

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

IASI monitoring team

15/10/2020 00:00:00 - 16/10/2020 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 15/10/2020 00:00:00 - 16/10/2020 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 15/10/2020 00:00:00 - 16/10/2020 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	481	-
L1 ENG distinct GEPSGranule	478	-
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)	1014	1023	20201015131035.810	20201015131037.755
PX1 (130)	1044	1046	20201015131043.810	20201015131044.243
PX1 (130)	1051	1065	20201015131045.321	20201015131049.864
PX1 (130)	2806	2815	20201015131834.106	20201015131836.051
PX1 (130)	2846	2848	20201015131844.266	20201015131844.700
PX2 (135)	1014	1022	20201015131035.810	20201015131037.540
PX2 (135)	1044	1046	20201015131043.810	20201015131044.243
PX2 (135)	1051	1065	20201015131045.321	20201015131049.864
PX2 (135)	2806	2815	20201015131834.106	20201015131836.051
PX2 (135)	2848	2850	20201015131844.700	20201015131845.129
PX3 (140)	1014	1022	20201015131035.810	20201015131037.540
PX3 (140)	1046	1048	20201015131044.243	20201015131044.673
PX3 (140)	1051	1064	20201015131045.321	20201015131049.646
PX3 (140)	2806	2815	20201015131834.106	20201015131836.051
PX3 (140)	2848	2850	20201015131844.700	20201015131845.129
PX4 (145)	1014	1022	20201015131035.810	20201015131037.540
PX4 (145)	1046	1048	20201015131044.243	20201015131044.673
PX4 (145)	1051	1064	20201015131045.321	20201015131049.646
PX4 (145)	2806	2815	20201015131834.106	20201015131836.051

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	2848	2850	20201015131844.700	20201015131845.129
PX4 (145)	2850	2852	20201015131845.129	20201015131845.563
IMG (150)	9477	9486	20201015131035.595	20201015131037.540
IMG (150)	9516	9518	20201015131044.673	20201015131045.107
IMG (150)	9518	9536	20201015131045.107	20201015131049.646
IMG (150)	11509	11519	20201015131833.887	20201015131836.051
IMG (150)	11551	11553	20201015131843.618	20201015131844.051
IMG (150)	11553	11555	20201015131844.051	20201015131844.481
IMG (150)	11558	11560	20201015131845.129	20201015131845.563
VER (160)	16379	0	20201015030022.476	20201015030030.476
VER (160)	0	16380	20201015030030.476	20201015030030.476
VER (160)	-1	1	20201015030030.476	20201015030038.476
VER (160)	16380	0	20201015101718.419	20201015101726.419
VER (160)	1	16381	20201015101726.419	20201015101726.419
VER (160)	-1	2	20201015101726.419	20201015101734.419
VER (160)	6496	6502	20201015131038.403	20201015131054.403
VER (160)	16381	0	20201015173414.396	20201015173422.396
VER (160)	2	16382	20201015173422.396	20201015173422.396
VER (160)	-1	3	20201015173422.396	20201015173430.396
AUX (180)	14404	14406	20201015131038.837	20201015131054.837

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
15/10/2020 00:00:01	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	481	-
L1 ENG PDUs	481	-
L1 ENG distinct GEPSGranule	478	-
GQisFlagQual set (PX1)	99.51 %	-
GQisFlagQual set (PX2)	99.54 %	-
GQisFlagQual set (PX3)	99.53 %	-
GQisFlagQual set (PX4)	99.48 %	-
GQisFlagQual set (all)	99.51 %	-

