

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

02/06/2014 00:00:00 - 03/06/2014 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 02/06/2014 00:00:00 - 03/06/2014 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 02/06/2014 00:00:00 - 03/06/2014 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	406	e
L0 IASI PDUs	406	e
L1 ENG PDUs	405	e
L1 ENG distinct GEPSGranule	406	a
L1 DPX PDUs (RM: IASI-HIRS)	404	e
L1 DPS Files (RM: OBS-CAL NWP based)	405	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	8681	9328	20140602114948.472	20140602115241.690
PX1 (130)	9328	9343	20140602115241.690	20140602115244.936
PX1 (130)	9343	9351	20140602115244.936	20140602115248.179
PX1 (130)	9351	9369	20140602115248.179	20140602115252.069
PX1 (130)	9369	9379	20140602115252.069	20140602115255.745
PX1 (130)	9379	9410	20140602115255.745	20140602115303.960
PX1 (130)	9410	9423	20140602115303.960	20140602115306.772
PX1 (130)	9423	9428	20140602115306.772	20140602115307.854
PX1 (130)	9428	9432	20140602115307.854	20140602115308.718
PX1 (130)	9432	9442	20140602115308.718	20140602115312.393
PX1 (130)	9442	9446	20140602115312.393	20140602115313.257
PX1 (130)	9446	9499	20140602115313.257	20140602115327.745
PX1 (130)	9526	11317	20140602115333.581	20140602153959.702
PX1 (130)	11320	11322	20140602154000.350	20140602154000.784
PX1 (130)	11322	11324	20140602154000.784	20140602154001.218
PX1 (130)	11325	11327	20140602154001.432	20140602154001.862

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	11327	11333	20140602154001.862	20140602154003.163
PX1 (130)	11334	11336	20140602154003.378	20140602154003.811
PX1 (130)	11338	11340	20140602154004.245	20140602154004.675
PX1 (130)	11340	11342	20140602154004.675	20140602154005.108
PX1 (130)	11345	11347	20140602154005.757	20140602154007.702
PX1 (130)	11349	11351	20140602154008.136	20140602154008.569
PX1 (130)	11354	11356	20140602154009.214	20140602154009.647
PX1 (130)	11362	11367	20140602154010.944	20140602154012.026
PX1 (130)	11367	11369	20140602154012.026	20140602154012.460
PX1 (130)	11369	11371	20140602154012.460	20140602154012.893
PX1 (130)	11374	11376	20140602154013.538	20140602154013.972
PX1 (130)	11381	11383	20140602154016.565	20140602154016.999
PX1 (130)	11392	11394	20140602154018.944	20140602154019.378
PX1 (130)	11404	11406	20140602154021.542	20140602154021.971
PX1 (130)	11407	11409	20140602154023.702	20140602154024.136
PX1 (130)	11414	11416	20140602154025.214	20140602154025.647
PX1 (130)	11416	11418	20140602154025.647	20140602154026.081
PX1 (130)	11419	11421	20140602154026.296	20140602154026.729
PX1 (130)	11422	11424	20140602154026.944	20140602154027.378
PX1 (130)	11426	11429	20140602154027.807	20140602154028.460
PX1 (130)	11432	11434	20140602154029.108	20140602154029.538
PX1 (130)	11475	11477	20140602154041.432	20140602154041.862
PX2 (135)	8681	9328	20140602114948.472	20140602115241.690
PX2 (135)	9328	9332	20140602115241.690	20140602115242.557
PX2 (135)	9332	9402	20140602115242.557	20140602115300.718
PX2 (135)	9402	9409	20140602115300.718	20140602115303.745
PX2 (135)	9411	9418	20140602115304.179	20140602115305.690
PX2 (135)	9418	9428	20140602115305.690	20140602115307.854
PX2 (135)	9428	9430	20140602115307.854	20140602115308.284
PX2 (135)	9430	9496	20140602115308.284	20140602115325.581
PX2 (135)	9496	9499	20140602115325.581	20140602115327.745
PX2 (135)	9526	11317	20140602115333.581	20140602153959.702
PX2 (135)	11320	11324	20140602154000.350	20140602154001.218
PX2 (135)	11325	11327	20140602154001.432	20140602154001.862
PX2 (135)	11328	11330	20140602154002.081	20140602154002.515
PX2 (135)	11331	11333	20140602154002.729	20140602154003.163
PX2 (135)	11334	11337	20140602154003.378	20140602154004.026
PX2 (135)	11338	11340	20140602154004.245	20140602154004.675
PX2 (135)	11340	11342	20140602154004.675	20140602154005.108
PX2 (135)	11354	11356	20140602154009.214	20140602154009.647
PX2 (135)	11362	11367	20140602154010.944	20140602154012.026
PX2 (135)	11367	11369	20140602154012.026	20140602154012.460
PX2 (135)	11372	11374	20140602154013.108	20140602154013.538
PX2 (135)	11374	11376	20140602154013.538	20140602154013.972
PX2 (135)	11385	11387	20140602154017.432	20140602154017.862
PX2 (135)	11389	11391	20140602154018.296	20140602154018.729
PX2 (135)	11399	11401	20140602154020.460	20140602154020.889
PX2 (135)	11404	11407	20140602154021.542	20140602154023.702
PX2 (135)	11414	11416	20140602154025.214	20140602154025.647
PX2 (135)	11416	11418	20140602154025.647	20140602154026.081
PX2 (135)	11419	11421	20140602154026.296	20140602154026.729
PX2 (135)	11422	11424	20140602154026.944	20140602154027.378
PX2 (135)	11425	11427	20140602154027.593	20140602154028.026

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	11427	11429	20140602154028.026	20140602154028.460
PX2 (135)	11429	11431	20140602154028.460	20140602154028.889
PX2 (135)	11432	11434	20140602154029.108	20140602154029.538
PX2 (135)	11439	11441	20140602154032.132	20140602154032.565
PX2 (135)	11455	11457	20140602154035.593	20140602154036.026
PX2 (135)	11457	11459	20140602154036.026	20140602154036.456
PX2 (135)	11459	11461	20140602154036.456	20140602154036.889
PX2 (135)	11481	11483	20140602154042.729	20140602154043.163
PX3 (140)	8681	9320	20140602114948.472	20140602115239.960
PX3 (140)	9320	9322	20140602115239.960	20140602115240.393
PX3 (140)	9322	9341	20140602115240.393	20140602115244.503
PX3 (140)	9341	9392	20140602115244.503	20140602115258.554
PX3 (140)	9392	9394	20140602115258.554	20140602115258.987
PX3 (140)	9394	9409	20140602115258.987	20140602115303.745
PX3 (140)	9409	9417	20140602115303.745	20140602115305.475
PX3 (140)	9418	9499	20140602115305.690	20140602115327.745
PX3 (140)	9526	11317	20140602115333.581	20140602153959.702
PX3 (140)	11321	11325	20140602154000.565	20140602154001.432
PX3 (140)	11325	11327	20140602154001.432	20140602154001.862
PX3 (140)	11328	11330	20140602154002.081	20140602154002.515
PX3 (140)	11335	11338	20140602154003.593	20140602154004.245
PX3 (140)	11340	11343	20140602154004.675	20140602154005.323
PX3 (140)	11352	11356	20140602154008.784	20140602154009.647
PX3 (140)	11362	11364	20140602154010.944	20140602154011.378
PX3 (140)	11365	11367	20140602154011.593	20140602154012.026
PX3 (140)	11367	11369	20140602154012.026	20140602154012.460
PX3 (140)	11371	11374	20140602154012.893	20140602154013.538
PX3 (140)	11374	11376	20140602154013.538	20140602154013.972
PX3 (140)	11376	11378	20140602154013.972	20140602154015.917
PX3 (140)	11385	11387	20140602154017.432	20140602154017.862
PX3 (140)	11389	11391	20140602154018.296	20140602154018.729
PX3 (140)	11393	11395	20140602154019.159	20140602154019.593
PX3 (140)	11396	11398	20140602154019.811	20140602154020.241
PX3 (140)	11399	11401	20140602154020.460	20140602154020.889
PX3 (140)	11405	11407	20140602154021.757	20140602154023.702
PX3 (140)	11416	11418	20140602154025.647	20140602154026.081
PX3 (140)	11419	11421	20140602154026.296	20140602154026.729
PX3 (140)	11422	11424	20140602154026.944	20140602154027.378
PX3 (140)	11425	11427	20140602154027.593	20140602154028.026
PX3 (140)	11429	11431	20140602154028.460	20140602154028.889
PX3 (140)	11439	11441	20140602154032.132	20140602154032.565
PX3 (140)	11444	11446	20140602154033.214	20140602154033.647
PX3 (140)	11455	11457	20140602154035.593	20140602154036.026
PX3 (140)	11457	11459	20140602154036.026	20140602154036.456
PX3 (140)	11459	11461	20140602154036.456	20140602154036.889
PX3 (140)	11464	11466	20140602154037.538	20140602154037.971
PX3 (140)	11477	11479	20140602154041.862	20140602154042.296
PX3 (140)	11481	11483	20140602154042.729	20140602154043.163
PX4 (145)	8680	9327	20140602114948.253	20140602115241.475
PX4 (145)	9327	9329	20140602115241.475	20140602115241.909
PX4 (145)	9329	9341	20140602115241.909	20140602115244.503
PX4 (145)	9341	9353	20140602115244.503	20140602115248.608
PX4 (145)	9353	9379	20140602115248.608	20140602115255.745

