BCAS OBSERVING HIGHLIGHTS for August 19 to September 4, 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:

August 19-25, 4 AM to 5 AM: Enjoy our fall and early winter stars under dark, moonless skies
August 19, 6:00 PM: Western Slope Skies on KVNF radio
August 20, 8:45 PM to 11:45 PM: Gibbous Moon <2° below reddish star, Antares, in Scorpius
August 27, 8:33 PM to 11:52 PM: Partial lunar eclipse, maximum (96%) at 10:12 PM!
August 28, 10:00 AM: Western Slope Skies on KVNF radio
August 30, 9:30 PM to 10:00 PM: Waning gibbous Moon rises about 5° above Saturn
September 1, 8:30 PM to 8:45 PM: Venus <2° below bright star, Spica, in Constellation Virgo
September 2, 6:00 PM: Western Slope Skies on KVNF radio
September 2-4, 9:15 PM to 10:15 PM: Enjoy our "summer" Milky Way under dark, moonless skies
September 3, 1 AM to 5:30 AM: Moon about 1° above Pleiades Star Cluster (use binoculars)

SUMMARY.
The highlight of this "bright Moon" period is a deep, partial lunar eclipse on the evening of August 27. This eclipse occurs during "primetime" on Colorado's Western Slope! Locally, the Moon rises at about 7:44 PM MDT, and the partial eclipse begins at 8:33 PM MDT with the Moon about 9° above the east-southeastern horizon. That's when the Moon enters the umbra, the darker part of Earth's shadow. Maximum eclipse is at 10:12 PM MDT on August 27, when 93% of the Moon's diameter and 96% of its area are immersed in the umbra. Around maximum eclipse, part of the Moon will likely glow with an ashen, reddish hue, caused by the Moon reflecting light from countless, reddish sunsets and sunrises from around the periphery of the Earth! Try viewing the lunar eclipse through binoculars; the views can be otherworldly (literally!). The partial eclipse ends at 11:52 PM MDT, when the Moon moves eastward out of Earth's umbra. There's still some subtle shading on the Moon until around 1:03 AM MDT on August 28. That's when the Moon finally leaves the penumbra, the less dark part of Earth's shadow.

The Moon reaches first quarter on August 19. From August 20 to 26, watch the gibbous Moon wax. The Moon is full on the night of August 27-28, during the partial lunar eclipse. From August 29 to September 3, the gibbous Moon wanes. The Moon reaches last quarter on September 4.

Venus is still a dazzling evening star that is visible in the southwest from just after sunset for about an hour. Saturn rises in the east before 10:05 PM MDT, and we can get good telescopic views of the Ringed Planet and its brighter moons as it rises higher in the sky, after about 11:50 PM MDT. Reddish Mars rises before 2:30 AM MDT, and by 5 AM Mars may be high enough in the sky to appear interesting through telescopes. Jupiter now shines brightly before dawn, rising in the east northeast at about 5:11 AM MDT on August 19 and 4:25 AM MDT on September 4. With binoculars (or telescopes), we can view 8th-magnitude Neptune in Constellation Pisces through much of the night, and 6th-magnitude Uranus in Constellation Taurus during the predawn hours.
As of August 18, some active regions with big sunspots are present on the side of the Sun that will in a few days rotate beyond our view. But other active regions may rotate into view 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; 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. Predawn passes of the bright International Space Station (ISS) are predicted from August 19 to September 4. And predawn passes of the almost-as-bright, Chinese Tiangong Space Station (aka CSS TIANHE-1) are predicted for August 19 to 26, and evening passes of Tiangong are predicted for August 28 to September 4.
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/

