

Highlights of the August Sky...

- - - 1st - - -

First Quarter Moon @ 8:41 am EDT

- - - 3rd - - -

PM: A waxing gibbous Moon is about 1° below Antares in Scorpius.

- - - 9th - - -

Full Moon @ 3:55 am EDT

- - - 11th - - -

PM: Saturn trails a waning gibbous Moon by 5° when they rise in the east.

- - - 12th - - -

AM: Venus and Jupiter, the two brightest planets in the night sky, are less than 1° apart when they rise in the east-northeast.

- - - 12th → 13th - - -

PM: The Perseid meteor shower peaks, but the Moon will interfere with all but the brightest of meteors.

- - - 16th - - -

Last Quarter Moon @ 1:12 am EDT

AM: The Moon is about 4° to the upper right of the Pleiades.

- - - 19th - - -

AM: A waning crescent Moon, Jupiter, and Venus form an arc just over 14° tall in the east-northeastern sky.

- - - 20th - - -

AM: The crescent Moon is 4½° to the upper left of Venus. Jupiter is 8° to the pair's upper right and completes a triangle.

- - - 21st - - -

DAWN: A thin crescent Moon is nearly 5° to the upper left of Mercury.

- - - 23rd - - -

New Moon @ 2:07 am EDT

- - - 26th - - -

DUSK: A waxing crescent Moon is about 6° to the lower left of Mars.

- - - 27th - - -

DUSK: The Moon is 5½° to the right of Spica low in the southwest.

- - - 30th - - -

DUSK: The Moon is 4½° to the lower right of Antares.

Prime Focus

A Publication of the Kalamazoo Astronomical Society

★ ★ ★ August 2025 ★ ★ ★

This Month's KAS Events

Astrophoto Workshop: Saturday, August 2 @ 4:00 pm

Solar Imaging • Flesher Field • See Page 8 for Details

Perseid Potluck Picnic: Saturday, August 2 @ 6:00 pm

Flesher Field (3664 S. 9th St.) • See Page 8 for Details

Observing Session: Saturday, August 16 @ 9:00 pm

Kalamazoo Nature Center • [Visit Observing Page for Details](#)

Observing Session: Saturday, August 30 @ 9:00 pm

Kalamazoo Nature Center • [Visit Observing Page for Details](#)

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★ ★ ★ www.kasonline.org ★ ★ ★

We urgently need volunteers on Saturday, August 9th, starting at 10am. That's the date and time we've selected to disassemble the late Fred Dutton's donated 15-foot ProDome observatory from Technical Innovations. If we have enough help, we hope to finish the job in a single day, but we will continue and hopefully complete it on Sunday, August 10th. The Fred E. Dutton Irrevocable Trust will soon hand the house and property over to the Kalamazoo Foundation, so it's imperative we remove the observatory as soon as possible.

Pete Mumbower has done the most research on the ProDome, so he'll be the onsite supervisor. He'll be making a list of all the tools that we'll need and bringing several tote bags to store the various sections. As the various sections are removed, they'll need to be cleaned first, though. Pete or I will bring a power washer, but I imagine we'll need plenty of buckets, brushes, and towels as well. We will try to organize much of this work at the Perseid Potluck Picnic on August 2nd.

We're not sure exactly how long breaking down the observatory will take, so we're tentatively planning to provide pizzas, sports drinks (Powerade or Gatorade), and water for all our volunteers on August 9th. That means we'll need coolers, bags of ice, paper plates, napkins, and trash bags.

The ProDome will be kept in Mike Patton's storage facility in Plainwell. We'll need a trailer, U-Haul, or member trucks and/or vans to transport the parts there.

We can only keep the observatory in Patton's facility until early October, so we'll likely need somewhere to store everything for an unspecified time after that. Suggestions are welcome.

We've made a fair amount of progress since we learned of Fred's generous donation on May 15th. KAS board members inspected the observatory and equipment on June 8th. We determined that all the important equipment was in good working order; only the observatory

computer appeared to be inoperable. It would've needed to be replaced anyway. The group photo above was taken after the initial inspection.

We returned on June 10th to troubleshoot an issue with the dome's shutter system (which was resolved), clean the interior a bit, inventory all the equipment, and remove most of the smaller items. Fred's Tele Vue eyepieces and observing chair now reside in Owl Observatory. We have yet to determine if we'll sell any of the eyepieces, but I know a member or two already have their eyes on them!

