BCAS OBSERVING HIGHLIGHTS for October 13 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:

October 12 to 23, 8 to 11+ PM: Enjoy the dark, early fall sky
October 13-14, 7:30 to 8:45 PM: Comet SWAN in southwest near bright star, Sabik (aka Eta Oph)
October 14, 1:00 to 6:30 AM: Waning crescent Moon near Jupiter
October 14, 7:00 to 9:00 PM: BCAS meeting, Montrose and online
October 14-17, 7:30 to 8:15 PM: Comet Lemmon in northwest near star, Cor Caroli (aka Alpha CVn)
October 15, 7:00 PM: Western Slope Skies on KVNF radio
October 17, 4:00 to 6:00 PM: Grand Mesa Art Center, astrophotography exhibit - Michael Marino
October 18, 5:45 to 7:15 PM: 2 Dark sky films at Ridgway Independent Film Festival at Decker Room, 675 Clinton St., Ridgway
October 18, 7:30 to 10:00 PM: BCAS/RIFF night-sky viewing at Ridgway Frontier Field (Backup date, if needed, will be Sunday October 19th 7:30pm to 10:00pm Frontier Field, Ridgway)
October 18 to 22, 6:50 to 7:00 PM: Mercury & Mars < 3° apart in bright twilight (use binoculars)
October 19, 6:00 to 6:30 AM: Thin crescent Moon near Venus
October 21, midnight to 6:30 AM: See Orionid Meteors peak in a dark sky!
October 21 to 29, 2:00 to 6:30 AM: Preview winter's bright stars and the winter Milky Way!
October 23, about 6:50 PM: Thin crescent Moon 5° left of Mercury (use binoculars)
October 24, 10:00 AM: Western Slope Skies on KVNF radio
October 24, 7:00 to 7:15 PM: Crescent Moon < 2° from red supergiant star, Antares
October 29, 7:00 PM: Western Slope Skies on KVNF radio

SUMMARY. On evenings during this "dark Moon" period, enjoy seeing the lingering stars of summer, the rising stars of autumn, the stunning Milky Way, and two relatively bright comets, C/2025 A6 (Lemmon) and C/2025 R2 (SWAN). And early risers (or "night owls") can preview the bright stars of winter and see Orionid meteors, which peak around October 21.

As Mars disappears from the evening sky, Mercury reappears, although it could be challenging to spot the Innermost Planet. But with binoculars, between October 18 and 22, we may be able to see both Mars and Mercury within 3 degrees of each other. As the sky darkens, Saturn is high in the southeast and remains visible for most of the night. With binoculars or a telescope, you can find Neptune, about 4 degrees north and east of Saturn. Uranus, moving slowly through Constellation Taurus, rises in the east northeast by 8:24 PM MDT, about 4 degrees south of the Pleiades Star Cluster. Bright Jupiter rises around midnight, and Venus, still a brilliant "morning star", rises before 6:15 AM MDT.

The Moon reaches last quarter on October 13, and from October 14 to 20, the crescent Moon wanes. The Moon is new on October 21. Between October 23 and 28, watch the crescent Moon wax in the evening sky. The Moon reaches first quarter on October 29. Enjoy seeing earthshine delicately illuminate the nightside of the crescent Moon, especially on mornings from October 15 to 19 and on evenings from October 23 to 26.

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

Find times for local passes of bright satellites, including the International Space Station and Tiangong, the Chinese Space Station, at these websites...
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/

ENJOY THE DARK EVENING SKY! From October 12 to 23, enjoy a wonderfully dark evening sky that is free from moonlight, featuring the lingering constellations of summer, the rising constellations of fall, and two relatively bright comets! By 8:00 PM MDT evening twilight has ended, and we can see the Milky Way extending from its bright central regions in Constellation Sagittarius, low in the southwest, across the zenith in Cygnus, through Perseus low in the northeast. The "Summer Triangle" of bright stars, Vega, Altair, and Deneb, is still high in the sky, just west of the zenith. In the east, fall Constellations Andromeda, Pegasus, Aquarius, Pisces and Aries are rising higher. Look for the Planet Saturn, which is getting higher in the southeast, and first-magnitude star, Fomalhaut, rising in the south southeast. Comet C/2025 A6 (Lemmon) moves from the northwest to the west, against the stars of Ursa Major, Canes Venatici, Boötes, and Serpens, while Comet C/2025 R2 (SWAN) moves rapidly from the southwestern sky into our southern sky, against the stars of Ophiuchus, Serpens, Scutum, Sagittarius, Capricornus, and Aquarius. You may need binoculars to get a good look at these comets. On October 18, celebrate Ridgway's status as a Dark Sky Community by attending dark sky films at the Ridgway Film Festival from 5:30 to 7:15 PM MDT, followed by night-sky viewing with the Black Canyon Astronomical Society.

