The W.A.S.P.

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March 2026

The Warren Astronomical Society Publication

The WASP

Published by
Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505

Dale Thieme, Editor

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The Warren Astronomical Society, Inc., is a local, non-profit organization of amateur astronomers. The Society holds meetings on the first Monday and third Thursday of each month, starting at 7:00 p.m.

First Monday meeting:	Third Thursday meeting:
Cranbrook: Institute of Science	Macomb Community College
1221 North Woodward Ave	South campus, Bldg. E, Room 208
Bloomfield Hills, Michigan	14600 Twelve Mile Rd.
	Warren, Michigan

Membership and Annual Dues

Student	Individual	Senior Citizen	for families
$17.00	$30.00	$22.00	add $7.00

Astronomical League (optional) $9.00

Send membership applications and dues to the treasurer:

c/o Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505

Pay at the meetings

Also via PayPal (send funds to treasurer@warrenastro.org)

- Among the many benefits of membership are
- Loaner telescopes (with deposit). See 2nd VP.
- Free copy of each WASP newsletter.
- Free use of Stargate Observatory.
- Special interest subgroups. See chairpersons.

The Warren Astronomical Society Publication (WASP) is the official monthly publication of the Society.

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the end of each month. Any format of submission is accepted. Materials can either be transmitted in person, via US Mail, or by email (publications@warrenastro.org)

Disclaimer: The articles presented herein represent the opinion of their authors and are not necessarily the opinion of the Warren Astronomical Society or this editor. The WASP reserves the right to edit or deny publication of any submission.

Stargate Observatory is owned and operated by the Society. Located on the grounds of Camp Rotary on 29 Mile Road, 1.8 miles east of Romeo Plank Road, Stargate features an 8-inch refractor telescope under a steel dome. The observatory is open according to the open house schedule published by the 2nd VP.

In This Issue

About the Cover

"I See the Moon, And the Moon Sees Me"

Adrian Bradley posted this photo on Facebook and this editor immediately thought, "WASP Cover!"

Here is what he says about the occasion, which is an excellent example of both always prepared and the best camera is the one with you.

"I'm sharing my memories of watching a beautiful moonrise over a frozen Lake Huron. This wasn't a planned event so I captured it with what happened to be in the car at the time: an iPhone 12 and a rickety setup of my Canon 6D and a small Celestron spotting scope that I could never quite get dead on focused. What I saw was amazing, even in the cold. I never tire of seeing the very moments the moon breaks the horizon."

Field of View

The Michigan Nebula struck again, repeatedly, in January and February, forcing the cancellation of several W.A.S. outreach events. Disappointing, yes. Surprising, no.

My spouse and observing partner Jonathan has a hypothesis that Michigan's oft-clouded skies are the reason for the robust network of astronomy clubs throughout the state. When you're socked in, why not take solace in the company of fellow astronomers? I think Jonathan is onto something. Last week, we traveled on a cloudy afternoon up to Dryden to join our colleagues at the Seven Ponds Astronomy Club for their first official Chili Cook-Off; there was no hope of getting the telescopes out that night but we enjoyed an evening of camaraderie and excellent chili. So it goes through the Michigan winter.

But that was January and February; as we barrel into March we hope for better things. Jupiter is still up there looking fine amid the hyped-up "planet alignment" of this weekend. Spring constellations with their rich clusters of galaxies are coming into view. We'll have an equal balance of day and night for a time.

Sounds ideal for some "astronomizing," as long as that pesky Michigan Nebula cooperates…

Diane Hall,
President

Outreach

Belleville Library

February 26

We had roughly thirty attendees at the event last night. Adrian Bradley and I had two scopes and a Seestar, and I gave an astronomy 101 presentation. We mostly observed the Moon and Jupiter, which had all four Galilean moons visible and the Great Red Spot rotated into easy view during the event. Later on we looked at the Orion Nebula and Adrian live-imaged the Horsehead and Flame Nebulas. We observed for about two hours. It was very successful!

Jonathan

And a Thank You

From: Rachel Davies
Date: Fri, Feb 27, 2026 at 10:35 AM
Subject: Belleville Library program

I want to thank you again for sharing your experience and knowledge with the Belleville Library community. I have already received positive feedback and many glowing reviews of the event. It was an enjoyable and educational experience for our patrons. I look forward to working with you again in the future.

Have a wonderful day.

Rachel

Rachel Davies
Adult Services Librarian
Belleville Area District Library

FAAC Astronomy Conference & Swap Meet

Saturday, March 28, 2026 9:00 am - 3:00 pm

General Astronomy

10:00 am: **Extraterrestrial Intelligence** – Dale Partin

1:30 pm: **Smart Telescopes** – Jim Frisbie

Technical Talks

10:00 am: **Spectralhelograph** – Gordon Hansen

1:00 pm: **How It's Really Made** – Tim Campbell

Planetarium: Tour of the Universe

10:45am, Noon & 1:30pm FAAC Members

Swap Meet

All Day…Earn Cash by Selling Those Items Sitting Around Collecting Dust!
Telescopes, Eyepieces, Cameras, Binoculars, Mounts, Software, Books, and Accessories, etc.

DETAILS:

Admission: $7.00 (children 15 and younger – Free / must be accompanied by an adult)

Sales Table: $25 in advance, or $30 at the door as available, (includes one admission ticket)

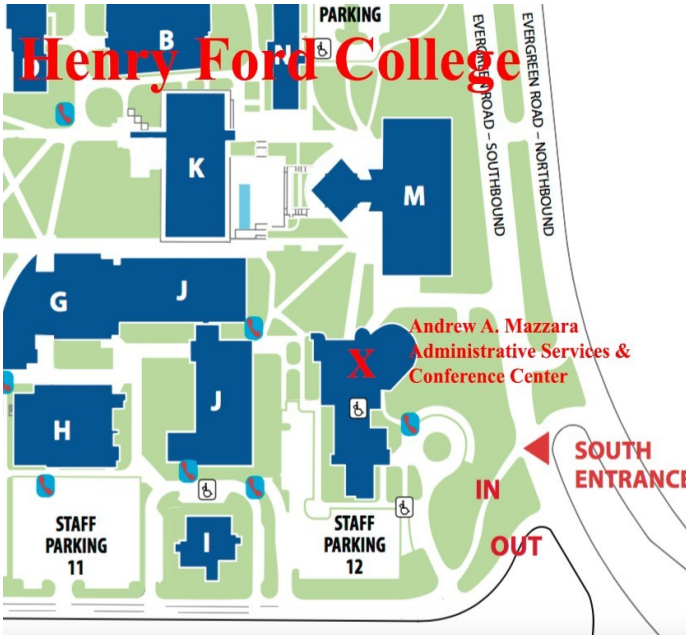
Advanced Table Registration ends Mar 15, 2026

Doors Open: 8:00 am for setup

Make Checks Payable: to FAAC for advance table registration.

Send payment to: FAAC, P.O. Box 7527, Dearborn, MI 48121-7527

Location: Henry Ford College, 5101 Evergreen Rd, Dearborn, MI 48128 (Andrew A. Mazzara Admin. & Conference Center… See **X** on map, Staff Parking Lots 11 & 12 will be open)



For More Information: Contact Jim via email: w8tu@comcast.net or call (734) 751-6280

WAS Apparel Price List

T-SHIRTS

Black – Navy – Gray (Pink or Yellow if desired) – one imprint

Small – XL $15.00
2XL $18.00
3XL $19.00

LONG SLEEVE T-SHIRTS

Black – Navy – Gray - one imprint

Small – XL $19.00
2XL $21.00
3XL $22.00

CREW NECK SWEATSHIRT

Black – Navy – Gray - one imprint

Small – XL $22.00
2XL $24.00
3XL $25.00

HOODIE W/Pockets

Black Only (at this time) – one imprint

Small – XL $27.00
2XL $33.00
3XL $34.00

IMPRINT LOCATIONS:

Front left chest (3 ¼" logo)

Front or back (9" or 10" logo)

Back (12" logo for jackets or sweater)

Combination front left chest (3 ¼" logo) and back (9", 10" or 12" logo) – add $7.00

Choose when placing order

LOGO COLOR SCHEMES:

Black background with gold/yellow artwork and lettering

Black background with blue lettering and gold/yellow artwork

Choose when placing order

HOW TO ORDER:

Place order at the Cranbrook meeting on the first Monday of month –
Select garment type - color of garment – logo imprint and color scheme –
Pay in full for order to be placed –
Your order will be ready for pickup at next Cranbrook meeting –
(Your order may possibly be ready for the Macomb meeting following the Cranbrook meeting of that month – you will be notified if that is the case)
Contact Mark Kedzior @ bazonga952@hotmail.com with any questions

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IMPRINT ON YOUR OWN CLOTHING ITEM: Logo + Imprint Charge

3 ¼" Logo - $8.00 **9" – 10" Logo – $12.00** **12" Logo - $15.00**

LOGO COLOR CHOICES

Gold/Blue

Gold-3D

Legacy

Proposed Bi-Law change

This amendment will be presented at the Cranbrook meeting, March 2, 2026 and voted on at the April 6, 2026 Cranbrook meeting.

By-Laws Amendment Proposal in Section 7.05

Current section:

Section 7.05.

Compensation of Employees.

The Directors of the Corporation shall serve as such without salary, but the Board may authorize the payment of reasonable expenses incurred by Directors in the performance of their duties and reasonable compensation for special services rendered by any Director. Except as provided in this Section no Officer or Trustee of the Corporation shall receive directly or indirectly, any salary, or other compensation from the Corporation.

Proposed Amendment:

Section 7.05.

