

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

IASI monitoring team

27/06/2021 00:00:00 - 28/06/2021 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 27/06/2021 00:00:00 - 28/06/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 27/06/2021 00:00:00 - 28/06/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
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)	-	-	-	-
PX2 (135)	463	465	20210627021654.628	20210627021655.058
PX2 (135)	1027	1029	20210627055753.386	20210627055753.820
PX2 (135)	2115	2117	20210627060243.148	20210627060243.577
PX3 (140)	16346	16348	20210627021442.054	20210627021442.484
PX3 (140)	4269	4271	20210627045928.973	20210627045929.403
PX3 (140)	1027	1029	20210627055753.386	20210627055753.820
PX3 (140)	2115	2117	20210627060243.148	20210627060243.577
PX4 (145)	13839	13841	20210627065449.842	20210627065450.272
IMG (150)	11744	11746	20210627041127.892	20210627041128.540
IMG (150)	1541	1543	20210627053957.306	20210627053957.739
VER (160)	5480	5482	20210627033959.254	20210627033959.254
VER (160)	16379	0	20210627083031.244	20210627083039.244
VER (160)	0	16380	20210627083039.244	20210627083039.244
VER (160)	-1	1	20210627083039.244	20210627083047.244
VER (160)	16380	0	20210627154727.186	20210627154735.186
VER (160)	1	16381	20210627154735.186	20210627154735.186
VER (160)	-1	2	20210627154735.186	20210627154743.186
VER (160)	16381	0	20210627230423.167	20210627230431.167

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	2	16382	20210627230431.167	20210627230431.167
VER (160)	-1	3	20210627230431.167	20210627230439.163
AUX (180)	-	-	-	-

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
27/06/2021 00:00:02	-	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	478	-
GQisFlagQual set (PX1)	99.49 %	-
GQisFlagQual set (PX2)	99.55 %	-
GQisFlagQual set (PX3)	99.54 %	-
GQisFlagQual set (PX4)	99.45 %	-
GQisFlagQual set (all)	99.51 %	-

