

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

19/02/2016 00:00:00 - 20/02/2016 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 minute data packet) for 19/02/2016 00:00:00 - 20/02/2016 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 19/02/2016 00:00:00 - 20/02/2016 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	400	e
L0 IASI PDUs	400	e
L1 ENG PDUs	397	e
L1 ENG distinct GEPSGranule	389	a
L1 DPX PDUs (RM: IASI-HIRS)	344	e
L1 DPS Files (RM: OBS-CAL NWP based)	388	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	9355	10034	20160219162359.858	20160219162701.471
PX1 (130)	10705	12734	20160219162959.846	20160219163901.489
PX1 (130)	13405	15434	20160219164159.860	20160219165101.469
PX1 (130)	399	1072	20160219165659.726	20160219170000.046
PX1 (130)	2421	3100	20160219170559.858	20160219170901.475
PX1 (130)	3771	4450	20160219171159.846	20160219171501.462
PX1 (130)	5121	5800	20160219171759.837	20160219172101.454
PX1 (130)	8499	9172	20160219173259.738	20160219173600.058
PX1 (130)	11199	11872	20160219174459.717	20160219174800.073
PX1 (130)	13221	13900	20160219175359.845	20160219175701.462
PX1 (130)	14571	15250	20160219175959.837	20160219180301.454
PX1 (130)	215	888	20160219180859.715	20160219181200.070
PX1 (130)	2915	3588	20160219182059.730	20160219182400.050
PX1 (130)	4265	5616	20160219182659.721	20160219183301.474
PX1 (130)	6287	8316	20160219183559.849	20160219184501.454
PX1 (130)	9665	10338	20160219185059.715	20160219185400.070

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	11015	11688	20160219185659.742	20160219190000.062
PX1 (130)	14387	15066	20160219191159.822	20160219191501.439
PX1 (130)	31	4082	20160219192059.735	20160219193901.437
PX1 (130)	6103	6782	20160219194759.834	20160219195101.451
PX1 (130)	8803	10154	20160219195959.814	20160219200600.059
PX1 (130)	12181	13532	20160219201459.719	20160219202101.437
PX1 (130)	3897	4570	20160219205059.731	20160219205400.047
PX1 (130)	7269	8620	20160219210559.811	20160219211200.053
PX1 (130)	9297	10648	20160219211459.725	20160219212101.443
PX1 (130)	335	1014	20160219214759.815	20160219215101.428
PX1 (130)	2363	4386	20160219215659.724	20160219220600.036
PX1 (130)	5063	9786	20160219220859.704	20160219223000.030
PX2 (135)	9355	10034	20160219162359.858	20160219162701.471
PX2 (135)	10705	12734	20160219162959.846	20160219163901.489
PX2 (135)	13405	15434	20160219164159.860	20160219165101.469
PX2 (135)	399	1072	20160219165659.726	20160219170000.046
PX2 (135)	2421	3100	20160219170559.858	20160219170901.475
PX2 (135)	3771	4450	20160219171159.846	20160219171501.462
PX2 (135)	5121	5800	20160219171759.837	20160219172101.454
PX2 (135)	8499	9172	20160219173259.738	20160219173600.058
PX2 (135)	11199	11872	20160219174459.717	20160219174800.073
PX2 (135)	13221	13900	20160219175359.845	20160219175701.462
PX2 (135)	14571	15250	20160219175959.837	20160219180301.454
PX2 (135)	215	888	20160219180859.715	20160219181200.070
PX2 (135)	2915	3588	20160219182059.730	20160219182400.050
PX2 (135)	4265	5616	20160219182659.721	20160219183301.474
PX2 (135)	6287	8316	20160219183559.849	20160219184501.454
PX2 (135)	9665	10338	20160219185059.715	20160219185400.070
PX2 (135)	11015	11688	20160219185659.742	20160219190000.062
PX2 (135)	14387	15066	20160219191159.822	20160219191501.439
PX2 (135)	31	4082	20160219192059.735	20160219193901.437
PX2 (135)	6103	6782	20160219194759.834	20160219195101.451
PX2 (135)	8803	10154	20160219195959.814	20160219200600.059
PX2 (135)	12181	13532	20160219201459.719	20160219202101.437
PX2 (135)	3897	4570	20160219205059.731	20160219205400.047
PX2 (135)	7269	8620	20160219210559.811	20160219211200.053
PX2 (135)	9297	10648	20160219211459.725	20160219212101.443
PX2 (135)	335	1014	20160219214759.815	20160219215101.428
PX2 (135)	2363	4386	20160219215659.724	20160219220600.036
PX2 (135)	5063	9786	20160219220859.704	20160219223000.030
PX3 (140)	9355	10034	20160219162359.858	20160219162701.471
PX3 (140)	10705	12734	20160219162959.846	20160219163901.489
PX3 (140)	13405	15434	20160219164159.860	20160219165101.469
PX3 (140)	399	1072	20160219165659.726	20160219170000.046
PX3 (140)	2421	3100	20160219170559.858	20160219170901.475
PX3 (140)	3771	4450	20160219171159.846	20160219171501.462
PX3 (140)	5121	5800	20160219171759.837	20160219172101.454
PX3 (140)	8499	9172	20160219173259.738	20160219173600.058
PX3 (140)	11199	11872	20160219174459.717	20160219174800.073
PX3 (140)	13221	13900	20160219175359.845	20160219175701.462
PX3 (140)	14571	15250	20160219175959.837	20160219180301.454
PX3 (140)	215	888	20160219180859.715	20160219181200.070
PX3 (140)	2915	3588	20160219182059.730	20160219182400.050

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	4265	5616	20160219182659.721	20160219183301.474
PX3 (140)	6287	8316	20160219183559.849	20160219184501.454
PX3 (140)	9665	10338	20160219185059.715	20160219185400.070
PX3 (140)	11015	11688	20160219185659.742	20160219190000.062
PX3 (140)	14387	15066	20160219191159.822	20160219191501.439
PX3 (140)	31	4082	20160219192059.735	20160219193901.437
PX3 (140)	6103	6782	20160219194759.834	20160219195101.451
PX3 (140)	8803	10154	20160219195959.814	20160219200600.059
PX3 (140)	12181	13532	20160219201459.719	20160219202101.437
PX3 (140)	3897	4570	20160219205059.731	20160219205400.047
PX3 (140)	7269	8620	20160219210559.811	20160219211200.053
PX3 (140)	9297	10648	20160219211459.725	20160219212101.443
PX3 (140)	335	1014	20160219214759.815	20160219215101.428
PX3 (140)	2363	4386	20160219215659.724	20160219220600.036
PX3 (140)	5063	9786	20160219220859.704	20160219223000.030
PX4 (145)	9355	10034	20160219162359.858	20160219162701.471
PX4 (145)	10705	12734	20160219162959.846	20160219163901.489
PX4 (145)	13405	15434	20160219164159.860	20160219165101.469
PX4 (145)	399	1072	20160219165659.726	20160219170000.046
PX4 (145)	2421	3100	20160219170559.858	20160219170901.475
PX4 (145)	3771	4450	20160219171159.846	20160219171501.462
PX4 (145)	5121	5800	20160219171759.837	20160219172101.454
PX4 (145)	8499	9172	20160219173259.738	20160219173600.058
PX4 (145)	11199	11872	20160219174459.717	20160219174800.073
PX4 (145)	13221	13900	20160219175359.845	20160219175701.462
PX4 (145)	14571	15250	20160219175959.837	20160219180301.454
PX4 (145)	215	888	20160219180859.715	20160219181200.070
PX4 (145)	2915	3588	20160219182059.730	20160219182400.050
PX4 (145)	4265	5616	20160219182659.721	20160219183301.474
PX4 (145)	6287	8316	20160219183559.849	20160219184501.454
PX4 (145)	9665	10338	20160219185059.715	20160219185400.070
PX4 (145)	11015	11688	20160219185659.742	20160219190000.062
PX4 (145)	14387	15066	20160219191159.822	20160219191501.439
PX4 (145)	31	4082	20160219192059.735	20160219193901.437
PX4 (145)	6103	6782	20160219194759.834	20160219195101.451
PX4 (145)	8803	10154	20160219195959.814	20160219200600.059
PX4 (145)	12181	13532	20160219201459.719	20160219202101.437
PX4 (145)	3897	4570	20160219205059.731	20160219205400.047
PX4 (145)	7269	8620	20160219210559.811	20160219211200.053
PX4 (145)	9297	10648	20160219211459.725	20160219212101.443
PX4 (145)	335	1014	20160219214759.815	20160219215101.428
PX4 (145)	2363	4386	20160219215659.724	20160219220600.036
PX4 (145)	5063	9786	20160219220859.704	20160219223000.030
IMG (150)	9263	10030	20160219162359.858	20160219162700.174
IMG (150)	10793	13090	20160219162959.846	20160219163900.192
IMG (150)	13853	16150	20160219164159.860	20160219165100.172
IMG (150)	1295	2060	20160219165659.726	20160219170000.046
IMG (150)	3589	4356	20160219170559.858	20160219170900.174
IMG (150)	5119	5886	20160219171159.846	20160219171500.166
IMG (150)	6649	7416	20160219171759.837	20160219172100.153
IMG (150)	10475	11240	20160219173259.738	20160219173600.058
IMG (150)	13535	14300	20160219174459.717	20160219174800.073
IMG (150)	15829	212	20160219175359.845	20160219175700.165

