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

IASI monitoring team

19/04/2026 00:00:00 - 20/04/2026 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 19/04/2026 00:00:00 - 20/04/2026 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 19/04/2026 00:00:00 - 20/04/2026 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	479	-
L1 ENG distinct GEPSGranule	476	-
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	479	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	2840	2871	20260419123109.159	20260419123118.889
PX1 (130)	2932	2934	20260419123135.104	20260419123135.537
PX1 (130)	2935	3131	20260419123135.752	20260419123227.209
PX1 (130)	3162	3171	20260419123235.424	20260419123238.885
PX2 (135)	2840	2871	20260419123109.159	20260419123118.889
PX2 (135)	2933	3129	20260419123135.319	20260419123226.776
PX2 (135)	3161	3171	20260419123235.209	20260419123238.885
PX3 (140)	2840	2871	20260419123109.159	20260419123118.889
PX3 (140)	2935	2937	20260419123135.752	20260419123136.186
PX3 (140)	2937	3130	20260419123136.186	20260419123226.994
PX3 (140)	3161	3171	20260419123235.209	20260419123238.885
PX4 (145)	2840	2871	20260419123109.159	20260419123118.889
PX4 (145)	2933	2935	20260419123135.319	20260419123135.752
PX4 (145)	2935	3130	20260419123135.752	20260419123226.994
PX4 (145)	3162	3171	20260419123235.424	20260419123238.885
IMG (150)	3904	3939	20260419123109.159	20260419123117.588
IMG (150)	4011	4013	20260419123134.885	20260419123135.319
IMG (150)	4013	4018	20260419123135.319	20260419123136.401
IMG (150)	4018	4233	20260419123136.401	20260419123226.776

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	4269	4279	20260419123235.209	20260419123237.588
VER (160)	1336	1343	20260419123109.159	20260419123109.159
VER (160)	1355	1386	20260419123133.159	20260419123229.158
VER (160)	1390	1392	20260419123229.158	20260419123235.424
AUX (180)	265	267	20260419123101.592	20260419123117.588
AUX (180)	269	276	20260419123133.588	20260419123229.588

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
19/04/2026 00:00:11	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	481	-
L1 ENG PDUs	479	-
L1 ENG distinct GEPSGranule	476	-
GQisFlagQual set (PX1)	99.70 %	-
GQisFlagQual set (PX2)	99.79 %	-
GQisFlagQual set (PX3)	99.78 %	-
GQisFlagQual set (PX4)	99.71 %	-
GQisFlagQual set (all)	99.74 %	-

