

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

11/08/2013 00:00:00 - 12/08/2013 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 11/08/2013 00:00:00 - 12/08/2013 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 11/08/2013 00:00:00 - 12/08/2013 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)	480	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	9918	9921	20130811091323.315	20130811091323.963
PX1 (130)	9922	9924	20130811091324.182	20130811091324.612
PX1 (130)	9924	9927	20130811091324.612	20130811091326.776
PX1 (130)	9928	9930	20130811091326.990	20130811091327.424
PX1 (130)	9930	9932	20130811091327.424	20130811091327.854
PX1 (130)	9935	9937	20130811091328.506	20130811091328.936
PX1 (130)	9937	9940	20130811091328.936	20130811091329.584
PX1 (130)	9940	9944	20130811091329.584	20130811091330.451
PX1 (130)	9945	9950	20130811091330.666	20130811091331.748
PX1 (130)	9950	9952	20130811091331.748	20130811091332.178
PX1 (130)	9953	9959	20130811091332.397	20130811091335.205
PX1 (130)	9959	9961	20130811091335.205	20130811091335.639
PX1 (130)	9962	9965	20130811091335.858	20130811091336.502
PX1 (130)	9965	9970	20130811091336.502	20130811091337.584
PX1 (130)	9970	9972	20130811091337.584	20130811091338.018
PX1 (130)	9973	9975	20130811091338.233	20130811091338.666
PX1 (130)	9976	9978	20130811091338.881	20130811091339.315
PX1 (130)	9985	9989	20130811091340.826	20130811091343.205

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	10002	10004	20130811091346.018	20130811091346.447
PX1 (130)	10004	10006	20130811091346.447	20130811091346.881
PX1 (130)	6640	6642	20130811101138.427	20130811101138.860
PX1 (130)	6648	6650	20130811101140.157	20130811101140.591
PX1 (130)	6651	6654	20130811101140.806	20130811101142.970
PX1 (130)	6657	6660	20130811101143.618	20130811101144.267
PX1 (130)	6660	6665	20130811101144.267	20130811101145.345
PX1 (130)	6665	6668	20130811101145.345	20130811101145.997
PX1 (130)	6669	6671	20130811101146.212	20130811101146.642
PX1 (130)	6674	6676	20130811101147.294	20130811101147.728
PX1 (130)	6678	6682	20130811101148.157	20130811101150.536
PX1 (130)	6684	6686	20130811101150.966	20130811101151.399
PX1 (130)	6686	6689	20130811101151.399	20130811101152.052
PX1 (130)	6689	6694	20130811101152.052	20130811101153.130
PX1 (130)	6694	6697	20130811101153.130	20130811101153.778
PX1 (130)	6700	6702	20130811101154.427	20130811101154.860
PX1 (130)	6703	6707	20130811101155.075	20130811101155.942
PX1 (130)	6707	6709	20130811101155.942	20130811101156.376
PX1 (130)	6715	6717	20130811101159.185	20130811101159.614
PX1 (130)	6727	6729	20130811101201.778	20130811101202.212
PX1 (130)	6733	6735	20130811101203.075	20130811101203.509
PX1 (130)	6736	6738	20130811101203.724	20130811101204.157
PX1 (130)	6744	6746	20130811101206.966	20130811101207.399
PX2 (135)	9919	9921	20130811091323.529	20130811091323.963
PX2 (135)	9921	9926	20130811091323.963	20130811091326.557
PX2 (135)	9927	9929	20130811091326.776	20130811091327.209
PX2 (135)	9929	9931	20130811091327.209	20130811091327.639
PX2 (135)	9931	9934	20130811091327.639	20130811091328.287
PX2 (135)	9934	9937	20130811091328.287	20130811091328.936
PX2 (135)	9937	9940	20130811091328.936	20130811091329.584
PX2 (135)	9940	9943	20130811091329.584	20130811091330.233
PX2 (135)	9945	9947	20130811091330.666	20130811091331.100
PX2 (135)	9947	9953	20130811091331.100	20130811091332.397
PX2 (135)	9953	9957	20130811091332.397	20130811091334.776
PX2 (135)	9957	9959	20130811091334.776	20130811091335.205
PX2 (135)	9959	9961	20130811091335.205	20130811091335.639
PX2 (135)	9961	9965	20130811091335.639	20130811091336.502
PX2 (135)	9965	9967	20130811091336.502	20130811091336.936
PX2 (135)	9968	9970	20130811091337.154	20130811091337.584
PX2 (135)	9970	9972	20130811091337.584	20130811091338.018
PX2 (135)	9976	9978	20130811091338.881	20130811091339.315
PX2 (135)	9979	9981	20130811091339.529	20130811091339.963
PX2 (135)	9985	9989	20130811091340.826	20130811091343.205
PX2 (135)	10002	10004	20130811091346.018	20130811091346.447
PX2 (135)	10004	10006	20130811091346.447	20130811091346.881
PX2 (135)	6640	6642	20130811101138.427	20130811101138.860
PX2 (135)	6644	6647	20130811101139.294	20130811101139.942
PX2 (135)	6648	6650	20130811101140.157	20130811101140.591
PX2 (135)	6651	6653	20130811101140.806	20130811101142.751
PX2 (135)	6657	6660	20130811101143.618	20130811101144.267
PX2 (135)	6660	6664	20130811101144.267	20130811101145.130
PX2 (135)	6666	6669	20130811101145.564	20130811101146.212
PX2 (135)	6669	6672	20130811101146.212	20130811101146.860

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	6674	6676	20130811101147.294	20130811101147.728
PX2 (135)	6680	6683	20130811101148.591	20130811101150.751
PX2 (135)	6683	6687	20130811101150.751	20130811101151.618
PX2 (135)	6687	6689	20130811101151.618	20130811101152.052
PX2 (135)	6689	6692	20130811101152.052	20130811101152.696
PX2 (135)	6692	6694	20130811101152.696	20130811101153.130
PX2 (135)	6695	6697	20130811101153.349	20130811101153.778
PX2 (135)	6698	6702	20130811101153.993	20130811101154.860
PX2 (135)	6703	6706	20130811101155.075	20130811101155.724
PX2 (135)	6707	6709	20130811101155.942	20130811101156.376
PX2 (135)	6709	6711	20130811101156.376	20130811101156.806
PX2 (135)	6719	6721	20130811101200.048	20130811101200.481
PX2 (135)	6721	6723	20130811101200.481	20130811101200.915
PX2 (135)	6727	6729	20130811101201.778	20130811101202.212
PX2 (135)	6735	6738	20130811101203.509	20130811101204.157
PX2 (135)	6744	6746	20130811101206.966	20130811101207.399
PX3 (140)	9919	9921	20130811091323.529	20130811091323.963
PX3 (140)	9921	9923	20130811091323.963	20130811091324.397
PX3 (140)	9923	9929	20130811091324.397	20130811091327.209
PX3 (140)	9929	9931	20130811091327.209	20130811091327.639
PX3 (140)	9931	9934	20130811091327.639	20130811091328.287
PX3 (140)	9934	9937	20130811091328.287	20130811091328.936
PX3 (140)	9939	9944	20130811091329.369	20130811091330.451
PX3 (140)	9945	9947	20130811091330.666	20130811091331.100
PX3 (140)	9949	9951	20130811091331.533	20130811091331.963
PX3 (140)	9951	9957	20130811091331.963	20130811091334.776
PX3 (140)	9957	9959	20130811091334.776	20130811091335.205
PX3 (140)	9961	9964	20130811091335.639	20130811091336.287
PX3 (140)	9965	9967	20130811091336.502	20130811091336.936
PX3 (140)	9968	9972	20130811091337.154	20130811091338.018
PX3 (140)	9978	9981	20130811091339.315	20130811091339.963
PX3 (140)	9987	9989	20130811091342.776	20130811091343.205
PX3 (140)	6644	6647	20130811101139.294	20130811101139.942
PX3 (140)	6649	6651	20130811101140.376	20130811101140.806
PX3 (140)	6657	6659	20130811101143.618	20130811101144.048
PX3 (140)	6660	6664	20130811101144.267	20130811101145.130
PX3 (140)	6664	6669	20130811101145.130	20130811101146.212
PX3 (140)	6669	6672	20130811101146.212	20130811101146.860
PX3 (140)	6674	6679	20130811101147.294	20130811101148.372
PX3 (140)	6679	6685	20130811101148.372	20130811101151.185
PX3 (140)	6685	6687	20130811101151.185	20130811101151.618
PX3 (140)	6687	6689	20130811101151.618	20130811101152.052
PX3 (140)	6689	6692	20130811101152.052	20130811101152.696
PX3 (140)	6692	6694	20130811101152.696	20130811101153.130
PX3 (140)	6698	6701	20130811101153.993	20130811101154.646
PX3 (140)	6701	6703	20130811101154.646	20130811101155.075
PX3 (140)	6707	6709	20130811101155.942	20130811101156.376
PX3 (140)	6709	6711	20130811101156.376	20130811101156.806
PX3 (140)	6719	6721	20130811101200.048	20130811101200.481
PX3 (140)	6721	6723	20130811101200.481	20130811101200.915
PX3 (140)	6727	6729	20130811101201.778	20130811101202.212
PX3 (140)	6729	6731	20130811101202.212	20130811101202.642
PX3 (140)	6732	6734	20130811101202.860	20130811101203.294