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Section 7.05a

Waving of Directors Membership Fees

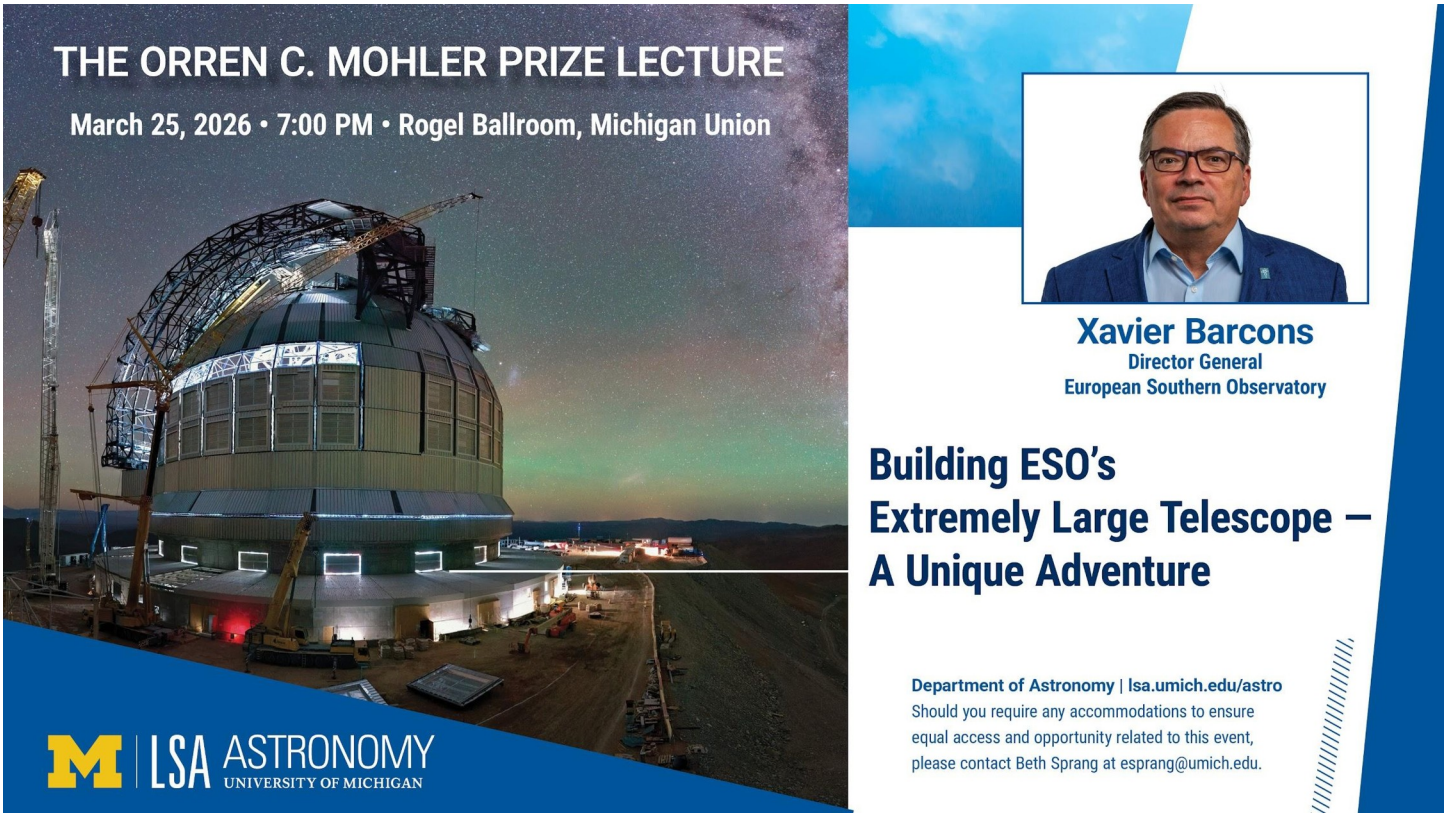
In recognition of the time, effort, and services rendered by members of the Board of Directors in carrying out the purposes of the Corporation, the Corporation shall waive the annual membership dues for each Director during their term of office. This waiver shall be considered a form of reasonable, non-monetary compensation for services rendered, consistent with Section 2.02 of these By-Laws and applicable provisions of Section 501(c)(3) of the Internal Revenue Code. Such waiver shall not affect any other rights or privileges of membership, and Directors shall be considered members in good standing for all purposes of these By-Laws.

W.A.S.P. Photo and Article Submissions

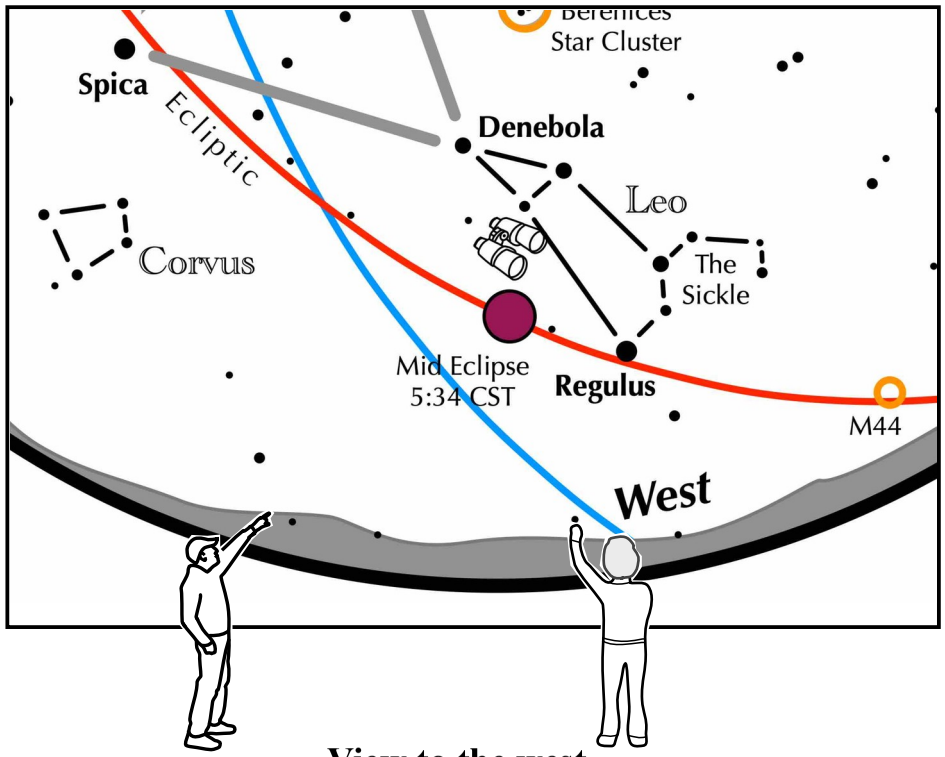
We'd like to see your photos and articles in the W.A.S.P. Your contribution is ESSENTIAL! —
This is YOUR publication!
Send items to: publications@warrenastro.org
Documents can be submitted in Microsoft Word (.doc or .docx), Open Office (.ods), or Text (.txt) formats, or put into the body of an email. Photos can be embedded in the document or attached to the email and should be under 2MB in size. Please include a caption for your photos, along with dates taken, and the way you'd like your name to appear.

AMC Forum 30 Saturday, March 7, 2026 10:00 am

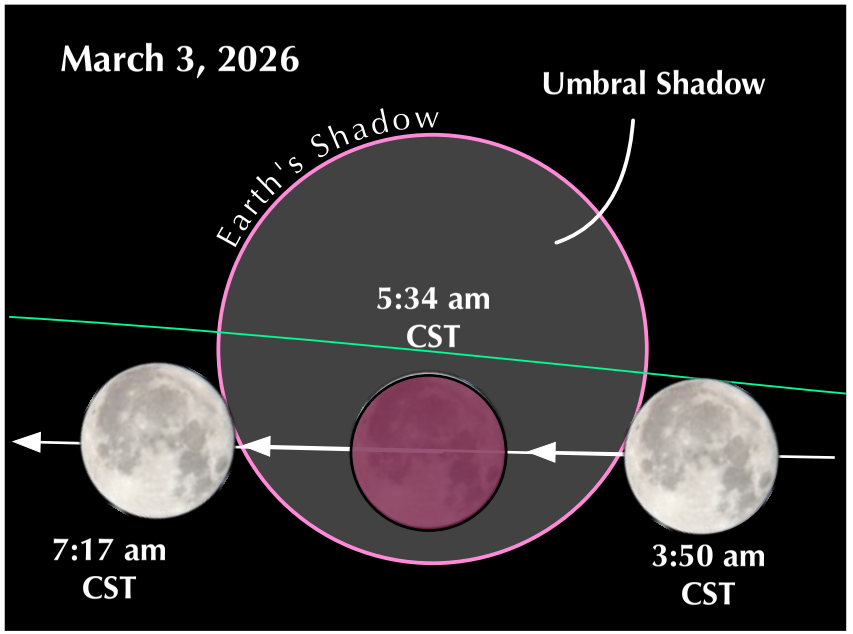
A Beautiful Planet 3D is a breathtaking portrait of Earth from space, providing a unique perspective and increased understanding of our planet and galaxy as never seen before. Made in cooperation with the National Aeronautics and Space Administration (NASA), the film features stunning footage of our magnificent blue planet - and the effects humanity has had on it over time - captured by the astronauts aboard the International Space Station (ISS). From space, Earth blazes at night with the electric intensity of human expansion - a direct visualization of our changing world. But it is within our power to protect the planet. As we continue to explore and gain knowledge of our galaxy, we also develop a deeper connection to the place we all call home. Narrated by Academy Award® winner Jennifer Lawrence - A Beautiful Planet 3D presents an awe-inspiring glimpse of Earth and a hopeful look into the future of humanity.



If you can observe only one celestial event in the morning this March, see this one.



View to the west on March 3 at 5 am CST



The Moon slides through a total eclipse

In the hours before dawn on March 3, the brilliant full moon slides into Earth's shadow.

Eclipse times
Partial eclipse begins: 3:50 a.m. CST
Total eclipse begins: 5:04
Mid eclipse: 5:34
Total eclipse ends: 6:03
Partial eclipse ends: 7:17

- Even though the partial umbral eclipse begins at 3:50 a.m. CDT, darkening might not be noticed for another 5 minutes.
- When totality is reached, the full moon's brilliance is gone, allowing the stars to appear. Can you see that the moon lies east of Regulus and below Leo?
- At mid eclipse, what color is the moon? How red is it?
- During the partial phases, can you notice that the shadow's edge is not straight, but curved?

