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

IASI monitoring team

17/07/2024 00:00:00 - 18/07/2024 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 17/07/2024 00:00:00 - 18/07/2024 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 17/07/2024 00:00:00 - 18/07/2024 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	481	-
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)	7546	7548	20240717022658.560	20240717022658.994
PX1 (130)	9989	9991	20240717023750.868	20240717023751.302
PX1 (130)	10371	10373	20240717023931.622	20240717023932.055
PX2 (135)	6405	6407	20240717022154.315	20240717022154.748
PX2 (135)	7546	7548	20240717022658.560	20240717022658.994
PX3 (140)	16221	16223	20240717030531.620	20240717030532.053
PX4 (145)	3005	3007	20240717020648.179	20240717020648.609
PX4 (145)	10645	10647	20240717024046.001	20240717024046.430
IMG (150)	3235	3237	20240717022343.287	20240717022343.721
IMG (150)	6836	6838	20240717023750.653	20240717023751.087
IMG (150)	7266	7268	20240717023931.407	20240717023931.840
VER (160)	12870	12872	20240717024852.039	20240717024852.039
VER (160)	13174	13177	20240717025652.066	20240717025700.066
VER (160)	16379	0	20240717042220.043	20240717042228.043
VER (160)	0	16380	20240717042228.043	20240717042228.043
VER (160)	-1	1	20240717042228.043	20240717042236.043
VER (160)	16380	0	20240717113916.022	20240717113924.022
VER (160)	1	16381	20240717113924.022	20240717113924.022
VER (160)	-1	2	20240717113924.022	20240717113932.022
				Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	16381	0	20240717185611.965	20240717185619.965
VER (160)	2	16382	20240717185619.965	20240717185619.965
VER (160)	-1	3	20240717185619.965	20240717185627.965
AUX (180)	-	-	-	-

Table 2: L0 data gaps

3   Instrument modes

Time	Transition from	Transition to
17/07/2024 00:00:06	-	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	481	-
GQisFlagQual set (PX1)	99.60 %	-
GQisFlagQual set (PX2)	99.65 %	-
GQisFlagQual set (PX3)	99.65 %	-
GQisFlagQual set (PX4)	99.58 %	-
GQisFlagQual set (all)	99.62 %	-