Table 4: Quality flags

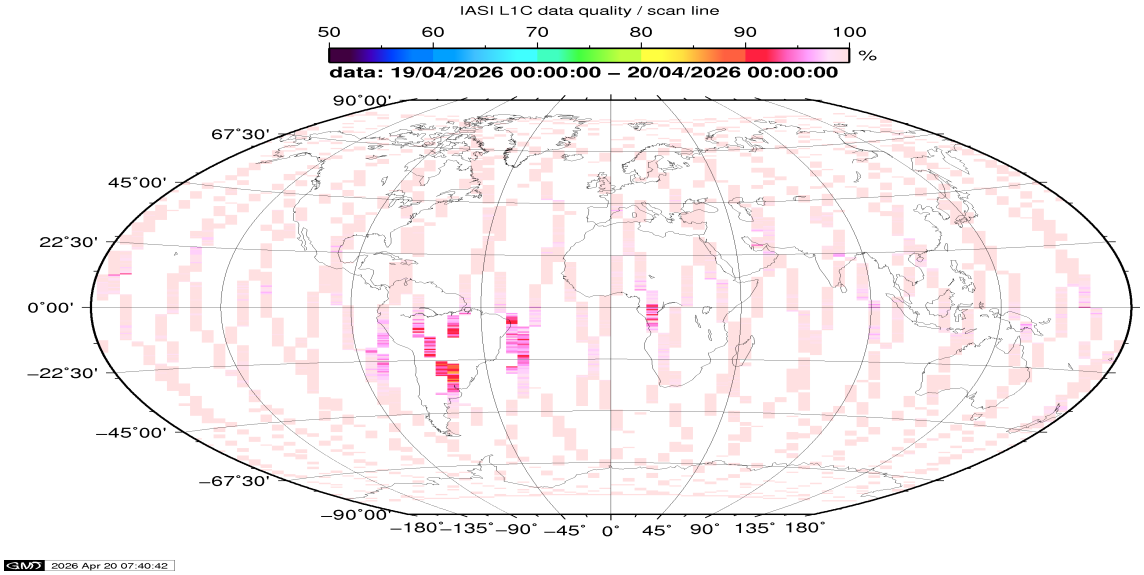

Figure 1: L1C data quality

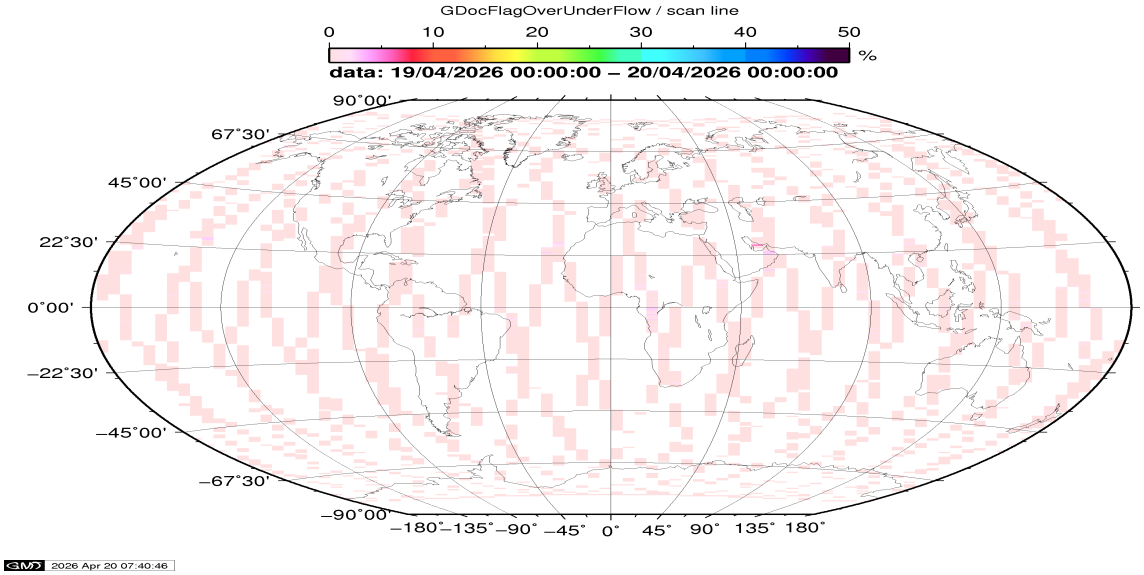

Figure 2: Flag of Over and Under Flows

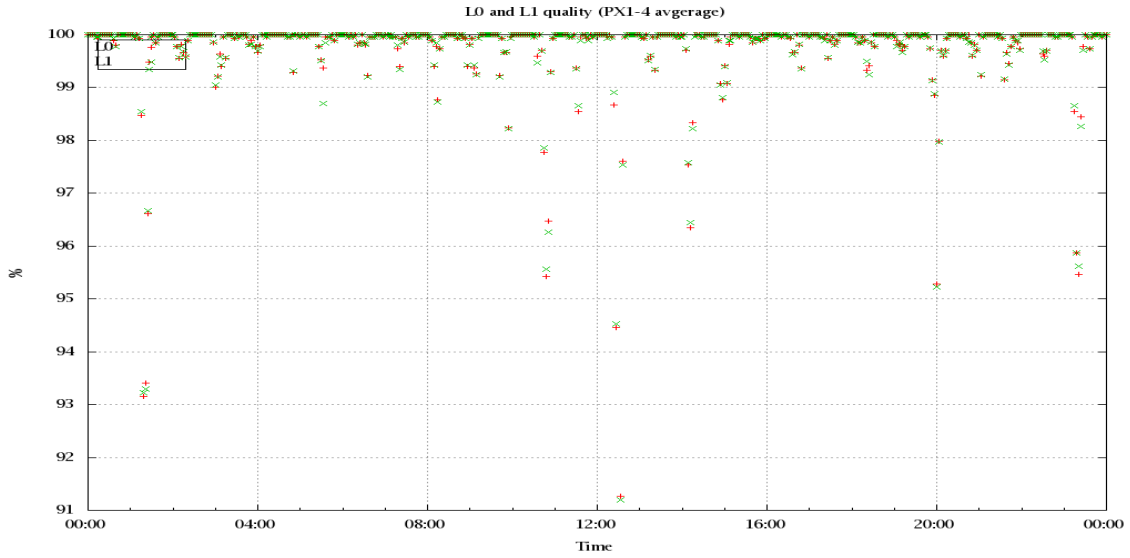

Figure 3: Level 0 and 1C overall quality

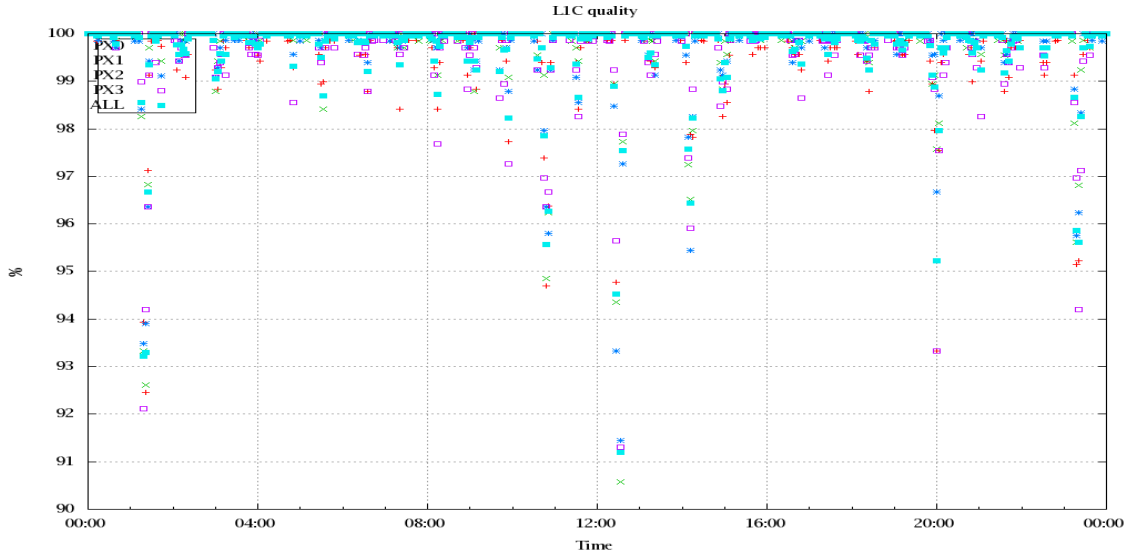

Figure 4: Level 1C quality

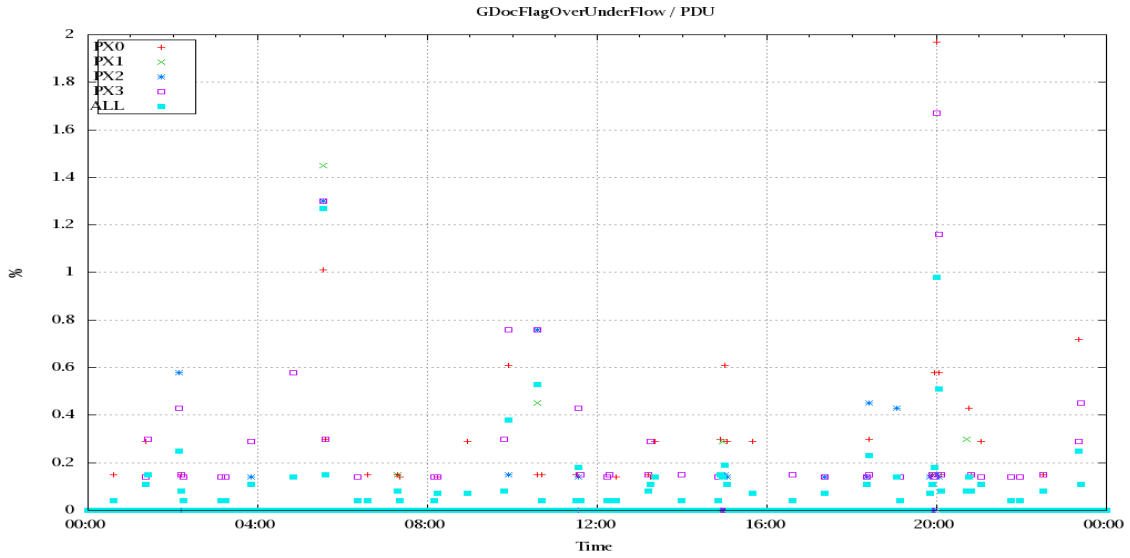

Figure 5: Timeseries of flag of Over and Under Flows

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 indentification 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.