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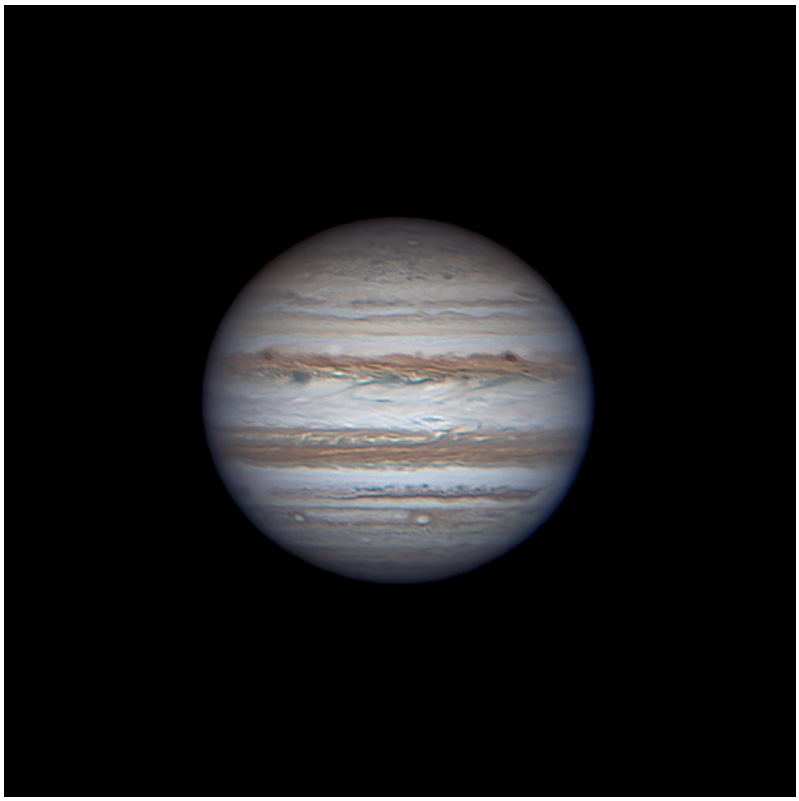
WAS Astrophotos

Have Telescope, will Travel

Not wishing to hang around Michigan in hopes of a break in the clouds, Dale Hollenbaugh and his wife left for warmer climes and clearer skies in the Caribbean. Happily, he was able to take his trusty ZWO Seestar along.



Dale says, "I took my ZWO Seestar S30 with me on vacation and took a photo of this southern target *(Carina Nebula, NGC 3372, ESO 128-EN013, GC 2197, h 3295, Caldwell 92- Ed.)*, from the island of Curaçao in the Caribbean.

The other photo is of Jupiter and I also took this one from Curaçao. I collaborated with a friend who lives on the island. I took my ZWO ASI676MC camera and laptop and used his telescope, a Celestron 14" EdgeHD SCT, to get the image. The seeing conditions in Curaçao are usually significantly better than here in Michigan. Also, this is the first time I used the derotation technique. I derotated 14 separate imaging runs together to help boost the signal to noise ratio."

Presentations

Cranbrook
7:00 pm, March 2, 2026

Main Talk

Lunar Imaging

By Rik Hill

As an avid member of the Association of Lunar and Planetary Observers, Rik Hill has imaged a whole lot of the moon. His "airplane window" views of lunar features frequently grace the pages of our newsletter, *The WASP*. In this talk, Rik will talk about his approach to imaging our friendly neighborhood satellite.

About the Speaker

Rik was born on June 10, 1949, shortly after Antares was obscured by a nearly full moon. His first astronomical observation took place on May 6, 1957, during a Mercury transit. Rik got involved with ALPO (founded the Solar Section) and AAVSO, co-founded The Sunset Astronomical Society in Midland with his wife, Delores. He worked at Kitt Peak for 12 years. He worked at the Lunar & Planetary Lab at the University of Arizona and on the Catalina Sky Survey, discovering thousands of asteroids and 27 comets before retiring in October 2015. Now, he focuses on astronomy from his home observatory while caring for bonsai trees and fostering rescue cats.

Short Talk

Measuring the Distance to the Moon

(The Old-Fashioned Way)

By Jeff MacLeod

Jeff MacLeod recreates how astronomers first estimated the distance to the moon without any modern equipment like radar, retro reflectors or even telescopes? He will guide you along his recreation of these ancient measurements, showing that what starts off as a seemingly simple experiment, can escalate to an obsession.

About the Speaker

Jeff MacLeod is a former WAS president, Observatory Chair, and now Outreach Chair. During his time at Wayne State, he was a presenter in their Planetarium while getting a bachelor's in physics and another in astronomy. Jeff recently started work in the aerospace sector simulating missiles (the rest is classified). Nowadays most of his free time is spent working on his space-flight simulator, a life size recreation of a Gemini spacecraft you can actually fly in.

Macomb
7:00 pm, March 19, 2026

Feature

Astronomy Factoids

By Bob Berta

Bob has always been fascinated by the trivia around astronomy. He has an assortment of these factoids that he uses when presenting to schools, scouts, and general public. He will share these topics with the audience. They will be interesting to our newer members and he is sure our long time members will find them fascinating.

About the Speaker

A member of WAS since 2004, Bob has served as Secretary, 2nd VP, President, and Outreach Chair. He is also a member of the Oakland Astronomy Club where he served as VP for several years, a member of the 7 Ponds Astronomy Club, and San Francisco Amateur Astronomers in California.

Bob is both a Michigan Representative for the Astronomical Society of the Pacific's Night Sky Network, as well as a Solar System Ambassador for the Jet Propulsion Laboratory (JPL).

Next Month

Cranbrook

Main Talk

STEM Research on the ISS

Short Talk

Archaeoastronomy of the Newark, OH Earthwork

Macomb

Auroras

WAS PRESENTATIONS

If you would like to present either a short talk (10-15 minutes) or a full-length talk (45-60 minutes) at a future meeting, please email Jonathan Kade at: firstvp@warrenastro.org.

Skyward

David H. Levy

Pathetic Jupiter

Why would I want to write something insulting about Jupiter? After all, Jupiter is the first thing I looked at through a telescope. Only last month I wrote how, when I began searching for comets, I was looking for an activity that did not involve me dealing with other people. I had a few friends as a youngster. Now in my ripe age of 77, I have many good friends, of whom the current editor of Desert Skies is one of my closest. But I still enjoy, more than anything, the idyllic solitude of looking through my telescope, field after field of sky, for a new elusive comet. A related part of that same solitude is looking at the planet Jupiter, which I consider to be a faithful and lifelong friend.

Jupiter and I have been friends since I first looked at it, with Mom and Dad, on 1 September 1960. Since then the planet has never failed to give me an emotional, pathetic look. And thus I introduce that word pathetic. Applied to a person, pathetic could mean a loser. I am pathetic. I do not want to see myself as a loser, but as someone who deals intensely in emotions. Applied to Jupiter, I do not intend for it to be considered a loser of a planet, but rather as a planet that yields always an emotional response in the observer.

Jupiter is pathetic, but not a loser, not insulting. I use the word as a derivative of pathos, an idea from Greco-Roman philosophy. The concept survived all the way into Shakespeare's Julius Caesar, where Brutus exemplifies the stoic, logical personality that is brought to fame at the very end, in Antony's celebrated obituary:

> This was the noblest Roman of them all.
> All the conspirators save only he,
> Did that they did in envy of great Caesar;
> He only, in a general honest thought
> And common good to all, made one of them.
> His life was gentle, and the elements
> So mix'd in him that Nature might stand up
> And say to all the world, "This was a man!" (JC.5.5.68-75.)

Pathos alludes to a person's emotions, and it ignites feelings related to those emotions. For my sense, Jupiter is pathetic because it fosters the emotions I felt when I first looked at it. That world is incredibly turbulent; a brief look at the Voyager images from decades ago shows us the roiling of the little clouds as they circle the great Red spot. More important to me, those of us who were alive in 1994 remember the profound effect that the daily addition of big black spots the size of Earth had on that weeping world, as though some cosmic force was pounding the daylights out of the solar system's biggest planet.

Thaxted

According to NASA, my favorite government agency, there is a special musical allusion to this mighty comet's breakup and collision. It is called Thaxted, and on the occasion of NASA's last SL9 press conference late in July, as a way of celebration, they played the Thaxted section of Gustav Holtz's The Planets, from its Jupiter movement. Holtz adapted it in 1921. He loved living in that small English town. In my opinion the Thaxted portion of The Planets, from near the center of the Jupiter movement, is one of the most stunning pieces of music ever written, equivalent to Mozart's Jupiter symphony or Beethoven's Fifth.

The NASA presentation included many images of comet fragments, impacts, and people. Gustav Holtz lived in Thaxted from 1917 to 1925. Holtz wrote the piece as the middle section of the "Jupiter" movement of The Planets. He adapted Thaxted to fit the words of the hymn "I vow to thee, my country":

> I vow to thee, my country, all earthly things above,
> Entire and whole and perfect, the service of my love;
> The love that asks no questions, the love that stands the test,
> That lays upon the altar the dearest and the best;
> The love that never falters, the love that pays the price,
> The love that makes undaunted the final sacrifice.

My favorite image of Jupiter's Red spot, imaged by Voyager I in 1979. NASA photo.

And there's another country, I've heard of long ago,

Most dear to them that love her, most great to them that know;

We may not count her armies, we may not see her King;

Her fortress is a faithful heart, her pride is suffering;

And soul by soul and silently her shining bounds increase,[11]

And her ways are ways of gentleness, and all her paths are peace.

Before returning to pathetic Jupiter, one additional thought about Thaxted and its related hymn; its final line is from Proverbs 3:17. It belongs to a song, "Eitz Chayim", I sing at our synagogue every year on the Day of Atonement:

"Her ways are ways of pleasantness,

And all her paths are peace."

These words help connect the emotional pathos I feel towards Jupiter with the memorable black spots that graced that world. The dark soot-like spots lasted for months and they dissipated only gradually. As much as my earlier observations of Jupiter stayed in my memory and emotions, watching the comet's impact spots were electrifying; the emotional, pathetic impact on me was unbelievable. These impacts taught us an important lesson. Over the course of cosmic time, Jupiter has been battered by comets and asteroids over and over again, and each time a pathetic or emotional observer might detect planetary tear coming from the eye of Jupiter.

During this particular winter, on each clear night I watch as Jupiter comes up earlier and earlier and I wave at my old friend that has never failed to greet me on a million starlight nights since my teenage years. Its fabulous Red Spot is smaller and fainter than it was on that September evening 66 years ago, and it is a lot smaller than the S-L 9 impact spots. But Jupiter never fails to arouse my deepest emotions. Jupiter's pathos is a part of me, and it always will remain a central part of my life.

WAS Merchandise

Available at Cranbrook and Macomb meetings

WAS Logo Stickers

$1.00 ea.
$5.00 for 7

WAS Pins

$2.50 Each

WAS Bandana

$5.00 Each

Endorsed by the Unicycle Cowboy!

