

[ㄹGC-42] Progress Report on the Relationship Between the Bright and Faint Galaxies in Abell 3659

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The properties of bright galaxies are closely related to those of their nearby neighbors and satellite galaxies. However, the effects of nearby companions are known to be very weak in a galaxy cluster, when the companions are bright galaxies. On the other hand, until now, it has not been clear whether the properties of bright galaxies are affected by their faint satellites in a galaxy cluster. Recently, J. H. Lee et al. (in preparation) have found that the colors of bright galaxies in WHL J085910.0+294957, a galaxy cluster at $z = 0.3$, show a measurable correlation with the mean colors of faint galaxies around them. To confirm that result and to investigate the host-satellite relationship depending on cluster properties, we carry out follow-up studies of a few galaxy clusters, beginning with Abell 3659 ($z \sim 0.0907$) imaged in the g' and r' bands using IMACS on the Magellan (Baade) 6.5m telescope. Cluster members are selected based on the distributions of color, size and concentration along magnitude and spatial distribution. In this poster, we present some preliminary results: marginal correlations in color between bright galaxies and their faint companions are found at the central region of Abell 3659. The implication of these results is discussed.

[ㄹGC-43] Star formation efficiency of galaxies in groups and clusters

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We examine the effect of environment on star formation activity of a sample of a galaxy group catalogue constructed from the Sloan Digital Sky Survey(SDSS DR8) given in Tempel et al.(2012). As an environmental parameter, we use the richness of the galaxy group. According to this parameter, we select 6846 galaxies in dense environment and 297335 galaxies in low environment. By comparing the two samples, we identify the different relationship between star formation rate and stellar mass. In order to compare galaxies in different environment, we fixed other parameters(color, apparent magnitude), which can affect star formation efficiency except for stellar mass. Also, based on HI mass from the ALFALFA survey, we study the environmental dependence of Kennicutt-Schmidt law which show the correlation between star formation rate and gas content.