

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

IASI monitoring team

16/10/2019 00:00:00 - 17/10/2019 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 16/10/2019 00:00:00 - 17/10/2019 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 16/10/2019 00:00:00 - 17/10/2019 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)	479	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	3801	0	20191016104452.023	20191016104757.745
PX1 (130)	13729	13862	20191016202057.371	20191016202133.696
PX1 (130)	13863	13865	20191016202133.910	20191016202134.344
PX1 (130)	13865	13867	20191016202134.344	20191016202134.774
PX1 (130)	13868	13871	20191016202134.992	20191016202135.641
PX1 (130)	13875	13877	20191016202136.504	20191016202136.938
PX1 (130)	13877	13879	20191016202136.938	20191016202137.371
PX1 (130)	13879	13887	20191016202137.371	20191016202139.098
PX1 (130)	13887	14900	20191016202139.098	20191016202609.578
PX2 (135)	3801	0	20191016104452.023	20191016104757.745
PX2 (135)	13729	13861	20191016202057.371	20191016202131.965
PX2 (135)	13863	13865	20191016202133.910	20191016202134.344
PX2 (135)	13865	13867	20191016202134.344	20191016202134.774
PX2 (135)	13867	13870	20191016202134.774	20191016202135.422
PX2 (135)	13871	13873	20191016202135.641	20191016202136.071
PX2 (135)	13874	13876	20191016202136.289	20191016202136.723
PX2 (135)	13877	13879	20191016202136.938	20191016202137.371
PX2 (135)	13881	13887	20191016202137.801	20191016202139.098
PX2 (135)	13887	13889	20191016202139.098	20191016202139.531
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	13889	13891	20191016202139.531	20191016202139.965
PX2 (135)	13891	14900	20191016202139.965	20191016202609.578
PX3 (140)	3801	0	20191016104452.023	20191016104757.745
PX3 (140)	13729	13760	20191016202057.371	20191016202105.586
PX3 (140)	13760	13813	20191016202105.586	20191016202120.074
PX3 (140)	13813	13858	20191016202120.074	20191016202131.317
PX3 (140)	13858	13865	20191016202131.317	20191016202134.344
PX3 (140)	13866	13868	20191016202134.559	20191016202134.992
PX3 (140)	13868	13870	20191016202134.992	20191016202135.422
PX3 (140)	13870	13873	20191016202135.422	20191016202136.071
PX3 (140)	13873	13875	20191016202136.071	20191016202136.504
PX3 (140)	13876	13878	20191016202136.723	20191016202137.153
PX3 (140)	13882	13885	20191016202138.020	20191016202138.668
PX3 (140)	13885	14900	20191016202138.668	20191016202609.578
PX4 (145)	3801	0	20191016104452.023	20191016104757.745
PX4 (145)	13728	13760	20191016202057.153	20191016202105.586
PX4 (145)	13760	13863	20191016202105.586	20191016202133.910
PX4 (145)	13863	13865	20191016202133.910	20191016202134.344
PX4 (145)	13866	13869	20191016202134.559	20191016202135.207
PX4 (145)	13874	13876	20191016202136.289	20191016202136.723
PX4 (145)	13876	13878	20191016202136.723	20191016202137.153
PX4 (145)	13878	13882	20191016202137.153	20191016202138.020
PX4 (145)	13882	13887	20191016202138.020	20191016202139.098
PX4 (145)	13887	14900	20191016202139.098	20191016202609.578
IMG (150)	16157	0	20191016104452.023	20191016104757.745
IMG (150)	14460	14496	20191016202057.153	20191016202105.586
IMG (150)	14496	14603	20191016202105.586	20191016202130.668
IMG (150)	14603	14610	20191016202130.668	20191016202132.399
IMG (150)	14616	14618	20191016202134.125	20191016202134.559
IMG (150)	14618	14621	20191016202134.559	20191016202135.207
IMG (150)	14621	14623	20191016202135.207	20191016202135.641
IMG (150)	14624	14626	20191016202135.856	20191016202136.289
IMG (150)	14627	14630	20191016202136.504	20191016202137.153
IMG (150)	14631	15636	20191016202137.371	20191016202534.121
IMG (150)	15636	15788	20191016202534.121	20191016202609.578
VER (160)	16382	0	20191016053820.061	20191016053828.061
VER (160)	3	16383	20191016053828.061	20191016053828.061
VER (160)	-1	4	20191016053828.061	20191016053836.061
VER (160)	11490	15	20191016104452.023	20191016104904.987
VER (160)	16381	0	20191016180707.992	20191016180715.992
VER (160)	2	16382	20191016180715.992	20191016180715.992
VER (160)	-1	3	20191016180715.992	20191016180723.988
VER (160)	5012	5037	20191016202051.965	20191016202131.965
VER (160)	5037	5208	20191016202131.965	20191016202611.957
AUX (180)	15376	0	20191016104444.452	20191016104804.448
AUX (180)	4283	4285	20191016202132.399	20191016202148.395
AUX (180)	4285	4287	20191016202148.395	20191016202204.395
AUX (180)	4287	4289	20191016202204.395	20191016202220.395
AUX (180)	4291	4293	20191016202236.395	20191016202252.395
AUX (180)	4293	4296	20191016202252.395	20191016202316.395
AUX (180)	4296	4300	20191016202316.395	20191016202348.395
AUX (180)	4301	4305	20191016202356.395	20191016202428.391
AUX (180)	4305	4307	20191016202428.391	20191016202444.391