C/2025 A6 (Lemmon) – A BRIGHT COMET IN THE EVENING SKY! From October 12 to 29 between 7:30 and 8:15 PM MDT, try to spot Comet C/2025 A6 (Lemmon), as it moves through Constellations Ursa Major, Canes Venatici, Boötes, and Serpens. At around magnitude +5 October 12, you can probably spot Comet Lemmon with binoculars, and possibly with your eyes unaided. On evenings from October 14 to 17, you can find Comet Lemmon within a few degrees of the 2.5-magnitude, double star Cor Caroli (aka Alpha Canum Venaticorum). As it moves closer to Earth and the Sun, Comet Lemmon may become easily visible to eyes unaided, if it gets as bright as magnitude +3, as some have predicted. The Comet is closest to Earth on October 21 (55 million miles distant), and closest to the Sun on November 8 (perihelion of 49 million miles). C/2025 A6 (Lemmon) was discovered by the Mount Lemmon Survey in southern Arizona, hence the name. Several BCAS members have been enjoying Comet Lemmon on early October mornings, and we look forward to seeing Comet Lemmon brighten in the evening sky in mid to late October. Find updates, photos, finder charts, and an ephemeris for Comet Lemmon here…
https://www.space.com/astronomy/comets/comet-c-2025-a6-lemmon-is-approaching-earth-will-it-become-visible-to-the-naked-eye
https://theskylive.com/c2025a6-info
C/2025 A6 (Lemmon) | astro.vanbuitenen.nl
http://www.aerith.net/comet/catalog/2025A6/2025A6.html
Please do your Comet Lemmon spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.

COMET C/2025 R2 (SWAN) - BECOMING EASIER TO SPOT. For us in the northern hemisphere, C/2025 R2 (SWAN) is finally emerging from bright evening twilight and getting easier to spot, at least with binoculars. Up until recently, it's been easiest to see this Comet from the southern hemisphere. After cruising just north of the bright stars in northern Scorpius from October 10 to 11, Comet SWAN passes a bit south of the 2.45-magntide star, Sabik (aka Eta Ophiuchi) on October 13-14. Start looking for this comet toward the end of evening twilight. Views of this Comet between October 12 and 23 may be rewarding, due to the absence of moonlight. On October 12, Comet SWAN was shining between magnitude +5 and +6, and you may need binoculars to see it. Vladimir Bezugly discovered C/2025 R/2 (SWAN) on images from the Solar Wind Anisotropies Instrument (SWAN) on the SOHO satellite, hence

the name. Comet SWAN was closest to the Sun on September 12 (perihelion of 47 million miles), and it is closest to Earth on October 20 (25 million miles distant). As Comet SWAN gets closer to Earth, it will move rapidly from Constellation Ophiuchus into Serpens on October 15, and then through Scutum, northeastern Sagittarius, Capricornus, and into Aquarius by October 28. Comet SWAN is now "outbound" and is predicted to fade rapidly after its close approach to Earth on October 20. Find updates, photos, finder charts, and an ephemeris for Comet SWAN here…
https://www.space.com/stargazing/could-new-comet-c-2025-r2-swan-become-visible-to-the-naked-eye-in-october-heres-what-we-know
C/2025 R2 (SWAN) | astro.vanbuitenen.nl
http://www.aerith.net/comet/catalog/2025R2/2025R2.html
https://theskylive.com/c2025r2-info
https://en.wikipedia.org/wiki/C/2025_R2_(SWAN)
Please do your Comet SWAN spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.

