

Exploration
Science
Workshop

AGENDA

PROGRAMME DAY 1

TIME	TITLE	SPEAKERS
8:30 - 09:45	Coffee Break & Registrations	
09:45 - 10:05	Welcome & Opening Remarks	Daniel Neuenschwander , Director of Human and Robotic Exploration, ESA Mario Cosmo , Director - Directorate of Science and Innovation – ASI
10:05 - 10:30	Italian approach to space exploration science – overview	Raffaele Mugnuolo – Head of Exploration and Orbital Infrastructure Office - Directorate of Science and Innovation ASI
10:30 - 11:10	ESA's Human and Robotic Exploration Programme	Daniel Neuenschwander , Director of Human and Robotic Exploration, ESA
11:10 - 11:30	European Space Science Committee (ESSC) & Human spaceflight and Exploration Science Advisory Committee (HESAC)	Roberto Battiston , European Space Sciences Committee (Chair) Caroline Smith , ESA's Human spaceflight and Exploration Science Advisory Committee (Chair)
11:30 - 12:10	Coffee Break	
12:10 - 13:30	Exploration Science: Update and Highlights + Q&A	Angelique Van Ombergen , Chief Exploration Scientist, ESA Fabian Möller , Human Exploration Enabling Science Team Lead, ESA James Carpenter , Lunar Science Office Team Lead, ESA Gerhard Kminek , Mars & Beyond Science Team Lead, ESA Sébastien Vincent-Bonnieu , Utilisation and Enabled Science Team Lead, ESA
13:30 - 14:30	Lunch Break	
14:30 - 14:40	COSPAR: Powering Exploration Science	Pascale Ehrenfreund , President of the Committee on Space Research (COSPAR)
14:40 - 15:15	ExPeRT: Exploration Preparation, Research and Technology	Benoit Pouffary , Chief Exploration Engineer, ESA
15:15 - 16:00	Keeping Humans Healthy Beyond Earth: ESA's Space Medicine Priorities	Sergi Vaquer Araujo , Lead Space Medicine Team & HRE Chief Medical Officer, ESA

TIME	TITLE	SPEAKERS
16:00 - 16:30	Exploration Science Research Fellow Pitches: - Evaluation and optimization of Blood Flow Restriction Exercise as a Countermeasure to Microgravity-Induced Musculoskeletal and Cardiovascular Deconditioning - Blood Coagulation, Haemodynamics, and Thromboembolic Disorders - Enhancing wound healing in simulated microgravity conditions using a nanoparticle-infused scaffold - Developing a Science Sampling Strategy for the ExoMars Rosalind Franklin rover - Refine and Expand ESA's Mutual Radio Occultation Capability - ACES Data Analysis - Machine Learning for Materials Science - Additive Manufacturing of Lunar Regolith in the context of In-Situ Resource Utilisation - Mineralogical and Geochemical Indicators for Lunar Resource Exploration - Lunar Resource Assessment and Exploration - Radiation in the Lunar Environment: from Crew Health to Resource Prospecting	Angelique Van Ombergen , Chief Exploration Scientist, ESA (Chair) Ewoud Jacobs , ESA Hayley Arron , ESA Elisa Paolin , ESA Gabriela Ligeza , ESA Jacob Parrot , ESA Michael Plumaris , ESA Jonathan Mullen , ESA Christopher Ogunlesi , ESA Giulia Consuma , ESA Astrid Oetting , ESA Martin Losekamm , ESA
16:30 - 17:00	The Negative Ions at the Lunar Surface (NILS) Instrument on the Chang'E-6 Mission	Stas Barabash , Swedish Institute of Space Physics, Sweden
17:00 - 19:00	Exploration Science Research Fellow Posters + Aperitif (Networking Event)	

