

[7GC-27] On the UV properties of Early Type Galaxies in Clusters

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We present the ultraviolet (UV) properties of early type galaxies (ETGs) in clusters. We obtained a cluster catalogue from Yoon et al.(2008) based on Sloan Digital Sky Survey(SDSS) DR5 in the redshift range of $0.05 < z < 0.10$. After matching sample galaxies in clusters with Galaxy Evolution Explorer (GALEX) GR5, we have classified the morphologies of ETGs by UV-optical colour distributions and investigated them in terms of the ranks in magnitude in a cluster and in clustocentric distance. It has recently been suggested theoretically that brightest cluster galaxies (BCGs) show a strong UV upturn than non-BCGs, but we find that the difference between them is not significant. Moreover, to our surprise, it appears that density (environment) does not play any significant role to the UV properties. consequent of internal galaxy processes rather than that of environmental processes.

[7GC-28] Exploit the Unexploited : the Potential of the PAH 3.3mm emission feature as a star formation rate proxy and beyond

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Polycyclic aromatic hydrocarbon (PAH) features have emerged as one of the most important infrared (IR) features since these PAH features dominate mid-IR spectra of galaxies and are ubiquitous within galactic and extragalactic objects. These PAH features have the potentials to become reliable star formation rate (SFR) proxies and diagnostics of physical conditions of interstellar medium, such as ionization states of dust grains and grain sizes. While constructing an unbiased library of 44 sample galaxies selected from 5MUSES sample, AKARI mJY Unbiased Survey of Extragalactic Sources in 5MUSES (AMUSES) intends to measure and to calibrate the PAH 3.3 mm emission feature which has not been studied extensively due to its weak strength and dearth of capable instruments. Out of 20 target galaxies, we detected the 3.3mm feature from eight galaxies and measured their line strengths, line widths and line ratios with other PAH emission features. Sample galaxies whose spectral energy distributions (SEDs) are classified as starburst-type have clearly stronger 3.3mm emission features than ones with AGN-type SEDs. We also found that there is a correlation between the PAH 3.3mm luminosity and total IR luminosity within our sample galaxies, albeit a large scatter. We further discuss implications of our results.