



Comet Hyakutake Passes the Earth

Credit & [Copyright](#): [Doug Zubenel \(TWAN\)](#)



Two Tails of Comet Lulin

Credit & Copyright: [Richard Richins \(NMSU\)](#)



Comet 17/P Holmes, 11.04.2007, 21h UT
TMB130/780, EOS 350D, 15x5 min, FOV 1.1x 1.65°
© Eder Iván 2007, Hungary

A Tale of Comet Holmes

Credit & Copyright: [Ivan Eder](#) and (inset) Paolo Berardi



The Dust and Ion Tails of Comet Hale-Bopp
Credit & Copyright: [John Gleason](#) (Celestial Images)



The Tails of Comet NEAT (Q4)
Credit & Copyright: [Chris Schur](#)



Tails Of Comet LINEAR

Credit & Copyright: Jure Skvarc, Bojan Dintinjana, [Herman Mikuz](#) ([Crni Vrh Observatory](#), Slovenia)



Two Tails of Comet West

Credit: Observatoire de Haute, Provence, France

TEACHER'S NOTES:

[APOD: 2009 December 16 - Comet Hyakutake Passes the Earth](#)

Explanation: In 1996, an unexpectedly bright comet passed by planet Earth. Discovered less than two months before, [Comet C/1996 B2 Hyakutake](#) came within only 1/10th of the Earth-Sun distance from the Earth in late March. At that time, Comet Hyakutake, dubbed the [Great Comet of 1996](#), became the brightest comet to grace the skies of Earth in 20 years. During its previous visit, [Comet Hyakutake](#) may well have been seen by the stone age [Magdalenian culture](#), who 17,000 years ago were possibly among the first humans to live in [tents](#) as well as caves. Pictured above near closest approach as it appeared on 1996 March 26, the long ion and dust tails of [Comet Hyakutake](#) are visible flowing off to the left in front of a distant star field that includes both the [Big and Little Dippers](#). On the far left, the blue ion tail appears to have recently undergone a [magnetic disconnection](#) event. On the far right, the comet's green-tinted [coma](#) obscures a [dense nucleus](#) of melting dirty ice estimated to be about 5 kilometers across. A few months later, Comet [Hyakutake](#) began its long trek back to the outer Solar System. Because of being gravitationally deflected by massive planets, Comet Hyakutake is not expected back for about 100,000 years.

[APOD: 2009 February 25 - Two Tails of Comet Lulin](#)

Explanation: Go outside tonight and see Comet Lulin. From a dark location, you should need only a [good star map](#) and [admirable perseverance](#) -- although wide-field binoculars might help. Yesterday, [Comet Lulin](#) passed its closest to Earth, so that the comet will remain [near its brightest](#) over the next few days. The comet is currently almost 180 degrees around from the Sun and [so visible](#) nearly all night long, but will appear to [move on the sky](#) about 10 full moons a night. In this image, [Comet Lulin](#) was captured in spectacular form two nights ago from New Mexico, USA. The central coma of the comet is appearing quite green, a color likely indicating glowing molecular [carbon](#) gasses. Bright stars and a distant [spiral galaxy](#) are clearly visible in the image background. The yellow dust tail, reflecting sunlight, is [visible](#) sprawling to the coma's left trailing behind [the comet](#), while the textured bluish-glowing ion tail is visible to the coma's right, pointing away from the Sun. Over the past few weeks, from the current vantage point of Earth, these [two tails appeared to point in opposite](#) directions. [Comet Lulin](#) is expected to slowly fade over the next few weeks.

[APOD: 2007 November 10 - A Tale of Comet Holmes](#)

Explanation: A beautiful blue ion tail has become visible in deep telescopic images of [Comet Holmes](#). Pointing generally away from the Sun and also planet Earth, the comet's [ion tail](#) is seriously [foreshortened](#) by our extreme viewing angle. Still, [enthusiastic](#) comet watchers have remarked that on the whole, the compact but tentacled appearance suggests a jellyfish or even a cosmic [calamari](#). This [stunning view](#) of the comet's greenish coma and blue tail was recorded on November 4 in clear skies near Budapest, Hungary. The colors are caused by [molecules in](#) the tenuous gas, like C₂ (green) and CO⁺ (blue), [fluorescing](#) in sunlight. In a more recent development, [the dramatic inset](#) is a deep image from L'Aquila in central Italy on November 8, showing the ion tail [disconnecting](#) from the comet.

