

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

IASI monitoring team

12/11/2021 00:00:00 - 13/11/2021 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 12/11/2021 00:00:00 - 13/11/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 12/11/2021 00:00:00 - 13/11/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	475	-
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)	916	1694	20211112111805.932	20211112112133.495
PX1 (130)	1862	1895	20211112112218.897	20211112112227.545
PX1 (130)	1905	1907	20211112112229.709	20211112112231.655
PX1 (130)	1921	1923	20211112112234.682	20211112112235.112
PX1 (130)	1924	1963	20211112112235.330	20211112112245.276
PX1 (130)	10381	10829	20211112120010.694	20211112120210.261
PX1 (130)	10999	11031	20211112120256.097	20211112120304.530
PX1 (130)	11055	11057	20211112120309.718	20211112120311.663
PX1 (130)	11057	11099	20211112120311.663	20211112120322.257
PX2 (135)	916	1694	20211112111805.932	20211112112133.495
PX2 (135)	1862	1895	20211112112218.897	20211112112227.545
PX2 (135)	1907	1909	20211112112231.655	20211112112232.084
PX2 (135)	1914	1916	20211112112233.166	20211112112233.600
PX2 (135)	1921	1923	20211112112234.682	20211112112235.112
PX2 (135)	1924	1963	20211112112235.330	20211112112245.276
PX2 (135)	10381	10829	20211112120010.694	20211112120210.261
PX2 (135)	10999	11031	20211112120256.097	20211112120304.530
PX2 (135)	11041	11043	20211112120306.690	20211112120307.124
PX2 (135)	11057	11099	20211112120311.663	20211112120322.257
Continued on next page				

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	916	1694	20211112111805.932	20211112112133.495
PX3 (140)	1861	1895	20211112112218.682	20211112112227.545
PX3 (140)	1914	1916	20211112112233.166	20211112112233.600
PX3 (140)	1923	1963	20211112112235.112	20211112112245.276
PX3 (140)	10381	10829	20211112120010.694	20211112120210.261
PX3 (140)	10999	11031	20211112120256.097	20211112120304.530
PX3 (140)	11056	11099	20211112120309.933	20211112120322.257
PX4 (145)	916	1694	20211112111805.932	20211112112133.495
PX4 (145)	1861	1895	20211112112218.682	20211112112227.545
PX4 (145)	1916	1918	20211112112233.600	20211112112234.034
PX4 (145)	1923	1962	20211112112235.112	20211112112245.057
PX4 (145)	10381	10829	20211112120010.694	20211112120210.261
PX4 (145)	10999	11031	20211112120256.097	20211112120304.530
PX4 (145)	11043	11045	20211112120307.124	20211112120307.558
PX4 (145)	11050	11052	20211112120308.636	20211112120309.069
PX4 (145)	11056	11099	20211112120309.933	20211112120322.257
IMG (150)	11452	12333	20211112111805.932	20211112112133.276
IMG (150)	12525	12562	20211112112218.682	20211112112227.330
IMG (150)	12581	12583	20211112112232.084	20211112112232.518
IMG (150)	12583	12585	20211112112232.518	20211112112232.952
IMG (150)	12588	12590	20211112112233.600	20211112112234.034
IMG (150)	12590	12592	20211112112234.034	20211112112234.463
IMG (150)	12595	12638	20211112112235.112	20211112112245.057
IMG (150)	5796	6305	20211112120010.480	20211112120210.261
IMG (150)	6498	6535	20211112120255.882	20211112120304.530
IMG (150)	6556	6558	20211112120309.069	20211112120309.503
IMG (150)	6560	6563	20211112120309.933	20211112120311.015
IMG (150)	6564	6610	20211112120311.233	20211112120322.042
VER (160)	16382	0	20211112014517.980	20211112014525.980
VER (160)	3	16383	20211112014525.980	20211112014525.980
VER (160)	-1	4	20211112014525.980	20211112014533.980
VER (160)	5089	5220	20211112111757.932	20211112112133.924
VER (160)	5249	5256	20211112112213.924	20211112112219.979
VER (160)	5256	5265	20211112112219.979	20211112112245.924
VER (160)	6669	6745	20211112120005.941	20211112120213.937
VER (160)	6774	6780	20211112120253.936	20211112120309.933
VER (160)	6782	6790	20211112120309.933	20211112120325.933
VER (160)	16379	0	20211112161901.904	20211112161909.900
VER (160)	0	16380	20211112161909.900	20211112161909.900
VER (160)	-1	1	20211112161909.900	20211112161917.900
VER (160)	16380	0	20211112233557.879	20211112233605.879
VER (160)	1	16381	20211112233605.879	20211112233605.879
VER (160)	-1	2	20211112233605.879	20211112233613.879
AUX (180)	10825	10852	20211112111758.362	20211112112134.358
AUX (180)	10857	10859	20211112112214.358	20211112112230.358
AUX (180)	10859	10861	20211112112230.358	20211112112246.358
AUX (180)	11141	11157	20211112120006.370	20211112120214.366
AUX (180)	11164	11166	20211112120310.366	20211112120326.366

