

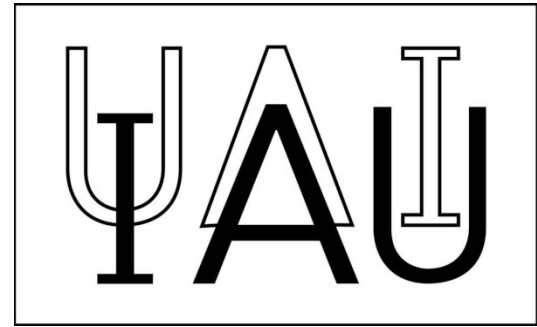


The IAU's Office of Astronomy for Education

Markus Pössel
OAE and Haus der Astronomie

Global Hands-On Universe Conference, August 22, 2020

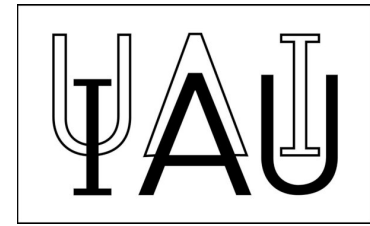
The International Astronomical Union



- Umbrella organisation for professional astronomers
- Defines astronomy community consensus where needed: Naming, coordinate conventions, units, definitions etc. (Resolutions at General Assemblies)
- Organises scientific meetings (notably IAU Symposia)

The mission of the International Astronomical Union is to promote and safe-guard astronomy in all its aspects (including research, communication, education and development) through international cooperation.

IAU Structure



IAU Executive Committee (President, General Secretary etc.)

Self-organisation of astronomers

9 Divisions consisting of
35 Commissions with
40-50 Working Groups (mostly temporary)

Of particular interest to us:

Division C: Education, Outreach and Heritage
(President: Susana Deustua)

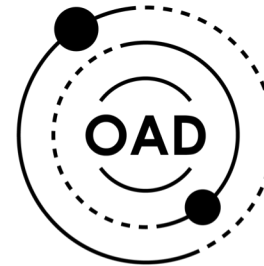
**Commission C1: Astronomy Education
and Development**

(President: Paulo Bretones)

Current working groups include:
Competitions; Education Research and Methods,
Resources (astroEDU); NASE

<https://www.iau.org>

IAU Offices



OFFICE OF ASTRONOMY
FOR DEVELOPMENT



since 1/2020

IAU Office of Astronomy for Education

The mission of the International Astronomical Union is to promote and safe-guard astronomy in all its aspects (including research, communication, education and development) through international cooperation.

Goal 5

The IAU stimulates the use of astronomy for teaching and education at school level.

https://www.iau.org/static/administration/about/strategic_plan/strategicplan-2020-2030.pdf

Fundamental question: Which actions are appropriate for the IAU, on an international level?



Categories of OAE Activities

- Create and maintain infrastructure
- Foster professionalisation
- Networking
- Create, curate, disseminate basic education resources
- Help to include more astronomy in Curricula
- Establish standards, disseminate best practices

...in close interaction with the astronomy education community.

We do not want to re-invent wheels.

So many helpful initiatives (GHOU, GTTP, ...) already out there!



Infrastructure:

Publication venues, data bases

Astronomy education is lagging behind astronomy research regarding findability and publication venues

- OAE supports astroEDU (editorial assistance)
- negotiations with **NASA-ADS** about listing educational resources
- Wider problem: How to create a good, common **astronomy education review culture?**
- Ideally: Something as widely accepted as arXiv, specifically for astronomy education?



Professionalisation:

Teachers

- Provide resources (“simple astronomy”) for astronomy teaching by teachers with little previous training (collaboration with OAD)
- Online **Schools for Astronomy Education (SAEs)** in English (international) and other languages (regional) as low-threshold introduction (including current developments)
- International and regional SAEs for face-to-face training
- Coordinate with existing frameworks (GTTP, NASE, ...)
- Define community standards for resources/trainings



Professionalisation:

Astronomers / astronomy educators

This includes both teachers and astronomers active in astronomy education

Help educators keep up with:

- AER developments
- modern teaching methods
- state-of-the-art evaluation techniques
- astronomy-specific topics (use of remote telescopes, daytime observations, use of authentic data, including indigenous astronomy...)



