

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

27/05/2016 00:00:00 - 28/05/2016 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 27/05/2016 00:00:00 - 28/05/2016 00:00:00 .

The monitoring data are extracted on PDU basis.

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

2 Data quantity 27/05/2016 00:00:00 - 28/05/2016 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	476	-
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)	9733	9735	20160527004436.557	20160527004436.991
PX1 (130)	7000	7024	20160527063632.175	20160527063638.879
PX1 (130)	7024	7040	20160527063638.879	20160527063642.336
PX1 (130)	7040	7065	20160527063642.336	20160527063649.253
PX1 (130)	7072	7077	20160527063652.281	20160527063653.363
PX1 (130)	7077	7080	20160527063653.363	20160527063654.011
PX1 (130)	7081	7083	20160527063654.230	20160527063654.660
PX1 (130)	7083	7085	20160527063654.660	20160527063655.093
PX1 (130)	7085	7090	20160527063655.093	20160527063656.175
PX1 (130)	7091	7093	20160527063656.390	20160527063656.824
PX1 (130)	7094	7098	20160527063657.039	20160527063657.906
PX1 (130)	7102	7104	20160527063700.285	20160527063700.714
PX1 (130)	7106	7111	20160527063701.148	20160527063702.226
PX1 (130)	7124	7126	20160527063705.039	20160527063705.472
PX1 (130)	7127	7129	20160527063705.687	20160527063706.121
PX1 (130)	7133	7135	20160527063708.500	20160527063708.929
PX1 (130)	7138	7141	20160527063709.578	20160527063710.230
PX1 (130)	7141	7143	20160527063710.230	20160527063710.660

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	7146	7148	20160527063711.308	20160527063711.742
PX1 (130)	7152	7154	20160527063712.605	20160527063713.039
PX1 (130)	9642	9675	20160527091354.323	20160527091404.484
PX1 (130)	9675	9678	20160527091404.484	20160527091405.132
PX1 (130)	9678	9682	20160527091405.132	20160527091405.999
PX1 (130)	9683	9686	20160527091406.214	20160527091406.862
PX1 (130)	9686	9695	20160527091406.862	20160527091408.808
PX1 (130)	9695	9697	20160527091408.808	20160527091409.241
PX1 (130)	9697	9700	20160527091409.241	20160527091409.890
PX1 (130)	9702	9705	20160527091410.323	20160527091412.484
PX1 (130)	9708	9710	20160527091413.132	20160527091413.566
PX1 (130)	9710	9712	20160527091413.566	20160527091413.999
PX1 (130)	9712	9714	20160527091413.999	20160527091414.429
PX1 (130)	9714	9717	20160527091414.429	20160527091415.077
PX1 (130)	9718	9722	20160527091415.296	20160527091416.159
PX1 (130)	9722	9724	20160527091416.159	20160527091416.593
PX1 (130)	9726	9728	20160527091417.023	20160527091417.456
PX1 (130)	9728	9730	20160527091417.456	20160527091417.890
PX1 (130)	9731	9733	20160527091418.105	20160527091420.050
PX1 (130)	9733	9735	20160527091420.050	20160527091420.484
PX1 (130)	9740	9742	20160527091421.566	20160527091421.999
PX1 (130)	9743	9746	20160527091422.214	20160527091422.862
PX1 (130)	9747	9750	20160527091423.077	20160527091423.726
PX1 (130)	9766	9770	20160527091428.698	20160527091429.566
PX1 (130)	9775	9778	20160527091430.648	20160527091431.292
PX1 (130)	9784	9786	20160527091432.593	20160527091433.023
PX1 (130)	9788	9790	20160527091433.456	20160527091433.890
PX1 (130)	9790	9793	20160527091433.890	20160527091436.050
PX1 (130)	9814	9816	20160527091440.593	20160527091441.023
PX2 (135)	9733	9735	20160527004436.557	20160527004436.991
PX2 (135)	7000	7017	20160527063632.175	20160527063637.363
PX2 (135)	7017	7032	20160527063637.363	20160527063640.609
PX2 (135)	7032	7065	20160527063640.609	20160527063649.253
PX2 (135)	7072	7077	20160527063652.281	20160527063653.363
PX2 (135)	7077	7080	20160527063653.363	20160527063654.011
PX2 (135)	7081	7083	20160527063654.230	20160527063654.660
PX2 (135)	7083	7085	20160527063654.660	20160527063655.093
PX2 (135)	7087	7098	20160527063655.527	20160527063657.906
PX2 (135)	7102	7106	20160527063700.285	20160527063701.148
PX2 (135)	7106	7111	20160527063701.148	20160527063702.226
PX2 (135)	7114	7116	20160527063702.878	20160527063703.308
PX2 (135)	7116	7121	20160527063703.308	20160527063704.390
PX2 (135)	7124	7126	20160527063705.039	20160527063705.472
PX2 (135)	7127	7129	20160527063705.687	20160527063706.121
PX2 (135)	7131	7133	20160527063708.066	20160527063708.500
PX2 (135)	7133	7135	20160527063708.500	20160527063708.929
PX2 (135)	7138	7141	20160527063709.578	20160527063710.230
PX2 (135)	7146	7148	20160527063711.308	20160527063711.742
PX2 (135)	9642	9674	20160527091354.323	20160527091404.269
PX2 (135)	9675	9678	20160527091404.484	20160527091405.132
PX2 (135)	9678	9682	20160527091405.132	20160527091405.999
PX2 (135)	9683	9686	20160527091406.214	20160527091406.862
PX2 (135)	9686	9693	20160527091406.862	20160527091408.374

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	9693	9695	20160527091408.374	20160527091408.808
PX2 (135)	9695	9701	20160527091408.808	20160527091410.105
PX2 (135)	9701	9703	20160527091410.105	20160527091412.050
PX2 (135)	9703	9705	20160527091412.050	20160527091412.484
PX2 (135)	9705	9707	20160527091412.484	20160527091412.917
PX2 (135)	9707	9712	20160527091412.917	20160527091413.999
PX2 (135)	9712	9714	20160527091413.999	20160527091414.429
PX2 (135)	9714	9716	20160527091414.429	20160527091414.862
PX2 (135)	9718	9720	20160527091415.296	20160527091415.726
PX2 (135)	9720	9722	20160527091415.726	20160527091416.159
PX2 (135)	9722	9724	20160527091416.159	20160527091416.593
PX2 (135)	9725	9728	20160527091416.808	20160527091417.456
PX2 (135)	9728	9730	20160527091417.456	20160527091417.890
PX2 (135)	9733	9737	20160527091420.050	20160527091420.917
PX2 (135)	9737	9739	20160527091420.917	20160527091421.347
PX2 (135)	9740	9742	20160527091421.566	20160527091421.999
PX2 (135)	9744	9746	20160527091422.429	20160527091422.862
PX2 (135)	9747	9749	20160527091423.077	20160527091423.511
PX2 (135)	9754	9756	20160527091424.593	20160527091425.023
PX2 (135)	9766	9769	20160527091428.698	20160527091429.347
PX2 (135)	9775	9777	20160527091430.648	20160527091431.077
PX2 (135)	9777	9779	20160527091431.077	20160527091431.511
PX2 (135)	9791	9793	20160527091434.105	20160527091436.050
PX2 (135)	9814	9816	20160527091440.593	20160527091441.023
PX2 (135)	9818	9820	20160527091441.456	20160527091441.890
PX3 (140)	7000	7017	20160527063632.175	20160527063637.363
PX3 (140)	7017	7046	20160527063637.363	20160527063645.148
PX3 (140)	7046	7064	20160527063645.148	20160527063649.039
PX3 (140)	7072	7074	20160527063652.281	20160527063652.714
PX3 (140)	7079	7083	20160527063653.796	20160527063654.660
PX3 (140)	7083	7085	20160527063654.660	20160527063655.093
PX3 (140)	7087	7089	20160527063655.527	20160527063655.960
PX3 (140)	7089	7092	20160527063655.960	20160527063656.605
PX3 (140)	7092	7095	20160527063656.605	20160527063657.257
PX3 (140)	7095	7098	20160527063657.257	20160527063657.906
PX3 (140)	7098	7100	20160527063657.906	20160527063658.335
PX3 (140)	7103	7106	20160527063700.500	20160527063701.148
PX3 (140)	7107	7111	20160527063701.363	20160527063702.226
PX3 (140)	7114	7116	20160527063702.878	20160527063703.308
PX3 (140)	7116	7121	20160527063703.308	20160527063704.390
PX3 (140)	7124	7127	20160527063705.039	20160527063705.687
PX3 (140)	7127	7129	20160527063705.687	20160527063706.121
PX3 (140)	7130	7133	20160527063706.335	20160527063708.500
PX3 (140)	7133	7135	20160527063708.500	20160527063708.929
PX3 (140)	7137	7141	20160527063709.363	20160527063710.230
PX3 (140)	7146	7148	20160527063711.308	20160527063711.742
PX3 (140)	9642	9678	20160527091354.323	20160527091405.132
PX3 (140)	9678	9682	20160527091405.132	20160527091405.999
PX3 (140)	9686	9695	20160527091406.862	20160527091408.808
PX3 (140)	9695	9699	20160527091408.808	20160527091409.675
PX3 (140)	9699	9701	20160527091409.675	20160527091410.105
PX3 (140)	9701	9705	20160527091410.105	20160527091412.484
PX3 (140)	9705	9707	20160527091412.484	20160527091412.917

