

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

IASI monitoring team

26/04/2021 00:00:00 - 27/04/2021 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 26/04/2021 00:00:00 - 27/04/2021 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 26/04/2021 00:00:00 - 27/04/2021 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	456	e
L0 IASI PDUs	457	e
L1 ENG PDUs	438	e
L1 ENG distinct GEPSGranule	423	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	438	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	14911	7423	20210426062659.911	20210426070632.857
PX1 (130)	7588	7626	20210426070716.099	20210426070725.829
PX1 (130)	7636	7638	20210426070729.505	20210426070729.939
PX1 (130)	7659	7661	20210426070734.478	20210426070734.911
PX1 (130)	7662	7682	20210426070735.126	20210426070740.966
PX1 (130)	9294	169	20210426071451.262	20210426074707.033
PX1 (130)	334	370	20210426074750.275	20210426074801.084
PX1 (130)	396	398	20210426074806.705	20210426074807.138
PX1 (130)	406	429	20210426074810.380	20210426074816.869
PX1 (130)	5376	6444	20210426081014.707	20210426081500.105
PX2 (135)	14911	7423	20210426062659.911	20210426070632.857
PX2 (135)	7588	7626	20210426070716.099	20210426070725.829
PX2 (135)	7659	7661	20210426070734.478	20210426070734.911
PX2 (135)	7662	7682	20210426070735.126	20210426070740.966
PX2 (135)	9294	169	20210426071451.262	20210426074707.033
PX2 (135)	334	370	20210426074750.275	20210426074801.084
PX2 (135)	389	391	20210426074805.193	20210426074805.623

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	405	429	20210426074810.166	20210426074816.869
PX2 (135)	5376	6444	20210426081014.707	20210426081500.105
PX3 (140)	14911	7423	20210426062659.911	20210426070632.857
PX3 (140)	7587	7626	20210426070715.884	20210426070725.829
PX3 (140)	7638	7640	20210426070729.939	20210426070730.372
PX3 (140)	7661	7682	20210426070734.911	20210426070740.966
PX3 (140)	9294	169	20210426071451.262	20210426074707.033
PX3 (140)	333	370	20210426074750.056	20210426074801.084
PX3 (140)	398	400	20210426074807.138	20210426074809.084
PX3 (140)	405	429	20210426074810.166	20210426074816.869
PX3 (140)	5376	6444	20210426081014.707	20210426081500.105
PX4 (145)	14911	7423	20210426062659.911	20210426070632.857
PX4 (145)	7587	7626	20210426070715.884	20210426070725.829
PX4 (145)	7661	7682	20210426070734.911	20210426070740.966
PX4 (145)	9294	168	20210426071451.262	20210426074706.814
PX4 (145)	333	370	20210426074750.056	20210426074801.084
PX4 (145)	391	393	20210426074805.623	20210426074806.056
PX4 (145)	405	429	20210426074810.166	20210426074816.869
PX4 (145)	5376	6444	20210426081014.707	20210426081500.105
IMG (150)	14172	7868	20210426062659.911	20210426070631.560
IMG (150)	8056	8099	20210426070715.884	20210426070725.829
IMG (150)	8108	8110	20210426070728.208	20210426070728.857
IMG (150)	8110	8112	20210426070728.857	20210426070729.290
IMG (150)	8112	8114	20210426070729.290	20210426070729.724
IMG (150)	8117	8119	20210426070730.372	20210426070730.802
IMG (150)	8133	8135	20210426070733.829	20210426070734.263
IMG (150)	8139	8163	20210426070735.126	20210426070740.966
IMG (150)	9990	1833	20210426071451.044	20210426074706.814
IMG (150)	2018	2062	20210426074750.056	20210426074800.869
IMG (150)	2079	2081	20210426074804.545	20210426074804.974
IMG (150)	2086	2088	20210426074806.056	20210426074806.490
IMG (150)	2097	2099	20210426074809.084	20210426074809.517
IMG (150)	2099	2101	20210426074809.517	20210426074809.947
IMG (150)	2102	2126	20210426074810.166	20210426074815.572
IMG (150)	7732	8945	20210426081014.492	20210426081500.105
VER (160)	16382	0	20210426030831.171	20210426030839.171
VER (160)	3	16383	20210426030839.171	20210426030839.171
VER (160)	-1	4	20210426030839.171	20210426030847.171
VER (160)	7438	8924	20210426062655.153	20210426070639.130
VER (160)	8948	8954	20210426070711.126	20210426070727.126
VER (160)	8955	8964	20210426070727.126	20210426070743.126
VER (160)	9233	10444	20210426071447.153	20210426074711.138
VER (160)	10473	10489	20210426074804.759	20210426074823.138
VER (160)	11308	11489	20210426081007.140	20210426081503.132
VER (160)	16379	0	20210426174215.090	20210426174223.090
VER (160)	0	16380	20210426174223.090	20210426174223.090
VER (160)	-1	1	20210426174223.090	20210426174231.090
AUX (180)	8006	8303	20210426062655.587	20210426070631.560
AUX (180)	8308	8310	20210426070711.560	20210426070727.560
AUX (180)	8310	8312	20210426070727.560	20210426070743.560
AUX (180)	8365	8608	20210426071447.587	20210426074711.572
AUX (180)	8613	8615	20210426074804.759	20210426074807.572
AUX (180)	8780	8817	20210426081007.574	20210426081503.566

