

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

IASI monitoring team

10/06/2021 00:00:00 - 11/06/2021 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 10/06/2021 00:00:00 - 11/06/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 10/06/2021 00:00:00 - 11/06/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	474	-
L0 IASI PDUs	474	-
L1 ENG PDUs	469	-
L1 ENG distinct GEPSGranule	469	-
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	469	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	15153	15251	20210610092032.945	20210610092100.187
PX1 (130)	4201	9026	20210610094441.376	20210610100608.296
PX2 (135)	15153	15251	20210610092032.945	20210610092100.187
PX2 (135)	4201	9026	20210610094441.376	20210610100608.296
PX3 (140)	15152	15251	20210610092032.726	20210610092100.187
PX3 (140)	4201	9026	20210610094441.376	20210610100608.296
PX4 (145)	15152	15251	20210610092032.726	20210610092100.187
PX4 (145)	4201	9026	20210610094441.376	20210610100608.296
IMG (150)	13366	13481	20210610092032.726	20210610092100.187
IMG (150)	3143	8608	20210610094442.673	20210610100608.296
VER (160)	16381	0	20210610010849.410	20210610010857.406
VER (160)	2	16382	20210610010857.406	20210610010857.406
VER (160)	-1	3	20210610010857.406	20210610010905.406
VER (160)	16382	0	20210610082545.387	20210610082553.387
VER (160)	3	16383	20210610082553.387	20210610082553.387
VER (160)	-1	4	20210610082553.387	20210610082601.387
VER (160)	2048	2069	20210610092025.375	20210610092105.375
VER (160)	2958	3759	20210610094441.376	20210610100609.378
VER (160)	16379	0	20210610225929.311	20210610225937.307

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	0	16380	20210610225937.307	20210610225937.307
VER (160)	-1	1	20210610225937.307	20210610225945.307
AUX (180)	3648	3653	20210610092025.808	20210610092105.808
AUX (180)	3830	3991	20210610094441.806	20210610100609.812

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
10/06/2021 00:00:04	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	474	-
L1 ENG PDUs	469	-
L1 ENG distinct GEPSGranule	469	-
GQisFlagQual set (PX1)	99.45 %	-
GQisFlagQual set (PX2)	99.47 %	-
GQisFlagQual set (PX3)	99.52 %	-
GQisFlagQual set (PX4)	99.41 %	-
GQisFlagQual set (all)	99.47 %	-