Table 4: Quality flags

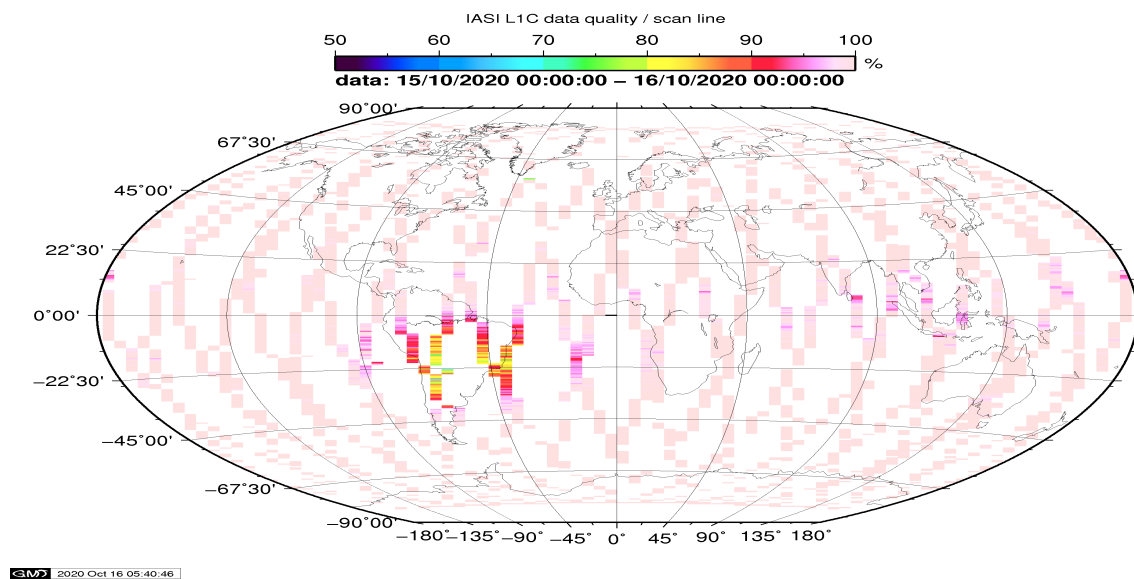


Figure 1: L1C data quality

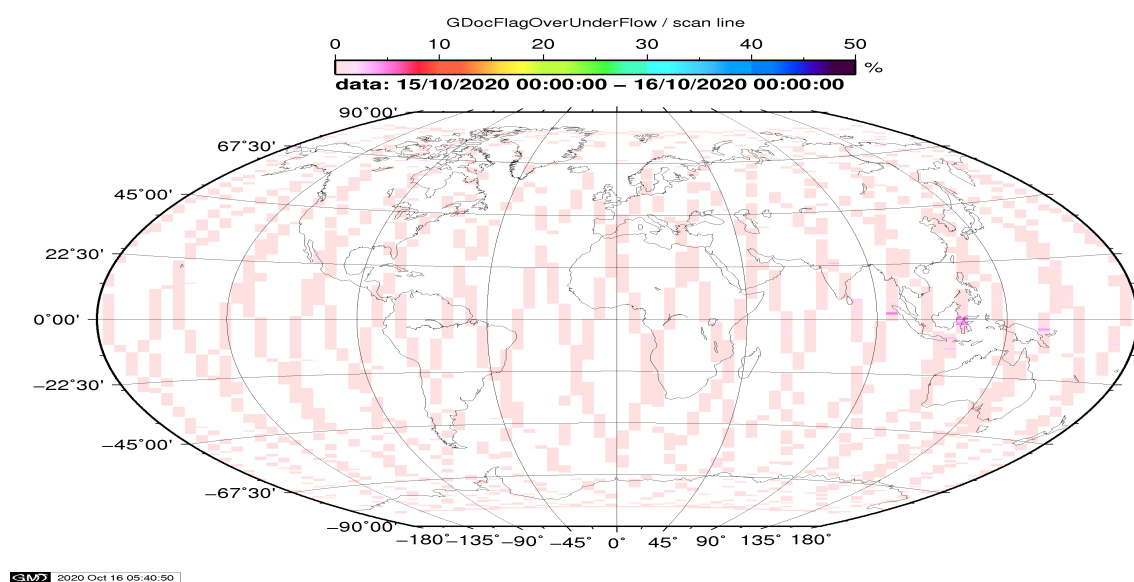


Figure 2: Flag of Over and Under Flows

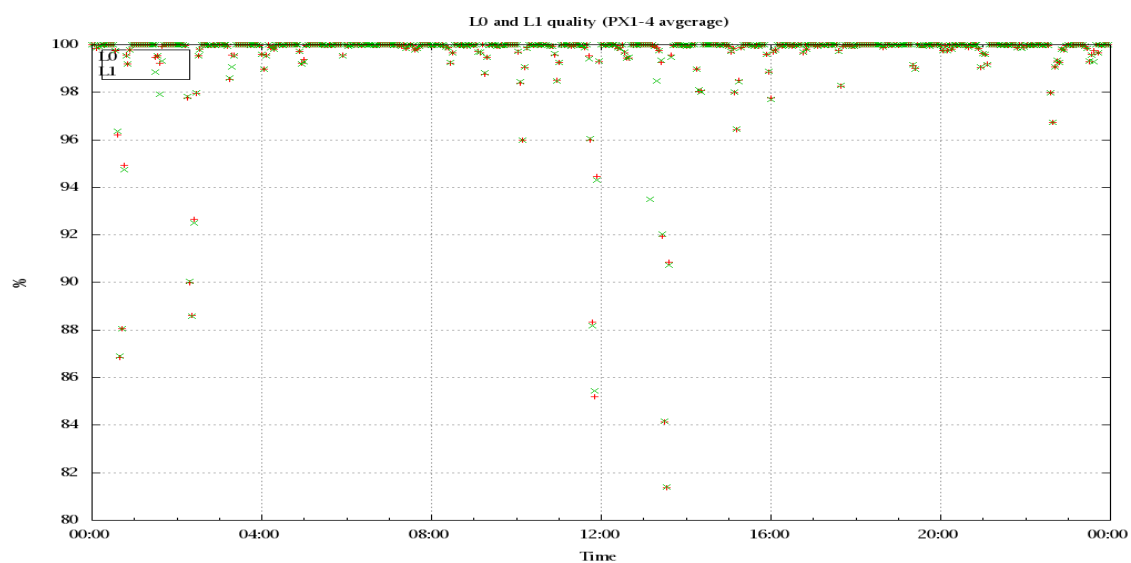


Figure 3: Level 0 and 1C overall quality

