

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

IASI monitoring team

23/03/2025 00:00:00 - 24/03/2025 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 23/03/2025 00:00:00 - 24/03/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 23/03/2025 00:00:00 - 24/03/2025 00:00:00

Product Type	Number	Action
L0 HKTU 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)	11644	11646	20250323030459.185	20250323030459.619
PX2 (135)	9339	9341	20250323025444.245	20250323025446.190
PX2 (135)	11644	11646	20250323030459.185	20250323030459.619
PX2 (135)	12628	12630	20250323030921.880	20250323030922.314
PX2 (135)	6232	6234	20250323035345.450	20250323035345.884
PX2 (135)	10064	10066	20250323063625.416	20250323063625.850
PX3 (140)	-	-	-	-
PX4 (145)	5911	5913	20250323023930.539	20250323023930.972
PX4 (145)	9010	9012	20250323025317.975	20250323025318.409
IMG (150)	13639	13641	20250323023930.539	20250323023930.972
IMG (150)	770	772	20250323025317.975	20250323025318.409
VER (160)	16380	0	20250323015812.261	20250323015820.261
VER (160)	1	16381	20250323015820.261	20250323015820.261
VER (160)	-1	2	20250323015820.261	20250323015828.261
VER (160)	16381	0	20250323091508.238	20250323091516.238
VER (160)	2	16382	20250323091516.238	20250323091516.238
VER (160)	-1	3	20250323091516.238	20250323091524.238
VER (160)	16382	0	20250323163204.179	20250323163212.179
VER (160)	3	16383	20250323163212.179	20250323163212.179

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	-1	4	20250323163212.179	20250323163220.179
AUX (180)	-	-	-	-

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
23/03/2025 00:00:09	-	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)	99.65 %	-
GQisFlagQual set (PX2)	99.68 %	-
GQisFlagQual set (PX3)	99.69 %	-
GQisFlagQual set (PX4)	99.61 %	-
GQisFlagQual set (all)	99.66 %	-