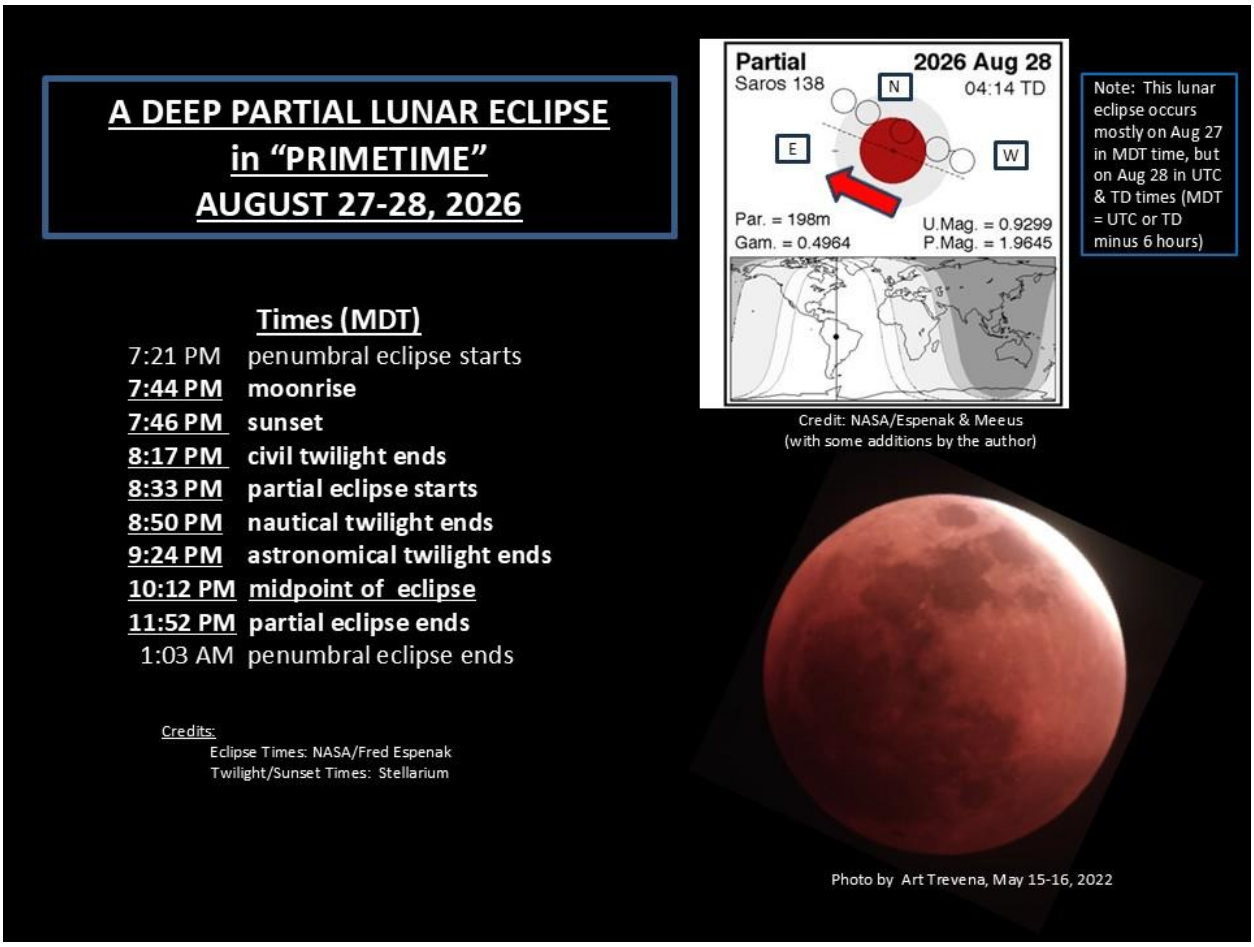
Note: The apparent brightness of sky objects is measured in "magnitude" units. Many bright stars are magnitude +1, while the faintest stars easily visible to unaided eyes under dark skies are magnitude +6. Some of the brightest stars are magnitude 0 (e.g., Vega, Arcturus), while the brightest sky objects 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 ").

THE MOON. The Moon reaches first quarter on August 19 (exactly at 8:46 PM MDT). From August 20 to 26, watch the gibbous Moon wax. **The Moon is full on the night of August 27-28** (exactly full at 10:18 PM MDT on August 27), near the maximum of a deep, partial lunar eclipse that is visible from the Western Slope (see item below for details). From August 29 to September 3, the gibbous Moon wanes. The Moon reaches **last quarter on September 4** (exactly at 1:51 AM MDT). NASA's daily Moon Guide is a fun website for enjoying the Moon, as it moves through its phases.

On the evening of August 20, the is in Constellation Scorpius, less than 2 degrees below the red supergiant star, Antares. On August 30 from 9:30 PM to 10 PM MDT, look for the waning gibbous Moon rising about 5 degrees above Saturn. Then on September 3 from 1 AM to 5:30 AM MDT, look for the "almost" last quarter Moon about 1 degree above the famous Pleiades Star Cluster (M45). Binoculars may help you spot the stars of the Pleaides against bright moonlight.

