

XMM-Newton CCF Release Note

XMM-CCF-REL-16

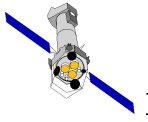
SciSim Specific CCF's for RGS

C. Erd

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1 CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
RGS1_ADUCONV_0001_SCISIM	1998-01-01T00:00:00	ADUCOEFF, OFFSET_GAIN	—	NO
RGS2_ADUCONV_0001_SCISIM	1998-01-01T00:00:00	ADUCOEFF, OFFSET_GAIN	—	NO
RGS1_CTL0001_SCISIM	1998-01-01T00:00:00	CTI, CTLEXTENDED, XCTI, CTIY1, CTIY2, CTIY3, CTIY4, CTIY5, CTIY6, CTIY7,CTIY8, CTIY9	—	NO
RGS2_CTL0001_SCISIM	1998-01-01T00:00:00	CTI, CTLEXTENDED, XCTI, CTIY1, CTIY2, CTIY3, CTIY4, CTIY5, CTIY6, CTIY7, CTIY8, CTIY9	—	NO
RGS1_BADPIX_0001_SCISIM	1998-01-01T00:00:00	BADPIX	—	NO
RGS2_BADPIX_0001_SCISIM	1998-01-01T00:00:00	BADPIX	—	NO



2 Changes

These sets of files are used for analyzing data with the SAS, which were generated by SciSim. For the SAS processing to work, as a minimum the CCD gains have to be calibrated as otherwise the order selection (by `rgsregion`) cannot be applied and therefore overall processing cannot be checked. This was in the past mainly used for scientific validation of the SAS, but could probably be used in the future to simulated complicated source fields, and testing of analysis strategies.

The approach taken for the calibration of the gains of SciSim was the quickest possible to fulfill the requirements for the validation of the SAS. Therefore, rather than tuning the simulation parameters of the CCD's in SciSim to match those of the real flight cameras, they were kept at the same value for all CCD's, and specific CCF's were provided matching these gains. Hence the gains in these CCF's are identical for all CCD's.

This calibration was checked with the flight model of the CCD responses (in CCF `RGS_REDIST`).

A similar approach was taken for the CTI calibration. The CTI in SciSim was deliberately set at slight higher values (worse performance of the CCD), in order to validate the correction by the calibrations. An appropriate value for the CTI was subsequently stored in the CCF.

In order to check the processing, a random set of bad pixels was selected and stored in the CCF `RGS_BADPIX`. SciSim itself does not generate bad pixels, but the SAS can exclude any pixel, if it is specified in the CCF.

3 Scientific Impact of this Update

First release.

4 Estimated Scientific Quality

Accurate quantitative checks of these calibrations were never performed. It was checked however that the gain correction is such that the order selection regions calculated by `rgsregion` overlay on the data, even for regions chosen to be 5% of the total intensity.

Inaccuracies in the order selection impact on the effective area. Given these compromises, the effective area is estimated to be 10–20% accurate.