Table 4: Quality flags

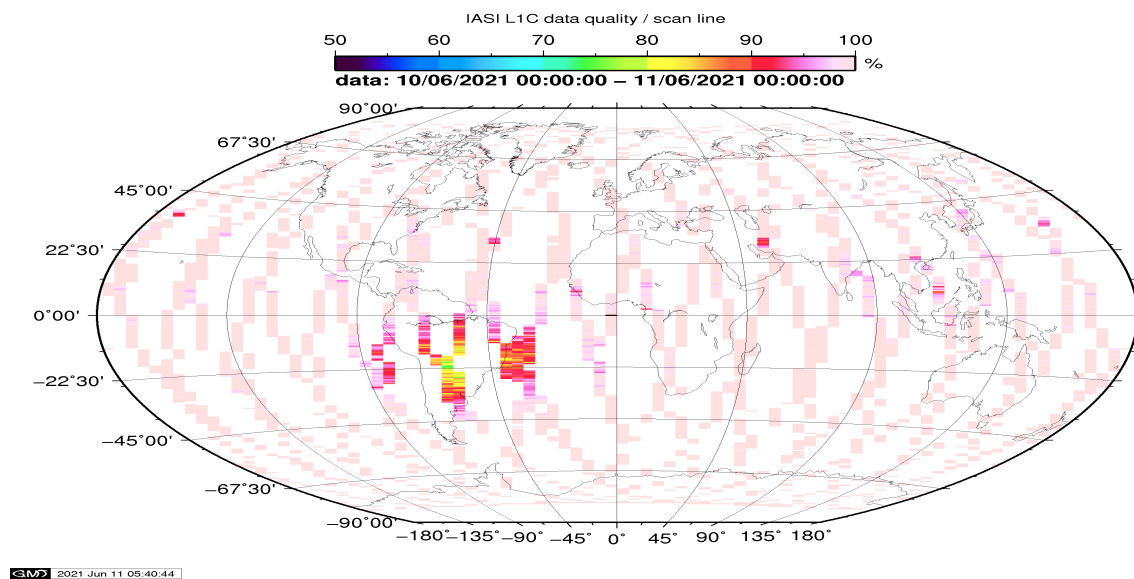


Figure 1: L1C data quality

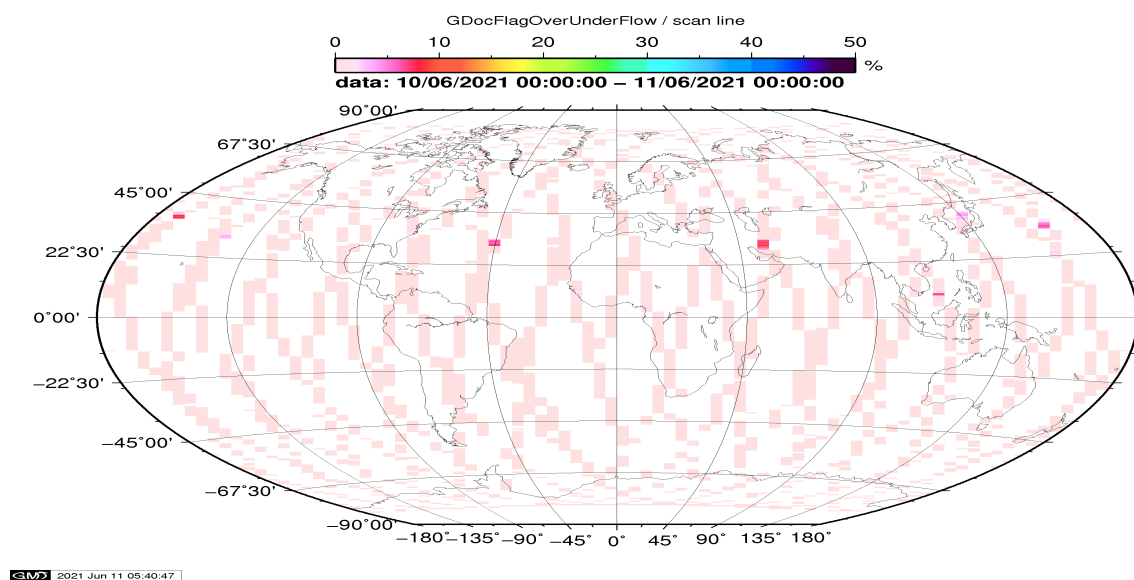


Figure 2: Flag of Over and Under Flows

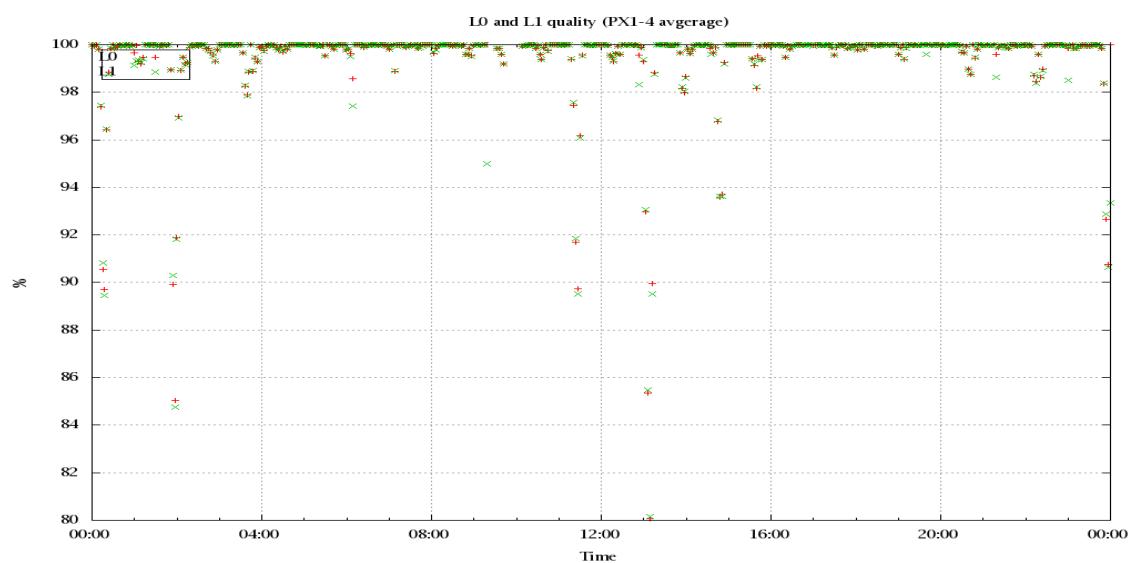


Figure 3: Level 0 and 1C overall quality

