



Astronomy & Society Group

LEIDEN UNIVERSITY
LEIDEN OBSERVATORY



Universiteit
Leiden
The Netherlands

**The aim of Leiden Observatory,
and specifically of the Astronomy
& Society Group, is to engage the
public with the wonders of the
Universe and share the scientific,
technological, cultural and
educational aspects of astronomy
with society.**



Earthball activity at Balud Elementary School in Samar, Philippines, February 2014. Credit: S. Tumamos/UNAWA Philippines.

Oude Sterrewacht Old Leiden Observatory

The Old Observatory Leiden is the oldest university observatory in the world. The Old Observatory has been home to many world famous astronomers like Oort, Hertzsprung and De Sitter, who made discoveries and laid down theoretical frameworks that are still being used today.



A view of the Old Leiden Observatory from across the canal. Credit: V. Mullenders/Sterrewacht Leiden/ Universiteit Leiden.

The Old Observatory aims to share the beauty of the universe alongside the rich history of Leiden astronomy. The Visitors Centre features a number of exhibitions about astronomy. The observatory offers tours of the building and telescopes by Leiden University astronomy students, and hosts open days, public talks and stargazing events throughout the year.

www.oudesterrewacht.nl

 [@OudeSterrewacht](https://twitter.com/OudeSterrewacht)

 [/oustrw](https://www.facebook.com/oudesterrewacht)

 [oudesterrewachtleiden](https://www.instagram.com/oudesterrewachtleiden)



The biggest refractor telescope in the Netherlands, built in the 19th century, housed in the Old Observatory Leiden Credit: J. Passchier/Sterrewacht Leiden/Universiteit Leiden.

Universe Awareness

Universe Awareness (UNAWE) uses the beauty and grandeur of the Universe to inspire children 4 to 10 years old and encourage them to develop an interest in science and technology.




UNAWE activities with small children in San Cristobal El Alto, Sacatepéquez, Guatemala, September 2015.
Credit: Alan Garcia/UNAWE Guatemala.

The programme aims to introduce children to the idea of global citizenship at a crucial stage of their development – to show them that they are part of an international community.

Until the advent of UNAWE, there were no large-scale attempts to use astronomy as a tool for inspiring and educating young children. Therefore, while our resources are open to all, the programme is aimed at children aged 4 to 10 years, especially those from underprivileged communities. UNAWE is active in 63 countries and Leiden University Observatory is the founder and coordinator of the programme.

www.unawe.org

 @unawe

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Universe in a Box activity in the Ladakh region of the Himalayas, India, July 2015. Credit: J. Polednikova.

IAU 100

In 2019, the International Astronomical Union (IAU) will celebrate its 100th anniversary under the central theme "Uniting our World to Explore the Universe".



The IAU100 Flagship ceremony will be held at the Palais des Académies in Brussels (Belgium) in April 2019. Credit: Juri Kowski.

Following the successful organization of the International Year of Astronomy 2009, the IAU will organize a year-long celebration in 2019 to increase awareness of a century of astronomical discoveries as well as to support and improve the use of astronomy as a tool for education, development and diplomacy. The centennial celebrations will stimulate worldwide interest in astronomy and science and will reach out to the global astronomical community, national science organizations and societies, policy-makers, students and families and the general public.

The IAU100 activities will take place at global and regional levels, and especially at the national and local levels. To coordinate the initiative, the IAU has set up the IAU100 Secretariat at Leiden Observatory that is preparing a comprehensive programme of Flagship initiatives to reach targeted audiences worldwide through the IAU National Outreach Contact points and National Astronomical Societies.

www.iau.org/iau100



@IAU_org



/InternationalAstronomicalUnion



Amateur astronomers are preparing their equipment for a night of astronomical discoveries during the International Year of astronomy 2009. Credit: TWAN/Babak Tafreshi.

IAU European Regional Office of Astronomy for Development

The IAU European Regional Office of Astronomy for Development (OAD) is operated jointly by the European Astronomical Society and Leiden University.



IAU European Regional Office of Astronomy for Development Signing ceremony at Leiden University, the Netherlands. Credit: Leiden University, the Netherlands/P. Rusch.

