

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

IASI monitoring team

29/10/2019 00:00:00 - 30/10/2019 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 29/10/2019 00:00:00 - 30/10/2019 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 29/10/2019 00:00:00 - 30/10/2019 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)	16303	157	20191029114148.547	20191029114252.113
PX1 (130)	281	289	20191029114324.976	20191029114326.707
PX1 (130)	314	348	20191029114333.625	20191029114342.492
PX1 (130)	2782	3637	20191029115431.378	20191029115820.128
PX1 (130)	9045	9098	20191029122221.856	20191029122236.340
PX2 (135)	16303	157	20191029114148.547	20191029114252.113
PX2 (135)	281	289	20191029114324.976	20191029114326.707
PX2 (135)	314	348	20191029114333.625	20191029114342.492
PX2 (135)	2782	3637	20191029115431.378	20191029115820.128
PX2 (135)	9044	9098	20191029122221.641	20191029122236.340
PX3 (140)	16303	157	20191029114148.547	20191029114252.113
PX3 (140)	281	289	20191029114324.976	20191029114326.707
PX3 (140)	309	311	20191029114332.547	20191029114332.976
PX3 (140)	311	313	20191029114332.976	20191029114333.410
PX3 (140)	313	348	20191029114333.410	20191029114342.492
PX3 (140)	2782	3637	20191029115431.378	20191029115820.128
PX3 (140)	9044	9098	20191029122221.641	20191029122236.340
PX4 (145)	16303	157	20191029114148.547	20191029114252.113
PX4 (145)	281	289	20191029114324.976	20191029114326.707

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	307	309	20191029114332.113	20191029114332.547
PX4 (145)	309	311	20191029114332.547	20191029114332.976
PX4 (145)	313	348	20191029114333.410	20191029114342.492
PX4 (145)	2782	3637	20191029115431.378	20191029115820.128
PX4 (145)	9044	9098	20191029122221.641	20191029122236.340
IMG (150)	8247	8517	20191029114148.547	20191029114252.113
IMG (150)	8644	8646	20191029114321.519	20191029114321.953
IMG (150)	8656	8665	20191029114324.762	20191029114326.707
IMG (150)	8677	8679	20191029114329.301	20191029114329.734
IMG (150)	8679	8681	20191029114329.734	20191029114330.168
IMG (150)	8693	8732	20191029114333.410	20191029114342.492
IMG (150)	11489	12457	20191029115431.159	20191029115818.831
IMG (150)	2204	2265	20191029122221.641	20191029122236.125
VER (160)	16380	0	20191029013618.451	20191029013626.451
VER (160)	1	16381	20191029013626.451	20191029013626.451
VER (160)	-1	2	20191029013626.451	20191029013634.451
VER (160)	16381	0	20191029085314.394	20191029085322.394
VER (160)	2	16382	20191029085322.394	20191029085322.394
VER (160)	-1	3	20191029085322.394	20191029085330.394
VER (160)	6317	6358	20191029114146.387	20191029114258.383
VER (160)	6382	6388	20191029114330.383	20191029114346.383
VER (160)	6792	6935	20191029115426.401	20191029115431.378
VER (160)	7837	7848	20191029122218.395	20191029122242.395
VER (160)	16382	0	20191029161010.371	20191029161018.371
VER (160)	3	16383	20191029161018.371	20191029161018.371
VER (160)	-1	4	20191029161018.371	20191029161026.371
AUX (180)	14369	14378	20191029114146.820	20191029114258.816
AUX (180)	14382	14384	20191029114330.816	20191029114346.816
AUX (180)	14464	14493	20191029115426.835	20191029115818.831
AUX (180)	14673	14676	20191029122218.829	20191029122242.829

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
29/10/2019 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)	99.51 %	-
GQisFlagQual set (PX2)	99.55 %	-
GQisFlagQual set (PX3)	99.56 %	-
GQisFlagQual set (PX4)	99.48 %	-
GQisFlagQual set (all)	99.53 %	-

