[포GC-28] The near infrared image of GRB100205A field

Yongjung Kim, Myungshin Im
CEOU/Dept. of Physics & Astronomy, Seoul National University

GRB100205A is a Gamma Ray Burst (GRB) which is suspected to be at redshift z=11-13 due to its very red H-K color($(H-K)_{vega}$ = 2.1 ± 0.5). We observed a field centered at GRB100205A with Wide Field Camera (WFCAM) at United Kingdom Infrared Telescope (UKIRT) in Hawaii, in order to search a quasar that could be located around the GRB. The images were obtained in J, H, and K filters covering a square area of 0.78 deg^2. Our J-, H-, and K-band data reach the depths of 22.5, 22.1, and 21.0 mag (Vega) at 5σ, respectively. Also using z-band image observed by CFHT, we find 8 candidates that have colors consistent with a quasar at z=11-13(non-detection in z-, J-band and $(H-K)_{vega} > 1.6$). However, the shallow depths of J-, H-band are not enough to verify their true nature. Instead, we identify many red objects to be old or dusty galaxies at $z \gtrsim 3$. The number density of such objects appears about twice or more than that of the field of Cosmological Evolution Survey (COSMOS) and Ultra Deep Survey (UDS) of UKIRT Infrared deep sky survey (UKIDSS). On scales between 0.18′ and 15′ the correlation function is well described by a power law with an exponent of ≈ -0.9 and this implies that those objects are like galaxies. It is interesting that many red galaxies exist in the region where the GRB was detected.

[포GC-29] Relationship between hot gas halo and environmental factors of early-type galaxies

Eunbin Kim[1,2], Yun-Young Choi[1], Sungsoo S. Kim[1,2] and Changbom Park[3]

[1]*Department of Astronomy and Space Science, Kyung Hee University, Korea*
[2] *School of Space Research, Kyung Hee University, Korea*
[3]*Korea Institute for Advanced Study, Korea*

We present an investigation of X-ray hot gas halo in 21 early-type galaxies(ETGs) from cross-matched sample of XMM-Newton(2XMM-DR3 catalog) and SDSS DR 7($0.025 < z < 0.085$ and $Mr < -19.5$). It has been controversial whether or not the environment affects X-ray luminosity of ETGs. In this research, we mainly considered how dense the surrounding galaxies of the target galaxy are and how isolated the target galaxy is from the nearest neighboring galaxy. It appears that the second environmental factor has more effects on X-ray luminosity (0.5-2 keV) of hot gas halo than the first one. We found that the closer a galaxy is to the nearest neighboring galaxy, the brighter it is when the galaxy is located within the neighbor galaxy's virial radius. However, when a galaxy is located outside the neighbor's virial radius, the luminosity does not show any trend. In this poster, we report preliminary results from our study.