

IAA/IAF SPACE LIFE SCIENCES SYMPOSIUM (A1)
Interactive Presentations (IP)

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INNOVATIONS FOR SPACE EXPLORATION - LESSONS FROM MARTIAN ANALOG ASTRONAUT
SIMULATION EXPEDITIONS

Abstract

This abstract is both an oral and interactive presentation. We will profile several cutting-edge space innovations, novel concepts, experimental technologies and visionary ideas from analog astronauts, space and citizen scientists, pioneering explorers, researchers, space artists and creative writers and filmmakers who as a collective force have committed and dedicated their energies to moving Humans beyond Earth's borders with the vision to building a positive inspiring future for the Next Generation of space explorers.

This presentation will feature unique, creative ideas and innovative technologies for human space exploration, feasibility biomedical projects, robotics and rover studies for Extra-Vehicular-Activities, EVA, for future planetary surface exploration, development and testing an integrated, portable solar powered 3D Printing technology for space surgery, optimizing human performance and crew interactions by integrating Virtual Reality and complementary medicine platforms, such as, yoga and mindfulness meditation programs in the development of space psychological mitigation concepts, promoting S.T.E.A.M, public outreach and space-art.

The Analog Astronaut expedition crews have collaborated under the auspices of the Mars Society and the non-profit organization, Mars Without Borders, MWOB, and all the missions have successfully completed full immersive "Martian" simulation expeditions spanning two weeks to four weeks in duration at the Mars Society's Mars Desert Research Station, MDRS, located in remote area of Utah desert in USA. Mars Without Borders, MWOB, is a group of international, interdisciplinary and intercultural team of Analog Astronauts crew teams integrating 21st century technologies for enabling space exploration. Our mission is to create and test capabilities related to enabling future human missions to Mars and beyond. As a community of analog astronauts, we will continue to challenge our human limitations and to overcome our fears to boldly reach out into the vast darkness of our Universe to one day become a multi-planetary species.