

## 2. SCIAMACHY Daily Report for level 2 products

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## 2.1 General Info

This report contains a daily analysis on parameters extracted from SCIAMACHY level 2 data (The SCI\_OL\_\_2P product).

### 2.1.1 Report summary

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

| Item                                     | Value                                    |
|--|--|
| Report version                           | 1.6 (28-07-2008)                         |
| Time of report generation                | 14FEB2009 06:01:34                       |
| Data source version                      | SCIA-OL/3.01-R                           |
| Processing scope for products            | 27JAN2009 00:00:00 to 28JAN2009 00:00:00 |
| Start time of first product within scope | 27JAN2009 13:29:48                       |
| Stop time of last product within scope   | 28JAN2009 00:28:47                       |
| Total number of level 2 products         | 7  |
| Number of level 2 products with errors   | 0  |

### 2.1.2 Summary per product

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

Products are linked to a corresponding server directory for view/download. Note: Link access may be restricted by security settings of your internet browser or firewall.

| # | Product name   | Start time         | Stop time          | Prod err | Fit summary |
|---|--|--------------------|--------------------|----------|-------------|
| 0 | <a href="#">SCI_OL__2PRDPA20090127_132948_000033252076_00010_36136_2096.N1</a> | 27JAN2009 13:29:48 | 27JAN2009 14:25:14 | 0        | GOOD        |
| 1 | <a href="#">SCI_OL__2PRDPA20090127_151132_000032692076_00011_36137_2087.N1</a> | 27JAN2009 15:11:32 | 27JAN2009 16:06:02 | 0        | GOOD        |
| 2 | <a href="#">SCI_OL__2PRDPA20090127_165059_000033252076_00012_36138_2097.N1</a> | 27JAN2009 16:50:59 | 27JAN2009 17:46:25 | 0        | GOOD        |
| 3 | <a href="#">SCI_OL__2PRDPA20090127_183108_000033942076_00013_36139_2100.N1</a> | 27JAN2009 18:31:08 | 27JAN2009 19:27:42 | 0        | GOOD        |
| 4 | <a href="#">SCI_OL__2PRDPA20090127_201143_000033812076_00014_36140_2101.N1</a> | 27JAN2009 20:11:43 | 27JAN2009 21:08:05 | 0        | GOOD        |
| 5 | <a href="#">SCI_OL__2PRDPA20090127_215354_000032692076_00015_36141_2102.N1</a> | 27JAN2009 21:53:54 | 27JAN2009 22:48:24 | 0        | GOOD        |
| 6 | <a href="#">SCI_OL__2PRDPA20090127_233321_000033252076_00016_36142_2103.N1</a> | 27JAN2009 23:33:21 | 28JAN2009 00:28:47 | 0        | GOOD        |

## 2.2 Product Quality Indicators

### 2.2.1 Cloud parameters

This is a new section that shows information about the cloud parameters estimation, in particular cloud fractions and cloud top height. IMPORTANT NOTE: The contents and layout of this section are still being validated. Please use with caution.

#### General statistics:

Total number of cloud data DSRs: 67277

Total number of cloud data DSRs with good quality flag (=0): 67277 (100.0 %)

| Parameter    | #valid | Mean    | Median  | Min     | Max     | Stddev   | Unit |
|--------------|--------|---------|---------|---------|---------|----------|------|
| QUALITY_FLAG | 67277  | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000   | flag |
| INTEGR_TIME  | 67277  | 0.16981 | 0.12500 | 0.12500 | 0.25000 | 0.059944 | s    |

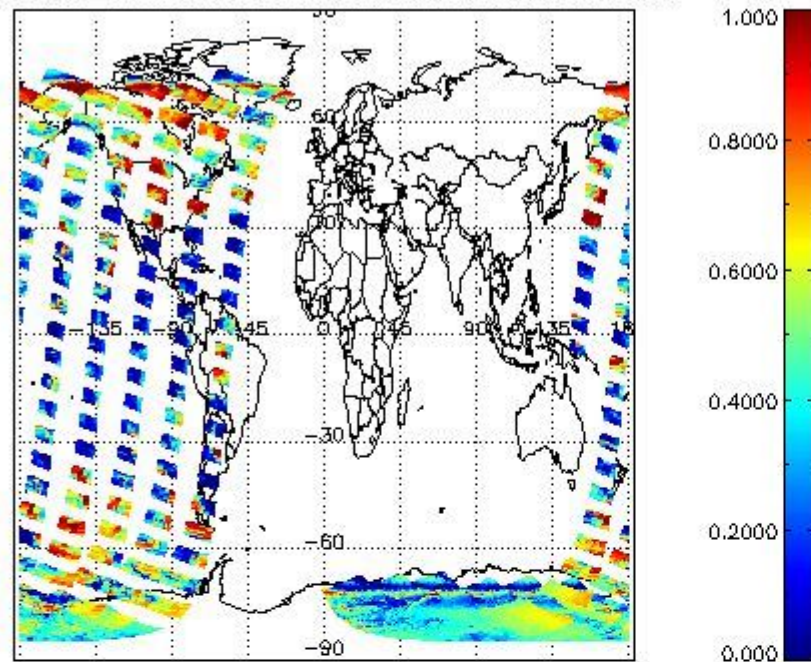
|                   |       |          |          |          |          |         |   |
|-------------------|-------|----------|----------|----------|----------|---------|---|
| CL_FRAC           | 67277 | 0.42397  | 0.41268  | 0.0000   | 1.0000   | 0.27254 | -   |
| CL_FRAC_ERR       | 67277 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000  | rel. fraction   |
| PMD_READ          | 67277 | 5.4339   | 4.0000   | 4.0000   | 8.0000   | 1.9182  |   |
| PMD_READ_CL[0]    | 67277 | 0.24297  | 0.0000   | 0.0000   | 8.0000   | 1.1007  | -   |
| PMD_READ_CL[1]    | 67277 | 0.59964  | 0.0000   | 0.0000   | 8.0000   | 1.7533  | -   |
| CL_TOP_HEIGHT     | 57586 | 4.2584   | 3.3269   | 0.0000   | 17.000   | 3.7788  | km  |
| CL_TOP_HEIGHT_ERR | 0     | ---      | ---      | ---      | ---      | ---     | ---   |
| CL_OPT_DEPTH      | 57586 | 56.460   | 49.161   | 0.0000   | 101.00   | 39.305  | km  |
| CL_OPT_DEPTH_ERR  | 0     | ---      | ---      | ---      | ---      | ---     | ---   |
| CL_TYPE_FLAGS     | 67277 | 11100000 | 11100000 | 11100000 | 11100000 | 0.0000  | flags. Bit definition = 0: low or high cloud; 1: ice or water cloud; 2: thick or thin cloud; 3-15: not used |
| CLOUD_FLAGS       | 67277 | 11001000 | 11000100 | 11000000 | 11100000 | 2978.2  | flags   |
| AERO_ABSO_IND     | 67277 | 3.2052   | 3.7714   | 0.0000   | 12.917   | 2.2040  |   |
| AERO_IND_DIAG     | 67277 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000  |   |
| AERO_FLAGS        | 67277 | 01010110 | 00000000 | 00000000 | 11000000 | 24466.  | flags   |

### Time and geolocation plots:

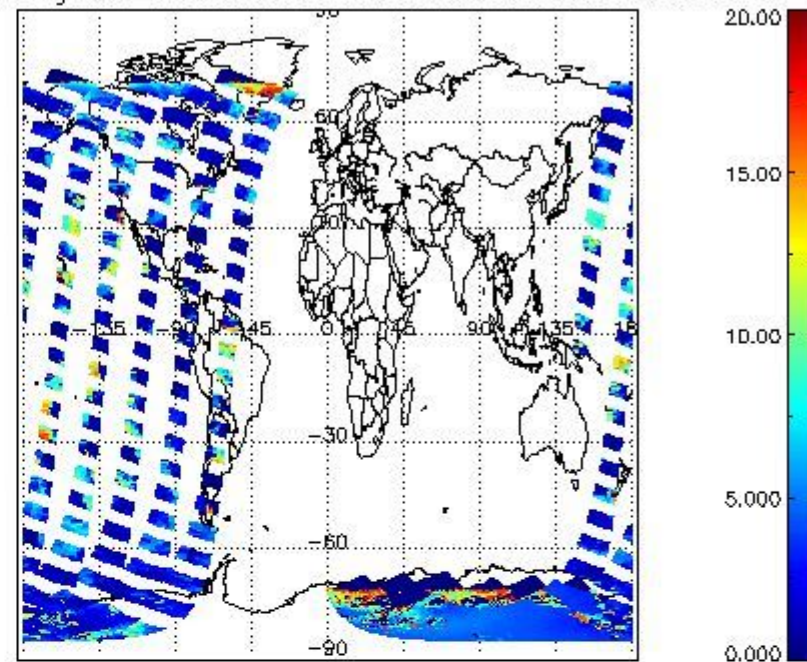
Plots are available for the following parameters:

| Number | Data item ID  |
|--------|---------------|
| 0      | cl_frac       |
| 1      | cl_top_height |
| 2      | cl_opt_depth  |
| 3      | cloud_flags   |

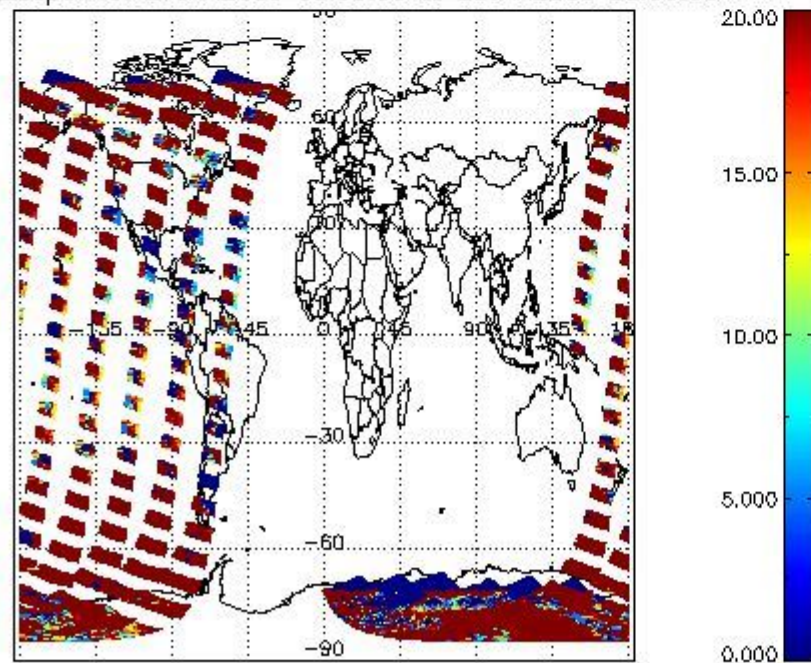
cL\_frac for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



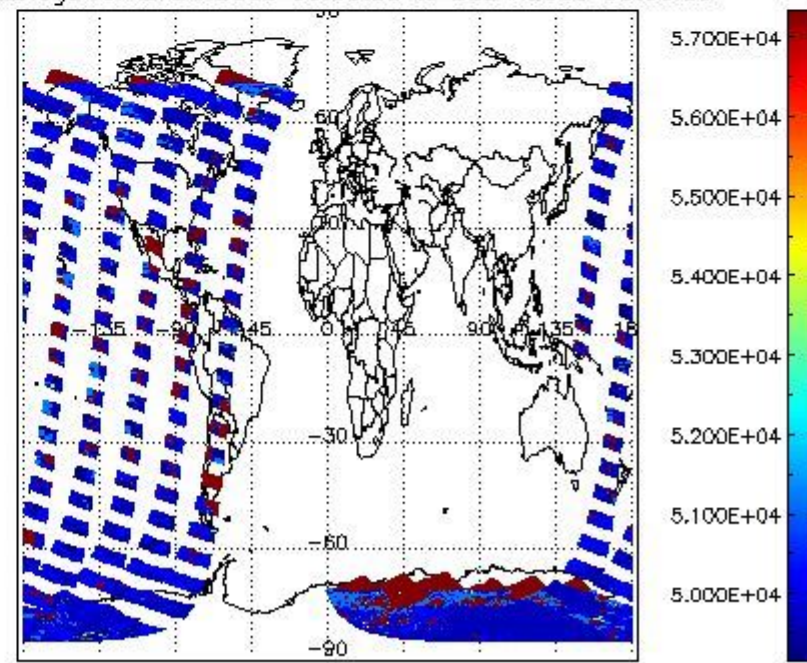
cL\_top\_height for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



cLopt\_depth for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



cloud\_flags for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



## 2.2.2 Nadir

This section shows information about product quality of nadir measurements, in particular the quality of retrieved species.

