

Flight Opportunities Program

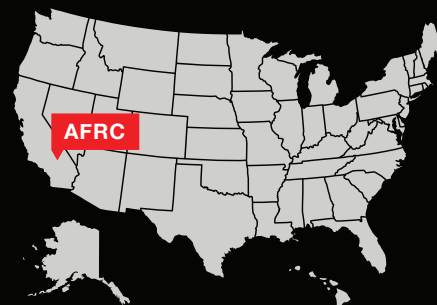
Flight Opportunities rapidly demonstrates promising technologies for space exploration, discovery, and the expansion of space commerce through suborbital and hosted orbital testing with industry flight providers.

The program matures capabilities needed for NASA missions and commercial applications while strategically investing in the growth of the U.S. commercial spaceflight industry. Flight Opportunities provides researchers with opportunities to flight test technology payloads on qualified vehicles that provide relevant environments —including but not limited to reduced gravity, exposure to the space environment, and free fall — in order to advance their technology readiness.

Flight Opportunities also partners with STMD's Small Spacecraft Technology (SST) program, which expands the ability to execute unique missions through rapid development and demonstration of capabilities for small spacecraft applicable to exploration, science, and the commercial space sector. Similar to Flight Opportunities, SST works with industry providers to advance technologies through flight testing in relevant environments, including but not limited to orbital flight.

Who/Where ▶

The Flight Opportunities program, part of NASA's Space Technology Mission Directorate (STMD), is a multi-Center program managed out of Armstrong Flight Research Center (AFRC) in Edwards, CA. The AFRC Office of Procurement awarded and administers the multiple-award indefinite delivery/indefinite quantity (FO IDIQ 4), Tipping Point, and other supporting contracts.



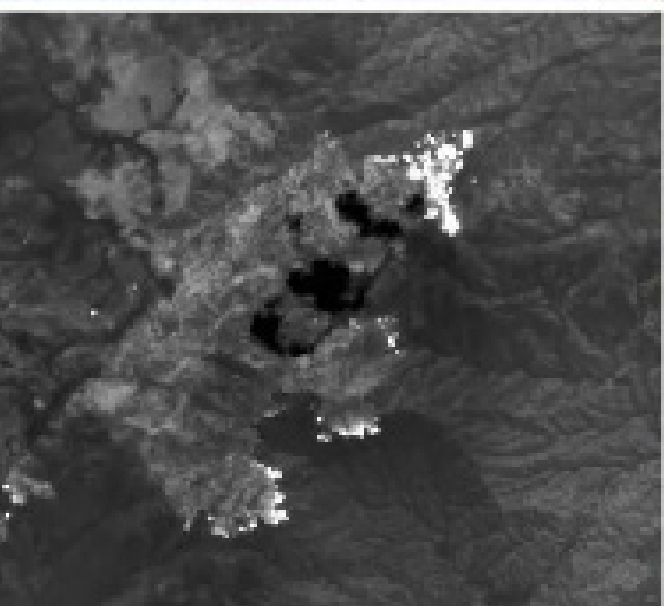
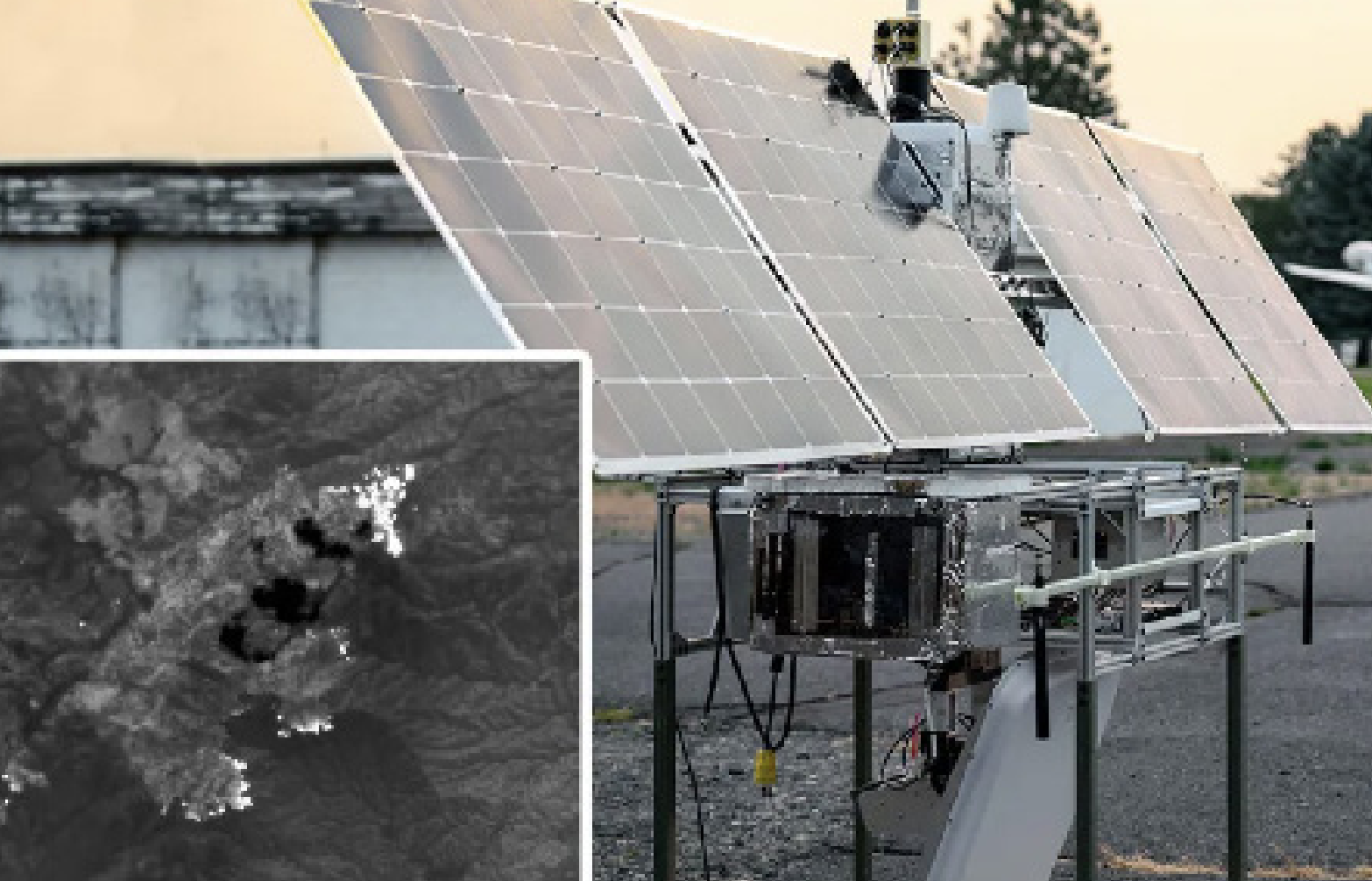
Why ▶

