

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

IASI monitoring team

22/06/2022 00:00:00 - 23/06/2022 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 22/06/2022 00:00:00 - 23/06/2022 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 22/06/2022 00:00:00 - 23/06/2022 00:00:00

Product Type	Number	Action
L0 HKTU PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	479	-
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)	6490	6492	20220622091538.312	20220622091538.742
PX1 (130)	6494	6496	20220622091539.176	20220622091541.121
PX1 (130)	6503	6505	20220622091542.636	20220622091543.066
PX1 (130)	6506	6508	20220622091543.285	20220622091543.718
PX1 (130)	6512	6515	20220622091544.582	20220622091545.230
PX1 (130)	6515	6518	20220622091545.230	20220622091545.879
PX1 (130)	6519	6521	20220622091546.093	20220622091546.527
PX2 (135)	6492	6494	20220622091538.742	20220622091539.176
PX2 (135)	6495	6497	20220622091540.906	20220622091541.340
PX2 (135)	6497	6499	20220622091541.340	20220622091541.769
PX2 (135)	6499	6501	20220622091541.769	20220622091542.203
PX2 (135)	6501	6503	20220622091542.203	20220622091542.636
PX2 (135)	6512	6515	20220622091544.582	20220622091545.230
PX2 (135)	6515	6517	20220622091545.230	20220622091545.664
PX2 (135)	6518	6520	20220622091545.879	20220622091546.312
PX3 (140)	6494	6497	20220622091539.176	20220622091541.340
PX3 (140)	6501	6503	20220622091542.203	20220622091542.636
PX3 (140)	6504	6507	20220622091542.851	20220622091543.500
PX3 (140)	6507	6511	20220622091543.500	20220622091544.367

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	6511	6513	20220622091544.367	20220622091544.797
PX4 (145)	6497	6499	20220622091541.340	20220622091541.769
PX4 (145)	6499	6501	20220622091541.769	20220622091542.203
PX4 (145)	6504	6507	20220622091542.851	20220622091543.500
PX4 (145)	6509	6511	20220622091543.933	20220622091544.367
PX4 (145)	6514	6516	20220622091545.015	20220622091545.445
PX4 (145)	6518	6522	20220622091545.879	20220622091546.742
IMG (150)	10433	10435	20220622032819.202	20220622032819.851
IMG (150)	699	703	20220622091539.176	20220622091540.472
IMG (150)	705	707	20220622091541.121	20220622091541.554
IMG (150)	708	710	20220622091541.769	20220622091542.203
IMG (150)	715	717	20220622091543.285	20220622091543.718
IMG (150)	719	721	20220622091544.148	20220622091544.582
IMG (150)	724	726	20220622091545.230	20220622091545.664
IMG (150)	727	730	20220622091545.879	20220622091546.527
IMG (150)	732	734	20220622091546.961	20220622091547.609
IMG (150)	735	738	20220622091547.824	20220622091548.906
VER (160)	16381	0	20220622013259.201	20220622013307.201
VER (160)	2	16382	20220622013307.201	20220622013307.201
VER (160)	-1	3	20220622013307.201	20220622013315.197
VER (160)	4321	4323	20220622032819.202	20220622032827.202
VER (160)	16382	0	20220622084955.182	20220622085003.178
VER (160)	3	16383	20220622085003.178	20220622085003.178
VER (160)	-1	4	20220622085003.178	20220622085011.178
VER (160)	959	961	20220622091539.176	20220622091539.176
VER (160)	963	967	20220622091539.176	20220622091547.176
VER (160)	16379	0	20220622232339.104	20220622232347.104
VER (160)	0	16380	20220622232347.104	20220622232347.104
VER (160)	-1	1	20220622232347.104	20220622232355.104
AUX (180)	4137	4139	20220622032811.636	20220622032827.636

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
22/06/2022 00:00:08	-	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	479	-
GQisFlagQual set (PX1)	99.49 %	-
GQisFlagQual set (PX2)	99.56 %	-
GQisFlagQual set (PX3)	99.56 %	-
GQisFlagQual set (PX4)	99.44 %	-
GQisFlagQual set (all)	99.51 %	-

