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

IASI monitoring team

27/05/2024 00:00:00 - 28/05/2024 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 27/05/2024 00:00:00 - 28/05/2024 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 27/05/2024 00:00:00 - 28/05/2024 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	455	e
L0 IASI PDUs	455	e
L1 ENG PDUs	452	e
L1 ENG distinct GEPSGranule	450	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	452	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	7177	15900	20240527061541.444	20240527065427.945
PX1 (130)	16289	9623	20240527065610.210	20240527073921.785
PX1 (130)	1311	1343	20240527081514.196	20240527081524.145
PX1 (130)	1355	1357	20240527081526.738	20240527081527.168
PX1 (130)	1362	1364	20240527081528.250	20240527081528.684
PX1 (130)	1371	1373	20240527081530.196	20240527081532.145
PX1 (130)	1378	1380	20240527081533.223	20240527081533.656
PX1 (130)	1385	1390	20240527081534.738	20240527081535.817
PX1 (130)	10425	10459	20240527085544.911	20240527085553.774
PX1 (130)	10462	10464	20240527085555.938	20240527085556.372
PX1 (130)	10485	10487	20240527085600.911	20240527085601.344
PX1 (130)	10491	10509	20240527085602.208	20240527085607.614
PX2 (135)	7177	15900	20240527061541.444	20240527065427.945
PX2 (135)	16289	9623	20240527065610.210	20240527073921.785
PX2 (135)	1311	1343	20240527081514.196	20240527081524.145
PX2 (135)	1371	1373	20240527081530.196	20240527081532.145
PX2 (135)	1378	1380	20240527081533.223	20240527081533.656

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	1385	1390	20240527081534.738	20240527081535.817
PX2 (135)	10425	10459	20240527085544.911	20240527085553.774
PX2 (135)	10471	10473	20240527085557.883	20240527085558.317
PX2 (135)	10478	10480	20240527085559.399	20240527085559.829
PX2 (135)	10491	10509	20240527085602.208	20240527085607.614
PX3 (140)	7177	15900	20240527061541.444	20240527065427.945
PX3 (140)	16289	9623	20240527065610.210	20240527073921.785
PX3 (140)	1311	1343	20240527081514.196	20240527081524.145
PX3 (140)	1357	1359	20240527081527.168	20240527081527.602
PX3 (140)	1364	1366	20240527081528.684	20240527081529.117
PX3 (140)	1371	1373	20240527081530.196	20240527081532.145
PX3 (140)	1385	1390	20240527081534.738	20240527081535.817
PX3 (140)	10425	10459	20240527085544.911	20240527085553.774
PX3 (140)	10464	10466	20240527085556.372	20240527085556.801
PX3 (140)	10471	10473	20240527085557.883	20240527085558.317
PX3 (140)	10487	10489	20240527085601.344	20240527085601.774
PX3 (140)	10491	10509	20240527085602.208	20240527085607.614
PX4 (145)	7177	15900	20240527061541.444	20240527065427.945
PX4 (145)	16289	9623	20240527065610.210	20240527073921.785
PX4 (145)	1311	1342	20240527081514.196	20240527081523.926
PX4 (145)	1357	1359	20240527081527.168	20240527081527.602
PX4 (145)	1373	1375	20240527081532.145	20240527081532.574
PX4 (145)	1385	1390	20240527081534.738	20240527081535.817
PX4 (145)	10425	10459	20240527085544.911	20240527085553.774
PX4 (145)	10473	10475	20240527085558.317	20240527085558.747
PX4 (145)	10480	10482	20240527085559.829	20240527085600.262
PX4 (145)	10487	10489	20240527085601.344	20240527085601.774
PX4 (145)	10491	10509	20240527085602.208	20240527085607.614
IMG (150)	2956	12840	20240527061541.225	20240527065426.644
IMG (150)	13281	7911	20240527065610.210	20240527073921.785
IMG (150)	675	714	20240527081514.196	20240527081523.926
IMG (150)	724	726	20240527081526.090	20240527081526.520
IMG (150)	731	733	20240527081527.602	20240527081528.035
IMG (150)	738	740	20240527081529.117	20240527081529.547
IMG (150)	740	742	20240527081529.547	20240527081529.981
IMG (150)	749	751	20240527081532.145	20240527081532.574
IMG (150)	751	753	20240527081532.574	20240527081533.008
IMG (150)	758	760	20240527081534.090	20240527081534.520
IMG (150)	760	765	20240527081534.520	20240527081535.602
IMG (150)	11005	11042	20240527085544.911	20240527085553.559
IMG (150)	11054	11056	20240527085556.801	20240527085557.235
IMG (150)	11056	11058	20240527085557.235	20240527085557.669
IMG (150)	11061	11063	20240527085558.317	20240527085558.747
IMG (150)	11063	11065	20240527085558.747	20240527085559.180
IMG (150)	11070	11072	20240527085600.262	20240527085600.696
IMG (150)	11077	11079	20240527085601.774	20240527085602.208
IMG (150)	11079	11101	20240527085602.208	20240527085607.614
VER (160)	16382	0	20240527045730.212	20240527045738.212
VER (160)	3	16383	20240527045738.212	20240527045738.212
VER (160)	-1	4	20240527045738.212	20240527045746.212
VER (160)	2928	4382	20240527061538.202	20240527061541.444
VER (160)	4445	6064	20240527065610.210	20240527073922.218
VER (160)	7411	7413	20240527081514.196	20240527081526.305