Table 4: Quality flags

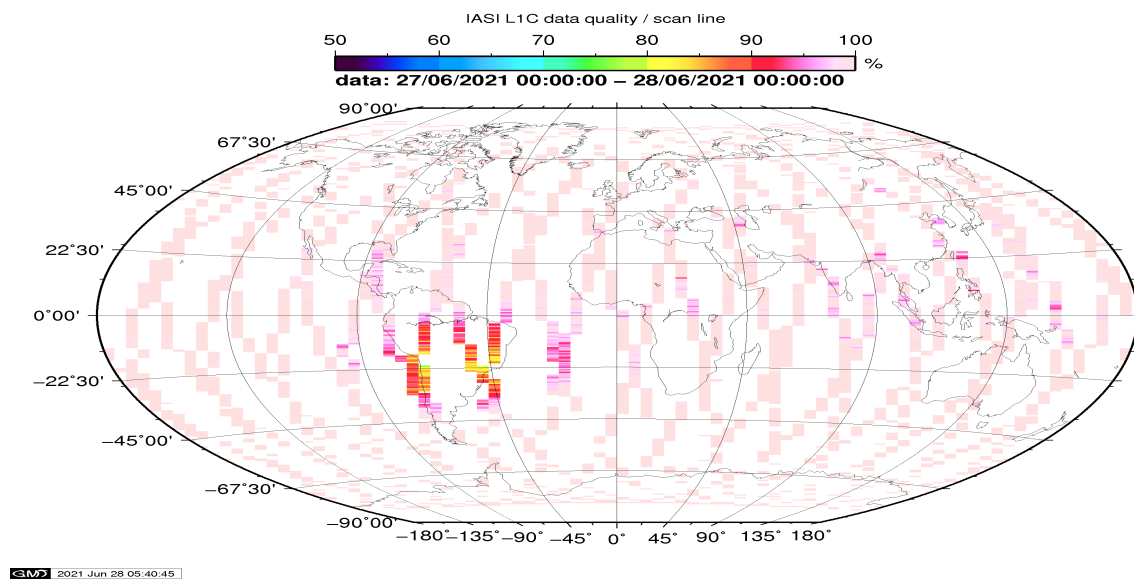


Figure 1: L1C data quality

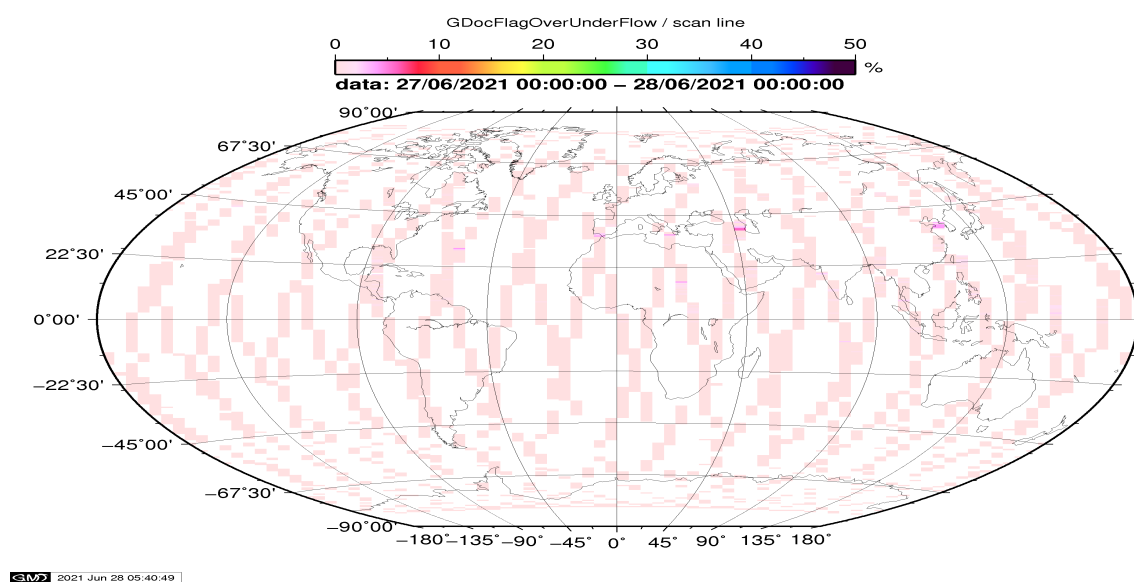


Figure 2: Flag of Over and Under Flows

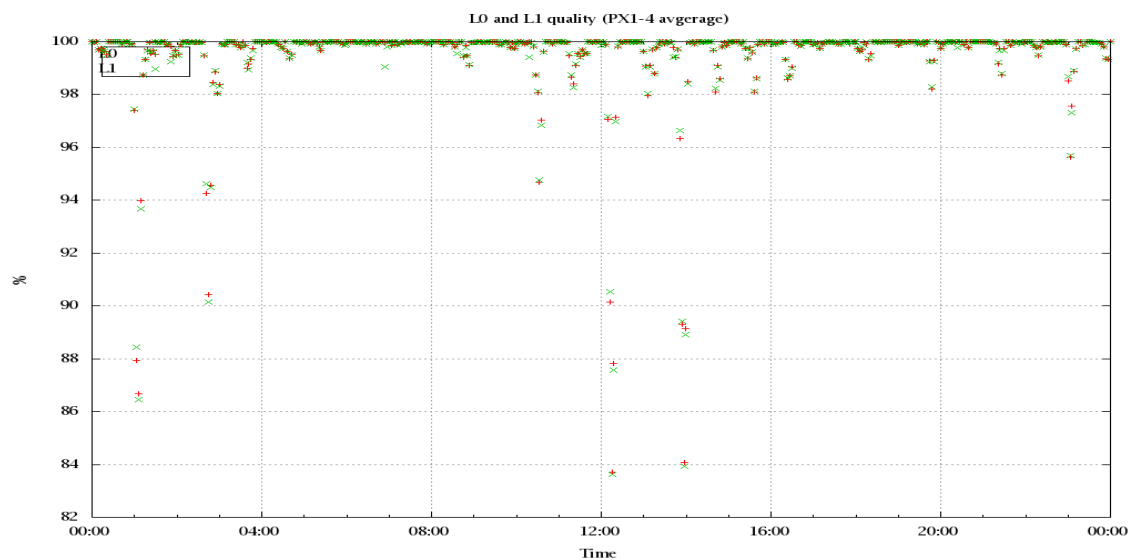


Figure 3: Level 0 and 1C overall quality

