

XMM-Newton CCF Release Note

XMM-CCF-REL-338

EPIC PN Bad Pixels

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1 CCF Components

Name of CCF	VALDATE	EVALDATE	Blocks Changed	CAL Version	XSCS Flag
EPN_BADPIX_0145.CCF	2016-08-25T12:52:16		BADPIX		NO

2 Changes

An additional segment of column 64 in CCD 11 has been set to bad in the on-board Bad Pixel Table (BPT), in use from revolution 3061 onwards. The new EPN_BADPIX CCF reflects the changes made on board.

3 Scientific Impact of this Update

Significant pixel segments of column 64 in CCD 11 exhibit noisy behaviour due to numerically overflowing offset values. The extent of these segments varies slowly in time and requires periodic adjustments of the pixels included in the BPT.

Noisy pixel data will in general be removed through the standard SAS processing, limiting the adverse effect on the science quality to a local loss in effective area. However, they may add considerably to the telemetry load, and therefore these pixels are masked on-board through the BPT.

Reduced telemetry load due to the on-board masking of these noisy pixels will lower the chances of counting mode excursions, thus increasing the quadrant 3 live-time.

4 Estimated Scientific Quality

Note that in all the EPIC cameras there are intermittent bad pixels that may arise in only one exposure. The user is recommended to run the bad pixel finding algorithm, and remove after processing - note that this is done by default in the SAS pipeline tasks `epproc` and `epchain`.

5 Test Procedures and Summary of the Test Results

Correct bad pixel contents confirmed with `calview`. Correct functionality and validity dates tested with `epproc` (SAS 15.0.0).