

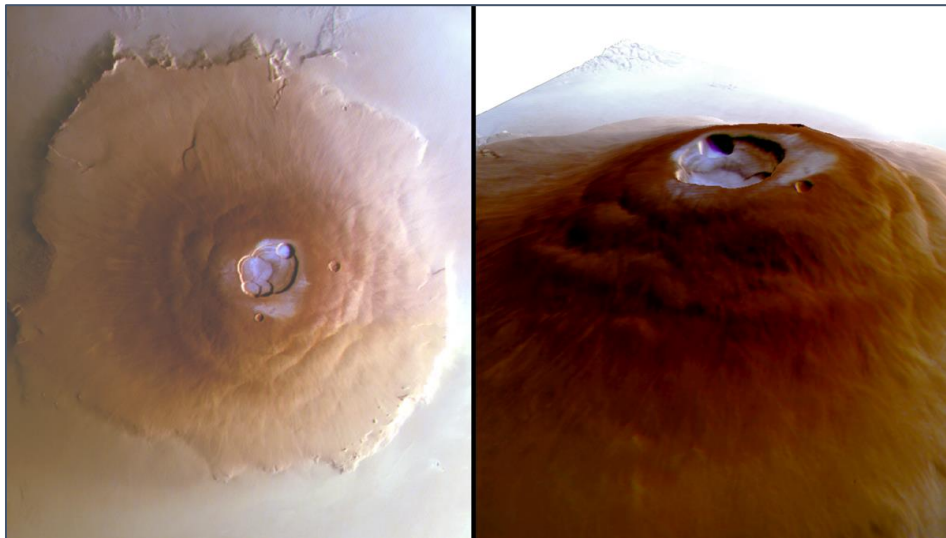
June - 18

## TNPSC BITS

- ❖ India has regained its position as the fourth-largest global equity market, by surpassing Hong Kong with \$5.2 trillion.
- ❖ India-IORA Cruise Tourism Conference held in New Delhi with participants from the Indian Ocean Rim Association (IORA) Member States.
- ❖ 18-year-old Divya Deshmukh from Nagpur, clinched the FIDE Under-20 Girl's World Chess Championship title held at Gandhinagar, Gujarat.
  - She is the 4th Indian to win the FIDE U20 Girl's World Chess Championship after Koneru Humpy, Harika Dronavalli and Soumya Swaminathan.

## SCIENCE AND TECHNOLOGY

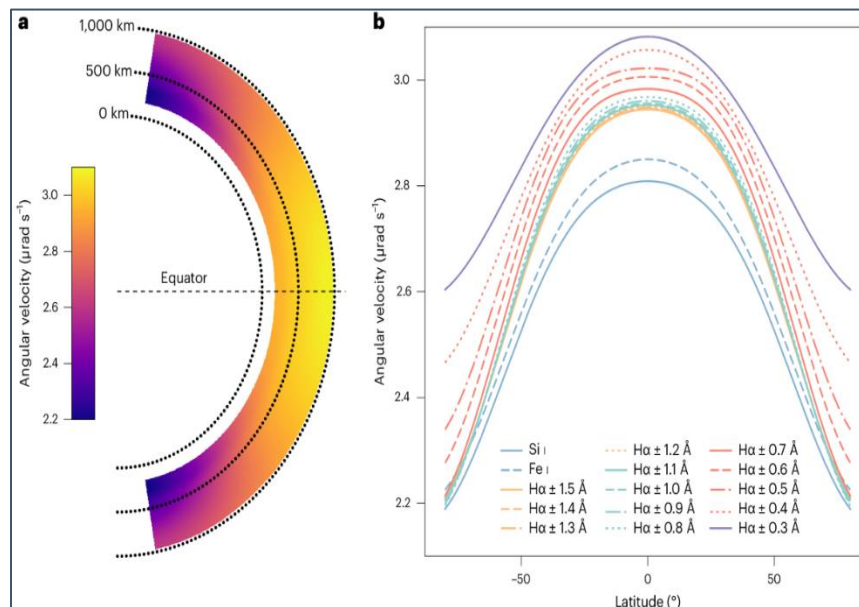
### Frosty peaks at Olympus Mons



- ❖ Two spacecraft orbiting Mars have discovered water frost atop towering volcanoes near the Red Planet's equator.
- ❖ They found the frost on the Tharsis volcanoes, the tallest volcanoes in the Solar System.
- ❖ The frost is only as thick as a human hair - about one-hundredth of a millimetre thick - but covers a vast area.
- ❖ This amounts to about 150,000 tonnes of water freezing and evaporating during the cold seasons on Mars.
- ❖ It is equivalent to roughly 60 Olympic swimming pools.

