Off-source Fluctuation Analysis of the Chandra Deep Fields

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Abstract

The distribution of counts-in-cells in the source-excluded regions contains information on source number counts fainter than the resolved sources. This "fluctuation analysis" has been successfully applied to the deep surveys of previous missions in extending the Log N-Log S relation to fainter fluxes. We have applied this method to the two publicly archived Chandra Deep Fields, i.e., the Hubble Deep Field North (HDF-N) and Chandra Deep Field South (CDF-S). The distributions of counts-in-cells in the source-excluded Chandra ACIS-I images in the 0.5-2 keV and 2-8 keV bands have been compared with those expected from flux-distribution (Log N-Log S) models using simulations including non-uniformity of exposure over the field of view (FOV) and off-axis angle-dependent point-spread function (PSF). CATEGORY: EXTRAGALACTIC DIFFUSE EMISSION AND

SURVEYS