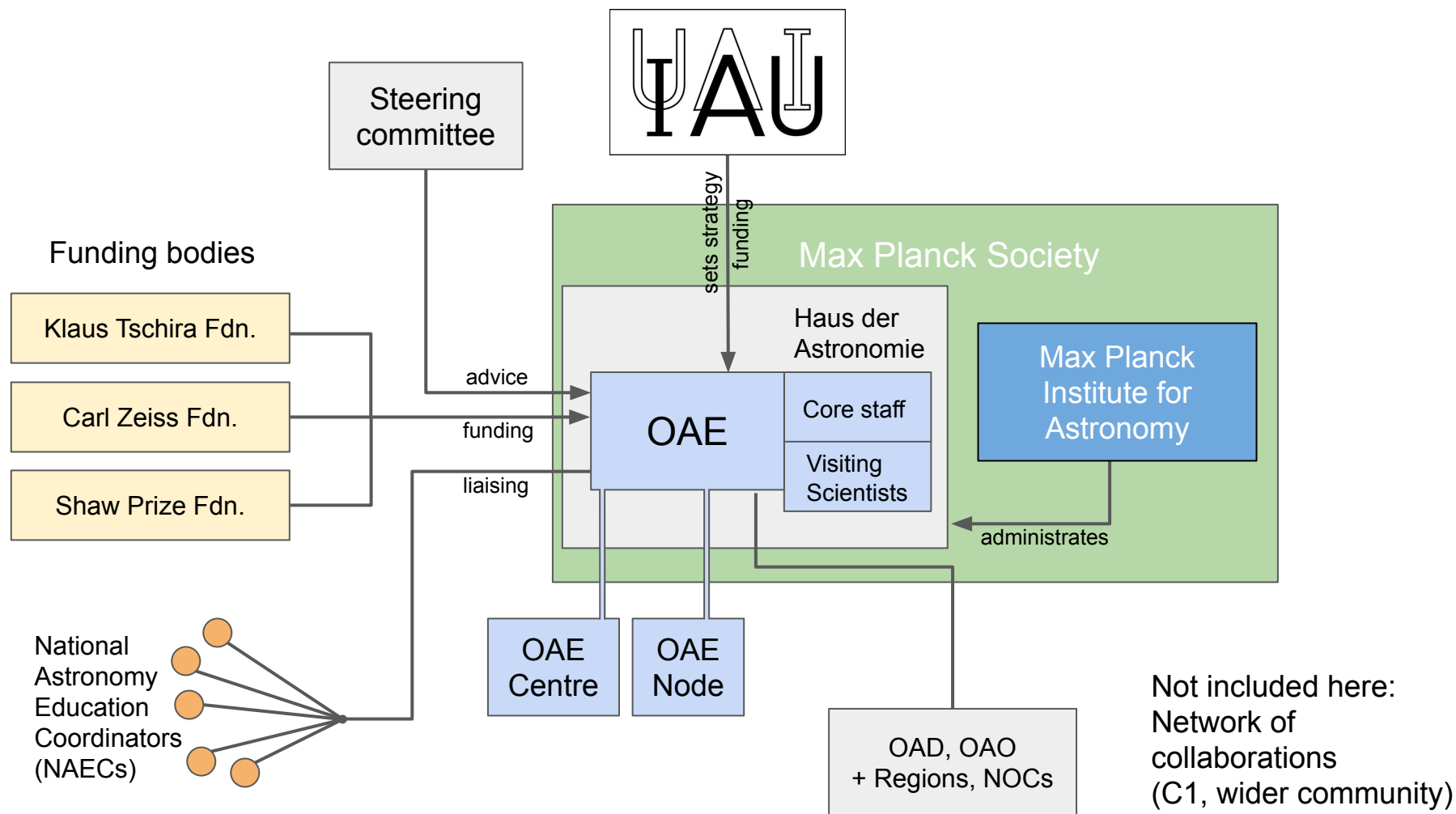


OAE Proposed Structure and Activity Plan

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Haus der Astronomie

Shaw-IAU OAE Workshop, Paris, 18 December 2019

OAE Proposed Structure



OAE Core Staff: Who does what?



Director & Deputy:

- Strategy
- Networking
- Infrastructure talks (ADS...)
- Hiring
- First Events



Coordinator:

- Build network!
- NAECs
- Contacts with OAO, OAD networks



AER Coordinator:

- Start AER-related OAE Reviews
- Research on student interests?
- Big Ideas, Standards, Concept Inventories

...supported by administrative assistant
...supported by HdA staff as advisors, helpers

Visiting Scientist Program

- Funds for inviting scientists, educators, stakeholders to Haus der Astronomie
- Travel costs, accomodation, stipends (for people not paid by another institution)
- Stays between a few days and a few months possible
- We want to use this program to **get things done!**
- Concomitant visits possible (from collaborations to mini workshops)
- If you have specific ideas, talk to us!

Max Planck Society

- Germany's largest organisation for basic research
- founded in 1948
- 86 institutes/institutions
- 8 institutes for astronomy/astrophysics
- 18 Nobel prize winners
- Funded by federal and state money



MAX-PLANCK-GESELLSCHAFT

Max Planck Institute for Astronomy

- Main research themes: Galaxies and cosmology, planet and star formation
- Instrumentation (Calar Alto, La Silla/VLT/ELT, LBT, ISO, Herschel, JWST)
- Tasked by MPG with administering Haus der Astronomie
- OAE: Basic administration, IT infrastructure



Haus der Astronomie



- Physical location for OAE
- Offices for core staff and visiting scientists
- Localities for meetings (e.g. as part of visiting scientists program), venue for workshops and smaller conferences with up to 100 participants
- Useful testbed:
 - Student workshops
 - Teacher training
 - Developing resources



OAE Funding: **IAU** and **Shaw Prize Foundation**

- IAU
 - OAE: Organisational assistant, travel, web services
 - Comparable support to OAD, OAO
- Shaw Prize Foundation
 - Founded by Mr. Run Run Shaw
 - Shaw Prizes \$1.2M: Astronomy, Life Sciences, Maths
 - OAE: Annual Shaw Prize-IAU Workshops

OAE Funding: **KTS** and **CZS**

- Klaus Tschira Foundation
 - Klaus Tschira = SAP Co-Founder
 - Funds science & outreach
 - OAE: Coordinator position and visiting scientists program
- Carl Zeiss Foundation
 - owns Zeiss and Schott
 - Funds science and engineering
 - OAE: AER coordinator position

Klaus Tschira Stiftung
gemeinnützige GmbH



OAE Governance: **Steering Committee**

- 4 members: Asst. GA, IAU nominee, 2 MPIA nominees
- Three year term, plus provisions for continuity
- advises OAE management
- monitors adherence to strategy, inter-office collaboration
- Feedback on:
 - choice of Shaw Prize-IAU Workshops
 - topics/locations of Schools for Astronomy Education (SAEs)
 - new OAE Centres and Nodes

OAE Governance: **Reporting** and **Review**

- Yearly reports to General Secretary for Officer's Mtg.
- Contributions to Catalyst, newsletters
- External review:
 - every 3 years, in phase with GAs
 - jointly arranged by IAU and MPIA
- Transparency towards stakeholder communities: news items, finished works (e.g. OAE Reviews) published online
- Next GA: OAE meeting (3.5 hours)

National Astronomy Education Coordinators

- NAECs are 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.

OAE Centres and OAE Nodes

Given the scale of the tasks we face, we welcome support!

