

## 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                           | 1.4 (06-11-2007)                         |
| Time of report generation                | 17APR2008 15:01:15                       |
| Data source version                      | SCIA-OL/3.01-R                           |
| Processing scope for products            | 22MAR2008 00:00:00 to 23MAR2008 00:00:00 |
| Start time of first product within scope | 21MAR2008 23:32:23                       |
| Stop time of last product within scope   | 22MAR2008 23:57:01                       |
| Total number of level 2 products         | 15                                       |
| 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.

| #  | Product name   | Start time         | Stop time          | Prod err | Fit summary |
|----|--|--------------------|--------------------|----------|-------------|
| 0  | SCI_OL__2PRDPA20080321_233223_000033812067_00059_31676_5217.N1 | 21MAR2008 23:32:23 | 22MAR2008 00:28:44 | 0        | GOOD        |
| 1  | SCI_OL__2PRDPA20080322_011258_000033942067_00060_31677_5220.N1 | 22MAR2008 01:12:58 | 22MAR2008 02:09:32 | 0        | GOOD        |
| 2  | SCI_OL__2PRDPA20080322_025334_000033812067_00061_31678_5222.N1 | 22MAR2008 02:53:34 | 22MAR2008 03:49:55 | 0        | GOOD        |
| 3  | SCI_OL__2PRDPA20080322_043409_000033942067_00062_31679_5223.N1 | 22MAR2008 04:34:09 | 22MAR2008 05:30:43 | 0        | GOOD        |
| 4  | SCI_OL__2PRDPA20080322_061445_000033812067_00063_31680_5225.N1 | 22MAR2008 06:14:45 | 22MAR2008 07:11:06 | 0        | GOOD        |
| 5  | SCI_OL__2PRDPA20080322_075520_000033942067_00064_31681_5349.N1 | 22MAR2008 07:55:20 | 22MAR2008 08:51:54 | 0        | GOOD        |
| 6  | SCI_OL__2PRDPA20080322_093556_000033812067_00065_31682_5350.N1 | 22MAR2008 09:35:56 | 22MAR2008 10:32:17 | 0        | GOOD        |
| 7  | SCI_OL__2PRDPA20080322_111631_000033942067_00066_31683_5351.N1 | 22MAR2008 11:16:31 | 22MAR2008 12:13:05 | 0        | GOOD        |
| 8  | SCI_OL__2PRDPA20080322_125707_000033812067_00067_31684_5352.N1 | 22MAR2008 12:57:07 | 22MAR2008 13:53:28 | 0        | GOOD        |
| 9  | SCI_OL__2PRDPA20080322_143742_000033942067_00068_31685_5353.N1 | 22MAR2008 14:37:42 | 22MAR2008 15:34:16 | 0        | GOOD        |
| 10 | SCI_OL__2PRDPA20080322_161818_000033812067_00069_31686_5354.N1 | 22MAR2008 16:18:18 | 22MAR2008 17:14:39 | 0        | GOOD        |
| 11 | SCI_OL__2PRDPA20080322_175917_000033252067_00070_31687_5355.N1 | 22MAR2008 17:59:17 | 22MAR2008 18:54:42 | 0        | GOOD        |
| 12 | SCI_OL__2PRDPA20080322_193952_000033812067_00071_31688_5356.N1 | 22MAR2008 19:39:52 | 22MAR2008 20:36:14 | 0        | GOOD        |
| 13 | SCI_OL__2PRDPA20080322_212004_000033942067_00072_31689_5357.N1 | 22MAR2008 21:20:04 | 22MAR2008 22:16:38 | 0        | GOOD        |
| 14 | SCI_OL__2PRDPA20080322_230040_000033812067_00073_31690_5358.N1 | 22MAR2008 23:00:40 | 22MAR2008 23:57:01 | 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: 147993

Total number of cloud data DSRs with good quality flag (=0): 147993 (100.0 %)

| Parameter    | #valid | Mean    | Median  | Min     | Max     | Stddev   | Unit |
|--------------|--------|---------|---------|---------|---------|----------|------|
| QUALITY_FLAG | 147993 | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000   | flag |
| INTEGR_TIME  | 147993 | 0.17138 | 0.12500 | 0.12500 | 0.25000 | 0.060386 | s    |
| SURFACE_PRES | 147993 | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000   | hPa  |
| CL_FRAC      | 147993 | 0.38156 | 0.34968 | 0.0000  | 1.0000  | 0.28726  | -    |

|                   |        |          |          |          |          |         |   |
|-------------------|--------|----------|----------|----------|----------|---------|---|
| CL_FRAC_ERR       | 147993 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000  | rel. fraction   |
| PMD_READ          | 147993 | 5.4842   | 4.0000   | 4.0000   | 8.0000   | 1.9324  |   |
| PMD_READ_CL[0]    | 147993 | 0.21463  | 0.0000   | 0.0000   | 8.0000   | 0.98670 | -   |
| PMD_READ_CL[1]    | 147993 | 0.97351  | 0.0000   | 0.0000   | 8.0000   | 2.1701  | -   |
| CL_TOP_HEIGHT     | 123258 | 3.6239   | 1.8810   | 0.0000   | 17.000   | 3.9131  | km  |
| CL_TOP_HEIGHT_ERR | 0      | ---      | ---      | ---      | ---      | ---     | ---   |
| CL_OPT_DEPTH      | 123258 | 60.071   | 65.979   | 0.0000   | 101.00   | 41.168  | km  |
| CL_OPT_DEPTH_ERR  | 0      | ---      | ---      | ---      | ---      | ---     | ---   |
| CL_TYPE_FLAGS     | 147993 | 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       | 147993 | 11001010 | 11000100 | 11000000 | 11100000 | 3295.4  | flags   |
| AERO_ABSO_IND     | 147993 | 2.9455   | 3.4900   | -1.4294  | 13.741   | 2.0328  |   |
| AERO_IND_DIAG     | 147993 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000  |   |
| AERO_FLAGS        | 147993 | 01011000 | 00000000 | 00000000 | 11000000 | 24502.  | flags   |

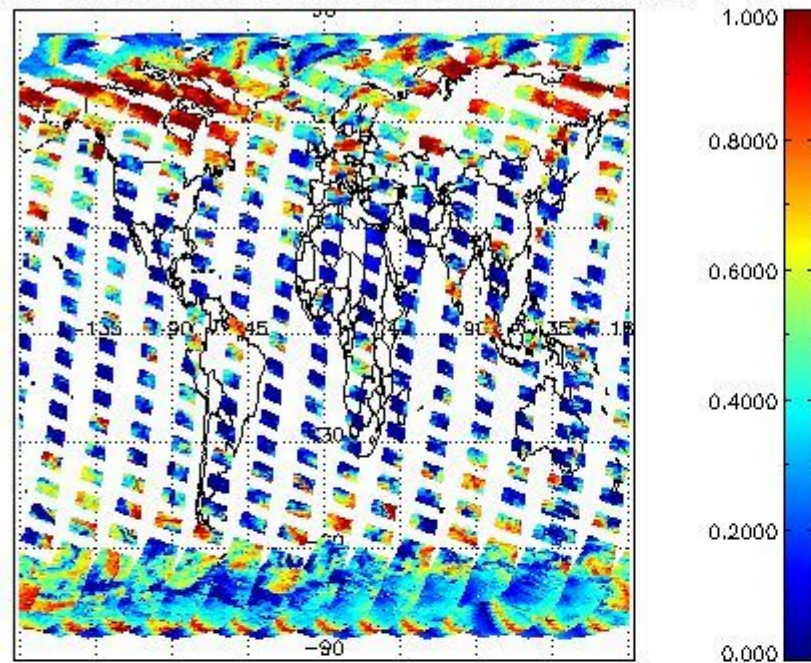
Time and geolocation plots:

Plots are available for the following parameters:

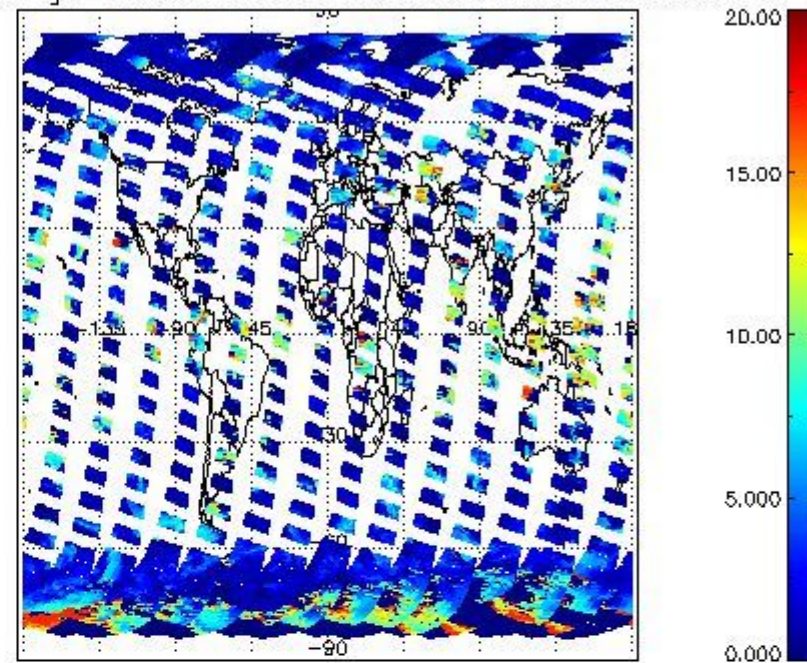
| Number | Data item ID  |
|--------|---------------|
| 0      | cl_frac       |
| 1      | cl_top_height |
| 2      | cl_opt_depth  |
| 3      | cloud_flags   |



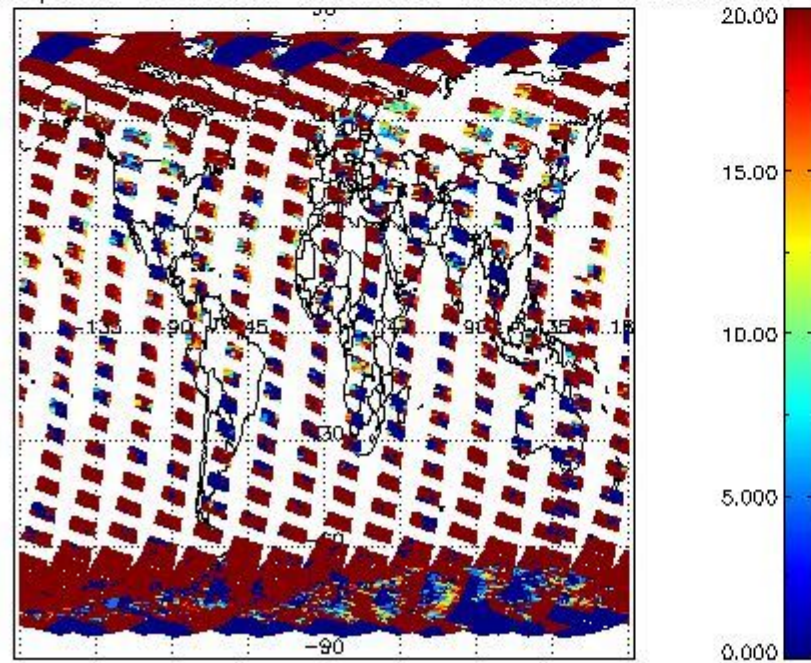
cLfrac for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