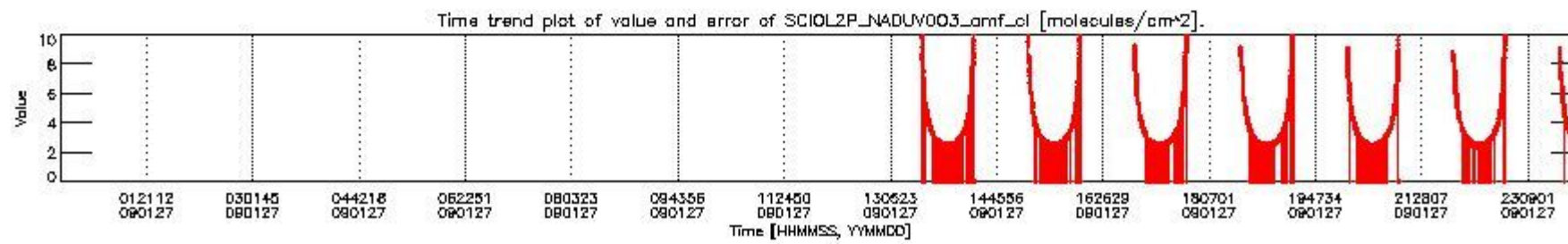
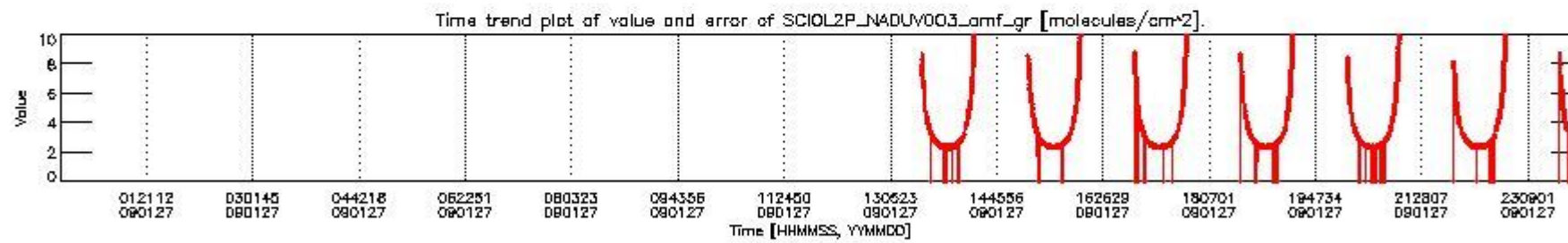
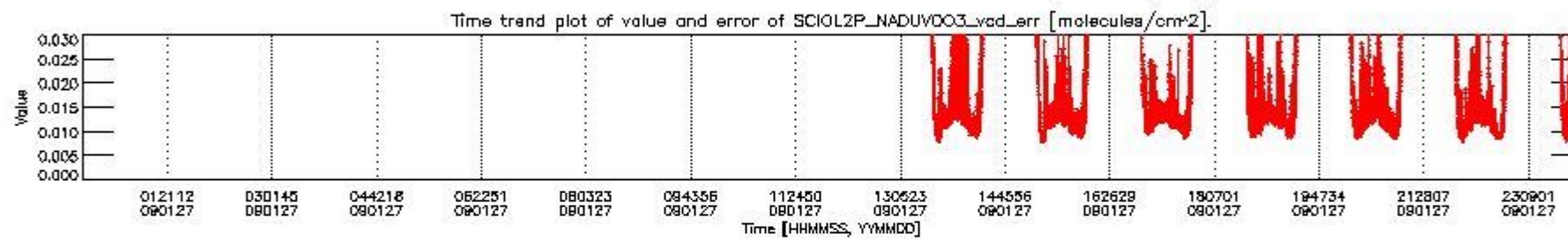
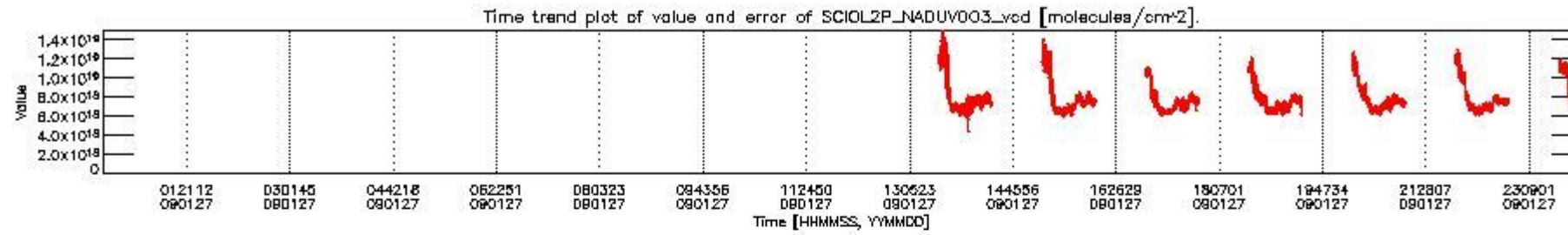
The following data items are currently included into this section:

| Number | Data item ID             |
|--------|--------------------------|
| 0      | SCIOL2P_NADUV003_vcd     |
| 1      | SCIOL2P_NADUV003_vcd_err |
| 2      | SCIOL2P_NADUV003_amf_gr  |



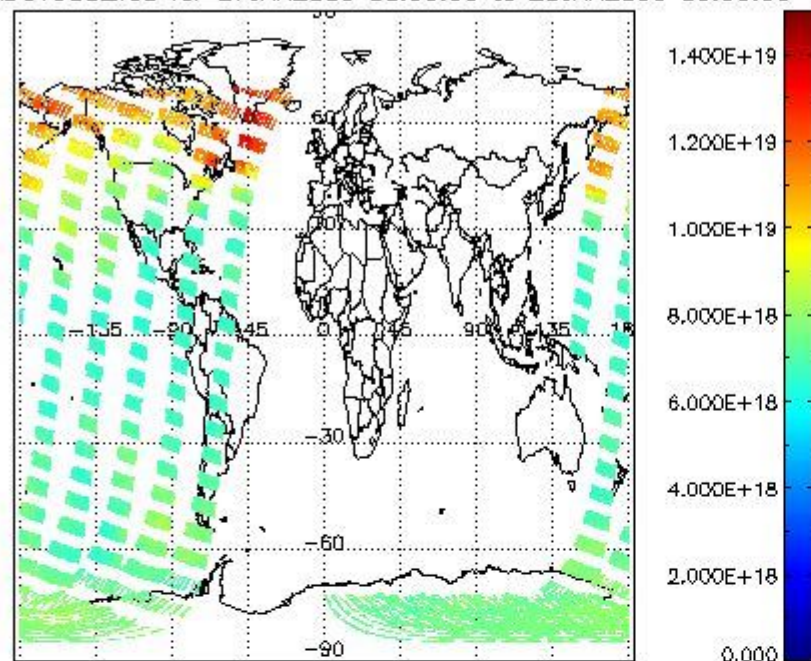
|   |                           |
|---|---------------------------|
| 3 | SCIOL2P_NADUV003_amf_cl   |
| 4 | SCIOL2P_NADUV1NO2_vcd     |
| 5 | SCIOL2P_NADUV1NO2_vcd_err |
| 6 | SCIOL2P_NADUV1NO2_amf_gr  |
| 7 | SCIOL2P_NADUV1NO2_amf_cl  |

Data is presented both in time trend plots and world map plots, in order to show variations with time and geolocation. The vertical dotted lines in the time trend plots indicate orbits. The orbit times on the X-axis are estimated sensing\_start time as suggested by the product sensing\_start time in the MPH.

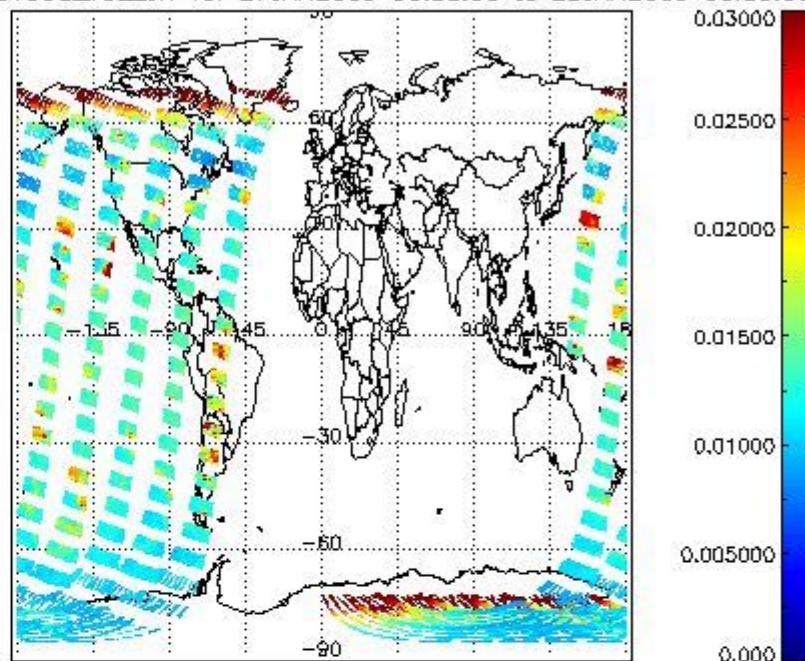




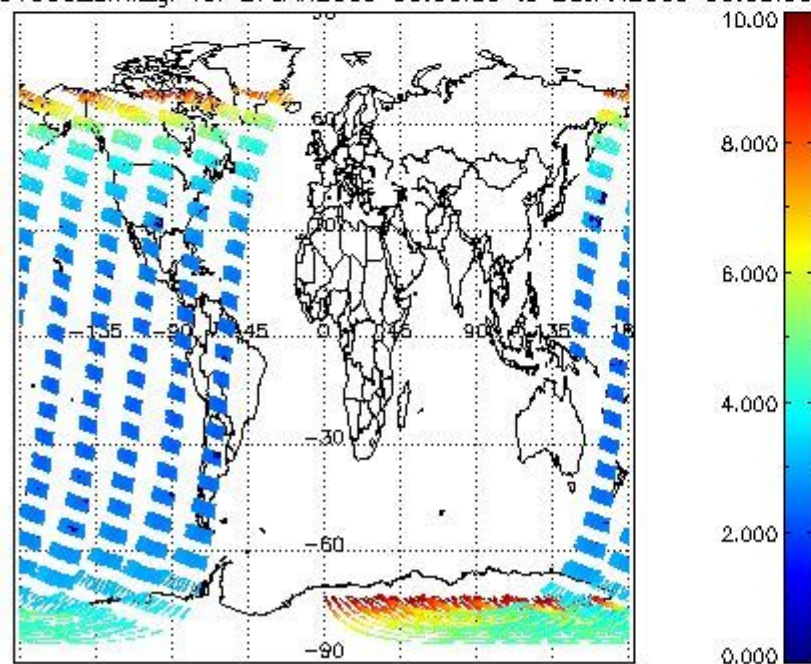
SCIOL2P\_NADUV003\_vcd for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