Table 4: Quality flags
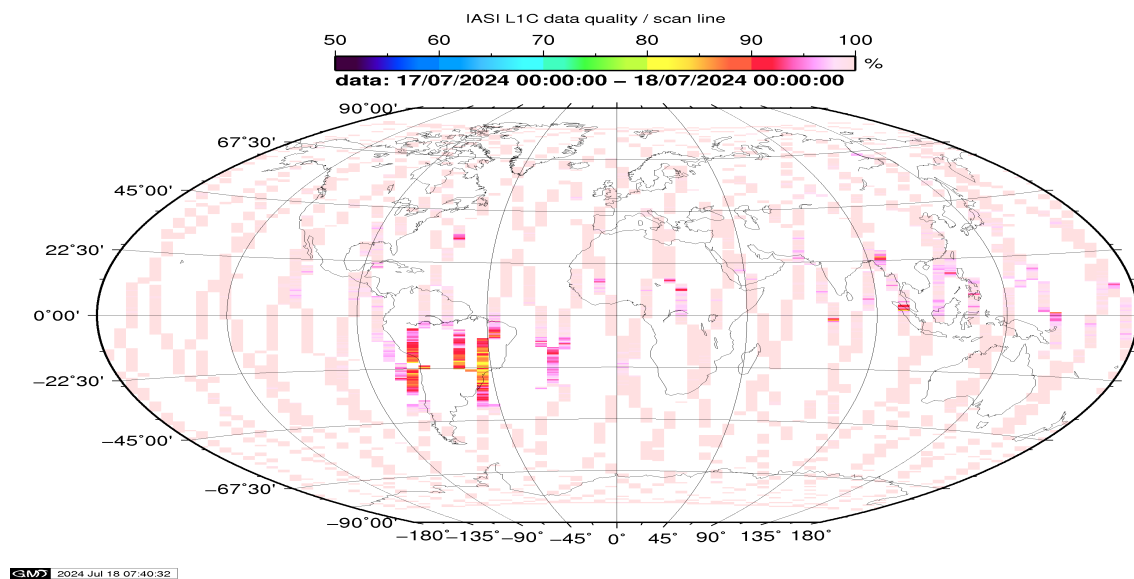
Figure 1: L1C data quality
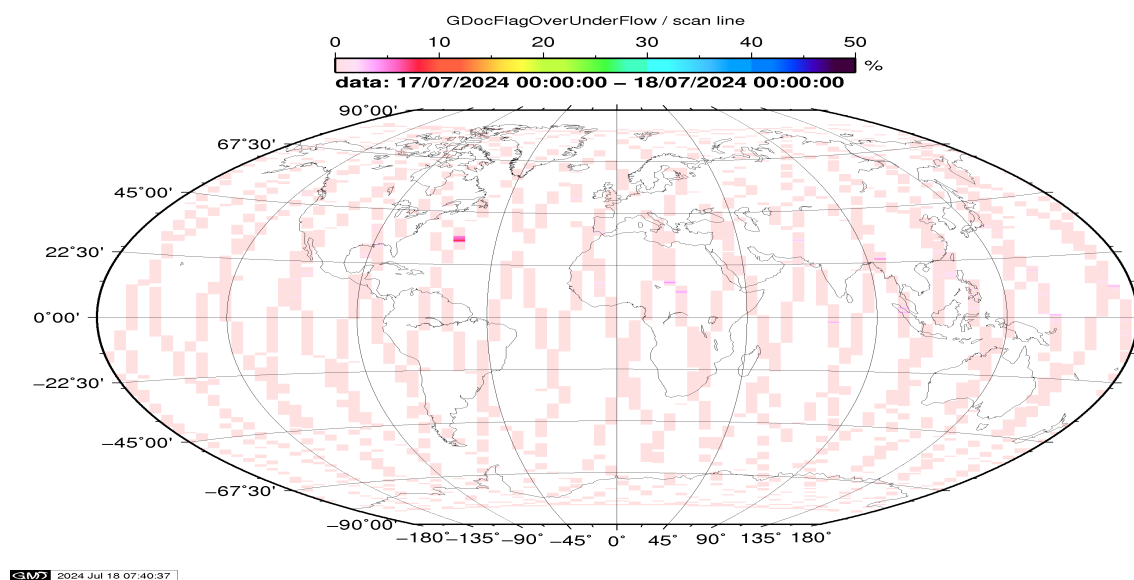
Figure 2: Flag of Over and Under Flows
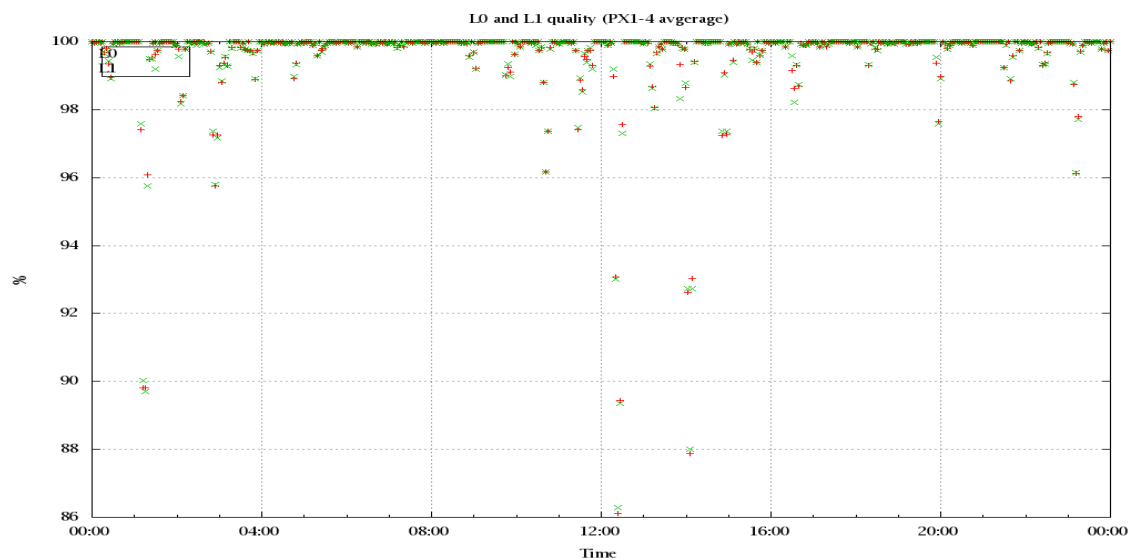
Figure 3: Level 0 and 1C overall quality
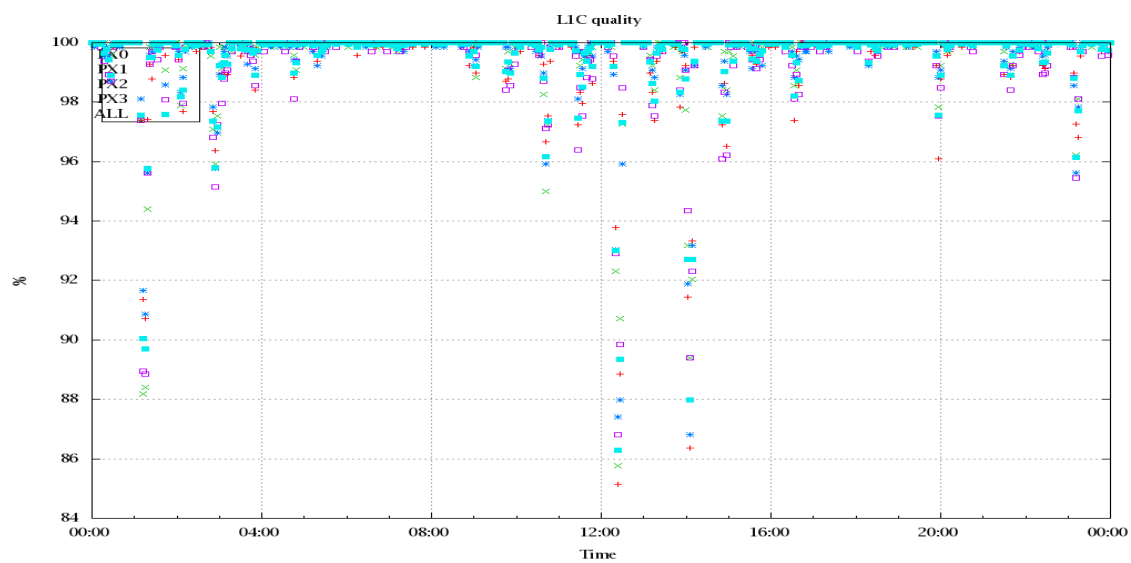
Figure 4: Level 1C quality
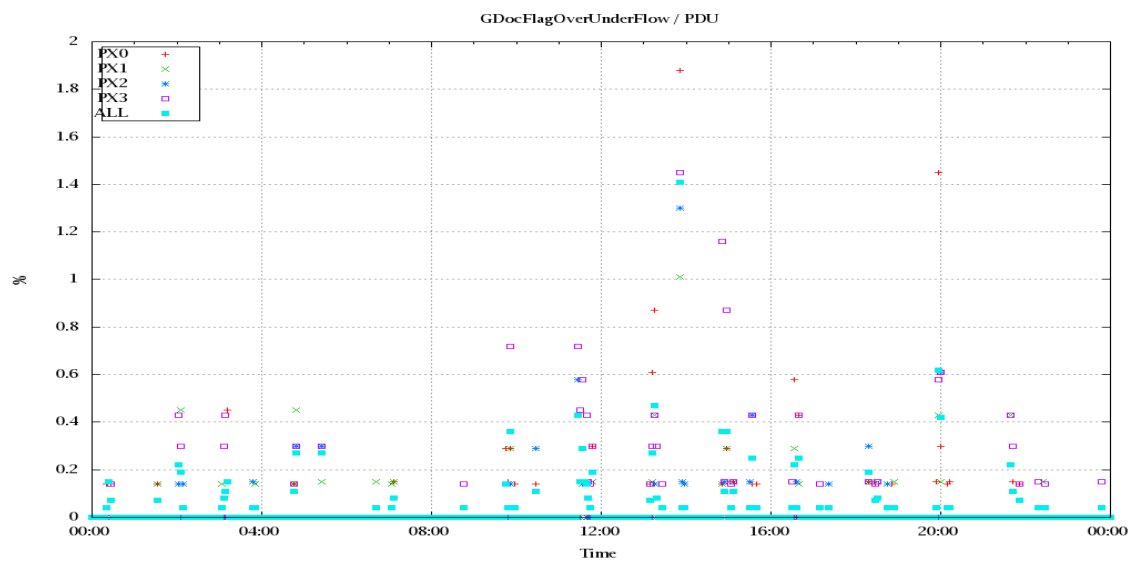
Figure 5: Timeseries of flag of Over and Under Flows

