

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

IASI monitoring team

06/02/2025 00:00:00 - 07/02/2025 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 06/02/2025 00:00:00 - 07/02/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 06/02/2025 00:00:00 - 07/02/2025 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	465	-
L1 ENG PDUs	403	e
L1 ENG distinct GEPSGranule	404	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	150	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	5401	10130	20250206125659.996	20250206131800.107
PX1 (130)	10927	11600	20250206165959.872	20250206170300.192
PX1 (130)	12277	12950	20250206170559.864	20250206170900.184
PX1 (130)	1965	2644	20250206173259.967	20250206173600.068
PX1 (130)	3315	3994	20250206173859.994	20250206174200.099
PX1 (130)	4665	5344	20250206174459.985	20250206174800.087
PX1 (130)	6015	7366	20250206175059.977	20250206175700.184
PX1 (130)	8043	9394	20250206175959.851	20250206180600.097
PX2 (135)	5401	10130	20250206125659.996	20250206131800.107
PX2 (135)	10927	11600	20250206165959.872	20250206170300.192
PX2 (135)	12277	12950	20250206170559.864	20250206170900.184
PX2 (135)	1965	2644	20250206173259.967	20250206173600.068
PX2 (135)	3315	3994	20250206173859.994	20250206174200.099
PX2 (135)	4665	5344	20250206174459.985	20250206174800.087
PX2 (135)	6015	7366	20250206175059.977	20250206175700.184
PX2 (135)	8043	9394	20250206175959.851	20250206180600.097
PX3 (140)	5401	10130	20250206125659.996	20250206131800.107
PX3 (140)	10927	11600	20250206165959.872	20250206170300.192

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	12277	12950	20250206170559.864	20250206170900.184
PX3 (140)	1965	2644	20250206173259.967	20250206173600.068
PX3 (140)	3315	3994	20250206173859.994	20250206174200.099
PX3 (140)	4665	5344	20250206174459.985	20250206174800.087
PX3 (140)	6015	7366	20250206175059.977	20250206175700.184
PX3 (140)	8043	9394	20250206175959.851	20250206180600.097
PX4 (145)	5401	10130	20250206125659.996	20250206131800.107
PX4 (145)	10927	11600	20250206165959.872	20250206170300.192
PX4 (145)	12277	12950	20250206170559.864	20250206170900.184
PX4 (145)	1965	2644	20250206173259.967	20250206173600.068
PX4 (145)	3315	3994	20250206173859.994	20250206174200.099
PX4 (145)	4665	5344	20250206174459.985	20250206174800.087
PX4 (145)	6015	7366	20250206175059.977	20250206175700.184
PX4 (145)	8043	9394	20250206175959.851	20250206180600.097
IMG (150)	4725	10082	20250206125659.996	20250206131800.107
IMG (150)	1155	1920	20250206165959.872	20250206170300.192
IMG (150)	2685	3450	20250206170559.864	20250206170900.184
IMG (150)	9569	10336	20250206173259.967	20250206173600.068
IMG (150)	11099	11866	20250206173859.994	20250206174200.099
IMG (150)	12629	13396	20250206174459.985	20250206174800.087
IMG (150)	14159	15690	20250206175059.977	20250206175700.184
IMG (150)	71	1602	20250206175959.851	20250206180600.097
VER (160)	16379	0	20250206112818.078	20250206112826.078
VER (160)	0	16380	20250206112826.078	20250206112826.078
VER (160)	-1	1	20250206112826.078	20250206112834.078
VER (160)	3320	4106	20250206125658.050	20250206131802.052
VER (160)	12430	12546	20250206165954.036	20250206170306.032
VER (160)	12655	12771	20250206170554.028	20250206170906.020
VER (160)	13670	13781	20250206173258.022	20250206173602.017
VER (160)	13895	14006	20250206173858.048	20250206174202.044
VER (160)	14120	14231	20250206174458.040	20250206174802.036
VER (160)	14345	14571	20250206175058.028	20250206175706.020
VER (160)	14680	14906	20250206175954.015	20250206180602.042
VER (160)	16380	0	20250206184514.019	20250206184522.019
VER (160)	1	16381	20250206184522.019	20250206184522.019
VER (160)	-1	2	20250206184522.019	20250206184530.019
AUX (180)	3926	4084	20250206125658.480	20250206131802.486
AUX (180)	5748	5772	20250206165954.470	20250206170306.462
AUX (180)	5793	5817	20250206170554.458	20250206170906.454
AUX (180)	5996	6019	20250206173258.451	20250206173602.447
AUX (180)	6041	6064	20250206173858.482	20250206174202.478
AUX (180)	6086	6109	20250206174458.470	20250206174802.466
AUX (180)	6131	6177	20250206175058.461	20250206175706.453
AUX (180)	6198	6244	20250206175954.449	20250206180602.476

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
06/02/2025 00:00:15	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	465	-
L1 ENG PDUs	403	e
L1 ENG distinct GEPSGranule	404	a
GQisFlagQual set (PX1)	99.70 %	-
GQisFlagQual set (PX2)	99.73 %	-
GQisFlagQual set (PX3)	99.74 %	-
GQisFlagQual set (PX4)	99.68 %	-
GQisFlagQual set (all)	99.71 %	-

