The Prairie Astronomer

October, 2025 Volume 66, Issue #10

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 October 28th 7:30pm at Branched Oak Observatory

NEXT MEETING

Program: "Cartography of Extraterrestrial Objects, a Mapping Tour of our Solar System", by Amos Sobotka. This program will cover a brief history of mapping our nearest neighbors, the science of mapping extraterrestrial objects by various means, and a tour of our planets and moons.

November:
How to Buy a Telescope

CONTENTS

Cover: NGC 281, the Pacman Nebula by Jim White

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

October PAC Meeting
*Tuesday, October 28th, **Branched Oak Observatory***
Program: to be announced

Nocturnal November
November 15, Spring Creek Prairie

November PAC Meeting
Tuesday, November 25th, Hyde Observatory
Program: How to Buy a Telescope

December: Holiday Gathering

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

2026 STAR PARTY DATES

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

Underlined Dates are closest to the New Moon.

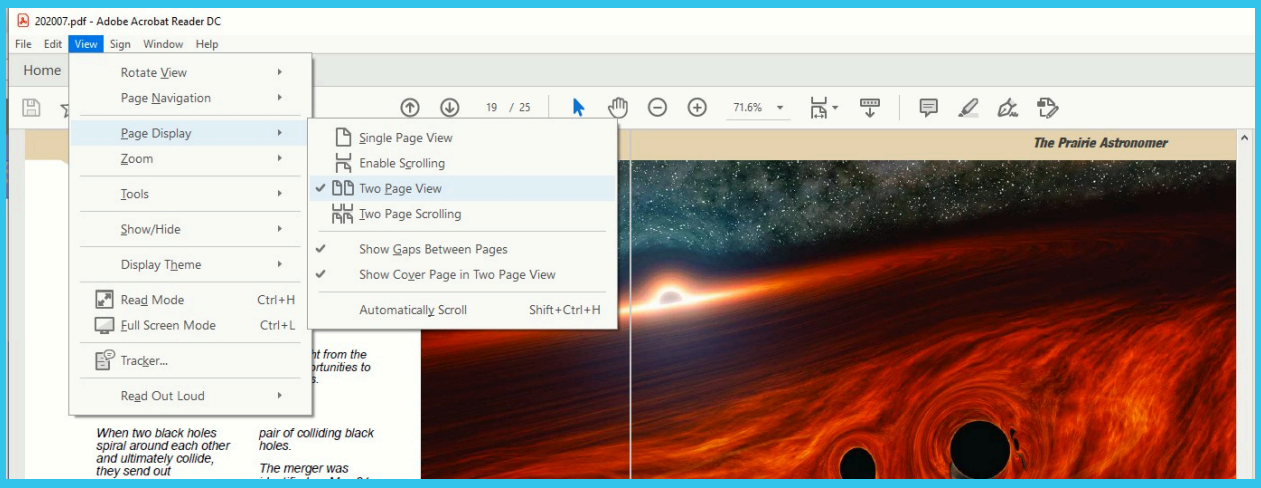
CLUB OFFICERS

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 President's Message

Dear PAC Members,

There's a touch of chill in the air as autumn settles in, and I hope everyone is enjoying the beautiful weather and the clear nights that often come with this time of year.

I want to extend a big thank you to Russ Genzmer for his excellent presentation last month on Remote Observatories for Individuals. It was an excellent overview of what these facilities have to offer and how they can expand our ability to observe the night sky.

During last month's meeting, we also held nominations for club officers. There's still time to nominate someone, or volunteer yourself, if you're interested in serving. We also welcome anyone interested in learning about the role of an officer without a full commitment. Please reach out to me at jason@oflaherty.contact.

Our next meeting will be on Monday, October 28th, at Branched Oak Observatory, where we'll hold our officer elections. We'll also be enjoying Casey's Pizza using club funds, so we hope you'll make the trip out to this excellent facility and join us in person. If you can't attend in person, you'll still be able to vote via Zoom, so either way, I hope you'll take part.

We'll also have another in-person presentation from club member Amos Sobotka, which I'm sure will be a great addition to the evening.

Wishing you all clear skies and crisp fall nights for observing!

Jason O'Flaherty

President, The Prairie Astronomy Club

Meeting Minutes

Jim White

Jason O'Flaherty, PAC President, started the meeting at 7:42 pm. Tonight's meeting is being held in person at Hyde Memorial Observatory and online via Zoom. There were three new members at tonight's meeting, Evan, Dylan and Machaela.

Jim Kvasnicka, PAC Observing Chair, is out of town for tonight's meeting so Jason is presenting Jim's monthly observing report. Star parties for the month of October are on Friday the 17th and Friday the 24th, both will be at the Clatonia Recreation Area about 1 ½ miles North of Clatonia, Nebraska. Planets for the month of October, Mercury and Mars are evening planets but are difficult to see, Saturn is in Aquarius at magnitude +.7 with of disc of 19.4 arc seconds, Neptune is an evening planet in Pisces, Venus is an early morning planet with a magnitude of -3.9, Jupiter is a morning planet in Gemini with a magnitude of -2.1 with a disc of 36.9 arc seconds and Uranus is a morning planet. In the month of September Saturn's rings became nearly invisible due to a combination of factors. This happened in March of this year and again in September and on September 21st Saturn reached opposition. In October we have a meteor shower, The Orionids, on the nights of the 20th and 21st. The Orionids offers the opportunity to see up to 20 meteors per hour and there won't be a moon to interfere with observing. The rest of Jim's observing report can be found in the monthly newsletter. At 7:50 Jason turned the meeting over to John Reinert.

John Reinert, PAC Treasurer, shared a slide showing the balances in PAC's various accounts with a BMO total of $38,374.62 and a PayPal balance of 291.23. John recently filed the 990-N form with the IRS. Recent club expenses were $192.00 for the PAC P.O. Box, $196.39 for our Zoom renewal and $425.00 to the Hartford for general liability insurance. John stated that dues renewal notices had recently been sent out. John is working on a newsletter article explaining how we would preserve the value that you paid if we solarize dues collection versus our current lunar cycle payment system. John finished his report and turned the meeting back over to Jason at 7:56.