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APID	Seq from	Seq to	Time from	Time to
IMG (150)	975	1742	20160219175959.837	20160219180300.157
IMG (150)	3271	4036	20160219180859.715	20160219181200.070
IMG (150)	6331	7096	20160219182059.730	20160219182400.050
IMG (150)	7861	9392	20160219182659.721	20160219183300.178
IMG (150)	10155	12452	20160219183559.849	20160219184500.157
IMG (150)	13981	14746	20160219185059.715	20160219185400.070
IMG (150)	15511	16276	20160219185659.742	20160219190000.062
IMG (150)	2951	3718	20160219191159.822	20160219191500.142
IMG (150)	5247	9838	20160219192059.735	20160219193900.140
IMG (150)	12131	12898	20160219194759.834	20160219195100.154
IMG (150)	15191	338	20160219195959.814	20160219200600.059
IMG (150)	2633	4164	20160219201459.719	20160219202100.140
IMG (150)	11813	12578	20160219205059.731	20160219205400.047
IMG (150)	15637	784	20160219210559.811	20160219211200.053
IMG (150)	1549	3080	20160219211459.725	20160219212100.146
IMG (150)	9963	10730	20160219214759.815	20160219215100.131
IMG (150)	12259	14554	20160219215659.724	20160219220600.036
IMG (150)	15319	4290	20160219220859.704	20160219223000.030
VER (160)	8140	8256	20160219162355.748	20160219162707.740
VER (160)	8365	8706	20160219162955.736	20160219163907.759
VER (160)	8815	9156	20160219164155.755	20160219165107.738
VER (160)	9380	9491	20160219165659.726	20160219170003.722
VER (160)	9715	9831	20160219170555.749	20160219170907.744
VER (160)	9940	10056	20160219171155.740	20160219171507.732
VER (160)	10165	10281	20160219171755.728	20160219172107.724
VER (160)	10730	10841	20160219173259.738	20160219173603.734
VER (160)	11180	11291	20160219174459.717	20160219174803.748
VER (160)	11515	11631	20160219175355.740	20160219175707.736
VER (160)	11740	11856	20160219175955.728	20160219180307.723
VER (160)	12080	12191	20160219180859.715	20160219181203.746
VER (160)	12530	12641	20160219182059.730	20160219182403.725
VER (160)	12755	12981	20160219182659.721	20160219183307.748
VER (160)	13090	13431	20160219183555.740	20160219184507.727
VER (160)	13655	13766	20160219185059.715	20160219185403.746
VER (160)	13880	13991	20160219185659.742	20160219190003.738
VER (160)	14440	14556	20160219191155.717	20160219191507.709
VER (160)	14780	15456	20160219192059.735	20160219193907.706
VER (160)	15790	15906	20160219194755.725	20160219195107.721
VER (160)	16240	82	20160219195955.704	20160219200603.731
VER (160)	421	647	20160219201459.719	20160219202107.706
VER (160)	1771	1882	20160219205059.731	20160219205403.723
VER (160)	2331	2557	20160219210555.702	20160219211203.729
VER (160)	2671	2897	20160219211459.725	20160219212107.716
VER (160)	3906	4022	20160219214755.706	20160219215107.698
VER (160)	4246	4582	20160219215659.724	20160219220603.712
VER (160)	4696	5482	20160219220859.704	20160219223003.706
AUX (180)	8168	8191	20160219162356.178	20160219162700.174
AUX (180)	8213	8281	20160219162956.170	20160219163900.192
AUX (180)	8303	8371	20160219164156.188	20160219165100.172
AUX (180)	8415	8439	20160219165652.160	20160219170004.155
AUX (180)	8483	8506	20160219170556.182	20160219170900.174
AUX (180)	8528	8551	20160219171156.170	20160219171500.166
AUX (180)	8573	8596	20160219171756.161	20160219172100.153
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
AUX (180)	8685	8709	20160219173252.172	20160219173604.167
AUX (180)	8775	8799	20160219174452.151	20160219174804.182
AUX (180)	8843	8866	20160219175356.174	20160219175700.165
AUX (180)	8888	8911	20160219175956.161	20160219180300.157
AUX (180)	8955	8979	20160219180852.149	20160219181204.180
AUX (180)	9045	9069	20160219182052.163	20160219182404.159
AUX (180)	9090	9136	20160219182652.151	20160219183300.178
AUX (180)	9158	9226	20160219183556.173	20160219184500.157
AUX (180)	9270	9294	20160219185052.149	20160219185404.179
AUX (180)	9315	9339	20160219185652.175	20160219190004.167
AUX (180)	9428	9451	20160219191156.147	20160219191500.142
AUX (180)	9495	9631	20160219192052.169	20160219193900.140
AUX (180)	9698	9721	20160219194756.159	20160219195100.154
AUX (180)	9788	9834	20160219195956.138	20160219200604.165
AUX (180)	9900	9946	20160219201452.152	20160219202100.140
AUX (180)	10170	10194	20160219205052.160	20160219205404.156
AUX (180)	10283	10329	20160219210556.136	20160219211204.162
AUX (180)	10350	10396	20160219211452.158	20160219212100.146
AUX (180)	10598	10621	20160219214756.135	20160219215100.131
AUX (180)	10665	10734	20160219215652.158	20160219220604.141
AUX (180)	10755	10914	20160219220852.137	20160219223004.139

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
19/02/2016 00:05:13	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	400	e
L1 ENG PDUs	397	e
L1 ENG distinct GEPSGranule	389	a
GQisFlagQual set (PX1)	99.62 %	-
GQisFlagQual set (PX2)	99.63 %	-
GQisFlagQual set (PX3)	99.63 %	-
GQisFlagQual set (PX4)	99.59 %	-
GQisFlagQual set (all)	99.62 %	-

