

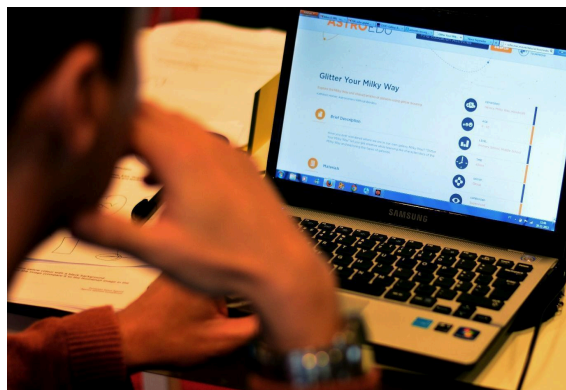


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# ASTROEDU

Peer-reviewed Astronomy Education Activities



## AstroEDU Report 2024/2025

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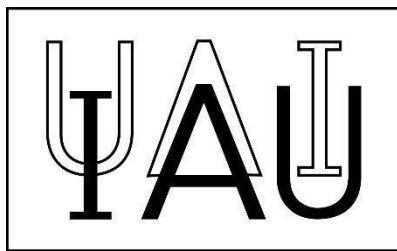
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**Date:** 04th of July 2025

# ASTROEDU

Peer-reviewed Astronomy Education Activities

is a project by



with the collaboration of:

INAF (Istituto Nazionale di Astrofisica), Las Cumbres Observatory

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## Abstract

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**AstroEDU** is a free, open-access platform for educational activities supported by the Office of Astronomy for Education (OAE) of the International Astronomical Union (IAU). On astroEDU, educators can find a curated selection of astronomy, Earth, and space science activities, each reviewed by professional educators and scientists to ensure accuracy and educational effectiveness.

This report covers the activities of the international editorial team during its third year of operation, from April 1st, 2024, to April 1st, 2025. For information about the previous two years, refer to the AstroEDU Report 2022/2023 (<https://doi.org/10.20371/INAF/TechRep/275>) and AstroEDU Report 2023/2024 (<https://doi.org/10.20371/INAF/TechRep/325>)

Throughout the year, AstroEDU continued to publish one new activity per month, maintaining a high standard of quality and worldwide distribution. Two new local editions (French and Greek) are also in development, bringing the total from two to four (including the Italian and Spanish editions). However, several technical and managerial challenges emerged during the expansion of local editions, requiring a reassessment of the overall organization and a careful evaluation of the efforts and changes needed to ensure the long-term sustainability of the project.

# 1. Overall organization

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## 1.1. Editorial Boards and overall organization

The International editorial team has maintained the same structure as in the previous year. The Spanish and Italian editions also preserved their organizational models. The Greek and French editions were formally established towards the end of this reporting period, with volunteers identified and preliminary structures defined (See **Attachment 1** for the full description of the editorial boards).

The international board continued to meet weekly to coordinate tasks. Local editorial boards were given autonomy to organize their work independently, without central oversight.

The proposal to establish an **AstroEDU Working Group** within OAE was approved and included in the last review, but no concrete activities had started as of April 1st, 2025 (See **Attachment 2** for a description of the AstroEDU WG structure and tasks).

AstroEDU also began receiving support from **Speak Science Association** (as of March 2024) for DOI attribution. This enabled the regular assignment of DOIs to new activities and initiated the reattribution of DOIs to older ones — a process expected to continue in the coming years.

## 1.2. The editorial process of publication and review

This third year was marked by the operational launch of the Spanish local edition and the preparatory phase of two others (French and Greek). Given that peer review is the cornerstone of AstroEDU's strength, it was decided that all new activities — regardless of their origin — **must first be published in English. Also, during this year, it was decided that a final review should be conducted by the international board, even if prior reviews were carried out in another language.**

While local editions remain free to manage their own timelines and select activities for translation or proposal, translation workflows encountered both technical and managerial challenges. It was therefore decided to follow more closely the process of establishing and setting up new local editorial boards, including **a training and testing phase (both technical and content-related).**

To support new local editorial boards, the international board created and distributed comprehensive documentation and instructional videos outlining the editorial and review process.

To manage limited resources efficiently, external reviewers are now selected from a growing database of volunteers.

### 1.3. Improvements of the technical structure for the website

The main improvements this year were made on the backend of the astroEDU website. The goal was to simplify and make the translation, review, and publication process more reliable and error-proof — especially as this process is now increasingly managed by local editions.

Throughout the year, we carried out a series of technical improvements and problem-solving actions, which led to, among other things:

- the implementation of activity versions with different fonts
- the definition of user permissions to enable a final check by the international editorial board before publication

The development of an AI assistant is still ongoing (Thesis for a Master's degree in Mathematics Educational Outreach of Antonella Corleone, Università degli Studi Roma Tre).