Table 4: Quality flags

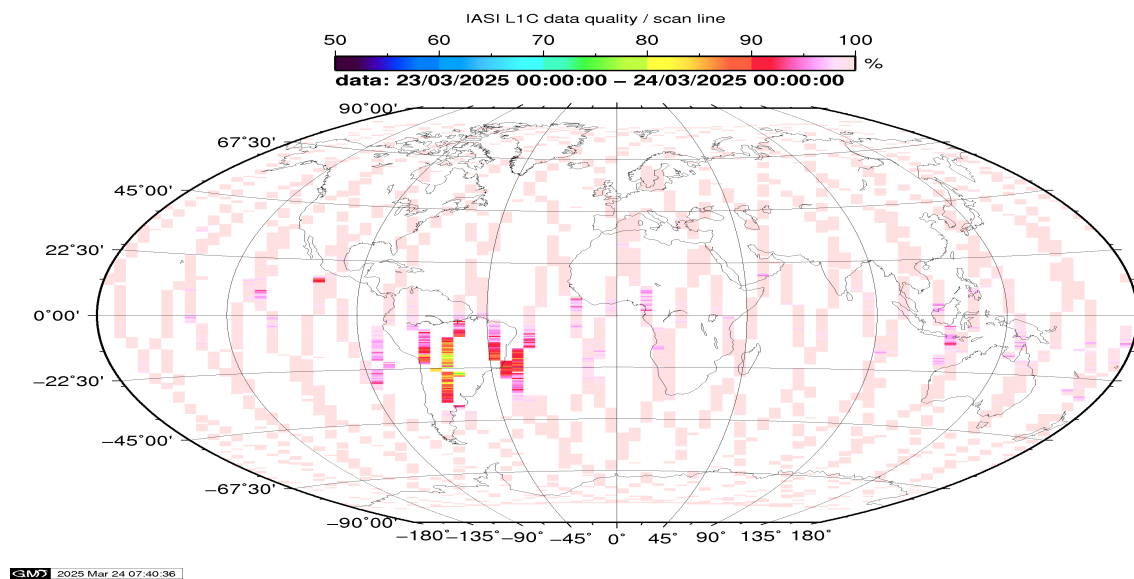


Figure 1: L1C data quality

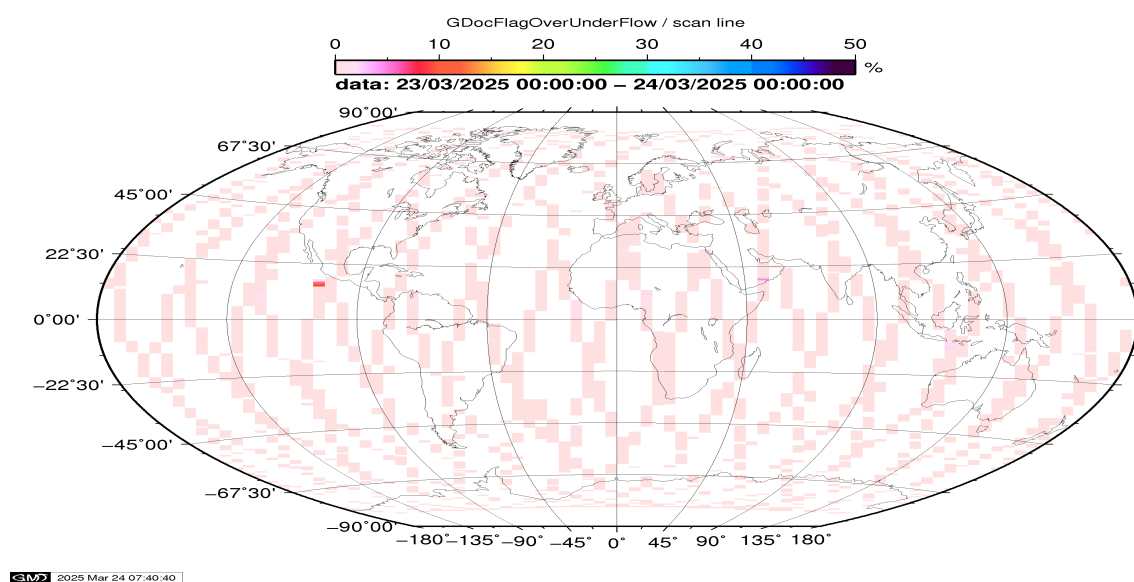


Figure 2: Flag of Over and Under Flows

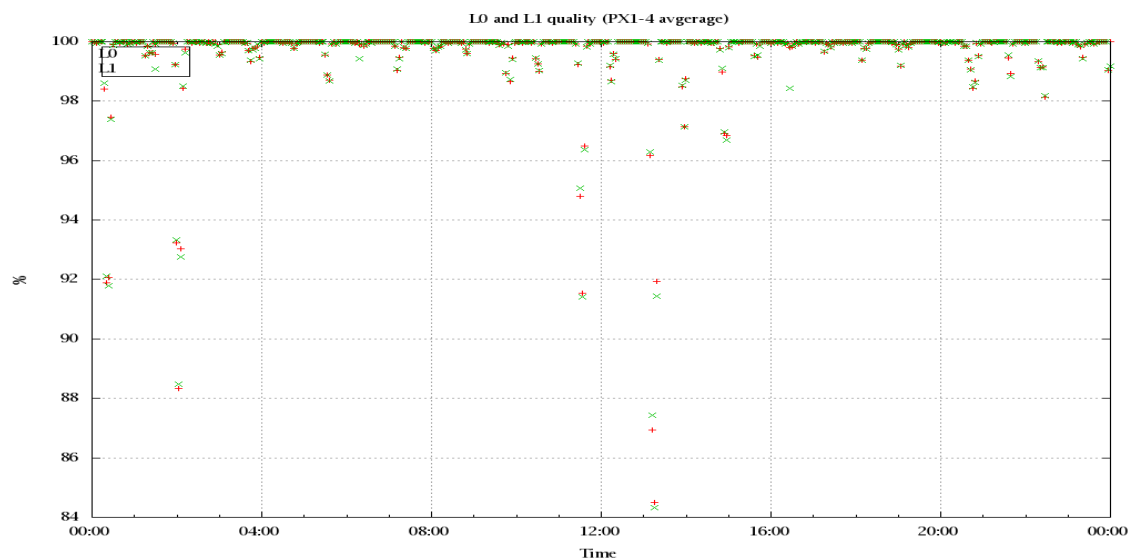


Figure 3: Level 0 and 1C overall quality