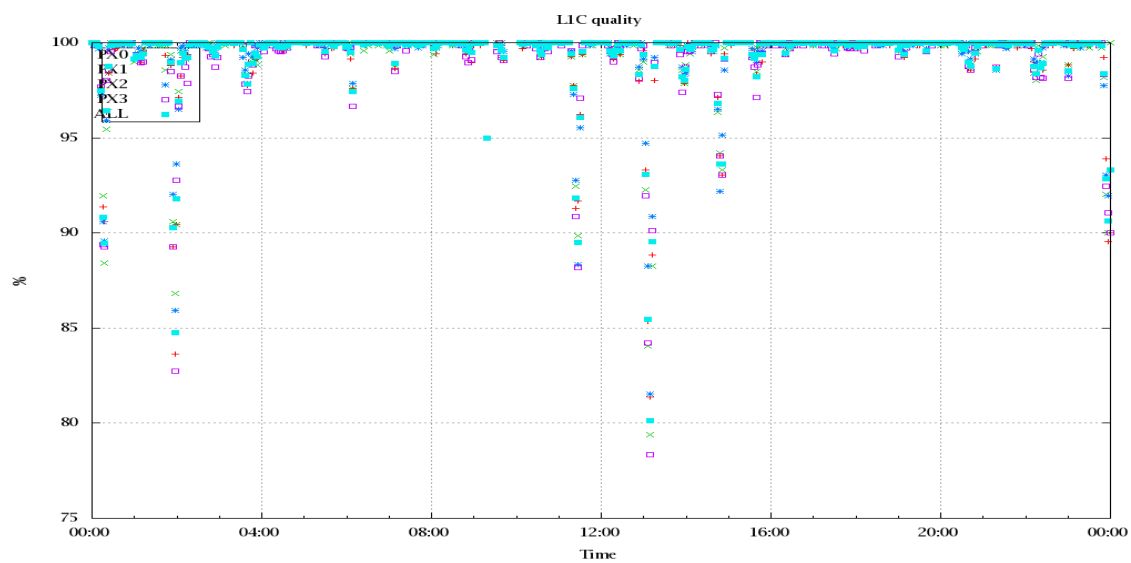


Figure 4: Level 1C quality

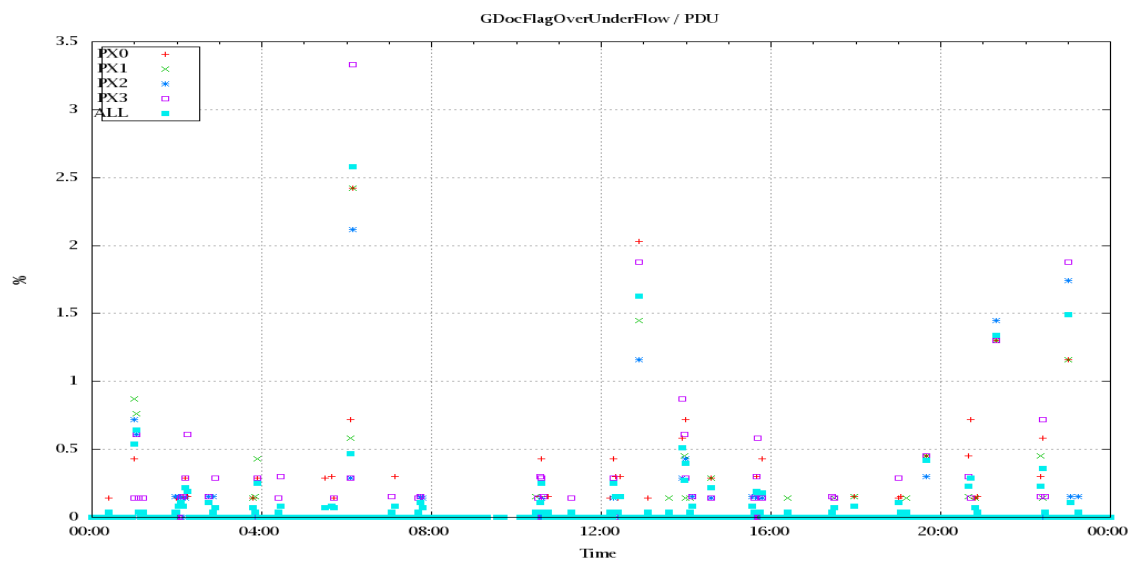


Figure 5: Timeseries of flag of Over and Under Flows

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.

