

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

19/09/2015 00:00:00 - 20/09/2015 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 19/09/2015 00:00:00 - 20/09/2015 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 19/09/2015 00:00:00 - 20/09/2015 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)	0	e

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	8088	8090	20150919055344.399	20150919055344.833
PX1 (130)	8094	8097	20150919055347.208	20150919055347.856
PX1 (130)	8101	8104	20150919055348.723	20150919055349.372
PX1 (130)	8105	8109	20150919055349.586	20150919055350.450
PX1 (130)	8110	8113	20150919055350.668	20150919055351.317
PX1 (130)	8114	8116	20150919055351.532	20150919055351.965
PX1 (130)	8121	8123	20150919055353.047	20150919055353.481
PX1 (130)	8123	8125	20150919055353.481	20150919055355.426
PX1 (130)	8137	8139	20150919055358.020	20150919055358.454
PX1 (130)	8141	8143	20150919055358.883	20150919055359.317
PX1 (130)	8145	8147	20150919055359.751	20150919055400.184
PX1 (130)	8147	8154	20150919055400.184	20150919055403.208
PX1 (130)	8159	8161	20150919055404.290	20150919055404.723
PX1 (130)	8165	8168	20150919055405.586	20150919055406.235
PX1 (130)	10090	10092	20150919060238.691	20150919060239.125
PX1 (130)	10113	10115	20150919060245.175	20150919060245.609
PX1 (130)	11127	11129	20150919060715.870	20150919060716.304
PX1 (130)	11137	11139	20150919060718.034	20150919060718.468

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	11148	11151	20150919060720.413	20150919060721.062
PX1 (130)	11161	11163	20150919060724.737	20150919060725.167
PX1 (130)	11164	11166	20150919060725.386	20150919060725.819
PX1 (130)	11166	11168	20150919060725.819	20150919060726.249
PX1 (130)	11168	11171	20150919060726.249	20150919060726.898
PX1 (130)	11171	11174	20150919060726.898	20150919060727.546
PX1 (130)	11182	11184	20150919060729.276	20150919060731.222
PX1 (130)	11185	11190	20150919060731.441	20150919060732.519
PX1 (130)	11193	11197	20150919060733.167	20150919060734.034
PX1 (130)	11203	11208	20150919060735.331	20150919060736.413
PX1 (130)	11208	11211	20150919060736.413	20150919060737.062
PX1 (130)	11211	11214	20150919060737.062	20150919060739.222
PX2 (135)	8088	8092	20150919055344.399	20150919055345.262
PX2 (135)	8094	8097	20150919055347.208	20150919055347.856
PX2 (135)	8099	8104	20150919055348.290	20150919055349.372
PX2 (135)	8105	8109	20150919055349.586	20150919055350.450
PX2 (135)	8110	8113	20150919055350.668	20150919055351.317
PX2 (135)	8114	8116	20150919055351.532	20150919055351.965
PX2 (135)	8117	8119	20150919055352.184	20150919055352.614
PX2 (135)	8121	8123	20150919055353.047	20150919055353.481
PX2 (135)	8137	8139	20150919055358.020	20150919055358.454
PX2 (135)	8140	8142	20150919055358.668	20150919055359.098
PX2 (135)	8143	8145	20150919055359.317	20150919055359.751
PX2 (135)	8145	8151	20150919055359.751	20150919055401.047
PX2 (135)	8151	8154	20150919055401.047	20150919055403.208
PX2 (135)	8166	8168	20150919055405.805	20150919055406.235
PX2 (135)	8196	8198	20150919055413.801	20150919055414.235
PX2 (135)	10090	10092	20150919060238.691	20150919060239.125
PX2 (135)	10099	10101	20150919060240.636	20150919060241.070
PX2 (135)	10106	10108	20150919060243.664	20150919060244.097
PX2 (135)	11127	11131	20150919060715.870	20150919060716.737
PX2 (135)	11131	11133	20150919060716.737	20150919060717.171
PX2 (135)	11137	11139	20150919060718.034	20150919060718.468
PX2 (135)	11141	11143	20150919060718.898	20150919060719.331
PX2 (135)	11148	11151	20150919060720.413	20150919060721.062
PX2 (135)	11158	11160	20150919060724.089	20150919060724.519
PX2 (135)	11164	11166	20150919060725.386	20150919060725.819
PX2 (135)	11169	11171	20150919060726.464	20150919060726.898
PX2 (135)	11171	11174	20150919060726.898	20150919060727.546
PX2 (135)	11182	11184	20150919060729.276	20150919060731.222
PX2 (135)	11185	11188	20150919060731.441	20150919060732.089
PX2 (135)	11193	11200	20150919060733.167	20150919060734.683
PX2 (135)	11203	11206	20150919060735.331	20150919060735.980
PX2 (135)	11208	11211	20150919060736.413	20150919060737.062
PX2 (135)	11211	11214	20150919060737.062	20150919060739.222
PX3 (140)	8089	8092	20150919055344.614	20150919055345.262
PX3 (140)	8094	8097	20150919055347.208	20150919055347.856
PX3 (140)	8099	8103	20150919055348.290	20150919055349.153
PX3 (140)	8105	8113	20150919055349.586	20150919055351.317
PX3 (140)	8114	8116	20150919055351.532	20150919055351.965
PX3 (140)	8117	8119	20150919055352.184	20150919055352.614
PX3 (140)	8120	8123	20150919055352.833	20150919055353.481
PX3 (140)	8130	8132	20150919055356.504	20150919055356.938
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	8132	8134	20150919055356.938	20150919055357.372
PX3 (140)	8137	8139	20150919055358.020	20150919055358.454
PX3 (140)	8140	8142	20150919055358.668	20150919055359.098
PX3 (140)	8143	8145	20150919055359.317	20150919055359.751
PX3 (140)	8145	8149	20150919055359.751	20150919055400.614
PX3 (140)	8149	8151	20150919055400.614	20150919055401.047
PX3 (140)	8151	8154	20150919055401.047	20150919055403.208
PX3 (140)	8157	8159	20150919055403.856	20150919055404.290
PX3 (140)	8196	8198	20150919055413.801	20150919055414.235
PX3 (140)	10090	10092	20150919060238.691	20150919060239.125
PX3 (140)	10097	10099	20150919060240.203	20150919060240.636
PX3 (140)	10099	10101	20150919060240.636	20150919060241.070
PX3 (140)	10106	10108	20150919060243.664	20150919060244.097
PX3 (140)	10114	10116	20150919060245.394	20150919060245.824
PX3 (140)	10116	10118	20150919060245.824	20150919060246.257
PX3 (140)	10142	10144	20150919060252.961	20150919060253.394
PX3 (140)	11128	11131	20150919060716.089	20150919060716.737
PX3 (140)	11131	11133	20150919060716.737	20150919060717.171
PX3 (140)	11134	11136	20150919060717.386	20150919060717.816
PX3 (140)	11137	11139	20150919060718.034	20150919060718.468
PX3 (140)	11141	11143	20150919060718.898	20150919060719.331
PX3 (140)	11148	11151	20150919060720.413	20150919060721.062
PX3 (140)	11158	11161	20150919060724.089	20150919060724.737
PX3 (140)	11164	11166	20150919060725.386	20150919060725.819
PX3 (140)	11176	11178	20150919060727.980	20150919060728.413
PX3 (140)	11180	11182	20150919060728.843	20150919060729.276
PX3 (140)	11182	11184	20150919060729.276	20150919060731.222
PX3 (140)	11184	11186	20150919060731.222	20150919060731.655
PX3 (140)	11186	11189	20150919060731.655	20150919060732.304
PX3 (140)	11189	11193	20150919060732.304	20150919060733.167
PX3 (140)	11193	11195	20150919060733.167	20150919060733.601
PX3 (140)	11196	11200	20150919060733.816	20150919060734.683
PX3 (140)	11201	11203	20150919060734.898	20150919060735.331
PX3 (140)	11203	11206	20150919060735.331	20150919060735.980
PX3 (140)	11206	11208	20150919060735.980	20150919060736.413
PX3 (140)	11208	11211	20150919060736.413	20150919060737.062
PX3 (140)	11211	11214	20150919060737.062	20150919060739.222
PX4 (145)	8089	8092	20150919055344.614	20150919055345.262
PX4 (145)	8095	8097	20150919055347.426	20150919055347.856
PX4 (145)	8099	8102	20150919055348.290	20150919055348.938
PX4 (145)	8106	8108	20150919055349.805	20150919055350.235
PX4 (145)	8108	8111	20150919055350.235	20150919055350.883
PX4 (145)	8111	8117	20150919055350.883	20150919055352.184
PX4 (145)	8117	8119	20150919055352.184	20150919055352.614
PX4 (145)	8120	8122	20150919055352.833	20150919055353.262
PX4 (145)	8130	8132	20150919055356.504	20150919055356.938
PX4 (145)	8132	8134	20150919055356.938	20150919055357.372
PX4 (145)	8136	8138	20150919055357.805	20150919055358.235
PX4 (145)	8138	8145	20150919055358.235	20150919055359.751
PX4 (145)	8145	8149	20150919055359.751	20150919055400.614
PX4 (145)	8157	8159	20150919055403.856	20150919055404.290
PX4 (145)	8164	8166	20150919055405.372	20150919055405.805
PX4 (145)	8196	8198	20150919055413.801	20150919055414.235

