

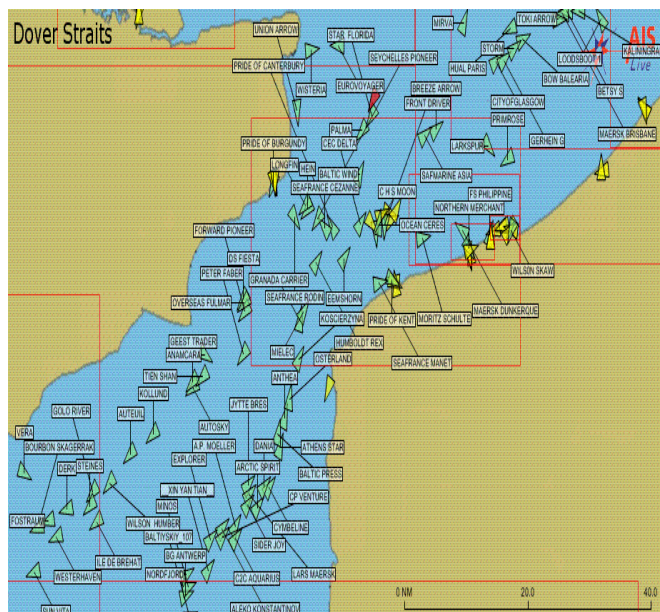
Automatic Identification System (AIS)

❖ Context

- A maritime data company that provides research to the United Nations, has uncovered **more than 500 cases of ships manipulating their satellite navigation systems**, GPS, to hide their locations.

❖ Key Highlights

- The technology, in essence, replicates the **effect of a VPN cellphone app**, making a ship appear to be in one place while physically being elsewhere.



- Under a United Nations maritime resolution, signed by nearly 200 nations in 2015, all large ships must carry and operate **satellite transponders**, known as **automatic identification systems**, or **AIS**, which transmit a ship's identification and navigational positional data.

- The resolution was signed under the **International Convention for the Safety of Life at Sea (SOLAS), 1974**.

❖ About SOLAS

- Administered by the **International Maritime Organisation (IMO)**, it concerns the safety of merchant ships.

- The **first version was adopted in 1914, in response to the Titanic disaster**.
- The main **objective** of the SOLAS Convention is to specify minimum standards for the construction, equipment and operation of ships, compatible with their safety.
- Flag States** are responsible for ensuring that ships under their flag comply with its requirements.
- Control provisions** also allow contracting governments to inspect ships of other contracting States if there are clear grounds for believing that the ship and its equipment do not substantially comply with the requirements of the Convention - this procedure is known as **Port State control**.

❖ About IMO

- A **specialised agency of UN**, established following agreement at a UN conference held in Geneva in **1948**.
- It came into existence ten years later, meeting for the first time in 1959.
- Headquartered in London, United Kingdom**.

Sea Cucumbers

❖ Context

- Chinese firm investing in a sea cucumber farm in **Pungudutivu, off Jaffna Peninsula** in northern Sri Lanka, local fishermen have raised concern over its potential impact on their livelihoods, marine ecosystem, and land.



❖ Key Highlights

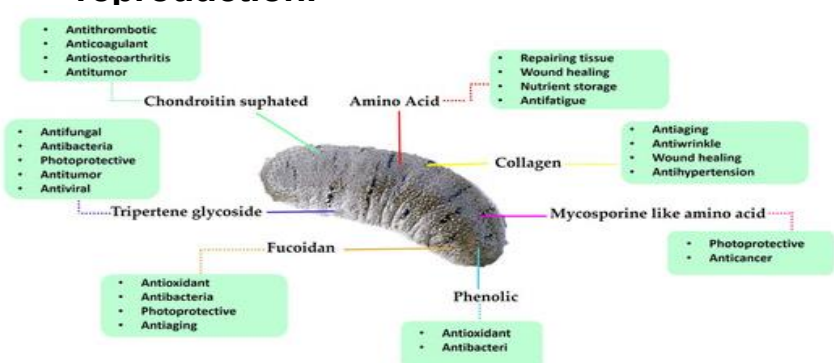
- In 2021, Sri Lanka exported about 336 tonnes of sea cucumber to China, Singapore, and Hong Kong, according to local media reports.
- Desperate to find dollars to stabilise its battered economy, the Sri Lankan government appears to have identified potential for both, foreign investment and exports in breeding and selling the sausage-shaped marine animal considered a delicacy in China and Southeast Asia.

