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IAU Office of Astronomy for Education

OAE Center Italy

Annual Report 2021



I-OAE is a joint project of a consortium of Italian partners (INAF, the Italian Astronomical Society and the University of Rome Tor Vergata) led and represented by INAF and of the IAU OAE.

I-OAE is operated by INAF.



First in-presence meeting at Rome, 15 December 2021

I-



OAE

Compiled and edited by Stefano Sandrelli, Sara Ricciardi, Stefania Varano, Livia Giacomini

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EXECUTIVE SUMMARY

The IAU OAE Center Italy (hereinafter I-OAE), was established on the 3rd of March 2021, and in the first months of activity, the I-OAE appointed its staff and defined its organization and strategy.

See pag.7 for details and pag.30 for more

A. Direct contributions to OAE activity

3rd Shaw-IAU workshop of Astronomy for Education

Total FTE = 0.95

The first coordinated activity of OAE-I was the support to the 3rd Shaw-IAU Workshop on Astronomy for Education, held online from the 12th to the 15th of October 2021. Seven sessions out of 18 were chaired by I-OAE members; one I-OAE member took part in the Local Organising Committee and edited the Proceedings; 7 I-OAE members participated in the Organising Committee and 10 members in the Scientific Advisory Committee.

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Review on equity, diversity and inclusion in astronomy education

Total FTE = 0.03

This theme is the first OAE Review for which a panel was constituted. After the first two meetings though, the panelists' participation and interaction stopped, resulting in the standby of the Review preparation. The *Equity, Diversity and Inclusion in Astronomy Education* Session of the 3rd Shaw IAU workshop and its proceedings re-boosted the project.

A brief document is now in preparation, giving some very general ideas on how to deal with diversity and equity in educational contexts, and possibly ease individual (either social, ethnical, physical, etc.) difficulties and different learning styles, enhancing the richness and opportunities that diversity brings.

See pag.14 for details

B. Mediterranean and primary school initiatives

Total FTE = 1.28

In the first year of activity, there were also two new projects born within I-OAE (MIRTO and STEAM-Med projects) and a kick-starter (Officina degli errori).

1. MIRTO - Mediterranean Informal Round Table

The MIRTO project 's final goal is to build a collaborative environment on a permanent basis for multicultural, trans-disciplinary projects, in order to highlight the cultural richness of those areas, and to promote activities supporting astronomy education. MIRTO is focused upon all the countries of the Mediterranean area, and aims at encouraging cooperation with meetings, training courses, formation activities and other initiatives. It required the creation of a network of NAECs and other stakeholders (mainly NOCs) in the area.

See pag.15 for details

2. STEAM-Med: a co-design for Med Children

STEAM-Med is a global effort coordinated by I-OAE to co-design an educational path for children in the approximate age-range 6-12 in the Mediterranean area: a set of activities which will explore a concept, or an idea in Astronomy / Astrophysics / Physics, by mixing and matching different methods / practices / instruments. The results will be published on the OAE website and shared in a regional summer school. The co-design process will be documented and - if successful - could be applied to other communities.

See pag.16 for details

2.1 Kick Starter: Officina degli Errori / Officina della luce

As a kick starter within STEAM-Med, for future communities of practices, co-design experience with teachers and STEAM learning at school, OAE-I also invested in an ongoing Italian educational project “Officina degli Errori” (Workshop of Mistakes).

See pag.19 for details

C. astroEDU ITA

Total FTE = 0.96

OAE-I activities started in September 2021 with the establishment of a new editorial board that aims at publishing one resource per month.

In this period, the Editorial board started advertising astroEDU and its activities to the Italian community with articles, press releases and other initiatives. OAE-I also started its activities to support the astroEDU International platform, by identifying a list of technical issues to be addressed. In order to suggest improvements to astroEDU contents and strategy of publication, the editorial board also began to analyze visitors' access and their behaviour.

See pag.21 for details

D. Communication activities

Total FTE = 0.5

1. **Design and test of game-based learning activities**

OAE-I has also started a co-design project with game scientists, which led to the creation of a board game, called PIXEL, which was recently presented in a National games convention, Lucca Comics and Games 2021.

See pag.27 for details

2. **Supports with use of the I-OAE logo**

OAE-I also supported the Tour 2021, organized by the non-profit association *Il cielo itinerante* (the Travelling Sky). In this tour, a van equipped with telescopes stopped in different places with specific educational poverty, reaching more than 450 children.

See pag.28 for details

ANNUAL REPORT 2021

Introduction

The IAU OAE Center Italy (hereinafter I-OAE), was established on the 3rd of March 2021, thanks to a Memorandum of Understanding (hereinafter OAE-MoU) signed by three parties: IAU, the Office of Astronomy for Education and INAF.

