

GOMOS Daily Report 15-DEC-2011

Level 0 and Level 1 products

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This report presents the daily analysis on parameters extracted from GOMOS level 1b data (GOM_TRA_1P). It is intended to monitor some important parameters that will impact the quality of the level 2 products as the Spectrometers and Photometers CCD Temperatures and Dark Charge, SATU noise equivalent angle... A list of level 0 products (and content) that have arrived during the actual month to the PCF is also given.

Item	Value
Time of report generation	21DEC2011 07:00:58
Data source version	GOMOS/6.01
Start time of products	15DEC2011 12:28:11
Stop time of products	15DEC2011 16:55:27
Store outputs in DB	Yes
Nb of level 1b prods	26
Nb of prods with errors	0

2. Summary of products arrived in PCF (Product Control Facility)

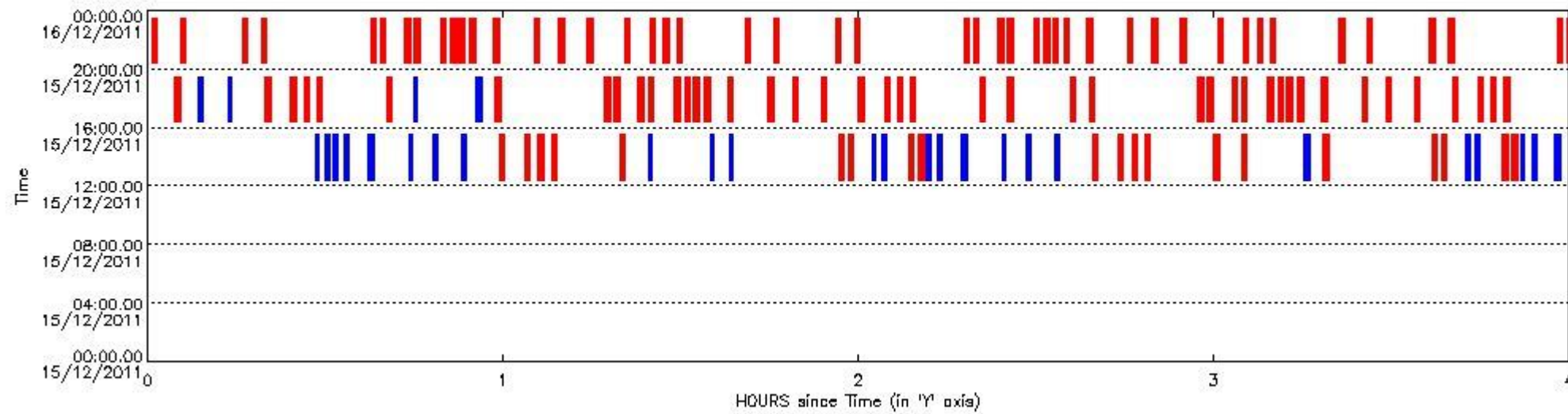
2.1 Level 0 products arrived in PCF (see template [here](#))

2.2 Plot of mission plan versus Level 0 production arrived in PCF during reporting period

Red segments are missing products.

Blue segments are available products.

Green segments are calibration measurements (not available products to users).



2.3 Summary of missing occultations (red segments in previous plot)

UTC start time	Star name	Star ID	Orbit
15-DEC-2011 12:59:18	87AlpTau	13	51229
15-DEC-2011 13:03:38	44ZetPer	150	51229
15-DEC-2011 13:05:55	45EpsPer	149	51229
15-DEC-2011 13:08:06	39DelPer	175	51229
15-DEC-2011 13:19:46	1AlpUMi	49	51229
15-DEC-2011 13:56:36	5TheCen	54	51230
15-DEC-2011 13:58:11	1otCen	123	51230
15-DEC-2011 14:08:25	TheCar	124	51230
15-DEC-2011 14:10:10	UpsCar	159	51230
15-DEC-2011 14:39:32	87AlpTau	13	51230
15-DEC-2011 14:43:52	44ZetPer	150	51230
15-DEC-2011 14:46:09	45EpsPer	149	51230
15-DEC-2011 14:48:20	39DelPer	175	51230
15-DEC-2011 15:00:00	1AlpUMi	49	51230
15-DEC-2011 15:04:41	7BetUMi	60	51230

15-DEC-2011 15:18:26		83	51230
15-DEC-2011 15:36:51	5TheCen	54	51231
15-DEC-2011 15:38:26	lotCen	123	51231
15-DEC-2011 15:48:40	TheCar	124	51231
15-DEC-2011 15:50:24	UpsCar	159	51231
15-DEC-2011 16:04:29	AlpCol	108	51231
15-DEC-2011 16:19:46	87AlpTau	13	51231
15-DEC-2011 16:24:06	44ZetPer	150	51231
15-DEC-2011 16:26:23	45EpsPer	149	51231
15-DEC-2011 16:28:34	39DelPer	175	51231
15-DEC-2011 16:40:14	1AlpUMi	49	51231
15-DEC-2011 16:58:40		83	51231
15-DEC-2011 17:17:05	5TheCen	54	51232
15-DEC-2011 17:18:41	lotCen	123	51232
15-DEC-2011 17:22:47	GamCen	64	51232
15-DEC-2011 17:24:25	DelCen	99	51232
15-DEC-2011 17:28:54	TheCar	124	51232
15-DEC-2011 17:30:39	UpsCar	159	51232
15-DEC-2011 17:32:01	lotCar	71	51232
15-DEC-2011 17:33:54	EpsCar	41	51232
15-DEC-2011 17:37:51	DSA1055	0	51232
15-DEC-2011 17:44:43	AlpCol	108	51232
15-DEC-2011 17:48:48	9BetLep	139	51232
15-DEC-2011 17:53:40	67BetEri	128	51232
15-DEC-2011 18:00:00	87AlpTau	13	51232
15-DEC-2011 18:04:20	44ZetPer	150	51232
15-DEC-2011 18:06:37	45EpsPer	149	51232
15-DEC-2011 18:08:48	39DelPer	175	51232
15-DEC-2011 18:20:28	1AlpUMi	49	51232
15-DEC-2011 18:25:09	7BetUMi	60	51232
15-DEC-2011 18:35:41	27GamBoo	180	51232
15-DEC-2011 18:38:54		83	51232
15-DEC-2011 18:57:19	5TheCen	54	51233
15-DEC-2011 18:58:55	lotCen	123	51233
15-DEC-2011 19:03:01	GamCen	64	51233
15-DEC-2011 19:04:40	DelCen	99	51233
15-DEC-2011 19:09:09	TheCar	124	51233
15-DEC-2011 19:10:53	UpsCar	159	51233
15-DEC-2011 19:12:15	lotCar	71	51233
15-DEC-2011 19:14:09	EpsCar	41	51233
15-DEC-2011 19:18:05	DSA1055	0	51233
15-DEC-2011 19:24:57	AlpCol	108	51233
15-DEC-2011 19:29:02	9BetLep	139	51233
15-DEC-2011 19:33:54	67BetEri	128	51233
15-DEC-2011 19:40:14	87AlpTau	13	51233
15-DEC-2011 19:44:34	44ZetPer	150	51233
15-DEC-2011 19:46:51	45EpsPer	149	51233
15-DEC-2011 19:49:02	39DelPer	175	51233
15-DEC-2011 20:00:42	1AlpUMi	49	51233
15-DEC-2011 20:05:23	7BetUMi	60	51233
15-DEC-2011 20:15:55	27GamBoo	180	51233
15-DEC-2011 20:19:08		83	51233
15-DEC-2011 20:37:34	5TheCen	54	51234
15-DEC-2011 20:39:10	lotCen	123	51234
15-DEC-2011 20:43:16	GamCen	64	51234
15-DEC-2011 20:44:54	DelCen	99	51234
15-DEC-2011 20:49:23	TheCar	124	51234
15-DEC-2011 20:51:07	UpsCar	159	51234
15-DEC-2011 20:52:30	lotCar	71	51234