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 indentification 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.
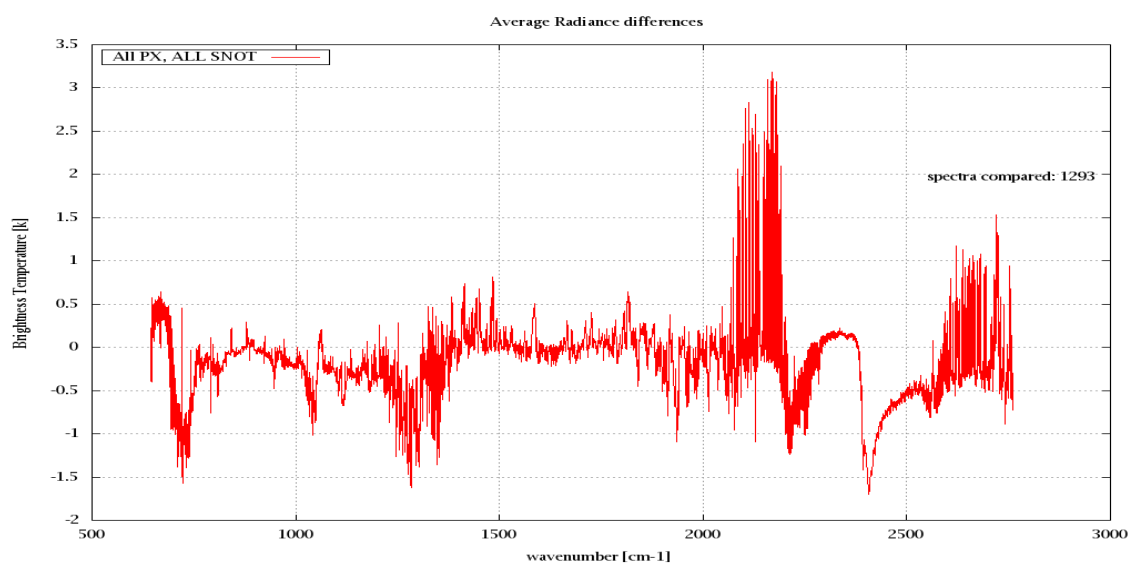
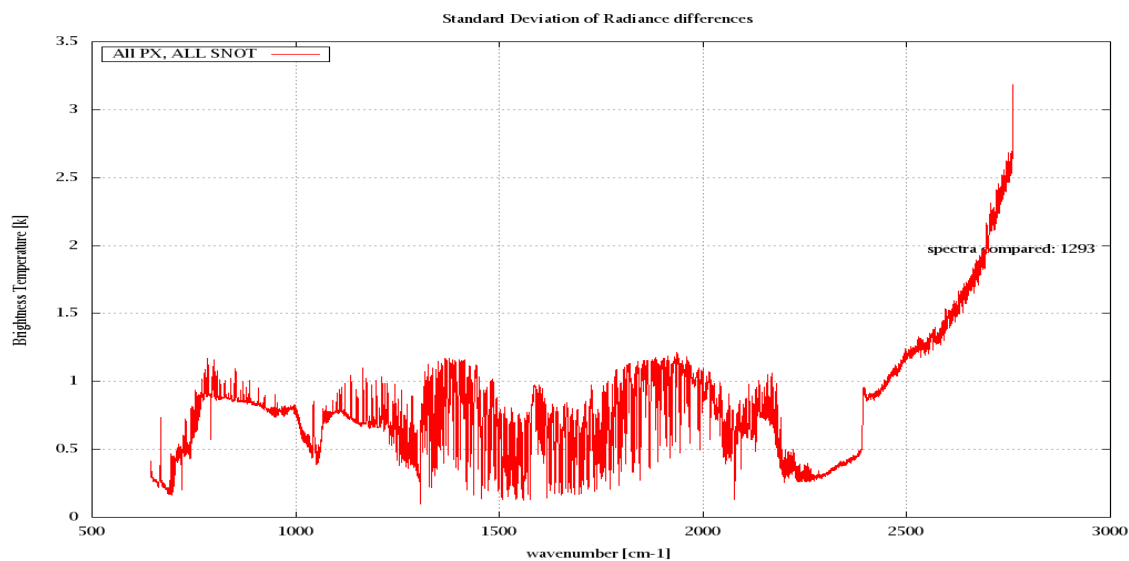Figure 6: Average Radiance differences: OBS-CAL

