

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

IASI monitoring team

02/04/2025 00:00:00 - 03/04/2025 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 02/04/2025 00:00:00 - 03/04/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 02/04/2025 00:00:00 - 03/04/2025 00:00:00

Product Type	Number	Action
L0 HKTU PDUs	481	-
L0 IASI PDUs	470	-
L1 ENG PDUs	471	-
L1 ENG distinct GEPSGranule	469	-
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	470	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	5081	5758	20250402074458.951	20250402074800.138
PX1 (130)	10481	11832	20250402080858.953	20250402081500.671
PX1 (130)	13857	15882	20250402082359.901	20250402083300.681
PX1 (130)	2197	4224	20250402084458.930	20250402085400.144
PX1 (130)	6247	6924	20250402090258.940	20250402090600.124
PX1 (130)	7597	8274	20250402090858.932	20250402091200.115
PX2 (135)	5081	5758	20250402074458.951	20250402074800.138
PX2 (135)	10481	11832	20250402080858.953	20250402081500.671
PX2 (135)	13857	15882	20250402082359.901	20250402083300.681
PX2 (135)	2197	4224	20250402084458.930	20250402085400.144
PX2 (135)	6247	6924	20250402090258.940	20250402090600.124
PX2 (135)	7597	8274	20250402090858.932	20250402091200.115
PX3 (140)	5081	5758	20250402074458.951	20250402074800.138
PX3 (140)	10481	11832	20250402080858.953	20250402081500.671
PX3 (140)	13857	15882	20250402082359.901	20250402083300.681
PX3 (140)	2197	4224	20250402084458.930	20250402085400.144
PX3 (140)	6247	6924	20250402090258.940	20250402090600.124
PX3 (140)	7597	8274	20250402090858.932	20250402091200.115
PX4 (145)	5081	5758	20250402074458.951	20250402074800.138

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	10481	11832	20250402080858.953	20250402081500.671
PX4 (145)	13857	15882	20250402082359.901	20250402083300.681
PX4 (145)	2197	4224	20250402084458.930	20250402085400.144
PX4 (145)	6247	6924	20250402090258.940	20250402090600.124
PX4 (145)	7597	8274	20250402090858.932	20250402091200.115
IMG (150)	11607	12374	20250402074459.600	20250402074800.138
IMG (150)	1343	2874	20250402080859.601	20250402081500.023
IMG (150)	5169	7464	20250402082359.901	20250402083300.033
IMG (150)	10523	12820	20250402084459.583	20250402085400.144
IMG (150)	15113	15880	20250402090259.589	20250402090600.124
IMG (150)	259	1026	20250402090859.580	20250402091200.115
VER (160)	12329	12440	20250402074458.951	20250402074802.947
VER (160)	13229	13455	20250402080858.953	20250402081506.941
VER (160)	13789	14130	20250402082354.928	20250402083306.951
VER (160)	14579	14915	20250402084458.930	20250402085402.957
VER (160)	15254	15365	20250402090258.940	20250402090602.936
VER (160)	15479	15590	20250402090858.932	20250402091202.928
VER (160)	16379	0	20250402093258.930	20250402093306.930
VER (160)	0	16380	20250402093306.930	20250402093306.930
VER (160)	-1	1	20250402093306.930	20250402093314.930
VER (160)	16380	0	20250402164954.910	20250402165002.910
VER (160)	1	16381	20250402165002.910	20250402165002.910
VER (160)	-1	2	20250402165002.910	20250402165010.910
AUX (180)	5727	5750	20250402074459.385	20250402074803.381
AUX (180)	5907	5953	20250402080859.383	20250402081507.374
AUX (180)	6019	6088	20250402082355.362	20250402083307.384
AUX (180)	6177	6245	20250402084459.364	20250402085403.386
AUX (180)	6312	6335	20250402090259.374	20250402090603.370
AUX (180)	6357	6380	20250402090859.366	20250402091203.358

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
02/04/2025 00:00:08	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	470	-
L1 ENG PDUs	471	-
L1 ENG distinct GEPSSGranule	469	-
GQisFlagQual set (PX1)	99.62 %	-
GQisFlagQual set (PX2)	99.65 %	-
GQisFlagQual set (PX3)	99.64 %	-
GQisFlagQual set (PX4)	99.59 %	-
GQisFlagQual set (all)	99.62 %	-