Table 4: Quality flags

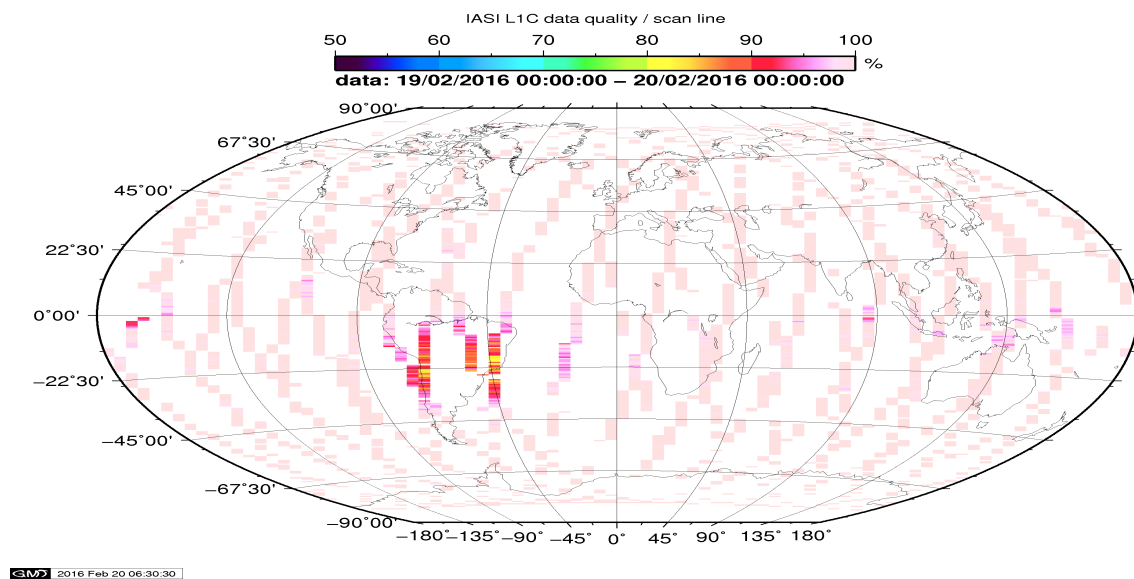


Figure 1: L1C data quality

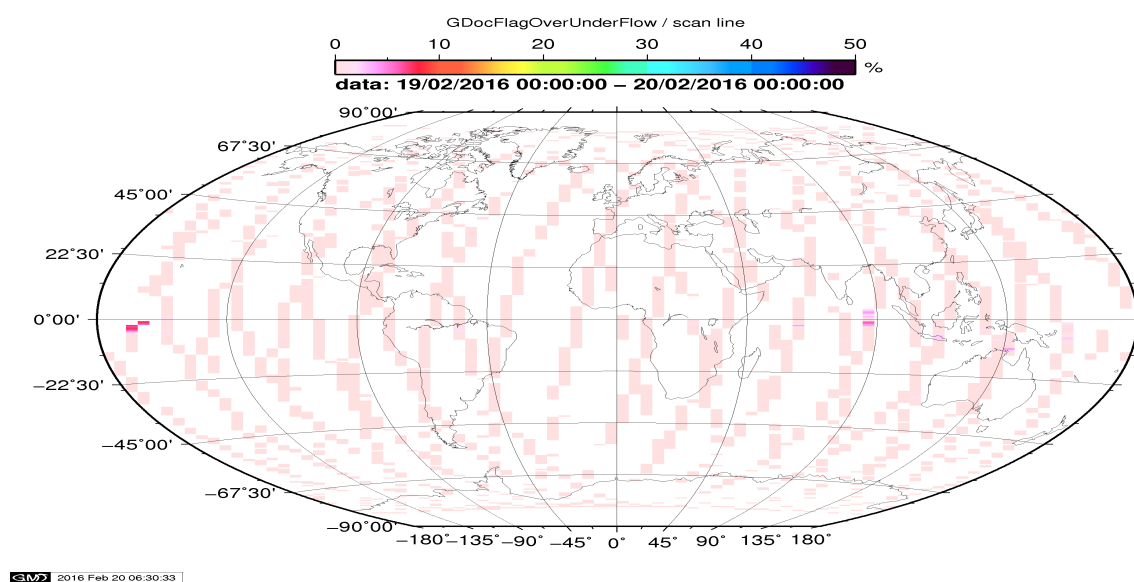


Figure 2: Flag of Over and Under Flows

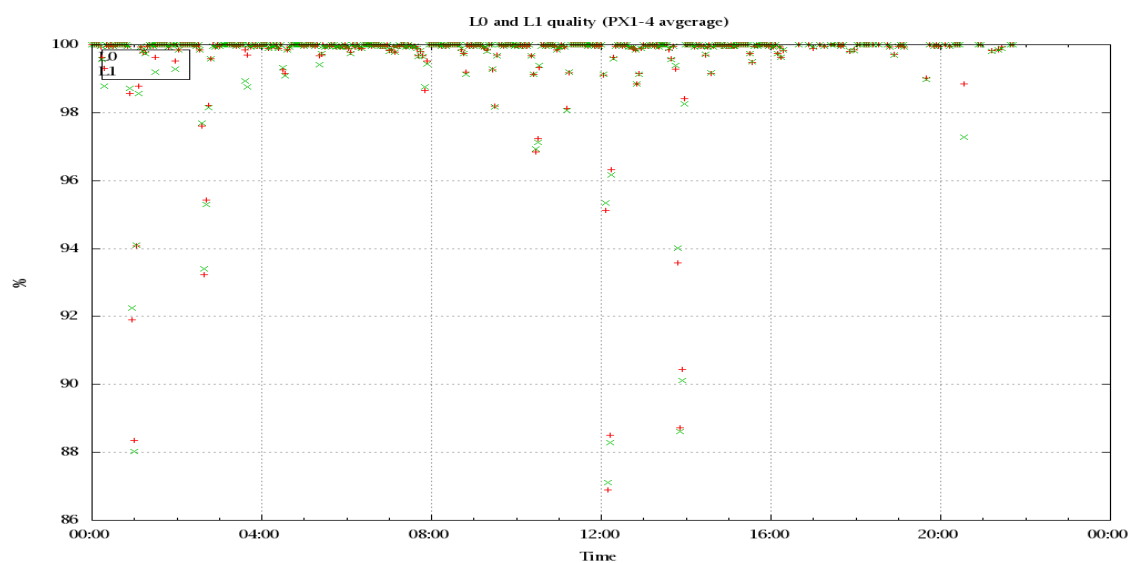


Figure 3: Level 0 and 1C overall quality

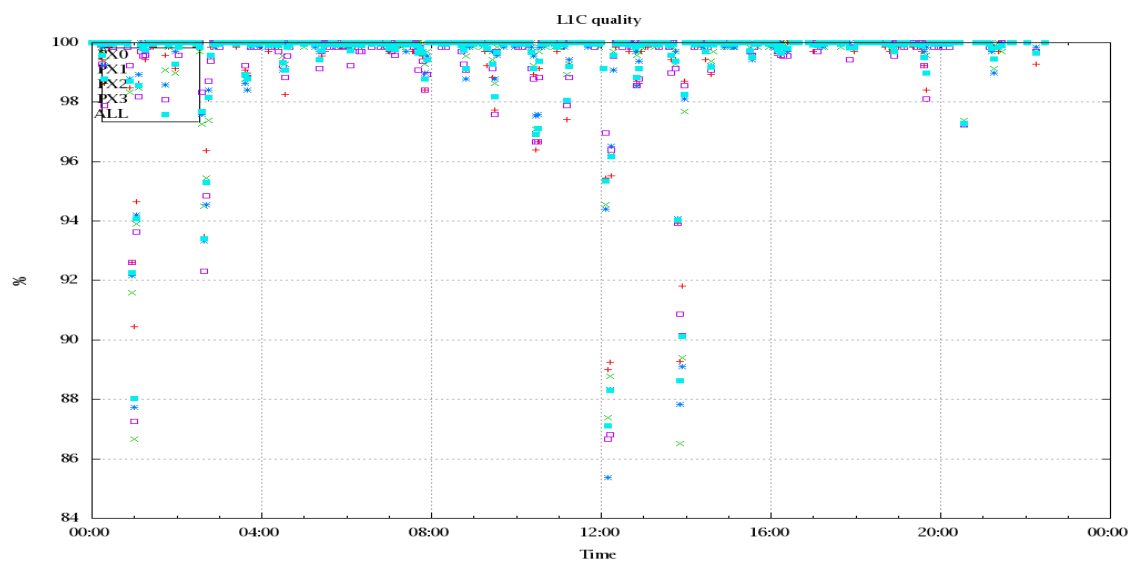


Figure 4: Level 1C quality

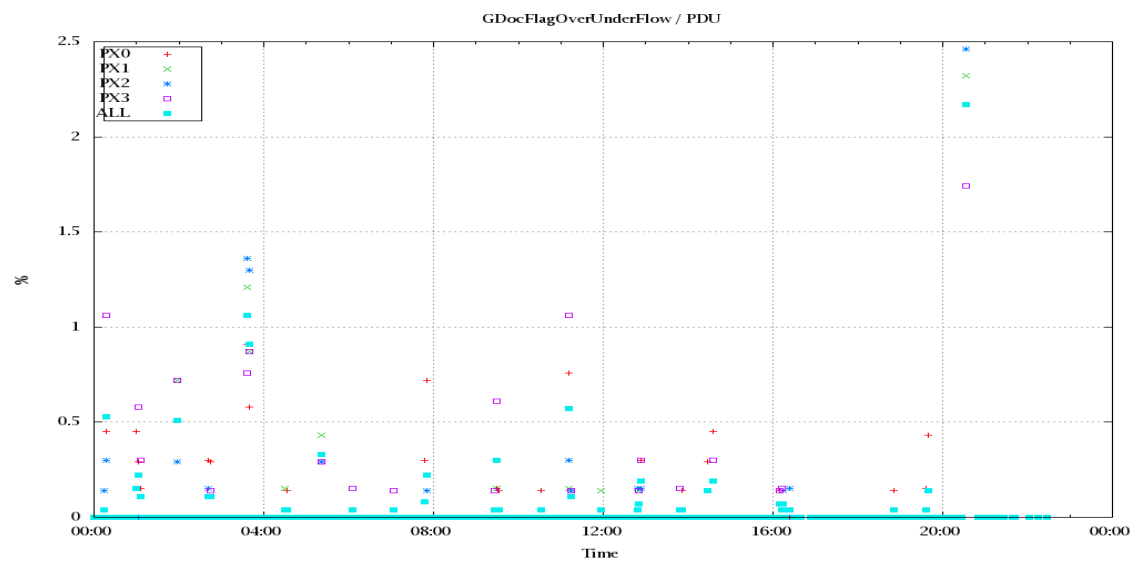


Figure 5: OverUnderFlowFlag timeseries

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 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,WV, and Ozon. 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 10 to 16 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 pixel and scan position 10 to 20) and the average bias OBS-CAL (over all pixel and scan position 10 to 20) of the last 30 days.

