

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

IASI monitoring team

14/06/2020 00:00:00 - 15/06/2020 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 14/06/2020 00:00:00 - 15/06/2020 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 14/06/2020 00:00:00 - 15/06/2020 00:00:00

Product Type	Number	Action
L0 HKTM 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)	12952	12983	20200614091717.852	20200614091727.578
PX1 (130)	13010	13012	20200614091733.418	20200614091733.852
PX1 (130)	13017	13019	20200614091736.446	20200614091736.875
PX1 (130)	13020	13041	20200614091737.094	20200614091741.633
PX1 (130)	5693	5745	20200614095752.454	20200614095805.212
PX1 (130)	5766	5768	20200614095811.266	20200614095811.700
PX1 (130)	5782	5784	20200614095816.239	20200614095816.673
PX2 (135)	12952	12983	20200614091717.852	20200614091727.578
PX2 (135)	13003	13005	20200614091731.903	20200614091732.336
PX2 (135)	13010	13012	20200614091733.418	20200614091733.852
PX2 (135)	13019	13041	20200614091736.875	20200614091741.633
PX2 (135)	5693	5745	20200614095752.454	20200614095805.212
PX2 (135)	5759	5761	20200614095809.751	20200614095810.184
PX2 (135)	5775	5777	20200614095813.212	20200614095813.645
PX2 (135)	5782	5784	20200614095816.239	20200614095816.673
PX3 (140)	12952	12983	20200614091717.852	20200614091727.578
PX3 (140)	12990	12992	20200614091729.094	20200614091729.528
PX3 (140)	13012	13014	20200614091733.852	20200614091735.797
PX3 (140)	13019	13040	20200614091736.875	20200614091741.418
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	5692	5745	20200614095752.239	20200614095805.212
PX3 (140)	5768	5770	20200614095811.700	20200614095812.130
PX3 (140)	5784	5786	20200614095816.673	20200614095817.102
PX4 (145)	12952	12983	20200614091717.852	20200614091727.578
PX4 (145)	13005	13007	20200614091732.336	20200614091732.770
PX4 (145)	13012	13014	20200614091733.852	20200614091735.797
PX4 (145)	13019	13040	20200614091736.875	20200614091741.418
PX4 (145)	5692	5744	20200614095752.239	20200614095804.997
PX4 (145)	5754	5756	20200614095808.673	20200614095809.102
PX4 (145)	5761	5763	20200614095810.184	20200614095810.618
PX4 (145)	5777	5779	20200614095813.645	20200614095815.591
PX4 (145)	5784	5786	20200614095816.673	20200614095817.102
IMG (150)	8412	8447	20200614091717.852	20200614091726.282
IMG (150)	8453	8455	20200614091728.012	20200614091728.446
IMG (150)	8466	8468	20200614091730.824	20200614091731.254
IMG (150)	8468	8470	20200614091731.254	20200614091731.688
IMG (150)	8475	8477	20200614091732.770	20200614091733.203
IMG (150)	8486	8488	20200614091735.797	20200614091736.227
IMG (150)	8488	8490	20200614091736.227	20200614091736.660
IMG (150)	8491	8512	20200614091736.875	20200614091741.418
IMG (150)	2372	2428	20200614095752.239	20200614095804.997
IMG (150)	2444	2446	20200614095809.102	20200614095809.536
IMG (150)	2451	2453	20200614095810.618	20200614095811.052
IMG (150)	2458	2460	20200614095812.130	20200614095812.563
IMG (150)	2460	2462	20200614095812.563	20200614095812.997
IMG (150)	2465	2467	20200614095813.645	20200614095814.294
IMG (150)	2469	2471	20200614095814.942	20200614095815.591
IMG (150)	2471	2473	20200614095815.591	20200614095816.024
IMG (150)	2476	2478	20200614095816.673	20200614095817.102
VER (160)	16381	0	20200614062029.871	20200614062037.871
VER (160)	2	16382	20200614062037.871	20200614062037.871
VER (160)	-1	3	20200614062037.871	20200614062045.871
VER (160)	6622	6631	20200614091709.852	20200614091717.852
VER (160)	6632	6635	20200614091717.852	20200614091723.473
VER (160)	6635	6638	20200614091723.473	20200614091741.852
VER (160)	8147	8153	20200614095749.860	20200614095805.860
VER (160)	8157	8163	20200614095805.860	20200614095821.860
VER (160)	16382	0	20200614133725.849	20200614133733.849
VER (160)	3	16383	20200614133733.849	20200614133733.849
VER (160)	-1	4	20200614133733.849	20200614133741.849
AUX (180)	11152	11154	20200614091710.282	20200614091726.282
AUX (180)	11457	11459	20200614095750.294	20200614095806.294

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
14/06/2020 00:00:01	-	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)	99.43 %	-
GQisFlagQual set (PX2)	99.48 %	-
GQisFlagQual set (PX3)	99.50 %	-
GQisFlagQual set (PX4)	99.41 %	-
GQisFlagQual set (all)	99.46 %	-

