

# The Story of Light

Festival Concept Note

Goa, January 2015



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# Executive Summary

## Introduction

Science and technology hold the key to sustainable development and solutions to worldwide challenges in energy, education, agriculture, communications and health. The **Story of Light Festival** is an initiative to educate the general public about leading-edge science through art and design. It will bring scientists and artists on a common platform to translate complex topics (e.g., how light and matter interact, the structure of an atom, etc.) into interactive and fun public installations, performances, film screenings, workshops, and talks. Light is all-pervading, with connections to science, technology, nature, culture, spirituality, history, and cosmology, and has something for everybody. This project is part of the **International Year of Light 2015** adopted by the United Nations to raise awareness of the science of light and light technologies.

## Goals

1. To promote science education among youth
2. To put modern science and cultural science on a common, intersecting platform
3. To increase public awareness of particle and quantum physics through the role of light
4. To give people new philosophical perspectives on the nature of reality
5. To encourage the public to think about light technologies for sustained development and improved quality of life

## Themes

The activities at the Story of Light festival will be structured around four broad areas intersecting at science, culture, and art: Light and Life, Seeing and Perceiving, Light in Technology, and Our Universe. Each theme will be represented by events at different levels of **public engagement** across the following categories: (1) Public installations, (2) Performances and screenings, and (3) Workshops and talks. Example activities:

**Solarize:** The sun offers a reliable and pollution-free solution to our energy needs. In this interactive workshop, participants work for three days of the festival to build a solar house with materials and ideas provided, and thereby discover the problems associated with solar power and their possible solutions.

**Infinity:** Astronomers study the universe by studying light. This light travels billions and billions of years to reach our telescopes and eyes. This light would continue to travel infinitely if it did not interact with any matter. In this public installation, artists will demonstrate their representation of infinity.

## Why Goa

If you ask 100 local Goans, would you learn science, 90 would say, “No, I’m not *smart* enough.” We would like to break this myth by presenting science as a fun topic and showing the relevance of this knowledge in building strong communities. With flourishing art institutions and numerous dance, music, film and theatre festivals, Goa is

definitely on its way to be the cultural capital of India. It is the perfect base to achieve our goal, which is, to make science magical for everyone by fusing science with the art and culture resources already available in the city. In Goa, our aim is to reach three types of audiences:

1. Local public in Panjim and nearby areas
2. School, college, and university students from Goa
3. Visiting tourists, both Indian and foreign

The total impact number of people we would expect to impact through our festival is about **50,000**.

## **Dates**

The five-day festival will open on the evening of Wednesday, January 14, 2015. This date was chosen because of its astronomical and cultural relevance as it is the day the sun begins ascending into the Northern Hemisphere. This day is also celebrated as *Makar Sankranti*, *Pongal*, or *Bihu*. The public installations will be kept open until the end of January 2015.

## **Venues**

The events will be concentrated in Panjim city. A walking route will be designed for the visitor to go through all the public installations and to guide them to other events. The locations planned are (subject to permissions and availability): Kala Academy as the main venue for the performances, screenings, workshops, and talks, the information hub, and the venue for the opening and closing ceremonies; Children's Park; Marquinez Palace, Promenade, Azad Maidan, Jardim Garcia de Orta, Church Steps, Friends of Astronomy, Miramar Circle, and Goa Science Center.

## **Budget and Sponsorship**

The budget for the festival is 37.5 Lakh Rupees. To realize the festival, we will seek sponsorship and grants from the government and light-and-light technology based companies.

# Current Scenario

If you ask 100 local Goans, would you learn science, 90 would say, “No, I’m not *smart* enough.” This is a myth because this perspective comes from not what science is, but how it is taught and how it is viewed by a culture. The word science comes from the Latin word *scien*, which means *to know*. And while science today is limited to (restricted by) the scientific method, a truly *scientific* mind is just a *knowing* mind. We agree that the predominant language of science, mathematics, may be challenging for many, but at the same time we also believe that concepts in science contain knowledge that the general public should have access to. We are moving towards an ever increasing technological society, and this knowledge will benefit us to build stronger communities.

