Flight Opportunities

Testing and maturing space technologies with commercial providers

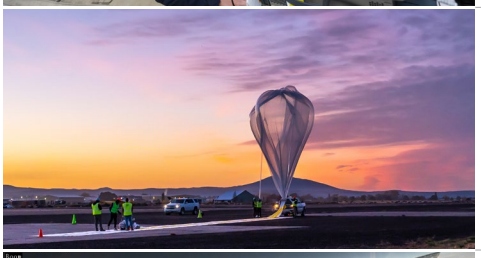
To change the pace of space, Flight Opportunities rapidly demonstrates technologies for space exploration, discovery, and the expansion of space commerce through suborbital and hosted orbital testing with industry flight providers. Speed, flexibility, risk-tolerance, and access to a wide array of commercial capabilities provide the opportunity to efficiently address technology shortfalls and emerging needs for space exploration missions and commercial applications.

Vertical Takeoff Vertical Landing Testbeds

These vehicles provide a controlled descent and landing from various altitudes, often specializing in the testing of entry, descent, and landing technologies.

Parabolic Flights

These airplanes achieve brief periods of reduced gravity through a series of maneuvers called parabolas. These flight profiles can be used for testing technologies that need to operate in zero or reduced gravity.



High-Altitude Balloons

These systems can reach altitudes of up to approximately 100,000 feet (or 30 kilometers) and typically sustain flights of hours, days, or even weeks at a time, offering exposure to relevant pressure and thermal environments as well as external views of the Earth below. High-altitude drop of payloads is also an option.

Suborbital Reusable Launch Vehicles

These vehicles reach high altitudes — nominally nearly 50 miles (or 80 kilometers) — providing 2 or more minutes of continuous reduced gravity and/or exposure to the space environment.

Hosted Orbital Platforms

These platforms include small spacecraft, satellites, launch vehicle stages, or orbital spacecraft that perform at least one orbit around the Earth. Platforms provide power and communications to their hosted payloads.

Getting to Know Flight Opportunities

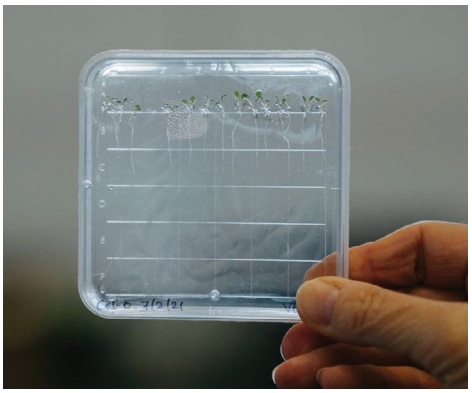
The Flight Opportunities program matures capabilities needed for space exploration missions and commercial applications while strategically investing in the growth of the U.S. commercial space industry. Flight tests are an extension of ground-based laboratories, taking technologies into relevant environments to increase technology readiness and validate feasibility while reducing the costs and technical risks of future missions.

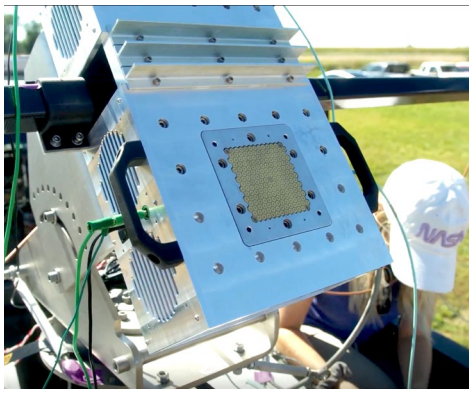
What is a "relevant environment"?

Flight Opportunities provides access to relevant flight test environments for space technologies. These environments are relevant because they replicate some of the conditions encountered on orbital missions and beyond, such as extreme temperatures, microgravity conditions, radiation, and other factors. These conditions are difficult, and in some cases impossible, to replicate in ground-based laboratory testing.

What is the value of these flights?

- Mature technologies faster (and farther) than ground-based laboratory testing alone
- Obtain data to refine and prepare technologies for spaceflight
- Demonstrate technologies in advance of more complex missions, including those aboard small spacecraft, International Space Station, or lunar missions





How do I get started with flight testing?

Flight Opportunities offers several avenues for accessing flights, including prizes/challenges and solicitations. Visit our website to learn more: https://www.nasa.gov/flightopportunities

In addition, funding to support flight testing is available through ROSES, SBIR/STTR, and many other mechanisms across NASA. Flight Opportunities encourages researchers whose technologies would benefit from flight tests to include such testing in their plans when applying for NASA funding.

Contact nasa-flightopportunities@mail.nasa.gov to discuss the options that are best for your situation.

Prepare to Meet with Flight Opportunities

Sign up for the Flight Opportunities newsletter to stay up to date on solicitations, prizes, and challenges: https://go.nasa.gov/32jXl9s

Part of NASA's Space Technology Mission Directorate, the Flight Opportunities program is managed at NASA's Armstrong Flight Research Center in Edwards, California.

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