

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

IASI monitoring team

14/09/2020 00:00:00 - 15/09/2020 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 14/09/2020 00:00:00 - 15/09/2020 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 14/09/2020 00:00:00 - 15/09/2020 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)	10702	10711	20200914154246.658	20200914154248.603
PX1 (130)	10816	10870	20200914154317.357	20200914154332.060
PX1 (130)	10871	10873	20200914154332.275	20200914154332.709
PX1 (130)	10887	10889	20200914154335.736	20200914154336.170
PX1 (130)	10894	10896	20200914154337.248	20200914154337.682
PX1 (130)	10903	10905	20200914154340.709	20200914154341.142
PX1 (130)	3455	3457	20200914162322.307	20200914162324.252
PX1 (130)	3492	3494	20200914162333.330	20200914162333.764
PX1 (130)	3559	3605	20200914162350.846	20200914162402.303
PX1 (130)	3626	3628	20200914162408.358	20200914162408.791
PX1 (130)	3633	3635	20200914162409.873	20200914162410.303
PX1 (130)	3642	3644	20200914162413.330	20200914162413.764
PX2 (135)	10702	10710	20200914154246.658	20200914154248.385
PX2 (135)	10816	10870	20200914154317.357	20200914154332.060
PX2 (135)	10880	10882	20200914154334.224	20200914154334.654
PX2 (135)	10887	10889	20200914154335.736	20200914154336.170
PX2 (135)	10919	10921	20200914154344.170	20200914154344.599
PX2 (135)	3455	3457	20200914162322.307	20200914162324.252
PX2 (135)	3485	3487	20200914162330.307	20200914162332.252

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	3487	3489	20200914162332.252	20200914162332.682
PX2 (135)	3559	3605	20200914162350.846	20200914162402.303
PX2 (135)	3610	3612	20200914162404.901	20200914162405.330
PX2 (135)	3619	3621	20200914162406.846	20200914162407.276
PX2 (135)	3635	3637	20200914162410.303	20200914162412.248
PX3 (140)	10702	10710	20200914154246.658	20200914154248.385
PX3 (140)	10816	10870	20200914154317.357	20200914154332.060
PX3 (140)	10873	10875	20200914154332.709	20200914154333.142
PX3 (140)	10896	10898	20200914154337.682	20200914154338.115
PX3 (140)	10905	10907	20200914154341.142	20200914154341.576
PX3 (140)	10912	10914	20200914154342.654	20200914154343.088
PX3 (140)	3487	3489	20200914162332.252	20200914162332.682
PX3 (140)	3558	3604	20200914162350.627	20200914162402.088
PX3 (140)	3628	3630	20200914162408.791	20200914162409.225
PX4 (145)	10702	10710	20200914154246.658	20200914154248.385
PX4 (145)	10816	10870	20200914154317.357	20200914154332.060
PX4 (145)	10882	10884	20200914154334.654	20200914154335.088
PX4 (145)	10921	10923	20200914154344.599	20200914154345.033
PX4 (145)	3558	3604	20200914162350.627	20200914162402.088
PX4 (145)	3621	3623	20200914162407.276	20200914162407.709
PX4 (145)	3637	3639	20200914162412.248	20200914162412.682
IMG (150)	6661	6670	20200914154246.439	20200914154248.385
IMG (150)	6709	6711	20200914154257.467	20200914154257.900
IMG (150)	6792	6850	20200914154317.357	20200914154330.764
IMG (150)	6859	6861	20200914154333.142	20200914154333.576
IMG (150)	6868	6870	20200914154335.088	20200914154335.521
IMG (150)	6875	6877	20200914154336.599	20200914154337.033
IMG (150)	6877	6879	20200914154337.033	20200914154337.467
IMG (150)	6882	6884	20200914154338.115	20200914154338.764
IMG (150)	6886	6888	20200914154339.412	20200914154340.060
IMG (150)	6888	6890	20200914154340.060	20200914154340.494
IMG (150)	6895	6897	20200914154341.576	20200914154342.006
IMG (150)	6897	6899	20200914154342.006	20200914154342.439
IMG (150)	6902	6904	20200914154343.088	20200914154343.521
IMG (150)	6904	6906	20200914154343.521	20200914154343.951
IMG (150)	6911	6913	20200914154345.033	20200914154345.467
IMG (150)	631	636	20200914162322.307	20200914162324.033
IMG (150)	668	670	20200914162331.385	20200914162332.033
IMG (150)	673	675	20200914162332.682	20200914162333.115
IMG (150)	750	800	20200914162350.627	20200914162402.088
IMG (150)	807	809	20200914162404.248	20200914162404.682
IMG (150)	814	816	20200914162405.764	20200914162406.197
IMG (150)	816	818	20200914162406.197	20200914162406.627
IMG (150)	821	823	20200914162407.276	20200914162407.709
IMG (150)	830	832	20200914162409.225	20200914162409.655
IMG (150)	843	845	20200914162412.682	20200914162413.115
VER (160)	16382	0	20200914051242.362	20200914051250.362
VER (160)	3	16383	20200914051250.362	20200914051250.362
VER (160)	-1	4	20200914051250.362	20200914051258.362
VER (160)	7244	7250	20200914154250.334	20200914154306.330
VER (160)	7259	7265	20200914154314.330	20200914154317.357
VER (160)	7269	7271	20200914154317.357	20200914154323.412
VER (160)	7271	7275	20200914154323.412	20200914154346.330