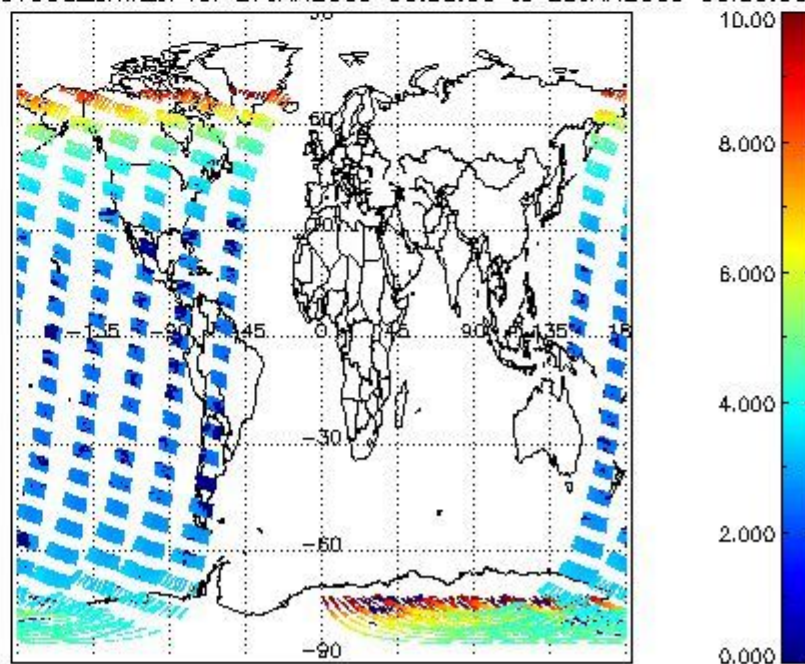
SCIOL2P\_NADUV003\_vcd\_err for 27JAN2009 00:00:00 to 28JAN2009 00:00:00

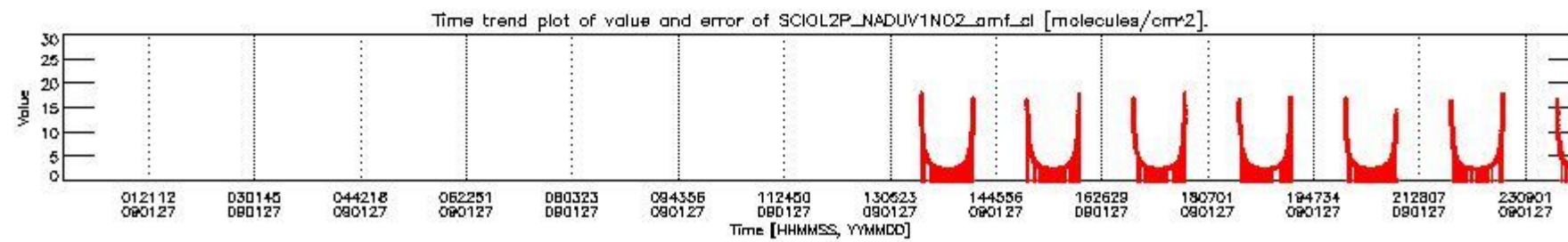
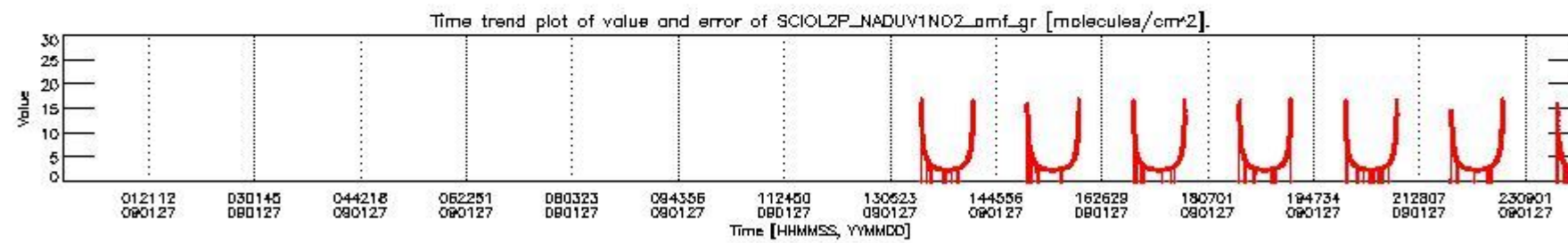
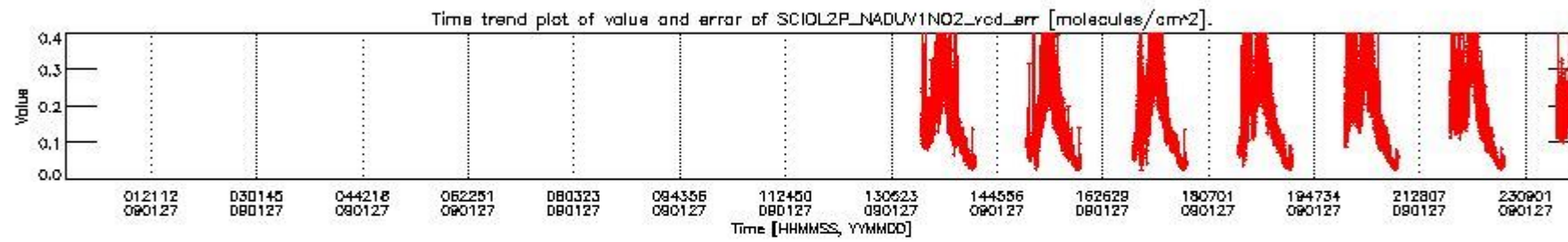
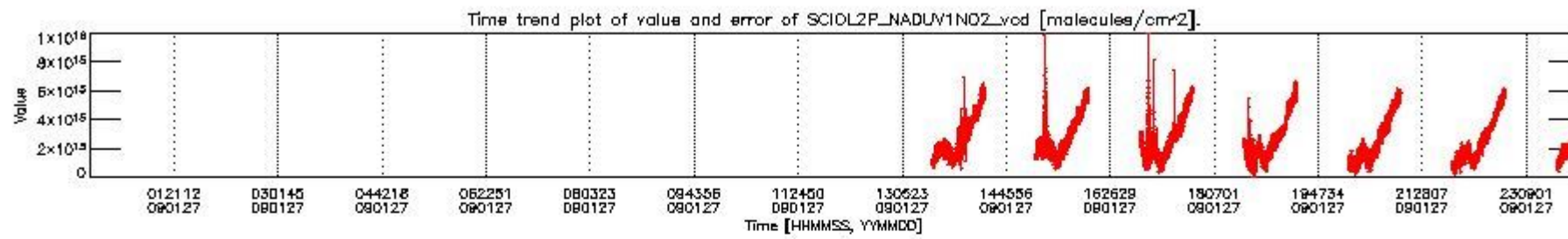


SCIOL2P\_NADUV003\_amf\_gr for 27JAN2009 00:00:00 to 28JAN2009 00:00:00

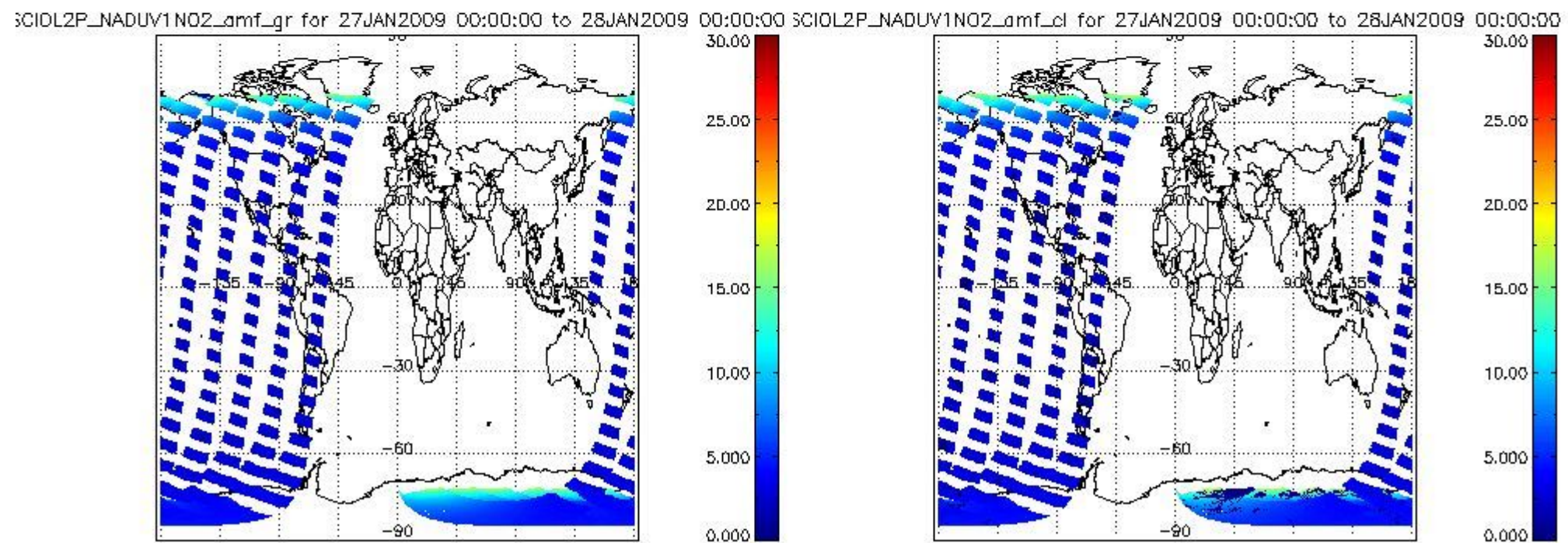
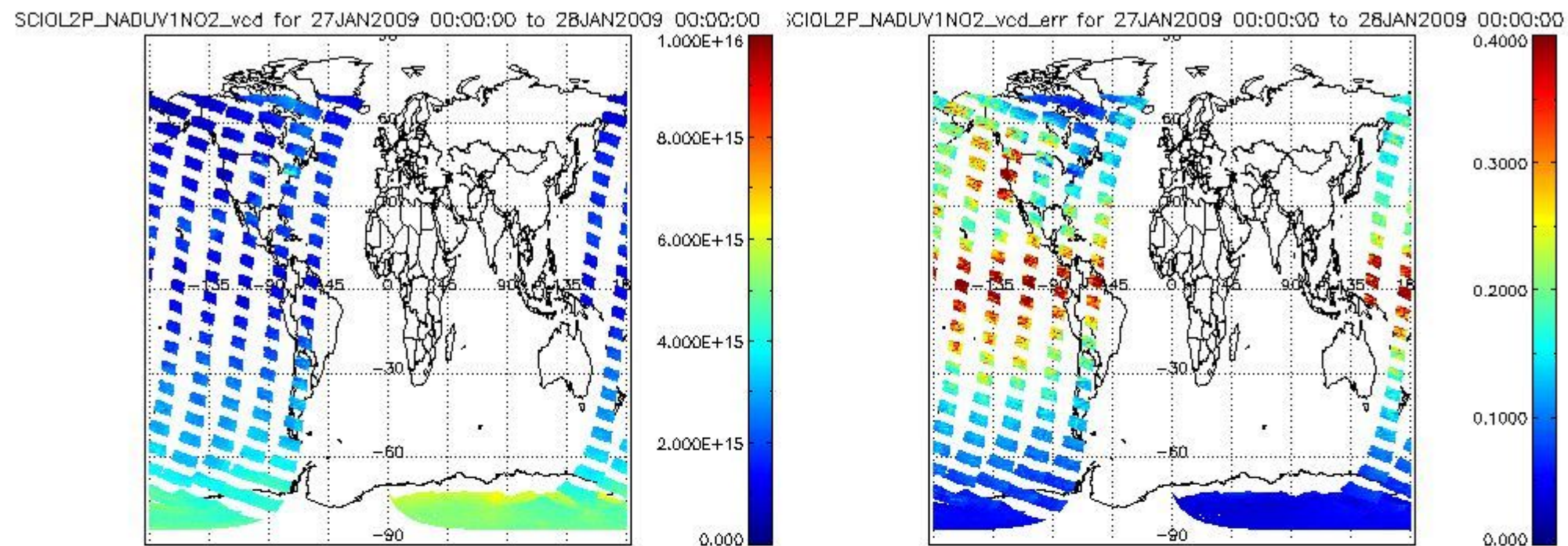