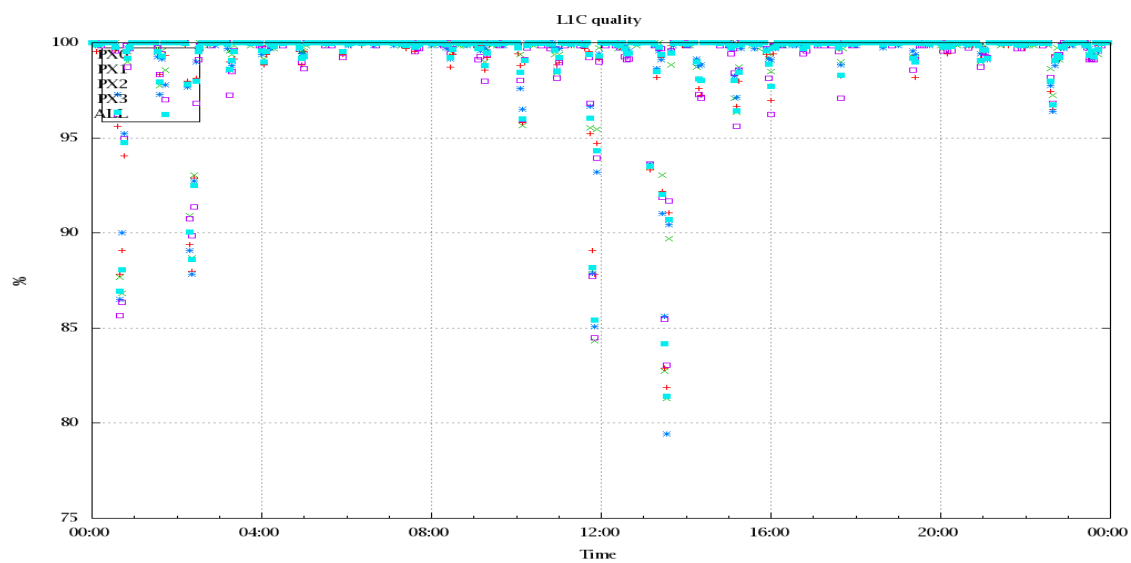


Figure 4: Level 1C quality

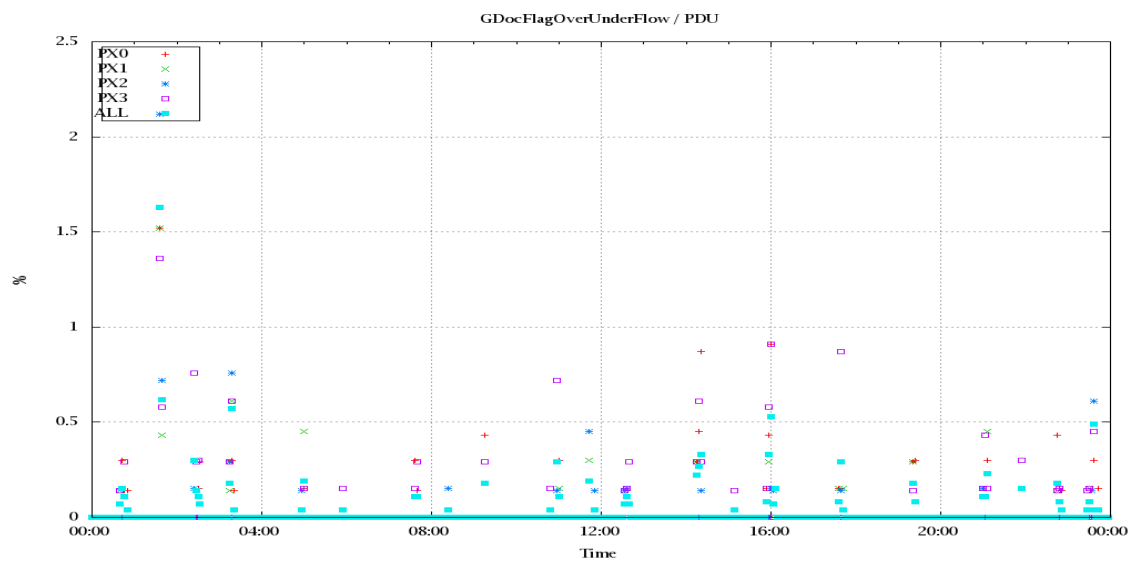


Figure 5: Timeseries of flag of Over and Under Flows

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.