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	9707	9709	20160527091412.917	20160527091413.351
PX3 (140)	9709	9712	20160527091413.351	20160527091413.999
PX3 (140)	9712	9714	20160527091413.999	20160527091414.429
PX3 (140)	9714	9717	20160527091414.429	20160527091415.077
PX3 (140)	9717	9720	20160527091415.077	20160527091415.726
PX3 (140)	9720	9722	20160527091415.726	20160527091416.159
PX3 (140)	9722	9724	20160527091416.159	20160527091416.593
PX3 (140)	9725	9727	20160527091416.808	20160527091417.241
PX3 (140)	9728	9730	20160527091417.456	20160527091417.890
PX3 (140)	9734	9737	20160527091420.269	20160527091420.917
PX3 (140)	9737	9739	20160527091420.917	20160527091421.347
PX3 (140)	9740	9742	20160527091421.566	20160527091421.999
PX3 (140)	9744	9746	20160527091422.429	20160527091422.862
PX3 (140)	9754	9756	20160527091424.593	20160527091425.023
PX3 (140)	9765	9769	20160527091428.483	20160527091429.347
PX3 (140)	9777	9779	20160527091431.077	20160527091431.511
PX3 (140)	9780	9782	20160527091431.726	20160527091432.159
PX3 (140)	9785	9788	20160527091432.808	20160527091433.456
PX3 (140)	9791	9793	20160527091434.105	20160527091436.050
PX3 (140)	9814	9816	20160527091440.593	20160527091441.023
PX3 (140)	9818	9820	20160527091441.456	20160527091441.890
PX4 (145)	7000	7017	20160527063632.175	20160527063637.363
PX4 (145)	7017	7064	20160527063637.363	20160527063649.039
PX4 (145)	7072	7074	20160527063652.281	20160527063652.714
PX4 (145)	7074	7076	20160527063652.714	20160527063653.148
PX4 (145)	7079	7084	20160527063653.796	20160527063654.878
PX4 (145)	7084	7086	20160527063654.878	20160527063655.308
PX4 (145)	7087	7089	20160527063655.527	20160527063655.960
PX4 (145)	7089	7095	20160527063655.960	20160527063657.257
PX4 (145)	7095	7097	20160527063657.257	20160527063657.687
PX4 (145)	7098	7100	20160527063657.906	20160527063658.335
PX4 (145)	7103	7105	20160527063700.500	20160527063700.929
PX4 (145)	7107	7110	20160527063701.363	20160527063702.011
PX4 (145)	7111	7113	20160527063702.226	20160527063702.660
PX4 (145)	7114	7116	20160527063702.878	20160527063703.308
PX4 (145)	7116	7121	20160527063703.308	20160527063704.390
PX4 (145)	7125	7127	20160527063705.253	20160527063705.687
PX4 (145)	7129	7132	20160527063706.121	20160527063708.281
PX4 (145)	7137	7139	20160527063709.363	20160527063709.796
PX4 (145)	7141	7143	20160527063710.230	20160527063710.660
PX4 (145)	7146	7148	20160527063711.308	20160527063711.742
PX4 (145)	7163	7165	20160527063716.496	20160527063716.929
PX4 (145)	9642	9645	20160527091354.323	20160527091356.484
PX4 (145)	9645	9676	20160527091356.484	20160527091404.702
PX4 (145)	9676	9682	20160527091404.702	20160527091405.999
PX4 (145)	9682	9684	20160527091405.999	20160527091406.429
PX4 (145)	9686	9695	20160527091406.862	20160527091408.808
PX4 (145)	9695	9699	20160527091408.808	20160527091409.675
PX4 (145)	9701	9707	20160527091410.105	20160527091412.917
PX4 (145)	9707	9709	20160527091412.917	20160527091413.351
PX4 (145)	9709	9711	20160527091413.351	20160527091413.780
PX4 (145)	9715	9717	20160527091414.648	20160527091415.077
PX4 (145)	9717	9719	20160527091415.077	20160527091415.511

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	9719	9721	20160527091415.511	20160527091415.944
PX4 (145)	9722	9724	20160527091416.159	20160527091416.593
PX4 (145)	9724	9728	20160527091416.593	20160527091417.456
PX4 (145)	9728	9730	20160527091417.456	20160527091417.890
PX4 (145)	9732	9734	20160527091418.323	20160527091420.269
PX4 (145)	9734	9737	20160527091420.269	20160527091420.917
PX4 (145)	9752	9754	20160527091424.159	20160527091424.593
PX4 (145)	9763	9765	20160527091428.050	20160527091428.483
PX4 (145)	9765	9768	20160527091428.483	20160527091429.132
PX4 (145)	9775	9777	20160527091430.648	20160527091431.077
PX4 (145)	9777	9780	20160527091431.077	20160527091431.726
PX4 (145)	9780	9782	20160527091431.726	20160527091432.159
PX4 (145)	9785	9788	20160527091432.808	20160527091433.456
PX4 (145)	9790	9792	20160527091433.890	20160527091434.319
PX4 (145)	9818	9820	20160527091441.456	20160527091441.890
IMG (150)	4843	4916	20160527063631.957	20160527063649.039
IMG (150)	4927	4935	20160527063652.066	20160527063653.796
IMG (150)	4935	4945	20160527063653.796	20160527063655.960
IMG (150)	4945	4951	20160527063655.960	20160527063657.257
IMG (150)	4952	4954	20160527063657.472	20160527063657.906
IMG (150)	4954	4956	20160527063657.906	20160527063658.335
IMG (150)	4961	4963	20160527063700.066	20160527063700.500
IMG (150)	4963	4965	20160527063700.500	20160527063700.929
IMG (150)	4965	4967	20160527063700.929	20160527063701.363
IMG (150)	4967	4970	20160527063701.363	20160527063702.011
IMG (150)	4971	4973	20160527063702.226	20160527063702.660
IMG (150)	4974	4976	20160527063702.878	20160527063703.308
IMG (150)	4977	4979	20160527063703.527	20160527063703.957
IMG (150)	4979	4981	20160527063703.957	20160527063704.390
IMG (150)	4982	4984	20160527063704.609	20160527063705.039
IMG (150)	4985	4987	20160527063705.253	20160527063705.687
IMG (150)	4989	4991	20160527063706.121	20160527063706.769
IMG (150)	4994	4996	20160527063707.632	20160527063708.281
IMG (150)	5001	5003	20160527063709.363	20160527063709.796
IMG (150)	5004	5007	20160527063710.011	20160527063710.660
IMG (150)	5009	5012	20160527063711.093	20160527063711.742
IMG (150)	5015	5017	20160527063712.390	20160527063712.824
IMG (150)	5031	5033	20160527063716.496	20160527063716.929
IMG (150)	12206	12248	20160527091354.323	20160527091404.702
IMG (150)	12248	12253	20160527091404.702	20160527091405.780
IMG (150)	12254	12266	20160527091405.999	20160527091408.593
IMG (150)	12266	12268	20160527091408.593	20160527091409.026
IMG (150)	12268	12271	20160527091409.026	20160527091409.675
IMG (150)	12273	12279	20160527091410.105	20160527091412.050
IMG (150)	12280	12282	20160527091412.269	20160527091412.698
IMG (150)	12282	12285	20160527091412.698	20160527091413.351
IMG (150)	12285	12287	20160527091413.351	20160527091413.780
IMG (150)	12287	12290	20160527091413.780	20160527091414.429
IMG (150)	12290	12297	20160527091414.429	20160527091415.944
IMG (150)	12297	12300	20160527091415.944	20160527091416.593
IMG (150)	12300	12306	20160527091416.593	20160527091417.890
IMG (150)	12306	12308	20160527091417.890	20160527091418.323
IMG (150)	12312	12314	20160527091419.616	20160527091420.269
Continued on next page				

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	12320	12322	20160527091421.566	20160527091421.999
IMG (150)	12322	12324	20160527091421.999	20160527091422.429
IMG (150)	12327	12329	20160527091423.077	20160527091423.511
IMG (150)	12332	12334	20160527091424.159	20160527091424.593
IMG (150)	12342	12345	20160527091426.323	20160527091427.401
IMG (150)	12347	12349	20160527091428.050	20160527091428.483
IMG (150)	12349	12353	20160527091428.483	20160527091429.347
IMG (150)	12359	12361	20160527091430.648	20160527091431.077
IMG (150)	12362	12364	20160527091431.292	20160527091431.726
IMG (150)	12364	12366	20160527091431.726	20160527091432.159
IMG (150)	12367	12373	20160527091432.374	20160527091433.671
IMG (150)	12373	12376	20160527091433.671	20160527091434.319
IMG (150)	12376	12379	20160527091434.319	20160527091435.401
IMG (150)	12379	12381	20160527091435.401	20160527091436.050
IMG (150)	12381	12383	20160527091436.050	20160527091436.483
VER (160)	13708	13719	20160527063626.336	20160527063650.336
VER (160)	13723	13728	20160527063650.336	20160527063658.335
VER (160)	13728	13733	20160527063658.335	20160527063706.335
VER (160)	3227	3229	20160527091354.323	20160527091354.323
VER (160)	3229	3239	20160527091354.323	20160527091410.323
VER (160)	3239	3244	20160527091410.323	20160527091418.323
VER (160)	3244	3246	20160527091418.323	20160527091426.323
VER (160)	3247	3255	20160527091426.323	20160527091442.319
AUX (180)	15844	15847	20160527063626.769	20160527063650.769
AUX (180)	641	643	20160527091354.753	20160527091410.753
AUX (180)	644	647	20160527091418.753	20160527091442.753

