

The Oldest Star Clusters in the Small Magellanic Cloud

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Abstract. We present our analysis of archival *Hubble Space Telescope* Wide Field Planetary Camera 2 (WFPC2) observations in F450W ($\sim B$) and F555W ($\sim V$) of the intermediate-age populous star clusters NGC 121, NGC 339, NGC 361, NGC 416, and Kron 3 in the Small Magellanic Cloud. We use published photometry of two other SMC populous star clusters, Lindsay 1 and Lindsay 113, to investigate the age sequence of these seven star clusters in order to improve our understanding of the formation chronology of the SMC. We analyzed the V vs $B-V$ and M_V vs $(B-V)_0$ color-magnitude diagrams of these populous Small Magellanic Cloud star clusters using a variety of techniques and determined their ages, metallicities, and reddenings. These new data enable us to improve the age-metallicity relation of star clusters in the Small Magellanic Cloud. In particular, we find that a closed-box continuous star-formation model does not reproduce the age-metallicity relation adequately. However, a theoretical model punctuated by bursts of star formation is in better agreement with the observational data. The full details of this analysis are reported in Mighell, Sarajedini, & French (1998, AJ, 116, 2395).

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