



SPONSORSHIP PACKET



SPRING 2025

A group of five students, three women and two men, are standing in a line in front of a building with large columns. They are wearing dark polo shirts and light-colored pants. The image is dimmed, and white text is overlaid in the center. The text describes the mission of UASPACE at the University of Alabama.

*UASPACE strives to design,
test, and deploy **space
technologies** through a
culture of **collaborative
development**, fostering
engineering **excellence**
and business **leadership**
in students at The
University of Alabama
and the surrounding
community through
STEM-related **outreach.***

WHAT IS UASPACE?

UASPACE is a team of 70 undergraduate students from The University of Alabama's College of Engineering, College of Communications & Information Sciences, and Culverhouse College of Business.

In 2018, a group of passionate undergraduate students established UASPACE with the intent to make The University of Alabama a space-faring institution. In 2020, NASA's CubeSat Launch Initiative selected the team's BAMA-1 proposal, granting UASPACE a launch opportunity.

Over the next two years, UASPACE built BAMA-1, a CubeSat designed to demonstrate innovative drag sail technology. In 2022, the team successfully handed off the completed BAMA-1. Unfortunately, the CubeSat was tragically destroyed when its launch vehicle spun out of control during ascent.

NASA's CubeSat Launch Initiative then awarded UASPACE a second launch opportunity, and the team began work on BAMA-2, a re-flight effort of BAMA-1.

Beyond satellite development, UASPACE actively engages with the Tuscaloosa community, inspiring future STEM leaders by hosting interactive displays and activities at local elementary, middle, and high schools.

WHAT IS A CUBESAT?

A CubeSat is a miniature satellite that packs big potential! Each CubeSat is made up of small 10 cm x 10 cm x 10 cm cubes.

Our BAMA-1 and BAMA-2 CubeSats are 3U CubeSats, which means they are built with three compact cubes stacked together. Their small size and lightweight design make them an excellent choice for testing new technologies at a fraction of the cost of regular satellites, opening the door for more affordable space exploration and innovation.

WHAT IS A DRAG SAIL?

BAMA-1 and BAMA-2 were designed to test an innovative drag sail technology to help combat space debris! These CubeSats were built with a special sail that can be deployed to increase the drag profile and slow the satellite down, pulling it out of orbit and reducing its deorbit time.

WHY ARE DRAG SAILS IMPORTANT?

Without a drag sail, satellites can become space debris—inactive junk floating in space. Debris poses a serious risk, as it can collide with and damage operational satellites, creating even more clutter in our already crowded space environment. BAMA-2 is helping to pave the way for safer, cleaner space exploration!

FUTURE PROJECTS

Although we are in the midst of working on our BAMA-2 CubeSat, we are consistently researching new technologies for our next project. We created a Future Projects team tasked with researching potential technologies to test aboard CubeSats.

BAMA-1

A 3U CubeSat, BAMA-1 was a technology demonstration mission that aimed to conduct a flight demonstration of a drag sail.

February 2020 – NASA’s CubeSat Launch Initiative accepted UASPACE’s BAMA-1 proposal.

February 2021 – BAMA-1 was officially manifested on a rocket launch scheduled for December 2021.

Fall 2021 – With the hardware and final design details confirmed, UASPACE focused on integration, assembly, and subsystem testing.

December 2021 – UASPACE team members hand-delivered BAMA-1 to Nanoracks for integration onto the rocket.

February 2022 – Astra’s LV-0008 rocket launched but suffered a critical failure right after main engine cutoff. The rocket spun out of control, and BAMA-1 was lost.

BAMA-2

As the launch vehicle failed to deliver BAMA-1 to its destination orbit, NASA gave UASPACE a second opportunity to build and launch our CubeSat. BAMA-2 is an effort to re-create and improve on the BAMA-1 design and complete its mission of demonstrating drag sail capabilities.

DESIGN



UASPACE will integrate the lessons learned from BAMA-1 into BAMA-2's design process. This includes more efficient manufacturing processes, correcting flaws that were identified in testing, and making minor design tweaks to the main payload to further increase likelihood of mission success.

TEST



UASPACE is performing a variety of in-house testing on BAMA-2. Tests range from payload deployment to ground station communication as individual components and multi-component tests. UASPACE will also work with our mission integrator to conduct vibration testing for BAMA-2.

DEPLOY



In coordination with mission integrator, UASPACE will stage BAMA-2 for integration into a larger payload. BAMA-2 flight information will be shared with the donors and community as we near project completion.

COMMUNITY ENGAGEMENT

EDUCATIONAL OUTREACH

UASPACE actively engages with local schools by participating in community and campus events, showcasing our 3D-printed CubeSats through hands-on demonstrations and offering interactive educational activities. On average, we attend two events each month.



EDUCATIONAL MATERIALS

UASPACE has created a series of detailed educational worksheets for students ranging from Kindergarten to 12th grade. These resources are available to teachers and families on our website for easy access and download.



GUEST SPEAKER EVENTS

UASPACE organizes events where industry experts share their career journeys and explore captivating engineering topics. Additionally, we invite our alumni to return to share their valuable CubeSat and UASPACE experiences, motivating our team.



SUPPORT BAMA-2

We are incredibly excited about the second-chance opportunity to send our CubeSat to space! We invite you to be part of our extraordinary journey. Please consider supporting BAMA-2 and the students behind this innovative mission.

CONNECT WITH US

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