The newest OAD Regional Office in Europe was established in February 2018 and will carry out and coordinate relevant astronomy-for-development activities in all three Task Force areas defined in the IAU Strategic Plan – Universities and Research, Children and Schools and Public Outreach, focusing on accomplishing the United Nations Sustainable Development Goals in Europe. These tasks will be carried out in cooperation with existing activities of pan-European and national astronomical organisations.

OAD Regional offices work closely with the OAD to execute the vision of Astronomy for a better world, with a focus on a geographic or cultural region. The other regional offices are located in: Colombia, Jordan, Ethiopia, China, Portugal, Thailand, Armenia, Zambia and Nigeria.

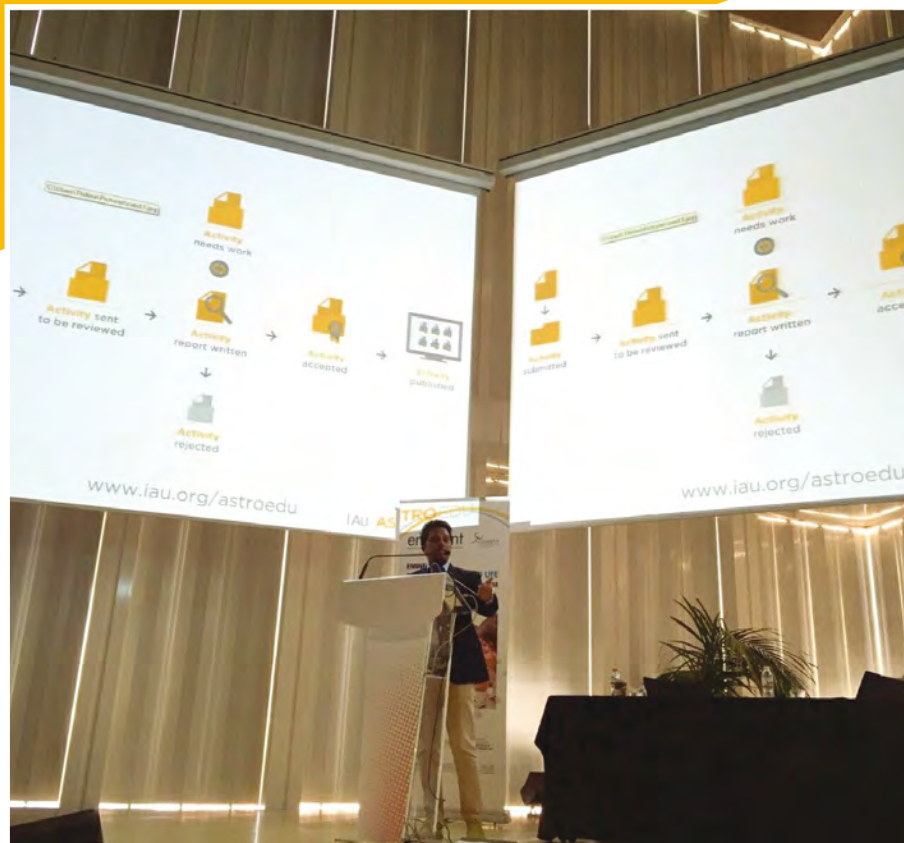
www.astro4dev.org



South African Minister of Higher Education Naledi Pandor at the interdisciplinary symposium on Science Diplomacy and Development at the Leiden University Campus in the Hague on the occasion of the IAU European Regional Office of Astronomy for Development Signing ceremony. Credit: Leiden University, the Netherlands/P. Rusch.

IAU astroEDU

astroEDU is an open-access platform for peer-reviewed science education activities.



IAU astroEDU allows educators to discover, review, distribute, improve and remix science education activities, particularly those with an astronomical, earth or space science focus. It offers a free peer-review service by a professional educator and an astronomer to ensure a high scientific and educational standard. astroEDU targets activity guides, tutorials and other activities in the area of astronomy education, prepared by teachers, educators and education specialists.

www.iau.org/astroEDU



@IAUastroEDU



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astroEDU Assistant Editor Thilina Heenatigala presents astroEDU at the Experts Meeting in Education Networking (EMINENT) annual event organised by European Schoolnet (EUN), Barcelona, Spain, 19 November 2015. Credit: P. Russo/astroEDU.

