

IAF SPACE EXPLORATION SYMPOSIUM (A3)  
Space Exploration Overview (1)

Author: Dr. Marta Del Bianco  
Italian Space Agency (ASI), Italy

Ms. Francesca Ferranti  
Italian Space Agency (ASI), Italy  
Dr. Claudia Pacelli  
Agenzia Spaziale Italiana (ASI), Italy  
Dr. Valerio Vagelli  
Agenzia Spaziale Italiana (ASI), Italy

## MAPPING THE PATHS OF HUMAN SPACE EXPLORATION, A LIFE SCIENCE PROSPECTIVE

**Abstract**

Human space exploration is one of the most effective drivers for scientific research and technological innovation. In view of the steadily growing international relevance of human space exploration beyond Low Earth Orbit, the Italian Space Agency (ASI) is continuously reinforcing the network of the national scientific community and industrial stakeholders for the success of future Moon and Mars exploration missions. This requires tackling unsolved issues related to the effects of long-duration space flights and developing the required, enabling technologies. ASI has activated four working groups with the participation of national experts from the scientific community on the macro-areas of space life sciences: integrated physiology, microbiology, biological systems for life support, and radiations. The groups have analysed the current scenario of space life science research and have identified the most relevant objectives and key issues to enhance the national contribution and competitiveness towards enabling human deep space exploration in collaboration with international partners and agencies. In this contribution, we will present and discuss the results produced by the working groups, with emphasis on the long-termed, strategic initiatives that have spurred from the output of their analysis of the field.