



# IAU Symposium 367 Education and Heritage in the Era of Big Data in Astronomy



The first steps on the IAU 2020-2030 Strategic Plan

9-14 December 2020, Bariloche, Argentina

Main webpage: <http://sion.frm.utn.edu.ar/iaus367/>

Web page at IAU: <https://www.iau.org/science/meetings/future/symposia/2528/>

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2<sup>nd</sup> Circular. January 10<sup>th</sup>, 2020

## Goals

As with most other sciences, astronomy is being fundamentally transformed by the Information and Computation Technology (ICT) revolution. The data volume is growing exponentially, can be accessed remotely and the observations can be performed even without a real knowledge of a telescope. The new approaches to the data permits the development of new tools, techniques and resources for data analysis and produce discoveries which probably never would be reached with traditional Astronomy data analysis period. Between these new approaches to the Astronomy, we would like to reinforce the access to the data for all the audiences, as blind, deaf, neurodiverse people, with motor-related disabilities and chronic diseases, not only in the field of outreach, but also education in all levels and, mainly, as part of the scientific community, permitting to perform research in a multi modal way.

The primary goal of this Symposium is to give perhaps for the first time a global vision of Education and Heritage in the frame of the goals of the IAU, taking into account the 2020-2030 Strategic Plan and to propose an eventual 'next steps' road map and a global Astronomy education agenda for the next decade, while honouring the education from the past.

## Topics

- State-of-the-art of astronomy education in countries/continents in the framework of the 2020-2030 IAU plan.
- Meta-analysis of astronomy education research on contents/school grade levels/focus on education cross studies.
- Literacy in Astronomy.
- Innovations in education methodologies and instrumentation.
- Research into the value and influence of astronomy education in other disciplines.
- Big Data in education and Open Astronomy.
- Astronomy as an interdisciplinary approach to science education in all levels.
- Inclusive education in Astronomy.
- Use of Astronomy Education Research experiments and results by teachers and in informal education activities (museum, planetarium, etc.).
- Cultural Astronomy and heritage and education: from Stonehenge to the Space telescopes.

## Proposed invited speakers

- **Alejandro Gangui**, UBA-IAFE, Argentina. History of Astronomy.
- **Alejandro López**, UBA, Argentina. Cultural astronomy.
- **Alex Young**, NASA, USA. Heliophysics and Big Data.
- **Amelia Ortiz**, Univ. de Valencia, Spain. Astronomy and Inclusion.
- **Daniela Lazzaro**, Observatorio Nacional Coordenação de Pesquisas em Astronomia e Astrofísica, Brazil. The role of women in Astronomy in promoting education and culture.
- **Georg Zotti**, LBI ArchPro, Austria. Stellarium: simulation for research and outreach.
- **John Hearnshaw**, Canterbury University, New Zealand. IAU strategic plan 2020-2030.
- **José Maza** (to be confirmed), Univ de Chile, Chile. Education and communication of Astronomy.
- **César González-García**, CSIC, Spain. History and Heritage.
- **Karen Hallberg**, CAB-IB, Argentina. Women in Science.
- **Carolina Ödman**, Inter-University Institute for Data Intensive Astronomy (IDIA), the University of the Western Cape (UWC). South Africa. Development and Outreach
- **Laura Noto**, Inst. Relat. Office, CONICET, Argentina. Communication of Astronomy with the Public.
- **Michael Fitzgerald**, Edith Cowan Inst. for Educ. Research, Australia. Research in Education of

## Astronomy

- **Mónica Oddone**, Córdoba Astron. Observ., Argentina. Astronomy Olympics: awakening scientific and technical vocations.
- **Néstor Camino**, UNSJB, Argentina. Didactics in Astronomy.
- **Shanshan LI**, National Astronomical Observatories, China. Data-driven Education.
- **Susana Deustua**, STScl - President of IAU-Div C, USA. IAU Strategic Plan for Education.