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APID	Seq from	Seq to	Time from	Time to
AUX (180)	4307	4309	20191016202444.391	20191016202500.391
AUX (180)	4310	4314	20191016202508.391	20191016202540.390
AUX (180)	4314	4317	20191016202540.390	20191016202604.390

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
16/10/2019 00:00:15	-	Normal operation
16/10/2019 14:07:11	Normal operation	Auxiliary ASE synchronised
16/10/2019 14:09:19	Auxiliary ASE synchronised	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)	99.33 %	-
GQisFlagQual set (PX2)	99.36 %	-
GQisFlagQual set (PX3)	99.36 %	-
GQisFlagQual set (PX4)	99.32 %	-
GQisFlagQual set (all)	99.34 %	-

Table 4: Quality flags

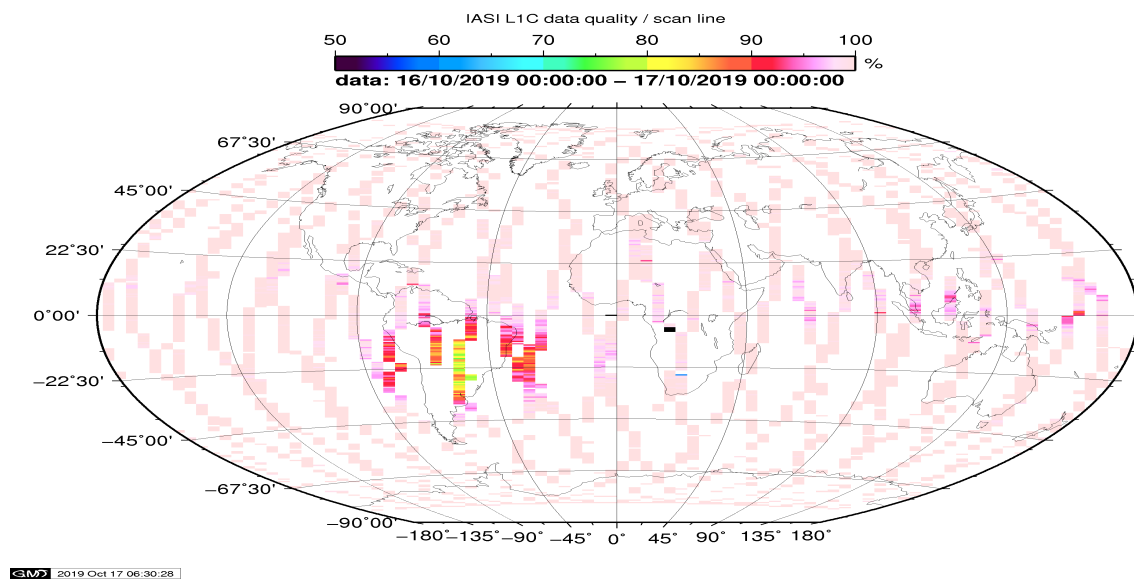


Figure 1: L1C data quality

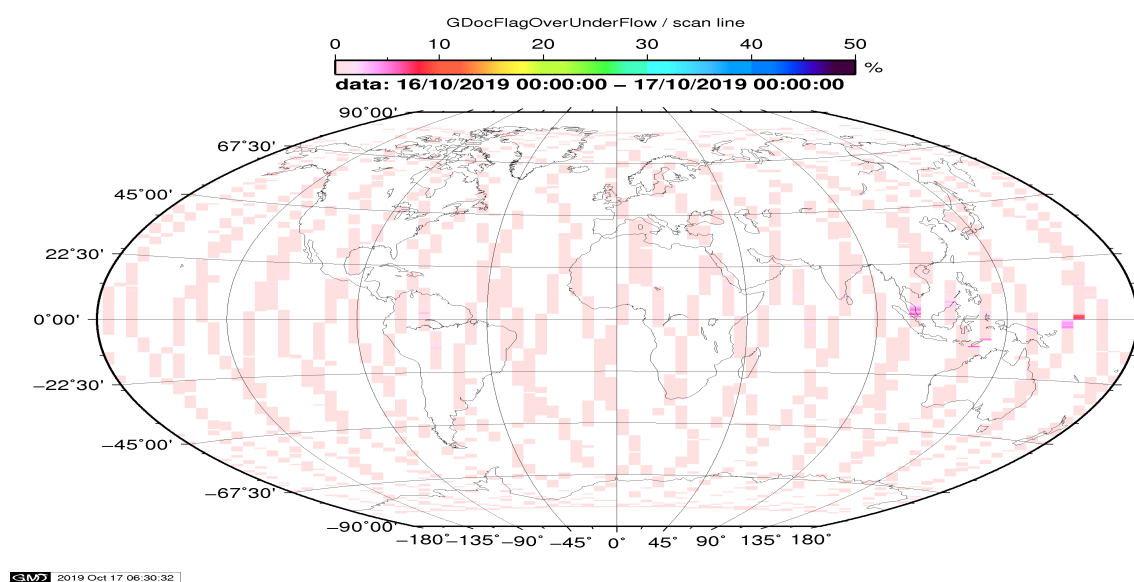


Figure 2: Flag of Over and Under Flows

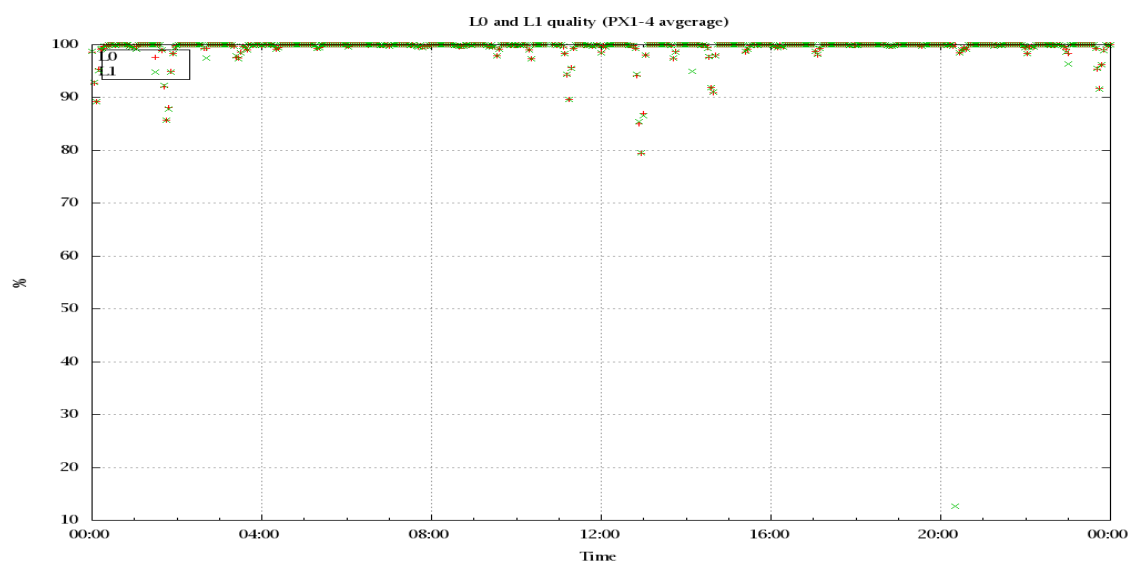


Figure 3: Level 0 and 1C overall quality

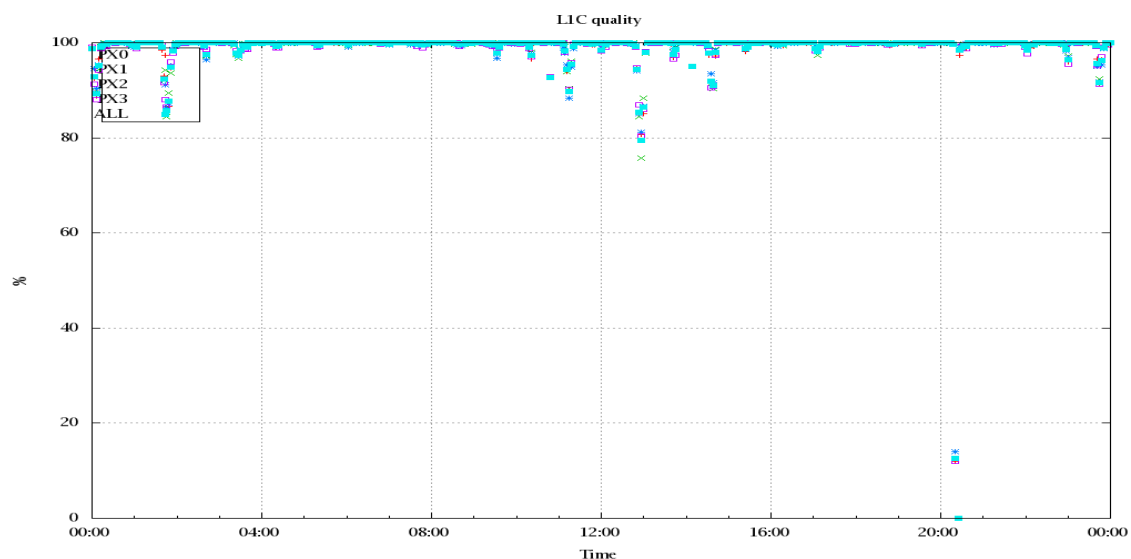


Figure 4: Level 1C quality

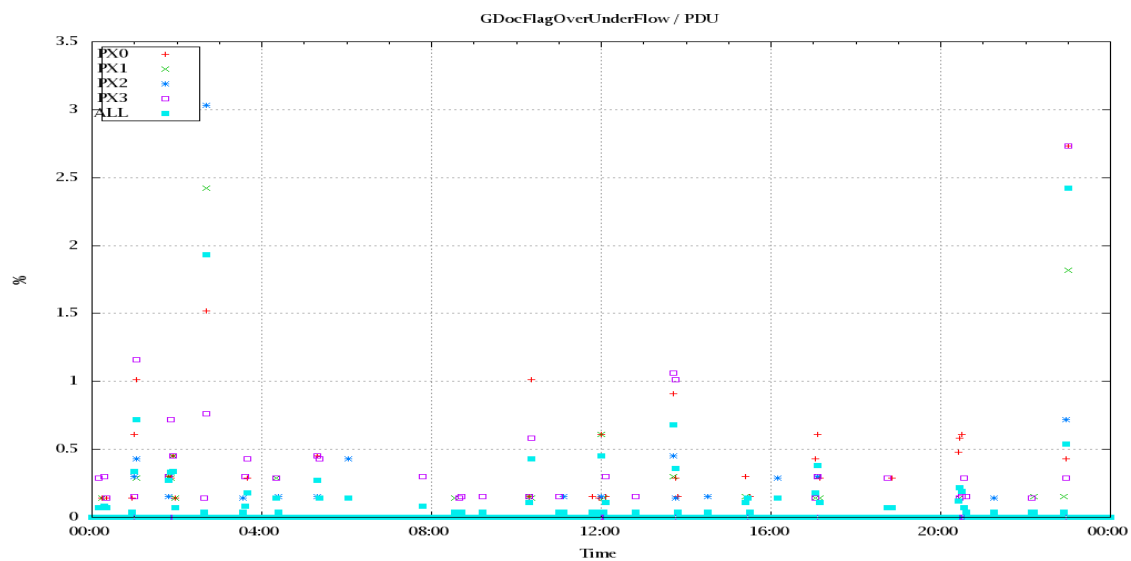


Figure 5: Timeseries of flag of Over and Under Flows

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.

