

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

IASI monitoring team

26/10/2023 00:00:00 - 27/10/2023 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 26/10/2023 00:00:00 - 27/10/2023 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 26/10/2023 00:00:00 - 27/10/2023 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	480	-
L0 IASI PDUs	480	-
L1 ENG PDUs	479	-
L1 ENG distinct GEPSGranule	480	-
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	479	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	2925	3836	20231026134723.357	20231026135127.243
PX1 (130)	3924	3926	20231026135149.298	20231026135151.243
PX1 (130)	5575	5926	20231026135909.539	20231026140043.590
PX1 (130)	12076	12986	20231026142803.583	20231026143207.251
PX1 (130)	13172	13213	20231026143256.548	20231026143306.927
PX1 (130)	149	447	20231026144752.777	20231026144912.343
PX2 (135)	2925	3836	20231026134723.357	20231026135127.243
PX2 (135)	5575	5926	20231026135909.539	20231026140043.590
PX2 (135)	12075	12986	20231026142803.369	20231026143207.251
PX2 (135)	13172	13213	20231026143256.548	20231026143306.927
PX2 (135)	13232	13234	20231026143312.548	20231026143312.981
PX2 (135)	13239	13241	20231026143314.063	20231026143314.493
PX2 (135)	148	446	20231026144752.562	20231026144912.128
PX3 (140)	2925	3836	20231026134723.357	20231026135127.243
PX3 (140)	5575	5926	20231026135909.539	20231026140043.590
PX3 (140)	12075	12986	20231026142803.369	20231026143207.251
PX3 (140)	13101	13103	20231026143236.657	20231026143237.091
PX3 (140)	13172	13213	20231026143256.548	20231026143306.927
PX3 (140)	13225	13227	20231026143309.520	20231026143311.466

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	148	446	20231026144752.562	20231026144912.128
PX4 (145)	2925	3836	20231026134723.357	20231026135127.243
PX4 (145)	5575	5926	20231026135909.539	20231026140043.590
PX4 (145)	12075	12986	20231026142803.369	20231026143207.251
PX4 (145)	13172	13213	20231026143256.548	20231026143306.927
PX4 (145)	13234	13236	20231026143312.981	20231026143313.415
PX4 (145)	13241	13243	20231026143314.493	20231026143314.927
PX4 (145)	148	446	20231026144752.562	20231026144912.128
IMG (150)	11888	12920	20231026134723.142	20231026135125.946
IMG (150)	14891	15290	20231026135909.539	20231026140043.590
IMG (150)	5875	6908	20231026142803.369	20231026143206.603
IMG (150)	7119	7165	20231026143256.333	20231026143306.927
IMG (150)	7183	7185	20231026143311.466	20231026143311.899
IMG (150)	7185	7187	20231026143311.899	20231026143312.333
IMG (150)	7190	7192	20231026143312.981	20231026143313.415
IMG (150)	7192	7194	20231026143313.415	20231026143313.845
IMG (150)	7199	7201	20231026143314.927	20231026143315.360
IMG (150)	10928	11266	20231026144752.562	20231026144912.128
VER (160)	16379	0	20231026065733.573	20231026065741.573
VER (160)	0	16380	20231026065741.573	20231026065741.573
VER (160)	-1	1	20231026065741.573	20231026065749.569
VER (160)	15360	15514	20231026134717.521	20231026134723.357
VER (160)	15800	15861	20231026135901.539	20231026140045.535
VER (160)	16380	0	20231026141429.514	20231026141437.514
VER (160)	1	16381	20231026141437.514	20231026141437.514
VER (160)	-1	2	20231026141437.514	20231026141445.514
VER (160)	501	657	20231026142757.529	20231026143213.524
VER (160)	686	692	20231026143253.520	20231026143309.520
VER (160)	1246	1297	20231026144749.535	20231026144917.535
VER (160)	16381	0	20231026213125.494	20231026213133.494
VER (160)	2	16382	20231026213133.494	20231026213133.494
VER (160)	-1	3	20231026213133.494	20231026213141.490
AUX (180)	6336	6367	20231026134717.950	20231026135125.946
AUX (180)	6424	6437	20231026135901.969	20231026140045.969
AUX (180)	6641	6673	20231026142757.962	20231026143213.954
AUX (180)	6678	6680	20231026143253.954	20231026143309.954
AUX (180)	6790	6801	20231026144749.968	20231026144917.964

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
26/10/2023 00:00:56	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	480	-
L1 ENG PDUs	479	-
L1 ENG distinct GEPSGranule	480	-
GQisFlagQual set (PX1)	99.59 %	-
GQisFlagQual set (PX2)	99.62 %	-
GQisFlagQual set (PX3)	99.59 %	-
GQisFlagQual set (PX4)	99.55 %	-
GQisFlagQual set (all)	99.59 %	-

