



ASTROBIOLOGY  
COYHAIQUE - CHILE 2017



# Astrobiology 2017

## Official Scientific Program

Last update: November 16, 2017\*

For more information, contact us at [registration@astrobiology2017.org](mailto:registration@astrobiology2017.org)  
or find us in the web at [www.astrobiology2017.org](http://www.astrobiology2017.org)

### Sunday, November 26

- 16:00 **Registration desk opens**
- 19:00 - 20:30 Welcome Reception (Cocktail)
- 20:30 **Registration desk closes**

\*Please note that this program is subject to changes

## Monday, November 27

8:45 - 9:15 Opening remarks

9:15 - 10:15 **Keynote talk: Nader Haghighipour**  
*"The unifying power of Astrobiology"*

### 10:15 - 10:45 Coffee Break

10:45 - 11:10 **Pierre Cox**  
*"The role of ALMA in Astrobiology"*

11:10 - 11:30 Lucas Cieza  
*"Imaging the water-snow line during a protostellar outburst"*

11:30 - 11:50 Rhana Bethany Nicholson  
*"Supernova Enrichment of Protoplanetary Discs in Low Mass Star Clusters"*

11:50 - 12:10 Daniela Iglesias  
*"Searching for exocometary activity in debris disks"*

Star and  
Planet  
Formation

### 12:10 - 14:00 Lunch

14:00 - 14:25 **André Izidoro Ferreira da Costa**  
*"Watering, shielding and building the inner Solar System"*

14:25 - 14:50 **Jeong-Eun Lee**  
*"Chemical Evolution in Star Formation"*

14:50 - 15:10 Othon Winter  
*"On the formation of Earth-like planets in the habitable zone of circumbinary star systems"*

15:10 - 15:30 Haiyang Wang  
*"From A Star to Its Rocky Planets: Devolatilization Matters"*

Star and  
Planet  
Formation

### 15:30 - 16:00 Coffee Break

16:00 - 16:25 **Lena Noack**  
*"Mantle convection and atmosphere evolution on rocky exoplanets"*

16:25 - 16:45 Yasunori Hori  
*"Atmospheric Growth of a (Non-)Migrating Planet: Application to the TRAPPIST-1 System"*

16:45 - 17:05 Claudio Melo  
*"Atmospheric characterization of exoplanets through their reflected light"*

17:05 - 17:25 Ricardo Ramírez Reyes  
*"Transmission Spectroscopy in LHS1140b"*

17:25 - 17:45 Andreas Quirrenbach  
*"CARMENES: Blue Planets Orbiting Red Stars"*

17:45 - 18:05 Christopher C.E. Tylor  
*"Exomoons as future targets for Astrobiology"*

Extrasolar  
Planets /  
Habitable  
zones and  
habitable  
planets

### 18:20 - 20:00 Poster session I (Posters A, B & C)

20:00 **Public talk by Antonio Lazcano (in spanish)**  
*"El origen de la vida"*  
Location: Centro Cultural de Coyhaique (Eusebio Lillo #23, Coyhaique)

## Tuesday, November 28

- 8:45 - 9:10 **Stephen Kane**  
*"Definitions and Caveats of the Habitable Zone"*
- 9:10 - 9:35 **Gustavo Porto de Mello**  
*"Planetary Habitability: Limitations and Timescales Related to Stellar Magnetic Activity"*
- 9:35 - 9:55 **Amri Wandel**  
*"The potential for liquid water and photosynthesis on planets of red dwarf stars"*
- 9:55 - 10:15 **Luciano Darriba**  
*"Migrating Jupiter up to the habitable zone: Earth-like planet formation and water"*

Extrasolar  
Planets /  
Habitable zones  
and habitable  
planets

### 10:15 - 10:45 Coffee Break

- 10:45 - 11:10 **Yoko Kebukawa**  
*"Formation of various organic matter driven by liquid water in the solar system bodies"*
- 11:10 - 11:30 **Carle M. Pieters**  
*"Distinct Observations of Organic-rich Material on the Dwarf Planet Ceres"*
- 11:30 - 11:50 **Conor Nixon**  
*"A Multi-Spectral Search for Cyclic Molecules in Titan's Atmosphere"*
- 11:50 - 12:10 **María Eugenia Parra**  
*"First characterization of fluids-vitreous inclusions in ordinary chondrites from the Atacama Desert Meteorite Collection"*

Planets in the  
Solar System /  
Habitable zones  
and habitable  
planets

### 12:10 - 14:00 Lunch

- 14:00 - 14:25 **Kathrin Altwegg**  
*"Organics in comet 67P/Churyumov-Gerasimenko and its relation with Earth"*
- 14:25 - 14:50 **Herve Cottin**  
*"Comets organic content and astrobiology, (re)assessment for comet 67P after the Rosetta mission (I)"*
- 14:50 - 15:10 **Rita Schulz**  
*"The composition of comets – overview of 30 years of investigations"*
- 15:10 - 15:30 **Julio Ángel Fernández**  
*"The current and past impact rate on the Earth from an eroding asteroid belt"*

Planets in the  
Solar System /  
Habitable zones  
and habitable  
planets

15:30 - 16:00 Coffee Break

- 16:00 - 16:25 **Lucy Ziurys**  
*"The Primordial Carbon Cycle: Carriers, Pathways and Assembly Leading to Prebiotic Molecules"*
- 16:25 - 16:45 Maria Drozdovskaya  
*"Pre- and protostellar roots of complex organic molecules in comets"*
- 16:45 - 17:10 **Arnaud Belloche**  
*"Exploring molecular complexity in the interstellar medium with ALMA"*
- 17:10 - 17:30 Sergio Pilling  
*"Chemical changes in interstellar ices due to cosmic-rays and X-rays and its astrobiological implications"*