Table 4: Quality flags

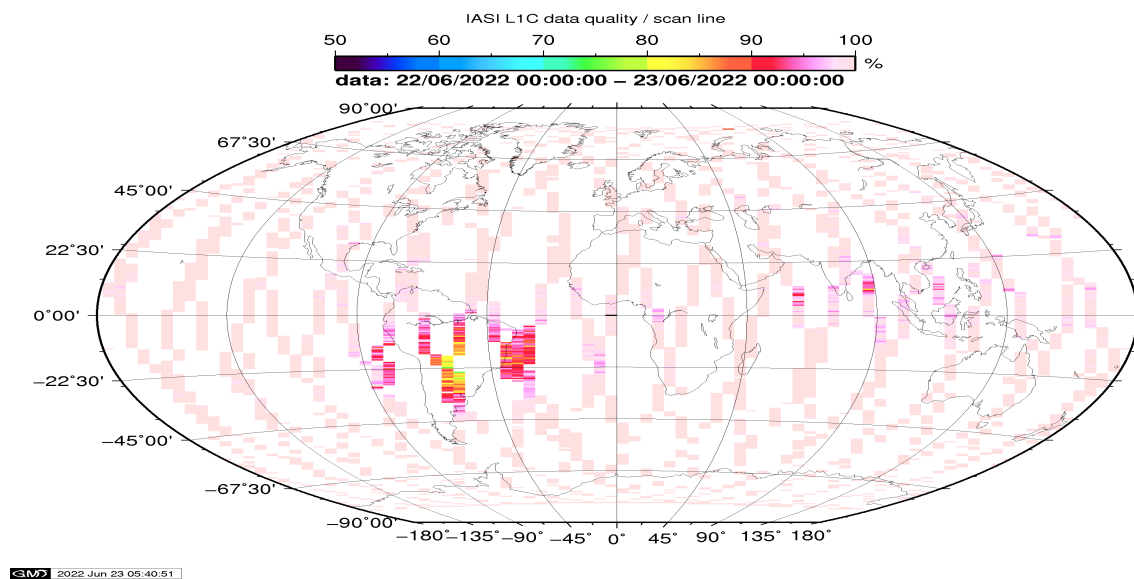


Figure 1: L1C data quality

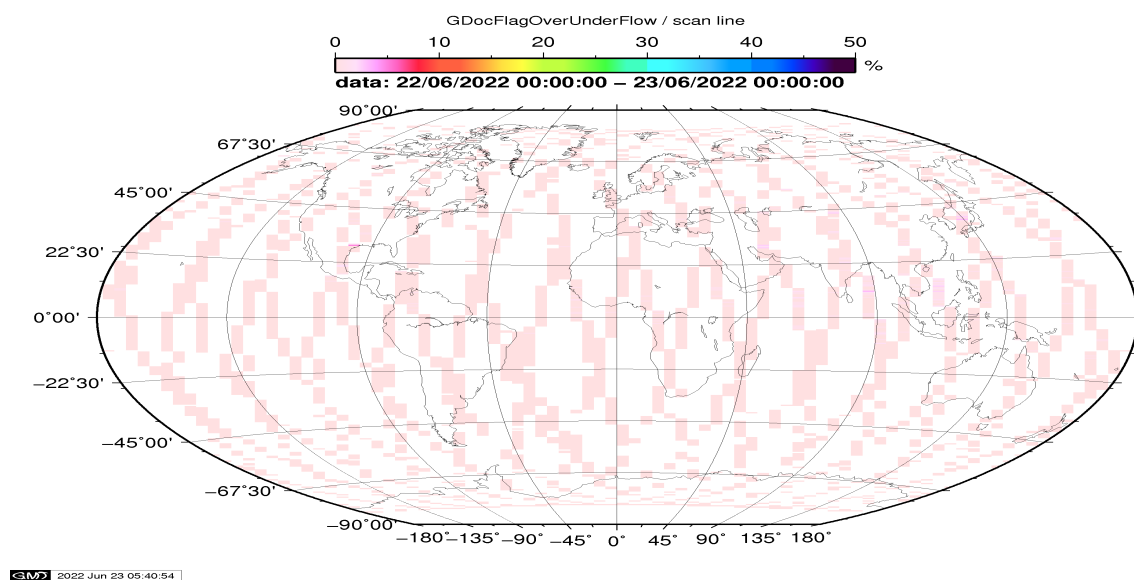


Figure 2: Flag of Over and Under Flows

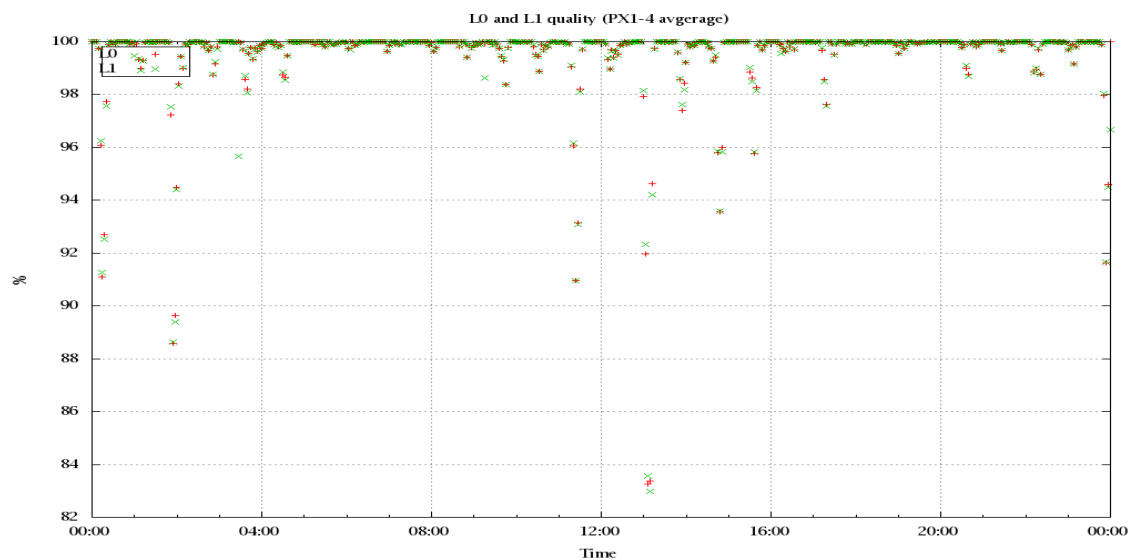


Figure 3: Level 0 and 1C overall quality

