

Ross 508b

❖ Context

- The **Subaru Telescope** in Japan has discovered **Ross 508b** – a super-Earth with a mass of almost four times that of our planet.

❖ Key Highlights

- The super-Earth planet has been found near the **habitable zone** of a red dwarf star only **37 light-years** from the Earth.
- The discovery was made using a newly installed **Infrared Doppler instrument**.

❖ Red Dwarf Stars

- Red dwarfs, stars **smaller than the Sun**.
- They account for **3-quarters of the stars in the Milky Way Galaxy**, & are abundant in the neighbourhood around the Sun.
- They are important targets in the search for nearby extrasolar planets & extraterrestrial life.
- But red dwarfs are cool and don't emit much visible light compared to other types of stars, making it difficult to study them.

❖ About the Planet

- The planet has a year of only **11 Earth-days**.
- There are indications that the orbit is elliptical.
- Because of its irregular orbit, the planet essentially dips in and out of the habitable zone and isn't constantly as near to the star.
- Habitable zone is the region where conditions would be right for liquid water to exist on the surface of the planet.

❖ Super Earths

- Super-Earths are a unique class of exoplanets (a planet that orbits a star outside the solar system).
- They are **more massive than Earth yet lighter than ice giants like Neptune and Uranus**.
- They can be made of rock, gas, or a combination of both. They range in size from being **up to 10 times the mass of Earth** to being only twice its size.
- Proxima Centauri b is the closest exoplanet to Earth, located at a distance of 4.2 light years from us.

Agasthyamalai Elephant Reserve

❖ Context

- Speaking at the **World Elephant Day (12th Aug)** celebrations at the Periyar National Park in Kerala's Idukki district, the Union Minister announced that the Central government will establish an elephant reserve at Agasthyamalai.



❖ Key Highlights

- India has **31 Elephant Reserves**.
- In the last 3 years, **Dandeli** Elephant Reserve has been notified by the state of Karnataka, **Singphan** Elephant Reserve by Nagaland and **Lemru** Elephant Reserve in Chhattisgarh.
- It will be the **5th elephant reserve in TN** after Nilgiris-Eastern Ghat, Nilambur Silent Valley in Coimbatore, Srivilliputhur and Anamalai.
- Elephant was declared as the **Natural Heritage Animal** of India in 2010.

- There are about 50,000 - 60000 Asian elephants in the world with **India having more than 60% of its population**.
- The Indian elephant (*Elephas maximus*) is included in **Schedule I** of the Indian Wildlife (Protection) Act, 1972 and in **Appendix I** of the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). Its IUCN status is **Endangered**.
- The population of the animal had become **critically low (15000) in 1992**, when the Project Elephant was launched for their scientific conservation.
- As per the Ministry, there are around 29,900 elephants in the country. The **highest number is in Karnataka** followed by Assam and Kerala.

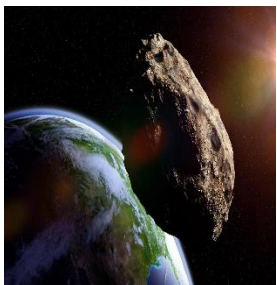
Massive Meteorites behind Continent Formation

❖ Context

- According to a new study, the scientists have found **concrete evidence** supporting the theory that Earth's continents were formed by massive meteorite impacts.

❖ Key Highlights

- The impacts were prevalent during the first billion years of Earth's 4.5 billion year history.
- The researchers studied **composition of isotopes of oxygen in zircon crystals** embedded in rocks from the **Pilbara Craton in Western Australia**.



- The study revealed a top down process starting with melting of rocks near the surface and progressing deeper.
- Pilbara craton is the remnant of an ancient crust that began forming more than three billion years ago.
- Zircons are formed by the **crystallisation of magma** and are found in metamorphic rocks.
- Older grains of zircon possessed the lighter oxygen-16. The younger ones contained the heavier oxygen-18. The ratio between the two variants helped scientists estimate past temperatures.

