



FLIGHT OPPORTUNITIES



ISSUE 81 — APRIL 2025

Recent Flights | Lunar Gravity Community of Practice Webinar | DMEN Technology Transition | Phase I NIAC | SBIR Ignite | Upcoming Events

RECENT FLIGHTS

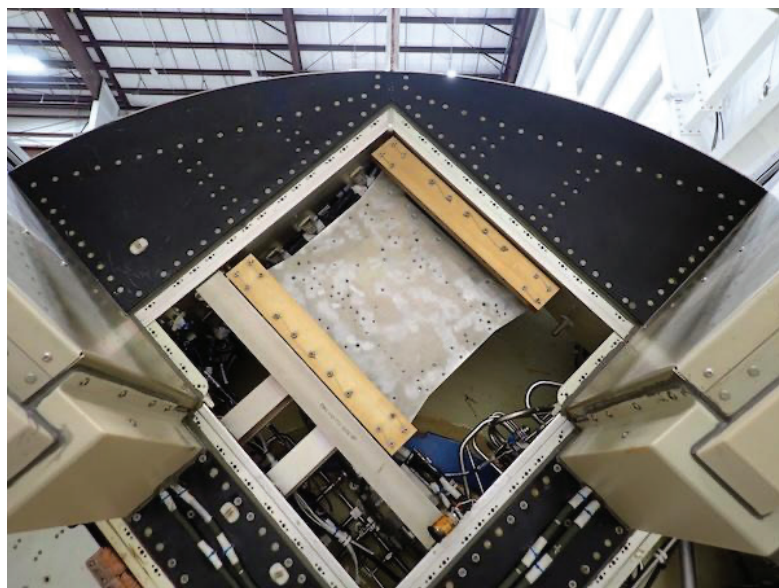
Enabling External-Environment Payloads on Suborbital Reusable Launch Vehicles

Date: April 14, 2025

Organization: Johns Hopkins University Applied Physics Laboratory

Vehicle: Blue Origin's New Shepard reusable suborbital rocket system

[Read about JANUS](#)



Mounted on the top deck of the Blue Origin New Shepard propulsion module for testing, JANUS 3.0 provides an accessible onboard facility for conducting in-situ observations and sampling in suborbital space. Credit: Blue Origin

Balloon-Based Test of a Multi-Instrument Wildland Fire Observation Enabling System

Date: April 23, 2025

Organizations:

- Harvard University
- NASA's Ames Research Center
- Xiomias

Vehicle: Aerostar International high-altitude balloon

[Read about the Harvard technology](#)

[Read about the NASA Ames's NephEx technology](#)

[Read about the Xiomias technology](#)

Small fires in firepits and barbecue grills burn to provide testing subjects for the wildland fire observation system, which generates imagery to facilitate data-driven forecasting of smoke transport to inform response and management efforts and improve scientific understanding. Credits: NASA



COMMUNITY OF PRACTICE WEBINAR

May Webinar: New Capability Allows Payloads to Experience Lunar Gravity Aboard Suborbital Rocket

Wednesday, May 7, 2025 • 10–11 a.m. PST

Join us on May 7 for a session that will cover the Feb. 4 lunar gravity flight aboard Blue Origin's New Shepard reusable suborbital rocket system. The flight provided approximately two minutes of **simulated lunar gravity**, allowing researchers to test and de-risk their innovations. Flight Opportunities supported vehicle capability enhancements to enable the simulation of lunar gravity through development funding and early purchase of payload space as part of its strategic investment in the U.S. spaceflight industry.

In this session moderated by Flight Opportunities personnel, one of NASA's Space Technology Mission Directorate principal technologists will provide insight on how advancing technology readiness levels through flight tests feeds into technology roadmaps and infusion into farther-term mission architectures. A selection of principal investigators and a representative from Blue Origin will discuss the flight test and explore lessons learned.