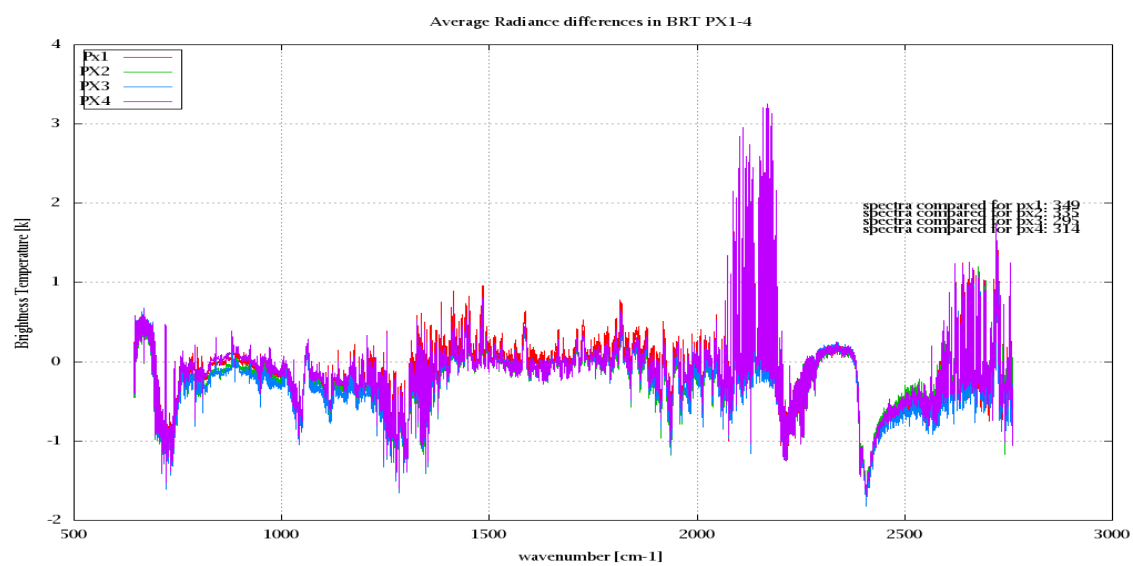Figure 7: Standard Deviation of Radiance differences
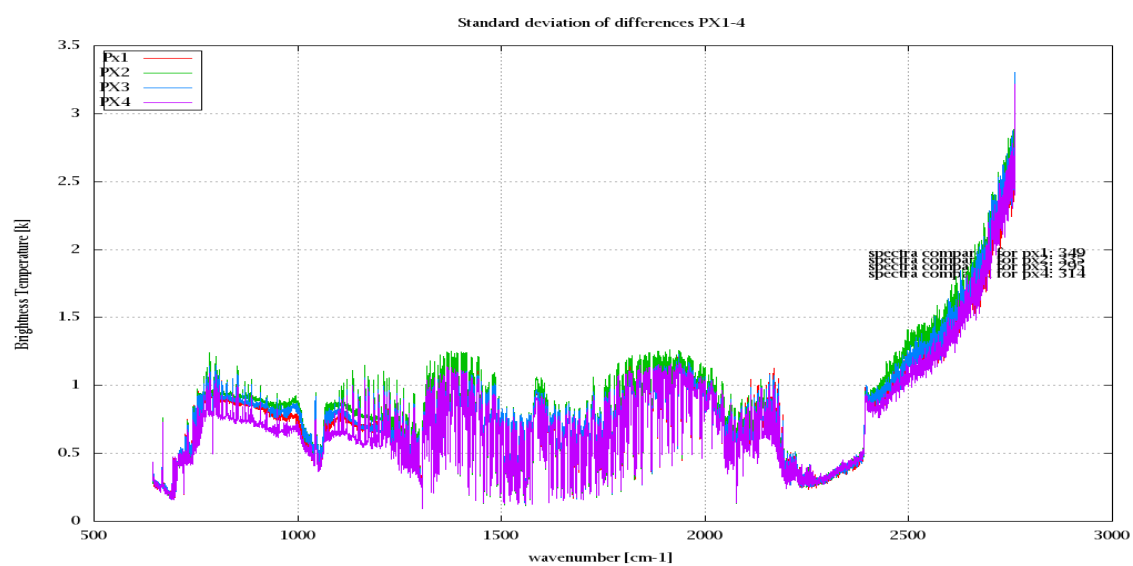
Figure 8: Average Radiance differences: OBS-CAL

