



06 December 2023

### National and International News

#### Six exoplanets found orbiting a nearby bright star

#### Context

- Six exoplanets orbiting around a nearby **bright star (HD 110067)** in the Coma Berenices constellation has been discovered.

#### Key points

- HD 110067 is the bright star in the **Coma Berenices constellation** (around 100 light-years away), which is visible from Earth's Northern Hemisphere
- The masses of the planets and estimated **densities are relatively low**
- The low densities could be explained by large, hydrogen-rich atmospheres.
- All six planets are in **resonant orbits**, in which the planets exert regular forces on each other as they orbit.
- This feature suggests that the system remains practically unchanged since its birth, at least four billion years ago.
- **Scientific Significance:** Enhances understanding of exoplanetary systems.

**ESA'S CHEOPS HELPS UNLOCK RARE SIX-PLANET SYSTEM**

An uncommon family of **six exoplanets** has been unlocked with the help of ESA's Cheops mission.

The six planets orbit their **central star HD 110067** in a harmonic rhythm with planets aligning every few orbits.

Planet b completes **six orbits** while planet g does **one**

Planet e completes **four orbits** while planet f does **three**

Planet c completes **three orbits** while planet d does **two**

Orbital period predicted and confirmed by Cheops

All planets are smaller than Neptune and have large atmospheres  
\*Star and planets not to scale

Orbital ratios: 6:1, 3:2, 3:2, 3:2, 4:3, 4:3

#### Visa-free entry to Indian citizens

#### Context

- **Malaysia** has become the latest country to extend



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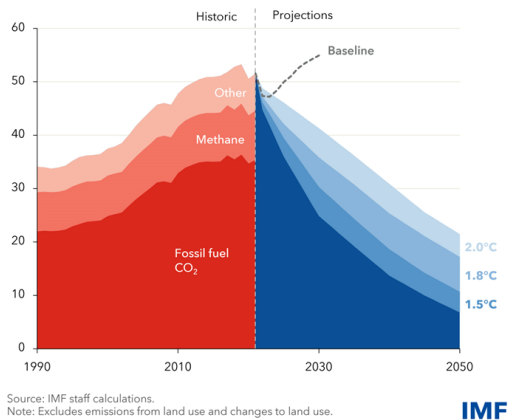
	<p>the advantage of visa-free travel to Indian citizens.</p> <ul style="list-style-type: none"> <li>The facility will be extended to Indian travellers till December 31, 2024 and will be <b>valid for 30 days</b> from the date of entry.</li> </ul> <p><b>Key points</b></p> <ul style="list-style-type: none"> <li>The initiative is aimed at ensuring <b>hassle-free travel for Indians</b> who have emerged as one of the major tourist groups visiting Malaysia in the recent past.</li> <li>At present there are <b>around 26 countries</b> that extend visa-free entry to Indian citizens for various reasons.</li> </ul>
<p><b>One-third of all 2022 suicides were of daily wage earners, farmers, says NCRB report</b></p>	<p><b>Context</b> India reported a total of over <b>1.7 lakh suicides</b> in 2022, nearly <b>one-third of whom were daily wage earners, agricultural labourers</b>, and farmers, according to the <b>National Crime Record Bureau's (NCRB) Accidental Deaths and Suicides in India (ADSI) 2022 report</b></p> <p><b>Key points</b></p> <ul style="list-style-type: none"> <li>The suicide data published in the <b>ADSI-2022 report</b> showed that the <b>maximum suicides</b> in the year were reported <b>from Maharashtra (22,746)</b>, Tamil Nadu (19,834), Madhya Pradesh (15,386), Karnataka (13,606), Kerala (10,162), and Telangana (9,980).</li> <li>Apart from daily wage earners, and agricultural workers and farmers, the ADSI data showed that <b>9.6% of the suicides in 2022</b> were of persons who were <b>self-employed or salaried professionals</b>.</li> <li>This was followed by unemployed persons, who comprise <b>9.2% of all suicides reported in India in 2022</b>.</li> <li>Among all suicides reported in the year, over <b>12,000 were of students</b>.</li> </ul>
<p><b>Methane</b></p>	<p><b>Context</b> At the ongoing COP-28 climate talks in the United Arab Emirates, a group of well-endowed philanthropic bodies, including the <b>Sequoia Climate Foundation and the Bezos Earth Fund</b>, announced that they would collectively invest <b>\$450 million</b> in solutions to tackle methane emissions.</p> <p><b>About</b></p> <ul style="list-style-type: none"> <li>Methane is an <b>organic compound</b>.</li> <li>Its molecule consists of carbon and four hydrogen atoms (CH<sub>4</sub>).</li> </ul>