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APID	Seq from	Seq to	Time from	Time to
VER (160)	8759	8765	20200914162314.307	20200914162330.307
VER (160)	8779	8785	20200914162346.303	20200914162402.303
VER (160)	8789	8795	20200914162402.303	20200914162418.303
VER (160)	16379	0	20200914194626.320	20200914194634.320
VER (160)	0	16380	20200914194634.320	20200914194634.320
VER (160)	-1	1	20200914194634.320	20200914194642.320
AUX (180)	11281	11283	20200914154314.764	20200914154330.764
AUX (180)	11581	11583	20200914162314.737	20200914162330.737
AUX (180)	11585	11587	20200914162346.737	20200914162402.737

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
14/09/2020 00:00:05	-	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)	99.49 %	-
GQisFlagQual set (PX2)	99.55 %	-
GQisFlagQual set (PX3)	99.54 %	-
GQisFlagQual set (PX4)	99.49 %	-
GQisFlagQual set (all)	99.52 %	-

Table 4: Quality flags

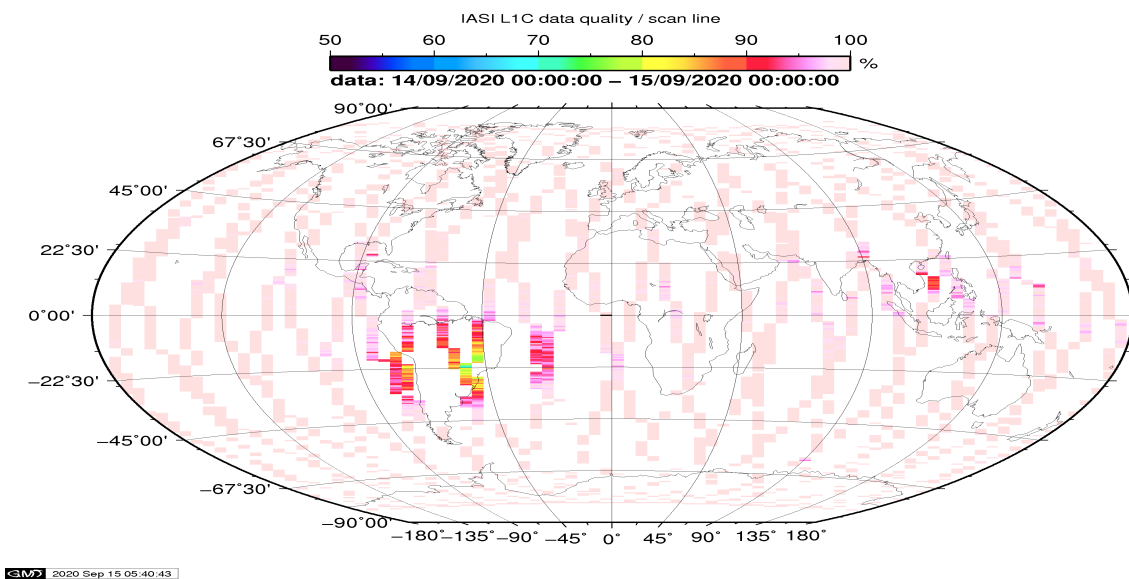


Figure 1: L1C data quality

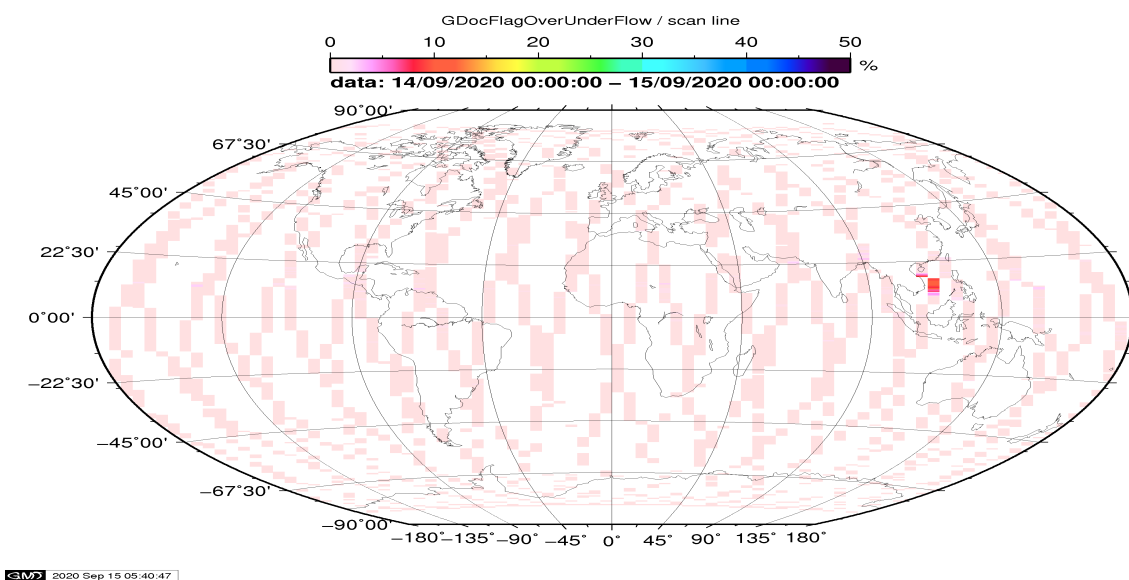


Figure 2: Flag of Over and Under Flows

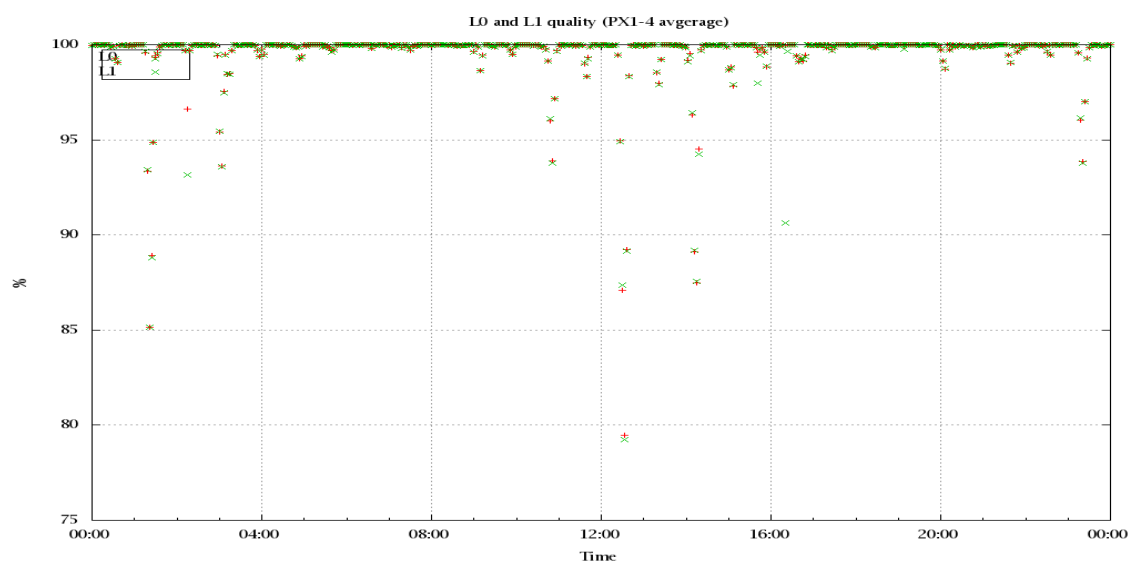


Figure 3: Level 0 and 1C overall quality

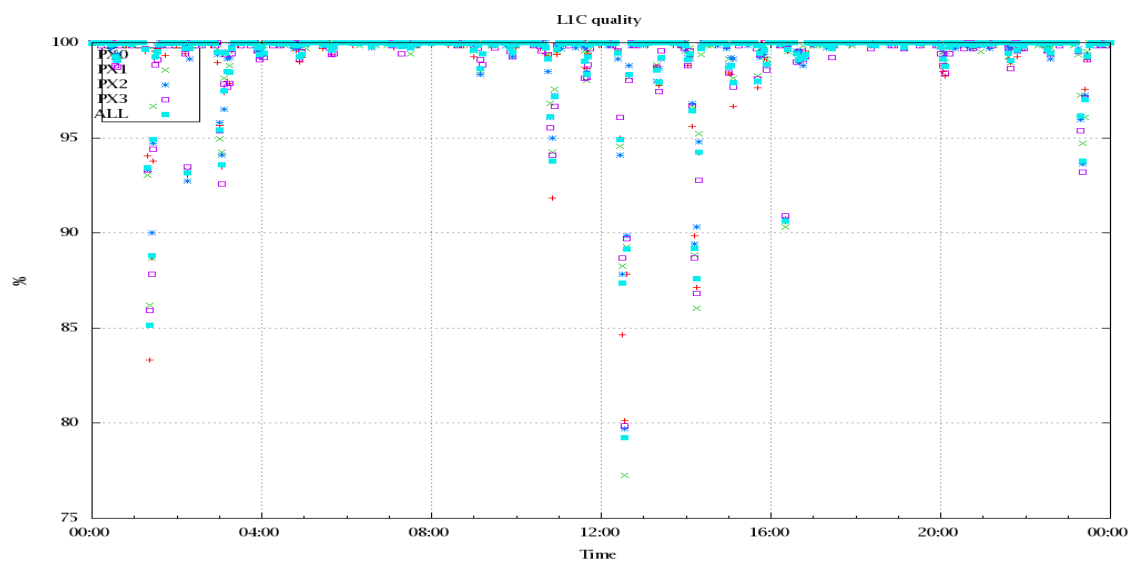


Figure 4: Level 1C quality

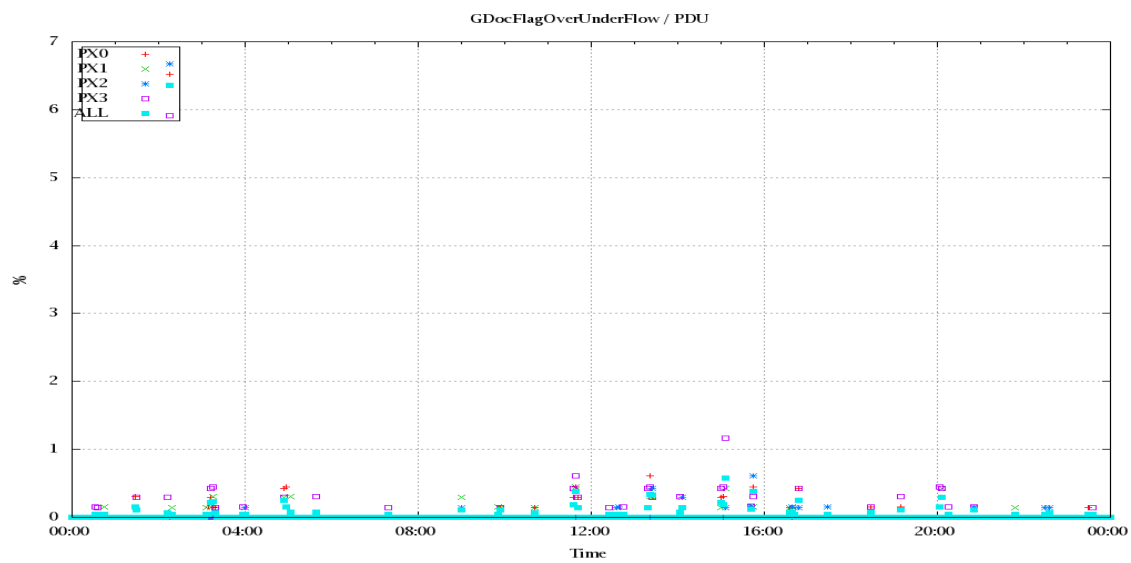


Figure 5: Timeseries of flag of Over and Under Flows

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.

