

## 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                | 12DEC2009 03:07:16                       |
| Data source version                      | SCIA-OL/3.01-R                           |
| Processing scope for products            | 24NOV2009 00:00:00 to 25NOV2009 00:00:00 |
| Start time of first product within scope | 23NOV2009 23:04:59                       |
| Stop time of last product within scope   | 25NOV2009 01:09:27                       |
| Total number of level 2 products         | 16                                       |
| 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__2PRDPA20091123_230459_000033812084_00302_40436_5433.N1</a> | 23NOV2009 23:04:59 | 24NOV2009 00:01:21 | 0        | GOOD        |
| 1  | <a href="#">SCI_OL__2PRDPA20091124_004535_000033252084_00303_40437_5434.N1</a> | 24NOV2009 00:45:35 | 24NOV2009 01:41:01 | 0        | GOOD        |
| 2  | <a href="#">SCI_OL__2PRDPA20091124_022611_000033812084_00304_40438_5435.N1</a> | 24NOV2009 02:26:11 | 24NOV2009 03:22:33 | 0        | GOOD        |
| 3  | <a href="#">SCI_OL__2PRDPA20091124_040648_000033252084_00305_40439_5436.N1</a> | 24NOV2009 04:06:48 | 24NOV2009 05:02:13 | 0        | GOOD        |
| 4  | <a href="#">SCI_OL__2PRDPA20091124_054724_000033812084_00306_40440_5440.N1</a> | 24NOV2009 05:47:24 | 24NOV2009 06:43:45 | 0        | GOOD        |
| 5  | <a href="#">SCI_OL__2PRDPA20091124_072800_000033252084_00307_40441_5441.N1</a> | 24NOV2009 07:28:00 | 24NOV2009 08:23:25 | 0        | GOOD        |
| 6  | <a href="#">SCI_OL__2PRDPA20091124_090836_000033812084_00308_40442_5442.N1</a> | 24NOV2009 09:08:36 | 24NOV2009 10:04:57 | 0        | GOOD        |
| 7  | <a href="#">SCI_OL__2PRDPA20091124_104912_000033252084_00309_40443_5443.N1</a> | 24NOV2009 10:49:12 | 24NOV2009 11:44:38 | 0        | GOOD        |
| 8  | <a href="#">SCI_OL__2PRDPA20091124_122948_000033812084_00310_40444_5444.N1</a> | 24NOV2009 12:29:48 | 24NOV2009 13:26:10 | 0        | GOOD        |
| 9  | <a href="#">SCI_OL__2PRDPA20091124_141024_000033252084_00311_40445_5445.N1</a> | 24NOV2009 14:10:24 | 24NOV2009 15:05:50 | 0        | GOOD        |
| 10 | <a href="#">SCI_OL__2PRDPA20091124_155101_000033812084_00312_40446_5446.N1</a> | 24NOV2009 15:51:01 | 24NOV2009 16:47:22 | 0        | GOOD        |
| 11 | <a href="#">SCI_OL__2PRDPA20091124_173158_000033252084_00313_40447_5447.N1</a> | 24NOV2009 17:31:58 | 24NOV2009 18:27:24 | 0        | GOOD        |
| 12 | <a href="#">SCI_OL__2PRDPA20091124_191234_000033122084_00314_40448_5448.N1</a> | 24NOV2009 19:12:34 | 24NOV2009 20:07:47 | 0        | GOOD        |
| 13 | <a href="#">SCI_OL__2PRDPA20091124_205249_000033252084_00315_40449_5449.N1</a> | 24NOV2009 20:52:49 | 24NOV2009 21:48:15 | 0        | GOOD        |
| 14 | <a href="#">SCI_OL__2PRDPA20091124_223325_000033812084_00316_40450_5450.N1</a> | 24NOV2009 22:33:25 | 24NOV2009 23:29:47 | 0        | GOOD        |
| 15 | <a href="#">SCI_OL__2PRDPA20091125_001401_000033252084_00317_40451_5451.N1</a> | 25NOV2009 00:14:01 | 25NOV2009 01:09:27 | 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: 147260

Total number of cloud data DSRs with good quality flag (=0): 147260 (100.0 %)

| Parameter         | #valid | Mean     | Median   | Min      | Max      | Stddev   | Unit  |
|-------------------|--------|----------|----------|----------|----------|----------|-------|
| QUALITY_FLAG      | 147260 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000   | flag  |
| INTEGR_TIME       | 147260 | 0.16958  | 0.12500  | 0.12500  | 0.25000  | 0.059876 | s     |
| CL_FRAC           | 147260 | 0.37979  | 0.38080  | 0.0000   | 1.0000   | 0.27873  | -     |
| CL_FRAC_ERR       | 147260 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000   | %     |
| PMD_READ          | 147260 | 5.4266   | 4.0000   | 4.0000   | 8.0000   | 1.9160   |       |
| PMD_READ_CL[0]    | 147260 | 0.16939  | 0.0000   | 0.0000   | 8.0000   | 0.92794  | -     |
| PMD_READ_CL[1]    | 147260 | 1.1321   | 0.0000   | 0.0000   | 8.0000   | 2.3246   | -     |
| CL_TOP_HEIGHT     | 126014 | 3.8965   | 2.9067   | 0.0000   | 17.000   | 3.7731   | km    |
| CL_TOP_HEIGHT_ERR | 0      | ---      | ---      | ---      | ---      | ---      | ---   |
| CL_OPT_DEPTH      | 126014 | 55.958   | 50.163   | 0.0000   | 101.00   | 41.005   | km    |
| CL_OPT_DEPTH_ERR  | 0      | ---      | ---      | ---      | ---      | ---      | ---   |
| CL_TYPE_FLAGS     | 147260 | 11100000 | 11100000 | 11100000 | 11100000 | 0.0000   | flags |
| CLOUD_FLAGS       | 147260 | 11001011 | 11000100 | 11000000 | 11100000 | 3341.3   | flags |
| AERO_ABSO_IND     | 147260 | 4.1406   | 4.8472   | 0.0000   | 19.271   | 2.8203   |       |
| AERO_IND_DIAG     | 147260 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000   |       |
| AERO_FLAGS        | 147260 | 01010110 | 00000000 | 00000000 | 11000000 | 24461.   | flags |

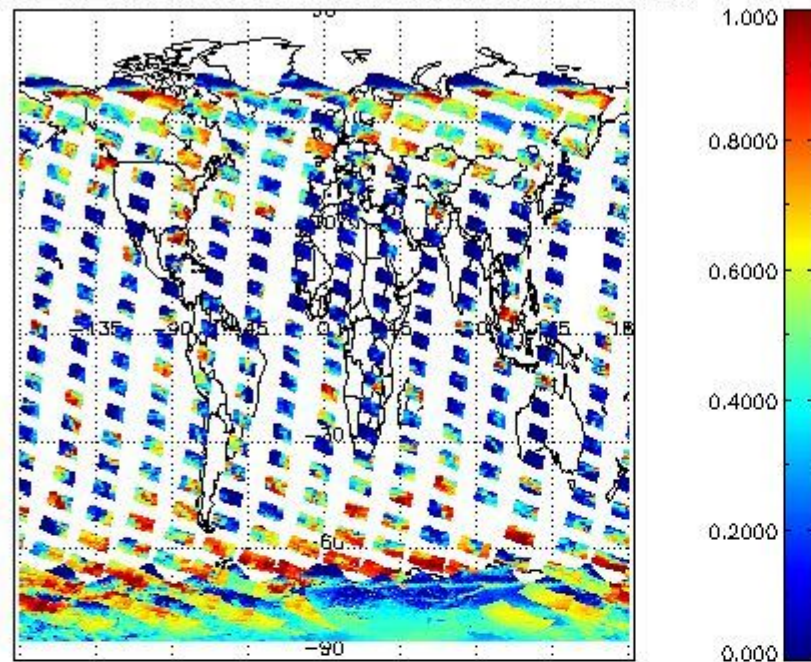
### Time and geolocation plots:

Plots are available for the following parameters:

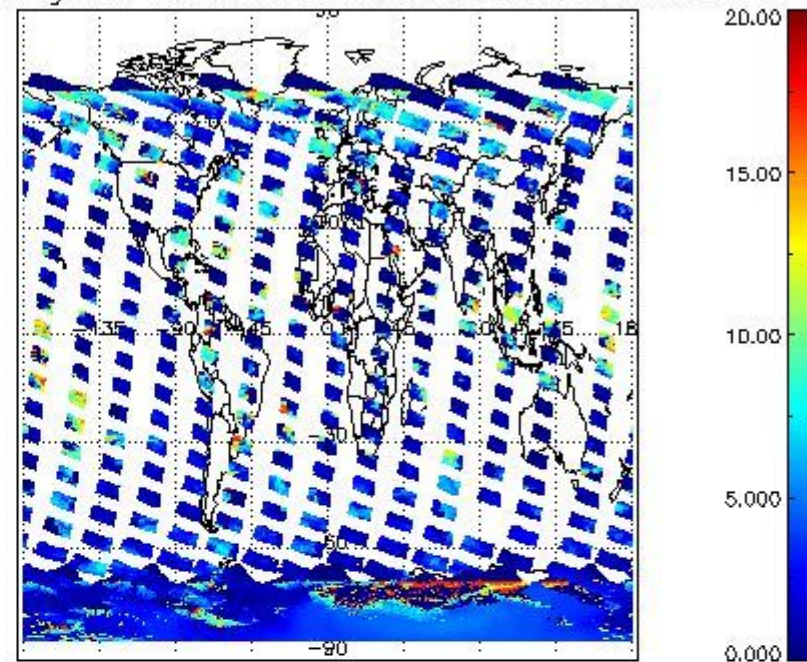
| Number | Data item ID  |
|--------|---------------|
| 0      | cl_frac       |
| 1      | cl_top_height |
| 2      | cl_opt_depth  |
| 3      | cloud_flags   |



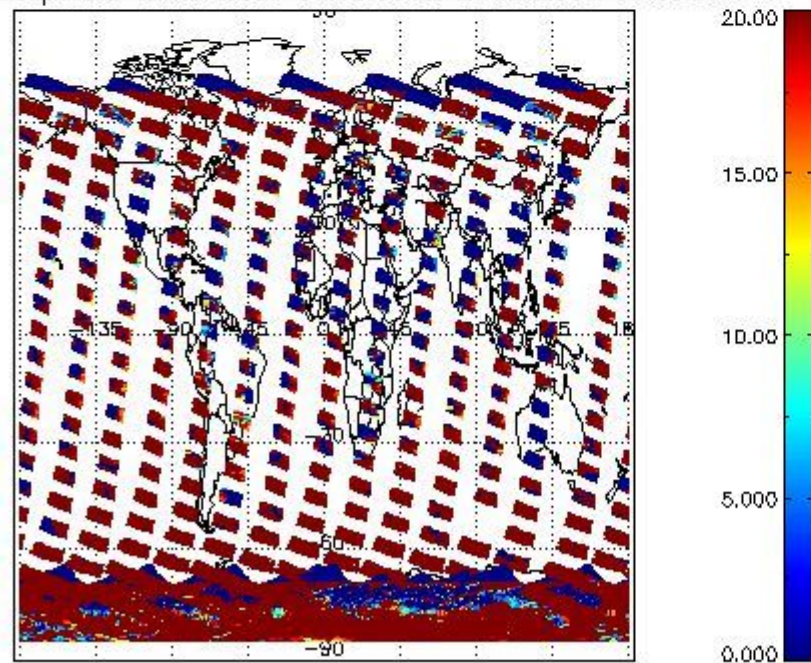
cLfrac for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



