

# Green Comet

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**Context-** Recently discovered, Green Comet can be witnessed after about 50 thousand years and next expected to be seen after the same number of years.

## Key Highlights

- Green Comet recently approached the sun in the middle of January 2023, it is now moving away from it, along its own orbit.
- The orbit indicates that it comes from the edge of our solar system, a distant reservoir of comets we call the Oort cloud.
- The Oort cloud is thought to be a large, spherical region of outer space enveloping our sun, consisting of innumerable small objects, such as comets and asteroids.
- It is the most distant region of the solar system and Home of the Comets.

## Factors for the colour Green

- Comets are frozen rocky or gas-filled objects which are remnants of the formation of the solar system.
- Due to their composition, characteristics and the path they move in, the comets tend to leave a light behind them.
- Here, the comet itself is green (called the head of the comet) and emits a whitish light behind it and it is often called the tail of the comet.
- The green glow is thought to arise from the presence of diatomic carbon, these pairs of carbon atoms which are bound together in the head of the comet.
- The molecule emits green light when it gets excited by the ultraviolet rays in solar

radiation.

## Distance from Earth:

- The green comet could be at a distance of 2.5 light minutes from Earth, that means a “mere” 27 million miles.
  - It will be closest to Earth during early February of 2023.
  - Termed the C/2022 E3 (ZTF), the comet was named to refer to those who for the first time spotted it – astronomers at the Zwicky Transient Facility (ZTF) in the US, in March 2022.
  - Comets could be visible with telescopes and binoculars, and it might even be visible to the naked eye under a clear night sky.
  - **Northern Hemisphere:** Comet will be seen in the morning sky, as it moves swiftly toward the northwest in January 2023.
  - **Southern Hemisphere:** It will become visible in the Southern Hemisphere in early February 2023.
  - **Specifically in India:** In Indian skies, the comet can be spotted at 16° above the horizon in the Bootes constellation, when looking in the northwest direction.
- **Gravity on Comets:**
    - Just like other bodies in space, comets have orbits.
    - They are sometimes pulled in close to the sun due to the sun’s gravity acting on them.
    - As they orbit near the Sun, they heat up and spew gases and dust into a glowing head which can be larger than a planet.
    - The remains of dust following this burning up, from a distance, look like a trail of light to the humans on Earth.
    - Comets, hence, have often been seen giving out blue or whitish light, or even green.
  - **Uniqueness of Green Comet:**

- It comes under the category of long-period comets, that take more than 200 years to orbit the Sun; the green comet is not easily spotted.

- With a highly elliptical orbit, the comet will head back to the Oort cloud and it make its next appearance roughly 50,000 years later.