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## Space & Astronomy:

### Astronomical Events

#### September Epsilon Perseids Meteor Shower:

The September Epsilon Perseids meteor shower peaked predawn on September 9. While not a major shower, it's an annual event where meteors appear to originate from the constellation Perseus.

**A "Blood Moon" Lunar Eclipse:** A total lunar eclipse, also known as a "Blood Moon," occurred on September 7-8. During this event, the Earth passed between the sun and the moon, causing the moon to turn a deep red or orange color. This was visible to billions of people across Asia, Australia, Africa, and Europe and was notable for its exceptionally long total phase, lasting around 82 minutes.

**Celestial Conjunctions:** The night of September 8 saw the moon align with Saturn and Neptune. Additionally, later in the month, a conjunction between the moon and Jupiter will take place.

**Fomalhaut in the Night Sky:** The bright star Fomalhaut, also known as the "mouth of the southern fish," is visible in the southern sky. This star is young and surrounded by a large protoplanetary disk.

### Space Research & Missions

**Black Hole Research:** New research is shedding light on the "messy habits" of smaller, stellar-mass black holes, showing that the process of them accreting matter is complex and disorderly.

**TRAPPIST-1e Observations:** The James Webb Space Telescope (JWST) has begun examining the atmosphere of the exoplanet TRAPPIST-1e, a planet in a habitable zone. Early observations suggest it has not retained its original atmosphere, likely due to powerful flaring from its star.

**Origin of Life:** A new study suggests that a planetary collision may have been responsible for bringing the necessary ingredients, like water and carbon compounds, to early Earth to allow for life to emerge.

**Interstellar Object Mission:** A new mission concept has been developed by researchers at the Southwestern Research Institute to rendezvous with and explore the interstellar comet 3I/ATLAS.

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- A) The moon was passing through a cloud of cosmic dust.  
B) Earth passed between the sun and the moon.  
C) A solar flare hit the moon's surface.  
D) The moon's atmosphere was refracting sunlight.

**Answer:** B) Earth passed between the sun and the moon.

The summary explains, "A total lunar eclipse, also known as a 'Blood Moon,' occurred on September 7-8. During this event, the Earth passed between the sun and the moon, causing the moon to turn a deep red or orange color."

**3: What celestial bodies did the moon align with on the night of September 8?**

- A) Mars and Venus  
B) Jupiter and Saturn  
C) Saturn and Neptune  
D) Venus and Neptune

**Answer:** C) Saturn and Neptune

The news mentions, "The night of September 8 saw the moon align with Saturn and Neptune."

**4: What is the bright star Fomalhaut also known as?**

- A) The "eye of the northern fish"  
B) The "tail of the southern fish"  
C) The "mouth of the southern fish"  
D) The "heart of the northern fish"

**Answer:** C) The "mouth of the southern fish"

The summary states, "The bright star Fomalhaut, also known as the 'mouth of the southern fish,' is visible in the southern sky."

**5: What new insight has been gained about stellar-mass black holes from recent research?**

- A) They are much larger than previously thought.

### MCQS

**1: The September Epsilon Perseids meteor shower, which peaked on September 9, appears to originate from which constellation?**

- A) Orion  
B) Ursa Major  
C) Perseus  
D) Andromeda

**Answer:** C) Perseus

The news states, "The September Epsilon Perseids meteor shower peaked predawn on September 9. While not a major shower, it's an annual event where meteors appear to originate from the constellation Perseus."

**2: What caused the moon to turn a deep red or orange color during the recent total lunar eclipse?**







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- B) They accrete matter in a complex and disorderly process.  
C) They do not accrete any matter.  
D) They have a perfectly ordered accretion process.

**Answer:** B) They accrete matter in a complex and disorderly process.

The news summary mentions that new research is shedding light on the "messy habits" of smaller, stellar-mass black holes, showing that the process of them accreting matter is "complex and disorderly."

**6: Why is the exoplanet TRAPPIST-1e believed to have lost its original atmosphere?**

- A) A collision with another planet.  
B) Powerful flaring from its star.  
C) The planet's weak gravitational pull.  
D) It was never formed with an atmosphere.

**Answer:** B) Powerful flaring from its star.

The summary states that early observations of TRAPPIST-1e suggest it has not retained its original atmosphere, "likely due to powerful flaring from its star."

**7: According to a new study, what event may have been responsible for bringing the necessary ingredients for life to early Earth?**

- A) A series of asteroid impacts.  
B) A planetary collision.  
C) The formation of a volcanic super-continent.  
D) The gradual accumulation of cosmic dust.

**Answer:** B) A planetary collision.

The news reports that a new study suggests "a planetary collision may have been responsible for bringing the necessary ingredients, like water and carbon compounds, to early Earth to allow for life to emerge."

**8: What is the name of the interstellar object that a new mission concept aims to explore?**

- A) Oumuamua  
B) Borisov  
C) 3I/ATLAS  
D) Comet Halley

**Answer:** C) 3I/ATLAS

The summary mentions a new mission concept developed to "rendezvous with and explore the interstellar comet 3I/ATLAS."

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