Table 4: Quality flags

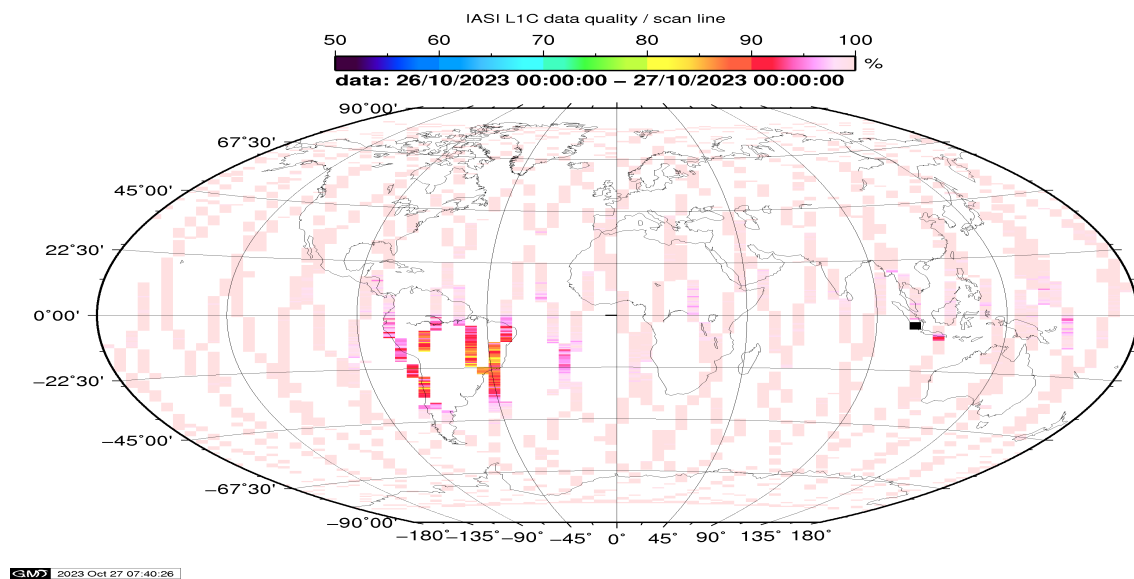


Figure 1: L1C data quality

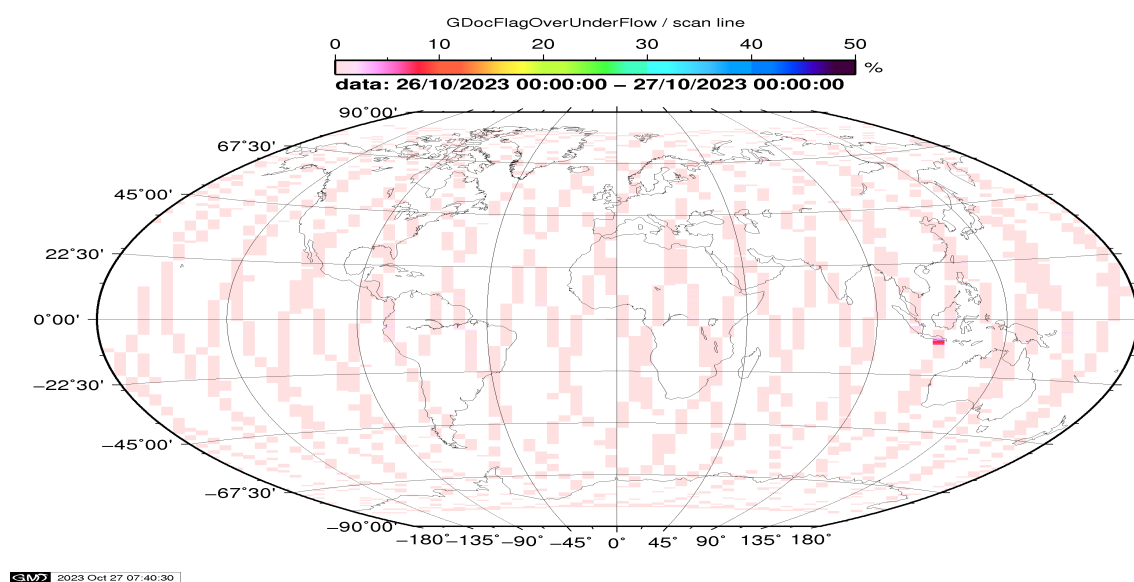


Figure 2: Flag of Over and Under Flows

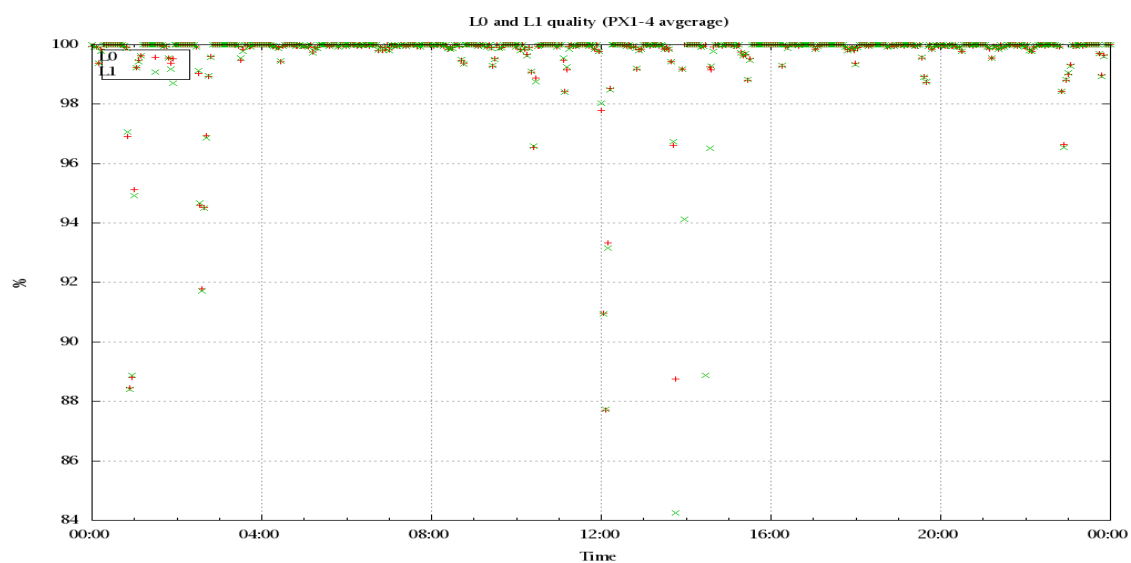


Figure 3: Level 0 and 1C overall quality

