



## **Analogue Simulation of human and psychosocial factors for MoonMars bases**

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Several courageous plans regarding future human space exploration have been proposed. Both main future targets, ESA's Moon village, as well as journey to Mars represent huge challenge for humans. Appropriate research on psychological aspects of humans in extreme conditions is needed. Analogue simulations represent valuable source of information that help us to understand how to provide an adequate support to astronauts in specific conditions of isolation and limited resources.

The psychosocial investigation was designed to build on combination of several methods based on subjective as well as objective assessments, namely observation, sociomapping, content analysis of interviews etc. Research on several simulations provided lessons learned and various insights. The attention was paid particularly to the interpersonal interactions among crew members, intragroup as well as intergroup communication, cooperation, and performance. This comprehensive approach enables early detection of hidden structures and potential insufficiencies of an astronaut team.

The sociomapping of interpersonal communication as well as analysis of interviews with participants revealed insufficiencies especially in communication between the analogue astronauts and mission control. Another important finding was gain by investigation of the relationship between the astronaut crew and mission control. Astronauts low trust to mission control can have a great negative impact to the performance and well-being of astronauts.

The findings of the psychosocial studies are very important for designing astronaut training and planning future mission.