



spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



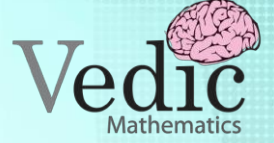
SpardhaGuru



Spardha.guru



www.spardha.guru



## Space & Astronomy:

### Major Celestial Event - Twin Meteor Showers Peak:

**Southern Delta Aquariids and Alpha Capricornids:** Two meteor showers, the Southern Delta Aquariids and the Alpha Capricornids, are peaking together on July 29-30, 2025.

**Visibility and Rates:** Skywatchers can expect to see up to 25 meteors per hour. The Southern Delta Aquariids are the main show, known for faint, persistent trails, producing around 20 meteors per hour. The Alpha Capricornids contribute 5 to 10 meteors per hour and are famous for their slow-moving, bright, and often colorful fireballs.

**Optimal Viewing Conditions:** This year offers excellent visibility due to a nearly moonless sky. While best viewed from the Southern Hemisphere, both showers are visible worldwide. For Northern Hemisphere viewers, looking southward during predawn hours is recommended.

**Origins:** The Southern Delta Aquariids originate from Comet 96P/Machholz, while the Alpha Capricornids are linked to Comet 169P/NEAT.

**Extended Window:** The Southern Delta Aquariids have a broad peak, with high activity expected to continue until July 31.

### Upcoming Launches & Missions:

**NISAR Launch (India-US Collaboration):** The NASA-ISRO Synthetic Aperture Radar (NISAR) mission is scheduled to launch on Wednesday, July 30, at 8:10 a.m. EDT (5:40 p.m. IST) from

Satish Dhawan Space Centre in India. This is the first joint satellite mission between the US and India, designed to provide high-resolution, three-dimensional mapping of Earth's surface to monitor environmental changes like earthquakes, landslides, glaciers, and crops.

**SpaceX Crew-11 Mission:** SpaceX's Crew-11 mission, carrying four astronauts for a 142-day stay on the International Space Station (ISS), is slated for launch on July 31. The mission will conduct research relevant to NASA's Artemis program.

**Other Launches:** Several other launches are planned for this week:

Australia's Gilmour Space Technologies will attempt the inaugural test flight of its Eris TestFlight1 mission on Tuesday, July 29, at 11:30 p.m. EDT.

iSpace plans to launch its Hyperbola 1 from Jiuquan on Tuesday night, July 29 (12:10 a.m. EDT on July 30).

SpaceX is set to launch Starlink Group 10-29 on Tuesday, July 29, at 11:30 p.m. EDT.

### Ongoing Astronomical Observations & Discoveries:

**Saturn and its Moons:** On July 29, Saturn is prominently visible in the early morning sky in the constellation Pisces. Its largest moon, Titan, reaches its greatest eastern elongation, and several fainter moons like Tethys, Rhea, and Dione are also visible. Neptune is also observable nearby with a telescope.

**AstroSat's Black Hole Discoveries:** India's first specialized multi-wavelength space observatory, AstroSat, has made breakthrough





spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



SpardhaGuru



Spardha.guru



www.spardha.guru



discoveries about black holes. Scientists detected recurring patterns of X-ray radiation, including "Quasi-periodic Oscillations" (QPOs) – rapid X-ray flickers 70 times per second – originating from the superheated plasma (corona) around a black hole in our Milky Way.

**Habitable Worlds Observatory (HWO):** A meeting titled "Towards the Habitable Worlds Observatory: Visionary Science and Transformational Technology" is ongoing from July 28-31. HWO is the next planned NASA astrophysics flagship mission, aiming to launch in the early to mid-2040s with a large mirror to find and study atmospheres of at least 25 potentially habitable exoplanets.

#### India's Space Achievements & Future:

**PM Modi Highlights Achievements:** Prime Minister Narendra Modi, in his "Mann Ki Baat" address, expressed pride in India's recent achievements in space and science, specifically mentioning Indian astronaut Shubhanshu Shukla's recent space mission and the success of Chandrayaan-3.

**Growing Space Startups:** PM Modi noted the rapid growth of space-related startups in India, increasing from fewer than 50 five years ago to over 200 today.

**Astronomy and Astrophysics Olympiad:** India will host the Astronomy and Astrophysics Olympiad in Mumbai next month, with participants from 60 countries.