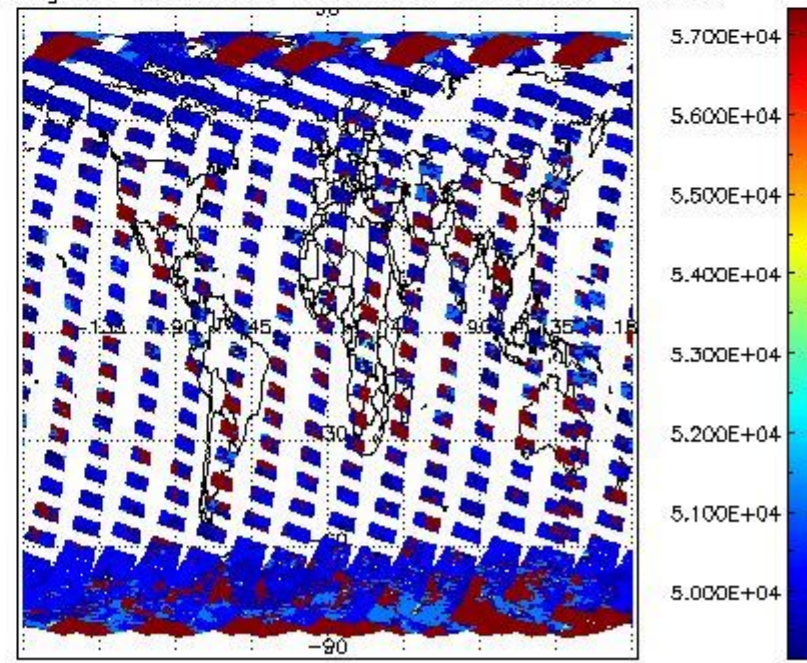
cLtop\_height for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



cLopt\_depth for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



cloud\_flags for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



### 2.2.2 Nadir

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

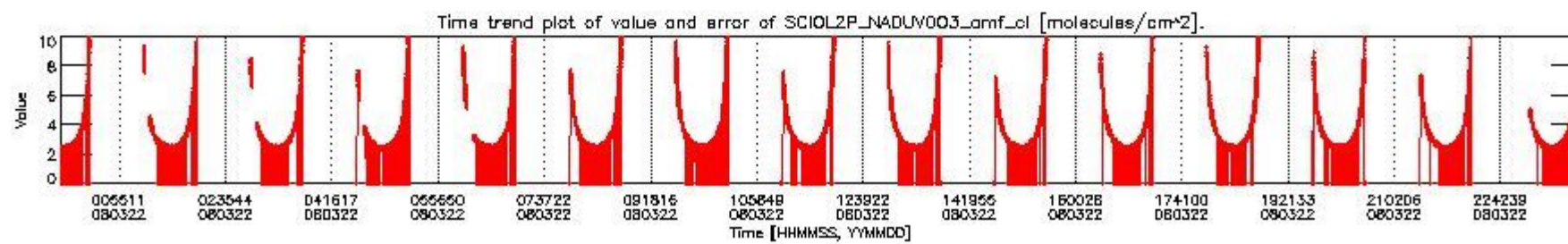
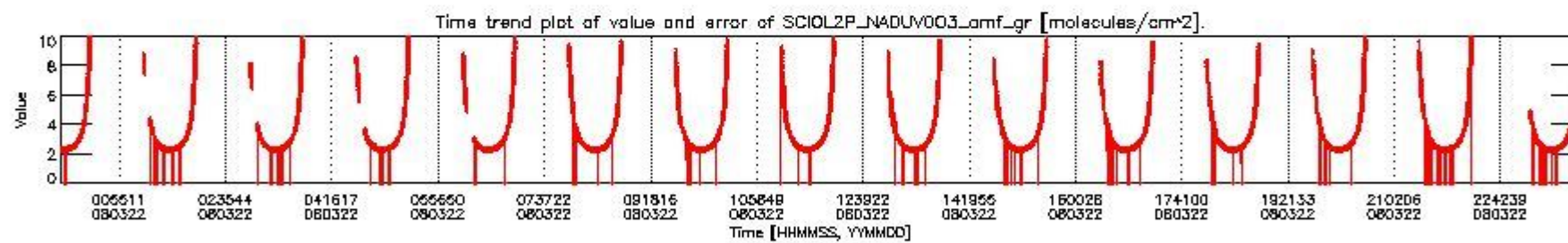
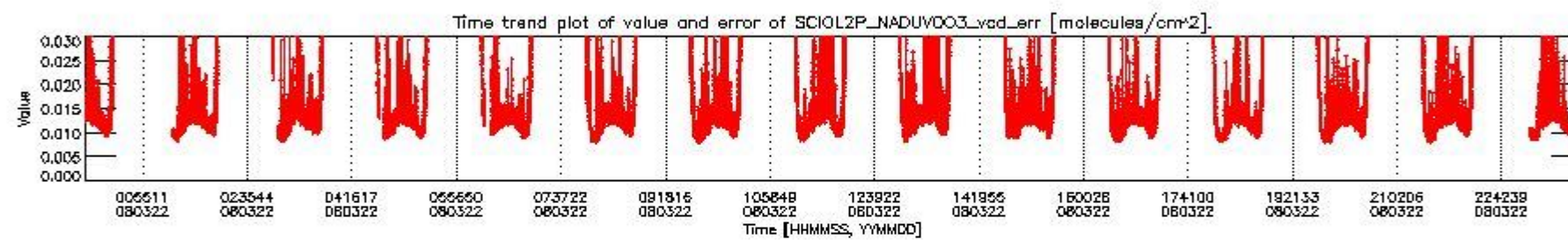
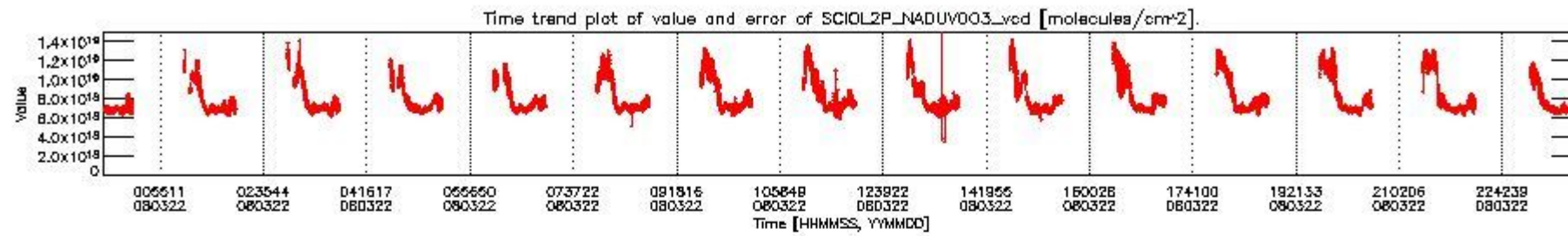
The following data items are currently included into this section:

| Number | Data item ID             |
|--------|--------------------------|
| 0      | SCIOL2P_NADUV003_vcd     |
| 1      | SCIOL2P_NADUV003_vcd_err |
| 2      | SCIOL2P_NADUV003_amf_gr  |
| 3      | SCIOL2P_NADUV003_amf_cl  |



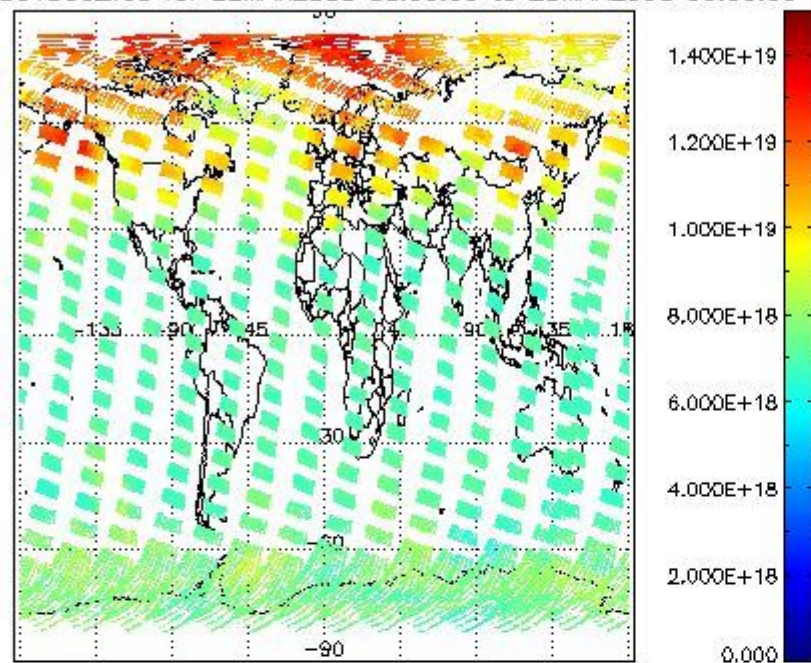
|   |                           |
|---|---------------------------|
| 4 | SCIOL2P_NADUV1NO2_vcd     |
| 5 | SCIOL2P_NADUV1NO2_vcd_err |
| 6 | SCIOL2P_NADUV1NO2_amf_gr  |
| 7 | SCIOL2P_NADUV1NO2_amf_cl  |

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.

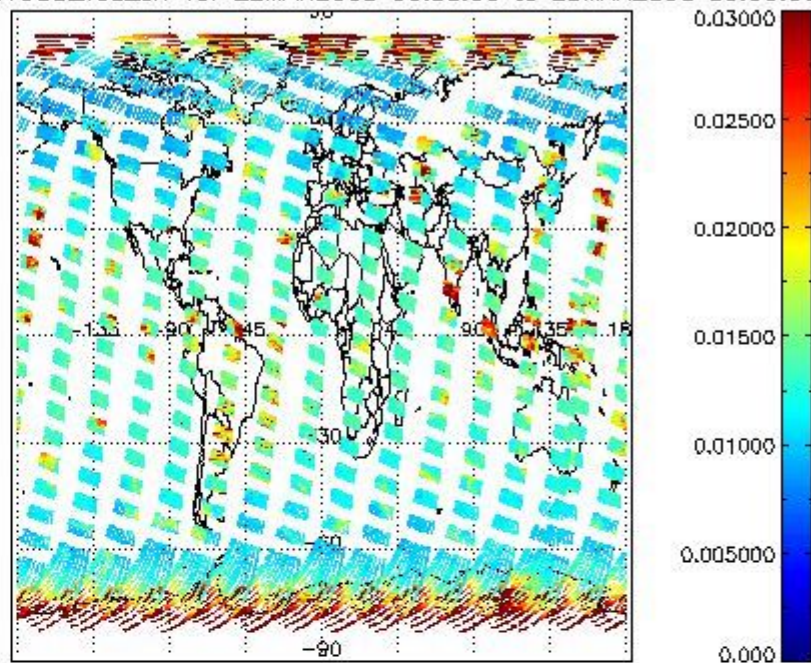




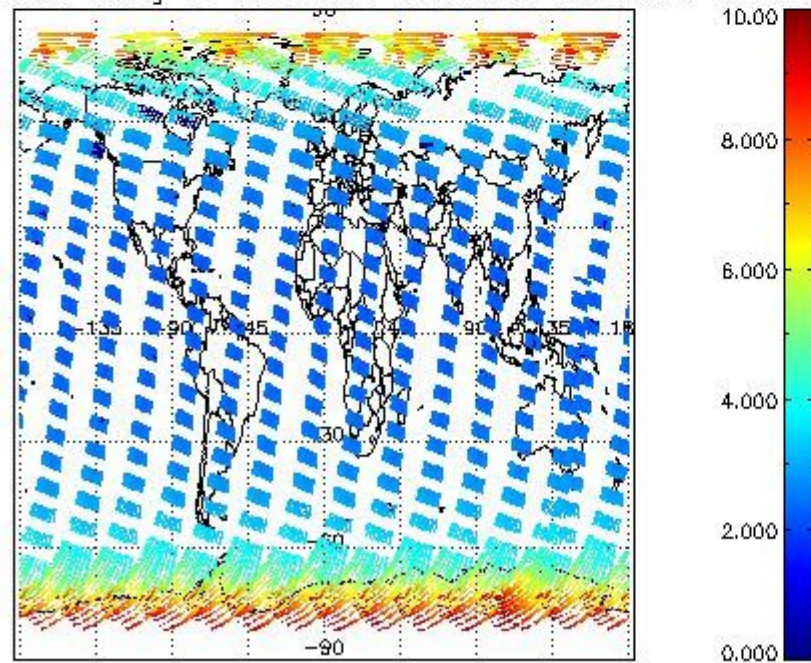
SCIOL2P\_NADUV003\_vcd for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