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

Centres/Nodes are part of the OAE in name, public-facing, in strategy, in coordination and in reporting

Not mainly regional (in the sense of only being responsible for a limited region), but with an international perspective

OAE Centres and OAE Nodes

- Well-defined tasks/specializations where possible
- Key tasks remain w/OAE, lead for *specific* concept inventory or OAE Review, can be Centre/Node
- Centres/Nodes are run by experts – OAE will not micromanage, but strategy must be agreed-upon beforehand, and reporting is necessary task
- To start talking about a Centre/Node: See what resources (FTE, funds for travel, website) you can commit, and about possible specializations

→ **we will discuss this in the next section!**

OAO, OAD and their networks

- Overlap OAE with OAO, OAD: Education is an important aspect of development/outreach
- Keeping each other up to date: OAE joins existing regular OAD/OAO teleconference
- Making use of OAO, OAD networks: NOCs, OAD Regional Offices, OAO-coordinated **translator network**



OAE Activities

General remarks:

- Today's talk is about where we want OAE to go
- Related question of “how to get there from here”:
Draft Road Map talk on Thursday
- Activities related to standards and best practices:
Separate talk this afternoon

Categories of OAE Activities

- Infrastructure
- Professionalisation
- Networking
- Astronomy in Curricula
- Standards and best practices

Creating infrastructure: **Publications and data base**

Our impression:

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

- Numerous excellent resources, but often not as widely known as they should be
- Lack of platforms for widely accessible publication (arXiv) and peer-reviewed platforms
- Particular problem (not as relevant for astro research): **languages** (important for reaching teachers)

Infrastructure: **Getting resources out there**

- Role of arXiv in astronomy research: easy, fast, low-threshold, widely-read way of publishing results
- What could play a similar role for astronomy education resources (both AER and teaching resources?)
- arXiv itself?
 - phys.edu-ph exists, but no astro-ph.edu
 - Could be a touchy issue; have tried to initiate contact
- Alternative: zenodo.com, hosted by CERN, hosts materials of all kind. No astro visibility, though.

Infrastructure: **Peer-reviewed publication venues**

- **astroEDU** portal for peer-reviewed activities following a specific template – will be supported by OAE (organisational assistance, hosting)
- Ideas floated/plans made within the community for **peer-reviewed journals** – waiting for specifics
- Wider problem for peer-reviewed journals: review culture. How to create a good **astronomy education review culture?**

Infrastructure: **How to find things?**

- Astronomy research: **NASA ADS** as near-universal way of searching for specific articles
- Have started talks (thanks to S. Deustua) with ADS about including astronomy education resource database
- Searching by topic: Do we need an agreed-upon list of keywords? (e.g. based on <http://astrothesaurus.org/> ?)
- Additional resource: collecting best-practice examples
→ Standards & Best practices talk at 17:20

Professionalisation: **Target Groups**

Different target groups:

- Teachers: trained educators, but not necessarily familiar with (current) astronomy
- Astronomers active in education: excellent astronomy knowledge, but often self-taught/no formal teacher training, and not necessarily up-to-date with Astronomy Education Research (AER)

OAE should have bridge function

Professionalisation for **Teachers**

- Provide resources (“simple astronomy”) for astronomy teaching by teachers with little previous training (collaboration with OAD)
- Best-practice resources collection (plus translations!)
- 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
- Define community standards for those resources/trainings

Professionalisation for **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

OAE Reviews as compact, minimally time-consuming resources for getting up to speed

OAE Reviews topics:

General/methodology will include:

- How to evaluate resources and activity
- Accessibility 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), ...

Collaborative actions with the **NAECs**

- OAE Review on int'l astronomy education practices
- ...including analysis of each nation's specific needs
- Nation-specific plans: Where would additional astronomy in curricula improve teaching?
- Lobbying efforts: NAECs and national community must take the lead; OAE and IAU Exec support
- Planning national community actions: Regional SAEs (online or offline)? Hosting a Shaw Prize-IAU workshop?

Networking within the astronomy ed. community

- Use OAE Reviews and online-SAE to share experiences/best-practices
- Interaction at General Assemblies, OAE session
- How should we keep stakeholders informed? Mailing list? Newsletter?
- Shaw Prize-IAU Workshops to advance specific OAE tasks and topics



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What else?

**Save for the usual disclaimers – limited resources! –
what else should/could OAE do or support?**

Let's talk!