I-OAE is a joint project of a consortium of Italian partners, led and represented by INAF and of the IAU OAE, and is operated by INAF. The Italian partners are INAF, the Italian Astronomical Society (SAIt) and the University of Rome Tor Vergata (ToV).

INAF may change the roster of partners in coordination with the IAU OAE.

The I-OAE is formally located at INAF-Osservatorio Astronomico di Roma. It is part of the IAU OAE structure and contributes to the implementation of the IAU OAE mission.

Staff and budget

Staff

The formal staff assigned to I-OAE by the Italian partners was the following:

Name	Role	FTE	Institution, city
Stefano Sandrelli	OAE Center Italy Manager	0.5	INAF, Milano
Sara Ricciardi	OAE Center Italy deputy Manager and officer 1: technology and innovation in education	0.5	INAF, Bologna
Stefania Varano	Officer 2 equal opportunity and access to culture	0.5	INAF, Bologna
Livia Giacomini	Officer 3 astroEDU: implementation and consultancy	0.5	INAF, Roma
Giuliana Giobbi	Multi-language organisational secretariat	0.5	INAF, Roma

Gianluigi Filippelli	Django formed web editor	0.2	INAF, Milano
Elisa Di Carlo	member	0.5	SAIt, INAF Teramo
Rosa Valiante	member	0.5	SAIt, INAF Roma
Amedeo Balbi	member	0.25	TOV, Roma
Dario Del Moro	member	0.25	TOV, Roma
totale		4.2	

An additional support of 0.8 FTE was foreseen by the OAE-MoU with administrative, technical and management support (mainly Giorgia Ortolani, INAF Roma and other administrative department members in other INAF institutes), for a total FTE of 5.

On April, the 8th, Amedeo Balbi quitted for personal reasons and was substituted at the end of November by Giuseppe Bono.

For personal reasons Rosa Valiante had to reduce her commitment from 0,5 FTE to 0,3 FTE, while Elisa di Carlo could contribute to the projects for 0,1 FTE.

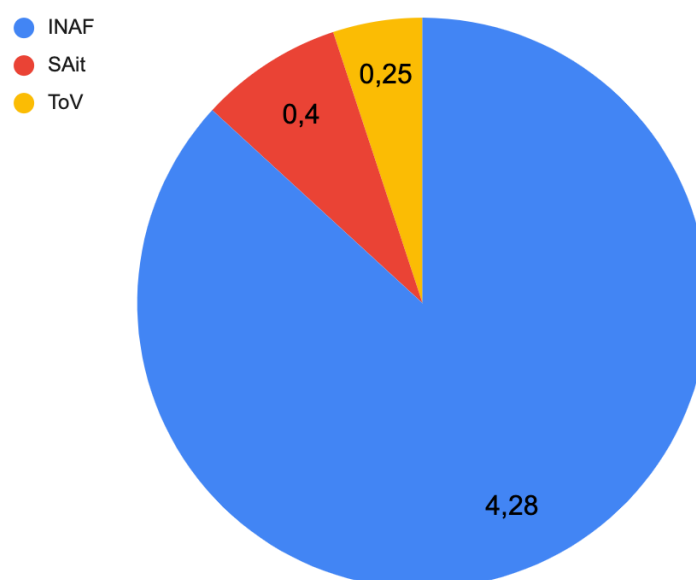
Ginevra Trinchieri, Lucio Angelo Antonelli (INAF) are also part of I-OAE with a formal contribution of 0 FTE.

On the other hand, other volunteers joined I-OAE (see table below), under the supervision of the Head and the officers and with the approval of the whole staff and the final FTE still remains 4.95.

Name	Role	FTE	Institution, city
Alessandra Zanazzi	primary school	0.2	INAF, Firenze
Anita Zanella	primary school	0.1	INAF, Padova
Claudia Mignone	international links	0.1	INAF, Monte Mario

Mayssa El Yazidi	international links	0.1	Università Padova
Riccardo Leoni	member	0.1	INAF Roma
Silvia Casu	member	0.1	INAF Cagliari
Caterina Boccato	member	0.1	INAF Padova

The estimate of the FTE contribution by the three partners is the following (see graph below): INAF: 4,28 FTE (85% of the total FTE); SAIt: 0,4 FTE (8%); ToV: 0,25 FTE (5%). We also have a contribution of approximately 0.1 FTE (2%) by the Università di Padova, which is not formally part of the network.



I-OAE internal and joint meetings

Online I-OAE members' meetings are scheduled on a weekly basis on the Google_meet platform, with a duration of 1-2 hours each:

- on Wednesday at 14.30 CET: General communication and discussions
- on Thursday at 14.00 CET: Mediterranean activity
- on Friday at 14.00 CET: Primary school activity

The link is: <https://meet.google.com/xbv-ehes-rtv>

The first in person meeting was held on the 15th of December, at INAF-Osservatorio Astronomico di Roma.