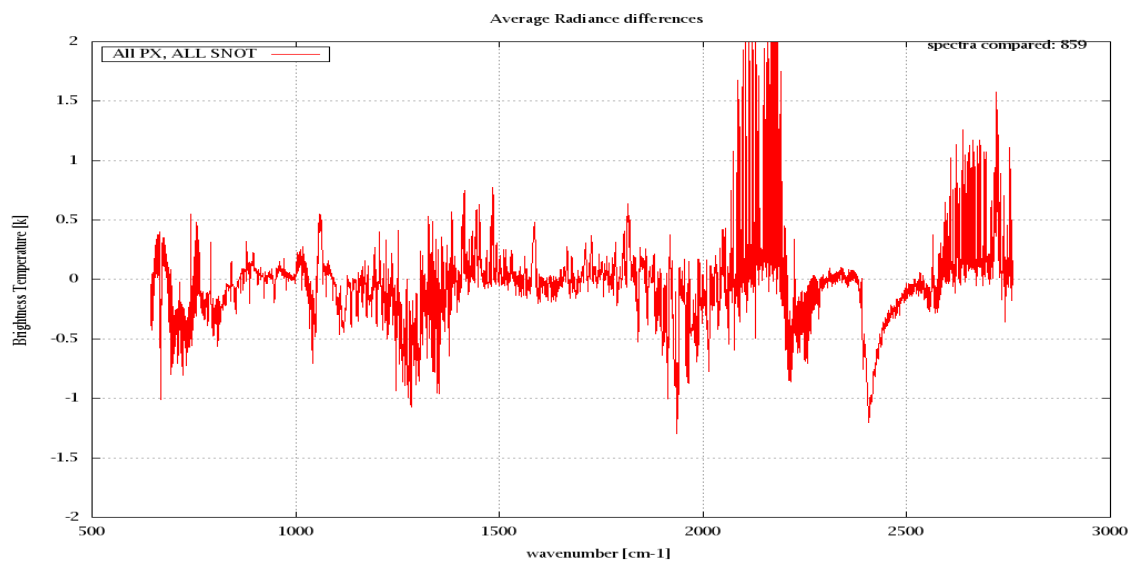


Figure 6: Average Radiance differences: OBS-CAL

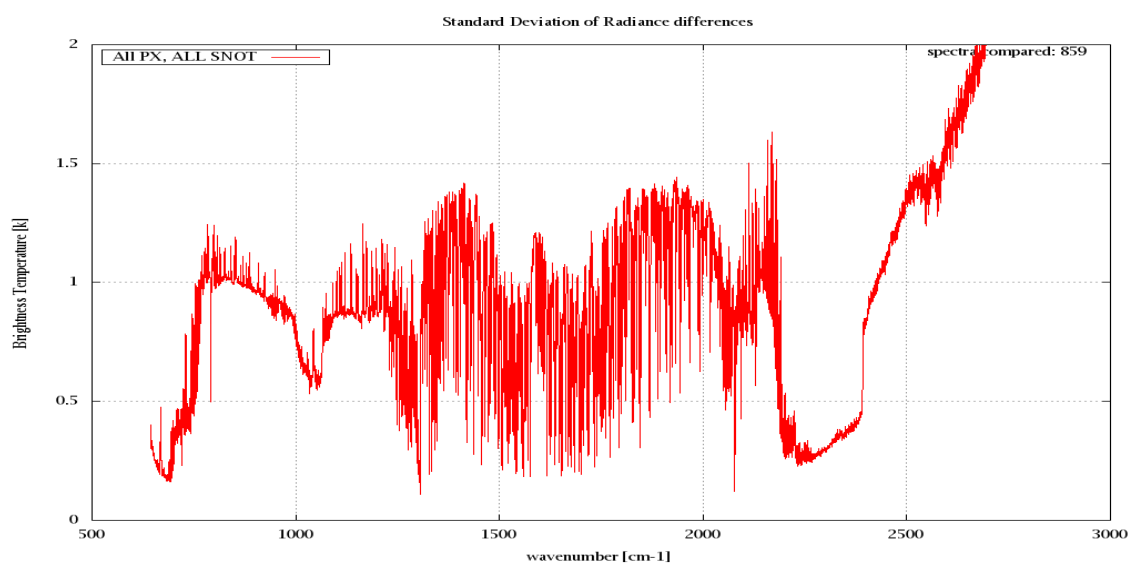


Figure 7: Standard Deviation of Radiance differences

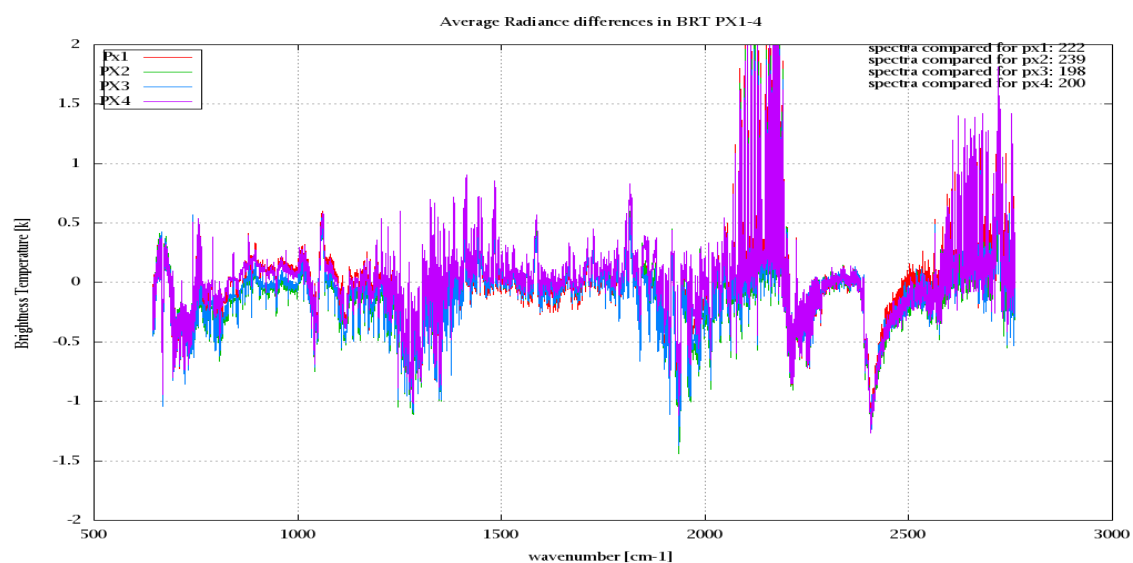


Figure 8: Average Radiance differences: OBS-CAL

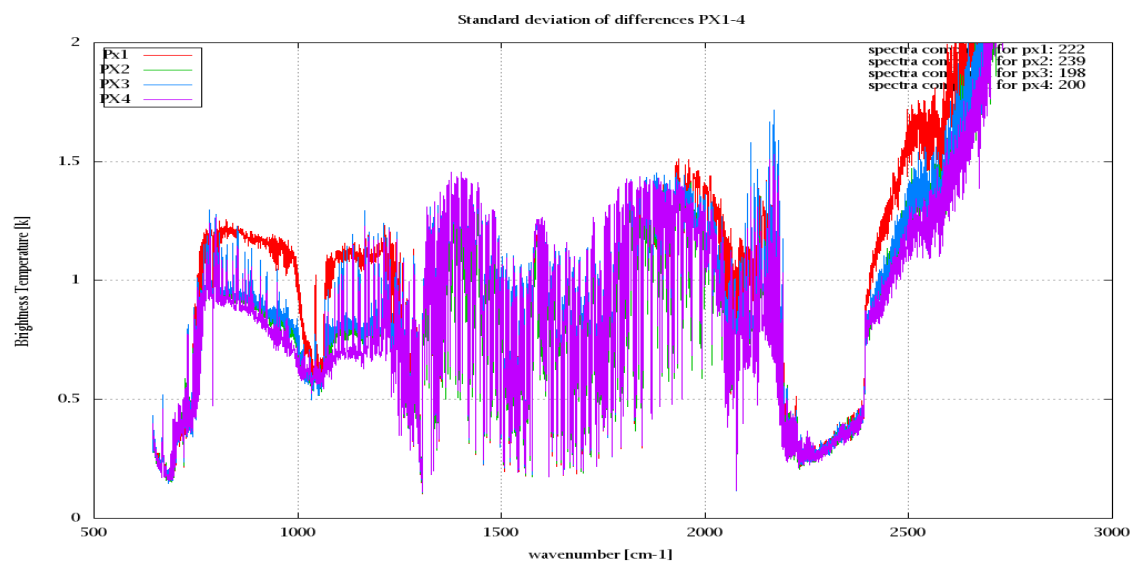


Figure 9: Standard Deviation of Radiance differences