Club business is next on the agenda. Tonight, we have nominations for club officers. Nominations open tonight and will close at the October meeting just before the election of officers. You can nominate yourself or

Meeting Minutes, continued

someone else at this meeting or the October meeting prior to the closing of nominations or you can send an email to Jason anytime between now and the October meeting. The October meeting will be held at Branched Oak Observatory (BOO). Nominations were opened and Jason O'Flaherty was nominated for club president and Jason accepted the nomination, Brett Boller was nominated for first vice president and Brett accepted the nomination, current second vice president Lee Taylor has indicated that he will not be accepting a nomination at this time due to time constraints, Amos Sobotka was nominated for second vice president and Amos accepted the nomination, Jim White was nominated for secretary and Jim accepted the nomination and John Reinert was nominated for treasurer and John accepted the nomination. Elections will be held at our October meeting which will be held on Tuesday, October 28th at BOO. Members can vote in person or online via Zoom as long as they have video enabled, which was added to the club bylaws last year. The club will also be supplying Casey's pizza at the October meeting. There was a PAC board meeting held via Zoom on September 11th with all officers in attendance including all chair people, here is a brief summary of items that were discussed.

1. We are moving to Proton Pass for password management.
2. We reviewed what we are using for newsletter desktop publishing software.
3. We intend to renew our mentorship program which is headed by Bob Kacvinsky.
4. We need to refresh a list for those interested in volunteering.
5. Hyde is going to be advertising our club between programs on Saturday nights.
6. We are going to send out a new member survey, it's been over a year since our last one.
7. We want to look for opportunities for club outings beyond our monthly meetings and star parties.
8. We want to reintroduce our beginner astronomy class.
9. We want to consider new interactions with the Omaha Astronomical Society (OAS).
10. We discussed possible uses for club funds, speakers' fees, entrance fees to

Meeting Minutes, continued

events or outings, t-shirts, no decisions were made and any action would have to adhere to club bylaws.

11. We discussed club promotion and volunteer opportunities. We have previously had events at Southpointe Mall, setup telescopes for public viewing at Lazy Horse Brewery, we talked about having an informational table at BOO events.
12. We discussed getting a new club banner (the old banner is currently in Dave Knisely's possession).
13. We discussed modernizing our "How to Use Your Telescope" class to include information about Electronically Assisted Astronomy (EAA) with information on Seestar, Origin and other digital telescopes.
14. Let the club membership know if there are any plans to go anywhere after the monthly meeting to grab something to eat or drink and sit down and chat with other members. Generally, there isn't much time for socializing before the monthly meeting due to our meeting taking place right after the Hyde board meeting. Normally there are a few people that go to Culvers on 70th street after our meeting so we need to let members know if people are planning on getting together and where they plan on going.

December is typically when we have our holiday party instead of a normal monthly meeting, the details of which have not been finalized yet, the past two years have been at Big Red Restaurant and may be what we go with again. We are considering moving our how to use your telescope class from January to a month with a little warmer weather.

Volunteer opportunities include Nocturnal November at Spring Creek Prairie on November 15th, November 12th at the Crete Library, please let Don Hain know if you are interested in helping out at either of these events.
With no additional club business, the meeting was adjourned at 8:15.

Tonight's presentation is "Clouds out Tonight? Press a Button and Bortle 1 Skies Await! The Universe of Remote Astronomy." Presented by PAC member Russ Genzmer.

PAC Board Initiates Change in Dues Collection

John Reinert, Treasurer

To date, PAC members have submitted their dues annually in the month they first joined, April, August, or whatever month, which continues to have an appeal, for some.

However, e-mail prompts which capture 75% of us who will pay before the due date or shortly thereafter are not reaching everyone. Correspondence sent via snail mail or phone calls from me are marginally better at reaching you. At +120 or +240 days beyond the due date I've been dropping you, especially if we hadn't spoken with each other at a PAC meeting or other event. During COVID I offered up to one year's grace to those who might have otherwise been dropped and retention rates improved. However, I am now looking ahead and the PAC board has said "make the change."

Realigning PAC's dues collection practices accomplishes three things:

1) the treasurer ceases to be the arbiter of who is and who is not a member as dues payments lapse;

2) those voting in our elections in October are clearly members entitled to vote; and 3) as a club we have renewed energy come August, September, and October reaching out to each other and young families who could be invited to participate and then join the club. It's all about putting energy into the system, using the suns rays to "solarize" our experience together rather than relying on a dark and mysterious lunar model.

Preserving membership value: no matter your anniversary month, a prorated amount will catch you up to November 1st. If dropped you can still renew subject to the bylaws' requirements for membership. I'll publish a rate table that indexes the catch-up amounts, which if you combine with the next year's dues will have you paid for a year and a fraction in only one payment. As always, if you have any questions, please ask.

John Reinert, PAC Treasurer jr6@aol.com

ARP 85

The Mantrap Skies Image Catalog

Arp 85 is better known as M51, the Whirlpool Galaxy. It is probably the easiest to see as a spiral in an amateur size telescope. Arp put it in his category for Spirals with large, high surface brightness companions. This time the companion is really a companion and they are interacting. Being well studied we know that the larger galaxy, NGC 5194 has passed slightly in front of the smaller, NGC 5195. The interaction has drawn out an arm from NGC 5194 whose dust lanes are seen against NGC 5495 making this smaller galaxy look even stranger than it really is and giving it a red color due to being seen through the dust. NED classifies NGC 5194 as SA(s)bc pec; HII Sy2.5. Seligman agrees though ads a question mark. The NGC project says more simply Sc. NED classifies NGC 5195 as SB01 pec as does Seligman. The NGC Project, however, says SB0-a. Red-shift puts the pair about 30 million light-years distant. NGC 5194 was first seen by Charles Messier on October 13, 1773. The companion wasn't seen as a separate galaxy until March 21, 1781 when Messier's friend Pierre Méchain recorded 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 85, continued

I took this image 5 days after supernova 2011dh was discovered. The delay was due to lousy weather. Even then clouds prevented but one 10 minute round of color data rather than my normal 2. I did add in H alpha data from a previous image to help bring out the HII regions in the system. The SN was still brightening as a type IIP SN when I imaged it. I got a magnitude of 14.4 and the following night through clouds I measured it at 14.0. Clouds returned until it had faded below this level. The P indicates it is a plateau type SN that after a short fall, levels off for a bit before continuing to fade. Thanks to clouds I missed that phase.

