

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

21/08/2013 00:00:00 - 22/08/2013 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 21/08/2013 00:00:00 - 22/08/2013 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 21/08/2013 00:00:00 - 22/08/2013 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	479	-
L1 ENG distinct GEPSGranule	480	-
L1 DPX PDUs (RM: IASI-HIRS)	479	-
L1 DPS Files (RM: OBS-CAL NWP based)	479	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	2784	2791	20130821025410.960	20130821025412.475
PX1 (130)	2861	2863	20130821025430.635	20130821025432.581
PX1 (130)	2891	2893	20130821025438.635	20130821025440.581
PX1 (130)	2908	2915	20130821025443.823	20130821025445.338
PX1 (130)	15468	15609	20130821110726.779	20130821110804.833
PX1 (130)	4416	4419	20130821222630.284	20130821222632.444
PX1 (130)	4478	4498	20130821222646.718	20130821222652.554
PX1 (130)	4508	4532	20130821222654.718	20130821222701.417
PX1 (130)	4563	4568	20130821222709.636	20130821222710.718
PX1 (130)	4580	4586	20130821222714.823	20130821222716.120
PX1 (130)	4607	4612	20130821222722.175	20130821222723.257
PX1 (130)	4643	4779	20130821222731.472	20130821222808.444
PX1 (130)	4821	4831	20130821222819.038	20130821222821.202
PX1 (130)	4850	4856	20130821222826.823	20130821222828.120
PX1 (130)	4861	4989	20130821222829.198	20130821222904.479
PX1 (130)	5078	5087	20130821222926.749	20130821222930.206
PX1 (130)	5105	5289	20130821222934.100	20130821223024.479
PX1 (130)	5293	5459	20130821223025.342	20130821223108.799

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APID	Seq from	Seq to	Time from	Time to
PX1 (130)	5467	5499	20130821223110.530	20130821223120.475
PX1 (130)	5549	5559	20130821223132.799	20130821223136.475
PX1 (130)	5565	5575	20130821223137.772	20130821223139.936
PX1 (130)	5581	5587	20130821223141.229	20130821223142.530
PX1 (130)	8591	8598	20130821224504.884	20130821224506.396
PX1 (130)	6576	6593	20130821234856.667	20130821234900.343
PX1 (130)	6634	6643	20130821234910.722	20130821234914.183
PX1 (130)	6649	6656	20130821234915.480	20130821234916.992
PX1 (130)	6789	6804	20130821234953.316	20130821234956.558
PX1 (130)	6820	6828	20130821235001.531	20130821235003.261
PX1 (130)	6836	7044	20130821235004.992	20130821235100.558
PX1 (130)	7711	7720	20130821235358.065	20130821235401.526
PX1 (130)	7764	7824	20130821235412.550	20130821235428.550
PX1 (130)	7830	7854	20130821235429.847	20130821235436.550
PX1 (130)	9014	9033	20130821235946.416	20130821235950.526
PX2 (135)	2784	2790	20130821025410.960	20130821025412.256
PX2 (135)	2861	2863	20130821025430.635	20130821025432.581
PX2 (135)	2891	2893	20130821025438.635	20130821025440.581
PX2 (135)	2908	2915	20130821025443.823	20130821025445.338
PX2 (135)	15468	15609	20130821110726.779	20130821110804.833
PX2 (135)	4416	4419	20130821222630.284	20130821222632.444
PX2 (135)	4477	4498	20130821222646.499	20130821222652.554
PX2 (135)	4508	4532	20130821222654.718	20130821222701.417
PX2 (135)	4563	4568	20130821222709.636	20130821222710.718
PX2 (135)	4580	4586	20130821222714.823	20130821222716.120
PX2 (135)	4607	4612	20130821222722.175	20130821222723.257
PX2 (135)	4643	4779	20130821222731.472	20130821222808.444
PX2 (135)	4821	4831	20130821222819.038	20130821222821.202
PX2 (135)	4849	4855	20130821222826.604	20130821222827.901
PX2 (135)	4860	4989	20130821222828.983	20130821222904.479
PX2 (135)	5078	5087	20130821222926.749	20130821222930.206
PX2 (135)	5105	5289	20130821222934.100	20130821223024.479
PX2 (135)	5292	5459	20130821223025.124	20130821223108.799
PX2 (135)	5466	5499	20130821223110.315	20130821223120.475
PX2 (135)	5549	5559	20130821223132.799	20130821223136.475
PX2 (135)	5565	5576	20130821223137.772	20130821223140.151
PX2 (135)	5580	5587	20130821223141.014	20130821223142.530
PX2 (135)	8591	8598	20130821224504.884	20130821224506.396
PX2 (135)	9621	9623	20130821224939.040	20130821224939.470
PX2 (135)	6576	6593	20130821234856.667	20130821234900.343
PX2 (135)	6634	6643	20130821234910.722	20130821234914.183
PX2 (135)	6649	6656	20130821234915.480	20130821234916.992
PX2 (135)	6789	6804	20130821234953.316	20130821234956.558
PX2 (135)	6819	6827	20130821235001.316	20130821235003.046
PX2 (135)	6836	7044	20130821235004.992	20130821235100.558
PX2 (135)	7711	7720	20130821235358.065	20130821235401.526
PX2 (135)	7764	7823	20130821235412.550	20130821235428.335
PX2 (135)	7830	7854	20130821235429.847	20130821235436.550
PX2 (135)	9014	9032	20130821235946.416	20130821235950.307
PX3 (140)	2784	2790	20130821025410.960	20130821025412.256
PX3 (140)	2806	2808	20130821025417.229	20130821025417.663
PX3 (140)	2860	2863	20130821025430.420	20130821025432.581
PX3 (140)	2891	2893	20130821025438.635	20130821025440.581

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APID	Seq from	Seq to	Time from	Time to
PX3 (140)	2907	2915	20130821025443.608	20130821025445.338
PX3 (140)	9162	9164	20130821103925.492	20130821103925.926
PX3 (140)	15468	15609	20130821110726.779	20130821110804.833
PX3 (140)	4416	4419	20130821222630.284	20130821222632.444
PX3 (140)	4478	4497	20130821222646.718	20130821222652.339
PX3 (140)	4508	4532	20130821222654.718	20130821222701.417
PX3 (140)	4562	4568	20130821222709.421	20130821222710.718
PX3 (140)	4580	4586	20130821222714.823	20130821222716.120
PX3 (140)	4607	4612	20130821222722.175	20130821222723.257
PX3 (140)	4643	4779	20130821222731.472	20130821222808.444
PX3 (140)	4821	4831	20130821222819.038	20130821222821.202
PX3 (140)	4849	4855	20130821222826.604	20130821222827.901
PX3 (140)	4860	4989	20130821222828.983	20130821222904.479
PX3 (140)	5078	5087	20130821222926.749	20130821222930.206
PX3 (140)	5105	5289	20130821222934.100	20130821223024.479
PX3 (140)	5292	5459	20130821223025.124	20130821223108.799
PX3 (140)	5467	5499	20130821223110.530	20130821223120.475
PX3 (140)	5549	5559	20130821223132.799	20130821223136.475
PX3 (140)	5565	5575	20130821223137.772	20130821223139.936
PX3 (140)	5580	5587	20130821223141.014	20130821223142.530
PX3 (140)	8590	8598	20130821224504.665	20130821224506.396
PX3 (140)	6575	6593	20130821234856.453	20130821234900.343
PX3 (140)	6634	6643	20130821234910.722	20130821234914.183
PX3 (140)	6649	6656	20130821234915.480	20130821234916.992
PX3 (140)	6789	6804	20130821234953.316	20130821234956.558
PX3 (140)	6819	6827	20130821235001.316	20130821235003.046
PX3 (140)	6836	6842	20130821235004.992	20130821235006.288
PX3 (140)	6842	7043	20130821235006.288	20130821235100.343
PX3 (140)	7710	7720	20130821235357.851	20130821235401.526
PX3 (140)	7763	7823	20130821235412.335	20130821235428.335
PX3 (140)	7829	7854	20130821235429.632	20130821235436.550
PX3 (140)	9012	9014	20130821235945.983	20130821235946.416
PX3 (140)	9014	9032	20130821235946.416	20130821235950.307
PX4 (145)	2763	2765	20130821025404.905	20130821025405.338
PX4 (145)	2784	2790	20130821025410.960	20130821025412.256
PX4 (145)	2860	2863	20130821025430.420	20130821025432.581
PX4 (145)	2891	2893	20130821025438.635	20130821025440.581
PX4 (145)	2907	2915	20130821025443.608	20130821025445.338
PX4 (145)	9162	9164	20130821103925.492	20130821103925.926
PX4 (145)	15468	15609	20130821110726.779	20130821110804.833
PX4 (145)	4416	4419	20130821222630.284	20130821222632.444
PX4 (145)	4478	4497	20130821222646.718	20130821222652.339
PX4 (145)	4508	4532	20130821222654.718	20130821222701.417
PX4 (145)	4562	4567	20130821222709.421	20130821222710.499
PX4 (145)	4580	4585	20130821222714.823	20130821222715.905
PX4 (145)	4607	4611	20130821222722.175	20130821222723.038
PX4 (145)	4643	4659	20130821222731.472	20130821222736.444
PX4 (145)	4659	4779	20130821222736.444	20130821222808.444
PX4 (145)	4820	4830	20130821222818.823	20130821222820.983
PX4 (145)	4849	4855	20130821222826.604	20130821222827.901
PX4 (145)	4860	4989	20130821222828.983	20130821222904.479
PX4 (145)	5078	5087	20130821222926.749	20130821222930.206
PX4 (145)	5105	5289	20130821222934.100	20130821223024.479

