



spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



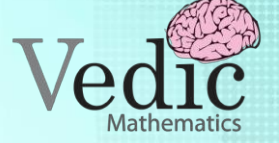
SpardhaGuru



Spardha.guru



www.spardha.guru



Space & Astronomy:

1. Major Missions & Launches:

NISAR Satellite Launch (ISRO-NASA Joint Mission): The Indian Space Research Organisation (ISRO) has confirmed that the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite will launch on July 30, 2025, at 5:40 PM IST from Sriharikota, using ISRO's GSLV-F16 rocket. This \$1.5 billion satellite is the first joint Earth observation satellite developed by ISRO and NASA.

Capabilities: NISAR, weighing 2,392 kg, is equipped with a dual-frequency synthetic aperture radar (SAR) and NASA's 12-meter unfurlable mesh reflector antenna. It will scan the entire globe every 12 days, providing high-resolution, all-weather, day-and-night data using SweepSAR technology.

Applications: It can detect subtle changes in Earth's surface, including ground deformation, ice sheet movements, vegetation dynamics, sea ice classification, ship detection, shoreline monitoring, storm tracking, and soil moisture changes, supporting disaster response.

China's Tianzhou-9 Cargo Mission: On July 15, 2025, China successfully launched the Tianzhou-9 cargo spacecraft to deliver essential supplies, including two upgraded extravehicular activity (EVA) spacesuits (with a 4-year lifespan and capacity for 20 spacewalks), to the Tiangong space station. This highlights China's increasing confidence in orbital logistics and its capacity to sustain an independent space station.

ESA/Arianespace Vega C Launch (CO3D & MicroCarb): On July 25, 2025, Arianespace is scheduled to launch the CO3D (Constellation Optique en 3D) quartet of Earth observation satellites and the MicroCarb greenhouse gas-measuring satellite from French Guiana using a Vega C rocket.

ESA/UK Space Agency SkyPhi Mission (5G from LEO): MDA Space UK will prime SkyPhi, a new mission funded by ESA and the UK Space Agency, announced on July 16, 2025. This mission aims to enable regenerative 5G direct-to-device (D2D) satellite communications from low Earth orbit (LEO), placing the UK as a leader in new satellite technologies.

Axiom Mission 4 (Ax-4) Splashdown: The Ax-4 crew safely splashed down off the coast of California on July 15, 2025, concluding an 18-day mission to the International Space Station. This historic mission marked the first government-sponsored human spaceflight to the ISS for India, Poland, and Hungary, with crew members conducting over 60 research activities.

2. Deep Space Discoveries & Research:

James Webb Space Telescope (JWST) Discoveries:

"Sleeping Beauty" Galaxies: JWST data has revealed over a dozen "dormant" galaxies that paused their star formation within the first billion years after the Big Bang. This challenges previous assumptions and offers clues about galaxy evolution.





spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



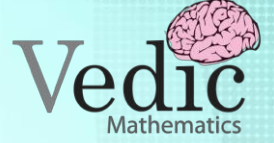
SpardhaGuru



Spardha.guru



www.spardha.guru



First Directly Imaged Planet (Candidate): JWST has captured compelling evidence of a Saturn-mass exoplanet candidate (TWA 7b) orbiting the young star TWA 7. If confirmed, this would be Webb's first direct image discovery of a planet and the lightest planet ever seen with this technique. Its location within a debris disk suggests it might be shaping the disk's structure.

Cat's Paw Nebula: To mark its third year of science, JWST scratched beyond the surface of the Cat's Paw Nebula (NGC 6334), a massive, local star-forming region.

New Exoplanet Discoveries:

Massive Hidden Exoplanet (MP Mus): Astronomers uncovered a massive, hidden exoplanet, between three and ten times the size of Jupiter, nestled in the dusty disk of a young star called MP Mus. This was achieved by combining data from the ALMA observatory and ESA's Gaia mission, marking the first time a planet in such a disk has been detected using these tools.

Hidden Alien Planet (Kepler-139f): Scientists detected a hidden alien planet, Kepler-139f, roughly twice the mass of Neptune and 35 times the mass of Earth, in the Kepler-139 star system by examining the orbits of its known worlds.

3. Commercial Spaceflight & Infrastructure:

SpaceX Activity: SpaceX continues its rapid launch cadence in July 2025 with multiple Falcon 9 missions:

Starlink Launches: Several batches of Starlink satellites were launched to Low Earth Orbit (LEO) from both Vandenberg SFB, California,

and Cape Canaveral Space Force Station, Florida, throughout July.

03b mPOWER Satellites: SpaceX launched the fifth pair of SES' 03b mPOWER satellites into Medium Earth Orbit (MEO) on July 22, 2025.

