

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

IASI monitoring team

26/11/2025 00:00:00 - 27/11/2025 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 26/11/2025 00:00:00 - 27/11/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 26/11/2025 00:00:00 - 27/11/2025 00:00:00

Product Type	Number	Action
L0 HKTU PDUs	481	-
L0 IASI PDUs	463	-
L1 ENG PDUs	462	-
L1 ENG distinct GEPSSGranule	461	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	462	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	11209	11242	20251126002007.166	20251126002015.814
PX1 (130)	1749	0	20251126125903.975	20251126135409.704
PX2 (135)	11209	11242	20251126002007.166	20251126002015.814
PX2 (135)	1749	0	20251126125903.975	20251126135409.704
PX3 (140)	11209	11242	20251126002007.166	20251126002015.814
PX3 (140)	1749	0	20251126125903.975	20251126135409.704
PX4 (145)	11208	11242	20251126002006.947	20251126002015.814
PX4 (145)	1749	0	20251126125903.975	20251126135409.704
IMG (150)	15976	16014	20251126002006.947	20251126002015.814
IMG (150)	12901	0	20251126125903.975	20251126135409.704
VER (160)	10055	10061	20251126002000.029	20251126002016.029
VER (160)	5748	2220	20251126125903.975	20251126145358.465
VER (160)	2220	2225	20251126145358.465	20251126145358.465
VER (160)	2225	2230	20251126145358.465	20251126145358.465
VER (160)	2230	2235	20251126145358.465	20251126145358.465
VER (160)	2235	2221	20251126145358.465	20251126145358.465
VER (160)	2221	2226	20251126145358.465	20251126145358.465
VER (160)	2226	2231	20251126145358.465	20251126145358.465
VER (160)	2231	2236	20251126145358.465	20251126145358.465

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	2236	2222	20251126145358.465	20251126145358.465
VER (160)	2222	2227	20251126145358.465	20251126145358.465
VER (160)	2227	2232	20251126145358.465	20251126145358.465
VER (160)	2232	2237	20251126145358.465	20251126145358.465
VER (160)	2237	2223	20251126145358.465	20251126145358.465
VER (160)	2223	2228	20251126145358.465	20251126145358.465
VER (160)	2228	2233	20251126145358.465	20251126145358.465
VER (160)	2233	2238	20251126145358.465	20251126145358.465
VER (160)	2238	2224	20251126145358.465	20251126145358.465
VER (160)	2224	2229	20251126145358.465	20251126145358.465
VER (160)	2229	2234	20251126145358.465	20251126145358.465
VER (160)	2234	2239	20251126145358.465	20251126145358.465
AUX (180)	5287	5289	20251126002000.463	20251126002016.463
AUX (180)	10979	0	20251126125856.408	20251126135416.407

Table 2: L0 data gaps

3 Instrument modes

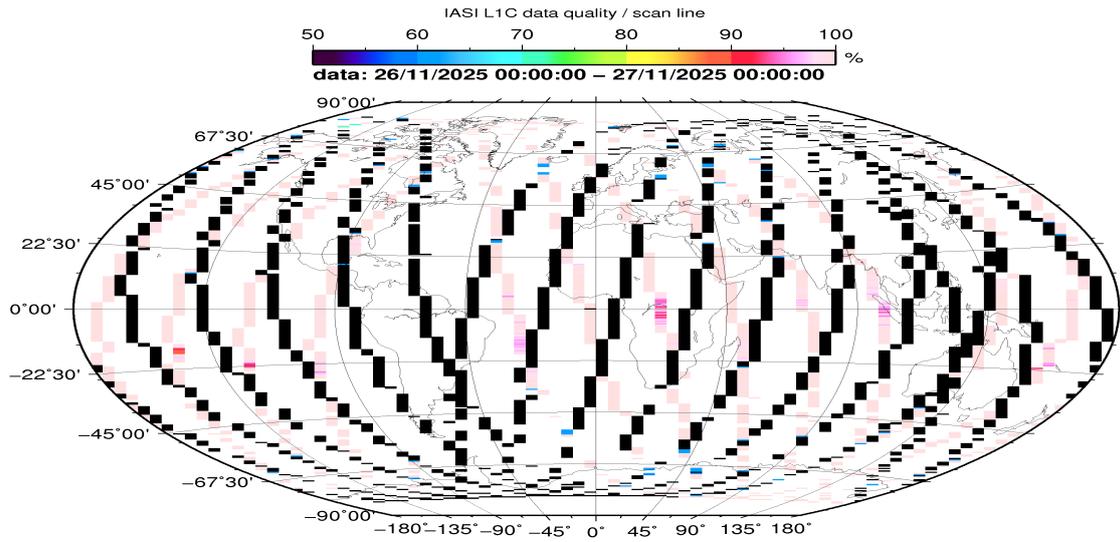
Time	Transition from	Transition to
26/11/2025 00:00:14	-	Normal operation
26/11/2025 12:59:10	Normal operation	Auxiliary ASE synchronised
26/11/2025 13:00:14	Auxiliary ASE synchronised	Heater 2
26/11/2025 13:01:18	Heater 2	Heater 1 warm up
26/11/2025 13:02:06	Heater 1 warm up	Heater 2
26/11/2025 13:33:18	Heater 2	Auxiliary ASE synchronised
26/11/2025 13:54:06	Auxiliary ASE synchronised	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

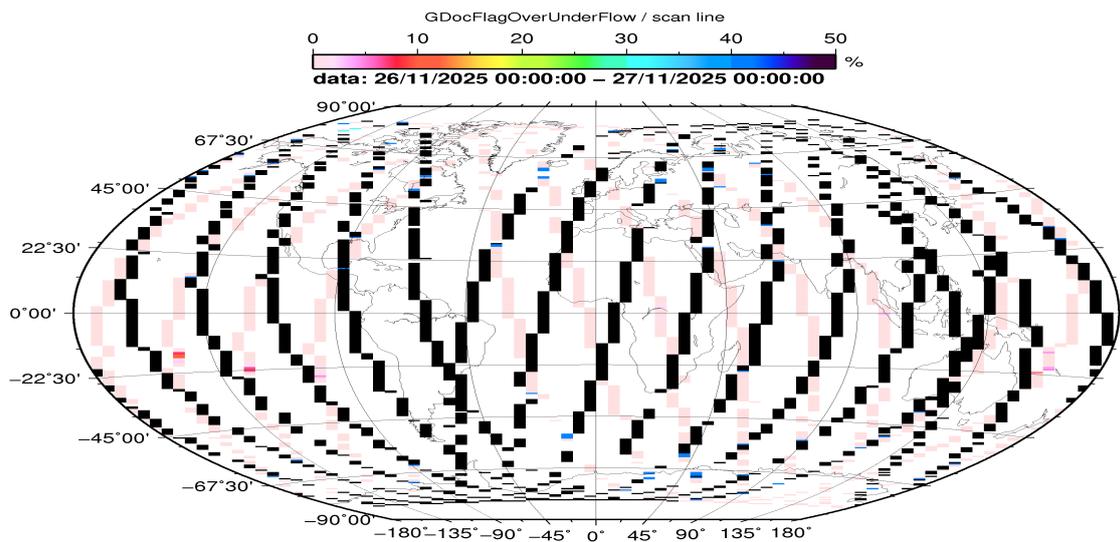
Flag	Value	Action
L0 IASI PDUs	463	-
L1 ENG PDUs	462	-
L1 ENG distinct GEPSGranule	461	a
GQisFlagQual set (PX1)	43.66 %	-
GQisFlagQual set (PX2)	43.69 %	-
GQisFlagQual set (PX3)	43.69 %	-
GQisFlagQual set (PX4)	43.65 %	-
GQisFlagQual set (all)	43.67 %	-

