

COMET CATALINA THIS MONTH

Comet C/2013 US10 (Catalina) visible in binoculars, maybe visible to the eye, in November. It'll be near the moon and Venus before dawn in early December.

A comet discovered two years ago will be closest to the sun this weekend (November 15, 2015) and, by the end of this month, might be visible to the eye. It'll be in the predawn sky, near the planets and moon in early December. Its name is Comet C/2013 US (Catalina). The Catalina Sky Survey in Arizona discovered it on October 31, 2013. At first, astronomers thought it was a rocky or metallic asteroid, but further observations confirmed it as an icy comet. By late November, Comet Catalina may reach a visual magnitude of 5 or 6, which means it would be within the limit for viewing with the unaided eye from dark sky sites. Comets have been shown to be unpredictable, so it may become brighter or fainter. Sometimes comets even disintegrate. But this comet is well worth following!

When and where should I begin to look? Between mid-November and the end of the month, Comet Catalina will be located in the direction east – the direction of sunup – before the sun rises. However, its proximity to the horizon means that the comet is difficult to see. We should have a better view of the comet beginning around the last week of November, and during all December.

Be sure to go to a dark site, away from city lights. At first, try using binoculars ... then remove the binoculars, and try to see the comet with your eye alone.

What will Comet Catalina look like? Recent observations show the comet has developed a tail some 800,000 km long. Thus – in November, 2015 – binoculars are likely to show a short tail of this comet, while small telescopes will provide a nice view.

While observing visually with a telescope, you will not see the green colour of the comet, as shown in the photo at the top of this post. That colour is mainly seen in pictures of this comet, and many comets. Cameras are more sensitive than the human eye and after a few seconds or minutes of exposure, they provide very good views of the colours that exist in comets. But visual observers using telescopes in November, 2015, might be able to glimpse a hint of Comet Catalina's green coma or cometary atmosphere. The green color we see in comets is from gases like diatomic carbon.

Here are some important dates: November 15, 2015. Comet Catalina is at perihelion or closest to the sun. At closest approach to our star, the comet will be moving between the orbits of planets Earth and Venus. Its perihelion distance is 0.82 AU from the sun (1 AU = 1 Earth-sun distance). Comet Catalina is traveling at a speed of 166,000 km/h relative to the sun at perihelion. Some estimates indicate the nucleus of Comet Catalina ranges between 4 and 20 kilometers in diameter. The trajectory of this visitor from the Oort cloud suggests that after closest approach to the inner solar system, comet Catalina will be ejected and we will never see this comet again.

When is the next predicted comet visible to the eye alone? The next predicted comet that may be reach visibility to the unaided eye – and be really easy to spot – is Comet 46P/Wirtanen. It will appear as a sky gift for Christmas of 2018.



Comet C/2013 US10 (Catalina) on October 1, 2015



November 23, 2015, 30 to 45 minutes before sunrise, local time