

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

IASI monitoring team

17/06/2021 00:00:00 - 18/06/2021 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 17/06/2021 00:00:00 - 18/06/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 17/06/2021 00:00:00 - 18/06/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	480	-
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)	3270	3272	20210617015229.711	20210617015230.144
PX2 (135)	-	-	-	-
PX3 (140)	-	-	-	-
PX4 (145)	4540	4542	20210617015807.901	20210617015808.331
PX4 (145)	1206	1208	20210617025607.885	20210617025608.314
PX4 (145)	309	311	20210617233003.651	20210617233004.080
IMG (150)	11760	11762	20210617025607.885	20210617025608.314
VER (160)	16379	0	20210617003736.526	20210617003744.526
VER (160)	0	16380	20210617003744.526	20210617003744.526
VER (160)	-1	1	20210617003744.526	20210617003752.526
VER (160)	3101	3103	20210617020032.546	20210617020032.546
VER (160)	3132	3134	20210617020120.546	20210617020120.546
VER (160)	16380	0	20210617075432.507	20210617075440.507
VER (160)	1	16381	20210617075440.507	20210617075440.507
VER (160)	-1	2	20210617075440.507	20210617075448.507
VER (160)	16381	0	20210617151128.449	20210617151136.449
VER (160)	2	16382	20210617151136.449	20210617151136.449
VER (160)	-1	3	20210617151136.449	20210617151144.449
VER (160)	16382	0	20210617222824.430	20210617222832.430

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	3	16383	20210617222832.430	20210617222832.430
VER (160)	-1	4	20210617222832.430	20210617222840.430
VER (160)	3265	3267	20210617235536.402	20210617235536.402
AUX (180)	-	-	-	-

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
17/06/2021 00:00:04	-	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)	99.54 %	-
GQisFlagQual set (PX2)	99.57 %	-
GQisFlagQual set (PX3)	99.57 %	-
GQisFlagQual set (PX4)	99.52 %	-
GQisFlagQual set (all)	99.55 %	-