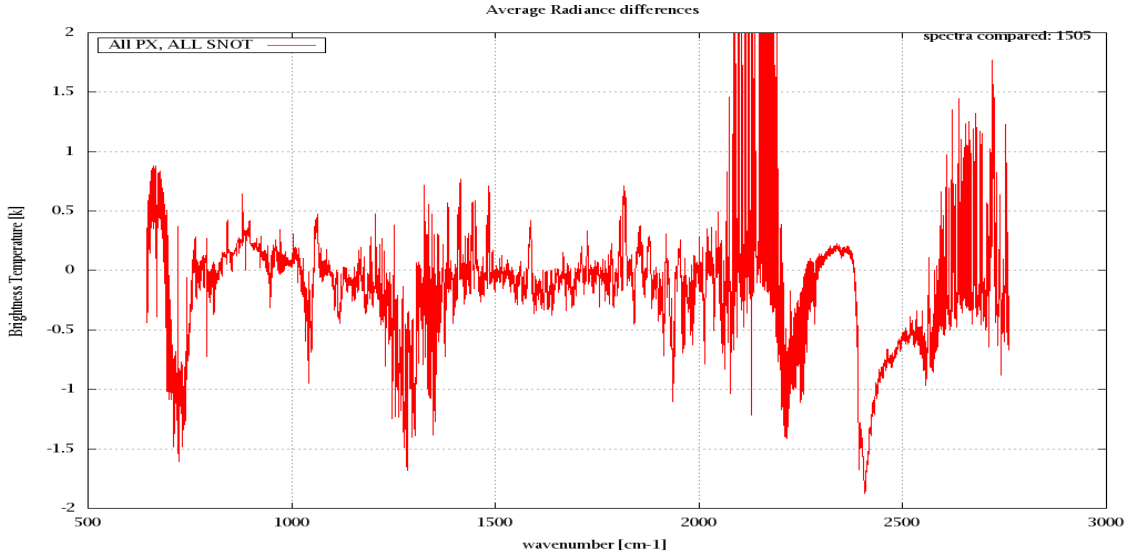

Figure 6: Average Radiance differences: OBS-CAL

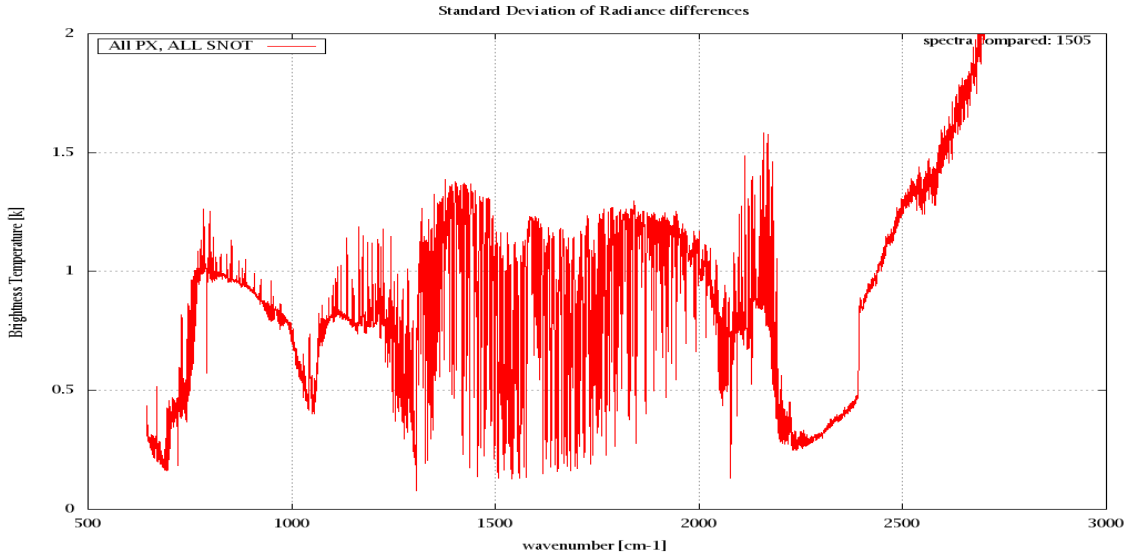

Figure 7: Standard Deviation of Radiance differences

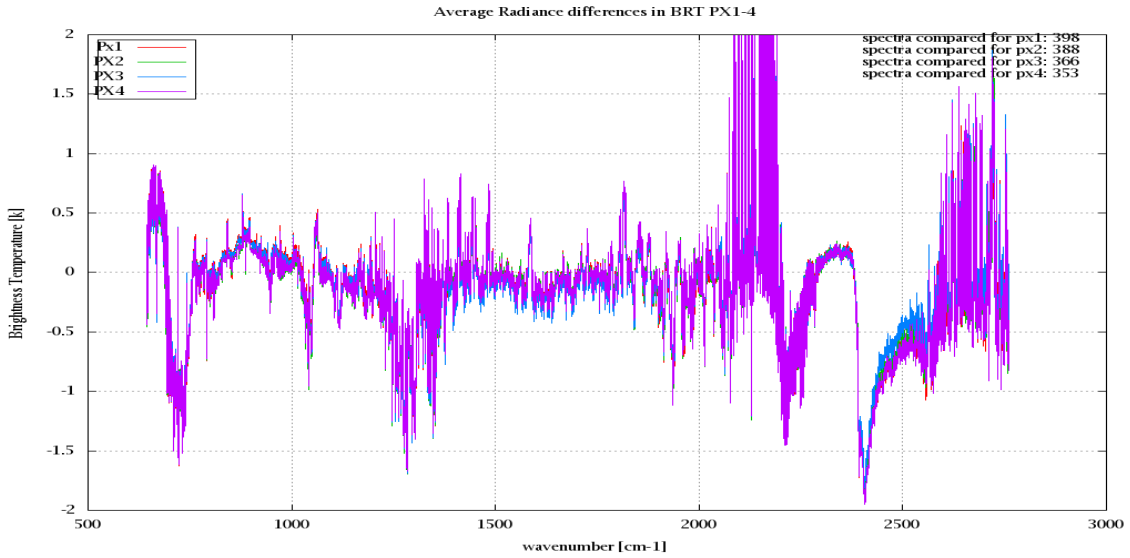

Figure 8: Average Radiance differences: OBS-CAL

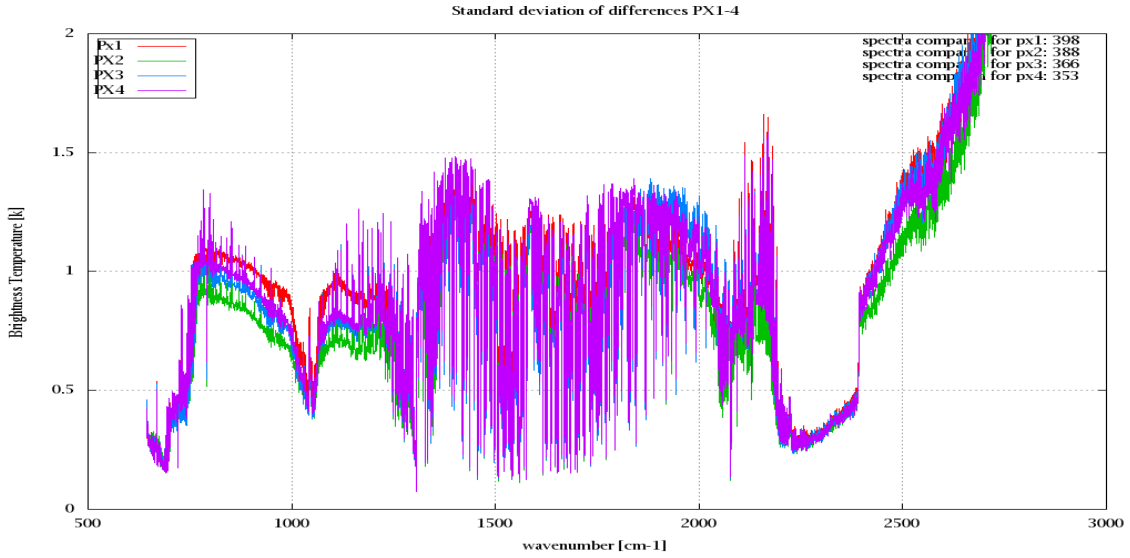

Figure 9: Standard Deviation of Radiance differences

