

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

IASI monitoring team

06/02/2021 00:00:00 - 07/02/2021 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 06/02/2021 00:00:00 - 07/02/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 06/02/2021 00:00:00 - 07/02/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	480	-
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)	15669	15671	20210206013054.676	20210206013055.110
PX1 (130)	13560	14240	20210206182059.793	20210206182400.109
PX2 (135)	15669	15671	20210206013054.676	20210206013055.110
PX2 (135)	13560	14240	20210206182059.793	20210206182400.109
PX3 (140)	13560	14240	20210206182059.793	20210206182400.109
PX4 (145)	734	736	20210206013720.613	20210206013722.558
PX4 (145)	6639	6641	20210206031624.390	20210206031624.820
PX4 (145)	13560	14240	20210206182059.793	20210206182400.109
IMG (150)	5006	5008	20210206013720.613	20210206013721.262
IMG (150)	13883	13885	20210206031624.390	20210206031624.820
IMG (150)	15176	15944	20210206182059.793	20210206182400.109
VER (160)	16379	0	20210206115624.777	20210206115632.777
VER (160)	0	16380	20210206115632.777	20210206115632.777
VER (160)	-1	1	20210206115632.777	20210206115640.777
VER (160)	14415	14526	20210206182056.765	20210206182400.757
VER (160)	16380	0	20210206191320.757	20210206191328.753
VER (160)	1	16381	20210206191328.753	20210206191328.753
VER (160)	-1	2	20210206191328.753	20210206191336.753
AUX (180)	12691	12714	20210206182057.195	20210206182401.191

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
06/02/2021 00:00:04	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	480	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	481	-
GQisFlagQual set (PX1)	99.55 %	-
GQisFlagQual set (PX2)	99.58 %	-
GQisFlagQual set (PX3)	99.59 %	-
GQisFlagQual set (PX4)	99.51 %	-
GQisFlagQual set (all)	99.56 %	-