After exchanging several emails with PlaneWave, we successfully acquired a crate for the CDK20 telescope. Matt Borton drove to PlaneWave headquarters in Adrian, Michigan, on June 20th to pick it up. On the morning of June 26th, Matt Borton, Scott Macfarlane, Pete Mumbower, Philip Wareham, and Dave Woolf removed the CDK20, Paramount MEII mount, and other remaining equipment from the observatory in sweltering heat and humidity. Matt returned to PlaneWave HQ on July 1st to deliver the CDK20 for cleaning and collimation.

Once the observatory has been disassembled, we'll resume planning to move it to Arizona Sky Village. Mike Patton has given his blessing to reassemble the dome on his property, where it will serve as the new home of the KAS Remote Telescope. This phase will require even more volunteer work and some more fundraising. We're considering some other serious upgrades as well. Stay tuned!



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THE Lunar

by Gregory T. Shanos

X & V

One of my favorite “features” on the Moon is the Lunar X & V. These phenomena are predictable and occur on a monthly basis. (See table 1).

The Lunar X (also known as the Werner X) is a clair-obscure effect in which light and shadow create the appearance of a letter 'X' on the rim of the craters Blanchinus, La Caille, and Purbach. The X is visible beside the terminator about one-third of the way up from the southern pole of the Moon. The Lunar V forms along the northern part of the terminator near the crater Ukert. (See images 1 and 2.)

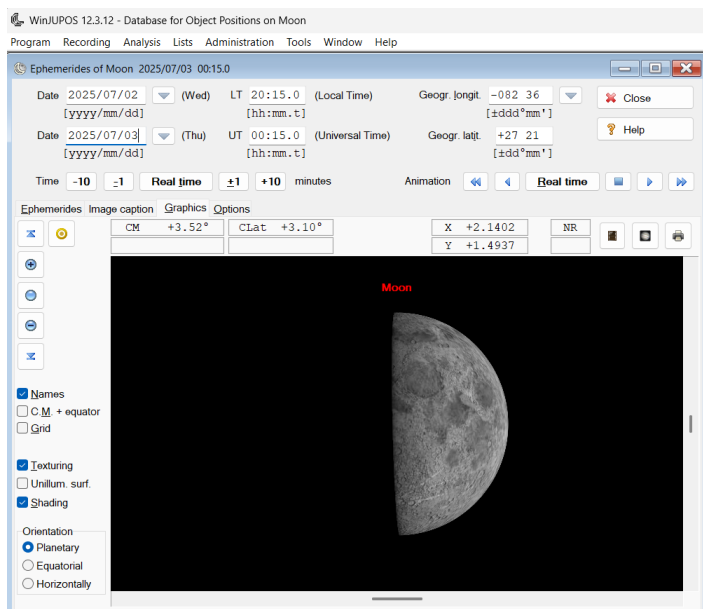


Figure 1: Conversion of Universal Time to Local Time using WinJupos. Note the geographic longitude and latitude must be entered first. Use a (-) negative sign for longitude if you are in the Western Hemisphere. Note that July 3, 2025, at 00h 15m UT is actually July 2, 2025, at 20:15 (8:15 pm) local time.

I advise all amateur astronomers to consult this table to see if the Lunar X & V will be visible from your location. Time and date are listed in Universal Time; therefore, each individual observer will need to convert to their local time to observe the event. The easiest way to do this is with a free program called [WinJupos](#).

WinJupos states both Universal Time and Local Time for the Sun, Moon, and planets. Enter your latitude and lon-



Image 1: The Lunar X & V stand out in high relief on the disk of the Moon on July 2, 2025, at 8:24 pm local time, or July 3, 2025, at 0h 24m UT. The Moon was in a 52% phase and high in the sky at 53° above the horizon.

The weather conditions were poor due to cloudy skies that persisted throughout the night. Greg caught a break in the clouds for approximately 10 minutes and was therefore able to obtain this image. Paradoxically, the seeing was quite good. The image was taken in daylight since sunset had not yet occurred.

An Orion ED80T CF 480mm f/6 triplet apo carbon fiber refractor was tracking on an Orion EQ-2 mount. A ZWO ASI 178MM monochrome camera and Baader CMOS-optimized UV-IR cut filter using Firecapture v2.7.15 acquired the video through the refractor. The SER video was processed using Autostakkert 4.0.13 and Registax 6.1.0.8. Using Photoshop CS4, the image was further processed and sharpened.

