

OBSERVING HIGHLIGHTS for May 12 to 27, 2023 a “dark Moon” period.
Black Canyon Astronomical Society (BCAS), western Colorado, USA

SUMMARY. During morning twilight on May 17, we can view a rare planetary event (if skies are clear): The crescent Moon will occult (move in front of) Jupiter and its four brightest moons! This event may be visible with eyes unaided but try viewing it with binoculars or a telescope. On evenings during this “dark Moon” period, our skies may be darker than in summer and early fall, because the bright star clouds of the central Milky Way are below our horizon (or low in our sky). The absence of the Milky Way allows us to see (using telescopes) many distant galaxies, including some massive galaxies at the heart of the Virgo Galaxy Cluster. Venus is a brilliant beacon in the western evening sky, setting just before midnight (MDT). You can find fainter, reddish Mars just above Venus. Saturn now rises in the east southeast between 2 and 3 AM MDT. And Jupiter is getting easier to see; look east toward bright morning twilight to spot the Giant Planet. On the morning of May 17, be sure to look for Jupiter at about 5:15 AM MDT, just before it gets covered by that slender crescent Moon. Mercury appears in the east-northeastern sky in bright morning twilight, but it might be challenging to see the Innermost Planet before May 24. The Moon reaches last quarter on May 12. On mornings from May 13 to 18, we can watch a crescent Moon wane. A “fat” crescent Moon is 5 degrees south of Saturn on the morning of May 13. Then the thin crescent Moon moves in front of Jupiter in morning twilight on May 17. The Moon is new (and invisible) on May 19. On evenings from May 20 to 26, we can watch the crescent Moon wax. Look for the crescent Moon below and to the right of Venus on May 22. The lunar crescent is between Venus and Mars on May 23 and above Mars on May 24. The Moon reaches first quarter on May 27. Sunspots and active regions are visible on the Sun, and there have been solar flares and coronal mass ejections of charged particles in the past few weeks. You can monitor solar activity safely in real time on the internet. Do not look at the Sun directly without safe, specialized solar filters. Looking at the Sun without adequate precautions can cause serious eye damage and even blindness. Keep watch for auroras (aka “northern lights”), which are triggered by high solar activity. Auroras have been seen and photographed from Colorado in recent weeks. And over western Colorado, we can watch many evening and early morning passes of the bright International Space Station (ISS). On May 11-12, May 12-13, and May 13-14 we may see multiple passes of the ISS nearly all night long.

WESTERN SLOPE SKIES. Since 2011, BCAS and KVN Community Radio have been producing Western Slope Skies (WSS), a biweekly astronomy feature. On May 12 and 17 Zach Schierl presents “NASA ‘DARTs’ an Asteroid.” WSS features are linked here:

<https://www.kvnf.org/show/western-slope-skies#stream/0>

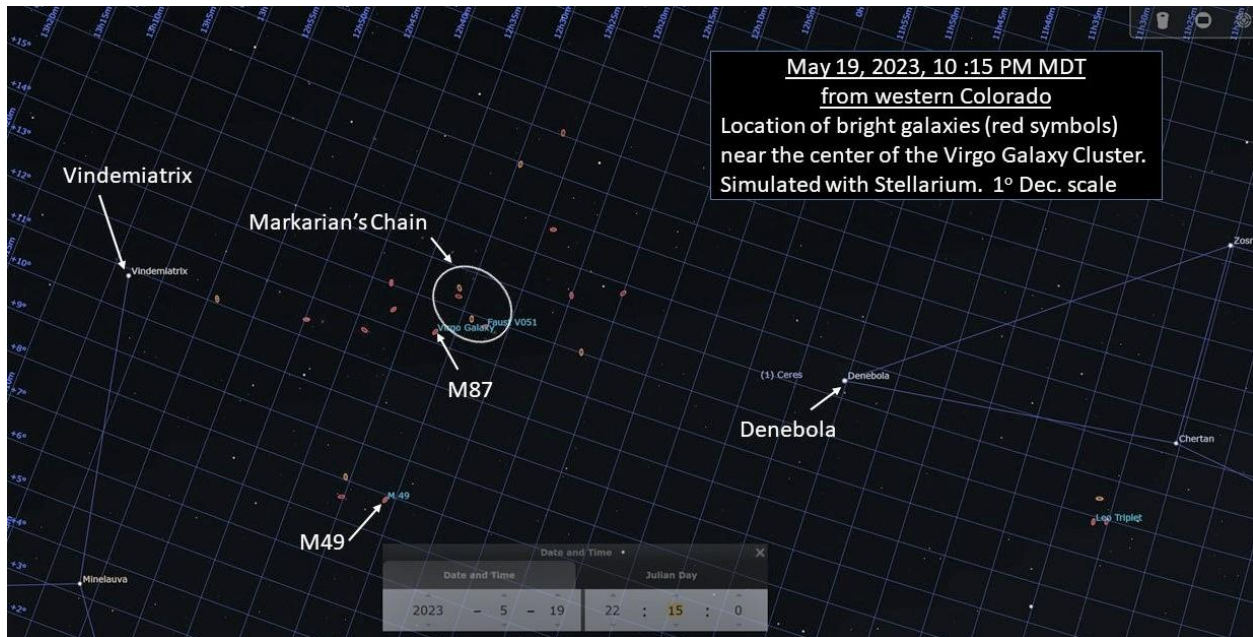
Note: The apparent brightness of sky objects is measured in “magnitude” units. Many bright stars are magnitude +1, while the faintest stars easily visible to unaided eyes under dark skies are magnitude +6. Some of the brightest stars are 0 magnitude (e.g., Vega, Arcturus), while the brightest sky objects 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 MOON. WATCH THE MOON OCCULT JUPITER ON MAY 17! The Moon reaches **last quarter on May 12** (at 8:28 AM MDT). On mornings from May 13 to 18, watch the crescent Moon wane. On the morning of May 13, a “fat” (40% illuminated) crescent Moon is about 5 degrees south of Saturn. **Then**

during western Colorado’s morning twilight on May 17 between about 5:23 and 5:32 AM MDT (times vary based on location), the 5%-illuminated crescent Moon will occult (move in front of) Jupiter and its 4 brightest moons. The Moon is new (and invisible) on May 19 (exactly new at 9:53 AM MDT). On evenings from May 20 to 26, we can watch a crescent Moon wax. The Moon reaches **first quarter on May 27** (exactly 9:22 AM MDT). On the evening of May 22, the waxing crescent Moon (12% illuminated) is below and to the right of brilliant Venus, and on May 23, the lunar crescent (19% illuminated) is about midway between Venus and Mars. And on May 24, a “fatter” crescent Moon (27% illuminated) is about 5 degrees above reddish Mars. Enjoy seeing earthshine on the dark part of the crescent Moon, especially on mornings from May 13 to 17 and evenings from May 20 to 23 (binoculars will enhance your view). You can find a stunning visualization of lunar phases for all of year 2023 here: [Moon Phase and Libration 2023 - Moon: NASA Science](#). Please do your crescent Moon spotting before sunrise and after sunset. NEVER chance looking at the Sun directly; serious eye damage can result.

