# 2. SCIAMACHY Daily Report for level 2 products



## 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 chacteristics of the data that are included into this report.

| Item | Value |
|---|---|
| Report version | 1.5 (01-07-2008) |
| Time of report generation | 28JUL2008 10:44:31 |
| Data source version | SCIA-OL/3.01-R |
| Processing scope for products | 09JAN2004 00:00:00 to 10JAN2004 00:00:00 |
| Start time of first product within scope | 08JAN2004 23:52:22 |
| Stop time of last product within scope | 10JAN2004 00:15:35 |
| 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__2PRDPA20040108_235222_000032932023_00145_09718_6033.N1 | 08JAN2004 23:52:22 | 09JAN2004 00:47:15 | 0 | GOOD |
| 1 | SCI_OL__2PRDPA20040109_013421_000032372023_00146_09719_6073.N1 | 09JAN2004 01:34:21 | 09JAN2004 02:28:18 | 0 | GOOD |
| 2 | SCI_OL__2PRDPA20040109_031333_000032932023_00147_09720_6286.N1 | 09JAN2004 03:13:33 | 09JAN2004 04:08:26 | 0 | GOOD |
| 3 | SCI_OL__2PRDPA20040109_045532_000032372023_00148_09721_6166.N1 | 09JAN2004 04:55:32 | 09JAN2004 05:49:30 | 0 | GOOD |
| 4 | SCI_OL__2PRDPA20040109_063444_000032932023_00149_09722_6399.N1 | 09JAN2004 06:34:44 | 09JAN2004 07:29:38 | 0 | GOOD |
| 5 | SCI_OL__2PRDPA20040109_081644_000032372023_00150_09723_6303.N1 | 09JAN2004 08:16:44 | 09JAN2004 09:10:41 | 0 | GOOD |
| 6 | SCI_OL__2PRDPA20040109_095556_000032932023_00151_09724_6121.N1 | 09JAN2004 09:55:56 | 09JAN2004 10:50:49 | 0 | GOOD |
| 7 | SCI_OL__2PRDPA20040109_113755_000032372023_00152_09725_6412.N1 | 09JAN2004 11:37:55 | 09JAN2004 12:31:52 | 0 | GOOD |
| 8 | SCI_OL__2PRDPA20040109_131707_000032932023_00153_09726_6040.N1 | 09JAN2004 13:17:07 | 09JAN2004 14:12:00 | 0 | GOOD |
| 9 | SCI_OL__2PRDPA20040109_145906_000032372023_00154_09727_6393.N1 | 09JAN2004 14:59:06 | 09JAN2004 15:53:04 | 0 | GOOD |
| 10 | SCI_OL__2PRDPA20040109_163818_000032932023_00155_09728_6159.N1 | 09JAN2004 16:38:18 | 09JAN2004 17:33:12 | 0 | GOOD |
| 11 | SCI_OL__2PRDPA20040109_181859_000033312023_00156_09729_6318.N1 | 09JAN2004 18:18:59 | 09JAN2004 19:14:31 | 0 | GOOD |
| 12 | SCI_OL__2PRDPA20040109_195901_000033492023_00157_09730_6321.N1 | 09JAN2004 19:59:01 | 09JAN2004 20:54:50 | 0 | GOOD |
| 13 | SCI_OL__2PRDPA20040109_214129_000032372023_00158_09731_6339.N1 | 09JAN2004 21:41:29 | 09JAN2004 22:35:27 | 0 | GOOD |
| 14 | SCI_OL__2PRDPA20040109_232041_000032932023_00159_09732_6370.N1 | 09JAN2004 23:20:41 | 10JAN2004 00:15:35 | 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: 117812

Total number of cloud data DSRs with good quality flag (=0): 117812 (100.0 %)

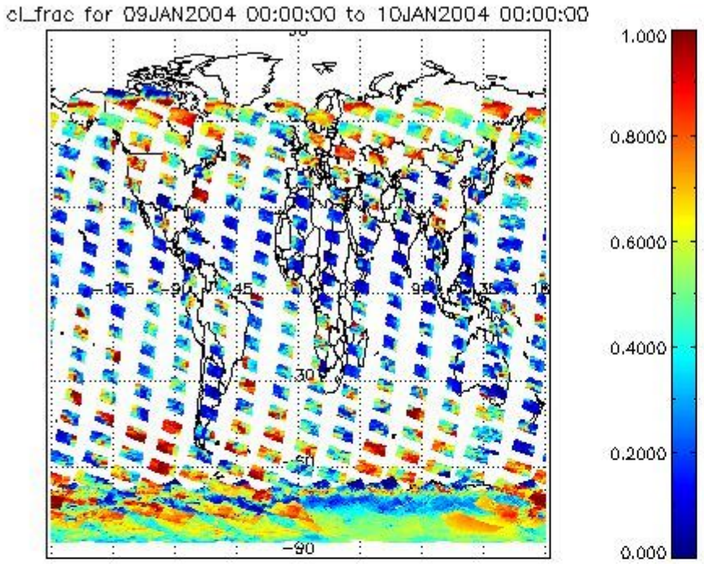
| Parameter | #valid | Mean | Median | Min | Max | Stddev | Unit |
|---|---|---|---|---|---|---|---|
| QUALITY_FLAG | 117812 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | flag |
| INTEGR_TIME | 117812 | 0.21656 | 0.25000 | 0.12500 | 1.0000 | 0.085600 | s |
| CL_FRAC | 117812 | 0.45878 | 0.45625 | 0.0000 | 1.0000 | 0.26669 | - |
| CL_FRAC_ERR | 117812 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | rel. fraction |

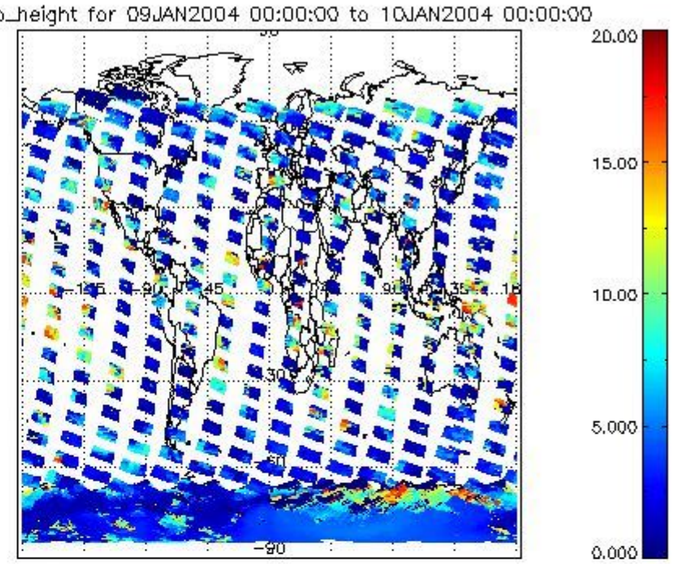
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PMD_READ | 117812 | 6.9298 | 8.0000 | 4.0000 | 32.000 | 2.7392 | |
| PMD_READ_CL[0] | 117812 | 0.31217 | 0.0000 | 0.0000 | 32.000 | 1.3111 | - |
| PMD_READ_CL[1] | 117812 | 0.22906 | 0.0000 | 0.0000 | 32.000 | 1.2674 | - |
| CL_TOP_HEIGHT | 108071 | 4.4353 | 3.3274 | 0.0000 | 17.000 | 3.8189 | km |
| CL_TOP_HEIGHT_ERR | 0 | --- | --- | --- | --- | --- | --- |
| CL_OPT_DEPTH | 108071 | 46.419 | 29.249 | 0.0000 | 101.00 | 38.221 | km |
| CL_OPT_DEPTH_ERR | 0 | --- | --- | --- | --- | --- | --- |
| CL_TYPE_FLAGS | 117812 | 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 | 117812 | 11000101 | 11000010 | 11000000 | 11100000 | 2267.6 | flags |
| AERO_ABSO_IND | 117812 | 0.55802 | 0.27930 | -4.5020 | 12.769 | 1.1865 | |
| AERO_IND_DIAG | 117812 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | |
| AERO_FLAGS | 117812 | 01101010 | 11000000 | 00000000 | 11000000 | 24433. | flags |

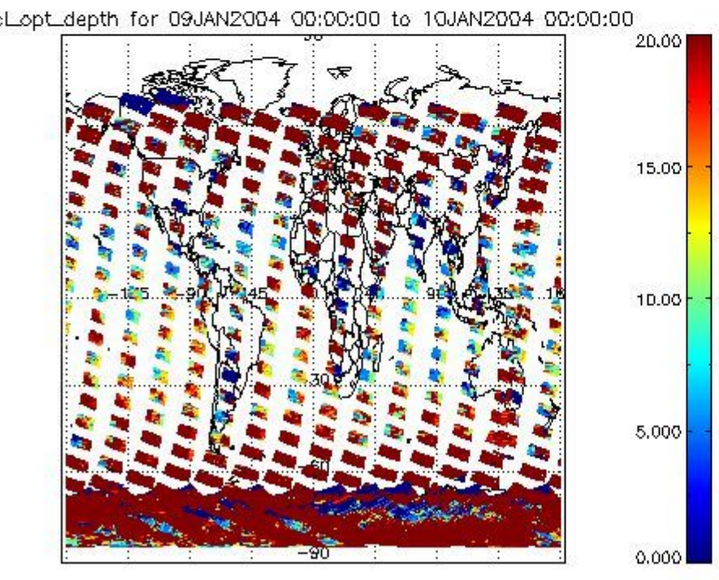
Time and geolocation plots:

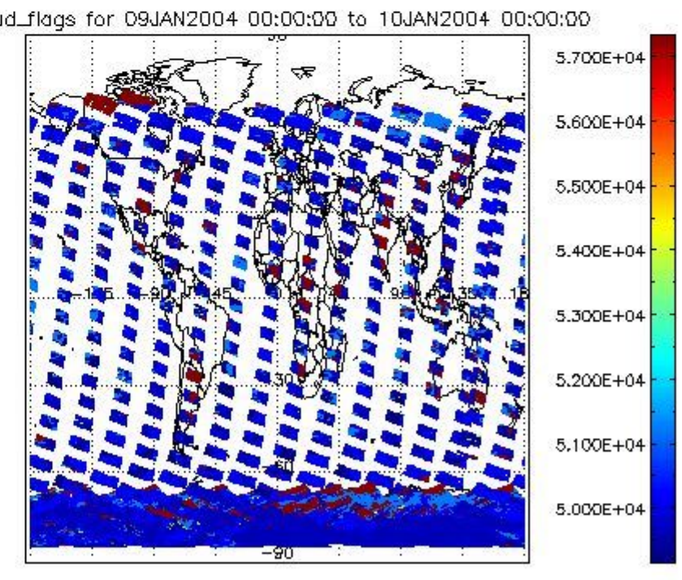
Plots are available for the following parameters:

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




### 2.2.2 Nadir

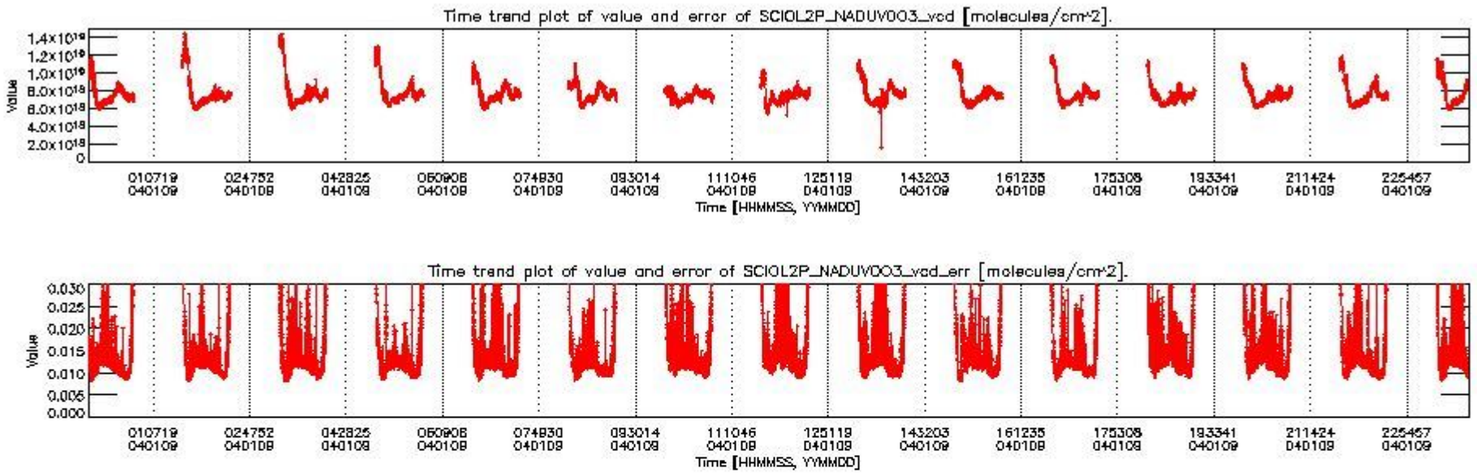
This section shows information about product quality of nadir measurements, in particular the quality of retrieved species.

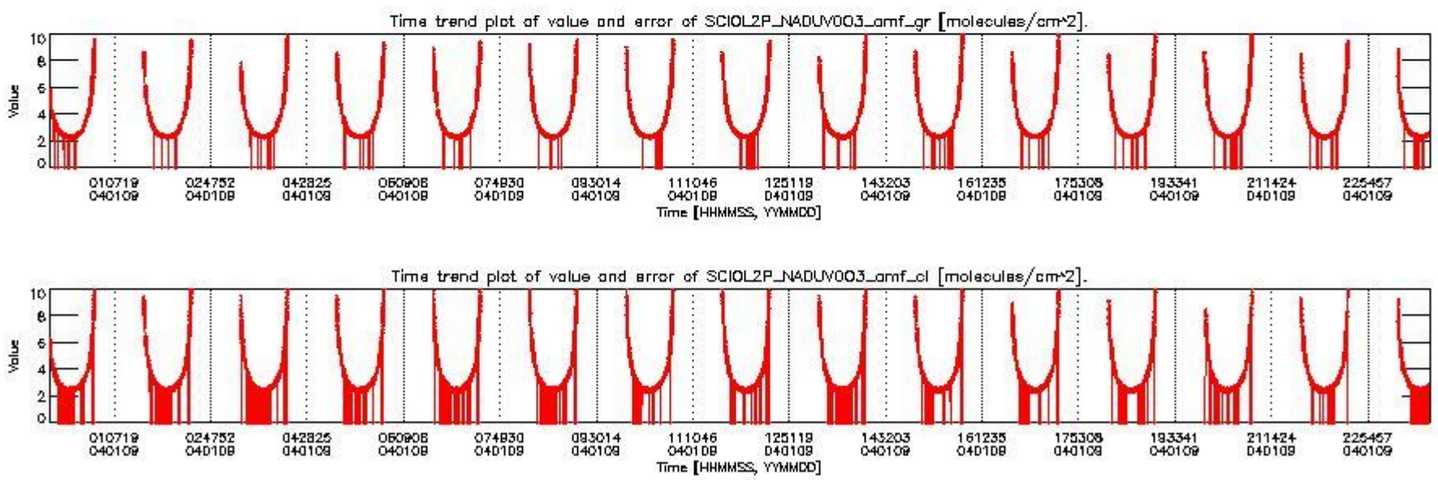
The following data items are currently included into this section:

| Number | Data item ID |
|---|---|
| 0 | SCIOL2P_NADUV0O3_vcd |
| 1 | SCIOL2P_NADUV0O3_vcd_err |
| 2 | SCIOL2P_NADUV0O3_amf_gr |
| 3 | SCIOL2P_NADUV0O3_amf_cl |

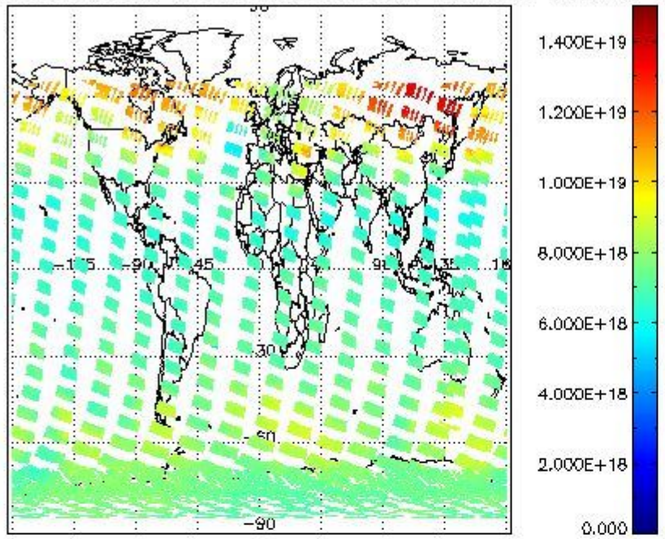
| | |
|---|---|
| 4 | SCIOL2P_NADUV1NO2_vcd |
| 5 | SCIOL2P_NADUV1NO2_vcd_err |
| 6 | SCIOL2P_NADUV1NO2_amf_gr |
| 7 | SCIOL2P_NADUV1NO2_amf_cl |

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.

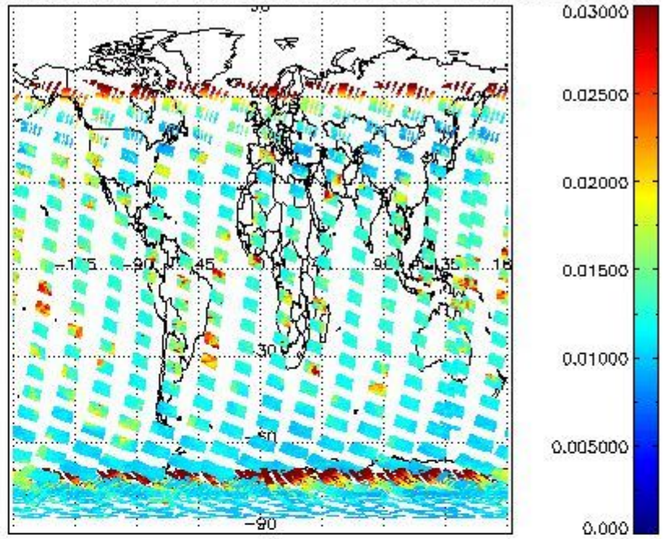


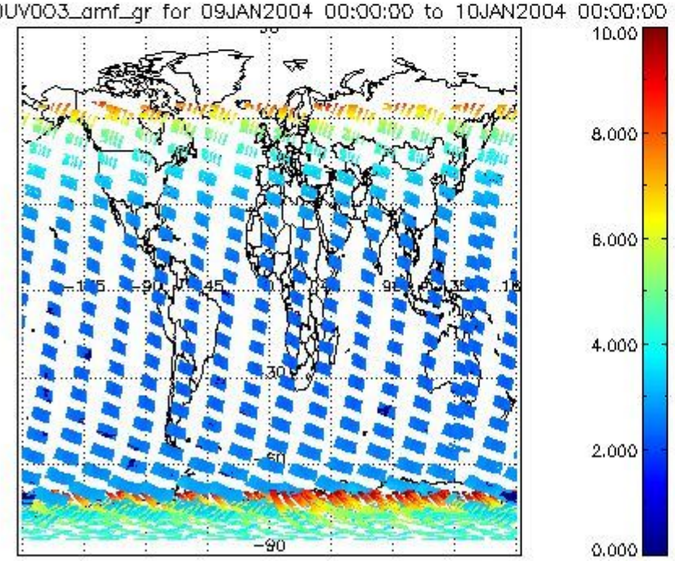
SCIOL2P_NADUV003_vcd for 09JAN2004 00:00:00 to 10JAN2004 00:00:00



