

⁴Shanghai Astronomical Observatory,

⁵Xinjiang Astronomical Observatory,

⁶Yunnan Astronomical Observatory

우리는 동아시아 각국(대한민국, 중국, 일본)의 VLBI 관측망을 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 나타낼 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.

Yongmin Yoon, Myungshin Im
CEO/Astronomy Program, Dept. of Physics & Astronomy, Seoul National University

We study the environmental dependence of the mass-size relation especially for the most massive early type galaxies ($M > 10^{11.2} M_{\odot}$) 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 $10^{11.6} M_{\odot}$ show the environmental dependence in the mass-size relation. The galaxies with $M > 10^{11.6} M_{\odot}$ 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

Hyein Yoon¹, Aeree Chung¹, Chandreyee Sengupta², O. Ivy Wong³, Martin Bureau⁴, Soo-Chang Rey⁵, J. H. van Gorkom⁶

¹Yonsei University,

²Korea Astronomy and Space science Institute,

³International Centre for Radio Astronomy Research,

⁴University of Oxford,

⁵Chungnam National University,

⁶Columbia University

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?

Gwang-Ho Lee(이광호), Myung Gyoon Lee(이명균)
Department of Physics and Astronomy, Seoul National University

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