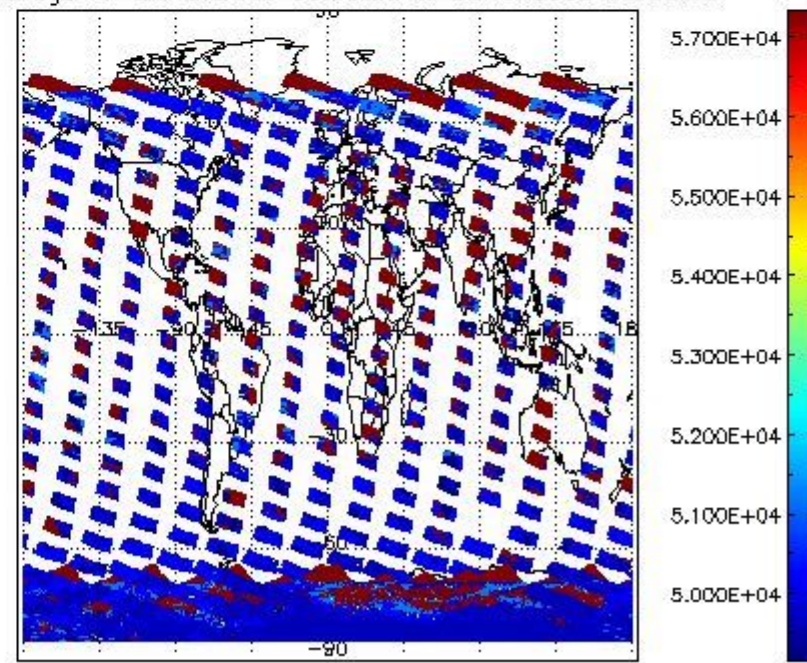
cL\_top\_height for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



cLopt\_depth for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



cloud\_flags for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



## 2.2.2 Nadir

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

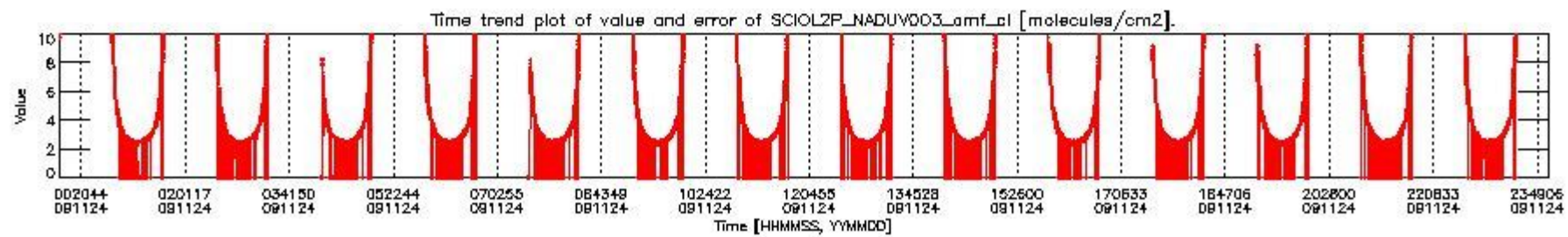
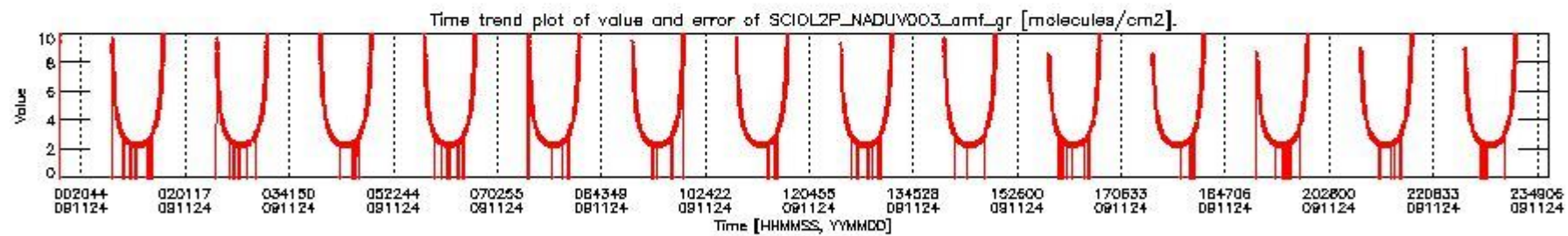
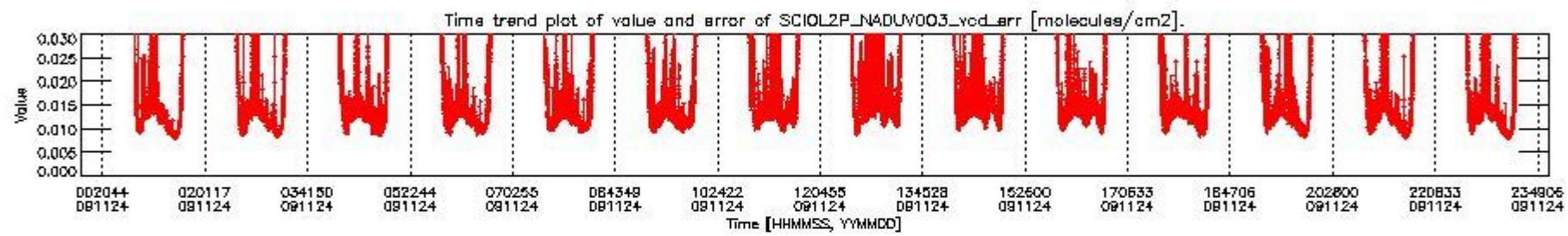
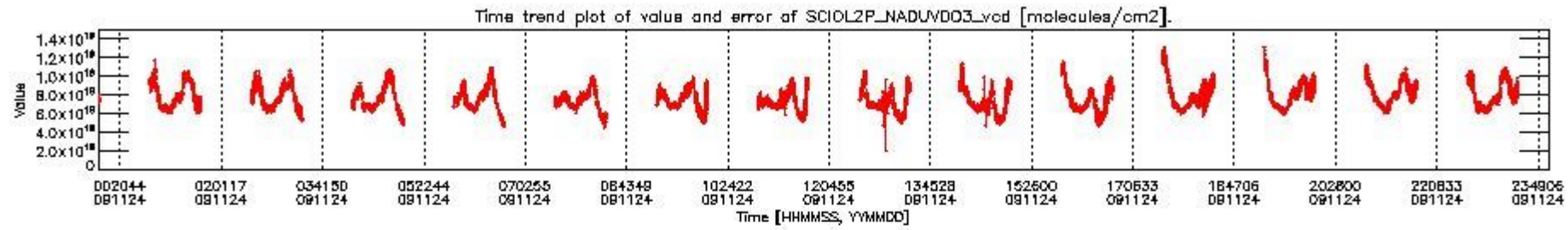
The following data items are currently included into this section:

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



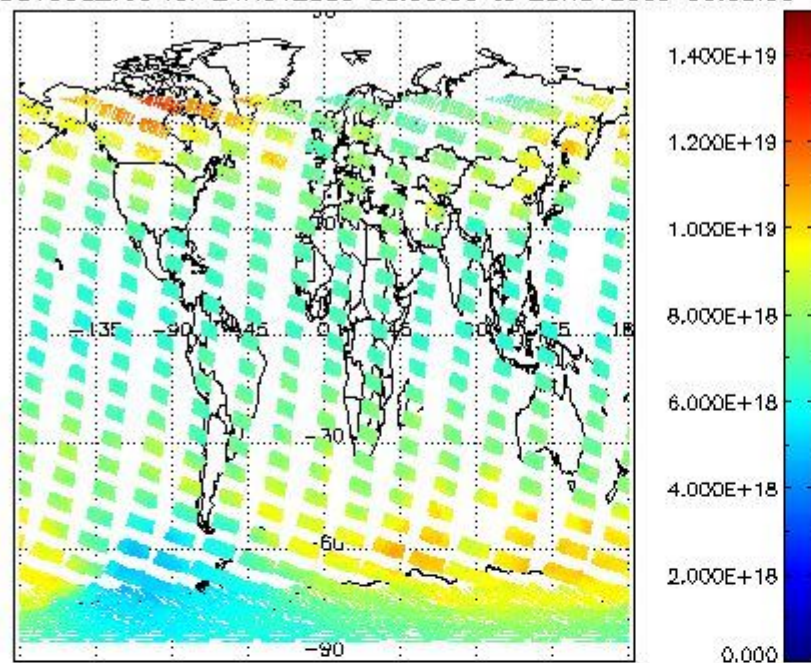
|   |                           |
|---|---------------------------|
| 3 | SCIOL2P_NADUV003_amf_cl   |
| 4 | SCIOL2P_NADUV1NO2_vcd     |
| 5 | SCIOL2P_NADUV1NO2_vcd_err |
| 6 | SCIOL2P_NADUV1NO2_amf_gr  |
| 7 | SCIOL2P_NADUV1NO2_amf_cl  |

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.

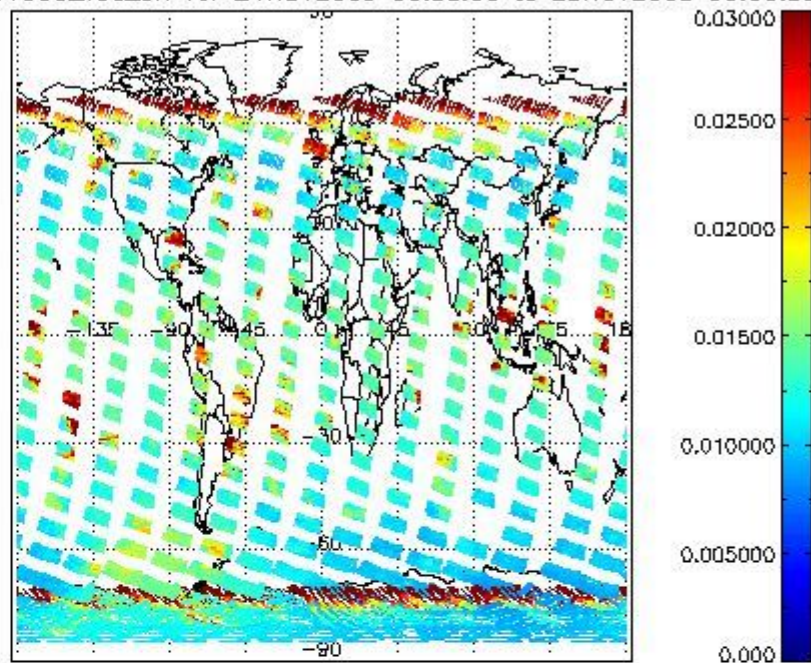




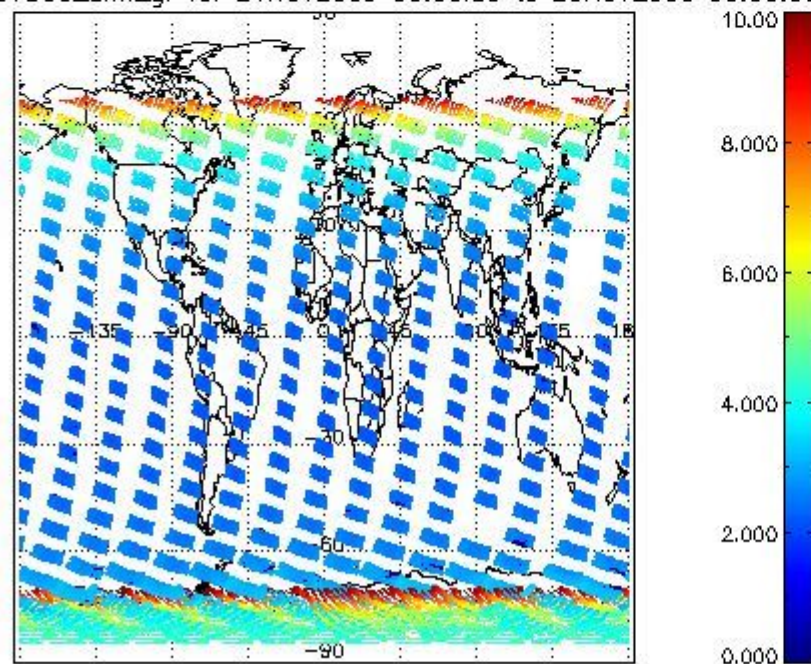
SCIOL2P\_NADUV003\_vcd for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



