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**WELCOME TO THE COMMUNITY OF PRACTICE WEBINAR SERIES**

▶ **Keep your mics muted and cameras off**

- Helps ensure a clean recording

▶ **The recording will be posted online**

- [nasa.gov/flightopportunities](https://nasa.gov/flightopportunities)
- Resources menu
- Community of Practice webinars

▶ **Please engage!**

- Post your questions in the chat

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## ABOUT THE COMMUNITY OF PRACTICE WEBINAR SERIES



An opportunity to hear from subject matter experts on best practices for preparing for suborbital flight tests



Researchers, program staff, and flight providers



Connecting and sharing information and lessons learned to:

- Increase the impact of suborbital flight tests
- Transfer best practices
- Optimize the experience of current and prospective program participants

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## JOIN US FOR COMMUNITY OF PRACTICE WEBINARS

**Subscribe to our newsletter for updates on future webinars!**

<https://www.nasa.gov/directorates/spacetech/flightopportunities/newsletter>

### Future webinars

- Webinars are usually held 1st Wednesday of each month at 10 a.m. PT.
- Topics are announced in the Flight Opportunities newsletter and website.
- Session recordings are posted on the Flight Opportunities website.
- Let us know session topics you would like to see covered.

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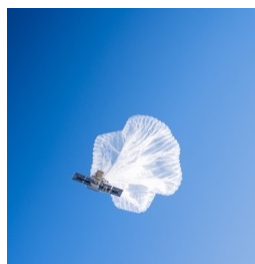
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## NASA'S FLIGHT OPPORTUNITIES PROGRAM

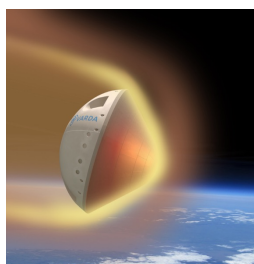


The **Flight Opportunities** program rapidly demonstrates promising technologies for space exploration, discovery, and the expansion of space commerce through suborbital and hosted orbital testing with industry flight providers.

- Subject matter expertise on flight test with commercial providers
- Access to flights through IDIQ contracts and astute use of funding mechanisms
- Flights for technologies, instruments, and experiments



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Credits (clockwise): Virgin Galactic, NASA/Matthew Kuhn, Blue Origin, Zero Gravity Corp., SpaceWorks Enterprises, Varda Space Industries, and Austin Buttar

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## EXPANDING ACCESS TO COMMERCIAL CAPABILITIES VIA FLIGHT OPPORTUNITIES CONTRACTS



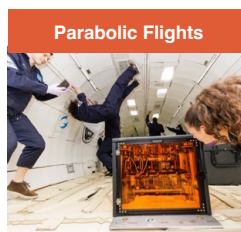
Suborbital Rocket-Powered Vehicles

- Astrobotic
- Blue Origin
- Rocket Lab USA Inc.
- Virgin Galactic



High-Altitude Balloons

- Aerostar International LLC (acquired Near Space Corporation)
- Angstrom Designs
- World View Enterprises



Parabolic Flights

- Zero Gravity Corp.



Orbital Platforms Hosting Payloads

- Astro Digital
- Loft Federal
- Momentus Space
- Rocket Lab USA Inc.
- Space Exploration Technologies (SpaceX)
- Spire Global
- Tyvak Nano-Satellite Systems (Terran Orbital)
- Varda Space Industries

Links to payload users guides (PUGs) available on Flight Opportunities website:  
<https://www.nasa.gov/stmd-flight-opportunities/flight-provider-overview/>

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## HOSTED ORBITAL SERVICES VIA FLIGHT OPPORTUNITIES IDIQ4

### Hosted Orbital Payload Definition

- Payload is integrated on to provider's vehicle and remains attached throughout mission
- Integration, launch and mission management included in hosting service
- Researchers can focus on technology, instrument, or experiment development rather than spacecraft development or mission planning

### Provider Qualifications

- Successful flight of a 2U, 2kg payload with one orbit of Earth
- Opportunity for on-ramps of new capabilities

### Structure of Proposed Services

- Each provider proposed their own standard services
- Non-standard rates cover unique requirements or evolving capabilities

### Wide Variety of Commercial Services

- Slots on small spacecraft (e.g., ESPA buses) designed for multi-payload / multi-customer hosting
- Hosting on a CubeSats designed for a specific payload
- Space-available options on vehicles conducting other commercial missions
- "Virtual" hosting of software payloads leveraging provider assets
- Space in or on capsules that return to Earth
- Test articles attached to rocket upper stages

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## UTILIZING FLIGHT OPPORTUNITIES CONTRACTS



Contracts **available for use by all of NASA** or on behalf of any NASA-supported researcher.



