



**Surrounded
by Science**

Newsletter #2

June 2022

**UNIVERSITY
OF TWENTE.**



NUCLIO



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think tank for the 21st century

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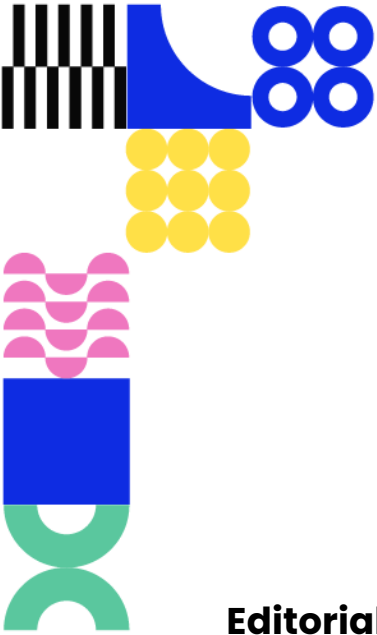
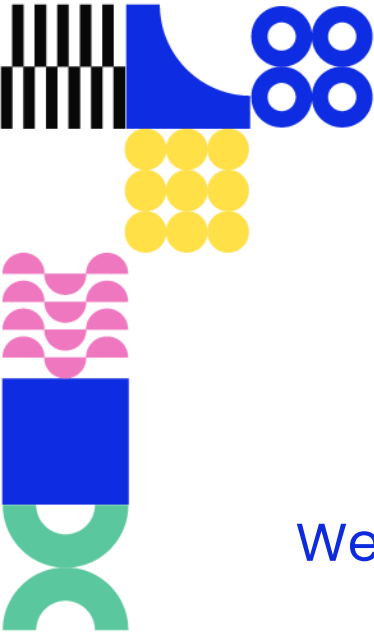


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Editorial

Welcome to the June 2022 newsletter

Nine months since its launch, Surrounded by Science is at full speed! In this second issue of our newsletter, you will find out why we have good reasons for advancing our work towards the ambitious aim of bringing together formal and informal STEM learning experiences through a systematic and evidence-based understanding of the multifaceted nature of science learning contexts.

In this issue:

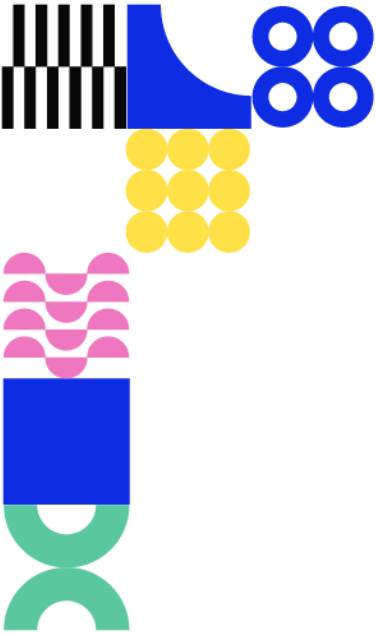
- Read about the Surrounded by Science presence at the Ecsite 2022 conference and the SciCompt Science Communication Congress
- Celebrate with us the IAU Astronomy Education Prize awarded to Dr. Rosa Doran, president of the Executive Council of NUCLIO and member of our team
- Meet Dr. Flora di Martino and Dr. Luigi Cerri, our partners at Città della Scienza, explaining the key role that science centres and museums play as open science ecosystems in their interview featured in *SciPerspectives*
- Browse through our brand-new section "*What we're reading, listening to and watching*" to get inspired with insightful resources on out-of-school STEM
- Find out what's up on Asteroid Day and discover ways that you can engage your audiences with this UN-sanctioned global awareness campaign.

We hope you find our newsletter enjoyable and informative, and we look forward to having you as part of our exciting journey. Don't forget to visit our website, subscribe to the newsletter, and follow us on our new Surrounded by Science social media channels!