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	6735	6738	20130811101203.509	20130811101204.157
PX3 (140)	6744	6746	20130811101206.966	20130811101207.399
PX4 (145)	9919	9923	20130811091323.529	20130811091324.397
PX4 (145)	9923	9929	20130811091324.397	20130811091327.209
PX4 (145)	9929	9937	20130811091327.209	20130811091328.936
PX4 (145)	9939	9941	20130811091329.369	20130811091329.803
PX4 (145)	9942	9944	20130811091330.018	20130811091330.451
PX4 (145)	9944	9947	20130811091330.451	20130811091331.100
PX4 (145)	9947	9949	20130811091331.100	20130811091331.533
PX4 (145)	9949	9951	20130811091331.533	20130811091331.963
PX4 (145)	9951	9955	20130811091331.963	20130811091332.830
PX4 (145)	9956	9961	20130811091334.557	20130811091335.639
PX4 (145)	9961	9964	20130811091335.639	20130811091336.287
PX4 (145)	9968	9971	20130811091337.154	20130811091337.803
PX4 (145)	9971	9973	20130811091337.803	20130811091338.233
PX4 (145)	9976	9980	20130811091338.881	20130811091339.748
PX4 (145)	9987	9989	20130811091342.776	20130811091343.205
PX4 (145)	6643	6647	20130811101139.079	20130811101139.942
PX4 (145)	6649	6651	20130811101140.376	20130811101140.806
PX4 (145)	6655	6657	20130811101143.185	20130811101143.618
PX4 (145)	6657	6659	20130811101143.618	20130811101144.048
PX4 (145)	6662	6664	20130811101144.700	20130811101145.130
PX4 (145)	6664	6669	20130811101145.130	20130811101146.212
PX4 (145)	6669	6672	20130811101146.212	20130811101146.860
PX4 (145)	6675	6679	20130811101147.509	20130811101148.372
PX4 (145)	6679	6684	20130811101148.372	20130811101150.966
PX4 (145)	6687	6692	20130811101151.618	20130811101152.696
PX4 (145)	6694	6696	20130811101153.130	20130811101153.563
PX4 (145)	6696	6698	20130811101153.563	20130811101153.993
PX4 (145)	6698	6701	20130811101153.993	20130811101154.646
PX4 (145)	6701	6703	20130811101154.646	20130811101155.075
PX4 (145)	6705	6711	20130811101155.509	20130811101156.806
PX4 (145)	6718	6723	20130811101159.833	20130811101200.915
PX4 (145)	6727	6729	20130811101201.778	20130811101202.212
PX4 (145)	6729	6731	20130811101202.212	20130811101202.642
PX4 (145)	6732	6734	20130811101202.860	20130811101203.294
PX4 (145)	6734	6738	20130811101203.294	20130811101204.157
IMG (150)	7529	7535	20130811091323.100	20130811091324.397
IMG (150)	7535	7543	20130811091324.397	20130811091326.776
IMG (150)	7543	7545	20130811091326.776	20130811091327.209
IMG (150)	7545	7549	20130811091327.209	20130811091328.072
IMG (150)	7549	7555	20130811091328.072	20130811091329.369
IMG (150)	7555	7560	20130811091329.369	20130811091330.451
IMG (150)	7560	7563	20130811091330.451	20130811091331.100
IMG (150)	7563	7565	20130811091331.100	20130811091331.533
IMG (150)	7565	7567	20130811091331.533	20130811091331.963
IMG (150)	7568	7571	20130811091332.178	20130811091332.830
IMG (150)	7573	7578	20130811091333.475	20130811091334.990
IMG (150)	7578	7581	20130811091334.990	20130811091335.639
IMG (150)	7581	7588	20130811091335.639	20130811091337.154
IMG (150)	7588	7591	20130811091337.154	20130811091337.803
IMG (150)	7591	7594	20130811091337.803	20130811091338.451
IMG (150)	7595	7600	20130811091338.666	20130811091339.748

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	7600	7602	20130811091339.748	20130811091340.182
IMG (150)	7608	7612	20130811091341.908	20130811091342.990
IMG (150)	7625	7627	20130811091345.803	20130811091346.233
IMG (150)	7627	7629	20130811091346.233	20130811091346.666
IMG (150)	5999	6001	20130811101138.212	20130811101138.646
IMG (150)	6002	6005	20130811101138.860	20130811101139.509
IMG (150)	6007	6009	20130811101139.942	20130811101140.376
IMG (150)	6009	6014	20130811101140.376	20130811101141.888
IMG (150)	6014	6017	20130811101141.888	20130811101142.751
IMG (150)	6019	6023	20130811101143.185	20130811101144.048
IMG (150)	6024	6026	20130811101144.267	20130811101144.700
IMG (150)	6026	6028	20130811101144.700	20130811101145.130
IMG (150)	6028	6030	20130811101145.130	20130811101145.564
IMG (150)	6031	6035	20130811101145.778	20130811101146.642
IMG (150)	6037	6039	20130811101147.075	20130811101147.509
IMG (150)	6039	6046	20130811101147.509	20130811101149.239
IMG (150)	6050	6060	20130811101150.536	20130811101152.696
IMG (150)	6061	6066	20130811101152.915	20130811101153.993
IMG (150)	6066	6069	20130811101153.993	20130811101154.646
IMG (150)	6069	6076	20130811101154.646	20130811101156.157
IMG (150)	6076	6079	20130811101156.157	20130811101156.806
IMG (150)	6085	6088	20130811101158.751	20130811101159.399
IMG (150)	6090	6092	20130811101159.833	20130811101200.267
IMG (150)	6092	6094	20130811101200.267	20130811101200.700
IMG (150)	6101	6103	20130811101202.212	20130811101202.642
IMG (150)	6104	6106	20130811101202.860	20130811101203.294
IMG (150)	6106	6108	20130811101203.294	20130811101203.724
IMG (150)	6108	6110	20130811101203.724	20130811101204.157
IMG (150)	6113	6115	20130811101204.806	20130811101205.454
VER (160)	1309	1319	20130811091324.612	20130811091340.826
VER (160)	1320	1322	20130811091340.826	20130811091340.826
VER (160)	3495	3503	20130811101140.806	20130811101148.591
VER (160)	3503	3505	20130811101148.591	20130811101156.806
VER (160)	3505	3507	20130811101156.806	20130811101156.806
VER (160)	3511	3514	20130811101204.806	20130811101212.806
AUX (180)	3498	3501	20130811091317.260	20130811091341.260
AUX (180)	3935	3937	20130811101133.239	20130811101149.239
AUX (180)	3938	3940	20130811101157.239	20130811101213.239

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
11/08/2013 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	480	-
L1 ENG distinct GEPSGranule	481	-
GQisFlagQual set (PX1)	99.35 %	-
GQisFlagQual set (PX2)	99.18 %	-
GQisFlagQual set (PX3)	99.27 %	-
GQisFlagQual set (PX4)	99.37 %	-
GQisFlagQual set (all)	99.29 %	-