Table 4: Quality flags

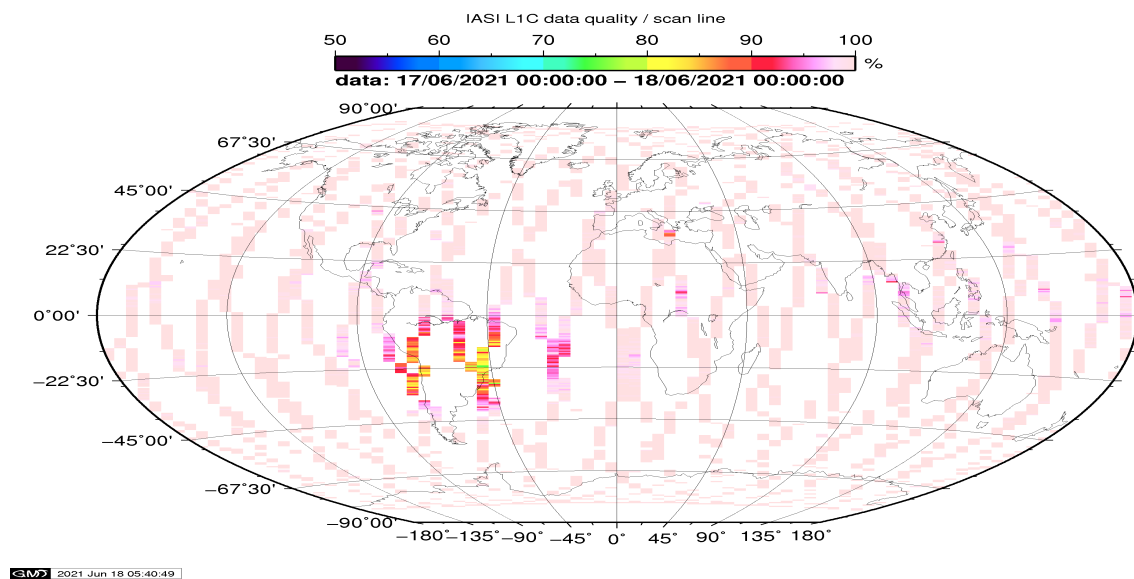


Figure 1: L1C data quality

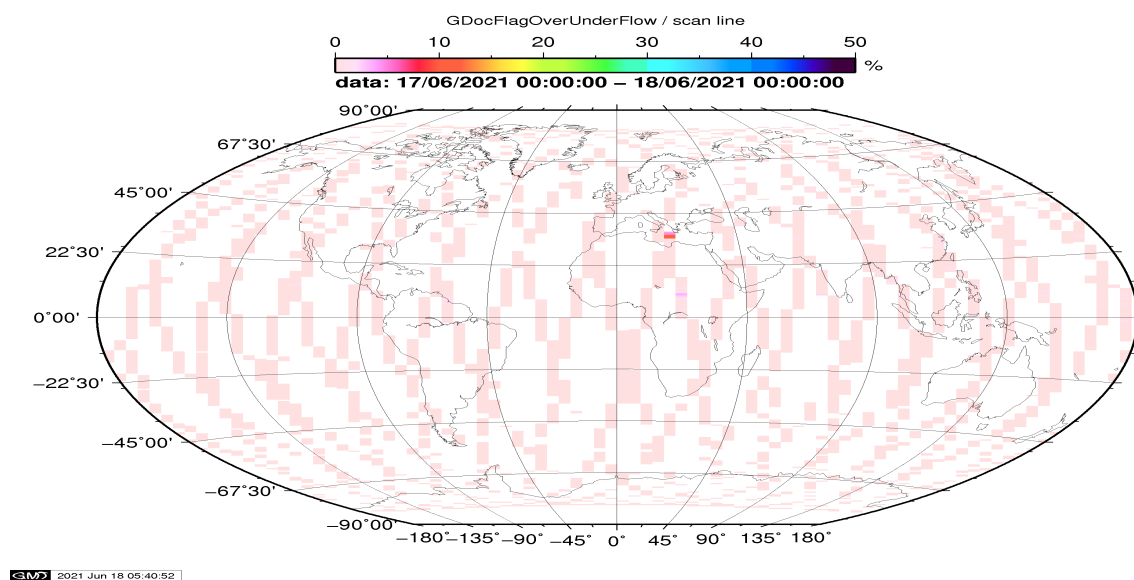


Figure 2: Flag of Over and Under Flows

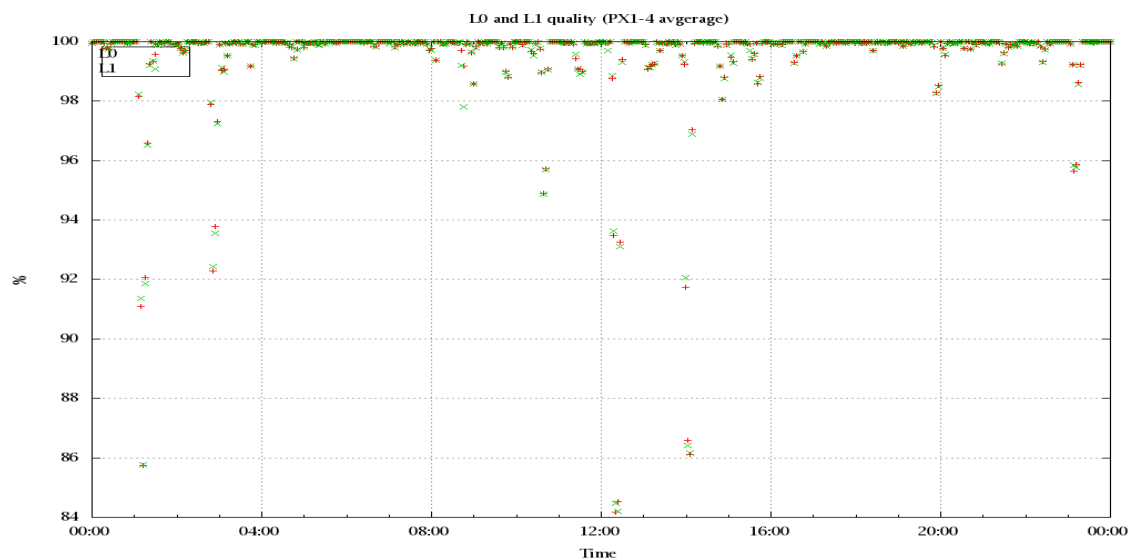


Figure 3: Level 0 and 1C overall quality

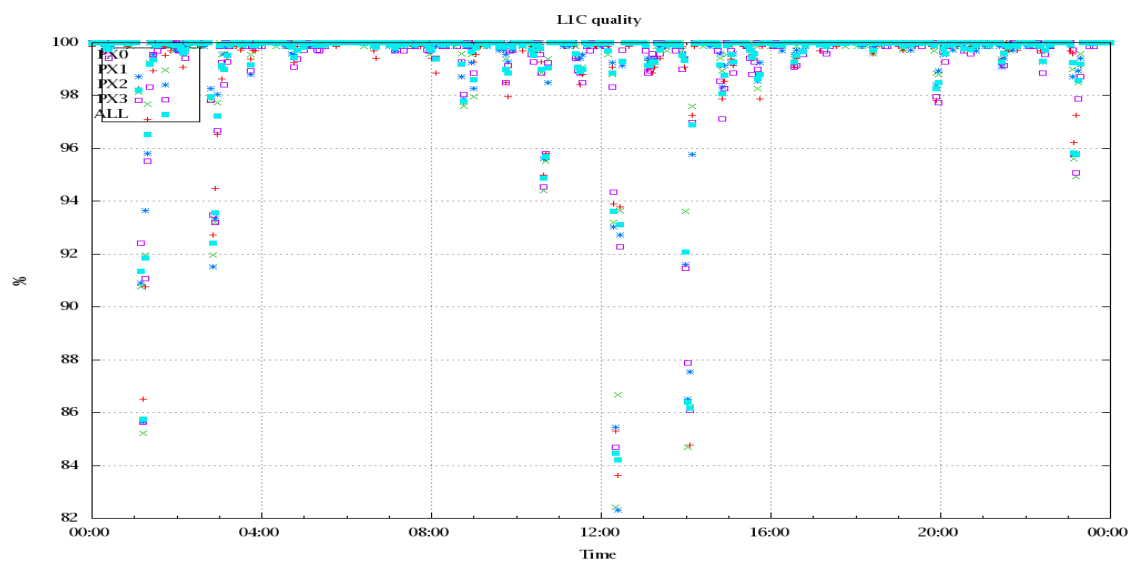


Figure 4: Level 1C quality

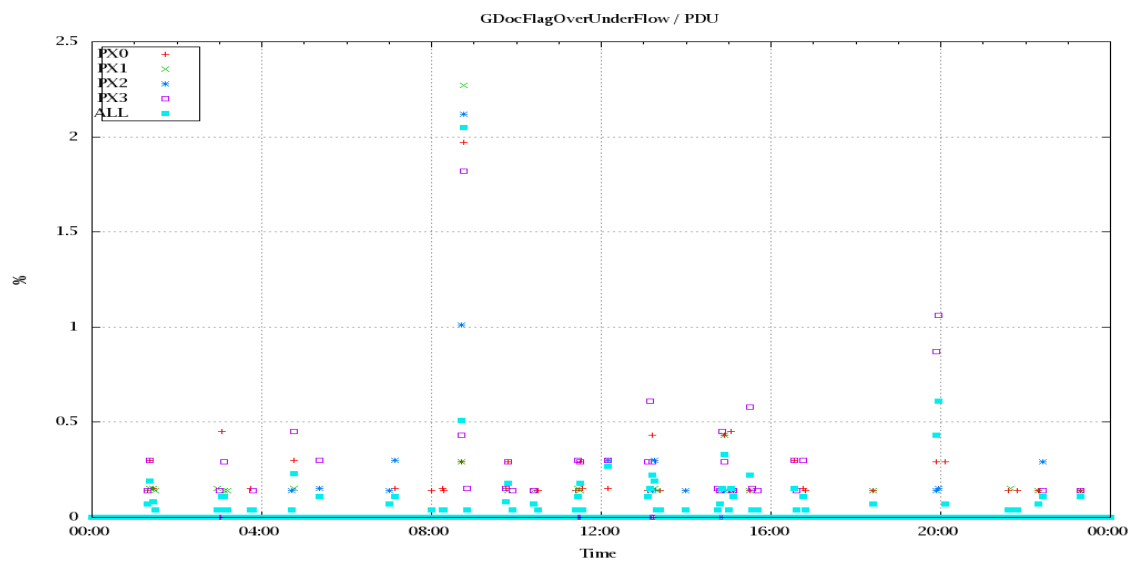


Figure 5: Timeseries of flag of Over and Under Flows

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.