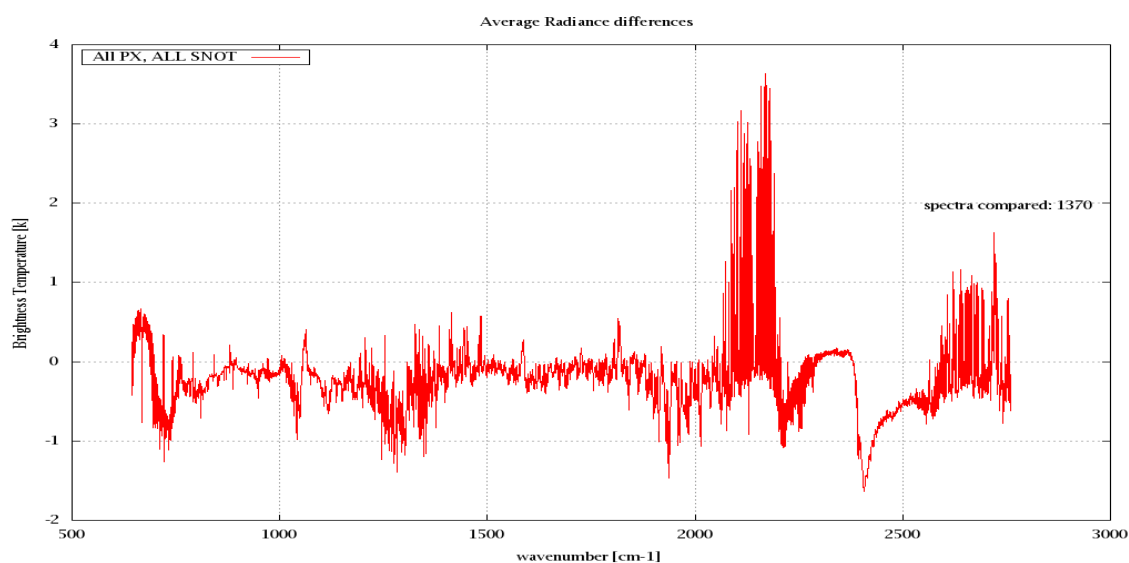


Figure 6: Average Radiance differences: OBS-CAL

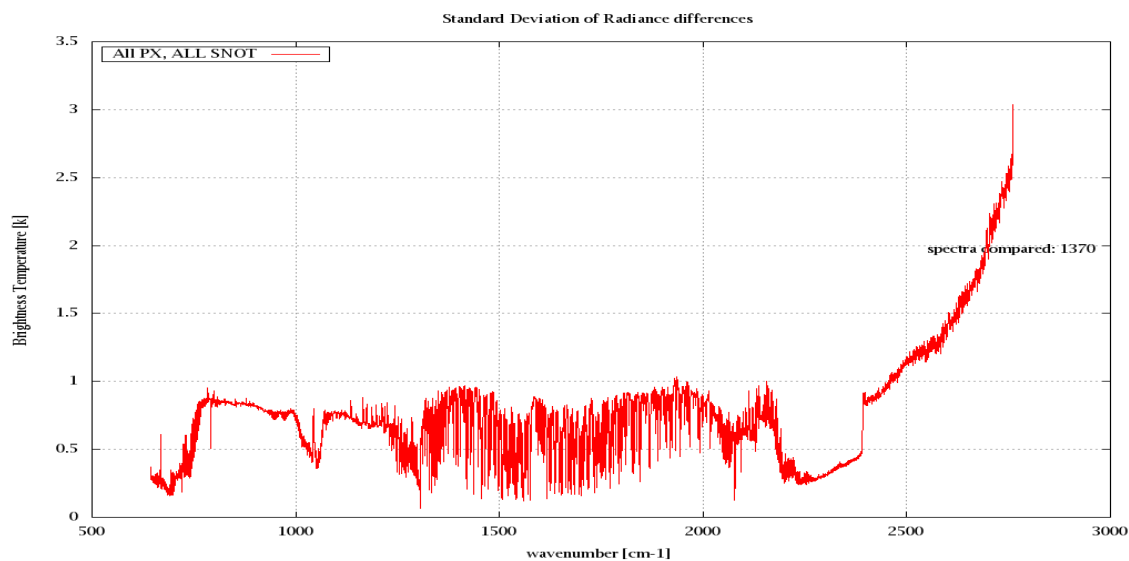


Figure 7: Standard Deviation of Radiance differences