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APID	Seq from	Seq to	Time from	Time to
VER (160)	7413	7424	20240527081526.305	20240527081538.196
VER (160)	8928	8934	20240527085538.208	20240527085554.208
VER (160)	8938	8944	20240527085554.208	20240527085610.208
VER (160)	16379	0	20240527193114.138	20240527193122.138
VER (160)	0	16380	20240527193122.138	20240527193122.138
VER (160)	-1	1	20240527193122.138	20240527193130.134
AUX (180)	7136	7427	20240527061538.632	20240527065426.644
AUX (180)	7439	7764	20240527065602.644	20240527073922.648
AUX (180)	8033	8035	20240527081526.305	20240527081530.629
AUX (180)	8336	8338	20240527085538.641	20240527085554.641
AUX (180)	8338	8340	20240527085554.641	20240527085610.641

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
27/05/2024 00:00:12	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	455	e
L1 ENG PDUs	452	e
L1 ENG distinct GEPSGranule	450	a
GQisFlagQual set (PX1)	99.56 %	-
GQisFlagQual set (PX2)	99.62 %	-
GQisFlagQual set (PX3)	99.61 %	-
GQisFlagQual set (PX4)	99.54 %	-
GQisFlagQual set (all)	99.58 %	-

Table 4: Quality flags

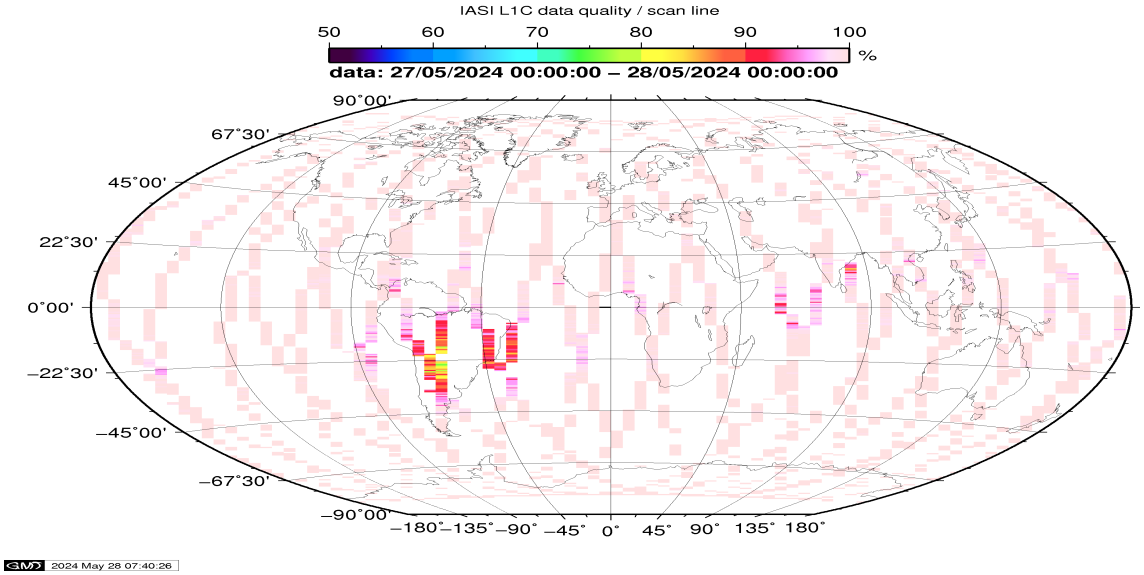

Figure 1: L1C data quality

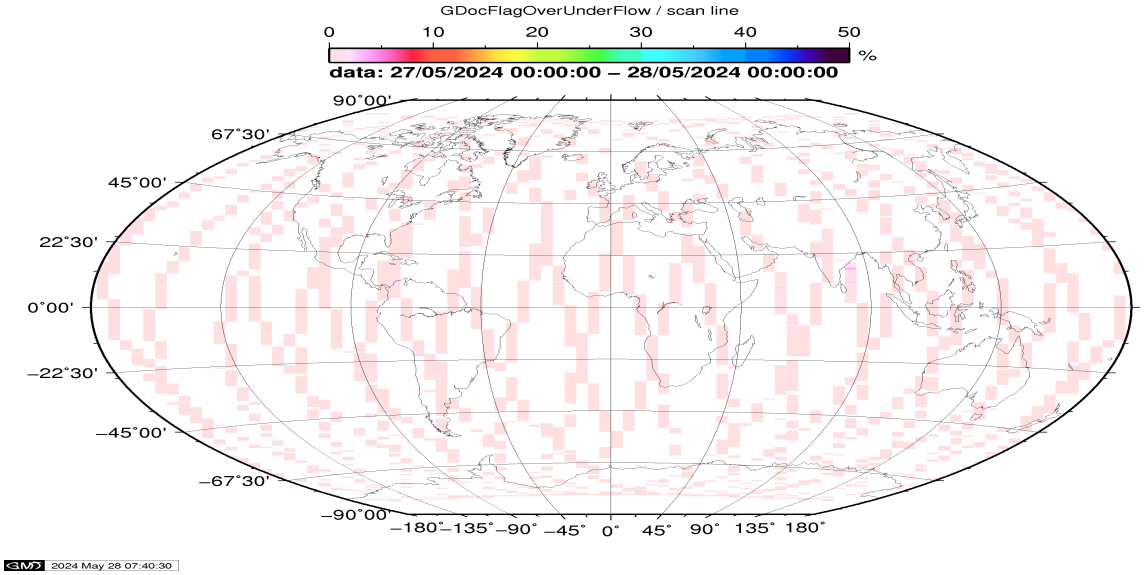

Figure 2: Flag of Over and Under Flows

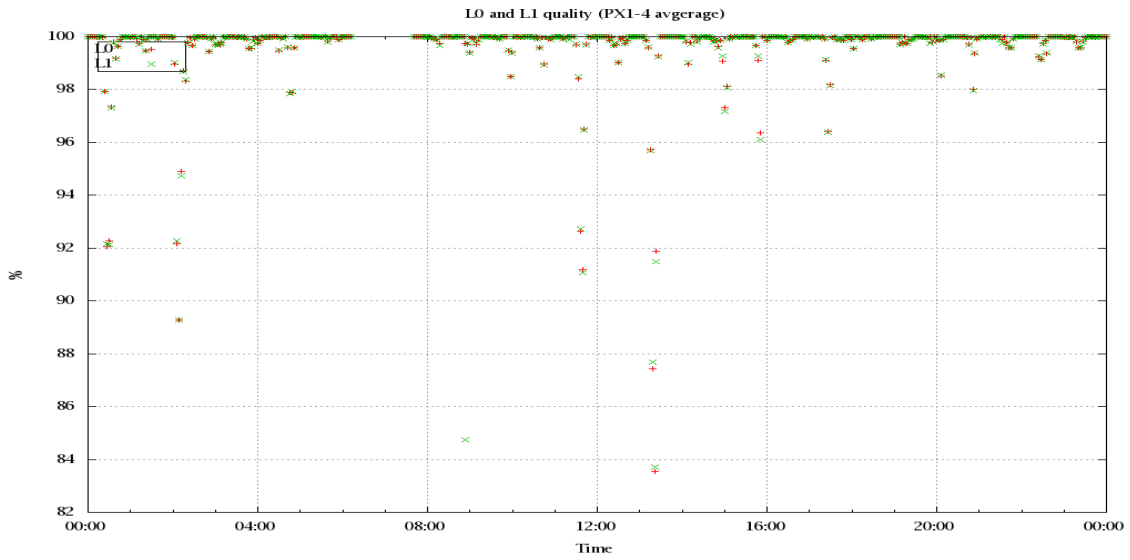

Figure 3: Level 0 and 1C overall quality

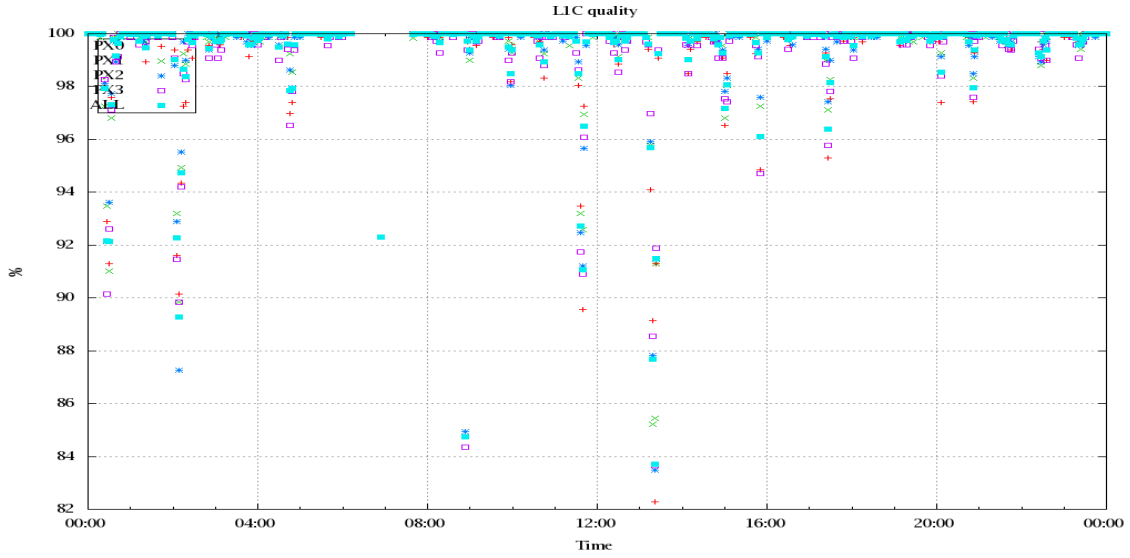

Figure 4: Level 1C quality

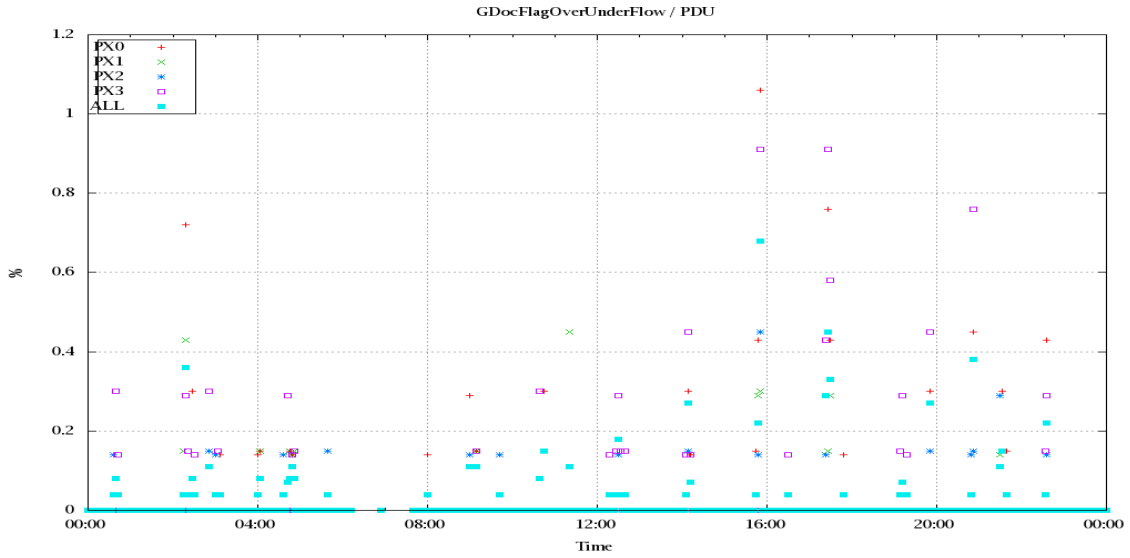

Figure 5: Timeseries of flag of Over and Under Flows

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 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.