Sara Anjos & Alice Iordache
Newsletter Co-editors





News

Thank you, Ecsite 2022!

by Angelos Alexopoulos

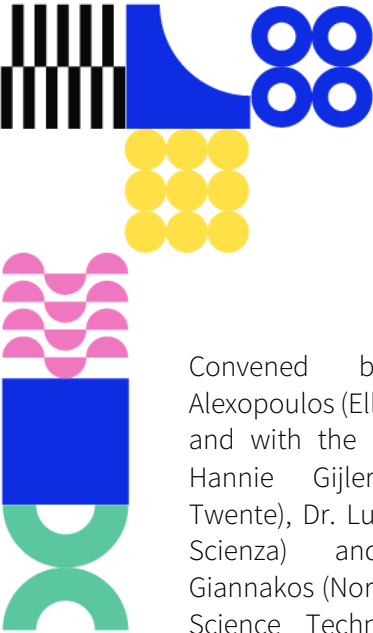


Moving back to a face-to-face format, the 2022 Ecsite conference was held on June 2-4 in Heilbronn, Germany. Hosted by the Experimenta Science Centre, this unique professional development opportunity brought together nearly 1000 participants, reinstating itself as the largest European science engagement conference and meet with peers. Surrounded by Science was, of course, present, with a highly attended panel session entitled 'Formal and informal science education: bridging the gap' that took place on the morning of June 3.



The Surrounded by Science team just before the panel session at Ecsite 2022 conference. Image credit: Vasileios Liakopoulos





Convened by Dr. Angelos Alexopoulos (Ellinogermaniki Agogi) and with the participation of Dr. Hannie Gijlers (University of Twente), Dr. Luigi Cerri (Città della Scienza) and Prof. Michail Giannakos (Norwegian University of Science Technology), the panel engaged with a knowledgeable audience of science engagement researchers and professionals on evidence-based dialogue to reflect



Image credit: Adapted from the Whova event app

on the importance of science proficiency and learning pathways that can inform their organisations to be more aware of their potential for contributing to a flexible and inclusive learning environment, making science more equitable, accessible and impactful for society.

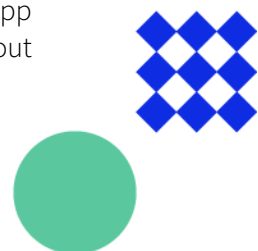
Dr. Gijlers' interactive talk helped the audience identify the six key strands of science proficiency and rate their relative importance according to their organisations' strategic priorities and goals. The notion of science proficiency was then put in action by Dr. Cerri by presenting Città della Scienza's Insetti&Co exhibition as an example of an out-of-school activity that can be assessed and enhanced using the Science Chaser, the web app that Surrounded by Science is about to release this autumn with the ultimate aim to help informal science learning providers assess science proficiency.

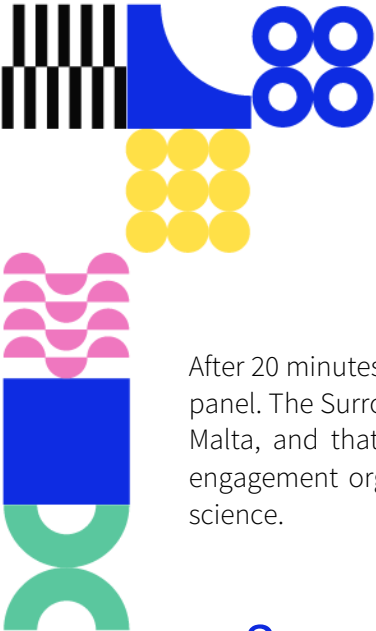


From left to right: Dr. Luigi Cerri, Dr. Hannie Gijlers and Prof. Michail Giannakos on stage during the Surrounded by Science panel session at the ECSITE 2022 conference, Heilbronn, Germany, 3 June. Image credit: Angelos Alexopoulos.

The floor was then given to Prof. Giannakos, who introduced the audience to latest ICT developments in science learning stemming from the recently completed EU project COMnPLAY SCIENCE and related research on the role of analytics and data utilisation for science learning.

The Q&A session that followed brought out many interesting questions that the speakers thoroughly answered. For instance, one participant asked the panel how much effort and what expertise is required from children, parents and teachers to make the most out of the Science Chaser, and the response was that Science Chaser is a light and user-friendly app that anyone can benefit from securely without special ICT skills.





After 20 minutes of lively discussion and questions, the session ended with a warm applause to the panel. The Surrounded by Science team promised to come back to next year's Ecsite conference in Malta, and that time with a fully-fledged Digital Toolbox designed and tested to help science engagement organisations realise their full potential for boosting their audiences' proficiency in science.