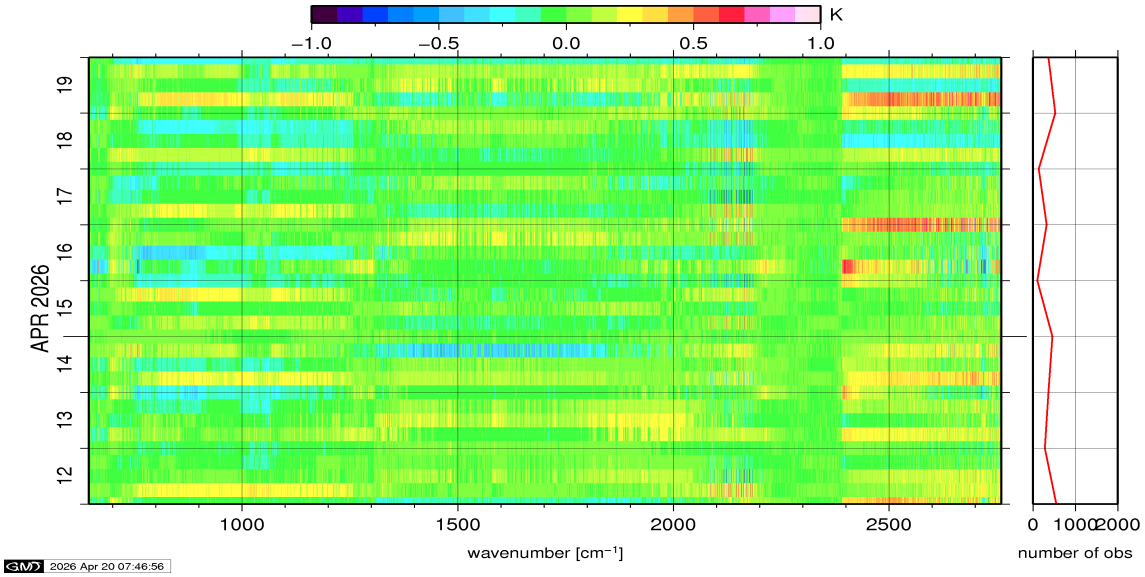

Figure 10: Radiance Anomaly in BT: All Channels

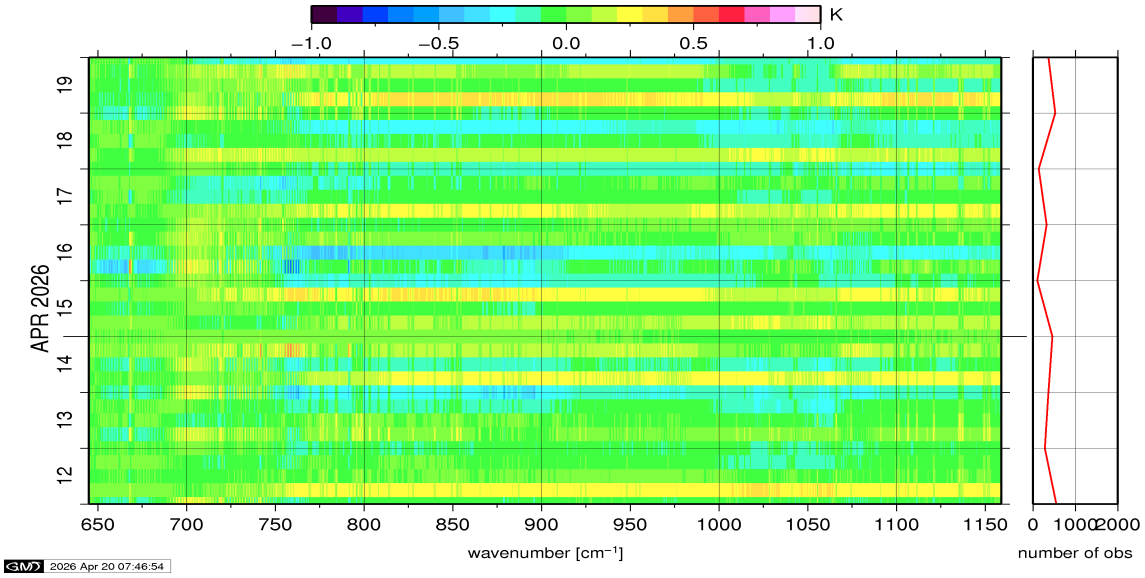

Figure 11: Radiance Anomaly in BT: IASI Band 1

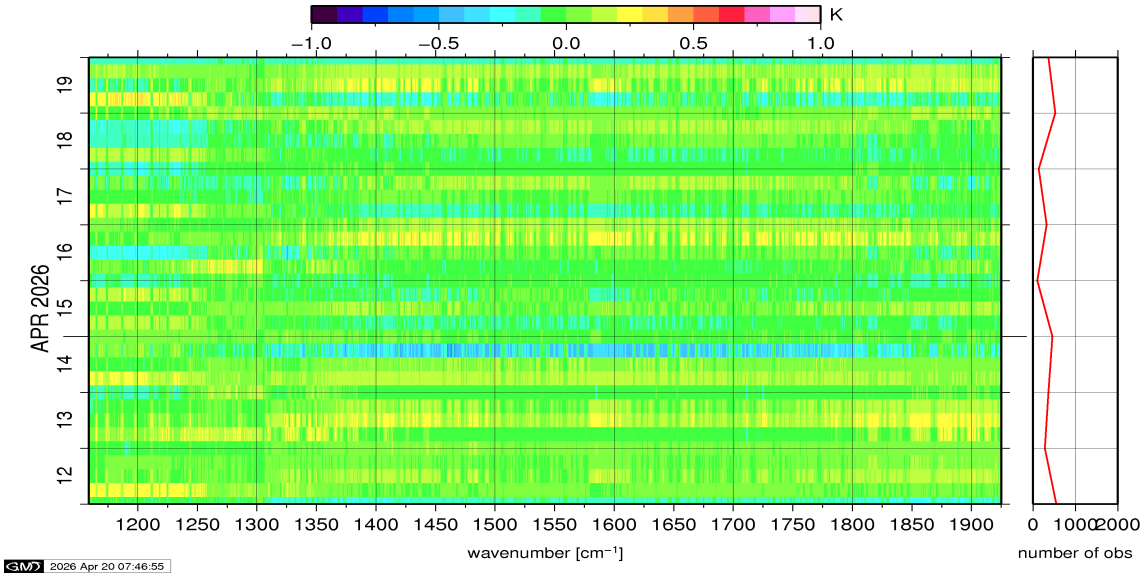

Figure 12: Radiance Anomaly in BT: IASI Band 2

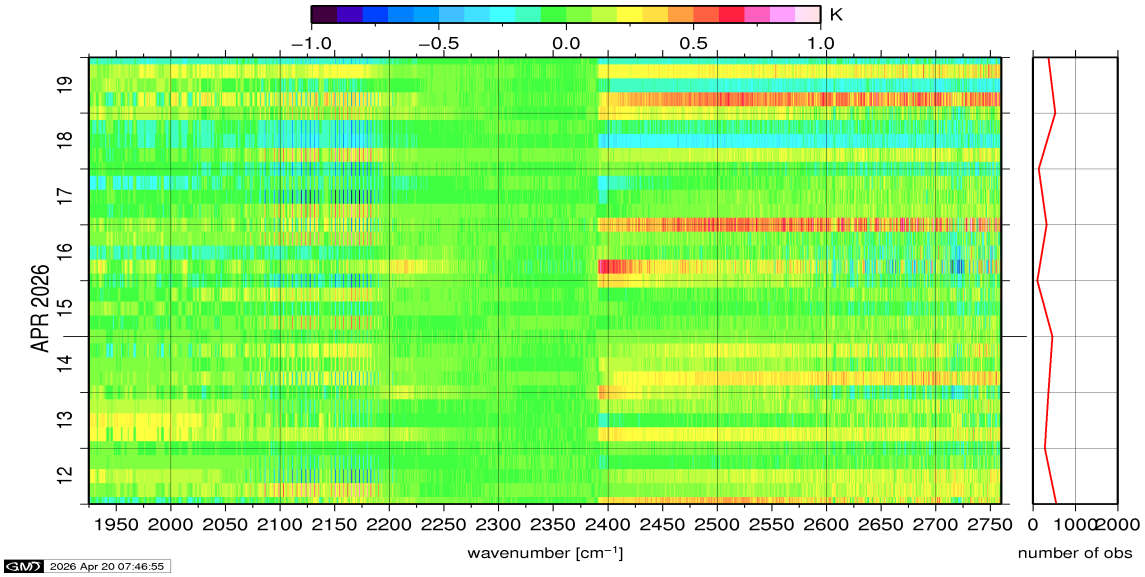

