

OVERVIEW OF THE HUMAN EXPLORATION RESEARCH ANALOG (HERA)

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In 2013, the Human Research Program at NASA began developing a new confinement analog specifically for conducting research to investigate the effects of confinement on the human system. The HERA (Human Exploration Research Analog) habitat has been used for both 7 and 14 day missions to date to examine and mitigate exploration risks to enable safe, reliable and productive human space exploration. This presentation will describe how the Flight Analogs Project developed the HERA facility and the infrastructure to suit investigator requirements for confinement research and in the process developed a new approach to analog utilization and a new state of the art analog facility. Details regarding HERA operations will be discussed including specifics on the mission simulation utilized for the current 14-day campaign, the specifics of the facility (total volume, overall size, hardware), and the capabilities available to researchers. The overall operational philosophy, mission fidelity including timeline, schedule pressures and cadence, and development and implementation of mission stressors will be presented. Research conducted to date in the HERA has addressed risks associated with behavioral health and performance, human physiology, as well as human factors. This presentation will conclude with a discussion of future research plans for the HERA, including infrastructure improvements and additional research capabilities planned for the upcoming 30-day missions in 2016.