



Scientists say Earth's rotation experiences 'unprecedented' changes

Description

Every day, Earth is taking a bit longer to spin around. The change is very small, just a few milliseconds. But the reasons behind this change are very big.

A new study says that this change is now the largest in 3.6 million years. As ice at the North and South Poles melts because of climate change, the water flows into the oceans. This change moves weight away from the poles and slows down Earth's spin.

Researchers from the University of Vienna and ETH Zurich looked back in time to see if this change happened before. They found that it has never happened like this. Earth's spin changes because of the Moon's gravity and other natural forces too. But now, climate change is becoming a powerful force.

Today, Earth's days are getting longer by 1.33 milliseconds each century. This means a huge amount of ice is melting. If we keep using fossil fuels, climate change will change the spin of Earth even more by the end of the century. This could affect GPS and our weather. Scientists are studying other ways that human actions change the planet.

Vocabulary List:

1. **milliseconds** //ˈmɪlɪˌsekəndz// (noun): very small units of time, one thousandth of a second
2. **melting** //ˈmɛltɪŋ// (verb): becoming liquid because of heat
3. **climate** //ˈklaɪmət// (noun): typical weather in a place over time
4. **gravity** //ˈgrævɪti// (noun): force that pulls things toward Earth
5. **century** //ˈsɛntʃəri// (noun): a period of one hundred years
6. **affect** //əˈfɛkt// (verb): to make a change to something

Comprehension Questions

Multiple Choice

1. What is the change in Earth's spin period as mentioned in the study?
Option: A few seconds
Option: A few milliseconds



Option: A few minutes

Option: A few hours

2. How long has this change in Earth's spin been the largest?

Option: 3.6 million years

Option: 1.2 million years

Option: 500,000 years

Option: 10 million years

3. Which two institutions conducted the research on Earth's spin?

Option: University of Vienna and ETH Zurich

Option: Harvard University and Stanford

Option: MIT and Caltech

Option: Oxford and Cambridge

4. What force causes changes in Earth's spin along with climate change?

Option: The Sun's gravity

Option: Mars' gravity

Option: The Moon's gravity

Option: Jupiter's gravity

5. How much longer are Earth's days getting each century?

Option: 1.00 milliseconds

Option: 1.25 milliseconds

Option: 1.33 milliseconds

Option: 1.50 milliseconds

6. What could be affected by the changing spin of the Earth due to climate change?

Option: Ocean currents

Option: GPS and weather

Option: Animal migration

Option: Vegetation growth

True-False

7. Earth's spin is getting faster due to climate change.

8. The change in Earth's spin has occurred for the first time in 3.6 million years.



9. Researchers found that climate change is becoming a powerful force affecting Earth's spin.
10. The study indicates that Earth is currently spinning faster than in the past.
11. The melting ice at the North and South Poles is a result of climate change.
12. Earth's days are getting shorter by 1.33 milliseconds each century.

Gap-Fill

13. The change in Earth's spin is now the largest in _____ million years.
14. Researchers from the University of Vienna and ETH Zurich found that Earth's spin changes due to _____ gravity.
15. As ice at the poles melts, the _____ flows into the oceans.
16. Today, Earth's days are getting longer by _____ milliseconds each century.
17. If fossil fuel use continues, climate change will change Earth's spin even more by the end of the _____
18. Scientists are studying other ways that _____ actions change the planet.

Answer

Multiple Choice: 1. A few milliseconds 2. 3.6 million years 3. University of Vienna and ETH Zurich 4. The Moon's gravity 5. 1.33 milliseconds 6. GPS and weather

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

Gap-Fill: 13. 3.6 14. Moon's 15. water 16. 1.33 17. century 18. human

Vocabulary quizzes

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



-
1. What has significantly changed due to global warming?
 - Option: Population growth
 - Option: Climate
 - Option: Industrialization
 - Option: Urbanization
 2. What is a consequence of rising temperatures in polar regions?
 - Option: Flooding
 - Option: Melting glaciers
 - Option: Increased biodiversity
 - Option: Improved agricultural yield
 3. What does gravity primarily affect?
 - Option: Light speed
 - Option: Spacecraft navigation
 - Option: The movement of water
 - Option: The falling of objects
 4. What is a fraudulent scheme designed to deceive people?
 - Option: Purchase
 - Option: Scam
 - Option: Gain
 - Option: Investment
 5. What field applies scientific and mathematical principles to design structures?
 - Option: Architecture
 - Option: Biology
 - Option: Engineering
 - Option: Economics
 6. How many milliseconds are in one second?
 - Option: 100
 - Option: 1,000
 - Option: 10,000
 - Option: 100,000
 7. What surrounds the Earth and contains gases necessary for life?
 - Option: Lithosphere
 - Option: Hydrosphere
 - Option: Atmosphere
 - Option: Cryosphere



8. Who creates audio content for an online audience?

- Option: Blogger
- Option: Podcaster
- Option: Vlogger
- Option: Author

9. What term is used for conclusions drawn from research?

- Option: Assumptions
- Option: Findings
- Option: Hypotheses
- Option: Predictions

10. What term refers to vehicles designed for travel in outer space?

- Option: Aircraft
- Option: Spacecraft
- Option: Submarines
- Option: Drones

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

11. The force of _____ affects all objects with mass.

12. Due to climate change, many _____ are melting at an alarming rate.

13. Many people fell victim to the online _____ that promised quick profits.

14. It may take years for ecosystems to _____ from natural disasters.

15. Civil _____ projects require careful planning and execution.

16. NASA constantly monitors for threats posed by _____ in space.

17. Before making a large _____, it is wise to compare options.

18. Scientists use _____ to analyze the light spectrum of distant stars.

19. A _____ is one-thousandth of a second.

20. The Earth's _____ is composed of several layers of gases.



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

21. The force of gravity keeps the planets in orbit around the sun.
22. The scam promised unrealistic returns on investment, attracting many unsuspecting people.
23. The melting of ice caps poses a significant risk to coastal cities worldwide.
24. Engineering plays a crucial role in developing sustainable technologies for the future.
25. Retreating glaciers are indicators of climate change and environmental shifts.
26. A popular podcaster discusses various topics related to technology and society.
27. Spectrometers are essential tools for analyzing the composition of distant celestial bodies.
28. In computational technology, response time is often measured in milliseconds.
29. The research team's findings were published in a reputable scientific journal.
30. The atmosphere is crucial for protecting life on Earth from harmful solar radiation.

Answer

Multiple Choice: 1. Climate 2. Melting glaciers 3. The falling of objects 4. Scam 5. Engineering 6. 1,000
7. Atmosphere 8. Podcaster 9. Findings 10. Spacecraft

Gap-Fill: 11. gravity 12. glaciers 13. scam 14. recover 15. engineering 16. asteroids 17. purchase
18. spectrometers 19. millisecond 20. atmosphere

Matching sentence: 1. gravity 2. scam 3. melting 4. engineering 5. glaciers 6. podcaster 7. spectrometers
8. millisecond 9. findings 10. atmosphere

CATEGORY

1. Sci/Tech - LEVEL1

POST TAG

1. Earth
2. ESL learning
3. esl news
4. Level 1
5. rotation
6. unprecedented



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