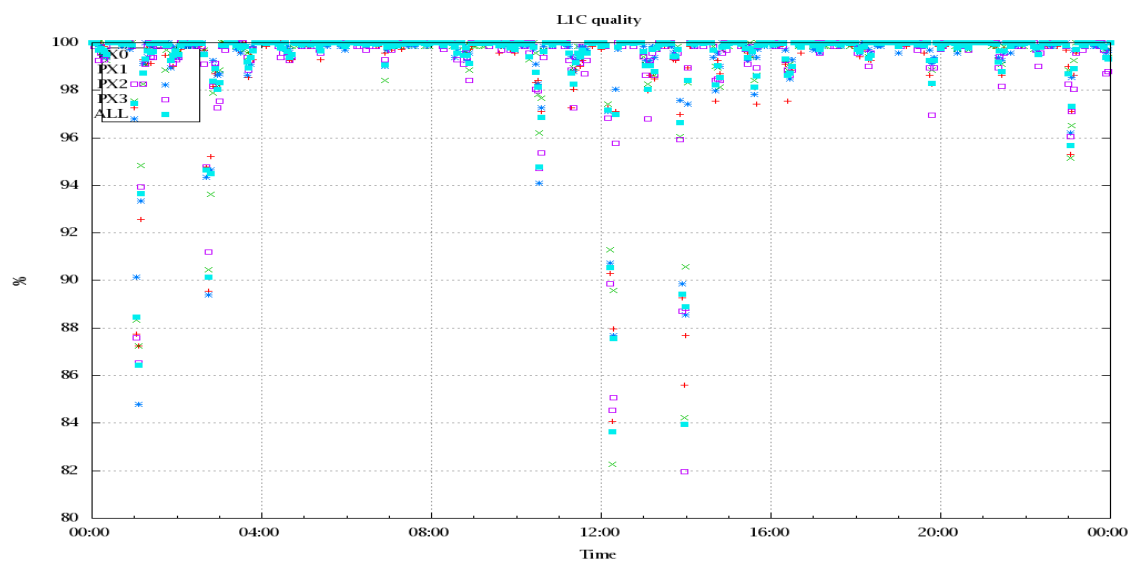


Figure 4: Level 1C quality

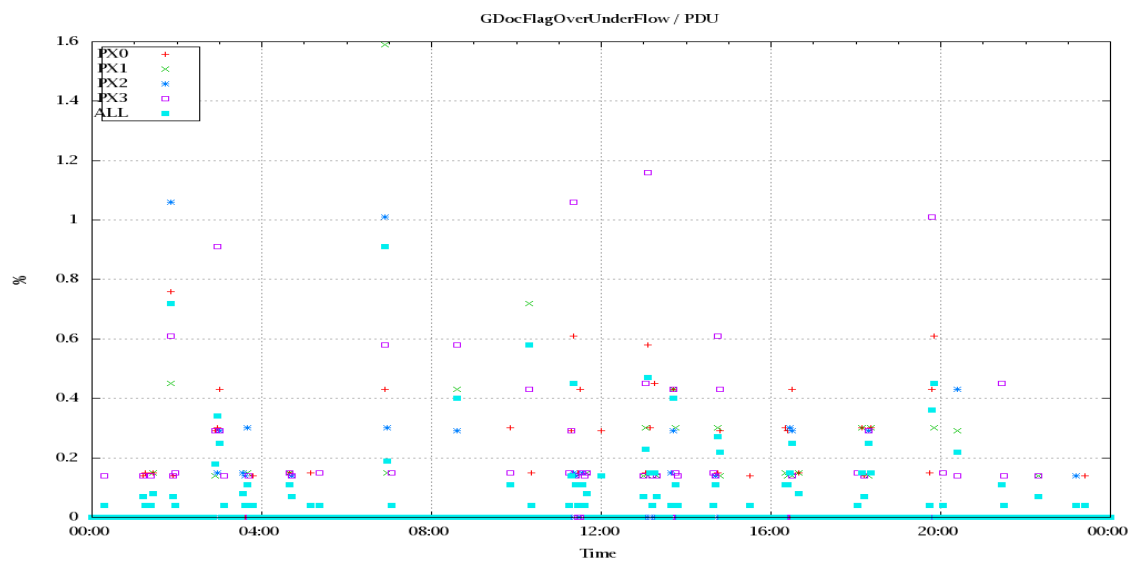


Figure 5: Timeseries of flag of Over and Under Flows

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.

