

“From star and planet formation to early life”

Vilnius, Lithuania 25 - 28 April 2016

Scientific programme

Sunday April 24 th , 2016	
14:00 - 19:00	Registration of participants at Artis Hotel
17:00 - 18:30	Public event at the Vilnius Planetarium
17:00 - 17:40	Comets: Relics of the Birth of our Solar System <i>Karen Meech, University of Hawaii, USA</i>
17:40 - 17:45	Questions from the public
17:45 - 18:25	Rosetta - the Comet Chaser <i>Martin Hilchenbach, MPI for Solar System Research, Germany</i>
18:25 - 18:30	Questions from the public
19:30	Reception with wine and finger food at Artis Hotel
Monday April 25 th , 2016	
08:00 - 09:00	Registration
09:00 - 09:15	Welcome addresses and organizational matters <i>Muriel Gargaud, COST Action Chair, University of Bordeaux, FR</i> <i>Wolf Geppert, Stockholm University, SE</i> <i>Grazina Tautvaišienė, Vilnius University, LT</i>
09:15 - 10:45	Session 1: Physical and chemical processes under star and planet formation (WG1) <i>Chair: Ewa Szuskiewicz, University of Szczecin, PL</i>
09:15 - 09:45	The formation and evolution of planetary systems <i>Wilhelm Kley, University of Tübingen, DE</i>
09:45 - 09:55	Discussion
09:55 - 10:15	Gas and Dust in Protoplanetary Disks <i>Anne Dutrey, University of Bordeaux, FR</i>
10:15 - 10:20	Discussion
10:20 - 10:40	Chemical evolution of star-forming regions <i>Floris van der Tak, SRON, NL</i>
10:40 - 10:45	Discussion
10:45 - 11:15	Coffee break
11:15 - 12:45	Session 2: Formation of complex molecules in space, planetary and satellite atmospheres <i>Chair: Wolf Geppert, Stockholm University, SE</i>
11:15 - 11:45	The formation of complex molecules in space <i>Tom Millar, Queen's University Belfast, UK</i>
11:45 - 11:55	Discussion
11:55 - 12:15	Gas phase chemistry and molecular complexity: how far do they go? <i>Nadia Balucani, University of Perugia, IT</i>
12:15 - 12:20	Discussion
12:20 - 14:00	Lunch break
14:00 - 15:30	Session 3: Before and after the Last Common Universal Ancestor: Early evolution of Life <i>Chair: Purificación López-García, Université Paris Sud, FR</i>
14:00 - 14:30	Molecular evolution before the domain ancestors: Indications for dramatic planetary changes during life's early evolution <i>Johann Peter Gogarten, University of Connecticut, US</i>
14:30 - 14:40	Discussion

14:40 - 15:00	Energy and matter at the origin of life <i>Nick Lane, UCL, UK</i>
15:00 - 15:05	Discussion
15:05 - 15:25	Life as a dissipative structure; implications for the emergence of metabolism <i>Wolfgang Nitschke, Université Aix-Marseille, FR</i>
15:25 - 15:30	Discussion
15:30 - 16:00	Coffee break
16:00 - 17:30	Session 4: Meteorites as probes for understanding the Early Solar System <i>Chair: Akos Kereszturi, Konkoly Observatory, HU</i>
16:00 - 16:30	Introductory talk <i>Henning Haack, University of Copenhagen, DK</i>
16:30 - 16:40	Discussion
16:40 - 17:00	Pre-solar grains: the ingredients to make a solar system <i>Ian Lyon, University of Manchester, UK</i>
17:00 - 17:05	Discussion
17:05 - 17:25	Meteorites as probes for understanding the Early Solar System <i>Zita Martins, Imperial College London, UK</i>
17:25 - 17:30	Discussion
17:30 - 20:00	Dinner break
20:00 - 21:30	Poster session
Tuesday April 26th, 2016	
09:00 - 10:30	Session 5: Comets and the early history of the solar system <i>Chair: Erik Vigren, Swedish Institute for Space Physics, SE</i>
09:00 - 09:30	Tracing early solar system history with comets: A compositional and dynamical perspective <i>Karen Meech, University of Hawai'i, USA</i>
09:30 - 09:40	Discussion
09:40 - 10:00	New insights from ROSETTA into cometary dust <i>Martin Hilchenbach, MPI for Solar System Research, DE</i>
10:00 - 10:05	Discussion
10:05 - 10:25	Organic Molecules Identified by the Rosetta Lander Philae <i>Uwe Meierhenrich, Université de Nice Sophia Antipolis, FR</i>
10:25 - 10:30	Discussion
10:30 - 11:00	Coffee break
11:00 - 12:15	Session 6: Geological conditions for prebiotic chemistry <i>Chair: Emmanuelle Javaux, University of Liège, BE</i>
11:00 - 11:30	The Hadean Earth vs. the Origin of Life <i>Stephen Mojzsis, University of Colorado, US</i>
11:30 - 11:40	Discussion
11:40 - 12:10	Geochemical complexities as a setting for life's origins <i>Robert Hazen, Carnegie Institute of Washington, US</i>
12:10 - 12:15	Discussion
12:15 - 13:45	Lunch break
13:45 - 15:15	Session 7: Early Universe, early Earth and the origin of Life: Evolution of concepts in history and philosophy <i>Chair: David Dunér, Lund University, SE</i>
13:45 - 14:15	Some Twentieth-Century Ideas of Extraterrestrial Life and Physical Eschatology <i>Helge Kragh, University of Aarhus, DK</i>
14:15 - 14:25	Discussion

