THE ONCE-IN-A-LIFETIME RETURN OF HALLEY'S COMET

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It is probable that Halley's comet was first observed by the Chinese as early as 239 BC. One of the most well-known appearances was in 1066, the year of the Norman conquest of England, and it can be seen as a flaming, long tailed star in a tapestry which depicts the Battle of Hastings. In 1222 the comet reappeared and was so bright that it could be seen in daylight. On the next return in 1301 it must have made another big impression, for it is thought to have been the model for the representation of the Star of Bethlehem in a painting by the Italian artist Giotto.

Photo of Halley's comet taken in 1910.
(Photo: Natural History)

Edmund Halley an English astronomer who had studied comets, was convinced that the orbits of the comet of 1682 and those observed in 1607 and 1531 were of one and the same comet having roughly a 76-year orbit. He then set out to predict the return of the comet in 1758. Unfortunately he died in 1742 without seeing vindication of his claim, for on Christmas eve 1758 it was spotted by an amateur astronomer.

Most people think comets "race across the sky" but actually, they are among the "tortoises" of the solar system. However, notwithstanding Halley's "slowness", on the first day of the year 1985, its orbital velocity was about 56 000 kph and by the end of November 1985, it will almost double that as it approaches the sun. Since the beginning of the year, Halley's comet has been an evening star. The earth was closest to it (about 640 million kilometres away) on January 13, when it passed between the comet and the sun. The earth moved gradually away from the comet until May 2, when the distance between them was 728 million kilometres. During May, the


Halley's comet of 1066 in a tapestry.

earth and Halley's comet moved closer and by the end of May, they were about 710 million kilometres apart (and closing). Shortly thereafter, on June 12, the earth's motion took the comet from the sun's left to its right, into the morning sky, where it will be until late November.

Postscript: The comet will return again in 76 years if its name is Halley's comet, but not for another 1 000 000 years or so if it is comet Kohoutek.

What is a comet? In reality, a comet is just a dirty snowball hibernating in the deep freeze of space — nothing but ice, fine dust, frozen gas and bits of meteoric rock. When its orbit swings it in towards the sun, some of the frozen gases begin to evaporate. The sun floodlights the dust and gas making the comet visible as an enormous glowing ball with a tail many millions of kilometres long. Driven by solar-energy, the tail always streams away from the sun.

Orbit of Halley's comet.
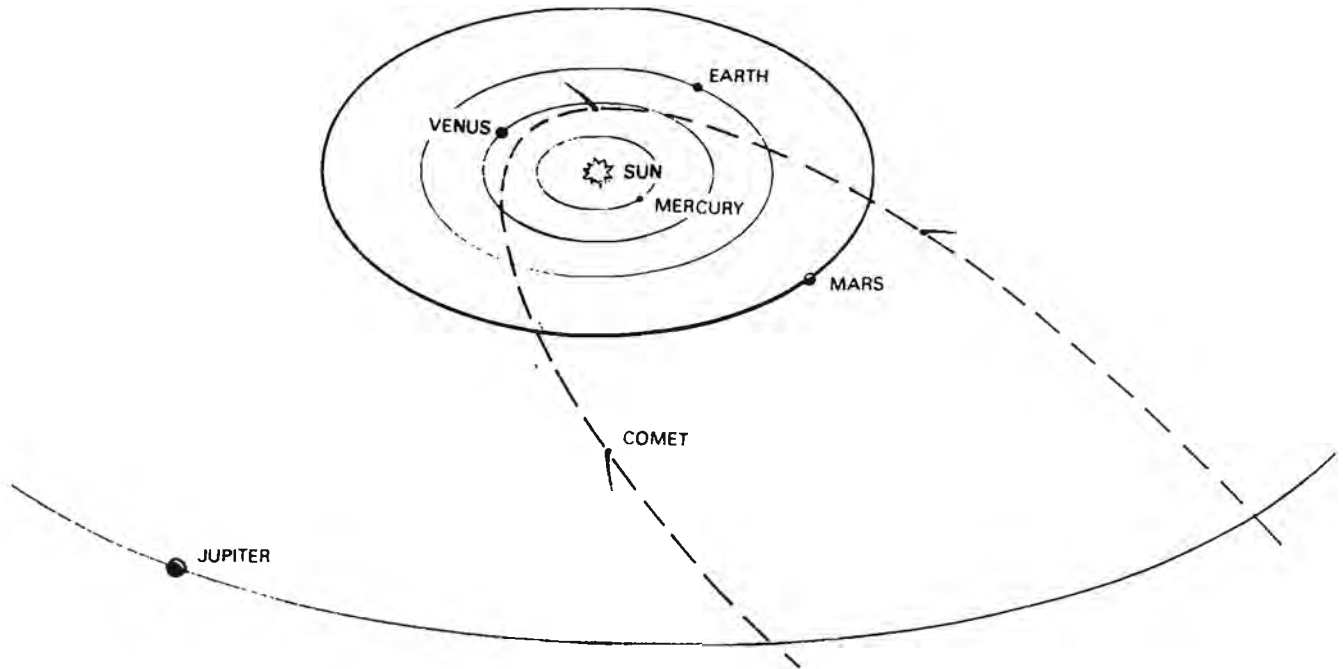
When will we see Halley's comet?

17 October 1985	10,0 magnitude. Visible from 22h00 until dawn for a few nights (Orion - Gemini).
27 November 1985	6,5 magnitude. Closest pre-perihelion approach (Pisces).
12 December 1985	Visible for a few nights (evenings).
Christmas 1985	6,0 magnitude. Visible for less than 2 hours after sunset.
9 February 1986	Closest to Sun (perihelion).
Late March, early April 1986	Visible all night.
11 April 1986	4,0 magnitude. Situated high in south. Closest post-perihelion approach (Centaurus).

A fine instrument for comet viewing is a pair of 7 x 50 binoculars.

Note: The naked eye can see stars up to the sixth magnitude. A "lower" magnitude means an increase in brightness e.g. Sirius, the brightest star is of the minus $1\frac{1}{2}$ magnitude. On 17 October 1985, comet Halley will be 39 times fainter than on Christmas eve, while on 11 April 1986 (when comet Halley will be at its brightest), it will be $6\frac{1}{2}$ times brighter than on Christmas eve.

The adoration of the Magi by Giotto; note the comet above the stable roof.

(Photo: Comets)

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