

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

IASI monitoring team

11/12/2025 00:00:00 - 12/12/2025 00:00:00

1 Introduction

This report provides summary monitoring plots and figures from IASI instrument on the Metop-B satellite retrieved from the IASI L0 and L1 ENG product (3 minutes data packet) for 11/12/2025 00:00:00 - 12/12/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 11/12/2025 00:00:00 - 12/12/2025 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)	8453	8685	20251211183230.054	20251211183332.324
PX1 (130)	8691	8694	20251211183333.621	20251211183335.781
PX1 (130)	8694	8696	20251211183335.781	20251211183336.214
PX1 (130)	8697	8699	20251211183336.429	20251211183336.863
PX1 (130)	8699	8701	20251211183336.863	20251211183337.296
PX1 (130)	14142	14144	20251211185747.669	20251211185748.099
PX2 (135)	8453	8684	20251211183230.054	20251211183332.105
PX2 (135)	8688	8694	20251211183332.972	20251211183335.781
PX3 (140)	8453	8685	20251211183230.054	20251211183332.324
PX3 (140)	8688	8691	20251211183332.972	20251211183333.621
PX4 (145)	8453	8685	20251211183230.054	20251211183332.324
PX4 (145)	8688	8690	20251211183332.972	20251211183333.402
PX4 (145)	8690	8693	20251211183333.402	20251211183334.054
PX4 (145)	8697	8699	20251211183336.429	20251211183336.863
PX4 (145)	3643	3645	20251211192356.741	20251211192357.175
IMG (150)	12853	13116	20251211183230.054	20251211183332.105
IMG (150)	13116	13118	20251211183332.105	20251211183332.539
IMG (150)	13120	13122	20251211183332.972	20251211183333.402
IMG (150)	13122	13124	20251211183333.402	20251211183333.835

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	13126	13128	20251211183334.484	20251211183335.132
IMG (150)	13129	13131	20251211183335.351	20251211183335.996
IMG (150)	2917	2919	20251211185747.454	20251211185747.884
VER (160)	1404	1447	20251211183230.054	20251211183334.054
AUX (180)	13387	13396	20251211183222.488	20251211183334.484

Table 2: L0 data gaps

3 Instrument modes

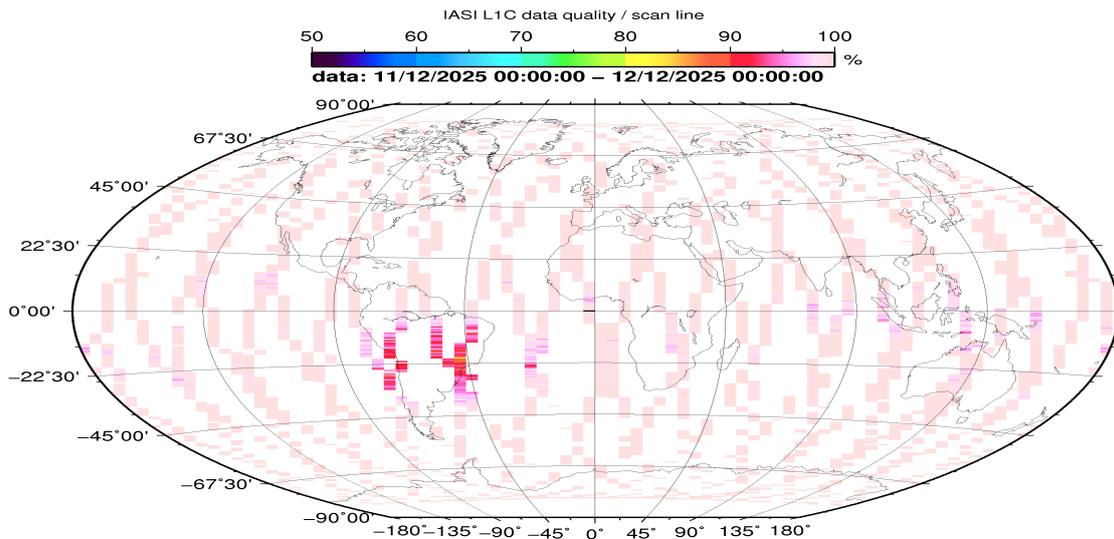
Time	Transition from	Transition to
11/12/2025 00:00:12	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

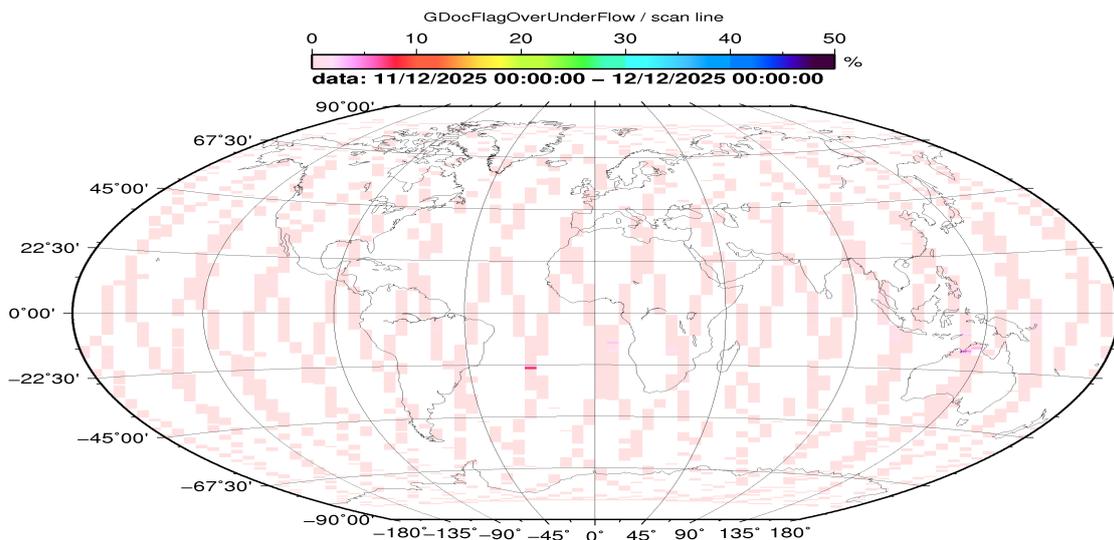
Flag	Value	Action
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	479	-
GQisFlagQual set (PX1)	99.72 %	-
GQisFlagQual set (PX2)	99.77 %	-
GQisFlagQual set (PX3)	99.77 %	-
GQisFlagQual set (PX4)	99.69 %	-
GQisFlagQual set (all)	99.74 %	-

