



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*” <https://youtu.be/Oen7wGxxUoM>

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

10:45 - 11:10 **Pierre Cox** [https://youtu.be/-JXaPMX\\_5Cw](https://youtu.be/-JXaPMX_5Cw)  
“*The role of ALMA in Astrobiology*”

11:10 - 11:30 Lucas Cieza <https://youtu.be/hHFfp0sq4rY>  
“*Imaging the water-snow line during a protostellar outburst*”

11:30 - 11:50 Rhana Bethany Nicholson <https://youtu.be/yQOVx7RRMB4>  
“*Supernova Enrichment of Protoplanetary Discs in Low Mass Star Clusters*”

11:50 - 12:10 Daniela Iglesias <https://youtu.be/TK5VkgIVrjY>  
“*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** <https://youtu.be/GKJqU3yTnhE>  
“*Watering, shielding and building the inner Solar System*”

14:25 - 14:50 **Jeong-Eun Lee** <https://youtu.be/7fHM8kkj7ZE>  
“*Chemical Evolution in Star Formation*”

14:50 - 15:10 Othon Winter <https://youtu.be/Z7H8PhSZbiY>  
“*On the formation of Earth-like planets in the habitable zone of circumbinary star systems*”

15:10 - 15:30 Haiyang Wang <https://youtu.be/-kD6BTCnlAA>  
“*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** <https://youtu.be/MzJhFmnE8tQ>  
“*Mantle convection and atmosphere evolution on rocky exoplanets*”

16:25 - 16:45 Yasunori Hori [https://youtu.be/\\_OUmqkti1bl](https://youtu.be/_OUmqkti1bl)  
“*Atmospheric Growth of a (Non-)Migrating Planet: Application to the TRAPPIST-1 System*”

16:45 - 17:05 Claudio Melo <https://youtu.be/luyWFwcUT2g>  
“*Atmospheric characterization of exoplanets through their reflected light*”

17:05 - 17:25 Ricardo Ramírez Reyes <https://youtu.be/7yVzYpKaWhw>  
“*Transmission Spectroscopy in LHS1140b*”

17:25 - 17:45 Andreas Quirrenbach <https://youtu.be/62xv-MV9yNs>  
“*CARMENES: Blue Planets Orbiting Red Stars*”

17:45 - 18:05 Christopher C.E. Tylor <https://youtu.be/fC9GoPRFtAU>  
“*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*” <https://youtu.be/5AXQPsKokx0>

9:10 - 9:35 **Gustavo Porto de Mello**

“*Planetary Habitability: Limitations and Timescales Related to Stellar Magnetic Activity*” <https://youtu.be/5AXQPsKokx0>

9:35 - 9:55 **Amri Wandel**

“*The potential for liquid water and photosynthesis on planets of red dwarf stars*” [https://youtu.be/BtDv-o0b\\_0c](https://youtu.be/BtDv-o0b_0c)

9:55 - 10:15 **Luciano Darriba**

“*Migrating Jupiter up to the habitable zone: Earth-like planet formation and water*” <https://youtu.be/LMnQuJFMOjI>

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*” <https://youtu.be/LZ717mkBHhA>

11:10 - 11:30 **Carle M. Pieters**

“*Distinct Observations of Organic-rich Material on the Dwarf Planet Ceres*” <https://youtu.be/wJKFjmUwBUI>

11:30 - 11:50 **Conor Nixon** [https://youtu.be/CkkJ-r2\\_08E](https://youtu.be/CkkJ-r2_08E)

“*A Multi-Spectral Search for Cyclic Molecules in Titan’s Atmosphere*”

11:50 - 12:10 **María Eugenia Parra** <https://youtu.be/XyGJVRSv-Sc>

“*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** <https://youtu.be/Om916kGLenY>

“*Organics in comet 67P/Churyumov-Gerasimenko and its relation with Earth*”

14:25 - 14:50 **Herve Cottin** [https://youtu.be/DJK\\_wsSB6rs](https://youtu.be/DJK_wsSB6rs)

“*Comets organic content and astrobiology, (re)assessment for comet 67P after the Rosetta mission (I)*”

14:50 - 15:10 **Rita Schulz** <https://youtu.be/GnZ0ISaS4Og>

“*The composition of comets – overview of 30 years of investigations*”

15:10 - 15:30 **Julio Ángel Fernández** <https://youtu.be/wnvHypliBAU>

“*The current and past impact rate on the Earth from an eroding asteroid belt*”