What is **astro**EDU?

astroEDU makes the best astronomy activities accessible to educators around the world.

astroEDU is the first, open-access platform of peer-reviewed astronomy educational activities.

astroEDU is a platform for educators to discover, review, distribute, improve, and remix educational astronomy activities.

Europlanet

Europlanet links research institutions and companies active in planetary research in Europe and around the world.



Educational activity with children, Iceland, February 2013. Credit: UNAWA Iceland.

Planetary science covers the study of our solar system and those around other stars. It is an interdisciplinary field of research that covers astronomy and geophysics, robotic and human exploration of other planets and the search for extraterrestrial life. Leiden Observatory leads the Outreach Services part of Europlanet 2020 RI, which includes science communication training workshops to equip planetary scientists with the skills to convey their work effectively to different audiences, including educators and the public, and creating and curating high-quality teaching resources and activities for use in classrooms and informal learning settings.

www.europlanet-eu.org

 [@europlanetmedia](https://twitter.com/europlanetmedia)

 [/europlanetmedia/](https://www.facebook.com/europlanetmedia/)



Working with teachers, Science Academy, Leiden, the Netherlands, September 2015. Credit: UNAWE.

Citizen Science Lab

The Citizen Science Lab is an incubator and central hub for citizen science efforts with a particular focus on astronomy, environmental data and Earth observations.



With the LIGHT2015 Dark Sky Meter app, citizen-scientists measure the quality of the night sky in their regions and thus contribute to understanding of night-sky quality around the world. Credit: DDQ/Leiden Leiden Univ.IAU.

The Citizen Science Lab focuses on societally relevant problems that can be addressed only by involving a substantial fraction of society.

The Citizen Science Lab organises workshops for groups of scientists and members of civic organisations, to develop new citizen science projects. CSLab builds on the leading citizen science, outreach and education expertise at Leiden University, which spearheaded the citizen science initiatives iSPEX and the LIGHT2015 Dark Sky Meter app.

www.ispex.nl/en/
www.citizenscience-lab.org



iSPEX, an add-on with complementary app, instantly turns a smartphone into a scientific instrument to measure dust in our atmosphere. Credit: iSPEX/Leiden Univ.

SciShops

SciShops is building an extensive knowledge base by analysing the practices of the existing European and International Science Shops. A Science Shop is a facility that provides independent participatory research support in response to needs, concerns and requests by civil society. It's a demand-driven and bottom-up approach to research.



SciShops Consortium meeting celebrated in Leiden in February 2018. Credit: SchiShops.

SciShops goal is to engage community stakeholders in knowledge cafes and other community events in order to provide examples of the benefits of community-based participatory research. The developed strategies and novel tools provided by the project, including a knowledge hub, a SciShops navigator, twinning and matchmaking platform, seek to provide guidelines for different types of organizations on how to establish and run a Science Shop. Leiden Observatory is establishing a Science Shop.

www.ispex.nl/en/



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Sharing perspectives and constellations with EU Commissioner Carlos Moedas EU Open Doors Event in Brussels (Belgium) on 6 May 2017. Credit: REA Communication team.

Open Science Hub

Open Science Hub is a learning space for Science, Technology, Engineering, Arts and Mathematics (STEAM) education that fosters sustainable development of local communities.



A view of the Open Science Hub – Portugal (Plataforma de Ciência Aberta) building during the opening ceremony of the exhibition “Conversations with the Earth: Indigenous Voices on Climate Change”
Credit: Sandra Invêncio/Gix

The first Open Science Hub (OSH) opened in July 2017, in Barca d’Alva – Figueira de Castelo Rodrigo (Portugal), a rural border town in the northeast of Portugal. OSH-Portugal brings together science, technology and innovation and the daily life of local and regional communities, promoting school performance and boosting entrepreneurship and innovation, in a sustainable way grounded on the reality of the community.