## 2. Accomplishments of the 3rd year

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### 2.1. Publication of new activities and review of existing activities

Starting from September 2023, we have been publishing one new activity on the 2nd Monday of each month. **From April, 1st 2024 to March, 31st 2025, a total of 13 new international activities were reviewed and published**, meeting the goal set in the 1st Year Report (see **Attachment 3** for the complete list). The international AstroEDU edition presents a total number of 112 English activities published at the end of this 3rd year.

It is important to note that the published activities come from all over the world (e.g. from Turkey, Morocco, Lebanon and Ghana) and are as inclusive as possible (e.g. activities for the visually impaired). Moreover, we intensified the effort of publishing activities for young children (8 of the 13 activities are suitable for students younger than 12 years old).

**As for the other editions, in this third year of activity, the Italian edition translated 7 activities (for a total of 50 published activities) and the Spanish edition published 2 activities (for a total of 16 activities). After an initial period of enthusiasm, the effort of the editorial boards of the local editions has been decreasing with time.**

After the first review accomplished in 2022/2023, no further review of the old activities has been accomplished during this third year. A complete second review of the activities is planned for the next year.

### 2.2. Participation of the scientific community

In the IAU community, we incremented collaboration with OAE Nodes and Centers and IAU Working Groups. Relevant examples are the activities that were codesigned as part of the Sabir project (an initiative of the OAE-Center Italy) in 2023 and published on AstroEDU in 2024 (see <https://astroedu.iau.org/en/collections/sabir/>).

The collaboration with the IAU Inclusive office subgroup to review and publish activities from their projects also led to the publication of an activity (see for example the activity: <https://astroedu.iau.org/en/activities/touching-the-stars/>).

Communication to the larger scientific community was also taken into account, mainly focusing on selected international congresses and events. **AstroEDU was presented in 5 different Congresses and workshops** (see Attachment 4 for the complete list).

As a result, the number of activities submitted to AstroEDU and the requests to open new editions in local languages are increasing.

This has also led to a growing number of collaborators. The number of volunteers who signed up through the dedicated form (created in 2021 at <https://astroedu.iau.org/it/volunteer/>) to collaborate with AstroEDU **has grown from 99 to 199 in the period from April 2024 to April 2025**. Starting from September 2023, activity reviewers were selected amongst these subscribers.

### 2.3. Dissemination to a worldwide audience

About 46,000 users from all over the world visited the AstroEDU website, for a mean value of 3800 each month. This number is aligned with the performance of the previous year (see **Attachment 6** for the graph of visitors to the website).

In this third year, an effort was made to consistently communicate the newly released activities each month within and outside the OAE community. Activities published on AstroEDU were:

- communicated **through social media and other OAE communication channels**
- presented **in articles on EduINAF**, the online education and outreach magazine of INAF (National Institute for Astrophysics), which reaches around 26,000 monthly visitors.
- Since August 2024, AstroEDU activities have been featured monthly in the NAEC newsletter that reaches about **300 subscribers**, with a total of **32 AstroEDU activities** shared.

An effort was also made to **increase the use of AstroEDU activities by teachers and researchers involved in education and outreach**. We are not aware of all the activities that have been organized, but we can provide a few examples of dissemination activities that were carried out on an experimental basis during the year:

- At the IAU General Assembly in South Africa, a teaching gadget was distributed — a pair of spectroscopic glasses related to one of the AstroEDU activities.
- AstroEDU activities were included in workshops and training courses for NAECs and/or teachers organized or supported by the OAE Center Italy (see list in Attachment 5).

We are also trying to start to have an overview of the **use of AstroEDU activities in classrooms with students**. **As an example, some of the educational activities and labs organized or supported in Italy by the OAE Center Italy (not a complete list):**

- AstroEDU activities were featured in hands-on workshops held alongside the *Macchine del Tempo* exhibition at OGR, Turin, reaching a total of 3,000 students.
- educational laboratory activities in Brera, Italy using AstroEDU activities: 31 lessons involving about 750 high school students;
- educational activities in Roma, Italy (at IAPS) using astroEDU activities: 9 laboratories organized involving about 300 elementary students.

**These efforts, carried out during the third year locally in Italy by the OAE Center Italy on a spontaneous and experimental basis, now need to be systematized, organized, and extended to all participating OAE Centers and Nodes (with the fundamental help of the AstroEDU WG).**

## 3. Objectives and plans for the future

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### 3.1 Publication of new activities (in English)

The main objective is continuing to publish high quality educational activities coming from all over the world and targeted to the largest audience possible (in terms of age, topics, type of activities), **at least once per month.**

We also plan to carry out a **second global review of the published activities** (the first was conducted in 2022/2023) to verify the proper functioning and quality standards of the activities, and to implement any improvements identified. These improvements will be defined during a pre-review phase by the international editorial board in collaboration with the steering committee.