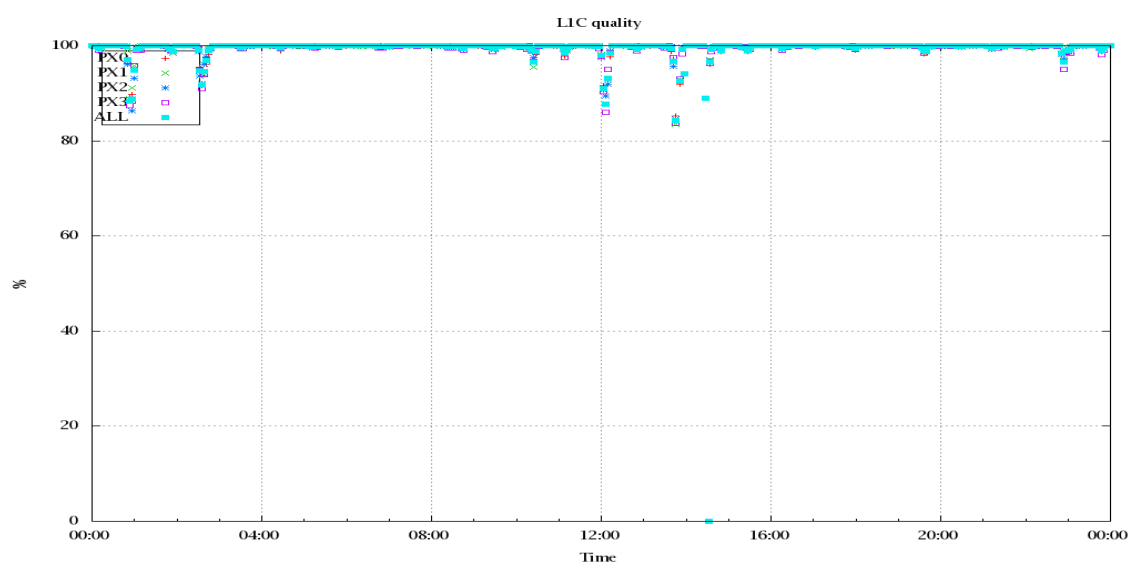


Figure 4: Level 1C quality

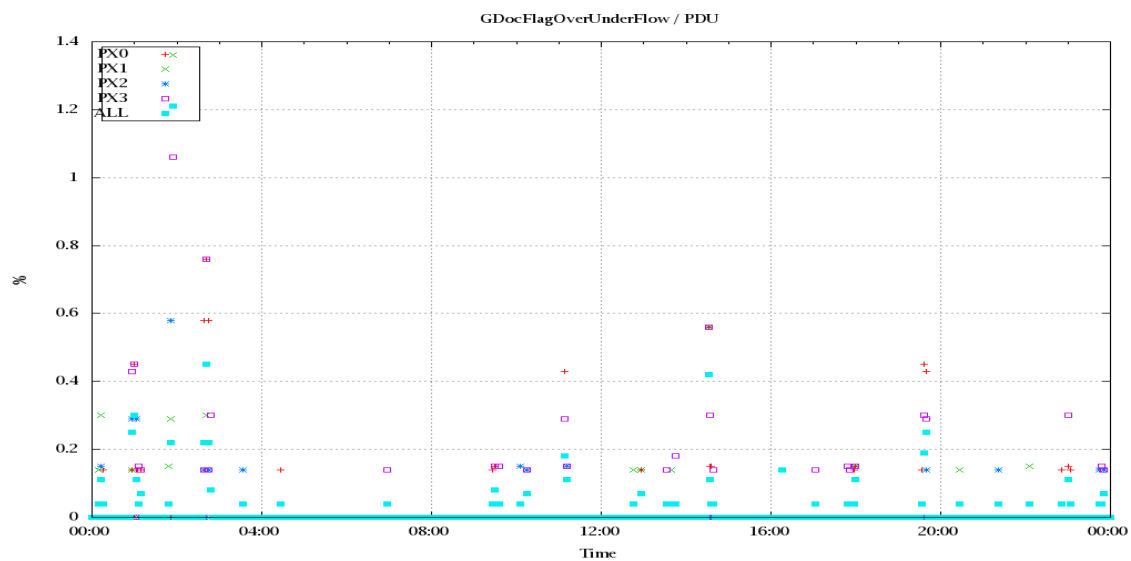


Figure 5: Timeseries of flag of Over and Under Flows

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.