Table 4: Quality flags

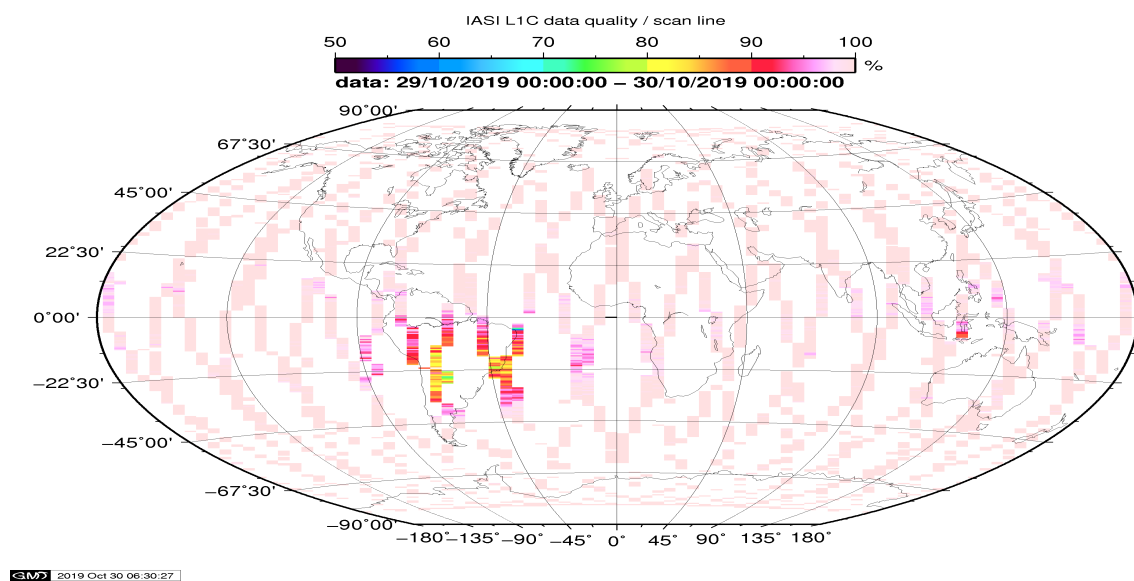


Figure 1: L1C data quality

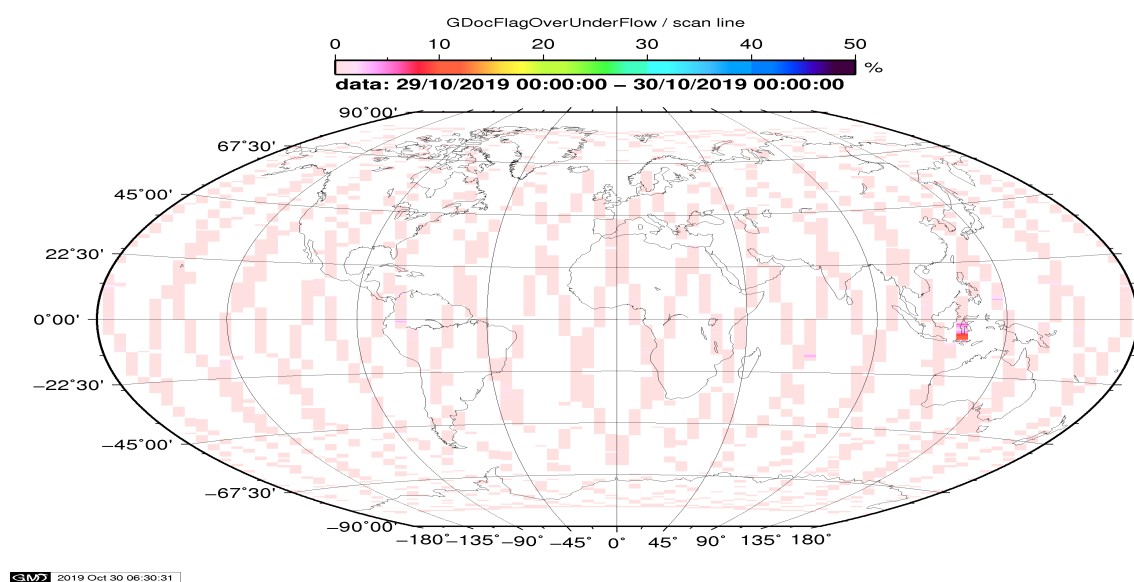


Figure 2: Flag of Over and Under Flows

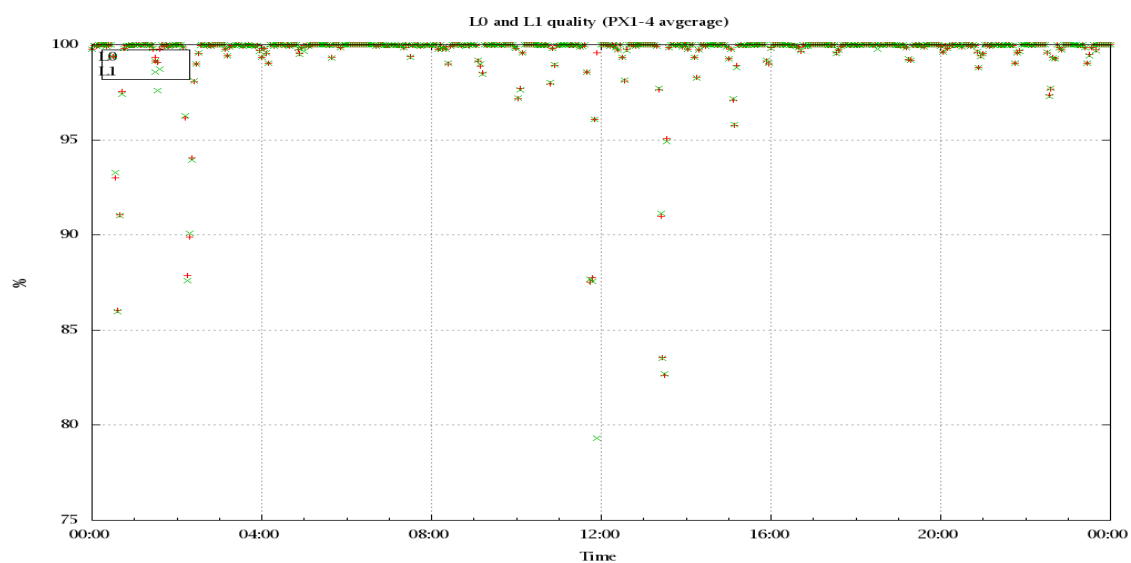


Figure 3: Level 0 and 1C overall quality

