

TITLE: The HEROES Balloon-borne Hard X-ray Telescope

PRESENTATION TYPE: Research Contributed

AUTHORS (FIRST NAME INITIAL LAST NAME): C. Wilson-Hodge¹, J. Gaskin¹, S. Christe², A. Y. Shih², D. A. Swartz³, A. F. Tennant¹, B. Ramsey¹, K. Kilaru³

Contributing Teams:

ABSTRACT BODY:

Abstract (2,250 Maximum Characters): The High Energy Replicated Optics to Explore the Sun (HEROES) payload flew on a balloon from Ft. Sumner, NM, September 21-22, 2013. HEROES is sensitive from about 20-75 keV and comprises 8 optics modules (HPD~33" as flown), each consisting of 13-14 nickel replicated optics shells and 8 matching Xenon-filled position-sensitive proportional counter detectors (dE/E=0.05 @ 60 keV). Our targets included the Sun, the Crab Nebula and pulsar and the black hole binary GRS 1915+105. HEROES was pointed using a day/night star camera system for astrophysical observations and a newly developed Solar Aspect System for solar observations (with a shutter protecting the star camera.) We have successfully detected the Crab Nebula. Analyses for GRS 1915+105 and the Sun are ongoing. In this presentation, I will describe the HEROES mission, the data analysis pipeline and calibrations, preliminary results, and plans for follow-on missions.

¹ NASA's MSFC, Huntsville, AL

² NASA's GSFC, Greenbelt, MD

³ USRA/MSFC, Huntsville, AL