



## FIRST ANNOUNCEMENT

IAUS 367 ***"Education and Heritage in the Era of Big Data in Astronomy.***

***The first steps on the IAU 2020–2030 Strategic Plan"***

9-14 of December 2020

Dear colleagues,

On behalf of the IAU and the SOC and LOC of the meeting, we are glad to announce the IAU Symposium number 367 (IAUS 367) on ***"Education and Heritage in the Era of Big Data in Astronomy. The first steps on the IAU 2020–2030 Strategic Plan"*** to be held in San Carlos de Bariloche, Argentina, 9-14 of December 2020.

### **Objectives**

The primary aim of this Symposium is to provide a global vision of Education and Heritage in the frame of the goals of IAU Strategic Plan 2020-2030, as well as to outline a road map and a global astronomy education agenda for the next decade, while honouring the education from the past.

In this sense, a central objective of the meeting is to increase the quality and impact of astronomy education by encouraging the use of new learning practices, not only at university level, but also at school level, taking into account the inclusion of minorities and equity. As with most other sciences, astronomy is being transformed by the Information and Computation Technology revolution. The available exponentially-growing data volume permits the development of new tools, techniques and resources for data analysis, that lead to new discoveries. This kind of new vision on data in astronomy provides the unprecedented opportunity of training professors and students to use the available information, not only to make the data available, but to but to make it available to each level of education.

This symposium will feature key speakers who are international leaders in discipline-based education in astronomy and planetary sciences, but also in Communication and History. Contributed Talks are solicited from astronomers and other researchers who have conduc-

ted astronomy education activities during the past years, with a particular emphasis on teaching innovation. This Symposium will be especially valuable to those astronomers who are actively involved in teaching, education, and outreach, thinking that education is a possibility to establish bridges between researchers and educators, showing the interdisciplinary characteristics of our discipline and its power to teach and learn about sciences in general and to promote the development on the globe, assuring the protection of World's heritage, including the dark sky.

Apart from invited and contributed presentations, there will be plenty of time to profoundly discuss different topics during the Symposium. Different working groups are planned in parallel sessions, as well as workshops for teachers and two conferences open for the public. In order to encourage the participation of non-English speakers, discussion sessions in other languages will be organized as well, as a step for equity and attention to minorities.

In addition, the occurrence of the total solar eclipse that will cross the north of Patagonia on December 14<sup>th</sup>, 2020 (see <http://sion.frm.utn.edu.ar/iaus367/index.php/related-events/>), is an incentive for all the attendants to the Symposium, and the observation of the event at the end of the meeting, will be a great closing ceremony.

The topics of this meeting cover a diversity of subjects including:

- State-of-the-art of astronomy education in countries/continents in the framework of the 2020-2030 IAU Strategic Plan, including the meta-analysis of astronomy education research on contents/school grade levels/focus on education cross studies.
- Literacy in Astronomy.
- Use of Astronomy Education Research experiments and results by teachers and in non-formal education activities (museum, planetarium, etc.).
- Innovations in education methodologies and instrumentation, including distance education: Moocs.
- Research into the value and influence of astronomy education in other disciplines.
- Big Data in education and data-driven education activities.
- Astronomy as interdisciplinary approach to science education in all levels.
- Inclusive education in Astronomy in all the fields, and the role of the women in Astronomy.
- Citizen Science taking advantage of astronomical events (i.e. solar eclipses, star showers).
- Cultural Astronomy and heritage and education: from Stonehenge to the Space telescopes.

### **Proposed invited speakers**

- Alejandro López, Cultural astronomy (UBA Argentina).
- Karen Hallberg, Women in Science (CAB-IB, Bariloche, Argentina).
- Jose Maza, Education of Astronomy in all levels (Universidad de Chile, Chile).
- Gloria Delgado Inglada, Innovation in Education, (UNAM, México).