The Blue Origin New Shepard reusable suborbital rocket prepares for launch for the February 4 lunar gravity flight. Credit: Blue Origin

**LEARN ABOUT OUR MAY 7
WEBINAR**

DMEN (Draper Multi-Environment Navigator): Landing and Working on the Moon

DMEN is a vision-aided system designed to help spacecraft land with greater precision in challenging space environments, like the Moon where GPS is not available. Using vision-based terrain-relative navigation technology, DMEN tracks features on the surface, detects hazards, and delivers precision location information during a spacecraft's descent.

DMEN has been matured through a series of flight tests supported by NASA's Flight Opportunities program, which helped it along the pathway toward:

- Landing on the Moon as part of NASA's CLPS (**Commercial Lunar Payload Services**) initiative under Artemis
- Helping astronauts while they work there with DMEN technology designed for **moonwalks**



*Astrobotic flight landing with the Draper DMEN system.
Credit: Astrobotic Technology, Inc.*

[Follow DMEN's journey and transition stories](#)

Share your transition story



*Bill Doig (left) and Brianna Warrenfeltz (right) operating the Teledyne EDR fuel cell water separator experiment during a reduced-gravity parabola on the first day of testing.
Credit: Zero Gravity Corporation*

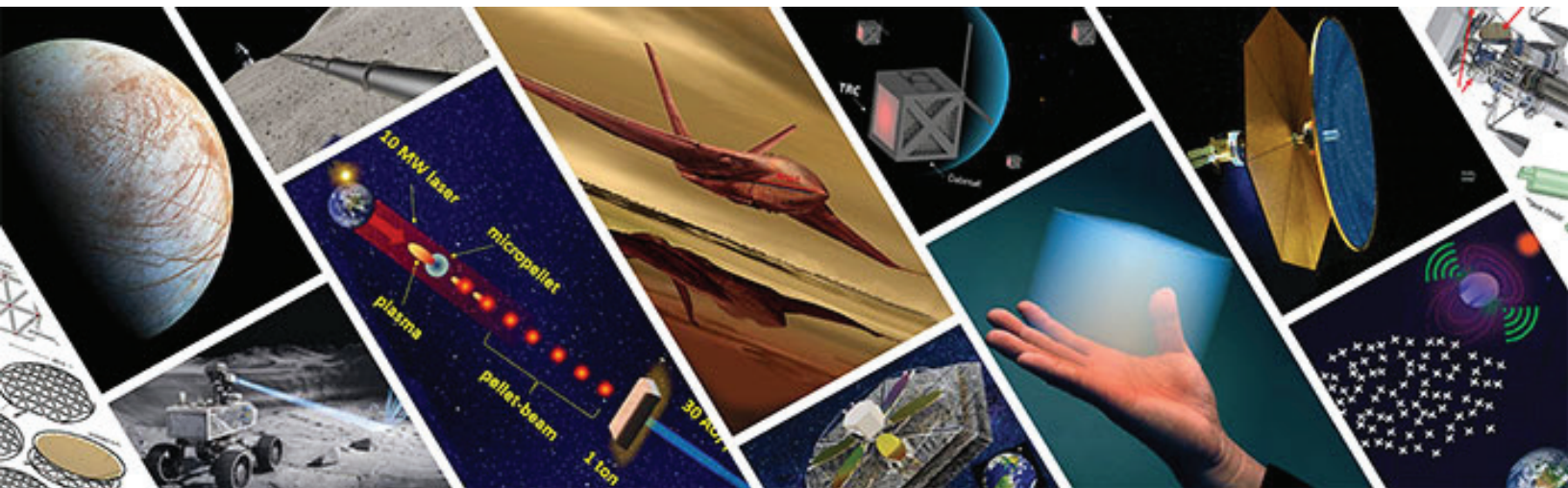
Have you transitioned technology you tested with Flight Opportunities to a NASA mission or commercial use?

Let us know!