Table 4: Quality flags

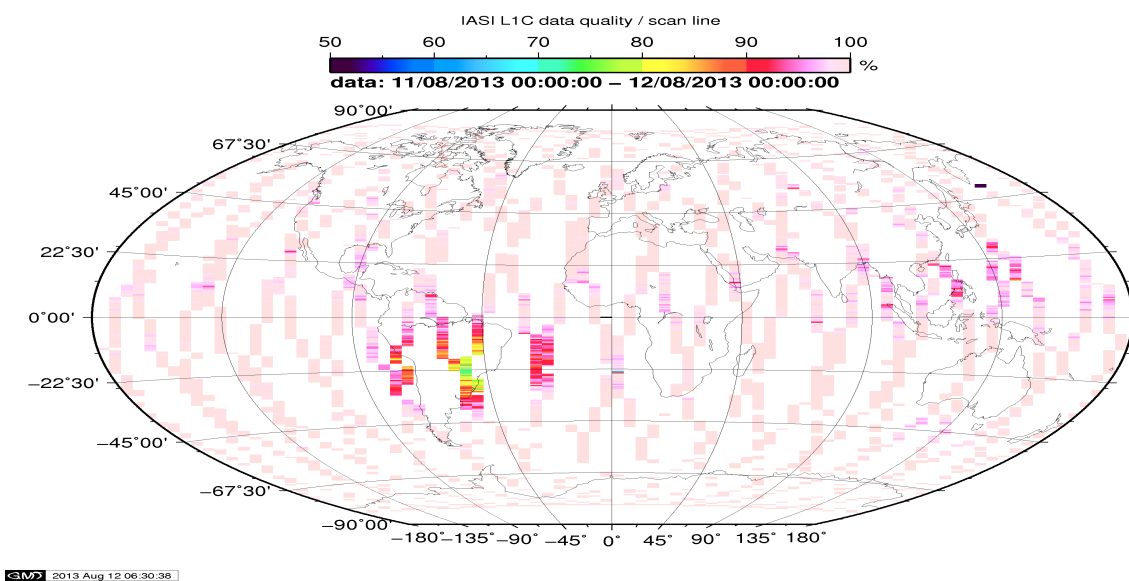


Figure 1: L1C data quality

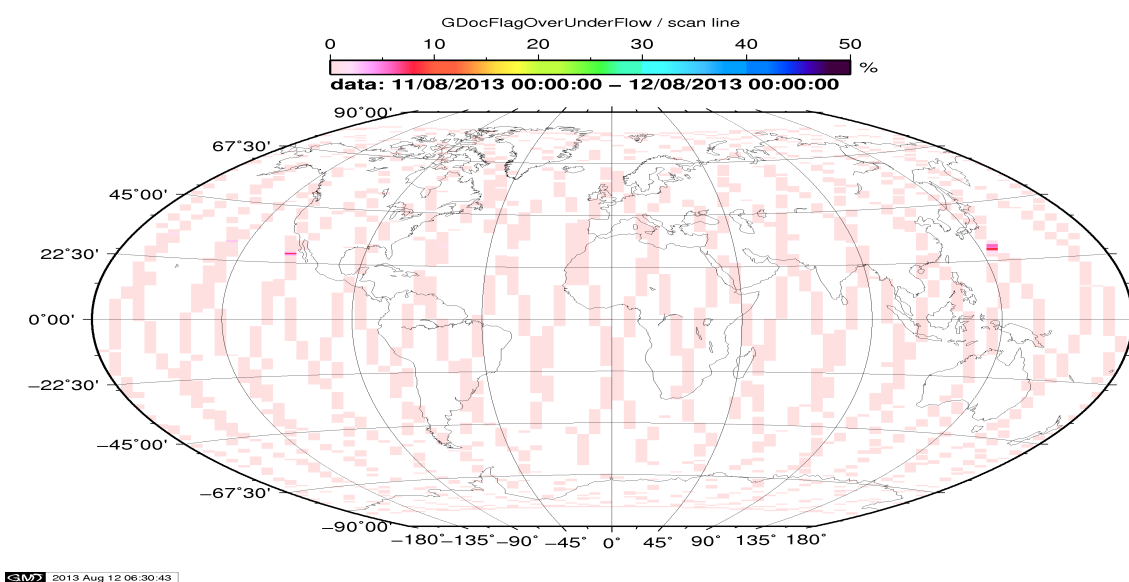


Figure 2: Flag of Over and Under Flows

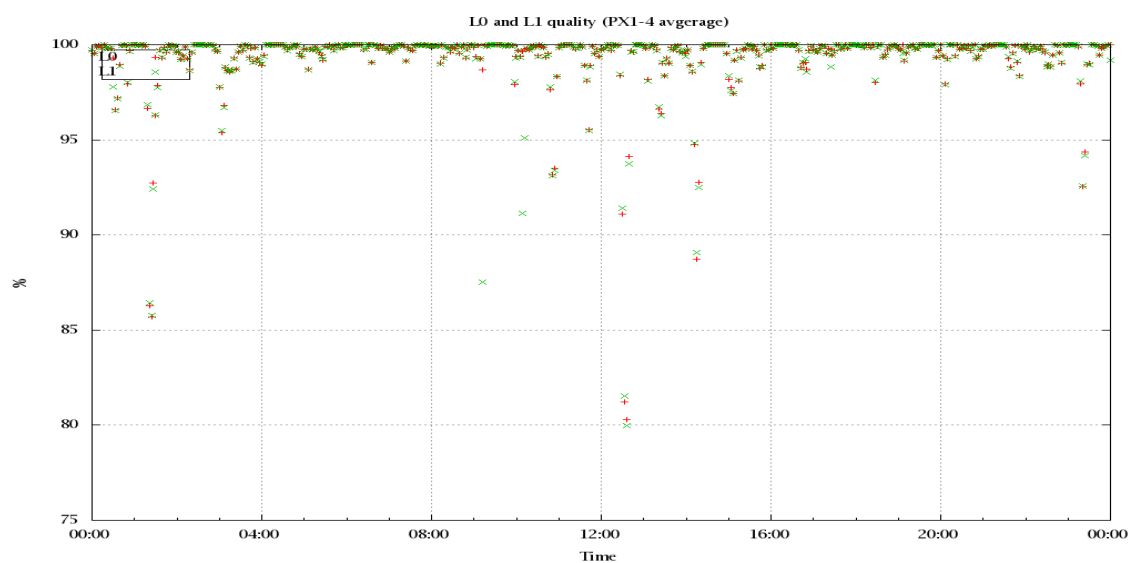


Figure 3: Level 0 and 1C overall quality

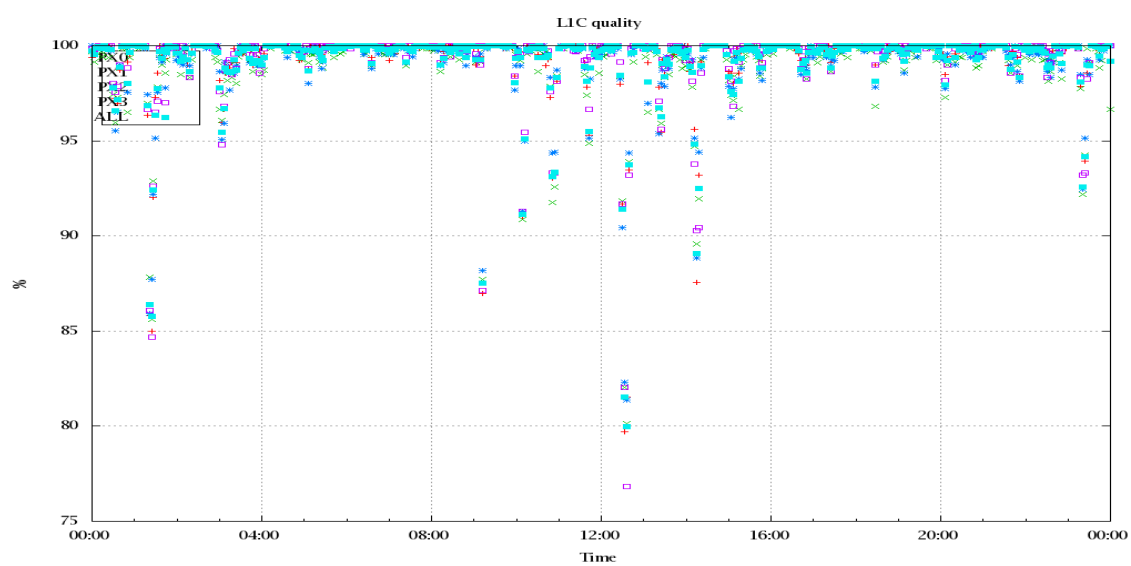


Figure 4: Level 1C quality

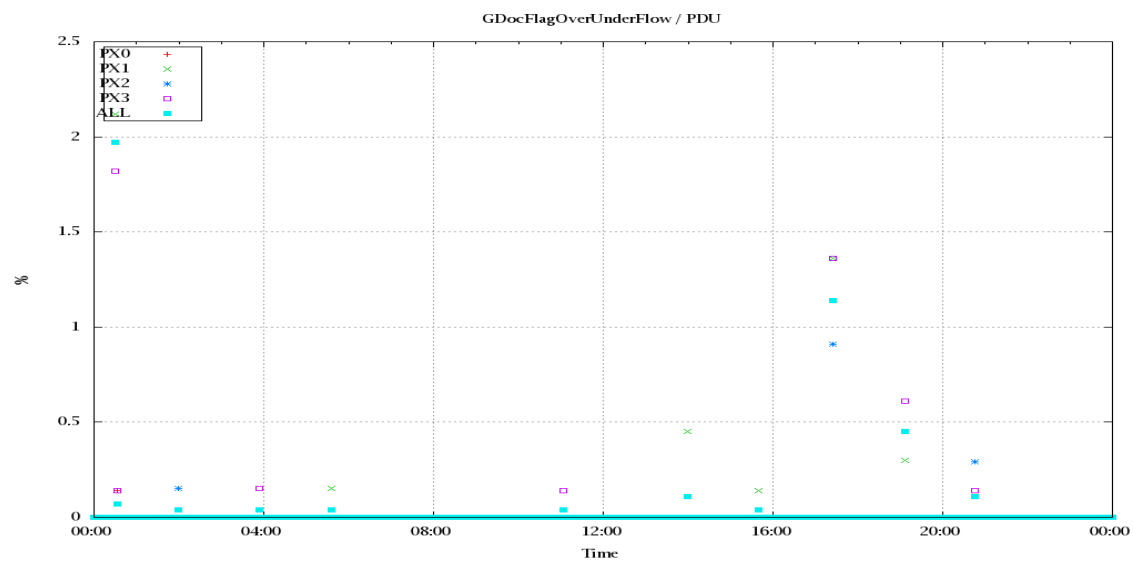


Figure 5: OverUnderFlowFlag timeseries

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 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.

