



Scientists Observe Comet Reversing Its Spin for First Time

Description

Astronomers have identified an unusual event involving a comet that seemed to reverse its rotation. NASA reported this discovery based on archived data. The comet, called 41P/Tuttle-Giacobini-Kresák, travels through the solar system every 5.4 years. During its 2017 passage near the sun, its rotation noticeably slowed.

In March 2017, the comet was spinning at a specific speed, but by May, it was rotating three times slower. A recent analysis revealed even more surprising findings. In December 2017, images showed that the comet was actually spinning faster than it had in May.

Researchers believe that the comet slowed down until it nearly stopped. As it approached the sun, heat melted ice on its surface, creating jets of gas that acted like small rocket boosters, according to David Jewitt, an astronomer at the University of California, Los Angeles. The jets pushed against the comet's original motion, ultimately causing a reversal in its spin.

Jewitt mentioned that the comet's nucleus could soon self-destruct due to its rapid changes. Historical data from 2001 indicated that the comet was very active back then, but by 2017, this activity had dropped significantly. NASA noted that continued changes in rotation might make the comet unstable, leading to its possible fragmentation.

This discovery highlights the value of NASA's publicly accessible data, allowing scientists to revisit old observations to answer new scientific questions.

Vocabulary List:

1. **archived** //ˈɑːrˌkaɪvd// (adjective): stored and kept for long term use
2. **rotation** //rəʊˈteɪʃən// (noun): turning movement around a center or axis
3. **analysis** //əˈnæləsɪs// (noun): careful study to find facts or meaning
4. **jets** //dʒets// (noun): fast streams of gas or liquid pushed out
5. **nucleus** //ˈnuːkliəs// (noun): the central part of an object or body
6. **fragmentation** //ˌfrægmənˈteɪʃən// (noun): breaking into smaller pieces or parts

Comprehension Questions



Multiple Choice

1. What is the name of the comet that reversed its rotation?
Option: 41P/Tuttle-Giacobini-Kresák
Option: Halley's Comet
Option: Tempel 1
Option: Comet Hale-Bopp
2. How often does the comet 41P/Tuttle-Giacobini-Kresák travel through the solar system?
Option: 3.5 years
Option: 5.4 years
Option: 7.1 years
Option: 10 years
3. What did NASA report about the comet's rotation during its 2017 passage?
Option: It increased speed
Option: It reversed direction
Option: It slowed down
Option: It remained the same
4. Who is the astronomer mentioned in the report regarding the comet?
Option: Carl Sagan
Option: David Jewitt
Option: Neil deGrasse Tyson
Option: Stephen Hawking
5. What effect did heat have on the comet's surface?
Option: Triggered volcanic activity
Option: Created jets of gas
Option: Made it spin faster
Option: Changed its color
6. What did the historical data from 2001 indicate about the comet?
Option: It was inactive
Option: It was very active
Option: It was self-destructing
Option: It was orbiting the sun steadily



True-False

7. The comet's rotation slowed down before approaching the sun.
8. NASA discovered the comet in 2017.
9. The rotation of 41P/Tuttle-Giacobini-Kresák was faster in December 2017 than in May.
10. David Jewitt believes the comet could self-destruct due to its rotation changes.
11. The comet is expected to fragment due to its consistent rotational stability.
12. NASA's publicly accessible data has no value for future observations.

Gap-Fill

13. The comet travels through the solar system every _____ years.
14. In March 2017, the comet was rotating at a specific _____ speed.
15. As the comet approached the sun, heat melted _____ on its surface.
16. The jets created by melting ice acted like small _____ boosters.
17. Historical data indicated that the comet was very _____ in 2001.
18. Continued changes in rotation might make the comet _____ unstable.

Answer

Multiple Choice: 1. 41P/Tuttle-Giacobini-Kresák 2. 5.4 years 3. It slowed down 4. David Jewitt 5. Created jets of gas 6. It was very active

True-False: 7. True 8. False 9. True 10. True 11. False 12. False

Gap-Fill: 13. 5.4 14. specific 15. ice 16. rocket 17. active 18. unstable

CATEGORY

1. Sci/Tech - LEVEL4

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