

# Sixth General Assembly of the EAI

Hessenpark, Germany, June 4<sup>th</sup> - 6<sup>th</sup>, 2024

Monday, June 3 <sup>rd</sup> , 2024	
14:00 - 19:00	Registration of participants at Landhotel Hessenpark
19:30	Dinner at Wirtshaus Adler
Tuesday, June 4 <sup>th</sup> , 2024	
07:30 - 08:30	Registration of participants at Landhotel Hessenpark
09:00 - 09:15	<b>Welcome address, structure of the meeting and organizational matters</b> <i>Wolf Geppert, Stockholm University, SE</i>
09:15	<b>Session I: “Formation of planetary systems and habitable planets”</b> <i>Chair: Ewa Szuszkiewicz, University of Szczecin, PL</i>
09:15 - 09:40	<b>Atmospheric chemistry and habitability</b> <i>Nathalie Carrasco, University of Versailles-Saint-Quentin-en-Yvelines, FR</i>
09:40 - 09:50	Discussion
09:50 - 10:35	<b>TBD (Keynote talk)</b> <i>Didier Queloz, ETH, CH</i>
10:35 - 10:45	Discussion
10:45 - 11:15	Coffee break
11:15 - 11:40	<b>Modeling climate habitability to predict biosignatures on rocky exoplanets</b> <i>Giuseppe Murante, INAF, IT</i>
11:40 - 11:50	Discussion
11:50 - 12:05	<b>Habitable Worlds: Formation, evolution, detection, and characterization</b> <i>Ewa Szuszkiewicz, University of Szczecin,</i>
12:05 - 12:30	General Discussion about the plans of the Working Group: Formation and Evolution of Planetary Systems and Detection of Habitable Worlds
12:30 - 14:00	Lunch break
14:00	<b>Session II: “Planetary Environments and Habitability”</b> <i>Chair: Ana Catalina Plesa, DLR, DE</i>
14:00 - 14:25	<b>TBD</b> <i>Olivier Mousis, Université Aix-Marseille, FR</i>
14:25 - 14:35	Discussion
14:35 - 15:00	<b>Mars Underground: the longest lived Martian habitable environment</b> <i>Mickael Baque, DLR, DE</i>
15:00 - 15:05	Discussion
15:05 - 15:15	<b>Introduction of Barbara de Toffoli (WG Co-lead)</b>
15:15 - 15:30	<b>HECATE Project: The Evolution of Venus: Coronae, Subsurface Structure and Volcano- Tectonics</b> <i>Barbara de Toffoli, INAF, IT</i>
15:30 - 15:35	Discussion
15:35 - 16:15	Coffee break
16:15- 16:40	<b>Towards understanding the geological evolution of Venus: Insights from observations and models</b> <i>Julia Maia, DLR, DE</i>
16:40 - 16:45	Discussion
16:45 - 17:10	<b>Venus and the Limits of Life on Rocky Worlds</b> <i>David Grinspoon, NASA, USA</i>
17:10 - 17:20	Discussion
17:20 - 17:35	<b>Habitability of temperate rocky exoplanets and their observability in reflected light with RISTRETTO@VLT and ANDES@ELT</b>

