

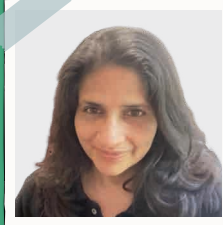
Scientists on Life and Learning:

Three non-negotiable things to be a scientist

Cultivate curiosity—Even about the obvious: A scientist must nurture deep curiosity and never hesitate to question things, even when they seem self-evident. Often, progress begins with challenging assumptions others take for granted.

Embrace the possibility of being wrong: Being open to the possibility of being wrong is essential for scientific growth. It allows one to learn, adapt, and move closer to the truth through evidence and reflection.

Let ethics guide every step: Ethical integrity is the foundation of good science—cutting corners may bring short-term gain, but it compromises trust and the value of the work. True scientific success lies in honesty, transparency, and responsibility.



Poonam Chandra
Tenured Astronomer
National Radio Astronomy Observatory

Weather Forecast

Max: **26°C / 78.8°F**
MIN: **25°C / 77°F**
Mumbai

Generally cloudy sky with heavy rain

Source: India Meteorological Department

*Subject to weather conditions 🌧️

Today's Programme

Students

08:00 hrs - 20:00 hrs

Excursion to Imagica Theme Park*



Leaders

08:00 hrs - 19:30 hrs

Moderation

Venue: Astor Ballroom

22:00 hrs onwards

Final IBM

Venue: Astor Ballroom

Today's Attraction ★

Visit to Imagica

Gear up students! Today you are headed for a fun-filled excursion to Adlabs Imagica, one of India's largest themed amusement parks, located along the Mumbai-Pune Expressway. Spread over 300 acres, Imagica offers a perfect blend of thrill and entertainment with its wide range of attractions—adrenaline-pumping rides, themed adventures, family-friendly zones, and a vibrant water park. Don't forget to carry a change of clothes, a towel, and plastic pouch or bag to keep your electronics safe and dry. Stick with your group, look out for one another!

Image Credit: Flickr/ Aaditya Bardhan/ CC2



Feature



Indian Scientists' Contribution to Astrophysics

Several key ideas in modern astrophysics originated from the work of Indian scientists during 1920s. Meghnad Saha developed the Saha Ionization Equation, connecting the ionization state of elements in stars to temperature and pressure. This allowed scientists to study stellar interiors using spectra. In 1924, Satyendra Nath Bose introduced Bose-Einstein statistics, explaining the behaviour of particles with integer spin, now called bosons. At extremely low temperatures, these particles form a Bose-Einstein condensate, a concept crucial for understanding photon gases and dense stellar matter. C.V. Raman discovered the Raman Effect in 1928, showing how light scatters inelastically through matter. Though initially an optics breakthrough, it now helps analyse planetary atmospheres and interstellar molecules. He won the Nobel Prize in Physics in 1930. In the 1930s, Subrahmanyan Chandrasekhar calculated the stellar mass limit, predicting the formation of neutron stars and black holes. For this, he was awarded the Nobel Prize in Physics in 1983. These contributions highlight India's rich legacy in astrophysics, inspiring global research even today.

This Day, That Year

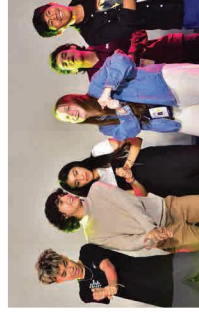
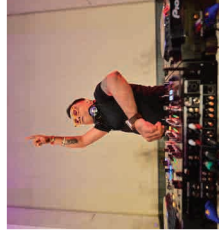
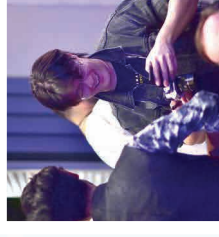
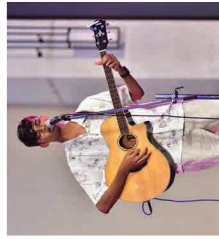
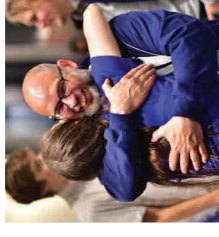
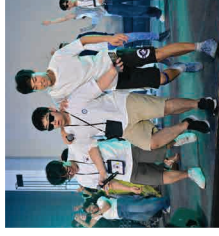
20 August, 1977:

The Voyager 2 Launched

On this day, the Voyager 2 spacecraft was launched by NASA (USA), beginning its grand tour of the four outer planets. It became the first and only spacecraft to visit Uranus and Neptune, sending back unprecedented data. Voyager 2 continues to transmit data from interstellar space, far beyond the edge of our solar system.



Image Credit: AI Generated (Artist's impression of the Voyager 2 spacecraft approaching Uranus)



Spice Trails and Salty Sips

India's food is incredibly diverse, changing every few hundred kilometers! While India has the largest *number* of vegetarians in the world, nearly three-fourths of the population follows a non-vegetarian diet, according to government surveys. From root vegetables to rich *paneer* (cottage cheese) gravies, and from coastal seafood dishes to spicy red meat curries, the variety is endless. Ingredients are deeply influenced by local geography and climate. Coconut is used along the western coast and in the south, mustard oil in the north, and fermented bamboo shoots in the east—each region shaped by what's local and seasonal. India's got some seriously bold spices—from fiery red chilies and earthy turmeric to the sharp punch of *hing* (asafoetida) and the sweetness of cardamom. Add in cumin, mustard seeds, coriander, cloves, and cinnamon, and you've got the magic that makes Indian food unforgettable. Ever heard of *dagad phool* (black stone flower)? It's a lichen used in masala blends in regional cuisines. And let's end with a sip! India also has salty teas! Popular in cold Himalayan regions like Kashmir and Ladakh, these teas are a warming comfort in chilly weather. Indian food can't be defined by any one type. Its endless variety offers a window into the country's culture, geography, and tradition.

