구 두 발 표 초 록

초 청 강 연

[초 IT-01] Hearts of Darkness: Rethinking the Role of Supermassive Black Holes in Galaxy Evolution

Ann Zabludoff
Steward Observatory, University of Arizona

While astronomers are working hard to detect the earliest galaxies and to follow their evolution to redshift z~0, they remain baffled by the present-day dichotomy between disky, star forming (aka late-type) galaxies and quiescent, spheroidal (aka early-type) galaxies. The key is to find galaxies in transition from one class to the other, whose spectra indicate intense recent star formation that has now ended. We have identified thousands of such "post-starburst galaxies" and discovered that they are often the products of late-type galaxy-galaxy mergers. Their current kinematics, stellar populations, and morphologies are consistent with late- to early-type galaxy evolution. I will discuss recent work that suggests new connections between this violent history and the central supermassive black hole. In particular, the molecular gas reservoir of a

post-starburst galaxy declines rapidly after the starburst ends and in a manner consistent with feedback from an active nucleus. Furthermore, a star is ~300x more likely to be tidally disrupted by the nucleus of a post-starburst galaxy than in other galaxies. Like the well-known black hole-bulge mass correlation, these surprising links between the properties of a galaxy on kpc scales and its supermassive black hole on pc scales require explanation.

외부은하 / 은하단

[구 GC-01] The progenitor star of Type Ic SN 2017ein from IMSNG survey

Changsu Choi[1,2], Myungshin Im[1,2], Sung-Chul Yoon[2] and IMSNG team
[1]*Center for the Exploration of the Origin of the Universe, Department of Physics and Astronomy, Seoul National University, Gwanak-gu, Seoul 151-742, Korea*
[2]*Astronomy Program, Department of Physics and Astronomy, Seoul National University, Gwanak-gu, Seoul 151-742, Korea*

The progenitor star properties of supernovae (SNe) are not fully understood though a large number of SNe have been discovered so far. One of the promising ways to understand the properties of progenitor stars is to study SN early light curve where the shock heated emission after explosion is imprinted in. We have performed Intensive Monitoring Survey of Nearby Galaxies (IMSNG) using a global network of telescopes with the aim to snatch the very early moments of SNe explosion. As one of the fruits of our project, we present the result on the type Ic SN, SN 2017ein which was discovered at 2017 May 25 in NGC 3938. We will present the physical properties of the type Ic SN progenitor star that are obtained from the analysis of early epoch data.

[구 GC-02] Distances of Type II-P Supernovae SN 2014cx and SN 2017eaw

Sophia Kim[1], Myungshin Im[1], ChangsuChoi[1] and IMSNG Team[1]
[1]*Center for the Exploration of the Origin of the Universe (CEOU), Astronomy Program, Dept. of Physics & Astronomy, Seoul National University., Korea.*

Supernovae (SNe) are well known as good cosmological distance probes owing to their brightness. Specifically, type Ia SNe contribute greatly to our understanding of acceleration of cosmic expansion. However, type IIP supernovae are the most common type of SNe and have been found out to a large redshift, so the application of these SNe as distance indicators is promising.

IMSNG is a project for monitoring nearby galaxies (<50Mpc) to catch early light curves of transients and get inspections of their progenitors. The daily monitoring observation allows us to construct a dense light curve of SNe, too.