PROGRAMME DAY 2

8:30 - 09:00	Coffee Break	
9:00 - 10:30	Physical Sciences – From Fundamental Research to Exploration	Sébastien Vincent-Bonnieu , Utilisation and Enabled Science Team Lead, ESA (Chair) Jim Lutsko , U. Libre Bruxelles, Belgium Jens Teiser , U. Duisburg-Essen, Germany Thomas Podgorski , U. Grenoble Alpes, France Katharina Brinkert , ZARM, Germany Guillaume Legros , Sorbonne U. & CNES, France Florian Kargl , DLR, Germany
10:30 - 11:30	Invited Early Career Researcher - Clay mineralogy and IR spectral signatures of Mars analogue sedimentary rocks - SELENA: Sustainable microbial Ecosystem for Lunar Exploration Applications - Bringing Space Radiation to Earth: Machine-Learning-Driven Optimization of the GCR Simulator at FAIR - Shotgun metagenomics reveals planetary protection relevant microbial diversity - Lunar Pyroclastic Deposits as Science and Resource Targets for Future Exploration - Towards robotic in situ sample processing and searching for biomarkers in terrestrial analogues for planetary exploration - Microgravity and Innate Immunity in vitro on the ISS Using a Novel Method for Organoid Culture in Spaceflight - Multilevel sensorimotor re-adaptation after long-duration spaceflight - Ground truth for ESA's PROSPECT package: characterising lunar volatiles before landing - Evaluation of astronaut exposure from GCR and historical SPEs within the scope of the ARTEMIS missions: implications for shielding strategies using a microdosimetric cancer risk factor [Q] method	Intro on metrics & Selection Angelique Van Ombergen , Chief Exploration Scientist, ESA (5min) 10 Pitches (3min presentation + 2min Q&A) Grace Nielson , University of St. Andrews, UK Isabel Santos de Sousa, University of Porto, Portugal Luca Lunati , GSI, Germany Anna Tumeo , University of Galway, Ireland Giacomo Melchiori , University of Padova, Italy Sergio Quevedo-Caraballo , Centro de Astrobiología (INTA-CSIC)/ Universidad de Alcalá de Henares, Spain Ryan Sarkar , Goethe University Frankfurt, Germany Anna Finazzi Agrò , University of Trento, Italy Stephanie Halwa , The Open University, UK Alexis Papadopoulos , University of Ioannina, Greece

11:30 - 12:00	Coffee Break	
12:00 - 13:30	Biology in Space: Roadmap, Research and Future Opportunities	Christiane Hahn, Science Lead for Biology, ESA (Chair) Rodrigo Almeida, Biology Scientist, ESA (Co-Chair) Ian Johnson, Human Exploration Science Support, ESA (Co-Chair) Adrienne Kish, Muséum National d'Histoire Naturelle, Paris, France Daniela Billi, University of Rome Tor Vergata, Italy Christian Liemersdorf, DLR, Germany James Henstock, Northumbria University, UK Miria Ricchetti, Institut Pasteur, France José Manuel Rivera Arbelaez, TU Twente, The Netherlands Veronica de Micco, University of Naples Federico II, Italy Joao Garcia, Wageningen University, The Netherlands
13:30 - 14:30	Lunch Break	
14:30 - 16:00	Science at the Moon	James Carpenter, Lunar Science Office Team Lead, ESA (Chair) Simone Dell'Agnello, Laboratori Nazionali Di Frascati (INFN), Italy Maresh Anand, Open University, UK Sophia Casanova, ispace Europe SA, Luxembourg Yoshifumi Futaana, Swedish Institute of Space Physics, Sweden Philipp Reiss, Technical University of Munich, Germany
16:00 - 16:30	Coffee Break	
16:30 - 18:00	Human Research for Exploration: What We Know, What We Have, Where We Go	Fabian Möller, Human Exploration Enabling Science. Team Lead, ESA (Chair) Francesco Pagnini, Università Cattolica del Sacro Cuore, Milan, Italy (Co-Chair) Anna-Maria Liphardt, FAU Erlangen-Nürnberg, Germany Vitalie Faoro, Université Libre de Bruxelles, Belgium Peter zu Eulenburg, Ludwig-Maximilians Universität, Munich, Germany Pedro Marques-Quinteiro, Lusofona University, Portugal Jonathan Scott, Medical Projects Manager Space Medicine Team, ESA



PROGRAMME DAY 3

8:30 - 09:00	Coffee Break	
9:00 - 09:30	Mars atmosphere's best-kept secrets: "the answer, my friend, is blowin' in the wind"	Franck Montmessin , LATMOS, France
9:30 - 11:00	Mars science: From orbit to subsurface	Gerhard Kminek , Mars & Beyond Science Team Lead, ESA (Chair) Susan Conway , University of Nantes, Frances Maria Paz Zorzano , Centro de Astrobiologia (CAB), Spain Roberto Orosei , Institute for Radioastronomy, Bologna, Italy
11:00 - 11:30	Coffee Break	
11:30 - 12:00	Keeping Time in Orbit: The Science of the Atomic Clock Ensemble in Space (ACES)	Luigi Cacciapuoti , Project Scientist (SCI-EA), ESA (Chair) Christophe Salomon , Ecole Normale Supérieure de Paris, France
12:00 - 13:30	Radiation for Space Exploration: Destinations, Research and Future Developments	Piers Jiggins , Science Lead for Radiation, ESA (Chair) Anna Fogtman , Radiation Protection Officer, ESA (Co-Chair) Carlotta Achille , Fondazione E. Amaldi, Italy Nicolas Wijsen , KU Leuven, Belgium Daniel Matthiae , DLR, Germany Luca Bocchini , TAS-I, Italy Charlot Vandevoorde / Olivia Drayson , GSI, Germany
13:30 - 14:30	Lunch Break	
14:30 - 17:00	Your Voice, Our Future: Interactive Discussion with ESA & Wrap-Up	

