

BCAS OBSERVING HIGHLIGHTS for September 18 to October 3, 2026, a “bright Moon” period
Black Canyon Astronomical Society (BCAS), southwest-central Colorado, USA

DATES & TIMES (MDT) FOR REGIONAL EVENTS & EYE-CATCHING HAPPENINGS IN THE SKY:

September 17, 8:00 PM to 9:30 PM, Moon 7° east of red supergiant star, Antares, in Scorpius
September 22, 6:05 PM: Fall Equinox. Sun shines directly over Earth’s equator
September 25, 10:00 AM: [Western Slope Skies](#) on KVN radio
September 25-26, all night long: Neptune is opposite the Sun in our sky
September 26, 6:54 PM to 8 PM: Full Harvest Moon rises 7° above 1st-magnitude Saturn
September 27-29, 7:20 PM to 8:27 PM: Waning gibbous Moon rises early in ENE (Harvest Moon effect)
September 30, 6:00 PM: [Western Slope Skies](#) on KVN radio
October 1-2, after 10:30 PM: Moon passes 1° south of 1.65-magnitude star, Beta Tauri (Elnath)
October 3, 7:10 PM: Mercury (-0.06 mag.) 7° to right and above Venus (-4.72 mag.), low in WSW

SUMMARY.

The Moon reaches first quarter on September 18. From September 19 to 25, watch the gibbous Moon wax. The Moon is full on September 26, a so-called “Harvest Moon.” From September 27 to October 2, the gibbous Moon wanes. The Moon reaches last quarter on October 3. [NASA’s daily Moon Guide](#) is a fun website for enjoying the Moon, as it moves through its phases.

The northern hemisphere’s “fall” equinox occurs on September 22 at 6:05 PM MDT. At that time the Sun shines directly on Earth’s equator, as autumn begins in Colorado, and spring begins in the southern hemisphere. Our nighttime hours are lengthening rapidly, as our daylight hours diminish.

This period is our last good chance to see Venus as a dazzling evening star, before our “Sister Planet” descends into glaring twilight prior to its October 24 solar conjunction. Mercury reappears in the evening sky by October 3, but it’s challenging to spot the Innermost Planet, which is south of the Sun, setting soon after sunset. Saturn is nearly opposite the Sun in our sky, moving against the stars of Constellation Cetus, and the Ringed Planet is visible all night long. Neptune, moving slowly through Constellation Pisces, reaches opposition to the Sun on September 25, and we can observe the 8th Planet with binoculars and/or telescopes all through the night. Uranus, moving slowly amidst the stars of Taurus, rises before 10:30 PM MDT. You’ll likely need binoculars or a telescope to view the 7th Planet, although it may be possible to spot it with eyes unaided under dark skies. Mars rises above the east-northeastern horizon before 2 PM MDT, and the Red Planet remains visible into morning twilight, amidst a host of bright winter stars, including Pollux, Betelgeuse, Procyon, Capella, Aldebaran, and Regulus. Unlike those stars, Mars probably won’t scintillate (or “twinkle”). Aside from that bright Moon from September 23 to October 3, Jupiter is the brightest object in the predawn sky, rising in the east before 4 AM MDT.

As of September 17, some active regions with sunspots are rotating out of view from Earth’s perspective. But it’s likely that other active regions will become visible on the Earth-facing side of the Sun during this period. We may experience more M-class (moderate) and possibly X-class (extreme) flares and powerful coronal mass ejections (CMEs). It’s possible that CMEs and flares from the Sun could trigger auroras and airglow that are visible from the Western Slope. View the Sun safely and in “real-time” via the internet. Please do your planet spotting when the Sun is below the horizon (or at least blocked from your view by a solid object). Never risk viewing the Sun without adequate eye protection, as serious eye damage can result.