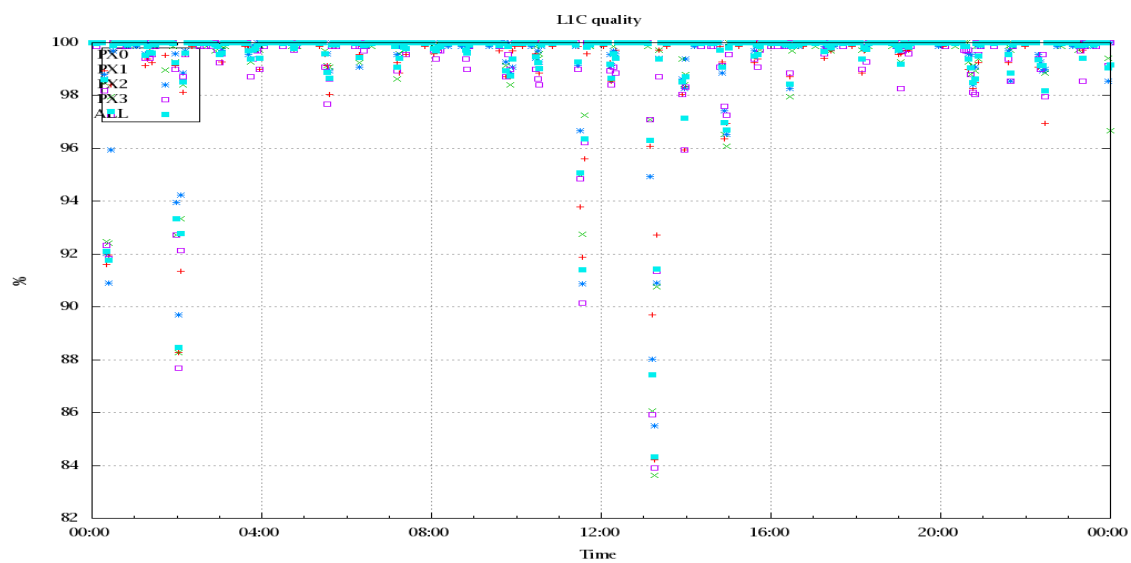


Figure 4: Level 1C quality

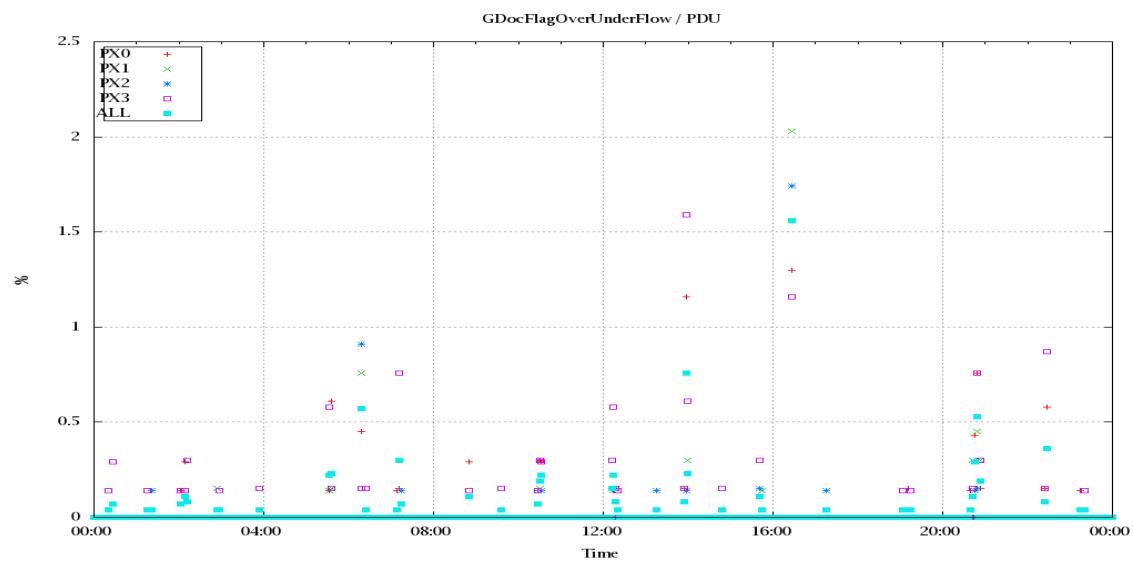


Figure 5: Timeseries of flag of Over and Under Flows

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.