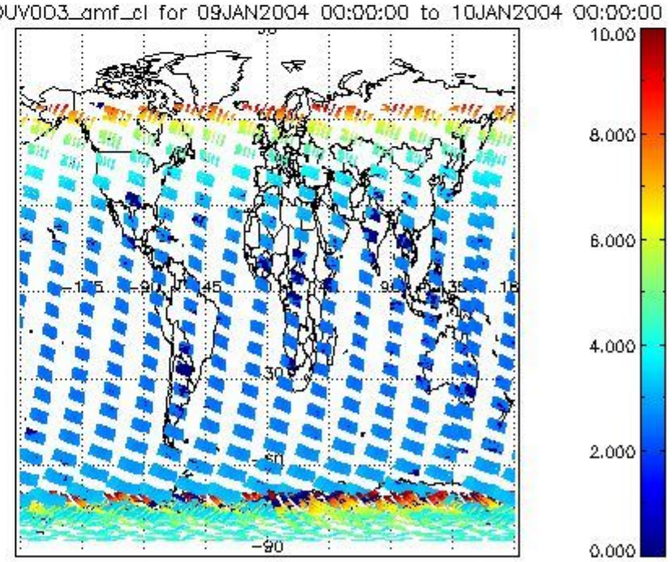

SCIOL2P_NADUV003_vcd_err for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

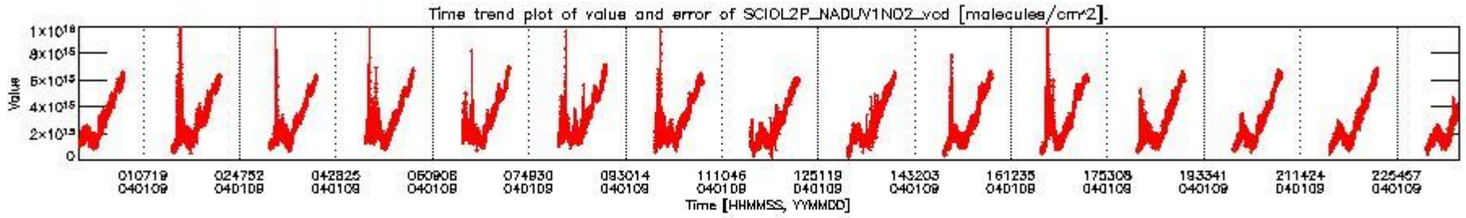


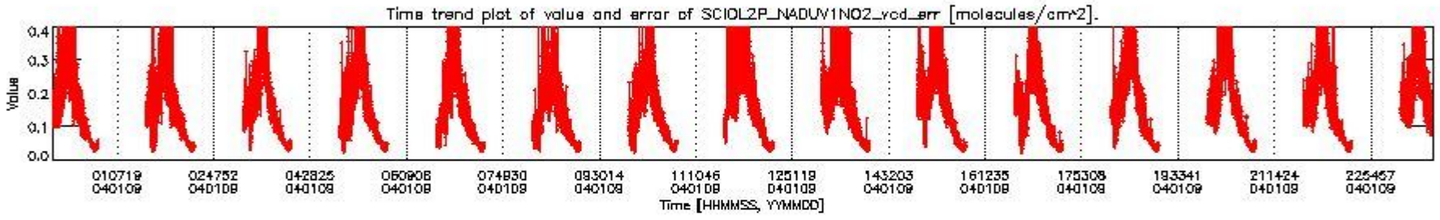

SCIOL2P_NADUV003_amf_gr for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

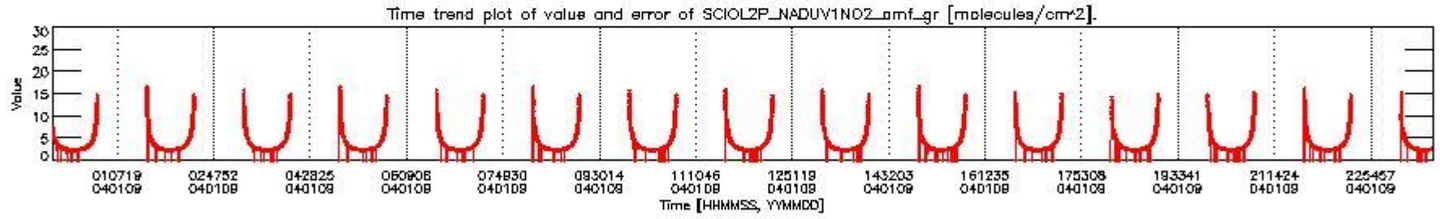


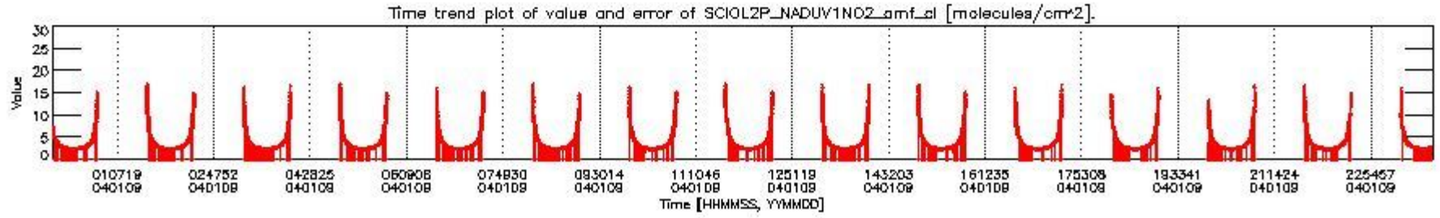

SCIOL2P_NADUV003_amf_cl for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

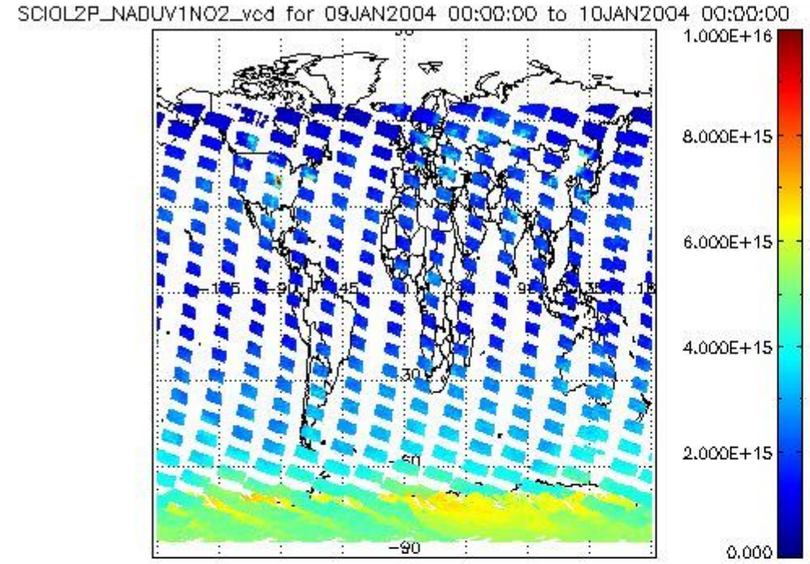


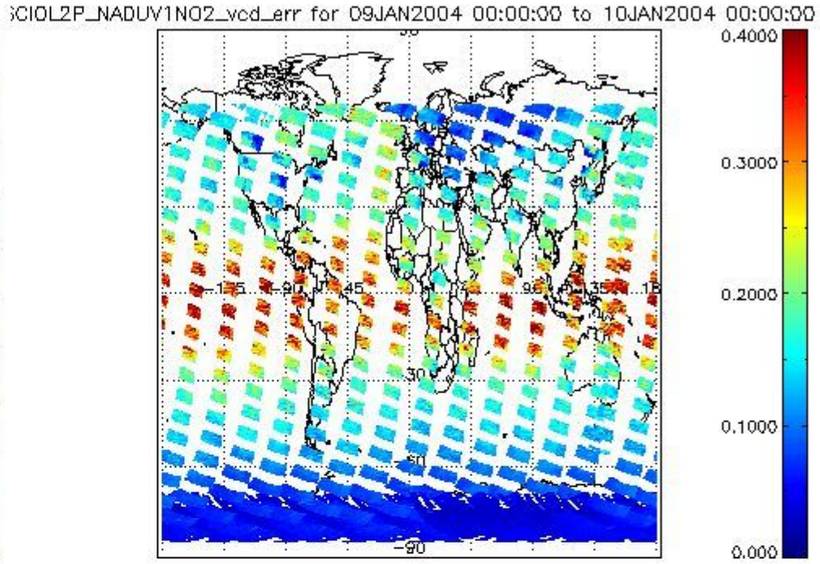

Time trend plot of value and error of SCIOL2P_NADUV1NO2_vcd [molecules/cm^2].
Value
1x10^16
8x10^15
6x10^15
4x10^15
2x10^15
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

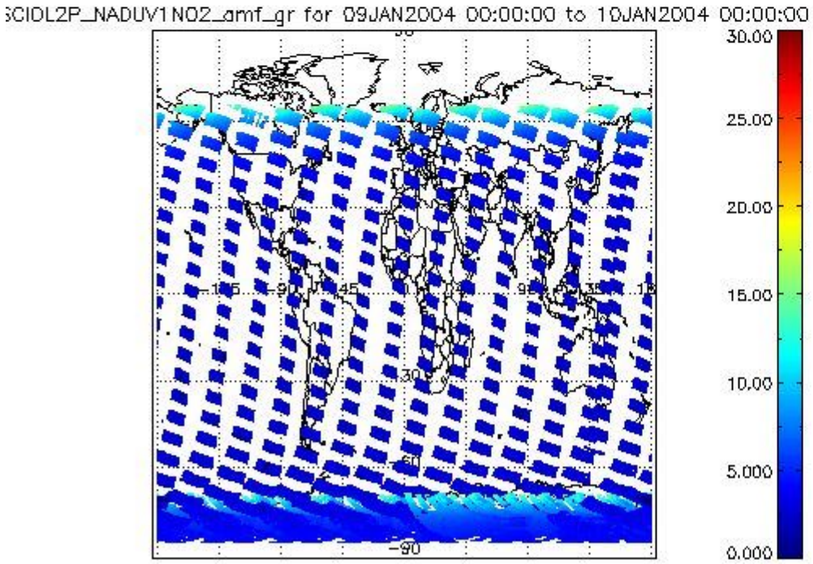

Time trend plot of value and error of SCIOL2P_NADUV1NO2_vcd_err [molecules/cm^2].
Value
0.4
0.3
0.2
0.1
0.0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