Table 4: Quality flags



GM 2025 Nov 27 07:40:33

Figure 1: L1C data quality



GM 2025 Nov 27 07:40:37

Figure 2: Flag of Over and Under Flows

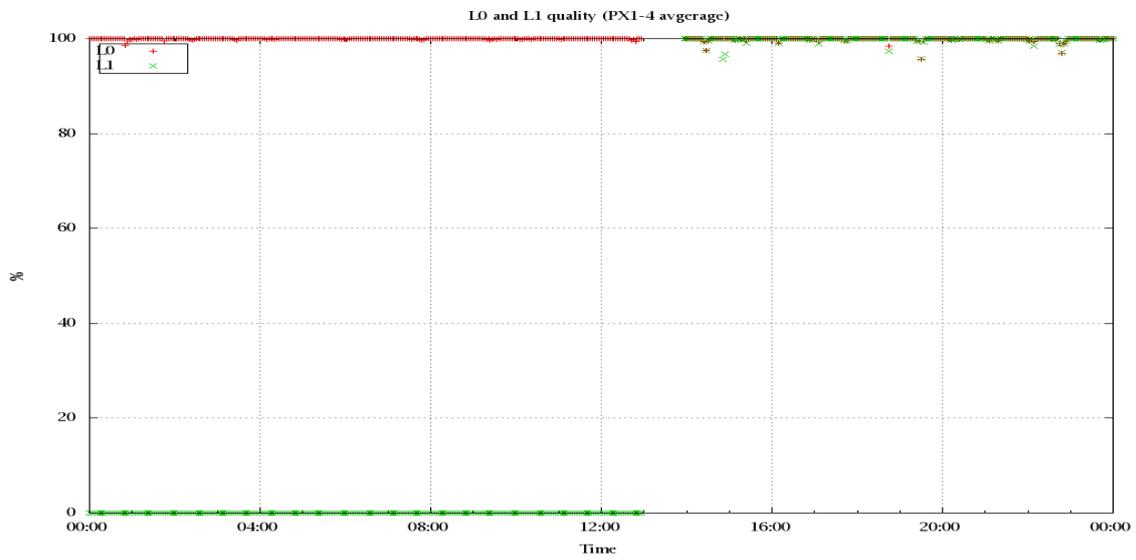


Figure 3: Level 0 and 1C overall quality

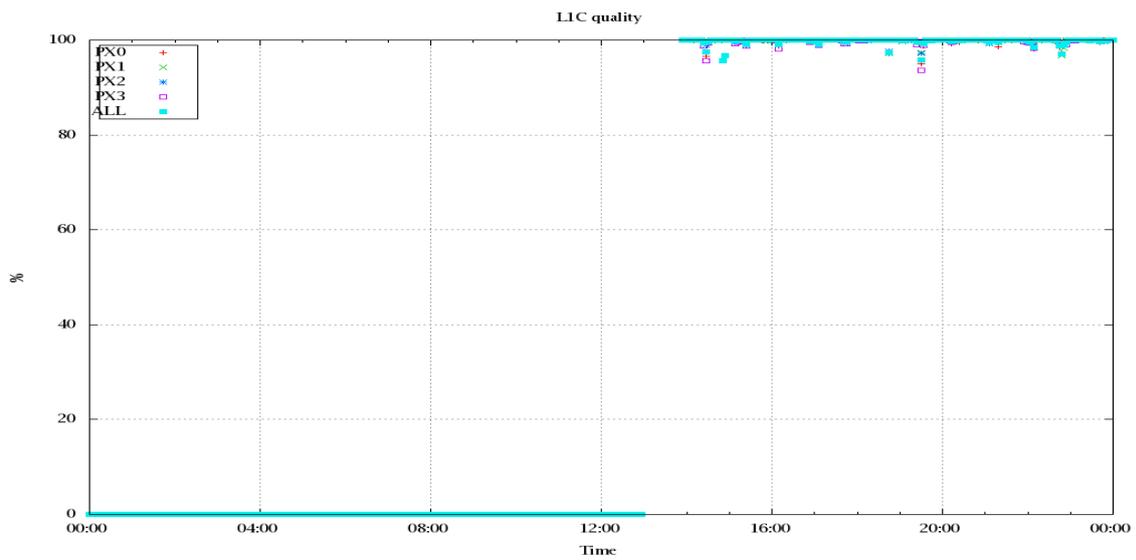


Figure 4: Level 1C quality

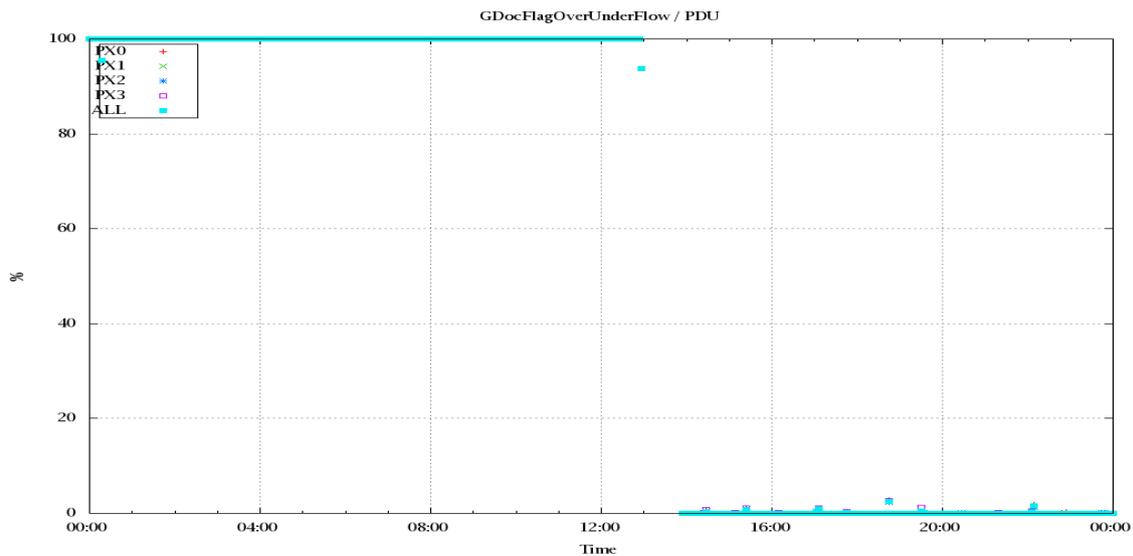


Figure 5: Timeseries of flag of Over and Under Flows

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.