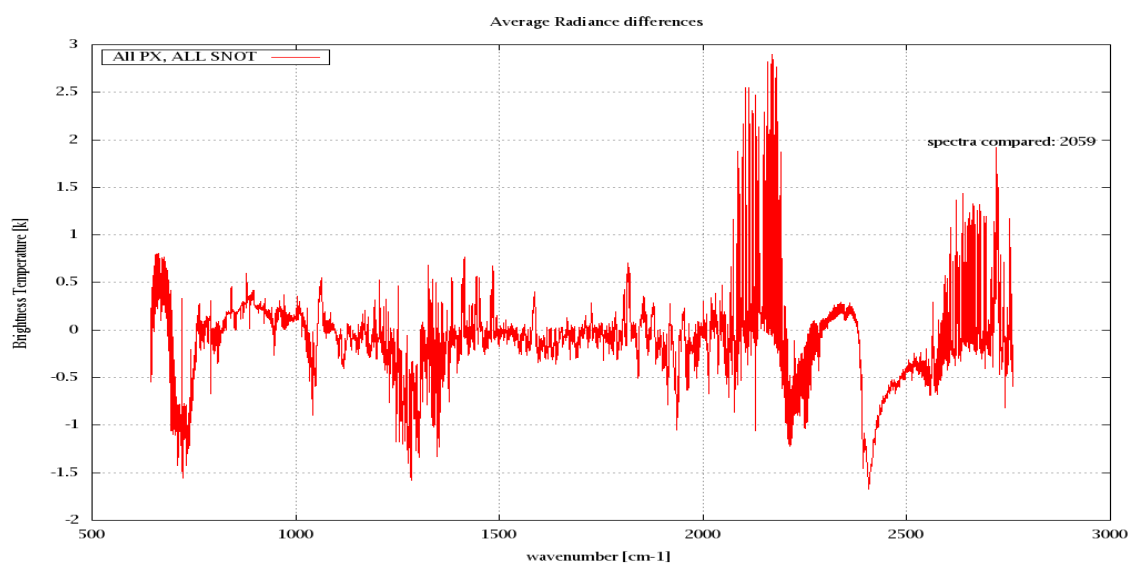


Figure 6: Average Radiance differences: OBS-CAL

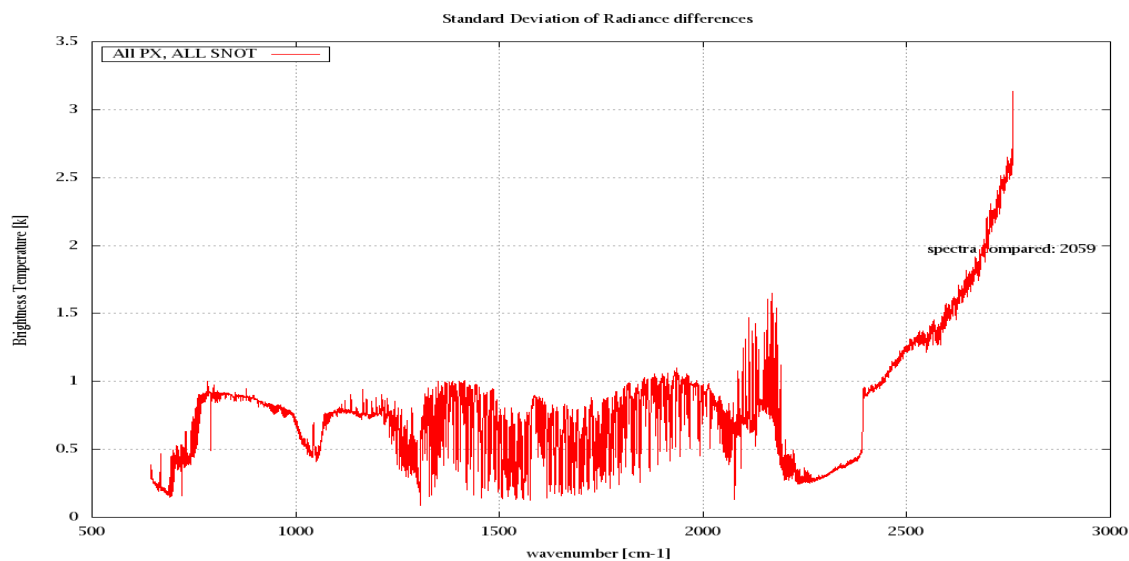


Figure 7: Standard Deviation of Radiance differences