Table 4: Quality flags

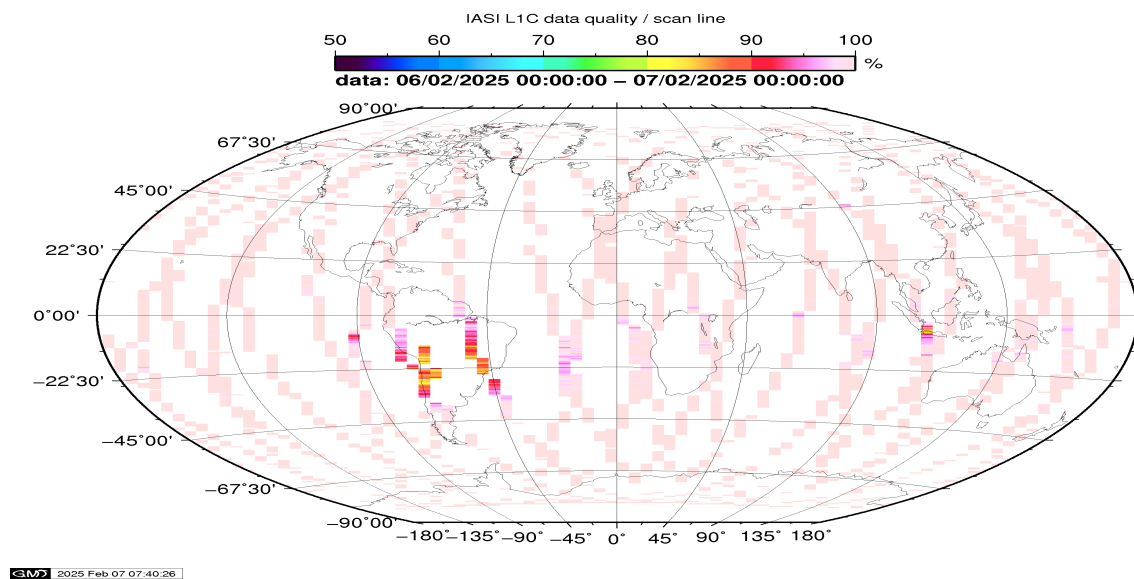


Figure 1: L1C data quality

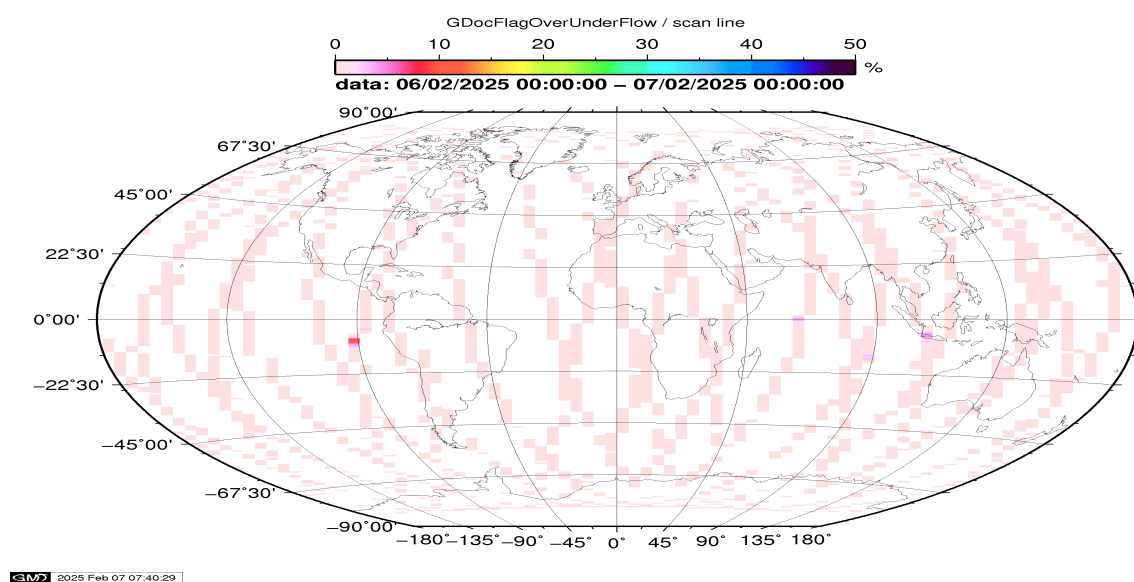


Figure 2: Flag of Over and Under Flows

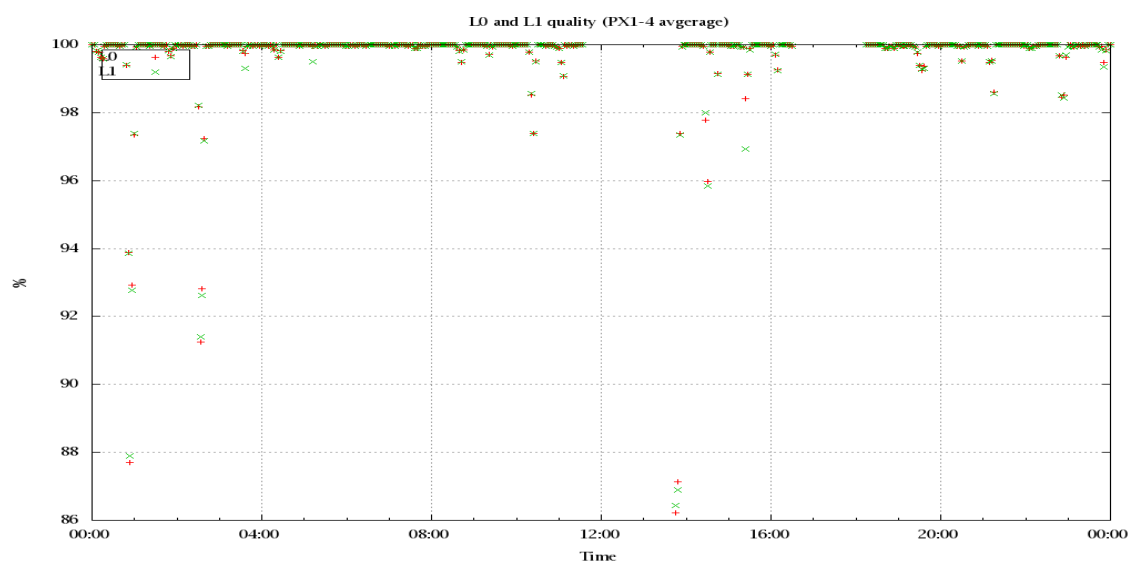


Figure 3: Level 0 and 1C overall quality