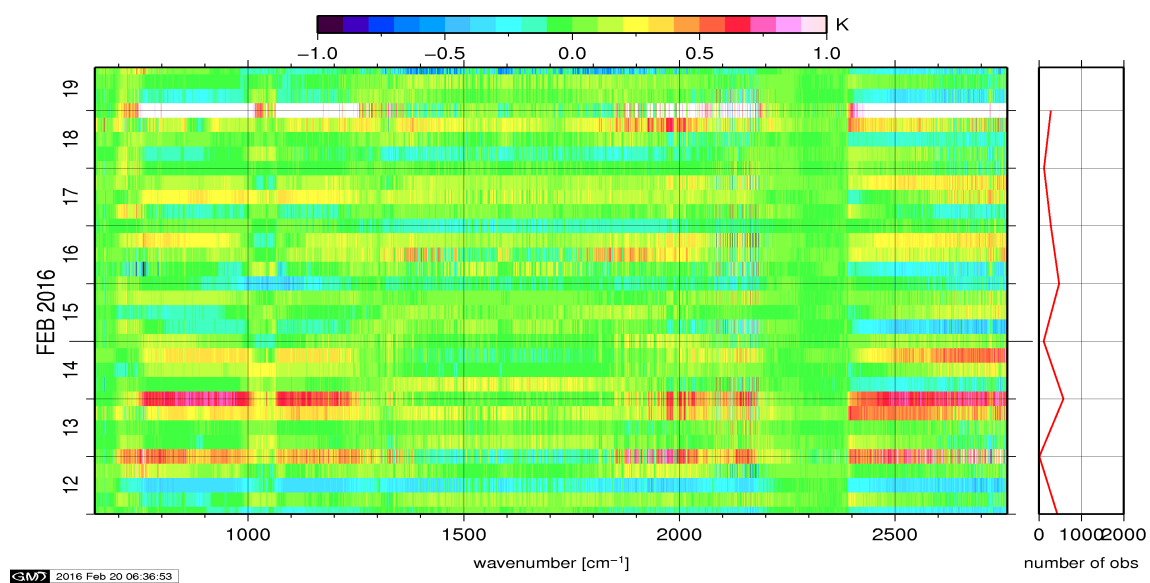


Figure 10: Radiance Anomaly in BRT: All Channels

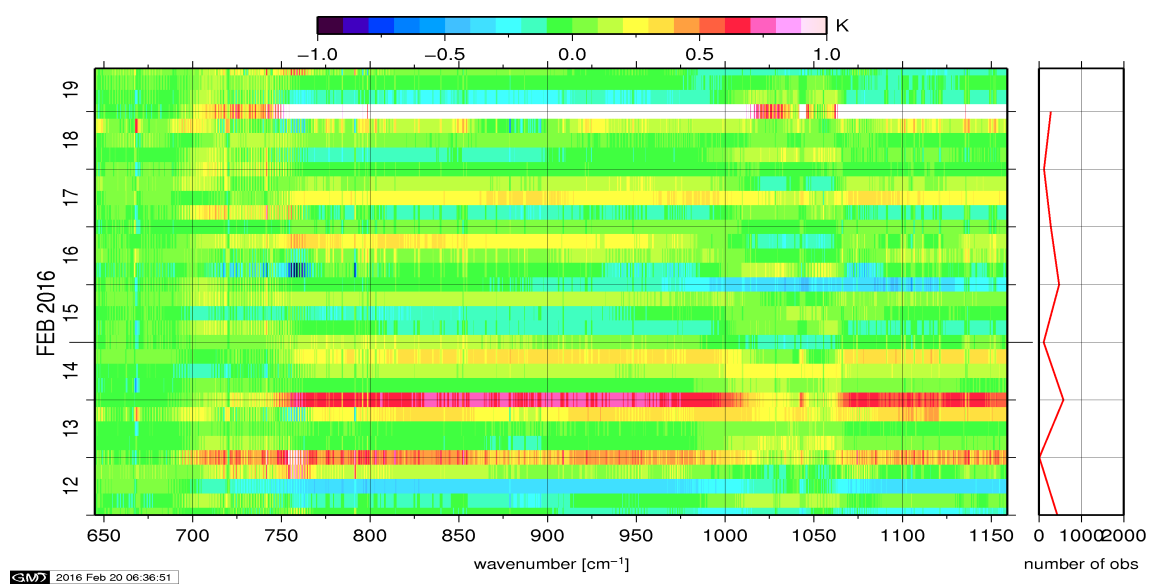


Figure 11: Radiance Anomaly in BRT: IASI Band 1

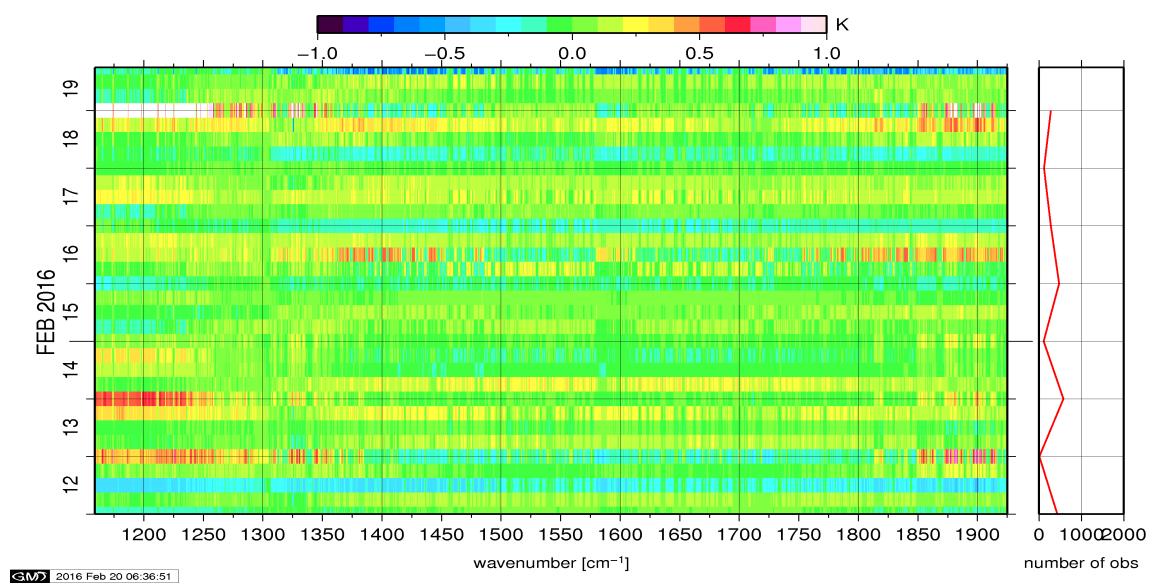


Figure 12: Radiance Anomaly in BRT: IASI Band 2

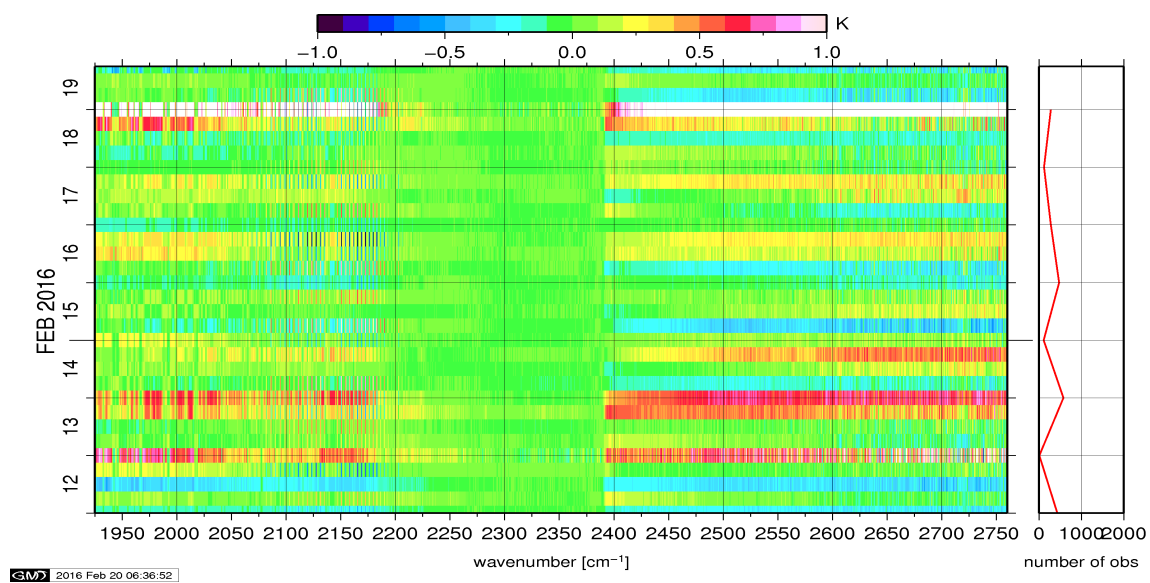


Figure 13: Radiance Anomaly in BRT: IASI Band 3

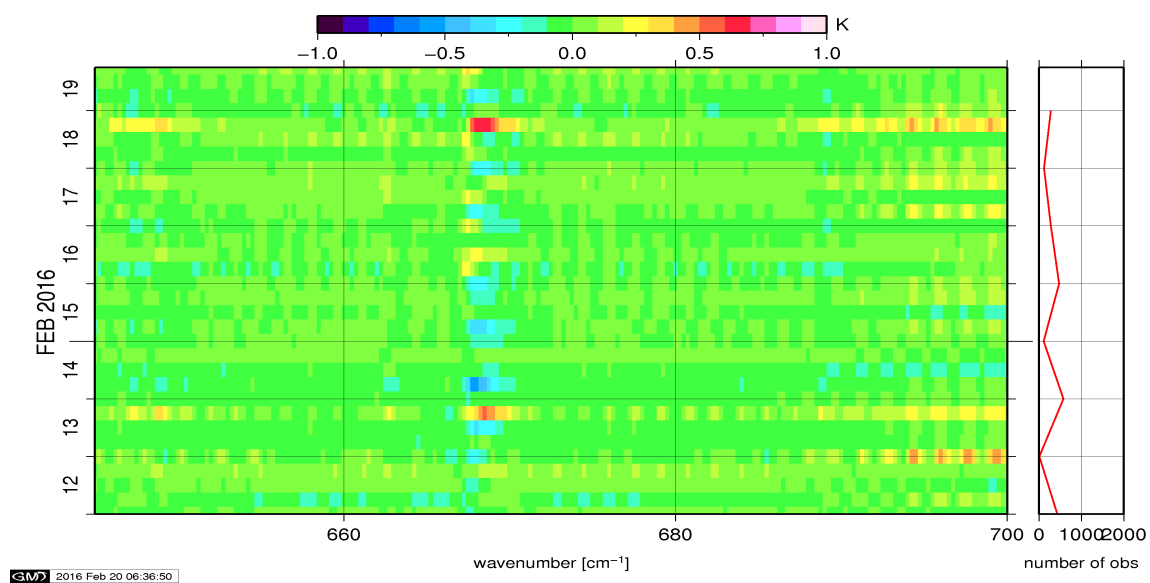


Figure 14: Radiance Anomaly in BRT: CO2 14

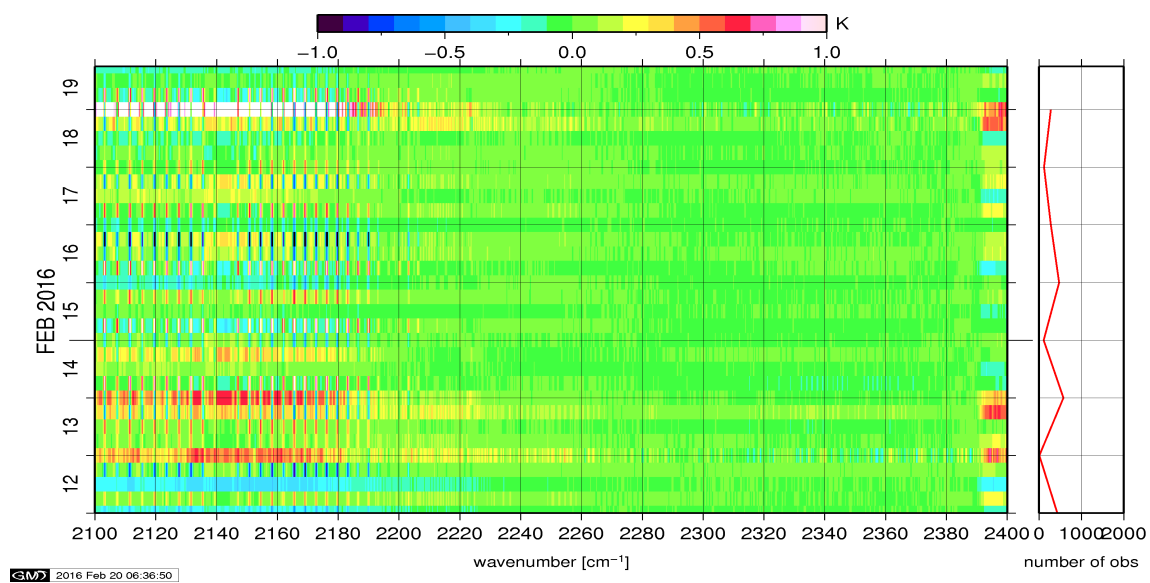


Figure 15: Radiance Anomaly in BRT: CO2 4.3

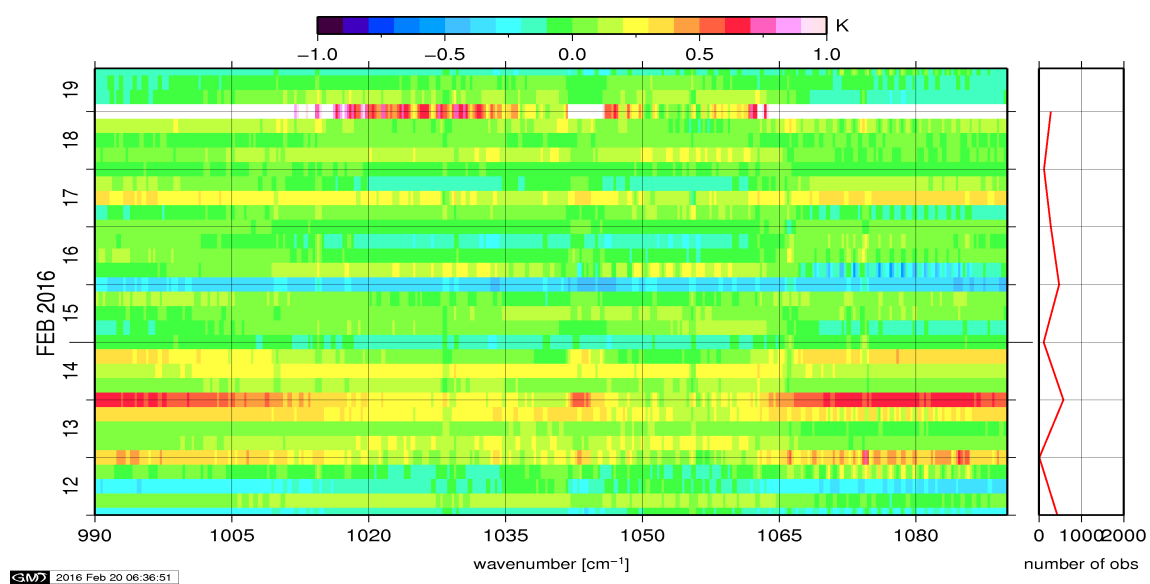


Figure 16: Radiance Anomaly in BRT: O3

6 IASI-HIRS radiance comparison Channel 1-19

The radiance comparison 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.

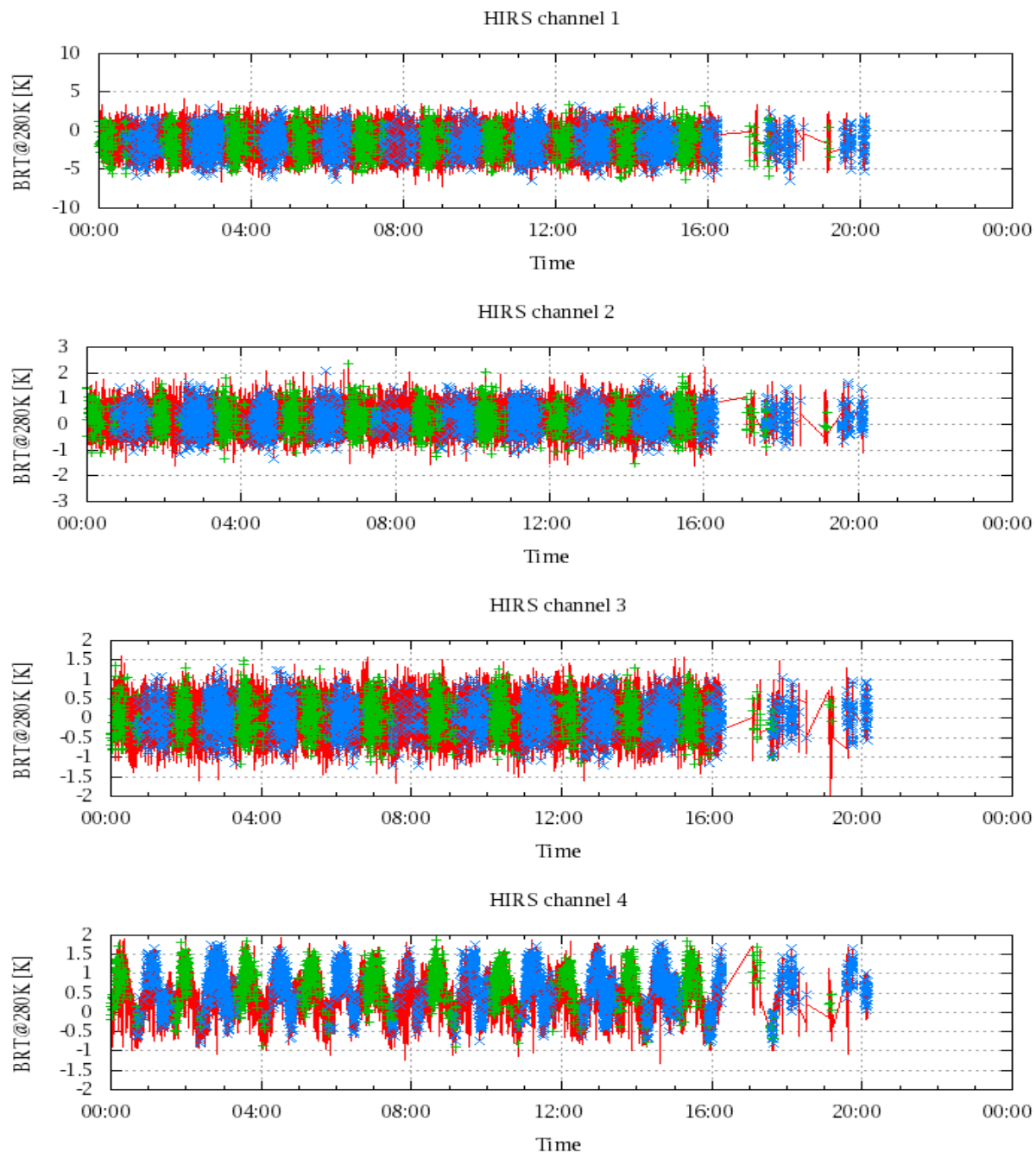


Figure 17: Radiance Differences in BRT

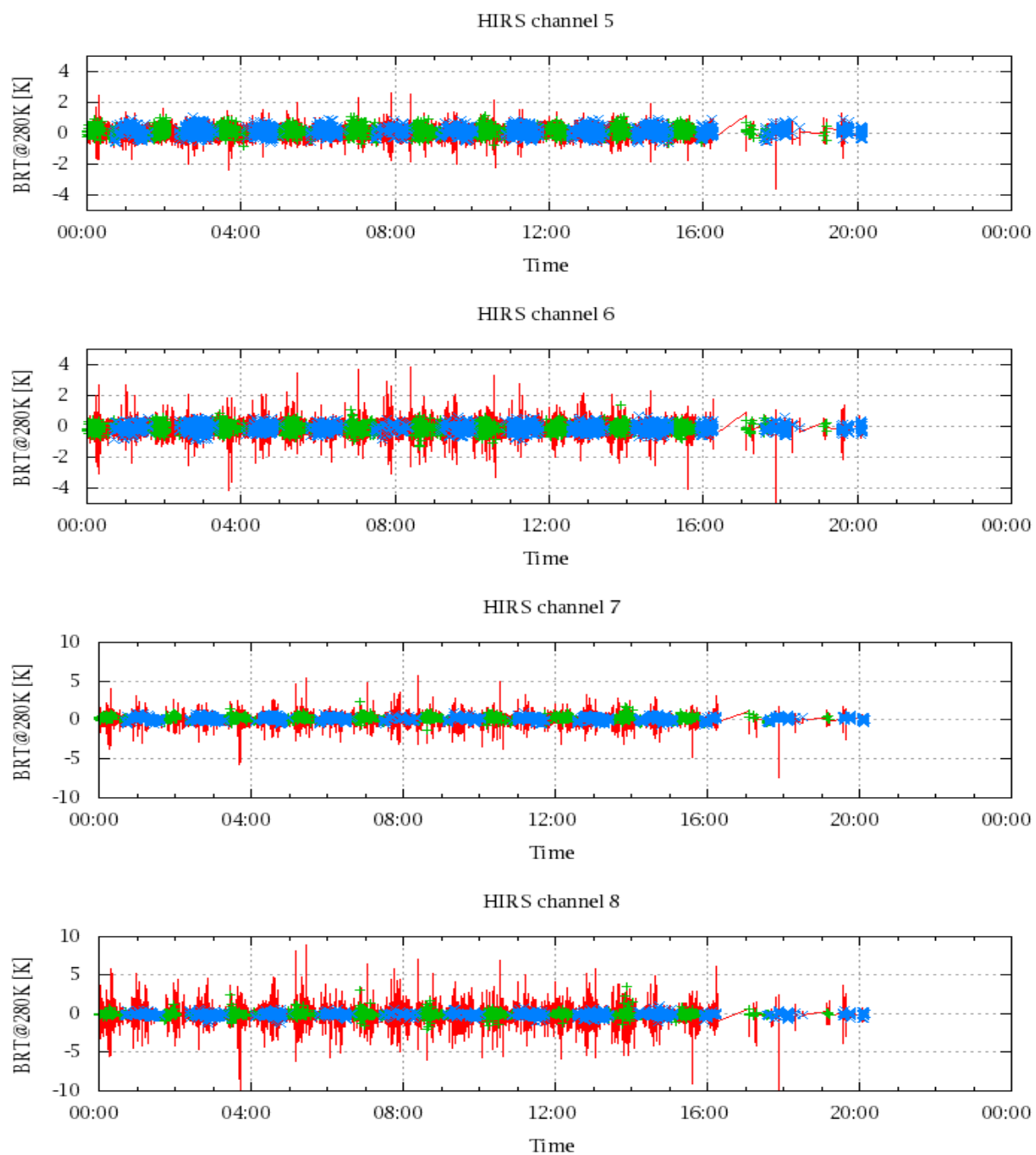


Figure 18: Radiance Differences in BRT

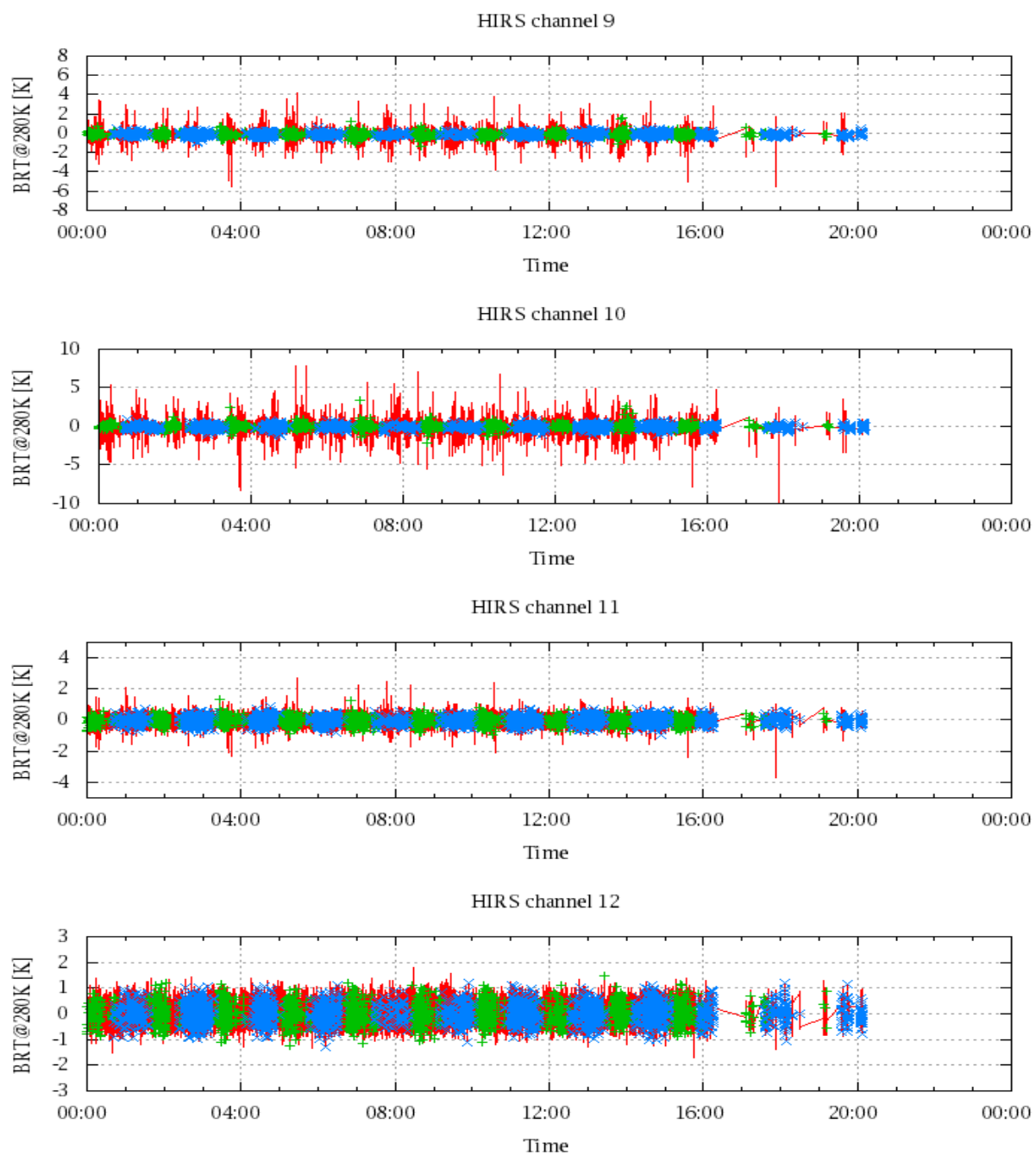