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APID	Seq from	Seq to	Time from	Time to
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Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
26/04/2021 00:00:10	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	457	e
L1 ENG PDUs	438	e
L1 ENG distinct GEPSGranule	423	a
GQisFlagQual set (PX1)	99.26 %	-
GQisFlagQual set (PX2)	99.29 %	-
GQisFlagQual set (PX3)	99.27 %	-
GQisFlagQual set (PX4)	99.22 %	-
GQisFlagQual set (all)	99.26 %	-

Table 4: Quality flags

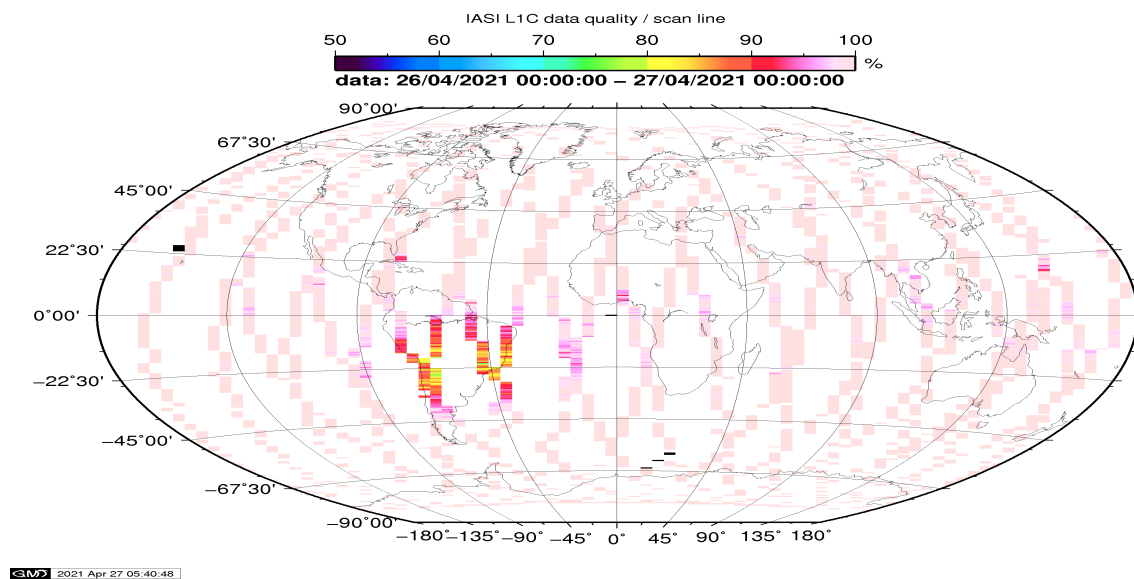


Figure 1: L1C data quality

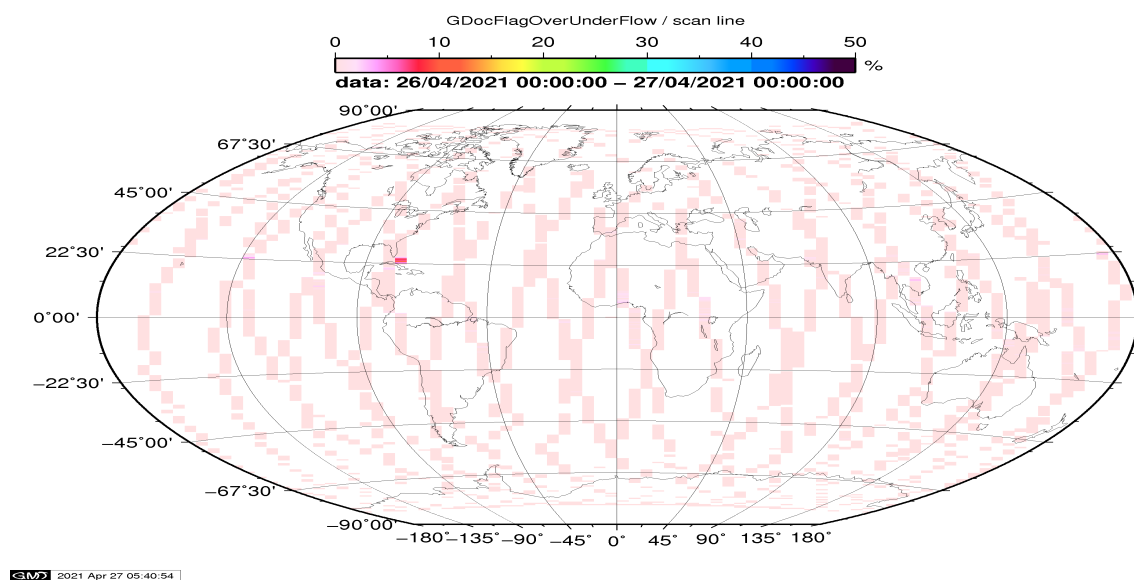


Figure 2: Flag of Over and Under Flows

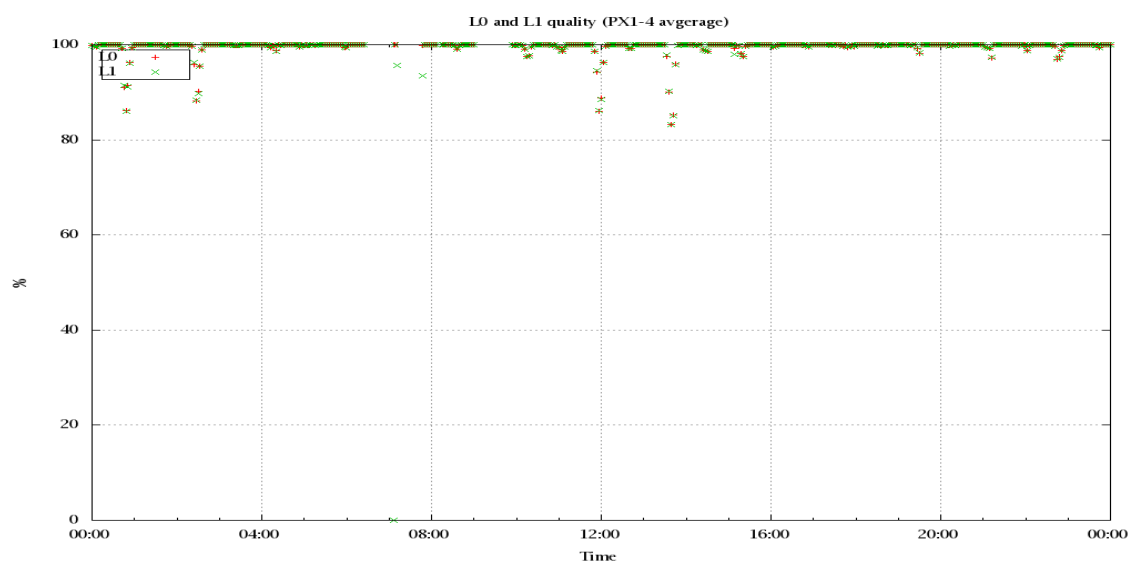


Figure 3: Level 0 and 1C overall quality

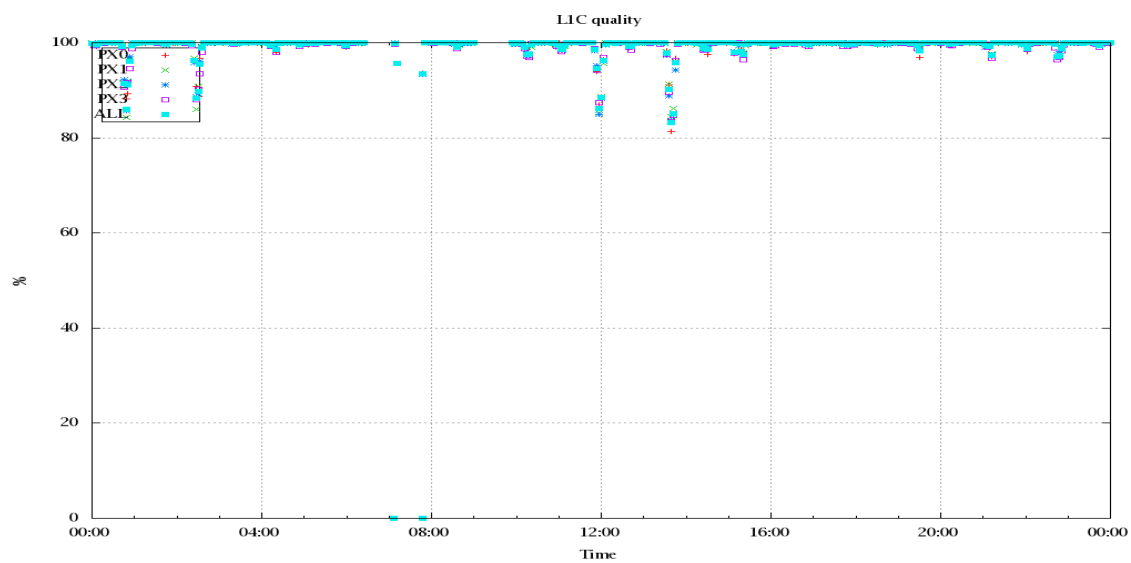


Figure 4: Level 1C quality

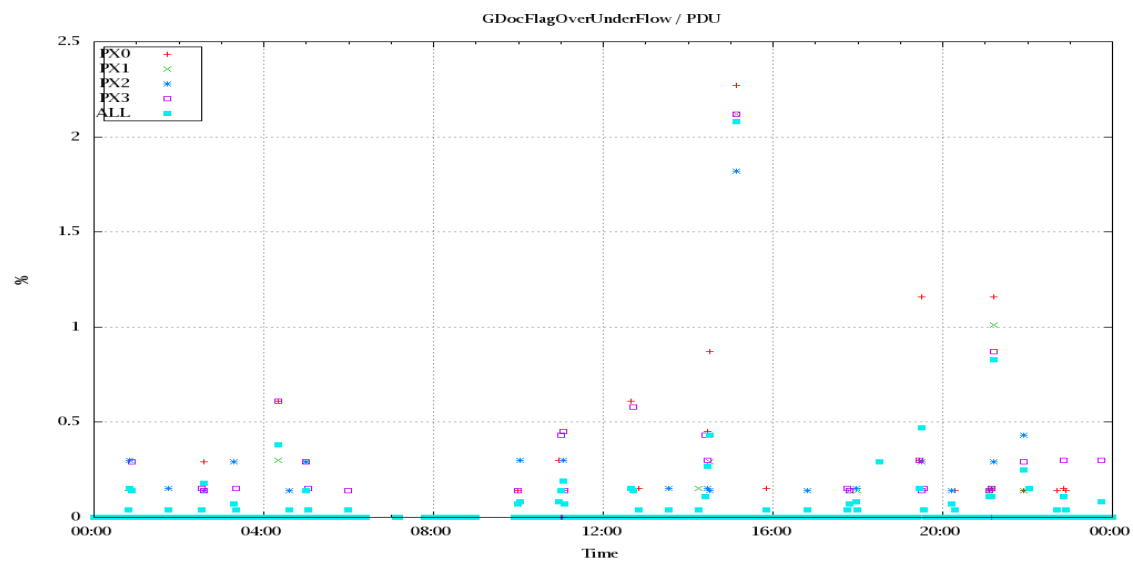


Figure 5: Timeseries of flag of Over and Under Flows

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.

