

BCAS OBSERVING HIGHLIGHTS for July 21 to August 5, 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:

July 20, 9:30 to 11:30 PM: Nearly first-quarter Moon 3° south of 1st-magnitude star, Spica, in Virgo
July 20-24, 2:00 AM to 4:15 AM: Preview our autumn stars under dark, moonless skies
July 21-23, 3:30 AM to 5:00 PM: Spot reddish Mars 7° to left of red giant star, Aldebaran
July 22, 6:00 PM: [Western Slope Skies](#) on KVNF radio
July 24-25, 9:15 PM to 1 AM: Gibbous Moon moves 4° to 6° east of reddish Antares in Scorpius
July 27-August 1, 4:45 AM to 5:15 AM: Spot heliacal risings of stars Betelgeuse & Rigel in Orion!
July 28, 8:30 PM to 10 PM: The almost full Moon rises in the southeast
July 31, 10:00 AM: [Western Slope Skies](#) on KVNF radio
August 2, around 11:30 PM: Waning gibbous Moon rises above and right from Saturn
August 2-5, 5:00 AM to 5:20 AM: Spot Mercury low to east-northeastern horizon
August 3, around 11:30 PM: Gibbous Moon rises left of Saturn
Aug 4-5, 10:05 PM to 11:00 PM: Enjoy the “summer” Milky Way under dark, moonless skies!
August 5, 6:00 PM: [Western Slope Skies](#) on KVNF radio

SUMMARY.

The Moon reaches first quarter on July 21, and from July 22 to 27, we can watch the gibbous Moon wax. The Moon is full on the night of July 28-29 (exactly full at 8:36 AM MDT on July 29). From July 30 to August 4, the gibbous Moon wanes. The Moon reaches last quarter on August 5. While viewing the Moon, check out this fun website: [NASA’s daily Moon Guide](#).

Explore the full Moon on the night of July 28-29! Even with eyes unaided, you can spot several dark lunar maria (the Latin word for “seas”). The maria are lowlands that were flooded by dark, basaltic lava. For some folks, the maria define imaginative characters on the lunar disk, like a “lunar rabbit” or “the man in the Moon.” You can use the chart in the attached PDF file to identify various lunar maria. And you can use this chart with binoculars or a telescope to spot and identify some bright “ray craters” on the Moon.

Venus is still a brilliant evening star, shining in the western sky for more than an hour after sunset. Saturn rises before midnight and is high in the southern sky before the onset of morning twilight. Reddish Mars rises in the east northeast by 3 AM MDT, to the left of the reddish star, Aldebaran. Mercury may become visible against bright morning twilight in the east northeast by July 28 between 5:00 AM and 5:20 AM MDT, and the Innermost Planet gets easier to spot after August 2. Neptune rises more than 20 degrees above the east-southeastern horizon by 1:16 AM MDT, although you’ll need a telescope, or at least binoculars, to spot the 8th Planet. Between 3 AM and 5 AM MDT, use binoculars (or a telescope) to spot Uranus about 6 degrees southeast of the Pleiades Star Cluster.

The term “heliacal rising” refers to the first visible rising of a star before sunrise during the year. The stars of our winter sky have been hidden in the Sun’s glare from late spring through early summer. But now in midsummer, our winter stars are reappearing in the eastern sky before dawn. By August 1 between 4:45 AM and 5:15 AM MDT, can you spot above the eastern horizon the heliacal risings of Rigel and Betelgeuse, Orion’s two brightest stars?

As of July 20, three large active regions with sunspots are present on the Earth-facing side of the Sun. 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; never risk viewing the Sun without adequate eye protection, as serious eye damage can result.

Numerous Earth satellites are visible every clear evening and morning. Evening passes of the International Space Station (ISS) are predicted from July 20 to 28, with 2 passes about 90 minutes apart on some nights (check for updates). Evening passes of the Tiangong (Chinese) Space Station are predicted for July 20 and 21 (check for updates). Find updated times for local passes of bright satellites at these links (be sure to set applications for your location and time zone):

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

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

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 “).

THE MOON. The Moon reaches first quarter on July 21 (exactly at 5:05 AM MDT). From July 22 to 27, watch the gibbous Moon wax. The Moon is full on the night of July 28-29 (exactly full at 8:36 AM MDT on July 29). From July 30 to August 4, the gibbous Moon wanes. The Moon reaches last quarter on August 5 (exactly at 8:21 PM MDT). [NASA’s daily Moon Guide](#) is a fun website for enjoying the Moon, as it moves through its phases.

