

The Prairie Astronomer

March, 2026 Volume 67, Issue #3



IN THIS ISSUE: DART MISSION CHANGED ORBIT OF ASTEROID
WEBB EXAMINES CRANIUM NEBULA



THE *Prairie*
Astronomy
Club

Night Sky Network



THE NEWSLETTER OF THE PRAIRIE ASTRONOMY CLUB



David Woolf, Kalamazoo, MI at NSP 2018
Photo by Mark Dahmke

Next meeting: Tuesday March 31st 7:30pm at Hyde Observatory

NEXT MEETING

March

Astronomical League Observing Programs
Jim Kvasnicka will be looking at the many different observing programs offered through the Astronomical League that PAC members can do. There are observing programs designed for the beginner just starting and those with years of observing experience. He will do an overview of the different observing programs and what is required to start an observing program.

April

‘What’s in Your Library?’

April’s program will provide a basic overview of many of the print and digital tools PAC members use to guide us through our journey in astronomy.

Cover: The Hamburger Galaxy NGC 3628 by Brett Boller

M31 by Brett Boller

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Most of our club meetings are held at Hyde Memorial Observatory in Holmes Park.

The Observatory is owned and maintained by the City of Lincoln Parks and Recreation Department, but is operated by volunteers, many of whom are also members of the Prairie Astronomy Club.

2026 STAR PARTY DATES

	Date	Date
January	9	<u>16</u>
February	13	<u>20</u>
March	13	<u>20</u>
April	10	<u>17</u>
May	8	<u>15</u>
June	5	<u>12</u>
July	10	<u>17</u>
NSP	7/12-7/17	
August	7	<u>14</u>
September	4	<u>11</u>
October	2	<u>9</u>
November	<u>6</u>	13
December	4	<u>11</u>

Underlined dates are closest to the New Moon.

CALENDAR



March PAC Meeting

Tuesday, March 31st, 7:30pm, Hyde Observatory

Program: Astronomical League Observing Programs

April PAC Meeting

Tuesday, April 28th, 7:30pm, Hyde Observatory

Program: What's in Your Library?

May PAC Meeting

Tuesday, May 26th, 7:30pm, Hyde Observatory

PAC Google calendar:

<https://www.prairieastronomyclub.org/event-calendar/>

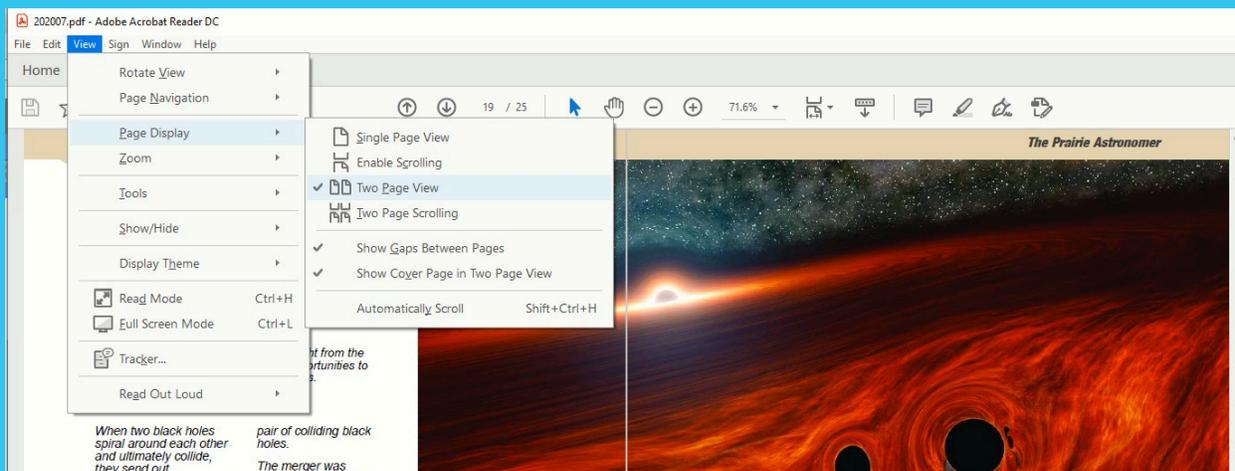
CLUB OFFICERS

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Website and Newsletter Editor	Mark Dahmke mark@dahmke.com

NOTICES

Newsletter Page View Format

How to Adjust Adobe Acrobat Settings for Two Page View



To view this newsletter in magazine spread format in Acrobat, select View ->Page Display->Two Page View. Acrobat will then show two pages side by side. Also make sure the checkboxes “Show Cover Page in Two Page View” and “Show Gaps Between Pages” are checked. If you have it setup correctly, the cover page will be displayed by itself and subsequent pages will be side by side with the odd numbered pages on the left.

Pay Dues

<https://www.prairieastronomyclub.org/pay-dues-online/>

If you're already a member and are renewing within 30 days of your anniversary date, select the early renewal option for a discount.

PAC-LIST

Subscribe through [GoogleGroups](#) or contact Mark Dahmke to be added to the list. You'll need a Google/ gmail account, but if you want to use a different email address, just associate that address with your google account to access Google Groups. Once subscribed, you can view message history through the GoogleGroups website. To post messages to the list, send to this address: pac-list@googlegroups.com

Club News

John Johnson presents Jason O'Flaherty with a certificate of appreciation from the Midstates Regional Astronomical League for hosting MSRAL conventions



**Welcome new club members:
Trevor Mai, Aaron Keck and
Edward McConnell**

Curiosity Surveys Boxwork Region



NASA's Curiosity Mars rover captured this panorama of boxwork formations — the low ridges seen here with hollows in between them — using its Mastcam on Sept. 26, 2025, the 4,671st Martian day, or sol, of the mission. These boxwork formations were created billions of years ago when water leaked through rock cracks. Minerals carried into the cracks later hardened; after eons of windblown sand eroding away the softer rock, the hardened ridges were left exposed.