Surrounded by Science at SciComPt 2022

The Annual Congress of Science Communication practitioners and researchers, SciComPt, returned to the face-to-face format in 2022 with the theme "Stop, listen and act: reflect on the past to build the future". This congress gathers the community of science communicators and informal science educators operating in Portugal around a diverse programme and several moments of experience sharing.



Image credit: Henrique Pereira, SciComPt



Image credit: José Gonçalves, NUCLIO

This year the congress took place in the Azores Islands, a region that has been an important stage for national investment in science and technological innovation.

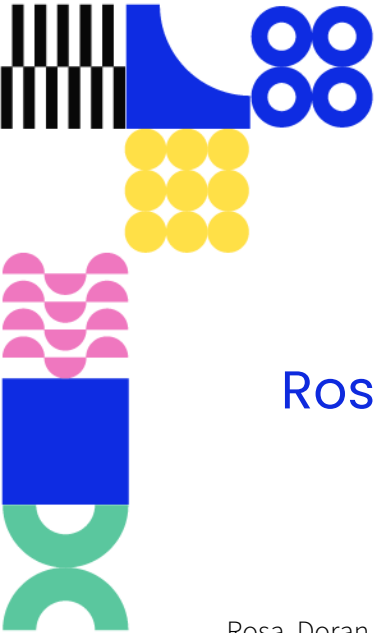
Sara Anjos (NUCLIO) represented the project in this meeting, with a presentation entitled 'Surrounded By Science: a H2020 Project of Evaluation and Certification of Science Communication and Informal Education

Activities' and which sparked community interest. Sara is also a member of the scientific committee of SciComPt 2022 and was moderator of the session 'Communication Strategies'.

SciComPt 2022 gathered about 146 people, had five workshops, two plenary sessions, two debates, 37 long and 28 short presentations, one roundtable and one Iberian Meeting. The about 250 hashtag shares reached 1.4M people online.

More information about the event at <http://scicom.pt/index.php/scicompt-2022/>





Rosa Doran wins Astronomy Education Prize

Rosa Doran is the winner of the first edition of the International Astronomical Union (IAU) Astronomy Education Prize. Rosa is the president of NUCLIO, Surrounded by Science project partner.

The IAU ODE Prizes – Astronomy Outreach Prize, Astronomy Development Prize and Astronomy Education Prize – have been created with generous funding from IAU Past President Ewine van Dishoeck, and recognise individuals and organisations who have made outstanding contributions to the fields of astronomy outreach, development and education.

Between the beginning of February and March 15, 2022, the ODE Prize Committees received a total of 40 valid nominations, with both the nominators and nominees spanning the entire globe. Following recommendation by the committees, the IAU Executive Committee approved the following nominees to win the first set of prizes:

- Astronomy Outreach Prize: Astronomy Picture of the Day (APOD) — a website created by Robert J. Nemiroff and Jerry T. Bonnell
- Astronomy Development Prize: Michèle Gerbaldi
- Astronomy Education Prize: Rosa Doran

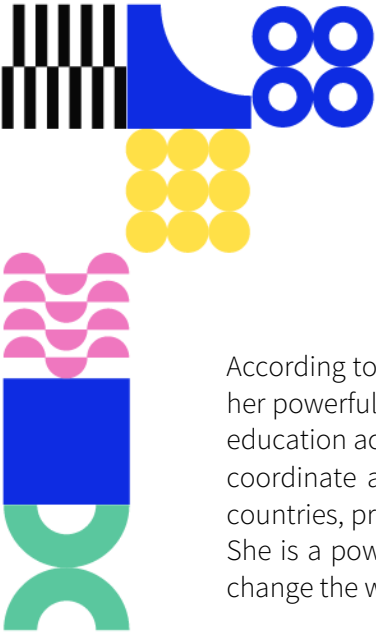


Rosa Doran – IAU Astronomy Education Prize



The IAU ODE Prizes 2022 Recipients. The awards will be presented at the IAU XXXI General Assembly (IAUGA2022) in Busan, South Korea, in August this year.





