

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

IASI monitoring team

23/08/2022 00:00:00 - 24/08/2022 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 23/08/2022 00:00:00 - 24/08/2022 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 23/08/2022 00:00:00 - 24/08/2022 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)	9013	9015	20220823063750.637	20220823063751.071
PX1 (130)	9040	9042	20220823063757.989	20220823063758.423
PX1 (130)	9086	9088	20220823063809.446	20220823063809.880
PX1 (130)	9114	9116	20220823063817.016	20220823063817.446
PX1 (130)	9137	9139	20220823063823.501	20220823063823.934
PX1 (130)	9142	9144	20220823063824.583	20220823063825.016
PX1 (130)	9147	9149	20220823063825.665	20220823063826.094
PX1 (130)	9165	9167	20220823063831.067	20220823063831.501
PX1 (130)	9168	9170	20220823063831.719	20220823063832.149
PX1 (130)	9170	9185	20220823063832.149	20220823063836.907
PX1 (130)	9192	9194	20220823063838.419	20220823063838.852
PX1 (130)	9210	9213	20220823063842.313	20220823063842.962
PX1 (130)	9214	9232	20220823063843.176	20220823063848.583
PX1 (130)	9243	9249	20220823063850.962	20220823063853.770
PX1 (130)	9249	9258	20220823063853.770	20220823063855.715
PX2 (135)	9013	9015	20220823063750.637	20220823063751.071
PX2 (135)	9050	9052	20220823063800.149	20220823063800.583
PX2 (135)	9084	9086	20220823063809.016	20220823063809.446
PX2 (135)	9096	9098	20220823063813.122	20220823063813.555
Continued on next page				

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	9101	9103	20220823063814.204	20220823063814.637
PX2 (135)	9138	9141	20220823063823.719	20220823063824.368
PX2 (135)	9143	9145	20220823063824.798	20220823063825.231
PX2 (135)	9169	9171	20220823063831.934	20220823063832.368
PX2 (135)	9174	9178	20220823063833.016	20220823063833.880
PX2 (135)	9178	9180	20220823063833.880	20220823063834.313
PX2 (135)	9180	9186	20220823063834.313	20220823063837.122
PX2 (135)	9188	9190	20220823063837.555	20220823063837.989
PX2 (135)	9207	9209	20220823063841.665	20220823063842.094
PX2 (135)	9210	9212	20220823063842.313	20220823063842.743
PX2 (135)	9212	9214	20220823063842.743	20220823063843.176
PX2 (135)	9214	9234	20220823063843.176	20220823063849.016
PX2 (135)	9242	9244	20220823063850.743	20220823063851.176
PX2 (135)	9244	9247	20220823063851.176	20220823063853.340
PX2 (135)	9247	9251	20220823063853.340	20220823063854.204
PX2 (135)	9251	9254	20220823063854.204	20220823063854.852
PX2 (135)	9256	9258	20220823063855.286	20220823063855.715
PX3 (140)	9040	9042	20220823063757.989	20220823063758.423
PX3 (140)	9063	9065	20220823063802.962	20220823063804.907
PX3 (140)	9098	9100	20220823063813.555	20220823063813.989
PX3 (140)	9133	9135	20220823063822.637	20220823063823.071
PX3 (140)	9139	9141	20220823063823.934	20220823063824.368
PX3 (140)	9163	9165	20220823063830.637	20220823063831.067
PX3 (140)	9167	9169	20220823063831.501	20220823063831.934
PX3 (140)	9174	9186	20220823063833.016	20220823063837.122
PX3 (140)	9193	9195	20220823063838.637	20220823063839.067
PX3 (140)	9207	9210	20220823063841.665	20220823063842.313
PX3 (140)	9212	9214	20220823063842.743	20220823063843.176
PX3 (140)	9214	9231	20220823063843.176	20220823063848.364
PX3 (140)	9232	9235	20220823063848.583	20220823063849.231
PX3 (140)	9243	9245	20220823063850.962	20220823063852.907
PX3 (140)	9245	9254	20220823063852.907	20220823063854.852
PX3 (140)	9255	9258	20220823063855.067	20220823063855.715
PX3 (140)	9259	9261	20220823063855.934	20220823063856.364
PX4 (145)	9021	9023	20220823063752.368	20220823063752.801
PX4 (145)	9083	9085	20220823063808.798	20220823063809.231
PX4 (145)	9094	9096	20220823063811.176	20220823063813.122
PX4 (145)	9137	9139	20220823063823.501	20220823063823.934
PX4 (145)	9139	9141	20220823063823.934	20220823063824.368
PX4 (145)	9162	9164	20220823063830.419	20220823063830.852
PX4 (145)	9166	9170	20220823063831.286	20220823063832.149
PX4 (145)	9170	9173	20220823063832.149	20220823063832.798
PX4 (145)	9173	9184	20220823063832.798	20220823063835.176
PX4 (145)	9186	9188	20220823063837.122	20220823063837.555
PX4 (145)	9208	9210	20220823063841.880	20220823063842.313
PX4 (145)	9210	9212	20220823063842.313	20220823063842.743
PX4 (145)	9214	9225	20220823063843.176	20220823063847.067
PX4 (145)	9225	9233	20220823063847.067	20220823063848.798
PX4 (145)	9238	9240	20220823063849.880	20220823063850.313
PX4 (145)	9244	9250	20220823063851.176	20220823063853.989
PX4 (145)	9250	9253	20220823063853.989	20220823063854.637
PX4 (145)	9254	9256	20220823063854.852	20220823063855.286
PX4 (145)	9256	9258	20220823063855.286	20220823063855.715

