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Space & Astronomy:

Key Astronomical Events

Conjunction of the Moon and Jupiter: Early risers on September 16 can observe a close conjunction of the waning crescent Moon and Jupiter in the eastern sky before sunrise. Both objects are visible to the naked eye. Observers with a telescope can see all four of Jupiter's Galilean moons positioned around the planet. A shadow transit of Europa across Jupiter's cloud tops is also potentially visible from parts of the U.S.

Asteroid Flyby: Asteroid 2025 FA22, which is larger than Delhi's Qutub Minar, is set to make a close but safe flyby of Earth on September 18. This object is classified as a "potentially hazardous asteroid," but detailed tracking has confirmed it poses no collision threat.

Cassini-Huygens Anniversary: The European Space Agency (ESA) and the Paris Observatory are holding an event to celebrate the 20th anniversary of the Huygens probe's landing on Titan, a milestone of the Cassini mission.

Mission and Scientific Updates

Perseverance Rover: After a year of peer review, a study has confirmed that a rock sample collected by NASA's Perseverance Mars rover in a location called "Sapphire Canyon" contains potential biosignatures, or clues that suggest past microbial life may have existed.

Juno Mission Ending: NASA's Juno spacecraft is preparing for its final days. Between September 16 and 20, it is gathering its last data before a planned controlled impact into Jupiter's

atmosphere, bringing its 14-year mission to a close.

Solar Flare Research: A new study reveals that ions within solar flares can reach temperatures of up to 108 million degrees Fahrenheit, significantly hotter than previously thought. This discovery has major implications for understanding and predicting **space weather**.

Asteroid Tracking: Indian Space Research Organisation (ISRO) is planning to expand its efforts in asteroid tracking and may send spacecraft to land on asteroids in the near future. This initiative is part of a growing global collaboration in planetary defense.

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d) September 22

Answer: b) September 18

The asteroid 2025 FA22 is scheduled to make its flyby of Earth on September 18. Although it's classified as "potentially hazardous," it poses no collision threat.

3. The 20th anniversary of the Huygens probe's landing on which moon is being celebrated?

- a) Europa
- b) Titan
- c) Ganymede
- d) Callisto

Answer: b) Titan

The Huygens probe, which was part of the Cassini mission, made a historic landing on Saturn's largest moon, Titan, 20 years ago.

The rock sample collected by NASA's Perseverance Mars rover, which contains potential biosignatures, was found in a location called:

- a) Perseverance Valley
- b) Sapphire Canyon
- c) Curiosity Crater
- d) Titan Basin

Answer: b) Sapphire Canyon

A study confirmed that a rock sample from a location named "Sapphire Canyon" on Mars contains clues that may suggest the presence of past microbial life.

5. What is the fate of NASA's Juno spacecraft, whose mission is coming to an end?

- a) It will be redirected to orbit another planet.
- b) It will be placed in a stable orbit around Jupiter.
- c) It will be intentionally deorbited for a controlled impact into Jupiter's atmosphere.

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MCQS

1. What two celestial objects are in a close conjunction in the eastern sky on September 16?

- a) Mars and the Moon
- b) The Moon and Venus
- c) The Moon and Jupiter
- d) Jupiter and Saturn

Answer: c) The Moon and Jupiter

The news highlights a close conjunction of the waning crescent Moon and Jupiter, visible in the eastern sky before sunrise on September 16.

2. The asteroid 2025 FA22, which is larger than Delhi's Qutub Minar, is set to make a close but safe flyby of Earth on which date?

- a) September 16
- b) September 18
- c) September 20





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d) It will be brought back to Earth for a museum display.

Answer: c) It will be intentionally deorbited for a controlled impact into Jupiter's atmosphere. The Juno mission is concluding with a planned, controlled impact into Jupiter's atmosphere to prevent any contamination of its moons.

6. A new study on solar flares revealed that ions within them can reach temperatures of up to:

- a) 108 million degrees Fahrenheit
- b) 50 million degrees Fahrenheit
- c) 10 million degrees Fahrenheit
- d) 1 million degrees Fahrenheit

Answer: a) 108 million degrees Fahrenheit

A recent study has found that the ions inside solar flares can reach a much higher temperature of up to 108 million degrees Fahrenheit, which is hotter than previously believed.

7. Which organization is planning to expand its efforts in asteroid tracking and may send spacecraft to land on asteroids in the near future?

- a) NASA
- b) ESA
- c) ISRO
- d) Roscosmos

Answer: c) ISRO

The Indian Space Research Organisation (ISRO) is planning to enhance its capabilities in asteroid tracking and planetary defense by considering missions to land on asteroids.

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