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
12/11/2021 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	475	-
GQisFlagQual set (PX1)	99.50 %	-
GQisFlagQual set (PX2)	99.53 %	-
GQisFlagQual set (PX3)	99.54 %	-
GQisFlagQual set (PX4)	99.46 %	-
GQisFlagQual set (all)	99.51 %	-

Table 4: Quality flags

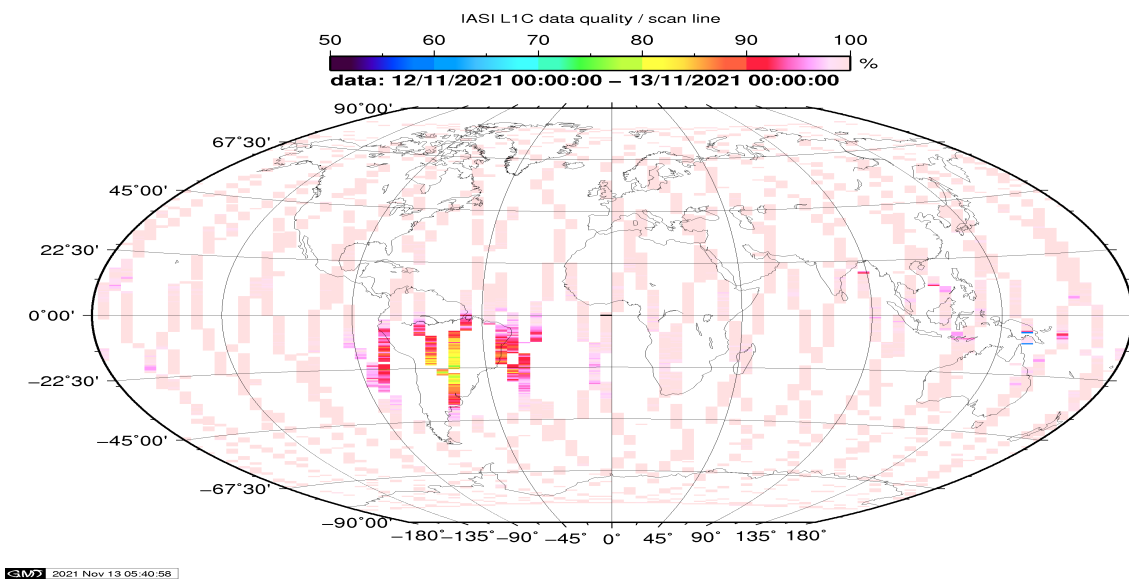


Figure 1: L1C data quality

