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To investigate the impact of the high-redshift quasars on cosmic reionization, the faint end slope of the quasars luminosity function has to be determined precisely. More quasars with low luminosity are needed to constrain the contribution to reionization in the early universe. However, finding these quasars has been regarded as tough process owing to the improper shallow depth of imaging data. In recent days, the release data of Subaru Hyper Suprime-Cam (HSC) Strategic Program survey which provide the deep images reaching ~ 25 mag facilitates searching the faint quasars candidates. To find faint quasar candidates in ELAIS-N1 field, along with the HSC data, two near-infrared (NIR) data sets also be used : The Infrared Medium-deep Survey (IMS) and The UKIRT Infrared Deep Sky Survey (UKIDSS) – Deep Extragalactic Survey (DXS). Quasar candidates selected from the multi-band color cut were observed by the SED camera for QUasars in EArly uNiverse (SQUEAN) instrument. To trace the redshifted Lyman break efficiently, appropriate medium bands comparable to targeted redshift range are chosen. The most reliable quasar candidates are finally determined through SED fitting. Using this less luminous quasars candidates, we can speculate the relation between the quasar growth and the host galaxy unbiasedly and estimate the contribution to the cosmic reionization.

[포GC-12] Specific star formation rate of the MIR-selected galaxies in AKARI NEP-Wide

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We investigate the SFR-$M_\star$ relation of the infrared luminous galaxies selected in either $11 \, \mu m$ and $15 \, \mu m$ from the $5.6 \, deg^2$ of the AKARI NEP-Wide field. From the constructed multi-wavelength catalog spanning $0.3 \, \mu m$ to $24 \, \mu m$, we select 3,408 S11 > $50 \, \mu Jy$ galaxies and 1,896 L15 > $20 \, \mu Jy$ galaxies which corresponds to

L_{IR} ~ $10^{11} \, L_\odot$ at z ~ 0.5 and 0.7 respectively. Photometric redshifts of the selected galaxies were derived using LePHARE and Coleman Extended templates. ~98% S11 selected galaxies are galaxies with $\langle z \rangle$(median redshift) ~ 0.4, and ~96% L15 selected galaxies are galaxies with $\langle z \rangle$ ~ 0.6. Star formation rates and stellar mass of these galaxies were calculated using MAGPHYS which derives physical parameters with SED fitting. In the SFR-$M_\star$ diagram, $11 \, \mu m$/$15 \, \mu m$ selected galaxies are located in the main sequence of star-forming galaxies at z ~ 1.

[포GC-13] Photometric Properties and Spatial Distribution of RSGs of Nearby Galaxy System: Leo Triplet

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We present the near infrared JHK photometric properties and the spatial distribution of red supergiants(RSGs) of NGC 3623, NGC 3627 and NGC 3628 in the Leo Triplet system using the data obtained with 3.8m UKIRT(United Kingdom Infra-Red Telescope) at Hawaii. We checked interaction between the three galaxies by making a spatial density map of RSGs. From (J-K,K)0 Color-Magnitude Diagram which include resolved stars in three galaxy and control field with PARSEC isochrone, we figured out the RSG candidates of the Leo triplet are at 0.9<(J-K)0<1.2, mK<17.5 and separated them from background and foreground sources. Using gaussian kernel density estimation, we drew spatial density map of RSGs in the Leo triplet with an assumption that all RSGs are an identical population. The density map shows extended features of NGC 3628 to NGC 3627 along the declination direction. The asymmetries between NGC 3627 and NGC 3628 might be evidence for that the distribution of actual star components(RSGs) follows the neutral hydrogen distribution and also for interaction between two galaxies. And the extended features along the right ascension direction might be a supporting evidence for the existence of a TDG(Tidal Dwarf Galaxy). In case of NGC 3623, we could not see any sign of interaction in density map.

[포GC-14] Hydrodynamics Simulation of the Off-Axis Cluster Merger Abell 115

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Abell 115 is a renowned cluster merger at z=0.197. It exhibits an asymmetric X-ray