



# FLIGHT OPPORTUNITIES



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## TECHLEAP PRIZE UPDATES

### Apply for the Robotically Manipulated Payload Challenge

Register by July 29 | Applications due by Aug. 12

NASA's latest **TechLeap Prize** — the **Robotically Manipulated Payload Challenge** — is underway. Register by July 29 to submit your idea for a solution that advances persistent infrastructure for in-space servicing, assembly, and manufacturing (ISAM).

#### Propose payloads that can:

- Interact with
- Be manipulated by or
- Be reconfigured by a robotic arm in low Earth orbit

Potential applications could include robotic inspection, structural assembly, sensor deployment, material processing, or modular systems that can be swapped and upgraded — and more.



Up to three winners will be announced this September and will win up to \$500,000 each to develop flight-ready payloads. NASA intends to offer final winners an opportunity for a flight test at no additional cost aboard an orbital spacecraft that will rendezvous with the **Fly Foundational Robots** (FFR) spacecraft. (See below for information on another challenge related to the FFR mission, inviting researchers to apply to run real experiments on a robotic arm in space.)

### On-demand informational webinars:

- **Robotically Manipulated Payload Challenge: Learn about the Latest TechLeap Prize:** Hosted by Flight Opportunities
- **NASA TechLeap: Robotically Manipulated Payload Challenge Informational Webinar:** Hosted by the TechLeap Prize team

[Learn about this challenge](#)

[Send questions to hello@nasatechleap.org](mailto:hello@nasatechleap.org)

## TECHRISE STUDENT CHALLENGE NEWS

### Student Teams' Payloads Ready to Fly!

The payloads prepared by 60 winning teams in NASA's fifth TechRise Student Challenge are packed up and ready to take flight! Twenty-five payloads are slated to fly aboard an upcoming high-altitude balloon flight operated by World View Enterprises of Tucson, Arizona. The remaining 35 payloads will fly on a Suborbital Spaceship operated by Virgin Galactic of Tustin, California.

[Read about the experiments](#) prepared by more than 370 students from 52 U.S. states and territories.

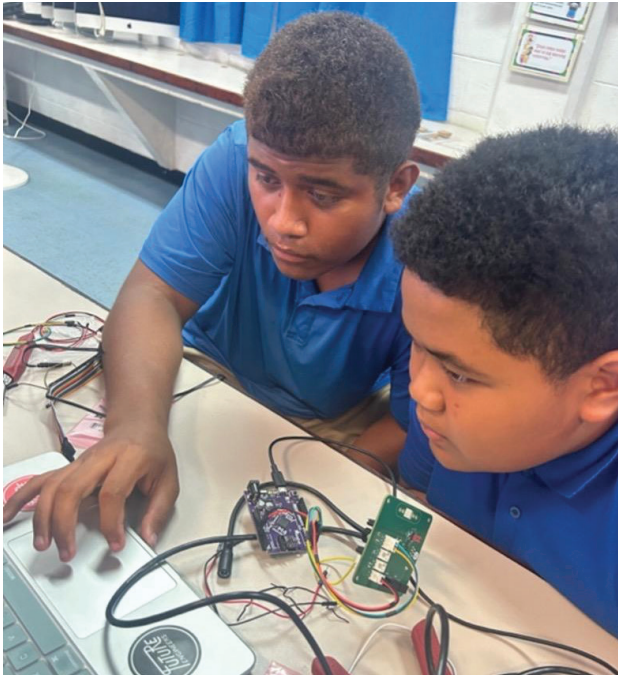
NASA expects to open the next TechRise challenge in Sept. 2026; [pre-register here](#) to be notified when it opens.

This nationwide contest engages 6-12 graders in technology, science, and space exploration, with each team receiving:

- \$1,500 to build their experiment
- A flight box in which to house it
- Technical support
- An assigned spot for their experiment on a Flight Opportunities-supported flight test



*The winning team at Dickinson High School in Dickinson, ND unpack their NASA TechRise starter kit, which includes a flight box in which to build their experiment. Credits: Sarah Tristem*



The winning team at Marist Saint Francis Elementary School in Pago Pago, AS, test components of their experiment. Credits: Susan Tupuola



Winning team members from Mescalero Apache School in Mescalero, NM, work on building plans for their experiment. Credits: Nate Raynor

[Read about the winning teams and their experiments](#)

## COMMUNITY OF PRACTICE WEBINAR

Our next Community of Practice webinar is scheduled for Wednesday, Aug. 5!  
Watch for details in the next issue of this newsletter and on our website!

