

# GOMOS Level 2 Daily Report

## SUMMARY

### [1. General Info](#)

### [2. Summary of processed GOM\\_NL\\_2P products](#)

### [3. Level 2 Quality information per product](#)

#### [3.1 Plot of level 2 quality information per product \(time dependant\)](#)

#### [3.2 Plot of level 2 quality information per product \(world map\)](#)

### [4. Level 1 Quality information per product \(stored on level 2 products\)](#)

#### [4.1 Plot of level 1 quality information per product \(time dependant\)](#)

##### [4.1.1 Plot of level 1 quality information per product \(time dependant\): ASCENDING](#)

##### [4.1.2 Plot of level 1 quality information per product \(time dependant\): DESCENDING](#)

#### [4.2 Plot of level 1 quality information per product \(world map\)](#)

##### [4.2.1 Plot of level 1 quality information per product \(world map\): ASCENDING](#)

##### [4.2.2 Plot of level 1 quality information per product \(world map\): DESCENDING](#)

### [5. Ozone profiles based on quality statistics and other trace gas profiles](#)

#### [5.1 Ozone statistics based on quality of products](#)

#### [5.2 Plot ozone profiles for all STD \(dark without errors\)](#)

#### [5.3 Plot ozone profiles where STD < 20% \(dark without errors\)](#)

#### [5.4. Plot ozone profiles where STD < 10% \(dark without errors\)](#)

#### [5.5. Plot ozone profiles where STD < 5% \(dark without errors\)](#)

#### [5.6 Plot NO2 profiles for all STD \(dark without errors\)](#)

#### [5.7 Plot NO3 profiles for all STD \(dark without errors\)](#)

#### [5.8 Plot H2O profiles \(only for occultations of stars 1,2,3,4,13,14,16,26,63 dark without errors\) for all STD](#)

### [6. Auxiliary Data Files used for the production reported in section 2](#)

This report presents the daily analysis on parameters extracted from GOMOS level 2 data (GOM\_NL\_\_2P). It is intended to monitor some important parameters that will impact the quality of these products. A list of level 2 products (and content) that have arrived during the reporting day to the PCF is also given.

| Item                      | Value                           |
|---------------------------|---------------------------------|
| Time of report generation | 17APR2013 18:55:10              |
| Data source version       | GOMOS/6.01                      |
| Start time of products    | 27-09-2002 (27SEP2002 00:00:00) |
| Stop time of products     | 28-09-2002 (28SEP2002 00:00:00) |
| Store outputs in DB       | Yes                             |
| Nb of level 2 prods       | 336                             |
| Nb of prods with errors   | 1                               |

## 2. Summary of processed GOM\_NL\_\_2P products.

| Nr | Filename   | UTC Start time       | Limb               | Duration | Star Id | Star Name | Star Mag | Star Temp | Nb Meas | Orbit | Prod. error |
|----|--|----------------------|--------------------|----------|---------|-----------|----------|-----------|---------|-------|-------------|
| 1  | GOM_NL__2PRFIN20020927_000106_000000822009_00445_03004_3161.N1 | 27-SEP-2002 00:01:06 | Dark               | 82.000   | 1       | 9Alp CMa  | -1.4400  | 11000.    | 164     | 3004  | No          |
| 2  | GOM_NL__2PRFIN20020927_000356_000000472009_00445_03004_3162.N1 | 27-SEP-2002 00:03:56 | Dark               | 46.500   | 46      | Del Vel   | 1.9540   | 10600.    | 93      | 3004  | No          |
| 3  | GOM_NL__2PRFIN20020927_000530_000000502009_00445_03004_3163.N1 | 27-SEP-2002 00:05:30 | Dark               | 50.000   | 41      | Eps Car   | 1.8600   | 4100.0    | 100     | 3004  | No          |
| 4  | GOM_NL__2PRFIN20020927_000757_000000662009_00446_03005_3140.N1 | 27-SEP-2002 00:07:57 | Dark               | 66.000   | 2       | Alp Car   | -0.73600 | 7000.0    | 132     | 3005  | No          |
| 5  | GOM_NL__2PRFIN20020927_001105_000001382009_00446_03005_3141.N1 | 27-SEP-2002 00:11:05 | Dark               | 138.00   | 101     | 11Alp Lep | 2.5820   | 7000.0    | 276     | 3005  | No          |
| 6  | GOM_NL__2PRFIN20020927_001548_000000452009_00446_03005_3142.N1 | 27-SEP-2002 00:15:48 | Dark               | 45.000   | 135     | Bet Hyi   | 2.8200   | 5800.0    | 90      | 3005  | No          |
| 7  | GOM_NL__2PRFIN20020927_001739_000000462009_00446_03005_3143.N1 | 27-SEP-2002 00:17:39 | Dark               | 46.000   | 143     | Alp Hyi   | 2.8570   | 7200.0    | 92      | 3005  | No          |
| 8  | GOM_NL__2PRFIN20020927_001907_000000542009_00446_03005_3144.N1 | 27-SEP-2002 00:19:07 | Dark               | 53.500   | 9       | Alp Eri   | 0.45300  | 24000.    | 107     | 3005  | No          |
| 9  | GOM_NL__2PRFIN20020927_002446_000000582009_00446_03005_3145.N1 | 27-SEP-2002 00:24:46 | Straylight         | 58.000   | 63      | Bet Gru   | 2.1500   | 2800.0    | 116     | 3005  | No          |
| 10 | GOM_NL__2PRFIN20020927_002923_000000492009_00446_03005_3146.N1 | 27-SEP-2002 00:29:23 | Straylight         | 49.000   | 18      | 24Alp PsA | 1.1660   | 9700.0    | 98      | 3005  | No          |
| 11 | GOM_NL__2PRFIN20020927_003139_000000612009_00446_03005_3147.N1 | 27-SEP-2002 00:31:39 | Twilight_and_stray | 61.000   | 52      | 16Bet Cet | 2.0370   | 4500.0    | 122     | 3005  | No          |
| 12 | GOM_NL__2PRFIN20020927_003803_000000452009_00446_03005_3148.N1 | 27-SEP-2002 00:38:03 | Bright             | 45.000   | 162     | 34Alp Aqr | 2.9440   | 5350.0    | 90      | 3005  | No          |
| 13 | GOM_NL__2PRFIN20020927_004158_000000452009_00446_03005_3149.N1 | 27-SEP-2002 00:41:58 | Bright             | 44.500   | 90      | 54Alp Peg | 2.4870   | 11000.    | 89      | 3005  | No          |
| 14 | GOM_NL__2PRFIN20020927_004539_000000472009_00446_03005_3150.N1 | 27-SEP-2002 00:45:39 | Bright             | 46.500   | 93      | 53Bet Peg | 2.5200   | 3100.0    | 93      | 3005  | No          |
| 15 | GOM_NL__2PRFIN20020927_005153_000000462009_00446_03005_3151.N1 | 27-SEP-2002 00:51:53 | Bright             | 45.500   | 19      | 50Alp Cyg | 1.2460   | 10500.    | 91      | 3005  | No          |
| 16 | GOM_NL__2PRFIN20020927_005519_000000492009_00446_03005_3152.N1 | 27-SEP-2002 00:55:19 | Bright             | 49.000   | 74      | 11Bet Cas | 2.2680   | 6600.0    | 98      | 3005  | No          |
| 17 | GOM_NL__2PRFIN20020927_005647_000000512009_00446_03005_3153.N1 | 27-SEP-2002 00:56:47 | Bright             | 50.500   | 76      | 27Gam Cas | 2.3000   | 30000.    | 101     | 3005  | No          |
| 18 | GOM_NL__2PRFIN20020927_010300_000000452009_00446_03005_3154.N1 | 27-SEP-2002 01:03:00 | Bright             | 45.000   | 49      | 1Alp UMi  | 1.9900   | 6300.0    | 90      | 3005  | No          |
| 19 | GOM_NL__2PRFIN20020927_010447_000000462009_00446_03005_3155.N1 | 27-SEP-2002 01:04:47 | Bright             | 46.000   | 60      | 7Bet UMi  | 2.0810   | 3950.0    | 92      | 3005  | No          |
| 20 | GOM_NL__2PRFIN20020927_012126_000002552009_00446_03005_3156.N1 | 27-SEP-2002 01:21:26 | Dark               | 255.00   | 114     | 31ot Aur  | 2.6930   | 4600.0    | 510     | 3005  | Yes         |
| 21 | GOM_NL__2PRFIN20020927_013057_000000842009_00446_03005_3157.N1 | 27-SEP-2002 01:30:57 | Dark               | 84.000   | 8       | 10Alp CMi | 0.40000  | 6500.0    | 168     | 3005  | No          |
| 22 | GOM_NL__2PRFIN20020927_013812_000000522009_00446_03005_3158.N1 | 27-SEP-2002 01:38:12 | Dark               | 52.000   | 132     | 15Rho Pup | 2.8030   | 6900.0    | 104     | 3005  | No          |
| 23 | GOM_NL__2PRFIN20020927_014142_000000862009_00446_03005_3159.N1 | 27-SEP-2002 01:41:42 | Dark               | 86.000   | 1       | 9Alp CMa  | -1.4400  | 11000.    | 172     | 3005  | No          |
| 24 | GOM_NL__2PRFIN20020927_014432_000000452009_00446_03005_3160.N1 | 27-SEP-2002 01:44:32 | Dark               | 44.500   | 46      | Del Vel   | 1.9540   | 10600.    | 89      | 3005  | No          |
| 25 | GOM_NL__2PRFIN20020927_014835_000000562009_00447_03006_3211.N1 | 27-SEP-2002 01:48:35 | Dark               | 56.000   | 2       | Alp Car   | -0.73600 | 7000.0    | 112     | 3006  | No          |
| 26 | GOM_NL__2PRFIN20020927_015144_000001342009_00447_03006_3212.N1 | 27-SEP-2002 01:51:44 | Dark               | 134.00   | 101     | 11Alp Lep | 2.5820   | 7000.0    | 268     | 3006  | No          |
| 27 | GOM_NL__2PRFIN20020927_015624_000000452009_00447_03006_3213.N1 | 27-SEP-2002 01:56:24 | Dark               | 45.000   | 135     | Bet Hyi   | 2.8200   | 5800.0    | 90      | 3006  | No          |
| 28 | GOM_NL__2PRFIN20020927_015816_000000462009_00447_03006_3214.N1 | 27-SEP-2002 01:58:16 | Dark               | 45.500   | 143     | Alp Hyi   | 2.8570   | 7200.0    | 91      | 3006  | No          |
| 29 | GOM_NL__2PRFIN20020927_015943_000000512009_00447_03006_3215.N1 | 27-SEP-2002 01:59:43 | Dark               | 50.500   | 9       | Alp Eri   | 0.45300  | 24000.    | 101     | 3006  | No          |
| 30 | GOM_NL__2PRFIN20020927_020523_000000502009_00447_03006_3216.N1 | 27-SEP-2002 02:05:23 | Straylight         | 49.500   | 63      | Bet Gru   | 2.1500   | 2800.0    | 99      | 3006  | No          |
| 31 | GOM_NL__2PRFIN20020927_020959_000000502009_00447_03006_3217.N1 | 27-SEP-2002 02:09:59 | Straylight         | 50.000   | 18      | 24Alp PsA | 1.1660   | 9700.0    | 100     | 3006  | No          |
| 32 | GOM_NL__2PRFIN20020927_021216_000000612009_00447_03006_3218.N1 | 27-SEP-2002 02:12:16 | Twilight_and_stray | 61.000   | 52      | 16Bet Cet | 2.0370   | 4500.0    | 122     | 3006  | No          |
| 33 | GOM_NL__2PRFIN20020927_021839_000000432009_00447_03006_3219.N1 | 27-SEP-2002 02:18:39 | Bright             | 43.000   | 162     | 34Alp Aqr | 2.9440   | 5350.0    | 86      | 3006  | No          |
| 34 | GOM_NL__2PRFIN20020927_022234_000000452009_00447_03006_3220.N1 | 27-SEP-2002 02:22:34 | Bright             | 44.500   | 90      | 54Alp Peg | 2.4870   | 11000.    | 89      | 3006  | No          |
| 35 | GOM_NL__2PRFIN20020927_022615_000000452009_00447_03006_3221.N1 | 27-SEP-2002 02:26:15 | Bright             | 44.500   | 93      | 53Bet Peg | 2.5200   | 3100.0    | 89      | 3006  | No          |
| 36 | GOM_NL__2PRFIN20020927_023229_000000452009_00447_03006_3222.N1 | 27-SEP-2002 02:32:29 | Bright             | 45.000   | 19      | 50Alp Cyg | 1.2460   | 10500.    | 90      | 3006  | No          |
| 37 | GOM_NL__2PRFIN20020927_023555_000000462009_00447_03006_3223.N1 | 27-SEP-2002 02:35:55 | Bright             | 45.500   | 74      | 11Bet Cas | 2.2680   | 6600.0    | 91      | 3006  | No          |
| 38 | GOM_NL__2PRFIN20020927_023723_000000502009_00447_03006_3224.N1 | 27-SEP-2002 02:37:23 | Bright             | 49.500   | 76      | 27Gam Cas | 2.3000   | 30000.    | 99      | 3006  | No          |
| 39 | GOM_NL__2PRFIN20020927_024336_000000412009_00447_03006_3225.N1 | 27-SEP-2002 02:43:36 | Bright             | 41.000   | 49      | 1Alp UMi  | 1.9900   | 6300.0    | 82      | 3006  | No          |
| 40 | GOM_NL__2PRFIN20020927_024523_000000452009_00447_03006_3226.N1 | 27-SEP-2002 02:45:23 | Bright             | 44.500   | 60      | 7Bet UMi  | 2.0810   | 3950.0    | 89      | 3006  | No          |
| 41 | GOM_NL__2PRFIN20020927_025125_000000452009_00447_03006_3227.N1 | 27-SEP-2002 02:51:25 | Bright             | 45.000   | 36      | 50Alp UMa | 1.8000   | 6300.0    | 90      | 3006  | No          |
| 42 | GOM_NL__2PRFIN20020927_025255_000000442009_00447_03006_3228.N1 | 27-SEP-2002 02:52:55 | Bright             | 43.500   | 82      | 48Bet UMa | 2.3650   | 10600.    | 87      | 3006  | No          |







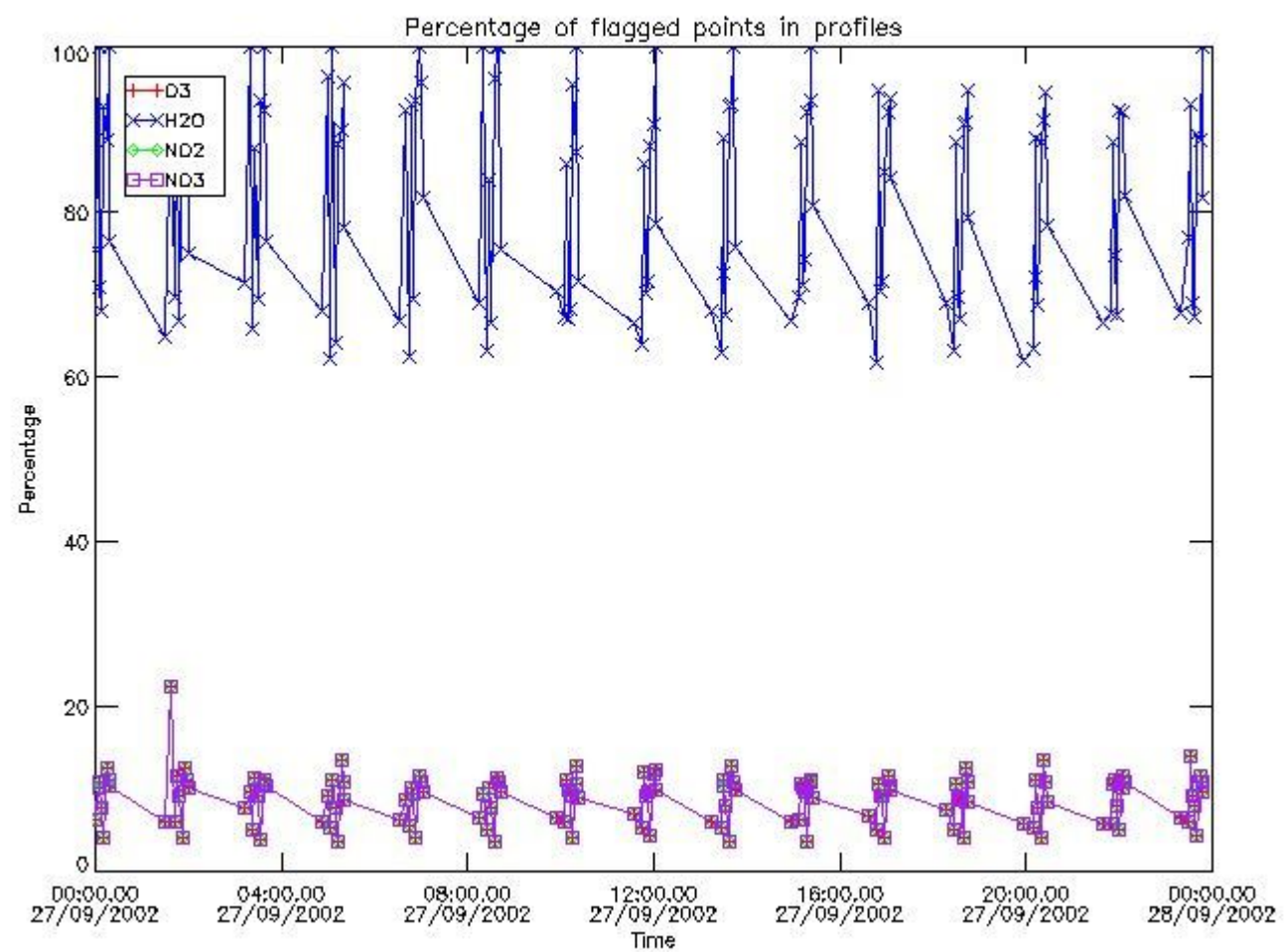




### 3. Quality information per product

In this section it is plotted some information contained in the Quality Summary data set of the level 2 products. Only products in dark limb conditions and without errors (error flag in the MPH set to "0") are used.

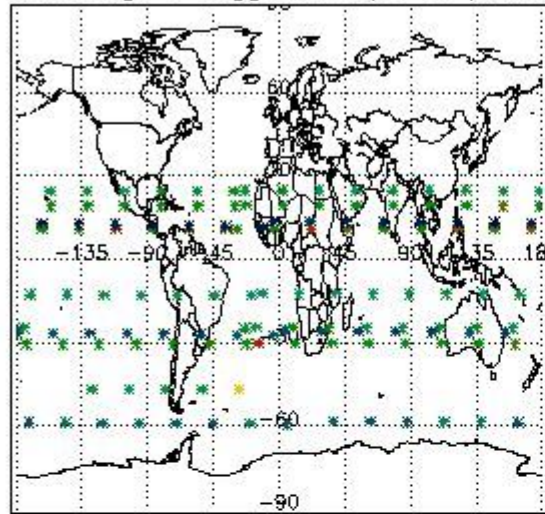
#### 3.1 Plot quality information per product (time dependant)



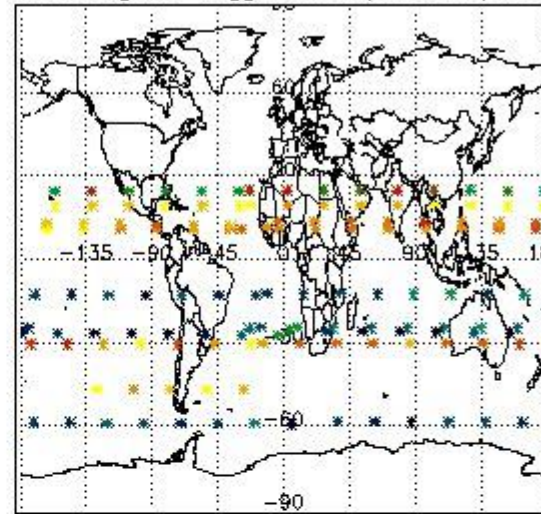
#### 3.2 Plot quality information per product (world map)



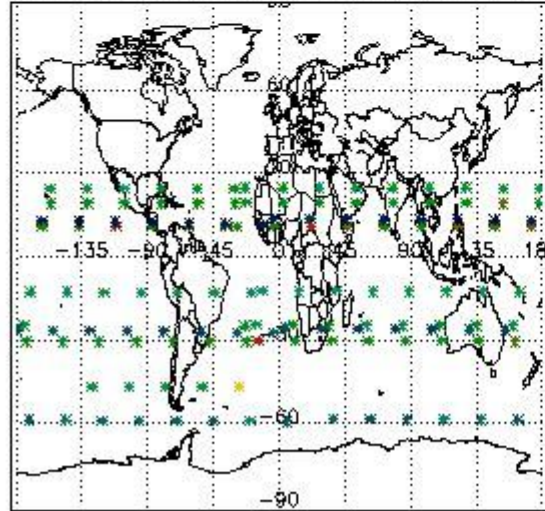
Percentage of flagged data per O3 profile



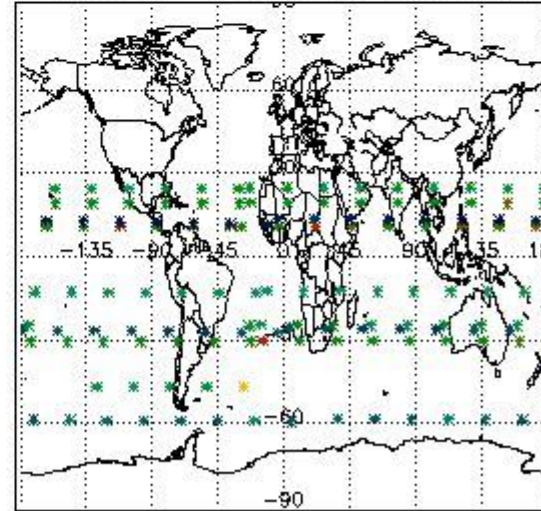
Percentage of flagged data per H2O profile



Percentage of flagged data per NO2 profile



Percentage of flagged data per NO3 profile

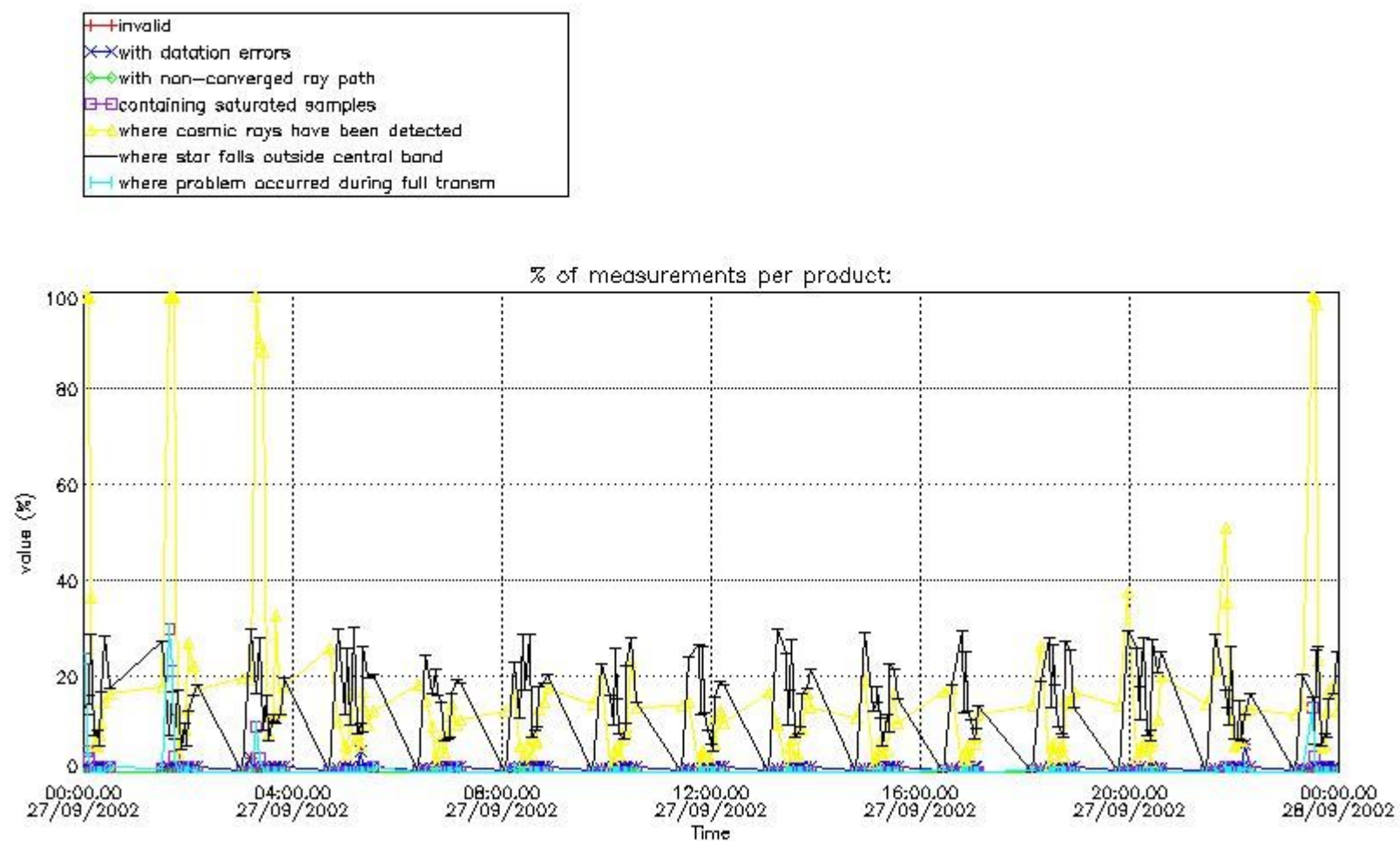


#### 4. Level 1 quality information per product

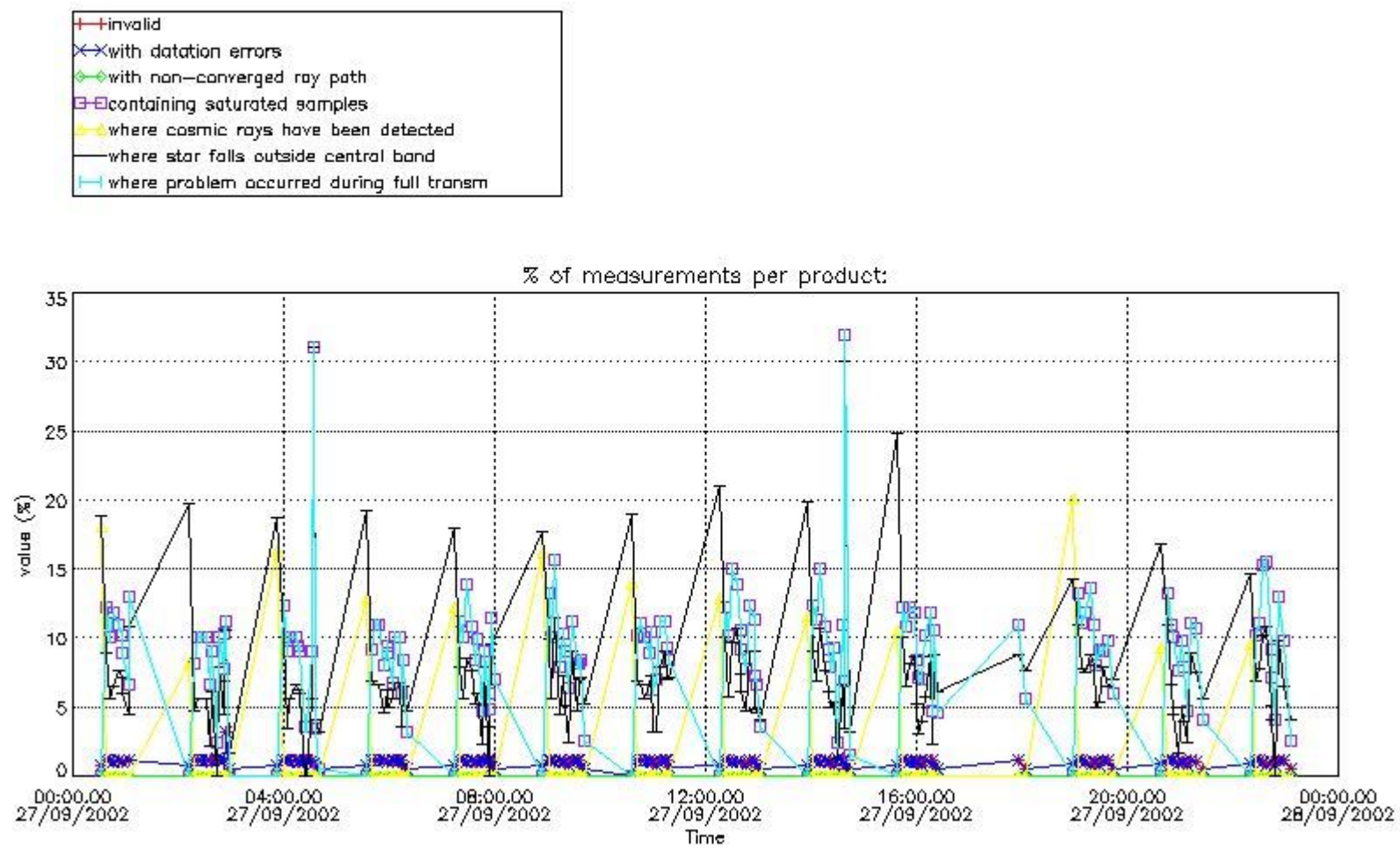
In this section it is plotted some information contained in the Quality Summary data set of the level 2 products that comes from the level 1b processing. Products without errors (error flag in the MPH set to "0") are used.

