Sky Highlights for December 2025

Bright stars and a lone bright planet visible at dusk as December begins include the *Summer Triangle* of **Vega, Altair, and Deneb** well up in west and getting lower as month progresses; **Saturn** halfway up in SE to SSE, with **Fomalhaut,** Mouth of the Southern Fish, to its lower right -- and be sure to arrange for telescopic views of Saturn's rings, tipped only 0.4° to 1.0° from edge-on this month; **Capella,** the "Mother Goat" star, in NE; and reddish-orange **Aldebaran** low in ENE, to lower right of Capella. Aldebaran, the eye of Taurus, the Bull, is at *opposition* to the Sun on Dec. 1. So, that night, you can also spot the star highest in south in the middle of the night, and low in WNW as dawn brightens. The Arabic name Aldebaran means "the Follower", and you can find the pursued, beautiful **Pleiades** or Seven Sisters star cluster 14° above Aldebaran in deepening evening twilight, and 31° lower left of a bright, 88-percent waxing gibbous **Moon.**

Two nights later, on **Dec. 3,** the Moon, moving through perigee, closes the distance and occults or covers some of the cluster's stars. Since the Moon is very bright, the best events will happen along the Moon's narrow, dark edge, and a telescope will be required to observe them: From East Lansing, Michigan, a 3.7-mag. star will be snuffed out at 8:20 p.m. EST, and a 3.9-mag. star at 8:49 p.m. Seen from E. Lansing, the Moon will miss occulting 2.9-mag. Alcyone (Eta Tauri), brightest member of the Pleiades; closest approach will occur at 9:52 p.m., with the star only 7' (arcminutes) from the Moon's southern limb. Alcyone is occulted from locations in North America west of a line from the southeastern corner of California crossing through Minnesota and James Bay. For a map and times, visit https://www.lunar-occultations.com/iota/bstar/bstar.htm

On **Dec. 4** at dusk, the Full Moon will appear a wide 11° north (upper left) of Aldebaran. On **Dec. 5,** this month's northernmost Moon will rise in twilight, and thereafter rise later each night, shifting farther south each time. Wait a few more evenings until the Moon rises well after nightfall and examine the Pleiades through a pair of binoculars. Look for a pair of stars 21' (arcminutes), or 0.35° apart, within 5° S of the Pleiades. They are 13 and 14 Tauri, mags. 5.7 and 6.1. During **Dec. 13-21,** 5.6-mag. Uranus passes closely south of the two stars. Refer to the Uranus and Neptune finder charts (Neptune is currently near Saturn) at www.abramsplanetarium.org/msta/

The Geminid meteor shower reaches its peak on the night of Dec. 13-14, with best viewing from 10 p.m. until 5 a.m. local time. Meteors can flare up anywhere in the sky, but their tracks, extended backwards, will seem to radiate from a point near Castor, one of the Twins. A waning crescent Moon, present from about 2 a.m. onward, will interfere very little.

Winter begins on Dec. 21 at 10:03 a.m. EST, as the Sun reaches the southernmost point of its annual journey, directly above the Tropic of Capricorn. The Moon will return to the early evening sky later that day, as a thin 4-percent crescent low in SW at dusk. By **Dec. 26,** the Moon is a gravid 42-percent crescent, 3° upper right of Saturn well up in south.

Watch the waxing gibbous Moon hopscotch over the Pleiades from one night to the next, **December 30 to 31,** while its phase increases from 84-to 92 percent. At dusk on **Dec. 31,** the Moon appears 10° north (upper left) of Aldebaran, while Jupiter is just rising 43° to Moon's lower left. Majestic Orion now rises in twilight at year's end, to Moon's lower right. Two or so hours later, watch for the rising of Sirius in ESE, in line with Orion's belt, extended downward. If you are in a place with unobstructed views toward west and ESE, both the *Winter Triangle,* Betelgeuse-Procyon-Sirius, and the *Summer Triangle,* Deneb-Vega-Altair, can be seen simultaneously. On subsequent nights, find the stars in the same positions 4 minutes earlier each evening, or two hours earlier per month.

At this time of year, the entire *Winter Hexagon* is visible for eight consecutive hours, spanning more than half of the night. Its stars of first magnitude or brighter, in clockwise order, are **Sirius; Procyon; Jupiter** (a temporary visitor, not really a star, but a planet or "wandering star"); **Pollux;** Castor (of mag. 1.6, so not really of first magnitude, but listed anyway, because it's only 4.5° from Pollux and helps identify it); **Capella; Aldebaran; Rigel;** and back to Sirius. That makes a Hexagon of half a dozen stars of first magnitude or brighter, with Jupiter and Castor added to its perimeter. **Betelgeuse,** another first-magnitude star, lies inside the polygon. From mid-Michigan on December 1, the Hexagon is in good view from 10:15 p.m. until 6:15 a.m., and on December 31, two hours earlier, or 8:15 p.m. until 4:15 a.m.

In morning twilight, within the hour before sunrise (see our morning twilight sky map included), Jupiter is in west with the "Twin" stars Pollux and Castor to its upper right. Capella is in NW, to lower right of the Twins. The "Dog Stars", Procyon and Sirius – the latter, the brightest of all nighttime stars but not as bright as Jupiter, appear to the lower left of Jupiter and the Twins.

Below Jupiter, find red Betelgeuse, with Orion's 3-star belt farther down. Setting in WNW, far to lower right of Jupiter and Betelgeuse, is another reddish star, Aldebaran, eye of Taurus. Rigel, Orion's foot, is already gone from the morning mid-twilight sky at the start of December, but you can still catch it, by looking earlier in the morning. After Rigel, the stars Aldebaran, Sirius, and Betelgeuse will all disappear below the western horizon. Remaining in the western sky at dawn through month's end will be the *"Spring Arch"* of Procyon, Jupiter (the very bright, temporary visitor), Pollux, Castor, and Capella.

Regulus, highest of the first mag. stars in the SW quadrant of the sky on December mornings, marks the heart of Leo, the Lion. Look for Regulus 36° to 39° upper left of Jupiter.

In eastern half of the sky on December mornings, golden-orange **Arcturus** climbs high in E to SE, with **Spica** of Virgo 33° to its lower right, in SE to S. Blue-white **Vega** is in NE to ENE, nearly 60° to lower left of Arcturus. **Deneb** rises in far NE, to lower left of Vega.

Mercury puts on its year's best morning showing low in SE sky in first three weeks of December, and sinks to horizon at mid-twilight by month's end. Watch for fainter, first-mag. **Antares** emerging last two weeks of month. It's 6° lower right of Mercury Dec. 17-21, moving to upper right of Mercury thereafter, to 10° on Christmas morning, to 18° on Dec. 31.

Follow the Moon at dawn, within an hour before sunrise. On the morning of **Dec. 4,** the Full Moon appears low in WNW, 6°upper left of the Pleiades and 11° right of Aldebaran. On **Dec. 7,** a 90-percent waning gibbous Moon appears near Jupiter, Pollux, and Castor. Soon after sunrise that morning, can you spot Jupiter in the daytime, within 4° left of the Moon, with unaided eye? If not, it should be easy for binoculars, which will show the planet's three-quarter arcminute disk as a tiny, round dot. On **Dec. 10** at dawn, the 63-percent Moon appears near Regulus.

On **Thursday, Dec. 11,** the Moon is nearing Last Quarter phase, when the half-lit Moon is 90° or one-quarter circle west of the Sun. **Good opportunity for a daytime moon watch!** For more than four hours after sunrise that morning, the Moon is well placed in the southwest quadrant of the sky. Try this: Wearing polarized sunglasses while looking at the Moon, tilt your head so that sunlight would shine "into one ear and out the other" (if your head were hollow), and notice the brightness of the blue sky around the Moon. Next, while still looking at the Moon, tilt your head to the left, far enough so that the Sun's rays would shine most directly on the top of your head. Do you notice any changes in the brightness of the blue sky around the Moon? Repeat, alternating between the two head positions just described. Teachers, or visiting amateur astronomers doing outreach programs at schools, observing the half Moon in the daytime can use this phenomenon by threading a single polarizing filter into the eyepiece of their telescope, and then rotating the eyepiece to cross-polarize against the maximally-polarized light in the blue sky 90° from the Sun, to darken the sky. Contrast of the Moon against the sky is then greatly enhanced, and lunar craters along the Moon's terminator (day-night boundary) will really stand out! This procedure for a daytime moon watch will also work well on the **afternoon of Saturday, December 22.** For more than four hours before sunset that day, the First Quarter, half-lit Moon will be well placed in the southeast quadrant of the sky, 90° east of the Sun. Outreach in public shopping areas, anyone?

On **Dec. 14** at dawn, a 25-percent crescent Moon appears very near Spica. On **Dec. 17,** find an easy, 6-percent crescent Moon low in SE, with Mercury 10° to its lower left. Finally, on **Dec. 18,** use binoculars to find a slender 2-percent crescent Moon 7° lower right of Mercury and 2° below Antares.

Welcome the New Year in a Sirius way. In the middle of the night of December 31 to January 1, the brightest star, Sirius (mag –1.45), passes directly south almost exactly 12 hours after the Sun's midday passage through its highest point, solar midday, on Dec. 31, 2025, at 12:41 p.m. in East Lansing, or at a different time, depending on the longitude of your location within your time zone. On the night of Dec. 31-Jan. 1, find the Dog Star well up in the southern sky as the New Year begins. Observers in southern U.S. have an added bonus: The second brightest star, **Canopus** (mag. –0.72), reaches its high point in the south just 22 minutes before Sirius does. Observers at the latitude of Atlanta and Los Angeles will find it 3° to 4° up due south when it is highest. From places farther south, observers will get an even better view.