

HALLOWEEN, AN ASTRONOMICAL HOLIDAY

Halloween – short for All Hallows' Eve – is an astronomical holiday. Sure, it's the modern-day descendant from Samhain, a sacred festival of the ancient Celts and Druids in the British Isles. But it's also a cross-quarter day, which is probably why Samhain occurred when it did. Early people were keen observers of the sky. A cross-quarter day is a day more or less midway between an equinox (when the sun sets due west) and a solstice (when the sun sets at its most northern or southern point on the horizon). Halloween – October 31 – is approximately at the midway point between the autumn equinox and winter solstice in the Northern Hemisphere.

In other words, there are eight major seasonal subdivisions of every year. They include the March and September equinoxes, the June and December solstices, and the intervening four cross-quarter days.

In modern times, the four cross-quarter days are often called Groundhog Day (February 2), May Day (May 1), Lammas (August 1) and Halloween (October 31).

Halloween is the spookiest of the cross quarter days, possibly because it comes at a time of year when the days are growing shorter. On Halloween, it's said that the spirits of the dead wander from sunset until midnight. After midnight – on November 1, which we now call All Saints' Day – the ghosts are said to go back to rest. The date for Halloween has been fixed by tradition. The true cross-quarter day falls on November 7, representing a discrepancy of about one week.

The Pleiades star cluster, also known as the Seven Sisters, marks the radiant for the North Taurid meteor shower. This cluster is part of the constellation Taurus the Bull.

The Pleiades connection is because the early forbearer of Halloween – Samhain – happened on the night that the Pleiades star cluster culminated at midnight.

In other words, the Pleiades climbed to its highest point in the sky at midnight on or near the same date as this cross-quarter day. In our day, Halloween is fixed on October 31, though the midnight culmination of the Pleiades cluster now occurs on November 21.

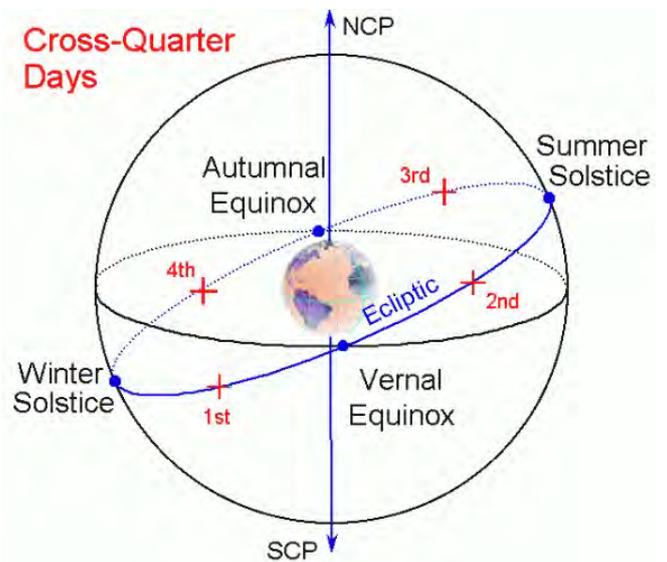
Presuming the supposed connection between Samhain and the midnight culmination of the Pleiades, the two events took place on or near the same date around the 11th century. Remember, this was several centuries before the introduction of the Gregorian calendar.

At that time, the Julian calendar was about one week out of step with the seasons. Had the Gregorian calendar been in use back then, the date of the cross-quarter day celebration would have been November 7.

So, the present date for Halloween – October 31 – marks the approximate midway point between the autumn equinox and the winter solstice.

Halloween is one of the year's four cross-quarter days. It is the modern-day descendant from Samhain, a festival of the ancient Celts and Druids. The Pleiades star cluster also plays a role in this story, because Samhain was said to happen on the night that the Pleiades star cluster culminated – or reached its highest point in the sky – at midnight.

AK, with EarthSky Notes



Equinoxes, solstices and cross-quarter days are all hallmarks of Earth's orbit around the sun. Halloween is the fourth cross-quarter day of the year.



The Pleiades star cluster, known as the Seven Sisters, is easy to pick out in the night sky



On Halloween spirits of the dead wander about in the night.