- Ms. Shanshan LI, Shanshan LI, Data-driven Education (National Astronomical Observatories, China).
- Juan Antonio Belmonte, History and Heritage, (IAC, Spain).
- Néstor Camino, Didactics in Astronomy, (UNSUB, Esquel, Argentina).
- Alejandro Gangui, History of Astronomy, (UBA-IAFE Argentina).
- Michael Fitzgerald, Innovation and literacy in Education of Astronomy (Edith Cowan Inst.for Educational Research, Australia).
- John Hearnshaw, IAU Strategic Plan 2020-2030 (Caterbury University, New Zealand)
- Sarbani Basu, Big Data (Yale, USA).
- Kevin Govender, Astronomy for development (Office for Astronomy Development, South Africa).
- Amelia Ortiz, Astronomy and Inclusion, (University of Valencia, Spain).
- Susana Deustua, (President of IAU-Div C, STScl, USA).
- Claire Rafferty, Big Data (DKIST, USA).
- Alex Young, Heliophysics and Big Data, (NASA, USA).
- Daniela Lazzaro, The role of women in Astronomy in promoting education and culture (Observatorio Nacional Coordenação de Pesquisas em Astronomia e Astrofísica, Brazil)

## The Venue

We have selected San Carlos de Bariloche, a beautiful city in the south of Argentina surrounded by outstanding forests, mountains, and lakes, as the venue for IAUS 367. We expect that the place provides an ideal environment to carry out the meeting, as it is close to the totality band of the Great eclipse of December 14<sup>th</sup> 2020.

The IAUS367 will be held at a hotel chain including Patagonia Sur, Monte Claro and Aguas del Sur. These three hotels are connected so they provide a unique way of working as a single one. The main room for IAUS367 is in Patagonia Sur (by Elflein street, see Figure 1). We will have ample space for the development of the scientific meeting (around 200 people in the largest space) and plenty of rooms for the participants wishing to book at the meeting place. Bariloche's Civic Center is only 500m away, and there are many other options for accommodation, restaurants and shops in the immediate surroundings.

Visit the hotel website, available in Spanish or Portuguese, in:

<http://hotelpatagoniasur.com.ar>

Further information will be provided in the Second Announcement and in the meeting web page,

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

Early registration is now open by filling the form available at this [LINK](#).