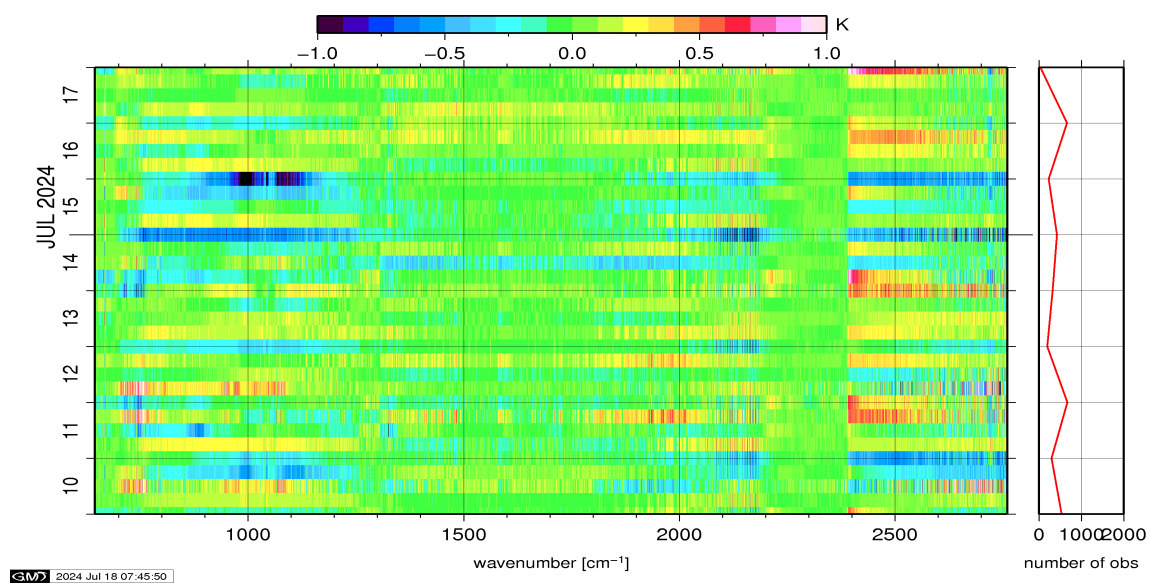Figure 9: Standard Deviation of Radiance differences