Table 4: Quality flags



CMV 2025 Dec 12 07:40:36

Figure 1: L1C data quality



CMV 2025 Dec 12 07:40:40

Figure 2: Flag of Over and Under Flows

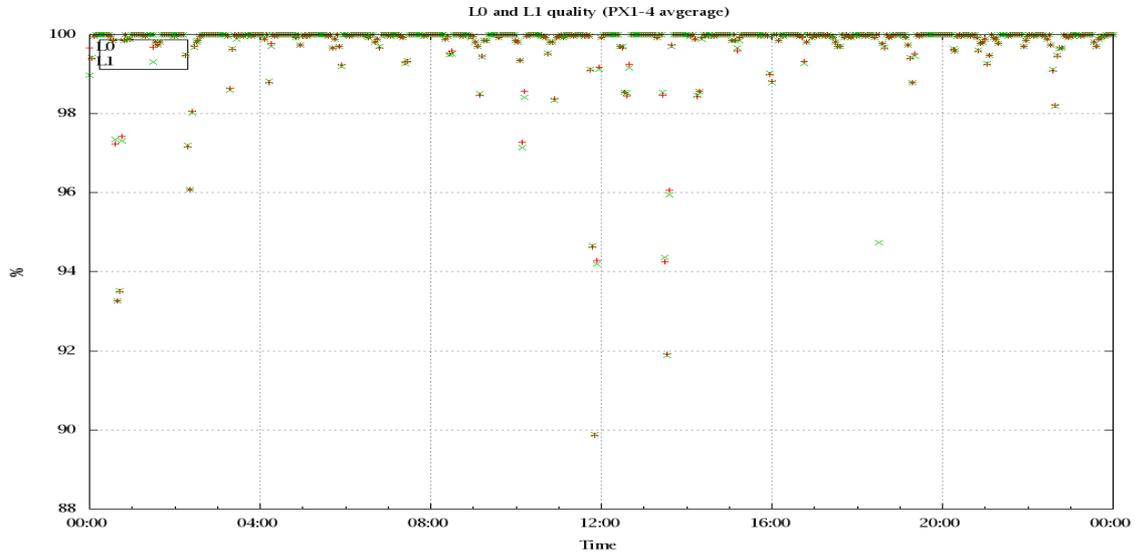


Figure 3: Level 0 and 1C overall quality

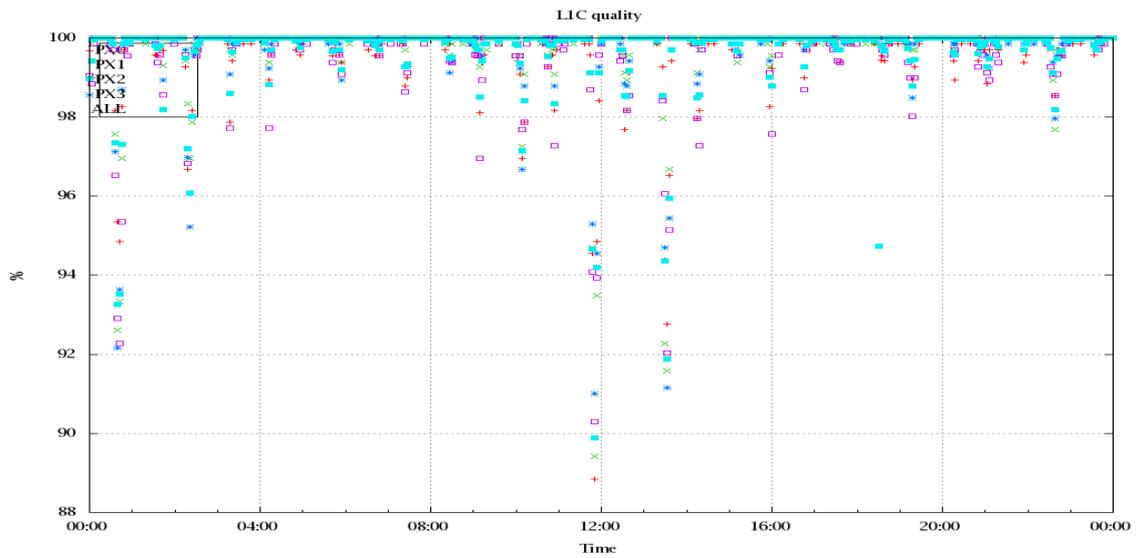


Figure 4: Level 1C quality

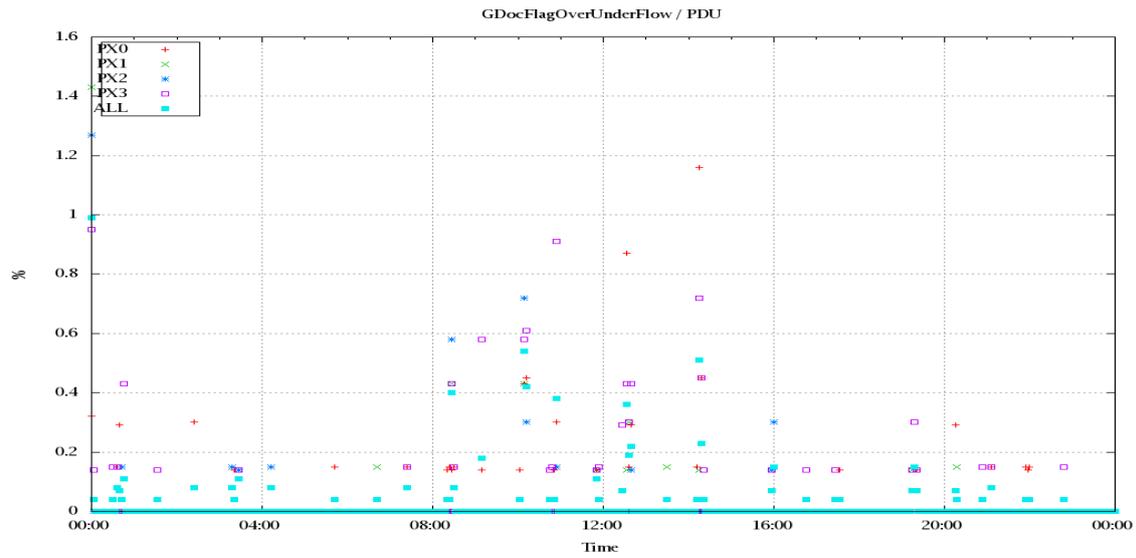


Figure 5: Timeseries of flag of Over and Under Flows

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.

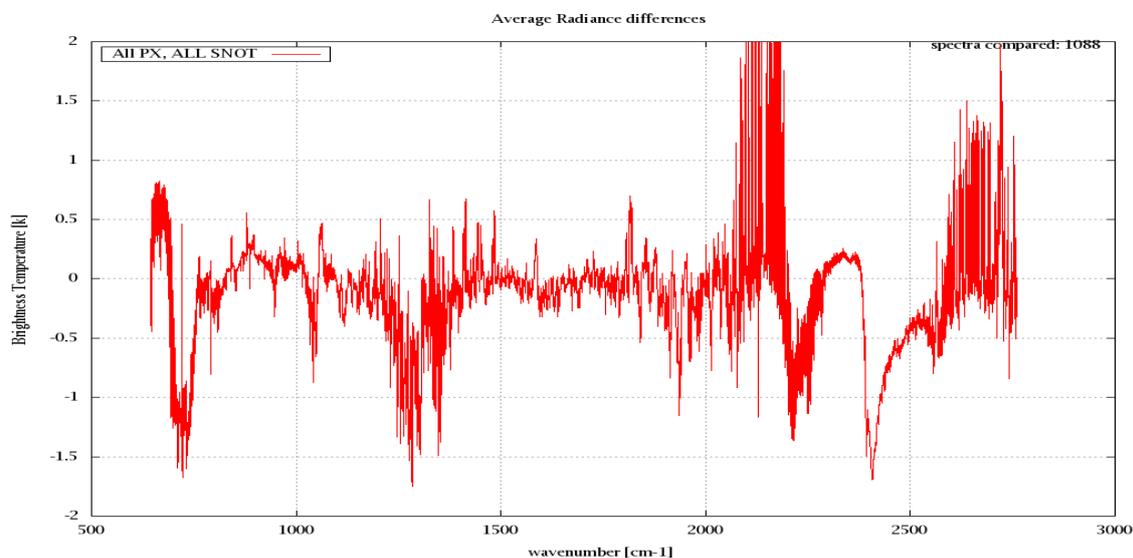


Figure 6: Average Radiance differences: OBS-CAL

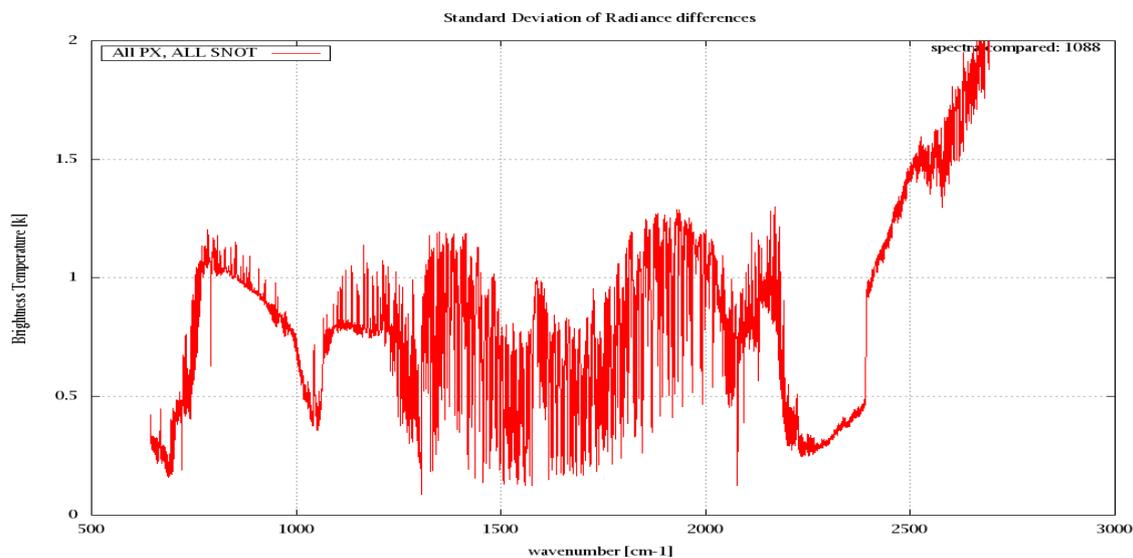


Figure 7: Standard Deviation of Radiance differences

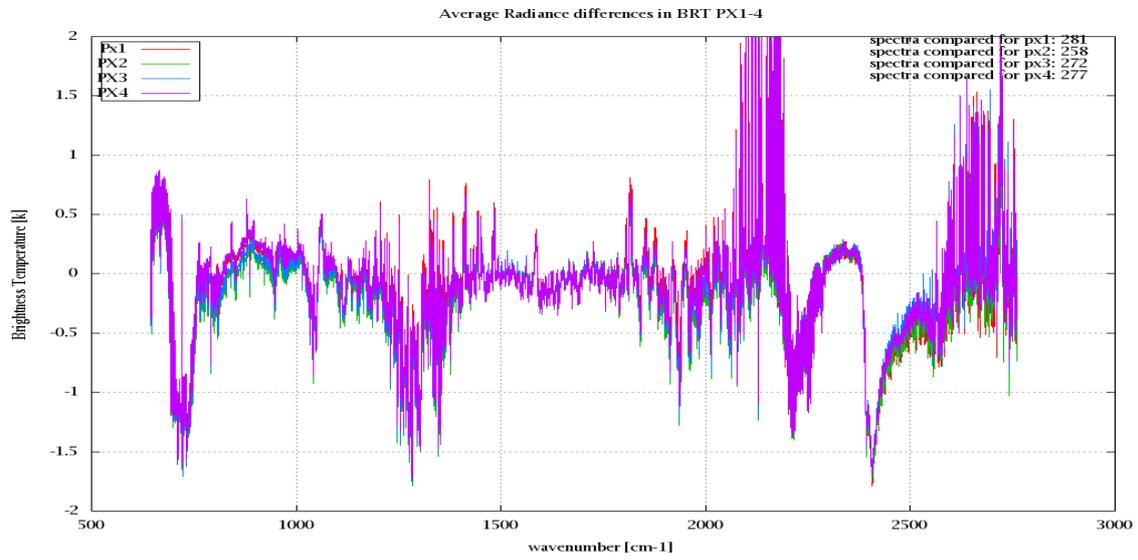


Figure 8: Average Radiance differences: OBS-CAL

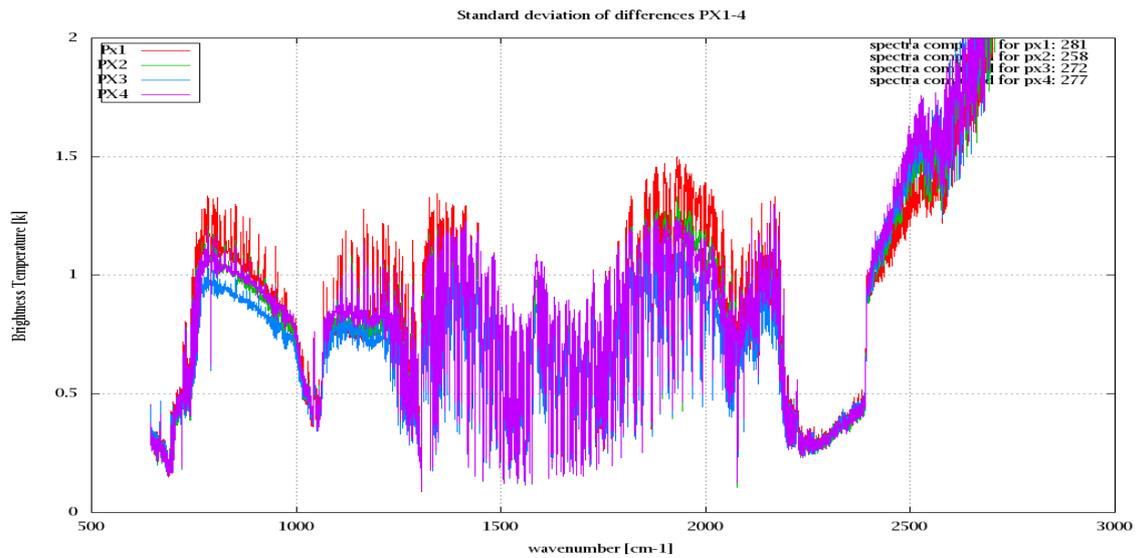


Figure 9: Standard Deviation of Radiance differences

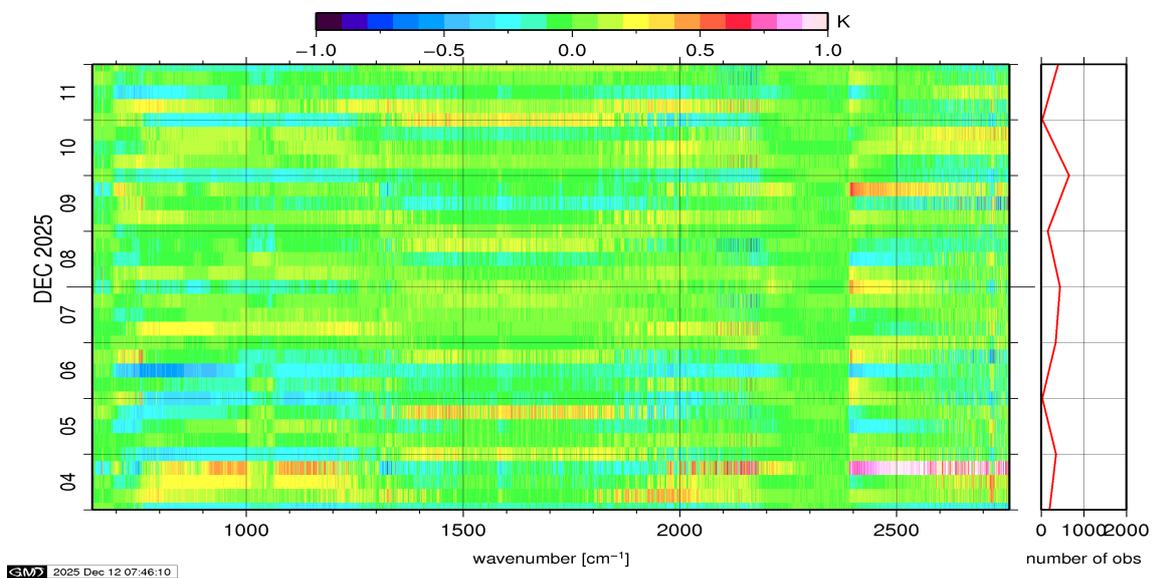


Figure 10: Radiance Anomaly in BT: All Channels

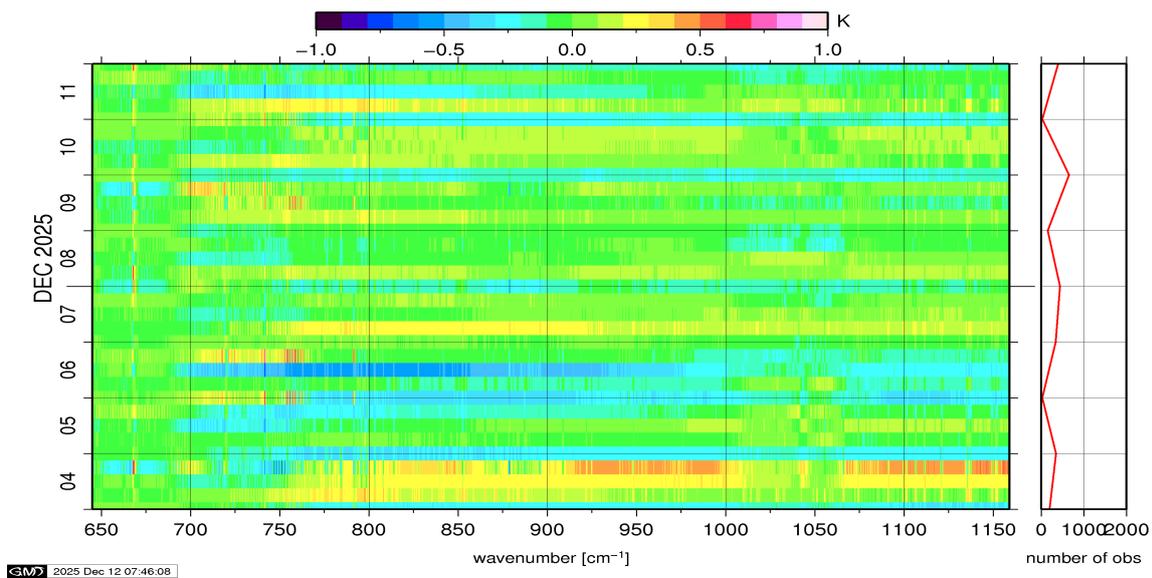


