

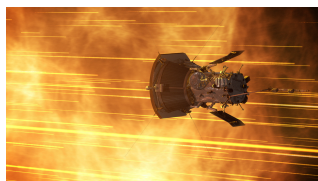


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National and International News

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Parker Solar Probe



Why in news?

- On March 22, 2025, NASA's Parker Solar Probe approached the Sun more closely, reaching 6 million km from its surface.
- The probe, launched in 2018, has set the record for being the closest spacecraft to the Sun and will continue making 24 close approaches to study solar activity.

Key Points:

- **Launched by NASA on August 12, 2018, from Cape Canaveral, Florida.**
- Designed to **study the Sun's corona, solar wind, and magnetic field to understand space weather and its effects on Earth.**
- Moves in a highly elliptical orbit, using Venus' gravity assist to spiral gradually closer to the Sun.
- **Speed:** The fastest human-made object, reaching 692,000 km/hr.
- **Mission Duration:** Designed to complete 24 orbits around the Sun, with a mission extending into the 2030s.
- **Key Features:**
 - **FIELDS:** Measures electric & magnetic fields in the corona.
 - **ISoIS (Integrated Science Investigation of the Sun):** Observes energetic solar particles responsible for solar storms.
 - **SWEAP (Solar Wind Electrons, Alphas & Protons):** Records solar wind properties.
 - **WISPR (Wide-Field Imager for Solar Probe):** Captures high-resolution images of the corona.

Uniform Civil Code (UCC)

Why in news?

- In a crackdown on Madrasas, the **Uttarakhand government has sealed more than 136 such institutions** to date.
- This has drawn attention to the state's actions regarding issues related to the minority community, including laws like the Uniform Civil Code and the removal of Mazars.

Key Points:

- A Uniform Civil Code refers to a **single law for the entire country, applicable to all religious communities in their personal matters such as marriage, divorce, inheritance, adoption etc.**
- It is intended to **replace the system of fragmented**



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	<p>personal laws, which currently govern interpersonal relationships and related matters within different religious communities.</p> <ul style="list-style-type: none"> ● Constitution of India on UCC <ul style="list-style-type: none"> ○ Article 44 of the Constitution lays down that the State shall endeavour to secure a Uniform Civil Code for the citizens throughout the territory of India. ○ These, as defined in Article 37, are not justiciable (not enforceable by any court) but the principles laid down therein are fundamental in governance. ○ These principles consist of all the ideals which the State should follow and keep in mind while formulating policies and enacting laws for the country.
SpaceX Starship	<p>Why in news?</p> <ul style="list-style-type: none"> ● Recently, Elon Musk, CEO of SpaceX, announced on X that an uncrewed Mars landing mission will occur by the end of next year. ● The mission is expected to feature Optimus, a robot developed by Tesla, another company owned by Musk, as its passenger. <p>Key Points:</p> <ul style="list-style-type: none"> ● Starship is a two-stage fully reusable super heavy-lift launch vehicle under development by American aerospace company SpaceX. ● Starship is the collective name for a two-component system consisting of the Starship spacecraft (which carries the crew and cargo) and the Super Heavy rocket. ● It is the world's most powerful launch vehicle ever developed, capable of carrying up to 150 metric tonnes fully reusable and 250 metric tonnes expendable. ● The vehicle comes in several different configurations, offers an integrated payload section and is capable of carrying crew and cargo to Earth orbit, the Moon, Mars and beyond. ● It is also capable of point-to-point transport on Earth, enabling travel to anywhere in the world in one hour or less. ● Starship is powered by six engines, three Raptor engines, and three Raptor Vacuum (RVac) engines, which are designed for use in the vacuum of space.
Operation Brahma	<p>Why in news?</p> <ul style="list-style-type: none"> ● After a devastating earthquake ravaged Myanmar recently, India initiated its relief and rescue efforts in the country under the banner 'Operation Brahma'. <p>Key Points:</p> <ul style="list-style-type: none"> ● It is India's humanitarian mission launched in response



	<p>to the devastating 7.7-magnitude earthquake that struck Myanmar.</p> <ul style="list-style-type: none"> • The large-scale humanitarian mission includes rescue teams, medical aid, and relief supplies. • The National Disaster Response Force (NDRF) deployed an 80-member team equipped with concrete cutters, drill machines, plasma cutters, and other rescue tools. • The Indian Army dispatched a specialized 118-member medical team from the elite Shatrueet Brigade Medical Responders. • As part of the mission, the Indian Army will set up a 60-bed Medical Treatment Centre to provide immediate care to those injured in the disaster. • The facility will be equipped to handle trauma cases, emergency surgeries, and essential medical services to support Myanmar's strained healthcare system. • Two Indian naval ships, INS Satpura and INS Savitri, were dispatched carrying 40 tonnes of humanitarian aid to the port of Yangon.
<p>Launch Vehicle Mark-3 (LVM3)</p>	<p>Why in news?</p> <ul style="list-style-type: none"> • ISRO has announced significant progress in the design and development of a semicryogenic engine, a liquid oxygen/kerosene engine with a high thrust of 2,000 kN (kilonewton), which will power the semicryogenic booster stage of the Launch Vehicle Mark-3 (LVM3). <p>Key Points:</p> <ul style="list-style-type: none"> • The LVM3 is a dedicated commercial mission for a foreign customer OneWeb, through NewSpace India Limited (NSIL), a Central Public Sector Enterprise (CPSE). • It is the first multi-satellite mission with 36 OneWeb Satellites to the LEO as the heaviest Payload mass of 5,796 kg. of LVM3 till date. • This newest rocket is capable of launching 4,000-kilogram class of satellites into GTO (Geosynchronous Transfer Orbit) and 8,000 kgs of payloads into LEO. • It is a three-stage launch vehicle consisting of two solid propellant S200 strap-ons on its sides and core stage comprising L110 liquid stage and C25 cryogenic stage. • Advantages: <ul style="list-style-type: none"> ○ Handling of multiple satellite separation events ○ Increased nominal mission duration ○ Ensuring safe separation distance through C25 (cryo) stage re-orientation & velocity addition ○ Ensuring data availability for entire mission duration ○ Realisation of new payload adaptor and interface ring for the satellites dispenser



India-US Relations

Why in news?

- Top trade officials from India and the U.S. have reached a broad understanding on the next steps toward a **bilateral trade agreement (BTA)**, paving the way for sectoral expert-level engagements.

Key Points:

- The relationship between India and the United States has evolved into one of the most significant partnerships in the 21st century.
- It spans **economic, strategic, and cultural dimensions, reflecting the shared values and mutual interests of the world's largest democracies**
- The two nations are motivated by common interests: **India aims to become the world's third-largest economy, while the US seeks reliable allies to counterbalance China's growing influence.**
- **Defense Ties:**
 - In 2018, India was elevated to **Strategic Trade Authorization tier 1 status, which allowed India to receive license-free access to a wide range of military and dual-use technologies regulated by the US's department of commerce.**
 - The signing of foundational agreements like **LEMOA (2016), COMCASA (2018), and BECA (2020)** has enabled deeper military cooperation.
 - **Joint exercises like Malabar and the establishment of the 2+2 Ministerial Dialogue in 2018** have further strengthened strategic ties.
- Recent initiatives like the **US-India Artificial Intelligence Initiative and the Critical and Emerging Technology Initiative (iCET) launched in 2022** underscore the strategic importance of tech cooperation in bilateral ties.



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