A key change that needs to be made in science education in India, in particular, is updating the curricula and current relevance. For example, although quantum mechanics has been around for almost a century, we are only exposed to the classical views until the level of Bachelor education in physics, which too few of us pursue. However, being exposed to concepts in particle physics and quantum mechanics can take us a long way in understanding the nature of reality, developing sustainable solutions for humankind and improving our quality of life. If, in the short term, this cannot be achieved through formal education, it can be achieved, in part, through informal education.

Informal education is a spontaneous process of helping people to learn. Informal education works through dialogue and the exploration and enlargement of experience. Its purpose, we suggest, is to cultivate communities, associations and relationships that make for human flourishing.

<http://www.infed.org>

Another common misconception in society is the assumed clash between science and religion / spirituality. It is our conjecture that when studied deeply, there are no contradictions — just two completely different ways of perceiving and describing the world. As a society, we would benefit from a synthesis of knowledge and ideas by bringing cultural science and modern science on an intersecting ground.

This brings us to the mission and goals of The Story of Light project.

## Mission & Goals

The **Story of Light** is a public outreach project to educate the public about the fascinating realm of particle and quantum physics through the all-pervading topic of light by drawing connections to science, technology, nature, culture, spirituality, history, and cosmology. It will simplify complex concepts that have been limited to academia and bring these concepts to the public through public installations, performances, film screenings, workshops, and talks.

Our goals are

1. To promote science education among youth
2. To put modern science and cultural science on a common, intersecting platform
3. To increase public awareness of particle and quantum physics through the role of light
4. To give people new philosophical perspectives on the nature of reality
5. To encourage the public to think about light technologies for sustained development and improved quality of life

The festival is a not-for-profit initiative and will be free to attend for all.

## Why Light and IYL 2015

Light is central to human activity, science, technology, art, and culture. At the most fundamental level, through photosynthesis, light is necessary to the existence of life. Electricity works with light. Photography captures light. Plants make food with light. Wireless signals travel through light. Light is at the beginning of mythologies across cultures. The connections and relations are infinite. Many scientific applications are based on light and have revolutionized society through medicine, communications, and entertainment. It is a gateway topic that has something for everyone.

All the fifty years of conscious brooding have brought me no closer to answer the question, "What are light quanta?" Of course today every rascal thinks he knows the answer, but he is deluding himself.

Albert Einstein

The Story of Light Festival is a project for the International Year of Light 2015. IYL 2015 (<http://www.light2015.org/>) is a cross-disciplinary educational and outreach project with more than 100 partners from over 85 countries, adopted by the United Nations to raise awareness of how optical technologies promote sustainable development and provide solutions to worldwide challenges in energy, education, agriculture, communications and health.

## Our Approach

When it comes to science, some of us approach it through math and equations and it makes perfect sense. But some of us don't relate to equations. We relate through emotions and feelings. If someone tells us the story of an equation, the poetry of math, the emotional relevance of a hypothesis, then perhaps we could understand better. Thus, the story of light is focused on creating relevant metaphors to translate the magic of our universe into palatable stories and their expressions.

In the months leading to the festival, we will organize short **residencies** for **scientists** who understand the theoretical concepts to work with **artists** who have the imagination to comprehend these concepts and bring them into the

public space through metaphors. Can we give people a direct experience of infinity or show them a wave collapse through an artist's interpretation?

We also plan to maintain a delicate balance of science, philosophy, and art, so that the concepts are not overwhelming for the general public but also not oversimplified or made entirely abstract.

## Themes and Events

The activities at the Story of Light festival will be structured around four broad areas intersecting at science, culture, and art: Light and Life, Seeing and Perceiving, Light in Technology, and Our Universe. Each theme will be represented by events at different levels of **public engagement** across the following categories:



The broad scope of the Story of Light festival can be seen in theme descriptions below along with **example events**.