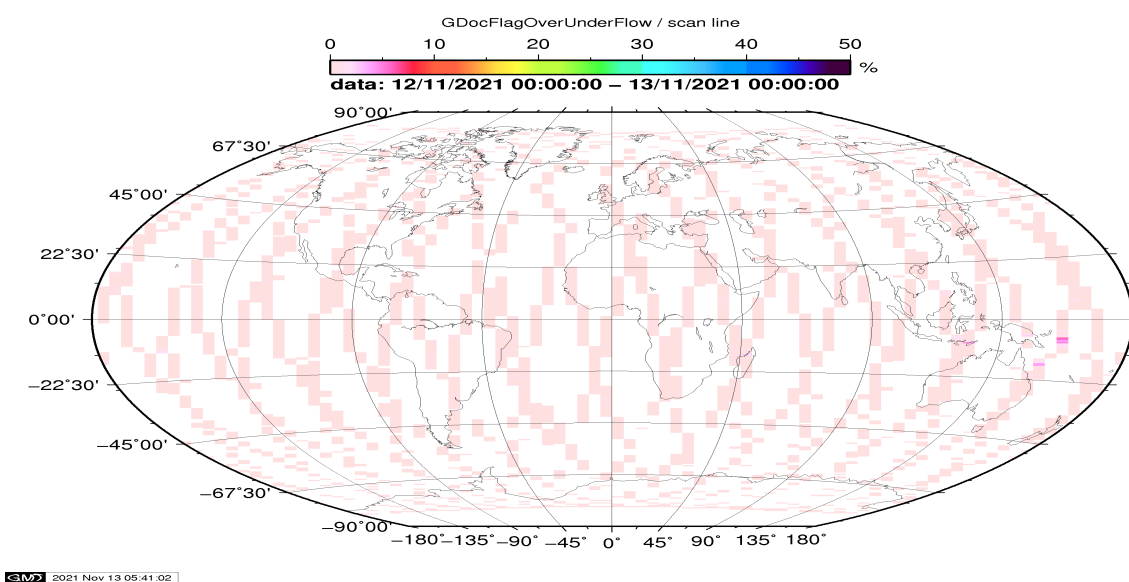


Figure 2: Flag of Over and Under Flows

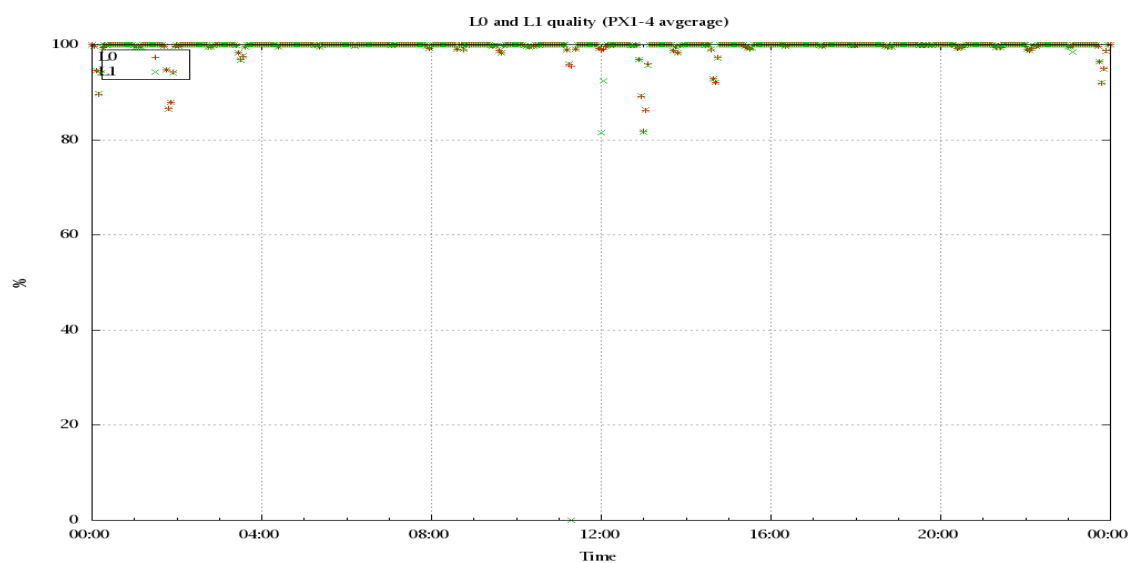


Figure 3: Level 0 and 1C overall quality

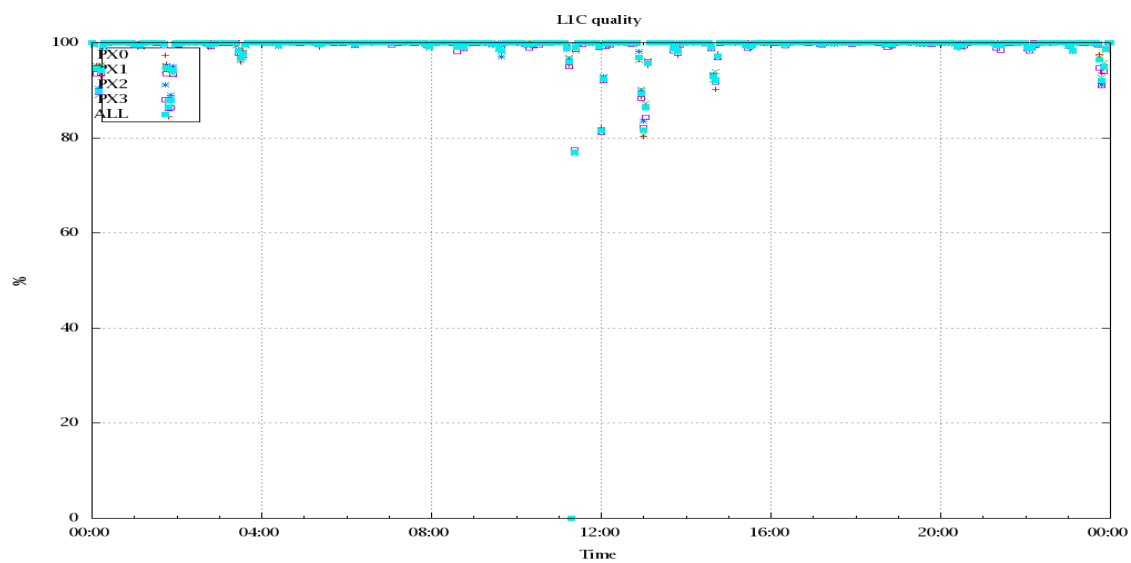


Figure 4: Level 1C quality

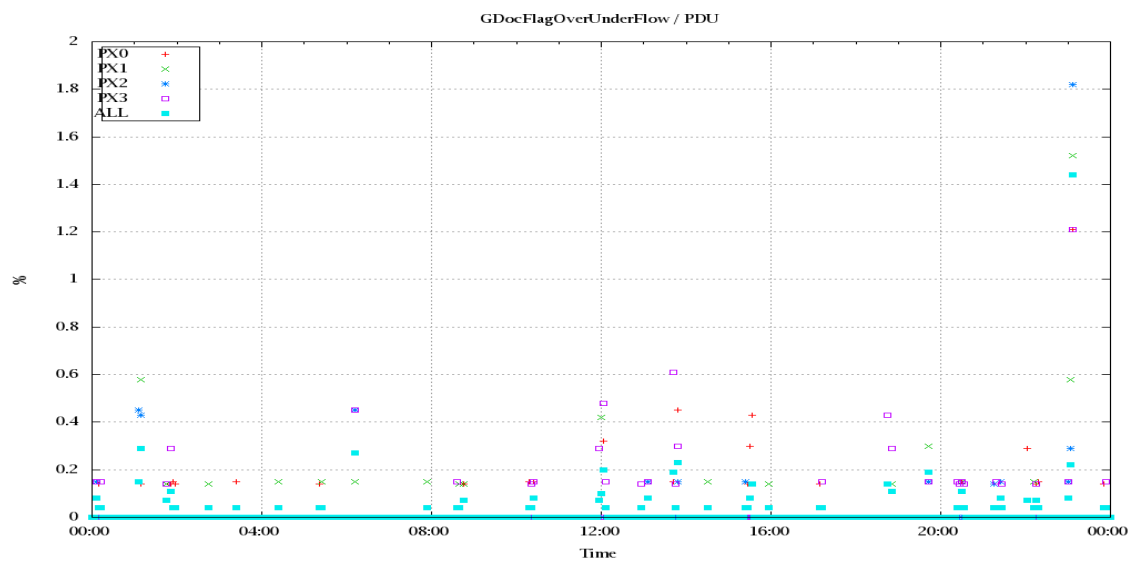


Figure 5: Timeseries of flag of Over and Under Flows

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.