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	5292	5458	20130821223025.124	20130821223108.585
PX4 (145)	5466	5499	20130821223110.315	20130821223120.475
PX4 (145)	5549	5559	20130821223132.799	20130821223136.475
PX4 (145)	5565	5575	20130821223137.772	20130821223139.936
PX4 (145)	5580	5587	20130821223141.014	20130821223142.530
PX4 (145)	8590	8597	20130821224504.665	20130821224506.181
PX4 (145)	6576	6593	20130821234856.667	20130821234900.343
PX4 (145)	6634	6642	20130821234910.722	20130821234913.964
PX4 (145)	6649	6655	20130821234915.480	20130821234916.777
PX4 (145)	6789	6803	20130821234953.316	20130821234956.343
PX4 (145)	6819	6827	20130821235001.316	20130821235003.046
PX4 (145)	6836	7043	20130821235004.992	20130821235100.343
PX4 (145)	7711	7719	20130821235358.065	20130821235401.308
PX4 (145)	7763	7823	20130821235412.335	20130821235428.335
PX4 (145)	7829	7854	20130821235429.632	20130821235436.550
PX4 (145)	9014	9032	20130821235946.416	20130821235950.307
IMG (150)	12003	12005	20130821025404.905	20130821025405.338
IMG (150)	12027	12034	20130821025410.745	20130821025412.256
IMG (150)	12112	12115	20130821025430.420	20130821025431.284
IMG (150)	12147	12153	20130821025438.635	20130821025440.581
IMG (150)	12167	12175	20130821025443.608	20130821025445.338
IMG (150)	6740	6901	20130821110726.779	20130821110804.833
IMG (150)	16059	16063	20130821222630.069	20130821222631.147
IMG (150)	16130	16153	20130821222646.718	20130821222652.339
IMG (150)	16163	16191	20130821222654.499	20130821222701.202
IMG (150)	16226	16231	20130821222709.421	20130821222710.499
IMG (150)	16248	16253	20130821222714.823	20130821222715.905
IMG (150)	16279	16283	20130821222722.175	20130821222723.038
IMG (150)	16319	16336	20130821222731.472	20130821222735.362
IMG (150)	16338	91	20130821222736.011	20130821222808.444
IMG (150)	136	146	20130821222818.823	20130821222820.983
IMG (150)	169	175	20130821222826.604	20130821222827.901
IMG (150)	180	325	20130821222828.983	20130821222903.175
IMG (150)	426	438	20130821222926.749	20130821222929.991
IMG (150)	456	666	20130821222933.885	20130821223023.397
IMG (150)	666	669	20130821223023.397	20130821223024.479
IMG (150)	672	859	20130821223025.124	20130821223108.799
IMG (150)	866	903	20130821223110.315	20130821223119.178
IMG (150)	961	971	20130821223132.799	20130821223135.178
IMG (150)	981	991	20130821223137.772	20130821223139.936
IMG (150)	996	1003	20130821223141.014	20130821223142.530
IMG (150)	4410	4417	20130821224504.665	20130821224506.181
IMG (150)	4311	4328	20130821234856.453	20130821234900.128
IMG (150)	4374	4386	20130821234910.722	20130821234913.964
IMG (150)	4392	4399	20130821234915.261	20130821234916.777
IMG (150)	4552	4567	20130821234953.101	20130821234956.343
IMG (150)	4580	4582	20130821234959.370	20130821235000.019
IMG (150)	4587	4595	20130821235001.316	20130821235003.046
IMG (150)	4603	4839	20130821235004.773	20130821235100.343
IMG (150)	5595	5608	20130821235358.065	20130821235401.526
IMG (150)	5655	5723	20130821235412.335	20130821235428.335
IMG (150)	5729	5758	20130821235429.632	20130821235436.550
IMG (150)	7073	7092	20130821235946.202	20130821235950.307
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	15696	15698	20130821025422.854	20130821025430.635
VER (160)	15701	15707	20130821025430.635	20130821025446.850
VER (160)	1414	1439	20130821110726.779	20130821110806.779
VER (160)	10494	10497	20130821222622.718	20130821222630.284
VER (160)	10504	10515	20130821222638.718	20130821222702.718
VER (160)	10534	10536	20130821222726.714	20130821222731.472
VER (160)	10537	10539	20130821222731.472	20130821222731.472
VER (160)	10539	10560	20130821222731.472	20130821222814.714
VER (160)	10569	10591	20130821222822.714	20130821222829.198
VER (160)	10606	10679	20130821222926.749	20130821223110.530
VER (160)	10684	10689	20130821223126.745	20130821223132.799
VER (160)	13597	13600	20130821234910.722	20130821234918.722
VER (160)	13629	13665	20130821234958.722	20130821235102.718
VER (160)	13774	13780	20130821235350.714	20130821235406.714
VER (160)	13784	13800	20130821235406.714	20130821235438.714
VER (160)	13806	13808	20130821235446.714	20130821235446.714
AUX (180)	6409	6411	20130821025431.284	20130821025447.284
AUX (180)	10105	10111	20130821110719.212	20130821110807.208
AUX (180)	15200	15203	20130821222639.151	20130821222703.147
AUX (180)	15207	15212	20130821222735.147	20130821222815.147
AUX (180)	15213	15218	20130821222823.147	20130821222903.175
AUX (180)	15220	15235	20130821222919.182	20130821223119.178
AUX (180)	15825	15833	20130821234959.152	20130821235103.152
AUX (180)	15854	15856	20130821235351.147	20130821235407.147
AUX (180)	15856	15860	20130821235407.147	20130821235439.147

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
21/08/2013 00:00:12	-	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	480	-
GQisFlagQual set (PX1)	99.41 %	-
GQisFlagQual set (PX2)	99.51 %	-
GQisFlagQual set (PX3)	99.51 %	-
GQisFlagQual set (PX4)	99.42 %	-
GQisFlagQual set (all)	99.46 %	-

Table 4: Quality flags

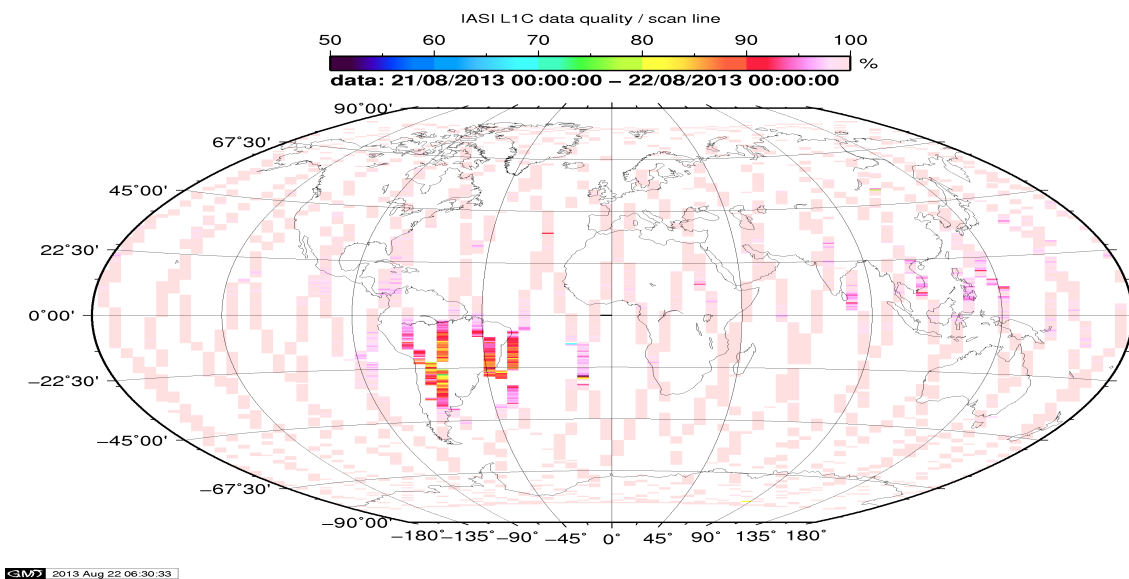


Figure 1: L1C data quality

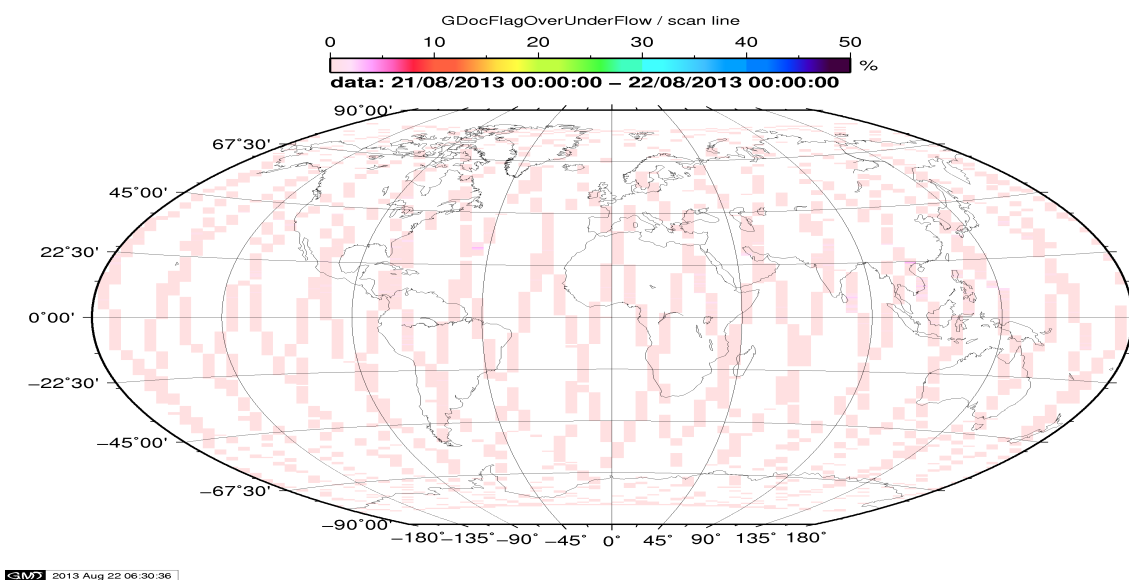


Figure 2: Flag of Over and Under Flows

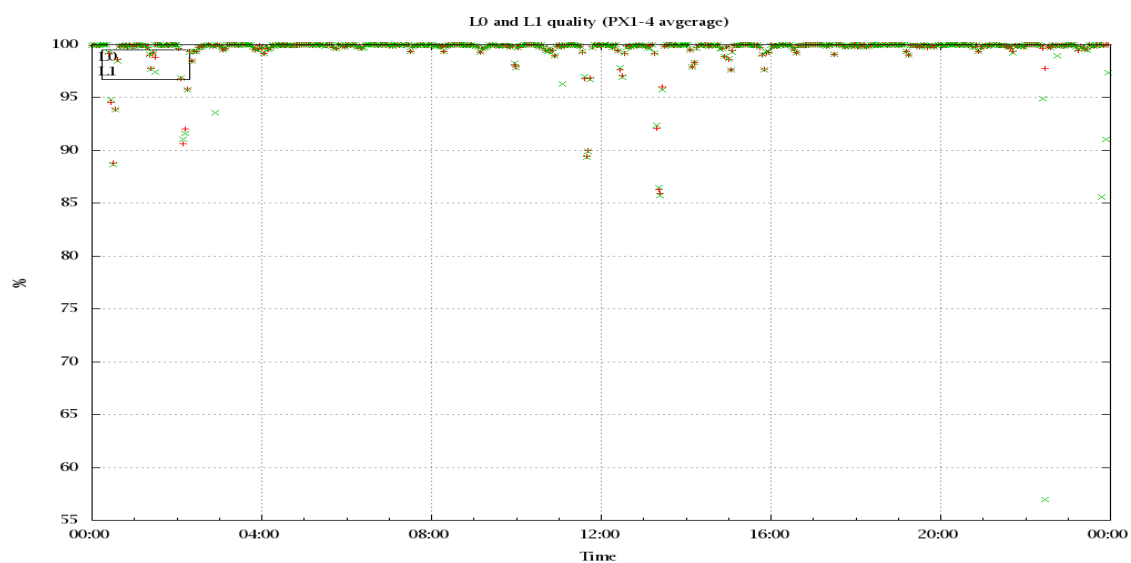


Figure 3: Level 0 and 1C overall quality

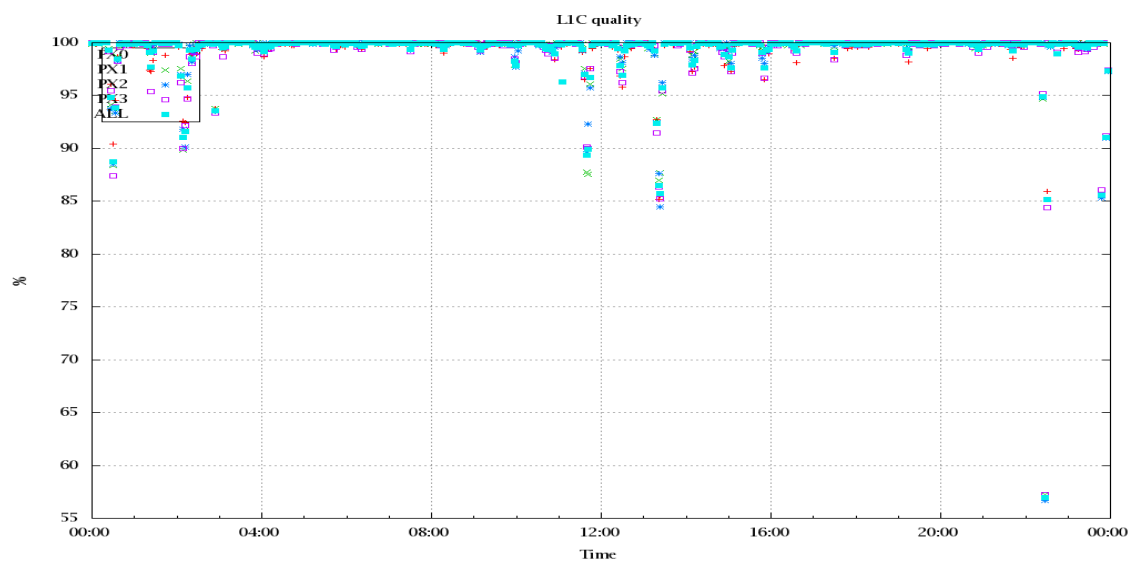


Figure 4: Level 1C quality

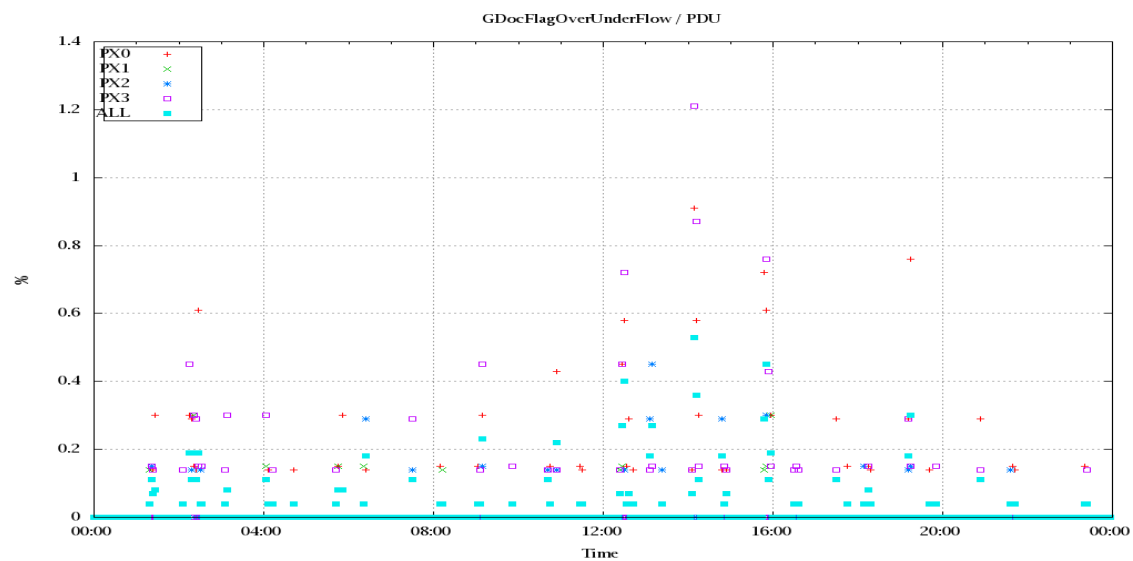


Figure 5: OverUnderFlowFlag timeseries

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.

