

[포 GC-14] Galactic gas depletion process in cosmological hydrodynamic cluster zoom-in simulation

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In cluster environments, most of the galaxies are found to be red and dead, but the origin of these passive galaxies is not yet clearly understood. Using a set of cosmological hydrodynamic zoom-in simulations, we study gas depletion process in and outside clusters. Our results are consistent with previous studies showing rapid stripping of a galactic cold gas reservoir during the first infall to the cluster center. Moreover, we found a fraction of galaxies that were already in the gas deficient state before reaching the cluster (i.e., pre-processed galaxies) is non-negligible. These findings lead to the idea that a complete understanding of passive galaxy population in clusters can not be achieved without a detailed understanding of gas stripping process in group size halos prior to the cluster infall.

[포 GC-15] Near-Infrared Color-Metallicity Relation for Globular Cluster System in Elliptical Galaxy NGC 4649

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We present Subaru Near-Infrared (NIR) photometry for globular clusters (GCs) in the giant elliptical galaxy NGC 4649 (M60) belonging to the Virgo cluster. NIR data are obtained in Ks-band with the Subaru/MOIRCS, and matching HST/ACS optical data available in literature are used to explore the origin of GC color bimodality. A clear bimodal color distribution is observed in the optical color ($g-z$), in which the ratio between blue and red GCs is 4:6. By contrast, the more metallicity-sensitive optical-NIR colors ($g-K_s$, $z-K_s$) show a considerably weakened bimodality in their distributions. The color-color relation of the optical and NIR colors for the GC system shows a nonlinear feature, supporting that the optical color bimodality observed in NGC 4649 GC system is caused by nonlinear color-metallicity relations (CMRs).

[포 GC-16] Comparison of the extraplanar H α and UV emission in the halo of nearby edge-on spiral galaxies

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We compare vertical profiles of the extraplanar H α emission to those of FUV and NUV emission for 39 nearby edge-on galaxies to investigate the origin of the extraplanar H α emission. A strong correlation between scale heights of the extraplanar H α and UV emissions is found. This may indicate that the diffuse extraplanar H α emission either co-exists with the extraplanar dust or originates from the similar mechanism as the diffuse extraplanar UV emission such as scattering of H α photons at diffuse extraplanar dust. The scale heights of the extraplanar H α and UV emissions are also compared with size, star formation rate, and star formation rate surface density of the host galaxies to figure out what is the most important parameter associated with the extraplanar emission.

[포 GC-17] Variability test of 9 AGNs selected from The Seoul National University AGN Monitoring Project

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We have been performing a long term AGN Monitoring project, to measure the time lag of H beta line with respect to AGN optical continuum based on the reverberation mapping method. From