There are two IC galaxies in the image, IC 4277 and 4278. I have no distance data for IC 4277 unfortunately. Seligman says S?? It looked flat enough to be in one of the flat galaxy catalogs but I didn't find it in any of them. IC 4278 is a strange galaxy some have said is either a double nucleus or interacting pair. The Sloan survey image, however, shows the two blue blobs to be connected by a slightly red bar pretty much ruling out either of these ideas. Seligman classifies it as Ir??. I'd add a B for the bar. Both were discovered by James Edward Keeler on May 10, 1899. He was using the Crossley reflector at Lick Observatory to image M51 and picked up 7 IC galaxies, including these two in the image. Another he found that night is IC 4282. Seligman classifies it as dE??. Keeler was director of the observatory at the time. He died the following year at the age of 42. His ashes are interred in a crypt at the base of the 31 inch Keeler Memorial telescope at Allegheny Observatory.

An Appeal for More Hyde Volunteers

John Reinert, Chairman of the Hyde Observatory Board of Supervisors

Hyde Observatory's 50th anniversary (November 6th, 2027) is now two years away. Phase II of our renovation project will probably commence in January, 2026 and last until April or May.

The idea for Hyde Observatory was largely the work of Prof. Carroll Moore but turned into a community project and fundraising effort. Many members of the Prairie Astronomy Club were part of the planning committee. As part of the agreement with the City of Lincoln in 1977, Lincoln Parks and Recreation would own and maintain the building, and the Prairie Astronomy Club would provide volunteers to operate it on regular public observation nights.

As part of the agreement, the club could also use the observatory classroom for its monthly meetings. Although Hyde has many volunteers who come to us from the community, the Hyde steering committee depends on PAC to uphold its agreement to support the observatory.

Those who volunteer to staff Hyde Observatory on a Saturday nights obviously possess an abiding general interest in science and astronomy. Hyde also provides outreach that appeals to all ages and levels of interest and provides a way for PAC to reach and engage potential new club members - and admission is free!

Given an ever-increasing call for programs that require additional volunteers both in the classroom and on the observing deck, the Hyde Board is reaching out specifically to PAC members to answer the call.

When group sizes range from 25 – 49 our policy is to offer a weekday night, subject to volunteer availability, to offer both a program and possible night sky viewing experience. Of late, scouting, home schooled students, and others in our community have been pinging the Lincoln Parks and Recreation Department with requests that presently exceed our ability to deliver. Please consider helping us out.

Although we'll be closed this winter for Phase II of the renovation we do need to be ready for a spring reopening that includes filling these group requests – and we need to prepare for our upcoming anniversary in 2027 which we hope will include an increase in publicity and outreach events that will also benefit PAC.

Focus on Constellations: Andromeda

Jim Kvasnicka

Andromeda the Princess extends from the NE corner of the Great Square of Pegasus. Andromeda is the 19th largest constellation with an area of 722 square degrees. Due to her position away from the galactic plane few nebulae can be found in the constellation; however, the area is a window to deep space allowing us to see galaxies of all types. The most famous is M31 the Andromeda Galaxy along with its two companion galaxies M32 and M110. These are the only Messier objects in the constellation. Andromeda is best seen in the month of November.

Showpiece Objects

Galaxies: M31 (The Andromeda Galaxy), M32, M110, NGC 891

Planetary Nebulae: NGC 7662 (The Blue Snowball)

Double Stars: Gamma Andromedae (Almach)

Mythology

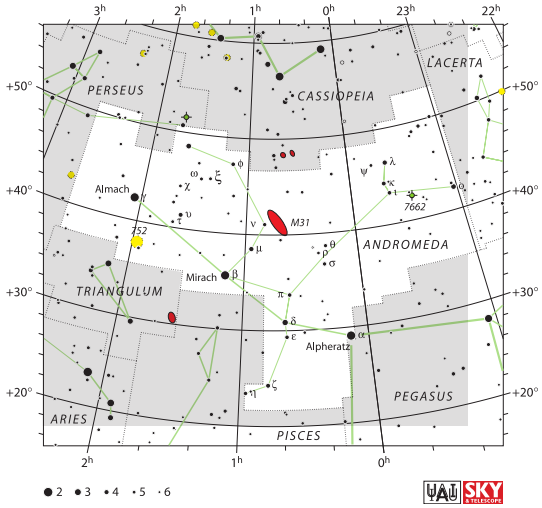
The mythology around Andromeda is one of the most famous Greek myths. Andromeda was chained to the rocks on the shore by her father, Cepheus, as a sacrifice to appease the avenging sea monster Cetus. The hero in the myth, Perseus, comes to her rescue riding Pegasus the winged horse. Perseus slays the monster and marries Andromeda. Adjacent constellations represent all the characters in the myth: her parents Cepheus and Cassiopeia, her hero Perseus and his winged horse Pegasus, and the sea monster Cetus.

Number of Objects Magnitude 12.0 and Brighter

Galaxies: 8

Open Clusters: 3

Planetary Nebulae: 1



Andromeda 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

November Observing

Jim Kvasnicka

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

Planets

Mercury: Visible in the morning after November 20th.
Venus: Morning planet at magnitude -3.9, not visible by end of the month.
Mars: Not visible.
Jupiter: At magnitude -2.3 with a disk 42.3" wide in Gemini.
Saturn: At magnitude +0.9 with a disk 18.5" wide in Aquarius.
Uranus and Neptune: In Taurus and Pisces.