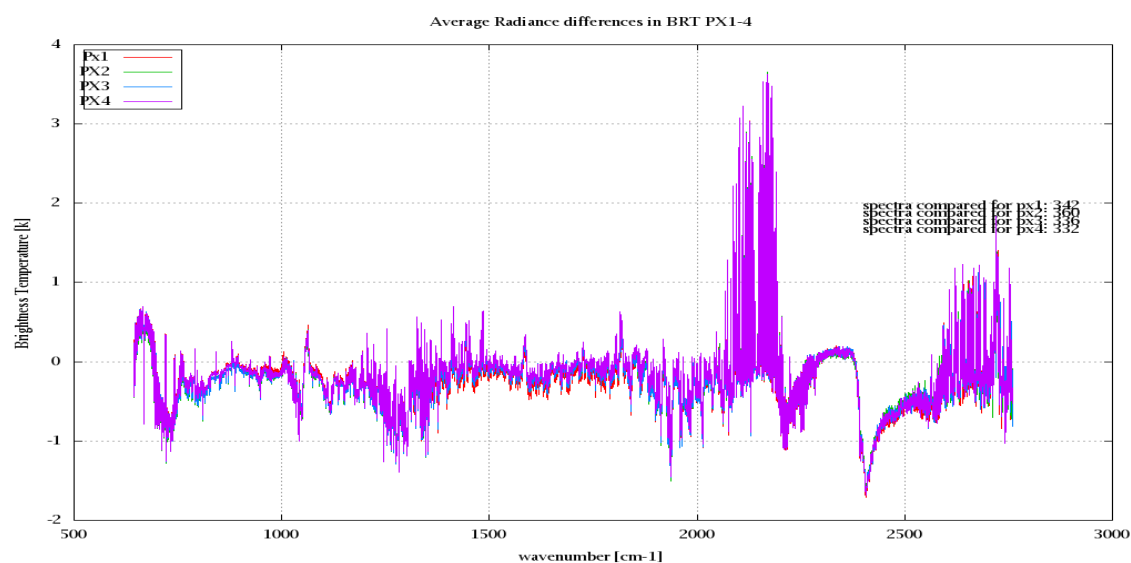


Figure 8: Average Radiance differences: OBS-CAL

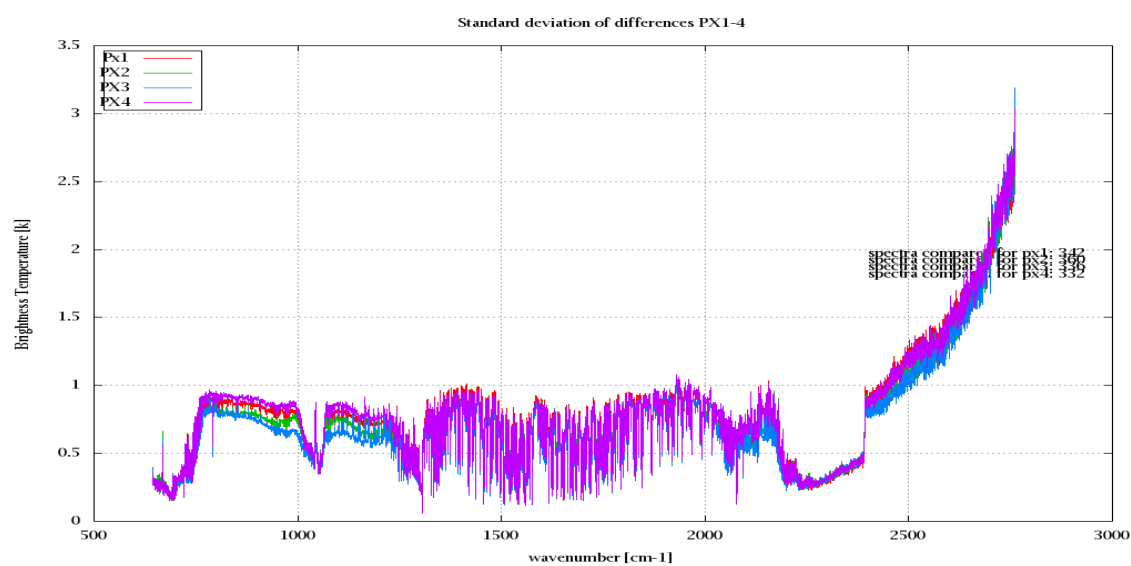


Figure 9: Standard Deviation of Radiance differences