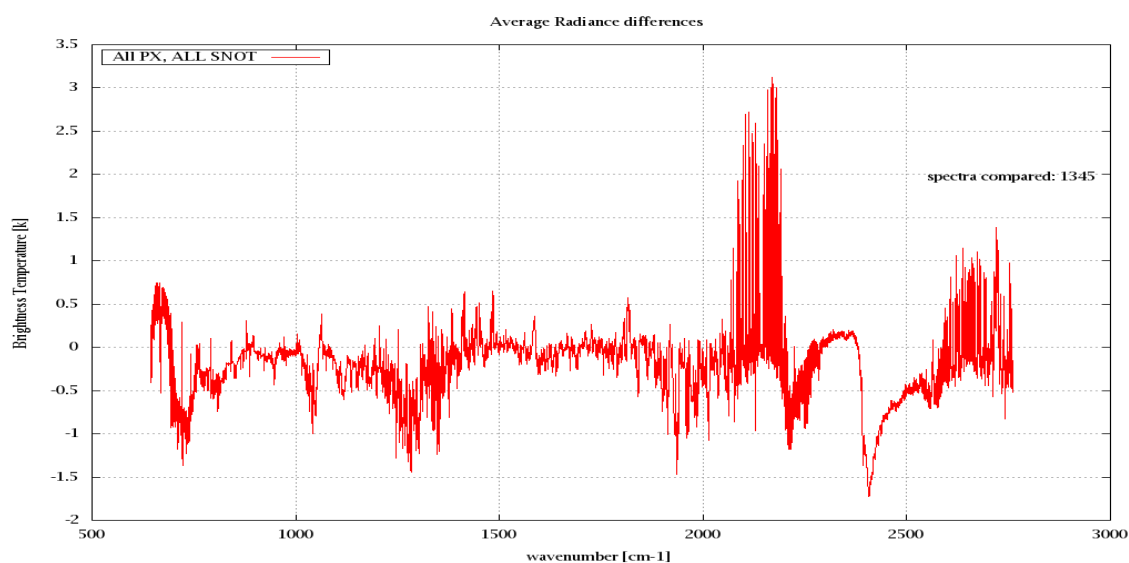


Figure 6: Average Radiance differences: OBS-CAL

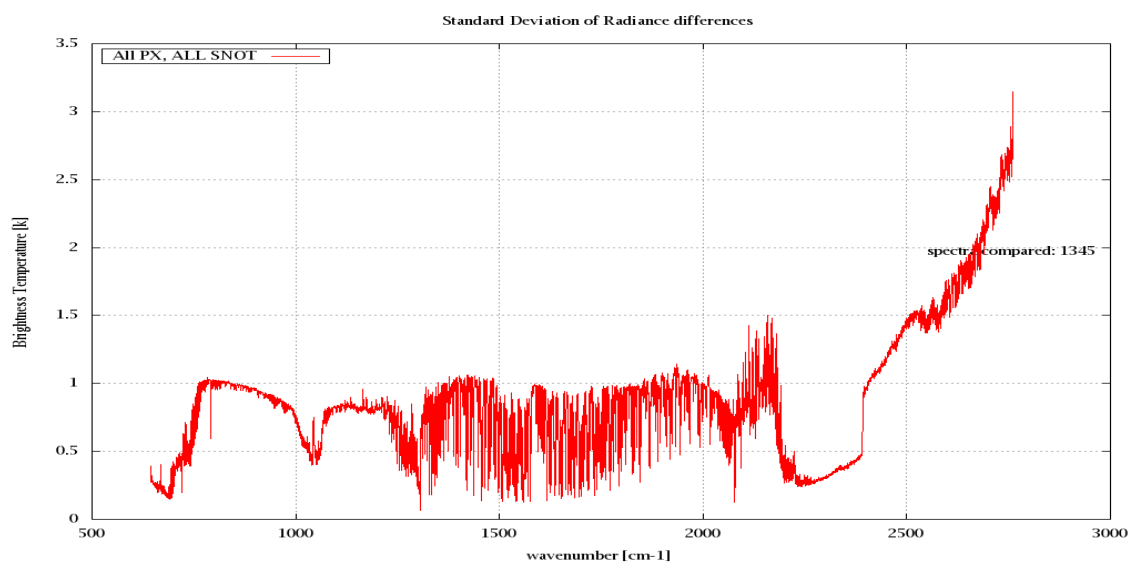


Figure 7: Standard Deviation of Radiance differences