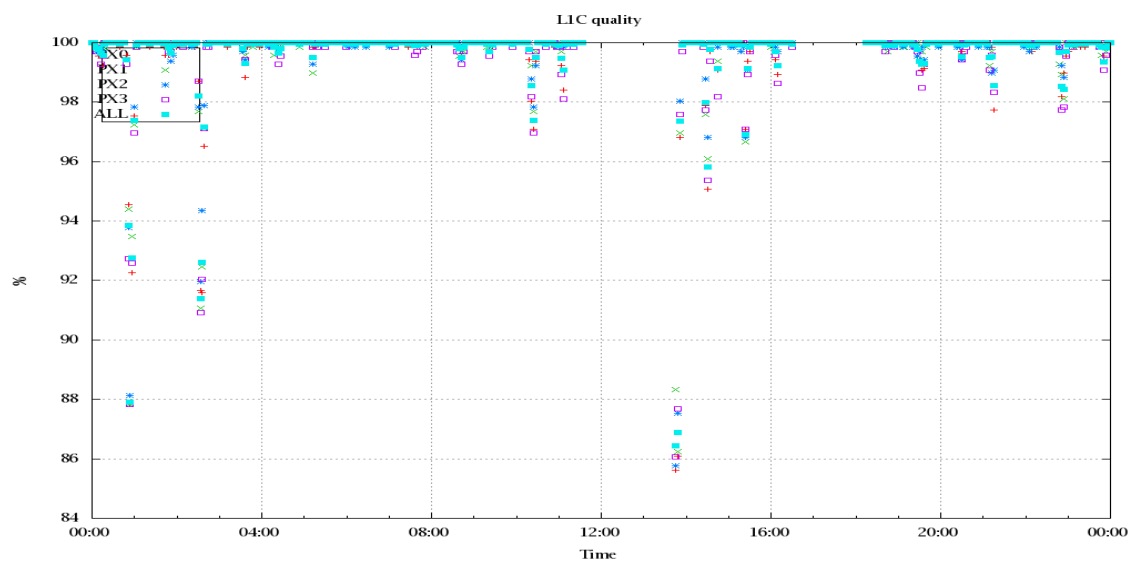


Figure 4: Level 1C quality

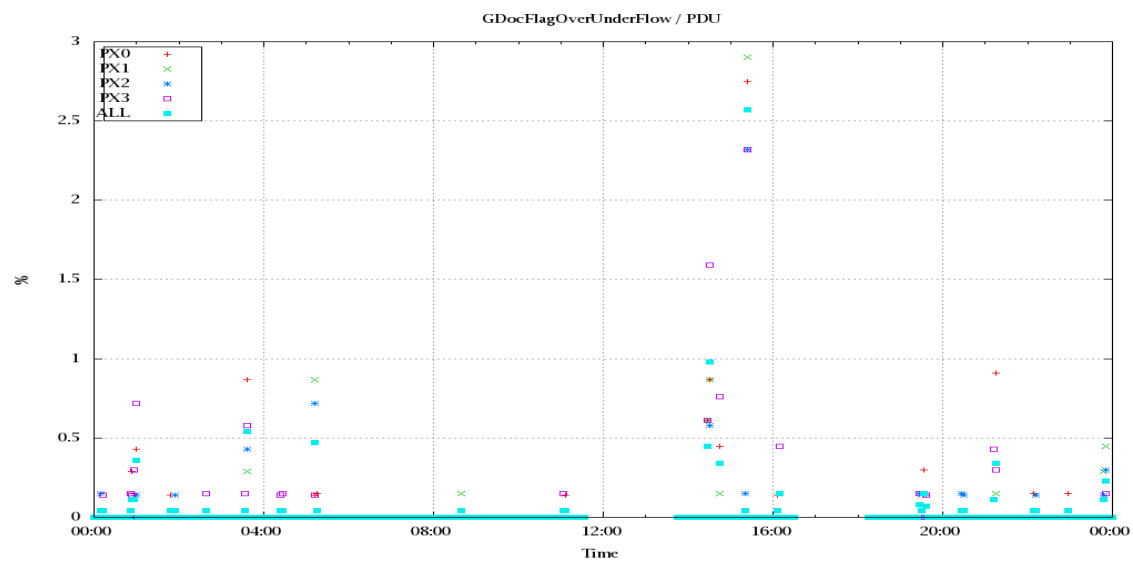


Figure 5: Timeseries of flag of Over and Under Flows

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.