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
27/05/2016 00:00:01	-	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	476	-
GQisFlagQual set (PX1)	99.45 %	-
GQisFlagQual set (PX2)	99.40 %	-
GQisFlagQual set (PX3)	99.42 %	-
GQisFlagQual set (PX4)	99.42 %	-
GQisFlagQual set (all)	99.42 %	-

Table 4: Quality flags

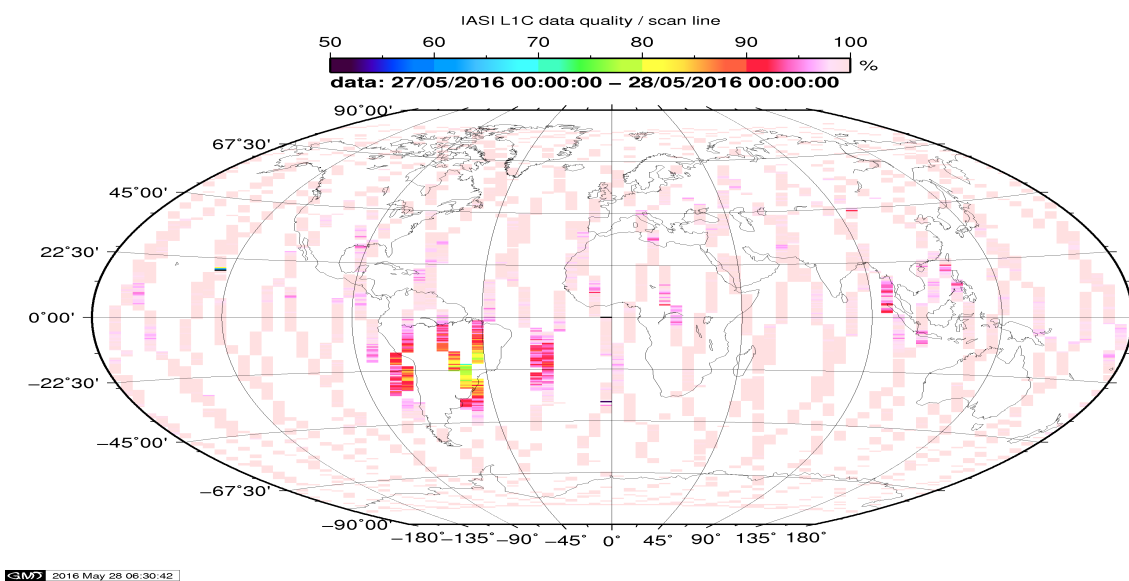


Figure 1: L1C data quality

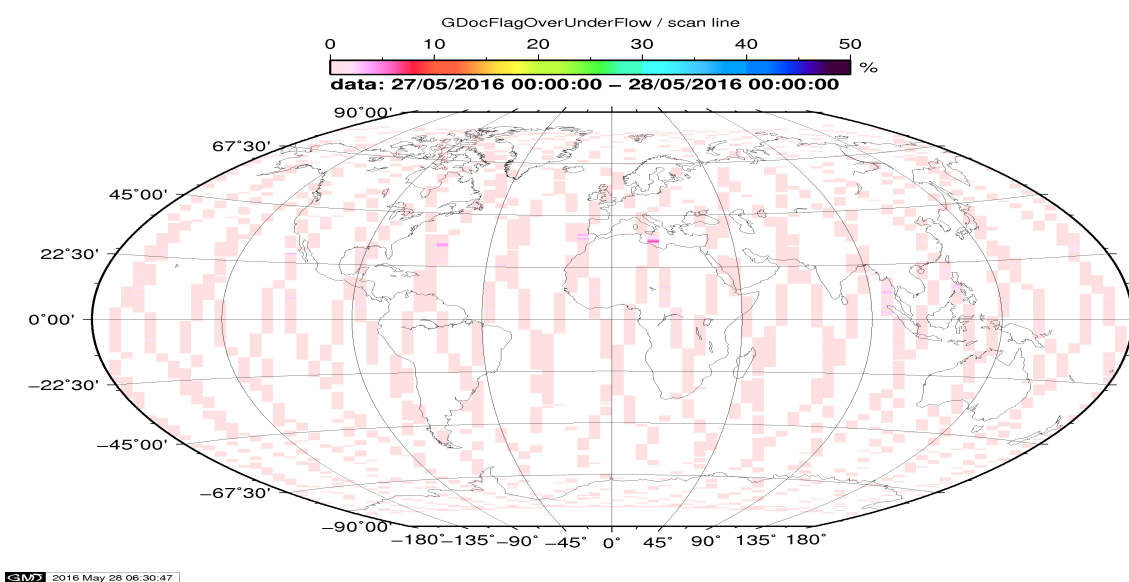


Figure 2: Flag of Over and Under Flows

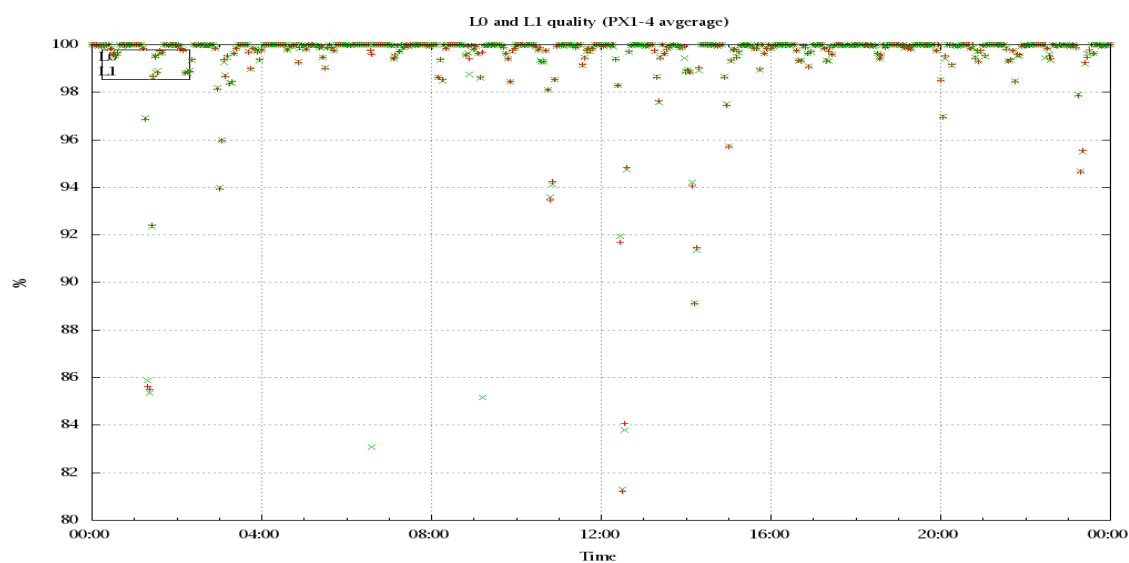


Figure 3: Level 0 and 1C overall quality

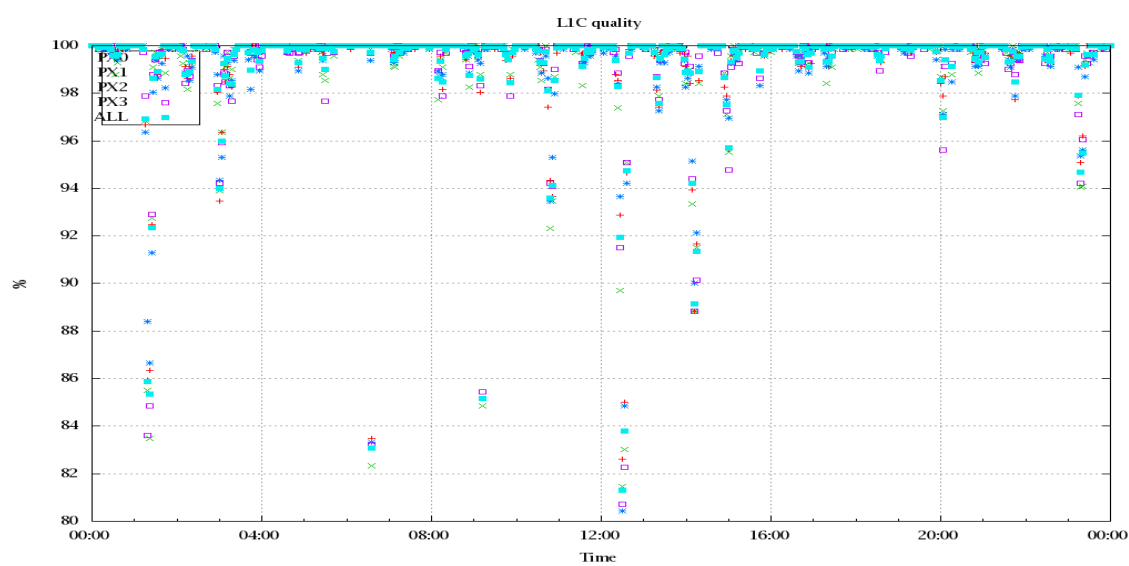


Figure 4: Level 1C quality

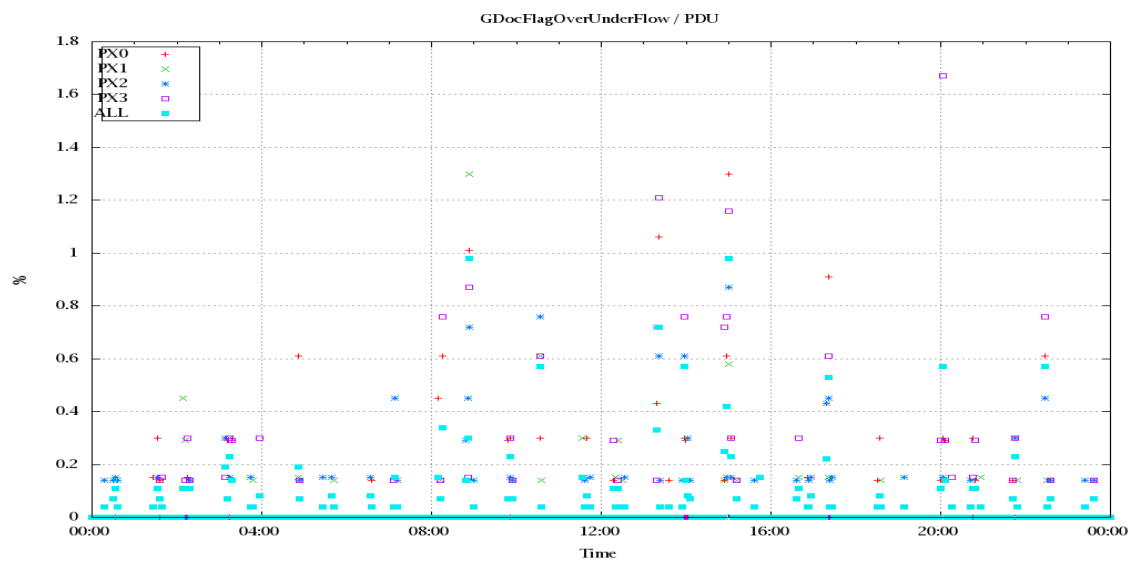


Figure 5: OverUnderFlowFlag timeseries

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.

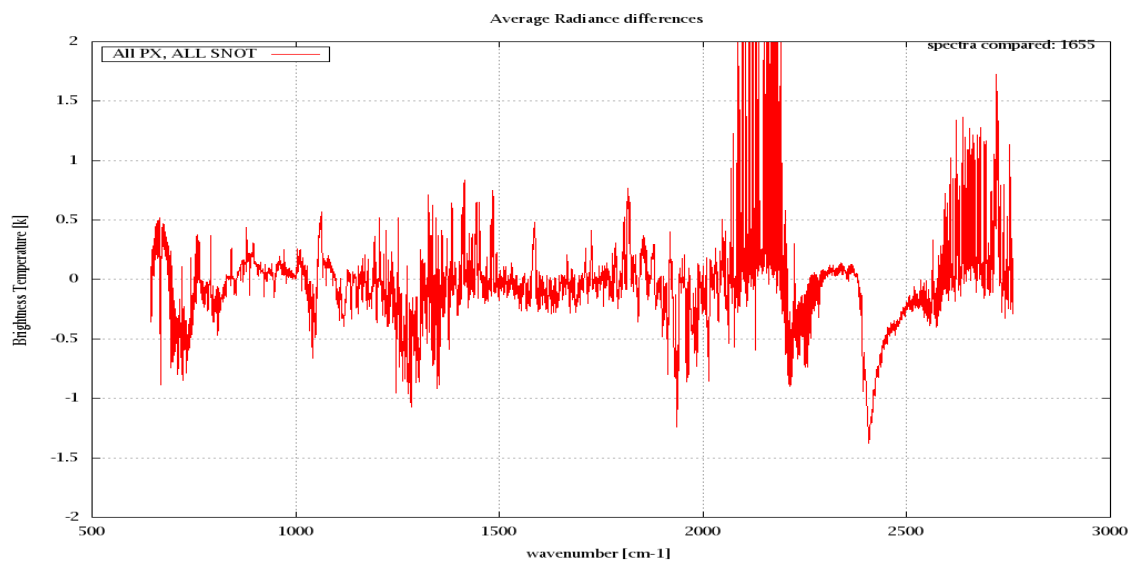


Figure 6: Average Radiance differences: OBS-CAL

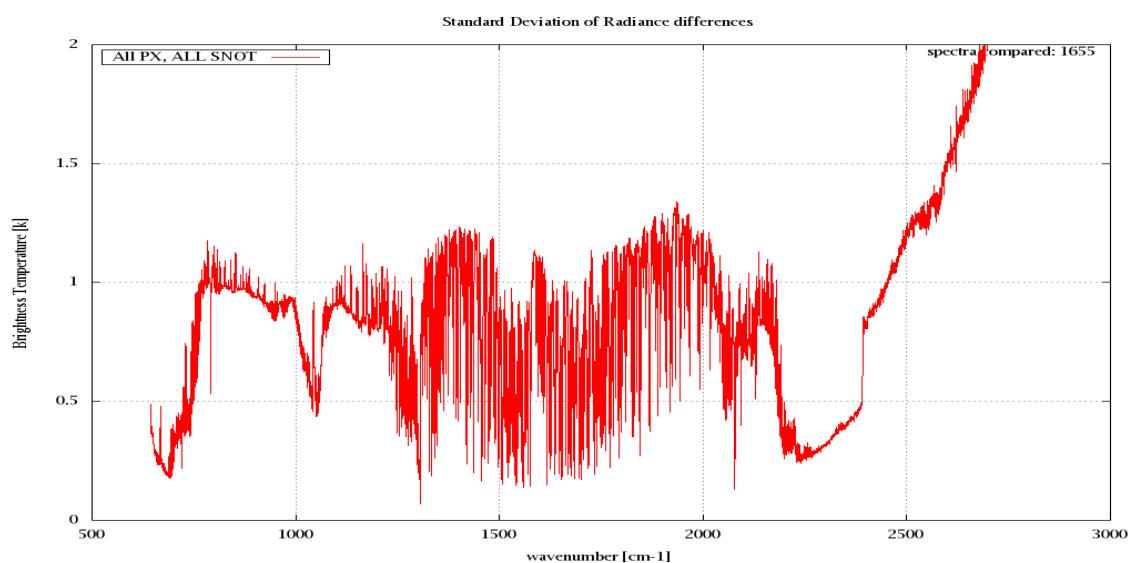


Figure 7: Standard Deviation of Radiance differences

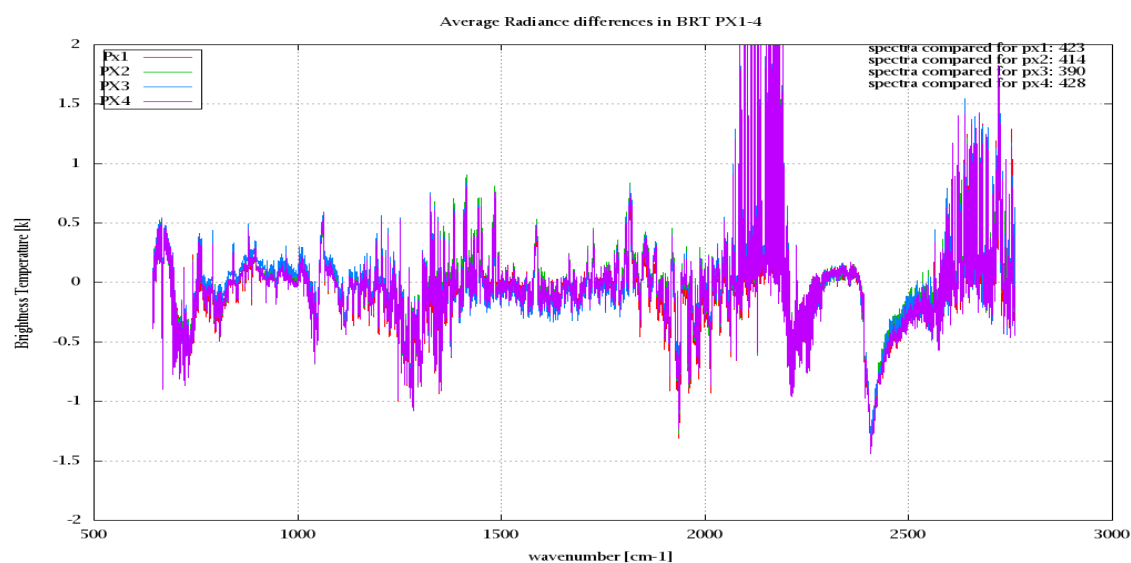


Figure 8: Average Radiance differences: OBS-CAL

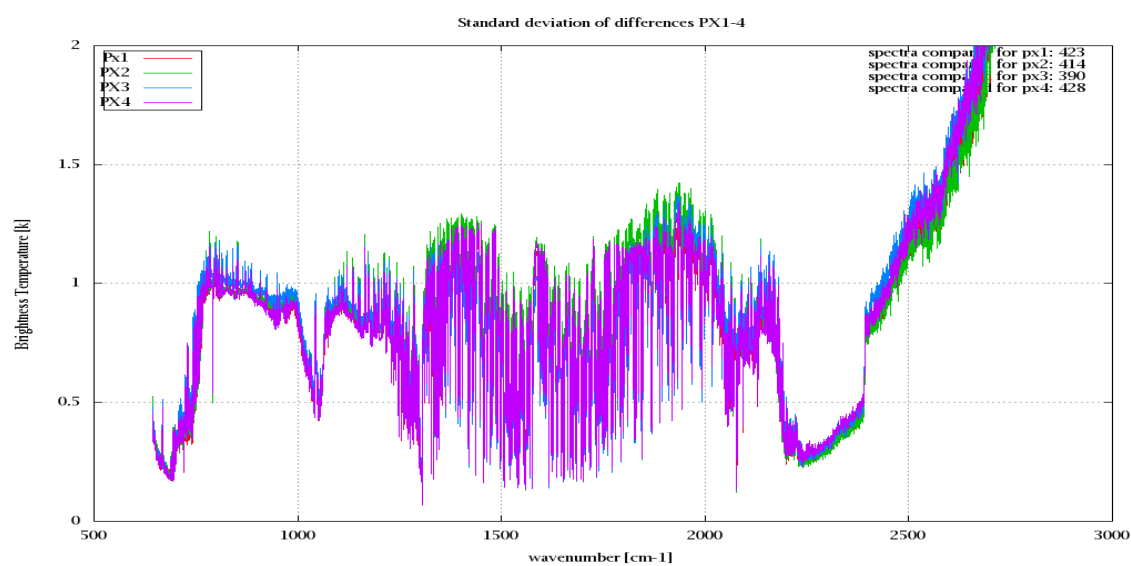


Figure 9: Standard Deviation of Radiance differences