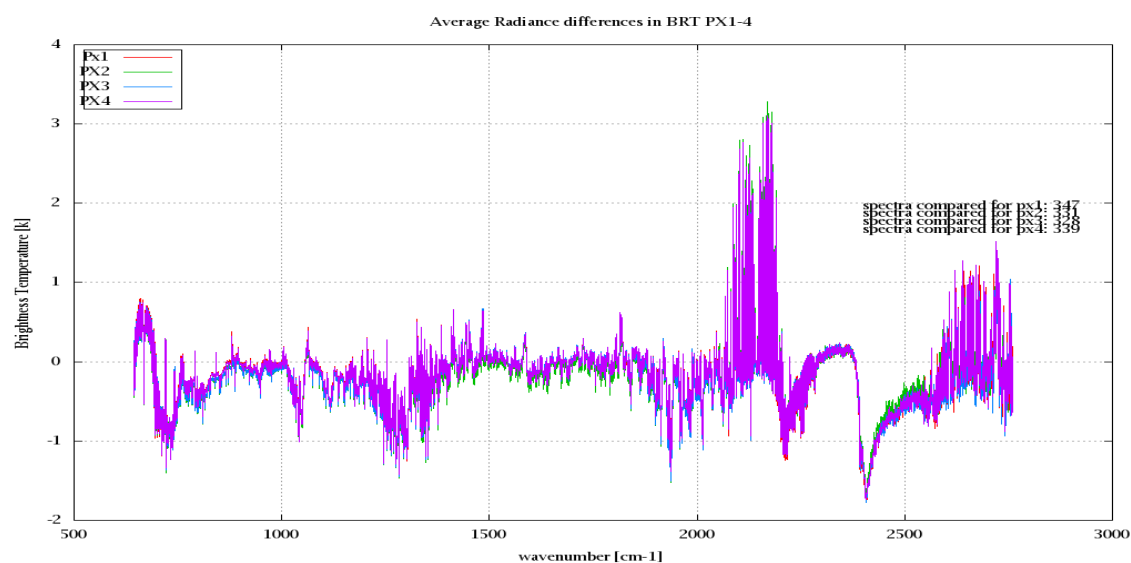


Figure 8: Average Radiance differences: OBS-CAL

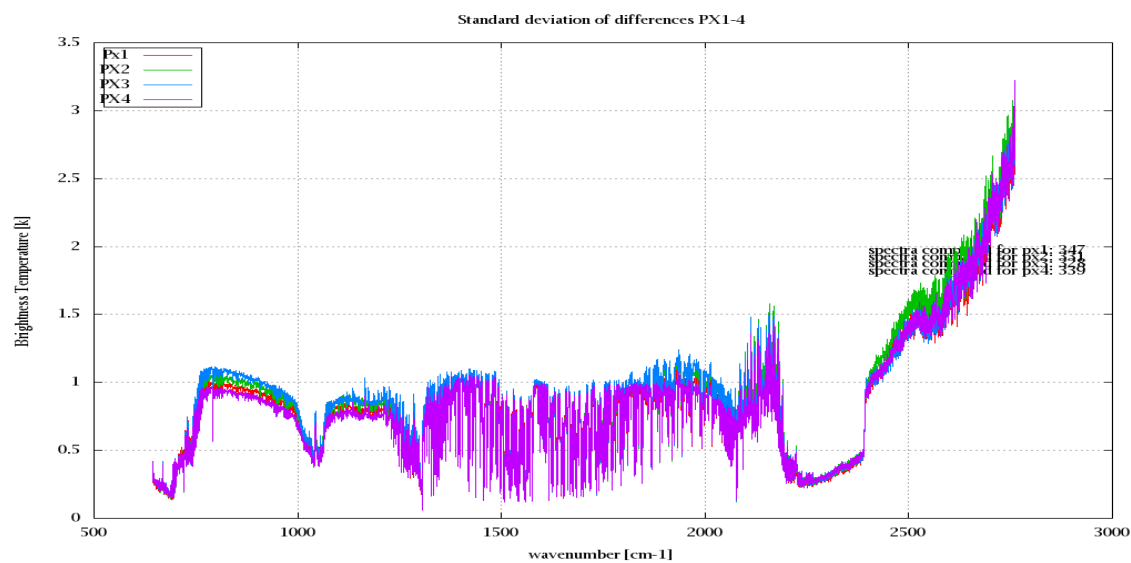


Figure 9: Standard Deviation of Radiance differences