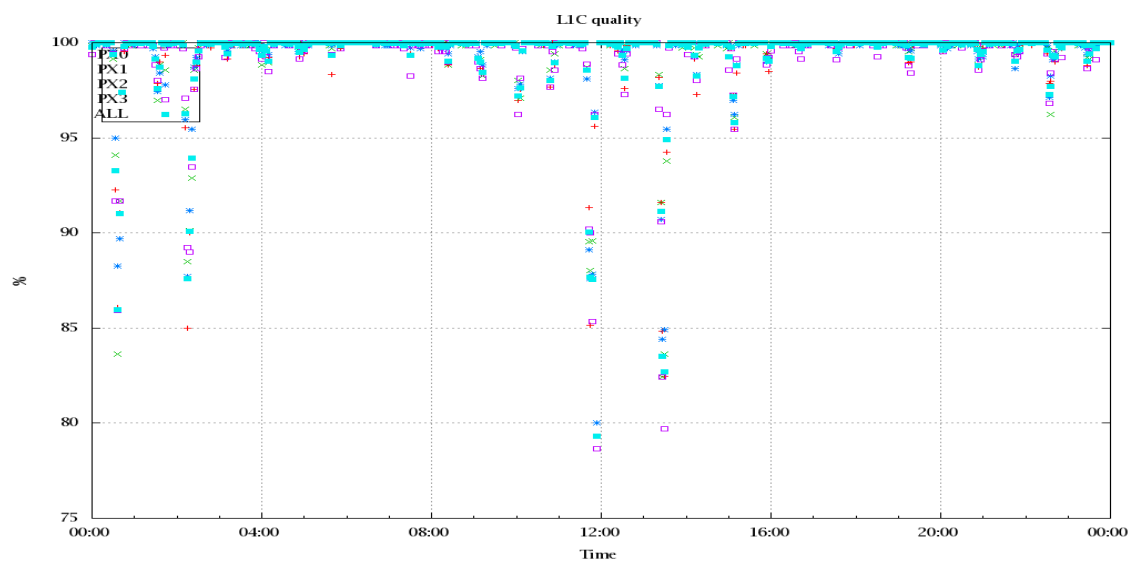


Figure 4: Level 1C quality

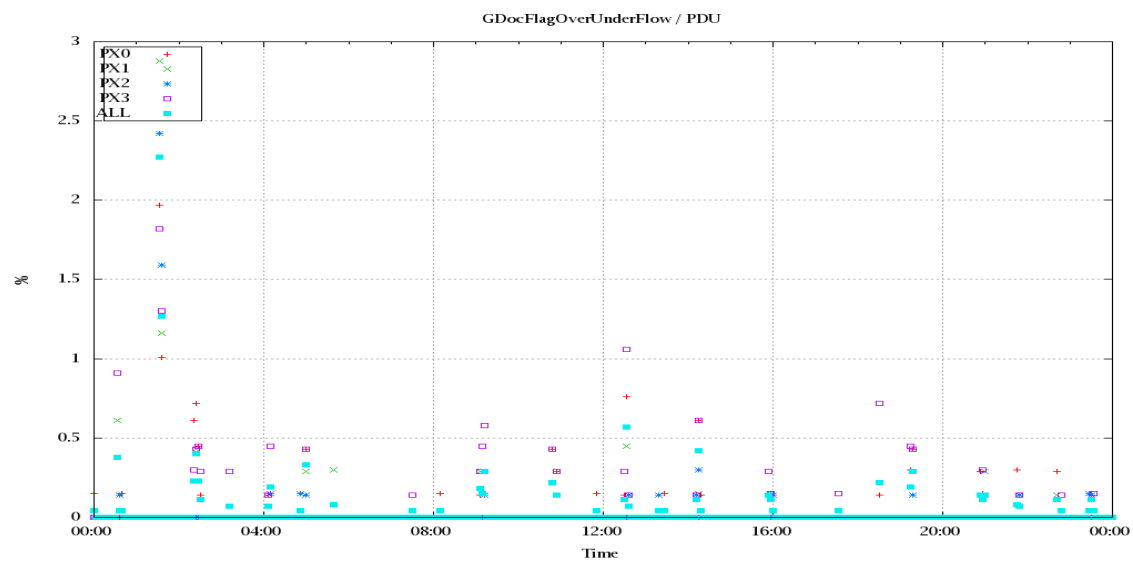


Figure 5: Timeseries of flag of Over and Under Flows

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.