14:25 - 14:55	The ghosts behind the molecules: the recent history of the attempts to understand the origin of life <i>Antonio Lazcano, National Autonomous University of Mexico, MX</i>
14:55 - 15:00	Discussion
15:00 - 15:45	Coffee break
15:45 - 19:00	Management Committee Meeting of the COST Action TD1308 Fre time for non MC-members
Wednesday April 27th, 2016	
09:00 - 10:30	Session 8: Scientific misconceptions: case studies in astrobiology <i>Chair: Antonio Lazcano, National Autonomous University of Mexico, MX</i>
09:00 - 09:20	Excitements and challenges in tracking the early traces of life <i>Emmanuelle Javaux, University of Liège, BE</i>
09:20 - 09:25	Questions and ad-hoc discussion contributions
09:25 - 09:45	Tenacious misconceptions about biological evolution <i>Purificación López-García, Université Paris Sud, FR</i>
09:45 - 09:50	Questions and ad-hoc discussion contributions
09:50 - 10:10	Misconceptions, Truths and Controversies: Is Origins of Life Research no Different from the Rest of Science? <i>Christophe Malaterre, UQAM, CA</i>
10:10 - 10:15	Questions and ad-hoc discussion contributions
10:15 - 10:30	Open Discussion
10:30 - 11:00	Coffee break
11:00 - 12:05	Session 9: Borderline between chemistry and biology <i>Chair: John Brucato, Arcetri Observatory, IT</i>
11:00 - 11:30	Transition between chemistry (non-life) and biology (life) <i>Sjibren Otto, University of Groningen, NL</i>
11:30 - 11:40	Discussion
11:40 - 12:10	Chemical selection at the origins of life <i>Matthew Powner, UCL, UK</i>
12:10 - 12:15	Discussion
12:15 - 14:00	Lunch break
14:00 - 22:30	Excursion and conference dinner
Thursday April 28th, 2016	
09:00 - 10:30	Parallel sessions
10:30 - 11:00	Coffee break
11:00 - 12:30	Parallel sessions
12:30 - 14:00	Lunch break
14:00 - 15:45	Parallel sessions
15:45 - 16:15	Coffee break
16:15 - 17:45	Parallel sessions
17:45 - 19:00	Room for individual discussions of the individual WGs
See next pages for detailed programme	

Detailed program for Thursday April 27th

Parallel sessions 09:00 – 10:30	
09:00 - 10:30	Parallel Session P1: Protoplanetary disks and planet formation (WG1) Aida Hall <i>Chair: Wilhelm Kley, University of Tübingen, DE</i>
09:00 - 09:25	The variable circumstellar extinction in a protoplanetary disk with an embedded low-mass companion <i>Tatjana Demidova, Russian Academy of Sciences, RU</i>
09:25 - 09:30	Discussion
09:30 - 09:55	From the chemistry in protoplanetary disk via the formation history of planets to the atmospheric composition <i>Christoph Mordasini, University of Berne, CH</i>
09:55 - 10:00	Discussion
10:00 - 10:25	Stellar chemistry: hints for planet formation and structure <i>Nuno Santos, University of Porto, PT</i>
10:25 - 10:30	Discussion
09:00 - 10:30	Parallel session P2: Basic chemical processes in astronomical environments (WG2) Carmen Hall <i>Chair: Nadia Balucani, University of Perugia, IT</i>
09:00 - 09:25	The Ortho-to-Para Ratio of NH₂ at Different Temperatures <i>Romane Le Gal, University of Virginia, US</i>
09:25 - 09:30	Discussion
09:30 - 09:55	The Role of Low-Energy Electrons in Astrochemistry: A Tale of Two Molecules <i>Chris Arumainayagam, Wellesley College, US</i>
09:55 - 10:00	Discussion
10:00 - 10:25	Study of gas-phase ion molecular reactions at temperatures relevant to the atmosphere of Titan <i>Ilia Zymak, J. Heyrovský Institute, CZ</i>
10:25 - 10:30	Discussion
09:00 - 10:30	Parallel session P3: Early Universe, early Earth and the origin of Life: Evolution of concepts in history and philosophy (WG3 + WG5) Mikado Hall <i>Chair: Christophe Malaterre, UQAM, Canada</i>
09:00 - 09:25	C'est la Vie <i>Kelly C. Smith, Clemson University, US</i>
09:25 - 09:30	Discussion
09:30 - 09:55	Biosphere complexity: A new approach towards a definition of life <i>Thomas Böttcher, University of Konstanz, DE</i>
09:55 - 10:00	Discussion
10:00 - 10:25	Panspermia: a panoply of possibilities <i>Clement Vidal, Vrije Universiteit Brussel, BE</i>
10:25 - 10:30	Discussion

