Astronomers Discover Two Gigantic, Low-Density Planets

Description

Astronomers have discovered two giant planets that are lighter than cotton candy. These planets are the largest ones found with less density than this sweet treat. They orbit a star 1,110 light-years away from Earth. George Dransfield from the University of Oxford says that these planets are the lightest of their size.

The planets are likely white or blue, depending on the clouds in their atmosphere. They probably consist mostly of hydrogen and helium, but scientists need more observations from NASA's Webb Space Telescope to confirm this. The discovery comes from NASA's TESS satellite, which has been observing these planets for the past ten years.

One of these planets takes 139 days to orbit its star, and the other takes 232 days. These planets are rare because they form from gas and dust around a young star. They lose much of their material over time.

Dransfield notes that studying these unusual planets can help scientists understand how giant planets form. Currently, NASA has confirmed nearly 6,300 planets outside our solar system, but fewer than 40 are super-puffs like these new discoveries.

Vocabulary List:

1. **density** //ˈdɛnsəti// (noun): how heavy something is for its size
2. **atmosphere** //ˈæt.mə.sfɪr// (noun): the layer of gases around a planet
3. **orbit** //ˈɔr.bɪt// (verb): to move around a larger object
4. **confirm** //kənˈfɝm// (verb): to show that something is true
5. **observations** //ˌɑb.zɚˈveɪ.ʃənz// (noun): things scientists record when they watch something
6. **satellite** //ˈsætəlˌaɪt// (noun): a machine sent into space that orbits

Comprehension Questions

Multiple Choice

1. How far away is the star that the newly discovered planets orbit?

   Option: 1,110 light-years
   Option: 2,150 light-years

Option: 1,500 light-years
Option: 900 light-years

2. Which telescope is needed for more observations of the newly discovered planets?

Option: Hubble Space Telescope
Option: James Webb Space Telescope
Option: Kepler Space Telescope
Option: Spitzer Space Telescope

3. What are the potential colors of the newly discovered planets depending on their atmosphere?

Option: Red or Green
Option: Yellow or Orange
Option: White or Blue
Option: Black or Gray

4. How many days does the first of the two discovered planets take to orbit its star?

Option: 139 days
Option: 150 days
Option: 120 days
Option: 160 days

5. What is the primary composition expected in the atmospheres of the discovered planets?

Option: Nitrogen and Oxygen
Option: Hydrogen and Helium
Option: Methane and Ammonia
Option: Carbon Dioxide and Argon

6. How many super-puff planets have been confirmed by NASA prior to this discovery?

Option: 20
Option: 30
Option: 40
Option: 50

True-False

7. The newly discovered planets are denser than cotton candy.

8. The discovery was made using NASA's TESS satellite.

9. One of the newly discovered planets orbits its star in 139 days.

10. Astronomers believe that the newly discovered planets are made mostly of iron.

11. George Dransfield is affiliated with the University of Cambridge.

12. These planets are formed from gas and dust around an old star.

Gap-Fill

13. The two newly discovered planets are the largest ones found with less density than _____.

14. The planets likely consist mostly of hydrogen and _____.

15. These planets are rare because they form from gas and dust around a _____ star.

16. George Dransfield notes that studying these unusual planets can help scientists understand how giant planets _____.

17. NASA's TESS satellite has been observing these planets for the past _____ years.

18. Currently, NASA has confirmed nearly 6,300 planets outside our _____ system.

Answer

Multiple Choice: 1. 1,110 light-years 2. James Webb Space Telescope 3. White or Blue 4. 139 days 5. Hydrogen and Helium 6. 40
True-False: 7. False 8. True 9. True 10. False 11. False 12. False
Gap-Fill: 13. cotton candy 14. helium 15. young 16. form 17. ten 18. solar

Vocabulary quizzes

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

1. What is the primary function of a satellite in space?

   Option: To carry people
   Option: To orbit planets
   Option: To collect data
   Option: To launch rockets

2. Which of the following best describes density?

   Option: Mass per unit volume
   Option: Speed of an object
   Option: Force applied
   Option: Total volume

3. What is a common cause of explosions in pressurized environments?

   Option: Cooling down
   Option: Leaking gases
   Option: Absorbing heat
   Option: Radiation exposure

4. What aspect can interfere with satellite communications?

   Option: Clear weather
   Option: Solar flares
   Option: High altitude
   Option: High density

5. What does the term 'cosmic' relate to?

   Option: Earth
   Option: Human activities
   Option: The universe
   Option: Weather patterns

6. Hypersonic vehicles can travel at speeds greater than what?

   Option: Mach 1
   Option: Mach 3
   Option: Mach 5
   Option: Mach 10

7. What tool is often used to create holes in materials?

   Option: Saw
   Option: Hammer
   Option: Drill
   Option: Chisel

8. What is a common purpose of a livestream?

Option: Recording music
Option: Broadcasting events live
Option: Editing videos
Option: Creating animations

9. What is essential for startups to develop their projects?

Option: Marketing
Option: Funding
Option: Sales
Option: Production

10. What is an array typically composed of in technology?

Option: Single device
Option: Multiple devices
Option: One function
Option: Random components

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

11. The satellite is designed to stay in a stable _____ around the Earth.

12. To prevent leaks in the spacecraft, a strong _____ is applied.

13. In case of an emergency, crew members need to know how to _____ the vehicle quickly.

14. This character has become a _____ figure in the franchise's story.

15. The scientists _____ their findings after numerous tests.

16. The new space _____ is equipped with advanced technology for exploration.

17. The recent explosion in orbit left behind a trail of space _____.

18. The story's _____ struggles against all odds to save the day.

19. The researchers analyzed several _____ to make their conclusions.

20. The director is working on a _____ of the classic film.

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

21. The satellite’s array of antennas helps in receiving signals from deep space.
22. A communication satellite orbits the Earth to facilitate data transmission.
23. The Earth's atmosphere protects us from harmful cosmic rays.
24. Hypersonic vehicles are designed to fly at speeds exceeding Mach 5.
25. Engineers found a leak that could have jeopardized the mission.
26. Securing funding is critical for any startup's success.
27. The controlled explosion was necessary to dismantle the old structure safely.
28. The instrument is sensitive to even the faintest cosmic signals.
29. Scientists were able to confirm the presence of a new planet in the solar system.
30. The team used a drill to secure equipment for the space exploration mission.

Answer

Multiple Choice: 1. To collect data 2. Mass per unit volume 3. Leaking gases 4. Solar flares 5. The universe 6. Mach 5 7. Drill 8. Broadcasting events live 9. Funding 10. Multiple devices
Gap-Fill: 11. orbit 12. sealant 13. evacuate 14. beloved 15. confirmed 16. vehicle 17. debris 18. protagonist 19. observations 20. remake
Matching sentence: 1. array 2. satellite 3. atmosphere 4. hypersonic 5. leak 6. funding 7. explosion 8. sensitive 9. confirm 10. drill

CATEGORY

1. Sci/Tech - LEVEL2

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1. cotton candy
2. ESL learning
3. esl news
4. gigantic planets

5. Level 2
6. shaving foam

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