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SUBMISSION ROLE: Research Contributed

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TITLE: CELESTA: A Catalog of Earth-Like Exoplanet Survey Targets

ABSTRACT BODY:

Abstract (2,250 Maximum Characters): Locating planets in circumstellar Habitable Zones is a priority for many exoplanet surveys. Space-based and ground-based surveys alike require robust toolsets to aid in target selection and mission planning. We present the Catalog of Earth-Like Exoplanet Survey Targets (CELESTA), a database of Habitable Zones around 36,000 nearby stars. We calculated stellar parameters, including effective temperatures, masses, and radii, and we quantified the orbital distances and periods corresponding to the circumstellar Habitable Zones. We gauged the accuracy of our predictions by contrasting CELESTA's computed parameters to observational data. We ascertain a potential return on investment by computing the number of Habitable Zones probed for a given survey duration. A versatile framework for extending the functionality of CELESTA into the future enables ongoing comparisons to new observations, and recalculations when updates to Habitable Zone models, stellar temperatures, or parallax data become available. We expect to upgrade and expand CELESTA using data from the Gaia mission as the data becomes available.

Contributing Teams:

PRESENTATION TYPE: Research Contributed

CURRENT * SESSION TYPE: Contributed Poster Session

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