## SOC members

- **Beatriz García** (co-chair) ITeDA (CNEA, CONICET, UNSAM) – UTN FRM, Argentina.
- **Rosa Ros** (co-chair) Universidad Politécnica de Catalunya, Spain.
- **Akihiko Tomita**, Wakayama University, Faculty of Education, Japan.
- **Andrea Sosa Oyarzabal**, Univ. de la Rep. – Centro Univ. Reg. del Este, Uruguay.
- **Boonrucksar Soonthornthum**, Nat. Astron. Research Institute of Thailand, Thailand.
- **Chenzhou Cui**, National Astronomical Observatories, CAS, China.
- **Dongni Chen**, Beijing Planetarium, China.
- **Hideiko Agata**, National Astronomical Observatory of Japan, Japan.
- **Jay Pasachoff**, Williams College-Hopkins Observatory, USA.
- **John Hearnshaw**, Univ. of Canterbury Physics-Astronomy Department, New Zealand.
- **Julieta Fierro**, UNAM, México.
- **Julio Fernández**, Dept. Astron., Facultad de Ciencias, UdelaR, Uruguay.
- **Katrien Kolenberg**, KU Leuven & Univ. of Antwerp, Physics Dep., Belgium.
- **Leonardo Pellizza**, Inst. Arg. de Radioastronomía, CONICET, AAA, Argentina.
- **Néstor Camino**, Univ. Nacional San Juan Bosco, CONICET, Argentina.
- **Nicoletta Lanciano**, University La Sapienza, Italia.
- **Paulo S. Bretones**, Univ. Federal de São Carlos, Dep. de Metodologia de Ensino, Brazil.

## LOC Members

- **Mariana Orellana** (*chair*) Universidad Nacional de Río Negro, CONICET, Argentina.
- **Elise Servajean**, Universidad de Los Andes – Universidad del Desarrollo, Chile
- **Anahí Granada**, Universidad Nac. de Río Negro, CONICET, Argentina.
- **Daniel Carpintero**, FCAGLP – Univ. Nac. de La Plata, IALP (CONICET – UNLP), Argentina.
- **José Luis Hormaechea**, Est. Astron. Río Grande (FCAGLP – UNLP, CONICET), Argentina.
- **Nicolás Maffione**, Universidad Nacional de Río Negro, CONICET, Argentina.
- **Santiago Paolantonio**, Universidad Nacional de Córdoba, Argentina.
- **Silvina Pérez Álvarez**, ITeDA (CNEA, CONICET, UNSAM), Argentina.

## IAU Travel Grants

The IAU supports qualified scientists to whom only limited means are available, e.g., colleagues from economically less privileged countries and young or retired scientists. The participants wishing to apply for an IAU travel grant should fill the online form available on the web site of the Symposium:

<http://sion.frm.utn.edu.ar/iaus367/index.php/iau-travel-grants/>

The same information would be used in order to provide grants specific for Argentinian participants according to our sponsors' policies (CONICET, AAA, etc).

## TOTAL SOLAR ECLIPSE

On December 14, 2020, a Total Eclipse of the Sun will travel from west to east of the territory of the Republic of Argentina, crossing Patagonia. We'll move to the small city of Piedra del Aguila (around 200 km away along Route 237, province of Neuquén) in a one day excursion for this event. The first part of the trip goes along the Enchanted Valley, an area full of hills and rock formations which surrounds the Limay river.

As there will be many people who will move that day, we cannot ensure the return time, so we suggest not travelling back (flights, in particular) on this date. Notice the trip to the eclipse is not covered by the registration fee, but we hope is affordable for everybody. Please take into account that there are limited seats.

For more information, including the map of the totality, see:

[http://xjubier.free.fr/en/site\\_pages/solar\\_eclipses/TSE\\_20201214\\_pg01.html](http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_20201214_pg01.html)

## Important deadlines

- Open IAU Grants Application: **January 15, 2020**
- End or Early-Registration / Registration: **January 15 – 23.59 UTC, 2020**
- Visa Application Support Opens: **July 15, 2020**

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- End IAU Grants Application: **July 31 – 23.59 UTC, 2020**
  - Abstract Deadline Submission: **July 31 – 23.59 UTC, 2020**
  - Registration Deadline: **July 31 – 23.59 UTC, 2020**

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- Grants are awarded: **until September 15, 2020**

- Abstract Results: **until September 15, 2020**



The organizers in the IAUS367 appreciate the support from the following institutions:

