The Prairie Astronomer

August, 2025 Volume 66, Issue #8

IN THIS ISSUE:

THE NEWSLETTER OF THE PRAIRIE ASTRONOMY CLUB

The Prairie Astronomer

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

Next meeting: Tuesday August 26th 7:30pm at Hyde Observatory

NEXT MEETING

For this month's program: "A Visit to the Kansas Cosmosphere and Space Museum" in Hutchinson, Kansas, by Dave Knisely. It will cover a little of our club's history visiting the facility and the most recent remodeling plus the newer exhibits of space hardware at the site.

September: "Clouds out Tonight? Press a button and Bortal 1 skies await....." Russ Genzmer will cover the universe of Remote Astronomy: Just what it is, the top site offerings and rates, how to get going, support, key features to look for in a site and philosophical issues from top amateurs.

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Cover: Pleiades by Brett Boller

M31 by Brett Boller

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.

CALENDAR

August PAC Meeting
Tuesday, August 26th, Hyde Observatory
Program: Dave Knisely's review of the Kansas Cosmosphere

September PAC Meeting
Tuesday September 30th Hyde Observatory
Program: Russ Genzmer will discuss developments on Remote Astronomy (remote telescope hosting)

October PAC Meeting
Tuesday, October 28th, Hyde Observatory
Program: to be announced

PAC Google calendar:
https://www.prairieastronomyclub.org/event-calendar/

2025 STAR PARTY DATES

	Date	Date
January	24	**31**
February	21	**28**
March	21	**28**
April	3/18	**25**
May	16	**23**
June	20	**27**
July	18	**25**
NSP	7/20	7/25
August	15	**22**
September	**19**	26
October	17	**24**
November	14	**21**
December	12	**19**

Dates in BOLD are closest to the New Moon.

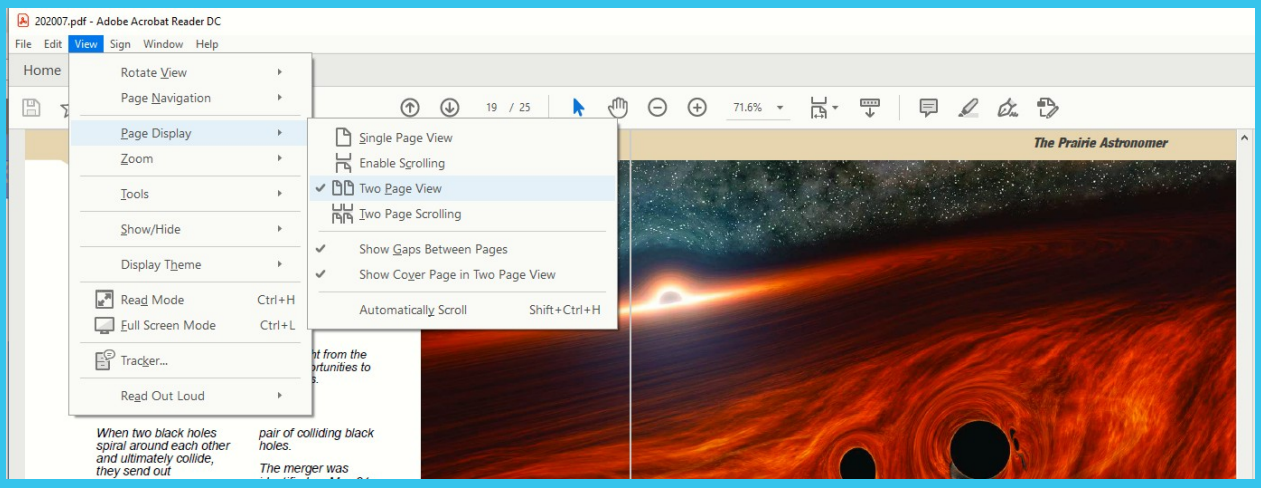
CLUB OFFICERS

President	Jason O'Flaherty jflaher@gmail.com
Vice President	Brett Boller proboller86@yahoo.com
2nd VP (Program Chair)	Lee Taylor otaylor88@gmail.com
Secretary	Jim White jrwhite2188@gmail.com
Treasurer	John Reinert jr6@aol.com
Club Observing Chair	Jim Kvasnicka jim.kvasnicka@yahoo.com
Outreach Coordinator	Don Hain dhain00@gmail.com
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 Online

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

The NASA's Webb Traces Details of Complex Planetary Nebula

More than one star contributes to the irregular shape of NGC 6072

The lifecycle of stars is one of the most well-studied areas of astronomical study, but is still shrouded in mystery. Stars are essentially the cosmic engines that shape the universe. They populate the universe with elements, some key to life as we know it. Planetary nebulas are spectacular showings of a star, 1 to 8 times the mass of our Sun, as it is dying, casting off a glowing shell of gas and dust. Eventually, our own Sun will go through this phase. However, it's astronomers' best guess on specifically what that last hurrah will look like – not that we'll be around to see. Studying planetary nebulas outside our solar system may provide insights into that, however, more powerful telescopes and detailed studies have shown the process isn't as straightforward as once thought. Complicated dynamics in systems, including interacting stars, create messy scenes, as seen in NASA's James Webb Space Telescope's newest look at a planetary nebula, NGC 6072.

NASA's James Webb Space Telescope's view of planetary nebula NGC 6072 in the near-infrared shows a complex scene of multiple outflows expanding out at different angles from a dying star at the center of the scene.

There is one stretching from roughly 11 to 5 o'clock, another from 1 to 7 o'clock, and possibly a third from 12 to 6 o'clock. These outflows push gas toward the equatorial plane, forming a disk that appears to span from 9 to 3 o'clock.

Astronomers suspect there is at least one other star interacting with the material cast off by the central dying star, creating the abnormal appearance of this planetary nebula. Image credit: NASA, ESA, CSA, STScI

Meeting Minutes, July 29th

Jim White

Jason O'Flaherty started the meeting at 7:38 pm. Jason announced that we have one new member, Neill Mollard.

Jason turned the meeting over to Jim Kvasnicka, PAC observing chair, for his monthly observing report at 7:40 pm. Star parties for the month of August are scheduled for the 15th and the 22nd at the Clatonia Recreation Area which is approximately 1 ½ miles north of Clatonia. The planets for the month of August, Mercury is a morning planet but is very difficult to see. Venus is a morning planet and will be in conjunction with Jupiter on the 12th of August, they will appear 52 arc seconds apart. Saturn is a morning planet, Uranus and Neptune are morning planets and Mars is not really visible in the bright evening twilight. The Perseid Meteor Shower will be the night of the 12th-13th but the waning gibbous moon will be up and interfere with viewing. Jim's complete observing report can be seen in the monthly newsletter. Jim completed his observing report at 7:43 pm.

The meeting was turned over to John Reinert for his monthly treasurer's report. The club's account balances are as follows; checking $5,181.20, CD1 $28.375.30, CD2 $5,503.23, BMO Total $39,059.73, PayPal $291.23, Stripe $33.68, Total assets $39,384.64. The Astronomical League dues have been paid. John received some cards at the Nebraska Star Party from Diana Hannikainen, Editor in Chief of Sky and Telescope Magazine, so if you would like to subscribe and get a nice discount see John Reinert for a card. John has picked up some other responsibilities in his already busy life so he is enlisting the help of Kale Strizek to help lighten the load. John has been elected to the NSP Board and is also on the Hyde Memorial Observatory Board.

Tonight's meeting ended at 7:48 pm.

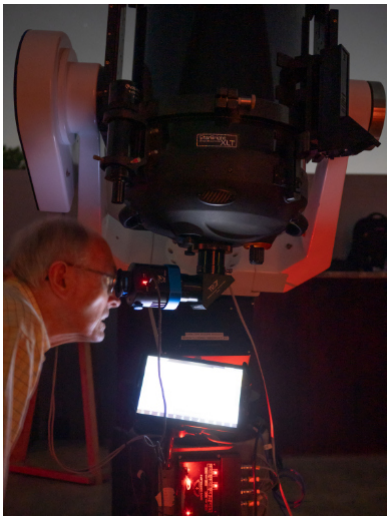
Tonight's program is a presentation put together by Jason of pictures taken by members over the last few months along with some pictures taken at the Nebraska Star Party and an animation of the image used on tee shirt for a past NSP which was originally composed in Photoshop by Mark Dahmke and has now been animated by Mark Dahmke and the magic of AI.

