

Highlights of the June Sky...

- - - 1st - - -

DUSK: A waxing crescent Moon is just over 1° to the upper right of Regulus.

- - - 2nd - - -

First Quarter Moon @ 11:41 pm EDT

- - - 5th - - -

PM: A waxing gibbous Moon is about 5° to the right of Spica in Virgo.

- - - 9th - - -

PM: The Moon is about 3½° to the upper right of Antares in Scorpius.

- - - 11th - - -

Full Moon @ 3:44 am EDT

- - - 16th - - -

PM: Mars is only ¾° to the upper right of Regulus in Leo.

- - - 17th - - -

PM: Mars is now ¾° above Regulus.

- - - 18th - - -

Last Quarter Moon @ 3:19 pm EDT

- - - 19th - - -

AM: Only 4° separate a waning crescent Moon and Saturn when they rise in the east.

- - - 20th - - -

SOLSTICE: Summer begins in the Northern Hemisphere at 10:42 pm EDT.

- - - 21st - - -

DUSK: Mercury will be 5° to the lower left of Pollux in Gemini low in the west-northwest.

- - - 22nd - - -

AM: A waning crescent Moon and Venus will be separated by 6° when they rise in the east-northeast.

- - - 25th - - -

New Moon @ 6:32 am EDT

- - - 26th - - -

DUSK: A thin waxing crescent Moon will be 3½° to the right of Mercury low in the northwest.

- - - 29th - - -

DUSK: The Moon will be less than ½° to the lower left of Mars.

Prime Focus

A Publication of the Kalamazoo Astronomical Society

★ ★ ★ June 2025 ★ ★ ★

This Month's KAS Events

General Meeting: Friday, June 6 @ 7:00 pm

Kalamazoo Area Math & Science Center • See Page 10 for Details

Observing Session: Saturday, June 7 @ 9:30 pm

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

Observing Session: Saturday, June 21 @ 9:30 pm

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

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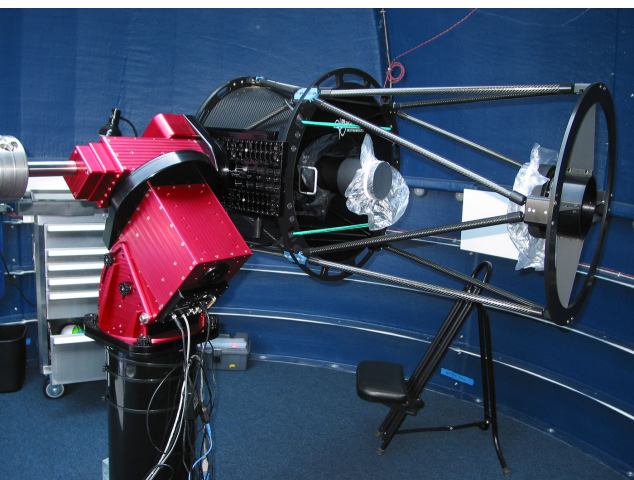
We received both sad and amazing news on May 15th. A wealth management officer at Southern Michigan Bank and Trust in Coldwater contacted me and said that Fred Dutton passed away at the end of January. Fred joined the KAS in the summer of 2007 and only attended a handful of meetings and observing sessions around that time.

Several years went by, and I discovered Fred's website that described the work he conducted in his backyard observatory. I asked him on a couple of occasions to give a presentation about it at a general meeting, but, as his obituary on page 6 notes, he was occupied with caring for his elderly mother. [Fred did contribute](#) to the series of articles on member observatories I ran in *Prime Focus* from August 2020 to April 2021. In fact, and I've never mentioned this to anyone before, Fred's observatory was the whole reason for that series. I thought members should be aware of what Fred was up to on clear nights from his backyard and the equipment he had right here in Kalamazoo.

The wonderful news I alluded to above is about Fred's observatory. He has left it and all of its contents to the KAS! This generosity is the largest single donation the KAS has received in its 89-year history. I quickly informed the KAS Board about Fred's passing and his generous contribution. We spent some time at the last board meeting discussing how to proceed. There wasn't room to include all the

ideas in the minutes, so I thought I would share some of them here.

The 15-foot ProDome from Technical Innovations is the most valuable of the donations. Fred had it fully equipped for remote use since he controlled it from his house. It would be a major undertaking, but we could transport the dome out west and move the Remote Telescope in there. The biggest hindrance at Arizona Sky Village has been the wind. Domes provide much better protection against such conditions. Pete Mumbower has already researched how to dis-



assemble the observatory, and it sounds like it can be done with only a few people. With a project like this, we'll have no problem enlisting volunteers. The hard and expensive part is moving and rebuilding the dome at ASV.