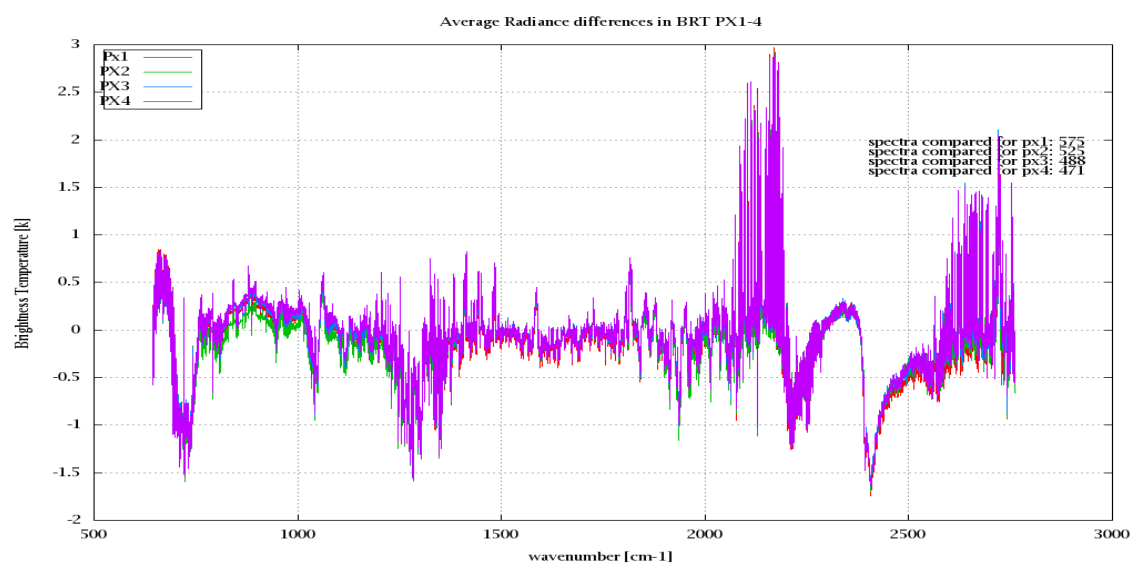


Figure 8: Average Radiance differences: OBS-CAL

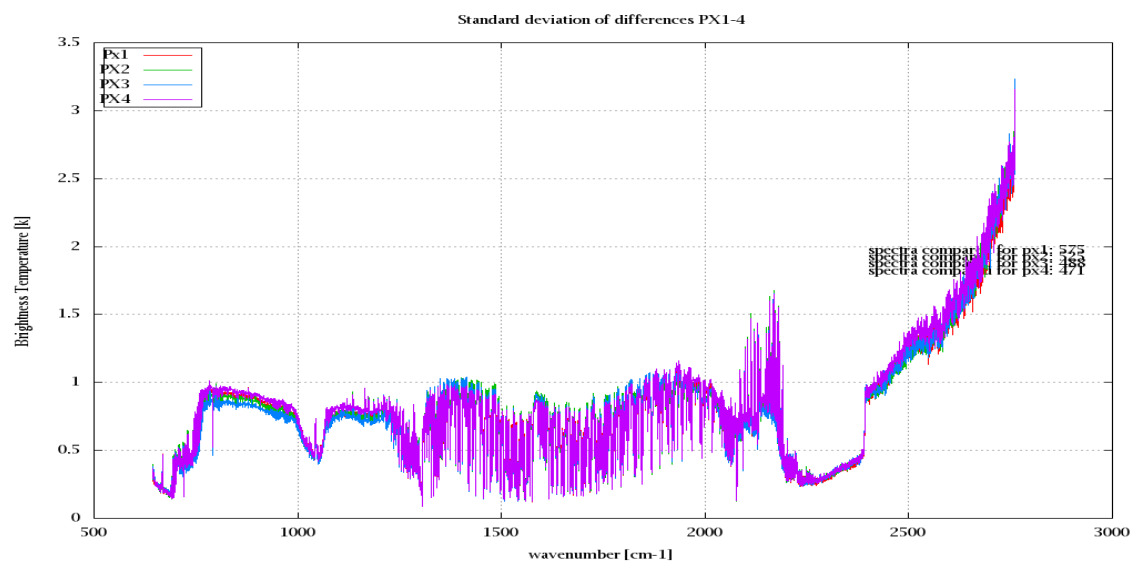


Figure 9: Standard Deviation of Radiance differences