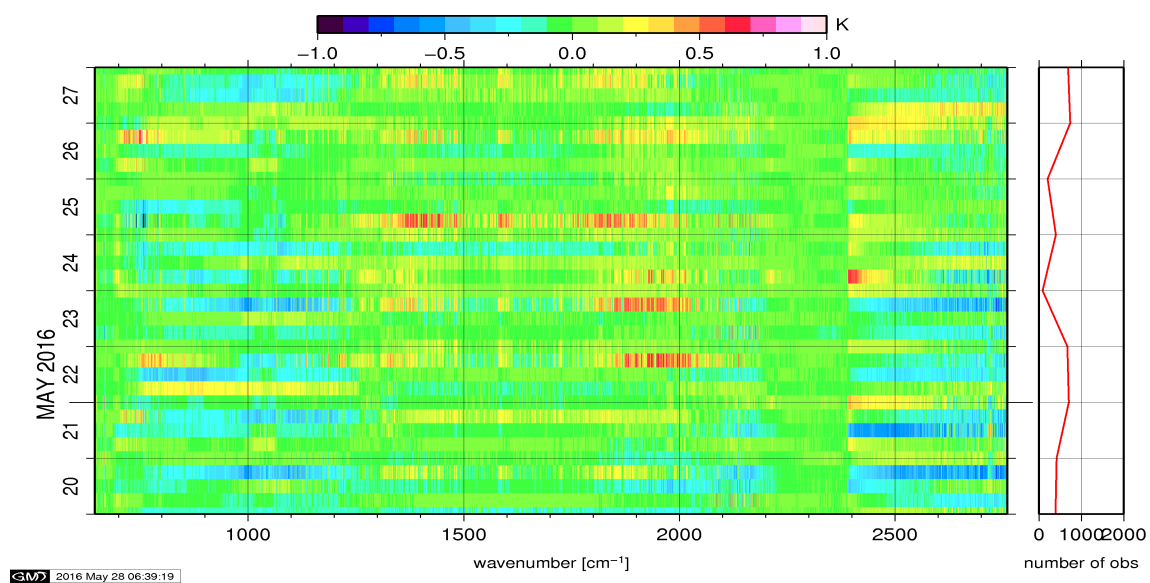


Figure 10: Radiance Anomaly in BRT: All Channels

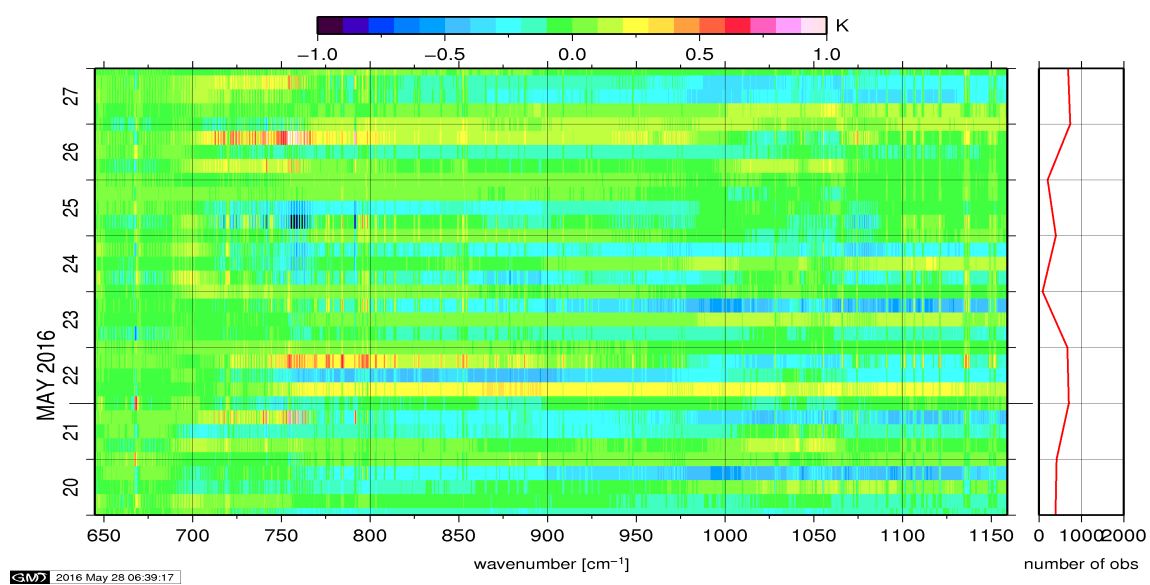


Figure 11: Radiance Anomaly in BRT: IASI Band 1

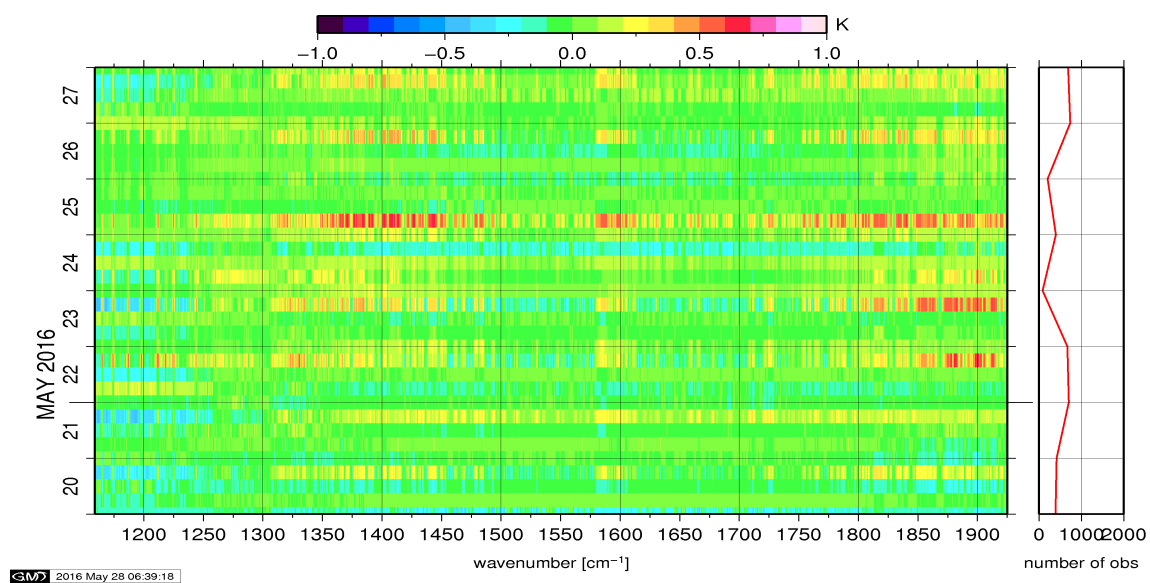


Figure 12: Radiance Anomaly in BRT: IASI Band 2

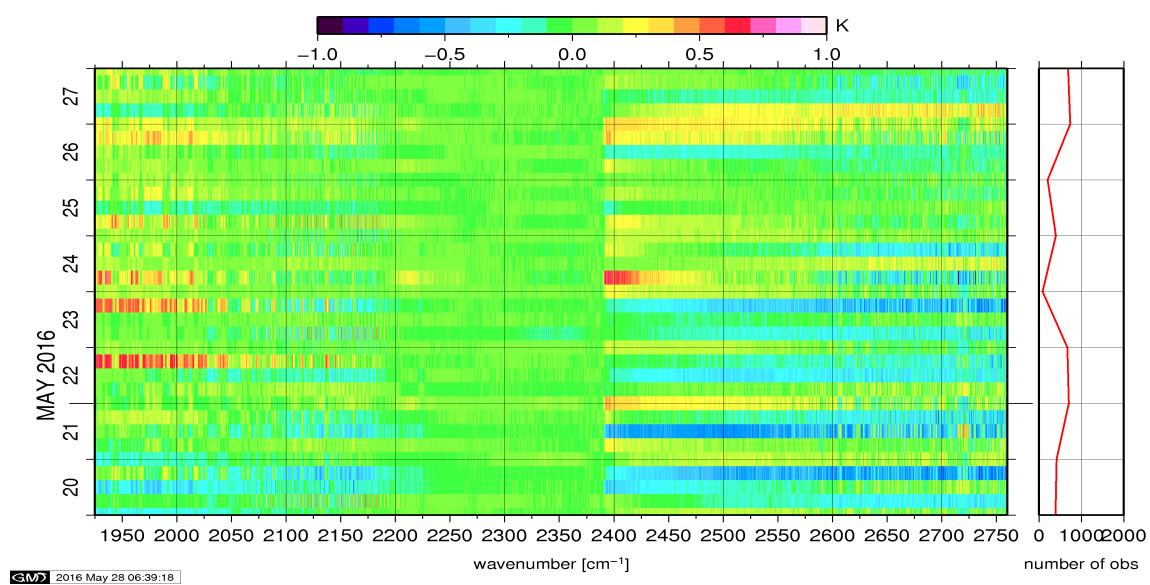