##### 4.1 Plot quality information per product (time dependant) coming from level 1b processing

###### 4.1.1 Plot level 1 quality information per product (time dependant): ENVISAT ASCENDING passes



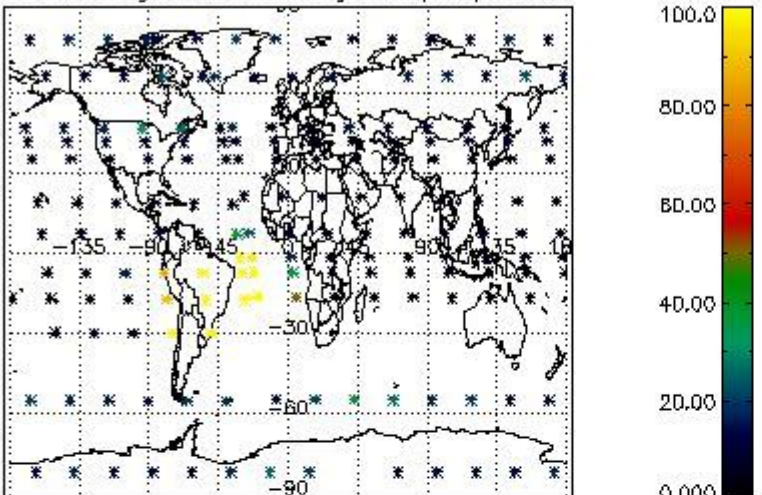
4.1.2 Plot level 1 quality information per product (time dependant): ENVI SAT DESCENDING passes



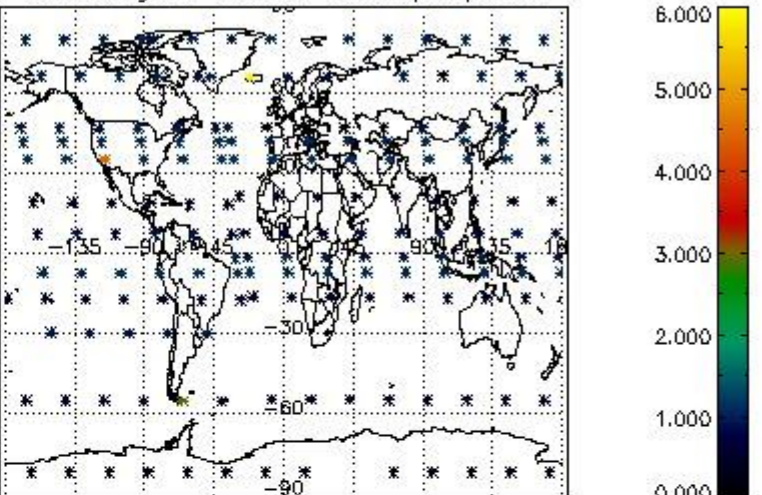
*4.2 Plot quality information per product coming from level 1b processing (world map)*

*4.2.1 Plot level 1 quality information per product (world map): ENVISAT ASCENDING passes*

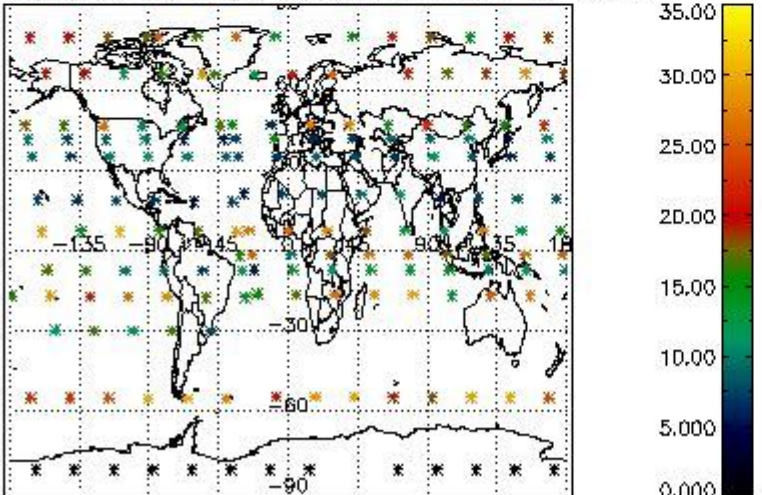
Percentage of cosmic ray hits per profile



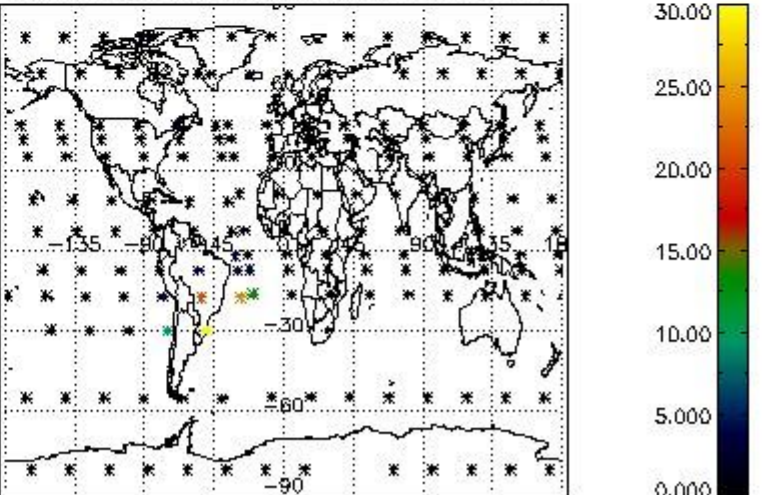
Percentage of datation errors per profile



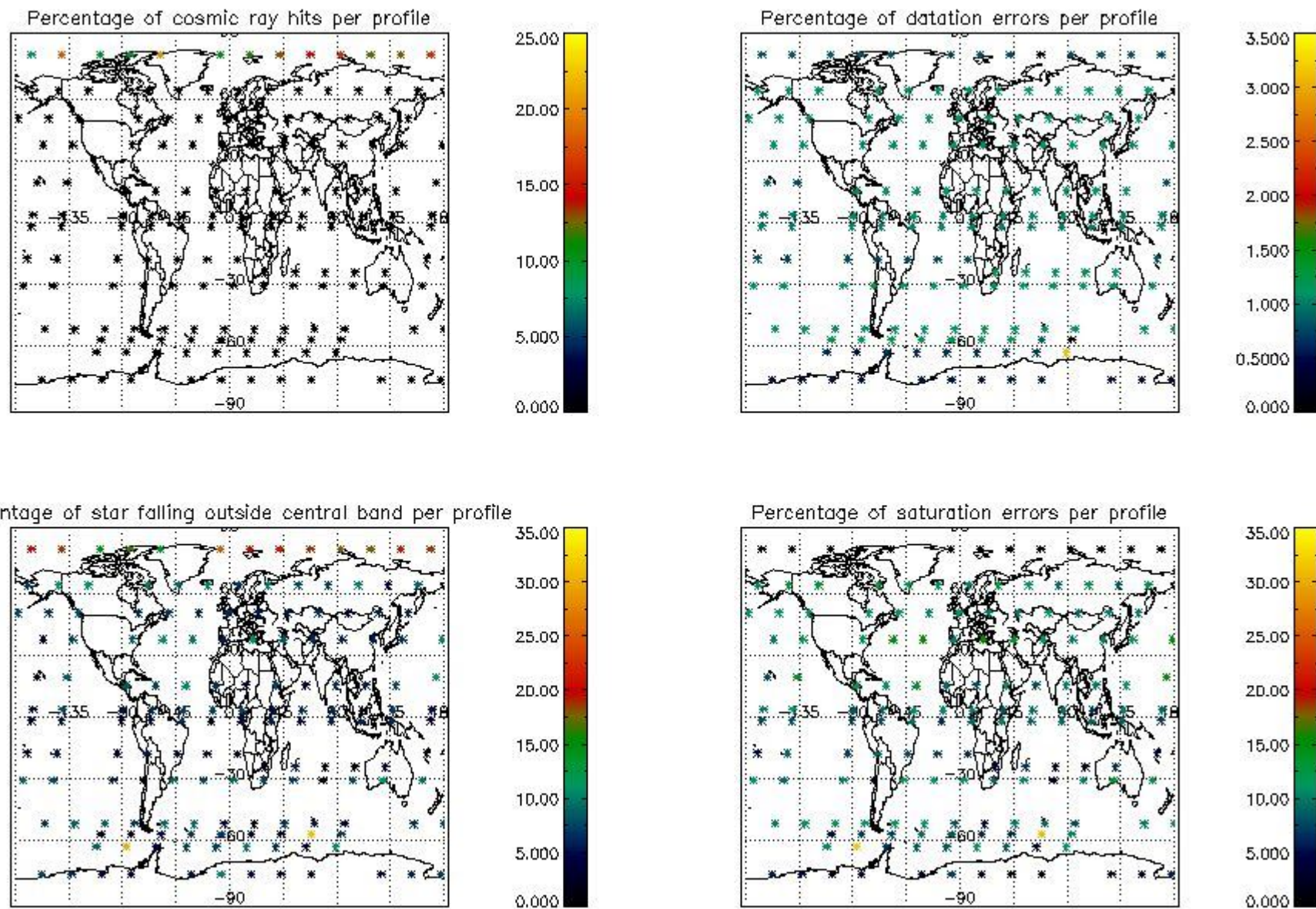
Percentage of star falling outside central band per profile



Percentage of saturation errors per profile



4.2.2 Plot level 1 quality information per product (world map): ENVISAT DESCENDING passes



## 5. Trace gas profiles

### 5.1 Ozone statistics based on quality of products

The final quality of the products can be "measured" using the STD (Standard Deviation) attached to every point profile. This information is written to the parameter GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/o3\_std of the level 2 products. The table below shows the statistics for given STD ranges.

The statistics are given with respect to the overall valid production:

- Products without fatal errors: GOM\_NL\_\_2P/MPH/PRODUCT\_ERR=0
- Valid point profile: GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/pcd(0)=0

The 'Criteria' is applied to valid points of dark limb products:

- Products in dark limb illumination condition: GOM\_NL\_\_2P/NL\_SUMMARY\_QUALITY/obs\_ill\_cond=0
- Products without fatal errors: GOM\_NL\_\_2P/MPH/PRODUCT\_ERR=0
- Valid point profile: GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/pcd(0)=0

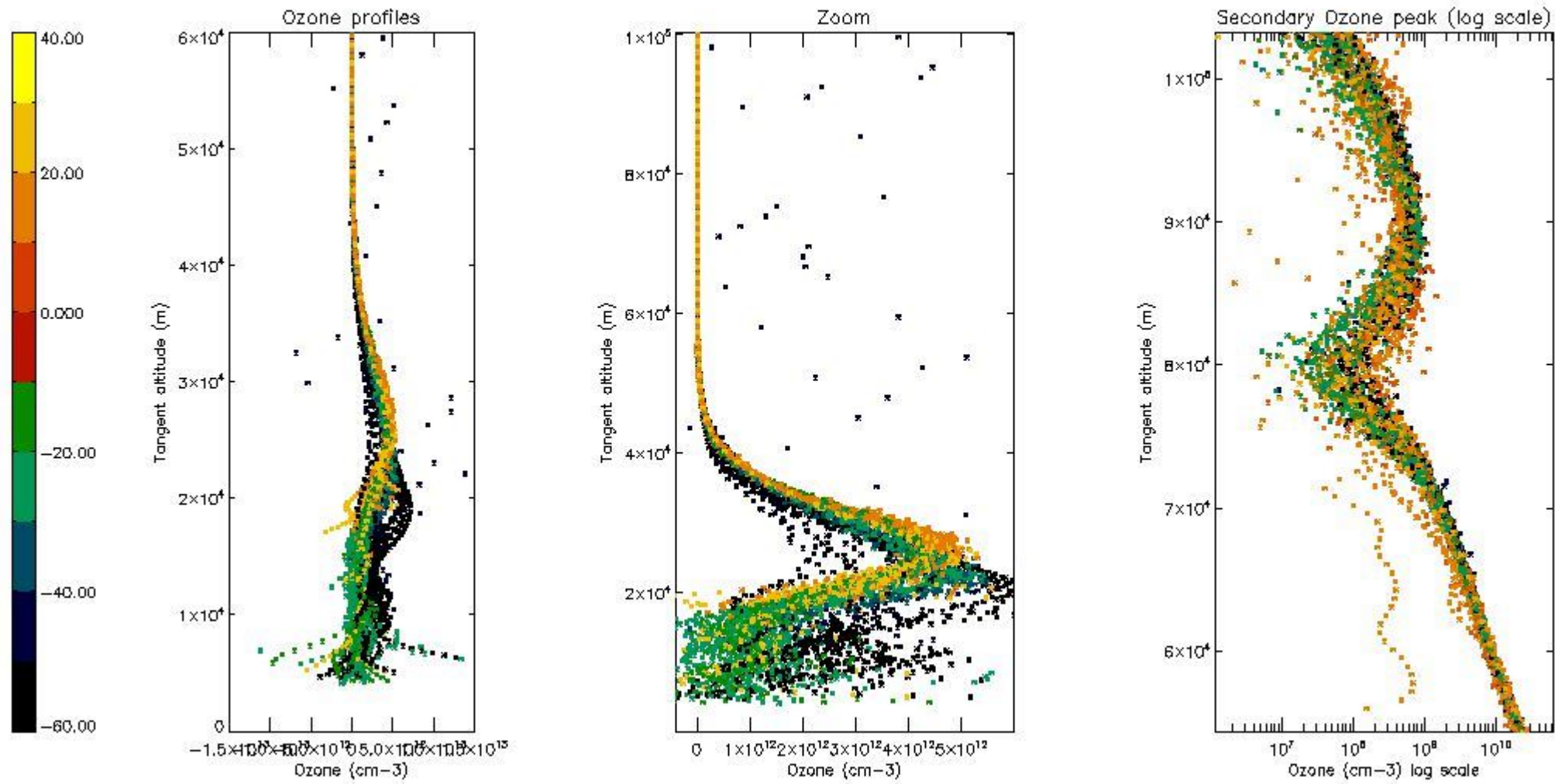
So, the table below shows the percentage of dark limb and valid observations for each criteria with respect to the overall valid daily observations.

| Criteria | % of total production |
|----------|-----------------------|
| All STD  | 41                    |
| STD < 20 | 23                    |

|          |    |
|----------|----|
| STD < 10 | 20 |
| STD < 5  | 15 |

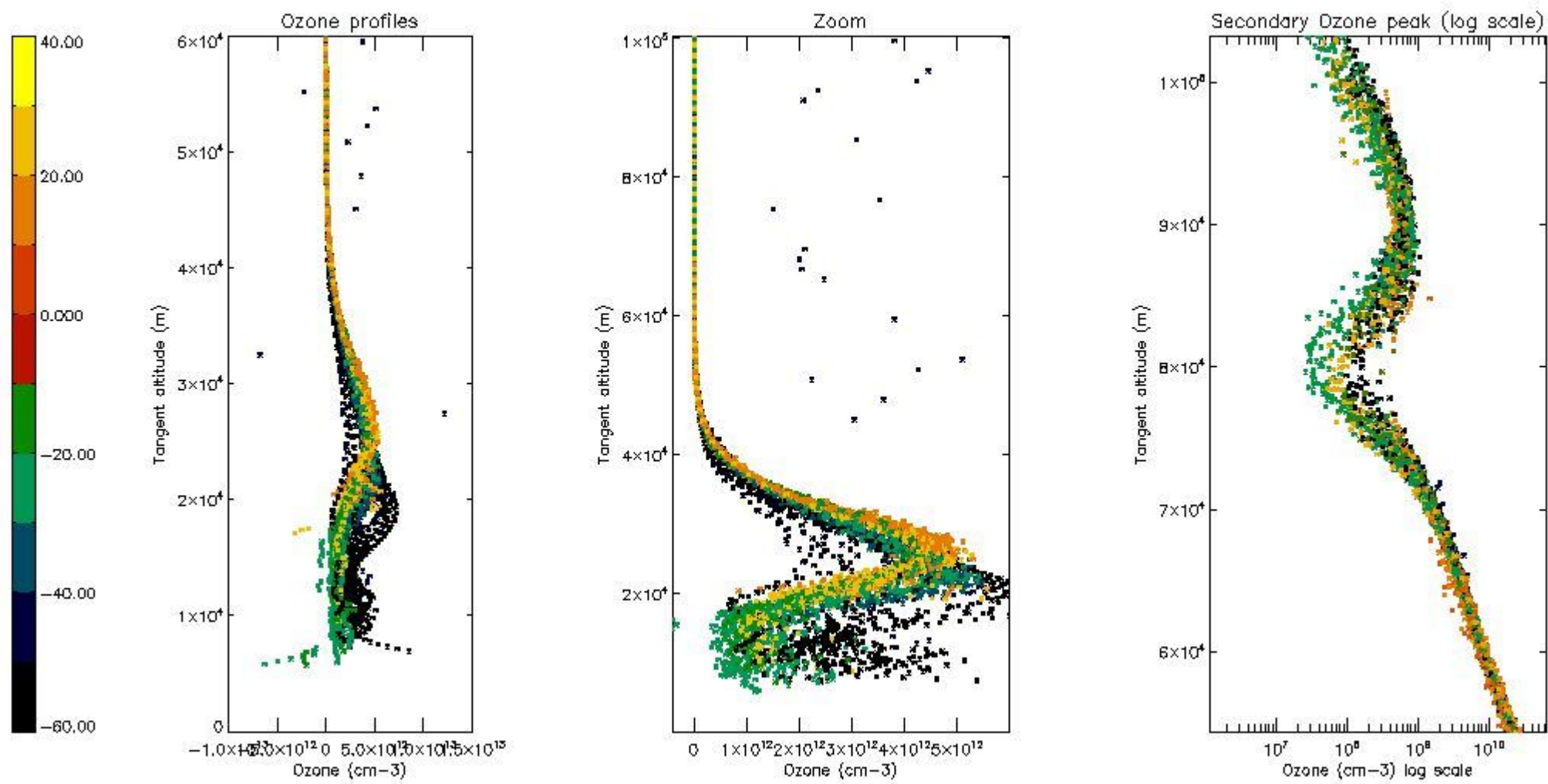
5.2 Plot ozone profiles for all STD (dark without errors)

The colorbar represents the latitude.



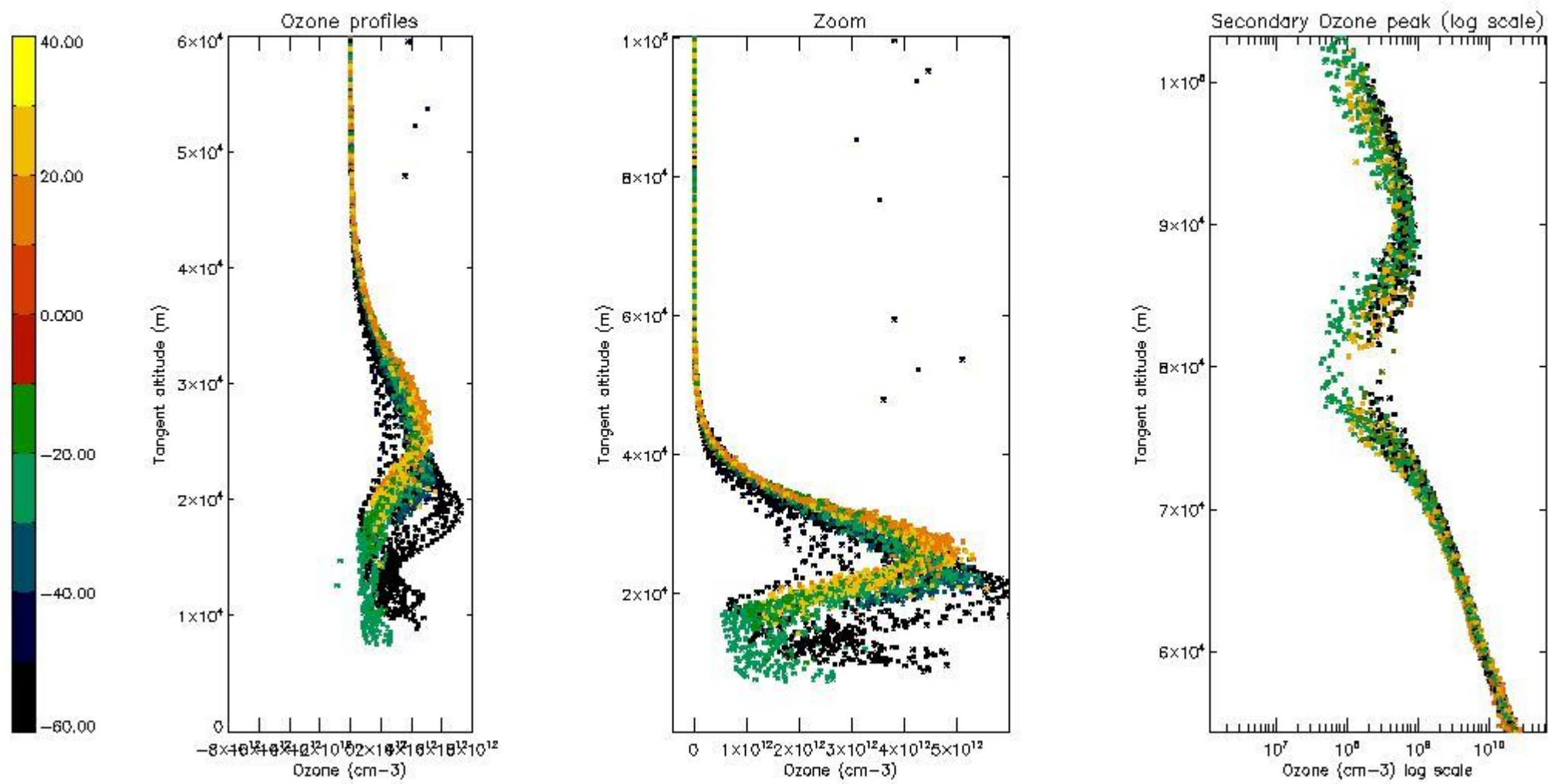
5.3 Plot ozone profiles where STD < 20% (dark without errors)

The colorbar represents the latitude.



*5.4 Plot ozone profiles where STD < 10% (dark without errors)*

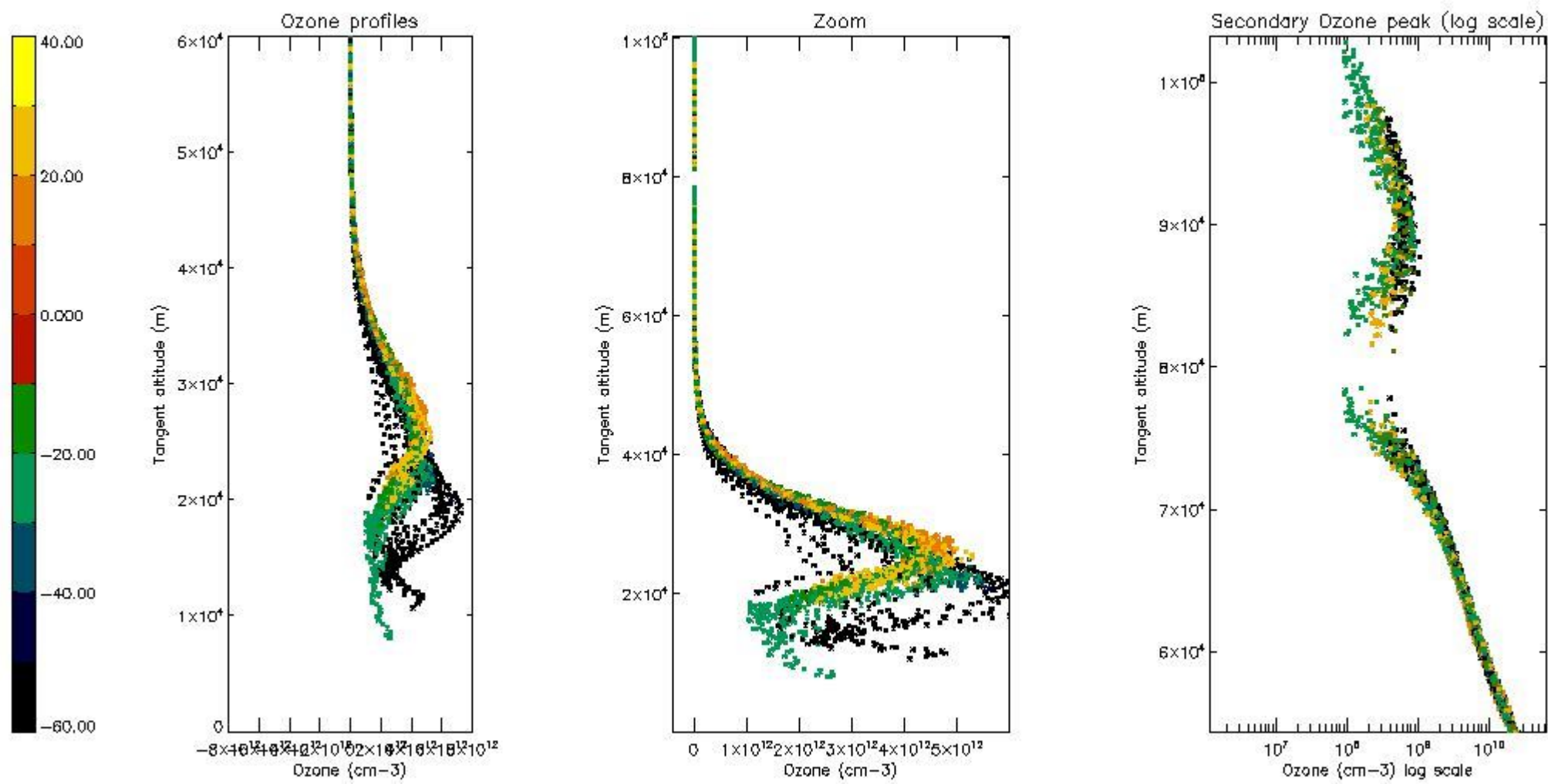
The colorbar represents the latitude.



*5.5 Plot ozone profiles where STD < 5% (dark without errors)*

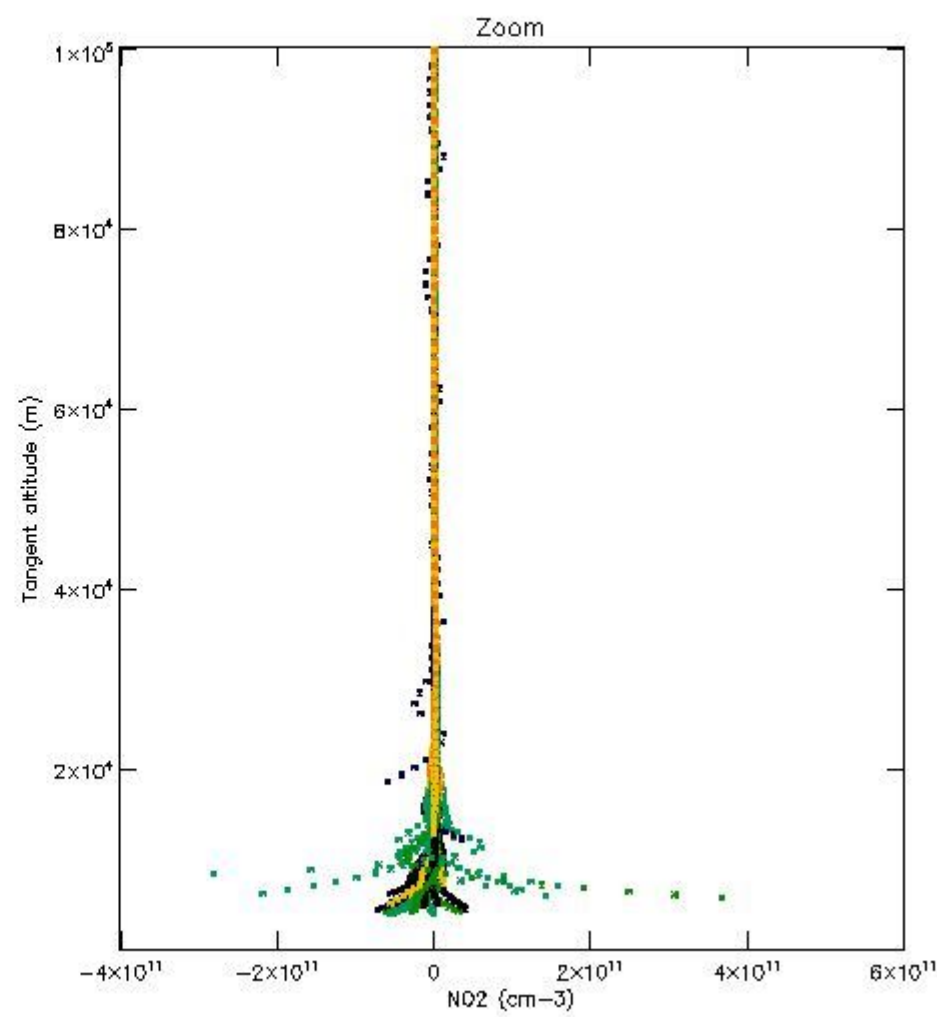
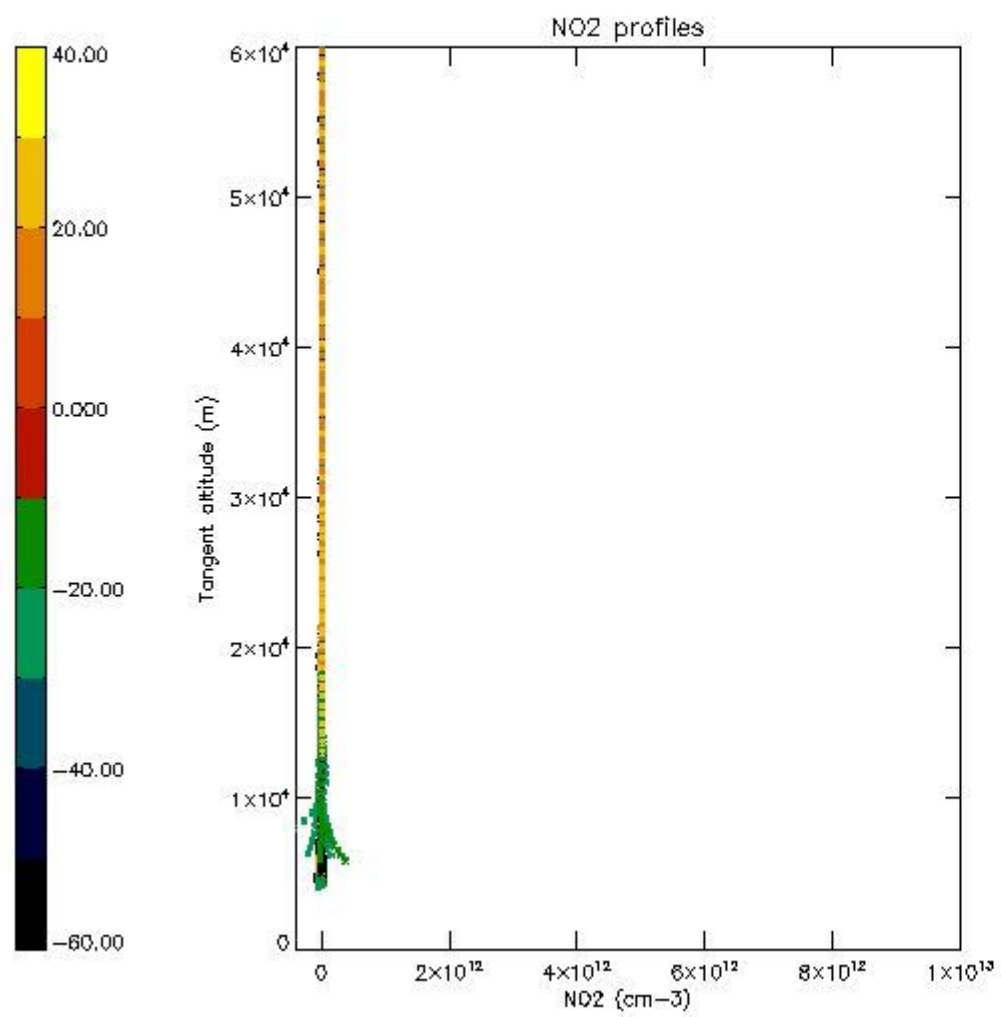
The colorbar represents the latitude.





