29th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Interactive Presentations - 29th IAA SYMPOSIUM ON SPACE AND SOCIETY (IP)

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BUBBLES ON MARS: 360 PLAY AND PERFORMANCE ON EVA.

Abstract

This interactive presentation – including a documentary-style VR immersive experience - presents a collection of playful bubble-blowing activities by Crew 188 during EVA simulations at the Mars Desert Research Station in 2018. The aim of the immersive cinematic interactive presentation is to posit 360 play and performance systems as vital technologies and therefore fundamental enablers of future missions' successes, worthy of significant development investment. Play as research-through-performance helps us explore, and adapt to, the new environment (serving the individual), becomes a useful mode for supporting positive crew performance, cohesion and wellbeing (serving the mission), and a technical method for inspiring passive players (on site, or on Earth) to imagine a new world (serving the crew, the mission and public). We extend this knowledge in virtual reality to analyse how human performance and play activities open new opportunities for imagination and experience of every-day yet nonetheless spellbinding phenomena such as blowing bubbles. By post-processing 360 video data and complementing it with interviews and narration, IAC audiences can experience both the MDRS analogue play and the predictive behaviours of blowing bubbles on Mars in a range of virtual reality scenarios. The authors build on Pell Mueller's 2016 taxonomy of performance and play in microgravity to articulate a range of reflex actions and spatio-temporal perceptions of the space-faring body and bubble interactions, and further demonstrate how to frame these changes in perceptions of space to support new discovery. The format allows us to speculate on the application of this technology across three platforms: firstly the application of play and performance for enhancing mission training and extrapolating complex science on a human-scale; secondly, the application of immersive visualisation platforms and virtual reality to contribute new knowledge on performance and interactivity in extreme environments; and thirdly to speculate on the long-range technological application for bubble-blowing on Mars including in-situ 3D manufacturing and architectural design, biomedical utilisation, gastronomy, fermentation, propulsion, and all in the spirit of "earthly" fun. These research-through-performance experiments by the artist-astronaut seek to demonstrate that playful processes in space-related environments including space analogues, simulations and microgravity conditions can be more than spontaneous novelty. Importantly, play and performance leads to innovation, invention and discovery.