Figure 13: Radiance Anomaly in BRT: IASI Band 3

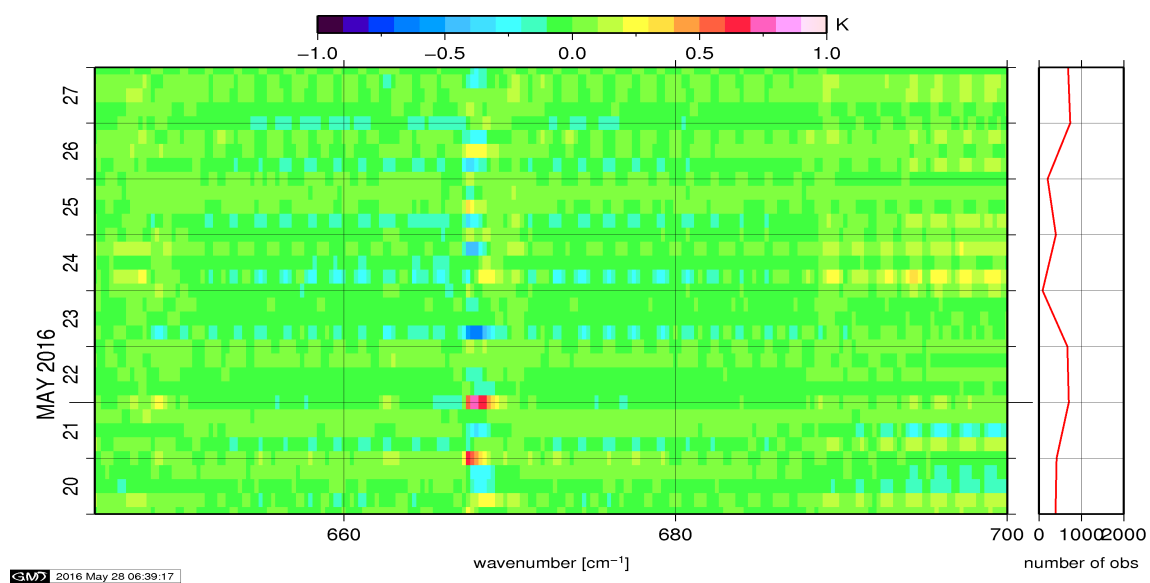


Figure 14: Radiance Anomaly in BRT: CO2 14

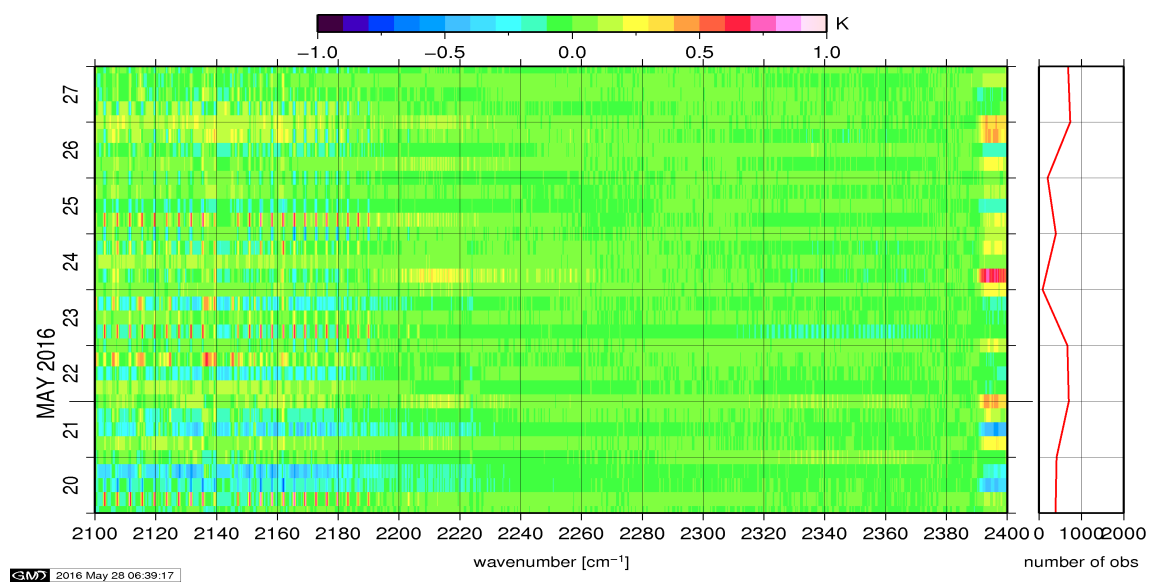


Figure 15: Radiance Anomaly in BRT: CO2 4.3

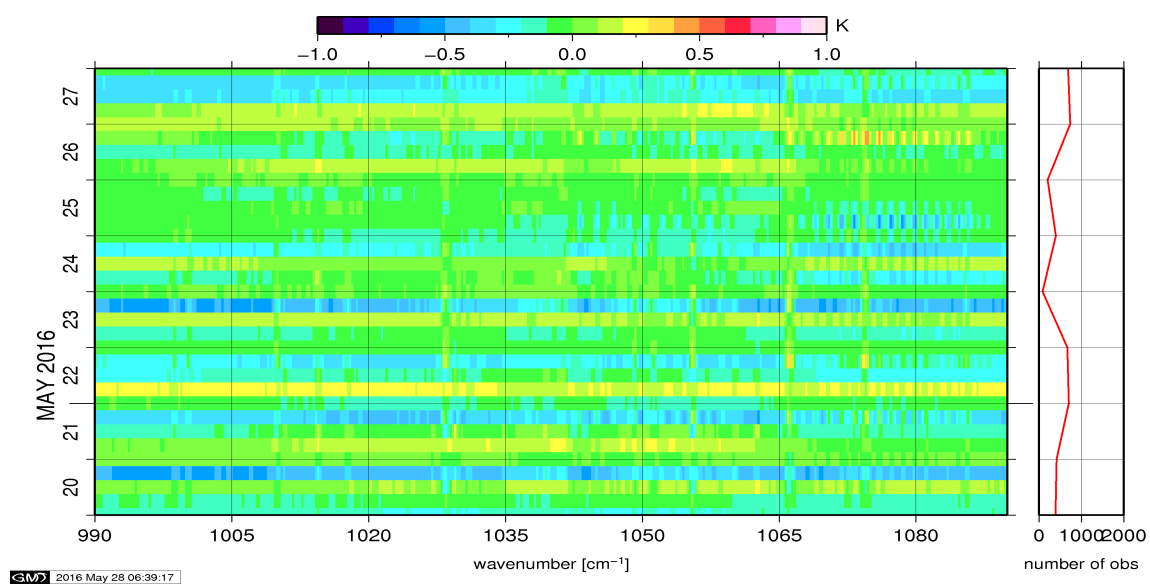


Figure 16: Radiance Anomaly in BRT: O3

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.