Meteor Showers

Leonids: Peaks the night of November 17-18. Expect up to 15 per hour. The Moon will not interfere. The Leonids is known for producing large fire balls.

Messier List

M27: The Dumbbell Nebula in Vulpecula.
M30: Class V globular cluster in Capricornus.
M56: Class X globular cluster in Lyra.
M57: The Ring Nebula in Lyra.
M71: Class XII globular cluster in Sagitta.
M72: Class IX globular cluster in Aquarius.
M73: Asterism in Aquarius.

Last Month: M11, M16, M17, M18, M24, M25, M26, M55, M75
Next Month: M2, M15, M29, M31, M32, M39, M110

NGC and other Deep Sky Objects

NGC 7662: The Blue Snowball in Andromeda.
NGC 128: Elongated galaxy in Pisces.
NGC 247: Galaxy in Cetus.
NGC 253: he Silver Coin Galaxy in Sculptor.
NGC 288: Class X globular cluster in Sculptor.
NGC 457: The E. T. Cluster in Cassiopeia.

Double Star Program List

Iota Trianguli: Yellow primary with a pale blue secondary.
Gamma Arietis: Two equal white stars.
Lambda Arietis: Yellow and pale blue stars.
65 Piscium: Yellow pair.
Psi 1 Piscium: Equal bluish white pair.
Zeta Piscium: White primary with a secondary.
Alpha Piscium: Close white pair.
Gamma Andromedae: Almach, gold and greenish blue pair.

Challenge Object

NGC 193 and NGC 194: Two small round galaxies in Pisces that fit in the same FOV.

Club Outreach

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

"You know Orion always comes up sideways. Throwing a leg up over our fence of mountains, An rising on his hands, he looks in on me ...."

A wonderful time of year heading our way. Stars of late fall and winter are rounding into our view. I have mentioned Robert Frost's "The Star-splitter" in a previous newsletter. You will most likely hear me mention Orion again. I love the Summer Triangle too, but we will soon have the daytime sun in the visual path it would take to see those three premier stars of the summer. Our nearest star will prevent our eyes from watching the swing of that geometric shape as it crosses the nighttime sky. Those three will be waiting for us whenl we are back on the other side of our solar system. The circumpolar asterisms and constellations will continue to be with us, cockeyed at slightly different angles than the months we have just passed through, or perhaps completely upside down in comparison, depending on when a person has last glanced to the north.

What can now be seen only in the early morning hours will become visible earlier and earlier in the evening sky. Orion's appearance happens just past midnight. By 5:00 AM CT he is high in the early morning sky, with the Pleiades off to the right past Taurus and the orange glow of his prominent eye as he decides his next course of action. This is a great time to talk to neighbors and friends about the universe we live in.

Club Outreach

Upcoming event(s):

Crete Public Library - Intro to Astronomy presentation and viewing of the night sky
When: Wednesday, November 12, 2025
Where: Crete Public Library, 1515 Forest Ave, Crete NE 68333
Sponsored by: Crete Public Library
Needs: scopes and volunteers to help with the night sky viewing after the indoor presentation - contact me

Nocturnal November - Spring Creek Prairie
When: Saturday, November 15, 2025
Where: Spring Creek Prairie Audubon Center - 11700 SW 100th St Denton, NE 68339
Sponsored by: Spring Creek Prairie
Needs: Another member and I are planning, however, the more the merrier.

Tuesday November 25th at 7:30pm - How to Buy a Telescope
(internally organized meeting for outreach. … For those new to astronomy / wanting to learn more about it)

Per the description on the PAC website: If you're considering buying a telescope for a family member for Christmas, the Prairie Astronomy Club will offer assistance with a session on "how to buy a telescope" at the November meeting. Experienced amateur astronomers will talk about how to select a telescope and what to look for when making your purchasing decision.

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.

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.

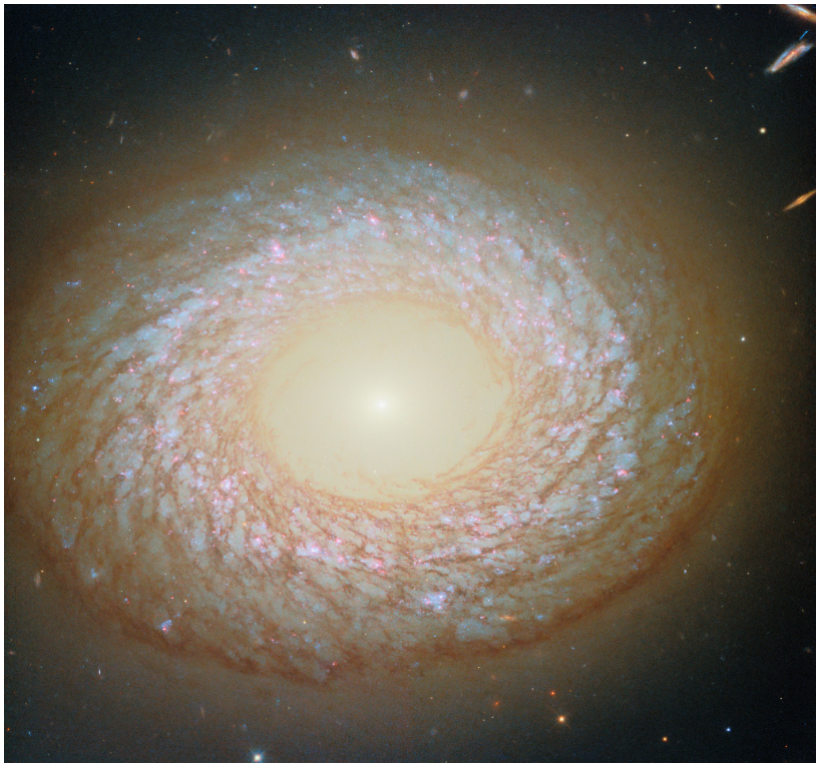
Outreach Chairperson

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. §

Hubble Captures Puzzling Galaxy

With its smooth core and feathery arms, NGC 2775 blurs the lines between galaxy types — revealing clues to its turbulent past and ongoing transformation.