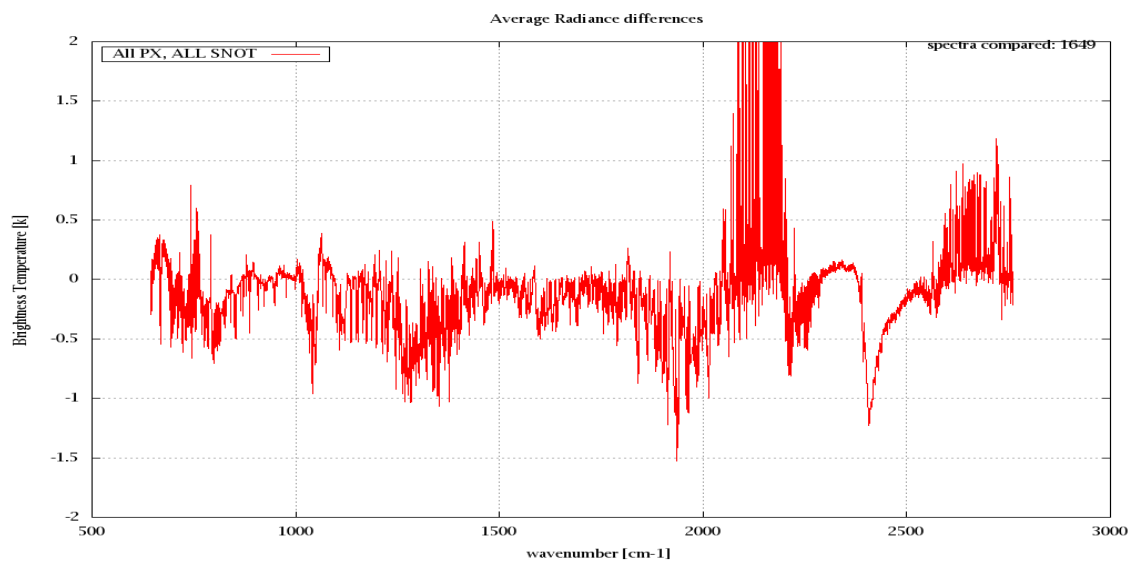


Figure 6: Average Radiance differences: OBS-CAL

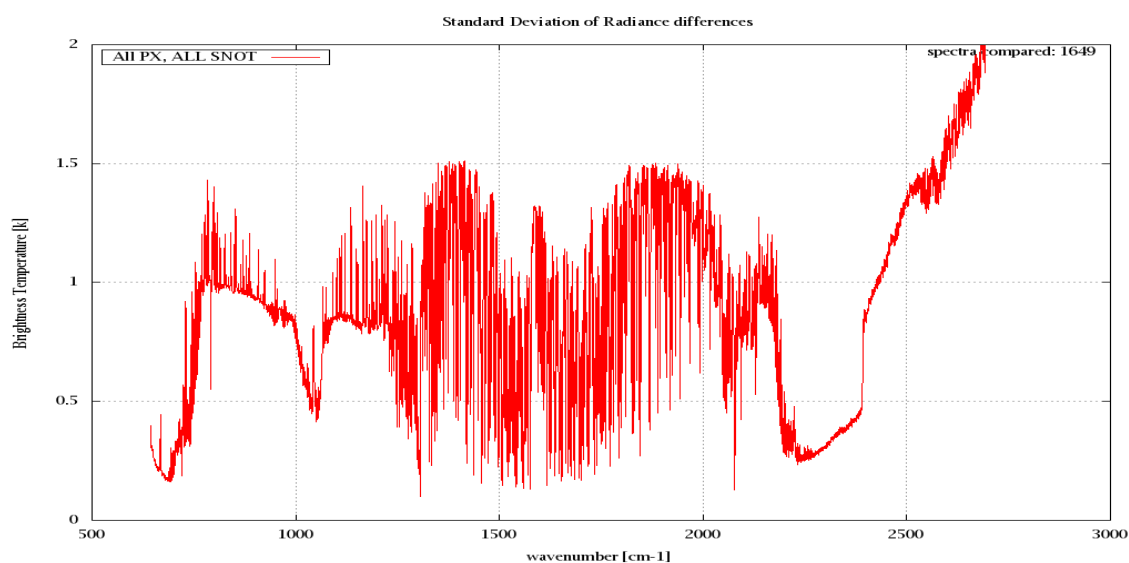


Figure 7: Standard Deviation of Radiance differences

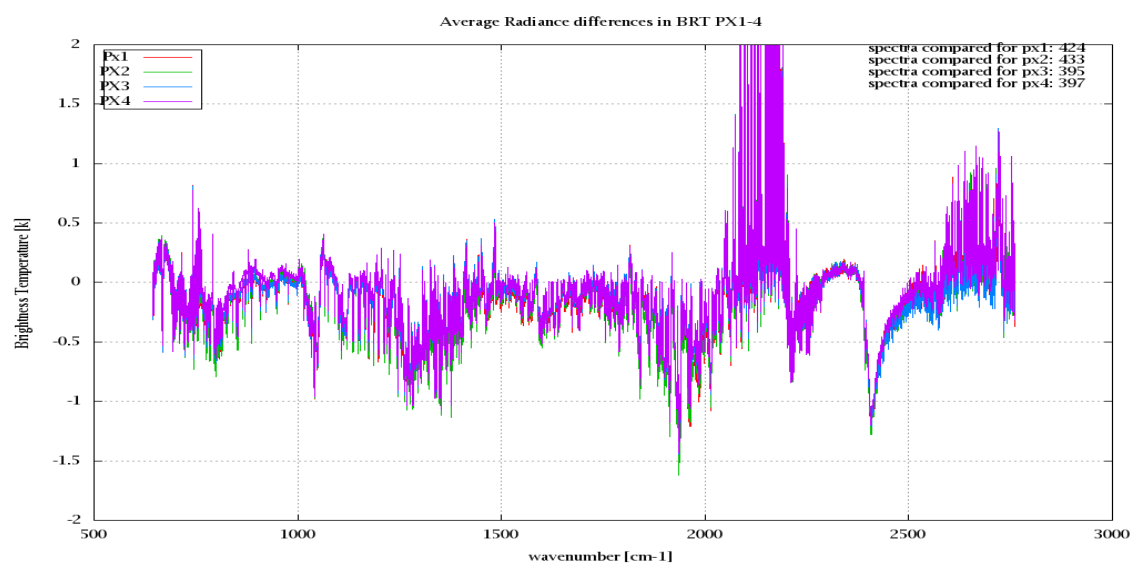


Figure 8: Average Radiance differences: OBS-CAL

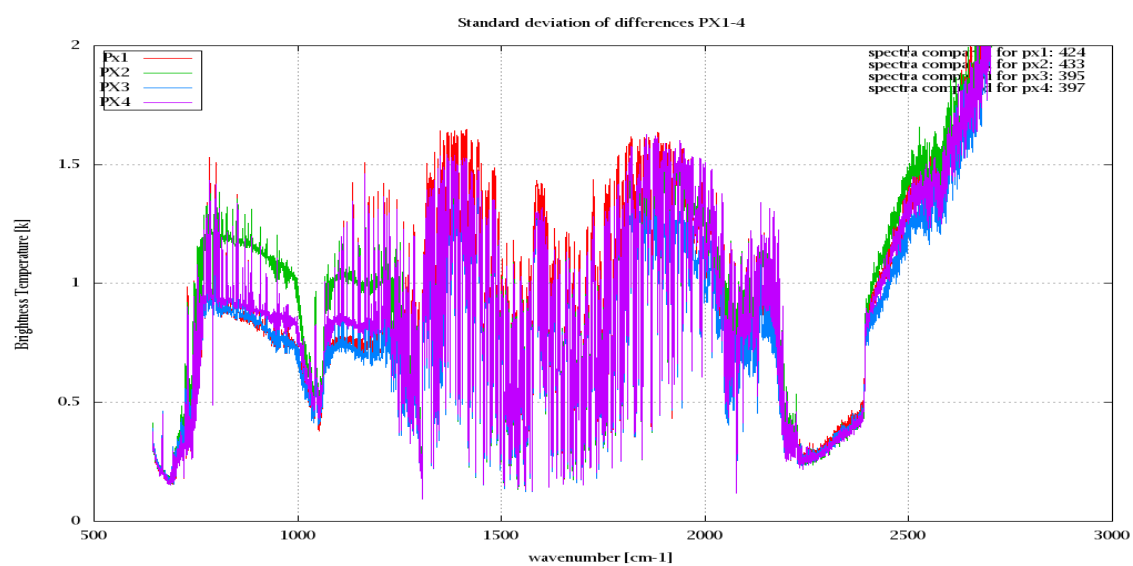


Figure 9: Standard Deviation of Radiance differences

