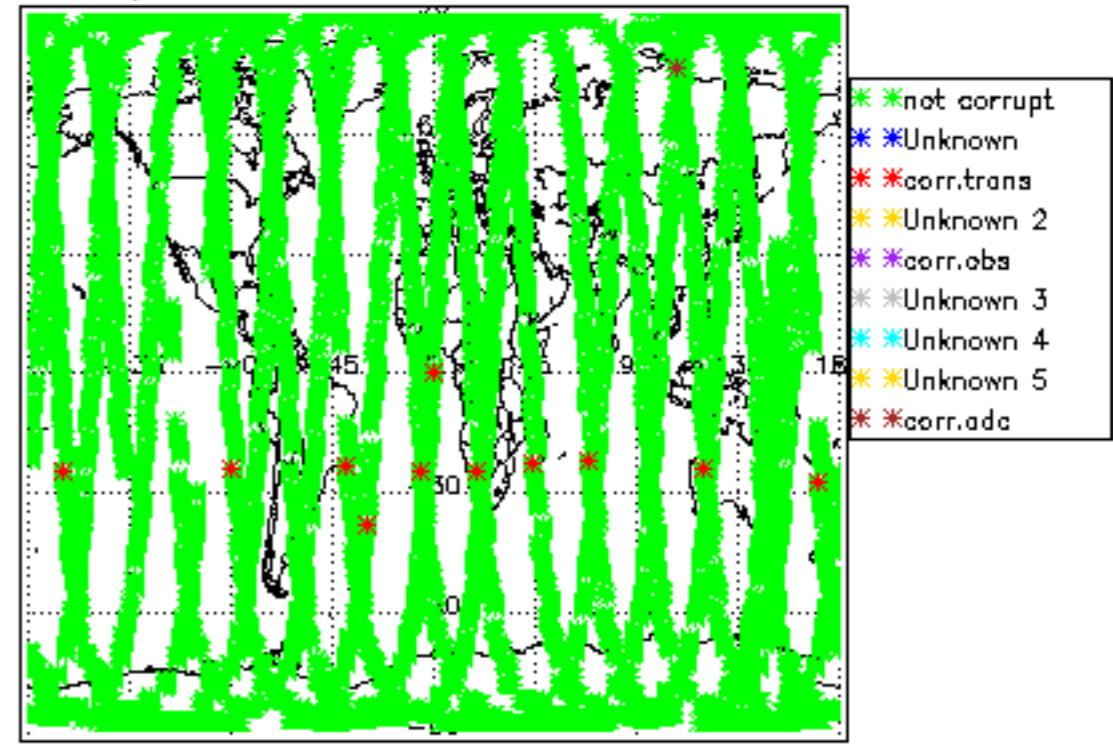


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band C

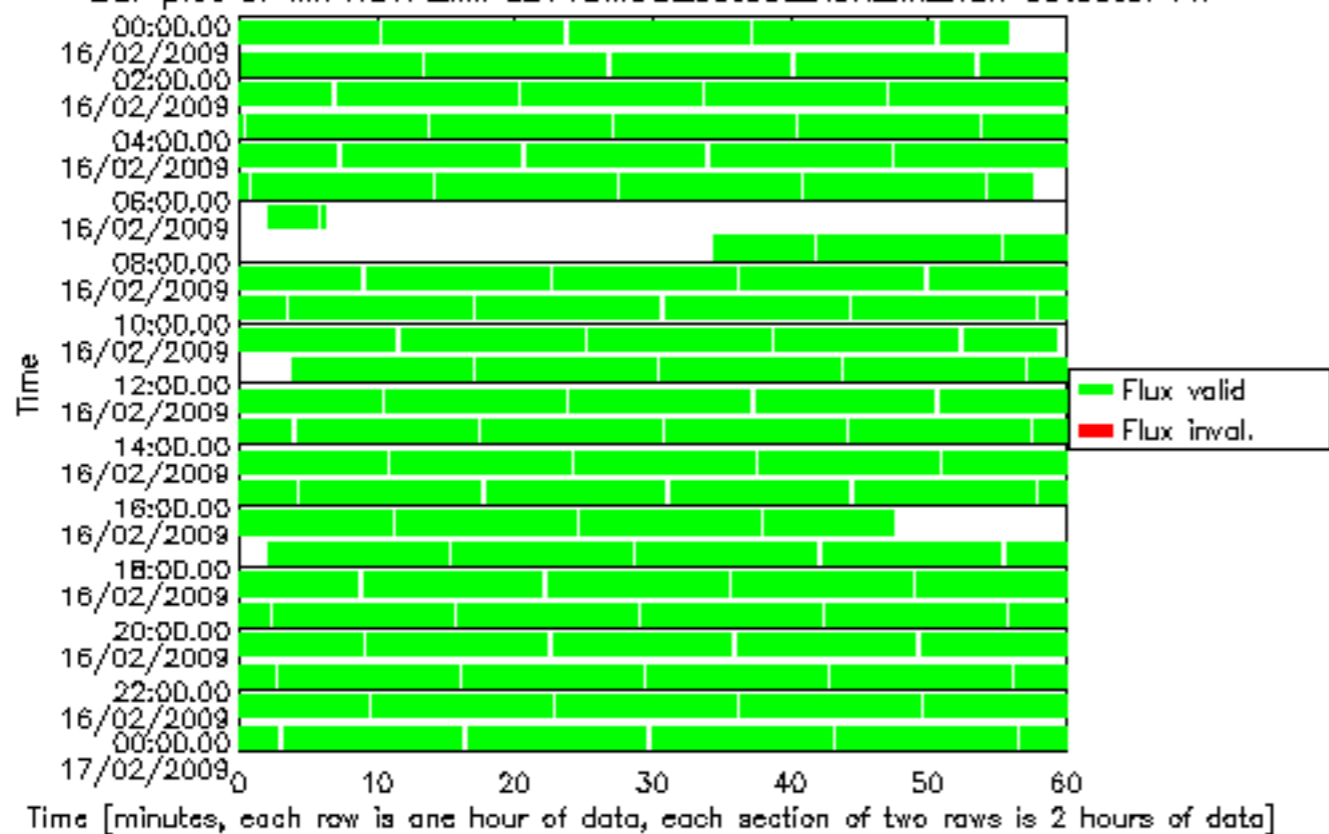




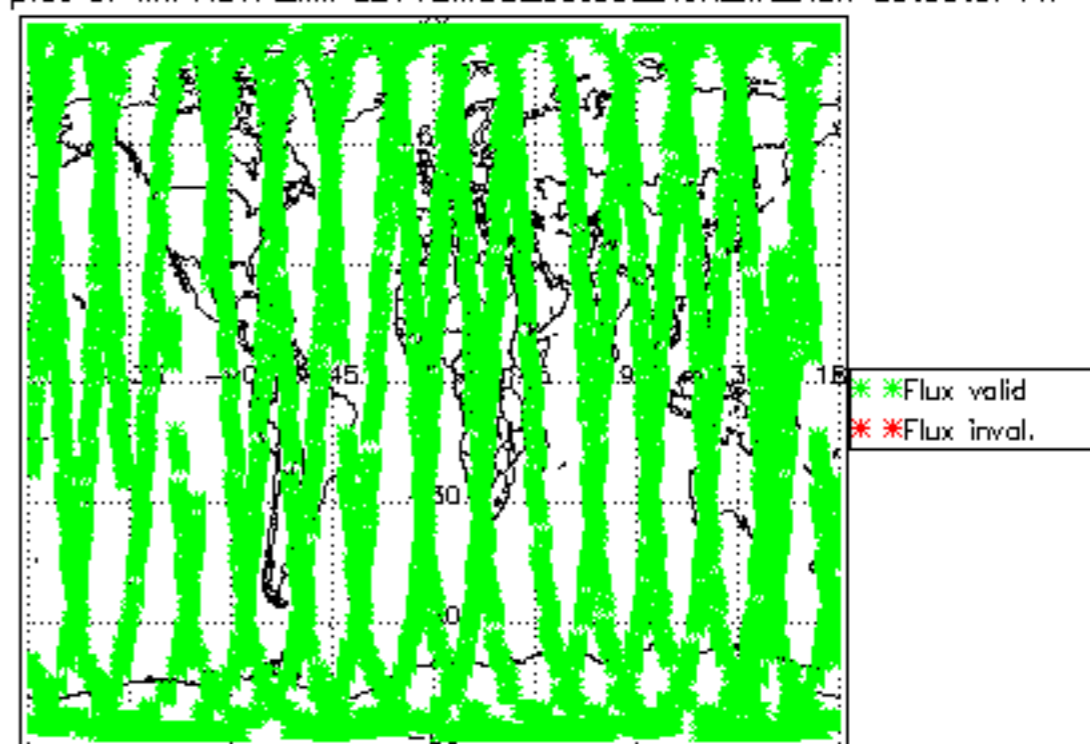
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_band\_val band D