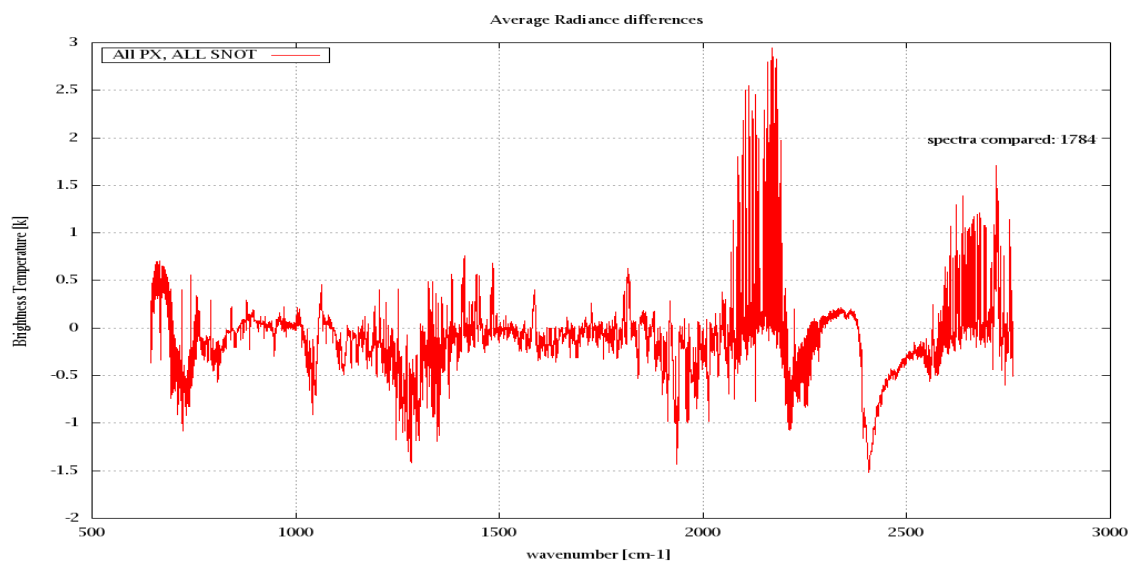


Figure 6: Average Radiance differences: OBS-CAL

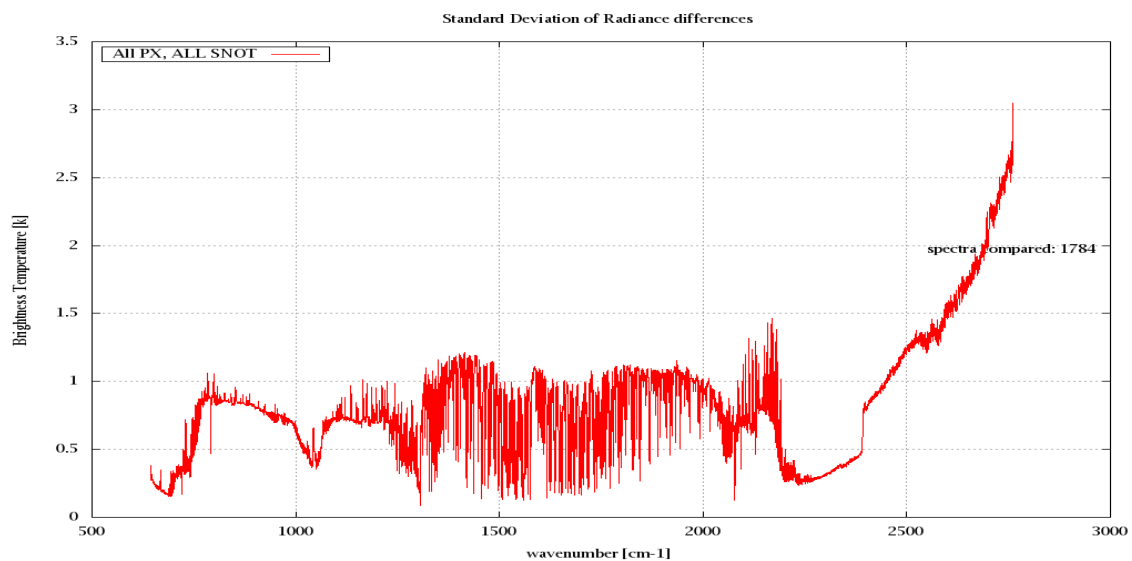


Figure 7: Standard Deviation of Radiance differences