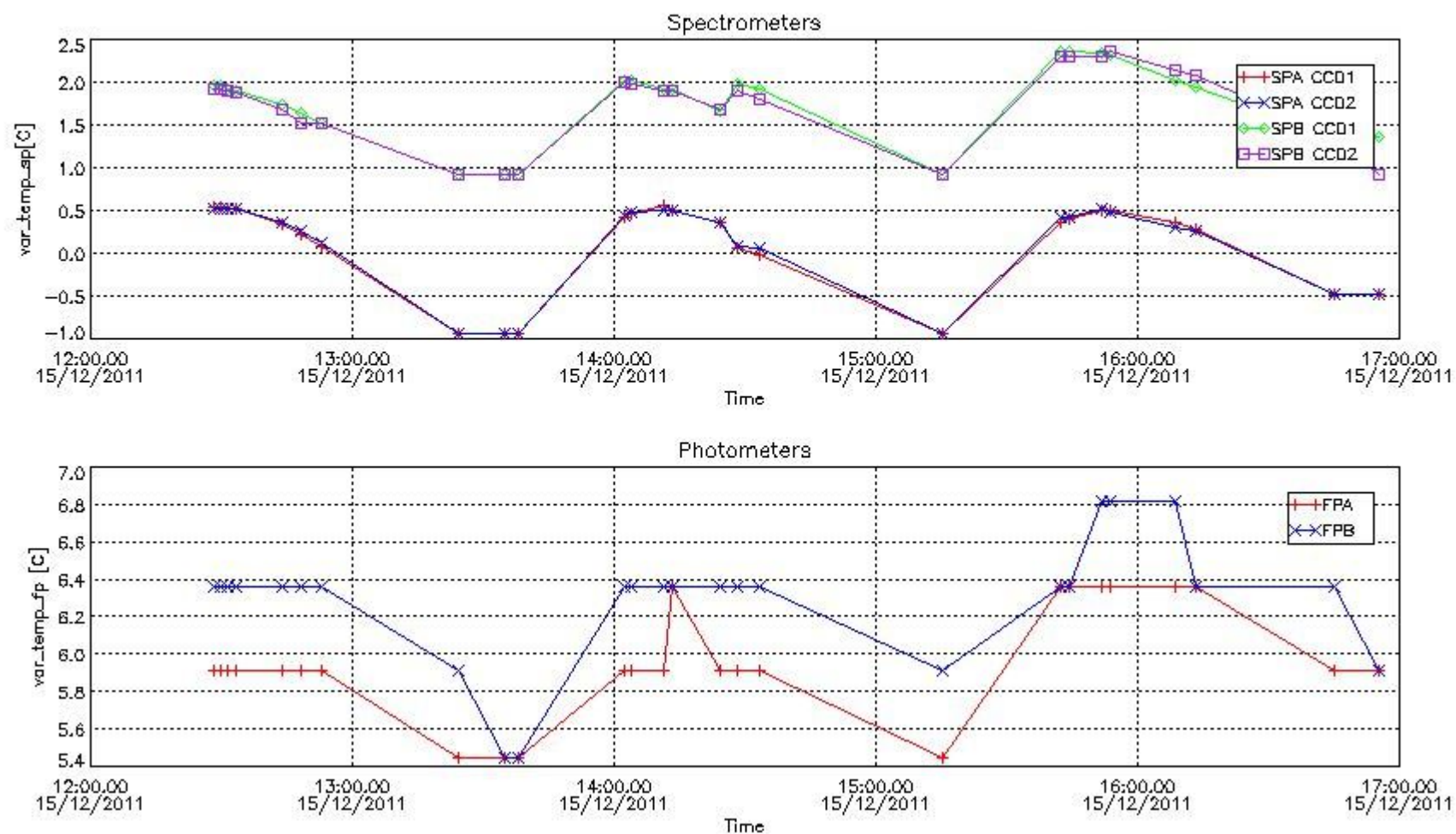
15-DEC-2011 20:54:23	EpsCar	41	51234
15-DEC-2011 20:58:19	DSA1055	0	51234
15-DEC-2011 21:05:11	AlpCol	108	51234
15-DEC-2011 21:09:16	9BetLep	139	51234
15-DEC-2011 21:14:08	67BetEri	128	51234
15-DEC-2011 21:20:28	87AlpTau	13	51234
15-DEC-2011 21:24:48	44ZetPer	150	51234
15-DEC-2011 21:27:05	45EpsPer	149	51234
15-DEC-2011 21:29:16	39DelPer	175	51234
15-DEC-2011 21:40:55	1AlpUMi	49	51234
15-DEC-2011 21:45:37	7BetUMi	60	51234
15-DEC-2011 21:56:09	27GamBoo	180	51234
15-DEC-2011 21:59:23		83	51234
15-DEC-2011 22:17:48	5TheCen	54	51235
15-DEC-2011 22:19:24	lotCen	123	51235
15-DEC-2011 22:23:30	GamCen	64	51235
15-DEC-2011 22:25:09	DelCen	99	51235
15-DEC-2011 22:29:38	TheCar	124	51235
15-DEC-2011 22:31:22	UpsCar	159	51235
15-DEC-2011 22:32:44	lotCar	71	51235
15-DEC-2011 22:34:38	EpsCar	41	51235
15-DEC-2011 22:38:34	DSA1055	0	51235
15-DEC-2011 22:45:26	AlpCol	108	51235
15-DEC-2011 22:49:30	9BetLep	139	51235
15-DEC-2011 22:54:21	67BetEri	128	51235
15-DEC-2011 23:00:41	87AlpTau	13	51235
15-DEC-2011 23:05:02	44ZetPer	150	51235
15-DEC-2011 23:07:19	45EpsPer	149	51235
15-DEC-2011 23:09:30	39DelPer	175	51235
15-DEC-2011 23:21:09	1AlpUMi	49	51235
15-DEC-2011 23:25:50	7BetUMi	60	51235
15-DEC-2011 23:36:23	27GamBoo	180	51235
15-DEC-2011 23:39:37		83	51235
15-DEC-2011 23:58:03	5TheCen	54	51236
15-DEC-2011 23:59:39	lotCen	123	51236

2.4 Summary of processed GOM_TRA_1P products

Nr	Filename	UTC Start time	Limb	Duration	Star Id	Star Name	Star Mag	Star Temp	Nb Meas	Orbit	Prod. error
1	GOM_TRA_1PNPDK20111215_122811_000000393109_00340_51216_0452.N1	15-DEC-2011 12:28:11	Dark	38.500	124	The Car	2.7640	30000.	77	51216	No
2	GOM_TRA_1PNPDK20111215_122955_000000393109_00340_51216_0453.N1	15-DEC-2011 12:29:55	Dark	39.000	159	Ups Car	2.9200	7200.0	78	51216	No
3	GOM_TRA_1PNPDK20111215_123117_000000413109_00340_51216_0454.N1	15-DEC-2011 12:31:17	Dark	41.000	71	lot Car	2.2460	7700.0	82	51216	No
4	GOM_TRA_1PNPDK20111215_123310_000000413109_00340_51216_0455.N1	15-DEC-2011 12:33:10	Dark	40.500	41	Eps Car	1.8600	4100.0	81	51216	No
5	GOM_TRA_1PNPDK20111215_124400_000000423109_00340_51216_0456.N1	15-DEC-2011 12:44:00	Straylight	41.500	108	Alp Col	2.6520	15200.	83	51216	No
6	GOM_TRA_1PNPDK20111215_124805_000000443109_00340_51216_0457.N1	15-DEC-2011 12:48:05	Straylight	44.000	139	9Bet Lep	2.8330	5600.0	88	51216	No
7	GOM_TRA_1PNPDK20111215_125257_000000443109_00340_51216_0488.N1	15-DEC-2011 12:52:57	Straylight	44.000	128	67Bet Eri	2.7840	9700.0	88	51216	No
8	GOM_TRA_1PNPDK20111215_132427_000000383109_00340_51216_0489.N1	15-DEC-2011 13:24:27	Bright	38.000	60	7Bet UMi	2.0810	3950.0	76	51216	No
9	GOM_TRA_1PNPDK20111215_133459_000000393109_00340_51216_0490.N1	15-DEC-2011 13:34:59	Bright	38.500	180	27Gam Boo	3.0400	8000.0	77	51216	No
10	GOM_TRA_1PNPDK20111215_133812_000000363109_00340_51216_0491.N1	15-DEC-2011 13:38:12	Bright	36.000	83		2.3780	11000.	72	51216	No
11	GOM_TRA_1PNPDK20111215_140217_000000403109_00340_51216_0492.N1	15-DEC-2011 14:02:17	Dark	40.000	64	Gam Cen	2.2000	10600.	80	51216	No
12	GOM_TRA_1PNPDK20111215_140355_000000423109_00341_51217_0493.N1	15-DEC-2011 14:03:55	Dark	42.000	99	Del Cen	2.5750	26000.	84	51217	No
13	GOM_TRA_1PNPDK20111215_141131_000000423109_00341_51217_0494.N1	15-DEC-2011 14:11:31	Dark	41.500	71	lot Car	2.2460	7700.0	83	51217	No
14	GOM_TRA_1PNPDK20111215_141325_000000433109_00341_51217_0495.N1	15-DEC-2011 14:13:25	Dark	43.000	41	Eps Car	1.8600	4100.0	86	51217	No
15	GOM_TRA_1PNPDK20111215_142414_000000423109_00341_51217_0496.N1	15-DEC-2011 14:24:14	Straylight	42.000	108	Alp Col	2.6520	15200.	84	51217	No
16	GOM_TRA_1PNPDK20111215_142820_000000453109_00341_51217_0530.N1	15-DEC-2011 14:28:20	Straylight	44.500	139	9Bet Lep	2.8330	5600.0	89	51217	No
17	GOM_TRA_1PNPDK20111215_143311_000000433109_00341_51217_0531.N1	15-DEC-2011 14:33:11	Straylight	43.000	128	67Bet Eri	2.7840	9700.0	86	51217	No
18	GOM_TRA_1PNPDK20111215_151513_000000553109_00341_51217_0532.N1	15-DEC-2011 15:15:13	Bright	55.000	180	27Gam Boo	3.0400	8000.0	110	51217	No
19	GOM_TRA_1PNPDK20111215_154232_000000413109_00341_51217_0533.N1	15-DEC-2011 15:42:32	Dark	40.500	64	Gam Cen	2.2000	10600.	81	51217	No

20	GOM_TRA_1PNPDK20111215_154410_000000433109_00342_51218_0534.N1	15-DEC-2011 15:44:10	Dark	42.500	99	Del Cen	2.5750	26000.	85	51218	No
21	GOM_TRA_1PNPDK20111215_155146_000000423109_00342_51218_0535.N1	15-DEC-2011 15:51:46	Dark	41.500	71	lot Car	2.2460	7700.0	83	51218	No
22	GOM_TRA_1PNPDK20111215_155339_000000493109_00342_51218_0536.N1	15-DEC-2011 15:53:39	Dark	48.500	41	Eps Car	1.8600	4100.0	97	51218	No
23	GOM_TRA_1PNPDK20111215_160834_000000433109_00342_51218_0561.N1	15-DEC-2011 16:08:34	Straylight	43.000	139	9Bet Lep	2.8330	5600.0	86	51218	No
24	GOM_TRA_1PNPDK20111215_161325_000000433109_00342_51218_0562.N1	15-DEC-2011 16:13:25	Straylight	43.000	128	67Bet Eri	2.7840	9700.0	86	51218	No
25	GOM_TRA_1PNPDK20111215_164454_000000393109_00342_51218_0563.N1	15-DEC-2011 16:44:54	Bright	38.500	60	7Bet UMi	2.0810	3950.0	77	51218	No
26	GOM_TRA_1PNPDK20111215_165527_000000543109_00342_51218_0564.N1	15-DEC-2011 16:55:27	Bright	54.000	180	27Gam Boo	3.0400	8000.0	108	51218	No