According to the IAU press release: “the 2022 ODE Education prize is awarded to Rosa Doran for her powerful, inclusive, innovative, inspirational, far-reaching, even transformational astronomy education achievements over more than three decades. She set up, secured funding for, helped coordinate and lead numerous small- and large-scale projects in developed and developing countries, projects which have reached many thousands of teachers and kids all over the globe. She is a powerhouse and has become a global leader. As one nominator wrote: her goal is to change the world through astronomy education.

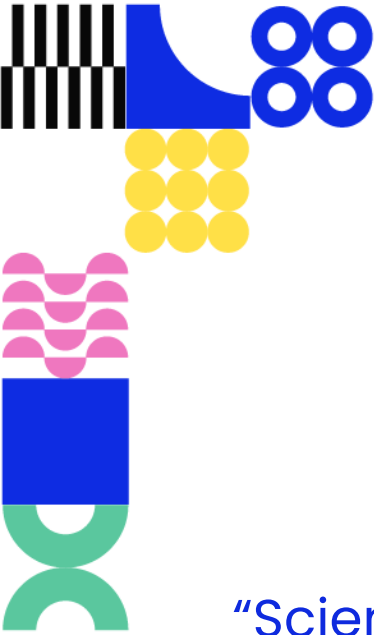
Cited in the Press Release, Rosa Doran said: “I always felt connected with the Universe and the urge to know more. At some point in my life, I understood that astronomy can be a strong drive to transform the perception humans have about themselves and their place in the cosmos. This prize is unexpected, and I feel very honoured and humbled to receive it. I will carry this treasure with me to ensure that my journey has even more impact in inspiring new generations to embrace their power.”

Rosa Doran was born and started her studies in São Paulo, Brazil, and came to Portugal after completing her degree in Physics, continuing with a Masters in High Energies and Gravitation from the Faculty of Sciences of the University of Lisbon. Her passion for astronomy led her to study Black Holes. In 2001, together with a group of astrophysicists and astronomers in Portugal, she found NUCLIO, a non-profit organisation for astronomy dissemination. Early on, NUCLIO turned to education and teacher training, particularly in the field of science, currently bringing innovation and development in education to all parts of the world.

Rosa Doran received a PhD in Science Teaching from the University of Coimbra and, in addition to being president of NUCLIO, she helped to found and is Chair of the Galileo Teacher Training Program (one of the world’s largest astronomy teacher training networks), she was at the genesis of the Global Hands-on Universe project and is now the President of the Executive Council, she is Chair of the Portuguese Language Office of Astronomy for Development (PLOAD) and vice-president of the Panel of Education of COSPAR (Committee on Space Research), among many other projects.

Note: This news item has originally been published at the NUCLIO website on 13 June 2022.





SciPerspectives

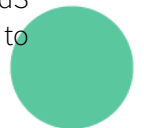
“Science as an ecosystem” | Meet Dr. Flora di Martino & Dr. Luigi Cerri

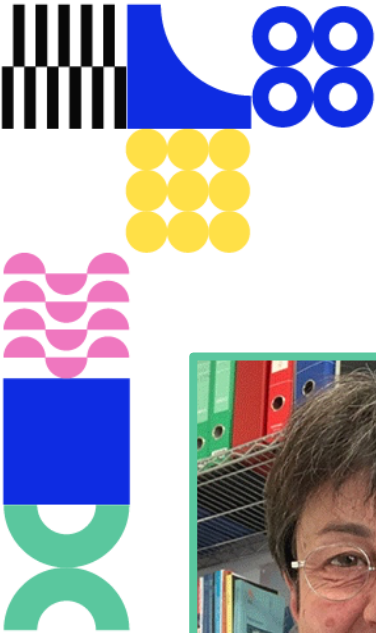
By Alice Iordache



IDIS Foundation - Città della Scienza (IDIS-CdS) was founded in 1996 in Naples, Italy, according to a very simple and effective mission: raising science awareness. It is the biggest interactive museum established in Italy, second only to *Immaginario Scientifico* in Trieste. The main activities carried out are conferences and convention organisation, high-level training, and, of course, permanent, and temporary exhibition as well as interactive museology. Among the most interesting exhibitions it is worth mentioning the permanent one on insects, *Insetti & CO*, which has been very well-received by the audience. One of the features that makes this experience so valuable relies in the fact that the exhibition is weekly updated, both in terms of specimens as well as additional laboratories for visitors and factsheets.

IDIS-CdS is the place to-be for informal science education. It is designed as a place where anyone can come and learn about scientific topics at different levels and across different dimensions. The legacy of the educators working at IDIS is to instil curiosity into pupils, who desire to either learn more by themselves or to pursue scientific careers. This pioneering method traces back to the San Francisco Exploratorium, where the goal is to create inquiry-based experiences that transform learning through the scientific method: inquiry, hypothesis formulation, verification, and result evaluation. For this reason, over the recent years the science learning ecosystem has evolved. For example, the IDIS team has increasingly started developing a multidisciplinary background and dossiers, ranging from STEM disciplines to psychology and civil education. The benefits derived from a **multidisciplinary approach** applied to scientific activities are no longer a mystery, and IDIS-CdS rightfully proves it. “Our vision shifted from considering science per se and scientific roles, to





Dr. Flora di Martino

enlarging their competencies and activities, considering science as an ecosystem”, says **Dr. Flora de Martino**, research implementation lead at IDIS-CdS.

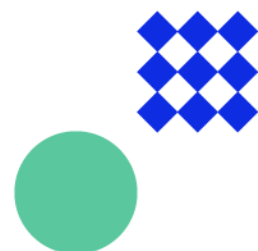
Together with this paradigm shift, the role of digital technologies champions over the activities pursued. However, we must always keep in mind that also new technologies find their roots in science, too. IDIS is increasingly exploring new digital tools and programs to create a virtual space, making use of the latest technologies employed in arts, that allows visitors to test real experiences. “Not only reproducing real experiences, but also make use of innovative and creative learning activities bridging gaps with real life; this is the evolution of science and emerging technologies.”, says **Dr. Luigi Cerri**, project manager at IDIS-CdS.

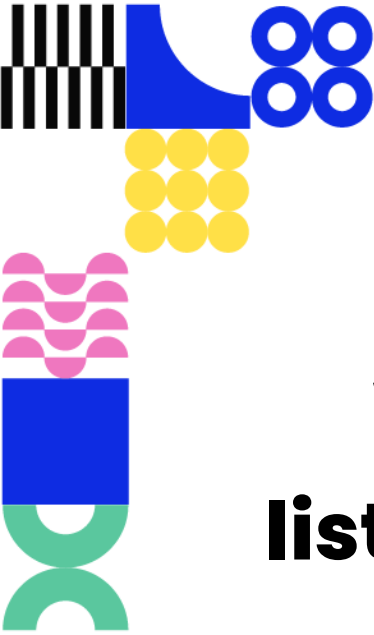
When asked what the expected contributions to the Surrounded by Science project are, IDIS team has a simple and effective answer: initiatives and science centres like IDIS are both promoters and beneficiaries. As activity providers stakeholders, their main contribution is related to the design and development of activities according to the informal learning standards. Moreover, they are the providers of meaningful research tools and skills needed to continue to develop evaluation tools and final reports and verify whether the interventions are effective. Surrounded by Science project aims at bridging the gap between formal and informal learning, developing ad hoc tools for the evaluation of informal learning activities and initiatives. In this respect, IDIS-CdS’ role in the project entails the proposal of scientific and exhibition paths that will contribute to the provision of an inventory of exemplary best-practices and educational proposals as well as concrete steps to put them into planning by other activity providers who would like to contribute.



Dr. Luigi Cerri

We wish them good luck and we are looking forward to following their next activities.





What we're reading, listening to and watching

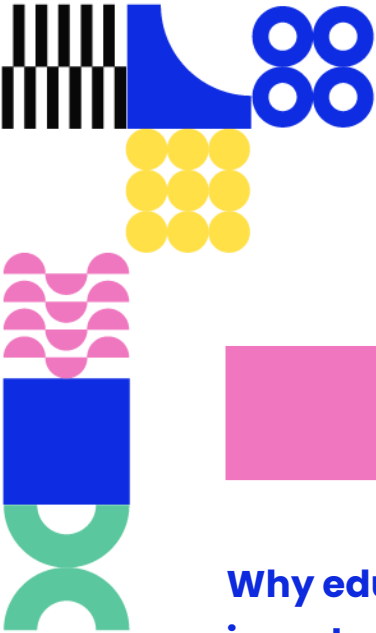
With this issue we are launching a new section that presents a curated selection of reads, movies and videos, podcasts, and more on out-of-school STEM learning

EDITORS' PICK

Equity in informal STEM learning: Using the Equity Compass

Developed by UCL, this three-week online course is designed for informal STEM learning practitioner working in out-of-school organisations and roles such as science museums and centres, zoos, STEM clubs, festivals, community organisations and makerspaces. By the end of it, participants will have gained a deeper understanding of equity issues, the factors influencing inequalities in STEM and what to do about it, ensuring that their organisations can support diverse people's engagement with STEM.

