



# Flight Opportunities



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Dear Flight Opportunities community,

Fall is here and at Flight Opportunities, we've recently wrapped up several suborbital demonstrations and more are just around the corner. In addition, we appreciated the opportunity to meet with NASA Administrator Jim Bridenstine when he visited NASA's Armstrong Flight Research Center last month. During his address, the new agency head spoke of our program and the many researchers whose work we are helping to demonstrate and mature. If you missed it, you can check out his press conference in [this video](#).



*Tim Chen, Program Manager*

This month, we're also covering:

- Highlights of UP Aerospace's recent launch of its SpaceLoft rocket from Spaceport America, carrying three Flight Opportunities-supported payloads
- Staff Spotlight: Campaign Manager Earl Adams
- Material samples selected for testing on the upcoming MISSE-12 mission
- Upcoming events, including ISPCS and ASGSR--mark your calendars!

As always, we hope you enjoy reading and thank you for being a valued member of the Flight Opportunities community.

**Tim Chen**, *Program Manager*  
NASA's *Flight Opportunities* program

## UP Aerospace Demonstrates Flight Opportunities-Supported Payloads on SL-12



*UP Aerospace's SpaceLoft vehicle, ready for launch at Spaceport America in New Mexico. NASA photo.*

Three NASA technology demonstration payloads launched aboard **UP Aerospace's SpaceLoft 12 mission** from Spaceport America in New Mexico on Sept. 12.

The suborbital rocket carried an umbrella-like heat shield called **Adaptable Deployable Entry and Placement Technology (ADEPT)**. Developed by NASA's Ames Research Center in California's Silicon Valley, ADEPT's unique design could be used for planetary lander and sample return missions. The flight tested the heat shield's deployment sequence and entry performance.

Another Ames payload called **Suborbital Flight Environment Monitor (SFEM-3)** measures the internal environment of suborbital rockets carrying experiments. The system monitored acceleration, temperature, and pressure within the payload bay during flight and could benefit future suborbital launches.

The third technology is from NASA's Kennedy Space Center in Florida and is the **Autonomous Flight Termination System (AFTS)**. While the termination

device operated in shadow mode and was not active during launch, the payload tested the hardware and software performance in the high dynamics of suborbital flight.

To learn more about these payloads, follow the links above.

## Meet Campaign Manager Earl Adams

With a multi-decade career at NASA, Earl Adams serves several roles at NASA's Armstrong Flight Research Center. He recently joined Flight Opportunities as a campaign manager where he manages parabolic flight campaigns with a commercial flight provider. In addition, he serves as the New Technology Representative and Software Release Authority for the Technology Transfer Office (TTO) at Armstrong. We sat down with Earl recently to talk about his career at NASA and his work with Flight Opportunities.



*Campaign Manager  
Earl Adams*

### ***Tell us a bit about your long career at NASA.***

I came to NASA in 1980 after training as an electronics technician in the U.S. Navy. I've had a wide range of roles at the Agency. I've worked as an instrumentation engineer, and then an avionics technician, which included assignment as lead technician in the communications, navigation, and video lab for the Operations Avionics Branch. I also oversaw non-standard equipment installation on NASA's support aircraft. Those roles really had me in a position to learn about and support aircraft in a significant way--I was designing, installing, and maintaining flight control and research instrumentation systems on aircraft as well as ground-based systems. Then I started working with the TTO, and more recently have signed on to work with Flight Opportunities. It's been a wide range of experiences.

### ***How have all of these roles informed what you do as a Flight Opportunities campaign manager?***

For Flight Opportunities I'm coordinating the preparation of technology payloads for flight demonstrations, so I'm working with both the flight providers and the researchers. My flight operations and technical background aligns well with helping get experiments ready for flight. And my work as a contracting officer representative gives me the skills to be proficient in the business side of these flight demonstrations as well. There are a lot of moving parts that researchers and flight providers need to work with to get these demonstrations literally off the ground, and I'm glad to get to help make all the pieces work together.