SCIOL2P\_NADUV003\_amf\_cl for 27JAN2009 00:00:00 to 28JAN2009 00:00:00









### 2.2.3 Limb

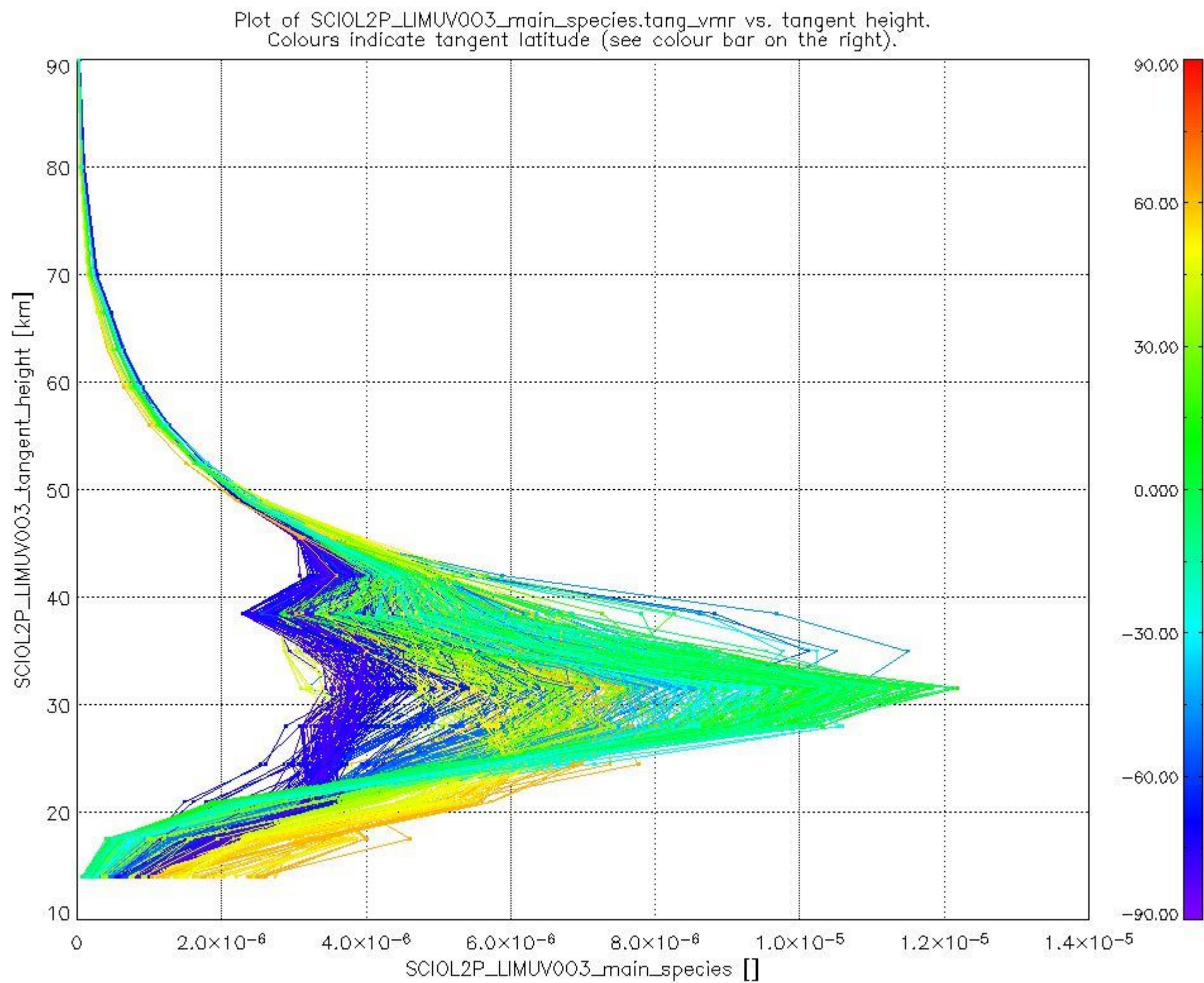
This section shows information about product quality of the limb retrievals, in particular the quality of retrieved species.

The following data items are currently included into this section:

| Number | Data item ID                  |
|--------|-------------------------------|
| 0      | SCIOL2PLIMUV003_main_species  |
| 1      | SCIOL2PLIMUV1NO2_main_species |

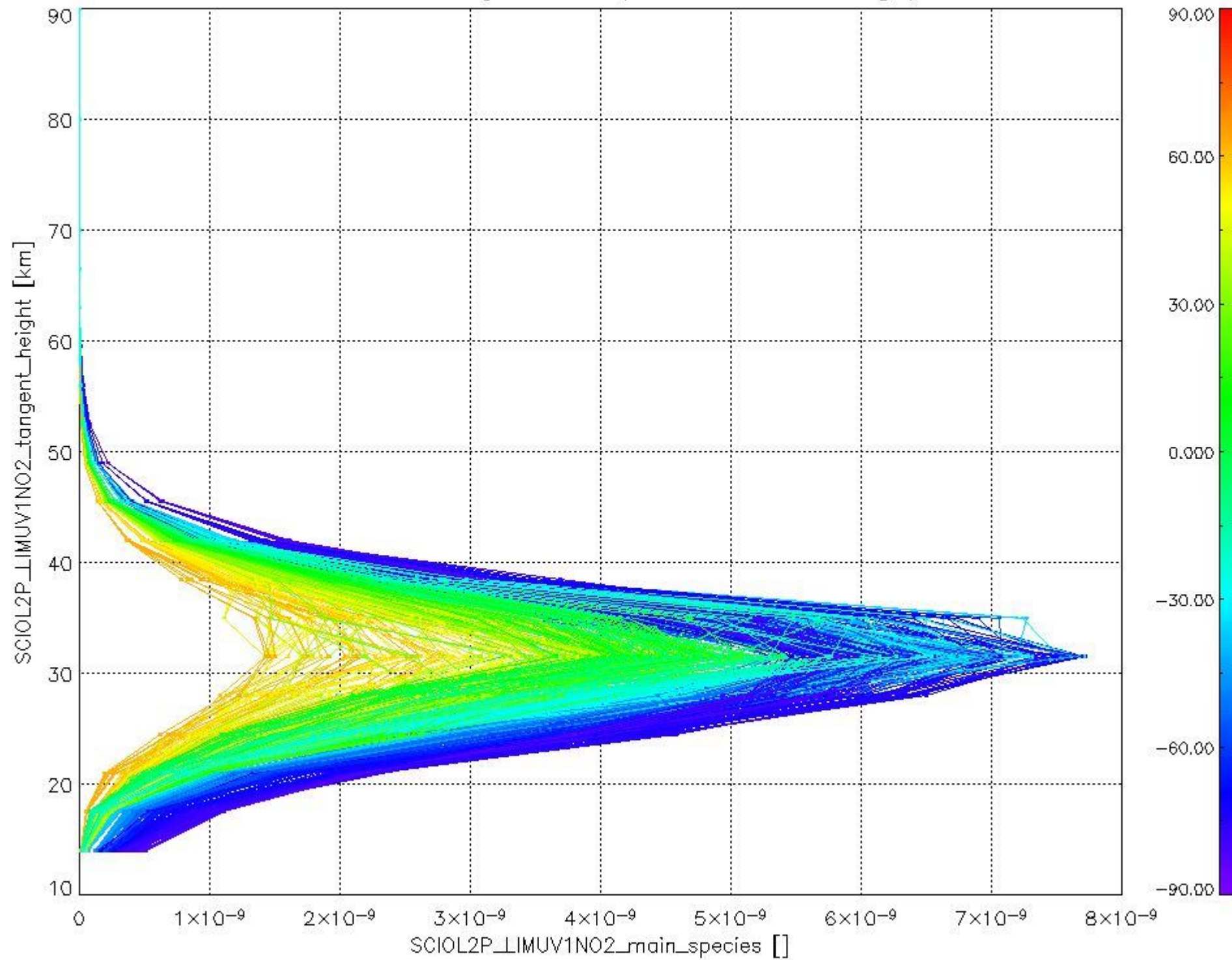


The following plots shows for each species the tangent volume mixing ratio vs. tangent height. Colours indicate tangent latitude.





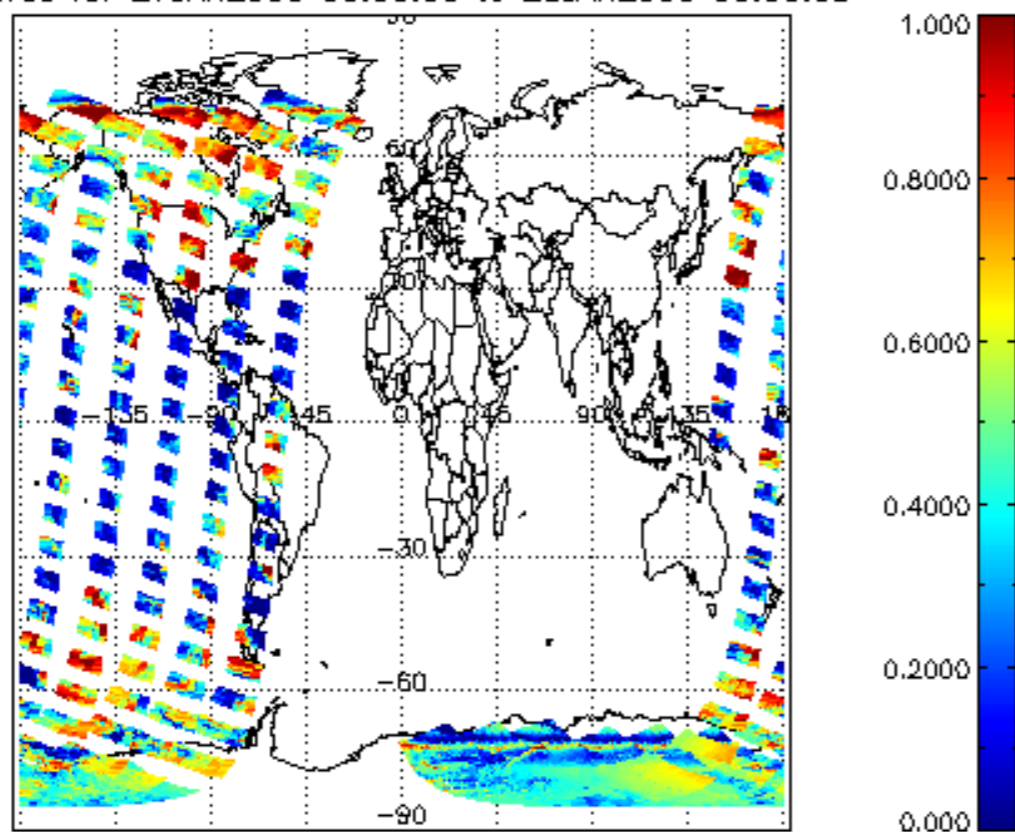
Plot of SCIOL2P\_LIMUV1NO2\_main\_species.tang\_vmr vs. tangent height.  
Colours indicate tangent latitude (see colour bar on the right).