Table 4: Quality flags

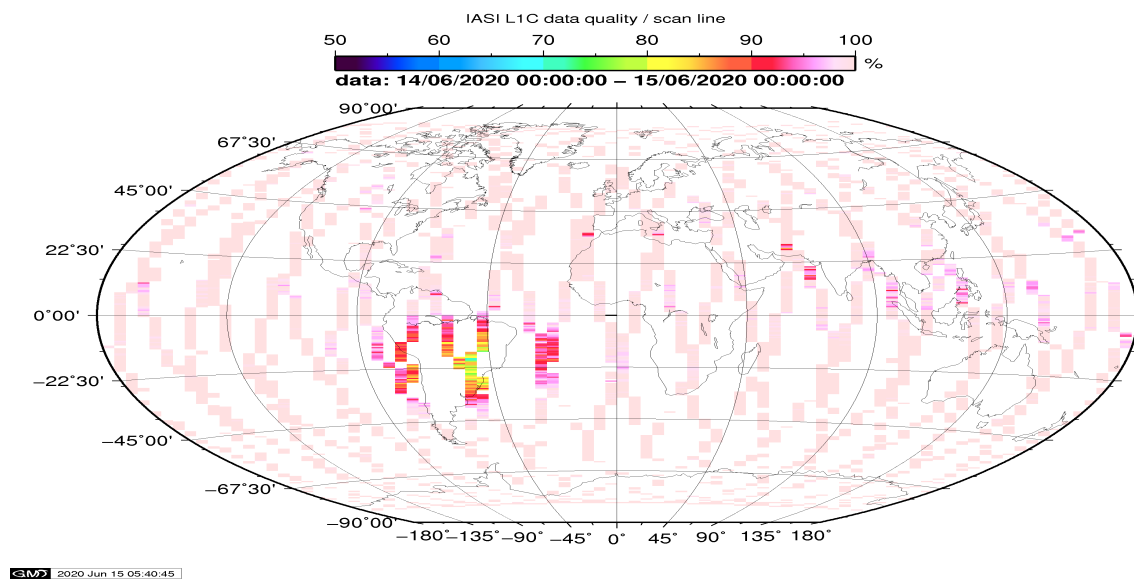


Figure 1: L1C data quality

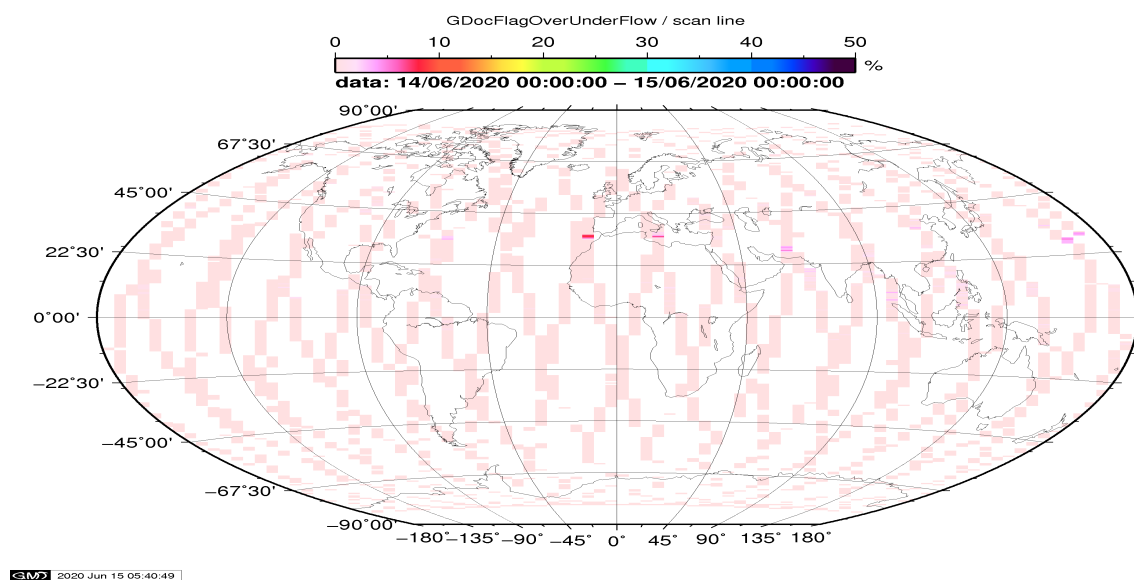


Figure 2: Flag of Over and Under Flows

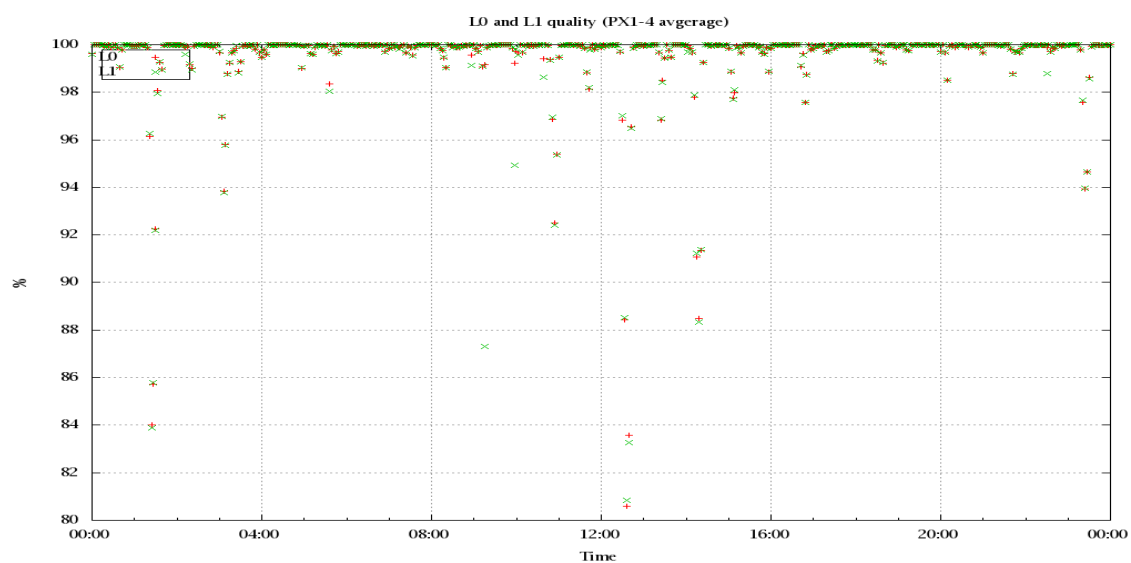


Figure 3: Level 0 and 1C overall quality

