

IASI L0 and L1 Daily Monitoring Report **Metop-C**

IASI monitoring team

14/10/2019 00:00:00 - 15/10/2019 00:00:00

1 Introduction

This report provides summary monitoring plots and figures from IASI instrument on the Metop-C satellite retrieved from the IASI L0 and L1 ENG product (3 minutes data packet) for 14/10/2019 00:00:00 - 15/10/2019 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 14/10/2019 00:00:00 - 15/10/2019 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	480	-
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	480	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	2196	2200	20191014073923.645	20191014073926.024
PX1 (130)	2227	2229	20191014073931.860	20191014073932.293
PX1 (130)	2290	2332	20191014073950.024	20191014074000.617
PX1 (130)	2363	2390	20191014074008.832	20191014074016.184
PX1 (130)	6764	6773	20191014113809.441	20191014113811.386
PX1 (130)	6857	6900	20191014113834.089	20191014113846.414
PX1 (130)	6926	6928	20191014113852.035	20191014113853.980
PX1 (130)	6949	6951	20191014113858.519	20191014113858.953
PX1 (130)	6954	6959	20191014113859.601	20191014113902.195
PX1 (130)	15897	15901	20191014121844.262	20191014121846.641
PX1 (130)	15925	15950	20191014121851.828	20191014121858.746
PX2 (135)	2196	2200	20191014073923.645	20191014073926.024
PX2 (135)	2217	2219	20191014073929.700	20191014073930.133
PX2 (135)	2224	2226	20191014073931.211	20191014073931.645
PX2 (135)	2290	2332	20191014073950.024	20191014074000.617
PX2 (135)	2351	2353	20191014074006.239	20191014074006.672
PX2 (135)	2358	2360	20191014074007.754	20191014074008.184
PX2 (135)	2363	2390	20191014074008.832	20191014074016.184
PX2 (135)	6764	6773	20191014113809.441	20191014113811.386

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	6780	6782	20191014113814.414	20191014113814.847
PX2 (135)	6787	6789	20191014113815.925	20191014113816.359
PX2 (135)	6857	6900	20191014113834.089	20191014113846.414
PX2 (135)	6935	6937	20191014113855.496	20191014113855.925
PX2 (135)	6954	6959	20191014113859.601	20191014113902.195
PX2 (135)	15897	15901	20191014121844.262	20191014121846.641
PX2 (135)	15918	15920	20191014121850.316	20191014121850.746
PX2 (135)	15925	15950	20191014121851.828	20191014121858.746
PX3 (140)	2196	2200	20191014073923.645	20191014073926.024
PX3 (140)	2290	2332	20191014073950.024	20191014074000.617
PX3 (140)	2363	2390	20191014074008.832	20191014074016.184
PX3 (140)	6764	6772	20191014113809.441	20191014113811.171
PX3 (140)	6857	6900	20191014113834.089	20191014113846.414
PX3 (140)	6928	6930	20191014113853.980	20191014113854.414
PX3 (140)	6944	6946	20191014113857.441	20191014113857.871
PX3 (140)	6951	6953	20191014113858.953	20191014113859.386
PX3 (140)	6954	6958	20191014113859.601	20191014113901.980
PX3 (140)	15897	15901	20191014121844.262	20191014121846.641
PX3 (140)	15925	15950	20191014121851.828	20191014121858.746
PX4 (145)	2196	2200	20191014073923.645	20191014073926.024
PX4 (145)	2219	2221	20191014073930.133	20191014073930.563
PX4 (145)	2290	2332	20191014073950.024	20191014074000.617
PX4 (145)	2344	2346	20191014074003.211	20191014074003.645
PX4 (145)	2353	2355	20191014074006.672	20191014074007.106
PX4 (145)	2360	2362	20191014074008.184	20191014074008.617
PX4 (145)	2363	2390	20191014074008.832	20191014074016.184
PX4 (145)	6763	6772	20191014113809.226	20191014113811.171
PX4 (145)	6857	6899	20191014113834.089	20191014113846.195
PX4 (145)	6921	6923	20191014113850.953	20191014113851.386
PX4 (145)	6937	6939	20191014113855.925	20191014113856.359
PX4 (145)	6954	6958	20191014113859.601	20191014113901.980
PX4 (145)	15897	15901	20191014121844.262	20191014121846.641
PX4 (145)	15920	15922	20191014121850.746	20191014121851.180
PX4 (145)	15925	15950	20191014121851.828	20191014121858.746
IMG (150)	4507	4512	20191014073923.430	20191014073924.727
IMG (150)	4535	4537	20191014073930.133	20191014073930.563
IMG (150)	4537	4539	20191014073930.563	20191014073930.996
IMG (150)	4617	4664	20191014073949.590	20191014074000.617
IMG (150)	4678	4680	20191014074003.645	20191014074004.078
IMG (150)	4684	4686	20191014074005.375	20191014074006.024
IMG (150)	4691	4693	20191014074007.106	20191014074007.535
IMG (150)	4698	4730	20191014074008.617	20191014074016.184
IMG (150)	16239	16248	20191014113809.226	20191014113811.171
IMG (150)	16262	16264	20191014113814.847	20191014113815.277
IMG (150)	16264	16266	20191014113815.277	20191014113815.710
IMG (150)	16344	11	20191014113833.871	20191014113846.195
IMG (150)	28	30	20191014113849.871	20191014113850.304
IMG (150)	35	37	20191014113851.386	20191014113851.820
IMG (150)	46	48	20191014113854.414	20191014113854.843
IMG (150)	48	50	20191014113854.843	20191014113855.277
IMG (150)	55	57	20191014113856.359	20191014113856.792
IMG (150)	62	64	20191014113857.871	20191014113858.304
IMG (150)	69	78	20191014113859.386	20191014113901.980