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	10097	10099	20150919060240.203	20150919060240.636
PX4 (145)	10106	10108	20150919060243.664	20150919060244.097
PX4 (145)	10114	10116	20150919060245.394	20150919060245.824
PX4 (145)	10116	10118	20150919060245.824	20150919060246.257
PX4 (145)	10142	10144	20150919060252.961	20150919060253.394
PX4 (145)	11124	11126	20150919060715.222	20150919060715.655
PX4 (145)	11128	11131	20150919060716.089	20150919060716.737
PX4 (145)	11131	11133	20150919060716.737	20150919060717.171
PX4 (145)	11134	11136	20150919060717.386	20150919060717.816
PX4 (145)	11141	11143	20150919060718.898	20150919060719.331
PX4 (145)	11159	11161	20150919060724.304	20150919060724.737
PX4 (145)	11176	11178	20150919060727.980	20150919060728.413
PX4 (145)	11180	11182	20150919060728.843	20150919060729.276
PX4 (145)	11184	11186	20150919060731.222	20150919060731.655
PX4 (145)	11186	11189	20150919060731.655	20150919060732.304
PX4 (145)	11189	11196	20150919060732.304	20150919060733.816
PX4 (145)	11196	11200	20150919060733.816	20150919060734.683
PX4 (145)	11201	11203	20150919060734.898	20150919060735.331
PX4 (145)	11204	11208	20150919060735.546	20150919060736.413
PX4 (145)	11208	11214	20150919060736.413	20150919060739.222
IMG (150)	14455	14457	20150919055344.184	20150919055344.614
IMG (150)	14466	14468	20150919055347.208	20150919055347.641
IMG (150)	14471	14475	20150919055348.290	20150919055349.153
IMG (150)	14476	14482	20150919055349.372	20150919055350.668
IMG (150)	14484	14487	20150919055351.102	20150919055351.751
IMG (150)	14487	14489	20150919055351.751	20150919055352.184
IMG (150)	14489	14491	20150919055352.184	20150919055352.614
IMG (150)	14492	14495	20150919055352.833	20150919055353.481
IMG (150)	14495	14500	20150919055353.481	20150919055355.208
IMG (150)	14503	14505	20150919055355.856	20150919055356.290
IMG (150)	14505	14508	20150919055356.290	20150919055356.938
IMG (150)	14508	14510	20150919055356.938	20150919055357.372
IMG (150)	14511	14514	20150919055357.586	20150919055358.235
IMG (150)	14514	14520	20150919055358.235	20150919055359.532
IMG (150)	14520	14525	20150919055359.532	20150919055400.614
IMG (150)	14525	14528	20150919055400.614	20150919055401.262
IMG (150)	14533	14535	20150919055402.778	20150919055403.422
IMG (150)	14537	14540	20150919055403.856	20150919055404.504
IMG (150)	14544	14546	20150919055405.372	20150919055405.805
IMG (150)	345	347	20150919060239.339	20150919060239.773
IMG (150)	349	351	20150919060240.203	20150919060240.636
IMG (150)	355	358	20150919060241.500	20150919060242.582
IMG (150)	362	364	20150919060243.664	20150919060244.097
IMG (150)	368	370	20150919060244.961	20150919060245.394
IMG (150)	1516	1518	20150919060715.222	20150919060715.655
IMG (150)	1518	1520	20150919060715.655	20150919060716.089
IMG (150)	1520	1522	20150919060716.089	20150919060716.519
IMG (150)	1526	1528	20150919060717.386	20150919060717.816
IMG (150)	1542	1544	20150919060720.843	20150919060721.276
IMG (150)	1546	1550	20150919060721.925	20150919060723.222
IMG (150)	1555	1559	20150919060724.304	20150919060725.167
IMG (150)	1561	1563	20150919060725.601	20150919060726.034
IMG (150)	1563	1566	20150919060726.034	20150919060726.683
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	1566	1569	20150919060726.683	20150919060727.331
IMG (150)	1569	1571	20150919060727.331	20150919060727.761
IMG (150)	1571	1574	20150919060727.761	20150919060728.413
IMG (150)	1576	1578	20150919060728.843	20150919060729.276
IMG (150)	1579	1582	20150919060729.491	20150919060730.573
IMG (150)	1584	1586	20150919060731.222	20150919060731.655
IMG (150)	1586	1589	20150919060731.655	20150919060732.304
IMG (150)	1589	1591	20150919060732.304	20150919060732.737
IMG (150)	1592	1596	20150919060732.952	20150919060733.816
IMG (150)	1599	1601	20150919060734.464	20150919060734.898
IMG (150)	1601	1603	20150919060734.898	20150919060735.331
IMG (150)	1604	1608	20150919060735.546	20150919060736.413
IMG (150)	1608	1614	20150919060736.413	20150919060737.925
VER (160)	12125	12130	20150919055337.481	20150919055345.481
VER (160)	12132	12137	20150919055353.481	20150919055401.481
VER (160)	12138	12140	20150919055401.481	20150919055401.481
VER (160)	12462	12466	20150919060241.500	20150919060249.500
VER (160)	12633	12635	20150919060713.491	20150919060713.491
VER (160)	12635	12640	20150919060713.491	20150919060721.495
VER (160)	12640	12642	20150919060721.495	20150919060729.491
VER (160)	12643	12648	20150919060729.491	20150919060737.062
AUX (180)	5688	5690	20150919055345.911	20150919055401.911
AUX (180)	5754	5756	20150919060233.933	20150919060249.933
AUX (180)	5790	5792	20150919060721.925	20150919060737.925

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
19/09/2015 00:00:15	-	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)	99.49 %	-
GQisFlagQual set (PX2)	99.58 %	-
GQisFlagQual set (PX3)	99.62 %	-
GQisFlagQual set (PX4)	99.53 %	-
GQisFlagQual set (all)	99.56 %	-

Table 4: Quality flags

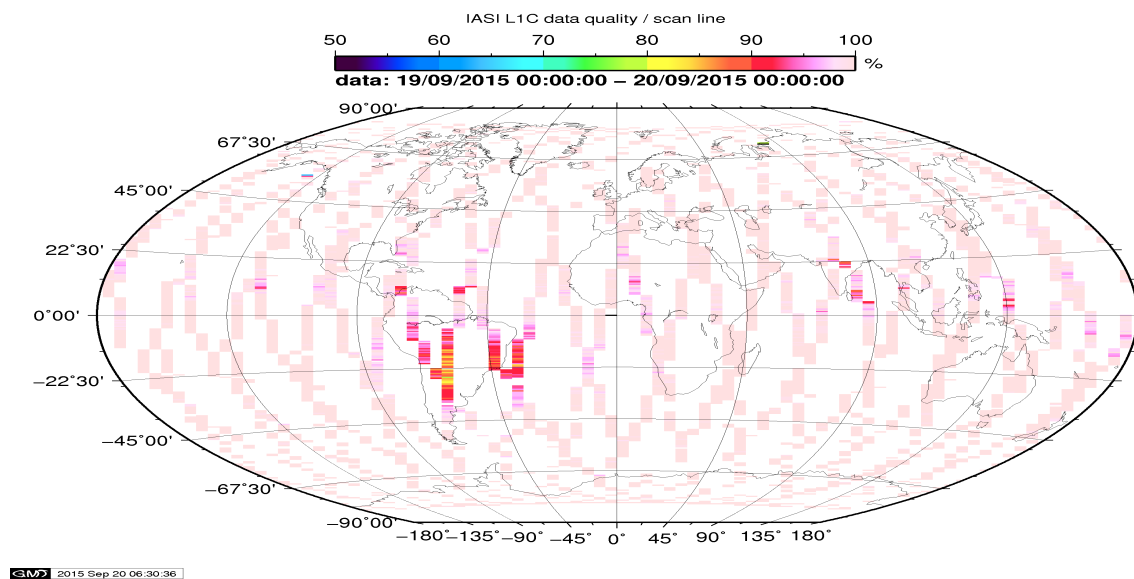


Figure 1: L1C data quality

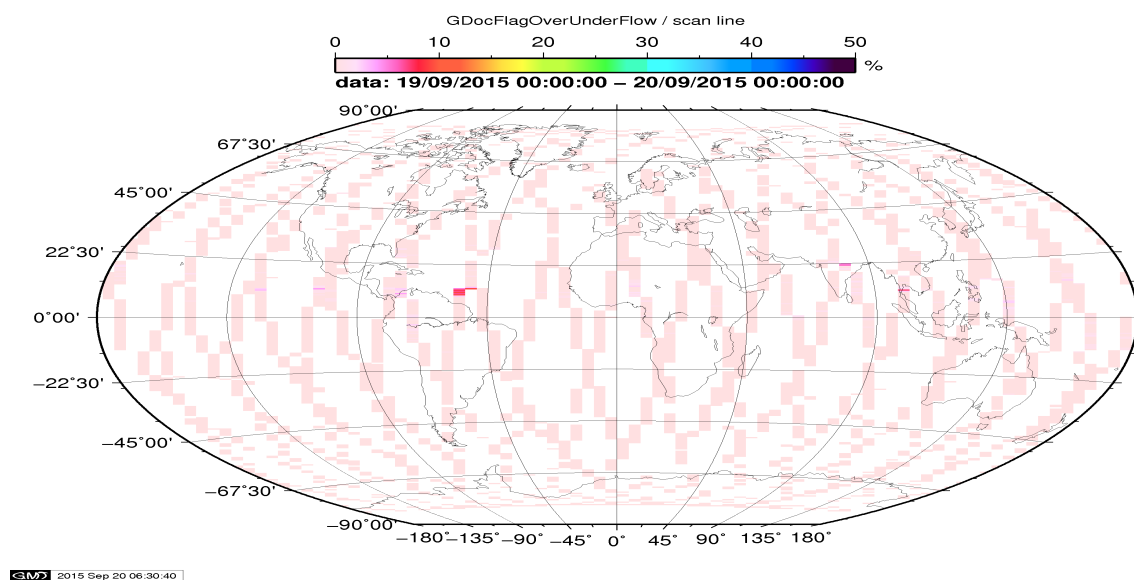


Figure 2: Flag of Over and Under Flows

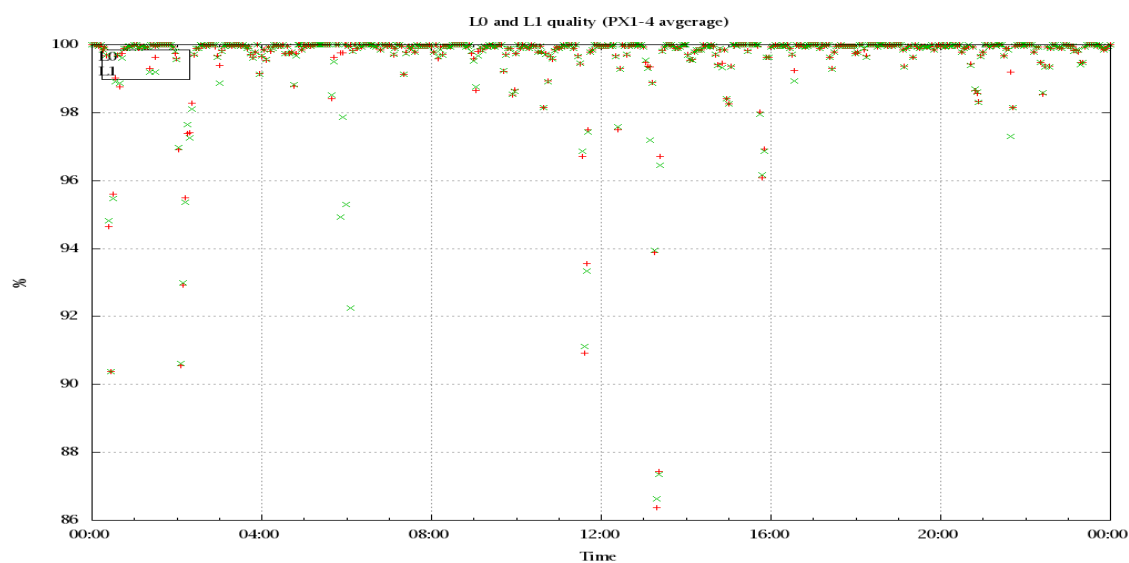


Figure 3: Level 0 and 1C overall quality

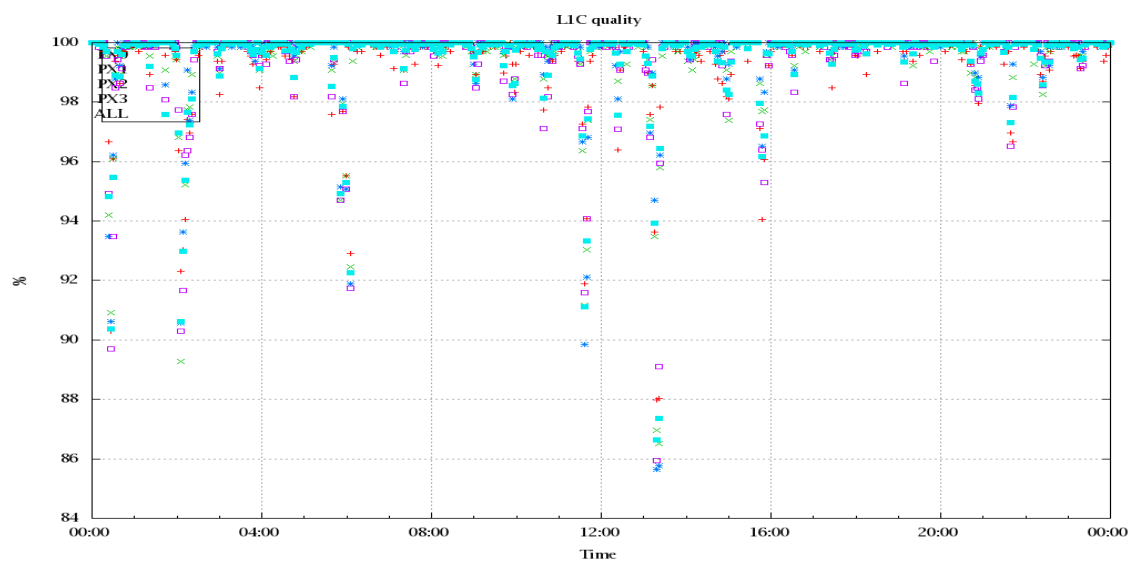


Figure 4: Level 1C quality

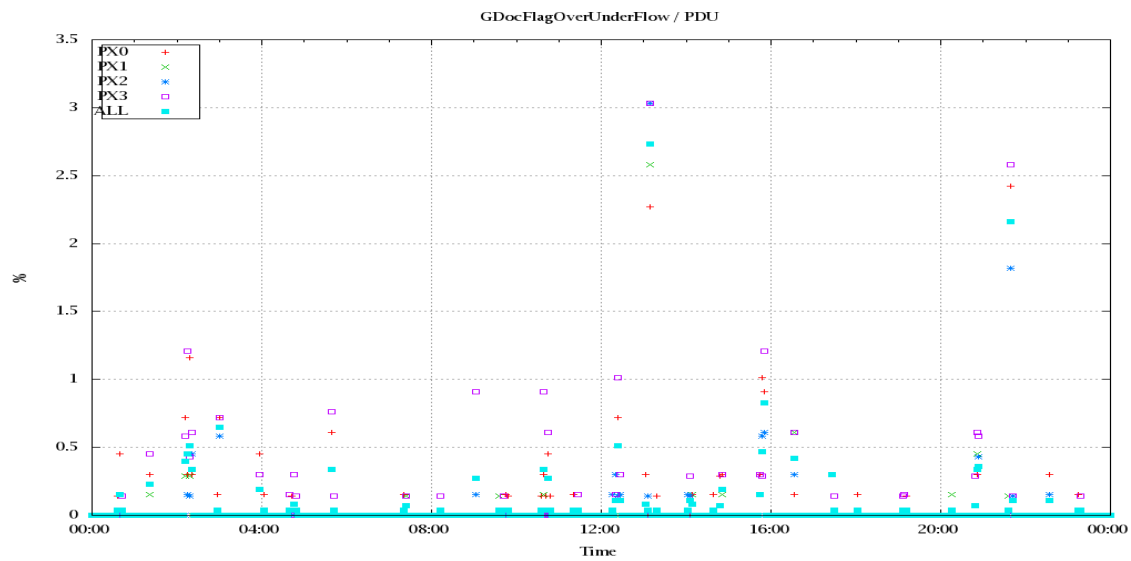


Figure 5: OverUnderFlowFlag timeseries

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.