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	9260	9262	20220823063856.149	20220823063856.583
IMG (150)	4261	4263	20220823063807.286	20220823063807.719
IMG (150)	4281	4283	20220823063811.825	20220823063812.473
IMG (150)	4336	4338	20220823063824.798	20220823063825.231
IMG (150)	4347	4350	20220823063827.176	20220823063828.258
IMG (150)	4356	4358	20220823063829.770	20220823063830.204
IMG (150)	4364	4366	20220823063831.501	20220823063831.934
IMG (150)	4366	4369	20220823063831.934	20220823063832.583
IMG (150)	4369	4374	20220823063832.583	20220823063833.665
IMG (150)	4375	4384	20220823063833.880	20220823063836.258
IMG (150)	4386	4389	20220823063836.907	20220823063837.555
IMG (150)	4414	4434	20220823063842.962	20220823063847.934
IMG (150)	4434	4436	20220823063847.934	20220823063848.364
IMG (150)	4436	4440	20220823063848.364	20220823063849.231
IMG (150)	4440	4442	20220823063849.231	20220823063849.665
IMG (150)	4446	4448	20220823063850.528	20220823063850.962
IMG (150)	4449	4451	20220823063851.176	20220823063851.825
IMG (150)	4451	4454	20220823063851.825	20220823063852.907
IMG (150)	4454	4456	20220823063852.907	20220823063853.340
IMG (150)	4456	4461	20220823063853.340	20220823063854.419
IMG (150)	4461	4463	20220823063854.419	20220823063854.852
IMG (150)	4463	4465	20220823063854.852	20220823063855.286
IMG (150)	4465	4467	20220823063855.286	20220823063855.715
IMG (150)	4469	4471	20220823063856.149	20220823063856.583
VER (160)	16380	0	20220823001027.231	20220823001035.231
VER (160)	1	16381	20220823001035.231	20220823001035.231
VER (160)	-1	2	20220823001035.231	20220823001043.231
VER (160)	14519	14521	20220823063747.177	20220823063747.177
VER (160)	14532	14536	20220823063811.176	20220823063811.176
VER (160)	14543	14545	20220823063827.176	20220823063827.176
VER (160)	14546	14551	20220823063827.176	20220823063835.176
VER (160)	14551	14559	20220823063835.176	20220823063851.176
VER (160)	14559	14562	20220823063851.176	20220823063859.176
VER (160)	16381	0	20220823072723.176	20220823072731.176
VER (160)	2	16382	20220823072731.176	20220823072731.176
VER (160)	-1	3	20220823072731.176	20220823072739.176
VER (160)	16382	0	20220823144419.153	20220823144427.153
VER (160)	3	16383	20220823144427.153	20220823144427.153
VER (160)	-1	4	20220823144427.153	20220823144435.153
AUX (180)	2895	2898	20220823063835.610	20220823063859.610

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
23/08/2022 00:00:00	-	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)	99.53 %	-
GQisFlagQual set (PX2)	99.59 %	-
GQisFlagQual set (PX3)	99.57 %	-
GQisFlagQual set (PX4)	99.52 %	-
GQisFlagQual set (all)	99.55 %	-