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	9379	9382	20140602115255.745	20140602115256.393
PX4 (145)	9382	9409	20140602115256.393	20140602115303.745
PX4 (145)	9409	9412	20140602115303.745	20140602115304.393
PX4 (145)	9412	9424	20140602115304.393	20140602115306.987
PX4 (145)	9424	9429	20140602115306.987	20140602115308.069
PX4 (145)	9429	9438	20140602115308.069	20140602115310.014
PX4 (145)	9438	9467	20140602115310.014	20140602115317.800
PX4 (145)	9467	9479	20140602115317.800	20140602115321.905
PX4 (145)	9479	9499	20140602115321.905	20140602115327.745
PX4 (145)	9526	11317	20140602115333.581	20140602153959.702
PX4 (145)	11319	11321	20140602154000.136	20140602154000.565
PX4 (145)	11323	11325	20140602154000.999	20140602154001.432
PX4 (145)	11325	11328	20140602154001.432	20140602154002.081
PX4 (145)	11329	11331	20140602154002.296	20140602154002.729
PX4 (145)	11332	11335	20140602154002.944	20140602154003.593
PX4 (145)	11335	11338	20140602154003.593	20140602154004.245
PX4 (145)	11340	11343	20140602154004.675	20140602154005.323
PX4 (145)	11352	11355	20140602154008.784	20140602154009.432
PX4 (145)	11358	11361	20140602154010.081	20140602154010.729
PX4 (145)	11362	11364	20140602154010.944	20140602154011.378
PX4 (145)	11365	11367	20140602154011.593	20140602154012.026
PX4 (145)	11370	11374	20140602154012.675	20140602154013.538
PX4 (145)	11374	11376	20140602154013.538	20140602154013.972
PX4 (145)	11376	11378	20140602154013.972	20140602154015.917
PX4 (145)	11385	11388	20140602154017.432	20140602154018.081
PX4 (145)	11393	11395	20140602154019.159	20140602154019.593
PX4 (145)	11396	11398	20140602154019.811	20140602154020.241
PX4 (145)	11398	11401	20140602154020.241	20140602154020.889
PX4 (145)	11405	11407	20140602154021.757	20140602154023.702
PX4 (145)	11411	11414	20140602154024.565	20140602154025.214
PX4 (145)	11416	11418	20140602154025.647	20140602154026.081
PX4 (145)	11419	11421	20140602154026.296	20140602154026.729
PX4 (145)	11421	11423	20140602154026.729	20140602154027.163
PX4 (145)	11425	11427	20140602154027.593	20140602154028.026
PX4 (145)	11429	11432	20140602154028.460	20140602154029.108
PX4 (145)	11439	11441	20140602154032.132	20140602154032.565
PX4 (145)	11444	11446	20140602154033.214	20140602154033.647
PX4 (145)	11455	11459	20140602154035.593	20140602154036.456
PX4 (145)	11459	11461	20140602154036.456	20140602154036.889
PX4 (145)	11464	11466	20140602154037.538	20140602154037.971
PX4 (145)	11477	11479	20140602154041.862	20140602154042.296
PX4 (145)	11481	11483	20140602154042.729	20140602154043.163
IMG (150)	11509	12244	20140602114948.253	20140602115241.475
IMG (150)	12244	12302	20140602115241.475	20140602115255.096
IMG (150)	12302	12341	20140602115255.096	20140602115304.393
IMG (150)	12341	12436	20140602115304.393	20140602115326.448
IMG (150)	12466	4668	20140602115333.366	20140602153959.054
IMG (150)	4668	4671	20140602153959.054	20140602153959.921
IMG (150)	4671	4675	20140602153959.921	20140602154000.784
IMG (150)	4676	4678	20140602154000.999	20140602154001.432
IMG (150)	4679	4685	20140602154001.647	20140602154002.944
IMG (150)	4685	4688	20140602154002.944	20140602154003.593
IMG (150)	4688	4692	20140602154003.593	20140602154004.460

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	4693	4696	20140602154004.675	20140602154005.323
IMG (150)	4697	4699	20140602154005.542	20140602154005.972
IMG (150)	4700	4704	20140602154006.405	20140602154007.702
IMG (150)	4705	4709	20140602154007.917	20140602154008.784
IMG (150)	4709	4712	20140602154008.784	20140602154009.432
IMG (150)	4715	4724	20140602154010.081	20140602154012.026
IMG (150)	4725	4727	20140602154012.241	20140602154012.675
IMG (150)	4727	4729	20140602154012.675	20140602154013.108
IMG (150)	4730	4733	20140602154013.323	20140602154013.972
IMG (150)	4737	4739	20140602154015.268	20140602154015.917
IMG (150)	4741	4743	20140602154016.350	20140602154016.784
IMG (150)	4745	4747	20140602154017.218	20140602154017.647
IMG (150)	4747	4749	20140602154017.647	20140602154018.081
IMG (150)	4750	4752	20140602154018.296	20140602154018.729
IMG (150)	4752	4754	20140602154018.729	20140602154019.159
IMG (150)	4754	4756	20140602154019.159	20140602154019.593
IMG (150)	4757	4759	20140602154019.811	20140602154020.241
IMG (150)	4759	4762	20140602154020.241	20140602154020.889
IMG (150)	4764	4766	20140602154021.323	20140602154021.757
IMG (150)	4771	4773	20140602154023.268	20140602154023.917
IMG (150)	4776	4780	20140602154024.565	20140602154025.432
IMG (150)	4780	4782	20140602154025.432	20140602154025.866
IMG (150)	4783	4786	20140602154026.081	20140602154026.729
IMG (150)	4786	4788	20140602154026.729	20140602154027.163
IMG (150)	4790	4792	20140602154027.593	20140602154028.026
IMG (150)	4795	4798	20140602154028.675	20140602154029.323
IMG (150)	4807	4809	20140602154031.917	20140602154032.350
IMG (150)	4813	4816	20140602154033.214	20140602154033.862
IMG (150)	4825	4827	20140602154035.811	20140602154036.241
IMG (150)	4833	4835	20140602154037.538	20140602154037.971
IMG (150)	4847	4849	20140602154041.214	20140602154041.647
VER (160)	7650	7789	20140602114941.984	20140602115325.581
VER (160)	7790	16286	20140602115325.581	20140602154005.972
VER (160)	16287	16290	20140602154005.972	20140602154005.972
VER (160)	16291	16294	20140602154013.972	20140602154013.972
VER (160)	16297	16300	20140602154021.971	20140602154021.971
VER (160)	16302	16304	20140602154029.971	20140602154029.971
VER (160)	16308	16310	20140602154037.971	20140602154037.971
VER (160)	16311	16314	20140602154045.971	20140602154045.971
AUX (180)	4802	4830	20140602114942.417	20140602115326.448
AUX (180)	4830	6530	20140602115326.448	20140602154006.405

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
02/06/2014 00:00:13	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	406	e
L1 ENG PDUs	405	e
L1 ENG distinct GEPSGranule	406	a
GQisFlagQual set (PX1)	99.50 %	-
GQisFlagQual set (PX2)	99.47 %	-
GQisFlagQual set (PX3)	99.51 %	-
GQisFlagQual set (PX4)	99.52 %	-
GQisFlagQual set (all)	99.50 %	-