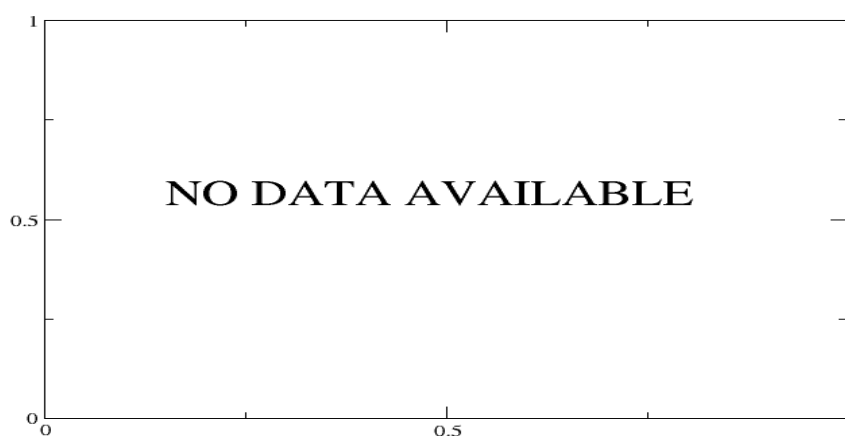


Figure 6: Average Radiance differences: OBS-CAL

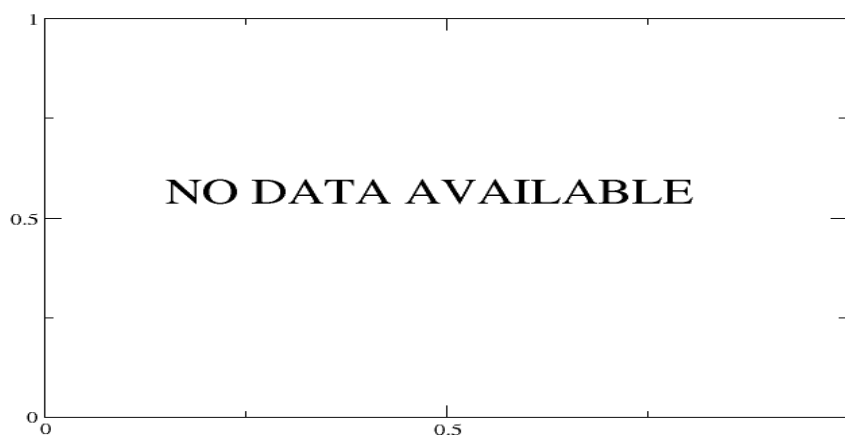


Figure 7: Standard Deviation of Radiance differences

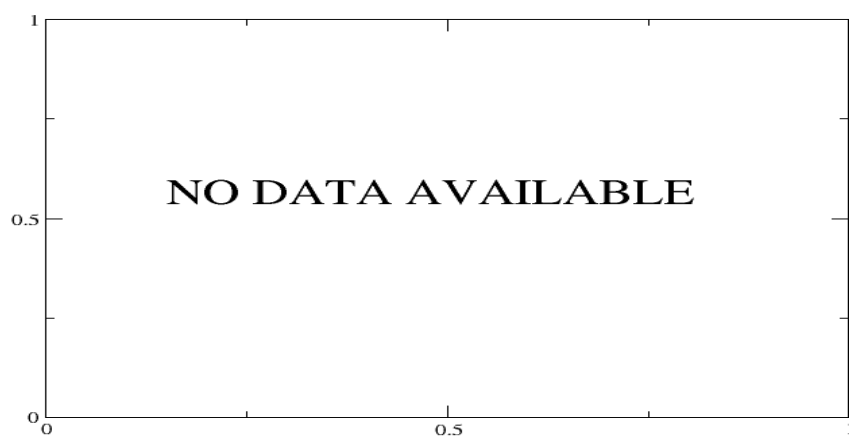


Figure 8: Average Radiance differences: OBS-CAL



Figure 9: Standard Deviation of Radiance differences