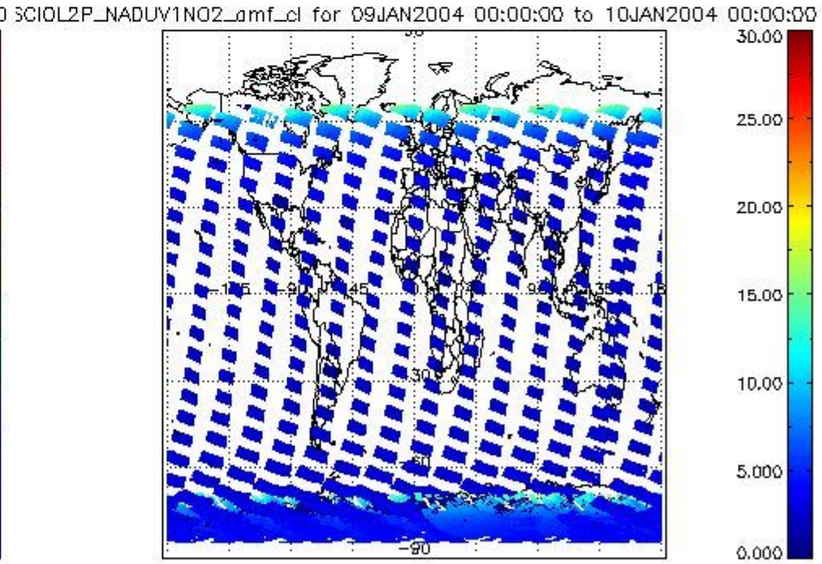

Time trend plot of value and error of SCIOL2P_NADUV1NO2_amf_gr [molecules/cm^2].
Value
30
25
20
15
10
5
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]


Time trend plot of value and error of SCIOL2P_NADUV1NO2_amf_cl [molecules/cm^2].
Value
30
25
20
15
10
5
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]



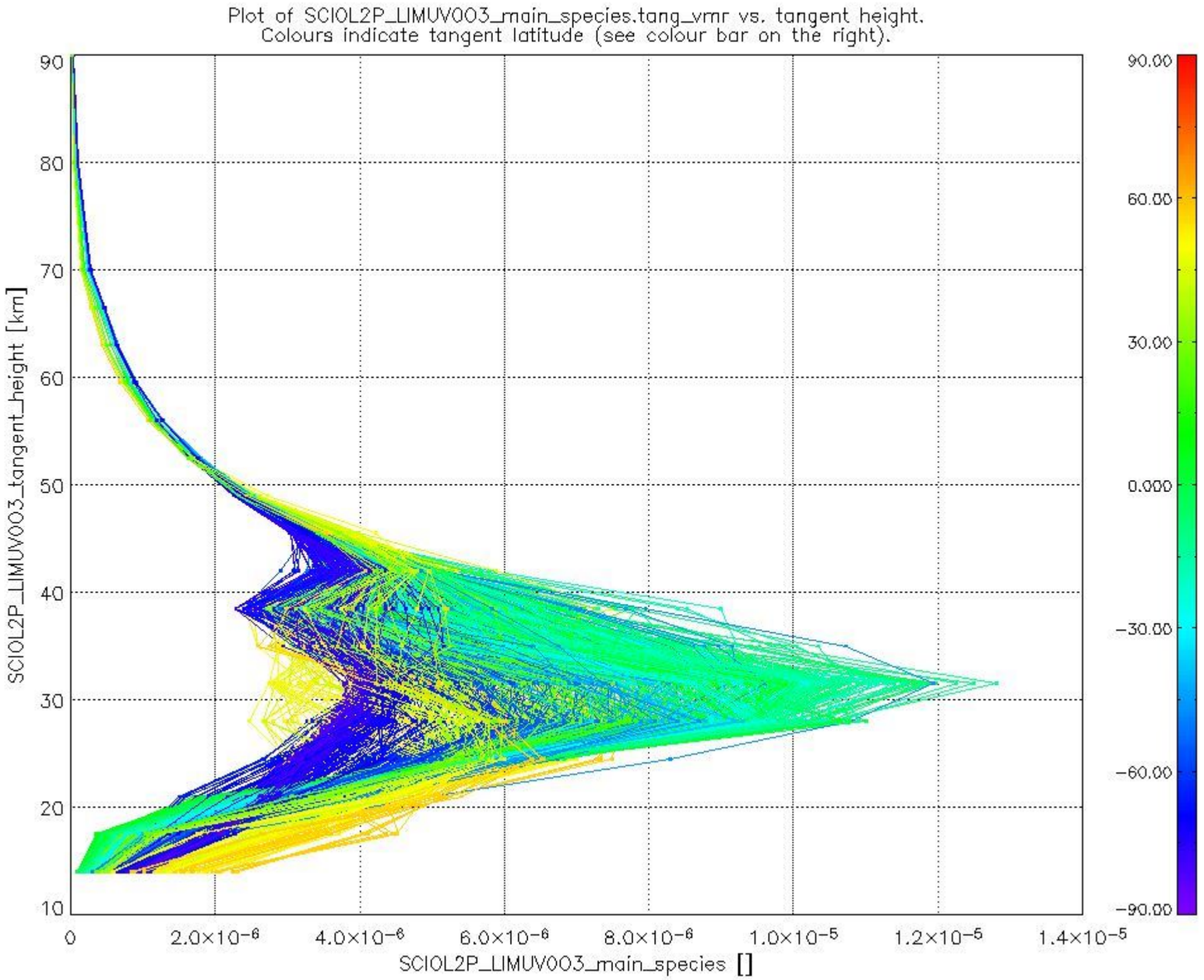

### 2.2.3 Limb

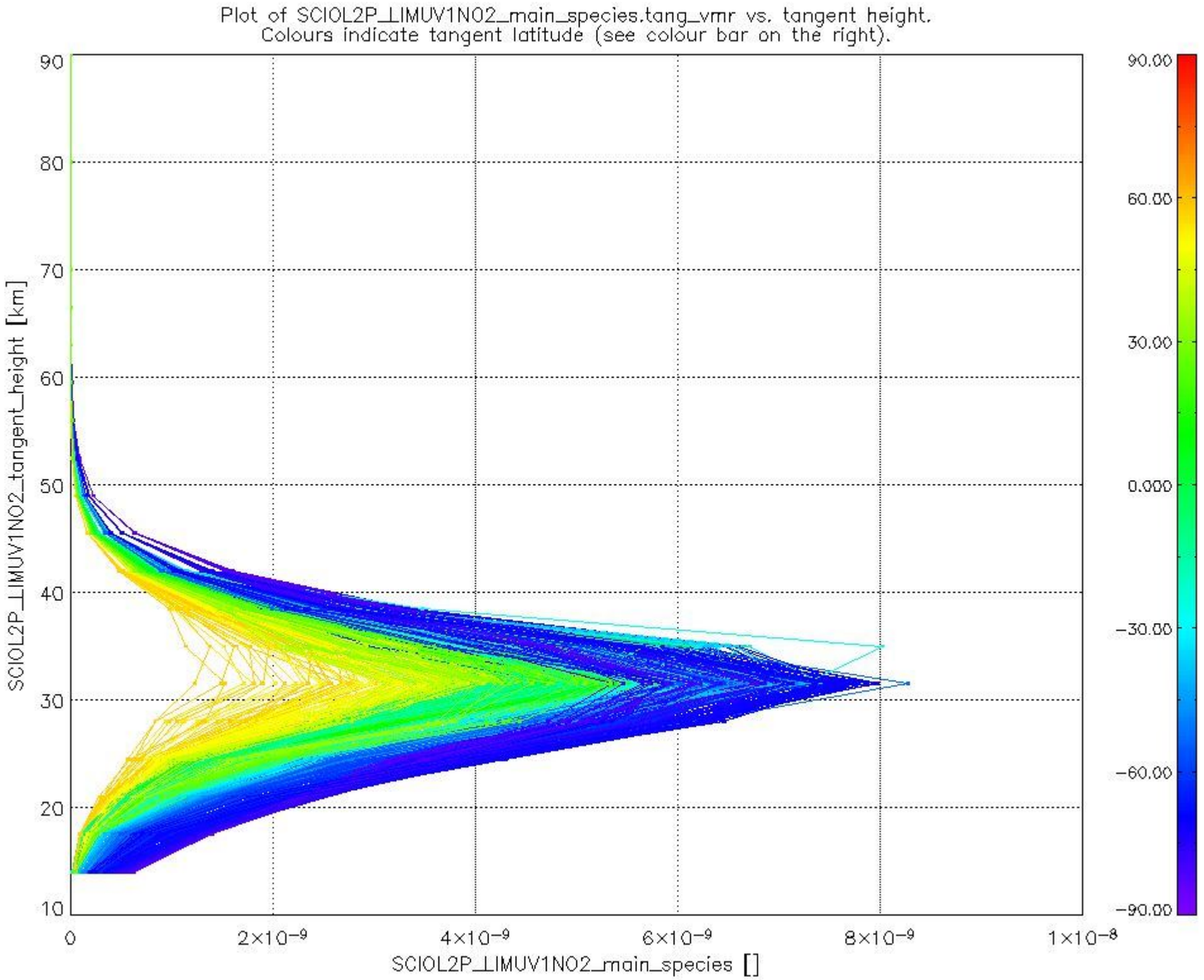
This section shows information about product quality of the limb retrievals, in particular the quality of retrieved species.

The following data items are currently included into this section:

| Number | Data item ID |
|---|---|
| 0 | SCIOL2PLIMUV0O3_main_species |
| 1 | SCIOL2PLIMUV1NO2_main_species |

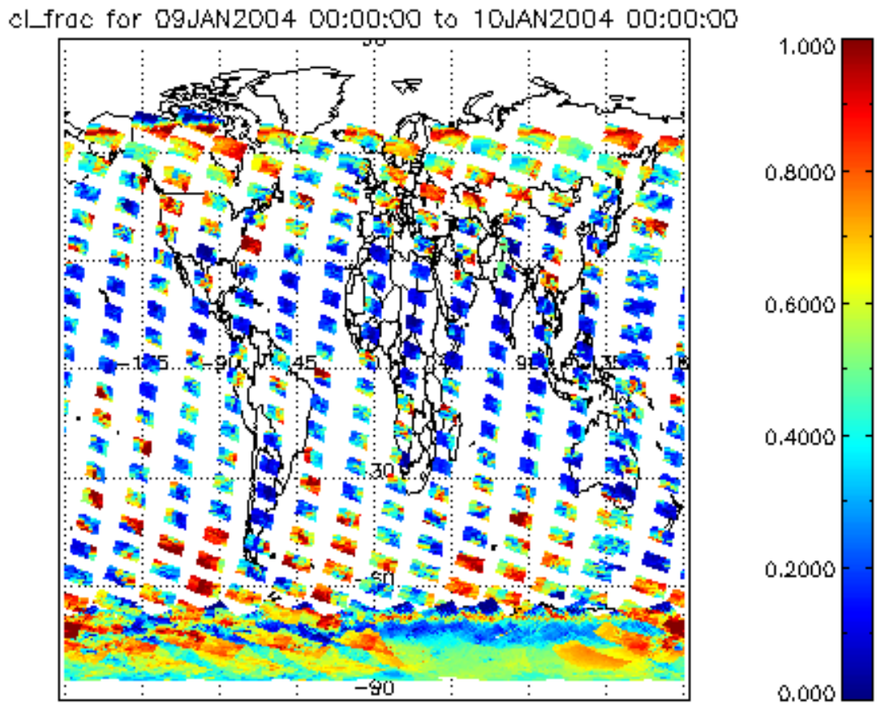
The following plots shows for each species the tangent volume mixing ratio vs. tangent height. Colours indicate tangent latitude.