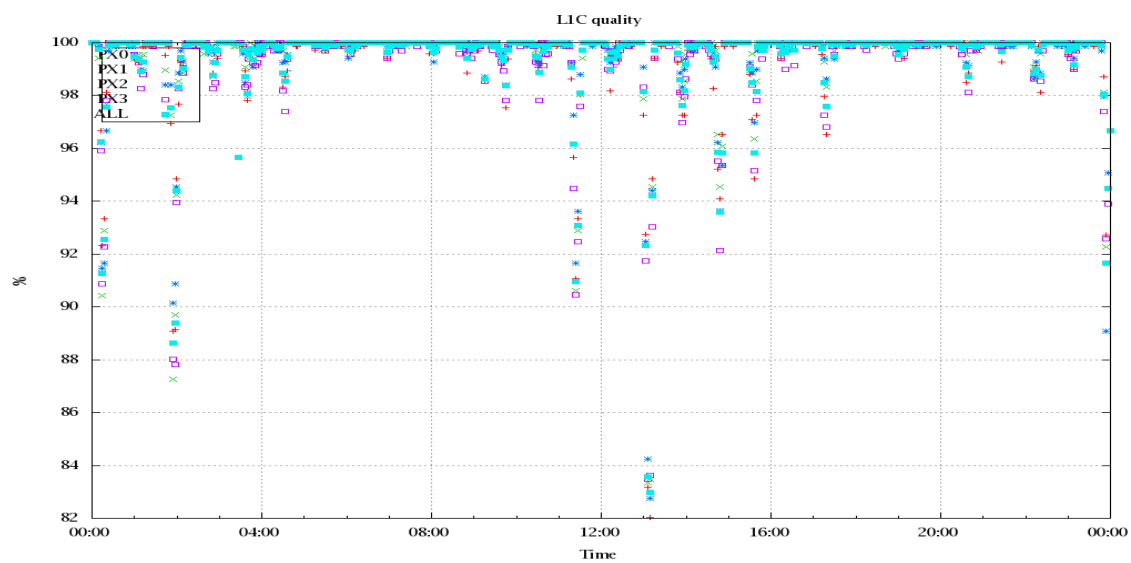


Figure 4: Level 1C quality

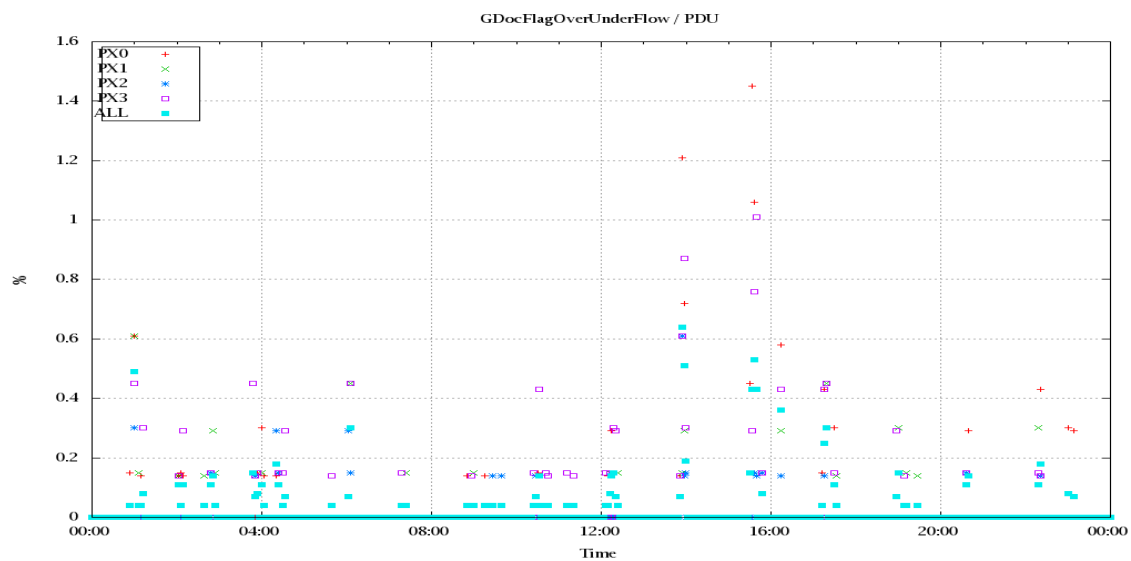


Figure 5: Timeseries of flag of Over and Under Flows

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.