Astronomical Bandanas at an astronomically low price, just $5! featuring 33 Glow in the dark constellations and a WAS logo.

Sophomore Slump

By Brad Young, Astronomy Club of Tulsa

This month's article has several items. Don't forget about the total lunar eclipse on March 3, before dawn. This is a naked eye event, but if you do have binoculars or telescope it's interesting to watch the craters disappear into the shadow. You can even help astronomy by timing these events, which are used to define the size of the umbra (Earth's shadow). Another useful report is on the color of the moon during total eclipse, which provides data on the Earth's atmosphere. For more on these observations, see https://skyandtelescope.org/observing/useful-projects-for-a-lunar-eclipse/.

Danjon Scale of Lunar Eclipse Darkness

We are nearing the equinox, so the geostationary satellites will be flaring during the first week of March as described in my article https://warrenastro.org/newsletter/WASP-2021-03.pdf. And the zodiacal light is prominent in the dusk now too, a cone of dim light visible outside bright city skies (look it up on Wikipedia).

I had the pleasure of presenting a talk on my completion of sketching all the NGC objects to the Bartlesville Astronomy Club on February 2nd. They were quite welcoming and gave me a mug decorated with images club members took.

As some of you may have heard, SpaceX has now requested a license to launch up to one million satellites to support its plan to run data centers in space instead of using resources and causing public concerns with ground stations. The IAU committee I'm on is trying to protect astronomical communities, both professional and amateur, from being deluged by satellite trails but is finding mitigation difficult based on scaling up from the problems that are occurring now. If you would like to comment on the SpaceX application with the FCC, contact me.

Future night skies with 1 million Starlinks and others

Retaining Members

> "You can listen as well as you hear"
> – The Living Years, Michael Rutherford and Brian David Robertson

The main point of this article is one that has come up several times and will probably be the focus of my next book. I call it the sophomore slump, the period between the exciting beginning of astronomy as a hobby and the confident enjoyment after a few years when you know more. You see it in astronomy clubs, where there is a tendency for members to join with high hopes, then finding it is harder than they thought, they give up on the hobby. This is one of the issues driving the decline in astronomy club membership - especially among young people.

One recommendation I would make is that it's essential when we have initial meetings with future members that we listen to what they want to achieve by becoming active in this hobby. Too often, I think we expect people who are new to astronomy to fit a certain model that we consider to be normal. For instance, with advances in technology and

changes in society, most younger people today are quite comfortable using computerized telescopes run by apps on their phone and are more interested in imaging than visual observing. I base this not only on experience at star parties and outreach events, but on anecdotal evidence and comments from clubs and amateurs all over the country.

This is the way things are moving. New devices such as a Seestar may not seem like "real" observing to some who have been doing this hobby for a while, but it doesn't matter. The way to attract and retain members and, more importantly, to foster their interest in astronomy, is to allow them to find what they are excited by. We do have a responsibility to explain that telescopes can be very expensive, and you don't want to give them buyer's remorse. Still, we can explain the different types of equipment that are available and the different types of observations and other activities that can be done and let the budding amateur astronomer pick their own path.

We experienced amateurs often tell new folks to go around and check out the different types of telescopes. Make an impression by reciprocating - ask to see what apps the new person uses, or what electronic devices are in his setup. Perhaps we can learn something too – e.g., I really enjoy using my Seestar even though it is a new way of observing for me. Even if we don't, the new person may feel more welcome if they can show us tips and tools too, so there is a balance to the relationship instead of a teacher-student dynamic.

New observers may also be intimidated by the equipment or social situations. Approach them with a smile and try to see things from their view. Others may be gregarious and want to talk a lot about different aspects of the hobby or may just want to talk. And remember, you must cast a wide net and very few people will stick with the hobby and / or the club. That's OK if we are not ripping the net open by ignoring potential members, demeaning them by pointing out their lack of skills or scaring them with proselytizing.

> Your old road is rapidly agin'
> Please get out of the new one if you can't lend your hand
> For the times they are a-changin'
> The Times They Are A-Changin'– Bob Dylan

Some amateur astronomers seem to have been around since they ground their own telescope mirrors and borrowed Galileo's eyepiece and can be set in their ways. I've seen this movie before with people complaining about new methods from the switch of visual to film, heard film users decry digital imaging and listened to complaints about electronic go-to and push to systems. You may have enjoyed the old ways or think they are better, but that ship has sailed.

Astronomy for amateurs is intended to be what the person wants it to be. Helping a new amateur find what excites them can be a rewarding experience for both parties. This may include new technology or delaying learning some fundamentals. However, telling them they must learn all the constellations and be able to star hop is not going to promote a hobby that is already expensive and complicated to begin with. If you would like to discuss ideas about retaining members (and specifically drawing a younger crowd), contact me.

Epilogue

Look for my article "Sketching all the NGC Objects" in the March issue of Reflector Magazine, published by the Astronomical League.

Searching for an image of an old man shaking his cane led me to this oldie but goodie meme; a perfect one for amateur astronomers.

Join the Astronomical League

The mission of the Astronomical League is to promote the science of Astronomy. The major benefit of belonging to this organization is receiving the quarterly newsletter, The Reflector, which keeps you in touch with amateur activities all over the country.

Also:

- Participate in the Observing Program
- Avail yourself of the League Store
- Astronomy Books at a discount
- Attend Astronomical League Conventions

Only $9.00 annually,
(Membership starts July 1)

alcor@warrenastro.org

Over the Moon

With Rik Hill

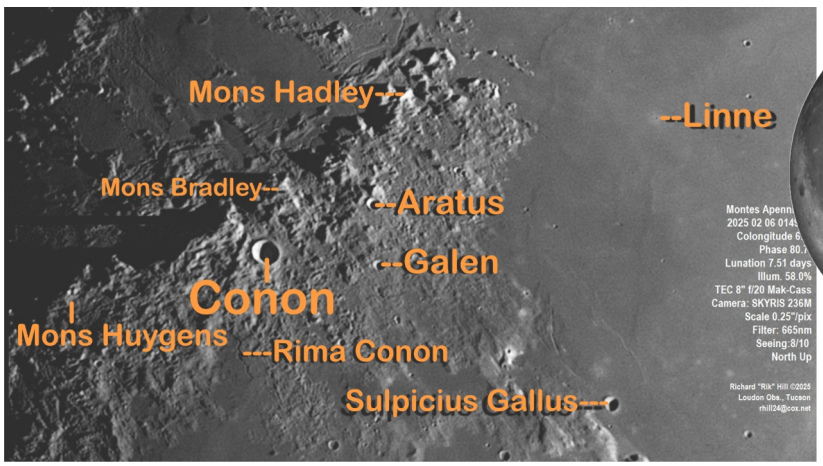
MOUNTAIN CLIMBING

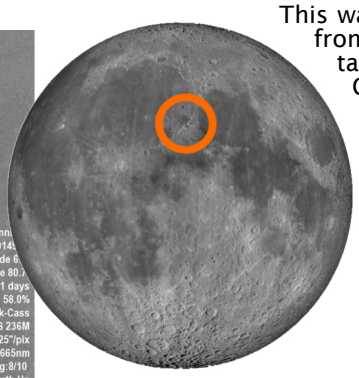
About 8 days after new moon, one day after first quarter, Montes Apenninus come into view on the terminator. Sharp-eyed younger amateur astronomers can often see hints of this range during this phase. There is much to see through the telescope at this time.

Here we see the grand Montes Apenninus running diagonally across the left side of the image. On the right side is the flat expanse of Mare Serenitatis. Left of center of the image is the young crater Conon (21km dia.) less than a billion years (b.y.) old. You can tell it is young by the sharpness of the rim not yet degraded by smaller impacts that take place over time. Two smaller but similar craters can be seen to the right of Conon. The northernmost one is Aratus (10km) about the same age as Conon, and the below it is Galen (9km) significantly older at 3.2-3.9 b.y. nearly as old as the montes themselves. Immediately north of Conon is the sunlit peak Mons Bradley (4200m high) with Rima Bradley being the large rille north and parallel to the mountains. There's another short sinuous rima to the left and below Conon perpendicular to the montes that is appropriately enough called Rima Conon. This is a challenge to spot visually.

Above Aratus deep in shadow is Rima Hadley known as "Hadley Rille" where Apollo 15 touched down in August, 1971. Moving up (right) the Montes Apenninus there's a particularly bright chisel shaped peak just past the "Hadley Rille" site. This is Mons Hadley a lofty 4800m peak. But this peak is dwarfed by the even taller mountain left of Conon and near the left edge of this image marked by two bright points like eyes staring back at us. This is Mons Huygens at the remarkable height of 5400m or 16,400 feet, one of the highest points on the moon. The whole of Montes Apenninus must be a spectacular sight from our next feature.

On the shore of Mare Serenitatis south of the mountains can be seen the deep fan of rilles, Rimae Sulpicius Gallus. The 12km namesake crater, Sulpicius Gallus, is on the south end of these rimae. Due north of this well out in the Mare is a diffuse white spot with a tiny crater in the middle. This is Linne, the subject of a lot of excitement in the mid-19th century when this crater originally mapped as 8-10 km was reported in 1866 to just be a small white spot. It was intensely observed for a number of years and eventually found to be a smaller crater (2.4km) than that originally supposed and today you can observe or record it with a good 8" aperture as you see here. So the elusive hope for verifiable observable change on the moon in the pre-spacecraft age died.





This was a single image stacked from a single AVI using AVIStack2, post-processed with GIMP and IrfanView.

Location Maps by Ralph DeCew

Hunting Exoplanets

By Bob Trembley

Two new surveys hunting Earth-like exoplanets

Since the first exoplanet was discovered in 1992, researchers have discovered over 6100 exoplanets, with over 7800 candidates awaiting confirmation. These planets were discovered using a variety of methods involving ground-based and space telescopes; these detection methods can more easily spot large planets (gas giants) that orbit close to their star – finding Earth-like planets has been elusive.

Two new surveys will hunt for Earth-sized planets, in an Earth-like orbit around a Sun-like stars; both of these surveys will measure stellar motions to an accuracy of 10 cm/sec – which is astounding when you are talking about stars that are many light years distant!

The Terra Hunting Experiment in the Canary Islands came online in December of 2025. It is a collaboration of a dozen research institutes led by Didier Queloz from the University of Cambridge. Queloz is an astrophysicist who shared the 2019 Nobel Prize in physics for the discovery of 51 Pegasi b in 1995 – the first exoplanet discovered orbiting a sun-like star. The survey will observe 50 sun-like stars every night for 10 years.