Welcome new club member: Neill Mollard

Richard Wright and SmartEye Make an Appearance at Hyde

Richard Wright, a speaker at The Nebraska Star Party stopped by Hyde Observatory on July 24th to demo the new SmartEye digital eyepiece.

Richard has been involved with software development for SmartEye, a product developed by Pegasus Astro. The SmartEye eyepiece combines the traditional visual observing experience with modern sensor technology. Wright has been showcasing and demonstrating the SmartEye at various events and locations, including Starfest and NSP. Also present at Hyde were Jack Dunn, Lee Thomas, Ron Veys and Mark Dahmke. All were very impressed and recommended to the Hyde board that a unit be ordered. Given the current backlog it will probably arrive in November or December.



Photos by Mark Dahmke

ARP 83

The Mantrap Skies Image Catalog

Arp 83/NGC 3799-3800 is found near Denebola in the tail end of Leo, about 170 million light-years distant. Arp put it in his class of spiral galaxies with large, high surface brightness companions on arms. Again, what he sees as an arm is more a plume due to interacting galaxies than a real arm. Arp seems to recognize this in his comment: "Some hazy material at juncture of two arm; high surface brightness, S shape inside comp." Radio data confirms these are interacting galaxies in a common HI halo. NGC 3799 is the small companion, NGC 3800 the large spiral with the odd arm structure of one major drawn out arm and a chaotic mess for the other one. Oddly both seem to start out going northeast. There's a third member of this interacting group, NGC 3800A to the northeast. Oddly a note at NED says it isn't recognized by NED, whatever that means.

NGC 3800 is classed at NED and by Seligman as SAB(rs)b: pec while the NGC project seems to throw up its hands just saying S... NGC 3799 is classed as SB(s)b: pec at NED with

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 83, continued

Seligman agreeing and again, S.. at the NGC Project. Both galaxies have exactly the same redshift of 3312 km/s though NED notes one source says NGC 3800 has a much different redshift of 5852 km/sec putting it over 100 million light-years further away. This seems unlikely. NGC 3800A has a nearly identical redshift, 3300 km/s and radio images show a warped HI disk indicative of interaction with the other two.

NGC 3800 was discovered by William Herschel on April 8, 1784 but isn't in either of the Herschel 400 observing programs. NGC 3799 was discovered by his son John Herschel on April 21, 1785.

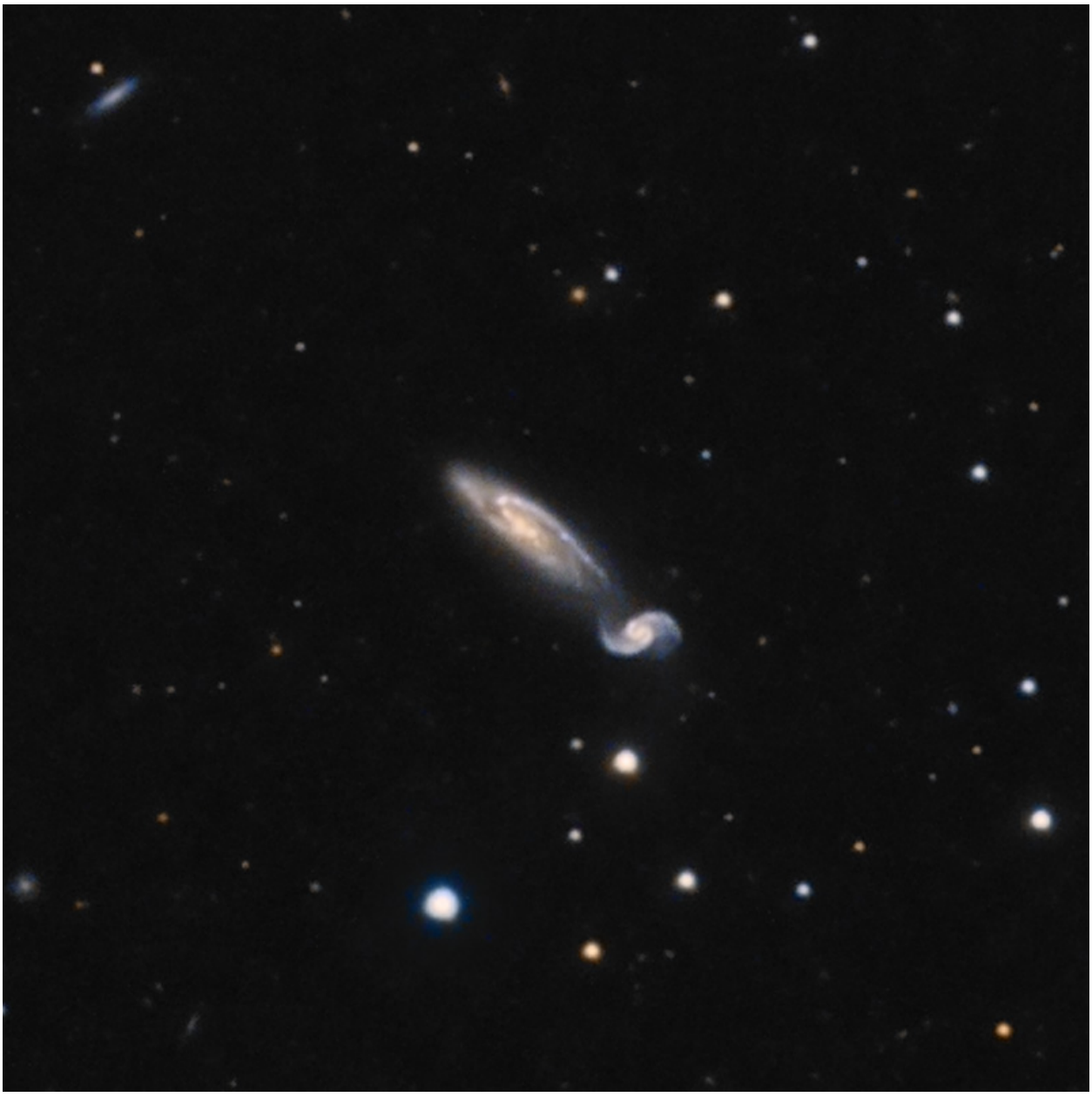
North and a bit west of Arp 83 is a blue object that the Sloan survey shows both as a galaxy and quasar. The quasar's position being 0.01" of RA further east than the star. Both are shown as 0.09" in size which is to say star-like. I've shown it as G/Q in the annotated image. If a quasar it is one of the closest ones though at magnitude 19.1 likely too faint to be seen visually. Just north of it is another blue starlike object. It is only slightly closer (but same distance given the error bar of measurements like these) and is shown only as a galaxy.

An X-ray bright galaxy cluster discovered by the ROSAT X-ray observatory -- now deceased -- is centered on the location of a BL Lac galaxy/ quasar again depending on what catalog you believe. There's little information on the cluster RBS 1015. The galaxy is an IR source in the 2MASS survey, A BL Lac galaxy in the Sloan survey and quasar in the BZB and [MGL2009] catalogs. The latter two while listed in NED as the catalogs seeing it as a quasar, are undefined catalogs in NED. When asked to do so NED responds that isn't a valid NED designation, yet they use it. ARGH! BL Lac objects are another type of AGN in which the active jet is likely pointed nearly directly at us but feeding far more slowly than a quasar's black hole. Google the term for more information.

In the lower left corner right at the bottom edge is the galaxy cluster, MaxBCG J175.27433+15.14893 with a photographic redshift distance of 2.8 billion light-years. The galaxy at its center is SDSS J114105.83+150856.2 with no redshift listed but the same position within a fraction of a second of arc. The cluster is said to have 21 members but no size was given. So I marked it as GC/G with a question mark for the galaxy's distance.