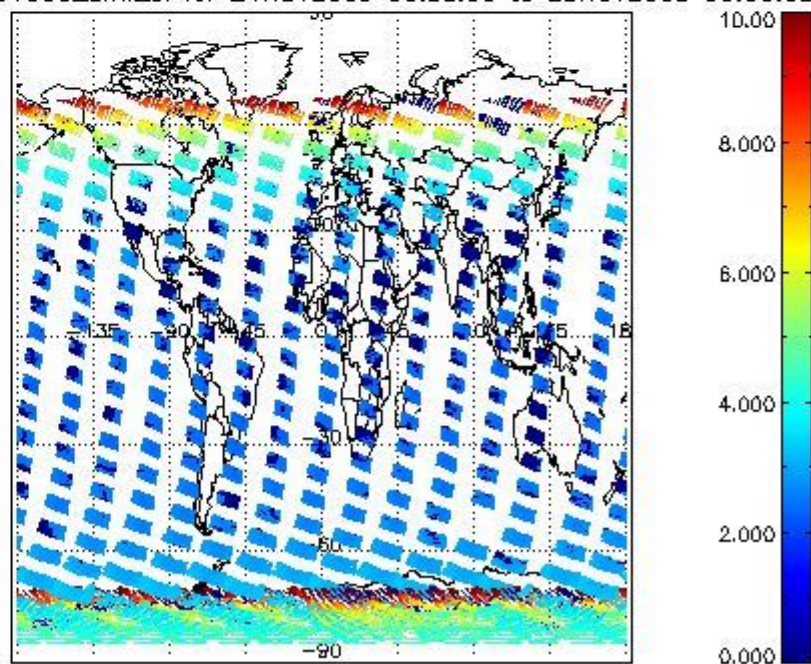
SCIOL2P\_NADUV003\_vcd\_err for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



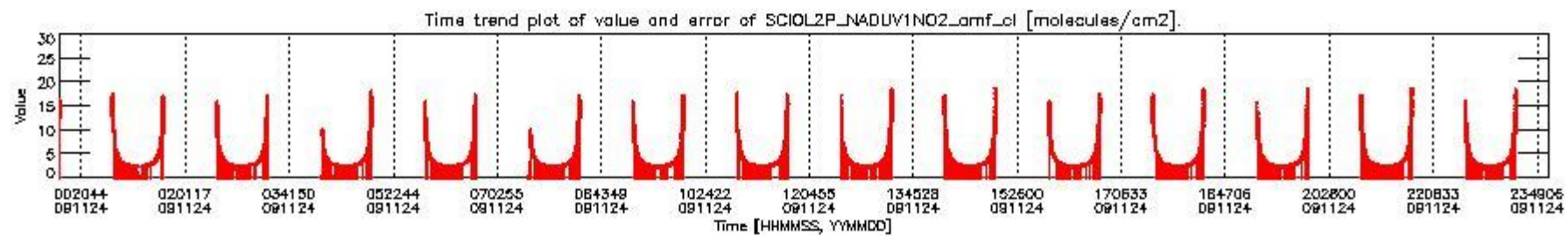
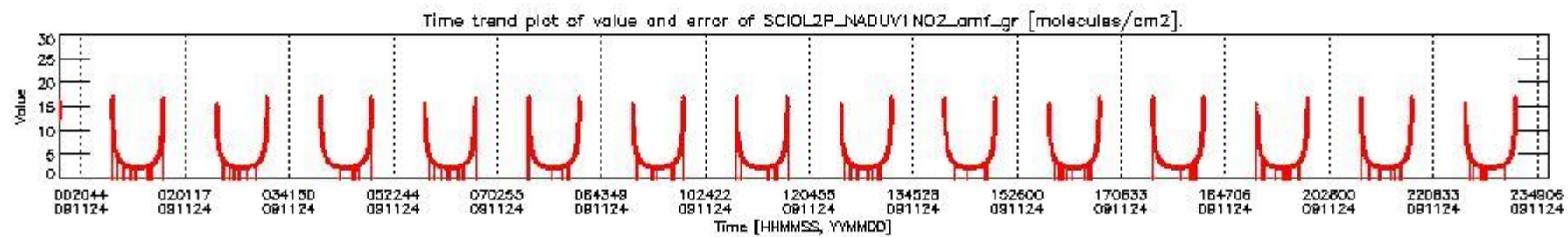
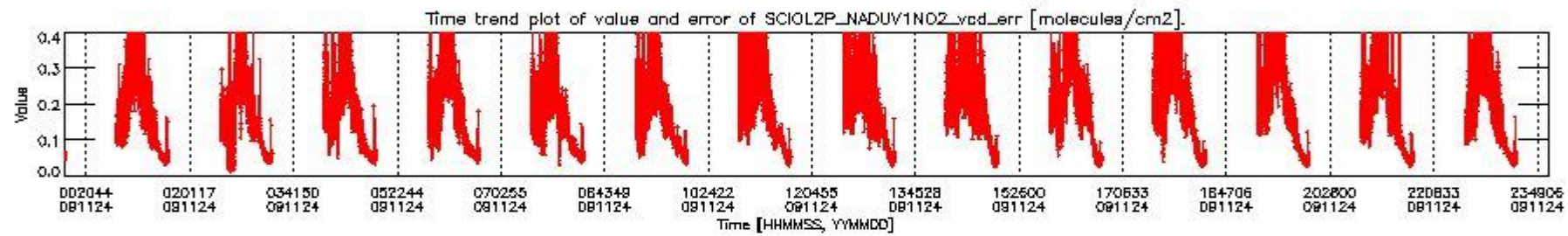
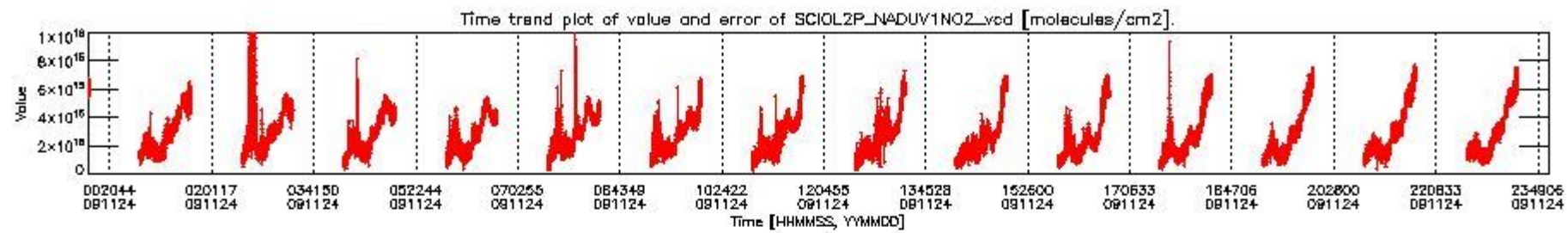
SCIOL2P\_NADUV003\_amf\_gr for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



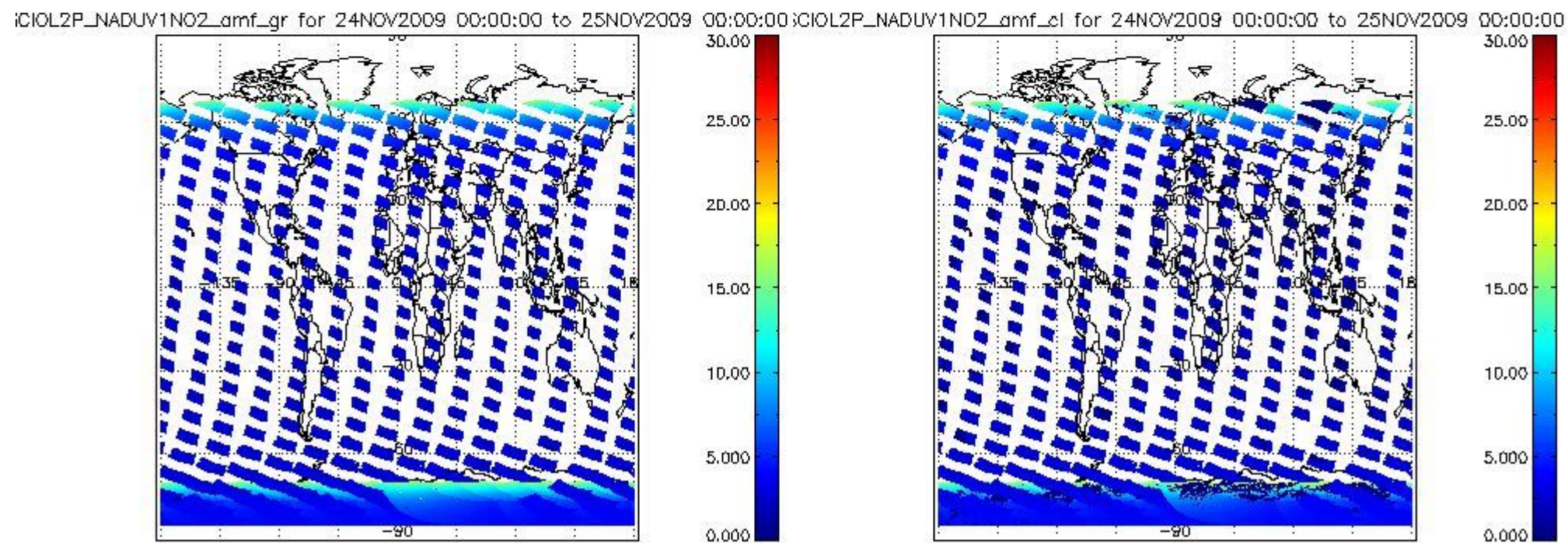
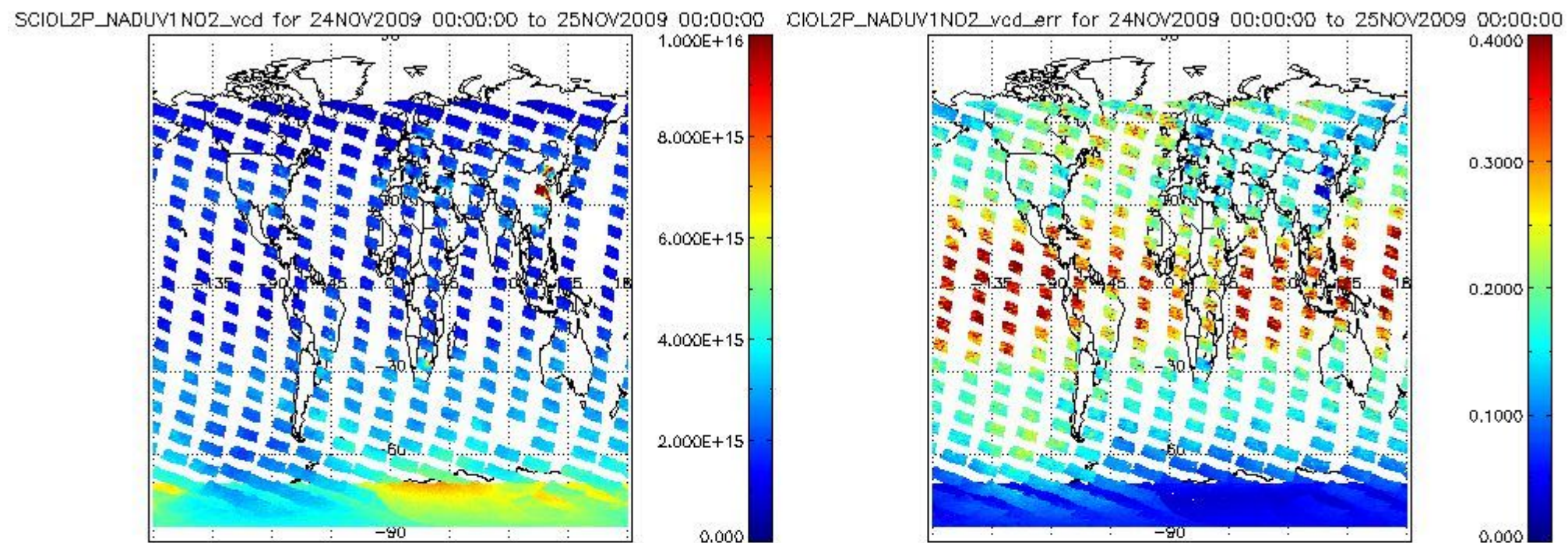
SCIOL2P\_NADUV003\_amf\_cl for 24NOV2009 00:00:00 to 25NOV2009 00:00:00











