

T11a Joint Strong and Weak Lensing Analysis of the Massive Cluster J0850

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We present a combined strong and weak lensing analysis of the J085007.6+360428 (J0850) field, which contains the massive cluster Zwicky 1953. Using Subaru/Suprime-Cam BVR_cI_cz' imaging along with spectroscopic redshifts from MMT/Hectospec, we perform a weak lensing shear analysis to derive constraints on the mass distribution in this field, including the massive cluster at $z = 0.3774$, a smaller foreground halo at $z = 0.2713$, and galaxies projected along the line of sight. We use a multiply-imaged galaxy identified in the Suprime-Cam imaging data with a photometric redshift of $z = 5.03$ to add an additional strong lensing constraint, which improves the mass model and the corresponding magnification map. From our analysis, we calculate the virial mass of the primary cluster to be $M_{\text{vir}} \sim 2.8 \times 10^{15} M_{\odot}$, making J0850 an ideal field for taking advantage of lensing magnification to search for high-redshift galaxies, complementary to existing surveys such as the *HST* Frontier Fields.