THE MOON. The Moon reaches **last quarter on October 13** (exactly at 12:33 PM MDT), and from October 14 to 20, the crescent Moon wanes. The **Moon is new on October 21** (exactly new at 6:25 AM MDT). Between October 23 and 28, watch the crescent Moon wax in the evening sky. **The Moon reaches first quarter on October 29** (exactly at 10:21 AM MDT).

On the morning of October 14, the 44%-illuminated, crescent Moon is in Constellation Gemini, about 5 to 7 degrees east of the bright planet, Jupiter. On October 19 between 6:00 and 6:30 AM MDT, look for the 4%-illuminated lunar crescent about 4 degrees to the right of brilliant Venus. As civil twilight ends on October 23 at about 6:50 PM MDT, look for the 6%-illuminated, crescent Moon 5 degrees to the left of the Planet Mercury (binoculars may help). On October 24 between about 7:00 and 7:15 PM MDT, the 11%-illuminated crescent Moon is less than 2 degrees below the red supergiant star, Antares (a very nice sight in binoculars, if skies are clear!).

Enjoy seeing earthshine delicately illuminate the nightside of the crescent Moon, especially on mornings from October 15 to 19 and on evenings from October 23 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.**

FAREWELL TO MARS. The Red Planet, shining at magnitude +1.5, now sets below the west-southwestern horizon at 7:36 PM MDT on October 13 and 7:05 PM MDT on October 29. During this period, you'll need binoculars or a telescope to spot Mars, as it moves deeper into glaring twilight before its solar conjunction on January 9. Mars appears within 3 degrees Mercury from October 18 to 22, but you will need binoculars to see both planets at once. After that, our next good chance to see Mars will be in late April or May of 2026, when the Red Planet emerges from bright morning twilight. **Please do your Mars spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

MERCURY: CHALLENGING IN THE EVENINGS. We may be able to spot Mercury between 6:50 PM and 7:05 PM MDT between October 13 and 29, but this could be challenging from Colorado's mid-northern latitudes. Binoculars or a telescope may be needed. Mercury's apparent angular separation from the Sun is maximum on October 29. During this period, the Innermost Planet is located south of the Sun in our sky, and it stays less than 5 degrees above an unobstructed, west-southwestern horizon at the end of bright, civil twilight. Between October 13 and 29, the Innermost Planet fades from magnitude -0.25 to -0.10, as its gibbous disk wanes from 84% to 63% illuminated. During this period Mercury's distance

from Earth decreases from 117 million to 94 million miles, as its apparent diameter, as seen through telescopes, increases from 5.5 to 6.6 arc seconds. Between October 18 to 22, Mercury (at magnitude -0.2) passes within 3 degrees of fainter Mars (magnitude +1.5), but you'll need binoculars to see both planets at once. **Please do your Mercury spotting after sunset. NEVER chance looking at the Sun without taking proper precautions. Serious eye damage can result.**

SATURN – WELL PLACED FOR VIEWING! Still visible for most of the night, the Ringed Planet rises above the eastern horizon in daylight, culminates 47 degrees above the southern horizon between 10 PM and midnight (MDT), and sets in the west at about 5:26 AM MDT on October 13 and 4:18 AM MDT on October 29. During this period, Saturn fades from magnitude +0.67, to +0.76, as its distance from Earth increases from 802 million to 814 million miles. Through telescopes, Saturn's disk appears 19 arc seconds wide, and its rings span 45 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.

NEPTUNE – NEAR SATURN. Neptune, shining at magnitude +7.7, is about 4 degrees east and north of Saturn. Like Saturn, we can see Neptune best as it culminates (at about 48 degrees) above the southern horizon between 10 PM and midnight (MDT). You will need binoculars or a telescope to spot Neptune, which retrogrades (moves westward) slowly against the stars of eastern Pisces during this period. A telescope may reveal Neptune's 2.4 arc second-wide, blue disk. Neptune is 2.7 billion miles distant during this period. You can use these links to find Neptune:
https://theskylive.com/neptune-info
https://in-the-sky.org/findercharts.php?obj=P8&year=2025&month=10&day=1

URANUS. Rising in the east northeast at about 8:24 PM on October 13 and 7:18 PM MDT on October 29. Uranus is slowly retrograding (moving westward) against the stars of Constellation Taurus, about 4 degrees south of the Pleiades Star Cluster. Use these charts to find Uranus:
https://theskylive.com/uranus-info
https://in-the-sky.org/findercharts.php?obj=P7&year=2025&month=10&day=1
At magnitude +5.7, you can see the 7th Planet easily with binoculars, and perhaps even with eyes unaided when skies are dark. But you'll need a telescope to resolve Uranus' 3.8 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 midnight and the start of morning twilight, when Uranus is more than 40 degrees above the horizon. On October 21, Uranus is 1.7 billion miles distant.