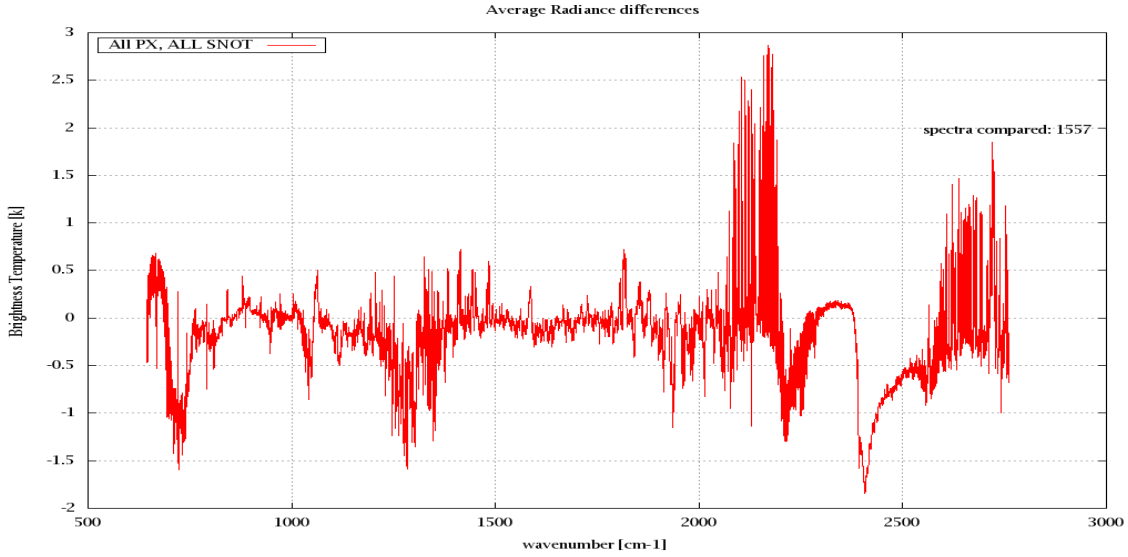

Figure 6: Average Radiance differences: OBS-CAL

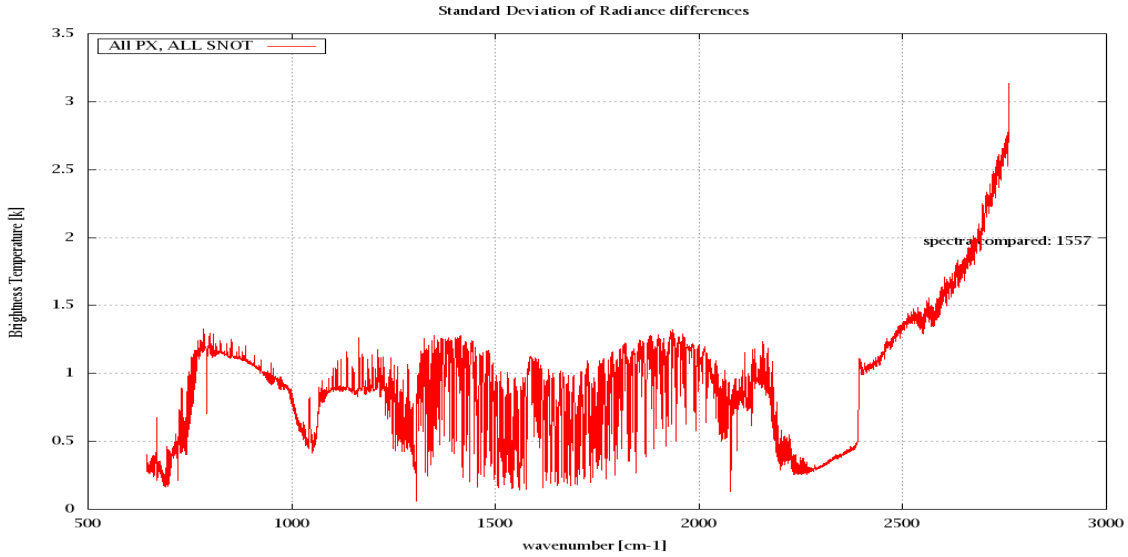

Figure 7: Standard Deviation of Radiance differences