Flight tests through FO IDIQ 4 take technologies from ground-based laboratories into relevant environments to increase technology readiness and validate feasibility while reducing the costs and technical risks of future missions.

Flight tests are open to researchers from industry, academia, non-profit research institutes, and government organizations. These investments help advance technologies of interest to NASA while supporting commercial flight providers and expanding space-based applications and commerce.

The flight test of the Falcon ExoDynamics payload — one of the winners of the NASA TechLeap Prize's Nighttime Precision Landing Challenge — took place around 10:00 p.m. PDT on Sept. 5, 2024, aboard Astrobotic's Xodiac rocket-powered lander vehicle. (NASA/Matthew Kuhns)





When ▶

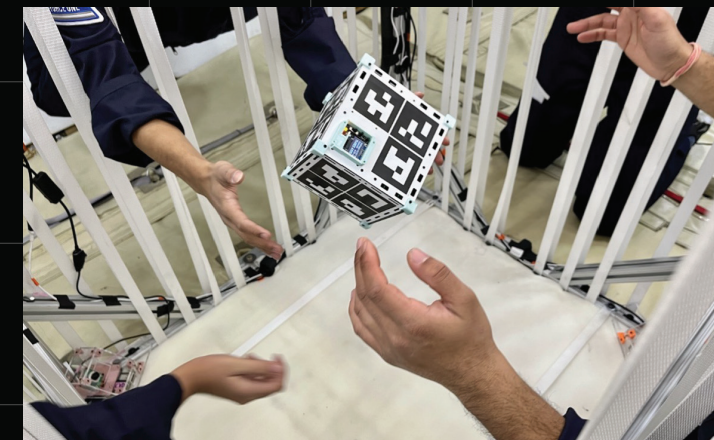
Flight Opportunities has been working with a suite of commercial flight providers since the program was started in 2011. FO IDIQ 4 is the fourth iteration of the multiple-award commercial contract for flight payload integration services. This iteration has added capabilities for the testing of hosted orbital payloads and human suborbital flights with Government Suborbital Research Specialists.

- ▲ The STRATO payload before launch, with gimbal-mounted LTE antenna underneath and EO and IR (electro-optical and infrared) cameras in the foreground. Solar panels (combined with a battery) provide power, even at night. The bright spots shown by the IR imager on the STRATO payload indicate hotspots, informing firefighting efforts. This image is of the Snag fire on August 12, 2024. (Main photograph: Colorado Div. of Fire Prevention and Control Center of Excellence for Advanced Technology Aerial Firefighting/Austin Buttlar. Inset image: Aerostar/Range and Bearing.)

How ▶

The AFRC Office of Procurement awarded 15 commercial IDIQ contracts for Suborbital/Hosted Orbital Flight and Payload Integration Services in 2024. The objective of the multiple-award IDIQ includes payload integration services with the objective of flying payloads aboard commercial vehicles that provide high altitude, reduced gravity, or other

relevant environments required to test the technologies and advance their readiness. Additionally, some contractors have the capability to fly Government Suborbital Research Specialists as passengers aboard their qualified vehicles. The IDIQ is available for NASA and other government agencies' (OGAs') use.



- ▲ Clockwise: World View's Stratollite high-altitude balloon is inflated on the launch pad in Tucson, Arizona. (World View Enterprises) / A research team from University of California – Davis tested reaction wheels for CubeSats on parabolic flights. (Zero Gravity Corp. / Steve Boxall) / Virgin Galactic VSS Unity Release (Virgin Galactic) / Engineers tested the performance of a Draper terrain relative navigation system in Mojave, California, on Masten Space Systems' Xodiac rocket.