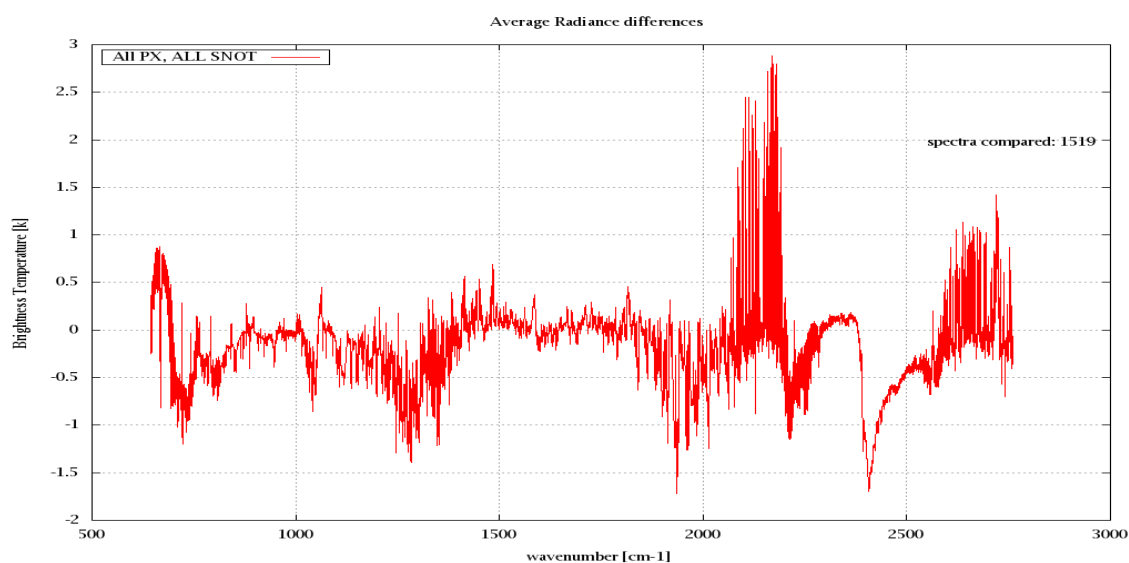


Figure 6: Average Radiance differences: OBS-CAL

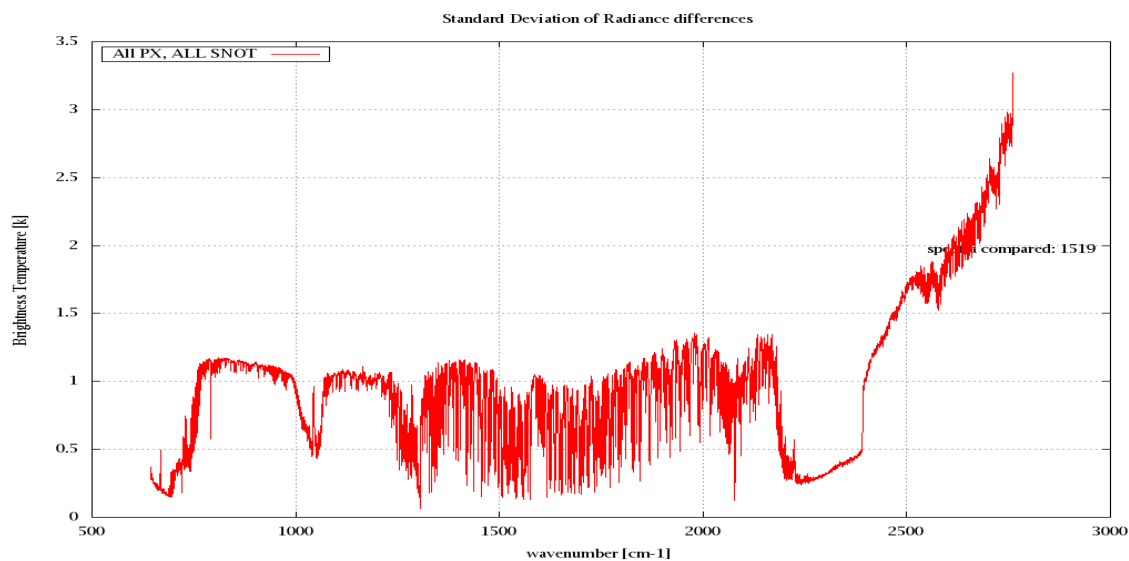


Figure 7: Standard Deviation of Radiance differences

