

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

IASI monitoring team

06/01/2025 00:00:00 - 07/01/2025 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 06/01/2025 00:00:00 - 07/01/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 06/01/2025 00:00:00 - 07/01/2025 00:00:00

Product Type	Number	Action
L0 HKTU 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)	12449	12709	20250106193814.004	20250106193923.875
PX1 (130)	12889	12911	20250106194011.874	20250106194018.144
PX1 (130)	12925	12927	20250106194021.171	20250106194021.605
PX1 (130)	12944	12960	20250106194026.792	20250106194031.765
PX1 (130)	5207	5465	20250106201852.281	20250106202001.687
PX1 (130)	5678	5716	20250106202058.332	20250106202108.062
PX2 (135)	12449	12709	20250106193814.004	20250106193923.875
PX2 (135)	12889	12910	20250106194011.874	20250106194017.929
PX2 (135)	12944	12960	20250106194026.792	20250106194031.765
PX2 (135)	5206	5465	20250106201852.066	20250106202001.687
PX2 (135)	5678	5716	20250106202058.332	20250106202108.062
PX3 (140)	12449	12709	20250106193814.004	20250106193923.875
PX3 (140)	12889	12910	20250106194011.874	20250106194017.929
PX3 (140)	12927	12929	20250106194021.605	20250106194022.035
PX3 (140)	12944	12960	20250106194026.792	20250106194031.765
PX3 (140)	5206	5465	20250106201852.066	20250106202001.687
PX3 (140)	5668	5670	20250106202056.172	20250106202056.605
PX3 (140)	5678	5715	20250106202058.332	20250106202107.847
PX4 (145)	12449	12709	20250106193814.004	20250106193923.875

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	12888	12910	20250106194011.660	20250106194017.929
PX4 (145)	12943	12960	20250106194026.578	20250106194031.765
PX4 (145)	5206	5465	20250106201852.066	20250106202001.687
PX4 (145)	5668	5670	20250106202056.172	20250106202056.605
PX4 (145)	5678	5715	20250106202058.332	20250106202107.847
IMG (150)	14101	14397	20250106193814.004	20250106193923.875
IMG (150)	14506	14508	20250106193949.390	20250106193949.820
IMG (150)	14600	14626	20250106194011.660	20250106194017.929
IMG (150)	14638	14640	20250106194020.523	20250106194020.956
IMG (150)	14663	14680	20250106194026.578	20250106194030.468
IMG (150)	8078	8373	20250106201852.066	20250106202001.687
IMG (150)	8493	8495	20250106202029.578	20250106202030.011
IMG (150)	8604	8606	20250106202056.172	20250106202056.605
IMG (150)	8608	8610	20250106202057.035	20250106202057.468
IMG (150)	8610	8612	20250106202057.468	20250106202057.902
IMG (150)	8613	8655	20250106202058.117	20250106202107.847
VER (160)	16379	0	20250106112558.075	20250106112606.075
VER (160)	0	16380	20250106112606.075	20250106112606.075
VER (160)	-1	1	20250106112606.075	20250106112614.075
VER (160)	16380	0	20250106184254.016	20250106184302.016
VER (160)	1	16381	20250106184302.016	20250106184302.016
VER (160)	-1	2	20250106184302.016	20250106184310.016
VER (160)	2066	2112	20250106193806.004	20250106193926.039
VER (160)	2141	2148	20250106194006.035	20250106194013.820
VER (160)	2148	2157	20250106194013.820	20250106194038.035
VER (160)	3591	3637	20250106201846.012	20250106202006.012
VER (160)	3671	3677	20250106202054.008	20250106202110.008
AUX (180)	412	422	20250106193806.433	20250106193926.468
AUX (180)	427	429	20250106194006.468	20250106194022.468
AUX (180)	717	727	20250106201846.445	20250106202006.441
AUX (180)	733	735	20250106202054.441	20250106202110.441

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
06/01/2025 00:00:03	-	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)	99.61 %	-
GQisFlagQual set (PX2)	99.66 %	-
GQisFlagQual set (PX3)	99.65 %	-
GQisFlagQual set (PX4)	99.59 %	-
GQisFlagQual set (all)	99.63 %	-