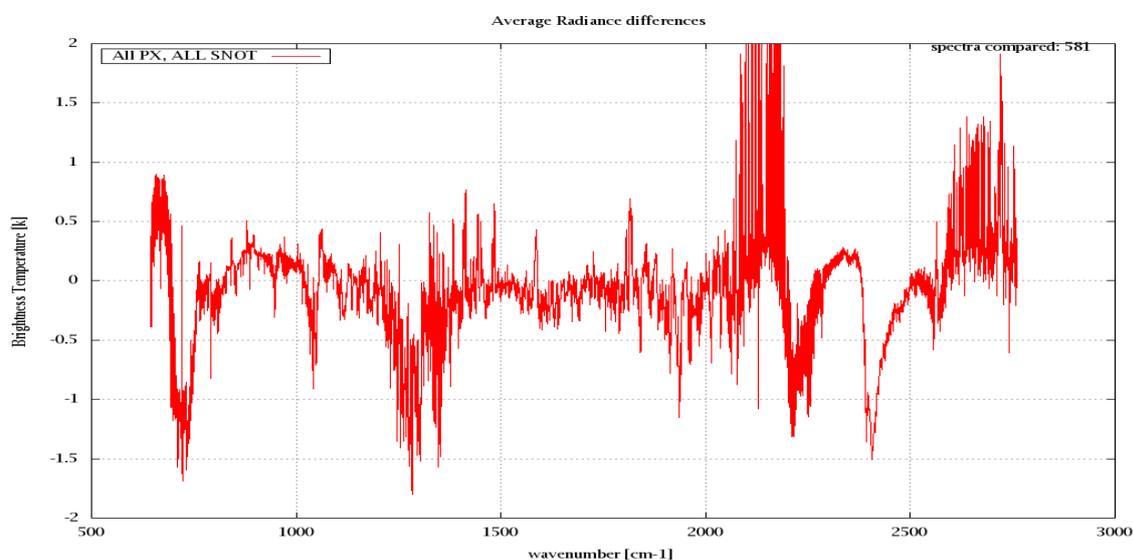


Figure 6: Average Radiance differences: OBS-CAL

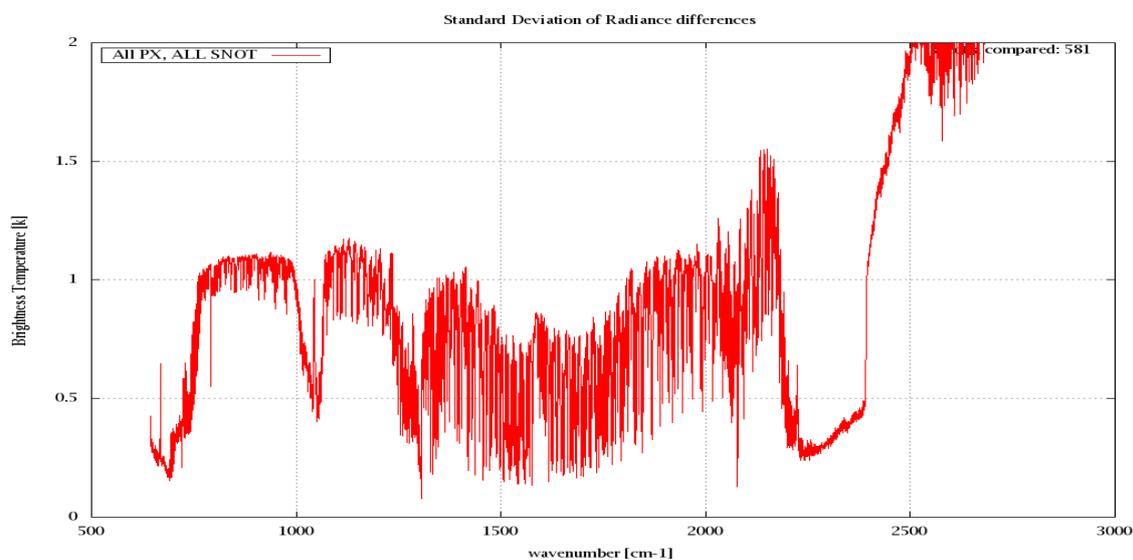


Figure 7: Standard Deviation of Radiance differences

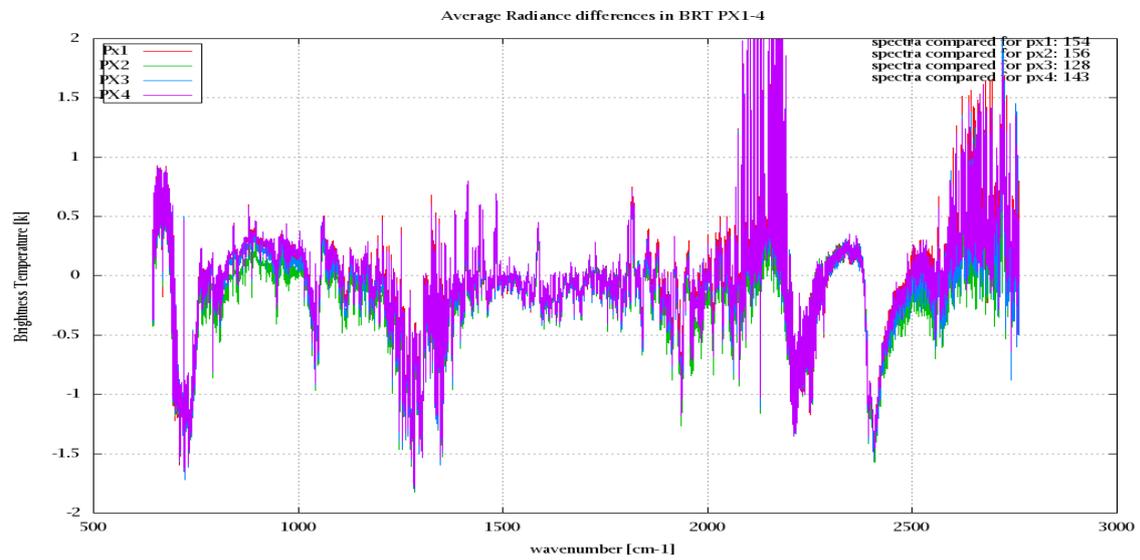


Figure 8: Average Radiance differences: OBS-CAL

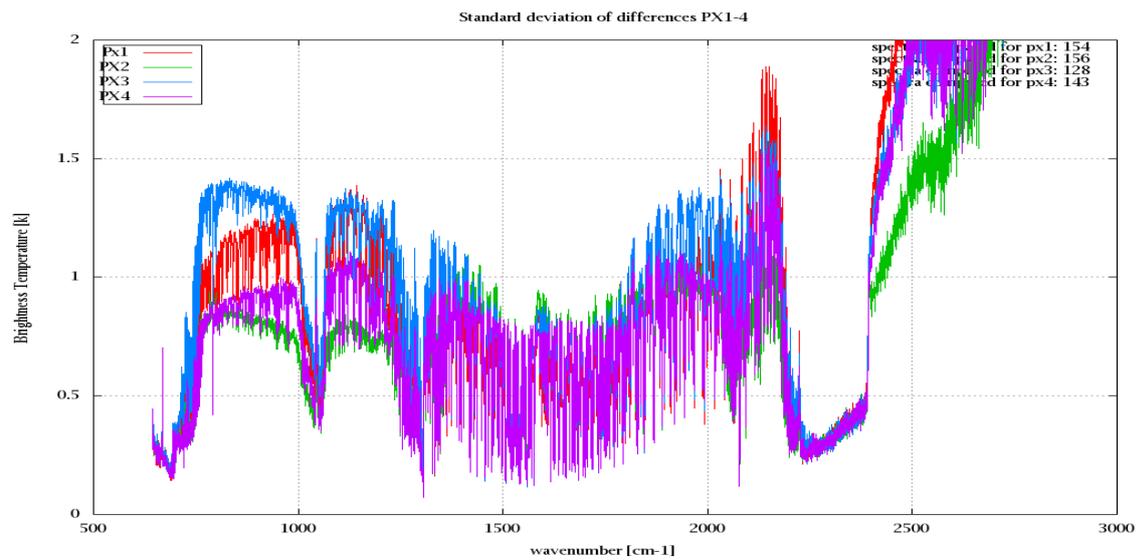


Figure 9: Standard Deviation of Radiance differences