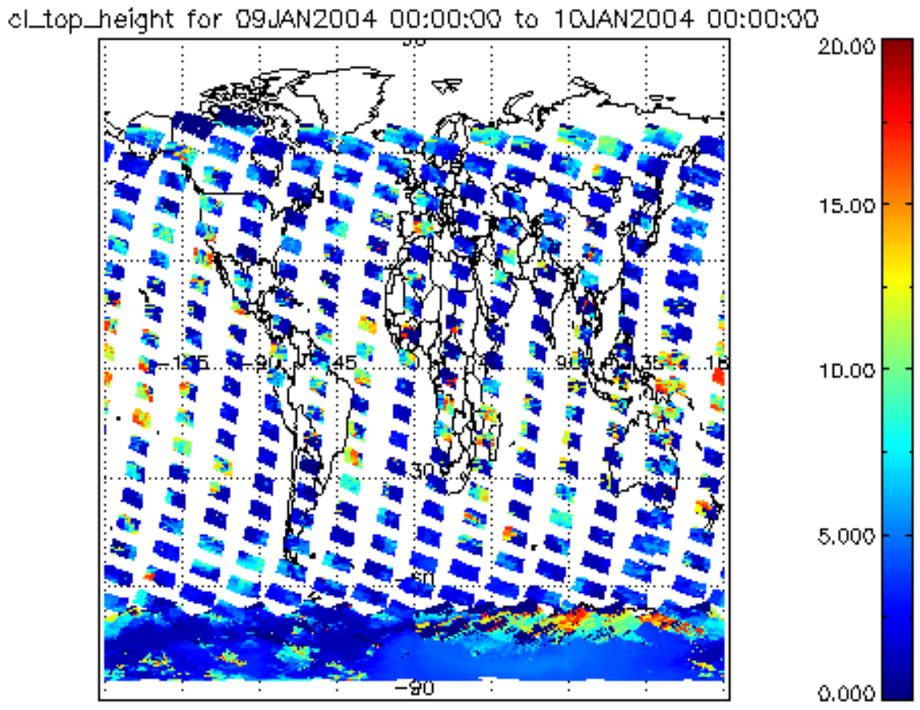

Plot of SCIOL2P_LIMUV003_main_species.tang_vmr vs. tangent height.
Colours indicate tangent latitude (see colour bar on the right).
SCIOL2P_LIMUV003_tangent_height [km]
90
80
70
60
50
40
30
20
10
0
2.0×10⁻⁶
4.0×10⁻⁶
6.0×10⁻⁶
8.0×10⁻⁶
1.0×10⁻⁵
1.2×10⁻⁵
1.4×10⁻⁵
SCIOL2P_LIMUV003_main_species []
90.00
60.00
30.00
0.000
−30.00
−60.00
−90.00

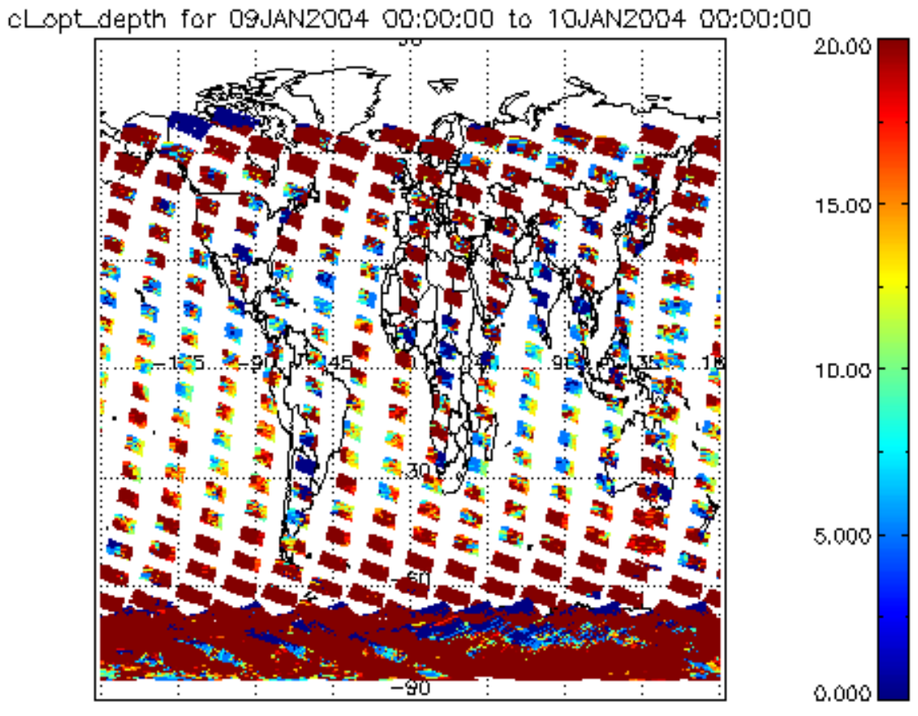


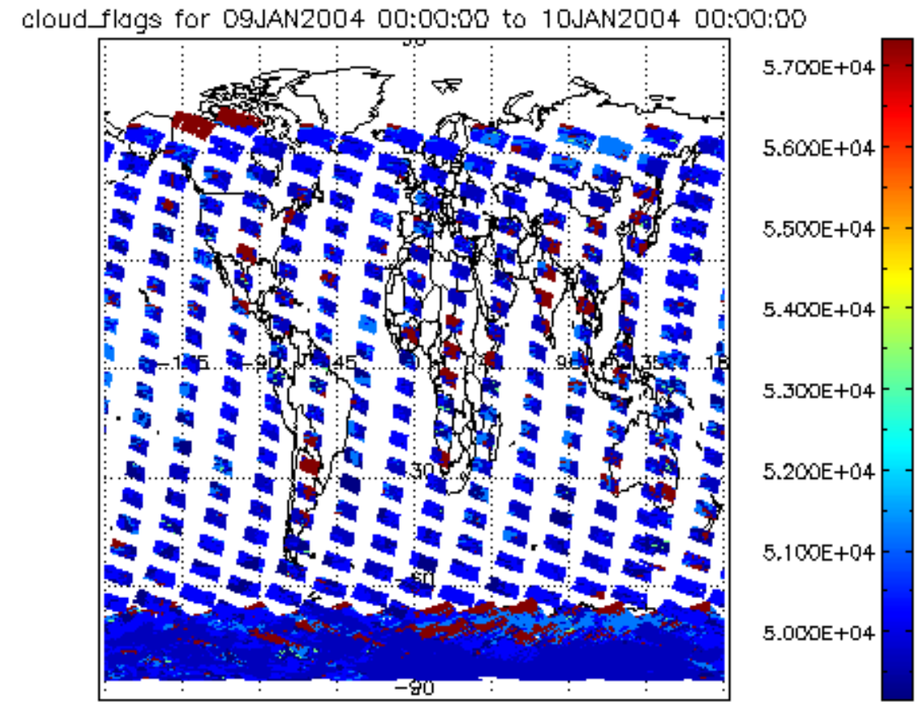

## 2.3 ADF monitoring

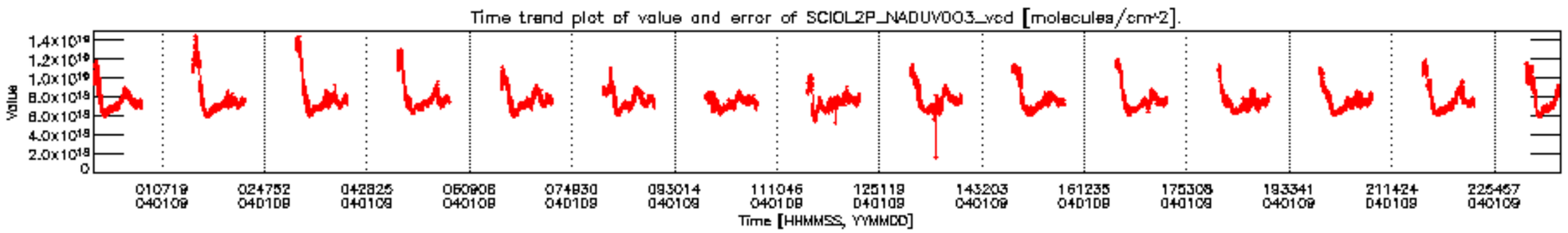
| Number | ADF |
|---|---|
| | IN_ (INITIALISATION_FILE) |
| 0 | SCI_IN__AXNPDE20070629_092400_20070720_000000_20991231_235959 |
| | ECF (ECMWF_FILE) |
| 1 | NOT USED |