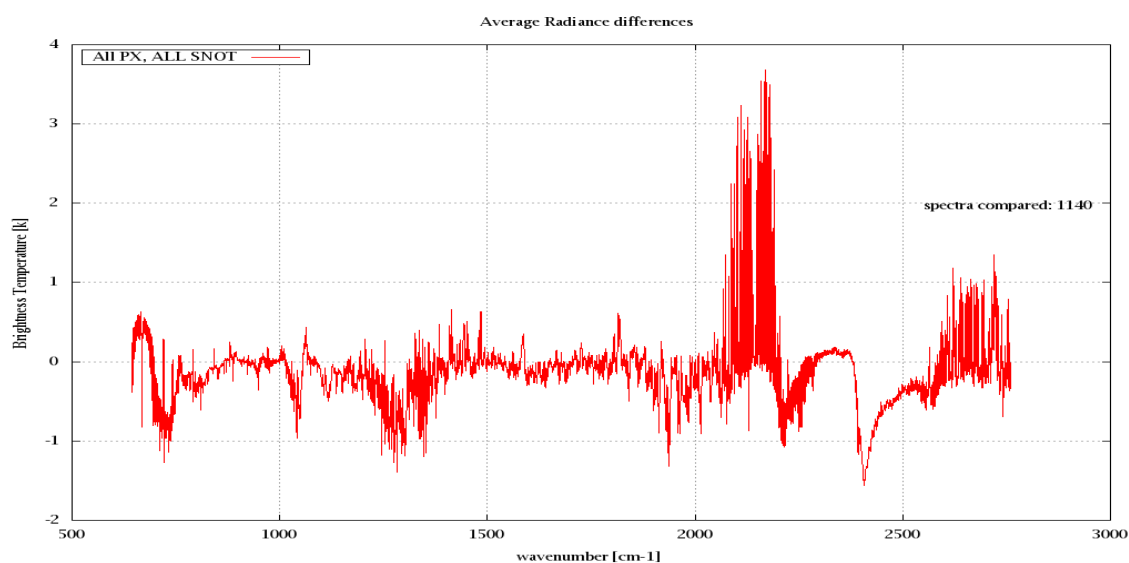


Figure 6: Average Radiance differences: OBS-CAL

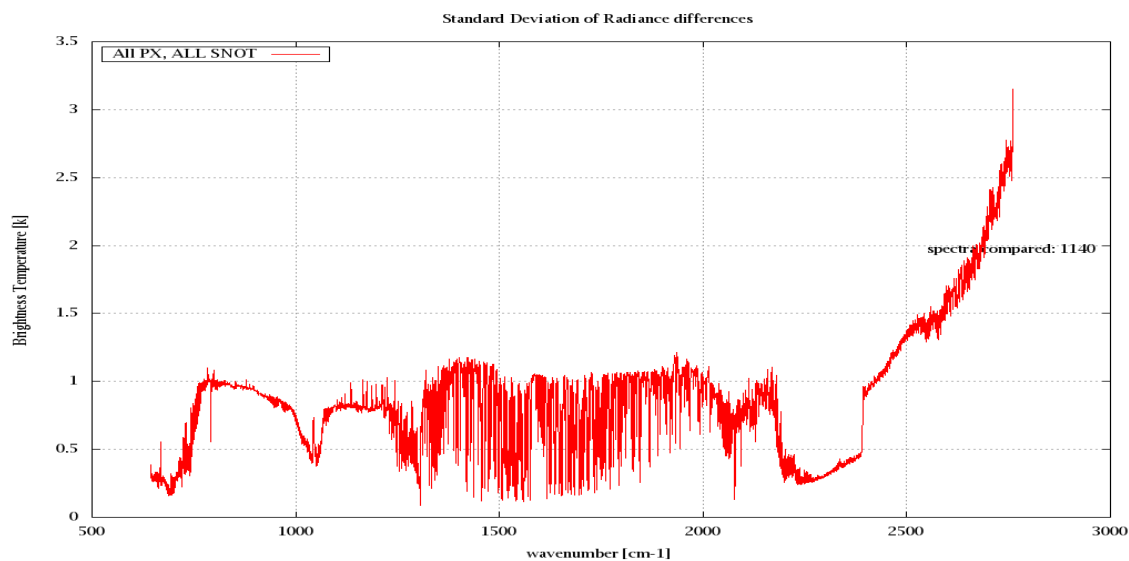


Figure 7: Standard Deviation of Radiance differences

