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

IASI monitoring team

03/07/2025 00:00:00 - 04/07/2025 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 03/07/2025 00:00:00 - 04/07/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 03/07/2025 00:00:00 - 04/07/2025 00:00:00

Product Type	Number	Action
L0 HKTM 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)	3616	3618	20250703030110.338	20250703030110.772
PX1 (130)	5493	5496	20250703091337.338	20250703091337.987
PX1 (130)	5498	5501	20250703091338.420	20250703091339.069
PX1 (130)	5501	5504	20250703091339.069	20250703091339.717
PX1 (130)	5504	5506	20250703091339.717	20250703091340.147
PX1 (130)	5511	5514	20250703091341.229	20250703091341.877
PX1 (130)	5514	5519	20250703091341.877	20250703091342.959
PX1 (130)	5520	5522	20250703091343.174	20250703091343.608
PX1 (130)	5522	5533	20250703091343.608	20250703091347.498
PX1 (130)	5533	5537	20250703091347.498	20250703091348.366
PX1 (130)	5537	5542	20250703091348.366	20250703091349.444
PX1 (130)	5543	5548	20250703091349.663	20250703091350.745
PX1 (130)	5548	5550	20250703091350.745	20250703091351.174
PX1 (130)	5551	5553	20250703091351.393	20250703091353.338
PX2 (135)	6164	6166	20250703015941.027	20250703015941.461
PX2 (135)	7444	7446	20250703031811.720	20250703031812.149
PX2 (135)	5491	5494	20250703091335.393	20250703091337.553
PX2 (135)	5496	5498	20250703091337.987	20250703091338.420
PX2 (135)	5504	5506	20250703091339.717	20250703091340.147

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	5508	5524	20250703091340.581	20250703091345.553
PX2 (135)	5524	5541	20250703091345.553	20250703091349.229
PX2 (135)	5541	5547	20250703091349.229	20250703091350.526
PX2 (135)	5547	5549	20250703091350.526	20250703091350.959
PX2 (135)	5551	5553	20250703091351.393	20250703091353.338
PX3 (140)	6164	6166	20250703015941.027	20250703015941.461
PX3 (140)	5492	5496	20250703091335.608	20250703091337.987
PX3 (140)	5499	5501	20250703091338.635	20250703091339.069
PX3 (140)	5511	5516	20250703091341.229	20250703091342.311
PX3 (140)	5516	5532	20250703091342.311	20250703091347.284
PX3 (140)	5532	5542	20250703091347.284	20250703091349.444
PX3 (140)	5542	5544	20250703091349.444	20250703091349.877
PX3 (140)	5545	5547	20250703091350.096	20250703091350.526
PX3 (140)	5547	5549	20250703091350.526	20250703091350.959
PX3 (140)	5549	5553	20250703091350.959	20250703091353.338
PX4 (145)	5490	5492	20250703091335.174	20250703091335.608
PX4 (145)	5504	5506	20250703091339.717	20250703091340.147
PX4 (145)	5508	5518	20250703091340.581	20250703091342.745
PX4 (145)	5518	5541	20250703091342.745	20250703091349.229
PX4 (145)	5541	5545	20250703091349.229	20250703091350.096
PX4 (145)	5545	5547	20250703091350.096	20250703091350.526
PX4 (145)	5548	5551	20250703091350.745	20250703091351.393
PX4 (145)	5551	5553	20250703091351.393	20250703091353.338
IMG (150)	12773	12775	20250703091339.069	20250703091339.498
IMG (150)	12777	12780	20250703091339.932	20250703091340.581
IMG (150)	12780	12782	20250703091340.581	20250703091341.014
IMG (150)	12782	12785	20250703091341.014	20250703091341.663
IMG (150)	12785	12788	20250703091341.663	20250703091342.311
IMG (150)	12788	12790	20250703091342.311	20250703091342.745
IMG (150)	12791	12797	20250703091342.959	20250703091344.690
IMG (150)	12797	12807	20250703091344.690	20250703091347.069
IMG (150)	12808	12810	20250703091347.284	20250703091347.717
IMG (150)	12810	12814	20250703091347.717	20250703091348.581
IMG (150)	12814	12821	20250703091348.581	20250703091350.096
IMG (150)	12821	12824	20250703091350.096	20250703091350.745
IMG (150)	12825	12829	20250703091350.959	20250703091352.041
VER (160)	16382	0	20250703065815.600	20250703065823.600
VER (160)	3	16383	20250703065823.600	20250703065823.600
VER (160)	-1	4	20250703065823.600	20250703065831.600
VER (160)	5070	5073	20250703091335.608	20250703091335.608
VER (160)	5073	5080	20250703091335.608	20250703091351.393
VER (160)	5081	5083	20250703091351.393	20250703091351.393
VER (160)	11325	11328	20250703191719.549	20250703191719.549
VER (160)	16379	0	20250703213159.522	20250703213207.522
VER (160)	0	16380	20250703213207.522	20250703213207.522
VER (160)	-1	1	20250703213207.522	20250703213215.522
AUX (180)	14105	14107	20250703091336.041	20250703091352.041