ARP 83, continued

The bright stars in the image are somewhat distorted due to tube currents caused by severely dropping temperatures this night. My notes indicate a 10C (18F) degree drop in the 1:43 time needed for this image. This also caused a rather large shift in image scale with the last images being 0.0025" larger per pixel. This might not sound like much but across 2004 pixels that is a 5 pixel difference! Fortunately this is something Registar handles easily. The temperature drop ruined seeing as well so the image is rather fuzzy overall. Another for the proverbial reshoot list.



Focus on Constellations: Cygnus

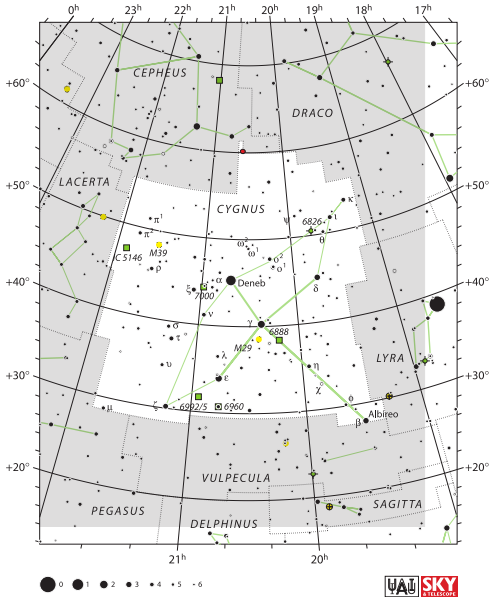
Jim Kvasnicka

Cygnus, the Swan, is also know and the Northern Cross. The Swan's head id marked by the double star Albireo, and the tail by Deneb. The Swan seems to be flying SW down the Milky Way toward Aquila, the Eagle. Cygnus covers 804 square degrees and contains the most visually beautiful part of the northern Milky Way. Cygnus contains a number of individual objects that are pleasing to look at. Albireo is the most observed double star in the night sky. The North America and Veil Nebula are often photographed. Cygnus contains a number of planetary nebulae and open clusters. The constellation Cygnus is best seen in September.

Showpiece Objects
Planetary Nebulae: NGC 6826 (Blinking Planetary)
Open Clusters: M29, M39
SNREM: NGC 6960-92 (Veil Nebula)
Double Stars: Albireo, 18 Cygni, 61 Cygni

Mythology
Cygnus was identified with the Swan into which Jupiter turned himself when he wished to seduce Leda, the wife of Tyndareus, King of Sparta. From this union was born Pollux and Helen of Troy. Castor was fathers by Tyndareus, and was therefore, unlike Pollux, was not immortal.

Number of Objects
Magnitude 12.0 and Brighter
Galaxies: 2
Globular Clusters: 0
Open Clusters: 28
Planetary Nebulae: 6
Dark Nebulae: 15
Bright Nebulae: 3
SNREM: 5



Cygnus Constellation Map:
IAU and Sky & Telescope magazine (Roger Sinnott & Rick Fienberg), CC BY 3.0 <https://creativecommons.org/licenses/by/3.0>, via Wikimedia Commons

September Observing

Jim Kvasnicka

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

Planets
Mercury and Mars: Not visible.
Venus: Morning planet, rises three hours before the Sun.
Jupiter: Morning planet at magnitude -2.1 with a disk 36.8" wide.
Saturn: Reaches opposition on September 21, rings are edge on.
Uranus: Morning planet.
Neptune: Near Saturn reaches opposition on September 23.

Messier List
M13: The Great Hercules Cluster, Class V globular cluster.
M14: Class VII globular cluster in Ophiuchus.
M22: Class VIII globular cluster in Sagittarius.
M28: Class IV globular cluster in Sagittarius.
M54: Class III globular cluster in Sagittarius.
M69: Class V globular cluster in Sagittarius.
M70: Class V globular cluster in Sagittarius.
M92: Class IV globular cluster in Hercules.

Last Month: M6, M7, M8, M9, M10, M12, M19, M20, M21, M23, M62, M107
Next Month: M11, M16, M17, M18, M24, M25, M26, M55, M75

NGC and other Deep Sky Objects
NGC 6826: The Blinking Planetary in Cygnus.
NGC 6905: The Blue Flash Nebula in Delphinus.
NGC 6960: Veil Nebula – Western Segment, SNR in Cygnus.
NGC 6974/6979: Veil Nebula – Central Segment, SNR in Cygnus.
NGC 6992/6995: Veil Nebula – Eastern Segment, SNR in Cygnus.
NGC 7006: Class I globular cluster in Delphinus.

Double Star Program List
Otto Struve 525: Yellow and blue pair in Lyra.
Gamma Delphinus: Yellow primary with a yellow-green secondary.
Zeta Aquarii: Yellow and white pair.
94 Aquarii: Yellow primary with a pale blue secondary.
Alpha Capricornus: Wide pair of yellow stars.
Beta Capricornus: Yellow and blue stars.
36 Ophiuchi: Yellow-orange pair of stars.
Omicron Ophiuchi: Yellow primary with a light-yellow secondary.
70 Ophiuchi: Yellow and orange stars.

Challenge Object
Stephan's Quintet: Galaxy group in Pegasus containing NGC 7317, NGC 7318A, NGC 7318B, NGC 7319, and NGC 7320. A large aperture is required to identify individual galaxies.

Club Outreach

Don Hain
dhain00@gmail.com
402-440-5318

As part of our outreach I have continued communicating with one of the cub scout troops in town. They are still hoping some of us can visit them at a camping/ astronomy nighttime activity later this year. Let me know if you are interested in getting involved (dhain00@gmail.com or by phone to 402 440 5318).

Additionally, I have gotten more closely involved with the Library Telescope program. I believe it is an organization that can be a big help in outreach efforts – in spreading the word about astronomy. They have recently become an official 501(c)3 organization and are on a mission to try to grow the program. As part of that, they were able to create a partnership with High Point Scientific. When Orion went out of business, as did Zhumell, the program had to scramble to continue to be able to have a source for the simple tabletop dobsonians they supply libraries with. Orion and Zhumell were manufacturers of the Starblaster 4.5" and the Zhumell 114mm. High Point Scientific was willing to continue to provide a 114mm refractor dob to the program.

I have also reached out to a few smaller libraries surrounding Lincoln to gauge if there would be any interest in participating in a project that would look for funding via a grant from the Watchable Wildlife Grant process the Nebraska Game and Parks is part of. My thoughts would be to have participants be part of a proof of concept for getting the public more familiar with telescope concepts than involve CCD imaging behind the objectives. Think of things like the ZWO SeeStar S30 f/5, ZWO ASI662MC USB3.0 Color Astronomy Camera or ZWO ASI715MC Color Astronomy Camera. If you have opinions about any of these newer technologies, or something akin to them, please reach out to me at dhain00@gmail.com . I believe several in the group have an S30, and I have been enjoying some of the images those have already produced.

Club Outreach

Camp Erin - Youth Overnight Camp
When: September 27-29, 2025 (exact night still to be determined)
Where: Carol Joy Holling Center- 27416 Ranch Rd, Ashland, NE 68003
Sponsored by: Mourning Hope
PAC Co-ordinator for this event: Bob Kacvinsky

Hoot 'n Howl (or Nocturnal November?) - Spring Creek Prairie
When: usually in October, but "Nocturnal November" is set for November 15, 2025
Where: Spring Creek Prairie Audubon Center - 11700 SW 100th St Denton, NE 68339
Sponsored by: Spring Creek Prairie
Needs: 2 or more volunteers are hoped for

Crete Public Library - Intro to Astronomy presentation and viewing of the night sky
When: planning for early November (after Daylight Savings Time ends)
Where: Crete Public Library, 1515 Forest Ave, Crete NE 68333
Sponsored by: Crete Public Library
Needs: 5 or more are hoped for to bring scopes for the night sky viewing - contact dhain00@gmail.com

Hyde Observatory: OPEN
When: Saturday nights
Where: Hyde Observatory
Sponsored by: Lincoln Parks and Rec / Hyde Board of Directors
Needs: volunteers willing to work out on the deck or manage the shows in the classroom about one Saturday per month
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 Scientist Finds Predicted Companion Star to Betelgeuse

Discovery of a close companion to the 10th brightest star in our night sky may explain why similar red supergiant stars see changes in their brightness on the scale of many years.

