

EE/CprE/SE 492 STATUS REPORT 4

02/27/2025 – 03/13/2025

Group number: 9

Project title: Space Cyclones - COSMIC CAPSTONE CHALLENGE 2024-2025

Client &/Advisor: Bo Varga, Benjamin Rupp, Rachel Shannon

Team Members/Role: John Beuter (Team Lead), Daniel Sprout, Maheeka Devarakonda, Tanvi Mehetre, Riley Heeren, Ben Swegle

○ **Weekly Summary**

Week Objectives:

Over the past two weeks, we have focused on developing a physical prototype for our design, emphasizing getting the print of our model made. We have placed a print order to have our design created and are currently waiting on additional parts before completing our initial prototype.

- John Beuter:

Reviewed and revised sections of the paper. Collaborated with Bo and Ben Rupp to share ideas and team progress.

- Daniel Sprout:

Worked on enhancing prediction modeling for objects. This should improve accuracy and allow for the enhancement of the prototype.

- Maheeka Devarakonda:

Worked on integrating the basic functionalities with the prediction model created by teammate. Looking to integrate the spring and launch of an actual projectile on this model.

- Tanvi Mehetre:

Made more changes to the power consumption report and finalized the components used in the payload. The servos and lidar components are finalized.

- Riley Heeren:

Started putting together a cost estimate for all of our materials as well as a rough weight

estimate to add to our final paper.

- Ben Swegle:

Received the spring we ordered for our launcher from ETG. Got our net launcher 3D print approved, now waiting for it to be printed at the additive manufacturing lab in Black Engineering. Made a CAD model for a 3D printed net capsule and submitted a 3D print project request to the additive manufacturing lab.

- **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*

- John Beuter: N/A
- Daniel Sprout: N/A
- Maheeka Devarakonda: N/A
- Tanvi Mehetre: N/A
- Riley Heeren: N/A
- Ben Swegle: N/A

- **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
John Beuter	Continued work on the final paper and worked with industry advisors to receive feedback for current design progress.	3	34.5
Daniel Sprout	Worked on enhancing the coding for the predictive model	4	33.5
Maheeka Devarakonda	Worked on integrating the basic functionalities with the prediction model.	2	34
Tanvi Mehetre	Power consumption report changes and component finalization.	2	30
Riley Heeren	Cost and weight estimates	5	25
Ben Swegle	Got our launcher prototype approved for 3D printing. Made a 3D CAD model for a net capsule. Submitted another project request to the additive manufacturing lab for a net capsule to be 3D printed.	2	42

- **Plans for the upcoming week:**

Complete the assembly of our design once the 3D-printed model is available. We will continue to progress with our final paper and conduct revisions.

- **Summary of weekly advisor meeting:**

N/A