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	10205	10213	20191014121844.262	20191014121846.641
IMG (150)	10234	10236	20191014121851.180	20191014121851.613
IMG (150)	10237	10266	20191014121851.828	20191014121858.746
VER (160)	16380	0	20191014023956.323	20191014024004.323
VER (160)	1	16381	20191014024004.323	20191014024004.323
VER (160)	-1	2	20191014024004.323	20191014024012.323
VER (160)	11221	11225	20191014073916.293	20191014073923.645
VER (160)	11226	11228	20191014073923.645	20191014073932.293
VER (160)	11228	11230	20191014073932.293	20191014073932.293
VER (160)	11241	11250	20191014073948.293	20191014073956.293
VER (160)	11251	11257	20191014074004.293	20191014074020.293
VER (160)	16381	0	20191014095652.262	20191014095700.262
VER (160)	2	16382	20191014095700.262	20191014095700.262
VER (160)	-1	3	20191014095700.262	20191014095708.262
VER (160)	3809	3811	20191014113850.089	20191014113851.167
VER (160)	3812	3828	20191014113851.167	20191014113908.249
VER (160)	5313	5317	20191014121844.262	20191014121851.398
VER (160)	5317	5323	20191014121851.398	20191014121900.262
VER (160)	16382	0	20191014171348.240	20191014171356.240
VER (160)	3	16383	20191014171356.240	20191014171356.240
VER (160)	-1	4	20191014171356.240	20191014171404.240
AUX (180)	8773	8775	20191014073948.727	20191014074004.727
AUX (180)	8775	8777	20191014074004.727	20191014074020.727
AUX (180)	10564	10566	20191014113851.167	20191014113852.683
AUX (180)	10566	10568	20191014113852.683	20191014113908.683
AUX (180)	10865	10867	20191014121851.398	20191014121900.695

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
14/10/2019 00:00:15	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	480	-
GQisFlagQual set (PX1)	99.44 %	-
GQisFlagQual set (PX2)	99.46 %	-
GQisFlagQual set (PX3)	99.47 %	-
GQisFlagQual set (PX4)	99.41 %	-
GQisFlagQual set (all)	99.45 %	-