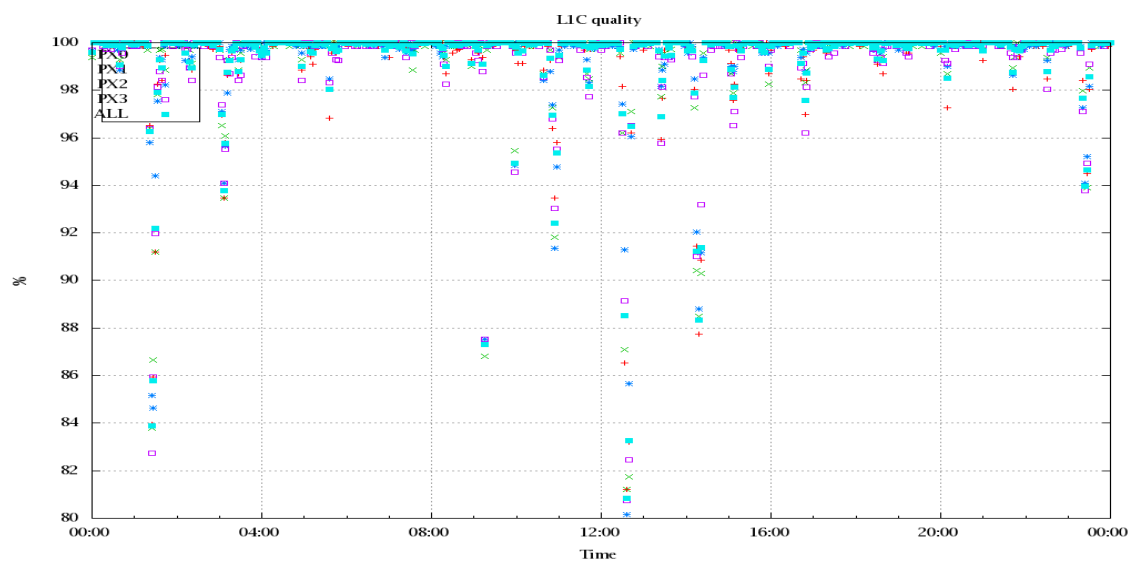


Figure 4: Level 1C quality

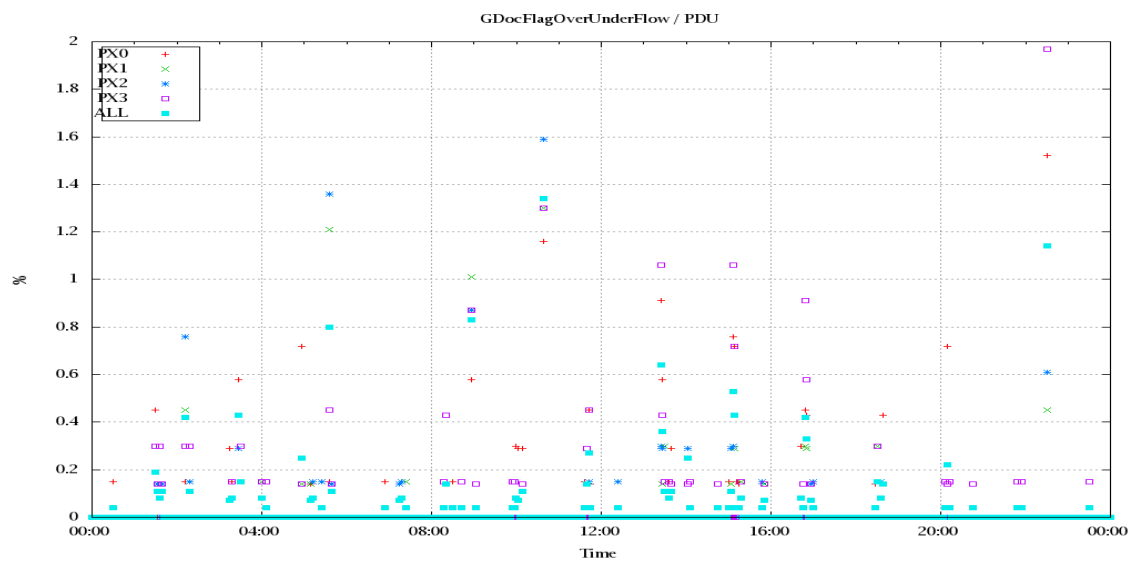


Figure 5: Timeseries of flag of Over and Under Flows

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.