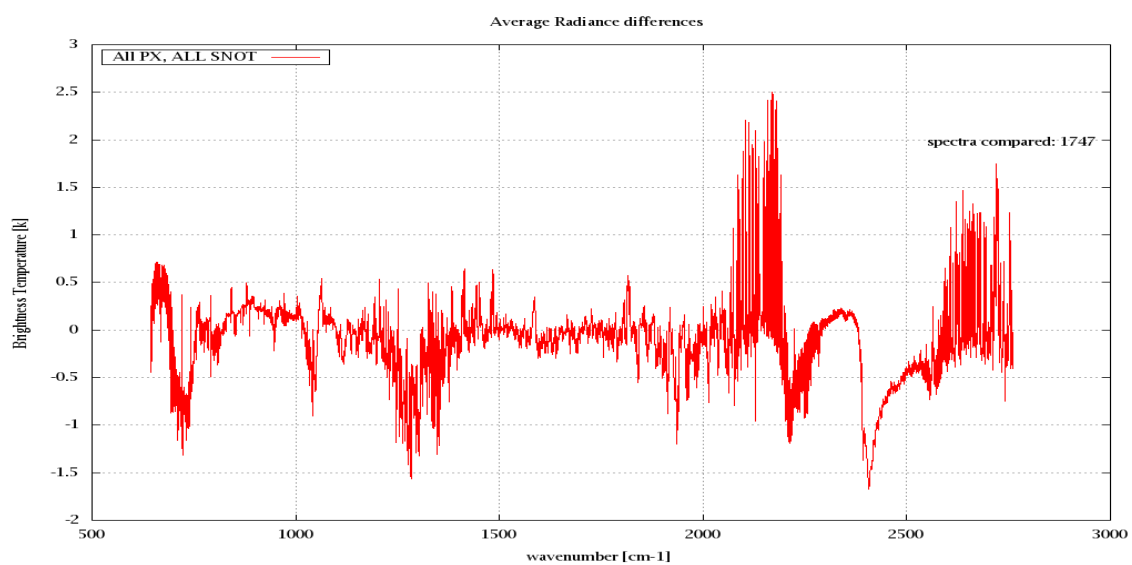


Figure 6: Average Radiance differences: OBS-CAL

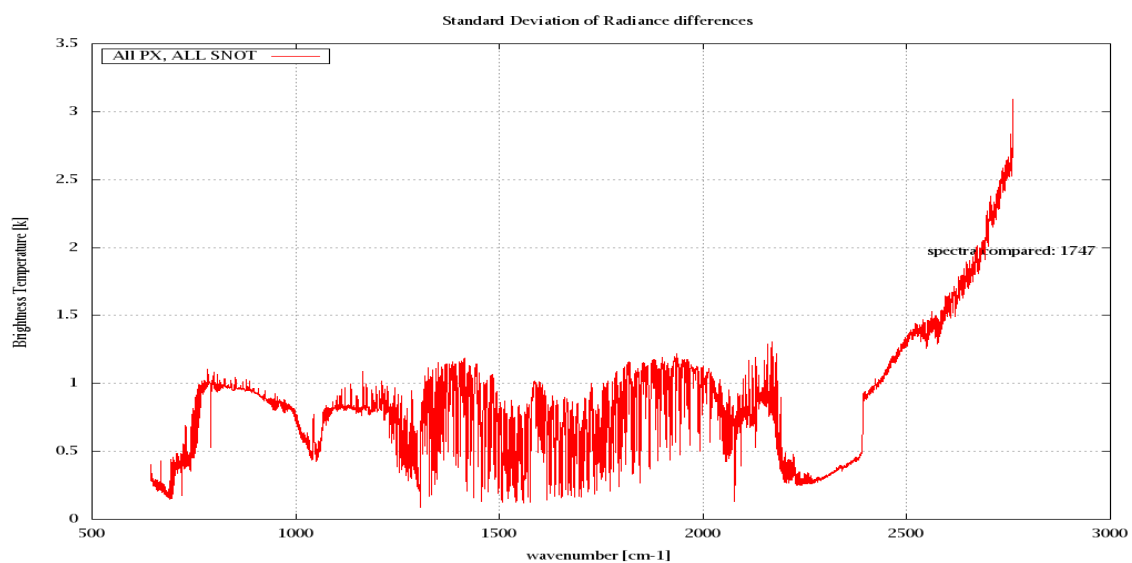


Figure 7: Standard Deviation of Radiance differences

