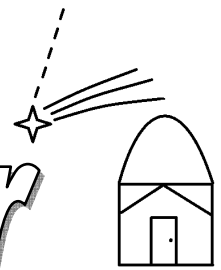


# Comet Calendar



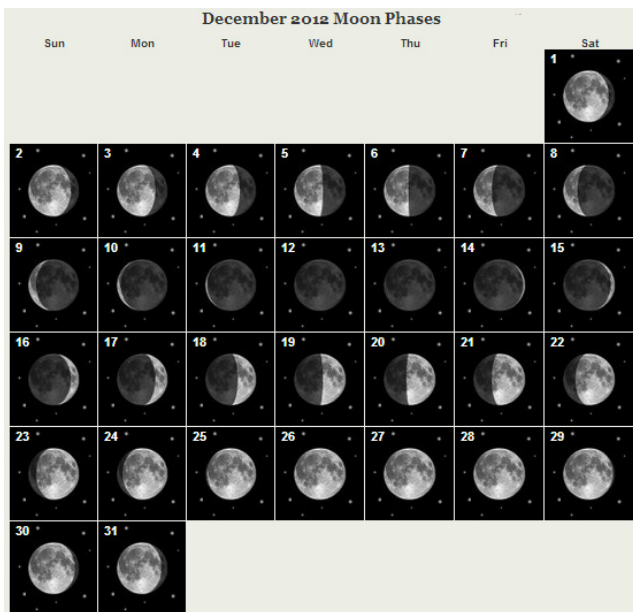
*From Asterion observatory*

COMET VISIBILITY IN THE NORTHERN HEMISPHERE IN DECEMBER:

Comet	Brightness	Visibility	Constellations	Instrument
C/2012 K5 (LINEAR)	9-7	Second half of night	Canes Venatici, Ursa Major, Lynx, Auriga	Binoculars 20×80
C/2012 F6 (Lemmon)	12-10	Morning	Crater, Hydra, Centaurus	20-cm reflector
C/2009 P1 (Garradd)	13	Second half of night	Sextans, Hydra	25-cm reflector
C/2010 S1 (LINEAR)	13.5	First half of night	Cygnus	20-cm reflector
C/2012 J1 (Catalina)	13.5	First half of night	Pegasus, Pisces	25-cm reflector
C/2011 UF305 (LINEAR)	13.5	Second half of night	Leo, Cancer	35-cm reflector
262P/McNaught-Russell	13.5	Evening	Aquarius, Cetus	35-cm reflector
168P/Hergenrother	13(?)	First half of night	Andromeda	35-cm reflector

COMET VISIBILITY IN THE SOUTHERN HEMISPHERE IN DECEMBER:

Comet	Brightness	Visibility	Constellations	Instrument
C/2012 F6 (Lemmon)	12-10	Morning	Crater, Hydra, Centaurus	20-cm reflector
C/2009 P1 (Garradd)	13	Second half of night	Sextans, Hydra	25-cm reflector
C/2011 UF305 (LINEAR)	13.5	Second half of night	Leo, Cancer	35-cm reflector
262P/McNaught-Russell	13.5	Evening	Aquarius, Cetus	35-cm reflector



The new moon of December will fall on the 13<sup>th</sup>, and the ten days around this event will be the best time for comet observations, since the Moon is not going to hinder observations during the night. In the course of the first week of the month one will be able to observe comets in the evening sky, a week after the new moon - only in the morning, and in the last week of December it will be impossible to observe tailed wanderers due to the full moon.

The most interesting tailed wanderer of December, which can rightly be called The New Year Comet of 2013, will be **C/2012 K5 (LINEAR)**. The comet elongation will be increasing from 75 to 150 degrees, which means that after starting the month as a morning sky object, by the end of December the comet will be available for astronomical observations virtually throughout the whole night. Its brightness will be increasing approximately from 9<sup>m</sup> to 7<sup>m</sup>, and around New Year's Night the comet will be an easy object to track down even with binoculars. In the course of the month C/2012 K5 is going to pass through several constellations – Canes Venatici, Ursa Major, Lynx, Auriga; in its motion it's going to come really close to some interesting celestial objects far out in space. On the 4<sup>th</sup> of December just a few arc minutes will separate this comet from the galaxy NGC 5377 (11.2<sup>m</sup>). On the 8<sup>th</sup> of December it will approach within a half degree of the outer eastern star of the Plough handle of the Ursa Major (Benetnash). On December 16-17 it will be passing in close proximity to Mizar. On the 21<sup>st</sup> of December it will approach the galaxy NGC 5377 (11.6<sup>m</sup>) by a half degree, and on December 23<sup>rd</sup> will pass close to Dubhe. At the end of 2012 – beginning of 2013 C/2012 K5 will approach our planet at a distance of less than 0.3 AU and will be visible near the zenith in the middle latitudes of the Northern hemisphere. Its rate of motion in the sky will reach 5.5 degrees per day (14"/per minute), which means that while observing the

comet through a telescope the movement of the object against the stars will be perceptible immediately. The comet will attain a maximum magnitude and maximum rate of motion around New Year's night, which will give new zest to its observation.

