

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-A 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	389	e
L0 IASI PDUs	383	e
L1 ENG PDUs	388	e
L1 ENG distinct GEPSGranule	387	a
L1 DPX PDUs (RM: IASI-HIRS)	341	e
L1 DPS Files (RM: OBS-CAL NWP based)	385	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	9410	10086	20160219155059.884	20160219155400.852
PX1 (130)	12110	12786	20160219160259.902	20160219160600.870
PX1 (130)	14810	16161	20160219161459.881	20160219162100.083
PX1 (130)	1126	2477	20160219162659.894	20160219163300.101
PX1 (130)	3151	3827	20160219163559.124	20160219163900.092
PX1 (130)	4501	5177	20160219164159.111	20160219164500.079
PX1 (130)	6526	7877	20160219165059.891	20160219165700.097
PX1 (130)	8551	9902	20160219165959.116	20160219170600.838
PX1 (130)	11926	13277	20160219171459.884	20160219172100.090
PX1 (130)	13951	14627	20160219172359.113	20160219172700.081
PX1 (130)	15976	943	20160219173259.854	20160219173900.099
PX1 (130)	1617	2293	20160219174159.118	20160219174500.087
PX1 (130)	4992	5668	20160219175659.850	20160219180000.854
PX1 (130)	6342	7018	20160219180259.877	20160219180600.845
PX1 (130)	8367	9718	20160219181159.102	20160219181800.824
PX1 (130)	10392	11743	20160219182059.882	20160219182700.088

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	13092	14443	20160219183259.861	20160219183900.067
PX1 (130)	83	759	20160219184759.113	20160219185100.081
PX1 (130)	1433	2109	20160219185359.104	20160219185700.072
PX1 (130)	2783	3459	20160219185959.091	20160219190300.060
PX1 (130)	4808	5484	20160219190859.871	20160219191200.840
PX1 (130)	6833	7509	20160219191759.101	20160219192100.065
PX1 (130)	8858	9534	20160219192659.838	20160219193000.845
PX1 (130)	10208	10884	20160219193259.868	20160219193600.832
PX1 (130)	16283	575	20160219195959.099	20160219200300.067
PX1 (130)	1924	3275	20160219200859.839	20160219201500.046
PX1 (130)	3949	4625	20160219201759.104	20160219202100.072
PX1 (130)	5299	6650	20160219202359.095	20160219203000.813
PX1 (130)	7999	12725	20160219203559.074	20160219205700.047
PX1 (130)	14074	14750	20160219210259.855	20160219210600.823
PX1 (130)	15424	391	20160219210859.846	20160219211500.053
PX1 (130)	1065	5791	20160219211759.072	20160219213900.045
PX1 (130)	7140	9166	20160219214459.818	20160219215400.813
PX1 (130)	10515	13891	20160219215959.074	20160219221500.056
PX1 (130)	14565	882	20160219221759.079	20160219223000.788
PX2 (135)	9410	10086	20160219155059.884	20160219155400.852
PX2 (135)	12110	12786	20160219160259.902	20160219160600.870
PX2 (135)	14810	16161	20160219161459.881	20160219162100.083
PX2 (135)	1126	2477	20160219162659.894	20160219163300.101
PX2 (135)	3151	3827	20160219163559.124	20160219163900.092
PX2 (135)	4501	5177	20160219164159.111	20160219164500.079
PX2 (135)	6526	7877	20160219165059.891	20160219165700.097
PX2 (135)	8551	9902	20160219165959.116	20160219170600.838
PX2 (135)	11926	13277	20160219171459.884	20160219172100.090
PX2 (135)	13951	14627	20160219172359.113	20160219172700.081
PX2 (135)	15976	943	20160219173259.854	20160219173900.099
PX2 (135)	1617	2293	20160219174159.118	20160219174500.087
PX2 (135)	4992	5668	20160219175659.850	20160219180000.854
PX2 (135)	6342	7018	20160219180259.877	20160219180600.845
PX2 (135)	8367	9718	20160219181159.102	20160219181800.824
PX2 (135)	10392	11743	20160219182059.882	20160219182700.088
PX2 (135)	13092	14443	20160219183259.861	20160219183900.067
PX2 (135)	83	759	20160219184759.113	20160219185100.081
PX2 (135)	1433	2109	20160219185359.104	20160219185700.072
PX2 (135)	2783	3459	20160219185959.091	20160219190300.060
PX2 (135)	4808	5484	20160219190859.871	20160219191200.840
PX2 (135)	6833	7509	20160219191759.101	20160219192100.065
PX2 (135)	8858	9534	20160219192659.838	20160219193000.845
PX2 (135)	10208	10884	20160219193259.868	20160219193600.832
PX2 (135)	16283	575	20160219195959.099	20160219200300.067
PX2 (135)	1924	3275	20160219200859.839	20160219201500.046
PX2 (135)	3949	4625	20160219201759.104	20160219202100.072
PX2 (135)	5299	6650	20160219202359.095	20160219203000.813
PX2 (135)	7999	12725	20160219203559.074	20160219205700.047
PX2 (135)	14074	14750	20160219210259.855	20160219210600.823
PX2 (135)	15424	391	20160219210859.846	20160219211500.053
PX2 (135)	1065	5791	20160219211759.072	20160219213900.045
PX2 (135)	7140	9166	20160219214459.818	20160219215400.813
PX2 (135)	10515	13891	20160219215959.074	20160219221500.056

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	14565	882	20160219221759.079	20160219223000.788
PX3 (140)	9410	10086	20160219155059.884	20160219155400.852
PX3 (140)	12110	12786	20160219160259.902	20160219160600.870
PX3 (140)	14810	16161	20160219161459.881	20160219162100.083
PX3 (140)	1126	2477	20160219162659.894	20160219163300.101
PX3 (140)	3151	3827	20160219163559.124	20160219163900.092
PX3 (140)	4501	5177	20160219164159.111	20160219164500.079
PX3 (140)	6526	7877	20160219165059.891	20160219165700.097
PX3 (140)	8551	9902	20160219165959.116	20160219170600.838
PX3 (140)	11926	13277	20160219171459.884	20160219172100.090
PX3 (140)	13951	14627	20160219172359.113	20160219172700.081
PX3 (140)	15976	943	20160219173259.854	20160219173900.099
PX3 (140)	1617	2293	20160219174159.118	20160219174500.087
PX3 (140)	4992	5668	20160219175659.850	20160219180000.854
PX3 (140)	6342	7018	20160219180259.877	20160219180600.845
PX3 (140)	8367	9718	20160219181159.102	20160219181800.824
PX3 (140)	10392	11743	20160219182059.882	20160219182700.088
PX3 (140)	13092	14443	20160219183259.861	20160219183900.067
PX3 (140)	83	759	20160219184759.113	20160219185100.081
PX3 (140)	1433	2109	20160219185359.104	20160219185700.072
PX3 (140)	2783	3459	20160219185959.091	20160219190300.060
PX3 (140)	4808	5484	20160219190859.871	20160219191200.840
PX3 (140)	6833	7509	20160219191759.101	20160219192100.065
PX3 (140)	8858	9534	20160219192659.838	20160219193000.845
PX3 (140)	10208	10884	20160219193259.868	20160219193600.832
PX3 (140)	16283	575	20160219195959.099	20160219200300.067
PX3 (140)	1924	3275	20160219200859.839	20160219201500.046
PX3 (140)	3949	4625	20160219201759.104	20160219202100.072
PX3 (140)	5299	6650	20160219202359.095	20160219203000.813
PX3 (140)	7999	12725	20160219203559.074	20160219205700.047
PX3 (140)	14074	14750	20160219210259.855	20160219210600.823
PX3 (140)	15424	391	20160219210859.846	20160219211500.053
PX3 (140)	1065	5791	20160219211759.072	20160219213900.045
PX3 (140)	7140	9166	20160219214459.818	20160219215400.813
PX3 (140)	10515	13891	20160219215959.074	20160219221500.056
PX3 (140)	14565	882	20160219221759.079	20160219223000.788
PX4 (145)	9410	10086	20160219155059.884	20160219155400.852
PX4 (145)	12110	12786	20160219160259.902	20160219160600.870
PX4 (145)	14810	16161	20160219161459.881	20160219162100.083
PX4 (145)	1126	2477	20160219162659.894	20160219163300.101
PX4 (145)	3151	3827	20160219163559.124	20160219163900.092
PX4 (145)	4501	5177	20160219164159.111	20160219164500.079
PX4 (145)	6526	7877	20160219165059.891	20160219165700.097
PX4 (145)	8551	9902	20160219165959.116	20160219170600.838
PX4 (145)	11926	13277	20160219171459.884	20160219172100.090
PX4 (145)	13951	14627	20160219172359.113	20160219172700.081
PX4 (145)	15976	943	20160219173259.854	20160219173900.099
PX4 (145)	1617	2293	20160219174159.118	20160219174500.087
PX4 (145)	4992	5668	20160219175659.850	20160219180000.854
PX4 (145)	6342	7018	20160219180259.877	20160219180600.845
PX4 (145)	8367	9718	20160219181159.102	20160219181800.824
PX4 (145)	10392	11743	20160219182059.882	20160219182700.088
PX4 (145)	13092	14443	20160219183259.861	20160219183900.067