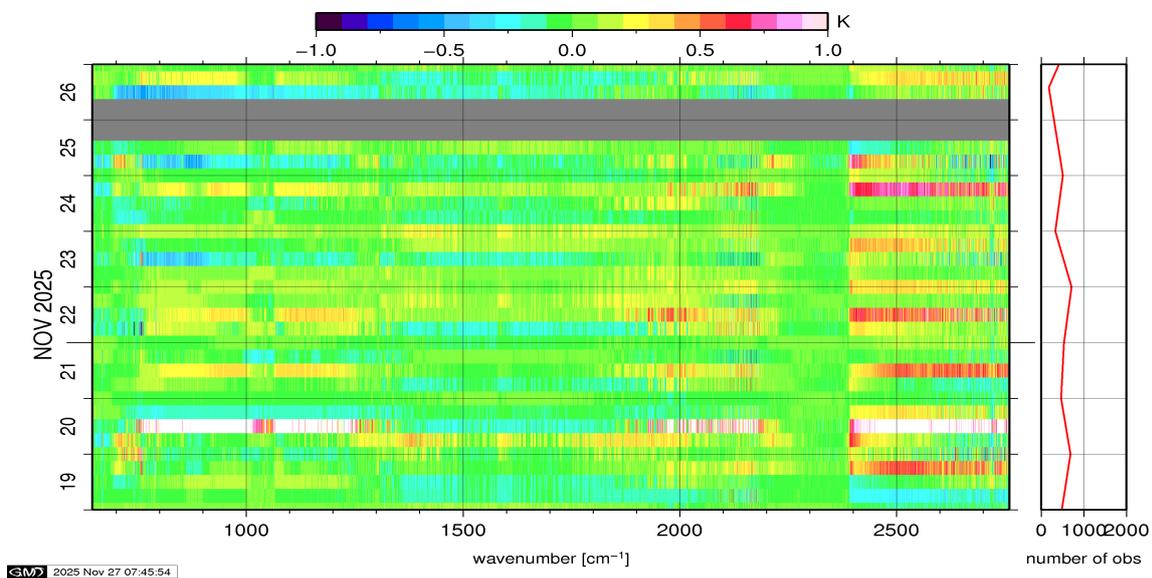


Figure 10: Radiance Anomaly in BT: All Channels

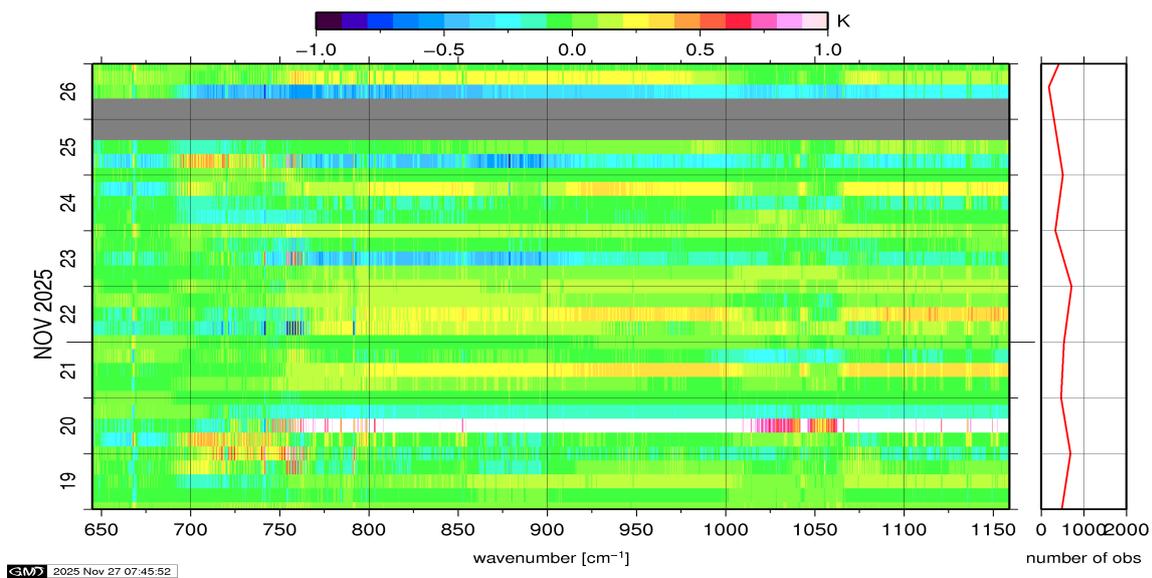


Figure 11: Radiance Anomaly in BT: IASI Band 1

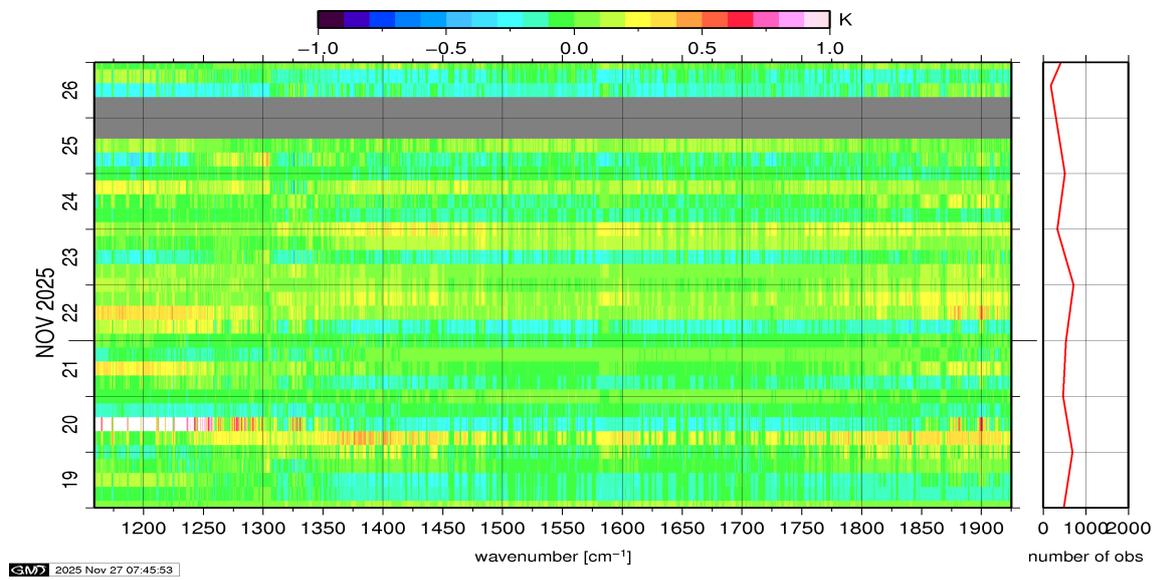


Figure 12: Radiance Anomaly in BT: IASI Band 2

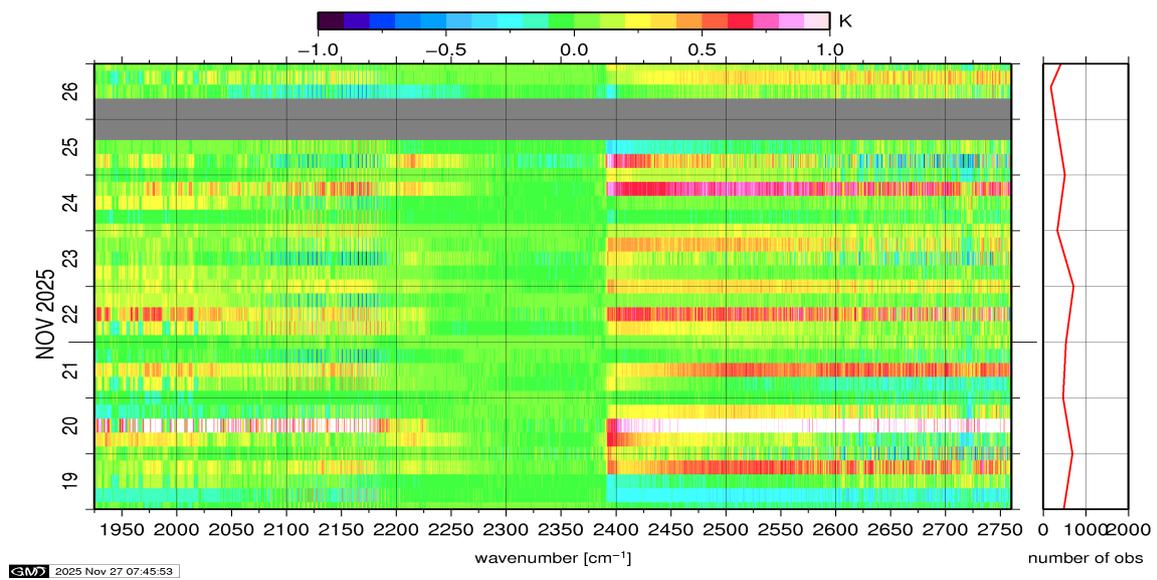