Table 4: Quality flags

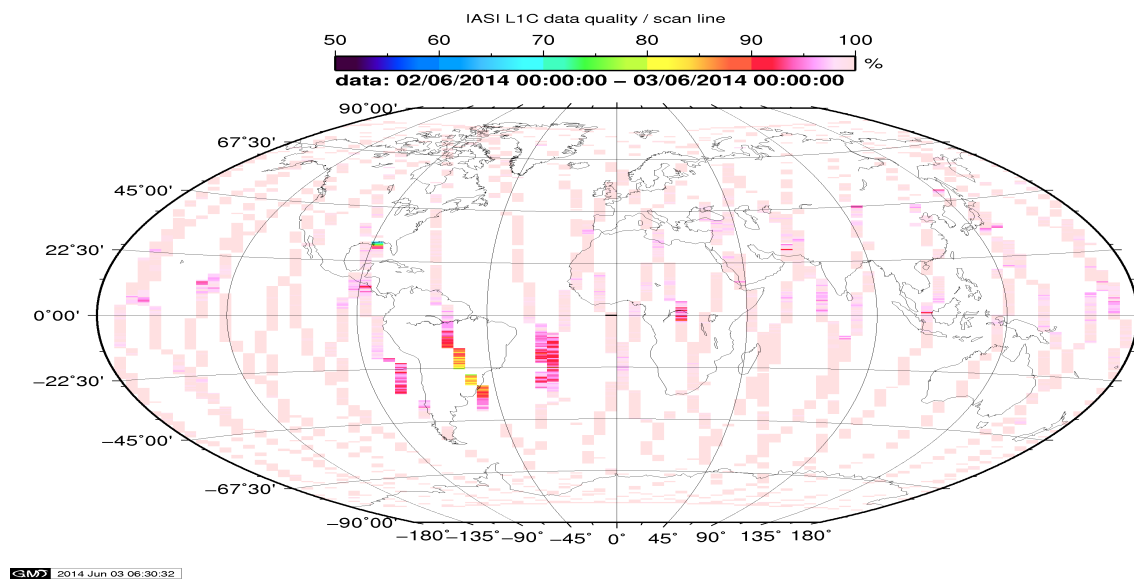


Figure 1: L1C data quality

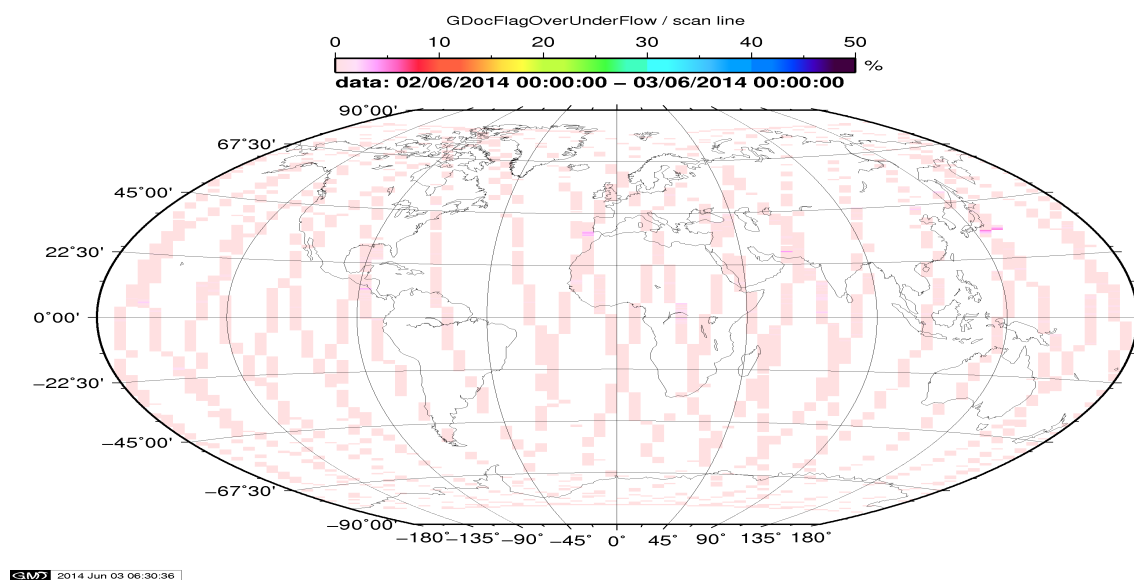


Figure 2: Flag of Over and Under Flows

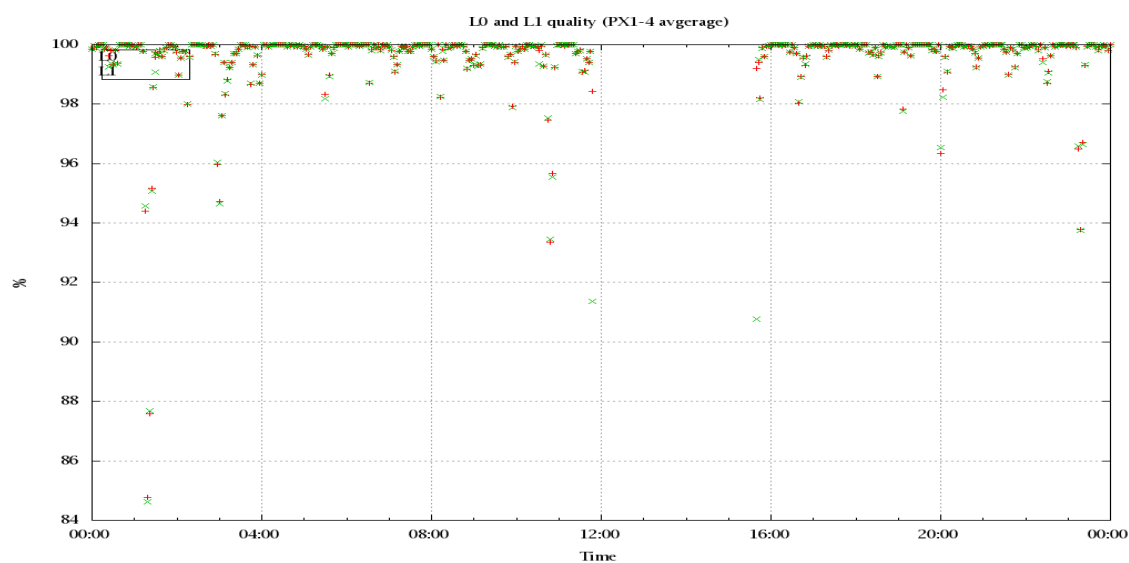


Figure 3: Level 0 and 1C overall quality

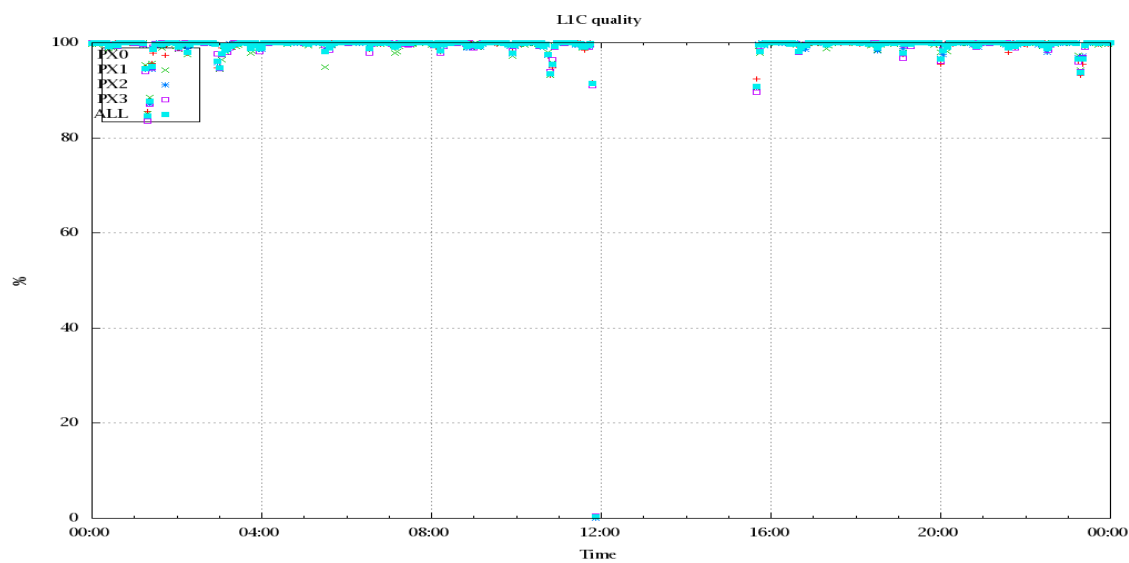


Figure 4: Level 1C quality

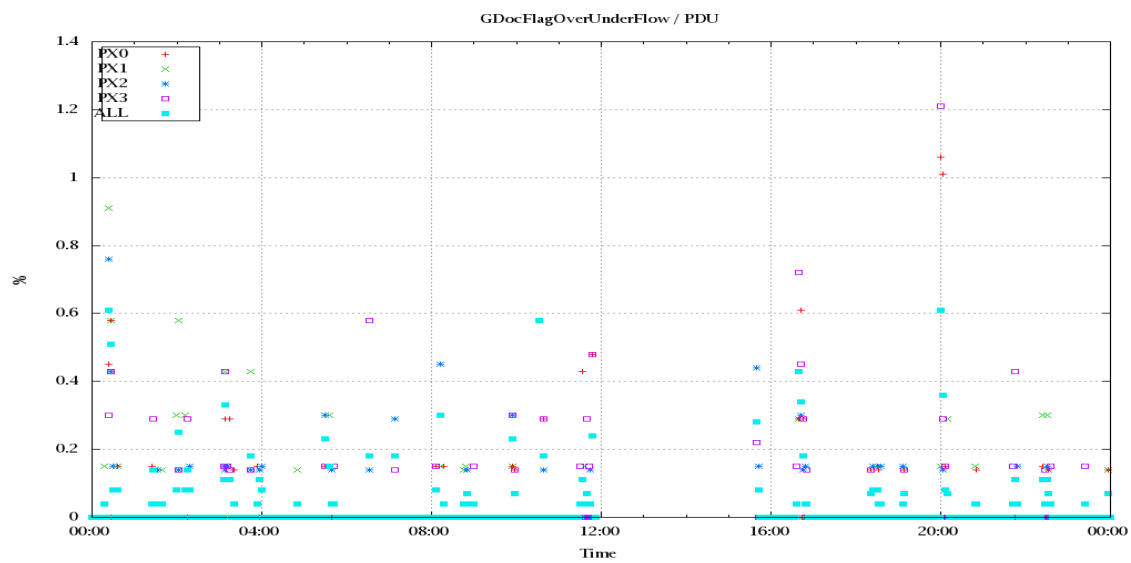


Figure 5: OverUnderFlowFlag timeseries

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.

