BCAS OBSERVING HIGHLIGHTS for July 7 to 21, 2026, a "dark Moon period"
Black Canyon Astronomical Society (BCAS), southwest-central Colorado, USA

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

July 6-15, 10:40 PM to 2 AM: Enjoy the "summer" Milky Way under dark, moonless skies!
July 7, 1:30 AM to 4:45 AM: Last quarter Moon about 6° above Saturn in Constellation Pisces
July 8, 6:00 PM: Western Slope Skies on KVNF radio
July 8 & 9, 9:35 PM to 10:25 PM: Brilliant Venus <1.5° from 1st-magnitude star, Regulus, in Leo
July 11, 3:35 AM to 4:50 AM: Crescent Moon 5° above & left from Mars in east northeast
July 12, 4:30 AM to 4:50 AM: Crescent Moon 1° below & right from Beta Tauri in east northeast
July 14-21, 2:00 AM to 4:00AM: Preview our autumn stars under a dark, moonless sky
July 16, 9:00 PM to 9:45 PM: Crescent Moon 2° left of Regulus & 6° below brilliant Venus
July 17, 10:00 AM: Western Slope Skies on KVNF radio
July 17, 9:00 PM to 10:00 PM: Crescent Moon 7° left of brilliant Venus
July 20, 9:30 to 11:30 PM: Fat crescent Moon 3° south of 1st-magnitude star, Spica, in Virgo

SUMMARY. Enjoy viewing the striking Milky Way during this dark Moon period! On evenings from July 6 to 15, the Milky Way rises high in the east under dark, moonless skies. With your eyes alone, or better yet, with binoculars, explore our home galaxy's star clouds, glowing nebulae, dusty dark nebulae, and star clusters! Venus shines brilliantly in the west for more than an hour after sunset, and you may see Jupiter shining through bright, evening twilight until around July 7. Before dawn, early risers can preview the stars and constellations of our "autumn evening sky." As a bonus, "early birds" can spot Saturn and Mars, and with binoculars or telescopes, Neptune and Uranus.

The Moon reaches last quarter on July 7, and from July 8 to 13, the crescent Moon wanes. The Moon is new on July 14. From July 15 to July 20, watch the crescent Moon wax in the evening sky. The Moon reaches first quarter on July 21. Enjoy seeing earthshine delicately illuminate the nightside of the lunar crescent, especially on mornings from July 9 to 12, and on evenings from July 15 to 19 (binoculars can provide eye-catching views!). A fun website for enjoying the Moon is NASA's daily Moon Guide.

A large active region with sunspots has rotated onto the Earth-facing side of the Sun, and on July 4 it discharged an X-class (extreme) solar flare. 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 and crescent Moon 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. From May through July, Earth's northern hemisphere is tilted toward the Sun, and from Colorado it's possible to see satellites in the northern sky through much of the night. Multiple passes of the International Space Station (ISS) are predicted on many nights from July 6 to 21 (check for updates). A predawn pass of the Tiangong (Chinese) Space Station is predicted for July 7, and evening passes of Tiangong are predicted for July 7 to 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 ").

VENUS: THAT BRILLIANT "EVENING STAR"! Dazzling Venus, shining in the west after sunset, brightens from magnitude -4.10 to -4.21 during this period, as it moves southeastward through Constellation Leo. You can spot Venus about 20 degrees above the western horizon shortly after sunset in bright twilight, and our "Sister Planet" remains visible for more than an hour afterward. Venus sets in the west northwest after twilight's end at about 10:58 PM MDT on July 6 and at about 10:38 PM MDT on July 21. As Venus' angular separation from the Sun continues to increase, there's a southward component in its mostly eastward motion near the ecliptic (the Sun's apparent path across our sky). These circumstances cause Venus to set a bit earlier night-by-night, as seen from the Western Slope.

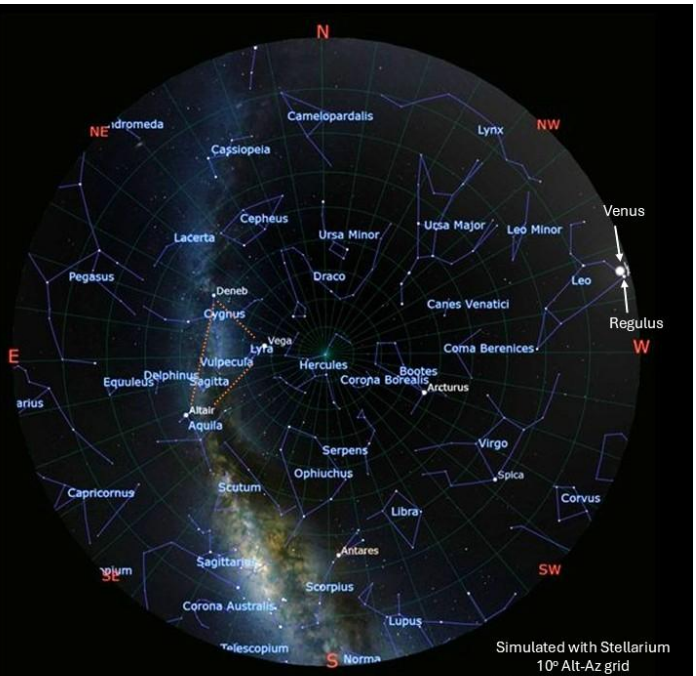
Through telescopes, Venus' gibbous phase wanes from 67% illuminated on July 6 to 60% illuminated on July 21, as its distance from Earth decreases from 93 million to 67 million miles, and its apparent diameter increases from 16.8 to 19.0 arc seconds. Venus will remain a dazzling "evening star" through the summer of 2026. On the evenings of July 8 and 9 between 9:35 and 10:25 PM MDT, spot Venus as our "Sister Planet" appears less than 1.5 degree from Leo's first-magnitude star, Regulus (viewing this pair through binoculars may be interesting!). Look for the crescent Moon below Venus on the evening of June 16 and left of Venus on June 17. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

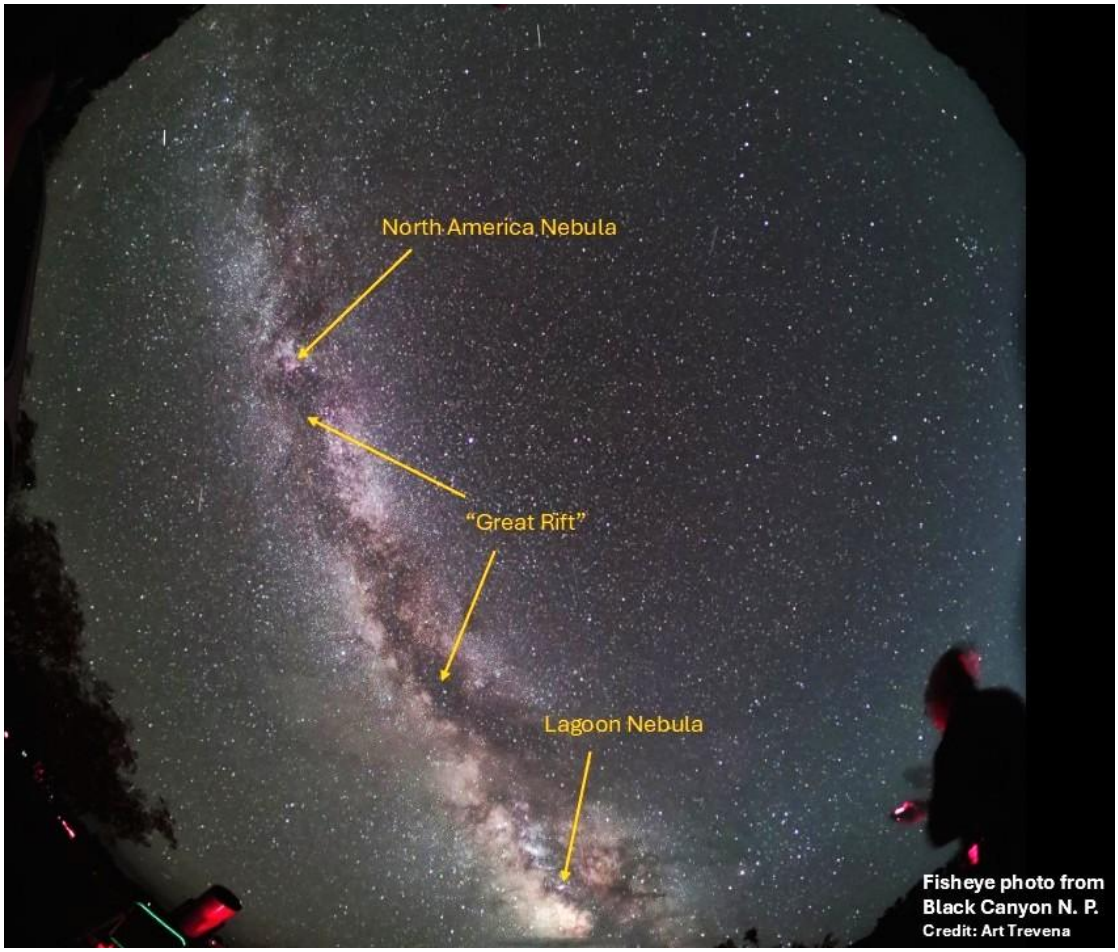
FAREWELL TO JUPITER. Jupiter is rapidly disappearing from the evening sky. The Giant Planet sets during nautical twilight at around 9:35 PM MDT on July 6 and 9:32 PM MDT on July 7. After July 7 Jupiter sets earlier still, rendering the Giant Planet nearly invisible. On July 7, Jupiter is 581 million miles from Earth, and its apparent diameter spans 31.5 seconds. Jupiter will be at superior solar conjunction on July 29, when it will be 586 million miles from Earth. Jupiter will enter our predawn sky by August 15, when it will appear within one degree of Mercury. **Please do your Jupiter spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

THE MILKY WAY UNDER DARK SKIES! The Milky Way ascends high in the eastern sky during dark July evenings. With the Moon absent from July 6 to 15, it's a great time to explore our home galaxy with binoculars (or just with your eyes unaided!). Take in the Milky Way's star clouds, star clusters, glowing bright nebulae, and dusty, dark nebulae! To navigate, use a planetarium app or the chart on the next page. From Scorpius in the south through Cygnus high in the east northeast, the Milky Way is divided into two parts by the "Great Rift", a zone of dust clouds that blocks light from more distant stars and nebulae (refer to the chart and the "fisheye" photo below the chart). The Lagoon Nebula (aka M8) in Constellation Sagittarius is a star forming region that, together with its associated star cluster (NGC 6530), is bright enough to spot with your eyes unaided. The North America Nebula in Constellation Cygnus (aka NGC 7000) is a star-forming nebula that you can spot with binoculars. Take a time-exposure photo of the Sagittarius region with a tripod-mounted camera (even a smart phone camera will do). You may find that the Lagoon Nebula and some other bright nebulae appear reddish. This red light is emitted by hydrogen atoms that are excited by intense ultraviolet radiation from hot, young stars.

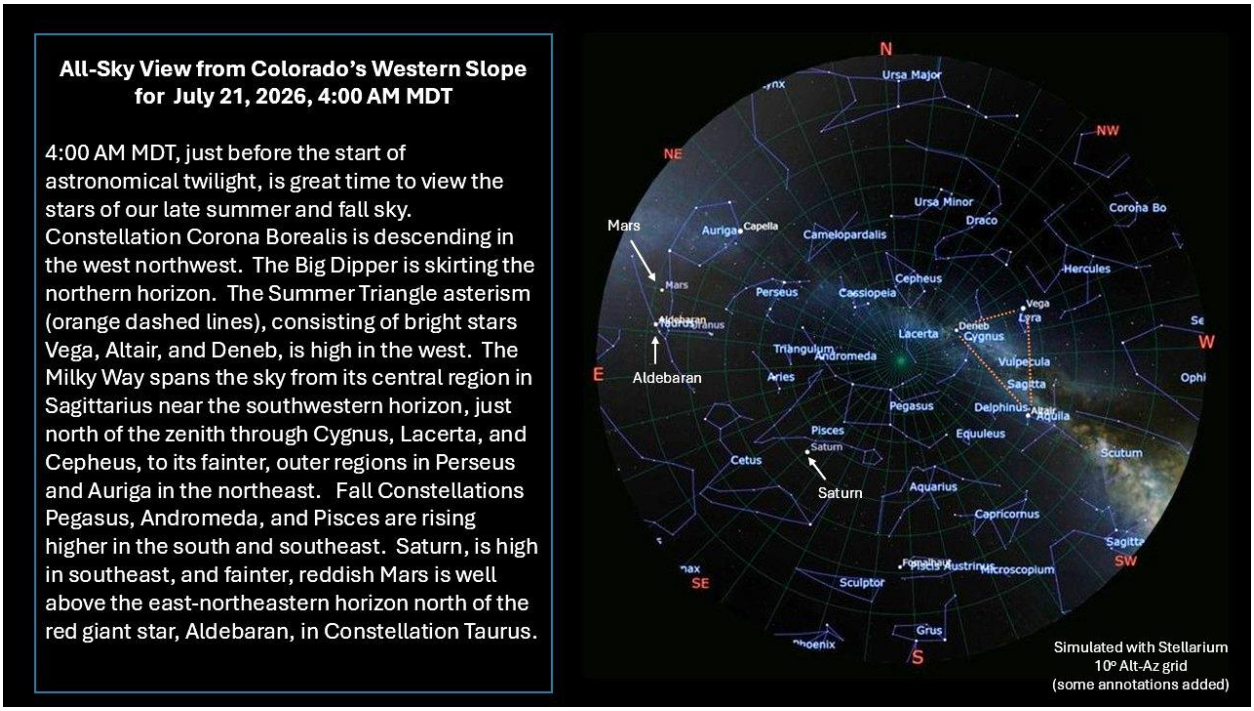
All-Sky View from Colorado's Western Slope for July 8, 2026, 10:45 PM MDT

The end of astronomical twilight, around 10:45 PM MDT, is great time to enjoy the dark skies above our Western Slope! Spring Constellations Leo and Virgo are descending toward the western horizon, but Corona Borealis and Boötes with the bright, reddish star, Arcturus, are still high in the western sky. Just above the western horizon on July 8, brilliant Venus is about 1.5 degrees north of the first-magnitude star, Regulus. Hercules is at the zenith. Draco is high in the north, and the Big Dipper is descending in the northwest. The Milky Way spans the sky, from its bright central regions in Scorpius, Sagittarius and Scutum in the south through Aquila and Cygnus, high in the east, to its fainter outer regions in Lacerta, Cepheus, and Cassiopeia in the northeast. The red supergiant star, Antares, is low in the south. The Summer Triangle asterism (orange dashed lines), consisting of bright stars Vega, Altair, and Deneb, is high in the east.





THE PREDAWN SKY. From July 14 to 21 between 2 AM and 4 AM MDT, early risers can preview the stars and constellations of our "autumn evening sky" under dark, moonless conditions. Use a planetarium app or the chart below to navigate. On July 21 at around 4 AM, the Milky Way extends from Sagittarius near the southwestern horizon, through Constellations Cygnus and Cepheus just north of the zenith, to its outer regions in Perseus and Auriga in the northeast. At 4 AM MDT, Saturn is high in the southeast, and in the east northeast, look for reddish Mars north of the red giant star, Aldebaran, in Constellation Taurus. Mars currently is fainter than Aldebaran and likely twinkles less than Aldebaran (or Mars may not twinkle at all).



A CRESCENT MOON: WANING, THEN WAXING. The Moon reaches **last quarter on July 7** (exactly at 1:29 PM MDT), and from July 8 to 13, the crescent Moon wanes. The **Moon is new on July 14** (exactly new at 3:43 AM MDT). From July 15 to July 20, watch the crescent Moon wax in the evening sky. **The Moon reaches first quarter on July 21** (exactly at 5:05 AM MDT).

On July 7 from 1:30 AM to 4:45 AM MDT, look for the last quarter Moon about 6 degrees above Saturn in Constellation Pisces. On July 11 between about 3:35 AM and 4:50 AM MDT, early risers can see the 12%-illuminated, crescent Moon about 5 degrees above and left from reddish Mars. On July 12 between about 4:30 AM and 4:50 AM MDT, look for the 6% illuminated crescent Moon just 1 degree below and to the right of the 1.65-magnitude star, Elnath (aka Beta Tauri). On July 16 between about 9:00 PM and 9:45 PM MDT, look for the 10% illuminated crescent Moon about 2 degrees to the left of first-magnitude Regulus and 6 degrees below brilliant Venus. On July 17 between about 9:00 PM and 10:00 PM MDT, look for the 18%-illuminated, lunar crescent about 7 degrees to left of Venus. On the evening of July 20, a "fat" crescent Moon passes about 3 degrees south of the first-magnitude star, Spica, in Constellation Virgo. Enjoy seeing earthshine delicately illuminate the nightside of the crescent Moon, especially on mornings from July 9 to 12, and on evenings from July 15 to 19 (binoculars can provide eye-catching views!). A fun website for enjoying the Moon 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.

WILL A BRIGHT NOVA ("NEW" STAR) ERUPT IN CORONA BOREALIS? Will there be a bright "new" star in Constellation Corona Borealis sometime soon, if only briefly? Corona Borealis is more than 60 degrees above the south-southeastern horizon as the sky darkens, about 70 degrees high in the south between 10 PM MDT and midnight, and it remains visible in the west and west northwest until about 4 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 6, 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

SATURN AFTER MIDNIGHT. Saturn rises in the east at about 12:54 AM MDT on July 7 and around midnight on the night of July 20-21. During this period, the Ringed Planet brightens from magnitude +0.75 to +0.68, as its distance from Earth decreases from 873 million to 852 million miles. Through telescopes, Saturn's disk appears 18 arc seconds wide, and its rings span 42 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. Saturn will be well placed for evening viewing by late summer and fall.
On July 7 from 1:30 AM to 4:45 AM MDT, Saturn is about 6 degrees southeast of the last quarter Moon in Constellation Pisces.

NEPTUNE AFTER MIDNIGHT. The 8th Planet, Neptune, at magnitude of +7.75, is visible after midnight, but we need a telescope, or at least binoculars, to see it. On July 7, Neptune is more than 20 degrees above the east-southeastern horizon by 2:15 AM MDT. Neptune's blueish disk appears only 2.3 arc seconds wide. Neptune is 2.75 billion miles from Earth during this period. You can use this link to find Neptune:
https://theskylive.com/neptune-info

URANUS BEFORE DAWN. Uranus rises above the east-northeastern horizon before morning twilight at about 3:04 AM MDT on July 7 and 2:11 AM MDT on July 21. 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' 3.5 arc second-wide disk and to detect color easily. Most people perceive Uranus as either blue or green. How does it appear to you? The best times to view the 7th Planet may be between 4:30 and 4:50 AM MDT, when Uranus rises more than 15 degrees above the horizon. You can use this link to find Uranus: https://theskylive.com/uranus-info. Uranus appears within 3 degrees of reddish Mars on July 7, but by July 21 the rapidly moving Red Planet is 10 degrees east of Uranus.

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

MARS BEFORE DAWN. Reddish Mars, shining at magnitude +1.4, now rises well before dawn. On July 7 Mars rises in the east northeast at around 3:12 AM MDT, just before the start of astronomical twilight. By July 21, Mars rises at about 2:52 AM MDT. Mars is still on the far side of the Sun from our perspective; the Red Planet is 194 million miles distant on July 7 and 190 million miles distant on July 21. Through telescopes, Mars' reddish disk still appears tiny, about 4.5 arc seconds wide 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. Look for these two reddish objects on July 14 between 4:00 and 4:30 AM MDT, when they are closest, only 5 degrees apart. Aldebaran is currently brighter than Mars (at magnitude +0.85 vs Mars at +1.4). You may also distinguish Aldebaran from Mars from Aldebaran's scintillation (or twinkling). Planets generally shine with a steadier light than stars. On July 11 between about 3:35 AM and 4:50 AM MDT, early risers can see Mars about 5 degrees below the 12%-illuminated, crescent Moon. **Please do your Mars spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

THE SUN. As of July 6, some large sunspots have rotated away from the Earth-facing side of the Sun, but a large active region with sunspots rotated into view on July 4, and it's been creating some "fireworks", including an X-class (extreme) solar flare on July 4 and an M-class (moderate) flare on July 5. 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. From May through July, Earth's northern hemisphere is tilted toward the Sun, and from Colorado it's possible to see satellites in the northern sky through much of the night. 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.

Multiple passes of the International Space Station (ISS) are predicted on many nights from July 6 to 21 (check for updates). A predawn pass of the Tiangong (Chinese) Space Station is predicted for July 7, and evening passes of Tiangong are predicted for July 7 to 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!