



Modi, Vance see 'significant progress' in trade talks

PM reviews bilateral ties with U.S. Vice-President, hosts his family for dinner; no new agreements announced as earlier expected; no mention of tariff, visa revocation issues in PMO statement; Modi also discusses India-U.S. road map that seeks to build on Mr. Trump's 'Make America Great Again' slogan and New Delhi's 'Viksit Bharat 2047' plans

Suhasini Haidar
NEW DELHI

Welcoming "significant progress" in talks for a Bilateral Trade Agreement (BTA), Prime Minister Narendra Modi and U.S. Vice-President J.D. Vance met in Delhi on Monday, and reviewed plans for India-U.S. cooperation, the Prime Minister's Office (PMO) said.

Mr. Vance's office said the two leaders "formally announced the finalisation of the Terms of Reference for the negotiations", even as Indian and U.S. officials

launch the TRUST Technology Partnership as had been earlier expected.

Trump's visit

Mr. Modi said he looked forward to U.S. President Donald Trump's visit to India "later this year", when India will host the U.S.-India-Japan-Australia Quad Summit.

"The BTA is expected to create new opportunities of growth for workers, farmers, and entrepreneurs in both countries," Mr. Vance's office said, calling the agreement an "opportunity to negotiate a new and modern trade



U.S. Vice-President J.D. Vance and family with Prime Minister Narendra Modi at his residence in New Delhi on Monday. REUTERS

ing reducing tariffs in a number of areas. However, there has been little indication of a breakthrough on

welfare of the people of the two countries," the PMO said in its statement. "They noted continued efforts to

force many Indians to return without completing their studies.

Mr. Modi also discussed the India-U.S. road map that seeks to build on Mr. Trump's "Make America Great Again (MAGA)" slogan and New Delhi's plans for "Viksit Bharat (Developed India) 2047", the statement said. National Security Adviser Ajit Doval and External Affairs Minister S. Jaishankar were present at the talks at the Prime Minister's residence, along with senior U.S. officials, and U.S. Charge d'Affaires Jorgan Andrews.

war or the conflict in Gaza were discussed.

Earlier, the visit had some uncertain moments as news came in of Pope Francis' sudden demise in the Vatican, leading to questions about whether Mr. Vance, a Catholic, who had met the Pope only on Sunday after Easter mass, would curtail his plans, or whether the Prime Minister would put off the official dinner. However, the visit proceeded as scheduled, with Mr. Vance writing a post on X just after learning of the Pope's passing. "I was happy to see him yesterday, though he

Monday morning, where he was received by Railway Minister Ashwini Vaishnaw. Mr. Vance and Ms. Usha Vance then brought their two sons, Ewan and Vivek, and daughter Mirabel off the plane dressed in Indian clothes. Although an earlier plan to visit the Red Fort was cancelled, the Vances went to the Akshardham temple and then shopped at the government-owned Cottage Emporium for Indian handicrafts.

The Vances will spend Tuesday in Jaipur at private engagements and cultural events, as well as a vi-

KEY POINTS

- PM Modi and U.S. Vice President J.D. Vance met in Delhi and finalized the Terms of Reference for India-U.S. Bilateral Trade Agreement talks, with further negotiations set in Washington.
- They discussed cooperation in trade, defense, and strategic tech but did not launch the expected TRUST Partnership.





THE HINDU



GS Paper 2-Governance

Bengal violence: SC debates limits of power in issuing directions on plea

The Hindu Bureau
NEW DELHI

The Supreme Court on Monday answered a plea to direct the Union government to invoke emergency powers and “protect” the State of West Bengal from violence with a question on whether such a measure would amount to a judicial incursion into the domains of the Executive and Legislature.

The judge’s remark



truding on government and parliamentary terrains following an April 8 judgment in the Tamil Nadu Governor case.

The court, in its verdict, had issued timelines to the President and Governors for clearing Bills.

Vice-President Jagdeep Dhankhar had later criticised the judiciary for acting like a “super-Parliament”.

“You want us to issue a writ of mandamus to the

KEY POINTS

- The Supreme Court questioned whether directing the Union government to invoke Article 355 over violence in West Bengal would amount to judicial overreach. Advocate Vishnu Shankar Jain sought urgent intervention citing unrest over the Waqf (Amendment) Act, 2025. Justice B.R. Gavai, referencing past criticism of judicial interference, asked whether such action would intrude into Executive and Legislative functions.