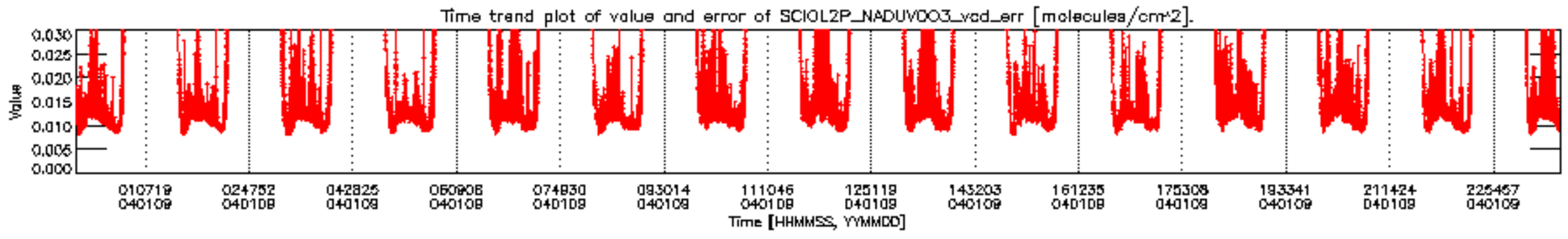

cl_frac for 09JAN2004 00:00:00 to 10JAN2004 00:00:00
1.000
0.8000
0.6000
0.4000
0.2000
0.000
-90

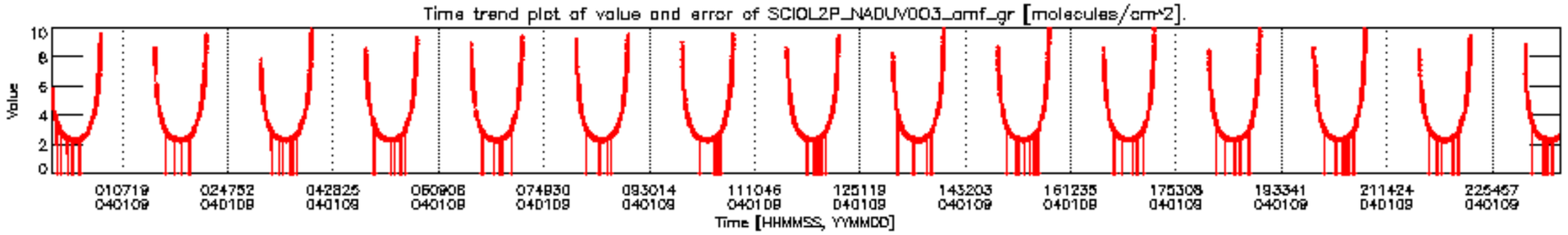

cl_top_height for 09JAN2004 00:00:00 to 10JAN2004 00:00:00
20.00
15.00
10.00
5.000
0.000
-90

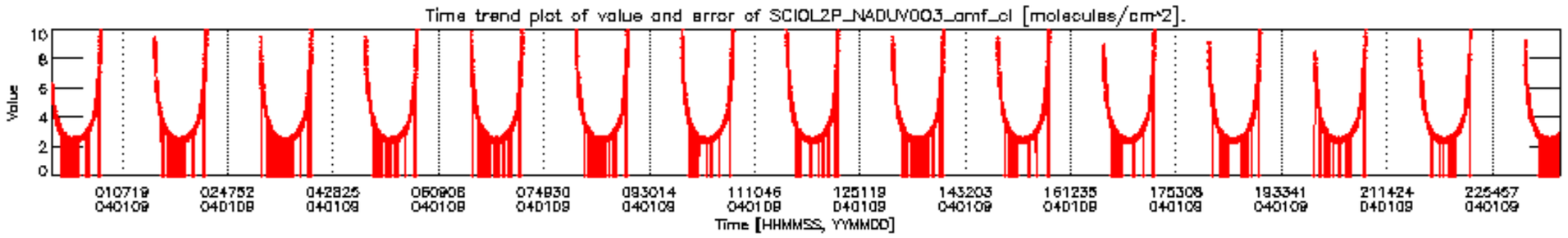

cl_opt_depth for 09JAN2004 00:00:00 to 10JAN2004 00:00:00
20.00
15.00
10.00
5.000
0.000
-90


cloud_flags for 09JAN2004 00:00:00 to 10JAN2004 00:00:00
5.700E+04
5.600E+04
5.500E+04
5.400E+04
5.300E+04
5.200E+04
5.100E+04
5.000E+04
-90

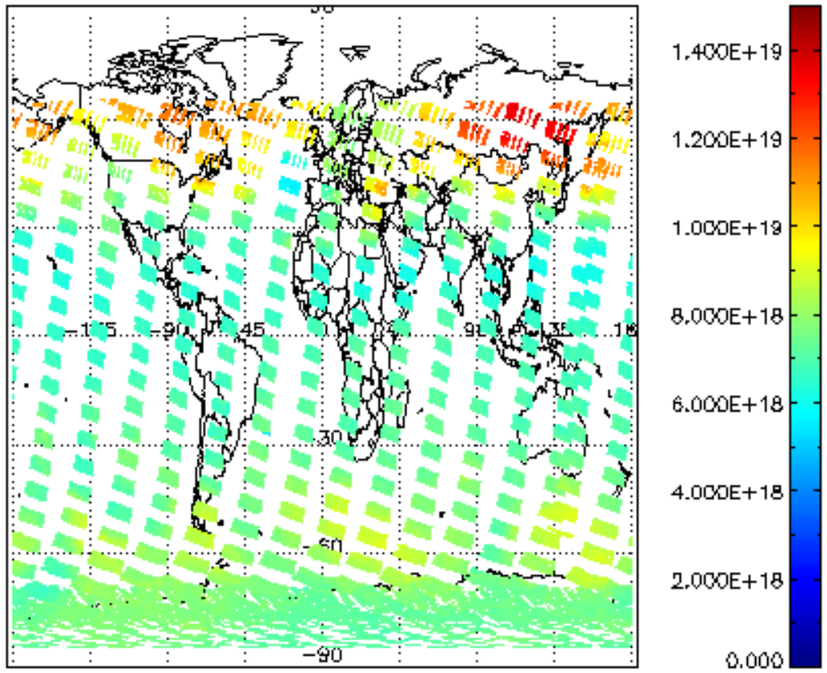

Time trend plot of value and error of SCIOL2P_NADUV003_vcd [molecules/cm^2].
Value
1.4x10^18
1.2x10^18
1.0x10^18
8.0x10^17
6.0x10^17
4.0x10^17
2.0x10^17
0
010719 040109
024752 040109
042825 040109
060908 040109
074830 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]


Time trend plot of value and error of SCIOL2P_NADUV003_vcd_err [molecules/cm^2].
Value
0.030
0.025
0.020
0.015
0.010
0.005
0.000
010719 040109
024752 040109
042825 040109
060908 040109
074830 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

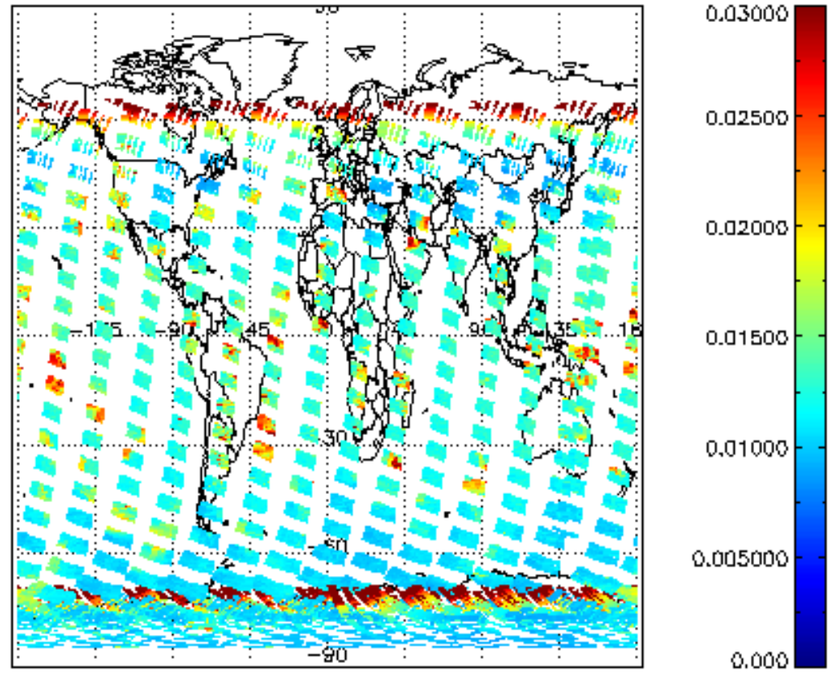

Time trend plot of value and error of SCIOL2P_NADUV003_amf_gr [molecules/cm^2].
Value
10
8
6
4
2
0
010719 040109
024752 040109
042825 040109
060908 040109
074830 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]


Time trend plot of value and error of SCIOL2P_NADUV003_amf_cl [molecules/cm^2].
Value
10
8
6
4
2
0
010719 040109
024752 040109
042825 040109
060908 040109
074830 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

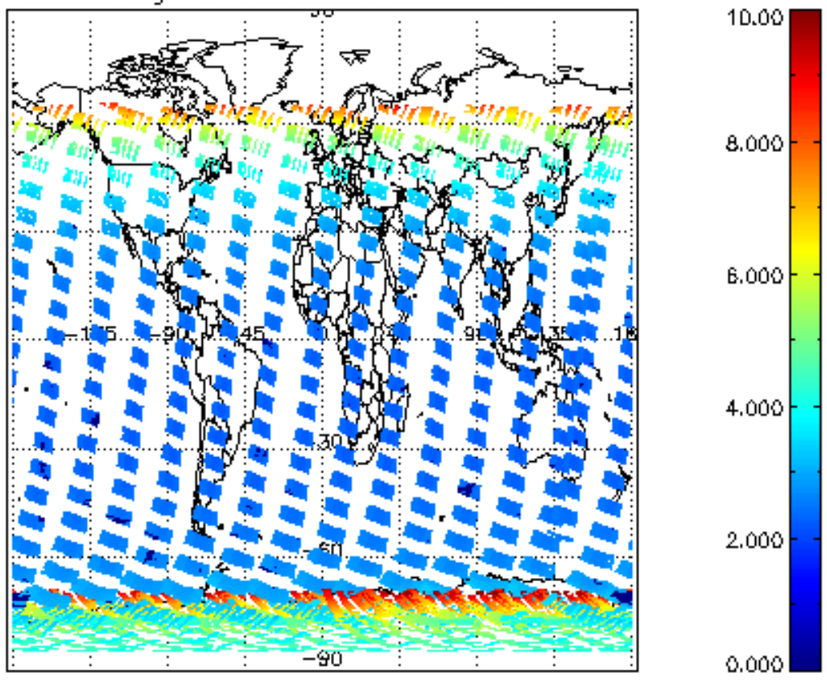
SCIOL2P_NADUV003_vcd for 09JAN2004 00:00:00 to 10JAN2004 00:00:00