[Share your story!](#)

[Visit our Technology Transitions webpage](#)

NASA Innovative Advanced Concepts (NIAC) 2026 Phase I Call for Proposals



Do you have an innovative concept that will change the way NASA does business? Let NASA know the impact your idea could have.

The NIAC program supports visionary research ideas through multiple progressive phases of study. Phase I studies are nine-month efforts to explore the overall viability of your ideas and to advance the technology readiness level. Eligible recipients of Phase I awards can propose for a follow-on Phase II study.

Watch for the release of NIAC solicitations on [NSPIRES](#) and follow all proposal preparation instructions.

2026 Phase I Solicitation (planned)

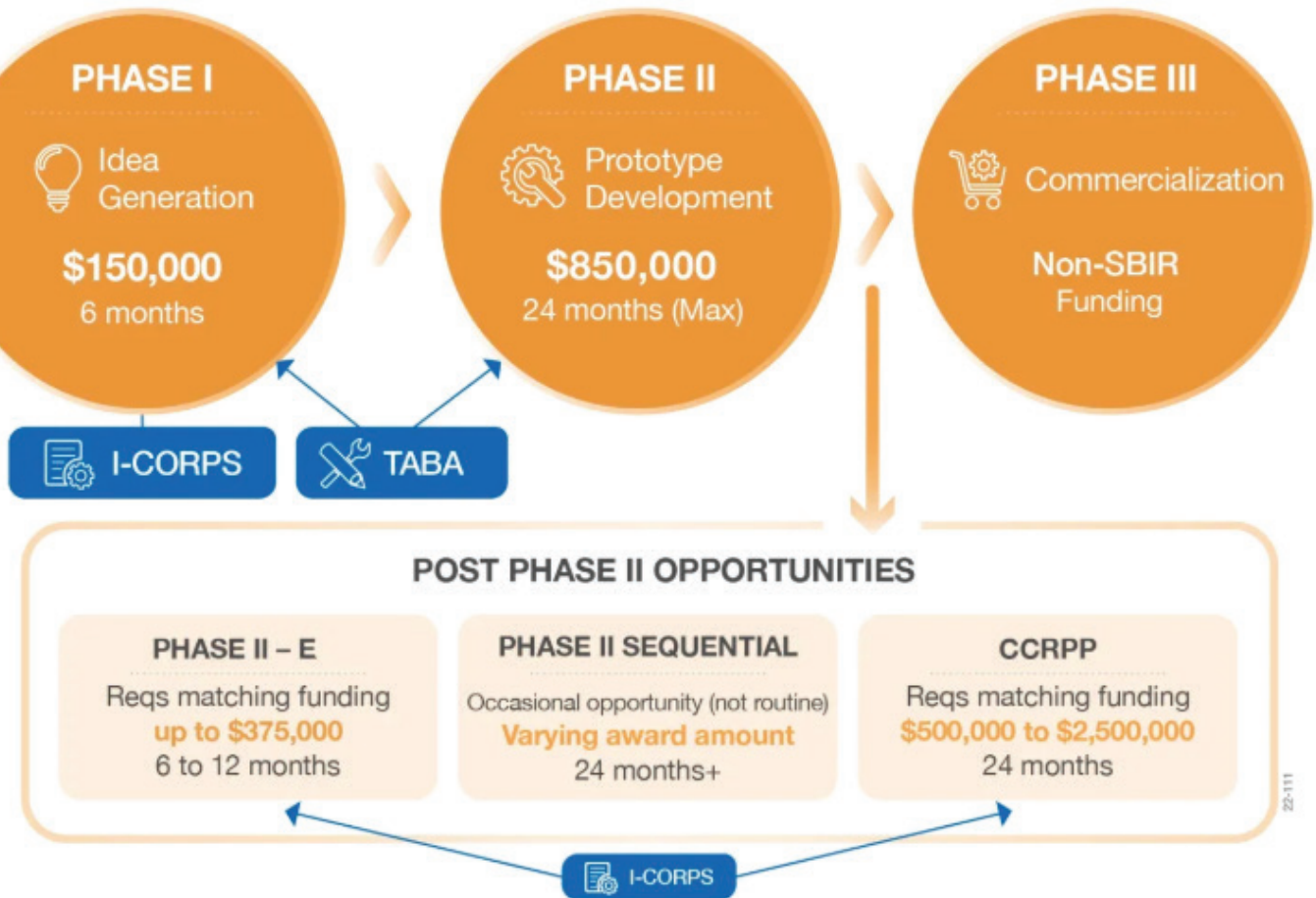
- Release: Early June 2025
- Proposers' Virtual Forum: Mid-June 2025
- Selections Announced: Early January 2026

