

Abstract Submitted
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Old Star Clusters in Young Galaxies¹ RACHEL PAULINE², University of Michigan - Dearborn, ZION THOMAS³, Case Western Reserve University, RUPALI CHANDAR⁴, University of Toledo, WILLIAM BERSCHBACK⁵, Ottawa Hills High School, PHANGS SURVEY COLLABORATION⁶ — The PHANGS-HST project is studying thirty-eight massive spiral galaxies in the nearby universe, using data taken by the Hubble Space Telescope. Each galaxy has been imaged in 5 filters, from the near ultraviolet through the red portion of the visible window. The collaboration has developed methods to select stellar clusters based on their appearance, to discriminate them from the numerous individual stars, background galaxies, and other non-cluster objects. These clusters span a wide range of ages, from clusters which formed quite recently (in the last million years) through the oldest known objects in the universe, ancient globular clusters with ages around 12 billion years. We are using these cluster catalogs to select and study the globular cluster populations using automated cuts in colors followed by visual inspection to identify remaining contaminants, such as spherical background galaxies and reddened young clusters. Our globular cluster catalogs are the most comprehensive and homogeneous ones created in spiral galaxies to date. They will provide important insight into the properties of ancient clusters, such as their color (metallicity) and luminosity (mass) distributions, and how these correlate with properties of their parent spiral galaxies.

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²Co-author for the project. Project began through the Summer 2021 REU program at the University of Toledo.

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⁶PHANGS collaboration is being considered a collaboration of Michigan State University, University of Michigan - Dearborn, and University of Toledo. I am unsure how many members of the collaboration are involved

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