

R24a Mining strong lensing surveys

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The present and upcoming surveys will increase the number of galaxy- to cluster-scale strong lensing candidates by several (3 - 5) times orders of magnitudes beyond the number known today. Gravitational lens systems itself require a foreground lens and a background source to be almost perfectly aligned along a line of sight from us. Lensing is a unique probe of the (dark) matter distribution at large-scale and also can act as a natural telescope that magnifies the background sources, allowing for detailed studies of their properties at high resolution. Hence, gravitational lenses are quite rare. The lens systems are needles in a haystack but thousands are expected to be discovered from ongoing large imaging surveys in the optical. At the present, about 500 definite or probable strong gravitational lens systems have been discovered from the early data release of the HSC Survey including highly compact galaxies. We discuss some finding results from the Survey of Gravitationally-lensed Objects in HSC Imaging (SuGOHI).