

## Meet Indian Physicists

### C. V. Raman: First Asian Nobel Laureate in Physics (1888 – 1970)

Sir Chandrasekhara Venkata Raman is the first Asian to receive the Nobel Prize in Physics. The prize was in recognition of his contribution in the field of light scattering, today commonly known as 'Raman effect'. The 'Raman Effect' is significant in analysing the molecular structure of chemical compounds and has several important applications.

Raman graduated at a very young age, and undertook original investigations in acoustics and optics. At the age of 18, he published a paper on 'unsymmetrical diffraction bands due to a rectangular aperture' in the *Philosophical Magazine* (London) in 1906. He founded the *Indian Journal of Physics* in 1926, which is one of India's oldest journal in Physics and also established the Raman Research Institute in Bangalore in 1949.



Raman became a Fellow of the Royal Society of London (1924), was knighted (1929), won the Nobel Prize (1930), was honoured with the prestigious Hughes medal from the Royal Society (1935) and honoured with India's highest civilian award *Bharat Ratna* (1954). Raman was also a connoisseur of music, played the violin and had a keen interest in the scientific study of musical instruments.

Image Source: Wikipedia/Public Domain



# Reflections

IPhO 2015 NEWSLETTER



## Today's Attraction (Leaders)

### Sanjay Gandhi National Park and Kanheri Caves

Mumbai has a thriving National Park in the middle of the bustling city. Sprawled over an area of around 104 sq.kms, Sanjay Gandhi National Park (SGNP) is home to numerous amphibians, reptiles, birds and mammals including leopards (*Panthera pardus*) who often live in proximity to human habitation! Rich in biodiversity, this park is the largest remaining green "lung" of the city. Kanheri Caves located within the boundaries of SGNP date back to the 4th century BC. The caves in ancient times housed Buddhist settlements and also served as rest houses for wanderers and weary travellers. Most of these Buddhist caves are chiselled out of volcanic rock. The small chambers are known as *viharas* while the larger chambers are known as *chaityas*. The latter were probably used for congregational worship.

The main chamber has massive figures of the standing Lord Buddha, on either side of the entrance; a colonnade of 34 pillars stand in the inner hallway and a large *stupa* (shrine) at the far end – all carved in the existing basalt rock. Kanheri stands as an exemplary example of the beautiful blend of nature and ancient architecture. If you are done exploring the caves, you can head towards the higher areas which will treat you to a panoramic view of hills, lakes and open expanses.

**Note:** Make sure to wear good footwear. The rocks can be slippery and the excursion involves a short climb. Remember to carry your rain gear. Videography and photography require special tickets at Kanheri caves.