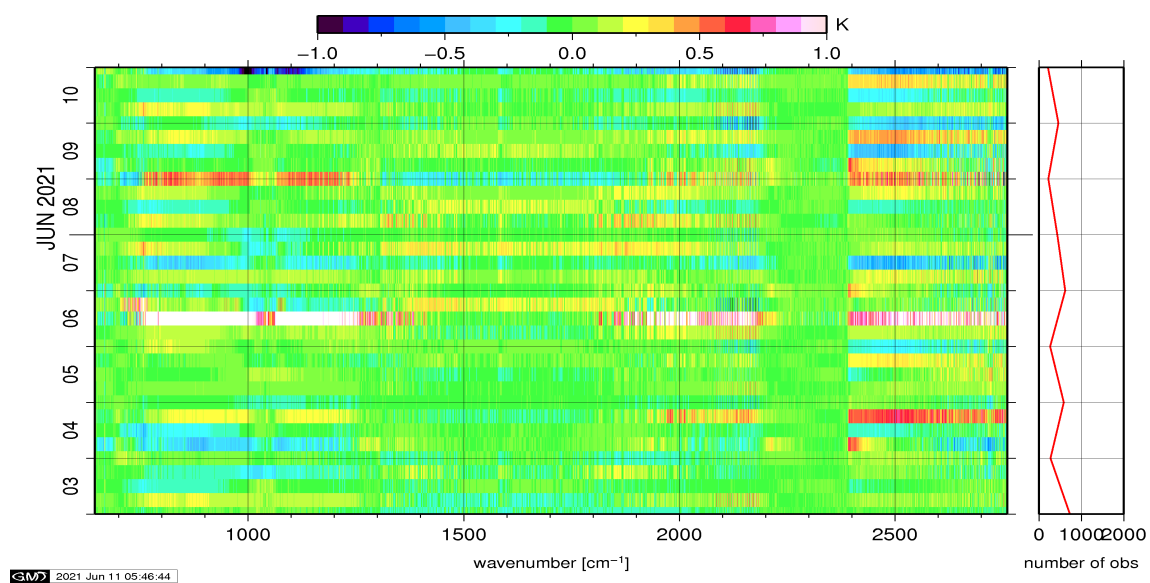


Figure 10: Radiance Anomaly in BT: All Channels

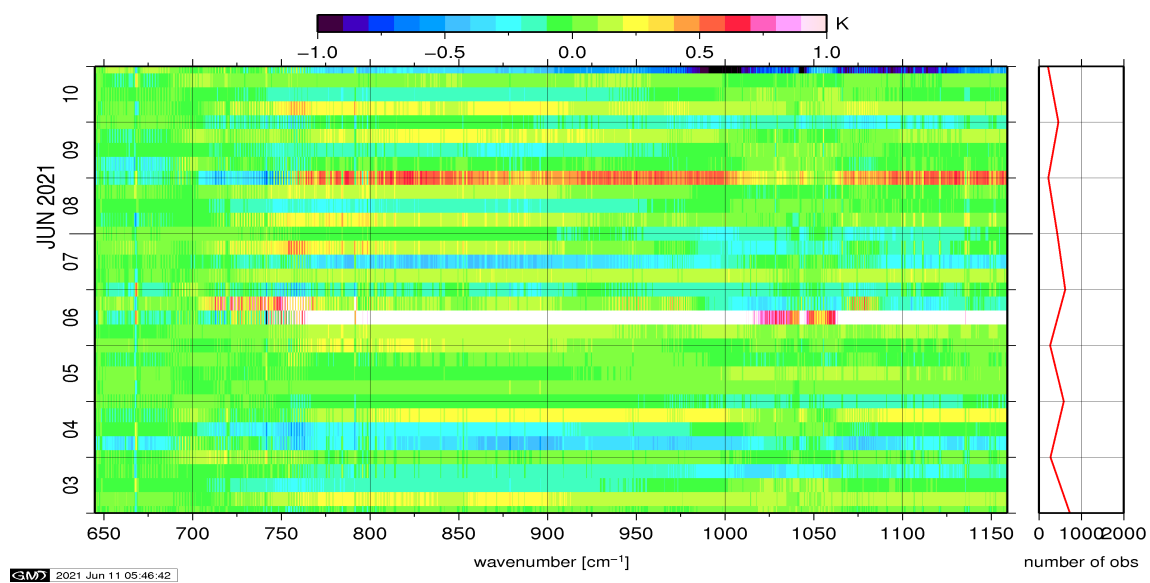


Figure 11: Radiance Anomaly in BT: IASI Band 1

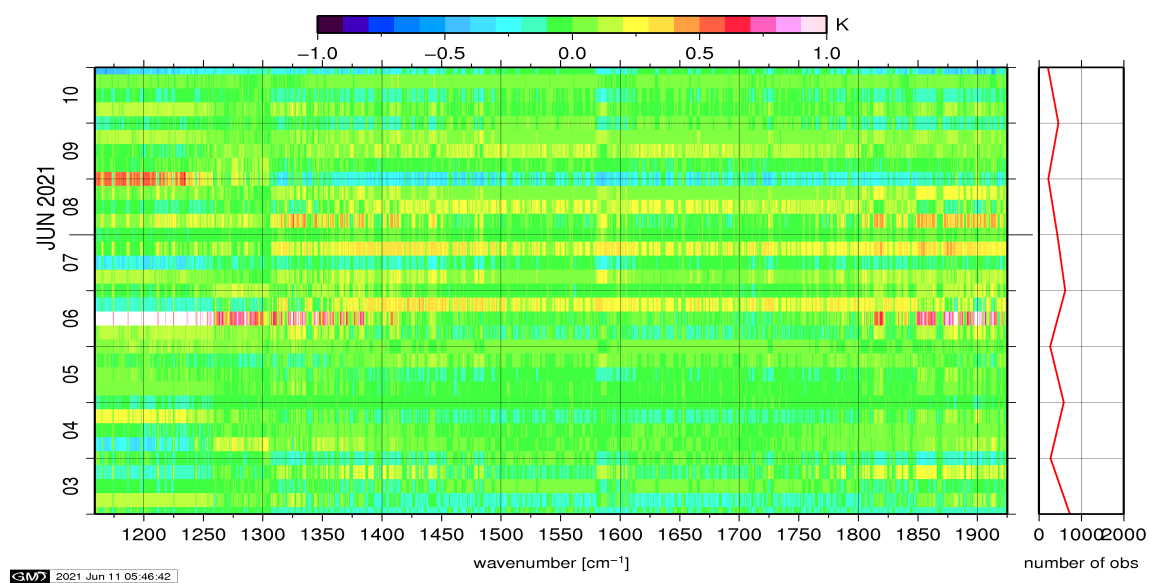