THE SPRING SKY – CHALLENGE YOURSELF TO SPOT DISTANT GALAXIES! May is “galaxy time.” On clear May evenings we have an unobstructed view of distant galaxies because the light-absorbing dust clouds of our own Milky Way Galaxy are below the horizon (or low in our sky). With a telescope of 5 inches or larger aperture, we can see dozens of these distant star cities in constellations Virgo, Leo, Coma Berenices, Canes Venatici, Ursa Major and Hydra, all of which are prominent as the May sky darkens. The [Virgo Galaxy Cluster](#) is centered in the westernmost part of Constellation Virgo, between stars Denebola (aka Beta Leonis) in Leo’s “tail” and Vindemiatrix (aka Epsilon Virginis) in Virgo. Can you spot some of these galaxies with a telescope? Visually, they appear as fuzzy patches of light. Use a star chart, planetarium app and/or the finder chart below and try to locate some of these distant star systems. The brightest galaxies on the chart below are M49 and M87. M87, a massive elliptical galaxy, is famous, because it contains the 6.5-billion solar mass black hole, which in 2019 was imaged by the [Event Horizon Collaboration](#). A “string” of Virgo Cluster galaxies that share a common motion through space is called “[Markarian’s Chain](#).”



VENUS: BRILLIANT IN THE EVENING. Brilliant Venus is still moving higher in the west, night by night, and brightening even further from magnitude -4.22 on May 12 to magnitude -4.34 on May 27. Venus sets in the west northwest well after the end of twilight, at about 11:52 PM MDT on May 12 and 11:55 PM MDT (**almost midnight!**) on May 27. During this period Venus is relatively far north in Constellation Gemini. As seen through telescopes between May 12 and 27, Venus' apparent diameter increases from 18.8 to 21.7 arc seconds, as its gibbous disk wanes from 61% to 54% illuminated and its distance from Earth decreases from 83 to 71 million miles. **Please do your Venus spotting after sunset. NEVER chance looking at the Sun directly; serious eye damage can result.**

MARS IN THE EVENING. As the sky darkens on May 12, the Red Planet is still about 40 degrees high in the west. Mars shines at magnitude +1.4 on May 12, but it fades to magnitude +1.5 by May 27, as its distance from Earth increases from 172 to 183 million miles. During this period Mars moves eastward against the constellations, from Gemini into Cancer. On May 14 Mars forms a line with Gemini's two brightest stars, Pollux and Castor. Mars is now fainter than Pollux, Gemini's brightest star, but it's still a bit brighter than Castor. Watch Pollux and Castor scintillate (or "twinkle"), while Mars usually shines with a steadier glow. Can you detect color differences among Mars, Pollux, and Castor? Many people see Mars as distinctly reddish orange (or perhaps, "butterscotch"?), Pollux as yellowish white, and Castor as white. But color perception varies. What colors do you see (try viewing with binoculars)? Mars sets in the west northwest at about 1:04 AM MDT on May 12 and 12:33 AM MDT on May 27. Through telescopes Mars appears as a 92%- to 93%-illuminated, gibbous disk. During this period, Mars' apparent diameter decreases from 5.1 to 4.8 arc seconds, and it's now very difficult to spot Mars' surface features.

SATURN IN THE MORNING. Saturn, shining at magnitude +0.9, rises at about 2:58 AM MDT on May 12 and 2:01 AM MDT on May 27. Between May 12 and 27, the Ringed Planet's distance from Earth decreases from 930 to 907 million miles. Telescopes of any size will show Saturn's rings. Saturn's disk appears about 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 larger than about 6 inches may reveal several other moons of the Ringed Planet. In 2023 from Earth's perspective, Saturn's rings are less inclined than they have been during the past several years, so they may appear less impressive in telescopes. These thin rings will appear edge-on (or nearly so) and almost disappear during 2025, so view Saturn this year! Because Saturn's rings appear less inclined in 2023, they are dimmer than they have been in past years. This makes it easier to spot some of Saturn's mid-sized moons through telescopes. You can follow the changing positions of Saturn's moons by referring to various planetarium apps and/or this site:

<https://skyandtelescope.org/observing/interactive-sky-watching-tools/saturns-moons-javascript-utility/>