Figure 13: Radiance Anomaly in BT: IASI Band 3

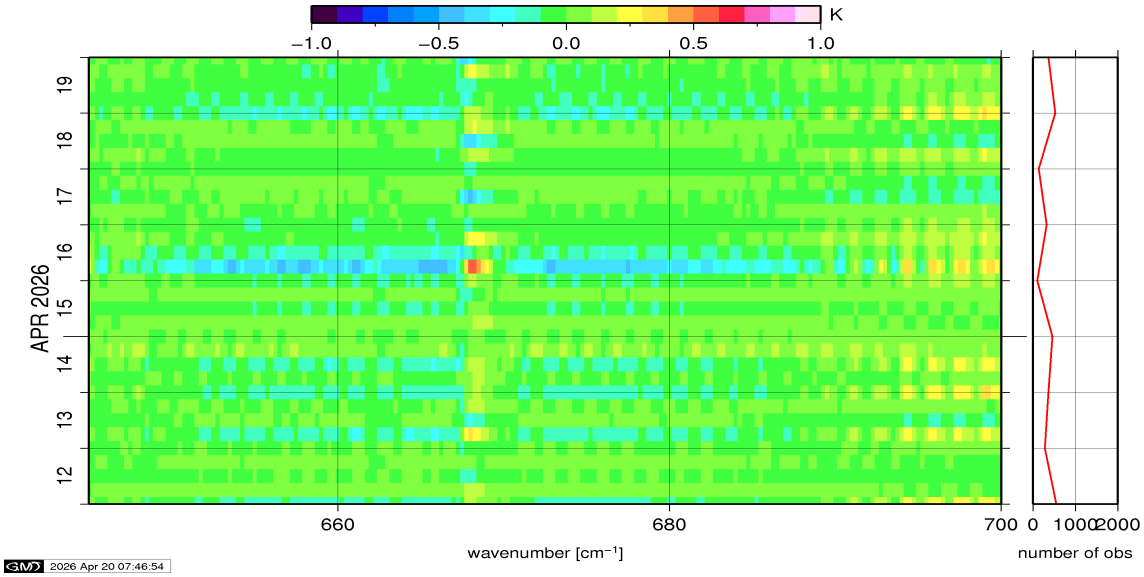

Figure 14: Radiance Anomaly in BT: CO2 14

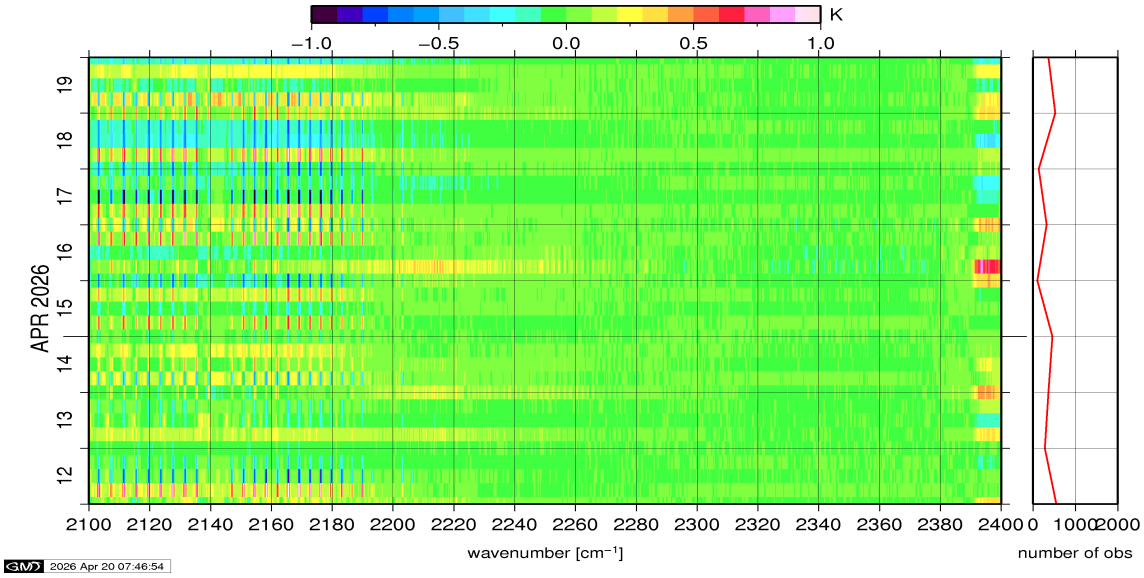

Figure 15: Radiance Anomaly in BT: CO2 4.3

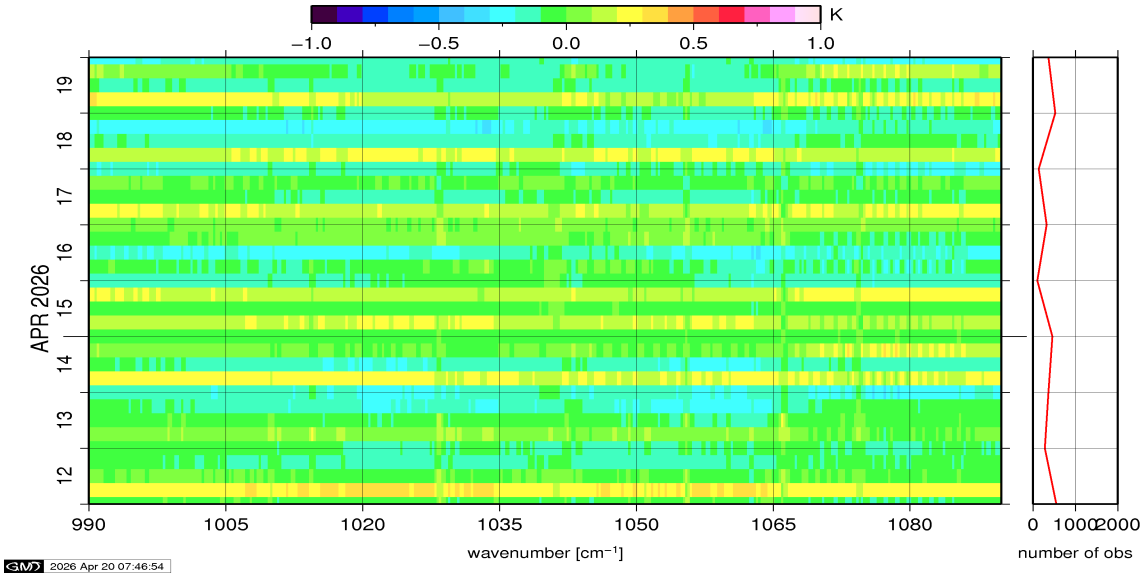

Figure 16: Radiance Anomaly in BT: O3

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.