### ***What is your favorite part of your work with the Flight Opportunities community?***

I really enjoy getting out from behind my desk and working with the researchers to understand how the flights are helping to mature their technologies. They're doing such exciting work, and I'm able to provide that insight to the Flight Opportunities leadership so that we can continually improve our support of the research and development happening at NASA and in industry and academia. It's great to see what they are able to do in a microgravity environment that is extremely difficult to replicate on the ground.

### ***Fun fact about your life off the launch pad?***

I used to own an after-market Harley Davidson motorcycle shop! I still love to ride. I enjoy building structures and maintaining old cars as well. I created the engineering for my home's solar ground-based array-I permitted and installed it myself.

## NASA Selects Materials to be Tested on International Space Station as Part of MISSE-12

NASA has selected polymeric and other high-performance material specimens for long-duration exposure to the space environment as part of the next Materials International Space Station Experiment (MISSE). NASA-supported materials selected for MISSE-12 are:

- Evaluation of Multifunctional Radiation Shielding Material Against Long Duration Space Environment (Keith Gordon, NASA's Langley Research Center)
- Polymers and Composites Experiment-3 (Kim de Groh, NASA's Glenn Research Center)
- Spectra Fiber Reinforced Polybenzoxazine Radiation Shielding Structural Composites (Sheila Thibeault, NASA's Langley Research Center)
- Electro-optic polymer films for tunable diffractive telescope objectives (David Macdonnell, NASA's Langley Research Center)
- Assessment of Radiation Shielding and Physical Properties of Novel and Baseline Materials through Exposure on the Outside of the ISS (Ranjit Vaidyanathan, Oklahoma State University)
- On Orbit Structural Health Monitoring (Andrei Zagrai, New Mexico Institute of Mining and Technology)
- Space Hybrid Photonic Integrated Circuits (Tingyi Gu, University of Delaware)

Utilizing ISS as a Test Bed to Validate the Performance of Nano-Enhanced Polymers Subject to Atomic Oxygen and/or Hypervelocity Impact (Ahmed Al-Ostaz, University of Mississippi)

Flight Opportunities oversees the selection of NASA material samples for the MISSE program. Space is available for purchase for commercial material samples on the MISSE Flight Facility through [Alpha Space](#) of Houston, Texas, which designed and owns the Flight Facility. The Flight Facility houses both NASA-supported and commercial material samples and is mounted to the ISS for a period of six months or longer per mission. MISSE-12 is expected to launch to the ISS in late 2019.

## ISPCS

**October 10-11, Las Cruces, NM**

Flight opportunities will be attending the 2018 International Symposium for Personal and Commercial Spaceflight and would love to see you there. If you have plans to attend, [drop us a line](#) to schedule a time to meet.

## ASGSR 2018 Meeting

**October 31–November 4, Bethesda, MD**

If the East coast is more convenient for you, we'll also be attending the American Society for Gravitational and Space Research 2018 Meeting in Maryland. [Get in touch](#) to set up a meeting in advance--we'd love the opportunity to meet you.

## *Other upcoming conferences...*

- Nov. 5-7: [18th Annual Mirror Technology SBIR/STTR Workshop](#), hosted by the International Society for Optics and Photonics (SPIE), El Segundo, CA
- Nov. 7-8: [Innovation and Opportunities Conference: Advancing Aerospace and Defense](#), Aurora, CO
- Nov. 27-28: [SpaceCom](#), Houston, TX
- Dec. 10-14: [American Geophysical Union \(AGU\) Fall Meeting](#), Washington, D.C.

**Have ideas or feedback for the Flight Opportunities newsletter?**

**Drop us a line at: [NASA-FlightOpportunities@mail.nasa.gov](mailto:NASA-FlightOpportunities@mail.nasa.gov)**

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**NASA Flight Opportunities Program**

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