IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

18/04/2010 00:00:00 - 19/04/2010 00:00:00

1 Introduction

This report provides summary monitoring plots and figures from IASI instrument on the MetOp-A satellite retrieved from the IASI L0 and L1 ENG product (3 minute data packet) for 18/04/2010 00:00:00 - 19/04/2010 00:00:00 .

The monitoring data are extracted on PDU basis.

Data extraction, calibration, processing and statictics are performed at EUMETSAT.

2 Data quantity 18/04/2010 00:00:00 - 19/04/2010 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)	480	-
L1 DPS Files (RM: OBS-CAL NWP based)	8	-

Table 1: Data quantity

APID	**Seq from**	**Seq to**	**Time from**	**Time to**
PX1 (130)	-	-	-	-
PX2 (135)	-	-	-	-
PX3 (140)	-	-	-	-
PX4 (145)	-	-	-	-
IMG (150)	-	-	-	-
VER (160)	-	-	-	-
AUX (180)	-	-	-	-

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
18/04/2010 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	480	-
L1 ENG distinct GEPSGranule	481	-
GQisFlagQual set (PX1)	99.37 %	-
GQisFlagQual set (PX2)	99.19 %	-
GQisFlagQual set (PX3)	99.24 %	-
GQisFlagQual set (PX4)	99.37 %	-
GQisFlagQual set (all)	99.29 %	-