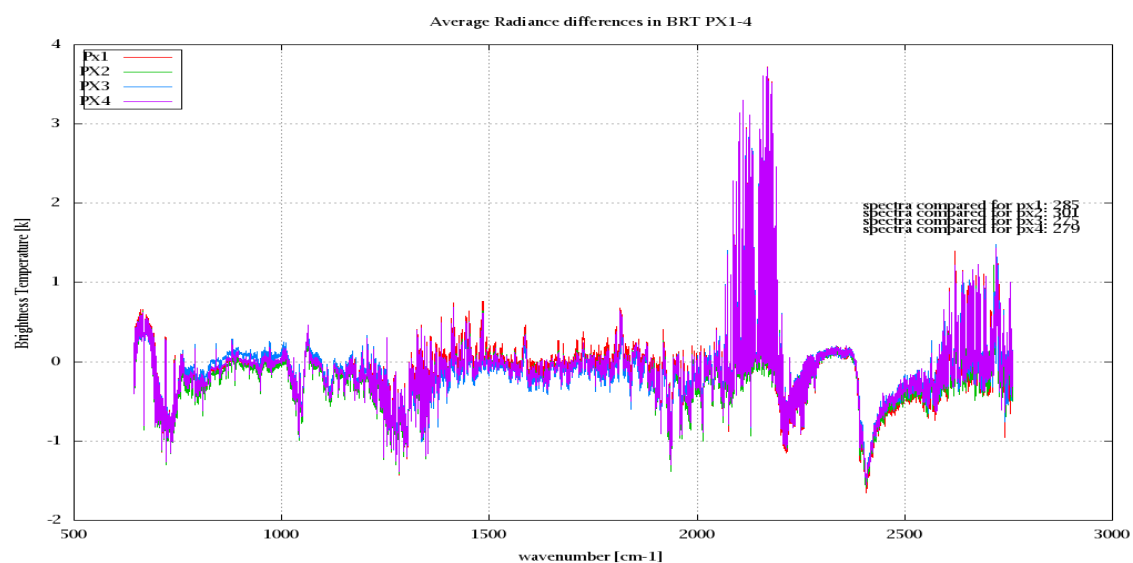


Figure 8: Average Radiance differences: OBS-CAL

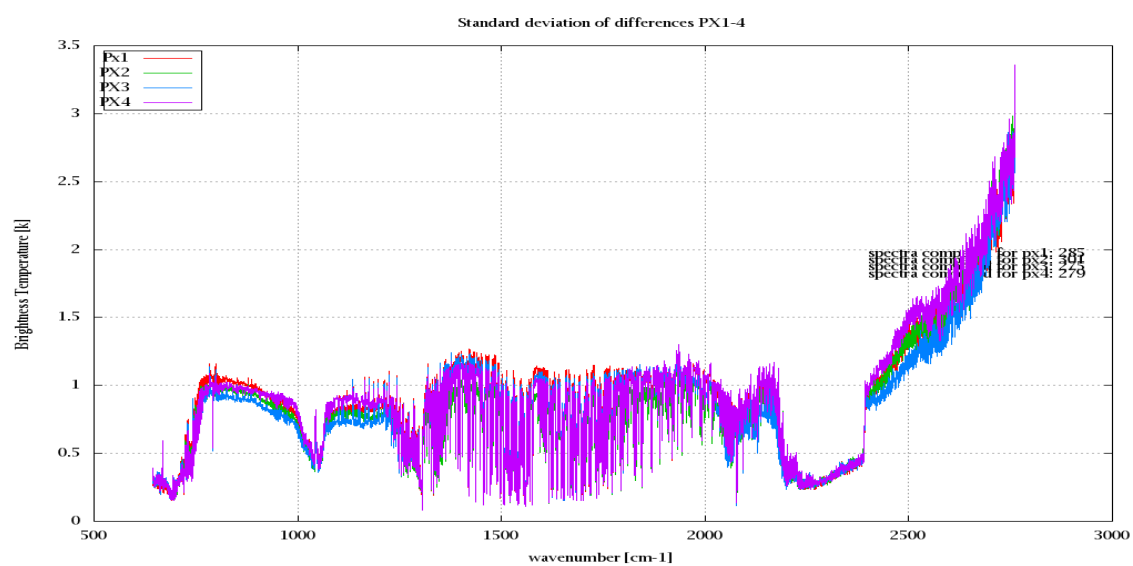


Figure 9: Standard Deviation of Radiance differences

