



Rare Celestial Event Set to Occur Again

Description

An extraordinary celestial event may occur soon, but many will miss it. The Kepler-89 system, the only known place outside our Solar System to have seen two exoplanets eclipsing each other, is expected to present a similar occurrence again. This event would align four celestial bodies: Earth, the star Kepler-89 A, and two of its planets, Kepler-89Ad and Kepler-89Ae.

The alignment of three or more celestial bodies is called a syzygy. This phenomenon can be likened to solar eclipses in our own Solar System. Observations from 2010 captured the outer planet of Kepler-89 A eclipsing another, marking an important discovery. Teruyuki Hirano from the Tokyo Institute of Technology, who was part of the original team, estimates that this event could happen again in April, although the exact timing remains uncertain due to various factors affecting the planets' movements.

However, there is a challenge. No observatory is currently set to monitor the event in April. The European Space Agency's CHEOPS telescope cannot observe it, and the team was unsuccessful in securing time with the Hubble Space Telescope. Hirano noted that the star is best observed in summer, complicating ground-based observations.

Despite these challenges, this event is significant for understanding distant planetary systems. Planet-planet eclipses provide an opportunity to measure the relationship between the orbits of planets, offering insights that are hard to achieve otherwise. The Kepler-89 system, discovered by NASA's Kepler nearly twenty years ago, may soon not be unique in having eclipsing planets, as advancements in exoplanet research continue. A new mission, PLATO, is set to launch next year, potentially discovering more planets in our nearby cosmos. If this April event isn't observed, the team will plan for the next opportunity.

Vocabulary List:

1. **Celestial** /sə'leɪs.tʃəl/ (adjective): Relating to the sky or outer space.
2. **Eclipsing** /ɪ'kliːp.sɪŋ/ (verb): Obscuring the light from one celestial body by another.
3. **Syzygy** /'sɪz.ɪ.dʒi/ (noun): An alignment of three or more celestial bodies.
4. **Phenomenon** /fə'nɒm.ɪ.nən/ (noun): A remarkable event or fact; something extraordinary.
5. **Observatory** /əb'zɜː.və.tər.i/ (noun): A building or place equipped for observing astronomical events.
6. **Advancements** /əd'vɑːnsmənts/ (noun): Progress or improvements in a field such as technology or science.

Vocabulary quizzes



Multiple Choice (Select the Correct answer for each question.)

1. What is a fossil?

- Option: A preserved remains of ancient organisms
- Option: A type of rock formation
- Option: A meteorological phenomenon
- Option: An extinct species

2. Which of the following best describes an ecosystem?

- Option: A community of living organisms and their environment
- Option: A group of identical species
- Option: A geographical area without life
- Option: A collection of fossils

3. What is the role of a predator in an ecosystem?

- Option: To create food
- Option: To control the population of prey species
- Option: To decompose organic matter
- Option: To provide shelter

4. Biodiversity refers to what?

- Option: The variety of life in the world
- Option: The number of species in one ecosystem
- Option: The extinction of species
- Option: The climate diversity

5. What is a key element of scientific progress?

- Option: Discovery
- Option: Repetition
- Option: Confirmation
- Option: Following traditions

6. Palaeontology is the study of what?

- Option: Ancient life through fossils
- Option: Astrological phenomena
- Option: Current ecosystems
- Option: Living species

7. What is a specimen in a scientific context?

- Option: A single example of a species
- Option: A type of fossil
- Option: An observational result



Option: A theoretical concept

8. What does celestial relate to?

Option: Heavenly bodies like stars and planets

Option: Earthly creatures

Option: Biological studies

Option: Oceanic depths

9. In astronomy what does syzygy refer to?

Option: The alignment of celestial bodies

Option: A type of star

Option: The study of galaxies

Option: The calculation of light years

10. What is the primary purpose of an observatory?

Option: To observe celestial phenomena

Option: To house fossils

Option: To maintain biodiversity

Option: To conduct ecological surveys

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. A _____ is formed when organic material is preserved over millions of years.

12. An _____ consists of living organisms interacting with their environment.

13. Certain species can _____ in extreme conditions.

14. In the food chain a _____ hunts and eats other animals.

15. High _____ is essential for a healthy environment.

16. The exciting _____ of a new species can change our understanding of biology.

17. _____ helps us understand the history of life on Earth through fossils.

18. A well-preserved _____ can provide valuable information about past climates.

19. Astronomers study various _____ phenomena including stars and planets.

20. An _____ event occurs when one celestial body moves into the shadow of another.



Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. A fossil is an ancient remnant of a living organism that has been preserved over time.
22. An ecosystem includes all the living organisms in a particular area and their interactions with the environment.
23. Plant species often thrive in conditions that are ideal for their growth.
24. A predator is an animal that hunts and eats other animals for survival.
25. Biodiversity is crucial for maintaining ecological balance in the environment.
26. The discovery of a new species can provide insights into evolutionary history.
27. Palaeontology is the scientific study of the history of life on Earth through fossils.
28. A specimen in research refers to an individual organism or a sample used for study.
29. Celestial bodies include all natural objects in space such as stars planets and moons.
30. Eclipsing is a phenomenon that occurs when one object moves into the shadow of another in space.

Answer

Multiple Choice: 1. A preserved remains of ancient organisms 2. A community of living organisms and their environment 3. To control the population of prey species 4. The variety of life in the world 5. Discovery 6. Ancient life through fossils 7. A single example of a species 8. Heavenly bodies like stars and planets 9. The alignment of celestial bodies 10. To observe celestial phenomena

Gap-Fill: 11. fossil 12. ecosystem 13. thrive 14. predator 15. biodiversity 16. discovery 17. Palaeontology 18. specimen 19. celestial 20. eclipsing

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CATEGORY

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6. rare event

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