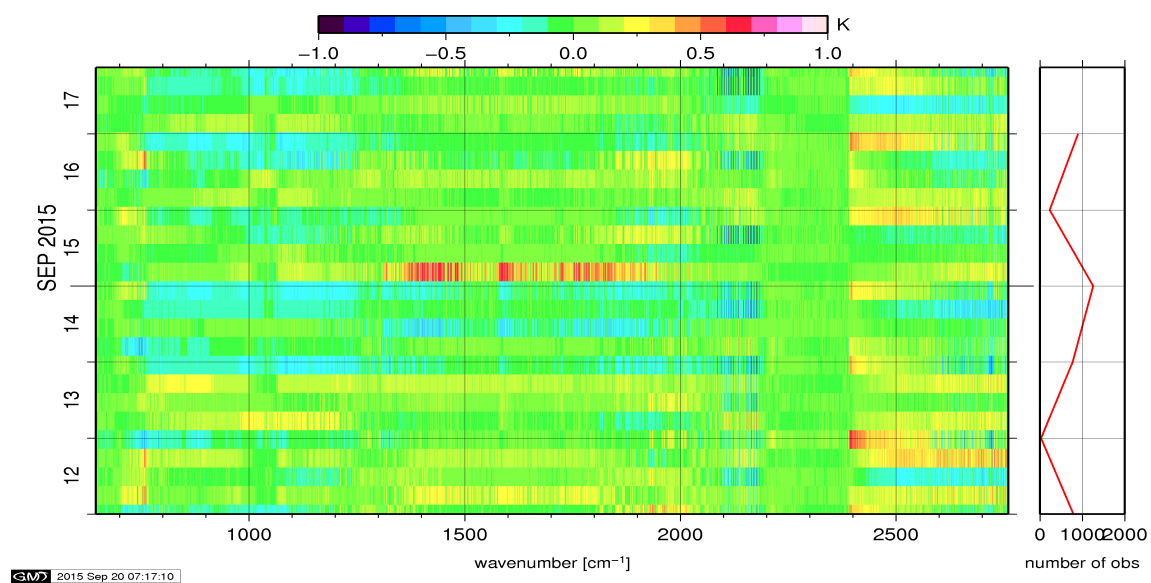


Figure 10: Radiance Anomaly in BRT: All Channels

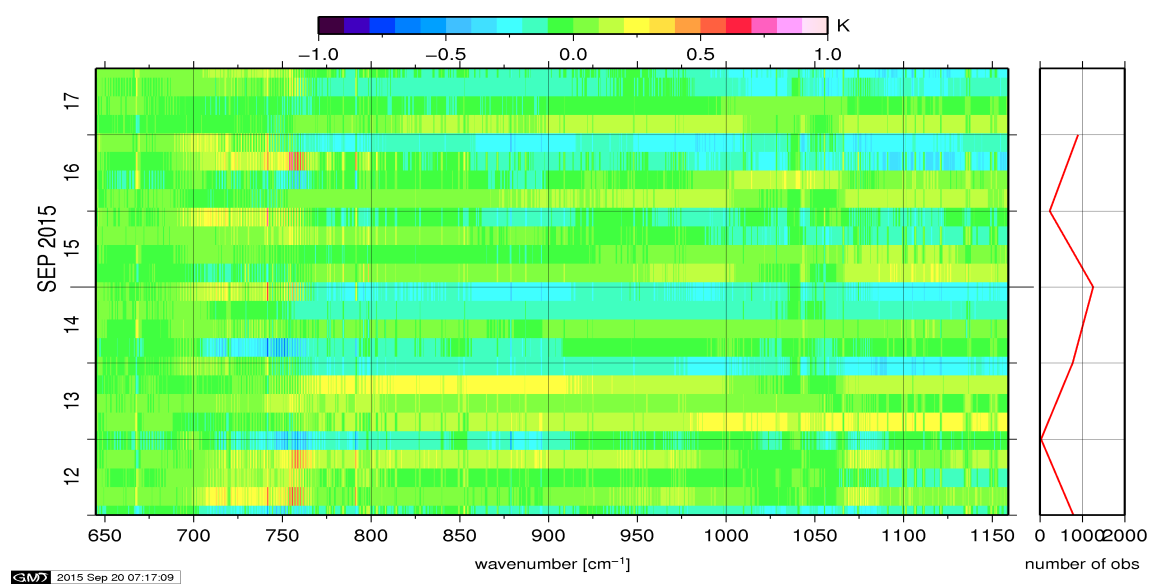


Figure 11: Radiance Anomaly in BRT: IASI Band 1

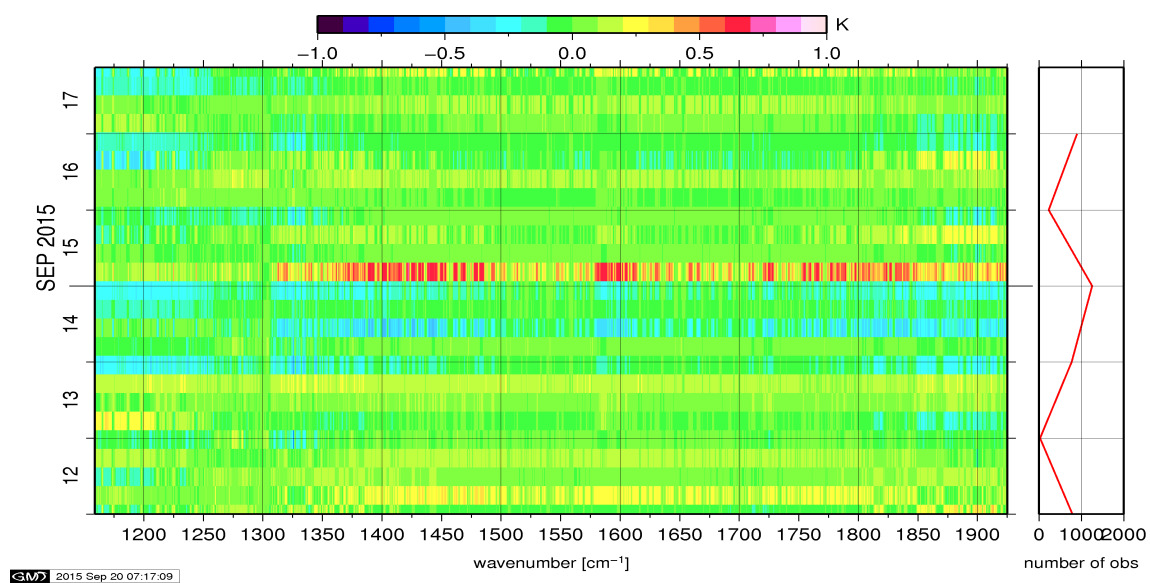


Figure 12: Radiance Anomaly in BRT: IASI Band 2

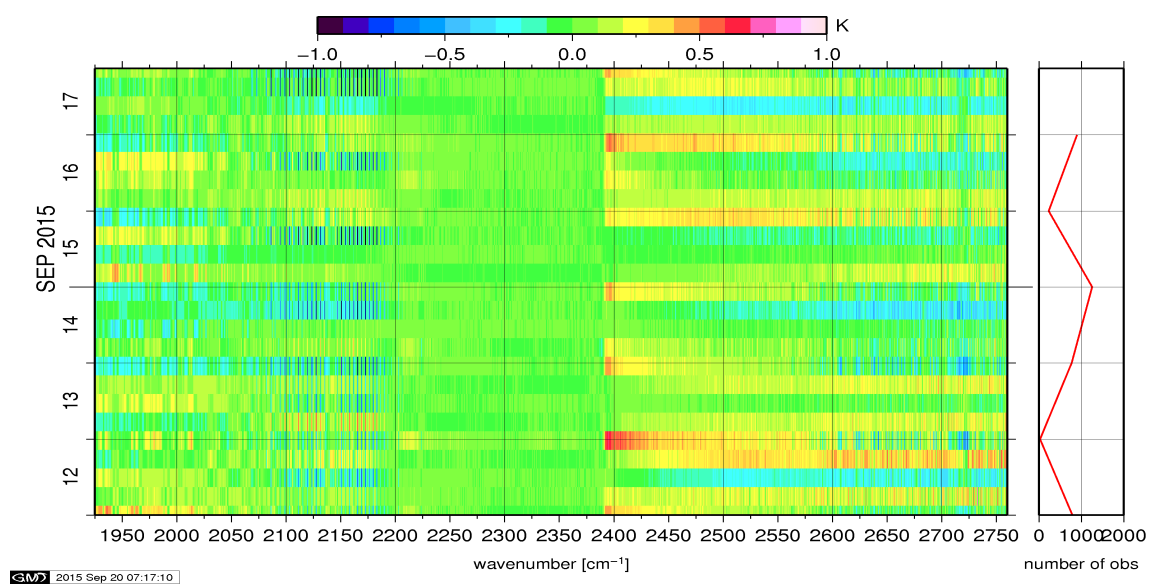


