

# XMM-Newton CCF Release Note

XMM-CCF-REL-28

## EPIC PN Spectral Response Distribution

D Lumb

October 13, 2000

### 1 CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
EPN_REDIST_0005	2000_01_01T00:00:00	EBINS		NO

### 2 Changes

Editorial change - units changed from keV to eV

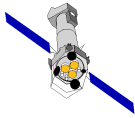
### 3 Scientific Impact of this Update

Necessary to make the response generation for PN coherent with other data files.

### 4 Estimated Scientific Quality

A combination of reconciling with theoretical models, and measurement of spectral residuals in-orbit has been undertaken, such that for some targets, spectral discrepancies at less than the 10% level have been obtained. Progress is being made for pathological cases of soft and hard sources, and in understanding the consequences of pile-up.

As ever, progress in improving the spectral response knowledge will continue to develop with more widespread use of data sets of different quality and characteristics. In the mean time users



should be aware not to over-interpret spectral features near instrument absorption edges, and at the extremes of energy range, nor at count rates inappropriate to the readout mode of use. Namely energies  $\leq 300\text{eV}$ , around C K (280eV) O K (540eV), ALk (1.55keV), Si K (1.84keV) and Au M (2.3keV) edges, and at energies  $\geq 8\text{keV}$ .

## 5 Expected Updates

The mode dependencies of the EPIC cameras is uncertain yet with respect to the spectral response. While it is hoped that the gain dependencies cover all aspects of mode changes, it is possible that at least in timing mode, the 1-d clocking scheme causes events to be merged, and so the response distributions may ALSO be different