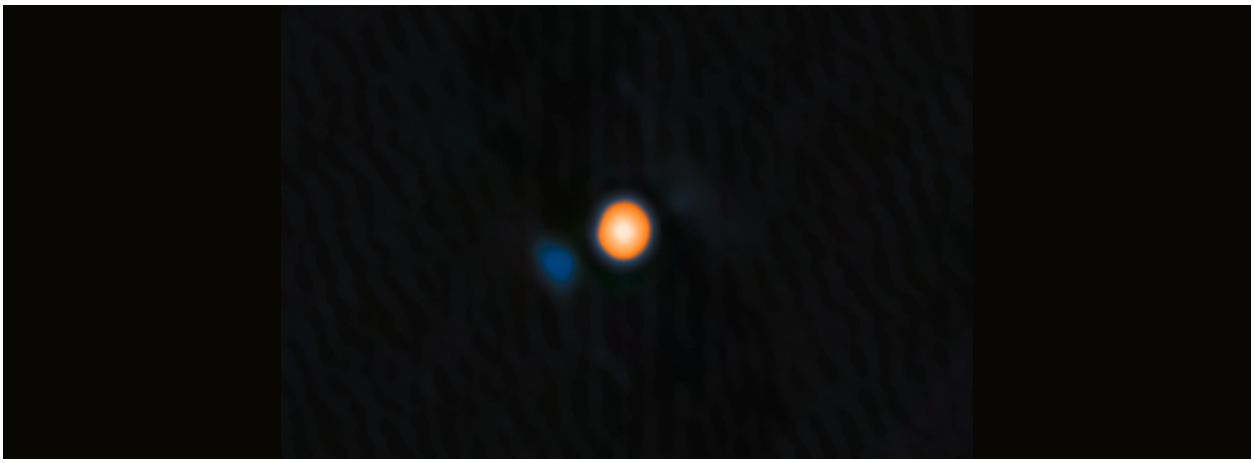
A century-old hypothesis that Betelgeuse, the 10th brightest star in our night sky, is orbited by a very close companion star was proved true by a team of astrophysicists led by a scientist at NASA's Ames Research Center in California's Silicon Valley.

The research published in The Astrophysical Journal Letters in the paper "Probable Direct Imaging Discovery of the Stellar Companion to Betelgeuse."

Fluctuations in the brightness and measured velocity of Betelgeuse, the closest red supergiant star to Earth, had long presented clues that it may have a partner, but the bigger star's intense glow made direct observations of any fainter neighbors nearly impossible.

Two recent studies by other teams of astronomers reignited the companion star hypothesis by using more than 100 years of Betelgeuse observations to provide predictions of the companion's location and brightness.

If the smaller star did exist, the location predictions suggested that scientists had a window of just a few months to observe the



An image of Betelgeuse, the yellow-red star, and the signature of its close companion, the faint blue object. Credit: Data: NASA/JPL/NOIRlab. Visualization: NOIRLAB

Betelgeuse, continued

companion star at its widest separation from Betelgeuse, as it orbited near the visible edge of the supergiant. After that, they would have to wait another three years for it to orbit to the other side and again leave the overpowering glow of its larger companion.

Searches for the companion were initially made using space-based telescopes, because observing through Earth's atmosphere can blur images of astronomical objects. But these efforts did not detect the companion.

Steve Howell, a senior research scientist at Ames, recognized the ground-based Gemini North telescope in Hawai'i, one of the largest in the world, paired with a special, high-resolution camera built by NASA, had the potential to directly observe the close companion to Betelgeuse, despite the atmospheric blurring.

Officially called the 'Alopeke speckle instrument, the advanced imaging camera let them obtain many thousands of short exposures to measure the atmospheric interference in their data and remove it with detailed image processing, providing an image of Betelgeuse and its companion.

Howell's team detected the very faint companion star right where it was predicted to be, orbiting very close to the outer edge of Betelgeuse.

"I hope our discovery excites other astrophysicists about the robust power of ground-based telescopes and speckle imagers — a key to opening new observational windows," said Howell. "This can help unlock the great mysteries in our universe."

To start, this discovery of a close companion to Betelgeuse may explain why other similar red supergiant stars undergo periodic changes in their brightness on the scale of many years.

Howell plans to continue observations of Betelgeuse's stellar companion to better understand its nature. The companion star will again return to its greatest separation from Betelgeuse in November 2027, a time when it will be easiest to detect.

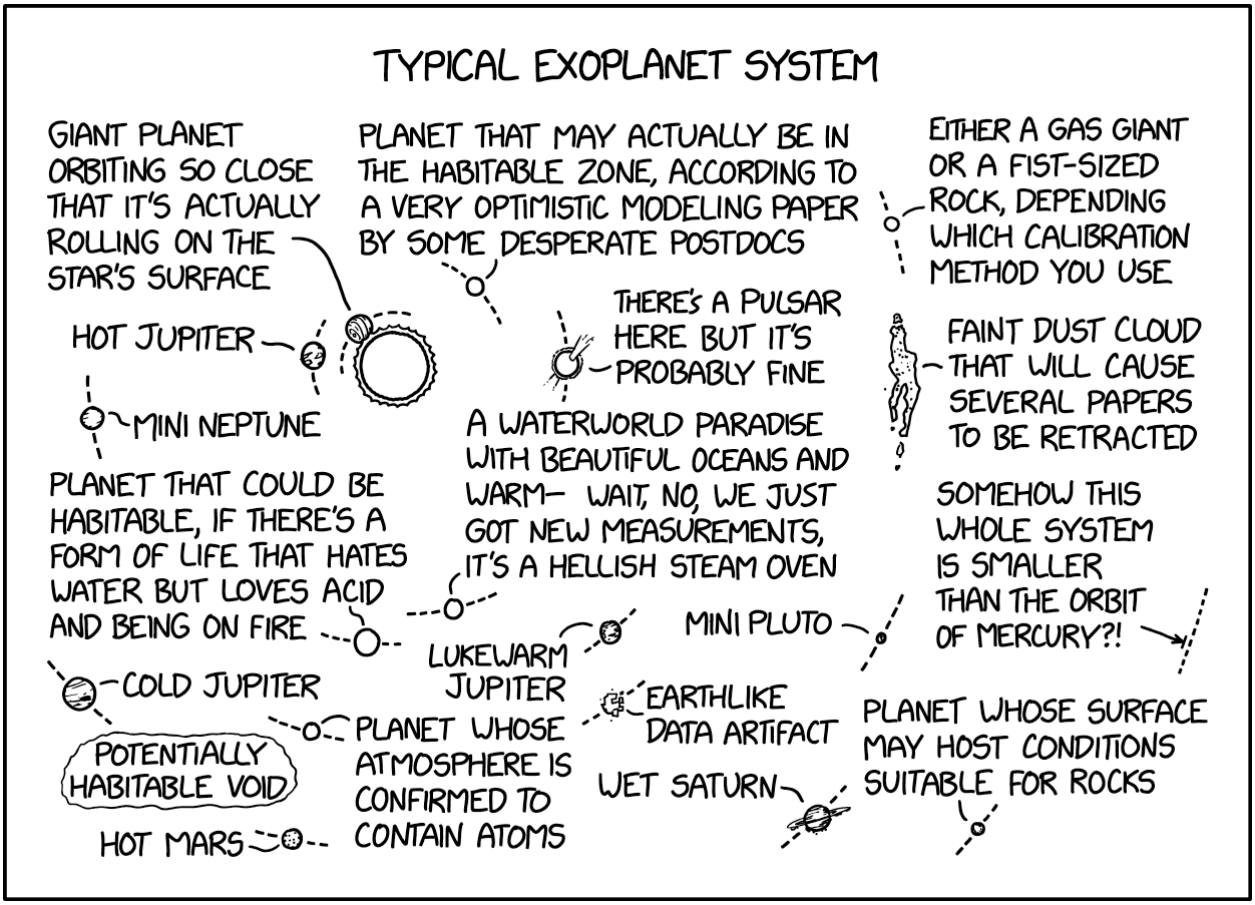
Having found the long-anticipated companion star, Howell turned to giving it a name. The traditional star name "Betelgeuse" derives from Arabic, meaning "the hand of al-Jawza," a female figure in old Arabian legend. Fittingly, Howell's team named the orbiting companion "Siwarha," meaning "her bracelet."