### Light and Life

Life wouldn't exist without light—that much we know. But light has also shaped so much of our lives and culture. It is a common symbol in religion and philosophy, it is found in our myths and rituals, and it is central to art and architecture. Even in death, do we go towards the light? This theme explores light and its hidden role in shaping our evolution and our humanity.



# Surya Namaskar

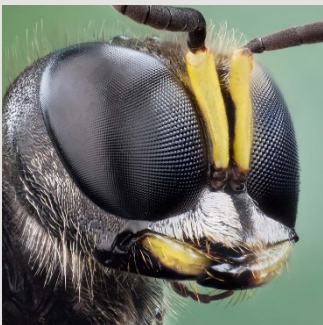
→ Workshop, Light and Life

**In a practical workshop you will learn the reasons behind the *surya namaskar* or sun salutation and its effects on your mental and physical wellbeing.**

Every wondered why yoga recommends we salute the sun in the morning? What is it about sunlight that stimulates mental and physical wellbeing?

## Seeing and Perceiving

Seeing is a tricky affair. It's more like a dance between the object we are seeing, the light reflecting off it, and our brain perceiving it. To complicate matters, not all beings see the same way. You and I see a bit differently, and what do we find when we look at the world through the eyes of a mantis shrimp or a butterfly? This theme explores light and vision and its myriad connections to our perception of reality—if there is such a thing as one objective reality!



# I Spy with My Animal Eye

→ Public Installation, Seeing and Perceiving

**In this public installation, visitors will experience the world through the eyes of different animals and insects – and understand that we all see differently.**

We see because visible light reflects or shoots out from surfaces to hit the receptors in our eye. These signals are interpreted by our brain to form a vision. But the same light is not visible to all creatures, so all creatures do not see the same way: bees and butterflies see in UV, dogs mostly see greys, bulls see only black and white.

## Light in Technology

Right now, you are surrounded by a chaotic but invisible symphony of different kinds of light waves passing through you like ghosts or interacting with you in subtle ways. Every time you send a text message, for instance, you are in fact sending out waves of light. Most of our day-to-day technology which we take for granted is based on the very wide spectrum of light, so in a way aren't we all connected by strands of light. This theme explores how humans have exploited light, from radio waves to gamma rays, and the directions we could move in in the future.





## Solarize

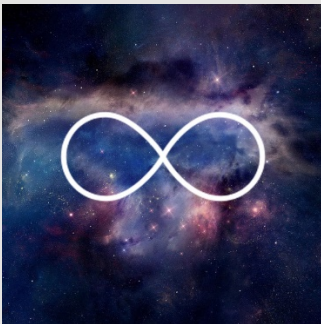
→ Workshop, Light in Technology

**In this interactive workshop, participants work for three days of the festival to build a solar house with materials and ideas provided, and thereby discover the problems associated with solar power and their possible solutions.**

The sun offers a reliable and pollution-free solution to our energy needs. However, a number of scientific, technological, and economic breakthroughs are necessary to fully exploit its energy.

## Our Universe

Light seems to play outside the rules of time and space as we understand them. It can travel infinitely, it can be everywhere, and we can still see the light of stars long gone. And if light is everywhere, where do we go to search for the dark or the absence of light? Following the journey of light, this theme gives us a direct glimpse into abstract notions like “infinity” and “inter-connectedness”.



## Infinity

→ Public Installation, Our Universe

**Public installation of artist impressions of the concept of infinity through any art medium.**

Astronomers study the universe by studying light. This light travels billions and billions of years to reach our telescopes and eyes. This light would continue to travel infinitely if it did not interact with any matter.

## Why Goa

Goa is a multicultural wonderland of creativity, with people flocking from all over the globe to visit, reside and to explore this spectacular state of India. With flourishing art institutions and numerous dance, music, film and theatre festivals, Goa is definitely on its way to be the cultural capital of India. This can be used as the perfect base to achieve our goal, which is, to make science magical for everyone. We can do that by fusing science with the art and culture resources already available in the city.