On July 20 from 9:30 PM to 11:30 PM MDT, look for the nearly first-quarter Moon about 3 degrees south of the first magnitude star, Spica, in Constellation Virgo. On the night of July 24-25 between about 9:15 PM and 1 AM MDT, the waxing gibbous Moon moves from 4 to 6 degrees east of the reddish star, Antares, in Constellation Scorpius. On August 2 around 11:30 PM MDT, look for the waning gibbous Moon rising above and to the right of Saturn. On August 3 the gibbous moon rises to the left of Saturn.

Explore the full Moon on the night of July 28-29! Even with eyes unaided, you can spot several dark lunar maria (“seas” in Latin, the singular form is “mare”). The dark maria allow some folks to imagine various characters on the lunar disk, like a “lunar rabbit” or “the man in the Moon.” Use the chart below to navigate. Try to identify Mare Crisium (Cr), Mare Fecunditatis (F), Mare Tranquillitatis (T), Mare Serenitatis (S), and Mare Imbrium (I), in addition to the vast Oceanus Procellarum (“Ocean of Storms”, O). These lunar “seas” appear dark, because they are low areas that were flooded, not by water, but by dark gray, basaltic lavas. It’s hard to see many craters on a full Moon, because we can’t see the shadows that help delineate them. But with telescopes (or powerful binoculars), try to spot some bright, “ray craters”, for example Tycho (T), Copernicus (C), Kepler (K) and/or Aristarchus (A). “Ray craters” formed from relatively recent impacts. These craters and their “rays” (materials ejected from them) appear bright, because they have not yet been darkened by the processes of [space weathering](#). “Rays” from Tycho extend over much of the lunar nearside. In the 17th Century, astronomer Giovanni Riccioli gave names to many large lunar features, and his names are still used today. Riccioli believed in an Earth-centered Universe, so the craters that he named for “heretic”, Sun-centered advocates (including craters Aristarchus, Copernicus, and Kepler) were “cast adrift” in the Ocean of Storms (Oceanus Procellarum). A little 17th-Century humor?

The Full Moon July 28-29, 2026

The simulated image at right shows the almost-full Moon at moonrise across the Western Slope on the evening of July 28. The exact time of full Moon is 8:36 AM MDT on July 29, about 2 and a half hours after moonset on the Western Slope. Even with eyes unaided, we can see many dark, lunar “*maria*” (Latin for “seas”), including Mare Crisium (Cr), Mare Fecunditatis (F), Mare Tranquillitatis (T), Mare Serenitatis (S), and Mare Imbrium (I), in addition to the vast Oceanus Procellarum (“Ocean of Storms”, O). With telescopes (or powerful binoculars), we can also see several bright, “ray craters”, like Tycho (Ty), Copernicus (C), Kepler (K) and Aristarchus (A).



Image credit:
NASA

VENUS: THAT BRILLIANT “EVENING STAR”! Venus is still a dazzling evening star, shining in the west after sunset. During this period Venus brightens from magnitude -4.21 to -4.34, as it moves southeastward through Constellation Leo and then into Virgo on August 1. You can spot Venus about 15 degrees above the west-southwestern horizon shortly after sunset in bright twilight, and our “Sister Planet” remains visible for more than an hour afterward. Venus sets in the west after twilight’s end at about 10:37 PM MDT on July 20 and at 10:09 PM MDT on August 5. Venus’ angular separation from the Sun will continue to increase until August 14. But there’s a southward component in its (mostly) eastward motion, and these circumstances cause Venus to set earlier night-by-night, as seen from the Colorado’s mid-northern latitude.

Through telescopes, Venus’ gibbous phase wanes from 61% illuminated on July 20 to 53% illuminated on August 5, as its distance from Earth decreases from 82 million to 71 million miles, and its apparent diameter increases from 18.8 to 22.0 arc seconds. Venus will remain as a bright “evening star” through September 2026. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

SATURN RISES BEFORE MIDNIGHT. Saturn rises in the east at 11:59 PM MDT on July 20 and at 11:01 PM MDT on August 5. During this period, the Ringed Planet brightens from magnitude +0.68 to +0.61, as its distance from Earth decreases from 852 million to 829 million miles. Through telescopes, Saturn’s disk appears 18 arc seconds wide, and its rings span 43 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. It will be more convenient to see Saturn in the evening when it starts rising earlier in late summer and fall. On August 2 at around 11:30 PM MDT, look for Saturn rising below a waning, gibbous Moon. On August 3, Saturn rises to the left of the gibbous Moon.

