### The International Year of Light

and Light-based Technologies

2015







Health Communications Economy Environment Social







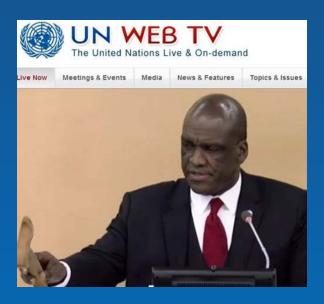




# Background

Many international partners brought the proposal to the UN headquarters in New York in May 2013



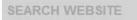


Resolution was adopted by UN General Assembly on 20 Dec 2013

Planning underway, website is now the main source of information



Q





International

HOME

ABOUT THE YEAR OF LIGHT

**EVENT PROGRAMME** 

2015 INTERNATIONAL YEAR OF LIGHT AND LIGHT-BASED TECHNOLOGIES

**WHY LIGHT MATTERS** 

**LEARN ABOUT** LIGHT

HANDS ON INVOLVEMENT COSMIC LIGHT

LIGHT FOR DEVELOPMENT

**SCIENCE STORIES** 



**LEARN ABOUT** IYL2015 & UNESCO





### EVENT CALENDAR

8th International Conference on Photonics and Applications Aug 12.

SPIE Optics & Photonics Aug 17.

2nd International Symposium on Optics and its Applications Sep 1.

Founding **Partners** 

- 19-20 January

2015







Contest











Endorsed by















# Background

IAU (International Astronomical Union)

ICSU (The International Council for Science)

ISPRS (The International Society for Photogrammetry and Remote Sensing)

ISSC (International Social Science Council)

IUHPS/DHST (International Union of History and Philosophy of Science/

Division of History of Science and Technology)

IUPAB (The International Union for Pure and Applied Biophysics)

IUPAP (The International Union of Pure and Applied Physics)

IUTAM (The International Union of Theoretical and Applied Mechanics)

**URSI** (International Union of Radio Science)

ICO (The International Commission for Optics)

# Background



### The UN has asked us to ...

Promote photonics for improved quality of life

Explain photonics as an economic driver

Show photonics is a solution to global challenges

Promote science education and careers worldwide

Have impact in all countries of the world

# Potential is very broad



Origin of Life

Healthcare

Communications & GPS

**Optical Instruments** 

The Universe





# Potential is very broad



Cultural Heritage

**Education for All** 

Nature

**Light Pollution** 



## Art



### Actions

Celebrating science successes within our community



Explaining photonics with outreach to the public



Promoting photonics to decision-makers



Support actions in the developing world



### **Anniversaries in 2015**

1015: 1000 years of Arabic optics

1815: 200 years of Fresnel's theory of diffraction

1865: 150 years since Maxwell's electrodynamics

1915: Einstein Centenary, General Relativity

1965: Cosmic Microwave Background,

Penzias & Wilson

Optical Fibre Technology, Charles Kao



# Focus on Development

85% of the world's population live in developing countries

Internet use by population 75% in Europe 16% in Africa

Study after Sunset is not possible for 2 billion people

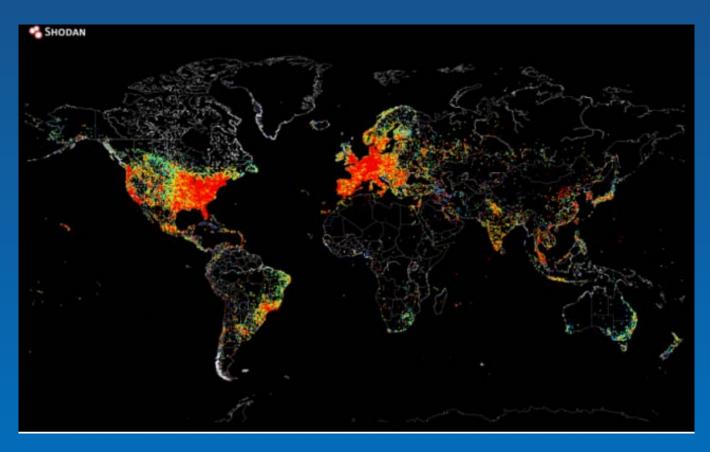
Billions need eyeglasses





# Science for peace

Internet connected devices in the world



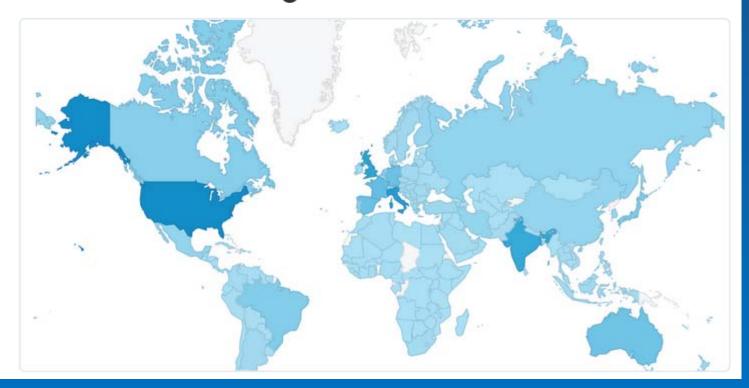
Scientists and social responsibility

### **National Interest**



IYL2015 @IYL2015 · 20h

#IYL2015 website statistics for December 2013 - 142702 views from 187 countries!! Scale shows %age of total



# National Interest

### **National Node Contact**



We have 72 National Nodes which are organising local campaigns, activities and events

# Funding

We receive NO funding from UNESCO

All international actions (e.g. Opening Ceremony, website, communications, seed funds for developing countries) must be self-funded.

We are very grateful already for the generous support from societies, industry, academic partners, and incredible volunteer enthusiasm

### Actions

The secretariat at ICTP cannot proactively solicit event information from all partners in all countries of the world

It is <u>up to organisers (you!)</u> to submit events for tracking on the global calendar

Many exciting events are already taking place

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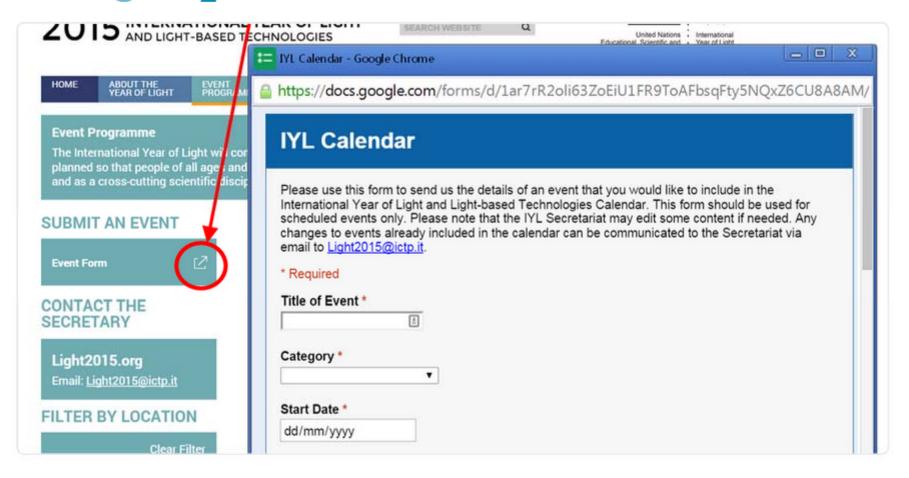
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### IYL2015 @IYL2015 · Jan 3

Wherever you are please tell us what you are doing for #IYL2015 Takes 1 minute! @helen\_hm11













IYL2015 @IYL2015 · Dec 31

Happy International Year of Light & Lightbased Technologies everyone! #IYL2015 @UNESCO











View more photos and videos



RT @IYL2015: #IYL2015 logo projected on Sydney Harbor Bridge! Thanks to #SydNYE @LightYearAU and all Australia.







IYL2015\_NL @IYL2015\_NL · Jan 4

International Year of Light 2015 in Washington State Convention Center #aas225 #IYL2015 @IYL2015



Dubai started #IYL2015 with the largest LED-illuminated façade ever - thanks @LischtschenkoO for sending the video youtube.com/watch?v=JQNZFF...