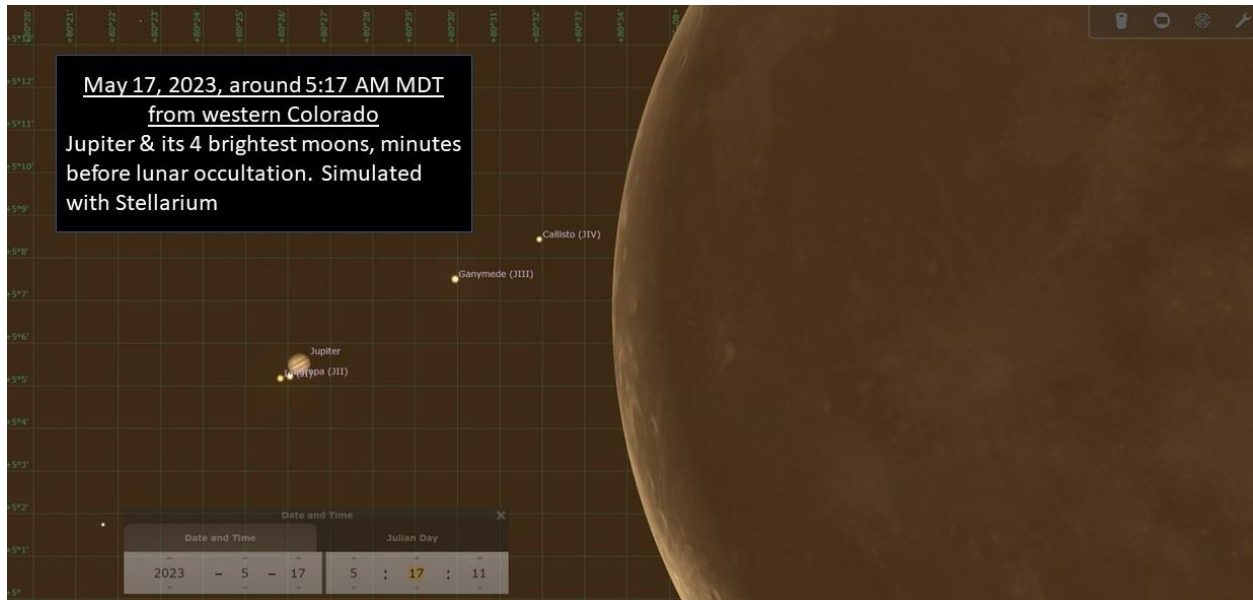
JUPITER IN MORNING TWILIGHT – WATCH JUPITER AND ITS 4 BRIGHTEST MOONS GET OCCULTED BY EARTH'S MOON ON MAY 17!

Jupiter rises in morning twilight at about 5:05 AM MDT on May 12 and 4:15 AM MDT on May 27. Between May 12 and 27, Jupiter's brightness increases slightly from magnitude -2.07 to -2.09, as its distance decreases from 546 million to 536 million miles. Through telescopes or binoculars, the Giant Planet's apparent diameter spans 34 arc seconds. You can use a telescope or binoculars to spot the Giant Planet's four bright moons, and you can identify them by their changing locations by using various planetarium apps or this website:

https://skyandtelescope.org/wp-content/plugins/observing-tools/jupiter_moons/jupiter.html

During western Colorado's morning twilight on May 17 between about 5:23 and 5:32 AM MDT (times vary based on location), the 5%-illuminated crescent Moon will occult (move in front of) Jupiter and its 4 brightest moons (see chart, below). At its disappearance around the start of Civil Twilight, Jupiter

will be about 6 degrees above an unobstructed, eastern horizon, and the Sun will be about 6 degrees below the horizon. This is a rare event – hope for clear skies! Watching Jupiter disappear behind the Moon will be interesting. You may be able to see it with your eyes unaided but try viewing through binoculars or a telescope. **Please do your Jupiter spotting before sunrise. NEVER chance looking at the Sun directly; serious eye damage can result.**



