



# NASA Aeronautics

October 2022  
No. 18

## Monthly STEM Newsletter

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*Two of NASA’s F-15s are mounted with a state-of-the-art data probe to measure the shock waves of another aircraft flying at supersonic speeds. When the X-59 flies, NASA will use the probe to measure its unique shock waves in flight. Photo credit: Carla Thomas*

## October 2022

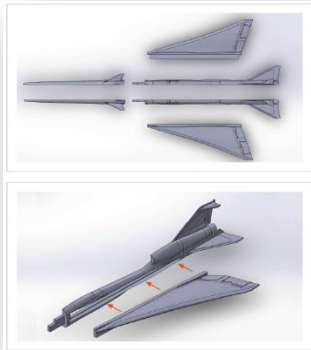
With the official start of the fall season, NASA Aeronautics has been busy preparing and announcing many new opportunities this month, particularly for our post-secondary audiences. Please be sure to scroll through the latest newsletter for multiple funding and design challenge opportunities. In addition, be sure to join us in person if you can at the Aerospace Valley Open House and Airshow at Edwards Air Force Base in honor of the Air Force’s 75<sup>th</sup> anniversary.

Do you need to see more of something or have a new idea for upcoming newsletters? Let us know! Do you know someone else who needs this monthly update? [Sign up for our monthly STEM newsletter](#). Have questions or want to be removed from the list? Send an email to [April.a.lanotte@nasa.gov](mailto:April.a.lanotte@nasa.gov).

Let’s Fly!

### Newly Released STEM Items:

**New!** [Multi-Piece 3D print model \(X-59\)](#)



Have you tested our 3D print file options for our X-59? We just added a multi-piece 3D print file to our site to allow you to build a larger X-59 model. Assembly instructions, a printable information card, and the ability to print decals is included in the assembly instructions.

**New!** [The Quiet Crew: Tiffany Titus](#)

In this episode meet Ground Operations Lead Tiffany Titus, learn about her role on the Quesst mission, her inspiration, and deep love of the Sierra.

### Design Challenges:

**[NASA TechRise Design Challenge:](#)** Students in grades 6-12 are invited to design experiments that could be selected to fly on a NASA high-altitude balloon flight. Selected teams receive technical support during the experiment build phase: no experience necessary! Entries are due Oct. 24, 2022.



### Engage with Aero!

For many, school is back in session, and NASA is busy supporting conferences, airshows, and more. Here are two of the larger events we'll be a part of:

**Oct. 6-8, 2022:** [AISES National Conference](#)

Join us at the American Indian Science and Engineering Society for the 45<sup>th</sup> annual conference that supports Indigenous peoples of North America and the Pacific Islands in STEM studies and careers.

**Oct. 15-16, 2022:** [Aerospace Valley Open House, Air Show, and STEM Expo 2022](#)

For the first time since 2009, the Edwards AFB air show is back, and larger than ever. Coinciding with the 75<sup>th</sup> anniversary of supersonic flight, the STEM Expo, USAF Thunderbirds flight demonstration, airshow, and open house will be free to the public. Join NASA, the Air Force, and others at Edwards Air Force Base in CA if you can!

*\*Please note that the events are currently scheduled as in-person events but could change due to COVID restrictions.*

### Professional Development:

**[Educator Professional Development Collaborative \(EPDC\):](#)** We know you're back in the classroom, but that doesn't mean you can't learn, too! Join NASA's EPDC team for free, virtual professional development to give you some great ideas for new lessons and activities tied to aeronautics. October virtual professional development includes: [Explore Flight: Using Bernoulli's Principle](#), on Oct. 13<sup>th</sup>, [Aeronaut-X: Efectos del Sonido y Sensibilidades del Sonido](#) on October 18<sup>th</sup>, and others. Sessions are free, but registration is required.

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## [NASA's Gateways to Blue Skies: Clean Aviation Energy Competition:](#)



In the push toward net-zero emissions by 2050, NASA seeks to crowdsource ideas for potential new clean aviation energy sources. Through the [2023 Blue Skies Competition](#), teams of two to six students will conceptualize and analyze the climate impacts along the source-to-flight lifecycle of one potential, primary clean aviation energy source of the future, and create a five- to seven-page research proposal and two-minute video summary. Finalist teams will receive a \$6,000 stipend to participate in the 2023 Blue Skies Forum at a NASA center in June 2023. Winners are eligible for NASA internships in the academic year following the competition. **Notice of Intent Deadline: Oct. 17, 2022. Submission Deadline: Feb. 28, 2023.**

## **Funding and Internship Opportunities:**

The [NASA Teams Engaging Affiliated Museums and Informal Institutions TEAM II Community Anchor Awards Notice of Funding Opportunity](#) is now open. **Full proposals are due Oct. 18, 2022**, with individual awards ranging from \$35K-40K.