Figure 13: Radiance Anomaly in BT: IASI Band 3

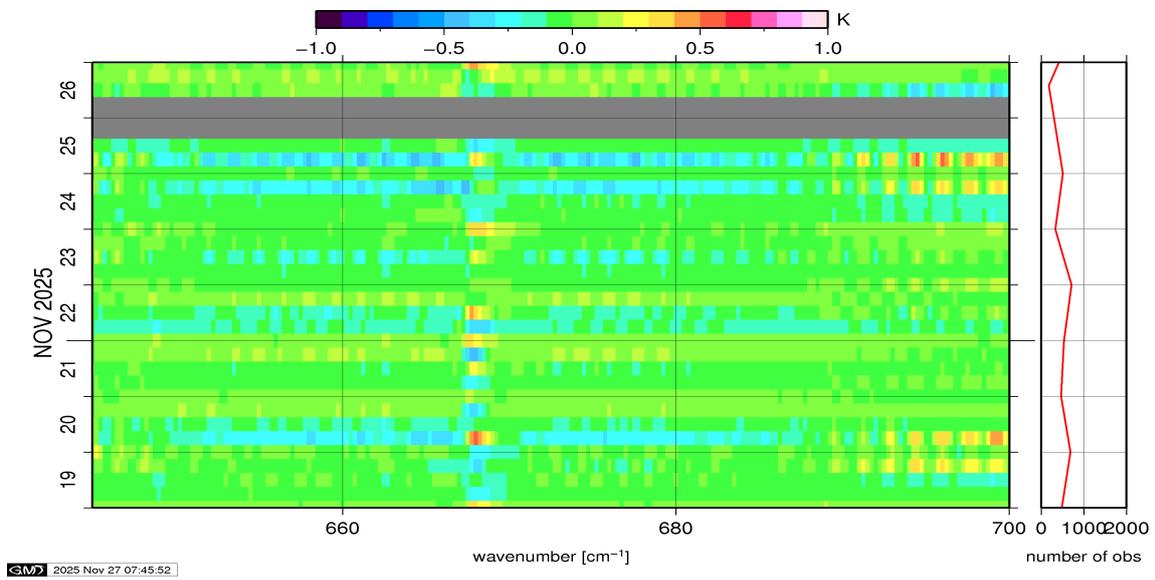


Figure 14: Radiance Anomaly in BT: CO2 14

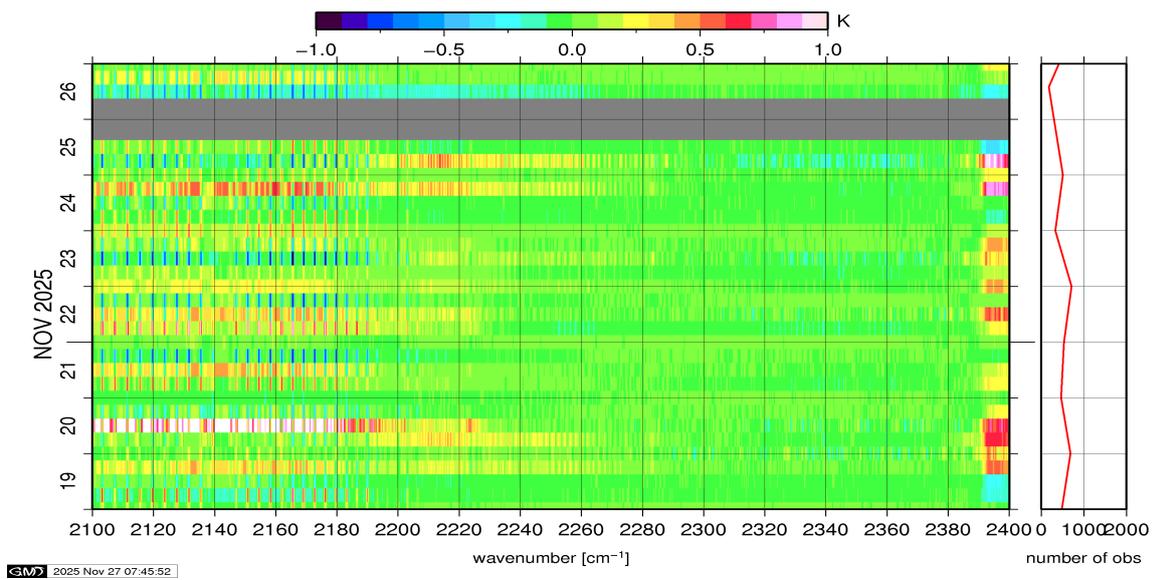


Figure 15: Radiance Anomaly in BT: CO2 4.3

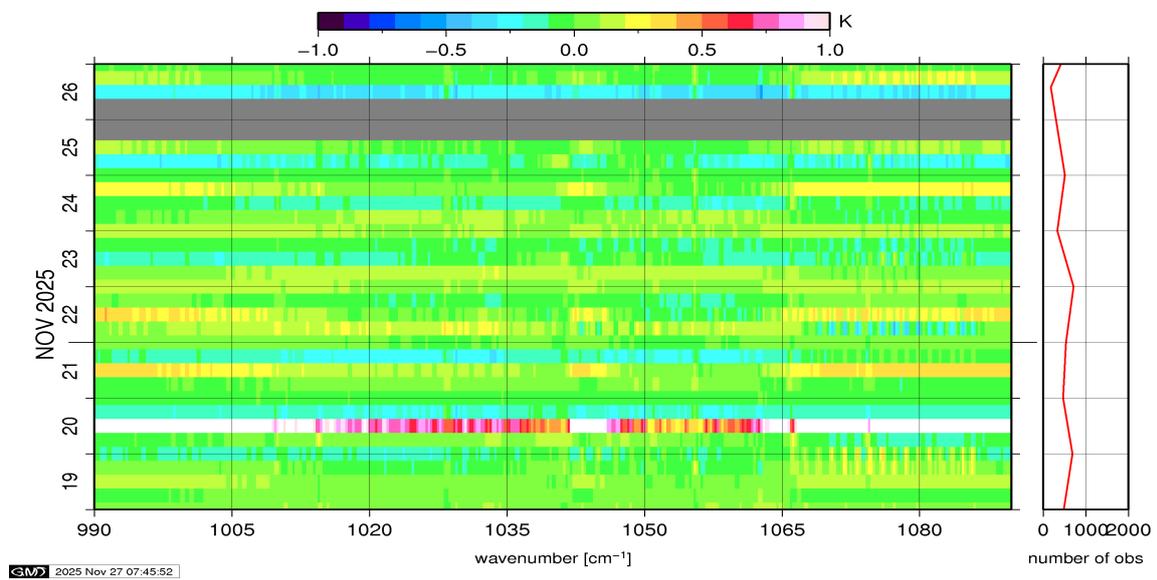


Figure 16: Radiance Anomaly in BT: O3

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.