Face to Face Centres





Policy to Accelerate Growth in Rainfed Agriculture

❖ Context

- The **National Rainfed Area Authority (NRAA)**, under the Ministry of Agriculture, has proposed a new policy for accelerating the growth of rainfed agriculture.

❖ Key Highlights

- Draft moots improving cropping systems to combat climate change and secure livelihoods.
 - Reviving millet-based cropping systems,
 - releasing new climate-resilient varieties,
 - improving water use efficiency, and
 - encouraging allied agri-activities are among several measures being proposed to accelerate the growth of rainfed agriculture in the country as per a draft policy.
- The proposed policy is expected to design programmes specifically for rainfed agriculture.

- It also lays emphasis on improving infrastructure and organisations enhance farmers' capacity to capture value, encourage private sector investment in rainfed regions and promote sustainable practices.

❖ Rainfed Agriculture

- It contributes to around **40%** of the total foodgrain production.
- About 85% of nutri-cereals, 83% of pulses, 70 per cent of oilseeds, & 65% of cotton are grown in rainfed conditions.
- It accounts for **55 per cent** of the net sown area of 139.42 million hectares, and supports about 61 per cent of the farmers in the country.
- Rain-dependent agriculture supports **two-thirds** of livestock and 40 per cent of the human populat

France's Highest Civilian Award

❖ Context

- A senior Congress leader is set to be conferred with France's highest civilian award **Chevalier de la Legion d'Honneur**.
- The French government is honouring him for his writings and speeches.



❖ About Chevalier de la Legion d'Honneur

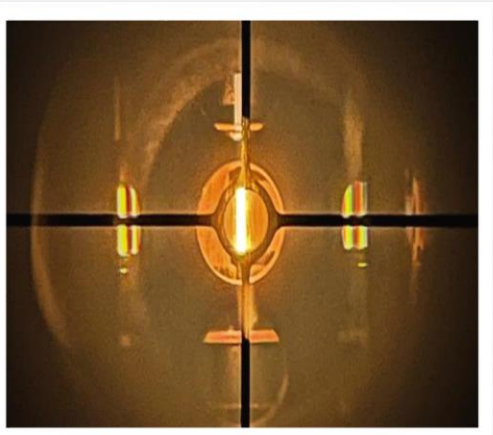
- It was instituted in 1802 by Napoleon Bonaparte.
- It is the highest civilian award given by the French Republic for outstanding contribution to the recipient's field of expertise, regardless of their nationality.
- The Legion has five classes, listed in descending rank: **grand cross** (limited to 80 members), **grand officer** (200), **commander** (1,000), **officer** (4,000), and knight, or chevalier (unlimited).

❖ Which other Indians have received it?

- The first Indian to be awarded with the Legion of Honour was **Maharaja Pratap Singh of Idar in 1918**.
- Since then, more than 40 Indians have been honoured with the award.
- The list of the recipients includes JRD Tata (1983), Satyajit Ray (1987), Pandit Ravi Shankar (2000), Zubin Mehta (2001), E Sreedharan (2005), Amitabh Bachchan (2007), Lata Mangeshkar (2007), Shah Rukh Khan (2014), Manish Arora (2016) Kamal Haasan (2016), Ratan Tata (2016), Kiran Mazumdar-Shaw (2016) & Azim Premji (2018), among others.

News in Between the Lines

New Method to Measure Sea Water Temperature



❖ Context

- The **Indian Institute of Science (IISc)** has discovered a way to measure seawater temperature by examining the microscopic fish ear bones.

❖ Key Highlights

- Fish bones or otoliths, are made of calcium carbonate and grow throughout a fish's lifetime by accumulating minerals from seawater.
- Like tree rings, otoliths also hold clues to the fish's age, migration patterns, and the type of water that the fish lived in.
- Researchers used a **Thermal Ionisation Mass Spectrometer (TIMS)** to analyse the ratio of various calcium isotopes in the otolith.
- The ratios of the observed calcium isotopes in the sample can be used to correlate with the temperature of the saltwater where the fish were taken.
- Calcium isotopes are a powerful tracer of water temperature.
- In addition to calcium isotopes, the team analysed the concentration of elements like strontium, magnesium, and barium.
- **Significance:** Mapping early seawater temperatures is important to better understand earth's history.