Table 4: Quality flags

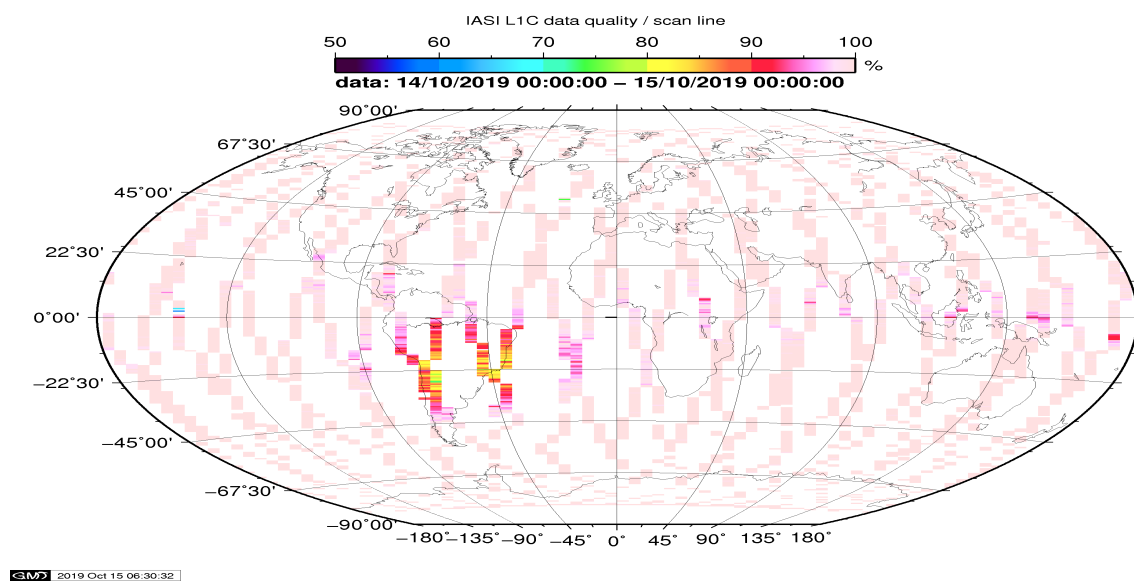


Figure 1: L1C data quality

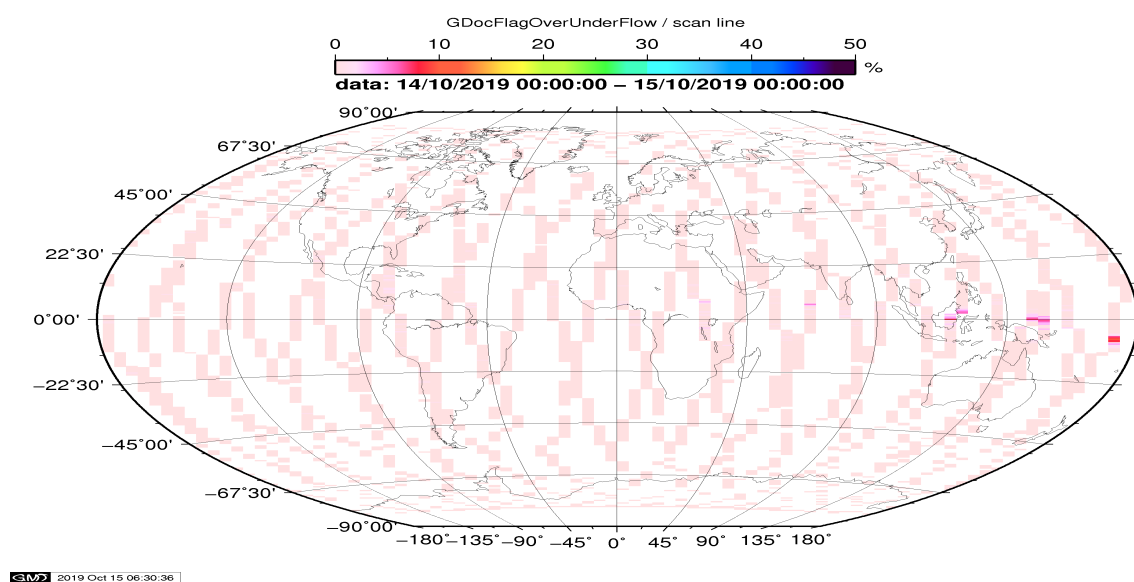


Figure 2: Flag of Over and Under Flows

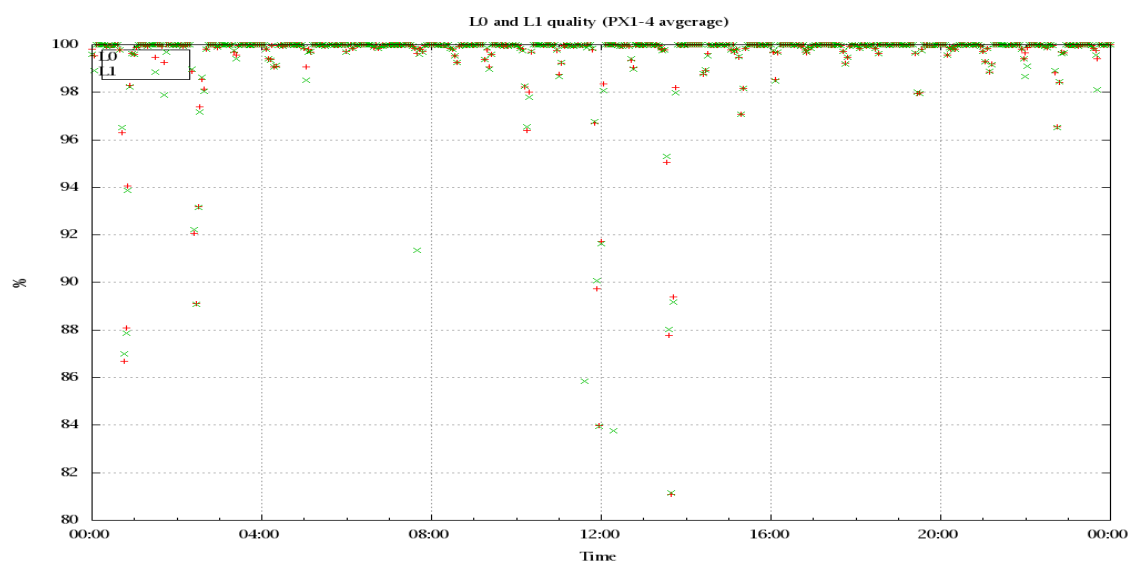


Figure 3: Level 0 and 1C overall quality

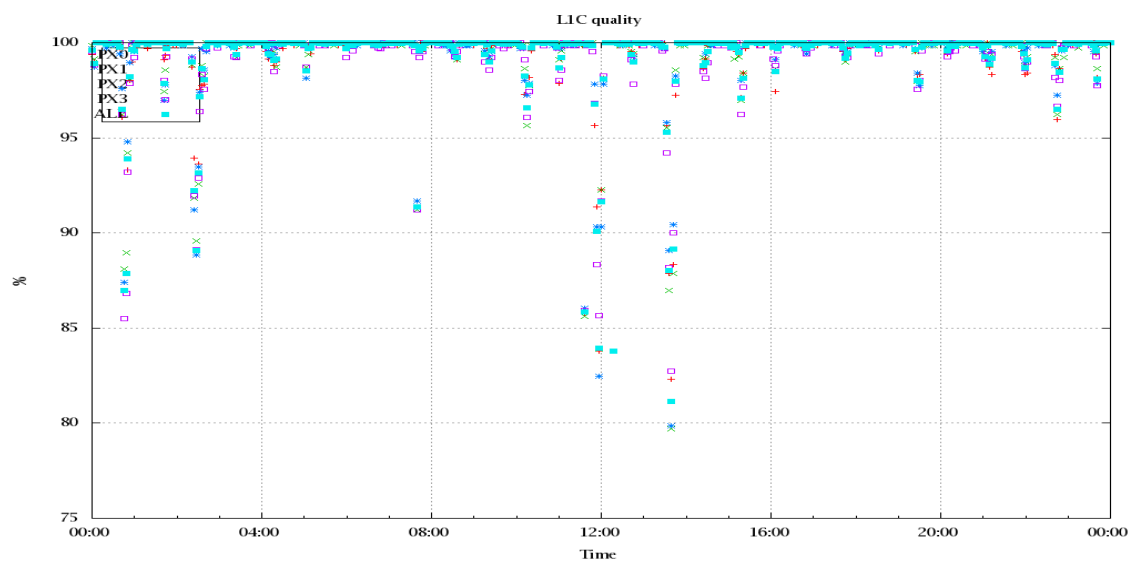


Figure 4: Level 1C quality

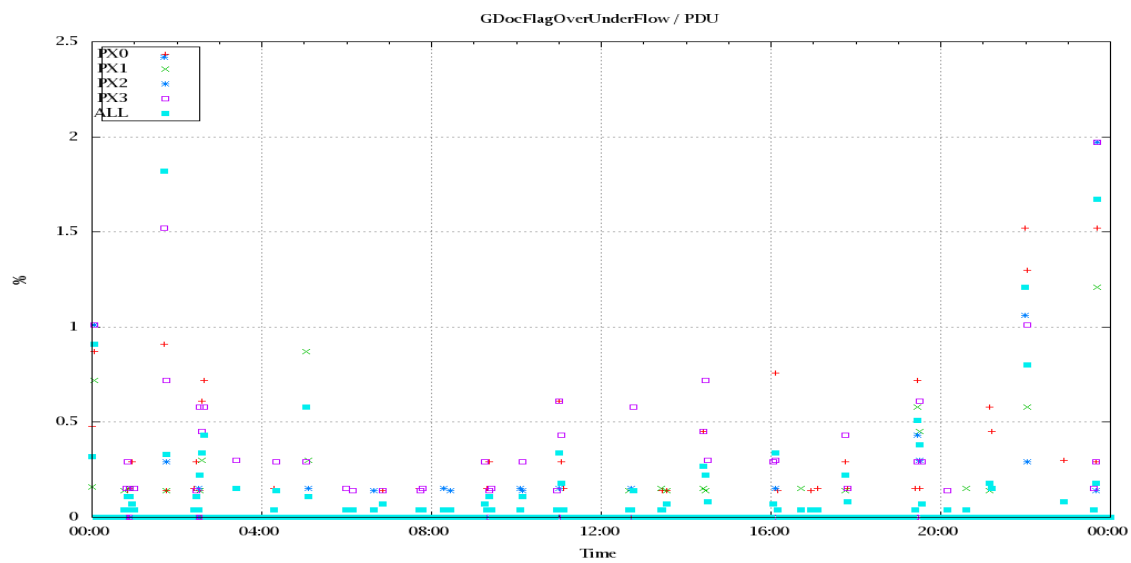


Figure 5: Timeseries of flag of Over and Under Flows

5 Radiance monitoring based on NWP

The radiance monitoring compares the IASI measurements (L1C-eps-products) obtained under clear sky situation over sea with modeled radiances. Cloud identification is based on cloud flag of co-located AVHRR L1B data in addition to information from the IASI L1C clustering analysis here only homogenous situations are taken into account (99.0 percent in first class).

A radiative transfer model (RTM) is feed with co-located ECMWF profiles of T, water vapor and Ozone. Between March 2007 and the 18th of May 2010 RTIASI in Version 4.0 is used. After that date the RTTOV model in V9.3 is used.

Information about the SST is obtained from the AVHRR L1B or taken from AVHRR scenes analysis (CGS only). In the following figures 28 to 34, the so-called radiance anomaly is shown. The radiance anomaly is defined as the difference between the quarter daily radiance average OBS-CAL (over all pixels and scan positions 10 to 20) and the average bias OBS-CAL (over all pixels and scan positions 10 to 20) of the last 30 days.