Table 4: Quality flags

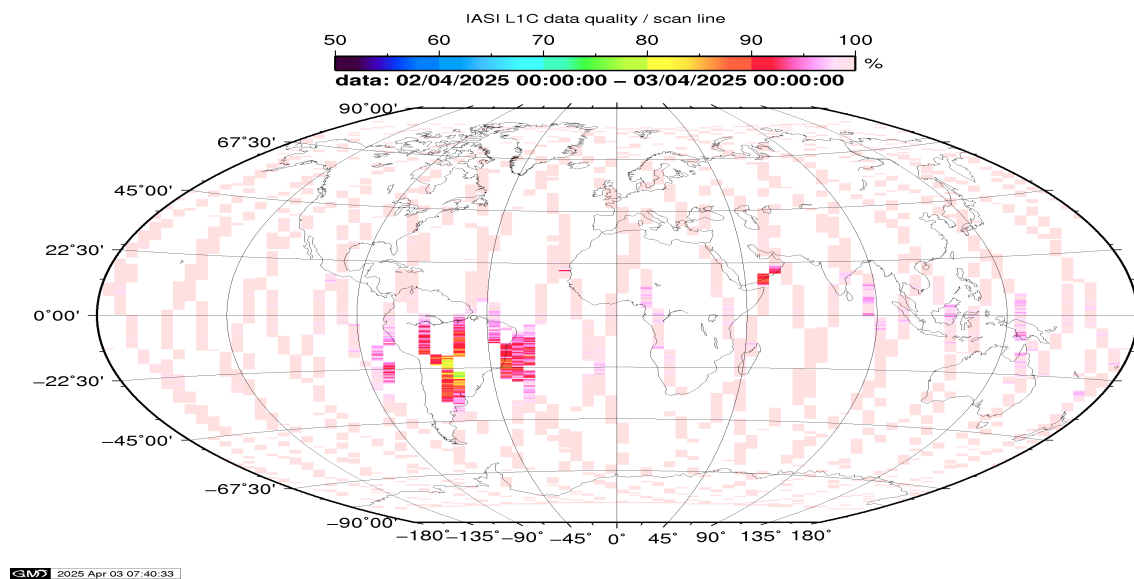


Figure 1: L1C data quality

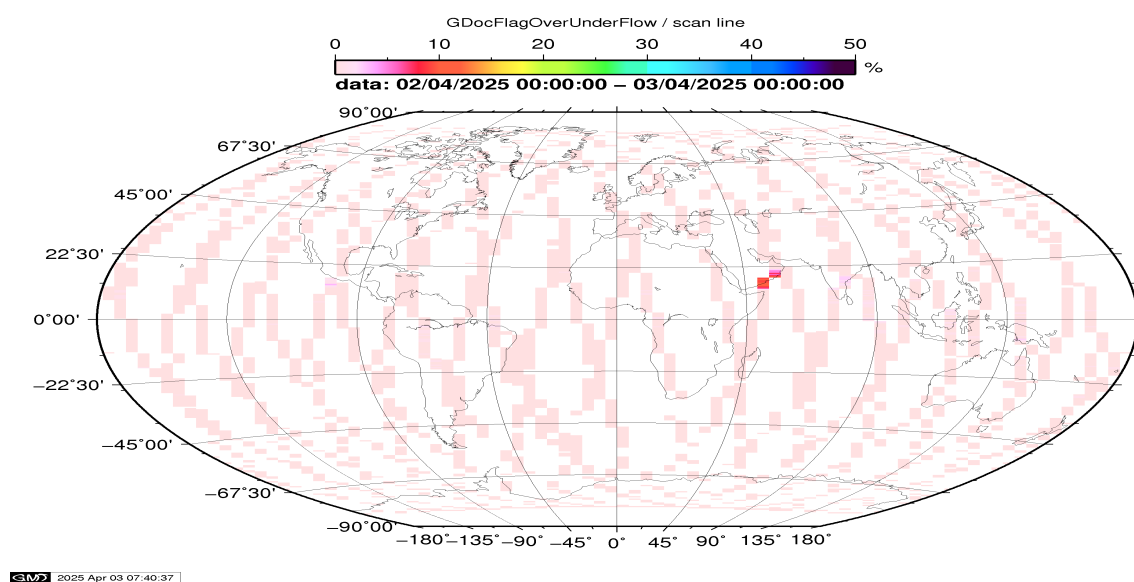


Figure 2: Flag of Over and Under Flows

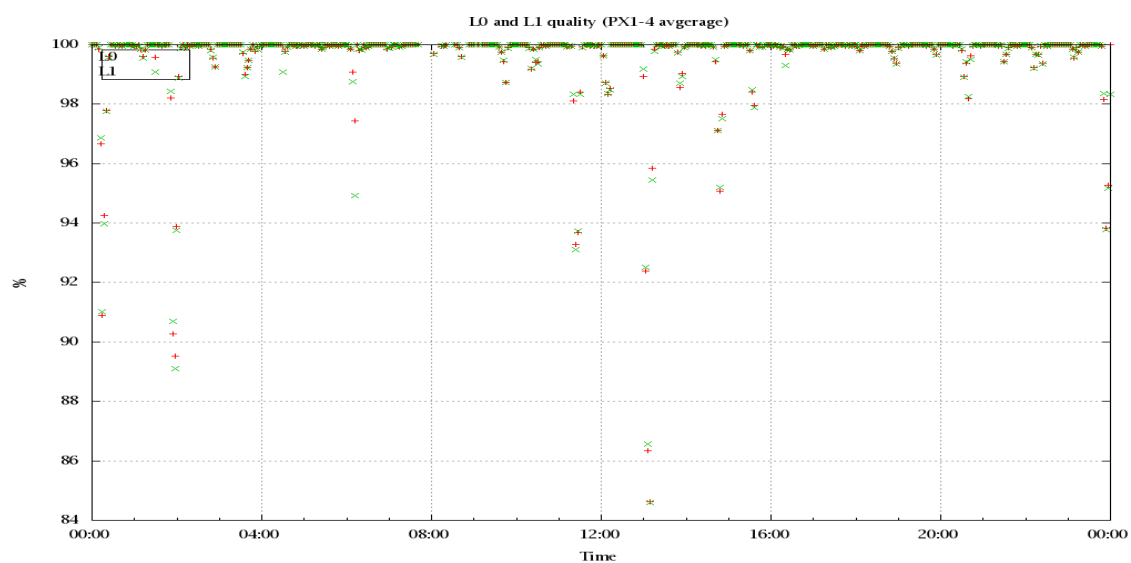


Figure 3: Level 0 and 1C overall quality

