[포GC-13] Environment of radio-sources over 8 decades of radio luminosity

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Although the link between activity in the nuclei of galaxy and galactic mergers has been under scrutiny for several years, it is still unclear to what extent and for which populations of active galaxies merger-triggered activity is relevant. The environment of AGN allows an indirect probe of the past merger history and future merger probability of these systems, suffering less from sensitivity issues while extending to higher redshifts, compared to traditional morphological studies of AGN host galaxies. Here we present results from our investigation of the environment of radio selected sources out to redshift z=2. We employ the first data release J-band catalog from the new near-IR Infrared Medium-Deep Survey (IMS) and 1.4 GHz radio data from the Faint Images of the Radio Sky at Twenty-cm (FIRST) survey and a deep dedicated VLA survey of the VIMOS field, covering a combined total of ~20 sq. degrees. Given the flux limit of the combined radio catalog (0.1 mJy), we probe a radio luminosity range of 10^36-10^44 erg/s. Using the second and fifth closest neighbor density parameters, we test whether active galaxies inhabit denser environments and study these overdensities in terms of both distance to the AGN and its luminosity. We find evidence for a sub-population of radio-selected AGN that resides in significantly overdense environments at small scales, although we do not find significant overdensities for the bulk of our sample. We do not recover any dependence between the AGN radio-luminosity and overdensities. We show that radio-AGN inhabiting the most underdense environments in the field have vigorous ongoing star formation. We interpret these results in terms of the triggering and fuelling mechanism of radio-AGN.

[포GC-14] Evidence of Stellar Substructures on the Near-infrared Image of M31 System

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Hierarchical merging scenario indicates that galaxies go through major and minor merger events during their formation and evolution. As a result of the merging, substructural features of remnants such as stellar stream are shown around a current galaxy system. To find evidence of stellar substructures on M31 system, we used the near-infrared images of JHK filters obtained from the Wide Field Camera (WFCAM) at UKIRT 3.8m. A total sky coverage is an area of about 4.5°×6° around M31. Indeed, M31 system which consists of several satellite systems contains stellar substructures such as giant stellar stream, loops, and spurs. By analysing stellar populations on the near-infrared color-magnitude diagrams, we selected member star candidates of each stellar substructure, from which we map out spatial distribution of stars in the vicinity of M31 system. Here, we present spatial density distribution maps of stars on each substructure over the entire field of M31 system. Also, we discuss the possible origin of the substructures and the implications on the galaxy assembly process.