nakshatra

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Official Newsletter of IOAA 2025

18th IOAA MUMBAI, INDIA - 2025
International Olympiad on Astronomy and Astrophysics

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Jury Member,
International Biology Olympiad 2025

Scientists on Life and Learning:
How can students stay encouraged and see beyond grades?

As a former badminton player, I often see the Olympiad much like a tournament—moments of intense focus, the joy of nailing a tricky shot or solving a hard problem, and the quiet discipline that takes shape over months of preparation. In both arenas, there's also the camaraderie, the shared respect, and the spirit of fair play that make the effort worthwhile. Years later, you may not recall every point scored or every question answered, but you will remember the friendships, the sparks of inspiration, and the sense of belonging. Sometimes, pacing yourself, resting well, and remembering there's more to life than marks can quietly transform the experience. Aim for the stars but cherish the journey that takes you there.

Weather Forecast

Max:
30°C / 86°F
MIN:
25°C / 77°F
Mumbai

Generally cloudy sky with heavy rain

Source: India Meteorological Department

Today's Programme

Students
08:30 hrs - 14:00 hrs
Theory Examination
Venue: Grand Ballroom

Leaders
09:00 hrs onwards
IBM (Gr. + Obs.)
Venue: Astor Ballroom

Feature

Devasthal Observatory

The Devasthal Observatory of Aryabhatta Research Institute of Observational Sciences (ARIES) located at an altitude of 2,450m above sea level in the Himalayan region of India, hosts three major telescopes.

The 1.3m Devasthal Fast Optical Telescope (DFOT), with a wide field of view of 66 arcmin and high precision CCDs for detection and follow-up of transient events, deep imaging of star clusters, search and study of variable stars, exoplanets, and variability studies of AGN and quasars, has been operational since 2010. The second, the 3.36-m Devasthal Optical Telescope (DOT), is India's largest optical telescope. Developed by Advanced Mechanical and Optical Systems (AMOS, Belgium) in collaboration with other international partners, this telescope was commissioned in March 2016. The telescope's mirror is equipped with active optics, as well as instruments for optical and near-infrared imaging and spectroscopy. The third is the 4m International Liquid Mirror Telescope (ILMT), which is the world's first liquid mirror telescope dedicated to deep sky astronomy. It is also the first survey telescope in the country. The Devasthal site offers dark skies, sub arcsecond seeing, and ~200 clear nights annually.

Image Credit : Wikimedia Commons/ Ajay Talwar/ CC4

This Day, That Year

14 August, 1959: The First Very Crude Photograph of the Earth From Orbit

On this day, the first crude photograph of Earth from orbit was taken by NASA's Explorer VI satellite, marking a pioneering milestone in space science and earth observation. Launched a week earlier, the satellite was manufactured by the Jet Propulsion Laboratory and Thompson Ramo Wooldridge Inc. Its mission was to study trapped radiation of various energies, galactic cosmic rays, radio wave propagation in the upper atmosphere, and micrometeorite flux—using piezoelectric crystal microphones as sensing elements.

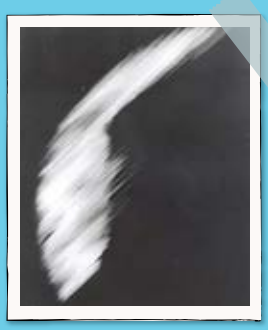

Image Credit : Wikimedia/ Public Domain

Spotlight


Leader
1. Alazar Demissie


Contestants
Leader


Leaders
1. Xiang Hao Yuen

Bollywood - India's (Pop)cultural Powerhouse

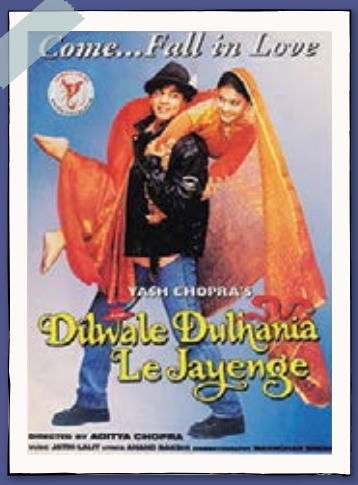

Image Credit: Wikimedia Commons/ Fair Use

Who do you think would be on the list of actors with the largest fan base? One may be tempted to think that the list belongs entirely to Hollywood. The fact is that names from Bollywood like Shah Rukh Khan give a tough competition to actors like Tom Cruise in this regard! Be it the markets of Istanbul or salons in interior Rwanda, Bollywood has cast its magic globally with its mesmerising music, breathtaking dance sequences and vibrant story telling. The term 'Bollywood' is a blend of 'Bombay' (former name of Mumbai) and 'Hollywood'. The history of this industry can be traced back when Dadasaheb Phalke, the father of Indian cinema, released India's first full-length feature film, "Raja Harishchandra," in 1913.

