

# Atmosphere Discovered on Rocky Exoplanet by Webb Telescope

## Description

Using the James Webb Space Telescope, scientists have potentially discovered atmospheric gases on a super-hot, rocky exoplanet called 55 Cancri e. This finding could be the strongest evidence yet of an atmosphere on a rocky planet outside our solar system. The planet is about 41 light-years away from Earth and is known for its extreme conditions, with a surface likely covered in molten lava due to its close proximity to its star.

Researchers believe they have detected a volatile-rich atmosphere surrounding the planet, possibly rich in carbon dioxide or carbon monoxide, emanating from a vast ocean of lava. This discovery represents a significant milestone in the search for rocky planet atmospheres beyond our solar system.

The James Webb Space Telescope has been instrumental in these findings, enabling researchers to measure infrared light from the planet and gather crucial data. By analyzing variations in light as the planet orbits its star, the team was able to determine the presence of different wavelengths of infrared light emitted from the planet's dayside. This data strongly suggests the existence of a volatile-rich atmosphere on 55 Cancri e.

The presence of such an atmosphere on this scorching planet offers valuable insights into planetary atmospheres, surfaces, and interiors, paving the way for a better understanding of habitable conditions on rocky planets. This groundbreaking research has opened new avenues for studying distant worlds and the mysteries of the universe beyond our own.

## Vocabulary List:

1. **Exoplanet** // (noun): A planet that orbits a star outside our solar system.
2. **Volatile** // (adjective): Tending to change rapidly and unpredictably especially for the worse.
3. **Infrared** // (adjective): Relating to or denoting electromagnetic radiation with wavelengths longer than those of visible light.
4. **Milestone** // (noun): An action or event marking a significant stage or turning point in development.
5. **Habitable** // (adjective): Suitable or good enough to live in.
6. **Emanating** // (adjective): Emitting or radiating.

## Vocabulary quizzes

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



1. What do we call a planet that orbits a star outside of our solar system?

- Option: Exoplanet
- Option: Moon
- Option: Asteroid
- Option: Comet

2. Which term describes a planet that is capable of supporting life?

- Option: Barren
- Option: Habitable
- Option: Toxic
- Option: Frozen

3. Which type of light has longer wavelengths than visible light?

- Option: Ultraviolet
- Option: Infrared
- Option: X-ray
- Option: Gamma-ray

4. What term is used to describe substances that easily change from a solid or liquid state to a vapor?

- Option: Volatile
- Option: Stable
- Option: Inert
- Option: Solid

5. What is the process of breaking something into smaller pieces or parts called?

- Option: Aggregation
- Option: Dissolution
- Option: Fragmentation
- Option: Growth

6. Who is a person who comes after another in a position or office?

- Option: Predecessor
- Option: Leader
- Option: Heir
- Option: Successor

7. What term describes the process of light bouncing off a surface?

- Option: Absorbing
- Option: Reflecting
- Option: Scattering
- Option: Transmitting

8. Which term describes chaotic or unstable airflow?

- Option: Calm
- Option: Turbulence
- Option: Serenity
- Option: Stability

9. What is the quality of being delicate or easily broken?

- Option: Strength
- Option: Fragility
- Option: Resilience
- Option: Robustness

10. Which term refers to a large amount of money possessions or assets?

- Option: Poverty
- Option: Wealth
- Option: Moderation
- Option: Scarcity

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

11. The warm glow of the fireplace was \_\_\_\_\_ a comforting heat on the chilly evening.

12. I have an \_\_\_\_\_ with my dentist tomorrow for a check-up.

13. It is essential to develop \_\_\_\_\_ practices to protect the environment for future generations.

14. The artist's painting featured an \_\_\_\_\_ design with detailed patterns.

15. There are \_\_\_\_\_ changes coming to the company but nothing has been confirmed yet.

16. The delicious smell of freshly baked bread was \_\_\_\_\_ from the bakery down the street.

17. The weather forecast is \_\_\_\_\_ us about possible heavy rain and thunderstorms

tonight.

18. Her \_\_\_\_\_ from the company left a noticeable gap in the team.

19. Learning multiple languages can be \_\_\_\_\_ for travel and career opportunities.

20. The king's palace was a symbol of his immense \_\_\_\_\_ and power.

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

21. The scientist used a powerful microscope to study the tiny organisms in the water sample.

22. The independent organization acts as a to ensure government transparency and accountability.

23. The new luxury car model exudes elegance and modern in its design.

24. The group of environmental activists were passionate for conservation and climate protection.

25. Due to the company's expansion the headquarters were to a larger building.

26. Graduating from college was a significant in her academic journey.

27. The historical museum showcases artifacts from the time of the Roman of Britain.

28. The photo album was filled with of family vacations and special occasions.

29. The research team tested the new drug before it was approved for human trials.

30. The aroma of freshly baked cookies was of her grandmother's kitchen.

## Answer

**Multiple Choice:** 1. Exoplanet 2. Habitable 3. Infrared 4. Volatile 5. Fragmentation 6. Successor 7. Reflecting 8. Turbulence 9. Fragility 10. Wealth

**Gap-Fill:** 11. emanating 12. appointment 13. sustainable 14. intricate 15. rumored 16. enamored 17. cautioning 18. departure 19. advantageous 20. wealth

**Matching sentence:** 1. microscopy 2. watchdog 3. sophistication 4. campaigners 5. relocated 6. milestone 7. invasion 8. snapshot 9. rigorously 10. reminiscent

## CATEGORY

1. Sci/Tech - LEVEL6



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