

## 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                | 15MAR2008 06:09:56                       |
| Data source version                      | SCIA-OL/3.01-R                           |
| Processing scope for products            | 22FEB2008 00:00:00 to 23FEB2008 00:00:00 |
| Start time of first product within scope | 21FEB2008 23:49:12                       |
| Stop time of last product within scope   | 23FEB2008 00:11:58                       |
| 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__2PRDPA20080221_234912_000032692066_00145_31261_3549.N1 | 21FEB2008 23:49:12 | 22FEB2008 00:43:42 | 0        | GOOD        |
| 1  | SCI_OL__2PRDPA20080222_012839_000033252066_00146_31262_3551.N1 | 22FEB2008 01:28:39 | 22FEB2008 02:24:04 | 0        | GOOD        |
| 2  | SCI_OL__2PRDPA20080222_031023_000032692066_00147_31263_3554.N1 | 22FEB2008 03:10:23 | 22FEB2008 04:04:52 | 0        | GOOD        |
| 3  | SCI_OL__2PRDPA20080222_044950_000033252066_00148_31264_3555.N1 | 22FEB2008 04:49:50 | 22FEB2008 05:45:15 | 0        | GOOD        |
| 4  | SCI_OL__2PRDPA20080222_063134_000032692066_00149_31265_3557.N1 | 22FEB2008 06:31:34 | 22FEB2008 07:26:03 | 0        | GOOD        |
| 5  | SCI_OL__2PRDPA20080222_081101_000033252066_00150_31266_3559.N1 | 22FEB2008 08:11:01 | 22FEB2008 09:06:26 | 0        | GOOD        |
| 6  | SCI_OL__2PRDPA20080222_095245_000032692066_00151_31267_3563.N1 | 22FEB2008 09:52:45 | 22FEB2008 10:47:14 | 0        | GOOD        |
| 7  | SCI_OL__2PRDPA20080222_113211_000033252066_00152_31268_3565.N1 | 22FEB2008 11:32:11 | 22FEB2008 12:27:37 | 0        | GOOD        |
| 8  | SCI_OL__2PRDPA20080222_131355_000032692066_00153_31269_3567.N1 | 22FEB2008 13:13:55 | 22FEB2008 14:08:25 | 0        | GOOD        |
| 9  | SCI_OL__2PRDPA20080222_145322_000033252066_00154_31270_3573.N1 | 22FEB2008 14:53:22 | 22FEB2008 15:48:48 | 0        | GOOD        |
| 10 | SCI_OL__2PRDPA20080222_163506_000032692066_00155_31271_3575.N1 | 22FEB2008 16:35:06 | 22FEB2008 17:29:36 | 0        | GOOD        |
| 11 | SCI_OL__2PRDPA20080222_181446_000033412066_00156_31272_3576.N1 | 22FEB2008 18:14:46 | 22FEB2008 19:10:27 | 0        | GOOD        |
| 12 | SCI_OL__2PRDPA20080222_195441_000033942066_00157_31273_3577.N1 | 22FEB2008 19:54:41 | 22FEB2008 20:51:15 | 0        | GOOD        |
| 13 | SCI_OL__2PRDPA20080222_213544_000033252066_00158_31274_3579.N1 | 22FEB2008 21:35:44 | 22FEB2008 22:31:10 | 0        | GOOD        |
| 14 | SCI_OL__2PRDPA20080222_231728_000032692066_00159_31275_3581.N1 | 22FEB2008 23:17:28 | 23FEB2008 00:11:58 | 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: 151088

Total number of cloud data DSRs with good quality flag (=0): 151088 (100.0 %)

| Parameter    | #valid | Mean    | Median  | Min     | Max     | Stddev   | Unit |
|--------------|--------|---------|---------|---------|---------|----------|------|
| QUALITY_FLAG | 151088 | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000   | flag |
| INTEGR_TIME  | 151088 | 0.17127 | 0.12500 | 0.12500 | 0.25000 | 0.060356 | s    |
| SURFACE_PRES | 151088 | 0.0000  | 0.0000  | 0.0000  | 0.0000  | 0.0000   | hPa  |
| CL_FRAC      | 151088 | 0.41865 | 0.39334 | 0.0000  | 1.0000  | 0.28442  | -    |

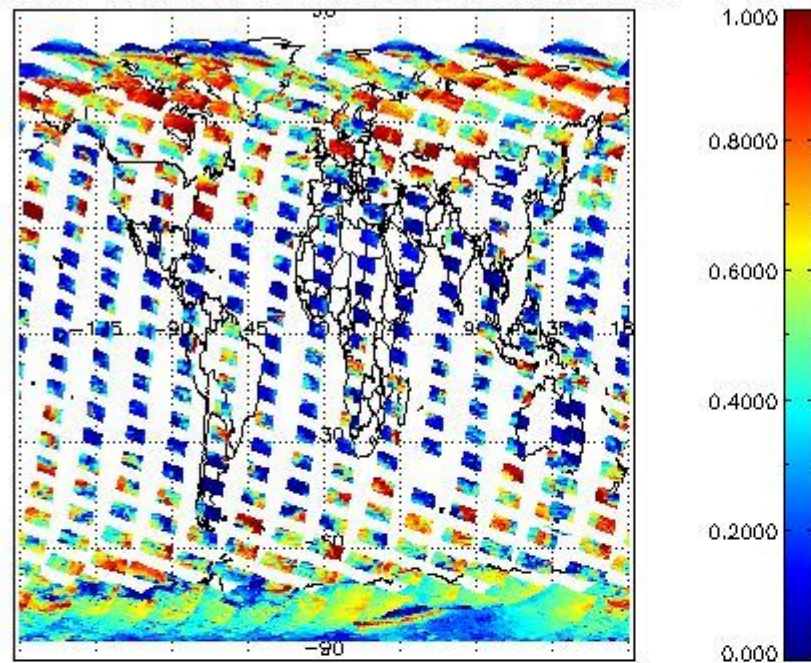
|                   |        |          |          |          |          |        |   |
|-------------------|--------|----------|----------|----------|----------|--------|---|
| CL_FRAC_ERR       | 151088 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000 | rel. fraction   |
| PMD_READ          | 151088 | 5.4807   | 4.0000   | 4.0000   | 8.0000   | 1.9314 |   |
| PMD_READ_CL[0]    | 151088 | 0.23575  | 0.0000   | 0.0000   | 8.0000   | 1.0750 | -   |
| PMD_READ_CL[1]    | 151088 | 0.61124  | 0.0000   | 0.0000   | 8.0000   | 1.7759 | -   |
| CL_TOP_HEIGHT     | 126643 | 4.1879   | 2.7561   | 0.0000   | 17.000   | 3.9737 | km  |
| CL_TOP_HEIGHT_ERR | 0      | ---      | ---      | ---      | ---      | ---    | ---   |
| CL_OPT_DEPTH      | 126643 | 55.499   | 47.252   | 0.0000   | 101.00   | 39.840 | km  |
| CL_OPT_DEPTH_ERR  | 0      | ---      | ---      | ---      | ---      | ---    | ---   |
| CL_TYPE_FLAGS     | 151088 | 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       | 151088 | 11001001 | 11000100 | 11000000 | 11100000 | 3096.3 | flags   |
| AERO_ABSO_IND     | 151088 | 2.8158   | 3.1801   | -1.3866  | 11.405   | 1.9625 |   |
| AERO_IND_DIAG     | 151088 | 0.0000   | 0.0000   | 0.0000   | 0.0000   | 0.0000 |   |
| AERO_FLAGS        | 151088 | 01011000 | 00000000 | 00000000 | 11000000 | 24508. | flags   |

Time and geolocation plots:

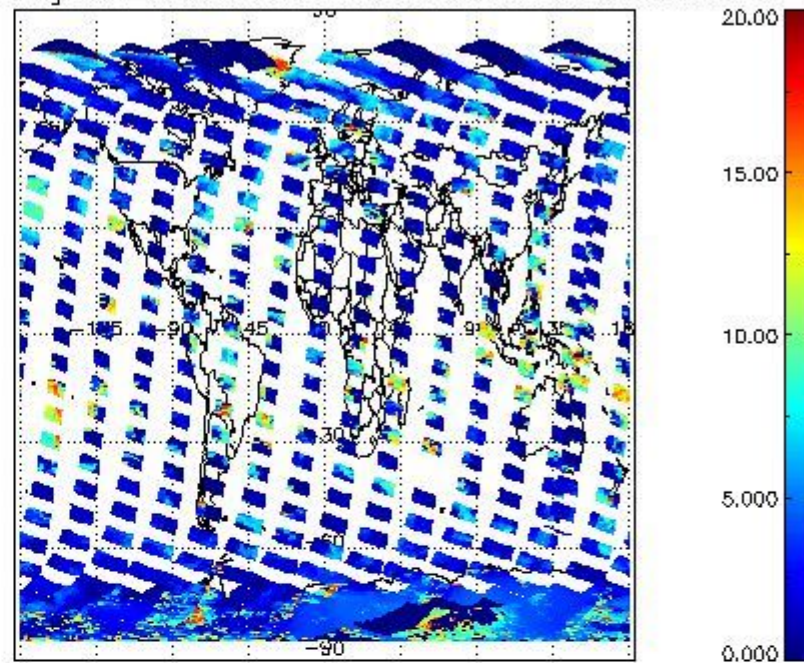
Plots are available for the following parameters:

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

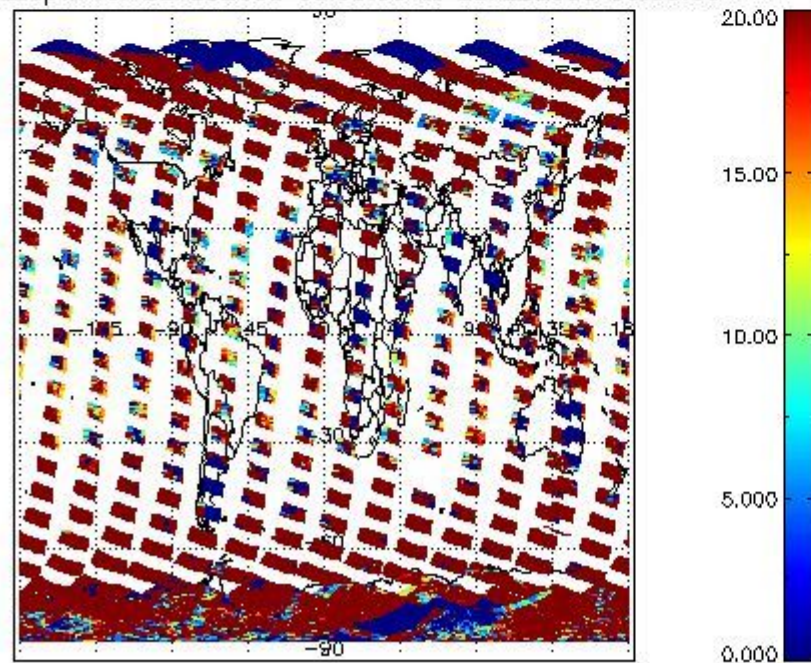
cL\_frac for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



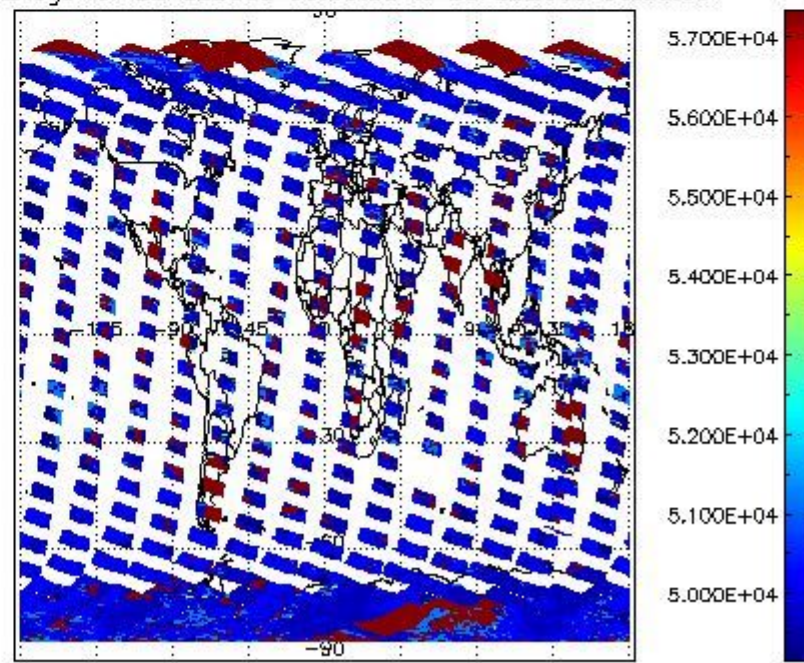
cL\_top\_height for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



cL\_opt\_depth for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



cloud\_flags for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



### 2.2.2 Nadir

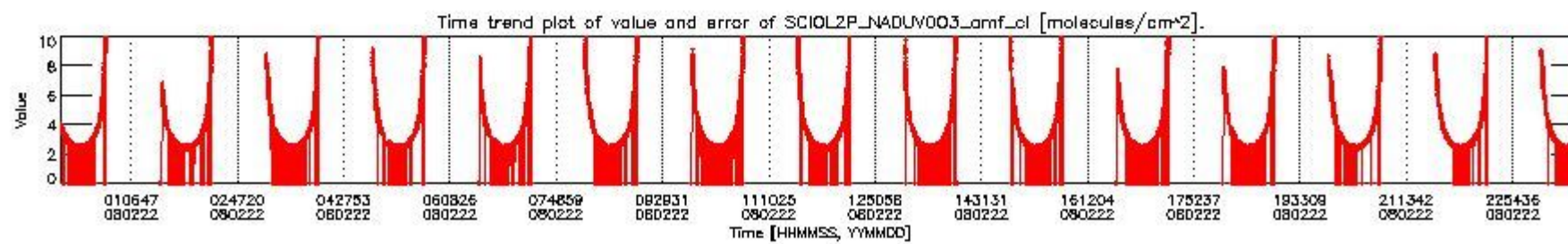
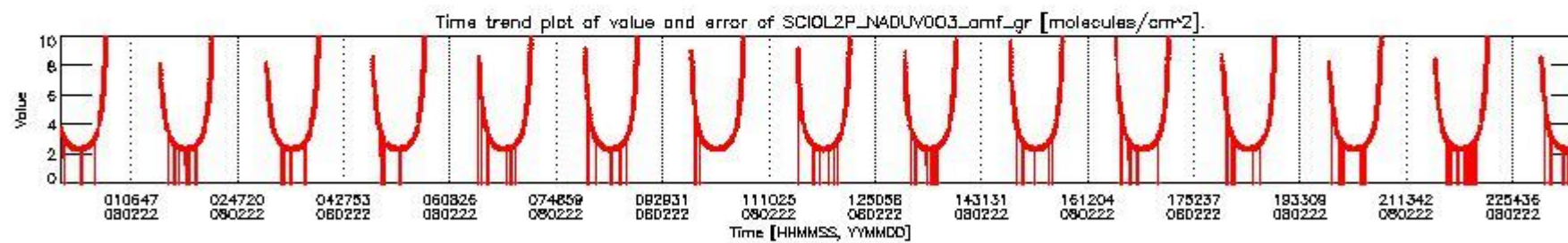
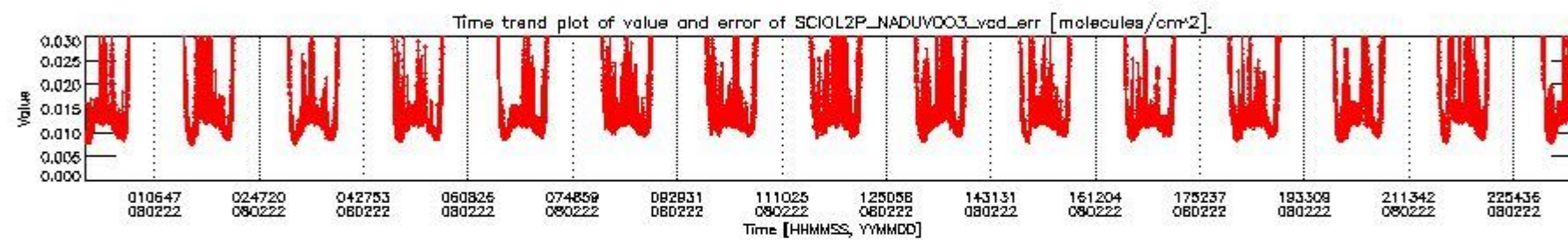
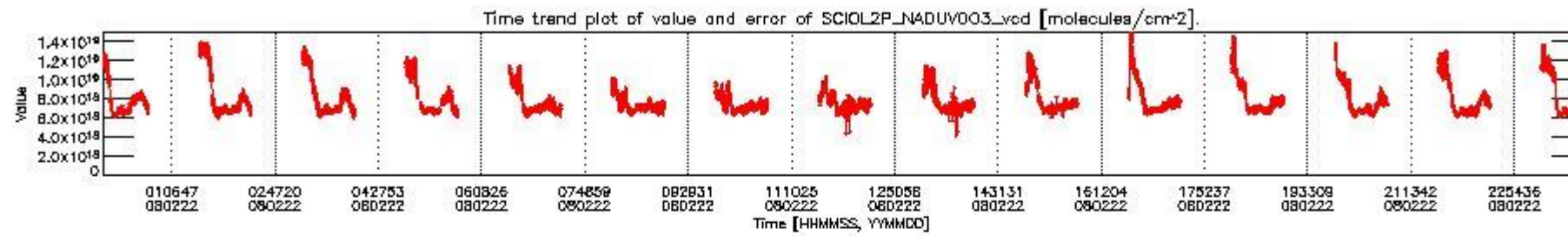
This section shows information about product quality of nadir measurements, in particular the quality of retrieved species.

The following data items are currently included into this section:

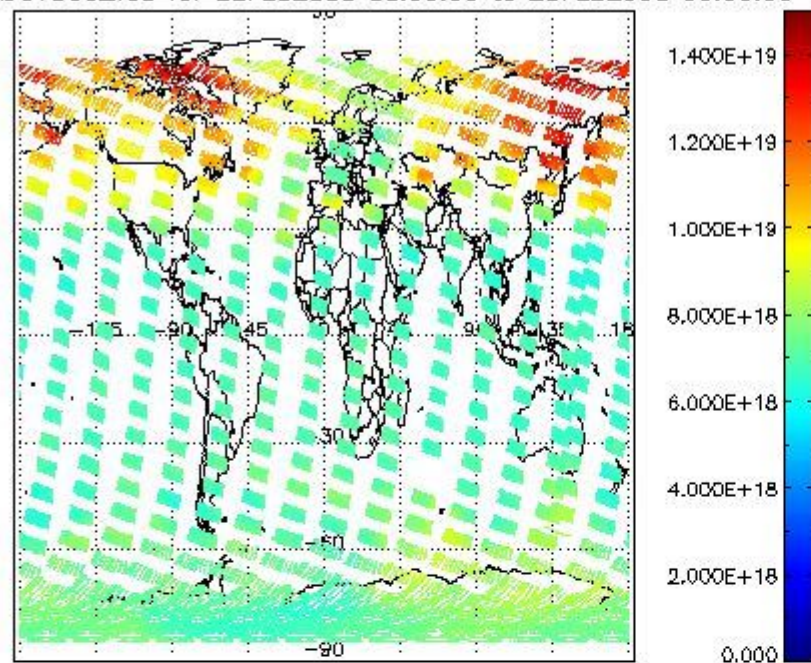
| Number | Data item ID             |
|--------|--------------------------|
| 0      | SCIOL2P_NADUV003_vcd     |
| 1      | SCIOL2P_NADUV003_vcd_err |
| 2      | SCIOL2P_NADUV003_amf_gr  |
| 3      | SCIOL2P_NADUV003_amf_cl  |

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

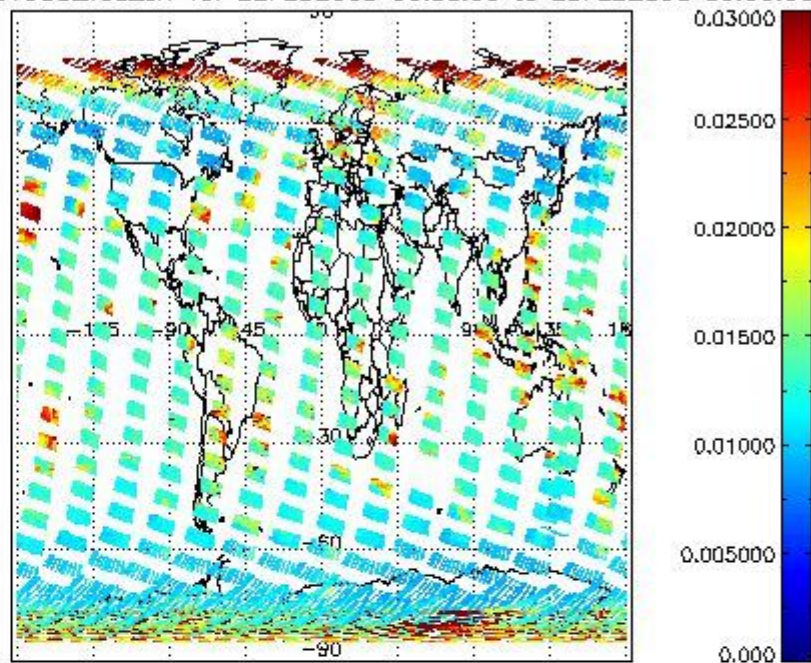
Data is presented both in time trend plots and world map plots, in order to show variations with time and geolocation. The vertical dotted lines in the time trend plots indicate orbits. The orbit times on the X-axis are estimated sensing\_start time as suggested by the product sensing\_start time in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



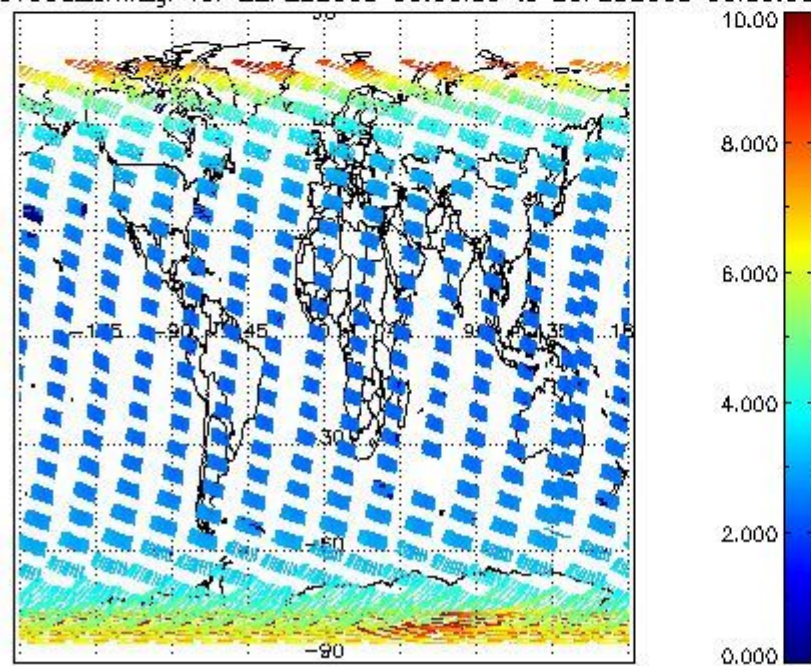
SCIOL2P\_NADUV003\_vcd for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



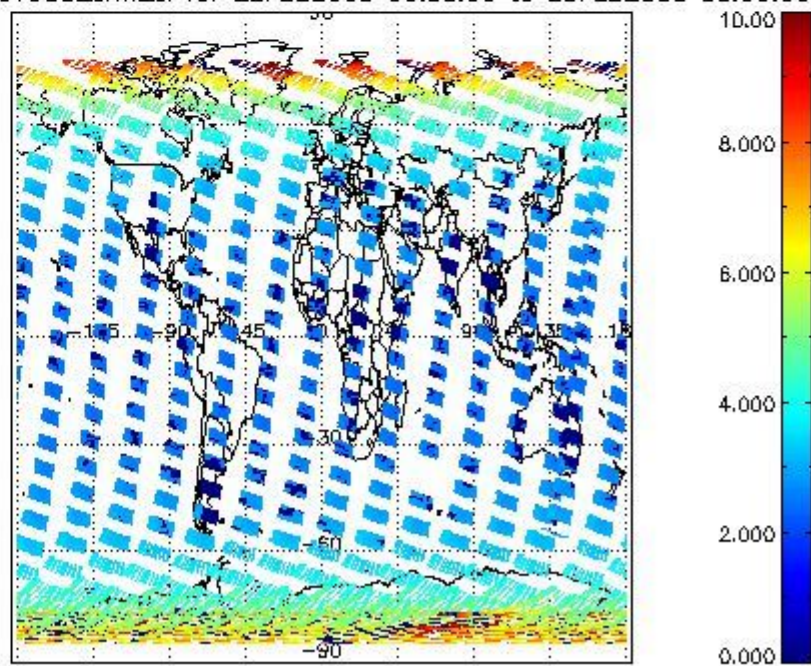
SCIOL2P\_NADUV003\_vcd\_err for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

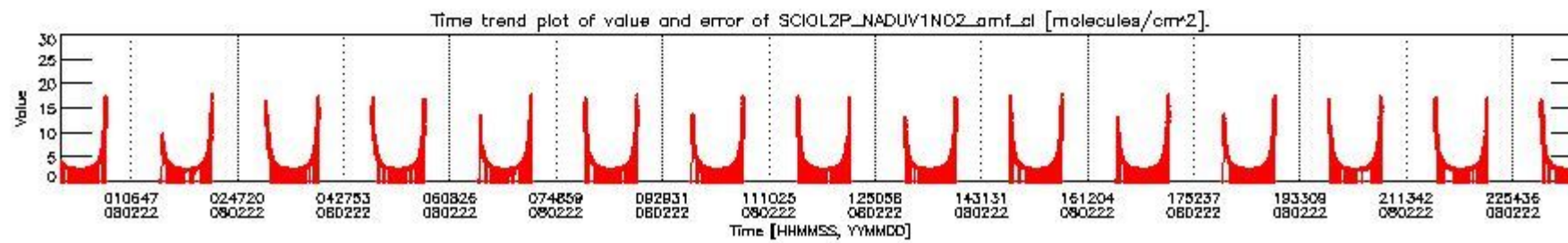
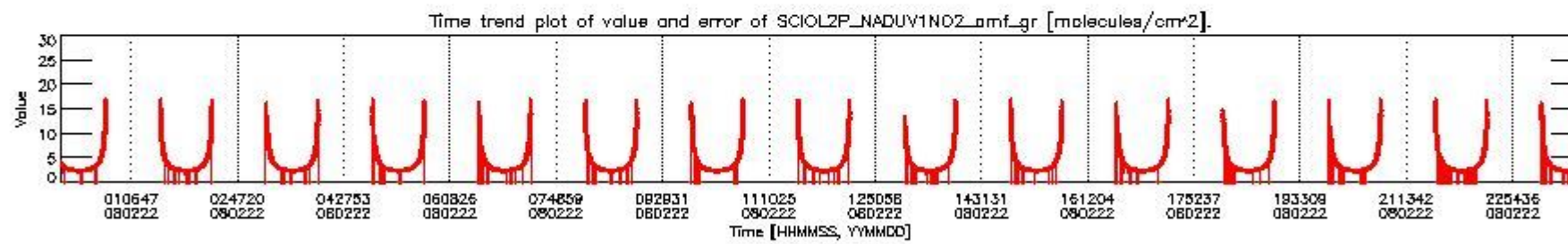
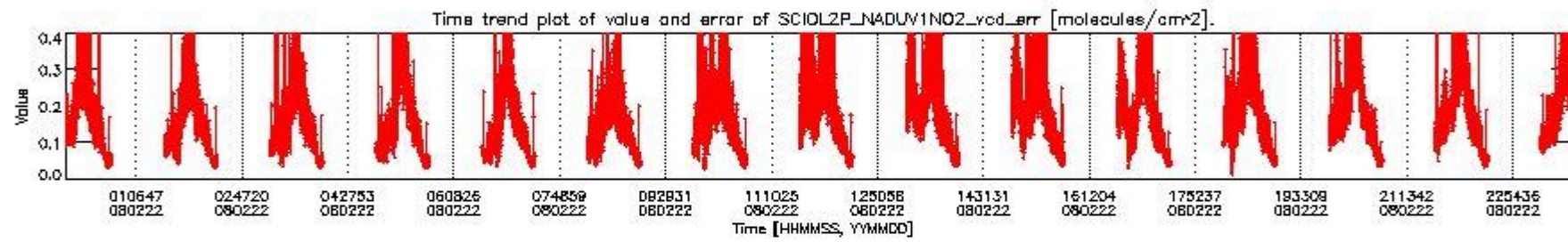
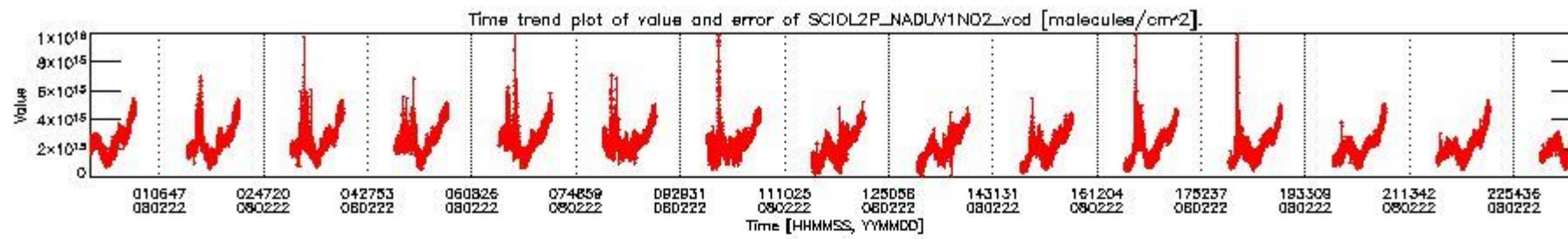


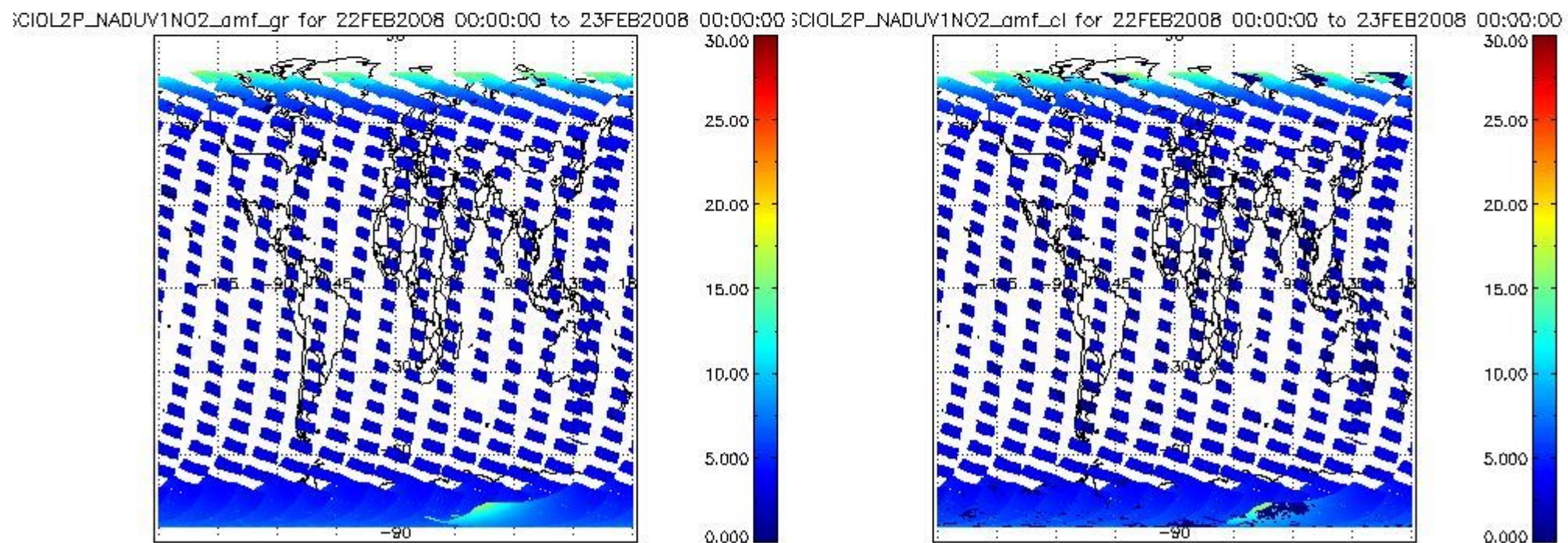
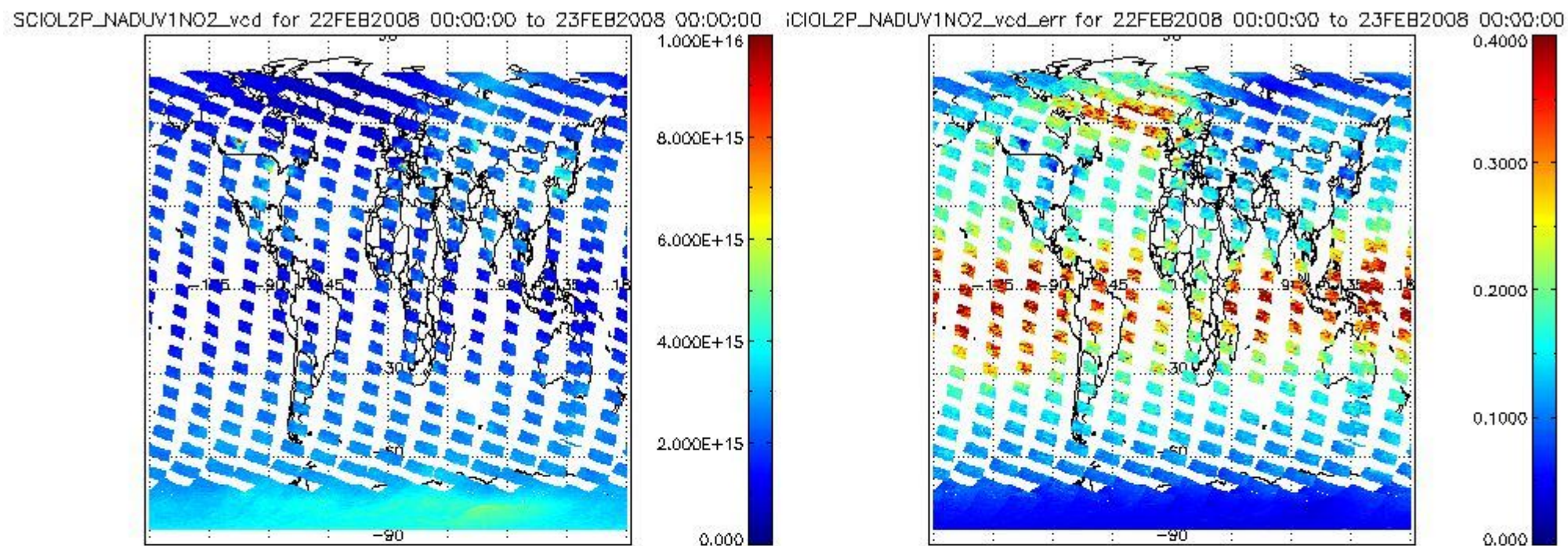
SCIOL2P\_NADUV003\_amf\_gr for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