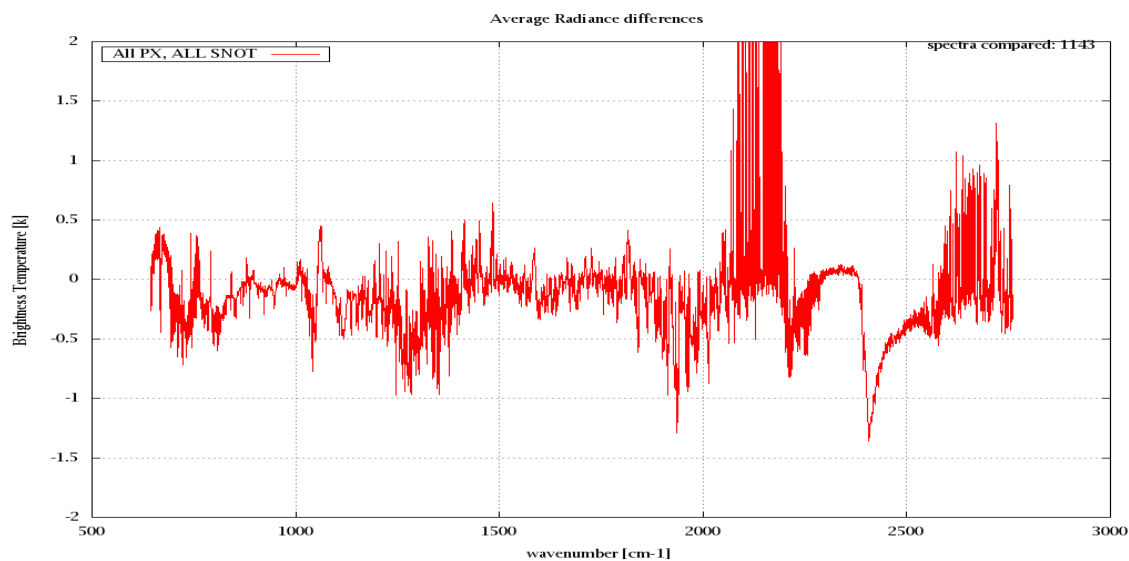


Figure 6: Average Radiance differences: OBS-CAL

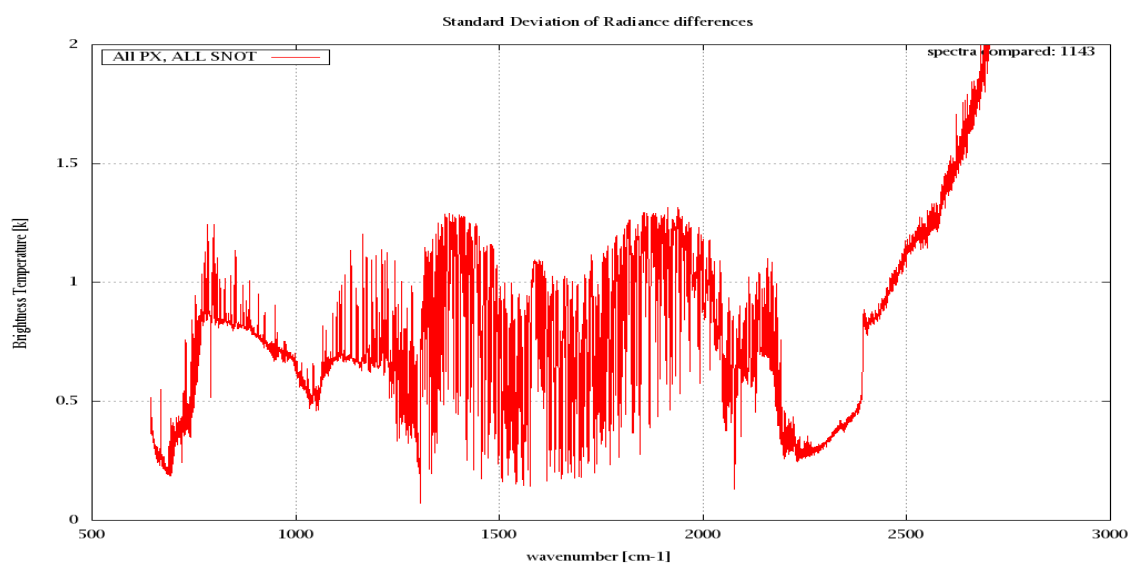


Figure 7: Standard Deviation of Radiance differences

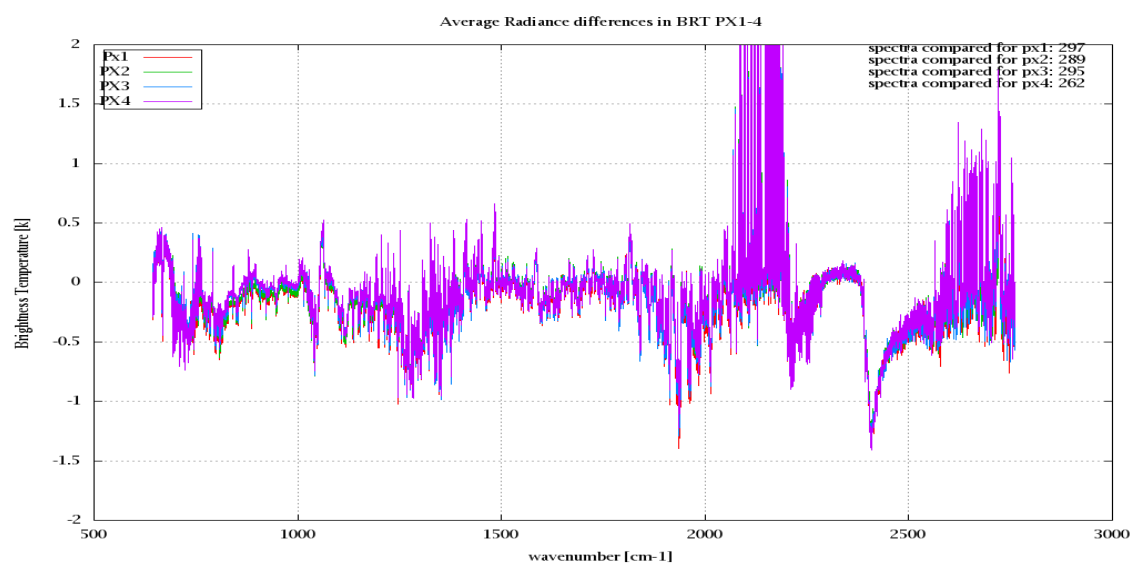


Figure 8: Average Radiance differences: OBS-CAL

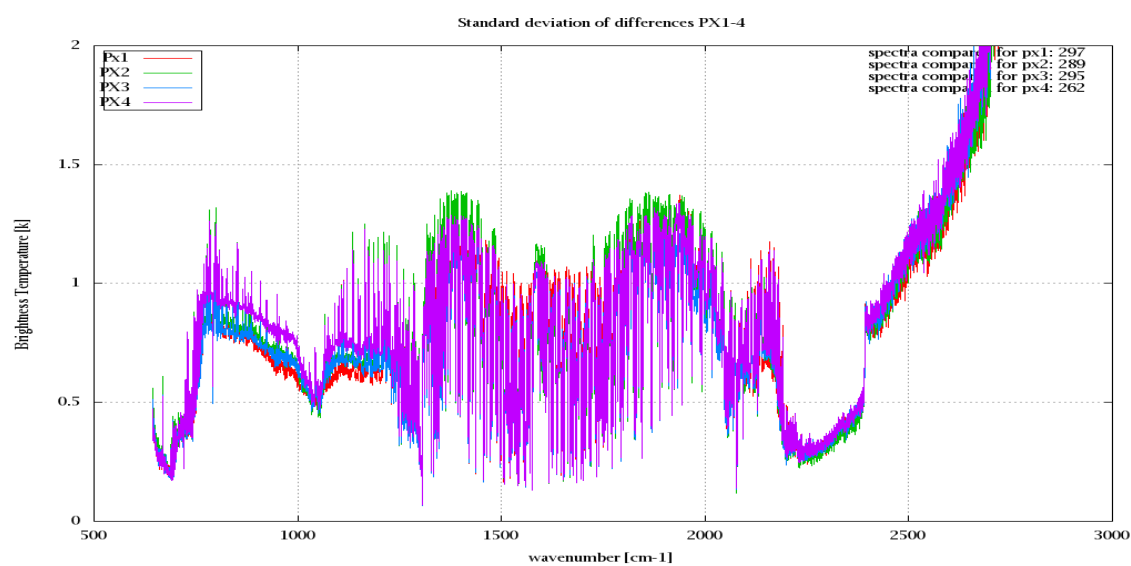


Figure 9: Standard Deviation of Radiance differences