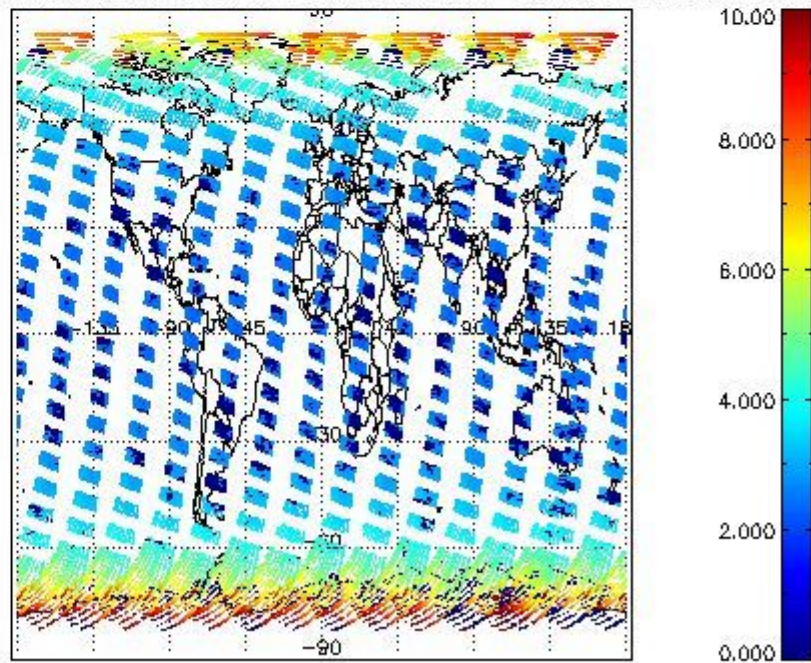
SCIOL2P\_NADUV003\_vcd\_err for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



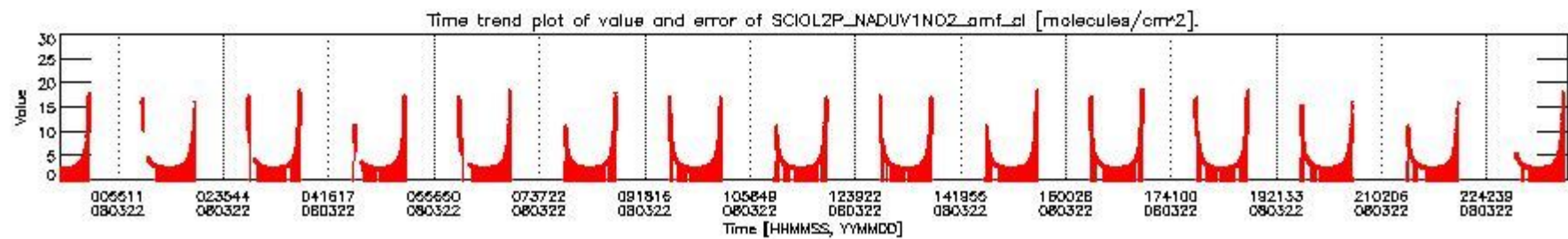
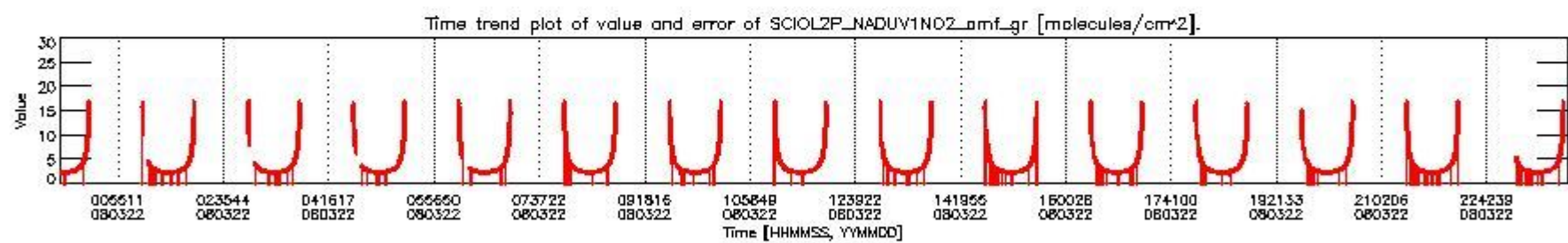
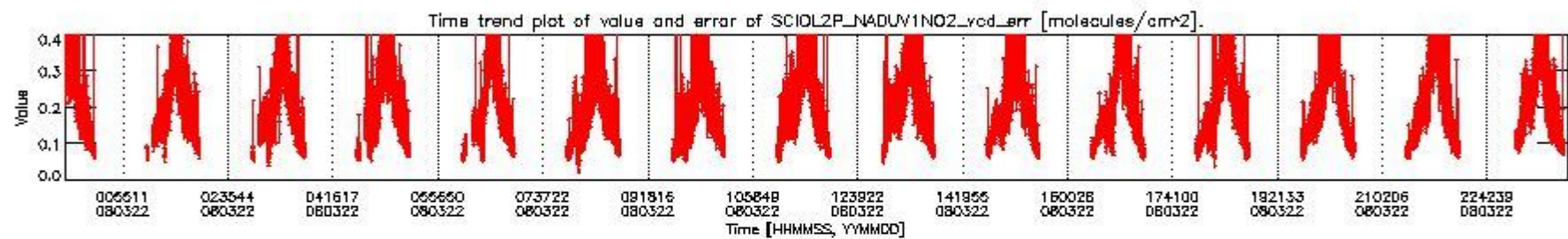
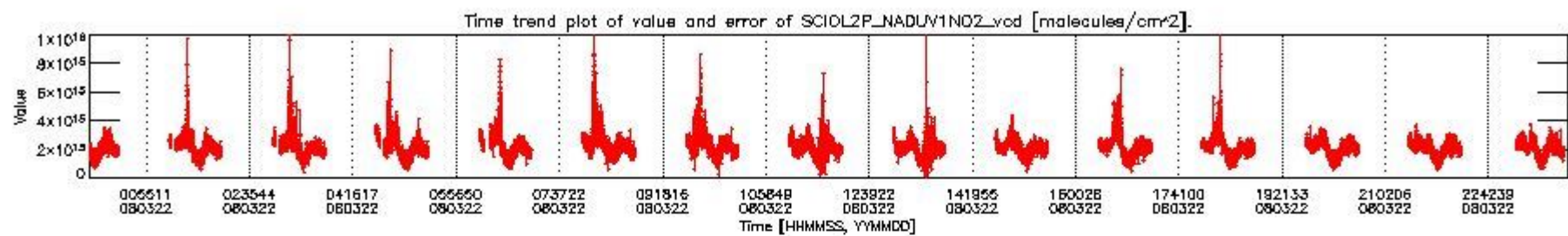
SCIOL2P\_NADUV003\_amf\_gr for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



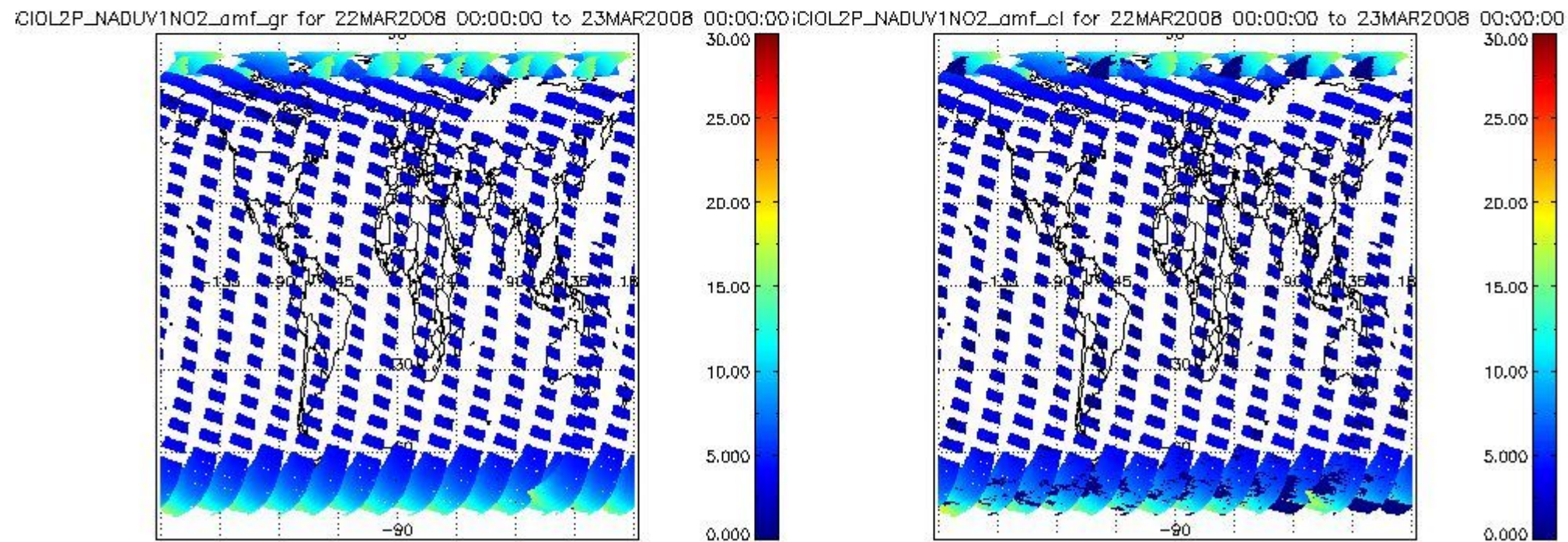
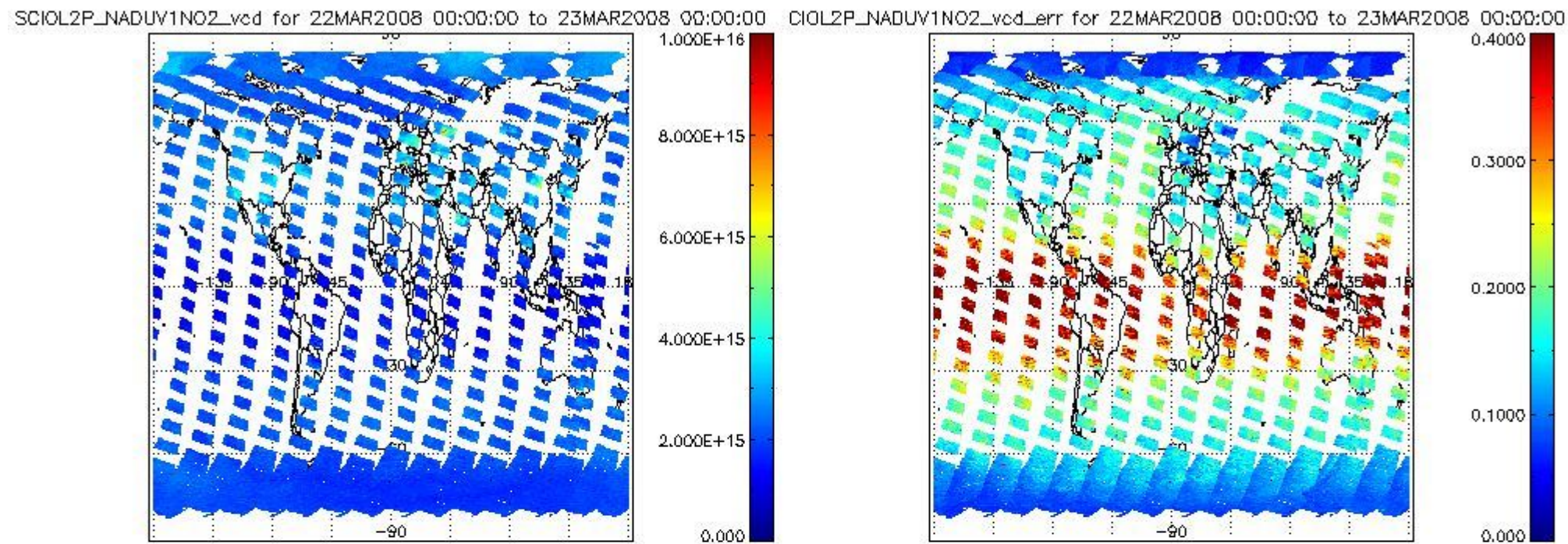
SCIOL2P\_NADUV003\_amf\_cl for 22MAR2008 00:00:00 to 23MAR2008 00:00:00











### 2.2.3 Limb

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

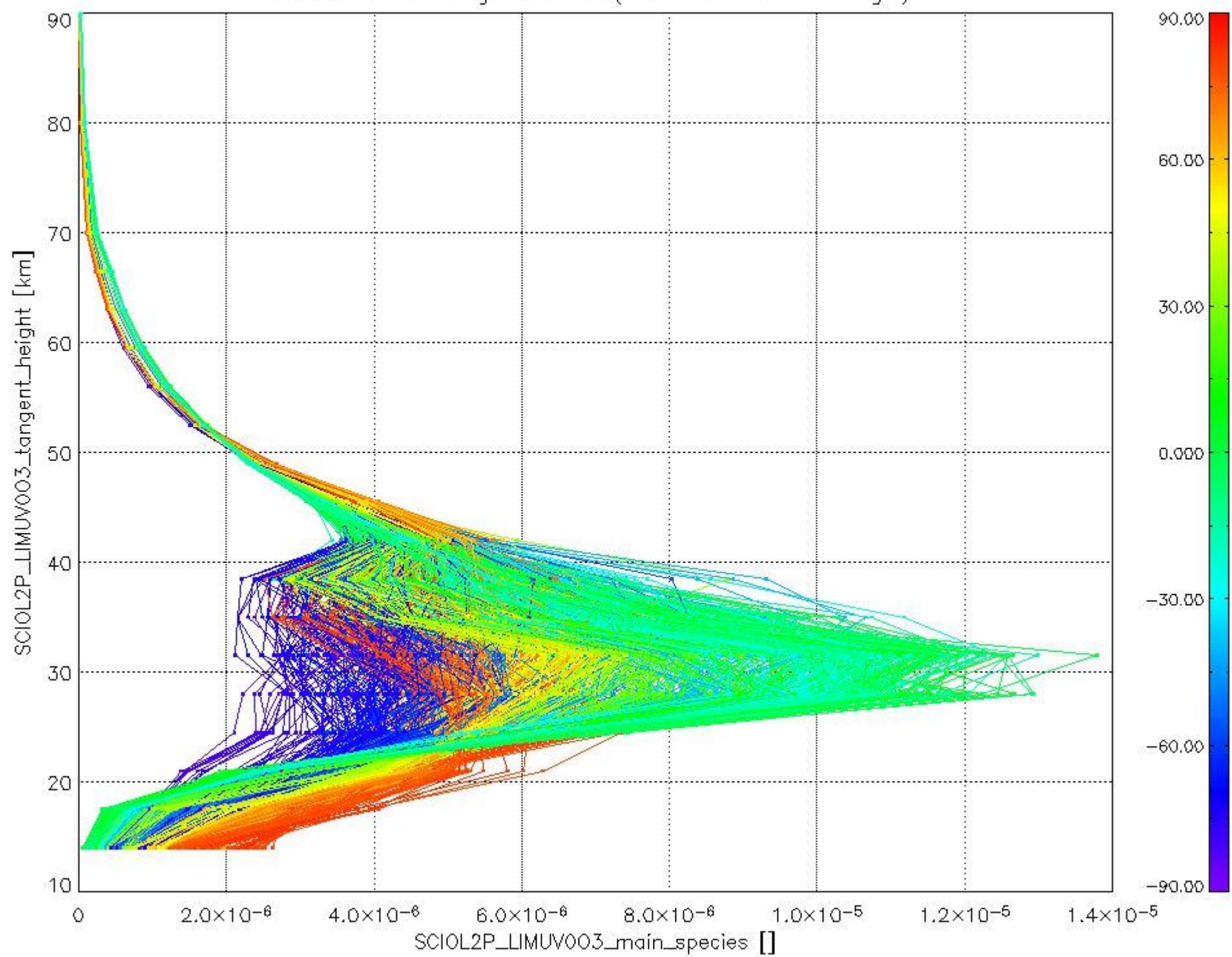
The following data items are currently included into this section:

| 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.

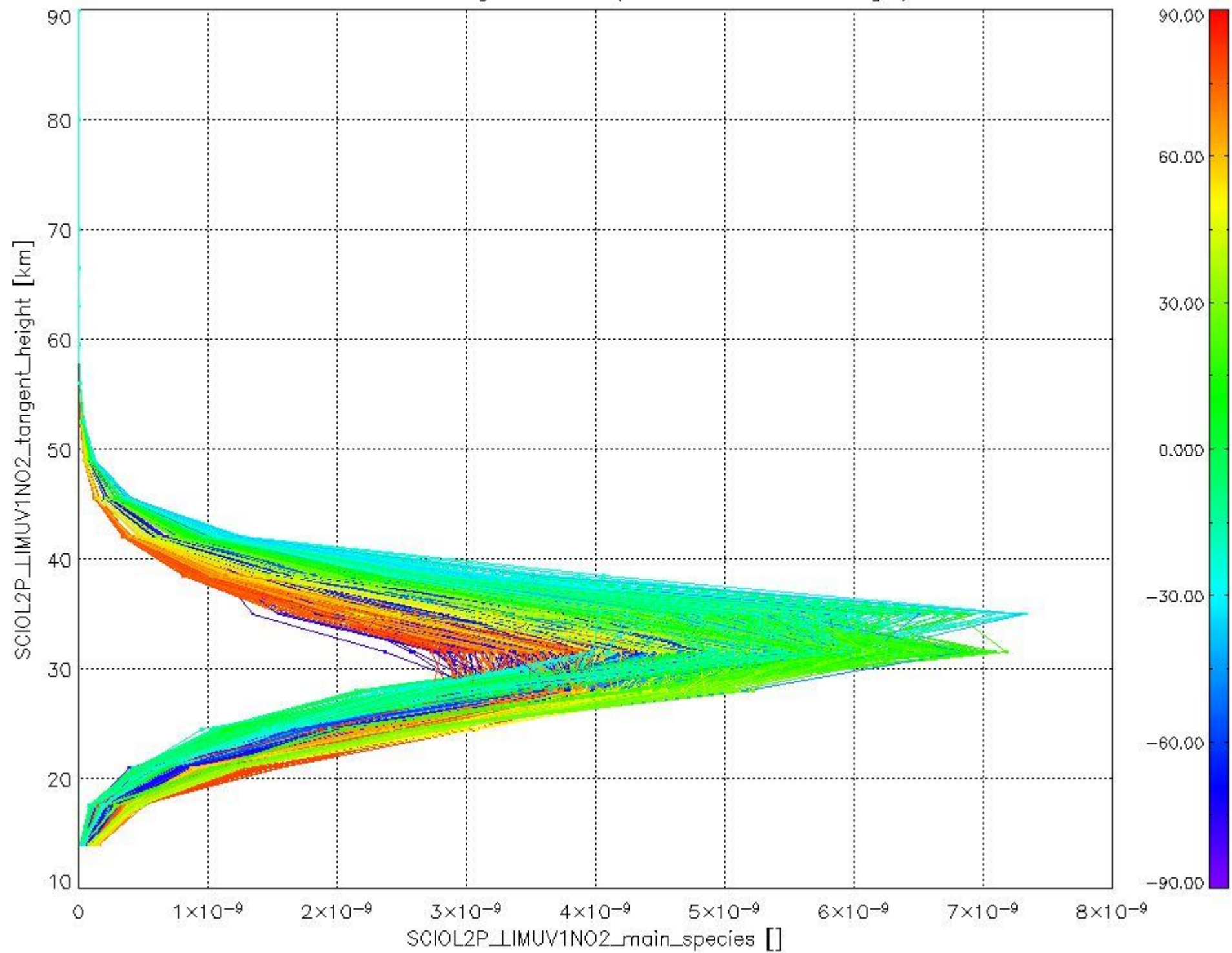


Plot of SCIOL2P\_LIMUV003\_main\_species.tang\_vmr vs. tangent height.  
 Colours indicate tangent latitude (see colour bar on the right).





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

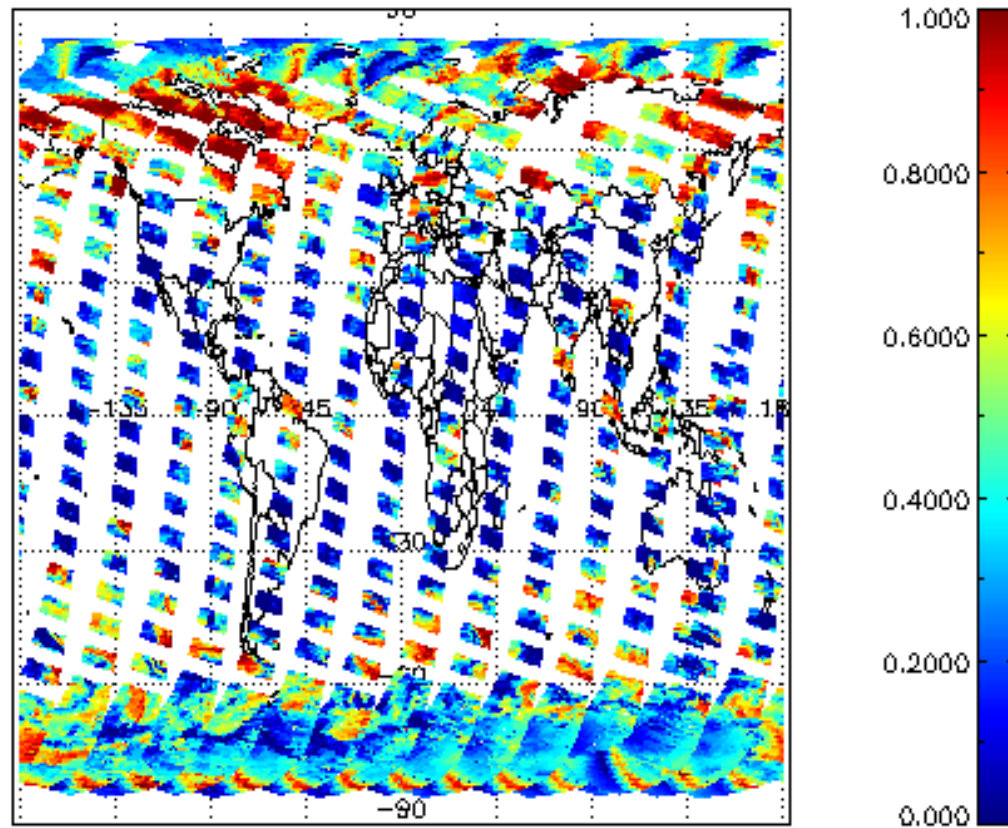


### 2.3 ADF monitoring

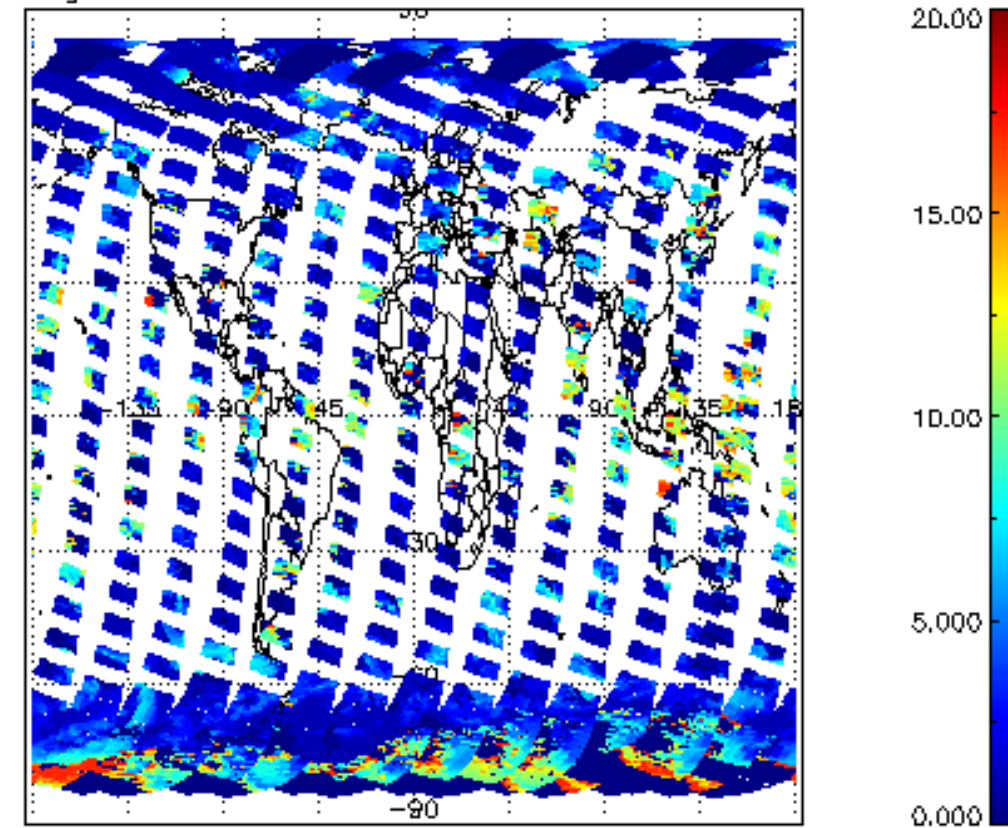
| Number | ADF  |
|--------|--|
|        | IN_ (INITIALISATION_FILE)                                    |
| 0      | SCI_IN_AXNPDE20070629_092400_20070720_000000_20991231_235959 |
|        | ECF (ECMWF_FILE)   |
| 1      | NOT USED   |



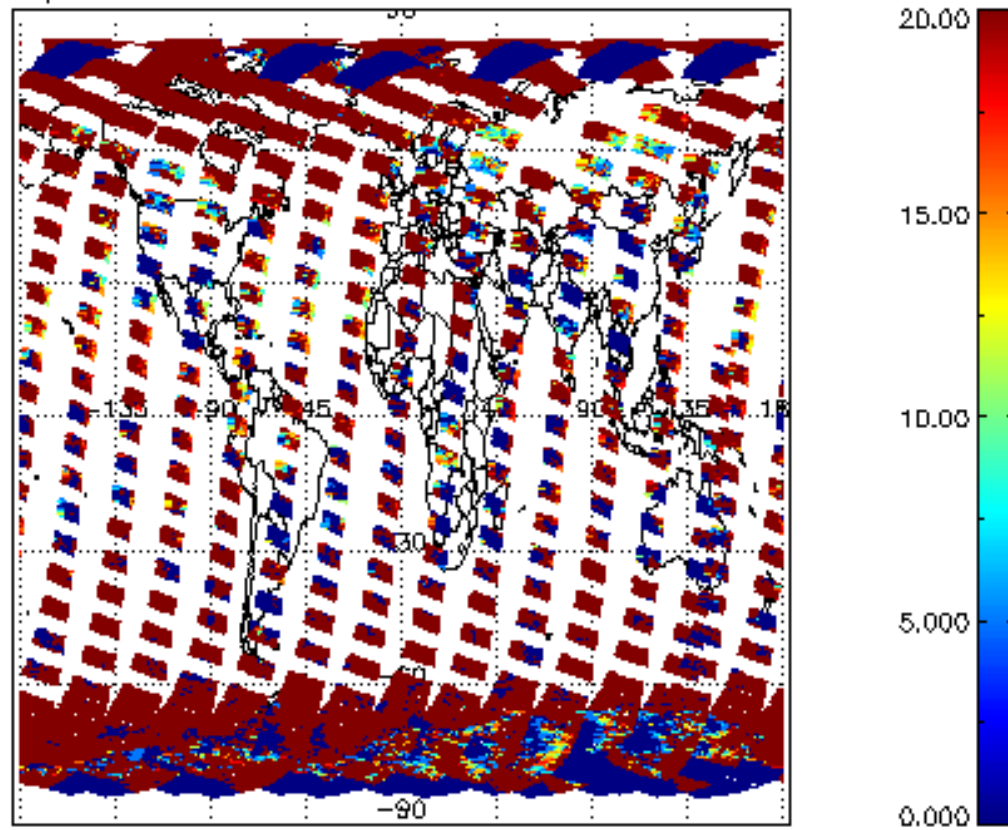
cL\_frac for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



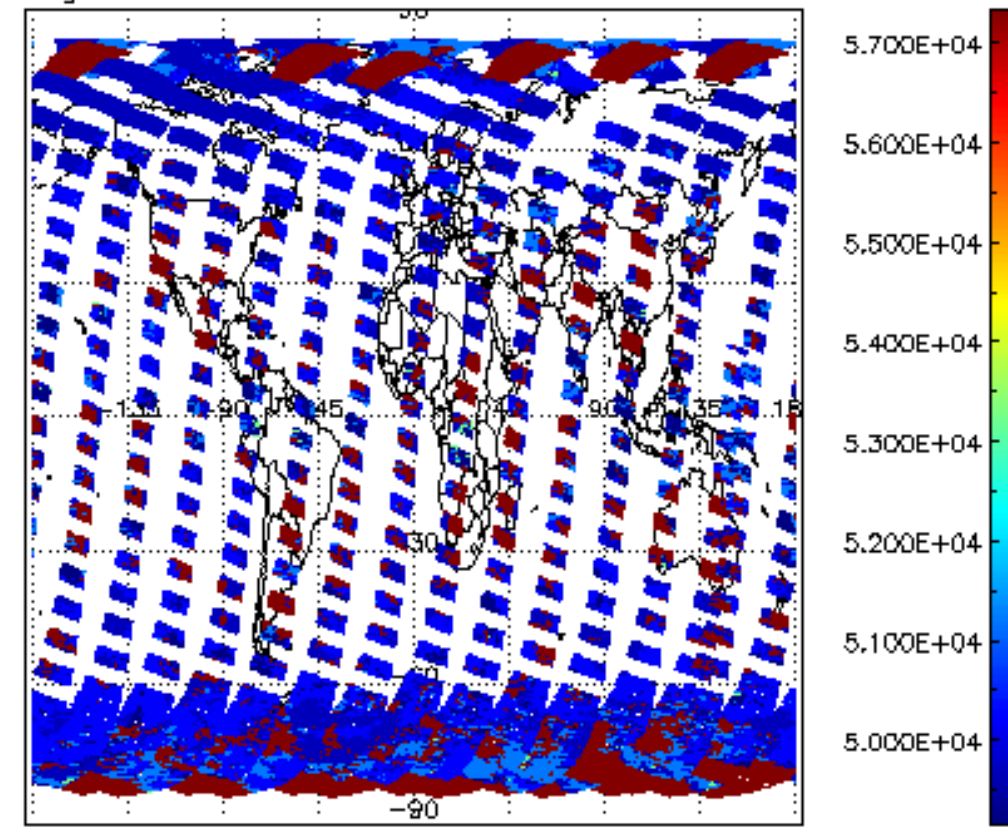
cL\_top\_height for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