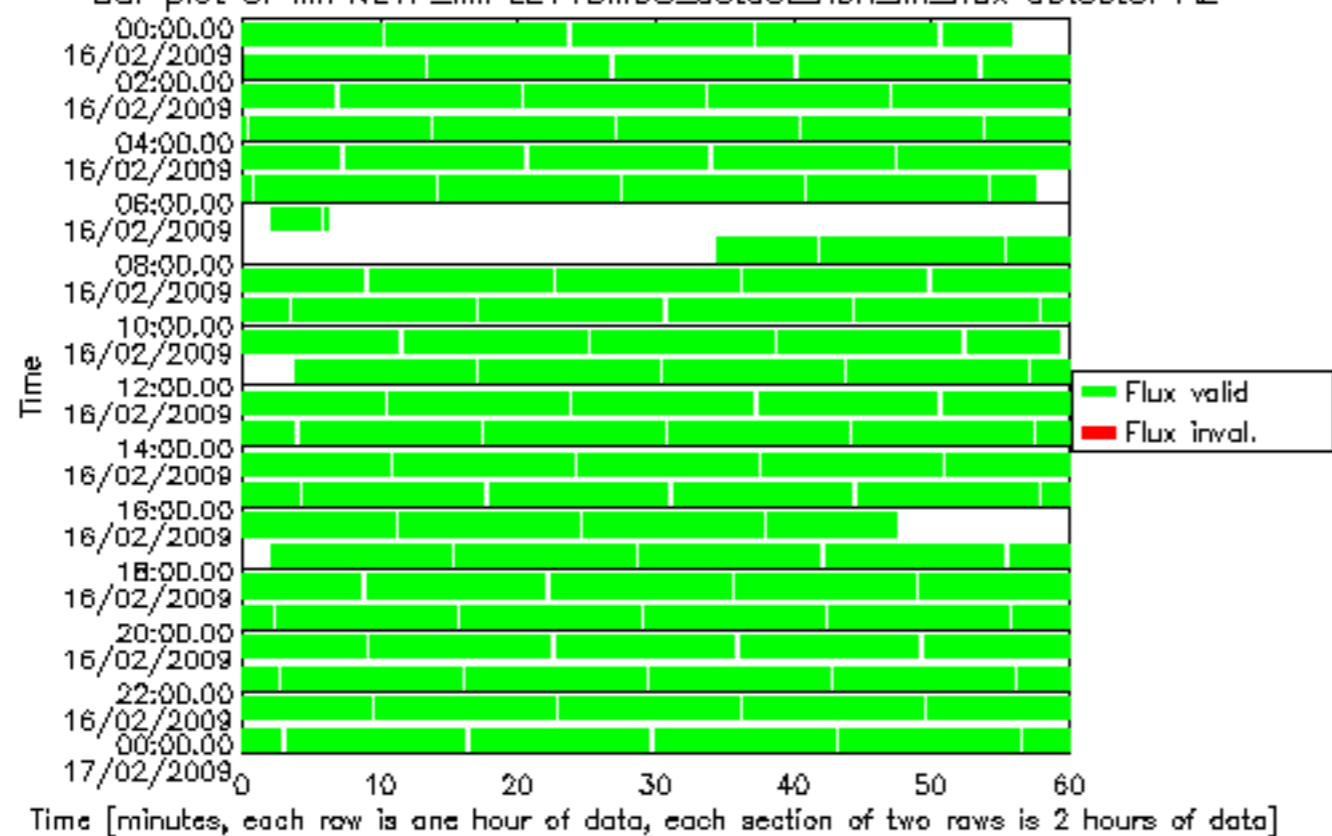
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



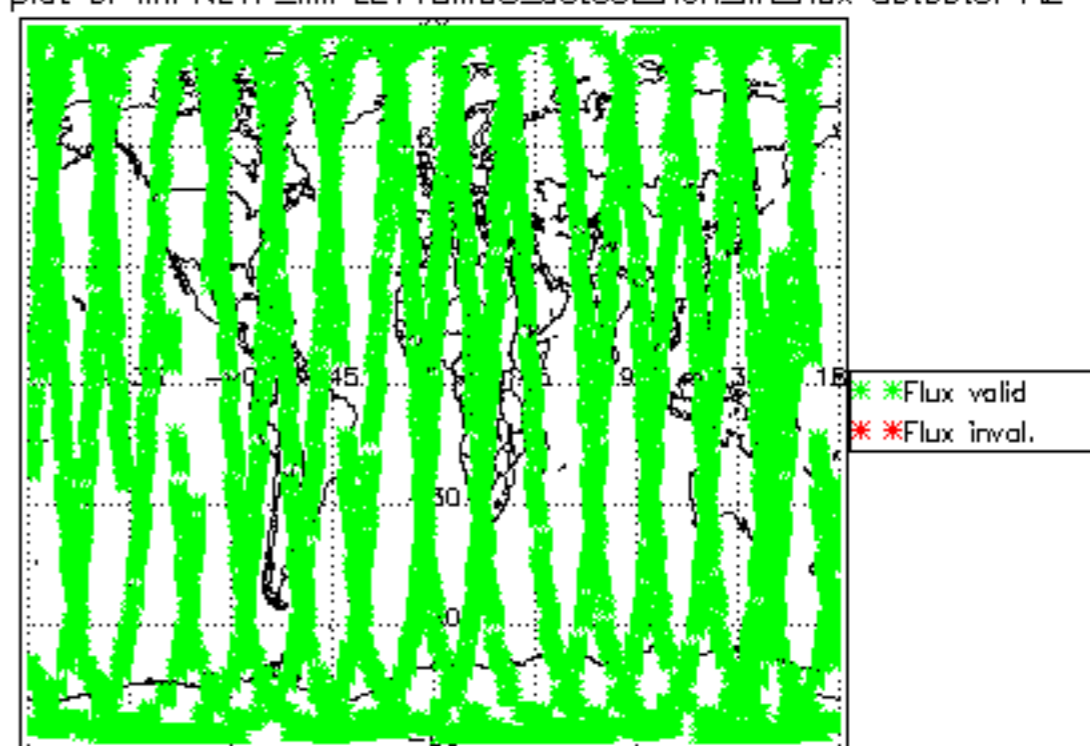
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A1



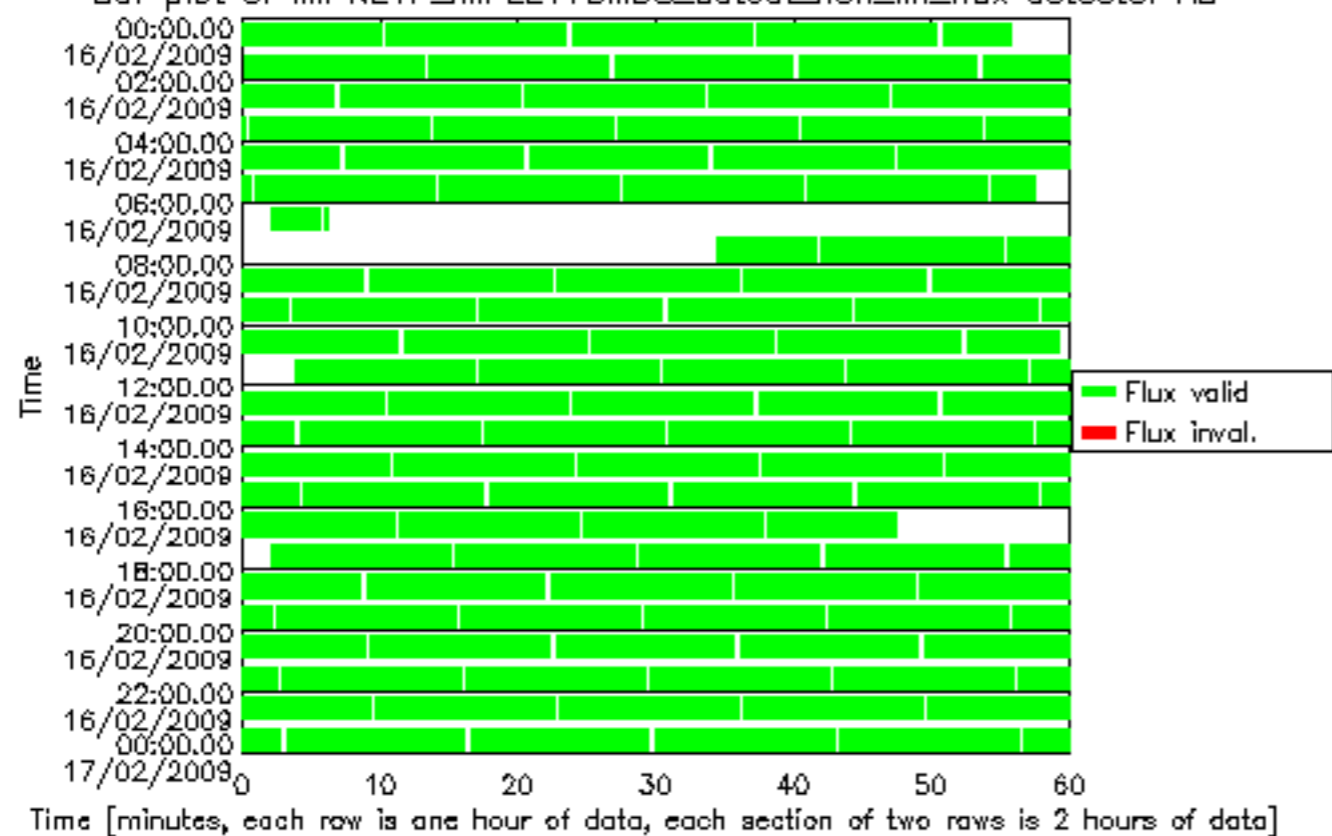
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



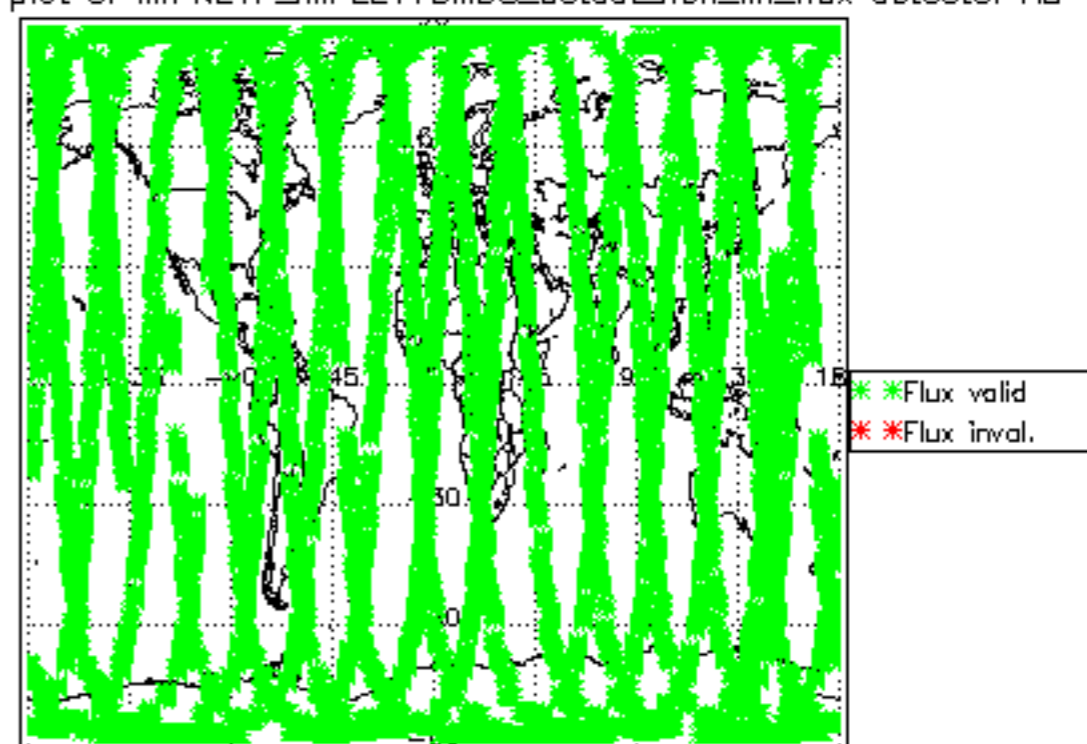
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector A2