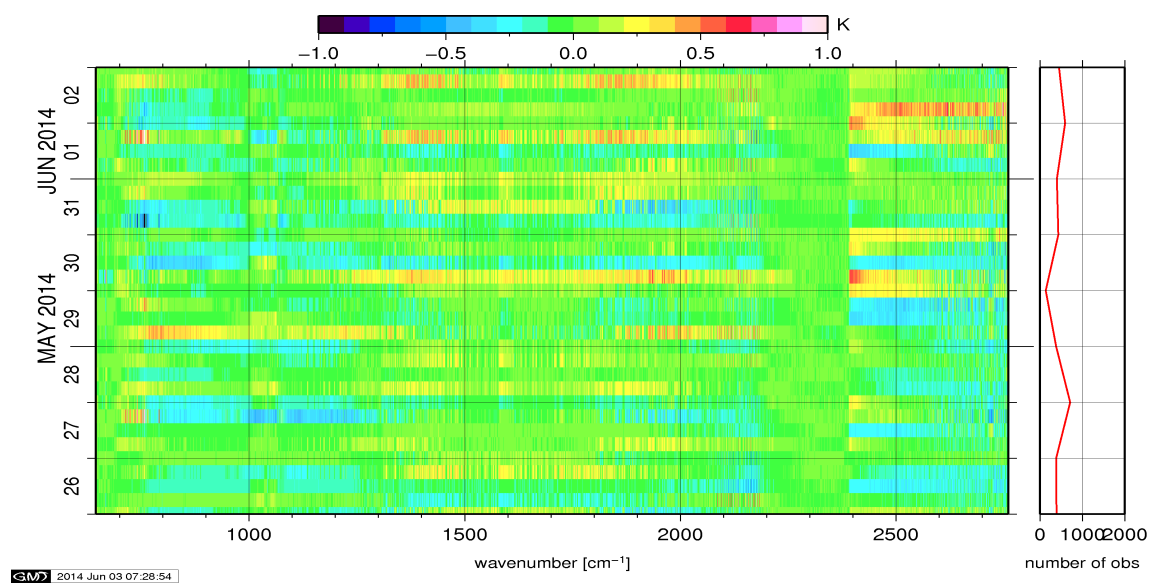


Figure 10: Radiance Anomaly in BRT: All Channels

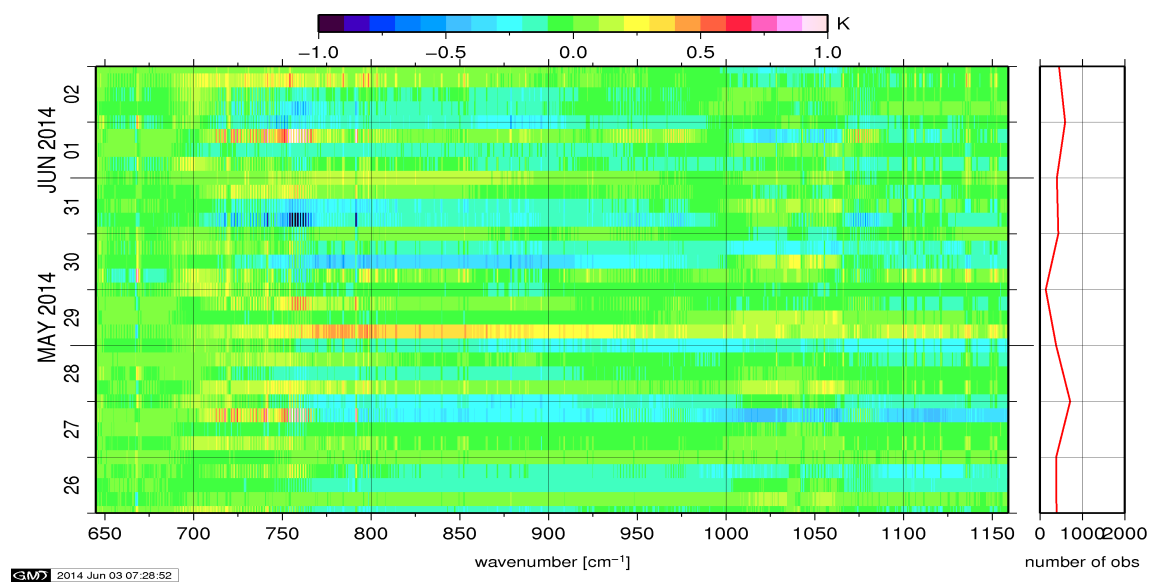


Figure 11: Radiance Anomaly in BRT: IASI Band 1

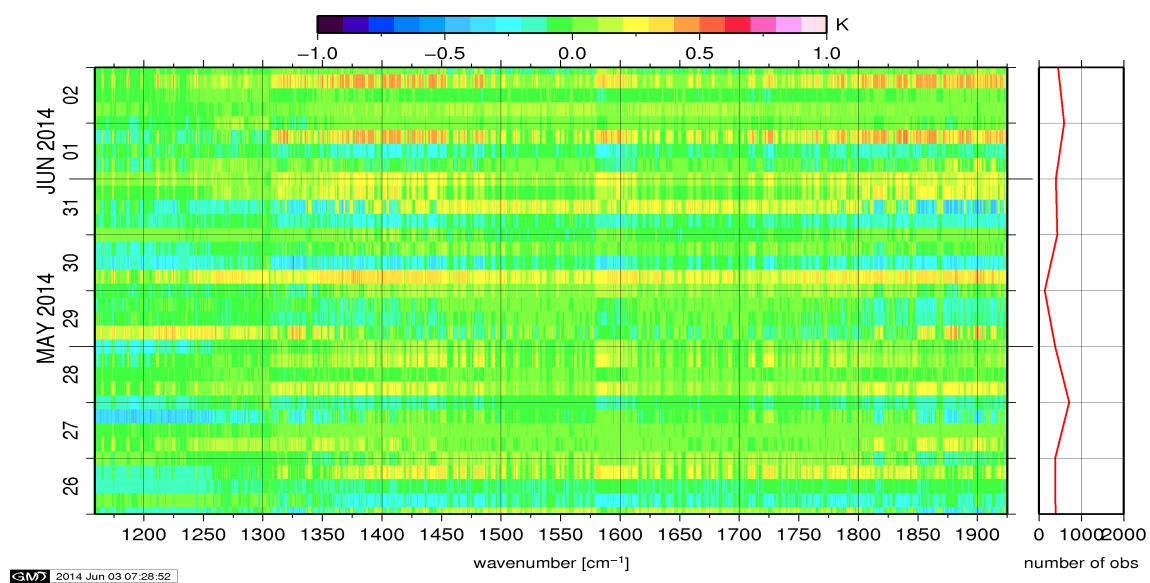


Figure 12: Radiance Anomaly in BRT: IASI Band 2

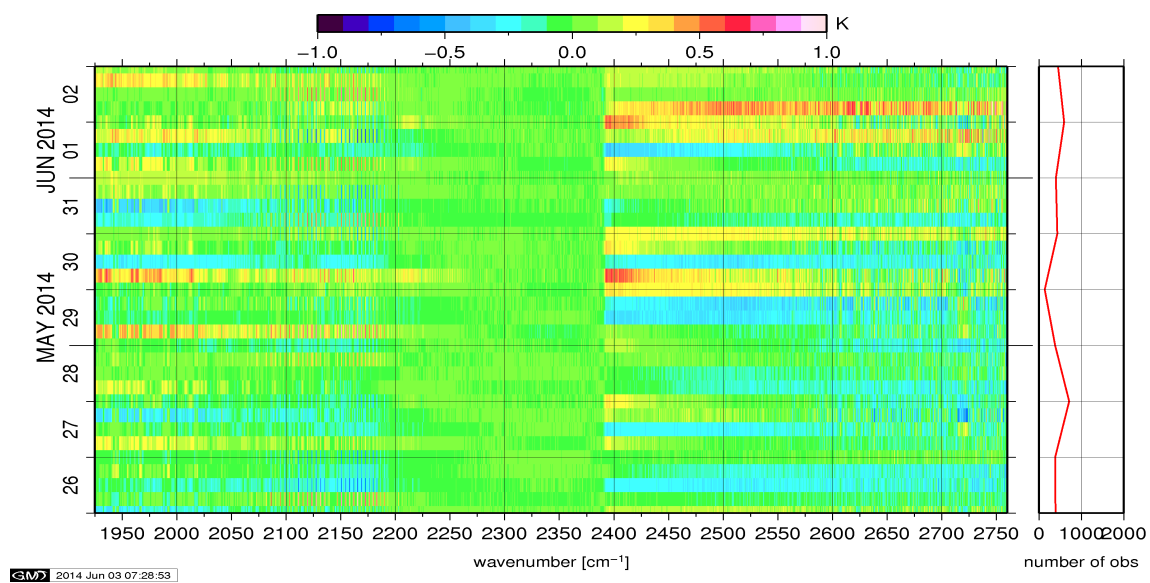


