

# XMM-Newton CCF Release Note

XMM-CCF-REL-44

## RGS Gain and CTI Parameters

C. Erd and C. d. Vries

December 13, 2000

### 1 CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
RGS1_ADUCONV_0005	2000-02-06T16:50:00	OFFSET_GAIN	xmmsas_20001207_0215	NO
RGS2_ADUCONV_0006	2000-01-25T16:27:00	OFFSET_GAIN	xmmsas_20001207_0215	NO
RGS1_CTL0002	2000-02-06T16:50:00	XCTI, CTIY1, CTIY2, CTIY3, CTIY4, CTIY5, CTIY6, CTIY7, CTIY8, CTIY9	xmmsas_20001207_0215	NO
RGS2_CTL0002	2000-01-25T16:27:00	XCTI, CTIY1, CTIY2, CTIY3, CTIY4, CTIY5, CTIY6, CTIY7, CTIY8, CTIY9	xmmsas_20001207_0215	NO

### 2 Changes

The CTI correction was changed in CAL HB version 2.0. This required an update of the CTI correction parameters.

In addition to the parallel CTI correction the serial CTI is also corrected causing a steeper gain of the CCD's. Therefore the gain parameters and the offsets needed to be updated as well.



### 3 Scientific Impact of this Update

The previous CTI correction was not appropriate close to the edges of the CCD's. This caused events falling outside the order selection criteria, and thus mimicking weak absorption features. This was improved with this release.

### 4 Estimated Scientific Quality

The quality of the corrections is shown in Figures 1 & 2, where the uncorrected data are compared with corrected data.

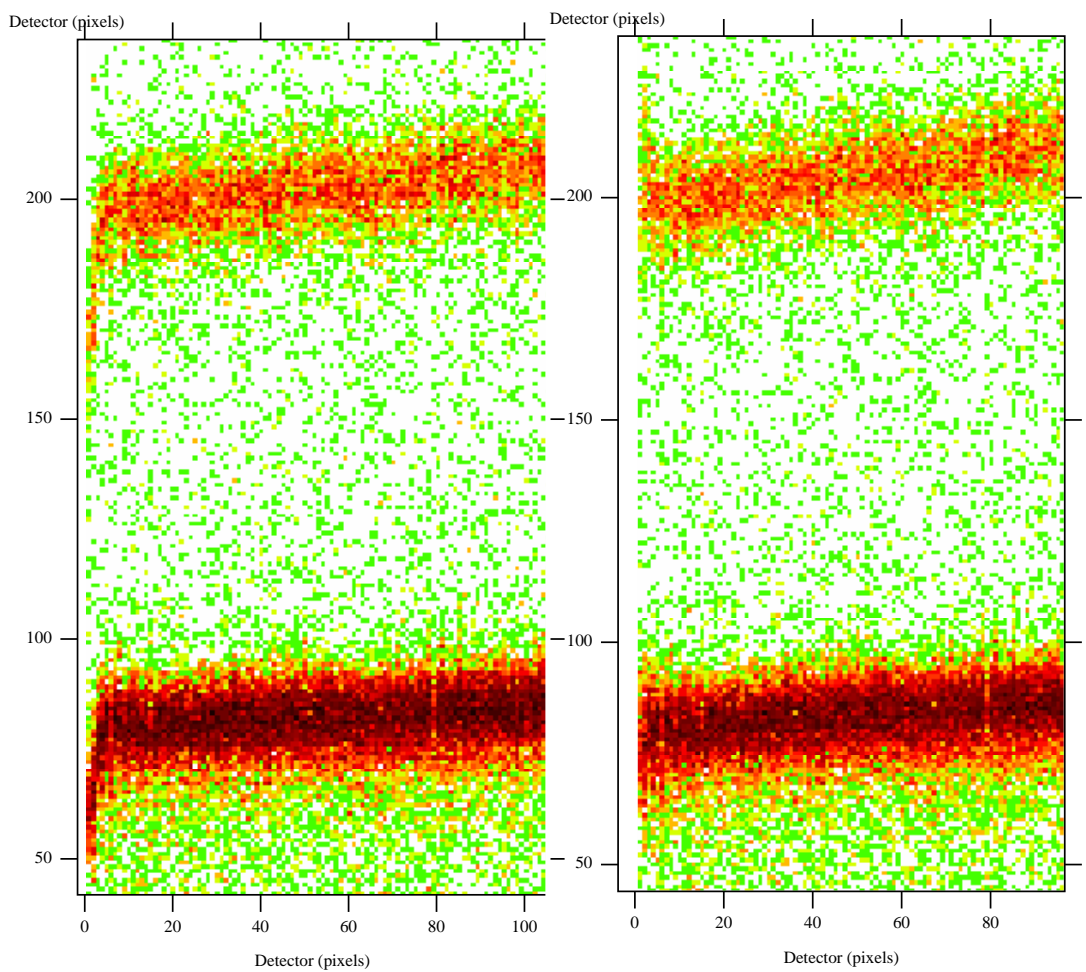
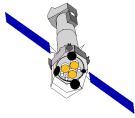


