



# COLUMBIA SPACE INITIATIVE

SPONSOR PACKET  
2016 - 2017



# Columbia Space Initiative

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Dear potential sponsor,

Every Friday, a classroom in Columbia University's engineering building becomes mission control. There, students from over a dozen disciplines work side by side designing satellites, building rockets, and proposing mission architectures for Martian settlements. Though just a year old, the Columbia Space Initiative has grown to become one of the largest engineering communities on campus.

We are an umbrella organization composed of independent teams participating in space technology projects. This past year, we competed in the final rounds of two NASA competitions, tested our asteroid anchor in NASA's Neutral Buoyancy Lab, and presented our proposed mission to Mars at Cape Canaveral. In addition, we recognize the opportunity space presents in inspiring the next generation of scientists and engineers. We've hosted over twenty space-related public events, featuring astronauts and other members of the space industry, with a total of over 1,300 attending. In addition, we have held workshops for K-12 students around New York City, in places ranging from the Intrepid Sea, Air, and Space Museum to the NY Hall of Science.

Because Columbia does not offer an aerospace program, our club offers the only opportunity for students to pursue or discover their interests in space technology and outreach. As a collaborative endeavor, designing for space has taught us engineering skills for working under tight constraints and teamwork skills. These valuable skills have helped our members succeed during their internships at such places as Boeing, SpaceX, NASA Jet Propulsion Laboratory, Johnson Space Center, and Marshall Space Flight Center.

Getting to space is expensive. We would not succeed without support from our university, student councils, and NASA. With every semester, our members dream of bigger and more expensive challenges, requiring us to seek more support. We are grateful for any form of financial aid, material support, software donations, and mentorship made available by our sponsors. Our sponsors are members of our team, and we proudly advertise their names in as many mediums as possible, even the projects we launch to space. We hope you join us on our pursuit toward the final frontier.

Sincerely,



Leon Kim, Co-President



James Gong, Co-President



# OVERVIEW

## Mission Statement

We seek to make Columbia students and faculty the catalysts, not simply witnesses, of the next generation of space exploration by expanding our technological horizons, scientific insight, and organization.

6

Technical missions organized  
and led by members

40+

Members of CSI actively  
participating in a mission

10+

Unique disciplines amongst  
current CSI members

1,300+

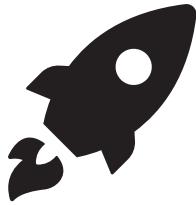
In attendance at events  
organized by CSI in 2016

108,100

Maximum altitude reached  
by ROAREE-I balloon (feet)

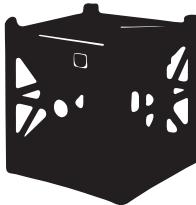


# MISSIONS



## Rocketry

The rocket mission builds amateur rockets every year with the goal of constant improvement and innovation. Last year, the mission assembled model rockets as an introduction to rocketry. This year, the mission is manufacturing its own rocket and solid fuel engines to reach an altitude 5000 feet with an impulse of 2200 N·s.



## Cubesat

The cubesat mission designs nanosatellites and payloads to place an experiment in low Earth orbit. This year, the mission is designing an orbital observational payload and a cubesat platform resilient enough to protect the payload during orbit.



## NIA/NASA RASC-AL

The RASC-AL mission writes mission proposals for NASA's RASC-AL challenge. Last year, RASCAL wrote a mission proposal and timeline for landing on a Martian moon in the 2030s. This year, RASC-AL has written a proposal for a partially inflatable rigid replacement successor to the ISS to be launched in 2022. It has also designed a drilling system to be used on Martian ice for a separate RASC-AL challenge.



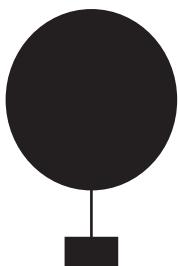
# MISSIONS

## Langley Aero Design Challenge



The Aero mission is designing a large commercial airliner that is both cleaner and quieter than conventional airliners. The plane will use several cutting edge technologies including a blended wing body, ceramic matrix composites, and distributed electric propulsion. It will serve as an entry into the Langley Aero Design Challenge.

## High Altitude Ballooning



The HAB mission aims to launch a high altitude balloon every year with experiential and scientific payloads. Its first balloon, ROAREE-1, launched on April 16, 2016 and reached 108000 ft with imaging and environmental sensor payloads. In 2017, a cloud chamber payload will attempt to visualize subatomic particles above the ozone layer.

