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

IASI monitoring team

18/03/2026 00:00:00 - 19/03/2026 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 18/03/2026 00:00:00 - 19/03/2026 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 18/03/2026 00:00:00 - 19/03/2026 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	458	e
L0 IASI PDUs	458	e
L1 ENG PDUs	456	e
L1 ENG distinct GEPSGranule	450	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	456	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	4947	5022	20260318183102.206	20260318183121.448
PX1 (130)	5078	5080	20260318183136.585	20260318183137.018
PX1 (130)	5081	5096	20260318183137.233	20260318183141.991
PX1 (130)	5096	5099	20260318183141.991	20260318183142.639
PX1 (130)	5099	5112	20260318183142.639	20260318183145.448
PX1 (130)	5174	5192	20260318183203.393	20260318183207.288
PX1 (130)	7047	6185	20260318210559.926	20260318221500.025
PX2 (135)	4947	5022	20260318183102.206	20260318183121.448
PX2 (135)	5078	5081	20260318183136.585	20260318183137.233
PX2 (135)	5081	5085	20260318183137.233	20260318183139.612
PX2 (135)	5085	5100	20260318183139.612	20260318183142.854
PX2 (135)	5100	5112	20260318183142.854	20260318183145.448
PX2 (135)	5174	5192	20260318183203.393	20260318183207.288
PX2 (135)	7047	6185	20260318210559.926	20260318221500.025
PX3 (140)	4947	5022	20260318183102.206	20260318183121.448
PX3 (140)	5066	5068	20260318183133.991	20260318183134.420
PX3 (140)	5078	5080	20260318183136.585	20260318183137.018

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	5082	5086	20260318183137.448	20260318183139.827
PX3 (140)	5086	5088	20260318183139.827	20260318183140.260
PX3 (140)	5088	5090	20260318183140.260	20260318183140.694
PX3 (140)	5090	5111	20260318183140.694	20260318183145.233
PX3 (140)	5174	5191	20260318183203.393	20260318183207.069
PX3 (140)	7047	6185	20260318210559.926	20260318221500.025
PX4 (145)	4947	5021	20260318183102.206	20260318183121.233
PX4 (145)	5071	5073	20260318183135.073	20260318183135.503
PX4 (145)	5073	5075	20260318183135.503	20260318183135.936
PX4 (145)	5078	5080	20260318183136.585	20260318183137.018
PX4 (145)	5080	5084	20260318183137.018	20260318183139.397
PX4 (145)	5084	5087	20260318183139.397	20260318183140.042
PX4 (145)	5088	5090	20260318183140.260	20260318183140.694
PX4 (145)	5090	5093	20260318183140.694	20260318183141.342
PX4 (145)	5093	5113	20260318183141.342	20260318183147.178
PX4 (145)	5174	5191	20260318183203.393	20260318183207.069
PX4 (145)	7047	6185	20260318210559.926	20260318221500.025
IMG (150)	10663	10745	20260318183102.206	20260318183121.233
IMG (150)	10745	10747	20260318183121.233	20260318183121.881
IMG (150)	10803	10805	20260318183135.073	20260318183135.503
IMG (150)	10810	10812	20260318183136.585	20260318183137.018
IMG (150)	10812	10814	20260318183137.018	20260318183137.448
IMG (150)	10814	10816	20260318183137.448	20260318183138.100
IMG (150)	10817	10820	20260318183138.530	20260318183139.397
IMG (150)	10820	10824	20260318183139.397	20260318183140.260
IMG (150)	10826	10840	20260318183140.694	20260318183143.721
IMG (150)	10840	10849	20260318183143.721	20260318183145.881
IMG (150)	10921	10939	20260318183203.178	20260318183207.069
IMG (150)	1027	2237	20260318210559.926	20260318221500.025
VER (160)	7150	7162	20260318183057.452	20260318183121.448
VER (160)	7170	7172	20260318183129.452	20260318183137.448
VER (160)	7172	7175	20260318183137.448	20260318183137.448
VER (160)	7175	7181	20260318183137.448	20260318183153.448
VER (160)	12960	15551	20260318210553.441	20260318221505.431
AUX (180)	1428	1431	20260318183057.881	20260318183121.881
AUX (180)	2590	3109	20260318210553.875	20260318221505.864

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
18/03/2026 00:00:00	-	Normal operation
18/03/2026 05:30:56	Normal operation	Auxiliary ASE synchronised
18/03/2026 05:32:48	Auxiliary ASE synchronised	External calibration
18/03/2026 09:26:55	External calibration	Auxiliary ASE synchronised
18/03/2026 09:28:47	Auxiliary ASE synchronised	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	458	e
L1 ENG PDUs	456	e
L1 ENG distinct GEPSGranule	450	a
GQisFlagQual set (PX1)	99.63 %	-
GQisFlagQual set (PX2)	99.69 %	-
GQisFlagQual set (PX3)	99.70 %	-
GQisFlagQual set (PX4)	99.61 %	-
GQisFlagQual set (all)	99.65 %	-