For some time now, there has been a creative drain of local talent from the state. Artists and scientific minds alike have been flocking to other cities to express themselves and to find viable opportunities. We think endeavours like the Story of Light could draw Goan talent back home.

Apart from the local talent, there is a large population of artists and cultural practitioners, who have migrated to the state to live, study, work and participate in the Goan way of life. Many artists find it easy to integrate into Goa, citing the availability of the conveniences of any modern city, the warm and welcoming personalities of their hosts, as well as the fact that a large percentage of the population speaks English.

Goa also has an existing culture of family and friends gathering to attend events and exhibits. We think the festival, with its ‘something for everyone’ approach will find a wide and varied audience here. Moreover, events like Nomozo (No Motoring Zone), which are not only cultural but also civically driven, have a huge local turnout who seem to greatly appreciate these initiatives.

One of Goa’s inherent competitive advantages is its global and regional connectivity through International sea, air travel and comprehensive network of highways and railways. Goa, with its developed infrastructure, is both reform-friendly as well as environment-friendly. Besides, it has one of the highest per capita income ratios in the country, one of the highest literacy rates, the highest road network density and the lowest crime rates. Its proximity to Mumbai, Pune, Hyderabad, Bangalore and Mangalore is also an added advantage.

In Goa, our aim is to reach three types of audiences, reaching a total number of **50,000** people:



## Festival Dates and Venues

### Dates

The five-day festival will open on the evening of Wednesday, January 14, 2015. This date was chosen because of its astronomical and cultural relevance as it is the day the sun begins ascending into the Northern Hemisphere. This day is also celebrated as *Makar Sankranti*, *Pongal*, or *Bihu*. The public installations will be kept open until the end of January 2015.

