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# Cosmic Cataclysm: Solar System Engulfed by Gas and Dust

## Description

Our solar system passed through a massive cloud of gas and dust about 14 million years ago. This cloud, known as the Radcliffe wave, obscured Earth's view of the night sky. It might have also left clues in our planet's geological history.

Scientists have identified vast waves of stars, gas, and dust in the Milky Way that move in a pattern over millions of years. One of these waves, the Radcliffe wave, is nearly 9000 light years wide and was located only 400 light years from our solar system.

Researchers, led by Efrem Maconi from the University of Vienna, have used data from the Gaia space telescope to study the Radcliffe wave. They discovered that this wave once passed very close to our solar system between 11 and 18 million years ago.

By tracking the movement of stars within the wave, scientists determined that our solar system intersected with the Radcliffe wave around 14 million years ago. This cosmic encounter may have dimmed the light reaching Earth, creating a darker galactic environment. It could also have influenced Earth's climate during the Middle Miocene period.

Studying these galactic encounters provides valuable insights into Earth's geological history and how cosmic events may have impacted our planet's past.

Topics: Astronomy, Radcliffe wave, Gaia space telescope, Milky Way, Earth's geological history

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## Vocabulary List:

1. **Cosmic** /'kɒz.mɪk/ (adjective): Related to the universe or cosmos especially concerning large-scale structures or phenomena.
2. **Obscured** /əb'skjʊəd/ (verb): Made unclear or difficult to see; hidden.
3. **Intersected** /,ɪn.tə'sek.tɪd/ (verb): Crossed or passed through another line or path.
4. **Geological** /,dʒi:.ə'lɒ.dʒɪ.kəl/ (adjective): Of or relating to the science that deals with the earth's physical structure and substance.
5. **Influenced** /'ɪn.flu.ənst/ (verb): Having an effect on the character development or behavior of someone or something.
6. **Vast** /væst/ (adjective): Of very great extent or quantity; immense.

## Vocabulary quizzes



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

1. What term refers to the vast expanses of outer space?  
Option: A) Geographical  
Option: B) Cosmic  
Option: C) Biological  
Option: D) Technological
2. Which term describes the process of creating offspring or making copies?  
Option: A) Geological  
Option: B) Encounter  
Option: C) Reproduce  
Option: D) Hydrogels
3. What term refers to a serious disagreement or argument?  
Option: A) Interference  
Option: B) Encounter  
Option: C) Conflict  
Option: D) Perception
4. Which term describes the process of gradual development or change?  
Option: A) Advancements  
Option: B) Resolution  
Option: C) Adaptations  
Option: D) Evolution
5. What term refers to the refusal to accept or comply with something?  
Option: A) Temporarily  
Option: B) Complexity  
Option: C) Resistance  
Option: D) Permanence
6. Which term refers to treatments for medical conditions?  
Option: A) Breakthrough  
Option: B) Sabotage  
Option: C) Therapies  
Option: D) Directive
7. What term describes improvements or developments?  
Option: A) Obscured  
Option: B) Pattern  
Option: C) Advancements



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Option: D) Utilizes

8. Which term is related to the study of shapes and spaces?

- Option: A) Encounter  
Option: B) Complexity  
Option: C) Geometry  
Option: D) Hydrogels

9. What term means to bring about a complete change in a significant way?

- Option: A) Meet  
Option: B) Challenge  
Option: C) Revolutionize  
Option: D) Repeat

10. Which term means capable of working successfully or feasible?

- Option: A) Geological  
Option: B) Encounter  
Option: C) Viable  
Option: D) Perception

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

11. \_\_\_\_\_ features are related to processes occurring within the Earth.
12. Proper \_\_\_\_\_ is essential for the smooth functioning of any organization.
13. The repeated arrangement of elements forms a recognizable \_\_\_\_\_.
14. The manager issued a clear \_\_\_\_\_ to all employees regarding the new policy.
15. \_\_\_\_\_ are the working parts or steps that make something function.
16. The unique \_\_\_\_\_ of the dish came from the blend of spices used.
17. The \_\_\_\_\_ of the situation required a thorough analysis to understand.
18. During their \_\_\_\_\_ with the new species the researchers noted unique behaviors.
19. The new technology \_\_\_\_\_ the latest advancements in artificial intelligence.
20. One's \_\_\_\_\_ of a situation can greatly impact their response.



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

21. The dense fog the view of the mountains making it difficult to see them clearly.
22. Her grandfather's passion for music greatly her own musical tastes.
23. are a type of materials with high water content often used in medical applications.
24. The five include sight hearing touch taste and smell.
25. The scientific team made a major in cancer research leading to new treatment possibilities.
26. There are millions of different on Earth each with its unique characteristics.
27. The bird's to cold environments include growing thicker feathers for insulation.
28. The spy attempted to the enemy's communication system to hinder their operations.
29. The company issued a new safety outlining emergency procedures for all employees.
30. The store closed for renovations but reopened with a new look.

## Answer

**Multiple Choice:** 1. B) Cosmic 2. C) Reproduce 3. C) Conflict 4. D) Evolution 5. C) Resistance 6. C) Therapies 7. C) Advancements 8. C) Geometry 9. C) Revolutionize 10. C) Viable

**Gap-Fill:** 11. Geological 12. Administration 13. Pattern 14. Directive 15. Mechanisms 16. Flavor 17. Complexity 18. Encounter 19. Utilizes 20. Perception

**Matching sentence:** 1. Obscured 2. Influenced 3. Hydrogels 4. Senses 5. Breakthrough 6. Species 7. Adaptations 8. Sabotage 9. Directive 10. Temporarily

## CATEGORY

1. Sci/Tech - LEVEL3

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