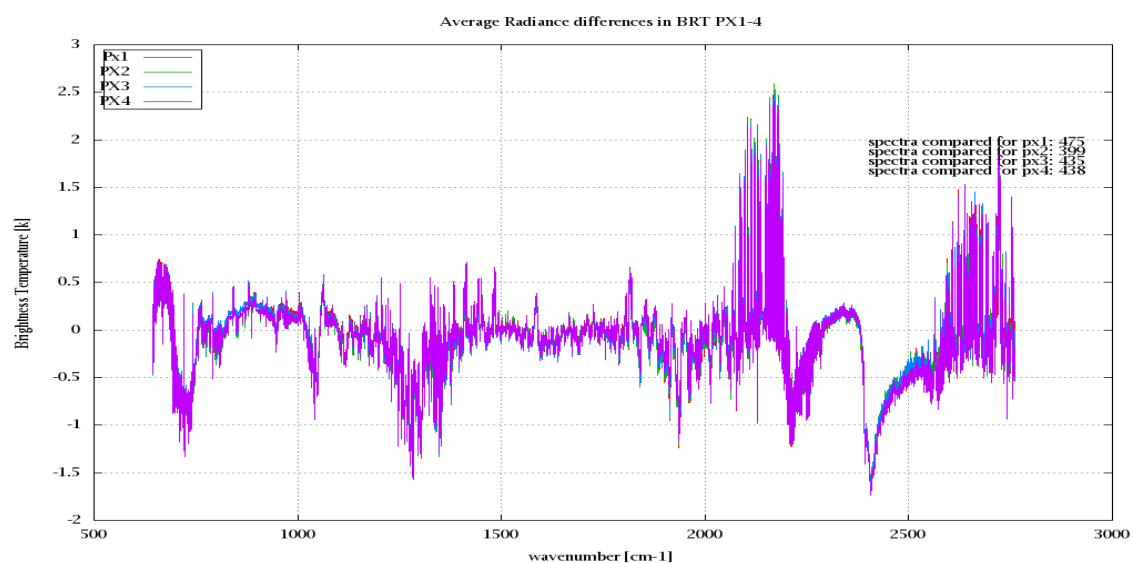


Figure 8: Average Radiance differences: OBS-CAL

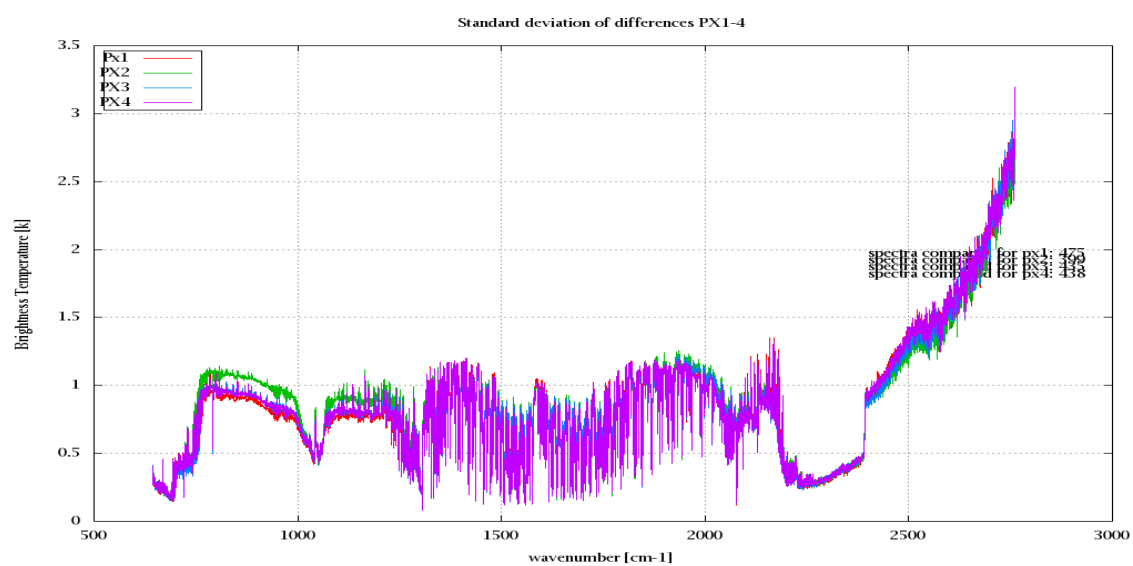


Figure 9: Standard Deviation of Radiance differences