Table 4: Quality flags

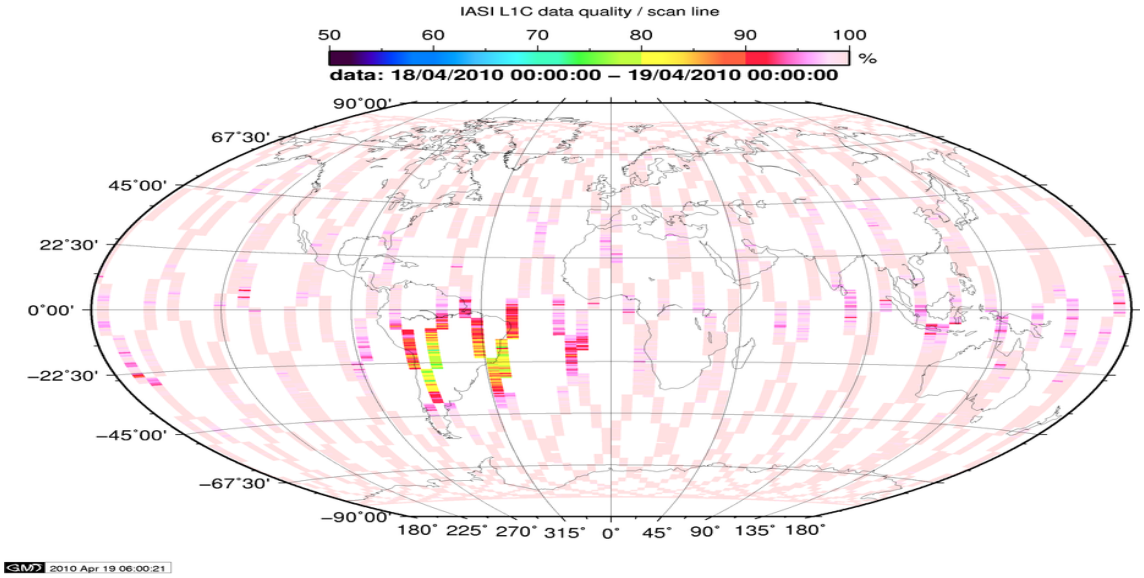

Figure 1: L1C data quality

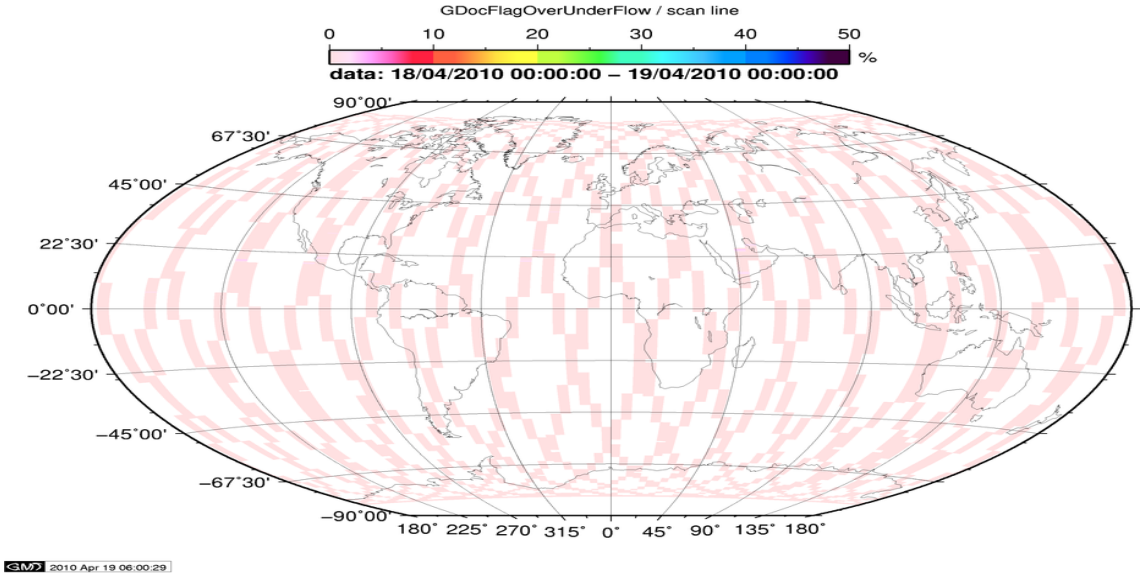

Figure 2: Flag of Over and Under Flows

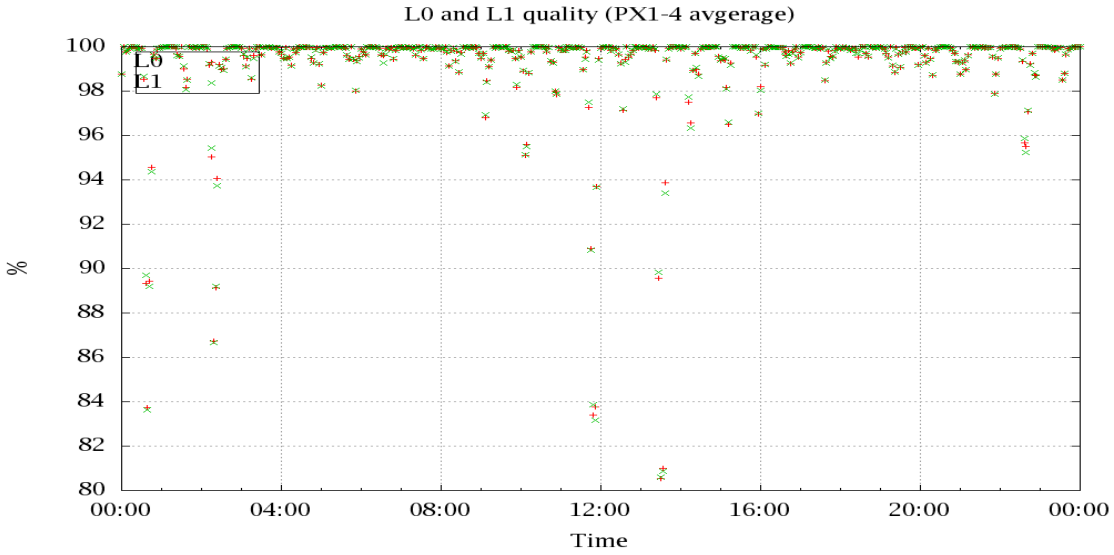

Figure 3: Level 0 and 1C overall quality

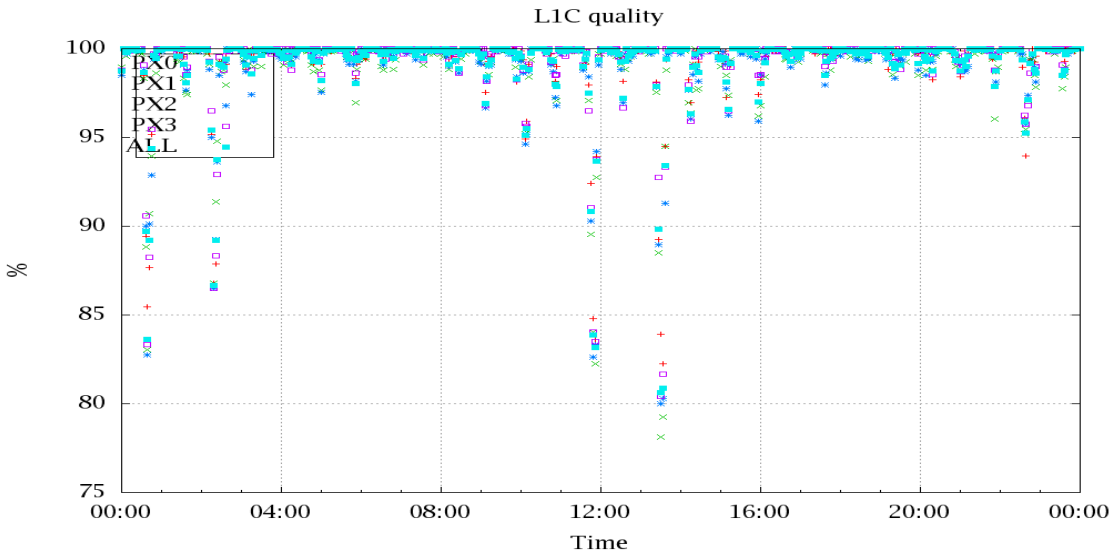

Figure 4: Level 1C quality

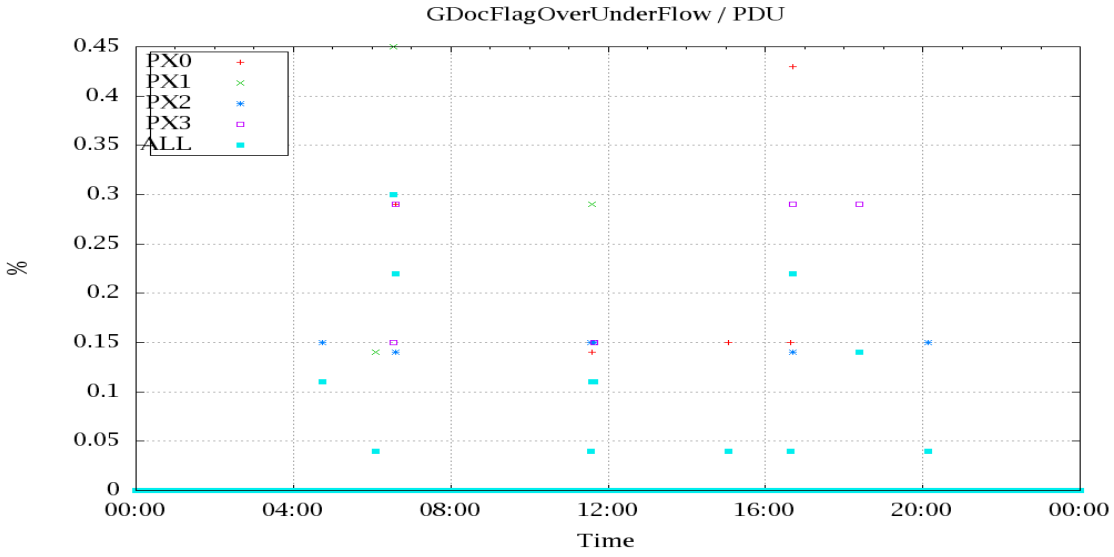

Figure 5: OverUnderFlowFlag timeseries

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). The RTIASI ratiative transfer model is feed with co-located ECMWF profiles of T,WV, and Ozon. Information about the SST is obtained from the AVHRR L1B or taken from AVHRR scenes analysis (CGS only).