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	83	759	20160219184759.113	20160219185100.081
PX4 (145)	1433	2109	20160219185359.104	20160219185700.072
PX4 (145)	2783	3459	20160219185959.091	20160219190300.060
PX4 (145)	4808	5484	20160219190859.871	20160219191200.840
PX4 (145)	6833	7509	20160219191759.101	20160219192100.065
PX4 (145)	8858	9534	20160219192659.838	20160219193000.845
PX4 (145)	10208	10884	20160219193259.868	20160219193600.832
PX4 (145)	16283	575	20160219195959.099	20160219200300.067
PX4 (145)	1924	3275	20160219200859.839	20160219201500.046
PX4 (145)	3949	4625	20160219201759.104	20160219202100.072
PX4 (145)	5299	6650	20160219202359.095	20160219203000.813
PX4 (145)	7999	12725	20160219203559.074	20160219205700.047
PX4 (145)	14074	14750	20160219210259.855	20160219210600.823
PX4 (145)	15424	391	20160219210859.846	20160219211500.053
PX4 (145)	1065	5791	20160219211759.072	20160219213900.045
PX4 (145)	7140	9166	20160219214459.818	20160219215400.813
PX4 (145)	10515	13891	20160219215959.074	20160219221500.056
PX4 (145)	14565	882	20160219221759.079	20160219223000.788
IMG (150)	1526	2292	20160219155059.884	20160219155400.204
IMG (150)	4586	5352	20160219160259.902	20160219160600.218
IMG (150)	7646	9177	20160219161459.881	20160219162100.083
IMG (150)	10706	12237	20160219162659.894	20160219163300.101
IMG (150)	13001	13767	20160219163559.772	20160219163900.092
IMG (150)	14531	15297	20160219164159.760	20160219164500.079
IMG (150)	442	1973	20160219165059.891	20160219165700.097
IMG (150)	2737	4268	20160219165959.769	20160219170600.190
IMG (150)	6562	8093	20160219171459.884	20160219172100.090
IMG (150)	8857	9623	20160219172359.761	20160219172700.081
IMG (150)	11152	12683	20160219173259.854	20160219173900.099
IMG (150)	13447	14213	20160219174159.767	20160219174500.087
IMG (150)	888	1654	20160219175659.850	20160219180000.205
IMG (150)	2418	3184	20160219180259.877	20160219180600.193
IMG (150)	4713	6244	20160219181159.751	20160219181800.172
IMG (150)	7008	8539	20160219182059.882	20160219182700.088
IMG (150)	10068	11599	20160219183259.861	20160219183900.067
IMG (150)	13893	14659	20160219184759.761	20160219185100.081
IMG (150)	15423	16189	20160219185359.752	20160219185700.072
IMG (150)	569	1335	20160219185959.744	20160219190300.060
IMG (150)	2864	3630	20160219190859.871	20160219191200.191
IMG (150)	5159	5925	20160219191759.745	20160219192100.065
IMG (150)	7454	8220	20160219192659.838	20160219193000.197
IMG (150)	8984	9750	20160219193259.868	20160219193600.184
IMG (150)	15869	251	20160219195959.747	20160219200300.067
IMG (150)	1780	3311	20160219200859.839	20160219201500.046
IMG (150)	4075	4841	20160219201759.752	20160219202100.072
IMG (150)	5605	7136	20160219202359.744	20160219203000.165
IMG (150)	8665	14021	20160219203559.722	20160219205700.047
IMG (150)	15550	16316	20160219210259.855	20160219210600.175
IMG (150)	696	2227	20160219210859.846	20160219211500.053
IMG (150)	2991	8347	20160219211759.720	20160219213900.045
IMG (150)	9876	12172	20160219214459.818	20160219215400.164
IMG (150)	13701	1143	20160219215959.722	20160219221500.056
IMG (150)	1907	4968	20160219221759.727	20160219223000.140

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
VER (160)	2436	2552	20160219155055.126	20160219155407.122
VER (160)	2886	3002	20160219160255.144	20160219160607.140
VER (160)	3336	3562	20160219161455.123	20160219162103.110
VER (160)	3786	4012	20160219162655.137	20160219163303.128
VER (160)	4126	4237	20160219163559.124	20160219163903.119
VER (160)	4351	4462	20160219164159.111	20160219164503.107
VER (160)	4686	4912	20160219165055.133	20160219165703.121
VER (160)	5026	5252	20160219165959.116	20160219170607.108
VER (160)	5586	5812	20160219171455.130	20160219172103.117
VER (160)	5926	6037	20160219172359.113	20160219172703.109
VER (160)	6261	6487	20160219173255.096	20160219173903.123
VER (160)	6601	6712	20160219174159.118	20160219174503.114
VER (160)	7161	7277	20160219175655.093	20160219180007.123
VER (160)	7386	7502	20160219180255.119	20160219180607.115
VER (160)	7726	7952	20160219181159.102	20160219181807.094
VER (160)	8061	8287	20160219182055.124	20160219182703.116
VER (160)	8511	8737	20160219183255.103	20160219183903.094
VER (160)	9076	9187	20160219184759.113	20160219185103.108
VER (160)	9301	9412	20160219185359.104	20160219185703.096
VER (160)	9526	9637	20160219185959.091	20160219190303.087
VER (160)	9861	9977	20160219190855.114	20160219191207.109
VER (160)	10201	10312	20160219191759.101	20160219192103.092
VER (160)	10536	10652	20160219192655.084	20160219193007.115
VER (160)	10761	10877	20160219193255.110	20160219193607.106
VER (160)	11776	11887	20160219195959.099	20160219200303.094
VER (160)	12111	12337	20160219200855.082	20160219201503.073
VER (160)	12451	12562	20160219201759.104	20160219202103.099
VER (160)	12676	12902	20160219202359.095	20160219203007.082
VER (160)	13126	13912	20160219203559.074	20160219205703.071
VER (160)	14136	14252	20160219210255.097	20160219210607.093
VER (160)	14361	14587	20160219210855.089	20160219211503.080
VER (160)	14701	15487	20160219211759.072	20160219213903.073
VER (160)	15711	16052	20160219214455.064	20160219215407.082
VER (160)	16276	453	20160219215959.074	20160219221503.083
VER (160)	567	1018	20160219221759.079	20160219223007.058
AUX (180)	10316	10340	20160219155055.560	20160219155407.555
AUX (180)	10406	10430	20160219160255.578	20160219160607.569
AUX (180)	10496	10542	20160219161455.556	20160219162103.544
AUX (180)	10586	10632	20160219162655.570	20160219163303.562
AUX (180)	10654	10677	20160219163559.553	20160219163903.549
AUX (180)	10699	10722	20160219164159.545	20160219164503.540
AUX (180)	10766	10812	20160219165055.567	20160219165703.554
AUX (180)	10834	10880	20160219165959.550	20160219170607.541
AUX (180)	10946	10992	20160219171455.560	20160219172103.551
AUX (180)	11014	11037	20160219172359.547	20160219172703.542
AUX (180)	11081	11127	20160219173255.530	20160219173903.556
AUX (180)	11149	11172	20160219174159.552	20160219174503.547
AUX (180)	11261	11285	20160219175655.526	20160219180007.557
AUX (180)	11306	11330	20160219180255.549	20160219180607.544
AUX (180)	11374	11420	20160219181159.536	20160219181807.523
AUX (180)	11441	11487	20160219182055.558	20160219182703.545
AUX (180)	11531	11577	20160219183255.537	20160219183903.524
AUX (180)	11644	11667	20160219184759.546	20160219185103.542

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
AUX (180)	11689	11712	20160219185359.538	20160219185703.529
AUX (180)	11734	11757	20160219185959.525	20160219190303.521
AUX (180)	11801	11825	20160219190855.547	20160219191207.543
AUX (180)	11869	11892	20160219191759.530	20160219192103.526
AUX (180)	11936	11960	20160219192655.513	20160219193007.548
AUX (180)	11981	12005	20160219193255.544	20160219193607.536
AUX (180)	12184	12207	20160219195959.532	20160219200303.528
AUX (180)	12251	12297	20160219200855.515	20160219201503.507
AUX (180)	12319	12342	20160219201759.537	20160219202103.529
AUX (180)	12364	12410	20160219202359.525	20160219203007.516
AUX (180)	12454	12612	20160219203559.504	20160219205703.504
AUX (180)	12656	12680	20160219210255.531	20160219210607.527
AUX (180)	12701	12747	20160219210855.522	20160219211503.510
AUX (180)	12769	12927	20160219211759.505	20160219213903.506
AUX (180)	12971	13040	20160219214455.494	20160219215407.516
AUX (180)	13084	13197	20160219215959.507	20160219221503.517
AUX (180)	13219	13310	20160219221759.512	20160219223007.491

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
19/02/2016 00:00:06	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	383	e
L1 ENG PDUs	388	e
L1 ENG distinct GEPSGranule	387	a
GQisFlagQual set (PX1)	99.46 %	-
GQisFlagQual set (PX2)	99.44 %	-
GQisFlagQual set (PX3)	99.46 %	-
GQisFlagQual set (PX4)	99.48 %	-
GQisFlagQual set (all)	99.46 %	-