As part of the OSH Network, more OSHs are planned to open in 2018, namely in Exloo, the Netherlands (in collaboration with ASTRON), and in Aras de los Olmos, Spain (in collaboration with the University of Valencia).

www.opensciencecentre.org

www.plataforma.edu.pt



Educational activity with high-school students in the context of the Citizen Science project "Insects in Order", Open Science Hub - Portugal (Plataforma de Ciência Aberta), October 2017
Credit: Paulo Lourenço/Open Science Hub

MOBilization of REsources for Public Engagement with science and technology (MORE-PE)

MORE-PE is an international project aimed at mapping the culture of public engagement at research institutes.



Public engagement activities at the EU Open Doors, 6 May 2017, at the European Parliament in the Berlaymont building in Brussels, Belgium. Credit: Space Awareness.

The MORE-Pe project aims to assemble a database of comparable data on aspects of public engagement at the institutional level in: Europe (Germany, Italy, Netherlands, Poland, Portugal and the United Kingdom), Americas (Brazil and the United States of America) and Asia (China, Japan and Taiwan).

The project conducted national studies in the partner countries/regions in 2017 and is performing comparative data analysis in 2018. MORE-PE will provide evidence for research institutes and policy makers to develop policy actions to engaging citizens in policy and research.

<http://www.more-pe.com/>



ESA Citizens' Debate 2016. Credit: ESA.

Expanding (Event) Horizons: Broadening Youth Participation in STEM Learning

Expanding Event Horizons stimulates the participation of girls and underrepresented minorities in the fields of science, technology, engineering and math (STEM).



Girls delighted by astronomy jigsaw puzzle. Credit UNAWE.

The participation of women and ethnic minorities is lacking in the fields of science, technology, engineering and math (STEM). Expanding Event Horizons aims to tackle this problem by using a grassroots approach: stimulating the interest of girls and underrepresented minorities aged 9-16 in STEM fields.

The project will provide exciting educational activities, based on cutting edge appealing research topics such as light and gravitational waves. The activities will be co-created by scientists together with teachers, educators and education specialists.



Young girls inventing alien life forms. Credit: UNAWA.

Space Scoop

Space Scoop is a weekly astronomy news service for children aged 8 and up, delivering news from across the Universe to children around the world.



A young girl enjoys a Space Scoop at an exhibition in the Romanian capital of Bucharest.

Sharing the excitement of the latest scientific discoveries is one of the best tools that we have to inspire the public – including young children. The question isn't whether astronomical news can inspire children, but how we can best communicate this information to youngsters.

In February 2011, Universe Awareness launched a weekly astronomy news service for children aged 8+, called Space Scoop. Space Scoop has now produced more than 350 astronomy news stories for young children, successfully tackling a wide variety of subjects – everything from exoplanets to cosmic reionisation.

Since 2011 the Space Scoop family has extended to include 13 partner organisations: the European Southern Observatory (ESO), the National Astronomical Observatory of Japan (NAOJ), Las Cumbres Observatory (LCO), Chandra X-ray Observatory, NASA/ ESA Hubble Space Telescope (HST), the European Space Agency (ESA), Europlanet, the Dutch Institute for Radio Astronomy (ASTRON), the Royal Astronomical Society (RAS), the South African Astronomical Observatory (SAAO), the Sloan Digital Sky Survey (SDSS), EUMETSAT and the ALMA collaboration. Space Scoop has grown into the biggest astronomy news service for children, with voluntary translators making the releases available in up to 33 languages.

www.spacescoop.org



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/unawe/about-space-for-children/



Image illustrating Ultracool Dwarf and the Seven Planets Space Scoop. Credit: ESO/M. Kornmesser.

Research & Development

Research & Development activities aim to improve the understanding of astronomy and society's interactions and develop innovative programmes, projects and tools to improve and empower those interactions.



Development of new educational activities during TEMI congress in Leiden, the Netherlands, April 2016. Credit: W. Schrier.

Youth Engagement with Astronomy

This research seeks to understand crucial aspects on the engagement of the youngest in the astronomy field, in order to inform and improve the relationship astronomy-society.

Research has raised multiple questions about the interaction between science and the public. One of the recurring themes is how the public understands and engages with science, based on science literacy studies and their implications in the promotion of public participation in Science and Technology (S&T) decisions. This research falls within that approach, focusing on youth engagement with astronomy. One of the cornerstone aspects in the discussion about the relationship with science is its implications on the design of a common social future, namely choices as consumers, the aspiration to academic and professional careers and participation on public life, as citizens.