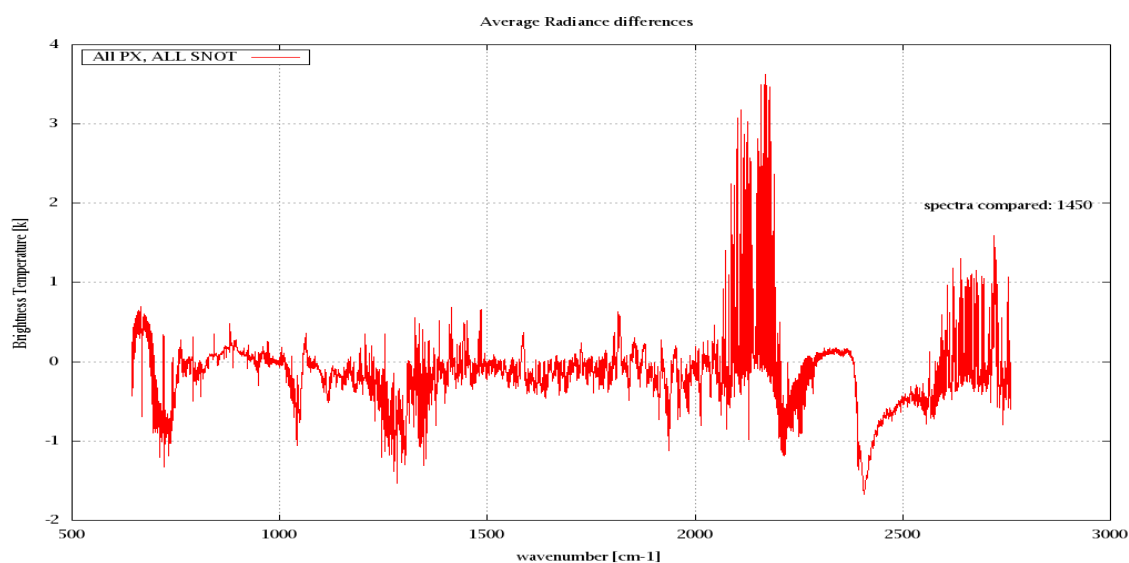


Figure 6: Average Radiance differences: OBS-CAL

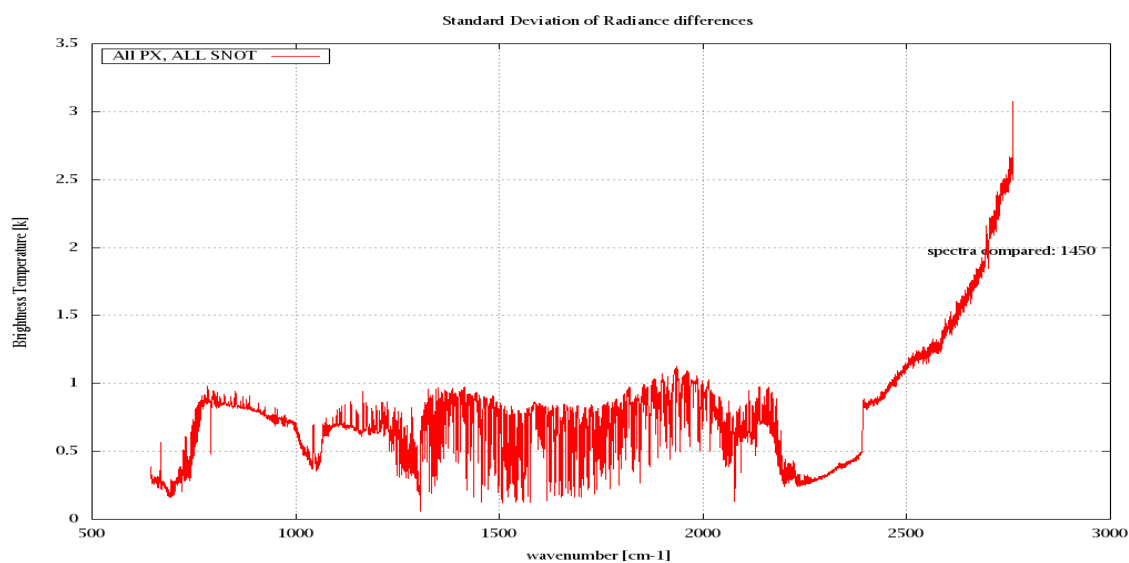


Figure 7: Standard Deviation of Radiance differences