Betelgeuse, continued

The NASA–National Science Foundation Exoplanet Observational Research Program (NN-EXPLORE) is a joint initiative to advance U.S. exoplanet science by providing the community with access to cutting-edge, ground-based observational facilities. Managed by NASA's Exoplanet Exploration Program, NN-EXPLORE supports and enhances the scientific return of space missions such as Kepler, TESS (Transiting Exoplanet Survey Satellite), Hubble Space Telescope, and James Webb Space Telescope by enabling essential follow-up observations from the ground — creating strong synergies between space-based discoveries and ground-based characterization. NASA's Exoplanet Exploration Program is located at the agency's Jet Propulsion Laboratory.

To learn more about NN-EXPLORE, visit:

https://exoplanets.nasa.gov/exep/NNExplore/overview



xkcd.com

Club Offices and Duties

Nominations for next year's officers will begin at the September meeting, and remain open until election at the October meeting.

Club officer nominations are made in September and elections are held in October. The following is a list of responsibilities of each of the officers and what is required to maintain a functioning club.

As stated in the bylaws, the club has five officers: President, Vice President, Secretary, Treasurer and Second Vice President. The business of the Club shall be managed by a Board of Directors, which shall have the power to spend funds from the treasury for any valid purpose.

The Board shall create additional non-elected offices as required and initiate impeachment proceedings against officers who have been negligent in performing their duties.

Each decision of the Board shall require an affirmative vote of a majority of the Board members present, with a minimum of three members present.

The Prairie Astronomy Club has a sixty year history of service to club members and the community. Potential club officers should have a good understanding of the history of the club, its formation and mission, its relationship with Hyde Observatory and the types of events, activities and outreach that is part of the tradition of the club. The most complete resource is the book The Prairie Astronomy Club: Fifty Years of Amateur Astronomy, which is in the club library or available as a PDF document.

President

The President shall organize and direct the regular monthly meetings and all other Club activities, officially represent the Club at meetings of regional and national importance where he/she is in attendance or delegate this authority, call meetings of the Board of Directors, and appoint non-elected officers.

Vice President

The Vice-President shall be responsible for meetings when the President is absent, mediate in cases of procedural dispute, temporarily assume any duties of any officer at the direction of the President, and maintain control of the current inventory of all club property.

Secretary

The Secretary shall be responsible for taking minutes at each club meeting and shall be in charge of Club publicity.

Treasurer

The Treasurer is responsible for all Club funds, communications with club members regarding the payment of dues, and keeping accurate records of all monetary transactions. In addition, the Treasurer is responsible for:

1.Sending out membership renewal notices.

2.Submitting a written report of the Club's monetary status at the request of the President or giving a verbal report at the request of any

Club Offices and Duties, continued

member during regular meetings.

3.Providing an annual financial summary to the auditing committee. The final audit report is to be completed, and final approval will be submitted to the President and club membership by the end of February.

4.Maintaining an accurate club membership roster.

5.All tax filings and reporting requirements needed to maintain the Club's 501c3 status.

Second Vice President

The 2nd Vice-President shall be responsible for the formation and presentation of monthly Club programs.

Publications Chairperson

The Publications Chairperson (or Newsletter Editor) is responsible for editing and publishing the *Prairie Astronomer*. The newsletter editor should have prior experience with the publication of a newsletter or demonstrated technical skills required for producing a newsletter.

Site Chairperson

The Site Chairperson (if one is appointed) is responsible for establishing a site committee to oversee the maintenance and security of the Club observing site.

Recording Secretary

The Recording Secretary (often the Club's elected Secretary) is responsible for keeping the minutes of the Club meetings and filing a copy with the Club Secretary. Minutes need to be kept in a systematic fashion as they record the history and life of the Club and must be published in the *Prairie Astronomer* on a monthly basis.

Librarian

The Librarian shall keep the Club library and promote its circulation among the Club members. Dated records of persons to whom books are circulated are to be kept by the Librarian. He/she shall keep a current index of all Club library materials and file updated copies with the Club Treasurer as necessary. The Club Librarian and Secretary work together to maintain a record of club activities and regularly update the official club history.

Observing Chairperson

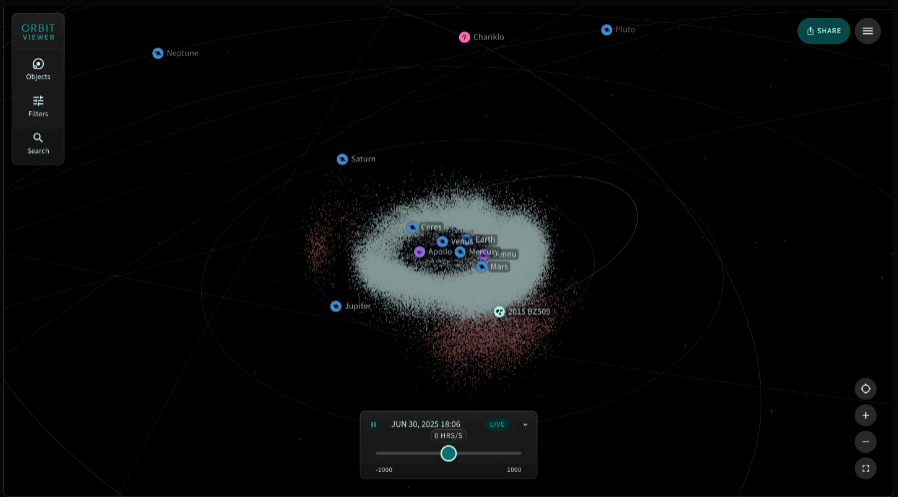
The Observing Chairperson presents a monthly report at Club meetings and/or in the *Prairie Astronomer*. The Chairperson keeps members informed of upcoming celestial events, sky objects of special interest, and star parties.

Outreach Chairperson

If the Club has an appointed Outreach Chairperson, the Chairperson takes on some of the roles performed by other officers – organizes outreach events, shares in media communications tasks, puts together flyers, etc.

All elected and non-elected officers must be accessible and responsive to club members via email and telephone or through other means of communication that are in common use. §

NSF–DOE Vera C. Rubin Observatory Launches Orbitviewer App



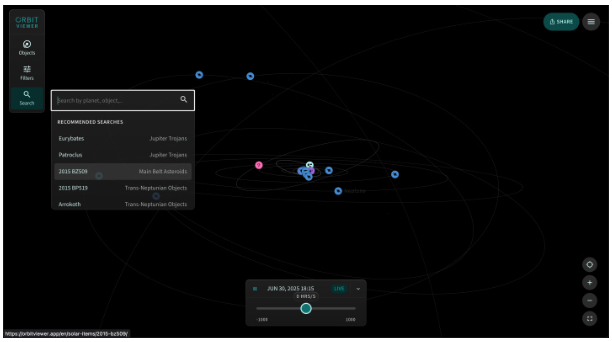
New 3D, interactive visualization of planets and minor planets in our Solar System lets you explore Rubin discoveries in real time

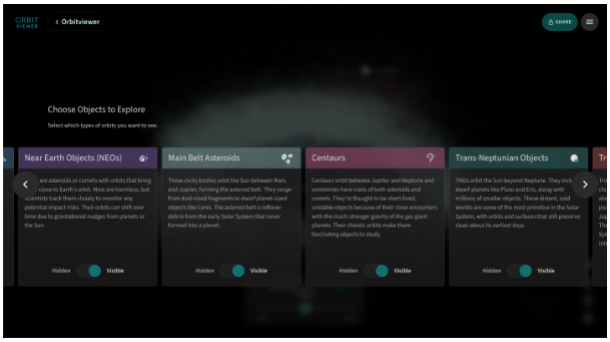
NSF–DOE Vera C. Rubin Observatory is thrilled to introduce Orbitviewer, a groundbreaking new web app that brings the dynamic movement of objects in our Solar System to life. Using real data from Rubin Observatory analyzed by the Minor Planet Center, Orbitviewer provides an unprecedented way to explore the structure of our cosmic backyard in three dimensions and in real time.