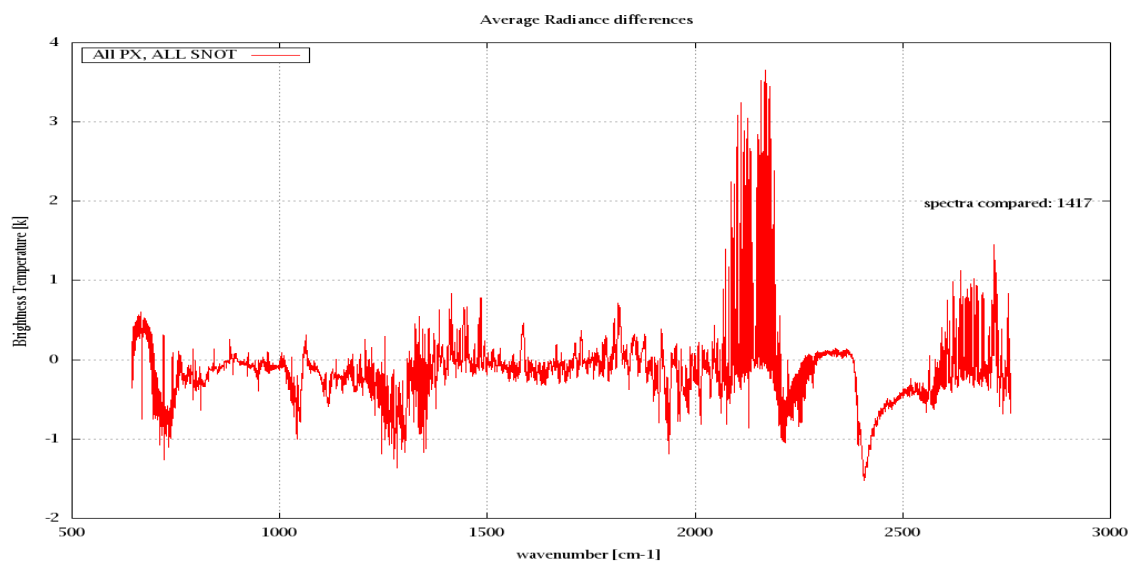


Figure 6: Average Radiance differences: OBS-CAL

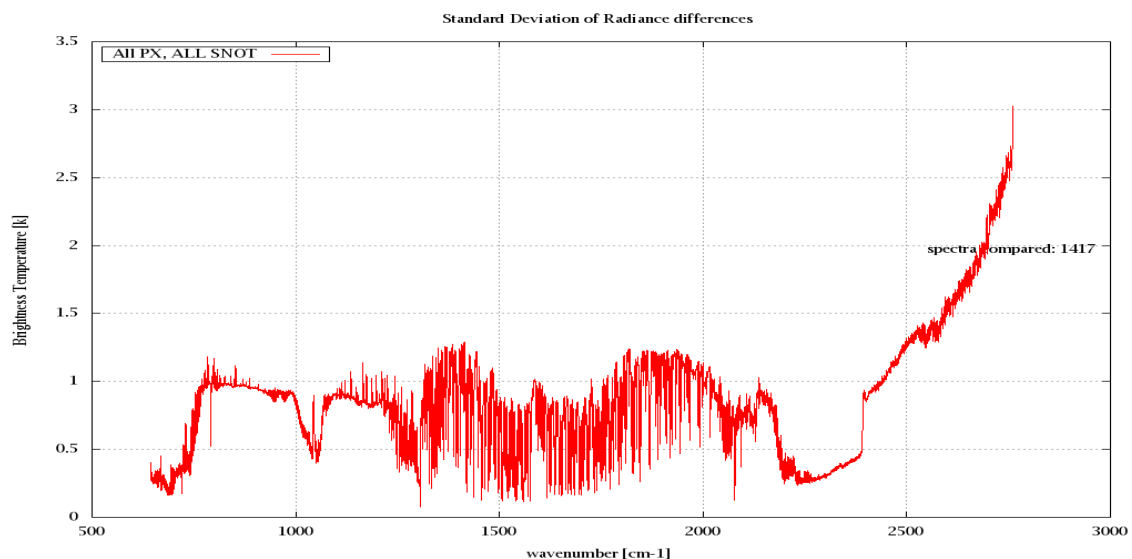


Figure 7: Standard Deviation of Radiance differences

