



Exoplanet Technology Development Program

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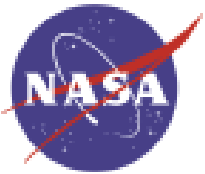
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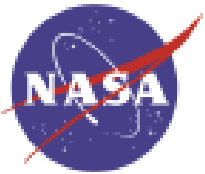
Exoplanet Technology Development

- Upcoming Exoplanet Exploration Technology Development proposal opportunities.
 - APRA 2012. ROSES 2012, Appendix D.3. Fundamental technology research (TRL 1-3)
 - SAT/TDEM 2011. ROSES 2012, Appendix D.8. Mid-TRL technology maturation (TRL 3-6)
 - NOIs due 25 January 2013; Proposals due 22 March 2013.
- Focus of SAT/TDEM program guided by Astro 2010 recommendations for “New Worlds Technology Development” recommendations (1) to advance technologies leading to a future flagship direct detection mission capable of imaging and spectroscopy of habitable, rocky exoplanets, and (2) create opportunities for mid-range TRL development. Currently, the solicitation encompasses:
 - Starlight suppression technologies.
 - Wavefront sensing and control
 - System performance assessment
- Annual appendix to the Exoplanet Exploration Program Technology Plan to be issued December 2012.



Future Mission Planning

- Addressing the opportunities presented by the NRO telescopes has delayed initiation of planned reduced-scale exoplanet mission concept studies.
- Key questions to be addressed in studies:
 - What are the compelling questions in exoplanet science that can be addressed through missions with a total cost <\$1B?
 - What are the technological challenges associated with implementing missions in this class?
 - What contributions could exoplanet missions in this class make to broader questions in astrophysics?
- Technological challenges identified could provide basis for revising scope of SAT/TDEM solicitation.
- Exoplanet Science and Technology Definition Teams (STDTs) to address these questions will likely be organized on the basis of measurement architectures
 - Internal coronagraphs
 - External occulter
 - Others? TBD.



Future Mission Planning

Currently anticipated timeline:

- Call for nominations to participate in Exoplanet STDTs issued via a “Dear Colleague” letter in early January 2013.
 - Plans/opportunity to be discussed at ExoPAG-7, 221st AAS Meeting
- Nominations for participation in STDTs due mid-February 2013.
- Appointments announced by mid-March 2013
- STDTs begin work April 2013.
- 18-24 month period of performance for STDTs.
- STDT reports submitted to NASA HQ/Exoplanet Exploration Program in early to mid-FY15.