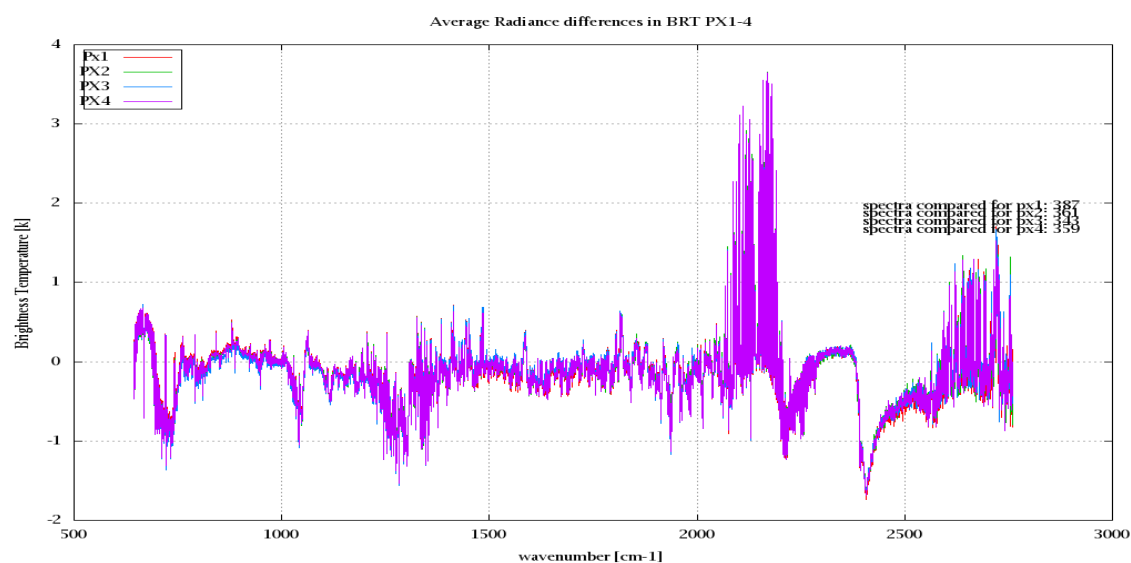


Figure 8: Average Radiance differences: OBS-CAL

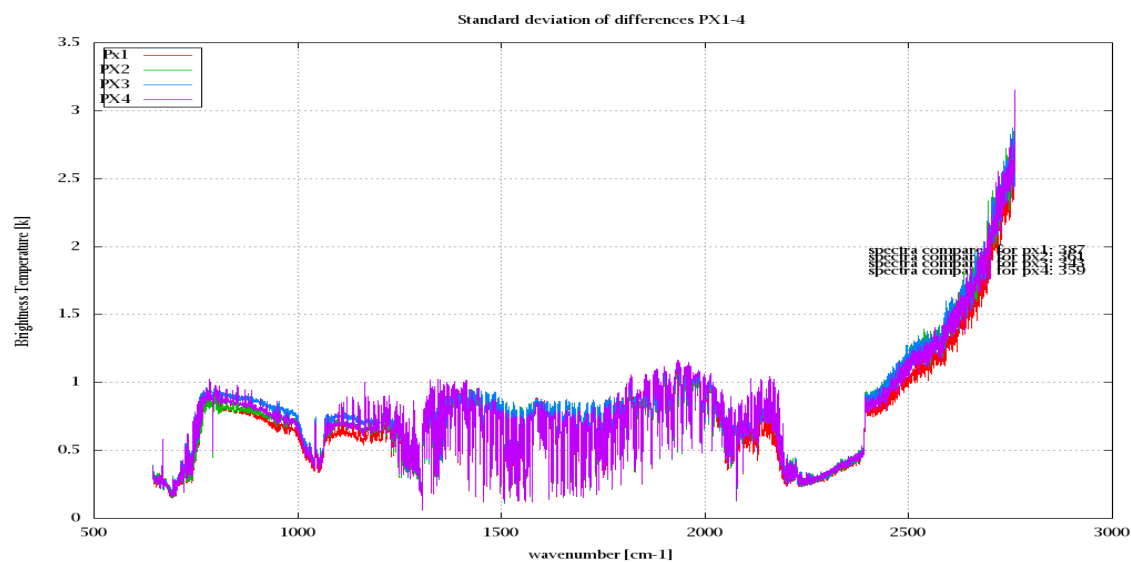


Figure 9: Standard Deviation of Radiance differences