Figure 11: Radiance Anomaly in BT: IASI Band 1

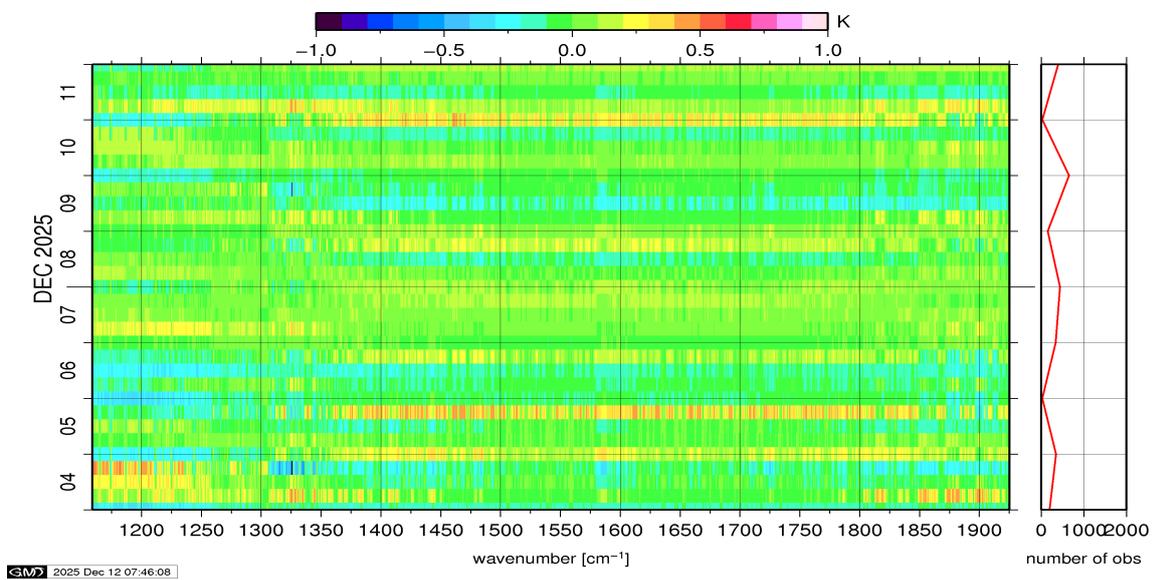


Figure 12: Radiance Anomaly in BT: IASI Band 2

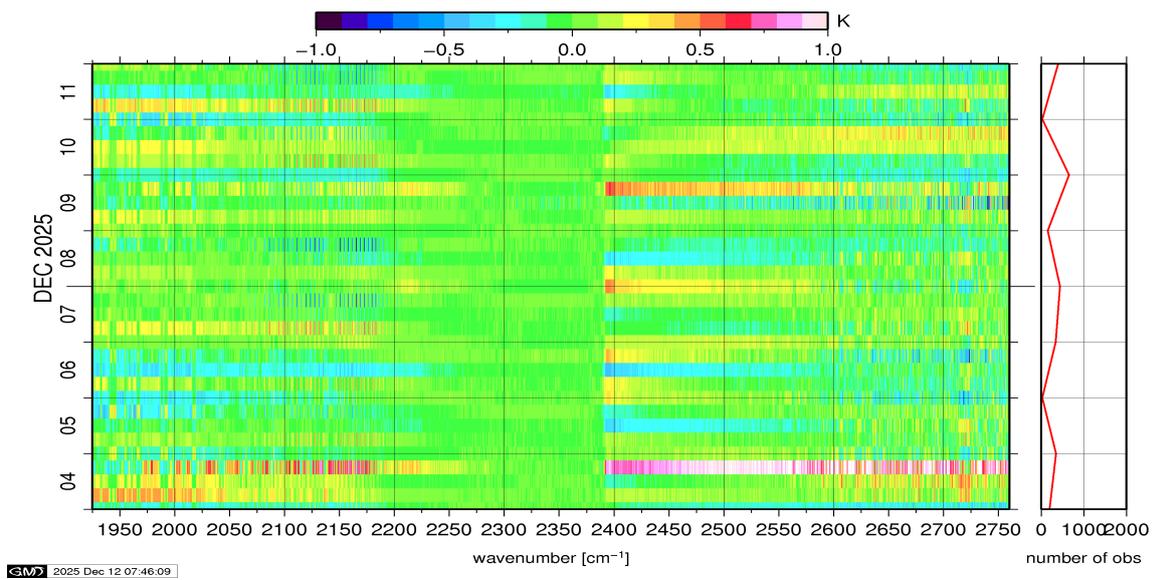


Figure 13: Radiance Anomaly in BT: IASI Band 3

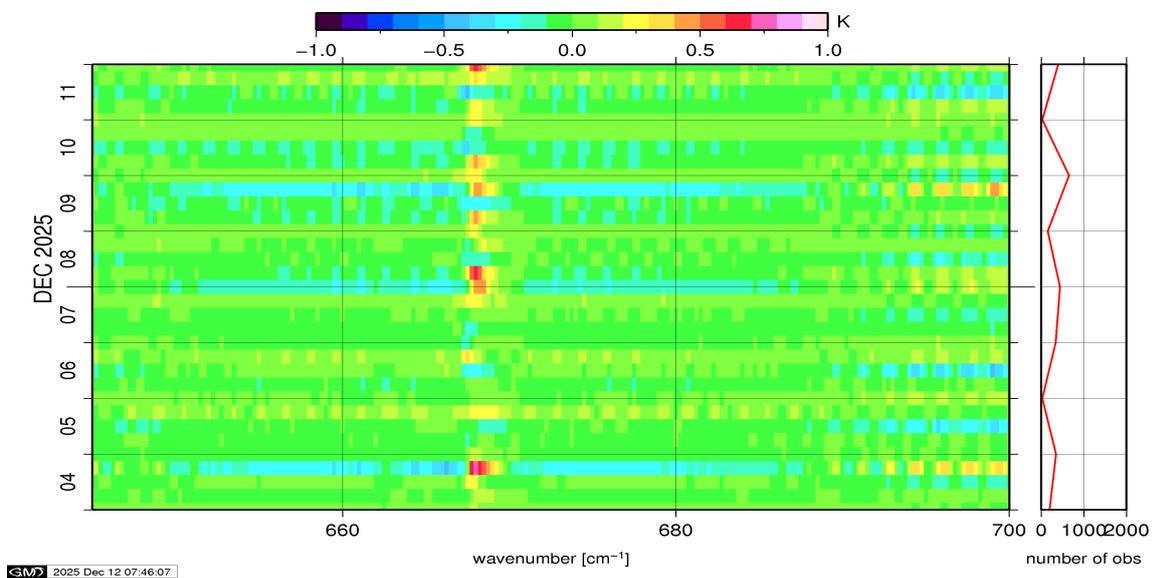


Figure 14: Radiance Anomaly in BT: CO2 14

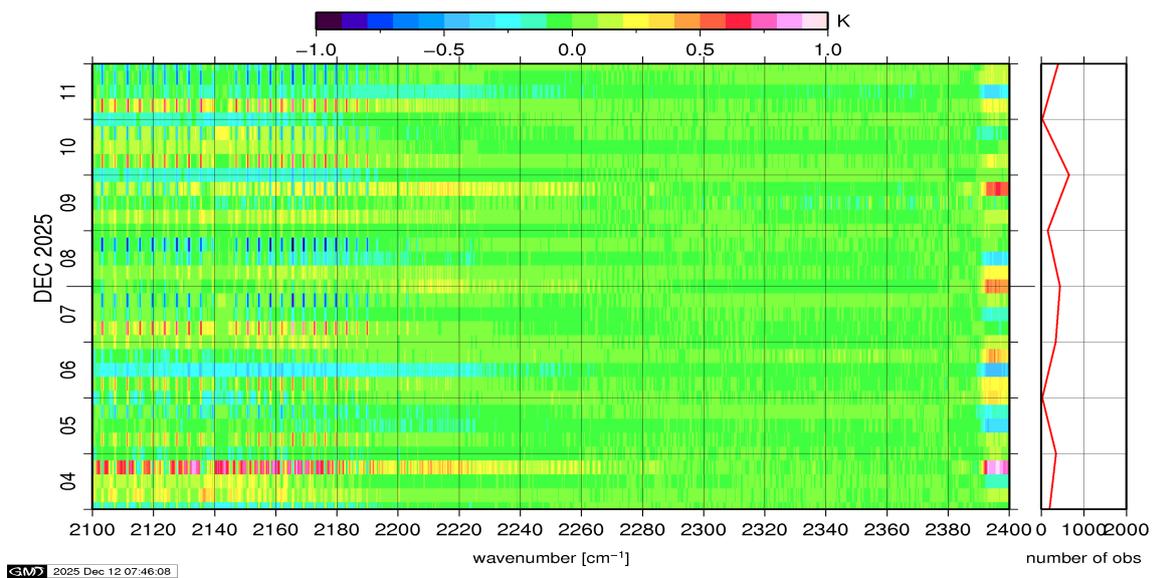


Figure 15: Radiance Anomaly in BT: CO2 4.3

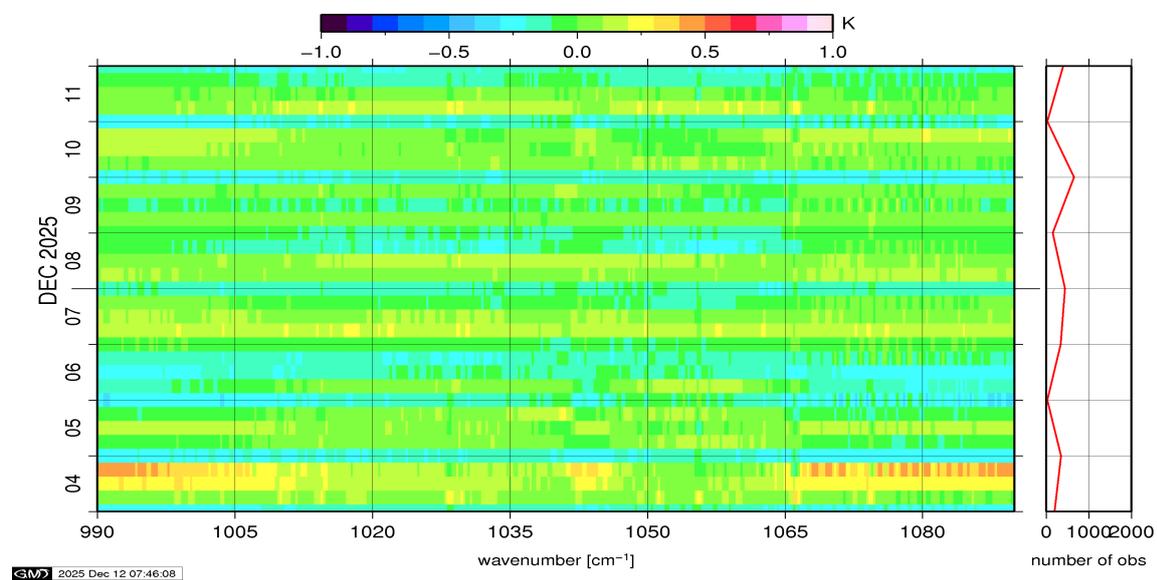


Figure 16: Radiance Anomaly in BT: O3

6 IASI-HIRS radiance comparison Channel 1-19

The radiance comparison of IASI and HIRS/4 on-board Metop is performed on all pixels with distances smaller than 3 km between IASI and HIRS. All sky conditions are covered. The radiance differences IASI - HIRS are given in brightness temperatures at 280K reference NeDT. All conditions (clear, cloudy, day and night) are given in red in the following figures. The clear sky conditions at night are given in green and the clear sky cases during daylight are displayed in blue.