MERCURY IN GLARING MORNING TWILIGHT. Mercury appears in the east-northeastern sky during bright morning twilight, but it might be challenging to see it before about May 24. Between May 12 and 27, the Innermost Planet’s apparent separation from the Sun increases, as it brightens from magnitude +2.57 to +0.63. From May 24 to 27 between about 5:10 to 5:15 AM MDT, look for Mercury about 3 to 4 degrees above a flat, east-northeastern horizon, and below and to the left of bright Jupiter. As seen through telescopes during this “dark Moon” period, the “Speedster Planet’s” crescent phase waxes from 9% to 35% illuminated, as its distance from Earth increases from 55 to 71 million miles. **Please do your Mercury spotting before sunrise. NEVER chance looking at the Sun directly; serious eye damage can result.**

THE SUN. The Sun has been very active this year. M-class (“moderate”) solar flares have been occurring frequently, and there were X-class (“extreme”) flares on January 5, 9, 10, February 11, 17, and March 3 and 29, 2023. There also have been coronal mass ejections (“CMEs”) of charged particles that have triggered auroras recently. As of May 11, there are several active regions with large sunspots on the side of the Sun that faces Earth. M- and even X-class solar flares, some with associated CMEs, are likely. 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>

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 in recent weeks auroras were photographed and seen from Colorado and even farther south in Arizona!** Solar magnetic storms, when directed toward Earth, can cause auroras. With current, high solar activity, chances for auroras are good. You can get predictions for auroras, their intensity, and geographic extent from NOAA’s Space Weather Prediction Center: <https://www.swpc.noaa.gov/>.

EARTH SATELLITE HIGHLIGHTS. The following predictions are for western Colorado, specifically Montrose, in Mountain Daylight Time (MDT). 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). During May, space above the northern hemisphere is awash in sunlight, and we can see many Earth satellites (visible only from sunlight they reflect) through much of the night, especially in the northern sky. Note that on the nights of May 11-12, May 12-13, and May 13-14 multiple passes of the bright International Space Station (ISS) may be visible from western Colorado through the evening and early morning hours.

May 11, 2023. International Space Station (ISS). 9:45 to 9:48 PM MDT, SSW to SSE, disappears into Earth’s shadow at max altitude 41 deg above SSE, max magnitude -3.4 (Passing through Antlia, Hydra, Corvus, and Virgo). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

May 12, 2023. International Space Station (ISS). 2:40 to 2:41 to 2:42, AM MDT, N to NNE to ENE, max altitude 11 deg above NNE, max magnitude -0.3 (Passing through Lynx, Camelopardalis, Cassiopeia, and Andromeda/Pegasus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

May 12, 2023. International Space Station (ISS). 4:15 to 4:18 to 4:22 AM MDT, NW to NNE to ESE, max altitude 36 deg above NNE, max magnitude -2.1 (Passing through Leo Minor, Ursa Major, Camelopardalis/Ursa Minor, Cassiopeia, Lacerta, Pegasus, and Pisces). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

Note: From western Colorado on May 12-13, there may be two evening passes of the International Space Station (ISS), followed by three early morning passes! So, you can watch the ISS almost all night long – unless you have better things to do!

May 12, 2023. International Space Station (ISS). 8:57 to 9:00 to 9:03 PM MDT, S to SE to ENE, max altitude 24 deg above SE, max magnitude -2.7 (Passing through Antlia, Hydra, Libra/Virgo, Serpens, and Hercules/Ophiuchus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

May 12, 2023. International Space Station (ISS). 10:33 to 10:36 to 10:40 PM MDT, W to NNW to NE, max altitude 34 deg above NNW, max magnitude -2.1 (Passing through Canis Minor-near Procyon,

Gemini-near Castor and Pollux, Lynx, Camelopardalis, Cepheus, and Cygnus-near Deneb). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