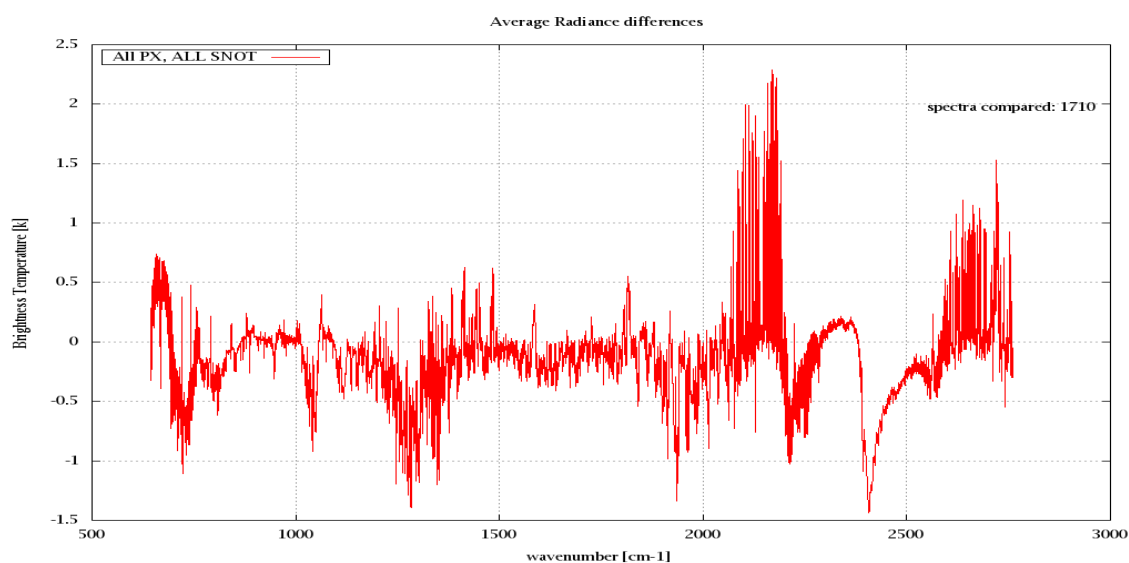


Figure 6: Average Radiance differences: OBS-CAL

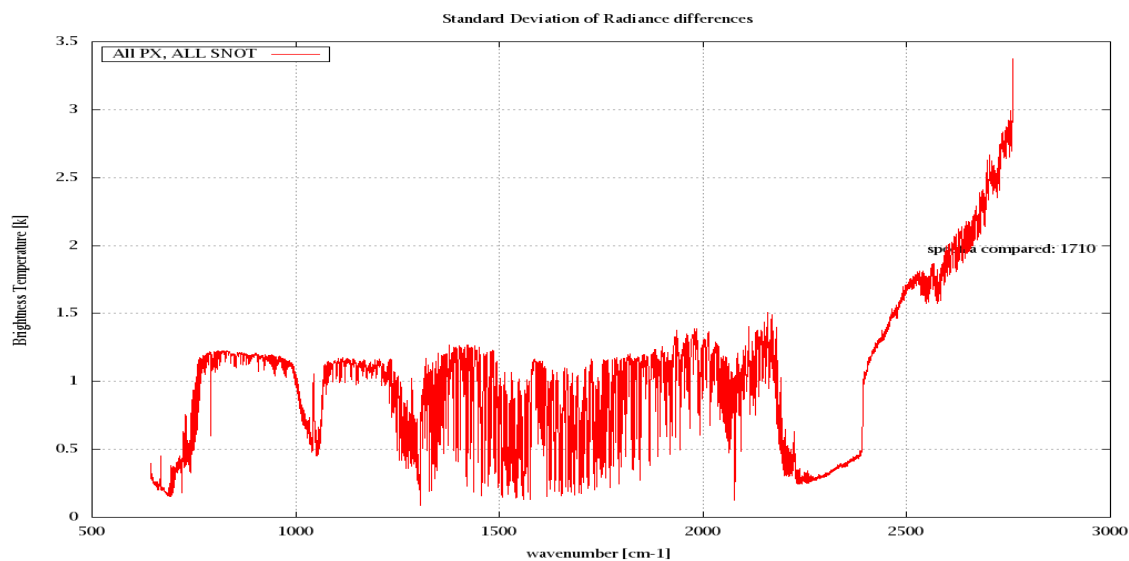


Figure 7: Standard Deviation of Radiance differences