Specific resource: **OAE Reviews**

- Developed by experts from the community and beyond (specific OAE Review Board), with OAE support
- Rely on existing resources, provide compact review
- Meant to be minimally time-consuming for getting up to speed on a given topic
- Transparent process, living document: Material available online during creation, Review updated when needed



Planned OAE Reviews topics

General/methodology will include:

- How to evaluate resources and activities
- Diversity, equity and inclusion in astronomy education
- Online formats for astronomy education
- Mix of best-practice reports and AER reviews

More specific content topics:

- Remote observing
- Astronomy education with authentic data (e.g. Archives)
- Best practices/resources reviews for common topics:
Cosmology, planetary atmospheres (climate change), ...



Fundamental astronomy resources

Lots of education resources already out there:
create, curate, evaluate, disseminate for
universal access to high-quality open educational resources

Specific support actions to start with:

- For teaching, resources in local language necessary:
Astronomy Translation Network and friends
- Create multi-lingual astronomy glossary
- Input from „Big Ideas in Astronomy“ – literacy definition
- Create collection of corresponding images/animations
available under suitable Creative Commons licenses
- Wikipedia Edit-a-thons – since that is where people look!



Fostering astronomy in curricula

Mid-term goal:

Support efforts to include more astronomy in national/state/regional (STEM) curricula

- Support studies on student interest and motivation (cf. ROSE, or planned successor ROSES)
- Create resources about lobbying best-practices
- Support National Astronomy Education Coordinators (NAEC Teams) with their national efforts



Networking

within the astronomy education community

- Direct interaction with partners (starting with OAD, OAO, ...)
- OAE Session at IAU General Assembly
- Annual Shaw-IAU Workshop (next: 6–9 October, 2020)
- Follow us on social media, subscribe to our mailing list
- Talks like this one 😊

<http://www.astro4edu.org>



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So – who will be doing the work?



- Office of Astronomy Education at Haus der Astronomie, Heidelberg
- OAE Centers and OAE Nodes
- Network of National Astronomy Education Coordinators
- Collaborators – e.g. OAE Review Board members



OAE at Haus der Astronomie



Markus Pössel



Carolin Liefke



Markus Nielbock



Niall Deacon



Juan Carlos Muñoz



Gwen Sanderson

Director & Deputy

Coordinators

Assistant



Based at Haus der Astronomie, Heidelberg, Germany

...supported by Haus der Astronomie staff

Currently hiring:
5-year postdoc in
astronomy education research

Deadline August 26, 2020

<https://bit.ly/3j8R9Jt>



OAE at Haus der Astronomie

Haus der Astronomie:
Center for Astronomy Education and Outreach
operated by: Max Planck Institute for Astronomy
for the Max Planck Society

External funding bodies:

- Klaus Tschira Foundation
- Carl Zeiss Foundation
- Shaw Prize Foundation

Klaus Tschira Stiftung
gemeinnützige GmbH





OAE Centres and OAE Nodes

Institutions that are willing to marshal their own **resources** for the task are invited to become OAE Centres or OAE Nodes (difference in scale).

Currently in the process of establishing:

Centers

- Italy
- China
- India
- Cyprus

Nodes

- France
- Republic of Korea
- Nepal



NAEC Teams

National Astronomy Education Coordinators

- NAECs are the liaison between OAE and each country's education community
- NAECs disseminate OAE material
- OAE asks NAECs for nation-specific needs
- Early task: survey of national practices/status quo in astronomy education
- For each country, think about ways for lobbying for more astronomy in curricula – and OAE ways of supporting this.