SCIOL2P\_NADUV003\_amf\_cl for 22FEB2008 00:00:00 to 23FEB2008 00:00:00







### 2.2.3 Limb

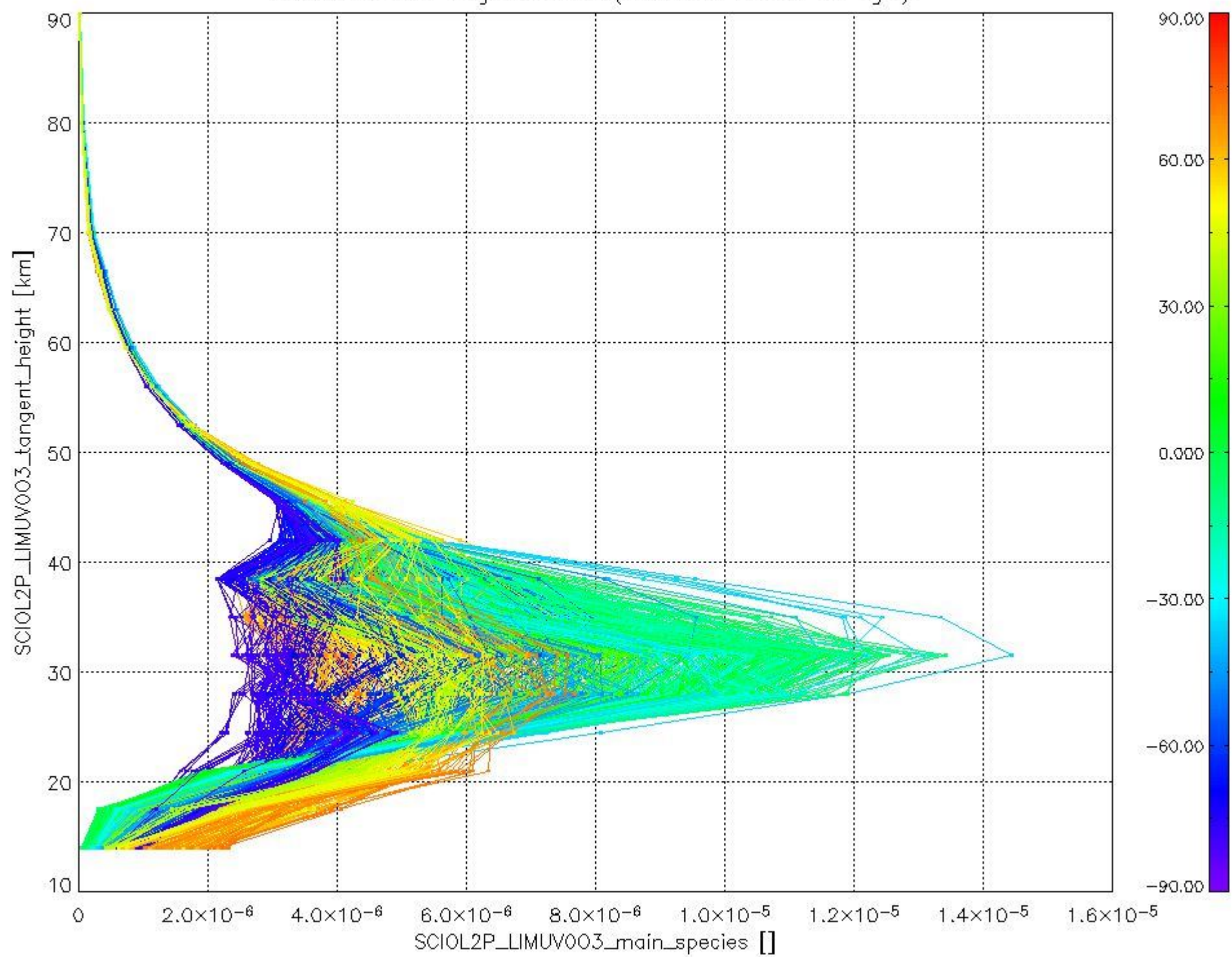
This section shows information about product quality of the limb retrievals, in particular the quality of retrieved species.

The following data items are currently included into this section:

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

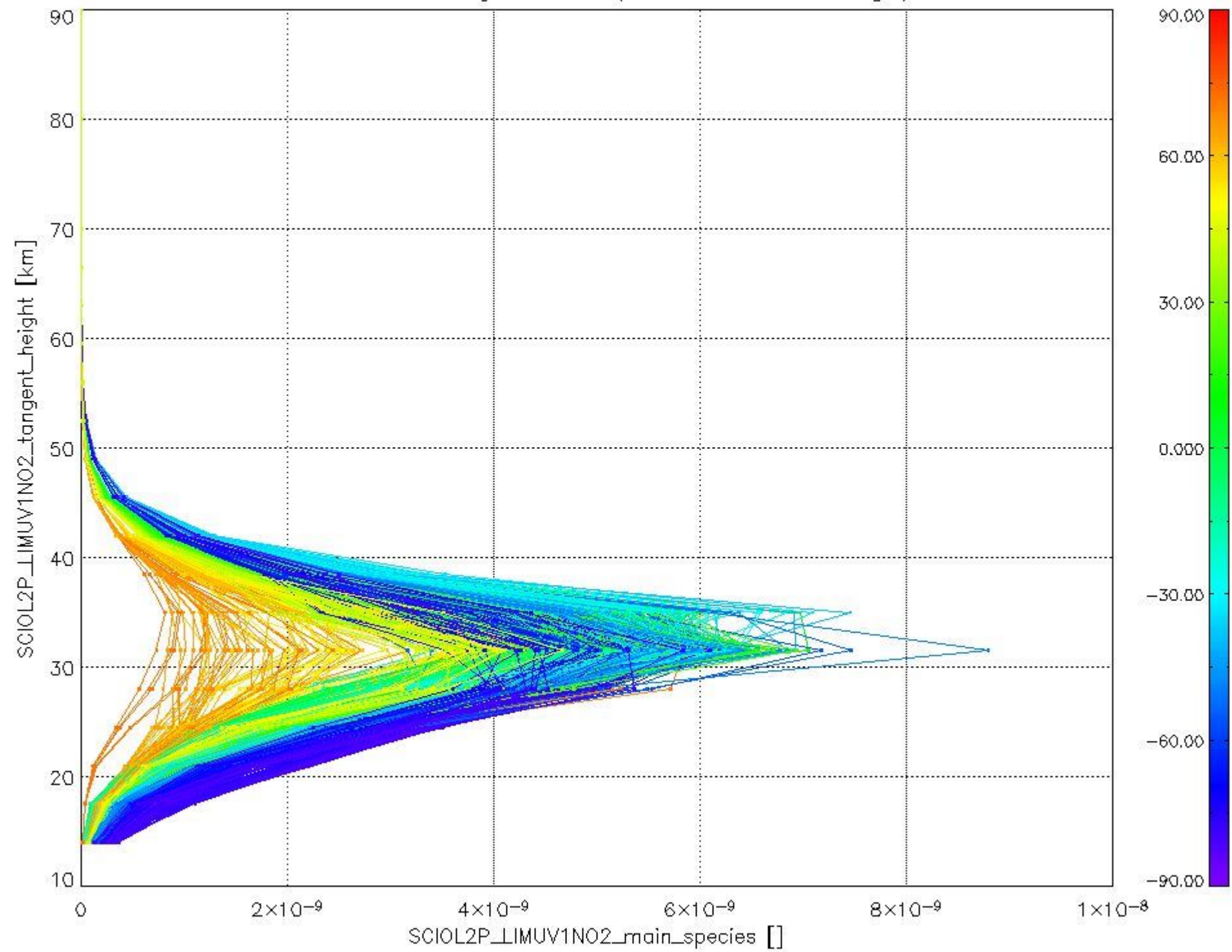
The following plots shows for each species the tangent volume mixing ratio vs. tangent height. Colours indicate tangent latitude.

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





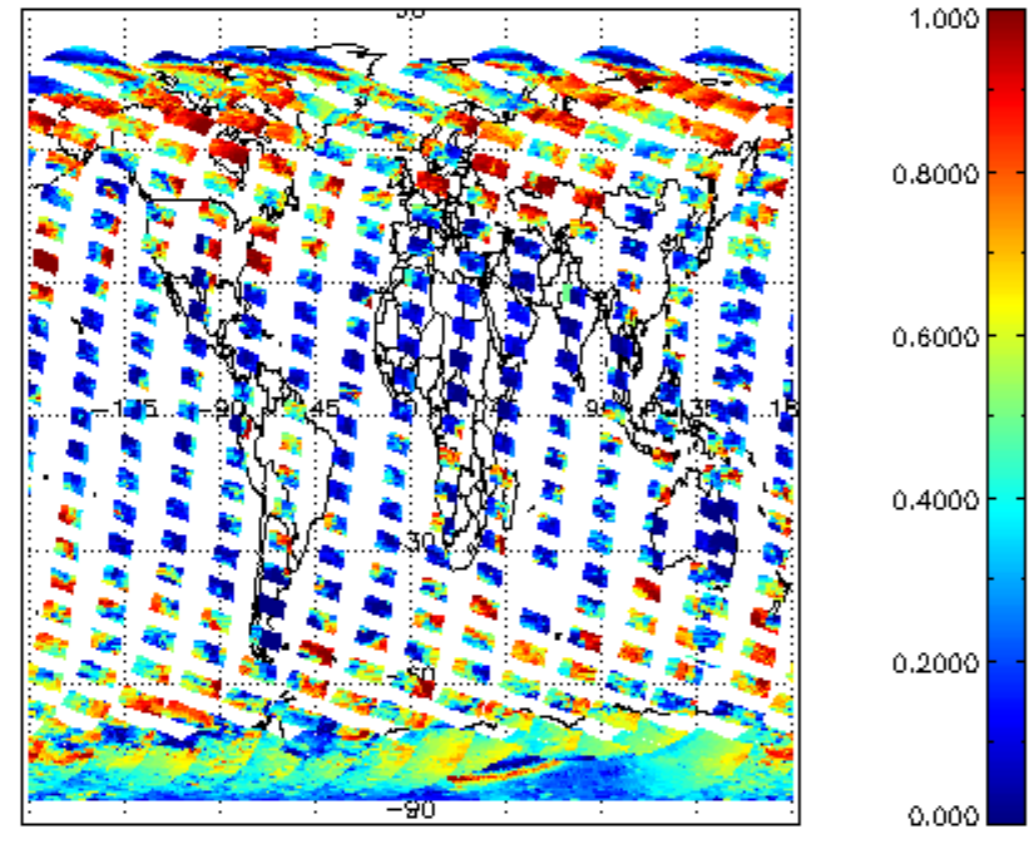
Plot of SCIOL2P\_LIMUV1NO2\_main\_species.tang\_vmr vs. tangent height.  
Colours indicate tangent latitude (see colour bar on the right).