Table 4: Quality flags

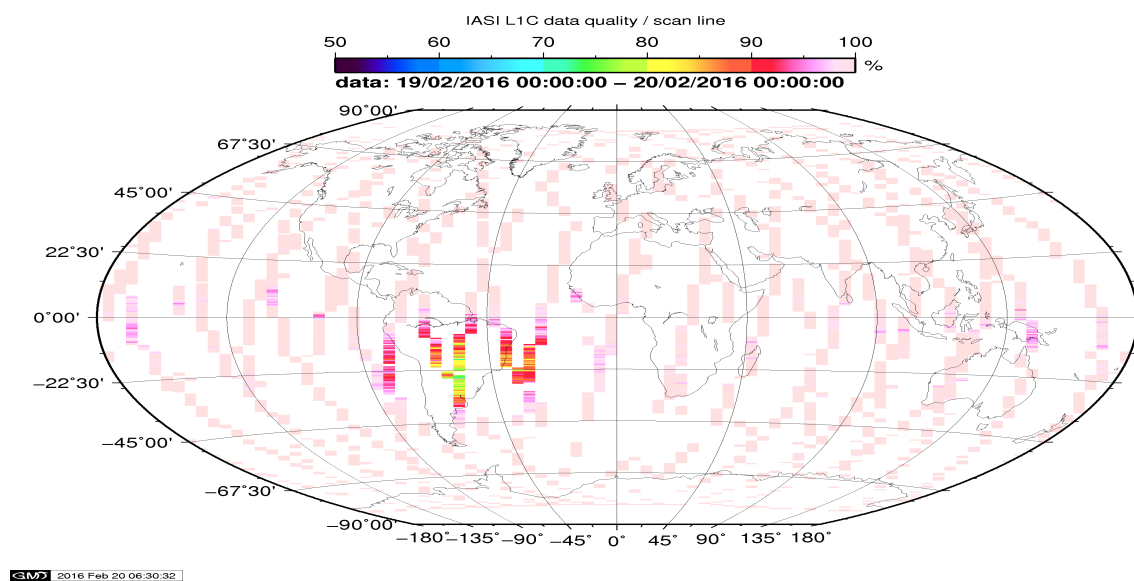


Figure 1: L1C data quality

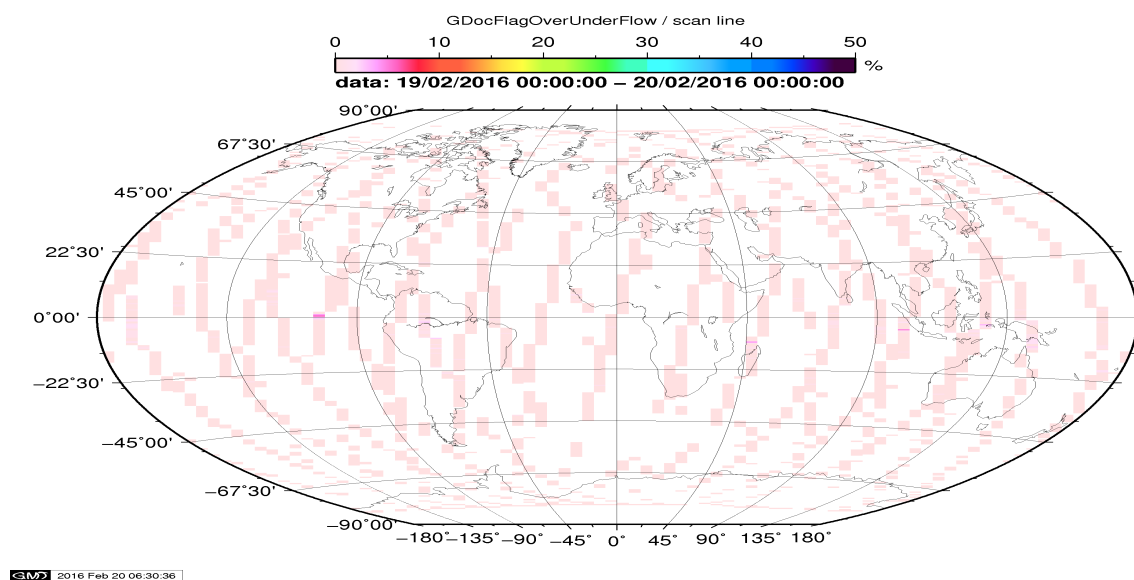


Figure 2: Flag of Over and Under Flows

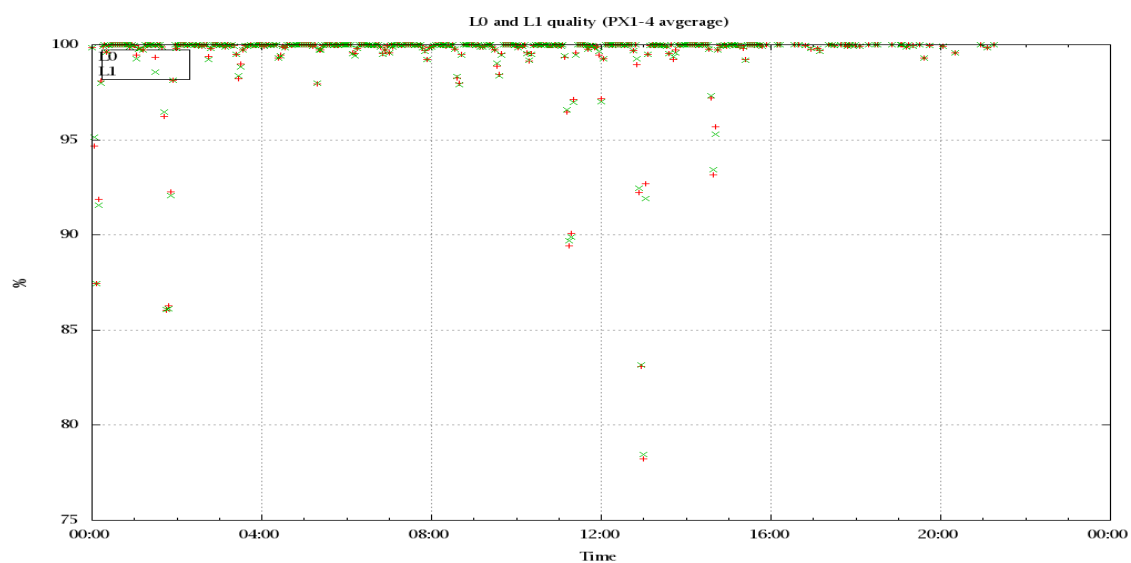


Figure 3: Level 0 and 1C overall quality

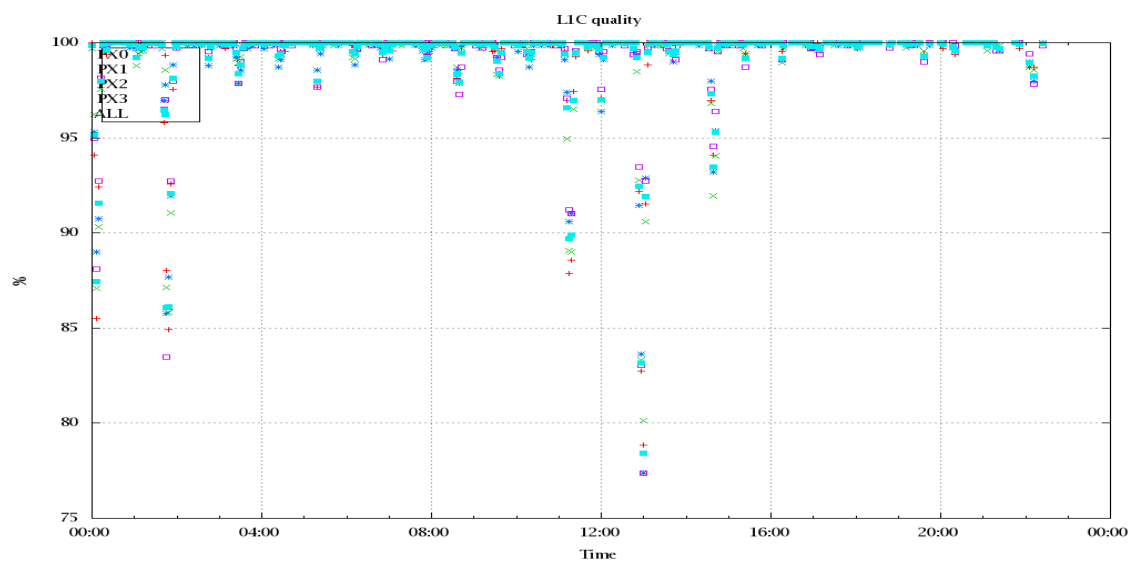


Figure 4: Level 1C quality

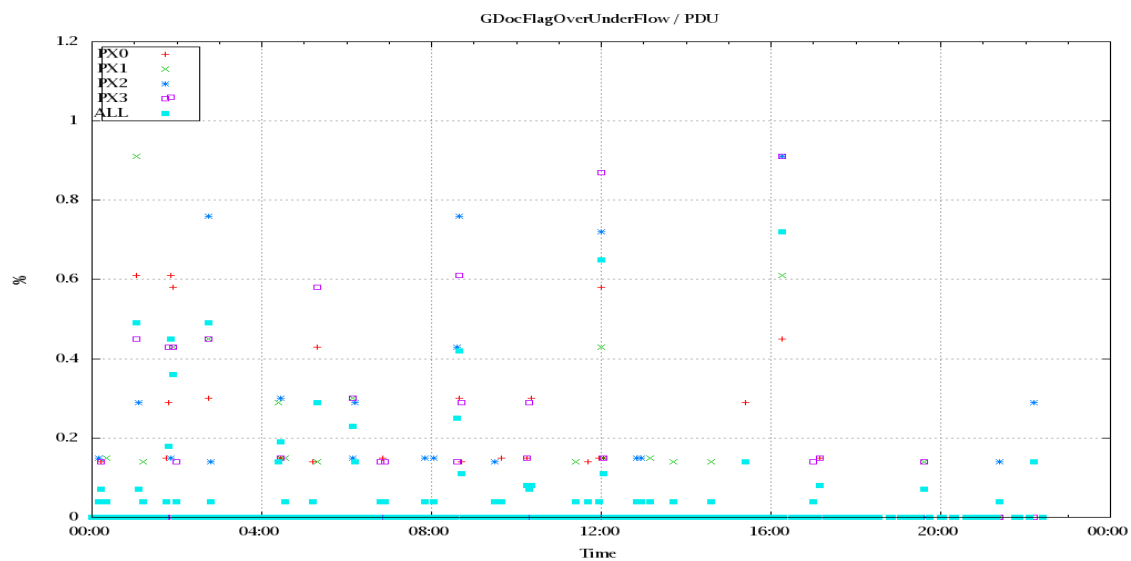


Figure 5: OverUnderFlowFlag timeseries

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.