Table 2: L0 data gaps

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3 Instrument modes

Time	Transition from	Transition to
03/07/2025 00:00:13	-	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)	99.59 %	-
GQisFlagQual set (PX2)	99.62 %	-
GQisFlagQual set (PX3)	99.61 %	-
GQisFlagQual set (PX4)	99.54 %	-
GQisFlagQual set (all)	99.59 %	-

Table 4: Quality flags

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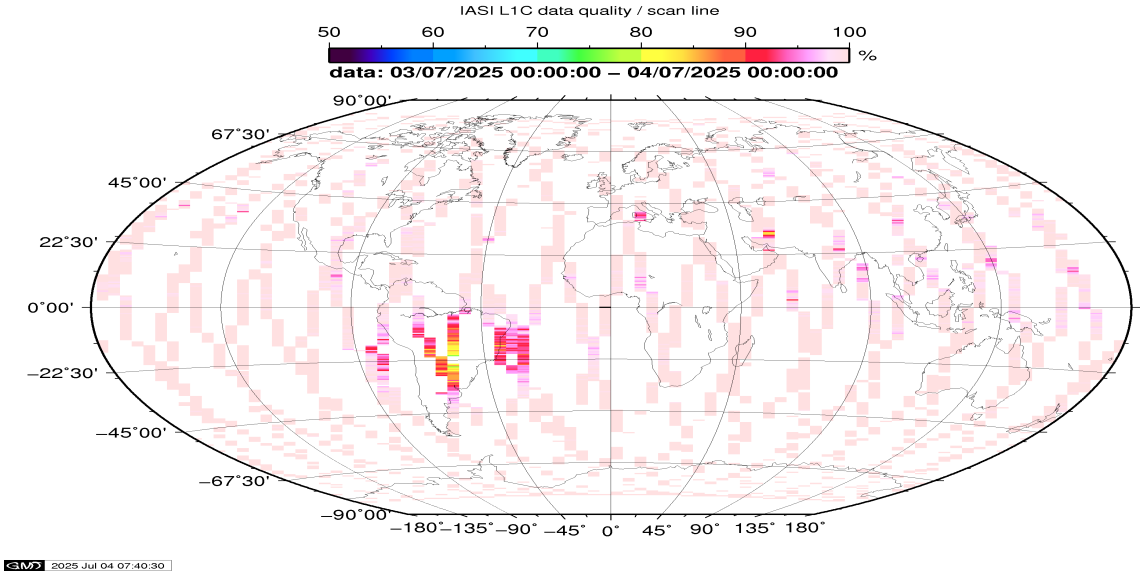