Table 4: Quality flags

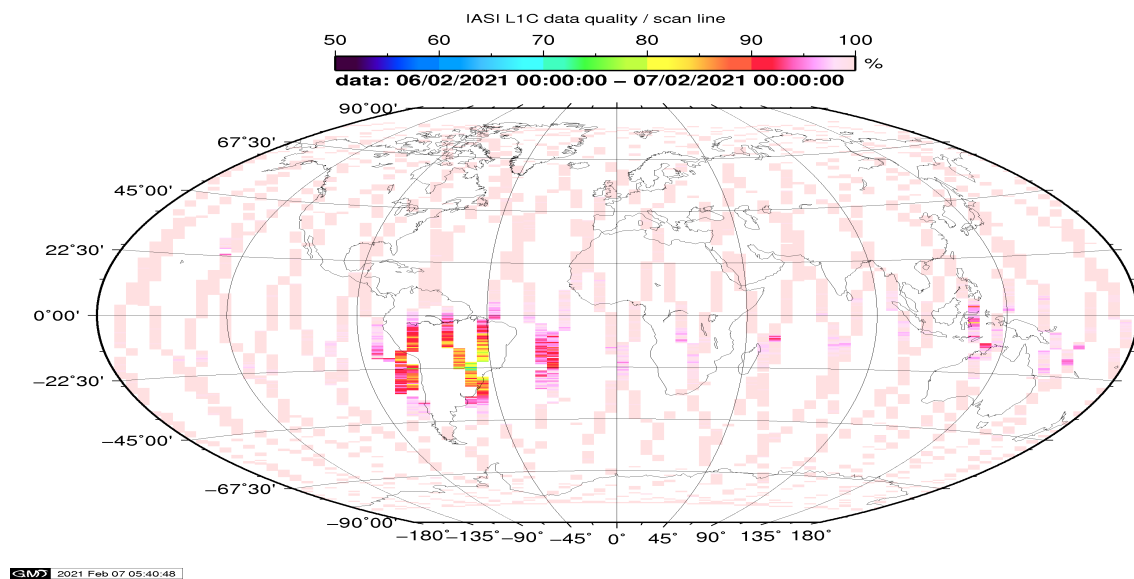


Figure 1: L1C data quality

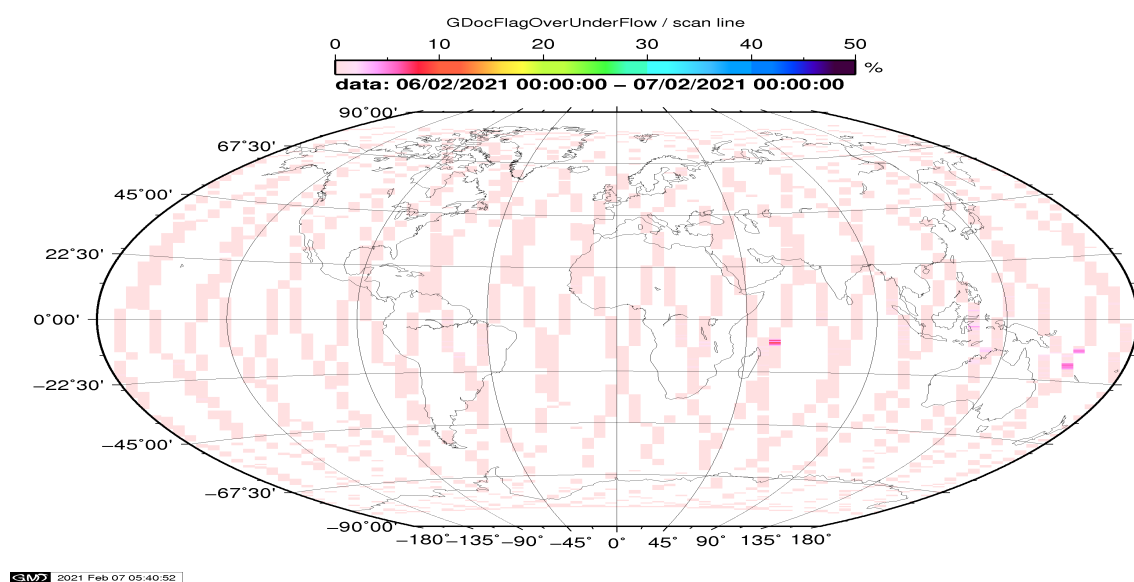


Figure 2: Flag of Over and Under Flows

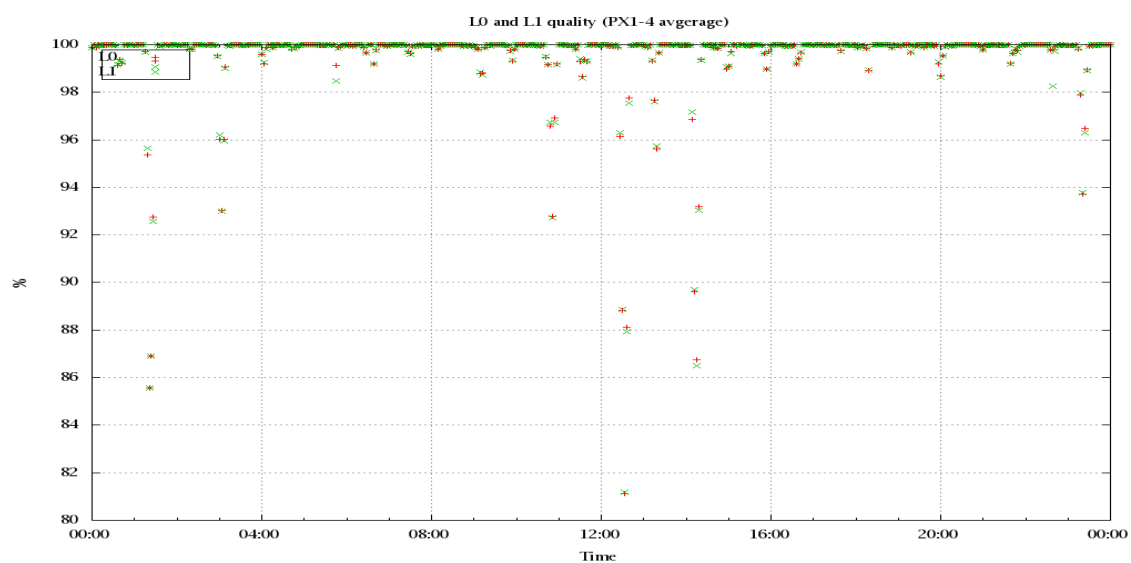


Figure 3: Level 0 and 1C overall quality