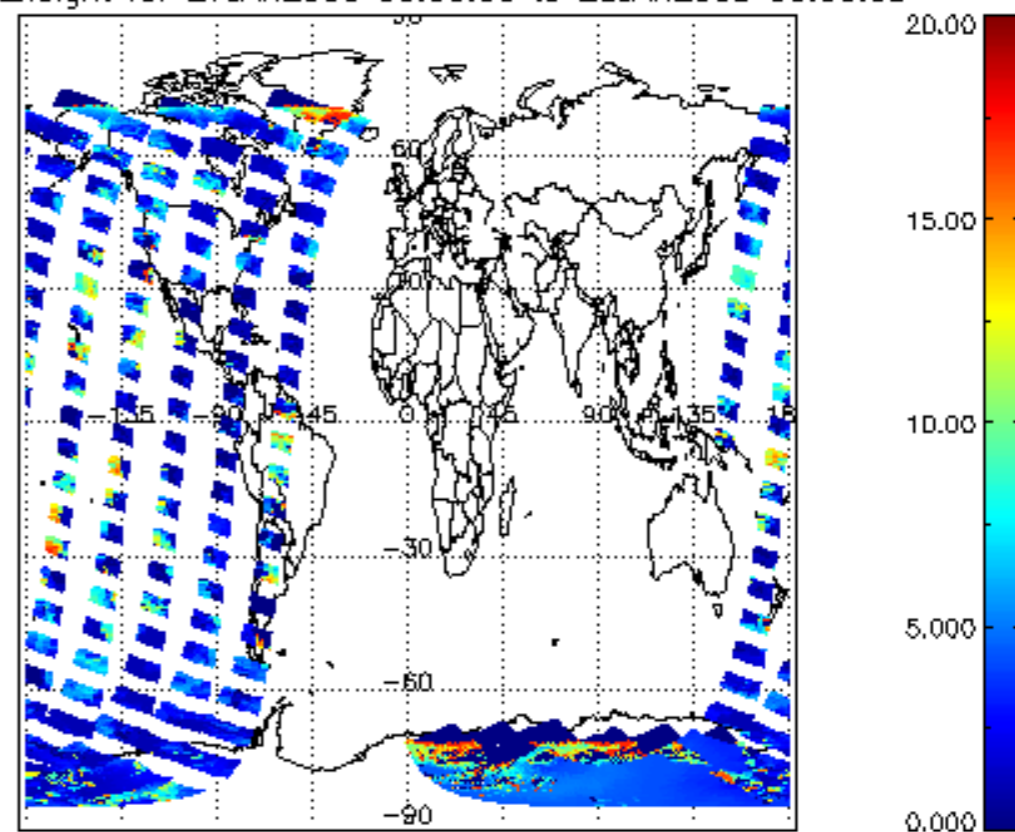
### 2.3 ADF monitoring

| Number | ADF  |
|--------|--|
|        | <b>IN_ (INITIALISATION_FILE)</b>                             |
| 0      | SCI_IN_AXNPDE20070629_092400_20070720_000000_20991231_235959 |
|        | <b>ECF (ECMWF_FILE)</b>                                      |
| 1      | NOT USED   |

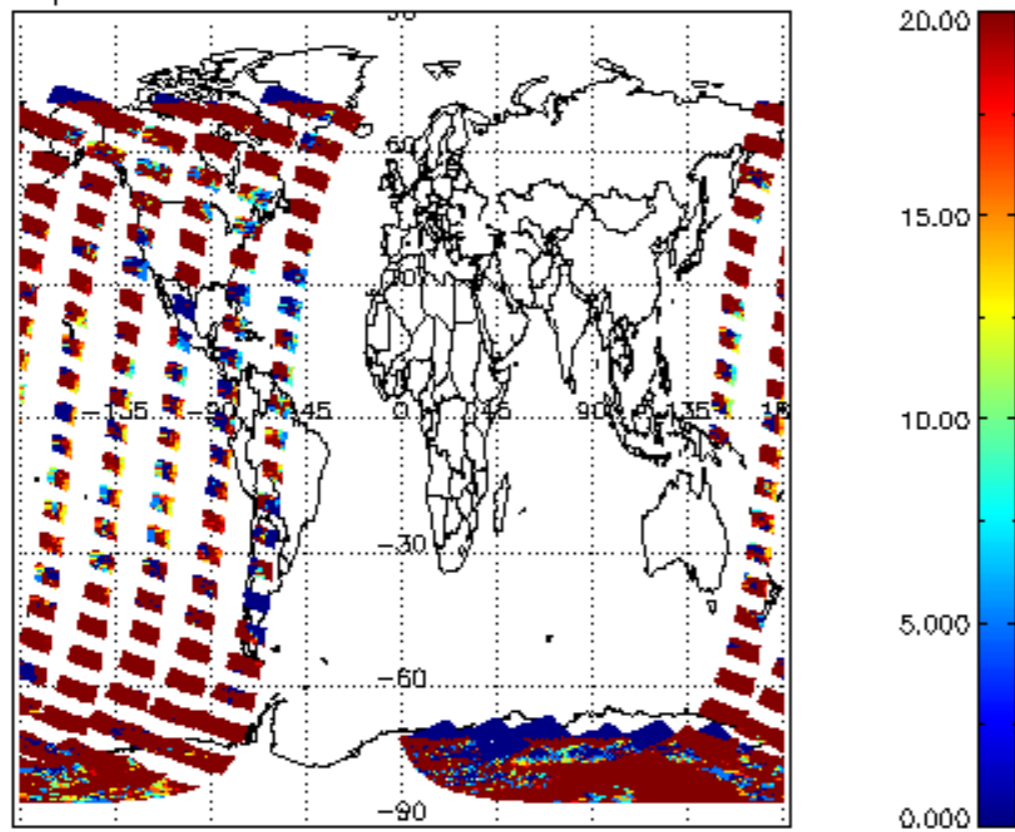
cL\_frac for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



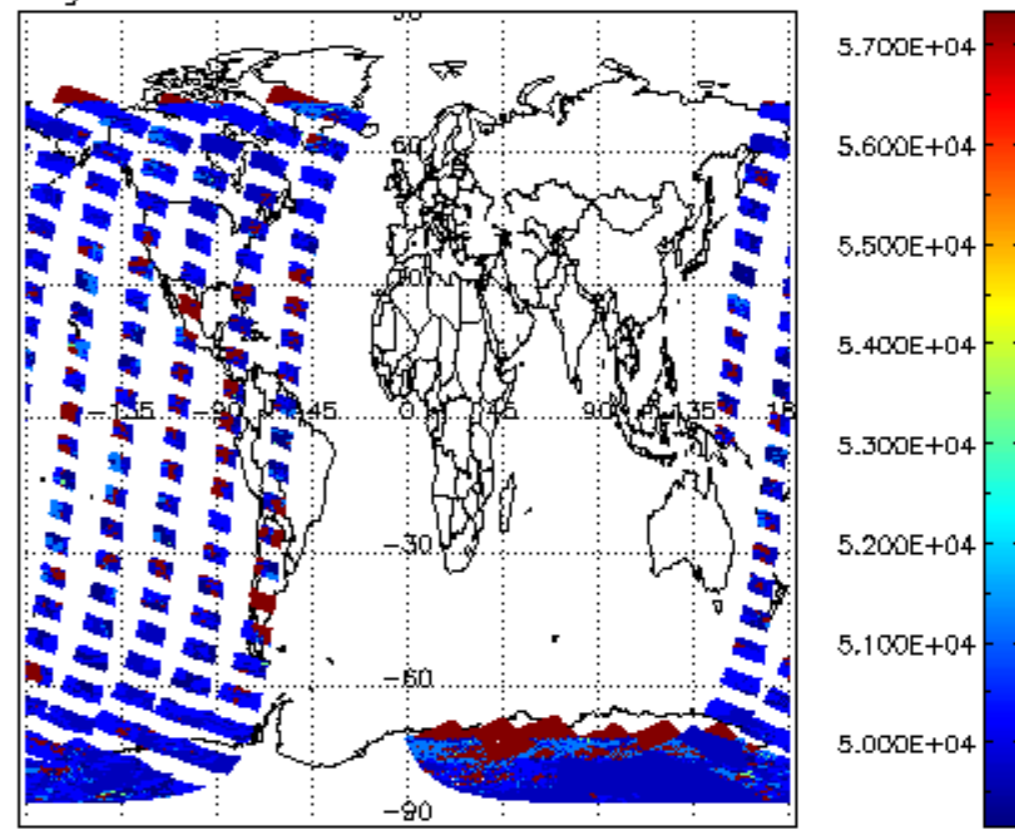
cL\_top\_height for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



