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Measuring Galaxy Properties in the Cluster Abell 160 CRAIG KOONTZ, JASON PINKNEY, Ohio Northern University — We develop a procedure for building a large catalog of cluster galaxies and their photometric properties, as measured with CCDs. Our first case, Abell 160, is relatively nearby and we have already obtained spectroscopic redshifts for its brightest galaxies. We have mosaiced this cluster in R and V filters using a CCD imager on the 1.3-meter McGraw-Hill telescope. We fit a world coordinate system to the images using the software "WCStools." We use "SExtractor" to extract sources from the images. We create software for merging catalogs in such a way as to avoid double counting, to reject cosmic rays, and to combine redundant measurements. The measured properties include magnitude, ellipticity, position angle, size, and color (V-R). We investigate the efficacy of our separation of galaxies and stars and find that it begins breaking down around R=19.0. We attempt to separate cluster members from foreground and background galaxies using the color-magnitude relation. In future work, we will investigate substructure (clumping) within clusters and its correlation with galaxy properties (especially color, size and morphology).

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