galaxy surveys, THINGS and LITTLE THINGS. Compared to the previous approach which aligns all the spectra of a cube using their central velocities derived from either moment analysis, single Gaussian or hermite h3 polynomial fitting, the new method makes a profile decomposition of the profiles from which an optimal number of single Gaussian components is derived for each profile. The so-called superprofile which is derived by co-adding all the aligned profiles from which the other Gaussian models are subtracted is found to have weaker wings compared to the ones constructed in a typical manner. This could be due to the reduced number of asymmetric profiles in the new method. A practical test made on the HI data cubes of the THINGS and LITTLE THINGS galaxies shows that our new method can extract more mass of kinematically cold HI components in the galaxies than the previous results. Additionally, we fit a double Gaussian model to the superprofiles whose S/N is boosted, and quantify not only their profile shapes but derive the ratio of the Gaussian model parameters, such as the intensity ratio and velocity dispersion ratio of the narrower and broader Gaussian components. We discuss how the superprofile properties of the sample galaxies are correlated with their other physical properties, including star formation rate, stellar mass, metallicity, and gas mass.

[포 GC-06] HI gas properties of BAT-BASS AGN host galaxies

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We present preliminary results of the○ VLA archival HI data of local AGN hosts. The sample consists of the galaxies selected from the Swift-BAT hard X-ray survey. The main goal is to probe the gas environment of the sample in order to verify the role of gas accretion as one of the major AGN triggering mechanisms. HI, as a mostly diffuse and extended gas component in many galaxies, is a sensitive tracer to explore the impact of the surroundings on galaxies. In this work, we therefore probe the HI imaging data of a subsample of BAT-BASS AGN hosts, starting with the cases for which relatively high HI fluxes have been reported from the past single-dish observations. Based on their resolved HI properties, we will discuss the possibility of gas accretion and its role in powering AGNs in these examples.

[포 GC-07] Compact Elliptical Galaxies Hosting Active Galactic Nuclei in Isolated Environments

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We present the discovery of rare active galactic nuclei (AGNs) in nearby ($z<0.05$) compact elliptical galaxies (cEs) located in isolated environments. Using spectroscopic data from the Sloan Digital Sky Survey (SDSS) Data Release 12, four AGNs were identified based on the optical emission-line diagnostic diagram. SDSS optical spectra of AGNs show the presence of distinct narrow-line emissions. Utilizing the black hole (BH) mass-stellar velocity dispersion scaling relation and the correlation between the narrow L([OIII])/L(Hβ) line ratio and the width of the broad Hα emission line, we estimated the BH masses of the cEs to be in the range of 7×10^5-8×10^7 solar mass. The observed surface brightness profiles of the cEs were fitted with a double Sérsic function using the Dark Energy Camera Legacy Survey r-band imaging data. Assuming the inner component as the bulge, the K-band bulge luminosity was also estimated from the corresponding Two Micron All Sky Survey images. We found that our cEs follow the observed BH mass-stellar velocity dispersion and BH mass-bulge luminosity scaling relations, albeit there was a large uncertainty in the derived BH mass of one cE. In view of the observational properties of BHs and those of the stellar populations of cEs, we discuss the proposition that cEs in isolated environments are bona fide low-mass early-type galaxies (i.e., a nature origin).

[포 GC-08] Star-forming Dwarf Galaxies in Filamentary Structures around the Virgo Cluster

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We present the chemical properties of star-forming dwarf galaxies (SFDGs) in five filamentary structures (Leo II A, Leo II B, Leo

Minor, Canes Venatici, and Virgo III) around the Virgo cluster using the Sloan Digital Sky Survey optical spectroscopic data and Galaxy Evolution Explorer ultraviolet photometric data. We investigate the relationship between stellar mass, gas-phase metallicity, and specific star formation rate (sSFR) of SFDGs in the Virgo filaments in comparison to those in the Virgo cluster and field. We find that, at a given stellar mass, SFDGs in the Virgo filaments show lower metallicity and higher sSFR than those in the Virgo cluster on average. We observe that SFDGs in the Virgo III filament show enhanced metallicities and suppressed star formation activities comparable to those in the Virgo cluster, whereas SFDGs in the other four filaments exhibit similar properties to the field counterparts. Moreover, about half of the galaxies in the Virgo III filament are found to be morphologically transitional dwarf galaxies that are supposed to be on the way to transforming into quiescent dwarf early-type galaxies. Based on the analysis of the galaxy perturbation parameter, we propose that the local environment represented by the galaxy interactions might be responsible for the contrasting features in "chemical pre-processing" found in the Virgo filaments.

[포 GC-09] HI gas kinematics of paired galaxies in the cluster environment from ASKAP pilot observations

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We examine the HI gas kinematics and distributions of galaxy pairs in group or cluster environments from high-resolution Australian Square Kilometer Array Pathfinder (ASKAP) WALLABY pilot observations. We use 32 well-resolved close pair galaxies from the Hydra, Norma, and NGC 4636, two clusters and a group of which are identified by their spectroscopy information and additional visual inspection. We perform profile decomposition of HI velocity profiles of the galaxies using a new tool, BAYGAUD which allows us to separate a line-of-sight velocity profile into an optimal number of Gaussian components based on Bayesian MCMC techniques. Then, we construct super profiles via stacking of individual HI velocity profiles after aligning their central velocities. We fit a model which consists of double Gaussian components to the super profiles, and classify them as kinematically cold and warm HI gas components with respect to their velocity dispersions, narrower or wider σ, respectively. The kinematically cold HI gas reservoir (M_cold/M_HI) of the paired galaxies is found to be relatively higher than that of unpaired control samples in the clusters and the group, showing a positive correlation with the HI mass in general. Additionally, we quantify the gravitational instability of the HI gas disk of the sample galaxies using their Toomre Q parameters and HI morphological disturbances. While no significant difference is found for the Q parameter values between the paired and unpaired galaxies, the paired galaxies tend to have larger HI asymmetry values which are derived using their moment0 map compared to those of the non-paired control sample galaxies in the distribution.

[포 GC-10] Gas dynamics and star formation in NGC 6822

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We examine gas kinematics and star formation activities of NGC 6822, a gas-rich dwarf irregular galaxy in the Local Group at a distance of ~490 kpc. We perform profile decomposition of all the line-of-sight (LOS) HI velocity profiles of the high-resolution (42.4" x 12" spatial; 1.6 km/s spectral) HI data cube of the galaxy, taken with the Australian Telescope Compact Array (ATCA). To this end, we use a novel tool based on Bayesian Markov Chain Monte Carlo (MCMC) techniques, the so-called BAYGAUD, which allows us to decompose a velocity profile into an optimal number of Gaussian components in a quantitative manner. We group all the decomposed components into bulk-narrow, bulk-broad, and non-bulk gas components classified with respect to their velocity dispersions and the amounts of velocity offset from