# Halley's Comet

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**Halley's Comet** (listed as **Halley's Comet**, or sometimes simply **Halley**, officially designated **1P/Halley**) is a short-period comet visible from Earth every 75–76 years. Halley is the only short-period comet visible from Earth that is also a naked-eye object, and the only such comet that many people see twice in their lifetimes. It has been observed at its 29 returns since 240 BC, the first of which was recorded by Chinese astronomers.[1] Halley's orbit takes it from just beyond the orbit of Venus to the orbit of Neptune.[2]

Halley's Comet is composed of rock and ices that sublimate when exposed to solar radiation, releasing gas and dust into the solar wind to form a tail and a coma. Its last perihelion was in 1986, and it will next be at perihelion in 2061. Its next return to visibility will occur in the 2060s, when it will be in a favorable position for observation in the Northern Hemisphere.

Halley's Comet is named after the English astronomer Edmond Halley, who was the first to predict its return, based on the orbits of 24 other comets he had observed in the sky. Halley was the first astronomer who, using Isaac Newton's laws of motion and universal gravitation, predicted the return of a comet. Halley's prediction was based on the assumption that the comet's orbit was influenced by Jupiter and Saturn, a complex calculation that occupied the attention of many astronomers for decades. Halley's prediction was vindicated when the comet returned in 1758, and astronomers have since been able to predict the return of Halley's Comet with great accuracy.

Halley's Comet
Orbital characteristics
Epoch 1 January 2000 (JD 2451545.0)
Observation arc 2,634 days (7.21 yr)
Number of observations 4,955
Aphelion 35.14 AU
Perihelion 0.586 AU
Semi-major axis 17.94 AU
Eccentricity 0.967
Orbital period 75–76 yr
Inclination 162.26°
Longitude of ascending node 58.42°
Argument of perihelion 111.33°
Mean anomaly 38.38°
Last perihelion 9 February 1986[3]
Next perihelion 28 July 2061[4]
Physical characteristics
Dimensions 15 km × 8 km × 8 km (9.3 mi × 5 mi × 5 mi)[5]
Mass 2.2 × 10^14 kg[6]
Mean density 0.6 g/cm³[6]
Equatorial surface gravity 0.3 mm/s²[7]
Equatorial escape velocity 0.6 m/s[7]
Sidereal rotation period 2.2 d[8]
Albedo 0.04[9]
Temperature 1,000 K (727 °C) (at perihelion)
Discovery
Discoverer Johannes Kepler[10]
Discovery date 1607[10]
Other designations
1P/Halley, 1982 III, 1983 I, 1984 IV, 1985 V, 1986 III, 1987 VII, 1988 IX, 1989 XX, 1990 XI, 1991 XIII, 1992 XVI, 1993 XXIII, 1994 XXIV, 1995 XX, 1996 XIII, 1997 XXII, 1998 XXIX, 1999 XXIII, 2000 XXIII, 2001 XXIX, 2002 XXIII, 2003 XXIII, 2004 XXIII, 2005 XXIII, 2006 XXIII, 2007 XXIII, 2008 XXIII, 2009 XXIII, 2010 XXIII, 2011 XXIII, 2012 XXIII, 2013 XXIII, 2014 XXIII, 2015 XXIII, 2016 XXIII, 2017 XXIII, 2018 XXIII, 2019 XXIII, 2020 XXIII, 2021 XXIII,

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## External links [ edit ]

- Synopsis of the Astronomy of Comets (1706 reprint of Halley's 1705 paper)
- Halley's nucleus by Giotto spacecraft (ESA link)
- Image of Halley in 1986 by Giotto spacecraft (NASA link)
- cometography.com
- 1P/Halley at CometBase database
- seds.org
- Orbital simulation from JPL (Java) / Ephemeris
- Donald Keith Yeomans, "Great Comets in History"
- A brief history of Halley's Comet (Ian Ridpath)
- Photographs of 1910 approach taken from the Lick Observatory from the Lick Observatory Records Digital Archive, UC Santa Cruz Library's Digital Collections Archived 20 May 2019 at the Wayback Machine

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