Table 4: Quality flags

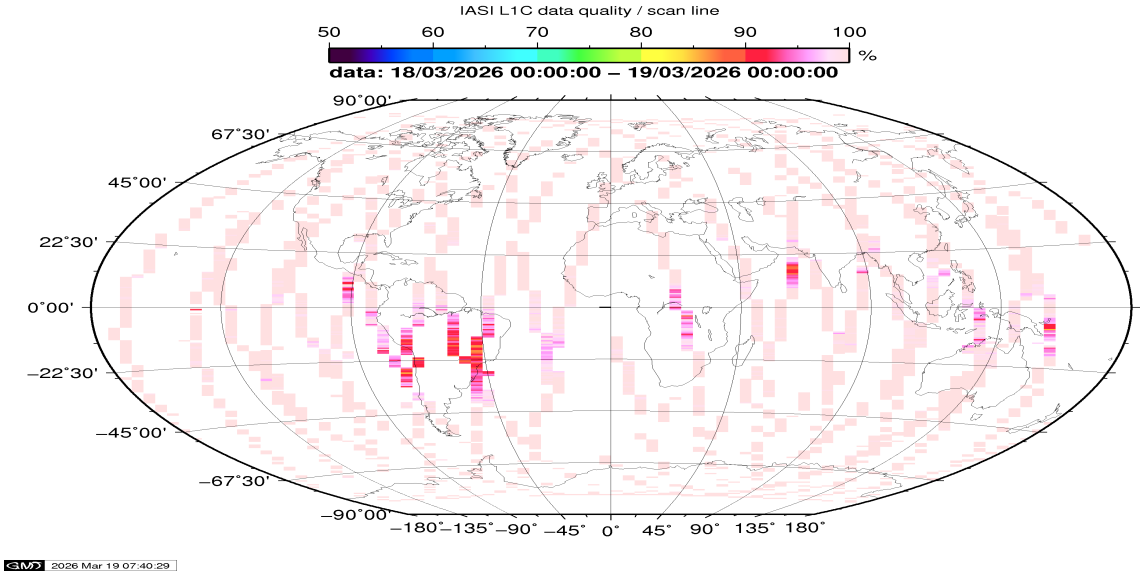

Figure 1: L1C data quality

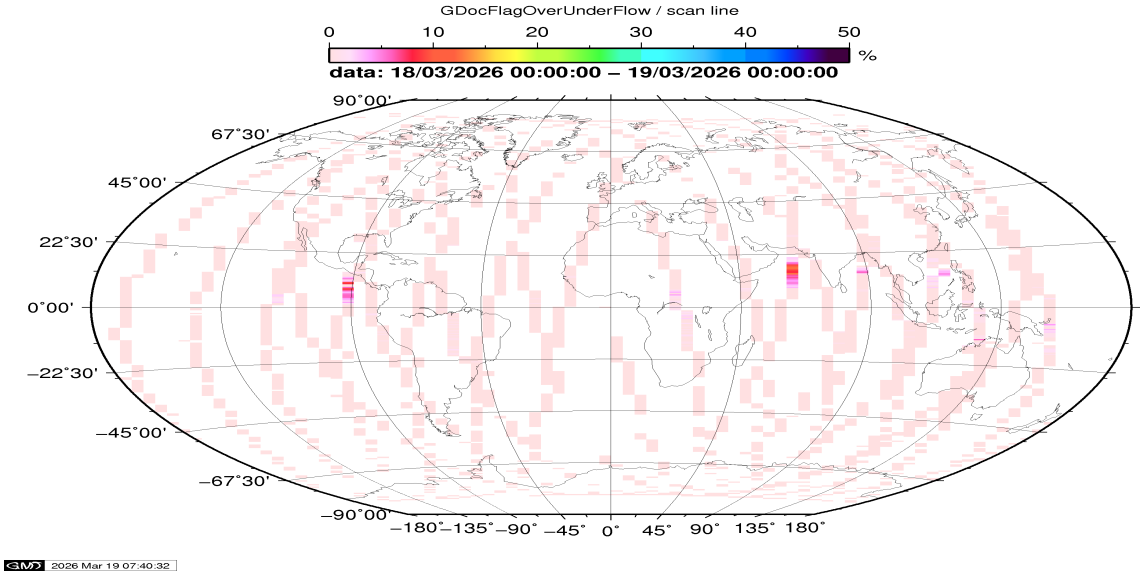

Figure 2: Flag of Over and Under Flows

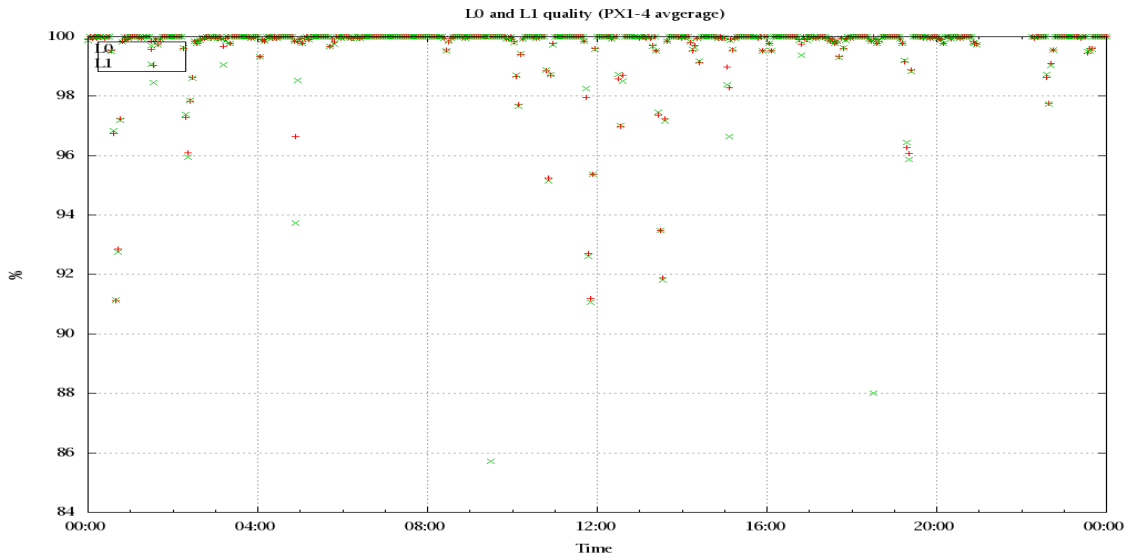

Figure 3: Level 0 and 1C overall quality

