구 두 발 표 초 록

초 청 강 연

[초 IT-01] A Road to Understanding Galaxies: 40 years of galaxy studies

Ann, Hong Bae
Pusan National University

One day, a galaxy study suddenly came to me and became a friend of 40 years. The study of galaxies, which began with surface photometry of nearby galaxies, ended up in galaxy morphology through chemical and dynamical evolution of galaxies. All that deviated from the study of galaxies was the study of the open clusters. So it seems to me that I devoted my entire life to the study of galaxies. The most memorable one is the observation at Sobaeksan Observatory. Even though the heavy snow fell, I climbed Sobaeksan to meet galaxies. Galaxies observed at Kiso Observatory, DAO, and BOAO are now beyond memory, but I still enjoy seeing them. There are many memories, but the biggest pleasure I've had in my galaxy studies is when I've encountered the galactic conformity between host and its satellite galaxies. Eureka! Now the night sky is changing from the object of study to the object of awe. I will share this joy.

[초 IT-02] Next generation spectroscopic facilities: GMACS for the Giant Magellan Telescope and the Maunakea Spectroscopic Explorer

Jennifer Marshall
Texas A&M University

The next decade will see great advances in ground-based spectroscopic observing capabilities: facilities that are under development today will have larger collecting areas and greater spectroscopic multiplexing capabilities than ever before, and are sure to revolutionize the scientific productivity of our field. In this talk I will review the status of two of these next-generation facilities, the Giant Magellan Telescope's wide-field multiobject optical spectrograph, GMACS, and the Maunakea Spectroscopic Explorer project, a massively multiplexed spectroscopic facility currently under development in Hawaii that features an 11.25m diameter primary mirror which feeds 4,332 fibers and a suite of low- and high-resolution spectrographs. These two projects are scientifically quite complementary and both present exciting instrument development opportunities over the next few years.

[초 IT-03] Multi-Messenger Astronomy with GECKO, Gravitational-wave EM Counterpart Korean Observatory - Past, Present, and Future

Myungshin Im
Seoul National University

The new era of multi-messenger astronomy (MMA) has arrived in 2017 with the detection of the binary neutron star merger in both gravitational wave (GW) and electromagnetic radiation (EM). Now, the new run of GW detectors are providing numerous GW events and the number GW events are expected to increase dramatically in future as the GW sensitivities improve. When the GW studies are combined with EM counterpart observations, a great synergy is expected in many areas of study such as the physical process following the compact object merger, the environment of such events (and galaxy evolution), and cosmology, Therefore, it has now become crucial to identify and characterize these GW events in optical/IR EM. In the past, we have been performing optical/NIR observation of GW events using a worldwide network of more than 10 telescopes, and are getting more actively involved in MMA of GW sources. In this talk, we will present our network of telescopes, the EM follow-up observation results of GW events including GW170817 and the O3 events in 2019, and the current issues in MMA. We will also give the future prospects of MMA, showing the forecast for the GW events and the outlook of EM MMA observations.

[초 IT-04] Towards a Better Understanding of Structure Formation: Galaxies and Dark Matter

Ho Seong Hwang
Korea Astronomy and Space Science Institute

Understanding the interplay between galaxies and dark matter in the universe is one of key challenges in modern astrophysics. This provides an important test of structure formation scenarios and cosmological models. I discuss three aspects of this test: (1) comparing the matter distribution from galaxy redshift surveys with that from weak-lensing surveys, (2) statistical comparison of large-scale structures between observations and

cosmological simulations, and (3) multi-wavelength study of galaxies. These tests underscore the importance of combining photometric and spectroscopic surveys in observations along with cosmological simulations for exploring and understanding the structure formation.

[초 IT-05] Cosmic Web: concept, skeleton, connectivity

Dmitri Pogosyan
Physics Department University of Alberta

In this talk I will review the concept of the Cosmic Web which is behind our understanding of the filamentary structures in the matter distribution in our Universe at large scales, how it can be described geometrically, and some of its most basic properties.

외부은하 / 은하단

[구 GC-01] A New Iron Emission Template for Active Galactic Nuclei

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Fe II emission is a prominent and ubiquitous feature in the spectra of broad-line Active Galactic Nuclei (AGN) by producing a pseudo-continuum from UV to optical with complex and strong blends of the numerous emission lines themselves, other emission lines, and continuum. Since theoretical modeling of such intricate Fe II emission is very difficult and still far from able to reproduce observed data in detail, an empirical iron emission template, derived from observations of a narrow-line Seyfert 1 galaxy, is an essential and practical tool to obtain accurate measurements of all the emission lines and continuum in AGN spectra. However, the existing iron templates, based on the single prototypical strong Fe II emitter I Zw 1, are suffering from inadequate S/N and non-simultaneous, inconsistent data with limited wavelength coverage, which consequently limit the accuracy of all the spectral measurements. To overcome the limitations and construct an improved iron template with wide spectral coverage, high-quality UV and optical spectra for the new and better identified template galaxy, Mrk 493, were successfully obtained from our HST STIS program (GO-14744). We will show the preliminary results for multicomponent spectral decomposition of the data and template construction with application tests to various AGN spectra and comparison with previous templates.

[구 GC-02] Multiwavelength Study of an Off-nuclear Active Galactic Nucleus in NGC 5252

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We present a multiwavelength study of an ultraluminous X-ray source (ULX) in NGC 5252, which is known as a candidate for an intermediate-mass black hole. The ULX, located 22 arcsec away from the center of NGC 5252, was first discovered with the Chandra X-Ray Observatory. In the optical spectra, the strong narrow emission lines are found at the position of the ULX. It reveals that the ULX is likely associated with NGC 5252. The VLBA data of the ULX yields that the black hole mass of the ULX is smaller than 106 solar mass, inferred from the black hole fundamental plane. From the near-infrared imaging data, we find that the stellar mass associated with the ULX is smaller than ~107.9 solar mass, implying that the ULX can be a remnant of a merging dwarf. We also find that K-band luminosity of the ULX is two orders of magnitude smaller than typical active galactic nuclei at a given [OIII] luminosity. It may suggest the ULX lacks the dusty torus possibly due to the disappearance of dusty material during the recoiling process.

[구 GC-03] Radiative pressure feedback in obscured quasars

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Ricci et al. (2017, Nature, 549, 488) discovered a lack of high accretion rate, obscured Active Galactic Nuclei (AGN) in the hard X-ray selected Swift/BAT local AGN survey. This was interpreted as radiative pressure driven AGN feedback clearing its immediate vicinity composed of dusty gas (having an effectively low Eddington limit in the order of 0.01-0.1), and governing the level of