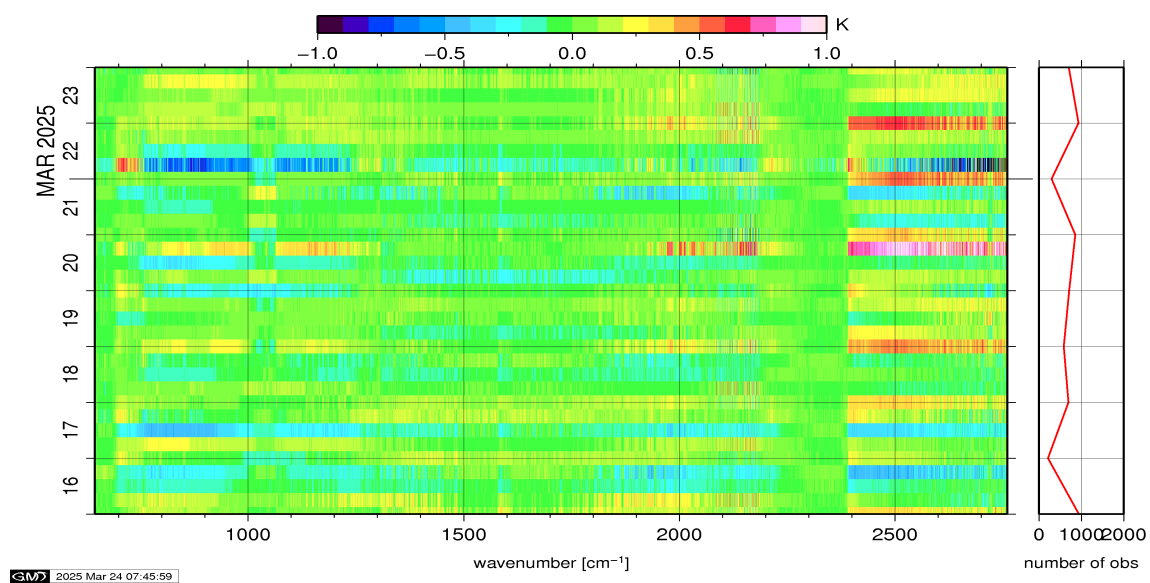


Figure 10: Radiance Anomaly in BT: All Channels

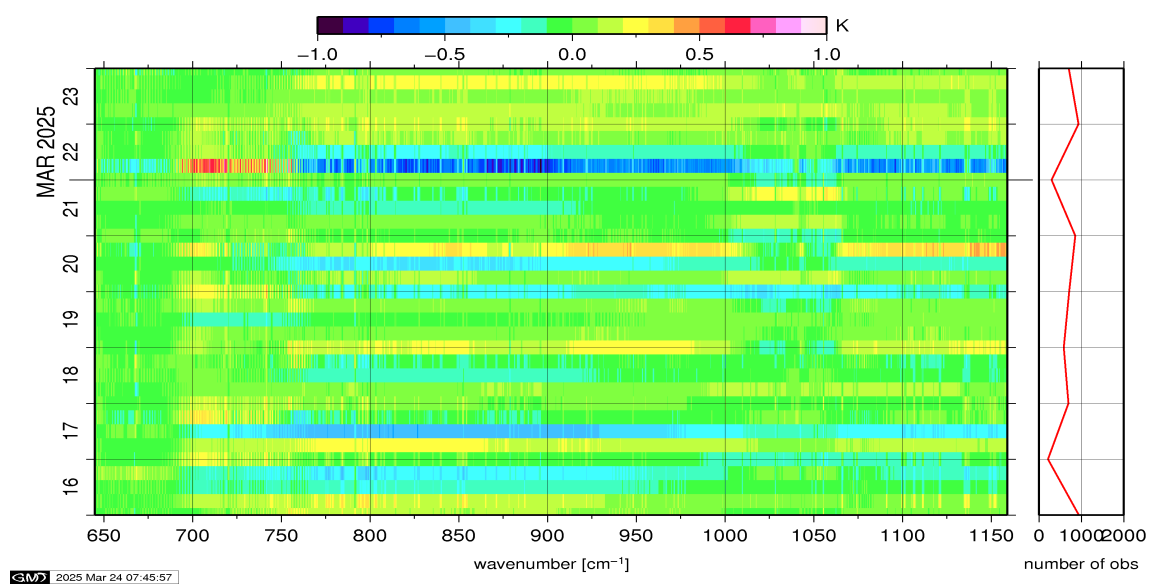


Figure 11: Radiance Anomaly in BT: IASI Band 1

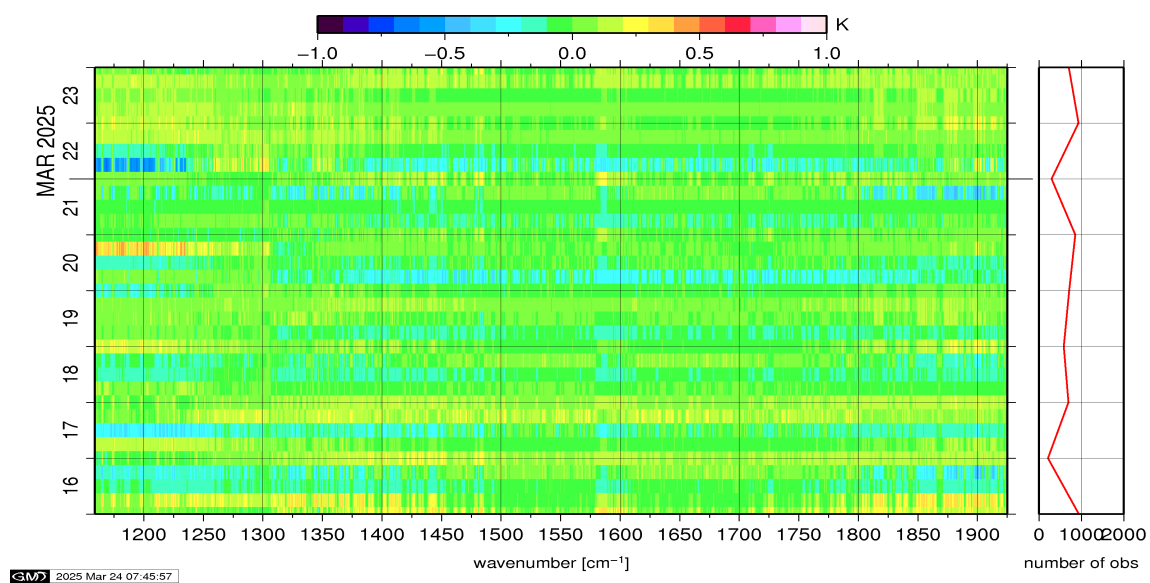


