

XMM-Newton CCF Release Note

XMM-CCF-REL-92

EPIC MOS Spectral Response Distribution

D Lumb

September 24, 2001

1 CCF components

Name of CCF	VALDATE	List of Blocks changed	CAL VERSION	XSCS flag
EMOS1_QUANTUMEF_0008.CCF	2000-01-01	QE_CCDn		NO
EMOS2_QUANTUMEF_0008.CCF	2000-01-01	QE_CCDn		NO

2 Changes

In the previous version of these files, the MOS detection efficiencies were changed to match those used in the existing Leicester-supplied on-axis response matrices. It was found in fact that there was a double-accounting For the fraction of events which are detected in each PATTERN type. Especially at high energies this caused substantial errors, as the PATTERN 0- 12 selection which is used as default, contains only ~50% of all events. Therefore the efficiencies represented in the previous version (v0007) were lower than the pre-prepared response matrices in a manner which worsened with increasing energy.

3 Scientific Impact of this Update

These updates should allow the SAS v5.2 tasks to return response matrices which are consistent to within 1 - 2 % of the response matrices supplied by the instrument teams for on-axis.



4 Estimated Scientific Quality

There are remaining spectral residuals seen around the instrumental absorption edges such as O (0.5keV), Al (1.49keV), Si (1.84keV) and Au (2.1 keV) . Adjusting systematic errors in the region of these features to $\sim 5\%$ in the spectrum files would be prudent.

5 Expected Updates

Future changes are expected to be real improvements in the physical data representing improved knowledge of the instrument