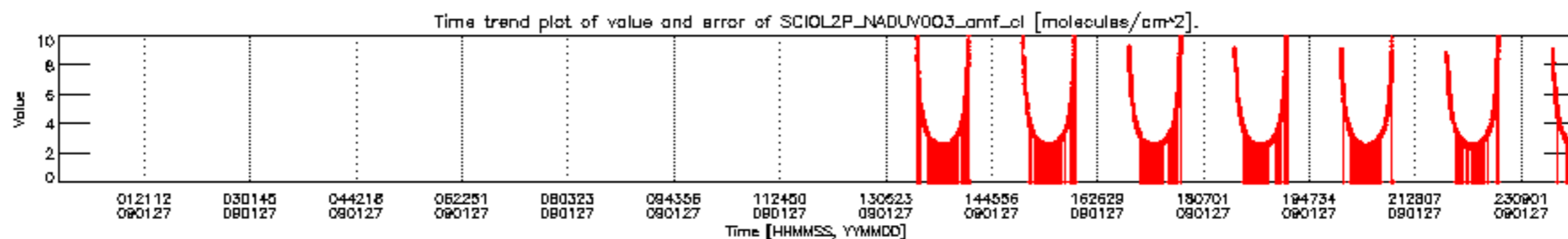
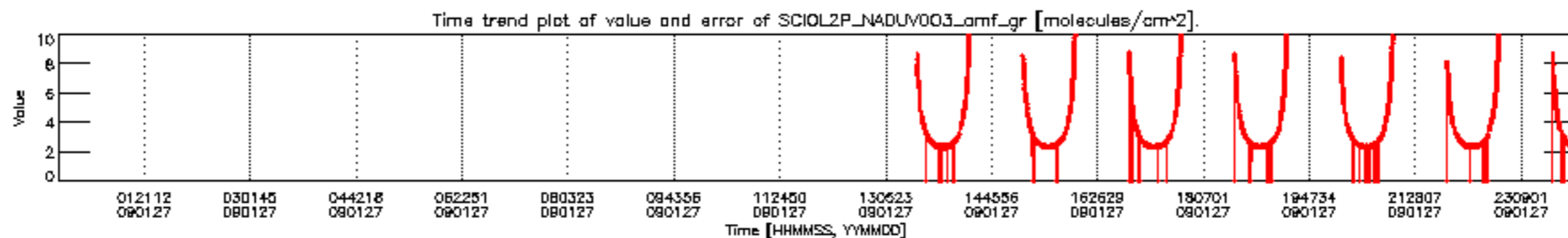
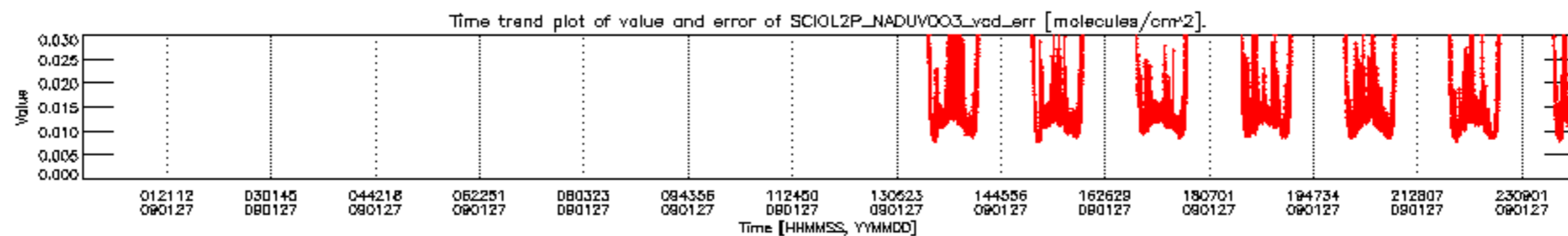
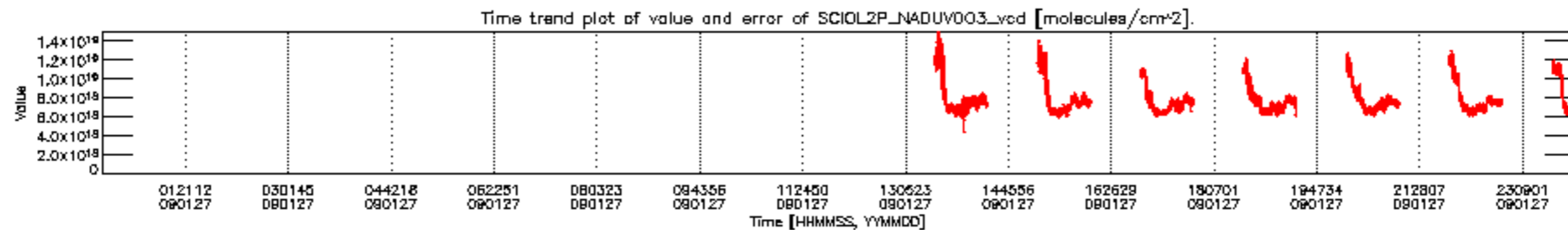
cLopt\_depth for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



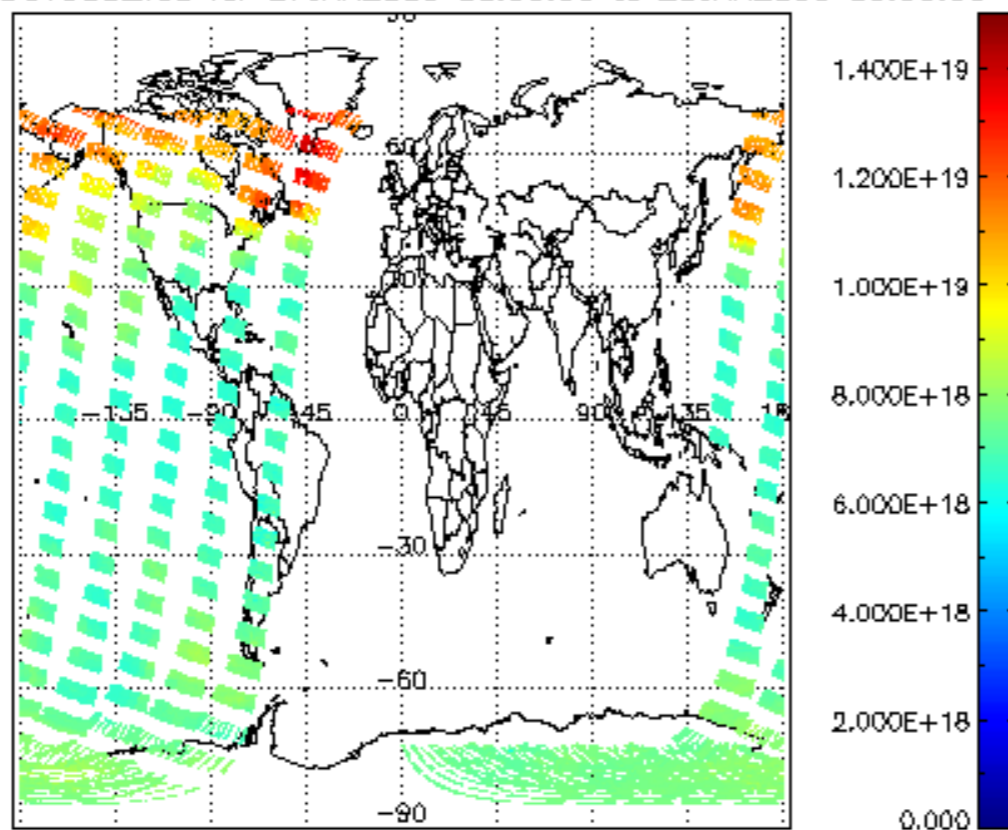
cloud\_flags for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



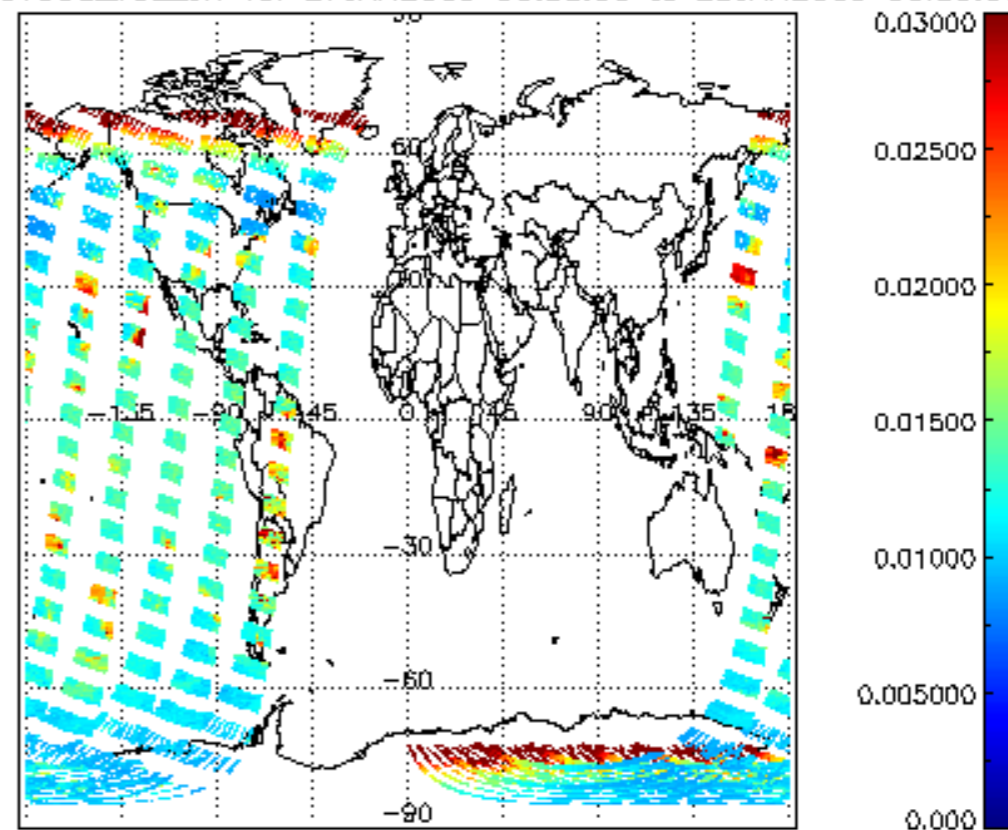




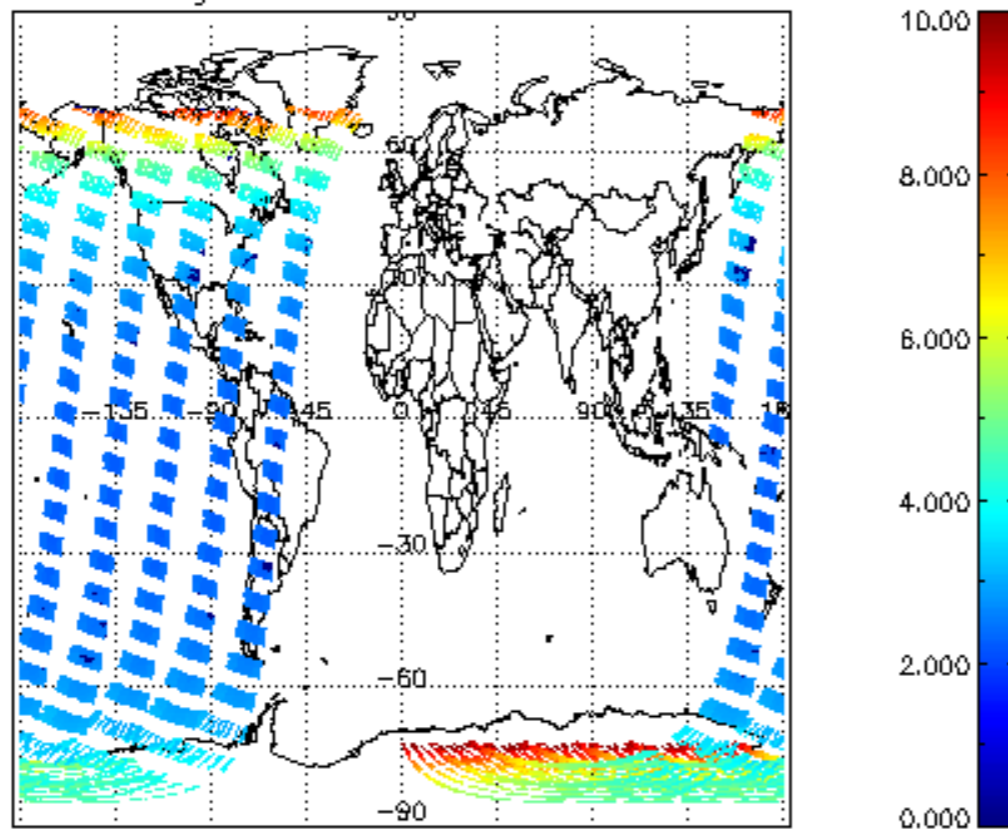
SCIOL2P\_NADUV003\_vcd for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