Funding is **not limited to Flight Opportunities budget** – any program or project can purchase a flight.



Contracts can be used by any other **U.S. government agency**.



Each **Request for Task Proposal** will be presented to the cohort of qualified providers for bid.



Flight Opportunities offers **campaign management and flight test subject matter expertise** to all teams.

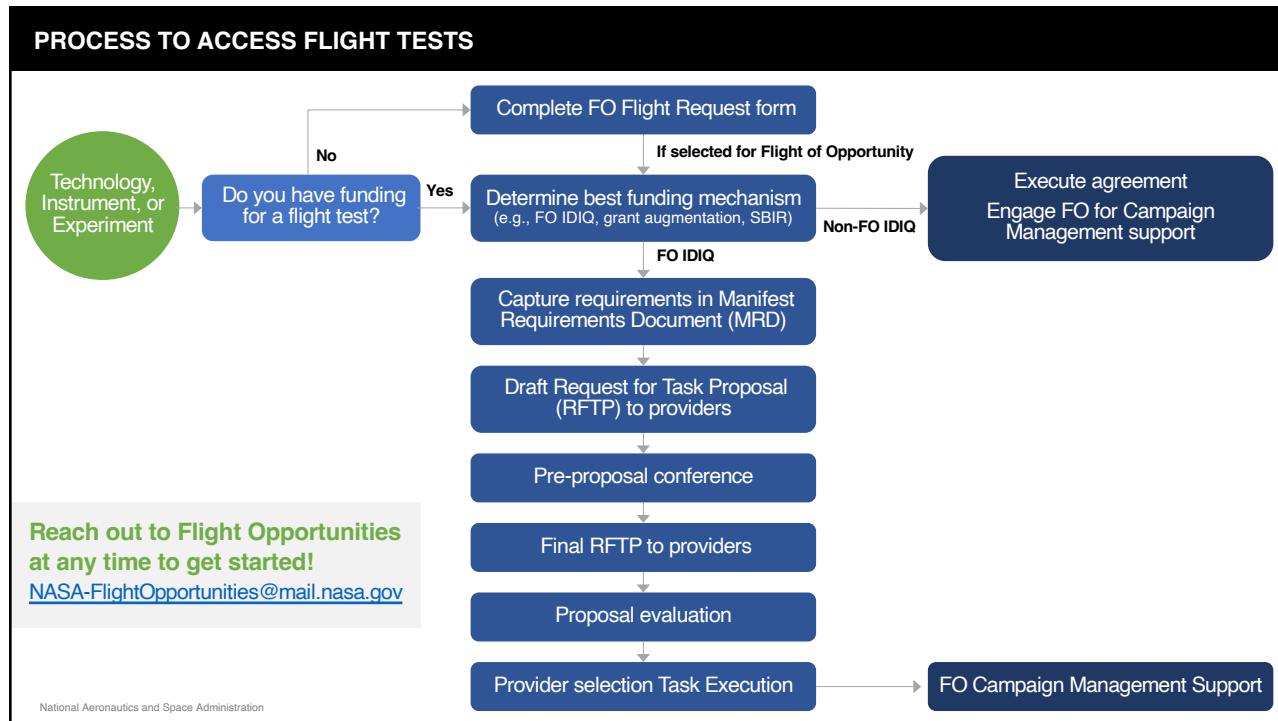


Interested parties can **contact Flight Opportunities** about available services available and task order process.





