Previous studies of GCSs in Coma mainly utilized data obtained using Hubble Space Telescope (HST) with high spatial resolution. However, most of the data were based on narrow-field pointing observations. In this study we present the widest survey of GCSs in the Coma cluster using the archival Subaru/Hyper Suprime-Cam (HSC) *g* and *r* images, supplemented with the archival HST images.

The Coma GCSs are largely extended in E-W and SW direction, along the general direction of Coma-Abell 1367 filament. This global structure of the GCSs is consistent with the spatial distribution of the intracluster light (ICL).

ICGC spatial distribution is largely extended to almost ~50% of the virial radius. Most of these ICGCs are blue and metal-poor, which supports the scenario that ICGCs are mainly originated from dwarf galaxies and some proportion from brighter galaxies. Implications of the results will be discussed.

[구 GC-09] Galaxy identification with the 6D friends-of-friend algorithm for high resolution simulations of galaxy formation

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Galaxy/Halo finding based on the friends-of-friend (FoF) algorithm has been widely adopted for its simplicity and expandability to the phase-space. However, cosmological simulations have been progressively bigger in size and more accurate in resolutions, resulting in that galaxy/halo finding gets computationally expensive more and more. In fact, we confirm this issue through our exercise of applying the 6-dimensional (6D) FoF galaxy finder code, VELOCIraptor (Elahi et al.2019) on the NewHorizon simulation (Dubois et al. 2021), in which typical galaxies with about 1e11 M_{sun} (10^7 particles) are identified with very low speed (longer than a day). We have applied several improvements to the original VELOCIraptor code that solve the low-performance problem of galaxy finding on a simulation with high resolutions. Our modifications find the exact same FoF group and can be readily applied to any tree-based FoF code, achieving a 2700 (12) times speedup in the 3D (6D) FoF search compared to the original execution. We applied the updated version of VELOCIraptor on the entire NewHorizon simulation (834 snapshots) and identified its galaxies and halos. We present several quick comparisons of galaxy properties with those with GALAXYMaker data.

[구 GC-10] Probing Intracluster Light of 10 Galaxy Clustersat z >1 with Deep HST WFC3/IR Imaging Data

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Intraclusterlight (ICL) is diffuse light from stars that are bound to the clusterpotential, not to individual member galaxies. Understanding the formationmechanism of ICL provides critical information on the assembly and evolution ofthe galaxy cluster. Although there exist several competing models, the dominantproduction mechanism is still in dispute. The ICL measurement between z=1 and 2strongly constrains the formation scenario of the ICL because the epoch is whenthe first mature clusters begin to appear. However, the number of high-redshiftICL studies is small mainly because of observational challenges. In this study,based on deep HST WFC3/IR data, we measured ICL of 10 galaxy clusters atredshift beyond unity, which nearly doubles the sample size in this redshiftregime. With careful handling of systematics including object masking, skyestimation, flatfielding, dwarf galaxy contamination, etc., we quantified thetotal amount of ICL, measured the color profile, and examined the transitionbetween BCG and ICL.

[구 GC-11] A tale of two cities: Two galaxy clusters at cosmic noon

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At high redshift, unlike local, many galaxy clusters are still at their stages of building. Likewise, they show a wide range in their star formation properties: some are still forming stars actively unlike their local counterparts, while others have very low level of star formation already. Here we report the two high-redshift (z~1) galaxy clusters, confirmed via Magellan MOS observation. While existing at similar redshift and having similar mass, these two clusters show very