

# DE RERUM NATURA

[Sobre a Natureza das Coisas]

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## International Year of Light in Portugal



The opening ceremony took place at 16<sup>th</sup> March 2015 at the Passos Manuel School, in Lisbon, with a lecture and a light show. The IYL was celebrated all over the country with a variety of scientific, educational, technological and artistic initiatives (see [ail2015.org](http://ail2015.org)). The year will close at 21<sup>th</sup> June 2016 with a concert at Casa da Música, Oporto, and a conference by Sir Michael Berry.

The focus was on schools, recognizing the relevance of education for a sustainable future. A program, entitled *Bringing Light at Schools*, promoted researcher's visits to schools for talking and experimenting with light. It included teachers training in photonics using kits. Schools were also participating in the IYL with their own projects.

Several exhibitions took place: a travelling exhibition on holograms (*Windows of Light*) invited visitors to understand holography hands on. In Oporto, the exhibition *Lux Mirabilis*, combining art and science, was at the Soares dos Reis Museum. In Lisbon two expositions attracted many visitors (*The Light of Lisbon* and *Within Light/ Inside Glass*). In Coimbra the Science Museum of the University, besides the permanent exhibition *Secrets of Light and Matter*, had an exhibition on the human eye (*A Look on Vision*). Other exhibitions on light took place at national festivals, for example at *Festa do Avante* in Seixal and at the literary festival *Fólio* in Óbidos.

To celebrate not only the IYL but also the 725<sup>th</sup> anniversary of the Coimbra University (UNESCO world heritage), a video mapping projection was seen by more than 30.000 spectators. There were other light shows in Cascais (*Lumina Festival*), Almeida, Aveiro, Coimbra, Lisbon, Lousada, Oeiras and Sintra. In Oporto, near the S. Bento Station, a light installation was built: *Oporto Light Experience*, a winner of the "Happy LED Life" competition.

The city halls were active partners: the conference *Lighting New Challenges*, in Águeda, brought together lighting companies, promoting intelligent street lighting, and the festival *Culture and Light* took place in Almeida. Also active were professional associations, such as the Portuguese Engineers Association responsible for two conferences (Lisbon and Funchal).

Other conferences were organized by various entities, some of them international. The most important was *Let There be Light: Dialogues Around Light*, held at 15<sup>th</sup> December at the Gulbenkian Foundation, Lisbon. But there were other conferences: *Lights On*, on cultural heritage at the Oporto University; *Communication and Light*, at the Minho University - Braga; the *12<sup>th</sup> International Conference on Hands-on Science*, in Funchal, on light and science education; *Colours 2015*, at Évora University, on light, art and science; two conferences at the Coimbra University (*Light Views* and *Around Light*); two conferences at the Lisbon University; a seminar at the Lisbon Academy of Sciences (*International Seminar on Light and its Applications*); a conference on Metrology and Light at the National Institute for Quality; and the international conference *Light, from Earths to the stars* organized in Lisbon by Ciência Viva. Two international science meetings took place in Figueira da Foz and Faro (*Colloquium Spectroscopium Internationale* and *International Conference on Advanced Laser Technologies*). The theory of relativity was the theme for conferences at November. Also in November, the Portuguese UNESCO commission organized a conference on the IYL and IY of Soils. The lecture given by the NASA scientist and Nobel laureate John Mather in Oporto was another IYL highlight.

Other events happened all over the country: *Worlds of Light*, at Viana do Castelo; Faculty Days at the Oporto University and the Coimbra University, both on light and health European Researchers' Night with light activities by Ciência Viva centers. Rómulo – Ciência Viva Center organized a series of lectures (*In the Light of Science*). The IYL celebrations at the Library of the Faculty of Science and Technology of the New University of Lisbon, which brought together science and art with seminars, debates and exhibitions, were intense.

Light was also celebrated in theatre and cinema. The Marionet Company (Coimbra) represented three plays about *Light* and the short movie *The End of Light*, directed by Laura Seixas, had a première at the Gulbenkian Foundation.

Sky observations played a role in the IYL program: in the Dark Sky Alqueva reserve ("ETIS Social & Cultural Impact Achiever" of the European Union), with a photo exhibition; the *Astrofesta* in Castro Verde; and a set of activities organized by the Lisbon Astronomical Observatory (*Nights of science, Nights of Light*).~

Several books were published: *A Biography of Light*, by José Tito Mendonça; *QED* by Richard Feynman (new edition); *Cosmicomix* by Amedeo Babi and Rossano Piccioni, and *History of physics in Portugal at 20<sup>th</sup> century* by Teresa Peña and Gonçalo Figueira, both at Gradiva; *Dark Sky - Alqueva* by Miguel Claro, at Centro Atlântico; a book of cartoons on light by Museu da Imprensa; *Light in books*, by António Campos at Tinta da China; and *Let there be light*, 3<sup>rd</sup> edition, by Jorge Calado, at ISTPress.

The IYL was covered by the media, with the help of the national news agency and national and local press. The newspaper *Público* had a special issue on the 100<sup>th</sup> anniversary of Einstein's Theory of General Relativity and published a series of articles (*Light as way and limit*). Public TV emitted the IYL spot and interviews appeared in national public TV and radio. Specialized journals published special issues: *Gazeta de Matemática*, *Gazeta de Física*, *Ingenium*, *Rua Larga*, *Aura Light*, etc.

There were photo competitions, one organized by the national commission and other by the Engineers association. One jewellery competition was organized by the Goldsmith Association. The contest *The Light of Discovery*, promoted by the Portuguese Society of Optics and Hands-on Science Network Association, was directed to schools. Finally, the Post Office issued stamps on the IYL and the IY of Soils (an edition distinguished in Italy).

The IYL national committee included the Physical, Chemical and Optical societies, Association of Biologists, UNESCO National Commission and Ciência Viva Agency for Scientific Culture. The IYL was sponsored by the Ministry of Education and Science, the Portuguese Foundation for Science and Technology, the Ciência Viva Agency, the Gulbenkian Foundation, etc.

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>In the image: *Light, from Earths to the stars* organized in Lisbon by Ciência Viva. Hommage to José Mariano Gago.