*The panorama is made up of 179 individual images that were stitched together after being sent back to Earth. This natural color view is approximately how the scene would appear to an average person if they were on Mars. Credit
NASA/JPL-Caltech/MSSS*

Meeting Minutes

Jim White

February 24th:

Tonight wasn't a normal monthly meeting, instead it was our annual "How to Use Your Telescope" event for the public. Tonight's event is being held at Hyde Observatory. Jason got things started at 7:30 with a few things that we needed to go over first. Jason started out by introducing himself to the attendees and welcoming our guests. John Johnson from OAS (Omaha Astronomical Society) has come to tonight's meeting to make a presentation to the Prairie Astronomy Club. John had attended the Mid-States Regional Astronomical Convention (MSRAL)

last summer and they were passing out certificates to clubs that had previously hosted a MSRAL Convention. When they announced the Prairie Astronomy Club, which hosted a convention in 2010, there was no one in attendance from PAC to accept the certificate so John accepted the certificate for PAC and told them that he would get the certificate to our club. John brought the certificate to tonight's event and presented it to Jason for the club. Eric Balcom, OAS and PAC member, came to tonight's meeting with information and brochures for this years Nebraska Star Party. Eric is the coordinator for the

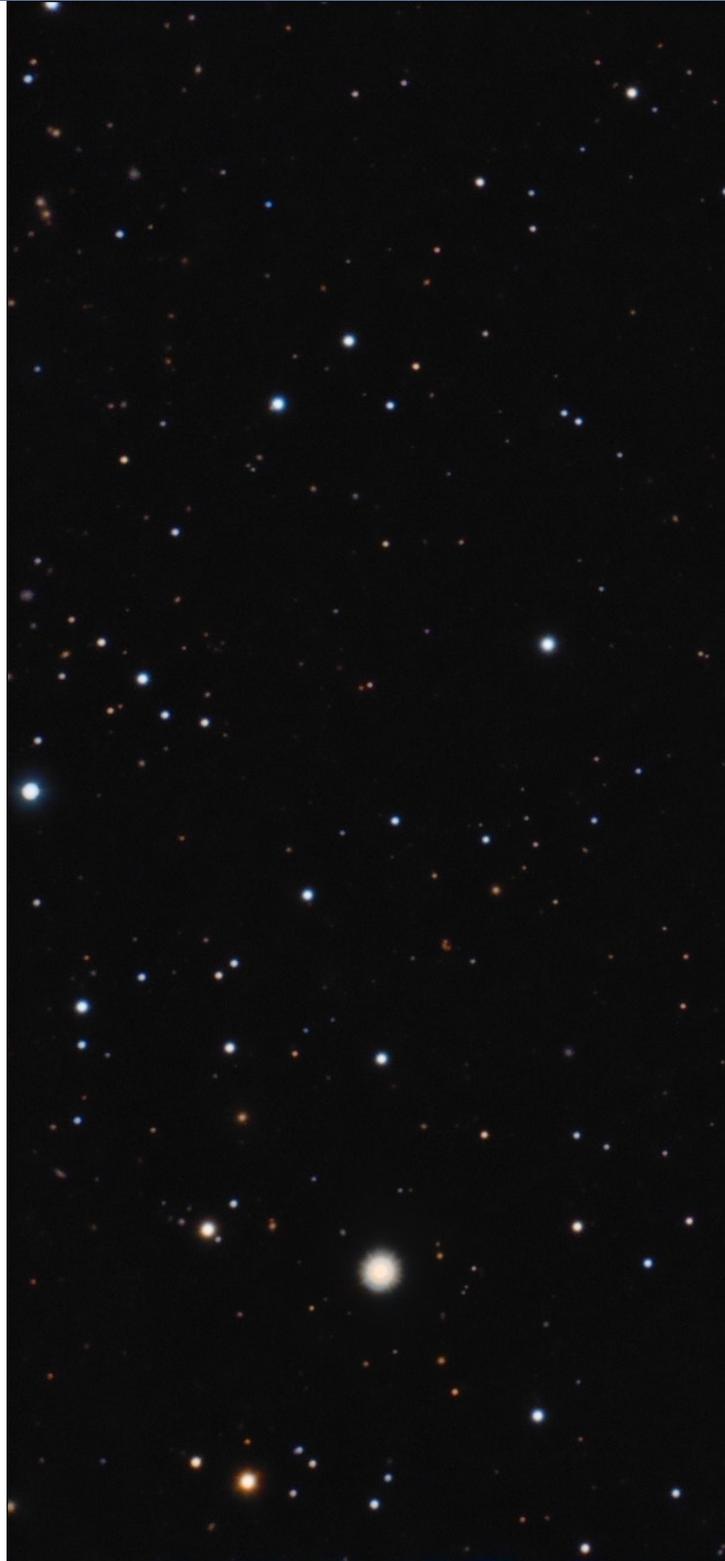
Nebraska Star Party. One last announcement is that Mark Dahmke, longtime PAC member and Newsletter Editor for many years, is making a permanent move to Hawaii for retirement. Jason has made arrangements for a dinner gathering at Big Red Restaurant this Thursday the 26th to give Mark a sendoff, for those that can make it we plan on meeting there at 6:30 PM. Mark plans on continuing his membership with PAC and Newsletter Editor for the time being until a replacement can be found.

ARP 90

The Mantrap Skies Image Catalog

Arp 90/NGC 5929-30 is an interacting pair of galaxies about 120 million light-years away in the constellation of Bootes. Arp put it in his classification for spirals with high surface brightness companions on the arms. He recorded this comment: "Absorption lanes around companion." This pair should be visible in an 8" telescope for those going after these visually. It was discovered by William Herschel in 1828 using an 18.7" speculum mirrored reflector. At least NGC 5930 was or maybe he saw both as one object. It isn't in either Herschel 400 observing program.

NGC 5929, on the right, is classed as Sab Pec and is a Seyfert 2 galaxy. It was discovered on May 13, 1828 by John Herschel. NGC 5930, on the left, is classed as SAB(rs)b pec at NED and SBb/P by the NGC project. Several notes at NED say 5930 has a starburst nucleus though this isn't mentioned in the classification at NED. Both the Seyfert 2 status of NGC 5930 and the starburst core of NGC 5930 can be an indication of interaction though either can occur without it. Here it



Rick Johnson

Rick Johnson, a founding member of the Prairie Astronomy Club, passed away in January, 2019. His legacy lives on through his comprehensive catalog of over 1600 images at www.mantrapskies.com.



ARP 90, continued

appears interaction is involved.

"Behind" Arp 90 off its lower left side is a small blue blob. Is it a plume or a separate galaxy. It appears to be a low surface brightness galaxy in my and the SDSS image but NED shows nothing at this position. Thus it is marked with a question mark on the annotated image.