Five Year Lunar “X” & “V” Schedule

	2024	2025	2026	2027	2028
January	18: 0830	06: 1645	25: 1630	15: 0015	04: 0830
February	16: 2345	05: 0800	24: 0730	13: 1530	03: 0015
March	17: 1400	06: 2300	25: 2145	15: 0600	03: 1500
April	16: 0300	05: 1300	24: 1100	13:1930	02: 0430
May	15: 1600	05: 0130	23: 2245	13: 0730	01: 1700 31: 0400
June	14: 0400	03: 1330	22: 0945	11: 1830	29: 1430
July	13: 1430	03: 0015	21: 2000	11: 0500	29: 0030
August	12: 0130	01: 1100 30: 2130	20: 0630	09: 1530	27: 1100
September	10: 1230	29: 0900	18: 1730	08: 0200	25: 2245
October	10: 0015	28: 2115	18: 0530	07: 1400	25: 1130
November	08: 1245	27: 1045	16: 1900	06: 0300	24: 0145
December	08: 0230	27: 0115	16: 0930	05: 1730	23: 1645

All time are listed as the day of then month and then the hour in UT.

All times are approximations based on LTVT calculations. They are accurate to ± 1 hour

Table 1: Five-year schedule for the “X” and “V” from ALPO’s monthly journal, *The Lunar Observer*.



Image 2: The Lunar X & V stand out in high relief on the disk of the Moon on May 4, 2025, at 9:31pm Eastern Time, or May 5, 2025, at 1h 31.2m UT. The Moon was in a 55.0% phase and high in the sky, at 69° above the horizon. Weather conditions included humid, clear skies with good steady seeing.

The image was taken with an altazimuth-driven Meade LX200GPS ACF 8-inch Go-To Schmidt-Cassegrain telescope utilizing a Lepus 0.62× focal reducer. A ZWO ASI 178MM monochrome camera with an Optolong UV-IR cut filter using Firecapture v2.7.14 to acquire the video.

The SER video was processed using Autostakkert 4.0.13 and Registax 6.1. The image underwent further sharpening and processing using Photoshop CS4.

gitude first, then enter the Universal Time stated on the table, and your local time will appear above (see figure 1). For many observers in the Western Hemisphere, local time will be the day before.

For example, the Lunar X & V occurred according to the table on July 3, 2025, at 00 hours 15 minutes UT, which for the New York Time Zone is the day before, July 2, 2025, at 20:15, or 8:15 pm local time. If you went out on July 3rd, the X & V would have occurred already and would not be visible. Therefore, it is imperative that Universal Time be converted to Local Time to witness the event.

Fortunately, the X & V will appear and last several hours later than the stated time on the table. This is a good thing, since it may be cloudy at the start of the event, and an hour later the clouds may have dissipated. The Lunar X & V will still be visible! Another interesting phenomenon I previously witnessed was that the V was visible at the time stated on the table, but the X was not fully formed. It took several hours for the X to appear as a full X. This feature makes the observation even more interesting since you can watch the X appear in real time!

In conclusion, the Lunar X & V are monthly phenomena not to be missed. Please refer to the table, convert Universal Time to Local Time, and determine if it will be visible from your location. If it is, then get out your telescopes and cameras and submit your observations to ALPO’s *The Lunar Observer* care of [David Teske](#).

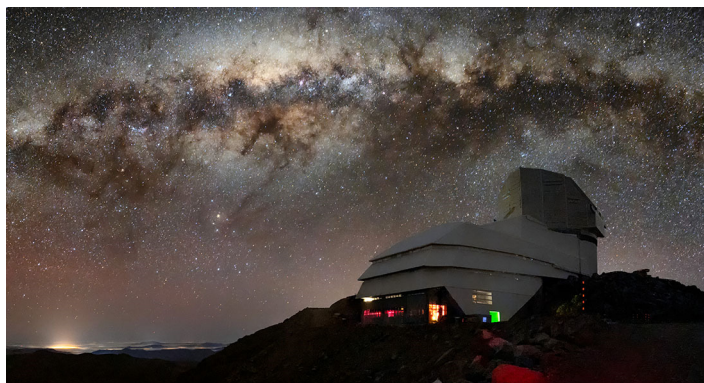
Greg became a member of the Kalamazoo Astronomical Society in December 2022 after attending the Introduction to Amateur Astronomy series. He lives in Longboat Key, located in Sarasota, Florida.

The Great Rift

by Dave Prosper | updated by Kat Troche

Summer skies bring glorious views of our own Milky Way galaxy to observers blessed with dark skies. For many city dwellers, their first sight of the Milky Way comes during trips to rural areas - so if you are traveling away from city lights, do yourself a favor and look up!