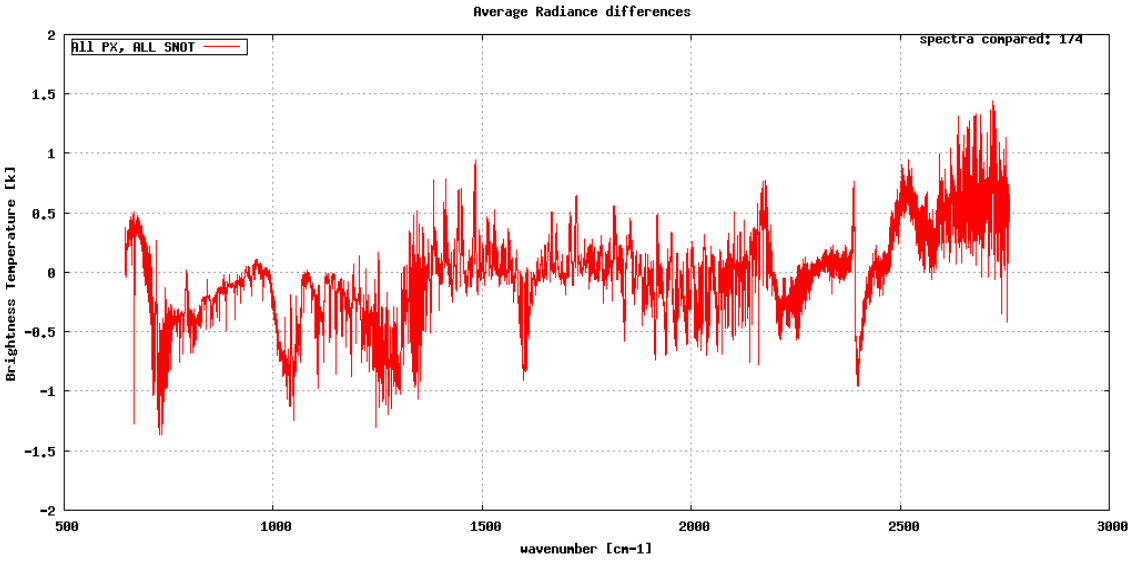

Figure 6: Average Radiance differences: IASI-RTIASI

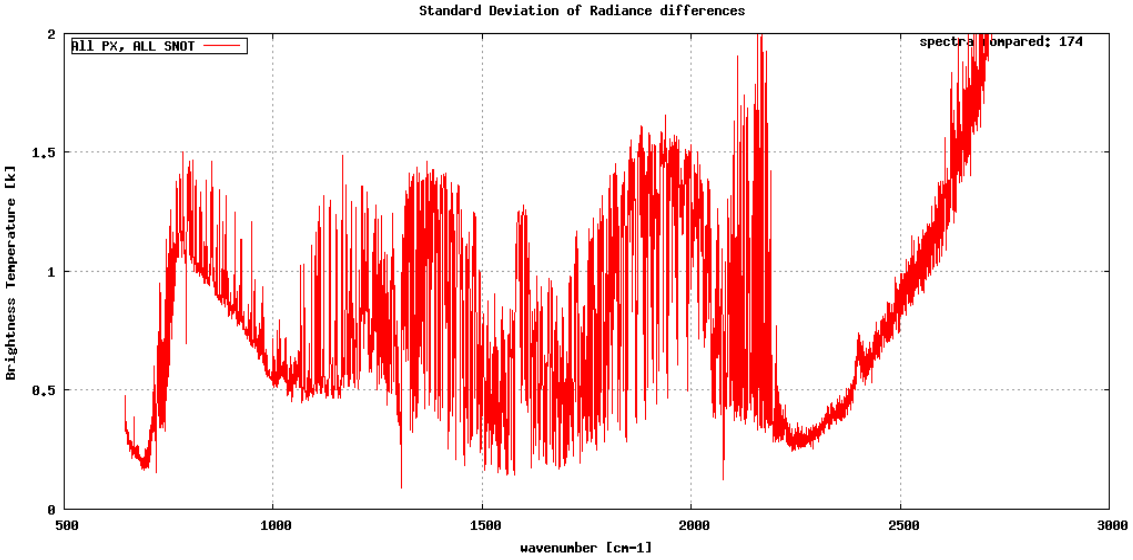

Figure 7: Standard Deviation of Radiance differences

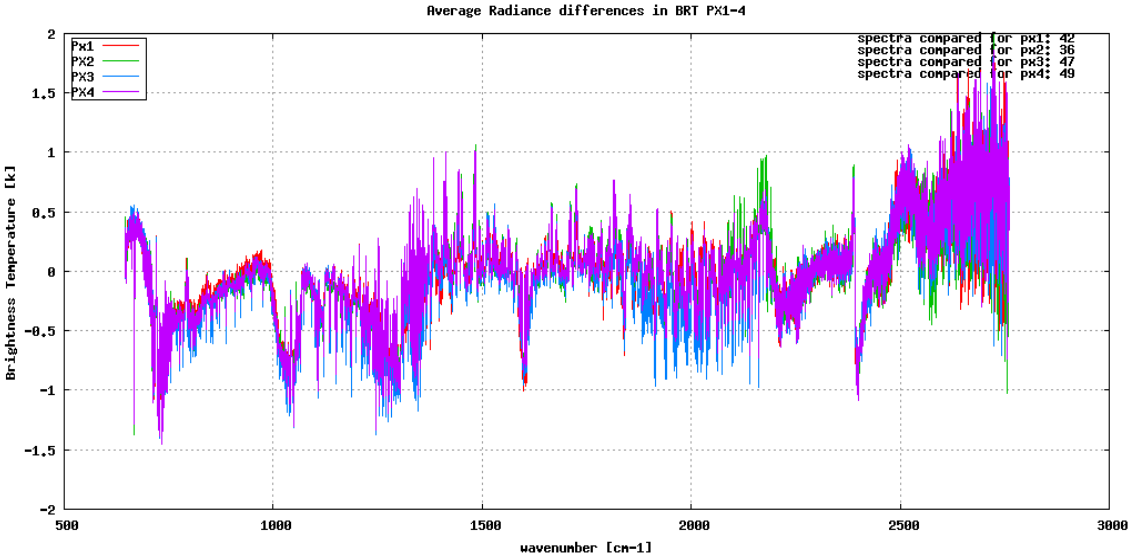

Figure 8: Average Radiance differences: IASI-RTIASI

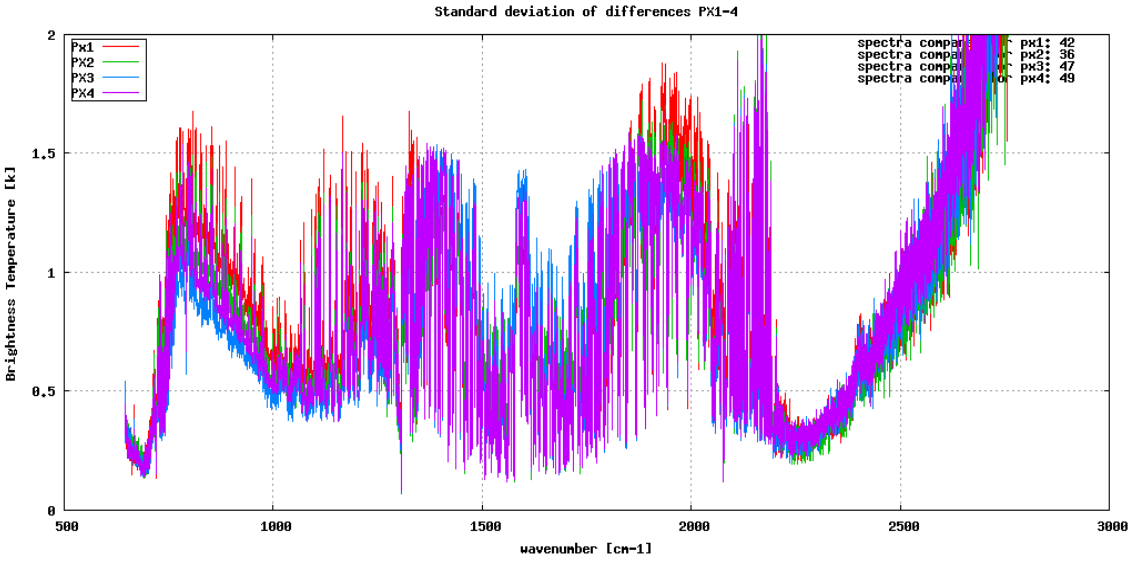