Another interesting comet is **C/2012 F6 (Lemmon)**, which will be increasing its brightness from 12<sup>m</sup> to 10<sup>m</sup> and will be visible low in the morning sky in the constellations of Crater, Hydra and Centaurus. Its declination in the course of the month is going to decrease from -15 to -35 degrees, so its observation conditions in the mid northern latitudes will also deteriorate. On the 4<sup>th</sup> of December C/2012 F6 will come within less than one degree of the galaxy NGC 3887 (11.0<sup>m</sup>). On the 15<sup>th</sup> of December it will pass along the outer boundaries of the galaxy NGC 3955 (11.9<sup>m</sup>), and on December 24<sup>th</sup> it will be at a distance of a little over a degree from the galaxy NGC 4106 (11.4<sup>m</sup>). Despite its magnitude and high brightness the comet is not going to be an easy object for visual observations due to its considerable diffuseness and the low position above the horizon. This comet will pass its perihelion point on the 24<sup>th</sup> of March 2013 at a distance of 0.73 AU from the Sun.

Other comets of the month will be available for observations with instruments that are mid-sized and large by amateur standards. **C/2010 S1 (LINEAR)** will be passing through Cygnus, and around the 20<sup>th</sup> of December will approach the star  $\epsilon$  Cygni (2.5<sup>m</sup>) within a half degree of arc. This object will be visible only during the first few hours of night through telescopes of 20 cm and more in diameter. The comet is quite compact and the CCD images indicate quite a long tail. Close to its perihelion point in 2013, C/2010 S1 may become brighter than magnitude 13.



C/2012 K5 (LINEAR)  
November 19, 2012  
© A. Novichonok, V. Gerke

**C/2012 J1 (Catalina)** may also be a relatively easy object for mid-sized telescopes due to its density and brightness of magnitude 13 or a little less. In December the comet will be passing through Pegasus and Pisces and will be visible during the first half of night. At the very beginning of the month the comet will approach the bright star  $\psi$  Pegasi (4.7<sup>m</sup>) by less than a degree of arc, which will make it easier to search for in the sky. On the 16<sup>th</sup> of December C/2012 J1 will pass at a distance of just a few arc minutes from the comet 167P/CINEOS, the brightness of which, however, will only be around 21-22<sup>m</sup>. Nevertheless, such a close proximity of two comets in the sky is quite a rare event. In the course of December the brightness of the comet is going to fade, so one should hurry to make the last visual observations while it's still available.

The comet **C/2009 P1 (Garradd)** will be passing through Sextans and Hydra at a brightness of magnitude 13. One has only to reminisce about its bygone splendor in the winter and spring of 2012, because now an observer with a telescope of 25 cm or more in diameter

will only make out a dim spot of light with a slight condensation in the centre, and the better your instrument – the clearer it will be seen. At the very beginning of the month C/2009 P1 will be located at a distance of one and a half degrees from the Spindle Galaxy NGC 3115 (9.2<sup>m</sup>), and on December 13-14 the star  $\gamma$  Sextantis (of magnitude 5) will come right up to the comet.

The very diffuse **C/2011 UF305 (LINEAR)** will be passing through Leo and Cancer. This comet will probably be a really difficult object for visual observations due to its low coma condensation in the centre, despite the fact that the brightness of this tailed wanderer will be at 13.5<sup>m</sup>. On the 5<sup>th</sup> of December the comet will come a little over a degree from the galaxy NGC 2903 (8.9<sup>m</sup>), and on December 24<sup>th</sup> - a half degree from the galaxy NGC 2903 (11.6<sup>m</sup>). During the second half of December the comet will be passing a few degrees away from the Beehive Cluster (M44), which will be easily visible to the unaided eye and will serve as a good initial orienting point when searching for C/2011 UF305 in the sky. In the course of the next few months the brightness of this object will be steadily fading.

Another comet that may be seen through large amateur telescopes is **262P/McNaught-Russell**. The CCD images of this object demonstrate a vast coma with a diameter of several arc minutes, but with low surface brightness. 262P will pass its perihelion point at the beginning of December, and it's in this period that it will attain a maximum brightness (13<sup>m</sup> and above); but due to its high diffuseness the comet will not be such an easy object for observations. After perihelion passage, the comet is going to fade, which will further impede its observations.

**168P/Hergenrother**, which underwent a series of flare-events in September, may still be available for visual observations. However its brightness is fading and by that time will be quite low for it to be observed through small telescopes. The comet will be passing through the realm of Andromeda, and during the second half of the month it will be separated from the famous Andromeda Nebula by just a few degrees.

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Four comets will be available for visual observations in the southern hemisphere – C/2012 F6 (Lemmon), **C/2011 UF305 (LINEAR)**, **C/2009 P1 (Garradd)** and **262P/McNaught-Russell**. Details about the visibility of each of them have been given above.



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Lunar phase calendar obtained from:

<http://www.farmersalmanac.com/calendar/moon-phases/2012/12>