Figure 13: Radiance Anomaly in BRT: IASI Band 3

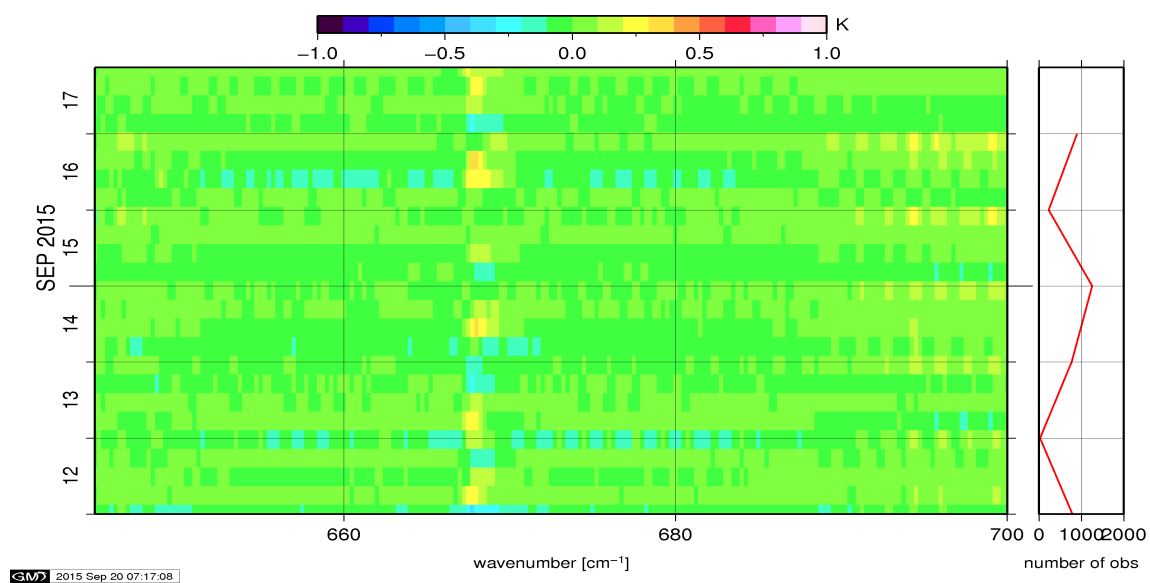


Figure 14: Radiance Anomaly in BRT: CO2 14

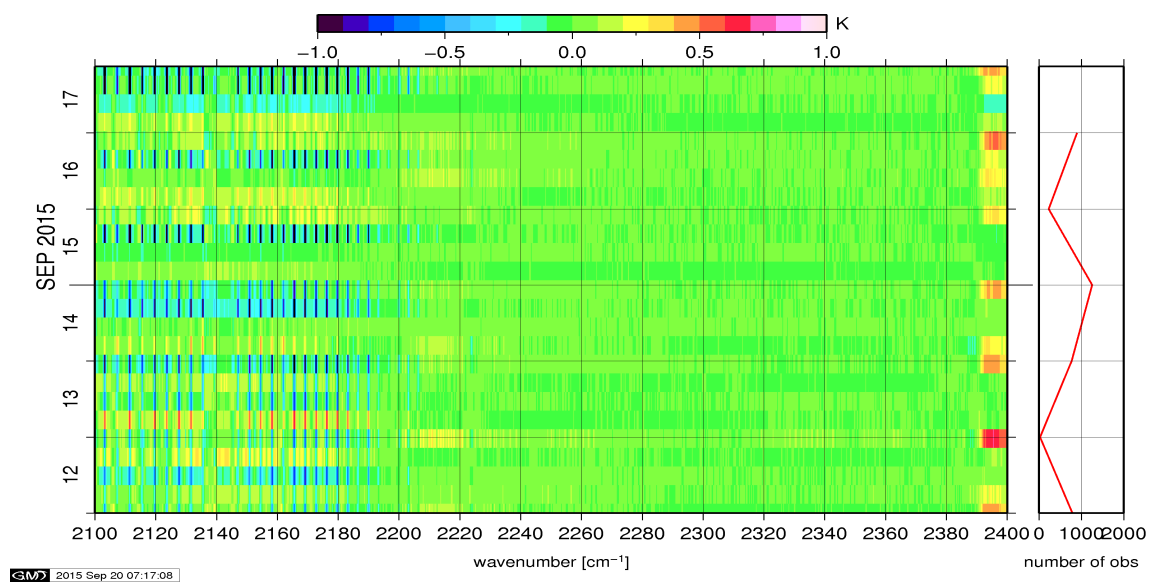


Figure 15: Radiance Anomaly in BRT: CO2 4.3

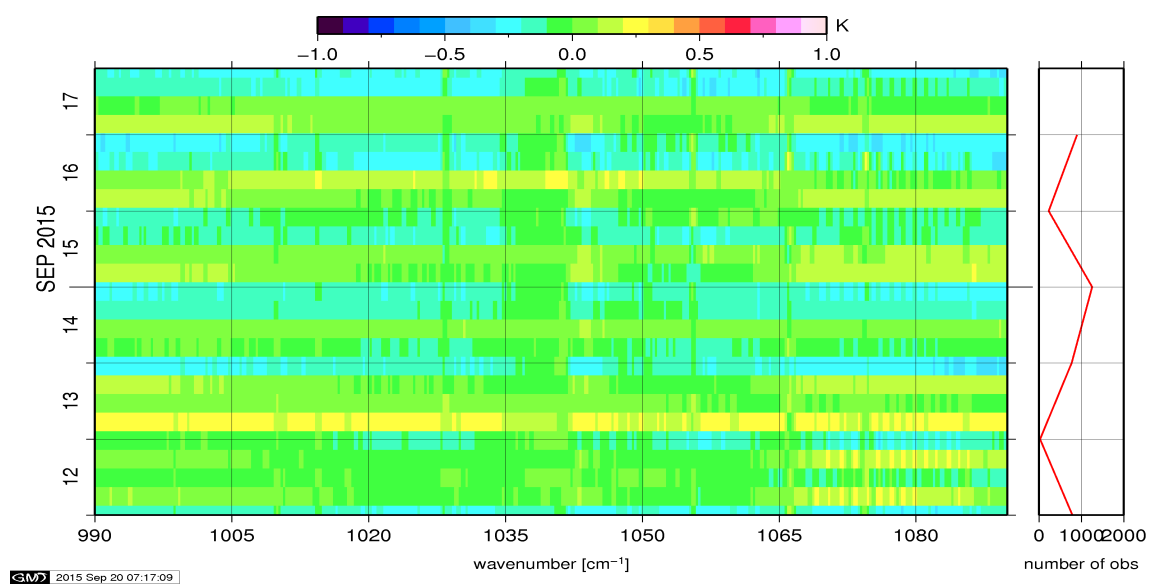


Figure 16: Radiance Anomaly in BRT: O3

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.