Figure 12: Radiance Anomaly in BT: IASI Band 2

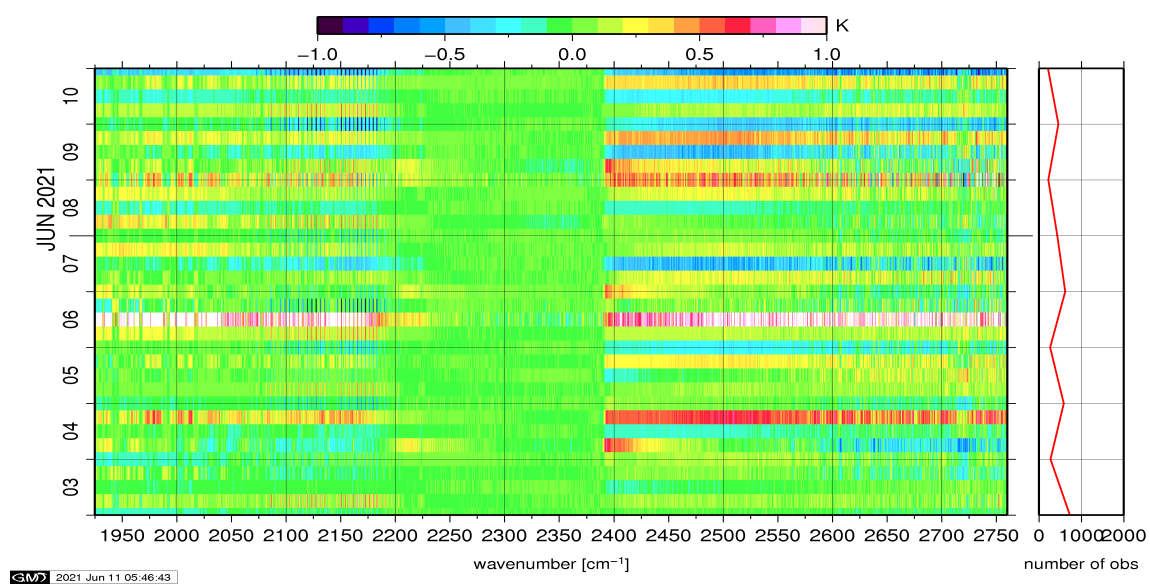


Figure 13: Radiance Anomaly in BT: IASI Band 3

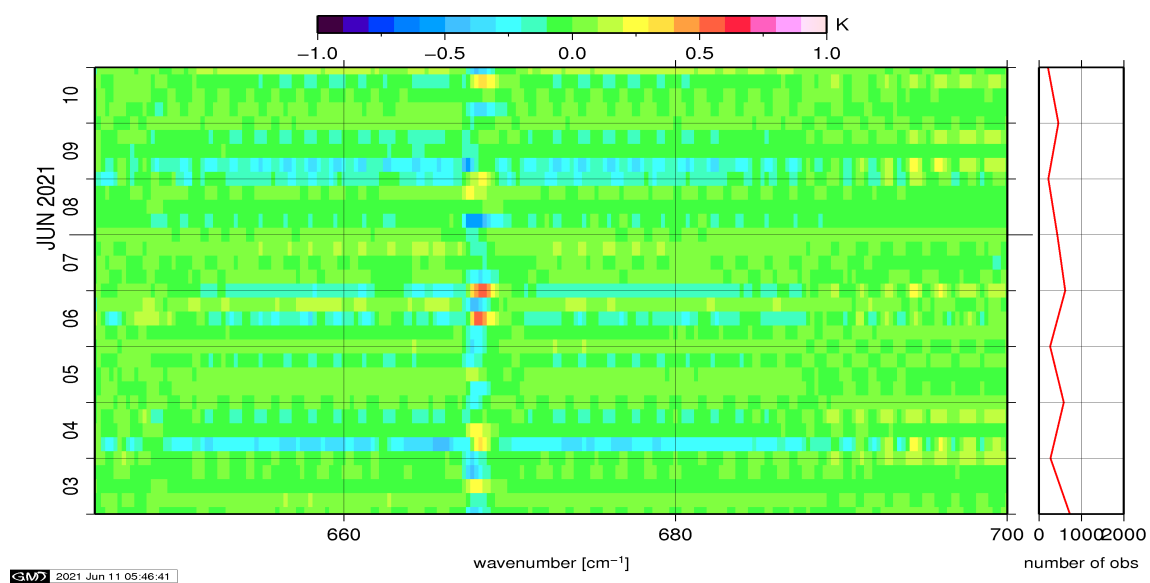