### 3.2 AstroEDU in different languages

The performance of local editorial boards has been uneven. After initial enthusiasm, activity levels dropped in the 2 existing local boards. To be effective, local boards need stronger support, as many lack the internal capacity for review and publication.

Additionally, the international editorial board's workload in coordinating and reviewing local editions has been greater than expected. **A test period for the new Greek and French editions (through December 2025) is planned, after which the structure will be evaluated for sustainability and new solutions might be proposed (with the collaboration of the AstroEDU Steering Committee to evaluate this situation)**

### 3.3 Internal collaboration and academic partnerships

We need to increment and improve collaboration within the scientific and academic community. We believe **the future AstroEDU Working Group within the OAE will be essential.** Starting September 2025, we aim to hold monthly meetings and invite participation from new Nodes and Centers. We will also need to understand how to better involve the volunteers who expressed their intention to collaborate. We will also continue promoting AstroEDU at IAU events and seek collaborations across the IAU network.

Plans also include expanding **partnerships with universities and educational institutions**, enabling students and non-staff collaborators to engage through thesis projects, internships, and more. To find new resources, we will also evaluate the **possibility to collaborate with specific projects** (EU funded projects devoted to education, space missions, Erasmus+ and others).

### 3.4 Expand the use of astroEDU worldwide

We want astroEDU to become a reference tool for the worldwide community of astronomers and, more in general, science teachers and educators.

A first step is to increase the number of monthly visitors to the website, making sure that visitors are distributed as homogeneously as possible across the world and increasing their average time on astroEDU. **For this reason in the next year we plan to test and improve the website SEO.**

To increase the use of AstroEDU activities by teachers and researchers involved in education and outreach, **we aim to promote dissemination efforts worldwide, encouraging the integration of AstroEDU activities into workshops, classroom lessons, and teacher training programs.** This type of activity was carried out in a localized and experimental way during the current year, but our goal is to coordinate, expand, and monitor it more systematically. We will rely on the support of the AstroEDU Working Group and our network of volunteers to do so. As part of this effort, we also plan to develop surveys and tools that will allow us to assess the impact of these dissemination activities.

Effective external communication is also crucial to boosting the visibility and impact of astroEDU worldwide. Hence, in the next year, significant effort will be dedicated to this task, including the development of **communication materials.**

## Conclusions

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**This third year of AstroEDU confirmed the strength of our core work** — publishing quality, peer-reviewed educational activities from and for a worldwide audience. **We are facing some challenges in expanding local editions**, and in the next year we will need to analyze if we have enough internal resources to pursue this task and if the identified strategy is the best one.

**The AstroEDU community is engaged, and provides very positive feedback. We plan to keep new collaborations growing within and outside the academic world and the research community. The newly born Working Group within OAE will also be a major step to keep improving.**

We're excited to keep building, connecting, and sharing astronomy education with more people and in more places. **If we want this to happen, additional resources are crucial as well as a long-term sustainability strategy for the project.**

## Attachments

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### Attachment 1 - Editorial Boards

International editorial Board: Livia Giacomini (editor in chief), Giulio Mazzolo; Edward Gomez, Gwen Sanderson, Gianluigi Filippelli, Federica Duras, Silvia Casu.

Italian edition: Silvia Casu (editor in chief), Sandro Bardelli, Ilaria De Angelis, Federica Duras, Gianluigi Filippelli, Giuliana Giobbi, Anna Wolter.

Spanish edition: Carolina Escobar García (editor in chief), Anaely Pacheco Blanco, Ana Escorza, Agustín Vallejo.

Greek edition: Maria Ampartzaki (editor in chief), Eleni Vardoulaki, Michail Dogramatzidis, Stavros Koukioglou, Olympia Tripolitsiotou

French edition: Emmanuel Rollinde (editor in chief), François Dulieu, Gilles Remy, Joseph Calixte, Assia Nechache, Jacob Tolno

## Attachment 2- Description of the AstroEDU WG

AstroEDU, the open-access platform by OAE, offers educators a monthly opportunity to discover new, peer-reviewed, high-quality educational activities in the fields of astronomy, Earth sciences, and space science. AstroEDU is already available in 3 different languages (English for the international edition and the local editions in Italian and Spanish) and is working to implement many different languages in the next years.

Centers and Nodes participating to the AstroEDU WG will be invited to collaborate with the editorial board on the following tasks:

- presenting astroEDU to the scientific community in their country/countries organizing or participating to scientific congresses or other institutional moments;
- increasing the use of astroEDU activities in schools in their country/countries, supporting and collecting information from teachers;
- scouting in their country/countries for new activities to be submitted to astroEDU for publication.

