

[MGC-32] An HI study of a tidally interacting BCD pair, ESO 435-IG20 and ESO-IG16

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Blue Compact Dwarf galaxies (BCDs) are systems which have been experiencing the bursts of star formation in their central region. As one of the origins of active star formation, tidal interaction (merger or fly-by between dwarf galaxies) has been suggested. A pair of BCDs, ESO 435-IG20 and ESO 435-IG16, are suspected to be a good example of such case. They are located at a similar redshift and separated only by ~ 130 kpc at their distances. In addition a bridge-like HI structure has been found between these two BCDs in the HIPASS survey. In this study, using the ATCA HI data of a much better resolution, we probe the gas morphology and kinematics of individual galaxies. We discuss how tidal interaction is responsible for the high star formation rate in this BCD pair.

[MGC-33] New candidates of $1 < z < 2$ galaxy clusters in 13.6 deg^2 of ELAIS-N1/N2 fields with a new colour-colour selection technique

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Galaxy clusters, the largest gravitationally bound systems, are an important means to place constraints on cosmological models. Moreover, they are excellent places to test galaxy evolution models in connection to the environments. To this day, massive clusters have been found unexpectedly at high redshift (Kang & Im 2009, Durret et al. 2011, Tashikawa et al. 2012), and evolution of galaxies in cluster has not been fully understood. Finding galaxy cluster candidates at $z > 1$ in wide, deep imaging survey data will enable us to solve such issues of modern extragalactic astronomy. We report new candidates of galaxy clusters in the wide and deep survey fields, European Large Area ISO Survey North1(ELAIS-N1) and North2(ELAIS-N2) fields, covering sky area of 8.75 deg^2 and 4.85 deg^2 each. We also suggest a new useful colour-colour selection technique to separate $1 < z < 2$ galaxies from low- z galaxies by combining multi-wavelength data from the UKIRT Infrared Deep Sky Survey Deep Extragalactic Survey (UKIDSS DXS, JK bands), Spitzer Wide-area InfraRed Extragalactic survey (SWIRE, Optical-Infrared bands), Canada France Hawaii Telescope (CFHT, z band) and Infrared Medium-deep Survey(IMS, J band).