Image Credit: Amish Parmar/ CC4



Chaat: A popular Indian street snack with spicy, tangy, sweet, crunchy flavours.

In Their Own Words



Before the exam, hanging out with friends and sharing jokes really helped calm me down. I loved the experience of meeting other people in India, and the contestants were all very kind.

Nikolina Van Bregt
(Contestant, Croatia)

The exam was quite different from previous years—unexpected, but in a good way. Compared to last year, this one had more interesting questions, and there were a lot of them.

Contestants of Team Philippines

In our country, friendship is a big thing—it's very important. When we say someone is our friend, it means we've known each other for many years.

Gor Hasratyan and Vahe Mkrtchyan
(Contestants, Armenia)

What will I take back from India? Hmm... There's a special recipe for one of the items from the buffet. I might pack some of it for myself. What I liked the most here is a sweet dish that looks like a yellow ball (probably) with cheese on it.

Layali Khatib
(Contestant, Palestine)

These days, people hold a lot of perceptions and biases that make us dislike or even hate each other. When we meet groups who are different from us, we tend to become defensive instead of open. This is something that needs to change in the world.

Taehun Jung
(Contestant, South Korea)



Zhe Jeffrey Tang

Contestant, Hong Kong, China

Randah Hamad Aljahim

Observer, Saudi Arabia

While the rest of the world connects the dots between stars to form constellations, the native stories of the Indigenous peoples of the Australian mainland create narratives from the gaps between the stars. One of the most famous constellations is the 'Dark Emu' in the Milky Way—it's a dark, empty patch that resembles an emu, a well-known bird in Australia.

Lachlan Paul McGinness
(Leader, Australia)

Whispers of the World

We asked our delegates to share a story, folklore, or piece of literature from their culture.

Here are a few of the things we learnt:

Dainų šventė
(Lithuania)

Caporales
(Bolivia)

Der Struwwelpeter
(Germany)

Wilhelm Tell
(Switzerland)

Tale of Kieu (Truyện Kiều)
(Vietnam)

Marko Mrnjavčević
(Serbia)

Tokens of Home and Heart

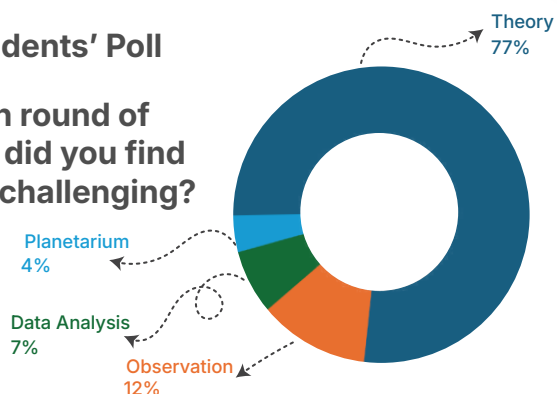


Test your observation skills.
Can you guess which item belongs to which team?

From cuddly mascots to cherished good luck charms, each item tells a story. Some are symbols of national identity, others bring comfort or courage. Together, they remind us that even far from home, we carry pieces of it with us. In a gathering like IOAA, these small objects quietly celebrate our shared humanity through personal pride.

Students' Poll

Which round of exam did you find most challenging?



Offbeat Intel



Tower of Tongues

Census of India officially recognised 22 Scheduled Languages and 99 non-scheduled languages! Over 1300 rationalised mother tongues were documented. Travel just 100 km, and the script, accent, or slang can completely change. From Himalayan villages to southern coasts, it's like crossing borders without a passport. How many languages have you heard till now?

Alien Signalling



A space observatory receives a repeated binary signal from an unknown source. The signal comes in bursts:
Signal Received:

010 – 101 – 010 – 101 – 010 – ?

The observatory needs to decode the next 3-bit segment in the pattern. What comes next?

Cryptic



Put Your Cryptographic Skills to the Test!

I hope you've been working hard to decipher the hidden cryptic clues scattered throughout the newsletter from Issue 2 to Issue 8. Now it's time to put it all together—scan the QR code to get started.



Enter your name and country, then input the 7-digit passcode. If your answer is correct and you're among the fastest to crack the cryptographic clues, you (and your entire team!) will win a goodie bag!

Note: If a student from a particular team has already won, other entries from the same team will no longer be eligible for the challenge. This challenge is also open to all student guides, volunteers, organisers etc.

Hot Takes for a Hotter Earth

The Earth is what we all have in common.

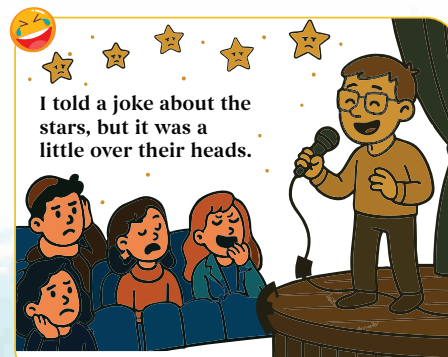


Image by: Dev Verma

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