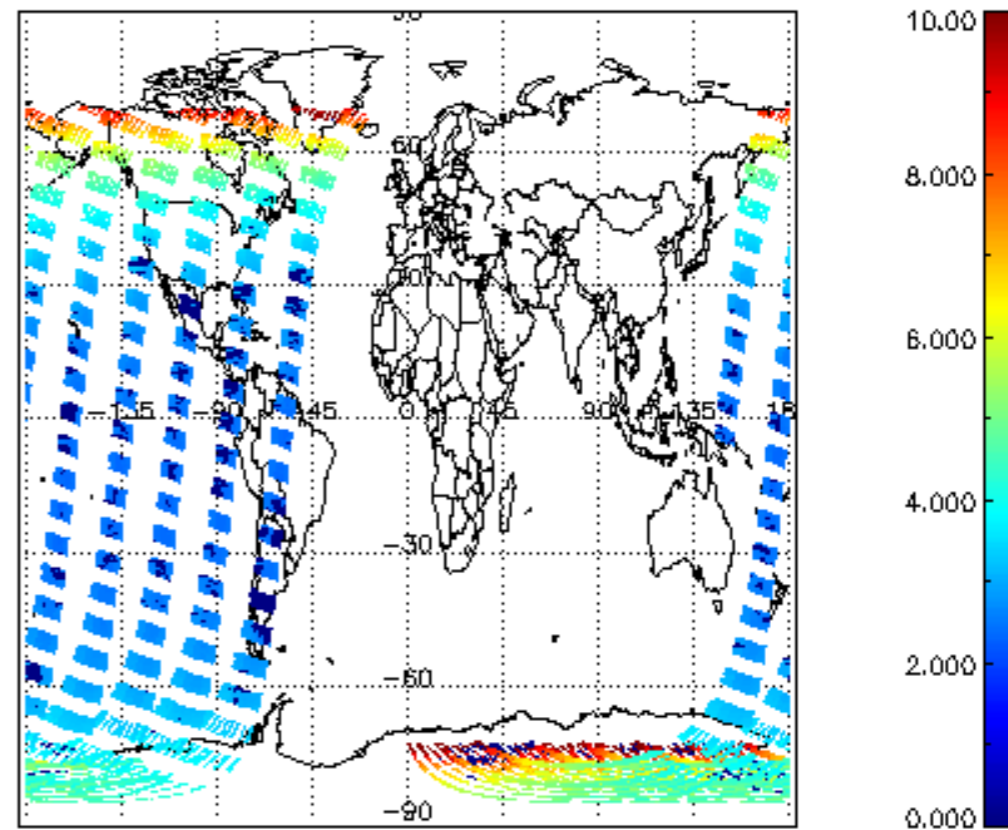
SCIOL2P\_NADUV003\_vcd\_err for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



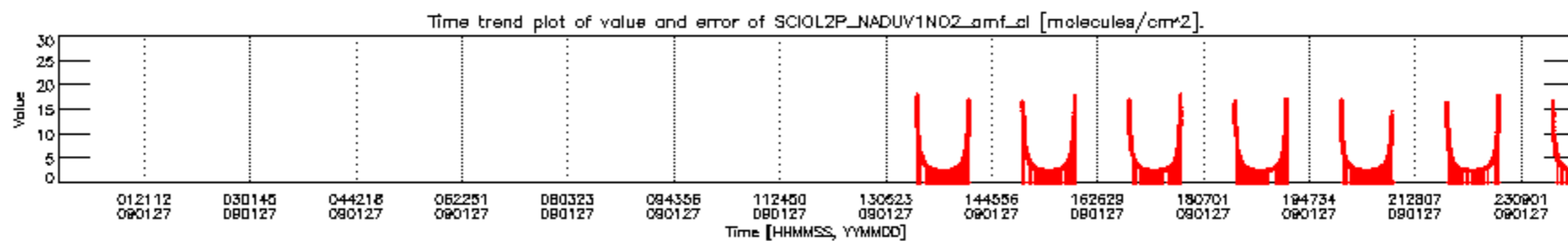
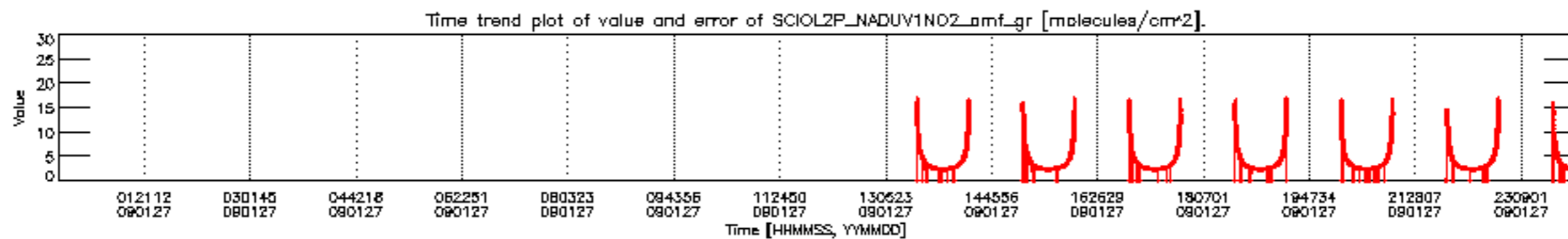
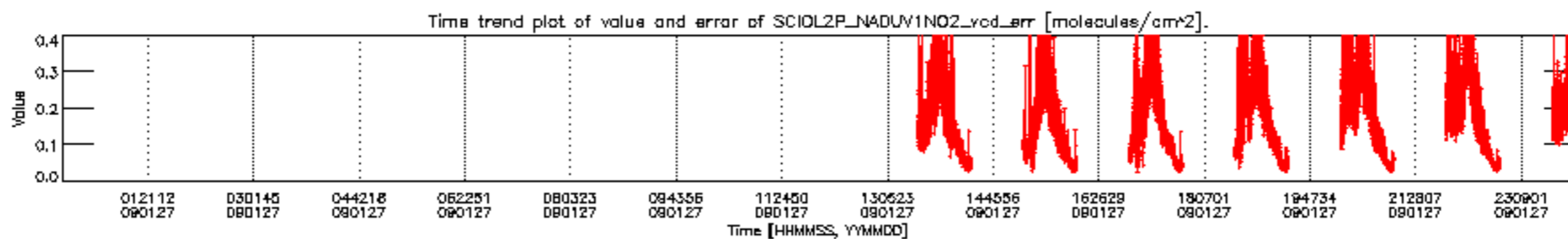
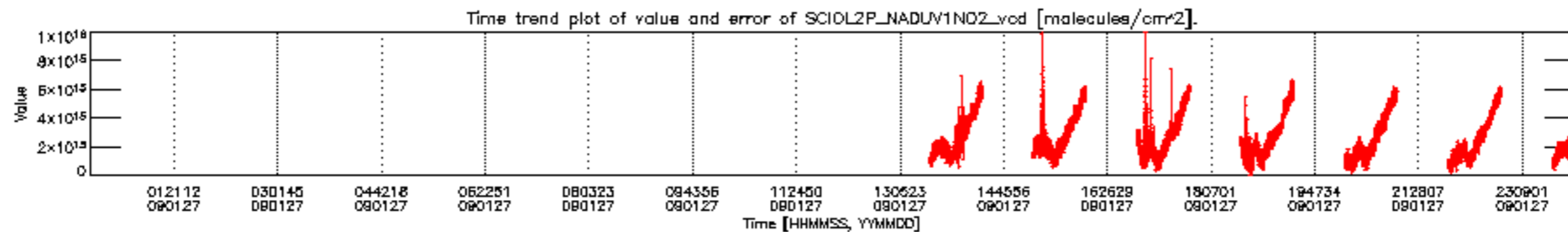
SCIOL2P\_NADUV003\_amf\_gr for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



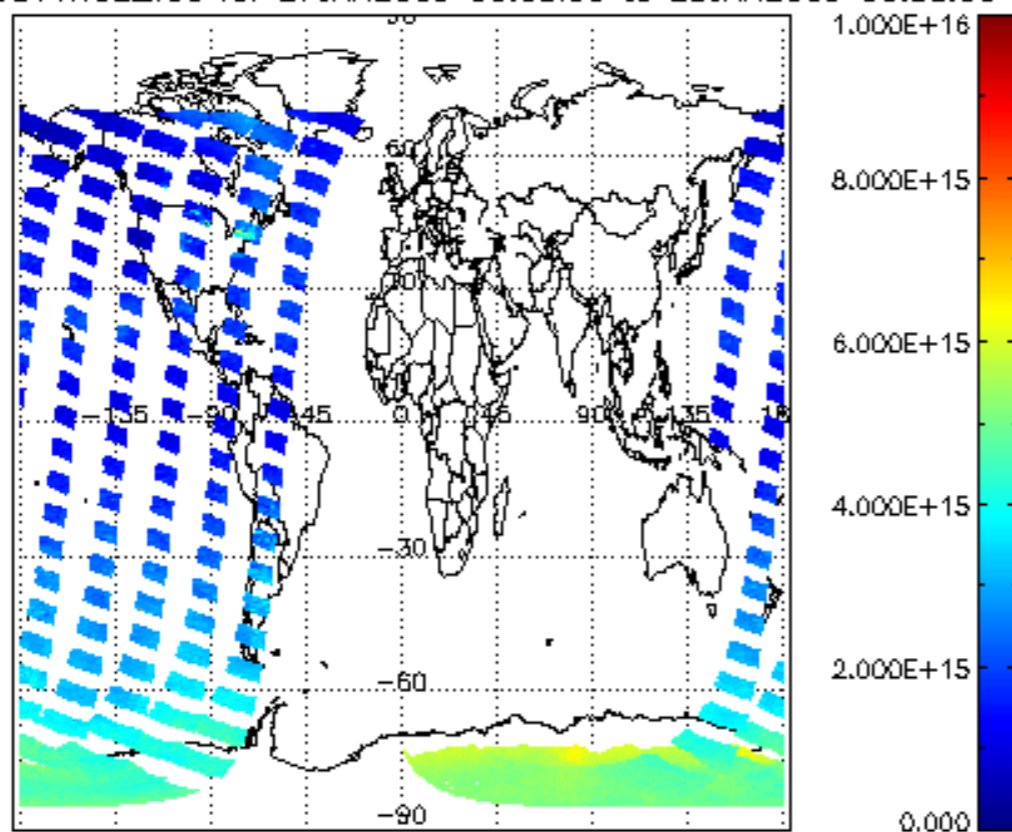
SCIOL2P\_NADUV003\_amf\_cl for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



