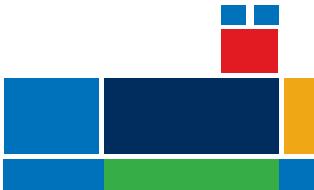


ESCUELA  
XX INTERNATIONAL  
SCHOOL OF  
ASTROBIOLOGY  
"JOSEP COMAS I SOLÀ"

Exoplanets: thousands  
of possibilities for  
complex chemistry  
and life

Cursos de verano **Santander**



**Horario y dirección de contacto**

Mañana de L a V: 9.00 a 14.00 h

**Santander**

Campus de Las Llamas  
Avda. de los Castros, 42  
39005 Santander  
Tlf.: 942 29 87 00

**Madrid**

C/ de Isaac Peral, 23  
28040 Madrid  
Tlf.: 91 592 06 31 / 33

**A partir del 17 de junio**

Mañana de L a V: 9.00 a 14.00 h

Tarde de L a J: 15.30 a 18.00 h

**Santander**

Palacio de la Magdalena  
39005 Santander  
Tlf.: 942 29 88 00

alumnos@uimp.es  
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Este curso es susceptible de ser reconocido como formación permanente del profesorado para el personal docente de los centros que imparten las enseñanzas reguladas en la Ley Orgánica 2/2006, de Educación, en base al artículo 21 y 29 de la Orden EDU/2886/2011, de 20 de octubre, por la que se regula la convocatoria, reconocimiento, certificación y registro de las actividades de formación permanente del profesorado.

Código 65OP - ECTS: 2,5

**Directors**

**Britney Elyce Schmidt**

Astronomy and Earth & Atmospheric Science Cornell  
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**Víctor Parro García**

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**Organization**

**Carlos Briones Llorente**

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The XX International Summer School of Astrobiology "Josep Comas i Sola" will be focused on the immense possibilities represented in the study of exoplanets and their potential to harbor life. With more than 5500 exoplanets now detected, and in the era of large ground and space based telescopes, we are on the precipice of moving from detection into characterization of these distant worlds through the window of their atmospheres. As we do so, understanding the history of our home planet and solar system as examples of the characteristics, processes, dynamics that conspire to create atmospheric signatures serves to guide our way.

In the next 20 years, a growing amount and diversity of data from recent and current ground and space-based telescopes like Kepler, ALMA, CHEOPS and James Webb Space telescope will be available, and observations for future missions and telescopes like the ELT, PLATO, Nancy Grace Roman Telescope, and Habitable Worlds Observatory, will be designed and executed. This requires synergy across instrument design and science. What instruments do we already have? Which do we need? How do we design observations to help us search for life? Planning to gather and interpret these distant signals naturally will include: understanding where to search; seeking examples from the early evolution of life and its effects on our home planet; modeling the atmospheric dynamics that mix and move gases across the planet; and disentangling the history of the star and planet in the context of their galactic setting.

Four outstanding teachers (two American and two European), experts in the field, will share the latest news and discoveries, discuss existing and new telescopes and technological challenges and design considerations for future observations, as well as cover the frontier in co-evolution of life and the biosphere and progress in planetary atmosphere and biosignature modeling.

**Apertura matrícula**

Desde el día 8 de abril de 2024  
(plazas limitadas)

Solicitud  
online





## Monday 24

- 10.00 h Welcome lectures  
**Britney Schmidt**  
 Cornell University, USA  
**Víctor Parro**  
 Centro de Astrobiología, Spain
- 11.30 h Studying Earth as an exoplanet to advance the search for habitable worlds  
**Edward W. Schwieterman**  
 University of California, Riverside, USA
- 15.30 h Biogeodynamics: influence of plate tectonics for life evolution and biodiversity  
**Taras Gerya**  
 ETH Zürich, Switzerland



## Wednesday 26

- 10.00 h Evolution, composition and chemistry of planetary atmospheres  
**Antonio García Muñoz**  
 CEA Paris-Saclay, France
- 11.30 h Life's origins and history as a guide to its presence elsewhere  
**Betül Kaçar**  
 University of Wisconsin, USA
- 15.30 h Oceans, continents, plate tectonics and missing extraterrestrial civilizations  
**Taras Gerya**
- 17.30 h La búsqueda y caracterización de exoplanetas: ¿otros escenarios para la vida?  
**Antonio García Muñoz** CEA Paris-Saclay, France *Open Lecture, in Spanish*



## Thursday 27

- 10.00 h Remote sensing of exoplanet atmospheres from the ground. Prospects of finding life  
**Antonio García Muñoz**
- 11.30 h From biosphere to atmosphere to telescope: fingerprinting potential signs of life on distant worlds  
**Edward W. Schwieterman**
- 15.30 h Next frontiers bridging astronomy with biology: Reconstructing synthetic biosignatures in the laboratory  
**Betül Kaçar**



## Friday 28

- 10.00 h Student presentations
- 11.30 h Synthesis



Red social de conocimiento UIMP  
 Accede a las retransmisiones en streaming de los cursos y actividades en [uimptv.es](http://uimptv.es)



Universidad Internacional Menéndez Pelayo