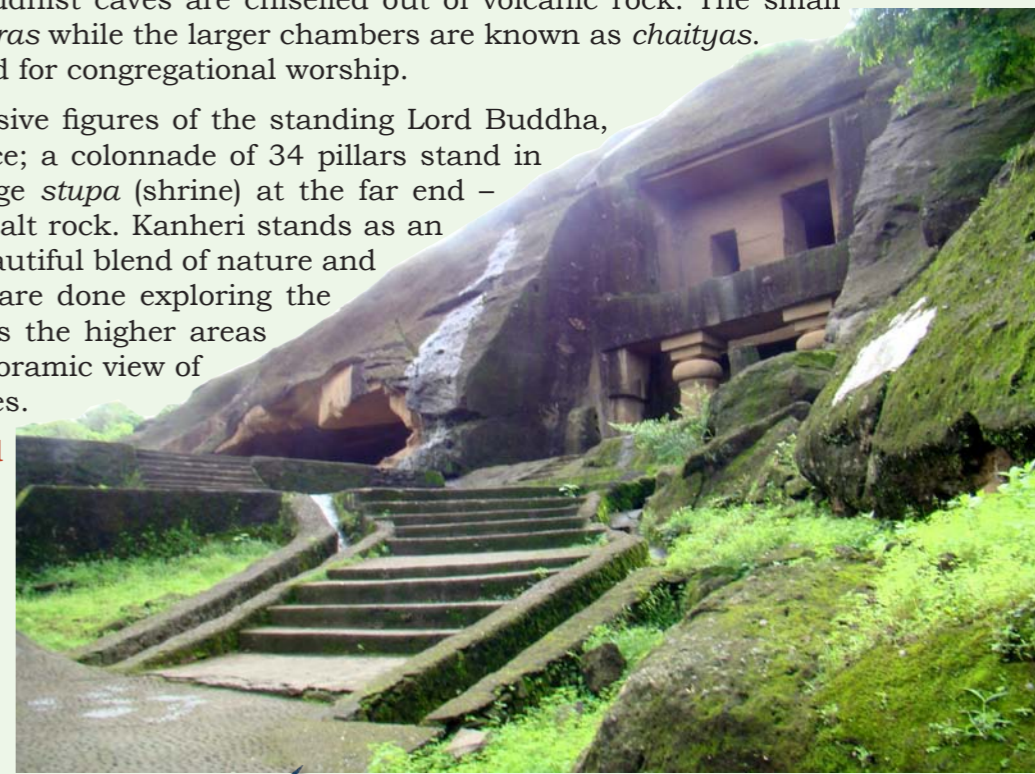


Image credit: Adithi Muralidhar

There are three switches in a room on the first floor and a lamp with a bulb (non-fluorescent / non-LED) on the third floor. Each switch is labelled On and Off. One (and only one) of the switches controls the lamp. There is no possible way for you to see whether the light is on or off from the first floor. You are alone in the house.



You are allowed to turn on and off the switches as often and as long as you'd like. However, you can only go upstairs once to check on the status of the lamp. Determine which switch controls the lamp.

Courtesy: Gray's Brain Teasers and Riddles - <http://256.com/gray/teasers/>

#### Answer to Word Wheel Game

ace(s),ache(s), acme, acne, ashen, amine, anemic(s), anime, anise, ashen, came, cane(s), case, casein, cache(s) chase, chime(s), chine, cinema(s), chaise, chicane, chance(s), each, encash, hames, hem(s), hie, hen(s), ice(s), inches, inseam, machine(s), mane(s), mean(s), mace(s), men, mensa, mensch, mesa, mesh, mice, mince(s), mine(s), mien, misname, mischance, name(s), niche(s), nice, sea, seam, same, sane, scenic, seam, semi, schema, shame, she, shine, since, sine, mechanic, MECHANICS...

### DID YOU KNOW?

Mumbai plays host to thousands of the pink-feathered Greater and Lesser Flamingoes each year. Every winter, they migrate from their breeding grounds to the mudflats, wetlands and mangroves around Mumbai which provide them with rich sources of food.



Image credit: Amit Dhakulkar

### \* HAPPY BIRTHDAY\*



**Avoy Datta**  
Bangladesh



**Edgar Andrés Sánchez García**  
Mexico (Observer)



**Romina Dolgopol**  
Moldova

#### Word search

Find the 10 hidden physicists

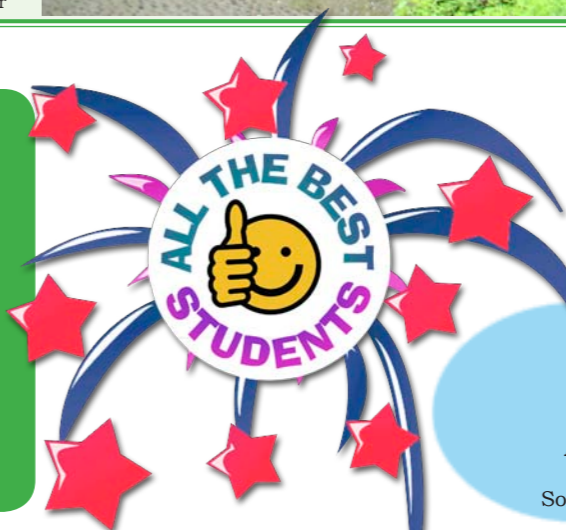
E	A	H	N	T	Z	N	L	H	Z
I	L	F	A	A	E	S	X	U	U
R	S	F	W	W	M	K	N	B	O
U	E	O	T	E	K	A	A	B	K
C	T	O	S	M	M	I	R	L	I
E	N	O	N	N	V	Q	N	E	R
I	B	A	Y	T	Q	O	D	G	O
R	M	E	I	T	N	E	R	E	G
A	F	K	C	N	A	L	P	E	E
M	H	L	N	T	I	J	T	J	V