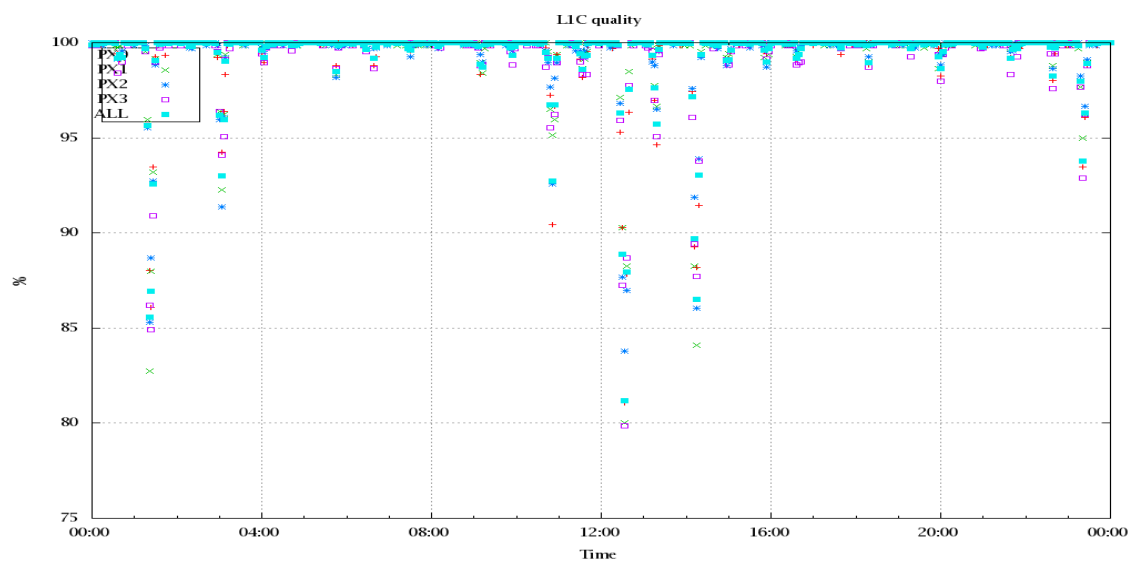


Figure 4: Level 1C quality

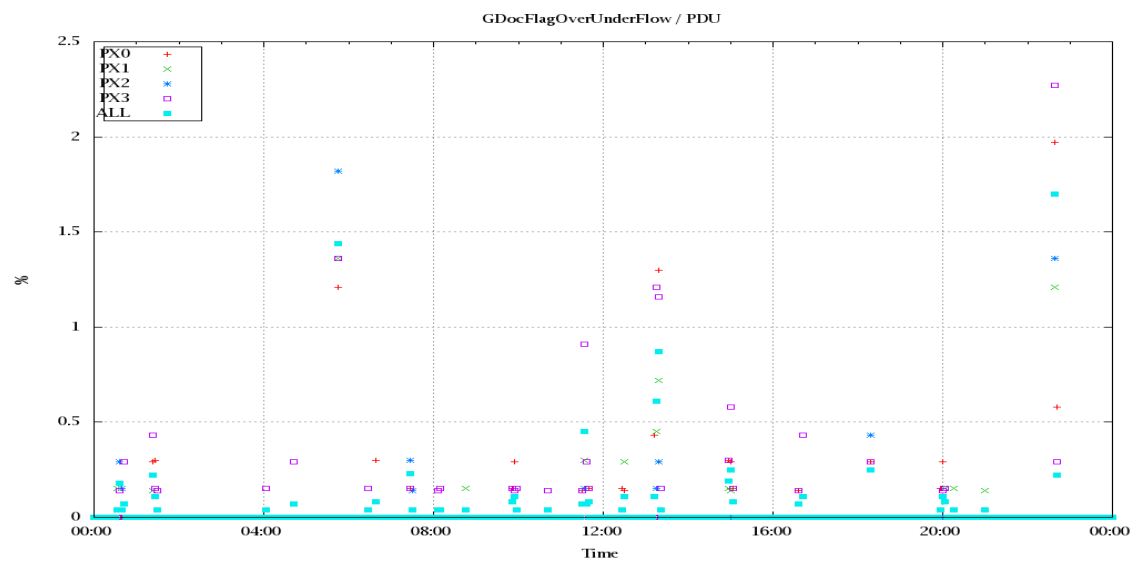


Figure 5: Timeseries of flag of Over and Under Flows

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.