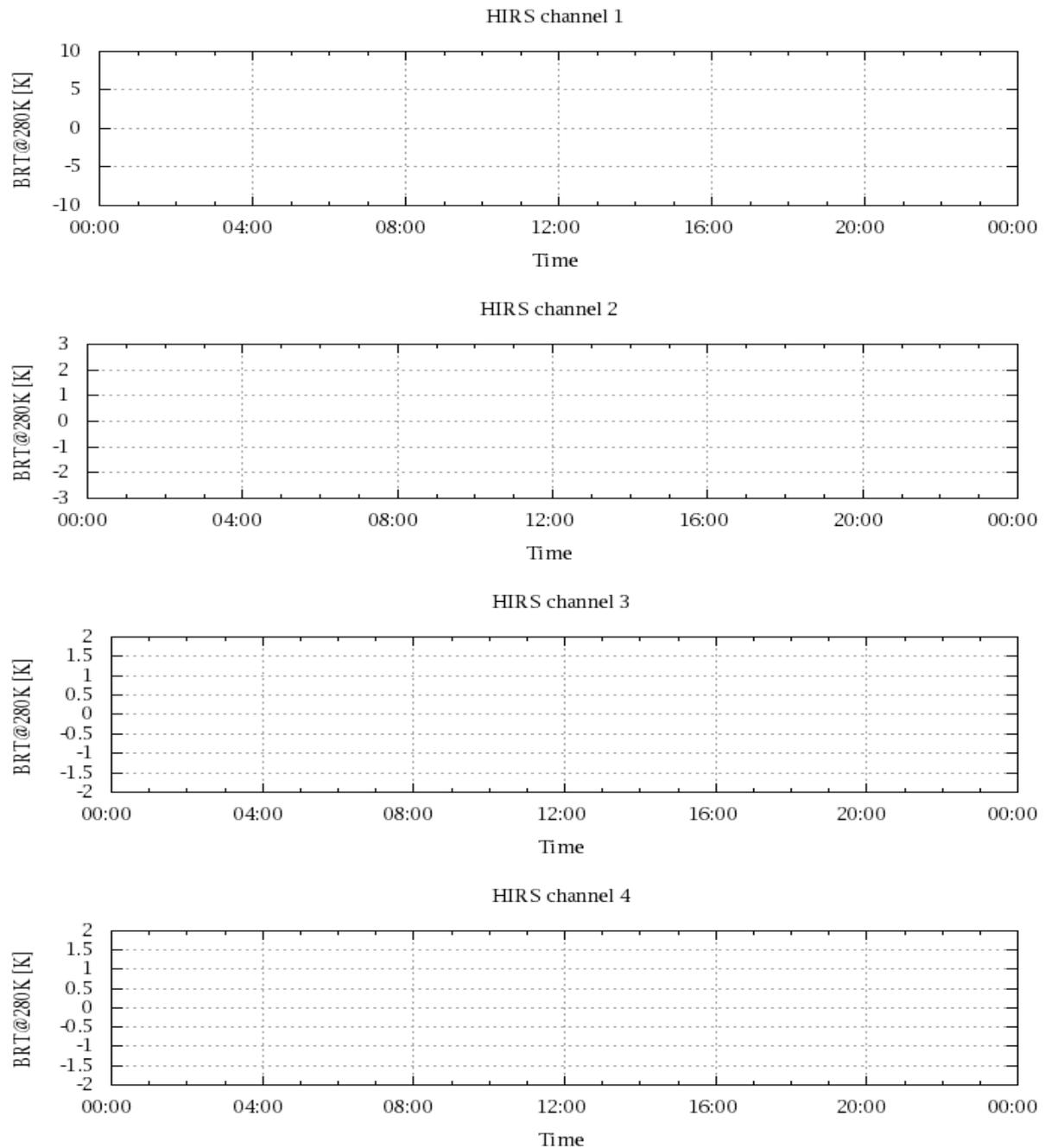


Figure 17: Radiance Differences in BT

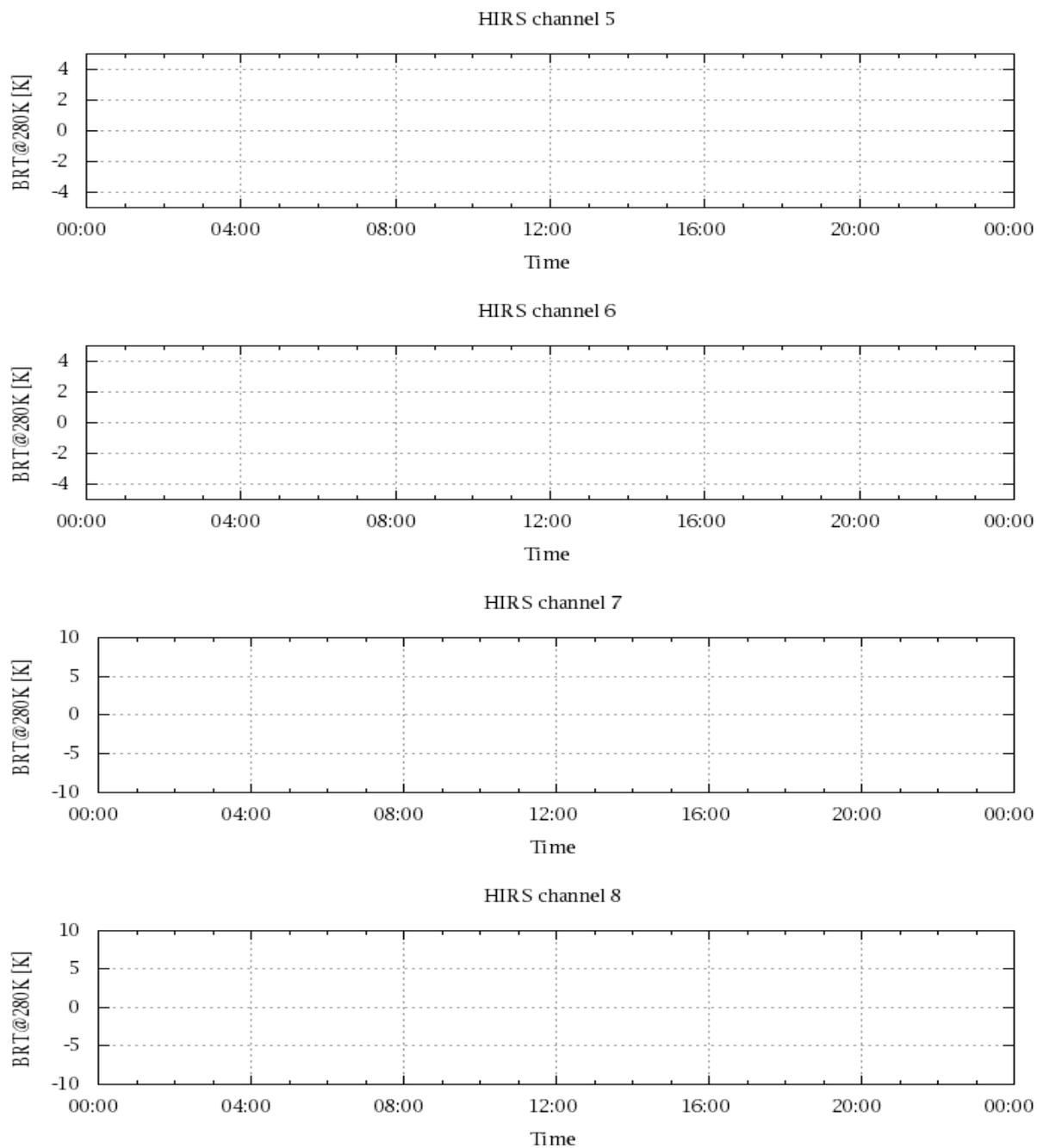


