

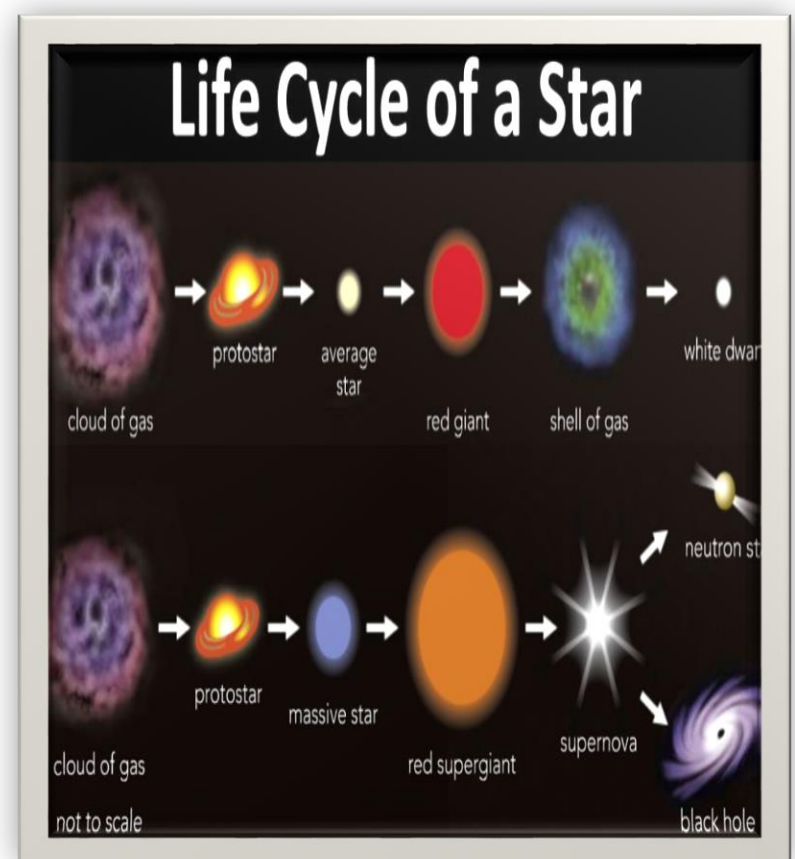
Magnetars

❖ Context

- The **first detailed study on extragalactic magnetar** published in Nature by scientists of Andalusian Institute of Astrophysics, Spain and Aryabhata Research Institute of Observational Sciences (ARIES), Uttarakhand
- They studied different oscillations, or pulses in a **giant flare (GRB2001415)** erupted in April 2020, from a magnetar. The flare **lasted for tenth of a second**.
- The eruption was detected by **Atmosphere-Space Interactions Monitor** instrument, onboard International Space Station
- The magnetar is located in Sculptor group of galaxies, some 13 million light years away

❖ About Magnetar

- When massive stars with a total mass of 10-25 times of solar mass collapse they form neutron stars
- Among **neutron stars** there is a very small group of stars, magnetars, **with most intense magnetic fields** known
- **Only 30 such objects** have been **known** till date in **Milky way galaxy** and such flares have been detected in two of these 30 objects in the past
- These objects suffer violent eruptions that are still unknown due to their unexpected nature and short duration
- Even in **inactive state**, magnetars can be many **thousand times more luminous than Sun**
- But the **energy**, released during the flare studied, was **equivalent to the energy radiated by Sun in 1,00,000 years**
- It is believed that eruptions in magnetars may be due to **instabilities in their magnetosphere** or to a kind of "earthquakes" ("**starquakes**") produced in their crust, a rigid and elastic layer about a kilometer thick.
- Regardless of the trigger, a type of wave, well known as **Alfvén waves** are produced. These waves, while bouncing back and forth between the points at the base of its lines of magnetic field, interact with each other dissipating energy
- **Alfvén waves** (named after Swedish electric engineer Hannes Alfvén) are also **believed to be responsible for** higher temperature (1 Mn kelvin) of solar corona than the photosphere (**the coronal heating problem**)



National Consumers Day

❖ Context

- Department of Consumer Affairs celebrated National Consumers Day on **24th December** with the **theme - "Consumer - know your rights"**

❖ Key provisions of Consumer Protection Act 2019

- Six rights of consumers
 - **Right to Safety**
 - **Right to be informed**
 - **Right to choose**
 - **Right to be heard**
 - **Right to seek redressal**
 - **Right to consumer education**
- All **e-commerce transactions covered**.
- The provision of **product liability** not only introduced but also extended to sellers, service providers and e-commerce platforms other than manufacturers
- Definition of **Unfair Trade practices** widened to cover online misleading advertisements, practice of not issuing bill/memo, failing to take back defective.



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products within a stipulated period and disclosing personal information of consumer.

- Establishment of **Central Consumer Protection Authority** - a regulatory body that can also conduct inquiry or investigation into consumer rights violations. It can order reimbursement, cancel license, recall products, on complaints or suomoto.
- Enhancement of pecuniary jurisdictions
 - **District forum** - entertain complaints where value of goods/services is less than Rs. 1 crore
 - **State Commission** - entertain complaints where value of goods/services is between Rs. 1 crore - Rs. 10 crore
 - **National Commission** - entertain complaints where value of goods/services is more than Rs. 10 crores
- Filing of complaints can be done with nearby jurisdictional forum (residence of place of work) unlike before (near place of purchase) or even electronically
- Government launched **e-daakhil** portal in 2020 for electronic filing of complaints.

India-Myanmar

❖ Context

- Recently, India gave **1 million doses of COVID-19 vaccines** to Myanmar.
- The doses were handed over by Foreign Secretary Harsh Vardhan Shringla who is on a visit to the country, the **first by any Indian high official** after Myanmar's military deposed the democratically-elected government of Aung San Suu Kyi in a coup on 1st February 2021.
- Also, India has **granted 10,000 tonnes of rice and wheat** to Myanmar as part of its continued **humanitarian support** for the neighbouring country.

❖ Key highlights

- Foreign Secretary emphasised India's interest in seeing **Myanmar's return to democracy** at the earliest and **"release" of political prisoners; resolution of issues through dialogue; and complete cessation of all violence** during his last visit to Myanmar.
- The **1,600 km (990 mi) India-Myanmar border** separates the Indian states of **Mizoram, Manipur, Nagaland and Arunachal Pradesh in Northeast India** from Kachin State, Sagaing Region and Chin State in Myanmar/Burma.
- India - Myanmar/Burmese **relations date to antiquity and cultural exchanges** included Buddhism and the Burmese script, which was based on the Indian Grantha script.
- India and Myanmar also **share a maritime border along India's Andaman Islands**.
- India established **diplomatic relations** after Myanmar's independence from Britain in 1948.
- For many years, Indo-Burmese relations were strong due to Myanmar previously having been a province of India, due to cultural links, flourishing commerce, common interests in regional affairs and the presence of a significant Indian community in Myanmar

❖ Economic Relation

- India is Burma's **4th largest trading partner** after **Thailand, China and Singapore**, and second largest export market after Thailand, absorbing 25 percent of its total exports. India is also the **seventh most important source of Burma's imports**.
- Both governments are proceeding to **enhance cooperation in agriculture, telecommunications, information technology, steel, oil, natural gas, hydrocarbons and food processing**.
- The **bilateral border trade agreement of 1994** provides for border trade to be carried out from three designated border points, one each in Manipur, Mizoram and Nagaland. **Infrastructure initiatives**
- **Tamu- Kalewa- Kalemyo highway**- Known as Indo- Myanmar friendship road , Built in 2001 by BRO aimed to provide a major strategic and commercial transport route connecting North- East India, and South Asia as a whole, to Southeast Asia. **India- Myanmar- Thailand Friendship Highway**- 3200KM triangular highway
- **Kaladan Multi-modal Transit Route**- connect the eastern Indian seaport of Kolkata with Sittwe seaport in Myanmar by sea; it will then link Sittwe seaport to Lashio in Myanmar via Kaladan river boat route and then from Lashio on to Mizoram in India by road transport.



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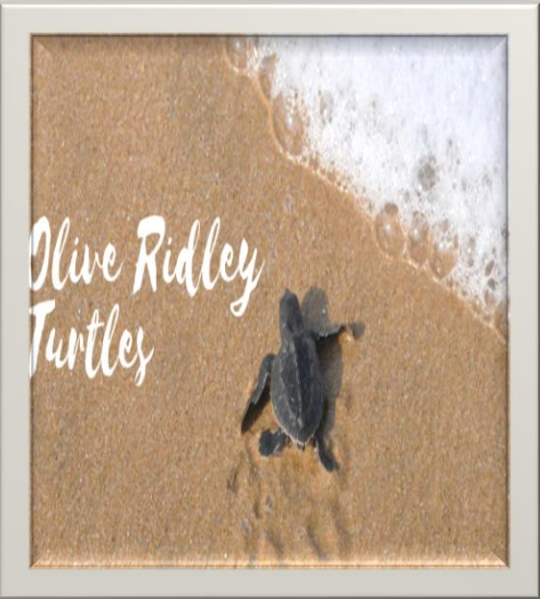