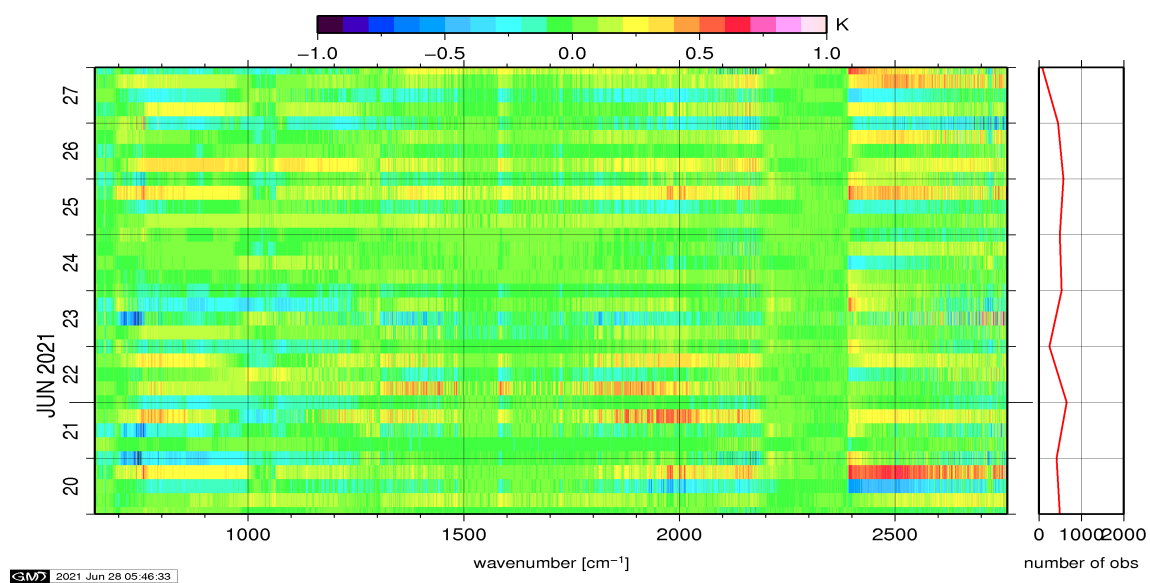


Figure 10: Radiance Anomaly in BT: All Channels

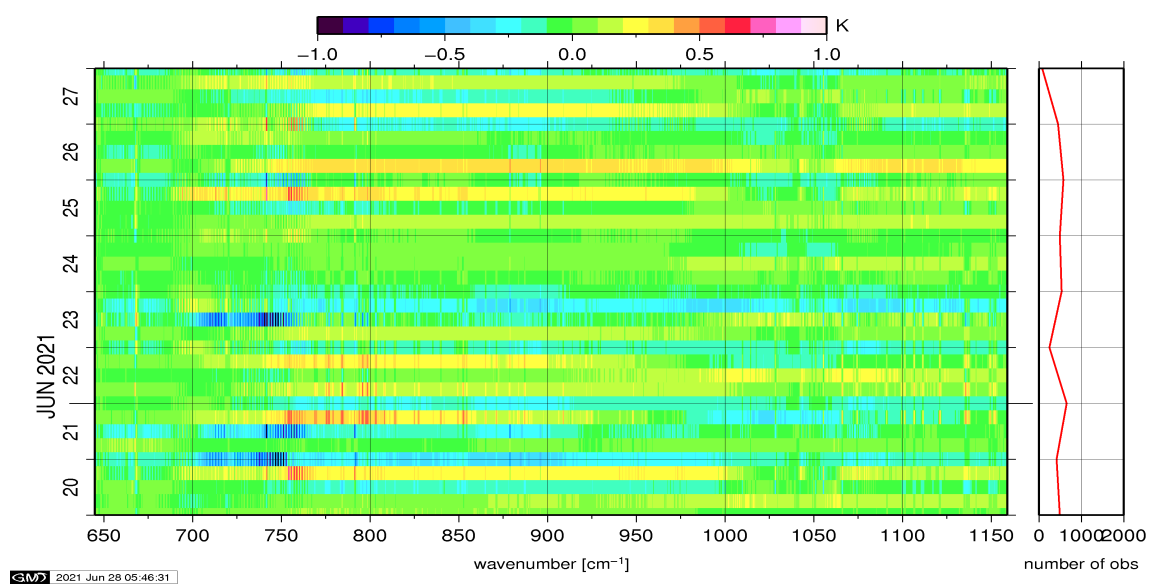


Figure 11: Radiance Anomaly in BT: IASI Band 1

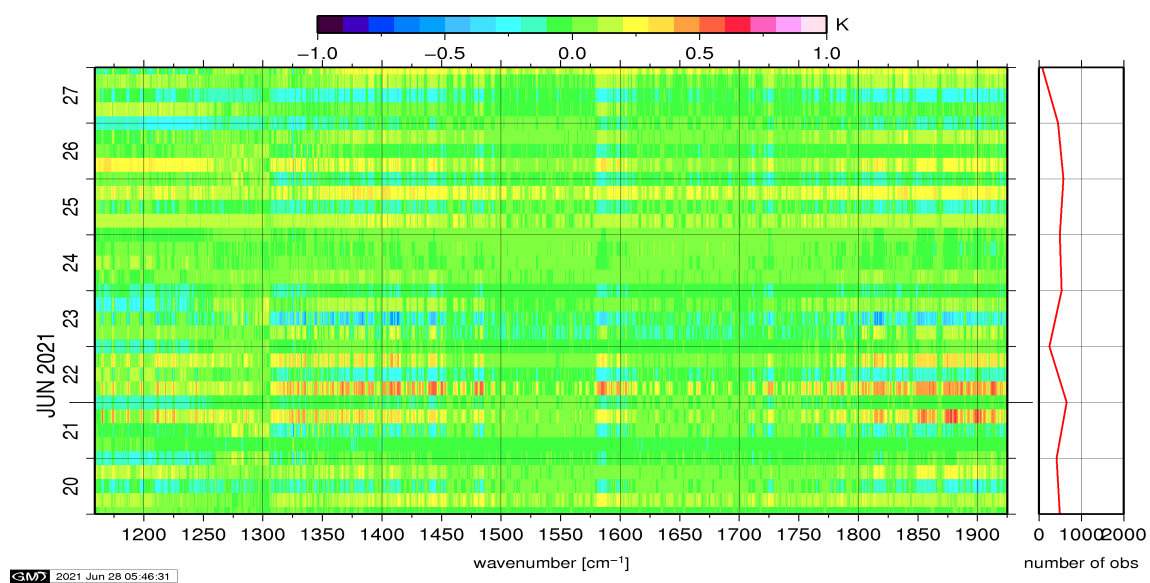


