E0102 as a Calibration Source

- E0102's spectrum is dominated by strong lines of O (561,574,654,774 eV), Ne (905,923,1022 eV), and Mg (1331,1352 eV)
- E0102 is a diffuse source ($\approx$ 1 arcminute in diameter) such that pileup is not a problem
- The spectrum of E0102 has been well-characterized by the HETG on *Chandra* and the RGS on *XMM*
- We developed a simple spectral model in order to evaluate the matrix and NOT to do astrophysics
- The model has two components for absorption (galactic and SMC with reduced abundances), bremsstrahlung and Gaussians for the lines detected in the gratings spectrum
- The line energies are held fixed to the true values and the widths of the Gaussians are set to zero so that the "width" of the line is determined completely by the spectral redistribution function of the response matrix. The normalizations of the lines are allowed to vary. Therefore, this model is a sensitive test of the gain and redistribution function of the matrix.
- In subsequent fits, the strong lines are held fixed to ratios determined by the HETG and RGS.
- For more detail, see poster by DePasquale *et al.* N17.017