

Observatory (GECKO), including the Korea Microlensing Telescope Network (KMTNet). Our observation started as soon as 100 minutes after the GW event alert and covered roughly 29 - 63 deg<sup>2</sup> for each event with a depth of 22.5 mag in R-band within hours of observation. No plausible EM counterparts were found for these events. Our result gives a great promise for the GECKO facilities to find EM counterparts within few hours from GW detection in future GW observation runs.

### [ㄷ GC-07] Measuring sub-mm emission from local AGN host galaxies by JCMT SCUBA-2

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Observing sub-mm continuum emission from cold dust can play an important role in measuring star formation rates of galaxies, especially in the case of AGN host ones, since AGNs contaminate FIR fluxes by dust heating. To measure star formation rates, we observed total 49 local AGN host galaxies ( $z < 0.2$ ) by SCUBA-2 camera at James Clerk Maxwell Telescope (JCMT) at 450 $\mu$ m and 850 $\mu$ m. We performed several tests with the observed images to determine whether each source is detected, and adopted  $3\sigma$  as the flux upper limit in non-detection cases. Using these measurements and FIR archival data, we modeled spectral energy distributions of the galaxies to estimate star formation rates. The effect of AGN activity on host galaxy star formation will be discussed.

### [ㄷ GC-08] KS4 Galaxy Clusters Catalog in Southern Sky

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Galaxy clusters are the largest structures in the universe located at the top of the cosmological hierarchical model, so the evolution of the universe can be understood by studying clusters of galaxies. Therefore, finding a larger number of galaxy clusters plays an important role in exploring how the universe evolves. A large number of catalogs for galaxy clusters in the northern sky have been published; however, there are few catalogs in the southern sky due to the lack of

wide sky survey data. KMTNet Synoptic Survey of Southern Sky (KS4) project, which observes a wide area of the southern sky about 7000 deg<sup>2</sup> with KMTNet telescopes for two years, is in progress under the SNU Astronomy Research Center. We use the KS4 multi-wavelength optical data and measure photometric redshifts of galaxies for finding galaxy clusters at redshift  $z < 1$ . Currently, the KS4 project has observed approximately 33% of the target region, and a pipeline that measures photometric redshifts of galaxies has been created. When the project is completed, we expect to find more than a hundred thousand galaxy clusters, and this will improve the study of galaxy clusters in the southern sky.

### [ㄷ GC-09] Globular Clusters in the NGC 4839 Group Merging with Coma: What Do They Tell about the Group History?

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The Coma cluster serves as an ideal laboratory to study the cluster assembly history. It is known as a typical example of relaxed galaxy clusters. However, recent X-ray, radio and optical observations revealed a number of substructures in Coma. The NGC 4839 group is an interesting substructure in the sense that it is overlapped with the X-ray bright component in the south-west region. Recent hydrodynamical simulations in the literature suggest that the NGC 4839 group came from the north-east direction of Coma, passed the apocenter about 1 Gyr ago, and started a second infall to the Coma core recently. Interestingly a number of E+A galaxies are located along the filament connecting the NGC 4839 group and the Coma core.

We are surveying a wide area covering the NGC 4839 group to search for globular clusters and use them to investigate any connection between the globular clusters and the merger scenario of the NGC 4839 group. We utilized Subaru Hyper Suprime-Cam archival images of two circular fields with diameter  $\sim 1.8$  deg, covering the Coma core and the NGC 4839 group. We discuss the results with regard to the formation history of the NGC 4839 group.

### [ㄷ GC-10] The first five-year results of Seoul National University AGN Monitoring Project

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