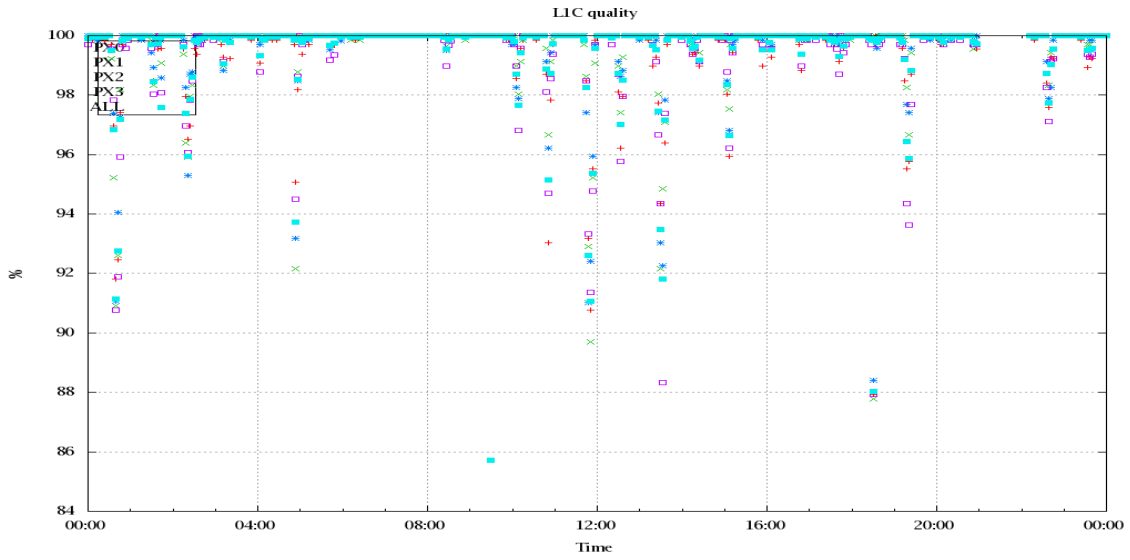

Figure 4: Level 1C quality

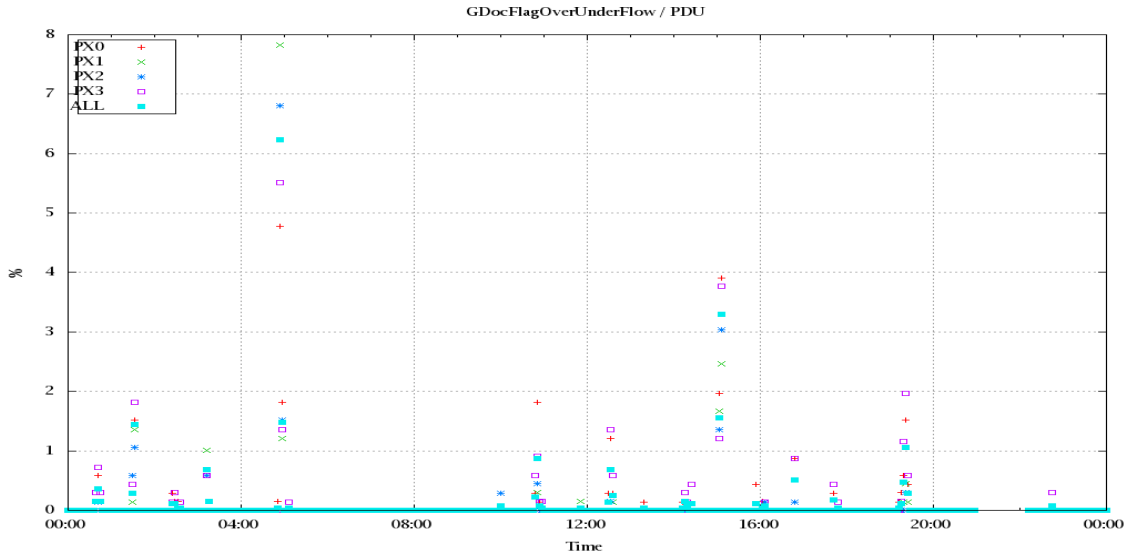

Figure 5: Timeseries of flag of Over and Under Flows

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.

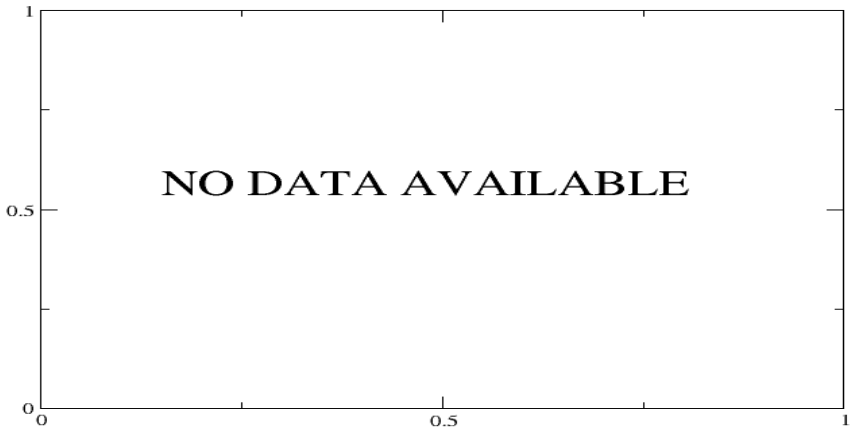

Figure 6: Average Radiance differences: OBS-CAL

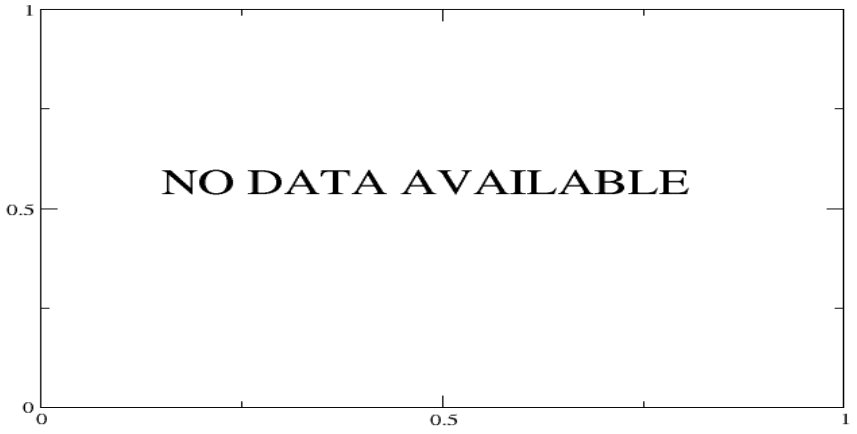

Figure 7: Standard Deviation of Radiance differences

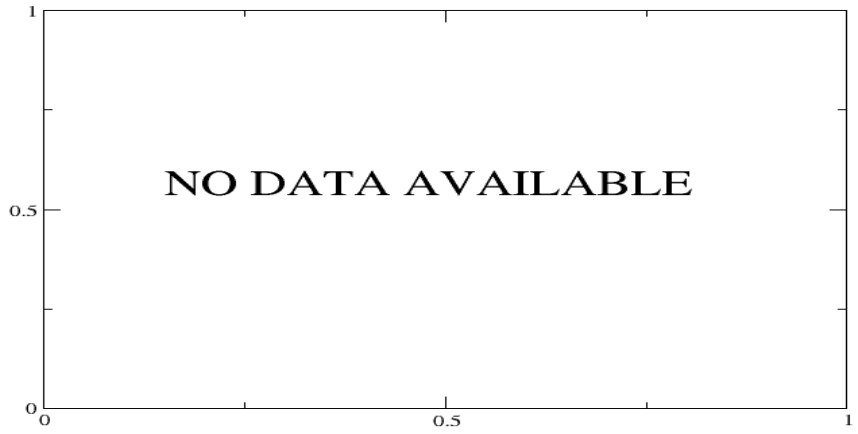

Figure 8: Average Radiance differences: OBS-CAL

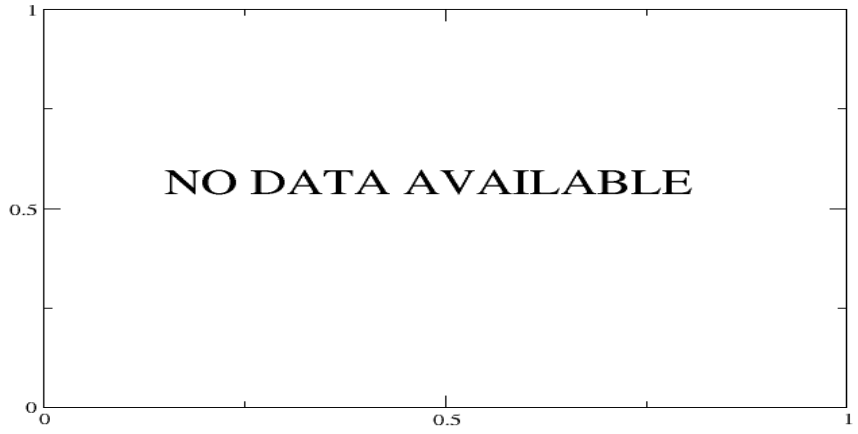

Figure 9: Standard Deviation of Radiance differences

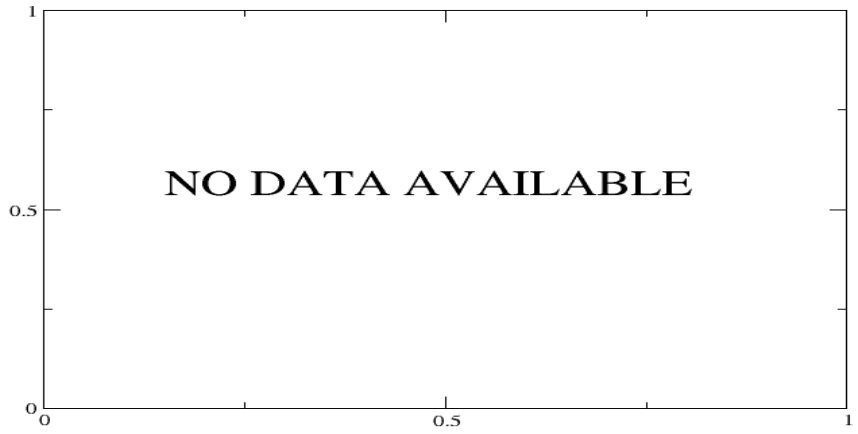

Figure 10: Radiance Anomaly in BT: All Channels

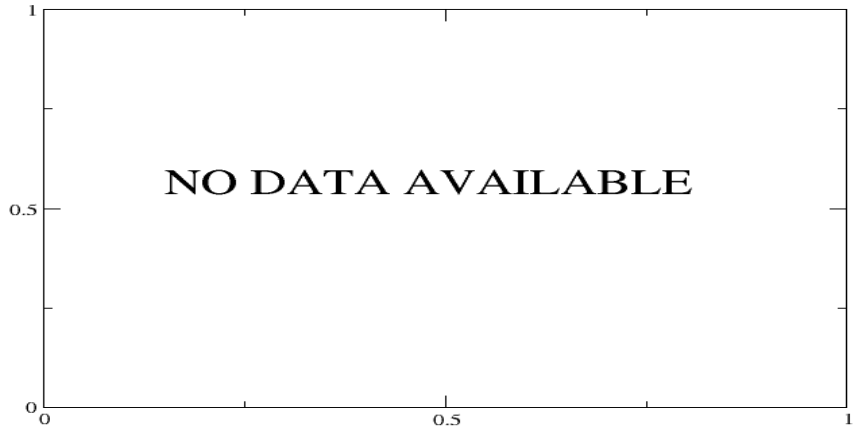