Prebiotic  
Molecules in the  
ISM and  
protoplanetary  
disks

17:40 - 18:40 Science communication panel

19:00 - 20:00 Poster session II (Posters D, E & F)

## Wednesday, November 29

- 8:45 - 9:10 **David Catling**  
*"The evolution of early Earth's atmosphere, climate, and chemical disequilibrium"*
- 9:10 - 9:30 Christian Koeberl  
*"The Impact Bombardment History of the Early Earth"*
- 9:30 - 9:55 **Yuichiro Ueno**  
*"Late Archean Earth as a window to Astrobiology"*
- 9:55 - 10:15 Alexander Slabunov  
*"Archean geodynamic settings and ecological niches of early life (examples from the Fennoscandian Shield)"*

Early Earth  
Environments  
and the  
emergence of  
life

10:15 - 10:45 Coffee Break

- 10:45 - 11:10 **Antonio Lazcano**  
*"Prebiotic evolution and the emergence of life"*
- 11:10 - 11:30 Daniel Glavin  
*"L-Amino Acid Excesses in Meteorites: Formation Mechanisms and Implications for the Origin of Homochirality"*
- 11:30 - 11:50 Andrew Pohorille  
*"The nature of the earliest evolutionary processes: insight from recent in vitro experiments on RNA molecules"*

Early Earth  
Environments  
and the  
emergence of  
life

12:00 - 12:10 Astrobiology 2017 Group photo (Location:TBD)

12:10 - 14:00 Lunch

- 14:00 - 20:00 Excursion to Cerro Castillo and Conference Banquet  
(Pre-registration required)

## Thursday, November 30

- 8:45 - 9:10 **Beatriz Diez**  
*"Effect of temperature on the ecology and biogeochemistry of photoautotrophic microbial mat communities in thermal systems"*
- 9:10 - 9:30 **Cristina Dorador**  
*"Halophiles beyond NaCl: limits of life under LiCl concentrated brines at Salar de Atacama, Chile"*
- 9:30 - 9:50 **Carolina González Rosales**  
*"Extremely Acidic Environments (pH $\leq$ 3) on Earth as Surrogates in the Search for Life on Exoplanets and Moons"*
- 9:50 - 10:10 **María Angélica Leal Leal**  
*"Characterization of functional groups of psychrophilic and psychrotolerant microorganisms in the frozen sediments of the Antarctic Peninsula (Half Moon island)"*

Life in extreme conditions and early life

### 10:10 - 10:40 Coffee Break

- 10:40 - 11:05 **Carlos Briones**  
*"The origins of life as a process of development of autonomous functional systems"*
- 11:05 - 11:30 **Douglas Galante**  
*"Morphological and chemical biosignatures from the fossil record as tools to recognize extraterrestrial life"*
- 11:30 - 11:50 **Chanenath Sriaporn**  
*"Molecular Characterization of Nodular Digtate Siliceous Hot Spring Microstromatolites as Analogues for Biosignature Candidates at Columbia Hills, Mars"*
- 11:50 - 12:10 **Amy Williams**  
*"Fatty Acid Preservation in Active, Recent, and Relic Icelandic Hot Springs as Revealed by On-line TMAH Pyrolysis GCMS"*

Life in extreme conditions and early life

### 12:10 - 14:00 Lunch

- 14:00 - 14:25 **Akihiko Yamagishi**  
*"Astrobiology Exposure and Micrometeoroid Capture Experiments at the Exposure Facility of International Space Station: Tanpopo"*
- 14:25 - 14:45 **María Fernanda Cerini**  
*"Environment simulations and spectroscopic in situ characterization of potential molecular biosignatures for application in space missions"*
- 14:45 - 15:05 **Michael Sterzik**  
*"IBiomarkers in Polarization Spectra of Planet Earth"*
- 15:05 - 15:25 **Ruth-Sophie Taubner**  
*"Lipid Pattern of Methanothermococcus okinawensis under Varying Enceladus-like Conditions"*

Search for life in the Universe

**15:25 - 16:00 Coffee Break**

- 16:00 - 16:25 **David Duner**  
*"The History and Philosophy of Biosignatures"*
- 16:25 - 16:50 **Octavio Chon**  
*"Astroethics"*
- 16:50 - 17:10 Alexei Dodsworth Magnavita de Carvalho  
*"On Ethics of Terraforming. Intrinsic values, space settlements, and their dilemmas: a philosophical approach"*
- 17:10 - 17:30 Andreas Losch  
*"Ethics of a Planetary Sustainability"*

Societal and ethical issues linked to Astrobiology

**17:40 - 18:40 F3 Commission business meeting**

**19:00 - 20:00 Poster Session III (Posters G & H)**

**Friday, December 1**

- 9:00 - 9:25 **Wolf Geppert**  
*"The European Astrobiology Campus- Towards a Comprehensive Multidisciplinary Training of Astrobiology Students in Europe"*
- 9:25 - 9:50 **Chris Impey**  
*"Teaching Astrobiology to Formal and Informal Learners"*
- 9:50 - 10:10 Susan Leschine  
*"An Introductory Seminar on Astrobiology"*
- 10:10 - 10:30 Fernando Selman  
*"Astrobiology as a unifying theme in education and outreach: our experience in small communities in rural Chile"*

Education in Astrobiology

**10:30 - 11:00 Coffee Break**

- 11:00 - 11:20 William Irvine  
*"The Encyclopedia of Astrobiology as a Teaching Tool"*
- 11:20 - 11:40 Muriel Gargaud  
*"Last news from the Working Group on Education and Training in Astrobiology"*
- 11:40 - 12:20 All  
Discussion

Education Panel

**12:20 - 12:30 Closing remarks**

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