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NASA tells us that “Comets are cosmic snowballs of frozen gases, rock and dust roughly the size of a small town. When a comet's orbit brings it close to the sun, it heats up and spews dust and gases into a giant glowing head larger than most planets. The dust and gases form a tail that stretches away from the sun for millions of kilometers.” This image depicts Halley’s Comet (which is featured in the Bayeux Tapestry). Named for a famous scientist who predicted its return, Halley’s Comet takes about 76 years to orbit the Sun. Image credit: ESA / Max-Planck-Institute for Solar System Research.

Comets are not just interesting objects in our solar system. They have also played curious roles in history - like the struggle for power in eleventh-century Britain.

Harold II was crowned king of England on the 6th of January, 1066 - soon after Edward the Confessor (Britain's next-to-last Anglo-Saxon King) died without children, leaving his succession in dispute. In the spring of that year, the *Anglo-Saxon Chronicle* (Part 5) records that a “comet-star” shone for a week:

A.D. 1066. ...Then was over all England such a token seen as no man ever saw before. Some men said that it was the comet-star, which others denominate the long-hair'd star. It appeared first on the eve called "Litania major", that is, on the eighth before the calends off May; and so shone all the week.

Some of the people took this as a bad omen: Maybe Harold wasn’t the rightful king after all?

The Bayeux Tapestry, a beautifully embroidered history completed in the eleventh century, memorializes this sense of awe and foreboding. In one panel (look at the bottom right), we see the “long-hair’d star” and this description:

ISTI MIRANT STELLA - Latin for “They are seeing the star” (or “These [people] look in wonder at the star”).

We also see the king’s attendant, who has rushed to tell Harold about the celestial sighting.

What do the pictures mean? Harold - according to the French perspective - knows he broke an oath to William, Duke of Normandy. He’d promised William to support his claim to the throne of England on the death of King Edward the Confessor (William’s distant cousin).

Instead, Harold became King himself. Now the “comet-star” appears - as do empty longboats at the bottom of the tapestry panel. Is the comet foreshadowing a French invasion (or worse) of Britain?

We know, of course, that the Duke of Normandy - William the Conqueror - did invade his neighbor to the north, defeating Harold and his exhausted troops in the 1066 Battle of Senlac Hill (near Hastings), thereafter becoming King William I. History - and the tapestry - record the events. (See the hand-embroidered tapestry “come alive” in narrated animation.)

We also know something else. Seven centuries later, Edmond Halley accurately predicted the return of a comet in 1758. His work, *A Synopsis of the Astronomy of Comets*, together with subsequent studies, led scientists to conclude the unusual star of 1066 was Halley’s Comet, making one of its rare appearances.

Throughout recorded history people were fascinated by (and fearful of) comets whenever they appeared in the sky. Around 300 B.C., Chinese astronomers compiled the “Mawangdui Silk” which depicts various comet forms

and their associated disasters. Halley's Comet became so closely associated with disasters that - it is said - Pope Calixtus III actually excommunicated its apparition in 1456.

Many comets appeared during the seventeenth century, and artists created images of them. Let's look at a few examples.

See Alignments to State and Common Core standards for this story online at:

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Media Stream

Wonders of the Earth, Sea and Sky Painting

This image of a comet appears in a 1902 work edited by [Edward Singleton \(E.S.\) Holden](#) entitled *Wonders of Earth, Sea and Sky*. It is Volume XI of the *Young Folks' Library* series.

In 1902, before astronomers had computers and other technologically advanced instruments to study the "Wonders of Earth, Sea and Sky," they relied on less-powerful telescopes. How did they assess comets, during that time frame?

Holden (1846-1914) was an American astronomer, the fifth president of the University of California and the librarian of the U.S. Military Academy, at West Point, where he served between 1901-1914. Let's examine some of his words - between [pages 253 and 260](#) - where the comet appears in his book:

The history of a comet would be an instructive episode of the great history of the heavens. In it could be brought together the description of the progressive movement of human thought, as well as the astronomical theory of these extraordinary bodies.

Let us take, for example, one of the most memorable and best-known comets, and give an outline of its successive passages near the Earth. Like the planetary worlds, Comets belong to the solar system, and are subject to the rule of the Star King.

It is the universal law of gravitation which guides their path; solar attraction governs them, as it governs the movement of the planets and the small satellites. The chief point of difference between them and the planets is, that their orbits are very elongated; and, instead of being nearly circular, they take the elliptical form.