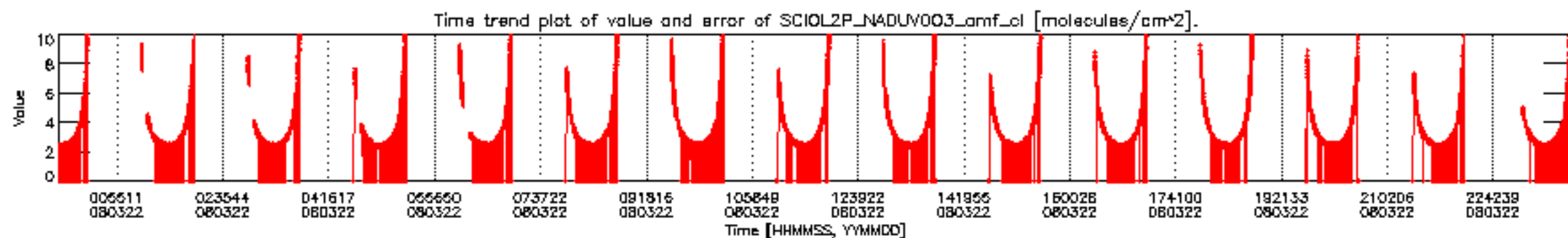
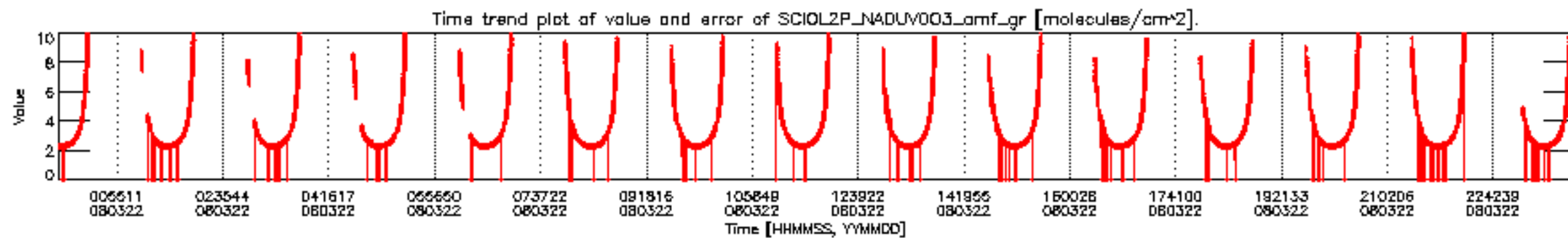
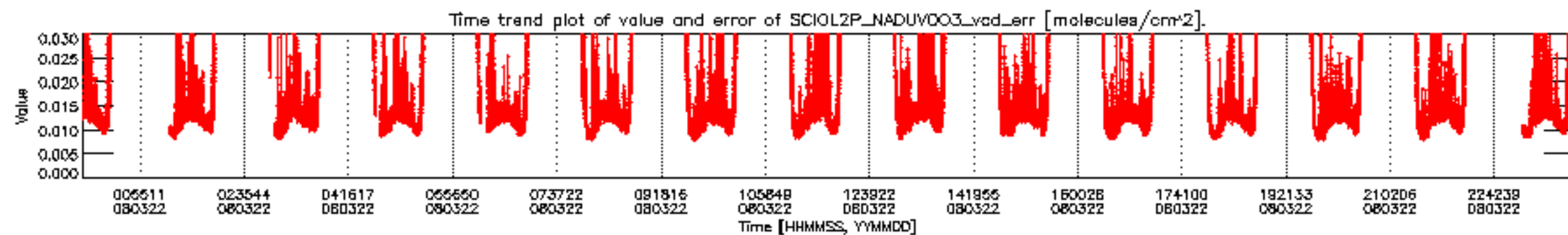
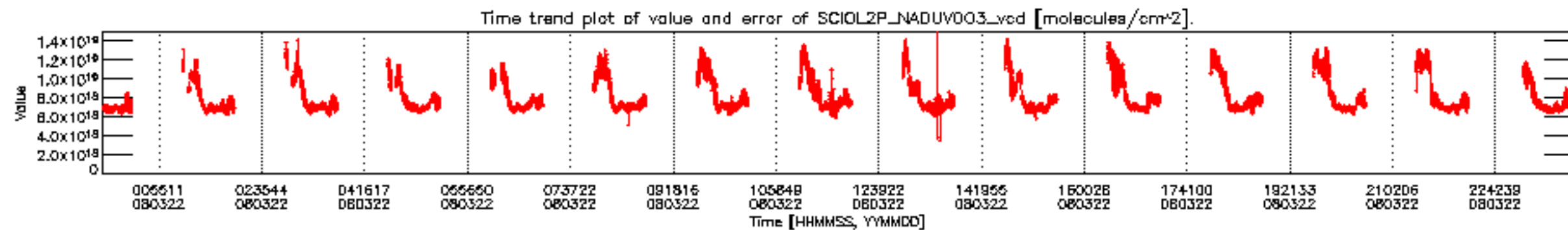
cL\_opt\_depth for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



cloud\_flags for 22MAR2008 00:00:00 to 23MAR2008 00:00:00

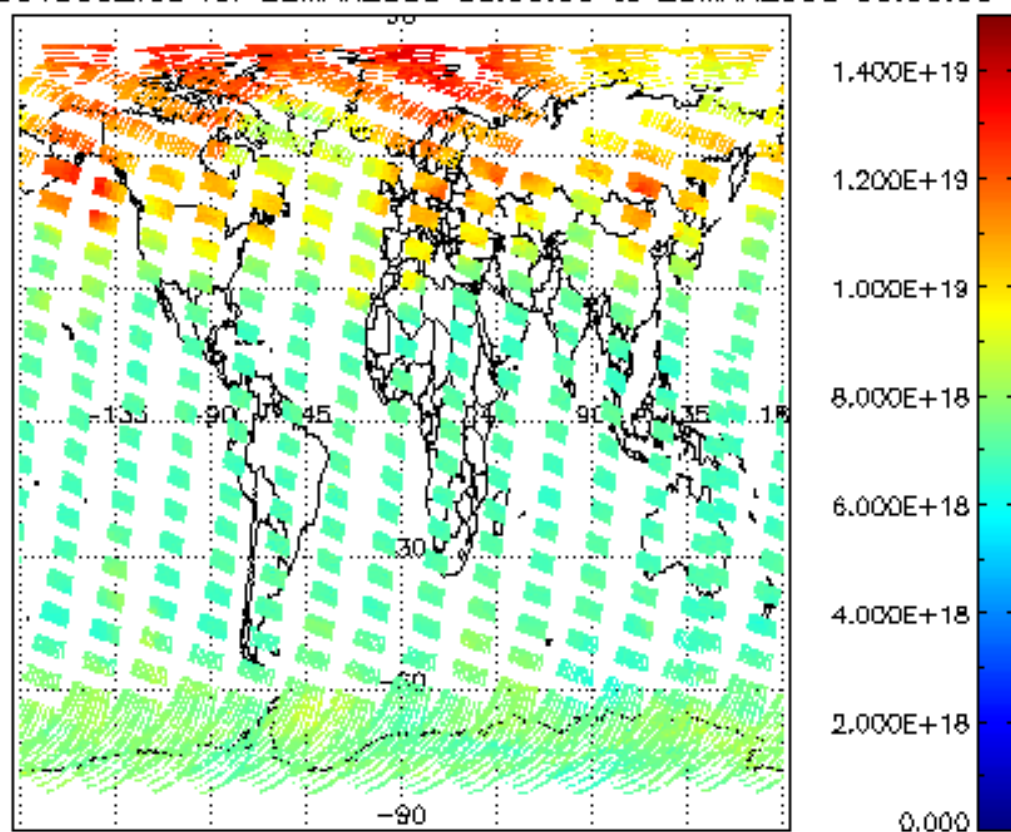




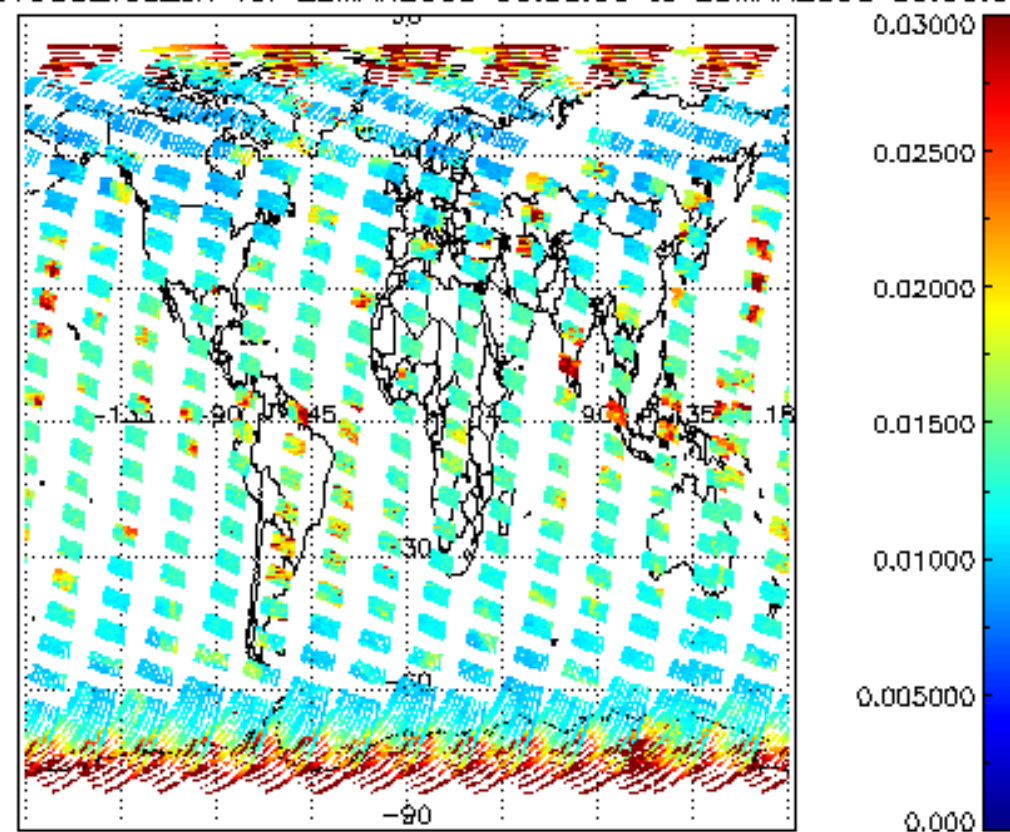




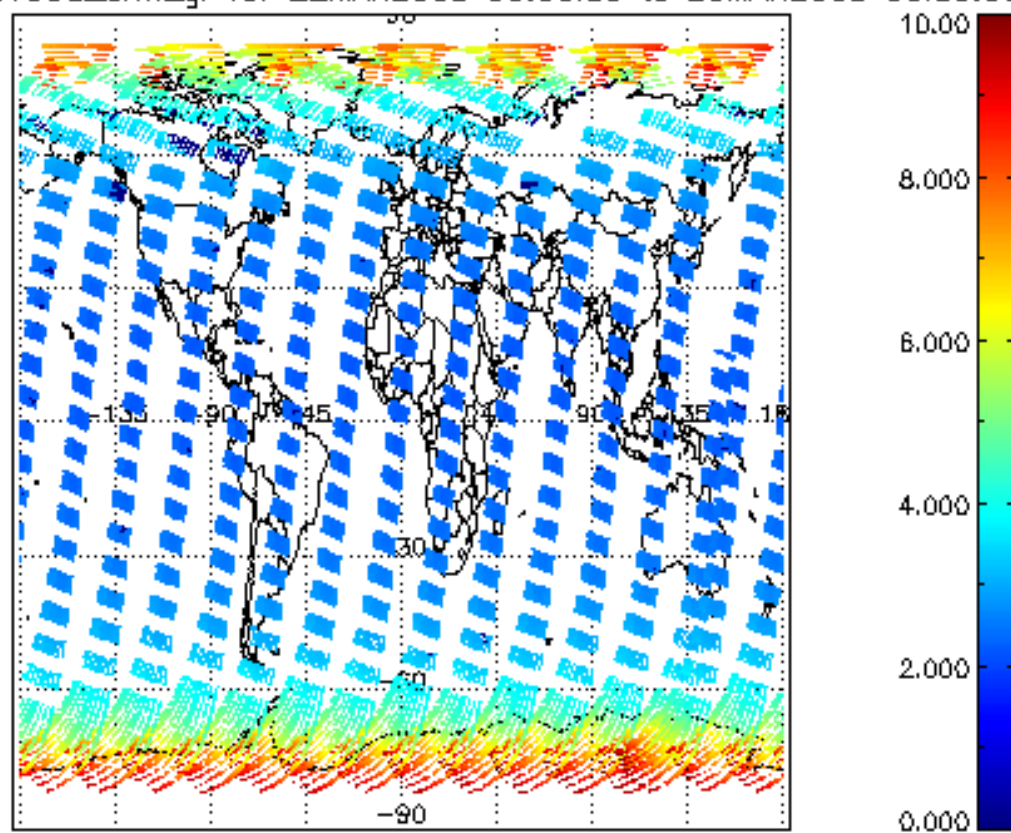
SCIOL2P\_NADUV003\_vcd for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



