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Using Strong Field Images near Sgr A* to Probe Extra Dimensions AMITAI BIN-NUN, University of Pennsylvania — In recent years, theories of uncompactified extra dimensions have been the subject of much study. As of now, there are few observational tests of extra dimensions. Now, building on recent work in calculating the magnitudes of images in the strong-field of gravity, I use metrics for black holes in the Randall-Sundrum (RS) braneworld and apply them to the class of S-stars near Sgr A*. Using a modified lens equation to account for the strong field nature of the lensing and using data from surveys of the Galactic Center, I calculate differences in magnification between a black hole in a 3+1 model and in a RS-braneworld scenario. In ideal cases, this difference in magnification can be detected in next generational surveys and serve as an experimental verification of extra dimensions.

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