

[7GC-11] A Progress Report on the MMT/Hectospec Observation for M81 Fields

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The M81 group is a nearby galaxy group hosted by M81, a twin galaxy of Milky Way. This galaxy group is considered as an ideal laboratory for near-field cosmology to understand mass assembly and evolution of galaxies in the group environment. We designed a project to investigate spectroscopic properties of globular cluster candidates in this group. We obtained spectra of globular cluster candidates using the MMT/Hectospec as a part of the K-GMT Science Program. Our main targets include globular cluster candidates of the M81 group member galaxies and those wandering in the intragroup region. We also observed supernova remnants and some background galaxies. Observing fields covered about 2 square degrees including three main galaxies of the M81 group. Using these spectra, we will identify globular clusters in the M81 group, and investigate their properties including age and metallicity. We will discuss the MMT/Hectospec data reduction processes, and future plan for this project.

[7GC-12] The Mid-IR Properties of Early Type Galaxies with Positive Optical Color Gradients

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Radial color gradient of early type galaxies (ETGs) is a key tool for studying the evolution of these galaxies. In this work, we investigated whether ETGs having negative or positive color gradients show any distinguishable characteristics in the galaxy properties. We selected sample of 211 ETGs at $0.01 < z < 0.5$ in the Spitzer FLS field, then we constructed u-R color gradients. We obtained the stellar mass, specific star formation rate and fluxes of emission lines of each ETG from MPA-JHU DR7 catalog. Spitzer IRAC and MIPS 24 micron data were used to detect dust emission from the ETGs. Preliminary result shows that less massive galaxies are likely to have positive color gradients, which is probably due to the ongoing star formation in the galaxy core. Almost all AGNs have negative color gradients. This probably is because AGNs are located in relatively massive galaxies with little ongoing star formation. There exists a marginal difference in the percentage of galaxies with PAH emission between ETGs having positive color gradient and negative color gradient. This also supports that ETGs with positive color gradient are galaxies having enhanced star formation.