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EUROMOONMARSPOLAND SPACE ANALOG SIMULATION CAMPAIGN 2024 : STUDIES ON HUMAN BEHAVIOUR COMBINED WITH HUMAN-SYSTEM INTERACTION

Abstract

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The future of space exploration depends heavily on our ability to establish space bases beyond Earth's borders, which will play a crucial role as launch points for the exploration and colonisation of remote regions of space. Simulating space missions in preparation for future exploration of the Moon and Mars, by reproducing living conditions and the external environment, is essential for perfecting technologies and analysing human behaviour. Planned for June 2024, the EuroMoonMarsPOLand initiative, the result of collaboration between the Analog Astronaut Training Center and the ILEWG Lunex EuroMoonMars, will involve a seven-day long mission during which a crew of five to six astronauts will be placed in isolation. Various individual and collective scientific experiments will be carried out to analyse the effects of the space environment. In particular, these research activities aim specifically to measure the psychological effects of isolation, as well as the conditions that may be encountered during extended space missions, by identifying optimal strategies to maintain the mental health and performance of astronauts in space. This mission aims to significantly increase our knowledge of human behaviour in space environments, by focusing specifically on the interactions between astronauts and their environment. The aim is to discover innovative approaches to optimising the efficiency and safety of space missions, while exploring ways to minimise stress and reduce their workload. A working environment designed so that the technology perfectly complements human skills would encourage an optimisation aimed at reducing human error by adapting systems according to astronauts' own actions and reactions. The results of this campaign will enrich our scientific understanding of human behaviour in space and will be presented during the presentation.