In consequence of the nature of these orbits, the same comet may approach very near the Sun, and afterwards travel from it to immense distances. Thus, the period of the Comet of 1680 has been estimated at three thousand years. It approaches the Sun, so as to be nearer to it than our Moon is to us, whilst it recedes to a distance 853 times greater than the distance of the Earth from the Sun.

On the 17th of December, 1680, it was at its perihelion—that is, at its greatest proximity to the Sun; it is now continuing its path beyond the Neptunian orbit. Its velocity varies according to its distance from the solar body. At its perihelion it travels thousands of leagues per minute; at its aphelion it does not pass over more than a few yards.

Its proximity to the Sun in its passage near that body caused Newton to think that it received a heat twenty-eight thousand times greater than that we experience at the summer solstice; and that this heat being two thousand times greater than that of red-hot iron, an iron globe of the same dimensions would be fifty thousand years entirely losing its heat.

Newton added that in the end comets will approach so near the Sun that they will not be able to escape the preponderance of its attraction, and that they will fall one after the other into this brilliant body, thus keeping up the heat which it perpetually pours out into space.

Such is the deplorable end assigned to comets by the author of the "Principia," an end which makes De la Brétonne say to Rétif: "An immense comet, already larger than Jupiter, was again increased in its path by being blended with six other dying comets. Thus displaced from its ordinary route by these slight shocks, it did not pursue its true elliptical orbit; so that the unfortunate thing was precipitated into the devouring centre of the Sun." "It is said," added he, "that the poor comet, thus burned alive, sent forth dreadful cries!"

...
It will be interesting, then, in a double point of view, to follow a comet in its different passages in sight of the Earth. Let us take the most important in astronomical history—the one whose orbit has been calculated by Edmund Halley, and which was named after him.

It was in 1682 that this comet appeared in its greatest brilliancy, accompanied with a tail which did not measure less than thirty-two millions of miles. By the observation of the path which it described in the heavens, and the time it occupied in describing it, this astronomer calculated its orbit, and recognized that the comet was the same as that which was admired in 1531 and 1607, and which ought to have reappeared in 1759.

Never did scientific prediction excite a more lively interest. The comet returned at the appointed time; and on the 12th of March, 1759, reached its perihelion. Since the year 12 before the Christian era, it had presented itself twenty-four times to the Earth. It was principally from the astronomical annals of China that it was possible to follow it up to this period.

...
Halley's comet again appeared in April, 1066, at the moment when William the Conqueror invaded England. It was pretended that it had the greatest influence on the fate of the battle of Hastings, which delivered over the country to the Normans.

A contemporary poet, alluding probably to the English diadem with which William was crowned, had proclaimed in one place, "that the comet had been more favorable to William than nature had been to Caesar; the latter had no hair, but William had received some from the comet."

A monk of Malmesbury apostrophized the comet in these terms: "Here thou art again, thou cause of the tears of many mothers! It is long since I have seen thee, but I see thee now, more terrible than ever; thou threatenest my country with complete ruin!"

...
This ancient comet witnessed many revolutions in human history, at each of its appearances, even in its later ones, in 1682, 1759, 1835; it was also presented to the Earth under the most diverse aspects, passing through a great variety of forms, from the appearance of a curved sabre, as in 1456, to that of a misty head, as in its last visit.

Moreover, this is not an exception to the general rule, for these mysterious stars have had the gift of exercising a power on the imagination which plunged it in ecstasy or trouble. Swords of fire, bloody crosses, flaming daggers, spears, dragons, fish, and other appearances of the same kind, were given to them in the middle ages and the Renaissance.

Comets like those of 1577 appear, moreover, to justify by their strange form the titles with which they are generally greeted. The most serious writers were not free from this terror. Thus, in a chapter on celestial monsters, the celebrated surgeon, Ambroise Paré, described the comet of 1528 under the most vivid and frightful colors: "This comet was so horrible and dreadful that it engendered such great terror to the people, that they died, some with fear, others with illness. It appeared to be of immense length, and of blood color; at its head was seen the figure of a curved arm, holding a large sword in the hand as if it wished to strike. At the point of the sword there were three stars, and on either side was seen a great number of hatchets, knives, and swords covered with blood, amongst which were numerous hideous human faces, with bristling beards and hair."