To the northeast of Arp 90 is UGC 09857 at 110 million light-years by redshift. This difference is rather insignificant and can easily represent the relative motion of related galaxies. It is classed as IBm. Is it naturally irregular or has it had a nasty encounter with Arp 90? I found nothing on it either way. It sure is interesting looking. Wish we could see these from a closer vantage point.

The annotated image shows some interesting things. Arp was a strong

believer that quasars aren't distant massive black holes on a feeding frenzy in distant galaxies but are nearby objects ejected from galaxies. This puts him in the near crackpot category of many astronomers. His theory goes that as time passes their redshift increases. Why requires rewriting physics. Read the Kanipe-Webb book on the Arp Atlas for the details. He cites several galaxies in which the redshift of the quasars in the field increases with angular distance from the galaxy. That appears to be the case here. The one nearest Arp 90 has the lowest redshift value (converts to distance as 6.2 billion light-years) increasing (using today's accepted distance conversion of redshift) to 8.1, 10.5 and finally 11.3 billion light years. One minor hitch is one to the east that's even further from Arp 90 but is only 9.2 billion light years distant. Of course, Arp says those distances are

false as all are about the same distance as Arp 90. The odd one is explained that the ones with higher redshift are really further from Arp 90 but only appear closer when projected onto a 2 dimensional image plane. Of course, by that logic, nearly any distance could be supported. You could just as easily say the one at 6.2 is really the furthest as it is was ejected away or toward us and thus the distance we see is greatly foreshortened. From what I read in Kanipe and Webb's book this didn't seem a problem to Arp.

In any case, after several fields without any quasars, there are at least 7 in this image ranging out past 11 billion light-years by established redshift theory.

There are a lot of galaxies, many fall into two very precise distance measurements. One set at 1.0 billion light-years

ARP 90, continued

and another nearly twice that at 1.9 billion light-years. The latter pretty much covers the entire field. Also noted in the annotated image is the center position of the galaxy cluster Abell 2080. It is listed as 30 minutes in diameter. It would extend from its position

near the eastern edge of my image to the middle of the image. That doesn't fit the distribution of either of the two distance groups in my image. The catalog gives little other help just saying it is "distant class" 6. All that means is the 10th brightest member

has a magnitude between 17.3 and 18.0. Most of both the 1 and 1.9 billion light-year groups fit that range but extend beyond the 30 minute diameter. So which galaxies in the image are part of the group? I have no idea.

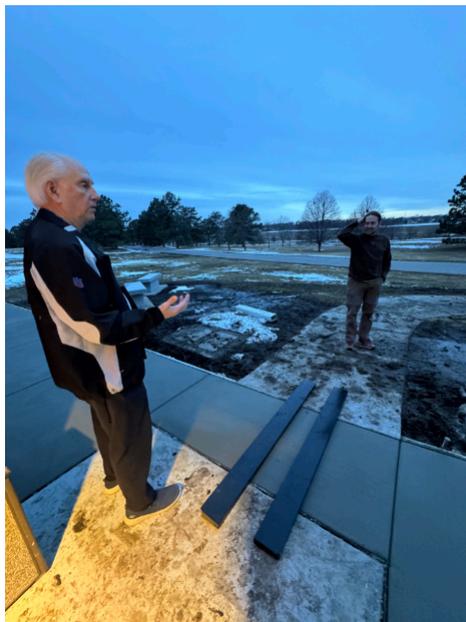


February and March at Hyde Observatory

Photos by John Reinert



Seeking an extensive planetary alignment

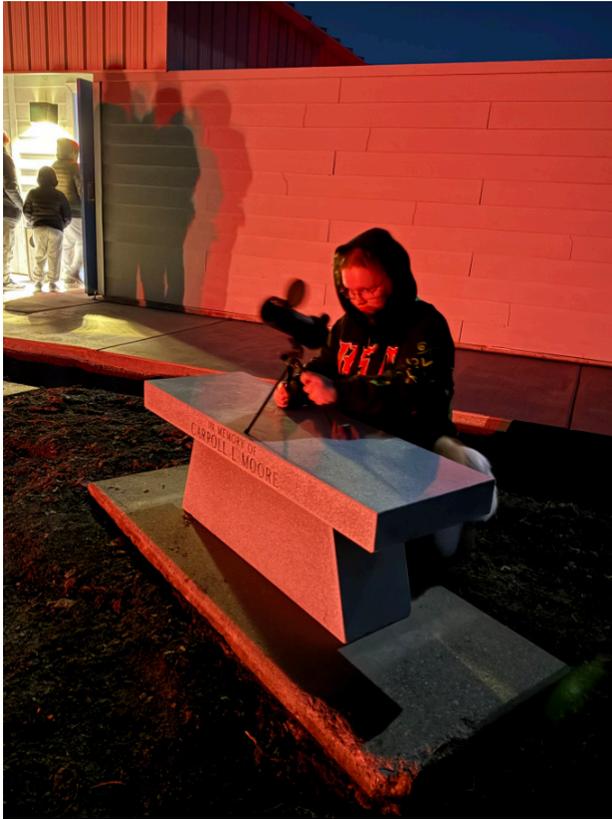


Boards Provided by the Hyde Board Chairman

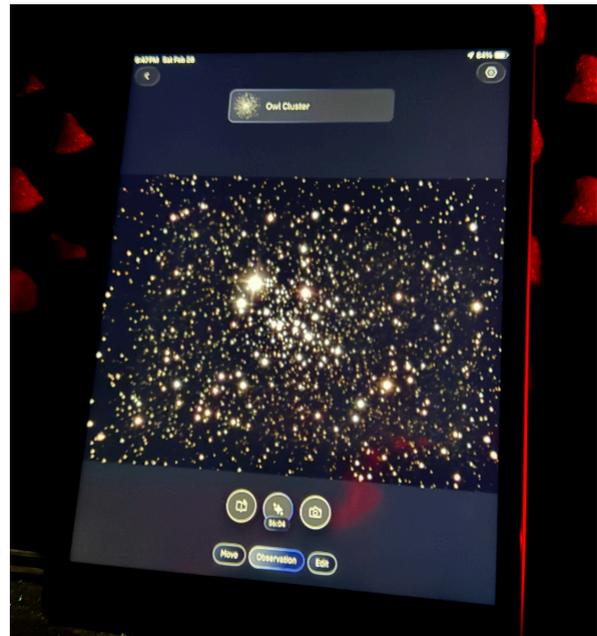


Don Hain lends his telescope for lunar observing

Hyde Observatory, continued



Young person seeks a stable mount



The Owl Cluster NGC 457, ET Cluster as seen in the EV Scope



eVScope looking for ET

Focus on Constellations: Ursa Major

Jim Kvasnicka

Ursa Major, The Great Bear, is the third largest constellation covering 1,280 square degrees. Seven of the brightest stars form the Big Dipper, the best known of all the star patterns. The Big Dipper is only the hind quarters and tail of the Great Bear. Ursa Major lies far away from the Milky Way, therefore it is rich in galaxies, or is the case of Ursa Major it is exceptionally rich in galaxies. Ursa Major is best seen in the month of April.

