

33rd IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Simulating Space Habitation: Habitats, Design and Simulation Missions (6)

Author: Ms. Rahaf Zorba
University of Jordan, Jordan, rahafzorba2002@gmail.com

Mr. Fadi Atieh
Jordan, fadiatieh2000@gmail.com

Ms. Hala Qashou
University of Jordan, Jordan, halaqashou@gmail.com

Mr. Obada Zayadneh
Jordan, obada.zayadneh@gmail.com

DESIGN OF MARS MODULAR SETTLEMENT UNITS

Abstract

Crewed space exploration missions to Mars have been planned for the next decade. Astronauts and coworkers will land on an inhabitable Mars and thus, they need to bring their needed settlement habitat along with them. In this research work, the design of a modular settlement unit that could be assembled and transported around Mars quite easily. The design has to address multiple constraints dictated by the harsh conditions on Mars. Data on Martian and Space weather conditions on various locations on Mars will be collected from NASA archive sources and analyzed and parameters essential for survival of crews will be identified and assessed. The Martian home for crew members for extended periods of time will be designed, simulated, and material selection will be made to fit the long term living and operation on Mars. Innovative materials and facilities will be incorporated into the units. This research work represent one of the ongoing activities towards the establishment of Jordanian Association for Space Science and Technology Applications (JSSTA).