Figure 11: Radiance Anomaly in BT: IASI Band 1

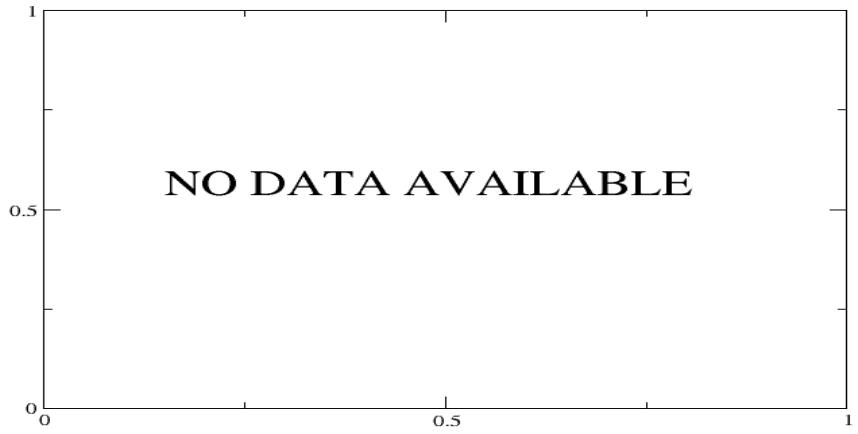

Figure 12: Radiance Anomaly in BT: IASI Band 2

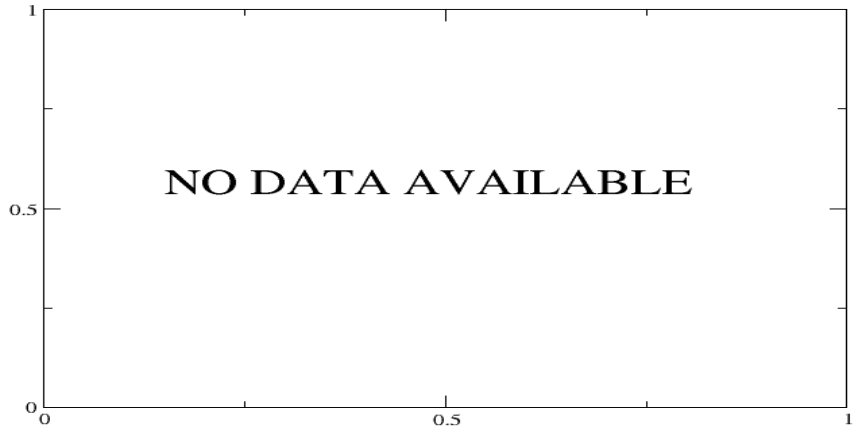

Figure 13: Radiance Anomaly in BT: IASI Band 3

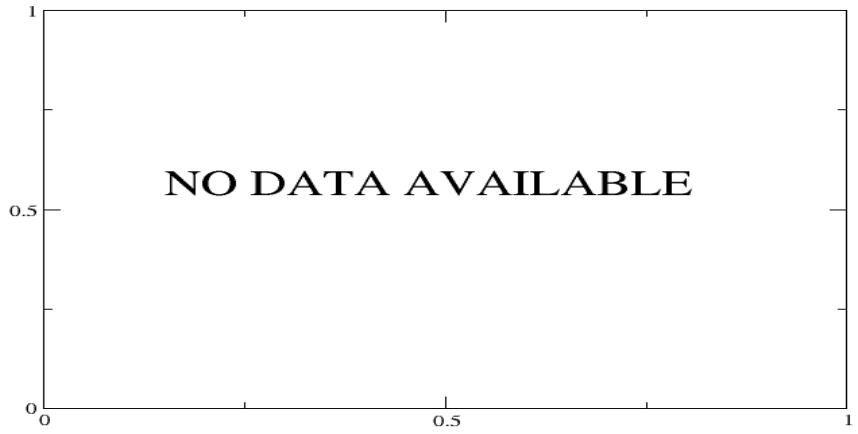

Figure 14: Radiance Anomaly in BT: CO2 14

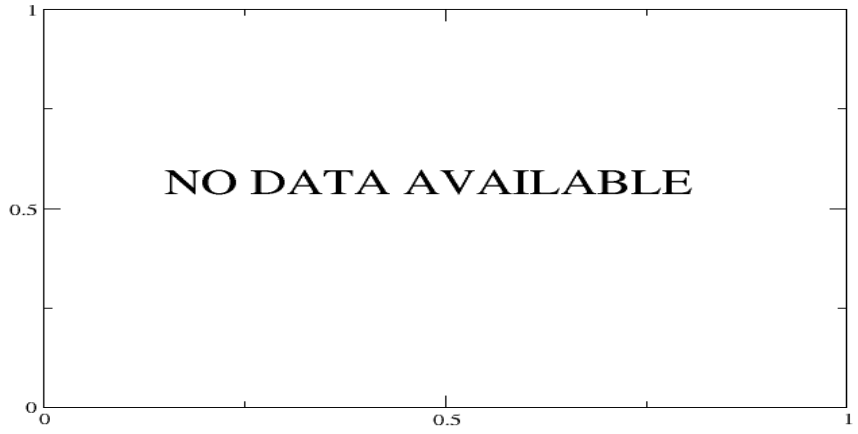

Figure 15: Radiance Anomaly in BT: CO2 4.3

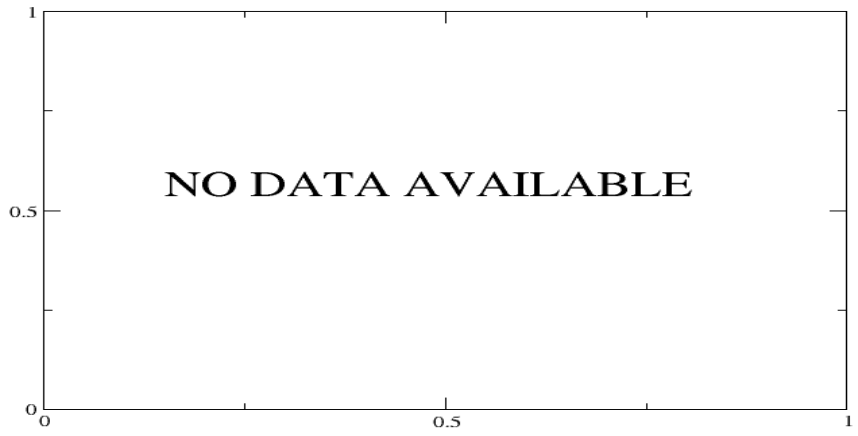

Figure 16: Radiance Anomaly in BT: O3

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.