- ❖ The Tharsis region of Mars is home to numerous volcanoes.
- ❖ It is including the Olympus Mons, and the Tharsis Montes: Ascraeus, Pavonis and Arsia Mons.
- ❖ Many of the volcanoes in this region are as big as or much bigger than Mount Everest on Earth.
- ❖ Olympus Mons is three times as tall as Everest.

### New pattern of solar rotation



- ❖ The Chinese H-alpha Solar Explorer (CHASE) discovered a new pattern of solar atmospheric rotation.
- ❖ The Researchers have obtained the world's first three-dimensional image of solar atmospheric rotation, unlocking more secrets about our sun.
- ❖ This could have big effects on how we understand solar physics and how we predict space weather.

### Nagastra-1 Drones

- ❖ Indian Army has inducted indigenous Loiter Munition, Nagastra-1, developed by Nagpur-baser Solar Industries.
- ❖ Nagastra-1, operating in a "kamikaze mode," boasts the capability to neutralize hostile threats with GPS-enabled precision strikes with accuracy of 2 meters.
- ❖ This man-portable fixed-wing electric UAV offers an endurance of 30 minutes, a man-in-loop range of 15 kilometres.

- ❖ It has an autonomous mode range of 30 kilometres.

**Nagastra-1**  
Nagastra-1 is a fixed-wing electric unmanned aerial vehicle which is a loitering munition

**450** completely indigenous UAVs to be purchased by the Indian Army

More than **75%** indigenous parts

**RANGE**  
30KM AUTONOMOUS MODE  
15KM MAN-IN-LOOP

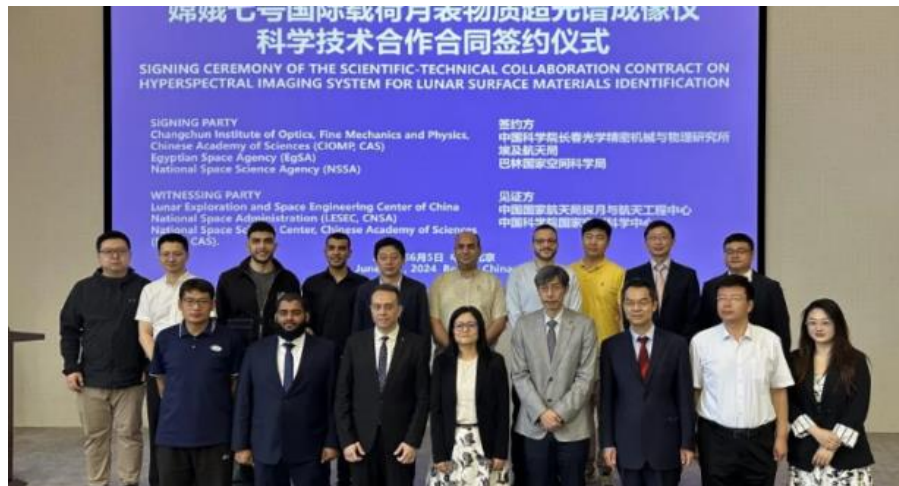
**ENDURANCE**  
60 MINS

Day-night surveillance cameras  
Fragmenting warhead

**KAMIKAZE MODE**  
Neutralise any hostile threat with an accuracy of **2 meters** USING GPS

If the mission is cancelled, the UAV can be called back and make a soft landing through a parachute recovery mechanism

