

[포ST-07] **SUBARU/FOCAS Multi-Object Spectroscopy of M87 Globular Clusters**

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We present spectra of  $\sim 100$  globular clusters (GCs) of the Virgo giant elliptical galaxy M87, obtained using the Subaru/FOCAS MOS mode. The spectra of the M87 GCs carefully selected to represent the galaxy's GC system enable us to derive the metallicity-colour relations, the most popular tool to extracting GC metallicity distribution functions (MDFs). The data are crucial for testing the recent theoretical prediction of a significant inflection along the metallicity-colour relations with implications in which GCs with a unimodal MDF can exhibit a bimodal colour distribution as found in M87. Furthermore, with the large sample acquired from the observation, we analyse the age structure and the abundance ratios of the M87 GCs, which, in turn will be used to constrain the reliability of the different GC formation scenarios and star formation history of the galaxy. A thorough analysis of the data is underway towards the goal of obtaining more accurate information on properties of M87 GC system, through which we expect to place a more robust constraint on the formation theory of GCs and the host galaxy.

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[포ST-08] **Radial Variation of Globular Cluster Color Distributions:  
Evidence for Two Distinct Subsystems within Elliptical Galaxies?**

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The colors of globular clusters (GCs) in most large early-type galaxies are bimodal, and the two GC groups show sharp difference in their radial profiles of the surface number density. An instant solution is to assume the presence of two distinct GC sub-systems with different radial distributions. The scenario however has been challenged by Yoon, Yi, & Lee (2006), who find that, due to the non-linear nature of the metallicity-to-color transformation, a coeval group of old clusters with a unimodal metallicity spread can exhibit color bimodality. Applying this hypothesis to the radial GC color variation of several giant elliptical galaxies, we find that the different radial number density profiles between the two GC groups can be a natural consequence of the observed higher mean metallicity of GCs towards the galaxy center. Interestingly, we detect no or little variation in GC age along the radius out to  $\sim 20$  effective radius, indicating that the radial color distribution change is mainly governed by the variation in mean metallicity rather than in age. Our results provide a simpler solution to the radial variation of GC color distributions that does not necessarily invoke distinct GC sub-systems, and further support Yoon et al.'s hypothesis.

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