## ON-DEMAND WEBINARS

### Watch our past webinars on demand!

Check out our recorded May webinar on flight-tested thermal protection systems now enabling commercial re-entry for routine orbital return. Listen to experts from NASA's Ames Research Center and Varda Space Industries discuss how thermal protection like C-PICA (Conformal Phenolic Impregnated Carbon Ablator) and ADEPT (Adaptable Deployable Entry and Placement Technology) were advanced through the Flight Opportunities program. Discover how NASA-industry partnerships are advancing the growing space economy.

[Watch the Heat Shield Flight Testing webinar](#)

[Watch our on-demand webinars](#)



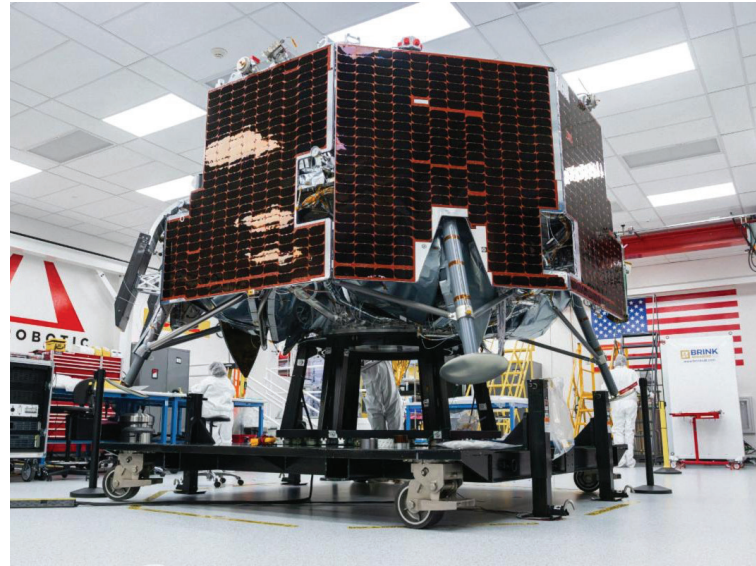
The Varda Space Industries W-5 capsule returned to Earth in Koonibba in South Australia, on Jan. 29, 2026, with the protection of a heat shield made of C-PICA, a cutting-edge material licensed from NASA and manufactured by Varda. Credits: Varda Space Industries

## Hazard Detection Lidar System Goes to the Moon

Selecting landing sites on lunar surfaces is a critical component for NASA's Commercial Lunar Payload Services (CLPS) missions. A new technology tested through NASA's Flight Opportunities program is set to go to the Moon and help provide a safe and precise landing.

With Flight Opportunities support, Astrobotic tested an engineering model of its advanced Hazard Detection (HD) Lidar sensor in Nov. 2024, confirming its ability to select a safe landing site by detecting and avoiding slopes, rough areas, and potential hazards.

The technology scans and analyzes the terrain in real-time, enabling landers to autonomously identify and select the safest landing sites. Astrobotic will use its HD Lidar system when its Griffin-1 lunar lander (pictured) delivers science and technology payloads to the Moon during its CLPS delivery to the lunar south pole.



NASA representatives, government officials, and industry partners gathered at Astrobotic Headquarters in Pittsburgh on June 15, 2026, to see the **unveiling of the Griffin-1 lunar lander**. Credits: Astrobotic

[Read about this Hazard Detection Lidar transition](#)

## OPEN CHALLENGE

### Fly Foundational Robots (FFR) Space Roboticist Challenge

**NASA is selecting U.S. researchers to run real experiments on a robotic arm in space.**

The **FFR mission**, launching in late 2027, is putting a 7-degree-of-freedom robotic arm into low Earth orbit. NASA is opening access to that arm to a select group of U.S. researchers — principal investigators, post-doctoral researchers, professors, and highly qualified graduate students — who have a compelling experiment and the capability to execute it.

Selected participants will have the opportunity to run pre-approved experiments on an active robotic system operating in microgravity.



[Learn more about this challenge](#)

## 2026 State-of-the-Art Small Spacecraft Technology Report Now Available

The NASA State-of-the-Art Small Spacecraft Technology report is updated annually to capture new information on publicly available small spacecraft systems from NASA and other sources.

[Download the 2026 report](#)



## UPCOMING EVENTS

### Attending any of these upcoming meetings? Let us know!

These events may be of interest to the flight test community. NASA's Flight Opportunities personnel plan on attending these events.

- [Small Satellite Conference](#), Salt Lake City, UT, Aug. 23-26, 2026
- [NASA's HELIOTECH Heliophysics Technology Symposium](#), with a focus on Orbital Flight, Johns Hopkins Applied Physics Laboratory, Laurel Maryland, Aug. 31-Sept. 4, 2026
- [2026 SPRSA \(Small Payload Ride Share Association\) Symposium](#), NASA's Ames Research Center, Silicon Valley, CA, Sept. 29-Oct. 1

### NASA Flight Opportunities Program

Flight Opportunities is part of NASA's Research and Technology Mission Directorate.

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