

Coves, et al.



BEFORE

AFTER



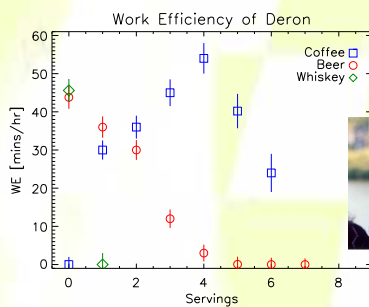
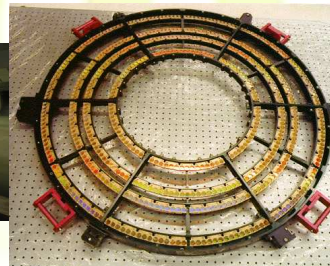
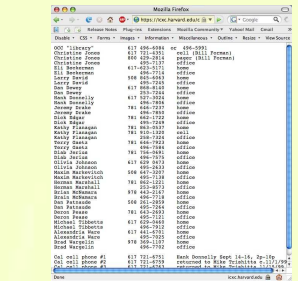
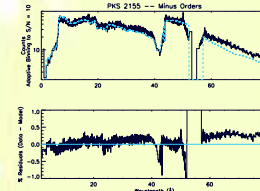
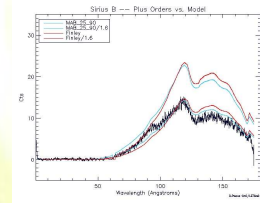
ABSTRACT

We present the in-flight mid-energy (6–80 Å; ~0.16–2.0 keV) effective area calibration of the High Resolution Camera Spectroscopic readout (HRC-S) combined with the Low Energy Transmission Grating (LETG) aboard the *Chandra X-ray Observatory*. These instruments comprise the Low Energy Transmission Grating Spectrometer (LETGS).

For this study, we employ LETGS data from the *XMM* PKS 2155-304 and the *Chandra* 3C 273, which both appear to be essentially 'featureless' continuous sources. The flux as a function of energy for these sources can be described by power-law models ($N = E^{-\Gamma}$). For PKS 2155-304 we find that a single power-law with $\Gamma = 2.45$ can be used to describe the LETGS spectrum from ~ 10 eV to the long wavelength ISM cut-off of ~ 80 Å. For 3C 273 we use a broken power-law with $\Gamma_1 = 1.64$, $\Gamma_2 = 2.23$ and a break at ~ 15 Å. The residuals of the model fits are taken to be errors in the NRC-S quantum efficiency (QE) model. Thus, from these residuals we derive a correction to the NRC-S QE to match the predicted and observed spectra over the mid-energy range.

A similar calibration procedure for the low energy regime of the LETGS has already been reported (Pease et al., 2000; Proc. SPIE, 4012, 700). The present study enables us to present for the first time an empirically calibrated in-flight HRC-S QE model encompassing the entire LETGS active energy range of 2–200 Å (~ 0.06 –6 keV).

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Jeremy interviewing prospective replacements



Note: uniforms will be obligatory starting 11/12/2006