Figure 9: Standard Deviation of Radiance differences

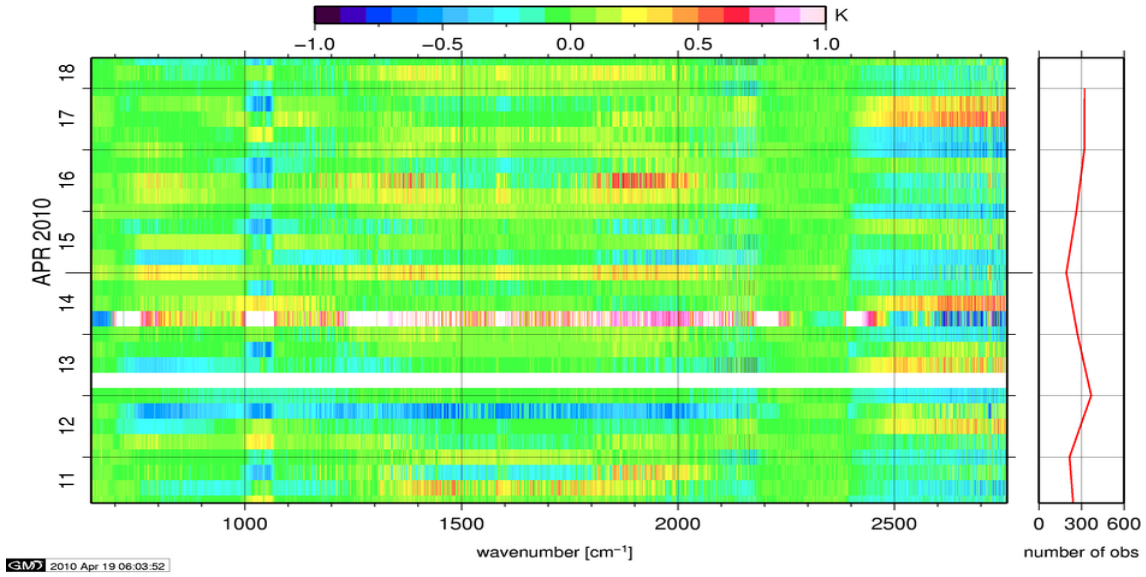

Figure 10: All Channels

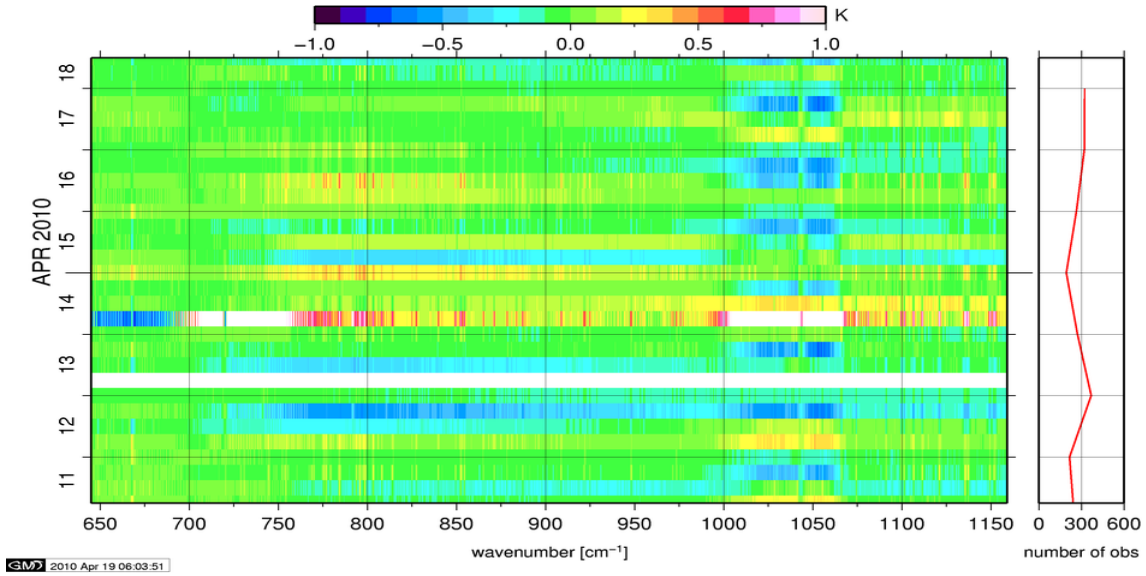

Figure 11: B1

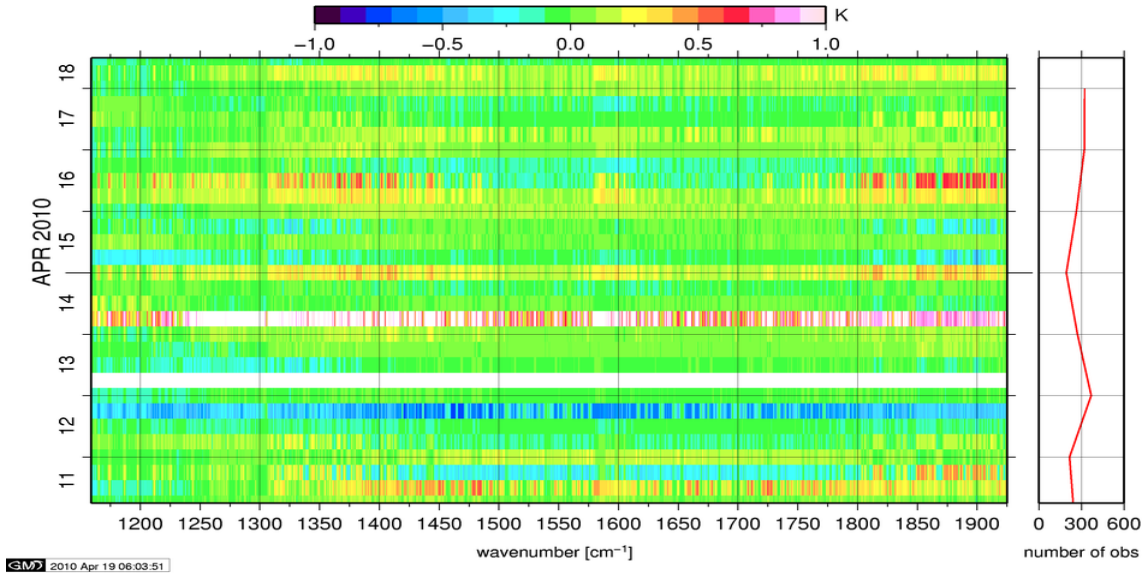

Figure 12: B2

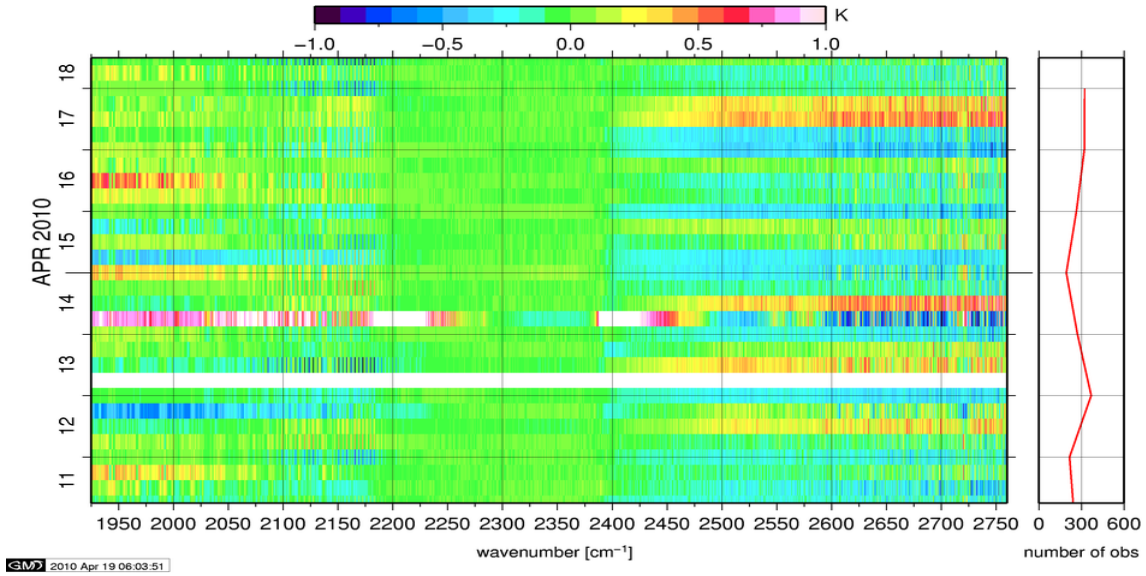

Figure 13: B3

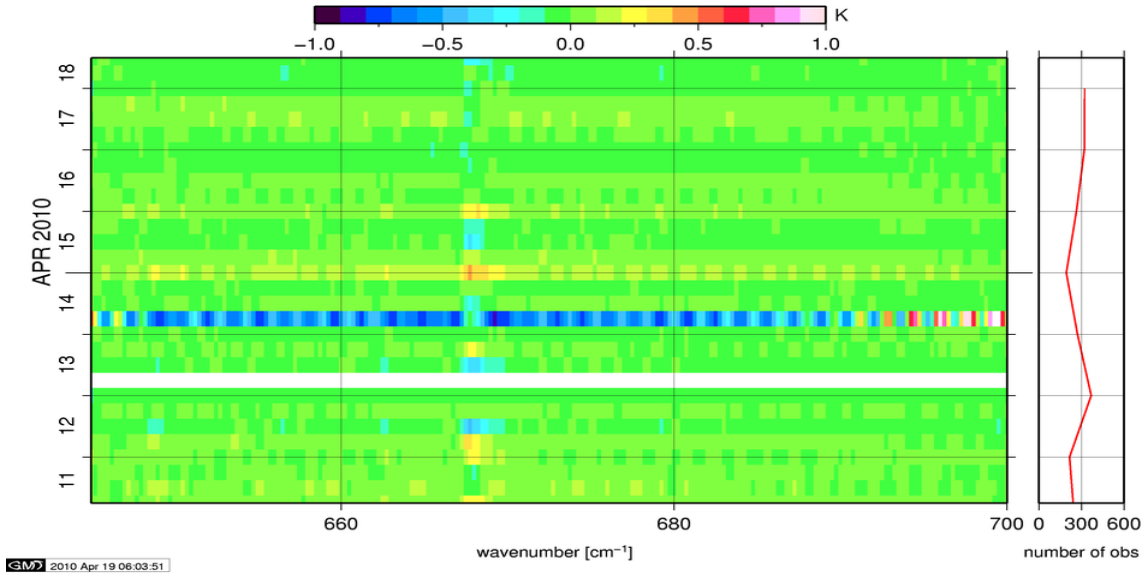

Figure 14: CO2