JUPITER AND ITS MOONS: RISING AROUND MIDNIGHT. Jupiter, moving against the stars of Constellation Gemini, rises at about 12:09 AM MDT on October 13 and 11:08 PM MDT on October 29. Between October 13 and 29, the Giant Planet brightens from magnitude -2.19 to -2.30, as its distance from Earth decreases from 478 million to 456 million miles, and its apparent diameter increases from 38.3 to 40.2 arc seconds.

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! Watch shadows of Io and Europa cross Jupiter simultaneously on October 18 between 4:40 AM and 6:50

AM MDT. And on October 20 between 12:12 AM and 1:18 AM MDT, the shadows of both Io and Ganymede cross Jupiter simultaneously. 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, 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 shadows 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.

October 18, 2025, 4:32 AM to 6:50 AM MDT, Io's shadow crosses Jupiter (Locally this event begins with Jupiter 52 degrees high and ends with Jupiter 72 degrees above the eastern horizon during civil twilight). **Between 4:40 AM and 6:50 AM MDT the shadows of both Io and Europa are projected onto Jupiter! Perhaps best observed around 6:00 AM MDT**).

October 18, 2025, 4:40 AM to 7:30 AM MDT, Europa's shadow crosses Jupiter (Locally, this event begins with Jupiter 54 degrees high in the east southeast, and the event ends at sunrise). **Between 4:40 AM and 6:50 AM MDT the shadows of both Io and Europa are projected onto Jupiter! Perhaps best observed around 6:00 AM MDT**).

October 18, 2025, 7:26 AM to 10:02 AM MDT, Callisto's shadow crosses Jupiter at high southern latitude on Jupiter (Locally this event begins with Jupiter 72 degrees high in the south during bright twilight, just 2 minutes before sunrise, and it ends with Jupiter 49 degrees high in the west during daytime).

October 19-20, 11:02 PM to 1:18 AM MDT, Io's shadow crosses Jupiter (Locally this event begins before Jupiter rises at about 11:45 PM MDT and ends with Jupiter 17 degrees above the east-northeastern horizon. **Between 12:12 AM and 1:18 AM MDT the shadows of both Io and Ganymede are projected onto Jupiter! Perhaps best observed around 12:50 AM MDT, when Jupiter is 11 degrees above the horizon**).

October 20, 12:12 AM to 3:28 AM MDT, Ganymede's shadow crosses Jupiter (Locally, this event begins with Jupiter just 4 degrees above the east-northeastern horizon and ends with Jupiter 42 degrees above the eastern horizon. **Between 12:12 AM and 1:18 AM MDT the shadows of both Io and Ganymede are projected onto Jupiter! Perhaps best observed around 12:50 AM MDT, when Jupiter is 11 degrees above the horizon**).

October 25, 2025, 6:26 AM to 8:44 AM MDT, Io's shadow crosses Jupiter (Locally, this event begins during nautical twilight with Jupiter with Jupiter 72 degrees high in the sky and ends after the Sun rises at 7:33 AM MDT. **Between 7:16 AM and 8:44 AM MDT the shadows of both Io and Europa are projected onto Jupiter!**).

October 25, 2025, 7:16 AM to 10:06 AM MDT, Europa's shadow crosses Jupiter (Locally, this event begins during bright civil twilight and ends long after the Sun rises at 7:33 AM MDT. **Between 7:16 AM and 8:44 AM MDT the shadows of both Io and Europa are projected onto Jupiter!).**

October 27, 2025, 12:54 to 3:12 AM MDT, Io's shadow crosses Jupiter (Locally, this event begins with Jupiter 17 degrees above the east-northeastern horizon and ends with Jupiter 43 degrees high in a dark sky).

October 28, 2025, 8:34 PM 11:24 PM MDT, Europa's shadow crosses Jupiter (Locally, this begins long before Jupiter rises, and it ends with Jupiter just 2 degrees above the east-northeastern horizon).

ORIONID METEOR SHOWER – MAXIMUM ON OCTOBER 21 BEFORE DAWN. Did you miss seeing Halley's Comet (1P/Halley) back in 1986? No problem – look skyward on October 20, 21, and/or 23 from around midnight to 6:30 AM MDT. On the morning of October 21, and for several mornings both before and after October 21, icy and dusty particles left behind by Halley's Comet enter our atmosphere at 42 miles per second, creating meteors (aka "shooting stars"). The Moon is new on October 21, so conditions for observing Orionid Meteors (given clear skies) will be ideal, from after the Orionid radiant (apparent origin point of meteors on the sky) rises above 15 degrees around midnight until the onset of bright morning twilight. Find a reclining chair, a warm sleeping bag, and a dark place away from urban lighting, and then look up! No equipment is needed. Meteors may be visible all over the sky. The peak of the Orionid Shower is broad, so if it's cloudy on October 21, try to observe during the wee hours before and/or after this date. Meteor rates tend to increase toward dawn. Under ideal conditions, you may see up to 30 Orionid Meteors per hour. You can find more information on the Orionids and other meteor showers here:
https://www.imo.net/files/meteor-shower/cal2025.pdf

PREVIEW BRIGHT WINTER STARS AND THE WINTER MILKY WAY! The Moon is absent from the predawn sky from October 21 to 29, making this a great time to preview the bright stars of winter and the winter Milky Way! At 5 AM MDT, Constellation Orion's bright stars, Rigel and Betelgeuse, are high in the south, Constellation Auriga with bright yellow Capella is overhead, Gemini with its "twins stars', Pollux and Castor, is high in the southeast, and Sirius, the night sky's brightest star, is more than 30 degrees above the south-southeastern horizon. The Milky Way extends from the south southeast across the zenith to the north northwest. Jupiter, high in the sky amidst the stars of Gemini, and Venus, rising between 5:36 AM and 6:11 AM MDT, add their brilliance to the predawn spectacle. And on October 20, 21, and 22, keep watch for those Orionid meteors during the predawn hours.

VENUS – STILL A BRILLIANT "MORNING STAR"! Morning by morning, brilliant Venus rises in the east later now, at about 5:36 AM MDT on October 13 and at 6:11 AM MDT on October 29. By October 29, our "Sister Planet" starts rising during astronomical twilight, as its angular separation from the Sun continues to decrease. Venus shines at magnitude -3.9 during this period, as its distance from Earth increases from 145 million to 150 million miles and its gibbous phase waxes from 93% to 96% illuminated. Between October 13 and 29, Venus' apparent diameter shrinks from 10.7 to 10.4 arc seconds, as seen through telescopes. **Please do your Venus spotting before sunrise. NEVER chance looking at the Sun without taking proper precautions. 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 about 30 degrees above the western horizon as the sky darkens, and it sets below the northwestern horizon after 9:30 PM 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 6 AM MDT on October 12, 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. November 10 is coming up soon, so keep watch during this period! 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 October 12, there are several active regions on the Earth-facing side of the Sun. 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 (the SDO site is not being updated during the U. S. government shutdown, use the SOHO site)…
https://sohowww.nascom.nasa.gov/data/realtime-images.html
https://sdo.gsfc.nasa.gov/data/
https://stereo.gsfc.nasa.gov/beacon/
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"). 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 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 afterwards, and before and during early morning twilight. The brightest satellites are the International Space Station (ISS) and Tiangong, the Chinese Space Station. Both space stations can appear brighter than any star in the sky, and at times even brighter than the Planet Jupiter. Predictions for space station passes can change quickly, and it's best to get predictions for passes within 24 hours of when you want to see them. In low Earth orbit, both the ISS and Tiangong are subject to atmospheric drag, and they undergo frequent re-boosting. Re-boosting slightly slows

orbital speed, resulting in later passes. Also, both space stations frequently alter their orbits to avoid collisions with other satellites and space debris. Some popular sites for predicting local passes of the space stations are the following (be sure to set applications to 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

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

HAPPY OBSERVING!