

Abstract Submitted  
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**Stellar-mass compact object evolution from the deepest X-ray surveys of the extragalactic Universe**<sup>1</sup> ANN HORNSCHEMEIER, NASA/GSFC, BRET LEHMER, Johns Hopkins University — The ever-increasing depth of X-ray surveys raises the possibility of detecting extremely X-ray faint source populations, including the X-ray faint early-type galaxy population. Such a population of galaxies presents the opportunity to study the long-term evolution of low-mass X-ray binary (LMXB) populations. To this end, we have assembled a sample of  $\sim 400$  low-luminosity early-type galaxies over  $0.05 < z < 1.2$  in the three deep *Chandra* surveys (the CDF-S, E-CDF-S and CDF-N). Even with the 4 Ms *Chandra* Deep Field coverage currently available, the deepest survey of the extragalactic sky ever conducted at X-ray wavelengths, the vast majority of these galaxies ( $> 90\%$ ) are undetected, so our work relies heavily on stacking analysis. We compare our observational constraints with new theoretical models and discuss possibilities for future deep X-ray observations.

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