The imagination has good eyes when it exerts itself. The great and strange variety of cometary aspects is described with exactitude by Father Souciet in his Latin poem on comets. "Most of them," says he, "shine with fires interlaced like thick hair, and from this they have taken the name of comets. One draws after it the twisted folds of a long tail; another appears to have a white and bushy beard; this one throws a glimmer similar to that of a lamp burning during the night; that one, O Titan! represents thy resplendent face; and this other, O Phoebe! the form of thy nascent horns. There are some which bristle with twisted serpents. Shall I speak of those armies which have sometimes appeared in the air? of those clouds which follow as it were along a circle, or which resemble the head of Medusa? Have there not often been seen figures of men or savage animals?"

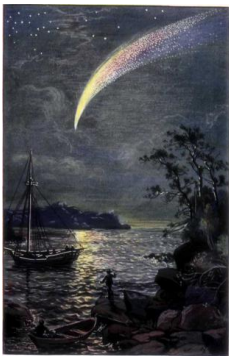
"Often, in the gloom of night, lighted up by these sad fires, the horrible sound of arms is heard, the clashing of swords which meet in the clouds, the ether furiously resounding with fearful din which crush the people with terror. All comets have a melancholy light, but they have not all the same color. Some have a leaden color; others that of flame or brass. The fires of some have the redness of blood; others resemble the brightness of silver. Some again are azure; others have the dark and pale color of iron. These differences come from the diversity of the vapors which surround them, or from the different manner in which they receive the Sun's rays. Do you not see in our fires, that various kinds of wood produce different colors? Pines and firs give a flame mixed with thick smoke, and throw out little light. That which rises from sulphur and thick bitumen is bluish. Lighted straw gives out sparks of a reddish color. The large olive, laurel, ash of Parnassus, etc., trees which always retain their sap, throw a whitish light similar to that of a lamp. Thus, comets whose fires are formed of different materials, each take and preserve a color which is peculiar to them."

Instead of being a cause of fear and terror, the variety and variability of the aspect of comets ought rather to indicate to us the harmlessness of their nature.

Click on the image for a better view.

Image described above, online via Project Gutenberg.

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Edward the Confessor - Anglo-Saxon King

Image online via History of the Monarchy.

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Bayeux Tapestry - Isti Mirant Stella Panel

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Bayeux Tapestry - Isti Mirant Stella, Close Up

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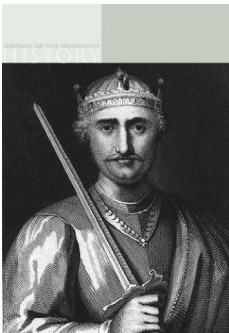
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Norman Conquest of Britain

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King William I - William the Conqueror

Image online, courtesy the History of the Monarchy.

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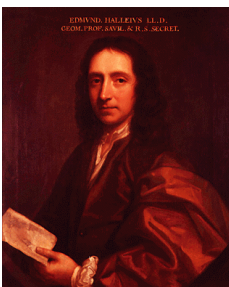


Death of Harold II at the Battle of Hastings

Image online, courtesy Wikimedia Commons.

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Edmond Halley - Portrait

Image of Edmond Halley painting, owned by the Royal Society, and [online via the University of Utrecht](#).

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Halley's Comet

Image, described above, online courtesy NASA.

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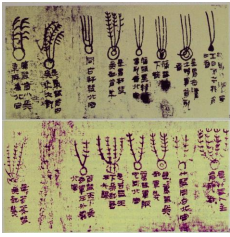
Halley's Comet Crossing Milky Way

NASA image No. AC86-0720-2. Photo online, courtesy NASA.

NASA quotes, about Halley's Comet, from NASA's Jet Propulsion Laboratory: "[Comet Halley Summary](#)."

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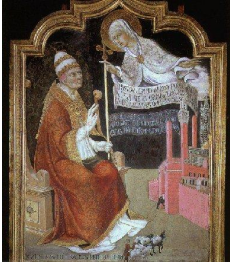
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Chinese Astronomers' Depiction of Comets - Mawangdui Silk

Image online courtesy the NASA/JPL website.

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Pope Calixtus III

Image online, courtesy the Vatican.history.de website.

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COMETS and OMENS

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Halley's Comet - Animated Version of Bayeux Tapestry

Animation online, courtesy avidavid62's Channel at YouTube.

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Battle of Hastings - Part 1

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