

Flight Opportunities

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Enjoy!

The Flight Opportunities team

Improving Firefighter Safety with STRATO

NASA researchers, the U.S. Forest Service, and Sioux Falls-based high-altitude balloon company, Aerostar, teamed up to provide cell coverage from the stratosphere. On August 4, the STRATO (Strategic Tactical Radio and Tactical Overwatch) technology launched aboard Aerostar's Thunderhead high-altitude balloon for flight testing over the West Mountain Complex fires in Idaho.

STRATO aims to provide persistent cell coverage from the stratosphere, enabling real-time communication between firefighters and command posts. It also uses an infrared sensor to provide valuable heat and spatial information to help them better understand the fire's characteristics.

Aerostar maintained the balloon's position in the vicinity of the fires for 11 days. This type of station-keeping flight profile allows researchers to evaluate the technical, operational, and financial feasibility of using stratospheric platforms to continuously push critical information to the first responders on the ground — a goal Aerostar has been pursuing for several years.



Experienced firefighter Kim Hinshaw of the U.S. Forest Service, Lincoln National Forest, conducts a signal connectivity survey to ensure reliable communication from the STRATO payload. Credits: Colorado Division of Fire Prevention and Control Center of Excellence for Advanced Technology Aerial Firefighting/Austin Buttlar

[Read more about the STRATO flight test results](#)

TechLeap Nighttime Precision Landing Flight Tests Begin

At approximately 1:00 a.m. on August 10, flight tests for the NASA **TechLeap** Nighttime Precision Landing Challenge began in Mojave, California, as the A-LiST (Automated Lidar Scanning Topography) payload developed by the University of South Florida took to the darkened skies aboard Astrobotic's Xodiac rocket-powered lander.

Designed to advance affordability and reduce complexity of precision landing capabilities to deliver spacecraft to safe landing locations — particularly when the terrain is hazardous and lighting conditions are challenging — the **Nighttime Precision Landing Challenge** had three winners:

- University of South Florida
- Falcon ExoDynamics
- Cal Poly Pomona's Bronco Space Club



The A-LiST payload designed at the University of South Florida received nighttime flight testing on August 10, 2024, aboard Astrobotic's Xodiac rocket-powered lander. Credits: Astrobotic

Recent Flights (cont)

These three teams are testing less expensive, smaller, and lower mass systems for detecting hazards from an altitude of 250 meters or higher to generate terrain maps suitable for facilitating safe landings in the dark. The middle-of-the-night flight tests take place above Astrobot's nearly 100x100-meter 3D test field, which provides a realistic lunar topography.

With one team's flight test completed, the remaining two teams' flight tests are expected to occur in the coming weeks. Watch for more news in future issues of this newsletter and on our webpage about this TechLeap challenge.

[Read more about the Nighttime Precision Landing Challenge winners](#)

Community of Practice Webinar

Flight Testing Opportunities for Students

Wednesday, September 4, 2024
10:00-11:00 a.m. PST

Representatives from across NASA will speak to the various avenues available to students for accessing flight tests. Speakers will give an overview of:

- **NASA TechRise Student Challenge** for 6-12 graders (see the next article below for more information) – **Deadline: Nov. 1**
- NASA's **CubeSat Launch Initiative** for U.S. educational institutions and non-profit organizations – **Deadline: Nov. 15**
- Other opportunities that support hands-on STEM experiences for students of many different ages

Flight Opportunities encourages the community to engage in these conversations, and participants are welcome to submit questions prior to the webinar to enable more directed responses. Please send questions to NASA-flightopportunities@mail.nasa.gov.



The middle school team from Herberger Young Scholars Academy in Glendale, Arizona, prepares their experiment for flight as part of the NASA TechRise Student Challenge. Credits: Herberger Young Scholars Academy

[Learn more about our Sept. 4 webinar](#)

Microsoft Teams meeting

Join on your computer, mobile app or room device

Or call-in (audio only):

+1 256-715-9946

[Join meeting](#)

Phone Conference ID: 310 225 112#

[See all Community of Practice webinars](#)

Do you have ideas or suggestions for a future Community of Practice topic? We'd love to hear your thoughts. Email us at NASA-FlightOpportunities@mail.nasa.gov to tell us what you'd like to see.

TechRise Gives 6th-12th Graders Flight Test Experience; Proposals Due Nov. 1

While the primary mission of Flight Opportunities is to rapidly demonstrate technologies for space exploration, discovery, and the expansion of space commerce, we also give middle and high school students the chance to experience this process for themselves.

The **NASA TechRise Student Challenge** encourages students in grades 6–12 at U.S. public, private, and charter schools to propose space technology and science experiments for development and flight testing. Students who won the 2023-2024 TechRise competition **flew their payloads** throughout this past summer.