Showpiece Objects

Galaxies: M81, M82, M101, M108, M109
Planetary Nebulae: M97
Double Stars: Mizar and Alcor

Mythology

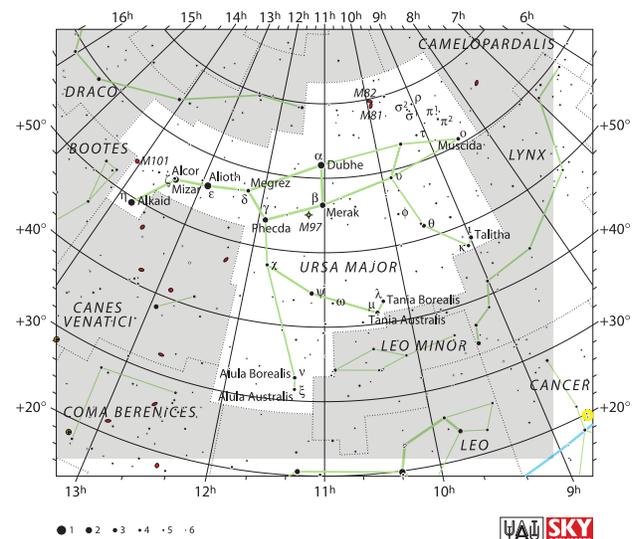
In Greek mythology Zeus fell in love with Callisto, a beautiful young woman. Hera, Zeus's wife found out and turned Callisto into a bear, but she kept her human feelings. She roamed the woods in fear of the other animals and of hunters. One day she came face to face with a young hunter who she recognized as her own son Areas. She

rushed to hug him but Areas didn't know the bear was his mother. Thinking the bear was attacking he raised his spear and was about to throw it when Zeus turned him into a bear like his mother. Callisto became Ursa Major and Areas became Ursa Minor.

Number of Objects Magnitude 12.0 and Brighter

Galaxies: 84
Globular Clusters: 0
Open Clusters: 0
Planetary Nebulae: 1
Dark Nebulae: 0
Bright Nebulae: 0
SNREM: 0

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April Observing

Jim Kvasnicka

This is a partial list of objects visible for the upcoming month.

Planets

Mercury, Mars, and Saturn: Morning planets but difficult to see.

Venus: Evening planet, sets two hours after the Sun.

Jupiter: Evening planet in Gemini at magnitude -2.0 with a disk 37.44" wide.

Uranus: Evening planet in Taurus at magnitude +5.8 with a disk 3.48" wide.

Neptune: Not visible.

Meteor Showers

Lyrids: Peaks the morning of April 22, expect 15-20 per hour. There will be an opportunity to view them the night of April 22 as well. The Moon will not interfere.

Messier List

M40: Double star in Ursa Major.

M65/M66: Part of the Leo Triplet Group.

M95/M96: Galaxies in Leo that fit in the same FOV.

M105: Galaxy in Leo.

M106: Galaxy in Canes Venatici.

M108/M109: Galaxies in Ursa Major.

Last Month: M41, M44, M46, M47, M48, M50, M81, M82, M93

Next Month: M49, M51, M61, M63, M64, M85, M94, M101, M102, M104

NGC and other Deep Sky Objects

NGC 2903: Elongated galaxy in Leo.

NGC 3077: Galaxy in Ursa Major.

NGC 3384: Galaxy in Leo.

NGC 3521: Elongated galaxy in Leo.

NGC 3631: Galaxy in Ursa Major.

NGC 3675: Elongated galaxy in Ursa Major.

Double Star Program List

Alpha Leonis: Regulus, white and yellow stars.



Gamma Leonis: Algieba, pair of yellow stars.

54 Leonis: Yellow primary with a greenish colored secondary.

Alpha Canum

Venaticorum: Cor Caroli, bluish white and greenish yellow stars.

Zeta Ursa Majoris: Mizar, pair of white stars.

Gamma Virginis:

Porrima, close pair of yellow stars.

24 Comae Berenices: Yellow primary with a pale blue secondary.

Delta Corvi: White and rose-colored stars.

Challenge Object

NGC 3577 and NGC 3583: Galaxy pair in Ursa Major.

Club Outreach

Don Hain

dhain00@gmail.com

402-440-5318

It is a bit early in the summer to see much of the Summer Triangle, but with the Morrill Hall / University Planetarium Astronomy Night just around the corner, I have been trying to learn a bit more about the lore surrounding the stars that make up that famous asterism. I am of course also trying to become more familiar with some of the deep sky objects that can be found using Vega, Deneb and Altair as guideposts too. I'm particularly interested in learning about open clusters because I enjoy seeing stars fill up a field of view through low power binoculars and scopes using lower magnification.

As for stories about those three stars, apparently there are many. Carl Sagan and Ann Druyan wrote a screenplay in the 1979-1980 timeframe. The screenplay did not make it to production as a movie as it stood. Instead, the idea was worked into the novel "Contact" Sagan built off that work. Published in 1985, twelve years later, in 1997, the movie "Contact" was released based on it. The movie starred Jodie Foster and Matthew McConaughey. They built a device based on instructions received from beings out by Vega in the Summer Triangle to allow humans to communicate with the beings in that region of space.



Enjoy the warmer weather as it comes our way. You can still catch Orion and the stars of the Winter Octagon in the evening for the next few months. If you are up early, you can catch the region of the sky that Jodi Foster tried to connect with back before the turn of the century!