Figure 1: L1C data quality

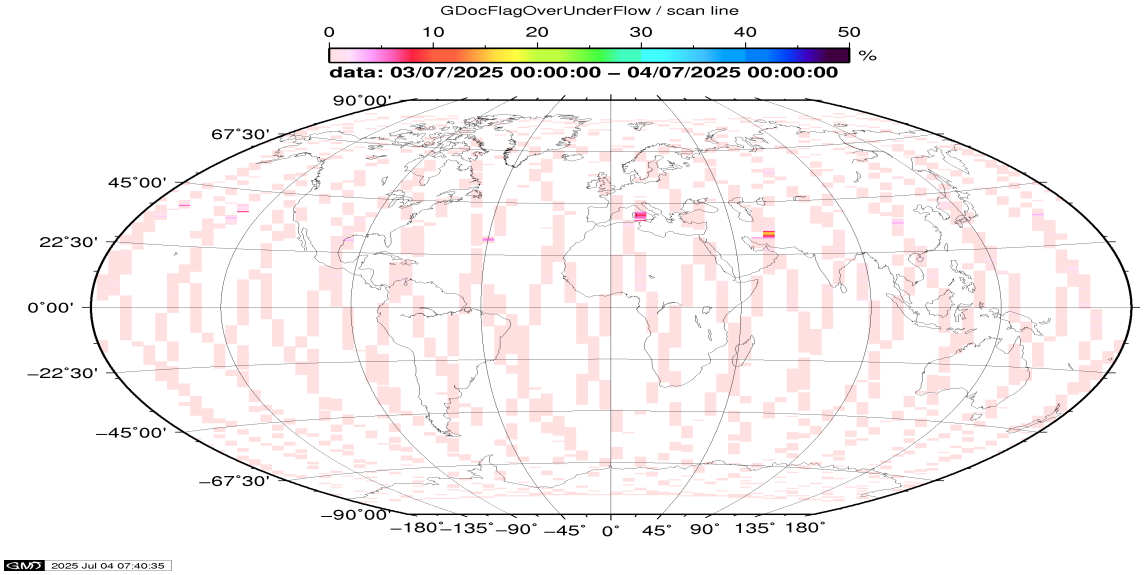

Figure 2: Flag of Over and Under Flows

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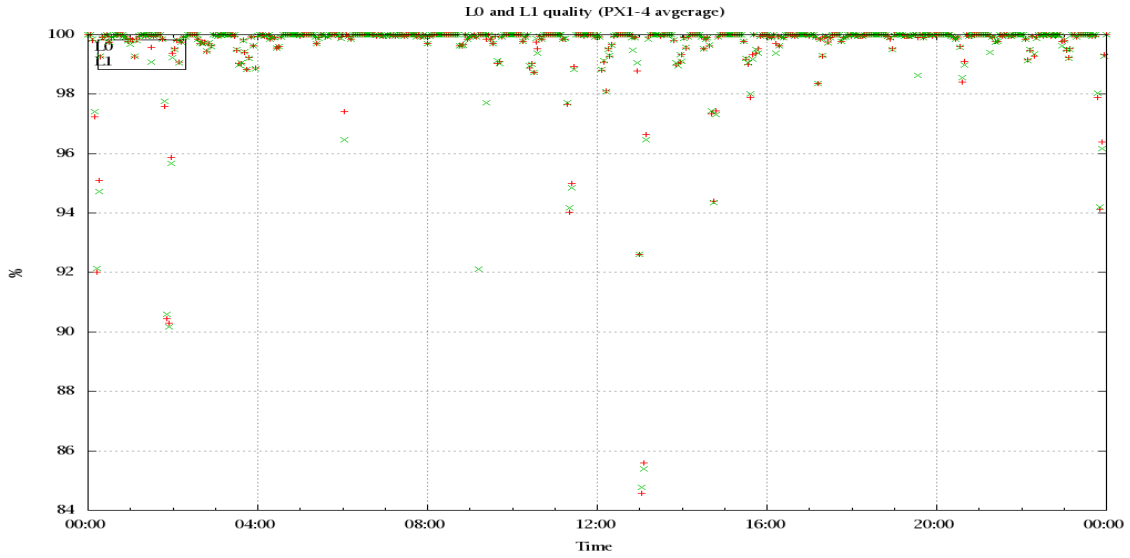