There are several possibilities for Fred's PlaneWave CDK20 and Paramount ME mount. If we move the Remote Telescope into the dome, then there would be an opening in Piishii Observatory! I don't think we need another CDK20, so we could sell it and purchase a different kind of telescope. My first thought would be a [PlaneWave DeltaRho 350](#). This 14-inch astrograph has an ultra-fast f/3 focal ratio. This telescope could replace the Takahashi FSQ-106EDXIII refractor as our wide-field imager. It only weighs 46 lbs., so it would be very stable on Fred's Paramount ME mount.

A more practical possibility is to use funds from the sale of the CDK20 and Paramount ME and purchase the latest CMOS cameras for the Remote Telescope. We were planning to do this anyway, and Fred's donation could make it that much easier.

Currently, our most immediate task is visiting the observatory and inspecting it and the equipment housed within. We've arranged a date of June 8th to do just that, and it will only be open to KAS board members. We don't know when we must vacate the observatory and equipment, but we will need help then.

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May Meeting Minutes



KAS President Richard Bell opened the society's general meeting on May 2, 2025, at 7:15 pm EDT. Approximately 29 members and guests were in attendance at the Kalamazoo Area Math & Science Center (KAMSC), while at least 47 people joined us virtually on Zoom.

Starting off with his President's Report, Richard reviewed the volunteers for our table at the Rock & Gem Show on May 3rd and 4th. Matt Borton, Mike Dupuis, John Miller, and Mike Sinclair will volunteer on Saturday. Genevieve Burns, Chip Johnson, Elaine Shirk, and he will cover Sunday. Special thanks to all of them for representing the KAS.

The next Owl Observatory Training Session has been rescheduled for May 17th at 8pm. Any eligible member interested in learning to gain access to the observatory and using the Leonard James Ashby Telescope should [contact us](#). We will send you a PDF copy of the *Owl Observatory User's Guide*.

We are still taking orders for KAS Night Lights. The cost will likely be \$25. They will be ordered if the expense is approved at the KAS board meeting on May 18th.

Finally, Richard again welcomed suggestions for special guest speakers

and other activities for next year's 90th anniversary.

Our guest speaker for the evening was Chris Howk, a professor of physics and astronomy at the University of Notre Dame. The title of Professor Howk's presentation was *Galaxies on the Edge: Using NASA's JWST to Learn How Galaxies Work*.

Prof. Howk began his presentation with some general facts about the James Webb Space Telescope (JWST). Its primary mirror has an aperture of 6.5 m (21 ft). For context, the Hubble Space Telescope (HST) has a primary mirror that is much smaller, at 2.4 m (7.8 feet) in diameter. JWST has to have a bigger mirror to capture high-resolution, Hubble-like details in infrared light.

Its mirror also needs to be stable at extreme temperatures—40 K (roughly –390°F, –235°C), which is why it is made of beryllium, which is six times stronger than steel and two-thirds the density of aluminum.

JWST's mirror has 18 hexagonal segments. They are hexagons so the mirrors can be adjusted to align to form a circular shape. Each segment is coated in a very thin layer of gold—about 1,000 atoms thick! Gold was selected

because it is the best reflector of infrared light.

Longer wavelengths, including infrared light, are able to pass through dense gas clouds and other matter in the universe. Shorter wavelengths get trapped, which means telescopes that specialize in visible light can't capture them. By detecting longer infrared wavelengths of light with JWST, we are able to see cool stars and warm planets clearly for the first time.

Webb is also ideal for observing the earliest galaxies in the universe. The expansion of space has stretched these galaxies' light into the infrared due to their extreme distance.

