

**Detecting Tidal Debris Streams with a
Spaceborne Wide-Field Infrared Telescope**

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Abstract: Debris streams produced by disrupting galaxies and star clusters provide us not only with a growing record of the accretion history of our Galaxy, but also with a sensitive new probe of both the global shape of the Galactic potential and the detailed distribution of dark matter. We examine the discovery potential for stellar debris streams using a wide and deep infrared survey. While infrared photometry by itself is not particularly sensitive to differences among stellar populations, combining such a survey with existing and planned optical surveys can significantly improve prospects for detecting streams at $R > 50$ kpc. Moreover, a deep infrared survey may be the only efficient way to detect and trace debris streams in the more highly extincted regions near the Galactic plane.