Figure 1: The effects of the CTI correction is shown as a function of dispersion coordinate. The uncorrected data are shown in the left panel: The PIXCOORD1 X-coordinate is on the abscissa and the CCD pulse-height is plotted along the ordinate for CCD5, node 0. The edge of the CCD is to the left. The right panel shows the CTI corrected pulse-heights. The upper band is second order data, the lower band is first order data.

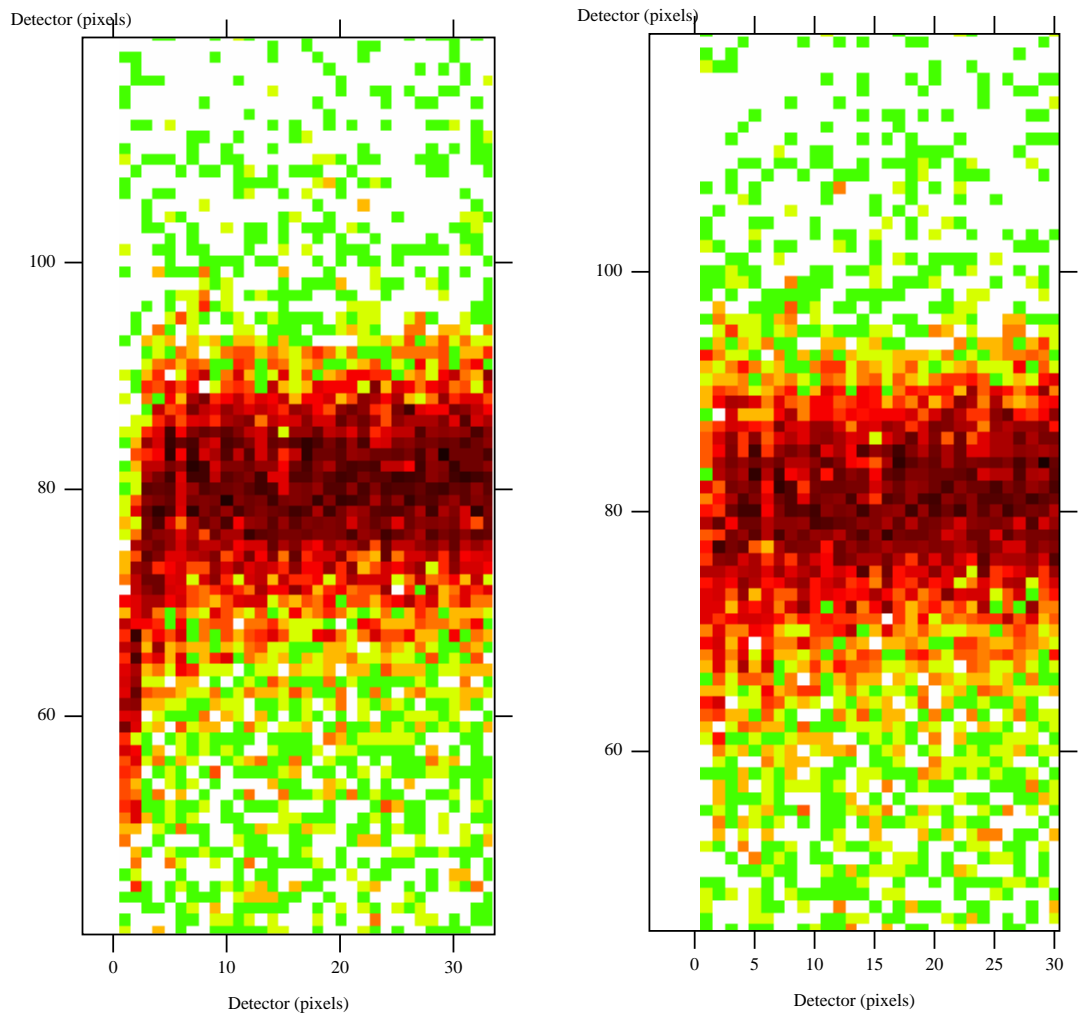
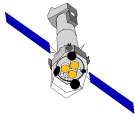