Table 4: Quality flags

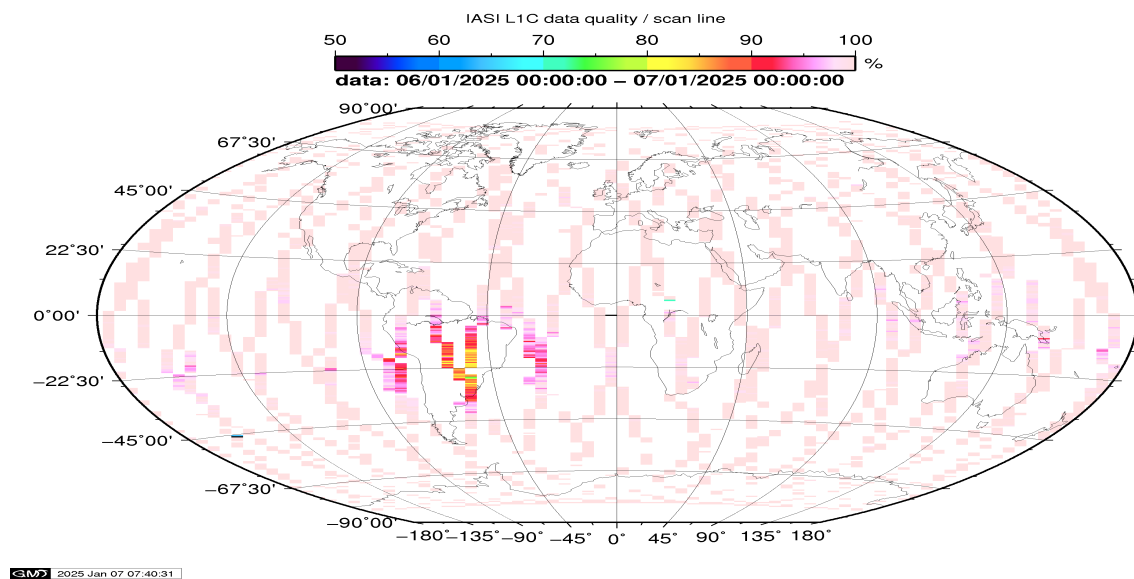


Figure 1: L1C data quality

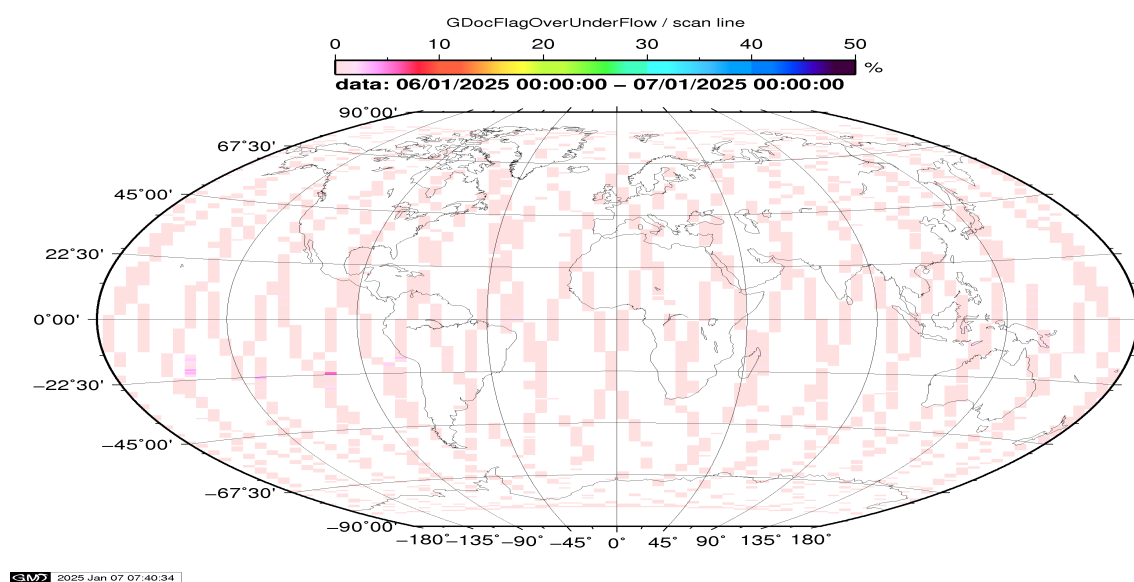


Figure 2: Flag of Over and Under Flows

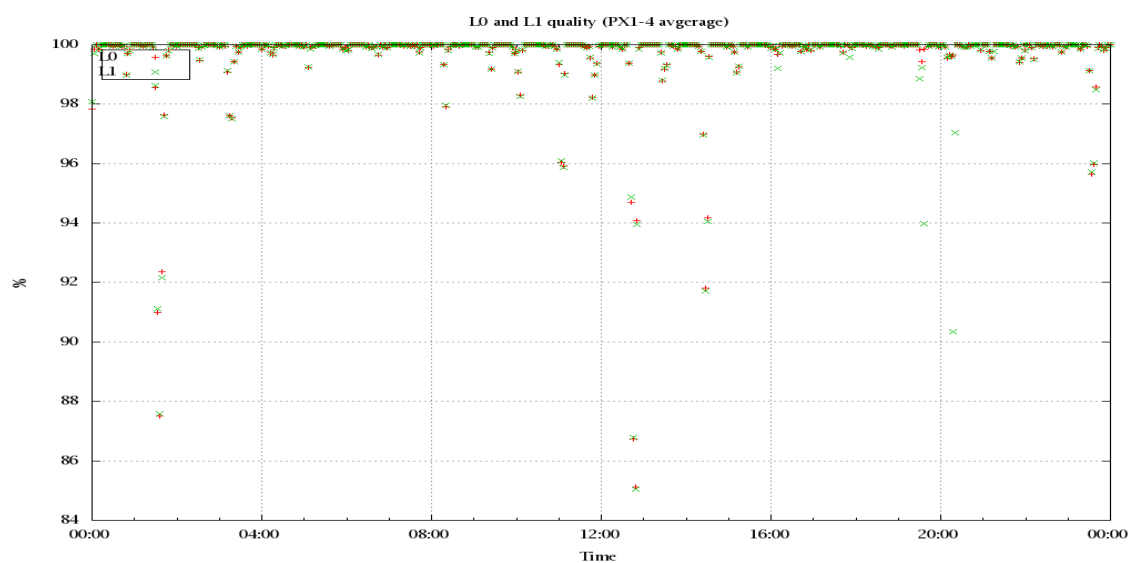


Figure 3: Level 0 and 1C overall quality