This NASA/ESA Hubble Space Telescope image features a galaxy that's hard to categorize. The galaxy in question is NGC 2775, which lies 67 million light-years away in the constellation Cancer (the Crab). NGC 2775 sports a smooth, featureless center that is devoid of gas, resembling an elliptical galaxy. It also has a dusty ring with patchy star clusters, like a spiral galaxy. Which is it: spiral or elliptical — or neither?

Because we can only view NGC 2775 from one angle, it's difficult to say for sure. Some researchers classify NGC 2775 as a spiral galaxy because of its feathery ring of stars and dust, while others classify it as a lenticular galaxy. Lenticular galaxies have features common to both spiral and elliptical galaxies.

Astronomers aren't certain of exactly how lenticular galaxies come to be, and they might form in a variety of ways. Lenticular galaxies might be spiral galaxies that merged with other galaxies, or that have mostly run out of star-forming gas and lost their prominent spiral arms. They also might have started out more like elliptical galaxies, then collected gas into a disk around them.

Some evidence suggests that NGC 2775 merged with other galaxies in the past. Invisible in this Hubble image, NGC 2775 has a tail of hydrogen gas that stretches almost

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NASA's Webb Explores Largest Star-Forming Cloud in Milky Way

Webb's MIRI, managed by NASA's Jet Propulsion Laboratory through launch, helped reveal the star-studded Sagittarius B2 molecular cloud in unprecedented detail.

NASA's James Webb Space Telescope has revealed a colorful array of massive stars and glowing cosmic dust in the Sagittarius B2 molecular cloud, the most massive and active star-forming region in our Milky Way galaxy.

"Webb's powerful infrared instruments provide detail we've never been able to see before, which will help us to understand some of the still-elusive mysteries of massive star formation and why Sagittarius B2 is so much more active than the rest of the galactic center," said astronomer Adam Ginsburg of the University of Florida, principal investigator of the program.

Sagittarius B2 is located only a few hundred light-years from the supermassive black hole at the heart of the galaxy called Sagittarius A*, a region densely packed with stars, star-forming clouds, and complex magnetic fields. The infrared light that Webb detects is able to pass through some of the area's thick clouds to reveal young stars and the warm dust surrounding them.

However, one of the most notable aspects of Webb's images of Sagittarius B2 are the portions that remain dark. These ironically empty-looking areas of space are actually so dense with gas and dust that even Webb cannot see through them. These thick clouds are the raw material of future stars and a cocoon for those still too young to shine.

The high resolution and mid-infrared sensitivity of Webb's MIRI (Mid-Infrared Instrument) revealed this region in unprecedented detail, including glowing cosmic dust heated by very young massive stars. The reddest area on the right half of MIRI's image, known as Sagittarius B2 North, is one of the most molecularly rich regions known, but astronomers have never seen it with such clarity. (Note: North is to the right in these Webb images.)
The difference longer wavelengths of light make, even within the infrared spectrum, are stark when comparing the images from Webb's MIRI and NIRCam (Near-Infrared Camera) instruments. Glowing gas and dust appear dramatically in mid-infrared light, while all but the brightest stars disappear from view.

Star-Forming Cloud, continued

Stars, gas and cosmic dust in the Sagittarius B2 molecular cloud glow in near-infrared light, captured by Webb's NIRCam instrument. The darkest areas of the image are not empty space but are areas where stars are still forming inside dense clouds that block their light. Credit: Image: NASA, ESA, CSA, STScI, Adam Ginsburg (University of Florida), Nazar Budaiev (University of Florida), Taehwa Yoo (University of Florida); Image Processing: Alyssa Pagan (STScI)

In contrast to MIRI, colorful stars steal the show in Webb's NIRCam image, punctuated occasionally by bright clouds of gas and dust. Further research into these stars will reveal details of their masses and ages, which will help astronomers better understand the process of star formation in this dense, active galactic center region. Has it been going on for millions of years? Or has some unknown process triggered it only recently?

Astronomers hope Webb will shed light on why star formation in the galactic center is so disproportionately low. Though the region is stocked with plenty of gaseous raw material, on the whole it is not nearly as productive as Sagittarius B2. While Sagittarius B2 has only 10 percent of the galactic center's gas, it produces 50 percent of its stars.

Star-Forming Cloud, continued

"Humans have been studying the stars for thousands of years, and there is still a lot to understand," said Nazar Budaiev, a graduate student at the University of Florida and the co-principal investigator of the study. "For everything new Webb is showing us, there are also new mysteries to explore, and it's exciting to be a part of that ongoing discovery."

Puzzling Galaxy, continued

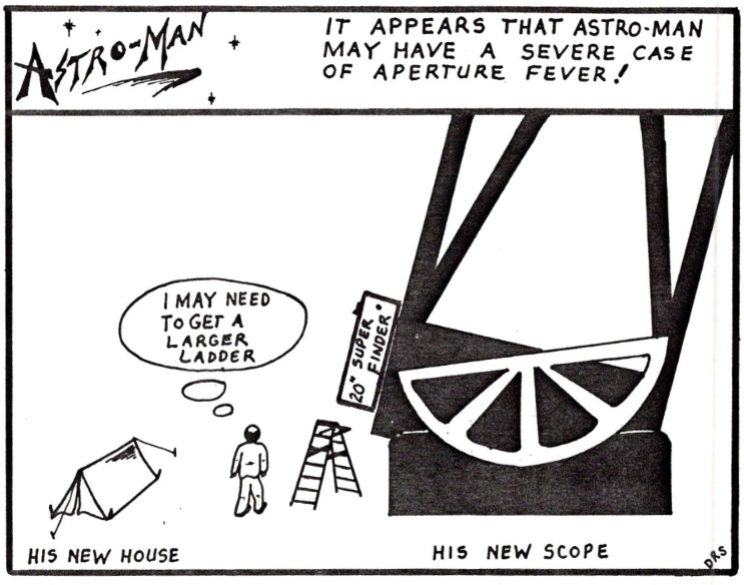
100,000 light-years around the galaxy. This faint tail could be the remnant of one or more galaxies that wandered too close to NGC 2775 before being stretched apart and absorbed. If NGC 2775 merged with other galaxies in the past, it could explain the galaxy's strange appearance today.