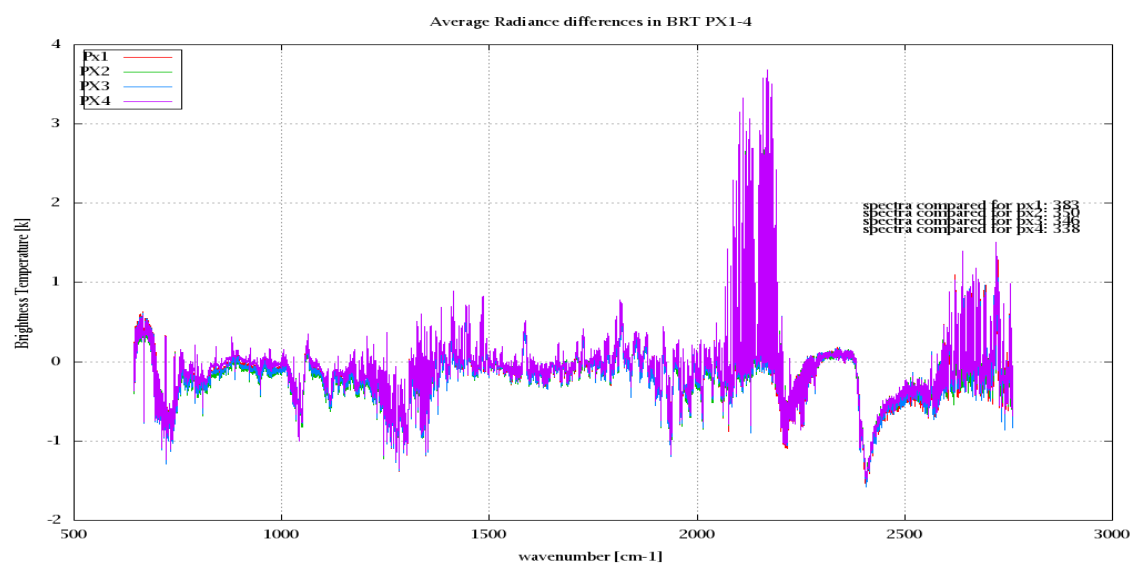


Figure 8: Average Radiance differences: OBS-CAL

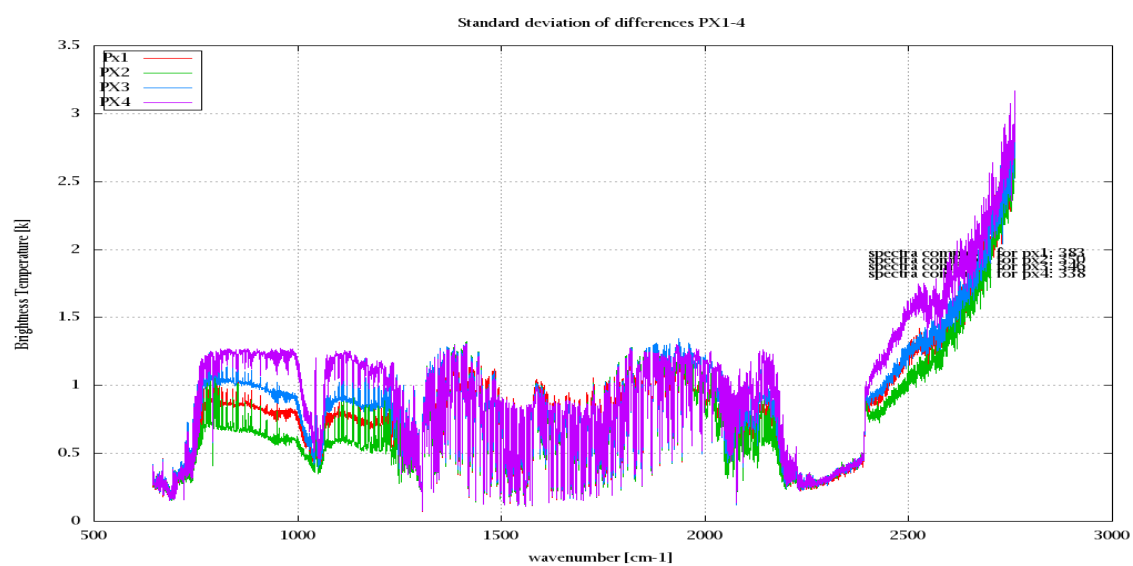


Figure 9: Standard Deviation of Radiance differences