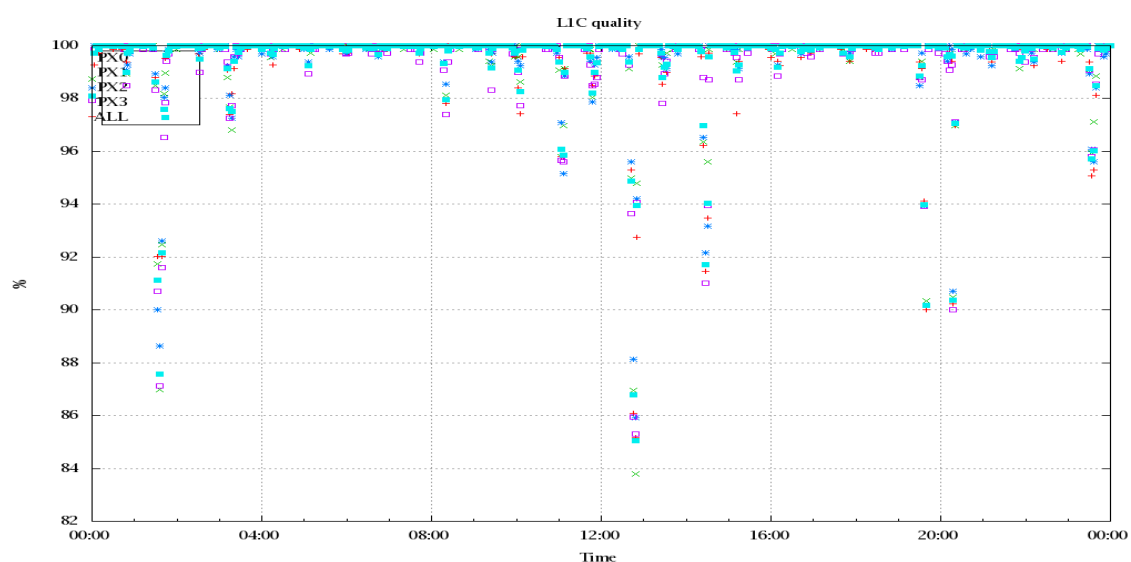


Figure 4: Level 1C quality

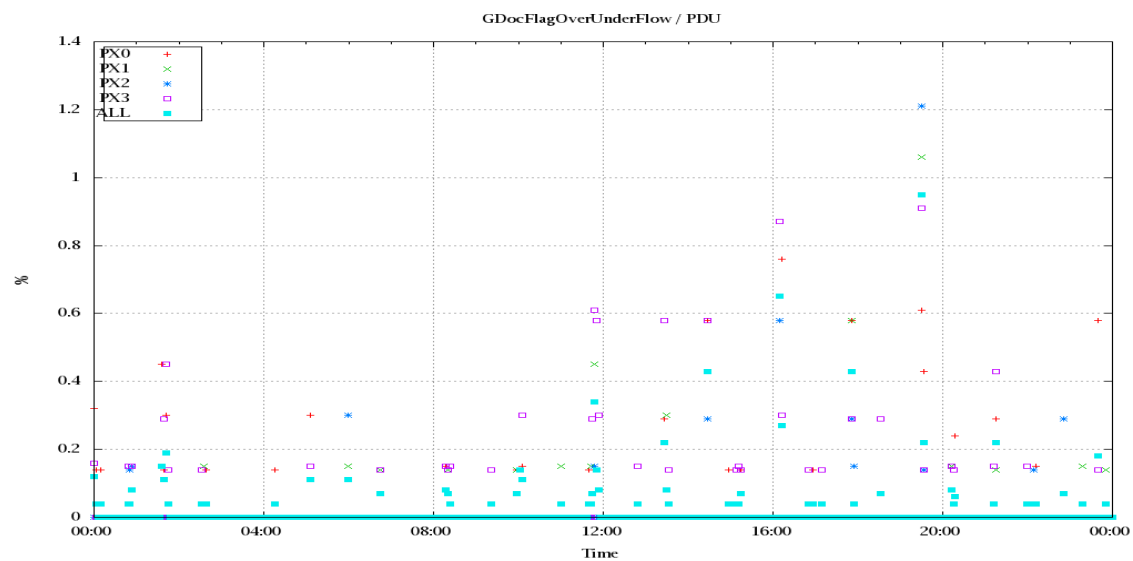


Figure 5: Timeseries of flag of Over and Under Flows

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.