Table 4: Quality flags

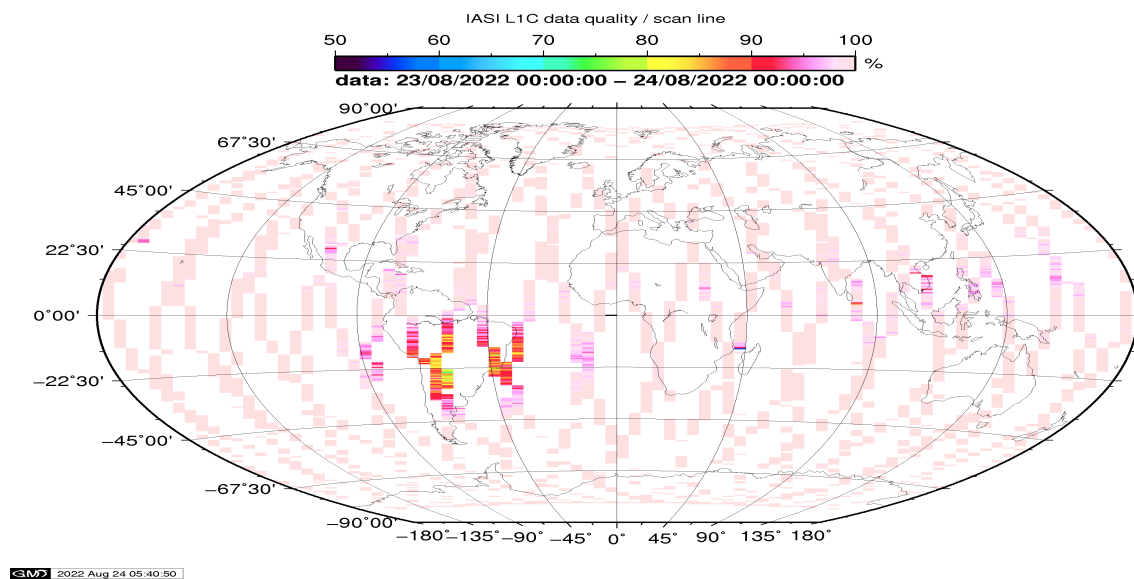


Figure 1: L1C data quality

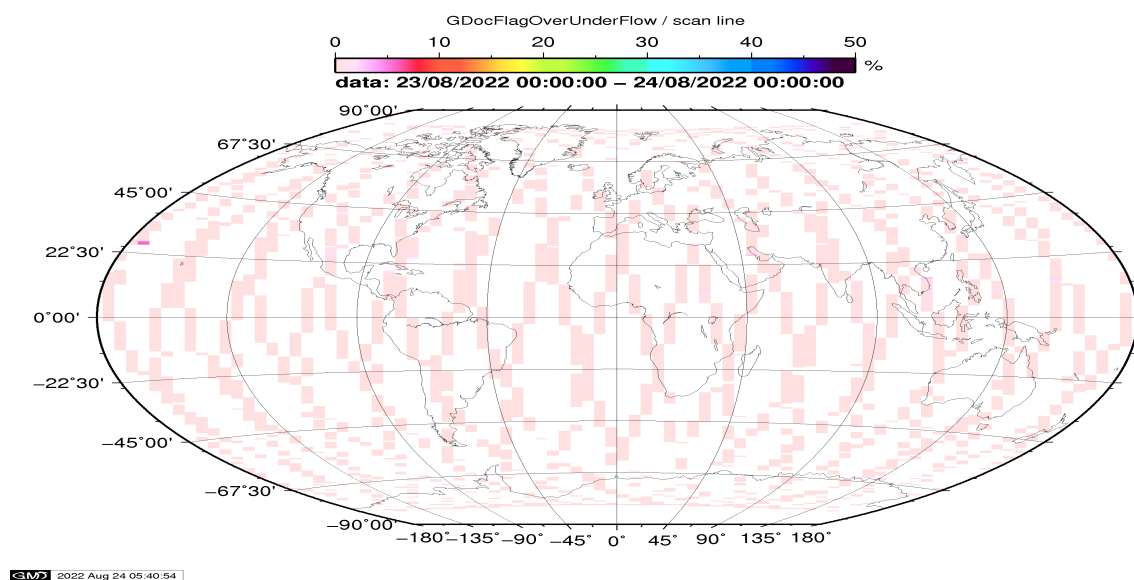


Figure 2: Flag of Over and Under Flows

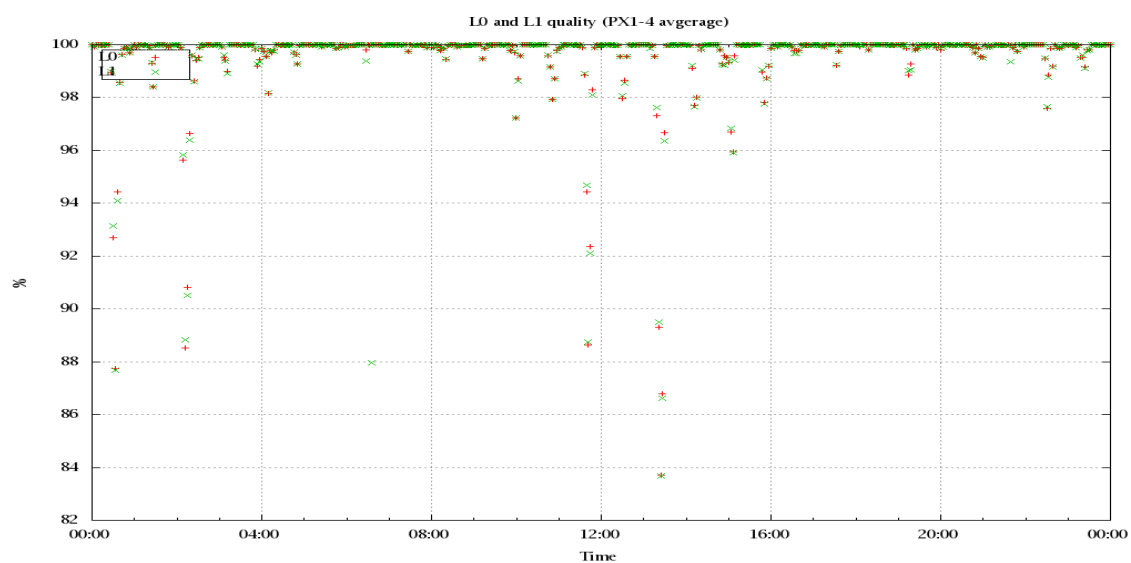


Figure 3: Level 0 and 1C overall quality