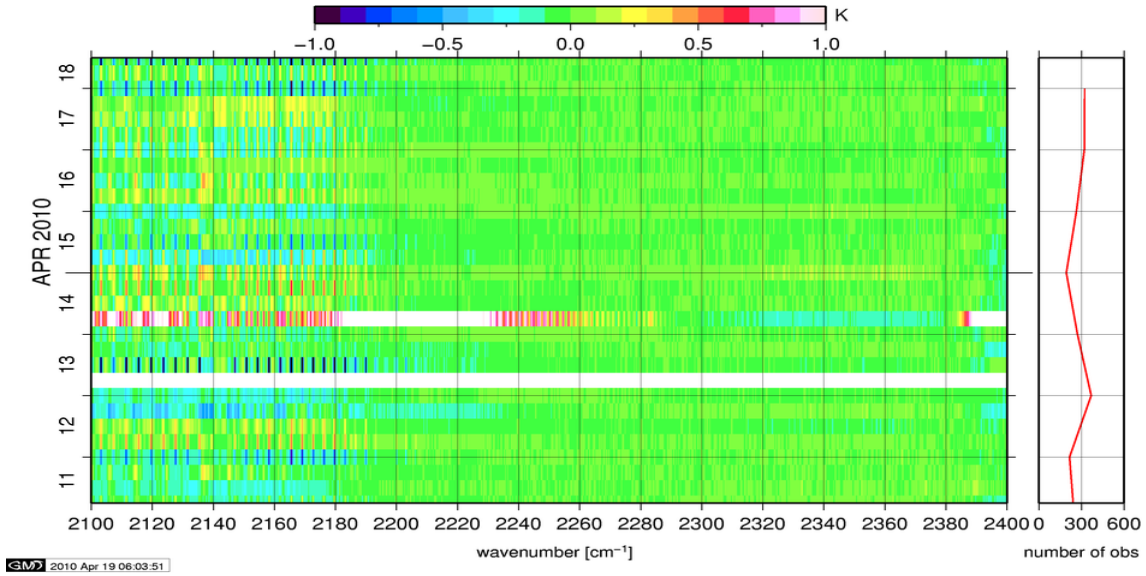

Figure 15: CO2

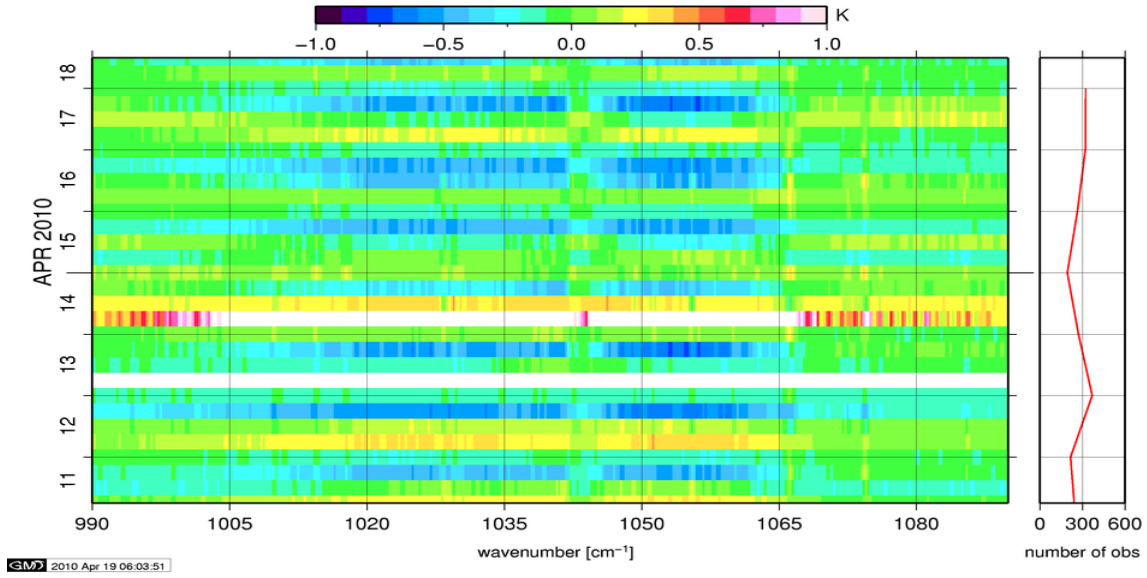

Figure 16: O3

6 IASI-HIRS radiance comparision Channel 1-19

The radiance comparision of IASI and HIRS/4 on-board MetOp is performed on all pixel 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 temperature. 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.