Figure 13: Radiance Anomaly in BRT: IASI Band 3

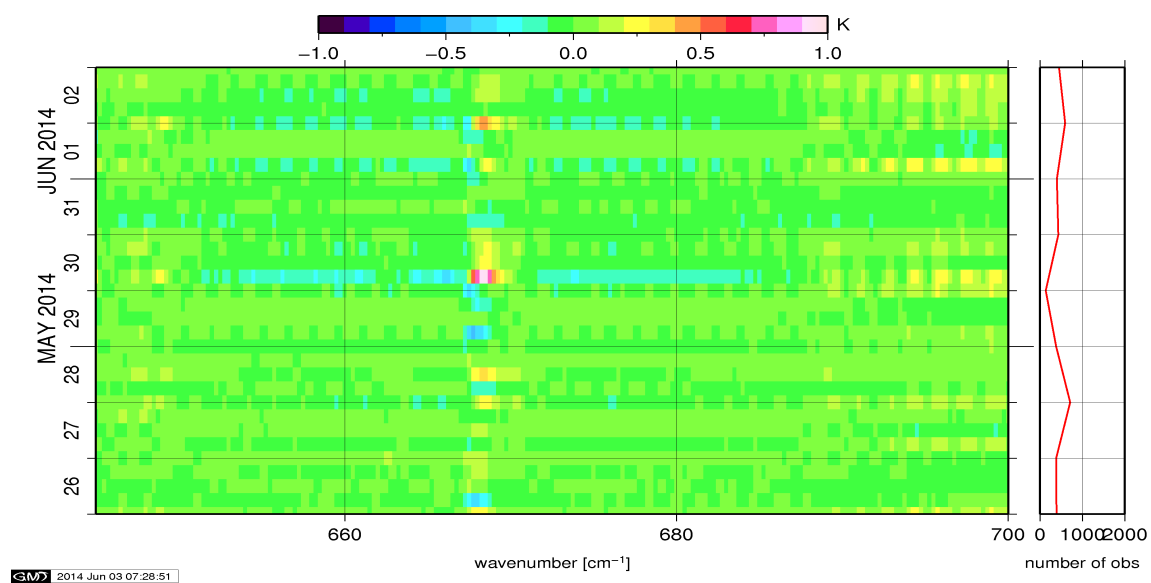


Figure 14: Radiance Anomaly in BRT: CO2 14

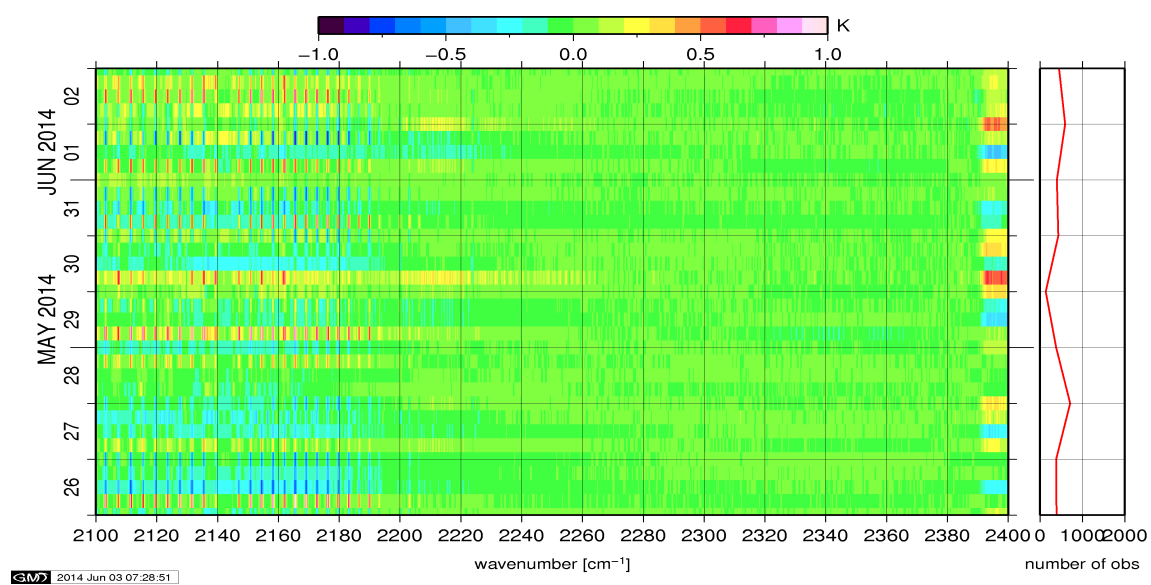


Figure 15: Radiance Anomaly in BRT: CO2 4.3

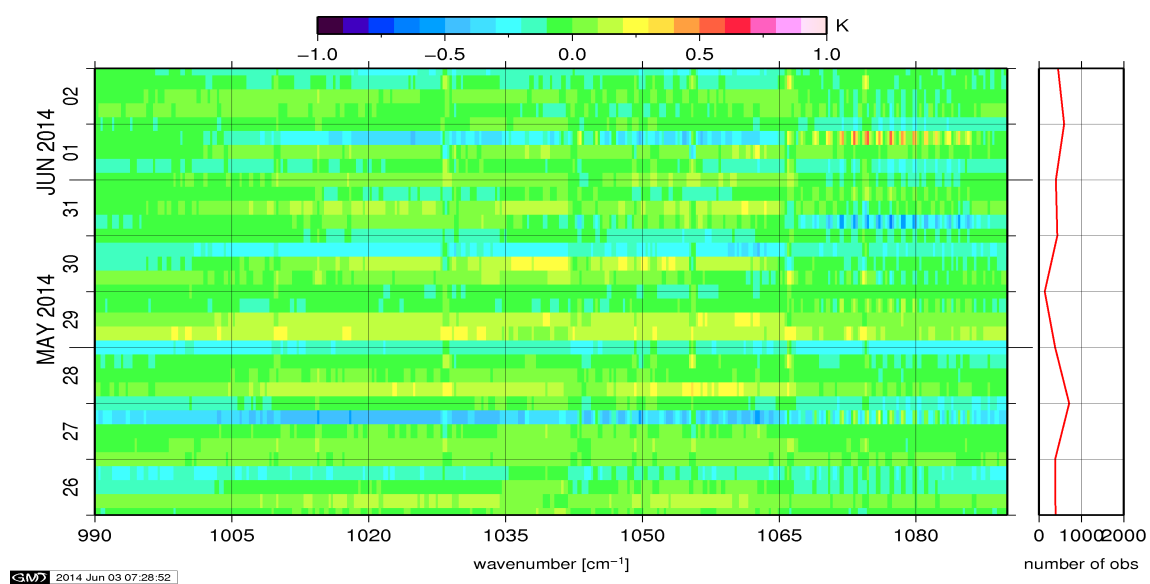


Figure 16: Radiance Anomaly in BRT: O3

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.