NEPTUNE. The 8th Planet, Neptune, at magnitude of +7.75, rises in the east at 11:29 PM MDT on July 20 and 10:26 PM MDT on August 5, but we need a telescope, or at least binoculars, to see it. Views of Neptune may be best after 1:16 AM MDT, when the 8th Planet rises more than 20 degrees above the east-southeastern horizon. Through telescopes, Neptune's blueish disk appears only 2.3 arc seconds wide. Neptune is 2.73 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 70 degrees above the southern horizon as the sky darkens and remains visible in the western and west-northwestern sky until about 3 AM 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 early next year. Then this "new" star may fade rapidly below naked-eye visibility in about a week. As of 4 AM MDT on July 20, T CrB had not yet erupted. [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 BEFORE DAWN. Uranus rises above the east-northeastern horizon before morning twilight at about 2:11 AM MDT on July 21 and 1:14 AM MDT on August 5. The 7th Planet is moving slowly eastward through Constellation Taurus, about 6 degrees southeast of the Pleiades Star Cluster.

At magnitude +5.8, 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' 3.6 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 1.85 million miles from Earth during this period. The best times to view the 7th Planet are between 3 AM MDT and the onset of bright twilight at about 5 AM MDT, when Uranus is more than 20 degrees above the eastern horizon. You can use this link to find Uranus: <https://theskylive.com/uranus-info>.

Please do your Uranus spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.

HELICAL RISINGS OF ORION'S BRIGHT STARS. The term "heliacal rising" refers to the first visible rising of a star before sunrise during the year. The stars of our winter sky have been hidden in the Sun's glare from late spring through early summer. But now in midsummer, as Earth moves in its orbit about the Sun, our winter stars are reappearing in the eastern sky before dawn. By August 1 between 4:45 AM and 5:15 AM MDT, can you spot above the eastern horizon the heliacal risings of Rigel and Betelgeuse, Orion's two brightest stars? It may be possible to spot these stars as early as July 27 to August 1, if you have an unobstructed eastern horizon. By the morning of August 5, it will probably be much easier to see blue-white Rigel and reddish Betelgeuse against less glaring twilight, and you may also be able to see the 2nd magnitude stars that define Orion's "belt."

MARS BEFORE DAWN. Reddish Mars, shining at magnitude +1.3, is moving eastward through Constellation Taurus. On July 21 Mars rises above the east northeastern horizon at around 2:52 AM MDT, well before the start of astronomical twilight. By August 5, Mars rises even earlier, at about 2:33

AM MDT. Mars is still on the far side of the Sun from our perspective; the Red Planet is 190 million miles distant on July 21 and 184 million miles distant on August 5. Through telescopes, Mars' reddish disk still appears tiny, increasing in apparent diameter from only 4.6 to 4.7 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.

Mars appears near the red giant star, Aldebaran, in Constellation Taurus during this period. On July 21 between about 3 AM and 3:45 AM MST, look for Mars rising about 7 degrees left (north) from Aldebaran. By August 5, Mars' rapid easterly motion places it more than 15 degrees below and left from Aldebaran. Aldebaran currently appears brighter than Mars (at magnitude +0.85 vs Mars at +1.3). You may also distinguish Aldebaran from Mars by Aldebaran's scintillation (or twinkling). Planets generally shine with a steadier light than stars. **Please do your Mars spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

MERCURY BEFORE DAWN. After its July 12 solar conjunction, Mercury has reappeared in the predawn sky within Constellation Gemini. Try not to confuse Mercury with Gemini's two bright stars, Pollux and Castor. From July 28 to August 5, Mercury is brighter than Pollux and Castor. Pollux and Castor typically twinkle rapidly, whereas Mercury generally twinkles less (or not at all). You might spot Mercury as early as July 28 between 5:00 AM and 5:20 AM MDT, when the Innermost Planet shines at magnitude +0.89 less than 5 degrees above the east-northeastern horizon. Mercury gets easier to spot by August 2 between 5:00 AM and 5:20 AM MDT. On August 2, Mercury is at its greatest western elongation from the Sun, and it has brightened to magnitude +0.13. On the morning of August 5, at about 5:25 AM MDT Mercury shines even brighter, at magnitude -0.24. Through telescopes, Mercury's phase waxes from a 24%-illuminated, 8.8 arc second-wide crescent on July 28 to a 50%-illuminated, 7.0 arc second-wide disk on August 5, as its distance from Earth increases from 71 million to 89 million miles. **Please do your Mercury spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

THE SUN. As of July 20, three large active regions with large sunspots are present on the Earth-facing side of the Sun. 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 likely 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 the past few 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 this site (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.

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 International Space Station (ISS) are predicted from July 20 to 28, with 2 passes about 90 minutes apart on some nights (check for updates). Evening passes of the Tiangong (Chinese) Space Station are predicted for July 20 and 21 (check for updates). Find updated times for local passes of bright satellites at these links (be sure to set applications for your location and time zone):

<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!