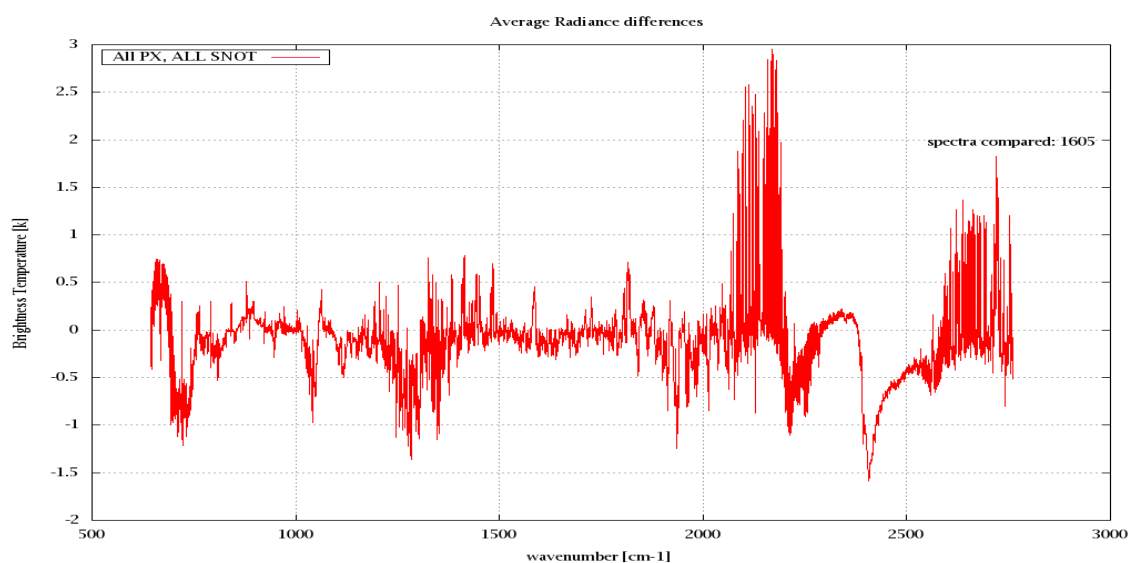


Figure 6: Average Radiance differences: OBS-CAL

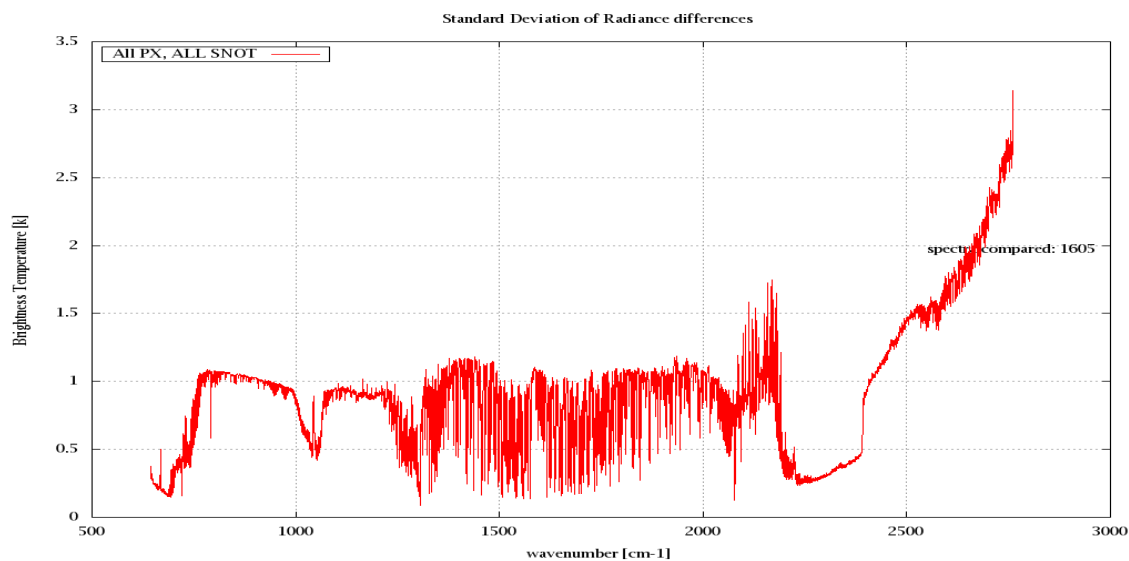


Figure 7: Standard Deviation of Radiance differences