Image: Telescope operating the Terra Hunting Experiment. Credit: Clark Baker (Science News)

Aside: 51 Pegasi b is officially named Dimidium – click here to see an interactive 3D visualization of this exoplanet and its star system using NASA's Eyes on Exoplanets web app.

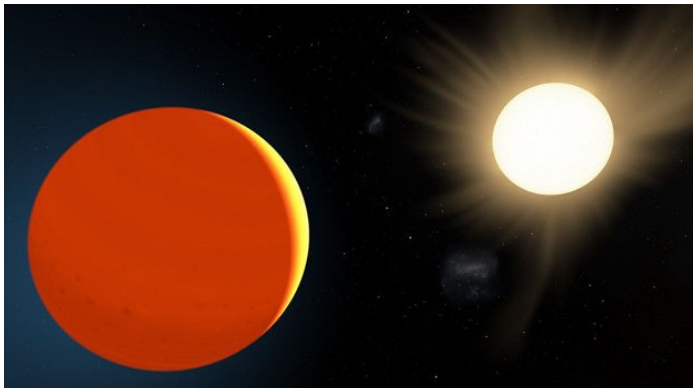


Image: Visualization of exoplanet Dimidium (51 Pegasi b). Credit: SpaceEngine/Bob Trembley

The other survey is the Second Earth Spectrograph (2ES), which will be installed at the MPG/ESO 2.2m Telescope on La Silla, Chile in the southern hemisphere. The program will last 5 years, with access to 2/3 of the telescope's observing time.

Image: MPG/ESO 2.2m Telescope. Credit: ESO

Near-future exoplanet research

Future exoplanet hunting missions include NASA's Habitable Exoplanet Observatory, NASA's Nancy Grace Roman Space Telescope (Roman), ESA's PLATO (PLAnetary Transits and Oscillations of stars) mission, ESA's Ariel (Atmospheric Remote-Sensing Infrared Exoplanet Large-survey), the Chinese Academy of Sciences (CAS) Earth 2.0 (ET), and the Europe-based Large Interferometer for Exoplanets (LIFE) which could zoom-in on exoplanets discovered by the Terra Hunting Experiment, to study their atmospheres for biosignatures.

The Vatican Observatory and Exoplanets

Recent **Vatican Observatory Summer Schools**, like the one in 2023, have given students experience with exoplanet research and analyzing large survey datasets; the 2025 summer school included hands-on tutorials for JWST data processing and analysis; the JWST has captured spectra for hundreds of exoplanets as of January 2026.

Didier Queloz (mentioned above) was an instructor for the 2007 summer school, whose theme was Extrasolar Planets and Brown Dwarfs. (A LOT has happened in the field of exoplanet research in the decade since this summer school.)

Fr. Paul Gabor, SJ, is the vice director of the Vatican Observatory; his main area of research is exoplanets and the development of the instrumentation used in the study of them; he also teaches the history of astronomy at the University of Arizona. Fr. Gabor organized a conference titled "Search for Life Beyond the Solar System: Exoplanets, Biosignatures & Instruments" which was held in Tucson in March of 2014.

Vatican Observatory adjunct scholar **Dante Minniti** was a member of a team of astronomers from Europe, the US, Chile, and Australia who discovered a planetary system around a nearby M-class red dwarf star with at least one super-Earth planet orbiting within its habitable zone. This star, GJ 667C, is a triple-star system located 22 light years from Earth.

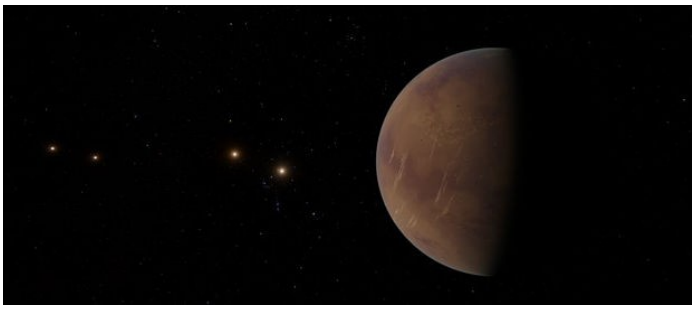


Image: Visualization of exoplanet GJ 667 C c – the super Earth discovered by Dante Minniti (and several others). Credit: SpaceEngine/Bob Trembley

Exoplanet Resources

The NASA Exoplanet Archive is an online astronomical exoplanet and stellar catalog and data service that collates and cross-correlates astronomical data and information on exoplanets and their host stars, and provides tools to work with these data. The site allows you to easily browse through exoplanet data.

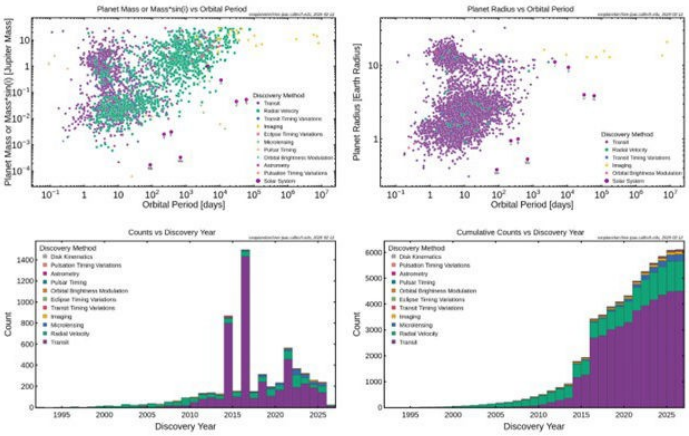


Image: NASA Exoplanet Archive interactive plots

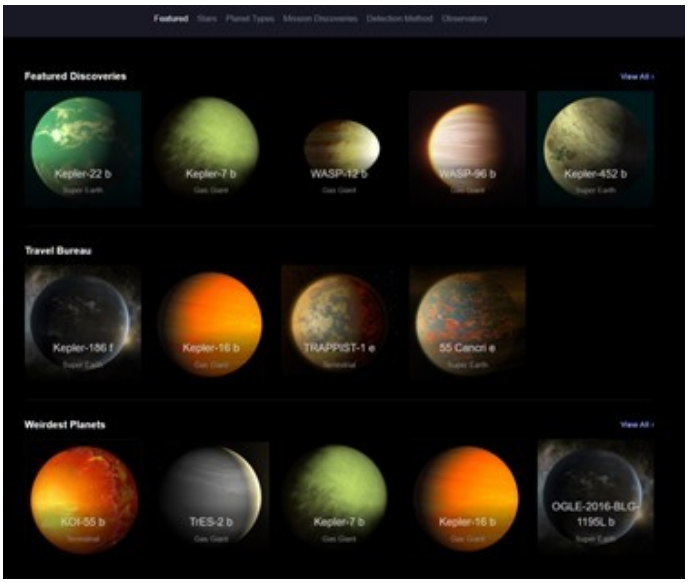


Image: Eyes on Exoplanets Featured Destinations

NASA Eyes on Exoplanets is a web-based 3D interactive app allowing you to view visualizations of exoplanets and their star systems.

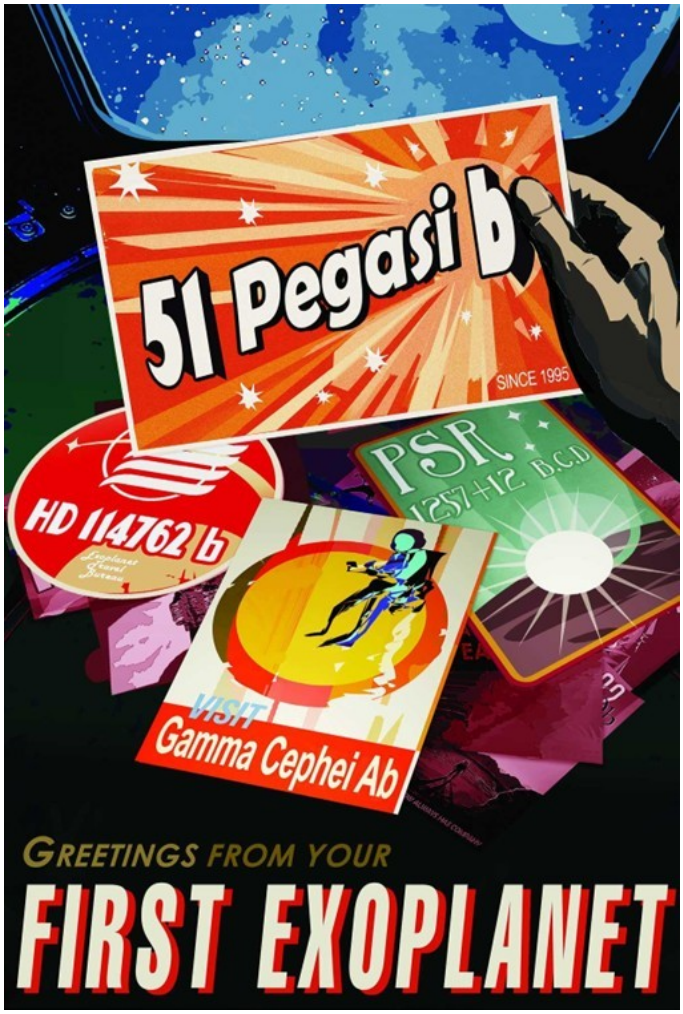
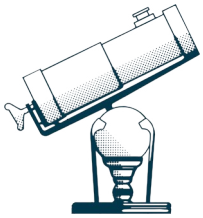


Image: JPL retro travel poster for 51 Pegasi b

This is a repost of an article I posted on the Vatican Observatory Foundation's website.

– Bob Trembley



History S.I.G.

March 1996

In this issue, we find both the Treasurer's Report and meeting minutes (nice to see the newsletter earning its keep) "Computer Chatter" by Larry Kalinowski covers both a second Comet Hyakutake and news of erasable CD-ROMs among other tidbits. An announcement for a solar eclipse cruise in 1998 appears, along with "Masterpieces Messier Missed" by Jeff Bondono: pk205+14.1 at 07h29m +13d15.

WASP

Warren Astronomical Society Paper

Volume 27, Number 12 — $1.00 for non-members — ~~Dec.~~ March, 1995

Treasurer's Report

by Ben Tolbert

As this years treasurer I would like to thank everyone for the opportunity to serve as a club officer. I would especially like to thank Glen Wilkins for his helping me get off to a good start.