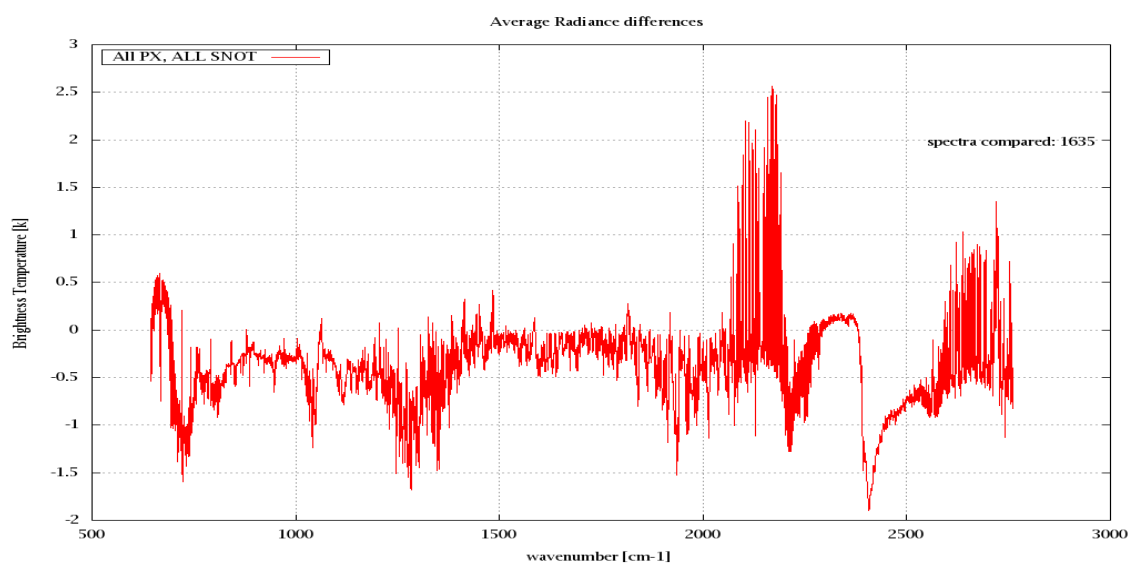


Figure 6: Average Radiance differences: OBS-CAL

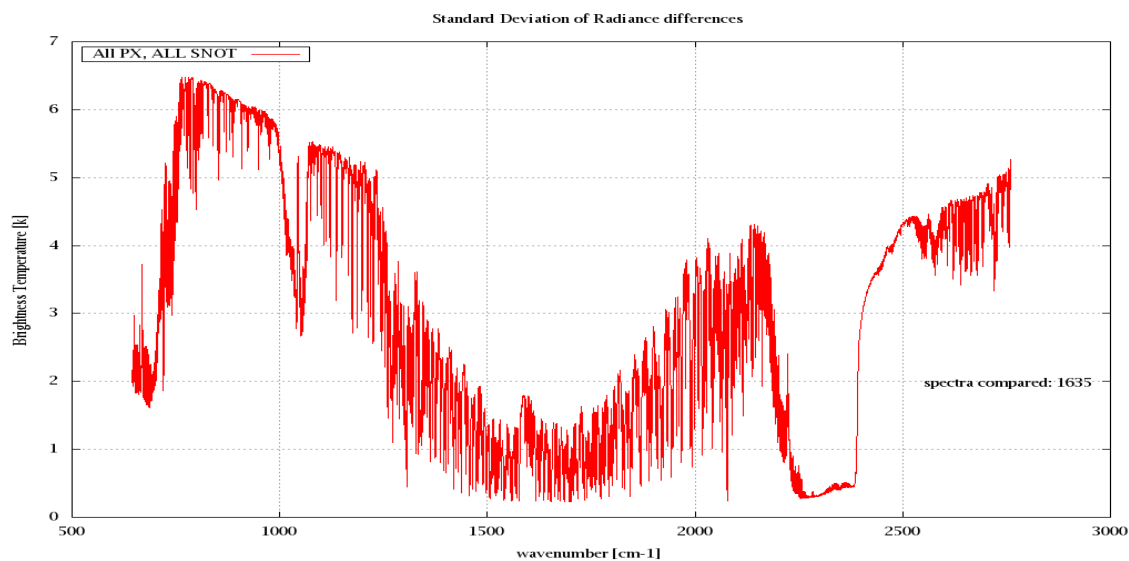


Figure 7: Standard Deviation of Radiance differences

