구 두 발 표 초 록

초 청 강 연

[초 IT-02] Galaxy Clusters at High Redshift

Myungshin Im
CEOU/Astronomy Program, Dept. of Physics & Astronomy, Seoul National University

Hierarchical galaxy formation models under LCDM cosmology predict that the most massive structures such as galaxy clusters ($M > 10^{14}$ $M_{\odot}$) appear late ($z < 1$) in the history of the universe through hierarchical clustering of small objects. Galaxy formation is also expected to be accelerated in overdense environments, with the star formation rate-density relation to be established at $z \sim 2$. In this talk, we present our search of massive structures of galaxies at $0.7 < z < 4$, using the data from GOODS survey and our own imaging survey, Infrared Medium-deep Survey (IMS). From these studies, we find that there are excess of massive structures of galaxies at $z > 2$ in comparison to the Millennium simulation data. At $1 < z < 2$, the number density of massive structures is consistent with the simulation data, but the star formation history is more or less identical between field and cluster. The star formation quenching process is dominated by internal process (stellar mass). The environmental effect becomes important only at $z < 1$, which contributes to create the well known star formation-density relation in the local universe. Our results suggest that galaxy formation models under LCDM cosmology may require further refinements to match the observation.

[초 IT-03] Profile, Facilities, and Options for Collaboration with Steward Observatory

Richard F. Green
Steward Observatory/University of Arizona

Steward Observatory has a rich and diverse program of investigations, with significant groups working on star and planet formation and astrobiology, galaxy and quasar formation and evolution, technology for adaptive optics and interferometry, computational astrophysics, and effectiveness of educational practice. To support this work, Steward operates and offers a range of observational and other facilities, including the Large Binocular Telescope, the MMT, the Magellan Telescopes, the Arizona Radio Observatory, and a suite of 1- and 2-m class telescopes. A special opportunity for IR astronomy exists with Arizona now running UKIRT. Steward Observatory astronomers would welcome the opportunity to form genuine scientific collaborations that are mutually beneficial for high-impact projects and improving the observing facilities.

[초 IT-04] Streaming Gas Clouds associated with the Circumnuclear Disk (CND) of our Galactic Center

Young Chol Minh
KASI

The supermassive black hole (SMBH) of our Galactic Center is surrounded by the circumnuclear disk (CND) in the radii of about 2-3 pc. New data from the Submillimeter Array and Green Bank Telescope clearly reveal the irregular and clumpy structures of the CND and its surroundings which may be a dynamically evolving integrated system. The CND seems to be the convergence of the various gas streamers inflowing, shaped mostly via local disturbances associated with, rather than a quasi-stationary stable structure.

[초 IT-05]]IGRINS and the Revolution in High Resolution Infrared Spectroscopy

Daniel T. Jaffe
University of Texas at Austin

The Immersion Grating Infrared Spectrograph (IGRINS) is the first of a new generation of infrared instruments with high sensitivity, high spectral resolution, and broad spectral grasp. IGRINS, a joint project of the University of Texas and the Korea Astronomy and Space Science Institute, designed and constructed by a team at UT, KASI, and Kyung Hee University, has been available to the Korean and Texas communities on the McDonald Observatory 2.7m telescope since 2014 September. On this modest-sized telescope, the instrument has 30 times the spectral grasp of CRIRES at the 8m VLT and is only slightly less sensitive. Already, Korean and UT astronomers have produced a raft of new results in star formation studies, investigations of the interstellar medium, and the nature of cool stars. Several programs are under way to detect and study the atmospheres of exoplanets. We will present