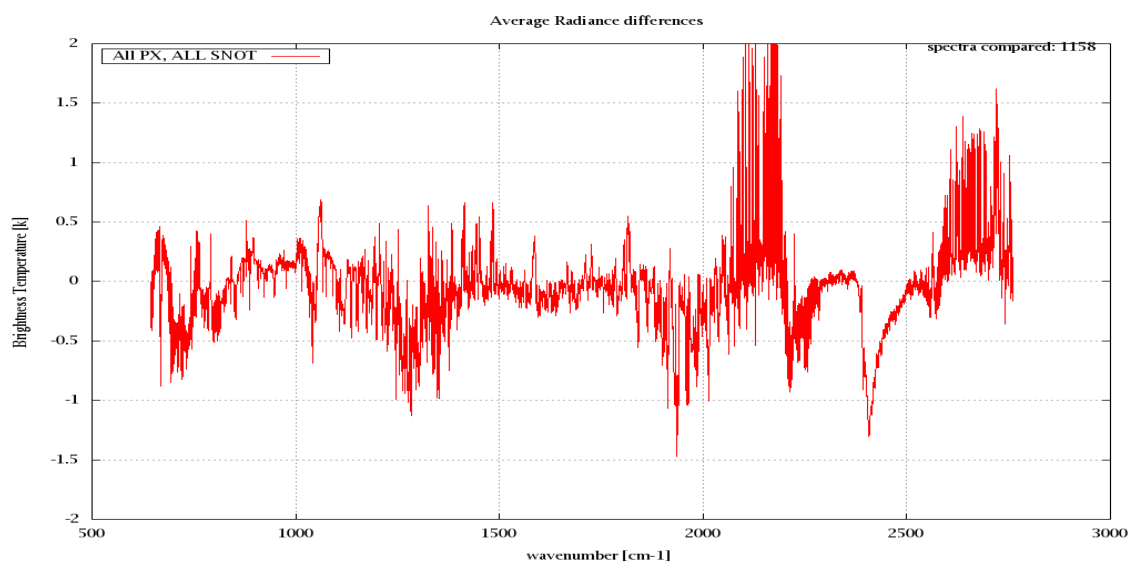


Figure 6: Average Radiance differences: OBS-CAL

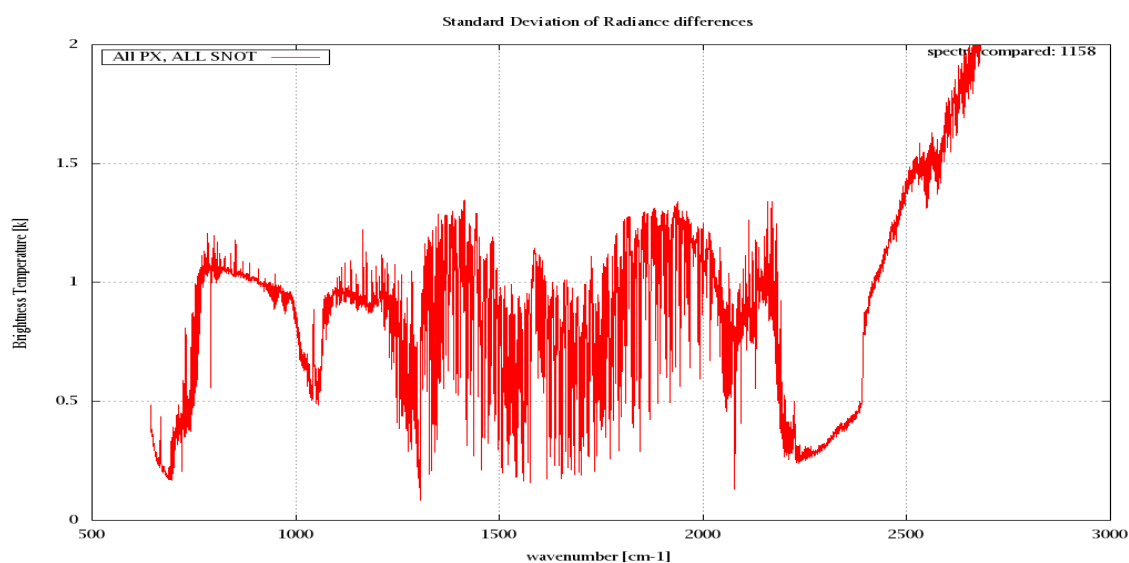


Figure 7: Standard Deviation of Radiance differences

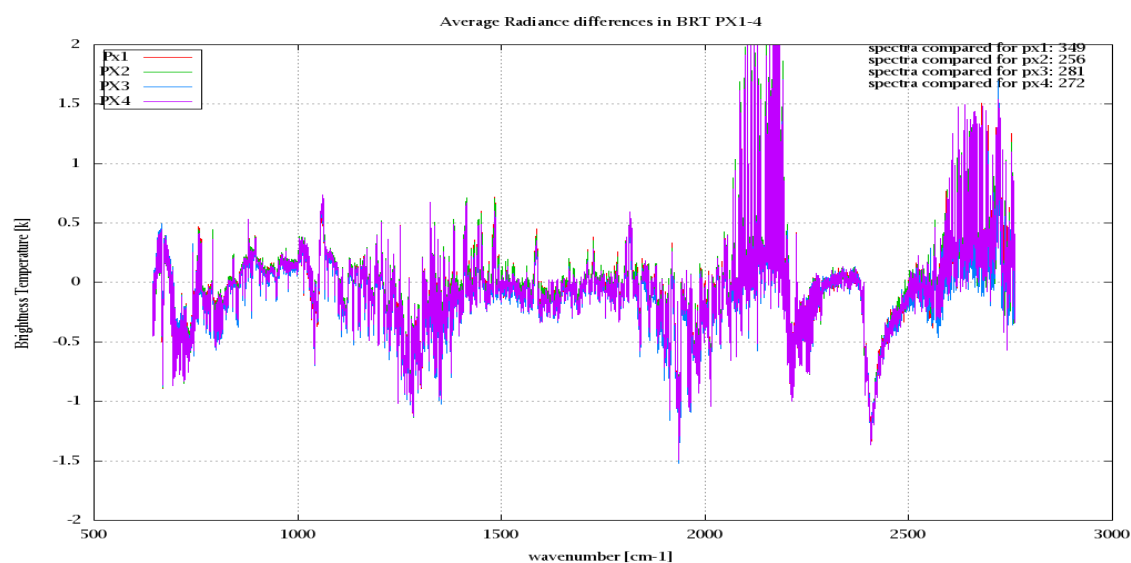


Figure 8: Average Radiance differences: OBS-CAL

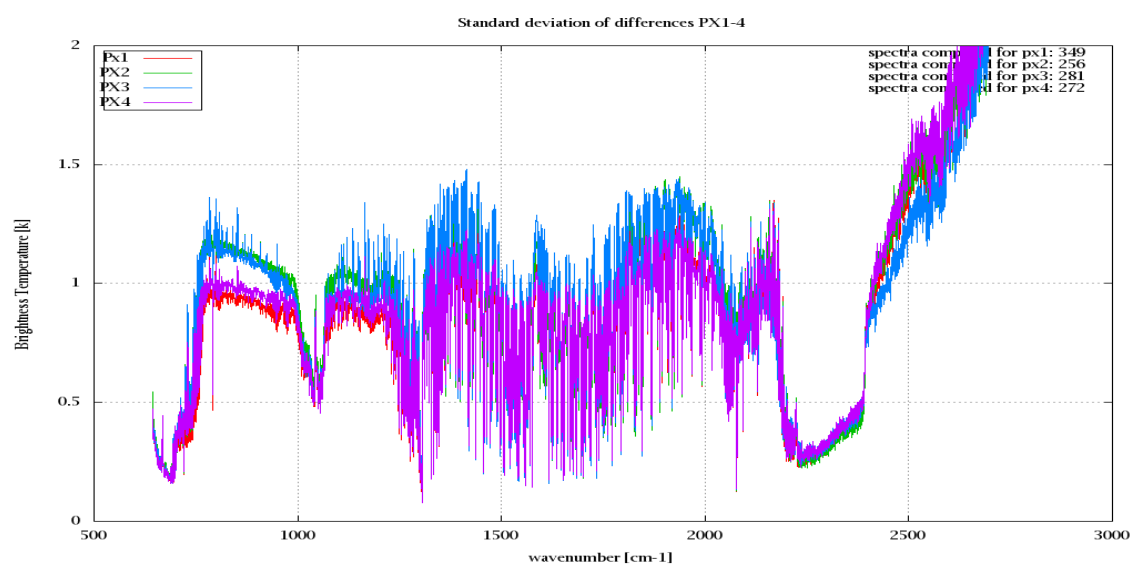


Figure 9: Standard Deviation of Radiance differences

