

BCAS OBSERVING HIGHLIGHTS for June 21 July 7, 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:

June 20, 9:30 PM to 10:30 PM: Brilliant Venus $<2^\circ$ above Beehive Star Cluster (use binoculars!)

June 21-24, 2 AM to 3:45 AM: View our late summer & fall stars under a dark, moonless sky

June 21, 2:24 AM: June solstice, our longest day & shortest night; astronomical summer begins

June 22 & 23, 9:25 to 9:45 PM: Mercury 4° below and to right of bright Jupiter (use binoculars)

June 23-24, 9:30 PM to 1:30 AM: Gibbous Moon east of first-magnitude star, Spica, in Virgo

June 24, 6:00 PM: [Western Slope Skies](#) on KVN radio

June 24-26 (all night long): Has T Coronae Borealis (a recurrent nova) erupted yet, as predicted?

June 26-30, 4:05 AM to 4:40 AM: Mars $< 5^\circ$ from Pleiades Star Cluster in east northeast (binoculars)

June 26-27, 9:30 PM to 3:30 AM: Gibbous Moon just east of reddish star, Antares, in Scorpius

June 27, 9:00 PM to 9:30 PM: Look for Ganymede’s shadow crossing Jupiter (use telescopes)

June 29, 9:00 PM to 9:40 PM: Full Moon rises in southeast within Constellation Sagittarius

July 3, 10:00 AM: [Western Slope Skies](#) on KVN radio

July 4, 4 AM to 4:45 AM: Mars & Uranus $< \frac{1}{4}$ degree apart in east northeast! (binoculars & telescopes)

July 5-7, 10:40 PM to 11:45 PM: Enjoy our late spring & summer stars under a dark, moonless sky

July 7, 1:30 AM to 4:45 AM: Last quarter Moon about 6° above Saturn in Constellation Pisces

SUMMARY. There’s lots to enjoy in our skies during this “bright Moon period”! Dazzling Venus and bright Jupiter still dominate the western sky just after sunset, although, night-by-night, Jupiter gets lower in evening twilight. Mercury rapidly disappears from the evening sky after June 27. But on June 22 and 23 between 9:25 PM and 9:45 PM MDT, you can use bright Jupiter as a guide for spotting the fainter Innermost Planet with binoculars: Mercury appears about 4 degrees below and to the right of the Giant Planet. Early risers can see Saturn and Mars with eyes unaided before dawn, and “early birds” can spot Uranus and Neptune with binoculars and telescopes. On July 4 between 4:00 AM and 4:45 AM MDT, use binoculars (or, better yet, a telescope) to spot Uranus less than $\frac{1}{4}^\circ$ from reddish Mars above the east-northeastern horizon. This is the closest planetary conjunction of 2026! Astronomer Jean Schneider of Paris Observatory has predicted that T Coronae Borealis (T CrB), a recurrent nova, may erupt around June 25. Keep watch on Corona Borealis to see if this “new star” becomes the brightest (or second brightest) star in this delightful spring/summer constellation!

The Moon reaches first quarter on the night of June 21, and from June 22 to 28 watch the gibbous Moon wax. The Moon is full on the night of June 29-30; watch it rise in the southeast between 9:00 PM and 9:40 PM MDT on July 29. From July 1 to 6, the gibbous Moon wanes. The Moon reaches last quarter on July 7. [NASA’s daily Moon Guide](#) is a fun website for enjoying the Moon, as it moves through its phases.

As of June 20, there is a large active region rotating onto the Earth-facing side of the Sun. We may experience more M-class (moderate) and possibly X-class (extreme) flares and powerful coronal mass ejections (CMEs). It’s possible that CMEs and flares from the Sun could trigger auroras and airglow that are visible from the Western Slope. [View the Sun safely and in “real-time” via the internet.](#) Please do your planet spotting when the Sun is below the horizon; never risk viewing the Sun without adequate eye protection, as serious eye damage can result.