Most of you already know that club member discounts are available for both Astronomy Magazine - ($20 for 12 months), and Sky & Telescope - ($24 for 12 months). If you want to subscribe or renew your subscription at the club discount price see me at the meetings or give me a call for any details.

Please remember to make all checks out to "Warren Astronomical Society" - and not to me personally. This includes any membership dues, magazine subscriptions, and WASP mailings.

Any WAS member that would like to see a copy of my monthly treasurer's report should let me know, I will be happy to provide you with a copy. Some of our major expenses this year are expected to be the building of a new club telescope, member activities, and the "Annual Awards Banquet". If anyone has financial business to take care at the meetings, I'll be at least 15 minutes early in order, to cut down on some of the delay - or feel free to give me a call at (810) 790-8292 (after 5 p.m..).

Thanks!

Ben Tolbert, Treasurer

MINUTES OF MEETINGS

by Blaine McCullough

MACOMB MEETING

Thursday, January 18, 1996

The meeting opened at 7:40 p.m. with 28 members in attendance.

John Hergott opened the meeting, welcoming new and prospective members. He welcomed Louie the Librarian back.

TREASURER'S REPORT - Balance as of December 31, 1995 - $5,519.52.

BANQUET - Bob Halsall was presented the J. Searles award. Distinguished service awards went to Larry Kalinowski and Blaine McCullough. Ben Tolbert

see MINUTES on page 4

COMPUTER CHATTER

by Larry Kalinowski

Hyakutake bagged another comet and this one is even better than the first one. The highly inclined orbit not only passes through the circumpolar sky but it swings to within 0.1 AU from the Earth and 0.2 AU from the Sun.This means that if the refined orbit doesn't change much, there will be two brightness peaks, both nearly zero magnitude! The first brightness peak will occur at the end of March and the second at the end of April. An ephemeris will be available at the February MCCC meeting.

You've heard of CD-ROM and CD-R. Now there's CD-E. That's CD Eraseable. Up until now you could record on a blank CD-R but that was it. The powers that be, have come up with a standard that allows computer users to erase CD-E disks so that new data can be recorded again. The new standard will be able to read CD-ROM's and also be able to write to CD-R's. Size is still approximately 640 Megabytes. Look for the new technology in about a year.

Rumors abound concerning Apple Computer and its possible sale to Sun Microsystems. However, Apple executives keep denying any possible merger. Apple

see Computer Chatter on page 3

SUBGROUP UPDATES

Fred Judd and the telescope making group meet at Fred's house every Tuesday at 7 p.m. Everyone is encouraged to come and help make the new club scope. You don't have to be an expert to lend a hand. Contact Fred at (810) 758-7458 for directions. Oh yeah, Angie's desserts are know far and wide as among the best.

The Deep Sky sub group will be meeting at Doug Bock's Northern Sky Observatory on Feb. 24. Bring your scopes and enjoy the evening. Should c—— y skies prevail, Doug will have a progam available. Any one interested in presenting a program at one of the deep sky meetings should contact Doug at (810) 750-0273

The Computer Group continues to ... Kalinowski's home on the 4th ... You can find direction... ber in the ...

March 2006

"Astro Chatter" by Larry Kalinowski provides the bulk of the WASP's journalism in this issue. Along with his usual reporting of club activities, he remembers a fellow club member who recently passed away, Don Lemons. Don's notice appears elsewhere in the issue. Besides Larry's "The Swapshop", we get this nugget from NASA's Space Place: An announcement they now have a wonderful new kid-accessible explanation of why the sky is blue -- on their SciJinks web site.

The W.A.S.P. newsletter

March 2006

Warren Astronomical Society Michigan

The Warren Astronomical Society Paper

P.O. Box 1505

Warren, Michigan 48090-1505

www.warrenastronomicalsociety.org

Volume 38, Number 3 // \\ March, 2006

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The WASP (Warren Astronomical Society Paper) is the official monthly publication of the Society. Each new issue of the WASP is e-mailed to each member and/or available online www.warrenastronomicalsociety.org. Requests by other Astronomy clubs to receive the WASP, and all other correspondence should be addressed to the editor, Cliff Jones, email: cliffordj@ameritech.net

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the first of each month. Any format of submission is accepted, however the easiest forms for this editor to use are plain text files. Most popular graphics formats are acceptable. Materials can be submitted either in printed form in person or via US Mail, or preferably, electronically via direct modem connection or email to the editor.

Disclaimer: The articles presented herein represent the opinions of the authors and are not necessarily the opinions of the WAS or the editor. The WASP reserves the right to deny publication of any submission.

Astro Chatter

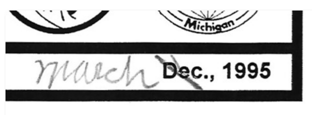
by Larry Kalinowski

A cosmic outburst that has yet to be explained has appeared in the constellation Taurus. The Space probe (Swift) that's designed to detect Gamma Ray Outbursts saw it on February 18 and can be seen by amateur telescopes at RA: 03:21:39.71 and Dec.:+16:52:02.6. It's quite possible that it could become a supernova in the not to distant future.

One of our fellow telescope makers passed away on Thursday, February ninth. Don Lemons, the guy who always had the perfect brush haircut, went to visit the great telescope maker in the sky. I'll always remember him as the guy who wouldn't take anything I told him about telescope mirror making for granted. Whenever he didn't quite want to accept my explanation, he told me he needed additional verification from another source. He always double checked my math and a few times he helped make my understanding of mirror making better. His curiosity about double stars and making physical measurements of position angles and separations got me to appreciate the universe even more. I hope I get to meet him again when I take my last trip. He was wonderful company for our kind with inquisitive minds. Our club needs more like him.

Occasionally, light patterns appear in the sky, caused by unfamiliar sources. The picture below is a series of light pillars but not the

From the Scanning Room



Oh the joys of computerized desktop publishing. If you look closely at the title banner on the front page, you'll see where Larry Kalinowski penciled out "Dec." and wrote March, but, didn't change the year (1995). Almost tripped me up when I was scanning and filing the issues. But a bit of digging assured me that this was indeed the March 1996 issue (the calendar page showing "March 1996" was a huge hint.) Happy Days!

More recently, I was indeed tripped up by updating the 2025 template to the 2026 version, then saving it as the January file (which means the changes didn't stay in the template), so, in February, we had the 2025 WAS board make a curtain call in the masthead. Since then I've adjusted the template properly and fixed the error in the February copy. If you downloaded the errant version, it's a collectors' piece now.

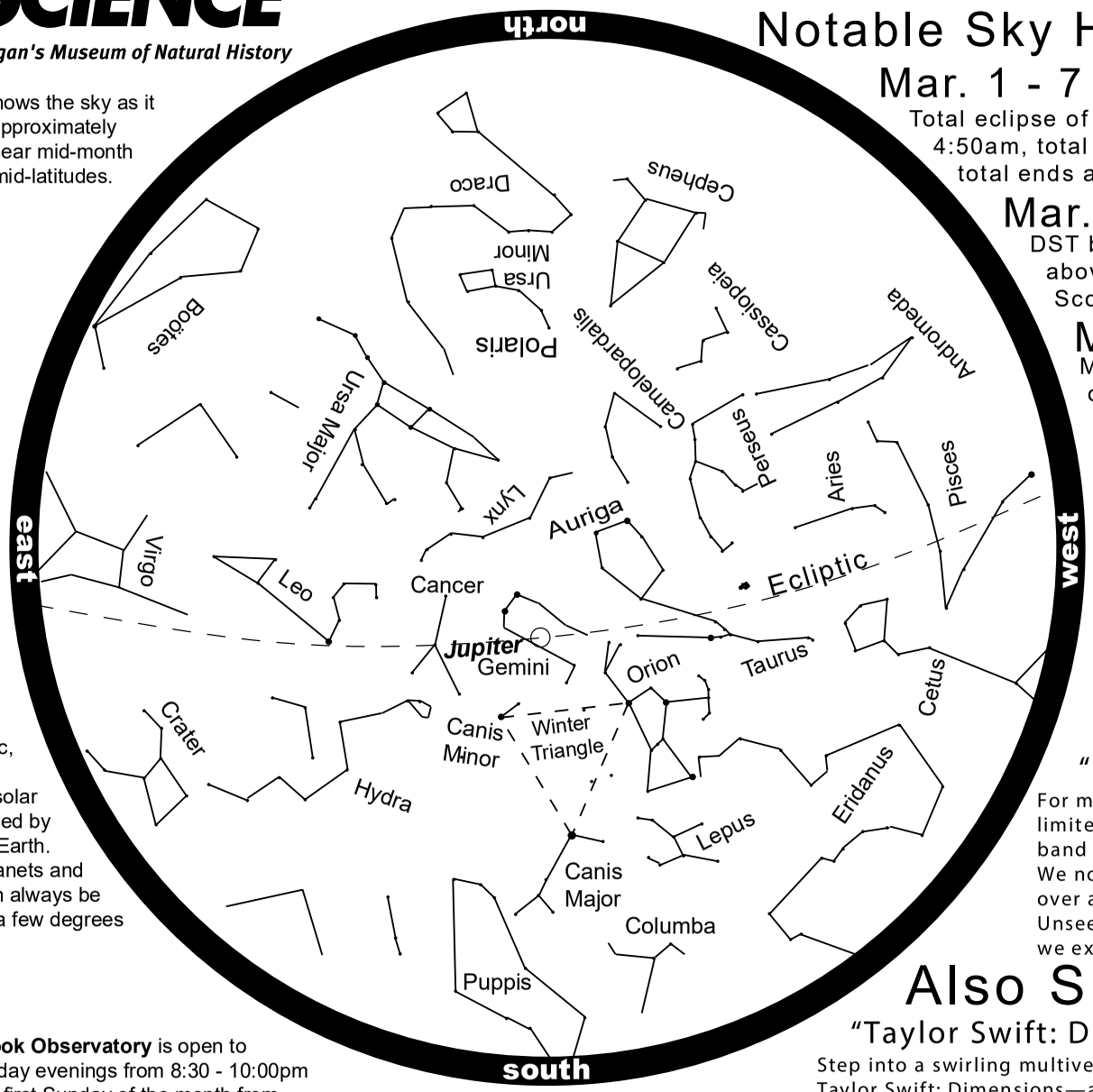
CRANBROOK INSTITUTE OF SCIENCE

Michigan's Museum of Natural History

MARCH 2026

Notable Sky Happenings

This chart shows the sky as it appears at approximately 10pm EDT near mid-month at northern mid-latitudes.