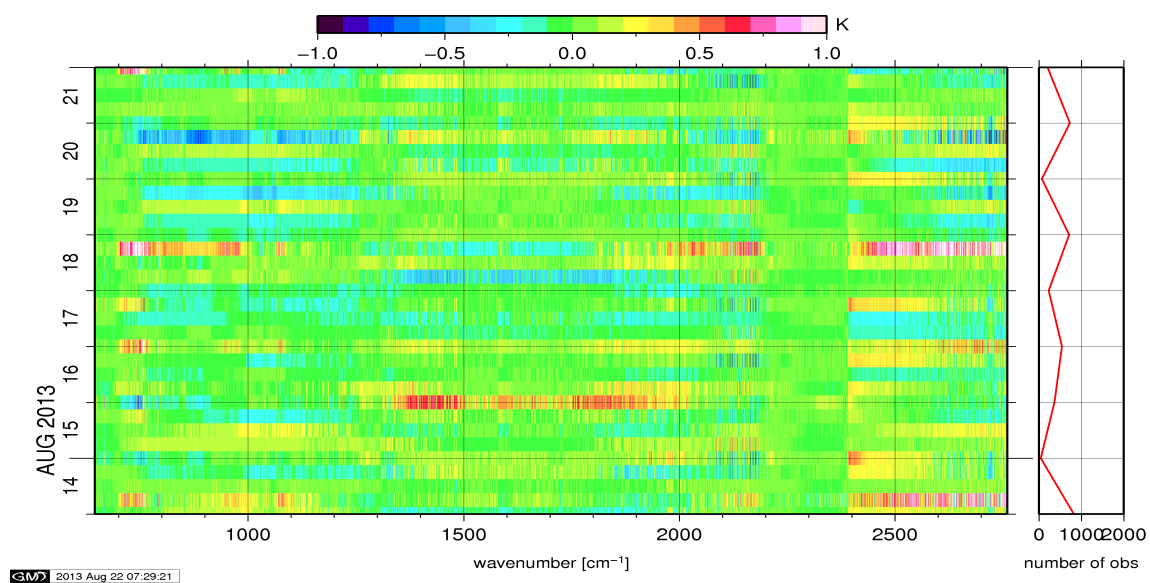


Figure 10: Radiance Anomaly in BRT: All Channels

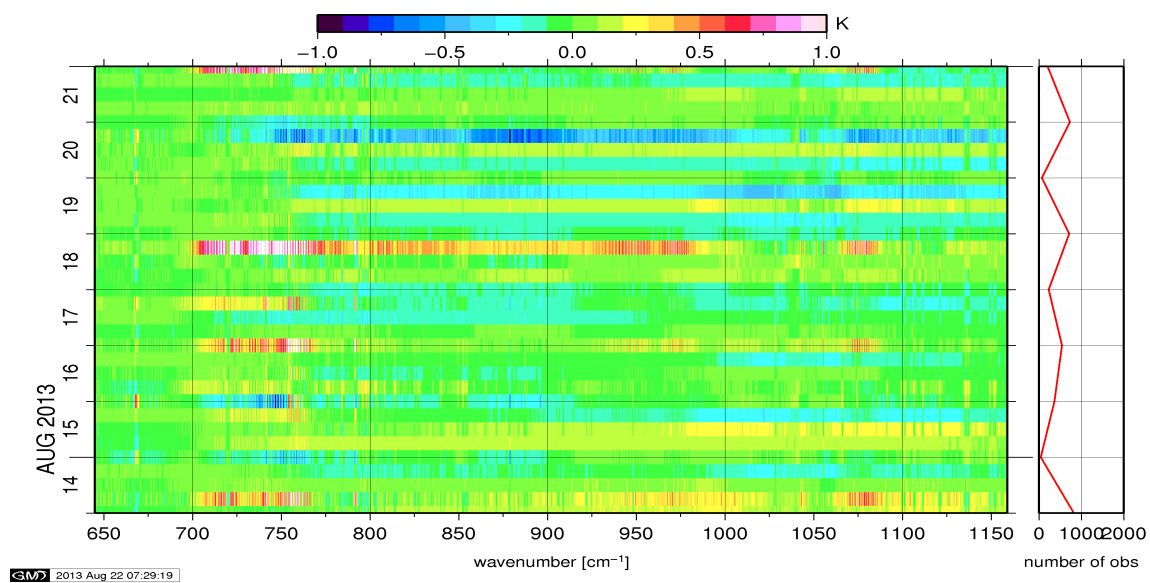


Figure 11: Radiance Anomaly in BRT: IASI Band 1

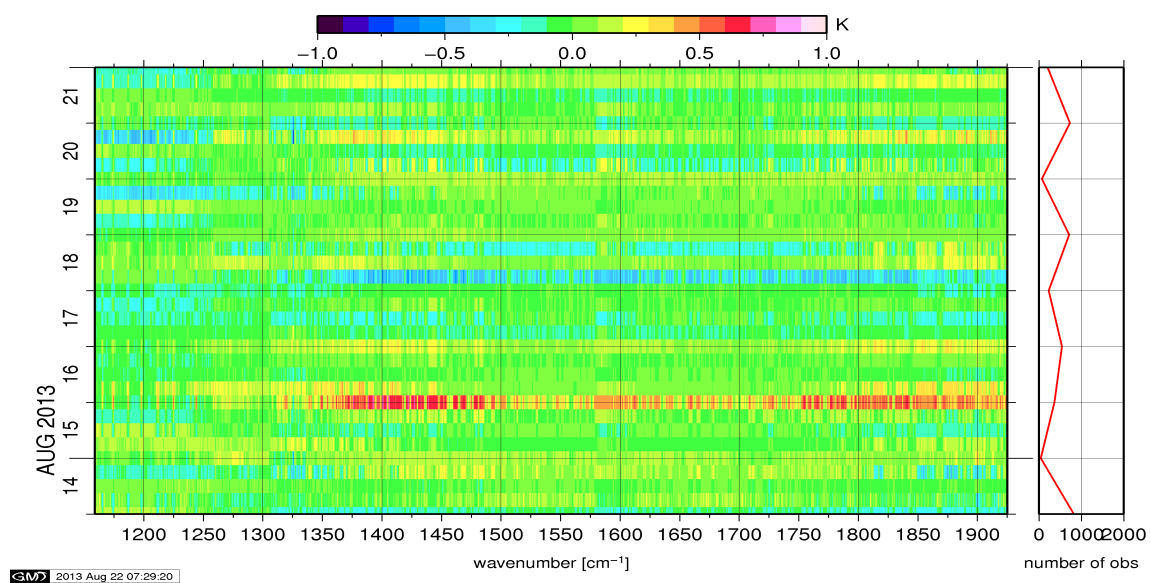


Figure 12: Radiance Anomaly in BRT: IASI Band 2

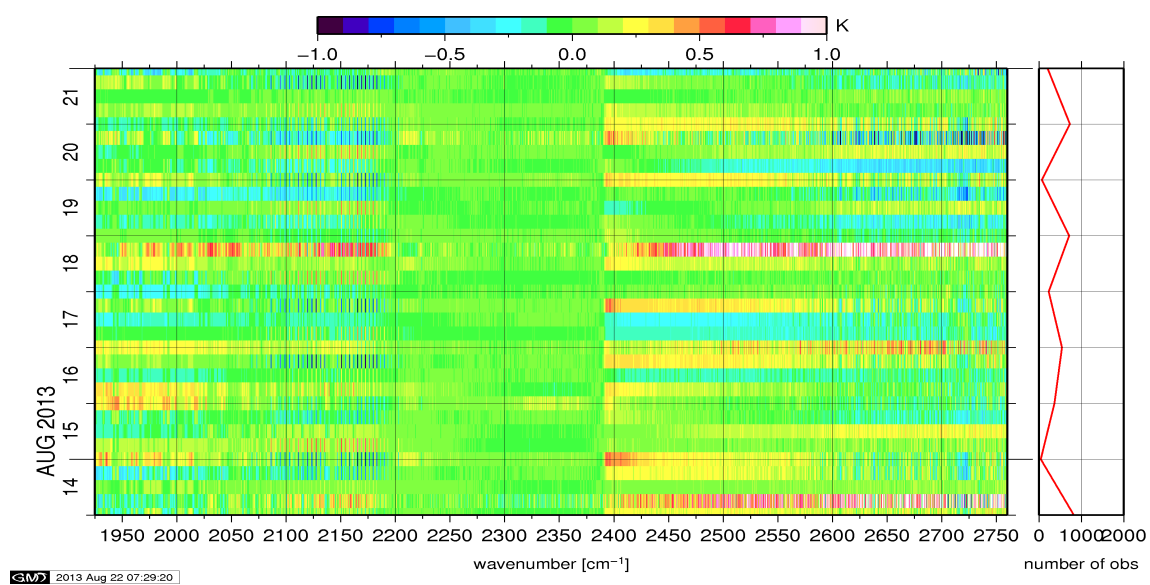