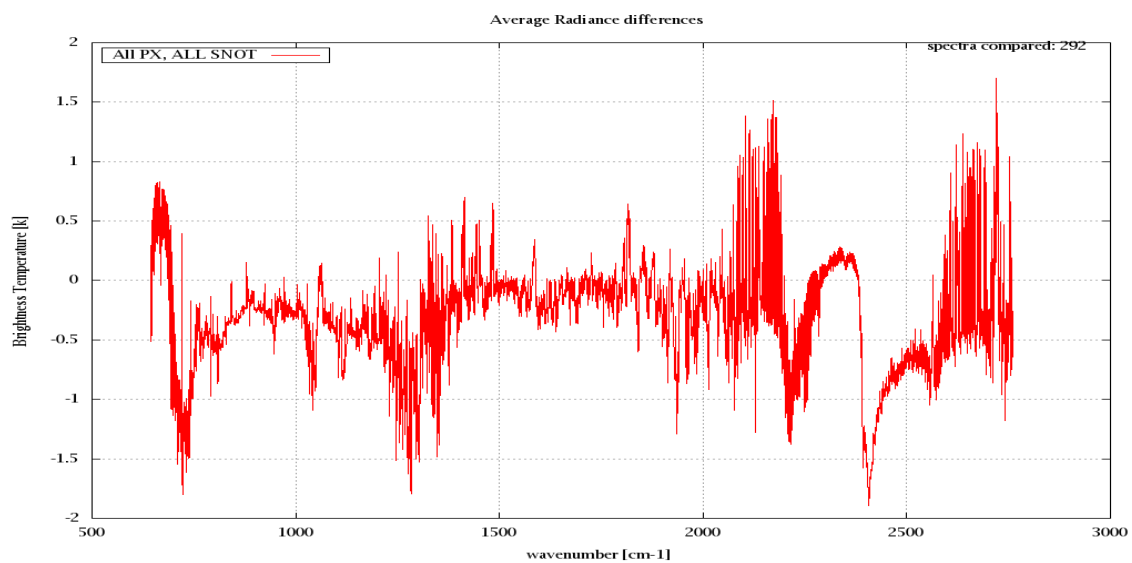


Figure 6: Average Radiance differences: OBS-CAL

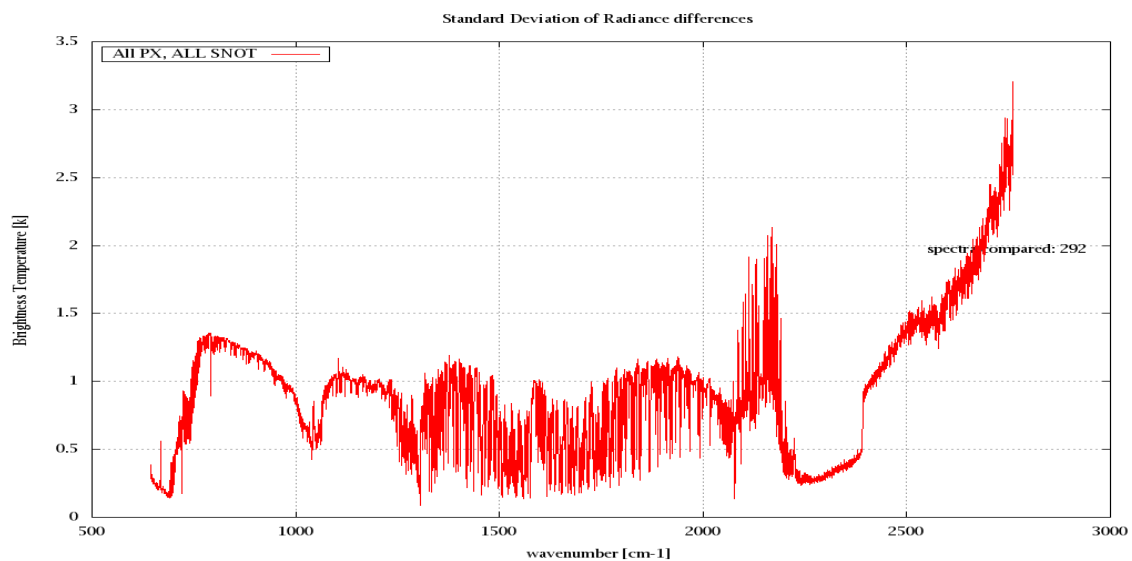


Figure 7: Standard Deviation of Radiance differences