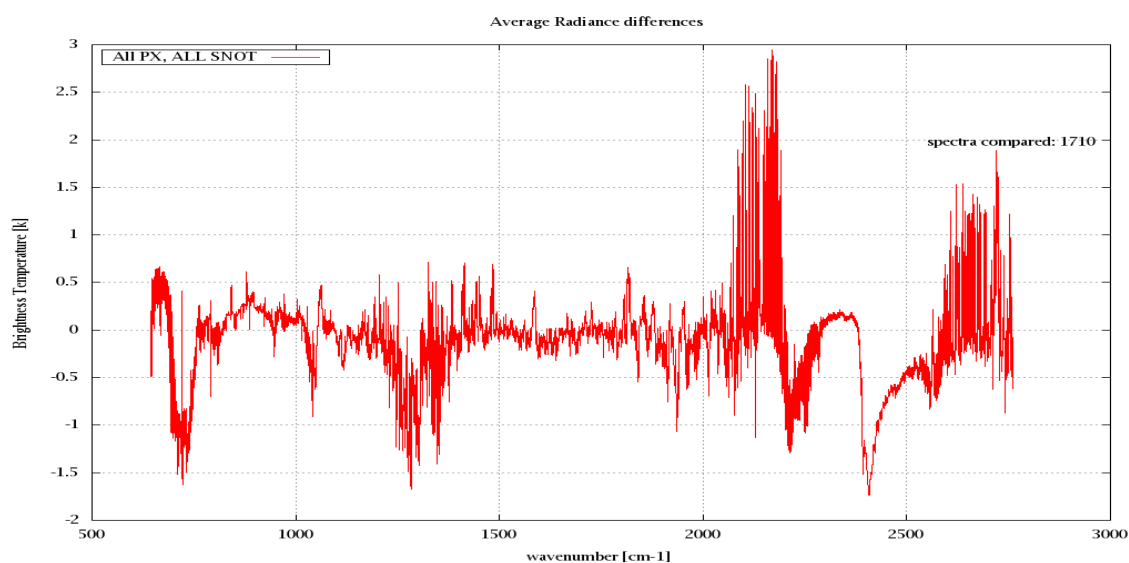


Figure 6: Average Radiance differences: OBS-CAL

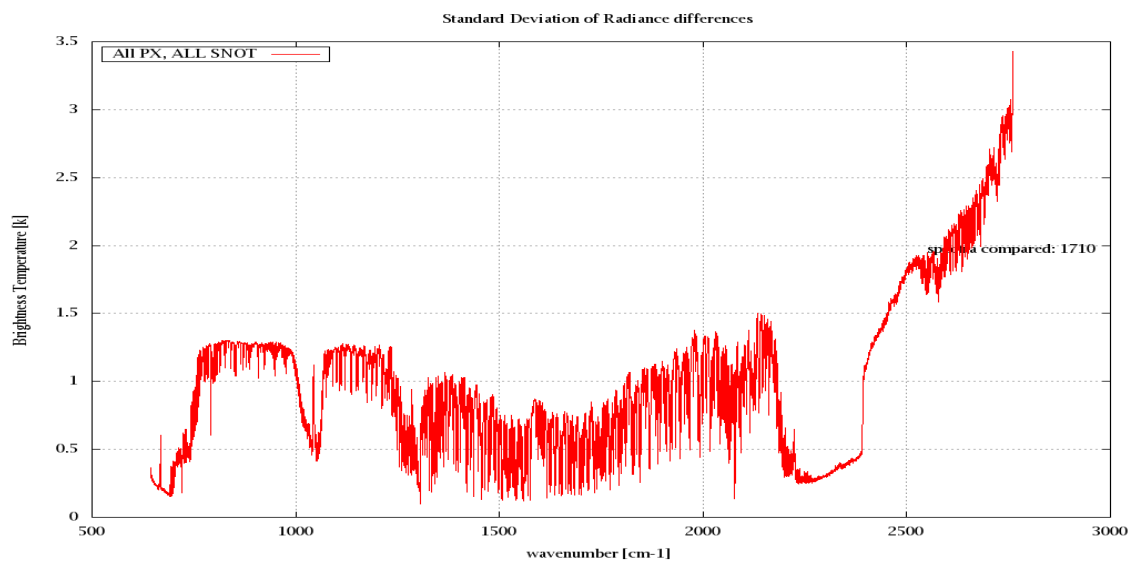


Figure 7: Standard Deviation of Radiance differences