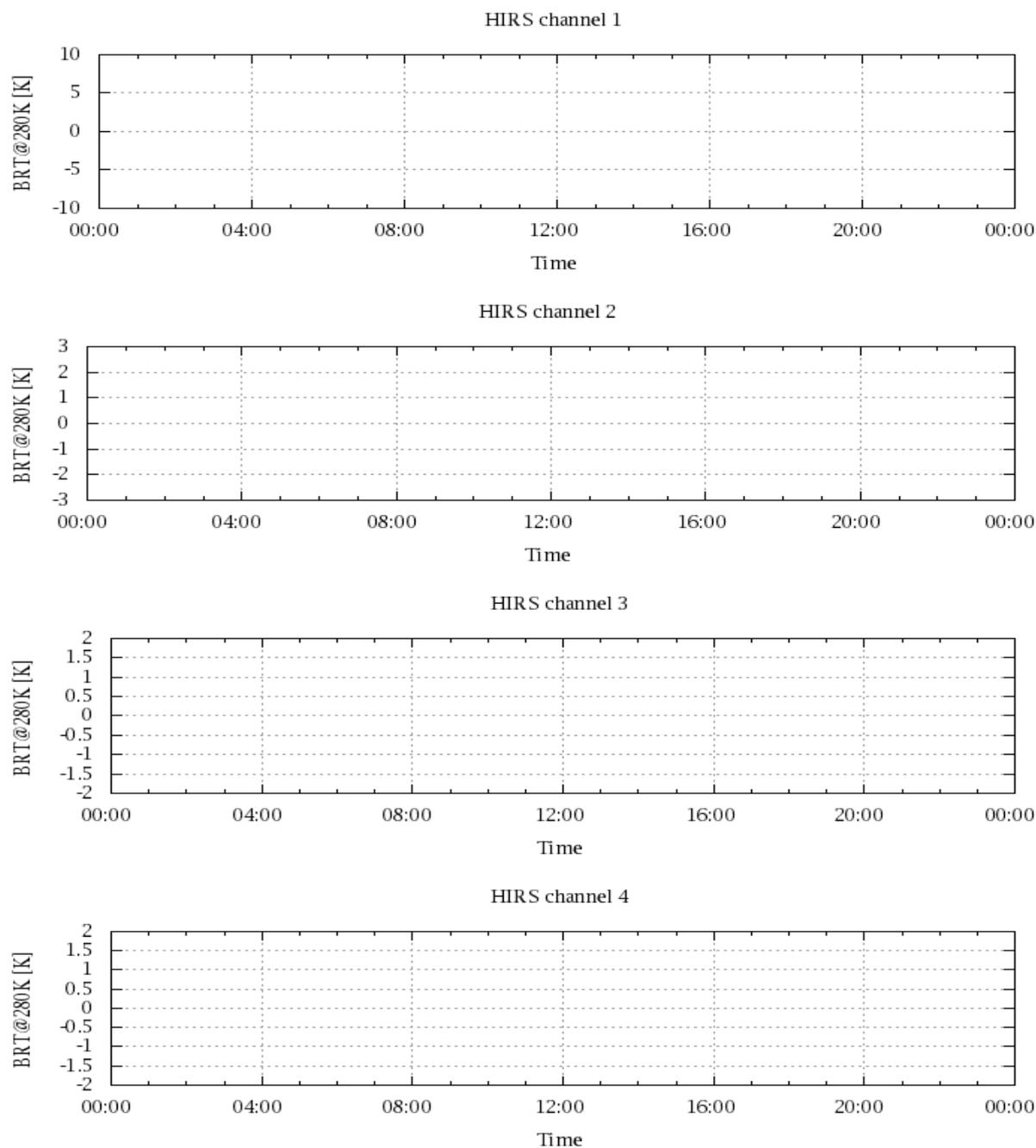


Figure 17: Radiance Differences in BT

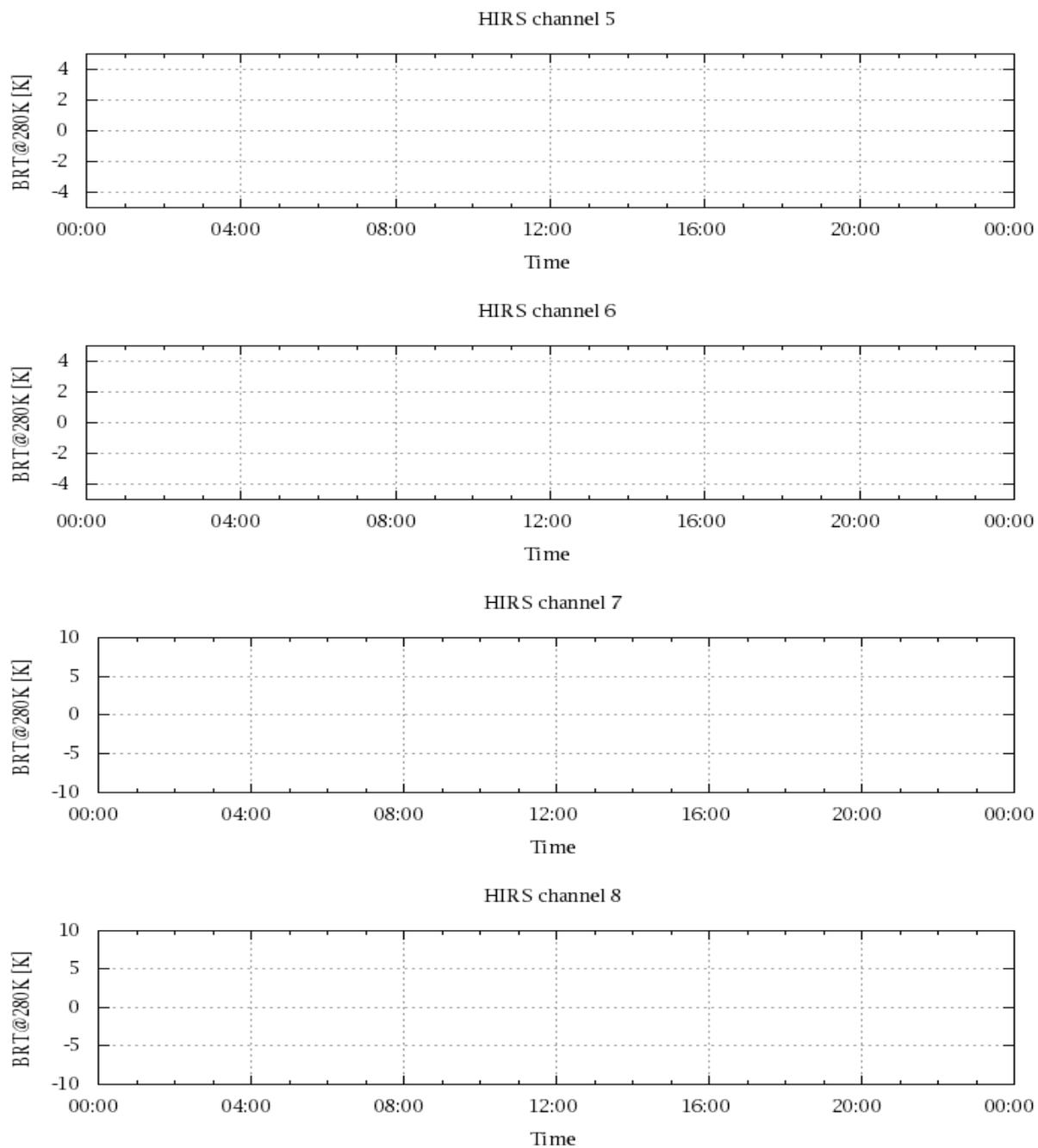


