



May 22, 2024

Dear Dominican University team STARS,

Congratulations on successfully completing NASA MINDS 2024. Kudos on the long hours, the team-work, and crossing the finish line! NASA MINDS 2024 was an enormous success because of the excellent participation of teams like yours. The NASA judges had some very difficult decisions to make because so many of the papers, posters, and finalist presentations were of such high caliber.

The following are your team's award, scores and the compiled judges' comments.

AWARDS:

- **2nd Place Technical Paper (Underclassman Teams)**

SCORES:

NASA MINDS 2024 SCORES		
	Averaged Score	Points Possible
Paper	20.5	25
Poster	8.5	20

JUDGES' PAPER COMMENTS:

- This group's paper was result driven, providing ample relevant data such as the graphics of those illustrated with charts and circuit diagrams.
- The conclusion could have been improved with slightly more depth.
- Overall, great work team from Dominican University.
- An interesting and potentially very useful project, directly applicable to Artemis. Impressive team and organization.
- The paper is well-organized and clear, with a couple of exceptions: in the power consumption section, the terminology and units are confusing.
- Power consumption should be measured in watts, not watt-hours, and the "additional power support," which I take to be battery capacity, should be in Wh. Thus, $192 \text{ Wh}/12.2\text{W} = 15.7$ hours life expectancy. Similarly, in Tables 2 and 3, "power draw" (which is jargon, not a technical term) should be in W, not Wh.
- In the Data Analysis section, Figs. 7, 9, and 10 could use more explanation: from the text, the significance of the scatterplots and histograms wasn't clear. All in all, a very good effort. Autonomous terrain awareness systems will be critical to both crewed and robotic missions in the coming years, so this team's work is highly relevant.

- Well done! You should be very proud of what you accomplished. I thought that you had an excellent design. You did a great job at testing the design, finding the flaws in it, and proposing a solution to the flaws. I am not only impressed with the technical content of your project, but also by how well you conveyed it.
- This is the best-written paper out of all of the ones I've seen. Being both clear and concise is an art, and you nailed it. The figures clearly convey key technical data, and the written language clearly conveys everything that the figures couldn't.

JUDGES' POSTER COMMENTS:

- Your project concept was good and could be applicable to establish a network of telemetry information to help with lunar manned expeditions.
- However, for this poster I think you could have provided more details that describes how you came up with your evaluation criteria for the ATARs.
- Next you could have provided more background describing the rigorous activities that you performed to get the ATARs to actuate (i.e. the challenges at low speeds) and how you could have improved that design to operate at higher speeds more effectively. Unfortunately, you missed several opportunities to discuss your ATAR device comparisons in your trade table section, in your data section, in your engineering design process and in your results/conclusions.
- Overall, the poster is well laid out and visually appealing with most of the graded criteria being shown.
- It is not clear as to what problem the team is trying to solve and the rest of the poster content suffers because of that. The problem statement discusses analyzing telemetry and the importance of autonomous science, but the mission object is about collecting telemetry. The conclusion doesn't summarize what problems the ATAR would help overcome.

Best regards,



Grace K. Johnson
Project Manager
NASA MINDS