❖ **Strategic Cooperations**

- India's move to forge close relations with Myanmar are motivated by a desire to counter **China's growing influence as a regional leader**. Both nations **sought to cooperate to counteract drug trafficking and insurgent groups** operating in the border areas. India and Myanmar are **leading members of BIMSTEC and the Mekong-Ganga Cooperation**, along with Vietnam, Laos, Cambodia and Thailand, helping India develop its influence and ties amongst Southeast Asian nations.
- India has gifted the Myanmar navy its first ever submarine, a **kilo class (INS Sindhuvir) attack submarine** which has been refurbished and modernised by Hindustan Shipyard Limited. **Security ties:** Indian and Myanmar troops carried out jointly **Operation Sunrise and Operation Sunrise 2 in 2019** in their respective territories to destroy several insurgent camps.

News in Between the Lines

Olive Ridleys Sea Turtles



❖ **Status**

- **Wildlife Protection Act, 1972: Scheduled 1**
- **IUCN Red List: Vulnerable**
- **CITES: Appendix I**

❖ **Context**

- Scientists have resumed tagging of **Olive Ridley sea turtles** at **Rushikulya rookery along Odisha coast**.
- **1,556 Olive Ridleys tagged** in exercise that began in **Odisha** in January 2021 after nearly 25 years.

❖ **Key Highlights**

- It would help them **identify the migration path and places visited by the marine reptiles** after congregation and nesting.
- Researchers of the **Zoological Survey of India (ZSI)** are carrying out tagging of Olive Ridley turtles at three mass nesting sites – **Gahirmatha, Devi River mouth and Rushikulya**.
- The metal tags affixed to turtles are **non-corrosive and they do not harm their body**. It can be removed later.
- The target is to tag 30,000 turtles over a period of 10 years.

❖ **About Olive Ridleys Sea Turtles**

- They are the **smallest and most abundant** of all sea turtles found in the world.
- They are **carnivores and get their name from their olive colored carapace**.
- They are best known for their **unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
- They can be found in **warm waters of the Pacific, Atlantic and Indian oceans** and the **Odisha's Gahirmatha Marine Sanctuary** is known as the world's largest rookery (colony of breeding animals) of sea turtles.

ASIGMA



❖ **Context**

- The Indian Army has launched its latest messaging application dubbed as **ASIGMA (Army Secure IndiGenous Messaging Application)**.

❖ **Key Highlights**

- The new generation web-based messaging application is **entirely in-house** and has been **exclusively developed by the team of officers of the Corps of Signals of the Army**.
- It is being **deployed on the Army's internal network**, as a replacement of the **AWAN (Army Wide Area Network)** messaging application which has been in service for the past 15 years.
- It comes with a **variety of contemporary features including multi-level security, dynamic global address book, message prioritization, and tracking**, and options to meet the requirements of the army at present.

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Meendum Manjappai Scheme



❖ Context

➤ Recently, Tamil Nadu chief minister M.K. Stalin launched the 'Meendum Manjappai' scheme to promote the use of cloth bags by the public and discourage the use of plastic bags.

➤ The Tamil Nadu government has already banned 14 types of plastic materials.

❖ Key Highlights

- Plastic bags have become rampant in the State over the years.
- The CM Stated that If the plastic is thrown away, it would take several years for it to decompose and adversely affect the soil. If the soil is affected, agriculture would be affected. Moreover, cattle eat plastics and die. If plastic carry bags are thrown into water bodies, the organisms there are affected and the water is polluted too. The sea is affected when single-use plastic products are thrown into it. Aquatic species feed on them and die.

❖ About Plastics

- As plastic is cheap, lightweight and easy to produce, it has led to a production boom over the last century, and the trend is expected to continue in the coming decades, according to the United Nations.
- But countries are now struggling with managing the amount of plastic waste they have generated.
- About 60% of plastic waste in India is collected — that means the remaining 40% or 10,376 tons remain uncollected.

ABHYAS



❖ Context

➤ DRDO successfully conducted the flight test of Indigenously developed High-speed Expendable Aerial Target (HEAT) Abhyas today from Integrated Test Range (ITR), Chandipur off the coast, Odisha

❖ Key Highlights

- Aeronautical Development Establishment (ADE), Bengaluru based DRDO laboratory along with other DRDO laboratories has developed this indigenous unmanned aerial target system to meet the requirement of aerial targets of Indian Armed Forces.
- The aircraft is controlled from a ground based controller and an indigenously developed MEMS based Inertial Navigation System along with the Flight Control Computer which helps it to follow the pre-designated path in a fully autonomous mode.