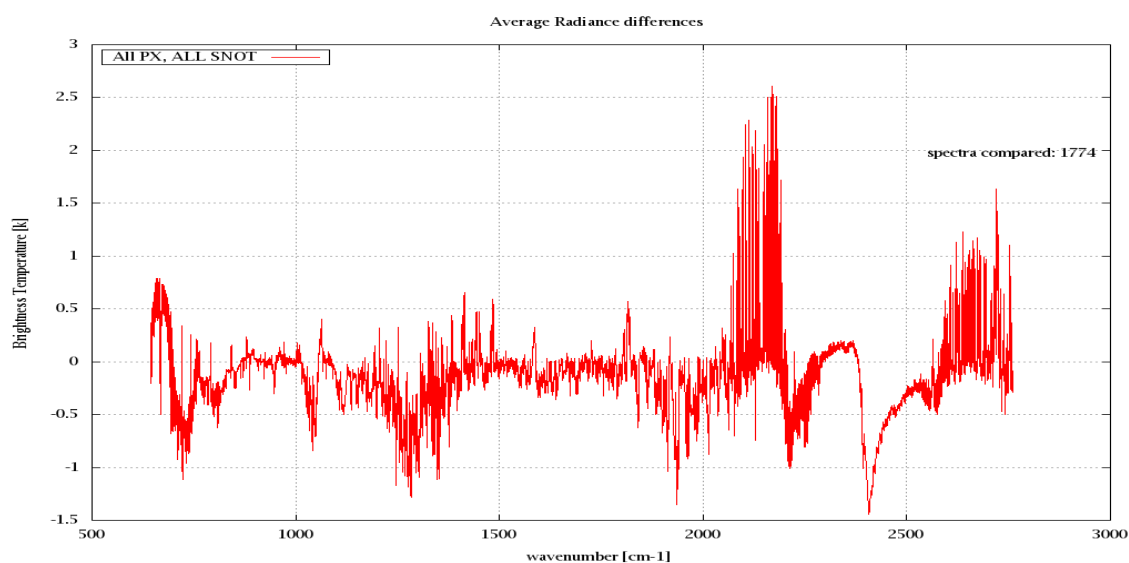


Figure 6: Average Radiance differences: OBS-CAL

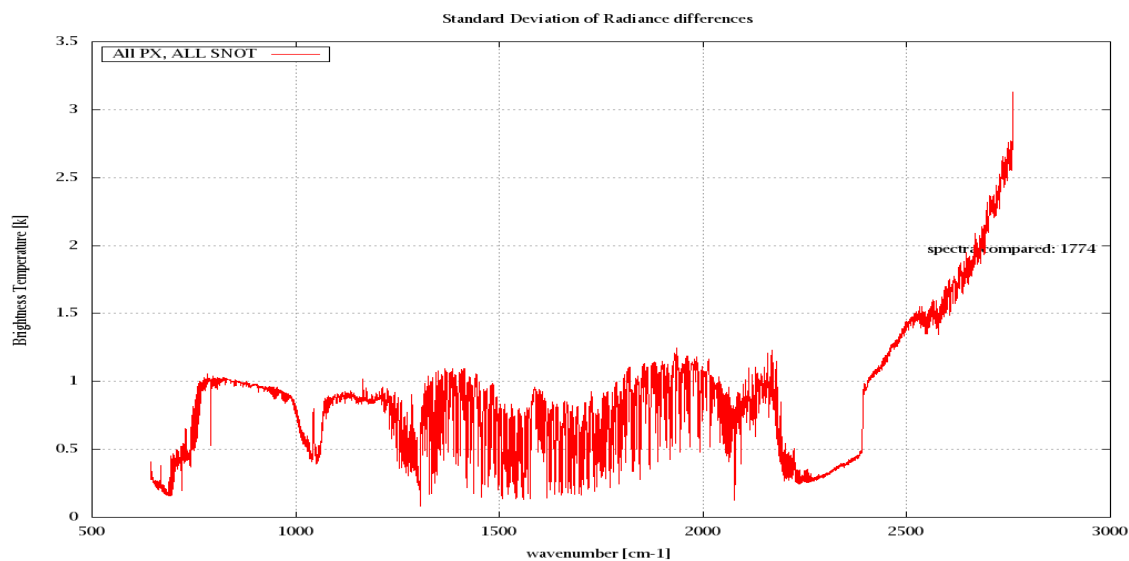


Figure 7: Standard Deviation of Radiance differences

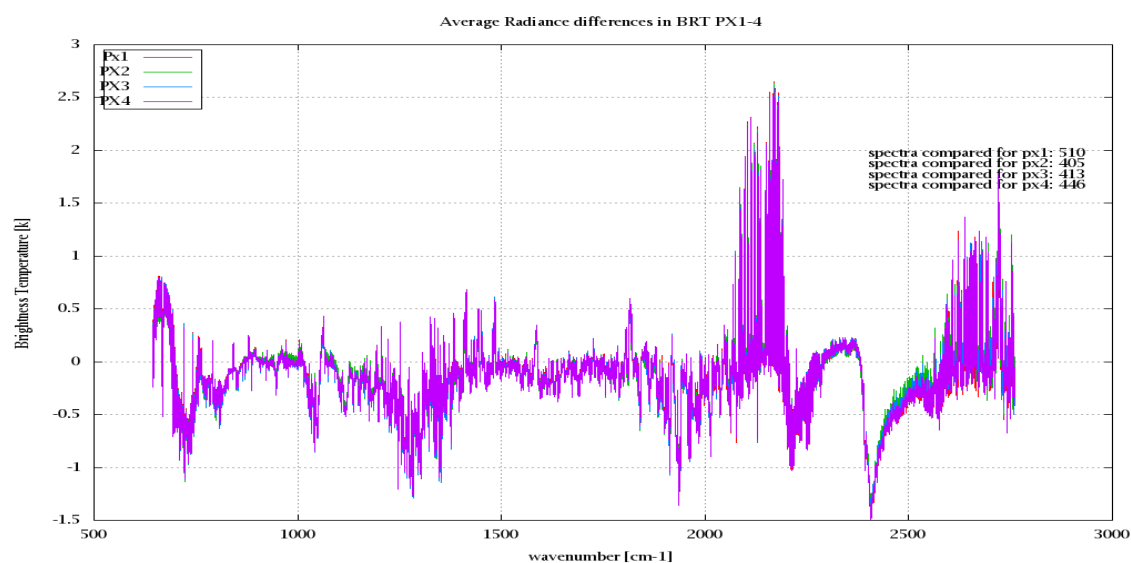