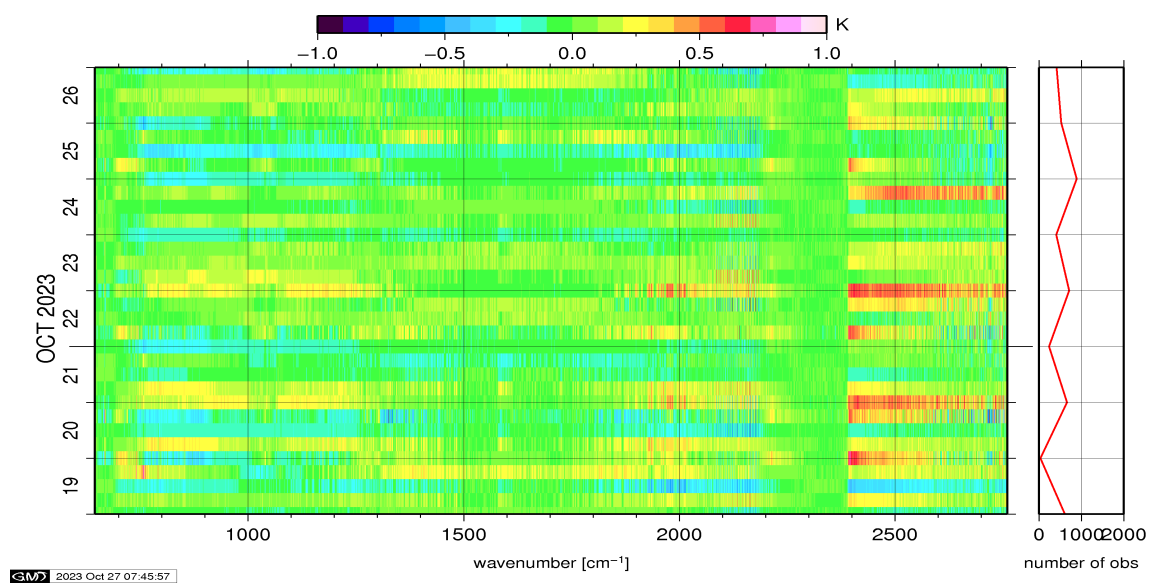


Figure 10: Radiance Anomaly in BT: All Channels

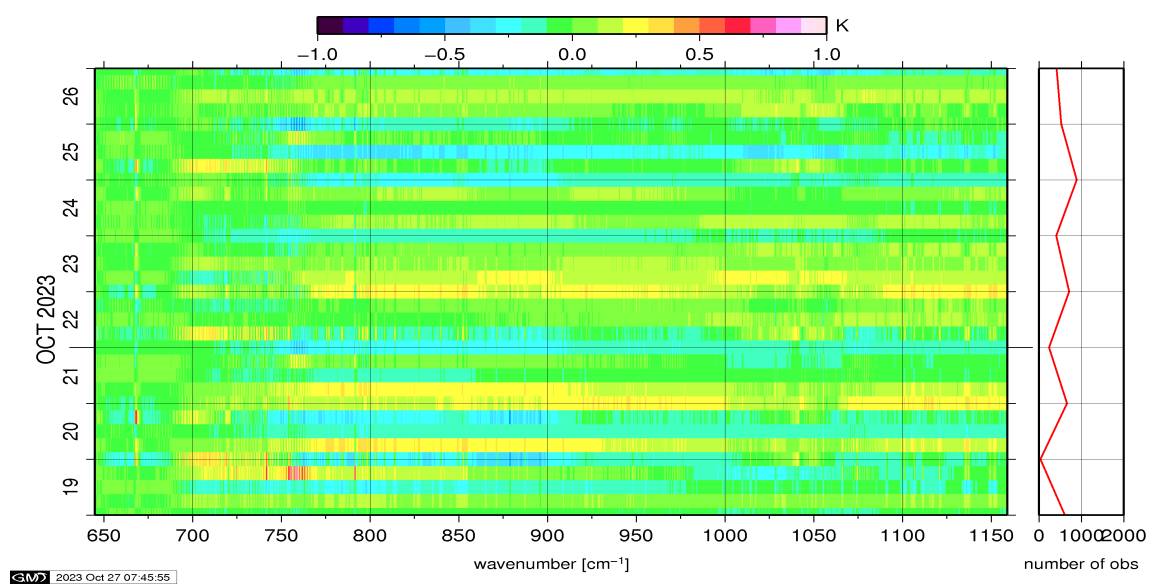


Figure 11: Radiance Anomaly in BT: IASI Band 1

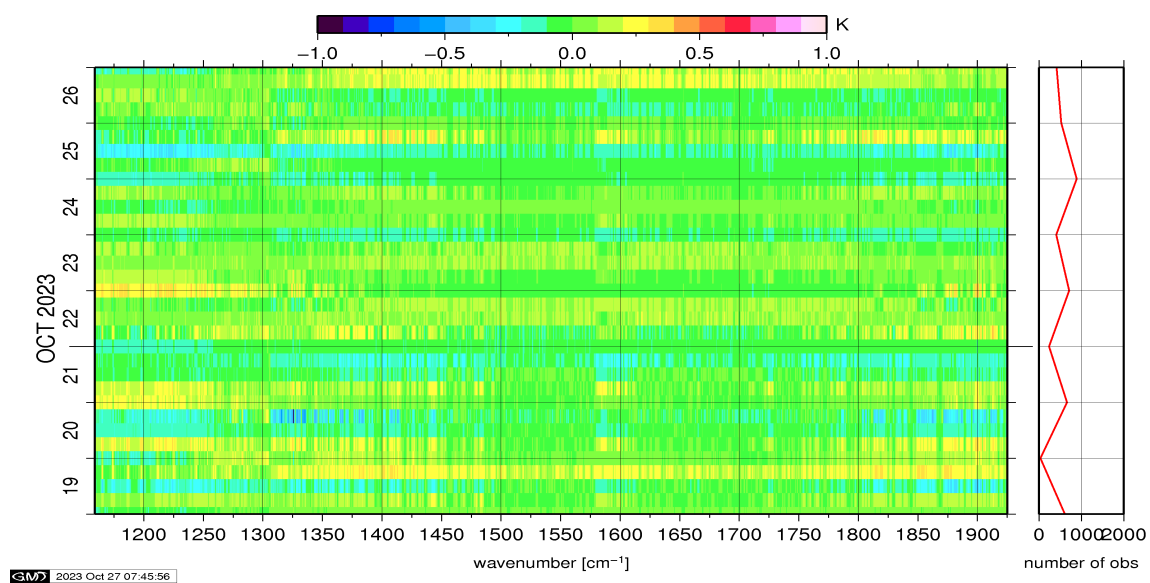