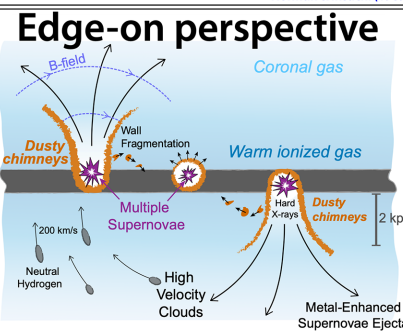
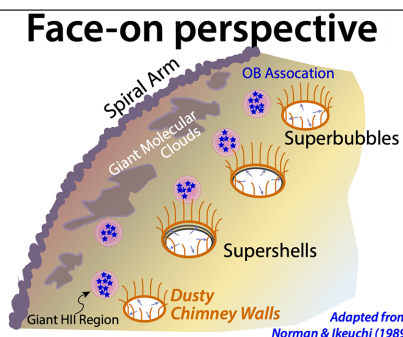
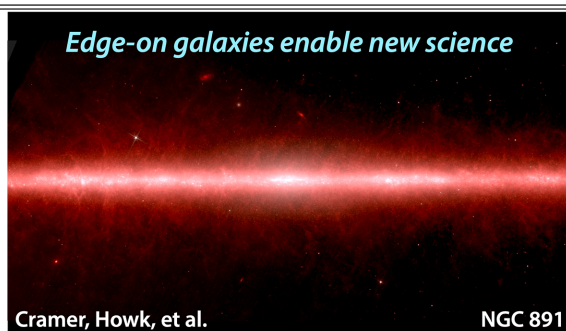
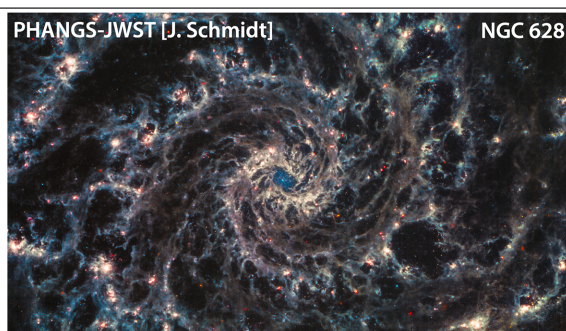
Prof. Howk's story with JWST began in November 2020 when he decided to write a proposal for telescope time even though its launch was 13 months away. One of his research interests is observing the way dust and gas flow through galaxies. Despite not being an infrared astronomer, he thought JWST would aid him greatly in his research.

Proposals for use of HST or JWST are submitted electronically to the Space Telescope Science Institute (STScI) in Baltimore, Maryland. They divide a panel of over 100 astronomers into sub-panels with varying expertise. Eight or nine experts in your field review the set of proposals that are conducting similar research to you, and they rank them. The proposals deemed the best get telescope time.

Prof. Howk received an email from STScI on March 30, 2021, saying that his proposal had been approved. JWST was [finally launched](#) on December 25, 2021, from the Guiana Space Centre in French Guiana in South America.

JWST orbits the Sun at one of the Sun-Earth Lagrangian points, locations in space where gravitational forces and the orbital motion balance each other. The Lagrange point 2 (L2), where JWST is located, is about 1.5 million km (1 million miles) from Earth.

JWST's minimum operational life-time was only 5 years. This limit was based on the amount of maneuvering



fuel JWST would need to expend to maintain its position at L2. However, the European Space Agency's Ariane 5 rocket booster placed JWST at its L2 position so precisely that its lifespan is now over 20 years!

Engineers then conducted hundreds of procedures to unfurl the telescope; a single failure could have doomed the mission. Next, astronomers [collimated](#) JWST's primary and secondary mirrors and then [precisely focused](#) the telescope.

Webb's signature diffraction spikes are defined by its primary mirror and struts. Webb has three struts with two angled 150° from its vertical strut, and its primary mirror is composed of hexagonal segments that each contain edges for light to diffract against. The design of Webb's struts partially overlaps the diffraction spikes created by the mirrors. Both of these lead to Webb's complex eight-pointed star pattern.

On April 24, 2022—four days before the focused images were released to the public—Prof. Howk received an email containing his Plan Notification Window, or when JWST would be observing his target. The dates were from January 5th to 23rd (later moved to the 18th), 2024.

On July 12, 2022, JWST released its [first images](#), which Prof. Howk shared along with more recent ones. He noted that the colors seen are not real, since they were taken in the infrared. Shorter-wavelength infrared images are typically colored blue, while longer-wavelength infrared images are colored red.

Prof. Howk's group used JWST to study the edge-on galaxy NGC 891, an edge-on spiral galaxy located 27.3 million light-years away in Andromeda. The images shared during the meeting have not been released publicly yet.

Before sharing the Webb images of NGC 891, Prof. Howk showed a [composite image](#) in visible light from Hubble, the 8.2-meter Subaru Telescope on Mauna Kea, and the 0.81-meter Schulman Telescope at the Mt. Lemmon SkyCenter in Arizona.

A prominent dust lane divides the galaxy in two, but Prof. Howk said to draw your attention to the dust suspended above and below the galactic plane. That dust is composed of polycyclic aromatic hydrocarbons (PAHs), organic molecules found in interstellar dust

within galaxies (and commonly found in coal, oil, and gasoline).

Prof. Howk's group has found that the filaments are preferentially perpendicular to the disk above strong star formation. Where there is no star formation, the orientation of the dust is random. Intense star formation results in superbubbles and supershells that push dust and gas out of the galactic plane (see the diagram on the previous page).

Special thanks to Mike Sinclair for providing snacks during the break again. Phillip Wareham volunteered to bring snacks to the June meeting.

There were no observing reports to speak of, so we moved right into astronomical news.

A team of researchers thinks they might have detected the molecules dimethyl sulfide and dimethyl disulfide in the atmosphere of exoplanet K2-18b, both of which could be produced by marine algae.

Discovered in 2015 by the Kepler Space Telescope, K2-18b traverses its 33-day orbit around a red dwarf star that is 124 light-years away.

Considered a "mini-Neptune" at around 2½ times Earth's girth and more than 8 times its mass, K2-18b could potentially sustain a liquid ocean on its surface beneath a thin hydrogen atmosphere.

However, some astronomers have found evidence that dimethyl sulfide could be produced by abiotic mechanisms, such as on comets or within the clouds of gas and dust that form stars.

The Kosmos 482 spacecraft is expected to reenter Earth's atmosphere on May 10th. Launched by the Soviet Union in 1972, it was part of their successful Venera program to explore Venus.

However, the upper stage of its Molniya rocket shut down prematurely, leaving it in a 206×9,802-kilometer orbit that has been decaying ever since.

Recent images from an amateur satellite tracker in the Netherlands indicate the deployment of its parachute.

UPDATE: There were no witnesses, but the Kosmos 482 spacecraft is thought to have re-entered Earth's atmosphere on May 10th as predicted. ESA reports a positive radar detection from Germany at 6:04 UTC, followed by a "no-show" at 7:32 UTC. The Russian Space Agency (Roscosmos) says it

splashed down in the Indian Ocean around 06:24 UTC.

An international team of scientists led by Rutgers University-New Brunswick astrophysicist Blakesley Burkhart has discovered a potentially star-forming cloud that is one of the largest single structures in the sky and among the closest to the Sun and Earth ever to be detected. The team found it by directly searching for far ultraviolet emission of molecular hydrogen.

The crescent-shaped gas cloud is located about 300 light-years away from Earth. It sits on the edge of the Local Bubble, a large gas-filled cavity in space that encompasses the solar system. Scientists estimate that it is vast in projection on the sky, measuring about 40 moons across, with a mass about 3,400 times that of the Sun. The team utilized models to predict its expected evaporation in 6 million years.



Richard then previewed upcoming activities, which include *Gadget Night* at the meeting on June 6th. For those unaware, *Gadget Night* is our oldest tradition, dating back to at least 1954. For the first time ever, people attending over Zoom will have an opportunity to share one of their custom creations or some intriguing doodad they purchased recently.

We then held a drawing to see who would be eligible to borrow our new ZWO Seestar S50 for the first time. The lucky member was George Drake. Members can now request the Seestar on a first-come, first-served basis. Visit the [Equipment for Loan](#) webpage to learn more and see the other items available for loan.

The meeting concluded at 9:06 pm.



The featured talk can be viewed in its entirety on our YouTube Channel.

Board Meeting Minutes



The KAS Board held its spring meeting on Sunday, May 18th, via Zoom. At 5:04 pm EDT, Society President Richard Bell called the meeting to order from Matt Borton's house, as his internet was still unavailable due to the storm on the night of May 15th. All other board members were in attendance. These include Matt Borton, Scott MacFarlane, Pete Mumbower, Jack Price, Don Stilwell, Philip Wareham, and Dave Woolf.

Don proceeded to give the Treasurer's Report. The total account balance at the end of April was \$46,797.92. The Advia 14-month CD is at \$10,171.52, with the 7-month CD currently at \$10,152.71. The Owl Observatory Maintenance Fund stands at \$2,930.26, while the Remote Telescope Fund is currently at \$1,064.33. The savings account is at \$12,640.17, with the checking account at \$6,661.95, followed by the PayPal account at \$2,453.48.

The board then previewed activities between now and the next board meeting in September. These include all Public Observing Sessions over the summer. For the June 6th meeting, remote members will have the opportunity to participate in *Gadget Night* for the first time, as it will take place at KAMSC. The Perseid Potluck Picnic will be held at Flesher Field in Oshtemo on August 2nd at 6:00 pm. Richard will present a history of human exploration of the Moon during the general meeting on September 5th.

The only follow-up items from the previous board meeting dealt with the Remote Telescope and Owl Observatory. The new all-sky camera in Arizona has been working well and is much improved over the previous camera. However, there have been some issues with tracking when the Remote Telescope is pointed near the zenith. The Paramount MEII's many cables may be the main culprit, as they were difficult to run through the mount. Pete suggested we purchase a PegasusAstro Ultimate Powerbox v3. This upgrade would alleviate the need for most of the internal cabling.

We discussed scheduling a group trip to the Remote Telescope for October. We would replace the aging com-

puter, rebalance the telescope (after redoing cable management), create a new pointing model, and tweak the polar alignment.

As for Owl Observatory, Richard recently replaced the damaged dew rope for the TeleVue NP101 and upgraded the LED rope lighting for the observatory's interior. We can dim the new lighting and reduce the number of LEDs used. Richard also reported that Owl Observatory did not suffer any damage from the aforementioned storm.

In new business, our next community outreach activity is the annual Kindleberger Festival at Kindleberger Park in Parchment on Saturday, July 12th, from 9am to 3pm. In addition to passing out KAS literature, we will offer a hands-on activity and solar observing. Jack, Don, Matt, and Dave plan to volunteer.

The society's Astronomical League membership is up for renewal. Philip presented the bill to the board, leading to a discussion about whether we should renew our membership. Don motioned for a vote, with Jack seconding the motion. The board approved the motion renewing our membership, with the only board member dissenting being Richard.

Matt Borton recently expressed the desire for the KAS to hold an astrophotography workshop. We encourage members who require assistance with their equipment to participate. We will also show members how to use the Ashby Telescope in Owl Observatory for astrophotography. The board selected Saturday, July 26th, 8:00 pm as the date for the workshop. We also decided to try holding a solar imaging workshop before the picnic at Flesher Field. That would begin at 4:00 pm.

We discussed the location and date of the 2025 Winter Solstice Party. We've held the past few parties on a Saturday, but Richard suggested that our standard Friday night might work better. Jack will check with Phyllis Lubbert, who did such a wonderful job organizing last year's party, if she plans to take charge of this year's end-of-year celebration and, if so, her preferences.

Our supply of general KAS brochures is running low, and Richard sug-

gested we order another 1,000 from Allegra. Jack made a motion for a vote, which was seconded by Don. The board unanimously approved the motion to purchase the brochures.

Richard proposed ordering 24 KAS Night Lights to sell during meetings and online. Philip motioned for a vote, and Matt seconded the motion. The board approved the purchase, with Don being the only dissenting vote. On a related note, Matt is looking into locating a source for some high-quality sew-on KAS patches and possibly even some stickers.

Richard shared a list of potential special guest speakers for our 90th anniversary. Depending upon his success and securing a grant for funding, we may have special guest speakers at most or select general meetings.

We recently learned that KAS member Fred Dutton passed away at the end of January. (See Fred's obituary on page 6.) At that time, we learned that Fred had generously donated his 15-foot Technical Innovations ProDome observatory and its contents to the society. Some of this equipment includes a PlaneWave CDK20 telescope and Software Bisque Paramount ME. The Kalamazoo Foundation has received the remainder of his property.

The timeline for removing the observatory and equipment from the property remains uncertain. The board spent some time discussing the logistics and utilization of the equipment Fred has left us. Richard is waiting to hear from the bank managing Fred's estate to schedule a time for the board members to inspect both the observatory and its contents.

In other business, Don visited with longtime KAS treasurer Rich Mather. For those unaware, Rich is suffering from the effects of Alzheimer's disease. His wife, Donna, gave Don some potential prizes for club events. Don also said that Donna would like to sell Rich's 12.5-inch f/8 Dobsonian at a reasonable cost.

The next board meeting is scheduled for 5:00 pm on Sunday, September 14th, at Sunnyside. The meeting adjourned at 6:54 pm.



Remembering Fred Dutton

1940 - 2025

ingly interested in tracking asteroids in 2013, said he couldn't do justice to both, and reluctantly gave up variable star photometry. Fred said that tracking asteroids was challenging because, unlike variable stars, they shine only by reflected sunlight. Unlike stars, he said, asteroids are constantly on the move. It's only because of their movement that they can be distinguished from stars.

In addition to astronomy, Fred enjoyed golf, photography, and playing the piano. He also liked to work on the genealogy of his family and research generations past.

