

[Υ GC-19] A study of a tidally interacting BCD pair, ESO 435-IG20 and ESO 435-IG16

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Blue Compact Dwarf galaxies (BCDs) are systems that recently have experienced the burst of star formation. As one of the causes for active star formation in BCDs, tidal interaction (fly-by or merger) has been suggested. A pair of BCDs, ESO 435-IG20 and ESO 435-IG16 are separated by only ~ 80 kpc in projection at a similar redshift (at a ~ 9 Mpc distance), and hence suspected to be a good example of such case. Intergalactic atomic hydrogen gas found in HIPASS survey is also suggestive of this hypothesis. In this study, we probe the HI morphology and kinematics of this BCD pair using ATCA HI data to study detailed interaction history. We investigate various star formation tracers of the pair to study how responsible tidal interaction is for triggering star formation in these galaxies.

[Υ GC-20] Galaxy Ecology: The Role of Neighbors

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We investigate the influence of neighboring galaxies as a component of the local environment. Based on the SDSS data release 7 and the KIAS value-added galaxy catalog, we have constructed a galaxy pair catalog by matching each galaxy with its nearest and its most tidally-influential neighbor. In particular, we examine the star formation rate (SFR) derived from their optical u-r color and H α emission as functions of neighbor's distance, tidal force, and morphological type. The results are as follows. (1) The H α -based SFR of galaxies with close companions is enhanced by up to a factor of three regardless of neighbor's morphology, when compared to isolated counterparts. (2) The mean u-r color of galaxies along with early-type galaxies is redder than that of isolated ones, yet bluer with late-types. (3) The galaxies with late-type companions mostly show higher SFR than those with early-types. The results suggest that the role played by neighboring galaxies are two-fold; (a) the tidal effect on the shorter scale of time and of distance, and (b) the hydrodynamic effect on the longer scale.