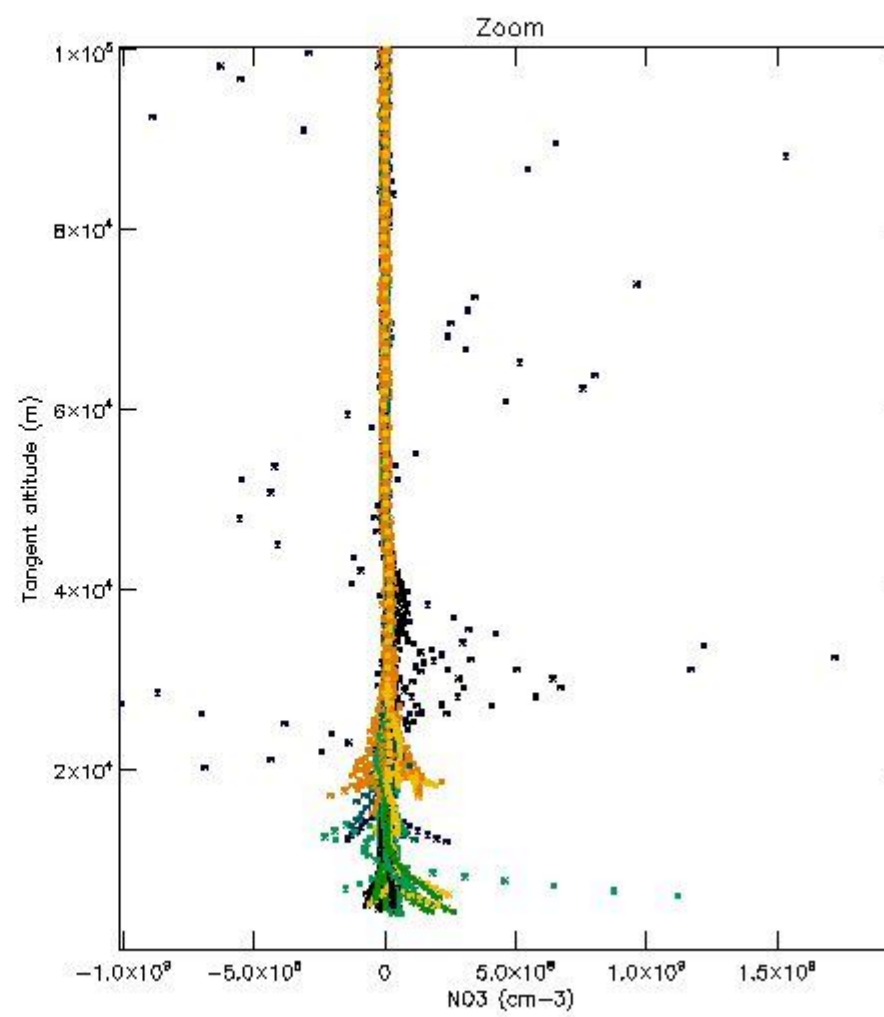
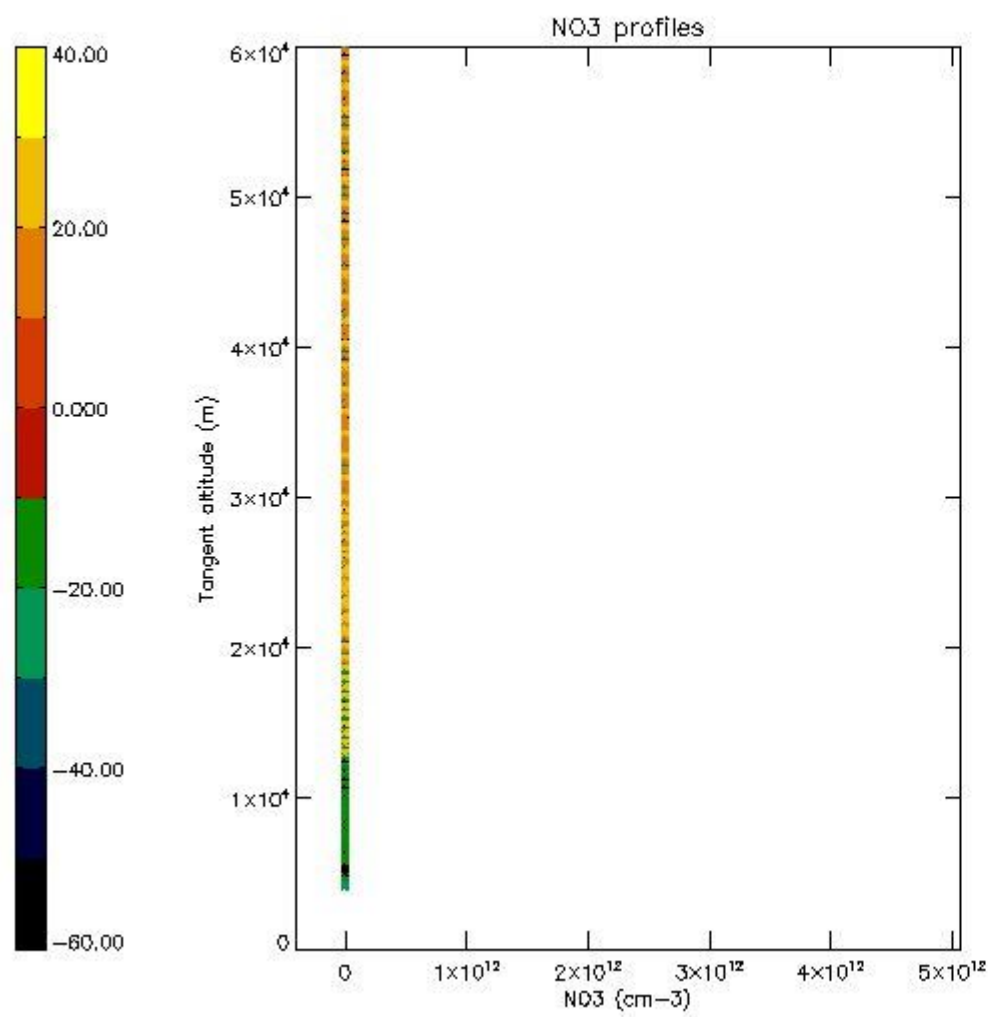
*5.6 Plot NO<sub>2</sub> profiles for all STD (dark without errors)*

The colorbar represents the latitude.



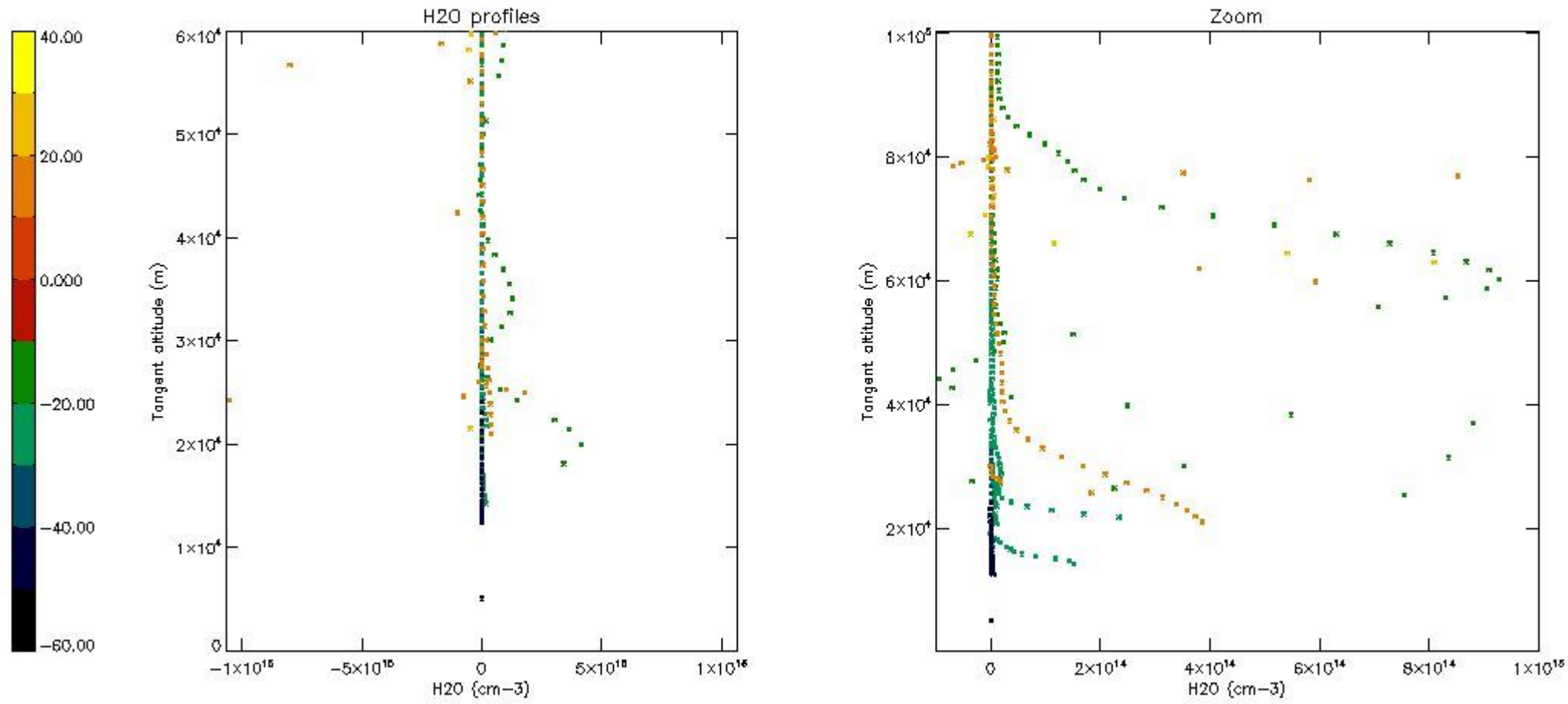
*5.7 Plot NO3 profiles for all STD (dark without errors)*

The colorbar represents the latitude.



5.8 Plot H<sub>2</sub>O profiles for all STD (only for occultations of stars 1,2,3,4,13,14,16,26,63 dark without errors)

The colorbar represents the latitude.



## 6. Auxiliary Data Files used for the production reported in section 2

The number reported in the third column indicates since which file (see list in section 2) the corresponding auxiliary file has been used. The fourth column is the date of those product files.

| Type                      | Auxiliary Filename  | Used since product | Used since product date |
|---------------------------|---|--------------------|-------------------------|
| INST_PHYS_CHARACTERISTICS | GOM_INS_AXNIEC20050627_150440_20020301_000000_20100101_000000 | 1                  | 27-SEP-2002 00:01:06    |
| LEVEL-2_PROC_CONFIG       | GOM_PR2_AXVIEC20091111_152718_20020301_000000_20500101_000000 | 1                  | 27-SEP-2002 00:01:06    |
| CROSS_SECTIONS_FILE       | GOM_CRS_AXVIEC20091111_154832_20020301_000000_20500101_000000 | 1                  | 27-SEP-2002 00:01:06    |

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#### [3.2 Plot of level 2 quality information per product \(world map\)](#)

### [4. Level 1 Quality information per product \(stored on level 2 products\)](#)

#### [4.1 Plot of level 1 quality information per product \(time dependant\)](#)

##### [4.1.1 Plot of level 1 quality information per product \(time dependant\): ASCENDING](#)

##### [4.1.2 Plot of level 1 quality information per product \(time dependant\): DESCENDING](#)

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##### [4.2.1 Plot of level 1 quality information per product \(world map\): ASCENDING](#)

##### [4.2.2 Plot of level 1 quality information per product \(world map\): DESCENDING](#)

### [5. Ozone profiles based on quality statistics and other trace gas profiles](#)

#### [5.1 Ozone statistics based on quality of products](#)

#### [5.2 Plot ozone profiles for all STD \(dark without errors\)](#)

#### [5.3 Plot ozone profiles where STD < 20% \(dark without errors\)](#)

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|---------------------------|---------------------------------|
| Time of report generation | 17APR2013 18:55:10              |
| Data source version       | GOMOS/6.01                      |
| Start time of products    | 27-09-2002 (27SEP2002 00:00:00) |
| Stop time of products     | 28-09-2002 (28SEP2002 00:00:00) |
| Store outputs in DB       | Yes                             |
| Nb of level 2 prods       | 336                             |
| Nb of prods with errors   | 1                               |

## 2. Summary of processed GOM\_NL\_\_2P products.

| Nr | Filename   | UTC Start time       | Limb               | Duration | Star Id | Star Name | Star Mag | Star Temp | Nb Meas | Orbit | Prod. error |
|----|--|----------------------|--------------------|----------|---------|-----------|----------|-----------|---------|-------|-------------|
| 1  | GOM_NL__2PRFIN20020927_000106_000000822009_00445_03004_3161.N1 | 27-SEP-2002 00:01:06 | Dark               | 82.000   | 1       | 9Alp CMa  | -1.4400  | 11000.    | 164     | 3004  | No          |
| 2  | GOM_NL__2PRFIN20020927_000356_000000472009_00445_03004_3162.N1 | 27-SEP-2002 00:03:56 | Dark               | 46.500   | 46      | Del Vel   | 1.9540   | 10600.    | 93      | 3004  | No          |
| 3  | GOM_NL__2PRFIN20020927_000530_000000502009_00445_03004_3163.N1 | 27-SEP-2002 00:05:30 | Dark               | 50.000   | 41      | Eps Car   | 1.8600   | 4100.0    | 100     | 3004  | No          |
| 4  | GOM_NL__2PRFIN20020927_000757_000000662009_00446_03005_3140.N1 | 27-SEP-2002 00:07:57 | Dark               | 66.000   | 2       | Alp Car   | -0.73600 | 7000.0    | 132     | 3005  | No          |
| 5  | GOM_NL__2PRFIN20020927_001105_000001382009_00446_03005_3141.N1 | 27-SEP-2002 00:11:05 | Dark               | 138.00   | 101     | 11Alp Lep | 2.5820   | 7000.0    | 276     | 3005  | No          |
| 6  | GOM_NL__2PRFIN20020927_001548_000000452009_00446_03005_3142.N1 | 27-SEP-2002 00:15:48 | Dark               | 45.000   | 135     | Bet Hyi   | 2.8200   | 5800.0    | 90      | 3005  | No          |
| 7  | GOM_NL__2PRFIN20020927_001739_000000462009_00446_03005_3143.N1 | 27-SEP-2002 00:17:39 | Dark               | 46.000   | 143     | Alp Hyi   | 2.8570   | 7200.0    | 92      | 3005  | No          |
| 8  | GOM_NL__2PRFIN20020927_001907_000000542009_00446_03005_3144.N1 | 27-SEP-2002 00:19:07 | Dark               | 53.500   | 9       | Alp Eri   | 0.45300  | 24000.    | 107     | 3005  | No          |
| 9  | GOM_NL__2PRFIN20020927_002446_000000582009_00446_03005_3145.N1 | 27-SEP-2002 00:24:46 | Straylight         | 58.000   | 63      | Bet Gru   | 2.1500   | 2800.0    | 116     | 3005  | No          |
| 10 | GOM_NL__2PRFIN20020927_002923_000000492009_00446_03005_3146.N1 | 27-SEP-2002 00:29:23 | Straylight         | 49.000   | 18      | 24Alp PsA | 1.1660   | 9700.0    | 98      | 3005  | No          |
| 11 | GOM_NL__2PRFIN20020927_003139_000000612009_00446_03005_3147.N1 | 27-SEP-2002 00:31:39 | Twilight_and_stray | 61.000   | 52      | 16Bet Cet | 2.0370   | 4500.0    | 122     | 3005  | No          |
| 12 | GOM_NL__2PRFIN20020927_003803_000000452009_00446_03005_3148.N1 | 27-SEP-2002 00:38:03 | Bright             | 45.000   | 162     | 34Alp Aqr | 2.9440   | 5350.0    | 90      | 3005  | No          |
| 13 | GOM_NL__2PRFIN20020927_004158_000000452009_00446_03005_3149.N1 | 27-SEP-2002 00:41:58 | Bright             | 44.500   | 90      | 54Alp Peg | 2.4870   | 11000.    | 89      | 3005  | No          |
| 14 | GOM_NL__2PRFIN20020927_004539_000000472009_00446_03005_3150.N1 | 27-SEP-2002 00:45:39 | Bright             | 46.500   | 93      | 53Bet Peg | 2.5200   | 3100.0    | 93      | 3005  | No          |
| 15 | GOM_NL__2PRFIN20020927_005153_000000462009_00446_03005_3151.N1 | 27-SEP-2002 00:51:53 | Bright             | 45.500   | 19      | 50Alp Cyg | 1.2460   | 10500.    | 91      | 3005  | No          |
| 16 | GOM_NL__2PRFIN20020927_005519_000000492009_00446_03005_3152.N1 | 27-SEP-2002 00:55:19 | Bright             | 49.000   | 74      | 11Bet Cas | 2.2680   | 6600.0    | 98      | 3005  | No          |
| 17 | GOM_NL__2PRFIN20020927_005647_000000512009_00446_03005_3153.N1 | 27-SEP-2002 00:56:47 | Bright             | 50.500   | 76      | 27Gam Cas | 2.3000   | 30000.    | 101     | 3005  | No          |
| 18 | GOM_NL__2PRFIN20020927_010300_000000452009_00446_03005_3154.N1 | 27-SEP-2002 01:03:00 | Bright             | 45.000   | 49      | 1Alp UMi  | 1.9900   | 6300.0    | 90      | 3005  | No          |
| 19 | GOM_NL__2PRFIN20020927_010447_000000462009_00446_03005_3155.N1 | 27-SEP-2002 01:04:47 | Bright             | 46.000   | 60      | 7Bet UMi  | 2.0810   | 3950.0    | 92      | 3005  | No          |
| 20 | GOM_NL__2PRFIN20020927_012126_000002552009_00446_03005_3156.N1 | 27-SEP-2002 01:21:26 | Dark               | 255.00   | 114     | 31ot Aur  | 2.6930   | 4600.0    | 510     | 3005  | Yes         |
| 21 | GOM_NL__2PRFIN20020927_013057_000000842009_00446_03005_3157.N1 | 27-SEP-2002 01:30:57 | Dark               | 84.000   | 8       | 10Alp CMi | 0.40000  | 6500.0    | 168     | 3005  | No          |
| 22 | GOM_NL__2PRFIN20020927_013812_000000522009_00446_03005_3158.N1 | 27-SEP-2002 01:38:12 | Dark               | 52.000   | 132     | 15Rho Pup | 2.8030   | 6900.0    | 104     | 3005  | No          |
| 23 | GOM_NL__2PRFIN20020927_014142_000000862009_00446_03005_3159.N1 | 27-SEP-2002 01:41:42 | Dark               | 86.000   | 1       | 9Alp CMa  | -1.4400  | 11000.    | 172     | 3005  | No          |
| 24 | GOM_NL__2PRFIN20020927_014432_000000452009_00446_03005_3160.N1 | 27-SEP-2002 01:44:32 | Dark               | 44.500   | 46      | Del Vel   | 1.9540   | 10600.    | 89      | 3005  | No          |
| 25 | GOM_NL__2PRFIN20020927_014835_000000562009_00447_03006_3211.N1 | 27-SEP-2002 01:48:35 | Dark               | 56.000   | 2       | Alp Car   | -0.73600 | 7000.0    | 112     | 3006  | No          |
| 26 | GOM_NL__2PRFIN20020927_015144_000001342009_00447_03006_3212.N1 | 27-SEP-2002 01:51:44 | Dark               | 134.00   | 101     | 11Alp Lep | 2.5820   | 7000.0    | 268     | 3006  | No          |
| 27 | GOM_NL__2PRFIN20020927_015624_000000452009_00447_03006_3213.N1 | 27-SEP-2002 01:56:24 | Dark               | 45.000   | 135     | Bet Hyi   | 2.8200   | 5800.0    | 90      | 3006  | No          |
| 28 | GOM_NL__2PRFIN20020927_015816_000000462009_00447_03006_3214.N1 | 27-SEP-2002 01:58:16 | Dark               | 45.500   | 143     | Alp Hyi   | 2.8570   | 7200.0    | 91      | 3006  | No          |
| 29 | GOM_NL__2PRFIN20020927_015943_000000512009_00447_03006_3215.N1 | 27-SEP-2002 01:59:43 | Dark               | 50.500   | 9       | Alp Eri   | 0.45300  | 24000.    | 101     | 3006  | No          |
| 30 | GOM_NL__2PRFIN20020927_020523_000000502009_00447_03006_3216.N1 | 27-SEP-2002 02:05:23 | Straylight         | 49.500   | 63      | Bet Gru   | 2.1500   | 2800.0    | 99      | 3006  | No          |
| 31 | GOM_NL__2PRFIN20020927_020959_000000502009_00447_03006_3217.N1 | 27-SEP-2002 02:09:59 | Straylight         | 50.000   | 18      | 24Alp PsA | 1.1660   | 9700.0    | 100     | 3006  | No          |
| 32 | GOM_NL__2PRFIN20020927_021216_000000612009_00447_03006_3218.N1 | 27-SEP-2002 02:12:16 | Twilight_and_stray | 61.000   | 52      | 16Bet Cet | 2.0370   | 4500.0    | 122     | 3006  | No          |
| 33 | GOM_NL__2PRFIN20020927_021839_000000432009_00447_03006_3219.N1 | 27-SEP-2002 02:18:39 | Bright             | 43.000   | 162     | 34Alp Aqr | 2.9440   | 5350.0    | 86      | 3006  | No          |
| 34 | GOM_NL__2PRFIN20020927_022234_000000452009_00447_03006_3220.N1 | 27-SEP-2002 02:22:34 | Bright             | 44.500   | 90      | 54Alp Peg | 2.4870   | 11000.    | 89      | 3006  | No          |
| 35 | GOM_NL__2PRFIN20020927_022615_000000452009_00447_03006_3221.N1 | 27-SEP-2002 02:26:15 | Bright             | 44.500   | 93      | 53Bet Peg | 2.5200   | 3100.0    | 89      | 3006  | No          |
| 36 | GOM_NL__2PRFIN20020927_023229_000000452009_00447_03006_3222.N1 | 27-SEP-2002 02:32:29 | Bright             | 45.000   | 19      | 50Alp Cyg | 1.2460   | 10500.    | 90      | 3006  | No          |
| 37 | GOM_NL__2PRFIN20020927_023555_000000462009_00447_03006_3223.N1 | 27-SEP-2002 02:35:55 | Bright             | 45.500   | 74      | 11Bet Cas | 2.2680   | 6600.0    | 91      | 3006  | No          |
| 38 | GOM_NL__2PRFIN20020927_023723_000000502009_00447_03006_3224.N1 | 27-SEP-2002 02:37:23 | Bright             | 49.500   | 76      | 27Gam Cas | 2.3000   | 30000.    | 99      | 3006  | No          |
| 39 | GOM_NL__2PRFIN20020927_024336_000000412009_00447_03006_3225.N1 | 27-SEP-2002 02:43:36 | Bright             | 41.000   | 49      | 1Alp UMi  | 1.9900   | 6300.0    | 82      | 3006  | No          |
| 40 | GOM_NL__2PRFIN20020927_024523_000000452009_00447_03006_3226.N1 | 27-SEP-2002 02:45:23 | Bright             | 44.500   | 60      | 7Bet UMi  | 2.0810   | 3950.0    | 89      | 3006  | No          |
| 41 | GOM_NL__2PRFIN20020927_025125_000000452009_00447_03006_3227.N1 | 27-SEP-2002 02:51:25 | Bright             | 45.000   | 36      | 50Alp UMa | 1.8000   | 6300.0    | 90      | 3006  | No          |
| 42 | GOM_NL__2PRFIN20020927_025255_000000442009_00447_03006_3228.N1 | 27-SEP-2002 02:52:55 | Bright             | 43.500   | 82      | 48Bet UMa | 2.3650   | 10600.    | 87      | 3006  | No          |









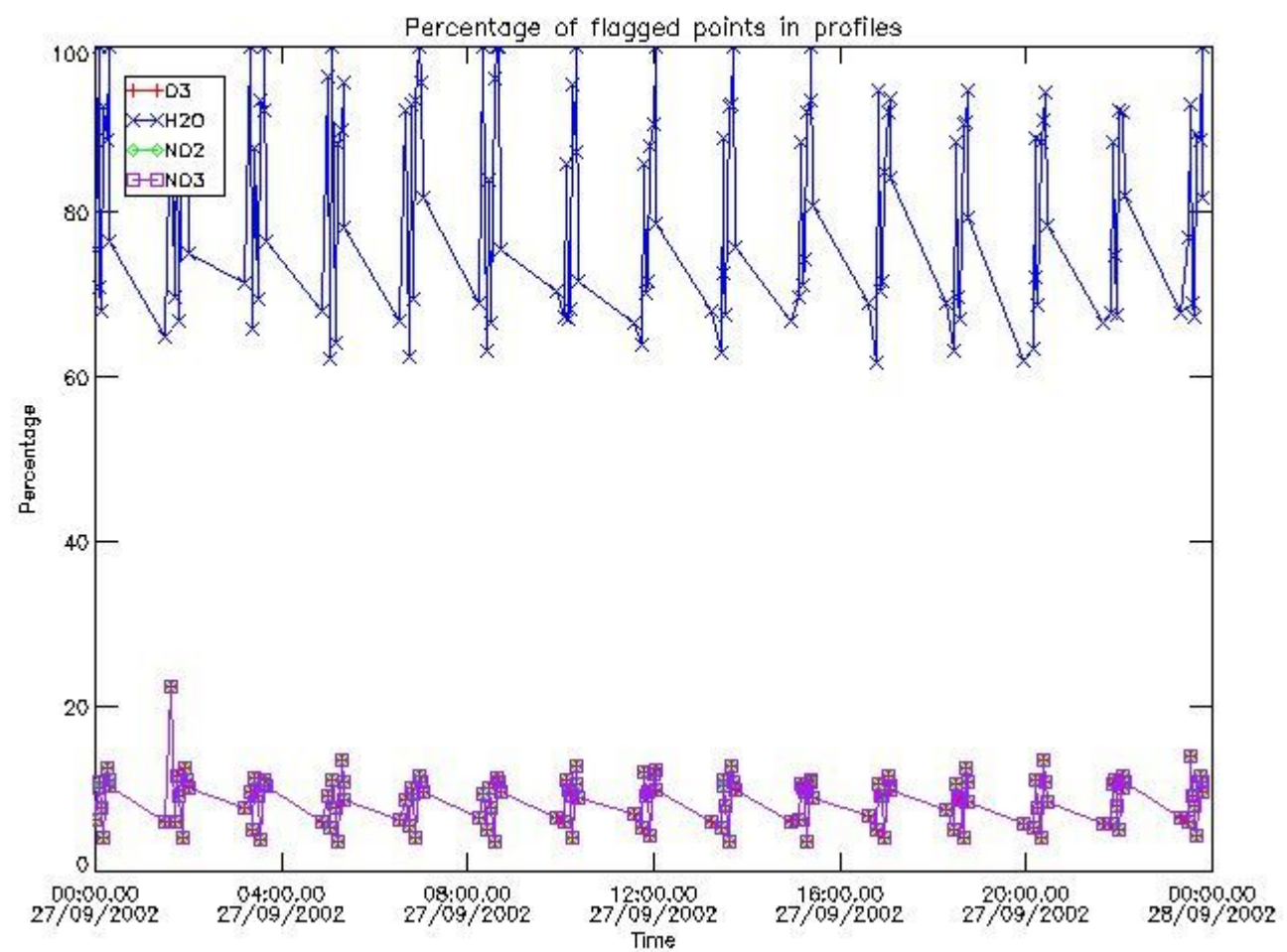




### 3. Quality information per product

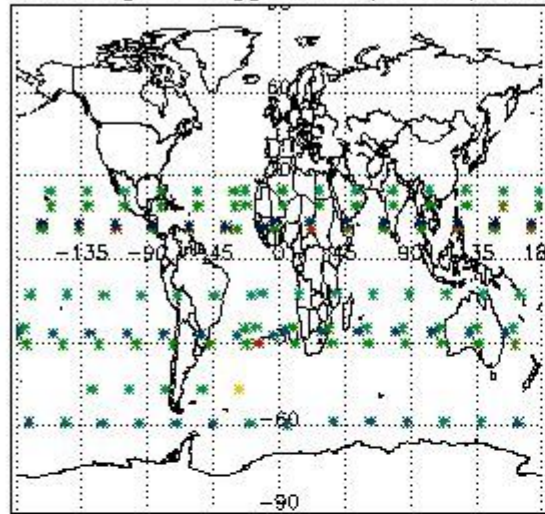
In this section it is plotted some information contained in the Quality Summary data set of the level 2 products. Only products in dark limb conditions and without errors (error flag in the MPH set to "0") are used.