Educators trying educational app during TEMI congress in Leiden, the Netherlands, April 2016. Credit: W. Schrier.

Public Engagement Activities

Leiden Observatory strives to maximise its impact in bringing astronomy to society at large by encouraging all staff and students to participate in public engagement activities.



Vincent Icke, Emeritus Professor at Leiden Observatory, live on the Dutch TV show De Wereld Draait Doort.
Credit: www.vara.nl.

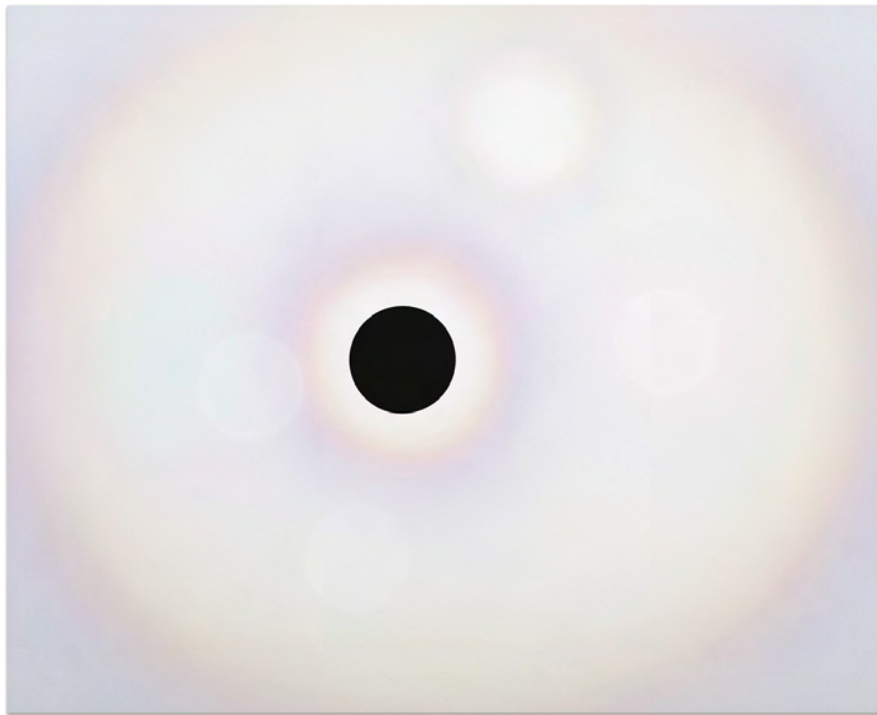
The myriad of activities include media appearances (through newspapers, radio, tv and online interviews), activities at schools, exhibitions and public talks (e.g., Kaiser Spring lectures and talks at various societies). Due to the international nature of Observatory students and staff, these activities are carried out not only in the Netherlands but also in their home countries.



Leiden Observatory Open Day 2014. Credit: UNAWE/W. Schrier.

Astronomy & Art

Leiden Observatory supports and encourages the exploration of intersections between astronomy and art, through the Academy Prize for Astronomy & Art, as well as other astronomy and art collaborations, ranging from science and art festivals to film-making.



Artist Roland Schimmel's 2010 work Black Sun won the first Academy Prize for Astronomy and Art. (Black Sun, 2010, acrylic on canvas, 100 x 125 cm). Credit: Roland Schimmel.

The Astronomy and Art Prize was established by the Royal Netherlands Academy of Arts and Sciences and the Society of Arts. It is intended for an artist who has created a work that is clearly inspired by astronomy.



To commemorate the 125th anniversary of the Amsterdam Central Station building, a rainbow could be observed every night in 2015 on the station building. The rainbow was created using the latest technology developed to detect exoplanets in a special collaboration between NOVA astronomers and Studio Roosegaarde. Credit: Studio Roosegaarde.

How to get involved?

**We love new ideas and
working with creative people.**

**Contact us at any time if you
want to bounce an idea or join
one of our initiatives.**

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SPACE
awareness

eur@PLANET 2020



SciShops



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