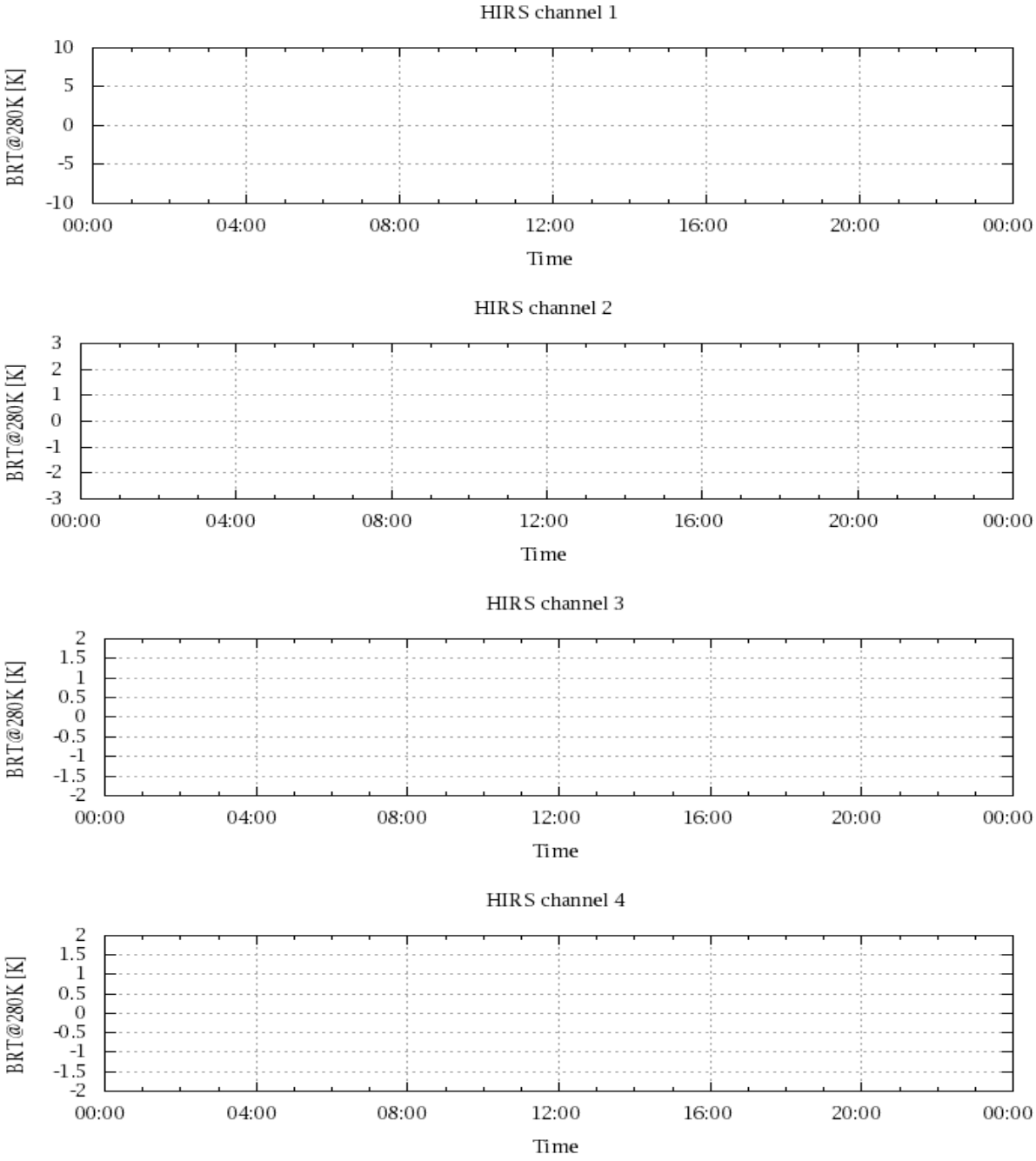

Figure 17: Radiance Differences in BT

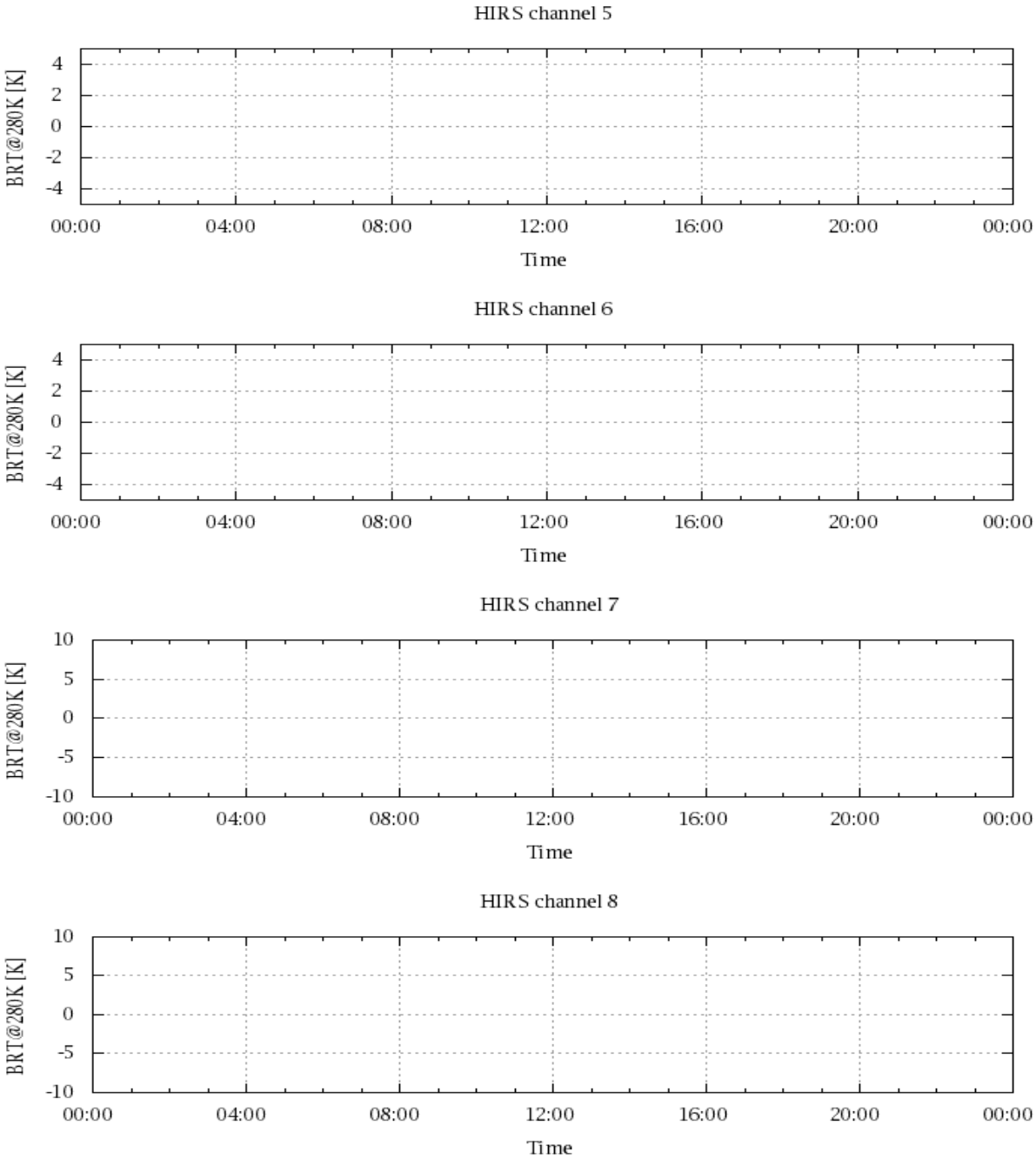