Rubin Observatory is jointly funded by the U.S. National Science Foundation and the U.S. Department of Energy's Office of Science. Rubin is a joint Program of NSF NOIRLab and DOE's SLAC National Accelerator Laboratory, who will cooperatively operate Rubin.

Orbitviewer is designed to showcase the incredible number of Solar System objects revealed by Rubin Observatory. In its first year, Rubin is expected to reveal more objects in our Solar System than have been discovered in the past 150 years combined. As Rubin Observatory embarks on its decade-long Legacy Survey of Space and Time (LSST), Orbitviewer will serve as a key tool for exploring and contextualizing millions of new discoveries. The in-app 'discovery counter' reflects Rubin Observatory's ongoing discoveries, and will increase in real-time as new data comes in and more objects are identified.

Whether you're on a mobile phone, tablet, or desktop, Orbitviewer adapts to your device to ensure an optimal





viewing experience. No downloads or installs are required — simply visit the website and you're ready to explore. You can customize your exploration by selecting from four different modes that range from 16,000 objects (optimized for mobile devices) to a high-performance set of one million objects (for powerful desktop machines).

With Orbitviewer, you'll have access to detailed information about planets, dwarf planets, near-earth objects, main belt asteroids, trans-Neptunian objects, comets, interstellar objects, and much more. Learn about the overall structure of the Solar System by viewing the orbits of each category of object, or explore individual objects by clicking on their icons.

Orbitviewer was conceptualized and produced by Rubin Observatory's Education and Public Outreach team, with design and development by Fil Studio, a digital studio based in Barcelona, Spain that specializes in crafting tailored interactive experiences. It offers several ways to interact with the Solar System's data. You can rotate the view, zoom in on objects, adjust the time slider to move through the years 1900–2100, and apply filters to explore specific object types. Additionally, you can search for specific objects by name or designation and access detailed information on individual orbits.

While Orbitviewer is currently available in English, we're pleased to announce that a Spanish version will be launching soon.

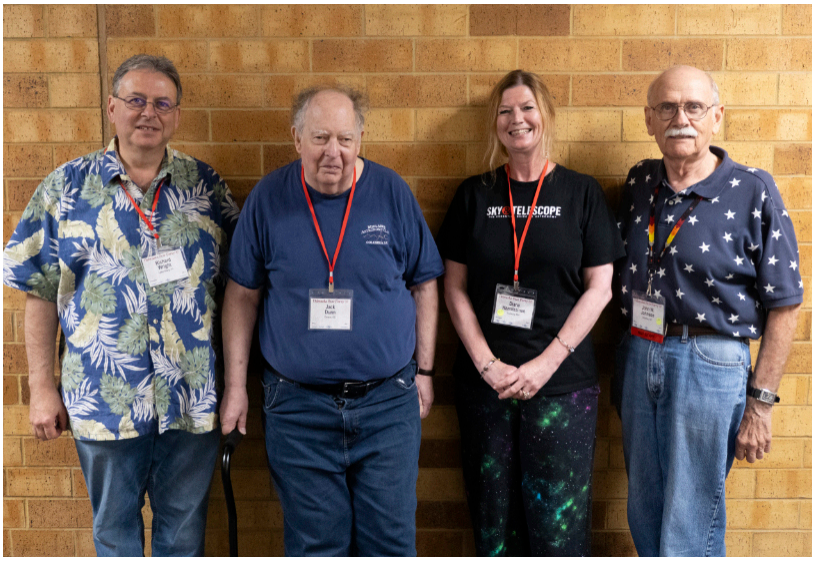
Orbitviewer is here to revolutionize how we understand our cosmic neighborhood.

Above left: A variety of exploration modes are available in Orbitviewer, a groundbreaking new web app developed by NSF–DOE Vera C. Rubin Observatory that brings the dynamic movement of objects in our Solar System to life. Right: Search the census of our Solar System using Orbitviewer Credit: RubinObs/NOIRLab/NSF/AURA.

The Nebraska Star Party

John Johnson

This year's Nebraska Star Party (NSP), held July 20th thru the 25th, was both a success and a disappointment! The disappointment for many was the lack of clear nights to see the marvelous dark skies from the Merritt Reservoir State Recreation Area. We can plan for about any other contingency, but we cannot control the weather! At the most, there were two nights with partial clearing (Sunday the 20th and late Tuesday night-early Wednesday morning, 22nd/23rd).



Richard Wright, Jack Dunn, Diana Hannikainen, John Johnson

However, those of us who stayed the whole week were finally rewarded with a beautiful clear night on Friday the 25th. This happened to be our "public night" when local resident in the Cherry County area are invited out to see what NSP is all about. This night alone was worth the trip to the Sandhills and some of the darkest skies in the US.

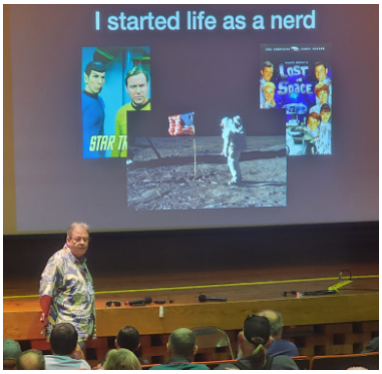
The successes were many! We had the largest number of attendees that anyone can remember there! At last count, we had at least 430 attendees that registered, including several new vendors and of course, our invited guest speakers. Vendors that attended included our longtime supporters, Explore Scientific, represented by Kent Marts and his wife Natalie and Celestial Wonders Revealed represented by Walter Trentadue and his wife Pam. New vendors attending this year included Spectrum Optical, represented by Lonnie Wegge and Joe Mungo, and ZWO Optical, represented by Richard (Beaner) Franks. Ken Fiscus, a long time attendee and supporter of NSP was also there at the swap meet tent selling many astronomy related items.

The guest speaker this year included Bob Morrow of "Bobs Knobs" fame, who gave a very entertaining talk on the various types of amateur telescopes and how best to collimate them. The next speaker at our Wednesday, Valentine High School sessions, was Diana Hannikainen, now Editor in Chief of Sky & Telescope magazine. She has become a "regular" now having attended her 3rd NSP. Her

NSP, continued

presentation, "The Radio Sky: How We Learned to Capture Cosmic Radio Waves" was a very informative discussion on an aspect of astronomy that most of

amateurs rarely consider. Our final speaker was Richard Wright Jr. who has parlayed his interest in astronomy and software



engineering into a career developing software for not only amateur astronomers but professionals too. His talk on the "Adventures of an Accidental Astronomer" was not only entertaining but very informative, including an introduction of the "Smart Eye" eyepiece by Simulation Curriculum.

Of course, Wednesday also brought out the very best in astro-imaging for the NSP Astro-Photo contest. There were many incredible photos making it very difficult for all the attendees to pick out their favorites.