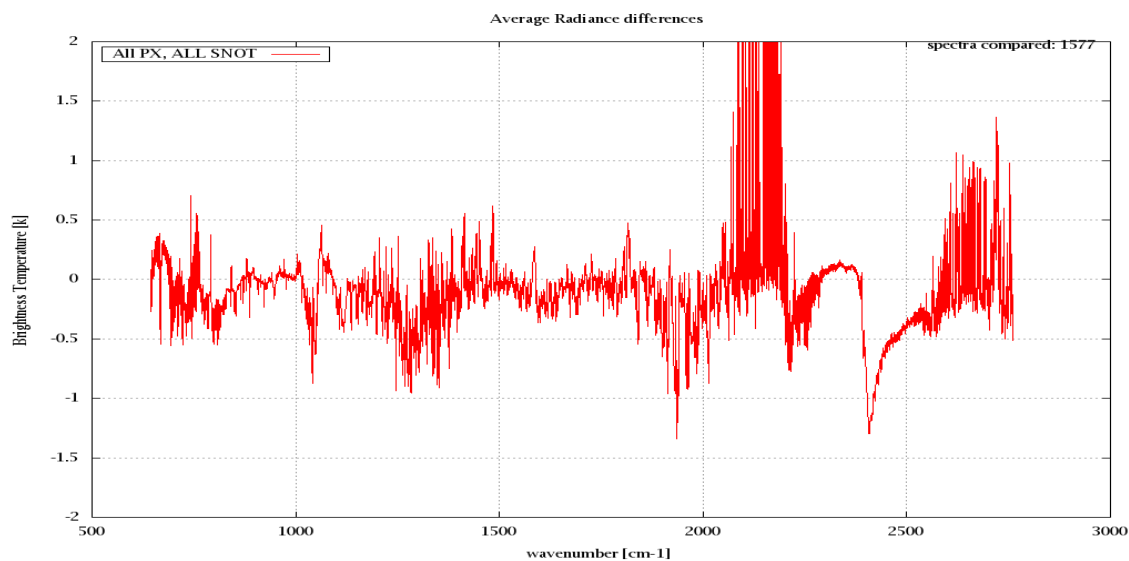


Figure 6: Average Radiance differences: OBS-CAL

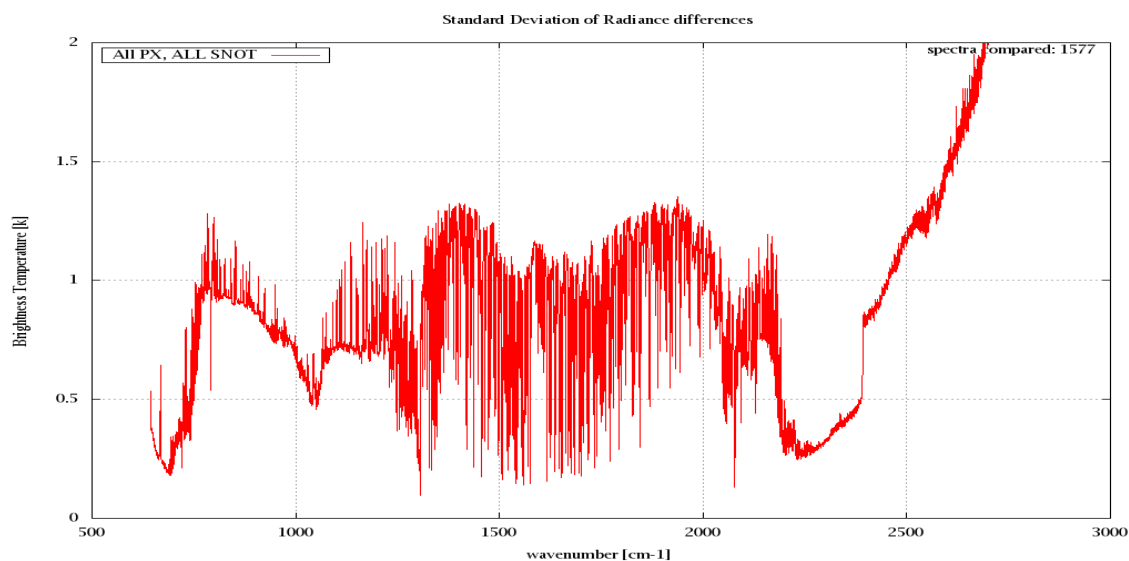


Figure 7: Standard Deviation of Radiance differences

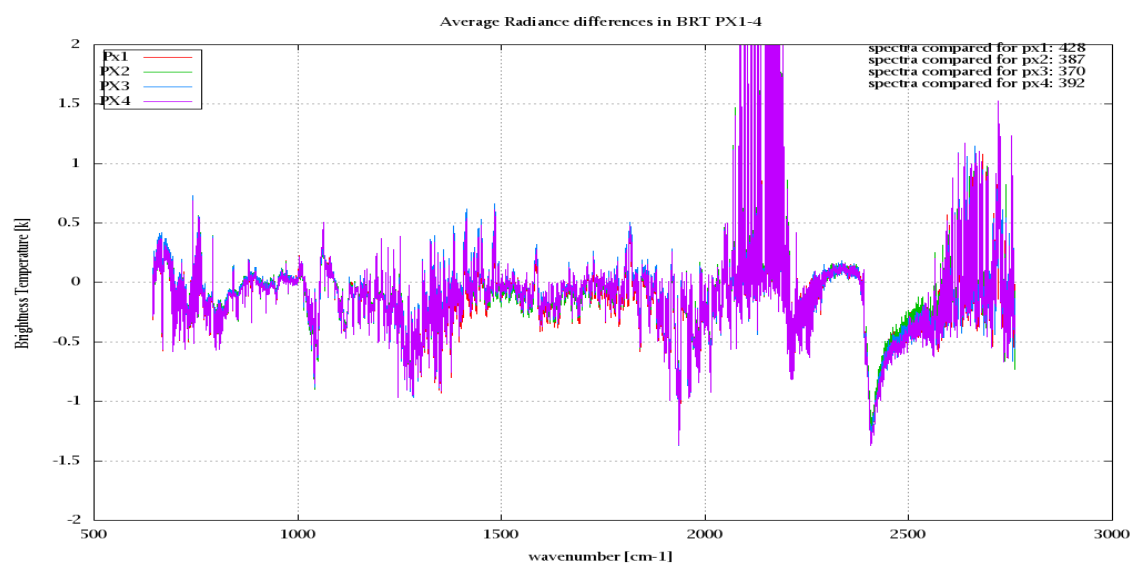


Figure 8: Average Radiance differences: OBS-CAL

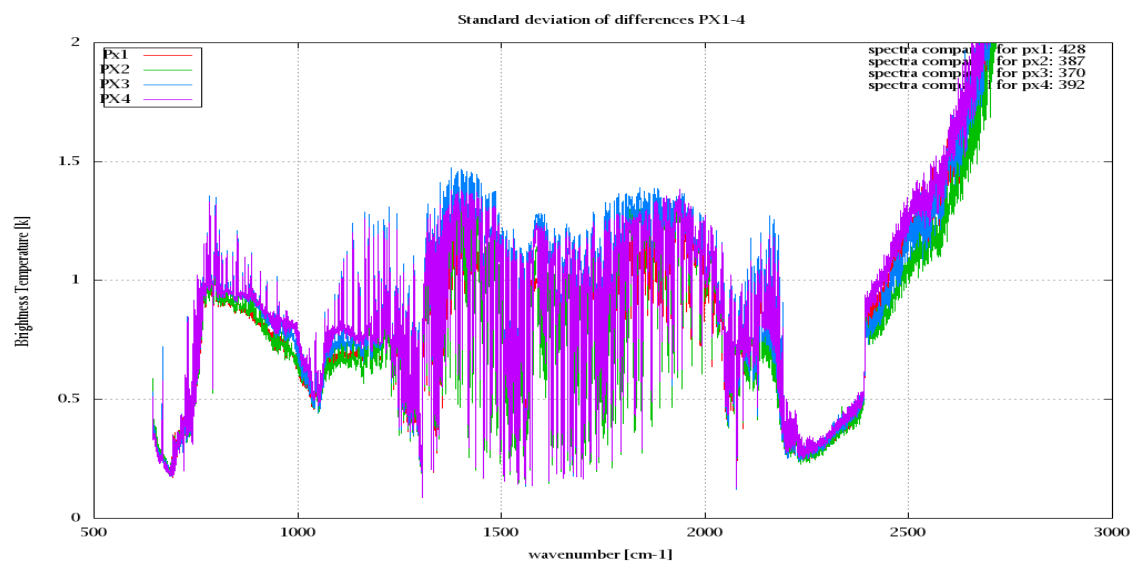


Figure 9: Standard Deviation of Radiance differences