Online joint meetings among I-OAE and OAE members are held on the Zoom platform, one per month, on Thursday at 14:00 CET. They last about 1-1.5 hours.

Budget

Fu.Ob. 1.05.01.23.16 IAU Office for Astronomy Education-OAE Center Italy (ref. Stefano Sandrelli) was established on the 20th of April and the budget was formally transferred to Roma Monteporzio on the 21th of April.

In the following month, the proper Expenditure Items were identified and formally defined as in the table below.

Expenditure Items	description	initial (Keuro)	final (Keuro)
1.01.01.01.009	Grant	15	0
1.03.02.02.001.01	missions	8	2.7
1.03.02.07.006	Software licenses	12	0.13
1.03.02.02.004.01	Communication, Outreach & Education	55	32.2
2.02.01.07.999	Hardware	10	0

For a detailed list of the actions (purchases, transfers or others) see Attachment 1. Budget.

3rd Shaw-IAU workshop of Astronomy for Education

The 3rd Shaw-IAU Workshop on Astronomy for Education was held online from the 12th to the 15th of October 2021, as the 2nd edition in 2020 (the 1st edition was held in Paris, at IAU headquarters, Observatoire du Paris where the OAE was officially attributed to the Max Planck Institute for Astronomy, hosted at Haus der Astronomie (“House of Astronomy”) in Heidelberg, Germany).

Organized by OAE and supported by IAU and Shaw Prize Foundation, the 2021 workshop was aimed at answering a very well-defined question: **what should everyone know about astronomy education** – at least everyone who is active in that field? That was the theme of the 3rd Shaw-IAU Workshop on Astronomy for Education.



The workshop was divided into 18 sessions, each on an important topic in astronomy education. Each session consisted of 4-5 pre-recorded talks, 5-10 posters and a live round table, moderated by the session chairperson. Talks were captioned in advance, while the

round tables were transcribed live. The official language was English.

The workshop was attended by more than 580 participants from 90 countries and territories.

In total, videos for 91 talks and for 31 poster presentations were published on the [YouTube channel](#) of the IAU's [Office of Astronomy for Education](#):
https://www.youtube.com/channel/UCHBfREIXEIpIRWPj_zuXqtQ

The 349-page proceedings document is available [online as a PDF](#) file:
<http://www.iau.org/static/announcements/pdf/ann21065a.pdf>

Sessions, chairs and Committees

Seven sessions out of 18 were chaired by I-OAE members; one I-OAE member took part in the Local Organising Committee and edited the Proceedings; 7 I-OAE members participated in the Organising Committee and 10 members in the Scientific Advisory Committee.

Astronomy across disciplines

Chair: Stefano Sandrelli

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/astronomy-across-disciplines/>

Equity, diversity and inclusion in education

Chair: Stefania Varano

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/equity-diversity-and-inclusion-in-education/>

Teaching methods

Chair: Sara Ricciardi

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/teaching-methods/>

Evaluation

Chair: Silvia Casu

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/evaluation/>

International collaborations with an educational component

Chair: Alessandra Zanazzi

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/international-collaborations-with-an-educational-component/>

Earth as a planet

Chair: Dario del Moro

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/earth-as-a-planet/>

Teaching with astronomy exhibits

Chair: Giuliana Giobbi

Session proceedings: <https://astro4edu.org/shaw-iau/sessions/teaching-with-astronomy-exhibits/>

Local Organizing Committee: Asmita Bhandare, Suresh Bhattarai, Niall Deacon, Theo Dimitrakopoulos, Natalie Fischer, **Giuliana Giobbi**, Celine Greis, Esther Kolar, Colm Larkin, Tshiamiso Makwela, Carmen Müllerthann, Markus Nielbock, Eduardo Penteado, Markus Pössel, Saeed Salimpour, Gwen Sanderson, Rebecca Sanderson, Anna Sippel

Organizing Committee: Asmita Bhandare, **Silvia Casu**, Niall Deacon, **Dario del Moro**, Samir Dhurde, **Giuliana Giobbi**, Edward Gomez, Renate Hubele, Tshiamiso Makwela, Sivuyile Manxoyi, Markus Nielbock, Eduardo Penteado, Markus Pössel (Chair), **Sara Ricciardi**, Rosa M. Ros, Saeed Salimpour, **Stefano Sandrelli**, Anna Sippel, Aniket Sule, **Stefania Varano**, **Alessandra Zanazzi**