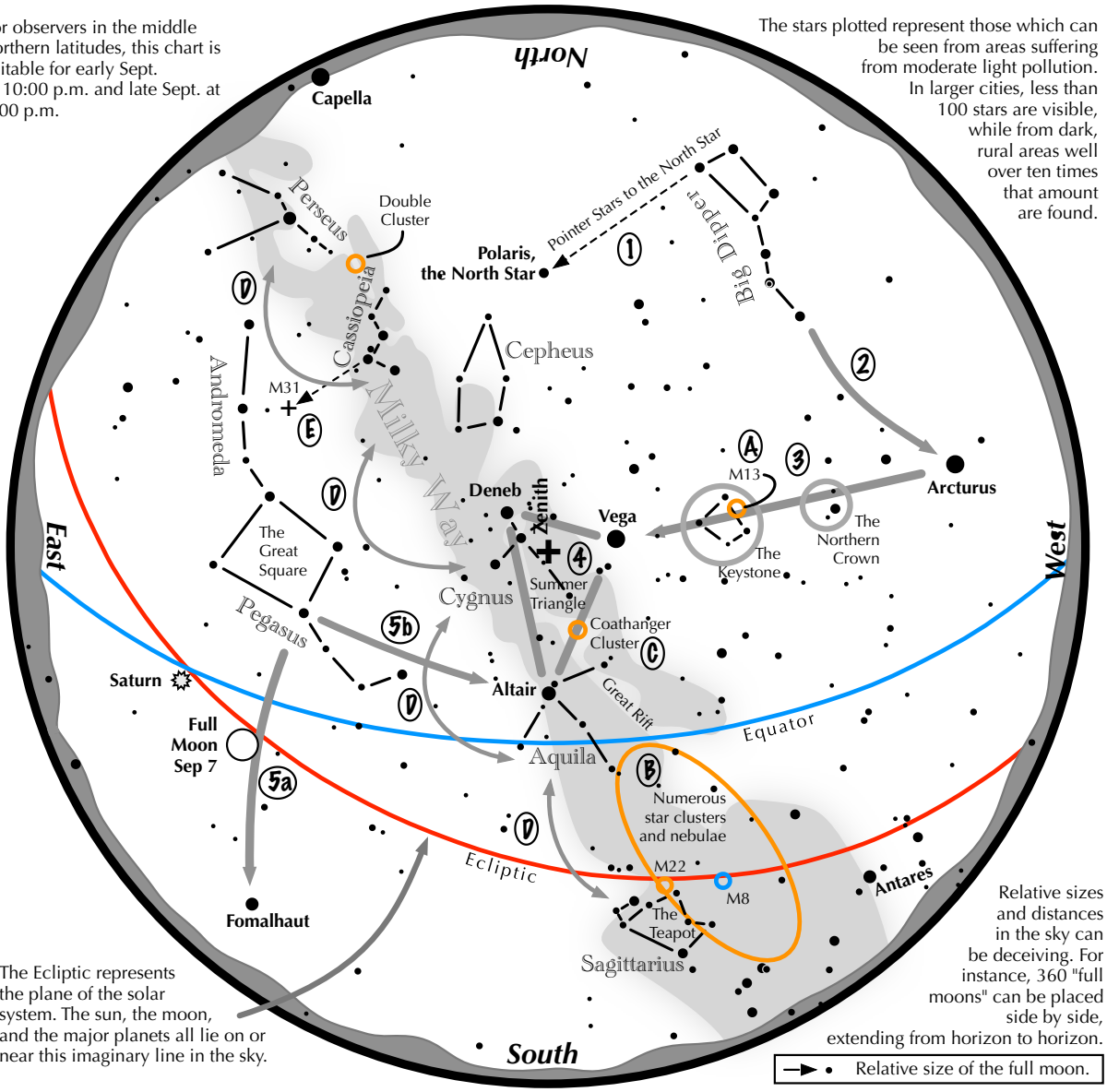
All in all, it was a great event reuniting with old friends and also making new ones as this star party, as always feels more like a big family reunion than just another star party. We are already planning for NSP-33 which will be July12-17, 2026, mark your calendars!

All photos on this page were taken by Brett Boller

Navigating the mid-September Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 p.m.

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.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

Relative size of the full moon.

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

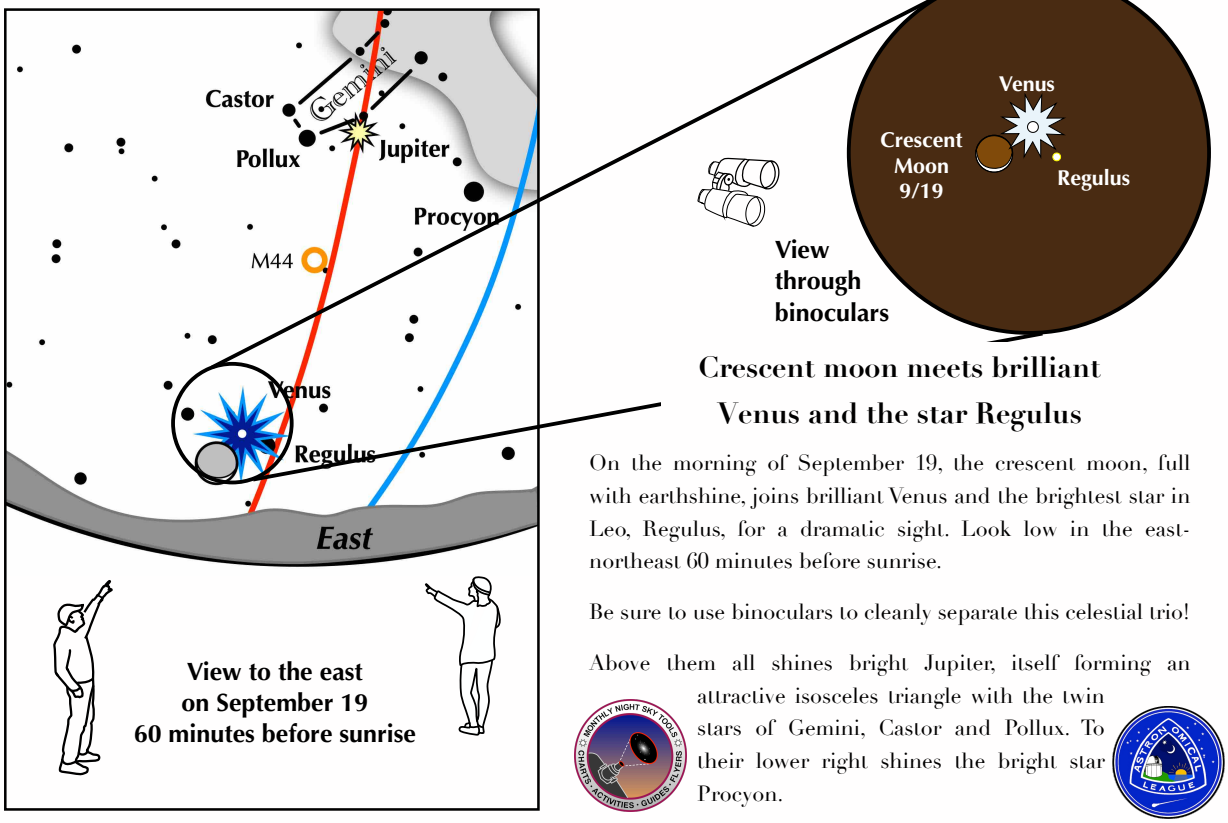
1. Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
2. Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the September evening sky.
3. Nearly overhead shines a star of similar brightness as Arcturus, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
4. The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
5. The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

Binocular Highlights

A: On the western side of the Keystone glows the Great Hercules Cluster.
B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

Astronomical League Outreach

If you can see only one celestial event in the morning this September, see this one!