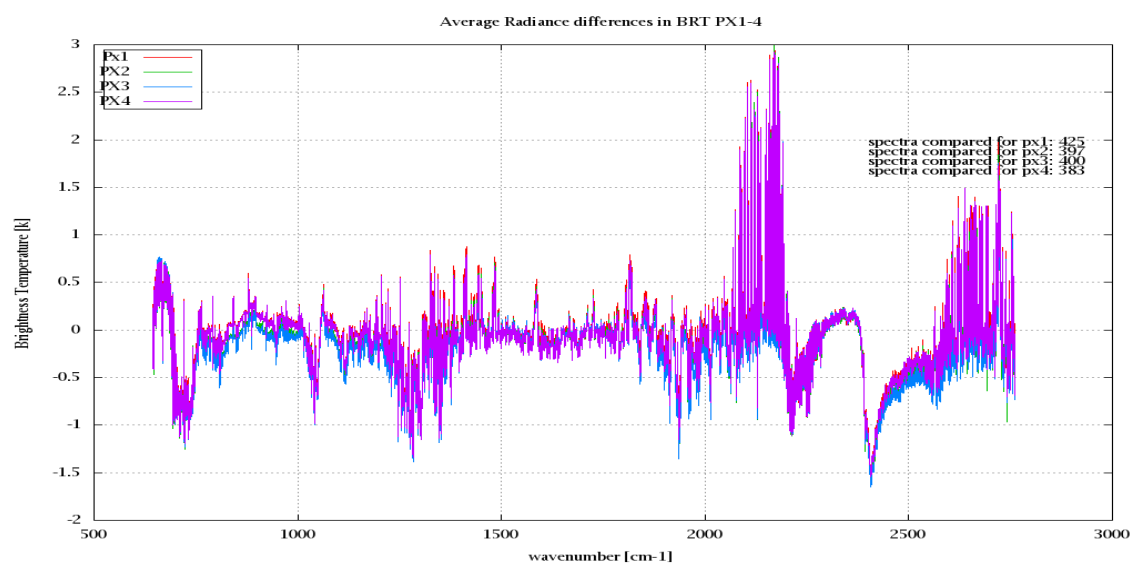


Figure 8: Average Radiance differences: OBS-CAL

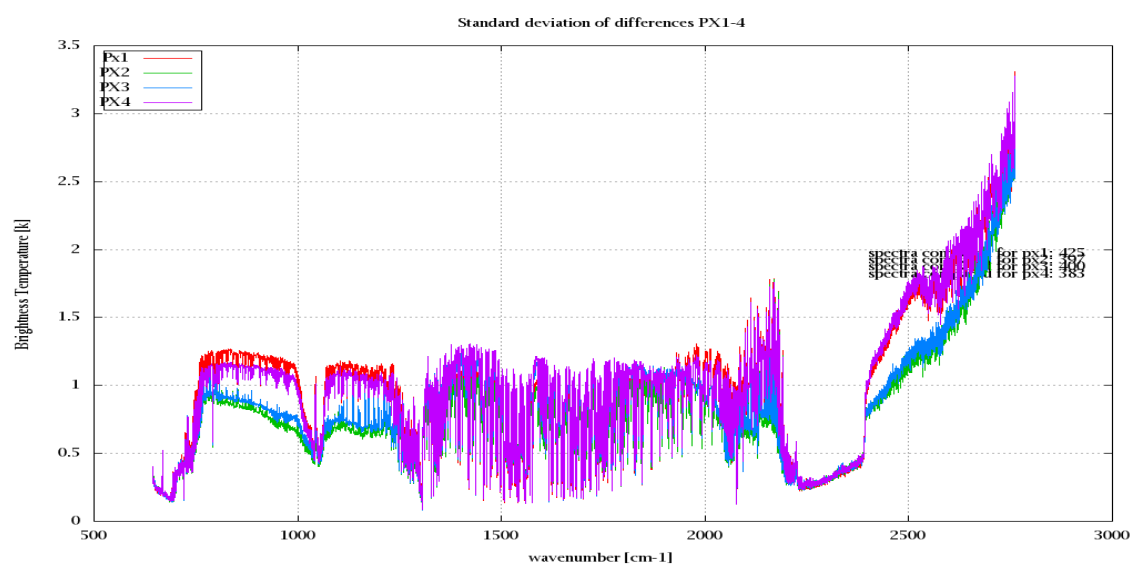


Figure 9: Standard Deviation of Radiance differences