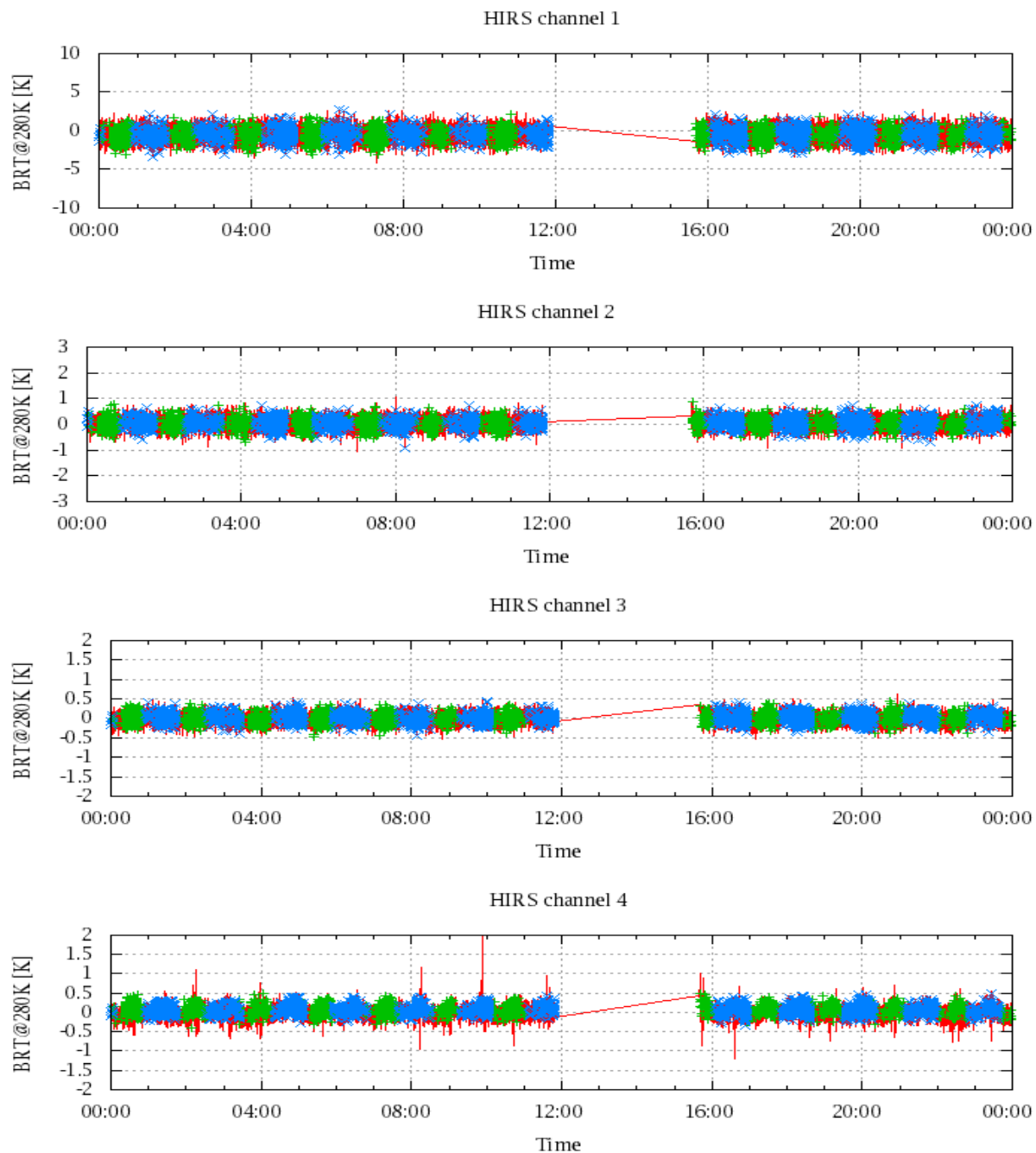


Figure 17: Radiance Differences in BRT

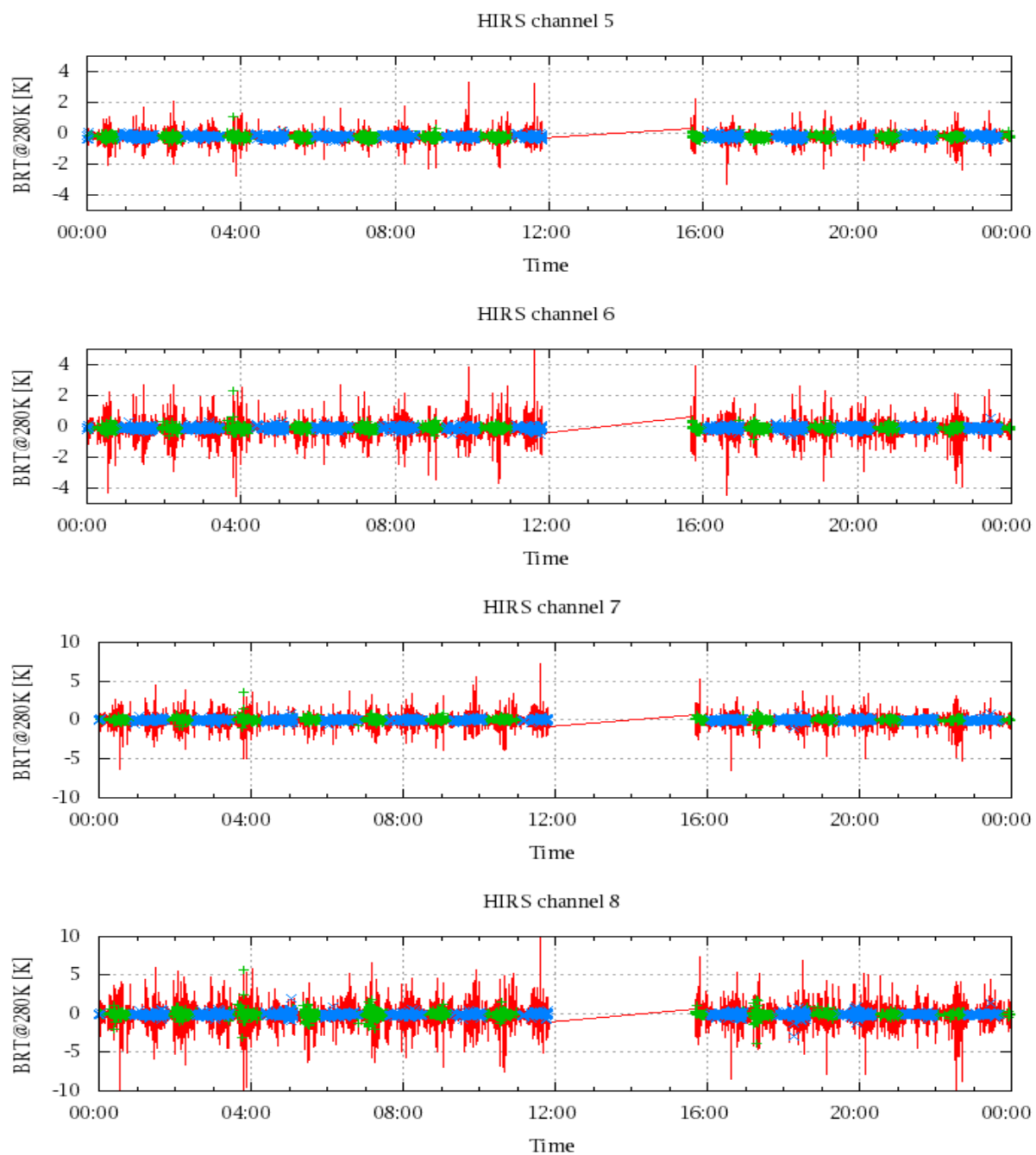


Figure 18: Radiance Differences in BRT

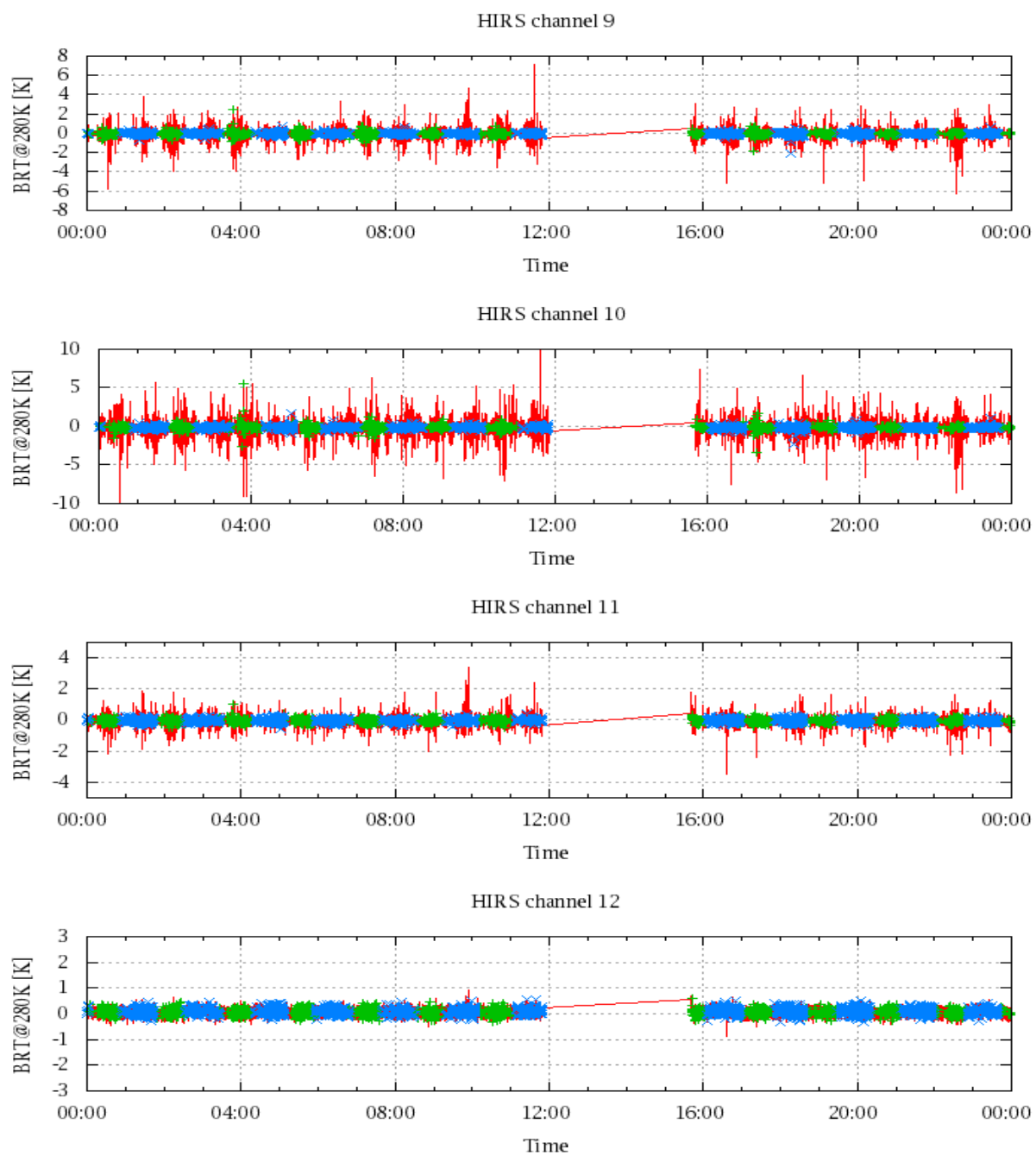


