

maser sources, W49N and Ori-KL and radio loud AGNs, NRAO150 and J2148+0657, were observed at K-band. In March 2009 two strong SiO maser sources, IK Tau and R Leo, were observed as well. For all observed sources in 2008, we detected the fringes at all baselines. Further tests are planned for K/Q band fringe detection and image sensitivity experiments in 2009. The scientific operation plan and the possible operation mode of KVN will be discussed also. In this talk, we introduce East Asian VLBI array where KVN will play important role. Especially EAVN observation at 22 and 43GHz is our interest. Sub mJy level imaging sensitivity which is comparable to NRAO FIRST survey sensitivity will be feasible with milli-arcsecond resolution. The scientific cases of AGN evolution will be discussed briefly.

■ Session : 은하/우주론 IV (GC)

4월 30일(목) 09:00 - 10:45 제1발표장

[GC-18] CEOU: Center for the Exploration of the Origin of the Universe

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We introduce research projects being carried out at CEOU (Center for the Exploration of the Origin of the Universe) at Seoul National University. CEOU is one of Creative Research Initiatives research centers, which started its operation in June 2008 as a 9-year project. The main focus of the CEOU is a NIR Intermediate-wide, Medium-deep survey which aims to cover ~ 150 square degree of the sky to the depth of 23 AB magnitude in J-band. The survey will be carried out using the United Kingdom Infrared Telescope (UKIRT) and a 2-m class equipped with a mosaic camera with deep depletion CCD chips which we are now developing. The main objectives of the survey are to discover and study (1) the first quasars in the universe at $z > 7$; and (2) the first massive galaxy clusters at $1 < z < 2$. Our study, however, will not be limited to these surveys. We are also carrying out various projects to understand the nature of distant galaxies and the growth of supermassive blackholes in quasars, including overdensity at high redshift, galaxy property and evolution near and far, and two programs related to quasars such as SNUQSO (Seoul National University Bright Quasar Survey), and QSONG, a NIR spectroscopy study of quasars.

[GC-19] Y-band Imaging of Extragalactic fields and High Redshift Quasars

Changsu Choi, and Myungshin Im

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We carried out the observations of several extragalactic fields, brown dwarfs, high- z QSO and AOV standard star imaging with Y-band filter at the Mt. Lemmon Optical Astronomy Observatory (LOAO) and the Maidanak Observatory. The deepest limit magnitude of 260 minutes exposure is $Y = 21.5$ AB mag in case of LOAO and $Y = 22$ AB mag for the Maidanak Observatory. Using the Y-band imaging data, we measured photometric calibration parameters of Y-band. We got two photometric calibration parameters atmospheric extinction coefficient $k = 0.087$ and zero point $\xi = 18.29$ in LOAO, $k = 0.1$ and zero point $\xi = 19.14$ mag in Maidanak Observatory. We performed number counts in Y-band imaging fields and found slopes consistent with previous I-band and J-band data. Also, we tested the usefulness of high redshift QSO ($z > 6$) selection via $i-z$ VS $z-Y$ color-color diagram. The discrimination method between them with $i-z$ vs $z-Y$ color-color diagram shows that it is as effective as the $i-Y$ vs $Y-J$ color-color diagram method which means we can search high redshift QSOs effectively with an optical CCD installed at 1m class telescopes. Furthermore we analyzed characteristics of Y-band objects with color-magnitude diagram and redshift - Y-band magnitude relation.