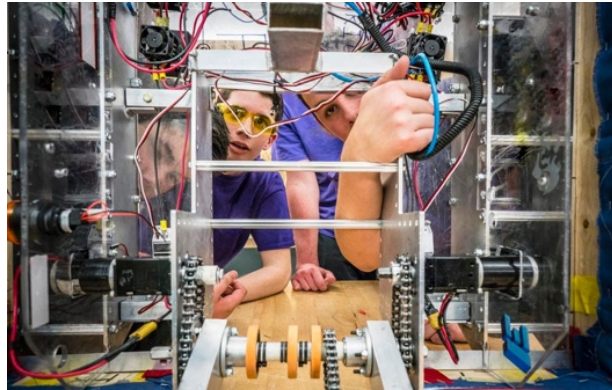
Find out more at www.futurelearn.com/courses



READS

Why education investors shouldn't ignore afterschool STEM

Ron Ottinger, Executive Director of the **STEM Next Opportunity Fund** on why out-of-school experiences can help build equitable STEM opportunities for all.



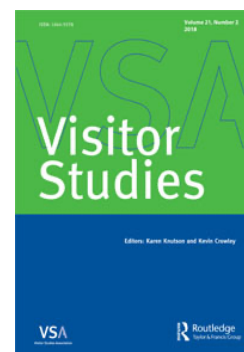
Measuring a sense of belonging at museums and cultural centers

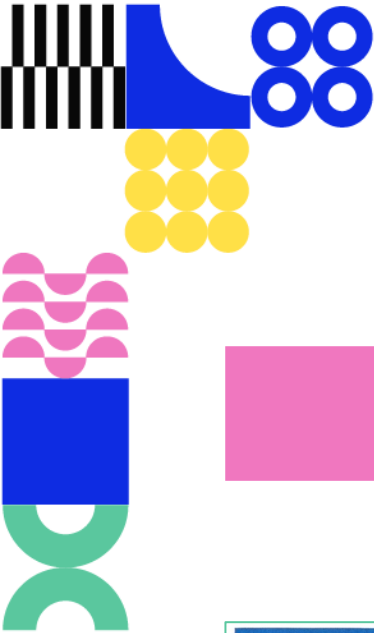
New study published in **Curator: The Museum Journal**, tests a model of community belongingness and shed new light on visitors' museum experience.



How do you define success? Evaluative criteria for informal STEM education

Study published in **Visitor Studies** analyses key criteria used for understanding success in informal STEM.





MOVIES

The Green Ray (1986) | by **Éric Rohmer**



Inspired by Jules Verne's novel of the same name, *The Green Ray* is a 1986 French film by **Éric Rohmer**. The film won the Golden Lion and the FIPRESCI Prize at the 1986 Venice Film Festival. In his unique cinematic style, Rohmer tells the simple story of Delphine who finds herself helplessly alone in Paris in the July summer of 1986, with nowhere to go. On a sporadic holiday she fails to enchant herself with romance and connection, while her anxieties cause her to reject the new. Somewhere along the way, she finds what she didn't know she needed.