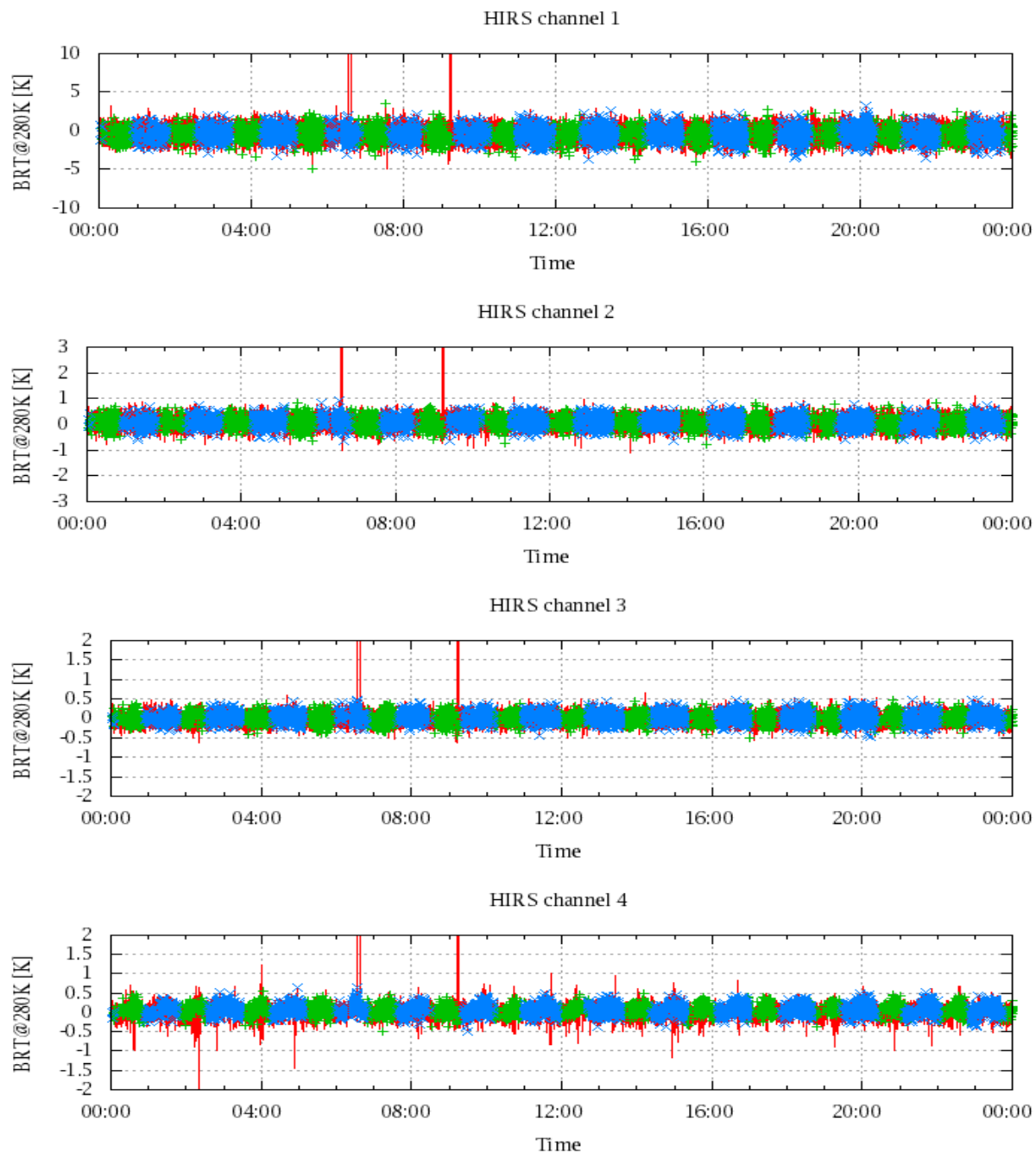


Figure 17: Radiance Differences in BRT

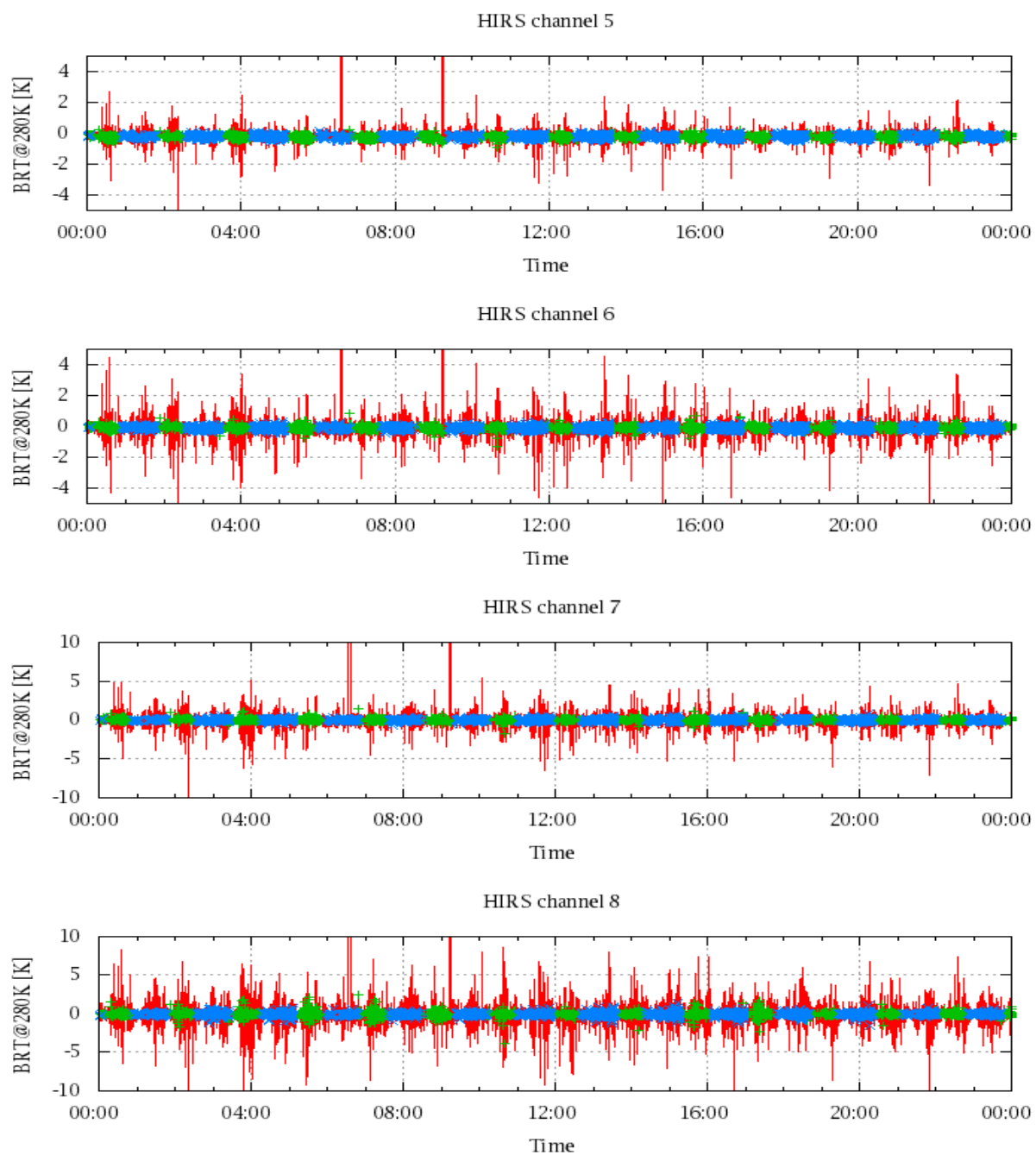


Figure 18: Radiance Differences in BRT

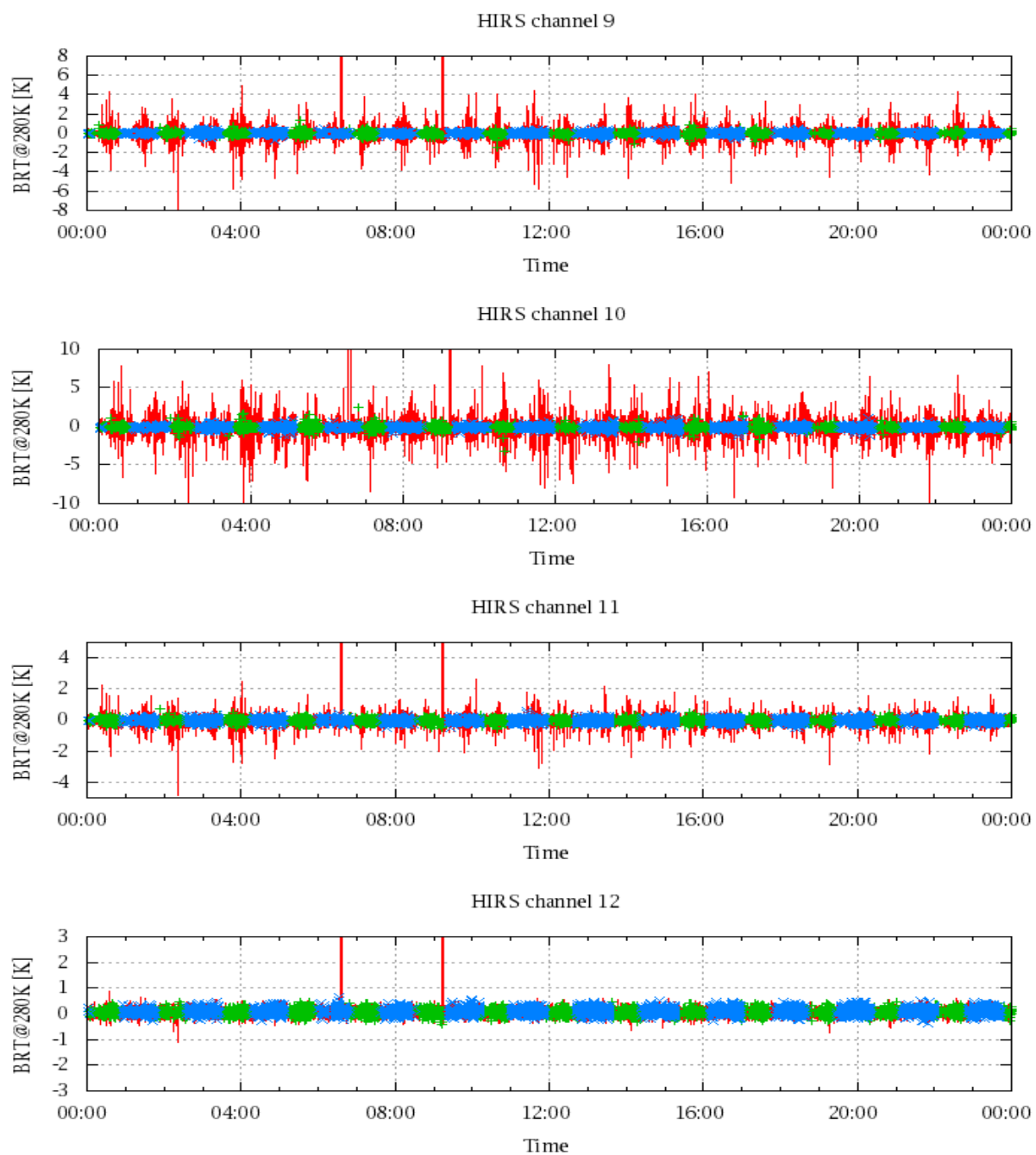


