OBSERVING HIGHLIGHTS for December 22, 2024 to January 6, 2025, a "dark Moon period"
Black Canyon Astronomical Society (BCAS), western Colorado, USA

SUMMARY. As twilight fades during this dark Moon period, Venus is a stunning beacon in the southwest, as bright Jupiter rises in the eastern sky. You can find first-magnitude Saturn about 40 degrees above the south-southwestern horizon. Mars rises in the east northeast before 7:30 PM MST, and, night-by-night, the Red Planet brightens rapidly. Early risers can spot Mercury in the east southeastern, pre-dawn sky from December 22 to about January 1, before the Innermost Planet gets lost in glaring twilight. If you have a telescope, look for surface features on Mars and try to view shadow transits of Jupiter's large moons, as their shadows cross the Giant Planet. These include simultaneous transits of shadows of Ganymede (largest moon in the Solar System) and Io in "double solar eclipses" on the night of December 22-23 and the morning of December 30.

In Colorado, December 21, the Solstice, is our shortest day, and the night of December 20-21 was our longest night of the year. Our earliest sunset was on December 7, and our latest sunrise is on January 5 or 6 (depending on your latitude). Earth is closest to the Sun on January 4. But don't expect a heatwave, because our seasons are caused by Earth's pronounced 23.5-degree axis tilt, not by our distance from the Sun (which varies by only 3%).

Step outside on a clear evening during this dark moon period, and you'll see autumn Constellations Perseus, Pegasus, Andromeda, and Pisces still high in the sky, as winter Constellations Taurus, Orion, Gemini, and Auriga rise in the east. The Milky Way extends from Constellation Cygnus low in the west northwest, north of the zenith through Cassiopeia and Perseus, and into Auriga, Gemini, and Monoceros in the east. Our winter Constellations contain some of the night sky's brightest stars, including Capella, Rigel, Betelgeuse, Procyon, Pollux, Aldebaran, and the night sky's brightest star, Sirius, which rises in the east-southeast before 7:30 PM MST.

The Moon reaches last quarter on December 22. From December 23 to 28, watch a crescent Moon wane in the morning sky. The Moon is new, and consequently invisible, on December 30. When the Moon is absent from the early evening sky from December 21 to 31, try to observe shadows cast by brilliant Venus by placing something opaque in front of a white surface. Watch the crescent Moon wax on evenings from January 1 to 5. The Moon reaches first quarter on January 6. From the Western Slope on December 28 between 6:30 to 6:35 AM MST, look for the crescent Moon only half a degree to the right of the reddish star, Antares, and about 9 degrees to the right of Mercury. After sunset on January 3, look for the crescent Moon about 4 degrees left from brilliant Venus. On the evening of January 4, the waxing crescent Moon is 5 degrees above Saturn. Enjoy seeing earthshine on the dark, nightside of the crescent Moon, especially on mornings from December 25 to 28, and on evenings from January 1 to 4 (binoculars can provide eye-catching views). Always look at Venus, Mercury, and the crescent Moon after sunset (or before sunrise); direct views of the Sun can cause severe eye damage.

As of December 21, there are active regions with sunspots on the Earth-facing side of the Sun, and X-class (extreme) flares occurred on October 1, 3,7, 9, 24, 26, and 31, November 6 and 10, and December 8. Moderate and even extreme, solar flares are likely, as are coronal mass ejections of charged particles. You can monitor solar activity safely in real time on the internet. This high solar activity is triggering geomagnetic storms, auroras (aka "northern lights"), and airglow. So, keep watch for these phenomena!

From western Colorado, view passes of interesting satellites, including pre-dawn passes of the bright International Space Station (ISS) on December 25 and from December 27 to January 5. You can see evening passes of the almost-as bright Tiangong (Chinese) Space Station from December 27 to January 6. And there are evening passes of NASA's Advanced Composite Solar Sail System (ACS3) on December 23, 24, and 26.