In the WG, we will also start an open discussion and identify specific tasks on the following objectives:

- how to improve collaboration with other WG and projects (in OAE and more in general in IAU)
- how to make astroEDU more accessible
- how to improve astroEDU with new technologies (like A.I.)
- how to organize astroEDU communication worldwide
- how to find support or funding for astroEDU

Centers and Nodes participating in the AstroEDU WG will meet every month to compare and verify the progress.

We encourage whoever joins the WG to dedicate 0.1 FTE to the WG and remain in the WG until the next MoU, to ensure continuity.

### Attachment 3 - list of new educational activities published

- April 2024, *The gravity battle*  
<https://astroedu.iau.org/en/activities/the-gravity-battle/>
- May 2024, *Discover Earth's climate with a balloon*  
<https://astroedu.iau.org/en/activities/discover-earths-climate-with-a-balloon/>
- June 2024, *Find the hidden rainbows* (for the IAU GA)  
<https://astroedu.iau.org/en/activities/find-the-hidden-rainbows/>
- July 2024, *Cubic Planets*  
<https://astroedu.iau.org/en/activities/cubic-planets/>
- September 2024, *Touching the stars*  
<https://astroedu.iau.org/en/activities/touching-the-stars/>
- October 2024, *3...2...1...Time for water rockets!* (for the Sabir collection)  
<https://astroedu.iau.org/en/activities/321-time-for-water-rockets/>
- October 2024, *Measuring an exoplanet*  
<https://astroedu.iau.org/en/activities/measuring-an-exoplanet/>
- November 2024, *Exoplanet in a box* (for the Sabir collection)  
<https://astroedu.iau.org/en/activities/exoplanet-in-a-box/>
- December 2024 - *Identikit of an alien*  
<https://astroedu.iau.org/en/activities/identikit-of-an-alien/>
- January 2025 - *Paper Planets*  
<https://astroedu.iau.org/en/activities/paper-planets/>
- February 2025 - *Asteroid miners* (for the Sabir collection)  
<https://astroedu.iau.org/en/activities/asteroid-miners/>
- March 2025 - *Meet our neighbours: Mercury*  
<https://astroedu.iau.org/en/activities/meet-our-neighbours-mercury/>
- March 2025 - *Meet our neighbours: Mars*  
<https://astroedu.iau.org/en/activities/meet-our-neighbours-mars/>

## Attachment 4- list of Congresses/Workshops

### **EPEC Annual Week, Padova, 26 June 2024**

Workshop: *AstroEDU, the IAU platform for educational resources*, Livia Giacomini INAF / OAE Center Italy

<https://www.europlanet-society.org/epec-annual-week-2024/>

### **IAU GA, Capetown, South Africa, 6-15 August 2024**

Talk: *Let's learn with astroEDU!*, Livia Giacomini (INAF / OAE Center Italy), Silvia Casu, Edward Gomez, Giulio Mazzolo, Gwen Sanderson

<https://astronomy2024.org/>

### **EPSC 2024, Berlin, Germany, 8-13 September 2024**

**Invited Talk:** *AstroEDU, the innovative platform to learn (with) astronomy*, Livia Giacomini (INAF / OAE Center Italy), Francesco Aloisi, Antonella Corleone, Edward Gomez, Giulio Mazzolo and Gwen Sanderson

<https://meetingorganizer.copernicus.org/EPSC2024/EPSC2024-520.html>

### **6th Shaw Workshop, 13-14 November 2024**

**Online workshop:** Livia Giacomini

<https://astro4edu.org/shaw-iau/sessions/astroedu-2024-workshop/>

### **ITP (Italian Teacher Programme) Galileo, Canary Islands, 03-08 November 2024**

Talk by Livia Giacomini

<https://indico.cern.ch/event/1395310/>

## **Attachment 5- list of Workshops/training for NAECs and/or teachers using AstroEDU activities organized by the OAE Center Italy**

**SABIR, 2-7 settembre 2024, Milano**

To know more: [Link \(in English\)](#)

**FRESCO (Florence RESidency and Codesign), 13-16 ottobre 2024, Istanbul**

To know more: [Link \(in English\)](#)

**MASTED (The Mediterranean Regional SHAW-IAU Workshop on Astronomy for Education) – in collaboration with NAEC Türkiye Team - 16–20 October 2024, Istanbul, Turchia**

To know more: [Link](#)

**6th Shaw Workshop, 13-14 November 2024**

Number of teachers/researchers involved: 160

To know more: <https://astro4edu.org/shaw-iau/sessions/astroedu-2024-workshop/>

**ITP (Italian Teacher Programme) Galileo, Canary Islands, 03-08 November 2024**

Number of teachers/researchers involved: 25

To know more: <https://indico.cern.ch/event/1395310/>

### Attachment 6- Number of visitors to the AstroEDU website

