forms stars and stars release gas through mass-loss. In this process, their angular momentum is conserved. Therefore, kinematic decoupling between stars and gas can occur due to external gas inflow or perturbation of components. There are some possible origins of misalignment: cold gas from filaments, hot gas from outer halo, interaction or merging events with galaxies and environmental effects.

Misalignment, the black box from mixture of internal and external gas, can be an important keyword for understanding further about galaxies' kinematics and external processes. Using both SAMI IFS data(Sydney-AAO Multi-object Integral field spectrograph Galaxy Survey, Croom+12) and Horizon-AGN simulation(Dubois+14), we examined misaligned galaxies properties and distribution. Because the simulation has lots of galaxies at various z, we were able to study history of formation, evolution and extinction of misalignment, which was hard to be done with observation only.

[포 GC-08] The Infrared Medium-deep Survey. VII. Optimal selection for faint quasars at z ~ 5 and preliminary results

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The universe has been ionized in the post-reionization by several photon contributors. The dominant source to produce the hydrogen ionizing photons is not revealed so far. Faint quasars have been expected to generate UV photon budgets required to maintain ionization state of universe. Observational limits, however, hinder to discover them despite their higher number density than bright one. Consequently, the influence of faint quasars on post-reionization are not considered sufficiently. Therefore, a survey to find faint quasars at z ~ 5 is crucial to determine the main ionizing source in the post-reionization era. Deep images from the Hyper Suprime-Cam Subaru Strategic Program (HSC SSP) allow us to search for quasar swith low luminosities in the ELAIS-N1 field. J band information are obtained by the Infrared Medium-deep Survey (IMS) and the UKIRT Infrared Deep Sky Survey (UKIDSS) - Deep ExtragalacticSurvey (DXS). Faint quasar candidates were selected from several multi-band color cut criteria based on simulated quasars on color-color diagram. To choose the reliable candidates with possible Lyman break, we have performed medium-bands observations. Whether a candidate is a quasar or a dwarf star contamination was decided by results from chi-square minimization of quasar/dwarf model fitting. Spectroscopic follow-up observations confirm three quasars at z ~ 5. 100% spectral confirmation success rate implies that the medium-band observations effectively select faint quasars with strong Lyman alpha emission.

[포 GC-09] Searching for LSB Dwarf Satellite Galaxies Around Nearby Galaxies in IMSNG Data

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Low surface brightness (LSB) dwarf galaxies hold a key to resolve the small-scale problems of Lambda Cold Dark Matter (LCDM) paradigm such as missing satellites problem. Many recent studies found LSB dwarf galaxies around massive galaxies beyond Local Group up to 10Mpc. Motivated by this, we can increase the number of them by searching for LSB dwarf galaxies around galaxies up to 40Mpc. We use stacked deep (μ_R~26.2 mag arcsec^{-2}) optical *B*, *R*-band images taken from Maidanak 1.5m telescope, one of facilities of Intensive Monitoring Survey of Nearby Galaxies (IMSNG) which monitored nearby galaxies in a day cadence from 2014 to 2016. Extended LSB sources in ambient regions of 16 nearby galaxies are selected using central surface brightness and total *R* magnitude criteria. After that, 24 LSB dwarf candidates are selected with visual inspection. To identify if the candidates are satellites or not, we are trying to compare the number density of LSB dwarf candidates around massive galaxies with those in Canada-France-Hawaii-Telescope Legacy Survey (CFHTLS) wide fields which have no dominant massive galaxies for control sample.

[포 GC-11] Examining the star formation properties of Virgo galaxies undergoing ram pressure stripping

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Understanding how ram pressure stripping (RPS) affects the star formation activity of cluster galaxies is one of the important issues in astrophysics. To examine whether we can identify any discernible trend in the star formation activity of galaxies undergoing ram pressure stripping, we study the star formation properties of galaxies in the Virgo cluster for which high-resolution HI images are available. We first classify galaxies in the Extended Virgo Cluster Catalog into different stages of RPS based on their HI morphology, HI deficiency, and location in phase space. We then examine various star formation activity indicators of these galaxies, which include starburstiness, g - r color, and WISE [3.4]-[12] color. No noticeable enhancement in star formation was identified for galaxies undergoing early or active stripping. Our results suggest that star formation activity at best seems to be enhanced locally in such galaxies, making it challenging to detect with integrated photometry. With the combination of HI deficiencies and locations in phase space, we were instead able to capture the overall quenching of star formation activity with increasing degree of ram pressure stripping, which agree with previous studies.

[포 GC-12] Identification Of Jet Components Of CTA 102 On Milliarcsecond Scales Using The iMOGABA Program

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CTA 102, one of gamma-ray bright active galactic nuclei (AGN) has been observed with Korean very long baseline interferometry (VLBI) network (KVN) during the period of 2012 December-2018 May as part of interferometric Monitoring Of Gamma-ray Bright AGN (iMOGABA). Multi-frequency VLBI observations enable us to compare the milliarcsecond(mas)-scale iMOGABA images of relativistic jets with those from the Monitoring Of Jets in AGN with Very long baseline array (VLBA) Experiments (MOJAVE) and the VLBA-Boston University(BU)-BLAZAR programs which use VLBA with its angular resolutions of 0.2-1.3 mas. In spite of the relative larger beam sizes of KVN (1-10 mas), we are able to identify jet components of CTA 102 using the KVN multi-frequency VLBI observations with those resolved with VLBA. Considering an instrumental beam blending effect on the jet component identification, we were able to obtain a blending shift of the core position based on a convolution analysis using the VLBA data. When we apply the core position shift to the KVN images of CTA 102, we find that the identified jet components of CTA 102 from the KVN observations are well matched with those from the VLBA observations. Based on the results of the analysis, we may be able to study the jet kinematics and its correlation with gamma-ray flare activity.

[포 GC-13] Metallicity Gradients of CALIFA Shell Galaxies

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Shells in early-type galaxies are low surface brightness tidal debris, which are wide concentric arcs of overdense stellar regions with large opening angles. The most widely accepted mechanism today for shell formation is the merger scenario, but the dominant merger type producing shells is not clearly understood yet: major/minor and wet/dry mergers. Since shells are regarded as smoking-gun evidence of merging events, detailed understanding of shell galaxies is very useful to constrain the formation process of early-type galaxies. In this study, we investigate the metallicity gradients of eight early-type shell galaxies using CALIFA IFU data to better understand the nature and origins of galaxy shells. We estimate simple stellar population properties out to three effective radius from the measurement of Lick/IDS absorption line indices. We compare the metallicity gradients of shell galaxies with those of normal early-type galaxies in the same mass range. In this presentation, we discuss how much the gradients of shell galaxies are different from those of normal early-type galaxies and what the existence of galaxy shells implies about galaxy formation.

[포 GC-14] The relationship of dense molecular gas and HI/H_2 gas in a MALATANG galaxy, NGC 6946

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