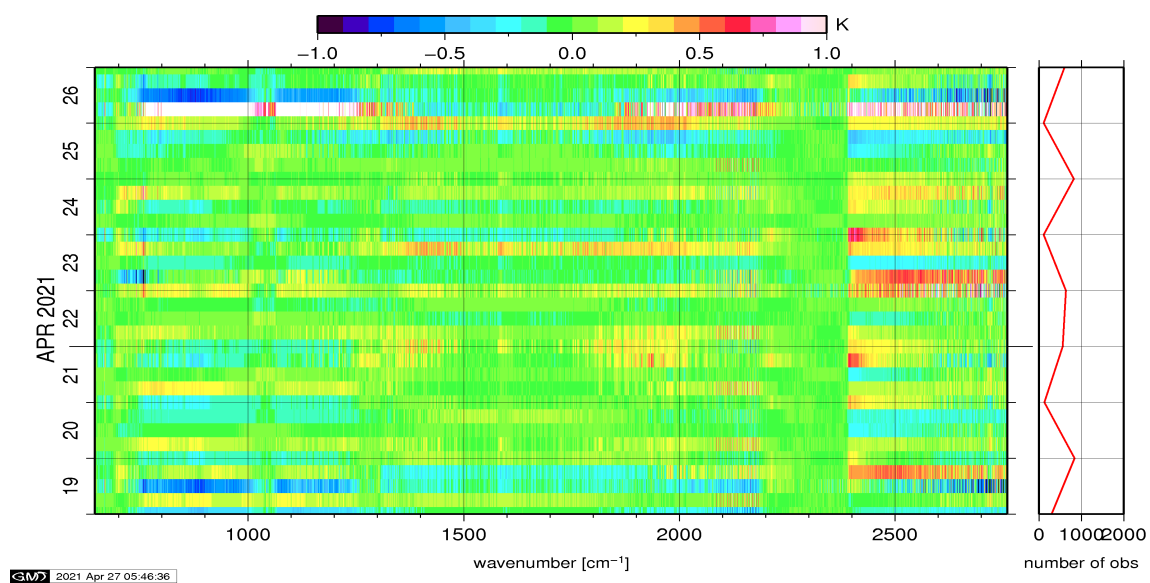


Figure 10: Radiance Anomaly in BT: All Channels

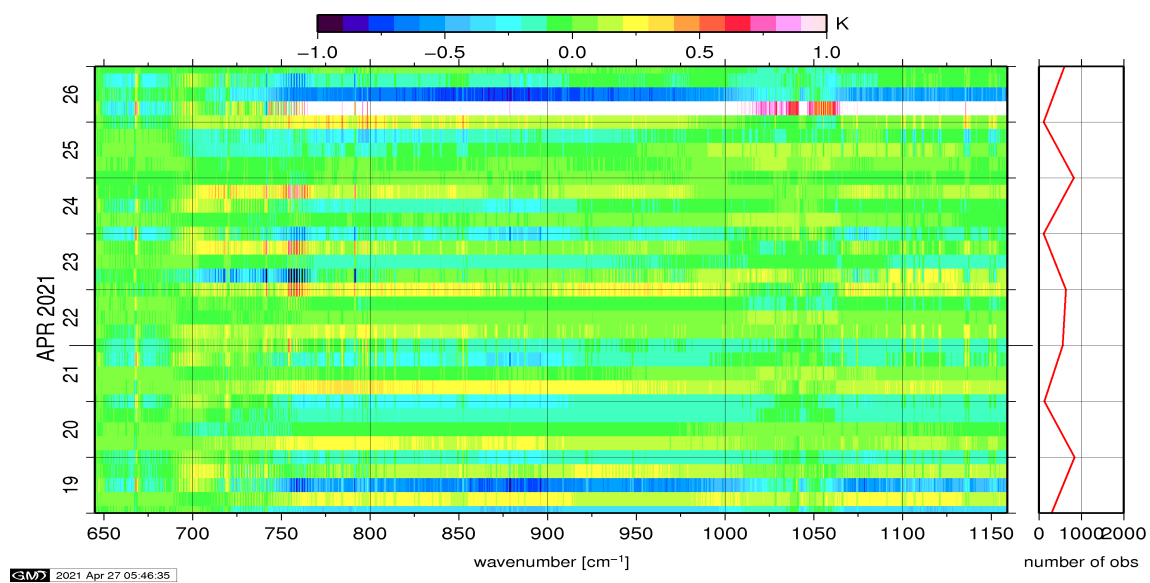


Figure 11: Radiance Anomaly in BT: IASI Band 1

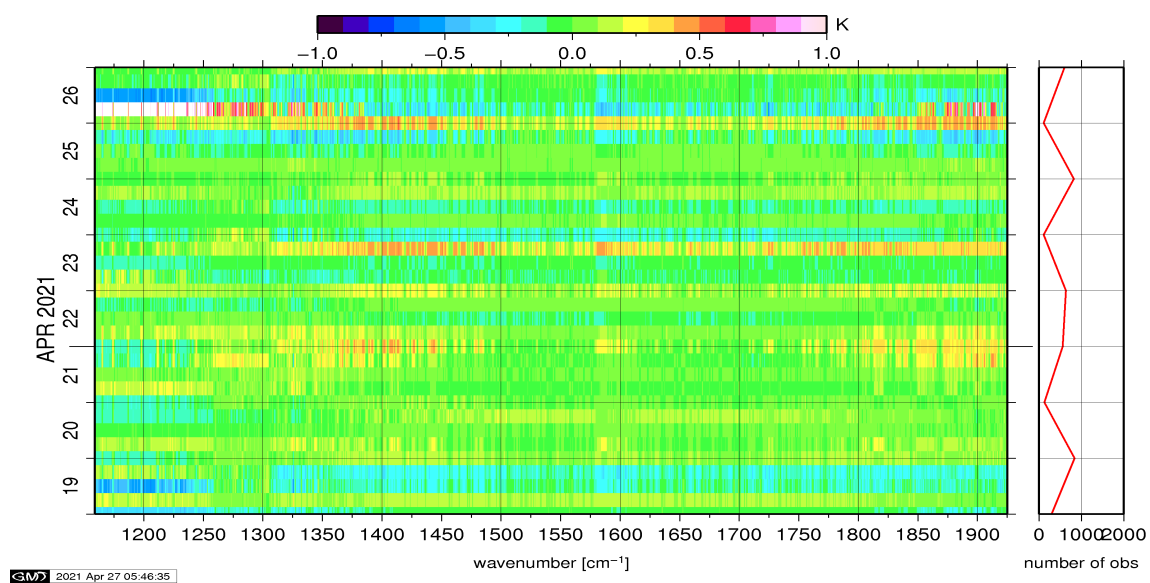