Figure 12: Radiance Anomaly in BT: IASI Band 2

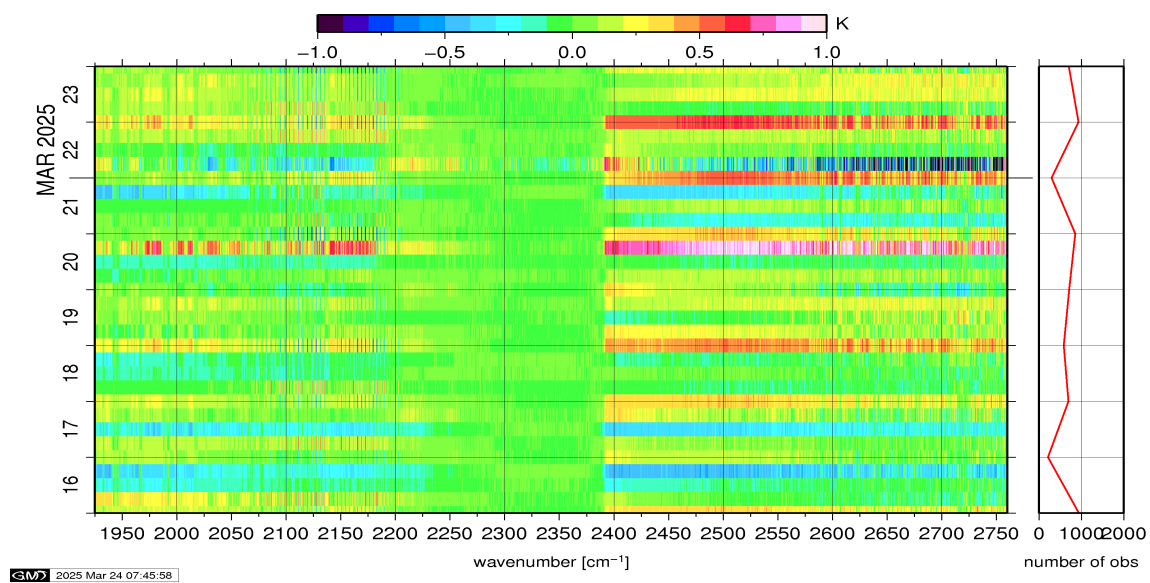


Figure 13: Radiance Anomaly in BT: IASI Band 3

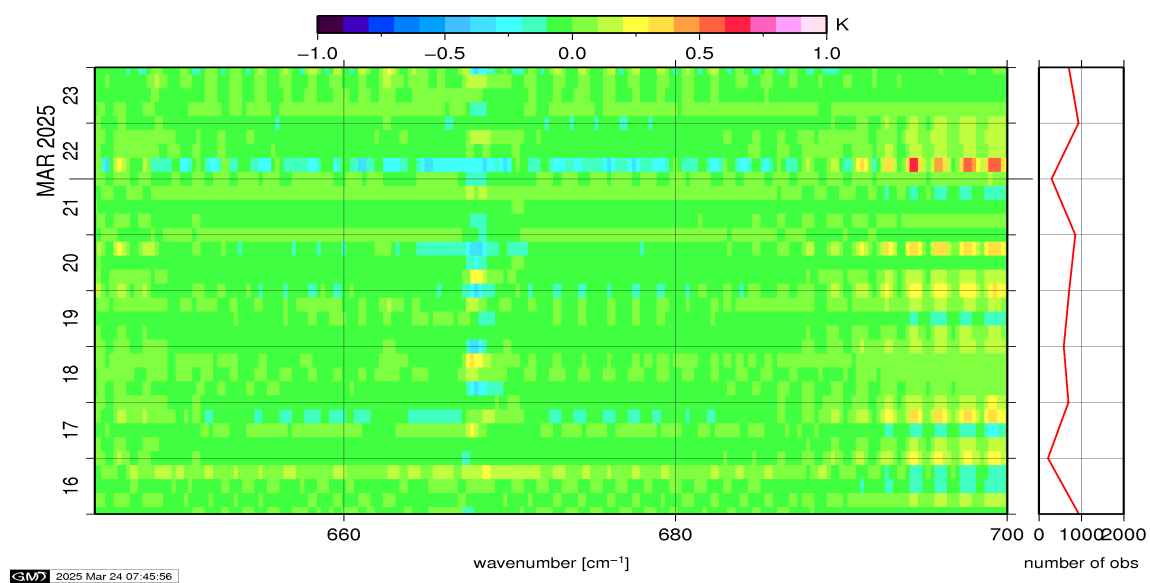


