[구GC-03] On the Origin of the Correlation between Hubble Residual and Mass of the Type Ia Supernova Host Galaxies

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The correlation between mass of Type Ia Supernova (SN Ia) host galaxies and Hubble residual is now well-established. The origin of this relation, however, is yet to be understood. We have used low-resolution spectra of early-type hosts from YONSEI (YOnsei Nearby Supernovae Evolution Investigation) project to measure central velocity dispersion and Lick/IDS absorption indices. By using the Evolutionary Population Synthesis (EPS) models, luminosity-weighted mean age and metallicity of host galaxies were determined from Hβ and <Fe> absorption lines. Here we will discuss the correlation between the velocity dispersion, which indicates the mass of galaxies, and mean age of stellar population in our sample of early-type host galaxies.

[구GC-04] Unveiling the Properties of FLS 1718+59: A Galaxy-Galaxy Gravitational Lens System

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We present results of the analysis of FLS 1718+59, a galaxy-galaxy gravitational lens system in the Spitzer First Look Survey (FLS) Field. A background galaxy (z = 0.245) is severely distorted by an elliptical galaxy (z = 0.08), by gravitational lensing. We analyze this system by several methods, including Ellipse and Galfit fitting, gravitational lens modeling (gravlens), and SED fitting. Properties of the lens galaxy can be obtained: from Galfit we measure the effective radius and the average surface brightness inside it, and from gravlens we estimate the total mass inside the Einstein radius (lensing mass). We use these parameters to check that the lens galaxy is located on the Fundamental Plane. Also, we conduct SED fitting for the lens galaxy and estimate the stellar mass, and compare this with the lensing mass of the lens galaxy to check the M-L relation.