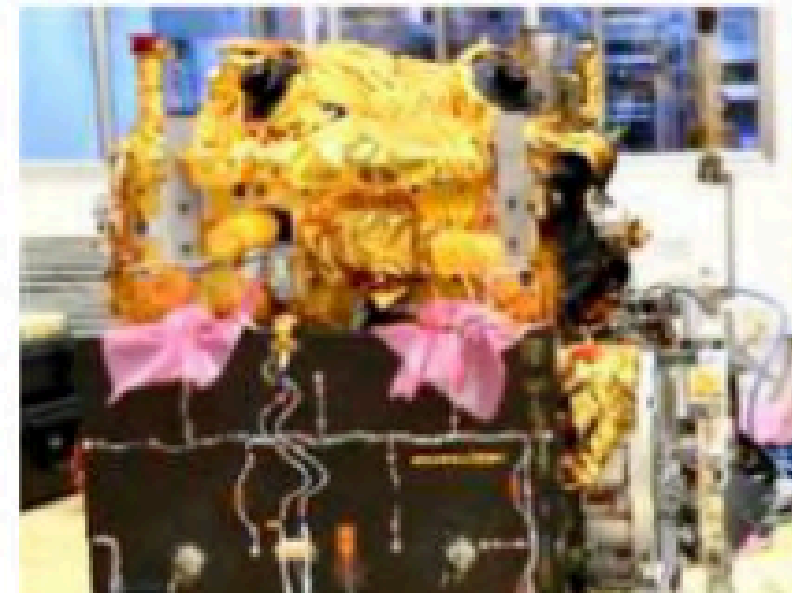


GS Paper 3-Space

Two ISRO satellites dock successfully for the second time

The Hindu Bureau
BENGALURU

The Indian Space Research Organisation (ISRO) has successfully executed the second docking of the two satellites – SDX01 (Chaser)





KEY POINTS

- ISRO successfully completed the second docking of satellites SDX01 and SDX02 under the SpaDeX mission, making India the fourth country to achieve this. The mission, launched in December 2024, aims to develop key technologies for future lunar missions, space stations, and in-space robotics.





THE HINDU



GS Paper 3-Space

Bullseye! Galaxy with nine rings may reveal dark matter secrets

Researchers found signs that a blue dwarf galaxy had passed through the centre of the Bullseye Galaxy, and the interaction could have led stars to pile up and form the rings; the Bullseye could evolve into a giant low surface-brightness galaxy, which is important in the study of dark matter

Shreya Samra

A team of international researchers recently discovered a galaxy with nine rings. They called it a "rare discovery" because previous ringed galaxies have only displayed two or three rings at best.

Using the Hubble Space Telescope, the team confirmed the presence of eight rings, while data from the W.M. Keck Observatory in Hawaii confirmed the existence of the ninth ring.

This unusual galaxy has been named UGCA 01424 but its common name is more memorable: the Bullseye Galaxy. The story of how its rings could have formed may render it more memorable.

A thin trail of evidence

When the researchers analysed the data from the space telescope and the observatory, they found signs that a blue dwarf galaxy, located at the immediate centre-left in an image, had passed through the centre of the Bullseye Galaxy about 50 million years ago. They have said this interaction gave the Bullseye galaxy its unique shape.

As evidence of this interaction, the team reported a thin trail of gas connecting the two galaxies even though they are separated by 100,000 light-years or 1.22 billion billion km. This is all the more remarkable considering the Bullseye Galaxy is nearly 2.5 times larger than the Milky Way with a diameter of 2,50,000 light-years.

On cosmic timescales, galaxies crash or barely miss one another relatively often. But even then it is very rare for one galaxy to literally start through the core of another. The blue dwarf galaxy's arrival could have led to the formation of the rings.



The mass of black holes at the centres of these GLSB galaxies is also lower than usual, meaning they aren't fully evolved.

MOONSHI (The Hindu, Indian Institute of Astrophysics, Bangalore)

material within them expands outward, creating a large, disk-like shape with a low density," and eventually GLSB galaxies.

"And their disks are not dense enough to easily form stars."

Studying GLSB galaxies in more detail could help check whether this idea, and others like it, could be true. This in turn makes confirming whether new-found galaxies like the Bullseye could be GLSB galaxies in future more important.

New insight

The international team of researchers reported that the size of the Bullseye Galaxy's extended disk and hydrogen content relative to its stellar mass are comparable to that of other GLSB galaxies, and that it's likely to become one in future. But in their paper they were also careful to add that more analysis is still required.