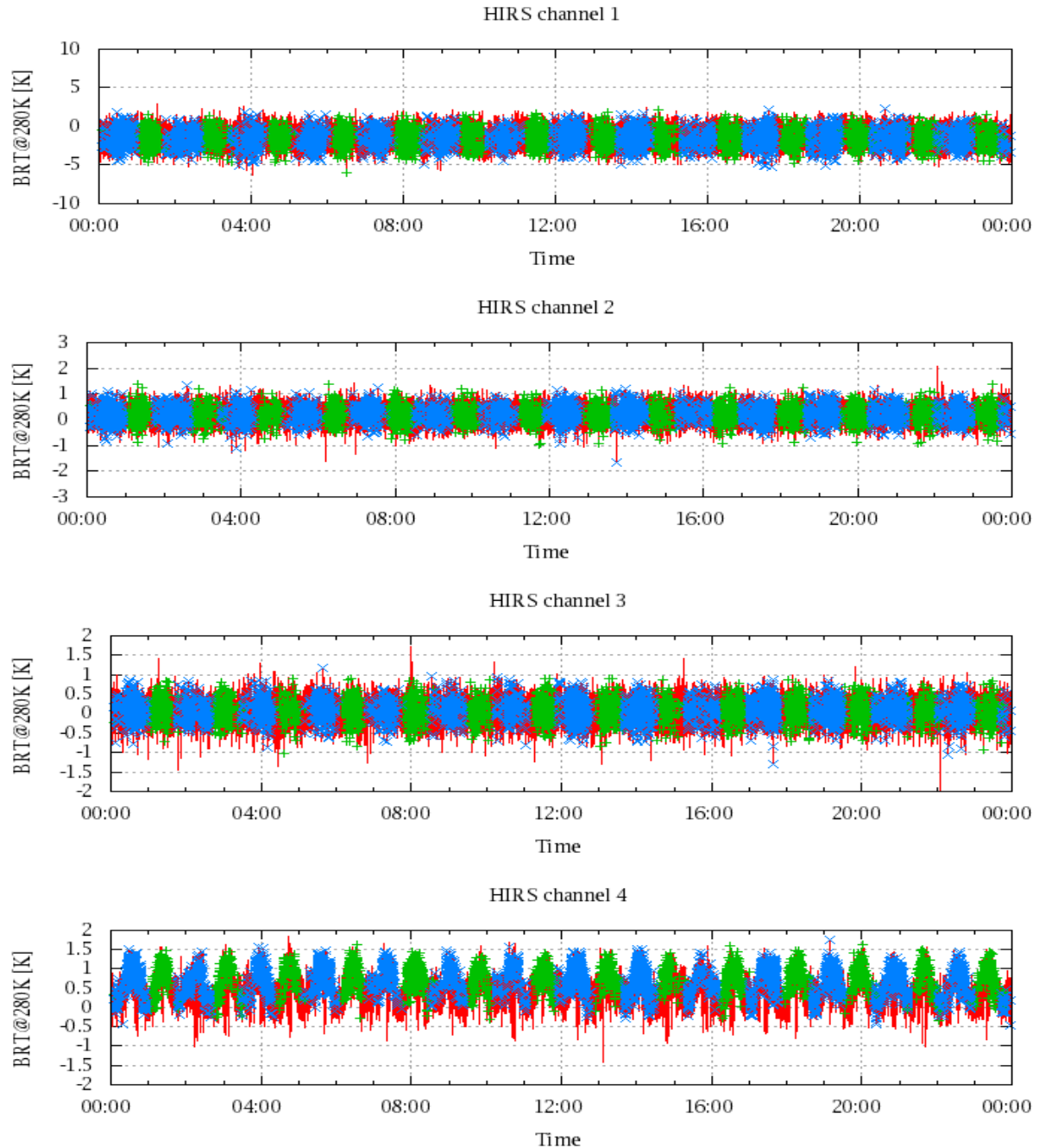


Figure 17: Radiance Differences in BRT

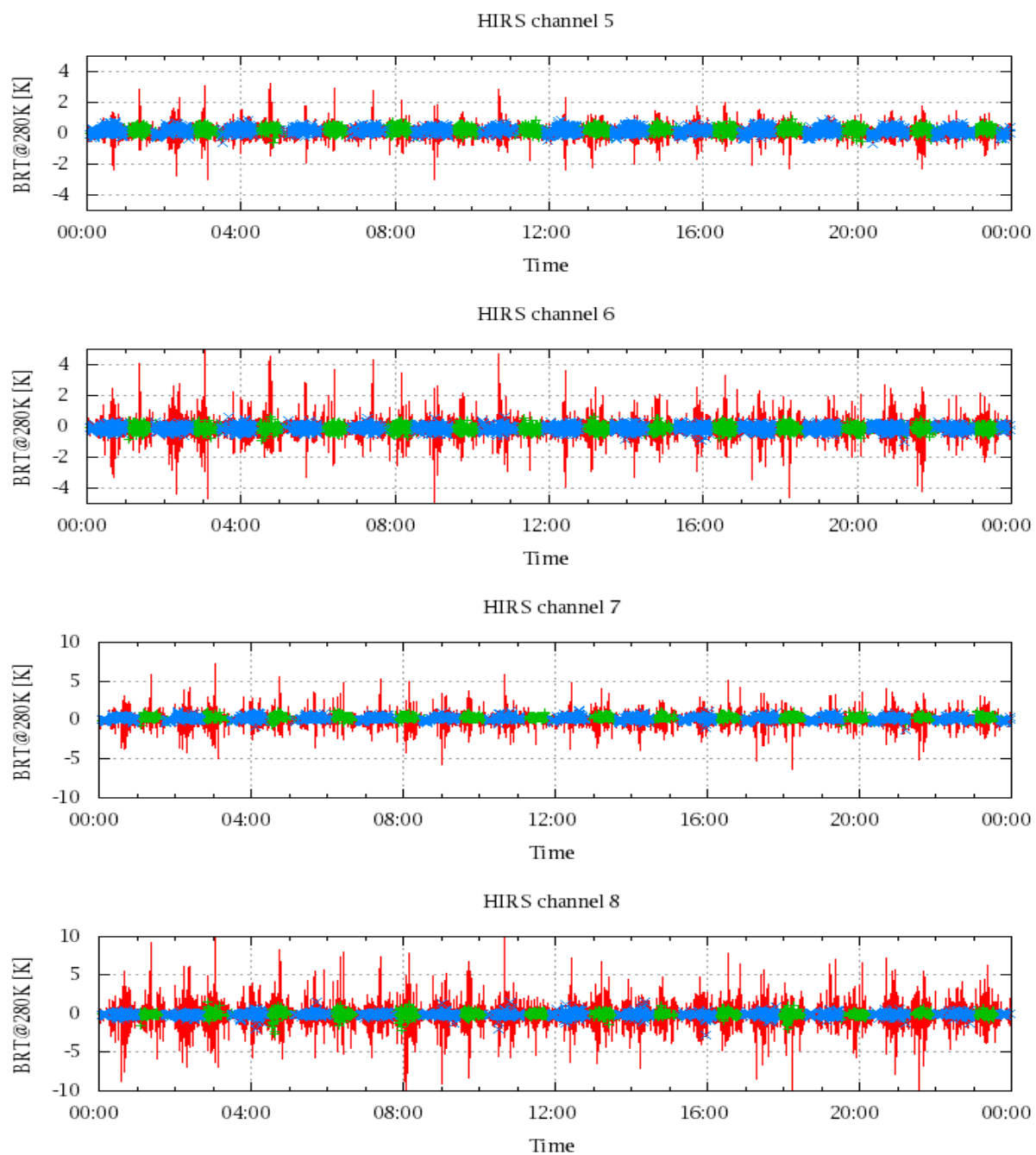


Figure 18: Radiance Differences in BRT

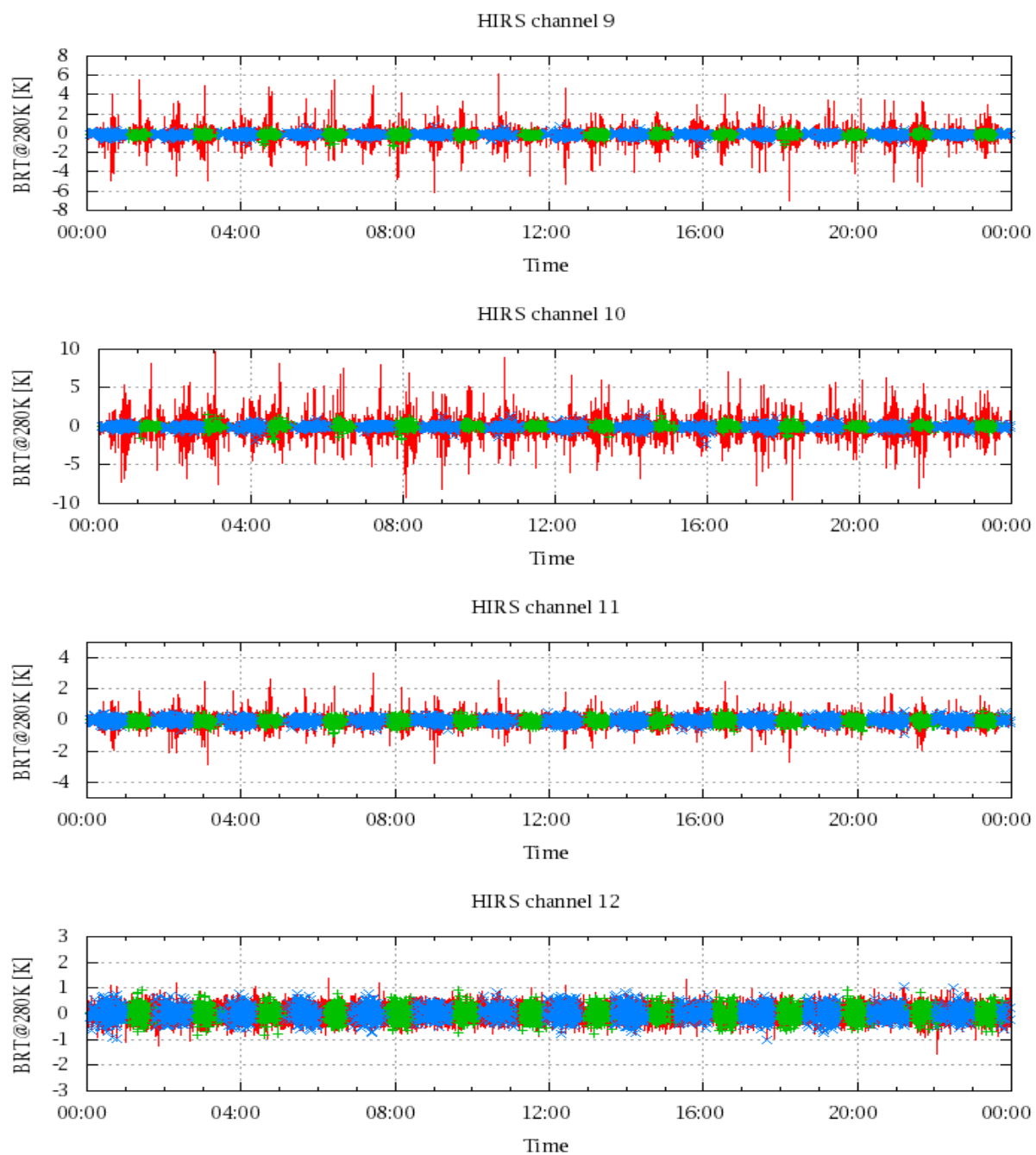