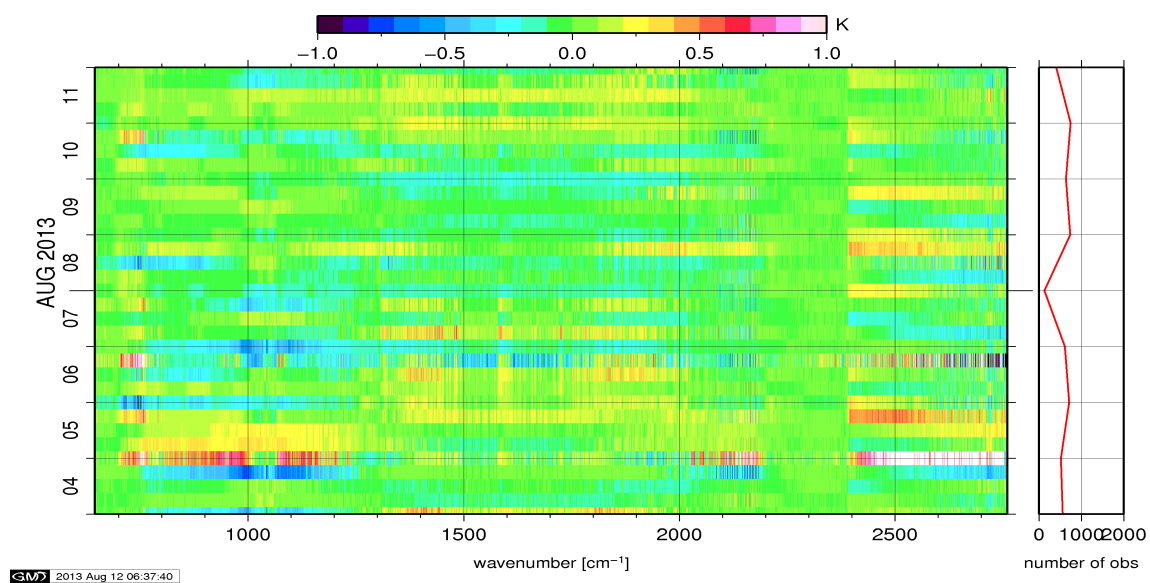


Figure 10: Radiance Anomaly in BRT: All Channels

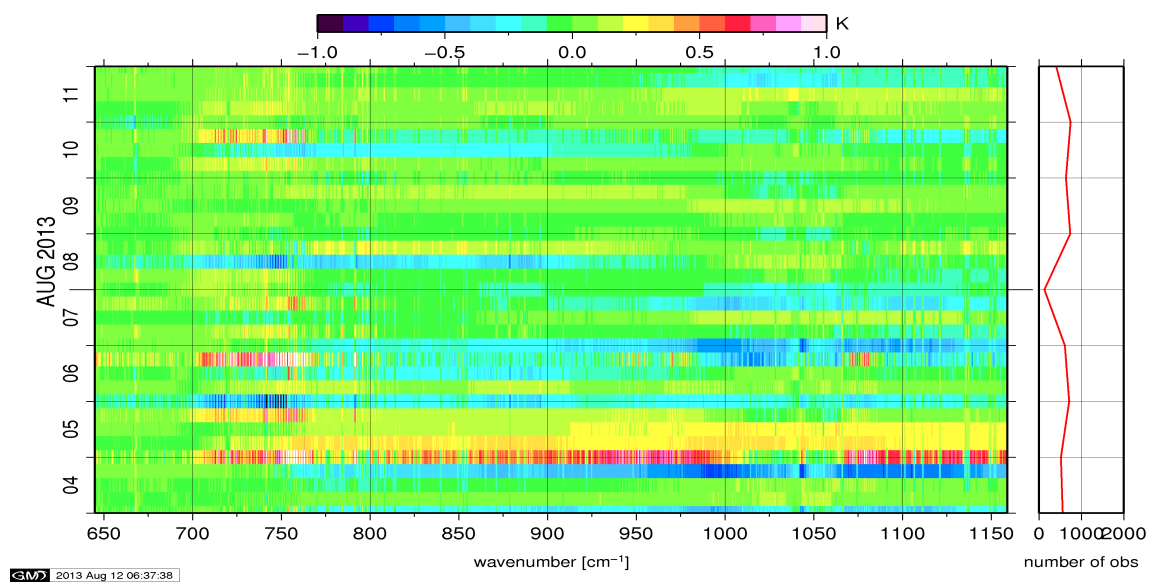


Figure 11: Radiance Anomaly in BRT: IASI Band 1

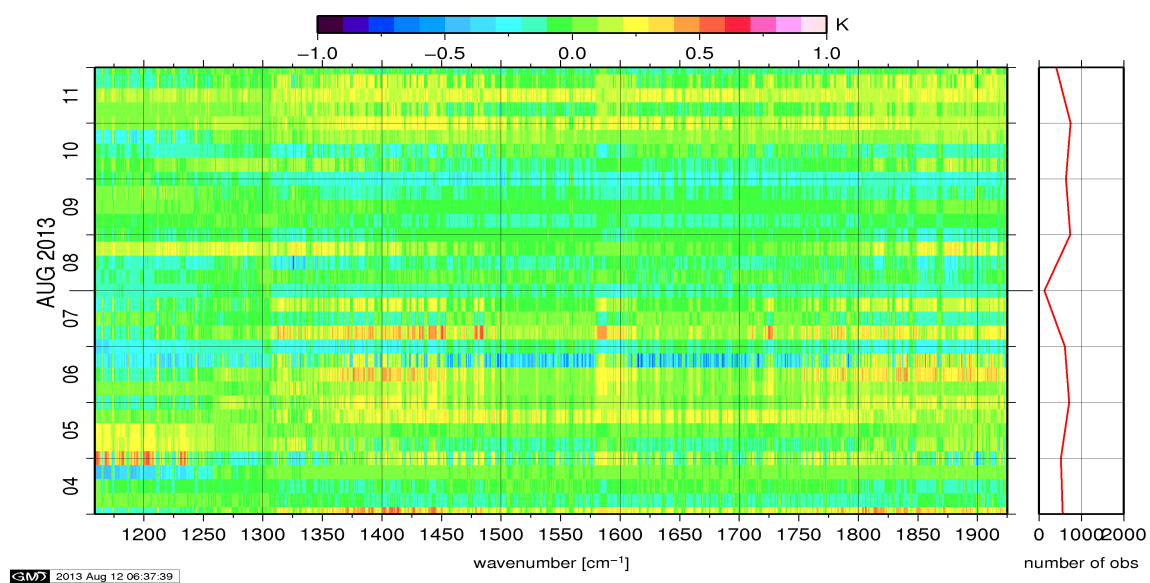


Figure 12: Radiance Anomaly in BRT: IASI Band 2

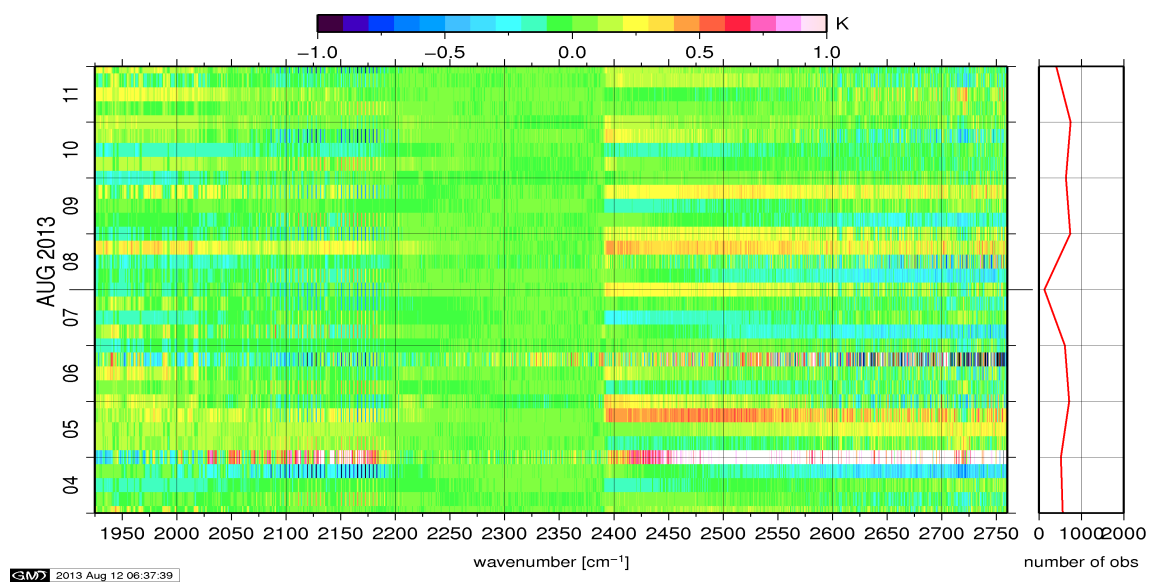