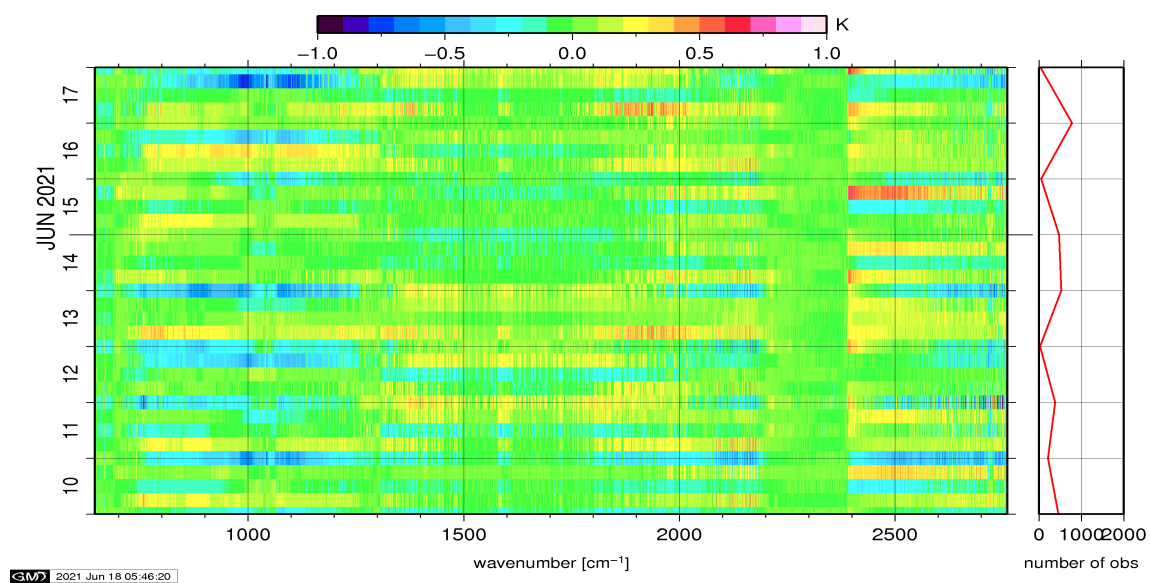


Figure 10: Radiance Anomaly in BT: All Channels

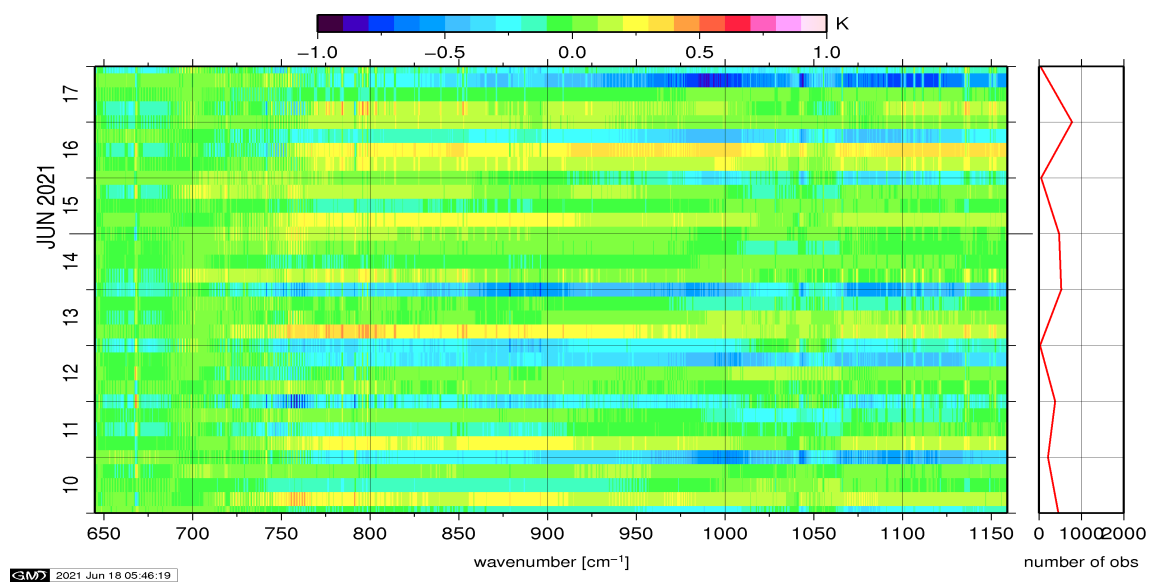


Figure 11: Radiance Anomaly in BT: IASI Band 1

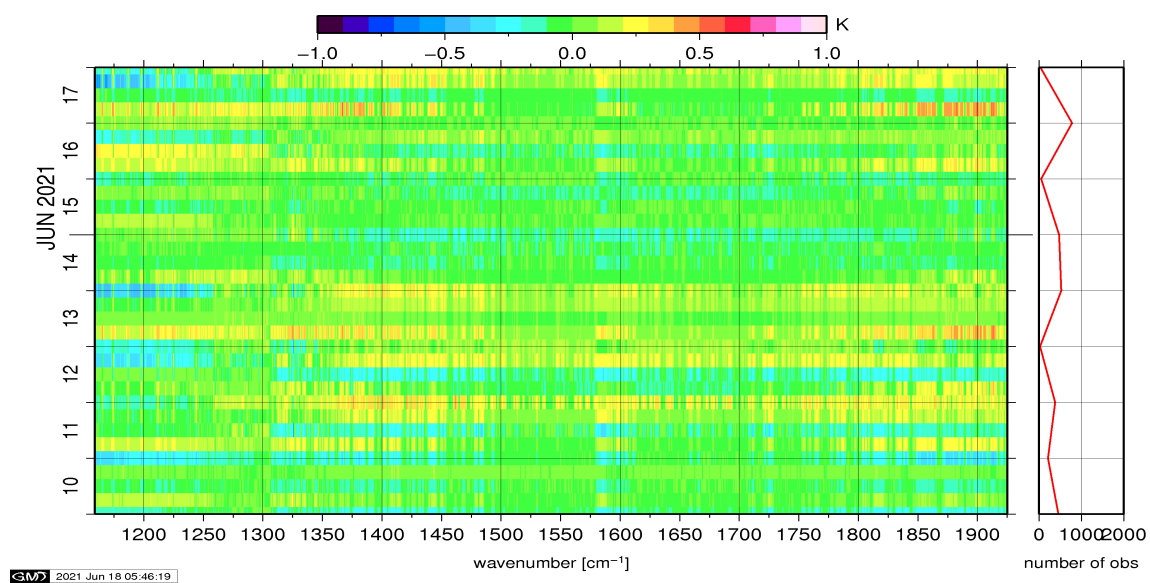