May 13, 2023. International Space Station (ISS). 12:13 to 12:14 to 12:15 AM MDT, NNW to N, max altitude 11 deg above NNW, disappears into Earth's shadow 11 deg above N, max magnitude -0.2 (Passing through Gemini, Auriga, and Cassiopeia/Camelopardalis). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 13, 2023. International Space Station (ISS). 3:27 to 3:30 to 3:33 AM MDT, NNW to NNE to E, max altitude 24 deg above NNE, max magnitude -1.3 (Passing through Camelopardalis, Cassiopeia, and Pegasus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 13, 2023. International Space Station (ISS). 5:03 to 5:07 to 5:10 AM MDT, WNW to SW to SSE, max altitude 41 deg above SW, max magnitude -3.4 (Passing through Coma Berenices, Boötes-near Arcturus, Serpens, Ophiuchus, Scutum, and Capricornus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

Note: From western Colorado on May 13-14, there may be two evening passes of the International Space Station (ISS), followed by two early morning passes.

May 13, 2023. International Space Station (ISS). 9:44 to 9:48 to 9:52 PM MDT, WSW to NW to NE, max altitude 57 deg above NW, max magnitude -3.1 (Passing through Canis Minor, Cancer, Ursa Major, Draco, Ursa Minor, Draco again, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 13, 2023. International Space Station (ISS). 11:23 to 11:25 to 11:27 PM MDT, NW to NNW to NNE, max altitude 13 deg above NNW, max magnitude -0.4 (Passing through Gemini-near Venus, Auriga, Cassiopeia, and Lacerta). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 14, 2023. International Space Station (ISS). 2:40 to 2:41 to 2:43 AM MDT, N to NNE to ENE, appears from Earth's shadow near max altitude 17 above NE, max magnitude -0.8 (Passing through Cassiopeia, and Pegasus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 14, 2023. International Space Station (ISS). 4:14 to 4:18 to 4:22 AM MDT, NW to SW to SE, appears from Earth's shadow 5 deg above NW, max altitude 79 deg above SW, max magnitude -3.9 (Passing through Ursa Major/Canes Venatici, Hercules, Aquila, Aquarius, and Capricornus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 14, 2023. International Space Station (ISS). 8:56 to 8:59 to 9:03 PM MDT, SW to SE to NE, maximum altitude 78 deg above SE, max magnitude -3.9 (Passing through Hydra, Leo, Canes Venatici, Boötes, Hercules, and Lyra). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 14, 2023. International Space Station (ISS). 10:34 to 10:36 to 10:39 PM MDT, WNW to NNW to NNE, maximum altitude 17 deg above NNW, max magnitude -0.7 (Passing through Gemini-near Venus, Auriga, Camelopardalis, Cepheus/Cassiopeia, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 15, 2023. International Space Station (ISS). 5:07 to 5:08 AM MDT, SSW to S, appears from Earth's shadow at max altitude 13 deg above SSW, max magnitude -1.8 (Passing through Scorpius, Corona Australis, and Sagittarius). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 15, 2023. International Space Station (ISS). 9:45 to 9:48 to 9:50 PM MDT, W to NNW to NNE, max altitude 24 deg above NNW, max magnitude -1.3 (Passing through Gemini, Auriga, Camelopardalis, Cepheus, and Cygnus-near Deneb). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 16, 2023. International Space Station (ISS). 8:56 to 8:59 to 9:02 PM MDT, WSW to NNW to NE, max altitude 36 deg above NNW, max magnitude -2.0 (Passing through Gemini-near Venus, Auriga, Camelopardalis, Ursa Minor/Cepheus, Draco, and Cygnus/Lyra). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 16, 2023. International Space Station (ISS). 10:35 to 10:36 to 10 37 PM MDT, NNW to N to NE, max altitude 11 deg above NNW, max magnitude -0.4 (Passing through Auriga, Perseus, Cassiopeia, and Lacerta). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 17, 2023. International Space Station (ISS). 9:46 to 9:47 to 9:49 PM MDT, NW to NNW to NNE, max altitude 14 deg above NNW, max magnitude -0.6 (Passing through Auriga, Camelopardalis/Perseus, Cassiopeia, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 18, 2023. International Space Station (ISS). 8:56 to 8:58 to 9:01 PM MDT, WNW to NNW to NNE, max altitude 18 deg above NNW, max magnitude -0.8 (Passing through Auriga, Camelopardalis/Perseus, Cassiopeia, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 19, 2023. International Space Station (ISS). 12:13 to 12:14 AM MDT, NNW to N, disappears into Earth's shadow at max altitude 12 deg above N, max magnitude -0.4 (Passing through Auriga, Camelopardalis, and Cassiopeia). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 19, 2023. International Space Station (ISS). 11:24 to 11:25 to 11:26 PM MDT, N to NNE, max altitude 10 deg above NNE, max magnitude -0.5 (Passing through Auriga, Camelopardalis/Perseus, and Cassiopeia). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 20, 2023. International Space Station (ISS). 8:57 to 8:58 to 9:00 PM MDT, NW to NNW to N, max altitude 11 deg above NNW, max magnitude -0.6 (Passing through Perseus, Cassiopeia, Cepheus, and