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PROVIDING RESEARCHERS WITH ACCESS TO FLIGHT TESTS		
Flight Opportunities <b>creatively uses a variety of funding mechanisms</b> to mature innovative solutions for the nation's technology needs, engaging academia, non-profit research institutes, industry, and entrepreneurs to address technology shortfalls.		
Challenges	Solicitations	Other Mechanisms
 <ul style="list-style-type: none"> <li>Open to:               <ul style="list-style-type: none"> <li>Commercial businesses</li> <li>Academic or non-profit research institutions</li> <li>Entrepreneurs</li> <li>Independent innovators</li> </ul> </li> <li>Funding + flight test opportunity</li> </ul>	 <ul style="list-style-type: none"> <li>Announcements of Collaboration Opportunity</li> <li>Tipping Points</li> </ul>	<p><b>Flights of Opportunity</b></p> <ul style="list-style-type: none"> <li>Open to:               <ul style="list-style-type: none"> <li>NASA personnel</li> <li>Competitively selected NASA-funded projects</li> <li>Other government agencies</li> </ul> </li> <li>Request Flight Opportunities support for flight testing with NASA-contracted U.S. commercial flight providers</li> <li>Flight Opportunities helps you:               <ul style="list-style-type: none"> <li>Identify test environment</li> <li>Establish mechanism/agreement</li> <li>Prepare for flight</li> </ul> </li> </ul>
<p><b>STEM Initiative (6-12 grades)</b></p> 	 <p>University SmallSat Technology Partnerships</p>	

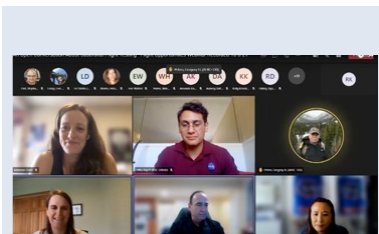
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## A WEALTH OF RESOURCES FOR ENGAGING THE FLIGHT TEST COMMUNITY

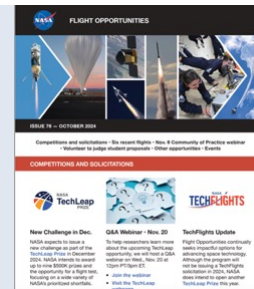
### Community of Practice Webinars

Sharing important insights from suborbital researchers and flight providers



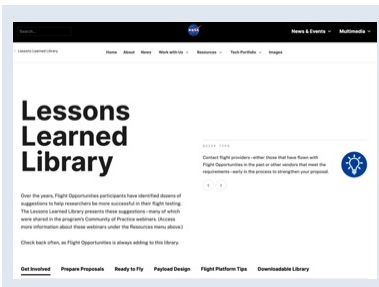
### Newsletter

Providing timely information about funding opportunities, recent flights, upcoming events, new resources, and other news



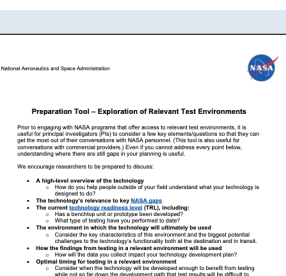
### Lessons Learned Library

Promoting best practices and suggestions to help researchers optimize flight test outcomes



### Researcher Prep Tool

Key considerations to prepare for conversations with the Flight Opportunities team.



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## RESEARCHER PREPARATION TOOL – ELEMENTS TO CONSIDER FOR FLIGHT TEST

High-level overview

Relevance to key NASA STMD shortfalls

Current technology readiness level (TRL)

Environment in which it will ultimately be used

How the findings from testing will be used

Optimal timing for testing

Links to payload users guides (PUGs) available on Flight Opportunities website:  
<https://www.nasa.gov/stmd-flight-opportunities/flight-provider-overview/>

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## NASA TECHRISE STUDENT CHALLENGE

The NASA TechRise Student Challenge leverages suborbital flight platforms to offer students in **6th–12th grades** hands-on experience with the design and test process used by NASA-supported researchers.

### DESIGN



Credit: John F. Kennedy High School

### BUILD



Credit: Cree Barnett Dreyfuss

### LAUNCH



Credit: World View

Visit the challenge website for information and resources:

[www.futureengineers.org/nasatechrise](http://www.futureengineers.org/nasatechrise)

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## WHAT QUESTIONS DO YOU HAVE?

Please put your questions in the chat

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## NASA.GOV/FLIGHTOPPORTUNITIES

Reminder: Register by Sept. 4 to virtually attend the Sept. 10 HELIOTECH panel.

Visit our websites for more information and resources, including our newsletter and monthly Community of Practice webinars.

Reach out:

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