Figure 13: Radiance Anomaly in BRT: IASI Band 3

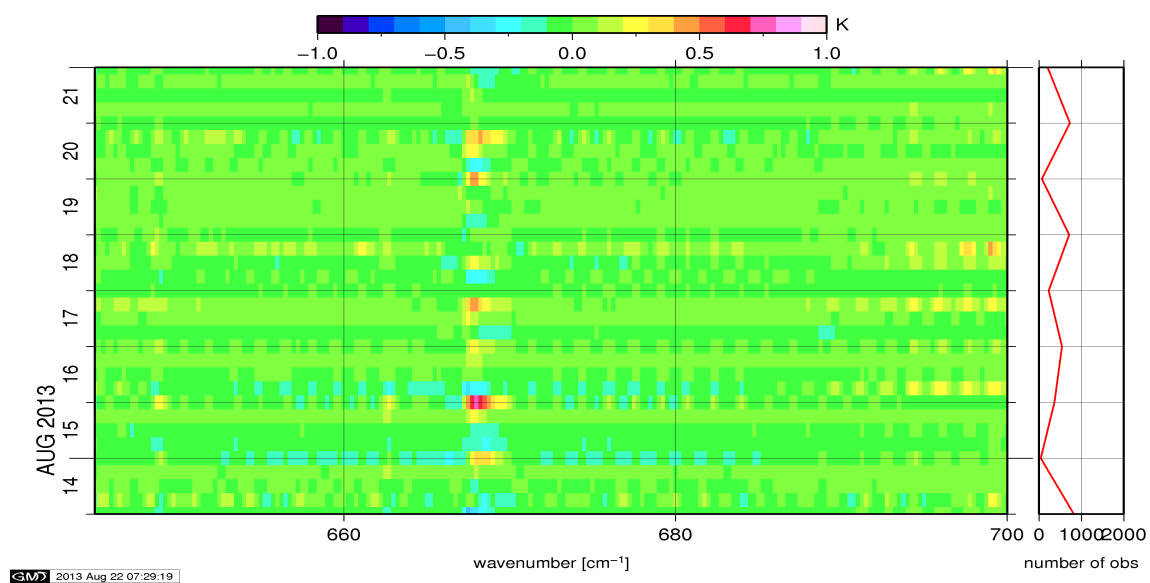


Figure 14: Radiance Anomaly in BRT: CO2 14

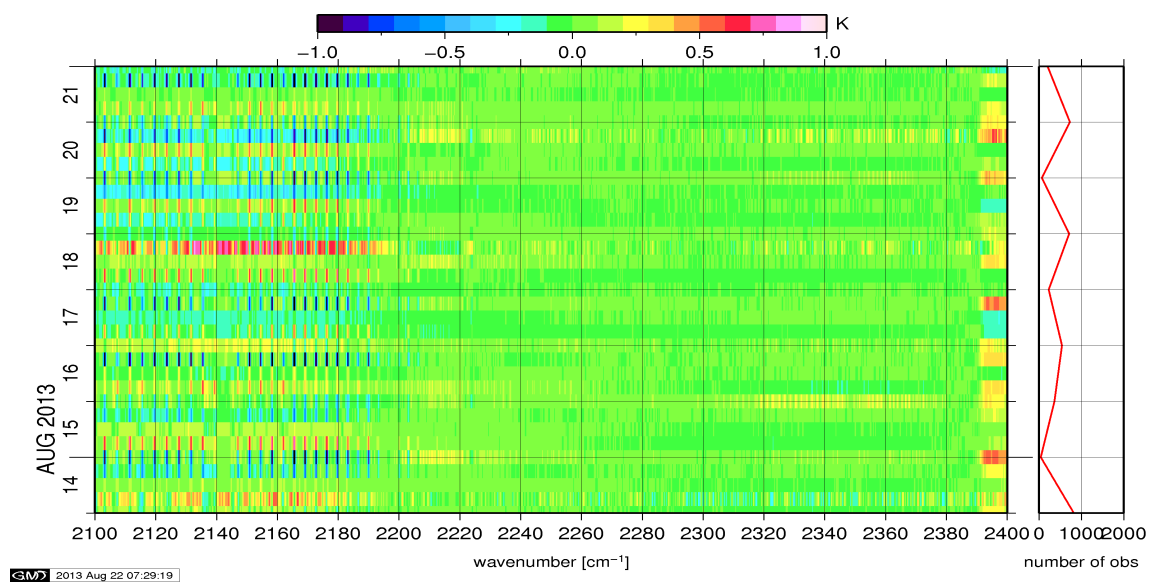


Figure 15: Radiance Anomaly in BRT: CO2 4.3

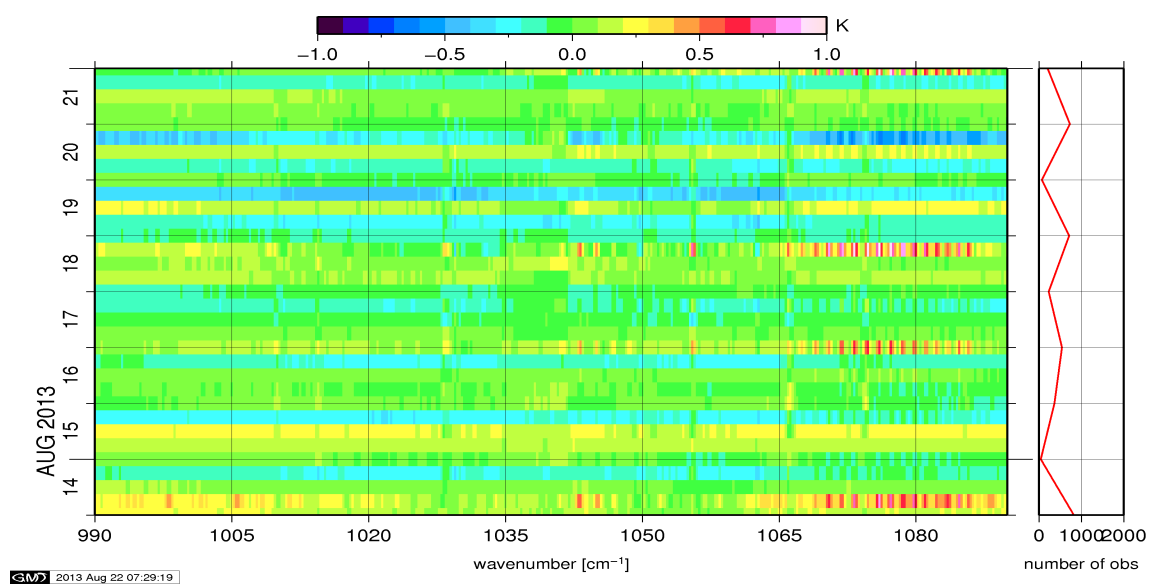


Figure 16: Radiance Anomaly in BRT: O3

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.