Figure 19: Radiance Differences in BRT

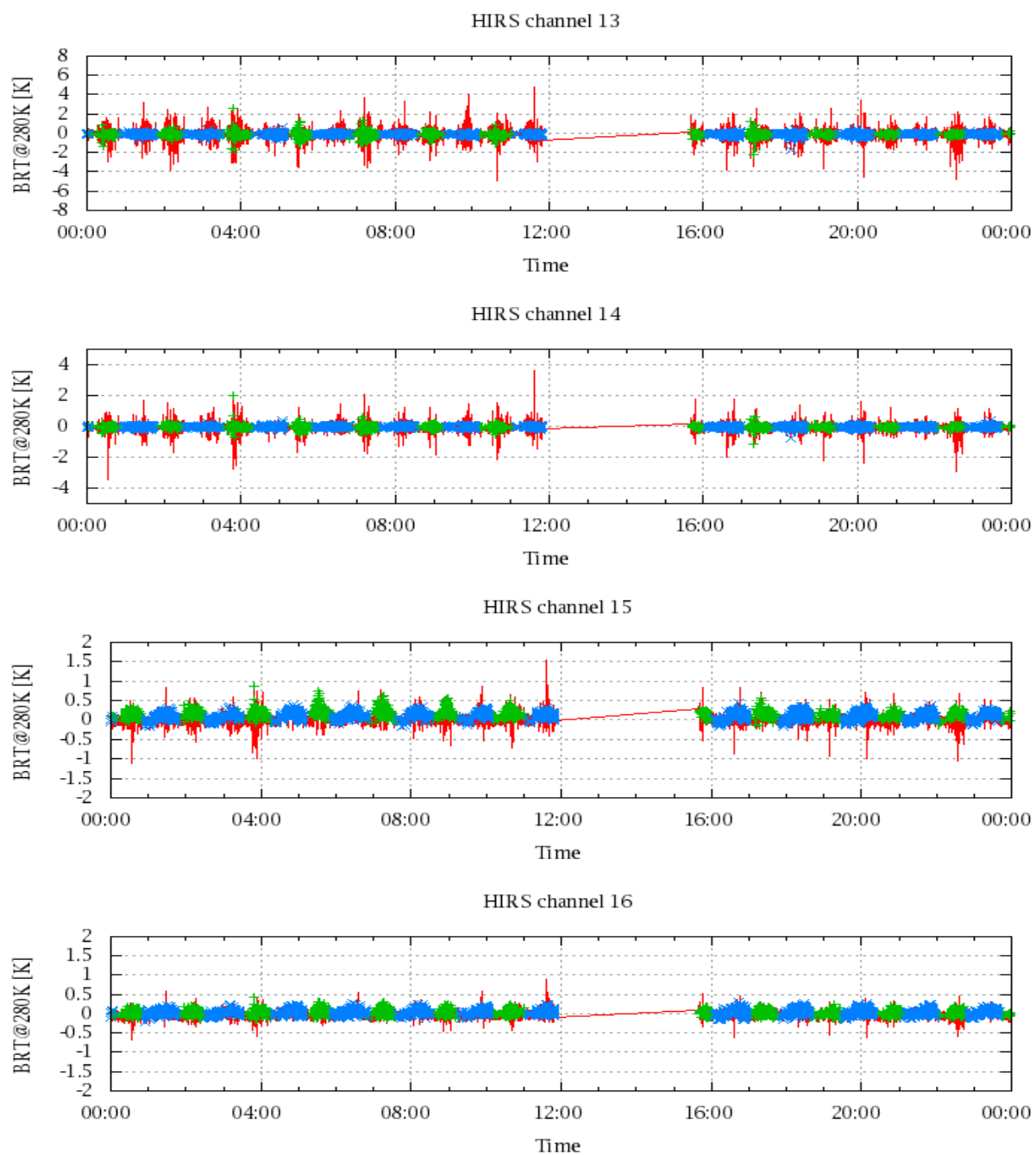


Figure 20: Radiance Differences in BRT

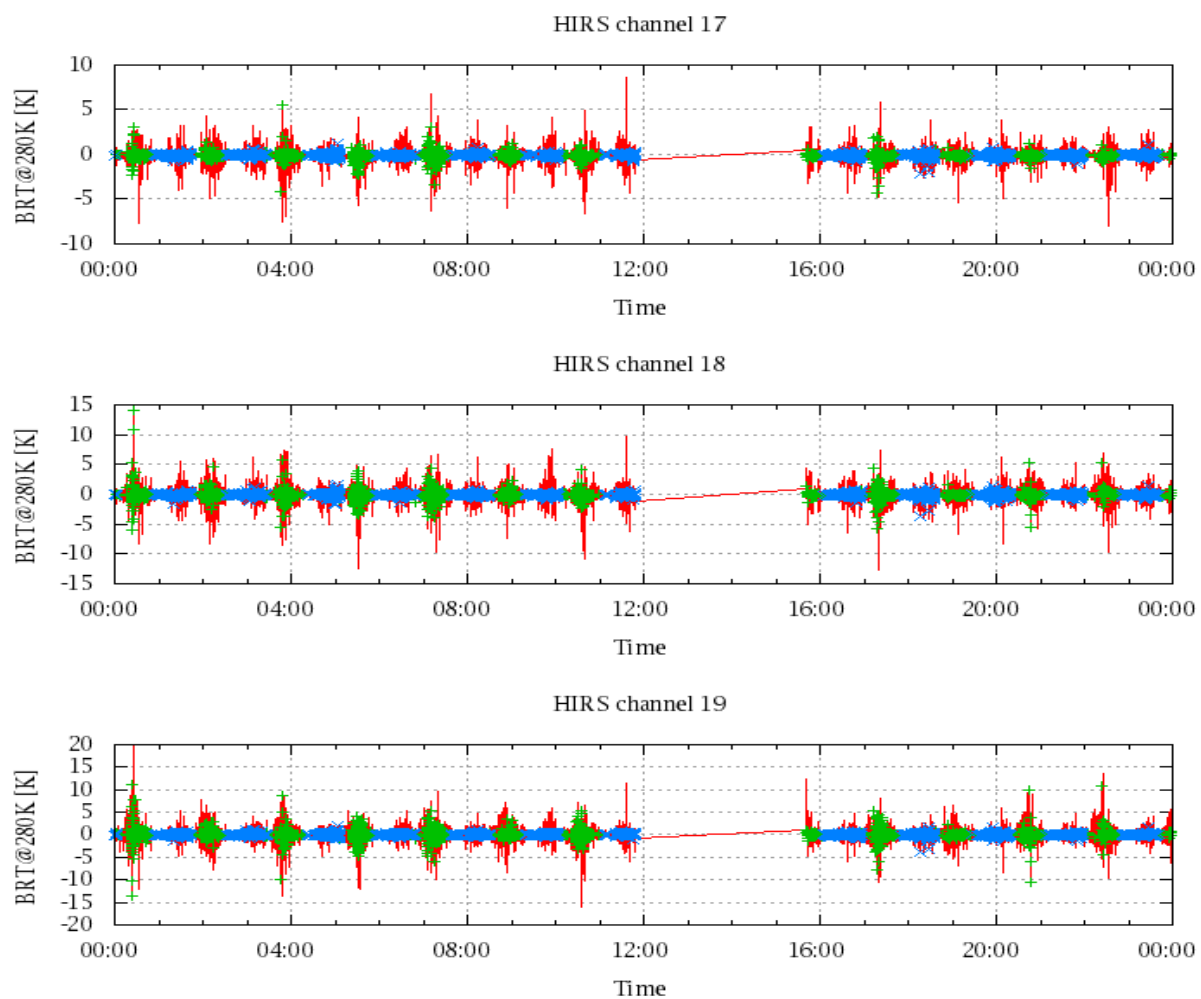


Figure 21: Radinace Differences in BRT