Figure 13: Radiance Anomaly in BRT: IASI Band 3

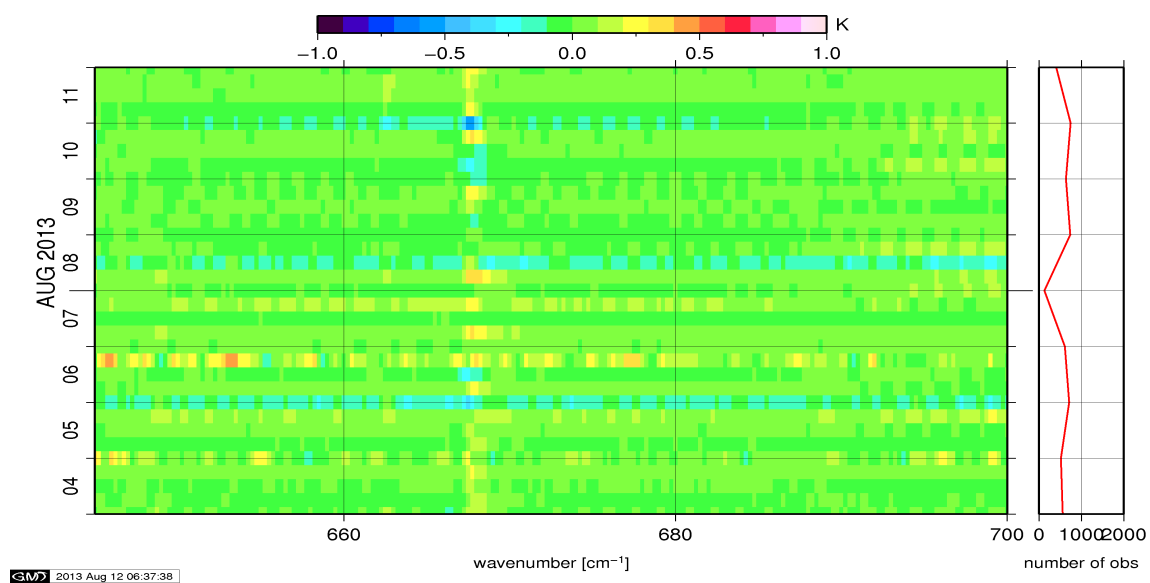


Figure 14: Radiance Anomaly in BRT: CO2 14

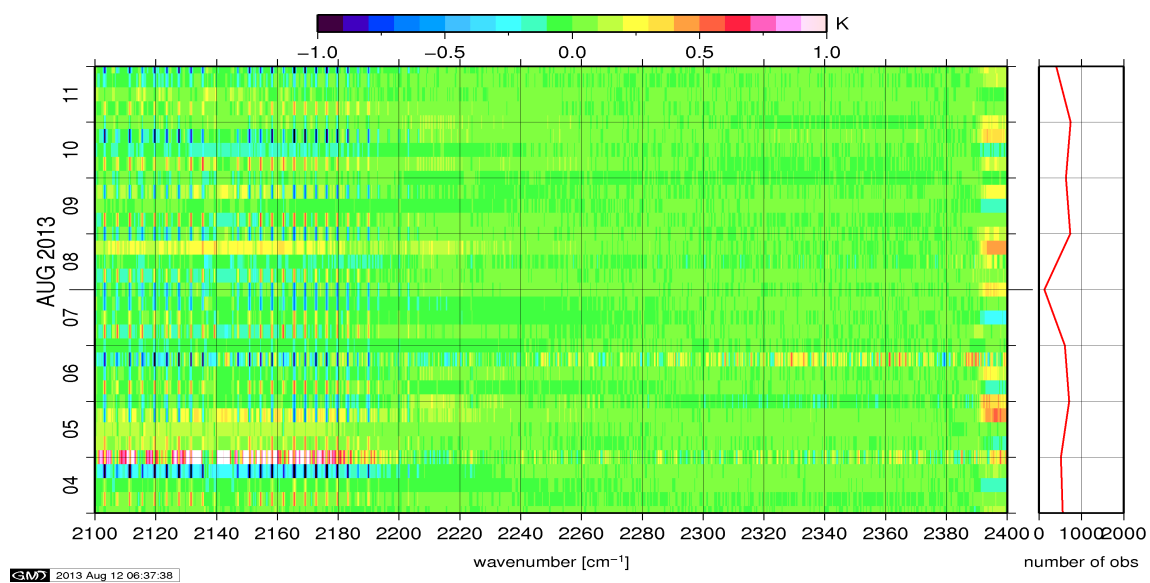


Figure 15: Radiance Anomaly in BRT: CO2 4.3

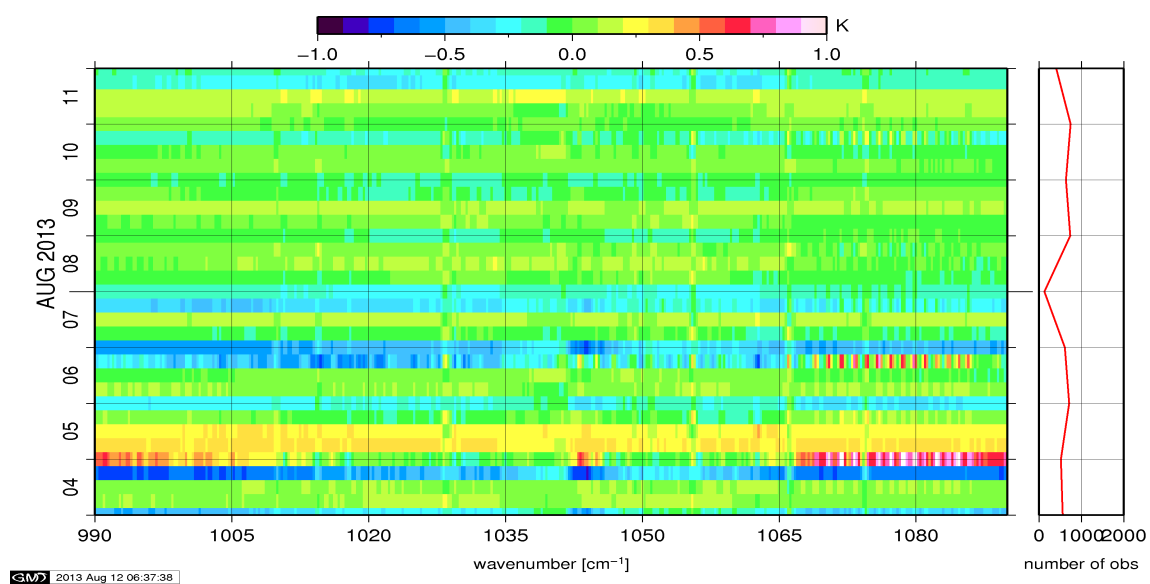


Figure 16: Radiance Anomaly in BRT: O3

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.