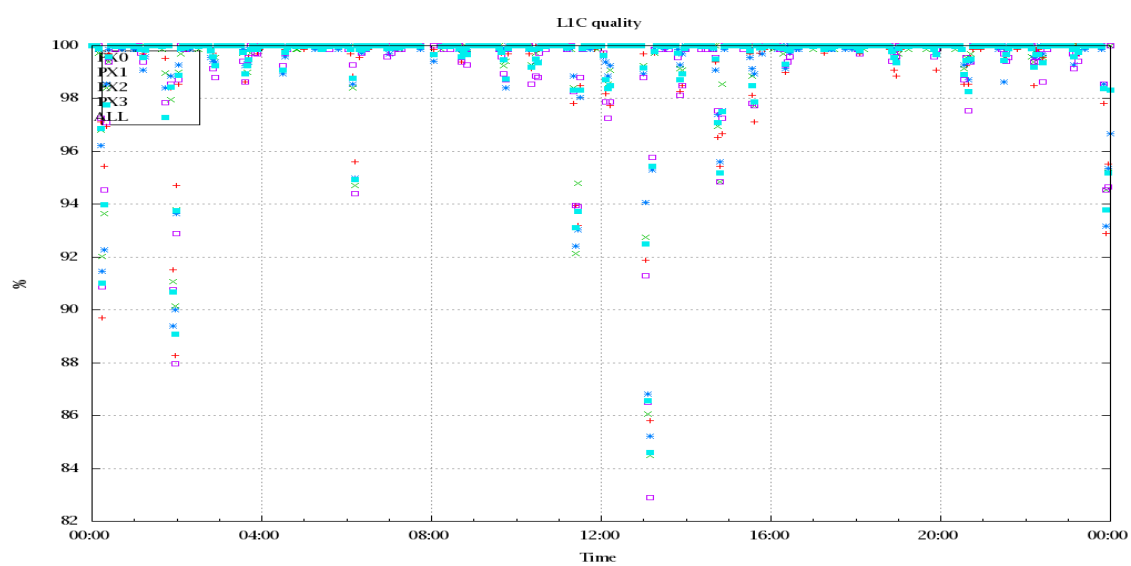


Figure 4: Level 1C quality

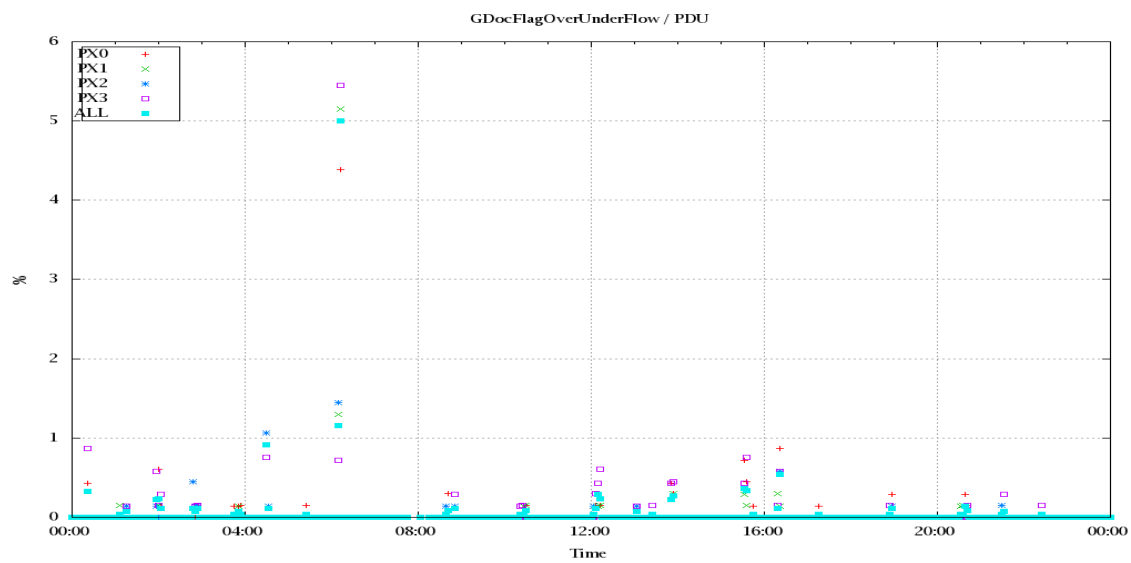


Figure 5: Timeseries of flag of Over and Under Flows

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.