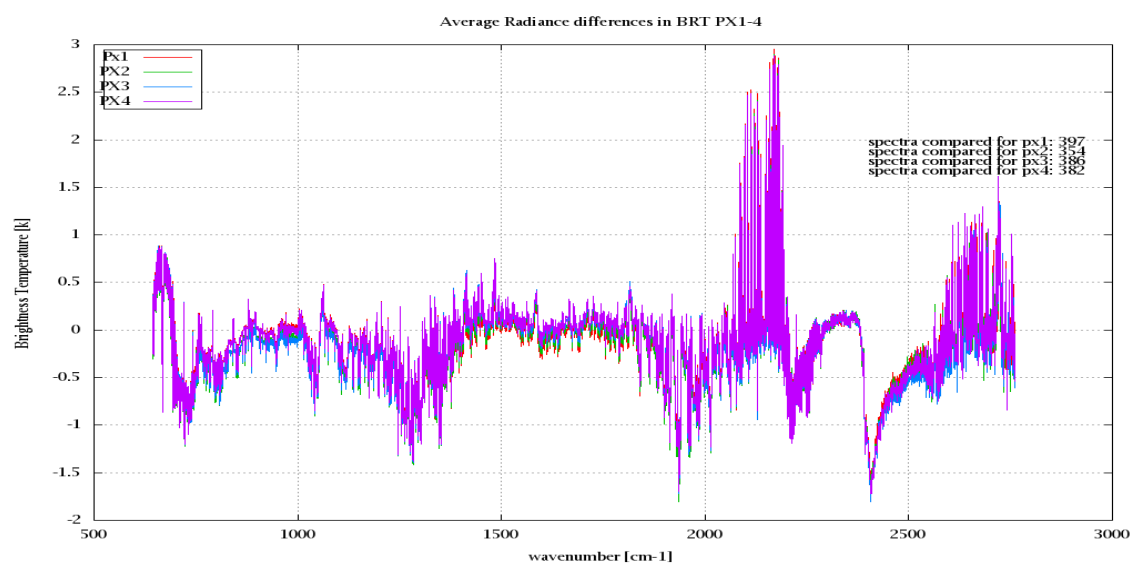


Figure 8: Average Radiance differences: OBS-CAL

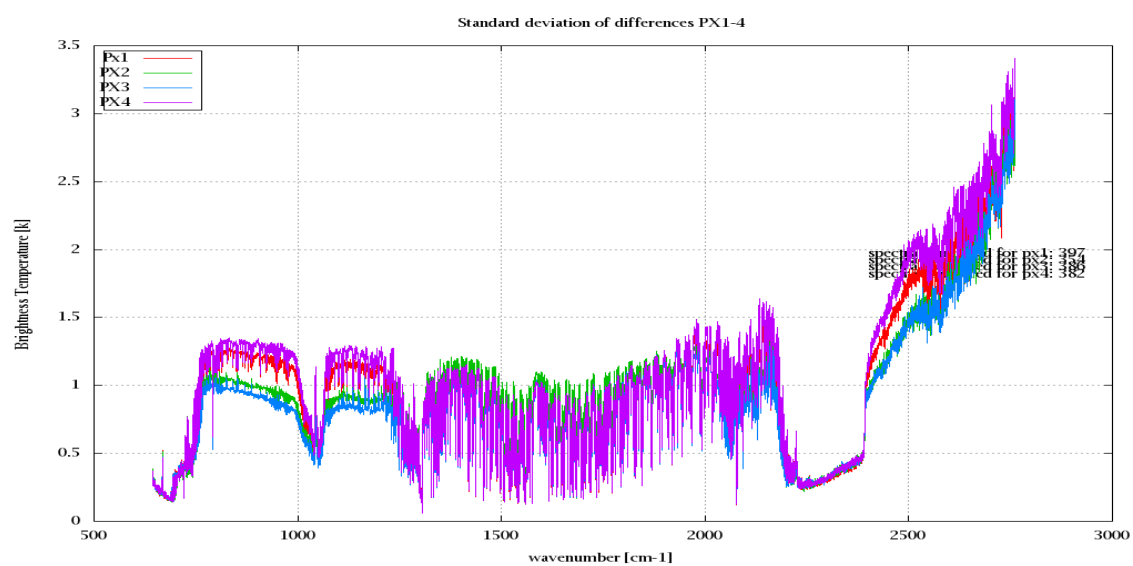


Figure 9: Standard Deviation of Radiance differences