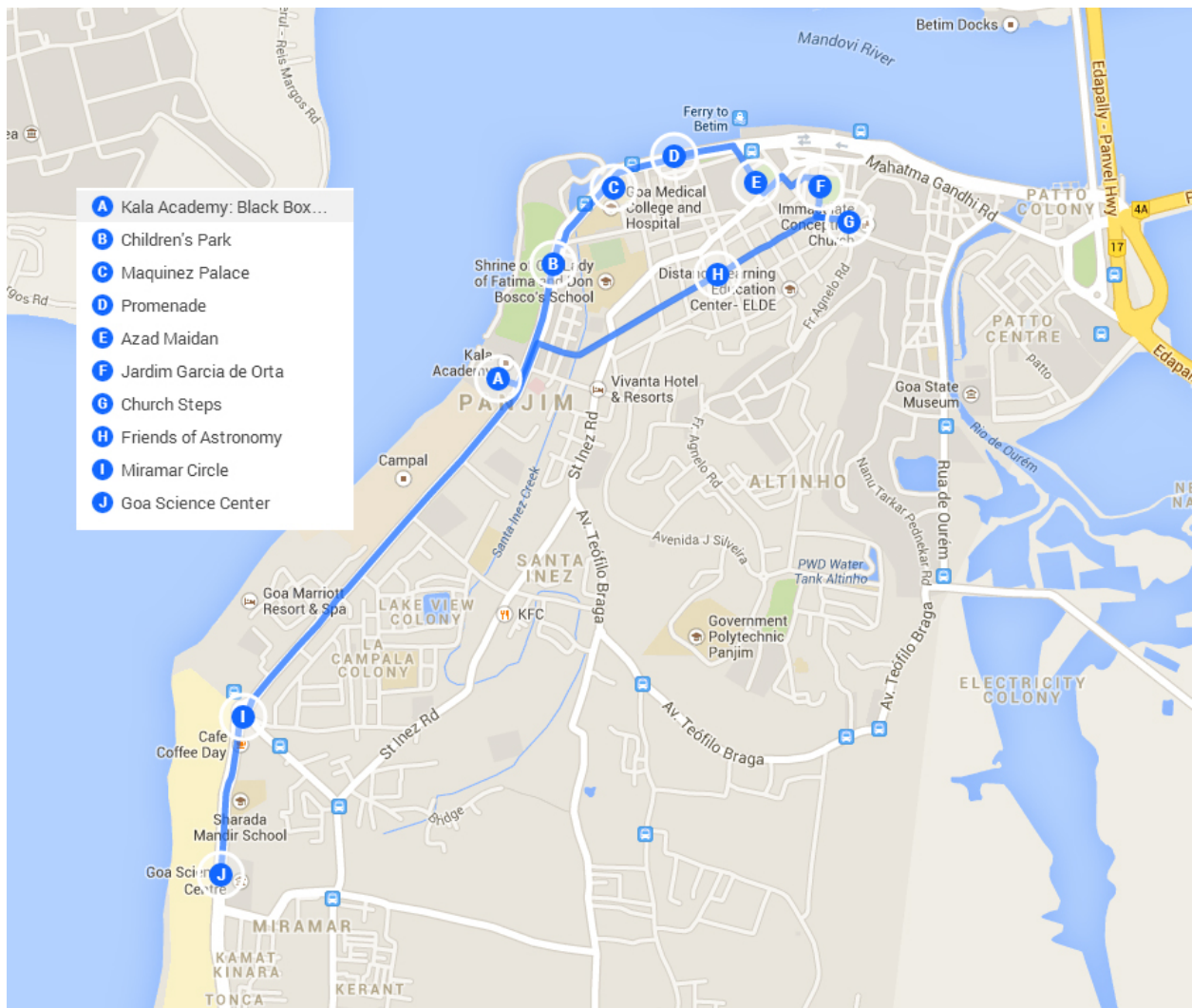
- Opening Ceremony: 14 January 2015

- All events categories: 15 January to 18 January 2015
- Public Installations only: 15 January to 31 January 2015

## Venues

The events will be concentrated in Panjim city. A walking route will be designed for the visitor to go through all the public installations and to guide them to other events. We also plan one mobile bus to take the magic to the interiors of Goa.

A list venues identified are given below (subject to permissions and availability). Kala Academy (Black Box & Mini Amphitheatre) would be the main venue for the performances, screenings, workshops, and talks, the information hub, and the venue for the opening and closing ceremonies.



View Map Online: [https://mapsengine.google.com/map/edit?mid=zs5\\_DuBVDpio.kgWyC-jVIMnM](https://mapsengine.google.com/map/edit?mid=zs5_DuBVDpio.kgWyC-jVIMnM)

## Budget

To promote good talent and achieve a high quality for the events, we would like to make a seed fund for the projects. We will curate and create a minimum of 12 public installations (category 1) and 13 events among the performances, screenings, workshops, and talks (categories 2 and 3). The expenses are laid out in the table below:

Expense Category	Details	Amount (INR)
Artist-Scientist Seed Fund (minimum of 25 proposals supported in three event categories)	includes honorarium and materials and equipment; excludes site-specific requirements, travel & accommodation	1000000
Artist-Scientist pre-festival workshops	travel, accommodation, food, etc.	600000
Collaborator (Artist, Scientist), Partner, Interns, Volunteer, and Guest Expenses for Accommodation and Travel during the festival	travel, accommodation, food, etc.	600000
Hosts honorarium	general expenses and honorarium	500000
Advertising, public relations	media partner, TV partner	300000
Site-specific and venue expenses	utilities, arrangements, lighting, carpentry, etc.	300000
Festival collaterals	brochures, signage, etc.	300000
Guests honorarium	gifts, etc.	150000
<b>TOTAL EXPENSES</b>		<b>3750000</b>

Funds to be Raised	Amount (INR)
Patron Sponsor	1000000
Indiegogo Crowdfunding Campaign	600000
Sponsors & Grants	2150000
<b>TOTAL FUNDS</b>	<b>3750000</b>