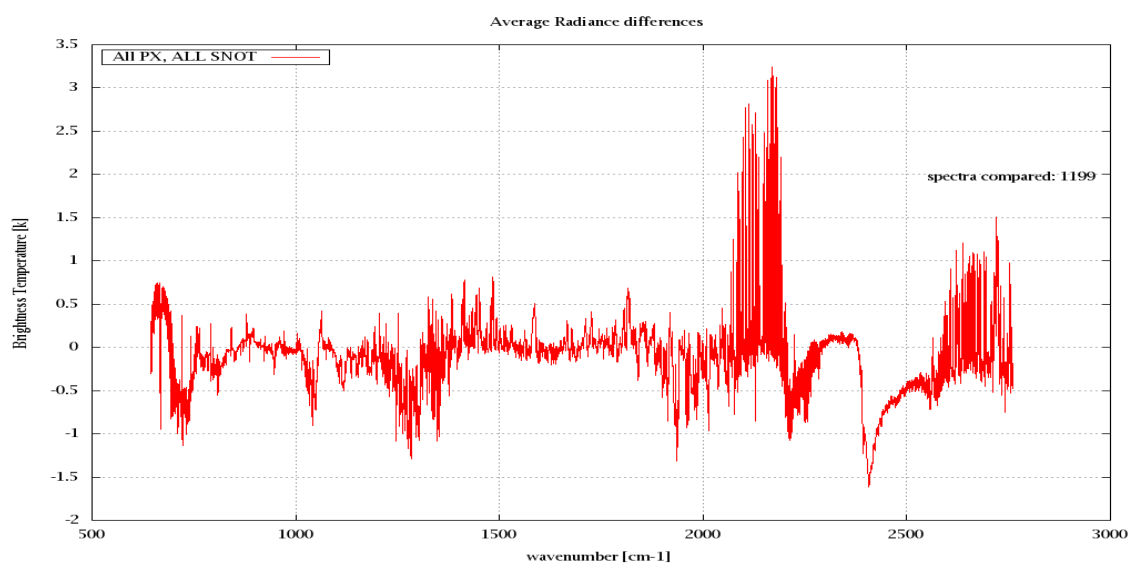


Figure 6: Average Radiance differences: OBS-CAL

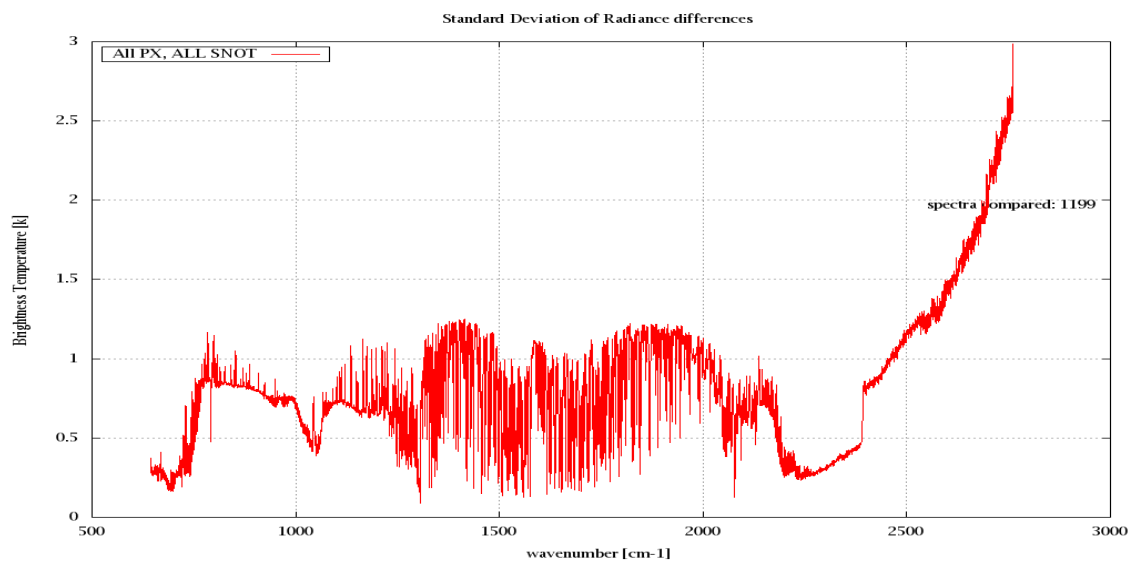


Figure 7: Standard Deviation of Radiance differences