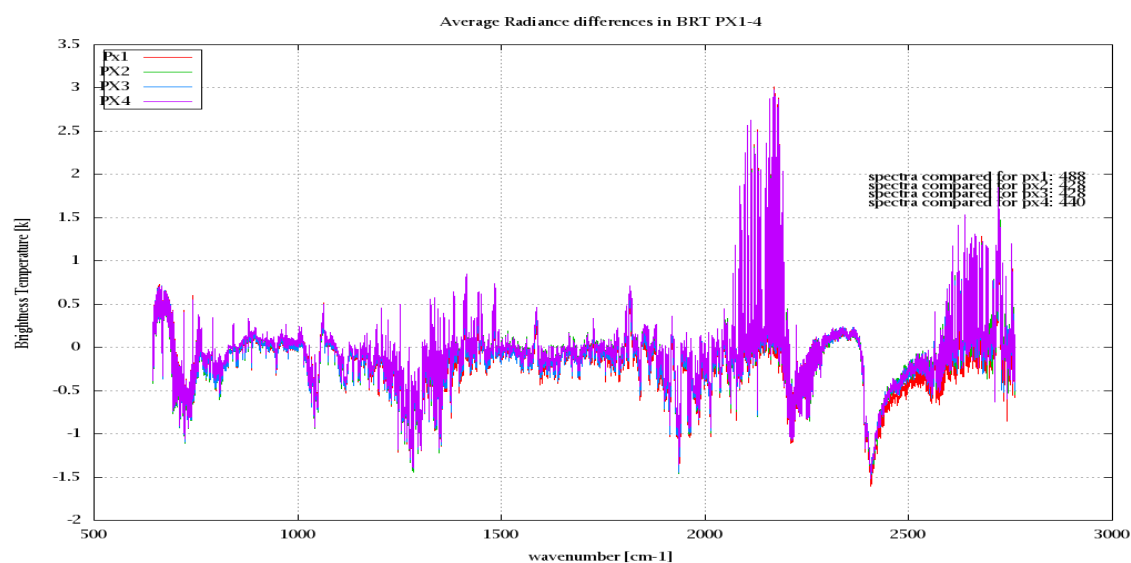


Figure 8: Average Radiance differences: OBS-CAL

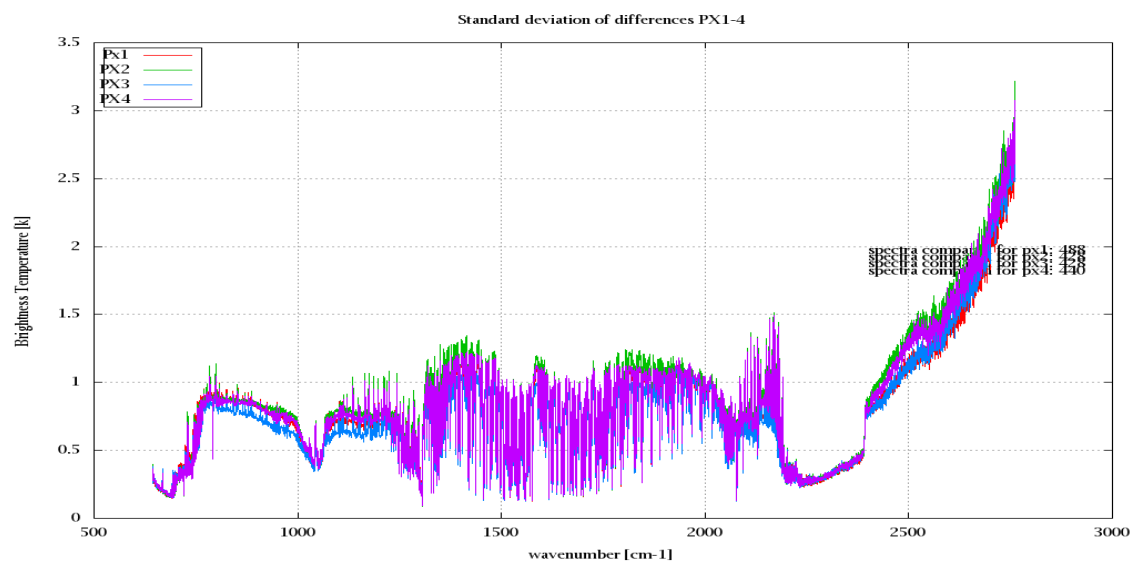


Figure 9: Standard Deviation of Radiance differences