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Assam Arunachal Border Dispute



❖ Context

- Assam and Arunachal Pradesh have formed 12 regional committees to expedite the process of identification and early resolution of disputed areas along their 804.10 km boundary.

❖ Key Highlights

- The two States had disputes in 123 villages along the border but the number was restricted to 86 in the Namsai Declaration.
- Assam has eight districts while Arunachal Pradesh has 12 along the interstate boundary.
- The Assam-Arunachal Pradesh border dispute resolution formula is similar to the one Assam and Meghalaya applied for resolving the disputes along their 885-km boundary.
- Of the 12 disputed sectors on the Assam-Meghalaya border, a "fifty-fifty" settlement has been signed for six "less complicated" areas.

Stolen Chola-era Buddha idol now stuck in the U.S.



❖ Context

- A Chola-era Buddha idol that was reportedly stolen from **Arpakkam near Kancheepuram** is now stuck with the Department of Homeland Security in the U.S. without any claim having been made by the Indian authorities.

❖ Key Highlights

- **Arpakkam**, a small village on the outskirts of Kancheepuram, is a virtual treasure trove of heritage.
- It has a Jain temple, a Shiva temple and an Adikesava Perumal temple - all over 1,000 years old. It has a Buddhist vestige as well.
- Three granite idols of Buddha were located in the confines of the Perumal temple.
- While one of them was inside the temple, a large Chola-era seated Buddha and a headless seated Buddha lined the outer walls.
- The idol of the seated Buddha was stolen about 20 years ago.
- The image of the Buddha was published in a 2001 book titled '**Arignar Parvaiyil Boutham**'.

Chronic Fatigue Syndrome



❖ Context

- A woman has filed a petition before Delhi HC to stop his friend, suffering from the disease, from travelling to Europe to undergo a physician-assisted euthanasia.

❖ About the Disease

- Also known as **Myalgic Encephalomyelitis (ME/CFS)**.
- It is a serious and debilitating disease that affects the **nervous system, immune system and the body's production of energy**.
- It can affect anyone, irrespective of age. However, it has been found to be more common in women and people between 40-60 years old.
- Its most recognisable symptom is **Post-Exertional Malaise (PEM)**.
- It is described as a "**crash**" in **physical and mental energy**, experiencing debilitating fatigue which is more severe than everyday feeling of tiredness. The fatigue is not relieved by sleep or rest. Exercising makes it worse.
- Its causes are still unknown and it has **no specific cure** or approved treatment.
- To deal with, doctors recommend **pacing**, in which patients learn to balance rest and activity to prevent crashes by exertion.

UNMOGIP

❖ Context

- The United Nations (UN) Secretary-General has appointed Rear Admiral Guillermo Pablo Rios of Argentina as the **Head of Mission and Chief Military Observer** for the United Nations Military Observer Group in India and Pakistan (UNMOGIP).

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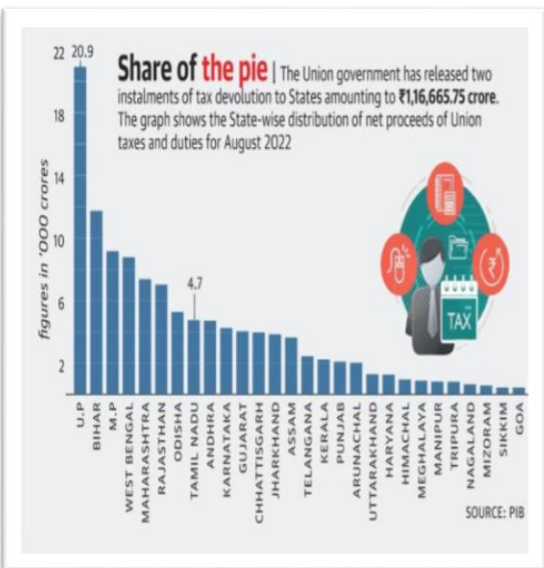