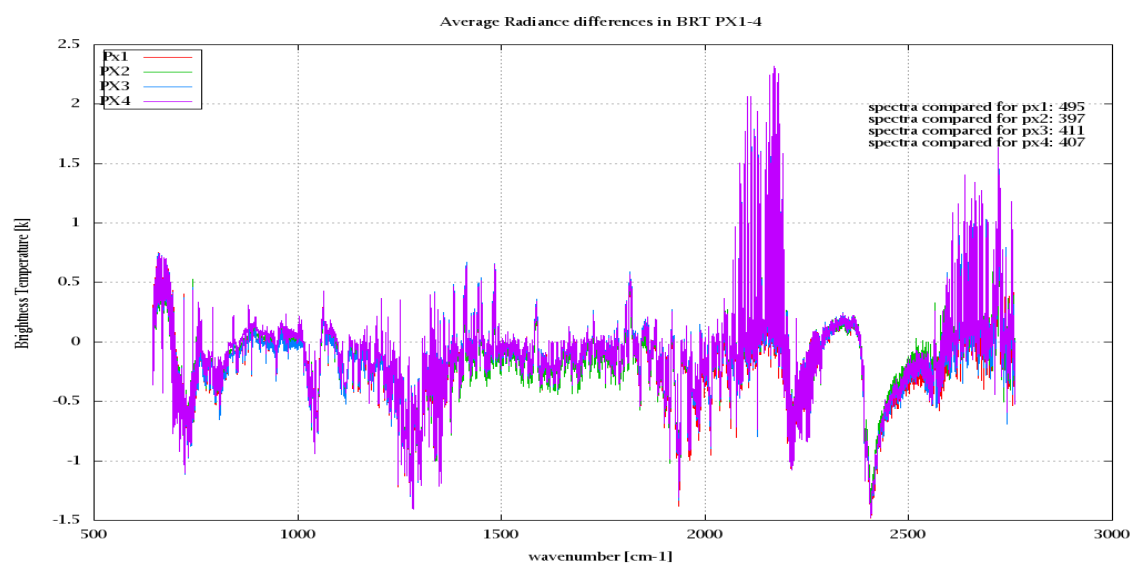


Figure 8: Average Radiance differences: OBS-CAL

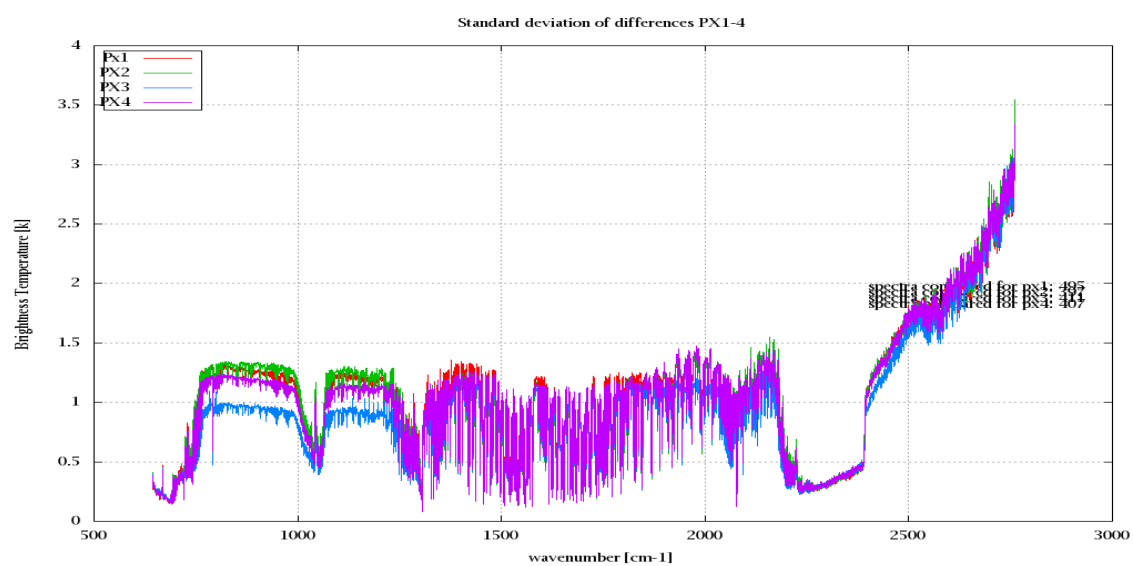


Figure 9: Standard Deviation of Radiance differences