Figure 18: Radiance Differences in BT

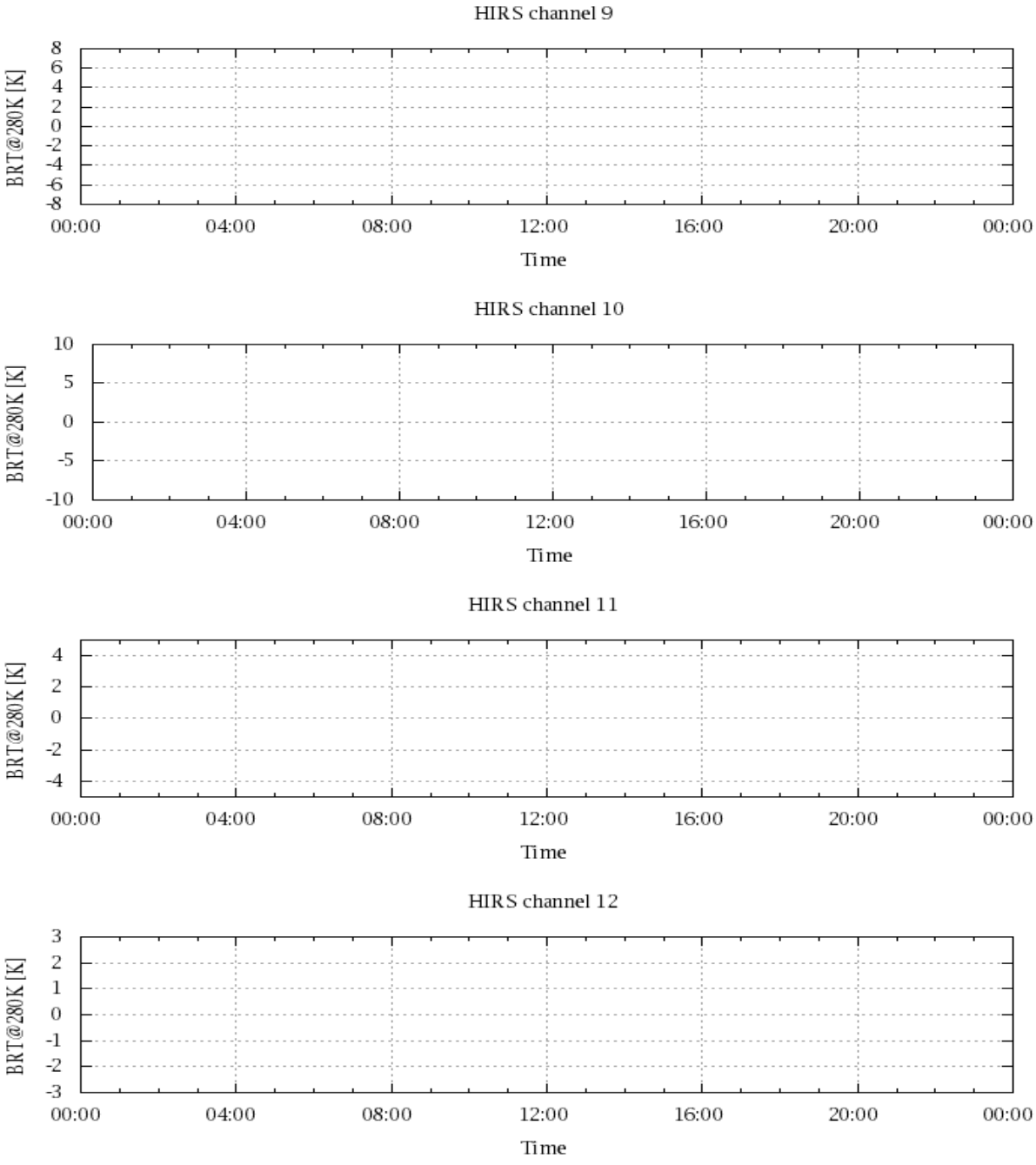

Figure 19: Radiance Differences in BT

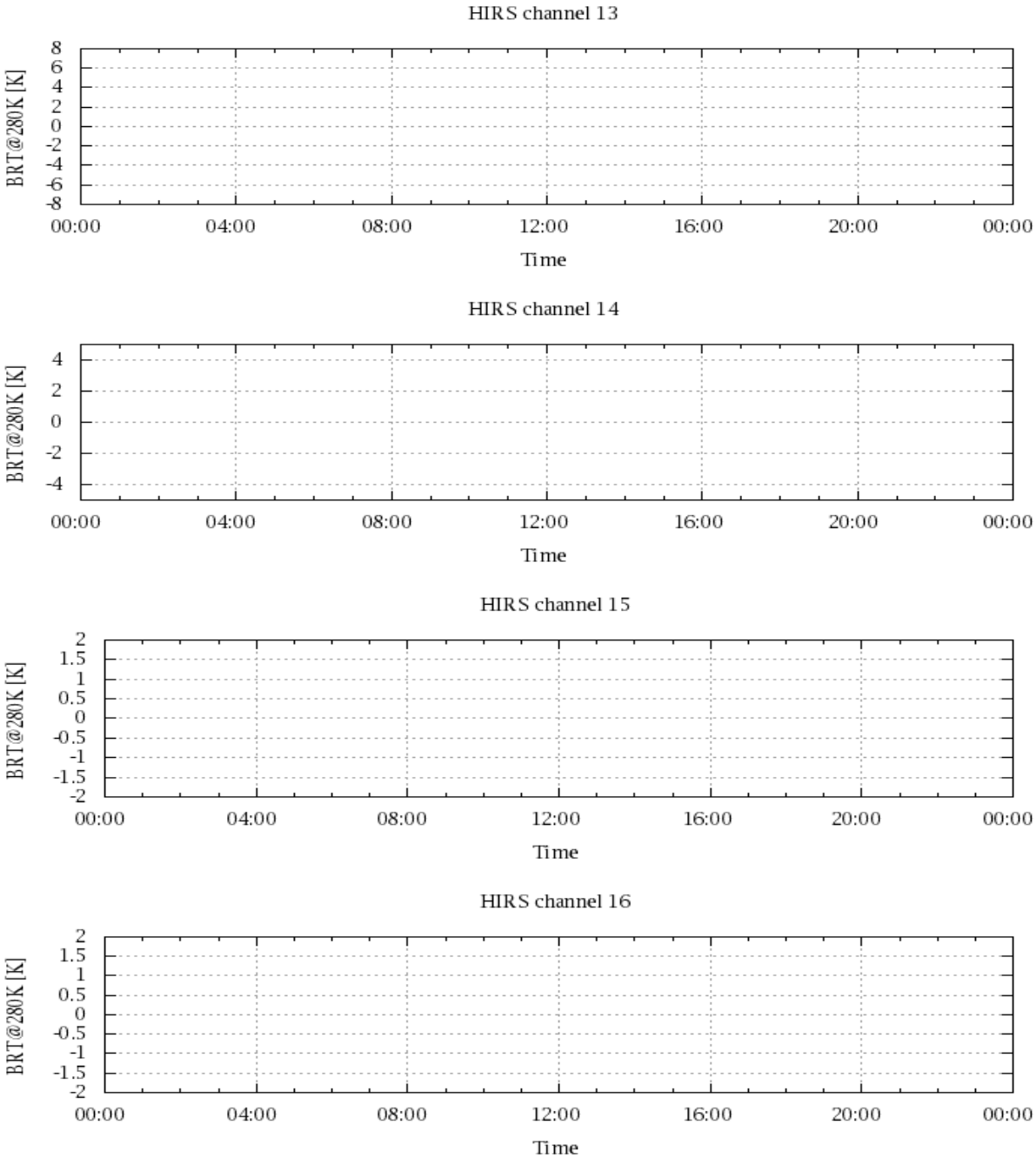