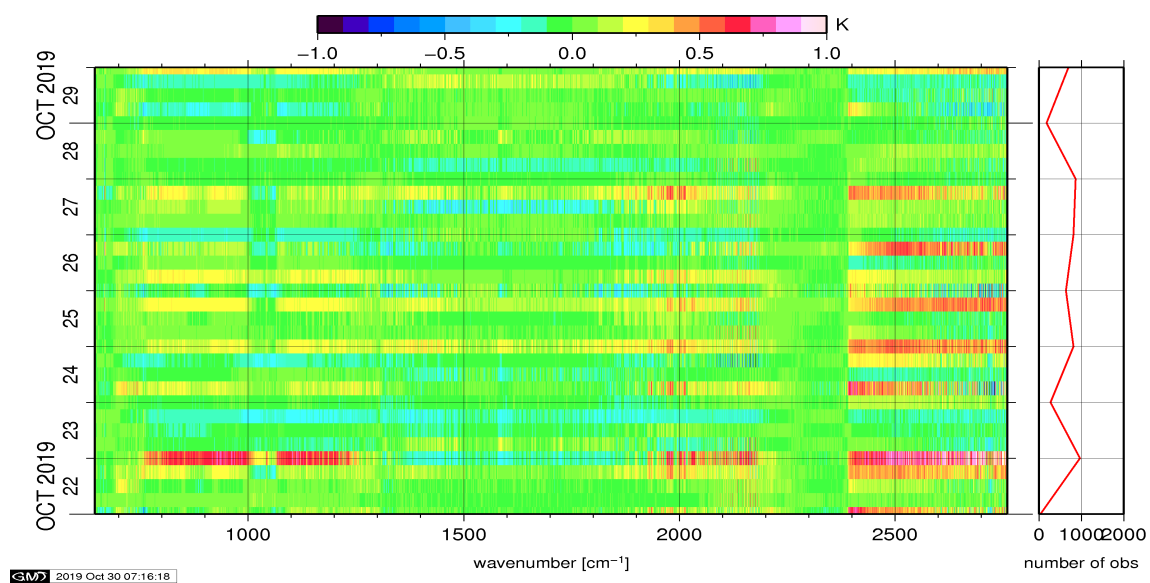


Figure 10: Radiance Anomaly in BT: All Channels

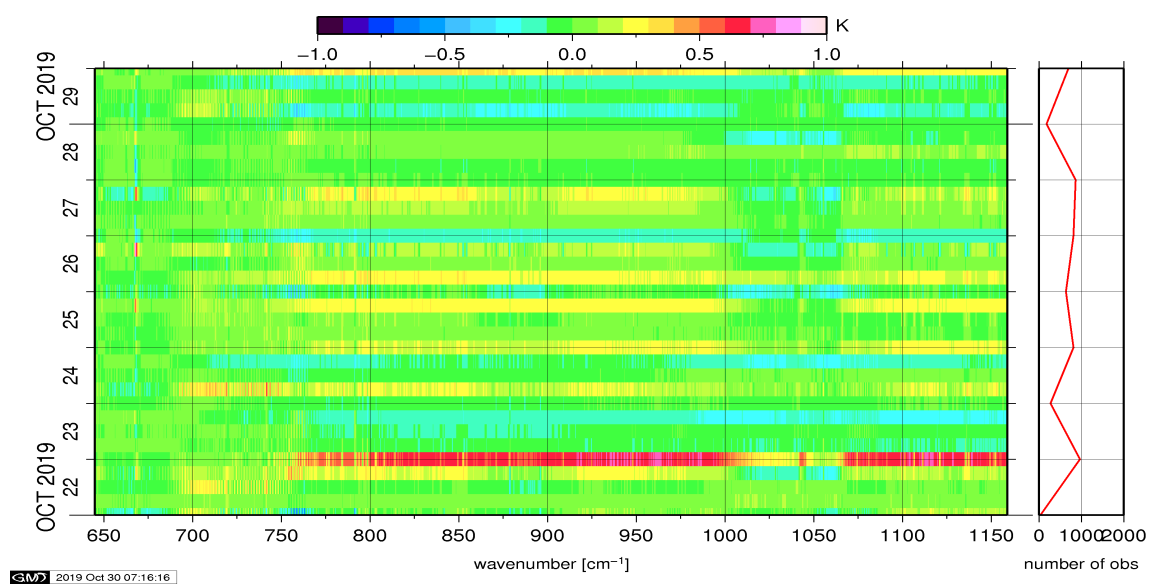


Figure 11: Radiance Anomaly in BT: IASI Band 1

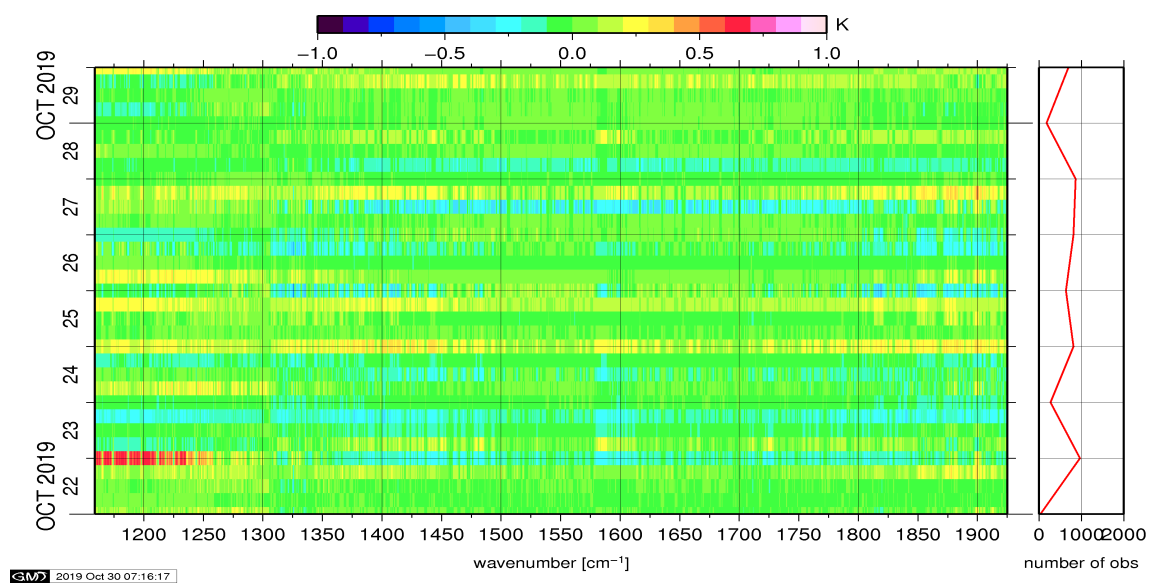


