EUROPEAN SPACE AGENCY

Agenzia Spaziale Italiana

Exploration Science Workshop

AGENDA

PROGRAMME DAY 1

TIME	TITLE	SPEAKERS
8:30 - 09:45	Coffee Break & Registrations	
09:45 - 10:05	Welcome & Opening Remarks	**Angelique Van Ombergen,** Chief Exploration Scientist, ESA **Mario Cosmo**, Director - Directorate of Science and Innovation, ASI **Mario Cospito**, Ambassador - Commissioner of the Italian Space Agency
10:05 - 10:45	ESA's Human and Robotic Exploration Programme	**Daniel Neuenschwander**, Director of Human and Robotic Exploration, ESA
10:45 - 11:10	Italian approach to space exploration science – overview	**Raffaele Mugnuolo**, Head of Exploration and Orbital Infrastructure Office - Directorate of Science and Innovation, ASI
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 - 12:00	Coffee Break	
12:00 - 13:30	Exploration Science: Update and Highlights + Q&A	**Angelique Van Ombergen**, Chief Exploration Scientist, ESA **Fabian Möller**, Human Exploration Science Office, 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 **Liz Guzman Ramirez**, Science Data and Archiving 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	**James Carpenter**, Lunar Science Office Team Lead, ESA (Chair) **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 Rome Tor Vergata & University of Trento, Italy **Stephanie Halwa**, The Open University, UK **Alexis Papadopoulos**, University of Ioannina, Greece

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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 **Sophia Casanova**, ispace Europe SA, Luxembourg **Yoshifumi Futaana**, Swedish Institute of Space Physics, Sweden **Philipp Reiss,** Technical University of Munich, Germany **Stas Barabash**, Swedish Institute of Space Physics, Sweden
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

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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"	**Gerhard Kminek**, Mars & Beyond Science Team Lead, ESA (Chair) **Frank 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 Jiggens**, 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 **Olivia Drayson**, GSI, Germany
13:30 - 14:30	Lunch Break	
14:30 - 17:00	Your Voice, Our Future: Interactive Discussion with ESA & Wrap-Up	