Figure 19: Radiance Differences in BRT

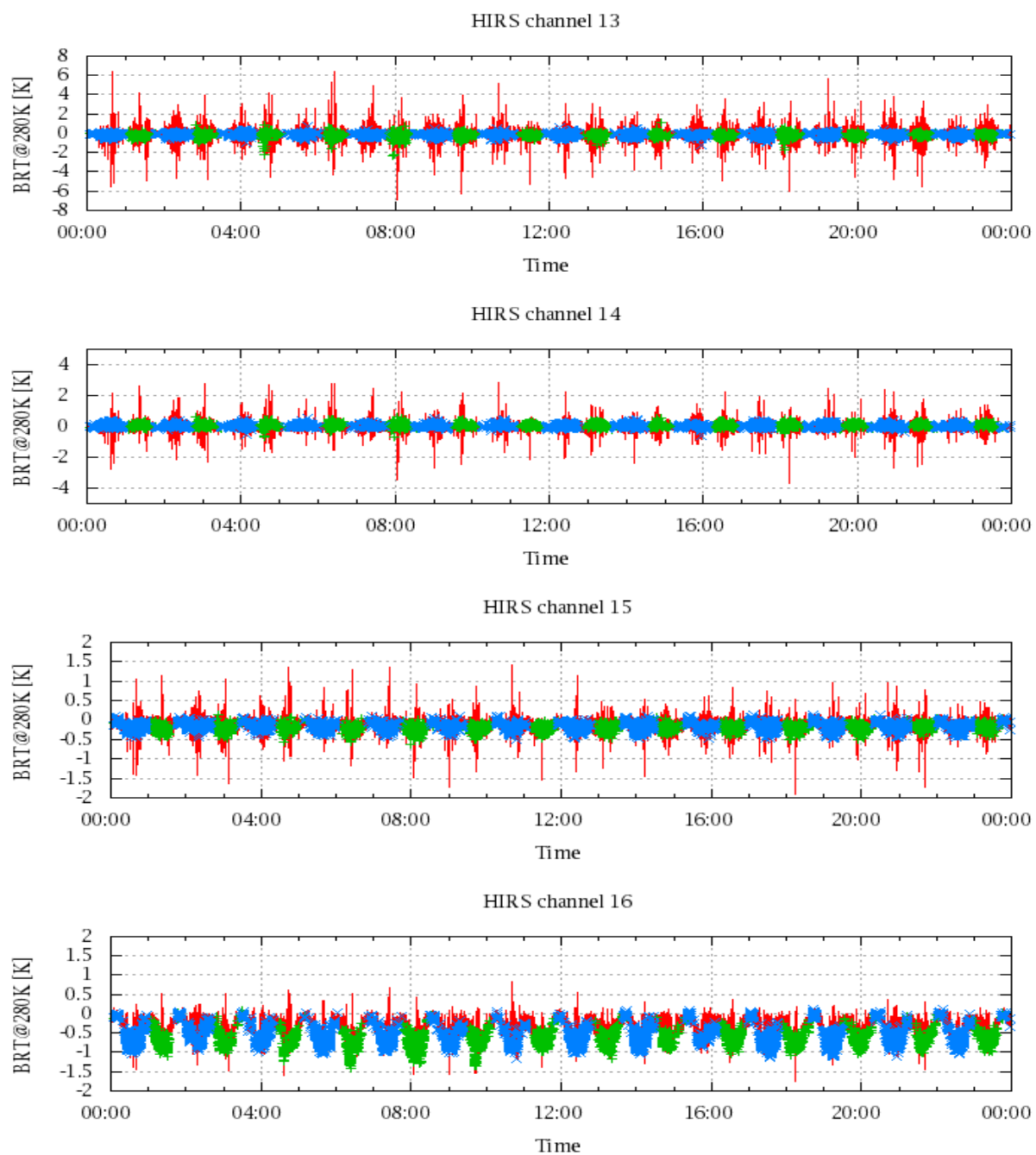


Figure 20: Radiance Differences in BRT

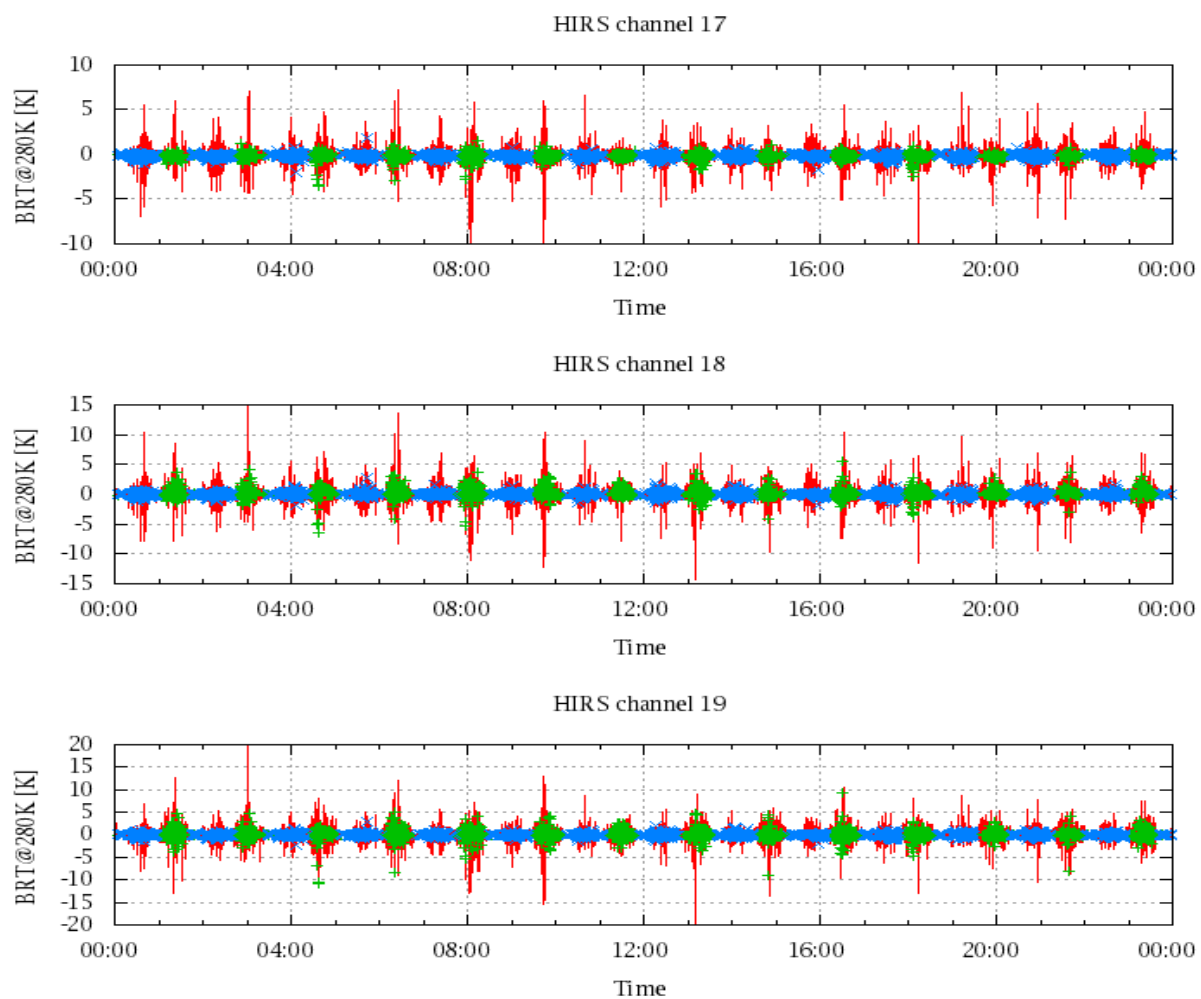


Figure 21: Radinace Differences in BRT