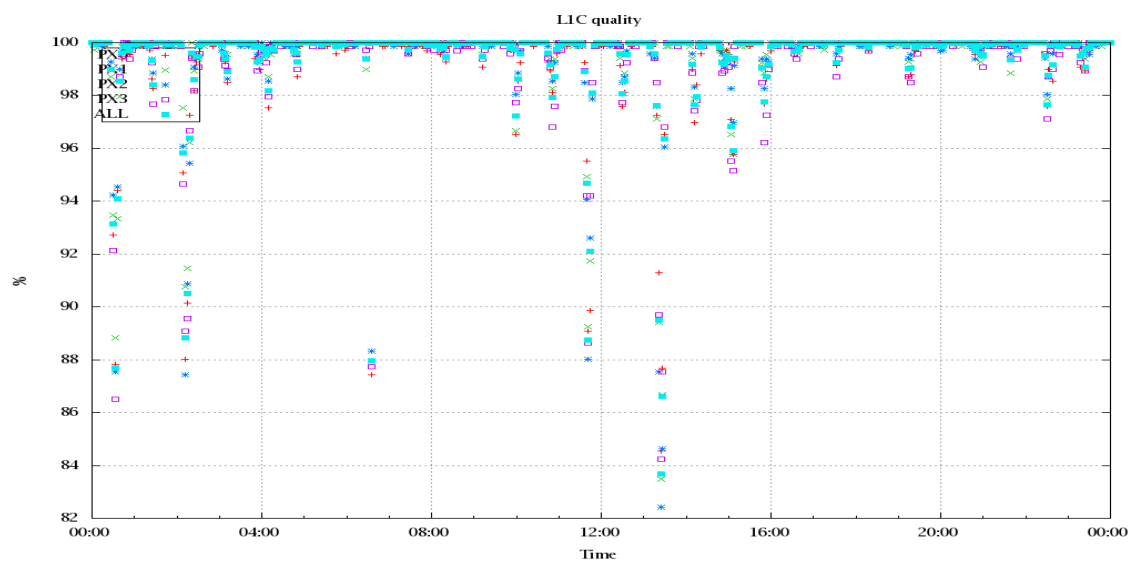


Figure 4: Level 1C quality

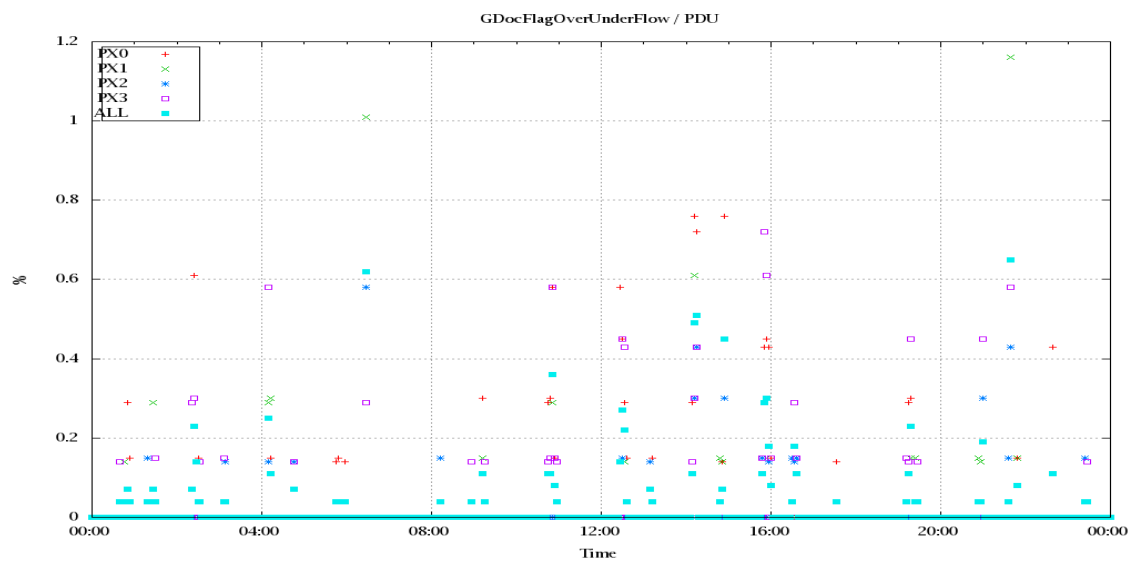


Figure 5: Timeseries of flag of Over and Under Flows

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.