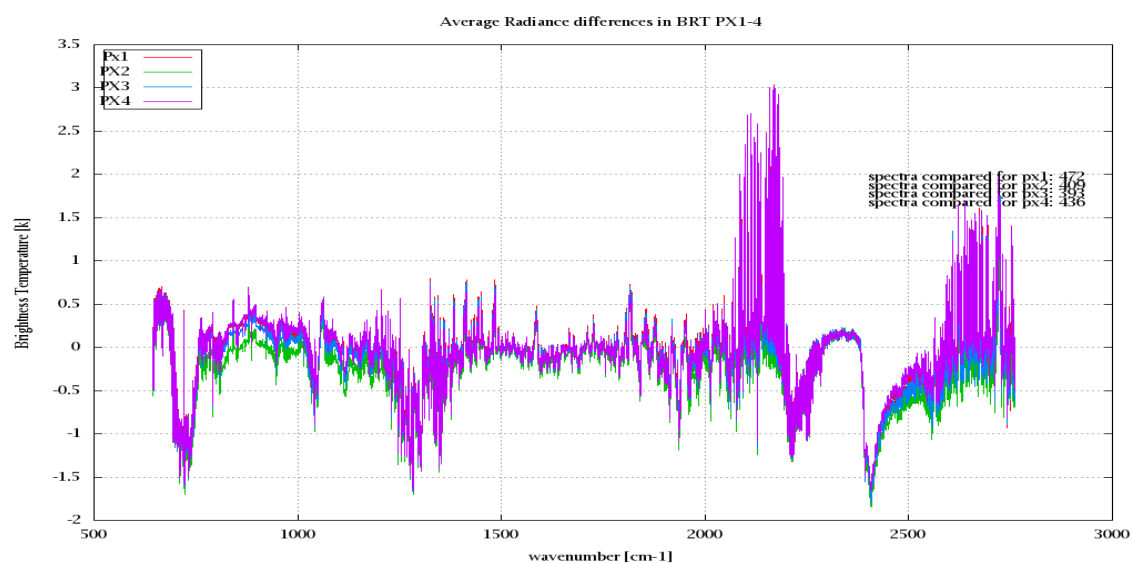


Figure 8: Average Radiance differences: OBS-CAL

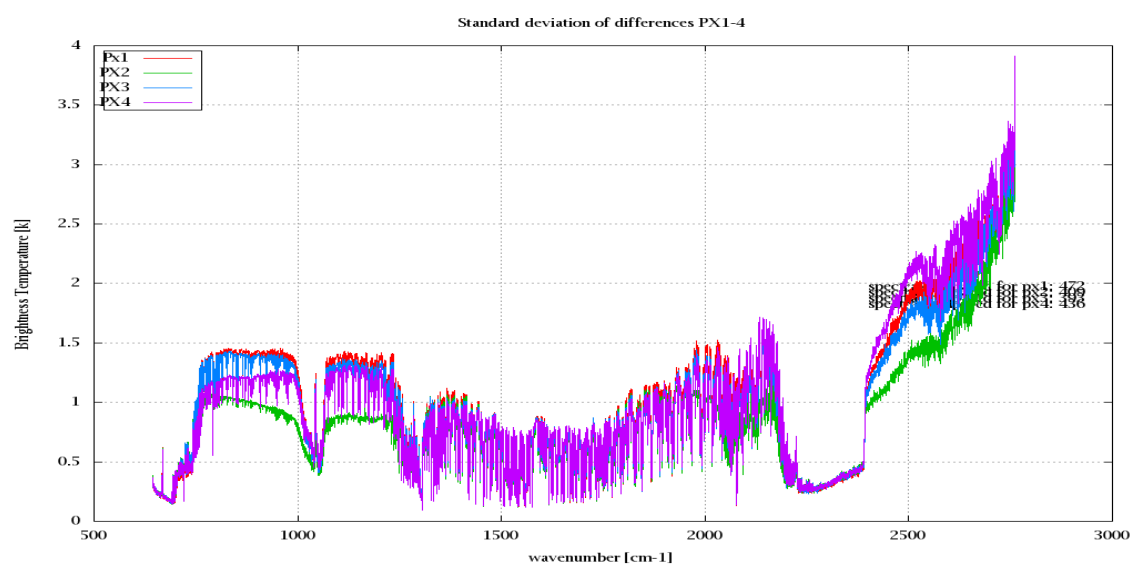


Figure 9: Standard Deviation of Radiance differences

