

Solar system slowdown





Overview

Why does the Earth slow down?

The primary driver of the Earth's gradual slowdown is tidal friction. The Moon's gravitational pull creates tides in the Earth's oceans. These tides are, in essence, bulges of water that move around the planet as the Earth rotates.

Will a day be longer if Earth slows down?

Today, we experience 24-hour days, but millions of years ago, a day on Earth was shorter. As the planet continues to slow down, days will become incrementally longer—a change that, while imperceptible in our daily lives, has profound long-term consequences. This deceleration also raises questions about how it might impact Earth's future.

Does tidal dissipation slow Earth's rotation?

The discovery of this pattern challenges the long-held belief that Earth's rotation has been slowing down at a constant rate due to tidal dissipation. Instead, the research shows that the deceleration occurred in distinct phases, providing a more nuanced view of how Earth's rotation has evolved over time.

What happens if the Sun reaches a solar minimum?

During the maximum, as seen in 2024, the Sun produces more sunspots, flares, and coronal mass ejections (CMEs), which trigger geomagnetic storms on Earth. After the peak, activity drops, and by 2027, the Sun is expected to reach a solar minimum—a period of minimal activity with few sunspots.



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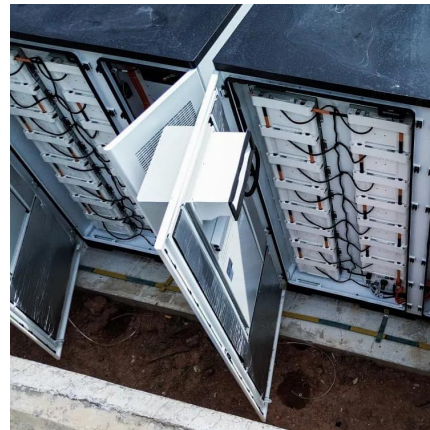


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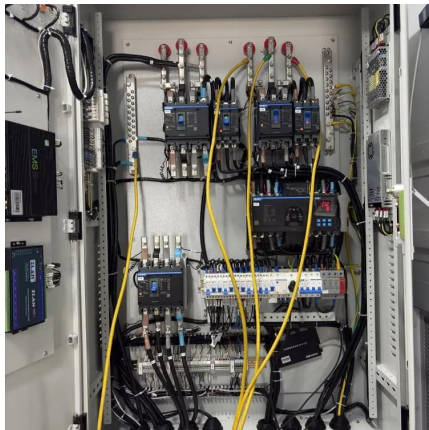
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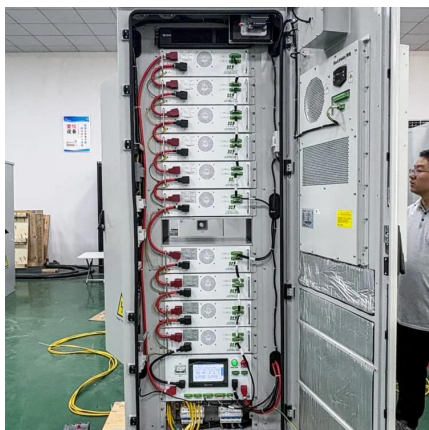


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