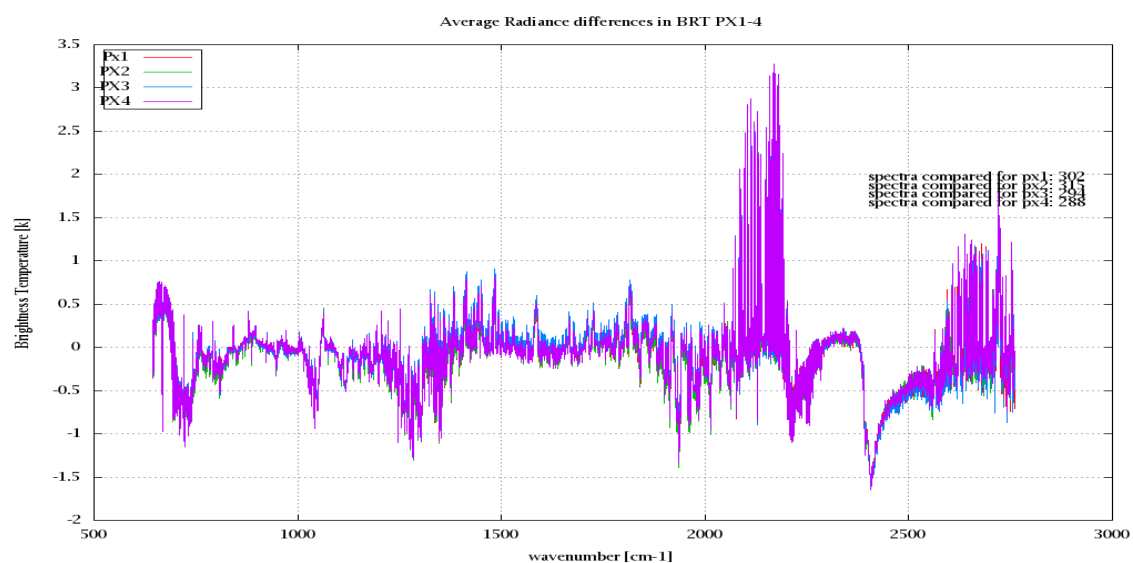


Figure 8: Average Radiance differences: OBS-CAL

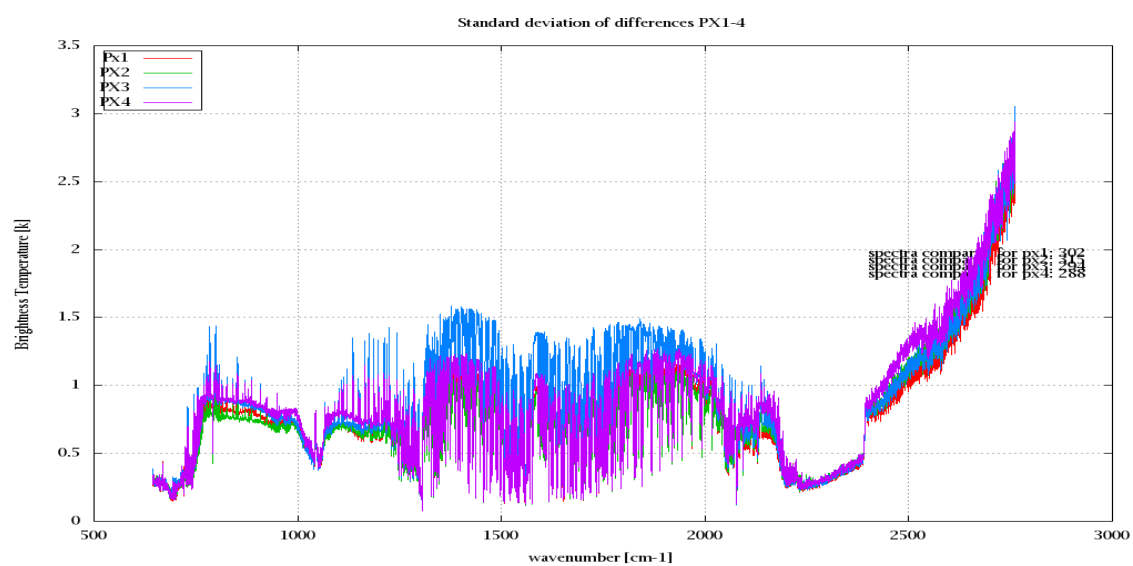


Figure 9: Standard Deviation of Radiance differences