### 2.2.3 Limb

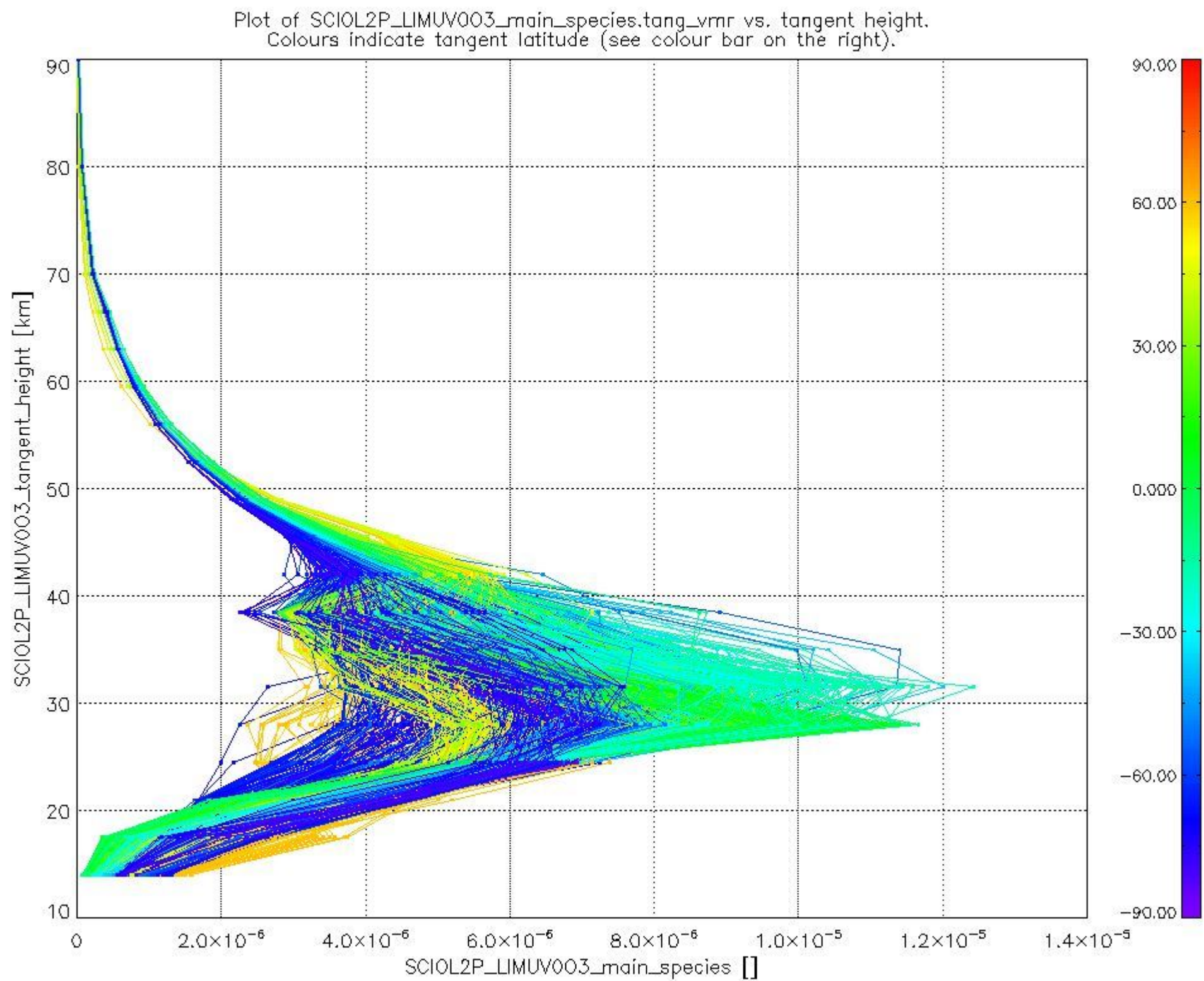
This section shows information about product quality of the limb retrievals, in particular the quality of retrieved species.

The following data items are currently included into this section:

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

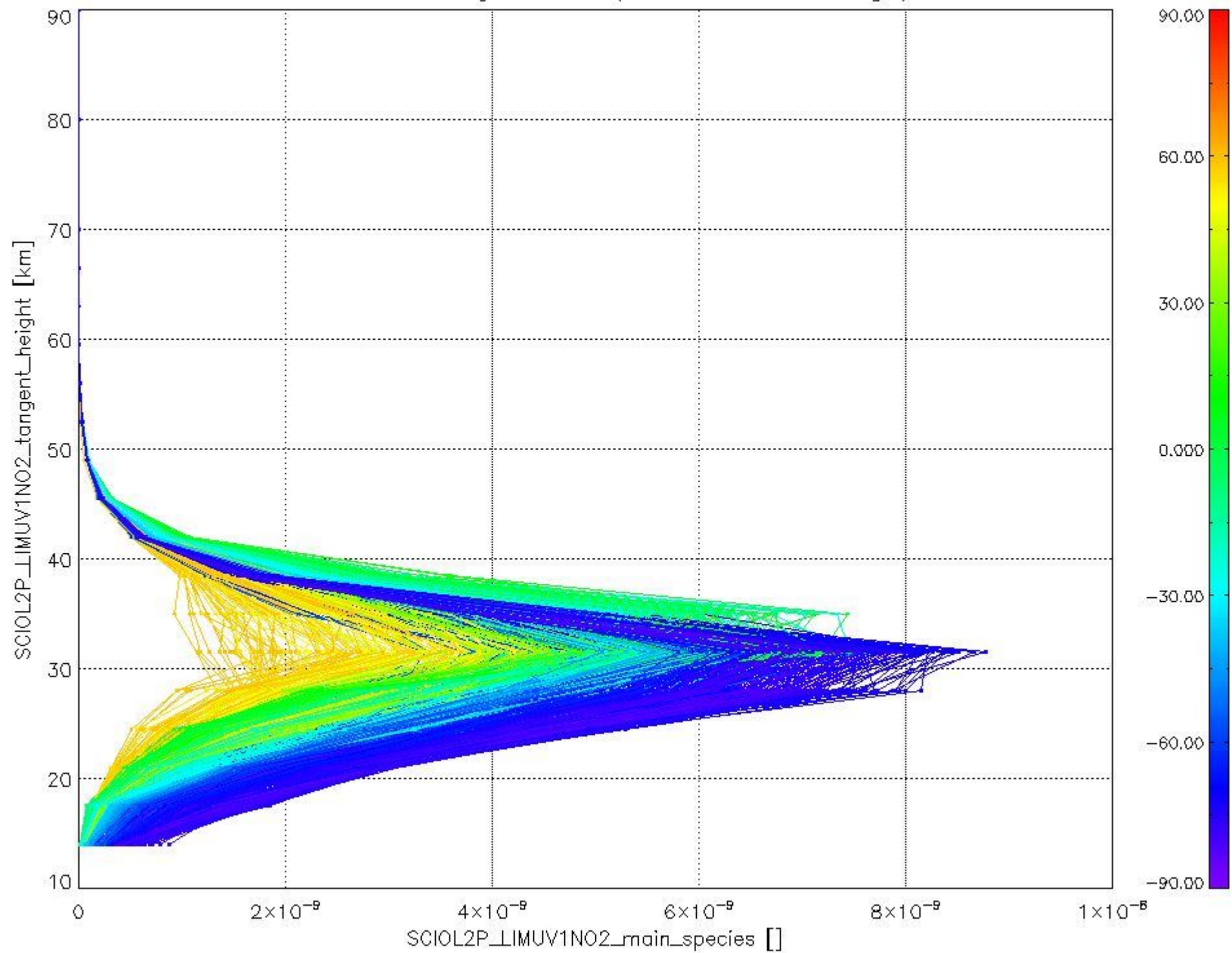


The following plots shows for each species the tangent volume mixing ratio vs. tangent height. Colours indicate tangent latitude.





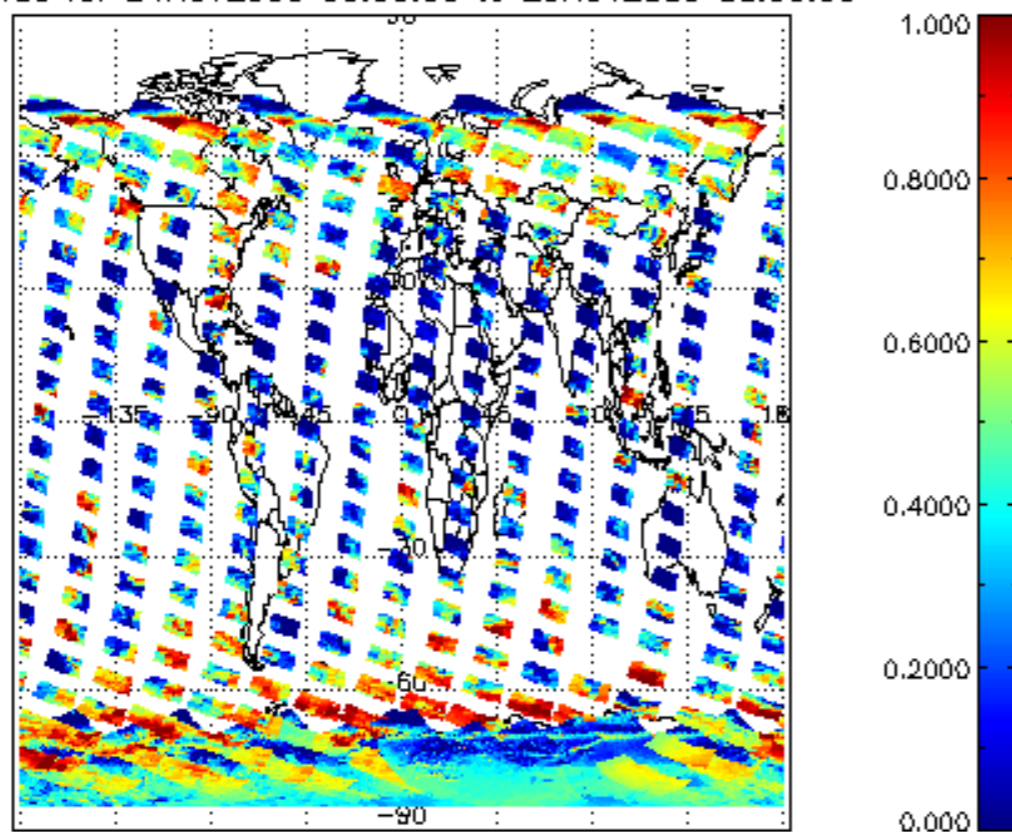
Plot of SCIOL2P\_LIMUV1NO2\_main\_species.tang\_vmr vs. tangent height.  
Colours indicate tangent latitude (see colour bar on the right).



