# Groundbreaking Strategy Unveiled for Detecting Dark Matter in Space

### Description

Scientists are working on a new detector to study dark matter. They want to learn more about this mysterious substance.

At the University of Southampton in the UK, physicists are testing a special machine. This machine levitates sheets of graphite in space. They are looking for very small changes that might help explain dark matter.

"Dark matter is a big mystery," says physicist Tim Fuchs. "It affects how our Universe is built, but we cannot see it."

We see a lot of gravity, but there is not enough normal matter to explain it. This means dark matter must be there, but we cannot detect it directly. It does not give off light and only shows its presence through gravity.

The team plans to send their experiment into space on a satellite called Jovian-1. It will float in orbit around Earth for two years. They hope to measure the effect of dark matter on their levitated particles.

This mission is special. It may help us discover more about dark matter, whether they find it or not.



## Vocabulary List:

1. **Detector** /dɪ'tɛk.tər/ (noun): An instrument or device that detects or measures something.
2. **Levitates** /'lɛvɪˌteɪts/ (verb): To rise or cause to rise and hover in the air usually by magnetic or other forces.
3. **Mysterious** /mɪ'stɪr.i.əs/ (adjective): Difficult or impossible to understand explain or identify.
4. **Gravity** /'græv.ɪ.ti/ (noun): The force that attracts a body toward the center of the earth or toward any other physical body having mass.
5. **Orbit** /'ɔr.bɪt/ (noun): The gravitationally curved trajectory of an object around a point in space.
6. **Experiment** /ɪk'spɛr.ɪ.mənt/ (noun): A scientific procedure undertaken to make a discovery test a hypothesis or demonstrate a known fact.

## Comprehension Questions

### Multiple Choice

1. What are physicists at the University of Southampton testing with a special machine?

Option: Rocket propulsion
Option: Dark matter
Option: Levitation of graphite sheets
Option: Nuclear fusion reactions

2. How does dark matter show its presence?

Option: By emitting light
Option: Through gravity
Option: By changing color
Option: By making noise

3. What is the purpose of sending the experiment into space on the satellite Jovian-1?

Option: To study planetary atmospheres
Option: To measure the effect of dark matter on levitated particles
Option: To test communication systems
Option: To grow plants in microgravity

4. What does physicist Tim Fuchs describe dark matter as?

Option: A minor inconvenience
Option: A big mystery
Option: A well-understood concept
Option: A common occurrence



5. What type of substance is dark matter unable to emit?

Option: Sound
Option: Light
Option: Heat
Option: Electricity

6. For how long is the satellite Jovian-1 expected to be in orbit?

Option: 1 year
Option: 5 years
Option: 2 years
Option: 10 years

**True-False**

7. Dark matter is directly observable through light emissions.

8. The experiment on Jovian-1 aims to study the effects of dark matter on levitated particles.

9. The physicists at the University of Southampton are testing a machine to study rocket propulsion.

10. Normal matter alone can explain all the gravity observed in the universe.

11. Tim Fuchs describes dark matter as a solved scientific mystery.

12. The satellite Jovian-1 will remain in orbit for 5 years.

**Gap-Fill**

13. Physicists are testing a special machine at the University of Southampton to levitate sheets of graphite in space to explain _____ matter.

14. Dark matter only shows its presence through _____.

15. The team plans to send their experiment into space on a satellite called Jovian-1 to measure the effect of dark matter on their levitated _____.

16. Physicist Tim Fuchs describes dark matter as a significant _____.

17. Dark matter is unable to give off _____.

18. The satellite Jovian-1 is expected to float in orbit around Earth for _____ years.



## Answer

**Multiple Choice:** 1. Levitation of graphite sheets 2. Through gravity 3. To measure the effect of dark matter on levitated particles 4. A big mystery 5. Light 6. 2 years
**True-False:** 7. False 8. True 9. False 10. False 11. False 12. False
**Gap-Fill:** 13. dark 14. gravity 15. particles 16. mystery 17. light 18. two

## Vocabulary quizzes

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

1. Which stage of sleep is characterized by rapid eye movement and dreaming?

   Option: Stage 1
   Option: Stage 2
   Option: Stage 3
   Option: Stage 4

2. Who are scientists that study celestial objects such as stars planets and galaxies?

   Option: Biologists
   Option: Geologists
   Option: Physicists
   Option: Astronomers

3. What term is used to describe a decline in cognitive function that affects memory thinking and behavior?

   Option: Bacteria
   Option: Dementia
   Option: Virus
   Option: Fungi

4. What force attracts a body toward the center of the Earth?

   Option: Magnetism
   Option: Friction
   Option: Tension
   Option: Gravity

5. What are individual events and occurrences that a person goes through in their lifetime?

   Option: Solutions
   Option: Results
   Option: Experiences
   Option: Consequences

6. What cognitive process involves encoding storing and retrieving information?

   Option: Processing
   Option: Memory
   Option: Reasoning
   Option: Imagination

7. What term describes a gentle feeling of fondness or liking?

   Option: Hatred
   Option: Jealousy
   Option: Indifference

Option: Affection

8. What is the body's response to pressure or threat?

Option: Relaxation
Option: Meditation
Option: Stress
Option: Joy

9. What is a huge system of stars gas and dust bound together by gravity?

Option: Planet
Option: Satellite
Option: Comet
Option: Galaxy

10. What compounds are often used as fertilizers to promote plant growth?

Option: Nitrates
Option: Phosphates
Option: Sulfates
Option: Chlorides



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

11. A _____ between two people can be strengthened through open communication.

12. In chemistry a mixture is composed of a solute and a _____.

13. Scientists conduct _____ to test hypotheses and theories.

14. The _____ between the Earth and the Sun is approximately 93 million miles.

15. Nuclear energy is a _____ source of electricity.

16. A smoke _____ can alert residents to the presence of a fire.

17. The magician performed a trick where the object seemed to _____ in mid-air.

18. The athlete _____ before starting the race to prevent muscle injuries.

19. The archeologists made a groundbreaking _____ in the ancient tomb.

20. The old mansion had a _____ atmosphere with creaking sounds coming from

unknown sources.

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

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| 21. Establishing meaningful relationships and building professional networks are essential for personal growth. |
| 22. Exercise and a balanced diet are crucial for maintaining a lifestyle. |
| 23. After a long day I love to up with a good book and a warm blanket. |
| 24. It is to listen actively in order to understand others better. |
| 25. Trust and communication are key elements in a successful and lasting . |
| 26. The Moon follows an around the Earth completing one cycle every 27.3 days. |
| 27. Rubbing a balloon against a wool sweater can create electricity. |
| 28. exercises help improve flexibility and prevent muscle stiffness. |
| 29. A warm hug is a simple gesture that conveys love and . |
| 30. A metal can identify the presence of metallic objects in luggage at airports. |



## Answer

**Multiple Choice:** 1. REM sleep 2. Astronomers 3. Dementia 4. Gravity 5. Experiences 6. Memory 7. Affection 8. Stress 9. Galaxy 10. Nitrates
**Gap-Fill:** 11. Connection 12. Solution 13. Experiment 14. Distance 15. Powerful 16. Detector 17. Levitates 18. Stretched 19. Discovery 20. Mysterious
**Matching sentence:** 1. Connections 2. Healthy 3. Cuddle 4. Important 5. Relationship 6. Orbit 7. Static 8. Stretching 9. Affection 10. Detector

**CATEGORY**

1. Health - LEVEL1

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