Figure 2: Same as Figure 1, but zooming in close to the edge of the device, on first order data.

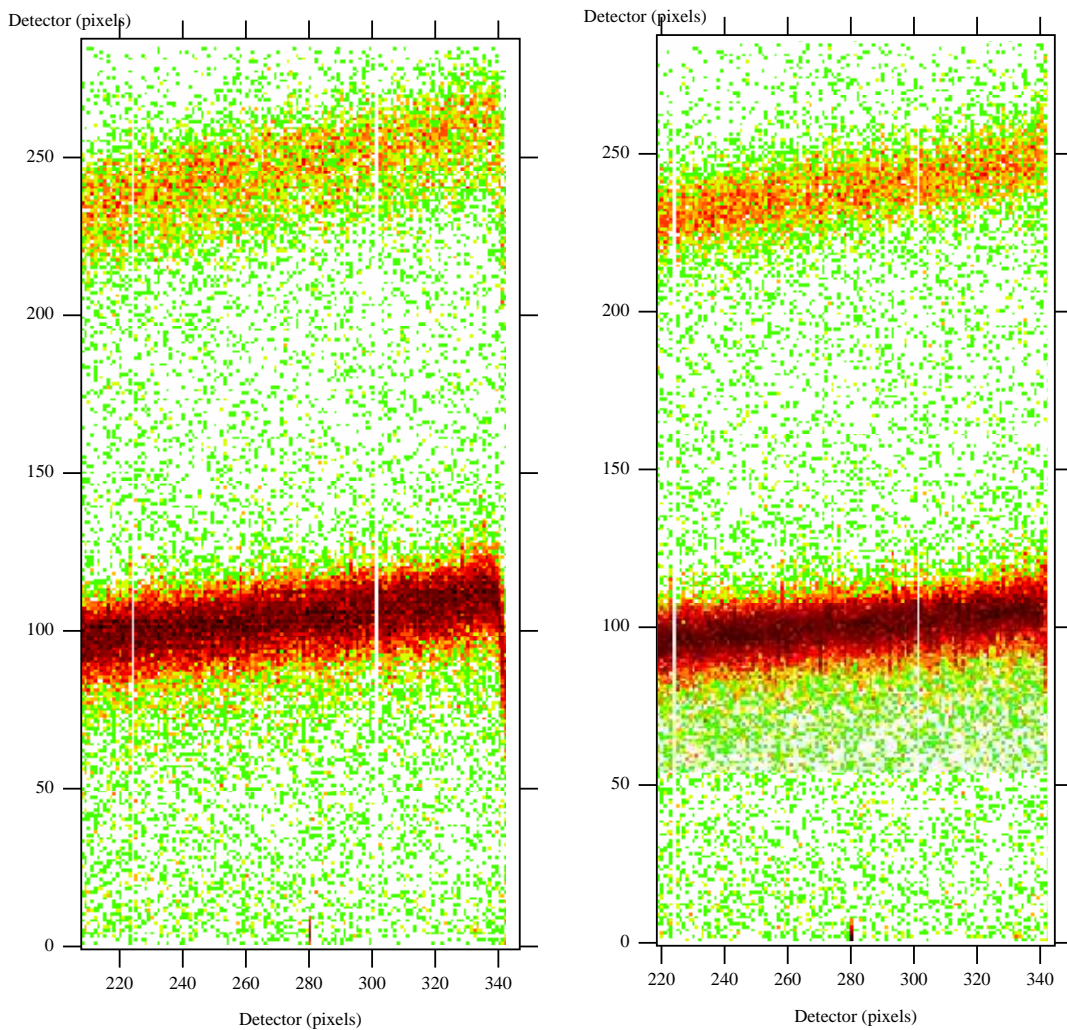
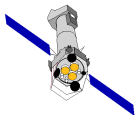


Figure 3: Same as Figure 1, but for the other side of the device, node 1. The edge of the CCD is to the right.

