Star Formation in the Magellanic Clouds with Herschel Key Program HERITAGE: The Discovery of the Clouds’ Youngest YSOs
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ABSTRACT
The Spitzer SAGE (Surveying the Agents of Galaxy Evolution) surveys greatly increased the number of known massive and intermediate-mass YSOs in the Magellanic Clouds (LMC, Whitney et al. 2008; Gruendl & Chu 2009; SMC, Sewilo et al. 2011), but because they were conducted at mid-IR wavelengths, they missed the youngest, most deeply embedded sources, the so-called “Class 0” YSOs. HERITAGE (Herschel Inventory of the Agents of Galaxy Evolution) is a successor of the SAGE-LMC, SAGE-SMC, and SAGE-Spec Spitzer Legacy programs, and has been used to search for these highly embedded sources. HERITAGE, a Herschel Key Project that uses 237.7 hours of time, obtained SPIRE/PACS parallel imaging (110, 170, 250, 350, and 500 μm) of the Magellanic Clouds. We have examined the HERITAGE images in order to identify highly embedded YSOs and fully account for the galaxies’ YSO population. Here we present the early results of the search.

FITTS OF SEDS TO RADIATION TRANSFER MODELS

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The candidate YSOs are distributed throughout the galaxy, but are preferentially located in sites previously traced by CO (MAGMA survey: Wong et al. 2011). Note, however, that not all molecular clouds, particularly those of low surface brightness, are rich with YSOs.

REFERENCES: