XMM-Newton CCF Release Note

XMM-CCF-REL-62

EPIC PN Energy Scale

D Lumb

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1 Changes

The offset values for selected columns is uploaded to the PN instrument at the same time as bad pixel locations. This offset corrects for low level noisy columns, by artificially suppressessing their threshold values. However in the ground processing this value must be added back in to obtain the correct energy scaling.

While previous submissions acounted for this, we noted that due to manual commanding, necessary at various points, an old database set had to be used therefore the validity of these calibration files has oscillated back and forth.
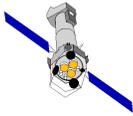
An added complication for this submission is that there were a number of very noisy pixels appeared at Rev 156, and subsequently for several orbits the telemetry was only able to handle these by manually adjusting the offset values in a number of columns. After Revolution 192 this was fixed, except for occasional commanding errors (eg Rev 199)

2 Scientific Impact of this Update

For a limited set of columns ensures a correct energy conversion. However if the wrong file is used it probably only affects a handful of columns at around a few eV level.

3 Estimated Scientific Quality

We expect that because the threshold of these columns was artificially raised, the actual detection efficiencies will have been altered as well. Not yet accounted for.

4   Expected Updates

With instrument database modifications, or due to future commanding errors.

5   CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
EPN_ADUCONV_0017	2000-06-11T03:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0018	2000-06-29T02:49:00	OFFSET_GAIN		NO
EPN_ADUCONV_0019	2000-07-01T08:07:00	OFFSET_GAIN		NO
EPN_ADUCONV_0020	2000-07-03T12:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0021	2000-07-03T22:16:00	OFFSET_GAIN		NO
EPN_ADUCONV_0022	2000-07-05T15:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0023	2000-07-05T22:30:00	OFFSET_GAIN		NO
EPN_ADUCONV_0024	2000-07-07T15:54:00	OFFSET_GAIN		NO
EPN_ADUCONV_0025	2000-07-08T11:50:00	OFFSET_GAIN		NO
EPN_ADUCONV_0026	2000-07-10T03:16:00	OFFSET_GAIN		NO
EPN_ADUCONV_0027	2000-07-10T17:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0028	2000-07-13T12:16:00	OFFSET_GAIN		NO
EPN_ADUCONV_0029	2000-07-26T04:48:00	OFFSET_GAIN		NO
EPN_ADUCONV_0030	2000-07-28T04:32:46	OFFSET_GAIN		NO
EPN_ADUCONV_0031	2000-07-29T00:59:00	OFFSET_GAIN		NO
EPN_ADUCONV_0032	2000-08-02T00:22:00	OFFSET_GAIN		NO
EPN_ADUCONV_0033	2000-08-02T20:19:00	OFFSET_GAIN		NO
EPN_ADUCONV_0034	2000-08-04T11:42:00	OFFSET_GAIN		NO
EPN_ADUCONV_0035	2000-08-04T20:11:00	OFFSET_GAIN		NO
EPN_ADUCONV_0036	2000-08-07T00:58:00	OFFSET_GAIN		NO
EPN_ADUCONV_0037	2000-08-10T10:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0038	2000-10-31T23:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0039	2000-11-03T21:38:00	OFFSET_GAIN		NO
EPN_ADUCONV_0040	2000-11-05T16:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0041	2000-11-05T21:31:00	OFFSET_GAIN		NO
EPN_ADUCONV_0042	2000-11-07T16:00:00	OFFSET_GAIN		NO
EPN_ADUCONV_0043	2000-11-07T21:22:00	OFFSET_GAIN		NO
EPN_ADUCONV_0044	2000-12-13T20:48:00	OFFSET_GAIN		NO
EPN_ADUCONV_0045	2000-12-14T11:07:00	OFFSET_GAIN		NO
EPN_ADUCONV_0046	2000-12-15T14:02:00	OFFSET_GAIN		NO
EPN_ADUCONV_0047	2000-12-15T16:56:00	OFFSET_GAIN		NO
EPN_ADUCONV_0048	2000-12-19T14:05:00	OFFSET_GAIN		NO
EPN_ADUCONV_0049	2000-12-19T16:41:00	OFFSET_GAIN		NO
EPN_ADUCONV_0050	2000-12-21T14:19:00	OFFSET_GAIN		NO
EPN_ADUCONV_0051	2000-12-21T16:39:00	OFFSET_GAIN		NO
EPN_ADUCONV_0052	2000-12-25T13:18:00	OFFSET_GAIN		NO
EPN_ADUCONV_0053	2001-01-08T12:47:00	OFFSET_GAIN		NO
EPN_ADUCONV_0054	2001-01-08T52:53:00	OFFSET_GAIN		NO