Planets in the  
Solar System /  
Habitable zones  
and habitable  
planets



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15:30 - 16:00 Coffee Break

- 16:00 - 16:25 **Lucy Ziurys** <https://youtu.be/dpigtqNbn90>  
“*The Primordial Carbon Cycle: Carriers, Pathways and Assembly Leading to Prebiotic Molecules*”
- 16:25 - 16:45 Maria Drozdovskaya <https://youtu.be/AQALpxrLW7Y>  
“*Pre- and protostellar roots of complex organic molecules in comets*”
- 16:45 - 17:10 **Arnaud Belloche** <https://youtu.be/oh12Z1UO070>  
“*Exploring molecular complexity in the interstellar medium with ALMA*”
- 17:10 - 17:30 Sergio Pilling <https://youtu.be/iRQk50zSzDg>  
“*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** [https://youtu.be/tA\\_CP9oLaas](https://youtu.be/tA_CP9oLaas)  
“*The evolution of early Earth’s atmosphere, climate, and chemical disequilibrium*”
- 9:10 - 9:30 Christian Koeberl <https://youtu.be/ezIFIOzQe4k>  
“*The Impact Bombardment History of the Early Earth*”
- 9:30 - 9:55 **Yuichiro Ueno** <https://youtu.be/3yX7nMrzFh8>  
“*Late Archean Earth as a window to Astrobiology*”
- 9:55 - 10:15 **Alexander Slabunov** Private link: <https://youtu.be/hlqwXyG2KMY>  
“*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** <https://youtu.be/WN9DqIMdios>  
“*Prebiotic evolution and the emergence of life*”
- 11:10 - 11:30 Daniel Glavin <https://youtu.be/MyzM5gjeKZQ>  
“*L-Amino Acid Excesses in Meteorites: Formation Mechanisms and Implications for the Origin of Homochirality*”
- 11:30 - 11:50 Andrew Pohorille <https://youtu.be/MP9pa8ThPyk>  
“*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** <https://youtu.be/IjHkXOTKZYo>  
*“Effect of temperature on the ecology and biogeochemistry of photoautotrophic microbial mat communities in thermal systems”*
- 9:10 - 9:30 **Cristina Dorador** <https://youtu.be/OFx36hibX20>  
*“Halophiles beyond NaCl: limits of life under LiCl concentrated brines at Salar de Atacama, Chile”*
- 9:30 - 9:50 **Carolina González Rosales** <https://youtu.be/P9N-OrgIESo>  
*“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** <https://youtu.be/UKYLXcZ9XO8>  
*“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** <https://youtu.be/Ab8ccb2HzoY>  
*“The origins of life as a process of development of autonomous functional systems”*
- 11:05 - 11:30 **Douglas Galante** <https://youtu.be/f8LvS9a3COW>  
*“Morphological and chemical biosignatures from the fossil record as tools to recognize extraterrestrial life”*
- 11:30 - 11:50 **Chanenath Sriaporn** <https://youtu.be/Ze3iVxSwpMg>  
*“Molecular Characterization of Nodular Digitate Siliceous Hot Spring Microstromatolites as Analogues for Biosignature Candidates at Columbia Hills, Mars”*
- 11:50 - 12:10 **Amy Williams** [https://youtu.be/3IQEW\\_X0BCw](https://youtu.be/3IQEW_X0BCw)  
*“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** <https://youtu.be/elCQBoUkuoM>  
*“Astrobiology Exposure and Micrometeoroid Capture Experiments at the Exposure Facility of International Space Station: Tanpopo”*
- 14:25 - 14:45 **María Fernanda Cerini** [https://youtu.be/vjLLdYA\\_1PE](https://youtu.be/vjLLdYA_1PE)  
*“Environment simulations and spectroscopic in situ characterization of potential molecular biosignatures for application in space missions”*
- 14:45 - 15:05 **Michael Sterzik** <https://youtu.be/1McKyjszFv0>  
*“Biomarkers in Polarization Spectra of Planet Earth”*
- 15:05 - 15:25 **Ruth-Sophie Taubner** [https://youtu.be/5PVRwI\\_omLE](https://youtu.be/5PVRwI_omLE)  
*“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** [https://youtu.be/KqbHrP\\_DL-Q](https://youtu.be/KqbHrP_DL-Q)  
“*The History and Philosophy of Biosignatures*”
- 16:25 - 16:50 **Octavio Chon** <https://youtu.be/FDlycNS76zc>  
“*Astroethics*”
- 16:50 - 17:10 **Alexei Dodsworth** **Cancellation**  
“*On Ethics of Terraforming. Intrinsic values, space settlements, and their dilemmas: a philosophical approach*”
- 17:10 - 17:30 **Andreas Losch** <https://youtu.be/URMqgOWHiQA>  
“*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** <https://youtu.be/4SwZK7iUFdk>  
“*The European Astrobiology Campus– Towards a Comprehensive Multidisciplinary Training of Astrobiology Students in Europe*”
- 9:25 - 9:50 **Chris Impey** <https://youtu.be/08MfvVwW1FM>  
“*Teaching Astrobiology to Formal and Informal Learners*”
- 9:50 - 10:10 **Susan Leschine** <https://youtu.be/BhIqSwOGeN0>  
“*An Introductory Seminar on Astrobiology*” 10:10 -
- 10:30 **Fernando Selman** <https://youtu.be/mkr3Rrxp4fE>  
“*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** <https://youtu.be/w4KMxozstZU>  
“*The Encyclopedia of Astrobiology as a Teaching Tool*”
- 11:20 - 11:40 **Muriel Gargaud** <https://youtu.be/Mh5DrS1fcy4>  
“*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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