XMM-Newton CCF Release Note

XMM-CCF-REL-181

EPIC MOS fixed-offset

Bruno Altieri & Jean Ballet

October 29, 2004

1 CCF components

Name of CCF	VALDATE (start of val. period)	EVALDATE (end of validity period)	List of Blocks changed	CAL VERS.	XSCS flag
EMOS1_DARKFRAME_0011	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS2_DARKFRAME_0011	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS1_DARKFRAME_0012	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS2_DARKFRAME_0012	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS1_DARKFRAME_0013	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS2_DARKFRAME_0013	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS1_DARKFRAME_0014	2003-07-29T01:00:00		OFFSET_CCD1		NO
EMOS2_DARKFRAME_0014	2003-07-29T01:00:00		OFFSET_CCD1		NO

2 Changes

Several Gatti warnings from emevents when MOS is used in window mode have been analysed by Jean Ballet (cf SAS SPR 2218 & 2553). He concluded that the ROW_Y0 definition in the fixed-offset extensions of the MOS DARKFRAME was incorrect, shifting the row offsets by one row, hence attributing to one row the offset of the adjacent row. This was corrected in issues 11 to 14, where the ROW_Y0 was changed from 250 to 251 in SW mode and from 150 to 151 in LW mode.

3 Scientific Impact of this Update

The previous emevents gatti warnings have disappeared.

The fixed-offset tables are not used to change the energy of the events because this is already done on-board.

The reason to reflect this change in the OFFSET extension of the CCFs is to get the right number of 'truncated' events whose ENERGYE1 is 4095 in output of the camera head (flagged as REJECTED_BY_GATTI). As the offsets for these events were already subtracted in the EDU, their final ENERGYE1 depends on position and they can be identified properly only if the offsets are known. The light curve built from those 'truncated' events is used to identify flares in the data and to optimise the GTIs for source detection in the PPS.

4   Estimated Scientific Quality

The update of the on-board offset tables is driven by the need to reconstruct the right energy for all events more precisely with their right pattern.

The main reason to reflect the change of MOS on-board fixed-offset tables in the DARKFRAME CCFs is to reconstruct the right number of truncated events used for the flare screening in the PPS.

5   Test procedures & results

A test of the new DARKFRAME CCFs was performed with SAS 6.0 : the emevents Gatti warning do disappear with the new set of DARKFRAME CCFs

6   Expected Updates

None.