❖ About Sea Cucumbers:



- Sea cucumbers are part of a larger animal group called echinoderms, which also contains **starfish & sea urchins**.
- Their body shape is similar to a cucumber, but they have small tentacle-like tube feet that are used for locomotion and feeding.

- Sea cucumbers are found in virtually all marine environments throughout the world, from shallow to deep-sea environments.
- Sea cucumbers are benthic, meaning they live on the ocean floor.
- They are scavengers that feed on small food items in the benthic zone (seafloor), as well as plankton floating in the water column.
- Algae, aquatic invertebrates, and waste particles make up their diet. They eat with tube feet that surround their mouths.
- Sea cucumbers exhibit **sexual and asexual reproduction**.



Face to Face Centres

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05 September, 2022

India's First LNG Green Truck

❖ Context

- Blue Energy Motors, a two-year old start-up backed by a Singapore-based firm, unveiled India's first **Liquefied Natural Gas (LNG)** fuelled green truck in Chakan near Pune.



❖ Key Highlights

- The engines generate high torque and help trucks deliver best in class **TCO** (total cost of ownership) and offer unmatched ride comfort and safety for the drivers for long hauls.
- It's cost effective and a change-maker for the transport sector. It is a great alternative to petrol and diesel at a time when we import so much.
- With LNG, logistics cost can be reduced by **16%**.
- The **(Fiat Powertrain Technology) FPT** Industrial engine is one of the most powerful natural gas engines and compatible with CNG, LNG and biomethane.

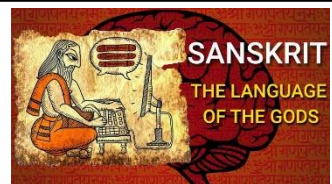


- It uses multipoint stoichiometric combustion to assure best-in-class fuel consumption and lower noise than diesel engines.
- **Liquefied natural gas (LNG)** is natural gas (predominantly methane, CH₄, with some mixture of ethane, C₂H₆) that has been cooled down to liquid form for ease and safety of non-pressurized storage or transport.
- LNG is odorless, colorless, non-toxic and non-corrosive.

Sanskrit As National Language

❖ Context

- The Supreme Court recently refused to entertain a plea to make Sanskrit the national language.

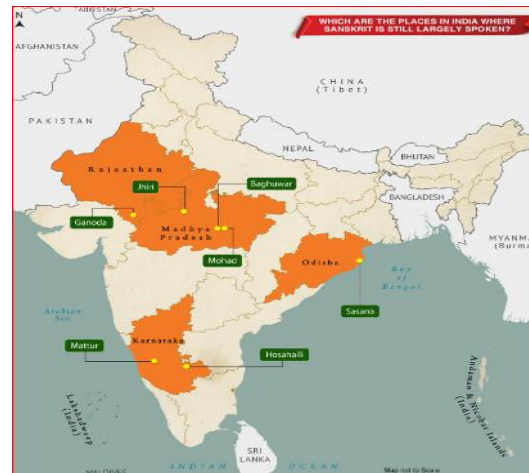


❖ National Language of India

- There is no national language in India.
- However, **article 343(1)** of the Indian constitution specifically mentions that, The official language of the Union shall be **Hindi** in Devanagari script.
- The form of numerals to be used for the official purposes of the Union shall be the international form of Indian numerals.
- The **clause 3** of Official Languages Act, 1963 mentions the, "Continuation of English Language for official purposes of the Union and for use in Parliament", thus denoting **Hindi and English** as the official languages of the Union.
- As per the Eighth Schedule to the Indian Constitution, 22 languages have been granted the **status of scheduled languages of India**.
- These are - Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri.