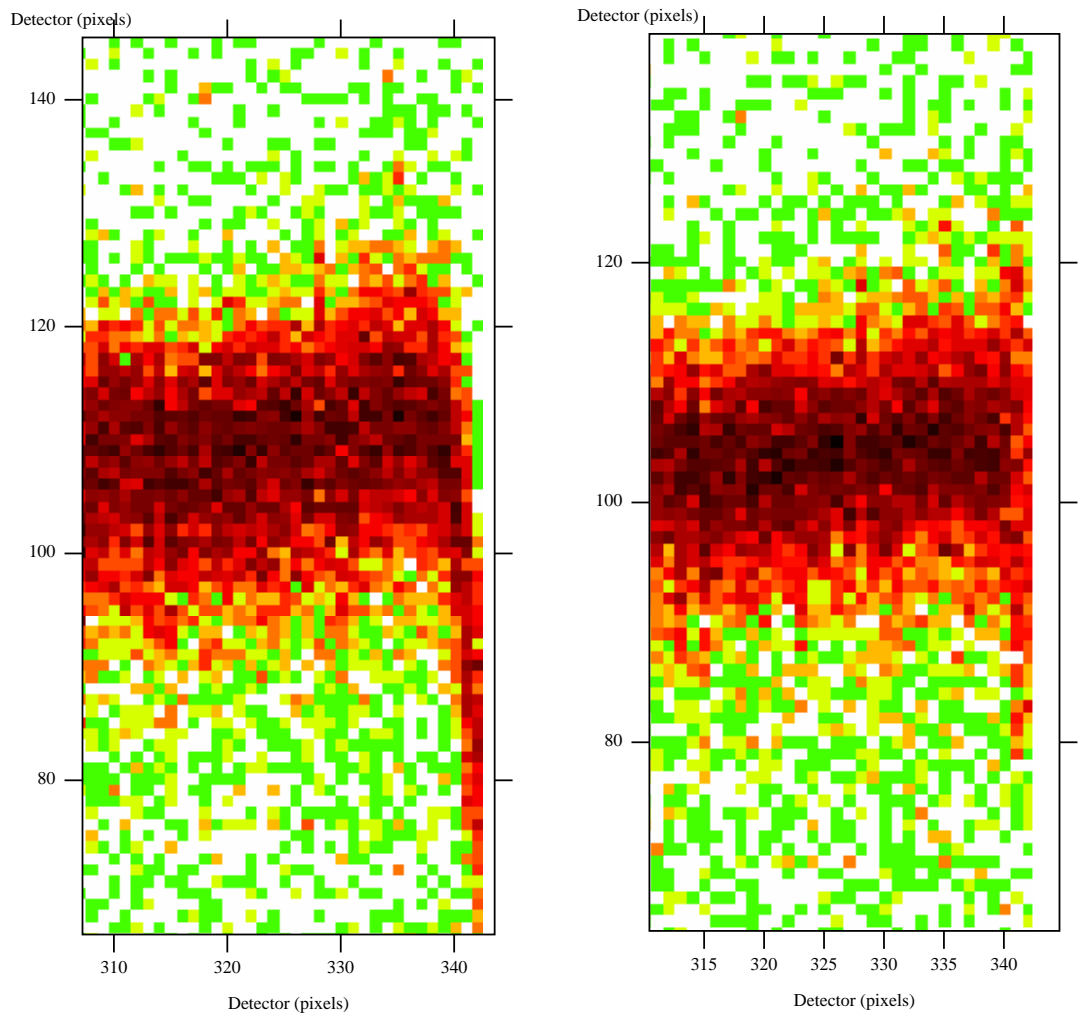
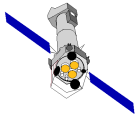


Figure 4: Same as Figure 3, but zooming in close to the edge of the device, on first order data.