## Chang'e-7 mission 2024

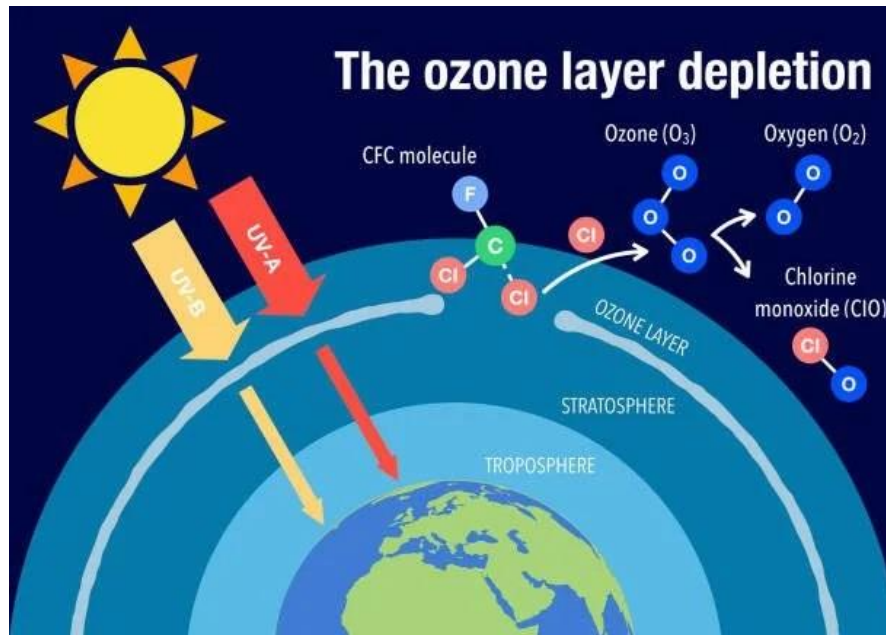


- ❖ Egypt and Bahrain have joined China as international partners to develop and deliver scientific instruments for the Chang'e-7 mission.
- ❖ This Chinese lunar mission aimed at searching for water ice at the moon's South Pole in 2026.
- ❖ The hyperspectral camera, developed collaboratively by Egypt and Bahrain with assistance from Chinese engineers, is one of six international payloads chosen by the CNSA for the Chang'e-7 lunar mission.

- ❖ This camera will image and analyse lunar surface materials from orbit, including the Moon's polar regions.

## ENVIRONMENT

### Ozone-Depleting Substance 2024



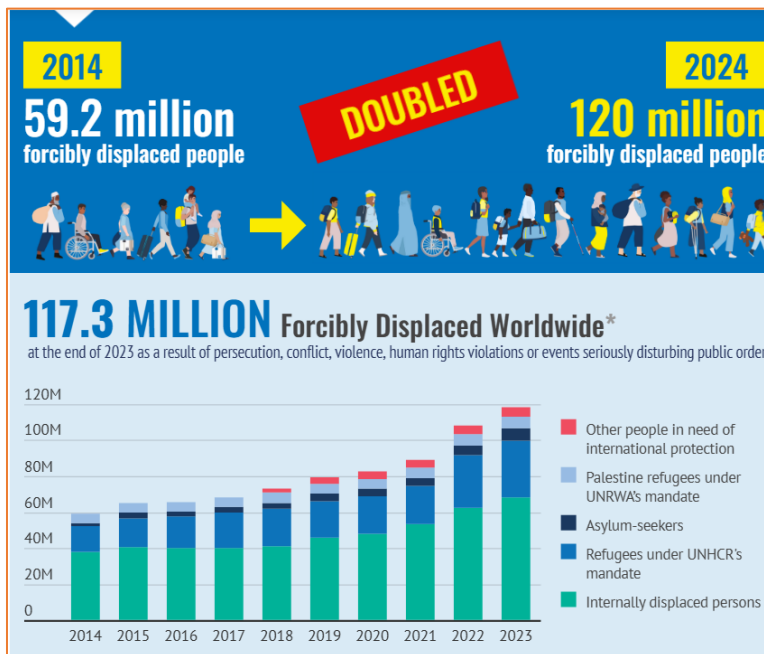
- ❖ For the first time a notable decline in the atmospheric levels of potent ozone-depleting substances (ODS), called hydrochlorofluorocarbons (HCFCs).
- ❖ These HCFCs are also potent greenhouse gases, so a reduction should also lessen global warming.
- ❖ The Montreal Protocol was agreed to internationally in 1987 to introduce controls on the production and usage of ODS.
- ❖ The global phase out of the production of CFCs was completed in 2010.

## REPORTS AND INDICES

### Global Trends Report: Forced Displacement in 2023

- ❖ A record-breaking 120 million people were living in a forcibly displaced status globally between the beginning of 2023 through to May 2024.
- ❖ The new data was revealed in the Global Trends report by the United Nations Refugee Agency (UNHCR).
- ❖ An estimated 117.3 million people remained forcibly displaced at the end of 2023.

- ❖ In May, 120 million people were displaced globally, nearly 10% more than the figures from 2022.
- ❖ This is representing around 1.5% of the world's population.
- ❖ This year, for the 12th consecutive year, the number of refugees and displaced people has grown: from 114 to 120 million.
- ❖ New asylum applications were received in just five countries with the vast majority being made in the US with 1.2 million.
- ❖ This was followed by Germany with 329,100 followed by Egypt, Spain and Canada.