Most astronomers classify NGC 2775 as a flocculent spiral galaxy. Flocculent spirals have poorly defined, discontinuous arms that are often described as "feathery" or as "tufts" of stars that loosely form spiral arms.

Hubble previously released an image of NGC 2775 in 2020. This new version adds observations of a specific wavelength of red light emitted by clouds of hydrogen gas surrounding massive young stars, visible as bright, pinkish clumps in the image. This additional wavelength of light helps astronomers better define where new stars are forming in the galaxy.

Text credit: ESA/NASA

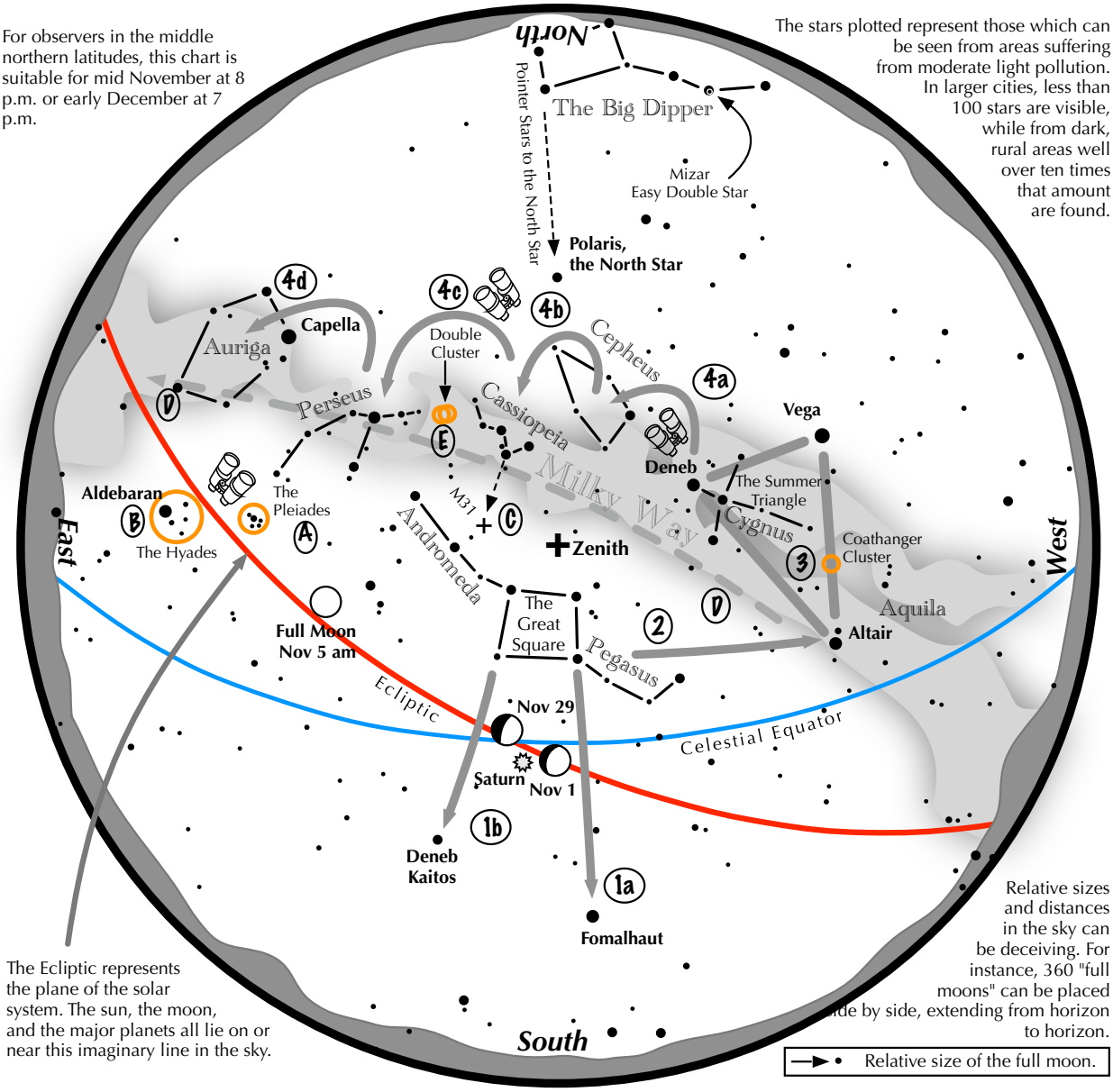
Image credit: ESA/Hubble & NASA, F. Belfiore, J. Lee and the PHANGS-HST Team



Navigating the mid-November Night Sky

For observers in the middle northern latitudes, this chart is suitable for mid November at 8 p.m. or early December at 7 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 November night sky: Simply start with what you know or with what you can easily find.

1. Face south. Almost overhead lies the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend a line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the south. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second brighest star in the south.
2. Draw a line westward following the southern edge of the Square until it strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the Summer Triangle. Vega is its brightest member, while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, then to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

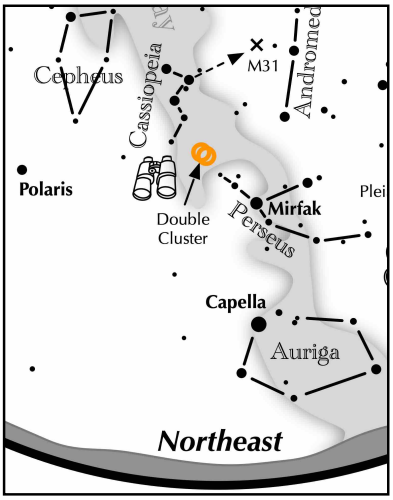
A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters. **C:** The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval. **D:** Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas. **E.** The Double Cluster.