YouTube





IYL2015 retweeted



Rob Sparks @halfastro · Jan 4

Building @galileoscope in preparation for @IYL2015 at #aas225

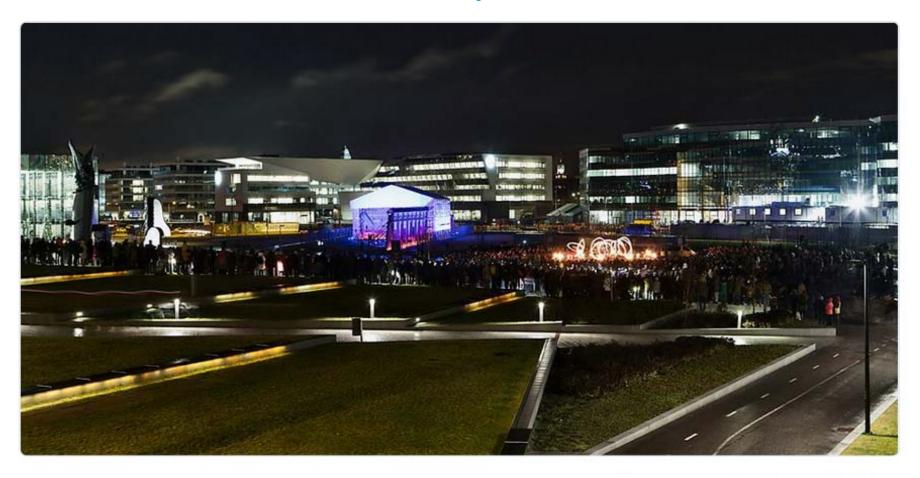






Lux Helsinki @LuxHelsinki · Jan 4

Now it begins – the 7th #luxhelsinki festival! Today from 5 to 10 pm. Welcome! Photo: Lux Helsinki 2014. #iyl2015

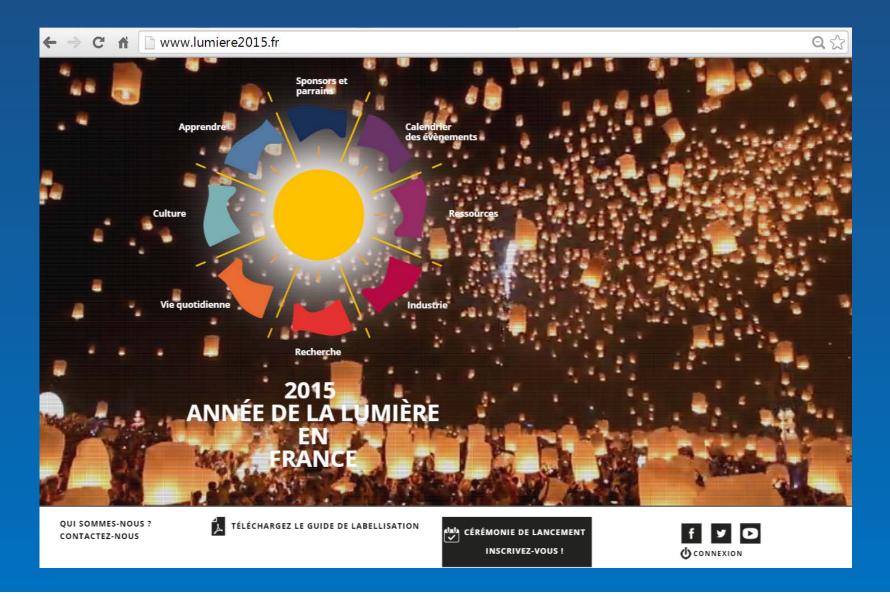








# In France



### CÉRÉMONIE DE LANCEMENT

### Grand Amphithéâtre de la Sorbonne 47 rue des Écoles, Paris 5°

### 13h30 - 13h40 Allocutions d'ouverture

### 14h00 - 15h15

- UNESCO et l'Année Internationale de la Lumière 2015
   Jean AUDOUZE Président de la Commission nationale française pour l'UNESCO
- International Year of Light 2015
   John DUDLEY Chairman of the IYL 2015 Steering Committee
- 2015, Année de la Lumière en France Costel SUBRAN - Président du Comité National ALF 2015
- Lumière et atomes
   Claude COHEN-TANNOUDII Prix Nobel Académie des Sciences CNRS
- Détecter la lumière invisible pour comprendre l'univers et la vie Serge HAROCHE - Prix Nobel - Académie des Sciences - CNRS
- À quelle distance sommes-nous « des lumières » ?
   Etienne KLEIN Philosophe des Sciences CEA