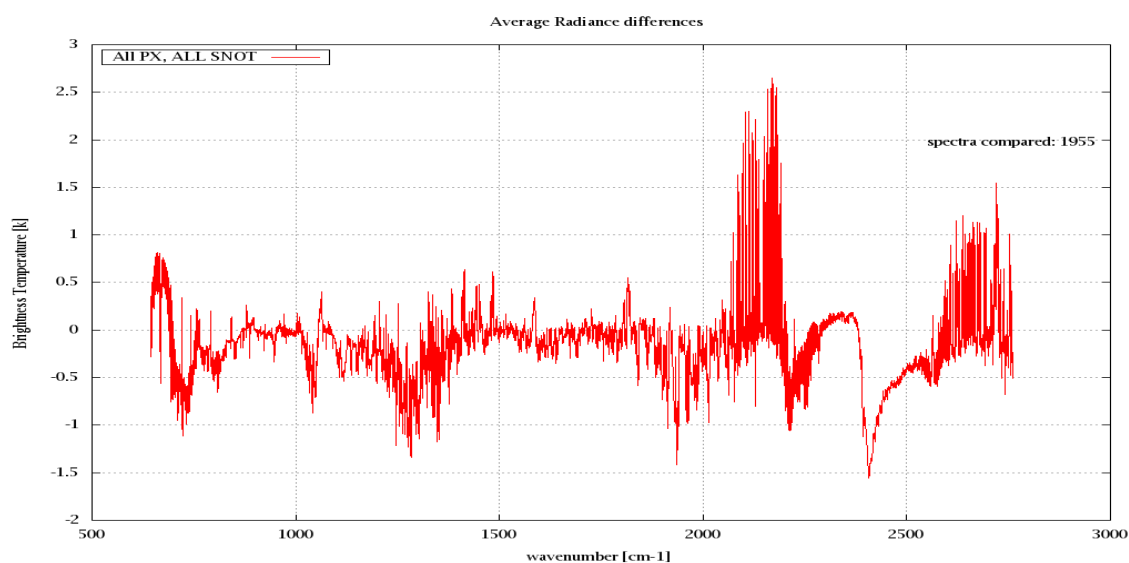


Figure 6: Average Radiance differences: OBS-CAL

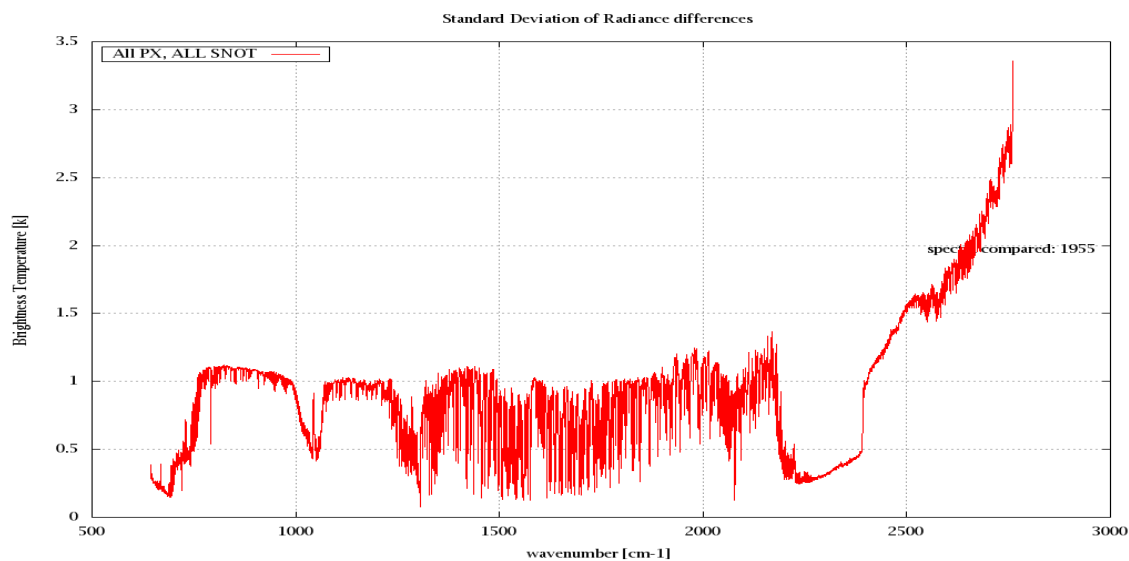


Figure 7: Standard Deviation of Radiance differences