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

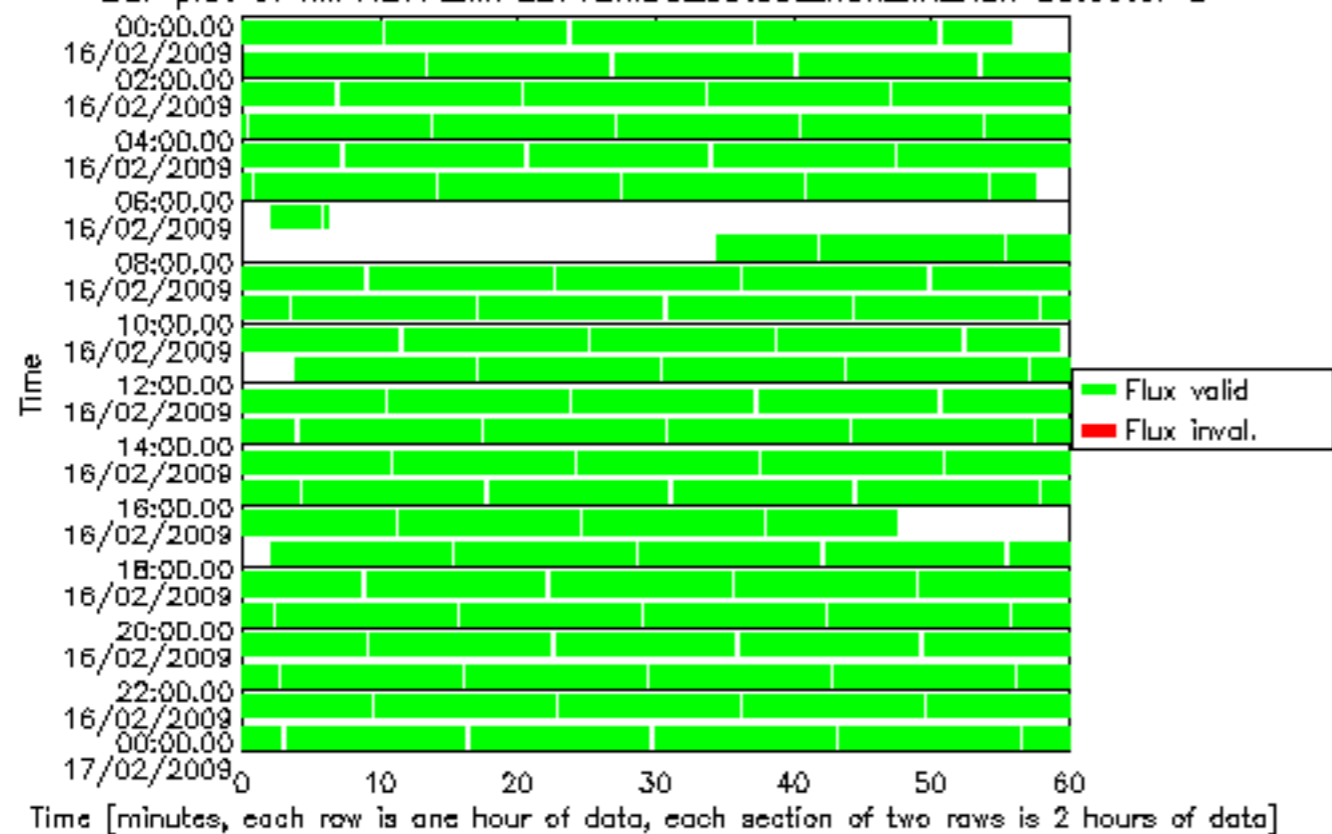


Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector AB

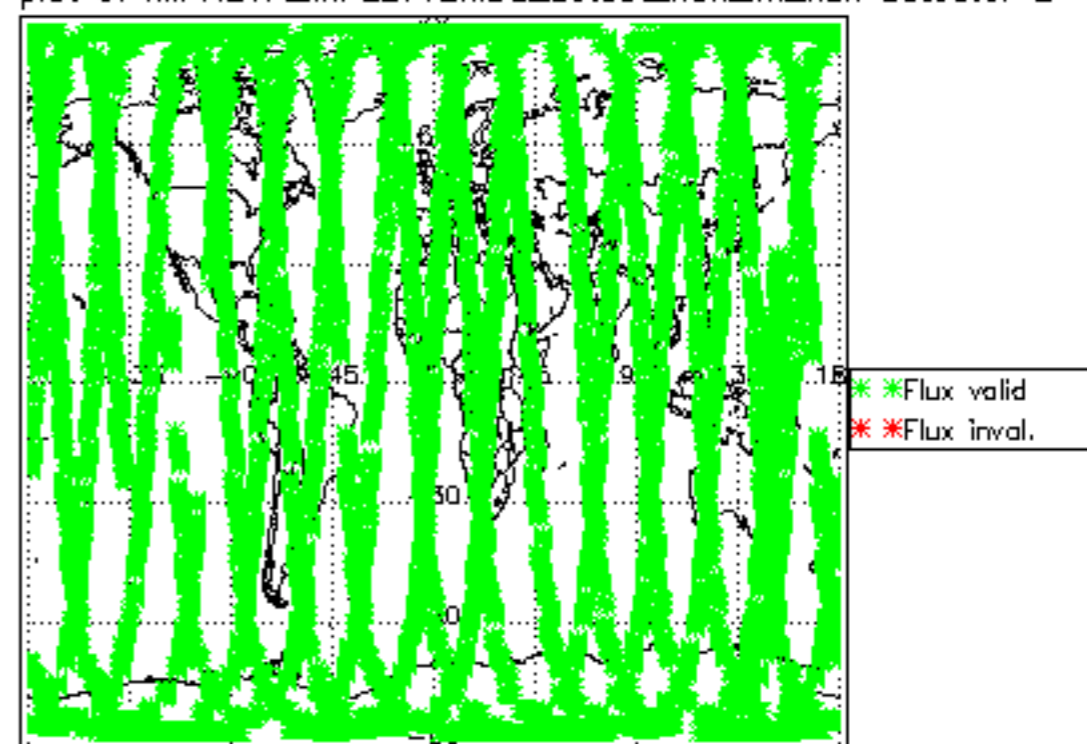




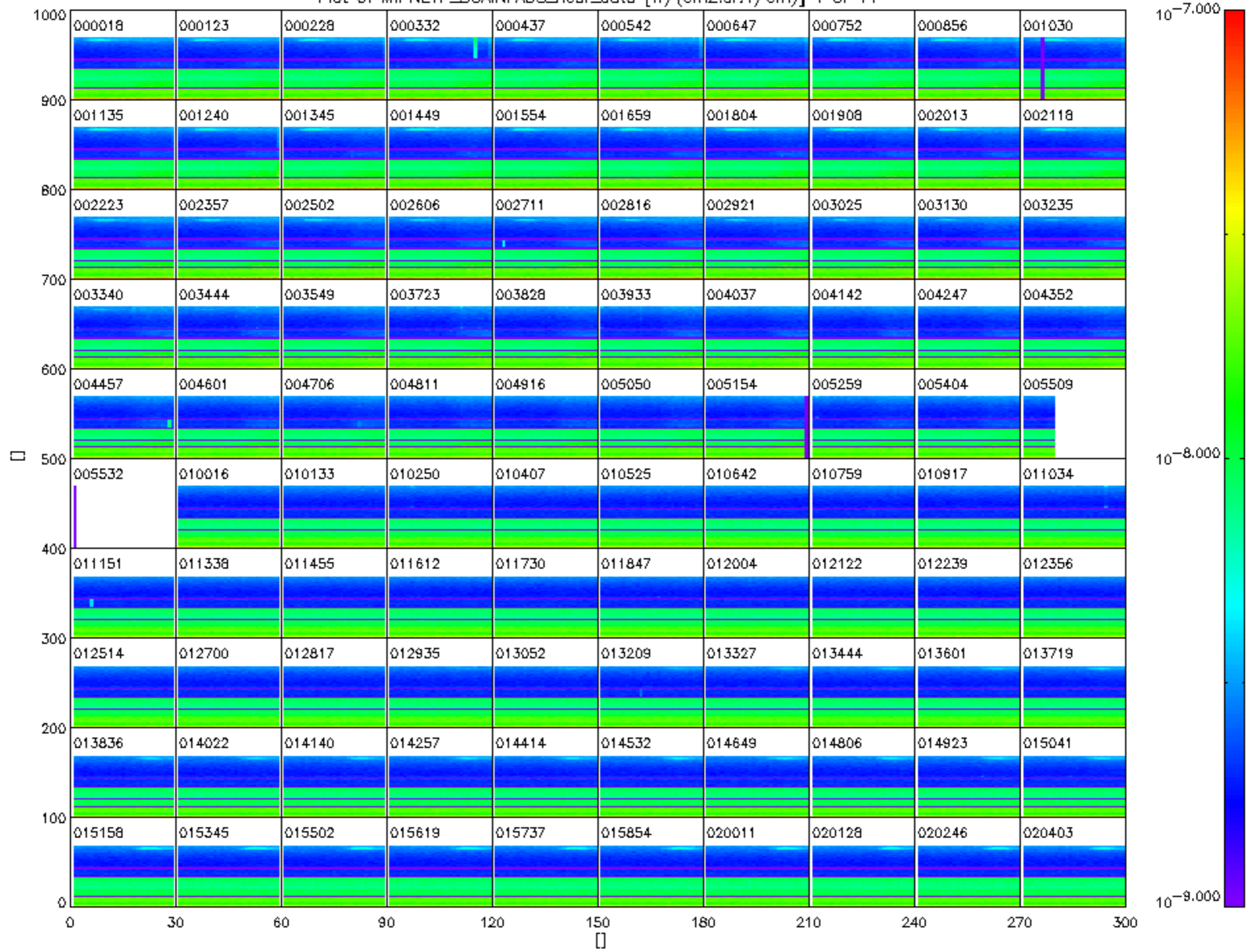
Bar plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector B