Club Outreach

Upcoming event(s):

Astronomy Night

When: Saturday, April 11, 2026 5 to 9 PM

Where: Nebraska State Museum and Planetarium

Needs: volunteers at the PAC table(s) - displaying and talking with folks about an astronomy related topic

Cub Scout Pack - Campout - Stargazing

When: April 18th, 2026 (rain date of May 2nd)

Where: Pawnee Lake

Sponsored by: cub scout pack

Needs: volunteers to help with a star walk or stargazing activity

Hyde Observatory: OPEN

When: Saturday nights ... and other nights for groups per request

Where: Hyde Observatory

Needs: volunteers willing to work out on the deck or manage the shows in the classroom about one Saturday per month, or nights scheduled by request of a group

See <https://www.hydeobservatory.info/volunteer/> for more information

See <https://forms.gle/ZKr4ivapvUhfejwL6> for the volunteer form to get paperwork with the city started. Since Hyde offers the activity through city government a background check is needed. Submission of this form will get that going.

NASA's DART Mission Changed Orbit of Asteroid Didymos Around Sun

The spacecraft changed the binary system's orbit, confirming that a kinetic impactor can be an effective planetary defense technique for deflecting a near-Earth object.

New research reveals that when NASA's DART (Double Asteroid Redirection Test) spacecraft intentionally impacted the asteroid moonlet Dimorphos in September 2022, it didn't just change the motion of Dimorphos around its larger companion, Didymos; the crash also shifted the orbit of both asteroids around the Sun. Linked together by gravity, Didymos and Dimorphos orbit each other around a shared center of mass in a configuration known as a binary system, so changes to one asteroid affect the other.

As detailed in a study published on Friday in the journal *Science Advances*, observations of the pair's motion revealed that the 770-day orbital period around the Sun changed by a fraction of a second after

the DART spacecraft's impact on Dimorphos. That change marks the first time a human-made object has measurably altered the path of a celestial body around the Sun.

"This is a tiny change to the orbit, but given enough time, even a tiny change can grow to a significant deflection," said Thomas Statler, lead scientist for solar system small bodies at NASA Headquarters in Washington. "The team's amazingly precise measurement again validates kinetic impact as a technique for defending Earth against asteroid hazards and shows how a binary asteroid might be deflected by impacting just one member of the pair."

High impact

When DART struck Dimorphos, the impact blasted a huge cloud of rocky debris into space, altering the shape of the asteroid, which measures 560 feet (170 meters) wide. Because the debris carried its own momentum away from the asteroid, it gave Dimorphos an explosive thrust — what scientists call the momentum enhancement factor. More debris being kicked out means more oomph. According to the new research, the momentum enhancement factor for DART's impact was about two, meaning that the debris loss doubled the punch created by the spacecraft alone.

Earlier research showed that the smaller asteroid's 12-hour orbital period around the nearly half-mile-wide (805-meter-wide) Didymos shortened by 33 minutes.

DART, continued

The new study shows the impact ejected so much material from the binary system that it also changed the binary's orbital period around the Sun by 0.15 seconds.

“The change in the binary system's orbital speed was about 11.7 microns per second, or 1.7 inches per hour,” said Rahil Makadia, the study's lead author at the University of Illinois Urbana-Champaign. “Over time, such a small change in an asteroid's motion can make the difference between a hazardous object hitting or missing our planet.”

Although Didymos was not on an impact trajectory with Earth and it was impossible for the DART mission to put it on one, that change in orbital speed underscores the role spacecraft — aka kinetic impactors in this context — could play if a potentially hazardous

asteroid is found to be on a collision course in the future. The key is detecting near-Earth objects far enough in advance to send a kinetic impactor.

To that end, NASA is building the Near-Earth Object (NEO) Surveyor mission. Managed by NASA's Jet Propulsion Laboratory in Southern California, this next-generation space survey telescope is the first to be built for planetary defense. The mission will seek out some of the hardest-to-find near-Earth objects, such as dark asteroids and comets that don't reflect much visible light.

How they did it

To prove DART had a detectable influence on both asteroids — not just on the smaller Dimorphos — the researchers needed to measure Didymos' orbit around the Sun to

exquisite precision. So, in addition to making radar and other ground-based observations of the asteroid, they tracked stellar occultations, which occur when the asteroid passes exactly in front of a star, causing the pinpoint of light to blink out for a fraction of a second. This technique provides extremely precise measurements of the asteroid's speed, shape, and position.

Measuring stellar occultations is challenging:

Astronomers have to be in the right place at the right time with several observing stations, sometimes miles apart, to track the predicted path of the asteroid in front of a specific star. The team relied on volunteer astronomers around the globe who recorded 22 stellar occultations between October 2022 and March 2025.

DART, continued

“When combined with years of existing ground-based observations, these stellar occultation observations became key in helping us calculate how DART had changed Didymos’ orbit,” said study co-lead Steve Chesley, a senior research scientist at JPL. “This work is highly weather dependent and often requires travel to

remote regions with no guarantee of success. This result would not have been possible without the dedication of dozens of volunteer occultation observers around the world.”

Studying changes in Didymos’ motion also helped the researchers calculate the densities of both asteroids.

Dimorphos is slightly less dense than previously thought, supporting the theory that it formed from rocky debris shed by a rapidly spinning Didymos. This loose material eventually clumped together to form Dimorphos, a “rubble pile” asteroid.



The Italian Space Agency’s LICIAcube traveled alongside NASA’s DART to capture the spacecraft’s collision with Dimorphos. In this LICIAcube image, taken moments after impact on Sept. 26, 2022, rocky debris can be seen fanning out from the smaller asteroid below its larger binary partner, Didymos. Credit: ASI/NASA

John Reinert provided this [link to DART video](#) shot at Hyde Observatory during a PAC meeting.

Webb Examines Cranium Nebula

The telescope used two instruments to capture mind-bending new views of the little-known nebula PMR 1

Nebula PMR 1 is a cloud of gas and dust that bears an uncanny resemblance to a brain in a transparent skull, inspiring its nickname, the “Exposed Cranium” nebula. Webb captured its unusual features in both near- and mid-infrared light using two instruments that reveal enhancing details of the

nebula’s brain-like appearance.

The nebula appears to have distinct regions that capture different phases of its evolution: an outer shell of gas that was blown off first and consists mostly of hydrogen, and an inner cloud with more structure that contains a mix of different gases.

Both Webb’s NIRCам (Near-Infrared Camera) and MIRI (Mid-Infrared Instrument) show a distinctive dark lane running vertically through the middle of the nebula that defines its brain-like look of left and right hemispheres. Webb’s resolution shows that this lane could be related to an outburst or



Astronomers are losing their heads over the latest images from the NASA/ESA/CSA James Webb Space Telescope, which bear a striking resemblance to a transparent cosmic cranium, revealing the “brain” inside. The nebula, officially named PMR 1, is being created by an aging star that is expelling its outer layers.