#### 3.1 Plot quality information per product (time dependant)

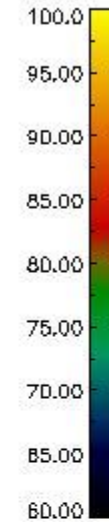
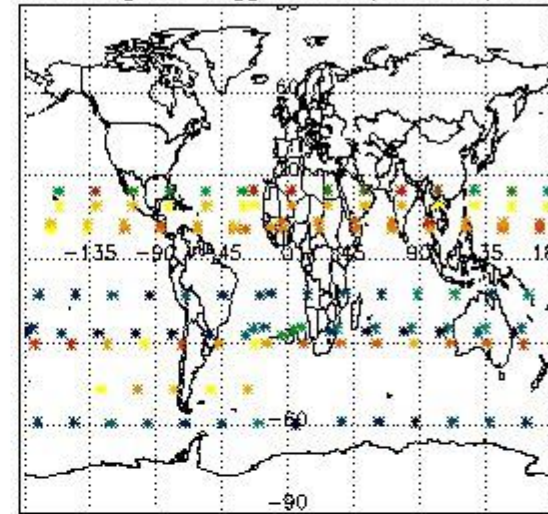


#### 3.2 Plot quality information per product (world map)

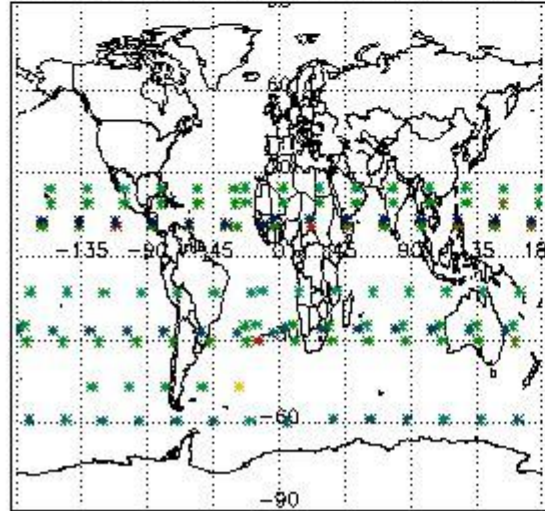
Percentage of flagged data per O3 profile



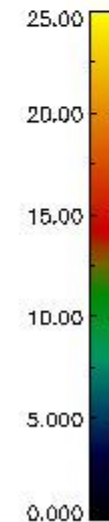
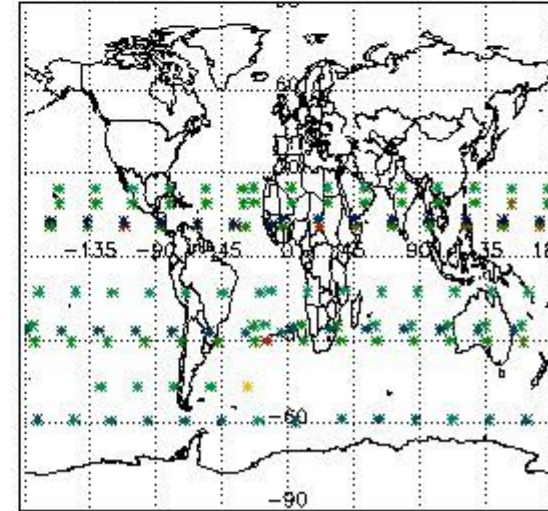
Percentage of flagged data per H2O profile



Percentage of flagged data per NO2 profile



Percentage of flagged data per NO3 profile

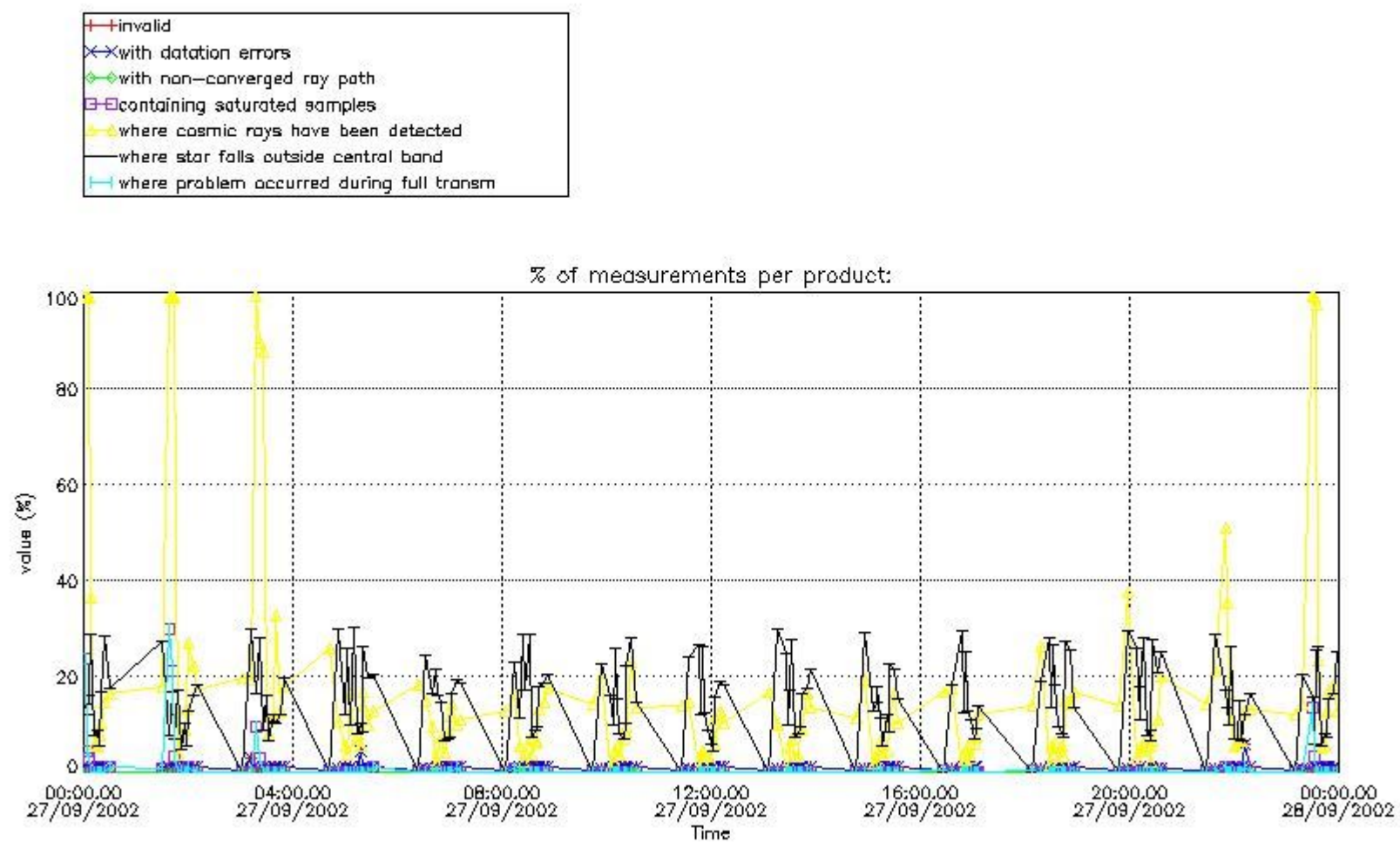


#### 4. Level 1 quality information per product

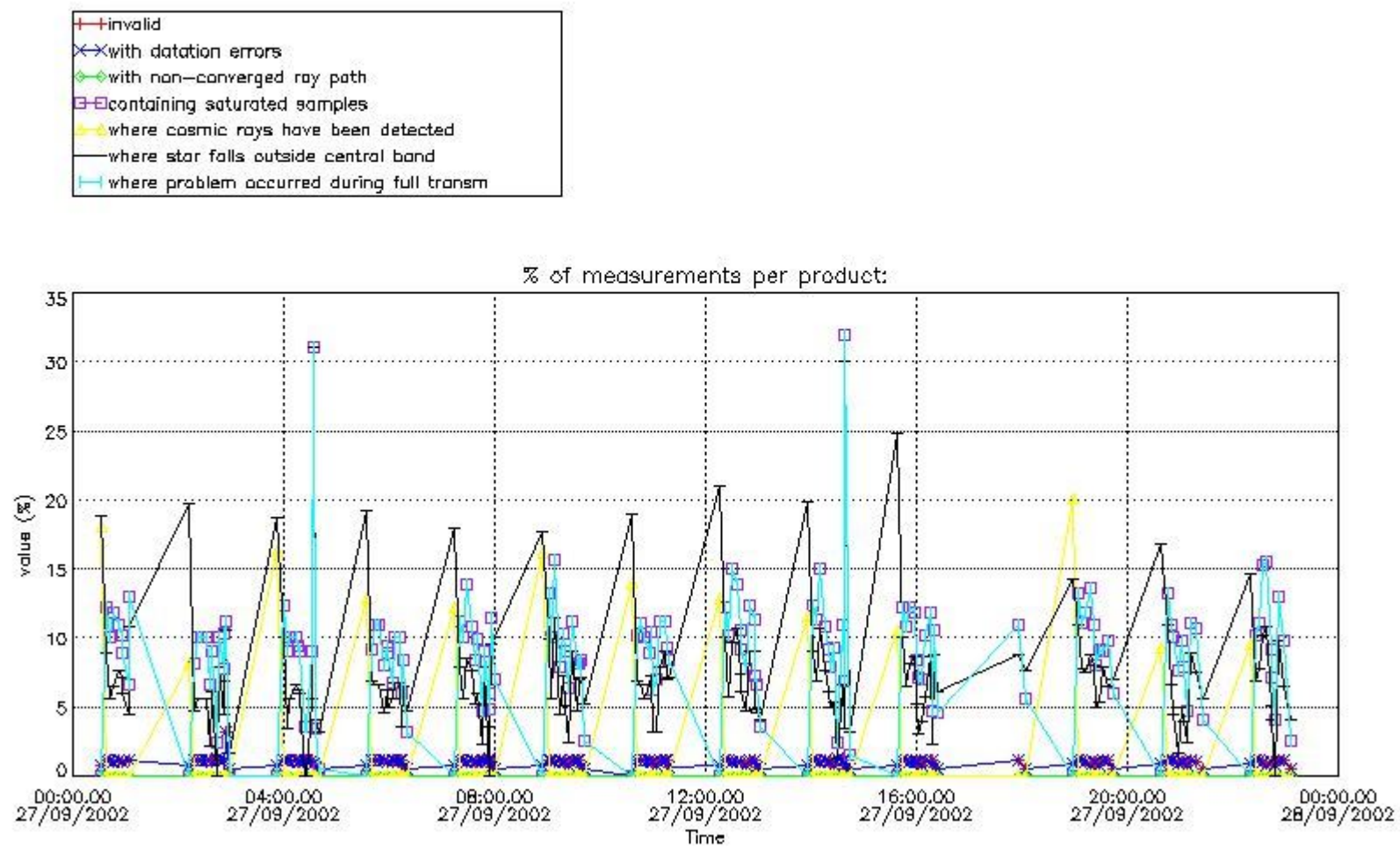
In this section it is plotted some information contained in the Quality Summary data set of the level 2 products that comes from the level 1b processing. Products without errors (error flag in the MPH set to "0") are used.

##### 4.1 Plot quality information per product (time dependant) coming from level 1b processing

###### 4.1.1 Plot level 1 quality information per product (time dependant): ENVISAT ASCENDING passes



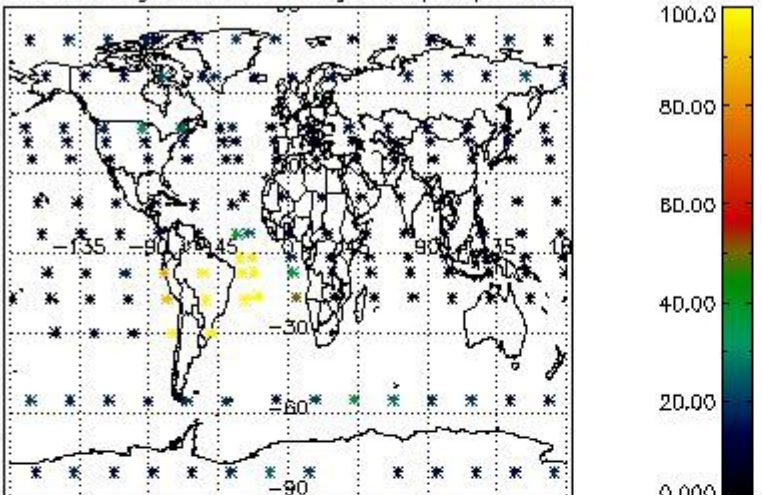
4.1.2 Plot level 1 quality information per product (time dependant): ENVI SAT DESCENDING passes



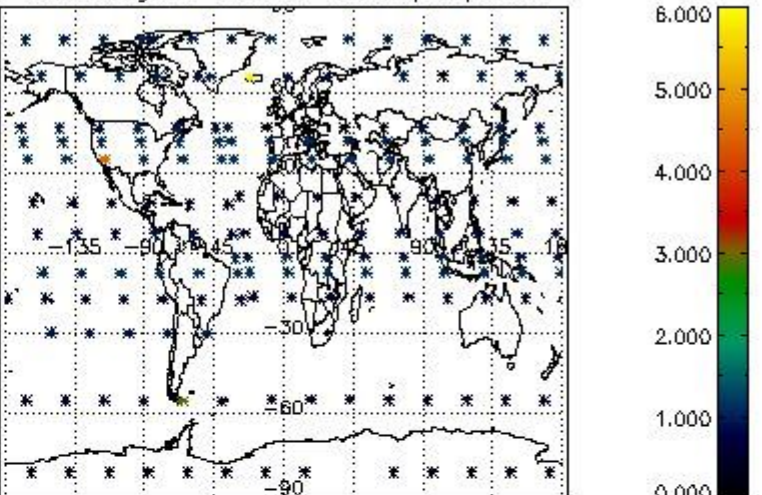
*4.2 Plot quality information per product coming from level 1b processing (world map)*

*4.2.1 Plot level 1 quality information per product (world map): ENVISAT ASCENDING passes*

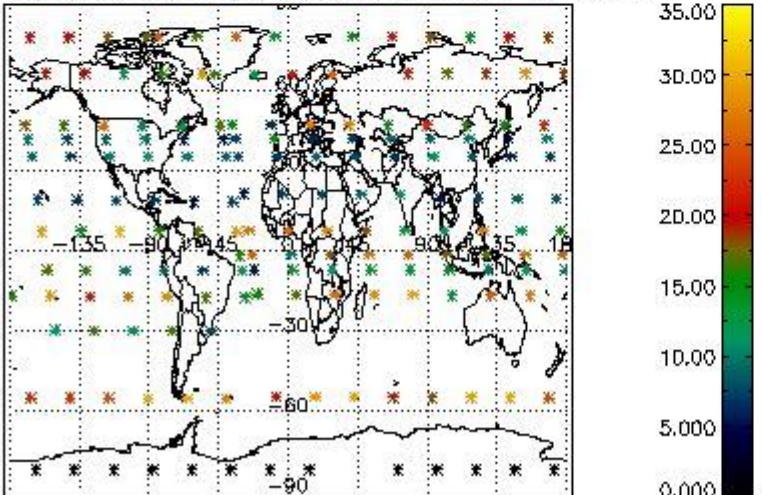
Percentage of cosmic ray hits per profile



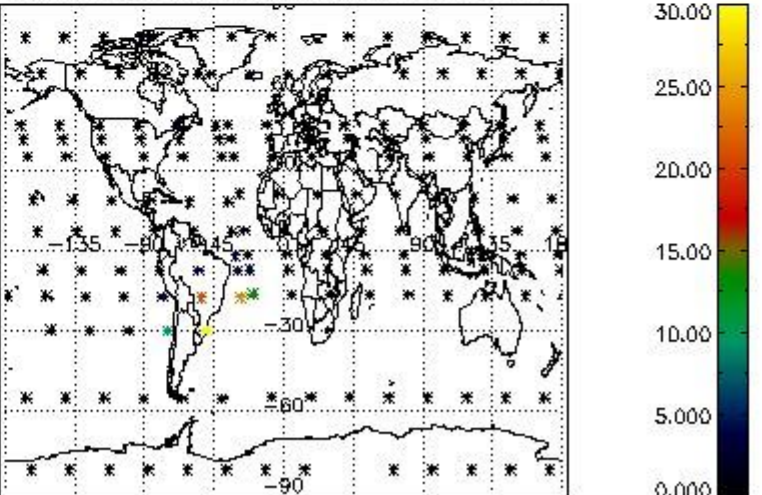
Percentage of datation errors per profile



Percentage of star falling outside central band per profile

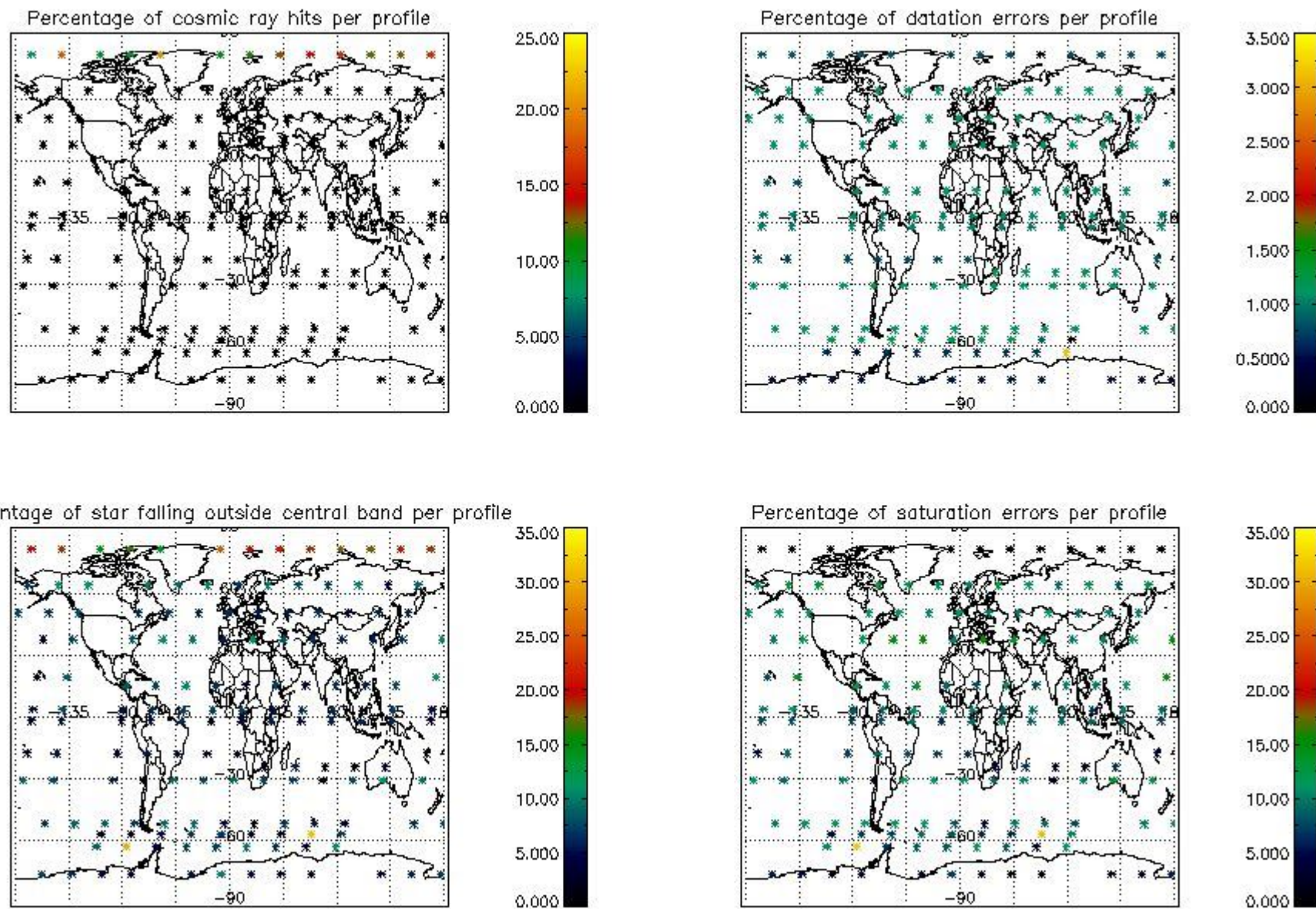


Percentage of saturation errors per profile



4.2.2 Plot level 1 quality information per product (world map): ENVISAT DESCENDING passes





## 5. Trace gas profiles

### 5.1 Ozone statistics based on quality of products

The final quality of the products can be "measured" using the STD (Standard Deviation) attached to every point profile. This information is written to the parameter GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/o3\_std of the level 2 products. The table below shows the statistics for given STD ranges.

The statistics are given with respect to the overall valid production:

- Products without fatal errors: GOM\_NL\_\_2P/MPH/PRODUCT\_ERR=0
- Valid point profile: GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/pcd(0)=0

The 'Criteria' is applied to valid points of dark limb products:

- Products in dark limb illumination condition: GOM\_NL\_\_2P/NL\_SUMMARY\_QUALITY/obs\_ill\_cond=0
- Products without fatal errors: GOM\_NL\_\_2P/MPH/PRODUCT\_ERR=0
- Valid point profile: GOM\_NL\_\_2P/NL\_LOCAL\_SPECIES\_DENSITY/pcd(0)=0

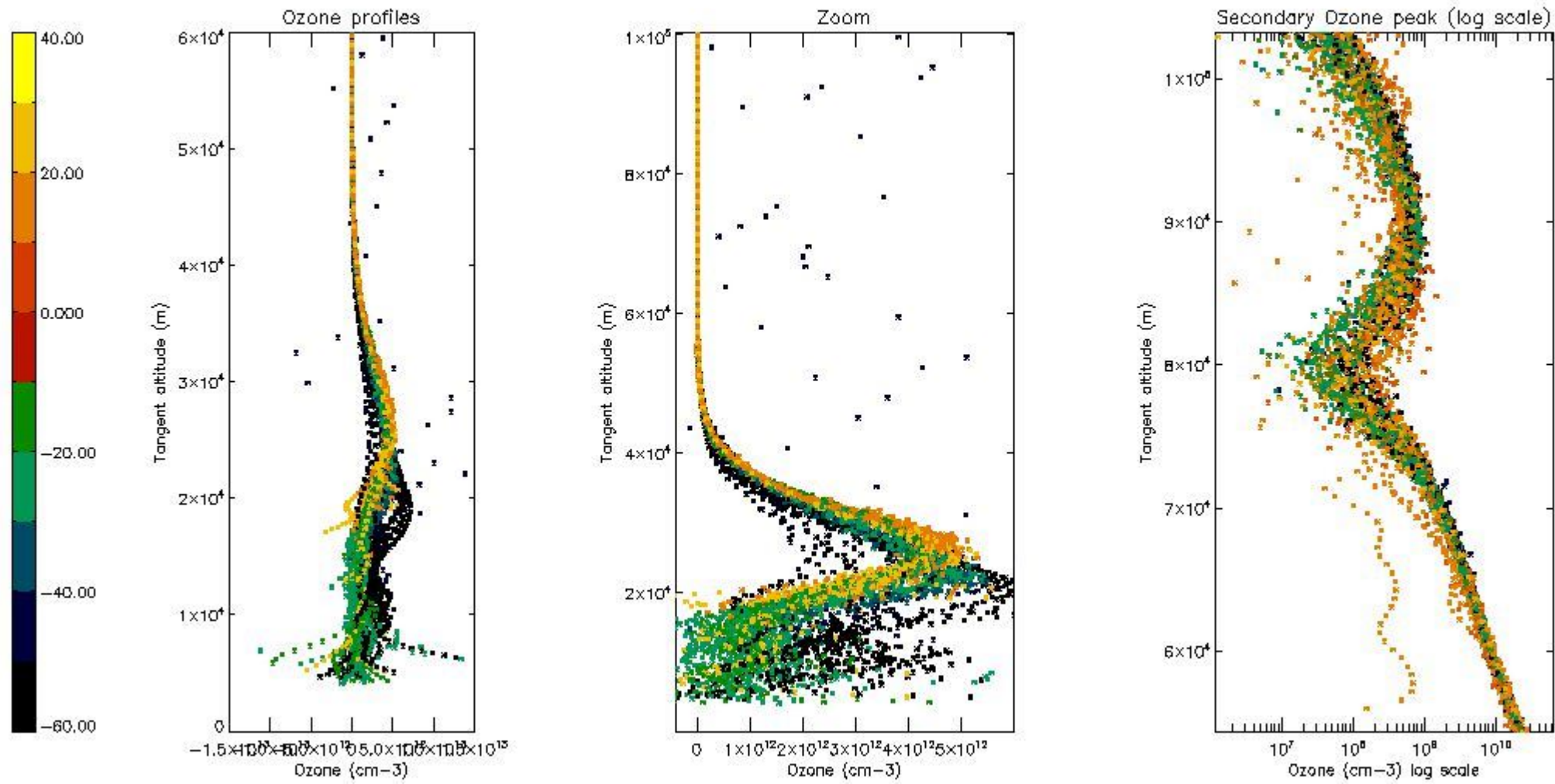
So, the table below shows the percentage of dark limb and valid observations for each criteria with respect to the overall valid daily observations.

| Criteria | % of total production |
|----------|-----------------------|
| All STD  | 41                    |
| STD < 20 | 23                    |

|          |    |
|----------|----|
| STD < 10 | 20 |
| STD < 5  | 15 |

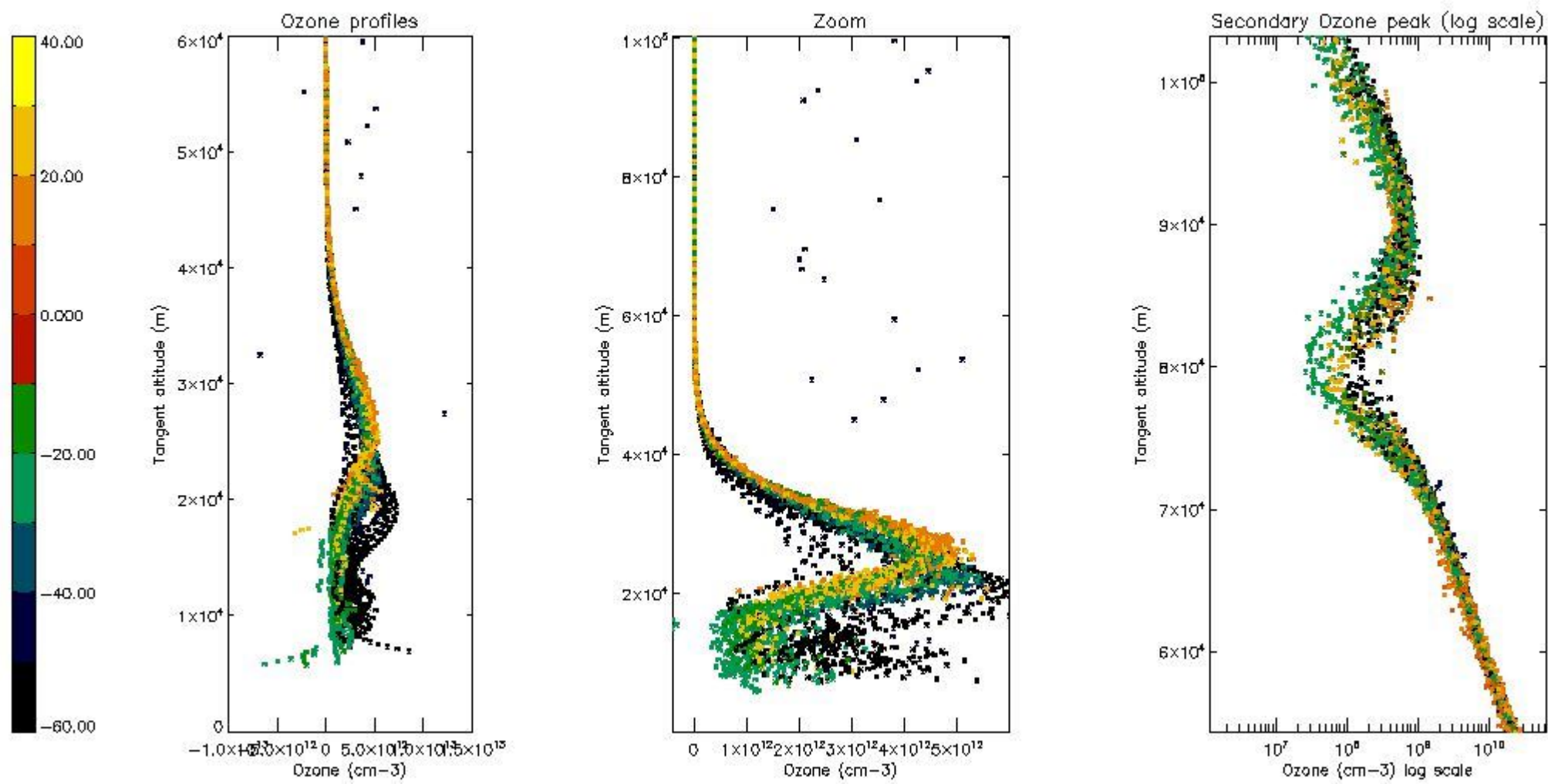
5.2 Plot ozone profiles for all STD (dark without errors)

The colorbar represents the latitude.