Figure 12: Radiance Anomaly in BT: IASI Band 2

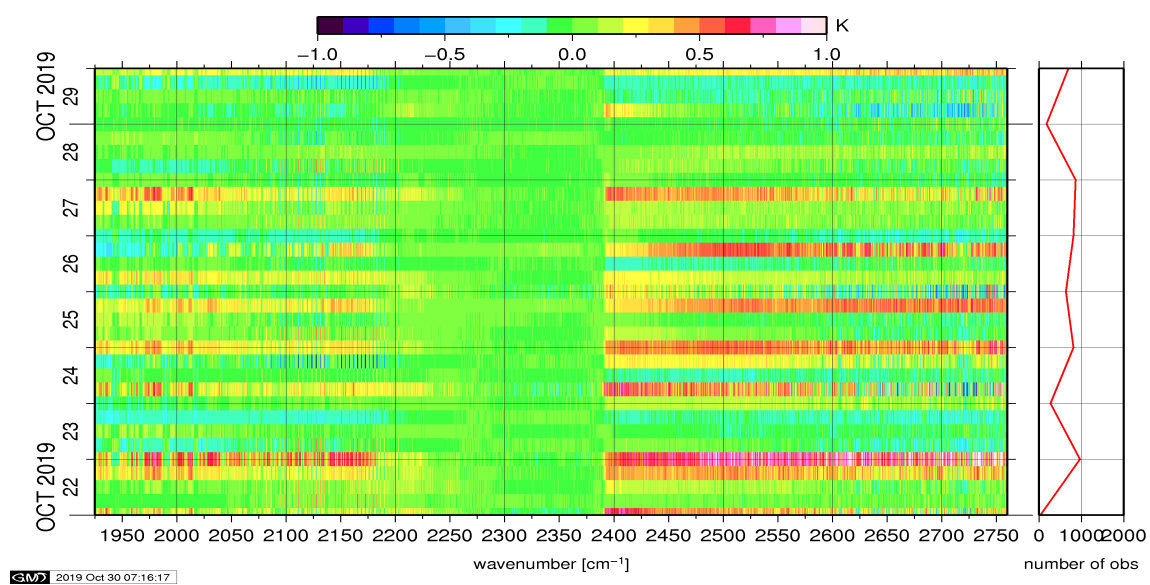


Figure 13: Radiance Anomaly in BT: IASI Band 3

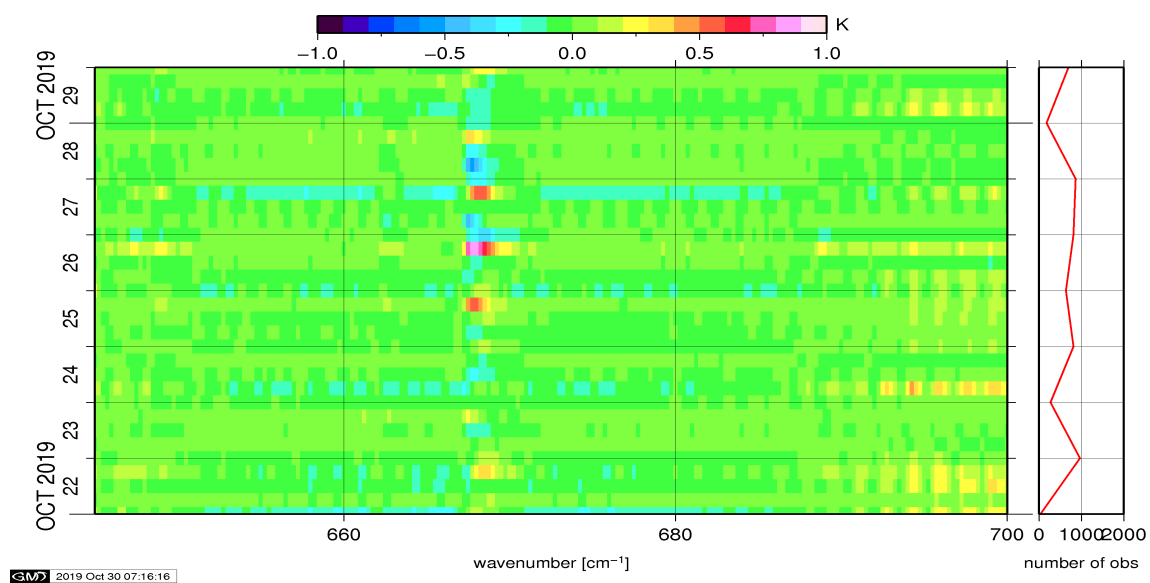