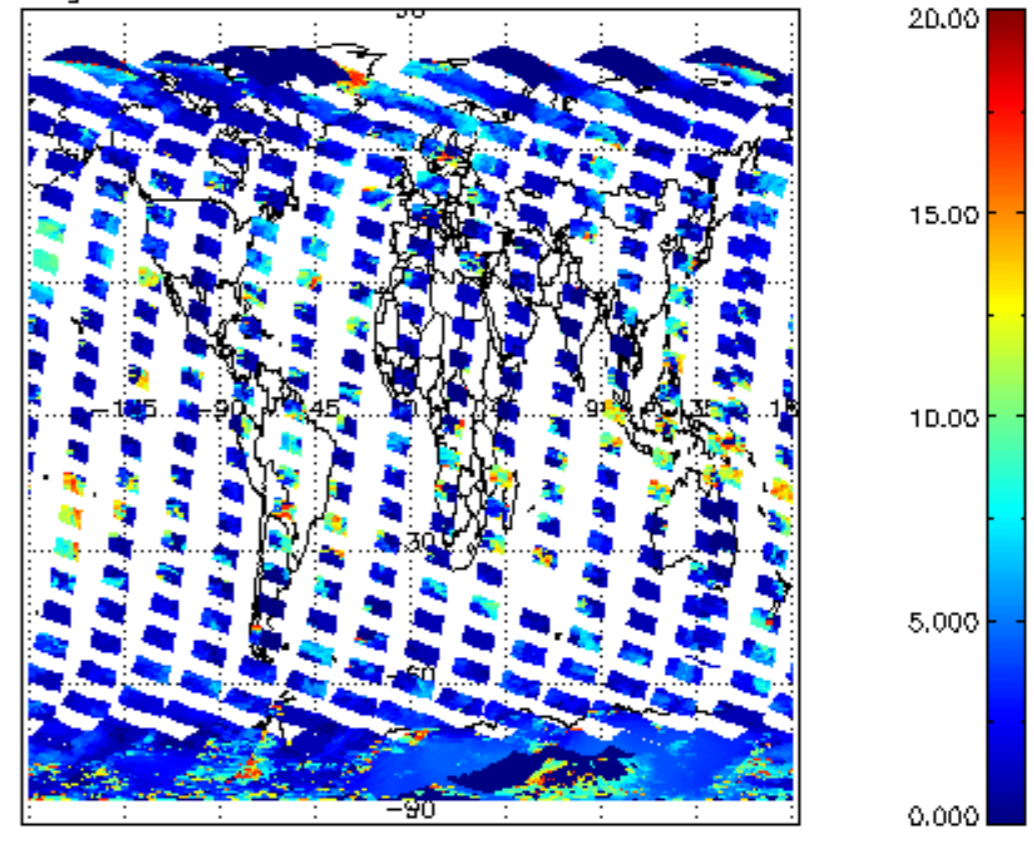
### 2.3 ADF monitoring

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

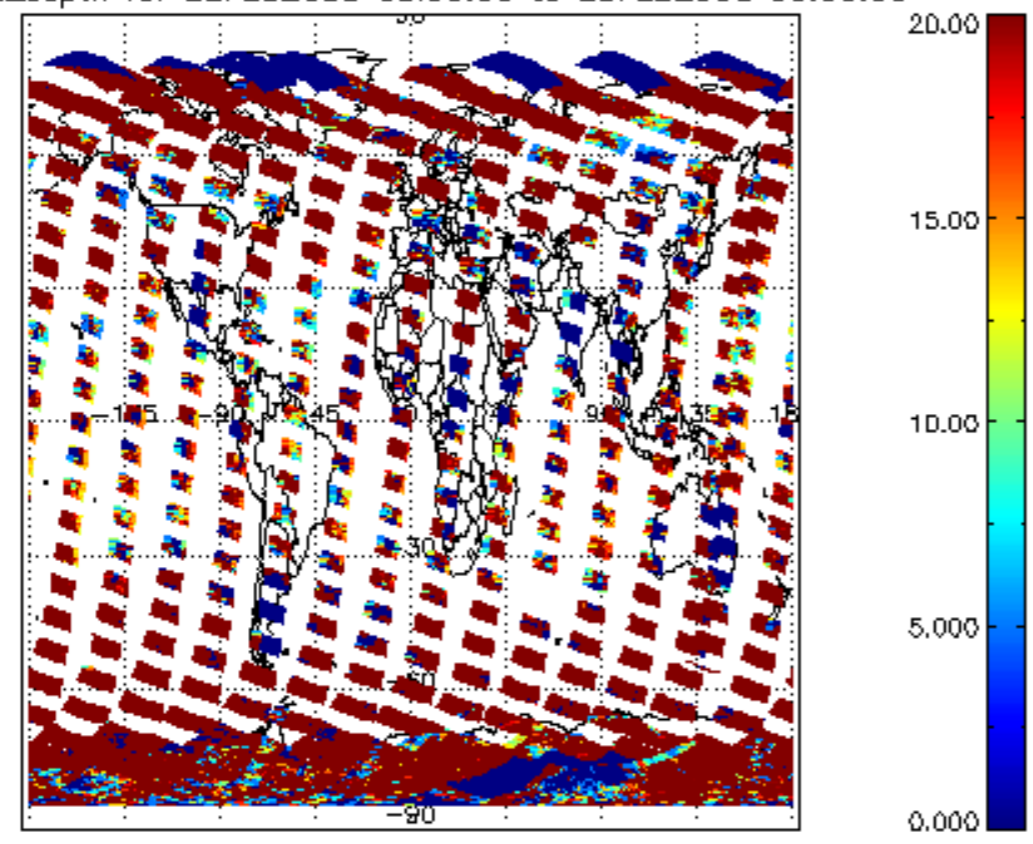
cl\_frac for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



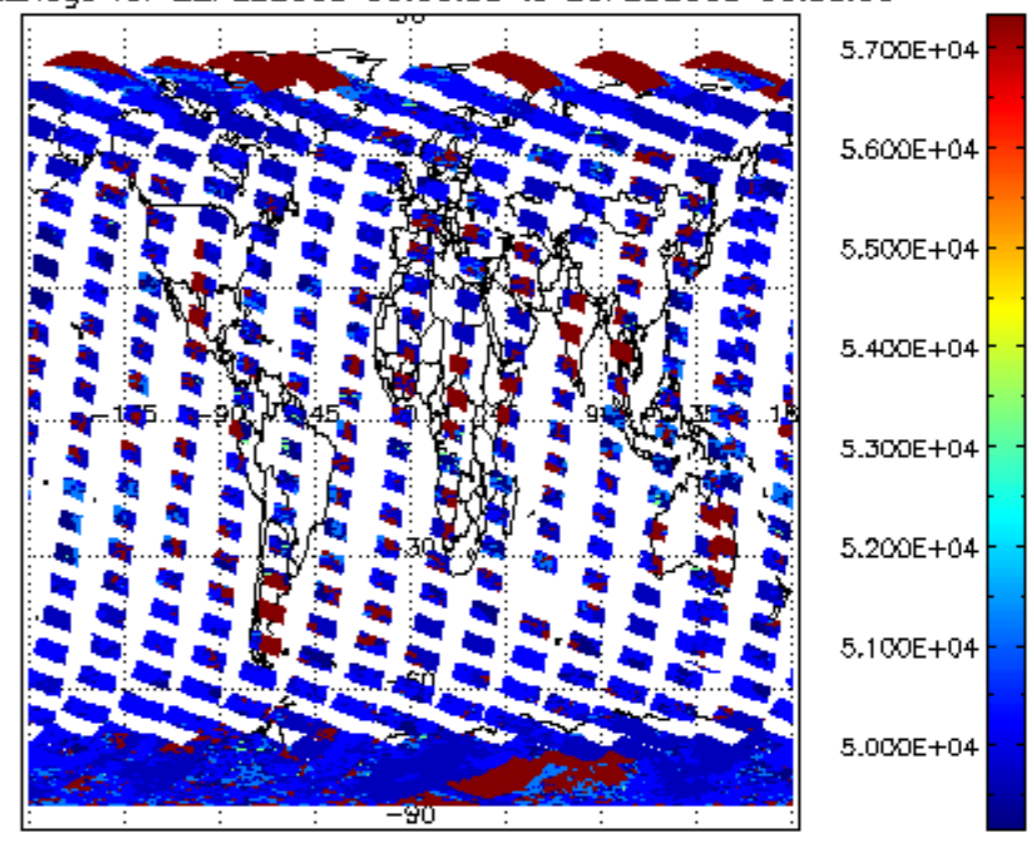
cl\_top\_height for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