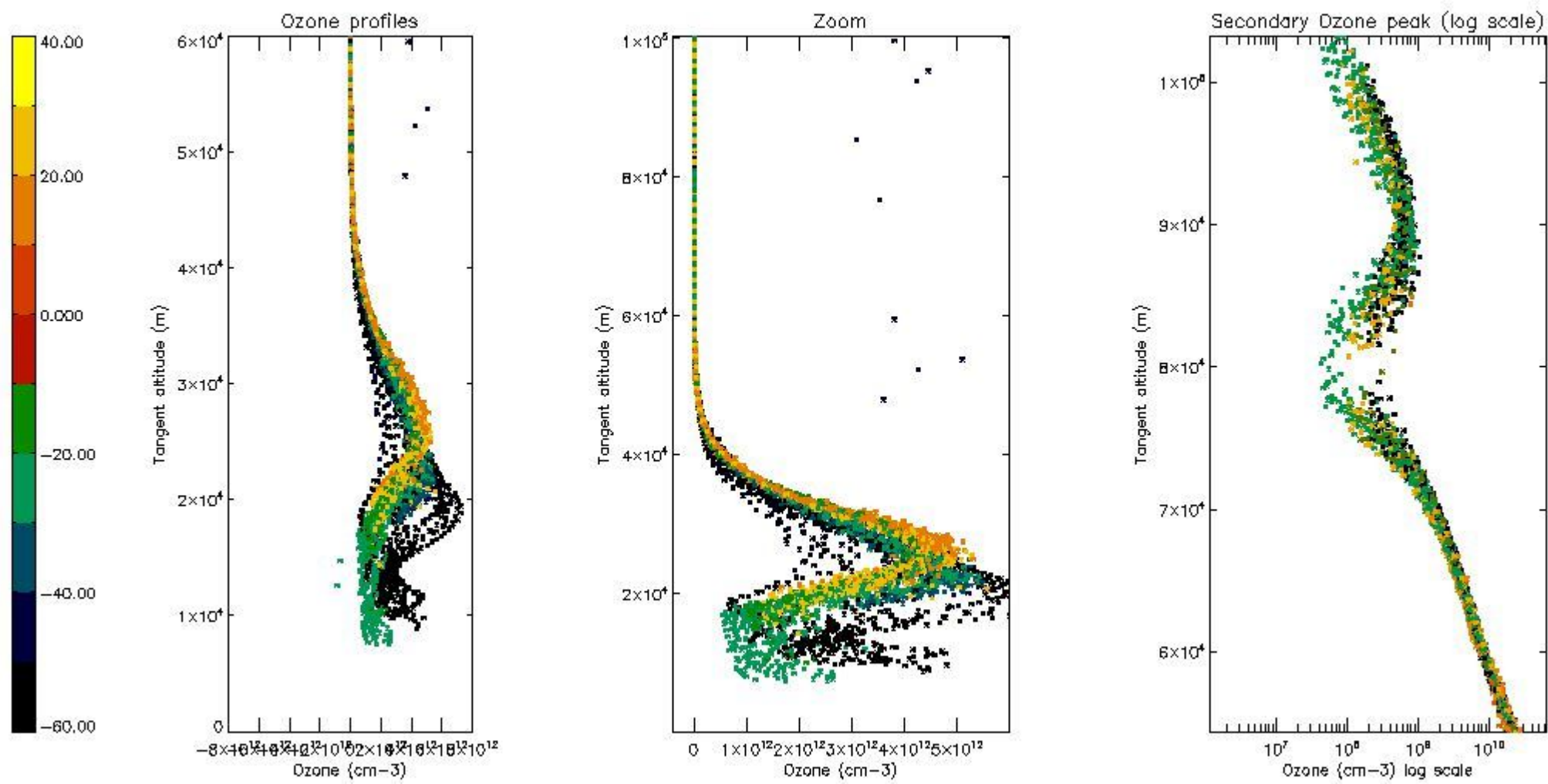
5.3 Plot ozone profiles where STD < 20% (dark without errors)

The colorbar represents the latitude.



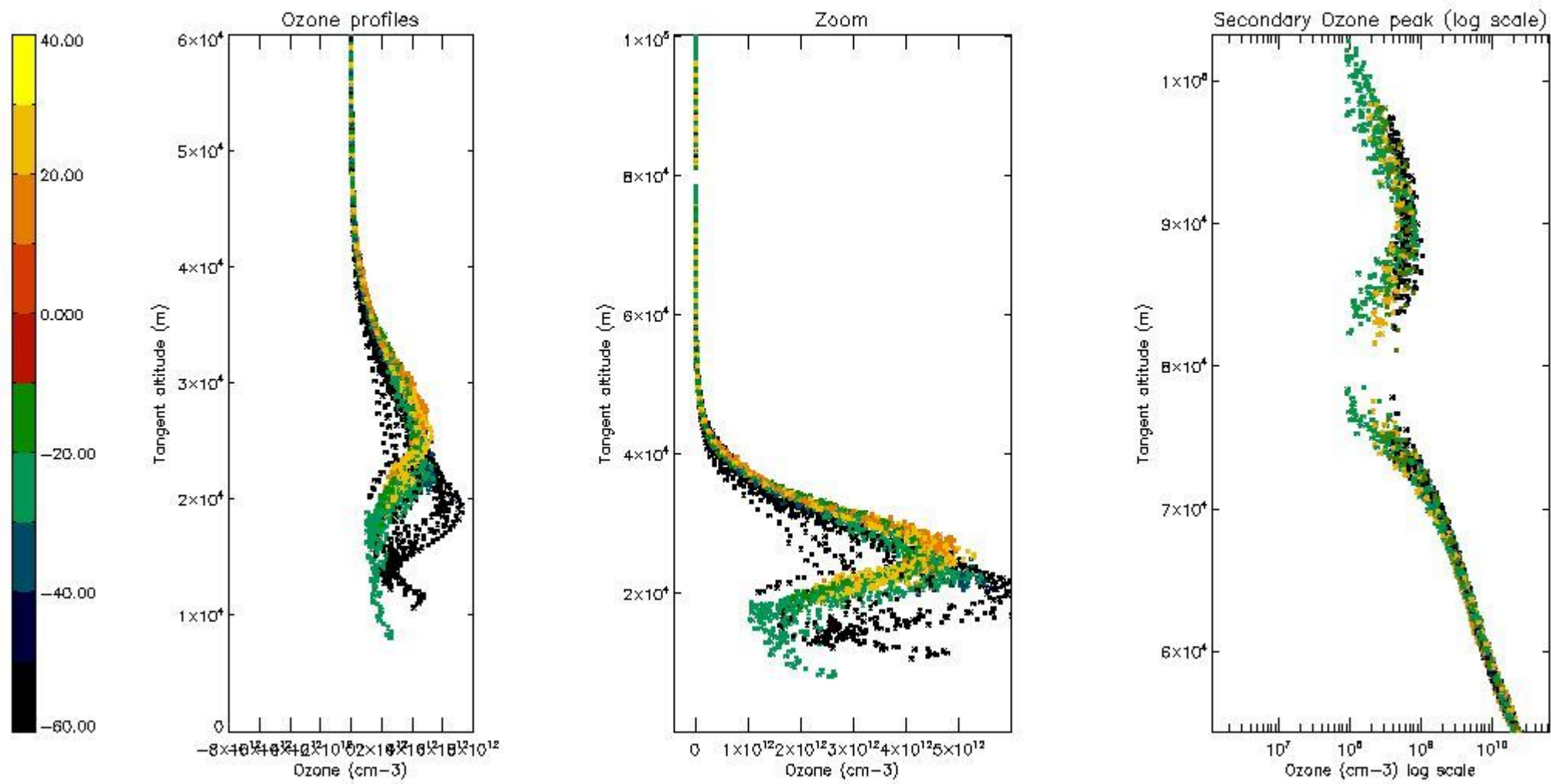
*5.4 Plot ozone profiles where STD < 10% (dark without errors)*

The colorbar represents the latitude.



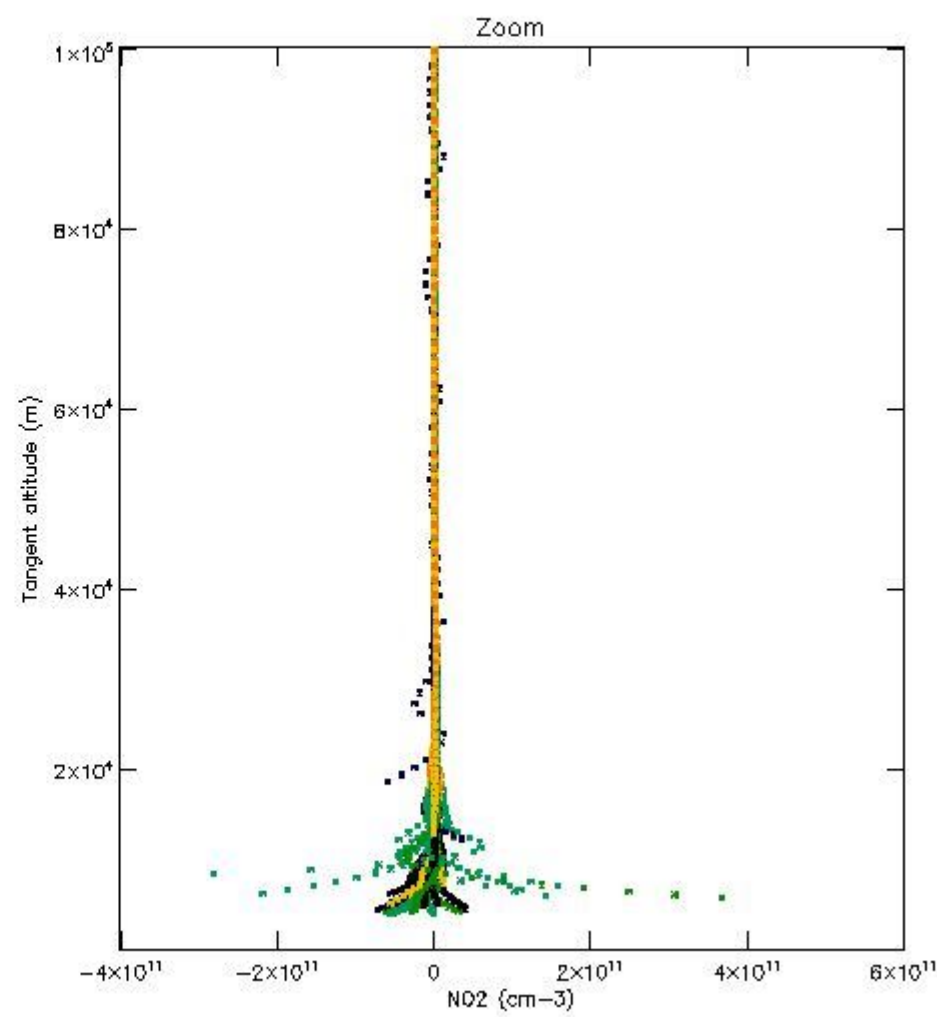
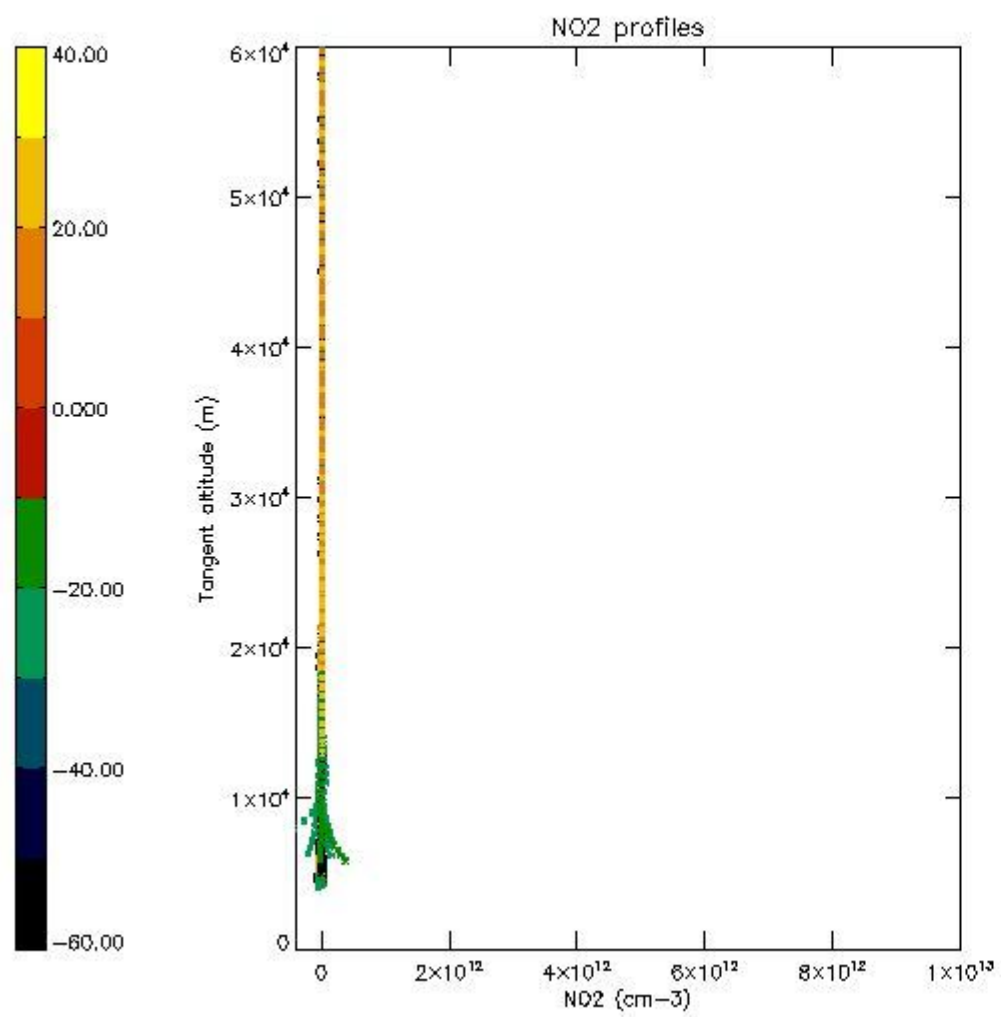
*5.5 Plot ozone profiles where STD < 5% (dark without errors)*

The colorbar represents the latitude.



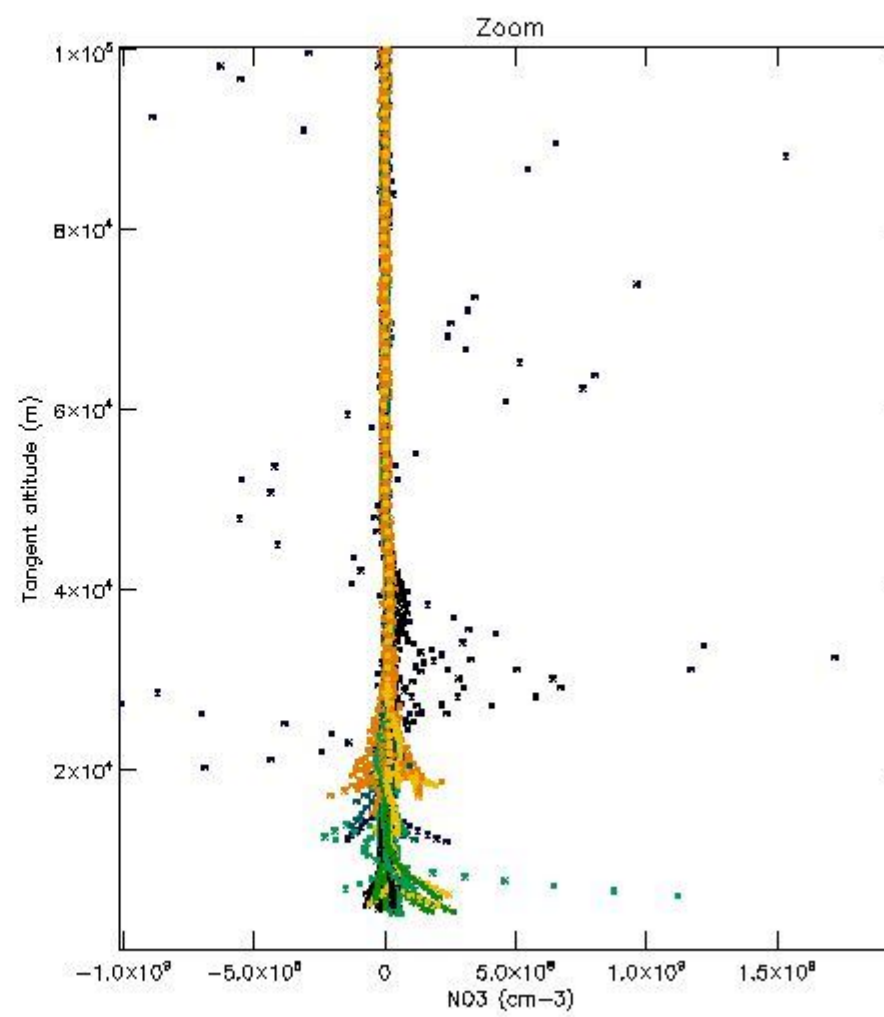
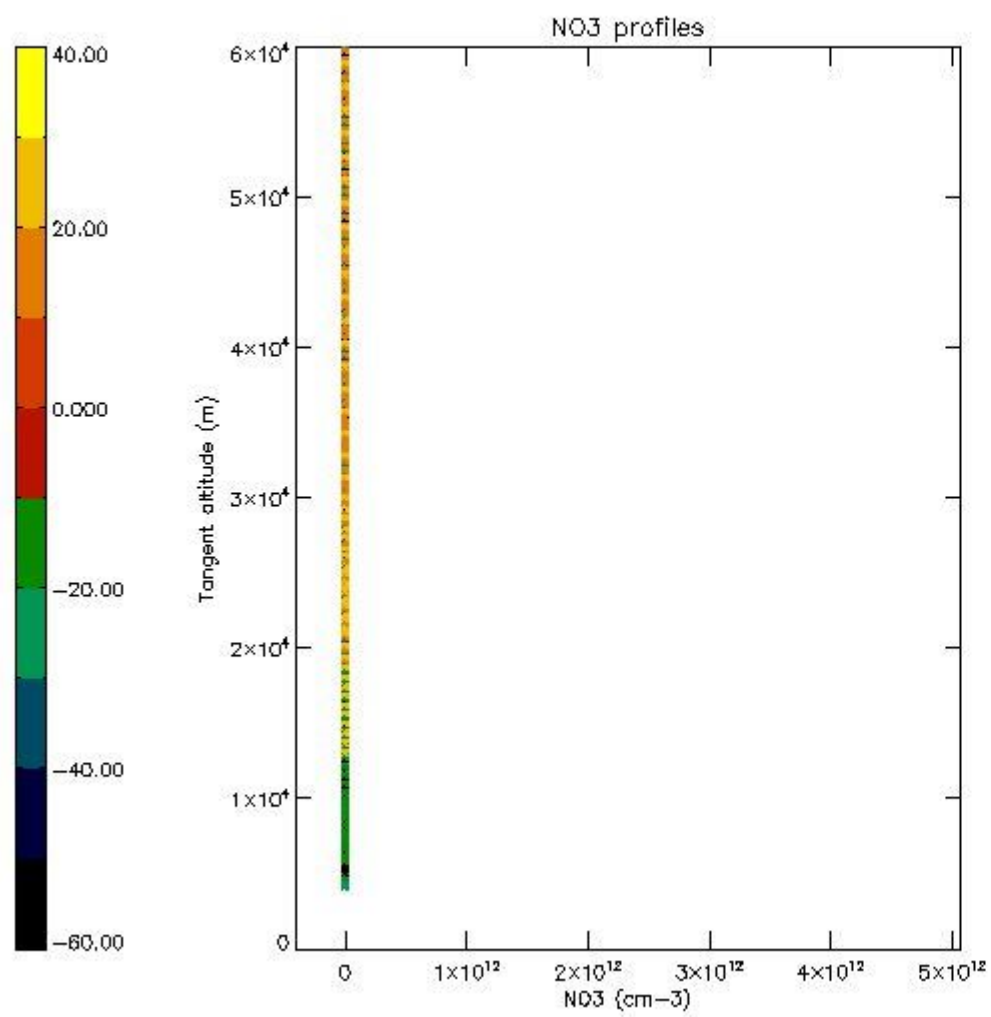
*5.6 Plot NO<sub>2</sub> profiles for all STD (dark without errors)*

The colorbar represents the latitude.



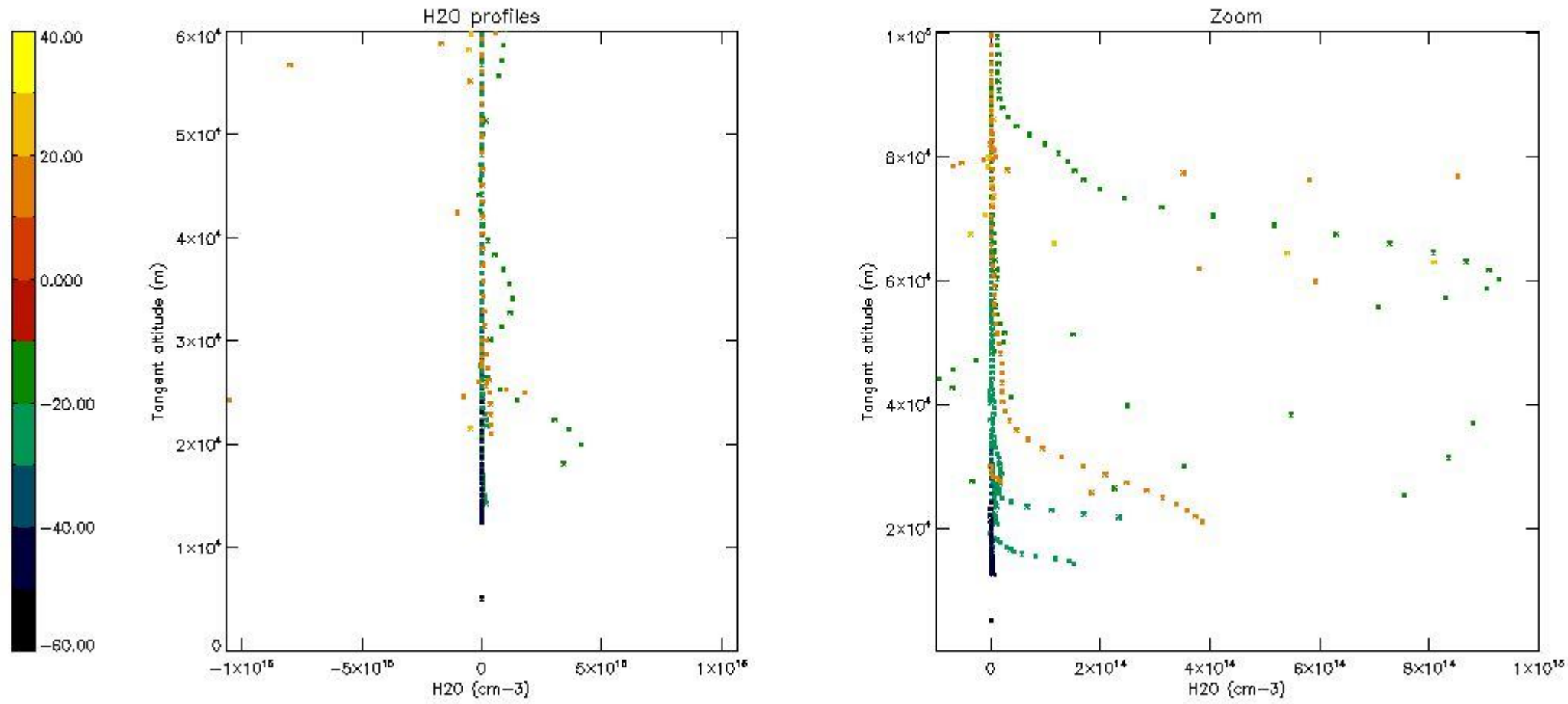
*5.7 Plot NO3 profiles for all STD (dark without errors)*

The colorbar represents the latitude.



*5.8 Plot H2O profiles for all STD (only for occultations of stars 1,2,3,4,13,14,16,26,63 dark without errors)*

The colorbar represents the latitude.

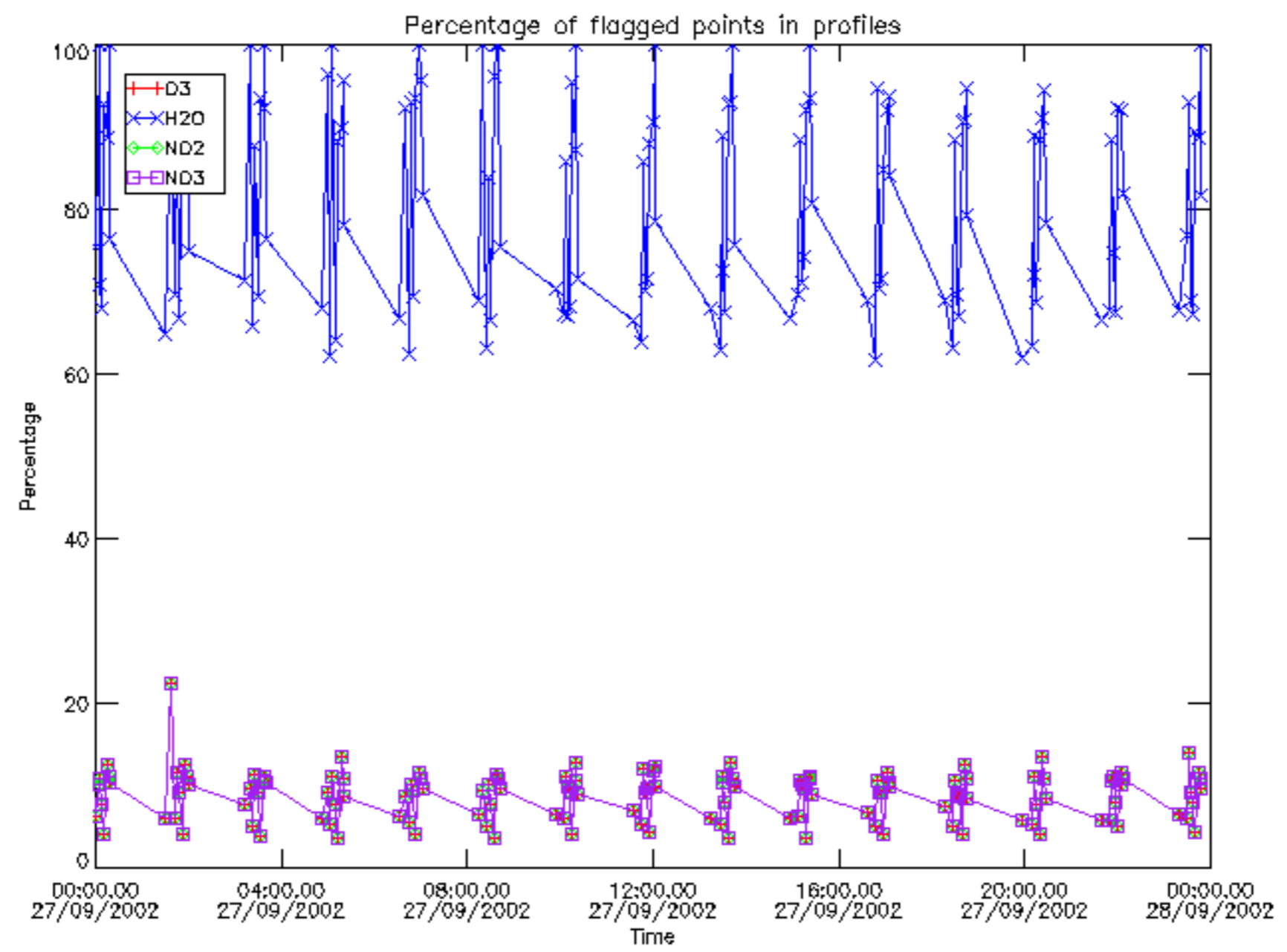


## 6. Auxiliary Data Files used for the production reported in section 2

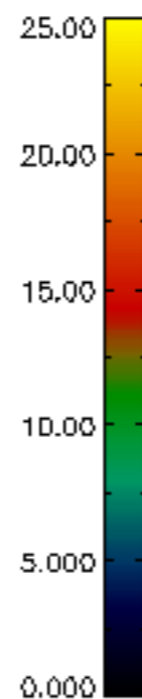
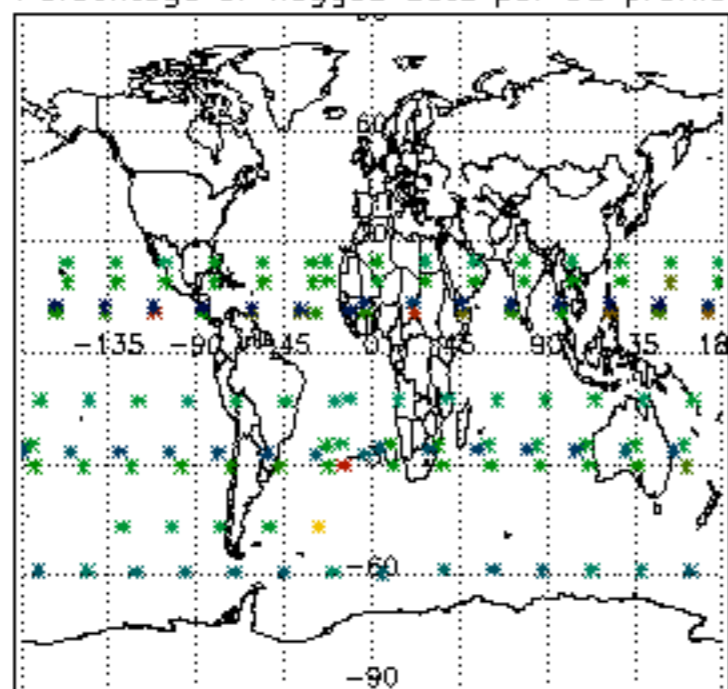
The number reported in the third column indicates since which file (see list in section 2) the corresponding auxiliary file has been used. The fourth column is the date of those product files.

| Type                      | Auxiliary Filename  | Used since product | Used since product date |
|---------------------------|---|--------------------|-------------------------|
| INST_PHYS_CHARACTERISTICS | GOM_INS_AXNIEC20050627_150440_20020301_000000_20100101_000000 | 1                  | 27-SEP-2002 00:01:06    |
| LEVEL-2_PROC_CONFIG       | GOM_PR2_AXVIEC20091111_152718_20020301_000000_20500101_000000 | 1                  | 27-SEP-2002 00:01:06    |
| CROSS_SECTIONS_FILE       | GOM_CRS_AXVIEC20091111_154832_20020301_000000_20500101_000000 | 1                  | 27-SEP-2002 00:01:06    |

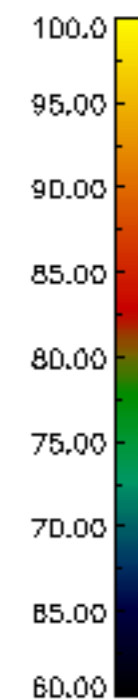
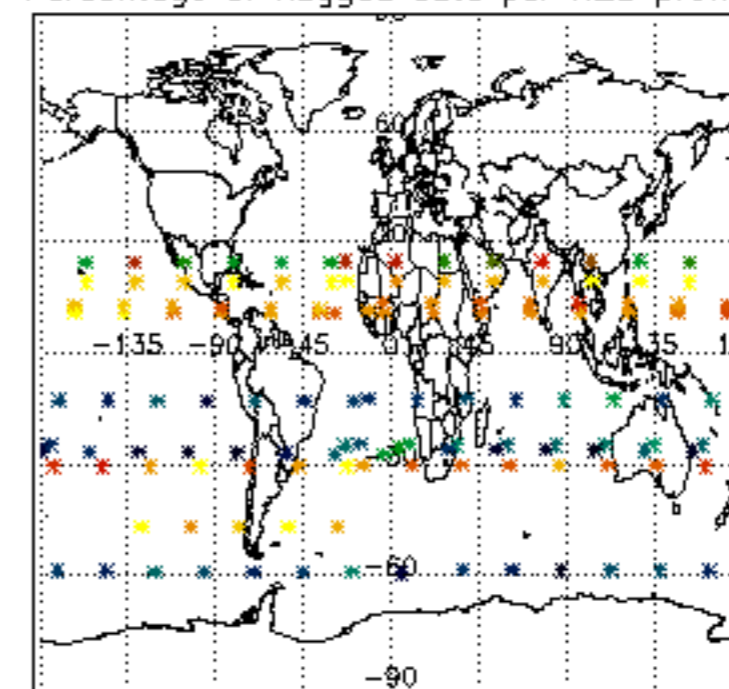