For **TechRise 2024-2025**, NASA will select 60 winning teams to receive \$1,500 to build their experiment, a flight box to house it, technical support from Future Engineers, and a spot on a World View high-altitude balloon. **Proposals are due Nov. 1.**

Learn more using the link below, and watch for a special announcement that you can easily share with the 6-12 graders and educators in your community!

[Learn more about NASA's TechRise Student Challenge](#)



Phillips Academy student works on experiment to fly on a World View high-altitude balloon as part of NASA's TechRise Student Challenge. Credits: Phillips Academy (Birmingham, Alabama)

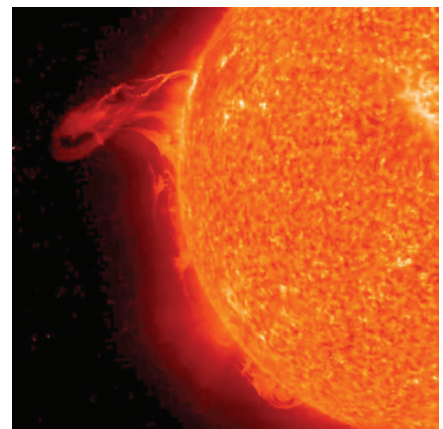
Opportunities

Apply by Sept. 20 for Heliophysics Flight Opportunities for Research and Technology (ROSES-2024 B.11)

Researchers have an opportunity to contribute to our understanding of the Sun and its interactions with the Earth and the Solar System, whether through direct scientific investigations or by developing new technologies.

The ROSES (Research Opportunities in Space and Earth Sciences) 2024 Amendment 22 **H-FORT (Heliophysics Flight Opportunities for Research and Technology) solicitation** is now accepting proposals for space and suborbital science and science-enabling investigations to advance heliophysics research.

Here's what you need to know:



An active region of relatively small solar eruptions observed in 2010 by STEREO (Solar Terrestrial Relations Observatory). Credits: NASA

Focus Areas:

- Space and suborbital science investigations using SmallSats (including CubeSats)
- Hosted rideshare payloads (such as payloads attached to the International Space Station)

Important Details:

- **Proposal deadline: Sept. 20, 2024.**
- No Notices of Intent or Step-1 proposals required.
- Proposals require components not standard for ROSES — read the solicitation documents carefully!
- Use the standard [Heliophysics template](#) for Current and Pending Support.

[Read the ROSES-2024 H-FORT documentation for details](#)

Subject Matter Experts Needed as Peer Reviewers for NIAC

NASA's Space Technology Mission Directorate is seeking subject matter experts to review proposals submitted in response to [NASA's Innovative Advanced Concepts \(NIAC\) Phase I solicitation](#). These peer reviewer panels are generally three-day in-person reviews. Travel support is provided, and eligible reviewers will also receive a nominal honorarium.



The [NIAC Program](#) focuses on early-stage feasibility studies of visionary concepts that address national government and commercial aerospace goals. Concepts are solicited from any field of study that offers a radically different approach or disruptive innovation that may significantly enhance or enable new human or robotic science and exploration missions.

If you are interested in serving as a peer reviewer for the NIAC Phase I solicitation, please [fill out this form](#). If your skills match NASA needs for the review and considerations for any organizational conflicts of interest allow, we will contact you to discuss further steps. Participating in a review is a service to the community and can be informative for those who might like to propose to STMD in the future.

[Apply to be a NIAC proposal peer reviewer](#)



SmallSat LEARN In-Person Forum **Sept. 24-25 • Moffett Field, California**

The NASA SmallSat community convenes annually to exchange knowledge with the goal to improve the implementation of SmallSat missions. This year's forum will be hosted at NASA's Ames Research Center in California's Silicon Valley and will feature a comprehensive program, including presentations, panel discussions, workshops, and networking opportunities. For registration requests and additional information, such as the agenda and FAQs, please [visit the LEARN Forum webpage](#).

Lunar Surface Innovation Consortium (LSIC) Fall Meeting **Nov. 13-15 • Las Vegas, Nevada**

LSIC's goal is to harness the creativity, energy, and resources of the nation to help NASA keep the United States at the forefront of lunar exploration. The fall meeting — held at the University of Nevada, Las Vegas — will focus on technology testing, lunar proving grounds, and how the community can partner to get to the Moon together. LSIC invites the community to [submit abstracts by October 4](#) on topics pertaining to LSIC's focus areas, particularly concerning testing technologies and lunar proving grounds. Further details about submitting abstracts are on [the meeting webpage](#).

American Society for Gravitational and Space Research (ASGSR) Conference **Dec. 3-7, 2024 • San Juan, Puerto Rico**

The [ASGSR annual meeting](#) brings together the biological and physical space sciences community to share research, build collaborations, and discuss emerging issues in the field. ASGSR welcomes scientists and engineers from all career stages. Members of the Flight Opportunities program will be there! Watch for more details in future issues of this newsletter.

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Drop us a line at:

NASA-FlightOpportunities@mail.nasa.gov

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NASA Flight Opportunities Program

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