3. Plot of GOMOS spectrometers and photometers temperatures from level 1b data



4. Overview of dark signal processing per product

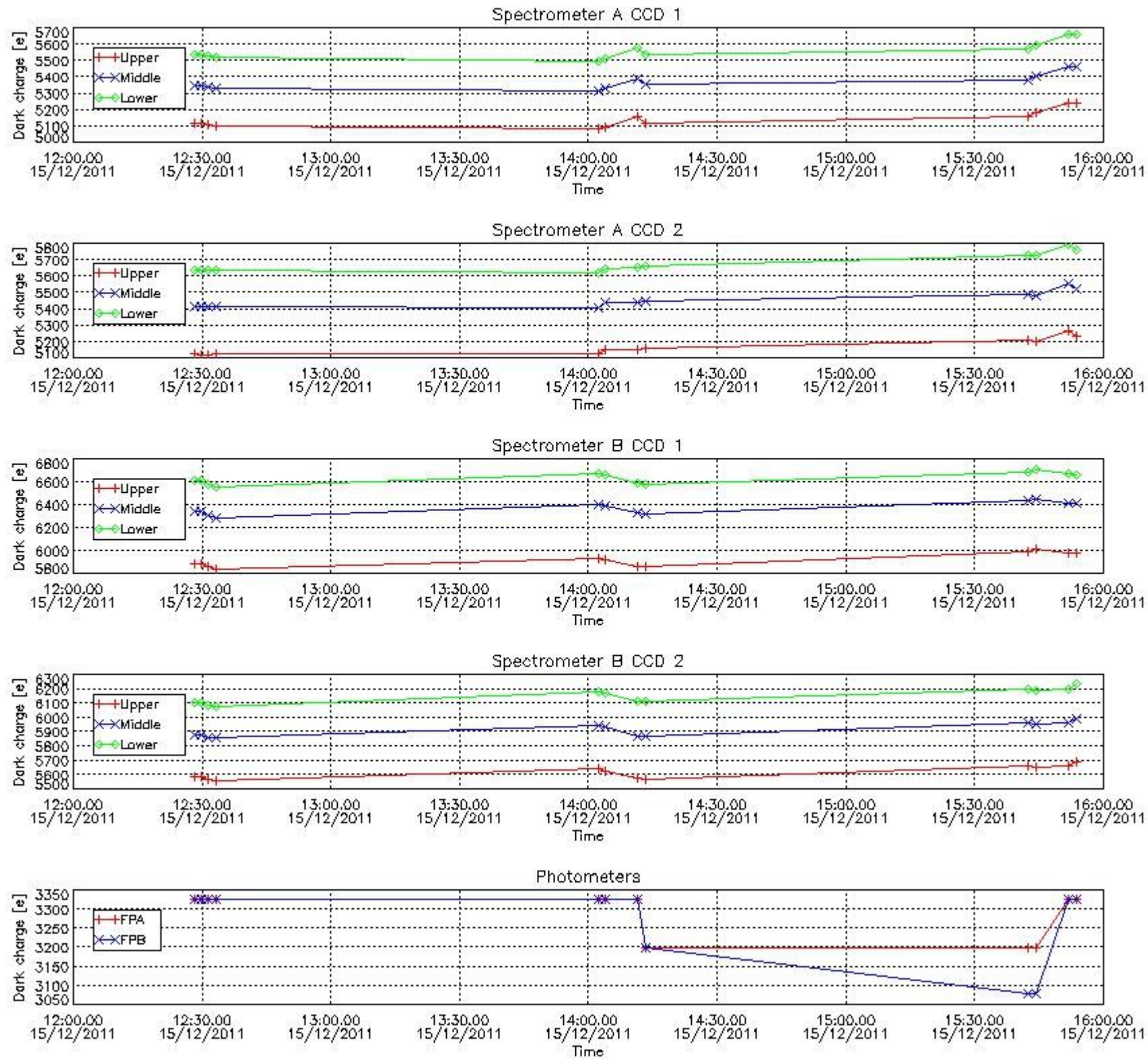
The Dark Charge (DC) is a temperature-dependant signal added to the useful measurements and it is therefore subtracted from them during the processing. There are two phenomena that produce a continuous increase of the DC: the "hot pixels" (a pixel is "hot" when its DC exceeds by a significant amount its value measured on ground at the same temperature) and the "Random Telegraphic Signal" (abrupt change positive or negative of the CCD pixel signal, random in time, affecting only the DC part of the signal and not the photon generated signal).

In this section a list of products that did not use the Dark Sky Area (DSA) observation for the DC computation is given. It is also provided the mean DC plot per product for dark limb products with no error flag set.

4.1 These products did not use the DSA observation for DC computation:

Product name	DC information
GOM_TRA_1PNPDK20111215_160834_000000433109_00342_51218_0561.N1	DC map used
GOM_TRA_1PNPDK20111215_161325_000000433109_00342_51218_0562.N1	DC map used
GOM_TRA_1PNPDK20111215_164454_000000393109_00342_51218_0563.N1	DC map used

4.2 Plot of mean dark charges per product: only products in DARK limb conditions without errors are used



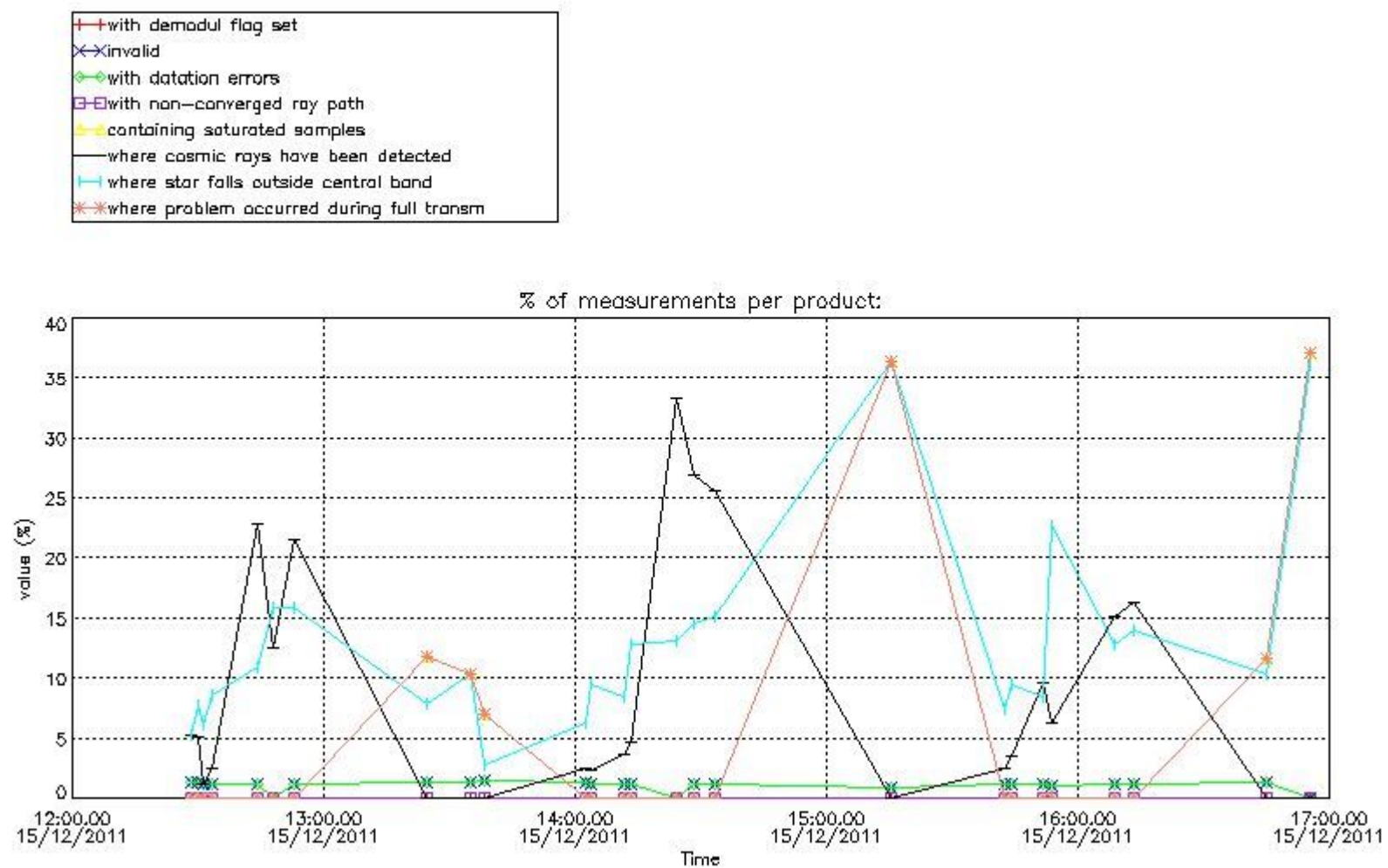
5. Demodulation flag and quality information monitoring

In this section it is presented the modulation information extracted from the pcd (product confidence data) at measurement level and information extracted from the Quality Summary dataset. Only products without errors (error flag in the MPH set to "0") are used.