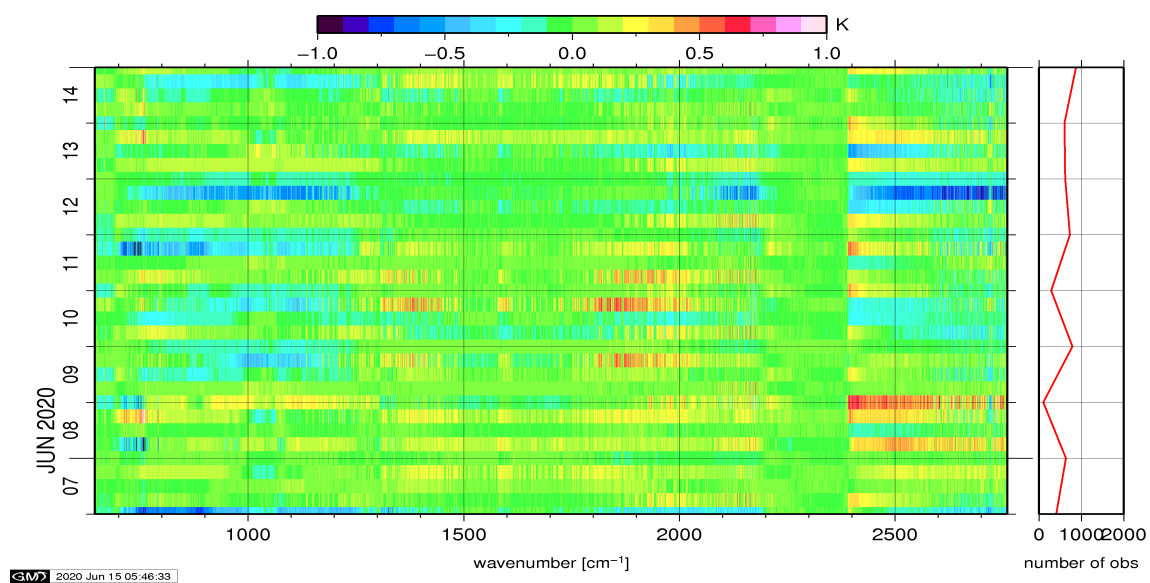


Figure 10: Radiance Anomaly in BT: All Channels

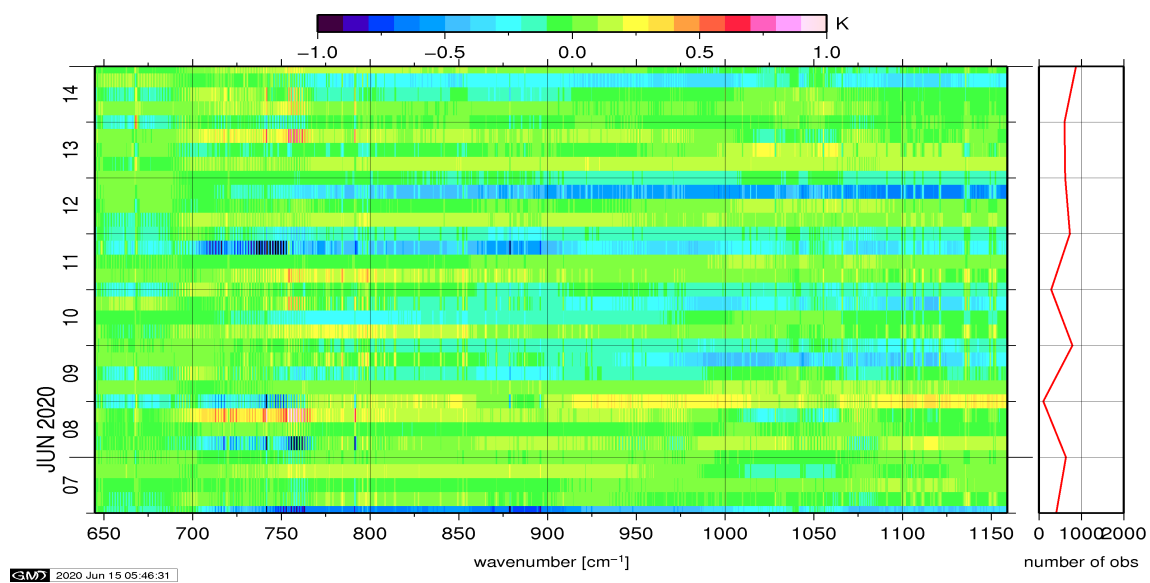


Figure 11: Radiance Anomaly in BT: IASI Band 1

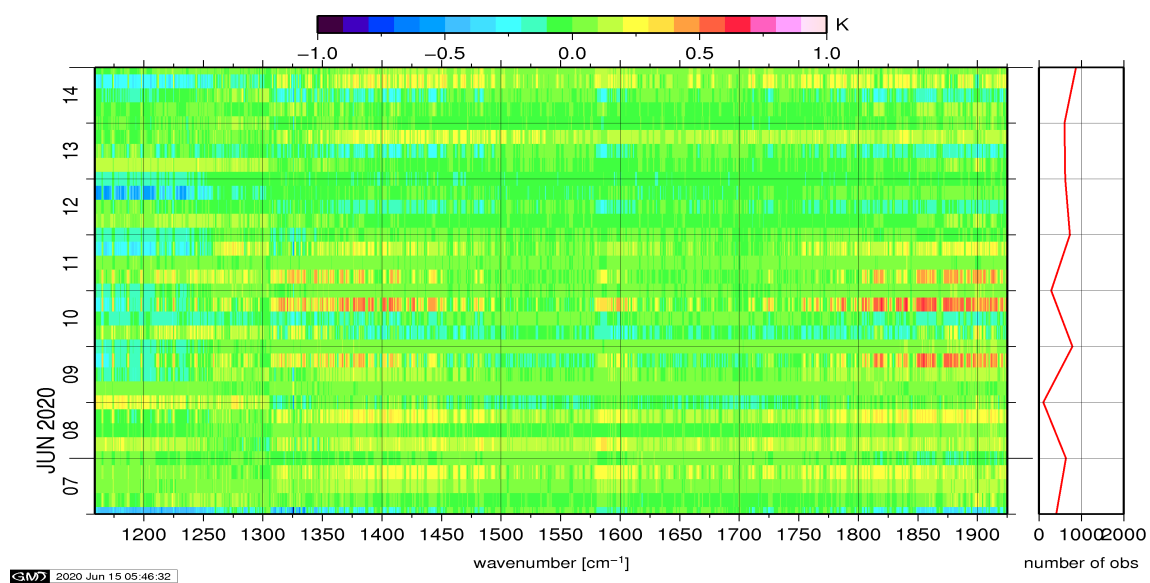