Figure 12: Radiance Anomaly in BT: IASI Band 2

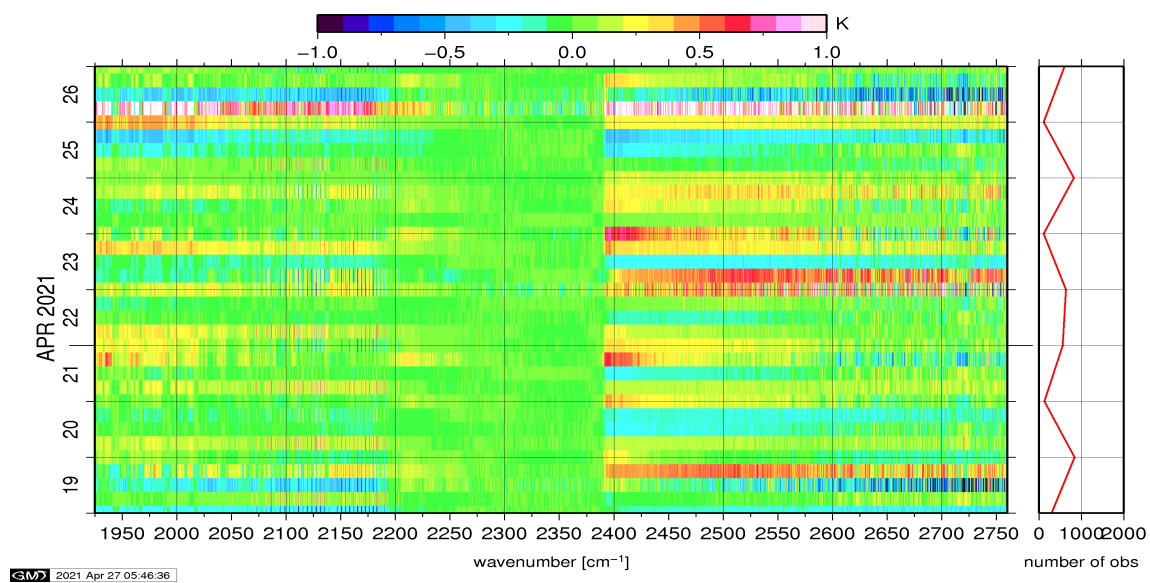


Figure 13: Radiance Anomaly in BT: IASI Band 3

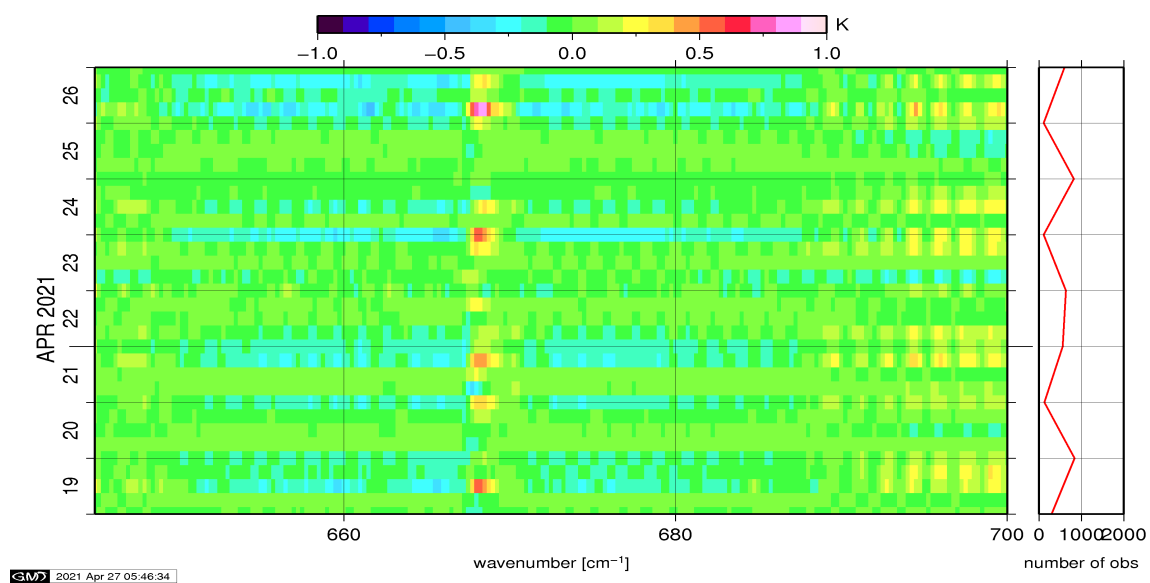


Figure 14: Radiance Anomaly in BT: CO2 14

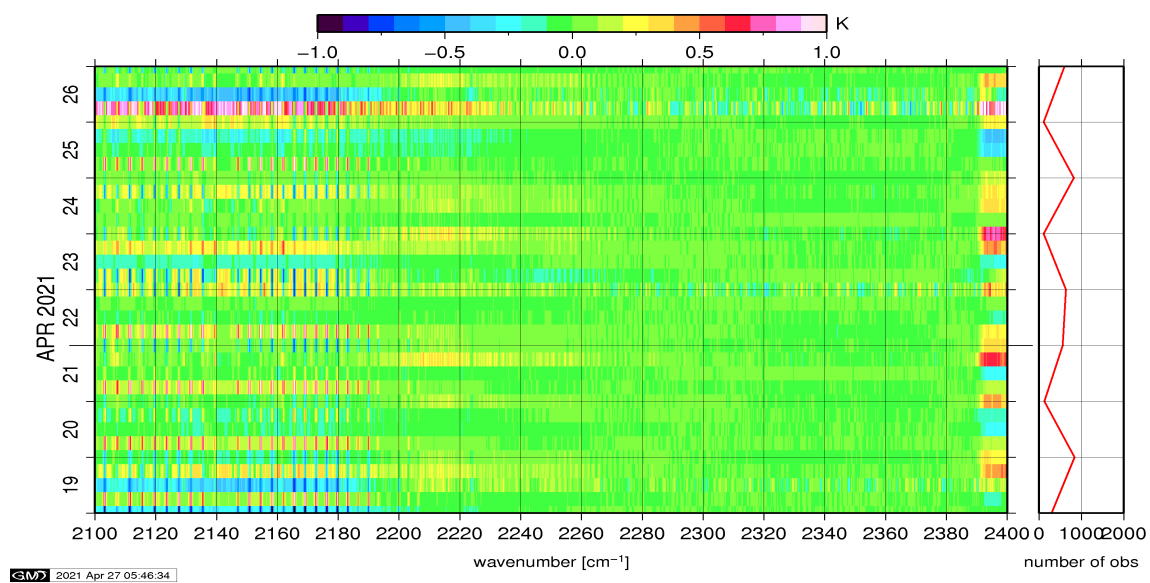


Figure 15: Radiance Anomaly in BT: CO2 4.3

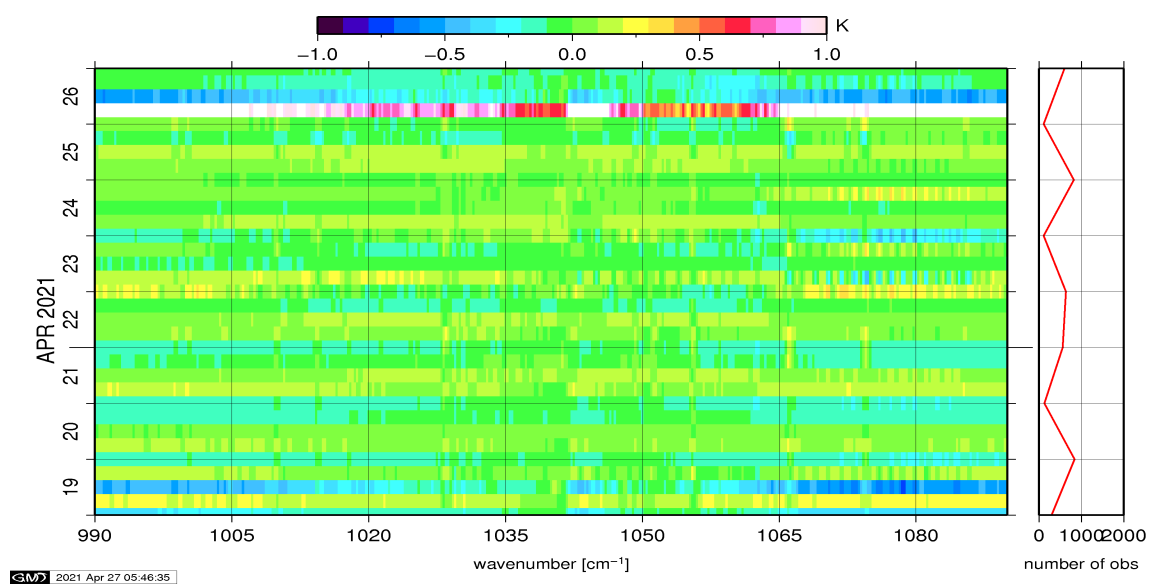


Figure 16: Radiance Anomaly in BT: O3