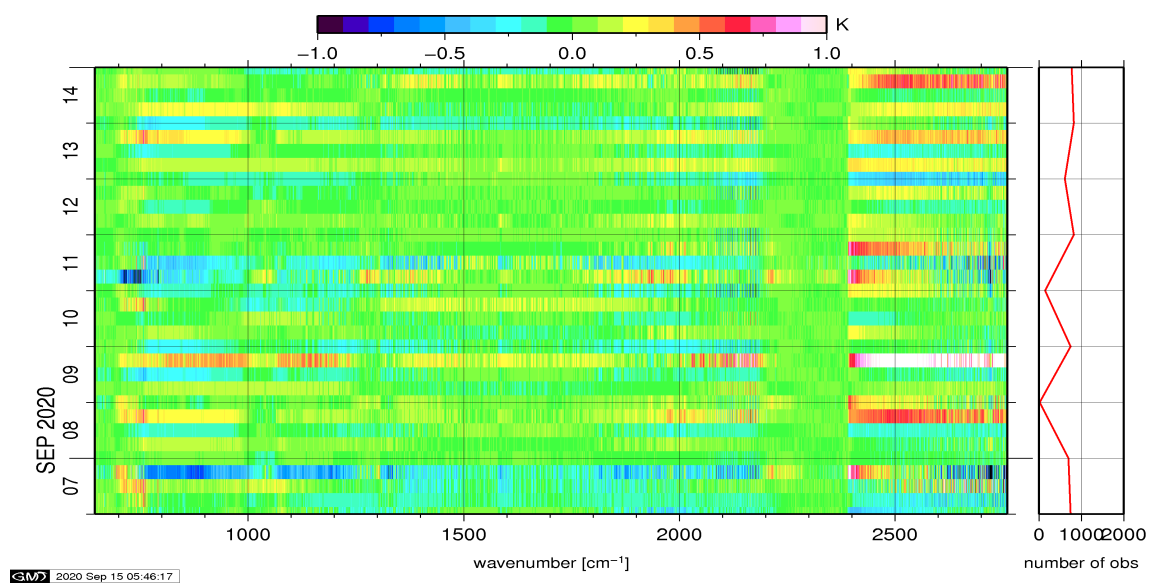


Figure 10: Radiance Anomaly in BT: All Channels

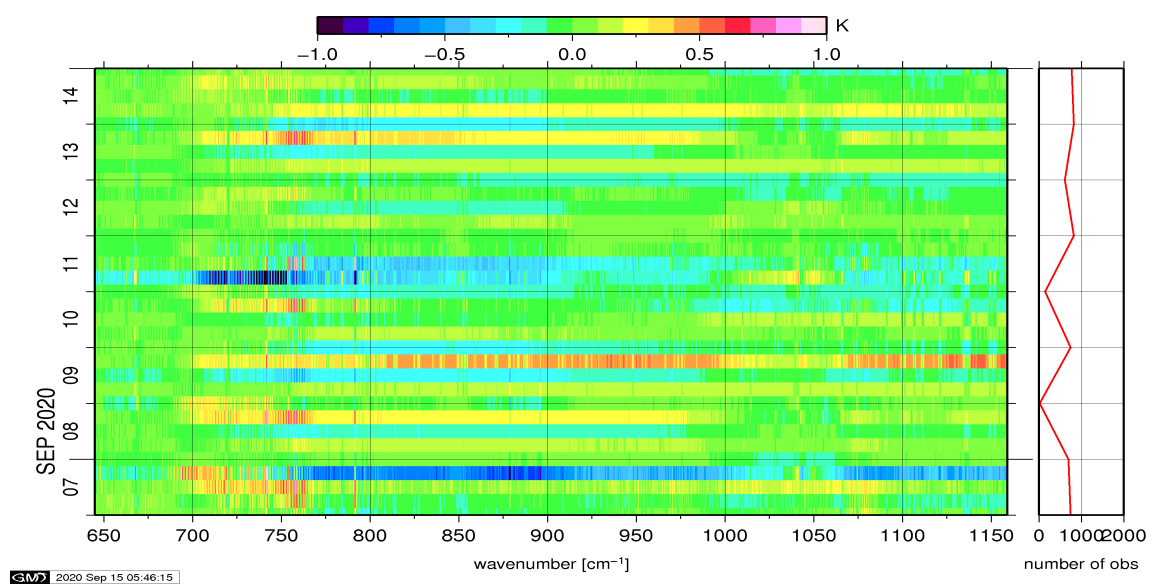


Figure 11: Radiance Anomaly in BT: IASI Band 1

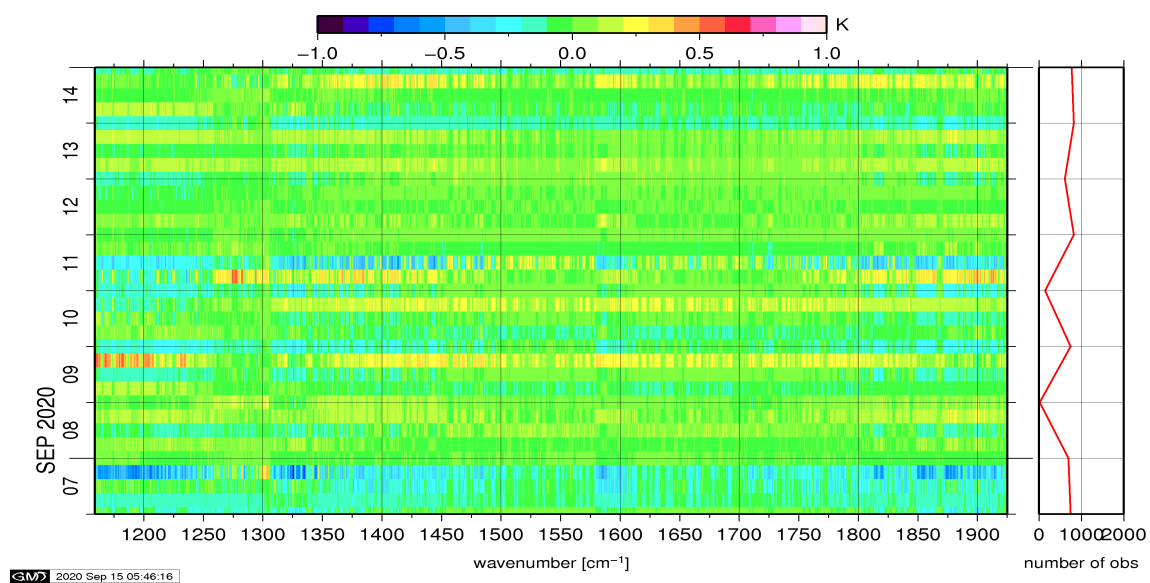