Figure 14: Radiance Anomaly in BT: CO2 14

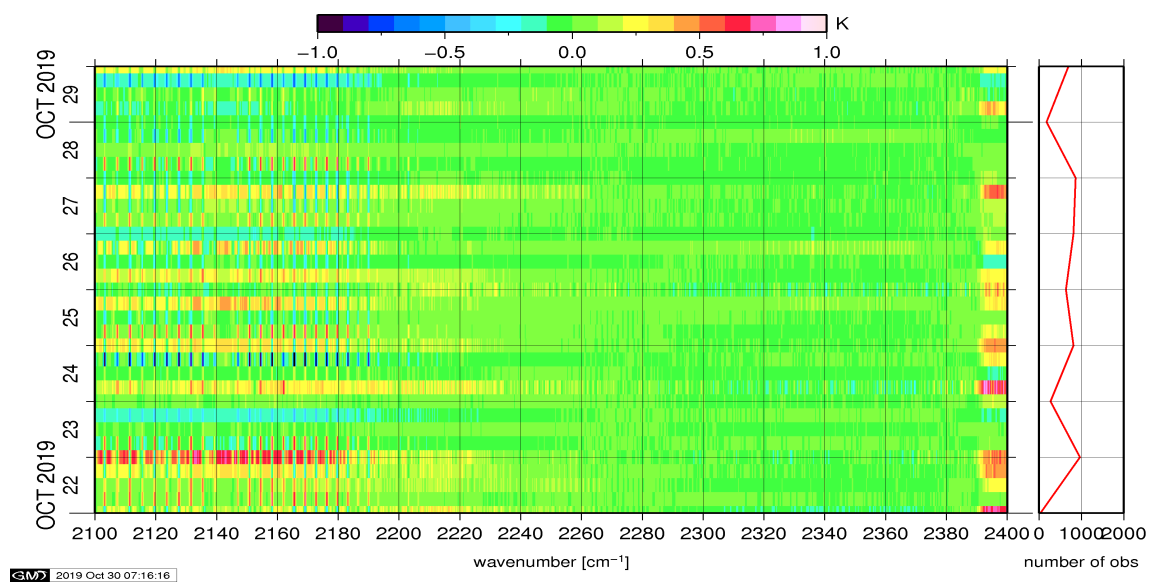


Figure 15: Radiance Anomaly in BT: CO2 4.3

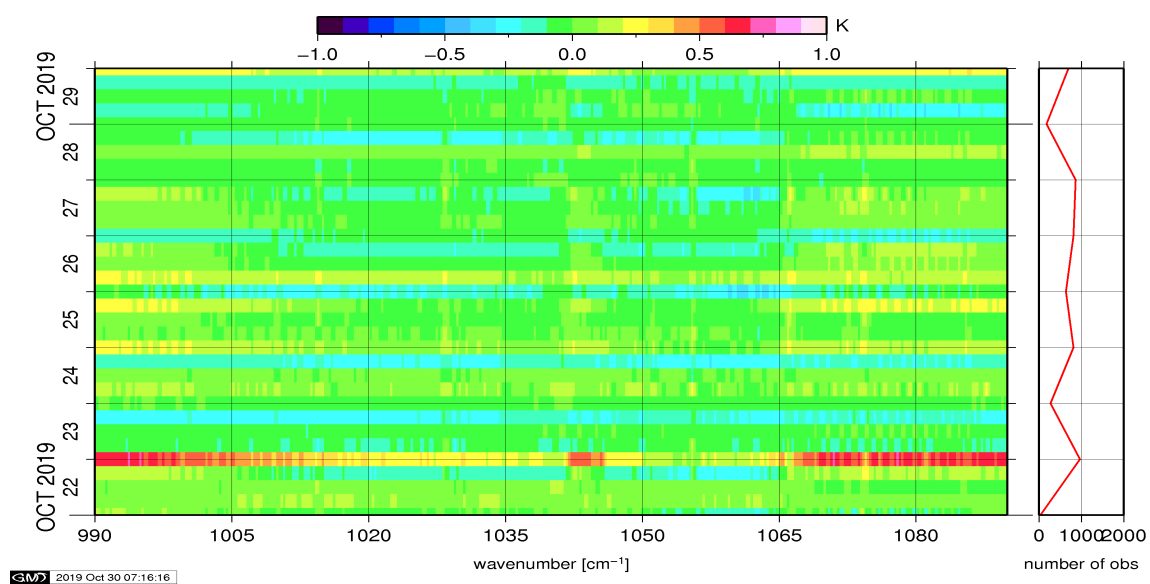


Figure 16: Radiance Anomaly in BT: O3