

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Sending out a Signal: Innovative Outreach and Communications Initiatives (7)

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LUNAR ODYSSEY: AN IMMERSIVE LUNAR MISSION SIMULATION FOR SPACE EDUCATION
OUTREACH

Abstract

Engaging the general public, particularly the youth, in space education demands innovative approaches. Acknowledging this challenge and embracing the contemporary trend of escape room-style environments to deliver knowledge in an immersive and captivating manner, the "LUNAR ODYSSEY" project centers around a meticulously designed lunar mission simulation. This simulation is crafted to involve participants from diverse backgrounds in an exhilarating journey through space exploration. The genesis of this concept emerged from extensive surveys highlighting the efficacy of immersive experiences in education, especially when targeting younger audiences outside of STEAM. To validate this approach, an immersive lunar mission simulation was executed for a significant cohort of undergraduate students. This paper presents the methodology, challenges encountered, data analytics, and participant feedback gathered from the conducted experience. The overarching goal of the activity is to seamlessly blend entertainment with education by infusing the excitement of escape rooms with the complexities inherent in space missions. The lunar mission simulation unfolds across six distinct phases, each mirroring critical aspects of an actual lunar mission, complemented by a comprehensive overview in a Phase 0. Teams comprising 3-5 participants navigate challenges ranging from mission design and training to the adrenaline-pumping experiences of launch, lunar landing, and the subsequent return journey. Participants progress through each phase by successfully completing simulation tasks, ensuring a dynamic and educational experience. Despite the intricacy of the mission, the entire course is designed for completion in under 25 minutes, with each team spending approximately 6 minutes on each phase. The efficiency of this timeline allows for the accommodation of over 150 participants in less than 10 hours. Participant feedback overwhelmingly lauds the novelty of the concept and its effectiveness in conveying intricate information about the moon, its missions, and their broader significance in space exploration. The simulation effectively communicates the challenges faced by astronauts, shedding light on critical decision-making processes in unexpected situations, akin to the real problems encountered in previous crewed missions. This underscores the innovative nature of our space education outreach concept, emphasizing the unique amalgamation of entertainment and education. This paper delves into the specifics of the simulation, presenting results, participant feedback, surveys, and insights for potential replication in diverse educational contexts.