Figure 12: Radiance Anomaly in BT: IASI Band 2

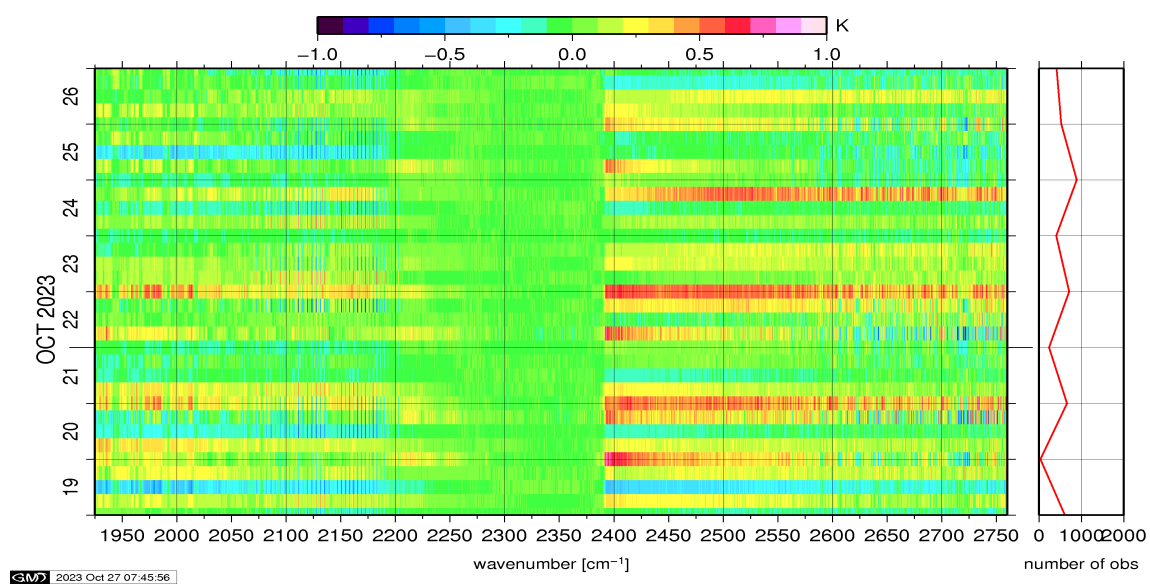


Figure 13: Radiance Anomaly in BT: IASI Band 3

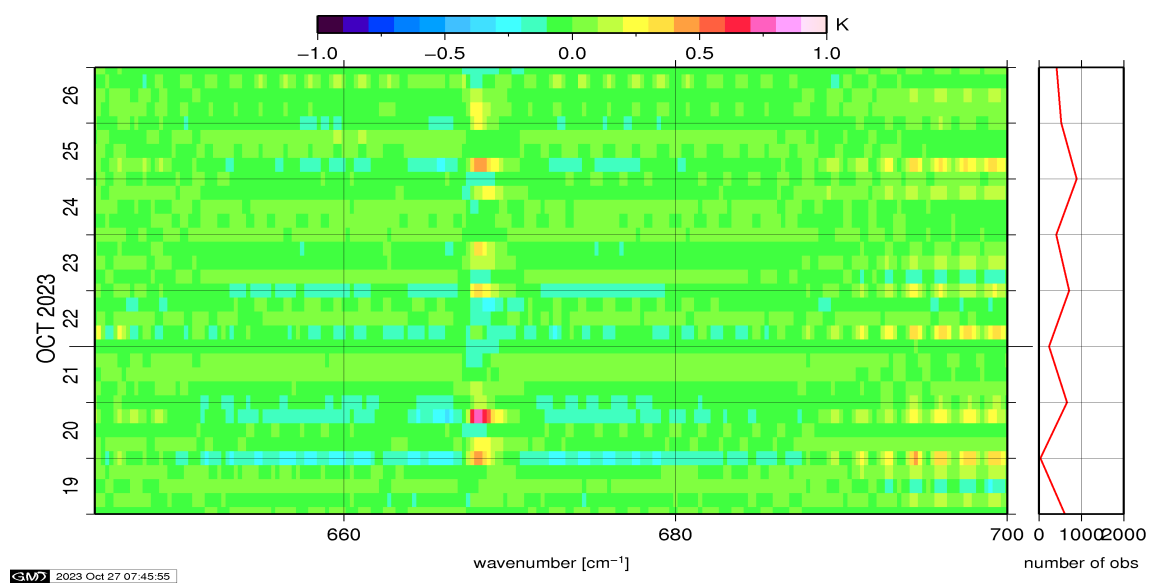


