Predicted source counts in the *Chandra* Multi-Wavelength Project (ChaMP)

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Abstract

The *Chandra X-ray Observatory's* unprecedented 0.5 arcsec angular resolution and sensitivity are ideal for the discovery and study of faint X-ray sources. The *Chandra* Multiwavelength Project (ChaMP) augments Chandra data with optical imaging and spectroscopy to fully investigate the properties of serendipitous sources in *Chandra's* 17*17 arcminute field of view.

We use analytical models of the *Chandra* mirror and ACIS instrument performance to find the source sensitivity limits as a function of off-axis angle for a given source powerlaw index and column density. By assuming a logN-logS and using a subset of *Chandra* Cycle 1 and 2 fields selected for the ChaMP, we then calculate an expected number of X-ray source detections and derive the expected sky coverage as a function of flux sensitivity and source spectrum.

Using an L-z relation we also calculate an expected redshift distribution assuming all sources are AGN. Finally we examine how changing the X-ray source properties will affect the derived logN-logS relations.

CATEGORY: EXTRAGALACTIC DIFFUSE EMISSION AND SURVEYS