Figure 12: Radiance Anomaly in BT: IASI Band 2

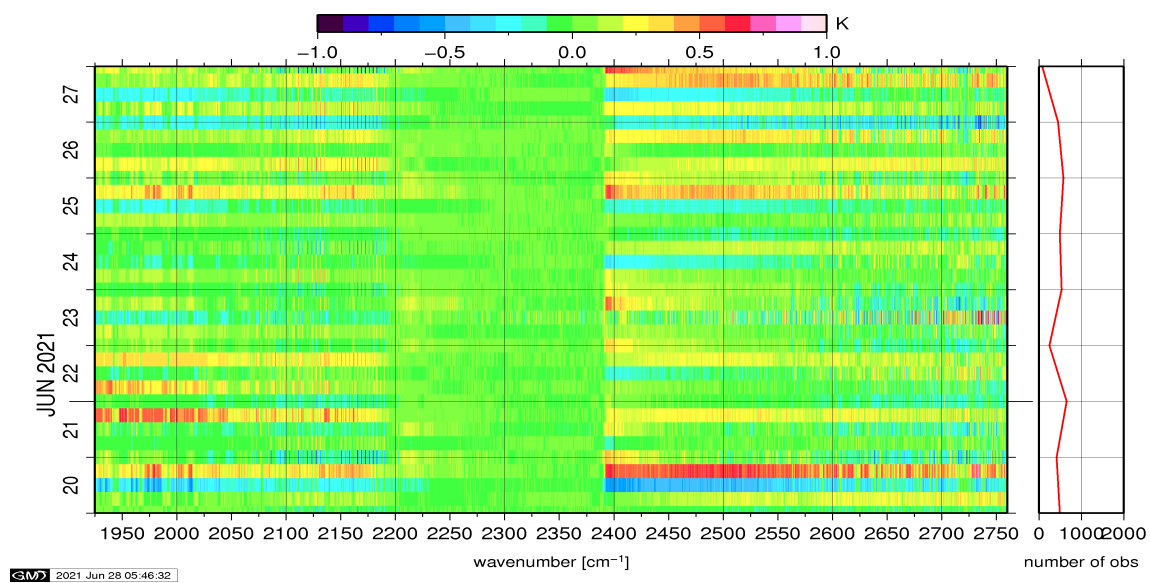


Figure 13: Radiance Anomaly in BT: IASI Band 3

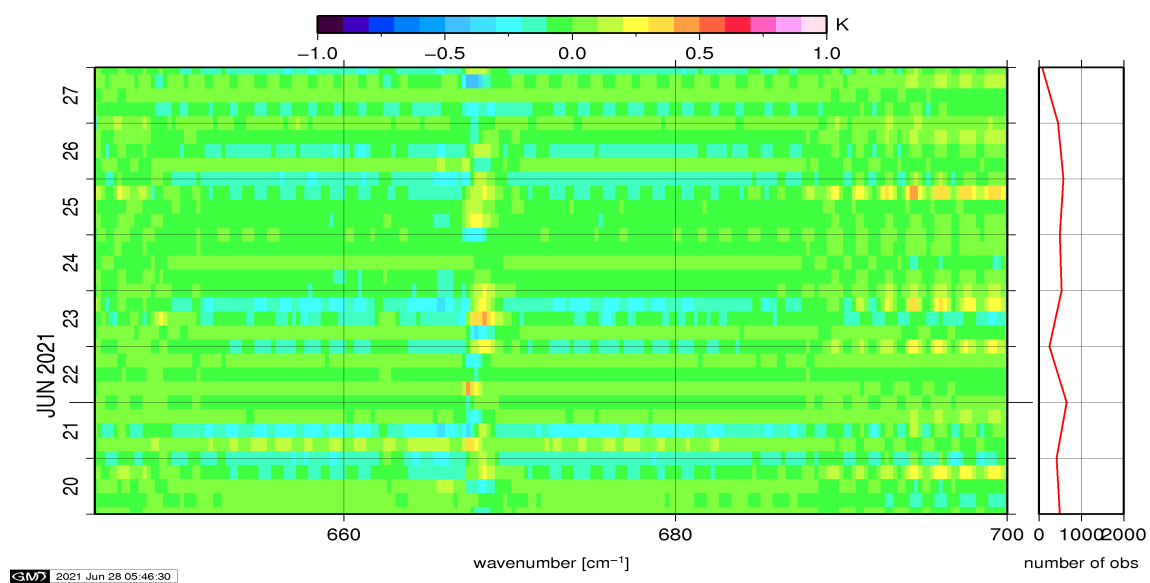