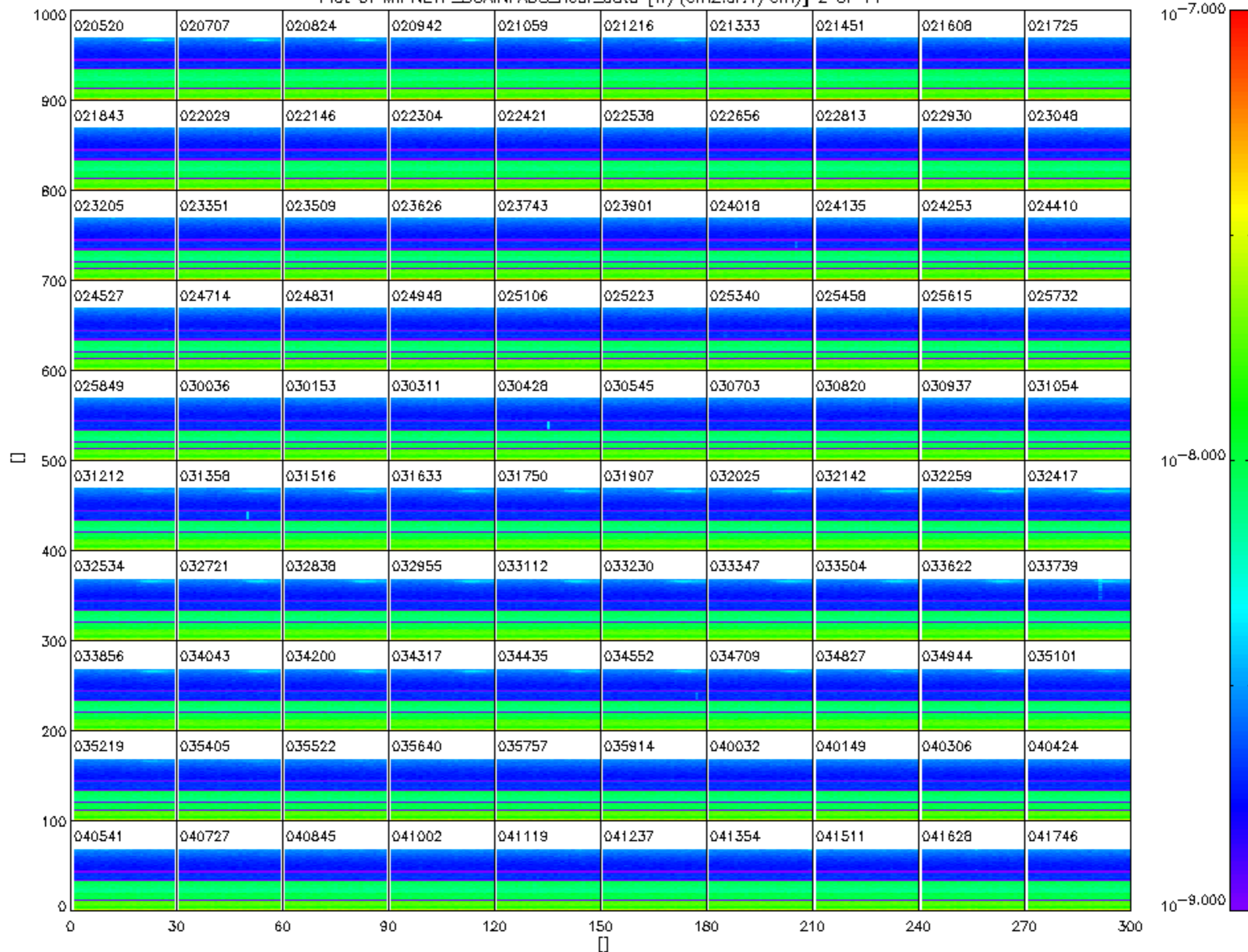
Geolocation plot of MIPNL1P\_MIPLEV1BMDS\_detect\_non\_lin\_flux detector B



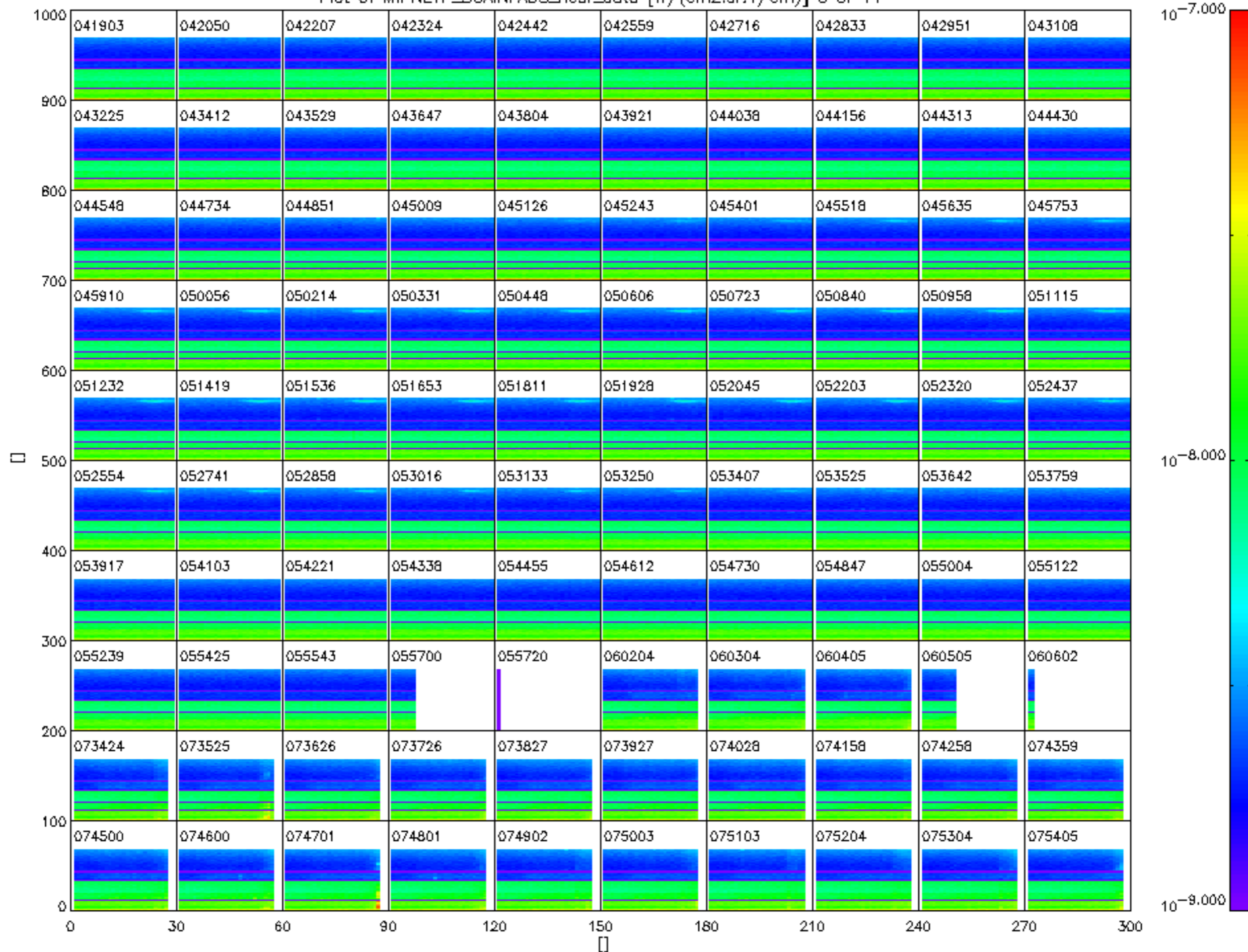
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 1 of 11



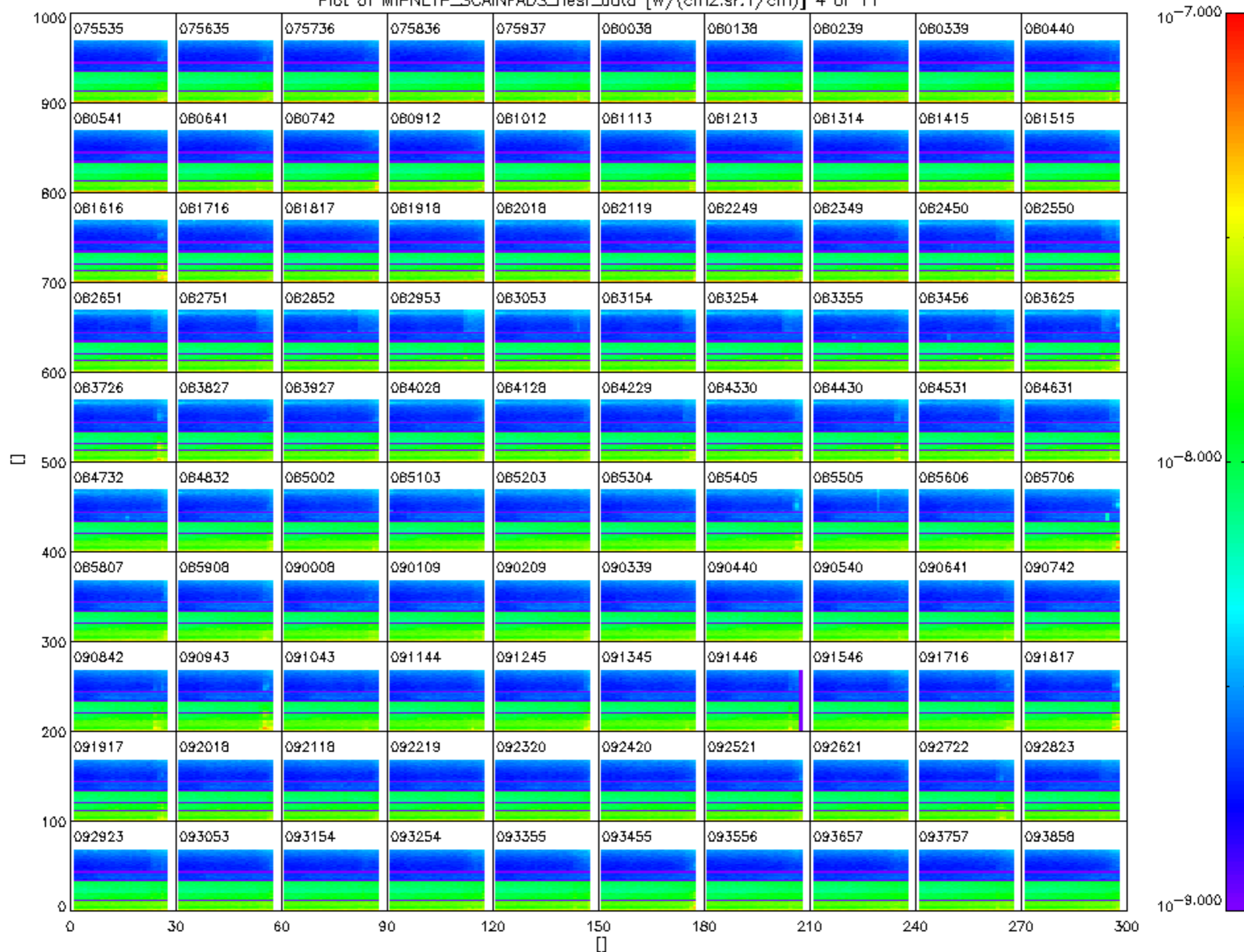
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 2 of 11