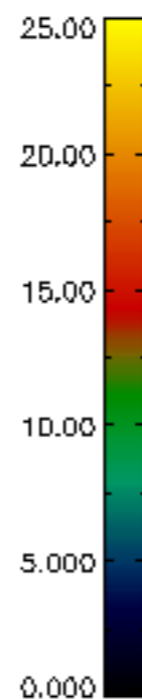
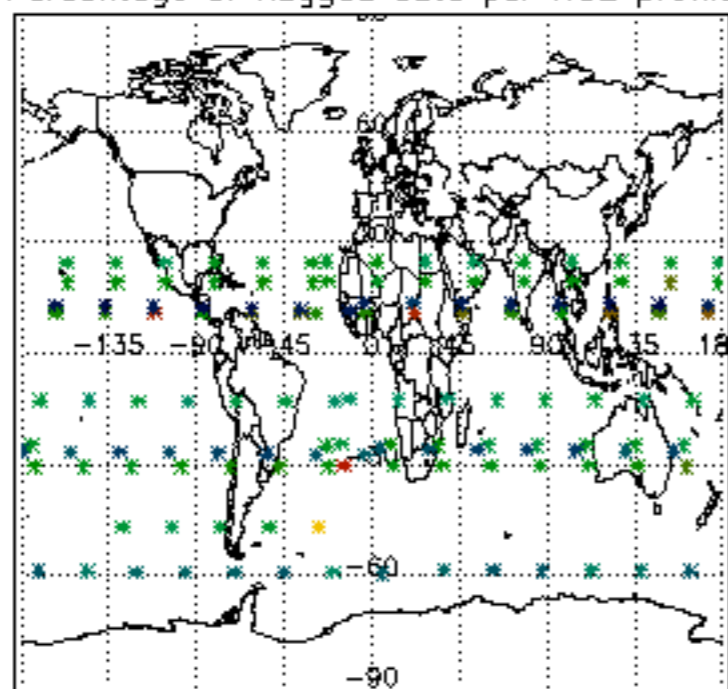
Percentage of flagged data per D3 profile



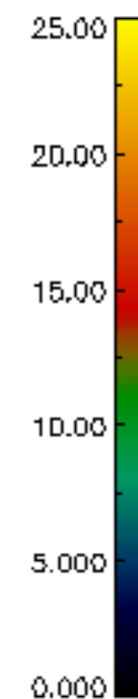
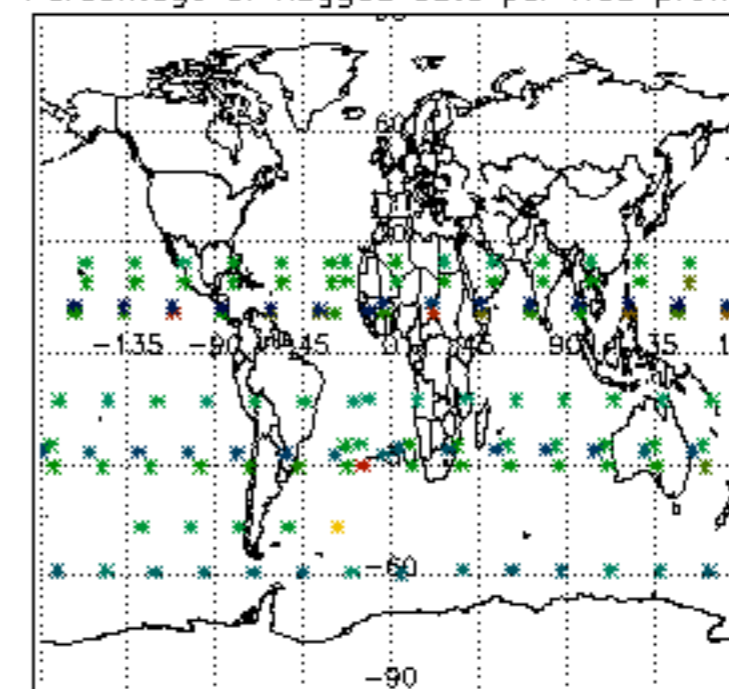
Percentage of flagged data per H2O profile

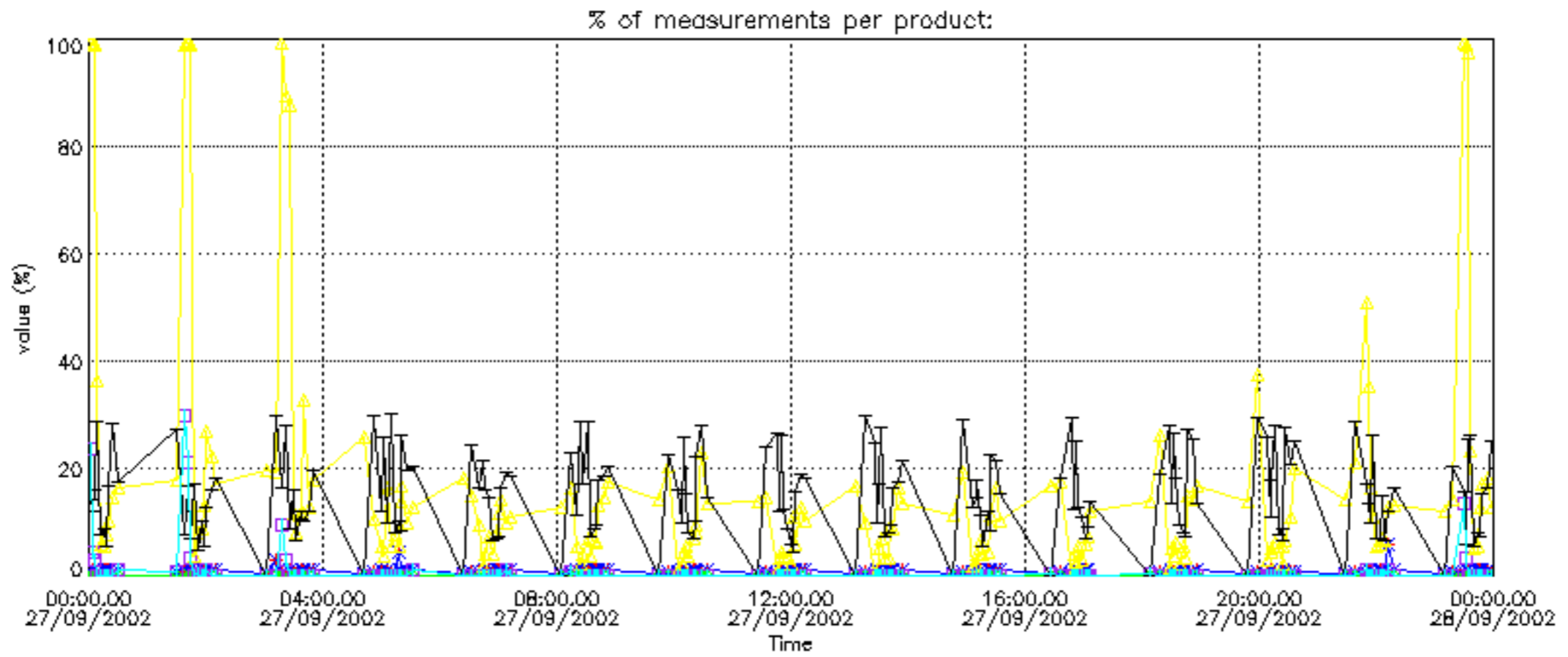


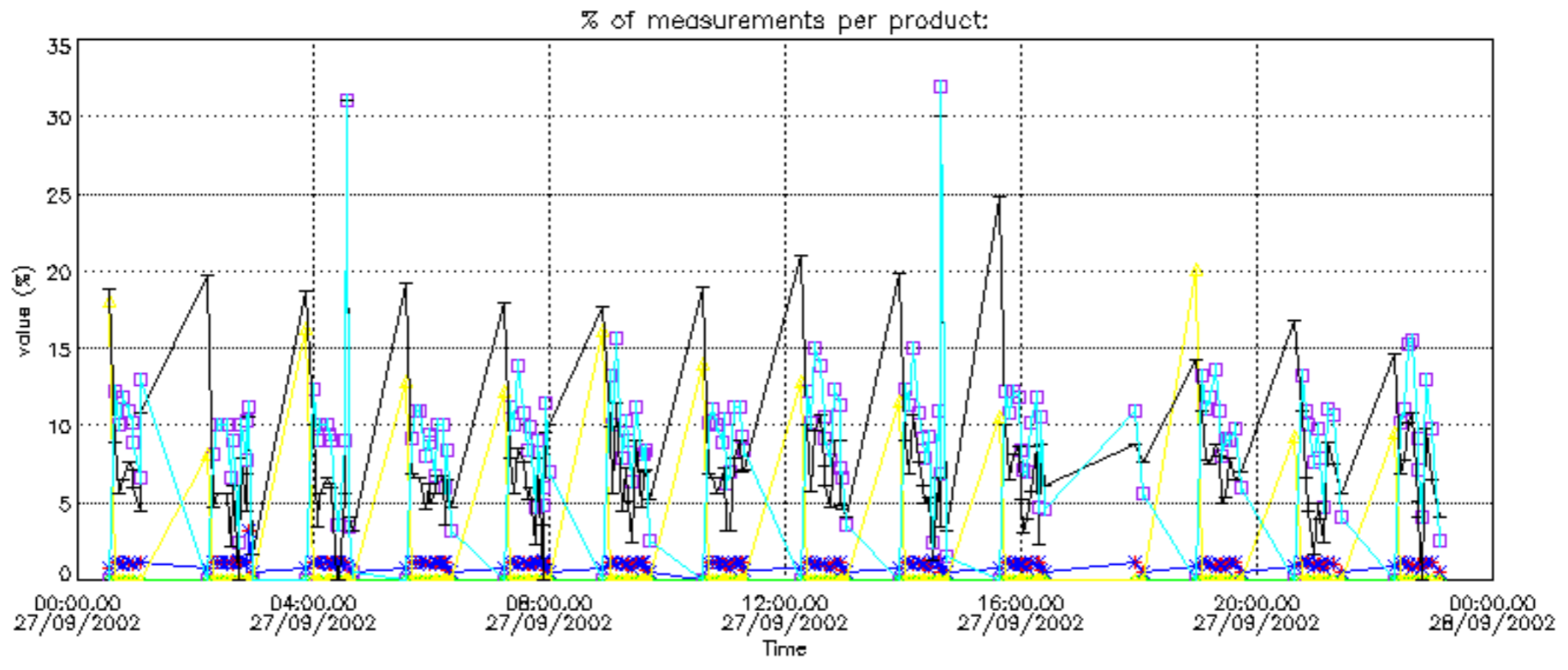
Percentage of flagged data per NO2 profile



Percentage of flagged data per NO3 profile

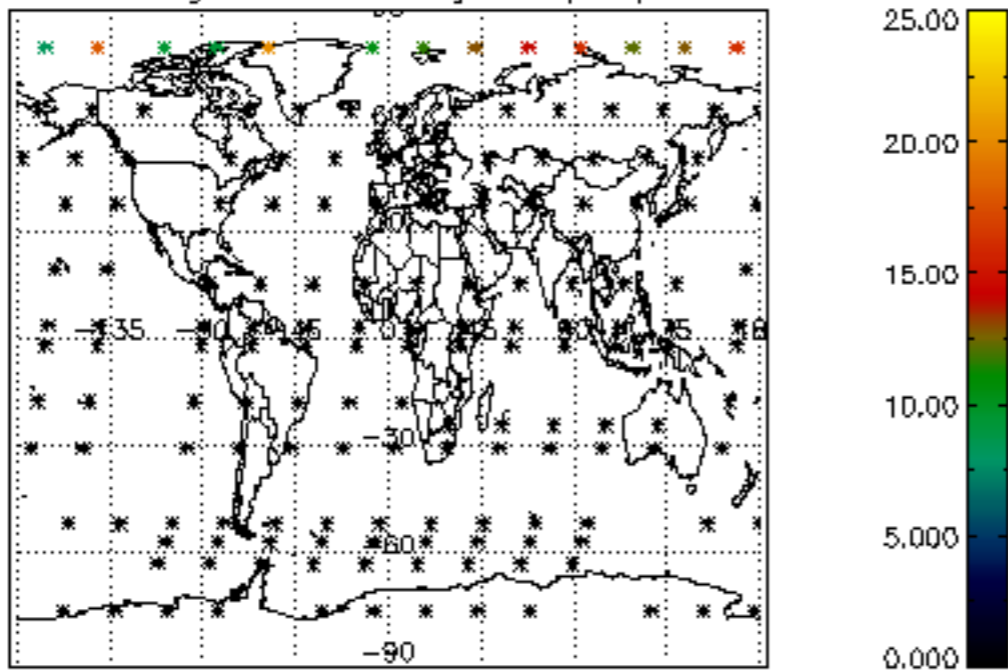




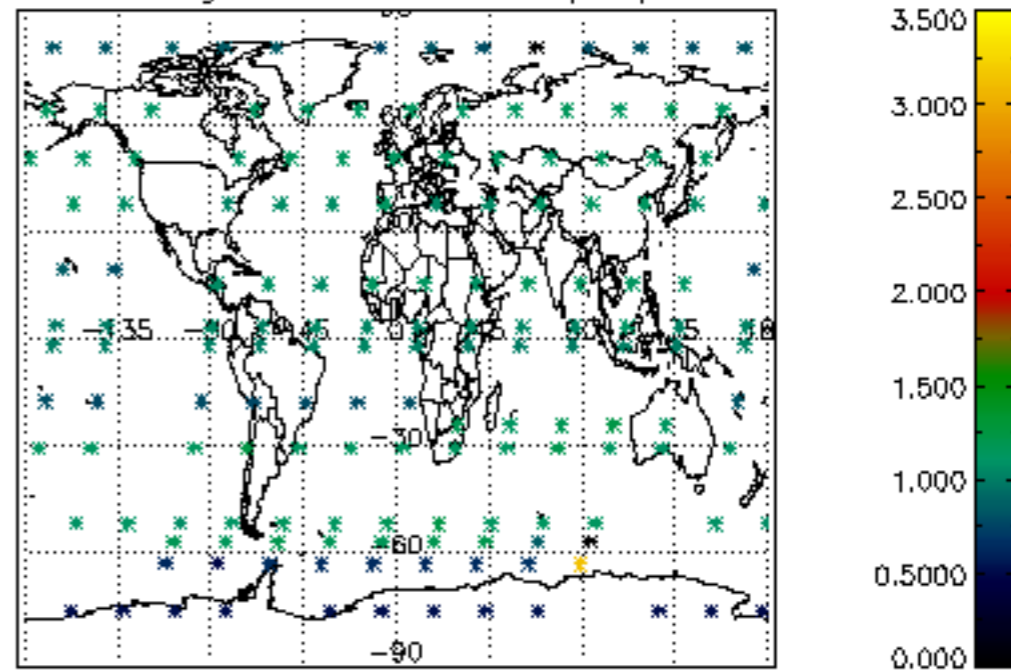




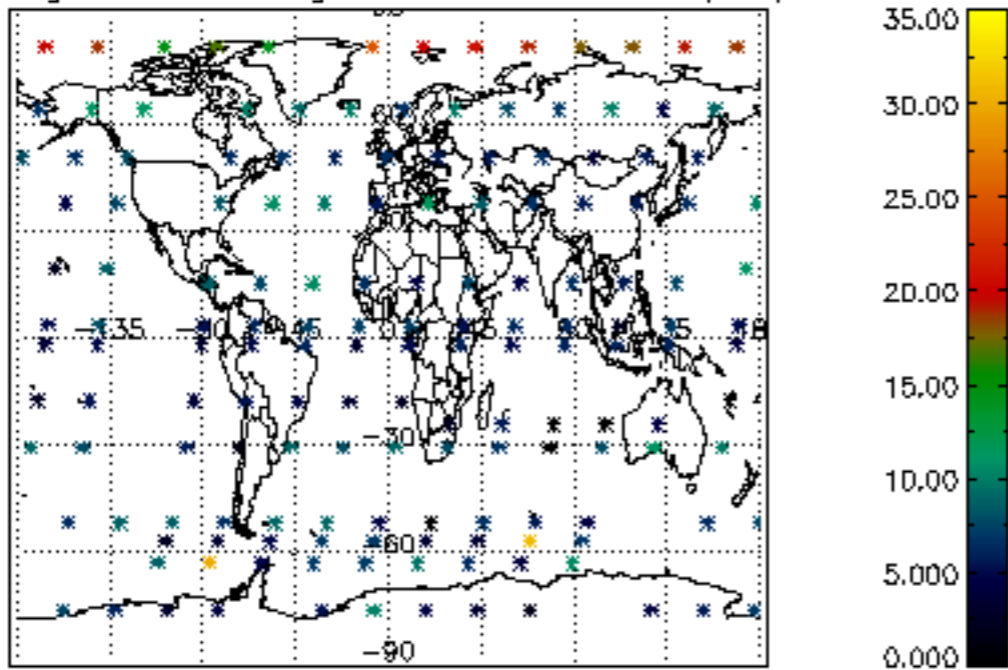
Percentage of cosmic ray hits per profile



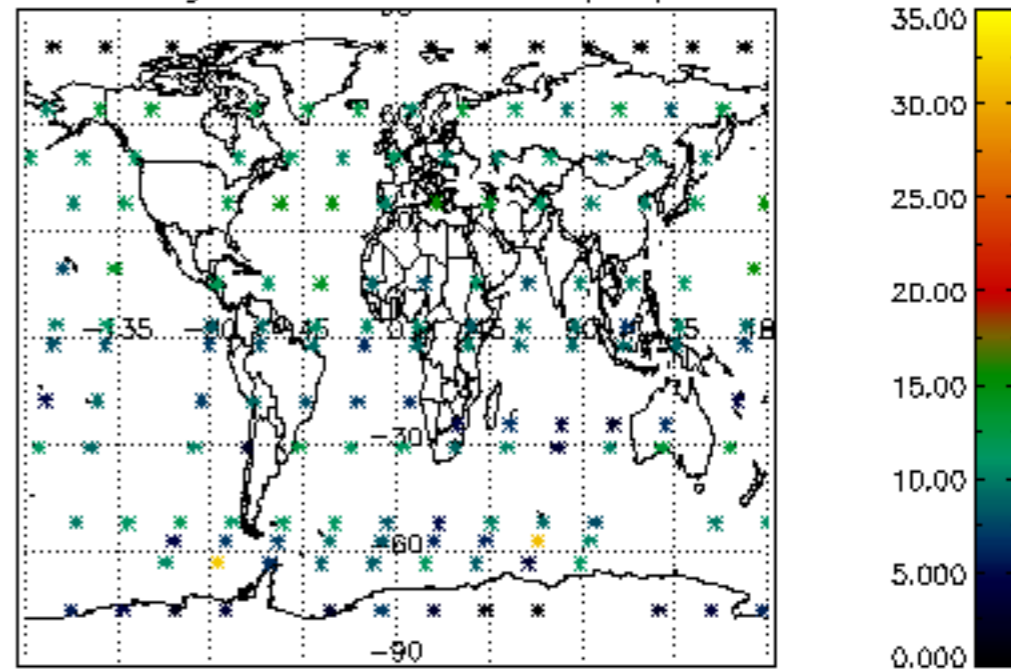
Percentage of datation errors per profile

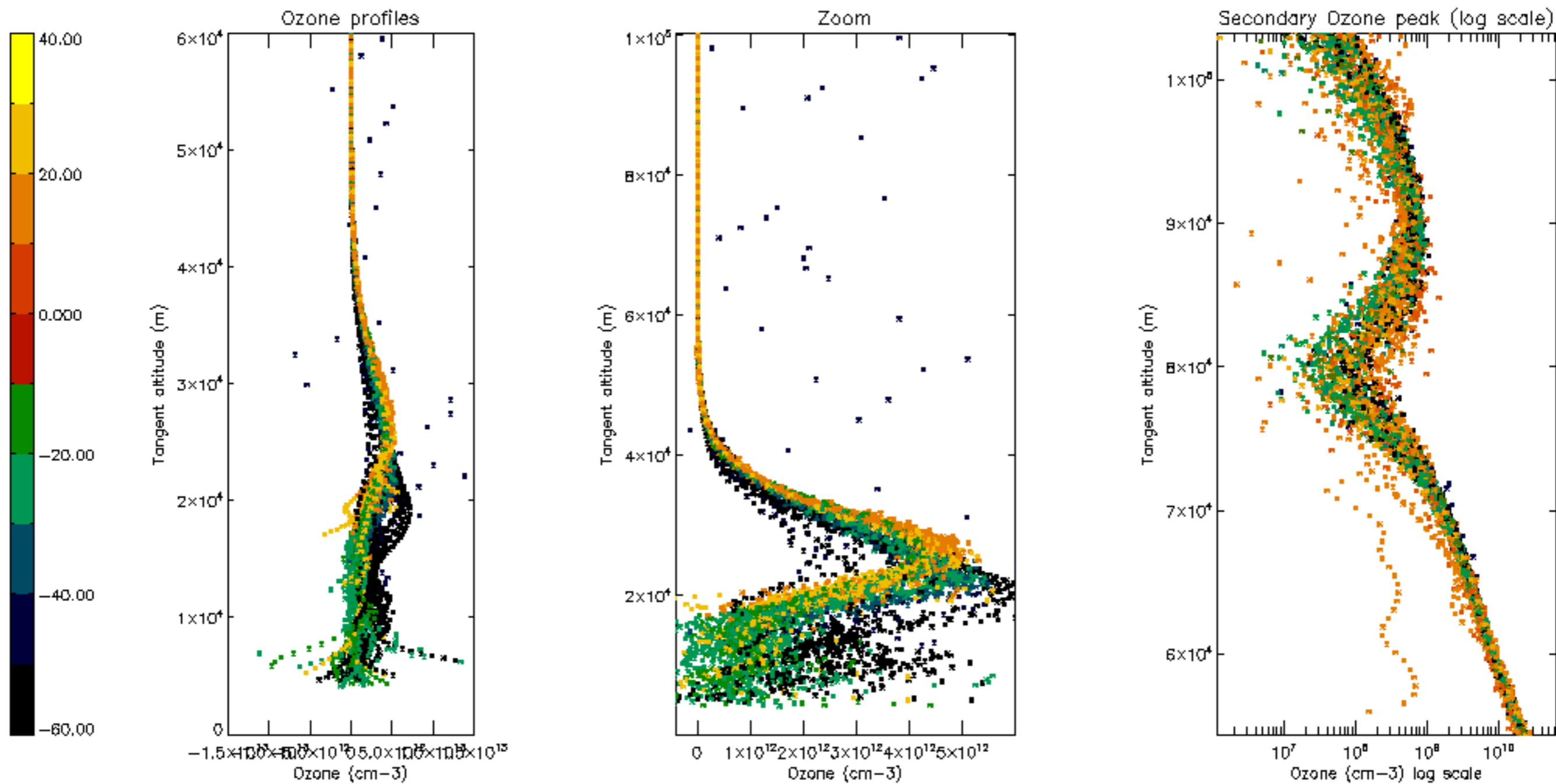


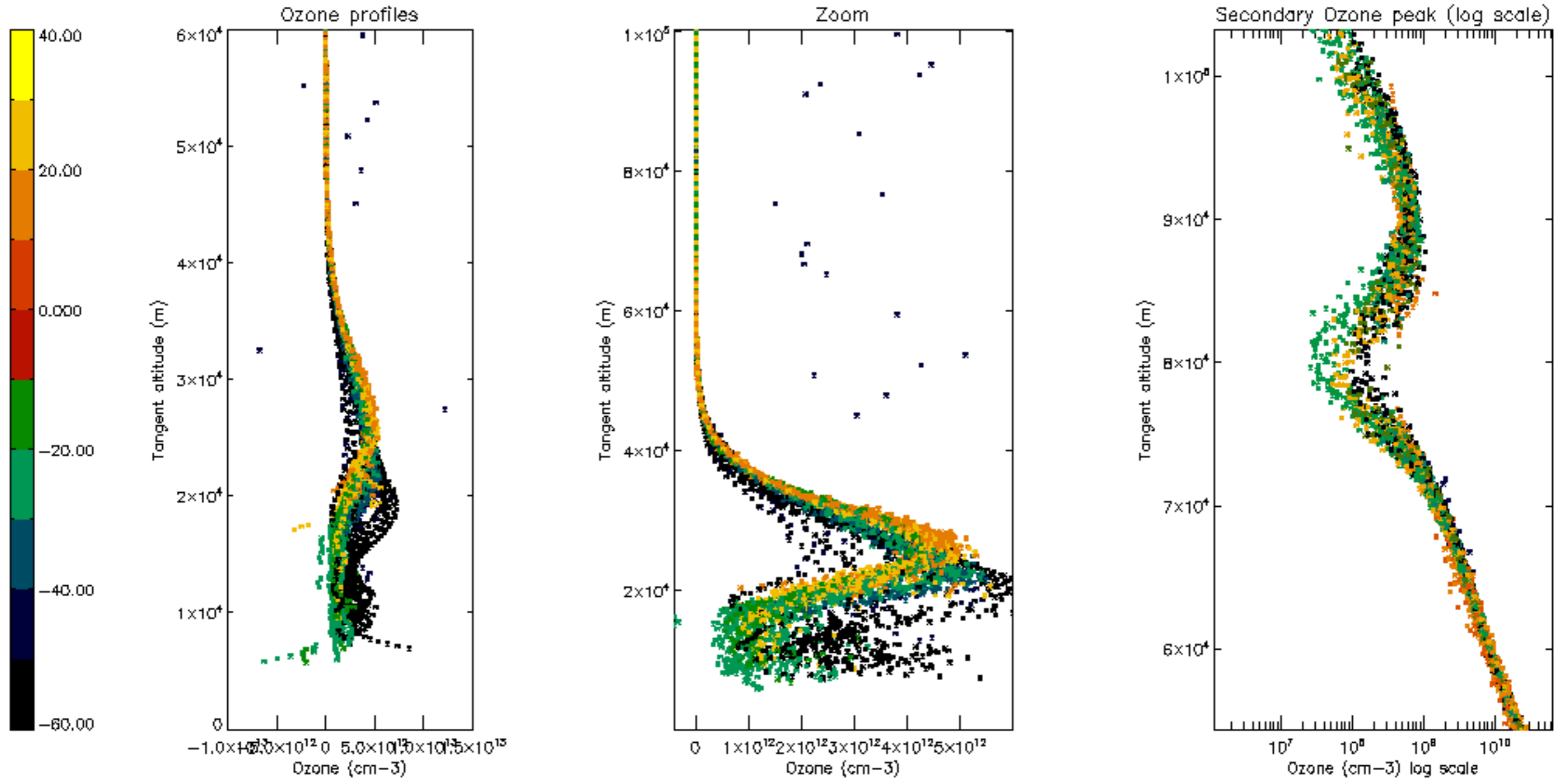
Percentage of star falling outside central band per profile



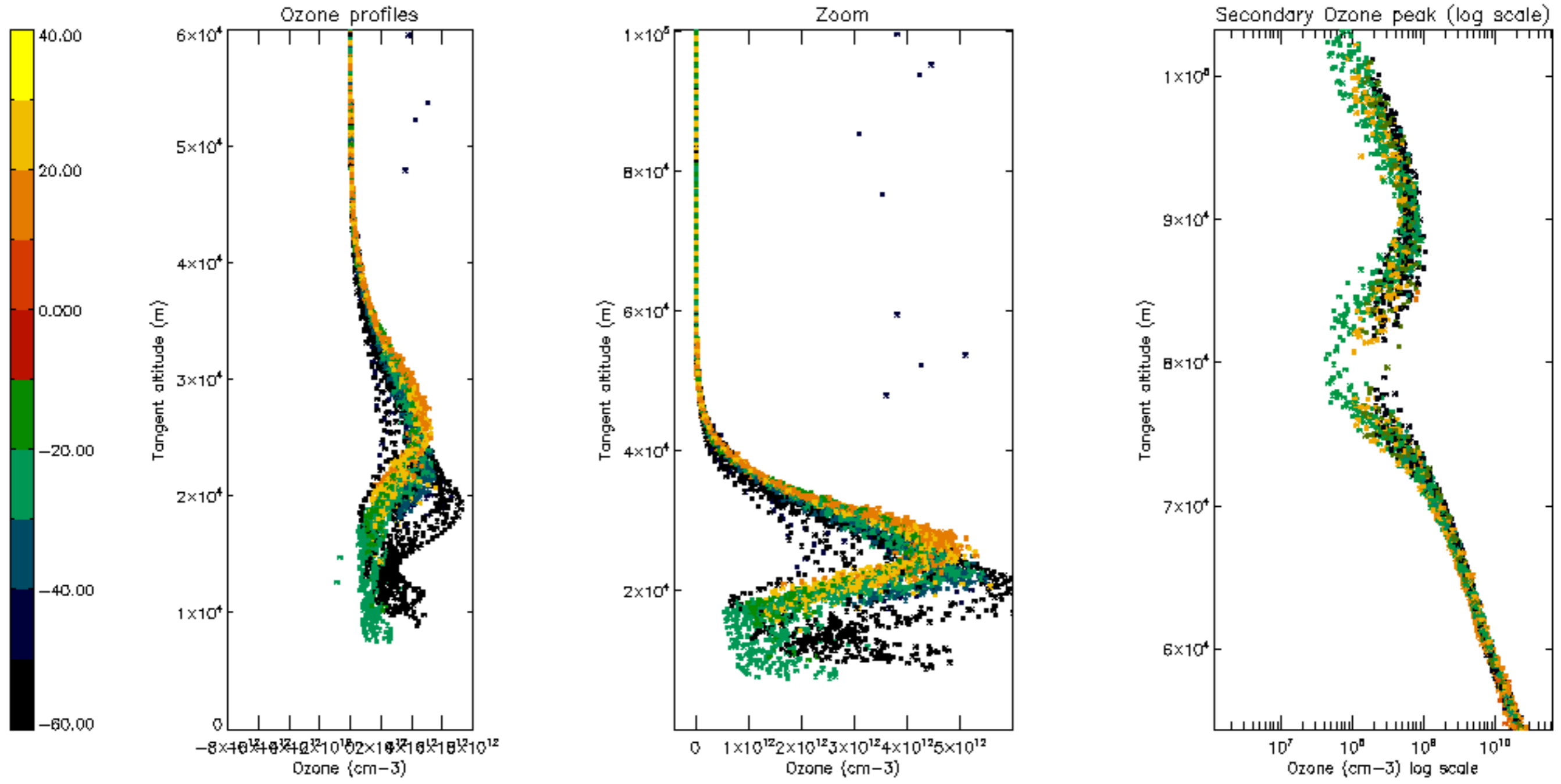
Percentage of saturation errors per profile

