

Ultraviolet Properties of Star Clusters in Nearby Galaxies: Project Outline

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We present the outline of the study on the ultraviolet (UV) properties of the star clusters of nearby galaxies. We are performing extensive and homogeneous UV point source photometry of nearby galaxies within 5 Mpc which were obtained as part of the Galaxy Evolution Explorer (GALEX) Nearby Galaxy Survey. Based on the final merged UV catalog with corollary database at other wavelengths, we will study the age and metallicity distribution of star clusters in various galaxies with different morphologies. The final UV properties of star clusters will provide constraints of the formation and evolution of nearby galaxies since the integrated UV flux of star clusters are good tracers of star formation history of their host galaxy.

Ultraviolet Properties of Early-Type Galaxies in the Virgo Cluster

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We present the Ultraviolet properties of a sample of early-type galaxies in Virgo cluster. We used the GALEX GR3 data in near-ultraviolet (NUV) and far-ultraviolet (FUV) passbands combined with spectro-photometric data available at other wavelengths. We obtain the photometry of objects in the GALEX mosaic fields of Virgo cluster using the SExtractor, since the GLAEX pipeline fail to detect faint galaxies even in moderately crowded images. We optimized parameters of SExtractor in order to secure complete sample of objects in this cluster. By matching with available optical catalog of Virgo cluster, we detected 1083 and 564 objects in NUV and FUV, respectively, which consist of ellipticals, lenticulars, and dwarf galaxies. Based on the UV to optical or near-infrared color magnitude relation (CMR), we confirmed discontinuity between massive and dwarf galaxies suggesting different population as FUV source between massive ellipticals and dwarf ellipticals. We found the dwarf lenticulars show distinct locus from that of dwarf ellipticals in CMR. This indicates the UV properties of dwarf lenticulars are different than those of dwarf ellipticals, suggesting a different evolution.