[GC-20] KASINICS J-band Imaging of High Redshift Quasar Candidates

Won-Keek Park, Myungshin Im, Induk Lee, Hyunjin Shim, Eugene Kang

Department of Physics and Astronomy/CEOU, Seoul National University

We report the current status of search for high redshift quasars using KASINICS Near-IR imaging data. We have been searching for $z \sim 6$ quasar candidates from high galactic latitude region of the Sloan Digital Sky Survey (SDSS) SEGUE dataset which covers about 3500 square degree area in the sky. So far, we have selected 91 i -band dropout objects ($i-z > 2.3$ mag) from the SDSS SEGUE data. In order to select the best high redshift quasar candidates, we obtained J-band images of 30 candidates using KASINICS NIR camera on the Bohyunsan Optical Astronomy Observatory (BOAO) 1.8m telescope. The ($i-z$) vs ($z-J$) color-color diagram of observed targets identifies a few possible distant quasars. Photometric observation of more targets are being carried out, and spectroscopic observation of reliable targets are planned. Our observation demonstrates that it is feasible to select distant quasar

candidates using KASINICS.

[GC-21] Demography of SDSS Early-type galaxies from the perspective of radial colour gradients

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Most early-type galaxies are centrally red mainly due to metallicity gradients but centrally blue galaxies do exist, called blue core galaxy. We investigate the radial (g-r) colour gradient of early-type galaxies at $0.0 < z < 0.06$ in the 5th Data Release of the Sloan Digital Sky Survey. We first estimate the (g-r) colour gradient of early-type galaxies using the least-square fit method. We find that roughly 30 percent of the sample shows positive gradients (centrally blue), which are mostly blue in terms of (u-r) colours and show emission and strong H β absorption lines. The galaxies tend to have small velocity dispersions and are located in the star-forming region in BPT diagram. On the other hand, galaxies with negative gradients (centrally red), which are relatively massive, are located in the LINER region in BPT diagram. We also present the UV-optical colour magnitude relation of early-type galaxies using GALEX GR4 data. While galaxies with positive gradients are NUV-r blue, galaxies with negative gradients are relatively NUV-r red. The galaxies are located in different fundamental plane according to their gradients. These results indicate that the positive gradient are due to star-formation in the galaxy center. Based on the stellar population modeling, positive gradients in early-type galaxies are a transient feature that is visible only for a half billion years after star formation episode which is generally centrally concentrated.

[GC-22] Properties of Type Ia Supernova Host Galaxies in the SDSS

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We investigate the properties and environments of Type Ia Supernovae host galaxies from the Sloan Digital Sky Survey-II Supernova Survey for the Stripe 82 centered on the celestial equator. 87 SNe Ia host galaxy samples are

selected from the SDSS Main galaxy catalog at the apparent r-band magnitude range $m_r < 17.77$. We found that the color properties of SNe Ia host galaxies are slightly bluer than the main galaxies and the absolute magnitude of SNe Ia host galaxies has a higher fraction than the main galaxies when the characteristic absolute magnitude $M_{\star} < -20.5$. The distribution of the distance to nearest neighbor galaxy and the local density of SNe Ia host galaxies show that SNe Ia host galaxies prefer intermediate region compared to the main galaxies. In early type SNe Ia host galaxies, the distribution shows SNe Ia host galaxies have a more distant neighbor galaxy compared to the main galaxies.

[GC-23] Improved line measurements for SDSS DR6

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We have established a database of galaxy spectral line strengths for SDSS DR6 using an improved line measuring method. Our work includes the entire SDSS DR6 galaxies within redshift of 0.2 excluding saturated objects. The absorption line strengths measured by the SDSS pipeline are seriously contaminated by emission filling. Our code, GANDALF (gas and absorption line fitting code) performs more accurate measurements by effectively separating emission lines from absorption lines. A significant improvement has also been made on the velocity dispersion measurement, more notably in late-type galaxies. The database will be provided with new parameters that are indicative of line strength measurement quality. The database will be useful for various fields of galaxy studies including star formation and AGN activities.

[GC-24] Study of Galaxies and Star Formation with the AzTEC mm-wavelength Camera

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Ultraluminous galaxies at high-redshift emit a large fraction of the energy at submillimeter and millimeter wavelengths. These so-called Submillimeter Galaxies (SMGs) seem to be progenitors of present-day elliptical galaxies due to the expected high star formation rate (SFR). We use a new bolometer array camera, AzTEC, utilizing 144 silicon nitride