The journey of Bollywood from its humble beginnings to its present global stature is a testament to its resilience, adaptability, and universal appeal. While you are in Mumbai, stepping into one of its theatres to have a firsthand experience of this phenomenon can be real fun!

In Their Own Words

The Makers' Lab was a nostalgic experience! I did similar projects 2–3 years ago, so it was heartwarming to see familiar concepts. My interest in astronomy started with sky photography on my phone, then progressed to using a camera, attending summer camps, and eventually exploring the night sky with telescopes!

Eduard Plic
(Contestant, Czechia)

Marie Curie's work has always inspired me. My interest in astronomy started when I was four, when my parents gifted me a picture book of planets. Today's session in the MakerSpace was great, especially the engraving process—it was really cool!

Novin Raushan
(Contestant, Indonesia)

Tell us something about your country

If you ever visit my country, you must check out the popular Carnival celebrations, which feature singing, dancing, theater, drama, and competitions. Teatro de Verano is one of the highlights.

Fiorella Amatti Ameal
(Contestant, Uruguay)

Kurentovanje is a traditional Slovenian carnival celebrated primarily in Ptuj, where performers dress in sheepskin garments, a mask with a long red tongue, and large cowbells around the waist. The noise of the bells is supposed to scare away the cold winter and bring spring.

Nika Videnšek Podgorelec
(Contestant, Slovenia)

Back home, we're blessed with many scenic volcanoes, including the stunning Santa Ana Volcano—their landscapes are simply breathtaking!

Carlos Cardoza Galina
(Contestant, El Salvador)

In our country's capital, Bratislava, there's a unique landmark—a triangular table where Slovakia, Austria, and Hungary can meet and have lunch together.

Mario Tlamka
(Contestant, Slovakia)

"Hello" in your language

Feature

Henrietta Leavitt

(4 July, 1868 – 12 December, 1921)

Image Credit : Wikimedia/ Public Domain

Imagine measuring the universe using starlight as a ruler. That's what Henrietta Leavitt did! After college, Henrietta joined the Harvard College Observatory, diving into the world of stars and glass photographic plates filled with shimmering dots from the night sky. She spent her days measuring the brightness of stars and tracking their changes. Each tiny flicker on those plates was a clue to something bigger.

While measuring the brightness of Cepheid variable stars, the stars that blink brighter and dimmer in a steady rhythm, Henrietta noticed that the longer a star's blink cycle, the brighter it truly was. This simple but powerful discovery, the "period-luminosity relationship" (or Leavitt's Law), became a cosmic yardstick. Using her discovery, Edwin Hubble found that the Andromeda Galaxy was not a star cloud in our Milky Way, but a galaxy far, far away, proving the universe was way bigger than anyone thought.

Henrietta discovered over 2,400 variable stars, nearly half of what astronomers knew then! After 1920s, many considered nominating her for Nobel Prize, but the prize could not be given posthumously. Thanks to Leavitt, the universe isn't just bigger; it's measurable—one blinking star at a time!

Hot Takes for a Hotter Earth

The future of our planet depends not on science alone, but on the political will to act on what science makes clear.

Image by: Dev Verma

Space Rover Pathfinder

Your spaceship is trapped inside an ancient defence grid—remnants of a long-forgotten alien civilisation. With the navigation system severely damaged, only emergency movement protocols remain operational. One wrong manoeuvre, and the ship could vanish into deep space forever. The only way out is to reach the Exit Portal.

Mission:

Escape the defence grid and reach the Exit Portal before the ship is trapped forever.

As the pilot, you'll begin at the **START** point of the grid. Your objective is to reach the **Exit Portal** by following strict emergency movement protocols:

- You can only move using authorised manoeuvres.
- An authorised manoeuvre (set of 2 moves) consists of:
  Moving exactly two squares in a straight line (up, down, left, or right—no diagonal movement),
  followed by making an immediate 90° turn (left or right).

(Contd.)

- You cannot turn in the same direction in two consecutive manoeuvres. The damaged navigation system will not allow it.
- Every move from START to EXIT PORTAL must follow these protocols. Be careful, else you'll vanish forever.

				Exit Portal
Start				

Answer to yesterday's crossword

Across: 4. ANDROMEDA; 5. TRITON; 6. SUNSPOTS; 8. URANUS; 10. BETELGEUSE; 13. AQUARIUS; 14. CRAB

Down: 1. VEGA; 2. HALLEY; 3. CENTAURUS A; 7. SPACE; 9. MERCURY; 11. SIRIUS; 12. EUROPA

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