

“FORWARD! Lunar Exploration and Beyond” Fiske Fulldome Film. J. M. Keller¹, Jack Burns¹, Thor Metzinger¹, Jenny Shipway², Brian Bishop³, Tom Ludlow³. ¹University of Colorado Boulder, ²Freelance Planetarium Science Communication, ³TEND Studio.

Overview: Fiske Planetarium at the University of Colorado Boulder, in collaboration with the Network for Exploration and Space Science (NESS) and Lockheed Martin, is producing a high quality, immersive film on future lunar exploration and beyond to engage public audiences at planetarium facilities across the nation. This 25-minute fulldome production will generate awareness and enthusiasm for NASA plans forward to the Moon through use of the Space Launch System, the Orion crew vehicle, the Gateway, and human-rated lunar landers to further our understanding of history of the Earth, our Solar System, and the Universe and to prepare for future exploration of Mars. The planetarium production is told in three parts outlined below.

Development of Infrastructure for Human Exploration: The first segment of the production features ongoing and future design, building, and testing of the spacecraft and resources needed to establish long duration human presence around the Moon. This segment of the production highlights that this challenge will be accomplished through coordinated efforts involving public, commercial, and international organizations. Importantly, this will be the first step towards long term, sustained human exploration, dawning a new era in which humans are heading into space exploration for the foreseeable future.

Scientific Investigations Afforded through Human Lunar Exploration: The second segment emphasizes science that will become accessible through lunar exploration, including opportunities to explore the South Pole-Aitken basin and to conduct low frequency radio observations from the radio-quiet lunar farside. Exciting yet challenging research investigations provide excellent examples of the novel and innovative opportunities to advance our knowledge of our planetary neighborhood, the Universe, and their histories.

From the Moon to Mars: The final segment of the production shows visions for humans advancing further into the Solar System. Building upon lessons learned from cis-lunar orbit, astronauts will establish a habitable establishment on a Martian moon to conduct telerobotic research on the Martian surface. Audiences will appreciate the value of designing and testing systems in lunar orbit to guide this ambitious venture further than humans have ever gone before.



Production Details: The script for this production was written by freelance science communicator Jenny Shipway in consultation with NESS, Lockheed Martin, and other SSERVI Subject Matter Experts. TEND Studio is providing storyboards and computer graphics animations for the film. Thor Metzinger of Fiske Planetarium is coordinating with NASA to obtain fulldome video footage related to SLS, Orion, and the Gateway.

Due to issues related to the COVID-19 situation, we have revised the release date of the full length film to 2021. However, we will be releasing a 5-minute short film trailer during Fall 2020. During our talk, we will preview scenes from the planned production.

Impact: This project will enhance public engagement in strategic exploration plans currently being pursued by NASA. By producing a feature length production to be disseminated widely across the nation, this project will engage audiences in informal education settings provided by planetarium facilities and have a broad impact both on public awareness as well as motivation of the next generation of STEM professionals. We anticipate that over 200 planetarium facilities will adopt and utilize the free content developed through this project to impact a minimum of 250,000 individuals in the United States and likely many more.