[초GC-11] Extragalactic Research Highlights of AKARI - From Nearby Galaxies to Quasars in the Early Universe -

임명신
서울대학교 물리·천문학부/초기우주천체연구단

I summarize highlights from extragalactic research activities performed with AKARI infrared space telescope. The main emphasis will be given to the works carried out by Korean astronomers. The activities span a wide range of topics, such as MIR properties of nearby galaxies in cluster environment, MIR diagnosis of star-forming galaxies at z=0 through z=2 in the North Ecliptic Pole (NEP) survey field, the Extended Groth Strip (EGS), and the First Look Survey (FLS) field, and the NIR spectroscopy of Luminous Infrared Galaxies (LIRGs) and Active Galactic Nuclei/Super-massive Black Holes at low redshift as well as near the re-ionization epoch of z ~ 6. I describe FIR and MIR all sky data which can be used as a precious resource for extragalactic research, and other future and ongoing works with AKARI. These AKARI results will form a strong basis for future studies using other facilities, such as infrared surveys with UKIRT, FIR study of dusty universe with Herschel, and the SPICA mission. This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MEST), No. 2009-0063616.

[구GC-12] Selection of High Redshift Quasars with Infrared Medium-deep Survey

Yiseul Jeon, Myungshin Im, Wonkee Park, Ji Hoon Kim, Hyunsung Jun and Changsu Choi
CEOU/Dept. of Physics and Astronomy, Seoul National University

A high redshift quasar is useful to investigate the early part of our universe. Since they are one of the brightest objects in the early universe, they can provide us with clues of the growth of super massive black holes and the early metal enrichment history. To discover the high redshift quasars, we designed a survey of wide area and moderate depth; Infrared Medium-deep Survey (IMS), a J-band imaging survey of ~200 deg^2 area where the multi-wavelength data sets exist. To obtain the J-band data, we are using the United Kingdom Infra-Red Telescope (UKIRT), and so far we have covered ~20 deg^2 with Y- or J-bands over three observing runs during 2009. We used color-color diagrams of multi-wavelength bands including i, z, Y, J, K, 3.6μm and 4.5μm to select high redshift quasars. The major challenge in the selection is many M/L/T dwarfs, low redshift galaxies, and instrumental defects that can be mistaken as a high redshift quasar. We describe how such contaminating sources can be excluded by adopting multiple color-color diagrams and eye-ball inspections. So far, our selection reveals two quasar candidates at z~7.

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