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# Scientific Opportunities for a Starshade Working with a 2.4 m Telescope at L2

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## Abstract

A starshade paired with an existing 2.4 m telescope offers scientific opportunities for high-contrast direct exoplanet observations that are complementary to those offered by internal coronagraphs. Most excitingly, since the inner working angle is decoupled from the telescope aperture, a starshade can provide access to the habitable zones of some nearby stars even with relatively small telescopes. This capability may allow direct imaging and low-resolution spectroscopy of Earth-analog exoplanets. Here, I will summarize a potential starshade design for a 2.4 m telescope, briefly discuss the modest changes to the WFIRST mission that would be needed for it to be "starshade-ready", and give preliminary estimates of the scientific capabilities. This possible enhancement to the WFIRST mission would provide valuable technology development for someday flying a starshade with a larger telescope aimed at characterization of large numbers of habitable exoplanets.

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