

## Highlights of the January Sky...

- - - 3<sup>rd</sup> - - -

Full Moon @ 5:03 am EST

Earth reaches perihelion, its point closest to the Sun for 2026, at about 12:15 pm EST.

DUSK: The Moon is flanked by Pollux  $3\frac{1}{2}^\circ$  to its left and Jupiter about  $3^\circ$  to its right when they rise in the east-northeast.

- - - 3<sup>rd</sup> → 4<sup>th</sup> - - -

The Quadrantid meteor shower peaks, but is severely hampered by the Full Moon.

- - - 6<sup>th</sup> - - -

PM: A waning gibbous Moon trails Regulus, in Leo, by about  $6\frac{1}{2}^\circ$  when they rise above the eastern horizon.

- - - 9<sup>th</sup> → 10<sup>th</sup> - - -

Jupiter reaches opposition, appearing opposite the Sun and rising at sunset.

- - - 10<sup>th</sup> - - -

Last Quarter Moon @ 10:48 am EST

- - - 11<sup>th</sup> - - -

AM: The Moon is  $5\frac{1}{2}^\circ$  below Spica when they rise in the east-southeast.

- - - 14<sup>th</sup> - - -

DAWN: A waning crescent Moon is  $3\frac{1}{2}^\circ$  to the upper right of Antares.

- - - 18<sup>th</sup> - - -

New Moon @ 2:52 pm EST

- - - 22<sup>nd</sup> - - -

DUSK: A waxing crescent Moon is about  $6^\circ$  to the lower right of Saturn in the west-southwest.

- - - 25<sup>th</sup> - - -

First Quarter Moon @ 11:47 pm EST

- - - 27<sup>th</sup> - - -

DUSK: A waxing gibbous Moon is nearly  $2^\circ$  to the left of the Pleiades.

- - - 30<sup>th</sup> - - -

DUSK: The Moon forms a triangle with Jupiter and Pollux in Gemini.

- - - 31<sup>st</sup> - - -

DAWN: The Moon is again flanked by Pollux  $4^\circ$  above and Jupiter  $5^\circ$  to the lower right as they set in the west-northwest.

# Prime Focus

A Publication of the Kalamazoo Astronomical Society

★ ★ ★ January 2026 ★ ★ ★

## This Month's KAS Events

**General Meeting: Friday, January 9 @ 7:00 pm**

*Kalamazoo Area Math & Science Center • See Page 12 for Details*

**Online Viewing: Saturday, January 10 @ 9:00 pm**

*Held on Zoom • [Click to Register](#) • [Visit OVS Page for Details](#)*

**Introduction to Amateur Astronomy Series Begins**

*Held on Zoom • See Page 4 for Dates, Times & Topics*

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★ ★ ★ [www.kasonline.org](http://www.kasonline.org) ★ ★ ★

# Observations of 2025

by Richard S. Bell

Overall, 2025 was another good year for the Kalamazoo Astronomical Society. It was not as good as 2024, though. A total solar eclipse, three major aurora out-breaks, a decent comet, and record membership are hard to surpass. This past year did have a fantastic lunar eclipse and another decent comet, C/2025 A6 (Lemmon).

One area where we always do well is guest speakers, and 2025 was no exception. Probably my favorite presentation of the year was the first one in January with Dr. J. Richard Gott from Princeton University. I still don't understand how a study of regular polygons helped lead to the discovery of the large-scale structure of the universe! I still need to purchase a copy of his book *The Cosmic Web*.

We remain grateful for the last-minute substitution of Dr. Samantha Lawler, from the University of Regina in Saskatchewan, in February. Dr. Lawler spoke on the threat to observational astronomy and the environment from the growing number of megaconstellations of satellites. This is a topic we'll visit again, as the threat is only going to get worse.

Other notable presentations in 2025 were from our own Dr. Kirk Korista (WMU), friend of the KAS Dr. Nicolle Zellner (Albion College), Prof. Chris Howk (Notre Dame), and yours truly in September. It's January now, and I *still* don't think we're going back to the Moon this year. I'll believe it when I see it!

The biggest astronomical event of the year, at least in my view, was the total lunar eclipse on March 14<sup>th</sup> (Pi Day). We had marvelously clear skies, and several members came out to view and photograph it. Pictured on the left is one of the images I took that night.



We had to cancel 8 out of 14 Public Observing Sessions last year. Some of the last sessions of the season had excellent conditions and attendance. Conditions in June and July suffered from the excessive humidity we had last summer. As for attendance at public sessions, I'd say that's one area that has recovered since the pandemic. We had some fairly large crowds for the sessions in late August and September. I can't say the same for general meetings. We just can't

seem to break the recent average of 35 members and guests. Thanks to Zoom, the overall attendance for general meetings has been good, but I don't bring in guest speakers for Zoom!

The most significant news event for the KAS in 2025 was the donation of equipment from the late Fred Dutton. Fortunately, our own Tim Kurtz and Pete Mumbower purchased the donated PlaneWave CDK20 and Technical Innovations 15-foot ProDome observatory, respectively. We still need to sell two major items: the Software Bisque Paramount ME classic mount and the Celestron CPC 800 GPS Computerized Telescope. Around Christmas Day, someone stole the latter from our storage facility, but we recently recovered it. We'll have more on that at the January meeting! The donation and sale of this equipment will allow us to make significant updates and upgrades to the KAS Remote Telescope in 2026.

Finally, we finished the year with 338 memberships. This is down from our all-time high set last year of 378 but an increase of 1 membership from 2023. This figure also represents the first dip in membership since 2018. I've been expecting this, though. Membership increased during the pandemic, and our eclipse activities in 2024 helped bring about our record high. Hopefully, this year's 90th anniversary celebration will help keep us over 300 memberships, but I'm skeptical. We do have a great deal of special programming planned, so hopefully my fears of another decrease are unwarranted.

## KAS Board of Directors

President

**Richard S. Bell**

Vice President

**Jack Price**

Treasurer

**Don Stilwell**

Secretary/ALCOR

**Philip Wareham**

Members-At-Large

**Matt Borton**

**Scott Macfarlane**

**Pete Mumbower**

**Dave Woolf**

## Non-Elected Volunteer Positions

Prime Focus Editor & Website Coordinator

**Richard S. Bell**

Equipment Manager

**Joe Comiskey**

Librarian

**Karen Woodworth**

Library Telescope Program Coordinator

**Mike Cook**

Membership & Program Coordinator

**Richard S. Bell**

Remote Telescope Technical Administrator

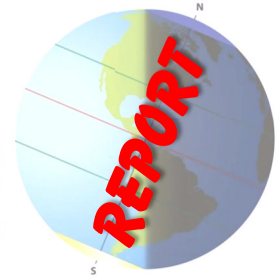
**Jim Kurtz**

Remote Telescope Usage Administrator

**Mike Patton**



# Winter Solstice Party



The Kalamazoo Astronomical Society's annual meeting, featuring the fourth Winter Solstice Party (WSP), began at 5:30 pm EST on Saturday, December 6, 2025. Westwood United Methodist Church, located at 538 Nichols Road, hosted this year's gathering for the second year in a row. Attendance was 36 members and guests, up slightly from last year's 32. Even though it's been five years, we are still struggling to get back to pre-pandemic attendance levels. This includes general meetings plus our summer and winter gatherings.

**Phyllis Lubbert** served as the organizer for the second consecutive year. She made all the preparations for dinner, including the table centerpieces. Special thanks once again go to **Suzanne Schauer** and **Brenda Tiffenthal**, friends of Phyllis and members of the church, who helped prepare and serve dinner and wash all the dishes.

We enjoyed a buffet-style dinner again this year, and it was as excellent as last year and only \$16.00. Appetizers consisted of fruits, vegetables, cheese, and crackers. Entrée choices included baked Italian-marinated chicken breast, Italian meatballs, original meatballs, and pasta choices of penne or fettuccine. Side dishes were green beans, sautéed Italian vegetables, and a potato blend (red skin/golden). Last but not least were cannoli cream cups, berry blend, pumpkin pie, and cake for dessert.

Once dinner was complete and everyone had a chance to relax and converse, we played five highly competitive rounds of BINGO. We say this every year, but this time we *truly* mean it! Everyone in attendance was very animated



Roslyn Borton, daughter of KAS board member Matt Borton, won the third round of BINGO and choose a Moon Lamp as her prize.

and anxious to win a BINGO prize this year. Here are the lucky winners:

- **Jack Price** – Northern Galaxy Light Aurora Projector  
– Donated by the KAS
- **Elaine Ritter** – Constellation Whiskey Glasses  
– Donated by the KAS
- **Roslyn Borton** – Moon Lamp  
– Donated by the KAS
- **David Latimer** – Sun/Moon Decoration  
– Donated by the KAS
- **Sandra Latimer** – KAS Night Light  
– Donated by Tim Kurtz

With all the festivities complete, we moved on to the annual meeting. It began with final nominations and the election of 2026 officers and at-large board members. With 6 candidates for member-at-large, we actually had to vote by secret ballot for the first time since 2013! Ultimately, the current four members-at-large were reelected since they were actually present at the meeting. Please see page 2 for the list of 2026 KAS board members.

At the start of his President's Report, Richard said the next notification for people to renew their KAS membership would be coming via email within a couple of weeks.



Members enjoy dinner and conversation at the Winter Solstice Party. (L to R) Duane & Katie Weller, Molly Williams, Beverly Byle, and Mike Cook.

He thanked everyone who has already renewed and stated it makes his life easier when everyone renews in a timely fashion.

In an update to the late Fred Dutton's donated PlaneWave CDK20, Tim Kurtz has offered to purchase the telescope (see last month's Board Meeting Minutes on page 4 to learn more). This sale will make most of our upgrade plans for the Remote Telescope possible next year.

The *Introduction to Amateur Astronomy* lecture series begins on January 17<sup>th</sup>. Richard said about 300 people have already registered. He also reminded members that he still plans to attend the Rockland Astronomy Club's [Northeast Astronomy Forum](#), the world's largest astronomy and space expo, on April 11<sup>th</sup> and 12<sup>th</sup>. It would be marvelous if a

large contingent of KAS members could attend with him.

And finally, while on the topic of trips, Richard plans to take a week's vacation in Utah sometime in 2026, and he's searching for some advice. What is the best park to visit for stargazing and astrophotography? Is it Arches National Park, Bryce Canyon National Park, Canyonlands National Park, or Zion National Park? What's the best time of year to visit? Obviously, at a time when the summer Milky Way is prominently visible. Are there any cabins available for rental in or near any of the aforementioned parks?

After discussing observing reports (there weren't any, too cloudy), astronomical news (not too much going on), and upcoming events (DO NOT miss Prof. Sara Seager on January 9<sup>th</sup>), the meeting concluded at about 8:32 pm.

# *Introduction to* **AMATEUR ASTRONOMY**

The five-part lecture series designed to help you become a star-hopping skymaster begins this month! Participants who attend ALL FIVE parts and sign in as instructed will receive a Certificate of Completion. [Please register](#) if you haven't done so already. Here are the topics:

## Part 1: *Our Place Among the Infinities*

 Saturday, January 17<sup>th</sup>

 1:00 pm – 3:00 pm

For a long time, the stars were merely pinpoints of light on the black backdrop of the heavens. Before massive mountaintop telescopes came along, all we could observe were the Sun, Moon, planets, their satellites, and the occasional comet. Today we know that those pinpoints of light are distant suns and that we live in a remote corner of one galaxy among billions. For our first presentation, we'll travel through our solar system and explore the star clusters and nebulae of our Milky Way Galaxy and the countless other galaxies in this vast, infinite universe.

## Part 2: *Discovering the Night Sky*

 Saturday, January 31<sup>st</sup>

 1:00 pm – 3:00 pm

Is that a planet or a bright star? Where's the constellation Orion? Your first task as an amateur astronomer is to learn your way around the night sky. With a simple star map or planisphere, we'll show you how to find any star or constellation in the night sky. There are wonderful things to see in the sky during the day and at night. At some point, everyone has looked up and seen the Sun, Moon, stars, and planets. This presentation will show you that there is so much more you can see with your eyes alone. Meteor showers, auroras, eclipses, and more all await you!

***Held Exclusively on Zoom***



Visit the *Introduction to Amateur Astronomy* [web page](#) for more information on the entire series.

# 90

# Years of Looking Up

## A Brief History of the Kalamazoo Astronomical Society

The history of the Kalamazoo Astronomical Society can be traced to its origin in 1936. The group was founded by Leonard James Ashby as the Kalamazoo Amateur Astronomical Association (KAAA). Mr. Ashby also served as the organization's first president. Inaugural members included amateur astronomers from the community at large and astronomy students from Kalamazoo College. Mr. Ashby hosted some of the earliest gatherings in his observatory, built into the top of his garage at 437 Stone Street. Professor John Hornbeck's [astronomy class](#) at K-College also

Commercially built telescopes were fairly expensive at the time, so many of the members constructed their own instruments, using surplus optics or grinding their mirrors.

At least two of our members received a fair amount of notoriety for their amateur telescope-making efforts. The *Kalamazoo Gazette* [published an article](#) about Mr. Ashby's successful effort to grind a 10-inch primary mirror. Both he and his wife, Nona, were featured in *The Beginner's Corner* section of the November 1939 issue of *Scientific American*. Alfred M. Bryant was also the subject of at least two



Kalamazoo Amateur Astronomical Association (circa late 1930s). From left to right: Dr. Lawrence N. Upjohn, unknown man (behind refractor), Leonard Hayden, unknown man (behind Leonard), unknown man (left of reflector), Louis Stadler (front), Jimmie Sigler, Jennie Hayden, Leonard James Ashby, Nona Ashby, Edgar Pashby (behind Nona), Hans Baldauf (front and center), Shiley? (behind Hans), Alfred Bryant (in profile), unknown man, Harriet Sigler (partial), Jim Hopkins, Fred Ashby (kneeling), Lillian Baldauf, unknown woman, unknown woman, Gratia Upjohn (dark dress), Bertha Ashby (front), William Persons, unknown woman (behind telescope), unknown man sitting on far right.

convened students for viewing at Ashby's observatory. Based upon a newspaper clipping in the *Kalamazoo Gazette*, we believe the first formal gathering of the KAAA was held in Mr. Ashby's home on September 30, 1936.

As noted, the KAAA consisted of young and old astronomy enthusiasts from the start. In addition to Mr. Ashby, some of the other prominent local amateur astronomers included Hans & Lillian Baldauf, Alfred M. Bryant, Jim Hopkins, Leonard Hayden, Edgar Pashby, William Persons, James Sigler, Louis Stadler, and Dr. Lawrence N. Upjohn.

articles. We first learned of Mr. Bryant's name from Philip Steffey, who joined the KAAA in 1953 at the age of 14 and remained a member until 1960. He wrote an article in which he mentions first joining the KAAA. He described Mr. Bryant "as the patriarch of astronomy in the Kalamazoo area." This certainly seems to be the case, based on what was found in old newspapers.

The [first article](#) found on Mr. Bryant's telescope-making efforts was in the *Detroit Free Press* from March 28, 1937 (page 10). It describes how he and his neighbor,

## Sky & Telescope's "Amateur Astronomers" Section

**Kalamazoo:** On September 14th, at the regular meeting of the Kalamazoo Amateur Astronomy Association, William Persons will speak on "The Tides." The meeting is at the home of Dr. H. R. Cobb, 3319 Knox Avenue.

Sept. 1946, p. 10

**Kalamazoo:** Meeting in the Science Hall at Kalamazoo College, on November 9th, the Kalamazoo Amateur Astronomy Association will hear a talk by Dr. J. Hornbeck on "The Spectroscopy in Astronomy."

Nov. 1946, p. 8

**Kalamazoo:** At the home of Mr. and Mrs. D. C. Lawrence, 307 Woodward, Comstock, the Kalamazoo Amateur Astronomy Association will hear a talk by Alfred Bryant on "The Sun." The meeting is on Saturday, June 21st.

June 1947, p. 12

**Kalamazoo:** At the meeting of the Kalamazoo Amateur Astronomy Association on October 12th at the home of Dr. and Mrs. L. N. Upjohn, 1556 Long Road, Dr. Upjohn will speak on "Mira."

Oct. 1946, p. 8

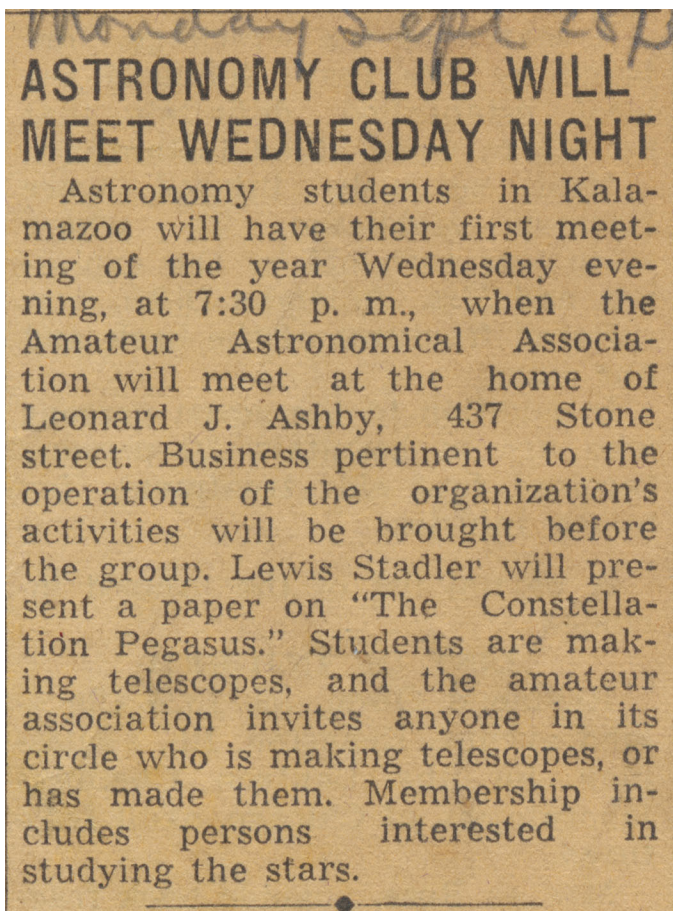
**Kalamazoo:** Meeting at the science building at Western Michigan College, the Kalamazoo Amateur Astronomy Association will hear a talk by Dr. Paul Rood on "Control and Use of Atomic Energy." The meeting is on Saturday, May 24th.

May 1947, p. 7

**Kalamazoo:** A potluck dinner at Wolfe Lake, 12 miles west on Route M-43, is scheduled for the Kalamazoo Amateur Astronomy Association on September 13th. The history of the association will be given by Edgar Pashby; pictures will be shown; and there will be observing if weather permits.

Sept. 1947, p. 10

Bliss Wheaton, learned to build telescopes. One paragraph reads as follows: "The city has an active Astronomers' Club with a score of enthusiastic members. An evening class in astronomy has drawn another eager group." Mr. Bryant would go on to become a prolific telescope builder. Several of his telescopes were shown in an article written by Albert Ingalls in the [January 1943 issue](#) of the *Amateur Telescope Making Journal*.



This newspaper clipping is likely promoting the first-ever KAAA general meeting, held on September 30, 1936.

During the early years, the association convened during the school year, from September to May. Eventually, meetings were held from March through December as more people outside of Kalamazoo College joined the group. Most meetings were held in members' homes, which was convenient for the small, close-knit group. Some meetings were held on the campuses of Kalamazoo College and Western Michigan College (now known as WMU). The annual picnic was held at Wolfe Lake for several years. Many of these gatherings were listed in *Sky & Telescope's* "Amateur Astronomers" section throughout the 1940s and 1950s. The [meeting agenda](#) was a brief presentation by one of the members on a topic of personal interest, followed by backyard telescope viewing.

In 1956, the KAAA affiliated itself with several other astronomy clubs in Michigan, Indiana, Ohio, and Kentucky, founding the Great Lakes Region of the Astronomical League. The function of the League was to connect members of the clubs within the region and to bridge the amateur groups with the universe of professional astronomy.

A new public library/museum was being planned in the mid-1950s. In 1957, KAAA President Hans Baldauf persuaded Alexis Praus, Director of the Kalamazoo Public Museum, that a planetarium would be an excellent addition to the new building. Praus agreed and asked Baldauf if the association would be able to assist in raising funds for a planetarium in the facility. The association successfully raised \$11,000 for the planetarium. The Kalamazoo Foundation provided an additional \$24,000 to complete the planetarium. The planetarium opened its doors to the public on May 23, 1959. For the first few years of operation, members of the KAAA provided volunteer lecturers for the planetarium's public programs.

The first of three name changes for our group occurred during a meeting on February 20, 1960. The KAAA was generically known as the "Kalamazoo Astronomy Club" (KAC) for the remainder of the decade.

Toward the end of the 1960s, the membership of the



KAAA member Hans Baldauf led the fundraising efforts to incorporate a planetarium into the new Kalamazoo Public Museum, which opened its doors in 1959. This image shows museum director Alexis Praus and fellow KAAA member Jerome Korman inspecting the Spitz A2 projector.

group had grown older. Because meetings were held in members' homes, new members could become aware of the organization only by invitation or by reading who to contact in *Sky & Telescope* magazine. As new members entered the group, the close ties that existed between the original association members did not develop. The group was beginning to fray.

New, younger members entered the organization from time to time. Eventually, they took the torch from the original association. In the autumn of 1968, KAC Vice President Roger McPherson announced that the older members no longer wanted to continue meeting and that the future of the organization was in the hands of its younger members.

One of the first changes was making the club more accessible to new members. Meetings shifted from members' homes to the Adventure House at the Kalamazoo Nature Center. Following the meetings, members would view the night sky from the Adventure House parking lot. A constitution was drafted for the operation of the group, which was then called the Kalamazoo Amateur Astronomical Society (KAAS).

For a few years, the society met and observed at a clubhouse on E Avenue, provided by the Kalamazoo Nature Center. The clubhouse was set up with facilities for grinding telescope mirrors and overnight accommodations for observing. Unfortunately, the plumbing never worked properly, and the club members misused the facility. After a few years, it began to deteriorate.

Society members searched for a better meeting site. Mike Potter, then president of the KAAS, contacted Alexis Praus at the Public Museum. The society was welcomed to meet in the planetarium (now called the Hans Baldauf Planetarium after his death in November 1965). At the time, several members of the society learned to operate the museum's new planetarium projector. Once again, the society

provided volunteer support for public shows at the planetarium.

The society grew rapidly with the help of two astronomical events. Several members participated in an expedition to see a total eclipse of the Sun on March 7, 1970, from a football field in Alma, Georgia. At the meeting where members shared their results, Bill Nigg came to show the eclipse photographs he shot in North Carolina. The eclipse was one event. The other was the apparition of Comet Bennett. Several club members would drive in the early morning hours to an observatory Roger McPherson was building in his backyard. The comet provided several weeks of excitement, which strengthened the interest of many society members. During this period, the club's name was shortened to the Kalamazoo Astronomical Society, which we use today.

The growth phase lasted until 1976. At the August meeting, more than 90 members and visitors jammed their way into the planetarium to hear about the Viking space probe's discoveries on the surface of Mars. Gradually, the society declined as core members aged past college years and sought employment. Some found work in their area of interest. Larry Mascotti graduated from Western Michigan University and went to work at a planetarium in Rochester, Minnesota. Jordan Marché went to the planetarium at Franklin and Marshall College in Lancaster, Pennsylvania. After graduating from the University of Michigan, Mike Potter and Don Neill found employment at the Space Telescope Science Institute in Baltimore, Maryland. Bob Dutilly moved away to work at the Goddard Space Flight Center in Greenbelt, Maryland. Other members moved on as well. Some went away to school, some moved for employment, and some lost interest as new hobbies claimed their spare time.

Astronomical events in the early 1990s helped start a new period of growth for the society. Many members watched the partial phases of the July 11, 1991, solar eclipse. Several members traveled to Baja California to view the totally eclipsed Sun. Three years later, an annular



In the spring of 1983, KAS members gathered outside the Hans Baldauf Planetarium at the Kalamazoo Public Museum. The planetarium was the society's meeting place from about 1970 until the end of 1995.



Well over 700 members and guests gathered to witness the last Transit of Venus of our lifetime at Warren Dunes State Park, located along the eastern shore of Lake Michigan in Berrien County, Michigan, on June 5, 2012.

eclipse crossed Southwest Michigan. The whole society became part of a major observing program that included the Kalamazoo Area Mathematics & Science Center (KAMSC), the Kalamazoo Public Museum Planetarium, fifteen area high schools, and amateur radio operators. Mike Sinclair and Eric Schreur were named [joint winners](#) of the 1996 Hans Baldauf Award due to their work on the Northernmost Eclipse Graze Line Project.

Membership once again began to rise in the 60th year of the KAS. It also saw the end of an era. After 30+ years, the Society held its final meeting in the Hans Baldauf Planetarium at the Kalamazoo Public Museum on December 1, 1995. The museum closed its doors forever on December 23<sup>rd</sup> and reopened in a new building as the Kalamazoo Valley Museum in February 1996. The new KAS president, Mike Sinclair, moved us to the Presentation Center at the Kalamazoo Area Math & Science Center. We now had to find monthly guest speakers instead of relying on the plane-



We started holding general meetings in January 1996 at the presentation center of the Kalamazoo Area Mathematics & Science Center. Over the years, several prominent professional and amateur astronomers have served as guest speakers.

tarium for entertainment. This, along with increased publicity, resulted in a dramatic increase in meeting attendance. Many prominent members of the professional and amateur astronomical communities have given presentations at our monthly gatherings at KAMSC.

That same year, the new KAS Board decided to pursue nonprofit status. Work began on a new constitution and bylaws. At the same time, several members began drawing up plans for an observatory at the Kalamazoo Nature Center. [Ground was broken](#) on October 16, 1996. Owl Observatory was [dedicated](#) on August 22, 1998. The KAS Board approved the final version of the KAS [Articles of Incorporation](#) and [Bylaws](#) in February 1999. The KAS received incorporation status from the state of Michigan in April 1999.

Two bright comets also helped create a boom in membership. Comet Hyakutake graced the skies in March 1996. Many KAS members were featured in the local media. Over 600 people enjoyed the astronomical trifecta of a deep-partial lunar eclipse, Mars near opposition, and Comet Hale-Bopp on March 23, 1997. Hundreds more came out to the Nature Center for [CometWatch](#) in early April 1997.

A campaign to upgrade Owl Observatory began in 2000. Richard Bell led an effort to sell 1,000 pairs of eclipse glasses for the December 25<sup>th</sup> partial solar eclipse. Matt Borton and his father, Gordon, installed a new roll-off system for the roof and built a custom telescope pier. Equipment and materials for this project were purchased with a \$3,700 donation from Consumers Concrete. Matt earned his Eagle Scout badge for his efforts. Over \$3,300 was raised to purchase a 12-inch Schmidt-Cassegrain, which was [installed](#) on June 7, 2001.

Thousands of people observed the universe through the 12-inch SCT at [Astronomy Day](#) events between 2001 and 2004. An estimated 1,200 people observed Mars during its historic opposition on August 27, 2003. Hundreds of students from the local colleges and universities have used the 12-inch SCT to complete class projects. Dr. John Miller, from WMU, used the 12-inch telescope to measure the

speed of light from distant quasars.

One of the most significant accomplishments of the KAS took place in February 2004. The IRS finally granted the KAS 501(c)(3) non-profit status. Members and corporations soon contributed several small donations and grants to the organization. We used this money to purchase materials that would enhance our outreach and educational activities. It would also lead to several grants for high-profile Astronomy Day speakers and the major fundraising campaigns that would follow in the years ahead.

KAS members invited the public to Warren Dunes State Park for two special astronomical events in May and June 2012. The [partial solar eclipse](#) on May 20<sup>th</sup> was mostly clouded out, but the eclipsed Sun became visible through a gap in the clouds shortly before setting. The eclipse took place during an intense but spectacular lightning storm that dazzled those that remained. Over 700 people (perhaps a thousand) returned to Warren Dunes on June 5<sup>th</sup> for the last [Transit of Venus](#) of our lifetime. During the entire transit, the skies remained crystal clear, despite the majority of cloud cover further inland. Approximately 30 telescopes were set up to enjoy this rare planetary alignment.

The KAS received an amazing offer from member Mike Patton in January 2008: in return for technical advice and guidance with equipment for his new 20' × 20' roll-off roof observatory at Arizona Sky Village, near the small village of Portal, Mike would provide the KAS with space in that observatory for a telescope to be controlled remotely over the Internet. A strong majority of KAS members voted to begin the "Robotic Telescope Project" in December 2009. Richard Bell led our largest fundraiser in KAS history, which commenced in September 2011 and officially concluded in November 2018. In all, over \$122,000 was raised, the majority of which was through member contributions. KAS members made two group trips to [install](#) the Remote Telescope in December 2015 and March 2017. Members were at last able to reserve time on the telescope beginning in the spring of 2019. A special dedication ceremony was held on November 16, 2019, at Western Michigan University.



KAS members gathered for a group photo following the installation of the 16-inch Leonard James Ashby Telescope at Owl Observatory, located within the Kalamazoo Nature Center, on September 8, 2019.

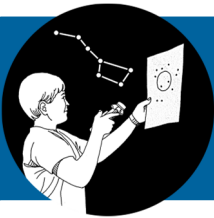
After nearly 18 years, the 12-inch SCT in Owl Observatory was sold, and a second fundraising campaign began, this time to seriously upgrade the facility. We raised over \$41,000 thanks to the sale of eclipse shades for the August 2017 *Great American Eclipse*, donated telescopes, and generous contributions from our members. KAS member Josh Taylor-Lehman constructed a new pier, one capable of supporting the weight of our newly acquired equipment. The initial equipment, a Meade 16-inch SCT and an Astro-Physics 1600GTO German equatorial mount, was [installed](#) on September 8, 2019. Additional equipment, including a Tele Vue 4-inch refractor and eyepieces, was added in 2020. Thanks to the efforts of the observatory's original builder, Dave Garten, the roof was at last motorized, making the facility accessible to everyone. The new instrument was named the [Leonard James Ashby Telescope](#), in honor of our founder and first president.

Many long-term goals still remain. We're considering starting an astronomy expo, similar to the Northeast Astronomy Forum in New York, sometime in the late 2020s. It would be called the "Great Lakes Astronomy Super Show" (GLASS). We would still like to obtain a piece of dark-sky property. At first, the venue could be a place for members to go and observe, but eventually a larger observatory with a meeting space that could double as a classroom could be built there. We would also like to purchase a portable planetarium and increase our community outreach efforts. We could integrate all these projects into a comprehensive "Schoolyard Stargazer" program. These highly ambitious goals work toward the singular purpose of "promoting the exchange of information among those with a common interest in all areas of astronomy" and "to educate the public about astronomical discoveries and events." The future is bright indeed.

*Eric Schreur wrote the original version of this article, which appeared in the June 1995 issue of "Prime Focus." Richard Bell made numerous revisions and updates.*



KAS members lifted the PlaneWave CDK20 telescope onto the Paramount MEII mount in Piishii Observatory at Arizona Sky Village on December 29, 2015.