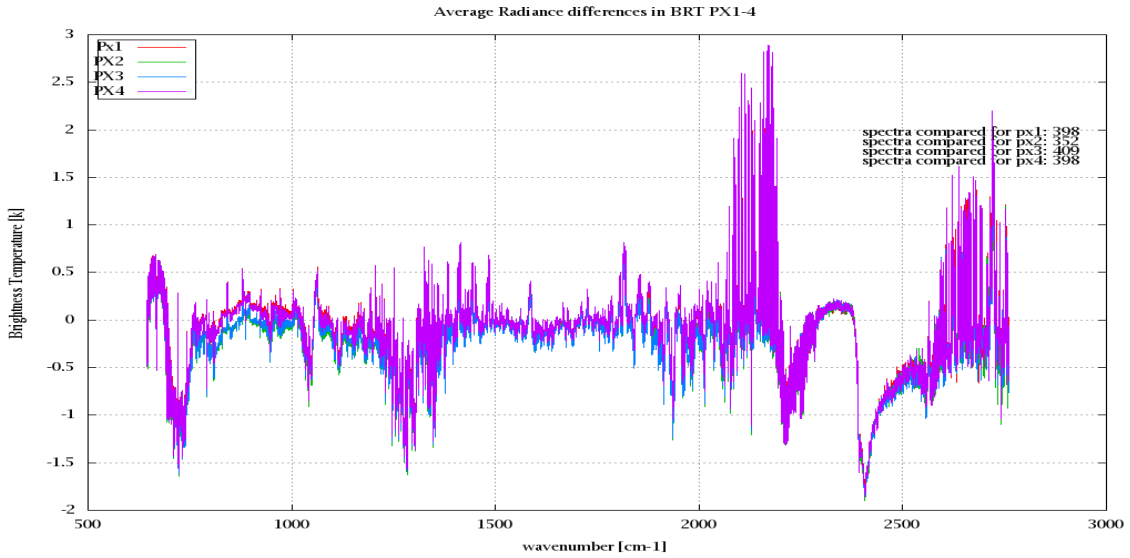

Figure 8: Average Radiance differences: OBS-CAL

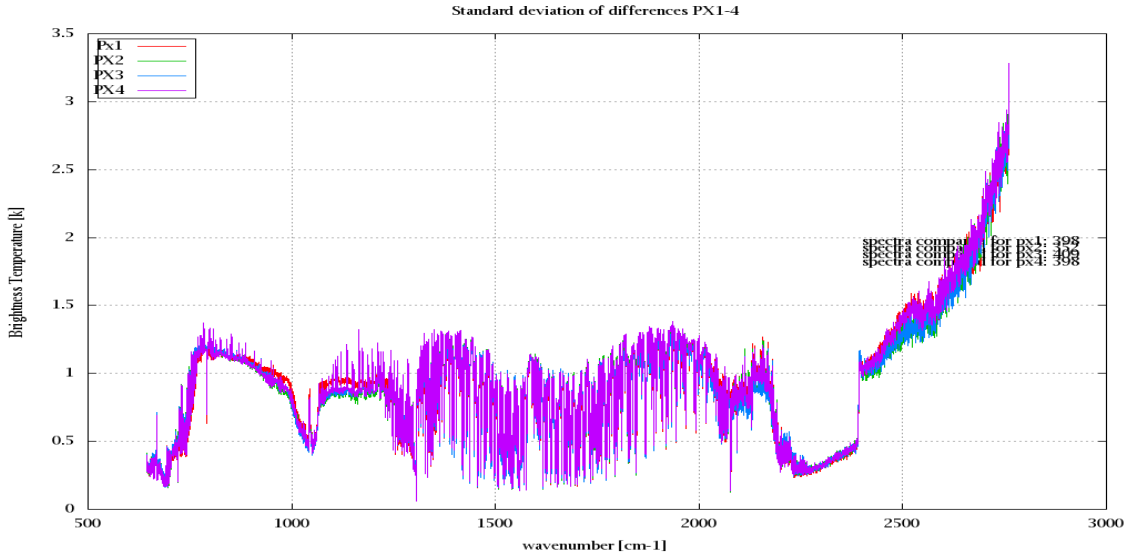

Figure 9: Standard Deviation of Radiance differences

