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Meteorite Sheds Light on the Sun's Infant Years

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By analyzing a piece of meteorite found in Kazakhstan in 1962, researchers have envisaged how the Sun behaved in its infancy.

Findings

- Researchers found that **during initial years Sun was able to generate superflares** which were a million times stronger than the strongest solar flare ever recorded at the 1859 Carrington event.
 - The **solar storm of 1859 (also known as the Carrington Event)** was a powerful geomagnetic storm during solar cycle 10 (1855–1867).
 - A **solar flare is a sudden flash of increased brightness on the Sun,** sometimes they are also accompanied by a **coronal mass ejection.**
- Such superflares must have taken place 4.5 billion years ago when the Sun was barely forming.
- Researchers also inferred that irradiation by such superflares from the Sun is the **sources of elements like beryllium-7.**
- **Among the first-formed solids of the solar system were the calcium-aluminum-rich inclusions (CAI).** The CAIs are nearly 4.5 billion years old.

Terms Related to Rocks of Space

- **Asteroid:** These rocks are generally **found between Mars and Jupiter** in an orbit called the **asteroid belt.**
 - These are usually **the fragments of a planet** that never came together.
 - Sometimes asteroids after being ejected from the main belt, intersect earth orbits.

- **Comet:** It is a **chunk of ice and rock originating from the outer solar system**. Some of them occasionally get gravitationally pulled towards the inner solar system, with the possibility of hitting Earth.
 - When passing close to the Sun, **the comet warms and begins to release gases, a process called outgassing**.
 - This produces a **visible atmosphere or coma, and sometimes also a tail**.
- **Meteoroid:** a **space rock that's bigger than a dust grain but smaller than an asteroid**. The dividing line between asteroid and meteoroid is fuzzy, but generally, space rocks bigger than boulders are asteroids and smaller ones are meteoroids.
- **Meteor:** **The streak of light seen when a space rock — an asteroid or a comet — enters the earth's atmosphere and starts burning up**. It's the scientific synonym for "shooting star."
- **Meteorite:** If a meteor doesn't entirely burn up, a piece of **space rock that lands on Earth** are called a meteorite.
- **Bolide:** astronomers use the term to describe a **bright fireball from an incoming meteor**; geologists use it as a catch-all term for a comet or an asteroid that hits the Earth.

Coronal Mass Ejection

- A coronal mass ejection (CME) is a **significant release of plasma and accompanying magnetic field from the solar corona**. They are **often followed by solar flares**.
- **Solar Flares on reaching earth causes spectacular light** shows by interacting with the earth's magnetic field called Aurora's.
- **Solar Flares can also disrupt** radio transmission and harm satellites in orbit.