[EONS-2022 "Engagement Opportunities in NASA STEM" NNH22ZAO001N-MUREPDEAP](#) proposals are **due Oct. 24, 2022**. The MUREP solicitation seeks proposals to create DEAP Institutes through consortia of three institutions that will be partnered with NASA mentors/advisors to develop and execute a research project over a three-year period.

## **Did you know??**

October 3, 1785: Jean-Pierre Blanchard makes the 1<sup>st</sup> piloted balloon ascent in Germany.

October 14, 1947: Chuck Yeager breaks the sound barrier. He flew the Bell X-1 at Mach 1 at an altitude of 40,000 ft (not announced until June of 1948).

October 25, 1974: Michael V. Love piloted an X-24B during the fastest lifting body flight from NASA's Dryden Flight Research Facility (now Armstrong Flight Research Center) in Edwards, CA. The aircraft reached Mach 1.76 (1164 mph).



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**[Aeronautics Research Mission Directorate University Student Research Challenge \(USRC\)](#)**: USRC challenges

students to propose new ideas/concepts that are relevant to NASA Aeronautics. USRC will provide students from accredited US colleges or universities with grants for their projects. **A USRC Q&A/Info Session and proposal workshop will be held on October 3<sup>rd</sup>, 2022 at 2PM EST. Submission deadline is November 10, 2022.**

**[Spring 2022 Internship applications](#)** are now open (yes, really)! The deadline for Spring internships are Nov. 11, which will be here before we know it, with the spring session beginning Jan. 17<sup>th</sup>, 2023. *Please note that NASA Internships has recently migrated to a new application system. Previous applicants need to renew their passwords and update profiles before applying for an opportunity.*





## Links to our Aeronautics STEM Resources:

[Aeronautics Research Resources](#): (all ages) This link takes you to a wide variety of educator resources, Aeronautics@Home, ebooks, National Academies Reports, webinars, lithographs and mini posters, the NASA Aeronautics Research Institute, and more.

[Aeronautics@Home](#): (K-12) This web page contains aeronautics-based activities, videos, games, and more that can be completed at home, in the classroom, or in any number of settings. Topic areas include: "Build It!" "Explore It!" "Watch It!" "Solve It!" "Color It!" and "Aero Educator Resources". Coming soon: "Read It!" and "Do It!"

[Aeronautics Innovations Challenges](#): Keeping up with our many design challenges and opportunities for both post-secondary and K-12 can be tough. In response, we created a "one-stop shop" to pull them all together in one location.

[Flight Log Experience](#): (K-12, post-secondary, general public) Sign up to send your name with NASA Aeronautics on X-planes, UAS flights, and more as you build your virtual NASA flight log. Earn virtual endorsement stamps and mission patches and access aeronautics STEM activities and resources. Educators can sign up their entire class.

[NASA Express Sign-Up](#): (K-12, post-secondary) Have you signed up for NASA's NASA EXPRESS weekly newsletter? This newsletter contains the latest information for educators (K-12 and post-secondary) about new resources, design challenges, internships, and workshops. It is THE go-to for the latest STEM news.

[NASA Educator Professional Development Collaborative](#): (K-12 educators) Where do you go for ongoing, free NASA educator professional development opportunities? To EPDC! Take a look at webinars, digital badging and CEU opportunities, STEM teaching tips, videos, and so much more.

[Aeronaut-X](#): (K-12) Our Next Gen STEM: Aeronaut-X team provides new and exciting STEM activities that focus on cutting-edge aeronautics education and the future of flight.

[Museum and Informal Education Alliance](#): (Informal Educators and Museums) Not in a classroom? Looking for informal education materials? Join NASA's Museum and Informal Education Alliance, where you have access to NASA resources—including aeronautics—for your program, organization, museum, science center, or library. Find out about events happening near you and in the virtual world, and let the MIE Alliance help you build your programs! Access to guest speakers, the latest announcements about grant programs, and an active community network allow you to connect with other like-minded people in a supportive, engaging, and aerospace-focused neighborhood.

[NASA Aeronautics for Educators Facebook Page](#): (K-12, post-secondary) Join our NASA Aeronautics for Educators Facebook page, where the latest aeronautics updates, professional development opportunities, lessons and ideas are freely shared.

[NASA STEM Stars](#): (students ages 13+) Webchats that connect students ages 13+ with NASA experts of all types. Each chat introduces a STEM career, addresses a STEM topic, and highlights a NASA mission. Webchats are streamed live at 2pm EST via YouTube, and students can ask questions via the chat feature in real time. Or you can choose from a growing library of archived sessions.