Numerous Earth satellites are visible every clear evening and morning. 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 June 21 through July 7 (subject to change). Predawn passes of the

Tiangong (Chinese) Space Station are predicted from June 21 to July 7, and an evening Tiangong pass is predicted for July 7 (subject to change). Find updated times for local passes of bright satellites at these links (be sure to set applications for your location and time zone):

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

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

Note: The apparent brightness of sky objects is measured in “magnitude” units. Many bright stars are magnitude +1, while the faintest stars easily visible to unaided eyes under dark skies are magnitude +6. Some of the brightest stars are magnitude 0 (e.g., Vega, Arcturus), while the brightest sky objects have negative magnitudes (e.g., Sirius at -1.5, Jupiter at -2 to -3, Venus at -4 to -5, the full Moon at -12 to -13, and the Sun at -27 magnitude). Angular distances on the sky are usually cited in degrees of arc (often abbreviated as °). Helpful ways to estimate 1, 5, 10, 15, and 25 degrees of arc can be found here:

<https://www.timeanddate.com/astronomy/measuring-the-sky-by-hand.html>

One degree can be subdivided into 60 arc minutes (abbreviated as ‘), and one arc minute is subdivided into 60 arc seconds (abbreviated as “).

THE MOON. Moon reaches first quarter on the night of June 21 (exactly at 3:55 PM MDT). From June 22 to 28, watch the gibbous Moon wax. **The Moon is full on the night of June 29-30** (exactly full at 5:56 PM MDT on June 29). From July 1 to 6, the gibbous Moon wanes. The Moon reaches **last quarter on July 7** (exactly at 1:29 PM MDT). [NASA’s daily Moon Guide](#) is a fun website for enjoying the Moon, as it moves through its phases.

On the night of June 23-24, the waxing gibbous moon is east of the 1st magnitude star, Spica, in Constellation Virgo. On June 26-27, the waxing gibbous Moon is west of 1st magnitude Antares, appearing less than 4 degrees from this red supergiant star by moonset at about 3:30 AM MDT on June 27. On June 29 between 9 PM and 9:40 PM MDT, watch the full Moon rise in the southeast within the “teapot” asterism of Constellation Sagittarius. As seen from our mid-northern latitude, this full Moon rises relatively late, because it’s 4 degrees south of the ecliptic, the apparent path of the Sun through our sky. The Moon’s orbit of Earth is elliptical, and the June 29 full Moon (as was also the case on May 30-31) occurs near “apogee”, when the Moon is farthest from Earth. Does the rising Moon appear smaller than usual? Maybe, but maybe not! Even though the full Moon on June 29 is more distant than the average full Moon (250,800 miles Vs. 238,000 miles) and appears about 5% less wide than on average, many of us perceive the rising Moon as very large due to [the Moon illusion effect](#). 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.

VENUS: THAT BRILLIANT “EVENING STAR”! Dazzling Venus brightens from magnitude -4.02 to -4.11 in the west during this period, as it moves southeastward from Constellation Cancer into Constellation Leo. You can spot Venus about 20 degrees high in the west shortly after sunset in bright twilight, and our “Sister Planet” remains visible for almost two hours afterward. Venus sets in the west northwest well after twilight’s end at about 11:14 PM MDT on June 21 and at about 10:55 PM MDT on July 7. As Venus’ angular separation from the Sun is increasing, 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 73% illuminated on June 20 to 66% illuminated on July 7, as its distance from Earth decreases from 104 million to 92 million miles, and its apparent diameter increases from 15.0 to 16.9 arc seconds. Venus will remain a dazzling “evening star” through the summer of 2026. On June 20 between about 9:30 and 10:30 PM MDT, view through binoculars to see Venus less than 2 degrees above the Beehive Star Cluster (aka M44), a striking sight! On July 7

between about 9:30 PM and 10:30 PM MDT, look for Venus about 2 degrees west of Leo's first-magnitude star, Regulus. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

MERCURY: FAREWELL TO THE SECOND "EVENING STAR." From late May to the middle of June, we in Earth's northern hemisphere enjoyed Mercury's best evening appearance of 2026. But Mercury's evening show is closing fast, as the "Speedster Planet" fades and descends into glaring twilight. On June 20 between 9:30 PM and 10:00 PM MDT, look for Mercury, shining at magnitude +0.9 in the west northwest, as it drops from 7 to only 2 degrees above the horizon. On June 22 and 23 between 9:25 PM and 9:45 PM MDT, using binoculars, look for Mercury, now fainter than magnitude +1.0, about 4 degrees below and to the right of bright Jupiter, as the Innermost Planet descends from 5 to 3 degrees toward the west-northwestern horizon. After June 27, Mercury fades below magnitude +1.7, becoming invisible about two weeks before its [inferior solar conjunction](#) on July 12. As seen through telescopes, Mercury's crescent wanes from 29% illuminated on June 20, to 25% illuminated on June 22, to only 16% illuminated on June 27, as its apparent diameter increases from 9.1, to 9.5, to 10.5 arc seconds. Mercury is 68 million miles distant from Earth on June 20 and 60 million miles distant on June 27. When at inferior solar conjunction on July 12, Mercury will be only 53 million miles distant, but invisible in the Sun's glare. **Please do your Mercury spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