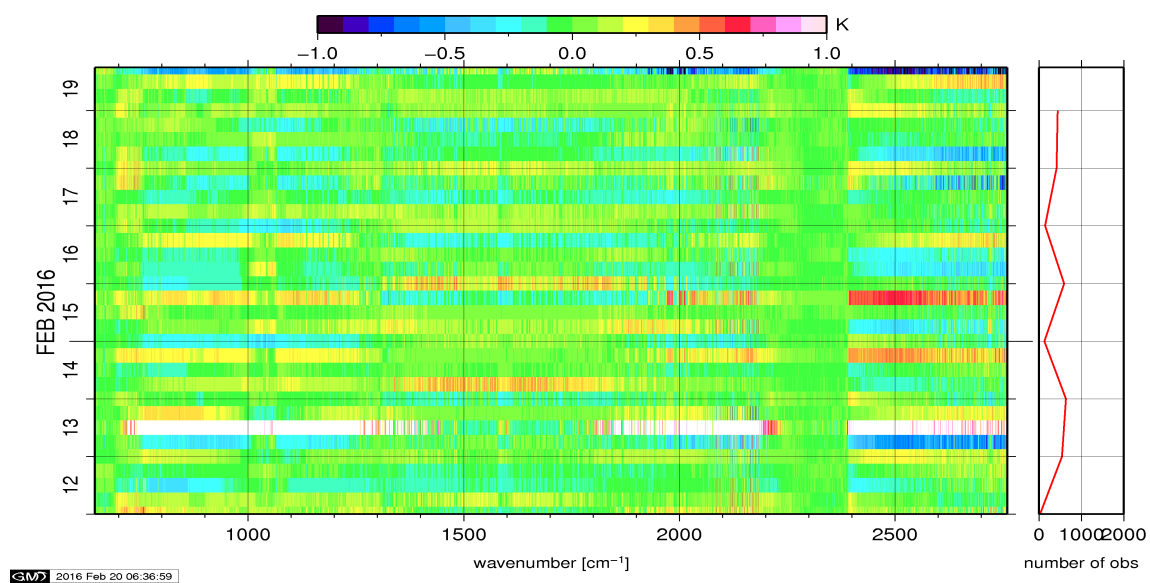


Figure 10: Radiance Anomaly in BRT: All Channels

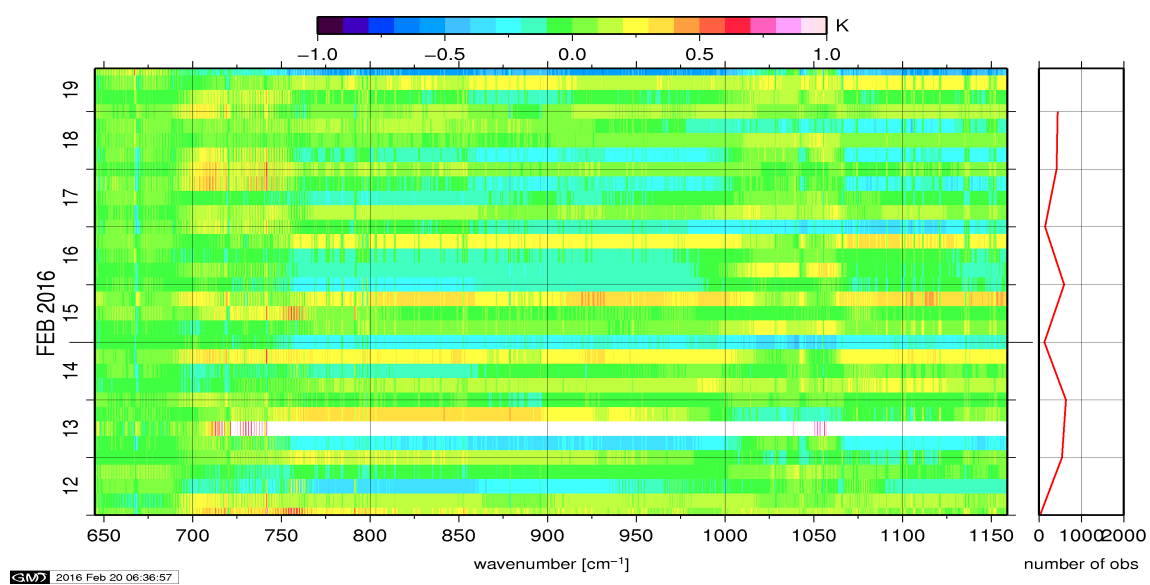


Figure 11: Radiance Anomaly in BRT: IASI Band 1

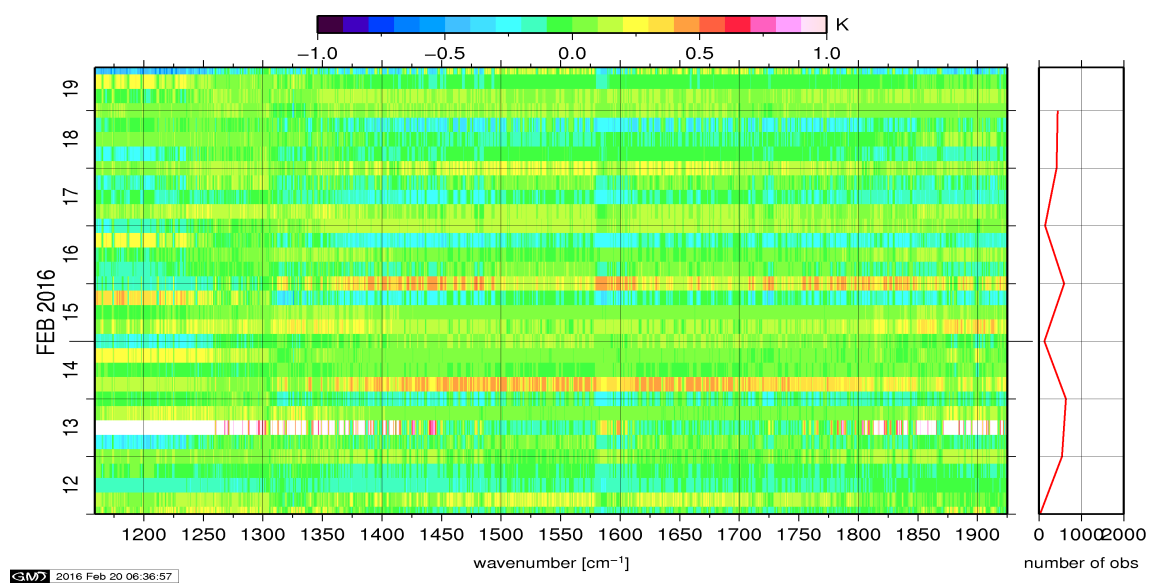


Figure 12: Radiance Anomaly in BRT: IASI Band 2

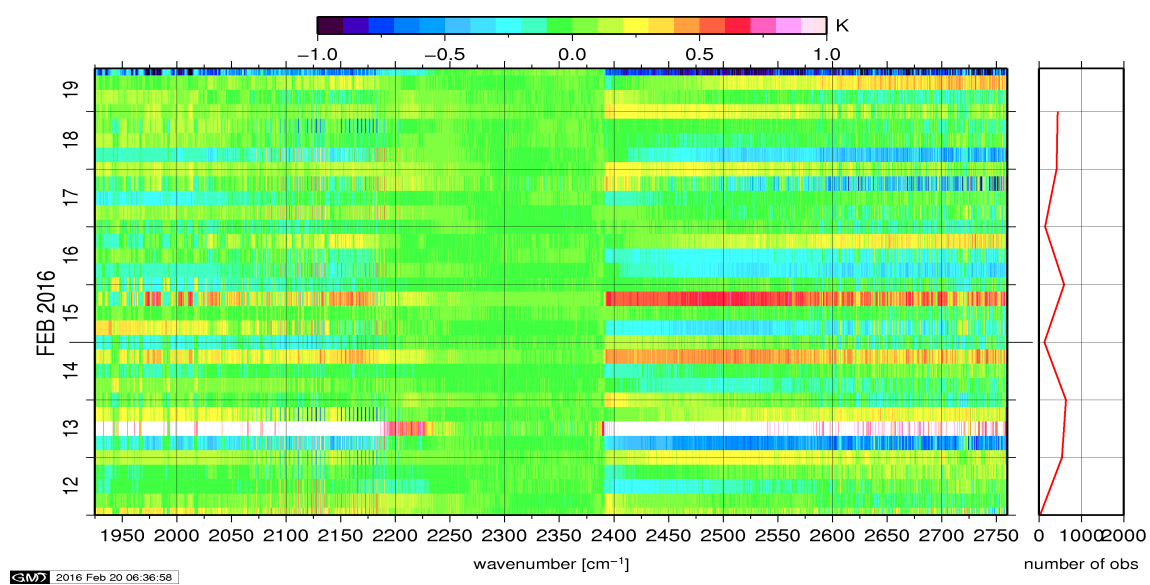