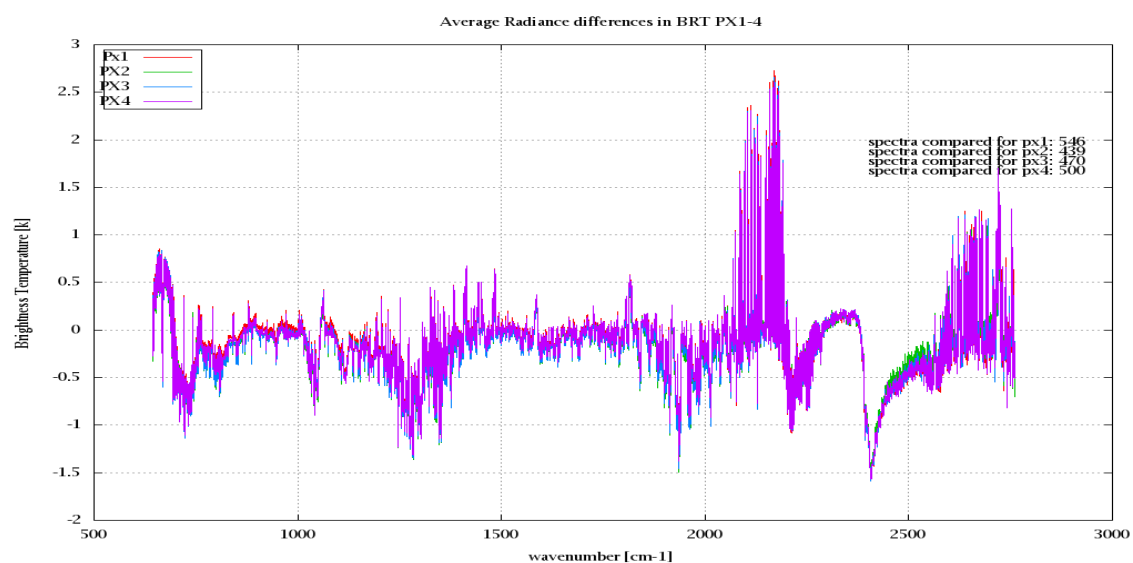


Figure 8: Average Radiance differences: OBS-CAL

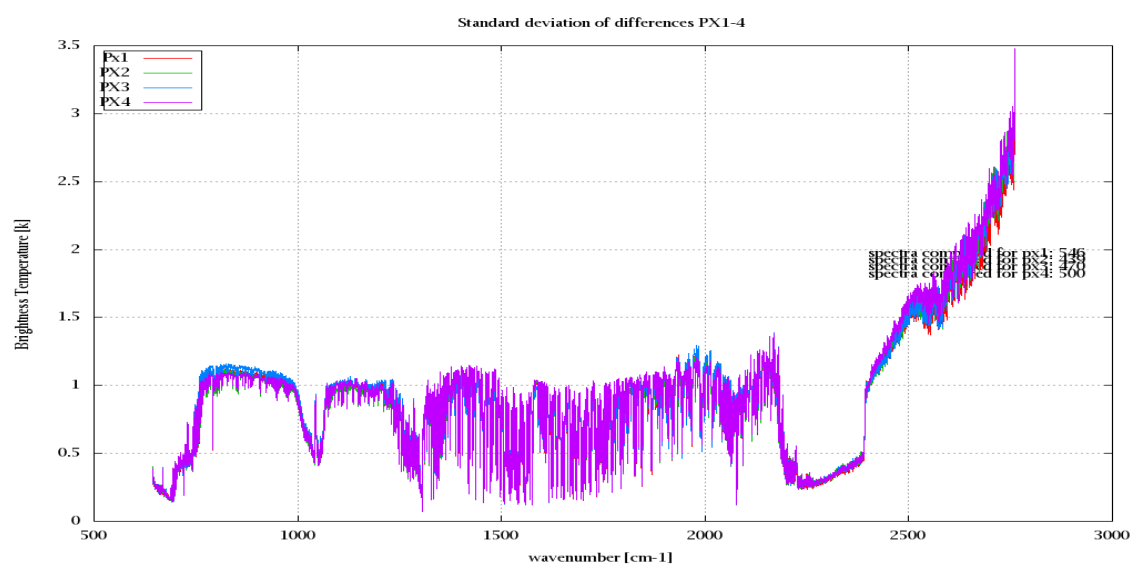


Figure 9: Standard Deviation of Radiance differences

