

Abstract Submitted  
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**Laboratory Demonstration of HBT Interferometry for Ultra-high Resolution Astronomical Imaging**<sup>1</sup> DAVID KIEDA, Univ of Utah, NOLAN MATTHEWS, University of Utah — This talk describes the development of an astronomical imaging technique exploiting Hanbury Brown Twiss (HBT) intensity interferometry. We have successfully demonstrated two-photon HBT temporal coherence in the laboratory with a variety of pseudo-random and thermal blackbody (arc lamp) light sources. We describe instrumentation methods for measuring second order photon spatial coherence which is related to simulated source image shape. We then use a modified Fourier inversion analysis to reconstruct the images of simulated stars and binary systems. The talk concludes with a description of the potential use of large arrays of atmospheric Cherenkov telescopes such as the VERITAS observatory (Amado, Arizona) and the future CTA Observatory (Canary Islands, Spain and Paranal, Chile) to directly image nearby stars using HBT interferometry.

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David Kieda  
Univ of Utah

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