

Let's Go for a Space Walk: Asynchronous Interplanetary Experiences

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Research Question

Which design opportunities can be identified for interplanetary experiences focused on supporting well-being of crew members?

Design Constraints

- Communication between Earth and Mars is delayed by 20 minutes
- The physical environment is different from Earth to a Mars habitat
- The equipment necessary to wear differs from Earth to habitat.
- Crew members have a personal connection to places on Earth but not necessarily their temporary home.

Framework for Experiences

We explore the research question through the framework illustrated below. The framework consists of two dimensions that relate to the social nature of an activity and the mobility of the design. Our framework is based on an analysis of the Life On Mars video series from New York Times documenting the work on the Hi-SEAS mission simulating an eight month long habitation on Mars with a specific focus on the psycho-social well-being of the crew members. For each quadrant, we offer a design that supports the well-being of crew members.



Design Opportunities

- Q1 Supporting personal connection to physical spaces on home planet in solitary
- Q2 Supporting personal relations with friends and family in physical spaces while stationary
- Q3 Supporting solitary mobile experiences by augmenting the landscape with elements of Earth
- Q4 Supporting personal relations in a mobile experience through recorded content

Discussion and Future Work

Our suggestions focus particularly on mixing different sensory stimuli, but designs could also be constrained to single senses. In some cases, crew members might be highly reliant on seeing their immediate, physical environment where smell or sound could be more appropriate. We also acknowledge the importance for people on Earth to experience life on Mars through family and friends. Further development of the framework could consider the designs in reverse for people on Earth.