Parallel sessions 11:00 – 12:30	
11:00 - 12:30	Parallel Session P1: Protoplanetary disks and planet formation (continued, WG1) <i>Chair: Nuno Santos, University of Porto, PT</i> Aida Hall
11:00 - 11:35	The chemical heritage of planet-building material: new insights from ALMA and Rosetta <i>Catherine Walsh, Leiden University, NL</i>
11:35 - 11:45	Discussion
11:45 - 12:20	From chondrules to planets - tracking the recycling of solids in an evolving protoplanetary disk <i>Martin Bizzarro, University of Copenhagen, DK</i>
12:20 - 12:30	Discussion
Parallel Session P4: Formation of the building blocks of life (WG2)	
11:00 - 12:30	<i>Chair: Yves Ellinger, University Pierre & Marie Curie, FR</i> Carmen Hall
11:00 - 11:25	State of the art electronic calculations and kinetic computations for formamide formation in cold interstellar clouds <i>Dimitrios Skouteris, Scuola Normale Superiore, Pisa, IT</i>
11:25 - 11:30	Discussion
11:30 - 11:55	Synthesis of formamide and isocyanic acid after ion irradiation of frozen gas mixtures <i>Zuzana Kanuchova, Slovak Academy of Sciences, SK</i>
11:55 - 12:00	Discussion
12:00 - 12:25	Formamide Prebiotic Plasma Chemistry Network in Reduction Atmospheres <i>Martin Ferus, J. Heyrovský Institute, CZ</i>
12:25 - 12:30	Discussion
Parallel session P5: Before and after the Last Common Universal Ancestor: Early evolution of Life (WG3+ WG4)	
11:00 - 12:40	<i>Chair: Johann Peter Gogarten, University of Connecticut, US</i> Mikado Hall
11:00 - 11:20	Modeling the origins of cellular systems: How complex must our system be to observe cell-like behaviors? <i>Pierre-Alain Monnard, University of Southern Denmark, DK</i>
11:20 - 11:25	Discussion
11:25 - 11:45	The last universal common ancestor: simple or complex? <i>David Moreira, Université Paris-Sud, FR</i>
11:45 - 11:50	Discussion
11:50 - 12:10	Origin and evolution of aerobic processes <i>Céline Brochier, University of Lyon, FR</i>
12:10 - 12:15	Discussion
12:15 – 12:35	The origin of eukaryotes is linked to the rooting of the Tree of Life... but the phylogenetic jury is still out <i>Richard Gouy, University of Liège, BE</i>
12:35 - 12:40	Discussion
11:00 – 12:00	Parallel session P3: Early Universe, early Earth and the origin of Life: Evolution of concepts in history and philosophy (WG5, continued) <i>Chair: Erik Persson, Lund University, SE</i> Nabucco room
11:00 - 11:25	Changing Views of Life: Impacts on Guidelines & Policies about Extraterrestrial