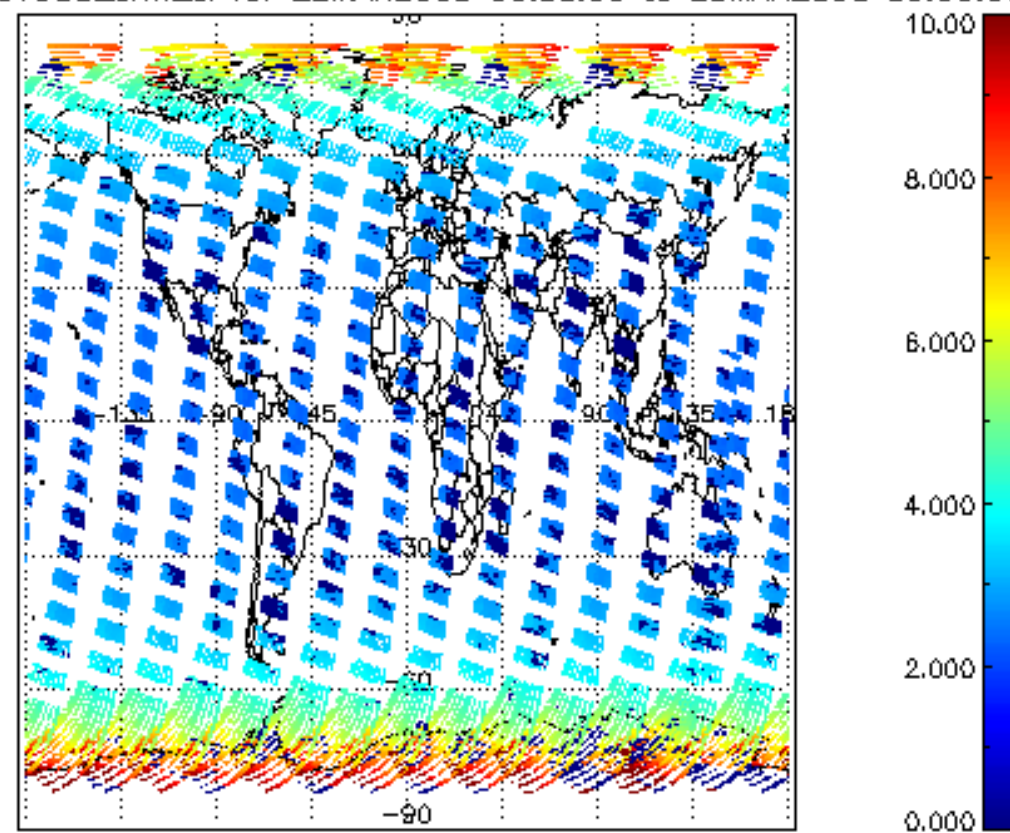
SCIOL2P\_NADUV003\_vcd\_err for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



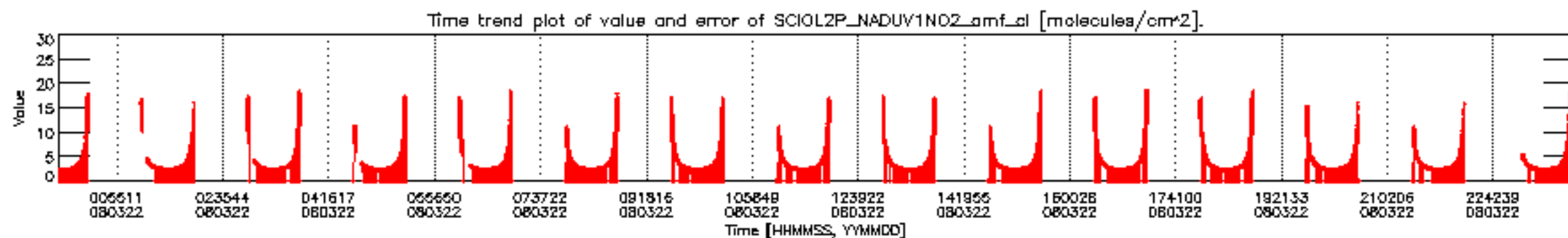
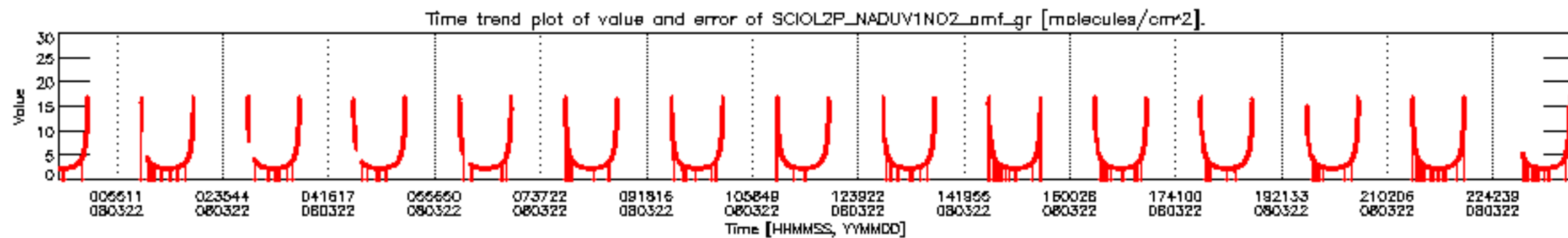
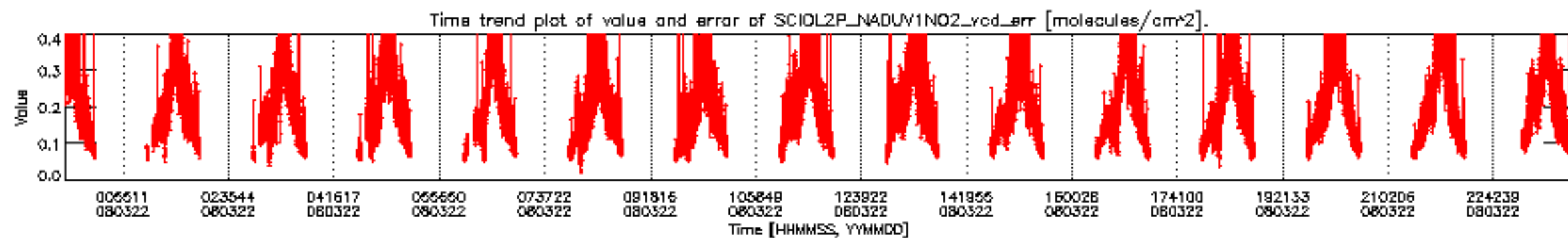
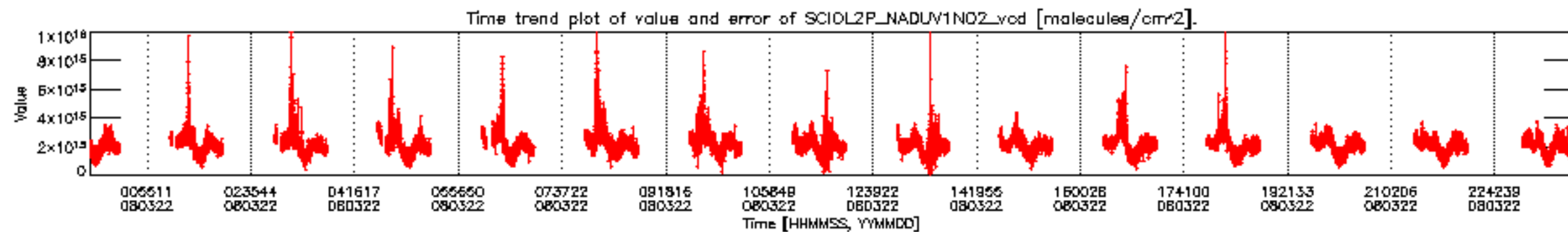
SCIOL2P\_NADUV003\_amf\_gr for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



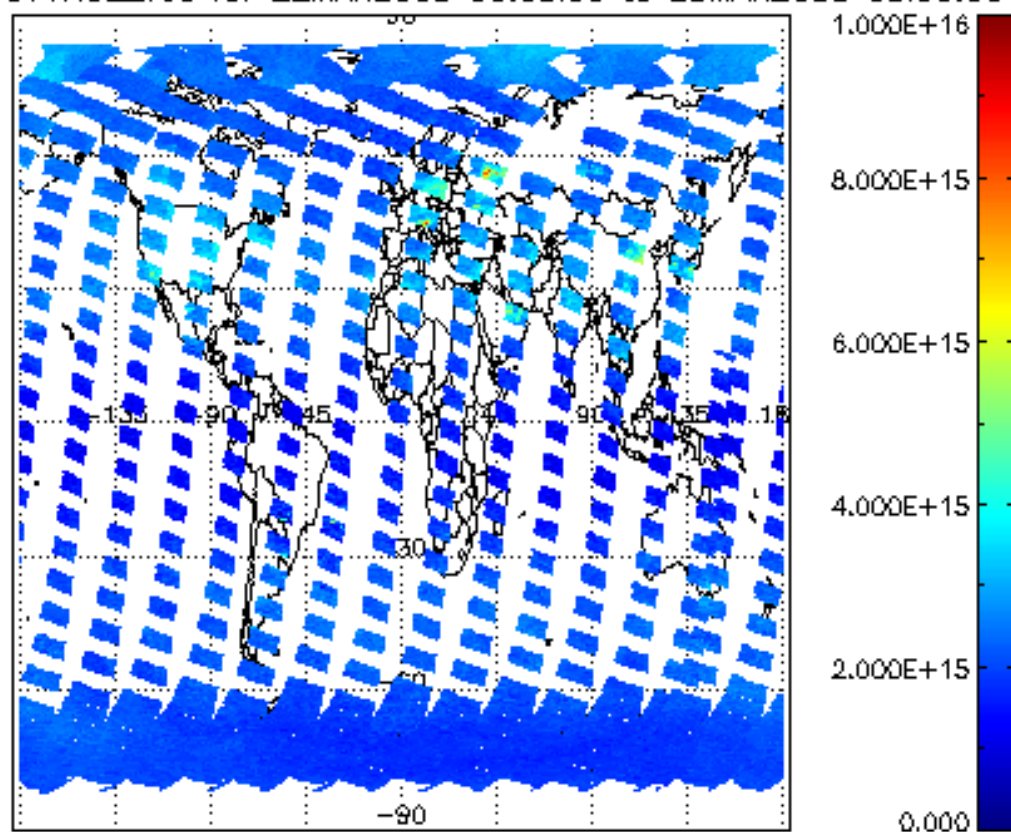
SCIOL2P\_NADUV003\_amf\_cl for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