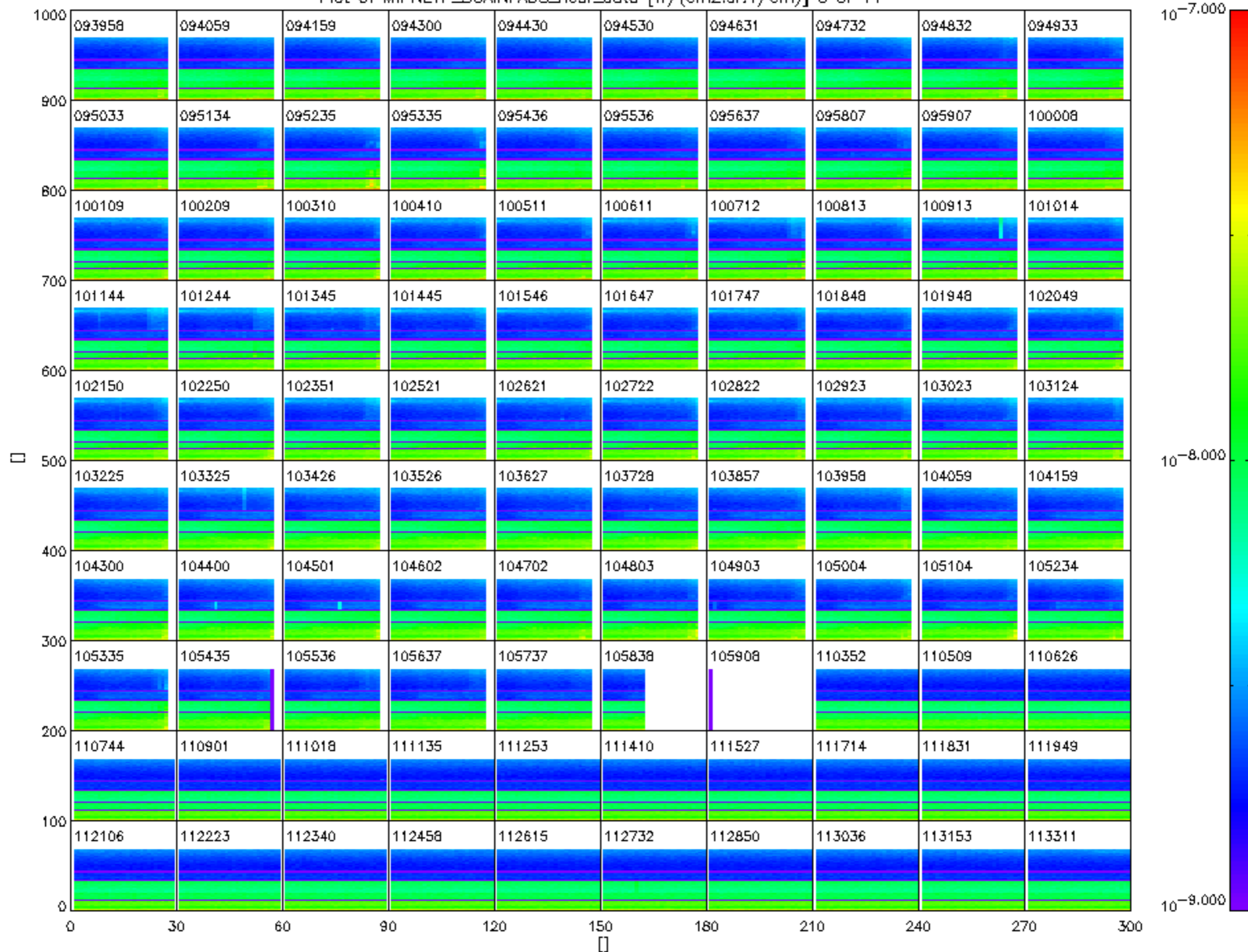
Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 3 of 11



Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 4 of 11

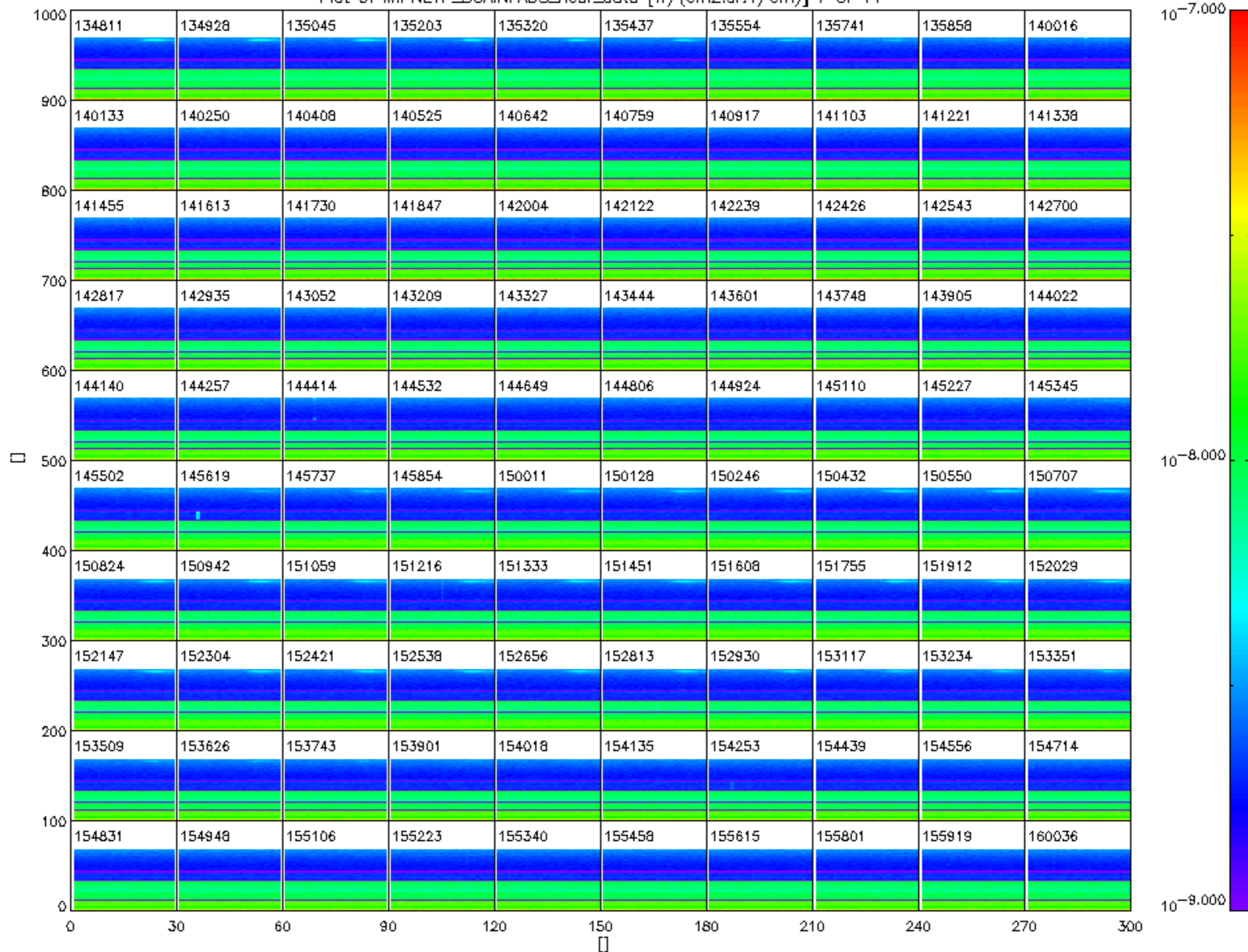


Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 5 of 11





Plot of MIPNL1P\_SCAINFADS\_near\_data [W/(cm<sup>2</sup>.sr.1/cm)] 7 of 11



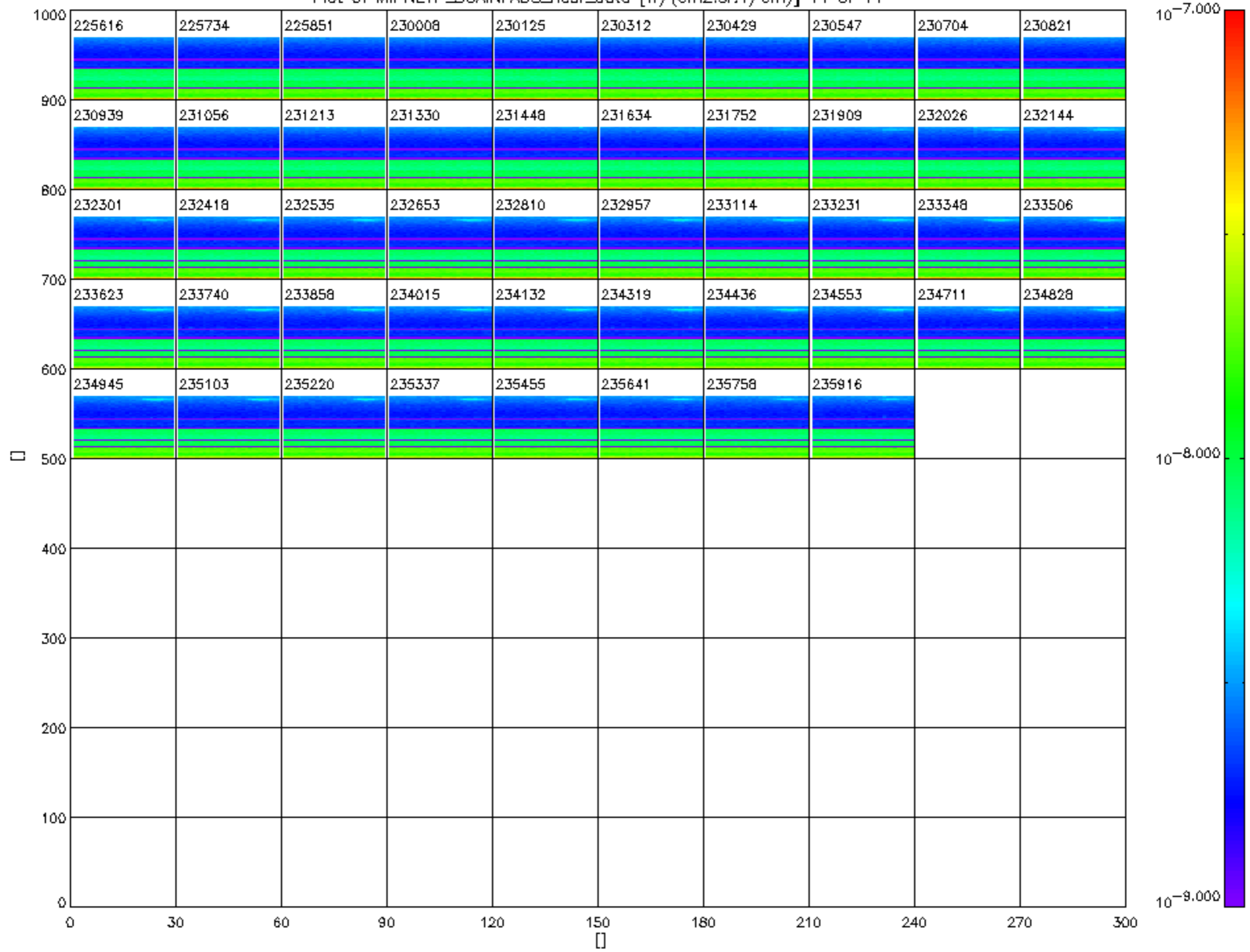




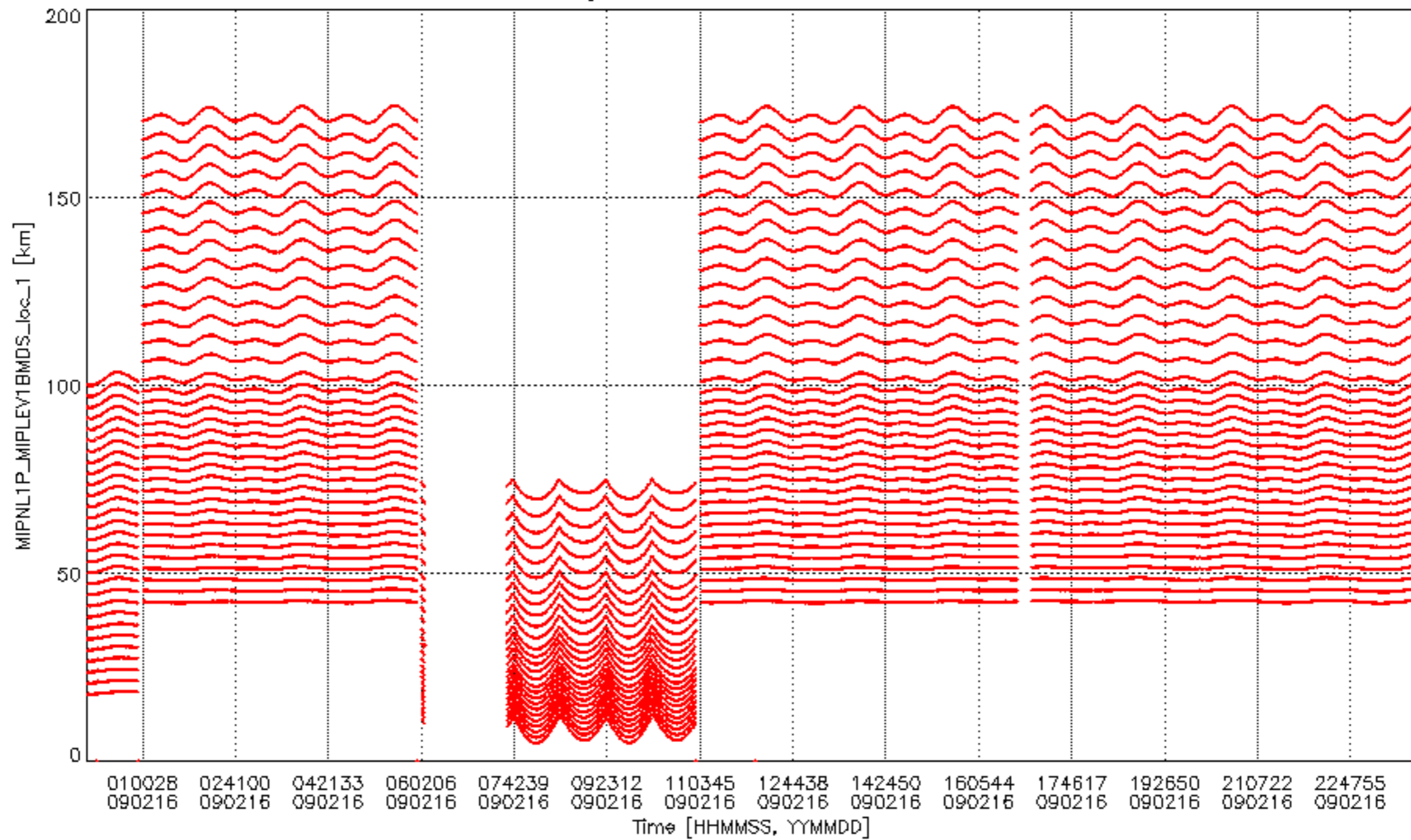




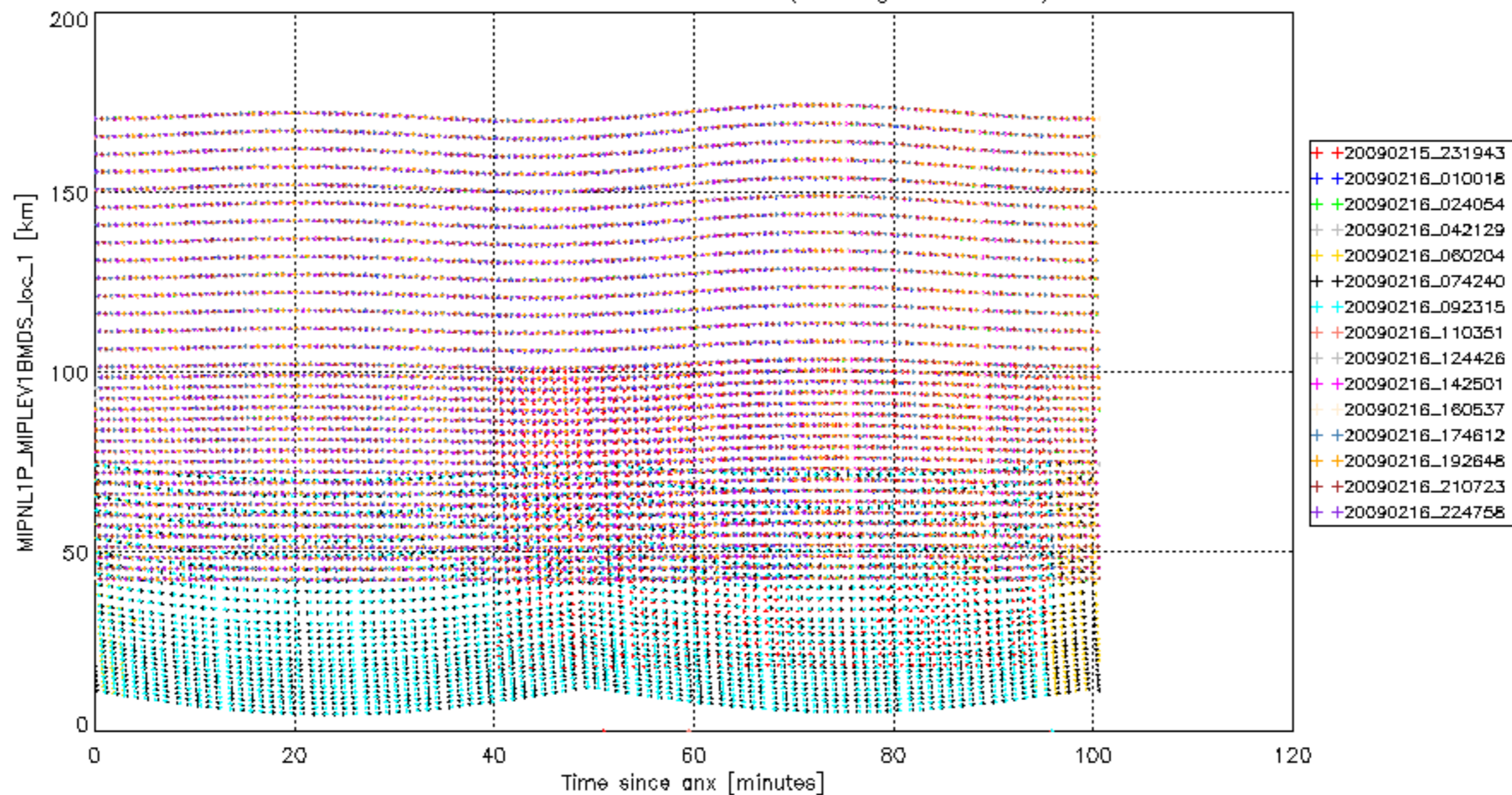
Plot of MIPNL1P\_SCAINFADS\_nesr\_data [W/(cm<sup>2</sup>.sr.1/cm)] 11 of 11

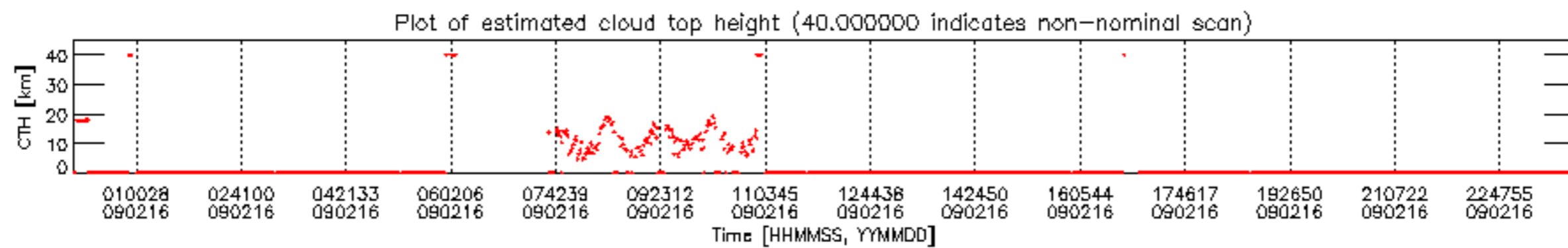


Plot of MIPNL1P\_MIPLEV1BMDS\_loc\_1 against time.  
The vertical grid lines indicate estimated anx events.