### 15h15 - 15h40 ■ Pause

### 15h40 - 17h30

- Lumière et obscurité dans la ville Roger NARBONI - Concepteur lumière
- Photon unique, photons intriqués : les deux révolutions quantiques Alain ASPECT - Académie des Sciences - CNRS
- La lumière extrême
   Gérard MOUROU Président IZEST École Polytechnique
- Une moins obscure clarté?
   José-Alain SAHEL Directeur de l'Institut de la Vision
- Écrire la nuit
   Hélène CIXOUS Écrivain
- La lumière, les qualités premières et les qualités secondes Claudine TIERCELIN - Philosophe - Collège de France
- Peindre la lumière à la Renaissance, théorie et pratique de Léonard de Vinci Vincent DELIEUVIN - Conservateur - Musée du Louvre

# IYL Opening Ceremony

19-20 January 2015, 1500 attendees, live webcast worldwide



**Nobel laureates** 

**Diplomats** 

**Politicians** 

Scientists

Industry

### MONDAY 19 JANUARY 2015

### **REGISTRATION 08:30 - 10:00**

### **WELCOME COFFEE** 08:30 - 10:00

### **MORNING SESSION** 10:00 - 12:00

### INAUGURATION 10:00 - 10:45

### Ban Ki Moon (Video-Message)

Secretary-General, United Nations

### Irina Bokova

Director-General, UNESCO

### Flavia Schlegel

Assistant Director-General for Natural Sciences, UNESCO

### Jane Naana Opoku-Agyemang

Minister for Education, Ghana

### **Enrique Cabrero**

Director-General of CONACYT, Mexico

### Susannah Gordon

Permanent Delegate of New Zealand to UNESCO

### Vladimir E. Fortov

President of the Russian Academy of Sciences

### Ziad Aldrees

Ambassador and Permanent Delegate of the Kingdom of Saudi Arabia to UNESC

### Patricio Hales (TBC)

Ambassador and Permanent Delegate of Chile to UNESCO

### Rolf-Dieter Heuer

Director-General, CERN

### Ligia Noronha

Director of the Division of Technology, Industry and Economics, UNEP

### **Günther Oettinger (TBC)**

Commissioner for Digital Economy and Society, European Commission

### **OVERVIEW 10:45 - 11:00**

### John Dudley

Chairman of the IYL2015 Steering Committee, Prof. Dudley (France, NZ) will give an overview of worldwide plans for 2015.

### LIGHT AND LIFE 11:00 - 11:45

### Ahmed Zewail

Nobel laureate Professor Zewail (USA) will describe scientific and humanitarian revolutions influencing life on Earth.

### WORLD OF IBN AL HAYTHAM 11:45

Launch of the "1001 Inventions and the World of Ibn Al-Haytham" campaign in Hall Segur.

### **LUNCH BREAK 12:00 - 14:00**

### AFTERNOON SESSION 14:00 - 18:00

### **ENERGY AND CLIMATE CHANGE 14:00 - 14:40**

### Steven Chu

Nobel laureate Professor Chu (USA) will discuss how science, innovation and policy mitigate the risks of climate change.