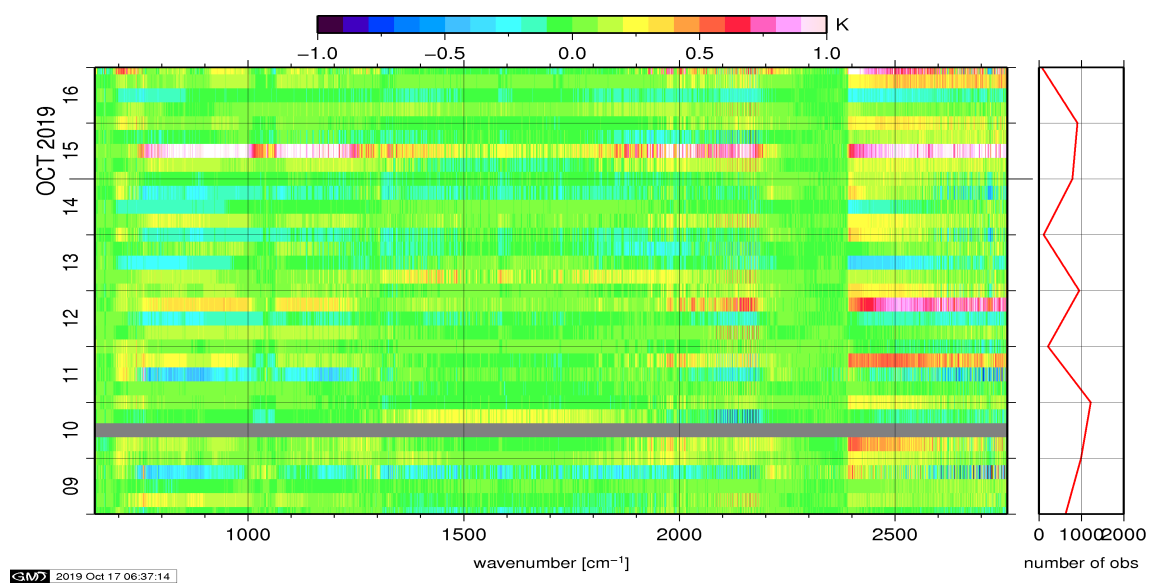


Figure 10: Radiance Anomaly in BT: All Channels

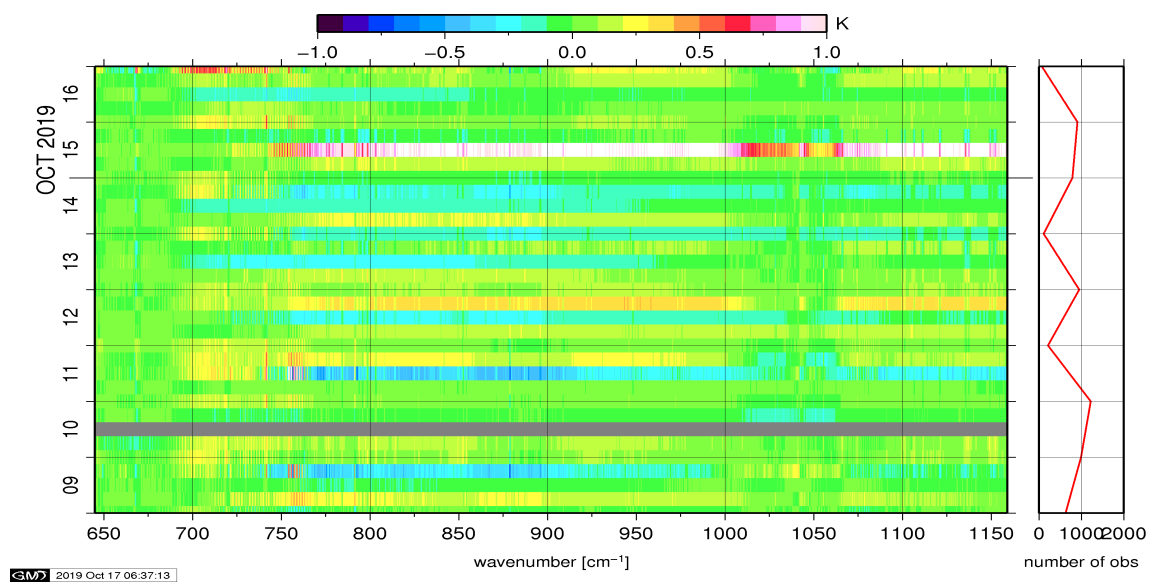


Figure 11: Radiance Anomaly in BT: IASI Band 1

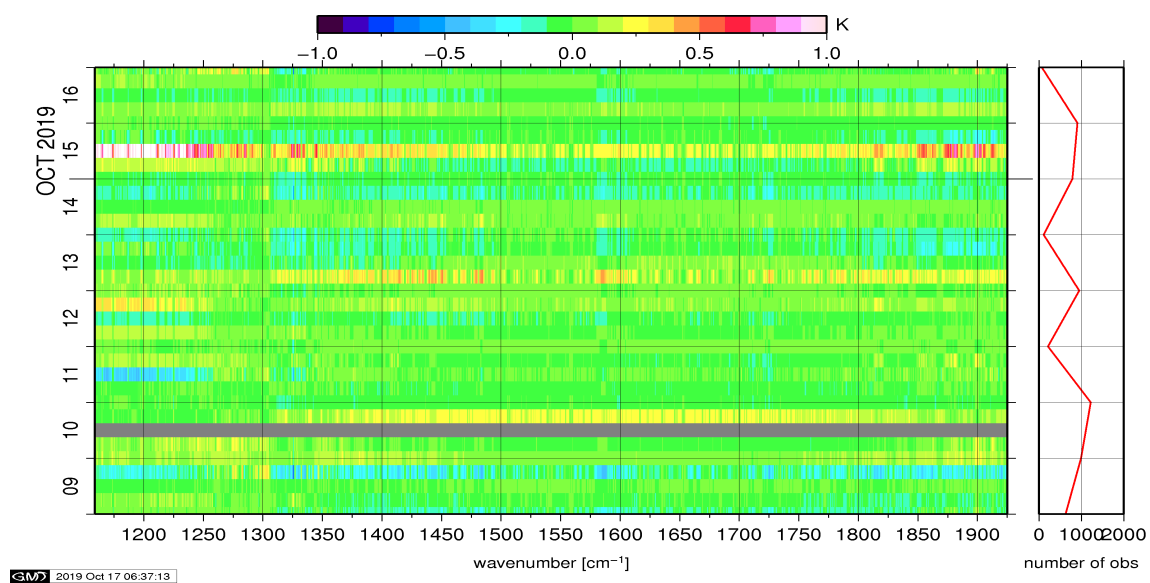