Figure 3: Level 0 and 1C overall quality

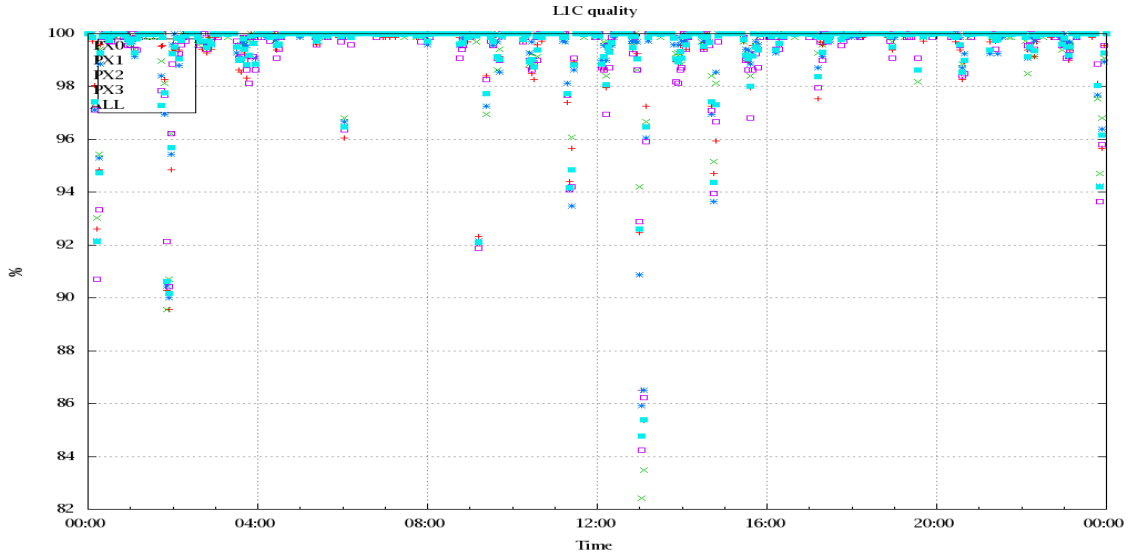

Figure 4: Level 1C quality

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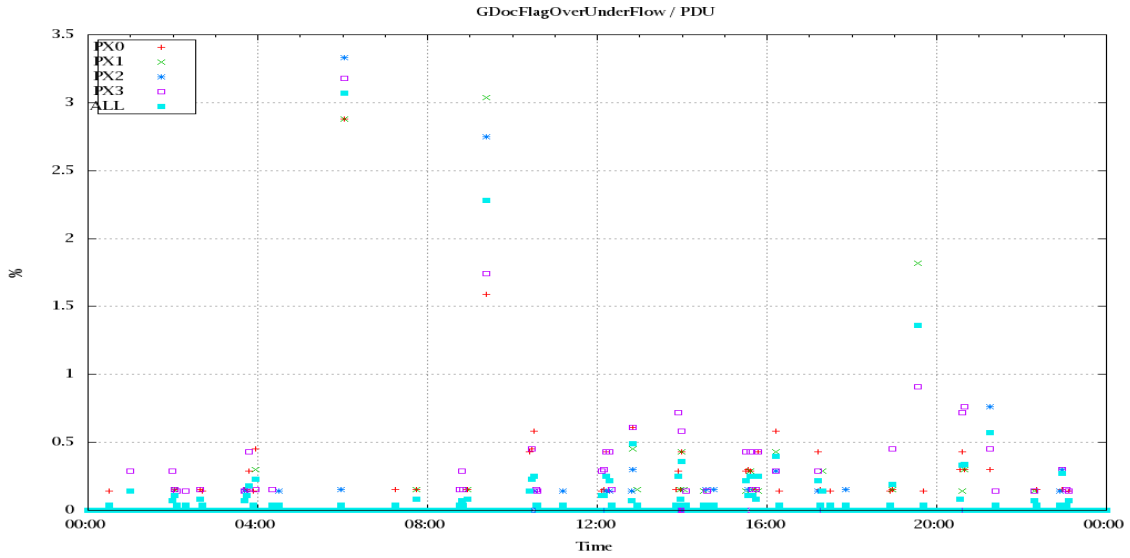

Figure 5: Timeseries of flag of Over and Under Flows

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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 indentification 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.