	<i>Mathilde Houelle, University of Geneva, CH</i>
<b>17:35 - 17:40</b>	Discussion
<b>17:40 - 17:55</b>	<b>Planetary Environments and Habitability</b> <i>Ana Catalina Plesa, DLR, DE</i>
<b>17:55 - 18:25</b>	General Discussion about the plans of the Working Group: Planetary Environments and Habitability
18:30 - 20:00	Dinner break
<b>Wednesday, June 5<sup>th</sup>, 2024</b>	
<b>08:30</b>	<b>Session III: “Biosignatures and the Detection of Life Beyond Earth”</b> <i>Chair: Jean-Pierre de Vera, DLR, DE</i>
<b>08:30 - 08:55</b>	<b>Mars-related biosignatures and their detection</b> <i>Teresa Fornaro, INAF, IT</i>
<b>08:55 - 09:05</b>	Discussion
<b>09:05 - 09:35</b>	<b>Exophotosynthesis, a Letter of Intent for a Human Frontier Science Program research grant</b> <i>Nicoletta La Rocca, University of Padova, IT</i>
<b>09:35 - 09:40</b>	Discussion
<b>09:40 - 10:10</b>	<b>TBD</b> <i>Sanjeev Gupta, Imperial College, UK</i>
<b>10:10 - 10:15</b>	Discussion
10:15 - 10:45	Coffee break
<b>10:45 - 11:10</b>	<b>Planetary Protection and right ways for biosignature detection</b> <i>Karen Olsson-Francis, Open University, UK</i>
<b>11:10 - 11:15</b>	Discussion
<b>11:15 - 11:30</b>	<b>Biomarkers preservation in Antarctic sandstone after prolonged space exposure outside the International Space Station during the ESA EXPOSE-E LIFE experiment</b> <i>Alessia Cassaro, University of Tuscia, IT</i>
<b>11:30 - 11:35</b>	Discussion
<b>11:35 - 11:50</b>	<b>Microbial biomarkers reveal El Médano 464 carbonaceous chondrite as a preferred microhabitat in the Atacama Desert</b> <i>Gabriel Pinto, Université Libre de Bruxelles, BE</i>
<b>11:50 - 11:55</b>	Discussion
<b>11:55 - 12:10</b>	<b>TBD</b> <i>Adam Frank, Rochester University, US</i>
<b>12:10 - 12:15</b>	Discussion
<b>12:15 - 12:30</b>	<b>Biosignatures and the Detection of Life beyond Earth</b> <i>Jean-Pierre de Vera, DLR, DE and John Brucato, INAF, IT</i>
<b>12:30 - 13:00</b>	General Discussion about the future activities of the Working Group “Biosignatures and the Detection of Life beyond Earth”
13:00 - 14:30	Lunch
<b>14:30</b>	<b>Session IV: Evolution and Traces of Early Life and Life under Extreme Conditions</b> <i>Chair: Yannick Lara, University of Liège, Belgium</i>
<b>14:30 - 15:05</b>	<b>Molecular mechanisms of adaptation of extremophiles to extreme conditions</b> <i>José Eduardo González-Pastor, Centro de Astrobiología, ES</i>
<b>15:05 - 15:10</b>	Discussion
<b>15:10 - 15:35</b>	<b>Origin, evolution, ecology and traces of subsurface life</b> <i>Cara Magnabosco, ETH Zürich, Switzerland</i>
<b>15:35 - 15:40</b>	Discussion

15:40 - 16:05	<b>Origin, evolution, ecology and traces of anaerobic life</b> <i>Keyron Hickman-Lewis, Imperial College, UK</i>
16:05 - 16:10	Discussion
16:10 - 16:35	<b>An Introduction to Traces of Early and Extinct Life</b> <i>Brooke Johnson, Université de Liège, BE</i>
16:35 - 16:40	Discussion
16:40 - 16:55	<b>Overlooked thermophiles in plumes of Europa, Enceladus, and subglacial Antarctic Lake Vostok?</b> <i>S. Bulat, University Grenoble Alpes, FR</i>
16:55 - 17:00	Discussion
17:00 - 17:25	Coffee break
17:25 - 17:40	<b>Origin and early evolution of oxygenic photosynthesis</b> <i>Tanai Cardona, Imperial College, UK</i>
17:40 - 17:45	Discussion
17:45 - 18:00	<b>Design of a Computational Model to simulate the possible evolution of protometabolic pathways</b> <i>Anika C. du Plessis, Stellenbosch University, ZA</i>
18:00 - 18:05	Discussion
18:05 - 18:20	<b>A comparative study between modern membraneless cell organelles and primitive coacervates</b> <i>Arunava Poddar, University of the Basque Country, ES</i>
18:20 - 18:25	Discussion
18:25 - 18:40	<b>The diversity of cyanobacterial photosynthetic responses and their implications for oxygenic photosynthesis on exoplanets orbiting M-dwarfs</b> <i>Mariano Battistuzzi, University of Padova, IT</i>
18:40 - 18:55	General Discussion about the future activities of the Working Group <b>Evolution and Traces of Early Life and Life under Extreme Conditions</b>
18:55 - 20:15	Dinner Break
20:15	<b>General Assembly of the EAI</b>

