



# Flight Opportunities

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## Greetings from Flight Opportunities

In this month's newsletter, we are pleased to share:

- Highlights of recent technology tests on UP Aerospace's SpaceLoft rocket and a World View Enterprises balloon
- Preparing for the upcoming NASA Tech Flights solicitation
- Other notable NASA opportunities
- Upcoming events

Enjoy!

The Flight Opportunities team

## Recent Flights



*UP Aerospace's SpaceLoft rocket launched from Spaceport America, New Mexico, on Nov. 22. It was the third SpaceLoft test of NASA's Affordable Vehicle Avionics (AVA) technology, and the first fully integrated test of AVA with the rocket's guidance and control system. (The pictured launch took place in September 2018.) Credit: NASA*

## Rocket Flight Tests Small Launch Technologies From NASA and Industry

On Nov. 22 UP Aerospace launched its SpaceLoft rocket on a flight funded by the company's NASA Tipping Point award. The **Affordable Vehicle Avionics (AVA)** project from NASA's Ames Research Center was one of several payloads onboard.

The AVA technology flew on two previous SpaceLoft flights supported by Flight Opportunities, with the goals of testing the technology in a relevant environment and leveraging the knowledge gained from the flights to aid development. The most recent flight was the first to test the flight computer's ability to provide the "brains" for UP Aerospace's own guidance and control system in a fully integrated demonstration that included firing a second-stage motor. Ultimately, the small company plans to integrate its guidance and control system with technology like AVA on Spyder Orbital—a four-stage solid motor rocket that UP Aerospace is developing specifically for dedicated small payload launches.

The launch also included Flight Opportunities–supported tests for three other technologies. They included an [autonomous flight termination system](#) from NASA's Kennedy Space Center in Florida, [a micro-avionics system](#) from Tyvak Nano-Satellite Systems and a [ADS-B transmitter prototype](#) from the Federal Aviation Administration. Development teams for each experiment aim to gather data that will help them advance their technologies, working toward eventual inclusion on NASA missions or commercial space vehicles, including dedicated small payload launchers.

[Read the full NASA web feature to learn more about the flight.](#)

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### **Mini Solar Observatory Collects More Than One Hour of Solar Images on Balloon Flight**

On Nov. 1, Southwest Research Institute (SwRI) successfully demonstrated its miniature solar observatory—the Solar Instrument Pointing Platform (SSIPP)—on a high-altitude balloon flight above Tucson, Arizona. The flight, which was sponsored by Flight Opportunities and provided by World View Enterprises, enabled investigators to collect 75 minutes of solar images and prove the concept of providing infrastructure and flexibility similar to that of a ground-based observatory in near-space.

SSIPP collects solar data using infrared, ultraviolet or visible light instruments on an optical table. This observatory provides arcsecond-level optical precision, allowing the development of custom instruments that can make use of the already-pointed, conditioned beam of focused sunlight. SSIPP could support the development of a range of new instruments for the near-space environment at relatively low cost. Using a standard optical table platform increases flexibility, allowing scientists to try new things and develop new technologies without designing a custom observatory.

[Read more about a previous flight test for this technology.](#)

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### Rocket Flight Attempts Test of NASA-Supported Space Dust Experiment

On Oct. 26, Exos Aerospace launched its SARGE suborbital reusable launch vehicle from Spaceport America, New Mexico, with a Flight Opportunities–supported payload onboard: the [University of Central Florida’s Suborbital Particle Aggregation and Collision Experiment-2 \(SPACE-2\)](#). The flight was aborted 48 seconds after launch due to what the company reported to be a structural failure.

Exos is in the process of evaluating video and telemetry data from the flight and intends to implement lessons learned from its first three SARGE launches. The company stated in a press release its plans to work closely with the Federal Aviation Administration on a return-to-flight protocol and planned vehicle upgrades in advance of flying again by mid-2020.

## Opportunities

### Prepare Now for NASA’s Upcoming Tech Flights Solicitation

The next [Tech Flights](#) solicitation is expected to be released in early 2020. Flight Opportunities strongly encourages interested organizations and principal investigators to begin gathering materials to support their proposals now. Past experience has shown that most successful proposals require a few months to put together. The [2019 solicitation is available for reference on NSPIRES](#).



- [Visit our solicitation page](#) for information about eligibility and creating a successful proposal.
- Need guidance on considering test plans and environments? [Contact us for more information](#).

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### Research Opportunities in Space Biology Step 1 Proposals Due Dec. 2

NASA’s Human Exploration and Operations Mission Directorate (HEOMD) has announced a solicitation for proposals for flight and ground space biology research. The NASA Research Announcement titled Research Opportunities in Space Biology (ROSBio) solicits basic and applied space biology research in support of NASA’s Space Life and Physical Sciences Research and Applications Division and the space exploration goals of HEOMD.

**Step 1 proposals are due Dec. 2.**  
[Information and submission materials are available on NSPIRES.](#)

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## International Space Station (ISS) U.S. National Laboratory Announces Two New Research Opportunities

Two new Requests for Proposals from the **ISS National Lab** focus on supporting research with translational or applied outcomes that may improve life on Earth and/or enable development of profitable industry in low-Earth orbit.

### *ISS National Lab Opportunity for Biomedical Research*

Applicants should propose flight experiments to enable biomedical advancements with a defined pathway for translation from scientific research to industrial or clinical applications, such as new therapeutics, medical procedures, or diagnostic devices.

[Learn more about this biomedical research opportunity.](#)

### *ISS National Lab Opportunity for Materials Research*

Applicants in the field of advanced materials science and engineering should propose flight experiments within the interior or on the exterior of the ISS that enable the development of next-generation production methods, improve understanding of mechanisms involved in material transformations, advance fundamental materials discovery, or test synthesis processes of novel material design.

[Learn more about this materials research opportunity.](#)

## Events

As we look ahead to early 2020, we are planning for:

### **Next-Generation Suborbital Researchers Conference (NSRC)**

**March 2-4, 2020  
Broomfield, Colorado**

NSRC brings together hundreds of suborbital researchers, educators, flight providers, spaceports and government officials to discuss how to further the opportunities provided by commercial suborbital research. Flight Opportunities will be attending, and we welcome the opportunity to meet with you at this event.



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[NASA-FlightOpportunities@mail.nasa.gov](mailto:NASA-FlightOpportunities@mail.nasa.gov)

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650-604-5876 (Stephen Ord - Technology Manager) | [www.nasa.gov/flightopportunities](http://www.nasa.gov/flightopportunities)

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