❖ Importance of Sanskrit Language

- Sanskrit is one of the languages that forms the basic framework of a variety of Indian regional languages like Tamil, Kannada, Malayalam, and Telugu.
- Reportedly, all modern languages in India draw about **50%** from Sanskrit, with Malayalam and Kannada topping the list.
- Scholars from the Romantic period (18th century) to contemporary times have paid tribute to the brilliance of Sanskrit and its contribution to the enrichment of all-around literature.



India Becomes 5th Largest Economy of the World

❖ Context

- India has overtaken the U.K. to become the world's fifth-largest economy and is now behind only the US, China, Japan and Germany, according to IMF projections.



❖ Key Highlights



- India's economy in dollar terms has grown at a nominal rate of **5.71% CAGR**(Compound Annual Growth Rate) over the past 10 years, while during the same period the UK's GDP has grown at a paltry **1.76%**.
- According to IMF's projections, India is likely to become a \$5 trillion economy by 2026.

- Pent-up demand is driving consumption as consumers, after two years of pandemic restrictions, are stepping out and spending.
- The services sector has seen a strong bounce back that will get a boost from the festival season next month.
- **Key Concerns:** The slowing growth of the manufacturing sector at **4.8%** and the imports being higher than exports is a matter of concern right now.

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Drone Based Tear Gas

❖ Context

- The **Border Security Force (BSF)** has developed a drone-based tear smoke launcher to control riots and other crowd control situations.



❖ Key Highlights

- **Tear smoke unit (TSU)** in Tekanpur, Gwalior has developed a '**Drone Tear Smoke Launcher**' for dropping munitions from unmanned aerial vehicles/drones which will be a potential force multiplier to the security forces in law-and-order management.
- The technology will help in dropping multiple grenades at a time at accurate location.
- The chances of injuries from debris of the launched grenades will be minimal.
- The user can drop the grenades at a precise location, unlike the ones fired manually from a gun. Indigenous production of non-lethal munitions by TSU has reduced the country's dependence on foreign munition.
- Timely and effective utilisation of the TSU munitions will save valuable human lives and public assets worth crore.

News in Between the Lines

Interest Rate Differential and the Exchange Rate



❖ Context

- According to experts, the inflation rate differentials between the U.S. and India suggest that the worst of the rupee's decline may be over.

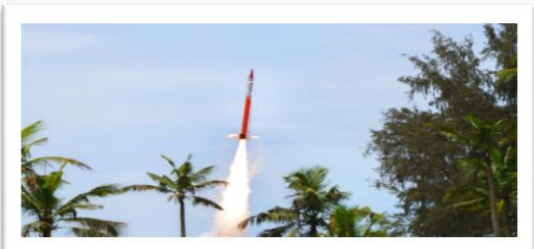
❖ Key Highlights

- **Interest rates, inflation, and exchange rates** are all **highly correlated**.
- By manipulating interest rates, central banks exert influence over both inflation and exchange rates.
- Higher interest rates offer lenders in an economy a higher return relative to other countries. Therefore, **higher interest rates** attract foreign capital and **cause the exchange rate to rise**. The opposite relationship exists for decreasing interest rates.
- The **impact of higher interest rates is mitigated**, however, if **inflation in the country is much higher than in others**.

❖ Inflation and Exchange Rate

- Typically, a country with a consistently **lower inflation rate** exhibits a **rising currency value**, as its purchasing power increases relative to other currencies.
- Those countries with **higher inflation** typically see **depreciation in their currency** compared to the currencies of their trading partners.
- This is also usually **accompanied by higher interest rates**.