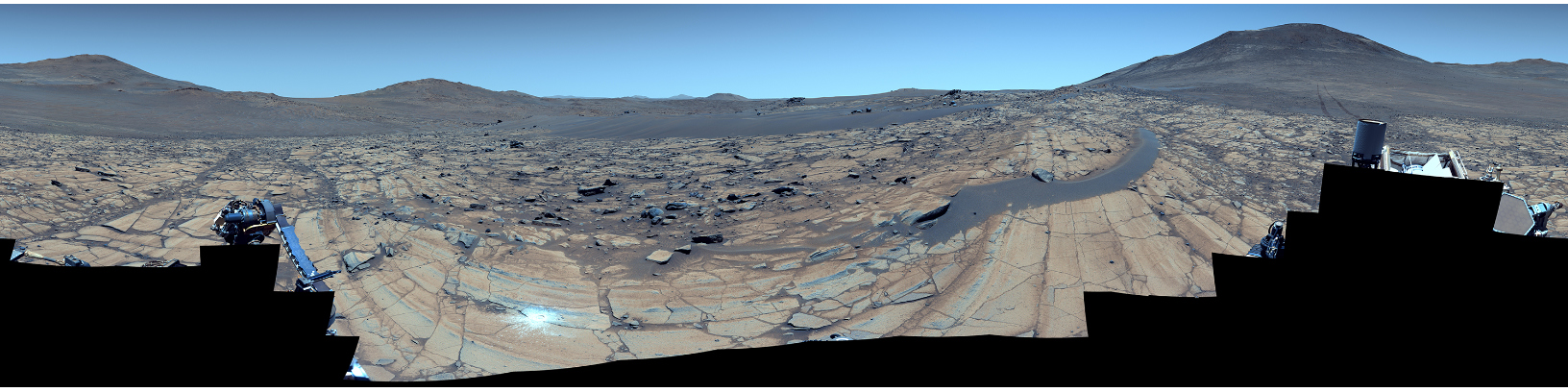


Crescent moon meets brilliant Venus and the star Regulus

On the morning of September 19, the crescent moon, full with earthshine, joins brilliant Venus and the brightest star in Leo, Regulus, for a dramatic sight. Look low in the east-northeast 60 minutes before sunrise.

Be sure to use binoculars to cleanly separate this celestial trio!

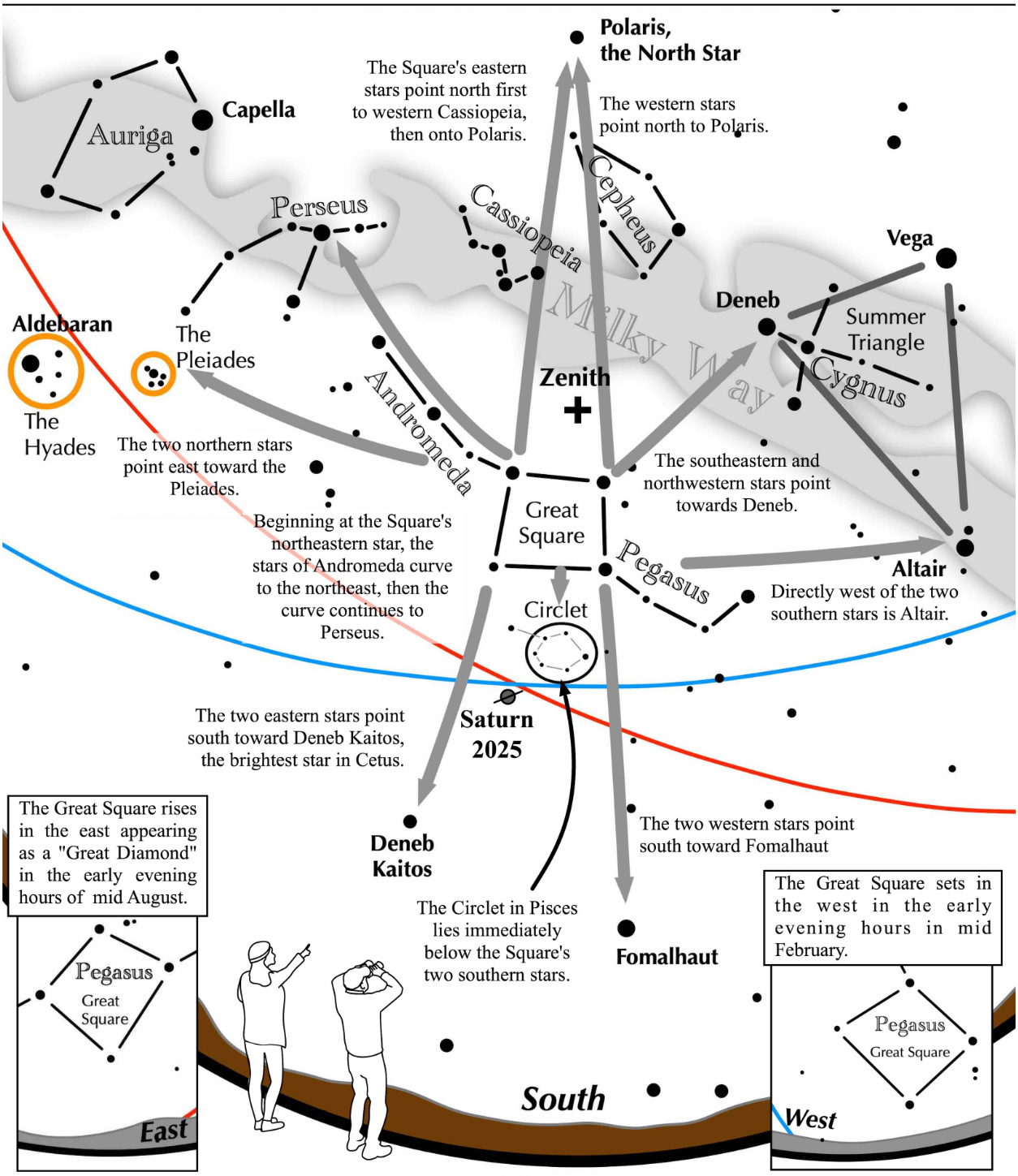
Above them all shines bright Jupiter, itself forming an attractive isosceles triangle with the twin stars of Gemini, Castor and Pollux. To their lower right shines the bright star Procyon.



NASA's Perseverance Mars rover used its Mastcam-Z camera to capture this 360-degree panorama of an area nicknamed "Falbreen" on May 26, 2025, the 1,516th Martian day, or sol, of the mission. Ninety-six separate images were stitched together to make the panorama. This enhanced-color version, which had its color bands processed to improve visual contrast and accentuate color differences, shows the Martian sky to be remarkably clear and deceptively blue. Credit: NASA/JPL-Caltech/ASU/MSSS

Navigating the mid Autumn Night Sky: Great Square Guide

Befriend these four stars, slightly dimmer than those of the more famous Big Dipper, and they'll guide you on a tour of the Autumn sky.



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Astrophotography

Pleiades by Brett Boller, 7/26/25
Williams Optics Red Cat 51mm
Zwo ASI2600MC Pro Duo
10x3min + Darks
Pixinsight + Photoshop
Merritt Reservoir

From the Archives, August, 1965

Prairie Astronomy Club
Lincoln, Nebraska
August 30

We are an amateur organization, formed in 1961 to promote the study of astronomy for the benefit of its members and the general public. We have had upwards as many as 60 members, composed of business men, retired persons, students, and junior members--both men and women.

The programs consist of sky shows, lectures, the study and construction of telescopes and how to use them. We try to asign a subject on stars, planets, nebula, comets, etc. to some member to report on at the meetings. The result of these reports have been outstanding, especially when given by some of our junior members.

Our club has had quite a struggle to keep going, but thanks to a group of about twenty hard core members we have been able to carry on. Our biggest need is not finance, but members. Anyone interested in astronomy is invited. Astronomy is open to everyone and don't forget the stars are yours. We have no regular dues, except you must subscribe to Sky and Telescope which is just $6 per year and is a must for an amateur astronomer. So if you like astronomy and its related subjects, we, the prairie astronomy club can supply your needs--join us won't you, we need you.

Let me also appeal to those who are members to give us a little more of your efforts. A few of us can't do the job alone. Come to our meetings, join in the programs, and invite a prospective amateur astronomer.

The help we give to these junior members will pay big dividends. You'll be glad you had a part in amateur astronomy and our club.

Come--learn--help others and in so doing, you help yourself.

your Sec'y

J.L.W.

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 or lulu.com.