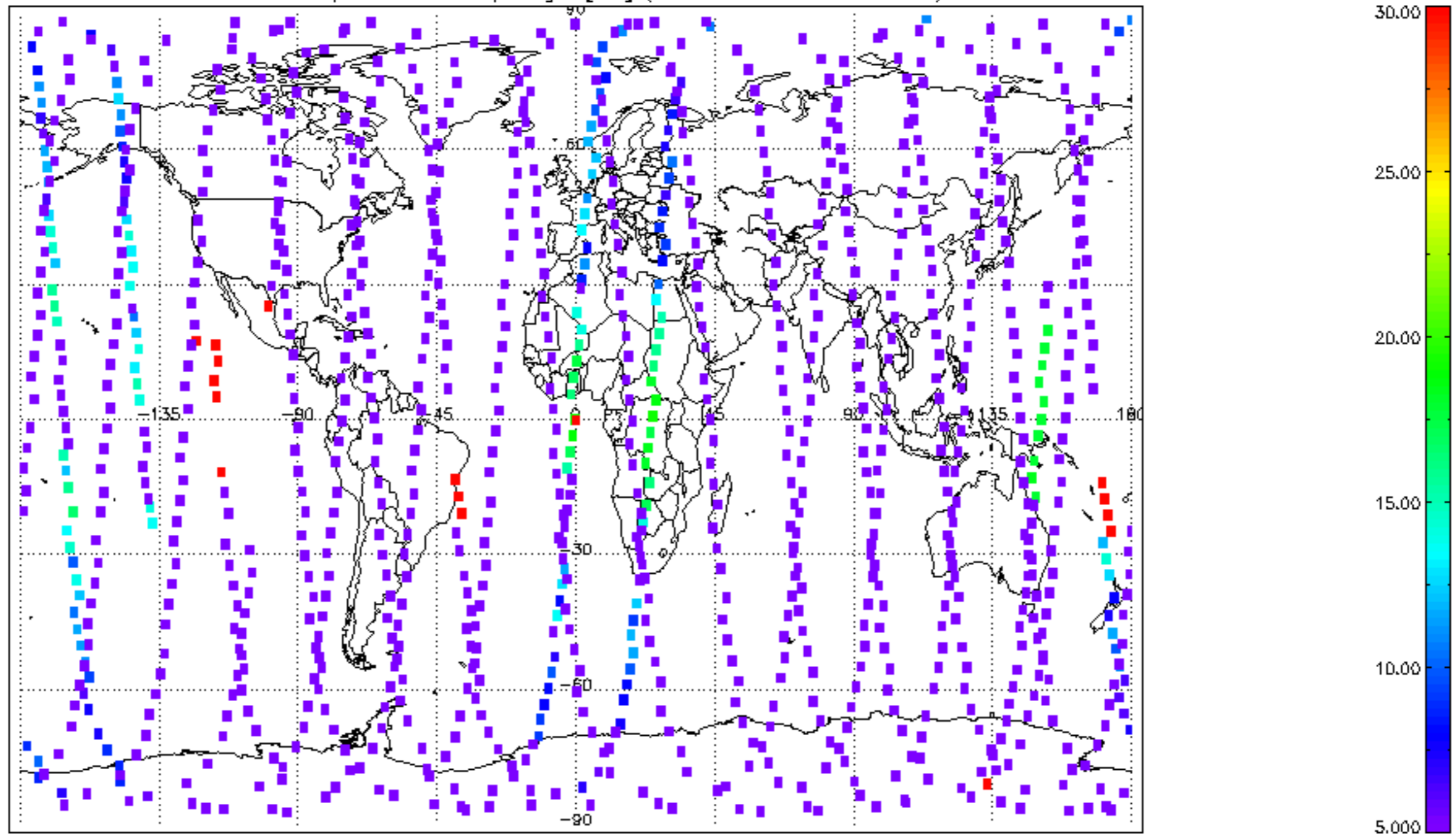


Plot of MIPNL1P\_MIPLEV1BMDS\_Joc\_1 against relative time within orbit.  
The colours indicate distinct orbits (see legend for anx).

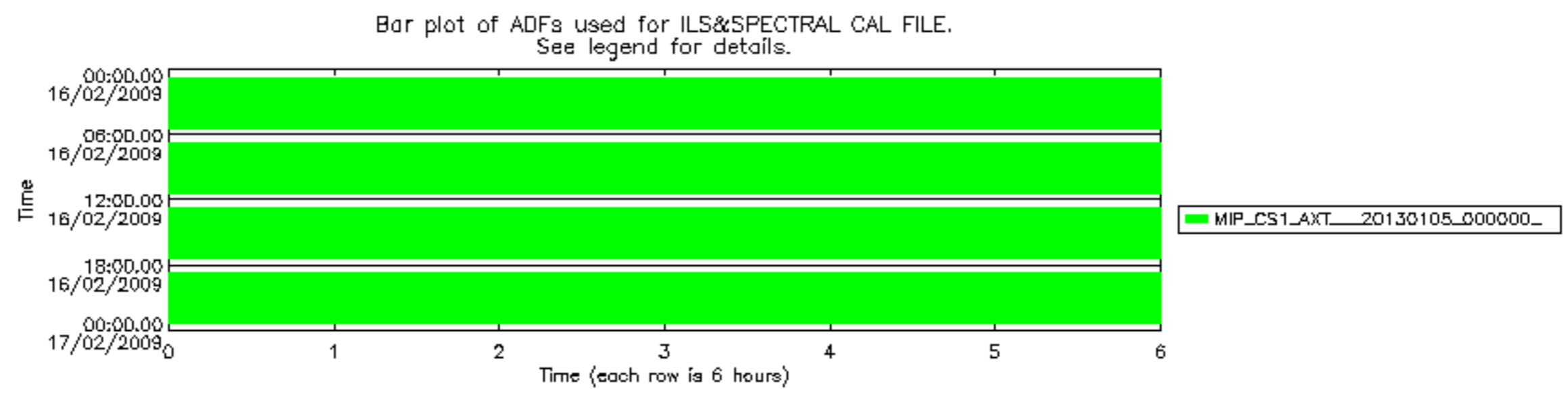


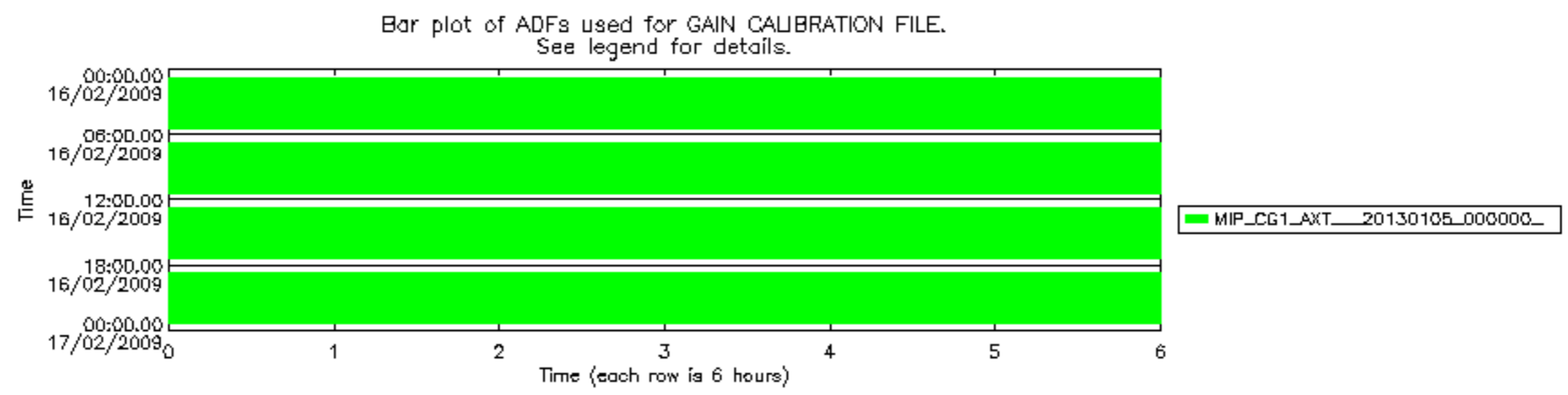


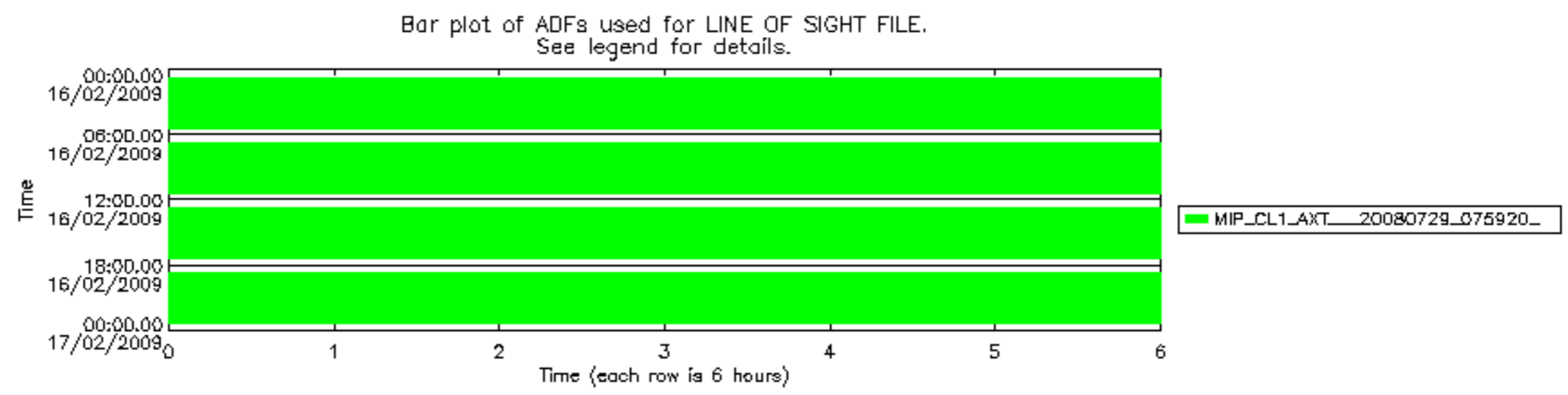
Geolocation plot of cloud top height [km] (non-nominal scans are red)