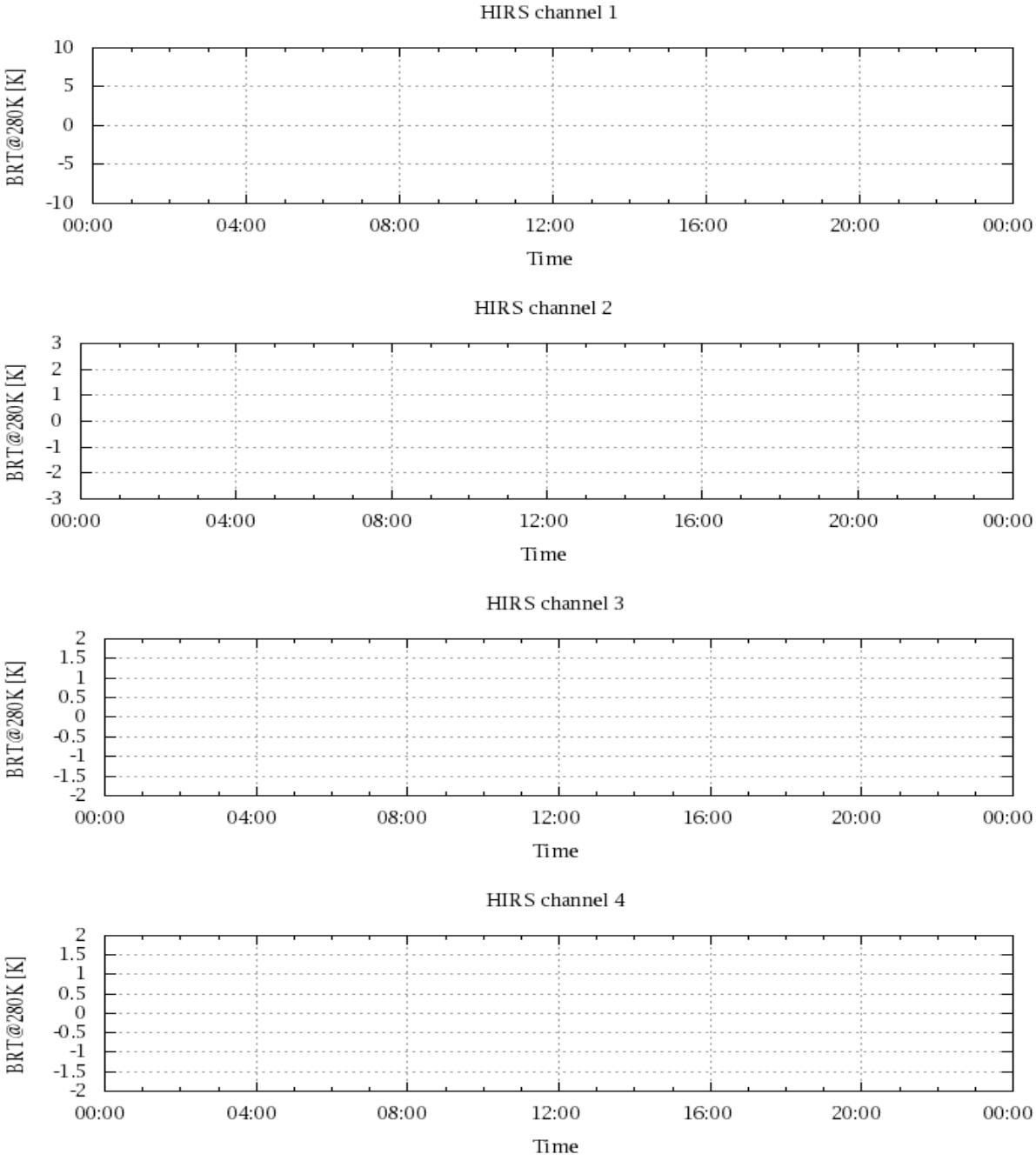

Figure 17: Radiance Differences in BT

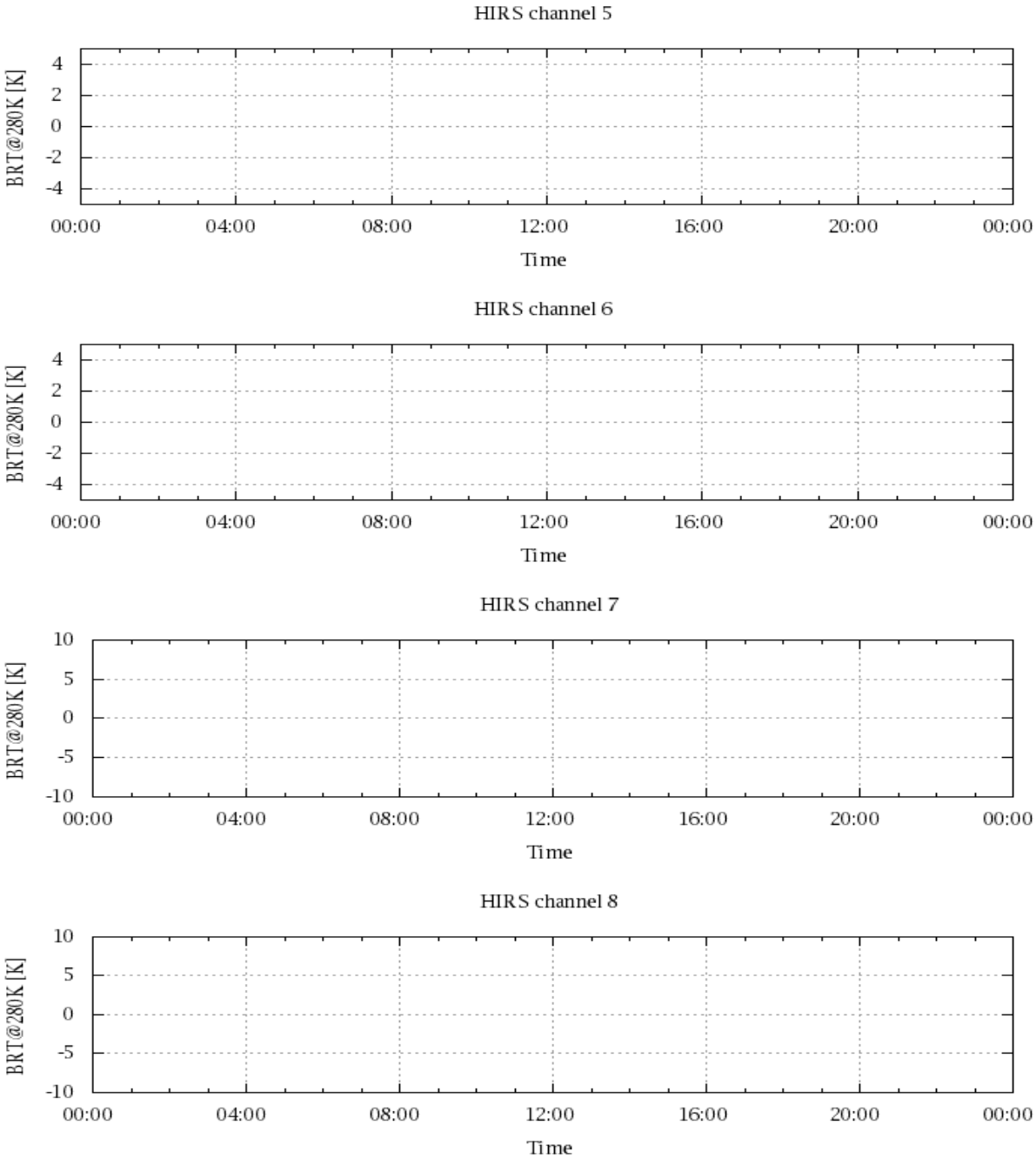