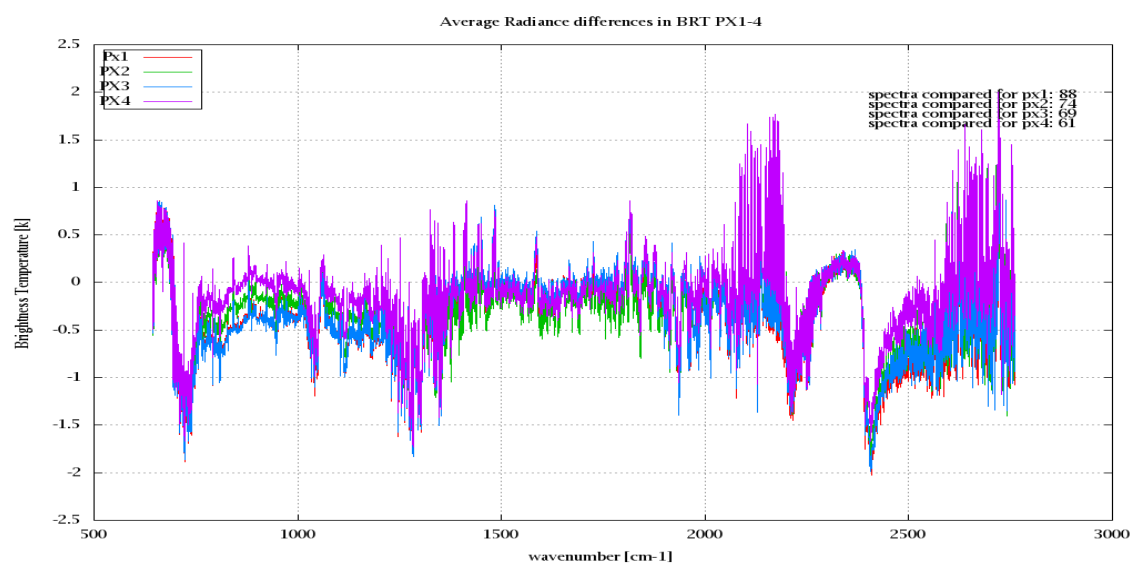


Figure 8: Average Radiance differences: OBS-CAL

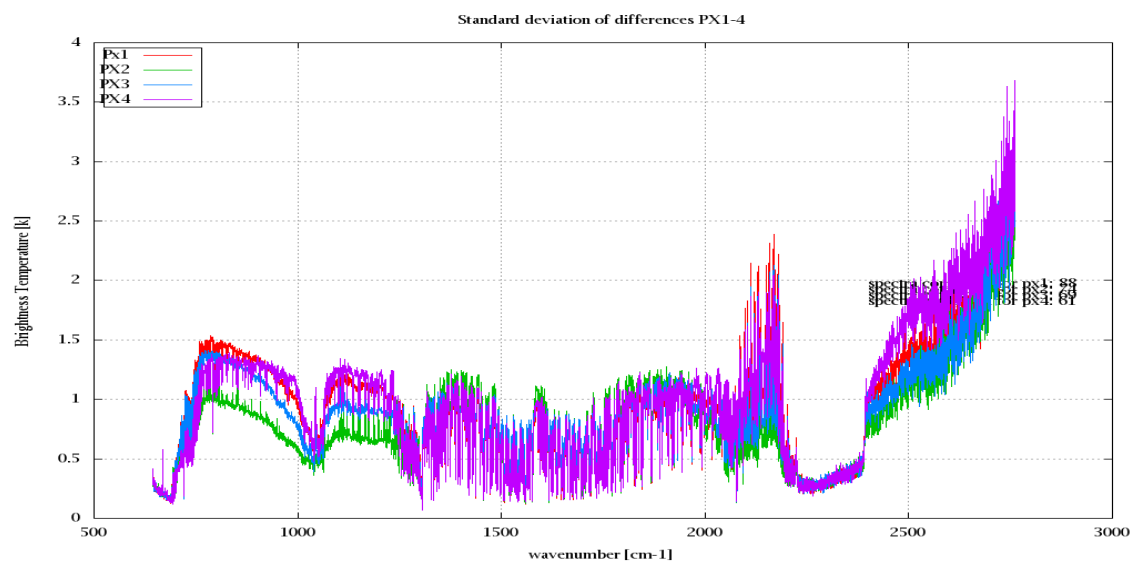


Figure 9: Standard Deviation of Radiance differences