### Thursday, June 6th, 2024

08:30	<b>Session V: The pathway to complexity</b> <i>Chair: Dima Semenov, MPI for Astronomy, DE</i>
08:30 - 08:55	<b>Complex organic molecules in the ISM: From Molecular Clouds to Protoplanetary Disks</b> <i>Alexey Potapov, University of Jena, DE</i>
08:55 - 09:00	Discussion
09:00 - 09:35	<b>"Asteroids, Comets, and Meteorites: Inheritance, Reprocessing, Synthesis, and Delivery of Complex Molecules"</b> <i>Dima Semenov, MPI for Astronomy, DE</i>
09:35 - 09:45	Discussion
09:45 - 10:10	<b>Surface vs. core composition of dust particles of comet 67P/Churyumov-Gerasimenko: pre-accretionary irradiation in the inner Solar System?</b> <i>Hervé Cottin, Université Paris Est Creteil and Université de Paris, FR</i>
10:10 - 10:15	Discussion
10:15 - 10:40	Coffee break
10:40 - 11:05	<b>Complex chemistry in outer solar system bodies</b> <i>Riccardo Urso, INAF, Italy</i>
11:05 - 11:10	Discussion

11:10 - 11:25	<b>Laboratory experiments to understand the molecular complexity of astrophysical environments</b> <i>Gregoire Danger, Aix-Marseille University &amp; CNRS, France</i>
11:25 – 11:30	Discussion
11:30 - 11:45	<b>Primordial group transfer potential: Exploring the chemistry of thioacetate through thiolysis</b> <i>Haruka Nakagawa, ELSI, Japan</i>
11:45 – 11:50	Discussion
11:50 - 12:05	<b>A comparative study between modern membraneless cell organelles and primitive coacervates</b> <i>Arunava Poddar, University of the Basque Country, ES</i>
12:05 – 12:10	Discussion
12:10 - 12:35	<b>Subgroup - Coupling compartmentalisation, metabolism and heritable information in evolutionary systems“</b> <i>Chaitanya Gokhale, University of Würzburg, Germany</i>
12:35– 12:40	Discussion
12:30 - 12:45	<b>The pathway to Complexity</b> <i>Dima Semenov, MPI for Astronomy, DE</i>
12:45 - 13:15	Discussion about the future activities of the Working Group: “The pathway to complexity”
13:15 – 14:30	Lunch break
14:30	<b>Session VI: Historical, Philosophical, Societal, and Ethical Issues in Astrobiology</b> <i>Chair: Erik Persson, Lund University, SE</i>
14:30 - 14:55	<b>Evidence in astrobiology</b> <i>Erik Persson, Lund University, SE</i>
14:55 – 15:00	Discussion
15:00 - 15:25	<b>The legal status of potential Martian life</b> <i>Alexandre Calvo, Stockholm University, SE</i>
15:25 - 15:30	Discussion
15:30 - 15:45	<b>Historical, Philosophical, Societal, and Ethical Issues in Astrobiology</b> <i>Erik Persson, Lund University, SE</i>
15:45 – 16:00	Discussion
16:00 - 16:30	Coffee break
16:30	<b>Session VI: Outreach and Organisation</b> <i>Chair: Wolf Geppert, Stockholm University, SE</i>
16:30 - 16:55	<b>Starting Our Space Odyssey’: Report from the ‘Science Fiction as a Tool for Astrobiology Outreach and Education’ EAI project team</b> <i>Julie Nekola Novaková, Charles University Prague, CZ</i>
16:55 - 17:00	Discussion
17:00 – 17:25	<b>Caves in the Skies</b> <i>Erica Bisesi, INAF, IT and Michele Maris, INAF, IT</i>
17.25 – 17:30	Discussion
17:30 – 17:55	<b>The past, the present and the future of EAI outreach</b> <i>Federico di Giacomo. INAF, IT</i>
17:55 – 18:10	Discussion
18:10 - 18:35	<b>The Evolution of Astrobiology at NASA</b> <i>David Grinspoon, NASA, US</i>
18:35	Discussion: Future Collaboration possibilities between NASA and EAI
19:00	Dinner
<b>Friday, June 7<sup>th</sup>, 2024</b>	
Breakfast and departure of participants	