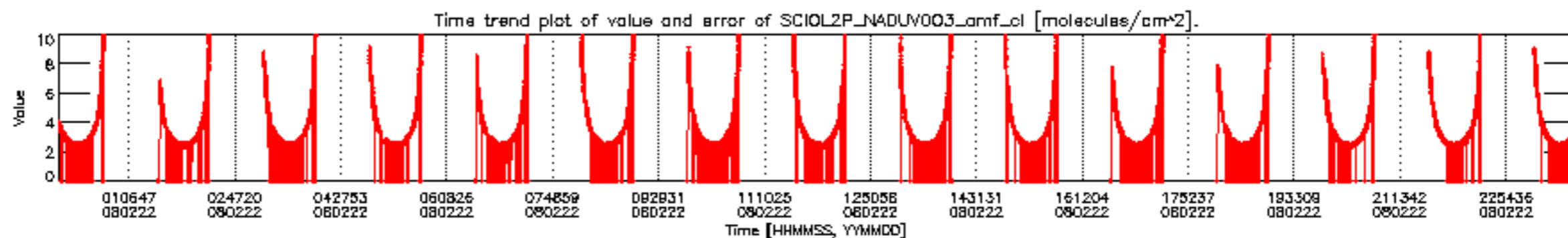
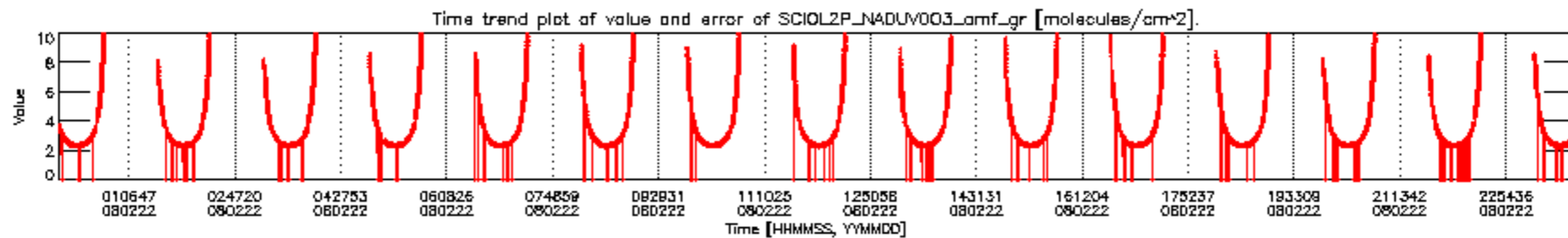
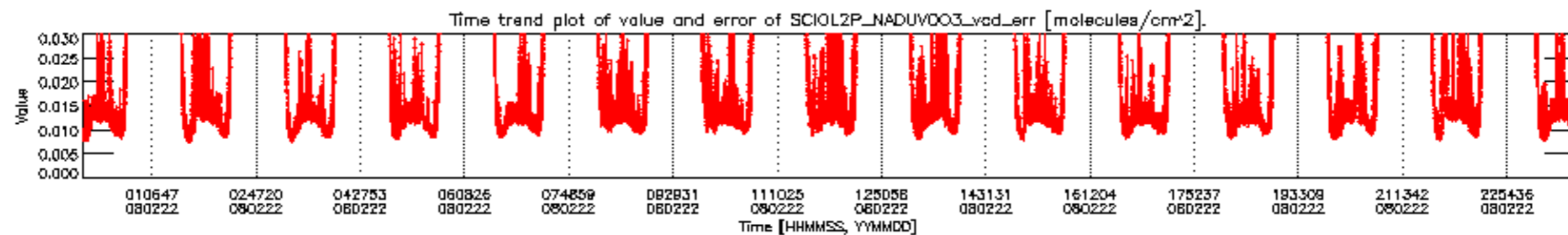
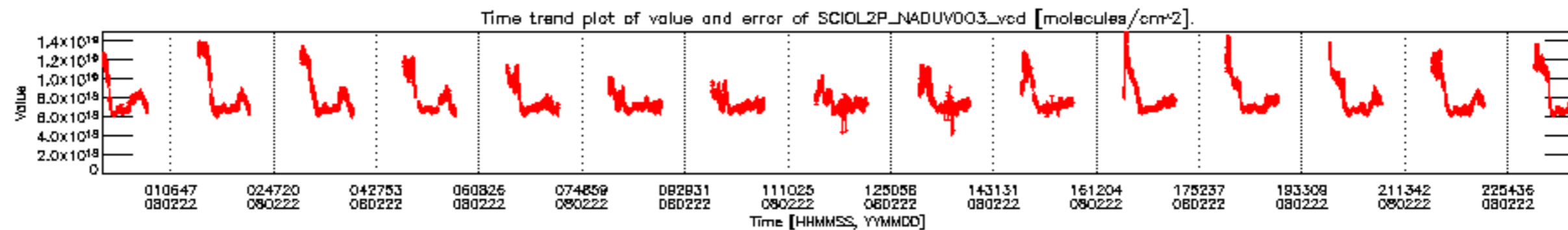


cl\_opt\_depth for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

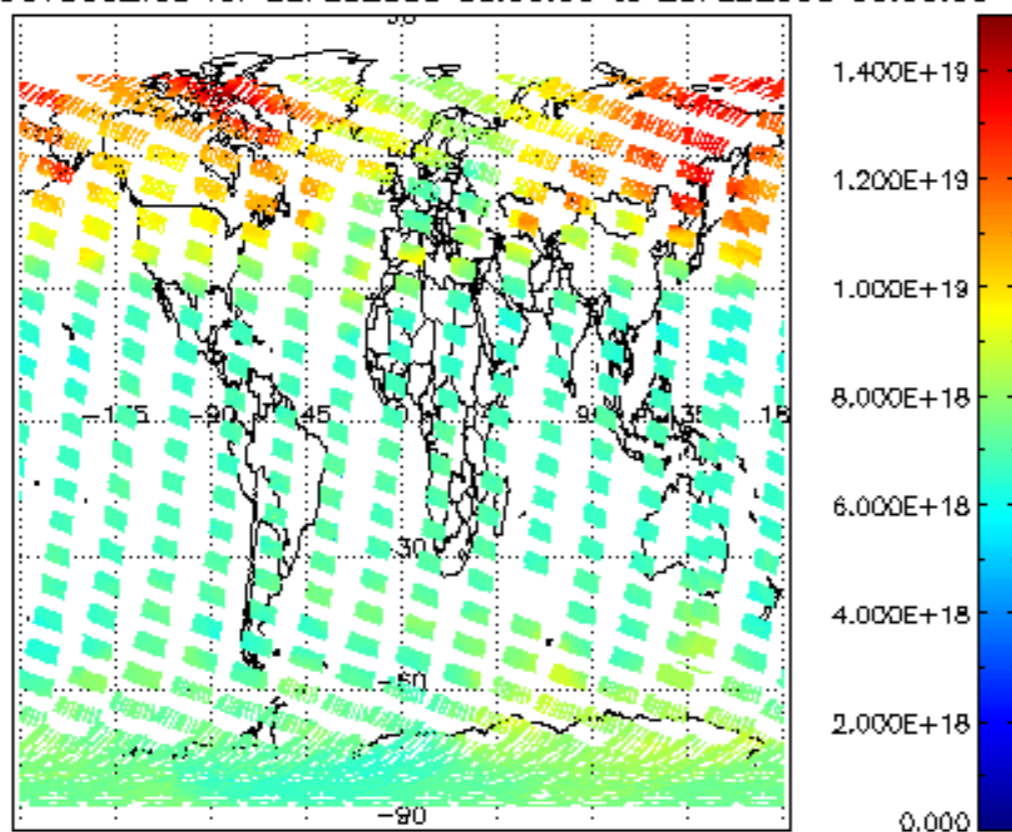


cloud\_flags for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

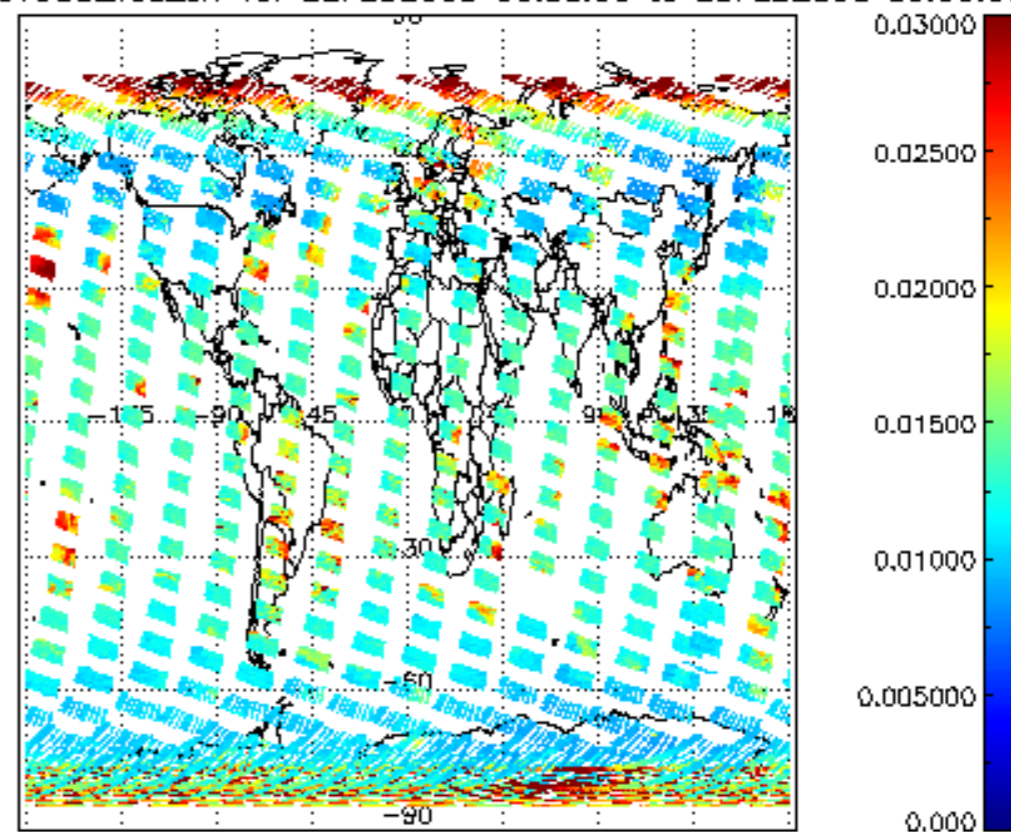




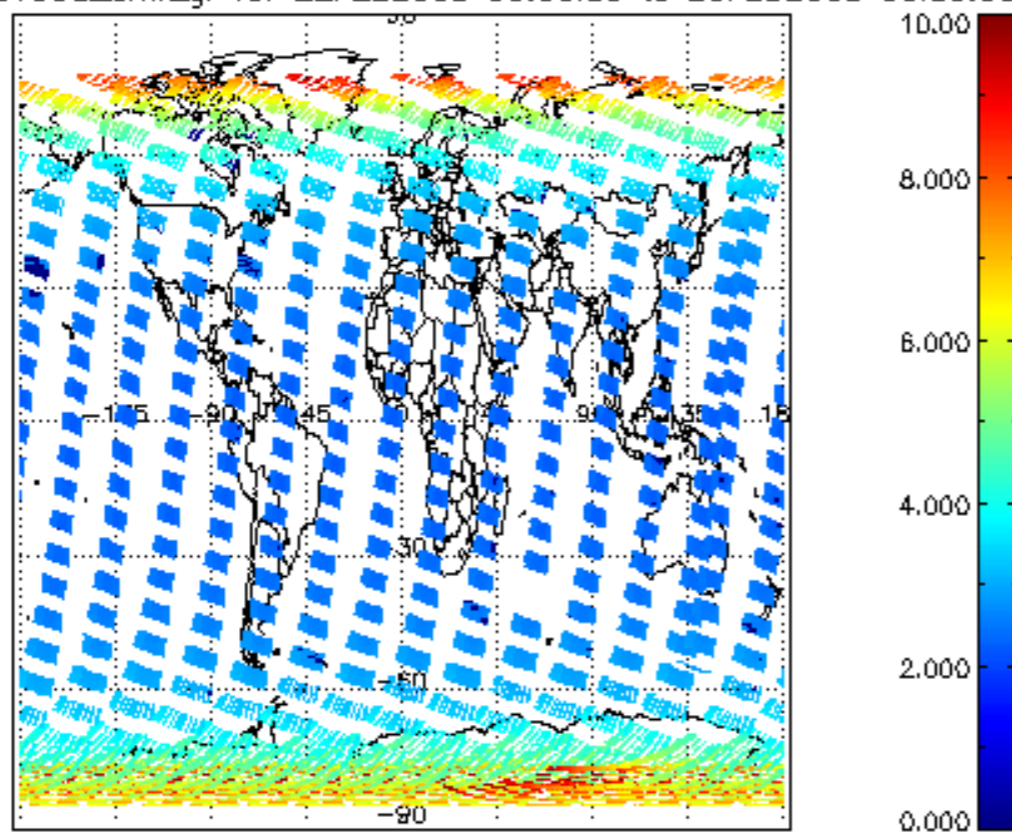
SCIOL2P\_NADUV003\_vcd for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