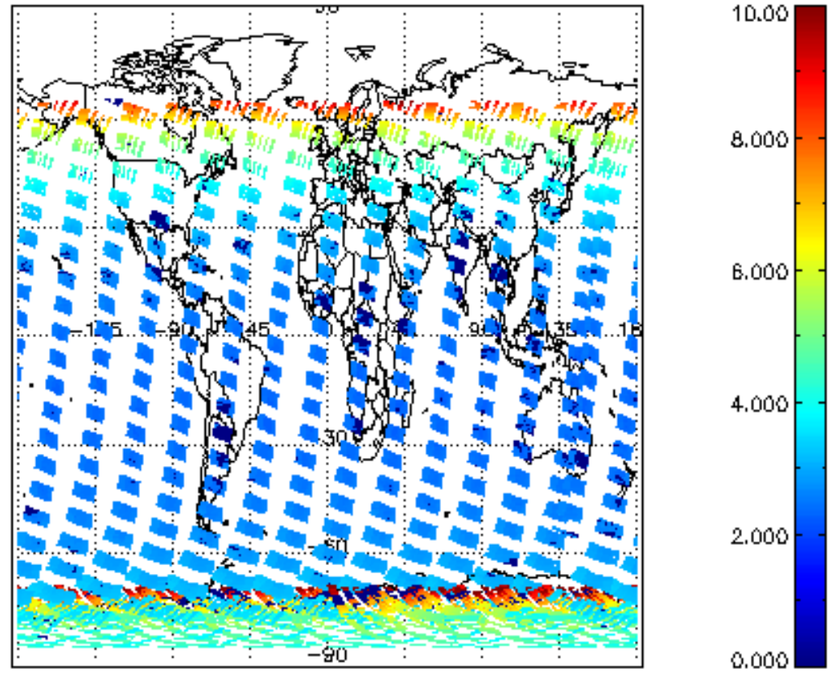

SCIOL2P_NADUV003_vcd_err for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

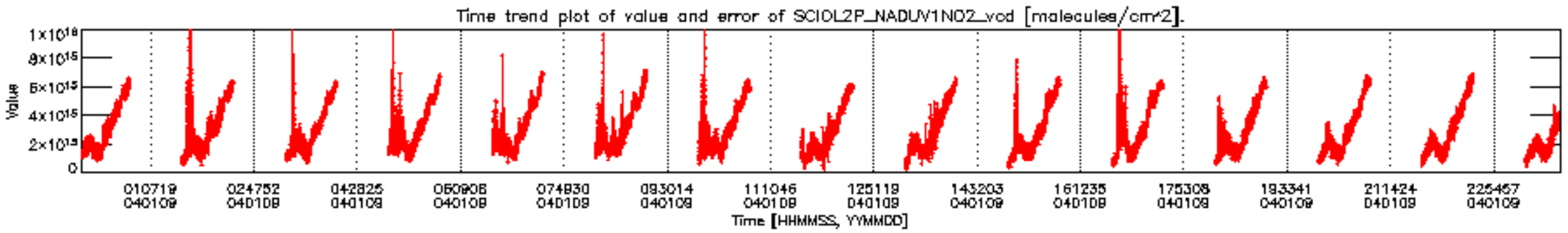


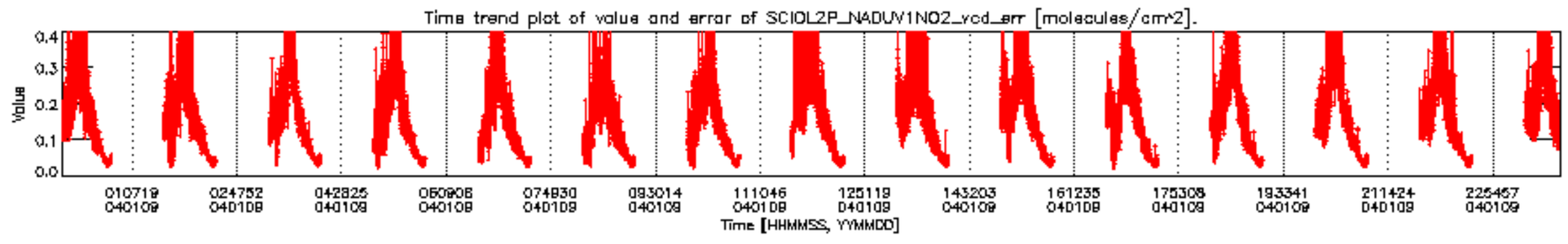

SCIOL2P_NADUV003_amf_gr for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

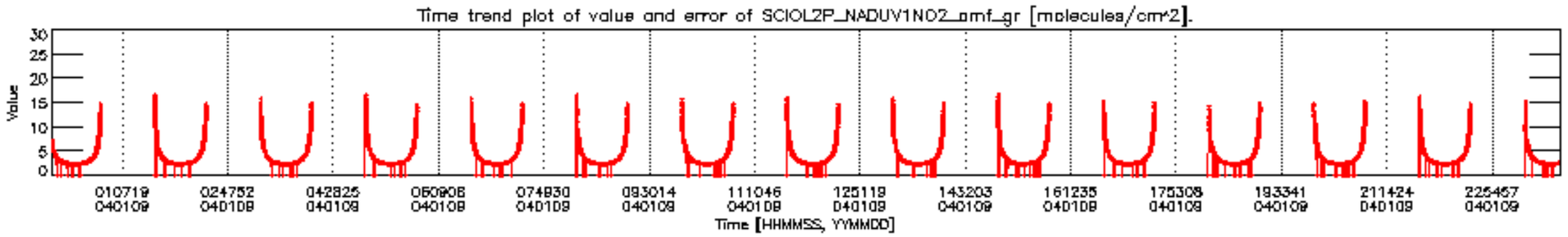


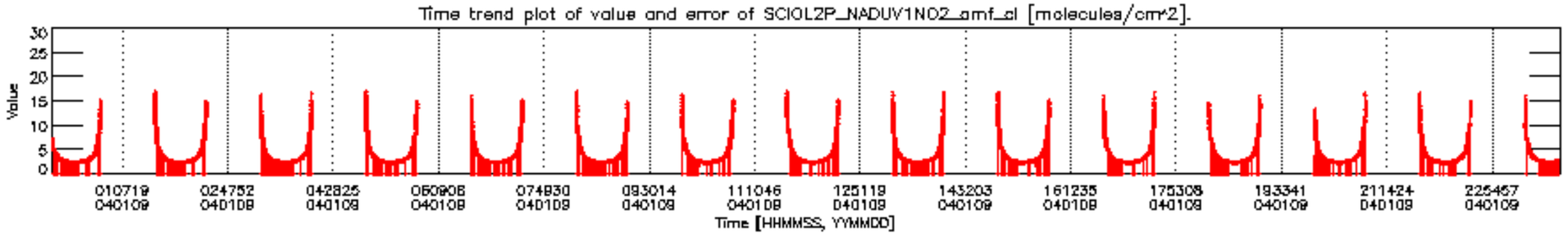

SCIOL2P_NADUV003_amf_cl for 09JAN2004 00:00:00 to 10JAN2004 00:00:00



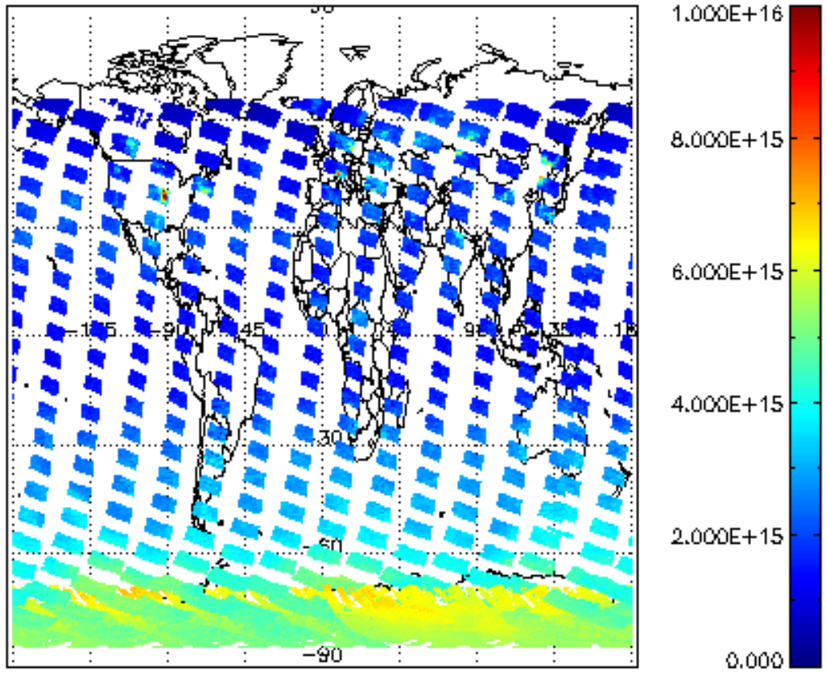

Time trend plot of value and error of SCIOL2P_NADUV1NO2_vcd [molecules/cm^2].
Value
1x10^16
8x10^15
6x10^15
4x10^15
2x10^15
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]


Time trend plot of value and error of SCIOL2P_NADUV1NO2_vcd_err [molecules/cm^2].
Value
0.4
0.3
0.2
0.1
0.0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