Cranium Nebula, continued

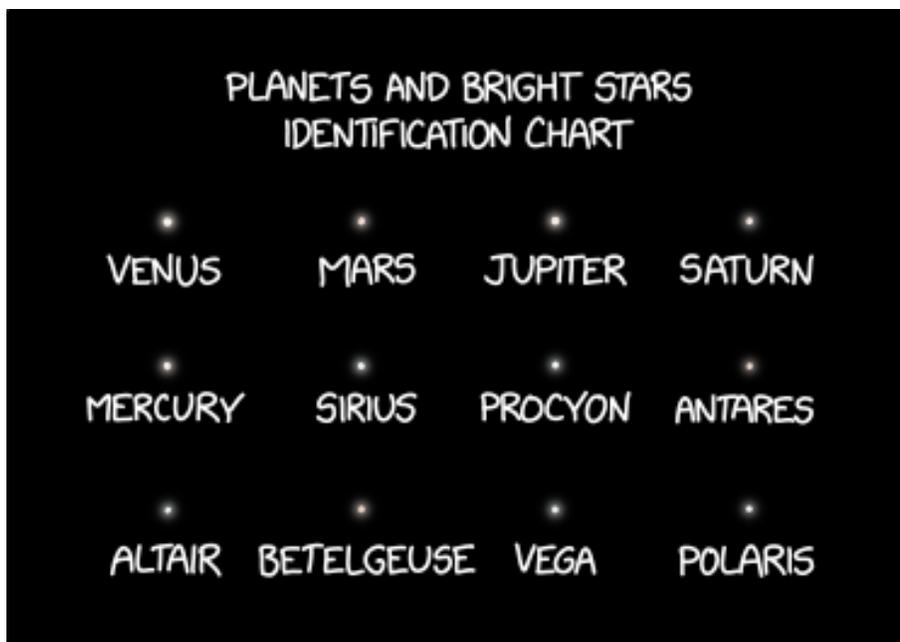
outflow from the central star, which typically occurs as twin jets burst out in opposite directions. Evidence for this is particularly notable at the top of the nebula in Webb's image, where it looks like the inner gas is being ejected outward.

While there is still much to be understood about this nebula, it's clear that it is being created by a star near the end of its fuel-burning "life." In their end stages, stars expel their outer layers. It's a dynamic and fairly fast process, in cosmic terms. Webb has

captured a moment in this star's decline. What ultimately happens will depend on the mass of the star, which is yet to be determined. If it's massive enough, it will explode in a supernova. A less massive Sun-like star will continue to shed layers until only its core remains as a dense white dwarf, which will cool off over eons.

After a red giant has shed all its atmosphere, only the core remains. Scientists call this kind of stellar remnant a white dwarf. A white dwarf is usually Earth-size but hundreds of thousands

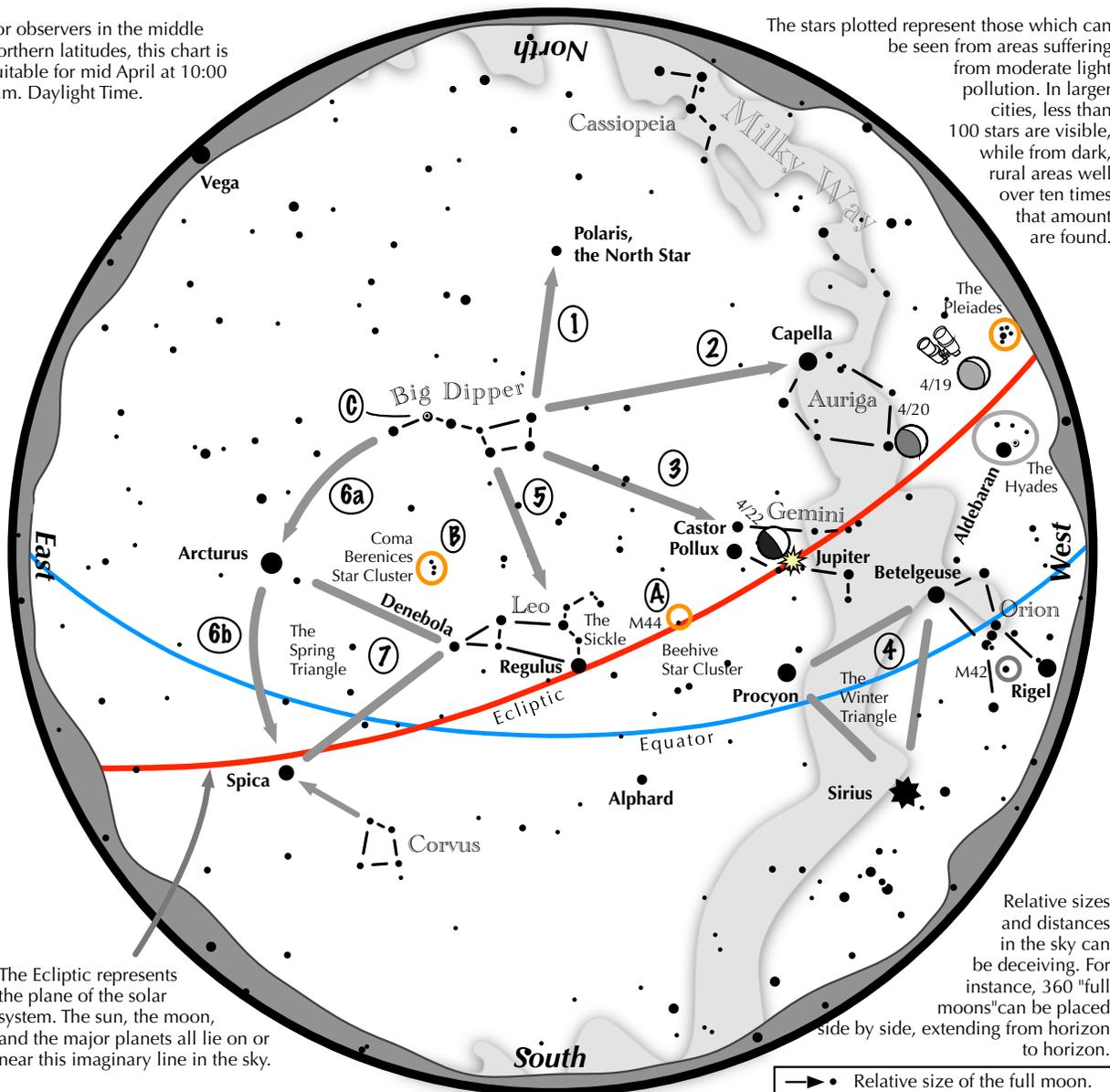
of times more massive. A teaspoon of its material would weigh more than a pickup truck. A white dwarf produces no new heat of its own, so it gradually cools over billions of years. Despite the name, white dwarfs can emit visible light that ranges from blue white to red. Scientists sometimes find that white dwarfs are surrounded by dusty disks of material, debris, and even planets – leftovers from the original star's red giant phase. In about 10 billion years, after its time as a red giant, the Sun will become a white dwarf.