To observe the Milky Way, you need clear, dark skies and enough time to adapt your eyes to the dark. Photos of the Milky Way are breathtaking, but they usually show far more detail and color than the human eye can see – that's the beauty and quietly deceptive nature of long exposure photography. For Northern Hemisphere observers, the most prominent portion of the Milky Way rises in the southeast as marked by the constellations Scorpius and Sagittarius. Take note that, even in dark skies, the Milky Way isn't easily visible until it rises a bit above the horizon, and the thick, turbulent air obscures the view. The Milky Way is huge, but it is also rather faint, and our eyes need time to truly adjust to the dark and see it in any detail. Avoid bright lights as they will ruin your night vision. It's best to attempt to view the Milky Way when the Moon is at a new or crescent phase; a full Moon will wash out any potential views.



The Vera C. Rubin Observatory, located at Cerro Pachón, Chile, under the Milky Way. The bright halo of gas and stars on the left side of the image highlights the very center of the Milky Way galaxy. The dark path that cuts through this center is known as the Great Rift, because it gives the appearance that the Milky Way has been split in half. Image Credit: RubinObs/NOIRLab/SLAC/NSF/DOE/AURA/B. Quint

Keeping your eyes dark-adapted is especially important if you want to not only see the haze of the Milky Way, but also the dark lane cutting into that haze, stretching from the Summer Triangle to Sagittarius. This dark detail is known as the Great Rift, and is seen more readily in very dark skies, especially dark, dry skies found in high desert regions. What exactly is the Great Rift? You are looking at

massive clouds of galactic dust lying between Earth and the interior of the Milky Way.

Other “dark nebulae” of cosmic clouds pepper the Milky Way, including the famed [Coalsack](#), found in the Southern Hemisphere constellation of Crux. Many cultures celebrate these dark clouds in their traditional stories along with the constellations and the Milky Way. One such story tells of a [Yacana the Llama](#), and her baby, wandering along a river that crossed the sky – the Milky Way. The bright stars Alpha and Beta Centauri serve as the llama's eyes, with the dark sections representing the bodies of mother and baby, with the baby below the mother, nursing.



In the activity, “Our Place In Our Galaxy”, if the Milky Way were shrunk down to the size of North America, our solar system would be about the size of a quarter. At that scale, Polaris - which is about 433 light years distant from us - would be 11 miles away. Image Credit: Astronomical Society of the Pacific

Where exactly is our solar system within the Milky Way? Is there a way to [get a sense of scale](#)? The “[Our Place in Our Galaxy](#)” activity can help you do just that, with only birdseed, a coin, and your imagination. You can also discover the amazing science NASA is doing to understand our galaxy – and our place in it - in the [Galaxies](#) section of [NASA's Universe](#) page.

This article is distributed by NASA's Night Sky Network (NSN). The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit night-sky.jpl.nasa.gov to find local clubs, events, and more!