Cygnus). **Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.**

May 21, 2023. International Space Station (ISS). 11:23 to 11:25 PM MDT, NNW to NNE, disappears into Earth's shadow at max altitude 16 deg above NNE, max magnitude -1.0 (Passing through Auriga, Camelopardalis/Perseus, and Cassiopeia/Cepheus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 22, 2023. International Space Station (ISS). 10:34 to 10:36 to 10:38 PM MDT, N to NNE to NE, max altitude 12 deg above NNE, disappears into Earth's shadow at 9 deg above NE, max magnitude -0.9 (Passing through Auriga, Camelopardalis/Perseus, and Cassiopeia/Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 23, 2023. International Space Station (ISS). 9:46 to 9:48 PM MDT, NW to NE, max altitude 10 deg above N, max magnitude -0.6 (Passing through Perseus, Cassiopeia, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 23, 2023. International Space Station (ISS). 11:21 to 11:24 PM MDT, NNW to N, disappears into Earth's shadow at max altitude 25 deg above N, max magnitude -1.6 (Passing through Auriga and Camelopardalis). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 24, 2023. International Space Station (ISS). 10:33 to 10:35 to 10:36 PM MDT, NNW to NNE to NE, max altitude 20 deg above NNE, disappears into Earth's shadow 18 deg above NE, max magnitude -1.6 (Passing through Auriga, Camelopardalis, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 25, 2023. International Space Station (ISS). 9:44 to 9:46 to 9:48 PM MDT, NNW to NNE to ENE, max altitude 15 deg above NNE, disappears into Earth's shadow 7 deg above ENE, max magnitude -1.1 (Passing through Perseus, Cassiopeia, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 26, 2023. International Space Station (ISS). 8:56 to 8:57 to 8:58 PM MDT, N to NNE to NE, max altitude 12 deg above NNE, max magnitude -1.0 (Passing through Perseus, Cassiopeia, Cepheus, and Cygnus). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 26, 2023. International Space Station (ISS). 10:31 to 10:35 PM MDT, NW to NE, disappears into Earth's shadow near max altitude 41 deg above NE, max magnitude -3.0 (Passing through Auriga, Camelopardalis, Ursa Minor-near Polaris, and Draco). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

May 27, 2023. International Space Station (ISS). 9:43 to 9:45 to 9:48 PM MDT, NNW to NNE to E, max altitude 26 deg above NNE, disappears into Earth's shadow 15 deg above E, max magnitude -2.1 (Passing through Auriga/Perseus, Camelopardalis, Cepheus, Cygnus/Draco, and Lyra). Predictions for the ISS are subject to change due to orbital adjustments. Check for updated predictions.

Satellite orbits can change. **These predictions for satellite passes may be inaccurate by up to several minutes, especially after May 15.** For more accurate predictions of these and other satellites, check Heavens-Above.com or other satellite prediction sites for updates on the nights you wish to observe. Be sure to set application(s) for your location and time zone.

HAPPY OBSERVING!