BCAS OBSERVING HIGHLIGHTS for September 14 to 29, 2025, a "dark Moon period"
Black Canyon Astronomical Society (BCAS), southwest-central Colorado, USA

DATES & TIMES (MDT) FOR REGIONAL EVENTS AND EYE-CATCHING HAPPENINGS IN THE SKY:
September 13, 11:09 PM: Last quarter Moon rises early, far to northeast, near star Beta Tauri
September 13-24, 8:30 to after 11 PM: Explore the Milky Way under dark skies!
September 14, 4:20 to 6:54 AM (sunrise): Shadow of Jupiter's moon, Ganymede, crosses Jupiter
September 17, 7:00 PM on KVNF radio: "2025 AstroFest", Dan Wright/NPS
September 19, 4:43 to 6:30 AM: Crescent Moon very near Venus and Regulus! Spectacular!
September 19, 2 to 4 PM: Black Canyon of the Gunnison N. P., South Rim VC, AstroFest Sun watch
September 19, 7 to 8 PM: Montrose P.D. Community Room, AstroFest Program – Dan Wright/NPS
September 19, 7 to 9 PM: Montrose P.D. Community Room – BCAS meeting (with NPS program)
September 19-20, 11:09 PM to 1:34 AM: Saturn's moon, Titan, and its shadow cross Saturn
September 20, 6:00 to 8:00 PM: Curecanti N.R.A., AstroFest NPS Jr. Ranger Activities/Ranger Program
September 20, 8:30 to 10:00 PM: Curecanti N.R.A., AstroFest night-sky viewing with telescopes
September 21-29: 4:30 to 6:00 AM: Preview the bright stars of winter and winter Milky Way!
September 26, 10:00 AM on KVNF radio: Dark Skies and Bird Migration - Kate Fedack/WSDSC
September 26, 7:30 to 9:30+ PM: Cedaredge, "Starry Nights" with BCAS and SCVHS
September 27, 7:50 to 9:00 PM: Crescent Moon is 4 degrees east of bright, reddish star, Antares

SUMMARY. After twilight fades during this dark Moon period, explore the luminous star clouds of our Milky Way Galaxy, which extend from the south-southwestern horizon, across the zenith to the northeast. The "Summer Triangle" of bright stars, Vega, Altair, and Deneb, is near the zenith, and the constellations of autumn, including Aquarius, Pegasus, Pisces, and Andromeda, are rising in the east. Before dawn, preview the bright stars of winter in mild September temperatures.

September 22 is our fall equinox, when the Sun shines directly on Earth's Equator, as Colorado's daylight hours shorten and our nighttime hours lengthen rapidly.

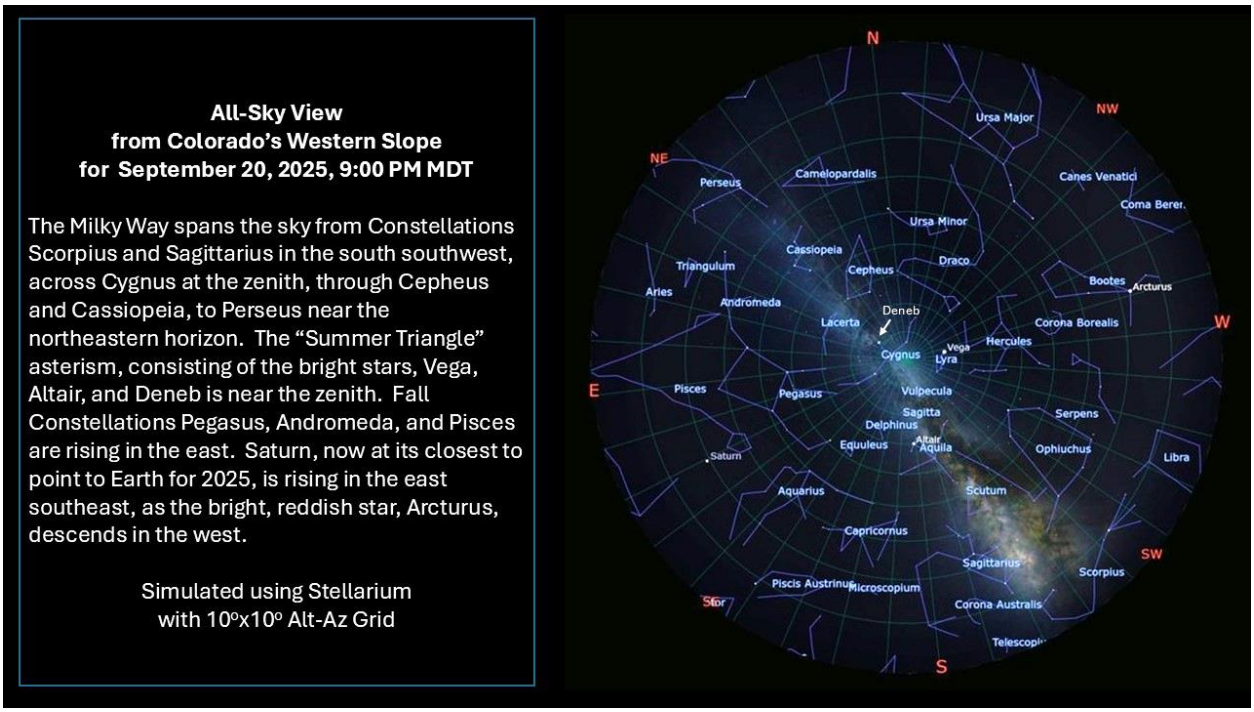
Mars is getting lost in bright evening twilight. But, as the sky darkens, Saturn rises in the east and remains visible all night long. Use binoculars or telescopes to spot Neptune, only 2 degrees north of Saturn. After 2 AM, with binoculars look for Uranus in Constellation Taurus, midway between the Hyades and Pleiades Star Clusters. Bright Jupiter rises in the east northeast after midnight, and Venus is still a brilliant morning star, rising in the east about 2 hours before the Sun.

The Moon reaches last quarter on the night of September 13-14, and from September 15 to 20, the crescent Moon wanes in the morning sky. The Moon is new on September 21, when it partially eclipses the Sun, as seen from parts of Earth's southern hemisphere. Watch the crescent Moon wax during evenings from September 23 to 28. The Moon reaches first quarter on September 29. Enjoy seeing earthshine delicately illuminate the nightside of the crescent Moon, especially on mornings from September 17 to 20 and on evenings from September 24 to 26 (binoculars can provide eye-catching views!). Be sure to enjoy a beautiful sight on September 19 between 4:43 AM and 6:30 AM MDT, as a slender crescent Moon (its nightside bathed in earthlight!) rises in the east, next to brilliant Venus and the first-magnitude star, Regulus!

A large active region has rotated onto the Earth-facing side of the Sun, and this region 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.

Look for predicted evening passes of the very bright International Space Station (ISS) from September 13 to 18 and from September 20 to 29. And there are predicted evening passes of the almost-as-bright Tiangong (Chinese) Space Station from September 13 to 22 and on September 24.

ENJOY A DARK SEPTEMBER SKY! Dark evenings in September are a favorite time for viewing the Milky Way! The luminous star clouds of our home galaxy extend from its bright central region in Constellations Scorpius and Sagittarius low in the south southwest, across the zenith in Constellation Cygnus, to its fainter outer reaches in Cassiopeia and Perseus in the northeast. The "Summer Triangle" asterism, consisting of bright stars Vega (in Constellation Lyra), Altair (in Aquila), and Deneb (in Cygnus), is near the zenith. Most of our spring stars have dopped below the western horizon, but the stars and constellations of autumn are rising in the east. These include the Constellations Aquarius, Pegasus, Andromeda, and Pisces. It's also a great time for viewing Saturn, which is rising higher in the east southeast after twilight fades. Use a planetarium app or the chart below to navigate our dark, September evening sky!



EQUINOX – SEPTEMBER 22. The northern hemisphere's "fall" equinox occurs on September 22 at 12:19 PM MDT. At that time the Sun shines directly on Earth's equator, as autumn begins for us in Colorado and spring begins in the southern hemisphere. Our nighttime hours are lengthening rapidly.

THE MOON. The Moon reaches **last quarter on the night of September 13-14** (exactly at 4:33 AM MDT on September 14), and from September 15 to 20, the crescent Moon wanes in the morning sky. The **Moon is new on September 21** (exactly new at 1:54 PM MDT), when it partially eclipses the Sun, as can be seen from parts of Earth's southern hemisphere. Watch the crescent Moon wax during evenings from September 23 to 28. The **Moon reaches first quarter on September 29** (exactly at 5:54 PM MDT).

On September 13 at 11:09 PM MDT, watch the last quarter Moon rise in the northeast near the star Elnath, aka Beta Tauri. On September 13-14, the Moon is about 5 degrees north of the ecliptic (the path of the Sun against the background stars) and about as far north as the Moon can ever appear. This northerly position causes this last quarter Moon to rise unusually early across the Western Slope of Colorado. In the wee hours of September 16, look for a 28%-illuminated, crescent Moon in Constellation Gemini, about 4 degrees north of the bright planet, Jupiter. **Then on September 19, between about 4:43 and 4:50 AM MDT, watch a skinny (5%-illuminated) crescent Moon rise just 0.3**

degree from brilliant Venus and one degree from the first-magnitude star, Regulus. This celestial trio may remain visible until around 6:30 AM MDT. This will be a spectacular sight, especially in binoculars! See the simulation for 5:30 AM MDT, below. This celestial grouping may be interesting to photograph with a telephoto lens or wide-field telescope. After 6:30 AM MDT, bright twilight ends the show. On September 24 at around 7:43 to 7:50 PM MDT, look for the 10%-illuminated, crescent Moon, as it descends from 5 to 3 degrees above the west-southwestern horizon, with Mars about 7 degrees north of the Moon. On September 27, from 7:50 to 9:00 PM MDT, the 32%-illuminated crescent Moon is in Constellation Scorpius, about 4 degrees east of the bright reddish star, Antares. Enjoy seeing earthshine delicately illuminate the nightside of the crescent Moon, especially on mornings from September 17 to 20 and on evenings from September 24 to 26 (binoculars can provide eye-catching views!). NASA has published a stunning visualization of lunar phases for year 2025. Another fun site is NASA's daily Moon guide. **Please do your crescent Moon spotting before sunrise and after sunset. NEVER chance looking at the Sun directly; serious eye damage can result.**

The Moon, Venus, and Regulus from Colorado's Western Slope for September 19, 2025, 5:30 AM MDT

On September 19 at 5:30 AM MDT, a skinny lunar crescent (only 5% illuminated by the Sun) is 8 degrees above the eastern horizon and less than 1 degree from brilliant Venus and about 1 degree from the bright, blue-white star, Regulus. At 5:30 AM the Sun is still 17° below the horizon and the sky is still quite dark. The simulated view (at right) is similar to what you may see in binoculars or wide-field telescopes. Note that earthshine delicately illuminates the brighter highlands and darker maria (lunar "seas") on the nightside of the crescent Moon. The spectacle may remain visible as late as 6:30 AM MDT. Simulated with Stellarium

MARS: A CHALLENGE IN EVENING TWILIGHT. The Red Planet, shining at magnitude +1.6, now sets below the west-southwestern horizon during astronomical twilight at 8:39 PM MDT on September 14 and at 8:05 PM MDT on September 29. After September 29, you may need binoculars to spot Mars, as it moves deeper into evening twilight. **Please do your Mars spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

SATURN – AT ITS CLOSEST AND BRIGHTEST, ALL NIGHT LONG! Now visible all night long, the Ringed Planet rises above the eastern horizon during bright civil twilight on September 14 at 7:41 PM MDT, and by September 29 Saturn rises before sunset at 6:42 PM MDT. During this period, Saturn, shining at magnitude +0.6, is at its closest and brightest for year 2025. Saturn is opposite the Sun from Earth on September 20, when the Ringed Planet's distance is 794 million miles. Through telescopes Saturn's disk appears 20 arc seconds wide, and its rings span 46 arc seconds. During 2025, Saturn's thin rings (150,000 miles wide but only 1000 ft thick!) appear nearly "edge-on" from our perspective on Earth.

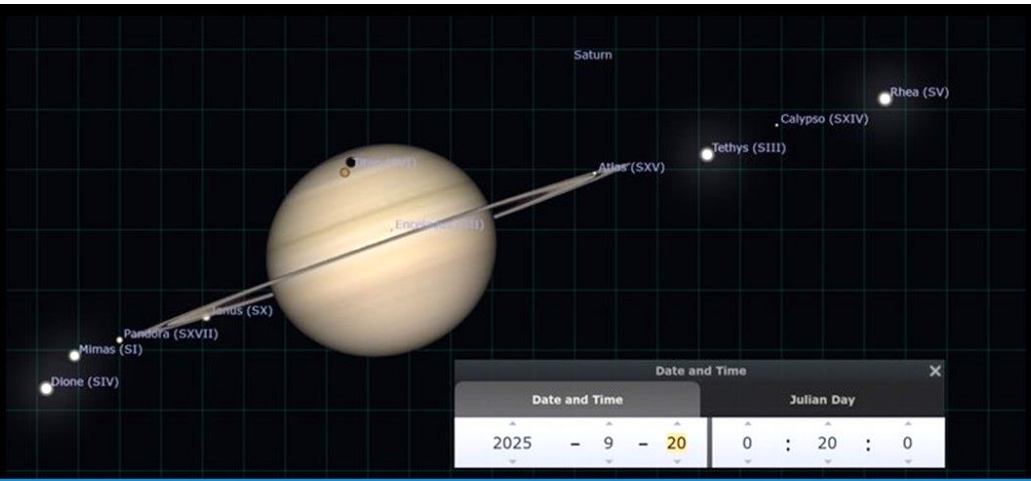
Saturn's rings are not as striking as they have been in the past few years (and will be a few years from now). When seen nearly edge-on, the rings are dimmer, making it easier to spot some of Saturn's mid-sized moons, like Tethys, Dione, Rhea, and Enceladus. Titan, Saturn's largest moon, is bright enough to see with just binoculars. You can follow the changing positions of Saturn's moons by using various planetarium apps.

SEE TITAN & ITS SHADOW MOVE ACROSS SATURN: SEPTEMBER 19-20 – BEST CHANCE UNTIL 2039!
Beginning in November 2024, the shadow of Saturn's moon Titan has moved across the Ringed Planet about every 16 days, and since April 29, 2025 these "shadow transits" (solar eclipses on Saturn!) have been visible in telescopes from the Western Slope. But opportunities for seeing these events will end on October 5-6. The transit on the night of September 19-20 is likely our best remaining chance to see a transit of Titan's shadow until year 2039. The September 19-20 transit fortuitously occurs when Saturn is exactly opposite the Sun in our sky and closest to Earth. And on September 19-20, we can see both Titan's shadow and Titan itself moving across the Ringed Planet (see simulation, below)!

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! From the Western Slope, the shadow transit on September 19-20 begins at 11:09 PM MDT, when Saturn is 39 degrees above the southeastern horizon. The Ringed Planet rises 46 degrees high in the south southeast by the middle of the transit at 12:20 AM MDT (see chart below). The shadow transit ends at 1:34 AM MDT, when Saturn is 48 degrees high in the south. Titan's orbital period of Saturn is just 1.5 hours short of 16 Earth days, so transits have been occurring every 16 days. After September 19-20, there will be only one more transit of Titan's shadow in 2025, on the night of October 5 to 6. Try to view the shadow transit on September 19-20 around the time of mid-transit, 12:20 AM MDT, when visibility of Titan's shadow may be best. If you wait, spotting Titan's shadow on October 5-6 may be challenging. On October 5-6, Titan's shadow will transit across Saturn's north polar region, and the contrast of the shadow with the darkened limb of Saturn may be very poor. After the transit on October 5-6, we will have to wait 15 years for the next group of Titan shadow transits! 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 considerably smaller than Titan. In the simulation below for 12:20 AM MDT, note that Saturn's moon Enceladus and its shadow are also transiting Saturn. It will be a major challenge to see or image 310-mile-wide Enceladus and its shadow.

Transits of Titan's shadow across Saturn

Date UTC	Date MDT	start MDT	middle MDT	end MDT	Saturn rises MDT
9/20/2025	9/19-20/2025	11:09 PM	12:20 AM	1:34 AM	19Sep, 7:23 PM
10/6/2025	10/5-6/2025	10:29 PM	11:32 PM	12:34 AM	5Oct, 6:18 PM
transit times from Sky & Telescope and Stellarium (converted to MDT by author)					
times for local Saturn rise are from Stellarium					



Saturn and Some of its Larger Moons, September 20, 2025, 12:20 AM MDT from the Western Slope (as simulated with Stellarium)

At 12:20 AM MDT on September 20, Saturn is 46 degrees above the southern horizon. Titan, the second largest moon in the Solar System, is crossing the Ringed Planet's northern hemisphere at high latitude. Titan's shadow is projected onto the planet just northwest of Titan.

NEPTUNE ALL NIGHT LONG. Not only can we see Saturn all night long during the September 14 to 29 period, with telescopes or binoculars we can also spot Neptune, the 8th Planet. Neptune is currently shining at magnitude +7.7 about 2 degrees north of Saturn, and you can use these links to find it:
https://theskylive.com/neptune-info
https://in-the-sky.org/findercharts.php?obj=P8&year=2025&month=9&day=1
You may be able to spot Neptune with binoculars, but you will need a telescope to resolve its 2.4 arc second-wide disk. Can you detect Neptune's blueish tint? The best time to look for Neptune may be from around 11 PM to 2 PM, when the 8th Planet is highest in the sky.

URANUS. Rising in the east northeast at about 10:19 PM MDT on September 14 and 9:20 PM MDT on September 29, Uranus is moving slowly through Constellation Taurus, about midway between the Hyades and Pleiades Star Clusters. Use these charts to find Uranus:
Printable finder charts for Uranus - In-The-Sky.org
Uranus: Complete Information & Live Data | TheSkyLive
At magnitude +5.7, you can see the 7th Planet easily with binoculars and perhaps even with eyes unaided, if skies are dark and transparent. However, you'll almost certainly need a telescope to resolve Uranus' 3.7 arc second-wide disk and to detect color. Most people perceive Uranus as either blue or green. How does it appear to you? Uranus rises before 10:30 PM MDT, but the best times to view the 7th Planet may be between about 2 AM MDT and the start of morning twilight, when Uranus is high in the sky.

JUPITER AND ITS MOONS IN THE MORNING. Jupiter, moving against the stars of Constellation Gemini, rises at about 1:46 AM MDT on September 14 and 12:57 AM MDT on September 29. Between September 14 and 29, the Giant Planet brightens from magnitude -2.04 to -2.11, as its distance from Earth decreases from 518 million to 498 million miles, and its apparent diameter increases from 35.4 to 36.8 arc seconds. For early risers, Jupiter is now easy to observe: On September 21 Jupiter rises 46 degrees above the eastern horizon by the onset of astronomical twilight at 5:29 AM MDT, and Jupiter

rises higher thereafter. Use a telescope or binoculars to spot Jupiter's four bright "Galilean" moons. You can identify them by their changing positions and referring to various planetarium apps.

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. For early risers, there's an optimally timed transit of Ganymede's shadow on the morning of September 14 (details below). 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 with telescopes having apertures as small as 3 inches. 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 this summer, and now Callisto's shadow is once again transiting Jupiter. No transits of Callisto's shadow are visible from the Western Slope during this period, but some will be observable in future months.

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

September 14, 2025, 4:20 AM to 7:30 AM MDT, Ganymede's large shadow crosses the southern hemisphere of Jupiter (Locally, this event begins before the onset of morning twilight with Jupiter 28 degrees above the eastern horizon, and the event ends after sunrise, which occurs at about 6:54 AM MDT).

September 16, 2025, 4:56 AM to 7:44 AM MDT, Europa's shadow crosses Jupiter (Locally, this event begins before the onset of morning twilight with Jupiter 37 degrees above the eastern horizon and ends after sunrise, which occurs at about 6:53 AM MDT. Look for the crescent Moon about 4 degrees to the left of Jupiter!).

September 18, 2025, 2:32 AM to 4:50 AM MDT, Io's shadow crosses Jupiter (Locally this event begins in a dark sky with Jupiter 8 degrees above the east-northeastern horizon and ends with Jupiter 36 degrees high in a dark sky).

September 25, 2025, 4:26 AM to 6:42 AM MDT, Io's shadow crosses Jupiter (Locally this event begins in a dark sky with Jupiter 36 degrees above the eastern horizon and ends with Jupiter 62 degrees high in bright twilight with the Sun only 5 degrees below the horizon).

VENUS – STILL A BRILLIANT "MORNING STAR"! Brilliant Venus rises in the east northeast at about 4:32 AM MDT on September 14, and at 5:08 AM MDT on September 29, before the start of morning twilight. Morning-by-morning, Venus is rising later, its angular separation from the Sun continuing to decrease, as it moves southeast against the starry background. But our "Sister Planet" still rises about 2 hours before the Sun. Venus shines steadily at magnitude -3.91 during his period. While Venus' distance from Earth increases from 133 million to 139 million miles, its gibbous phase waxes from 88% to 91% illuminated, exactly compensating for loss of brightness due to increasing distance. Between September 14 and 29

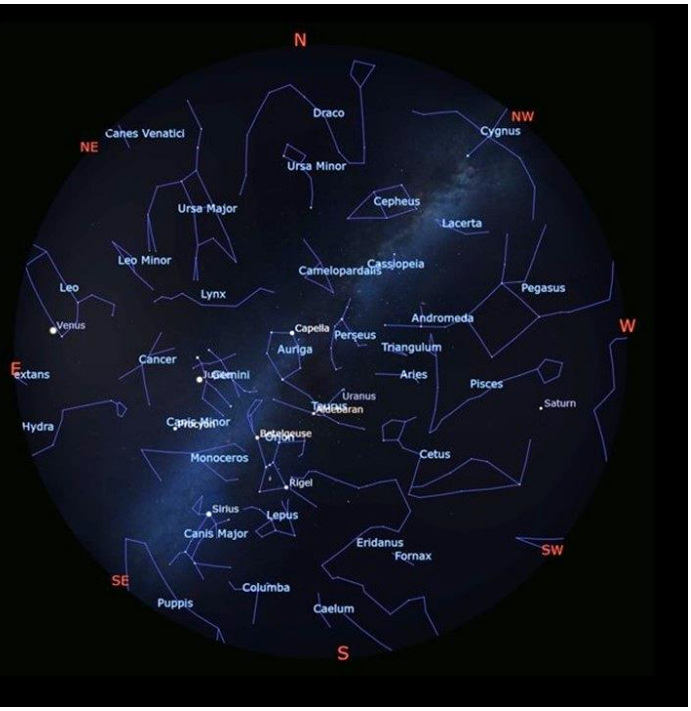
Venus' apparent diameter shrinks from 11.7 to 11.1 arc seconds. **On September 19, between about 4:43 and 4:50 AM MDT, watch brilliant Venus rise just 0.3 degrees to the right of a skinny (5%-illuminated) crescent Moon and less than one degree from the first-magnitude star, Regulus. This may be a spectacular sight, especially in binoculars! See simulated image under the discussion about the Moon (above). The celestial trio may remain visible until about 6:30 AM MDT. Venus and the Moon may remain visible even later, into bright twilight. Please do your Venus spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

PREVIEW THE BRIGHT WINTER STARS BEFORE DAWN! Thanks to "daylight time" and the Sun moving south in our sky, it's now still dark at 5:30 AM MDT. And it's even fairly dark at 6:00 AM MDT! This allows us to enjoy the spectacular stars of winter in mild temperatures! Use a planetarium app or the chart and notes below to navigate.

All-Sky View
from Colorado's Western Slope
for September 21, 2025, 5:30 AM MDT

The morning sky is dark at 5:30 AM MDT with the Sun still 18 degrees below the horizon and the Moon absent. This is a great time to enjoy the constellations and bright stars of winter in mild temperatures! Constellation Orion, with bright blue-white Rigel and reddish Betelgeuse, is well above the south-southeastern horizon. Constellation Auriga, with bright, yellow Capella, is nearly overhead, and Constellation Taurus, with its bright reddish star, Aldebaran, is just to the south. Sirius, the night sky's brightest star is rising higher in the southeast. The winter Milky Way spans the sky from the southeast, across the zenith to the northwestern horizon. Three bright planets add to the morning's luster: brilliant Venus, low in the east, Jupiter, high in the east, and Saturn, low in the west southwest.

Simulated using Stellarium



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 west at end of evening twilight and sets below the west-northwestern horizon after midnight. 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 September 13, 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. 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

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 CMEs that have triggered geomagnetic storms that caused auroras. As of 6 AM MDT on September 13, a large active region is rotating away from the Earth-facing side of the Sun, but another large active region has rotated into view. We may experience more M- and possibly X-class (extreme) flares and powerful CMEs during the next two weeks. Airglow and SAR arcs also result from high solar activity, and these phenomena have been photographed and/or observed from Colorado. The best 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 many people have seen and photographed auroras from Colorado earlier this year and last year. If we are lucky, we may see auroras from the Western Slope during this period. We can watch auroras in real-time from Yellowknife, Northwest Territories on an all-sky camera at the Canadian Space Agency's AuroraMax website. Like Colorado, Yellowknife is in the Mountain Time Zone. An aurora webcam at the University of Alaska-Fairbanks is two hours behind the Mountain Time Zone…
https://www.youtube.com/watch?v=O52zDyxg5QI

EARTH SATELLITE HIGHLIGHTS. The following predictions are for western Colorado, specifically Montrose. Numerous Earth satellites are visible every clear night. Satellites are visible only 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

September 13, 2025. International Space Station (ISS). 8:29 to 8:32 to 8:35 PM MDT. W to NNW to NNE. Max altitude 22 deg above NNW, max magnitude -1.4 (Passing through Coma Berenices, Canes Venatici, Ursa Major-Big Dipper, Camelopardalis, and Perseus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

September 13, 2025. Tiangong (Chinese Space Station). 8:30 to 8:33 to 8:35 PM MDT. W to N to ENE. Max altitude 48 deg above N, max magnitude -1.4, disappears into Earth shadow 24 deg above ENE (Passing through Coma Berenices, Ursa Major, Draco, Ursa Minor, Cepheus, Cassiopeia, and Andromeda). **Predictions for Tiangong are subject to change due to orbital adjustments. Check for updated predictions.**

September 14, 2025. Tiangong (Chinese Space Station). 9:09 to 9:12 PM MDT. WNW to NNW. Disappears into Earth's shadow at max altitude 44 deg above NNW, max magnitude -1.1 (Passing through Coma Berenices, Canes Venatici, Ursa Major, and Draco).

September 14, 2025. International Space Station (ISS). 9:20 to 9:21 to 9:22 PM MDT. NNW to N. Max altitude 11 deg above NNW, disappears into Earth's shadow 9 deg above N, max magnitude -0.7 (Passing through Coma Berenices, Ursa Major, and Camelopardalis). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

September 15, 2025. Tiangong (Chinese Space Station). 8:11 to 8:14 to 8:16 PM MDT. WNW to N to ENE. Disappears into Earth's shadow 17 deg above ENE, max altitude 46 deg above N, max magnitude -1.4 (Passing through Coma Berenices, Canes Venatici, Ursa Major, Draco, Ursa Minor, Cepheus, Cassiopeia, and Andromeda).

September 15, 2025. International Space Station (ISS). 8:30 to 8:32 to 8:33 PM MDT. NW to NNW to NNE. Max altitude 13 deg above NNW, max magnitude -0.9 (Passing through Coma Berenices, Ursa Major, Camelopardalis, and Perseus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

September 16, 2025. International Space Station (ISS). 7:41 to 7:43 to 7:45 PM MDT. WNW to NNW to NNE. Max altitude 17 deg above NNW, max magnitude -1.1 (Passing through Ursa Major, Camelopardalis, and Perseus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

September 16, 2025. Tiangong (Chinese Space Station). 8:50 to 8:53 PM MDT. WNW to NNE. Disappears into Earth's shadow near max altitude 63 deg above ENE, max magnitude -2.0 (Passing through Coma Berenices, Canes Venatici, Ursa Major/Boötes, Draco, Ursa Minor, and Cepheus).

September 17, 2025. Tiangong (Chinese Space Station). 7:51 to 7:54 to 7:57 PM MDT. WNW to N to E. Max altitude 51 deg above N, disappears into Earth's shadow 12 deg above E, max magnitude -1.6 (Passing through Coma Berenices, Canes Venatici, Ursa Major-Big Dipper, Draco, Ursa Minor, Cepheus, Lacerta, and Pegasus).

September 18, 2025. International Space Station (ISS). 7:42 to 7:43 to 7:44 PM MDT. NNW to N. Max altitude 11 deg above NNW, max magnitude -0.9 (Passing through Ursa Major, Camelopardalis, and Perseus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

September 18, 2025. Tiangong (Chinese Space Station). 8:30 to 8:33 to 8:34 PM MDT. WNW to SSW to ESE. Max altitude 87 deg above SSW, disappears into Earth's shadow 46 deg above ESE, max magnitude -2.2 (Passing through Coma Berenices, Boötes, Hercules, Lyra-near Vega, Cygnus, and Pegasus).

Additional evening passes of the very bright International Space Station (ISS) are predicted from September 20 to 29. And additional evening passes of the almost-as-bright Tiangong (Chinese) Space Station are predicted from September 19 to 22 and on September 24.

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 September 17 at 7:00 PM MDT, Park Ranger Dan Wright tells us about 2025 Black Canyon Regional AstroFest, to be held on September 19 and 20. Then on September 26 at 10:00 AM MDT, Kate Fedack of the Western Slope Dark Sky Coalition will explain why preserving dark skies is important for birds during their semiannual migrations.

HAPPY OBSERVING!