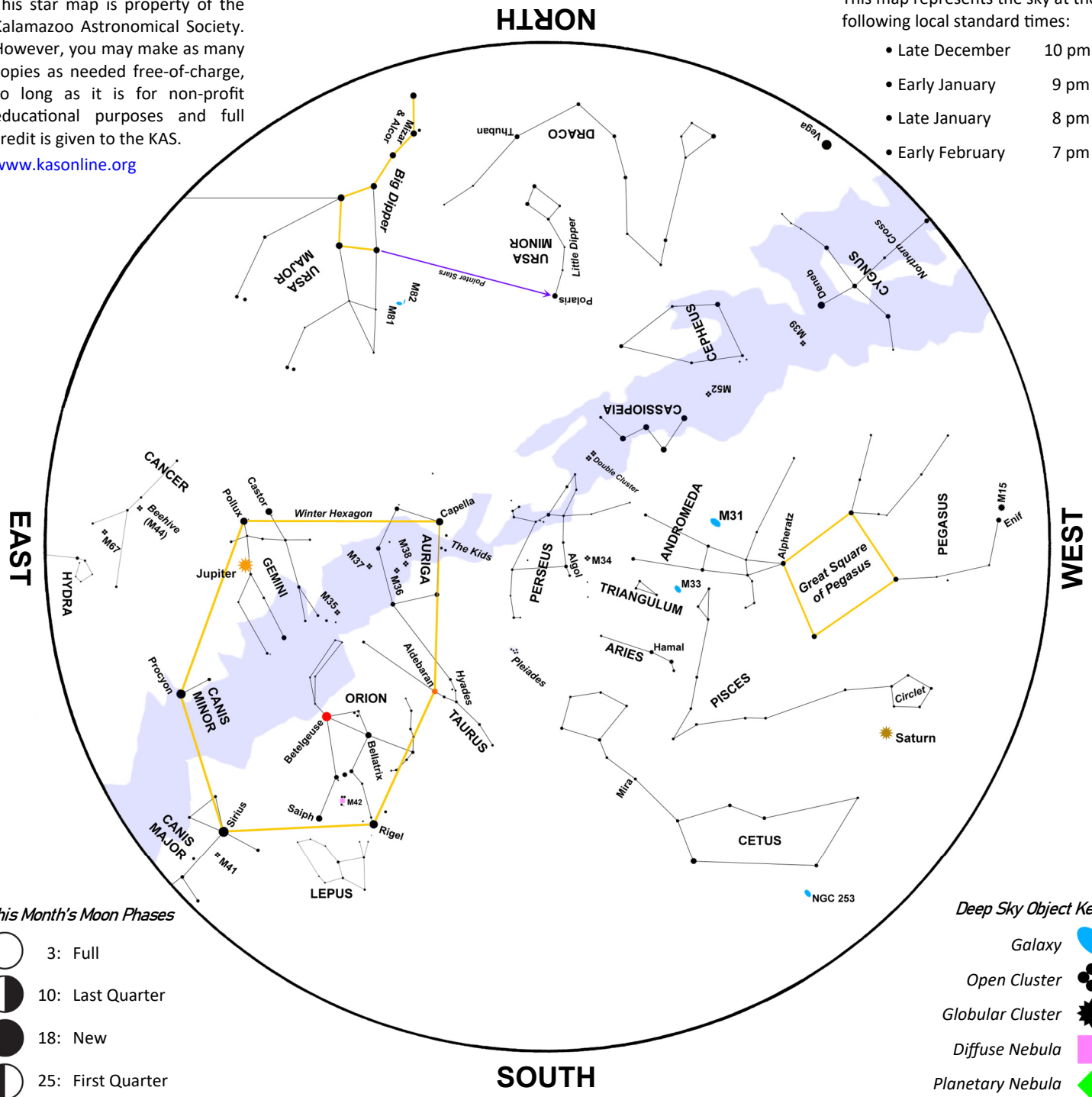


# January Night Sky

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](http://www.kasonline.org)

This map represents the sky at the following local standard times:

- Late December 10 pm
- Early January 9 pm
- Late January 8 pm
- Early February 7 pm



**M**ighty Jupiter reaches opposition on January 10<sup>th</sup>. This means it will be visible all night, rising at sunset and setting at sunrise. Opposition, meaning it's opposite the Sun in the sky, marks its official entry into the evening sky. With its dark belts, white zones, swirling festoons, Great Red Spot, and four Galilean moons, Jupiter has a lot to offer backyard telescopes of all sizes.

Face the southeastern sky at dawn on January 14<sup>th</sup> to see a waning crescent Moon positioned 3½° to the upper right of Antares, the red-orange supergiant star representing the heart of Scorpius.

At dusk on January 22<sup>nd</sup>, a waxing crescent Moon can be found about 6° to the lower right of Saturn in the west-southwest. The pair draw closer as they set in the west.

The Moon, two days past first quarter, will be nearly 2° left of the Pleiades at dusk on January 27<sup>th</sup>. You will need binoculars to see the cluster's stars through the Moon's overwhelming glare.

A waxing gibbous Moon, Jupiter, and Pollux will form a triangle at dusk on January 30<sup>th</sup>. Jupiter will be positioned 3½° to the lower right of the Moon.

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KAS 90<sup>th</sup> Anniversary Special Event

# Venus as a Potentially Habitable Planet

*presented via Zoom by*

**Prof. Sara Seager**

Massachusetts Institute of Technology

Scientists have been speculating on Venus as a habitable world for over half a century, not the scorching surface, but the much cooler atmosphere at 48 to 60 km above the surface.

The concept is that Venus' perpetual cloud cover might host life, as Earth's clouds do. The Venus clouds, however, are not made of water but are composed of concentrated sulfuric acid—an aggressive chemical that is toxic for Earth life. New lab-based experiments show some biomolecules are stable in concentrated sulfuric acid, and advance the notion that the Venus atmosphere environment may be able to support complex chemicals needed for life and motivate the astrobiology-focused Morning Star Missions to Venus.

**Friday, January 9<sup>th</sup> @ 7pm EST**

***Kalamazoo Area Math & Science Center***

*Use Dutton St. Entrance • Locked by 7:10 pm*

*Also held on Zoom • [Click to Register](#)*