	Life, Environments, and Activities <i>Margaret Race, SETI, US</i>
11:25 - 11:30	Discussion
11:30 - 11:55	Astrobiology in culture: NASA's current interests <i>Linda Billings, National Institute of Aerospace, US</i>
11:55 - 12:00	Discussion
Parallel sessions 14:00 – 15:30	
14:00 - 15:30	Parallel Session P1: Protoplanetary disks and planet formation (continued, WG1) <i>Chair: Olga Prieto Balleteros, CAB, ES</i> Aida Hall
14:00 - 14:35	A comprehensive analysis of presolar SiC grains using NanoSIMS and Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS) <i>Alex Clarke, University of Manchester, UK</i>
14:35 - 14:45	Discussion
14:45 - 15:20	Abundance trends with condensation temperature and terrestrial planet formation: The case of Zeta Reticuli <i>Vardan Adibekyan, Institute of Astrophysics and Space Sciences, PT</i>
15:20 - 15:30	Discussion
Parallel Session P4: Formation of the building blocks of life (continued, WG2)	
14:00 - 15:40	<i>Chair: William Irvine, University of Massachusetts at Amherst, US</i> Carmen Hall
14:00 - 14:20	Follow the evolution of organic matter using laboratory experiments: from volatile organics to organic residues <i>Gregoire Danger, PIIM Marseille, FR</i>
14:20 - 14:25	Discussion
14:25 - 14:45	Plausible Prebiotic Formation of Carbohydrates <i>Paul Clarke, University of York, UK</i>
14:45 - 14:50	Discussion
14:50 - 15:10	About the abundance of prebiotic species: the energetic aspect <i>Yves Ellinger, University Pierre & Marie Curie, FR</i>
15:10 - 15:15	Discussion
15:15 – 15:35	Inspecting the Role of Serpentinite-hosted Hydrothermal Minerals in Prebiotic Processes: Binding of Nucleic Acids Components to Brucite <i>Teresa Fornaro, Observatory of Arcetri, IT</i>
15:35 – 15:40	Discussion
Parallel Session P6: Life in extreme environments (WG3 + WG4)	
14:00 - 15:15	<i>Chair: Anna Łosiak, Polish Academy of Sciences, PL</i> Mikado Hall
14:00 - 14:20	Description and comparison of microbial communities and metagenomes in a subglacial lake under the Vatnajökull ice cap, East Skaftárketill <i>Viggo Marteinson, MATIS, IS</i>
14:20 - 14:25	Discussion
14:25 - 14:45	Life in Mars analogue sites: microbes adapted to extreme conditions in Iceland <i>Oddur Vilhelmsson, University of Akureyri, IS</i>
14:45 - 14:50	Discussion
14:50 - 15:10	Health hazards posed by ionizing radiation in manned space missions BLEO <i>Franco Ferrari, University of Szczecin, PL</i>
15:10 - 15:15	Discussion

Parallel sessions 16:15 – 17:45	
16:15 - 17:45	Parallel session P7: Habitability (WG3 + WG4) <i>Chair: Yann Alibert, University of Berne, CH</i> Mikado Hall
16:15 - 16:40	Dissipative structures in the Universe: Super massive black holes and life <i>Andjelika Kovacevic, University of Belgrade, RS</i>
16:40 - 16:45	Discussion
16:45 - 17:10	From stellar evolution to tidal interaction: impact on planetary habitability <i>Florian Gallet, University of Geneva, CH</i>
17:10 - 17:15	Discussion
17:15 - 17:40	Water-rich planets: how habitable is a water layer deeper than on Earth? <i>Lena Noack, Royal Observatory of Belgium, BE</i>
17:40 - 17:45	Discussion
16:15 - 17:45	Parallel Session P8: Comets and meteorites: Composition, chemical processes and their role in the evolution of the solar system (WG1 + WG2) <i>Chair: Martin Hilchenbach, MPI for Solar System Research, Germany</i> Aida Hall
16:15 - 16:40	First spectrally complete survey of cometary water emission at near IR wavelengths (0.9-2.5 μm): C/2014 Q2 Lovejoy with TNG/GIANO spectrograph <i>Sara Faggi, Observatory of Arcetri, IT</i>
16:40 - 16:45	Discussion
16:45 - 17:10	Prebiotic molecules in comets detected by Rosetta and their possible synthesis in the ice <i>Guillermo Muñoz Caro, Centro de Astrobiología, ES</i>
17:10 - 17:15	Discussion
17:15 - 17:40	Ion chemistry in the innermost coma of comet 67P/Churyumov-Gerasimenko <i>Erik Vigren, Swedish Institute for Space Physics, SE</i>
17:40 - 17:45	Discussion
17:45	Room for WG meetings
Friday April 29th, 2016	
09:00 - 10:30	Internal meeting for COST Action TD1308 <i>Chairs: M.Gargaud, W.Geppert</i>
10:30 – 11:00	Coffee break
11:00 - 12:00	Internal meeting for COST Action TD1308 <i>Chairs: M.Gargaud, W.Geppert</i>
12:00	Lunch, Departure of participants