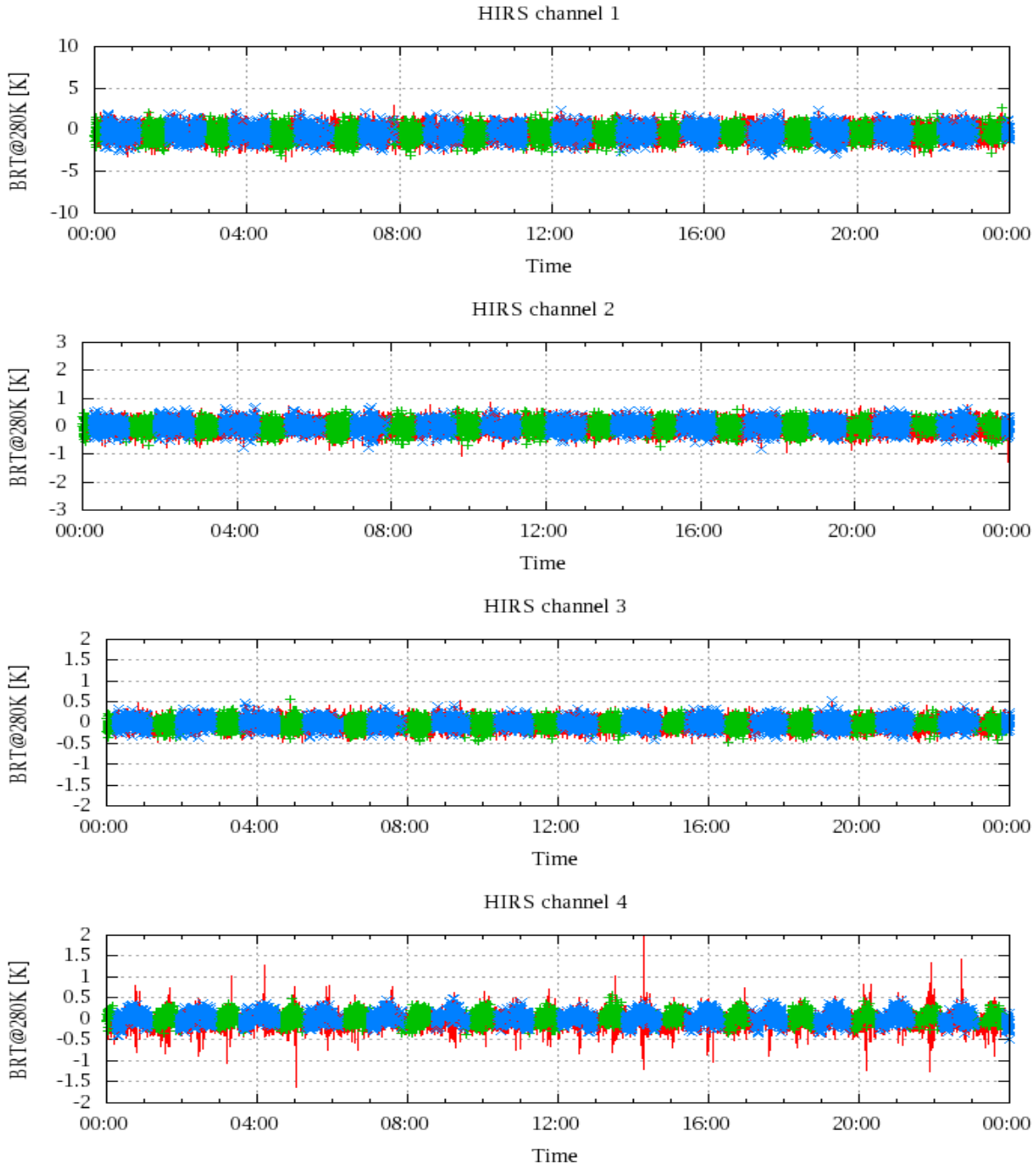

Figure 17: Radiance Differences in BRT

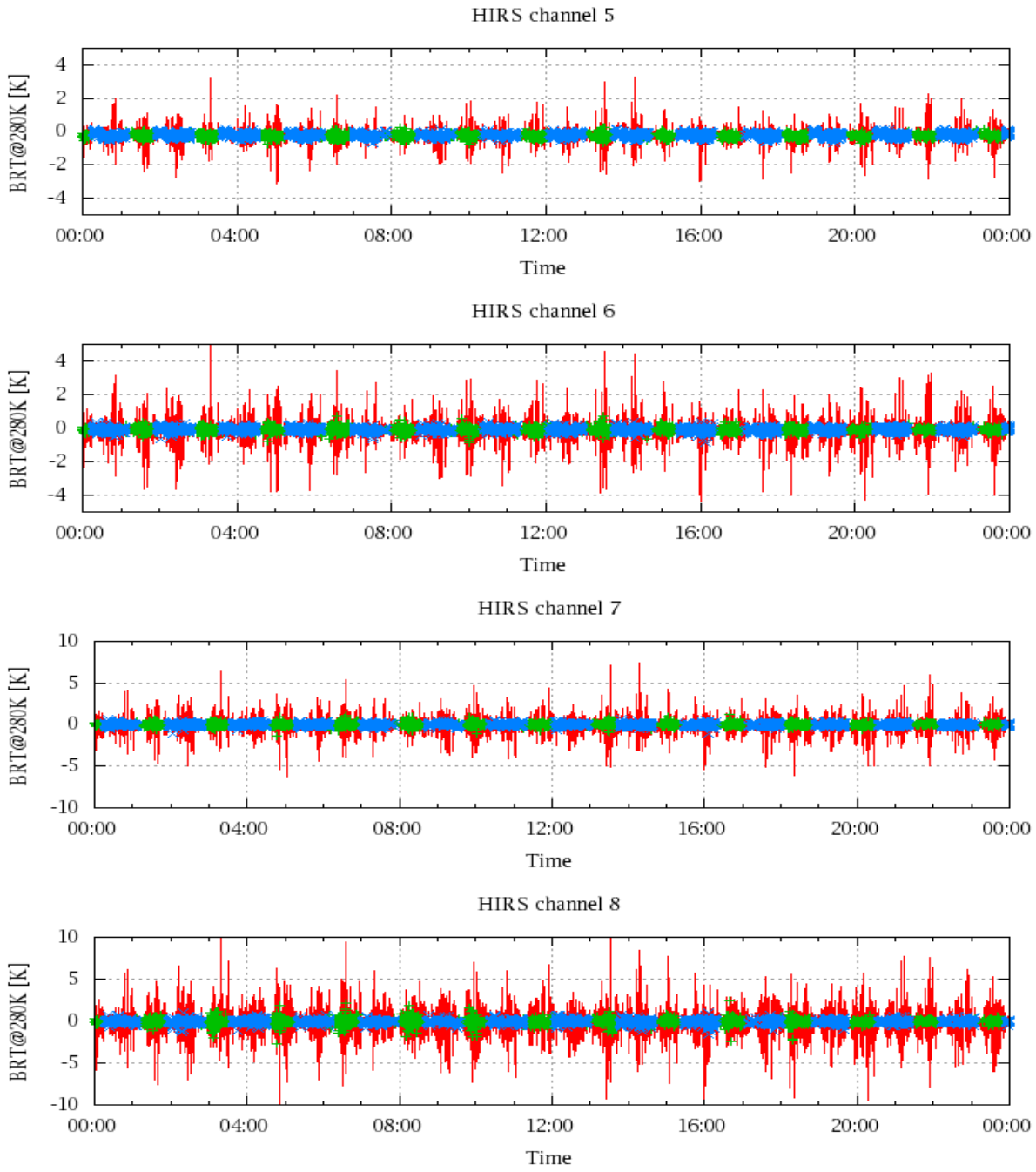