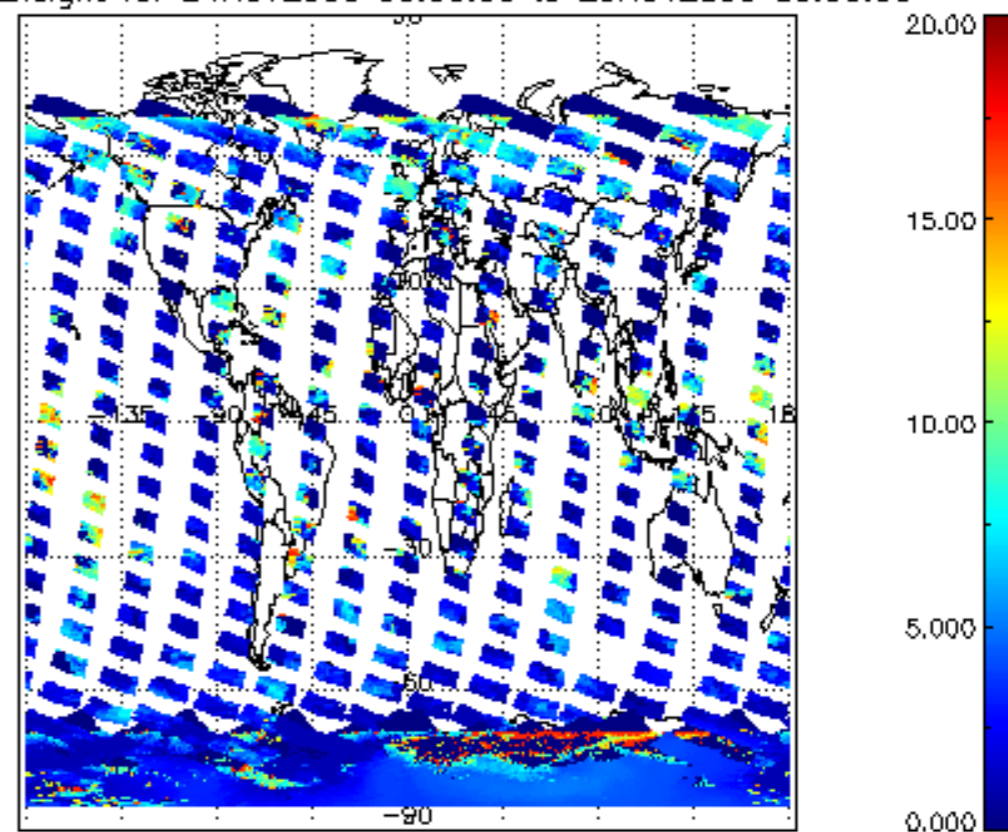
### 2.3 ADF monitoring

| Number | ADF   |
|--------|---|
|        | <b>IN_ (INITIALISATION_FILE)</b>                              |
| 0      | SCI_IN__AXNPDE20070629_092400_20070720_000000_20991231_235959 |
|        | <b>ECF (ECMWF_FILE)</b>                                       |
| 1      | NOT USED  |

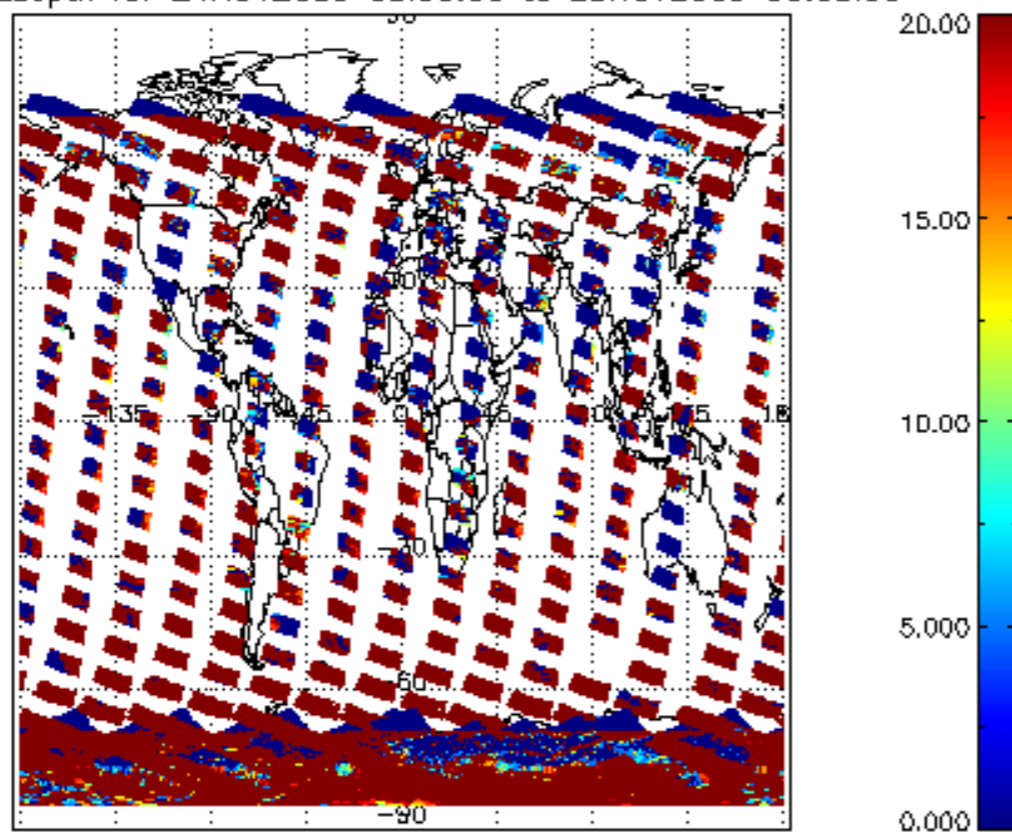
cLfrac for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



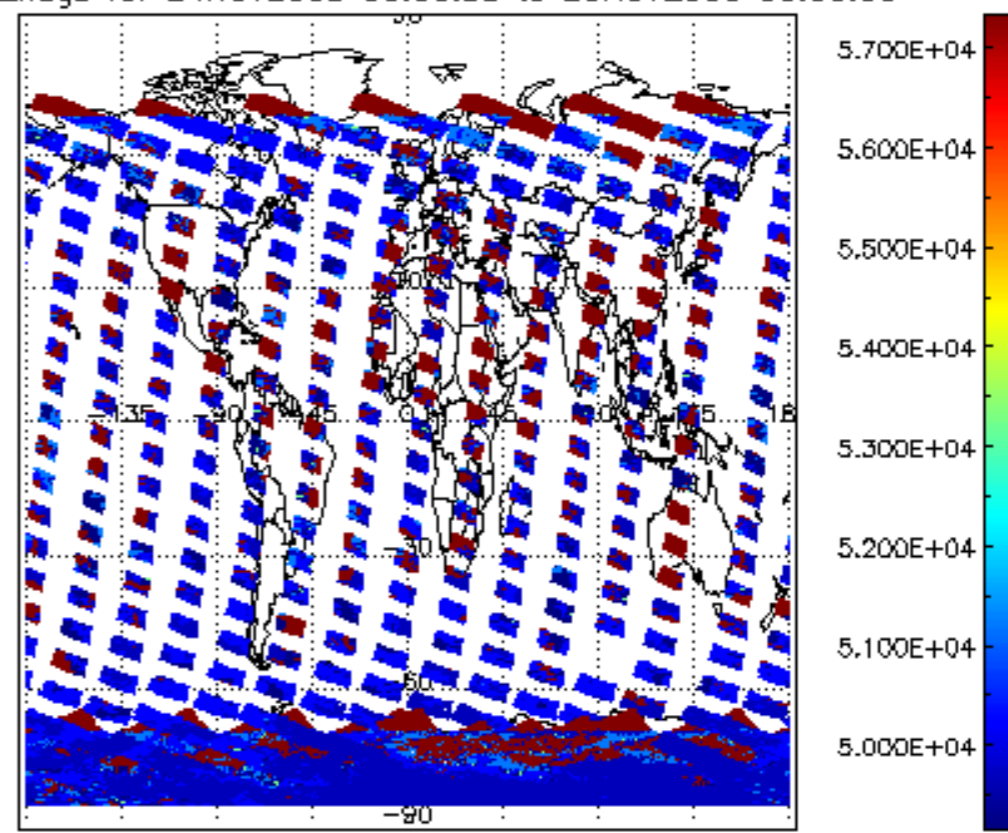
cL\_top\_height for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