Navigating the April Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid April at 10:00 p.m. Daylight Time.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Navigating the April night sky: Simply start with what you know or with what you can easily find.

- 1 Extend an imaginary line north from the two stars at the tip of the Big Dipper's bowl. It passes Polaris, the North Star.
- 2 Draw another imaginary line west across the top two stars of the Dipper's bowl. It strikes Capella low in the northwest.
- 3 Through the two diagonal stars of the Dipper's bowl, draw a line pointing to the twin stars of Castor and Pollux in Gemini.
- 4 Look in the west-southwest for the bright Winter Triangle stars of Sirius, Procyon, and Betelgeuse.
- 5 Directly below the Dipper's bowl reclines the constellation Leo with its primary star, Regulus.
- 6 Follow the arc of the Dipper's handle. It first intersects Arcturus, then continues to Spica.
- 7 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.

Binocular Highlights

- A:** M44, a star cluster barely visible to the naked eye, lies to the southeast of Pollux.
B: Look nearly overhead for the loose star cluster of Coma Berenices.
C: In the Big Dipper's handle shines Mizar next to a dimmer star, Alcor.

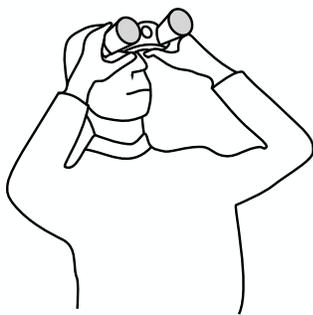
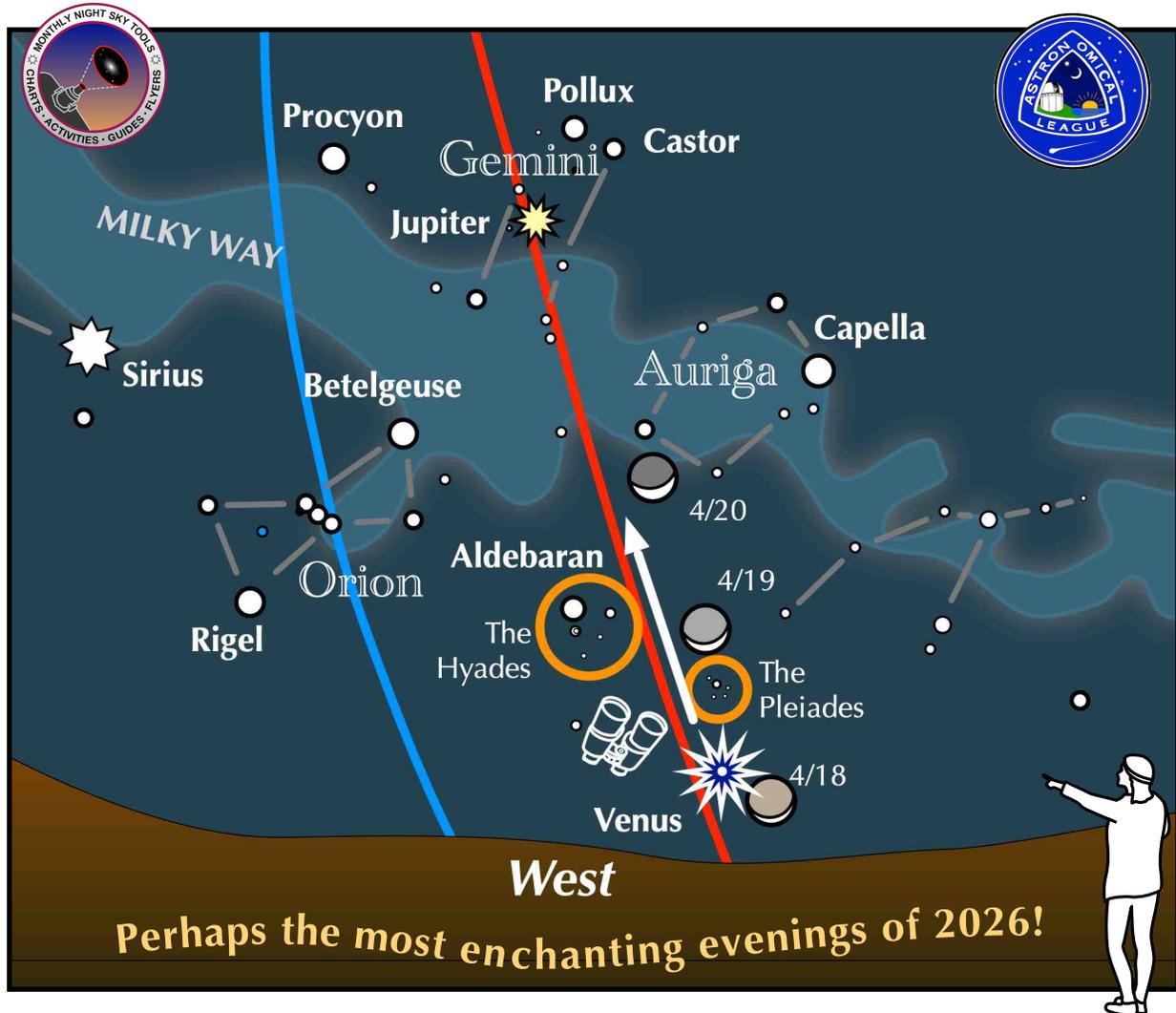


Astronomical League
www.astroleague.org

Duplication allowed and encouraged for all free distribution.

Astronomical League Outreach

If you can see only one celestial event this April,
see this one.