Star Rating protocol of garbage free cities



❖ Context

➤ Ministry of Housing & Urban Affairs launched Azadi@75 Star Rating Protocol of Garbage Free Cities- Toolkit 2022

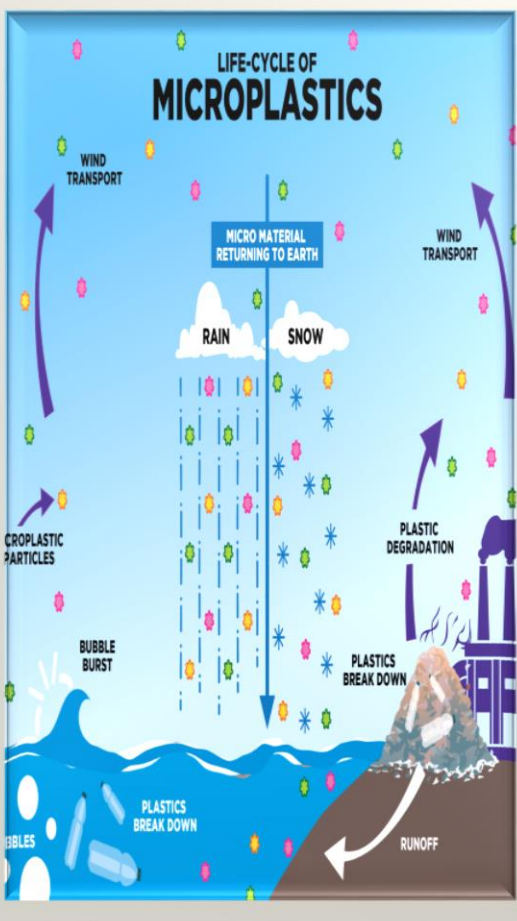


❖ Key Highlights

- It is one of the most important governance tool for waste management
- On 1st October 2021, the Government launched Swachh Bharat Mission-Urban 2.0, with the overall vision of creating "Garbage Free Cities" (GFC)
- SBM-U 2.0 is focused on achieving 100% waste processing along with remediation of legacy dumpsites, construction and demolition waste and plastic waste management.
- Release of Government of India funds has been made conditional, subject to a ULB achieving at least 1-star certification

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Microplastics



In the recently concluded (2,238 cities) participated in the certification exercise, of which a total of 299 cities have been certified and certification exercise for GFC, nearly 50% of ULBs (i.e., - 9 cities rated as 5-star, 143 cities rated as 3-star and 147 cities as 1-star.

❖ Context

- Micro-plastics are **fragm** Recently, **microplastic traced to 'clean' air Of European Mountains.**
- The scientists arrived at the conclusion after they reportedly sampled 10,000 cubic meters of air between June and October of 2017 at an altitude of 2,877 meters above sea level.
- This study reveals that **they can even be found high in the Earth's troposphere**, where wind speeds allow them to travel great distances and also there is **no eventual sink** for the plastic.
- Mathematical models of air mass trajectories used by the scientists indicate that the particles **originated in Africa, North America, or the Atlantic Ocean**, which indicates intercontinental atmospheric transport of microplastic.

❖ About Microplastics

- Microplastics are **fragments of any type of plastic less than 5 mm in length.**
- There are two types of microplastics- primary and secondary.
 - **Primary microplastics-** They are already less than 5 mm (0.20 in) in length
 - **Secondary microplastics-** They are reduced in size due to the degradation of larger plastic pieces
- These microplastics **escape into the environment through common sources like plastic nets, plastic bottles, microbeads, nurdles, microwave containers, tea bags and tire wear.**
- It is estimated that **35 percent of all ocean plastic pollution comes from the erosion of polyester, acrylic, or nylon-based clothing**, which often happens as a result of washing.

❖ Impacts

- The microplastics **can also be eaten by wildlife** without killing them immediately due to their small size.
- This allows the deadly plastics to **bio-accumulate in animal species**, which is dangerous for other species that are higher up the food chain, including humans.
- Microplastics also **act as buoys for other hazardous toxins and chemicals** that are polluting the environment.
- These chemicals can then result in **various diseases** and can cause cancer, liver failure and kidney failure.
- They **can also carry deadly bacteria like E. coli** and cholera if they come near contaminated water.

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