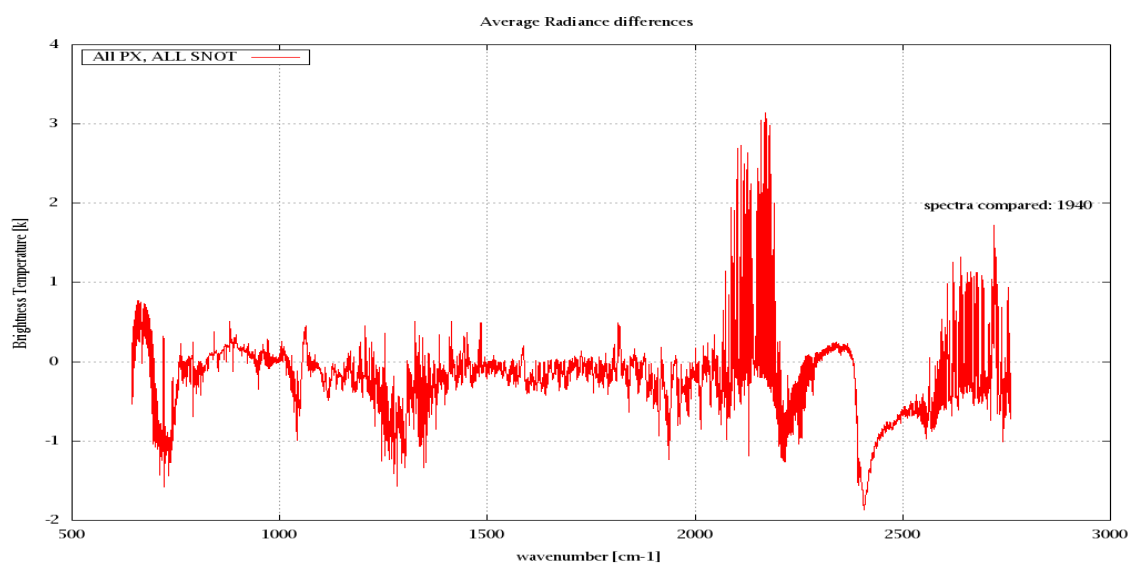


Figure 6: Average Radiance differences: OBS-CAL

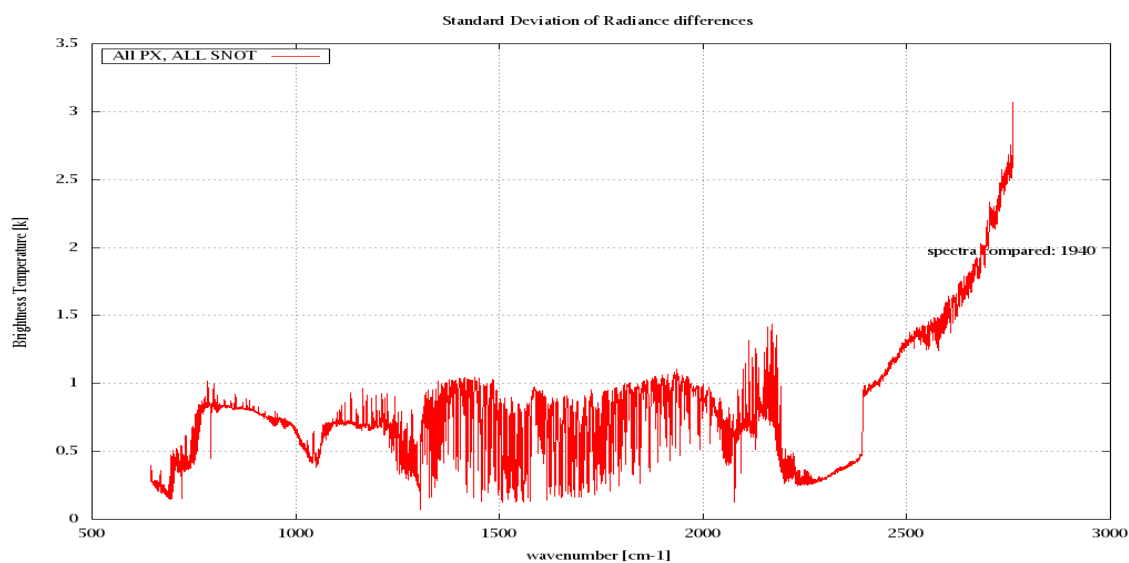


Figure 7: Standard Deviation of Radiance differences

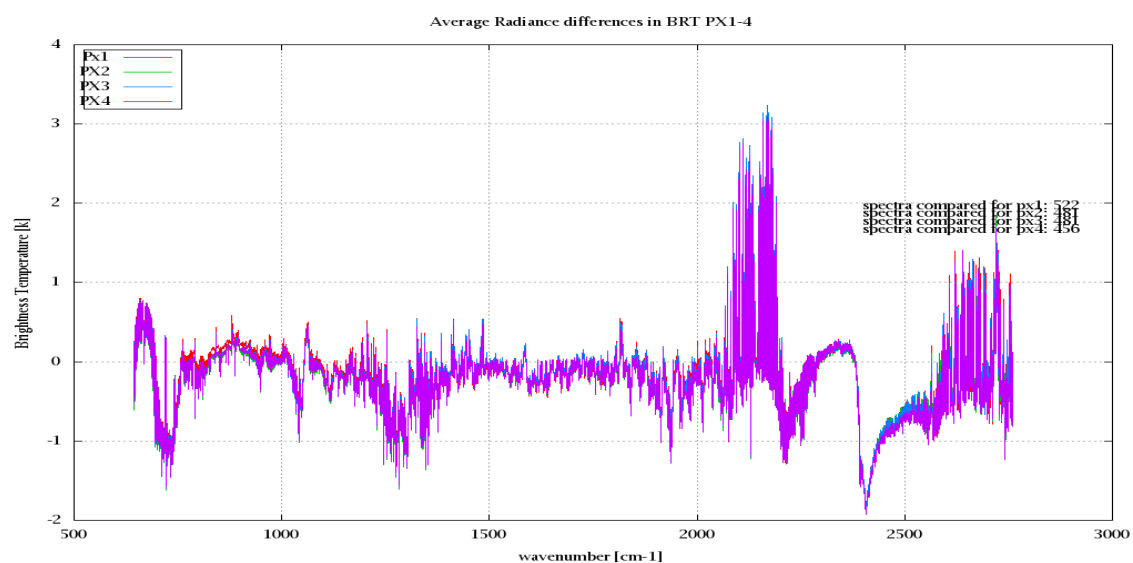


Figure 8: Average Radiance differences: OBS-CAL

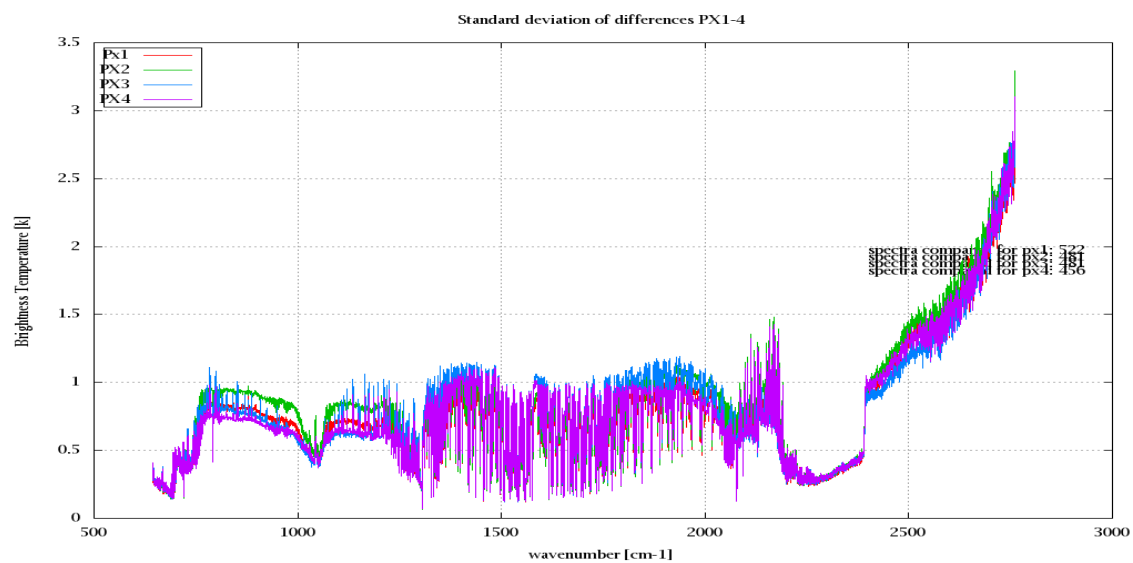


Figure 9: Standard Deviation of Radiance differences