JUPITER DESCENDS INTO EVENING TWILIGHT. Night-by-night, Jupiter appears lower in the west northwest, as it descends into brighter evening twilight. You may first spot Jupiter shortly after sunset. Jupiter sets below the west-northwestern horizon at about 10:30 PM MDT on June 20 and at about 9:35 PM MDT on July 7. On June 21, Jupiter moves from Constellation Gemini into Constellation Cancer. Although Jupiter still shines brightly at magnitude -1.8 during this period, twilight glare is diminishing the Giant Planet's luster. Jupiter's distance from Earth increases from 571 million miles on June 20 to 581 million miles July 7, as its apparent diameter decreases from 32.1 to 31.5 arc seconds. That's still large enough for resolving Jupiter's disk with binoculars. On June 22 and 23 between 9:25 PM and 9:45 PM MDT, using binoculars, look for fainter Mercury (magnitude +1) about 4 degrees below and to the right of much brighter Jupiter. **Please do your Jupiter spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

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 the 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 on Jupiter, and its shadow is usually the easiest to spot. Shadows of all 4 Galilean moons can be observed transiting Jupiter with telescopes having apertures as small as 3 inches. Shadow transits of Io and Europa occur frequently, because Io orbits Jupiter every 1.8 Earth days, and Europa every 3.6 days. Ganymede and Callisto have longer orbital periods (around Jupiter), 7.2 and 16.7 Earth days, respectively, so their shadows cross Jupiter less frequently.

June 27, 2026, 7:50 PM to 11:26 PM MDT, Ganymede's shadow crosses Jupiter (Locally, this event begins in daylight with Jupiter 25 degrees above the western horizon and ends long after Jupiter sets. From the Western Slope, 9:00 PM to 9:30 PM MDT may be the best time to observe this event in twilight, as Jupiter descends from 12 to 6 degrees above our west-northwestern horizon).

July 1, 2026, 7:24 PM to 10:10 PM MDT, Io's shadow crosses Jupiter (Locally, this event begins in daylight with Jupiter 28 degrees above the western horizon and ends after Jupiter sets at about 9:55 PM MDT. The best time to observe this event may be around 9:15 PM MDT).

WILL A BRIGHT NOVA ("NEW" STAR) ERUPT ON OR ABOUT JUNE 25? 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 5 AM MDT on June 20, T CrB had not yet erupted. [Astronomer Jean Schneider predicted that an eruption is most likely on or about June 25, 2026, or on February 8, 2027.](#) **Keep watch to see if Jean Schneider's predicted eruption for June 25 is "on the mark"!** 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 IN THE EARLY MORNING. Saturn rises in the east at about 1:55 AM MDT on June 21 and 12:54 AM MDT on July 7. During this period, the Ringed Planet brightens from magnitude +0.82 to +0.75, as its distance from Earth decreases from 897 million to 873 million miles. Through telescopes, Saturn's disk appears about 17.5 arc seconds wide, and its rings span about 41 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.