Figure 20: Radiance Differences in BT

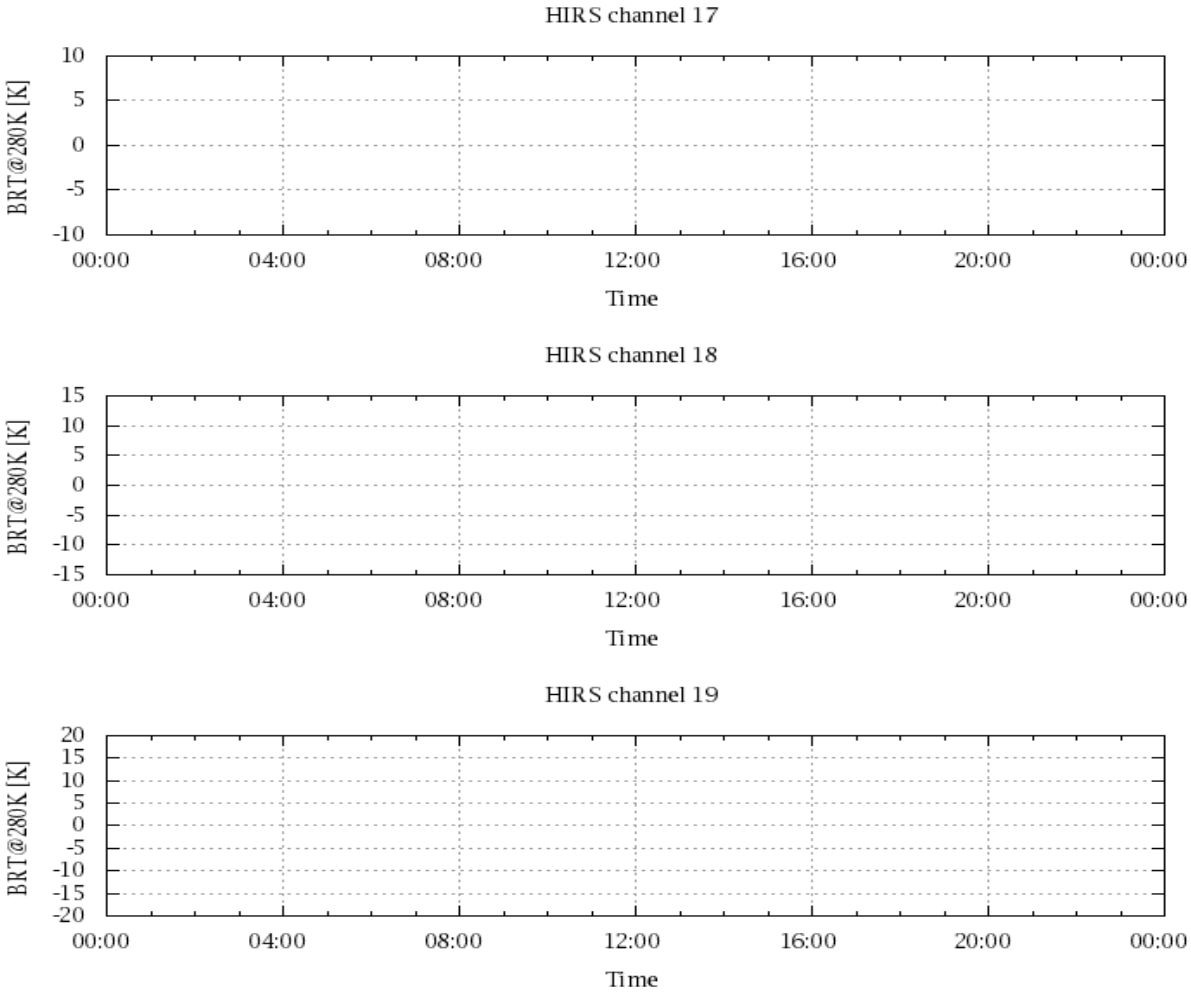

Figure 21: Radinace Differences in BT