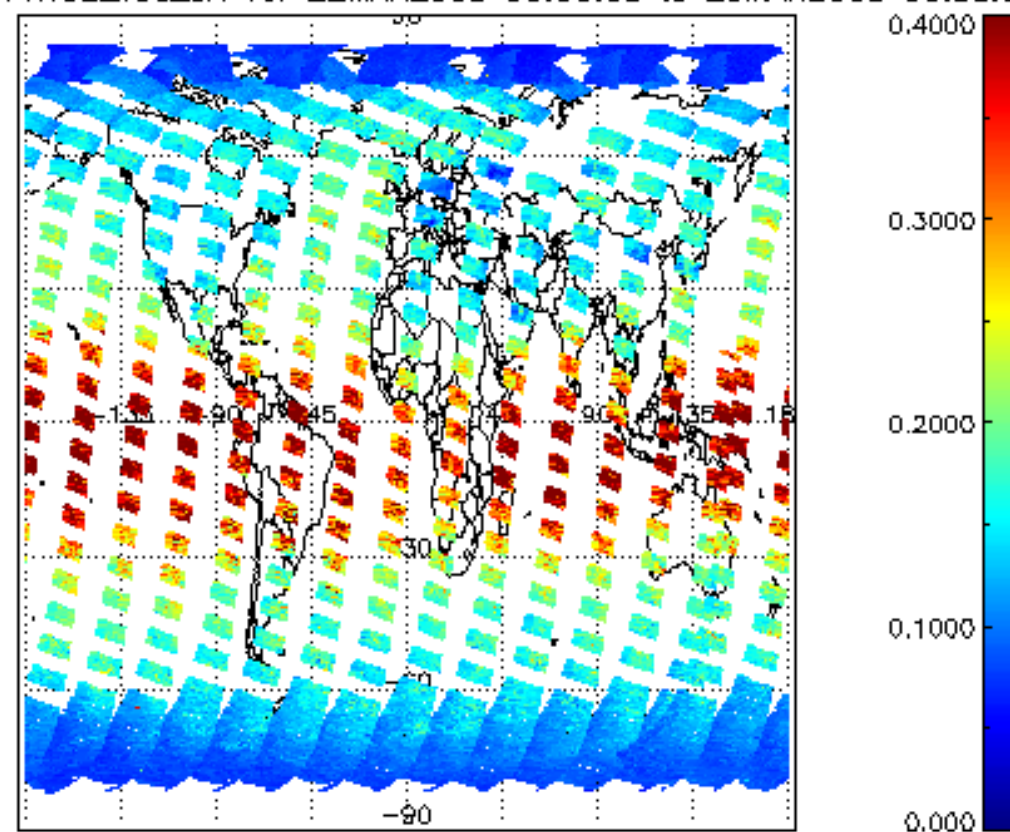




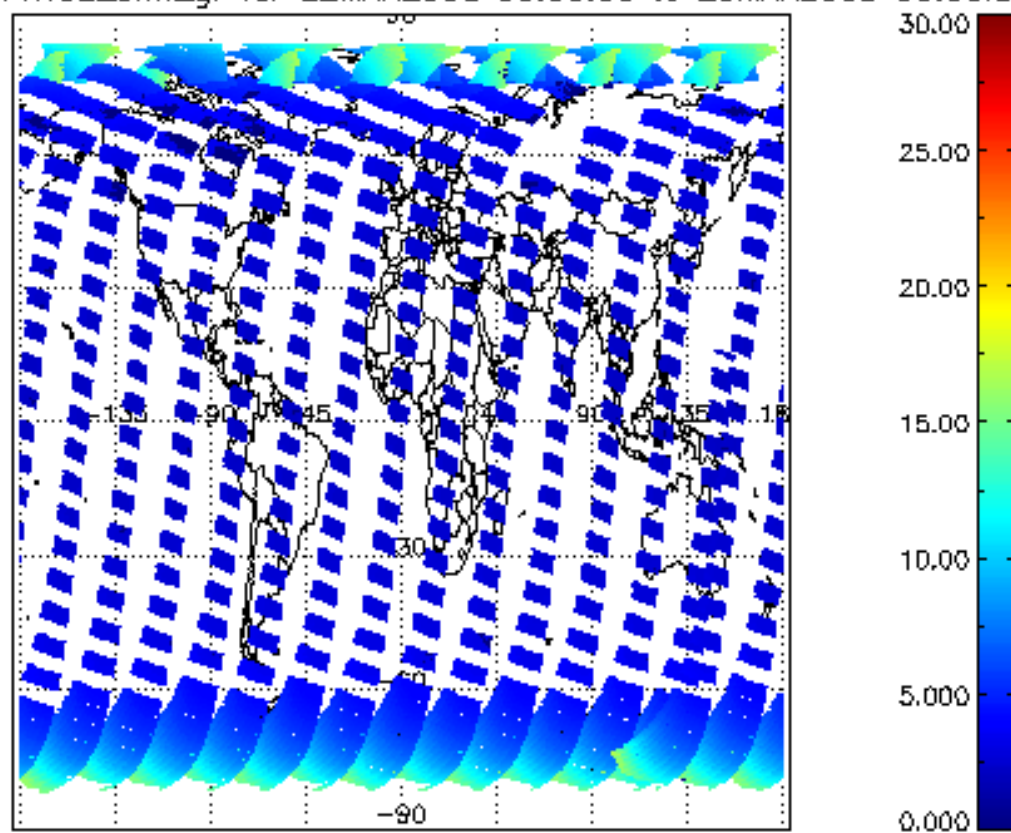
SCIOL2P\_NADUV1NO2\_vcd for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



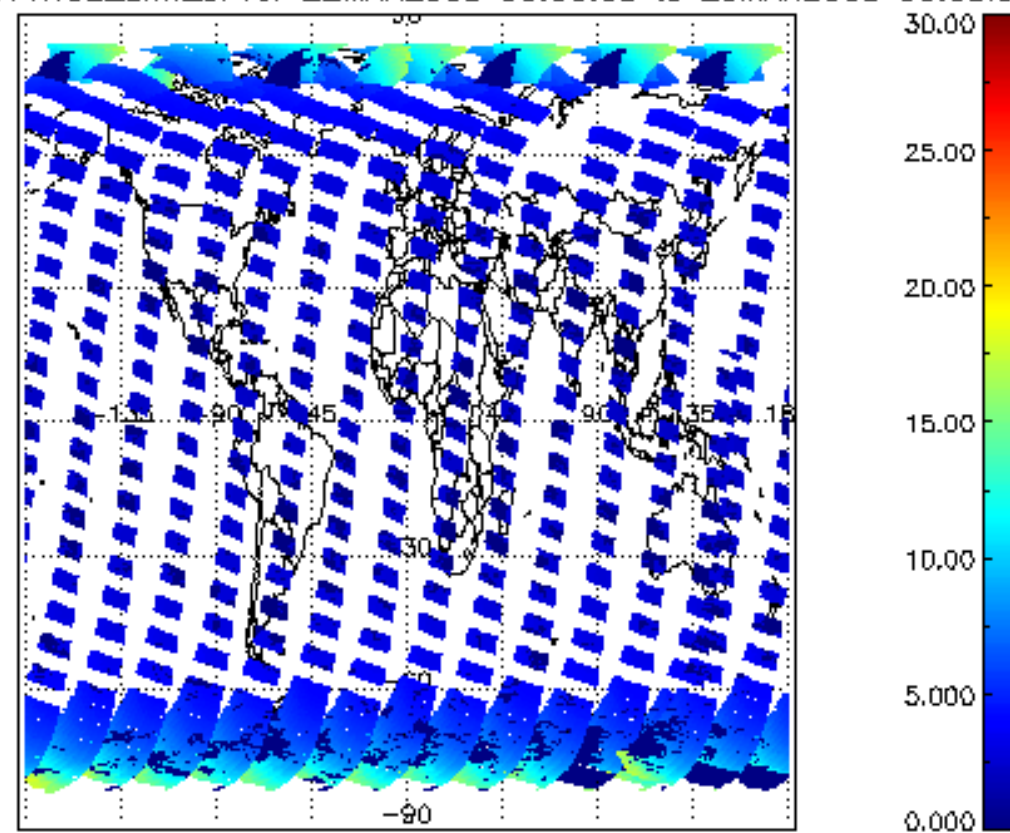
SCIOL2P\_NADUV1NO2\_vcd\_err for 22MAR2008 00:00:00 to 23MAR2008 00:00:00



SCIOL2P\_NADUV1NO2\_amf\_gr for 22MAR2008 00:00:00 to 23MAR2008 00:00:00

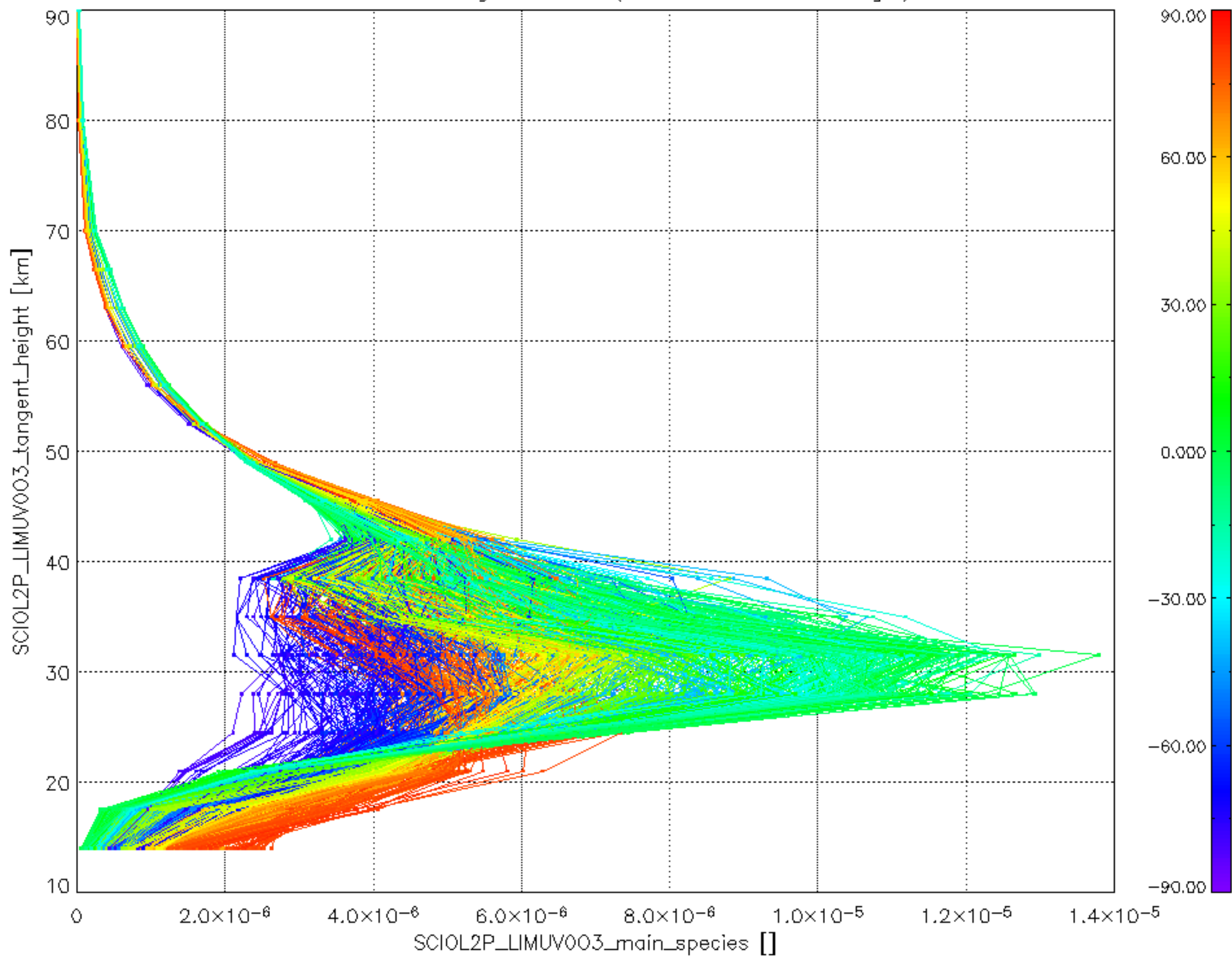


SCIOL2P\_NADUV1NO2\_amf\_cl for 22MAR2008 00:00:00 to 23MAR2008 00:00:00





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).

