CS/E-02
2

NASA Surface Data VR

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Sponsor: NASA Psyche Mission

Project Requirements:

- Immersive VR Engagement
- Educational Value
- Alignment with NASA Psyche Mission Content
- Appropriate for All Ages

Game Description:

This immersive simulation lets users explore realistic martian terrain and learn key information about NASA's Psyche mission, which will fly by Mars in 2026, by blending 3D Exploration, gravitational differences between celestial bodies, and gaining insights in the goals of space exploration.

Game Features:

Curiosity Rover:

- Control the Curiosity Rover and maneuver it through checkpoints in Gale Crater.

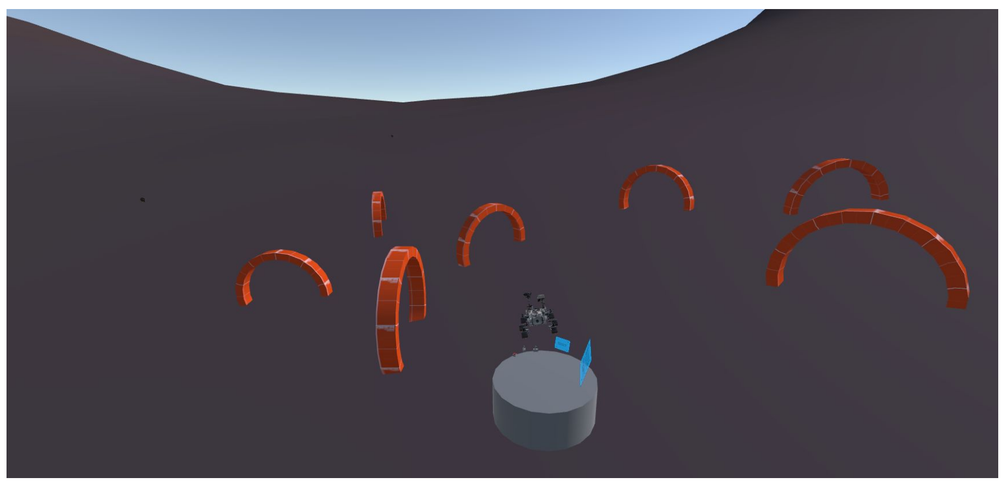
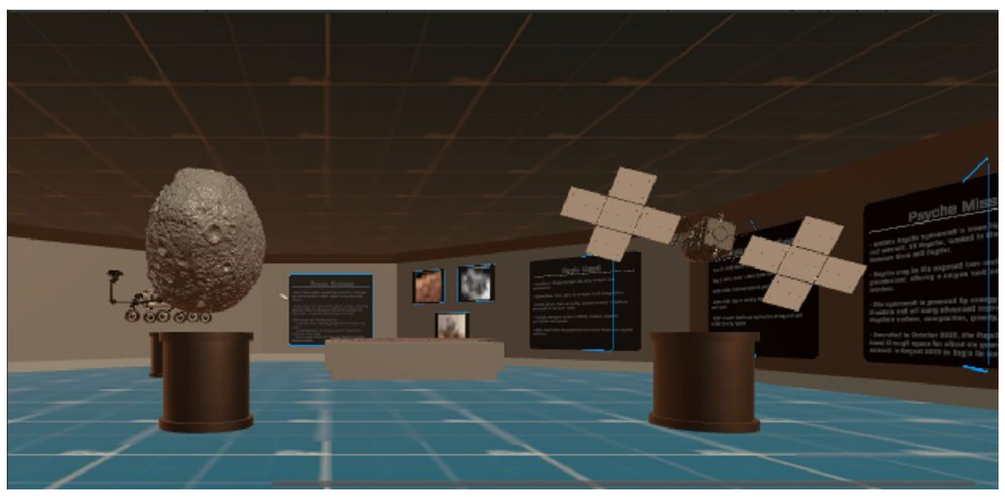


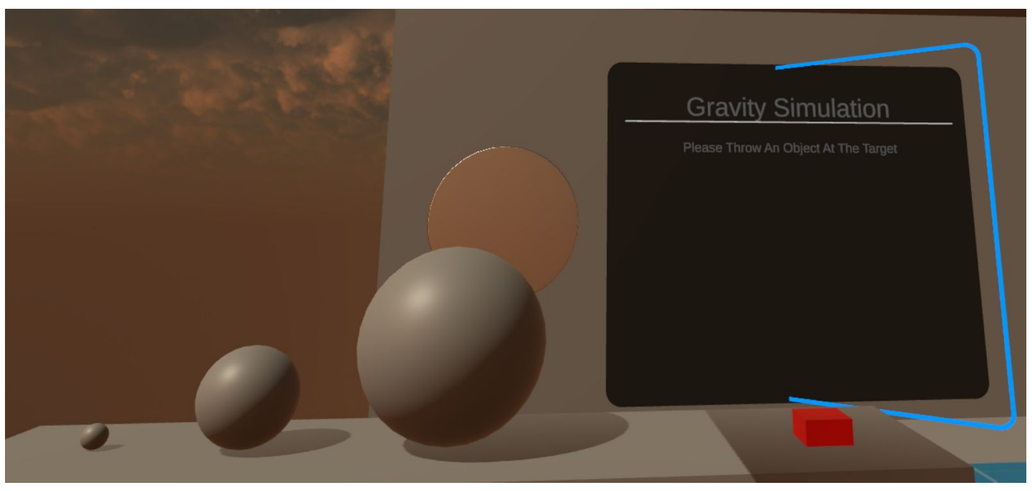
Exhibit Gallery:

- Explore models and information displays about Mars, Psyche, and more.



Gravity Demonstration:

- Experience the differences of gravity between Earth, Mars, and Psyche by throwing objects at a target.



Resource Search:

- Traverse Mars' terrain and find the resources that compose of its crust. See how material research will help the Psyche mission.

Future Improvements:

- Terrain maps of the Psyche asteroid (once data is collected)
- Increased educational value
- Improve interactivity and immersion

Lessons Learned:

- 3D and VR Development Principles: Raycasting, Model Texturing, etc
- Delivering with a timeline
- Flexibility in project expectations
- Team and sponsor communication

Technology Used:

- Meta Quest VR Headset
- Unity
- Github

This work was created in partial fulfillment of Arizona State Capstone Course "CSE 485/486". The work is a result of the Psyche Student Collaborations component of NASA's Psyche Mission (https://psyche.asu.edu/). "Psyche: A Journey to a Metal World" [Contract number NNM16AA09C] is part of the NASA Discovery Program mission to solar system targets. Trade names and trademarks of ASU and NASA are used in this work for identification only. Their usage does not constitute an official endorsement, either expressed or implied, by Arizona State University or National Aeronautics and Space Administration. The content is solely the responsibility of the authors and does not necessarily represent the official views of ASU or NASA.

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