Figure 8: Average Radiance differences: OBS-CAL

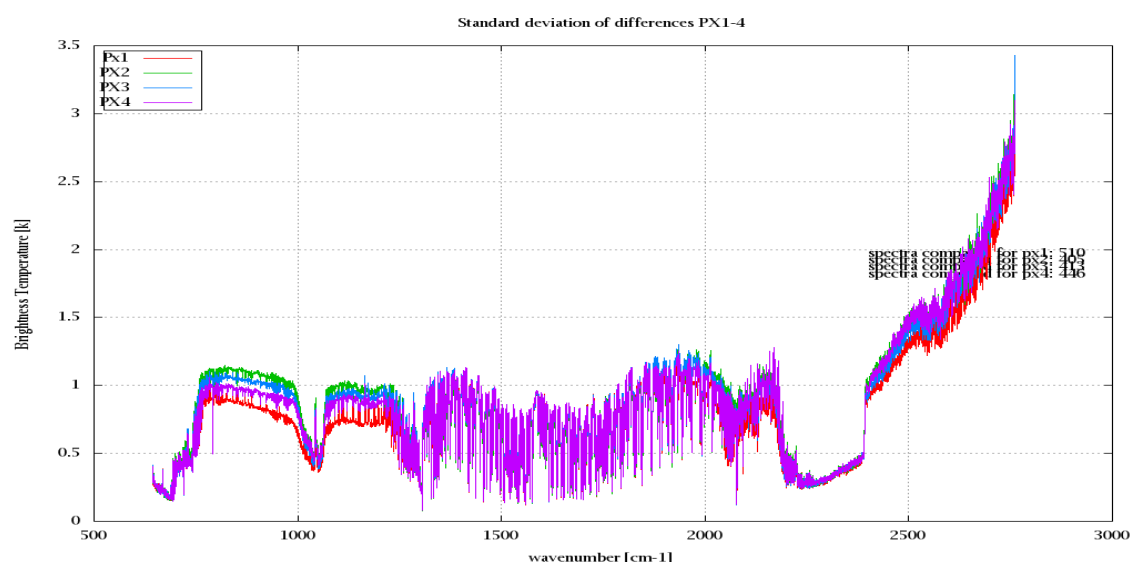


Figure 9: Standard Deviation of Radiance differences

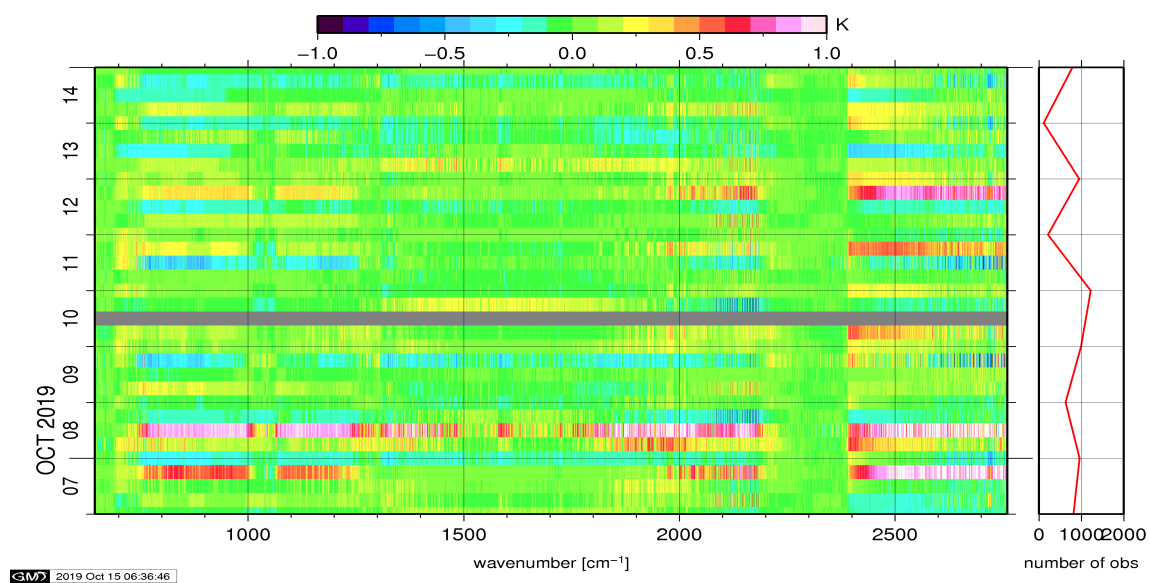


Figure 10: Radiance Anomaly in BT: All Channels

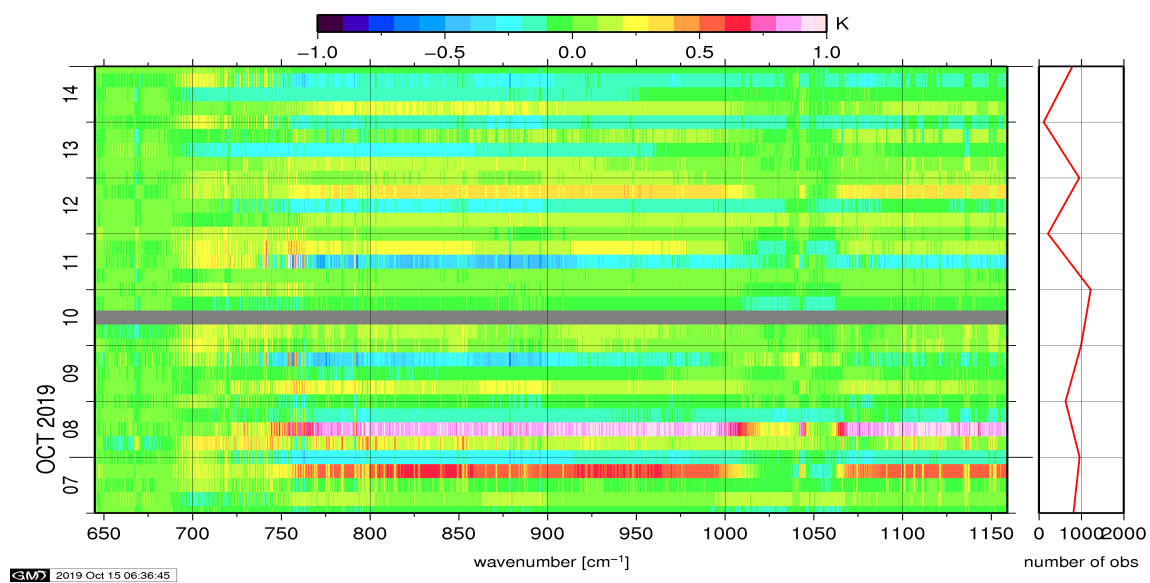