Project Kuiper: SpaceX launched the first of three planned Falcon 9 missions for Amazon's Project Kuiper constellation on July 15, 2025.

Crew-11 Launch: NASA and SpaceX are targeting July 31 for the Crew-11 launch to the ISS, marking the first time a SpaceX Crew Dragon capsule will fly for a sixth time.

Artemis Program Updates:

Senegal Signs Artemis Accords: Senegal is set to become the 56th country to sign the Artemis Accords on July 24, 2025, at NASA Headquarters, demonstrating growing international collaboration in lunar exploration under US leadership.

Artemis II, III, IV, V Schedule (as of May 2025): Artemis II (first crewed test flight) is expected in early 2026, Artemis III (first crewed lunar landing since Apollo 17) in mid-2027, Artemis IV (docking with Lunar Gateway) in late 2028, and Artemis V (delivering ESA's ESPRIT and Canadarm3) in March 2030.

4. Celestial Events (Stargazing):

Moon and Jupiter Conjunction: On July 23, 2025, early risers could witness a wafer-thin crescent moon shining close to the gas giant Jupiter in the morning sky, a visible event with the naked eye. Venus also appeared to the upper right of Jupiter, forming a fleeting cosmic triangle with Betelgeuse.





spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



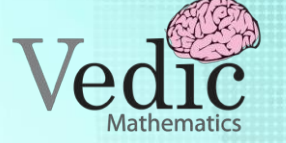
SpardhaGuru



Spardha.guru



www.spardha.guru



Dear Students,

Stay updated with **important lessons, tutorials, and announcements** by subscribing to our official **WhatsApp Channel!**

Scan the QR code below to join and never miss an update!

Thank you for your continued support and enthusiasm.

Let's keep learning and growing together!

MCQS

1. What is the upcoming launch date for the NISAR satellite, the joint Earth observation mission between ISRO and NASA?

- a) July 25, 2025
- b) July 30, 2025
- c) August 5, 2025
- d) August 15, 2025

Answer: b) July 30, 2025

The news states, "The Indian Space Research Organisation (ISRO) has confirmed that the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite will launch on July 30, 2025, at 5:40 PM IST from Sriharikota..."

2. Which countries had their first government-sponsored human spaceflight to the ISS during the recently concluded Axiom Mission 4 (Ax-4)?

- a) Japan, South Korea, Australia
- b) India, Poland, Hungary
- c) Brazil, Argentina, Chile
- d) South Africa, Egypt, Nigeria

Answer: b) India, Poland, Hungary

The news states, "This historic mission marked the first government-sponsored human spaceflight to the ISS for India, Poland, and Hungary..."

3. What significant type of galaxy has the James Webb Space Telescope (JWST) data recently revealed, challenging previous assumptions about early galaxy evolution?

- a) Spiral galaxies with active galactic nuclei.
- b) "Dormant" galaxies that paused their star formation.
- c) Elliptical galaxies with very high star formation rates.
- d) Irregular galaxies undergoing mergers.

Spardhaguru Competitive Exam
Coaching Institute
WhatsApp ಚಾನಲ್



ಈ ಚಾನಲ್ ನೋಡಲು ಅಥವಾ ಫಾಲೋ ಮಾಡಲು
ಕ್ಯಾಮರಾ ಬಳಸಿ ಈ QR ಕೋಡ್ ಸ್ಕ್ಯಾನ್ ಮಾಡಿ.





spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



SpardhaGuru



Spardha.guru



www.spardha.guru



Answer: b) "Dormant" galaxies that paused their star formation.

The news states, "JWST data has revealed over a dozen 'dormant' galaxies that paused their star formation within the first billion years after the Big Bang."

4. Astronomers using ALMA and ESA's Gaia mission discovered a massive, hidden exoplanet in the dusty disk of a young star. What is the name of this star?

- a) TWA 7
- b) Kepler-139
- c) MP Mus
- d) NGC 6334

Answer: c) MP Mus

The news states, "Astronomers uncovered a massive, hidden exoplanet... nestled in the dusty disk of a young star called MP Mus."

5. Which country is set to become the 56th to sign the Artemis Accords on July 24, 2025, demonstrating growing international collaboration in lunar exploration?

- a) Brazil
- b) South Africa
- c) Senegal
- d) New Zealand

Answer: c) Senegal

The news states, "Senegal is set to become the 56th country to sign the Artemis Accords on July 24, 2025, at NASA Headquarters..."

Dear Students,

Stay updated with **important lessons, tutorials, and announcements** by subscribing to our official **YouTube Channel!**

Scan the QR code below to subscribe and never miss an update!

Thank you for your continued support and enthusiasm. Let's keep learning together!