Figure 18: Radiance Differences in BT

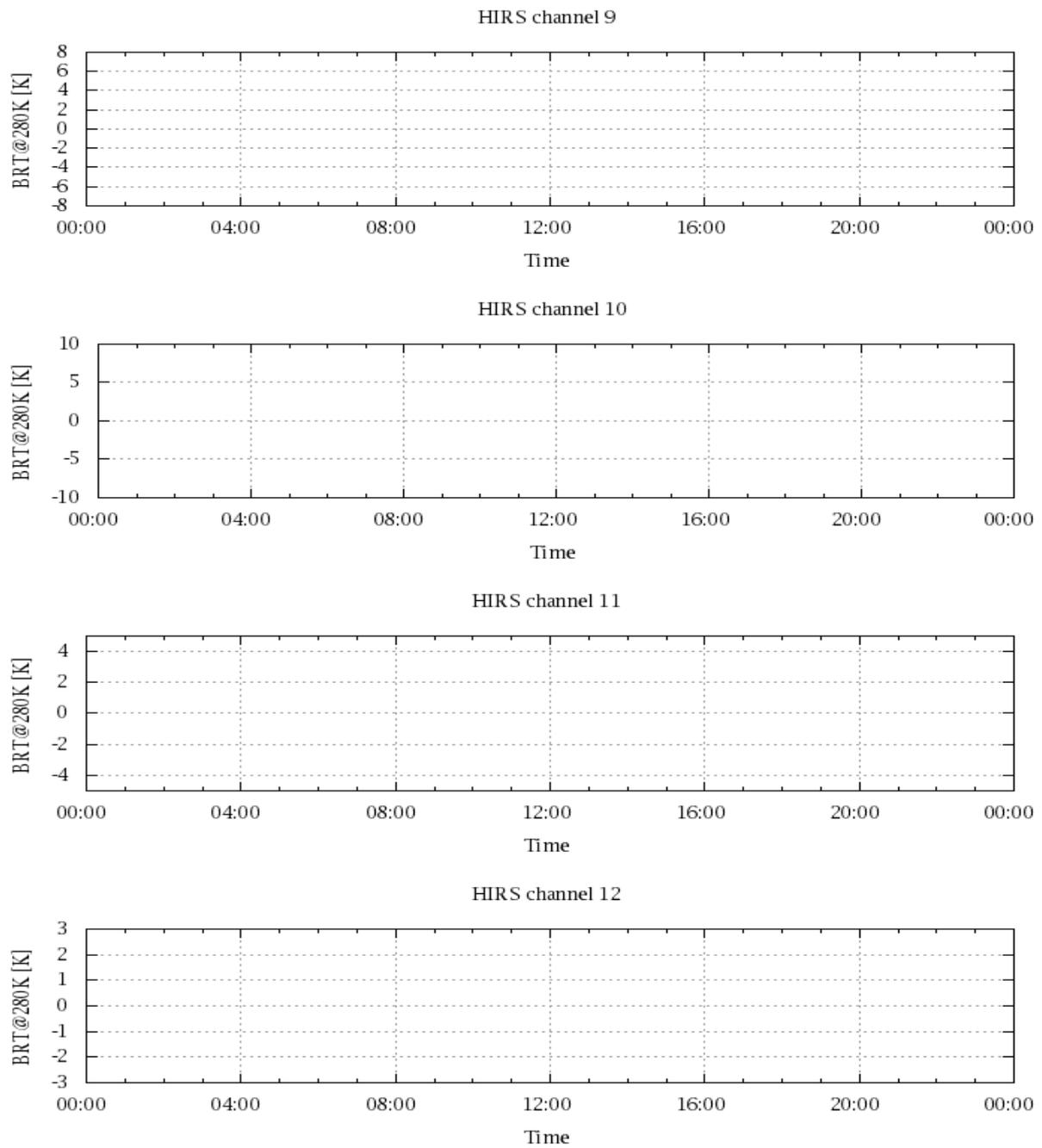


Figure 19: Radiance Differences in BT

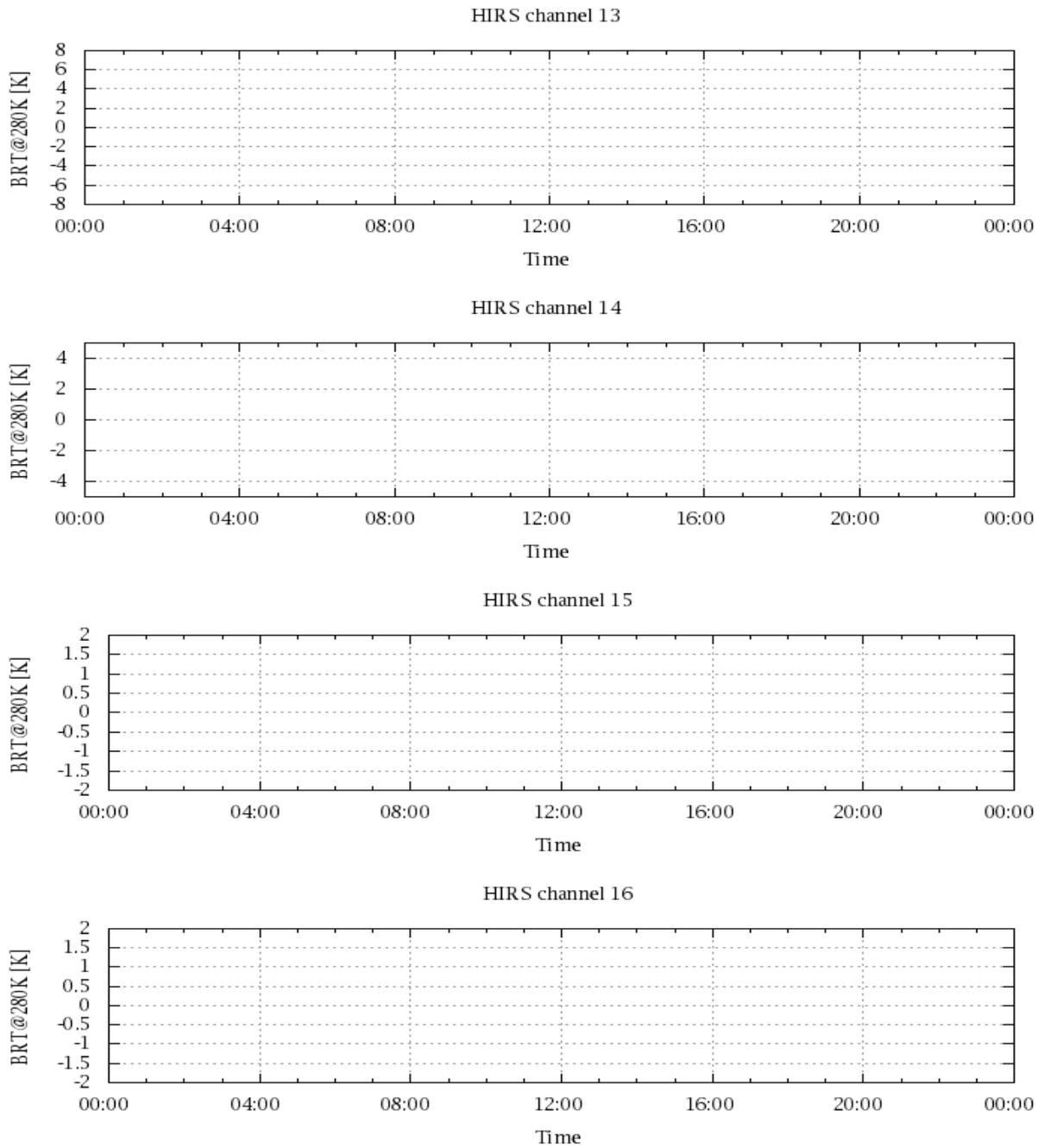