Astronomical League Outreach

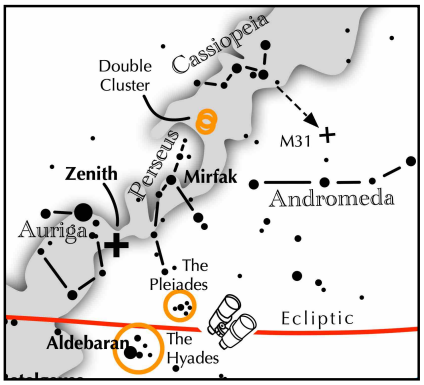
Can you easily find this open cluster showpiece?

Every Curious Skywatcher should know how to find the Double Cluster

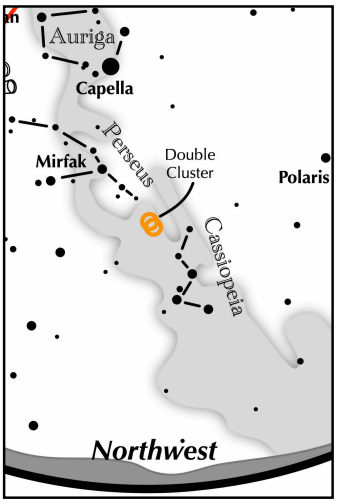
Visible in the early evening sky from late October through late March.



November in the northeast



January facing south looking past the zenith

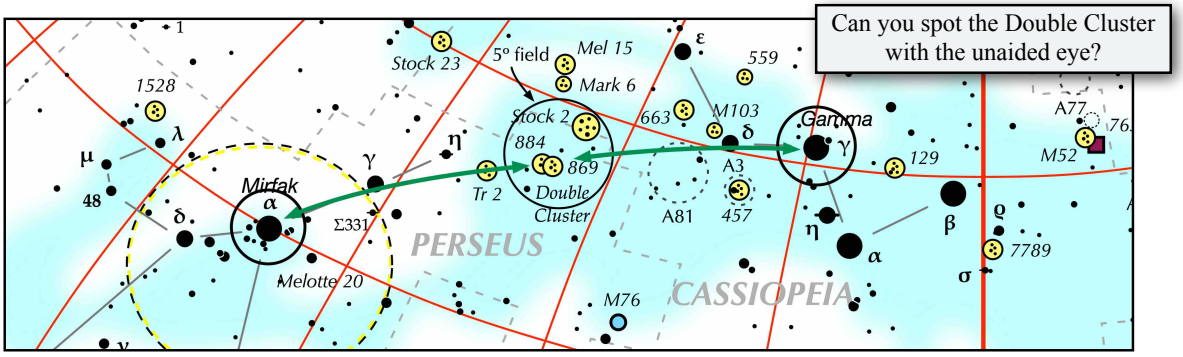


March in the northwest

The **Double Cluster** can be spotted with unaided eye from a dark sky as a dim glow in the Milky Way between Perseus and Cassiopeia. Through 10x50 binoculars, it is an obvious sight, revealing its brighter glittering lights. The neighboring cluster, **Stock 2,** can be seen as a much dimmer and more spread out grainy glow.

How to find the Double Cluster (aka NGC 869 & 884, and Caldwell 14):

1. Find the "w" shaped constellation Cassiopeia and the neighboring constellation to its southeast, Perseus. Identify Perseus' brightest star, 1.8 magnitude Mirfak.
2. Mid way between the center star of Cassopeia's "w" (Gamma Cas) and Mirfak lies a soft glow.
3. Binoculars aimed at the glow reveal the famous Double Cluster, also called NGC 869 and 884, Caldwell 14, and h Persei and Chi Persei.
4. Place the Double Cluster near the southern edge of the field. Near its center lies Stock 2, the Muscleman Cluster, which appears as a large, dim grainy glow.



Astrophotography

Lagoon Nebula by Leona Barratt

Vespera Classic - 200mm - 45 minute exposure - Merritt Reservoir

Astrophotography

NGC 281, the Pacman Nebula by Jim White

Taken 9/27-9/28 at Branched Oak Observatory
66 - 300 Second exposures
25 Darks, 25 Flats and 25 Dark Flats
Celestron 925 EdgeHD Telescope, Celestron CGX Mount, Celestron OAG
ZWO ASI2400MC Pro Imaging Camera, ZWO ASI174MM Mini Guide Camera
Stacked and Processed in PixInsight

Astrophotography

NGC 6946, The Fireworks Galaxy by Jason O'Flaherty
Celestron NexStar 6SE (1500 mm, f/10)
ZWO ASI2600MC Air
54 × 4 min subs (216 min total) over 2 nights, September 28–29
Captured in North Lincoln, NE
Processed in Siril, GraXpert, Photoshop, and Topaz Photo

From the Archives, October, 1995

Life on the Edge
By Martin Gaskell

No, my title doesn't refer to the Dr. James Dobson film series, but to an event that happens every fifteen years or so: Saturn's rings going edge-on. We are now in the middle of the 1995-96 triple ring-plane crossings. For me this has been a very nostalgic event, because it is a re-run of the 1969 triple crossing. It is now exactly one Saturnian year later and Saturn is in the same part of the Sky. I observed Saturn carefully in the 1969 apparition With the first incarnation of "Tel'Poke", the Gaskell family's homemade 6" Newtonian. The telescope might have a new mounting now but the primary is the same (as is its non-overcoated aluminum coating!). I've still got those observations packed away safely somewhere, but I want to talk about this year's events. I first became aware that the ring-crossing was approaching in the summer of 1994 when I swung Tel'Poke round to Saturn for the first look of the apparition. The thinness of the rings took me by surprise. I had been watching the rings close over the previous few years in a casual way while showing Saturn to innumerable students but the change while Saturn was behind the sun in the spring of 1994 startled me. I took some photos With Tel'Poke that fall just to have a reminder of what Saturn looked like With rings and to start documenting the ring crossings. I had missed the ring crossings of 1979-80 as I was too busy with professional astronomy at the time. I was determined not to miss out on the 1995-96 crossings. On the evening of May 14, the sky was clear and the seeing good. I measured the PA and separation of Castor and then moved Tel'Poke to a spot where I hoped I would have a clear view of Saturn before dawn. The first ring-crossing was less than 7 days away. Leaving Tel'Poke set up I went to bed hoping I would wake up at the right time (I couldn't set an alarm because it would wake my wife!). Fortunately I woke up as twilight was beginning. When I got outside the stars were not twinkling at all! The seeing proved to be perfect! It was the best I've ever seen, and this was just as well because Saturn was extremely low.

