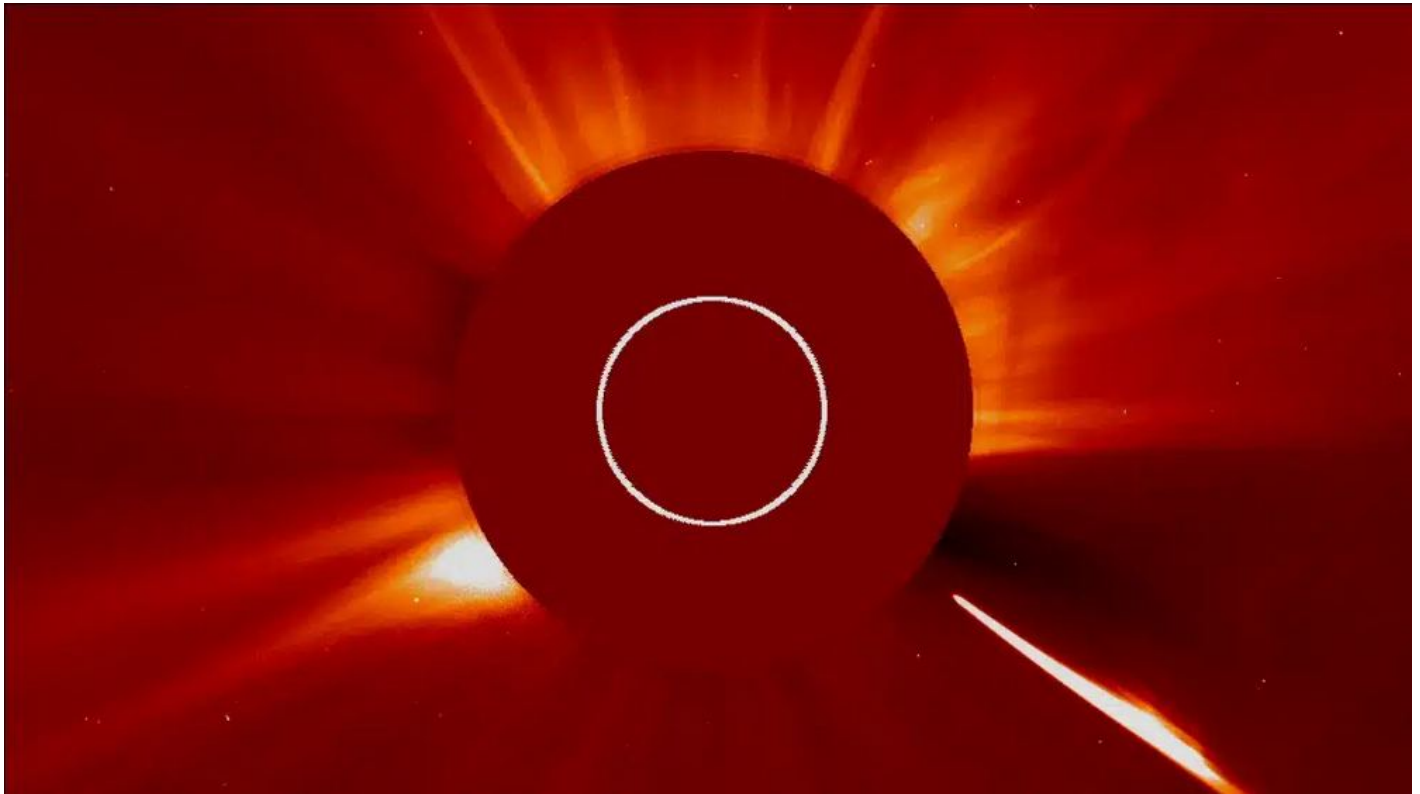


What are Sungrazing Comets?

April 12, 2024 • vajiramandravi.com



About Sungrazing Comets

- Sungrazing comets are a special class of **comets that come very close to the sun** at their **nearest approach**, a point **called perihelion**.
- To be considered a sungrazer, a comet **needs to get within** about **850,000 miles from the sun** at perihelion.
- **Many come even closer**, even to within a few thousand miles.
- Being so close to the sun is **very hard on comets** for many reasons.
 - They are subjected to a lot of **solar radiation**, which **boils off their water or other volatiles**.
 - The **physical push of the radiation and the solar wind** also **helps form the tails**.
 - As they get closer to the sun, the comets experience extremely **strong tidal forces**, or gravitational stress.
 - In this hostile environment, **many sungrazers do not survive** their trip around the sun.
 - Although **they don't actually crash** into the **solar surface**, the **sun is able to destroy them**.
 - **Most usually evaporate** in the hot solar atmosphere.
- **Orbit:** Most of the sungrazing comets observed follow a similar orbit, called the **Kreutz Path**, a single orbit that takes **800 years to complete**.

- They collectively belong to a population called the **Kreutz Group**.
- These Kreutz comets **are fragments from a single large comet** that was shattered thousands of years ago.
- The far end of the Kreutz path lies 160 times farther from the sun than the orbit of Earth.

What is a Comet?

- Comets are **frozen leftovers from the formation of the solar system**, composed of **dust, rock, and ice**.
 - They **orbit the sun in highly elliptical orbits** that can take hundreds of thousands of years to complete.
 - They range from a **few miles to tens of miles wide**, but as they orbit closer to the Sun, they **heat up and spew gases and dust into a glowing head** that can be larger than a planet.
 - The dust and gases **form a tail** that stretches away from the Sun for millions of miles.
- According to NASA, as of January 2023, the current number of known comets is 3,743. Though **billions** more are **thought to be orbiting the sun** beyond Neptune **in the Kuiper Belt** and the distant Oort cloud far beyond Pluto.
-

Q1: What is a total solar eclipse?

A total solar eclipse is a condition when the Moon passes between the Sun and the Earth and completely blocks the Sun's disk, casting a huge shadow on the surface. People viewing the eclipse from locations where the Moon's shadow completely covers the Sun-known as the path of totality-will experience a total solar eclipse. As per NASA, during this timeframe, the sky will darken, resembling the onset of dawn or dusk.

Source: [Total solar eclipse reveals tiny new comet moments before it was destroyed by the sun](#)

Source: <https://vajiramandravi.com/current-affairs/sungrazing-comets/>

© Vajiram & Ravi. For personal use only.