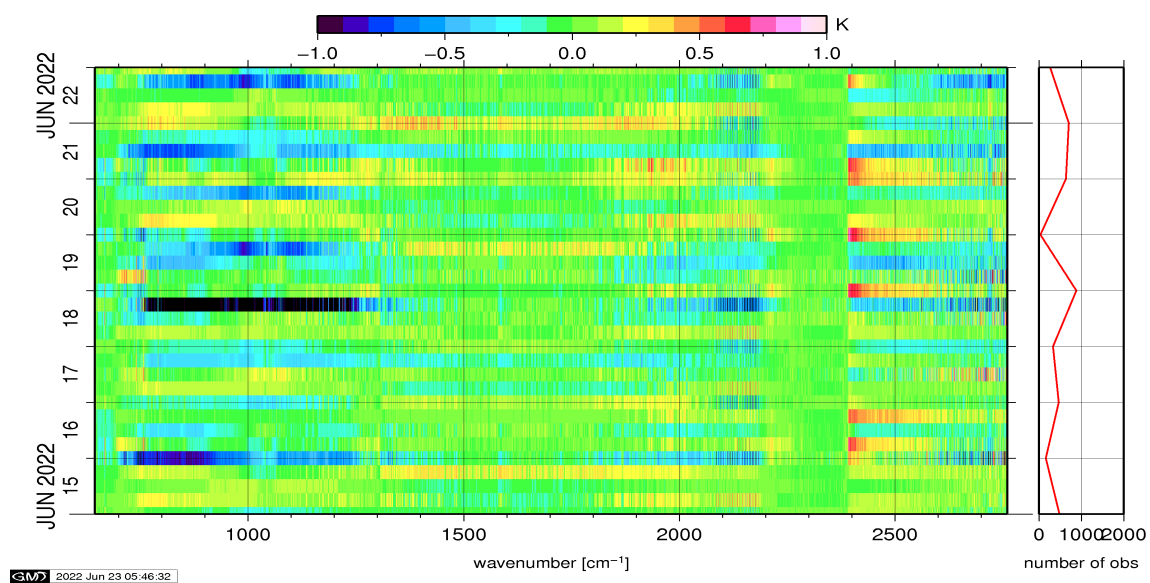


Figure 10: Radiance Anomaly in BT: All Channels

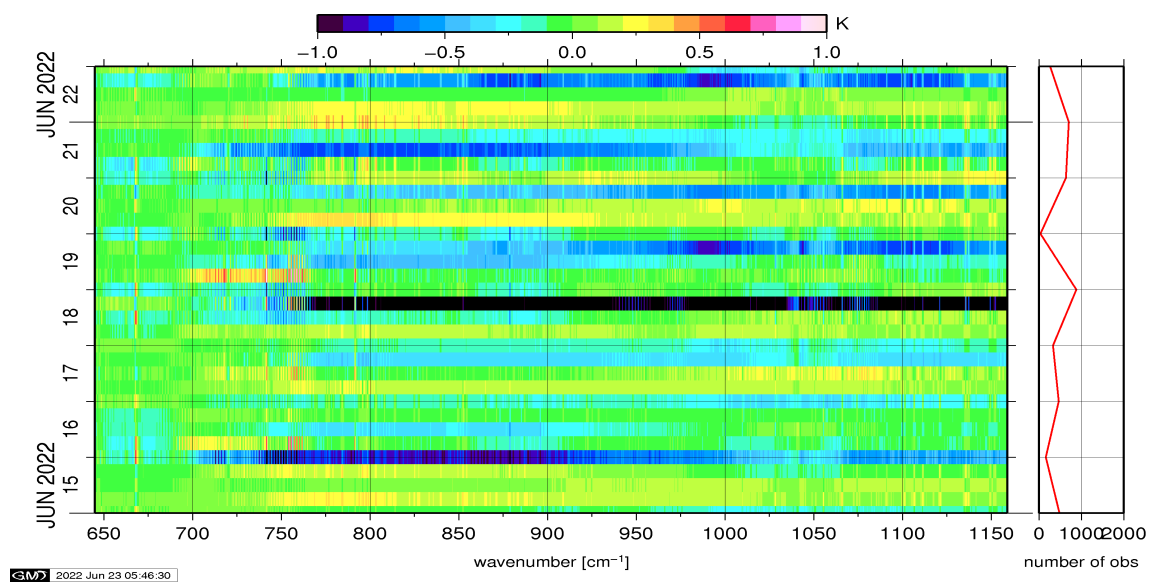


Figure 11: Radiance Anomaly in BT: IASI Band 1

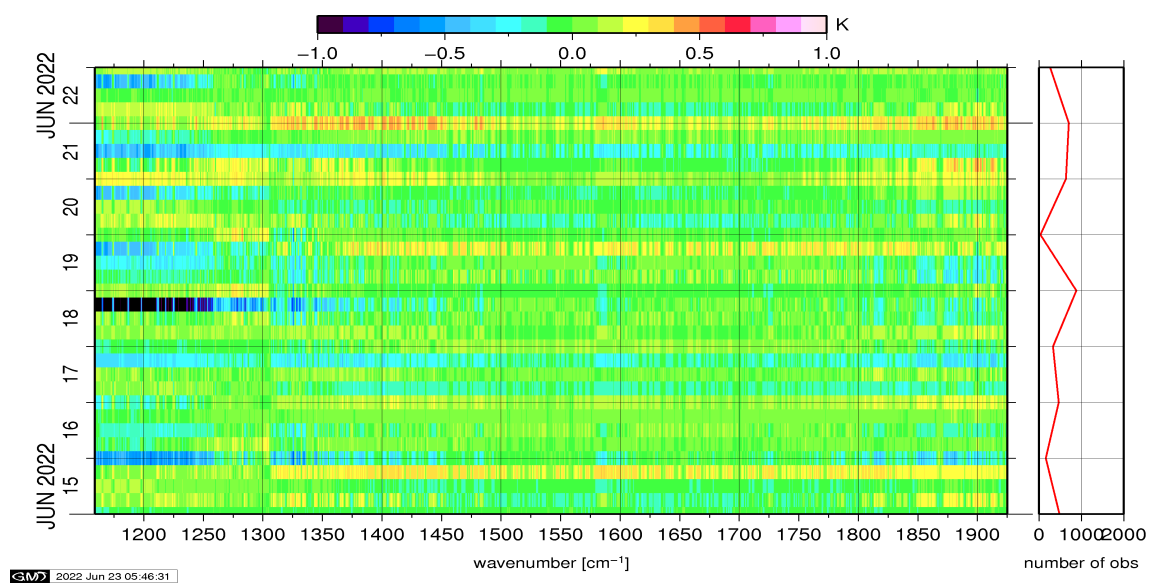