What is that dashed line? It's the ecliptic, the reference plane of the solar system, defined by the Sun and Earth. The major planets and the Moon can always be found within a few degrees of this plane.

The Cranbrook Observatory is open to the public Friday evenings from 8:30 - 10:00pm EDT, and the first Sunday of the month from 1:00 - 4:00pm for solar viewing.

For observatory information visit http://science.cranbrook.edu/explore/observatory

Mar. 1 - 7

Total eclipse of the Moon on the 3rd. Umbral begins at 4:50am, total begins at 6:04am, maximum is at 6:33am, total ends at 7:02am (times are EST for Detroit).

Mar. 8 - 14

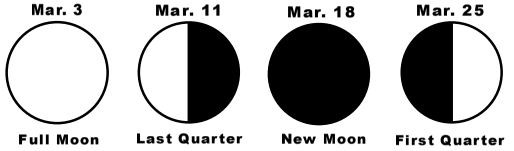
DST begins at 2:00am on the 8th. The star above the Moon on the 10th is Antares in Scorpius (S pre-dawn).

Mar. 15 - 21

March (Spring) Equinox is at 10:46am EDT on the 20th. Look for Venus below the two-day-old Moon around 8:15pm in the west on the 20th. Binoculars will help.

Mar. 22 - 31

Moon is right of Jupiter on the 25th and upper left on the 26th (SW evening).



Now Showing

"Unseen Universe"

For millions of years our view of the heavens has been limited by our eyes; allowing us to only see a narrow band of electromagnetic radiation we call visible light. We now have the technology to capture the Universe over an amazing width of the spectrum and beyond. Unseen Universe provides a stunning visual treat as we explore the latest splendors of the heavens.

Also Showing

"Taylor Swift: Dimensions"

Step into a swirling multiverse where mathematics and music collide in Taylor Swift: Dimensions—a stunning planetarium experience of breath-taking 360° visuals. From the tender acoustics of "Cardigan" to the electric energy of "Ready For It?" and the fun vibes of "Cruel Summer."

For astronomy information visit http://science.cranbrook.edu

Horsehead Nebula — Doug Bock

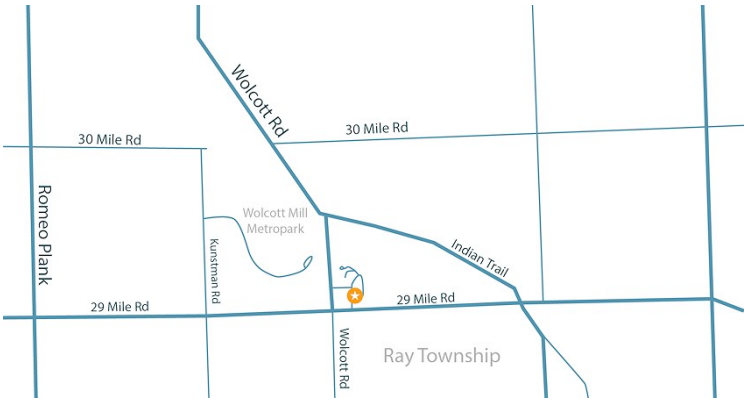
March

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 Cranbrook	3 Holi Total Lunar Eclipse(West Coast, Japan) FULL MOON	4	5	6	7
8 International Women's Day Daylight Saving Begins	9	10 Moon at Apogee: 404385 km	11 LAST QUARTER MOON	12	13	14
15	16	17 St. Patrick's Day	18 NEW MOON	19 Macomb	20 Vernal Equinox Eid al-Fitr	21
22 Moon at Perigee: 366858 km	23	24	25 FIRST QUARTER MOON	26	27	28 Stargate
29 Palm Sunday	30	31				

Stargate Observatory

Monthly Free Astronomy Open House and Star Party
7:00 PM, March 28
Wolcott Mill Park - Camp Rotary Entrance

- Sky tours.
- See different telescope types in operation.
- Get help with your telescope.
- We can schedule special presentations and outings for scouts, student or community groups.
- Contact: outreach@warrenastro.org
- Find us on Meetup.com



20505 29 Mile Rd (1.8 miles east of Romeo Plank Rd) Ray, MI 48096
82° 55'04" West Longitude, 42° 45'29" North Latitude

Observatory Rules:

- Closing time depends on weather, etc.
- May be closed one hour after opening time if no members arrive within the first hour.
- Contact the 2nd VP for other arrangements, such as late arrival time. Call 586-909-2052.
- An alternate person may be appointed to open.
- Members may arrive before or stay after the scheduled open house time.
- Dates are subject to change or cancellation depending on weather or staff availability.
- Postings to the Yahoo Group and/or email no later than 2 hours before starting time in case of date change or cancellation.
- It is best to call or email the 2nd VP at least 2 hours before the posted opening with any questions. Later emails may not be receivable (secondvp@warrenastro.org).
- Generally, only strong rain or snow will prevent the open house... the plan is to be there even if it is clouded over. Often, the weather is cloudy, but it clears up as the evening progresses.

Stargate Report

February Open House

The Observatory open house started at 5:30 pm. The sky was cloudy and snowing. about 12 people attended including members and visitors. We talked about the observatory and astronomy to the visitors. I gave the $800 from the sale of the Meade 12" SCT to the treasurer, Mark Miles. Mark also bought the Meade 10" SCT for $500 and the small Celestron 4" refractor for $50.

The open house closed at 7:30 pm after everyone left.

March Open House

The next open house is scheduled to start at 7:00 pm on Saturday, March 28, 2026.

Riyad I. Matti,
2026 WAS 2nd VP,
Observatory Chairperson

Treasury Report

For February 28, 2026

BOA Checking/cash box

Balance..... $20961.38

Income

Memberships..... 658.00

Cash Reward 63.85

Credit Card

Balance..... $0.00

PayPal

Balance..... $1091.15

Income

Memberships..... 287.26

Expenses

Refunds..... 66.64

Domain renewal 39.98

Membership

Members: 83

We wish to welcome Gregory Frederick to our membership

Reminder

It's a new year, don't forget to renew your membership.

Astronomical Events For March 2026

Add one hour for Daylight Saving Time

Source:

http://astropixels.com/almanac/almanac21/almanac2026est.html

Day	Time (h:m)	Event
2	7:00	Regulus 0.4°S of Moon
2	23:35	Moon at Descending Node
3	6:34	Total Lunar Eclipse; mag=1.151
3	6:38	FULL MOON
6	12:24	Spica 1.8°N of Moon
7	6:00	Mercury at Inferior Conjunction
10	6:32	Antares 0.7°N of Moon
10	8:43	Moon at Apogee: 404385 km
11	4:39	LAST QUARTER MOON
15	14:00	Mercury 3.4°N of Mars
17	9:07	Mercury 2.0°N of Moon
17	10:22	Moon at Ascending Node
17	16:51	Mars 1.5°S of Moon
18	20:23	NEW MOON
20	7:39	Venus 4.6°S of Moon
20	9:46	Vernal Equinox
22	5:00	Neptune in Conjunction with Sun
22	6:40	Moon at Perigee: 366858 km
23	3:32	Pleiades 1.1°S of Moon
25	3:00	Saturn in Conjunction with Sun
25	14:18	FIRST QUARTER MOON
26	2:00	Mars at Perihelion: 1.38126 AU
26	7:13	Jupiter 3.9°S of Moon
26	22:18	Pollux 3.0°N of Moon
29	14:00	Regulus 0.4°S of Moon
30	6:34	Moon at Descending Node

Meeting Minutes

Warren Astronomical Society

Board Meeting

1/26/2026

Board members present: Diane Hall, Jonathan Kade, Riyad Matti, Charlie Strackbein, Jeff MacLeod, Vatshalya Dandibhotla

WAS member: Dale Thieme

Diane Hall brought the meeting to order at 6:03

Officer Reports

President: Diane Hall observed that this was a new year, new board and looked at how the prior year went with this rundown: Stargate = good, Picnic = set, Banquet = success, Cranbrook = ongoing, Macomb = see Dale P. She pointed out the need to follow up on Charlie Strackbein's work with the Metro Park on improvements to Stargate. She pointed out we need a Treasurer and now, a secretary too. She spoke briefly about the financials of the Grand Rapids Amateur Astronomical Association, pointing out that they work at a much different level than us, so maybe not a good template. Finally, our own GLAAC needs officers.

1st VP: Jonathan Kade reported that he was chasing down our February 2 speaker, already contacted the March speakers. He's looking to have a crew of back-up presenters in case of a last minute no-show. Also looking for requests of what the members would like to see in a presentation (Budget Telescopes, Moons of Jupiter / Missions to Jupiter, Observing talks to name a few)

2nd VP: Riyad Matti reports that he has $800 cash in hand from the sale of the club 12". Is still looking for a right-angle finder for the 22" (from the $100 Hartwell gift). He needs calendar for the display case: one has been allocated and will be delivered by Tina Wong to Stargate. Most of our loaner scopes are out right now. A couple of leaks have recurred; Mark Kedzior and Riyad will take care of it once the weather is better. Spring Cleanup: April, need volunteers. Mark Kedzior completed upgrade to the 22".

Treasurer: Dale Thieme reported that he took care of the IRS e-postcard (keeping our existence as a non-profit alive.) He and Dave Baranski are keeping the ledger and roster up to date. Dale P, who offered to take on the treasurer duties, had surgery and might not make the Cranbrook meeting.

Secretary: Charlie Strackbein pointed out that AI assistance in note taking could make a future secretaries job much easier.

Outreach: Jeff MacLeod reported that the Jupiter January event was postponed to February (third Friday) and that we would be at Belleville Library, fourth Thursday of February - 6:30 PM.

Publications: Vatshalya Dandibhotla reported WASP is online for January, Dale Thieme pointed out that he needs reports for February issue.

Old Business

New room for Macomb next year - across the hall, Room E-208

Picnic shelter reserved for July, not August

Dale T turned in our 501[c]3 e-postcard

Mailer is out, thanks to Dale T

Auditorium is booked for 2nd Monday in September, thank you MMS.

By-Laws Update: Was read to the membership at the Cranbrook meeting, Dale T. will put in WASP, Announcement in mailer, Vote at Macomb.