## NASA Micro-g NExT



The Micro-G NExT mission designs tools for NASA's Asteroid Redirect Mission. Last year, the team designed and built an anchor that could be used in microgravity. It was successfully tested in NASA's Neutral Buoyancy Laboratory. This year, the team has designed and is building a coring drill that can take samples from near-Earth asteroids.



## Spreading the Message

The Columbia Space Initiative is dedicated to not only bettering ourselves, but also our campus, our local community, and beyond. We participate in various outreach events and activities to share the wonders of space technologies and exploration, and inspire the next generation of space scientists and engineers.



Columbia University Double Discovery Center, March 28, 2016



Columbia Splash, March 12, 2016



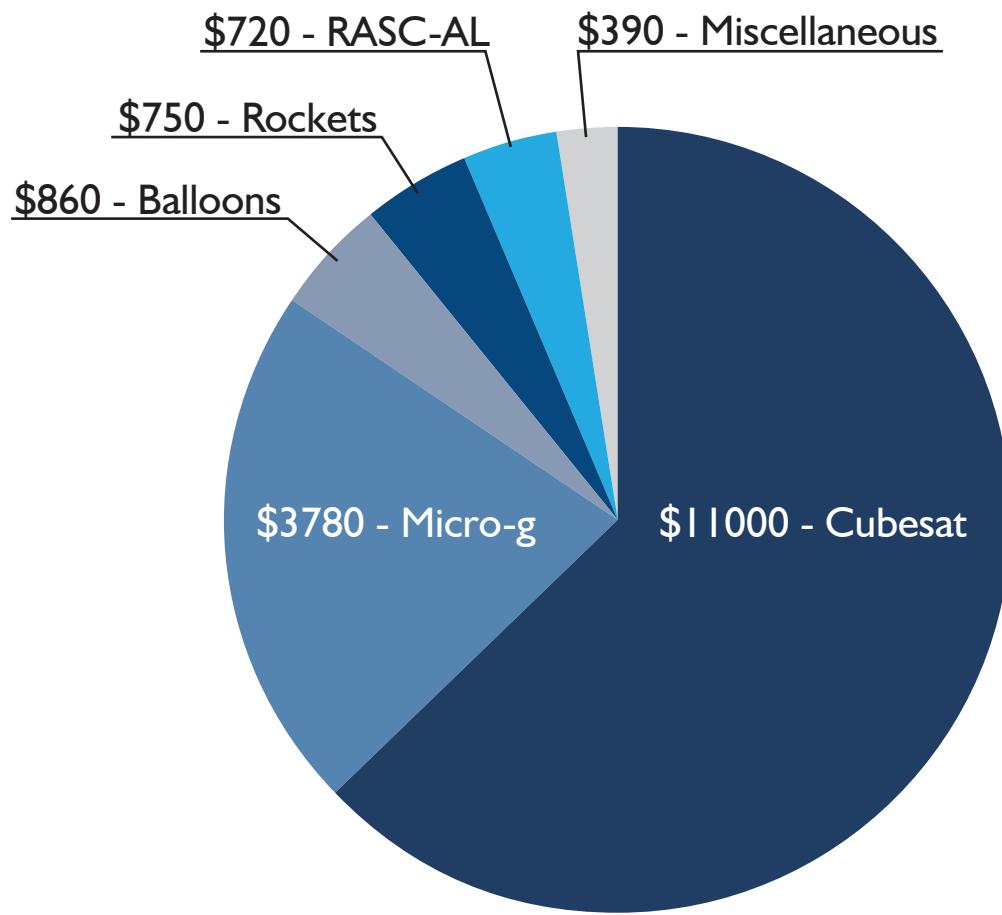
Senior Design Exposition, May 5, 2016



The Intrepid Sea, Air & Space Museum: Kids Week, Feb 18-20, 2016



WELCOME TO THE NBL



**2016-2017 Budget Projection Total:**  
**\$17500**

spent on

**Parts  
Manufacturing  
Travel**

**Equipment  
Registration  
etc.**

# SPONSORSHIP

	 <b>Asteroidal</b> \$50+	 <b>Planetary</b> \$500+	 <b>Solar</b> \$1500+	 <b>Galactic</b> \$5000+	 <b>Cosmic</b> \$10000+
<b>Name/Logo on website, social media, videos</b>	✓	✓	✓	✓	✓
<b>Name/Logo on all equip. and gear of one mission</b>		✓	✓	✓	✓
<b>CSI hosts Sponsor's event on-campus</b>		✓	✓	✓	✓
<b>Invitation to end-of-year banquet</b>			✓	✓	✓
<b>Name/Logo on all tools, entries to competitions</b>				✓	✓
<b>Logo on the next balloon, Set of free T-Shirts</b>					✓

# CONTACT



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