

## [ $\text{XGC-13}$ ] Establishing the Black Hole Mass Estimator of Active Galactic Nuclei with Hydrogen Brackett Lines

김도형, 임명신  
서울대학교

Red dusty Active Galactic Nuclei (AGNs) are suspected to mid-stage between ULIRG and AGN phase. As well as, red AGNs are suspected that they have more than 50% of whole AGN population. In order to understand the character of red AGNs, Black Hole (BH) mass of red AGN is a key property and can not measured by existing method such as reverberation mapping and single epoch method. Thus we still don't know their character and properties in clearly. To estimate properties of red AGNs without the effect of dust-obscuration, we have obtained Near InfraRed (NIR) spectra of 31 reverberation mapped AGNs and 49 Palomar-Green(PG) Quasi-Stellar Object (QSO) by using the infrared camera (IRC) for AKARI with unique wavelength range 2.5-5.0  $\mu\text{m}$ . From this spectra, we measured the FWHM and luminosity of brackett  $\alpha$  and  $\beta$  at 4.0, 2.6 micron meter for deriving new BH mass estimators based on the properties of Brackett line emission.

---

## [ $\text{XGC-14}$ ] The Spitzer Public Legacy Survey of the 1 square degree UKIDSS Ultra Deep Survey (SpUDS)

Minjin Kim<sup>1,2</sup>, James S. Dunlop<sup>3</sup>, Carol J. Lonsdale<sup>1</sup>, Duncan Farrah<sup>4</sup>, Mark Lacy<sup>1</sup>, Ming Sun<sup>5</sup>, and SpUDS team

<sup>1</sup>National Radio Astronomy Observatory, <sup>2</sup>Korea Astronomy and Space Science Institute, <sup>3</sup>University of Edinburgh, <sup>4</sup>University of Sussex, <sup>5</sup>University of Virginia

The Spitzer Public Legacy Survey of the UKIDSS Ultra Deep Survey (SpUDS) has been carried out with four IRAC bands and one MIPS band (24 $\mu\text{m}$ ). SpUDS surveys 1 square degree of the UDS field, that has been covered by one of the deepest near IR surveys and by various multiwavelength observations from X-ray to radio (XMM, GALEX, Subaru, SCUBA, VLA). We present a summary of the photometric data including number counts derived at 3.6-24 microns. In conjunction with extensive multiwavelength data, we are able to show the multiwavelength color distribution of MIR sources, and how different SED types contribute to the number counts.