Figure 12: Radiance Anomaly in BT: IASI Band 2

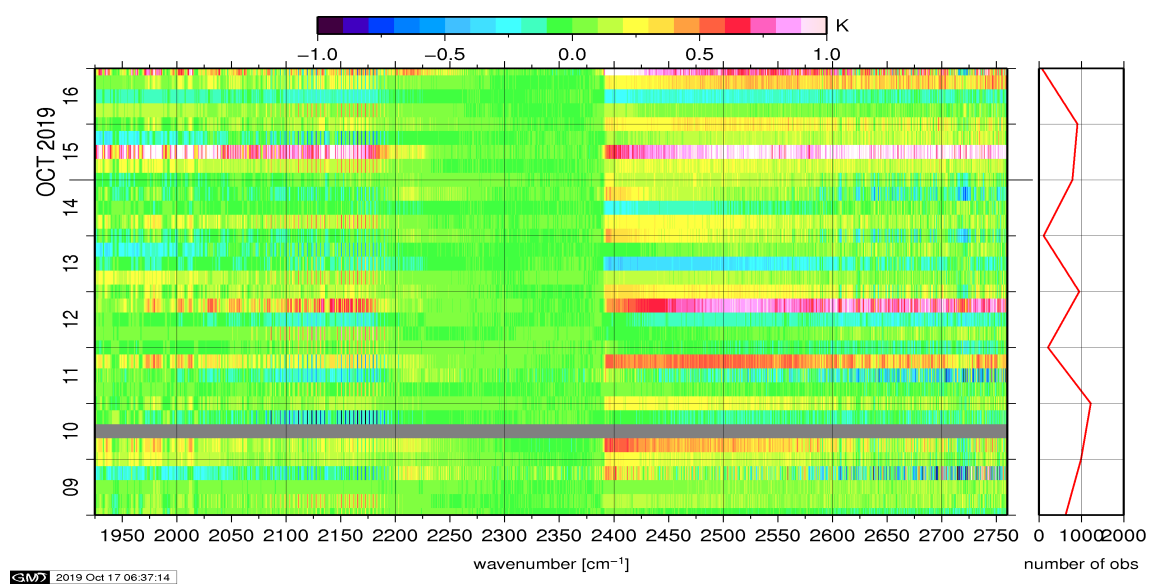


Figure 13: Radiance Anomaly in BT: IASI Band 3

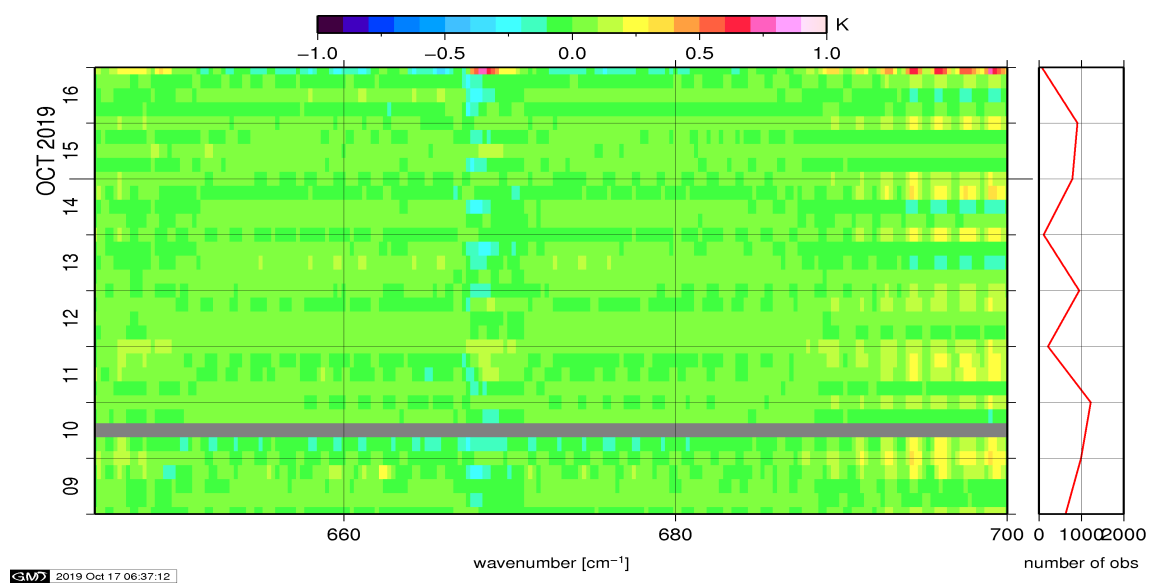


