

Abstract Submitted
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Probing Stellar Populations in the Virgo and Fornax Clusters with Infrared Surface Brightness Fluctuations ZACHARY GIBSON, JOSEPH JENSEN, Utah Valley University — We extracted surface brightness fluctuation magnitudes and colors from Hubble Space Telescope images for 16 elliptical galaxies as a function of radius. Our plots show the internal gradients in fluctuation magnitude and color for each galaxy. The near-IR SBF measurements help break the age-metallicity degeneracy present at optical wavelengths and reveal the presence of young stars in galaxies with known distances. We compare our SBF measurements to four new stellar population models. Since SBFs are sensitive to the brightest stars in a galaxy, SBFs provide a powerful way to test the models. Most of the galaxies follow lines of constant metallicity, with SBF and color gradients arising from age variations. Stellar population models lead to the conclusion that most of the dwarf galaxies have younger populations near their centers and nearly constant metallicities. While the models agree with these trends they disagree quite broadly on the quantitative side. These observations lead to the conclusion that bluer dwarf galaxies are not well-suited for precise SBF distance measurements because population variations between galaxies are large. More work is needed to determine if the bluest low-luminosity dwarf ellipticals are young or not.

Phil Matheson
Utah Valley University

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