BCAS OBSERVING HIGHLIGHTS for August 1 to 15, 2025, a "bright Moon period"
Black Canyon Astronomical Society (BCAS), western Colorado, USA

SUMMARY.

This "bright Moon period" features a striking conjunction of Venus and Jupiter, the two brightest planets, when they appear only 1 degree apart (2 apparent Moon diameters) in the predawn of August 12! If it's cloudy on August 12, all is not lost: Venus and Jupiter are within 6 degrees of each other (a "binocular field of view") from August 6 to 18. Look for Perseid meteors (aka, "shooting stars") on the mornings of August 12 and 13, although bright moonlight may limit how many we see.

The Moon reaches first quarter on August 1. From August 2 to 7, watch the gibbous Moon wax. The Moon is full on the night of August 8-9. Using binoculars or a telescope, enjoy viewing the full Moon by spotting dark lava-flooded, lunar maria ("seas" in Latin) and bright "ray" craters. Plus, you can locate the sunlit, landing areas of all 10 space probes that brought back samples from the Moon's nearside (including 6 crewed Apollo missions). From August 10 to 14, the gibbous Moon wanes. The Moon reaches last quarter on August 15. On the night of August 3-4, watch the 74%-illuminated, gibbous Moon pass 2 degrees south of the red supergiant star, Antares, in Constellation Scorpius. On the night of August 11-12, the 88%-illuminated, waning gibbous Moon passes about 5 degrees north of Saturn, now moving against the stars of Constellation Pisces.

As twilight fades, reddish (or butterscotch-tinted?) Mars shines a bit feebly at magnitude +1.5, about 10 degrees above the western horizon. Mars now sets well before midnight, at about 10:26 PM MDT on August 1 and 9:51 PM MDT on August 15. Saturn, brightening from magnitude +0.79 to +0.72, rises before midnight, at about 10:40 PM MDT on August 1, and 9:43 PM MDT on August 15. On the morning of August 3, use a telescope to watch a total solar eclipse on Saturn, when Titan, the Solar System's second largest moon, casts its shadow on the Ringed Planet. Venus, a brilliant morning star, rises at about 3:18 AM MDT on August 1 and 3:35 AM MDT on August 15. Bright Jupiter is getting easy to spot in the predawn sky. The Giant Planet rises at about 3:59 AM MDT on August 1 and 3:18 AM MDT on August 15. Use a telescope to watch the shadows of Jupiter's Galilean moons, as they cross the Giant Planet. These "Jovian solar eclipses" may be visible on the mornings of August 3, 8, 10, 12, and 15. Fresh from its July 31 solar conjunction, we may be able to spot Mercury in morning twilight by August 14 or 15 at around 5:35 AM MDT, when the Innermost Planet appears 5 degrees above an unobstructed, east-northeastern horizon.

Challenge yourself to spot the "heliacal rising" (first visible rising before the Sun) of Sirius, the night sky's brightest star. How early in August can you spot Sirius low to the southeastern horizon during predawn twilight? From Colorado's latitudes, it may be possible to spot the "Dog Star" by August 11, or even a morning or two earlier. The "heliacal rising" of Sirius portends the shorter days and longer nights of the coming fall and winter.

There are numerous active regions containing sunspots on the Earth-facing side of the Sun, which may produce solar flares and coronal mass ejections. Coronal mass ejections can trigger auroras (aka northern lights), which could become visible from Colorado. Never view the Sun without safe, specialized solar filters. You can monitor solar activity safely on the internet.

On the evening of July 31, watch for the bright Tiangong (Chinese) Space Station, as it passes above our southwestern and southern horizons. There are predicted evening passes for other bright satellites from August 1 to 4.