### **MEET THE COMMUNITY 14:40 - 15:20**

### **Eric Rondolat**

CEO of Lighting Sector, Royal Philips (Netherlands)

### Giorgio Anania

Vice-President, Photonics21 (Italy)

### France Cordova

Director, National Science Foundation (USA)

### Francis Allotey

African Physical Society & IUPAP Vice President (Ghana)

### Zohra Ben Lakhdar

l'Oreal-UNESCO Prize Recipient for Africa 2005 (Tunisia)

### Ana María Cetto

Member of WFC, Past Secretary-General of ICSU (Mexico)

### Danielle Harper

International Association of Physics Students IAPS (UK)

### **Thierry Montmerle**

International Astronomical Union IAU, Paris (France)

### LIGHTING THE FUTURE 15:20 - 16:10

### **Ann Webb**

President of CIE (UK)

### **Gustavo Avilés**

Lighteam (Mexico)

### Harry Verhaar

President of the GOGLA (Netherlands)

### Sze-leung Cheung

IAU Outreach Coordinator (Hong Kong SAR, China)

### **Barbara Horton**

President of IALD (USA)

### **COFFEE BREAK 16:10 - 16:40**

### **HUMANITY AND CULTURE 16:40 - 18:00**

### Ngati Ranana

Cultural Performance (New Zealand)

### **Gianfranco Cardinal Ravasi**

President of the Pontifical Council for Culture (Vatican)

### Alessandro Farini

Professor at the University of Florence (Italy)

### **Charles Falco**

Professor at the University of Arizona (USA)

### Joshua Bell

Grammy Award Winner (USA), Violin Recital - Einstein's Light

### COCKTAIL 18:00 - 20:00

### LIGHT IS HERE 18:30

Kari Kola's light art installation will recreate the Aurora Borealis at UNESCO

### **TUESDAY 20 JANUARY 2015**

### **REGISTRATION 08:30 - 09:00**

### **MORNING SESSION 09:00 - 12:30**

### EINSTEIN, TIME AND LIGHT 09:00 - 09:45

### William Phillips

Nobel laureate Professor Phillips (USA) will give an experimental lecture illustrating some of today's most exciting optical science.

### LIGHT FOR DEVELOPMENT 09:45 - 10:15

### **Andrew Forbes**

CSIR National Laser Centre (South Africa)

### Yanne Chembo

ERC Starting Grant Laureate (Cameroon)

### Thanh-Nga Tran

Vietnam Vascular Anomalies Center (Vietnam, USA)

### Sudhanshu Sarronwala

Earth Hour, World Wide Fund for Nature (WWF)

### **COFFEE BREAK 10:15 - 10:45**

### LIGHT AND THE QUANTUM 10:45 - 11:30

### Serge Haroche

Nobel laureate Professor Haroche (France) will explain how light reveals the quantum nature of physical reality.

### **LIGHT AT THE LIMITS 11:30 - 12:10**

### Gérard Mourou

École Polytechnique, University of Michigan, IZEST (France)

### Norio Kaifu

President of the International Astronomical Union (Japan)

### Caterina Biscari

ALBA Synchrotron and lightsources.org (Italy, Spain)

### **LUNCH BREAK 12:10 - 13:30**

### AFTERNOON SESSION 13:30 - 18:00

### **TECHNOLOGICAL INNOVATION 13:30 - 14:05**

### **Zhores Alferov**

Nobel laureate Professor Alferov (Russia) will discuss challenges in advanced technology and applications in areas such as solar energy.

### SCIENCE FRONTIERS 14:05 - 15:35

### Alain Aspect

UNESCO Niels Bohr Medal Laureate (France)

### **Brian Wilson**

University Health Network Biophotonics (Canada)

### Sune Svanberg

Past Chair of the Nobel Committee for Physics (Sweden)

### **LIGHT SOLUTIONS 16:05 - 16:35**

### Illac Diaz

Liter of Light and My Shelter Foundation (Philippines)

### Martin Aufmuth

One Dollar Glasses (Germany)

### Linda Wamune

Sunny Money and Solar Aid (Kenya)

### **SCIENCE POLICY 16:35 - 17:45**

### José Mariano Gago

Former Minister of Science, Technology and Innovation, Portugal

### Khalil Rouhana

Directorate General Communications Networks, Content and Technology, European Commission

### Maciei Nalecz

Director of the Division of Science Policy and Capacity Building, UNESCO

### **CLOSING REMARKS 17:45 - 18:0**

## The International Year of Light

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2015







We will only get one chance

www.light2015.org