Figure 12: Radiance Anomaly in BT: IASI Band 2

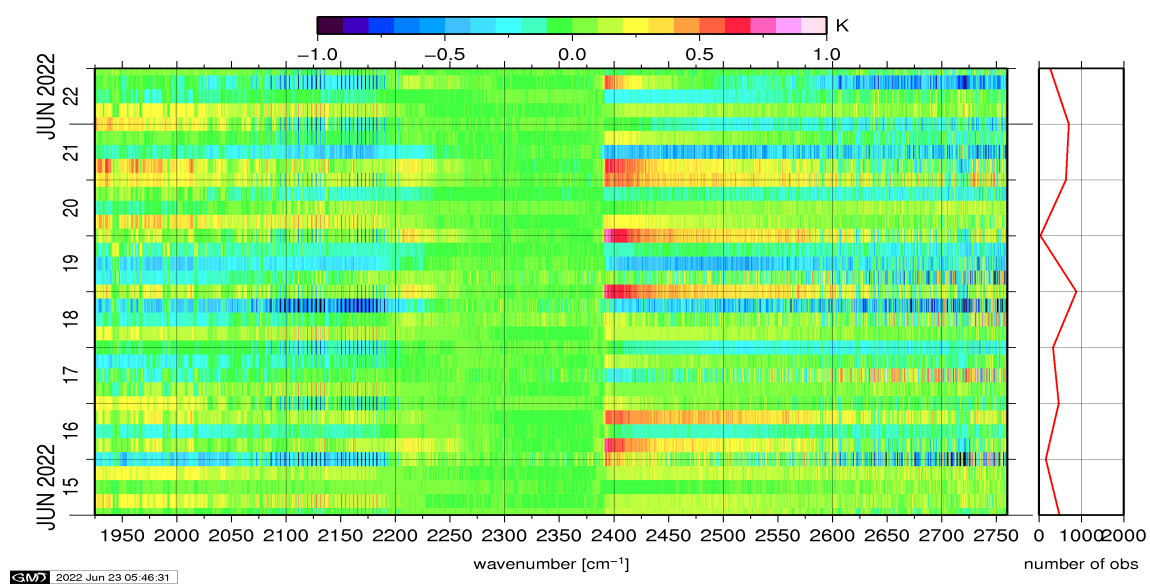


Figure 13: Radiance Anomaly in BT: IASI Band 3

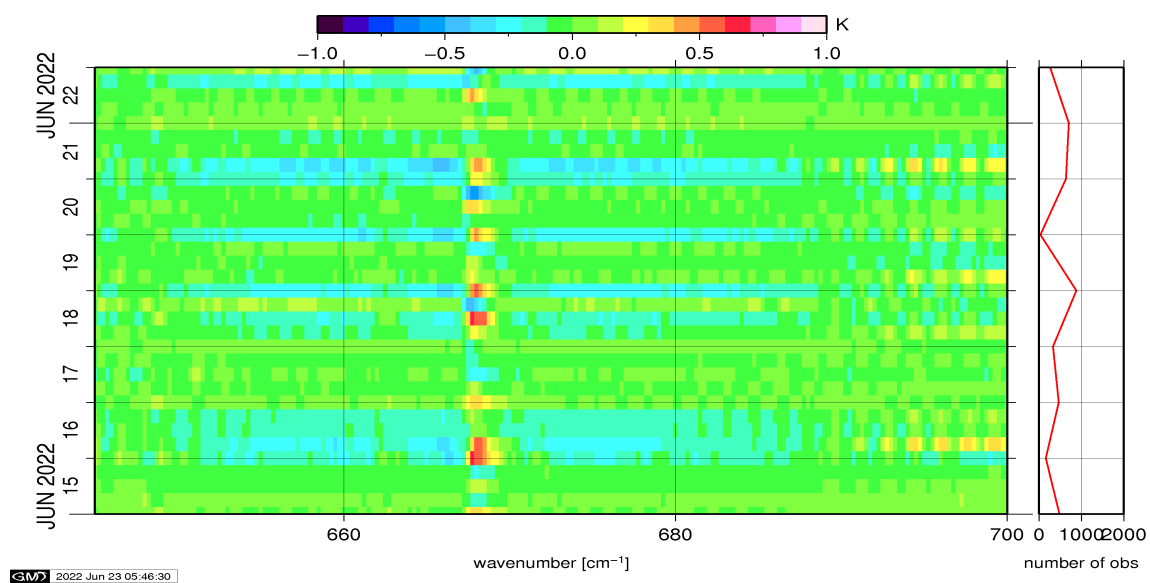