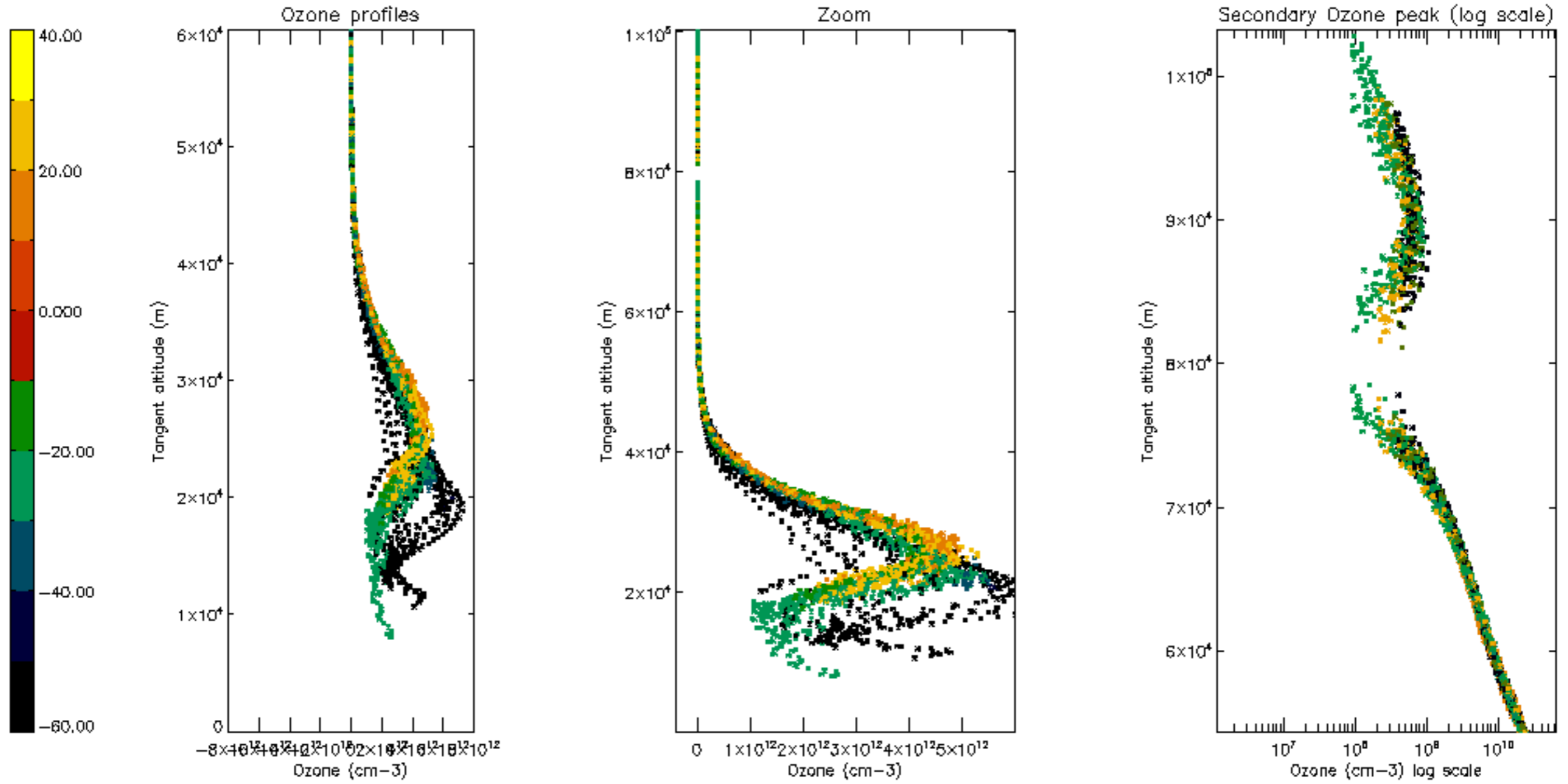


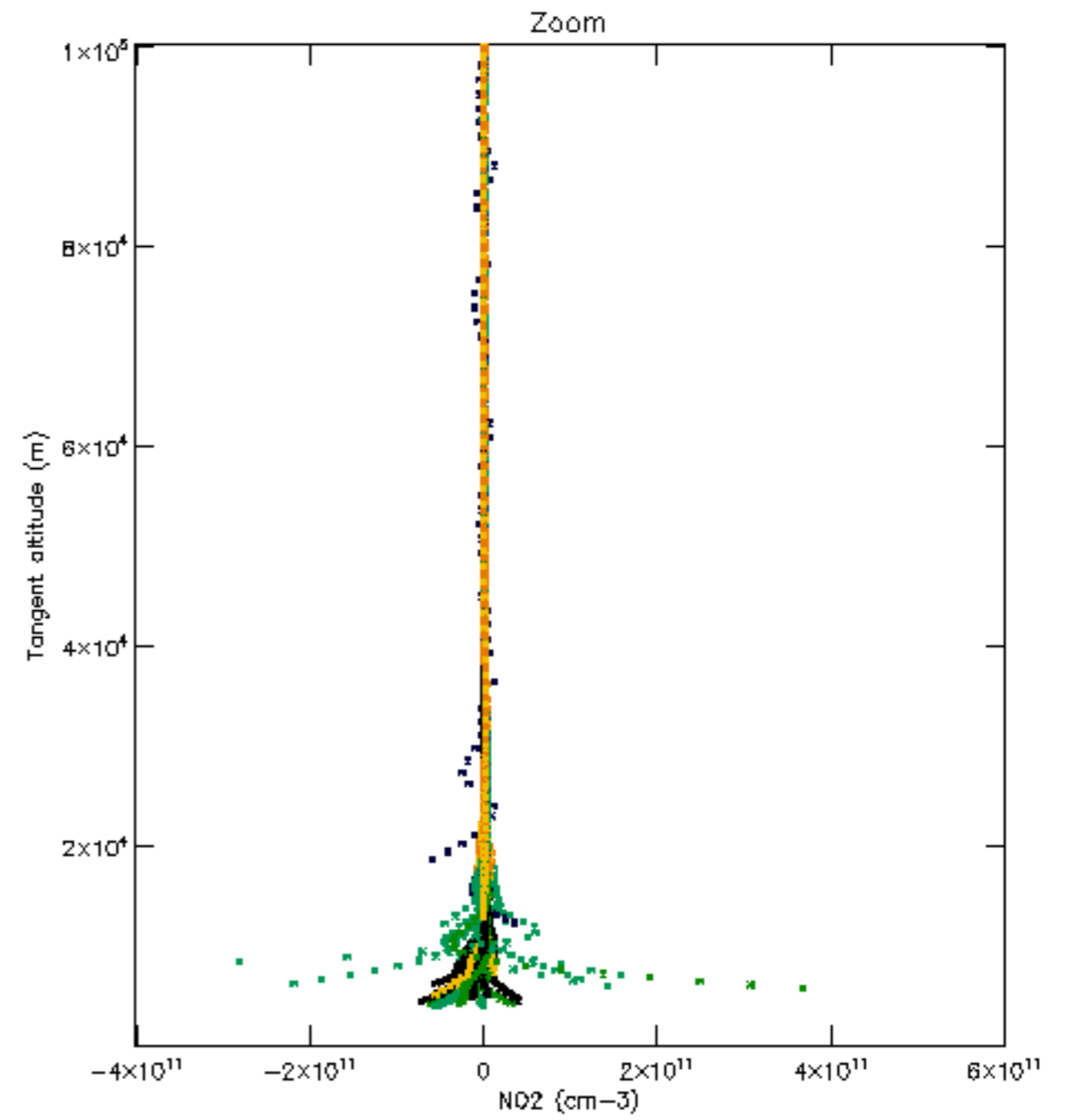
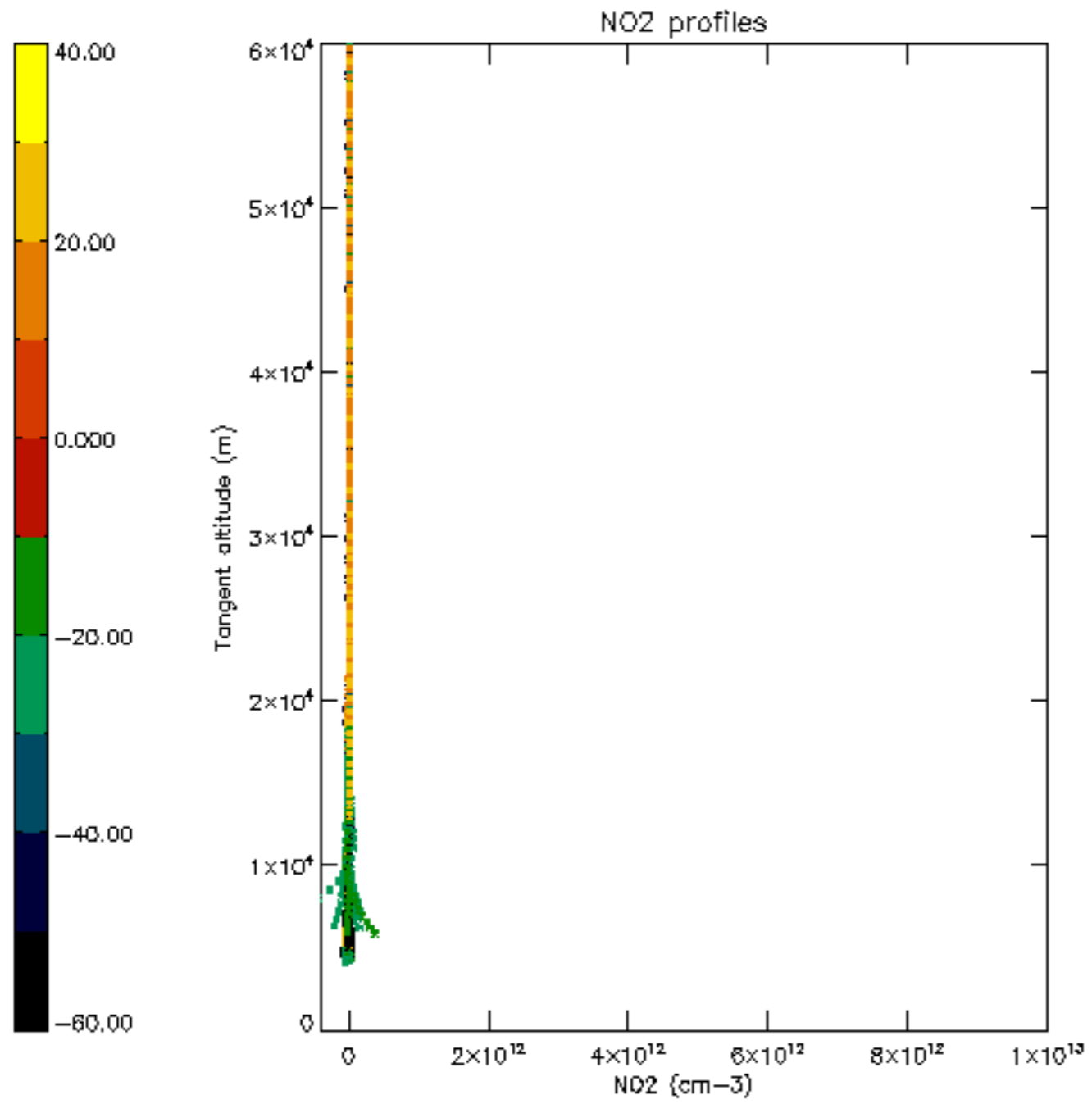


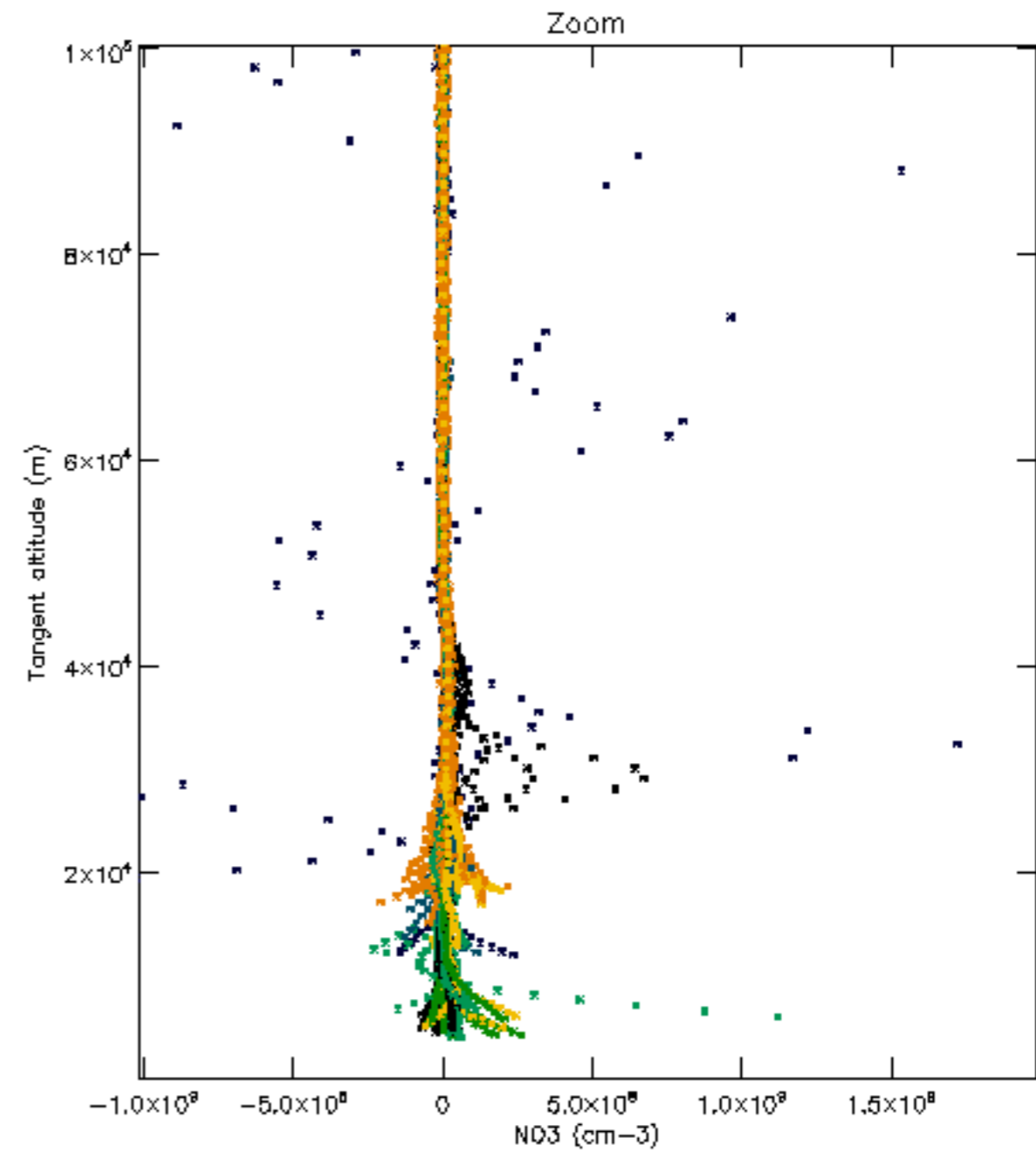
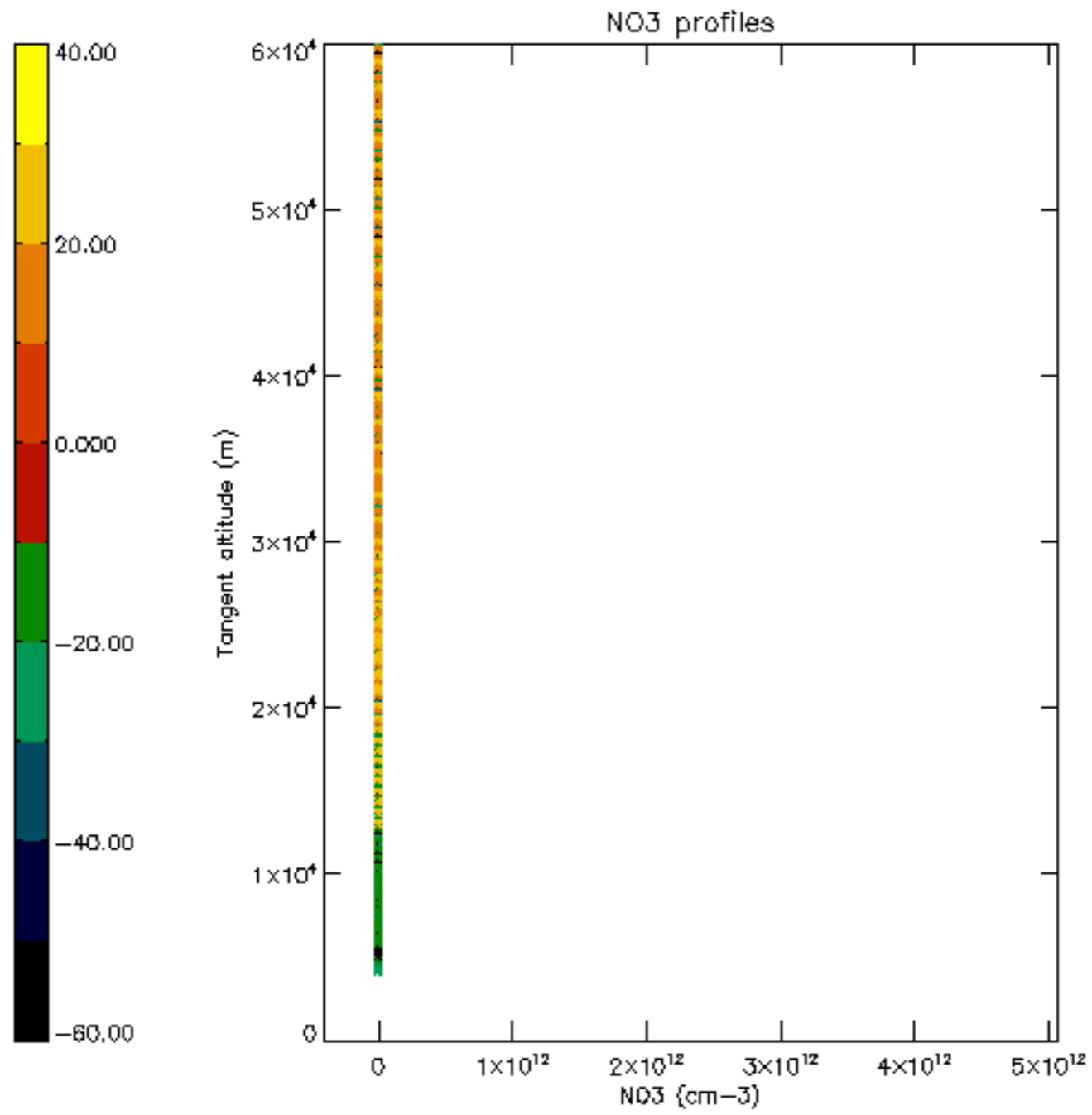


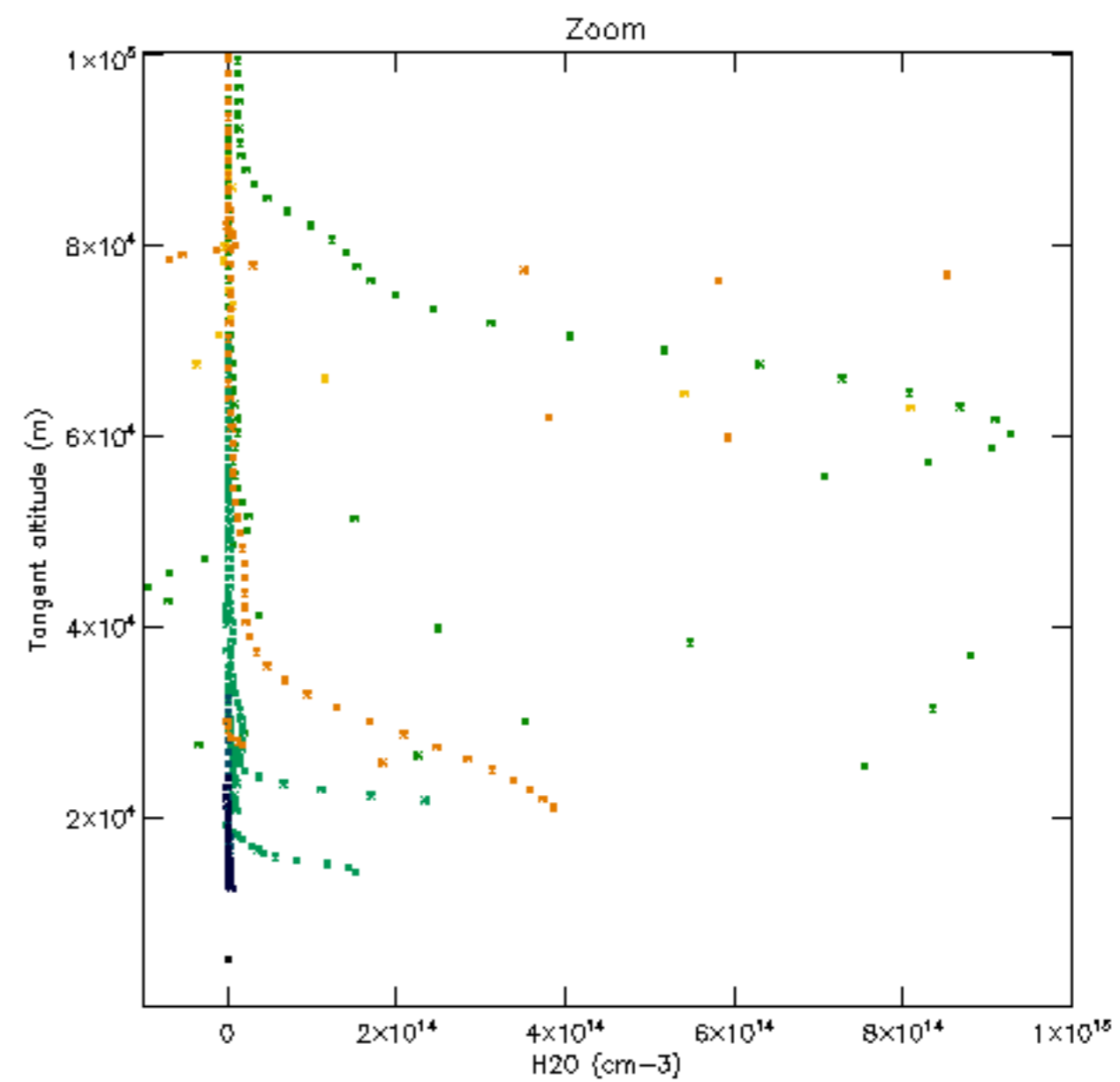
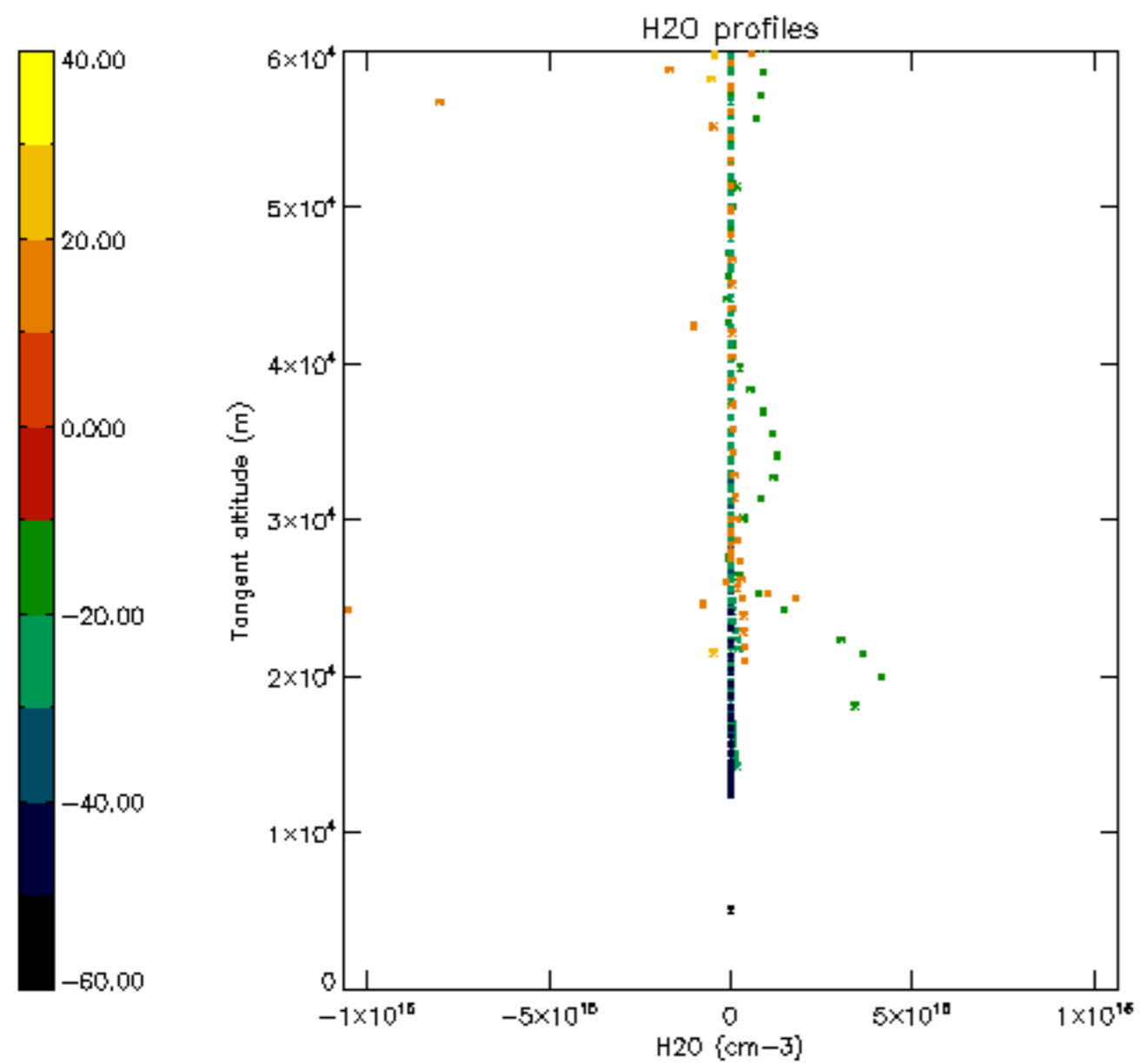