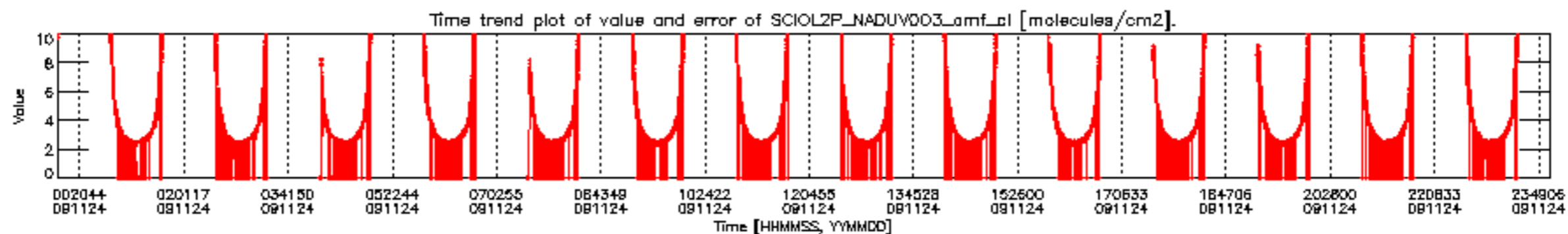
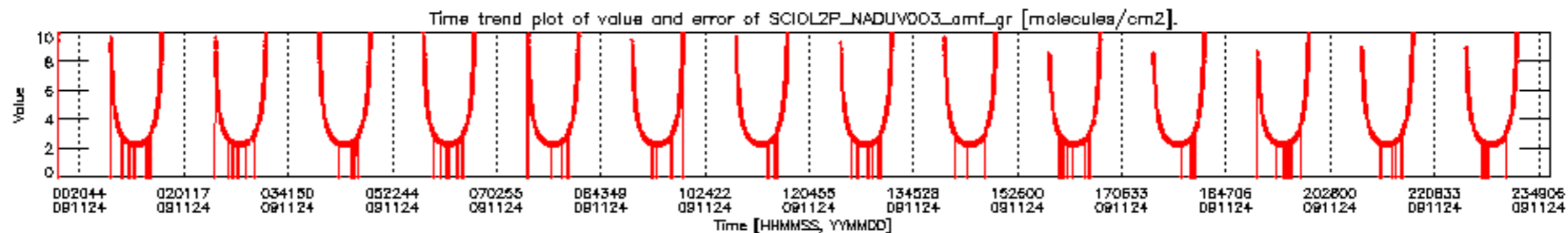
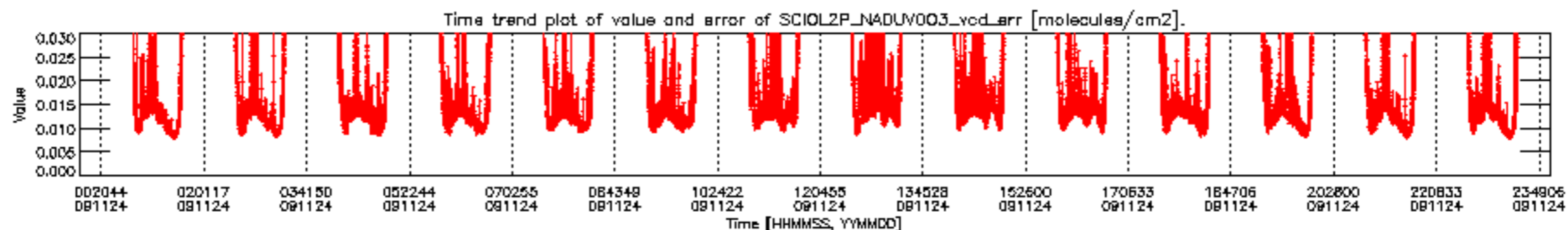
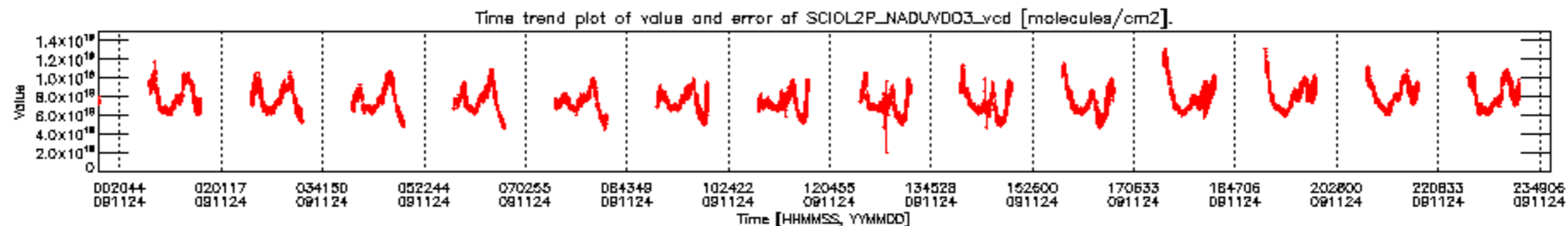
cL\_opt\_depth for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



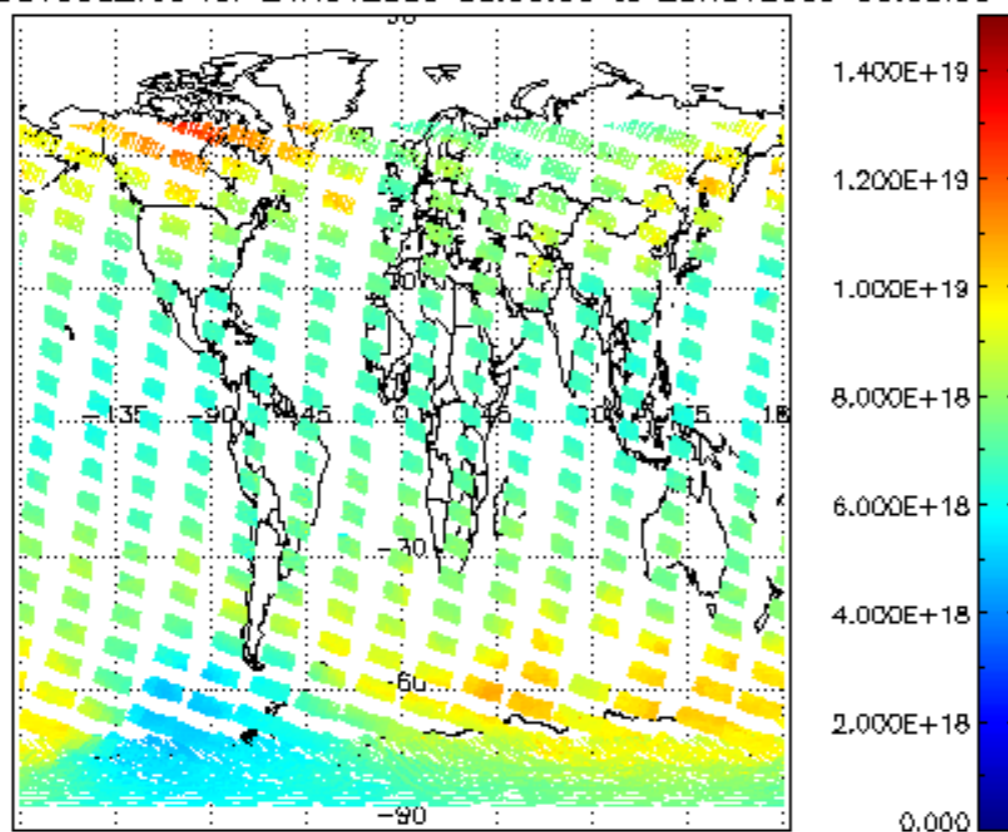
cloud\_flags for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



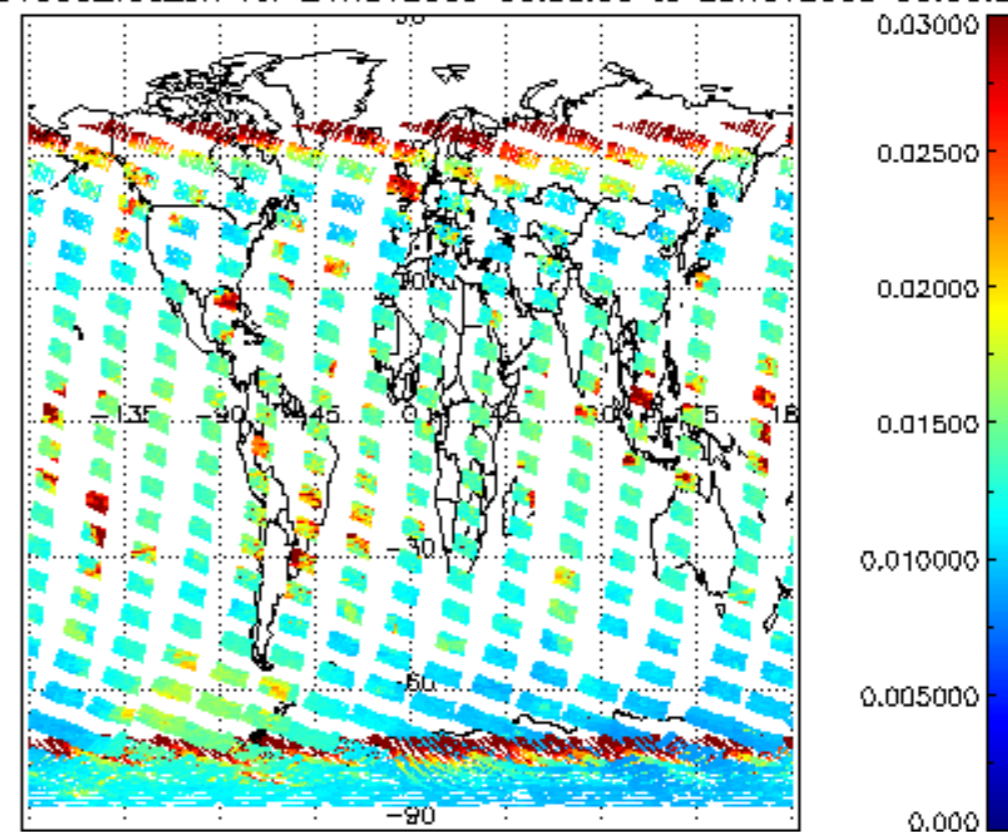




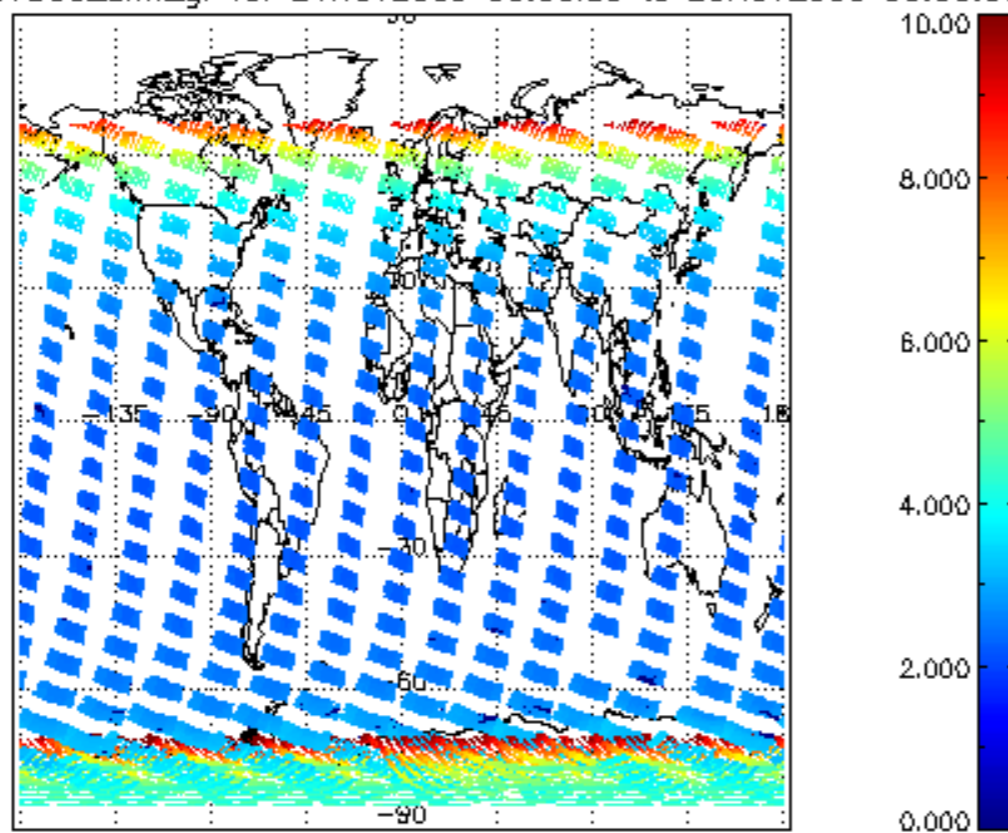
SCIOL2P\_NADUV003\_vcd for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