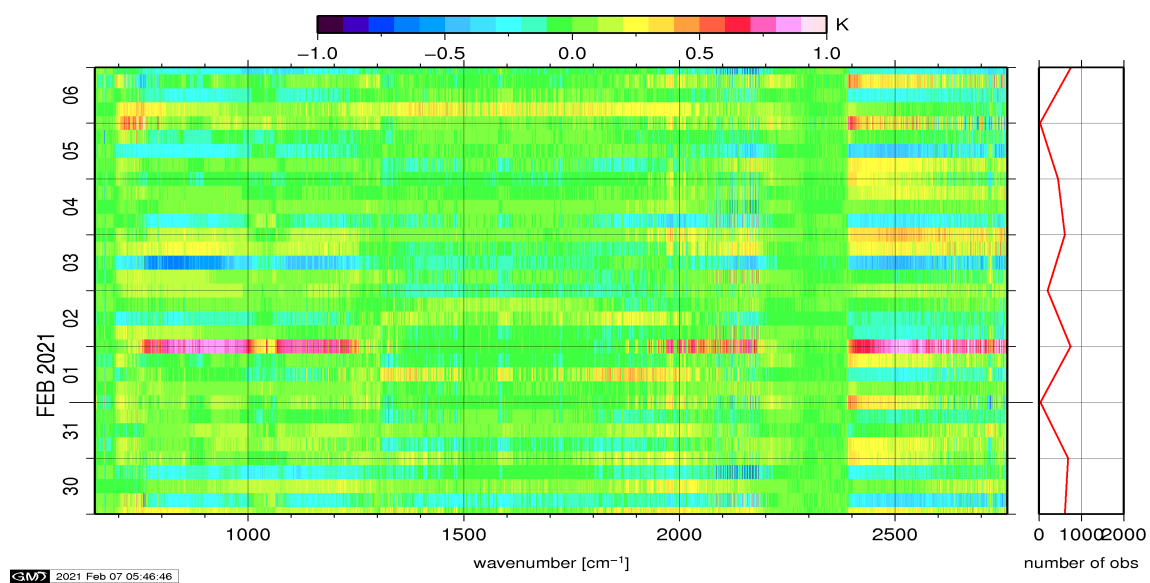


Figure 10: Radiance Anomaly in BT: All Channels

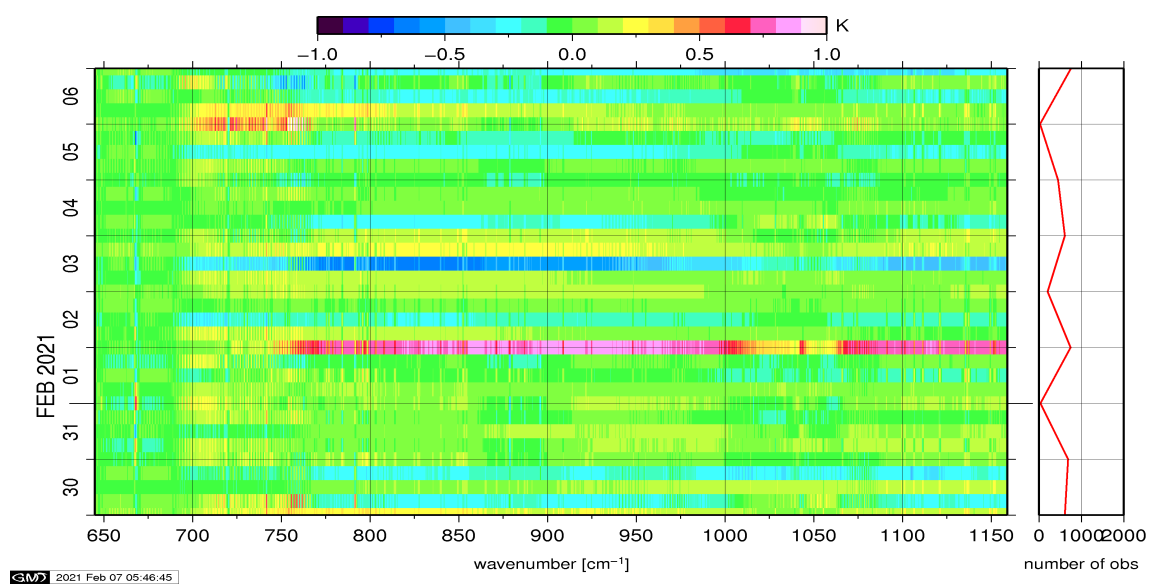


Figure 11: Radiance Anomaly in BT: IASI Band 1

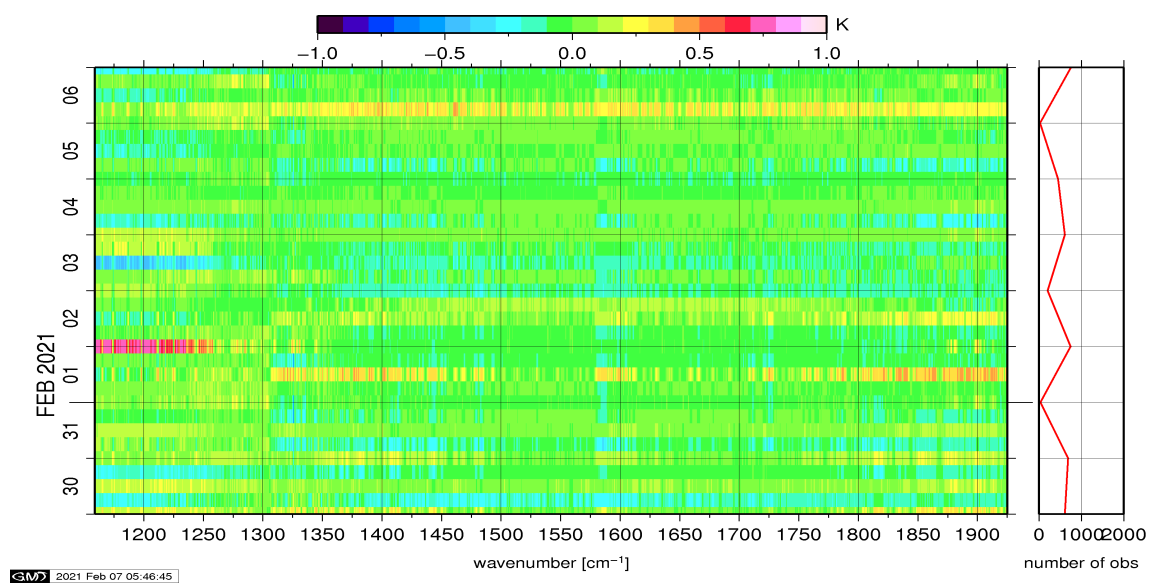