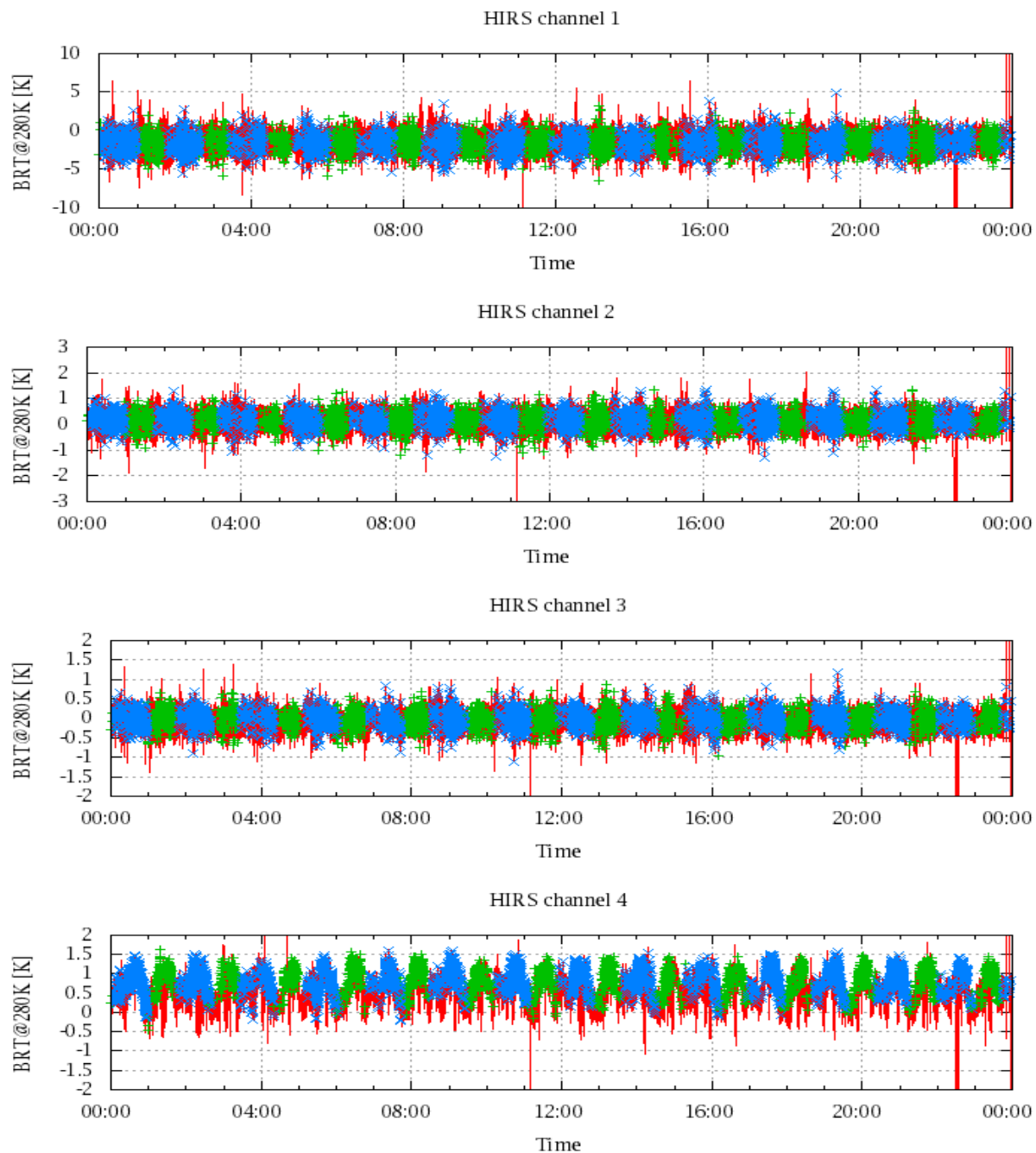


Figure 17: Radiance Differences in BRT

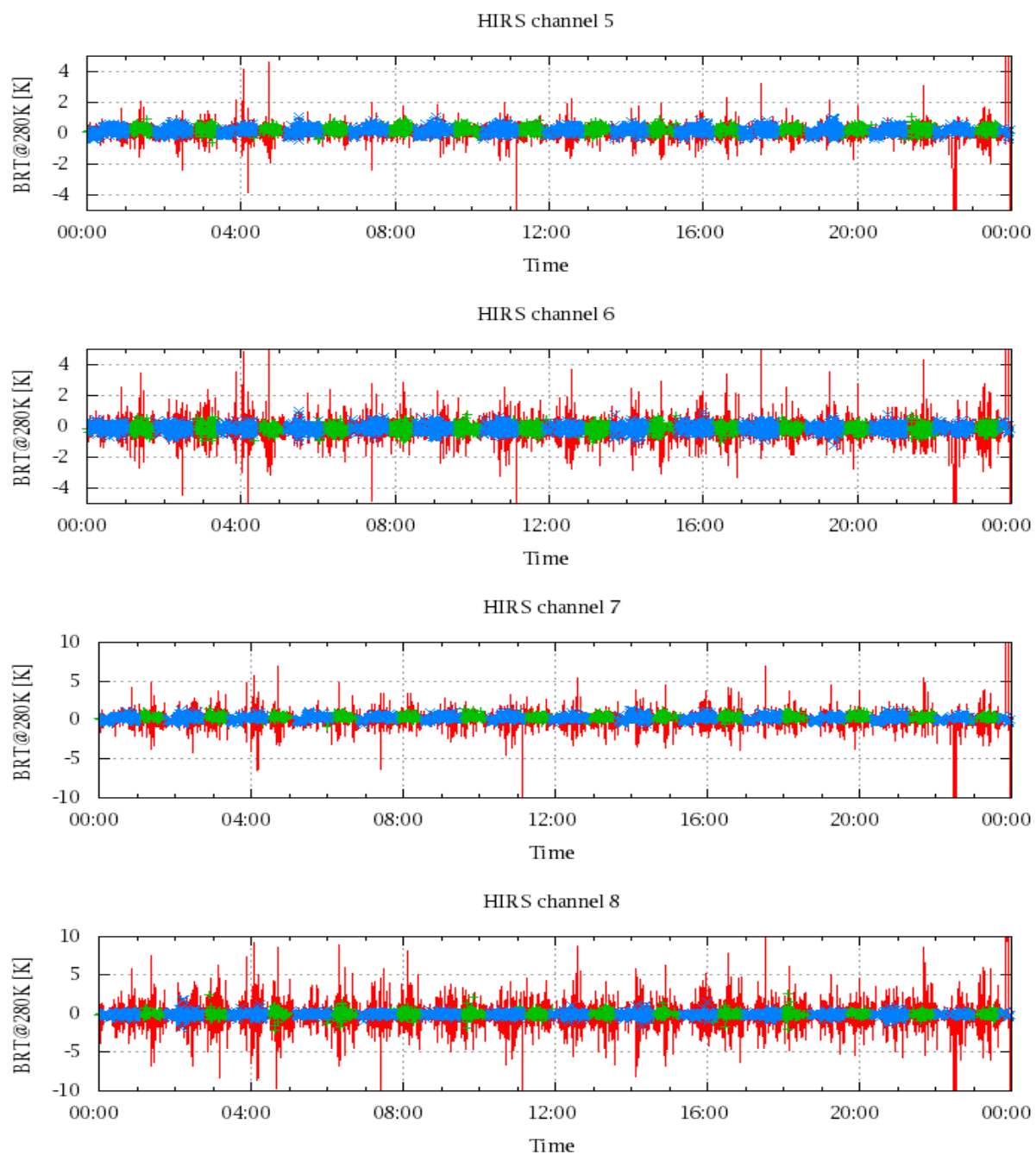


Figure 18: Radiance Differences in BRT

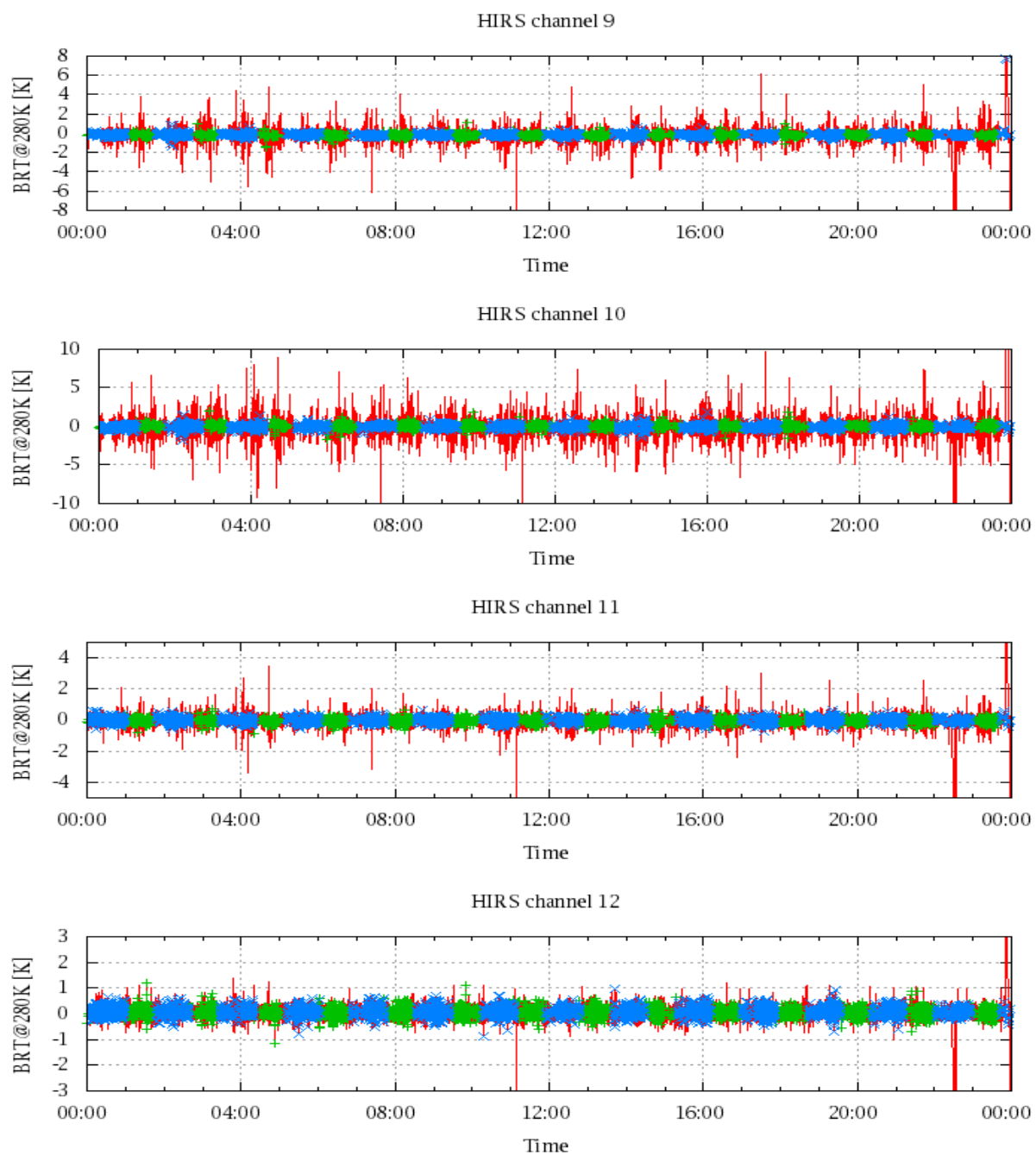