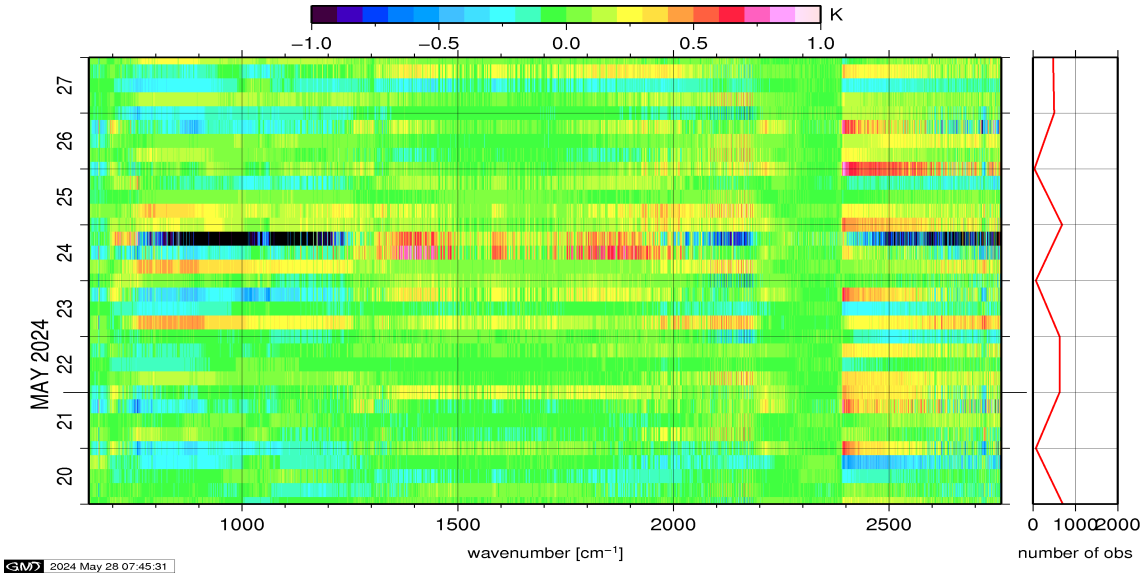

Figure 10: Radiance Anomaly in BT: All Channels

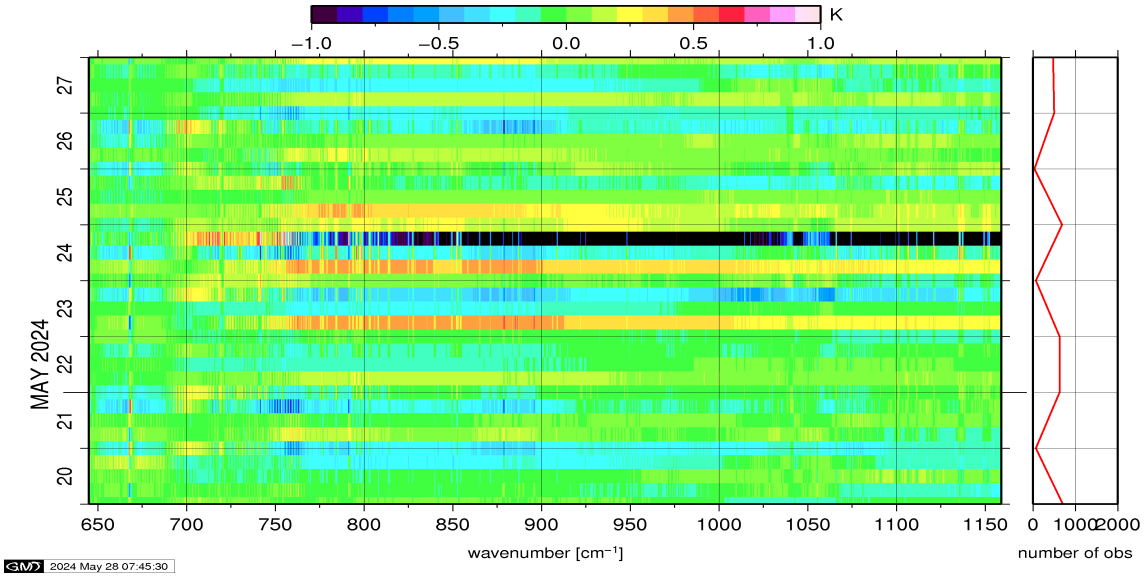

Figure 11: Radiance Anomaly in BT: IASI Band 1

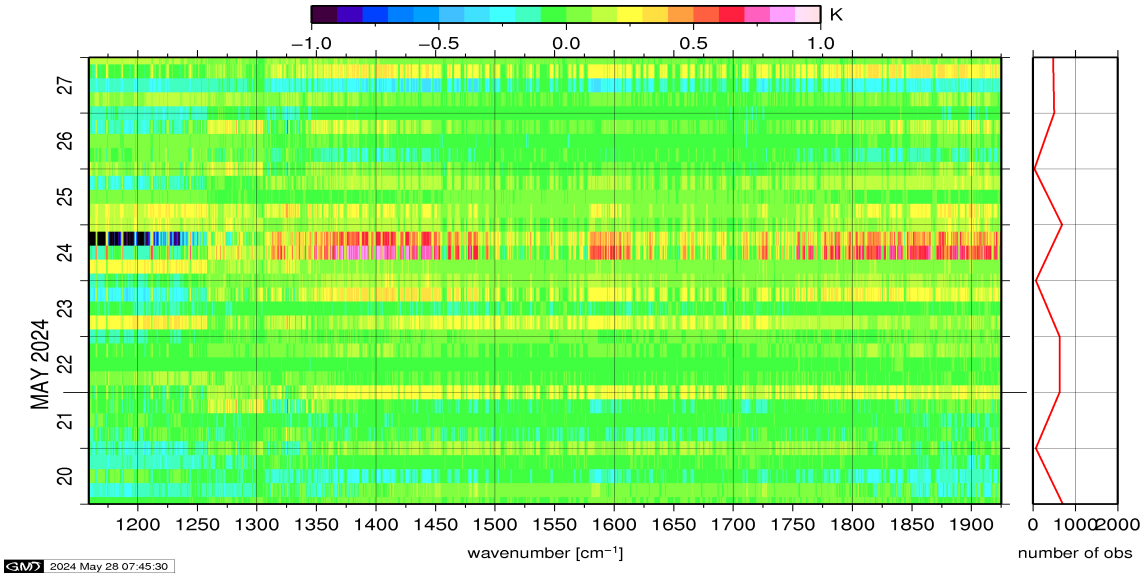