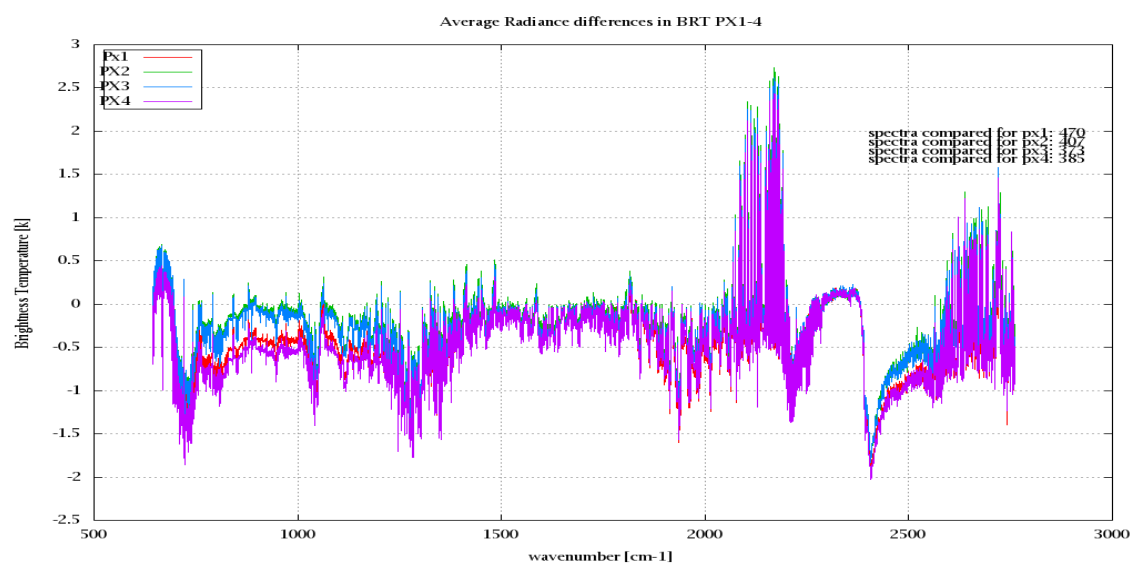


Figure 8: Average Radiance differences: OBS-CAL

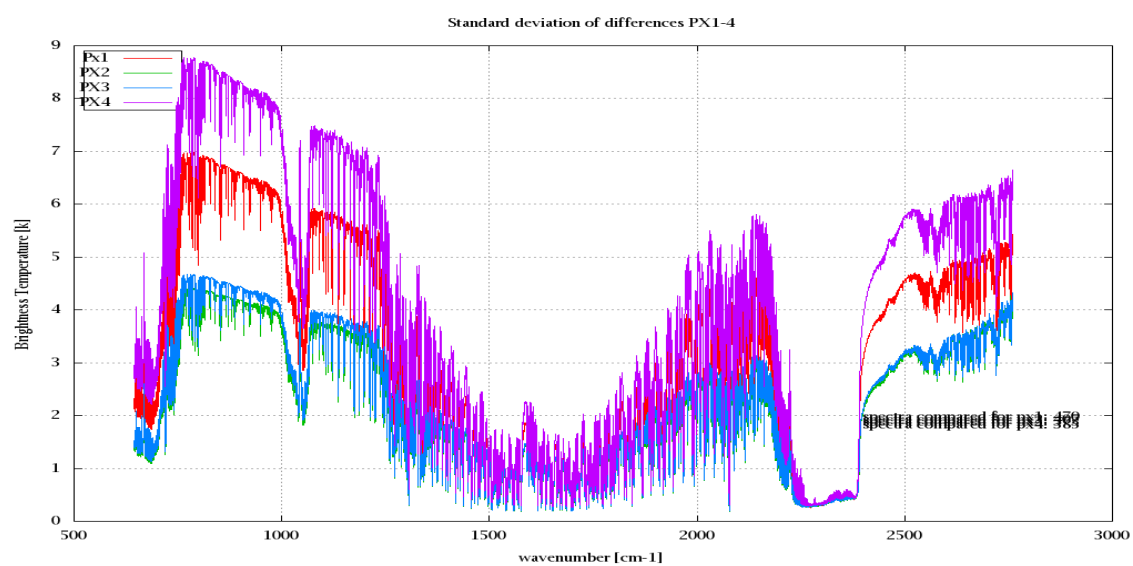


Figure 9: Standard Deviation of Radiance differences