THE MOON. The Moon reaches **first quarter on August 1** (exactly at 6:41 AM MDT). From August 2 to 7, watch the gibbous Moon wax. **The Moon is full on the night of August 8-9** (exactly full at 1:55 AM MDT on August 9). Using binoculars or a telescope, enjoy the full Moon by spotting dark, lava-flooded,

maria (“seas” in Latin) and bright “ray” craters. Plus, you can locate the landing areas of all 10 lunar missions (including six crewed Apollo missions) that returned samples to Earth from the Moon’s nearside (see chart, below, for locations). The landing modules from these sample-return missions are not visible with even the largest, earth-based telescopes. However, NASA’s Lunar Reconnaissance Orbiter has photographed them! From August 10 to 14, the gibbous Moon wanes. The Moon reaches **last quarter on August 15** (exactly at 11:12 PM MDT). On the night of August 3-4, watch the 74%-illuminated, gibbous Moon pass 2 degrees south of the red supergiant star, Antares, in Constellation Scorpius. That same night, at about 12:03 AM MDT on the Western Slope, the dark, leading edge of the waxing, gibbous Moon occults (covers) +2.8-magnitude, Tau Scorpii (aka Paikauhale). Tau Scorpii reappears from the bright, trailing edge of the Moon at around 12:45 AM MDT, when the Moon is only about 4 degrees above the southwestern horizon. Disappearance and reappearance times vary by a few minutes, based on your exact location on the Western Slope. On the night of August 11-12, the 88%-illuminated, waning gibbous Moon passes about 5 degrees north of Saturn. NASA has published a stunning visualization of lunar phases for year 2025. Another fun site is NASA’s daily Moon guide.

The Full Moon
August 8-9, 2025

Using binoculars or a telescope, enjoy views of the full Moon on the night of August 8 to 9. Dark, lava-flooded maria (“seas” in Latin) are prominent, as are several young “ray” craters, including Tycho (T), Copernicus (C), and Kepler (K). Landing sites of near-side, sample-return missions are indicated (with mass of samples returned in kilograms):

Apollo 11, A11 - Mare Tranquillitatis (22 kg)
Apollo 12, A12 – Oceanus Procellarum (34 kg)
Apollo 14, A14 – Fra Mauro (43 kg)
Apollo 15, A15 – Apennine/Hadley (77 kg)
Apollo 16, A16 - Descartes Highlands (95 kg)
Apollo 17, A17 - Taurus-Littrow (110 kg)
Luna 16, L16 - Mare Fecunditatis (0.10 kg)
Luna 20, L20 - Mare Crisium Rim (0.03 kg)
Luna 24, L24 - Mare Crisium (0.17 kg)
Chang’e 5, C5 - NE of Mons Rümker (1.7 kg)

Simulated image from NASA, labels by the author

PERSEID METEORS – CHALLENGING IN BRIGHT MOONLIGHT. A bright, gibbous Moon “washes out” the sky during the predicted peak of the Perseid Meteor Shower on the nights of August 11-12 and August 12-13, 2025, and we can expect to see only the brightest Perseid Meteors this year. The Perseid Shower, consisting of debris from Comet 109P/Swift-Tuttle, is one of the most reliable of the annual meteor showers with a typical zenith hourly rate (ZHR) of 100. ZHR is the number of meteors an observer would see with the radiant (apparent origin point of meteors) at the zenith under a transparent, dark sky. This year, due to bright moonlight, we’ll be lucky to see more than 25 meteors per hour during the predicted peak hours (11 PM to 5 AM MDT on August 11-12 and August 12-13). The Perseid Shower typically has a broad peak, and it’s possible to see reduced numbers of Perseids as early as July 17 and as late as August 24. Meteors can be seen all over the sky. You may see meteors most frequently during the “wee”, predawn hours, before the onset of morning twilight. You don’t need special equipment to view meteors – just a comfortable reclining chair.

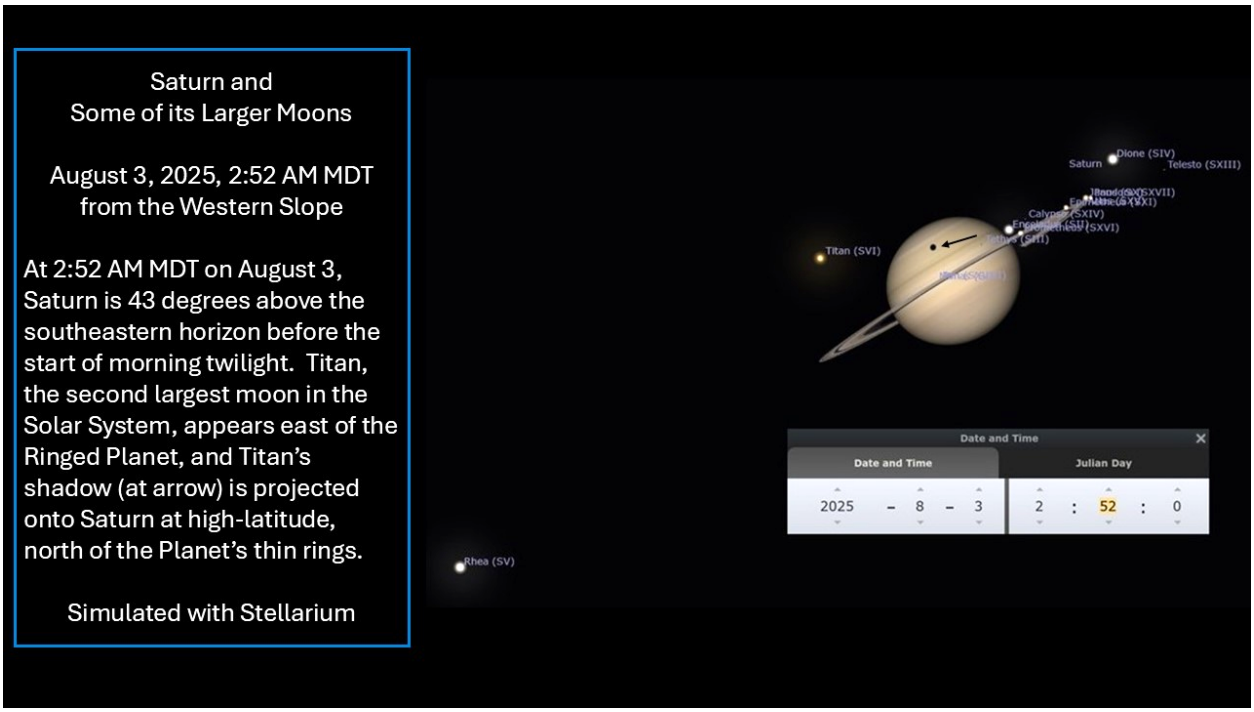
MARS IN THE EVENING. As twilight fades, **r**eddish (or butterscotch-tinted?) Mars is about 10 degrees above the western horizon. The Red Planet is wandering eastward, amidst the stars of the expansive Constellation Virgo. Mars' rapid eastward motion against the stars will keep the Red Planet in our evening sky through the middle of fall. Mars now sets well before midnight, at about 10:26 PM MDT on August 1 and 9:51 PM MDT on August 15. The Red Planet shines at about magnitude +1.5 during this period. Mars is getting a bit farther from Earth, from 198 million miles distant on August 1 to 204 million miles distant on August 15. Through telescopes, Mars' 94%-illuminated, gibbous disk appears only 4.3 arc seconds in diameter. Due to its small apparent size, it's now extremely challenging to spot features on the Red Planet. Find more info on observing Mars here:
https://www.alpo-astronomy.org/jbeish/2025_MARS.htm

SATURN RISES BEFORE MIDNIGHT. Moving against the stars of constellation Pisces, the Ringed Planet now rises in the east well before midnight, at about 10:40 PM MDT on August 1, and 9:43 PM MDT on August 15. Saturn brightens from magnitude +0.79 on August 1 to magnitude +0.72 on August 15, as its distance from Earth decreases from 827 million to 812 million miles. Through telescopes Saturn's disk appears 19 arc seconds wide, and its rings span 44 arc seconds. During 2025, Saturn's thin rings (150,000 miles wide but only 1000 ft thick!) are nearly "edge-on" from our perspective on Earth. Saturn's rings are not as striking as they have been in the past few years (and will be a few years from now). When seen nearly edge-on, the rings are dimmer, making it easier to spot some of Saturn's mid-sized moons, like Tethys, Dione, Rhea, and Enceladus. 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 and/or visiting this site: https://skyandtelescope.org/observing/interactive-sky-watching-tools/saturns-moons-javascript-utility/
For more info on the appearance of Saturn's rings in 2025 and phenomena associated with Saturn's moons, see this article…
https://skyandtelescope.org/astronomy-news/observing-news/see-mutual-events-close-approaches-of-saturns-moons/

On August 6, Saturn has its second of three conjunctions in 8 months with Neptune. Eighth-magnitude Neptune appears about 1 degree north of Saturn, sharing the same field of view for "wide-field" telescopes and binoculars.

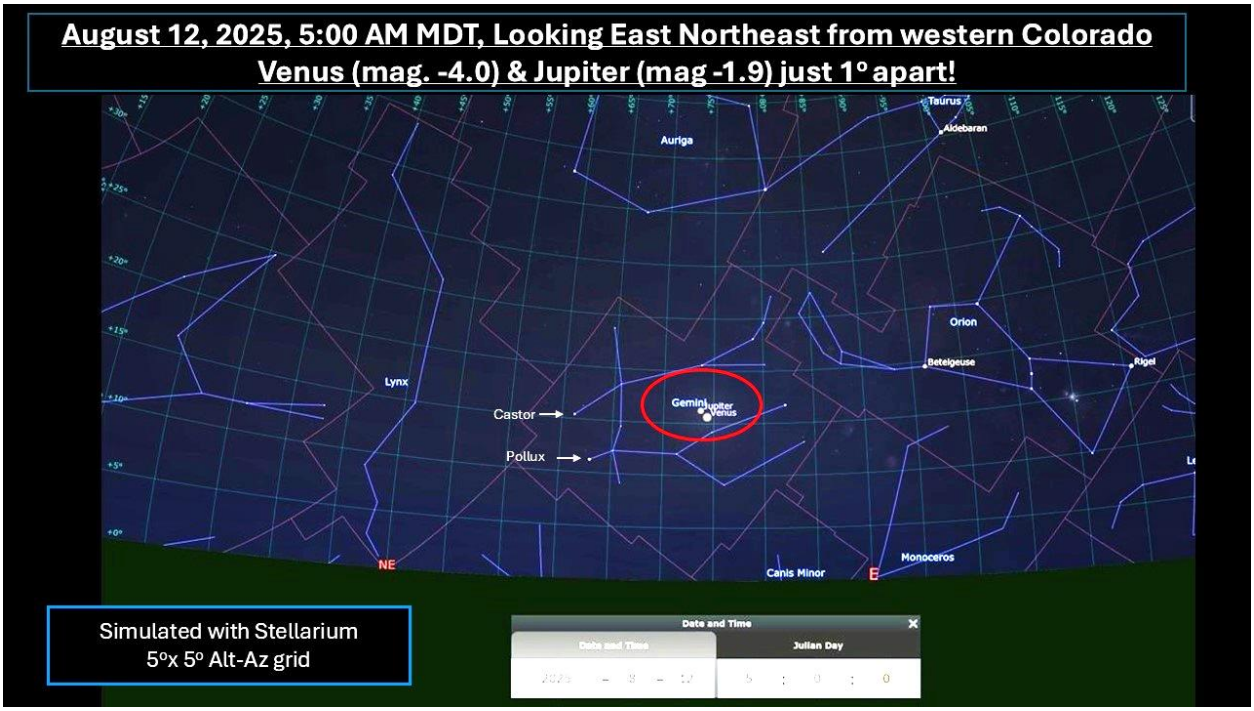
TITAN'S SHADOW MOVES ACROSS SATURN – AUGUST 3 (AM)! Use a telescope to watch the rare sight of Titan's shadow moving across the Ringed Planet on the morning of August 3! This is a total solar eclipse on Saturn! Titan is Saturn's largest moon, and the second largest moon in the Solar System. With a diameter of 3193 miles, Titan is larger than the Planet Mercury! The August 3 transit begins at 12:25 AM MDT, when Saturn is 20 degrees above the east-southeastern horizon on the Western Slope. The Ringed Planet rises 43 degrees high in the southeast by the middle of the transit at 2:52 AM MDT (see chart below). The transit ends at 5:04 AM MDT, when Saturn is 49 degrees in the south with the Sun about 13 degrees below our horizon. Titan's orbital period of Saturn is 1.5 hours short of 16 Earth days, so transits are now occurring every 16 days. After August 3, there will be four more transits of Titan's shadow in 2025 (see table, below). But after the transit on October 5, we will have to wait 15 years for the next group of Titan shadow transits! Through the summer, local circumstances for viewing Titan's shadow transits are improving, because Saturn rises progressively earlier and gets higher in our sky before the Sun rises. Try to view a transit at the next opportunity, as hard-to-predict sky cover can prevent visibility on some nights. Titan's shadow is large. But Saturn is on average about twice the distance of Jupiter. So, the size of Titan's shadow appears roughly the same size as the shadow of Jupiter's moon, Europa, which is smaller than Titan.

Transits of Titan's shadow across Saturn						
Date UTC	**Date MDT**	**start MDT**	**middle MDT**	**end MDT**	**Saturn rises MDT**	**Sunrise MDT**
8/3/2025	8/3/2025	12:25 AM	2:52 AM	5:04 AM	2Aug, 10:36 PM	6:13 AM
8/19/2025	8/18-19/2025	11:52 PM	2:01 AM	4:00 AM	18Aug, 8:26 PM	NA
9/4/2025	9/3-4/2025	11:25 PM	1:09 AM	2:50 AM	3Sep, 8:26 PM	NA
9/20/2025	9/19-20/2025	11:09 PM	12:20 AM	1:34 AM	19Sep, 7:21 PM	NA
10/6/2025	10/5/2025		11:32 PM		NA	NA
transit times from Sky & Telescope (converted to MDT by author)						
times for local Saturn rise and sunrise from Stellarium						



Find more info on Titan shadow transits at this link…
https://skyandtelescope.org/astronomy-news/observing-news/titan-shadow-transit-season-underway/

JUPITER GREETS VENUS – AUGUST 12 BEFORE DAWN! In the predawn of August 12, the two brightest planets, Venus and Jupiter, are within 1 degree of each other (less than 2 apparent Moon diameters), a striking sight, especially in binoculars or wide-field telescopes! Besides the Moon, these are the two brightest objects in our night sky! Venus shines brilliantly at magnitude -4.0, and Jupiter is no slouch either, shining at magnitude -1.9! The pair rises above the east-northeastern horizon around 3:30 AM MDT, but you might see them best between 4:30 AM and 5:30 AM MDT, when they are 10 to 20 degrees high in the sky, and before bright twilight starts to interfere (see chart below). On August 12, this planetary duo appears about 12 degrees to the right of Gemini's "twin stars", Pollux and Castor. If you rise early to see this conjunction on August 12, keep watch for some Perseid Meteors (see next item). If you can't view this planetary conjunction on August 12, don't panic. Venus and Jupiter appear within a 6-degree-wide, "binocular field-of-view" in the predawn for nearly a week, both before and after August 12.



VENUS – STILL A BRILLIANT "MORNING STAR"! Brilliant Venus rises in the east northeast at about 3:18 AM MDT on August 1 and 3:35 AM MDT on August 15, before the start of morning twilight. Morning-by-morning, Venus rises a bit later, as its angular separation west of the Sun decreases. Between August 1 and August 15, Venus fades just slightly, from magnitude -3.99 to -3.95, while its distance from Earth increases from 108 million to 117 million miles. As seen through telescopes, Venus' gibbous phase waxes from 75% illuminated on August 1 to 80% illuminated on August 15, as its apparent diameter shrinks from 14.3 to 13.3 arc seconds. Venus has a striking conjunction with Jupiter on the morning of August 12 (see item above)! **Please do your Venus spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

JUPITER AND ITS MOONS BEFORE DAWN. Jupiter, shining brightly at magnitude -1.9, rises in the predawn sky, at about 3:59 AM MDT on August 1 and 3:18 AM MDT on August 15. Between August 1 and 15, The Giant Planet's distance from Earth decreases from 561 million miles to 550 million miles, as its apparent diameter increases from 32.7 to 33.3 arc seconds. Morning-by-morning, Jupiter is getting easier to observe, as it rises higher in the sky before dawn. Use a telescope or binoculars to spot Jupiter's four bright "Galilean" moons. Identify them by their changing positions and referring to various planetarium apps or this website:
https://skyandtelescope.org/wp-content/plugins/observing-tools/jupiter_moons/jupiter.html
Use a telescope to view shadows of Jupiter's large Galilean moons crossing the Giant Planet. These are total solar eclipses on Jupiter! Ganymede, the largest moon in the Solar System, casts the largest shadow of Jupiter's moons, and its shadow is usually the easiest to spot. Due to their smaller diameters (see table below), the shadows of Callisto, Io, and Europa are smaller than Ganymede's shadow. But shadows of all 4 Galilean moons can be observed transiting Jupiter even with small telescopes. Transits of Io's shadow occur frequently, because Io orbits Jupiter every 1.8 Earth days. Europa, Ganymede, and Callisto have orbital periods (around Jupiter) of 3.6, 7.2 and 16.7 Earth days, respectively, so their shadows cross Jupiter less frequently. Shadows of Io, Europa, and Ganymede reliably cross Jupiter once

per orbit. Callisto's shadow had not crossed Jupiter since July 2022, but that situation changed in mid-2025. On August 12, there is a transit of Callisto's shadow. Unfortunately, this event occurs during daytime for the Western Slope. Even so, this event may be visible in larger telescopes, if you can find Jupiter in daylight between 8:00 and 8:54 AM MDT. More transits of Callisto's shadow will be visible later this year and next year.

Moon	Diameter (miles)	Orbital Period (Earth days)
Io	2259	1.8
Europa	1936	3.6
Ganymede	3266	7.2
Callisto	2988	16.7

August 2, 2025, 4:30 AM to 7:32 AM MDT, Ganymede's shadow crosses Jupiter at high southern latitude on Jupiter (Locally this event begins in earliest twilight, when Jupiter is about 5 degrees above the east-northeastern horizon and ends after sunrise. The best times for viewing might be 5:15 to 5:40 AM MDT).

August 3, 2025, 2:16 AM to 4:30 AM MDT, Io's shadow crosses Jupiter (Locally this event begins before Jupiter rises and ends when Jupiter is only 6 degrees above the east-northeastern horizon).

August 8, 2025, 2:38 AM to 5:22 AM MDT, Europa's shadow crosses Jupiter (Locally this event begins before Jupiter rises and ends when Jupiter is 18 degrees above the east-northeastern horizon in nautical twilight).

August 10, 2025, 4:10 AM to 6:24 AM MDT, Io's shadow crosses Jupiter (Locally this event begins when Jupiter is 6 degrees above the east-northeastern horizon and ends when Jupiter is 31 degrees above the eastern horizon just after sunrise).

August 12, 2025, 8:00 AM to 8:54 AM MDT, Callisto's shadow crosses Jupiter at high southern latitude on Jupiter (Locally this event occurs in daylight, when Jupiter is 51 to 61 degrees above the horizon. Although occurring in daylight, this event is listed here because it's the first observable transit of Callisto's shadow in more than 3 years. It may be visible in larger telescopes, if you can locate Jupiter in daylight).

August 15, 2025, 5:14 AM to 7:58 AM MDT, Europa's shadow crosses Jupiter (Locally this event begins in early twilight, when Jupiter is 11 degrees above the east-northeastern horizon, and it ends after sunrise).

MERCURY REAPPEARS BEFORE DAWN BY MID-AUGUST. Fresh from inferior solar conjunction on July 31, you may be able to spot the "Speedster Planet" in morning twilight by August 14 or 15. At about 5:35 AM MDT on those mornings, look toward the east-northeastern horizon. Mercury will be about 5 degrees above an unobstructed horizon, when the sun is still 10 degrees below the horizon. Mercury, shining at magnitude +0.80 on August 14 and magnitude +0.60 on August 15, may be hard to spot in morning twilight, but try using binoculars. The Innermost Planet steadily brightens into late August. It may be easiest to spot Mercury around August 19, when its angular distance from the Sun is greatest. On August 15, Mercury is 75 million miles from Earth, and its 27%-illuminated crescent appears 8.3 arc

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

HELIACAL RISING OF SIRIUS. "Heliacal rising" refers to the year's first visible rising of a star before sunrise. Sirius, the sky's brightest star (after the Sun, that is!), has been hidden in the Sun's glare since June. But as Earth moves in its orbit about the Sun, our perspectives change. By mid-August, it's possible to spot Sirius in morning twilight. How early can you spot "the Dog Star"? Given clear morning skies, Sirius should be easy to see by August 14, but can you spot Sirius above the east-southeastern horizon even earlier? Sightings of Sirius on August 11, or even a bit earlier, are possible from Colorado's latitudes. It might take several more days for Sirius to become prominent. Ancient Egyptians used the heliacal rising of Sirius to predict the Nile's annual flood. As our summer days shorten, morning twilight begins later each day. By late August, Sirius will be rising in a darker sky, portending the end of our warm season. **Please look for the heliacal rising of Sirius before sunrise. NEVER chance looking at the Sun directly, serious eye damage can result.**

DON'T GIVE UP! KEEP WATCHING THE NORTHERN CROWN! Better late than never? Will there soon be a bright "new" star in Constellation Corona Borealis (the "Northern Crown"), at least briefly? During this period, Corona Borealis is high in the southwest at end of evening twilight and sets below the west-northwestern horizon after 3:30 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 sometime in 2026. Then this "new star" may fade rapidly below naked-eye visibility in about a week. As of early on July 31, T CrB had not yet erupted. Astronomer Jean Schneider of Paris Observatory states that eruptions are most likely every 228 days, a period corresponding with the orbital period of T CrB's red giant and white dwarf components. Schneider suggests that the eruption may be likely around November 10, 2025 or June 25, 2026. For more about T CrB, read the article, "Get Ready for a Nova's Bright Return", by astronomer Brad Schaefer in the March 2024 issue of Sky & Telescopes Magazine, p. 34-40. 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://skyandtelescope.org/astronomy-news/is-the-blaze-star-about-to-blow-you-may-be-the-first-to-know/
https://ui.adsabs.harvard.edu/abs/2023ATel16107....1S/abstract
https://www.aanda.org/articles/aa/full_html/2023/12/aa48372-23/aa48372-23.html

THE SUN. The Sun has been very interesting lately, as solar active regions containing sunspots have unleashed numerous flares and coronal mass ejections (CMEs) of charged particles. There have been M-class (moderate) solar flares during recent weeks, and there have been X-class (extreme) solar flares on May 13, 14, 25, June 17 and 19. Also, there have been CMEs that have triggered geomagnetic storms that caused auroras. As of 6 AM MDT on July 31, there are many active regions containing sunspots on the Earth-facing side of the Sun. We may experience more M- and possibly X-class flares and powerful CMEs during the current period. Airglow and SAR arcs also result from high solar activity, and these phenomena have been photographed and/or observed from Colorado. The safest way to monitor sunspots, solar flares, CMEs, and other solar activity safely and in "real time" is by using the internet. Check out the following sites…
https://sdo.gsfc.nasa.gov/data/
https://stereo.gsfc.nasa.gov/beacon/
http://halpha.nso.edu/

https://www.swpc.noaa.gov/
https://sohowww.nascom.nasa.gov/data/realtime-images.html
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"). Auroras are triggered by geomagnetic storms that derive from coronal mass ejections (CME) from active regions on the Sun. With continuing high solar activity, more geomagnetic storms may occur, and we may be able to see auroras, like those seen and photographed from the Western Slope earlier this year and last year. 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 Auroras are most frequently seen from high latitudes, e.g., from Canada, Alaska, Iceland, northernmost Europe, southern New Zealand, and Antarctica. But, from late spring to midsummer (in respective hemispheres), it's impossible to see auroras from latitudes above 60 degrees, because it never gets dark there! If we are lucky, we may see auroras from the Western Slope during this period.

EARTH SATELLITE HIGHLIGHTS. The following predictions are for western Colorado, specifically Montrose. Numerous Earth satellites are visible every clear night. Satellites are visible when they reflect sunlight during twilight or nighttime hours. Brighter satellites have smaller magnitude numbers, and the brightest (e.g., the International and Chinese Tiangong Space Stations) may have negative magnitudes. These predictions are for selected passes of some bright and/or interesting satellites (as summarized from heavens-above.com). Satellite orbits change and these predictions may be inaccurate. This is especially true for the International Space Station (ISS) and the Tiangong Space Station, because they undergo frequent orbital changes. We do not show satellite predictions more than 5 days beyond the distribution date of the current "BCAS Observing Highlights" edition. For accurate predictions of the ISS, Tiangong, and other satellites, check heavens-above.com or other satellite prediction sites for updates on the nights you wish to observe. Be sure to set application(s) for your location and time zone. 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

July 31, 2025. Tiangong (Chinese Space Station). 9:38 to 9:39 to 9:41 PM MDT. SW to S. Max altitude 11 deg above SW, disappears into Earth's shadow 9 deg above S, max magnitude +0.6 (Passing through Virgo/Corvus, Hydra, Lupus/Scorpius). **Predictions for Tiangong are subject to change due to orbital adjustments. Check for updated predictions.**

August 1, 2025. USA 186 (U.S. Military reconnaissance satellite, launched in 2005). 9:15 to 9:18 to 9:21 PM MDT. SSE to E to N. Appears from Earth's shadow 10 deg above SSE, max altitude 81 deg above E, max magnitude +1.2. (Passing through Scorpius/Sagittarius, Ophiuchus, Hercules, Draco, Ursa Minor, and Camelopardalis).

August 2, 2025, Bluebird-SM004, Spacetrack Sat. ID # 61049 (telecommunications satellite from AST SpaceMobile, launched in 2024). 5:11 to 5:14 to 5:18 AM MDT. SW to NW to NE. Appears from Earth's shadow 18 deg above SW, maximum altitude 86 deg above NW, max magnitude +1.5? (Passing through Capricornus, Aquarius, Pegasus, Andromeda, Perseus, and Camelopardalis/Auriga).

August 2, 2025. Okean O (Russian rocket stage, launched in 1999). 9:35 to 9:38 to 9:43 PM MDT. SSE to ENE to N. Appears from Earth's shadow 19 deg above SSE, max altitude 59 deg above ENE, max magnitude +1.7 (Passing through Sagittarius, Aquila, Sagitta, Cygnus, Cepheus, and Camelopardalis). **Brightness may vary rapidly due to tumbling.**

August 3, 2025, Bluebird-SM004, Spacetrack Sat. ID # 61049 (telecommunications satellite from AST SpaceMobile, launched in 2024). 4:52 to 4:54 to 4:58 AM MDT. SW to NW to NE. Appears from Earth's shadow 29 deg above SW, maximum altitude 83 deg above NW, max magnitude +1.6? (Passing through Aquarius, Pegasus, Lacerta/Andromeda, Cassiopea/Perseus, and Camelopardalis/Auriga).

August 3, 2025. Okean O (Russian rocket stage, launched in 1999). 9:54 to 9:57 to 10:02 PM MDT. S to WSW to NNW. Appears from Earth's shadow 23 deg above S, max altitude 85 deg above WSW, max magnitude +1.6 (Passing through Sagittarius, Ophiuchus, Hercules, Draco, Ursa Major, and Camelopardalis/Ursa Major). **Brightness may vary rapidly due to tumbling.**

August 4, 2025, Bluebird-SM004, Spacetrack Sat. ID # 61049 (telecommunications satellite from AST SpaceMobile, launched in 2024). 4:33 to 4:34 to 4:38 AM MDT. WSW to NW to NE. Appears from Earth's shadow 46 deg above WSW, maximum altitude 80 deg above NW, max magnitude +1.8? (Passing through Pegasus, Andromeda, Cassiopea, and Camelopardalis/Auriga).

August 4, 2025. CZ-4R/B (Chinese rocket stage, launched in 2006). 8:48 to 8:52 to 8:55 PM MDT. SSE to ENE to N. Max altitude 65 deg above ENE, max magnitude +1.3 (Passing through Sagittarius, Scutum, Aquila/Ophiuchus, Lyra-near Vega, Draco, Cepheus/Ursa Minor, and Camelopardalis). **Brightness may vary rapidly due to tumbling. May be challenging to spot in bright twilight.**

There are no predicted passes over the Western Slope for either the ISS or Tiangong Space Stations for the August 1 to August 15 period.

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 0 magnitude (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 -26.7 magnitude). Angular distances on the sky are usually cited in degrees of arc. 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

WESTERN SLOPE SKIES. Since 2011, KVNF Community Radio has aired Western Slope Skies (WSS), a biweekly astronomy feature, every two weeks on Friday mornings and on the following Wednesday evenings. On August 1 and 6, Olivia Salerno and Dr. Catherine Whiting of Colorado Mesa University will tell us about "Tides."

HAPPY OBSERVING!