Figure 13: Radiance Anomaly in BRT: IASI Band 3

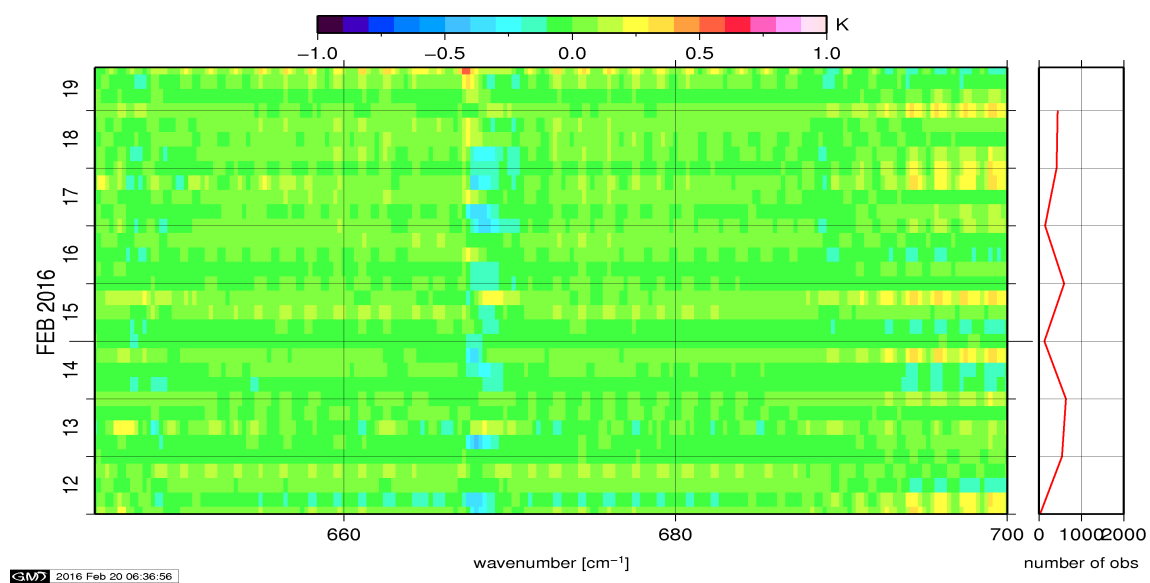


Figure 14: Radiance Anomaly in BRT: CO2 14

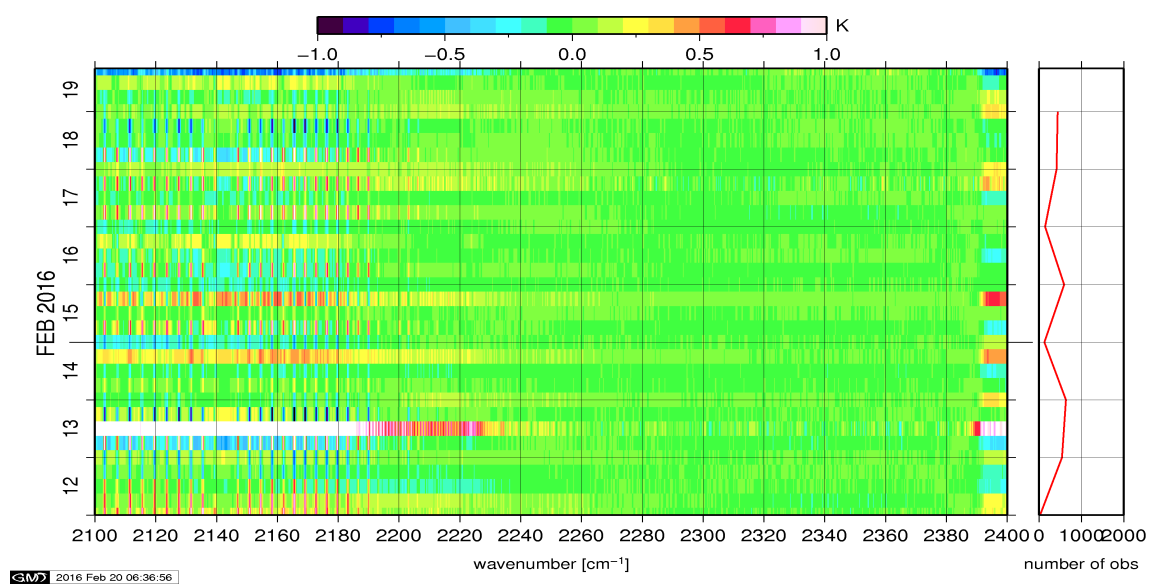


Figure 15: Radiance Anomaly in BRT: CO2 4.3

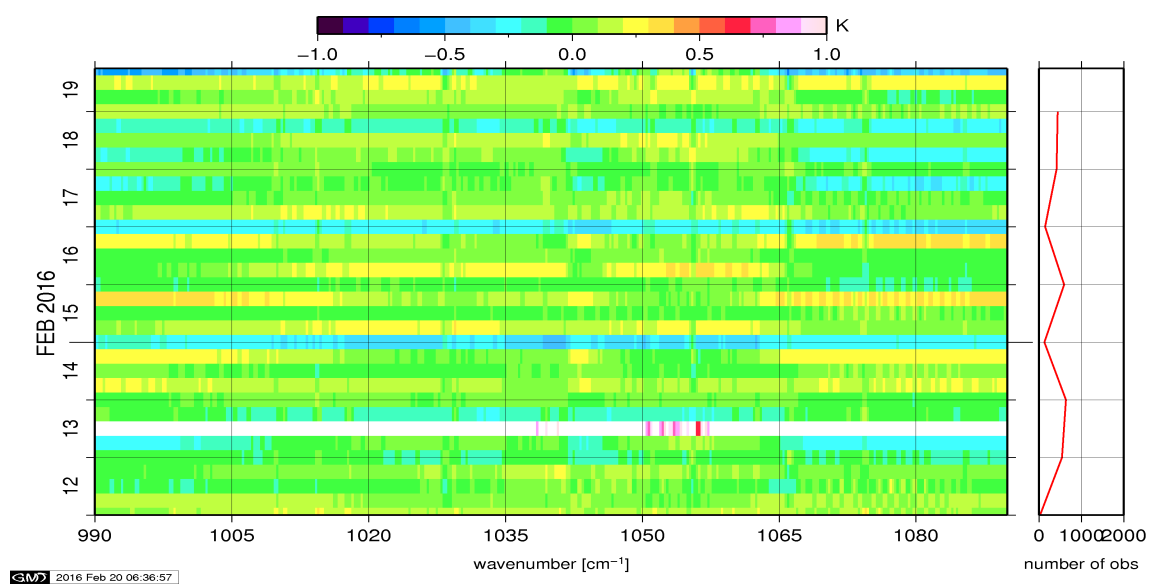


Figure 16: Radiance Anomaly in BRT: O3

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.