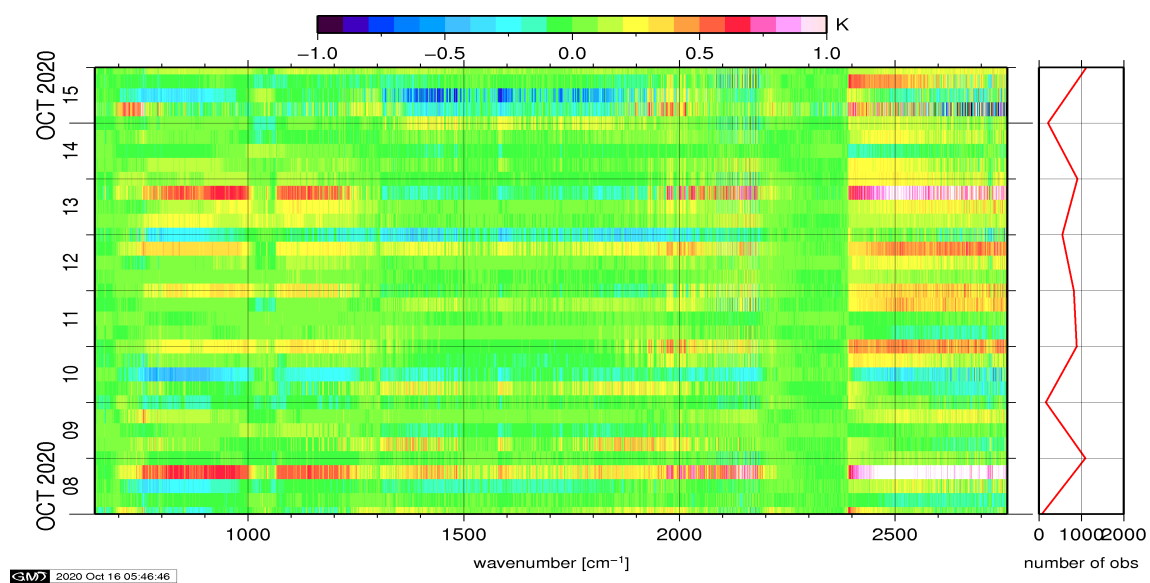


Figure 10: Radiance Anomaly in BT: All Channels

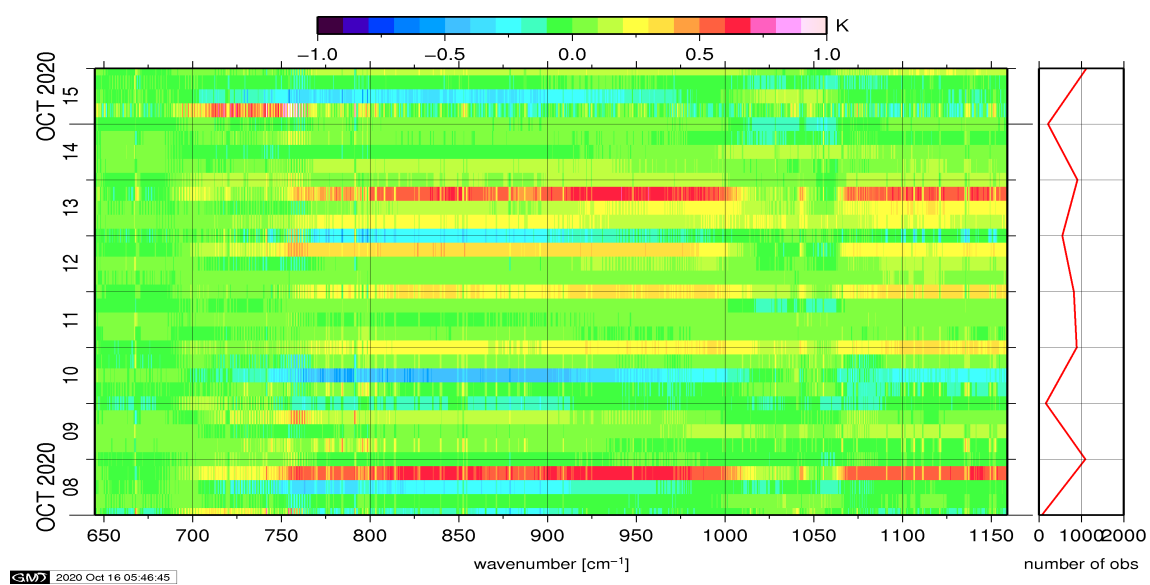


Figure 11: Radiance Anomaly in BT: IASI Band 1

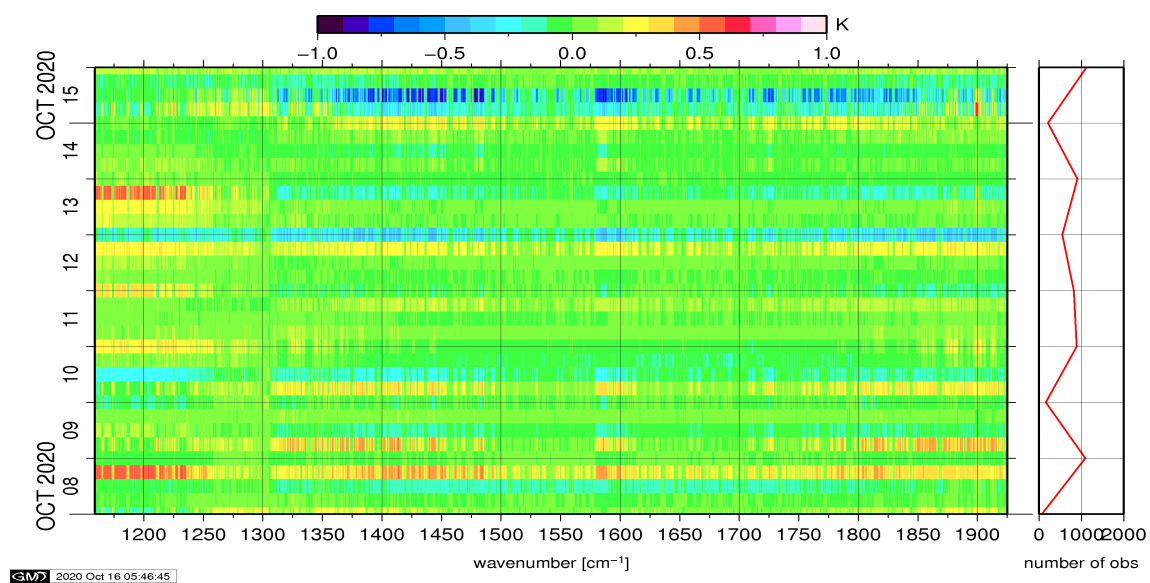