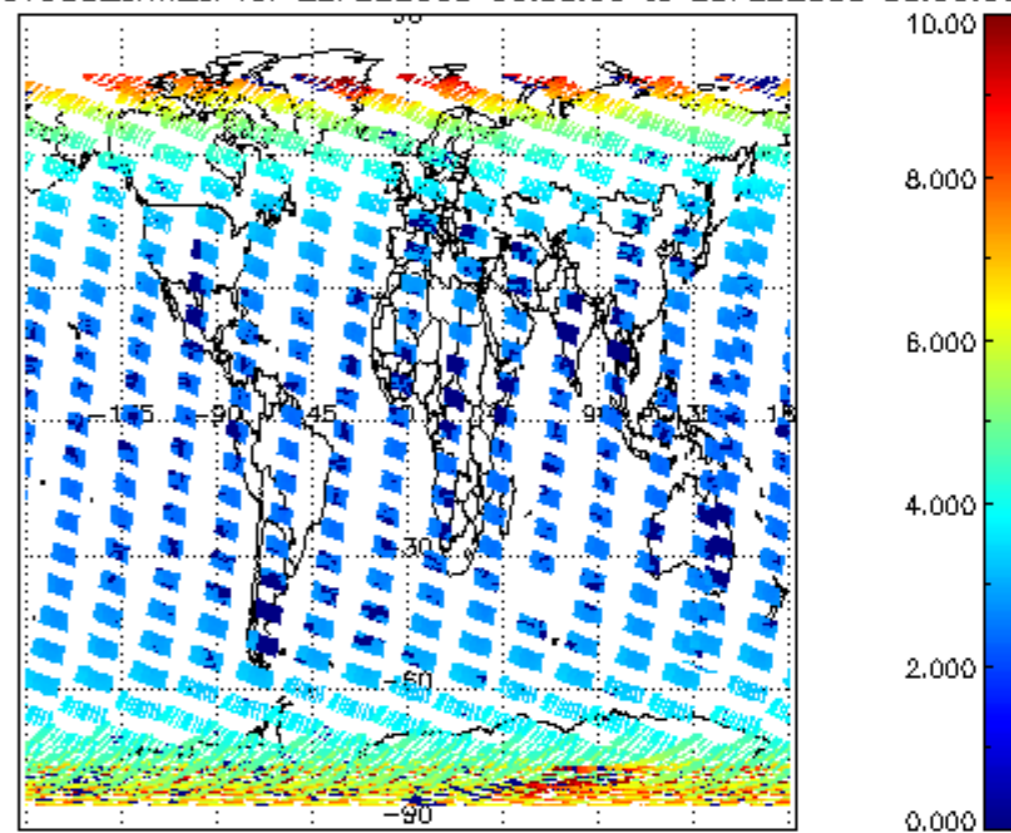
SCIOL2P\_NADUV003\_vcd\_err for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

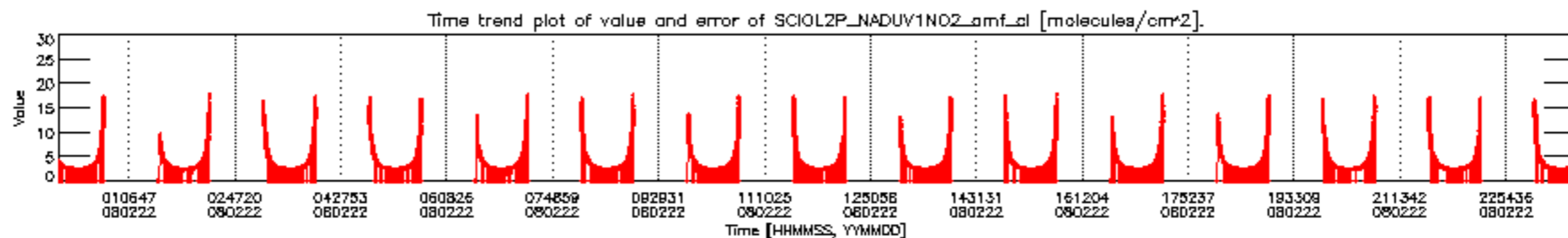
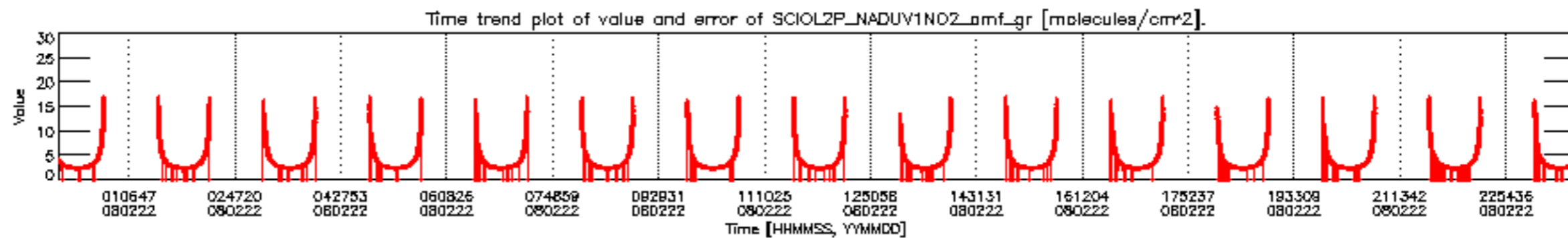
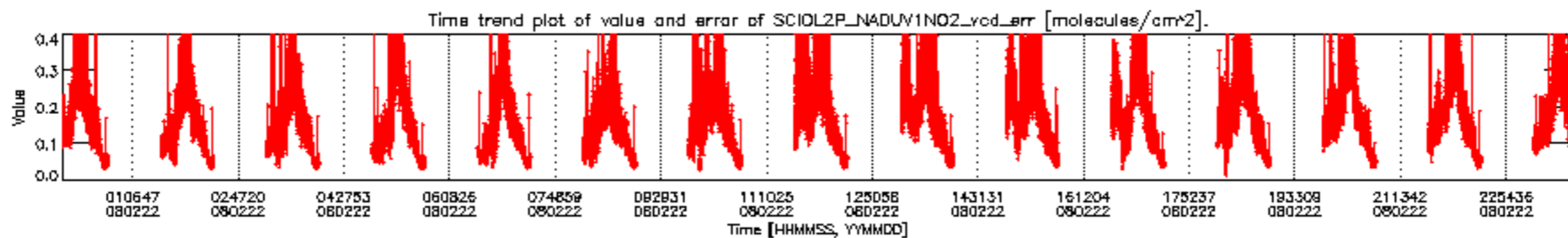
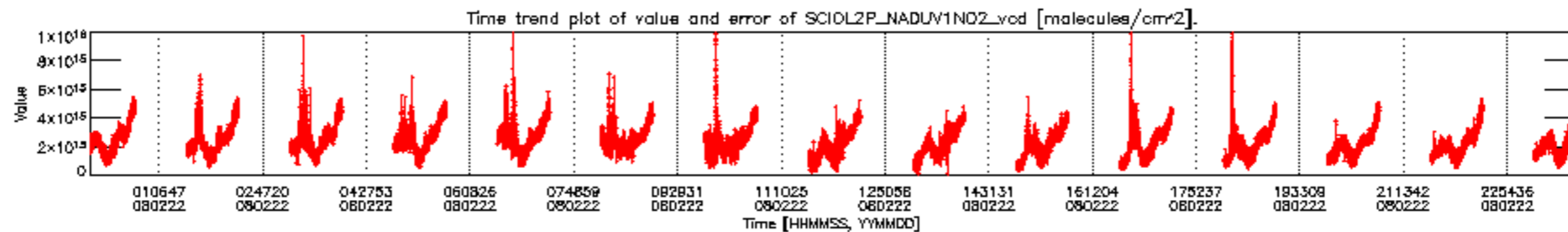


SCIOL2P\_NADUV003\_amf\_gr for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

