

New World Imager

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In this proposal we outline a mission architecture that uses existing technology to properly explore planetary systems around other stars. We introduce the concept of a starshade, which is a robust approach to separating weak exoplanet light from its close and overpowering parent star. We show how this technology can be used to find planets using visible light, detect spectral biomarkers, and then be extended to true planet imaging. We propose a Phase I study to determine the technical requirements of this “New Worlds Imager”. We expect to show that there are realistic (indeed affordable) solutions to all the technical challenges. Since this approach is “outside the box” of NASA’s current approaches to exo-planet science we request support of the NASA Institute for Advanced Concepts so we may properly define a technical path to launch. This is the only viable approach to true planet imaging known to the proposers and the only known approach to actually mapping nearby Earth-like planets.