Figure 12: Radiance Anomaly in BT: IASI Band 2

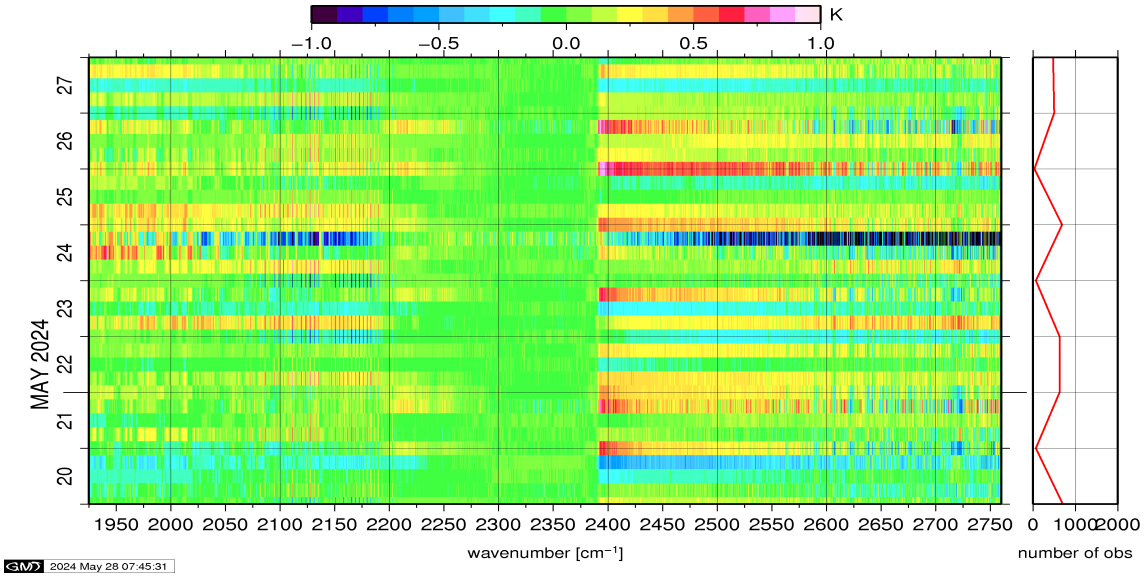

Figure 13: Radiance Anomaly in BT: IASI Band 3

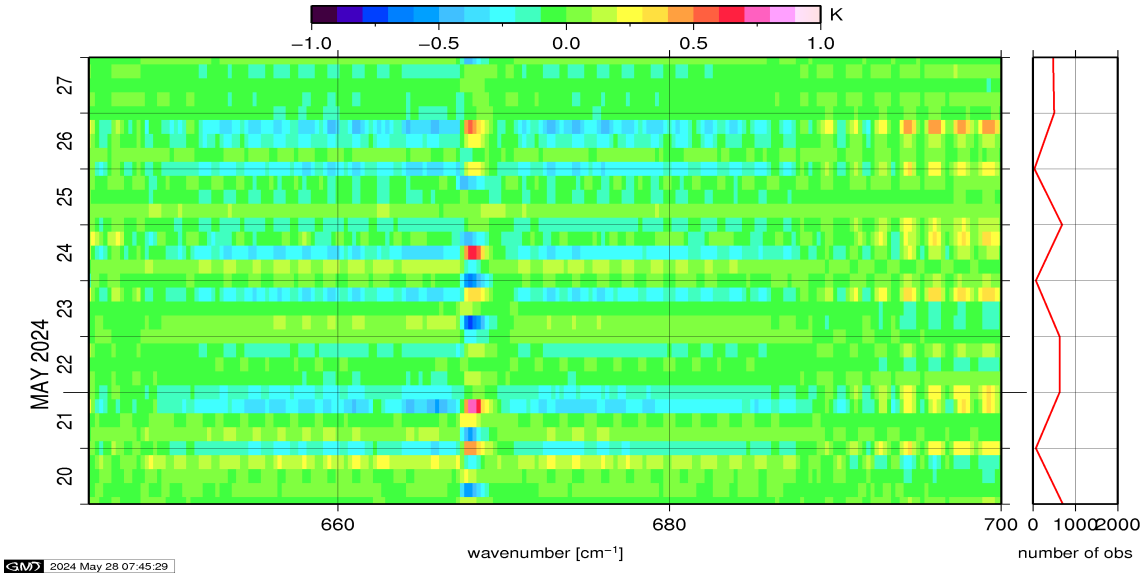