Inflatable Aerodynamic Decelerator (IAD)



❖ Context

- ISRO successfully demonstrated a new technology with **Inflatable Aerodynamic Decelerator (IAD)** that it said to be a game-changer.

❖ Key Highlights

- An IAD, designed and developed by ISRO's **Vikram Sarabhai Space Centre (VSSC)**, was successfully test flown in a '**Rohini**' sounding rocket from **Thumba Equatorial Rocket Launching Station (TERLS)**.
- The IAD was initially folded and kept inside the payload bay of the rocket.
- At around 84 km altitude, the IAD was inflated and it descended through the atmosphere with the payload part of the rocket.
- The IAD **systematically reduced the velocity of the payload through aerodynamic drag** and followed the predicted trajectory.
- This is the **first time** that an IAD is designed specifically for spent stage recovery.
- It has huge potential for a variety of space applications like recovery of spent stages of rocket, for landing payloads on to Mars or Venus and in making space habitat for human space flight missions.
- Rohini sounding rockets are routinely used for flight demonstration of new technologies being developed by ISRO as well as by scientists from India and abroad.

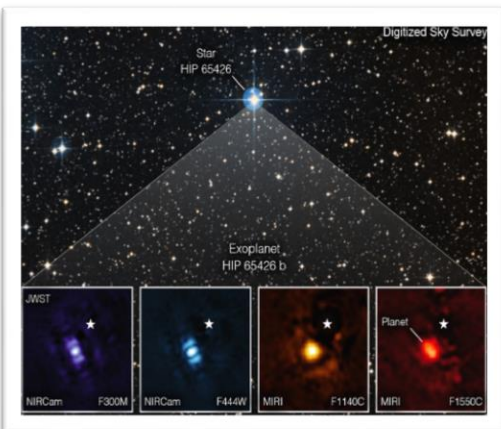
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HIP 65426B