Figure 19: Radiance Differences in BRT

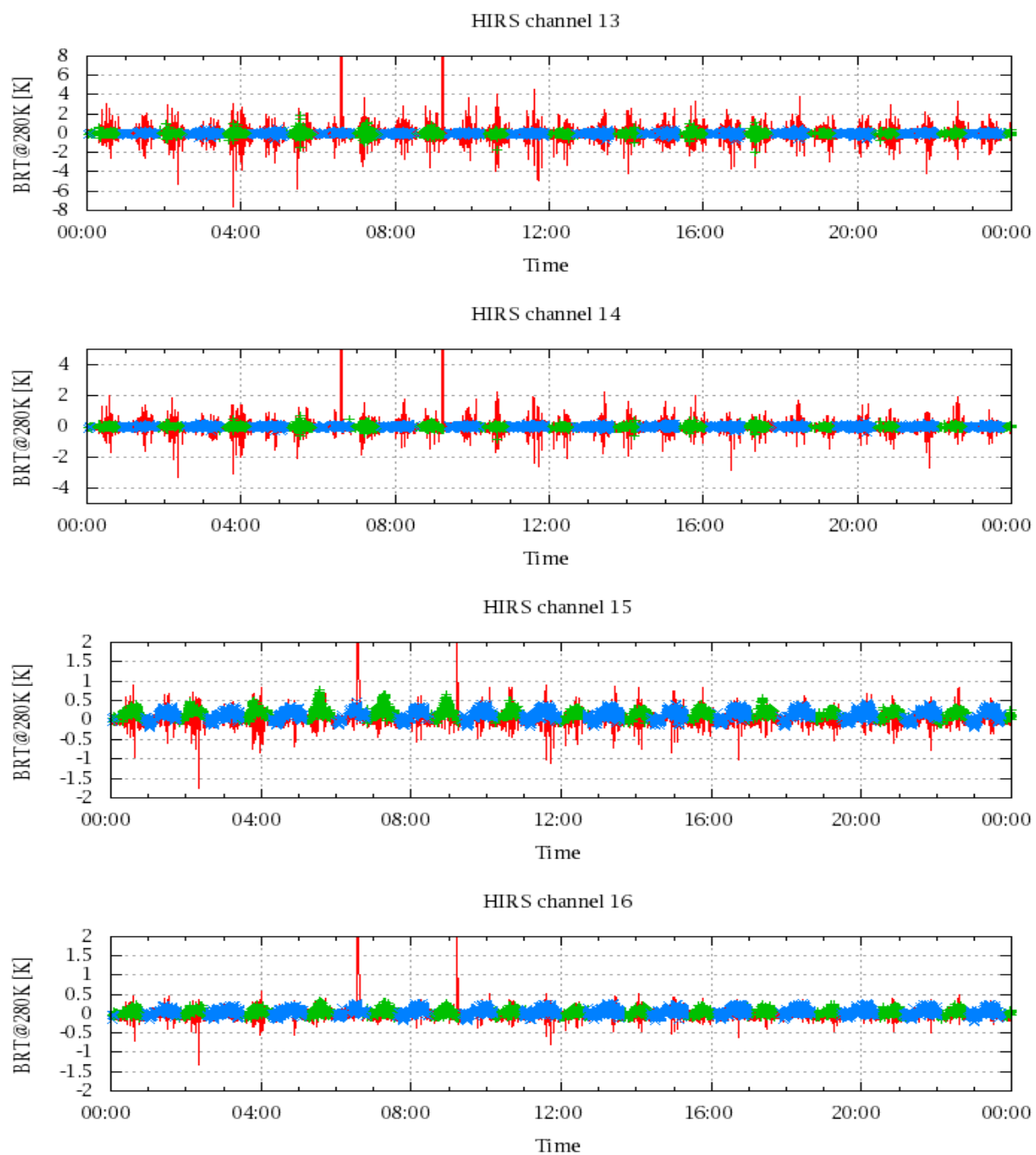


Figure 20: Radiance Differences in BRT

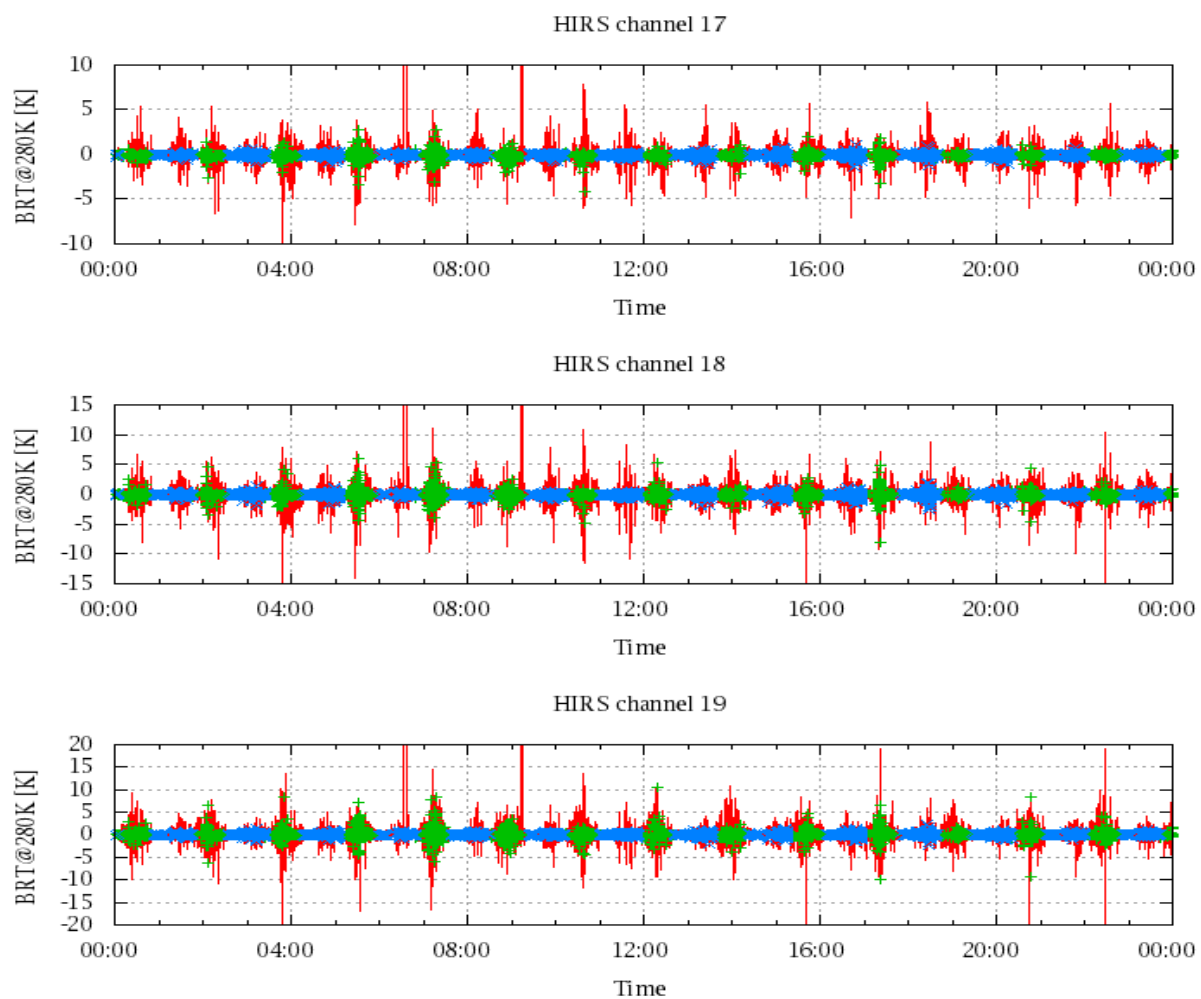


Figure 21: Radinace Differences in BRT