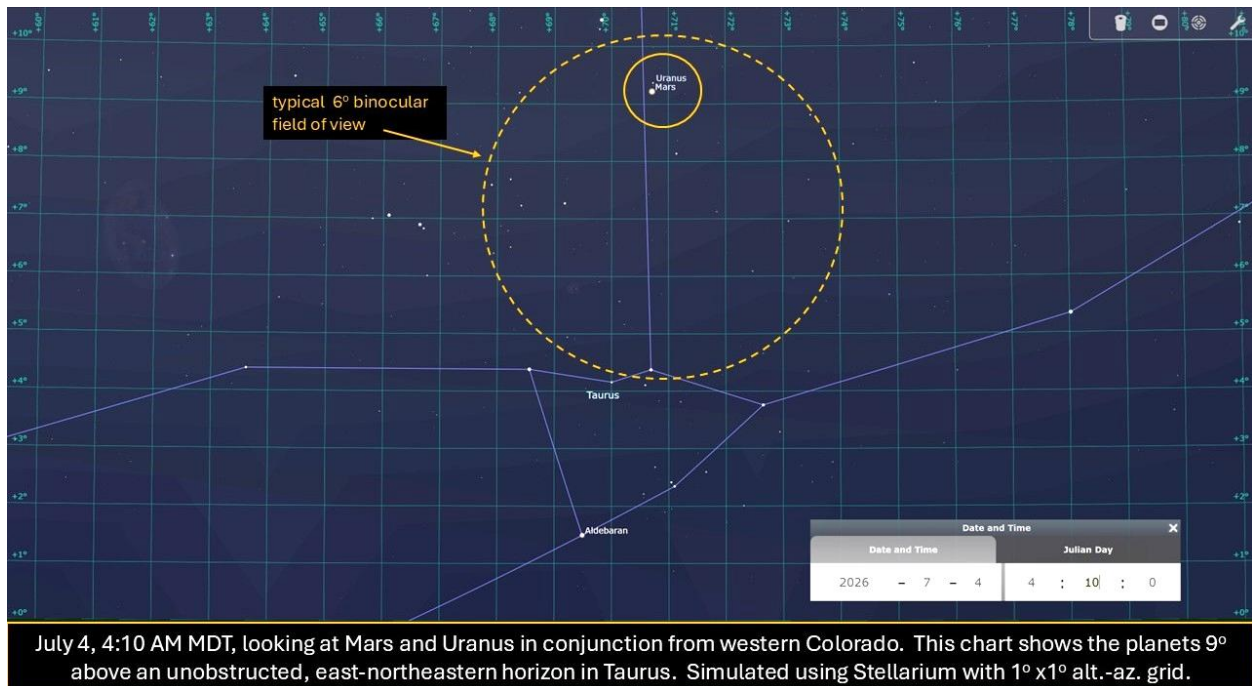
MARS BEFORE DAWN. Mars, shining at magnitude +1.3 to +1.4, is now easy spot before dawn. On June 21 Mars rises in the east northeast at around 3:40 AM MDT, just before the start of astronomical twilight. By July 7, Mars rises at about 3:12 AM MDT. Mars is still on the far side of the Sun from our perspective; the Red Planet is 198 million miles distant on June 21 and 194 million miles distant on July 7. 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. From June 26 to 30 between 4:05 AM and 4:40 AM MDT, early risers can spot Mars < 5 degrees to the right of and then below the famous Pleiades Star Cluster (M45). In binoculars, Mars' reddish hue should contrast nicely with the blue-white stars of the Pleiades. On the morning of July 4, Mars has a very close conjunction with Uranus (see item below). **Please do your Mars spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

NEPTUNE BEFORE DAWN. The 8th Planet, Neptune, at magnitude of +7.8, is also visible before dawn, but we need a telescope, or at least binoculars, to see it. On June 21, Neptune is more than 20 degrees above the east-southeastern horizon by 3:15 AM MDT. Neptune's blueish disk appears only 2.3 arc

seconds wide. Neptune is 2.8 billion miles from Earth during this period. You can use this link to find Neptune:

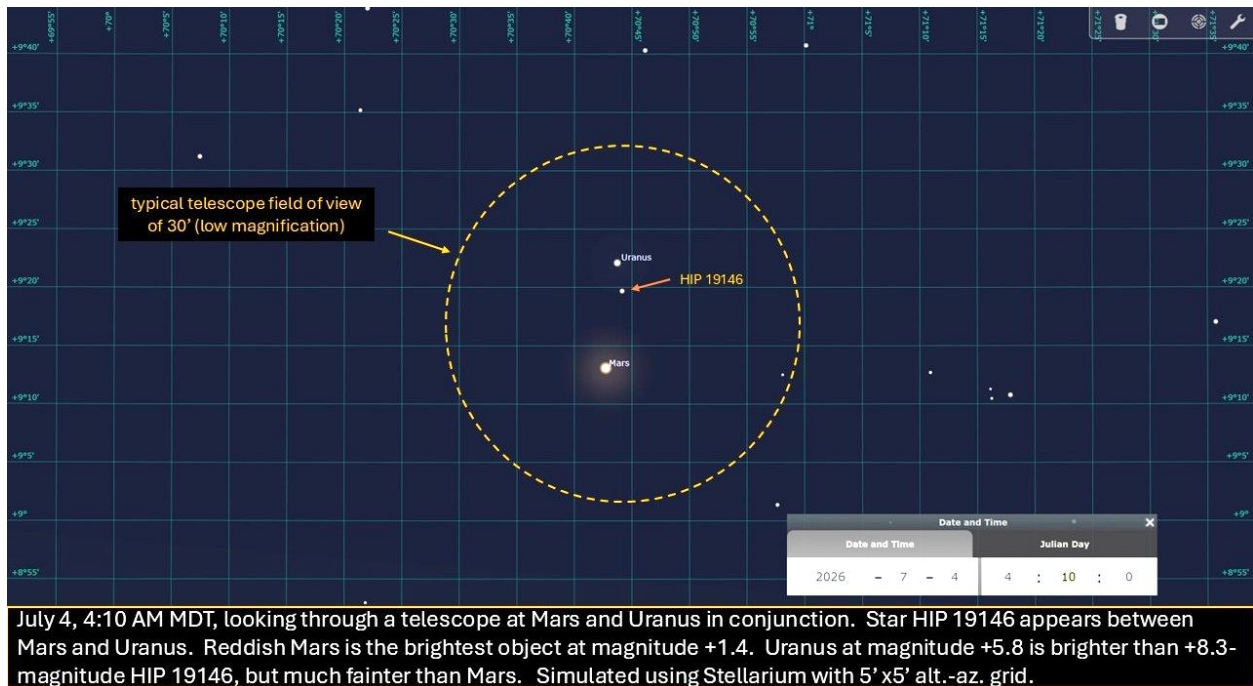
<https://theskylive.com/neptune-info>

URANUS MEETS MARS: JULY 4, 4:00 AM to 4:45 AM MDT. Uranus is just emerging from morning twilight. Typically, it would be challenging to spot Uranus so low in the sky during this period. However, on the morning of July 4, the 7th Planet has an amazingly close meeting with Mars in Constellation Taurus! This is the closest planetary conjunction of 2026, with Mars and Uranus appearing less than $\frac{1}{4}$ degree apart in the predawn sky! On July 4 between 4:00 AM and 4:45 AM MDT, scan above the east-northeastern horizon to spot reddish Mars, which is likely visible with eyes unaided. Then view through binoculars to spot Uranus just above Mars, which at magnitude +5.8 is considerably fainter than the +1.4 magnitude Red Planet. You need binoculars (or a telescope) to spot Uranus. Don't confuse Mars with the reddish star, Aldebaran, which is closer to the horizon. Refer to the chart below, which has an unobstructed east-northeastern horizon as its base.



If you have a telescope, it gets even better (refer to chart, below)! Mars and Uranus appear so close together on the morning of July 4 that you can see them both in the low-magnification field of view of most telescopes. A star, HIP 19146, appears between the two planets. Mars (magnitude +1.4) and Uranus (magnitude +5.8) are both brighter than the star HIP 19146 (magnitude +8.3). Can you detect a color contrast between Mars and Uranus? Reddish Mars can contrast vividly with Uranus, which appears blue or green to most people. The star HIP 19146 may appear reddish through larger telescopes. You may be able to resolve the disks of Mars and Uranus at high magnifications through telescopes, but they appear tiny, only 4.5 and 3.5 arc seconds wide, respectively. While Mars appears slightly larger than Uranus on July 4, Uranus is really 7 times wider than Mars (31,700 miles Vs 4,200 miles in diameter)! Although appearing close together on July 4, Uranus is almost 10 times farther away from us than Mars. Their apparent proximity is an illusion from our perspective on Earth. On July 4, 2026, Uranus is 1.9 billion miles from Earth, while Mars is a “near neighbor”, only 195 million miles distant. The star, HIP 19146, is very far away, about 1240 light years beyond our Solar System (that’s

about 7300 trillion miles!). **Please do your Uranus/Mars spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**



THE SUN. As of June 20, there is a large active region rotating onto the Earth-facing side of the Sun. There have been frequent M-class (moderate) solar flares during recent weeks, and there were X-class (extreme) flares on March 30, April 24 (two X-class flares), and June 3. More solar flares are likely during this period. Ultraviolet light from solar flares can cause airglow, which has been [imaged by BCAS Member, Aaron Watson](#). And 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://halph.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 June 21 through July 7 (subject to change). Predawn passes of the Tiangong (Chinese) Space Station are predicted from June 21 to July 7, and an evening Tiangong pass is also predicted for July 7 (subject to change). 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!