Figure 12: Radiance Anomaly in BT: IASI Band 2

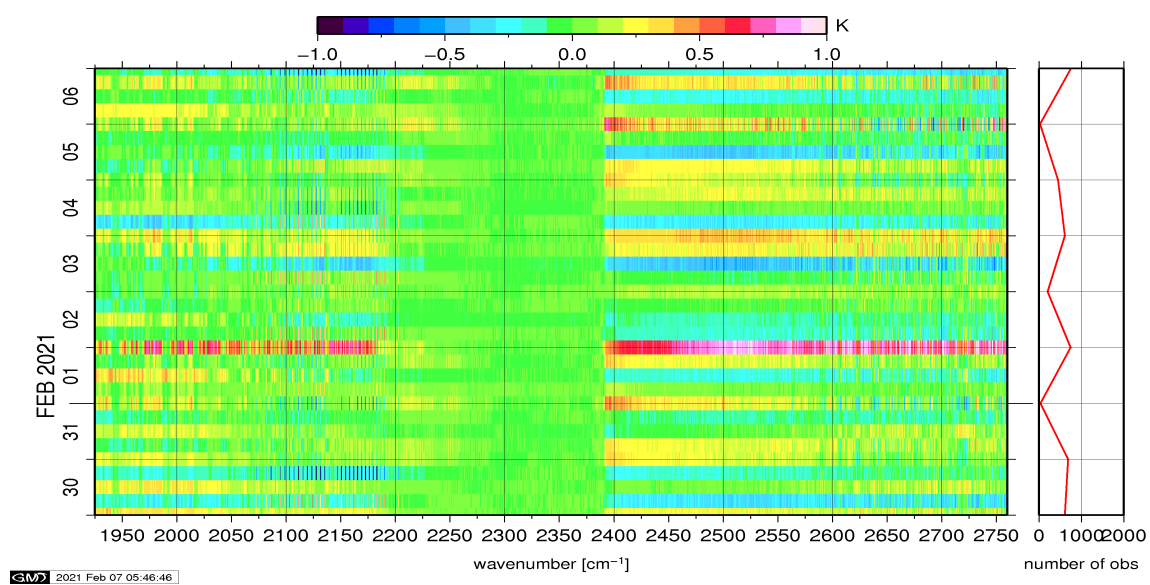


Figure 13: Radiance Anomaly in BT: IASI Band 3

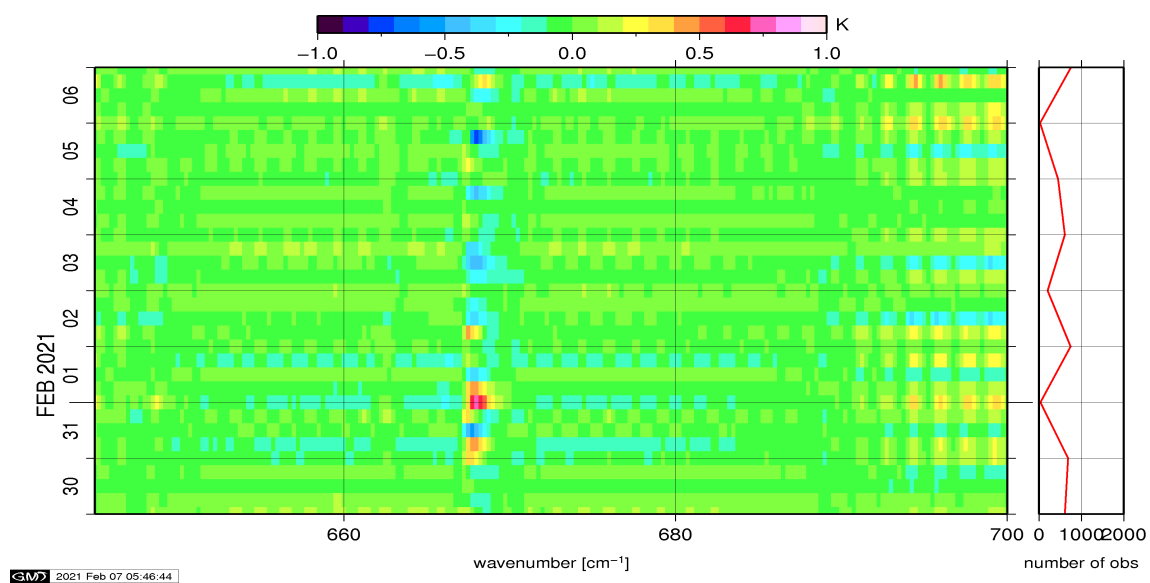