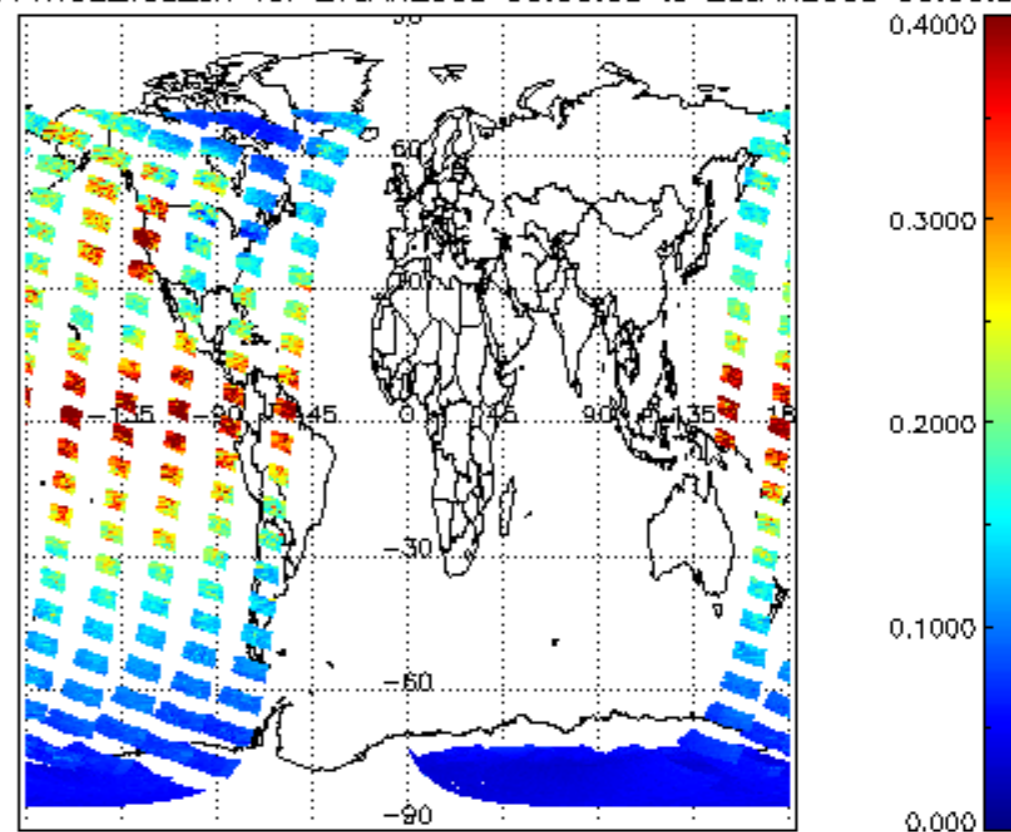




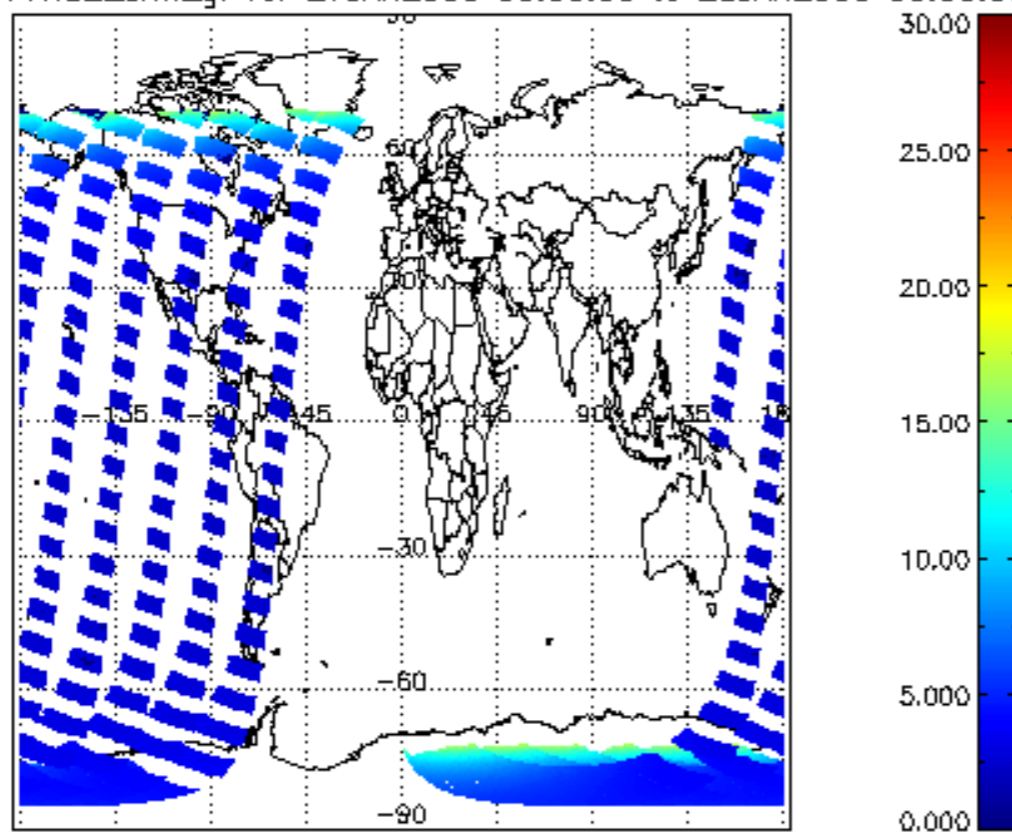
SCIOL2P\_NADUV1NO2\_vcd for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



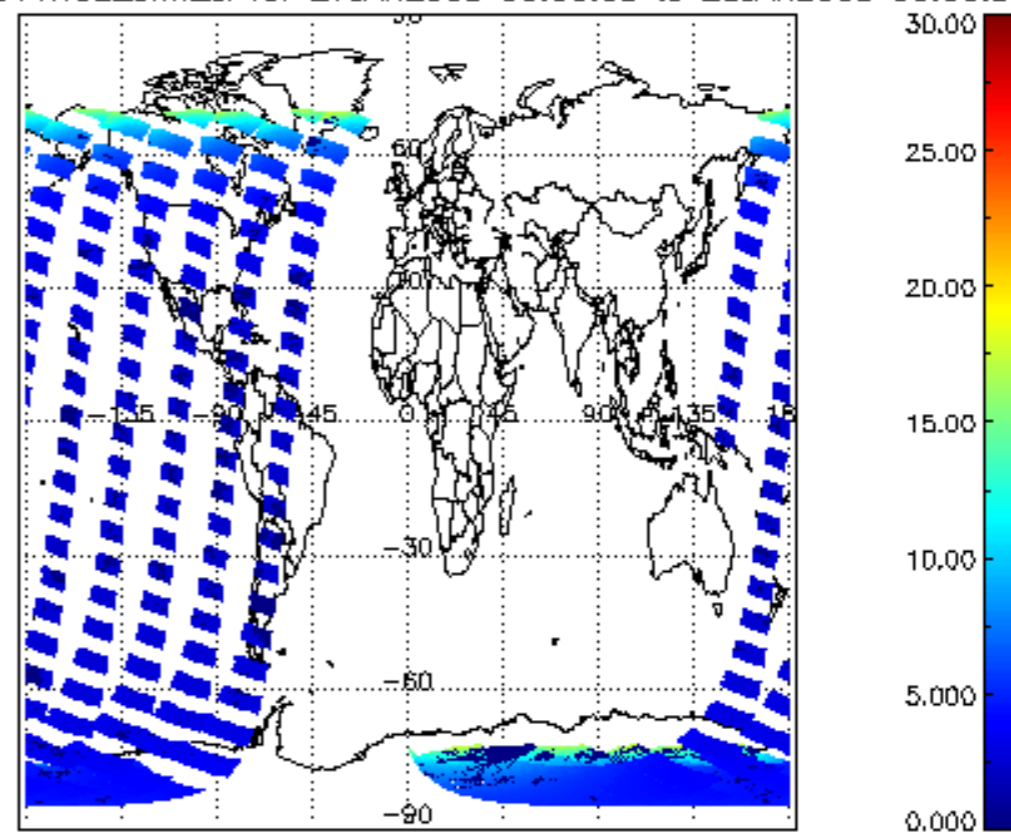
SCIOL2P\_NADUV1NO2\_vcd\_err for 27JAN2009 00:00:00 to 28JAN2009 00:00:00



SCIOL2P\_NADUV1NO2\_amf\_gr for 27JAN2009 00:00:00 to 28JAN2009 00:00:00

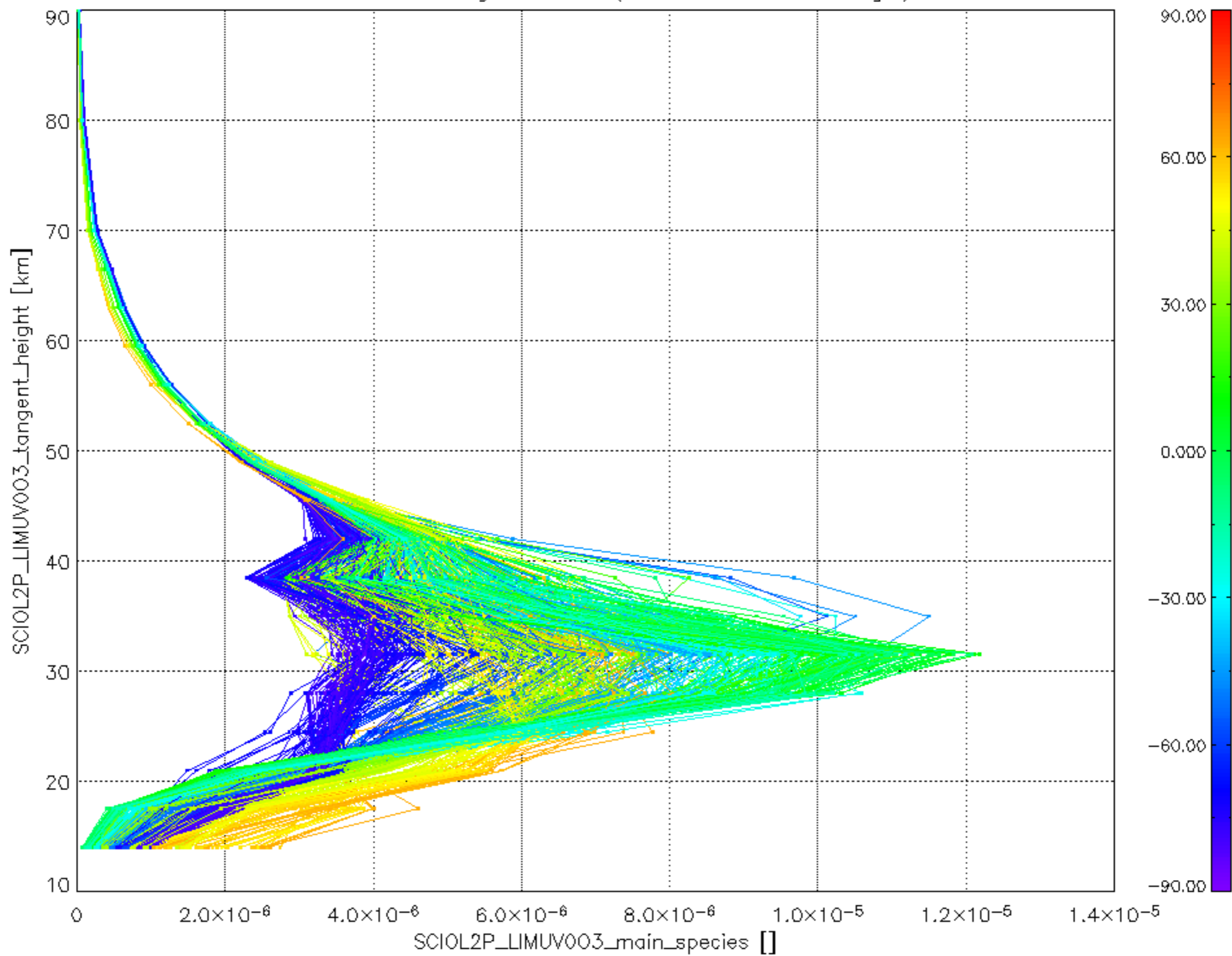


SCIOL2P\_NADUV1NO2\_amf\_cl for 27JAN2009 00:00:00 to 28JAN2009 00:00:00





Plot of SCIOL2P\_LIMUV003\_main\_species.tang\_vmr vs. tangent height.  
 Colours indicate tangent latitude (see colour bar on the right).



Plot of SCIOL2P\_LIMUV1N02\_main\_species.tang\_vmr vs. tangent height.  
 Colours indicate tangent latitude (see colour bar on the right).