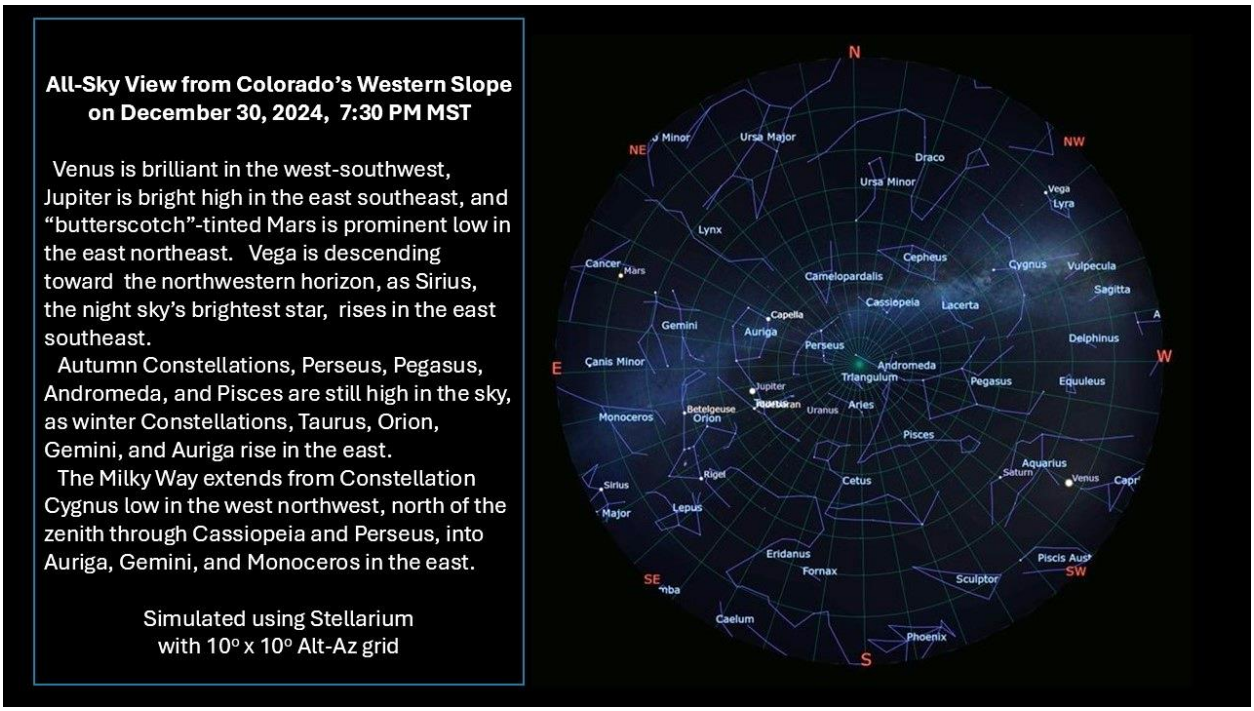
WESTERN SLOPE SKIES. Since 2011, BCAS and KVNF Community Radio have produced Western Slope Skies (WSS), a biweekly astronomy feature, which has aired every two weeks at about 8:10 AM on Fridays and 7:00 PM on following Wednesdays. On December 20 and 25, Art Trevena tells us about "Astronomy Highlights for 2025." For 2025, WSS features on KVNF will be coordinated by Dr. Catherine Whiting, Professor of Physics and Astronomy at Colorado Mesa University (CMU), with contributions from CMU, the Western Colorado Dark Sky Coalition, and the Black Canyon Astronomical Society. Initial airing times for WSS are likely to move to 10 AM on alternate Fridays.

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

THE WINTER SOLSTICE. In Colorado, our shortest day, only 9 hours 22 minutes long (plus or minus a few minutes based on your latitude) is December 21 (the day on which this "OH" edition is being sent), and our longest night was the night of December 20-21. These correspond to the December solstice, when the Sun shines directly on the Tropic of Capricorn at latitude 23.5 south, marking the beginning of winter in the northern hemisphere and the beginning of summer in the southern hemisphere (the solstice occurred at exactly 2:20 AM MST on December 21). Our earliest sunset occurred on December 7 at about 4:46 PM MST (plus or minus a few minutes), and our latest sunrise is on January 5 or 6 (depending on your latitude) at about 7:34 AM MST. Earliest sunset and latest sunrise occur about two weeks before and after the December solstice, respectively, due to factors related to Earth's orbital eccentricity and axis tilt.

PERIHELION – JANUARY 4. Earth is closest to the Sun ("at perihelion") on January 4, 2025 at 6:38 AM MST. What?? Can we really be closest to the Sun in "deep winter"? Yes, that's correct! Seasons are caused by Earth's pronounced 23.5-degree axis tilt, not by Earth's distance from the Sun (which varies by only 3%).

