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We investigate the narrow emission−line ratios of 64 radio−loud (log $L_{1.4GHz}$ > 40) AGNs available in the SDSS archive, in order to examine whether there is a systematic difference in the accretion disk condition of radio−loud AGNs compared to radio−quiet AGNs and compact young radio−loud AGNs. The fluxes of narrow−emission lines, [O II], [Ne III], [O III], [O I], [Ar III], are measured for diagnostics. Based on the [O I]/[O III] and [Ar III]/[O III] ratios with photoionization models, we constrain the states of the accretion disk. We will present the results of the emission−line diagnostics.

[포 GC−11] X−ray AGNs in Abell 133

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Environments (field, galaxy groups, and galaxy clusters) can affect galaxy evolution due to galaxy interaction which is controlled by different galaxy number densities and velocity dispersions. Since the galaxy interaction or merger triggers both star formation and AGN, AGN fraction can be used to understand the effect of environment. We detected X−ray AGN fraction in a nearby galaxy cluster, Abell 133, using Chandra X−ray image and optical spectra. We found ~600 X−ray point sources in the field of Abell 133 using the 2.8 Msec exposure Chandra images. We determined 3 cluster members based on the redshifts derived from optical spectra obtained from Magellan IMACS observation. The AGN fraction in Abell 133 is similar to that of other environments, i.e., COSMOS and CDFS. We will discuss the results by comparing Abell 133 with other environments.

[포 GC−12] Extremely Red Objects in Subaru GTO2deg^2 Field

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Extremely Red Objects (EROs) are characterized by their red optical−infrared colors (e.g., R−Ks > 5.0), which would be caused by either dusty star formation or old stellar population at moderate to high redshifts. We combine deep optical (Subaru R) and near−infrared (CFHT Ks) observations obtained as part of the Subaru GTO2deg^2 survey to select EROs over this field and to explore their properties. We present number densities of EROs as a function of magnitudes. We are planning to quantify the environments for EROs and to see if EROs reside in overdense regions.

[포 GC−13] Identification of MgII Absorbers in the Quasar Lines of Sight

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Large area infrared surveys are often accompanied with follow−up optical spectroscopic surveys that has a significant legacy value even for other areas of research. Using these spectral database, we have performed a search for MgII absorption lines in the optical spectrum of background quasar. Over the ~4deg2 of AKARI North Ecliptic Pole survey field and Spitzer First Look Survey field, 18 and 16 MgII absorber systems are identified respectively. The redshift range for the background quasars was $1.0 < z_{qso} < 3.4$, while the redshift range for the absorber was $0.6 < z_{abs} < 1.6$. Galaxies responsible for MgII absorptions are identified in the deep optical images (CFHT r−band), yet the identification still remains ambiguous for 60% of the systems due to the limited image depth and the source crowdedness. The impact parameter ranges 20−60kpc, and the rest−frame equivalent width of MgII absorption ranges 0.7−4 Å. The most critical part in the identification of MgII absorber galaxies is the existence of deep optical images in addition to the high S/N quasar spectrum with R>3000.

[포 GC−14] East Asia VLBI Network: Current Observation Status and Future Prospects

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우리는 동아시아 각국(대한민국, 중국, 일본)의 VLBI관측망을 통합하고 구성될 동아시아 VLBI 관측망(East Asia VLBI Network; EAVN)의 초기 검증 작업을 진행하고 있다. EAVN은 2 ~ 129 GHz로 관측이 가능하는데, 주로 6.7, 8, 22, 43 GHz로의 관측을 상정하고 있다. 또한 최대 기선장은 약 5,000 km으로 공간분해능은 약 0.3 mas(43 GHz로의 관측의 경우)가 된다. 높은 공간분해능과 고감도의 특징을 활용하고 저광도 활동성은하핵이나 우리 은하의 메이저 천체 등의 연구에 대해서 위력을 나탈 수가 있다. 우리는 EAVN 시험관측, 상관처리, 자료처리의 실행, 및 그것들을 통한 EAVN 운영의 검증을 하는 EAVN Tiger Team을 2013년에 조직하고 현재까지에 8 GHz 및 22 GHz로 8회의 VLBI 시험관측을 실행하였다. 상관처리는 주로 한국천문연구원에서 운영하고 있는 한일 공동상관기(KJJVC)와 상하이천문대의 소프트웨어 상관기(DiFX)로 실행되어 있다. 현재까지에 8 GHz 및 22 GHz 쌍방에서 프린지검출에 성공하고 있고, 올해는 영상합성을 포함한 과학적인 관측을 진행할 예정이다. 이 발표에서는 EAVN의 개요와 과학목표, 시험관측 현황과 결과, 및 앞으로의 운영 계획 등을 소개하겠다.

[포 GC-15] 발표취소

[포 GC-16] The Environmental Dependence of the Mass−Size Relation in the Most Massive Galaxies.

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We study the environmental dependence of the mass−size relation especially for the most massive early type galaxies $(M>10^{11.2}M_*)$ in the redshift range 0.15~0.25. As a measure of the environment, galaxy number densities are measured by the 10th nearest galaxies within 7000km/s from galaxies with spectroscopic redshifts. We find that galaxies more massive than $10^{11.6}M_*$ show the environmental dependence in the mass−size relation. The galaxies with $M>10^{11.6}M_*$ located in the densest, cluster like environment have larger sizes than their counterparts located in a low dense environment. We also find that this environmental dependence of the mass−size relation originates from the brightest cluster galaxies (BCG) rather than non−BCG galaxies. Our result can be explained with a hierarchical growth of the most massive galaxies through dissipation−less merger in dense environments.

[포 GC-17] The WSRT HI Imaging Study of

Gas−rich Galaxies in the Outskirts of the Virgo Cluster

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We present the results of the Westerbork Synthesis Radio Telescope (WSRT) HI imaging study of seven late−type galaxies. They are located in the outskirts of the Virgo cluster, possibly along a filament connected to Virgo from the north−west. Most galaxies in this region are found to be HI−rich, containing more HI gas compared to field galaxies with similar size and optical luminosity. The positions of the sample with respect to the cluster and their high HI mass−to−light ratios suggest that the selected galaxies might be accreting more gas from their surroundings while falling into the cluster. By high−resolution HI imaging, we aim to find evidence that galaxies are pre−processed by gas accretion from the intergalactic medium and/or gas−rich neighbors. We probe the detailed HI morphology/kinematics and the star formation properties of the sample. All of these galaxies are found with a large HI disk which is quite extended compared to their stellar disk. Together with kinematical peculiarities, this strongly suggests that cold gas accretion is responsible for active star formation in these galaxies.

[포 GC-18] What Do MIR Properties of Galaxies in the Coma Supercluster Tell Us?

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MIR colors are an excellent tool to investigate the transition phase of galaxy evolution in terms of star formation at various phases. The Coma supercluster is the nearest massive supercluster, hosting two main clusters, the Coma (Abell 1656) and Leo (Abell 1367) clusters, and one galaxy group, the NGC 4555 group, providing an ideal laboratory to study how galaxies evolve depending on environment. We present the results of a study