

HUMAN EXPLORATION OF THE SOLAR SYSTEM SYMPOSIUM (A5)
Near Term Strategies for Lunar Surface Infrastructure (1)

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MDRS 2011-2012 ILEWG CAMPAIGN: TESTING HABITABILITY AND PERFORMANCE AT AN
ANALOGUE MOON BASE INFRASTRUCTURE OUTPOST ON EARTH.**Abstract**

The International Lunar Exploration Working group has been organizing a new campaign to test exploration procedures in Analogue Moon Base Infrastructure. The 2012 campaign called EuroMoon-Mars/Domus was carried at the Mars Desert Research Station (MDRS), a space analogue environment in Utah. Inside the station, selected crew members are forced to work and live together in an infrastructure designed on the basis of an early Moon or Mars outpost. Feasibility and limitations of human and robotic planetary exploration were investigated, with prior lessons learned from the ILEWG EuroMoon-Mars missions since 2008 being taken into account. Two teams were involved, crew 113 and crew 114, each comprised of six members. The focus of this paper will be on presenting the analysis performed by the Extreme-Design working group on the living and working conditions, which analyzed and predicted problems related to the habitability of a previous lunar outpost. The living conditions were investigated with the help of a detailed questionnaire and a debriefing workshop, which focused on two points of interest: the social approach of the crew and the relevance of culture/nature/art for increasing the crew's

wellbeing and performance in isolation. The work activities of the crew included human-robotic partnership such as EVA assistance or replacement; extension of the RF robotic remote control network, as well as research in the field of human factors, such as a food study, a sleep study, and other types of habitability research. This paper will review all the results of the studies comparing those with the result from the 2011 campaign.