Website updates: New board members need to be added, Special interest groups need to be cleaned up, Remove snacks(?), Extra curricular section - who we are needs to be updated. It was pointed out that the astronomy.fm link goes to scam site now.

Stargate Sub-committee: Charlie suggested they meet ½ hour before board meeting.

New Business

We need a Treasurer. We also need a PayPal account holder. It is currently in David Baranski's name with his SSN used to ID it. Discussion of who should take over ensues. Dale T agrees to take over as our PayPal Account operator and the Board approves.

We need a Secretary

Proposal to order a PayPal card reader - $30.74 - Jonathan makes a motion that we purchase the reader. Riyad seconds it. All in favor, motion passes. Jonathan orders the reader.

Discussion of Join/Renew button on website, snacks– need a snack captain. Send out e-blast: "Ask what you can do for the WAS".

Kevin Jerome Everson would like to use the K2 refractor to shoot his short film of the sun over several days in June. Riyad signs off on the plan.

Where is the WAS laptop and projector? Bob Trembley has them.

Question was raised: a Google phone number for club? Jonathan pointed out that we can buy it, but we have to upgrade to a paid-by-user plan. We have two users: Admin@warrenastro.org and history@warrenastro.org

Motion to adjourn made by Riyad Matti, seconded by Jonathan Kade.

Meeting adjourned at 7:06pm

Warren Astronomical Society

Cranbrook Meeting

2/2/2026

Diane Hall brought the meeting to order at 7:00pm. In attendance were 30 at Cranbrook, 19 on Zoom and 7 on YouTube.

Diane opened with the announcements that we are looking for a new secretary and snack captain. Dale Partin offered to serve as treasurer until we find that replacement.

Officer Reports

1st VP: Jonathan reported that the presentation calendar is filling up, asked for ideas on what members might want for presentations.

2nd VP: Riyad Matti said the last open house was canceled for weather, but the next one is still on. He also announced a clean up day for the April open house for the observatory.

Secretary: Charlie Strackbein read a letter of thanks to the membership. *Charlie's letter follows the meeting notes- Ed.*

Treasurer: Dale Partin is taking over for Dave Baranski.

Outreach: Jeff MacLeod announced that he will be distributing Outreach pins. Pointed out that Dale Partin would be speaking at 7 Ponds. Jonathan also mentioned an outreach event at the Belleville Library.

Publications: WASP is online.

Special Interest Groups

Diane pointed out the Solar Group needs a new leader since we no longer have Marty Kunz, Riyad Matti talked about some double star targets for the next open house, Tom Hagen was introduced as the new lead for Radio Astronomy.

David Levy then quoted from Henry David Thoreau.

Ask an Astronomer

Why are the four Galilean moons so diverse? Dale Partin pointed out that it results from the distance each are from Jupiter. Io is closest, and hottest from gravitational flexing, going out from there Europa, Ganymede have subsurface oceans and Callisto is the coldest, least affected by Jupiter.

Observing reports

Despite the Michigan weather issues, members did make some observations.

Short Talk

Jonathan introduced Tom Hagen, who spoke on "Monitoring Jupiter with Radio Waves"

Long Talk

Following the break Jonathan introduced John Monnier, who presented "Turning Six Telescopes into One: Interferometry"

The meeting concluded at 9:00pm

Warren Astronomical Society

Macomb Meeting

2/19/2026

Diane Hall called the meeting to order at 7:02pm with 14 in attendance at Macomb, 10 on Zoom and 6 on YouTube.

Following introductions, Diane announced that Mark Miles would be our next treasurer, so now we just need a secretary. Also needed is someone to be our Snack Captain, organizing volunteers to bring snacks to the meetings. Said volunteers would be reimbursed.

Jonathan Kade reported that we have an increasingly full calendar, but we are still eagerly accepting, petitions for presentations.

Finishing the officer reports, Diane pointed out that the fourth Saturday of the month will be our Stargate Open House. Hopefully the weather will be better than it was last month. And the double star group will be meeting as it meets whenever Riyad does his thing with the big telescope, so the double star subgroup will be convening also at Stargate.

For the treasurer report, Diane pointed out that memberships could still be renewed through PayPal (with Jonathan commenting that he had the credit card reader available). She then mentioned, in the absence of a secretary, Dale Thieme was handling meeting notes.

She then announced the Cranbrook outreach event for Friday, the 20th was canceled due to weather. But the Belleville event for the next weekend was still on. The group was informed of another Cranbrook event scheduled for August.

Special Interest Groups

Solar: Sun is still very active.

Radio: There is interest brewing in this category. Tom Hagen is the coordinator for this group.

Other groups are encouraged, such as reviving the Urban Astronomy Club. That was fun back in the day, when we would show up at light-polluted parks and show people what we could, which was actually pretty fun. We also used to have a, computer group. If anybody really wants to do a computer group, we could revive that.

Observing

Dale Hollenbaugh shared images he took of the Carina Nebula (with his Seestar) and Jupiter (through a friend's 14" telescope) during a trip to Curacao.

David Levy then shared a quotation from William Blake's Auguries of Innocence (published in 1803):

> To see the world in a grain of sand
> And to heaven on a wildflower
> Hold infinity in the palm of your hand
> And eternity, in an hour

Ask an Astronomer

Jonathan Kade wondered if anyone knew what kind of nebula the Keyhole Nebula (associated with the Carina Nebula) was. Discussion ensued with Jonathan con-

cluding with a "homework assignment": Jonathan would like to invite everybody to, on their own time, look up the nebula, the dark nebula, inside Carina Nebula, known as Defiant Finger.

Main Feature

Following the break, Jonathan introduced the first presentation, "Astronomy Discoveries in 2025- beyond the Solar System" by Dale Partin, who spoke on the Status of Dark Energy, Is Dark Matter Made from Quarks?, JWST Detected 'Little Red Dots', Most Massive Black Hole Discovered, Andromeda and the Milky Way to Collide (or miss), Exoplanet Discoveries with a closer look at the Trappist system, and New Instruments for 2026. His presentation was followed by Ken Bertin's "Solar System Highlights", covering "China reached out to NASA to avoid a potential satellite collision in its first-of-kind space cooperation", Lac Rouge suddenly disappeared in Quebec, the James Webb Telescope takes its first look at the interstellar comet, a 3I-atlas, The Earth will spin faster today to create the second shortest day in history (last summer), Failed Soviet Venus Lander KOSMOS 482 Crashes to Earth After 53 Years in Orbit, Russian 'Noah's Ark' Satellite Carrying 75 Mice and 1,500 Flies Lands Back on Earth, Cosmonaut Removed from SpaceX's Crew 12 Mission for Violating National Security Rules, Scientists Analyze 76 Million Radio Telescope Images, Find Starlink Satellite Interference 'Where No Signals Are Supposed to be Present', What Time Was Sept. 7 Blood Moon Total Lunar Eclipse?, Nasa's Perseverance Rover Hits the Mars Rock Gold Mine: 'It Has Been All We Had Hoped for And More', Northern Lights Were Visible in 23 US States June 1, Trump Signed Bill Which Included $85 Million to Move Space Shuttle Discovery From Smithsonian to Texas, Caltech Researchers Find Evidence of a Real Ninth Planet, More on Comet 3I/Atlas, and Mars rover finds organics believed to be fatty acids.

The meeting concluded at 9:03pm.

Dear WAS membership,

I want to take a moment to say thank you.

Serving this organization has truly been a joy. It has been an honor to contribute, to learn, and to grow alongside such a thoughtful and passionate group of people. I've gained more knowledge and perspective than I ever expected, and I'm genuinely grateful for the opportunity to have served.

As I step back into the role of a participating member, I do so with a full heart and a deep appreciation for this community. I look forward to continuing to learn, observe, and enjoy astronomy together—especially our first Monday meetings at Cranbrook and our third Thursday meetings in Macomb. Both have always been not only educational, but welcoming, engaging, and a lot of fun.

Thank you for the trust, the camaraderie, and the shared curiosity that make this group so special. I'm thankful for the experience and excited to remain part of it.

With sincere gratitude,

Charles

The Warren Astronomical Society is a proud member of the

Great Lakes Association of Astronomy Clubs

GLAAC is an association of amateur astronomy clubs in Southeastern Michigan who have banded together to provide enjoyable, family-oriented activities that focus on astronomy and space sciences.

Club Name and Website	City	Meeting Times
Astronomy Club at Eastern Michigan	University Ypsilanti/EMU	Every Thursday at 7:30PM in 402 Sherzer
Capital Area Astronomy Club	MSU/Abrams Planetarium	First Wednesday of each month 7:30 PM
Farmington Community Stargazers	Farmington Hills	Members: Last Tuesday of the month Public observing: 2nd Tuesday of the month
Ford Amateur Astronomy Club	Dearborn	Fourth Thursday of every month (except November and December) at 7:00 PM
McMath-Hulbert Astronomy Society	Lake Angelus	Board and paid members-First Sunday of the month
Oakland Astronomy Club	Rochester	Second Sunday of every month (except May)
Seven Ponds Astronomy Club	Dryden	Monthly: generally the Saturday closest to new Moon
Sunset Astronomical Society	Bay City/Delta College Planetarium	Second Friday of every month
University Lowbrow Astronomers	Ann Arbor	Third Friday of every month
Warren Astronomical Society	Bloomfield Hills/Cranbrook & Warren/MCC	First Monday & third Thursday of every month 7:30 PM

Club and Society Newsletters

Warren Astronomical Society: http://www.warrenastro.org/was/newsletter/
Oakland Astronomy Club: http://oaklandastronomy.net/
McMath-Hulbert Astronomy Club http://www.mcmathhulbert.org/solar/newsletter/
Ford Amateur Astronomy Club: http://www.fordastronomyclub.com/starstuff/index.html
University Lowbrow Astronomers: http://www.umich.edu/~lowbrows/reflections/

WAS Member Websites

Steven Aggas: http://apache-sitgreaves.org/

Jon Blum: Astronomy at JonRosie

Doug Bock:

Facebook: Northern Cross Observatory: https://www.facebook.com/NorthernCrossObservatory

Boon Hill and NCO Discussion https://www.facebook.com/groups/369811479741758

Flickr (astrophotography album): https://www.flickr.com/photos/141833769@N05/

YouTube channel: https://www.youtube.com/channel/UC-gG8v41t39oc-bL0TgPS6w

Bob Trembley:

https://www.vaticanobservatory.org/profile/rtrembley

Vatican Observatory Foundation Blog

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