

lensing analysis of SPT-CL J0205-5829 using HST data. Our analysis produces a mass estimate consistent with the previous results obtained from non-lensing methods.

In this poster, we describe details of the method including shape measurement, PSF correction, source selection, and mass estimation. We also present a two-dimensional mass map and compare this to the galaxy distribution.

[포 GC-09] Weak Lensing Analysis On The Merging Galaxy Cluster Abell 115

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The galaxy cluster Abell 115 shows ongoing merger features, which suggest that it might be in an intermediate phase of dynamical evolution. As merging clusters often show, the characteristic hints of A115's merging activities include radio relics, double X-ray peaks, and large offsets between the cluster member galaxies and the X-ray distributions. To constrain the exact stage of the merger, it is necessary to obtain its dark matter distribution. In this study, we carry out a precision weak lensing study of this interesting system based on Subaru images. We present our mass reconstruction together with descriptions on our core procedure of the analysis: Subaru data reduction, galaxy shape measurement, and source selection. We find that Abell 115 consists of two massive dark matter clumps, which closely follow the cluster galaxies. Our weak lensing mass estimate is a few factors lower than the published dynamical mass obtained from velocity dispersion. This large mass discrepancy may be attributed to a significant departure from dynamical equilibrium.

[포 GC-10] Where is the Dark Matter in the Double Radio Relic Galaxy Cluster PLCKG287.0+32.9?

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Diffuse radio relics are often detected in merging galaxy clusters and are emitted by synchrotron process. Radio relics are believed to trace the shock waves in the intracluster medium induced by ram pressure during a major cluster merger. Radio

halos and relics are found in approximately 50 galaxy clusters to date that are all in a state of merging. The rarest of these galaxy clusters contain pairs of relics of similar brightness as well as a radio halo. The massive galaxy cluster PLCKG287.0+32.9 belongs to this rare population and is the second most significant detection from the Planck SZ All-sky Survey. Perhaps even more intriguing is that the radio relics are observed at vastly different distances from the X-ray peak requiring a complex merging scenario. In this study, we use weak-lensing to peer deeper into the merging scenario by reconstructing the dark matter distribution. We relate the mass distribution to the radio, X-ray, and optical emissions to provide constraints for future simulations of the merger. Fitting an NFW profile to the tangential shear we infer the mass of the cluster and discuss its implications for the merging scenario.

[포 GC-11] IONIZED GAS KINEMATICS ALONG THE RADIO JET IN TYPE 2 AGNS

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To investigate the connection between radio activity and AGN outflows, we present a study of ionized gas kinematics by using [O III] $\lambda 5007$ emission line along the radio jet for six radio AGNs. These AGNs are selected based on the radioactivity ($L_{1.4\text{GHz}} \geq 1039.8 \text{ erg s}^{-1}$) as well as optical properties as type 2 AGNs. By using the high spatial resolution of the Red Channel Cross Dispersed Echellette Spectrograph at the Multiple Mirror Telescope, we investigate in detail the [O III] and stellar kinematics. We spatially resolve and probe the central AGN-photoionization sizes, which is important in understanding the structures and evolutions of galaxies. We find that the typical central AGN-photoionization sizes of our targets are in range of 1.8-3.8 kpc. We study the [O III] kinematics along the radio jets to test whether there is a link between gas outflows in the narrow-line region and radio jet emissions. Contrary to our expectation, we find no evidence that the gas outflows are directly connected to radio jet emission.

[포 GC-12] The evolution of a late-type galaxy through multiple high-speed galaxy-galaxy collisions