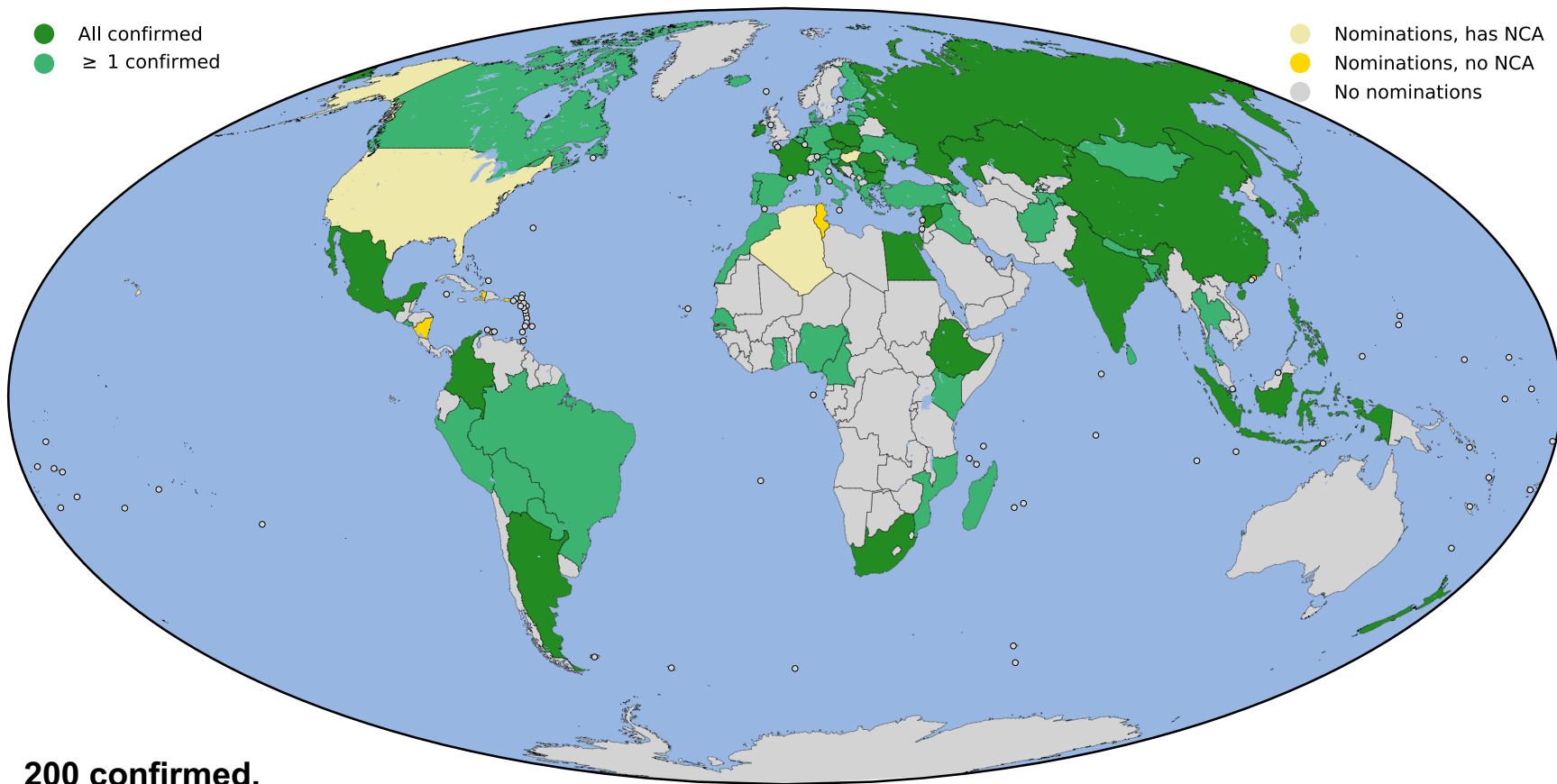


NAEC Teams

National Astronomy Education Coordinators

- All confirmed
- ≥ 1 confirmed

- Nominations, has NCA
- Nominations, no NCA
- No nominations



**200 confirmed,
from 70 countries**



OAE and you?

- Volunteer contributions: OAE Review Boards, Reviewers, Wikipedia Edit-a-thon, volunteer translators
- Institutions: interested in hosting OAE Center or OAE Node?
- Join in community discussions, help with dissemination
- ...keep doing what you are doing!

Thank you for your attention!

<http://www.astro4edu.org>



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