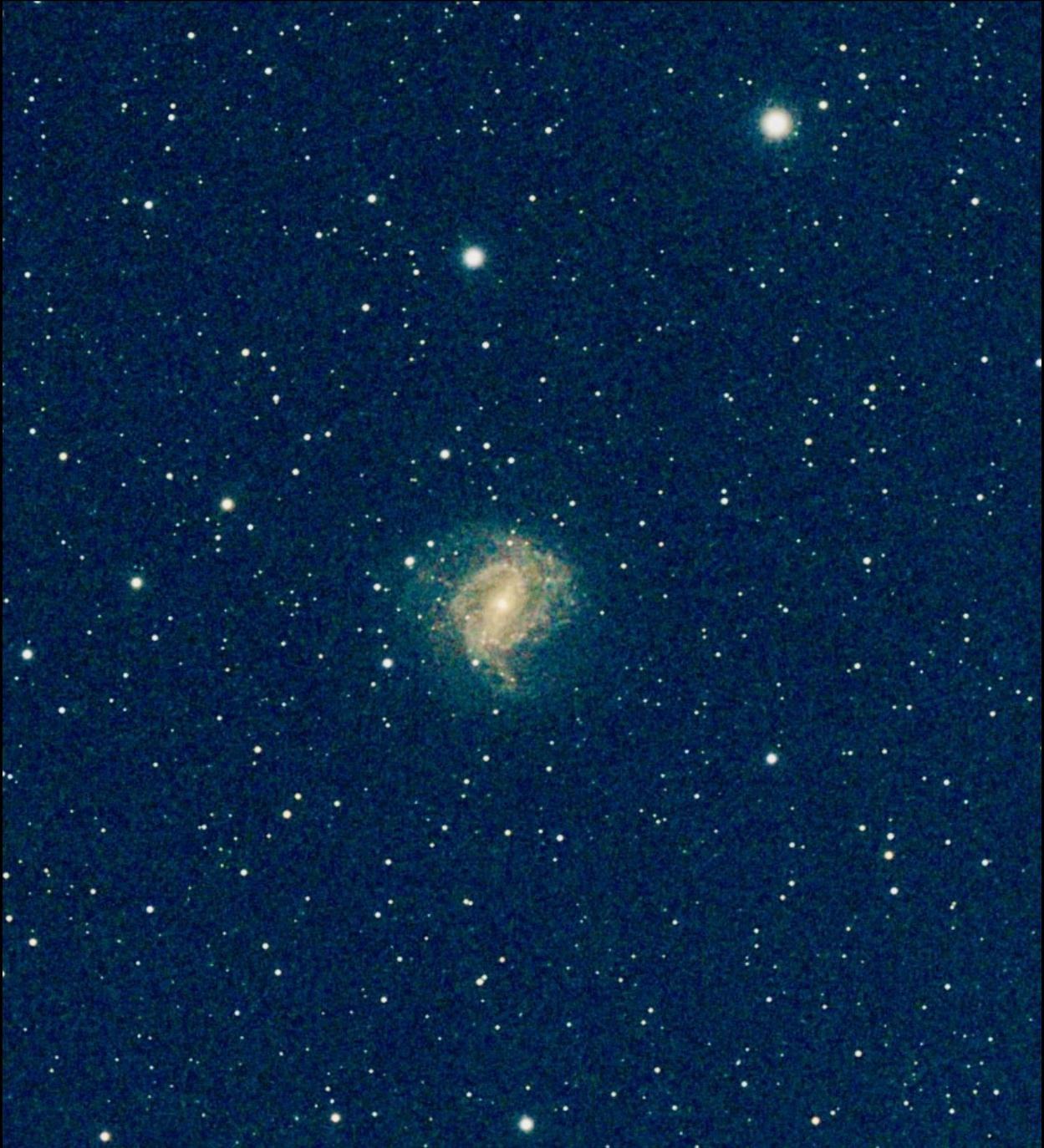


Enhance the scene –
use binoculars!

On April 18, 19, & 20, look low in the west-northwest 60 minutes after sunset.

- On the first evening, the crescent moon, glowing full with earthshine, floats near brilliant Venus, while on the second evening, it moves just above the delicate Pleiades star cluster, and to the right of the bright star Aldebaran and the intriguing Hyades star cluster.
- On the third evening, the slightly thicker, but more pronounced crescent moon hangs above the Pleiades and the Hyades.
- Above it all, bright Jupiter plows through Gemini, shining near Castor and Pollux.

Astrophotography



*Pinwheel Galaxy by Scott Spaulding
Seestar S30 photo of the Southern Pinwheel Galaxy from Namibia (23 Feb 2026, clouds
cut short the exposure to about 10 minutes)*

Astrophotography



*Hamburger Galaxy NGC 3628 by Brett Boller
Takahashi FRC 300mm @ 2348mm f/7.8
Camera: ZWO ASI2600MC Pro Duo
2-15-26 71 x 180 Seconds
Branched Oak Observatory*

From the Archives, March, 2016

New Mural Installed at Hyde Observatory



The new mural has been installed at Hyde Observatory. This photo is a composite of the Milky Way. Taken by Brett Boller and Dave Knisely at the Nebraska Star Party in July, 2015.

ADDRESS

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The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: Regular \$30/yr, Family \$35/yr. Address all new memberships and renewals to: The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585. For other club information, please contact one of the club officers listed to the right. Newsletter comments and articles should be submitted to: Mark Dahmke, P. O. Box 5585, Lincoln, NE 68505 or mark@dahmke.com, no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.



MEMBERSHIP INFO

REGULAR MEMBER - \$30.00 per year. Includes club newsletter, and 1 vote at club meetings, plus all other standard club privileges.

FAMILY MEMBER - \$35.00 per year. Same as regular member except gets 2 votes at club meetings.

STUDENT MEMBER - \$10.00 per year with volunteer requirement.

If you renew your membership prior to your annual renewal date, you will receive a 10% discount.

Club members are also eligible for special subscription discounts on Sky & Telescope Magazine.

CLUB TELESCOPES

To check out one of the club telescopes, please contact a club officer. Scopes can be checked out at a regular club meeting and kept for one month. Checkout can be extended for another month if there are no other requests for the telescope, but you must notify a club officer in advance.

100mm Orion refractor: Available

10 inch Meade Starfinder Dobsonian: Available.

13 inch Truss Dobsonian: Needs repair.

10 inch Zhumell: Needs mount.

Buy the book! The Prairie Astronomy Club: Fifty Years of Amateur Astronomy. Order online from [Amazon](https://www.amazon.com) or [lulu.com](https://www.lulu.com).