WINTER CONSTELLATIONS RISE IN A DARK, YEAR-END SKY! As twilight fades during this dark Moon period, you can find the Great Andromeda Galaxy (M31) just north of zenith. In addition to Andromeda, autumn Constellations Pegasus, Pisces, and Aries are still high in the sky, as winter Constellations, Orion, Auriga, and Gemini, rise above the eastern horizon. The Miky Way extends from Cygnus low in the west northwest through Cassiopeia and Perseus north of the zenith into Auriga, Gemini and Monoceros in the east. Our winter Constellations contain some of the brightest stars, including Capella, Rigel, Betelgeuse, Procyon, Pollux, Aldebaran, and the night sky's brightest star, Sirius. Sirius rises in the east-southeast before 7:30 PM MST. Use a planetarium app or the chart below to help navigate.



THE MOON. The moon reaches **last quarter December 22** (exactly at 3:18 PM MST), and from December 23 to 28, we can watch a crescent Moon wane in the morning sky. The **Moon is new, and consequently invisible, on December 30** (exactly new at 3:27 PM MST). Watch the crescent Moon wax on evenings from January 1 to 5. The **Moon reaches first quarter on January 6** (exactly at 4:56 PM MST). From the Western Slope on December 28 at about 6:35 AM MST, with the Sun still 10 degrees below the horizon, look for a thin crescent Moon (6% illuminated) only half a degree to the right of the reddish star, Antares, and about 9 degrees to the right of Mercury. On the early evening of January 3, look for the 19%-illuminated, crescent Moon about 4 degrees above and left from brilliant Venus (try using binoculars for an awesome view!). On the evening of January 4, the 28%-illuminated, lunar crescent is about 5 degrees above Saturn. Enjoy seeing earthshine on the dark, nightside of the crescent Moon, especially on mornings from December 25 to 28 and on evenings from January 1 to 4 (binoculars can provide eye-catching views). NASA has published a stunning visualization of lunar phases for year 2024. 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.**

VENUS: A YET BRIGHTER BEACON IN THE EVENINGS! Even against glaring twilight, you can easily spot Venus high above the southwestern horizon after sunset. And as the sky darkens, Venus' brilliance becomes stunning! With the Moon absent from the sky from December 22 to 31, Venus may be bright enough to cast shadows! To see a shadow cast by Venus, try placing a small object directly in front of a white surface. During this period Venus brightens from magnitude -4.34 to -4.49. "Earth's Sister Planet" now sets well after twilight's end, at about 8:32 PM MST on December 22 and 8:56 PM MST on January 6. Venus continues to get closer to Earth: Our "Sister Planet" is 76 million miles distant on December 22 and 66 million miles distant on January 6. Through telescopes, Venus' gibbous phase wanes from 59% to 53% illuminated, as its apparent diameter increases from 20.5 to 23.7 arc seconds during this period. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun directly; serious eye damage can result.**

SATURN IN THE EVENING SKY. Saturn, moving against the stars of Aquarius, is about 40 degrees high in the south southwest as the sky darkens. The Ringed Planet sets in the west at about 10:42 PM MST on December 22 and 9:48 PM MST on January 6. Saturn is 919 million miles distant on December 22 and 940 million miles distant on January 6. Saturn fades slightly from magnitude +1.03 to +1.07 during this period. Through telescopes, the Ringed Planet appears 17 arc seconds wide, and its rings span 39 arc seconds. With a telescope or high-magnification binoculars, it's possible to spot Titan, Saturn's largest moon.

Telescopes with apertures 5 inches or larger may reveal several other moons of the Ringed Planet. Saturn's rings now appear nearly "edge-on", so they may seem less impressive in telescopes than they did during the past several years. These thin rings will nearly disappear from our perspective during 2025. Because Saturn's rings now appear less inclined, and dimmer, than in past years, it may be easier to spot some of Saturn's mid-sized moons through telescopes. You can follow the changing positions of Saturn's moons by using various planetarium apps and/or logging onto this site:
https://skyandtelescope.org/observing/interactive-sky-watching-tools/saturns-moons-javascript-utility/
For more info on the appearance of Saturn's rings in 2024 and 2025 and phenomena associated with Saturn's moons, see this article…
https://skyandtelescope.org/astronomy-news/observing-news/see-mutual-events-close-approaches-of-saturns-moons/