"Prediction is very difficult, especially if it's about the future"  
Niels Bohr

### Today@IPhO

**Leaders:** Excursion to Sanjay Gandhi National Park & Kanheri Caves, 1400 to 1730 hrs

**Students:** Theoretical Examination, BCEC grounds, 0800 to 1530 hrs



### Weather Forecast

Temperature  
Max: 32°C / 89.6°F  
Min: 27°C / 80.6°F

A few spells of rain could occur

Source: Regional Meteorological Centre, Mumbai



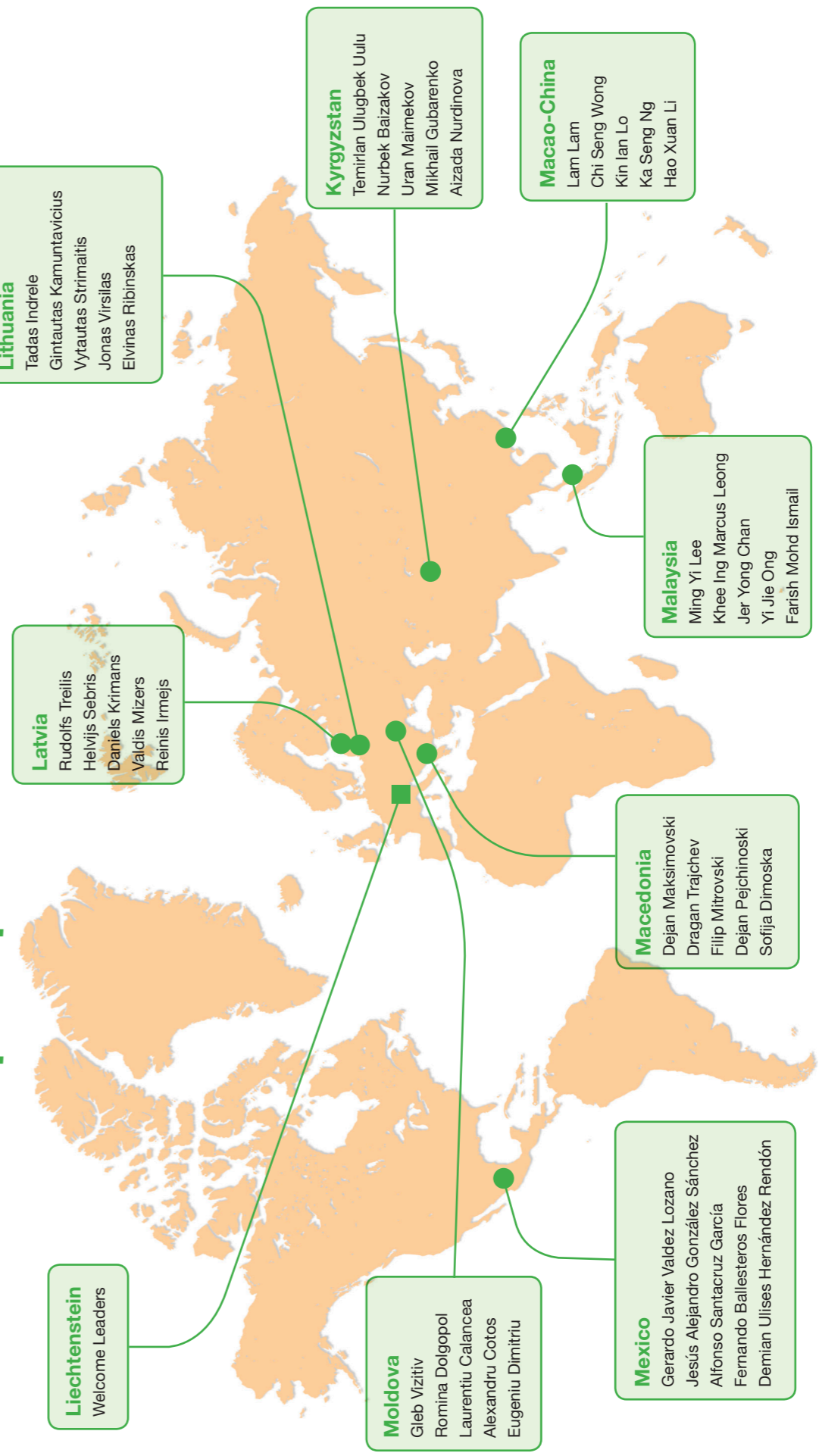


Visit to TIFR

Friends, old and new!

Students' Day Out at South Mumbai!

## Rendezvous with IPHO participants



### YOU SPEAK!

TIFR Labs were very interesting. I particularly liked the way glass tubes were made. I hope to become an engineer some day.

**Jayasuriya K. Malsha Vijini Perera**  
Sri Lanka

Finally got spicy food. I like Indian spicy food. *Lunch/box* is my favourite movie. My grandmother watches classical Bollywood movies.

**Cristian Alexandru Frunza**  
Romania

I like songs and movies of Shahrukh, Salman, Amitabh and Aishwarya Rai. I see these Bollywood movies dubbed in Russian. I have seen *Swades* movie of Shahrukh.

**Azizsho Mizrobov**  
Tajikistan

South Mumbai has unique and amazing architecture. Mumbai is very hot and there is a lot of noise. People use more public transport here than Africa.

**Damien Lawrence Naidoo**  
South Africa