**Gaganyaan Mission:** India's space agency ISRO is preparing for Gaganyaan, its first human spaceflight mission.

Dear Aspirants,

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!







spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



SpardhaGuru



Spardha.guru



www.spardha.guru



## MCQS

1. Which two meteor showers are peaking together on July 29-30, 2025?

- a) Perseids and Leonids
- b) Geminids and Orionids
- c) Southern Delta Aquariids and Alpha Capricornids
- d) Lyrids and Eta Aquariids

**Answer:** c) Southern Delta Aquariids and Alpha Capricornids

The news states, "Two meteor showers, the Southern Delta Aquariids and the Alpha Capricornids, are peaking together on July 29-30, 2025."

2. What characteristic are the Alpha Capricornids meteor shower particularly famous for?

- a) Rapid, faint streaks
- b) Very high meteor rates
- c) Slow-moving, bright, and often colorful fireballs
- d) Being exclusively visible from the Northern Hemisphere

**Answer:** c) Slow-moving, bright, and often colorful fireballs

The news highlights, "The Alpha Capricornids contribute 5 to 10 meteors per hour and are famous for their slow-moving, bright, and often colorful fireballs."

3. What is the NISAR mission designed to do?

- a) Study distant galaxies and exoplanets.
- b) Provide high-resolution, three-dimensional mapping of Earth's surface to monitor environmental changes.
- c) Transport cargo to the International Space Station.
- d) Explore the outer planets of our solar system.

**Answer:** b) Provide high-resolution, three-dimensional mapping of Earth's surface to monitor environmental changes.

The news states, "This is the first joint satellite mission between the US and India, designed to provide high-resolution, three-dimensional mapping of Earth's surface to monitor environmental changes like earthquakes, landslides, glaciers, and crops."

4. The SpaceX Crew-11 mission is slated for launch on July 31. What is the planned duration of the astronauts' stay on the International Space Station (ISS)?

- a) 30 days
- b) 90 days
- c) 142 days
- d) 365 days

**Answer:** c) 142 days

The news indicates, "SpaceX's Crew-11 mission, carrying four astronauts for a 142-day stay on the International Space Station (ISS), is slated for launch on July 31."

5. What type of celestial object has India's AstroSat observatory made breakthrough discoveries about, including the detection of "Quasi-periodic Oscillations" (QPOs)?

- a) Distant galaxies
- b) Supernovae
- c) Black holes
- d) Newly formed stars

**Answer:** c) Black holes

The news states, "India's first specialized multi-wavelength space observatory, AstroSat, has made breakthrough discoveries about black holes. Scientists detected recurring patterns of X-ray radiation, including 'Quasi-periodic Oscillations' (QPOs)..."





spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



SpardhaGuru



Spardha.guru



www.spardha.guru



**6. What is the primary goal of the Habitable Worlds Observatory (HWO), NASA's next planned astrophysics flagship mission?**

- a) To study the origins of the universe.
- b) To develop new propulsion technologies for space travel.
- c) To find and study atmospheres of at least 25 potentially habitable exoplanets.
- d) To establish a human colony on Mars.

**Answer:** c) To find and study atmospheres of at least 25 potentially habitable exoplanets.

The news mentions HWO "aiming to launch in the early to mid-2040s with a large mirror to find and study atmospheres of at least 25 potentially habitable exoplanets."

**7. In his "Mann Ki Baat" address, which Indian astronaut's recent space mission did Prime Minister Narendra Modi specifically mention?**

- a) Rakesh Sharma
- b) Kalpana Chawla
- c) Shubhanshu Shukla
- d) Sunita Williams

**Answer:** c) Shubhanshu Shukla

The news states, "Prime Minister Narendra Modi, in his 'Mann Ki Baat' address, expressed pride in India's recent achievements in space and science, specifically mentioning Indian astronaut Shubhanshu Shukla's recent space mission..."

**8. According to PM Modi, how many space-related startups are there in India today, compared to fewer than 50 five years ago?**

- a) Fewer than 100
- b) Exactly 150
- c) Over 200
- d) Over 500

**Answer:** c) Over 200

The news reports, "PM Modi noted the rapid growth of space-related startups in India, increasing from fewer than 50 five years ago to over 200 today."

**9. Which major international academic event will India host in Mumbai next month, related to space and science?**

- a) International Space Congress
- b) Global Astronomy Conference
- c) Astronomy and Astrophysics Olympiad
- d) World Robotics Challenge

**Answer:** c) Astronomy and Astrophysics Olympiad

The news states, "India will host the Astronomy and Astrophysics Olympiad in Mumbai next month, with participants from 60 countries."

**Dear Aspirants,**

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!







spardhaguru2022



Spardhaguru Current affairs



Spardhaguru1



SpardhaGuru



Spardha.guru



www.spardha.guru



**Spardhaguru**  
Spardhaguru India Private Limited