Figure 12: Radiance Anomaly in BT: IASI Band 2

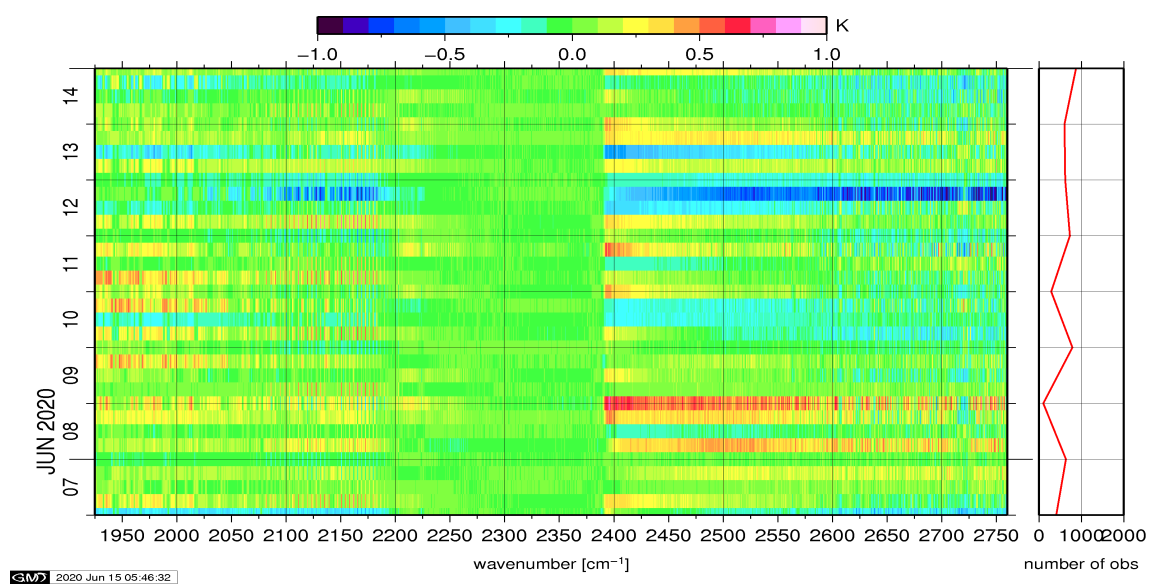


Figure 13: Radiance Anomaly in BT: IASI Band 3

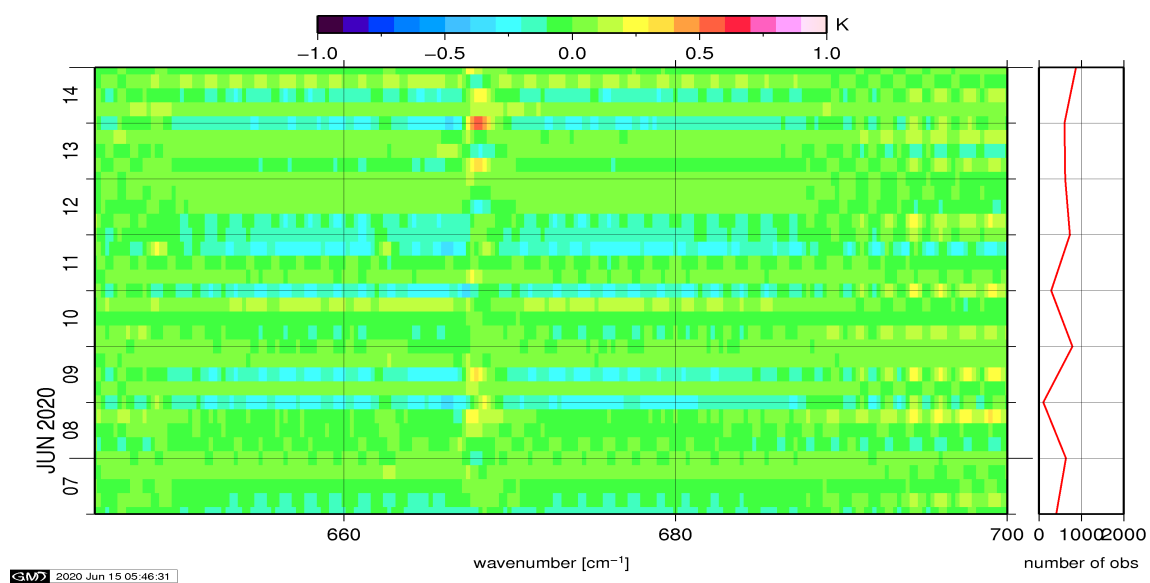


