

**Information from:**

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**NASA Exploration Campaign Overview** (It is a link on the Moon to Mars website that Dale sent out)

<https://www.nasa.gov/feature/nasas-exploration-campaign-back-to-the-moon-and-on-to-mars>

**NextSTEP E: Human Landing System Studies, Risk Reduction, Development, and Demonstration Broad Agency Announcement**

<https://www.nasa.gov/nextstep/humanlander>

Through multi-phased lunar exploration partnerships, NASA is asking American companies to study the best approach to [landing astronauts on the Moon](#) and start the development as quickly as possible with current and future anticipated technologies. NASA will fund industry-led development and flight demonstrations of lunar landers built for astronauts by supporting critical studies and risk reduction activities to advance technology requirements, tailor applicable standards, develop technology, and perform initial demonstrations by landing on the Moon. This solicitation is open to non-Government U.S. institutions (companies, universities, nonprofit organizations). Proposals: Due March 25, 2019, 5:00 pm Eastern Time. Offerors may submit proposals for a Phase A study and risk reduction effort for any or all of the following HLS Elements: Descent, Transfer Vehicle, and/or Refueling. Offerors may submit proposals for one or more Elements, with a separate proposal submitted for each Element being proposed. Offerors may only submit one proposal per Element.

Nine U.S. companies now are eligible to bid on NASA delivery services to the lunar surface through **Commercial Lunar Payload Services (CLPS) contracts**, as one of the first steps toward long-term scientific study and human exploration of the Moon and eventually Mars.

The selected companies are:

- Astrobotic Technology, Inc.: Pittsburgh
- Deep Space Systems: Littleton, Colorado
- Draper: Cambridge, Massachusetts
- Firefly Aerospace, Inc.: Cedar Park, Texas
- Intuitive Machines, LLC: Houston
- Lockheed Martin Space: Littleton, Colorado
- Masten Space Systems, Inc.: Mojave, California
- Moon Express: Cape Canaveral, Florida
- Orbit Beyond: Edison, New Jersey

Here is also a link to the **2020 eXploration (X-Hab) Systems and Habitation Challenge**.

<https://www.spacegrant.org/f/XHAB%20Challenge%20Solicitation%20-%202020.pdf>

The topics this year include:

- Life Support Systems Project Title: High Efficiency Heat Exchanger to Achieve Low-Power CO2 Deposition
- Solar System Exploration Research Virtual Institute (SSERVI) Project Title: Integration of Field Results into Virtual and Augmented Reality Environments

- Life Support Systems Project Title: Microgravity Gas-Liquid Separator for the Liquid Amine CO<sub>2</sub> Removal System
- Space Life and Physical Science Research and Applications Project Title: Volume Optimization for Food Product During Deep Space Exploration
- In-Space Manufacturing Project Title: Development of a Design Database for the In-Space Manufacturing Project
- NASA Platform for Autonomous Systems Project Title: User Interfaces for Gateway Autonomous Operations