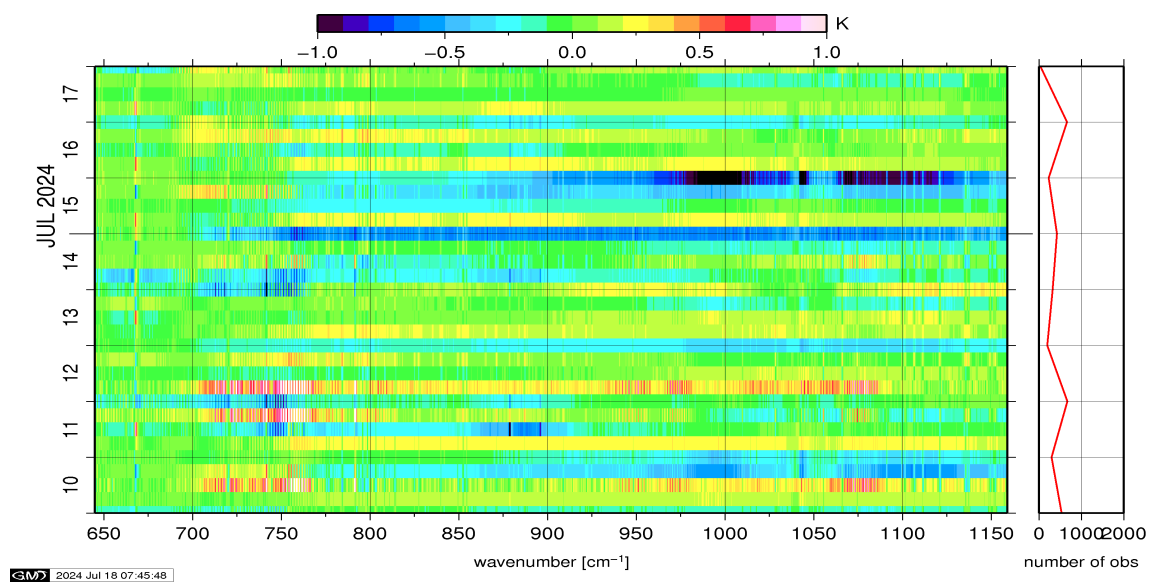Figure 10: Radiance Anomaly in BT: All Channels

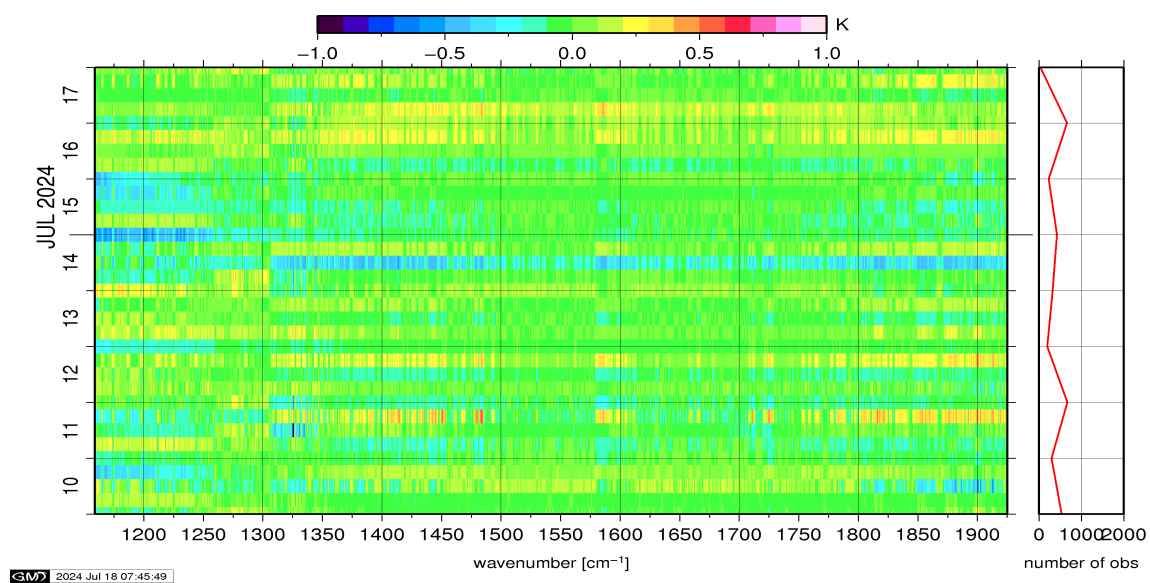Figure 11: Radiance Anomaly in BT: IASI Band 1

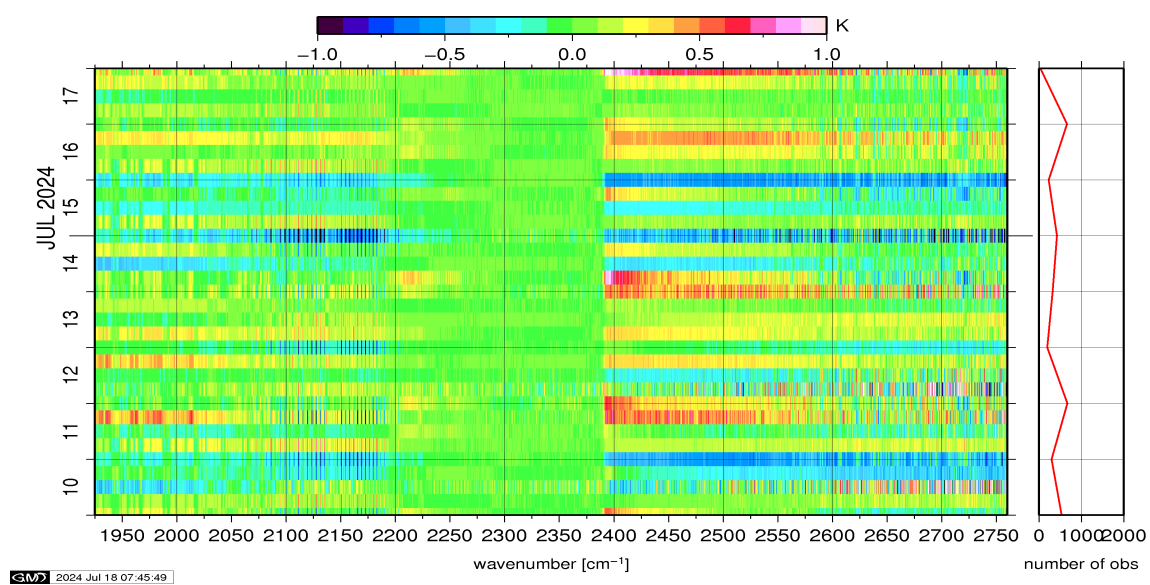Figure 12: Radiance Anomaly in BT: IASI Band 2

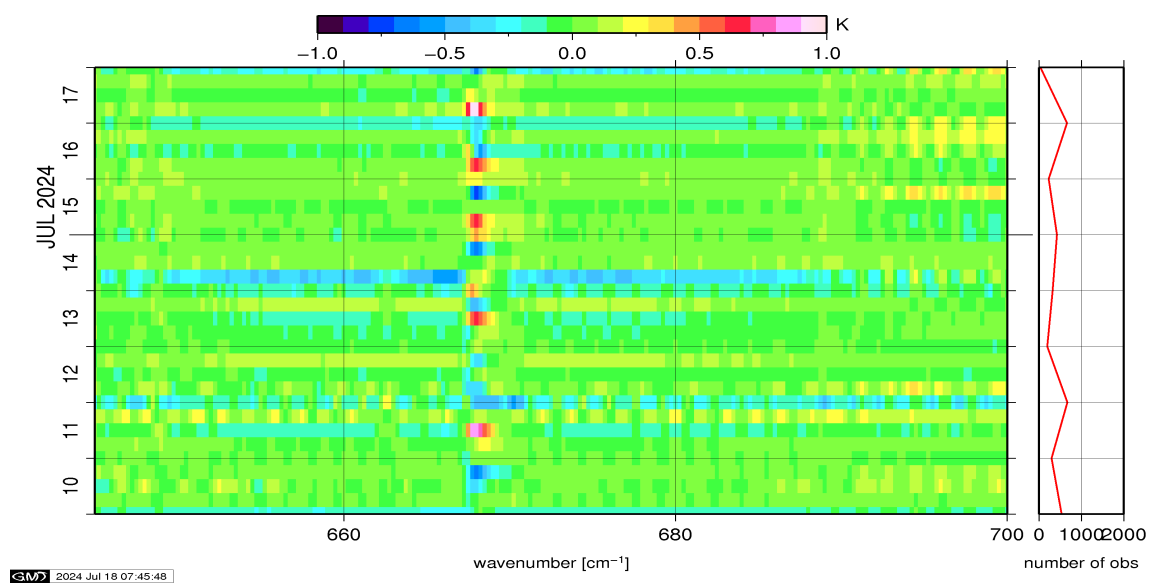Figure 13: Radiance Anomaly in BT: IASI Band 3