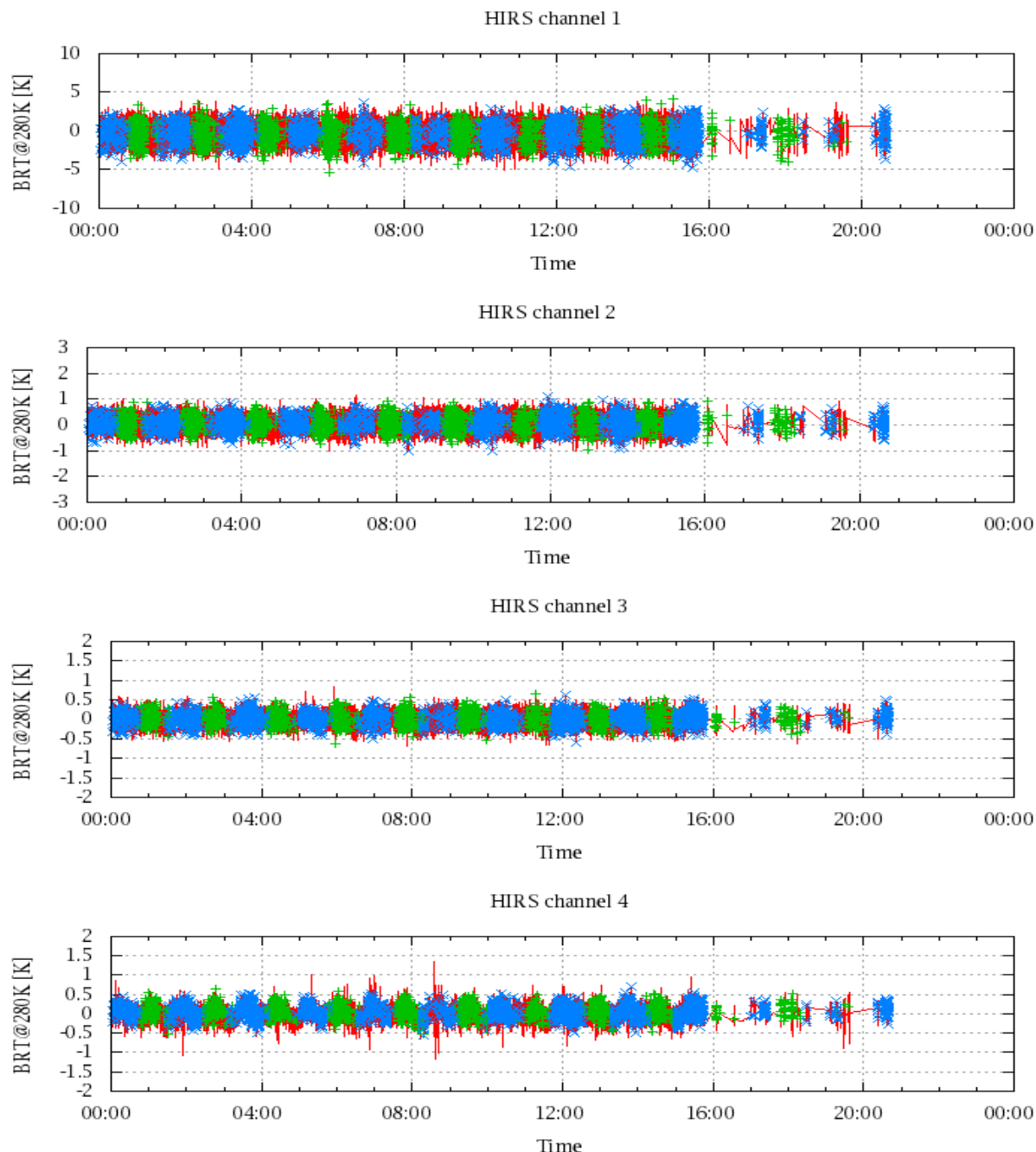


Figure 17: Radiance Differences in BRT

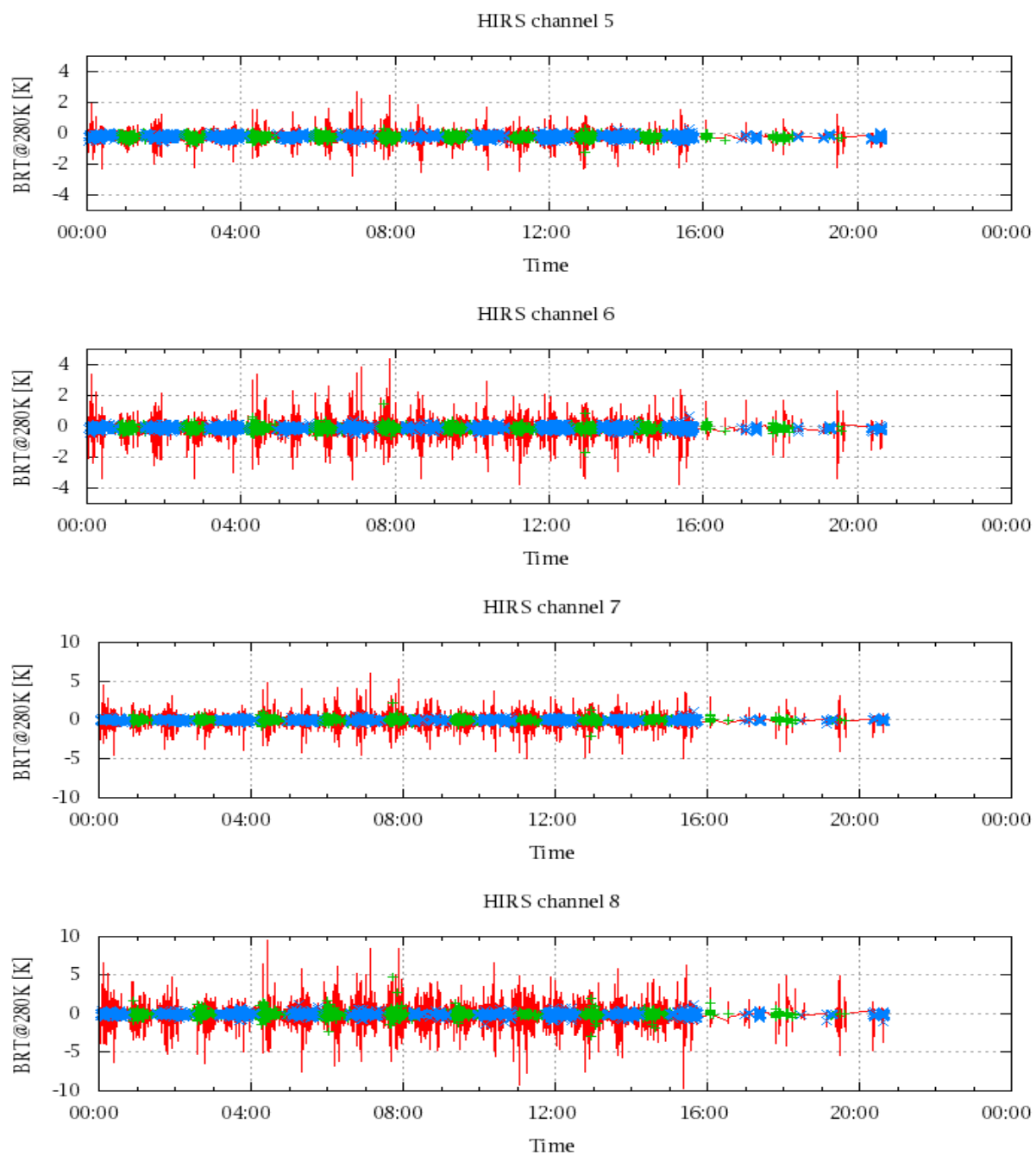


Figure 18: Radiance Differences in BRT

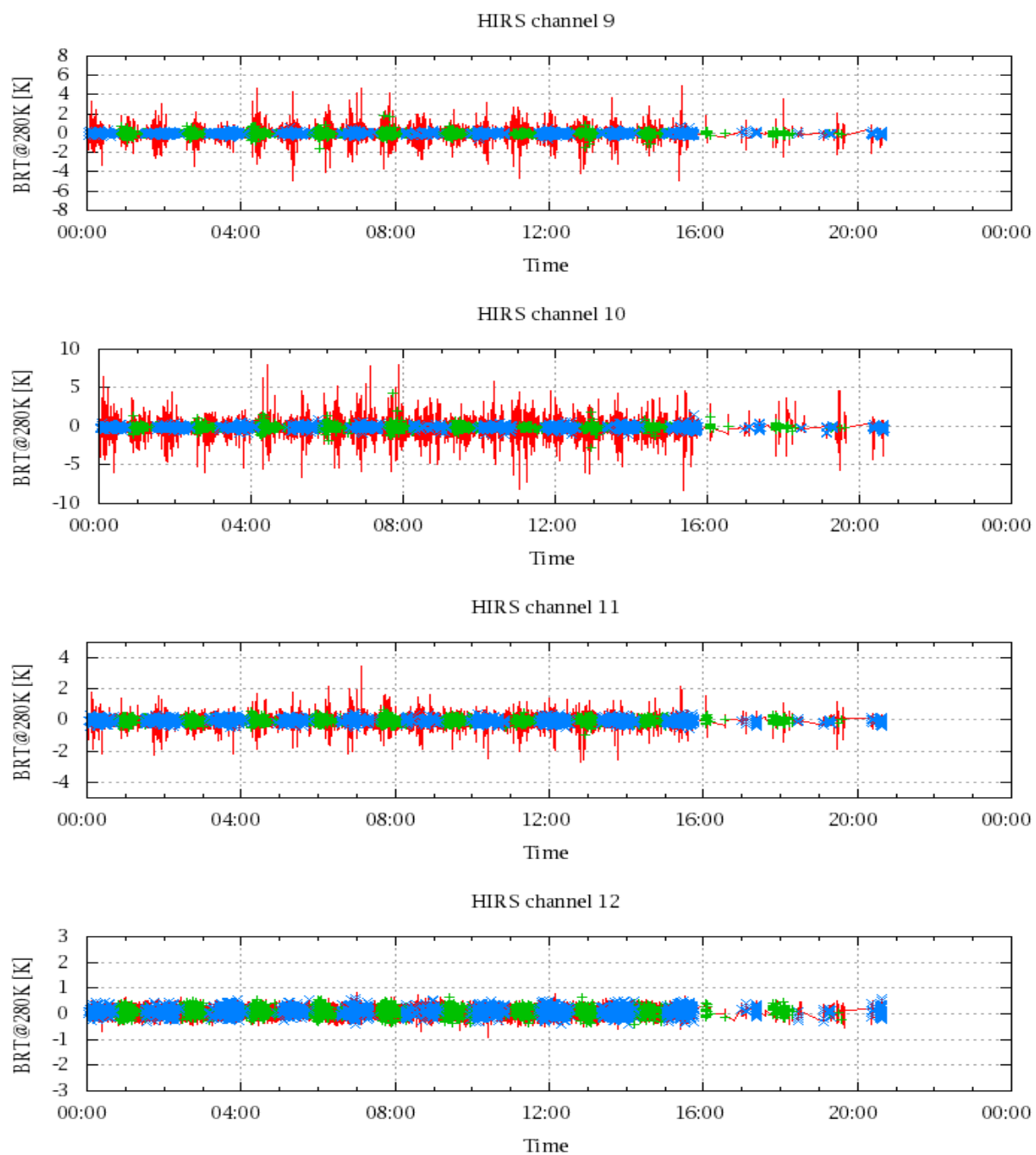