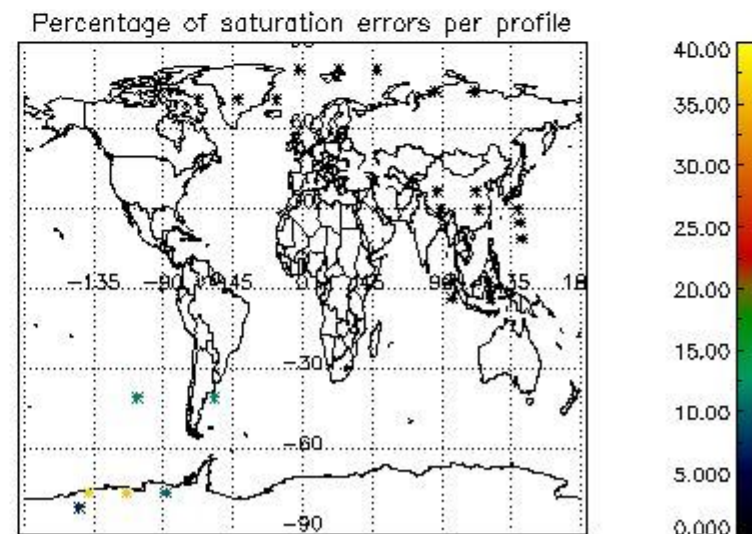
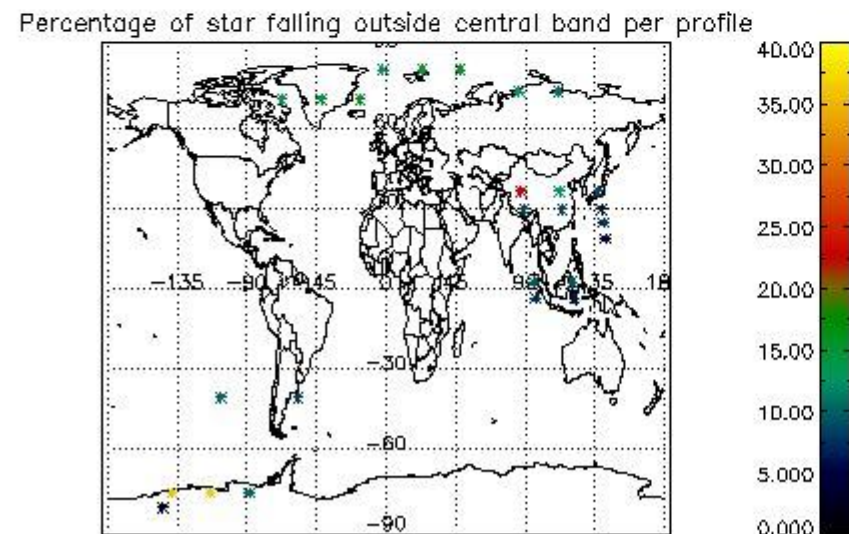
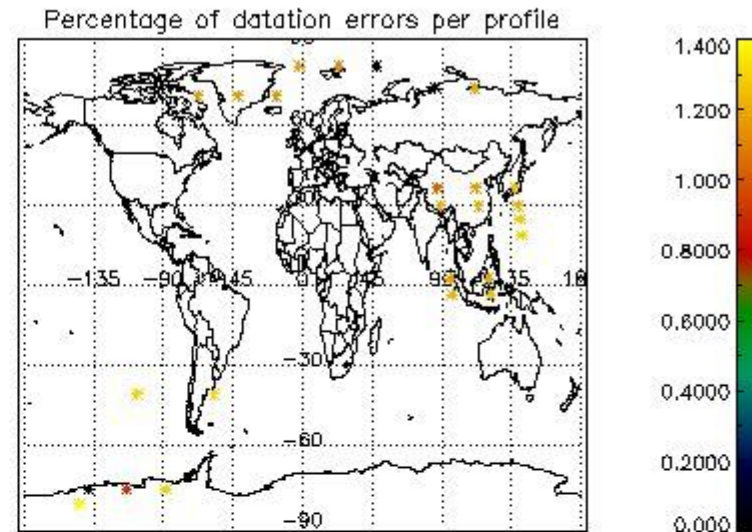
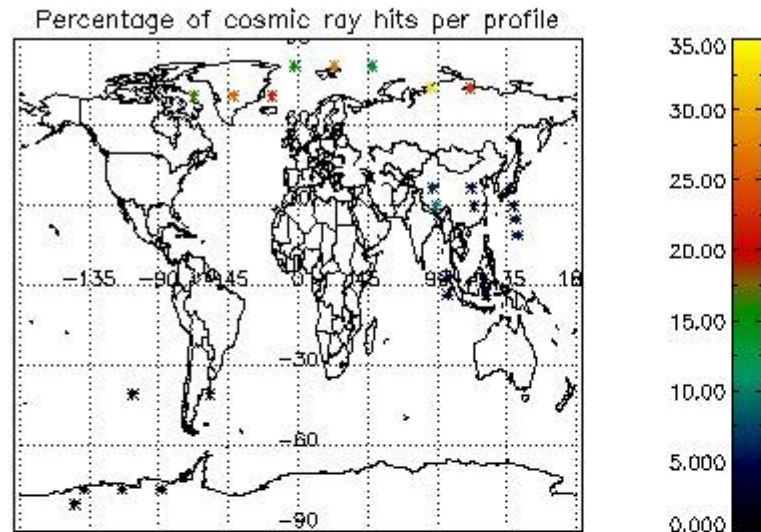
5.1 Percentage of products during reporting period with:

At least one measurement with demodulation flag set:	73.0769 %
Reference spectrum computed from DB:	0.00000 %
Reference spectrum with small number of measurements:	0.00000 %
SATU data not used:	23.0769 %

5.2 Plot quality information per product (time dependant)



5.3 Plot quality information per product (world map)



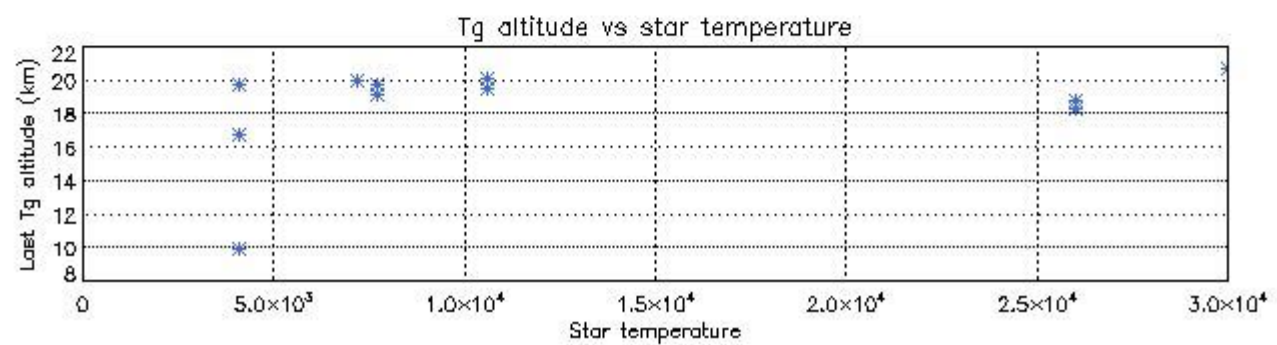
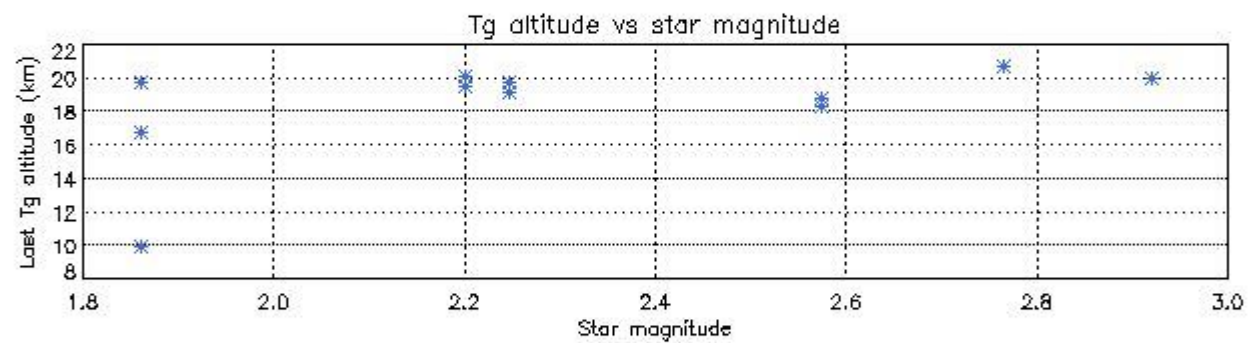
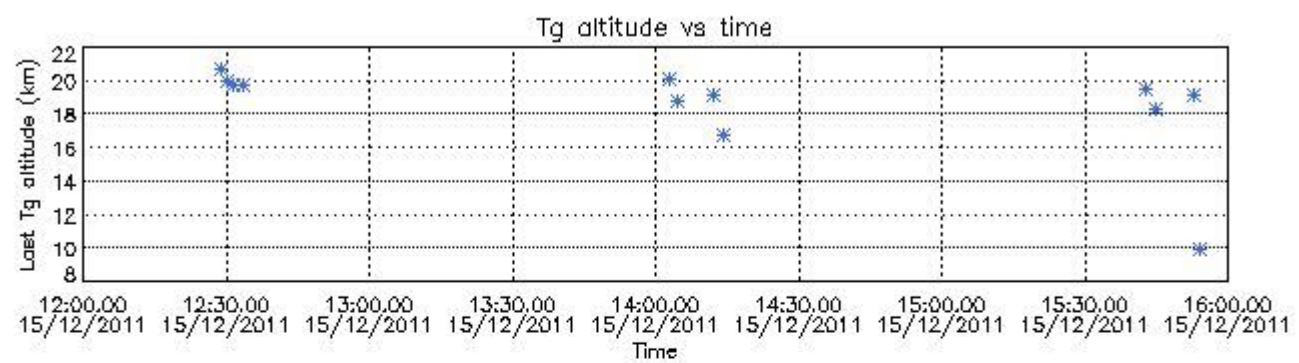
6. Statistics and plot of tangent altitude of the last measurement (DARK & BRIGHT products without errors)

6.1 Statistics on tangent altitude lost:

Statistics	DARK	BRIGHT	TWILIGHT
Mean:	18.465	15.197	NaN
St. deviation:	2.8813	8.3416	NaN
Maximum:	20.640	23.702	NaN
Minimum:	9.8878	4.4647	NaN
Number of data:	12.000	6.0000	NaN

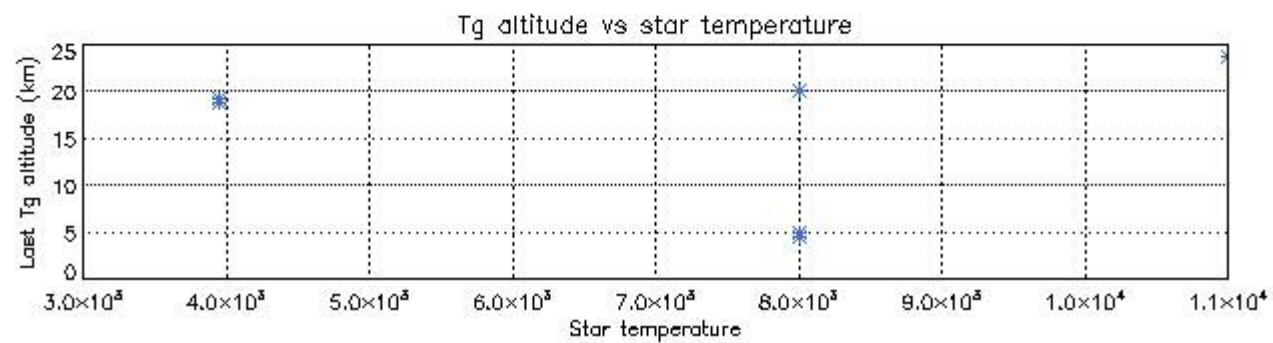
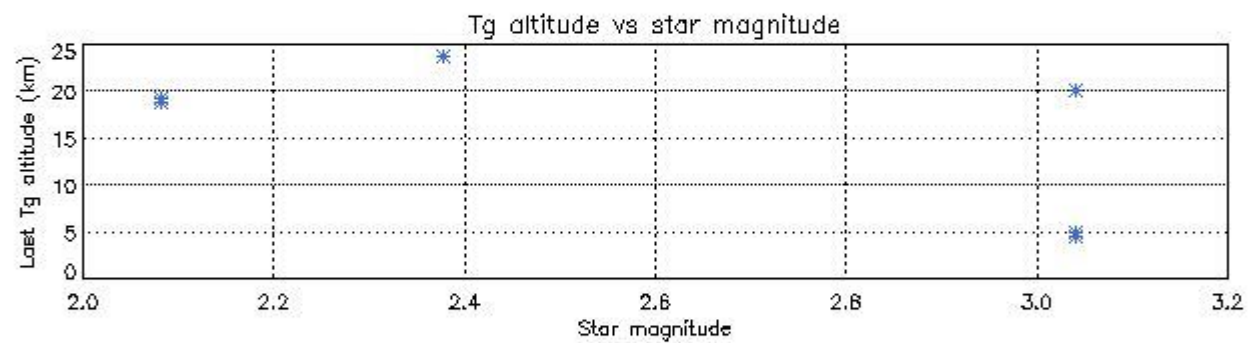
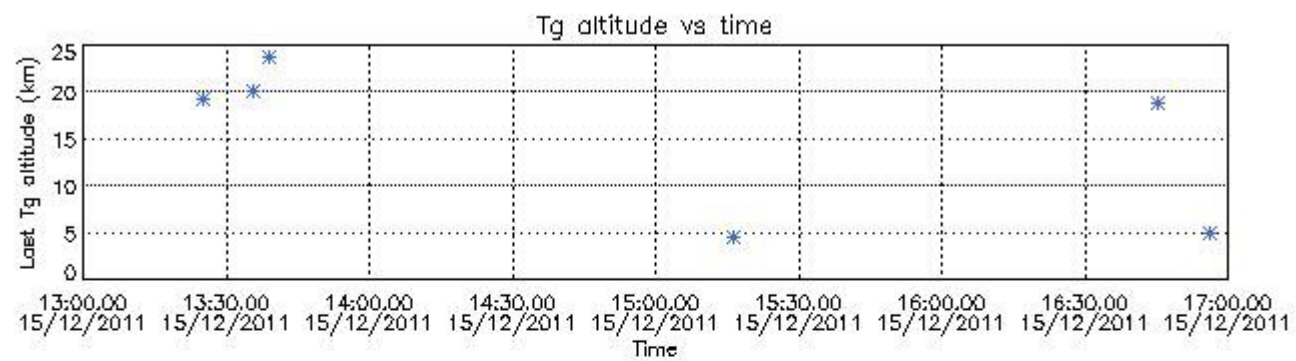
6.2 Plot for DARK limb products

Tangent altitude at which the star is lost



6.3 Plot for BRIGHT limb products

Tangent altitude at which the star is lost

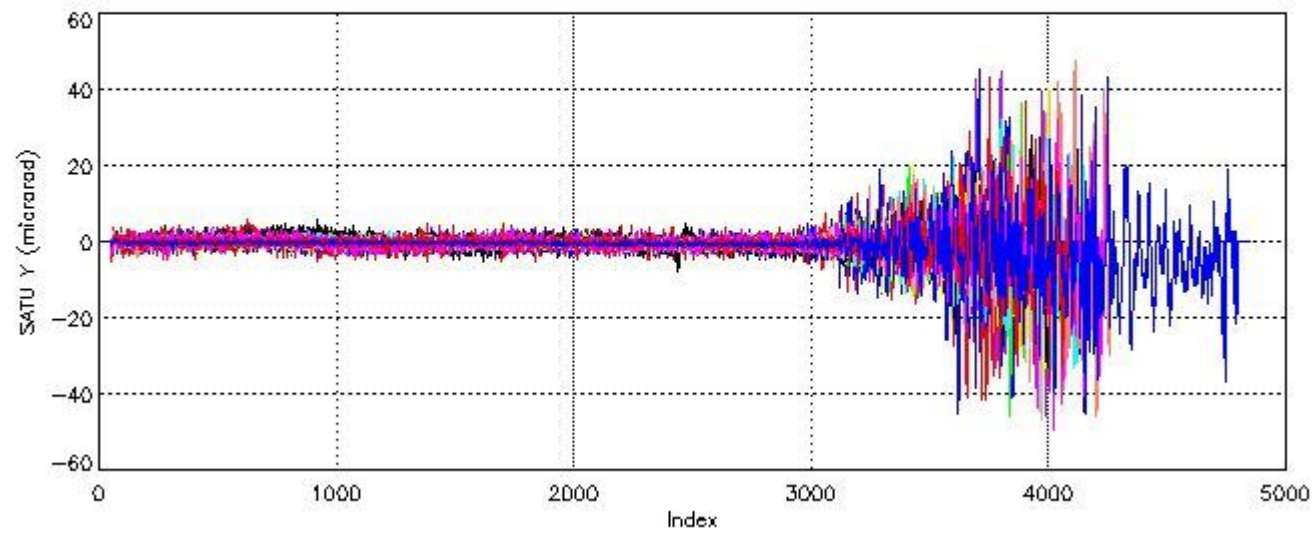
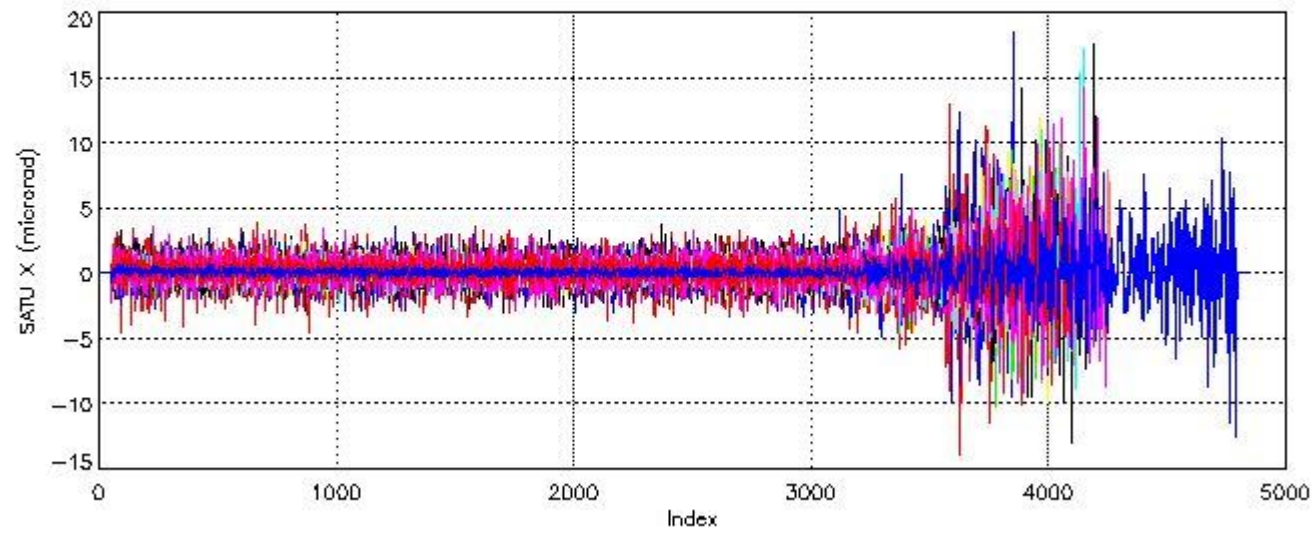


7. Star Acquisition and Tracking Unit (SATU)

The Star Acquisition and Tracking Unit (SATU) analyses the position of the tracked star beam collected by the GOMOS telescope and deflected by the optical beam dispatcher. The main function of the SATU is to detect a star, provide its image position to the science data electronics and to help the pointing function to keep the star image at a fixed position. In tracking mode the SATU data is recorded with a frequency of 100 Hz.

7.1 SATU 'X' and 'Y' axis plots (dark limb)

SATU CCD 'X' and 'Y' axis plots are provided in order to detect any abnormal behaviour of the tracking system. For every occultation (color) the plot should remain stable (with some noise) until we are deep in the atmosphere where big fluctuations are registered due to the refractive effects.



7.2 Statistics on SATU Noise Equivalent Angle (NEA) for DARK (D) and BRIGHT (B) products above 105 kms

The Star Acquisition and Tracking Unit (it is the CCD that tracks the star while it is occulted) Noise Equivalent Angle consists of the statistical angular variation of the SATU data above the atmosphere. Statistics (in microradians) above 105 km are computed for every occultation, giving four values per occultation: one in the 'X' direction and one in the 'Y' direction for dark and bright limbs. A mean value per day in every direction and limb is calculated and monitored in order to assess instrument performance in terms of star pointing.

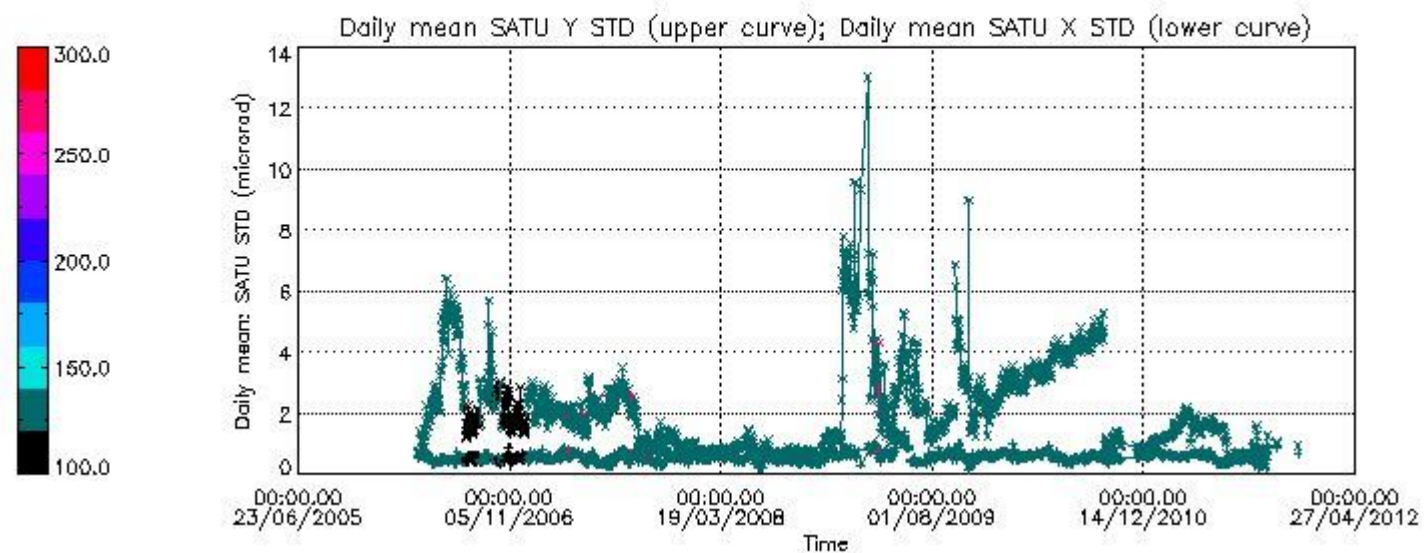
7.2.1 SATU NEA Statistics (table)

7.2.2 Trend of daily SATU NEA St. deviation since 1st April 2006 (dark limb) and of daily SATU NEA 90th percentile since May 2011

The long term trend of the SATU 'X' and 'Y' standard deviations should be constant during the whole mission.

The colorbar represents the start tangent altitude (km) of the occultations.

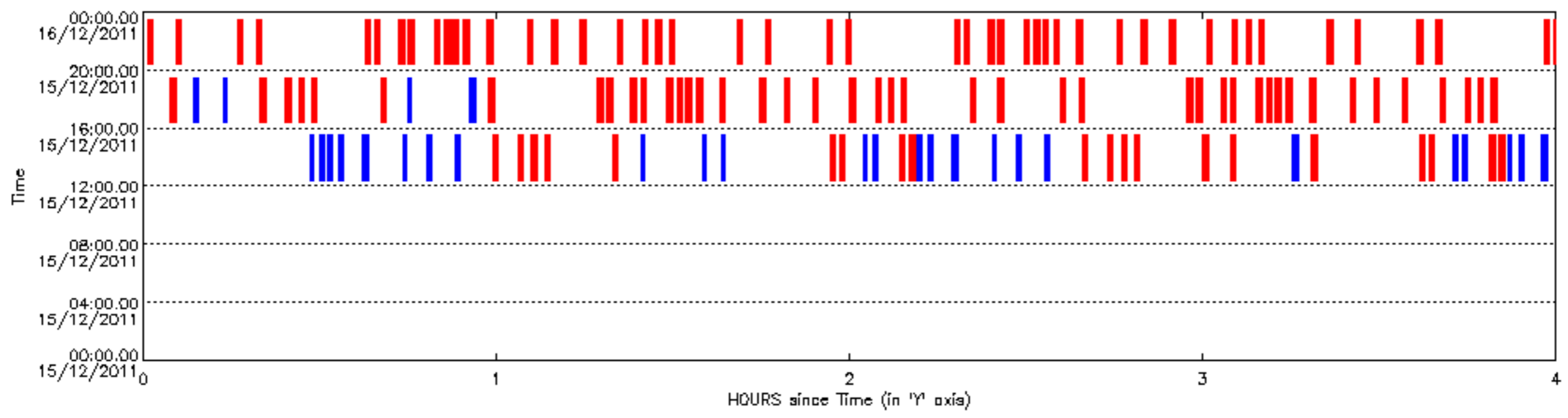
Upper curve: STD of SATU Y axis
 Lower curve: STD of SATU X axis

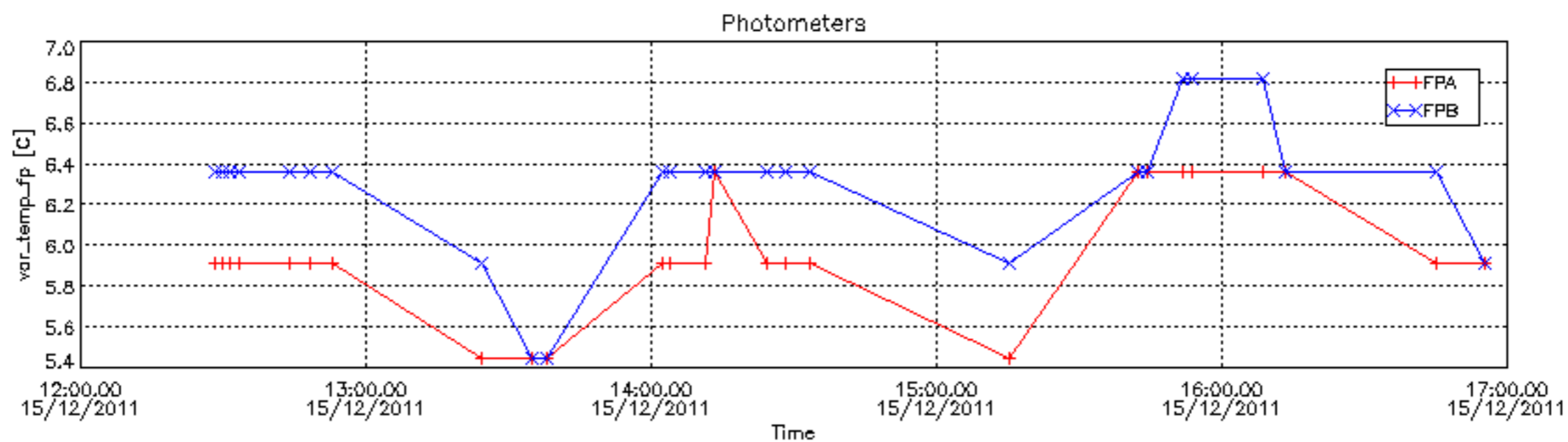
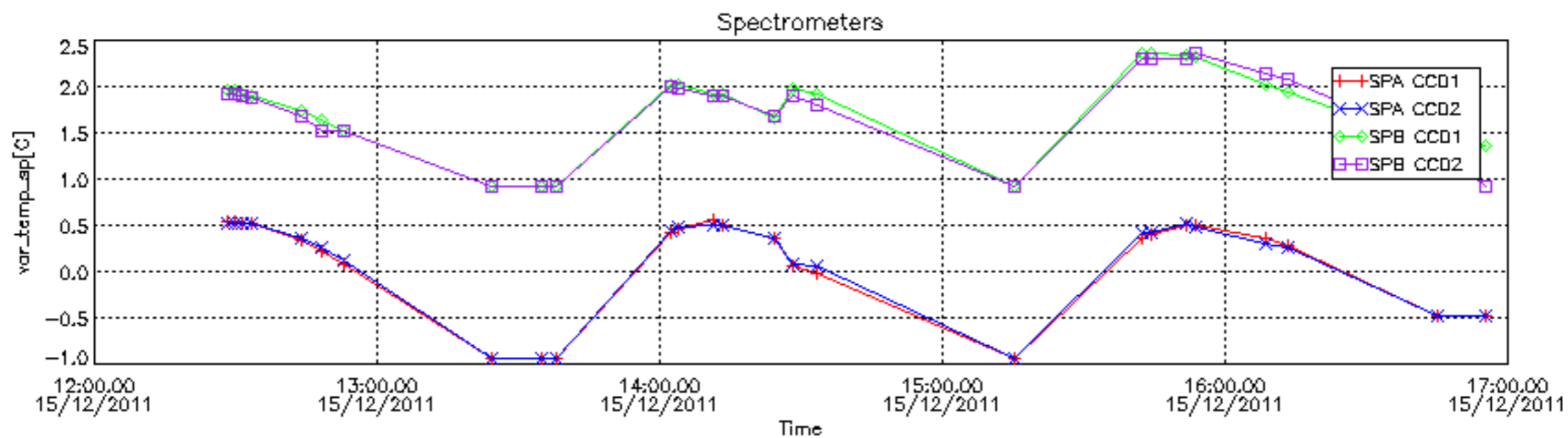