Fred's family includes his sister, Betty Louise (Frank) Tesar; his nephews, Chris (Kate) Chandler and Courtney Chandler; his great-niece and nephew, Megan (Josh) Behymer and Jake (Grace) Chandler; and his great-great-nephew and niece, Tobias and Eleanor Behymer. He was preceded in death by his parents.

Frederic Edwin Dutton, age 84 of Kalamazoo, died on January 23, 2025. He was born on September 2, 1940, in Kalamazoo, the only son of Edwin and Irene (Jones) Dutton. Fred was a graduate of Otsego High School. He received his master's degrees in organic chemistry and accounting from Western Michigan University. Fred was a chemist for the GD Searle company before returning to Michigan to begin his work at the Upjohn Company. He retired after 30 years at Pharmacia. Fred became his mother's caretaker and treasured his time with her until her death in 2020 at the age of 113.

Fred joined the Kalamazoo Astronomical Society on July 28, 2007. He was able to attend meetings and observing sessions early on, but he rarely attended activities after that because he was caring for his mother. He did say he kept up with KAS news and activities in *Prime Focus*!

In his membership profile, he described himself as largely an armchair astronomer. He said his interest in astronomy was a natural outgrowth of his curiosity about the development of science and technology.

Fred's interest in astronomy took a major leap forward in 2010 when he installed a 15-foot Technical Innovations ProDome on his property in Kalamazoo Township. Named Kalamazoo Observatory, it housed a PlaneWave f/6.8 CDK 20-inch Astrograph OTA mounted on a Software Bisque Paramount ME.

He originally used the observatory to generate photometric data on variable stars and reported his observations to the American Association of Variable Star Observers (AAVSO) from 2010 until 2014. But he became increas-



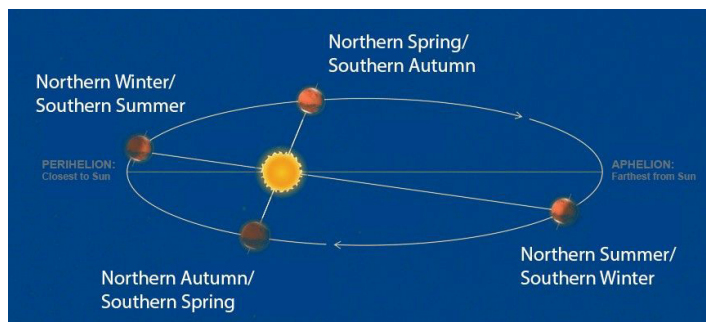
Seasons of the Solar System

by Kat Troche

Here on Earth, we undergo a changing of seasons every three months. But what about the rest of the Solar System? What does a sunny day on Mars look like? How long would a winter on Neptune be? Let's take a tour of some other planets and ask ourselves what seasons might look like there.

Martian Autumn

Although Mars and Earth have nearly identical axial tilts, a year on Mars lasts 687 Earth days (nearly 2 Earth years) due to its average distance of 142 million miles from the Sun, making it late autumn on the red planet. This distance and a thin atmosphere make it less than perfect sweater weather. A recent weather report from Gale Crater boasted a high of -18° Fahrenheit [for the week of May 20, 2025](#).



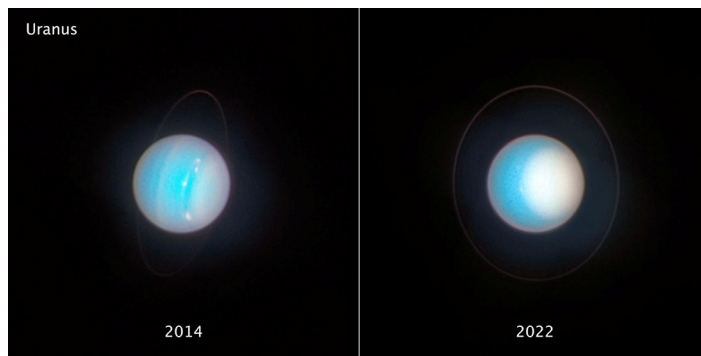
An artist's rendition of Mars' orbit around the Sun, and its seasons. Credit: NASA/JPL-Caltech

Seven Years of Summer

Saturn has a 27° tilt, very similar to the 25° tilt of Mars and the 23° tilt of Earth. But that is where the similarities end. With a 29-year orbit, a single season on the ringed planet lasts seven years. While we can't experience a [Saturnian season](#), we can observe a [ring plane crossing](#) here on Earth instead. The most recent plane crossing took place in March 2025, allowing us to see Saturn's rings 'disappear' from view.

