



---

# Scientists Warn of Unprecedented Changes to Earth's Rotation

## Description

Every day, Earth takes a little longer to spin. This change is very small, just fractions of a millisecond. However, the forces behind this change are enormous.

A new study says this change is the biggest in 3.6 million years. It happens because polar ice sheets and glaciers are melting due to climate change. When this ice melts, water moves from the poles into the oceans. This change makes the Earth rotate slower.

Scientists already knew climate change affects Earth's spin. Now, researchers from the University of Vienna and ETH Zurich looked at the past. They found that today's change has never happened before.

The exact length of a day is always changing. Forces like the Moon's gravity can pull on Earth. Researchers found that climate change is now as strong as these forces. They studied tiny sea creatures called benthic foraminifera to find out how Earth's spin has changed over millions of years.

By the end of this century, climate change will be the main cause of longer days, even more than the Moon's gravity. This small change can affect GPS systems and weather patterns. Scientists are now looking at how other factors, like groundwater loss, will change Earth's spin.

---

## Vocabulary List:

1. **millisecond** //ˈmɪlɪˌsekənd// (noun): one thousandth part of one second
2. **climate** //ˈklaɪmət// (noun): usual weather in a place over time
3. **glaciers** //ˈgleɪʃəz// (noun): very large slow-moving ice mass on land
4. **melting** //ˈmɛltɪŋ// (verb): changing from solid to liquid because of heat
5. **rotate** //roʊˈteɪt// (verb): turn around a center or axis
6. **gravity** //ˈgrævɪti// (noun): natural force that pulls things toward Earth

## Comprehension Questions

### Multiple Choice

1. What is the biggest change in Earth's rotation in the last few million years?



- Option: 1 million years
- Option: 3.6 million years
- Option: 5 million years
- Option: 10 million years

2. What phenomenon is contributing to the changes in Earth's rotation?

- Option: Volcanic activity
- Option: Climate change
- Option: Ocean currents
- Option: Wind patterns

3. Which institutions conducted the study regarding Earth's spin?

- Option: Harvard and MIT
- Option: University of Vienna and ETH Zurich
- Option: Stanford and Berkeley
- Option: Oxford and Cambridge

4. What has been found to be as strong as the Moon's gravity in affecting Earth's spin?

- Option: Tides
- Option: Climate change
- Option: Earthquakes
- Option: Solar winds

5. What type of sea creatures were studied to understand changes in Earth's spin?

- Option: Coral
- Option: Benthic foraminifera
- Option: Plankton
- Option: Sea urchins

6. By the end of this century, what will be the main cause of longer days?

- Option: Volcanic activity
- Option: Climate change
- Option: Earth's axis tilt
- Option: Solar flares

### True-False

7. Earth takes longer to spin every day.



8. The change in Earth's rotation is primarily caused by the Moon's gravity.
9. Researchers studied the impacts of climate change on Earth's spin over millions of years.
10. The study found that today's change in Earth's rotation has happened several times before.
11. Benthic foraminifera were used to understand the spin of Earth.
12. Climate change will not have an impact on GPS systems and weather patterns.

### Gap-Fill

13. Earth takes a little longer to spin every day, changing by just \_\_\_\_\_ milliseconds.
14. The study indicates this change in Earth's rotation is the biggest in \_\_\_\_\_ million years.
15. When ice sheets melt, water moves from the \_\_\_\_\_ into the oceans.
16. Scientists believe that by the end of this century, climate change will be the main cause of \_\_\_\_\_ days.
17. Research shows that forces like the \_\_\_\_\_ gravity also affect Earth's rotation.
18. The exact length of a day is always changing due to various \_\_\_\_\_ such as climate change.

### Answer

**Multiple Choice:** 1. 3.6 million years 2. Climate change 3. University of Vienna and ETH Zurich 5. Benthic foraminifera

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

**Gap-Fill:** 13. fractions of a millisecond 14. 3.6 15. poles 16. longer 17. Moon's 18. forces

### 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



## Tags

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

## Date Created

2026/05/25

## Author

aimeeyoung99

ESL-NEWS.COM