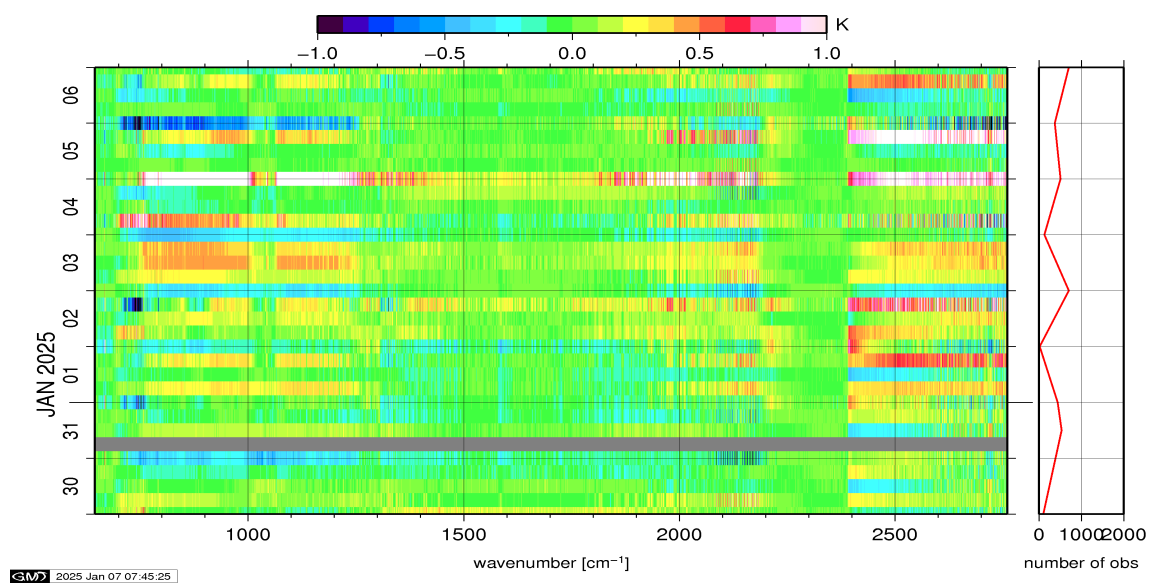


Figure 10: Radiance Anomaly in BT: All Channels

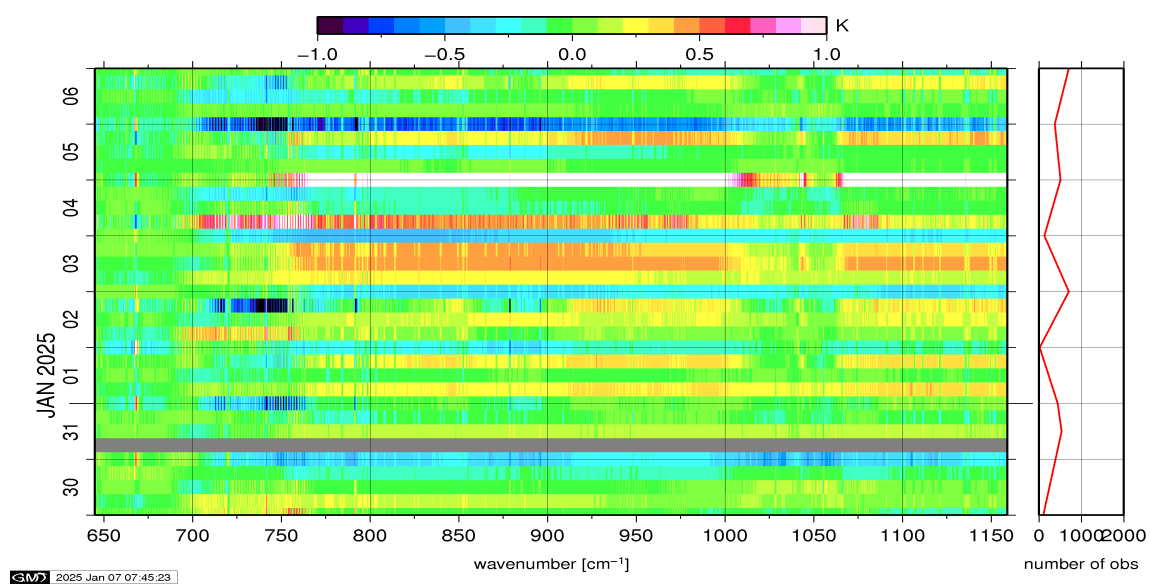


Figure 11: Radiance Anomaly in BT: IASI Band 1

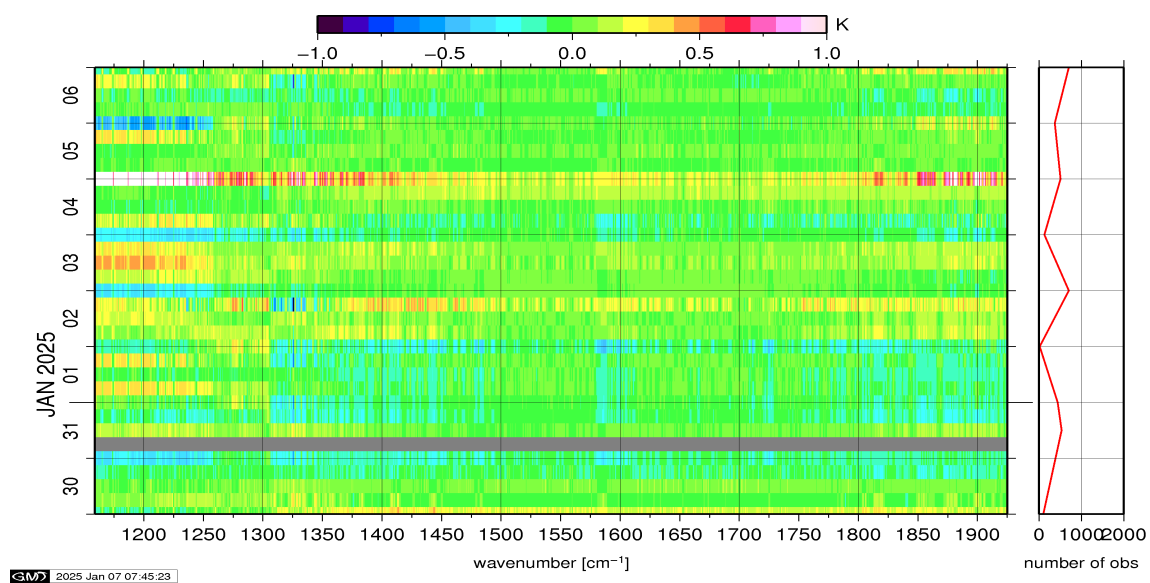


