[포GC-30] A New Galaxy Classification Scheme in the *WISE* Color-Luminosity Diagram

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We present a new galaxy classification scheme in the *Wide-field Infrared Survey Explorer (WISE)* [3.4㎛]-[12㎛] color versus 12㎛ luminosity diagram. In this diagram, galaxies can be classified into three groups in different evolutionary stages. Late-type galaxies are distributed linearly along "MIR star-forming sequence" identified by Hwang et al. (2012). Some early-type galaxies show another sequence at [3.4]-[12] (AB)$\simeq -2.0$, and we call this 'MIR blue sequence'. They are quiescent systems with old stellar population older than 10 Gyr. Between the MIR star-forming sequence and the MIR blue sequence, some early- and late-type galaxies are sparsely distributed, and we call these galaxies 'MIR green cloud galaxies'. Interestingly, both MIR blue sequence galaxies and MIR green cloud ones lie on the red sequence in the optical color-magnitude diagram. However, MIR green cloud galaxies have lower stellar masses and younger stellar populations (smaller D_n4000) than MIR blue sequence galaxies, suggesting that MIR green cloud galaxies are in the transition stage from MIR star-forming sequence galaxies to MIR blue sequence ones. We present differences in various galaxy properties between the three MIR classes using a multi-wavelength data, combined with the WISE and Sloan Digital Sky Survey Data Release 10, of local ($0.03 < z < 0.07$) galaxies.

[포GC-31] COCOA: The CO-evolution of cluster COres and the AGNs of central galaxies

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We report preliminary results from a radio study of central galaxies in cool and non-cool core clusters. A cooling flow is expected to rapidly form in the center of galaxy clusters unless additional heating mechanisms such as merging with sub clusters are at work. It has been suggested that cool flows can feed the AGN in the central galaxies, increasing their power. On the other hand, the AGN feedback can also affect the surrounding medium, heating back up the gas in the cluster core region. In this study, we investigate the co-evolution of cool flows and the AGN of galaxies located in the cluster center. For this study, we have selected 13 radio bright central galaxies from clusters with a range of cooling time scale. In this work, we present results of our recent observations using the Korean VLBI Network. We discuss the properties of the sample in radio and other wavelengths.