Figure 11: Radiance Anomaly in BT: IASI Band 1

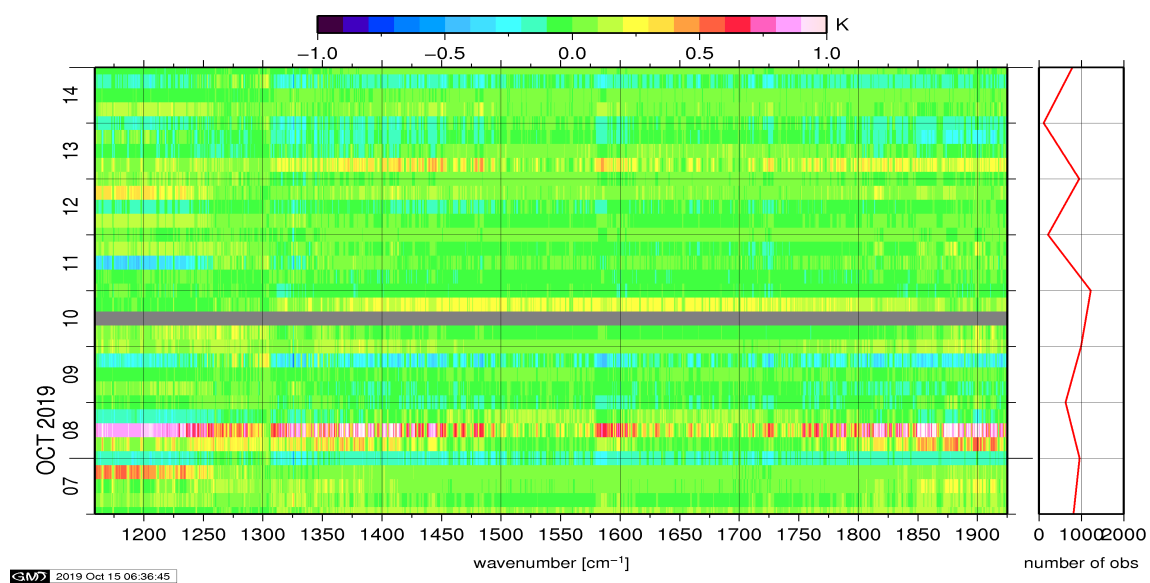


Figure 12: Radiance Anomaly in BT: IASI Band 2

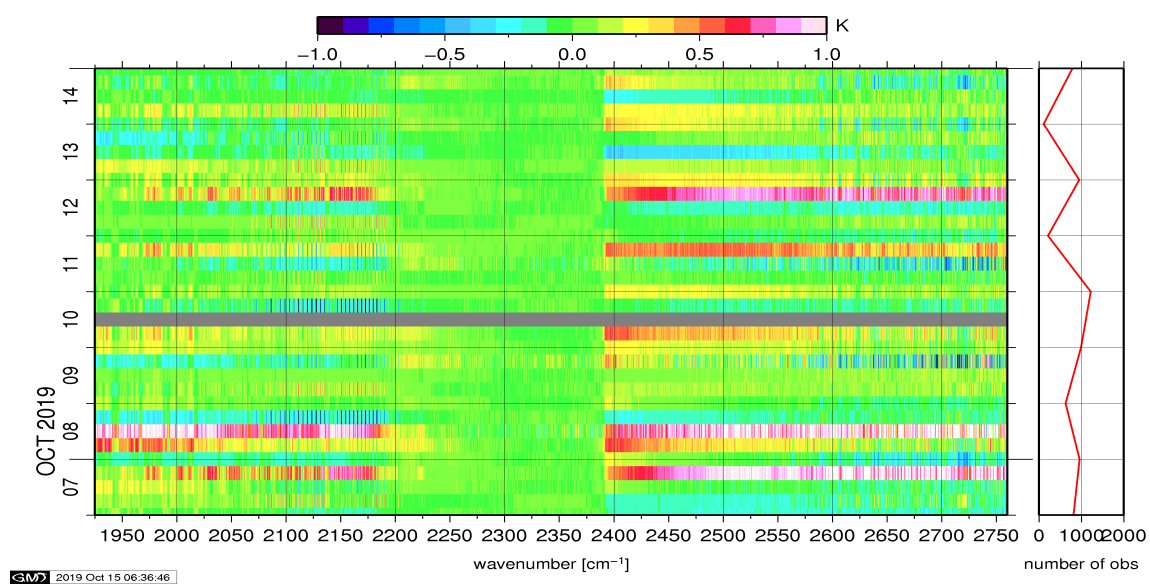


Figure 13: Radiance Anomaly in BT: IASI Band 3