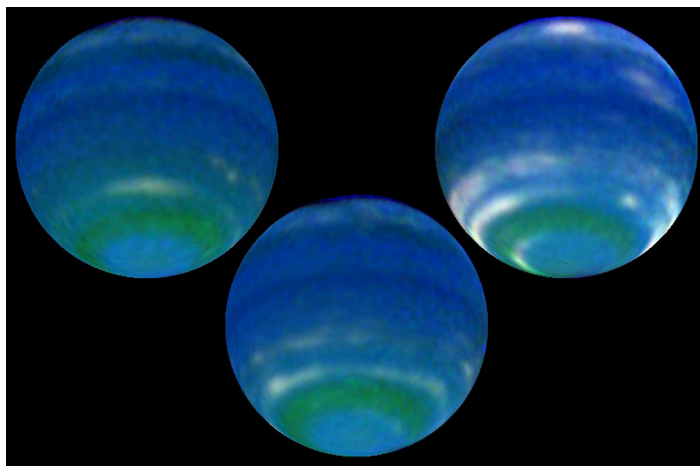
A Lifetime of Spring

Even further away from the Sun, each season on Neptune lasts over 40 years. Although changes are slower and less dramatic than on Earth, scientists have observed seasonal activity in Neptune's atmosphere. [These images](#) were taken between 1996 and 2002 with the Hubble Space Telescope, with brightness in the southern hemisphere indicating seasonal change.



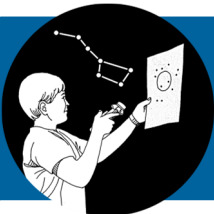
Uranus rolls on its side with an 84-year orbit and a tilt just 8° off its orbital plane. Its odd tilt may be from a lost moon or giant impacts. Each pole gets 42 years of sunlight or darkness. Voyager 2 saw the south pole lit; now Hubble sees the north pole facing the Sun. Credit: NASA, ESA, STScI, Amy Simon (NASA-GSFC), Michael Wong (UC Berkeley); Processing: Joseph DePasquale (STScI)

As we welcome summer here on Earth, you can build a [Suntrack](#) model that helps demonstrate the path the Sun takes through the sky during the seasons. You can find even more fun activities and resources like this model on NASA's [Wavelength and Energy](#) activity.



NASA Hubble Space Telescope observations in August 2002 show that Neptune's brightness has increased significantly since 1996. The rise is due to an increase in the amount of clouds observed in the planet's southern hemisphere. Credit: NASA, L. Sromovsky, and P. Fry (University of Wisconsin-Madison)

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 go.nasa.gov/nightskynetwork to find local clubs, events, and more!