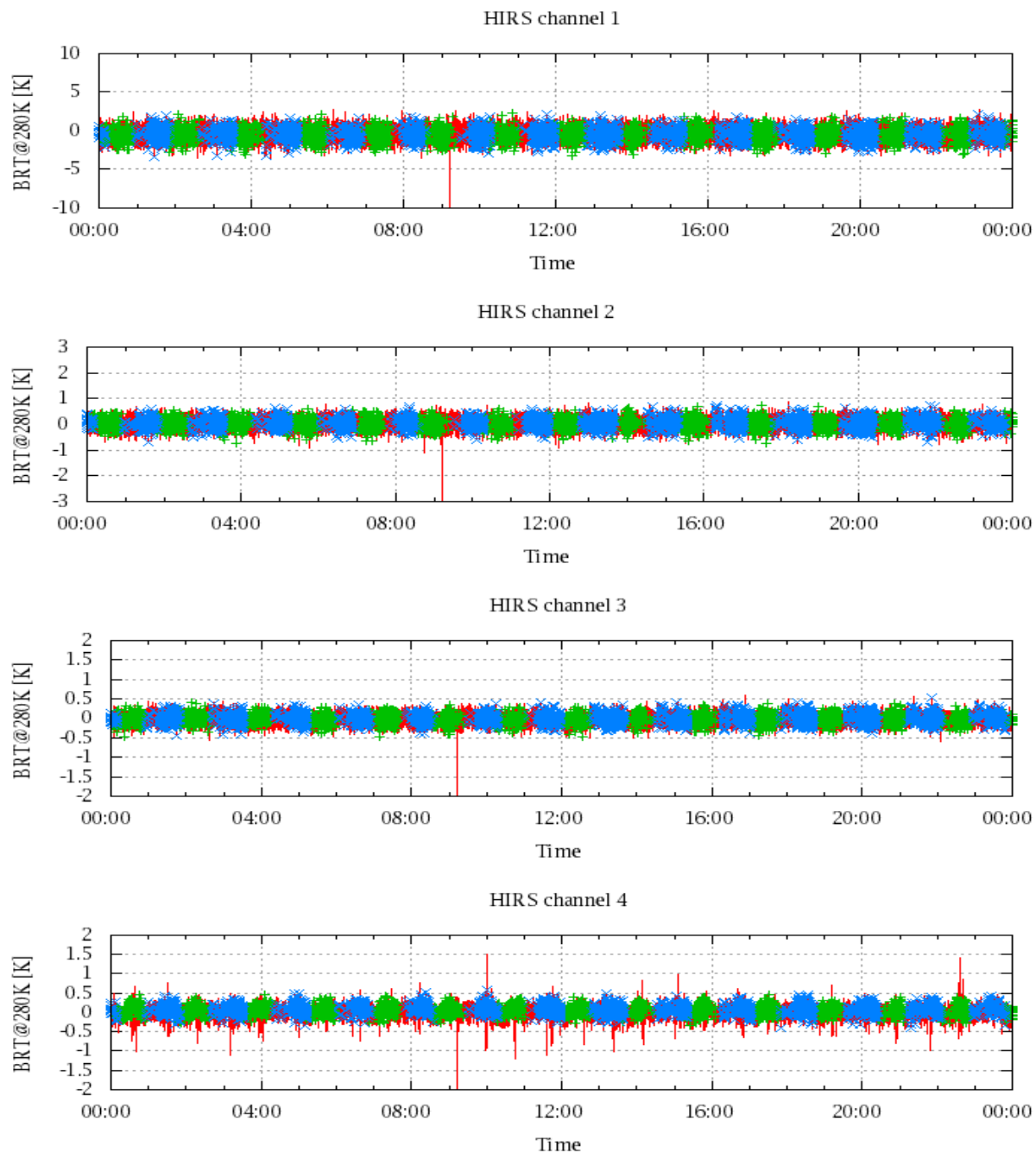


Figure 17: Radiance Differences in BRT

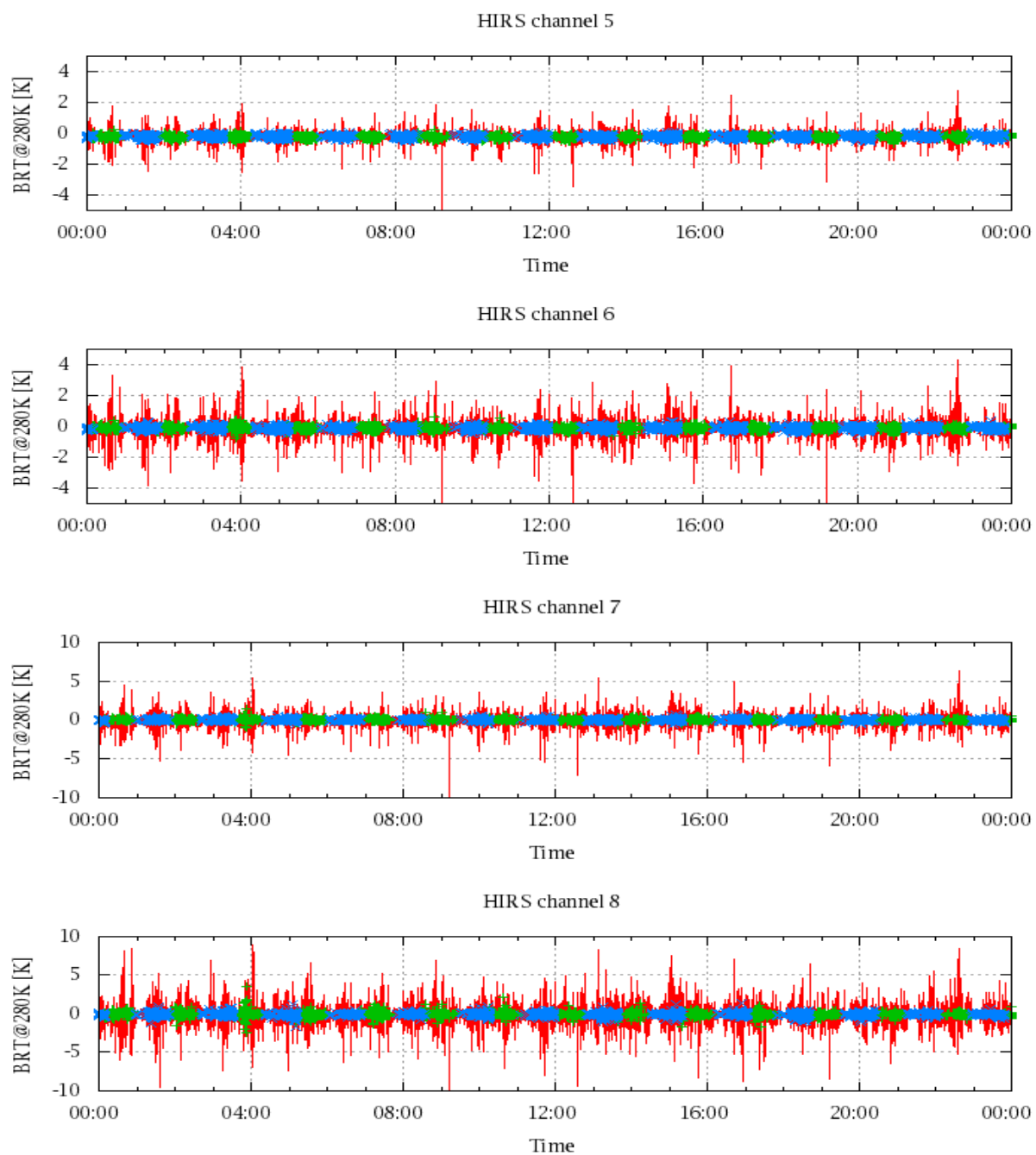


Figure 18: Radiance Differences in BRT

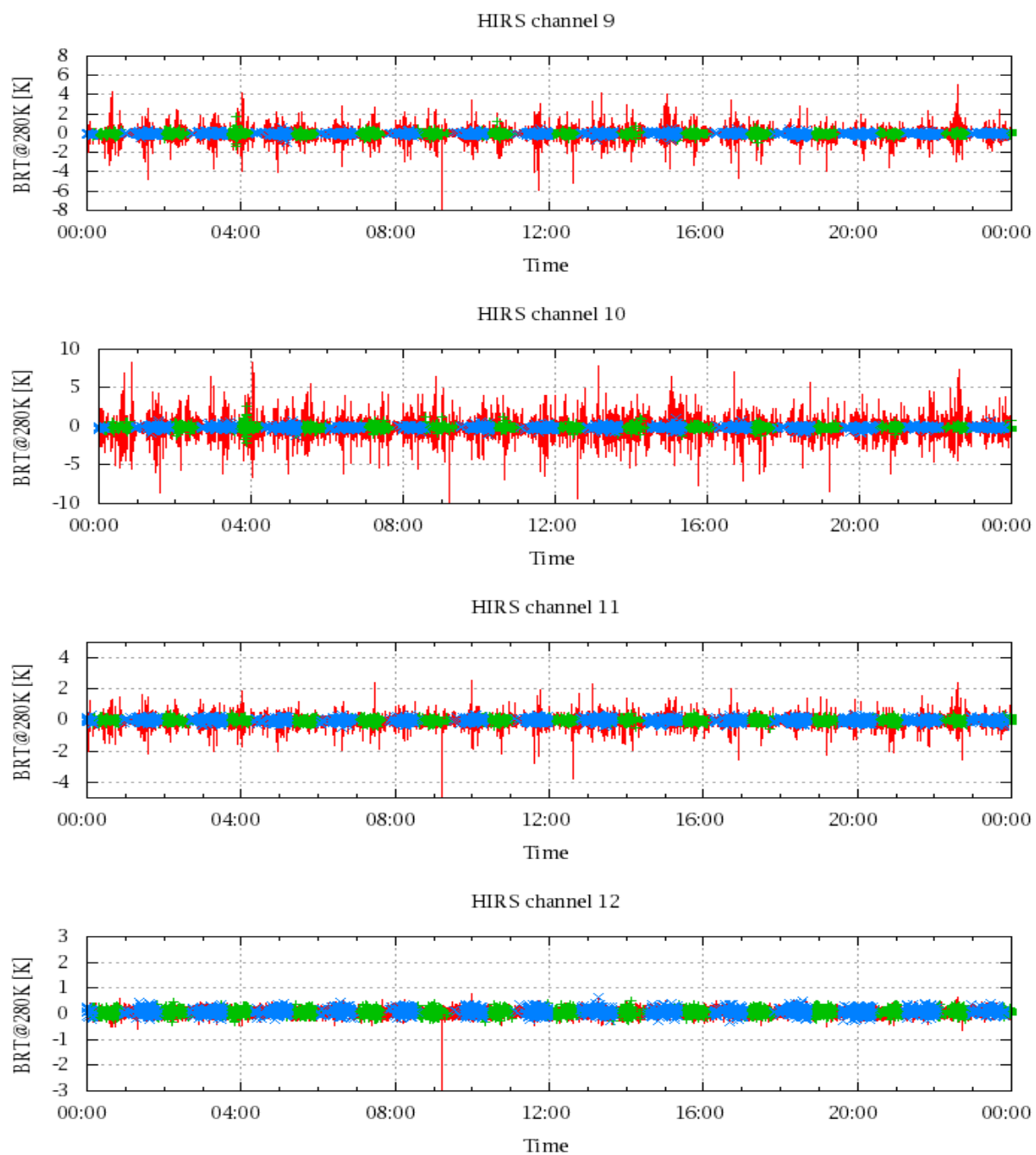