Scientific Advisory Committee: Asmita Bhandare, **Silvia Casu**, Niall Deacon, **Dario del Moro**, Samir Dhurde, Michael Fitzgerald, **Giuliana Giobbi**, Edward Gomez, Andrej Guštin, Marietta Gyulzadyan, Renate Hubele, Fraser Lewis, Carolin Liefke, Tshiamiso Makwela, Hakim Luth Malasan, Sivuyile Manxoyi, Surhud More, Markus Nielbock, Arvind Paranjpye, Eduardo Penteado, Markus Pössel, Carmelo Presicce, Travis Rector, **Sara Ricciardi**, Nayra Rodríguez Eugenio, Gustavo Rojas, Rosa M. Ros, Saeed Salimpour, **Stefano Sandrelli**, Anna Sippel, Aniket Sule, **Rachele Toniolo**, **Rosa Valiante**, **Stefania Varano**, Sarita Vig, **Alessandra Zanazzi**, **Anita Zanella**

The Proceedings of the workshop: compiled & edited by Asmita Bhandare, **Giuliana Giobbi**, Colm Larkin, Rebecca Sanderson, Niall Deacon & Eduardo Penteado.

Review on equity, diversity and inclusion in astronomy education

The panel is composed of people from very different parts of the globe.

This was broadly recognized as one of the most difficult subjects for a Review. In addition to that, this being the first OAE Review for which a panel was constituted, we also had to face the issue of defining and creating the structure of the document and the guidelines for its preparation from scratch.

Meeting and sharing thoughts, even in a virtual form, was very difficult, and we hardly managed to have 2 zoom meetings, where we started discussing the role and possible structure of the Review. We decided to involve experts and self-advocates in our countries and also drafted a small list of possible contacts. After the first two meetings though, the panelists' participation and interaction stopped, resulting in the standby of the Review preparation. This is possibly due to the difficulties in planning our meetings, to each one's personal and professional engagement on other duties and, eventually also to the foreseen difficulties in creating an effective and innovative document on such touchy issues without making a mere vademecum for accessibility (which already existed in many other places and forms).

We thought that preparing the *Equity, Diversity and Inclusion in Astronomy Education* Session of the 3rd Shaw IAU workshop and its proceedings could be a good opportunity for strengthening the collaboration and restarting the work on the Review, which could have taken advantage of the material produced for the workshop. First of all, all the panelists were contacted by the chair of the session (Stefania Varano) for contributing to the session, but only two of them answered, gave their talks and sent the contribution for the workshop.

These contributions, though, are very much related to specific contexts and activities, and do not cover all the subjects that the panel had expected, not even when integrated with contributions from other speakers in the session.

Therefore we decided to change direction, in order not to risk dropping the project and the creation of the review itself: the chair of the session will produce a small document, also based on the Shaw-IAU workshop results, giving some very general ideas on how to deal with diversity and equity in educational contexts, and possibly ease individual (either social, ethnical, physical, etc.) difficulties and different learning styles, enhancing the richness and opportunities that diversity brings.

This document is now in preparation.

MIRTO - Mediterranean Informal Round Table - online

The MIRTO project is focused on all countries in the Mediterranean area: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, and Turkey.

As inhabitants of a historical cultural area, we have the chance to highlight our common stories in astronomy and sciences. This is also the chance to underline all the astronomical activities in modern life nowadays: modern tools in astronomy, advanced applications, software, and educational materials.

We wish to encourage a large cooperation in the area, with online meetings, training courses, formation activities and other initiatives that can be designed together with all the NAECs and the stakeholders of all the interested countries.

The final goal is to build together a collaborative environment on a permanent basis for multicultural, trans-disciplinary projects, in order to highlight the cultural richness of those areas and promoting activities which support astronomy education in the context of a multicultural society, intercultural and interreligious dialogue, environmental issues, and human rights, in line with the UN Sustainable Development Goals.

This MIRTO project is very simple: we wish to establish a regular informal meeting area, where we can get to know each other.

The first step was the creation of a large mailing list of Med NAECs and interested NOC - in those countries with no official NAEC yet.

Every week, I-OAE organizes a 2 hour - online meeting in which at most NAECs from 4 different countries introduce themselves and their work for about 10 minutes.

In the second part of the meeting, we discuss freely about the situation in our countries and about the expectations that we have from the OAE office.

A final 30 min-long question-time concludes the meeting. Everyone can comment or ask questions.

The link is widely spread to all the Med Network and every NAEC team member is welcome to take part in it.

The schedule is defined according to preferences collected in a shared Google-spreadsheet:

https://docs.google.com/spreadsheets/d/16_ZsQ9yX5RRB7t1g35BmsxZseZyALyRX8OgNik4qt0/edit#gid=0

So far, these are the next round tables:

- December 2 14:00 16:00 CET - participants: Victor Bar (Israel)
- December 16 14:00 16:00 CET - participants: Mirjeta Domi (Albania), Aysegul Yelkenci (Turchia)
- December 22 14:00 16:00 CET - participants: Danijela Takač (Croatia), Rosa Doran (Portugal), Jovan Mirkovic (Montenegro), Tareq Alkhateb (Syria)

The round tables will go on a regular basis, twice every month.