Figure 19: Radiance Differences in BRT

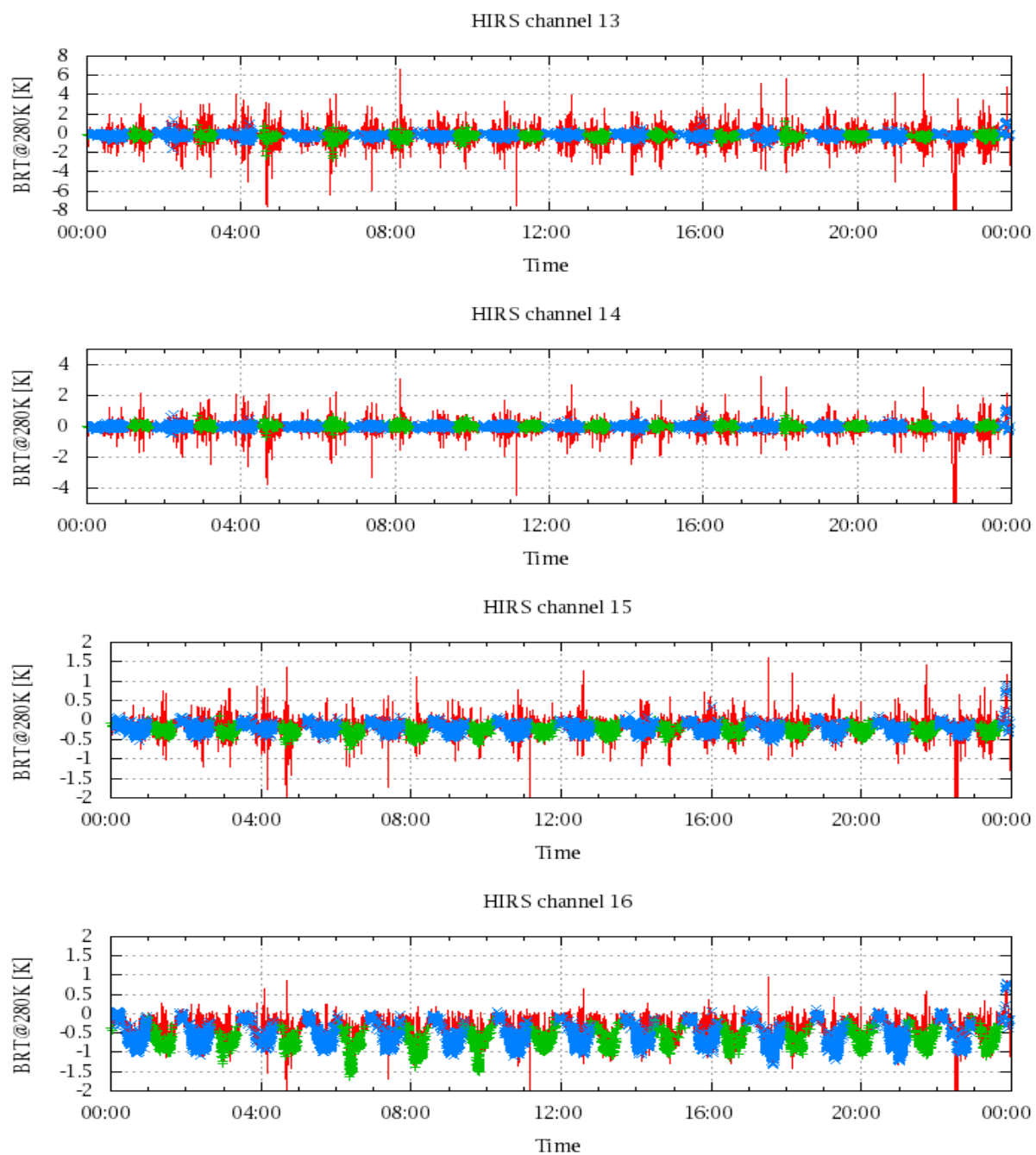


Figure 20: Radiance Differences in BRT

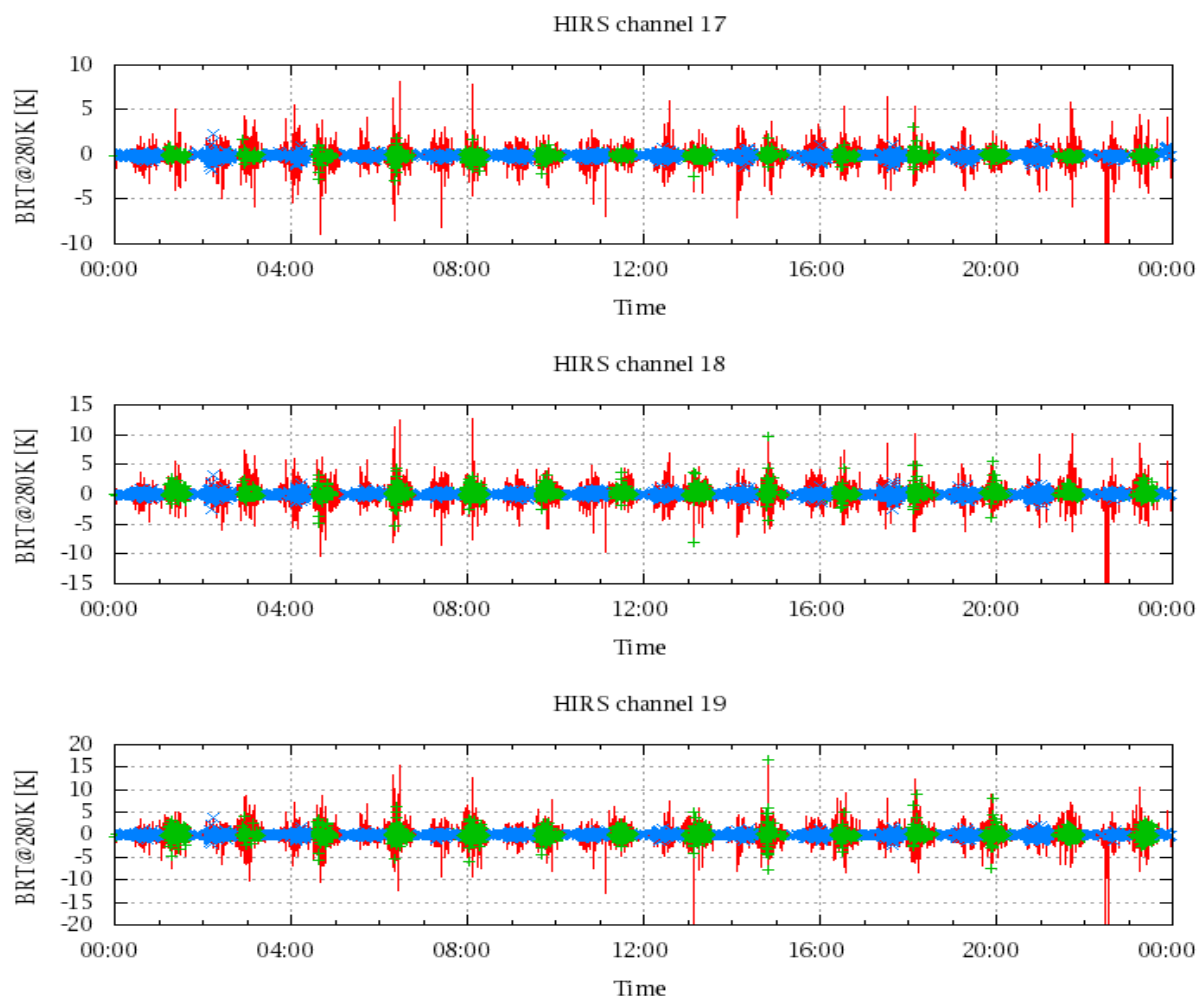


Figure 21: Radinace Differences in BRT