

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

InFOC μ S: A Balloon Instrument with <10 Arc Second Hard X-ray Imaging JACK TUELLER, WILLIAN ZHANG, SCOTT BARTHELMEY, NASA/GSFC, AKIHIRO FURUZAWA, YOSHITO HABA, Nagoya University, Japan, HANS KRIMM, CRESST/USRA/GSFC, HIDEYO KUNIEDA, Nagoya University, Japan, TAKASHI OKAJIMA, NASA/GSFC, TAKUYA MIYAZAWA, Nagoya University, Japan, RICHARD MUSHOTZKY, University of Maryland, College Park, KESUKE TAMURA, YUZURU TAWARA, Nagoya University, Japan — The International Focusing Optics Collaboration for μ Crab Sensitivity (InFOC μ S) is currently funded to develop balloon payload with a multilayer hard X-ray telescope based on slumped glass technology similar to NuSTAR, but fully utilizing the IXO technology to achieve a spatial resolution of <10 arcseconds (PSF area <1/25 of NuSTAR). The key science goal for this technology is a deep hard X-ray survey to understand role of AGN/black holes in the formation of galaxies. Due to obscuration, this can only be achieved in the hard X-ray band, where absorption is insignificant and that only hard X-ray measurements can unambiguously determine the luminosities of individual AGN. InFOC μ S will demonstrate the technology necessary to resolve the cosmic hard X-ray background missed by NuSTAR, which can only resolve 45-65% of the background due to source confusion, and make a complete census of black hole growth at the peak of their formation between $z=0.5$ and $z=2$. We will present our approach to high spatial resolution hard X-ray imaging at low cost, which will be demonstrated by a resolved image of the Crab Nebula from a balloon and can be scaled to a deep-survey Explorer mission. InFOC μ S is being prepared for a flight in the fall of 2013.

Jack Tueller
NASA/GSFC

Date submitted: 23 Jan 2012

Electronic form version 1.4