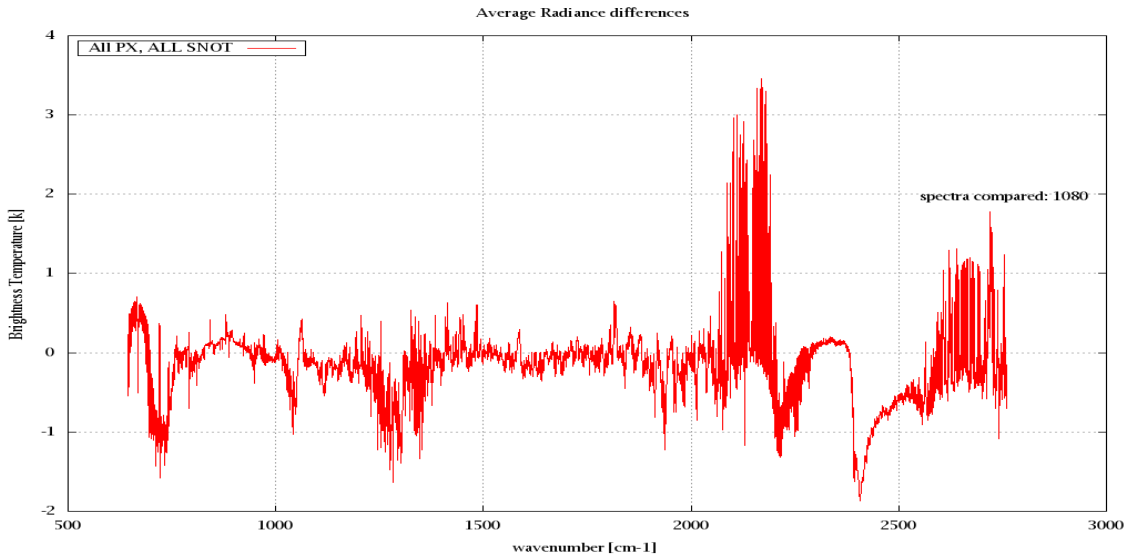

Figure 6: Average Radiance differences: OBS-CAL

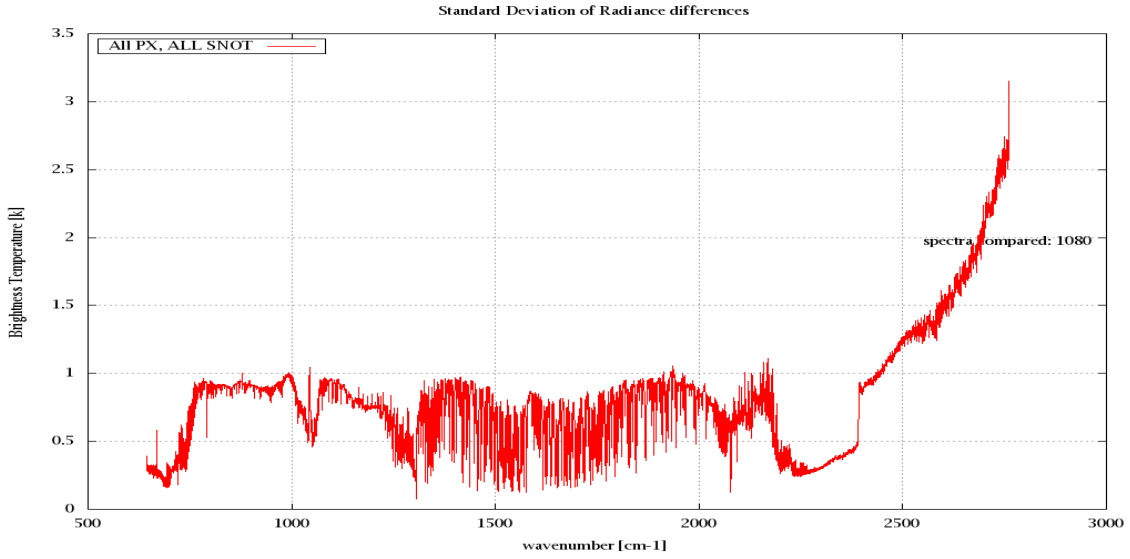

Figure 7: Standard Deviation of Radiance differences

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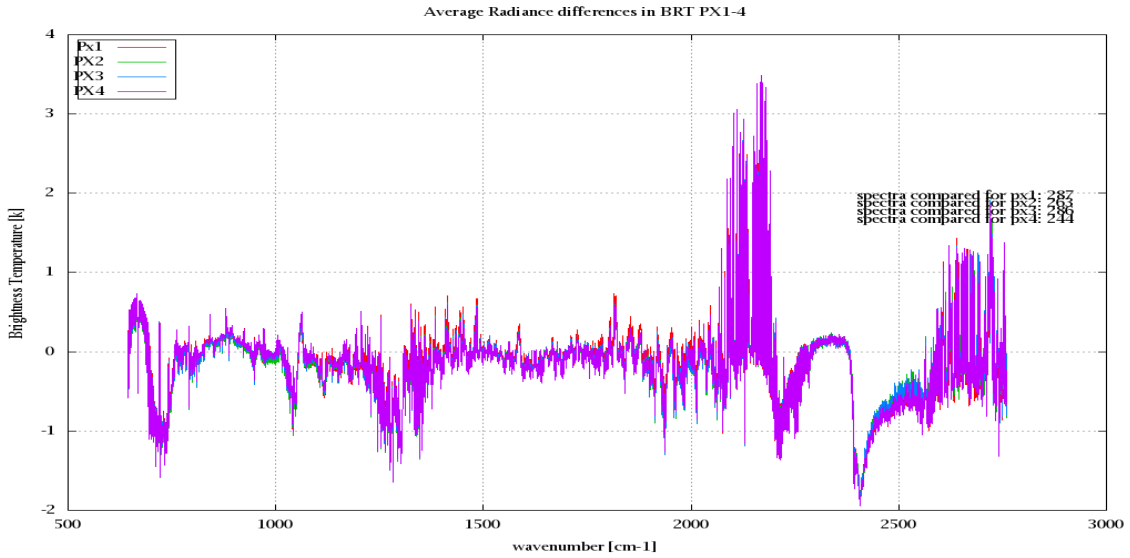

Figure 8: Average Radiance differences: OBS-CAL

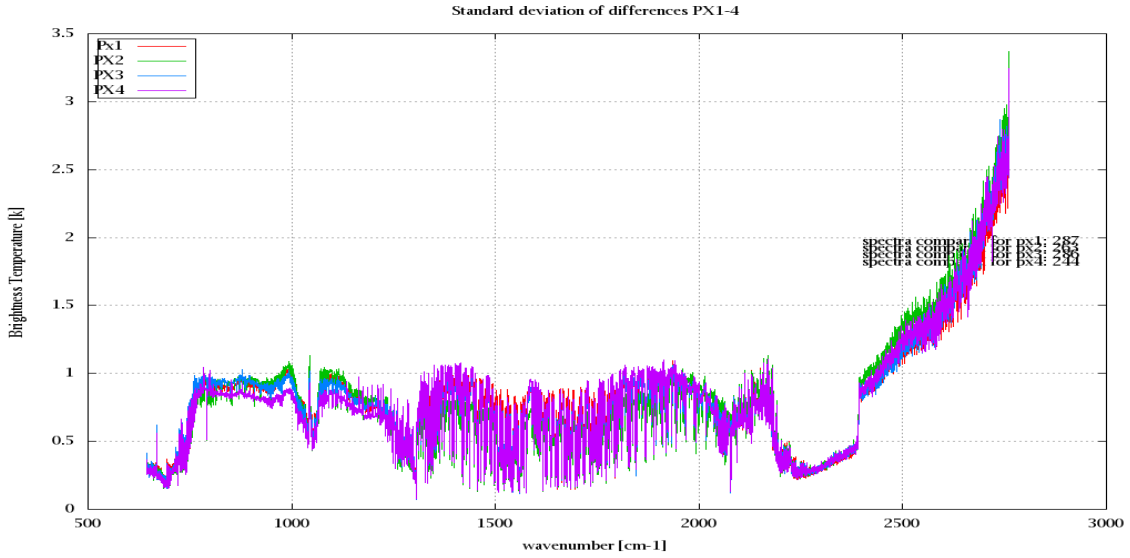

Figure 9: Standard Deviation of Radiance differences

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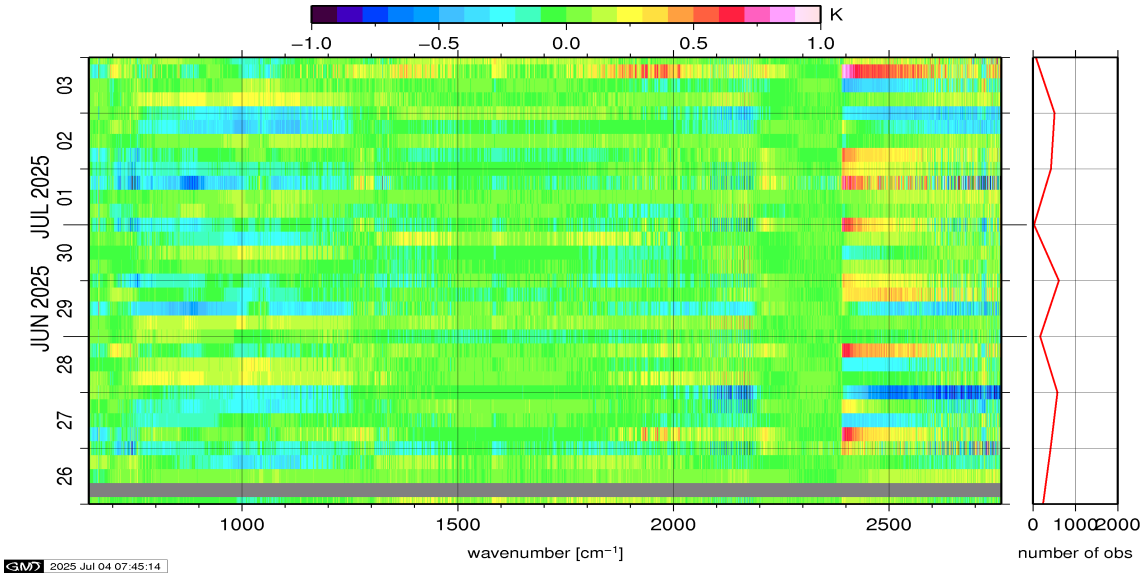