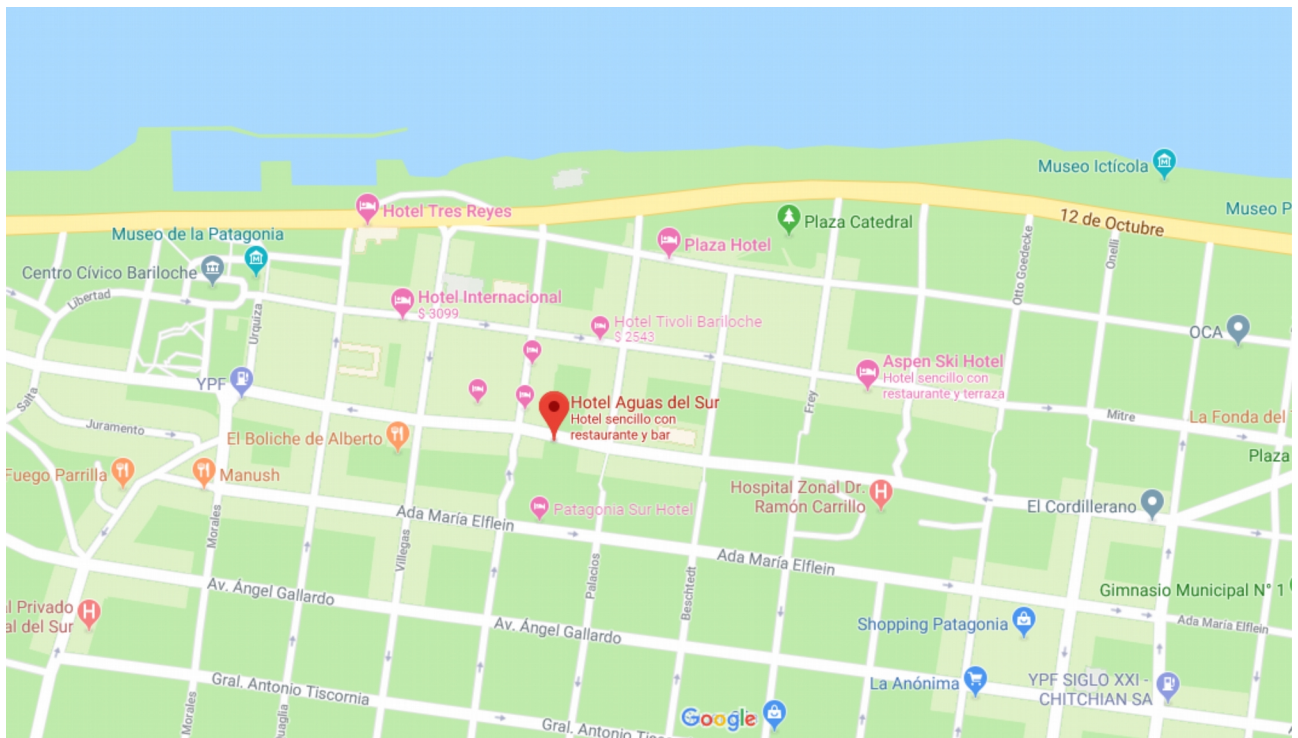


Figure 1. Bariloche Center and IAUS367 Venue

## Scientific Organizing Committee

### SOC Co-Chairs

- **Beatriz García**, ITeDA (CNEA, CONICET, UNSAM) -UTN FRM, Argentina.
- **Rosa Ros**, Universidad Politécnica de Catalunya, Spain.

### SOC members

- **Akihiko Tomita**, Wakayama Univ., Faculty of Education, Japan.
- **Andrea Sosa Oyarzaba**, Univ. de la Rep. – Centro Univ. Reg. del Este, Uruguay.
- **Boonrucksar Soonthornthum**, Nat. Astron. Research Institute of Thailand, Thailand.
- **Chenzhou Cui**, Nat. Astron. Observatories, CAS, China.
- **Dongni Chen**, Beijing Planetarium, China.
- **Hideiko Agata**, Nat. Astron. 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, U.de la Rep., 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**, Univ. La Sapienza, Italia.
- **Paulo S. Bretones**, Univ. Federal de São Carlos, Dep. de Metodologia de Ensino, Brazil

## Local Organizing Committee

### LOC Chair

– **Mariana Orellana**, Univ. Nac. de Río Negro, CONICET, Argentina.

### LOC Members

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

## Editor(s) of Proceedings

**Rosa Ros**, Universidad Politécnica de Catalunya, Spain

**Jay Pasachoff**, Williams College—Hopkins Observatory, USA

**Patricio Rojo**, Universidad Nacional de Chile, Chile

**Naomi Pasachoff**, Williams College—Hopkins Observatory, USA

## Important Dates

Open Registration + Abstract Submission: **August 31**, 2019

Open IAU Grants Application: **January 15**, 2020

End of Early-Registration/Registration: **January 15**, 2020

Visa Application Support Opens: **July 15**, 2020

End IAU Grants Application: **July 31**, 2020

Abstract Deadline Submission: **July 31**, 2020

Registration Deadline: **July 31**, 2020

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

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

Visa Application Support Closes: **September 30**, 2020

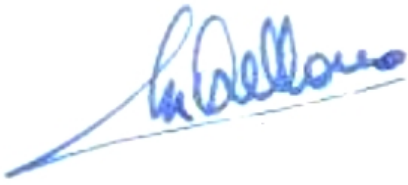
Final Program Published: **November 10**, 2020

Symposium: **December 9-14**, 2020

Total Solar Eclipse: **December 14**, 2020

Proceedings deadline submission: **February 15**, 2021

Hopping to meet you in Bariloche in 2020, we send to you the best regards,



Dr. Mariana Orellana  
Chair- LOC



Dr. Beatriz García  
Chair- SOC

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