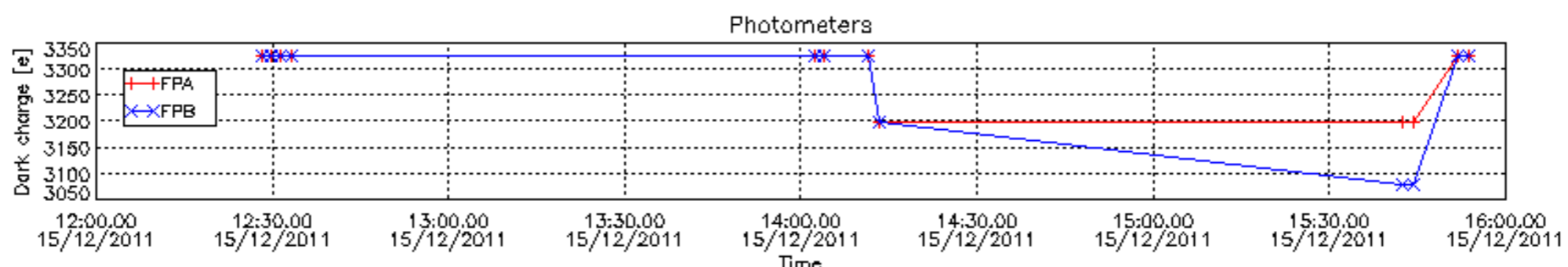
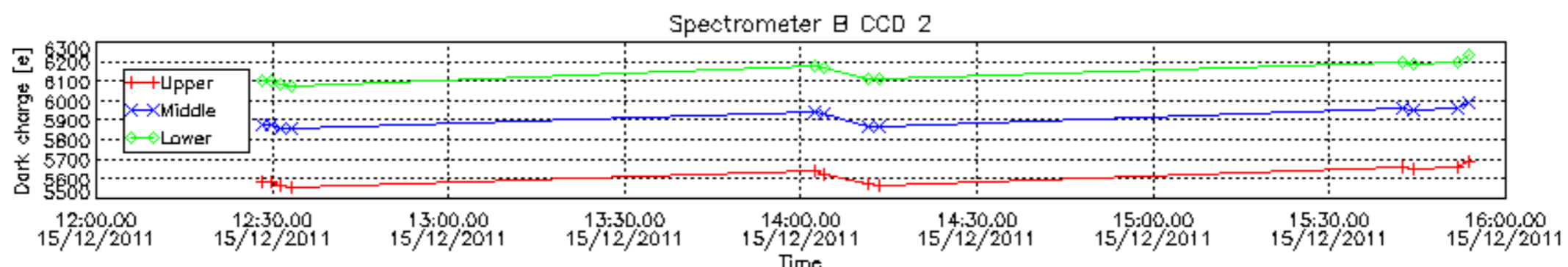
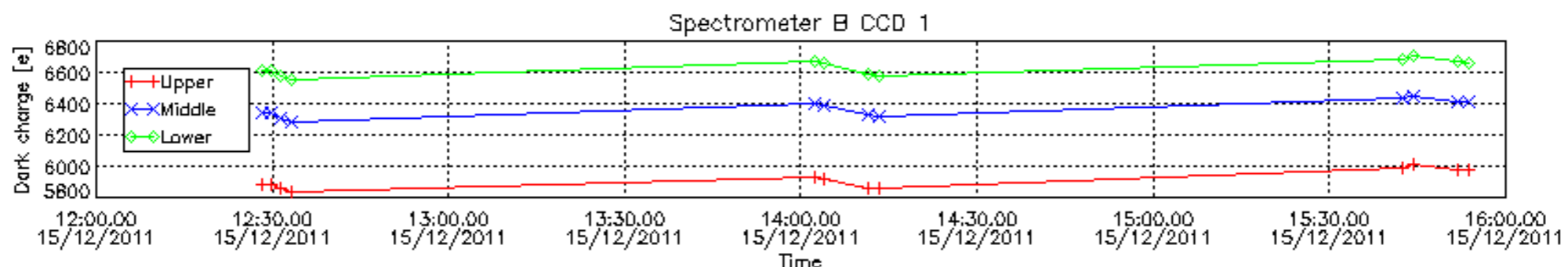
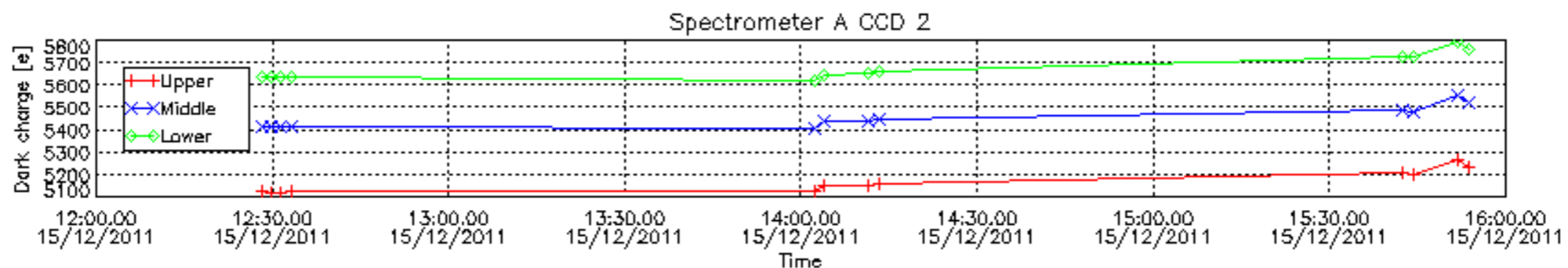
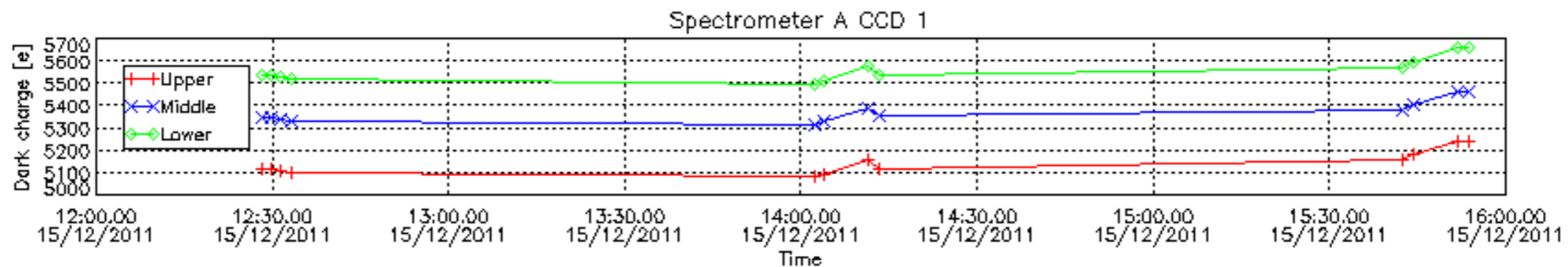
8. Auxiliary Data Files used for the production reported in section 2.4

The number reported in the third column indicates since which file (see list in section 2.4) the corresponding auxiliary file has been used. The fourth column is the date of those product files.

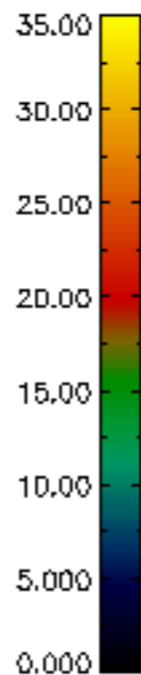
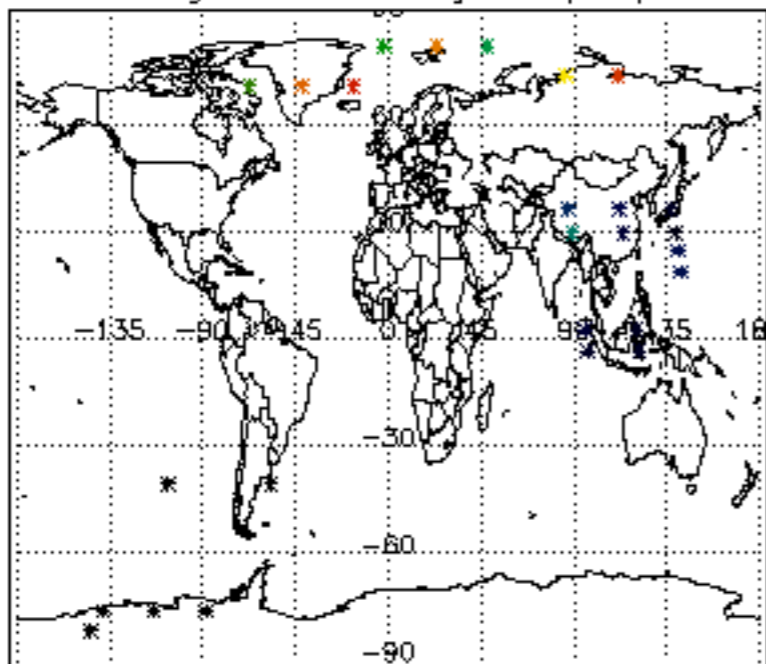
Type	Auxiliary Filename	Used since product	Used since product date
INST_PHYS_CHARACTERISTICS	GOM_INS_AXVIEC20111213_163131_20111215_000000_20500101_000000	1	15-DEC-2011 12:28:11
CALIBRATION_DATABASE	GOM_CAL_AXVIEC20111021_144853_20111020_000000_20500101_000000	1	15-DEC-2011 12:28:11
LEVEL-1B_PROC_CONFIG	GOM_PR1_AXVIEC20110513_081743_20020301_000000_20500101_000000	1	15-DEC-2011 12:28:11
STAR_CATALOGUE	GOM_CAT_AXVIEC20020121_161009_20020101_000000_20200101_000000	1	15-DEC-2011 12:28:11
STELLAR_SPECTRA_DATABANK	GOM_STS_AXVIEC20091111_151504_20020101_160000_20500101_000000	1	15-DEC-2011 12:28:11
ECMWF_FILE	AUX_ECF_AXNECM20111215_062420_20111215_090000_20111215_210000	1	15-DEC-2011 12:28:11
ECMWF_FILE	AUX_ECF_AXNECM20111215_062421_20111215_150000_20111216_030000	23	15-DEC-2011 16:08:34
OPTIONAL_ECMWF_FILE	MISSING	1	15-DEC-2011 12:28:11
ORBIT_DATA_FILE	AUX_FPO_AXVPDS20111215_120356_20111214_194042_20111224_201408	1	15-DEC-2011 12:28:11



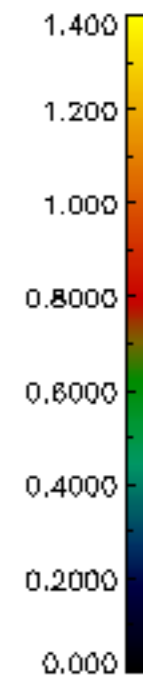
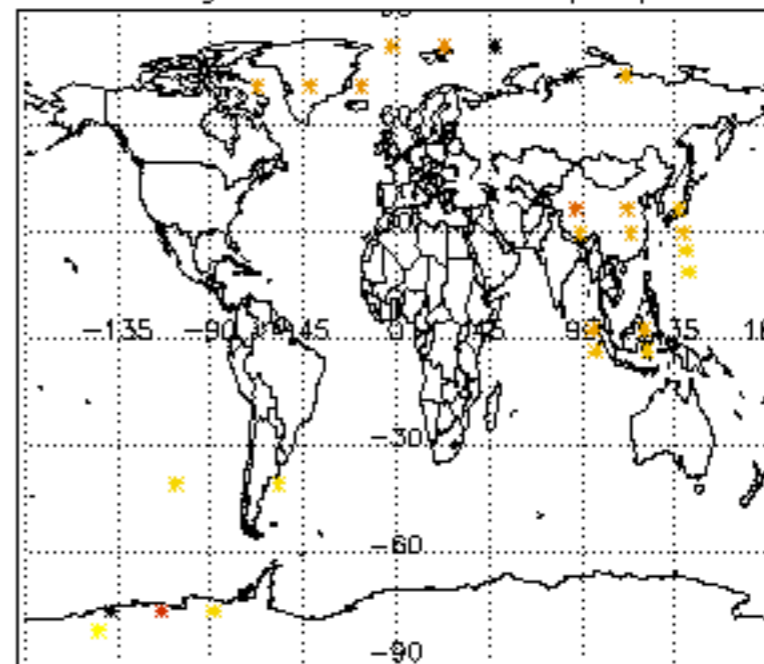