# Sponsorship

## **Patron Sponsor 10,00,000 INR (one only)**

- Custom Developed Marketing Plan to Integrate your Company as our Patron Sponsor
- Exclusive Promotional Marketing Tie-In on All Press & Media Opportunities (TV/Radio/Print) opportunity to be one of our featured event speakers – 30 minute presentation addressing important industry issues or opportunities and how your organisation addresses them (not a sales pitch or “about us” presentation)
- Patron Sponsor Recognition on Festival Website (Banner Ads, Profiles & Features)
- Patron Sponsor Recognition on all print collateral developed to promote the festival: Posters, Flyers & Programs
- Patron Sponsor Signage throughout all key areas of the festival (specific signage to be provided by sponsor)
- Patron Sponsor Recognition on all E-communication
- VIP Access to all areas

## **Platinum Sponsor 3,00,000 INR**

- Platinum Sponsor Recognition on Festival Website (Footer, Banner Ads, Profiles & Features)
- Platinum Sponsor Recognition on all print collateral developed to promote the festival: Posters, Flyers & Programs
- Platinum Sponsor Signage throughout all key areas of the festival
- Platinum Sponsor Recognition on all E-communication
- VIP Access to all areas

## **Gold Sponsor 1,00,000 INR**

- Gold Sponsor Recognition on Festival Website (Footer, Banner Ads, Profiles & Features)
- Gold Sponsor Recognition on all print collateral developed to promote the festival: Posters, Flyers & Programs
- Gold Sponsor Signage throughout 5 key areas of the festival
- Gold Sponsor Recognition on all E-communication

## **Silver Sponsor 50,000 INR**

- Silver Sponsor Recognition on Festival website (Footer, Banner Ads)
- Silver Sponsor Recognition on Festival Program
- Silver Sponsor Signage throughout 3 key areas of the festival

## **Bronze Sponsor 10,000 INR**

- Bronze Sponsor Recognition on Festival website (Footer)
- Bronze Sponsor Recognition on Festival Program
- Bronze Sponsor Signage at 1 key area of the festival

# Important Dates

**July 10:** Launch Festival Website with Call for Proposals

**September 1:** Project Proposal Deadline

**September 10:** Finalize Sponsors & Partners (Venue, Media, Travel, etc.)

**September 15:** Finalize Proposals

**December:** Scientist– Artist Residency / Workshop

**January 14:** Festival start date

**February 15:** Festival review report

# Contacts & Organization

## **JAYA RAMCHANDANI**

Physics & Astronomy Educator and Editor

Jaya graduated in Astronomy and specialized in Science Based Business at Leiden University (The Netherlands). After graduation, she started working on several astronomy and physics outreach projects: as a project manager with Universe in a Box (UNAWA, Leiden University), a mentor at Ajahn -- Redesigning Learning, and now The Story of Light. She is also a co-founder of Sirius Interactive, a language solutions company for researchers.

w. <http://siriusinteractive.co.in> | e. [jayar@siriusinteractive.co.in](mailto:jayar@siriusinteractive.co.in) | p. +919920935285

## **NASH PAUL D'SOUZA**

Designer

Nash grew up with an outdated education system and now wants to try to turn it around. Through interactions and installations, he wishes to educate audiences, to shock and awe, to make them smile and whistle, to spark their minds, to see the world from a different angle. After working as Creative Director of BC Web Wise, a Mumbai-based digital agency for a number of years, Nash moved to Goa and now works as a freelance graphic and web designer.

w. [www.antiflutter.com](http://www.antiflutter.com) | e. [nash@antiflutter.com](mailto:nash@antiflutter.com) | p. +918805473082

## Advisory Board

The Story of Light hosts will appoint an advisory board that will hold representatives spanning broad areas of science, technology, art, culture, and education.

## Reach Us!

Email: [hello@thestoryoflight.org](mailto:hello@thestoryoflight.org)

Website: [www.thestoryoflight.org](http://www.thestoryoflight.org)

Address: House No. 1167, Maina, Socorro, Goa