

XMM-Newton CCF Release Note

XMM-CCF-REL-67

EPIC Bad Pixels

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1 Changes

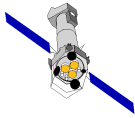
Two functional changes have been made to the CCF. The first consists of the explicit inclusion of a mode dependence, because the TIMING and BURST modes in particular do not use the bad pixel tables on-board. Secondly, a place-holder column "N_STAT_IMP" has been added. This is a proxy for the brightness of a bad pixel, and is necessary because its charge level can affect the amount of charge transfer loss seen in X-ray signal packets coming at a higher RAWY location in the same column.

2 Scientific Impact of this Update

Necessary to track changes in bad pixel settings. There were database updates in June 2000 and December 2000, to cover new bad pixel locations found during the CAL/PV phase and Routine phase respectively. These should be uplinked at the start of each observation. However this was not reflected in the the procedures for the start of unscheduled exposures, for example due to commanding losses, timeline interruptions etc.. In such cases old or upcoming bad pixel tables were used. The listings of such exposures have been collated and the different CCF versions propagated to account for an appropriate validity date.

Note that the interrupted and subsequently resumed Mrk 1383 exposure in revolution 116 cannot be accounted for in its entirety as different bad pixel tables were used in the two parts. Only the first part is reflected correctly in the relevant CCF.

Also note that some CAL CLOSED exposures in revolutions 103, 187, 189 and 190 are not accounted for. Additionally, from the database update that occurred at Rev 171-192, the CAL CLOSED exposures actually have an offset of 50 applied to CCD11 Column 64 which is not consistent with the CCF. This is left in as we have no tracking mechanism at this level of detail, and science analysis of CLOSED CAL data will not be materially affected.



3 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.

4 CCF components

| Name of CCF | VALDATE | List of Blocks changed | CAL VERSION | XSCS flag |
|-----------------|---------------------|---------------------------|-------------|-----------|
| EPN_BADPIX_0054 | 1999-12-10T06:30:00 | BADPIX | | NO |
| EPN_BADPIX_0060 | 2000-06-29T02:00:00 | BADPIX | | NO |
| EPN_BADPIX_0062 | 2000-07-13T21:37:00 | BADPIX | | NO |
| EPN_BADPIX_0063 | 2000-07-25T00:45:00 | BADPIX | | NO |
| EPN_BADPIX_0064 | 2000-07-25T05:50:00 | BADPIX | | NO |
| EPN_BADPIX_0065 | 2000-07-26T04:48:00 | BADPIX | | NO |
| EPN_BADPIX_0066 | 2000-08-14T01:00:00 | BADPIX | | NO |
| EPN_BADPIX_0067 | 2000-10-21T00:00:00 | BADPIX | | NO |
| EPN_BADPIX_0068 | 2000-10-25T15:00:00 | BADPIX | | NO |
| EPN_BADPIX_0069 | 2000-10-31T23:00:00 | BADPIX | | NO |
| EPN_BADPIX_0070 | 2000-11-03T21:00:00 | BADPIX | | NO |
| EPN_BADPIX_0071 | 2000-11-09T16:00:00 | BADPIX | | NO |
| EPN_BADPIX_0072 | 2000-12-13T20:00:00 | BADPIX | | NO |
| EPN_BADPIX_0073 | 2000-12-14T11:00:00 | BADPIX | | NO |
| EPN_BADPIX_0074 | 2000-12-25T13:00:00 | BADPIX | | NO |