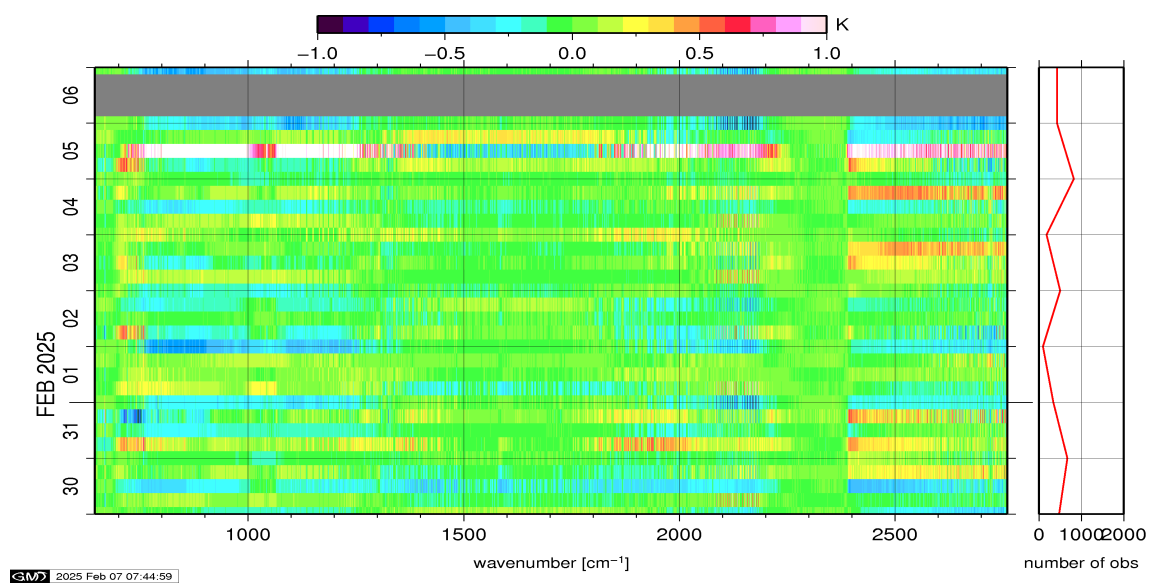


Figure 10: Radiance Anomaly in BT: All Channels

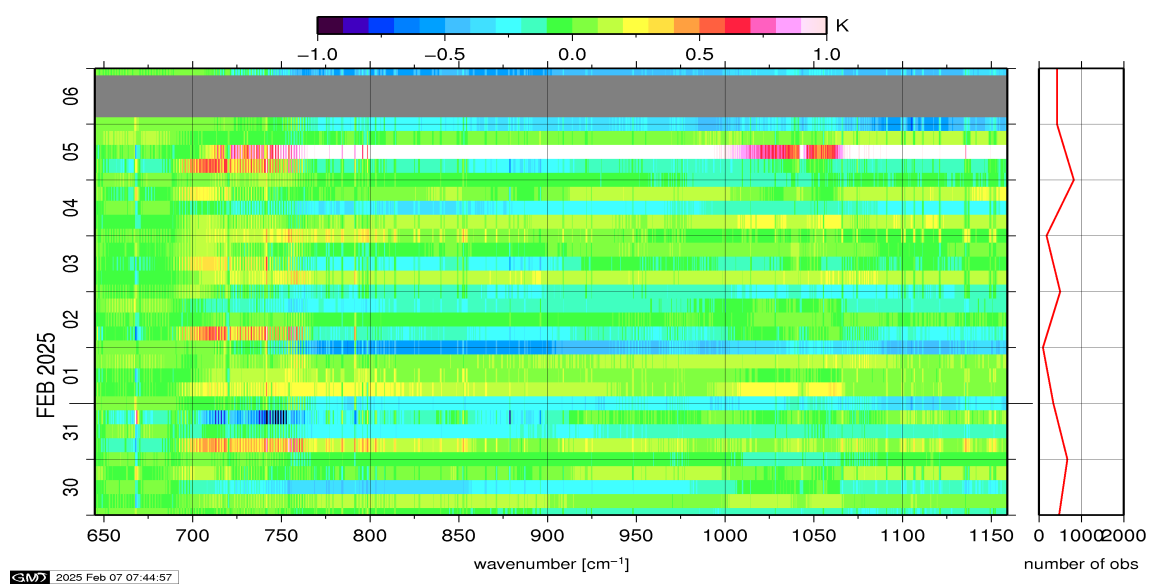


Figure 11: Radiance Anomaly in BT: IASI Band 1

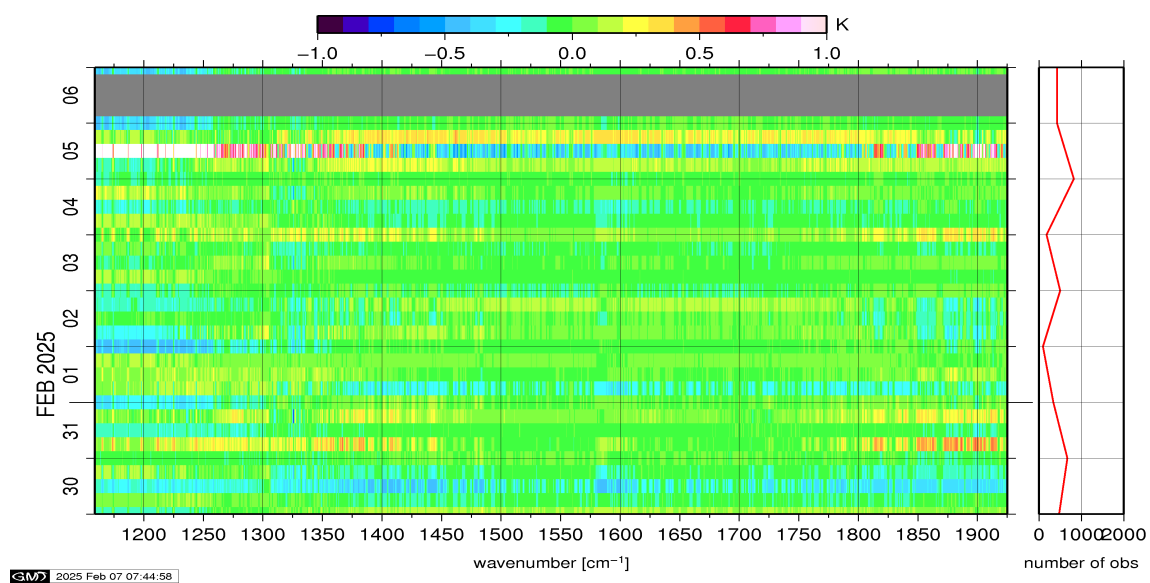