Numerous Earth satellites are visible every clear night. Evening passes of the bright International Space Station (ISS) are predicted from September 18 to October 2. And predawn passes of the almost-as-bright, Chinese Tiangong Space Station (aka CSS TIANHE-1) are predicted from September 29 to October 3. Find updated times for local passes of the space stations and other bright satellites at these links (be sure to set applications for your location and time zone, if required):

<https://www.heavens-above.com/>

<https://www.n2yo.com/passes/?s=25544>

<https://www.nasa.gov/spot-the-station/>

Note: The apparent brightness of sky objects is measured in “magnitude” units. Many bright stars are magnitude +1, while the faintest stars easily visible to unaided eyes under dark skies are magnitude +6. Some of the brightest stars are magnitude 0 (e.g., Vega, Arcturus), while the brightest sky objects have negative magnitudes (e.g., Sirius at -1.5, Jupiter at -2 to -3, Venus at -4 to -5, the full Moon at -12 to -13, and the Sun at -27 magnitude). Angular distances on the sky are usually cited in degrees of arc (often abbreviated as °). Helpful ways to estimate 1, 5, 10, 15, and 25 degrees of arc can be found here:

<https://www.timeanddate.com/astronomy/measuring-the-sky-by-hand.html>

One degree can be subdivided into 60 arc minutes (abbreviated as ‘), and one arc minute is subdivided into 60 arc seconds (abbreviated as “).

EQUINOX – SEPTEMBER 22. The northern hemisphere’s “fall” equinox occurs on September 22 at 6:05 PM MDT. At that time the Sun shines directly on Earth’s equator, as autumn begins in Colorado, and spring begins in the southern hemisphere. Our nighttime hours are lengthening rapidly, as our daylight hours diminish.

THE “HARVEST MOON.” The Moon reaches first quarter on September 18 (exactly at 2:44 PM MDT). From September 19 to 25, watch the gibbous Moon wax. The Moon is full on September 26 (exactly full at 10:49 AM MDT), a so-called “Harvest Moon.” From September 27 to October 2, the gibbous Moon wanes. The Moon reaches last quarter on October 3 (exactly at 7:25 AM MDT). [NASA’s daily Moon Guide](#) is a fun website for enjoying the Moon, as it moves through its phases.

The full Moon of September 26 is the first full Moon after the September Equinox. In the northern hemisphere, this is often called a “Harvest Moon.” After full Moon on September 26, the waning gibbous Moon moves progressively to the north in our sky each night. On average, the Moon rises about 50 minutes later each night. But the marked northward motion of this waning, gibbous Moon causes moonrise to occur only 26 to 37 minutes later each night from September 26 to 29. So, there’s no gap (or very little gap) between the end of evening twilight and the rising of a bright Moon that illuminates fields, so that farmers can harvest their crops.

On the evening of September 17, the not-quite first quarter Moon is about 7 degrees east of the red supergiant star, Antares. On September 26 from 6:54 PM to 8 PM MDT, watch the full Moon rise about 7 degrees above first-magnitude Saturn. Then after about 10:30 PM MDT on the night of October 1 to 2, watch the not-quite last quarter Moon pass about 1 degree south of the 1.65-magnitude star, Beta Tauri (aka Elnath).

LAST CALL FOR VENUS AS THAT BRIGHT EVENING STAR! Venus has been a dazzling evening star through late spring and summer, but this period is our last good chance to see our “Sister Planet” in evening twilight before its October 24 [inferior solar conjunction](#). On September 17, Venus shines brightly through evening twilight at magnitude -4.78 and sets in the west southwest at about 8:22 PM MDT, 68 minutes after the Sun sets. But by October 3, Earth’s “Sister Planet”, although still bright (at magnitude -4.72), sets at about 7:21 PM MDT, only 34 minutes after sunset. Venus is at its very

brightest (magnitude -4.80) from September 20 to 26, but it may be difficult to appreciate its luster against bright evening twilight.

On October 3 at 7:10 PM MDT, find a spot that is unobstructed toward the west southwest, and challenge yourself to spot Venus just 2 degrees above the west-southwestern horizon (with the Sun only 5 degrees below the horizon). Viewing through binoculars, you may also be able to spot fainter Mercury (magnitude -0.06) about 7 degrees above and to the right of Venus (**make sure the Sun is below the horizon if you attempt this!**). After its solar conjunction on October 24, Venus will reappear before dawn by the second week of November.

