

# NASA seeks proposals to develop capabilities for deep space exploration, journey to Mars

October 29 2014, by Stephanie Schierholz

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NASA is soliciting proposals for concept studies or technology development projects that will be necessary to enable human pioneers to go to deep space destinations such as an asteroid and Mars.

Through a Broad Area Announcement (BAA) NASA released today, the agency seeks to use public-private partnerships to share funding to develop advanced propulsion, habitation and small satellite capabilities that will enable the pioneering of space. Public-private partnerships of this type help NASA stimulate the U.S. space industry while working to expand the frontiers of knowledge, capabilities and opportunities in space.

NASA intends to engage partners to help develop and build a set of sustainable, evolvable, multi-use space capabilities that will enable human pioneers to go to [deep space](#) destinations. Developing capabilities in three key areas – advanced propulsion, habitation, and small satellites deployed from the Space Launch System – is critical to enabling the next step for human spaceflight. This work will use the proving ground of space around the moon to develop technologies and advance knowledge to expand human exploration into the solar system.

State-of-the-art solar electric propulsion technology currently employed by NASA generates less than five kilowatts. The Asteroid Redirect Mission (ARM) BAA selected proposals for concepts developing systems in the 40-kilowatt range. NASA now is seeking to advance the technology to 50- to 300-kilowatt systems to meet the needs of a variety

of mission concepts.

Orion is the first component of human exploration beyond low-Earth orbit and will be capable of sustaining a crew of four for 21 days in deep space and returning them safely to Earth. NASA seeks proposals for concept studies, technology investigation, and concepts of operations to enable extended space habitation as the next foundational cornerstone of a future deep space transit capability.

The studies will help define the architecture and subsystems of a modular habitation capability, which will be used to augment planned missions around the moon as well as to provide initial operations and testing in the proving ground for future systems in support of human exploration in deep space. Studies can address transportation, habitation, operations or environmental capabilities of a habitation system.

This BAA also provides for the selection of proposals for the development and delivery of small satellite missions that address strategic knowledge gaps for future [human exploration](#). Selected small satellites, known as cubesats, will fly as secondary payload missions on Exploration Mission-1. The mission provides a rare opportunity to boost these cubesats to deep space and enable science, technology demonstration, exploration or commercial applications in that environment.

Through awards from this BAA, NASA's goal is to accomplish both near-term missions and sustained investments in technologies and capabilities to address the challenges of [deep space exploration](#). Because capabilities and technologies developed through these awards will have significant potential commercial applications, NASA expects partners to contribute significant resources.

**More information:** More information on the BAA can be found at:

[prod.nais.nasa.gov/cgi-bin/eps/...sis.cgi?acqid=163051](http://prod.nais.nasa.gov/cgi-bin/eps/...sis.cgi?acqid=163051)

For additional information on NASA's Next Space Technologies for Exploration Partnerships BAA, visit: [www.nasa.gov/nextstep](http://www.nasa.gov/nextstep)

Provided by NASA

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