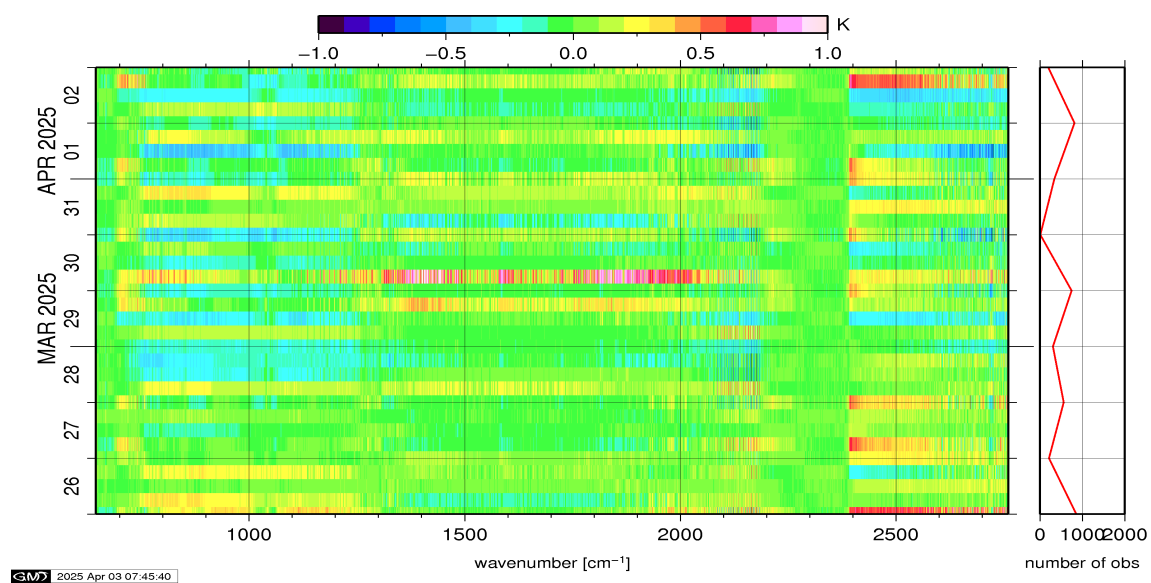


Figure 10: Radiance Anomaly in BT: All Channels

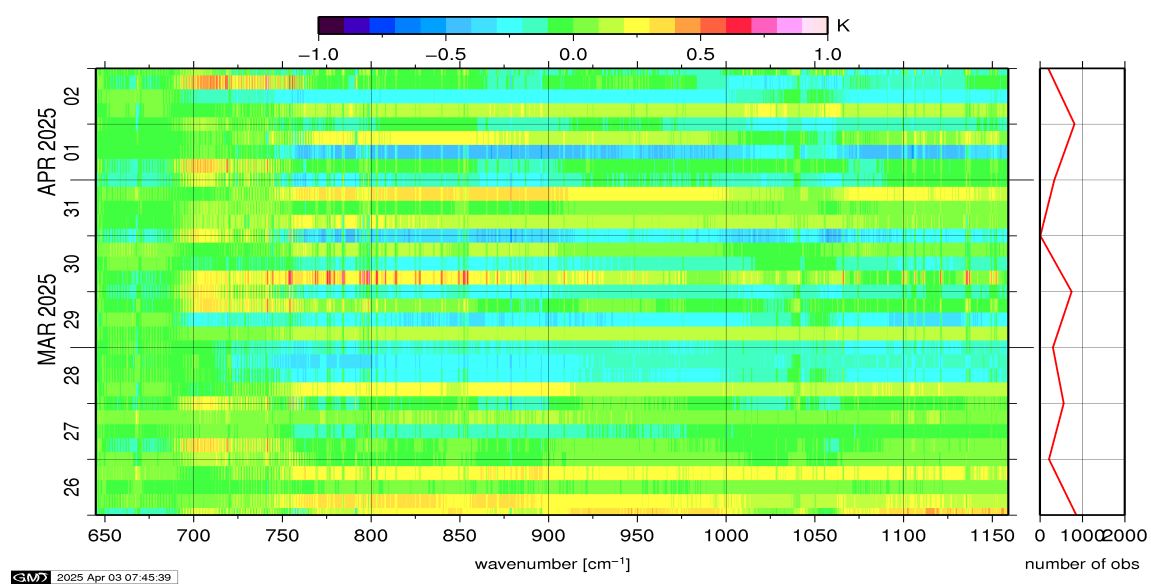


Figure 11: Radiance Anomaly in BT: IASI Band 1

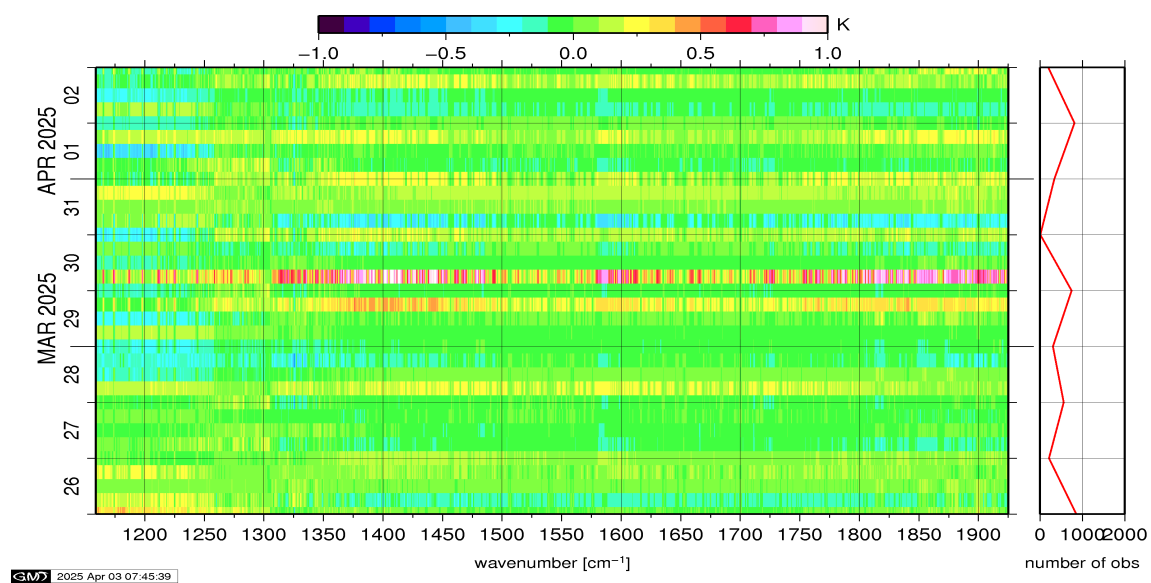


Figure 12: Radiance Anomaly in BT: IASI Band 2

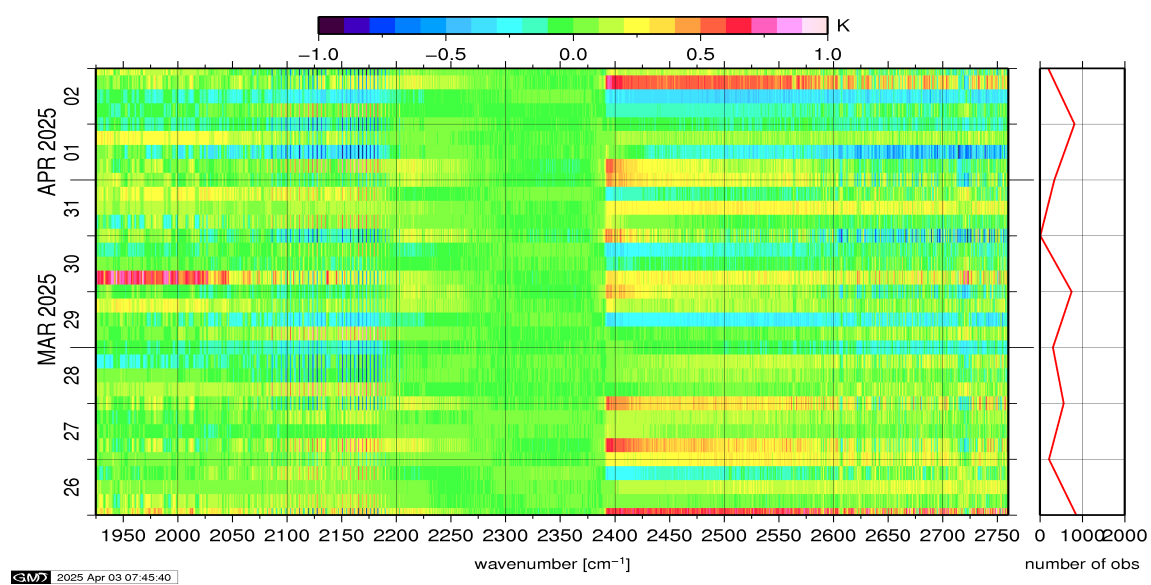


Figure 13: Radiance Anomaly in BT: IASI Band 3

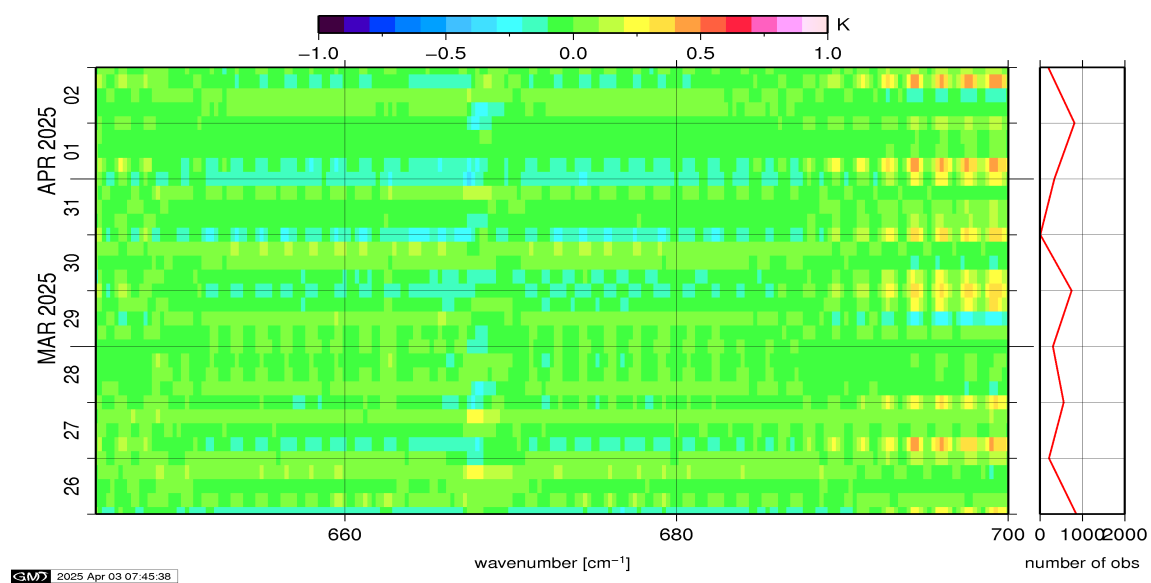