Figure 12: Radiance Anomaly in BT: IASI Band 2

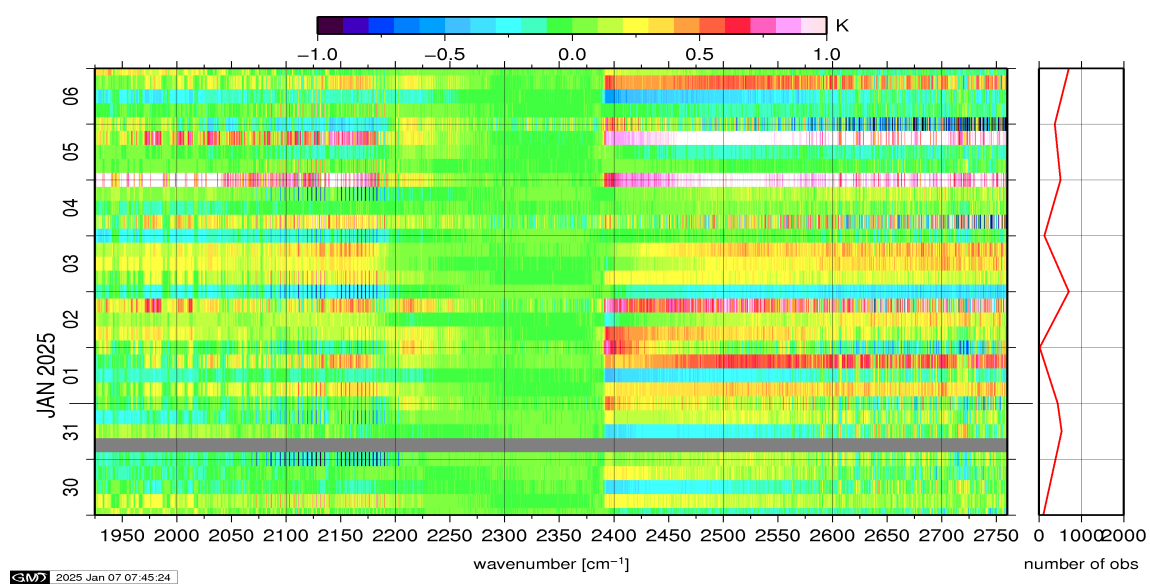


Figure 13: Radiance Anomaly in BT: IASI Band 3

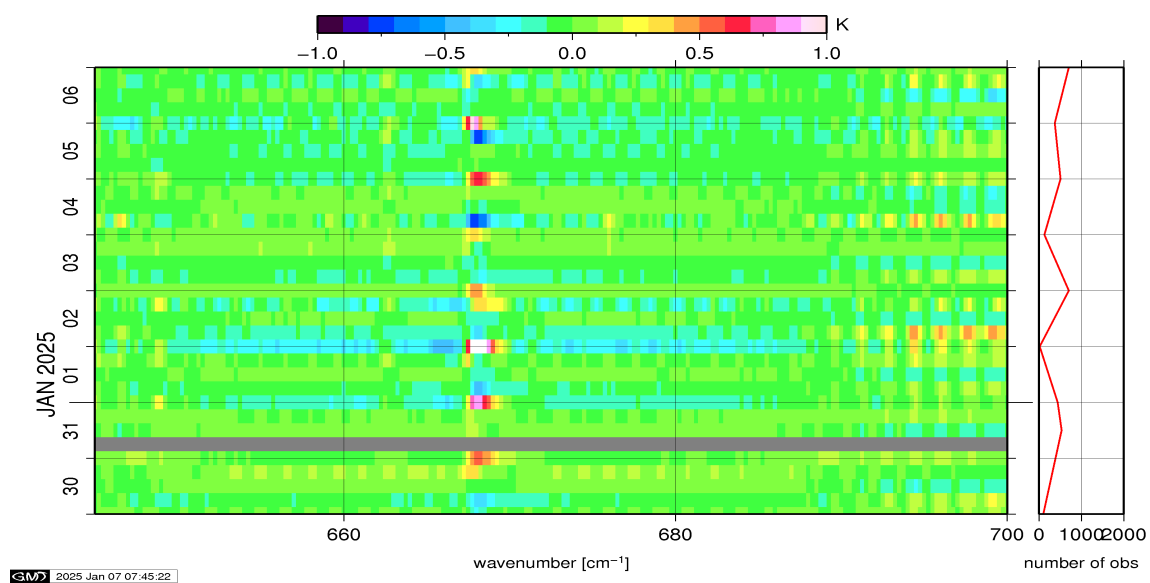