Figure 14: Radiance Anomaly in BT: CO2 14

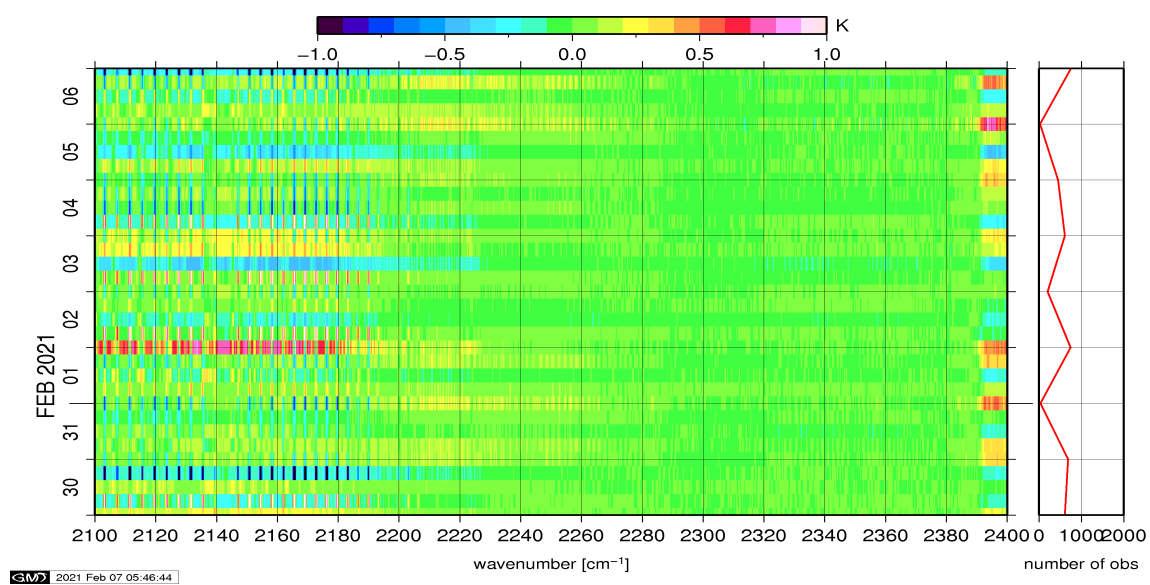


Figure 15: Radiance Anomaly in BT: CO2 4.3

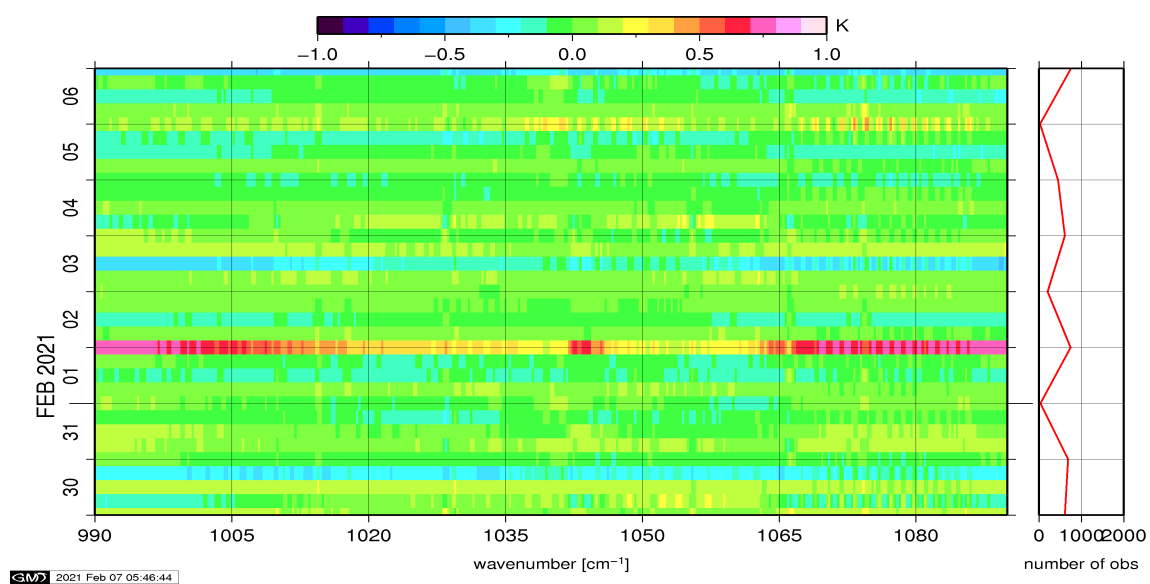


Figure 16: Radiance Anomaly in BT: O3