Figure 18: Radiance Differences in BT

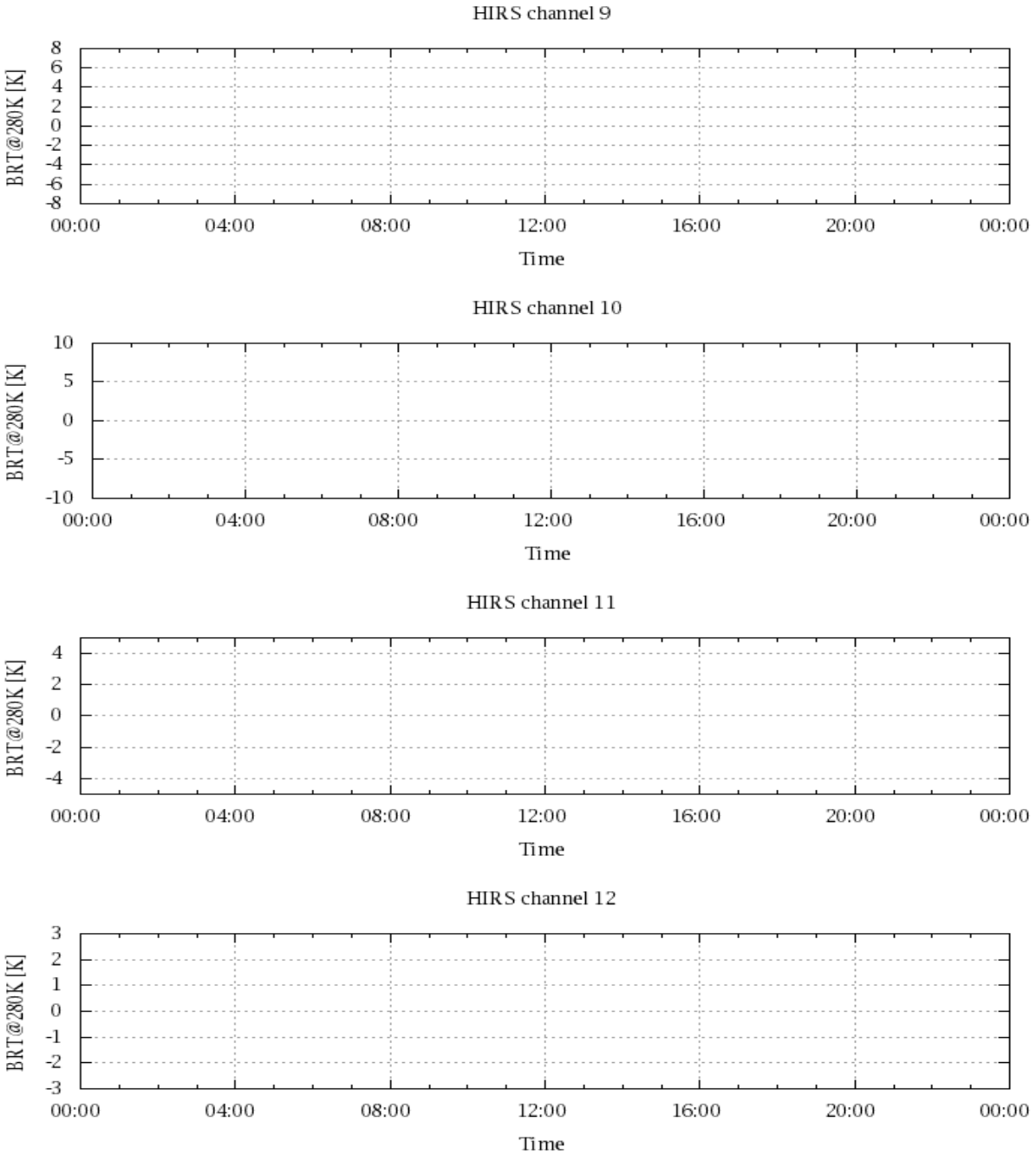

Figure 19: Radiance Differences in BT

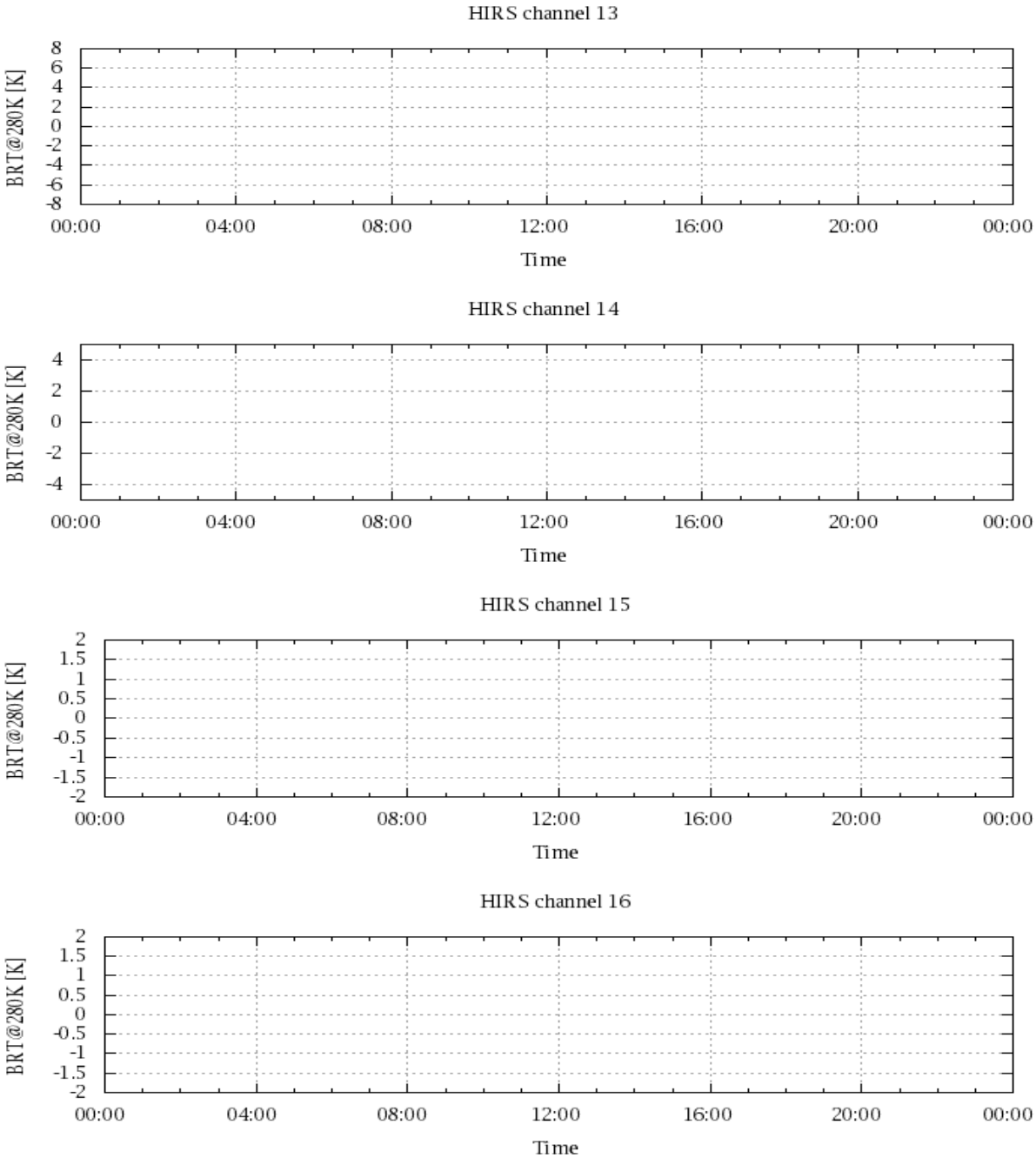