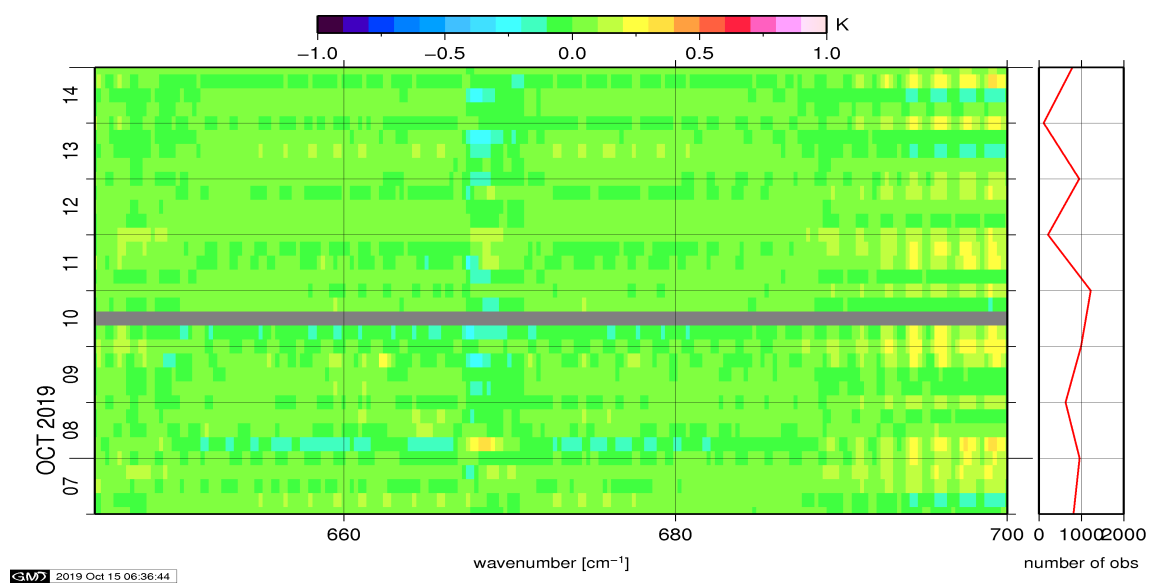


Figure 14: Radiance Anomaly in BT: CO2 14

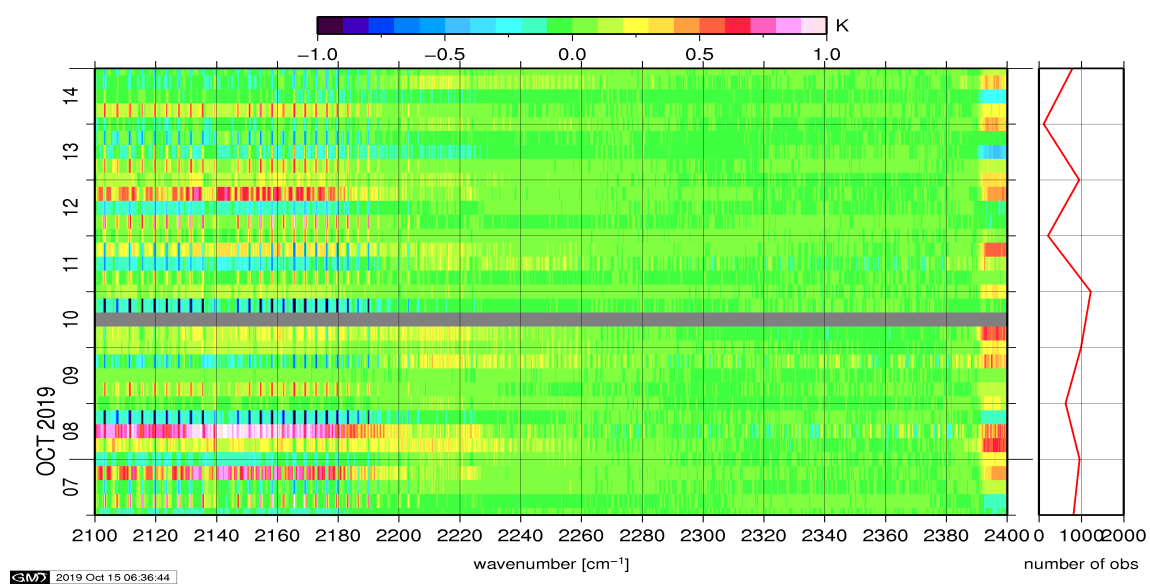


Figure 15: Radiance Anomaly in BT: CO2 4.3

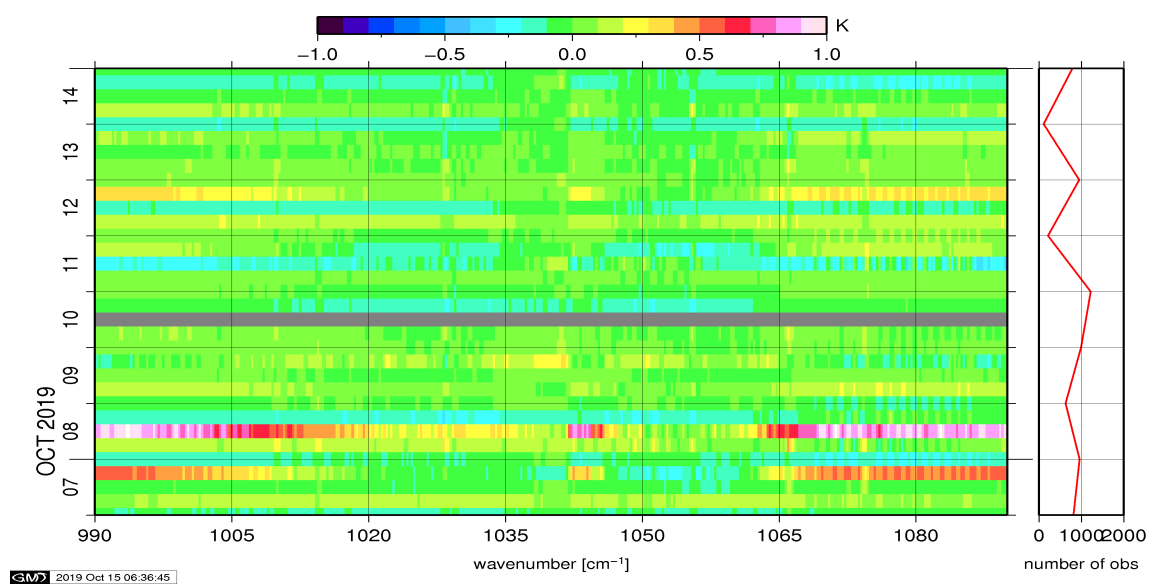


Figure 16: Radiance Anomaly in BT: O3