Figure 12: Radiance Anomaly in BT: IASI Band 2

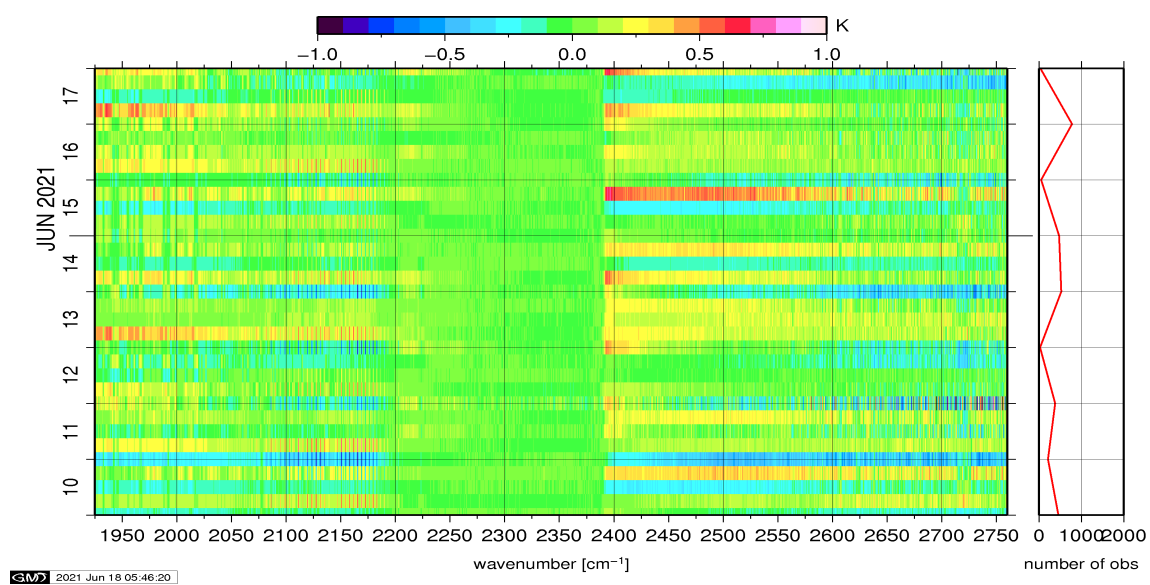


Figure 13: Radiance Anomaly in BT: IASI Band 3

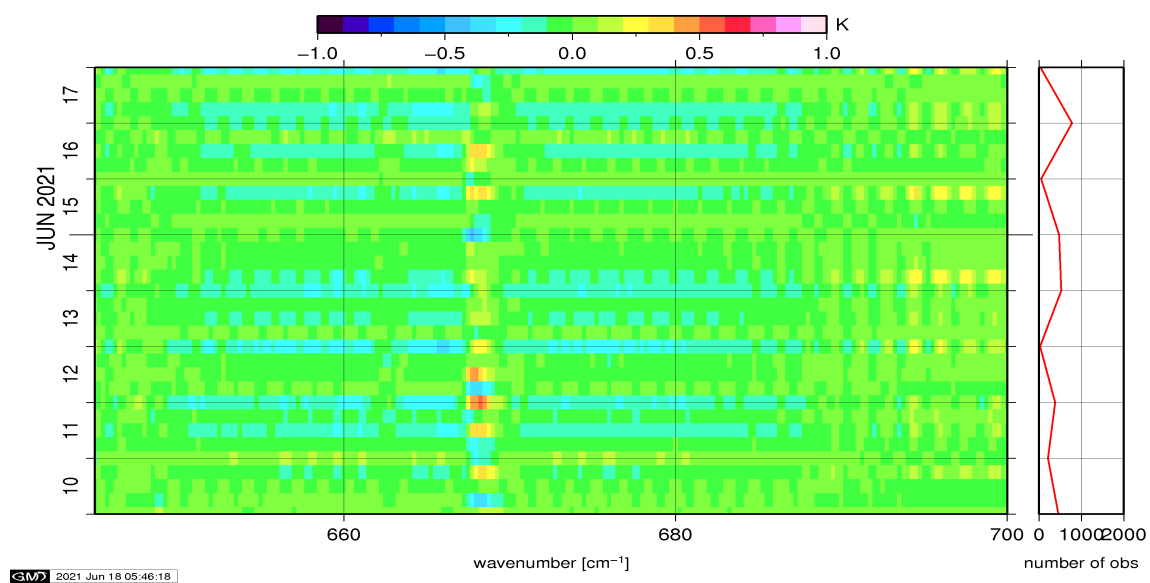