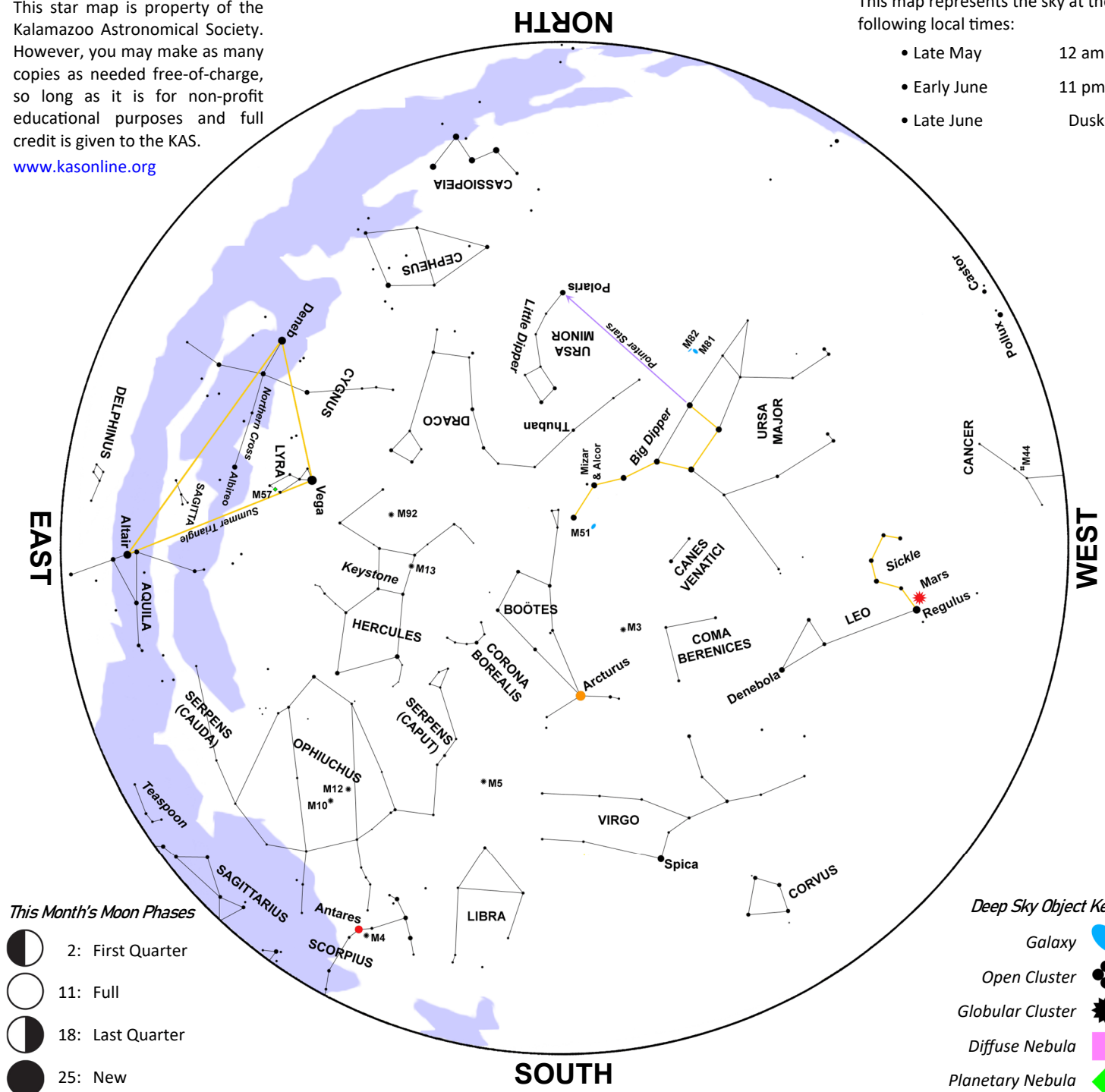
June Night Sky

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 May 12 am
- Early June 11 pm
- Late June Dusk



Mars may be well past opposition, but it has a worthwhile encounter with the heart of Leo the Lion in mid-June. The Red Planet will be a mere $\frac{3}{4}^\circ$ to the upper right of Regulus on the evening of June 16th. On June 17th, Mars will be $\frac{3}{4}^\circ$ above Leo's brightest star.

Many amateur and professional astronomers have never seen the planet Mercury firsthand. You'll have an excellent chance to

spot the elusive innermost world at dusk on June 21st. On that date, Mercury will be 5° to the lower left of Pollux. The trick is finding an unobstructed view of the west-northwestern horizon. Give it a shot!

On the morning of June 22nd, a waning crescent Moon and Venus will be about 6° apart when they rise above the east-northeastern horizon. Both worlds will fit in

the field of view of a pair of 7×50 binoculars.

You'll have another chance to see Mercury at dusk on June 26th. This time a slender waxing crescent Moon will be $3\frac{1}{2}^\circ$ to the right of the metal planet.

Finally, the crescent Moon hangs less than $\frac{1}{2}^\circ$ to the lower left of Mars on June 29th.

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Deadline for submissions is **15th of EVERY MONTH.**
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**Public
Observing Sessions**
at the Kalamazoo Nature Center

June 7th
The Moon & Double Stars

June 21st
Super Summer Nebulae



Gates Open: **9:30 pm** | Observing Begins: **10:00 pm**

KAS Clothing
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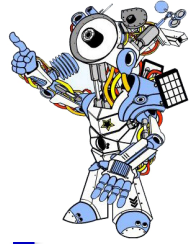
Multiple Sizes,
Colors & Styles
Available

Explore & Order



Seestar S50
Smart Telescope

Available for Loan!



Gadget Night

A KAS Tradition Dating Back Over 70 Years

Today the astronomical marketplace is flooded with telescopes and accessories of all shapes, sizes, and price ranges. However, even with the wealth of goods now available, there are some gadgets that can only be hand crafted. It just goes to show that necessity really is the mother of invention and thankfully amateur astronomers are an ingenious lot.

For our next meeting we invite KAS members to trot out the results of their latest brainstorming. Please feel free to bring along any interesting astronomically themed doodads, doohickeys, and devices you've purchased as well. You won't want to miss this fun and entertaining evening.



Friday, June 6th @ 7:00 pm EDT

Kalamazoo Area Math & Science Center

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

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