Figure 14: Radiance Anomaly in BT: CO2 14

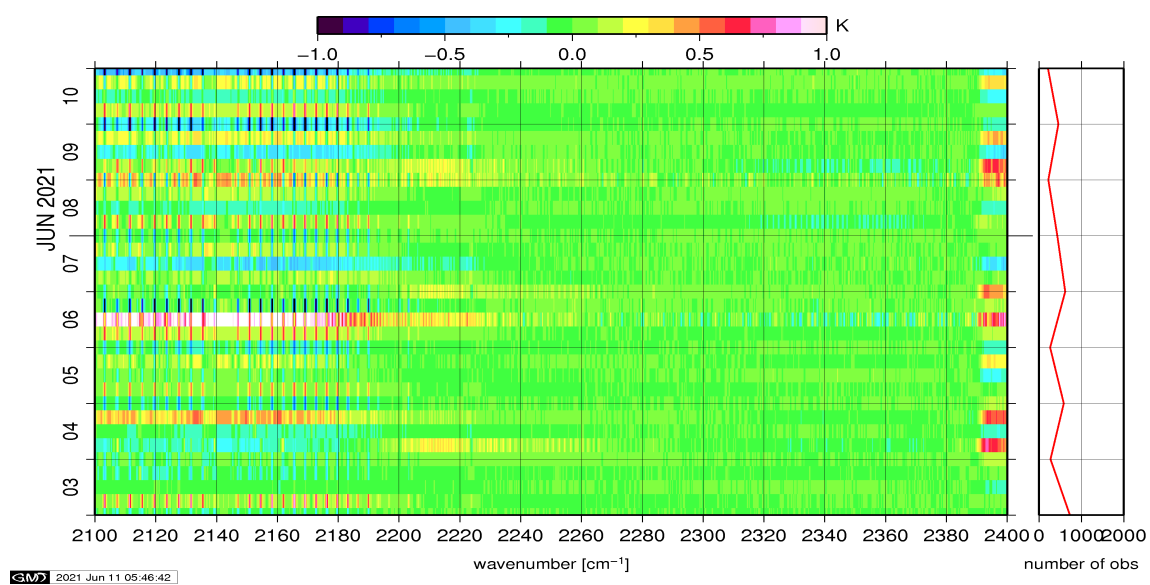


Figure 15: Radiance Anomaly in BT: CO2 4.3

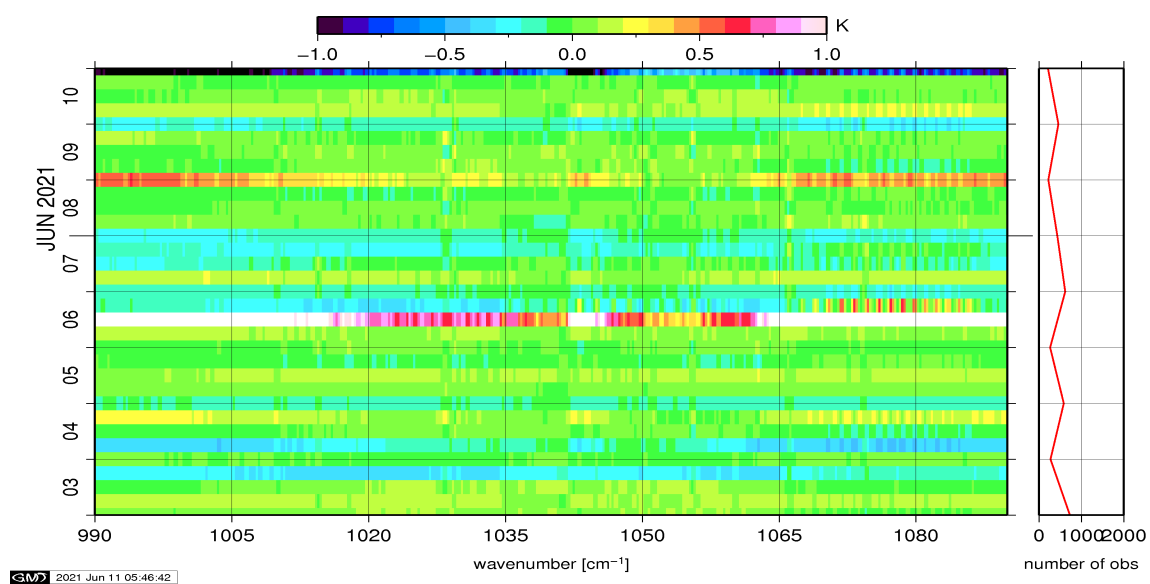


Figure 16: Radiance Anomaly in BT: O3