A "PRIMETIME" LUNAR ECLIPSE – AUGUST 27! It seems that eclipses always happen in far-away places or at inconvenient times. But that's not the case on Thursday, August 27, when, given clear skies, we'll see a lunar eclipse during "primetime" from the Western Slope (see illustration on next page)! On August 27 the Sun sets late, around 7:46 PM MDT, which allows enough time to get home from work or school, eat dinner, and get ready for the lunar show. The eclipse begins at 7:21 PM MDT, before the Moon rises locally at around 7:44 PM MDT. That's when the eastward-moving Moon first touches the partial shade of the penumbra, the "less dark" part of Earth's shadow. But we won't miss much during these 23 minutes without the Moon, because the early stages of penumbral eclipses are almost undiscernible from Earth. An astronaut on the Moon, standing within the penumbra, would see a partial eclipse of the Sun by the Earth. The real action starts at 8:33 PM MDT, when the partial eclipse begins as the Moon first encounters the umbra, the darker part of Earth's shadow. This happens in fading twilight on the Western Slope with the Moon about 9 degrees above our east-southeastern horizon - that's about the width of your fist, when held at arm's length. Try viewing the lunar eclipse through binoculars; views can be otherworldly (literally!). With binoculars, the edge of the umbra will look ragged, rather than sharp. That's due to clouds and other features of Earth's atmosphere. A lunar astronaut, standing within the umbra, would see a total eclipse of the Sun by the Earth, a phenomenon

that was photographed by a robotic lunar lander during the eclipse of March 14, 2025. Such eclipses will be amazing experiences for future lunar explorers! At the midpoint at 10:12 PM MDT, this eclipse becomes almost total, when 93% of the Moon's diameter and 96% of the Moon's area are covered by the Earth's umbra. Although this lunar eclipse is not total, it's almost as good – it's a very deep, partial eclipse. Around mid-eclipse at 10:12 PM MDT, we'll likely see the darkened part of the Moon glowing with an ashen, reddish light. The reddish hue is caused by sunlight that is bent by Earth's atmosphere into the umbra. We'll see the effects of countless reddish sunsets and sunrises around the periphery of the Earth as reflected by the Moon. After 10:12 PM MDT, the Moon will start moving out of Earth's umbra, and the partial eclipse will end at 11:52 PM MDT, still early enough to get some sleep before dawn. Let's hope for clear skies on the evening of August 27, so we can enjoy an amazing lunar eclipse experience!



VENUS: THAT BRILLIANT "EVENING STAR"! Venus has been a dazzling evening star through late spring and midsummer. Earth's "Sister Planet" is still brilliant, but evening-by-evening, Venus appears lower in our southwestern sky. During this period Venus brightens from magnitude -4.48 to -4.67, as it moves through Constellation Virgo. You can spot Venus less than 15 degrees above the southwestern horizon shortly after sunset, and our "Sister Planet" remains visible for about an hour afterward. Venus sets in the west southwest after twilight's end at about 9:44 PM MDT on August 18 and at about 9:03 PM MDT on September 4 during astronomical twilight. Venus' angular separation from the Sun is now decreasing, and there's a strong southward component in Venus' motion. These circumstances cause Venus to set earlier night-by-night, as seen from Colorado's mid-northern latitudes. By early October

Venus will disappear into glaring evening twilight. Venus will be at inferior solar conjunction on October 24, 2026 and will reappear in our predawn sky by the second week of November.

On the evening of September 1 between 8:30 PM and 8:45 PM MDT, look for Venus less than 2 degrees below the first magnitude star, Spica (perhaps an interesting sight in binoculars!).

Through telescopes, Venus' gibbous phase wanes from a "fat", 47%-illuminated crescent on August 18 to a "skinnier", 36%-illuminated crescent on September 4, as its distance from Earth decreases from 61 million to 49 million miles, and its apparent diameter increases from 25.5 to 31.9 arc seconds. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

SATURN: RISING IN THE EVENINGS NOW! Saturn rises in the east at about 10:05 PM MDT on August 18 and 8:57 PM MDT on September 4. During this period, the Ringed Planet brightens from magnitude +0.54 to +0.46, as its distance from Earth decreases from 812 million to 797 million miles. Through telescopes, Saturn's disk appears 19 arc seconds wide, and its rings span 45 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. Through telescopes, it's best to view Saturn after it rises more than 20 degrees above the eastern horizon; that's after about 11:50 PM MDT on August 18 and after about 10:45 PM MDT by August 19.