Figure 14: Radiance Anomaly in BT: CO2 14

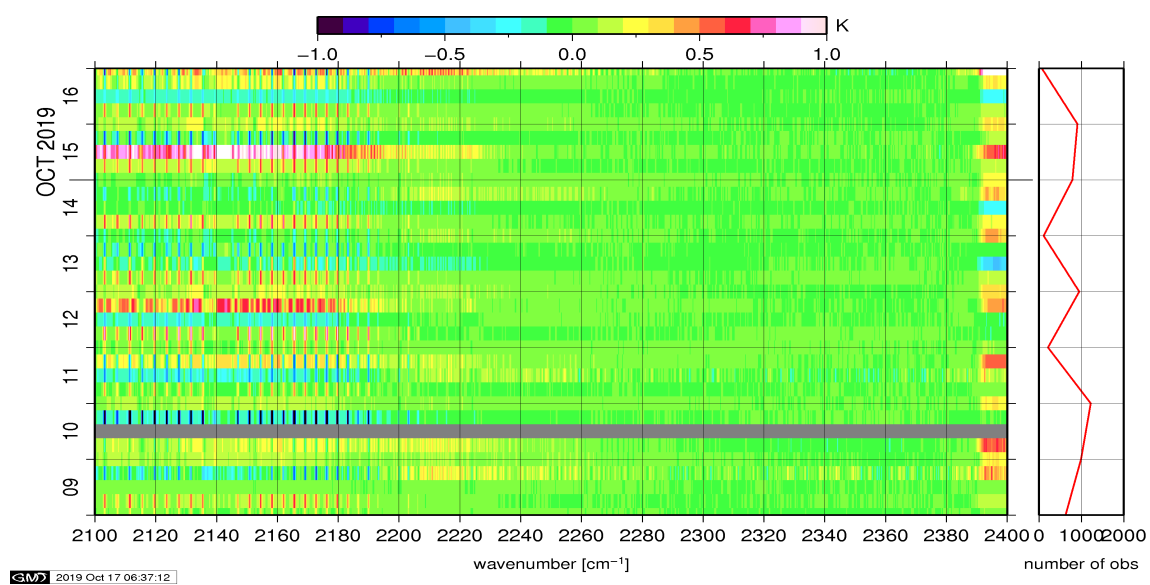


Figure 15: Radiance Anomaly in BT: CO2 4.3

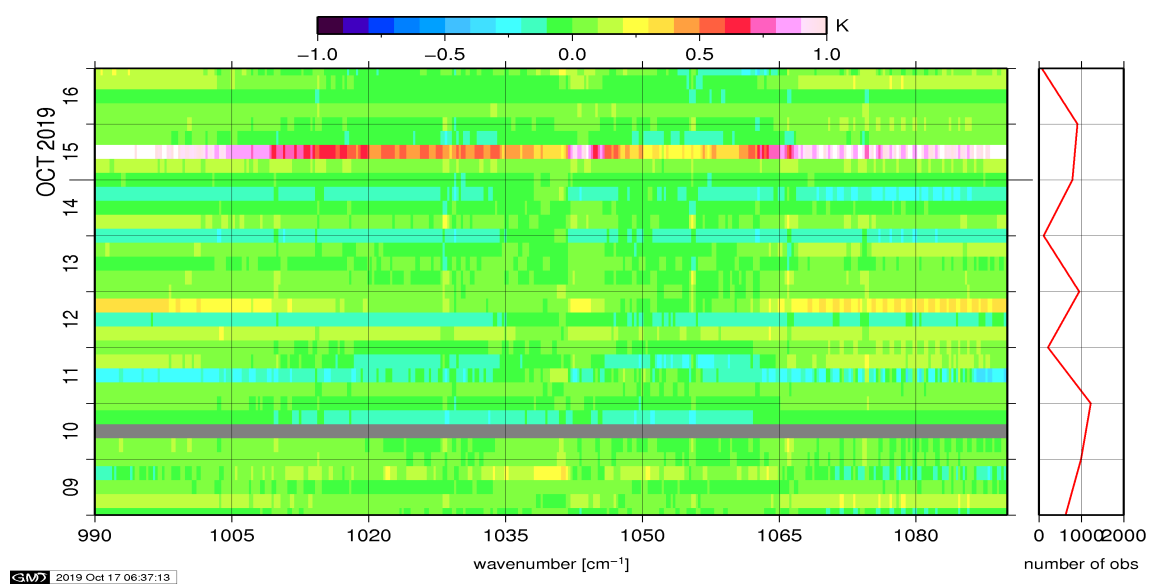


Figure 16: Radiance Anomaly in BT: O3