[포GC-49] UV Perspective for Dynamically Old and Young Clusters of Galaxies: Fornax and Virgo

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We present ultraviolet (UV) photometric properties of galaxies in two clusters, the Fornax and Virgo, with different dynamical conditions. We construct UV color-magnitude relations (CMRs) of galaxies in the Fornax and Virgo clusters using GALEX UV data matching with optical B band data. Elliptical and lenticular galaxies locate on red sequence in UV CMRs and show UV upturn phenomenon in both clusters. While dwarf lenticular galaxies (dS0s) in the Fornax also follow the extension of red sequence of giant early type galaxies, they are redder than dS0s in the Virgo at a given magnitude. We also investigated the effect of neighbor galaxies and cluster environment to the UV properties. In the space of projected clustercentric radius and projected nearest neighbor galaxy distance, we found that red (NUV-B>3) galaxy fraction of the Fornax depends entirely on clustercentric radius. However, in the case of Virgo, galaxy colors are also affected by interactions between galaxies outside the cluster virial radius. We suggest that UV properties of early-type galaxies in the Fornax cluster is likely consistent with its dynamically evolved system compared to the Virgo cluster.

[포GC-50] Does the SED of a galaxy constrain its merger history?

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It is widely accepted that the SED of a galaxy relates to its morphology. In addition, the SED of the galaxy is closely connected to its star formation history, and its morphological properties are affected by the merger history, interactions with its environment, and the gravitational instability of its dynamical system. Thus, it is likely that star formation history correlates to the elements that determine morphological properties.

Among the elements, this study investigates how much the merger histories of galaxies influence their star formation histories. By using simple merger trees and semi-analytic models, which disregard feedback processes to exclusively identify merger effects on star formation histories, we examine the relation between various merger histories and SEDs of galaxies. From the results, we discuss whether the SED of a galaxy can represent and constrain its merger history.