Figure 14: Radiance Anomaly in BT: CO2 14

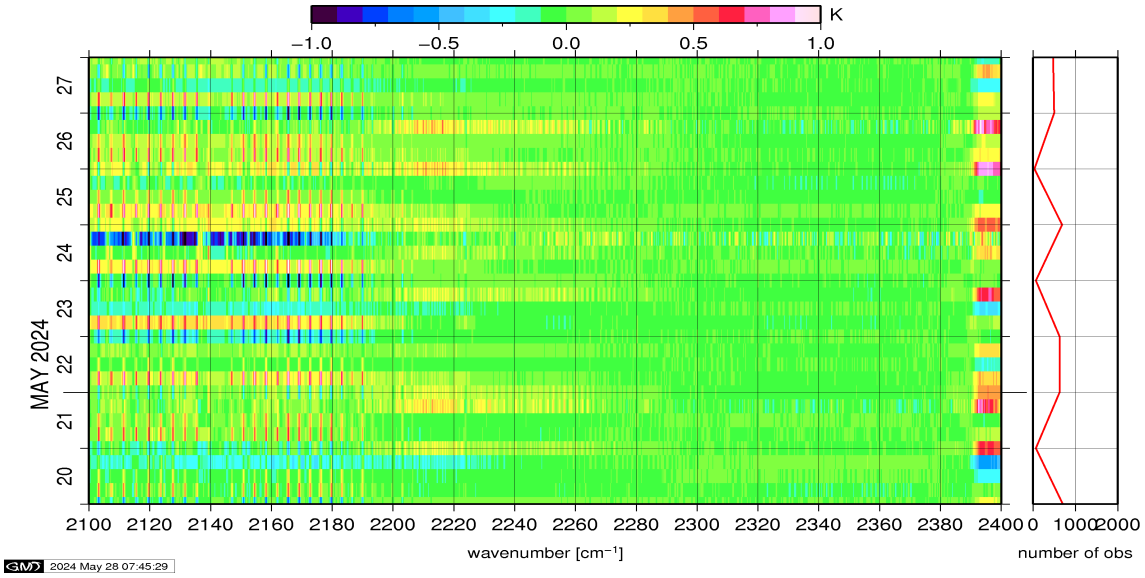

Figure 15: Radiance Anomaly in BT: CO2 4.3

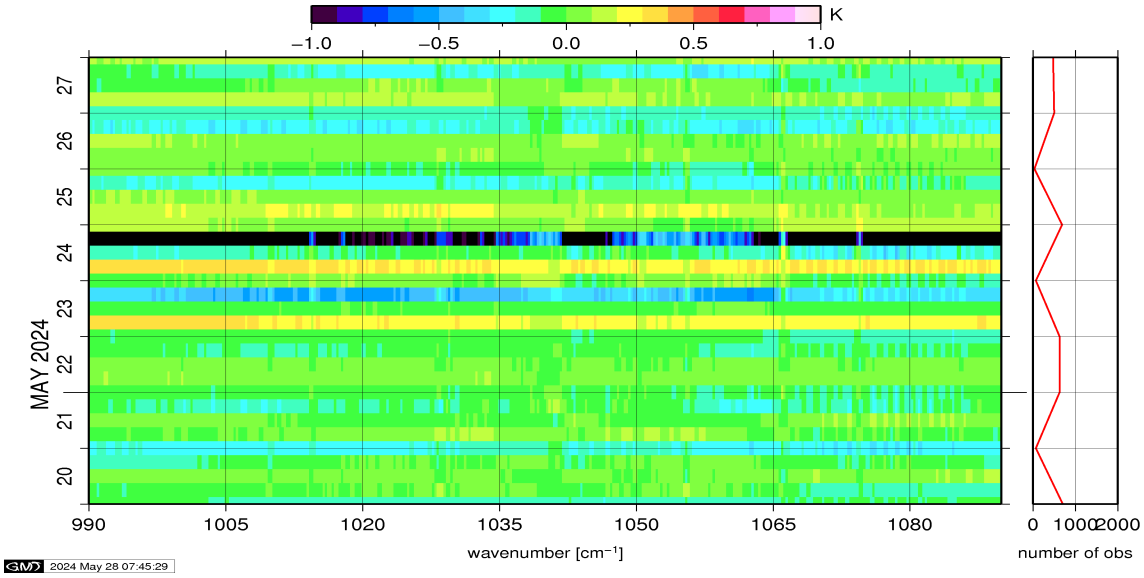

Figure 16: Radiance Anomaly in BT: O3