FIND URANUS, THE SEVENTH PLANET, IN THE EVENING SKY. Uranus is still observable through much of the night. On December 30 (the middle of this "dark Moon period"), the "Seventh Planet" is 1.753 billion miles from Earth. Uranus begins this period retrograding against the stars of western Taurus, re-entering Constellation Aries on December 29. Uranus shines at magnitude +5.7, and you may be able to see it with eyes unaided under dark skies. However, it helps to use binoculars or a telescope to find the "Seventh Planet," especially under bright moonlight. Try using a "Go-To" mount, a planetarium app, or a finder chart, like the one at this link…
https://theskylive.com/uranus-info
If you have a telescope, can you resolve Uranus' 4 arc second-wide disk? Does the Planet look colorful? Through telescopes, most people perceive Uranus as various shades of green or blue.

JUPITER: NEARLY ALL NIGHT LONG. Bright Jupiter was opposite the Sun in our sky on December 7 and the Giant Planet is visible through much of the night. Even in bright twilight, Jupiter becomes visible at around 5:20 PM MST about 25 degrees above the east-northeastern horizon. Jupiter is currently in Constellation Taurus and gets very high in the sky (above 70 degrees altitude!) between 10 and 11 PM MST. The Giant Planet sets in the west northwest at about 6:16 AM MST on December 22 and at 5:10 AM MST on January 6. During this period Jupiter fades slightly from magnitude -2.78. to -2.70. Jupiter is 384 million miles distant on December 22 and 394 million miles distant on January 6. Through telescopes or binoculars, the Giant Planet's apparent equatorial diameter is 47 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 or this website:
https://skyandtelescope.org/wp-content/plugins/observing-tools/jupiter_moons/jupiter.html
Use a telescope to view shadow transits (total solar eclipses on Jupiter!) by Jupiter's large moons (see details below). 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 crossing the Giant Planet. Io's shadow is larger than Europa's but smaller than Ganymede's shadow. Callisto's shadow does not cross Jupiter during this period.

On the night of December 22-23, between 12:48 AM and 1:54 AM MST, we can see the shadows of both Ganymede and Io projected onto Jupiter (try viewing this double solar eclipse at around 1:10 AM MST)!

December 22-23, 2024, 11:30 PM to 1:54 AM MST, Ganymede's shadow crosses Jupiter at a very high southern latitude on Jupiter.

December 23, 2024, 12:48 AM to 3:00 AM MST, Io's shadow crosses Jupiter

December 24, 2024, 7:18 to 9:30 PM MST. Io's shadow crosses Jupiter.

December 27, 2024, 4:00 to 6:32 AM MST, Europa's shadow crosses Jupiter (Locally this event begins with Jupiter about 20 degrees above the western horizon and Jupiter sets at about 5:54 AM MST, before the end of this event).

On the morning of December 30, between 3:30 and 4:56 AM MST, we can see the shadows of both Ganymede and Io project onto Jupiter (try viewing this double solar eclipse at about 4:00 AM MST, when Jupiter is 21 degrees above the western horizon).

December 30, 2024, 2:44 to 4:56 AM MST, Io's shadow crosses Jupiter.

December 30, 2024, 3:30 to 5:56 AM MST, Ganymede's shadow crosses Jupiter at very high southern latitude on Jupiter (Locally, this even begins with Jupiter 23 degrees above the western horizon, and it ends after Jupiter sets at about 5:40 AM MST).

December 30, 2024, 5:16 to 7:50 PM MST, Europa's shadow crosses Jupiter (Locally this event begins in bright twilight with Jupiter 24 degrees above the eastern horizon, and it ends with Jupiter 54 degrees high in the sky).

December 31, 2024, 9:12 to 11:26 PM MST, Io's shadow crosses Jupiter.

January 6, 2024, 4:38 to 6:52 AM MST, Io's shadow crosses Jupiter (Locally, this event begins with Jupiter only 5 degrees high in the west northwest and ends long after Jupiter sets at about 5:10 AM MST).