"Happy first Saturnian birthday!" I said to the Tel'Poke optics. Purely for nostalgia I located Saturn with the same 1" Ramsden I used to center Saturn with 29 years ago. Then I had my first high-power look With the same high-power Ramsden I used back then (remember

From the Archives, continued

Ramsden eyepieces anyone?!). The flaring with the low power reminded me that my eyes are much worse than they were in 1969! It was a very emotional moment as I quickly drew Saturn, concentrating on What I could see of the rings. I was being taken back 29 years in time. All sorts of things had happened in my life during those 29 years, but Saturn had faithfully come back to edge-on again and here I was looking at it with the same 6" mirror and Ramsden eyepieces as in 1969. On the morning of May 19 I had finished a full night of observing at Behlen Observatory. We used the 30" Cassegrain to have a quick peek at Saturn before dawn. The seeing had been sub-arcsecond most of the night and we had a great view of the faint rings. The contrast of the disc features was much better than With Tel'Poke and I could see structure down to about 0.5 arcsecond. However, using a 30" professional telescope to look at Saturn feels like cheating somehow! On Saturnday (Oops, I've made a typo, but it's s an appropriate one so I'll leave it in!), May 20, conditions were once again good so I set up in advance for dawn on the 21st, the day of the first ring-crossing. Once again I managed to awake with no alarm and headed off into the garden in my pajamas. Less emotionally this time I swung Tel'Poke round to Saturn. "ITS GONE!" I exclaimed aloud. There was Saturn, quietly sitting in the center of the field, but ringless! -- just as in 1969. The cycle was complete. I made another quick drawing as dawn broke. I didn't pay much attention to Saturn in June and July. It was rising much too late for convenient observing. The next excitement was going to be seeing when the rings came back. On August 9/10 the Behlen 30" failed to show any rings. August 10/11, the day of the second crossing was cloudy. I wasn't too upset as I had seen the first crossing. On August 11/12, using 250X on Tel'Poke, in poor seeing, I couldn't see the rings. At least, I thought I couldn't. I seemed to be imagining two faint stubs on either side of the planet during moments of better (still not good) seeing. I didn't think they were the rings because they were well offset from the shadow of the rings on the globe, but I was convinced enough that I was seeing, or imagining, something that I made a couple of drawings of what I thought I was seeing. Many days later, on considering the earth-sun-Saturn geometry I realized that the stubs were indeed the rings. The next night (Aug 12/13) the seeing was somewhat better. I was pretty sure I was now seeing the rings. I got a second opinion from my wife. "They're as plain as day" Barbara said after a minute or so of looking.

From the Archives, continued

Since then I've looked at Saturn just a couple of times with our 6" to make a couple of really careful drawings. I've been looking at the British Astronomical Association (BAA) Saturn section report for 1969 and I'm trying to do a detailed comparison of the surface of Saturn over one Saturnian year. I've worked on getting the latitudes of the zones and belts from my drawings and I've tried to get good intensity estimates. There seem to be a couple of significant differences, in which case the seasons do not repeat exactly on Saturn. I won't tell you what I think the differences are! Make your own observations and then borrow the 1969 report from me to see if you agree! What's next? Well, this next month, around November 19, we have sun crossing. Over a few days thereabouts the sun will gradually set on the north side of the rings and once again the rings will vanish, at least in small 'scopes. If you want to try to see the dark side of the rings and you missed June and July, Nov. 19 through Feb. 11 is going to be your chance. The dark side can be seen faintly because of "Saturnshine" and sunlight scattered through the rings. Based on the 1969 BAA report (and my own experience then) I don't expect to be able to do this With Tel'Poke (too little aperture and too much scattered light), but 10" and 12" reflectors should be able to do it. Finally, on Feb. 11, as Saturn is fading into the sunset, we have the third earth crossing and at last we get to see the south side illuminated. This is the side we'll be stuck with until 2009. 2009 is going to be an unfavorable single earth crossing, as also is 2025. For another favorable triple crossing you have to wait until 2038-2039, so don't pass up the opportunity to participate in watching an event that occurs only a few times in the average lifetime.

Recalling Relationships Held Dear

John Reinert

PAC members who never heard the backstory that recalls our founding may reference what Mark Dahmke wrote in his The Prairie Astronomy Club: 50 Years of Amateur Astronomy beginning on page 14. As a Hyde Supervisor myself on a Saturday night I recently renewed a conversation with friend Charlotte Miller who told me of her acquaintanceship with the Hydes fifty years ago.

A. Leicester Hyde and his wife Flora were neighbors to Charlotte just off Superior Street in North Lincoln. Leicester, pronounced "Lester" was a professional architect who designed buildings in post-WWII Japan. He was also an executive with the Midwest Life Insurance Company from 1945-1972. Mrs. Hyde, "Flora" learned to arrange flowers in the Japanese tradition and would occasionally teach a class on the subject.

Childless themselves, a niece of the Hyde's had a daughter that was friends with Charlotte's children. In order to walk the neighborhood efficiently they asked the Hyde's whether

cutting through their yard was possible? As long as a rutted path wasn't created, it would be OK, was the reply. This story compliments the bronzed relief faces of the Hyde's that peer lovingly at us when we enter the building.

Editor's note: Mark's history of Hyde Observatory can also be found on the Hyde website.

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.

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