Figure 10: Radiance Anomaly in BT: All Channels

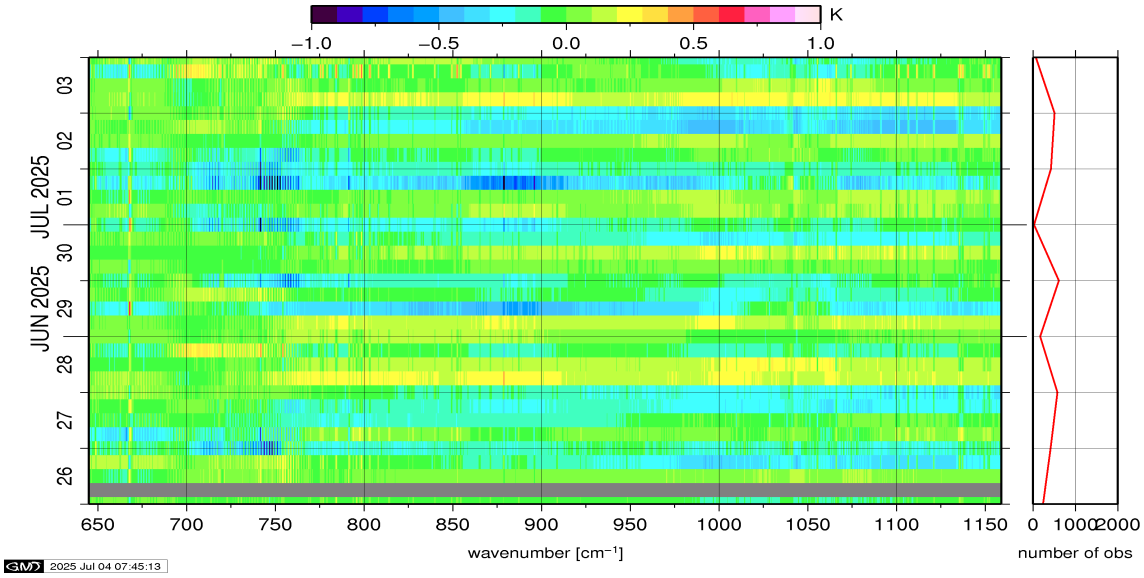

Figure 11: Radiance Anomaly in BT: IASI Band 1

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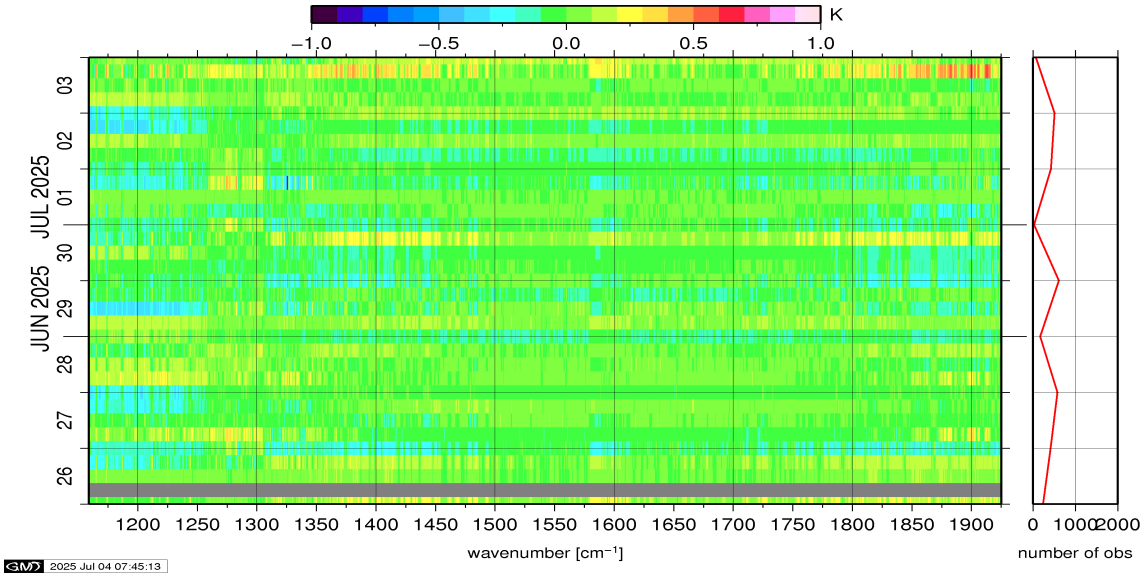

Figure 12: Radiance Anomaly in BT: IASI Band 2

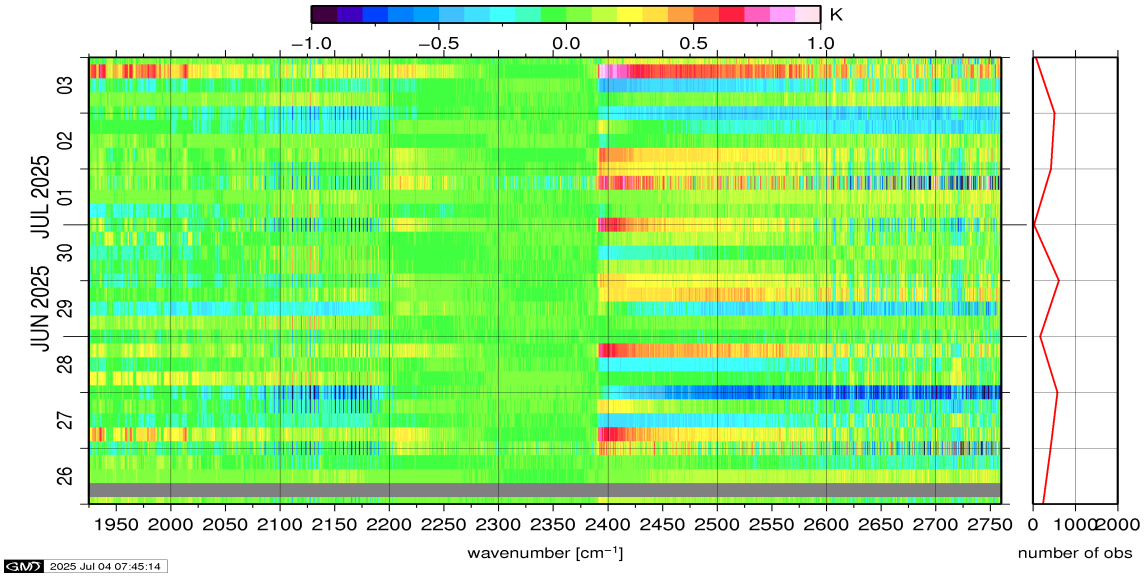

Figure 13: Radiance Anomaly in BT: IASI Band 3

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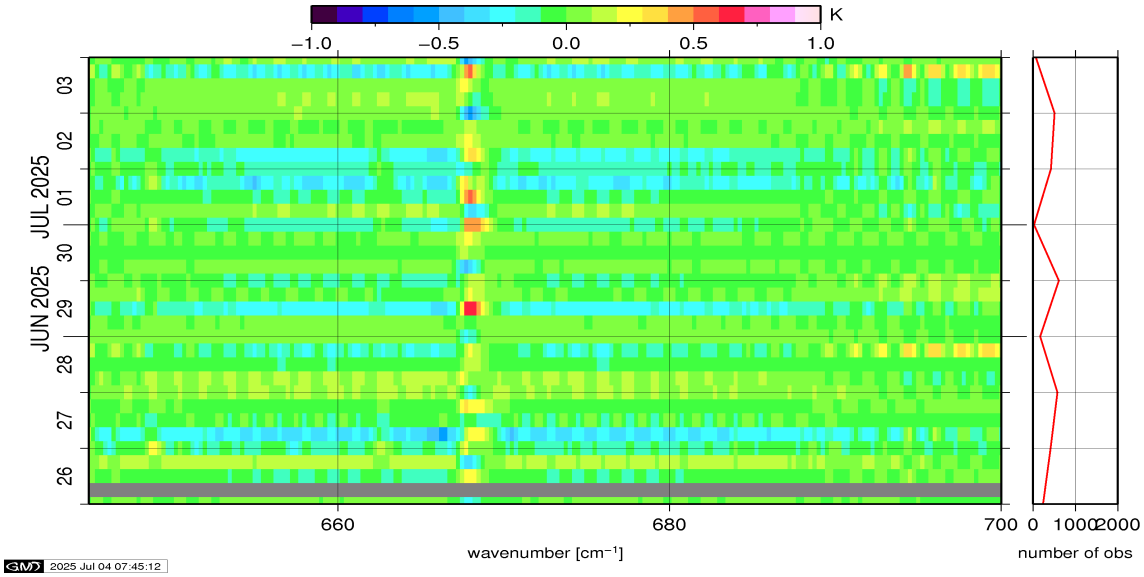