Figure 18: Radiance Differences in BT

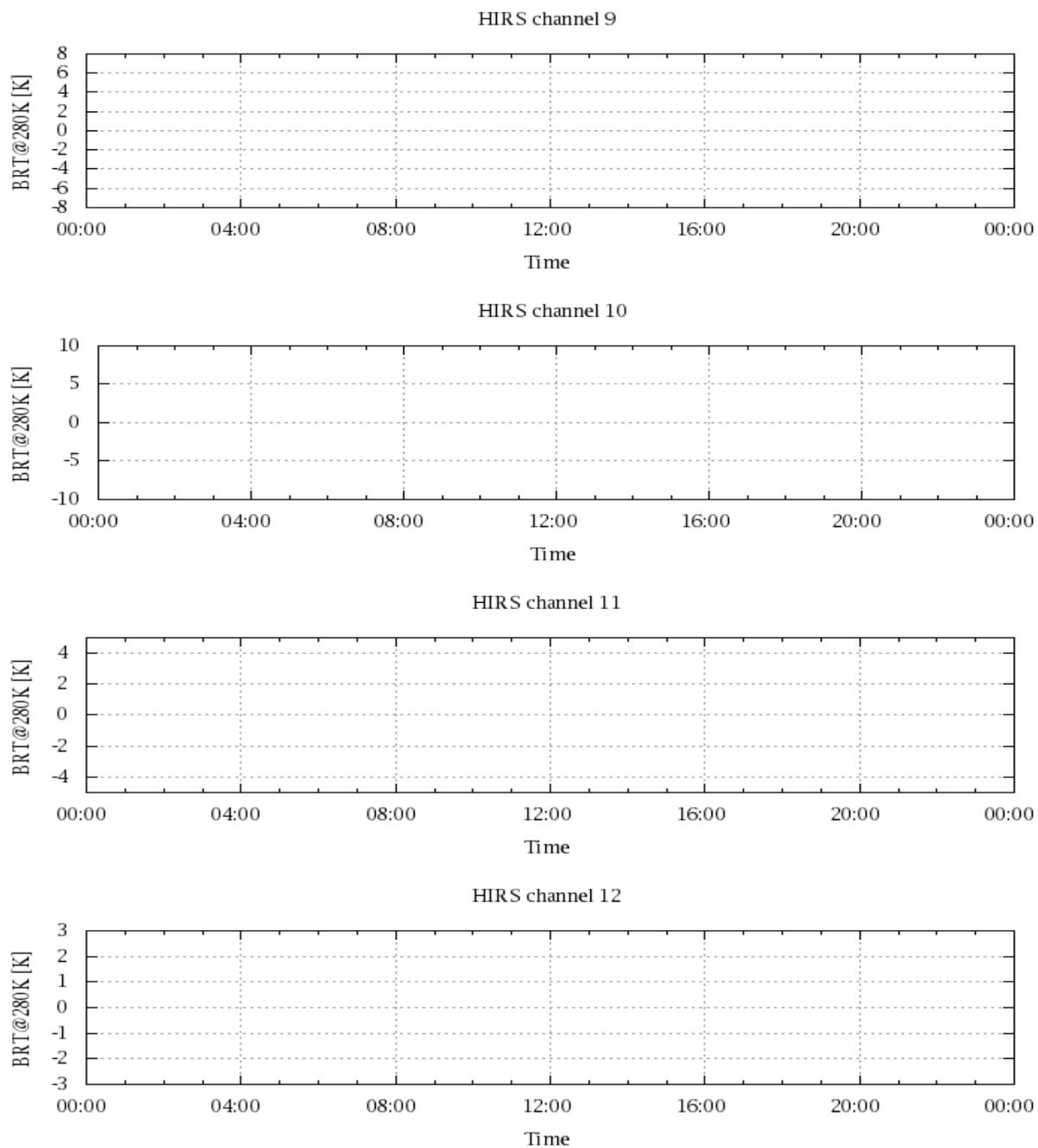


Figure 19: Radiance Differences in BT

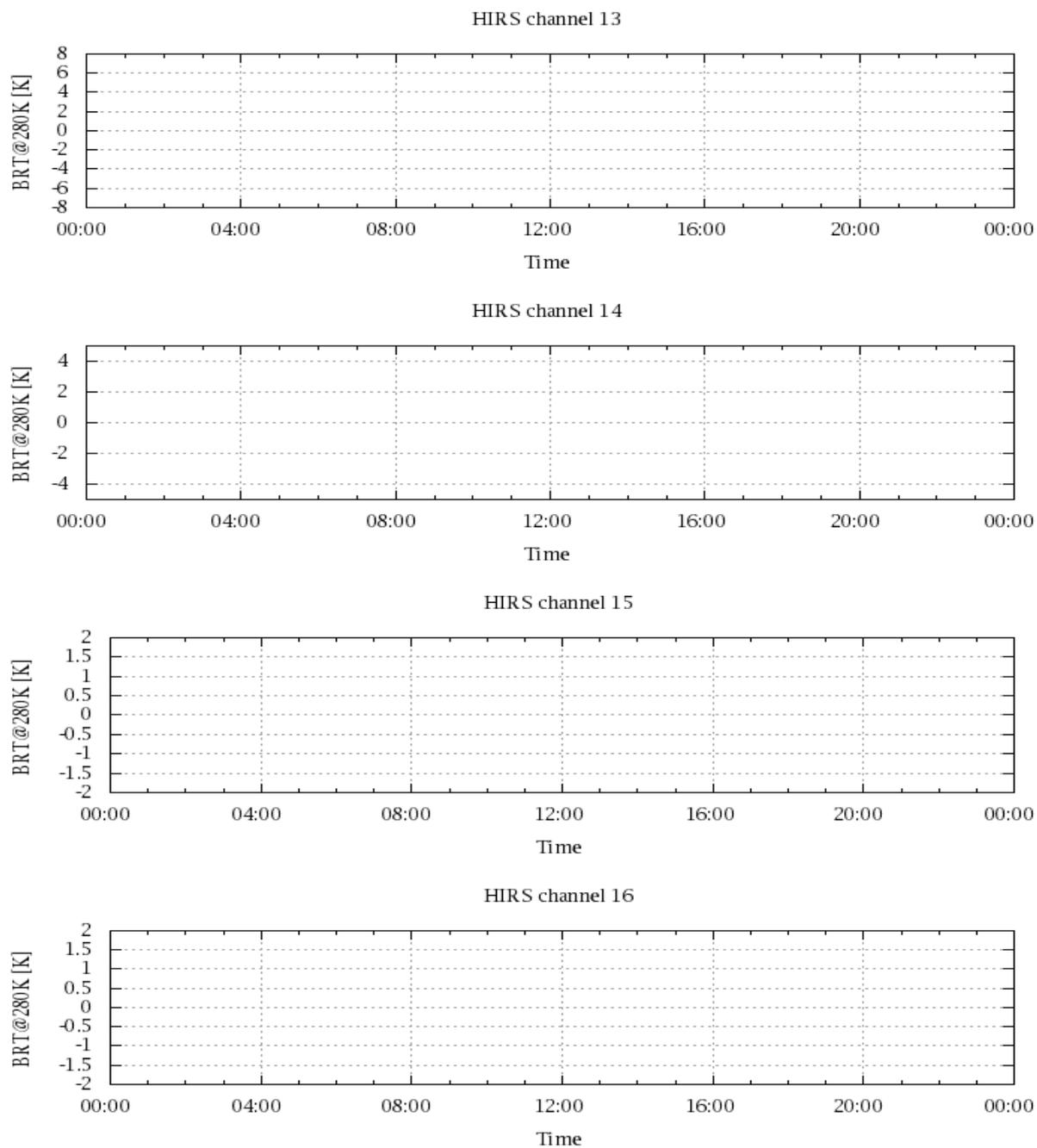