Figure 12: Radiance Anomaly in BT: IASI Band 2

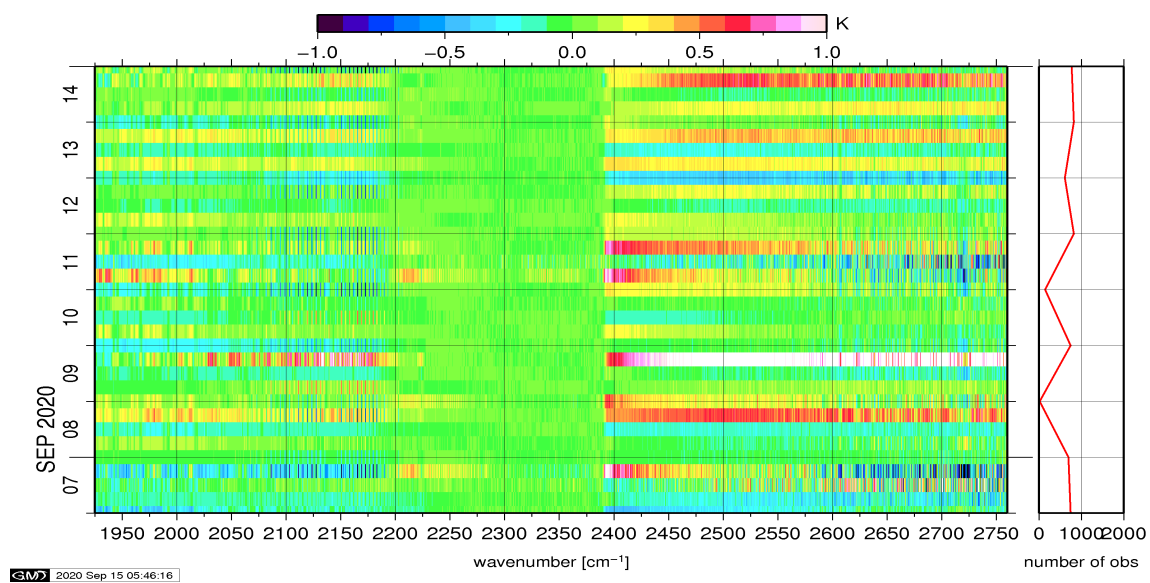


Figure 13: Radiance Anomaly in BT: IASI Band 3

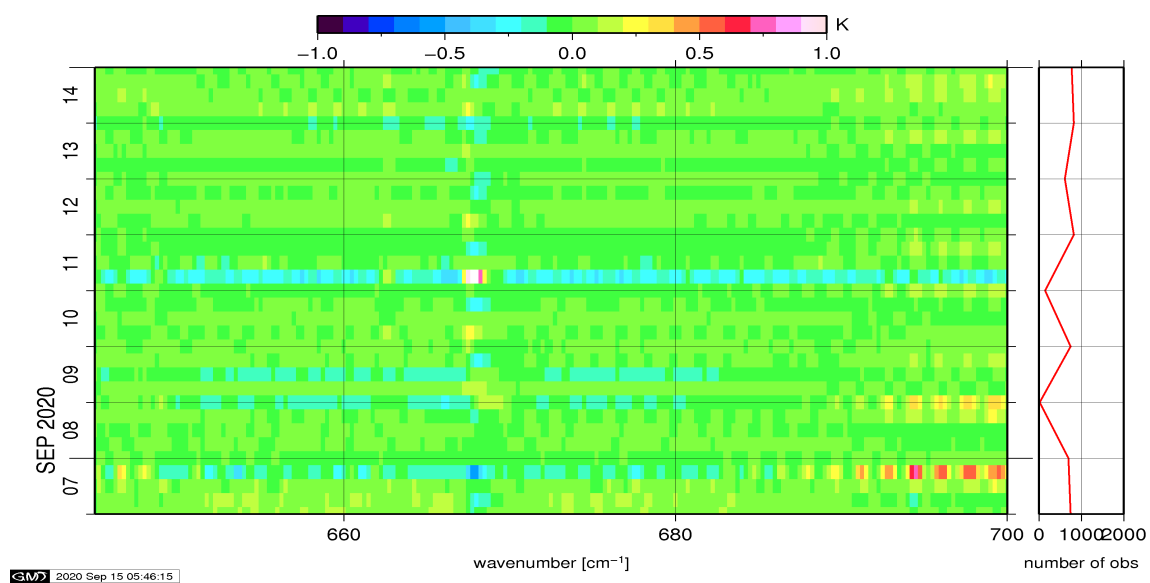