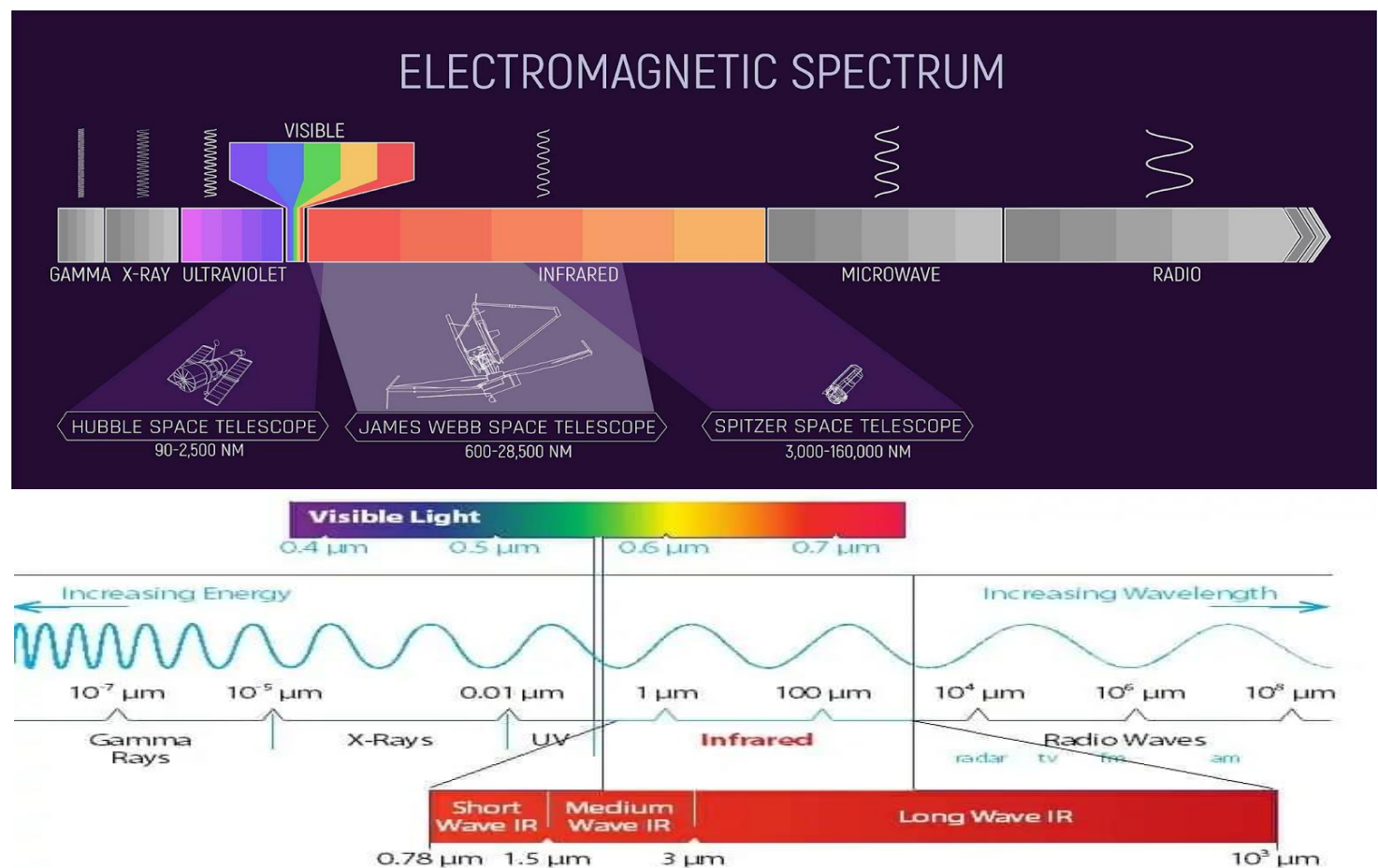


❖ Context

- The **James Webb Space Telescope** has taken its first picture of an exoplanet, i.e. a planet beyond the Solar System, HIP 65426B.

❖ Key Highlights

- It is a **gas giant**, meaning it has no rocky surface, and could not be habitable. It is about **six to 12 times the mass of Jupiter**.
- It is probably around **14 million years old**, making it “**a baby Jupiter**”.
- It was discovered by astronomers in **2017** using the **Spectro-Polarimetric High-Contrast Exoplanet Research (SPHERE)** instrument on the **European Southern Observatory Very Large Telescope** in **Chile** which took images using the **short infrared wavelength of light** (ranging from 1.4 to 3 micrometre).
- It is the **first exoplanet image ever taken at longer infrared wavelengths**, which allow astronomers to study the full range of a planet's brightness and what it is made of.
- **Range of infrared wavelength covered by JWT is 0.6 - 28.5 micrometre.**



Vostok -2022



❖ Context

- Russia is holding annual military exercises in its eastern region, with about 13 countries including India and China sending contingents.

❖ Key Highlights

- The countries that have sent military contingents are Algeria, Armenia, Azerbaijan, Belarus, **India**, Kazakhstan, Kyrgyzstan, China, Laos, Mongolia, Nicaragua, Syria and Tajikistan.
- However, India has only sent its army contingent and **will not take part in the maritime section** of the two-part event.
- This is because, while the first part of the land exercises will be held in Russian military training grounds in Siberia and the Far Eastern Federal District, the **maritime part of the exercises** would be held in the **Sea of Okhotsk** and the **Sea of Japan**. These are **near the disputed South Kuril islands, claimed by both Russia and Japan**.
- The **Kuril Islands** are a chain of islands that stretch between the Japanese island of **Hokkaido** at their southern end and the Russian **Kamchatka Peninsula** at their northern end. **The islands separate the Sea of Okhotsk from the Pacific Ocean.**