Figure 14: Radiance Anomaly in BT: CO2 14

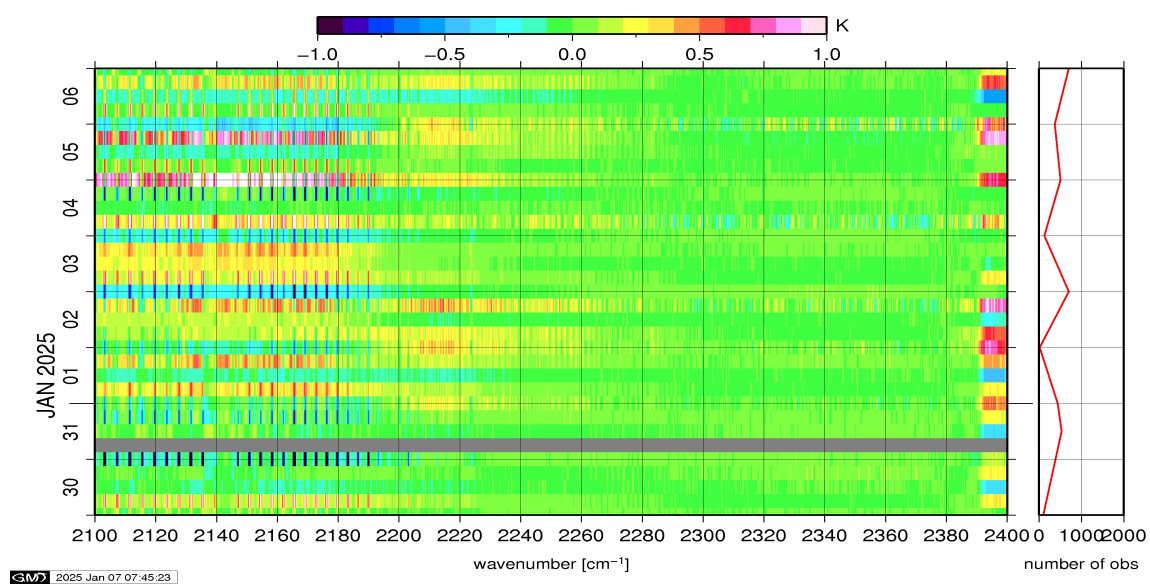


Figure 15: Radiance Anomaly in BT: CO2 4.3

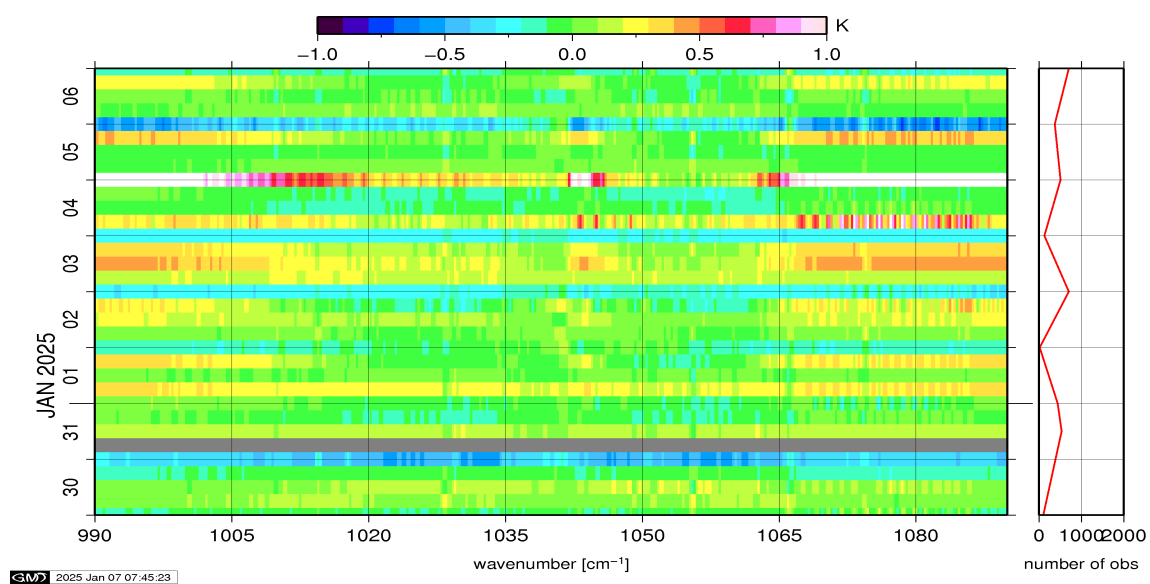


Figure 16: Radiance Anomaly in BT: O3