Figure 12: Radiance Anomaly in BT: IASI Band 2

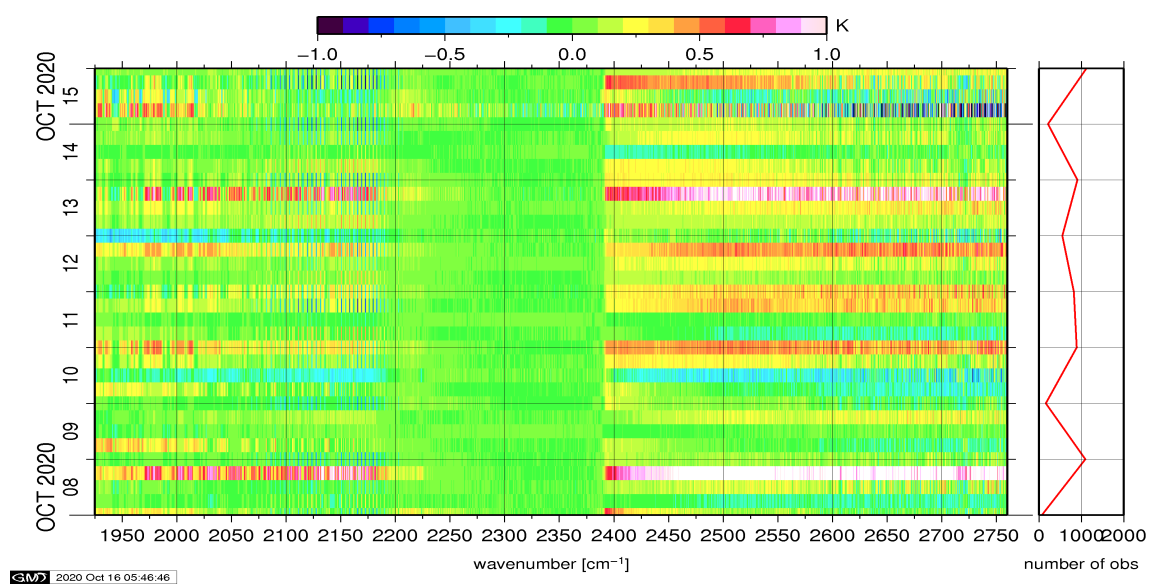


Figure 13: Radiance Anomaly in BT: IASI Band 3

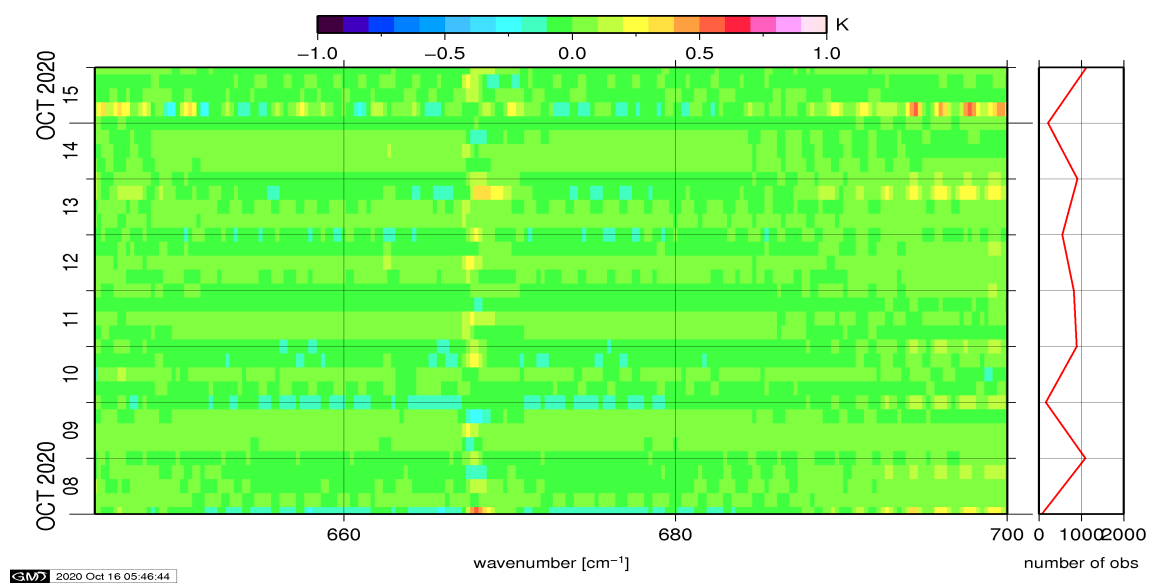


