XMM-CCF-REL-260

EPIC MOS Quantum Efficiency

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1 CCF components

Name of CCF	VALDATE	EVALDATE	Blocks changed	XSCS flag
EMOS1_QUANTUMEF_0018.CCF	2000-01-01		QE_TOTAL	NO
EMOS2_QUANTUMEF_0018.CCF	2000-01-01		QE_TOTAL	NO

2 Changes

We introduce a small change to the quantum efficiency (QE) of the two MOS cameras around the Oxygen edge. Currently the QE in the CCF is interpolated betweeen 526 and 536 eV. Finer measurements by Chandra, which has a similar edge depth to the MOS cameras, due to SiO2 in the surface layer, show that the edge should actually begin at around 534 eV (Fig. 1).

3 Scientific Impact of this Update

The QE change makes a small but noticeable improvement to fits across the O edge in continuum sources with very good statistics.

4 Estimated Scientific Quality

5 Test procedures and results

A refit of all the sources in the calibration archive has been made using the new QE. In general the change is very small and hard to see but in some bright sources an improvement
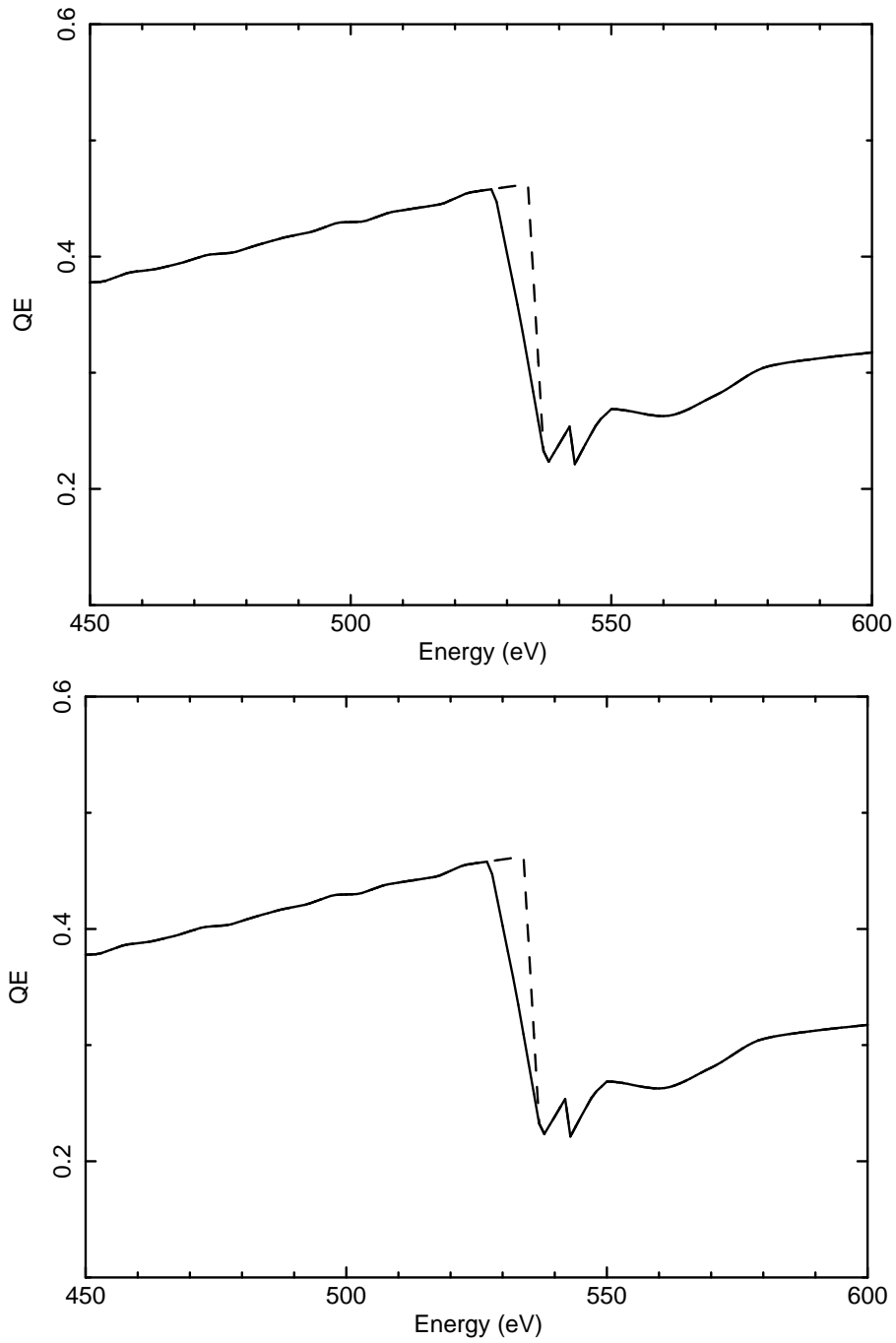
Figure 1: The QE around the oxygen edge for MOS-1 (upper) and MOS-2 (lower). The solid line represents the current QE calibration and the dashed line gives the new QE.
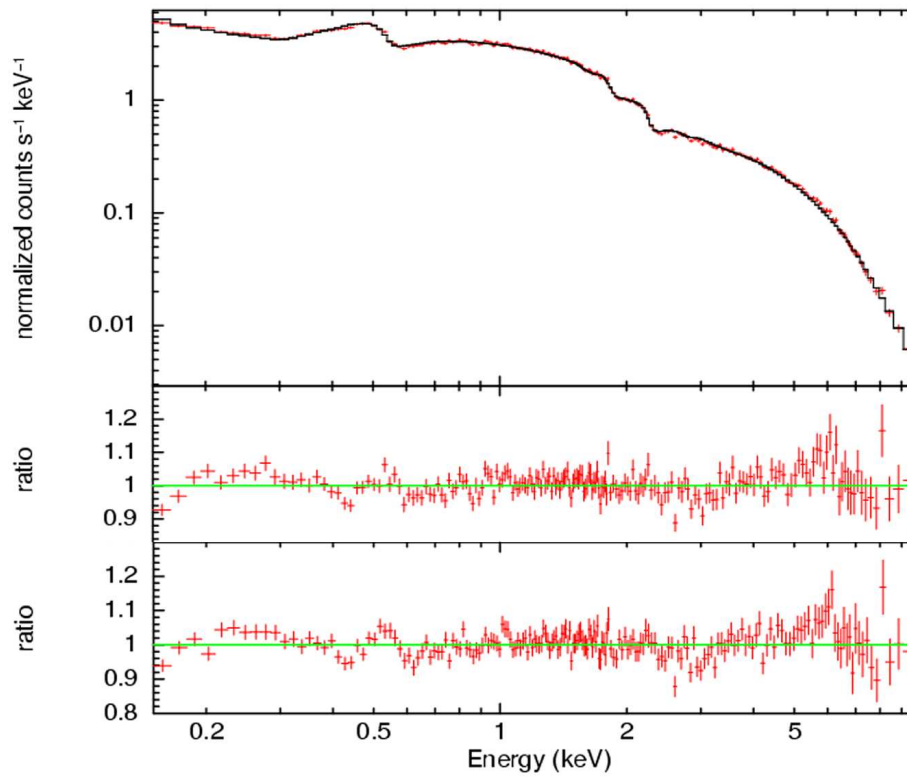
Figure 2: Residuals of a fit to the obsid=0136550101 MOS-1 observation of 3C273. The lower panel gives the rseiduals using the current QE while the middle panel gives the fit with the new QE. The improvement can be seen in a flattening of the residuals around 0.53 keV.

may be noted. In figure 2 we show a flattening of fit residuals in a MOS-1 observation of 3C273.

References