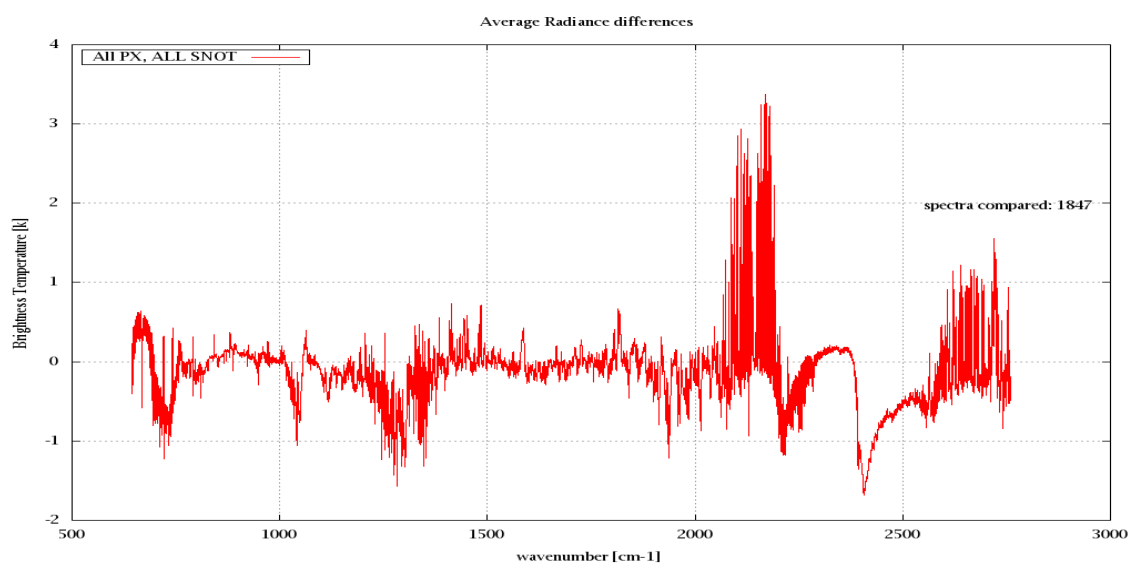


Figure 6: Average Radiance differences: OBS-CAL

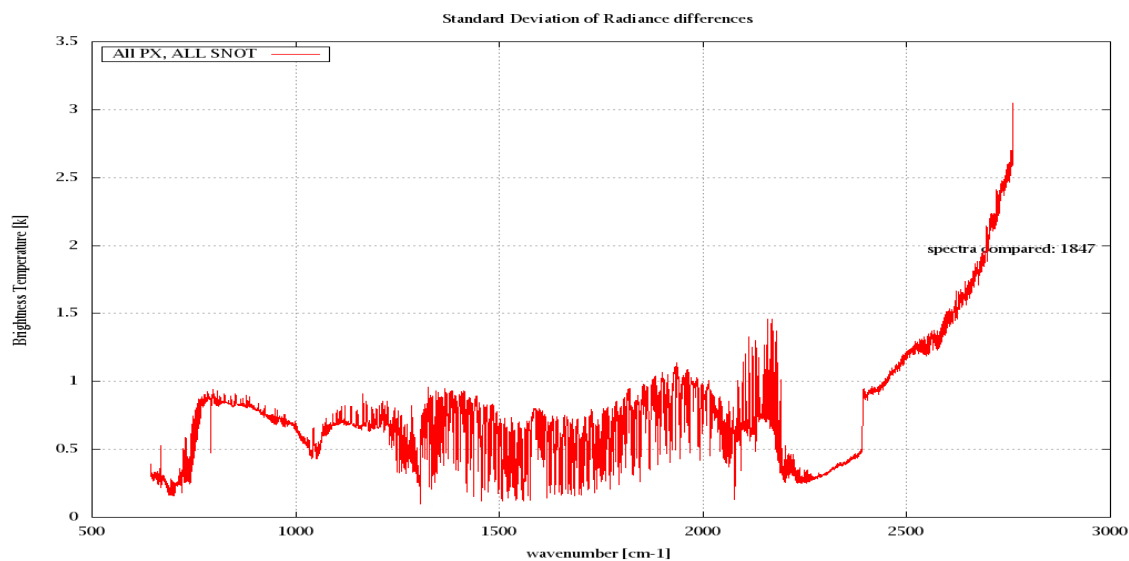


Figure 7: Standard Deviation of Radiance differences

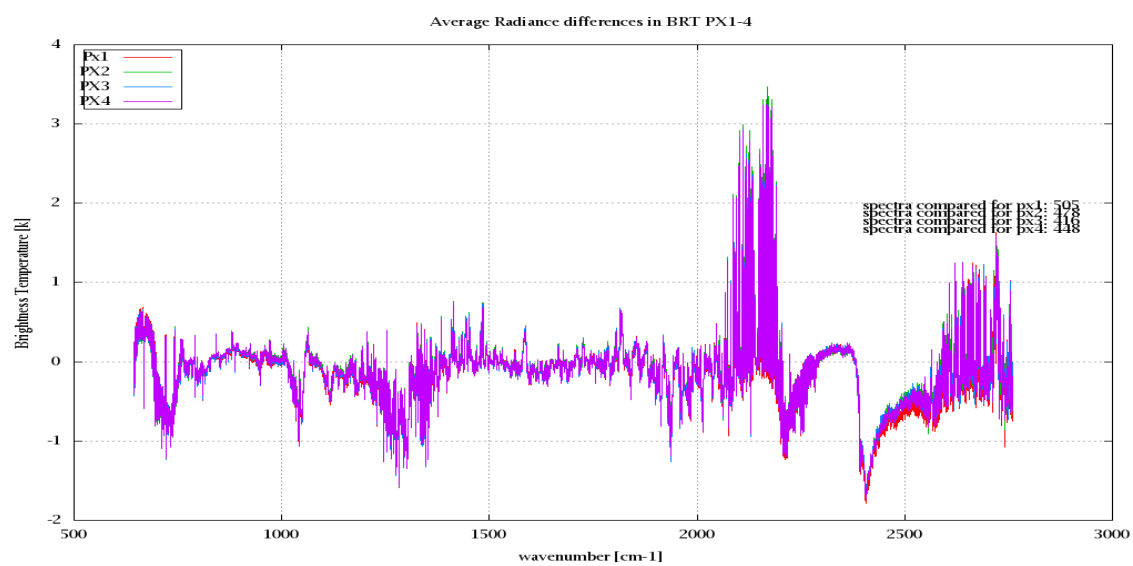