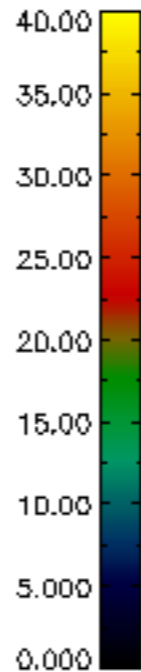
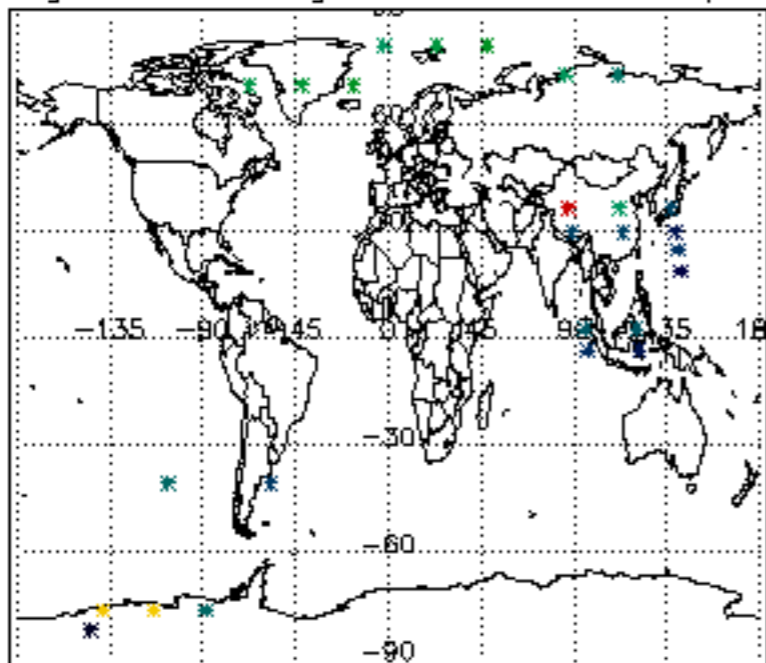
Percentage of cosmic ray hits per profile



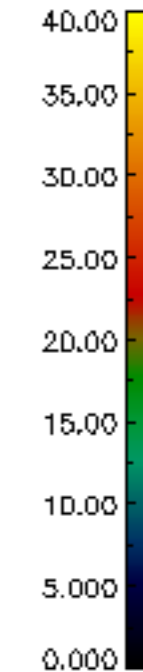
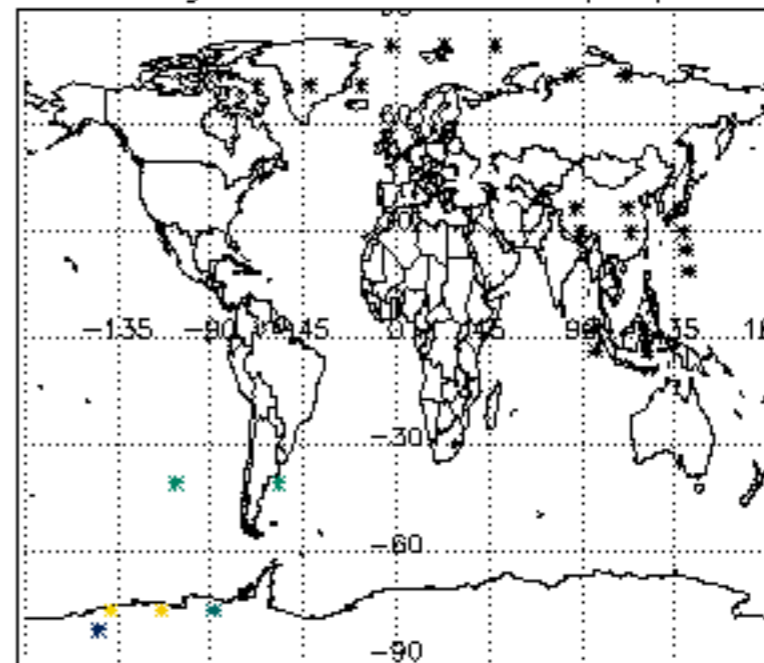
Percentage of datation errors per profile



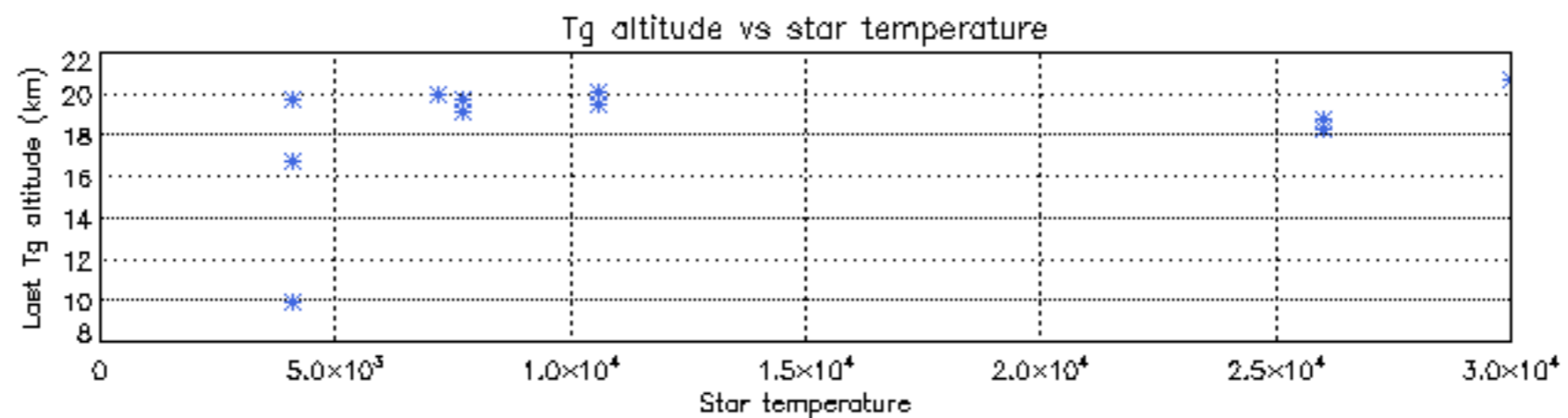
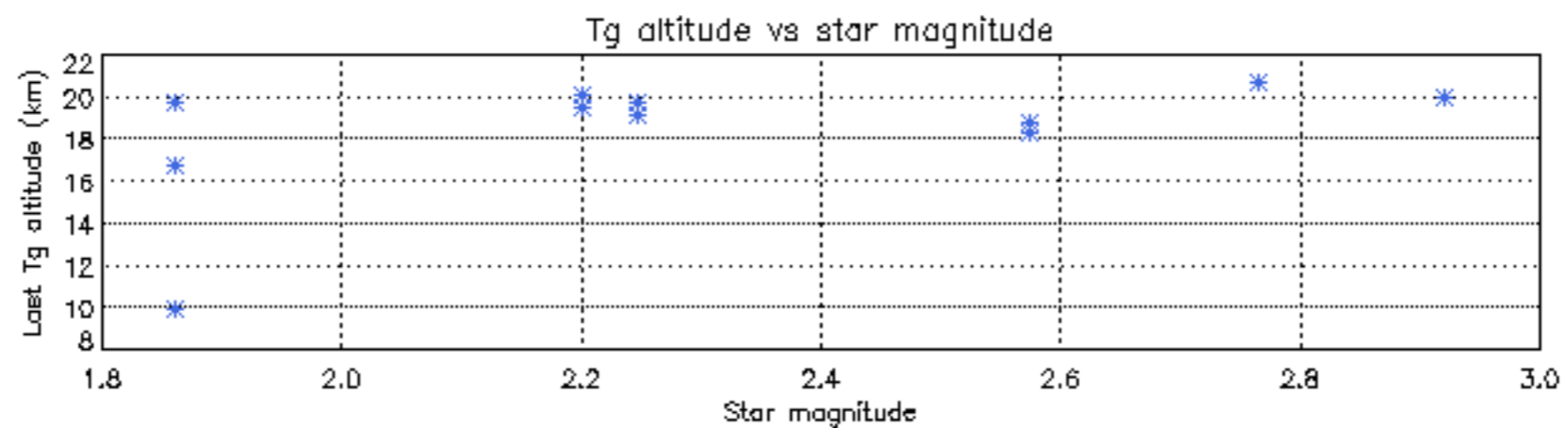
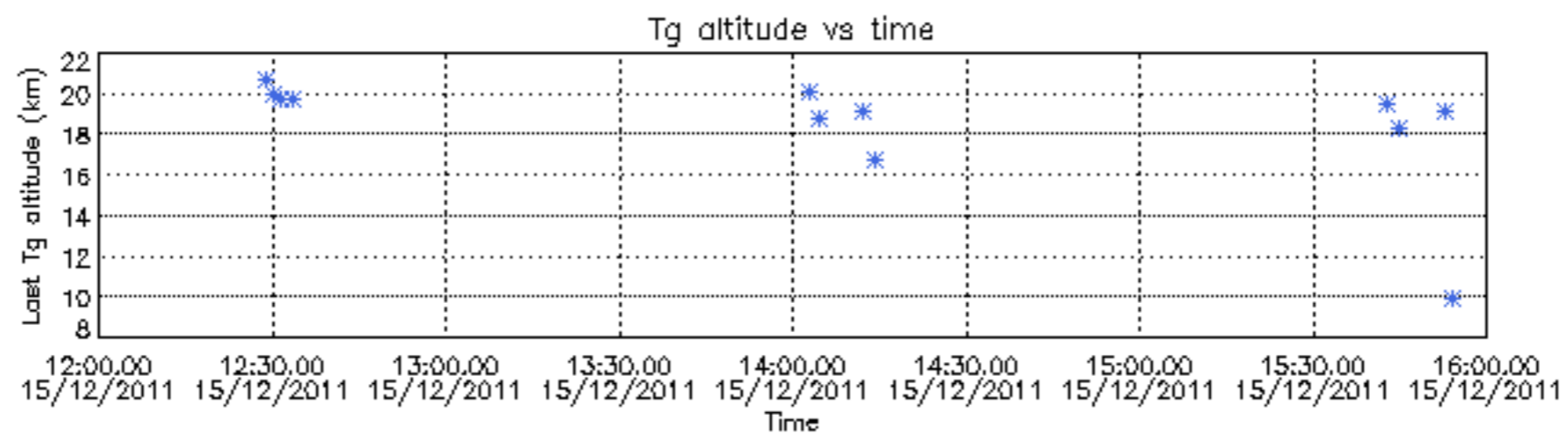
Percentage of star falling outside central band per profile



Percentage of saturation errors per profile



Tangent altitude at which the star is lost



Tangent altitude at which the star is lost