NEPTUNE: NEARLY ALL NIGHT LONG. Neptune, at magnitude +7.7, is moving slowly amidst the stars of Constellation Pisces. The 8th Planet rises in the east at about 9:27 PM MDT on August 18 and 8:27 PM MDT on September 4, but we need a telescope, or at least binoculars, to see it. Telescopic views of Neptune may be best after about 11:30 PM MDT, when the 8th Planet rises more than 20 degrees above the east-southeastern horizon. Through telescopes, Neptune's blueish disk appears only 2.5 arc seconds wide. Neptune is 2.69 billion miles from Earth during this period. On September 3, Neptune appears less than 2 arc minutes from the +8.6-magnitude star, HIP 1127. Can you see a color contrast between blueish (?) Neptune and this star, which may appear white? 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 50 degrees above the western horizon as the sky darkens and remains visible in the west-northwestern sky until about 1 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 August 18 at 6 AM MDT, 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. Uranus rises above the east-northeastern horizon at about 12:24 AM MDT on August 19 and 11:18 PM MDT on September 4. 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' 3.6 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 1.81 billion miles from Earth during this period. The best times to view the 7th Planet are between 2:30 AM MDT and the onset of bright twilight at about 5:25 AM MDT, when Uranus is more than 25 degrees above the east-northeastern horizon, rising to more than 55 degrees above the southeastern horizon during morning twilight. You can use this link to find Uranus: https://theskylive.com/uranus-info.

MARS BEFORE DAWN. Mars brightens from magnitude +1.33 to +1.16, as it moves eastward in our predawn sky through Constellation Gemini, amidst some widely arrayed, bright "winter" stars, including Pollux in Gemini, Betelgeuse in Orion, Capella in Auriga, and Aldebaran in Taurus. On August 19 Mars rises above the east-northeastern horizon at around 2:18 AM MDT, well before the start of twilight. By August 19, Mars rises a bit earlier, at about 2:02 AM MDT. Mars is still on the far side of the Sun from our perspective; the Red Planet is 178 million miles distant on August 19 and 170 million miles distant on September 4. Through telescopes, Mars' reddish disk still appears small, increasing in apparent diameter from only 4.9 to 5.1 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 5:00 AM MDT, Mars is more than 30 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", which consists of light-colored clouds covering all or part of Mars' northern polar ice cap? In the 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 at any date and time.

JUPITER BEFORE DAWN. Jupiter rises in the east during nautical twilight at about 5:11 AM MDT on August 19, and by September 4 the Giant Planet rises in a dark sky by about 4:25 AM MDT. Between August 19 and September 4, Jupiter brightens slightly from magnitude -1.79 to -1.81, as its distance from Earth decreases from 582 million to 574 million miles, and its apparent diameter increases from 31.5 to 31.9 arc seconds. That's large enough for resolving Jupiter's disk 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 parts of two "transits" of Io's shadow are observable from the Western Slope during this period. More of these shadow "transit" events will become visible as Jupiter starts rising earlier in the coming weeks and months. **Please do your Jupiter (and Galilean moon) spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

August 22, 2026, 3:40 AM to 5:58 AM MDT. Io's shadow crosses Jupiter (Locally, this event begins well before Jupiter rises at about 5:03 AM MDT and ends in twilight with Jupiter 10 degrees above the eastern horizon and the Sun 7 degrees below the horizon).

August 29, 2026, 5:34 AM to 7:52 AM MDT. Io's shadow crosses Jupiter (Locally this event begins in nautical twilight with Jupiter 9 degrees above the eastern horizon with the Sun 13 degrees below the horizon. The event ends long after sunrise with Jupiter still too near the Sun to observe safely).

THE SUN. As of August 18, active regions with big sunspots are present on the side of the Sun that will in a few days rotate beyond our view. But other active regions may rotate into view 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 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 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.

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.

Predawn passes of the bright International Space Station (ISS) are predicted from August 19 to September 4. And predawn passes of the almost-as-bright, Chinese Tiangong Space Station (aka CSS TIANHE-1) are predicted for August 19 to 26 and evening passes of Tiangong are predicted for August 28 to September 4. Check for updates at these links (enter your location and time zone as 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!