Coronagraph Design Survey for Future Exoplanet Direct Imaging Space Missions

- Summary -

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Survey Goals

The What

1. **Survey and document viable coronagraph architectures across the world to inform the Habitable Worlds Observatory about their capabilities and technology readiness.**

2. **Facilitate future evaluation and comparison of the coronagraph architectures to advance based on a set of technical and programmatic assessment criteria.**

3. **Identify novel coronagraph technologies that could mature rapidly for which NASA's technology development investments could be efficiently leveraged.**

Intended Application

- Provide to GOMAP, START, ExEP management, and anonymous proposal selection panels, a peer-reviewed assessment of coronagraph technologies that can be used to evaluate risk and performance for a Habitable Worlds Observatory

Survey Contents

The What

Background

- Role of coronagraph in the Habitable Worlds Observatory mission and how it affects mission yields and performance

Suggested Wants / Opportunities / Risks / Assumptions

- Establish what are desirements (Wants), Opportunities, Risks, and assumptions the survey will assess for different coronagraph designs.

Survey

- Coronagraph designs and their current TRL
- Quantifying value-added of each technology: potential to increase yield, relax mission/telescope requirements, and reduce cost plus risk.
- Assessing feasibility and schedule of developing each design to TRL 5
- Fact finding, data gathering, analyses when needed, no down-selecting

Results (deliverable Final Report)

- Documented list of coronagraph designs used to compare and inform future down-select options
- List will include the opportunities enabled by promising but less mature options, along with their risks and challenges.