

22nd IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM (A5)
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HEXHAB VIRTUAL WALK-THROUGH OF A FULLY OUTFITTED 3D PRINTED MARS HABITAT

Abstract

An immersive Virtual Reality (VR) experience is presented for a fully outfitted 3D printed Mars habitat. HexHab is a 3D constructed printed shelter designed for long-term occupancy in extreme, inhospitable planetary environments such as Mars or the Moon. The design is an entrant in NASA's 3D Printed Habitat Challenge to demonstrate how additive construction technology is used to autonomously construct a planetary habitat.

Depicted are regolith, atmosphere and water processing to create regolith and polyethylene feedstock. Feedstock mixing, piping to the printer, and HexHab site excavation, printing and outfitting are described. Interior views of the three deck levels of the habitat fully outfitted with mechanical services are experienced.

Users experiencing the VR demonstration walk around the site, hear the Martian wind, open doors, move items and interact with elements inside the habitat. A construction sequence is added where viewers watch as the observers seeing the habitat being built. An opportunity for users to participate in the outfitting sequence is in development.