Figure 14: Radiance Anomaly in BT: CO2 14

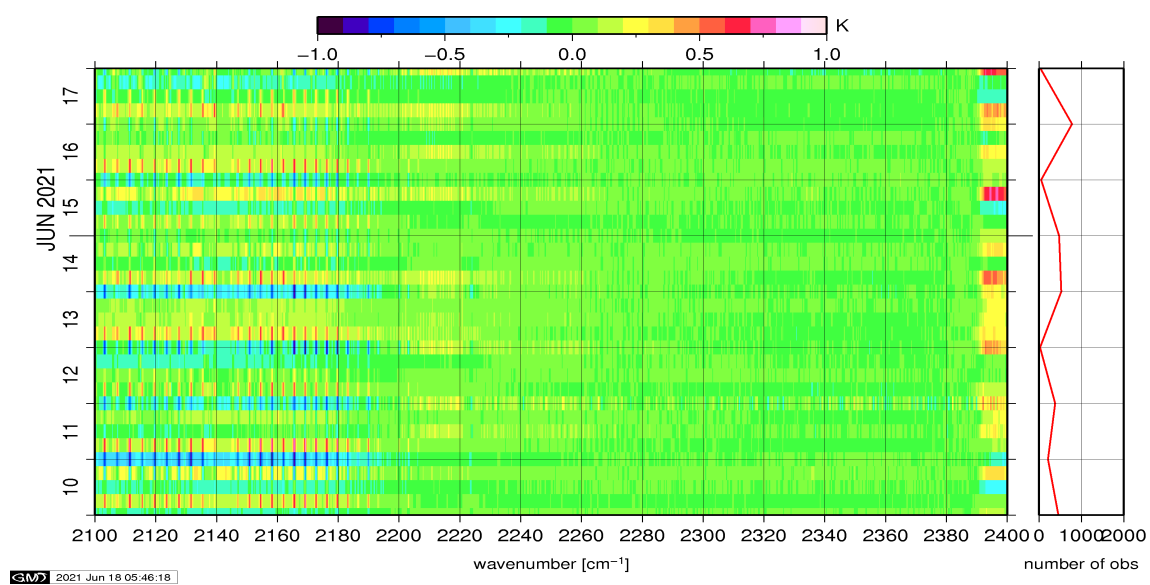


Figure 15: Radiance Anomaly in BT: CO2 4.3

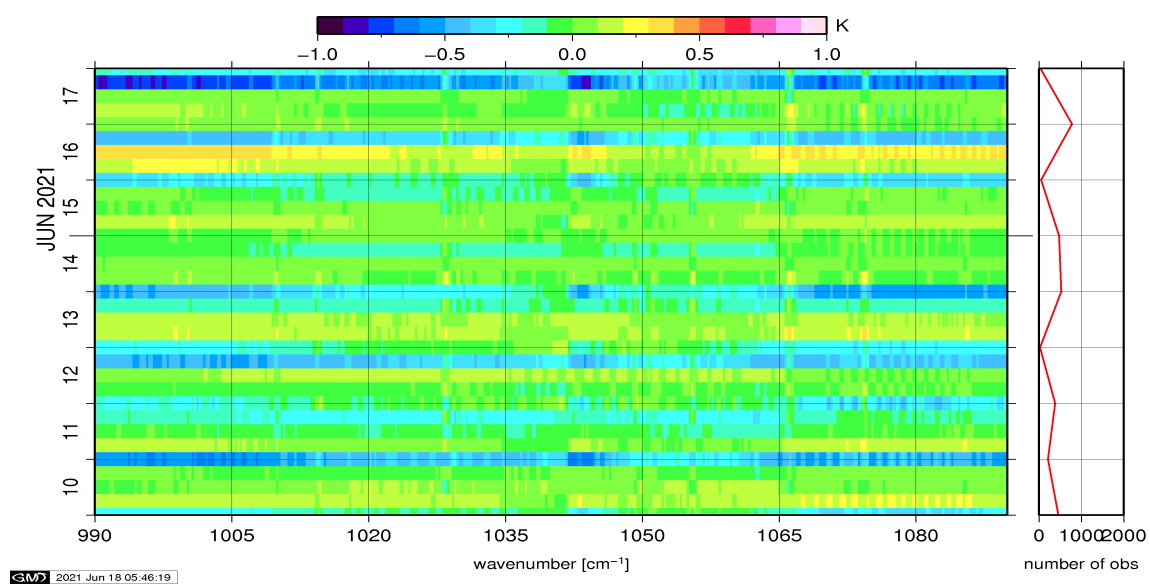


Figure 16: Radiance Anomaly in BT: O3