

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 deg² 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 μ m and 850 μ m. We performed several tests with the observed images to determine whether each source is detected, and adopted 3σ 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 deg² 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 ~ 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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The Seoul National University AGN Monitoring Project (SAMP) is a well-designed long-term AGN reverberation mapping project. SAMP focuses on the luminous AGNs out to $z \sim 0.5$ with relative long time lags between AGN continuum and broad emission lines and aims to probe the high-end of the AGN broad line region (BLR) size-luminosity (R-L) relation. The pilot observations started in October 2015 for 100 AGNs to confirm the variability and the H and [O III] emission line strengths. Based on the initial variability test, 48 quasars has been continued spectroscopic monitoring since Feb. 2016 with Lick 3m and MDM 2.4m telescopes with a cadence of ~ 20 days. Supporting photometric monitoring in B and V band was conducted at multiple facilities including the MDM 1.3m, LOAO, and DOAO telescopes with a cadence of ~ 10 days. By the time of Feb. 2021, we have obtained five years spectroscopic and photometric data. More than 30 AGNs shows significant variability in five-year baseline and 16 of them show well detected lags between B-band and H. Here, we report some examples of SAMP light curves and lag detections using the first five-year data as well as the location of our 16 targets in the AGN BLR R-L relation. These measurements are consistent with the existing R-L relation and located at the high-end. With the coming data, SAMP are hopefully to report more AGNs with well detected lags. Our results demonstrate the general feasibility and potential of long-term reverberation project with medium cadence for luminous AGNs.

[포 GC-11] A GMOS/IFU Study of Enhanced Star Formation Activity of Jellyfish Galaxies in Massive Galaxy Clusters

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Ram-pressure stripping (RPS) is known as a typical mechanism of quenching star formation (SF) of galaxies orbiting in clusters, but it can also boost the SF activity within a short period of time. Jellyfish galaxies, with eye-catching blue tails and knots, are such starburst galaxies undergoing strong RPS in galaxy clusters. Thus, they are very

useful targets to understand their SF activity in relation to RPS. We study the SF activity of three jellyfish galaxies in massive clusters at $z=0.3-0.4$ (MACSJ1752-JFG2, MACSJ0916-JFG1, and A2744-F0083) with Gemini GMOS/IFU and compare our results to those of jellyfish galaxies in low-mass clusters. We obtain total star formation rates (SFRs) of up to 60 Mo/yr and SFRs in the tails of up to 15 Mo/yr, which are much higher than those of jellyfish galaxies in low-mass clusters with the median SFRs of 1.1 Mo/yr in total and 0.03 Mo/yr in tails. In addition, these SFRs are also significantly higher than the SF main sequence of galaxies at the redshifts of the three jellyfish galaxies. This implies that their SF activity is much more enhanced compared to jellyfish galaxies in low-mass clusters due to extreme RPS in massive clusters.

[포 GC-12] Intensive Monitoring Survey of Nearby Galaxies (IMSNG) : Constraints on the progenitor system of a normal Type Ia SN 2019ein from its light curve at the early phase

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The progenitor of Type Ia supernovae (SNe Ia) is mainly believed to be a close binary system of a carbon-oxygen white dwarf (CO WD) and non-degenerate companion (single degenerate) or another WD (double degenerate). However, it is unclear which system is more prevalent. Here, we present a high cadence optical/Near-IR light curve of normal but slightly faint type Ia SN 2019ein from IMSNG project. We fit the early light curve ($t < +8.3$ days from the first detection) with various models to find the shock-heated cooling emission from SN ejecta-companion interaction. No significant shock-heated cooling emission is found, from which we constrain the progenitor star size as the following. The upper limit ($R_{\text{upper,*}}$) of the companion size in R-band is $\sim 0.2R_{\odot}$ when forcing the first light time (t_{fl}) to have one value and $\sim 0.9R_{\odot}$ when using the mean value of t_{fl} from the fitting in each band. Assuming the source of the I-band curve is almost powered from the radioactive decay, we obtained $R_{\text{upper,*}} \sim 1.2R_{\odot}$. The early B-V color curve is in agreement with the