The Origins of the Solar System: From Cosmic Dust to Planetary Formation

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What Triggered the Birth of Our Cosmic Neighborhood?

For centuries, scientists have wondered: what did the solar system originate from? The leading theory - the solar nebula hypothesis - suggests our planetary system formed 4.6 billion years ago from a collapsing cloud of interstellar gas and dust. Imagine a slowly rotating cosmic coffee cup: as it cooled, gravity compressed cosmic dust into a spinning disk, ultimately creating the Sun and planets.

3 Key Stages of Solar System Formation

- Nebula collapse: Triggered by shockwaves from a nearby supernova
- Protoplanetary disk formation: Lasting roughly 100 million years
- Planetesimal accretion: Dust grains merging into moon-sized bodies

How Cosmic Chemistry Powers Modern Solar Technology

Interestingly, the same planetary formation processes that created Earth's silicon-rich crust now enable photovoltaic innovation. Take Germany's solar industry - leveraging 95%-pure silicon crystals (similar to meteorite composition) to achieve 22.8% panel efficiency. This mirrors how ancient stardust particles (

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