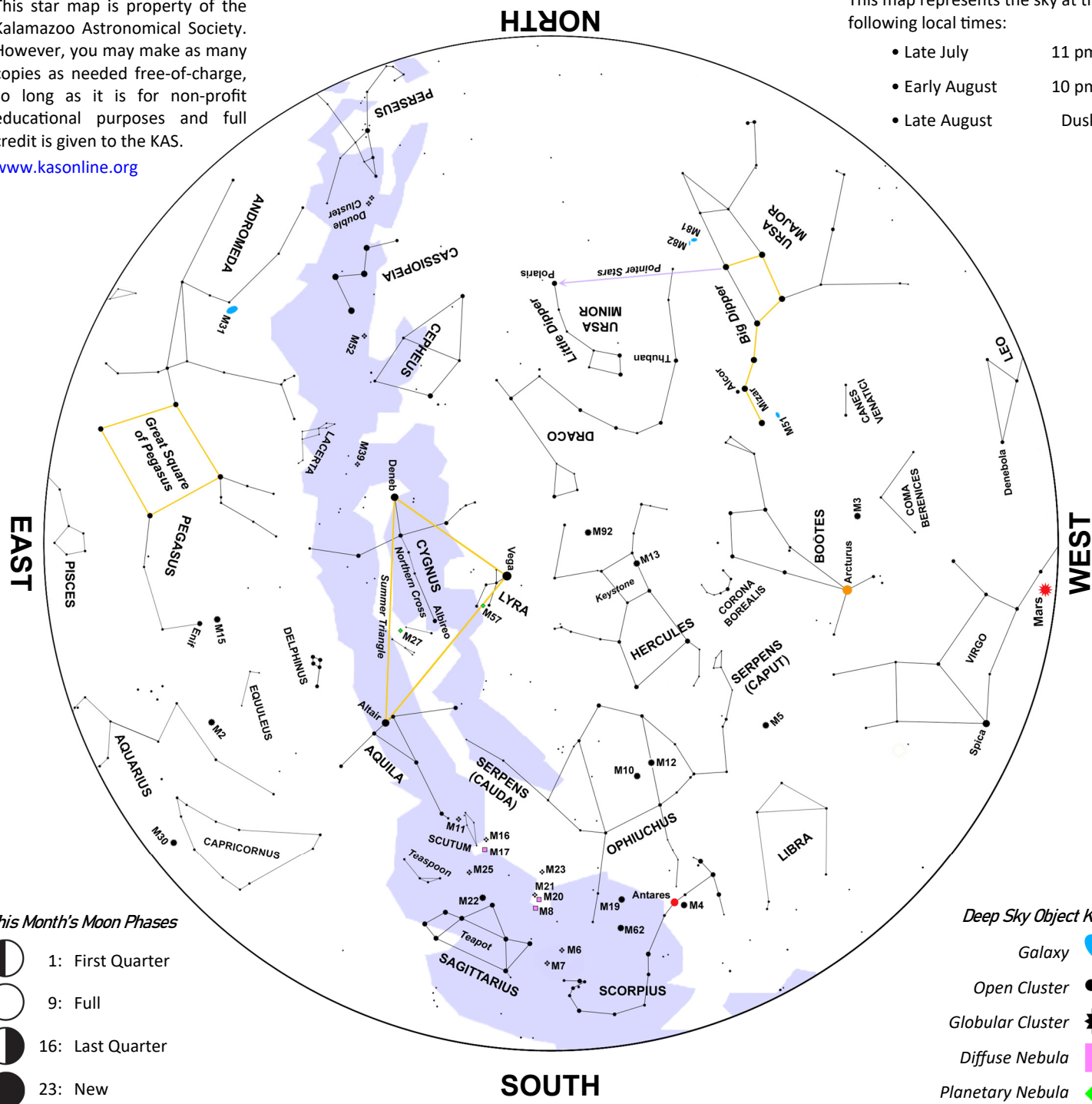
August Night Sky

This star map is property of the Kalamazoo Astronomical Society. However, you may make as many copies as needed free-of-charge, so long as it is for non-profit educational purposes and full credit is given to the KAS.

www.kasonline.org

This map represents the sky at the following local times:

- Late July 11 pm
- Early August 10 pm
- Late August Dusk



The two brightest planets in the night sky, Venus and Jupiter, will be less than 1° apart on the morning of August 12th. They rise in the east-northeast at ~4am under total darkness, so you can enjoy the dazzling duo before the light of dawn interferes.

A bright waning gibbous Moon will interfere with this year's peak of the Perseid meteor shower on the night of August 12th-13th.

A lunar trilogy of sorts begins on the morning of August 19th. A waning crescent Moon, Jupiter, and Venus form a vertical arc about 14° tall above the east-northeast horizon.

The thin lunar crescent appears about 4° to the upper left of Venus on August 20th. This conjunction can be greatly enhanced with an ordinary pair of 7×50 or 10×50 binoculars.

The lunar trilogy concludes at dawn on August 21st when the Moon, two days from new, appears $4\frac{1}{2}^\circ$ to the lower right of Mercury. Binoculars may be needed to spot the elusive innermost planet.

There's a lunar encore at dusk on August 26th, when the three-day-old waxing crescent Moon is some 6° to the lower left of Mars. Look low on the west-southwest horizon.

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The KAS Invites You to the Thirty-First Annual

PERSEID POTLUCK PICNIC



Mark your calendar. Hope for good weather. It's time for our largest social event of the summer. So get ready to party! Here are the details:

The KAS will provide the hot dogs, hamburgers, and veggie burgers by order. (You should have already received three email notifications about registering and providing your order.) The KAS will also provide condiments. You will be required to bring your own beverages, table service, lawn chairs, bug spray, and a dish to pass.



This year's summer gathering will be held at Flesher Field in Oshtemo Township. There's plenty of room, so feel free to bring any types of outdoor games or toys to pass the time while we wait for dinner.



Solar observing will be available through telescopes equipped with both white light and hydrogen alpha filters (weather permitting). We will also host a ***Solar Imaging Workshop and Demonstration*** before the picnic at 4pm. Members are encouraged to bring their equipment for knowledge-sharing or if they need a hands-on tutorial.

Prepare yourself for whatever Mother Nature has in store for us, regardless of the weather conditions.

WHEN:



Saturday, August 2, 2025

Arrive at 6pm • Dinner starts at 7pm

WHERE:



Flesher Field

3664 S. 9th St. • Oshtemo Township