Figure 19: Radiance Differences in BRT

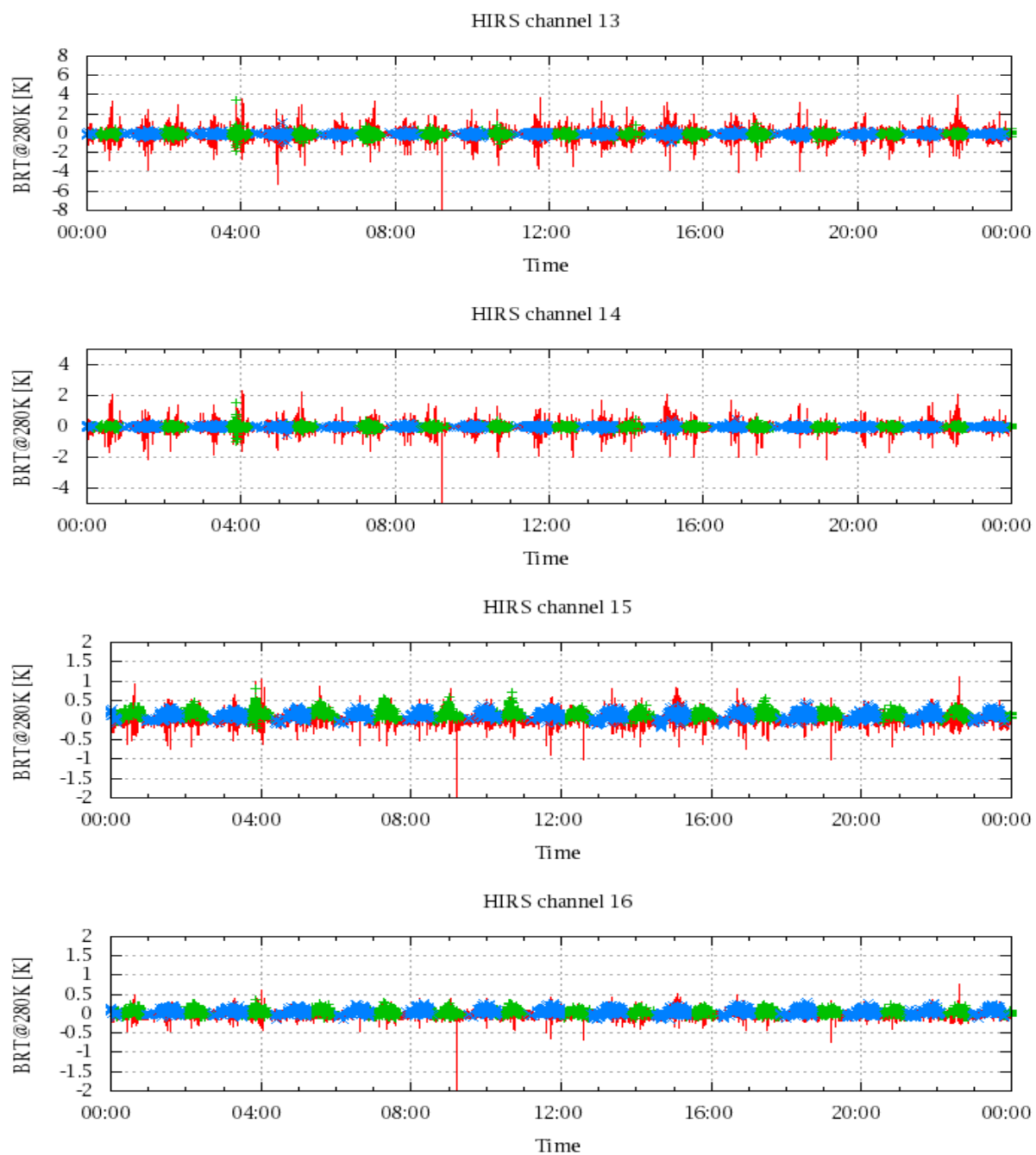


Figure 20: Radiance Differences in BRT

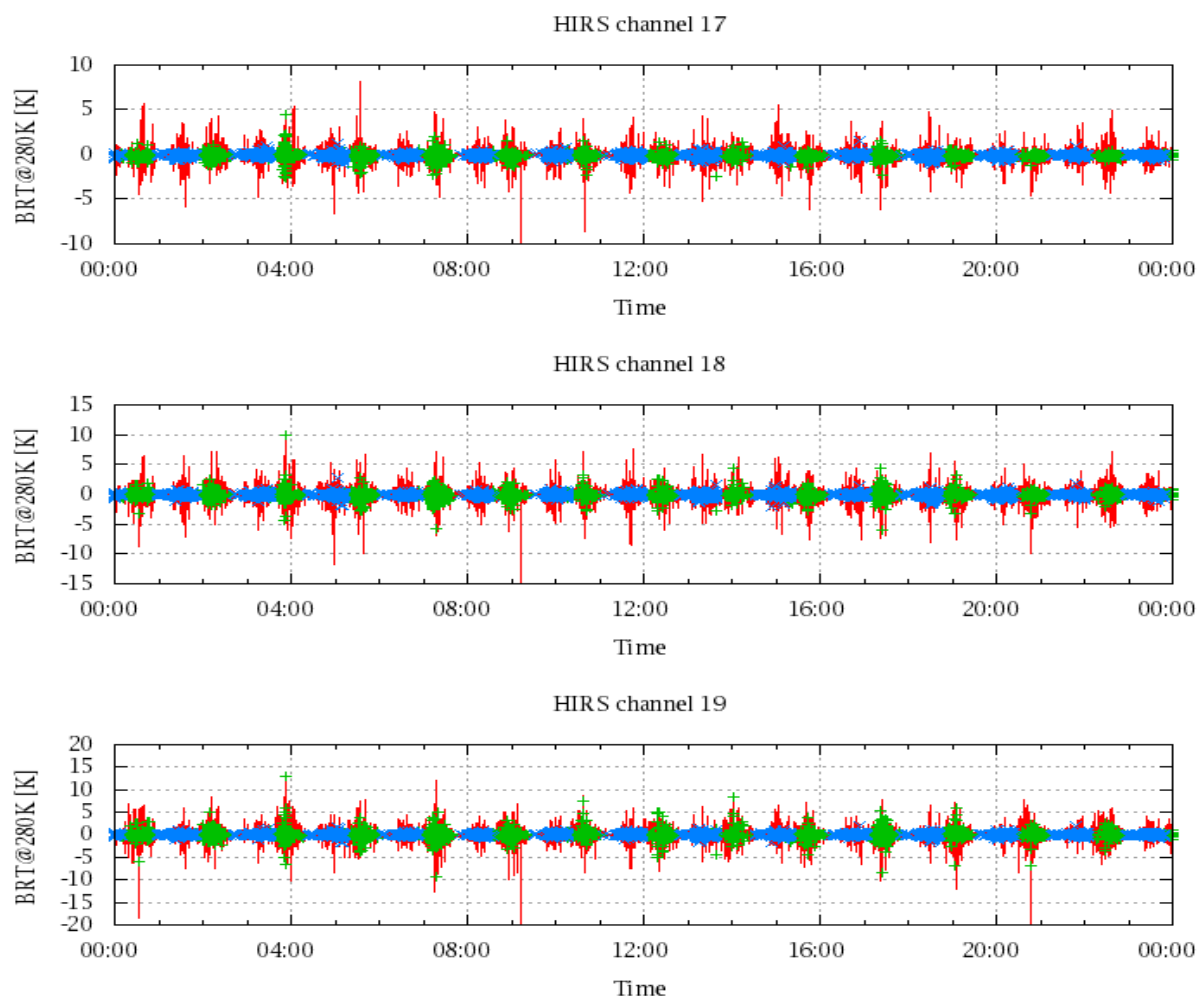


Figure 21: Radinace Differences in BRT