Figure 12: Radiance Anomaly in BT: IASI Band 2

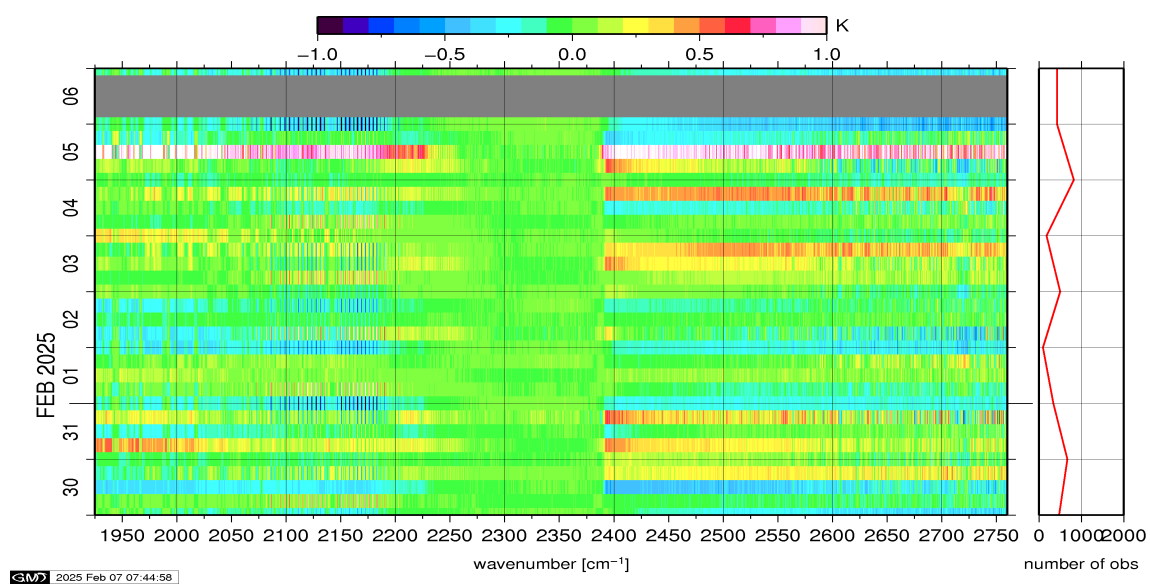


Figure 13: Radiance Anomaly in BT: IASI Band 3

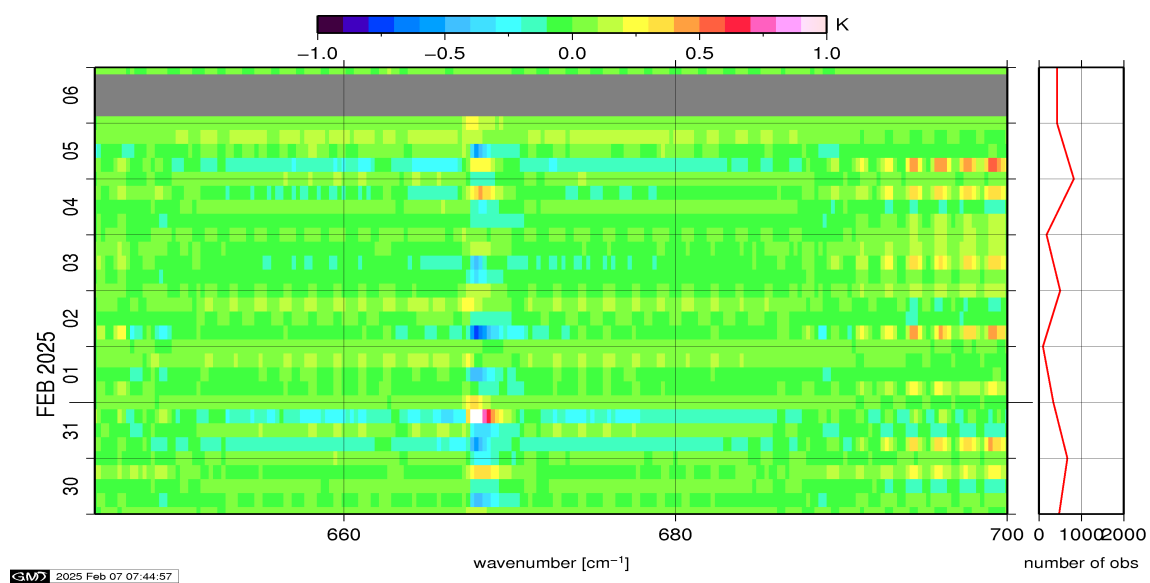