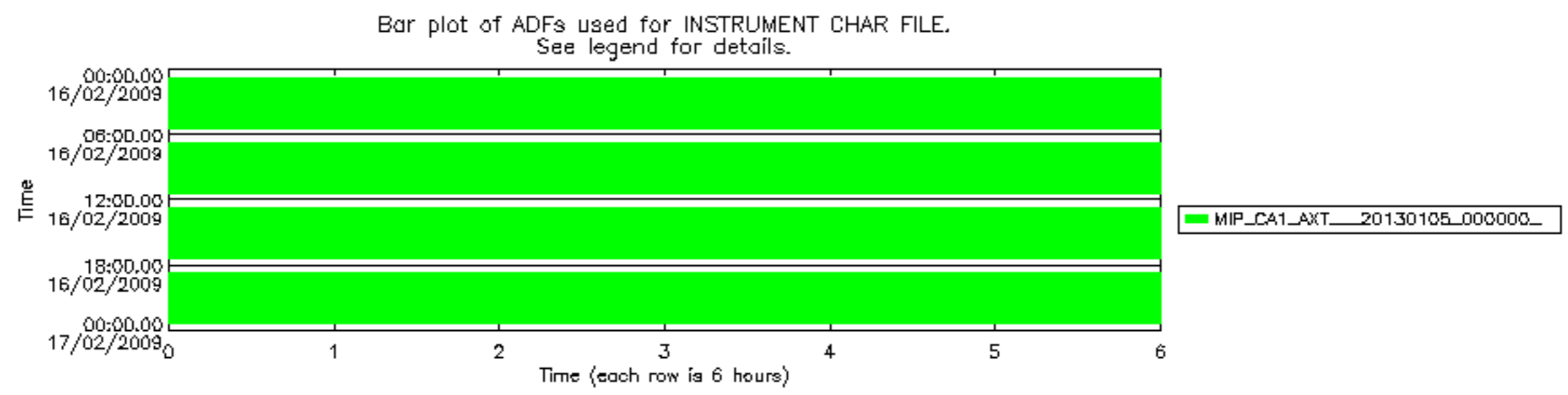


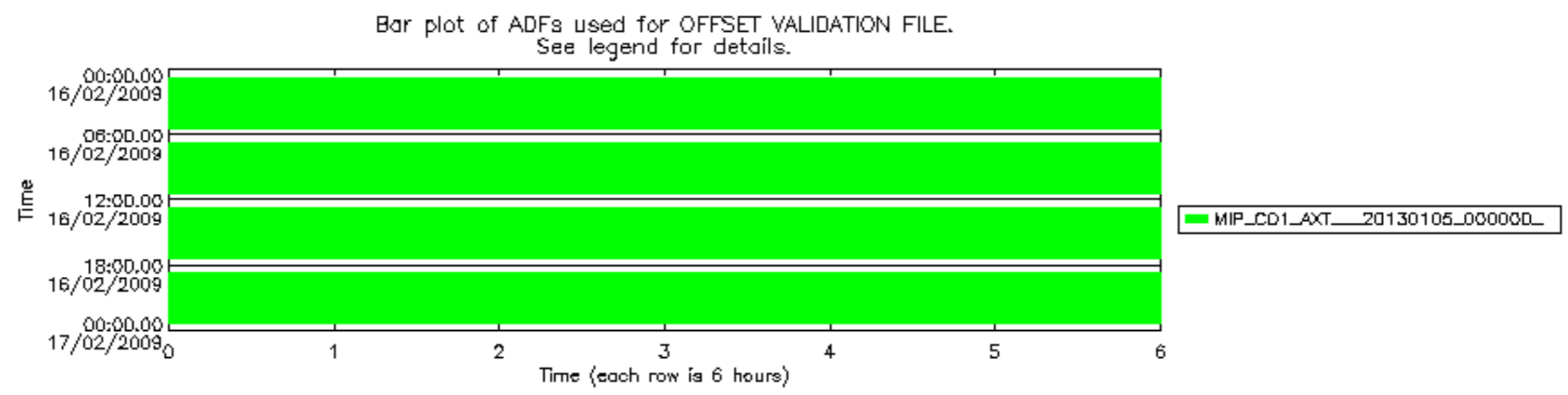


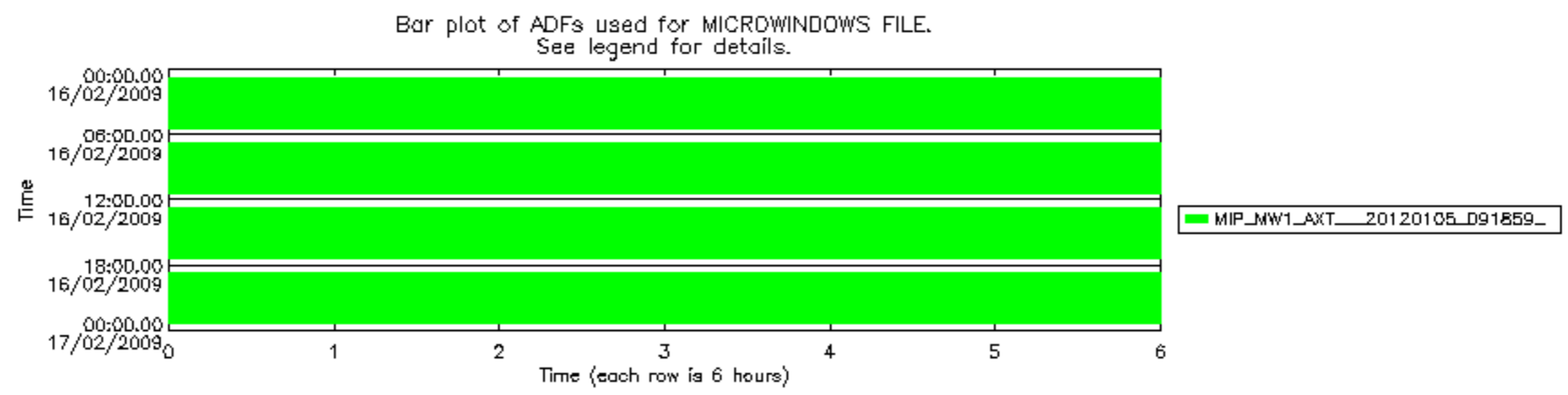


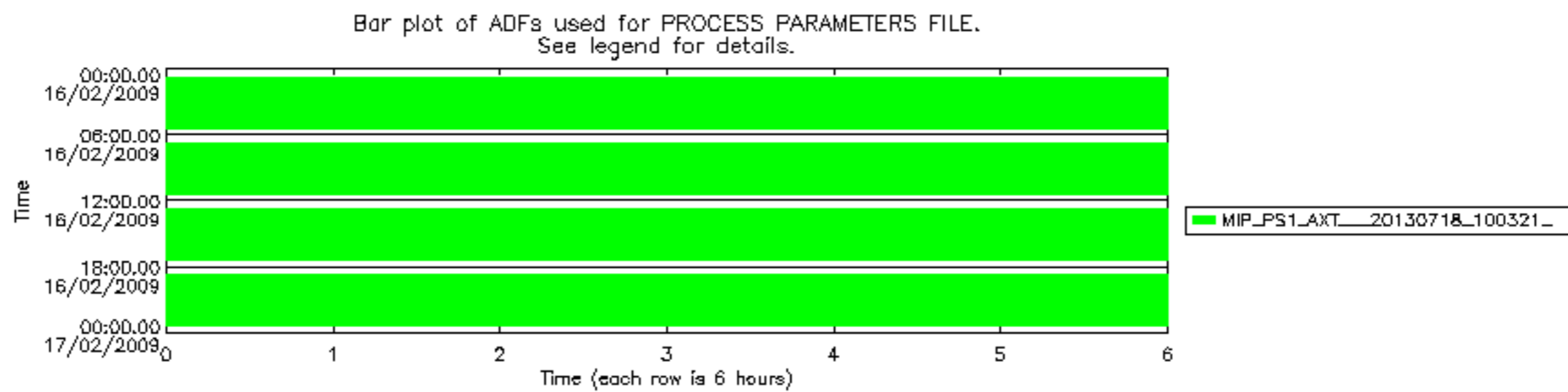


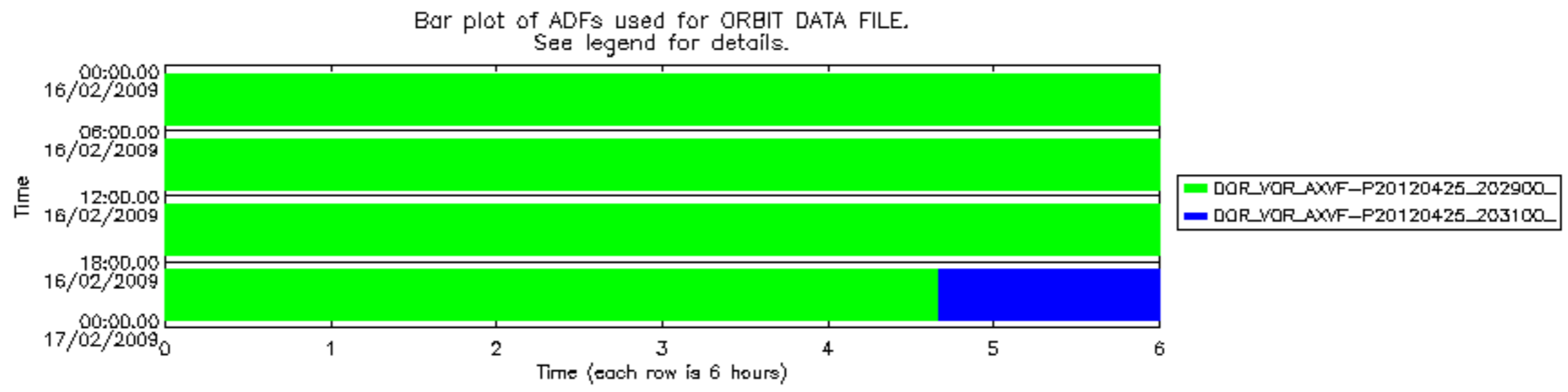














Bar plot of ADFs used for RESTITUTED ATTITUDE FILE.  
See legend for details.

