

[JGC-28] Search for Very Fast Variability in AGN Radio Light Curves

Taeseok Lee¹, Sascha Trippe¹, Bong Won Sohn², Sang-Sung Lee²,
Do-Young Byun², Junghwan Oh¹

¹*Seoul National University*

²*Korea Astronomy and Space Science Institute*

We present here the preliminary results of the fast variability of AGN radio light curves. The shortest time scale of minute in AGN light curves is needed to probe the AGN activity for a few reasons; First, to check if there is any kind of shortest time scale activity. Secondly, to find out what high frequency end of AGN spectra look like. For the last, to see the time delay at several wavelength bands and the change of the spectral index with time. The observation was conducted with three KVN(Korea VLBI Network) antennas with single dish cross scan mode. In order not to lose the target at any given time, whenever one station needs to observe the calibrator, the other station is on the target. Though the detailed data reduction is still going on, there might exist varying feature in the radio light curve. The more fine calibration will be done in near future and another good data set is ready for the reduction.

[JGC-29] Local Environmental Effects on AGN Activities

Jaemin Kim and Sukyoung K. Yi

Department of Astronomy, Yonsei University, Korea

The local environmental effects on the triggering of active galactic nucleus(AGN) activity has been studied with many authors, but there still be controversy. We perform statistical analysis for nearby($0.01 < z < 0.05$) volume limited($M_r < -19$) samples with visual inspection based on Sloan Digital Sky Survey Data Release7. We inspect $\sim 60,000$ galaxy images visually to find peculiar objects which show not only ongoing merging features and tidal features, but also post merging features like ring or shell structures. We found that these peculiar features were shown at least 2 times more frequently among AGN host galaxies than non AGN galaxies, and this trend was still visible when galaxy properties such as color or stellar mass are fixed. Furthermore, L[OIII] and L(Ha) of peculiar galaxies are found to be more increased than those of normal galaxies. In order to ensure this results, we also checked it for a smaller subsample with ~ 2 mag deeper monochromatic images provided from SDSS Stripe82 database, and found consistent results. At last, we perform the same work for pair($r_p < 80$ kpc/h, $\Delta v < 200$ km/s) systems. Because of some pair systems which do not interact gravitationally in actuality but fulfill the criteria for identification of pair system, the trends are found to be slightly weaker. We also found that line luminosities are increased consistently as projected distance between central and companion galaxy decreased, and as companion color gets bluer. Overall, the results of this study tell us that the local environment of galaxies affect the frequency as well as the strength of AGN activity. Local environmental effects, however, may not be the dominant triggering mechanism for AGN activity since the majority of peculiar galaxies are non AGN galaxies.