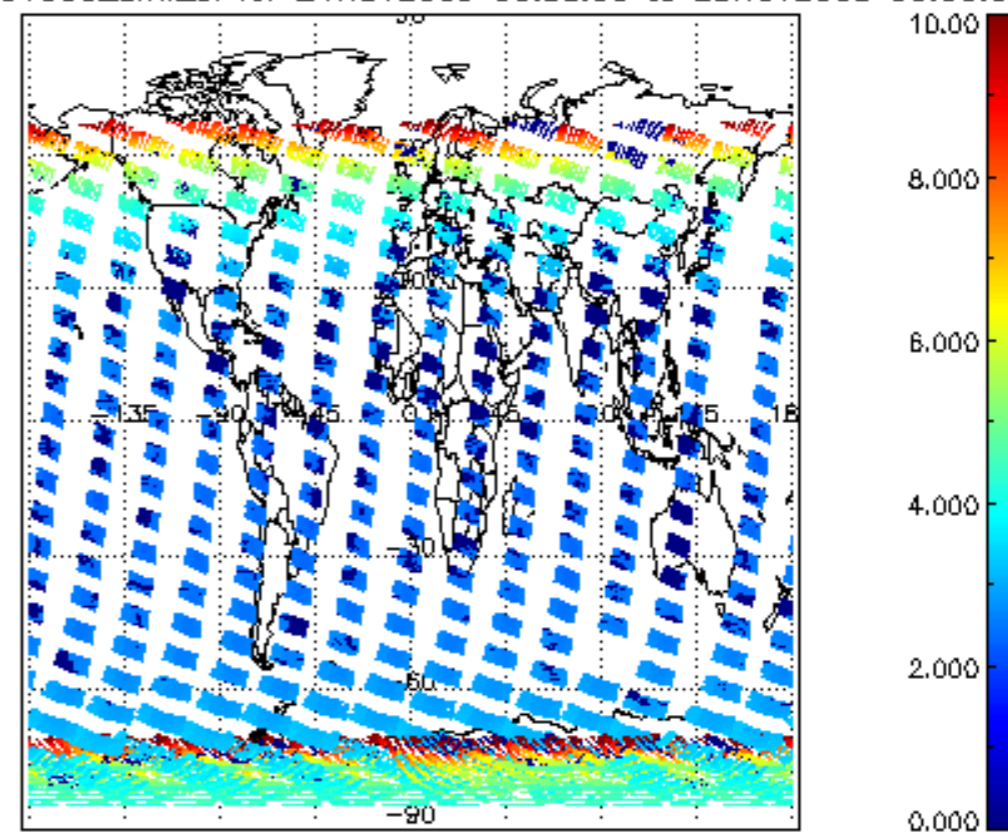
SCIOL2P\_NADUV003\_vcd\_err for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



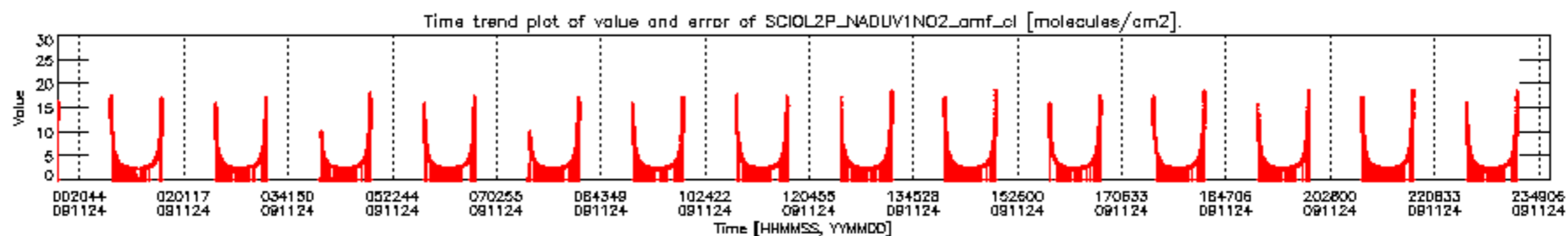
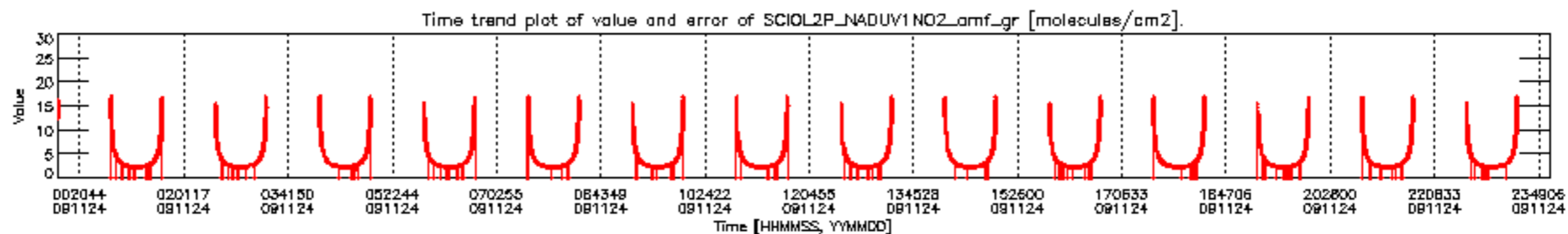
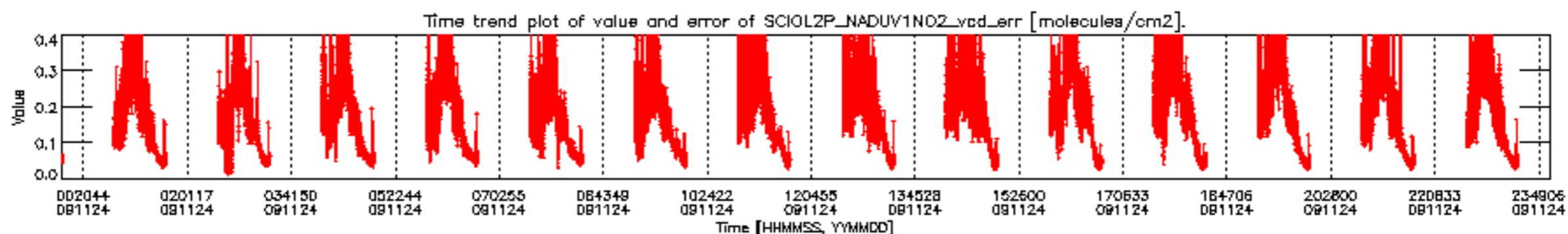
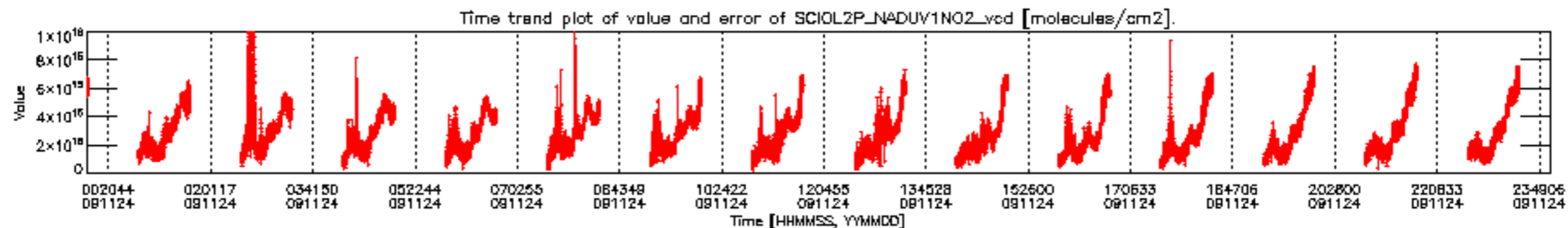
SCIOL2P\_NADUV003\_amf\_gr for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



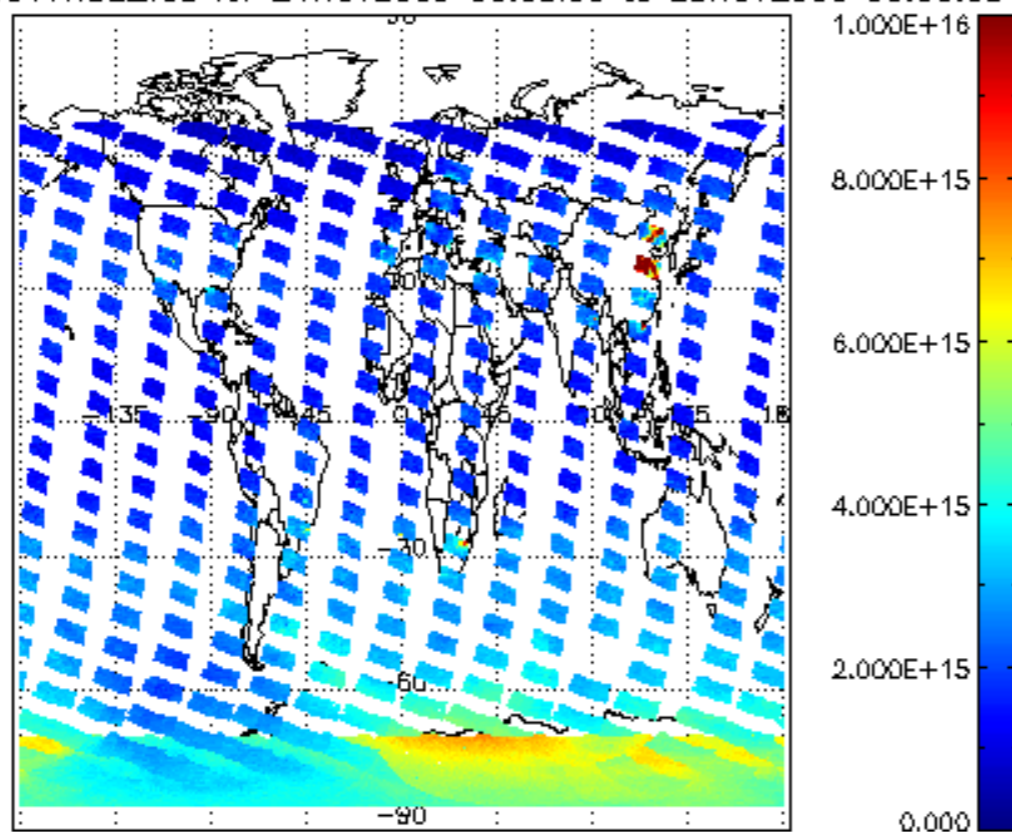
SCIOL2P\_NADUV003\_amf\_cl for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



