

Webster Cash

The University of Colorado

*"X-Ray Interferometry: Ultimate Astronomical Imaging"*

Imagine a telescope with resolution so fine it can image the even horizon of a black hole in a Quasar, resolve the disk of a star in another galaxy, or measure parallax to the Virgo Cluster. Imagine a telescope so sensitive it could detect an object no larger than an automobile at the center of our galaxy. Such is the promise of X-ray interferometry. Because of the short wavelength of X-rays, interferometric baselines can be much shorter and more practical than systems in the visible. Because some hot celestial sources are very compact and very bright, the X-ray is an ideal band for pushing imaging to its ultimate limitation (funding). We argue that the X-rays will naturally become the band of choice for high resolution imaging. We present a practical approach to X-ray interferometry. We propose to develop the concepts of X-ray interferometry by (a) looking for practical approaches that will allow us to push the concept as far as possible, and (b) demonstrating the feasibility in the laboratory.