Figure 20: Radiance Differences in BT

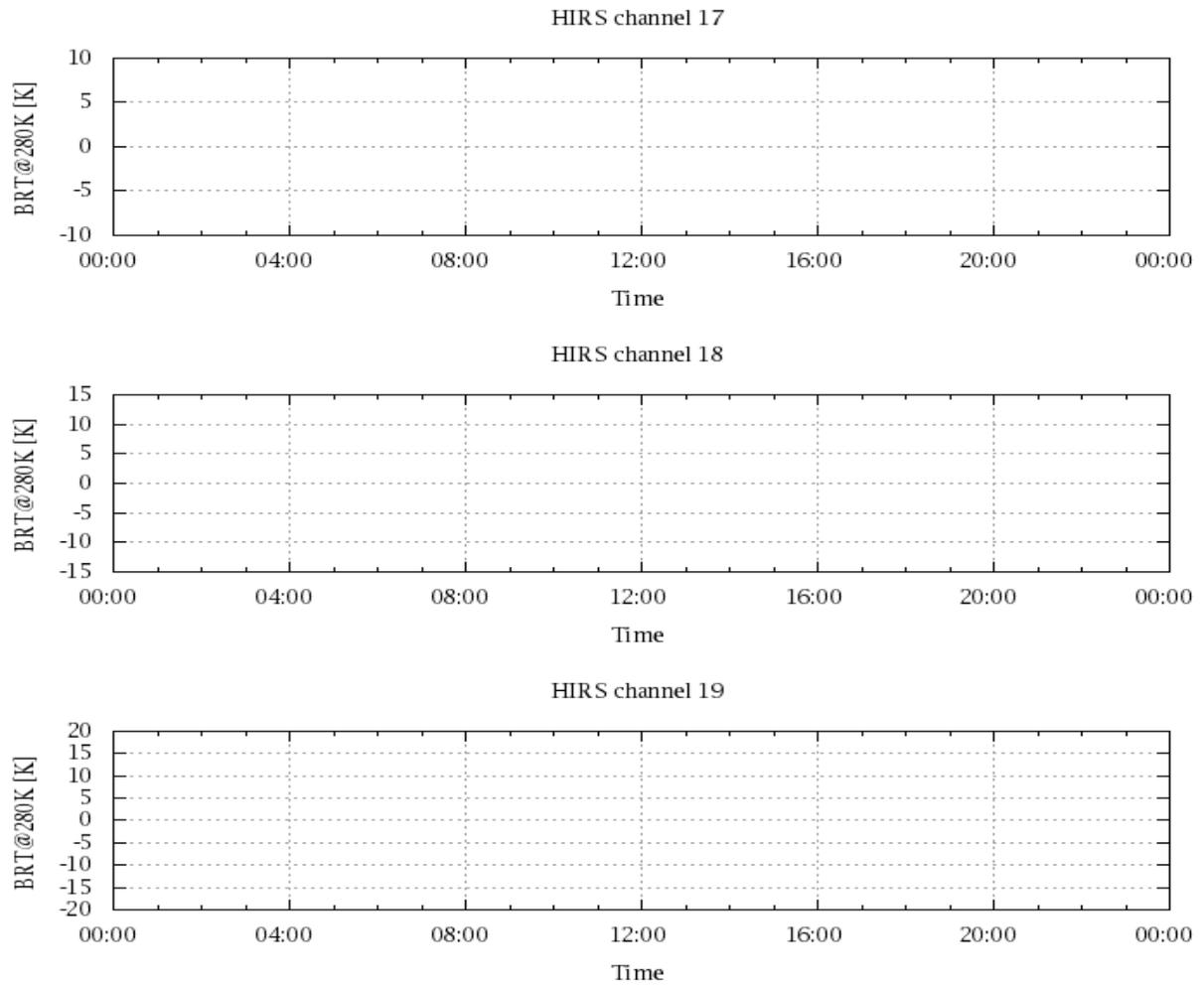


Figure 21: Radinace Differences in BT