Figure 14: Radiance Anomaly in BT: CO2 14

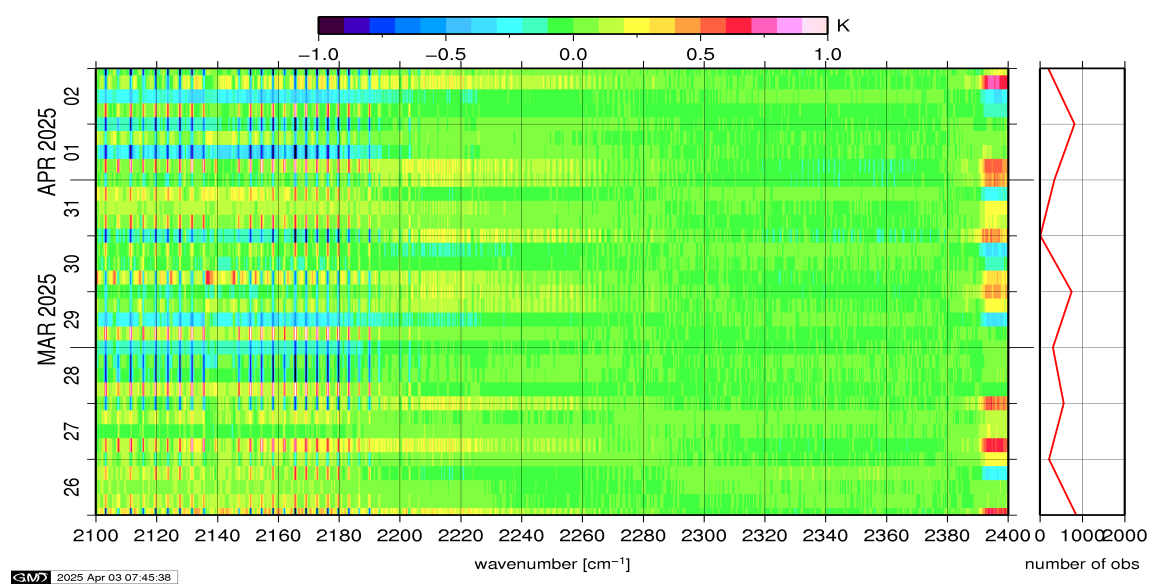


Figure 15: Radiance Anomaly in BT: CO2 4.3

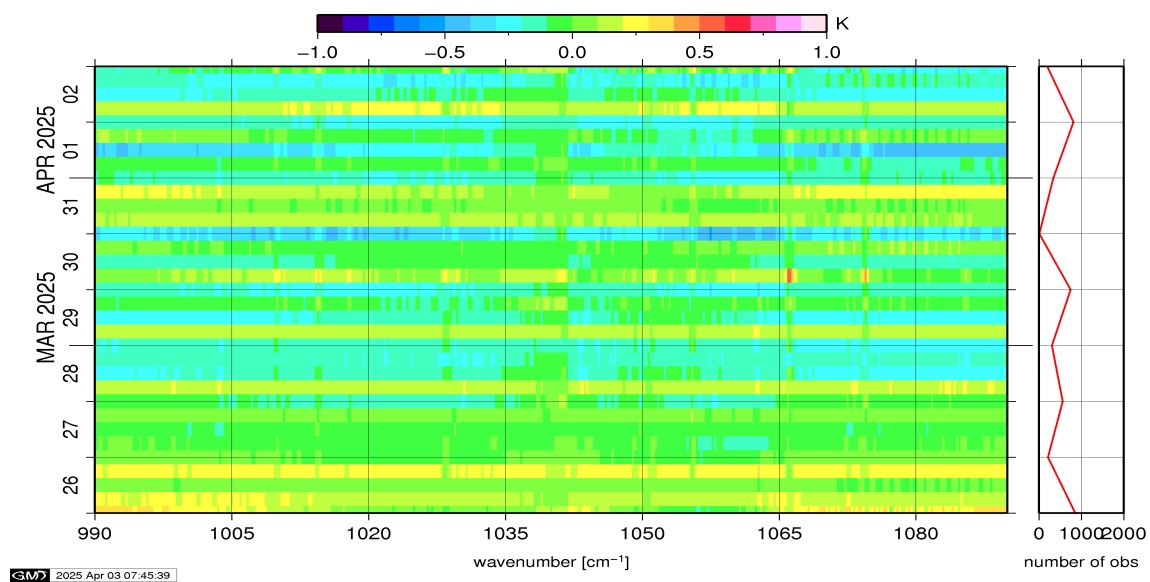


Figure 16: Radiance Anomaly in BT: O3