Figure 8: Average Radiance differences: OBS-CAL

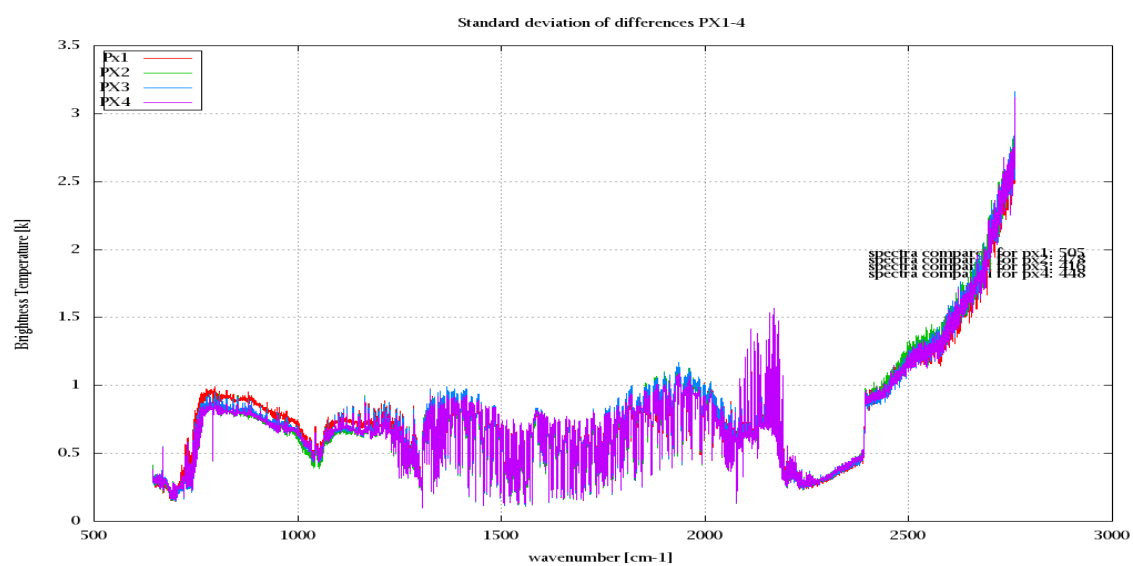


Figure 9: Standard Deviation of Radiance differences

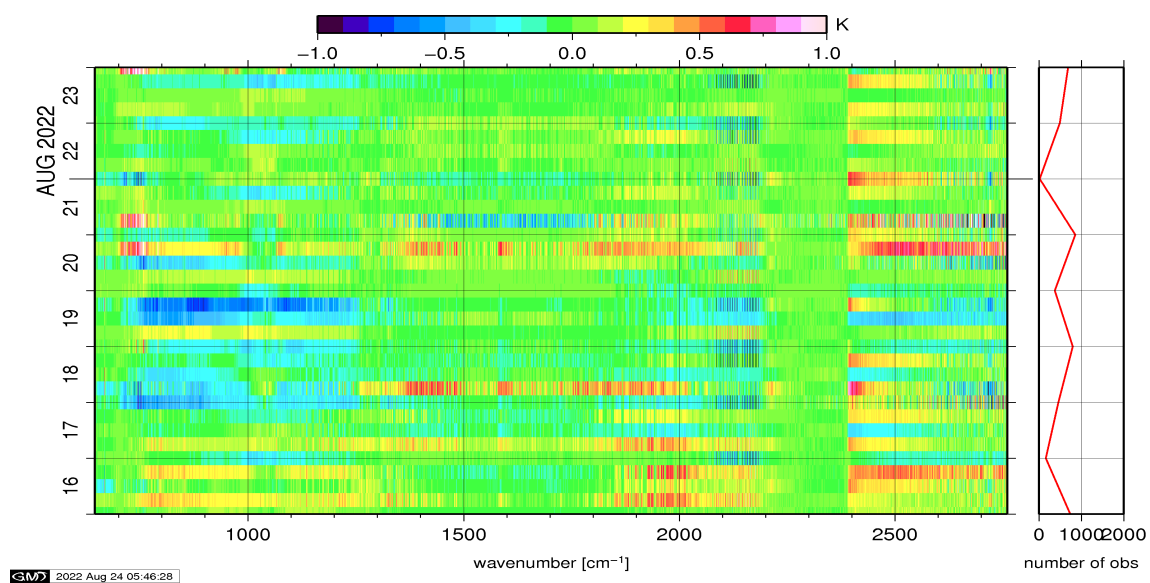


Figure 10: Radiance Anomaly in BT: All Channels

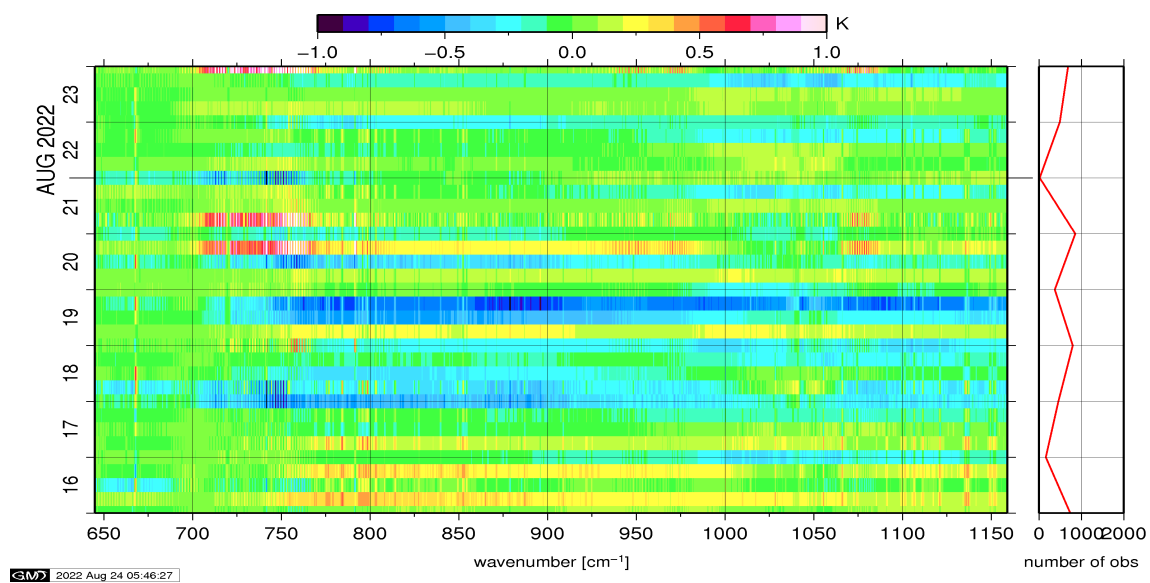