Figure 14: Radiance Anomaly in BT: CO2 14

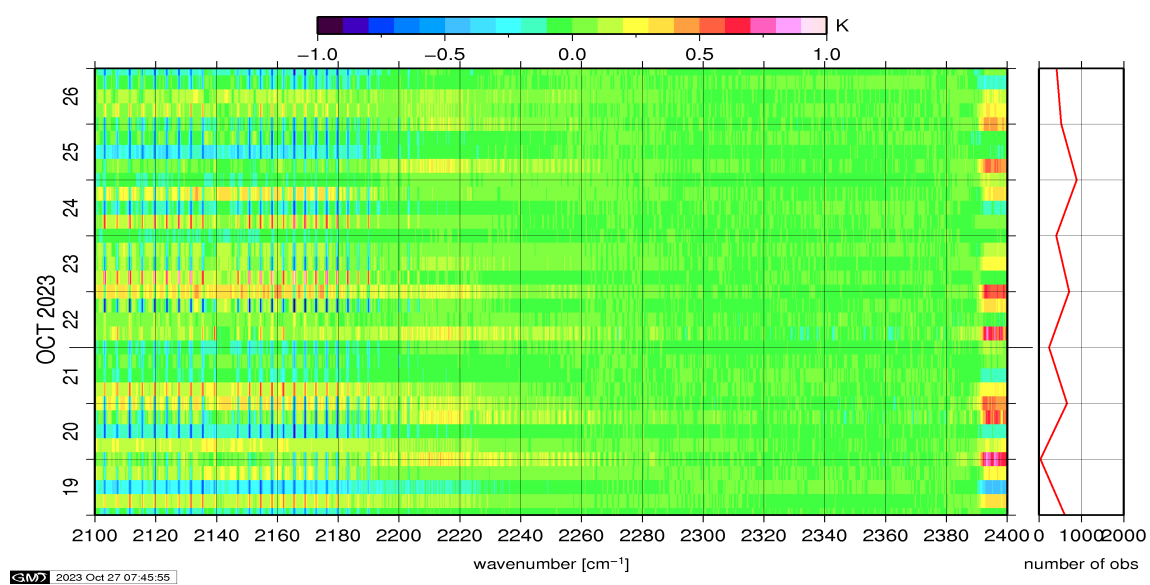


Figure 15: Radiance Anomaly in BT: CO2 4.3

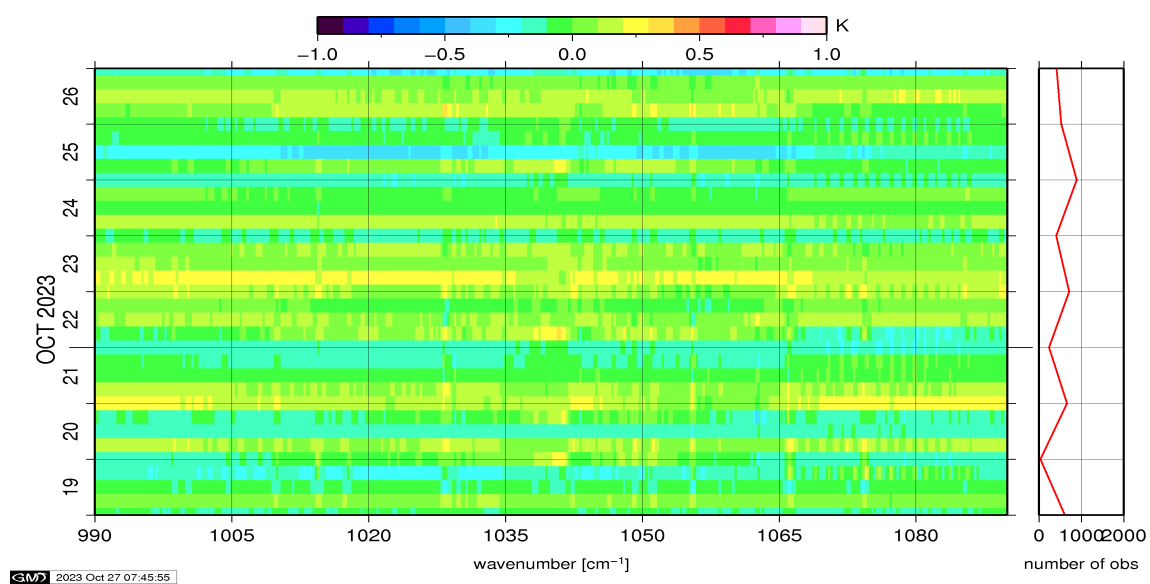


Figure 16: Radiance Anomaly in BT: O3