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## Methane matters

Methane is second only to CO<sub>2</sub> emissions from fossil fuels as a cause of global warming. (global GHG emissions, GtCO<sub>2</sub>e per year)



- It's in the news of late because of its character as a **potent climate pollutant**.
- Methane has a **greater global warming potential (GWP) than carbon dioxide**.
- However, while carbon dioxide lasts for several decades at a time in the atmosphere before breaking down, methane breaks down in a matter of years. That is, it's a **short-lived climate pollutant**.
- Its sources include cattle-farming, landfills, wastewater treatment facilities, rice cultivation, and some industrial processes.

### What is GWP?

- The GWP is a **measure of the warming caused by a substance relative to that due to the same mass of carbon dioxide**; the GWP100 measures this over a century at a time.
- If carbon dioxide has a GWP100 of 1, methane is 28, nitrous oxide is 265, and sulphur hexafluoride is 23,500.

## RS passes Post Office Bill

### Context

The Rajya Sabha passed the Post Office Bill , which repeals and replaces the **Post Office Act of 1898**.

### Key points

- The bill will ensure the **effective functioning of the postal department** as a messenger service and as a provider of banking facilities.
- **Section 9** of the Bill gives the power to intercept, open or detain any item or deliver item to customs authority by the post office officials.
- The provisions **empowering any officer to intercept, open or detain any postal item** in the interest of the security of the State is also a concern that giving such a free hand to officers will harm the right to privacy.



**Kerala Regional News**

<p><b>Kerala has the highest rate of filing charge-sheets in the country</b></p>	<p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• The National Crime Records Bureau's Crime in India 2022 report has revealed that <b>Kerala has the highest rate of filing charge-sheets in the country</b> for offenses under the Indian Penal Code (IPC) at 96 per cent.</li> <li>• <b>Puducherry</b> featured second with 91.3 per cent and <b>West Bengal</b> third with 90.6 per cent.</li> <li>• The charge-sheeting rate is the percentage of cases charge-sheeted by police of the total number of cases disposed of in a particular year.</li> </ul>
<p><b>Sayyid Abdur Rahman Azhari Award</b></p>	<p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• The department of Arabic of University of Kerala has decided to confer the '<b>Sayyid Abdur Rahman Azhari Award for excellence - 2023</b>' to noted Arabic Scholar and author of more than hundred books, <b>Kodambuzha Bava Musliyar</b>.</li> <li>• The award was instituted by Kerala University department of Arabic Alumni Association( KUDAAA) in 2019 to honour the contribution of the Kerala Scholars for the development of Arabic language and its Knowledge tradition.</li> </ul>
<p><b>Govt to declare 364 hectares in Chinnakanal as reserve forest</b></p>	<p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• The government has initiated steps to declare a <b>whopping 364.39 hectares in Chinnakanal, Idukki district, as a protected reserve forest</b>.</li> <li>• This area, to be named <b>Chinnakanal Reserve</b>, will include <b>Papathichola and Suryananelli</b> in Udumbanchola taluk.</li> </ul>
<p><b>A silent threat spreads fast in Wayanad Wildlife Sanctuary</b></p>	<p><b>Context:</b></p> <ul style="list-style-type: none"> <li>• <b>Wayanad Wildlife Sanctuary (WWS) is battling the encroachment of alien plant species.</b></li> <li>• These invasive plants are rapidly spreading, displacing native flora and disrupting the delicate ecosystem.</li> <li>• <b>Several alien species</b> have been identified as major threats, including <b>Senna spectabilis (locally known as 'manjakonna')</b>, <b>Lantana camara (a toxic shrub)</b>, <b>Mikania micrantha (an invasive vine)</b>, and various <b>Acacia species</b>.</li> </ul>



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- These invasive plants not only **alienate herbivores and carnivores** from their natural habitat but also contribute to human-animal conflicts.

December 1 is celebrated as 'Eat a Red Apple Day'



**Context:**

- Dec 1st, a "Eat a Red Apple Day" isn't just about indulging in a delicious, juicy treat (although, that's certainly encouraged).
- It's about **celebrating the health benefits and cultural significance of this iconic fruit**
- From its **antioxidant power** to its starring role in countless myths and stories, the red apple has earned its place in the spotlight.

**Did you Know?**

- The **first modern apples were discovered** in the Tien Shan mountains of Kazakhstan

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