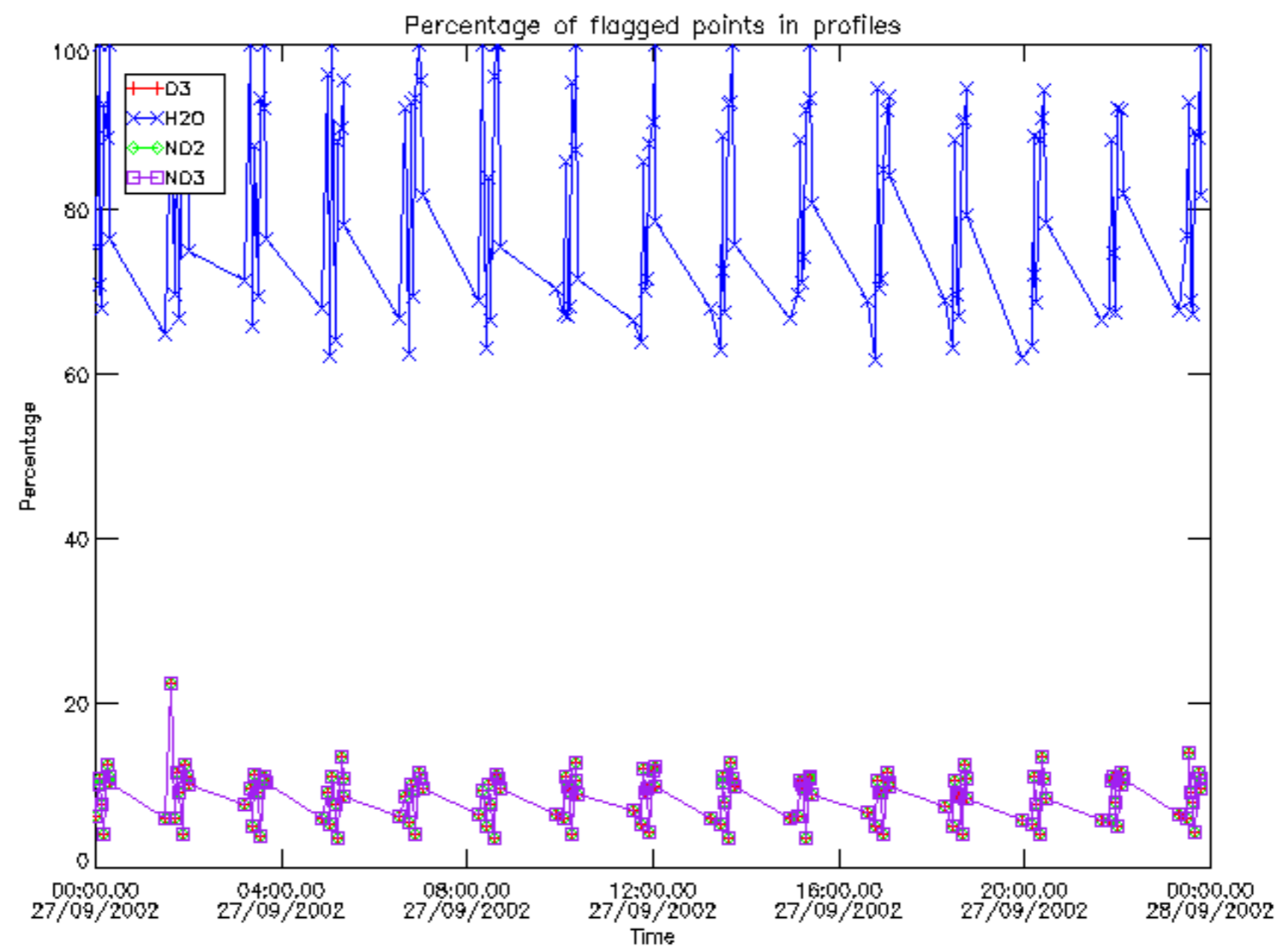




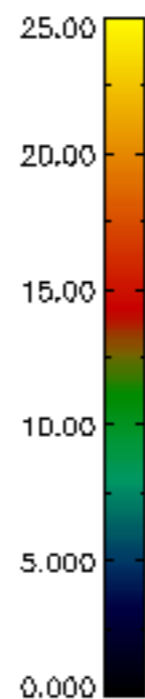
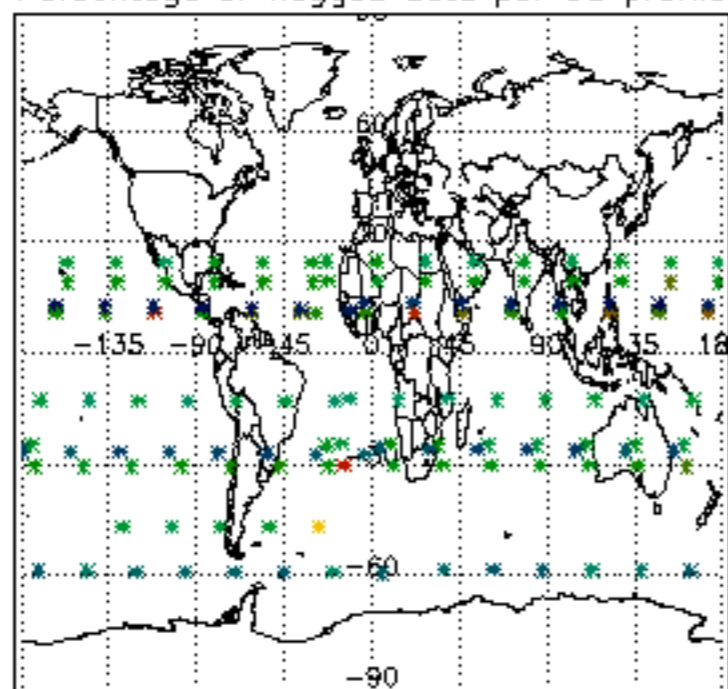




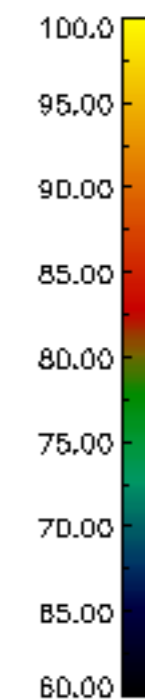
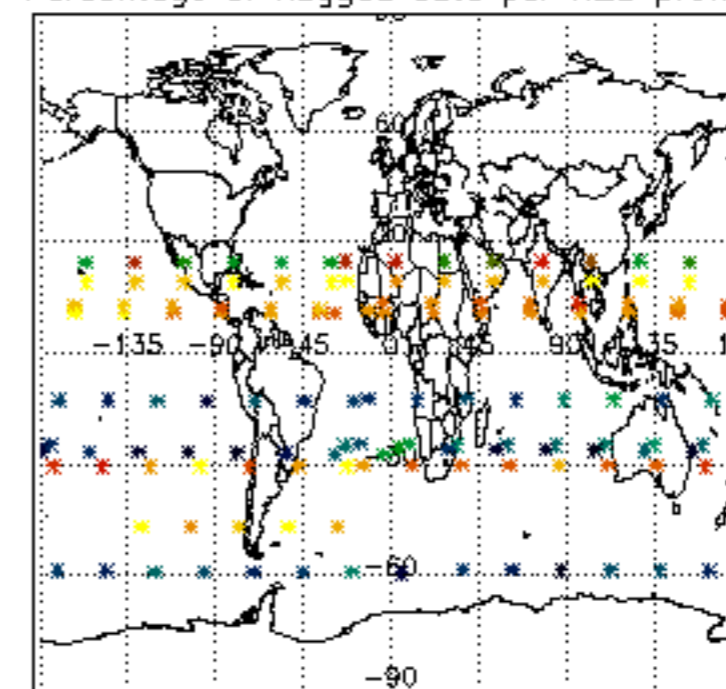




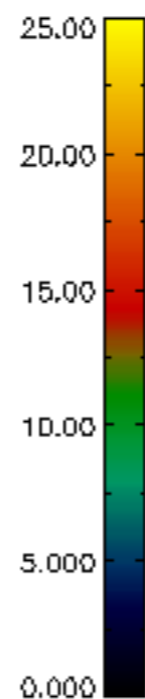
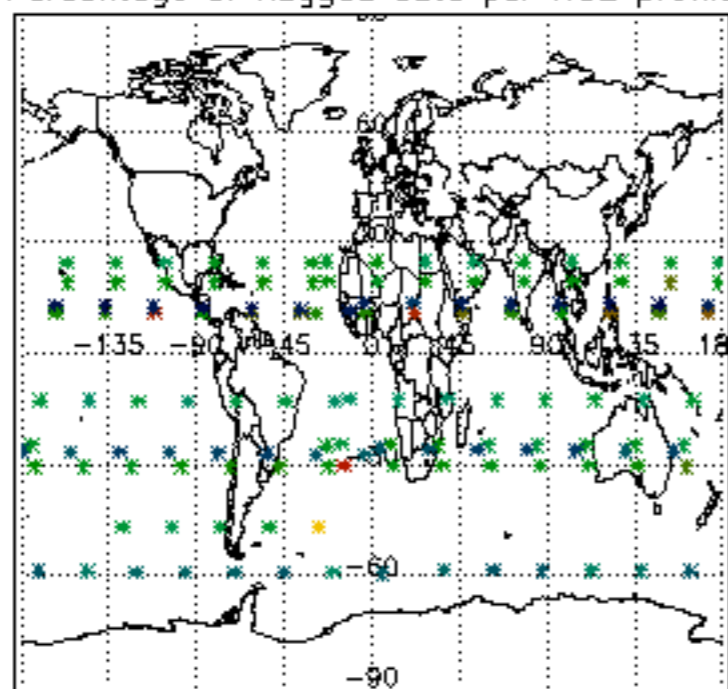
Percentage of flagged data per D3 profile



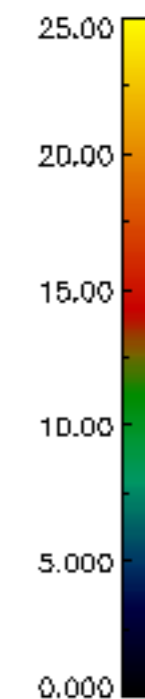
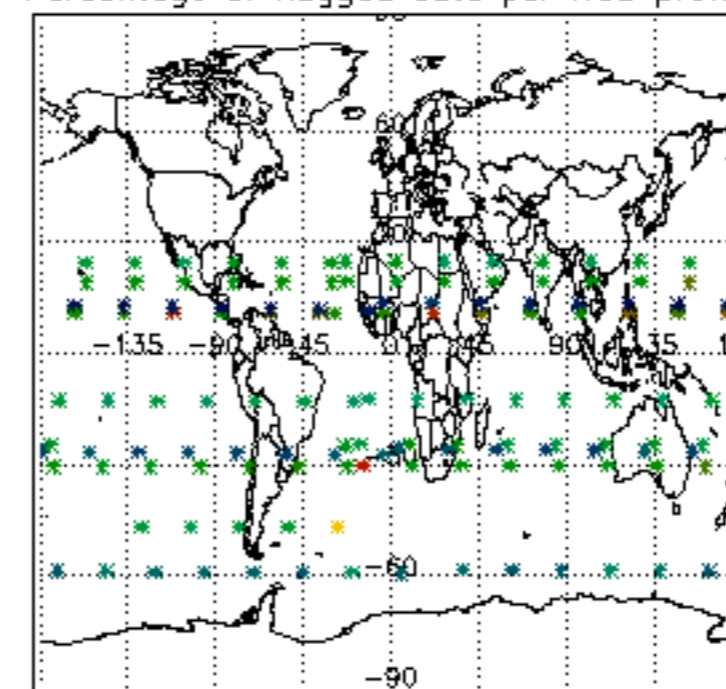
Percentage of flagged data per H2O profile

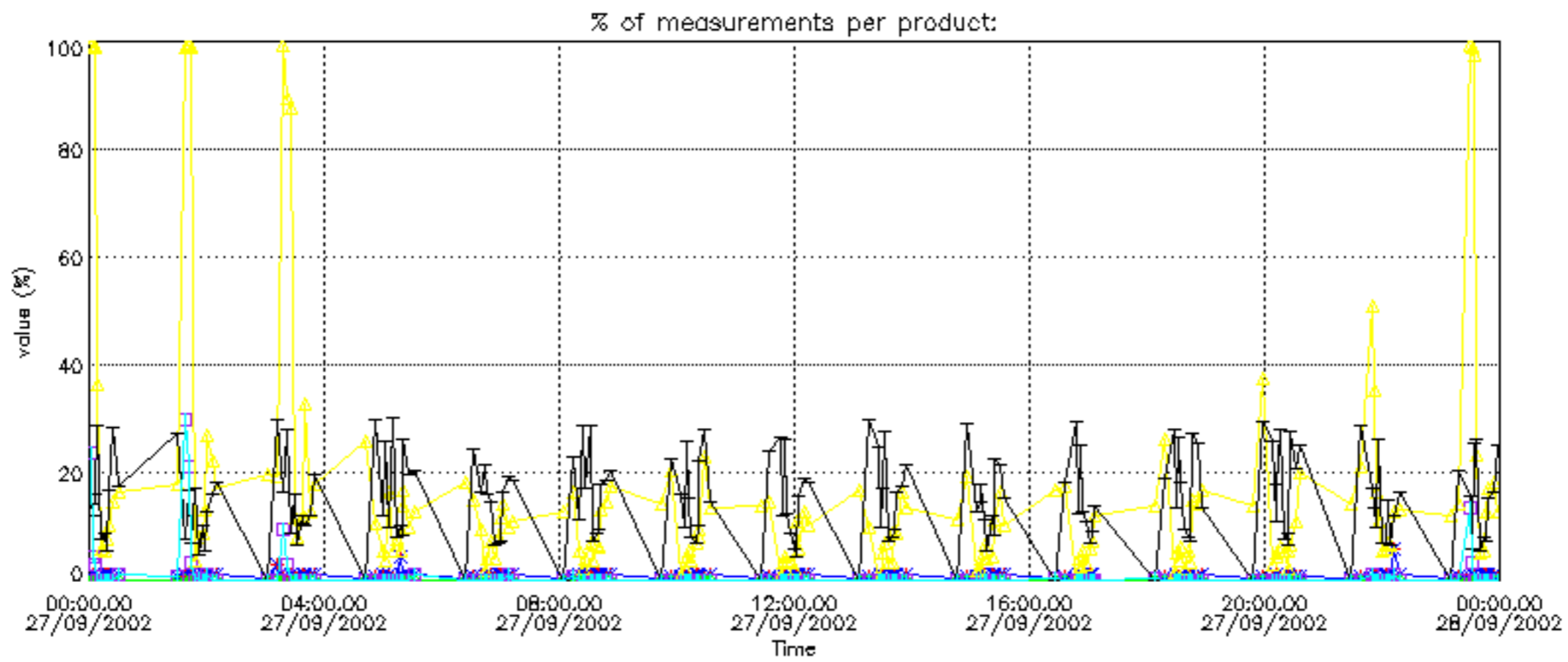


Percentage of flagged data per NO2 profile

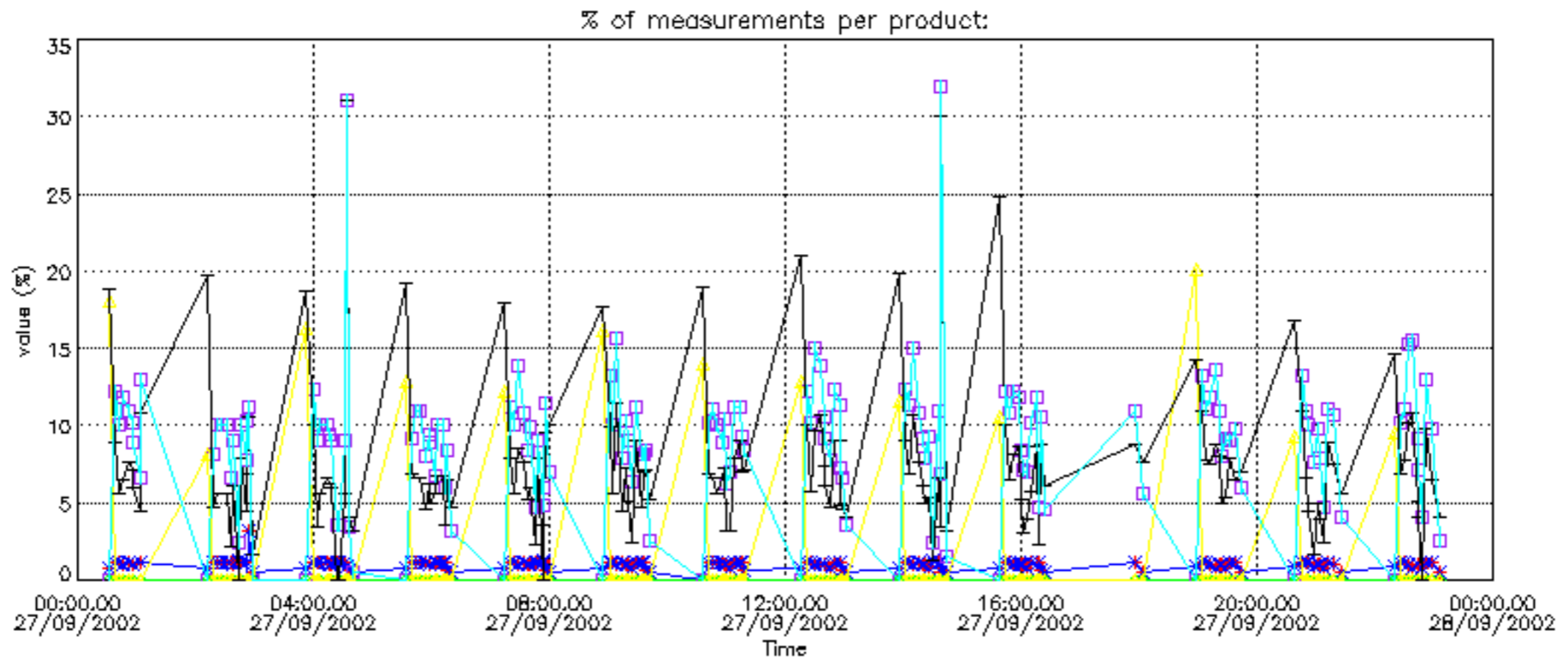


Percentage of flagged data per NO3 profile

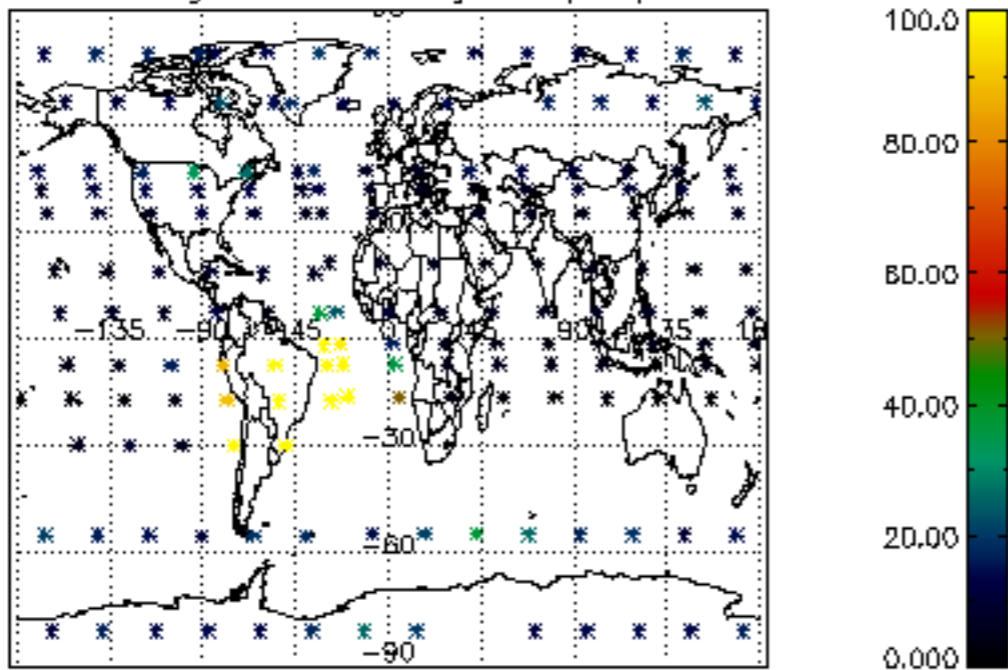




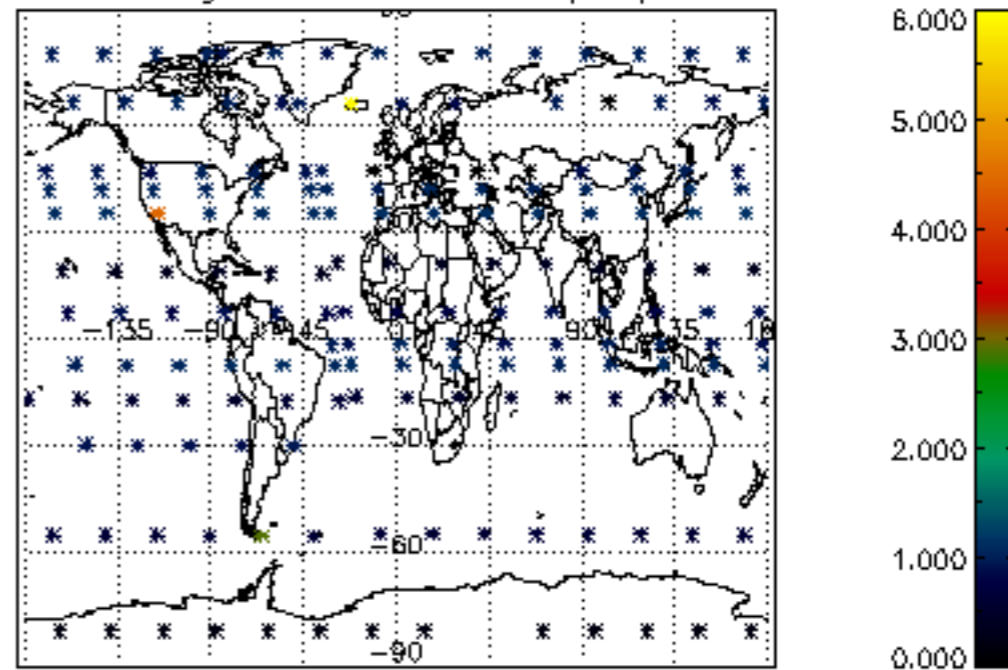




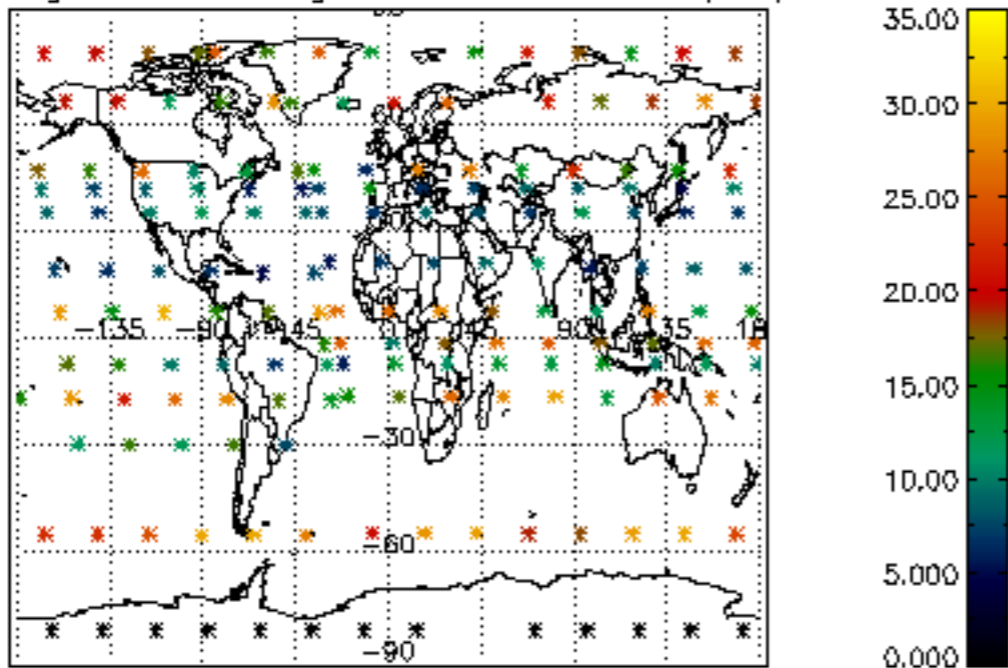
Percentage of cosmic ray hits per profile



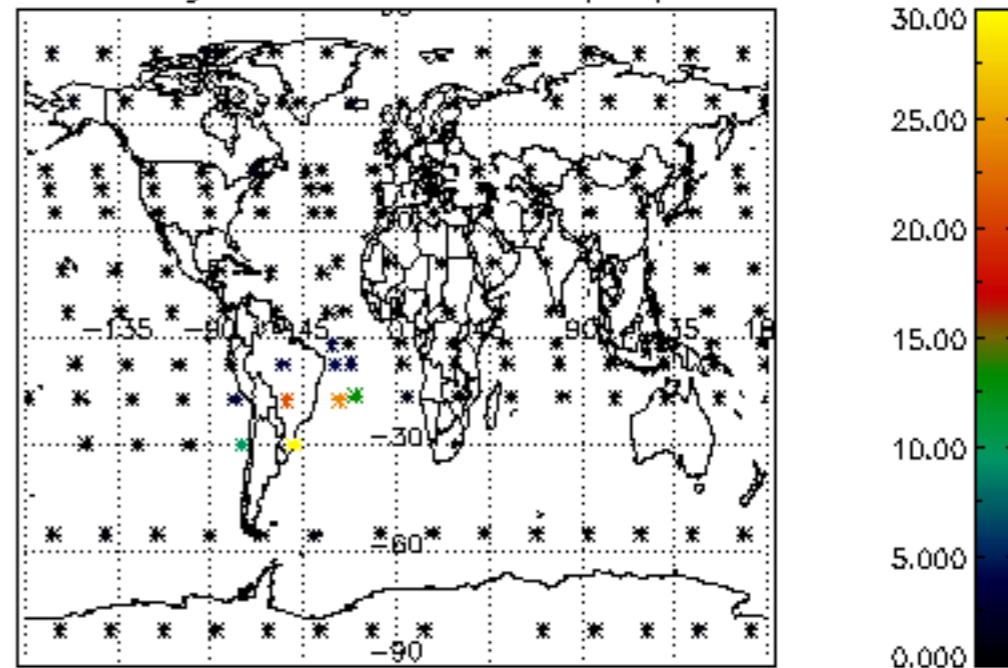
Percentage of datation errors per profile



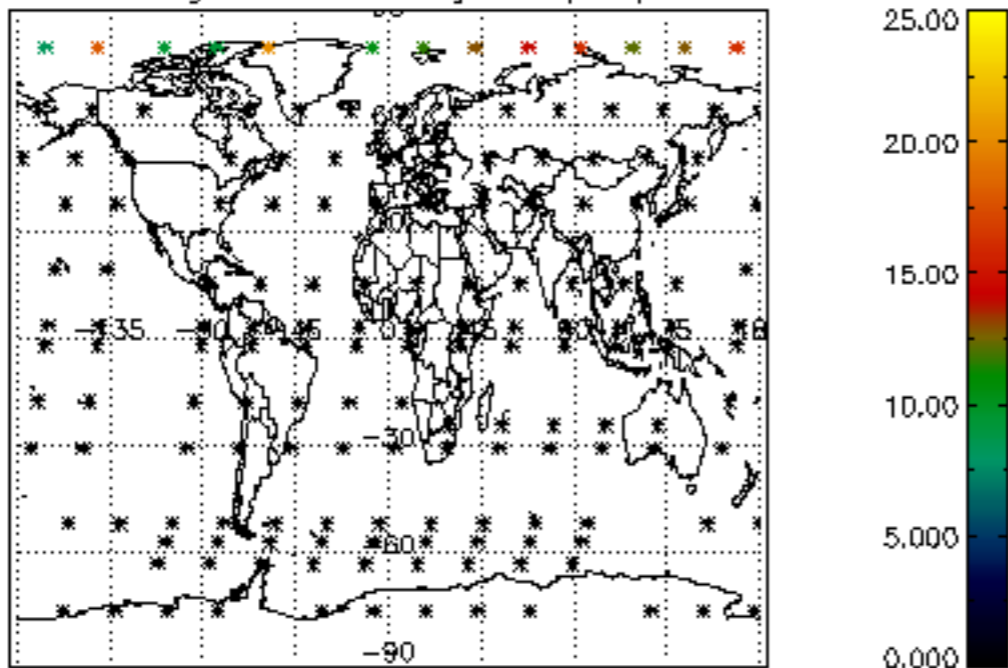
Percentage of star falling outside central band per profile



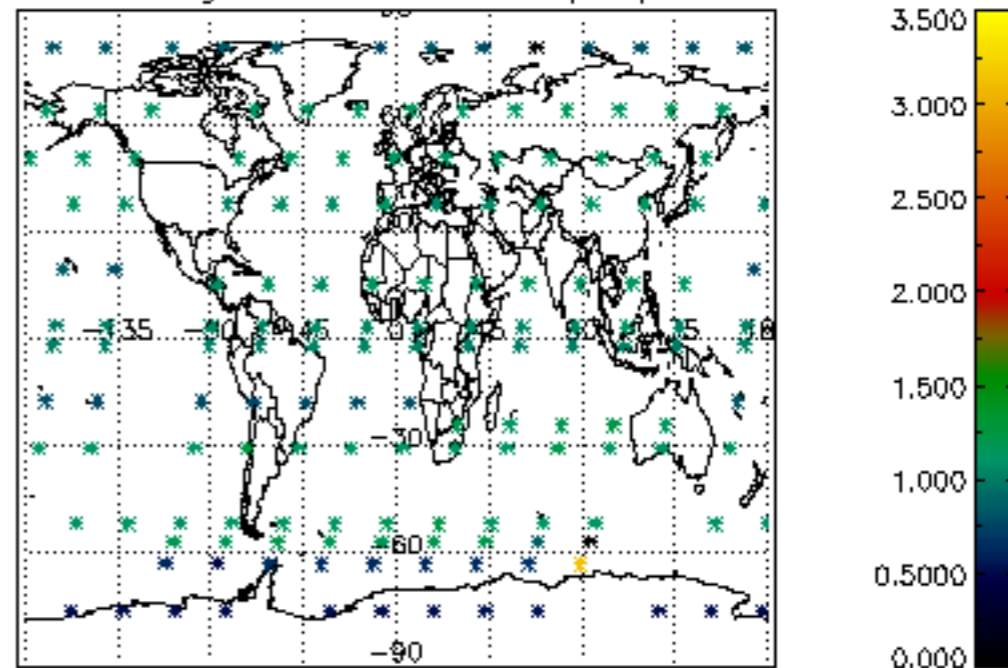
Percentage of saturation errors per profile



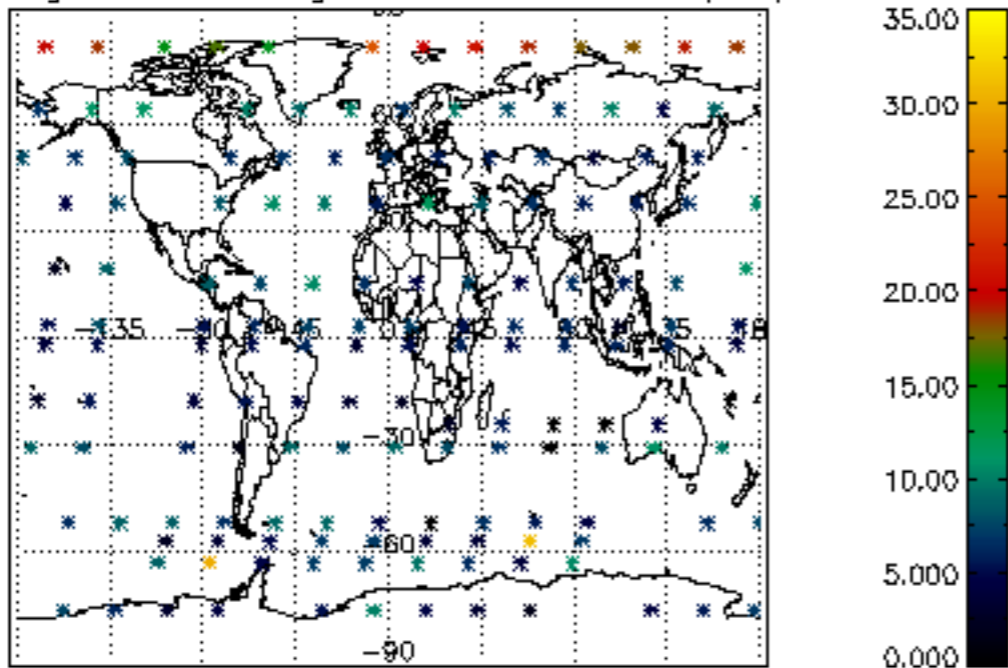
Percentage of cosmic ray hits per profile



Percentage of datation errors per profile



Percentage of star falling outside central band per profile



Percentage of saturation errors per profile