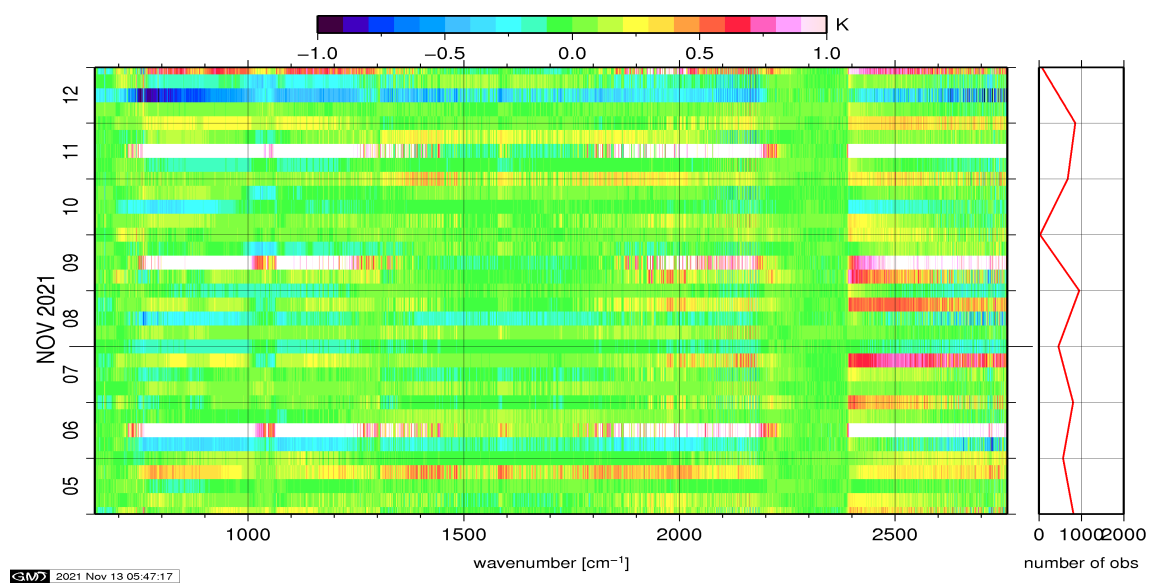


Figure 10: Radiance Anomaly in BT: All Channels

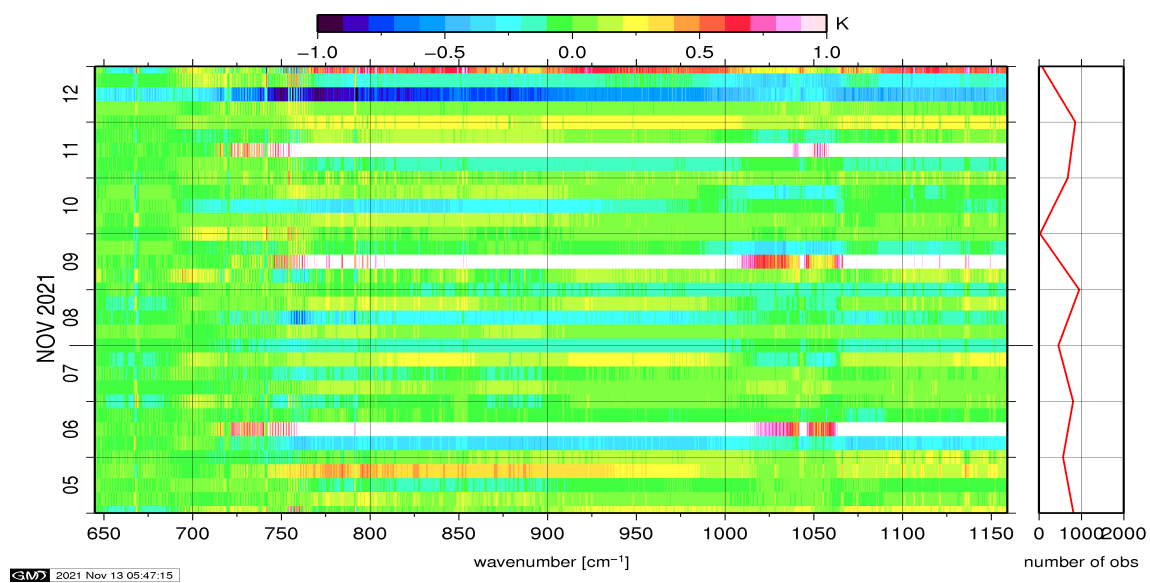


Figure 11: Radiance Anomaly in BT: IASI Band 1

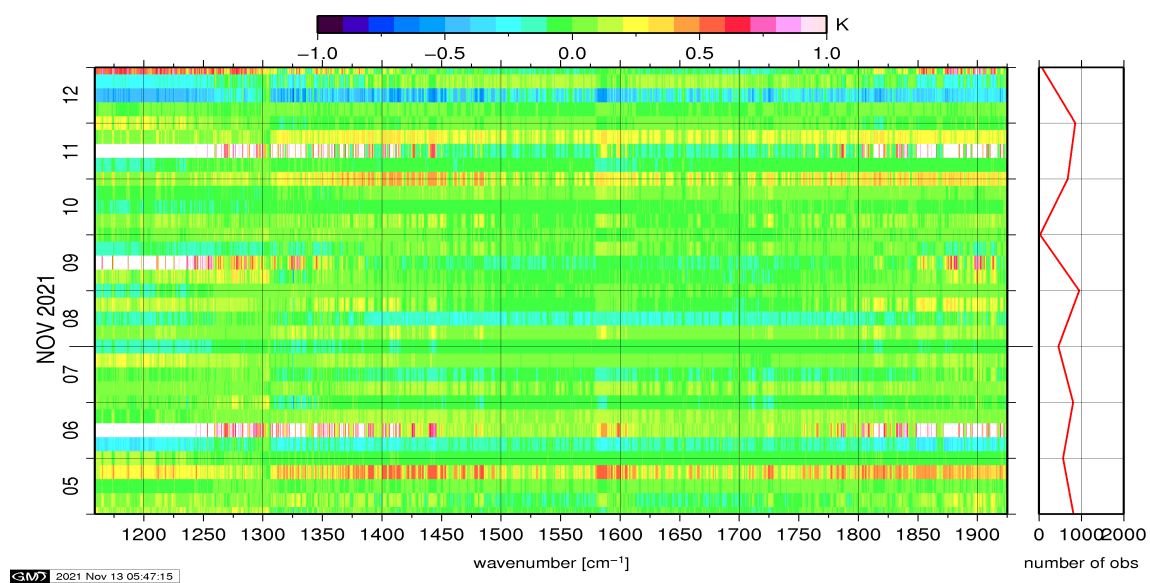