Figure 14: Radiance Anomaly in BT: CO2 14

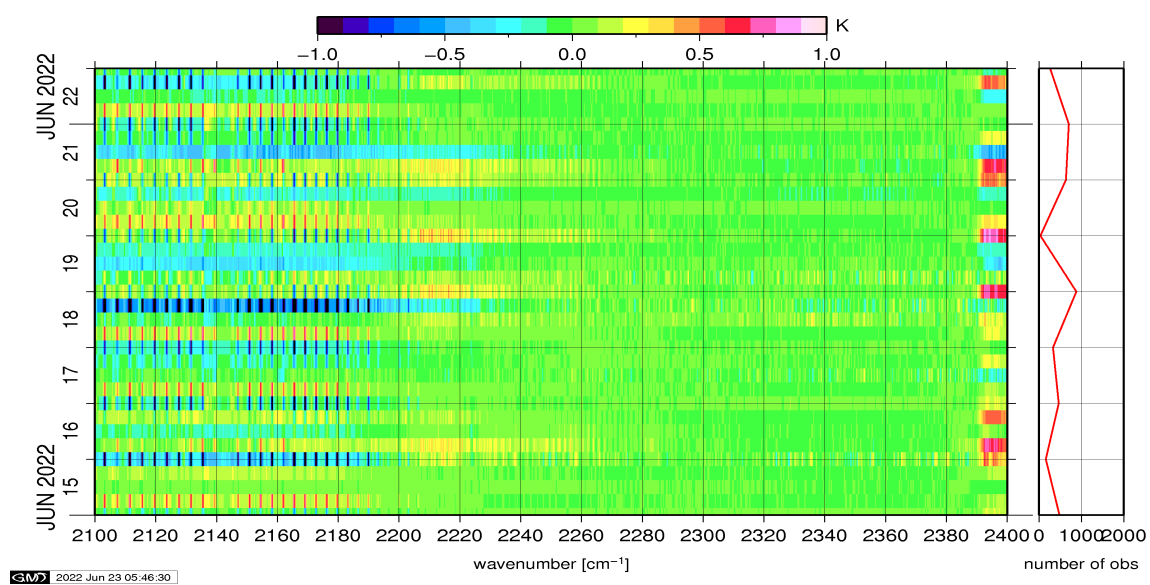


Figure 15: Radiance Anomaly in BT: CO2 4.3

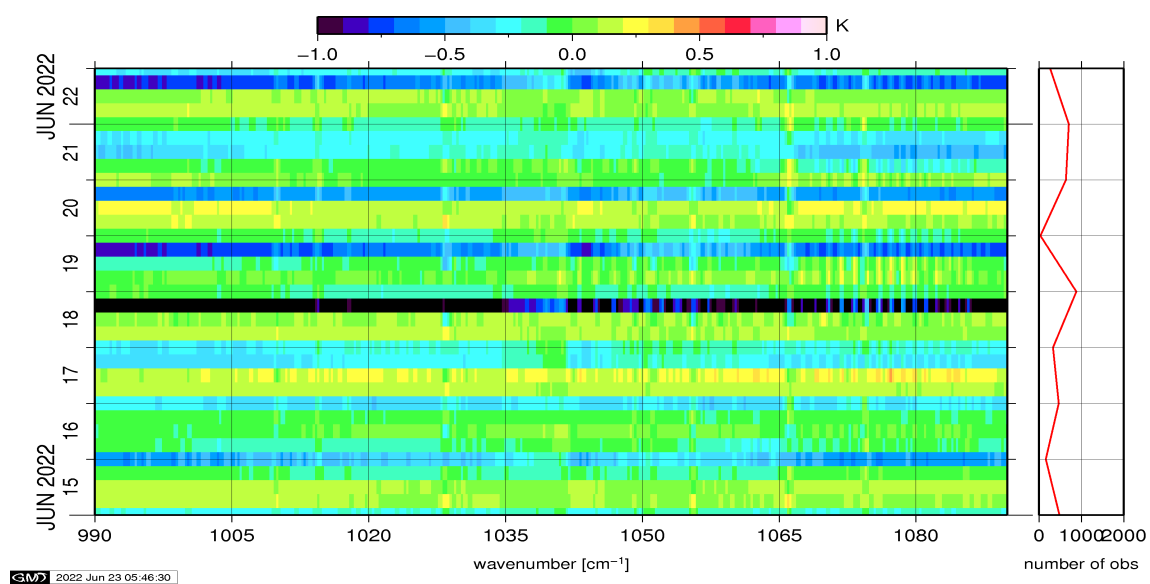


Figure 16: Radiance Anomaly in BT: O3