### Tracking SDG 7: The Energy Progress Report 2024

- ❖ It was jointly produced by IRENA in collaboration with the International Energy Agency (IEA), the United Nations Statistics Division (UNSD), the World Bank and the World Health Organization (WHO).
- ❖ The report finds that 91 percent of the global population had access to electricity in 2022.
- ❖ Still, leaving 685 million people still without access – 10 million people more than in 2021.
- ❖ Similarly, while 74 percent of the world's population had access to clean cooking technologies in 2022.
- ❖ 2.1 billion people still relied on polluting fuels, with only modest progress expected by 2030.



- ❖ Renewables accounted for 18.7% of total final energy consumption worldwide in 2021.
- ❖ It is barely higher than the 16.7 percent in 2015; and the world is not on course to double energy efficiency by 2030.
- ❖ This is having improved by only 0.8 percent in 2021.
- ❖ International public financial flows in support of clean energy in developing countries rebounded in 2022 to USD 15.4 billion.
- ❖ It is an increase of 25% compared to 2021.
- ❖ 80% of flows directed to just 25 countries.

| INDICATOR  | 2015  | LATEST YEAR  |  |  |  |
|--|---|--|--|--|--|
| 7.1.1 Proportion of population with access to electricity                                      |  <b>957.5 million</b><br>people without access to electricity            | <b>685 million</b><br>people without access to electricity (2022)              | 7.3.1 Energy intensity measured as a ratio of primary energy and GDP   |  <b>4.9 MJ/USD</b><br>primary energy intensity   | <b>4.6 MJ/USD</b><br>primary energy intensity (2021)   |
| 7.1.2 Proportion of population with primary reliance on clean fuels and technology for cooking |  <b>2.7 billion</b><br>people without access to clean cooking            | <b>2.1 billion</b><br>people without access to clean cooking (2022)            | 7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems |  <b>12.3 USD billion</b><br>international financial flows to developing countries in support of clean energy | <b>15.4 USD billion</b><br>international financial flows to developing countries in support of clean energy (2022) |
| 7.2.1 Renewable energy share in total final energy consumption                                 |  <b>16.7%</b><br>share of total final energy consumption from renewables | <b>18.7%</b><br>share of total final energy consumption from renewables (2021) | 7.b.1 Installed renewable energy-generating capacity in developing and developed countries   |  <b>250 watts per capita</b><br>installed renewables capacity  | <b>424 watts per capita</b><br>installed renewables capacity (2022)  |

## PERSONALITIES, AWARDS, AND EVENTS

### Sahitya Academy awards 2024



- ❖ The Sahitya Akademi has announced the names of 23 writers, including English writer K. Vaishali and Hindi author Gaurav Pandey.

- ❖ The National Academy of Letters also announced the names of 24 winners of the Bal Sahitya Puraskar for 2024.
- ❖ The Yuva Puraskar has been awarded for 10 poetry books, seven collections of short stories, two collections of articles and one of essays, one novel, one book of ghazals and one memoir.
- ❖ From Tamil Nadu, Yuma Vasuki got Bala Sahitya award for his work "Tanvi's birthday" and Lokesh Raguraman got Yuva Puraskar award for his Vishnu Vandhaar.

### **Kavli Prize 2024**

- ❖ The eight winners of the 2024 Kavli Prize were awarded for their contributions to astrophysics, neuroscience, and nanoscience.
- ❖ The Kavli Prize is awarded in honour of Norwegian-American businessman and philanthropist Fred Kavli (1927-2013).
- ❖ David Charbonneau and Sara Seager were given awards in astrophysics category.
- ❖ Robert Langer, Armand Paul Alivisatos, and Chad Mirkin were honored for making important contributions to nanotechnology.
- ❖ Nancy Kanwisher, Winrich Freiwald, and Doris Tsao are honored in neuroscience area.



## **IMPORTANT DAYS**

### **International Fatty Liver Day 2024 – June 13**

- ❖ It is observed annually on the second Thursday of June.
- ❖ The fatty liver is closely linked to metabolic health, cardiac health, and a risk for developing cancers.



- ❖ This disorder has now been appropriately reclassified and is known as 'Metabolic dysfunction-associated steatotic liver disease' (MASLD).
- ❖ The global prevalence of MASLD is estimated at 25-30%.
- ❖ In 2022, among Indian adults, the pooled prevalence of fatty liver was 38.6%, while among obese children, it was around 36%.
- ❖ The theme of 2024 is 'Act Now, Screen Today'.

