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Title: Undergraduate ALFALFA Team: Analysis of Spatially-Resolved Star-Formation in Nearby Galaxy Groups and Clusters

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Abstract

As part of the Undergraduate ALFALFA Team, we are conducting a survey of the gas and star-formation properties of galaxies in 36 groups and clusters in the local universe. The galaxies in our sample span a large range of galactic environments, from the centers of galaxy groups and clusters to the surrounding infall regions. One goal of the project is to map the spatial distribution of star-formation; the relative extent of the star-forming and stellar disks provides important information about the internal and external processes that deplete gas and thus drive galaxy evolution. We obtained wide-field H-alpha observations with the WYN 0.9m telescope at Kitt Peak National Observatory for galaxies in the vicinity of the MKW11 and NRGb004 galaxy groups and the Abell 1367 cluster. We present a preliminary analysis of the relative size of the star-forming and stellar disks as a function of galaxy morphology and local galaxy density, and we calculate gas depletion times using star-formation rates and HI gas mass. We will combine these results with those from other UAT members to determine if and how environmentally-driven gas depletion varies with the mass and X-ray properties of the host group or cluster. This work has supported by NSF grants AST-0847430, AST-1211005 and AST-1637339.

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