Figure 19: Radiance Differences in BRT

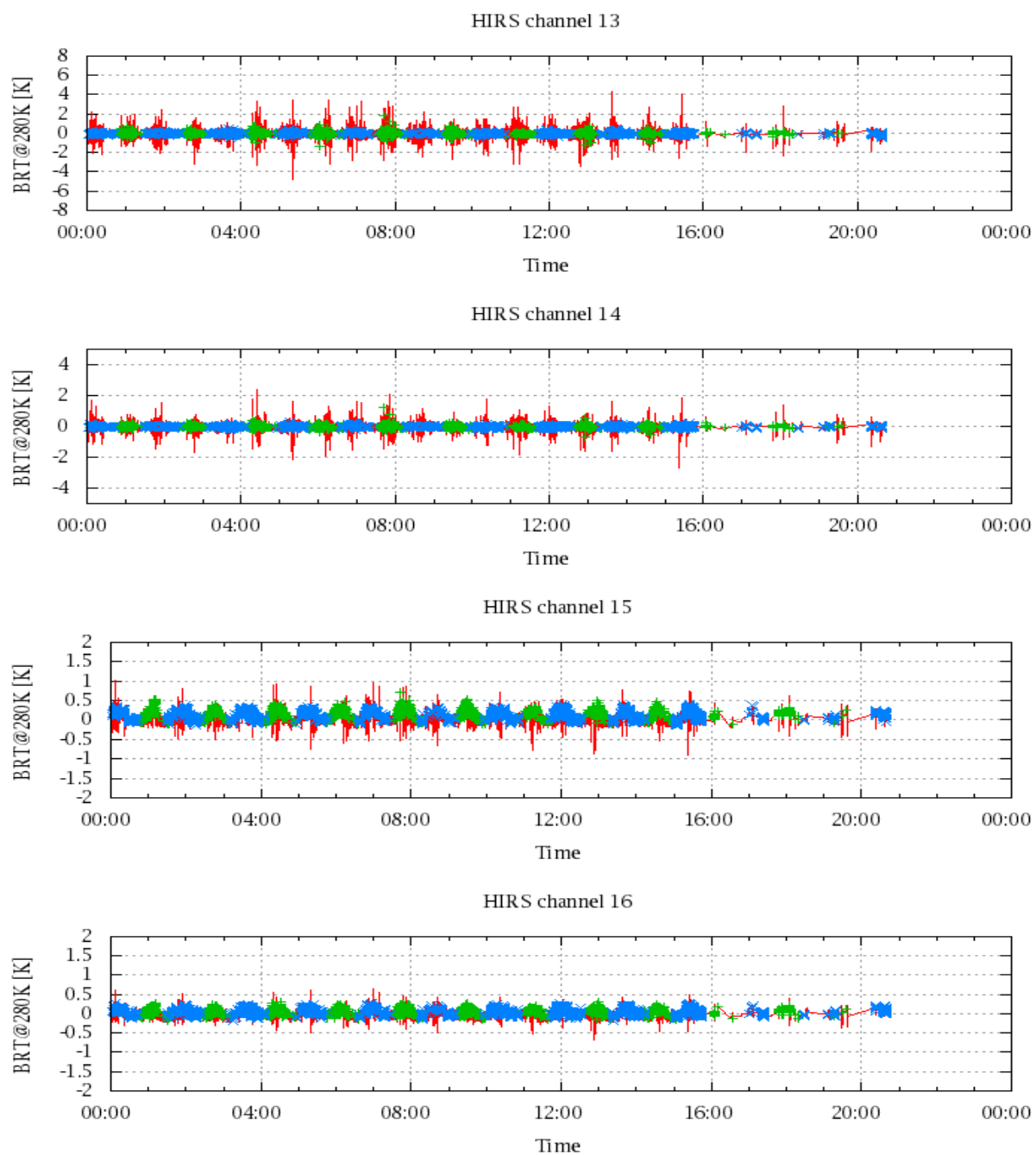


Figure 20: Radiance Differences in BRT

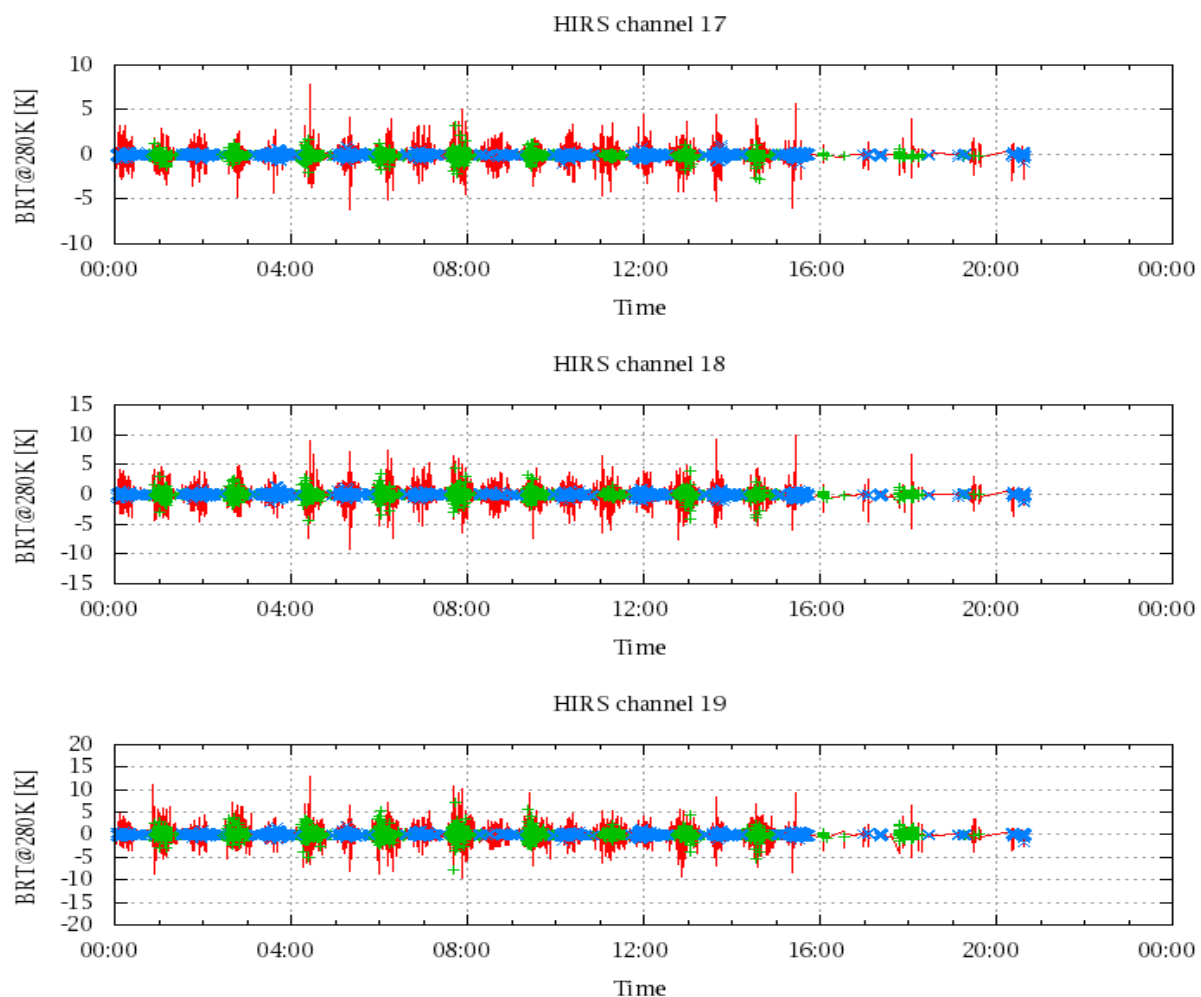


Figure 21: Radinace Differences in BRT