Figure 14: Radiance Anomaly in BT: CO2 14

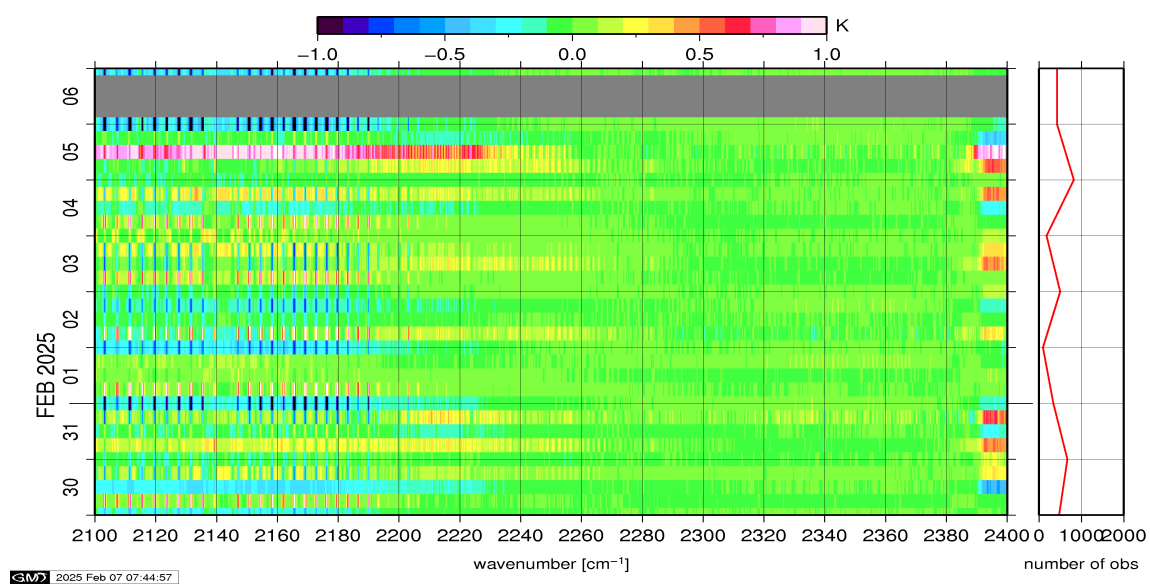


Figure 15: Radiance Anomaly in BT: CO2 4.3

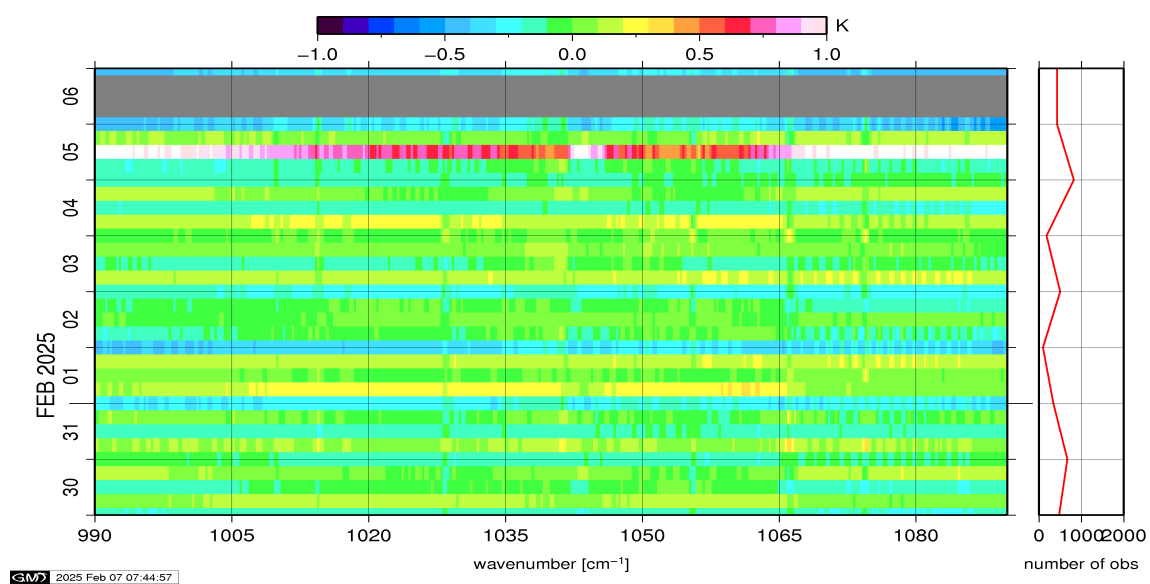


Figure 16: Radiance Anomaly in BT: O3