Figure 20: Radiance Differences in BT

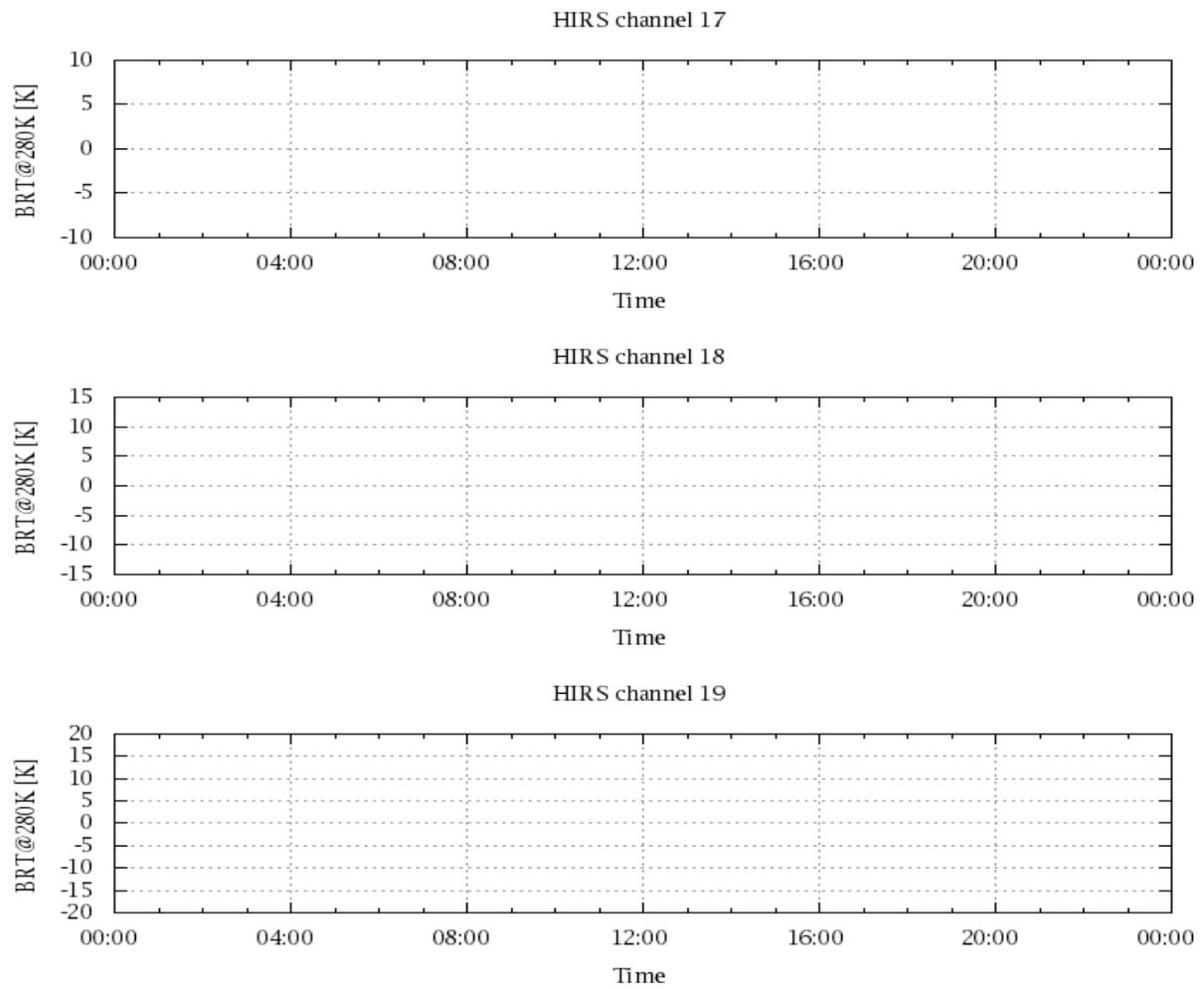


Figure 21: Radinace Differences in BT