IAU ECA Online Discourse Series

International Astronomical Union Early Career Astronomer Online Discourse Series

Register for this free event no later than 24h (UTC) in advance of the subsequent event to get access via Zoom and Youtube. You will get a link to your event after registration and a reminder roughly 12h (UTC) in advance.
https://forms.gle/sWoB7uxT2sWKEJQq8

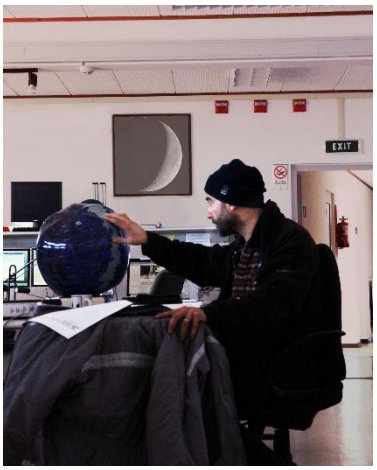
Thursday February 25th, 2021

9:00-10:00 UTC / 10:00-11:00 CET

"Preparing for a new era in astronomy"
Dr. Philippa Hartley (SKA Organisation, Jodrell Bank Observatory)

The SKA project is building the world's largest radio telescope in an international effort to revolutionise the way we explore the Universe. The project brings together scientists, engineers and policy makers from around the world to deliver one of the largest scientific endeavours in history. In this session I will talk about how I became part of the SKA project, what I'm doing to help the scientific community prepare for SKA observations, and what I've learned from working at the interface of academia and industry in this truly global organisation.

Moderated by: Dr. Gaël Buldgen & Dr. Sudeshna Boro Saikia



Thursday March 25th, 2021

16:00-17:00 UTC / 17:00-18:00 CET

"Satellite Mega-Constellations and Astronomy: the phantom menace, or a new hope?"
Dr. Olivier Hainaut (ESO)

In 2019, SpaceX Starlink launched its first batch of 60 telecommunication satellites, which appeared for a few weeks as a bright "string of pearls" stretching over the twilight sky. This stunning view, combined with the plans by Starlink, OneWeb, Amazon's Kuiper and a few other satellite operators to launch many thousands of satellites over the coming years, have caused some worries that the sky would soon be littered with tens of thousands of satellites outnumbering the stars and blinding telescopes.

ESO, and the astronomical community as a whole, started various studies to evaluate the impact of these satellites on astronomical observations. The outcome is that, while by far not as bad as originally feared, some observations would indeed be affected. While our understanding of the problem improved, discussions between the astronomers and Starlink have resulted in the operator changing the satellite design and the way the spacecrafts are operated, leading to a significant decrease of their

brightness (no more string of pearls). The Starlink example will hopefully serve as the basis for "best practice" standards for the whole industry.

While the problem for visible and IR astronomy is getting under control, other issues are that of radio astronomy -fortunately protected by international treaties- and of orbital crowding. The various space agencies are closely monitoring this, as collisions in low-Earth orbit would have disastrous effects on the whole space industry. I'll discuss the various ways that are being considered to reach a successful co-existence between the astronomers, space industry and its societal impacts.

Moderated by: Dr. Fatoumata Kebe & Dr. Themiya Nanayakkara

Thursday April 29th, 2021

9:00 AM - 10:00 AM AEST / 7:00 AM – 8:00 AM AWST

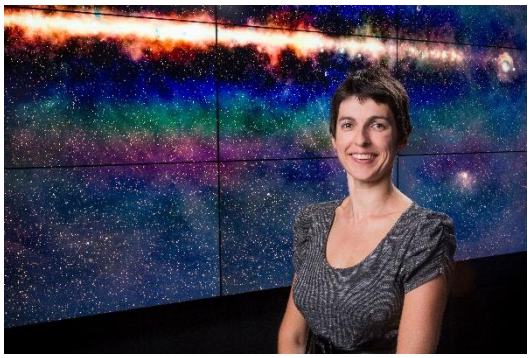
7:00 PM – 8:00 PM Wednesday April 28th, 2021 EDT

12:00 AM - 1:00 AM UTC / 1:00 AM -2:00 AM CEST

"Quantifying and Managing Uncertainty"
Dr. Richard Scalzo (DARE, University of Sydney)

Uncertainty is the byword of our age; our economy and the environment that supports it are composed of dizzying arrays of subsystems with complex interactions. Mathematical models that combine natural and social science, statistics, and machine learning hold potential for understanding and predicting the behaviors of these systems, and for driving decision-making about optimal management of natural resources. These models and the data they operate on, however, are uncertain, and an honest accounting of the limitations and uncertainty inherent in both deterministic and data-driven modeling is critical to manage risk across all possible outcomes. I will describe the role and impact of uncertainty in a range of applied fields including geology, groundwater, and ecology, as well as the management of uncertainty in my own career path towards environmental data science.

Moderated by: Dr. Eleanor Sansom & Dr. Christopher Moore



Thursday May 27th, 2021

9:00 AM -10:00 AM AEST / 7:00 AM – 8:00 AM AWST

7:00 PM – 8:00 PM on Wednesday May 26th, 2021 EDT

12:00 AM - 1:00 AM UTC / 1:00 AM -2:00 AM CEST

"Exploring the Universe Without Costing the Earth"
Dr. Natasha Hurley-Walker (Curtin University)

Science is a global endeavour and brings huge benefits to humankind. Modern astronomy is exploring the far reaches of the Universe, with tremendous advances in the last ten years: the detection of

gravitational waves, the first direct image of a black hole, and the discovery of powerful radio bursts rippling across cosmic distances. Great science requires resource-intensive infrastructure, large collaborations, and now more than ever, powerful supercomputers. The environmental impact of our scientific endeavours must not outweigh their benefits. I will describe how Australian astronomy is beginning to meet this challenge, and becoming a leader in sustainable science. I'll also show the unique perspective that astronomy itself brings to this challenge, and how that can guide our future actions.

Moderated by: Dr. Themiya Nanayakkara & Dr. Eleanor Sansom

The events of the IAU ECA Online Discourse Series are proudly brought to the community of early career astronomers by the Organizing Committee of the IAU EC Working Group of Junior Members:

Maria Drozdovskaya & Fatoumata Kebe (co-Chairs)
Camilla Danielski, Christopher Moore, Eleanor Sansom, Gaël Buldgen, Sudeshna Boro Saikia, Themiya Nanayakkara

https://www.iau.org/science/scientific_bodies/working_groups/310/

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Find useful resources and connect with the IAU JM community on our dedicated Slack workspace!

https://join.slack.com/t/iaujuniormembers/shared_invite/zt-lpho9m2b-fIXOjpoHAw20_Vb6IDBf8A

(link active up to and include March 4th)