Through telescopes, Venus' gibbous phase wanes from a 26%-illuminated crescent on September 17 to a "skinny", 12%-illuminated crescent on October 3, as its distance from Earth decreases from 40 million to 31 million miles, and its apparent diameter increases from 38.9 to 50.4 arc seconds. It's possible to resolve Venus' crescent even with binoculars during this period. When at solar conjunction on October 24, our "Neighbor Planet" will be only 25 million miles distant from Earth, but essentially invisible in the Sun's glare. That's about as close as Venus (or any planet) can get to Earth. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

MERCURY: A CHALLENGE IN EVENING TWILIGHT ON OCTOBER 3. For us in the northern hemisphere, Mercury's October appearance is the least favorable of its 2026 evening appearances, because Mercury is positioned south of the Sun and sets not long after sunset. As a challenge, find a spot with an unobstructed west-southwestern horizon on October 3 and scan the horizon at 7:10 PM MDT (**make sure that the Sun has already set**). If sky is clear, you may see Venus shining against twilight at magnitude -4.72 just 2 degrees above the horizon. Using binoculars, look for fainter Mercury (magnitude -0.06) about 7 degrees to the right and above Venus (about 5 degrees above the horizon). After October 3, Mercury may get slightly easier to spot as its angular distance from the Sun increases. But it will still be challenging to see Mercury against glaring twilight, because the Innermost Planet will be fading. Through telescopes on October 3, Mercury's 5.9 arc second-wide, gibbous disk appears 74% illuminated. **Please do your Mercury spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

SATURN: NEARLY ALL NIGHT LONG! Saturn will be opposite the Sun in our sky on October 4, so the Ringed Planet is now observable nearly all night long. Saturn rises in the east at about 8:04 PM MDT on September 17 and at 6:58 PM MDT on October 3 (just 7 minutes after sunset). During this period, the Ringed Planet brightens from magnitude +0.40 to +0.33, as its distance from Earth decreases from 788 million to 784 million miles. Saturn has been moving amidst the stars of Constellation Pisces, but on September 6 Saturn entered Cetus, a non-zodiacal Constellation, thus confounding those astrologers! Saturn will remain in Constellation Cetus until February 22, 2027. How is this possible? It turns out that Saturn's orbit is inclined 2.49 degrees to Earth's orbit, and it's currently appearing more than 2 degrees south of the ecliptic, which is the apparent path of the Sun through the sky and along which the zodiacal constellations reside. The Sun never travels through Cetus. But Mercury, Venus, and Saturn occasionally move through Cetus, due to their relatively high orbital inclinations of 7.01, 3.39 and 2.49 degrees, respectively.

Through telescopes, Saturn's disk appears 19.7 arc seconds wide, and its rings span 46 arc seconds. During early 2026, Saturn's thin rings (150,000 miles wide but only about 1000 ft thick!) appeared nearly "edge-on" from our perspective on Earth. Saturn's rings are now gradually appearing to "open" from Earth's perspective, and views of the rings are becoming more impressive. You can see Saturn's moons Tethys, Dione, Rhea, and Enceladus through small to mid-size telescopes, and Titan, Saturn's largest

moon, is bright enough to see with just binoculars. You can follow the changing positions of Saturn's moons by using various planetarium apps.

NEPTUNE: THE 8th PLANET AT ITS CLOSEST! Neptune is opposite the Sun in the sky ("at opposition") on September 25, and the 8th Planet is therefore visible all night long. Neptune is now as close to Earth as it will get this year. Neptune, moving slowly amidst the stars of Constellation Pisces, shines at magnitude +7.7, and we need a telescope or at least binoculars to see it. Through telescopes, Neptune's blueish disk appears only 2.4 arc seconds wide. Neptune is 2.68 billion miles from Earth during this period. You can use this link to find Neptune: <https://theskylive.com/neptune-info>

WILL A BRIGHT NOVA ("NEW" STAR) ERUPT IN CONSTELLATION CORONA BOREALIS? Will there be a bright "new" star in Constellation Corona Borealis sometime soon, if only briefly? Corona Borealis is more than 40 degrees above the western horizon as the sky darkens and remains visible in the west-northwestern sky until about 11 PM MDT. [T Coronae Borealis](#) (T CrB) is a recurrent nova that (based on past behavior) may rapidly increase in brightness 1500-fold (to second magnitude) to become the brightest star (or 2nd brightest star) in Corona Borealis between now and perhaps sometime next year. Then this "new" star may fade rapidly below naked-eye visibility in about a week. T CrB had not yet erupted, as of September 17 at 5 AM MDT. [Astronomer Jean Schneider predicted that an eruption is most likely on or about June 25, 2026, or on February 8, 2027.](#) An eruption did not happen on June 25, but T CrB could erupt at any time! You can find additional info at these sites...
https://blogs.nasa.gov/Watch_the_Skies/2024/02/27/view-nova-explosion-new-star-in-northern-crown/
https://www.aanda.org/articles/aa/full_html/2023/12/aa48372-23/aa48372-23.html

URANUS. Uranus rises above the east-northeastern horizon at about 10:23 PM MDT on September 17 and 9:19 PM MDT on October 3. The 7th Planet is moving slowly against the stars of Constellation Taurus, between the Pleiades and Hyades Star Clusters.

At magnitude +5.7, you can see Uranus easily with binoculars, and perhaps even with eyes unaided when skies are dark. But you'll need a telescope to resolve Uranus' 3.7 arc second-wide disk and to detect color easily. Most people perceive Uranus as either blue or green. How does it appear to you? Uranus is 1.76 billion miles from Earth during this period. The best times to view the 7th Planet are between midnight and the onset of bright twilight at about 6 AM MDT, when Uranus rises from 25 to 68 degrees above the eastern horizon. You can use this link to find Uranus: <https://theskylive.com/uranus-info>.

MARS BEFORE DAWN. Mars brightens from magnitude +1.19 to +1.05, as it moves eastward in our predawn sky through Constellation Gemini and then "crosses the border" into Constellation Cancer on September 25. Mars is amidst some widely arrayed, bright "winter" stars, including Pollux in Constellation Gemini, Betelgeuse in Orion, Capella in Auriga, and Aldebaran in Taurus (also note the bright Planet, Jupiter, and Leo's 1st magnitude star, Regulus, toward the eastern horizon). You can distinguish reddish Mars from reddish Betelgeuse and Aldebaran by the fact that Mars typically does not scintillate (or "twinkle"). On September 18, Mars rises above the east-northeastern horizon at around 1:41 AM MDT, and by October 3, Mars rises at about 1:33 AM MDT. Mars is still on the far side of the Sun from our perspective; the Red Planet is 162 million miles distant on September 18 and 153 million miles distant on October 3. Through telescopes, Mars' reddish disk still appears small, increasing in apparent diameter from only 5.4 to 5.7 arc seconds during this period. On February 20, 2027, the Earth-Mars distance will be 63 million miles, the closest during the current Mars apparition, and Mars will appear much brighter (magnitude -1.3) and larger (14 arc seconds wide) than it appears now.

By 5:30 AM MDT, Mars is more than 44 degrees above the eastern horizon, and this may be a good time to start viewing the Red Planet through telescopes. Can you spot Mars' "north polar hood"? The polar hood consists of light-colored clouds covering all or part of Mars' northern polar ice cap. In coming months, these clouds may dissipate and the polar ice cap may shrink, as summer approaches in Mars' northern hemisphere. Various dark "albedo" features may also become visible as Earth draws nearer to Mars. You can use the [Mars Profiler from Sky & Telescope](#) as a guide to features visible on Mars for any date and time.

JUPITER BEFORE DAWN. Bright Jupiter rises in the east at about 3:45 AM MDT on September 18 and at about 3:01 AM MDT on October 3. Between September 18 and October 3, Jupiter brightens from magnitude -1.84 to -1.88, as its distance from Earth decreases from 563 million to 548 million miles, and its apparent diameter increases from 32.6 to 33.5 arc seconds. That's large enough to resolve with binoculars!

You can use a telescope or binoculars to spot Jupiter's four bright, "Galilean" moons, Io, Europa, Ganymede, and Callisto. Use a telescope to view shadows of these moons crossing the Giant Planet. These are total solar eclipses on Jupiter! Due to Jupiter's brief "observing window" in our current predawn sky, only 2 "shadow transits" (both of Io's shadow) are observable from the Western Slope during this period. Many more of these "shadow transits" will become visible as Jupiter starts rising earlier in the coming weeks and months.

September 21, 2026, 5:44 AM to 8:02 AM MDT. Io's shadow crosses Jupiter (Locally, this event begins with Jupiter 24 degrees above the eastern horizon, and it ends after sunrise. A good time to catch it might be between 6:00 AM and 6:15 AM MDT).

September 30, 2026, 2:04 AM to 4:24 AM MDT. Io's shadow crosses Jupiter (Locally this event begins before Jupiter rises at about 3:09 AM MDT and ends with Jupiter 14 degrees above the eastern horizon).

THE SUN. As of September 17, some active regions with sunspots are rotating out of view from Earth's perspective. But it's likely that other active regions will become visible on the Earth-facing side of the Sun during this period. There have been frequent M-class (moderate) solar flares during recent weeks, and there were X-class (extreme) flares on June 3, June 30, and July 4. More solar flares are possible during this period. Ultraviolet light from solar flares can cause a phenomenon called airglow. Striking greenish airglow has been [imaged by BCAS Member, Aaron Watson](#). Coronal mass ejections (CMEs) have triggered geomagnetic storms that caused auroras during past months, some of which were observed and photographed from the Western Slope. The best way to monitor sunspots, solar flares, CMEs, and other solar activity safely (in "real time") is by using the internet. To safely monitor the Sun, check out the following sites...

<https://sohowww.nascom.nasa.gov/data/realtime-images.html>

<https://umbra.nascom.nasa.gov/newsite/images.html>

<https://sdo.gsfc.nasa.gov/data/>

<https://stereo-ssc.nascom.nasa.gov/>

<http://halpha.nso.edu/>

<https://www.swpc.noaa.gov/>

<http://www.sidc.be/silso/ssngraphics>

Do not look at the Sun directly without [safe, specialized solar filters](#). Looking at the Sun can be very dangerous unless you take adequate precautions. Severe eye damage and even blindness can result.

AURORAS (aka “polar lights” or “northern lights”). We are still in an active part of the solar cycle, and there may be more geomagnetic storms that trigger auroras that could become visible from the Western Slope. Get predictions and updates for auroras, their intensity, and geographic extent from NOAA’s Space Weather Prediction Center:

<https://www.swpc.noaa.gov/products/aurora-viewline-tonight-and-tomorrow-night-experimental>

We often see auroras from the Western Slope when the [Planetary Kp Index](#) (a measure of magnetic disturbances around Earth) is above 5 or 6. You can find predicted Kp values for the next 72 hours at the following website (times are posted as Universal Time, UT; to convert to MDT, subtract 6 hours):

<https://www.swpc.noaa.gov/products/3-day-geomagnetic-forecast>

Auroras are most frequently seen from high latitudes, e.g., from Canada, Alaska, Iceland, northernmost Europe, southern New Zealand, and Antarctica. But many people have viewed and photographed auroras from the Western Slope in the past two years, including a spectacular aurora on November 11, 2025, another aurora on the evening of January 19 and [early morning of January 20, 2026](#), and an [“aurora burst” on March 13](#) (thanks to BCAS member Aaron Watson for posting some of his great aurora images!). [Airglow](#) and [SAR arcs](#) also result from high solar activity, and these phenomena have been photographed and/or observed from Colorado. You can also watch aurora virtually from Yellowknife in the Northwest Territories on the [Canadian Space Agency’s Aurora Max](#) live feed (Yellowknife, like the Western Slope, is in the Mountain Time Zone).

EARTH SATELLITES. Numerous Earth satellites are visible every clear night. Satellites are visible only when they reflect sunlight during twilight or nighttime hours. We see satellites most often during late evening twilight and for an hour or so afterward, and before and during early morning twilight. The brightest satellites are the International Space Station (ISS) and Tiangong, the Chinese Space Station. Both space stations can appear brighter than any star in the sky, and at times even brighter than the Planet Jupiter. Predictions for space station passes can change quickly due to re-boosting and collision avoidance maneuvers, and it’s best to get predictions for passes within 24 hours of when you want to see the satellites.

Evening passes of the bright International Space Station (ISS) are predicted from September 18 to October 2. And predawn passes of the almost-as-bright, Chinese Tiangong Space Station (aka CSS TIANHE-1) are predicted from September 29 to October 3. Find updated times for local passes of the space stations and other bright satellites at these links (be sure to set applications for your location and time zone, if required):

<https://www.heavens-above.com/>

<https://www.n2yo.com/passes/?s=25544>

For ISS passes, you can use NASA’s “Spot the Station” app for mobile devices ...

<https://www.nasa.gov/spot-the-station/>

Starlink satellite “trains” can be striking sights for a few days after their launch. For predictions of SpaceX’s Starlink satellites, try using this site:

<https://findstarlink.com/#5431710;3>

HAPPY OBSERVING!