Figure 14: Radiance Anomaly in BT: CO2 14

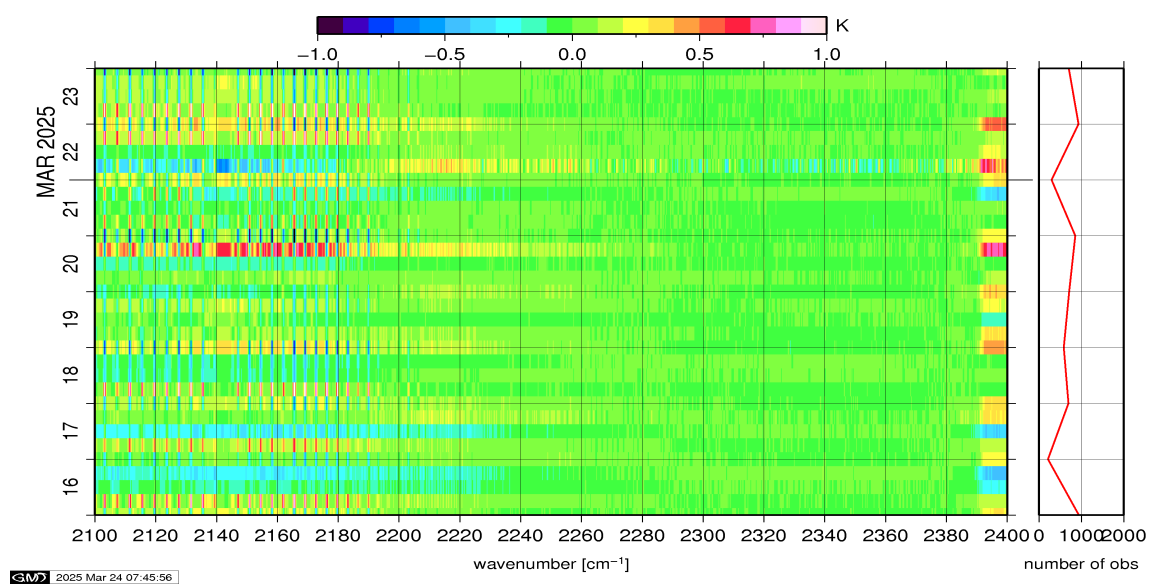


Figure 15: Radiance Anomaly in BT: CO2 4.3

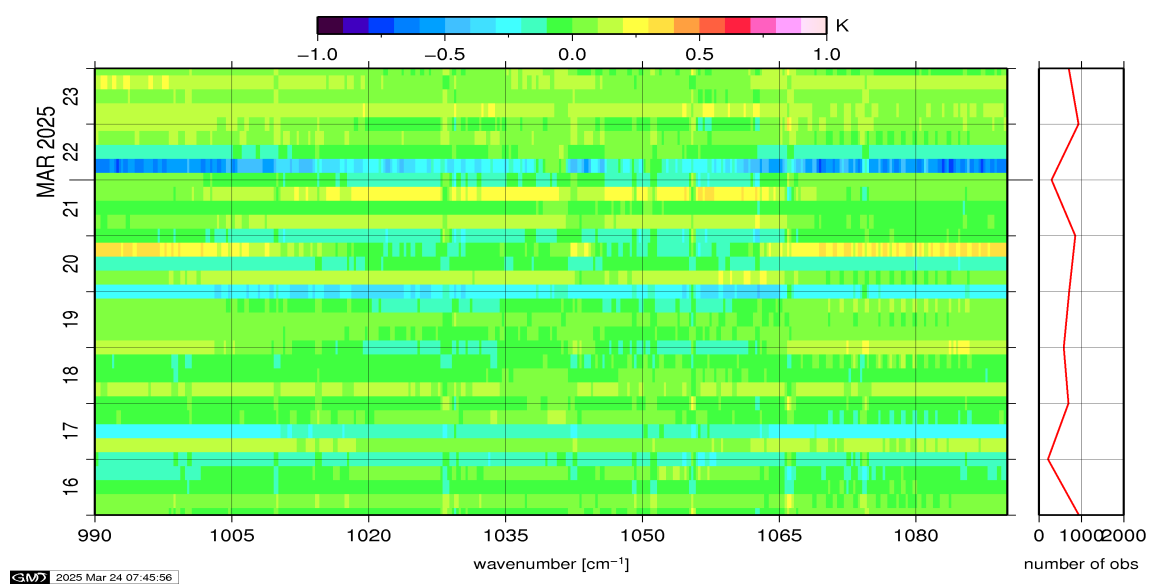


Figure 16: Radiance Anomaly in BT: O3