Figure 12: Radiance Anomaly in BT: IASI Band 2

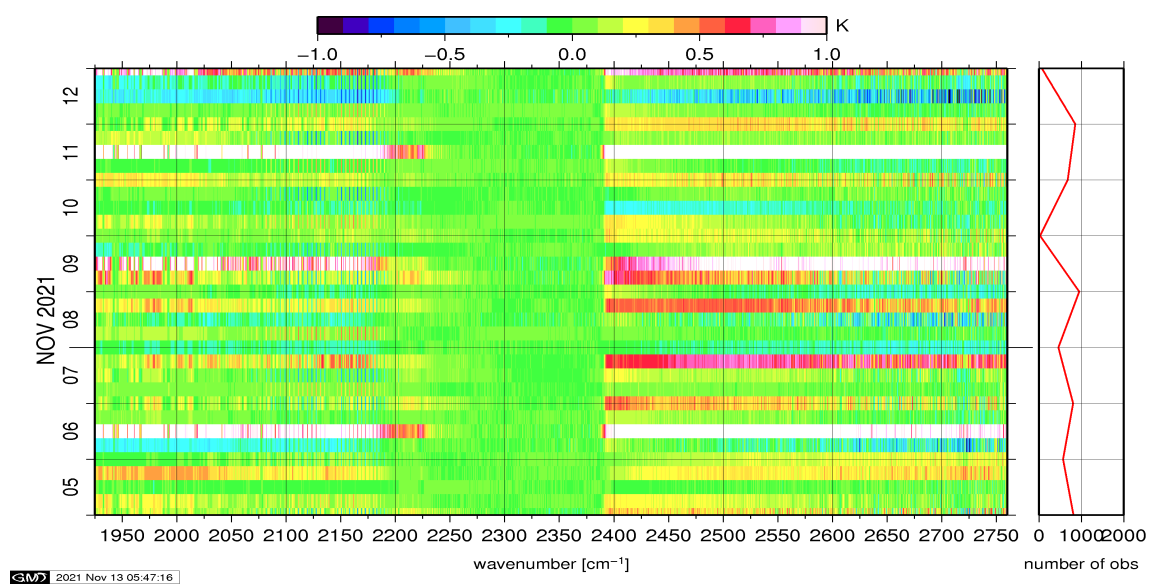


Figure 13: Radiance Anomaly in BT: IASI Band 3

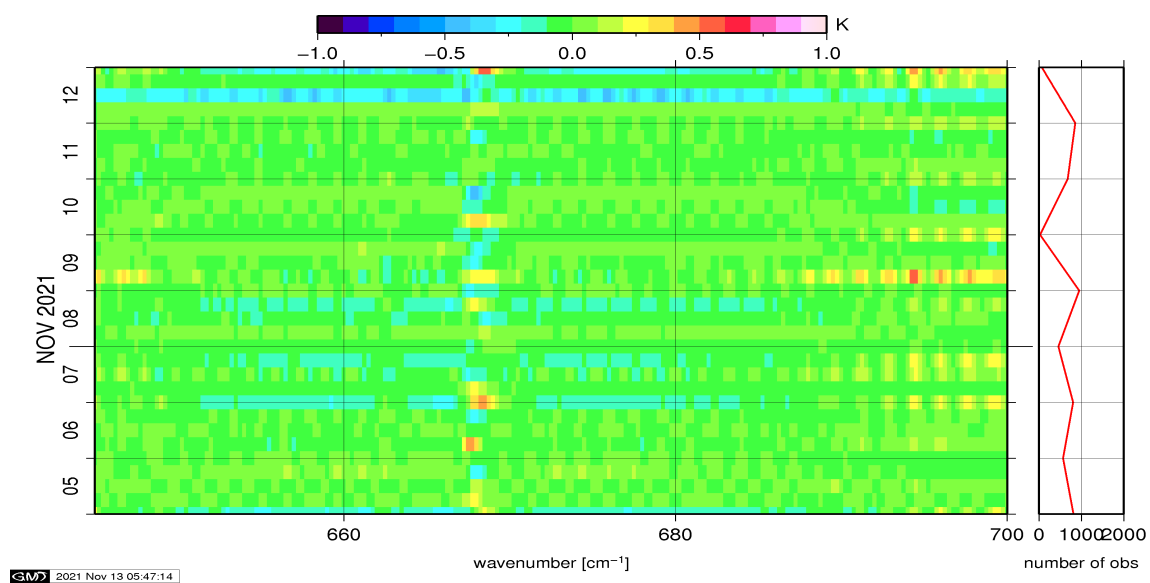