Ms. Das said, "The transition from a ringed galaxy to a GLSB galaxy is still a theory that is being explored" and that "past simulations have demonstrated that some GLSB galaxies may have formed from head-on collisions between disk galaxies", as in the Bullseye Galaxy's case. But she also said most GLSB galaxies are found in isolation — i.e. not surrounded by other galaxies nearby — making it less likely they are formed from collisions with



KEY POINTS

- Astronomers discovered the Bullseye Galaxy (LEDA 1313424) with nine rings, formed by a blue dwarf galaxy passing through it 50 million years ago. The galaxy, 2.5 times the size of the Milky Way, may evolve into a giant low surface-brightness (GLSB) galaxy, important for studying dark matter. More analysis is needed to confirm this potential evolution.





THE HINDU



GS Paper 3-Economy

Why did China block exports of rare earth elements?

What are rare earth elements? Why did China restrict their imports? How do the restrictions impact India?

Aroon Deep

The story so far:

Amid the ongoing U.S.-China trade war, Chinese authorities have reportedly imposed export controls on rare earth elements (REEs) and magnets that are needed in a range of manufacturing activities, from semiconductor fabrication units to defence equipment. This has been one of the more recent salvos in the trade war between the two countries, but the export restrictions apply to any Chinese refinery that can export refined rare earths outside the country.

countries, such as India, China, Myanmar, Japan, Australia and North Korea.

China's curbs target dysprosium, gadolinium, lutetium, samarium, scandium, terbium, and yttrium, seven of the 17 elements classified as REEs.

Dysprosium's so-called magnetic susceptibility makes it ideal for use in hard disks and car motors; gadolinium is used in nuclear reactors for shielding and in some medical equipment; lutetium and compounds with it are used in PET scanners and in petroleum refineries; samarium is used in powerful magnets in personal electronics; scandium-aluminium alloys are used in fighter aircraft; terbium is used in lighting

over the entire world for a range of supply chains for critical raw and intermediate materials. The export restrictions don't appear to amount to an outright ban, but could interrupt supplies to countries for a few weeks as refiners work through the process of getting permits.

What is the impact on India?

Indian supply chains may not be immediately impacted by REE export restrictions in China. While the government has taken steps to boost domestic production of semiconductors and defence equipment, the more advanced stages of manufacturing typically happen abroad in countries like

factors in India's practically non-existent capabilities in those activities.

India has light REE extraction capabilities through the state-owned Indian Rare Earths Ltd, such as monazite extraction from beach sand in Kerala.

India imports a limited quantity of REEs. In a response to the Lok Sabha earlier in April, the Ministry of Mines said 2,270 tonnes of REEs were imported in 2023-24. As such, the country's strategy depends on both boosting domestic production and imports.

What is the government's plan?

"As a policy framework for utilizing critical minerals, including rare earth metals, the National Critical Mineral Mission (NCMM) has been launched, which is India's strategic initiative to secure critical mineral supply chain by increasing domestic critical minerals production and foreign supply sources," the Ministry said in Parliament.

Critical minerals are a larger umbrella under which REEs fall.

"China's restrictions on certain critical minerals, the Russia-Ukraine War, and other issues highlight the fragility of

THE GIST

Amid the ongoing U.S.-China trade war, China has restricted the export of 17 rare earth elements that are essential materials in a wide range of industries — from being used in hard disks and car motors to superconductors and cancer treatment.

With practically all REEs being refined in China, this move could interrupt supply chains across many countries for a few weeks.

India may not be immediately impacted by the move; besides, the government has been working on realising the country's potential in REE extraction.



KEY POINTS

- China has imposed export controls on rare earth elements (REEs), crucial for industries like semiconductors and defense, giving it leverage over global supply chains. India, with 6% of global REE deposits, may not face immediate impacts but relies on imports for advanced manufacturing





GS Paper 3-Environment

World Earth Day Being Celebrated Today, HM Amit Shah To Inaugurate Save Earth Conclave



KEY POINTS

- Earth Day, celebrated globally since 1970, promotes environmental protection.
- The 2025 theme, "Our Power, Our Planet," focuses on using renewable energy to protect natural resources and achieve clean, sustainable power for all.





GS Paper 2-IR

India, Saudi Arabia To Discuss Regional Security & Strategic Partnership During PM Modi's Visit



KEY POINTS

- PM Modi will visit Saudi Arabia from April 22–23, highlighting the Kingdom's strategic importance to India in energy, diaspora support, and regional stability. Talks will focus on security, humanitarian aid, and strengthening ties.
- The visit builds on past cooperation like Operation Kaveri and reflects the deepening India–Saudi strategic partnership since 2019.