[APOD: 2005 May 22 - The Dust and Ion Tails of Comet Hale-Bopp](#)

Explanation: In 1997, [Comet Hale-Bopp](#)'s *intrinsic* brightness exceeded any comet since [1811](#). Since it peaked on the other side of the Earth's orbit, however, the comet *appeared* only brighter than any comet in [two decades](#). Visible above are the [two tails](#) shed by [Comet Hale-Bopp](#). The [blue ion tail](#) is composed of [ionized](#) gas molecules, of which [carbon monoxide](#) particularly glows blue when reacquiring [electrons](#). This [tail](#) is created by the particles from the fast [solar wind](#) interacting with gas from the comet's head. The blue [ion tail](#) points directly away from the [Sun](#). The light colored [dust tail](#) is created by bits of grit that have come off the [comet's nucleus](#) and are being pushed away by the [pressure of light](#) from the Sun. This tail points *nearly* away from the Sun. The [above photograph](#) was taken in March 1997.

[APOD: 2004 May 12 - The Tails of Comet NEAT Q4](#)

Explanation: [Comet NEAT \(Q4\)](#) is showing its [tails](#). As the large snowball officially dubbed [Comet C/2001 Q4 \(NEAT\)](#) falls toward the [inner Solar System](#), it has already passed the Earth and will reach its closest approach to the Sun this coming Saturday. [Reports](#) place the comet at third [magnitude](#), making it easily visible to the unaided eye to northern sky gazers observing from a dark location just after sunset. The above image was captured last Saturday from Happy Jack, [Arizona, USA](#). Visible is a long blue [ion tail](#), a blue [coma](#) surrounding the comet's [nucleus](#), and a shorter but brighter sunlight reflecting [dust tail](#). Q4 will likely drop from easy [visibility](#) during the next month as it recedes from both the Earth and the Sun. Another [separate](#) naked-eye comet, [Comet Linear \(T7\)](#), is also as bright as third magnitude and [should remain bright](#) into June.

[APOD: 2000 July 27 - Tails Of Comet LINEAR](#)

Explanation: Comet C/1999 S4 LINEAR is only one of [many](#) comets discovered with the [Lincoln Near Earth Asteroid Research](#) (LINEAR) telescope operating near Socorro, New Mexico, USA. Traveling steadily southward through Earth's night sky, C/1999 S4 passed perihelion (closest approach to the Sun) yesterday on what is likely [its first trip](#) through the [inner solar system](#). Now fading, [comet LINEAR](#) became no brighter than about 6th magnitude, but is still easily visible with binoculars in northern hemisphere skies. While the memorable comets [Hale-Bopp](#) and [Hyakutake](#) were much brighter, [comet LINEAR](#) is [displaying](#) delightful tails evident in this false-color composite [image from](#) the [Crni Vrh Observatory](#) in Slovenia. The combined series of exposures made on July 22nd are registered on the comet. In the resulting picture, stars appear as rows of dots, but the faint structures in the comet's tail are beautifully recorded. Presently seen moving from [Ursa Major to Leo](#) this [comet LINEAR](#) will begin to shine in southern hemisphere skies in August.

[APOD: August 26, 1995 - Two Tails of Comet West](#)

Explanation: Here Comet West is seen showing two enormous tails that wrap around the sky. The ion tale of a [comet](#) usually appears more blue and always points away from the [Sun](#). The dust tail trailing the comet's nucleus is the most prominent. Comet West was a visually spectacular [comet](#), reaching its most picturesque in March of 1976. A [comet](#) this bright occurs only about once a decade. Comets are really just large dirty snowballs that shed material when they reach the inner solar-system. Many astronomers are hopeful that [Comet Hale-Bopp](#) will look as spectacular as this in the spring of 1997.