Figure 14: Radiance Anomaly in BT: CO2 14

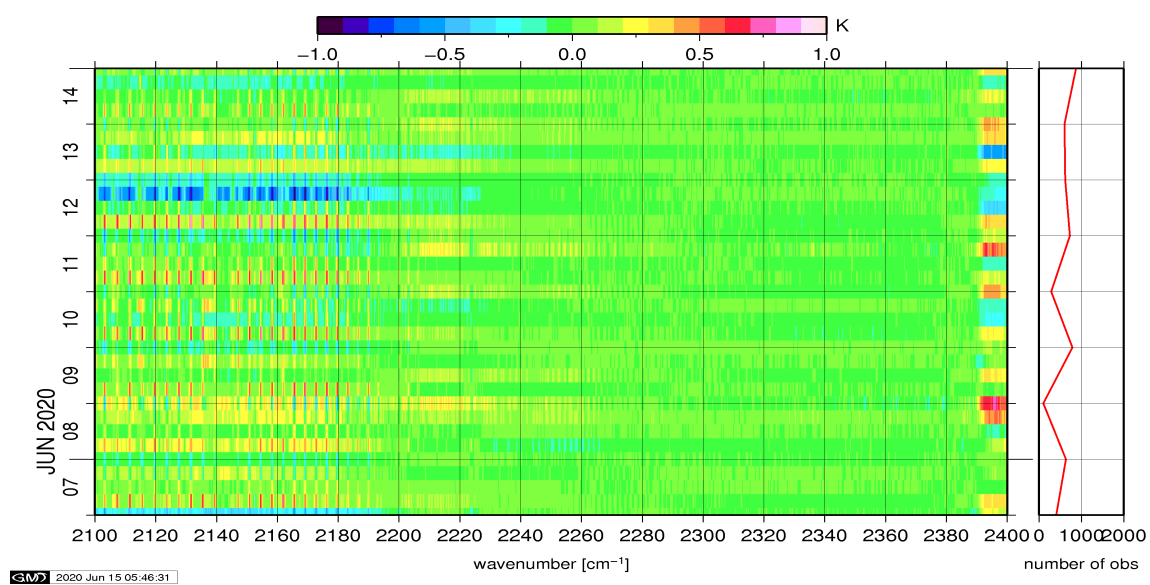


Figure 15: Radiance Anomaly in BT: CO2 4.3

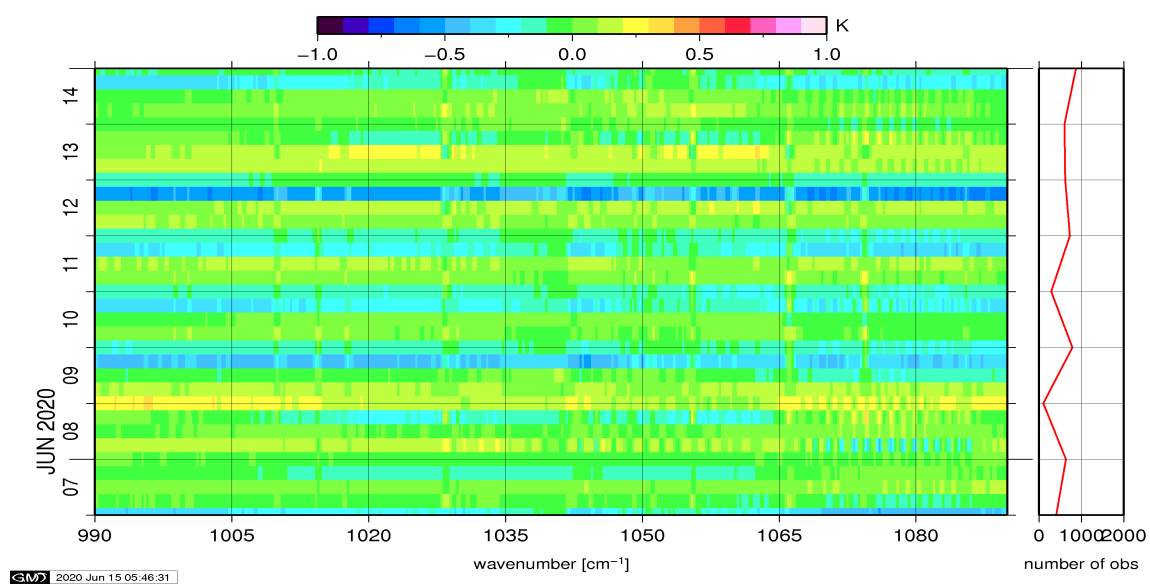


Figure 16: Radiance Anomaly in BT: O3