

• HALLEY'S COMET

For most of us it will be a genuine once-in-a-lifetime opportunity. From mid-December till the end of January Halley's comet will return to British skies.

Though the comet will excite great interest and may even light up the dark winter nights, it will not come within 40m miles of earth. The automatic assumption must be that to create so much light from such a distance the comet must be very large. Actually few comets have much substance at all.

Even with a large comet like Halley the only substantial part is the nucleus, made up largely of ordinary water ices, and rocky fragments it has picked upon its long journey into the outer reaches of the solar system. The comet orbits around the sun. When it is far out in space it is wholly made up of the icy nucleus. As it is drawn toward the sun however the ices begin to boil off. Usually a tail or tails develop, and a bright coma around the core.

Halley's return to our skies has been recorded for many centuries. It was frequently sighted by the Chinese with the first record coming from as early as 1059 BC. Full proof records have only been kept since 240 BC. Understandably the comet's return has often been used to explain historical events.

In AD 451 it reappeared over the skies of Europe just as the Huns were invading. In 1066 Harold and his men were apparently put off their patriotic duty by the comet. Its appearance is recorded in the Bayeaux Tapestry. In 1465 the then Pope preached against it, warning his flock that it was the agent of the Devil. In 1682 it returned again and was tracked by Edmund Halley. Following the publication of Newton's *Principia*, Halley worked out the orbit of the comet. He conjectured that it was identical with the comets that had appeared in 1607 and 1531. He predicted the comet would return every 76 years.

The comet did reappear on Christmas night in 1758 and since then it has been back twice. The last time was in 1910. The 1985-6 appearance, however, is probably the worst for the star-gazing public for 2,000 years. At its closest point to us the comet will be directly behind the sun and invisible from Earth.

However the comet is going to be met by an armada of spacecraft. In a programme of scientific cooperation which some will no doubt attribute to the new period of detente, spacecraft from the Soviet Union and Japan will go up to meet the comet. They will be helped by information from an earlier American probe which was sent up to meet a

smaller comet. In March a European probe will go right into the comet to send back pictures of the cometary nucleus. For the first time it might be possible for scientists to unveil some of the secrets of the comet.

For the ordinary person in the field with a pair of binoculars the timetable for Halley viewing is as follows. By mid-December the comet should be visible to the naked eye as a blurry patch with the outline of a tail. It will move through Aquarius (the water bearer) and Pisces (the fishes) but it will be more than 80m miles away.

By January the comet will be moving south, and at the end of the month will be mostly seen in the evening twilight. At this point it will be travelling at over 100,000 mph.

By March the comet will still be moving south and will not be visible in Britain. It will return in May but at this stage the comet's brightness will have faded and it will not be visible with the naked eye.

And if you're making a cup of tea, or get stuck on the loo as it passes over, then I'm afraid you will have to wait till 2062.

Heather Robinson