But what does Delphine's story have to do with science? Well, somewhere in the middle of the film, we learn from a kind white bearded old man about the scientific explanation behind the title of the film. Green ray refers to a meteorological phenomenon that sometimes occurs

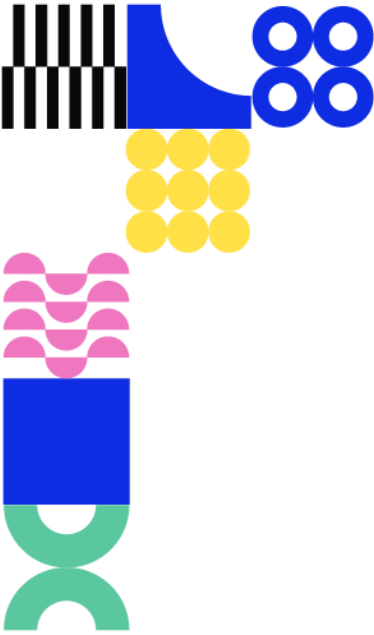
around the moment of sunset or sunrise. When the conditions are right, a distinct green spot is visible for no more than two seconds above the upper rim of the Sun's disk. Rarely, the green flash can resemble a green ray shooting up from the sunrise or sunset point. The green flash occurs because the Earth's atmosphere can cause the light to refract into different colours. Green flashes are enhanced by mirages which increase refraction.

In Rohmer's film, the green ray acts as a metaphor for the seeming unobtainability of happiness as pursued by Delphine. In fact, the green ray was also impossible to be captured by Rohmer's camera, which forced him to recreate it through special effects, offering to the spectator a bittersweet and open-ended ending to a memorable film. In the words of Scottish novelist, poet and film critic, Gilbert Adair, Rohmer's *green ray* is "the tiniest and most moving special effect in the history of cinema" that is barely possible to notice on a TV screen.



Still from *The Green Ray* film.





Events

Asteroid Day



Image credit: <https://asteroidday.org/>

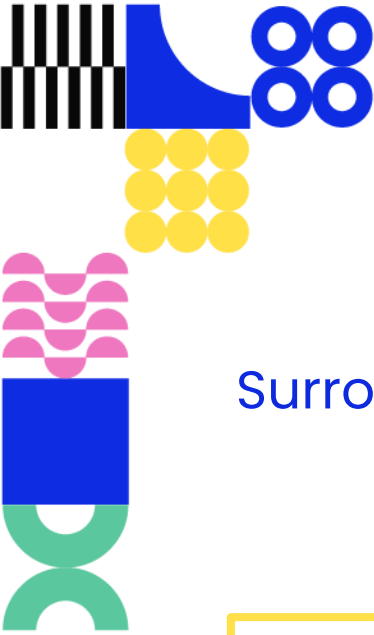
Asteroid Day is a UN-sanctioned global awareness campaign held annually on 30 June. With a mission to "inspire, engage and educate the public about asteroid opportunities and risks", every year, Asteroid Day includes broadcasts featuring asteroid content and commentary from astronauts, experts and celebrities. Asteroid Day events are held around the world thanks to thousands of independent Asteroid Day event organisers.

One initiative we would like to highlight is that of the International Astronomical Search Collaboration (IASC) Citizen Science project. This project provides high-quality astronomical data to citizen scientists around the world, who can make original astronomical discoveries and participate in hands-on astronomy.

Asteroid research campaigns are the primary focus of the IASC. A "campaign" is a month-long event in which teams search for asteroids. If you would like more information about the asteroid search campaigns, please follow this link: <http://iasc.cosmosearch.org/>.

Learn more here about this global event at <https://asteroidday.org/>





Surrounded by Science at the 2022 Global Hands-on Universe Conference

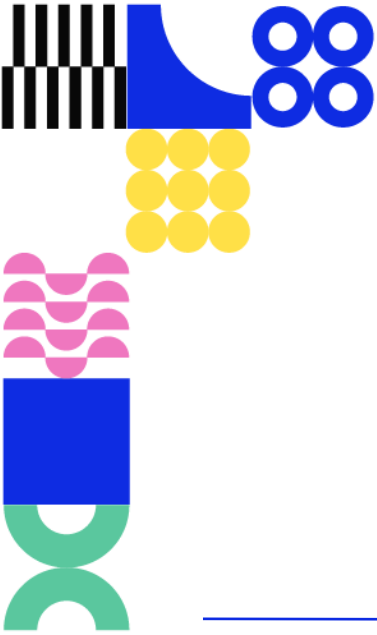


Image credit: Global Hands-on Universe

This year's **Global Hands-on Universe Conference** will be held online from 22 to 26 August 2022. Registration opens on 1 July 2022.

Learn more about this global gathering of astronomy educators and teachers by visiting the conference's [website](#).





Contact u s

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Our Team

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