Figure 18: Radiance Differences in BRT

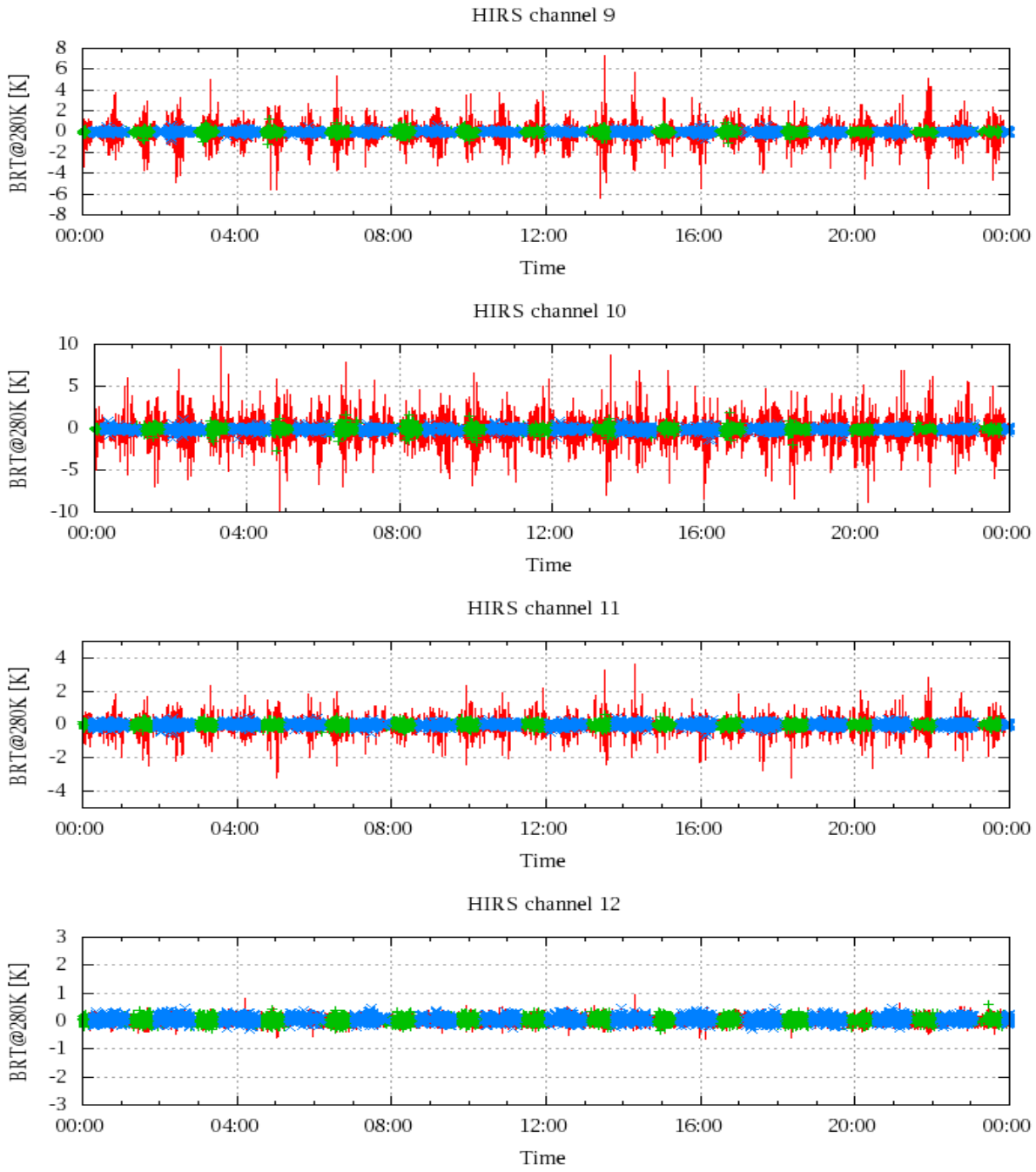

Figure 19: Radiance Differences in BRT

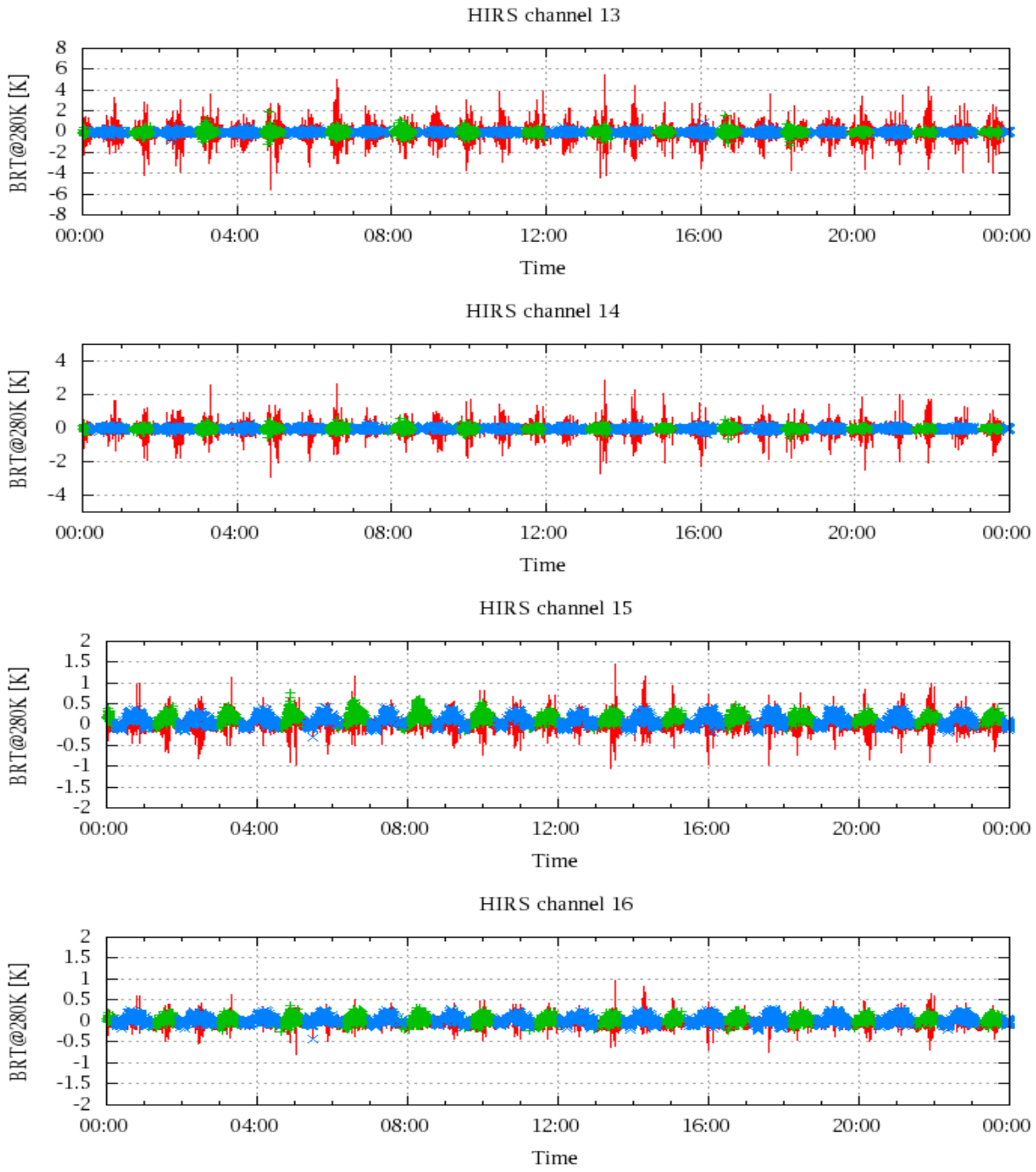

