

Comet

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Comet Latest News

NASA's Hubble Space Telescope has captured the first detailed images of interstellar comet 3I/ATLAS as it passes through our solar system, offering scientists a rare glimpse at a visitor from another star system.

About Comet

- Comets are **large objects made of dust and ice** that **orbit the Sun**.
- Best known for their **long, streaming tails**, these ancient objects are **leftovers from the formation of the solar system** 4.6 billion years ago.
- Comets are **mostly found way out in the solar system**.
- **Some exist** in a **wide disk beyond** the orbit of **Neptune called the Kuiper Belt**.
 - We call these **short-period comets**. They take less than 200 years to orbit the Sun.
- **Other comets** live **in the Oort Cloud**, the **sphere-shaped, outer edge of the solar system** that is about 50 times farther away from the Sun than the Kuiper Belt.
 - These are called **long-period comets** because they take much longer to orbit the Sun.

- The comet with the longest known orbit takes more than 250,000 years to make just one trip around the Sun.
- A comet is **made up of four visible parts**: the **nucleus**, the **coma**, the **ion tail**, and the **dust tail**.
 - The **nucleus** is a **solid body** typically a few kilometres in diameter and made up of a **mixture of volatile ices** (predominantly water ice) **and silicate and organic dust** particles.
 - The **coma** is the **freely escaping atmosphere around the nucleus** that forms **when the comet comes close to the Sun** and the **volatile ices sublimate**, carrying with them dust particles that are intimately mixed with the frozen ices in the nucleus.
 - The **dust tail** forms from those dust particles and is **blown back by solar radiation pressure to form a long curving tail** that is **typically white or yellow** in colour.
 - The **ion tail** forms from the **volatile gases in the coma** when they are **ionized by ultraviolet photons from the Sun** and **blown away by the solar wind**.
 - **Ion tails point almost exactly away from the Sun** and glow **bluish in colour** because of the presence of CO⁺ ions.

Source: IT

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