Figure 14: Radiance Anomaly in BT: CO2 14

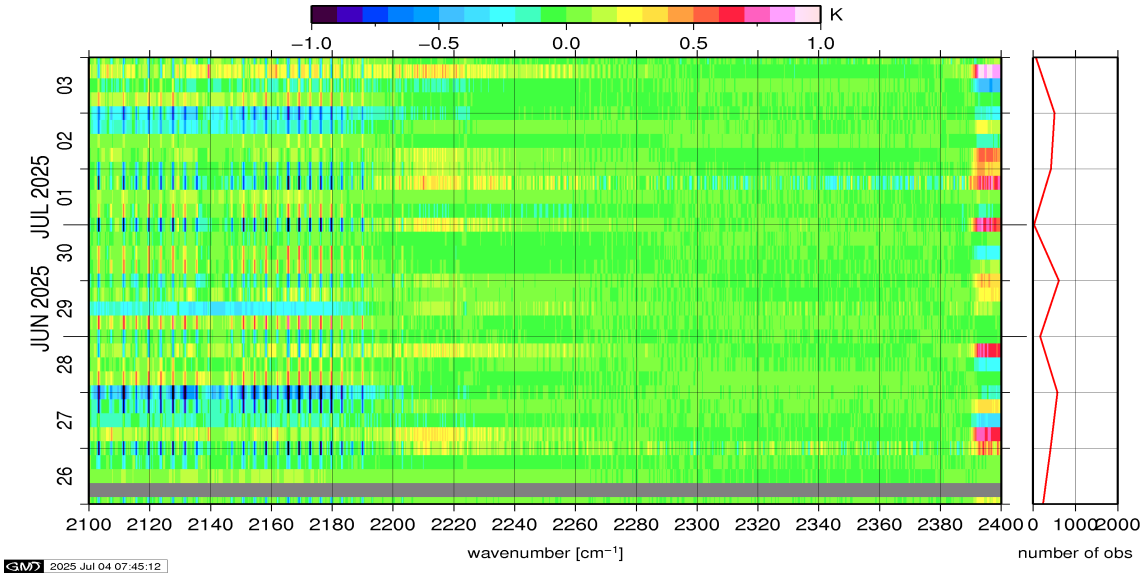

Figure 15: Radiance Anomaly in BT: CO2 4.3

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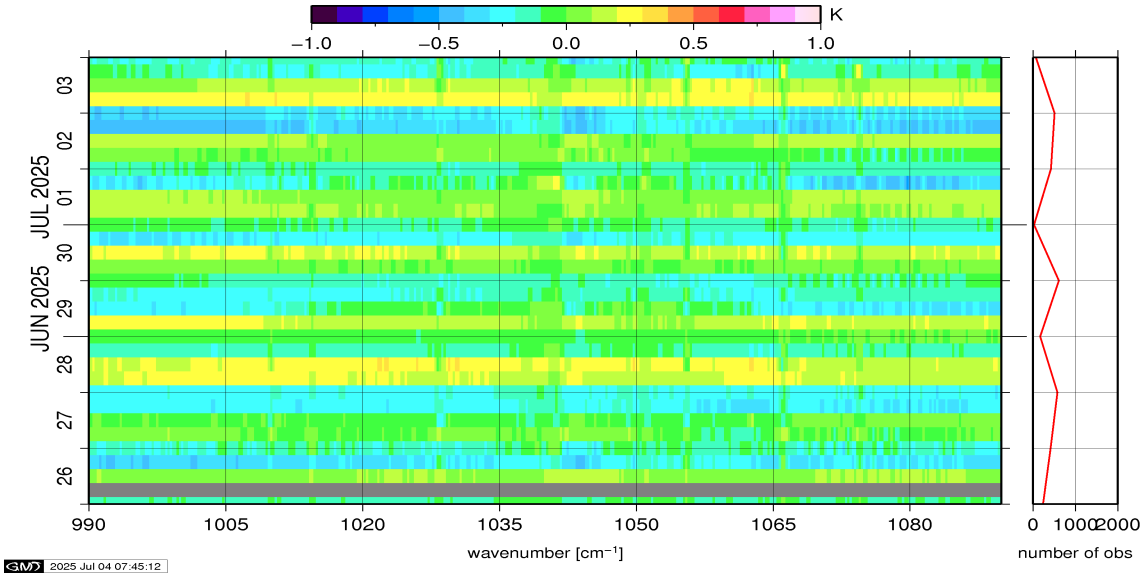

Figure 16: Radiance Anomaly in BT: O3

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