Figure 11: Radiance Anomaly in BT: IASI Band 1

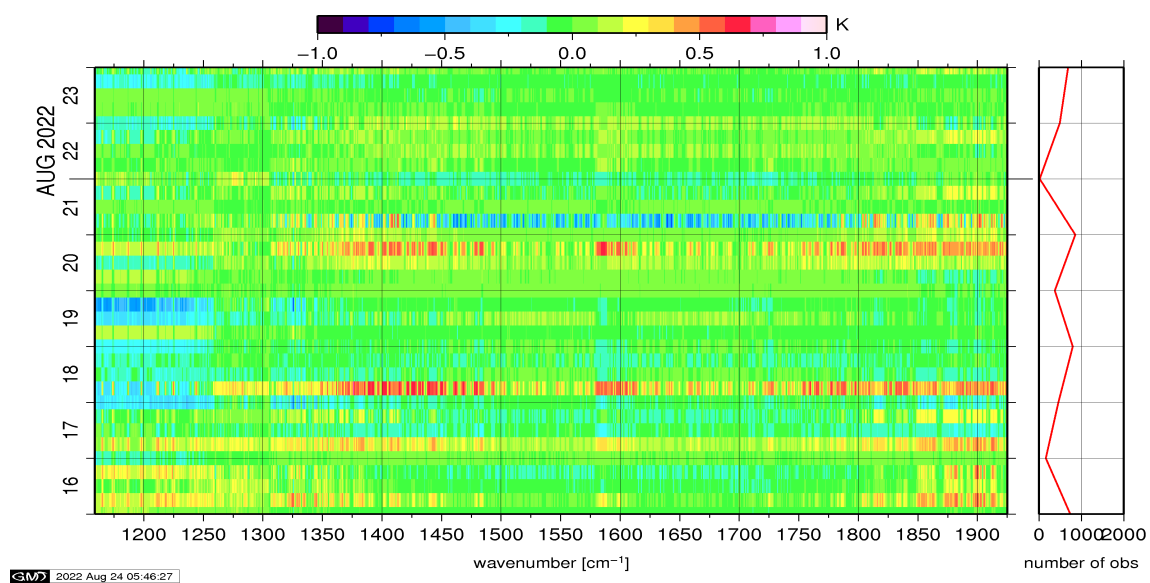


Figure 12: Radiance Anomaly in BT: IASI Band 2

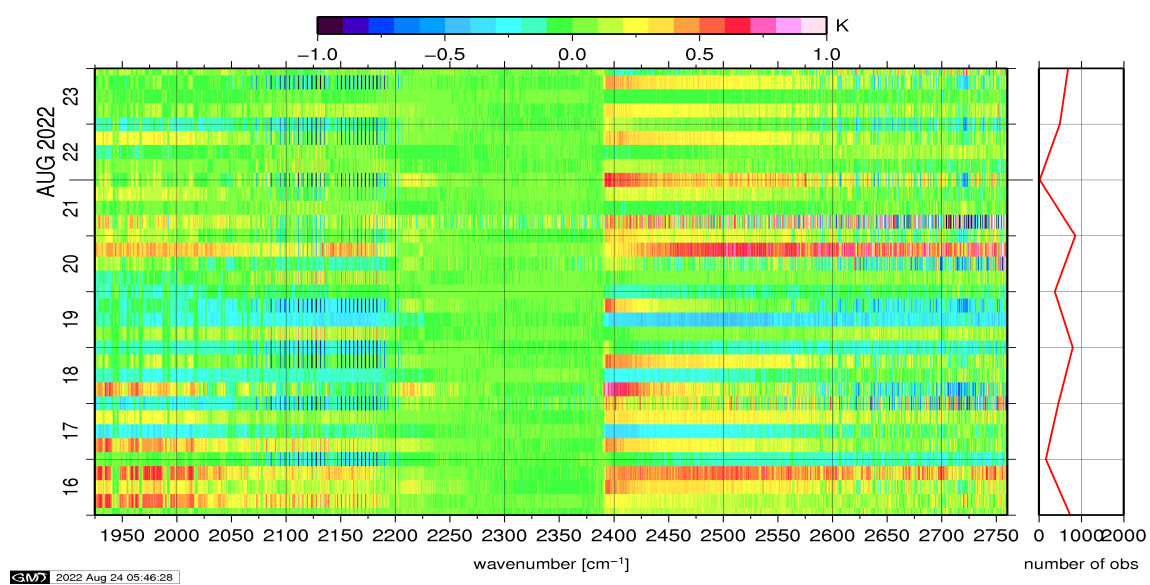


Figure 13: Radiance Anomaly in BT: IASI Band 3