Figure 14: Radiance Anomaly in BT: CO2 14

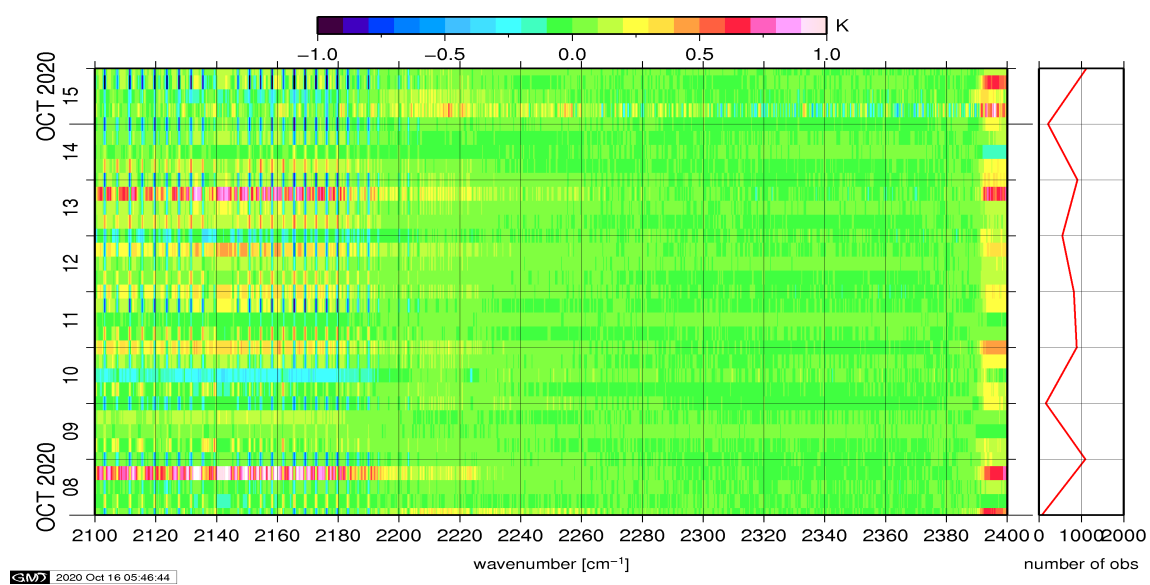


Figure 15: Radiance Anomaly in BT: CO2 4.3

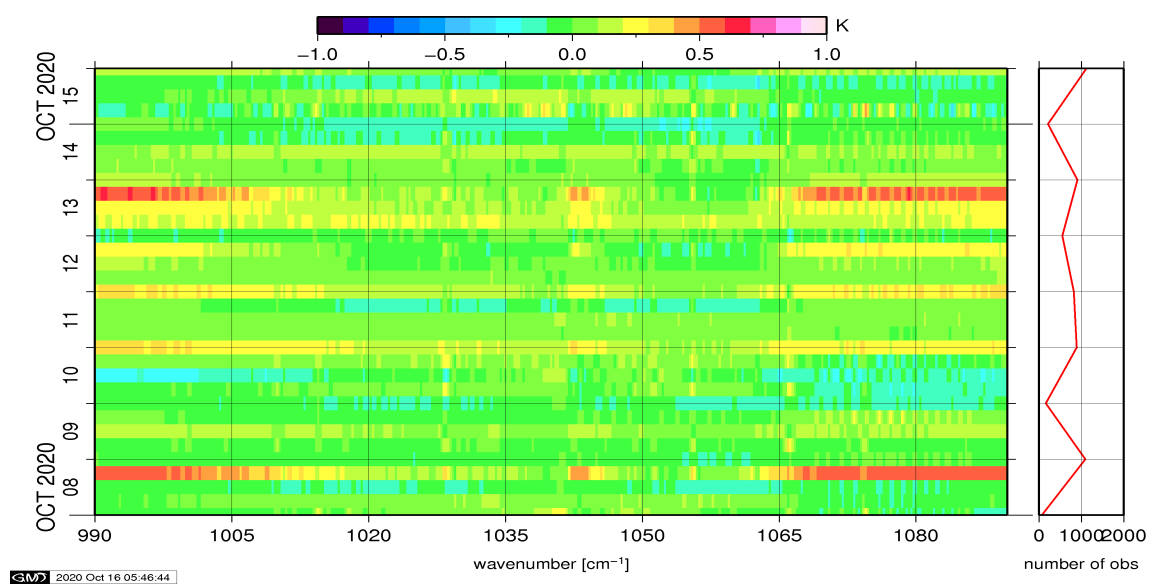


Figure 16: Radiance Anomaly in BT: O3