Figure 14: Radiance Anomaly in BT: CO2 14

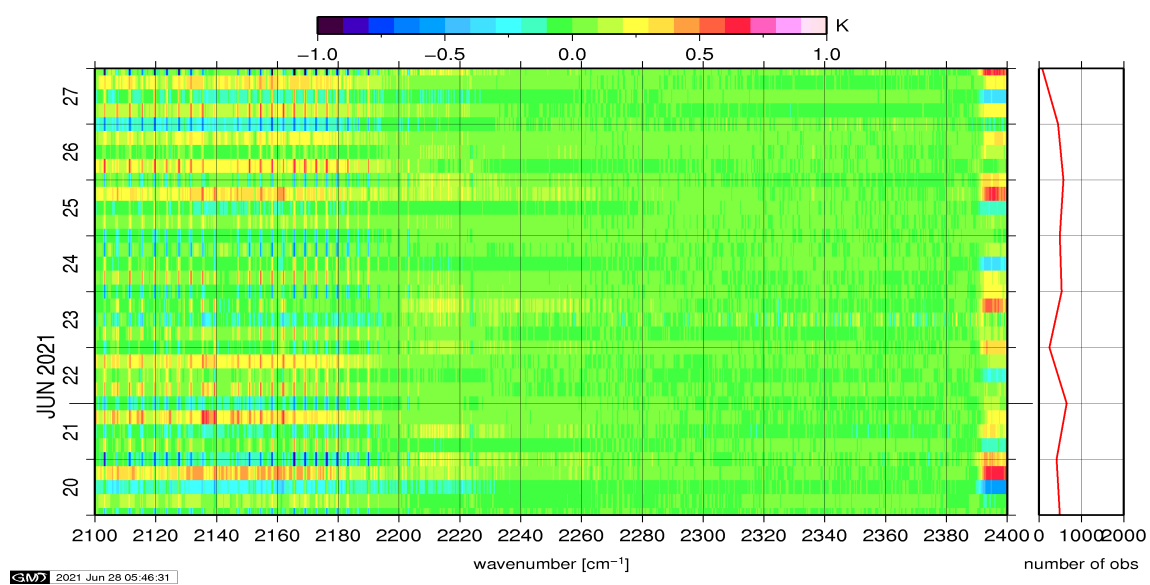


Figure 15: Radiance Anomaly in BT: CO2 4.3

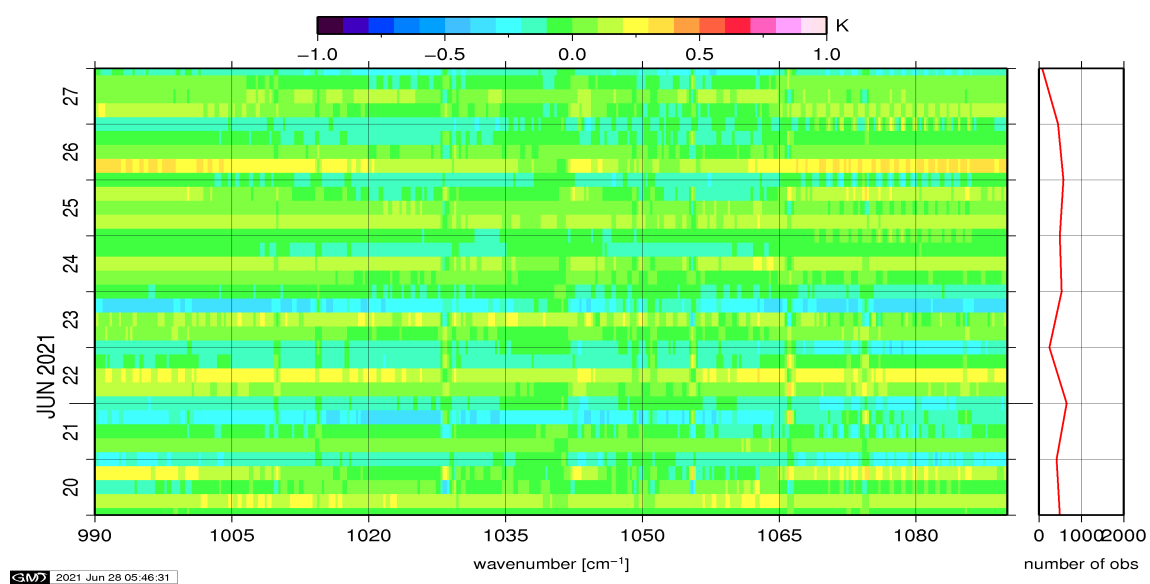


Figure 16: Radiance Anomaly in BT: O3