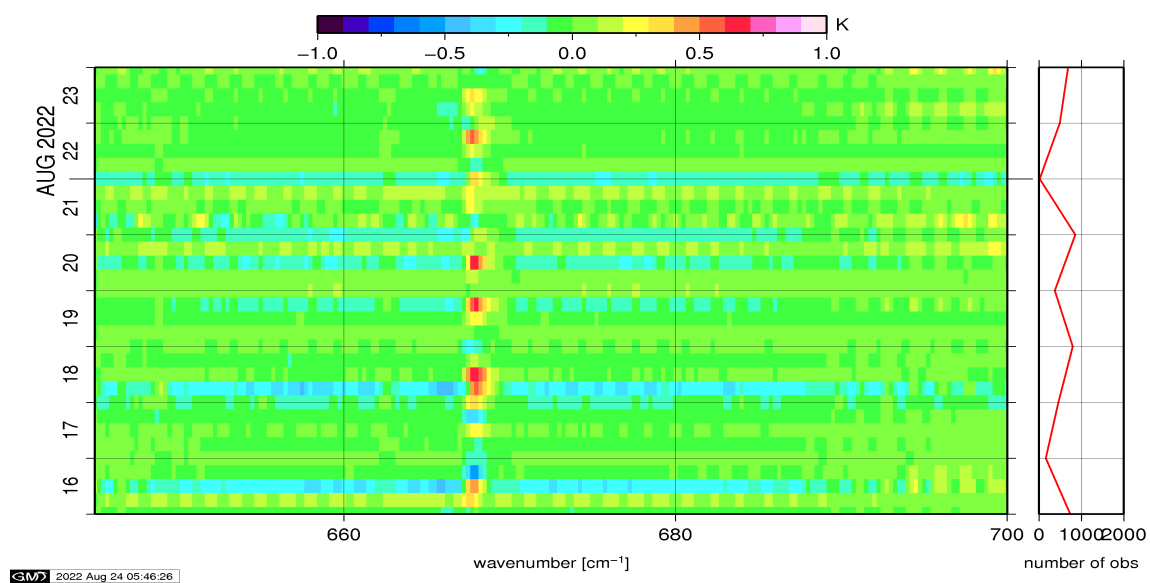


Figure 14: Radiance Anomaly in BT: CO2 14

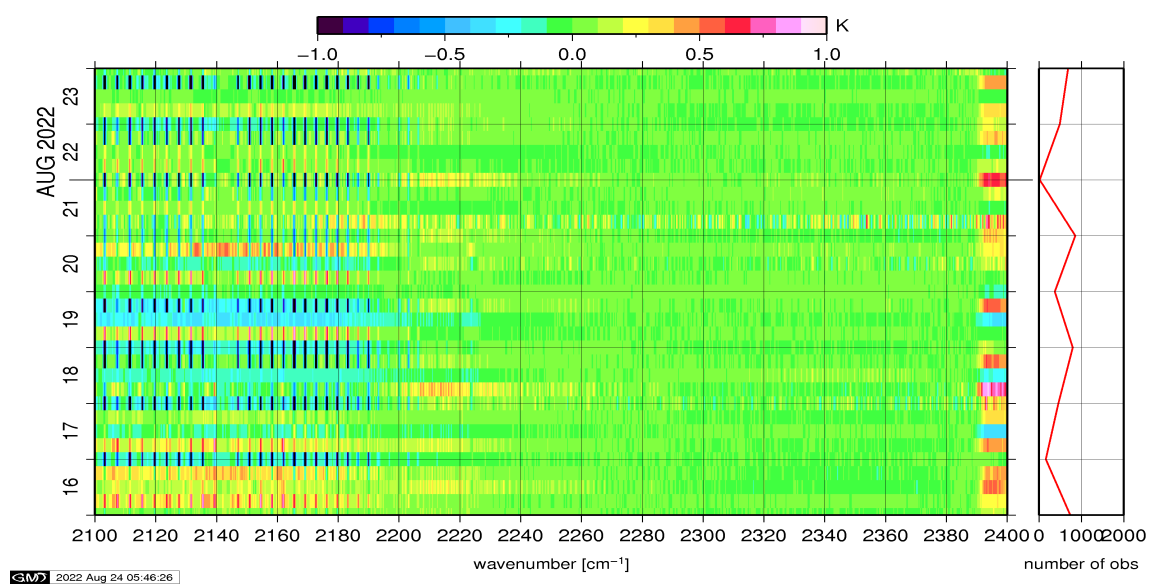


Figure 15: Radiance Anomaly in BT: CO2 4.3

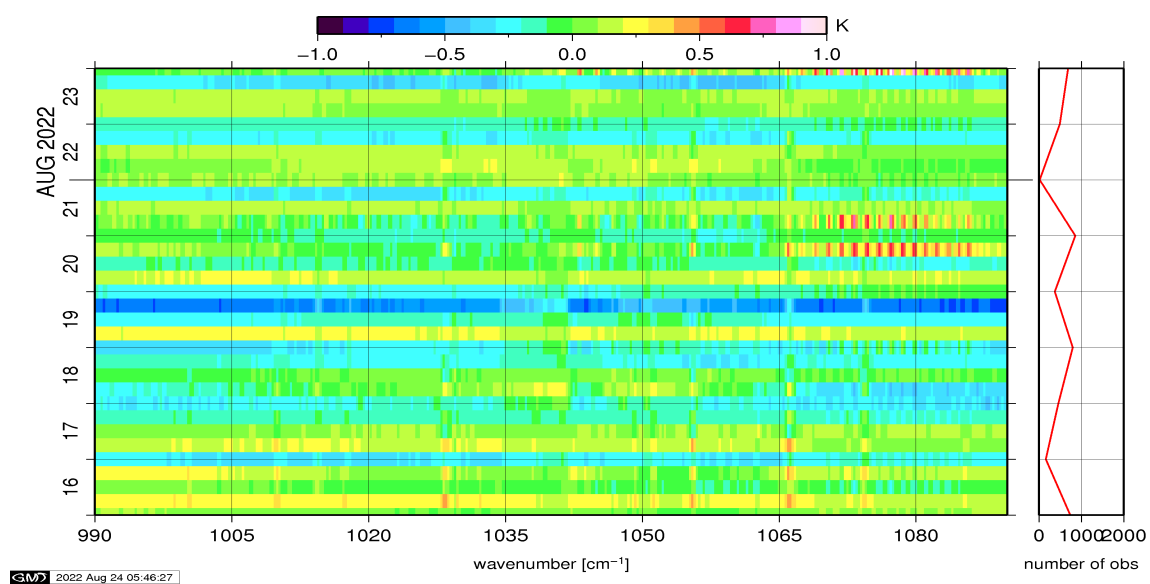


Figure 16: Radiance Anomaly in BT: O3