



NASA Flight Opportunities

NASA TechFlights: Best Practices for Proposing

Stephan Ord, NASA Flight Opportunities
Danielle McCulloch, NASA Flight Opportunities

Community of Practice Webinar Series – February 1, 2023

Session will start at 10 a.m. PT – Please mute your microphone and turn off your camera

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1

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Welcome to the Community of Practice Webinar Series!

First, a bit of housekeeping...

- Please mute your microphone and turn off your camera
- Today's session will be recorded
- Recordings for this and all future sessions will be posted on the Flight Opportunities website
- Please engage!
 - Use the chat throughout the session to ask questions

2

2

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Welcome to the Community of Practice Webinar Series!

Flight Opportunities hopes these webinars will enable researchers, program staff, and flight providers to connect informally and share information

- Designed to distill and share the most important lessons learned to:
 - Increase the impact of suborbital flight tests
 - Transfer best practices
 - Optimize the experience of current and prospective program participants
- Part of a broad effort to capture, organize, and communicate lessons learned by suborbital researchers
- An opportunity to hear from subject matter experts on best practices for preparing for suborbital flight tests

3

3

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Today's Speakers



Stephan Ord
Chief Technologist
NASA's Flight Opportunities Program



Danielle McCulloch
Program Manager (Acting)

4

4

EXPLORE SPACE TECH

WITH SMALL SPACECRAFT

The Small Spacecraft Technology program 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.



EXPLORE SPACE TECH

THROUGH SUBORBITAL FLIGHT

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

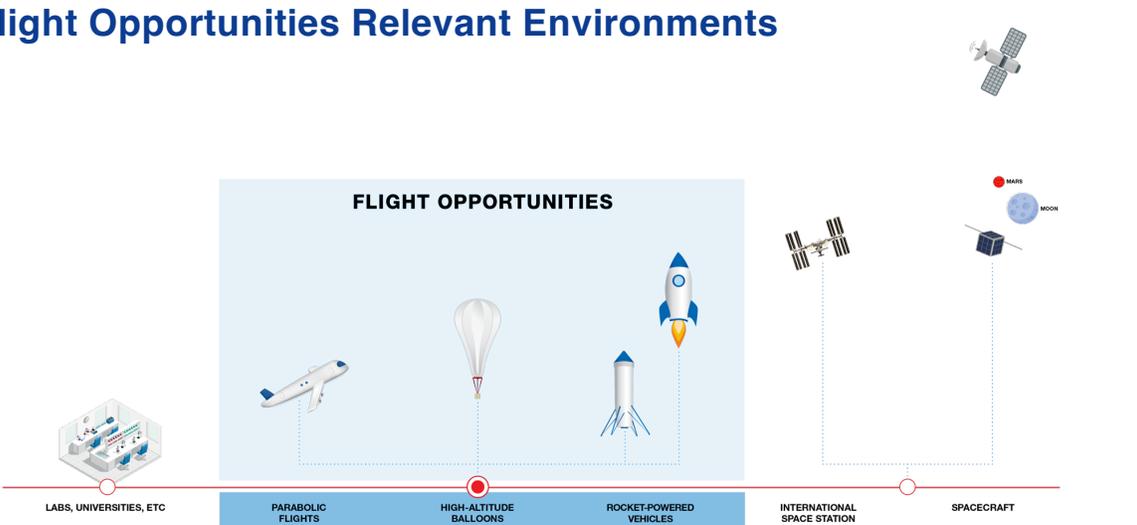


5

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Flight Opportunities Relevant Environments



LABS, UNIVERSITIES, ETC

GROUND

PARABOLIC FLIGHTS

HIGH-ALTITUDE BALLOONS

ROCKET-POWERED VEHICLES

SUBORBITAL FLIGHTS

INTERNATIONAL SPACE STATION

SPACECRAFT

ORBITAL MISSIONS

6

Commercial Vehicles Make Flight Opportunities Possible

Rocket-Powered Vehicles



Parabolic Flights



High-Altitude Balloons



Vertical Takeoff Vertical Landing (VTVL) vehicles



Plus hosted orbital platforms added as part of TechFlights 2022

7

FLIGHT OPPORTUNITIES MECHANISMS

	<p>Includes topic areas that address agency and mission goals; up to \$750K to purchase flights on suborbital or hosted orbital platforms directly from any eligible U.S. commercial flight provider</p>
	<p>Challenges addressing specific NASA technology needs; previous awards have been up to \$650K to build payloads, plus access to a suborbital flight test</p>
	<p>Competition to inspire the next generation of space researchers; offers hands-on insight into the design and test process used by NASA-supported researchers</p>
	<p>Through collaborative internal and external relationships, the program takes advantage of opportunities to flight test valuable space technologies</p>

Flights of Opportunity:

- In-Space Manufacturing / ISS Program Office
- SMD
 - ROSES
 - Human Research Program
 - Biological and Physical Sciences
- Sub-C
- EPSCoR
- SBIR/STTR
- Intergovernmental support (Department of Defense, USDA)
- Reflights

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8

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Talk to us at any time!