MARS NEARLY ALL NIGHT LONG – GETTING CLOSER AND BRIGHTER YET! Reddish (or butterscotch-tinted?) Mars rises in the east northeast in a dark sky at about 7:12 PM MST on December 22, and during evening twilight at about 5:48 PM MST on January 6. Mars is currently retrograding (moving westward) against the stars of Constellation Cancer. Mars brightens from magnitude -1.03 on December 22 to magnitude -1.40 on January 6. Around 1 AM MST Mars is very high in our sky, more than 70 degrees above the southern horizon. Earth's closest approach to Mars during this 2024-2025 encounter will be on January 12, and the Red Planet will be opposite the Sun on January 16. We can look forward to the full Moon occulting (moving in front of) Mars on January 13. Earth is getting nearer to Mars during this period; Mars is 64 million miles distant on December 22 and 60.0 million miles distant on January 6. At closest approach on January 12, Mars will be 59.7 million miles distant. Earth passes relatively close by Mars about every 2 years and 2 months. But due to Mars' highly elliptical orbit, the distance of Mars at these close approaches varies widely. Mars's apparent diameter increases from 13.7 to 14.5 arc seconds between December 22 and January 6. During the favorable Mars

encounter on July 31, 2018, Earth passed within 36 million miles of Mars, and Mars appeared 24.3 arc seconds wide. So, our January "close encounter" of 60 million miles is not particularly close. However, Mars gets very high in Colorado's skies during this period. Viewing through a relatively thin cross section of Earth's atmosphere may enable us to see some dark surface features through telescopes, like Syrtis Major and Acidalium Planitia, in addition to the north polar ice cap and/or clouds of the "north polar hood." You can identify Martian surface features for any date and time by using the interactive chart at the following link…
https://skyandtelescope.org/wp-content/plugins/observing-tools/mars_profiler/mars.html
Find more info on observing Mars here:
https://www.alpo-astronomy.org/jbeish/2025_MARS.htm

MERCURY BEFORE DAWN. This dark Moon period is a good time for spotting Mercury in the pre-dawn sky. On the morning of December 22 at 6:20 AM MST, look for Mercury about 6 degrees above an unobstructed, east-southeastern horizon (with the Sun still 13 degrees below the horizon). Mercury reaches its greatest apparent separation from the Sun on Christmas morning, December 25, when we can see the Innermost Planet 8 degrees above and to the left of the reddish star, Antares (Mercury at magnitude -0.3 greatly outshines Antares at magnitude +1.0). Try using binoculars for a nice view! After January 1, Mercury will get harder to spot as, morning-by-morning, it descends into brighter twilight, prior to its solar conjunction on February 8. Through telescopes Mercury's gibbous phase waxes from 56% illuminated on December 22 to 84% illuminated on January 6, as the Innermost Planet brightens from magnitude -0.2 to -0.4. Mercury's apparent diameter decreases from 7.0 arc seconds on December 22 to 5.5 arc seconds on January 6, its distance from Earth increases from 89 to 115 million miles. **Please do your Mercury and Antares spotting before sunrise. NEVER chance looking at the Sun directly; serious eye damage can result.**

DON'T GIVE UP - KEEP WATCHING THE NORTHERN CROWN! Better late than never? Will there soon be a bright "new" star in Constellation Corona Borealis ("The Northern Crown"), at least briefly? During late December and early January, you can find Corona Borealis in the east-northeastern sky before morning twilight. T Coronae Borealis (T CrB) is a recurrent nova that (based on its 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 2025. Then this "new star" may fade rapidly below naked-eye visibility in about a week. As of early on December 21, T CrB had not yet exploded. For more about T CrB, read the article, "Get Ready for a Nova's Bright Return", by astrophysicist Brad Schaefer in the March 2024 issue of Sky & Telescopes Magazine, p. 34-40. You can find additional info at these sites…
https://blogs.nasa.gov/Watch_the_Skies/2024/02/27/view-nova-explosion-new-star-in-northern-crown/
https://skyandtelescope.org/astronomy-news/is-the-blaze-star-about-to-blow-you-may-be-the-first-to-know/
https://en.wikipedia.org/wiki/T_Coronae_Borealis
https://ui.adsabs.harvard.edu/abs/2023ATel16107....1S/abstract
https://www.aanda.org/articles/aa/full_html/2023/12/aa48372-23/aa48372-23.html

