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Weak Lensing Measurements with the Hubble Space Telescope Advanced Camera for Surveys[1] KELLEN MURPHY, Ohio University, ESO DISTANT CLUSTER SURVEY COLLABORATION — We present the weak lensing analysis of imagery from 10 high-redshift clusters using the Hubble Advanced Camera for Surveys, from the ESO Distant Cluster Survey (EDisCS). Weak Gravitational Lensing is the miniscule bending of light from distant background galaxies by the presence of large foreground masses. Particularly, we examine images of galaxy clusters at reshifts $z < 1.0$ (corresponding to a physical distance on the megaparsec scale) and look for distant elliptical galaxies (i.e. redshifts $z >> 1.0$). These galaxies are expected to have an isotropic distribution in space, and their semi-major axes should subtend the entire possible space of orientation angles (i.e. when statistically measuring the mean ellipticity, we should find it averages to zero across a well-defined sample). These ten clusters, in particular, provide unprecedented depth and allow a perfect test bed on which to study the application of weak lensing tomography.

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