Get in touch with Flight Opportunities early in the technology development cycle

- Talk with us about technologies in development
- Identify the earliest opportunities to fly prototypes and preliminary hardware
- Discuss the best available flight platforms/profiles to help de-risk key components of hardware or software

Reach out to us at any time:
nasa-flightopportunities@mail.nasa.gov



9

9

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Tips for successful Tech Flights proposals


Communicate the connection to NASA's goals

How will your technology and flight experiment benefit NASA's missions and the agency's strategic goals? Stay up to date on NASA's priorities and clearly communicate how your technology may help the agency achieve them.


Explain why your technology is outstanding

Know the state of the art, and clearly explain why your technology is superior to what has been done before – or may be superior by maturing the technology via flight testing.


State your case for flight

Why does your experiment need a test flight, and why now? Communicate what you will learn or gain by doing a flight experiment and why it cannot be done on the ground.


Don't overlook the basics

Pay close attention to flight plan and cost details, and word/page limits. (Extra pages are eliminated and will not be reviewed by the selection committee, regardless of the information they contain.)


Be clear and to the point

Make sure your writing is clear and cogent. Ask for peer reviews to give feedback before you submit your proposal, and make sure you allow enough time to make revisions before the deadline.

10

10

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Strong proposals include...

-  Clear association with NASA STMD technology priorities – which are stated in the NASA Strategic Framework – to show the technology gaps that need to be closed in the future
-  A budget that adds up – reviewers should not have to be Sherlock Holmes to figure out how things break down in the budget.
-  Plans for leveraging previous flight experience – Don't have flight experience yourself? Consider partnering with someone who does or use an integrator with experience.

11

11

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Best practices for preparing for a solicitation

- 1 Leverage the Flight Opportunities website.
 - Review Q&A presentation from prior solicitation.
 - Check out the Resources page on the website, which has program factsheets, annual reports, and more.
 - Review previous solicitations, keeping in mind that each solicitation may vary.
- 2 Subscribe to the Flight Opportunities newsletter and monitor NSPIRES to keep up with the latest news about calls and solicitations.
- 3 Gather your proposal information and line up colleagues to help with peer reviews.
- 4 Reach out to fellow community members.

www.nasa.gov/flightopportunities

12

12

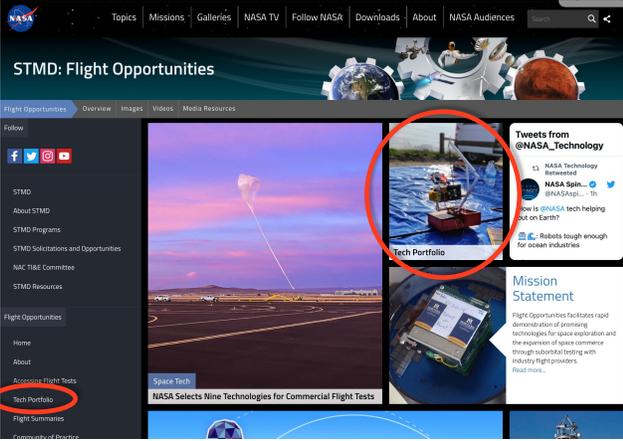
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Leverage the Flight Opportunities community

Search the technology portfolio

- Identify technologies similar to yours
- Familiarize yourself with tests performed on various vehicles
- Identify community members with whom you can connect



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13

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Strengthening the Suborbital Research Community

Community of Practice Webinars
 Designed to distill and share most important lessons learned by suborbital researchers.
First Wednesday of each month 10 am PT



14 **May 2021 Community of Practice – Effectively Preparing for Flight**

Flight Opportunities Newsletter
www.nasa.gov/flightopportunities



In This Issue:

- **Recent Flights:** Big Goals, Small Package: Enabling Compact Deliveries from Space; Parabolic Flights Provide Relevant Environment for Testing Flight Opportunities-Supported Technologies
- **Community of Practice:** June webinar: From the Mojave Desert to Jezero Crater; Introducing Lessons from the Launchpad – a new monthly column featuring tested tips for successful flights
- **Opportunities:** Recently announced: CASIS Research Announcement for Technology Advancement; Upcoming: Tech Flights 2021 solicitation; Two new NASA prize-based competitions; Closing soon: CASIS Research Announcement for In-Space Production Applications
- **Events:** Join Flight Opportunities Chief Technologist Stephan Ord for CRASTE next month

Enjoy!
 The Flight Opportunities team

Recent Flights



The New Space Corporation team completed pre-flight testing and checked out the Mojave Municipal Airport in Mojave, Oregon, in March for the New Space Corporation.

14

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Thank you!

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Contact us:
NASA-FlightOpportunities@mail.nasa.gov



15 www.nasa.gov