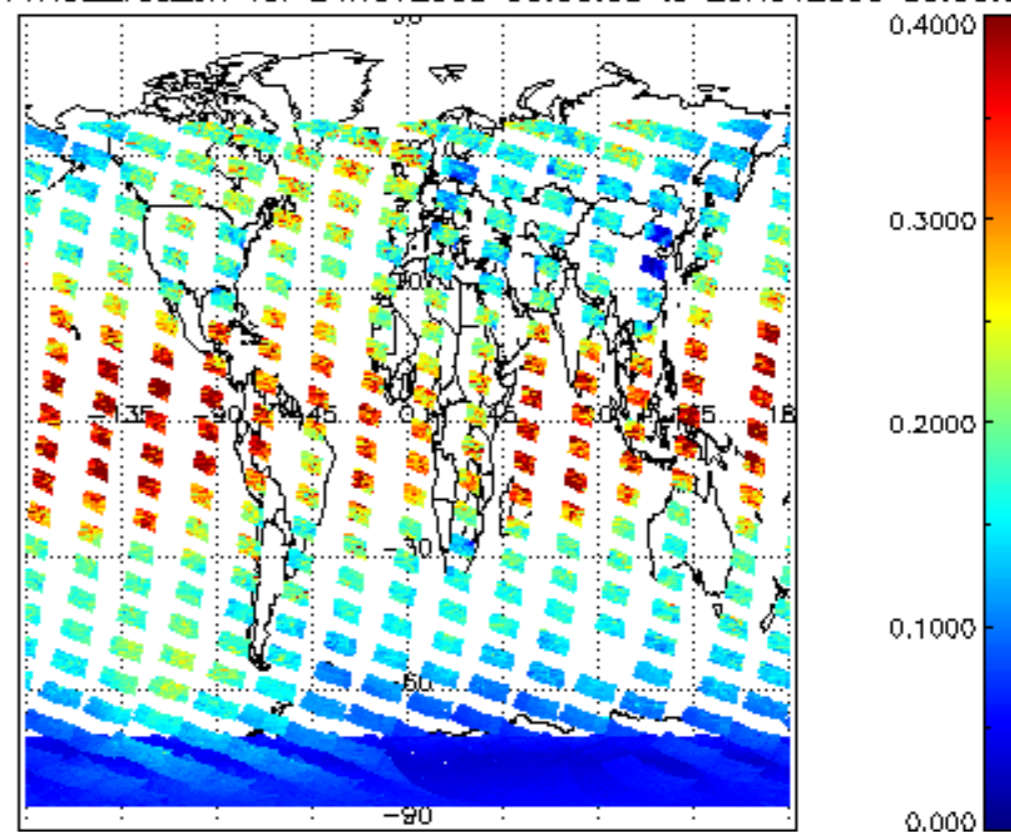




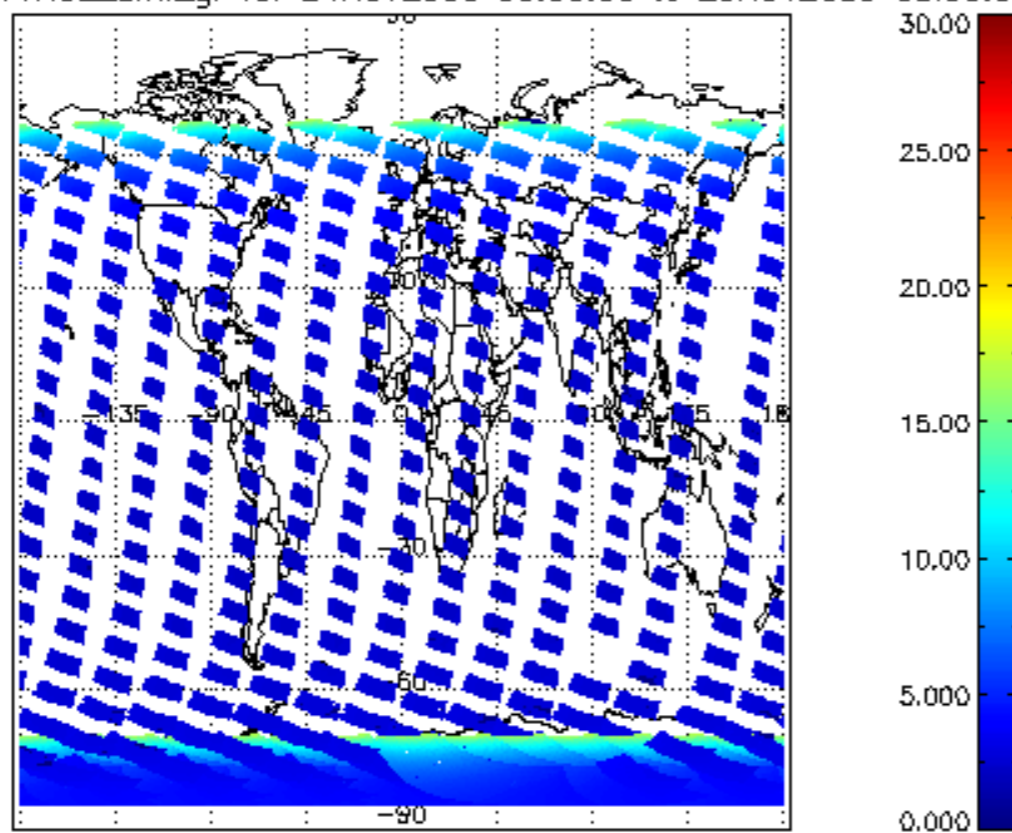
SCIOL2P\_NADUV1NO2\_vcd for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



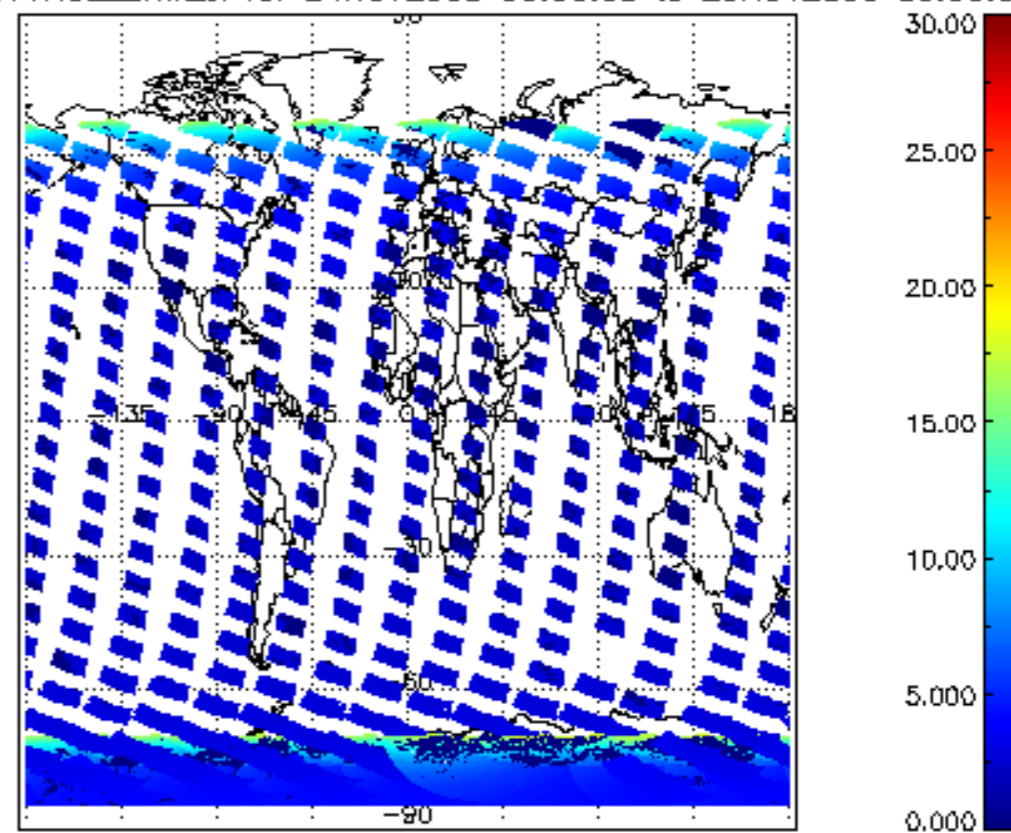
SCIOL2P\_NADUV1NO2\_vcd\_err for 24NOV2009 00:00:00 to 25NOV2009 00:00:00



SCIOL2P\_NADUV1NO2\_amf\_gr for 24NOV2009 00:00:00 to 25NOV2009 00:00:00

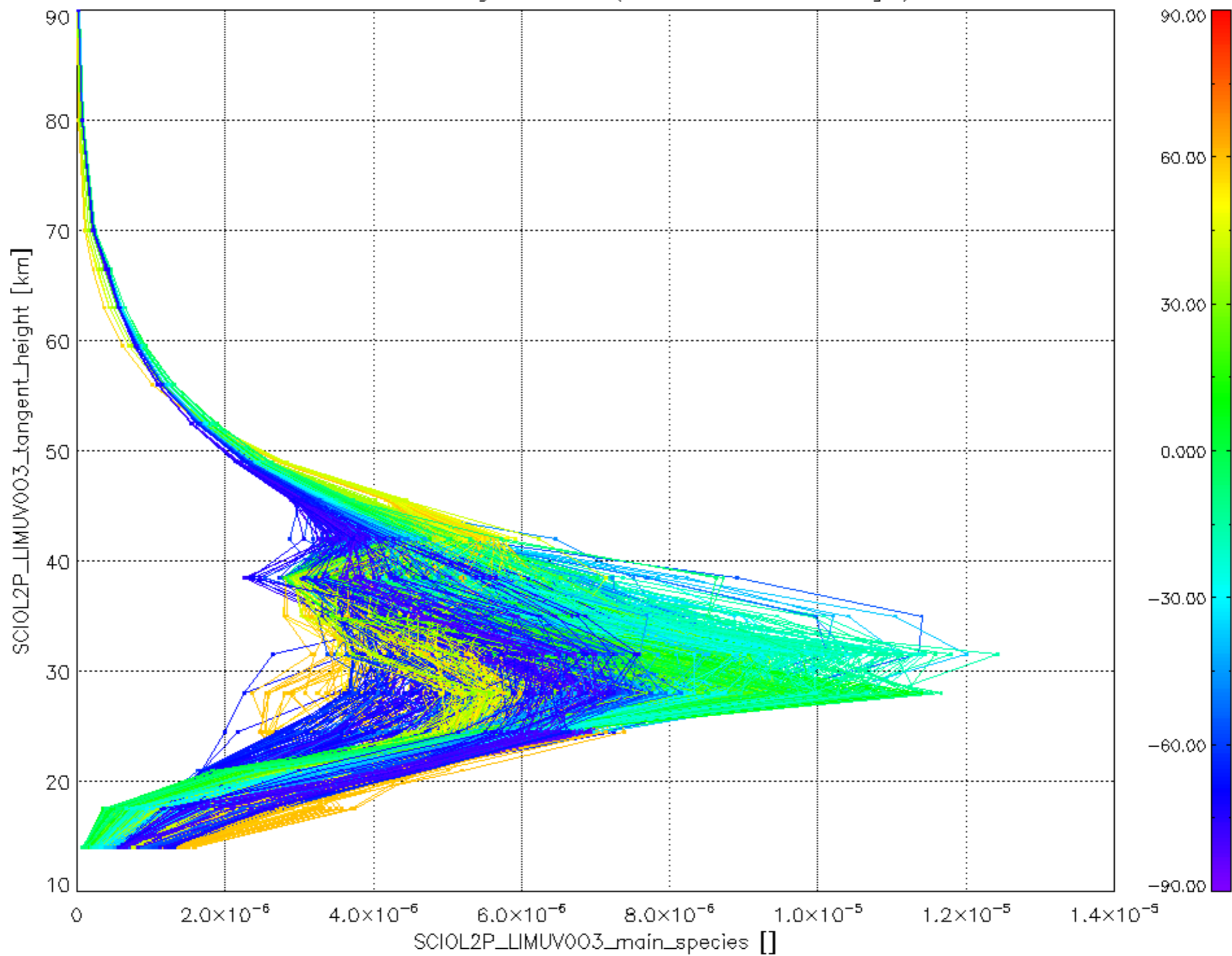


SCIOL2P\_NADUV1NO2\_amf\_cl for 24NOV2009 00:00:00 to 25NOV2009 00:00:00





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



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