Figure 19: Radiance Differences in BRT

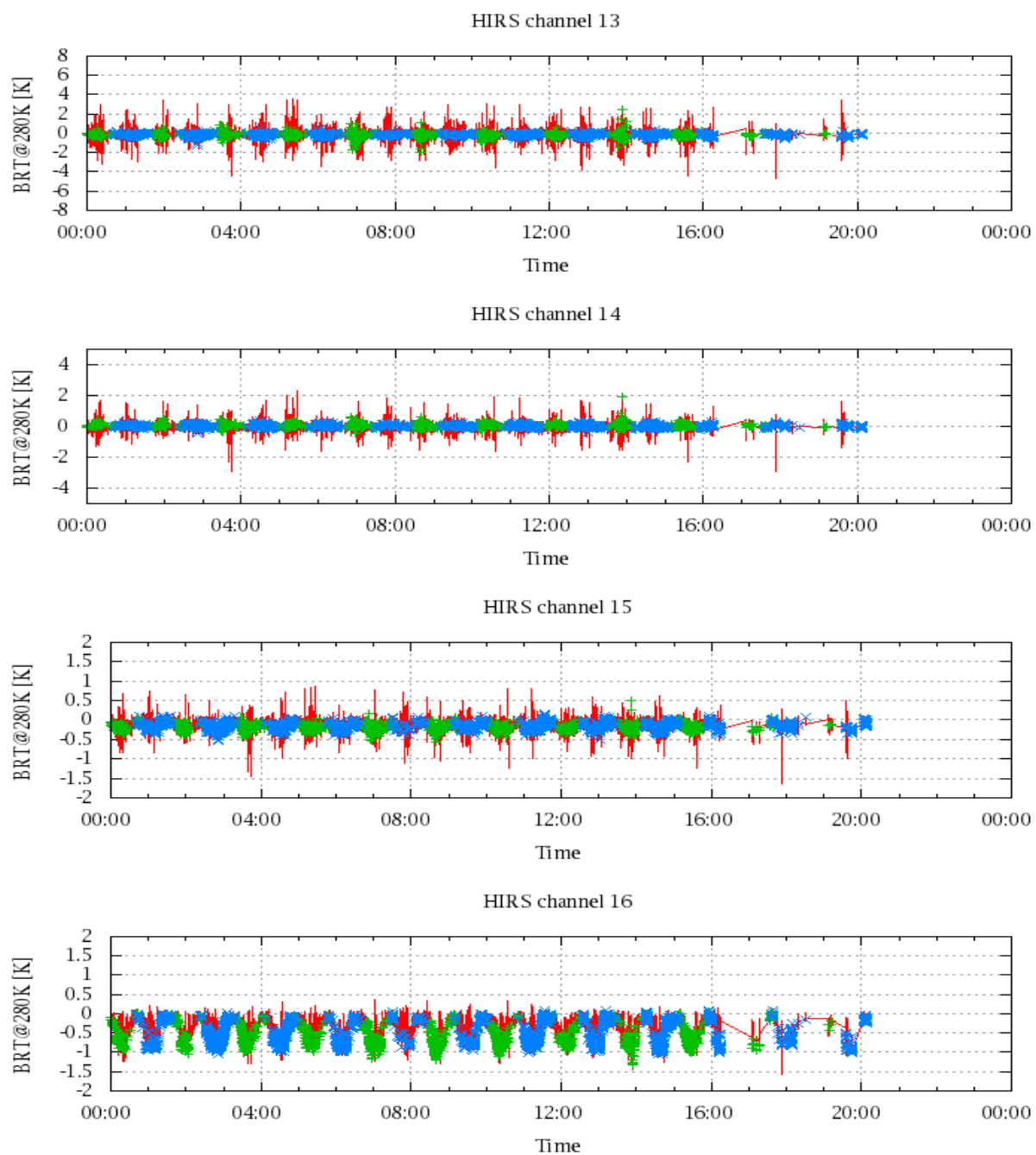


Figure 20: Radiance Differences in BRT

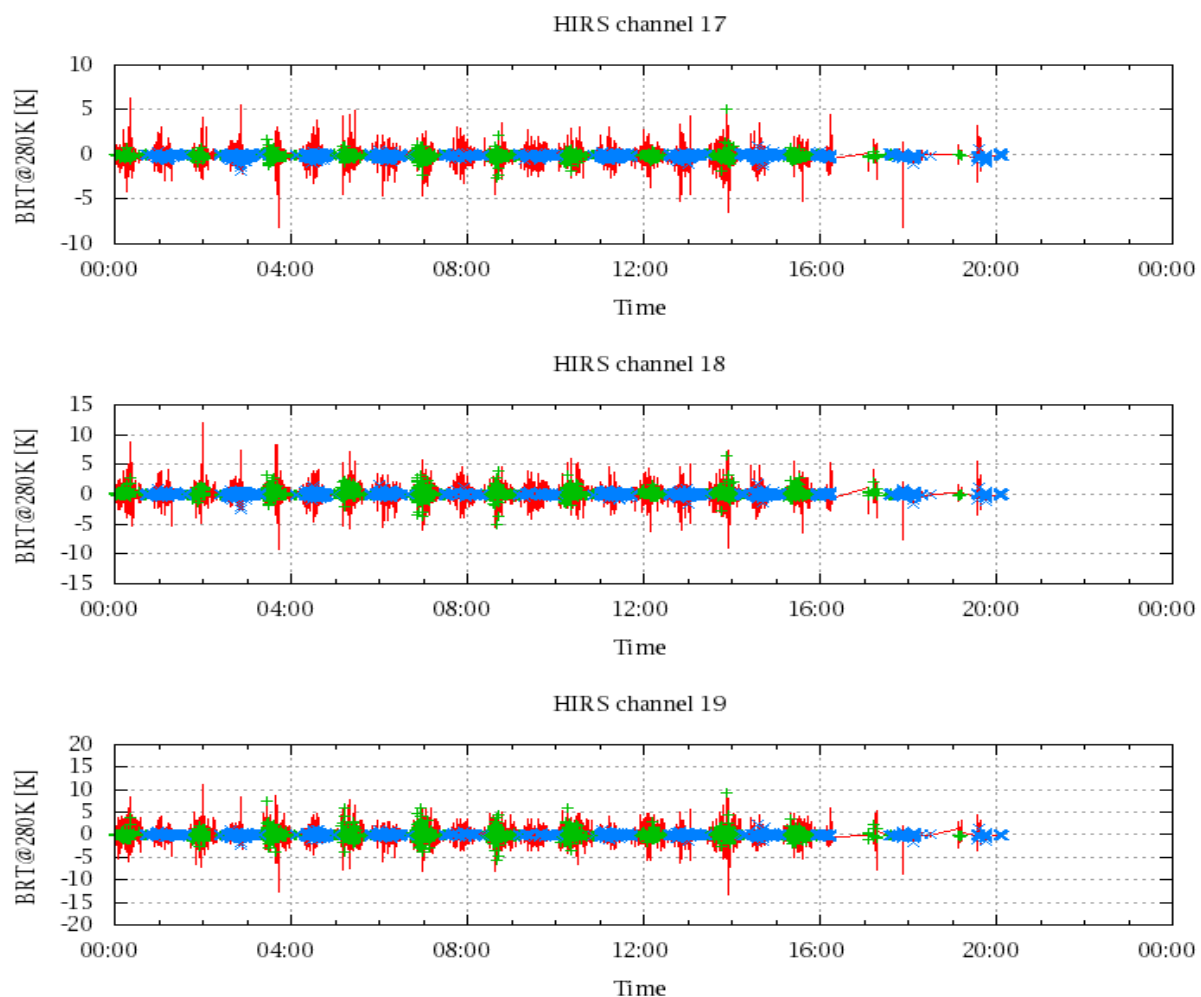


Figure 21: Radinace Differences in BRT