Learn more about the three flight-tested payloads

NASA SBIR Ignite: Funding Early-Stage Technology for Commercial Growth

Solicitation Opens This Summer

NASA SBIR IGNITE PHASES



SBIR Ignite is open to all U.S. small businesses. Entrepreneurs looking to shape the aerospace market are encouraged to apply — especially product-driven and commercially focused companies that do not consider NASA their primary revenue stream but want to leverage the NASA community and funding as a stepping stone for commercial success. SBIR Ignite follows the same three-phase approach as the mainline SBIR/STTR program, but with a more focused topic scope.

The 2025 NASA SBIR Ignite Phase I Solicitation is scheduled to open in summer 2025.

[Learn more about the two flight-tested payloads](#)

ON-DEMAND WEBINAR: How to Engage with NASA's Flight Opportunities Program

“Flight Testing Technologies, Instruments, and Experiments with NASA’s Flight Opportunities Program”

This webinar recording offers an overview of the Flight Opportunities program and explains how researchers within and outside of NASA can engage with the program’s flight testing capabilities. Learn how Flight Opportunities serves NASA by offering [access to suborbital and hosted orbital flight tests](#) — via IDIQ (Indefinite Delivery/Indefinite Quantity) contracts and the strategic use of funding mechanisms — as well as subject matter expertise on flight tests with a range of commercial providers and a variety of flight platforms.



NASA'S FLIGHT OPPORTUNITIES PROGRAM



[Watch the recorded webinar](#)

UPCOMING EVENTS

Scientific Ballooning Technology Workshop

MAY 14–16 • MINNEAPOLIS, MINNESOTA

This workshop will include sessions on gondola design, experiment-wide data acquisition and control systems, attitude control systems, on-board control software (both for the attitude control and for the entire experiment), on-board computer hardware, power systems, telemetry systems, and thermal design and control. Want to connect with Flight Opportunities while you’re there? [Send us an email](#).

Lunar Surface Innovation Consortium (LSIC) Spring Meeting

MAY 20–22, 2025 • LAUREL, MARYLAND

Join Flight Opportunities team members at LSIC’s 2025 spring meeting. This year’s focus is on technology payloads headed to the Moon. The agenda includes invited speakers, panels, focus area discussions, lightning talks, and posters. A technology “Show and Tell” from the community will provide an opportunity to learn more about technologies that are out there to drive partnerships and establish networks to support a sustainable existence on the Moon. [Let us know if you’re attending!](#)

- See **Jason Schuler**, PI for the ISRU Pilot Excavator (IPEX) Bucket Drum Flow technology, on the Access to Space panel on Tuesday, May 20 at 2 pm
- **Check out Flight Opportunities’ poster session**, “From Flight Test to the Moon: Demonstrating Lunar Technologies, Instruments, and Experiments with NASA’s Flight Opportunities Program,” on May 20 at ~4:50 pm (following the daily sessions) Learn how lunar technologies can benefit from flight testing and hear about how technologies tested through the program have been infused into space missions, including the NASA Commercial Lunar Payload Services (CLPS) initiative.

NASA Flight Opportunities Program

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

Visit nasa.gov/stmd-flight-opportunities

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