THE SUN. The Sun has been very active over the past year, and intensely so in the past several months, when solar active regions have unleashed numerous flares and coronal mass ejections (CMEs) of charged particles. There have been M-class (moderate) solar flares each week for the past year, and there have been many X-class (extreme) solar flares, including X-class flares on July 14, 16, and 29, August 5, 8, and 14, September 12 and 14, October 1, 3, 7, 9, 24, 26, 31, November 6 and 10, and

December 8. There also have been CMEs that have triggered geomagnetic storms that caused auroras. Many folks in Colorado and elsewhere viewed and/or photographed striking auroras during the nights of May 10-11 and October 10-11. As of December 21, there are active regions with sunspots on the Earth-facing side of the Sun. So, we may experience more M- and possibly even X-class flares and powerful CMEs. Airglow and "SARs" also result from high solar activity, and these phenomena also have been photographed and/or observed from Colorado. You can monitor sunspots, solar flares, CMEs, and other solar activity safely and in "real time" at 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
Note: As of December 21, many real-time images from SDO and SOHO sites are unavailable, due to a technical problem at Stanford. 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"). It can be challenging to spot auroras from Colorado's mid-northern latitudes. But on the nights of May 10-11 and October 10-11, many of us were able to see and/or photograph some amazing auroras from Colorado! Coronal mass ejections (CMEs) from the Sun were aimed at our planet. Charged particles from CMEs were captured by Earth's magnetic field, energizing the ionosphere, thereby triggering geomagnetic storms and widespread auroras. As of December 21, there are active regions with sunspots on the Earth-facing side of the Sun. So, the chances for geomagnetic storms are good and spotting auroras may be possible. You can 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. 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, in Mountain Standard Time (MST). Numerous Earth satellites are visible every clear night. Brighter satellites have smaller magnitude numbers, and the brightest (e.g., the International and 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 can change. These predictions for satellite passes may be inaccurate. This is especially true for the International Space Station (ISS) and the Chinese Space Station, Tiangong, and we no longer show ISS and Tiangong predictions more than 5 days beyond the distribution date of the current "BCAS Observing Highlights" edition. Orbits of both space stations change frequently, due to periodic re-boosting and avoidance maneuvers (to prevent collisions with other orbiting objects). For accurate predictions of the ISS and Tiangong beyond December 26, 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.

December 23, 2024. Advanced Composite Solar Sail System (ACS3), 6:40 to 6:46 to 6:52 PM MST. SSE to ENE to N. Max altitude 73 deg above ENE, max magnitude +1.9 (Passing through Eridanus, Fornax, Eridanus again, Taurus/Cetus, Perseus, Camelopardalis, Draco and Ursa Major-Big Dipper). **Predictions for ACS3 are subject to change due to orbital changes from the solar wind. Check for updated predictions.**

December 24, 2024. Advanced Composite Solar Sail System (ACS3), 7:07 to 7:13 to 7:20 PM MST. SSE to WSW to NNW. Max altitude 89 deg above WSW, max magnitude +1.8 (Passing through Eridanus Fornax, Cetus, Pisces, Andromeda, Cassiopeia, Cepheus, Ursa Minor, and Draco). **Predictions for ACS3 are subject to change due to orbital changes from the solar wind. Check for updated predictions.**

December 25, 2024. International Space Station (ISS). 6:51 to 6:52 to 6:53 AM MST. NNW to NNE to NE. Max altitude 11 deg above NNE, max magnitude -1.3 (Passing through Perseus, Cassiopeia, Cepheus, and Cygnus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

December 26, 2024. Advanced Composite Solar Sail System (ACS3), 6:18 to 6:24 to 6:30 PM MST. SE to ENE to N. Max altitude 39 deg above ENE, max magnitude +2.2 (Passing through Eridanus, Taurus, Auriga-near Capella, Camelopardalis, and Draco/Ursa Major-Big Dipper). **Predictions for ACS3 are subject to change due to orbital changes from the solar wind. Check for updated predictions.**

As of December 21, additional pre-dawn passes for the ISS are predicted from December 27 to January 5. And evening passes for Tiangong are predicted from December 27 to January 6. These predictions are subject to change due to orbital adjustments. For updates on times, check heavens-above (or other prediction websites) shortly before you want to observe. Be sure to enter your location and time zone info when using prediction websites.

HAPPY OBSERVING!