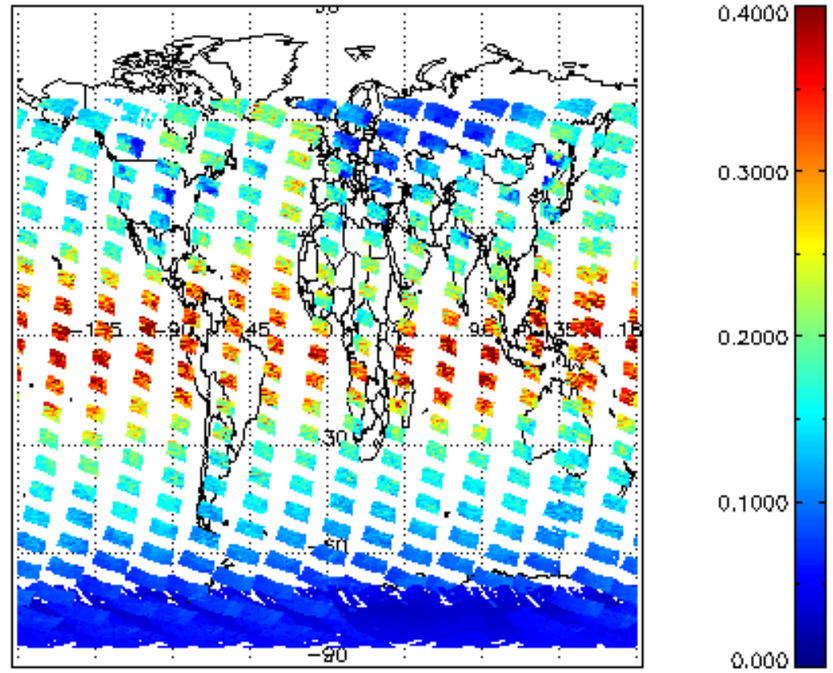

Time trend plot of value and error of SCIOL2P_NADUV1NO2_amf_gr [molecules/cm^2].
Value
30
25
20
15
10
5
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]


Time trend plot of value and error of SCIOL2P_NADUV1NO2_amf_cl [molecules/cm^2].
Value
30
25
20
15
10
5
0
010719 040109
024752 040109
042825 040109
060908 040109
074930 040109
093014 040109
111046 040109
125119 040109
143203 040109
161235 040109
175308 040109
193341 040109
211424 040109
225457 040109
Time [HHMMSS, YYMMDD]

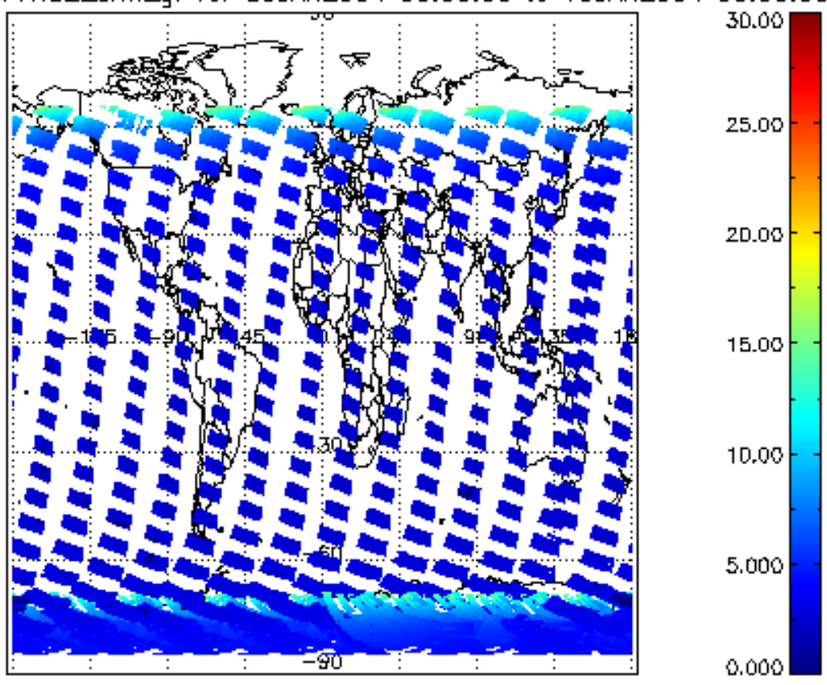
SCIOL2P_NADUV1NO2_vcd for 09JAN2004 00:00:00 to 10JAN2004 00:00:00



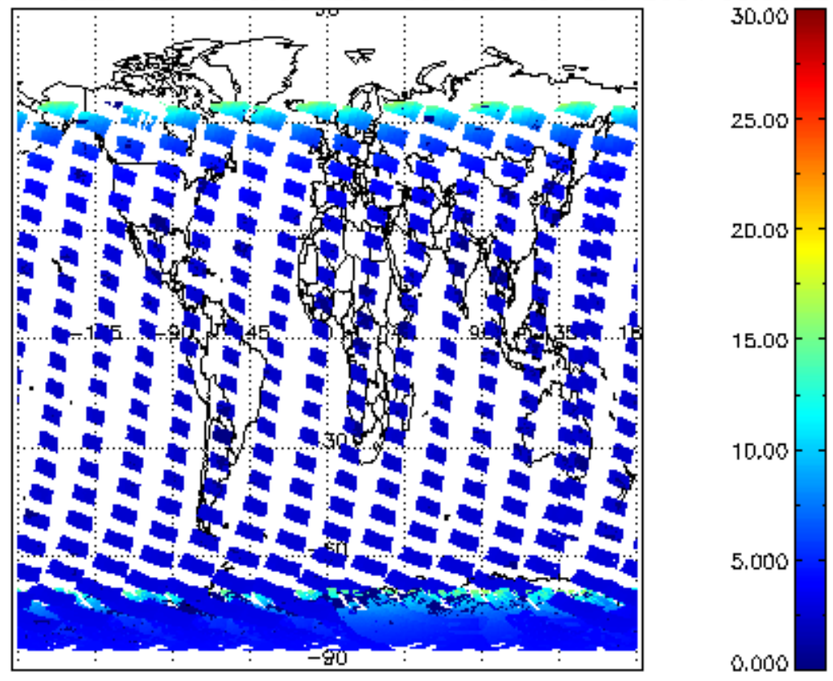

SCIOL2P_NADUV1NO2_vcd_err for 09JAN2004 00:00:00 to 10JAN2004 00:00:00

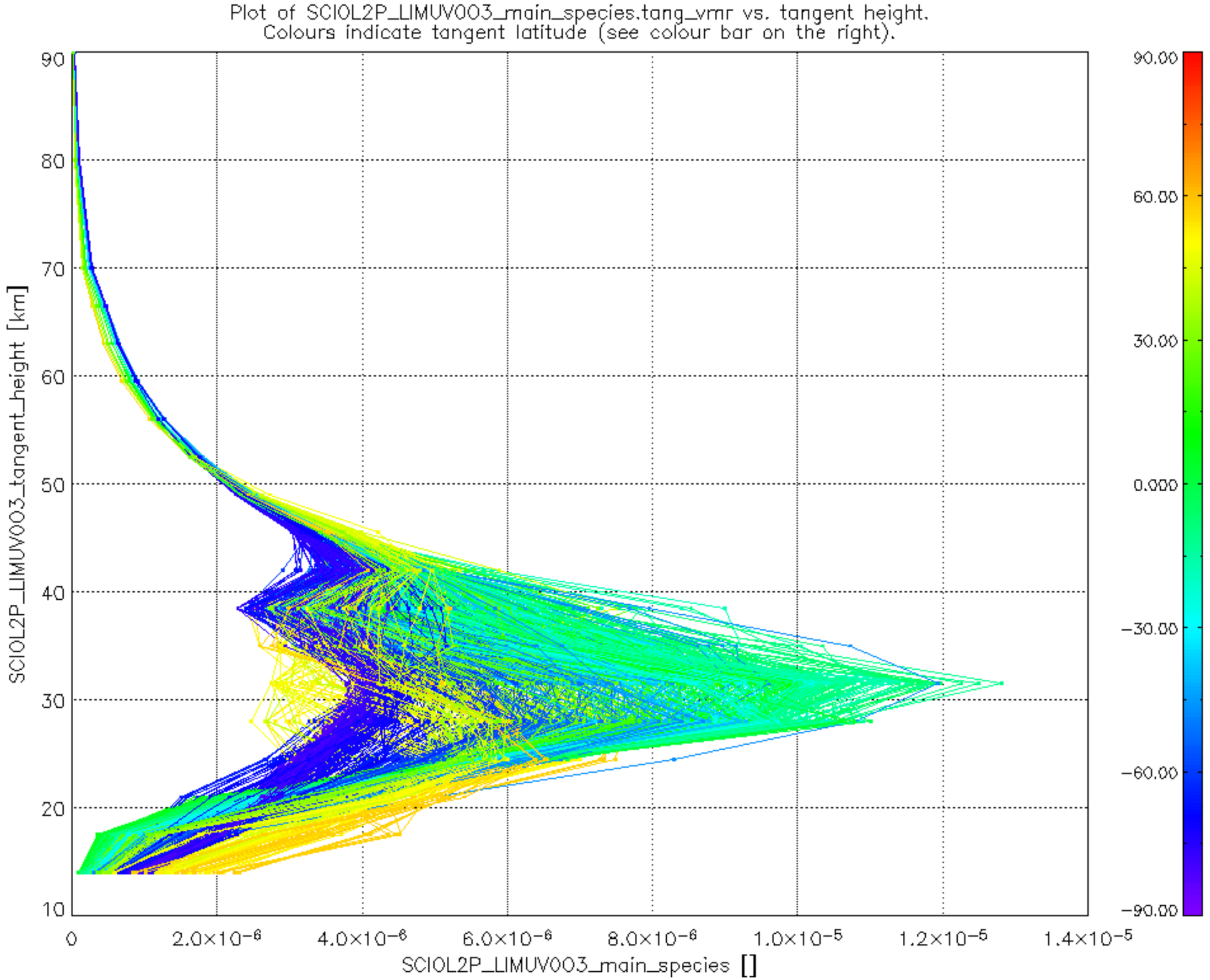



SCIOL2P_NADUV1NO2_amf_gr for 09JAN2004 00:00:00 to 10JAN2004 00:00:00




SCIOL2P_NADUV1NO2_amf_cl for 09JAN2004 00:00:00 to 10JAN2004 00:00:00




Plot of SCIOL2P_LIMUV003_main_species.tang_vmr vs. tangent height.
Colours indicate tangent latitude (see colour bar on the right).
SCIOL2P_LIMUV003_tangent_height [km]
90
80
70
60
50
40
30
20
10
0
2.0×10⁻⁶
4.0×10⁻⁶
6.0×10⁻⁶
8.0×10⁻⁶
1.0×10⁻⁵
1.2×10⁻⁵
1.4×10⁻⁵
SCIOL2P_LIMUV003_main_species []
90.00
60.00
30.00
0.000
−30.00
−60.00
−90.00

Plot of SCIOL2P_LIMUV1NO2_main_species.tang_vmr vs. tangent height.
Colours indicate tangent latitude (see colour bar on the right).