

# The Office of Astronomy for Education in Heidelberg

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Haus der Astronomie

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# The OAE Heidelberg Proposal

- What (and who) is Haus der Astronomie?
- OAE as a service organisation
- Infrastructure and how not to re-invent wheels
- OAE's bridge function between Astronomy Education Research and Practice
- The OAE network, partnerships, collaboration
- Standards, concept inventories & Co.

# Who we are: Haus der Astronomie



Center for Astronomy Education and Outreach in Heidelberg

Founded in 2008, galaxy-shaped building since 2011

Max Planck Society, Klaus Tschira Foundation, Heidelberg U & City of Heidelberg



Bild: Sebastian Egner

# Who we are: Haus der Astronomie



## Our present focus: Outreach/Astronomy Education **Practice**

- Kindergarten, primary & secondary school
- Developing teaching resources
- Teacher training (pre-service & in-service, regional, national & international, in-house and elsewhere)
- Collaborations & projects (UNAWWE, EUSPACE-AWE, NOC for IAU OAO)
- Lobbying (astronomy at state level)



# Who we are/will be: HdA-OAE Team



Markus Pössel  
OAE Director

PhD in Theoretical  
Physics

HdA Managing  
Scientist 2009+

Particularly interested  
in cosmology,  
data analysis



Carolin Liefke  
OAE Deputy Director

PhD in Astronomy  
(Stellar activity)

HdA staff 2010+

Particularly interested  
in remote observing,  
pre-service training

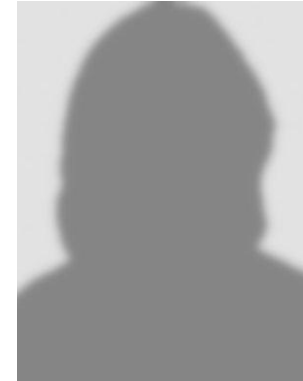


Markus Nielbock  
OAE Coordinator

PhD in Astronomy  
(Star formation)

HdA staff 2015+

Particularly  
interested in  
spaceflight,  
teaching materials



N.N.  
OAE AER  
Coordinator

5-year Astronomy  
Education  
Research postdoc

Suitable for early  
career scientists



N.N.  
OAE administrative  
assistant

general support

**...plus additional HdA staff as advisors/supporters**

1st Shaw Prize-IAU Workshop "Astronomy for Education"

# Basic role of the OAE

The astronomy education (practitioner and research) community within the IAU:

Commission C1 as **self-organizing, representative body** of the community

Office of Astronomy for Education as **service organization**:

**OAE** supports the community in using astronomy as a stimulus for STEM teaching/education from elementary to high school level.

# Support means **infrastructure**

- Venues for **publishing** educational resources  
not re-inventing wheels: arXiv? Zenodo.org?
- **Peer-reviewed publishing** of edu. Resources  
support for astroEDU – and will there be a new journal?
- Tools for **finding** suitable/best educational resources  
In talks with NASA ADS. Make good existing materials visible.
- Take action to make sure **Wikipedia** has good astronomy information
- **Translations!**



# Support means **professionalisation**

Training astronomy educators – both new and seasoned:

- New/inexperienced educators: Provide **basic training**, access to suitable resources
- Everybody: Provide (compact, minimally time-consuming) resources to self-teach/refresh **key competencies** and to **keep up with results** of astronomy education research
- Professionalisation of **review activities** (e.g. astroEDU)

Means to that end: “OAE Reviews”, Schools for Astronomy Education (online formats and face-to-face), future Shaw Prize-IAU workshops



# Support means professionalisation: **OAE Reviews**

Resource collections, videos etc. as appropriate

Similarity: *systematic reviews* (technical term, e.g. medicine)

General topics will include:

- How to evaluate resources and activity
- Accessibility and inclusion in astronomy education
- Online formats for astronomy education

More specific topics such as:

- Remote observing, handling authentic data
- Best practices for: Cosmology, planetary atmospheres, ...

## Support means **networking**

- **NAECs** – National Astronomy Education Coordinators, per country as liaison OAE and national community
- **OAE Centres** and **OAE Nodes** – institutions that invest their own resources to support OAE goals, and (with IAU approval) become part of the OAE
- Knowing how things are done elsewhere – analysing astronomy education in different countries (OAE Review)
- Direct interactions at the GAs and the annual Shaw Prize-IAU Workshop on Astronomy for Education
- Collaboration with OAD/OAO networks

# Support means **anchoring astronomy in curricula**

- Key role in each country: NAECs
- First, take stock: collecting information on each country's astronomy education landscape (OAE Review)
- Marshalling good arguments: student interest and motivation (ROSE), astronomy as “gateway science”
- Lobbying with the help of the IAU Executive

# Support means **standards** and **best practices**

- Finding the right **balance** between standards and individual diversity in practices
- Collecting and **showcasing** best-practice examples for resources, methods and activities
- Work on **consensus documents**, such as Big Ideas, concept inventories and more
- Recommendations for professionalisation in OAE Reviews – create **culture of evaluation**
- *Setting* standards must be a community (C1) discussion

**...more discussions on all of this  
over the next days!**