Figure 14: Radiance Anomaly in BT: CO2 14

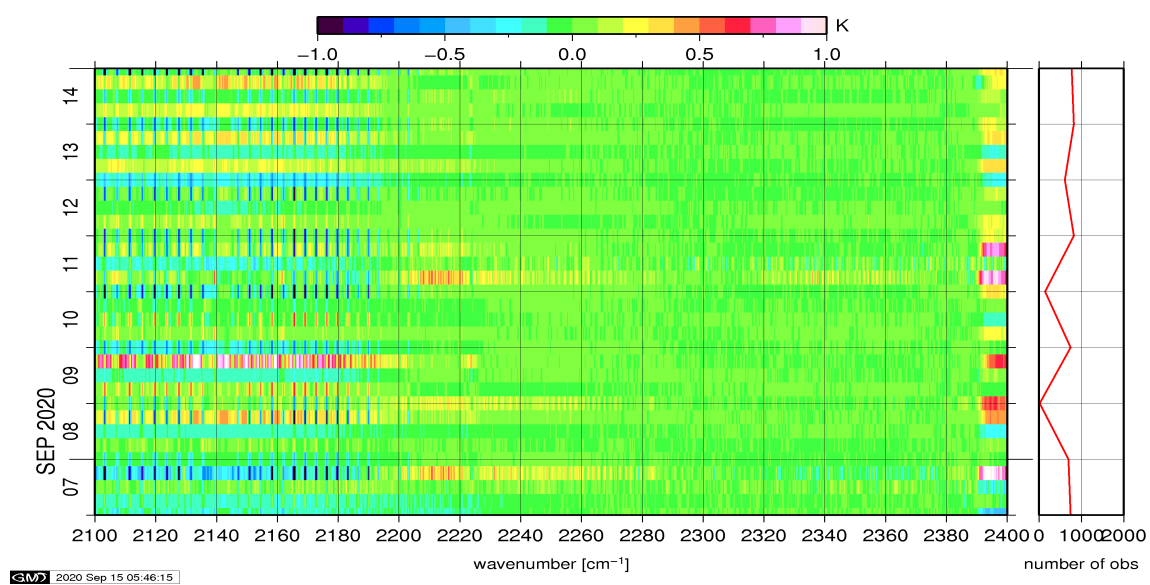


Figure 15: Radiance Anomaly in BT: CO2 4.3

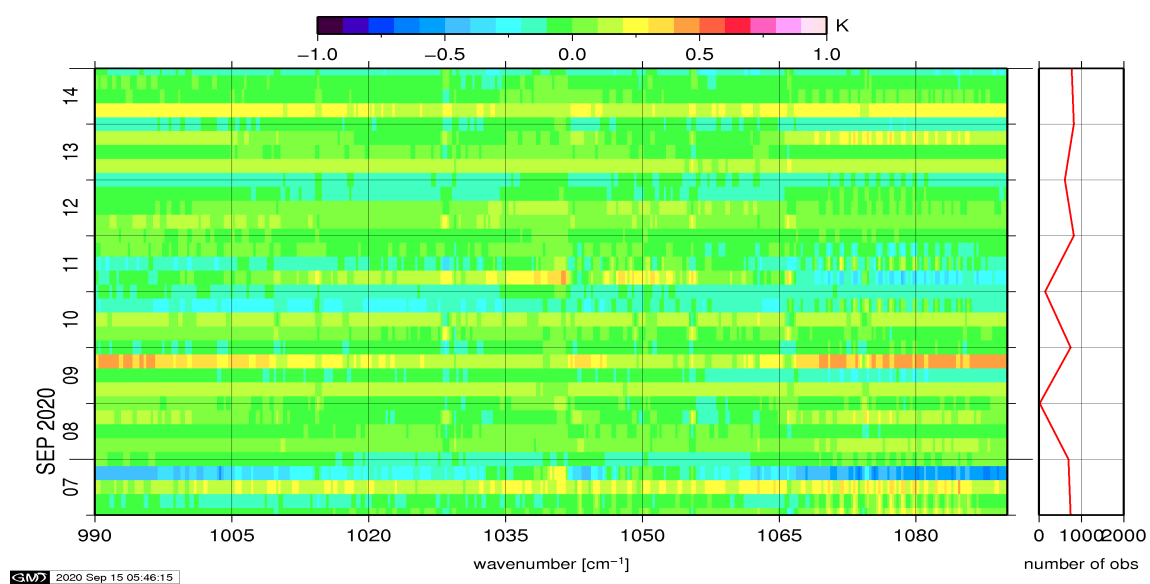


Figure 16: Radiance Anomaly in BT: O3