Figure 20: Radiance Differences in BRT

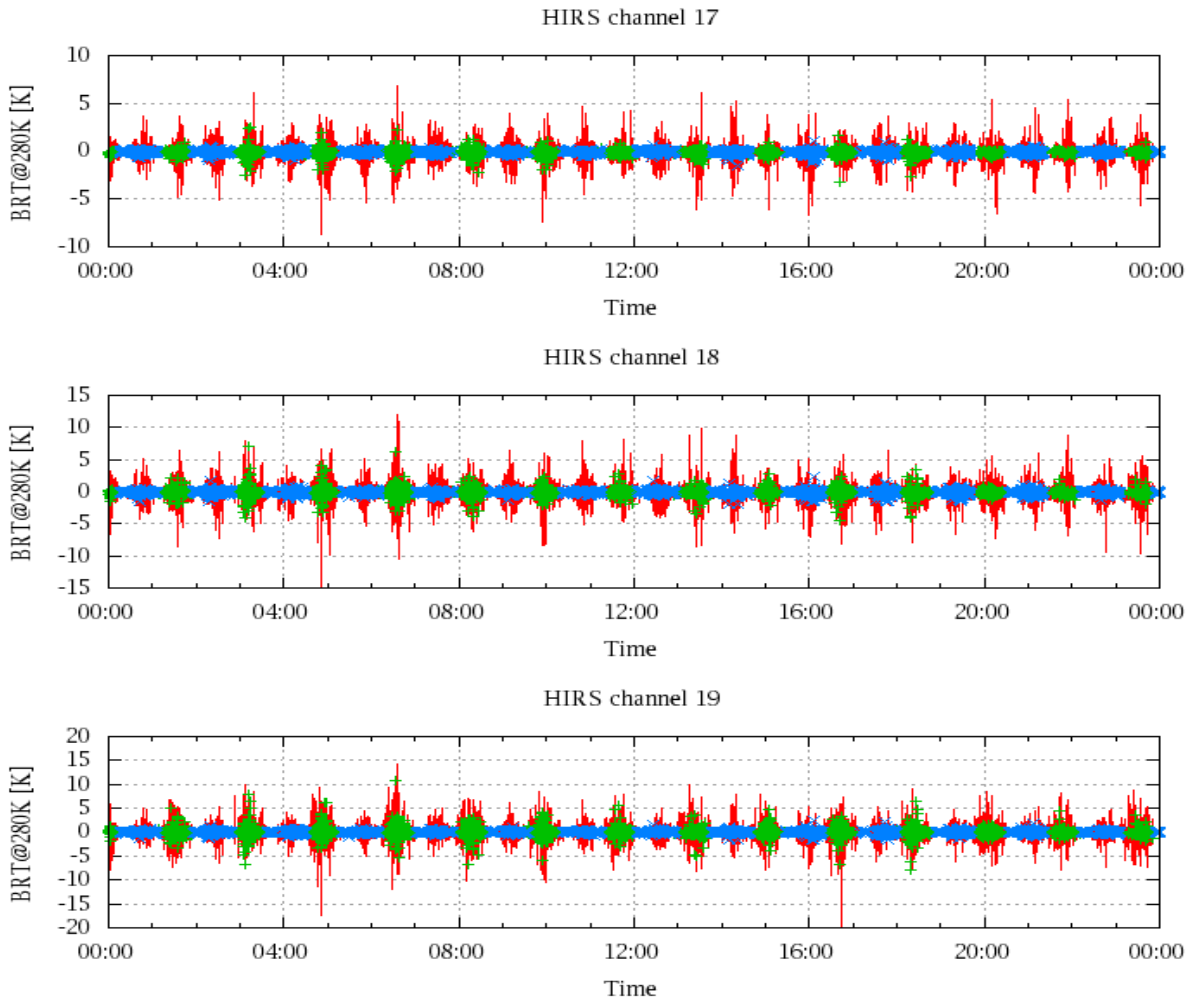

Figure 21: Radinace Differences in BRT