Figure 14: Radiance Anomaly in BT: CO2 14

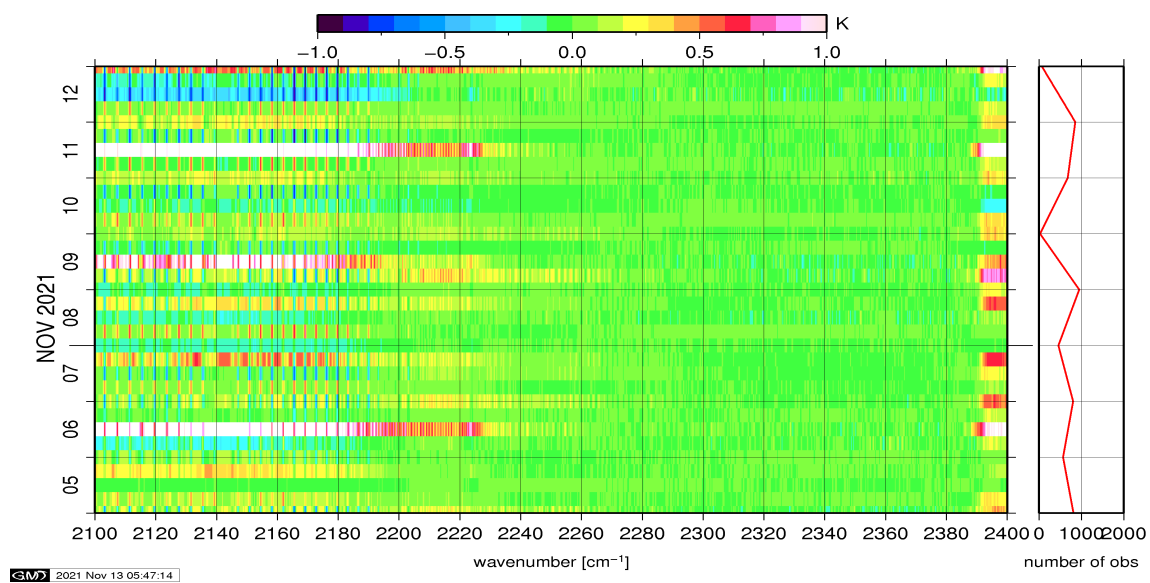


Figure 15: Radiance Anomaly in BT: CO2 4.3

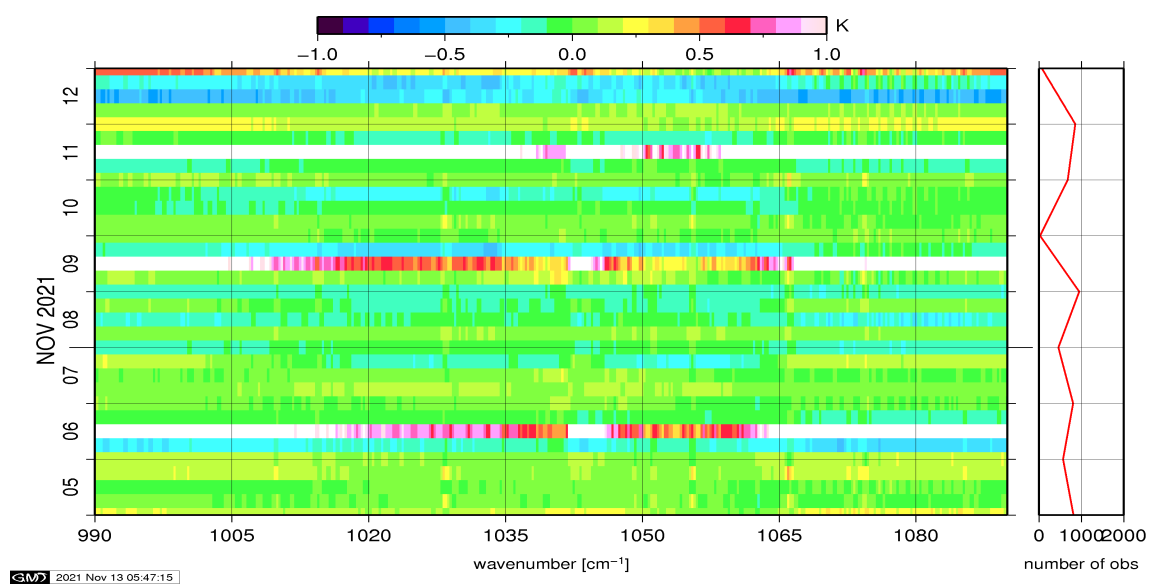


Figure 16: Radiance Anomaly in BT: O3