❖ Key Highlights

- UNMOGIP emerged from UN Security Council **Resolution 39 of January 1948** that set up the **UN Commission for India and Pakistan (UNCIP)**.
- India officially maintains that the UNMOGIP's role was "overtaken" by the **Simla Agreement of 1972**.
- The agreement established the Line of Control or the LoC which with minor deviations followed the earlier Ceasefire Line.
- Pakistan, however, does not accept the Indian position and continues to lodge complaints with the UNMOGIP against alleged Indian ceasefire violations.
- **India has not officially gone to the UNMOGIP since 1972** with complaints against Pakistan.
- In view of the difference of opinion between India and Pakistan, the **UN has maintained that the UNMOGIP could be dissolved only with a decision from the UN Security Council**.

Centre Releases 1.16 Lakh Crore To States



❖ Context

- The Centre recently released over ₹1.16 lakh crore to States, equivalent to two monthly instalments of tax devolution, to help front-load State governments' capital spending abilities in this financial year.

❖ Key Highlights

- **Uttar Pradesh** received Rs 20,928.62 crore – the highest allotment from the total amount, followed by Bihar which received 11,734.22 crore.
- The latest devolution has been increased by **49% over** the corresponding period of last year i.e 2021.
- After the tax devolution for August, the economists expect the states to get twice the monthly share of net proceeds of Union taxes and duties.
- The Investment Information and Credit Rating Agency said that it expects the tax devolution to be 9.3 lakh crore for 2022-'23.
- **Significance:** It will increase state's cash flows and efficiently plan their capital outlays.

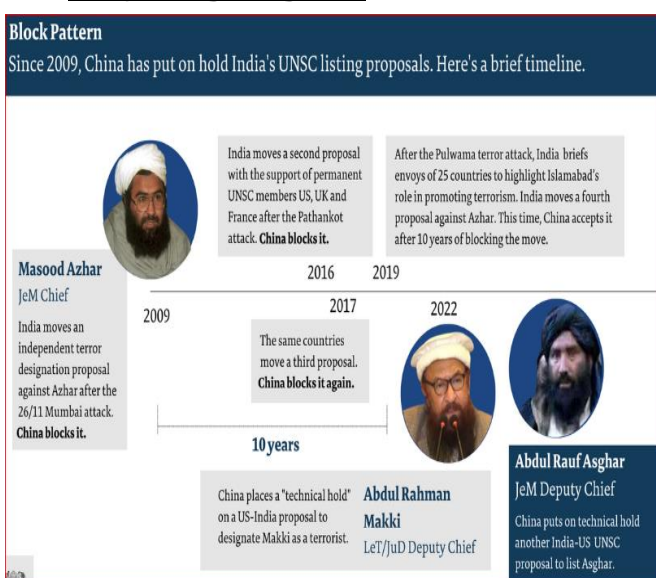
China has blocked an India-U.S. Listing Proposal



❖ Context

- China recently thwarted a joint India-U.S. bid to list Jaish-e-Mohammad deputy chief Rauf Asghar as a **UN Security Council** designated terrorist by placing a "technical hold" on the process.

❖ Key Highlights



- Rauf Asghar, the brother of JeM leader Masood Azhar, is accused of masterminding a number of terror attacks from :
 - the IC-814 hijacking in 1999,
 - the Parliament attack in 2001,
 - as well as a number of attacks on security forces personnel from 2014-2019,
 - including the strikes on the Air Force base in Pathankot, army camps in Kathua, Nagrota, Sanjwan and other locations.

❖ 1267 UN listing

- The 1267 UN listing mandates members to ensure that terrorists and organisations designated must not be allowed to travel, have recourse to funds or weapons.
- A UNSC permanent member can place a hold on any listing for a period of up to 6 months, followed by an extension of 6 months, after which it must either accept or deny the listing.

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