Figure 20: Radiance Differences in BT

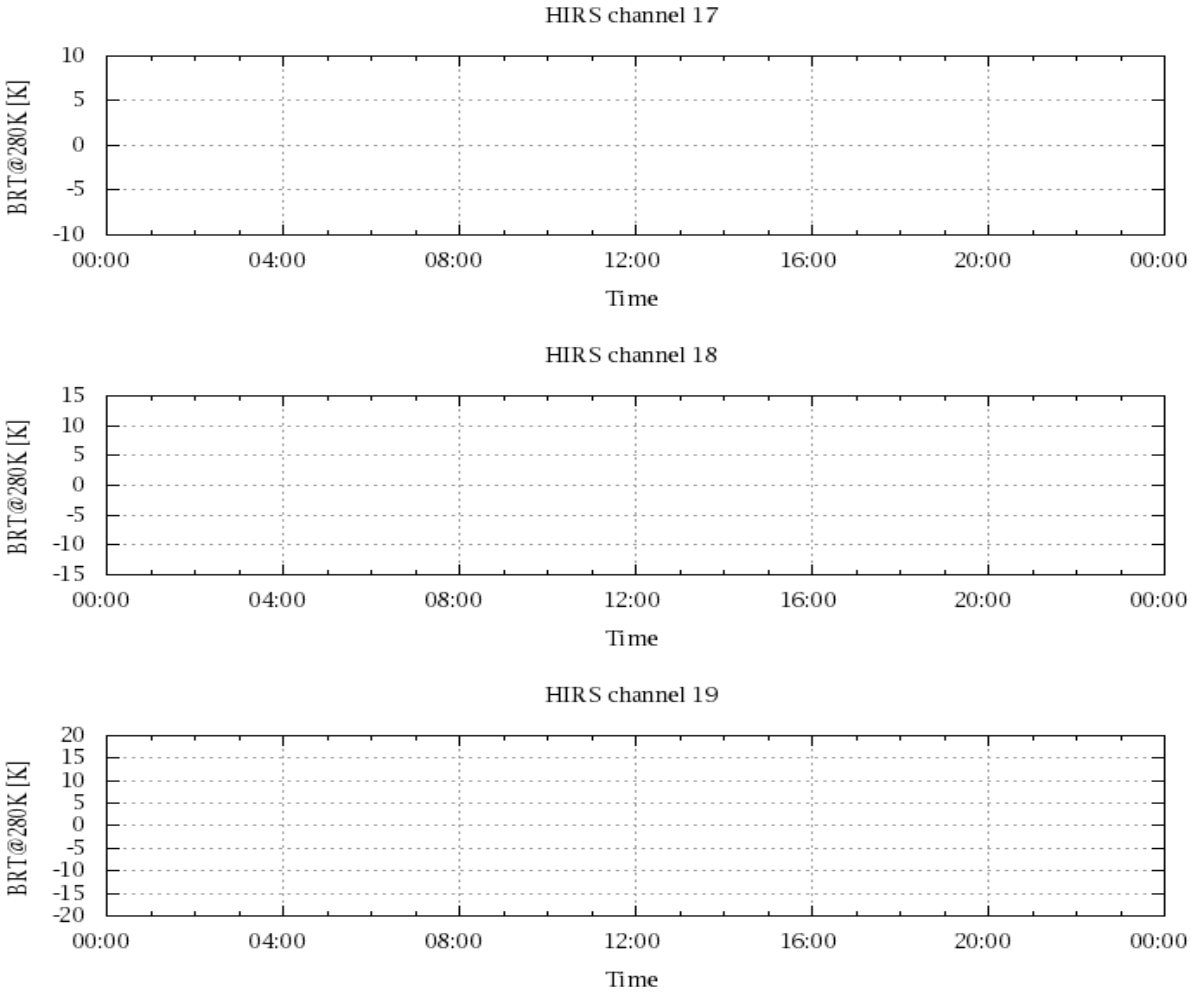

Figure 21: Radinace Differences in BT