

[GC-20] KASINICS J-band Imaging of High Redshift Quasar Candidates

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We report the current status of search for high redshift quasars using KASINICS Near-IR imaging data. We have been searching for $z \sim 6$ quasar candidates from high galactic latitude region of the Sloan Digital Sky Survey (SDSS) SEGUE dataset which covers about 3500 square degree area in the sky. So far, we have selected 91 i-band dropout objects ($i-z > 2.3$ mag) from the SDSS SEGUE data. In order to select the best high redshift quasar candidates, we obtained J-band images of 30 candidates using KASINICS NIR camera on the Bohyunsan Optical Astronomy Observatory (BOAO) 1.8m telescope. The $(i-z)$ vs $(z-J)$ color-color diagram of observed targets identifies a few possible distant quasars. Photometric observation of more targets are being carried out, and spectroscopic observation of reliable targets are planned. Our observation demonstrates that it is feasible to select distant quasar candidates using KASINICS. This work was supported by the Korea Science and Engineering Foundation (KOSEF) grant No. 2009-0063616, funded by the Korea government (MEST).

[GC-21] Demography of SDSS Early-type galaxies from the perspective of radial colour gradients

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Most early-type galaxies are centrally red mainly due to metallicity gradients but centrally blue galaxies do exist, called blue core galaxy. We investigate the radial (g-r) colour gradient of early-type galaxies at $0.0 < z < 0.06$ in the 5th Data Release of the Sloan Digital Sky Survey. We first estimate the (g-r) colour gradient of early-type galaxies using the least-square fit method. We find that roughly 30 percent of the sample shows positive gradients (centrally blue), which are mostly blue in terms of (u-r) colours and show emission and strong H β absorption lines. The galaxies tend to have small velocity dispersions and are located in the star-forming region in BPT diagram. On the other hand, galaxies with negative gradients (centrally red), which are relatively massive, are located in the LINER region in BPT diagram. We also present the UV-optical colour magnitude relation of early-type galaxies using GALEX GR4 data. While galaxies with positive gradients are NUV-r blue, galaxies with negative gradients are relatively NUV-r red. The galaxies are located in different fundamental plane according to their gradients. These results indicate that the positive gradient are due to star-formation in the galaxy center. Based on the stellar population modeling, positive gradients in early-type galaxies are a transient feature that is visible only for a half billion years after star formation episode which is generally centrally concentrated.