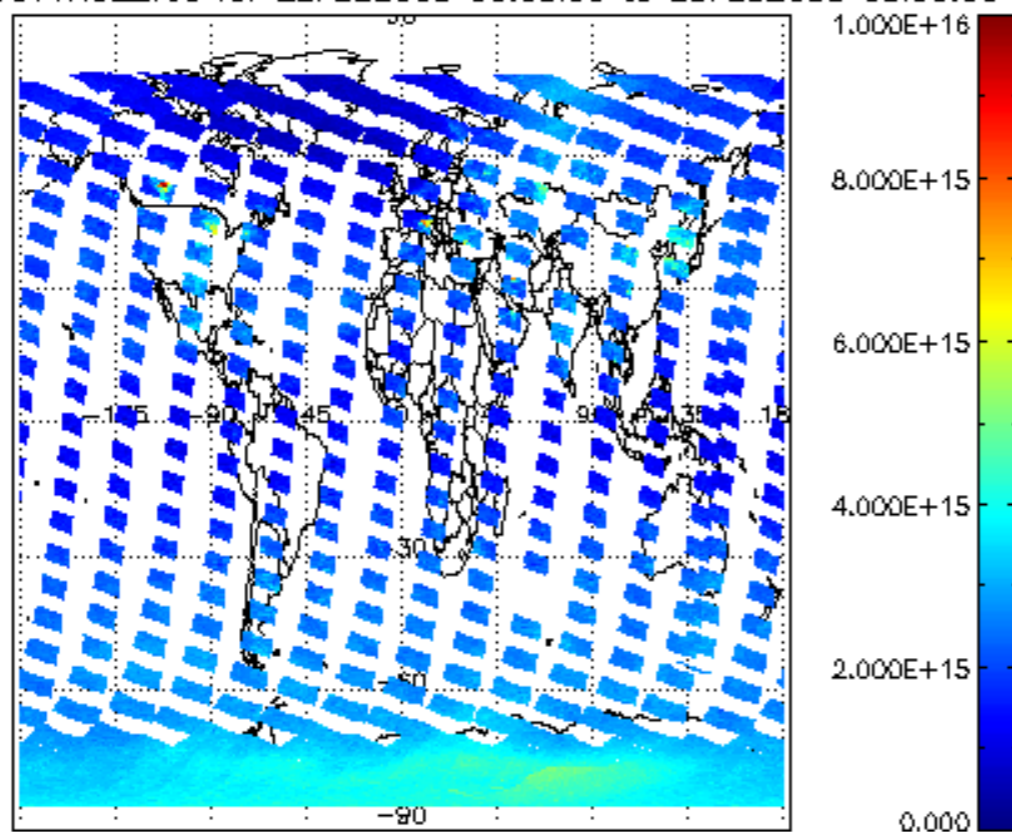


SCIOL2P\_NADUV003\_amf\_cl for 22FEB2008 00:00:00 to 23FEB2008 00:00:00

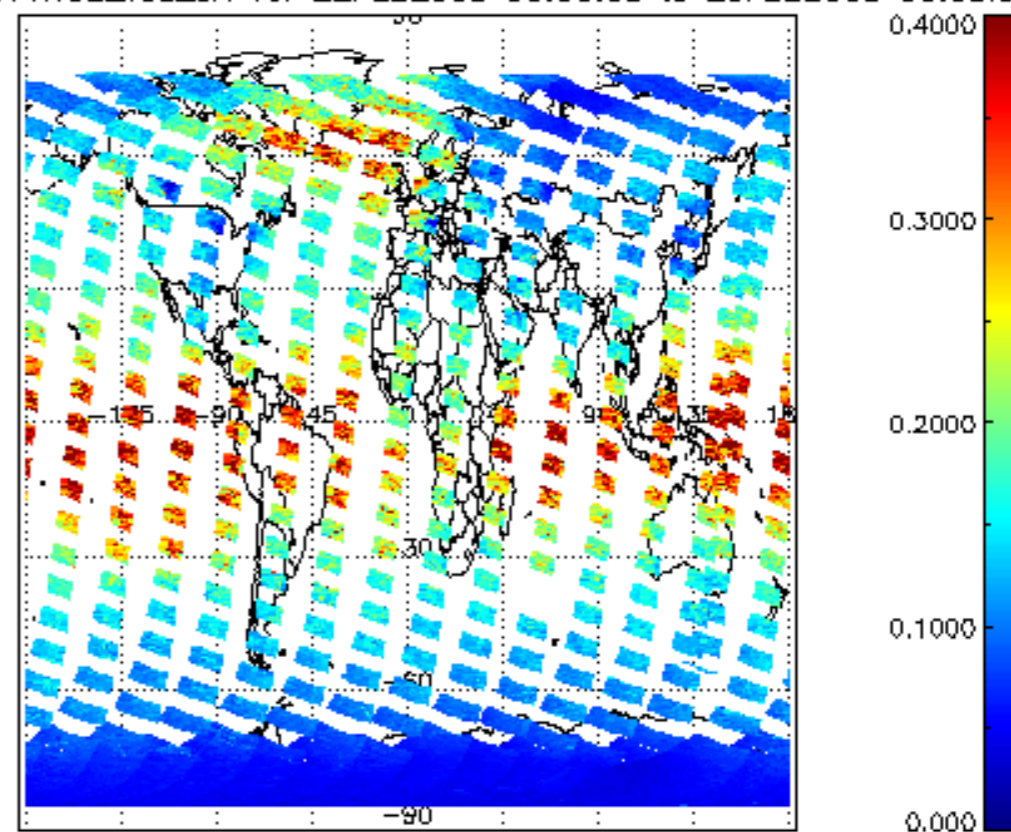




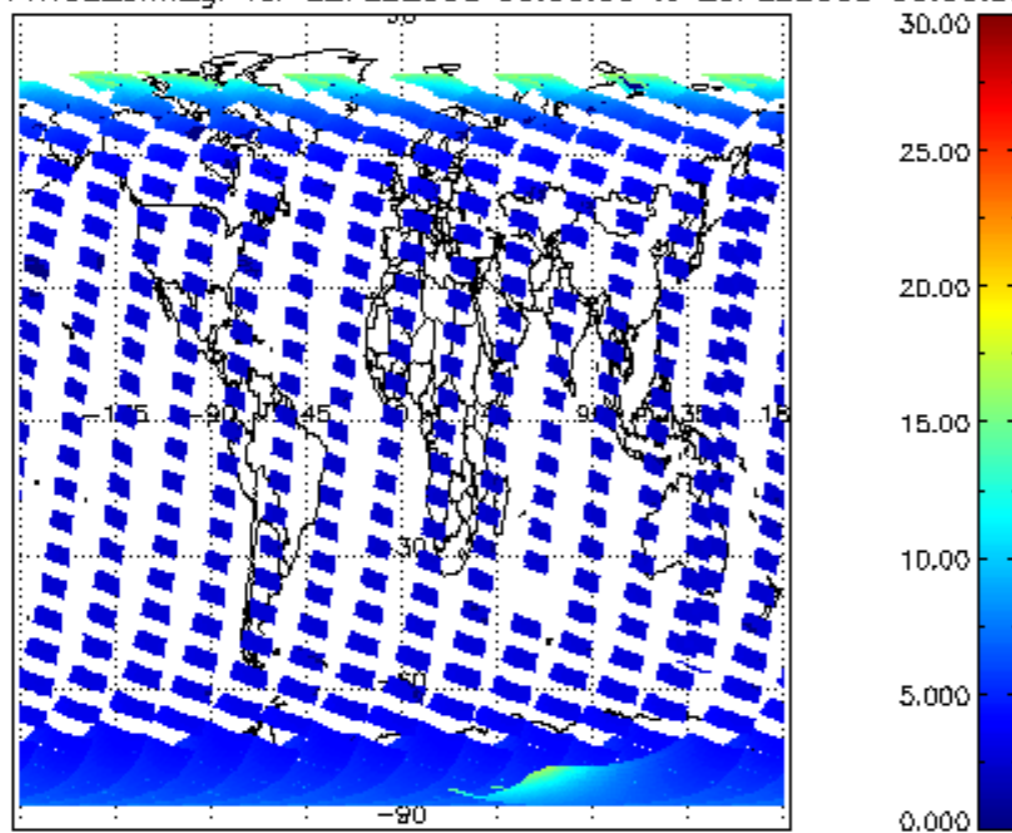
SCIOL2P\_NADUV1NO2\_vcd for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



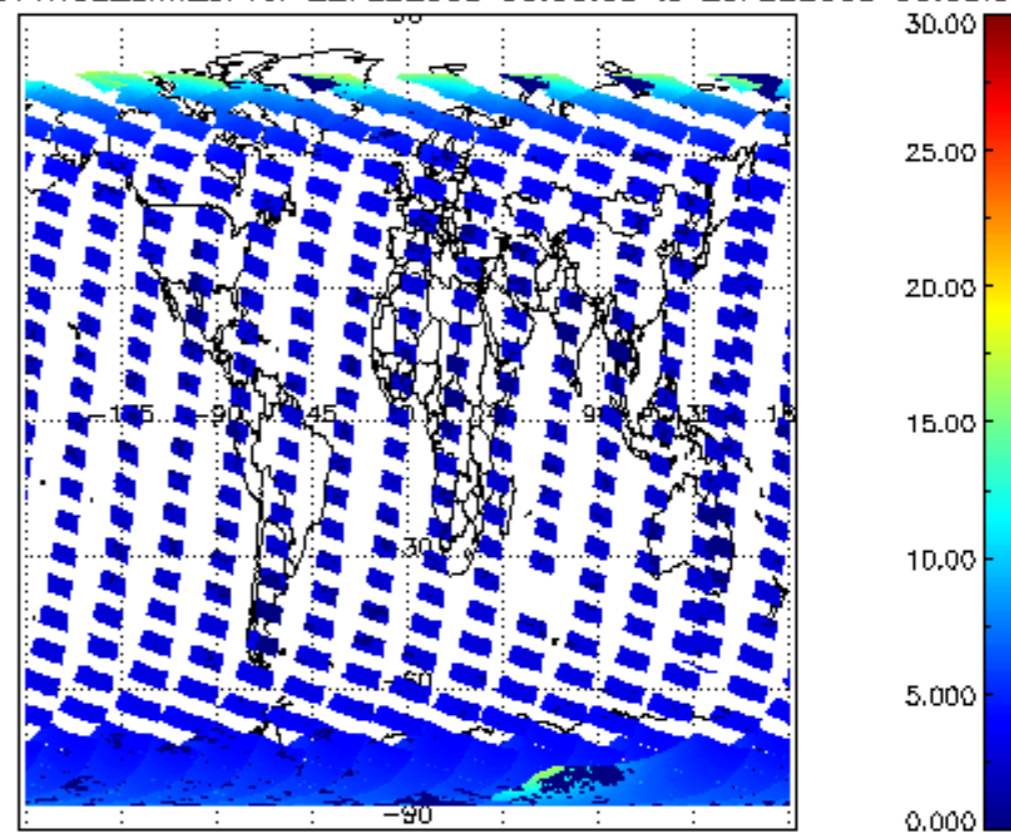
SCIOL2P\_NADUV1NO2\_vcd\_err for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



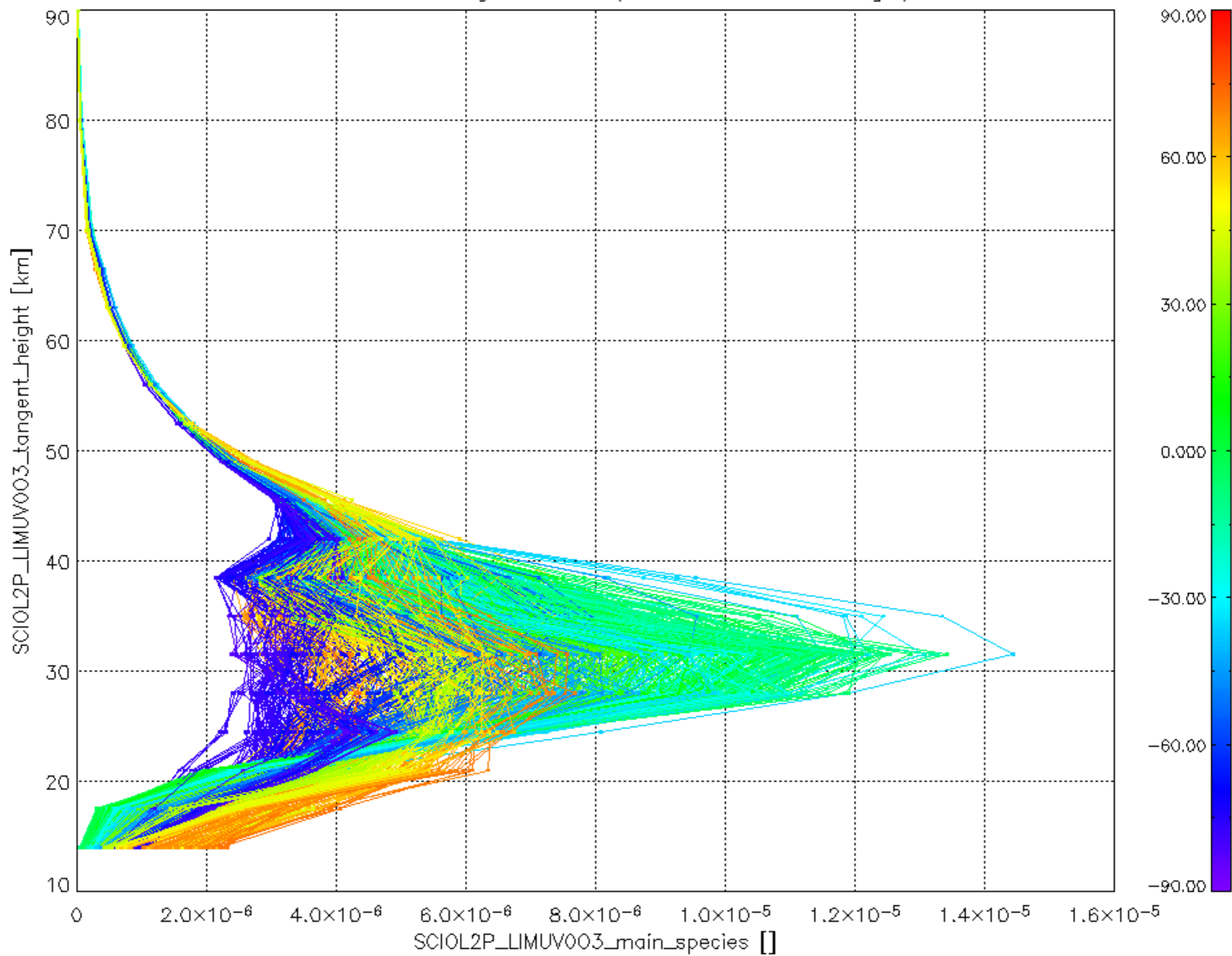
SCIOL2P\_NADUV1NO2\_amf\_gr for 22FEB2008 00:00:00 to 23FEB2008 00:00:00



SCIOL2P\_NADUV1NO2\_amf\_cl for 22FEB2008 00:00:00 to 23FEB2008 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).