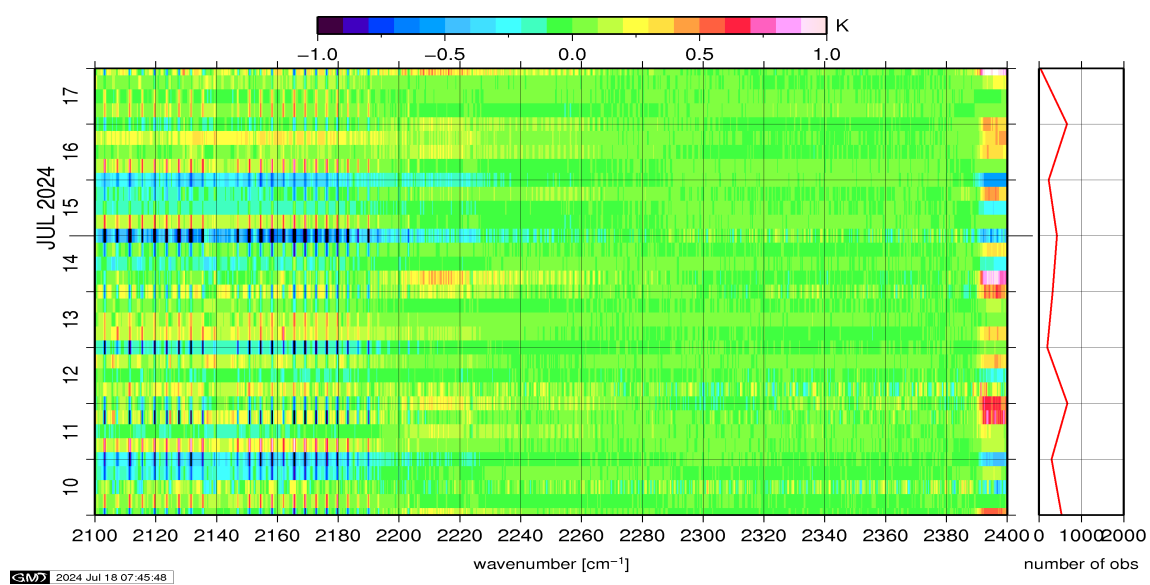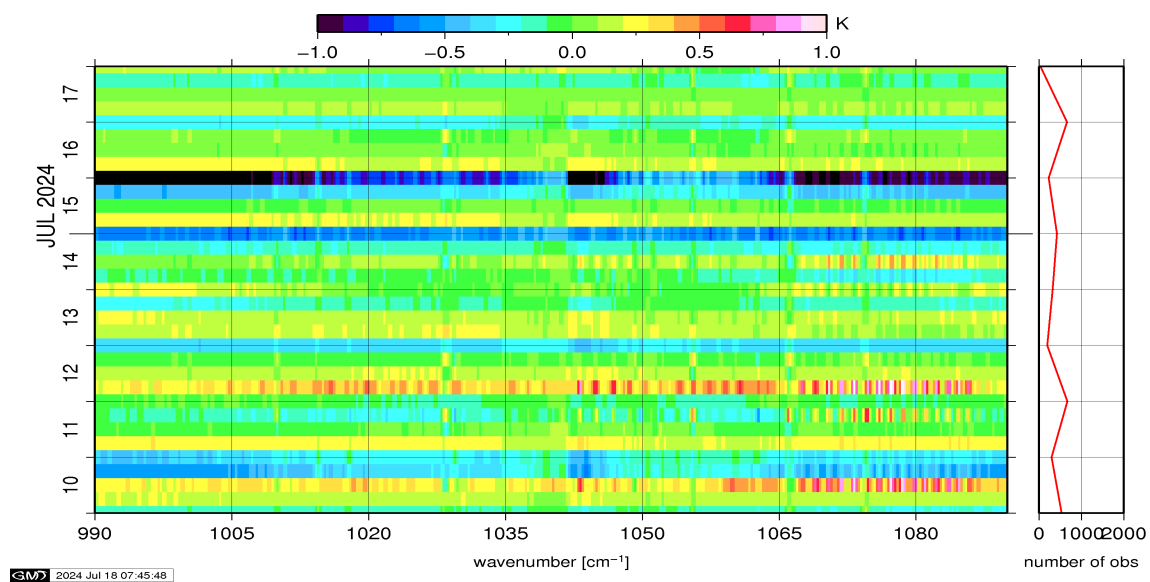Figure 14: Radiance Anomaly in BT: CO2 14

Figure 15: Radiance Anomaly in BT: CO2 4.3

Figure 16: Radiance Anomaly in BT: O3