REFLECTIONS / REFRACTIONS

University Lowbrow Astronomers Monthly Newsletter

June 2023, Vol 47, Issue 6

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M101 with SN2023IXF

BY HOWARD RITTER

I stacked four hours of subs I'd taken of M101 for the SN and decided that it wasn't a significant improvement on the two-hour integration as far as illustrating the SN was concerned. I played around with it because M101 seems to have a lot of outlying clumps of stars and gas, and since I didn't like the color cast (I'm not yet doing SPCC in PI), I converted it to mono. The final result provides a different take on the galaxy, one focused not on the SN and the color but on luminosity and the deep outlying stuff.

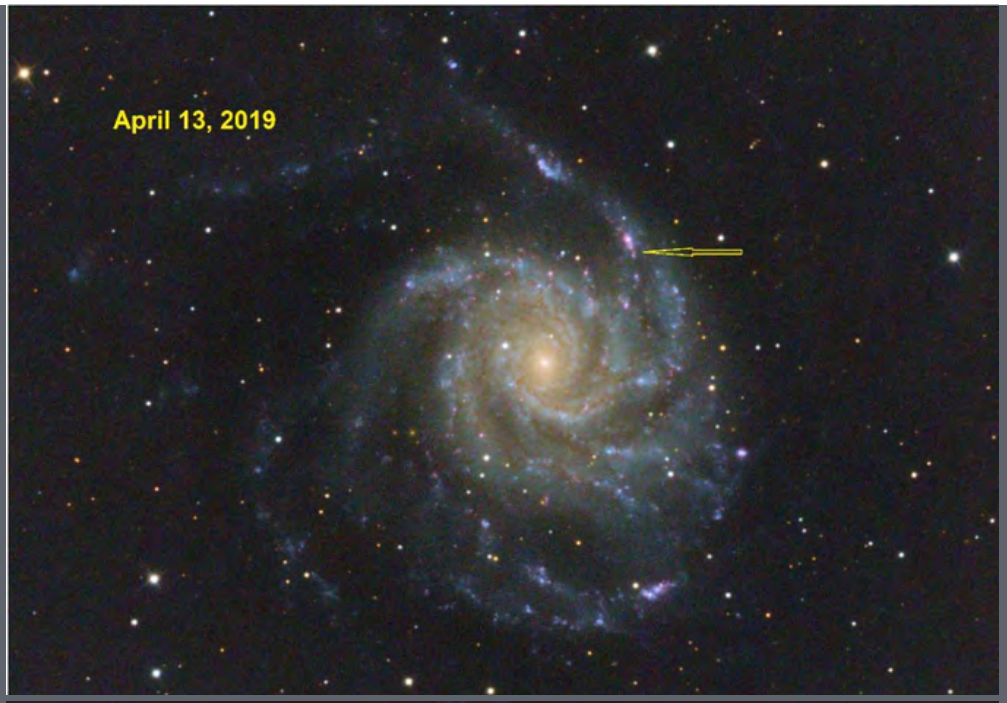
Many more photos of SN2023ixf feature elsewhere in this month's issue as well as our latest edition of the Objective Lens.

FROM THE DESK OF THE NORTHERN CROSS OBSERVATORY

BY DOUG BOCK

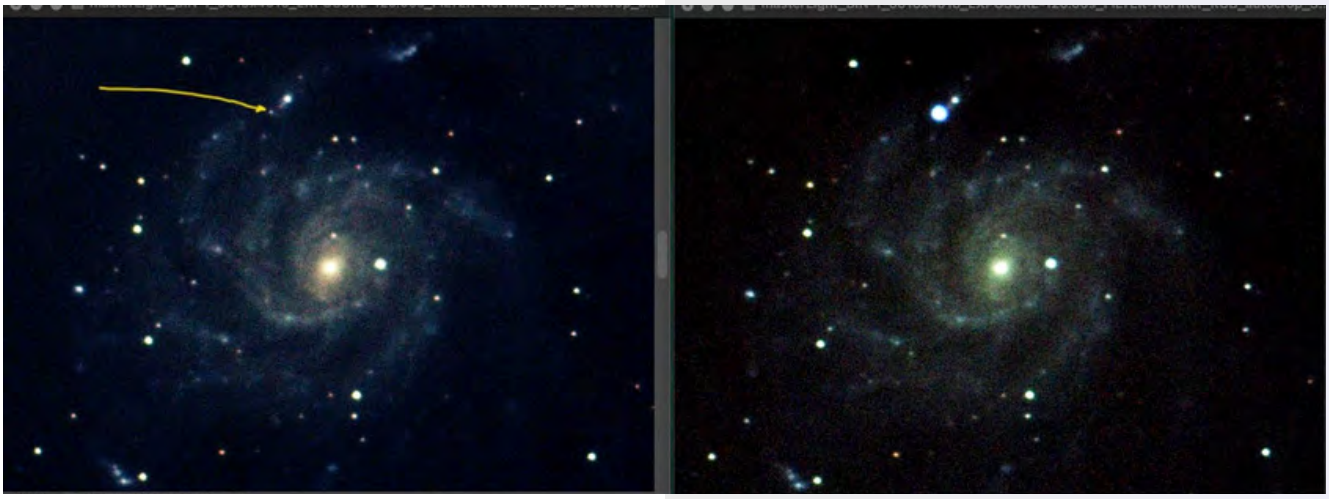
This month, the big news is a supernova in Messier 101. The Pinwheel Galaxy is a face-on spiral galaxy 21 million light-years away in the constellation Ursa Major. Pierre Méchain discovered it in 1781 and it was communicated to Charles Messier that year, who verified its position for inclusion in his Messier Catalogue as one of its final entries.

SN 2023ixf was discovered on May 19th, 2023 by Koichi Itagaki. I collected data on May 26th, 2023 using the 10" f/8 RC in my observatory. I then compared this image with one I took in 2019. As you can see, it isn't there in 2019 but is obvious now.



DISCOVERING SN2023IXF

BY BRIAN WALKOWSKI



These two pages detail the email exchange between Brian Walkowski, Howard Ritter, and Dipankar Maitra, as it becomes clear that Brian has captured the beginning of SN2023ixf in M101.

BRIAN: [from email on May 23]
It just so happened I targeted M101 on the evening of May 18. I had programmed to shoot 100 frames ISO 800 for 120 seconds on my Nikon d5300 attached to the Televue Genesis F5. Hearing of the new supernova, I set to processing and set up again to shoot. This was my first opportunity since clouds early limited me to 88 frames of 120-sec exposures.

My feeling was I needed more data for a nice end product. I processed it with PixInsight and the script WeightBatchPreprocessing, then exported to TIF and brought it into Photoshop to pull out detail. It's just over three hours of light captured on an OSC camera. But above is a pretty equal comparison of m101 four nights apart. This is also a screen capture, which won't help with detail, but the effect is there. This very dramatic change is exciting for me to share. I hope you enjoy it, too.

BRIAN: [from email on May 27]
It was suggested to me in my first post of 2023IXF from Buffalo, that what I had in my first photo was the start of the supernova. I've been looking at sites and have been sent a few links to look at and I decided to look at my data a little more closely; also looking at data from the previous night. In conclusion, it does appear what I captured is the start.

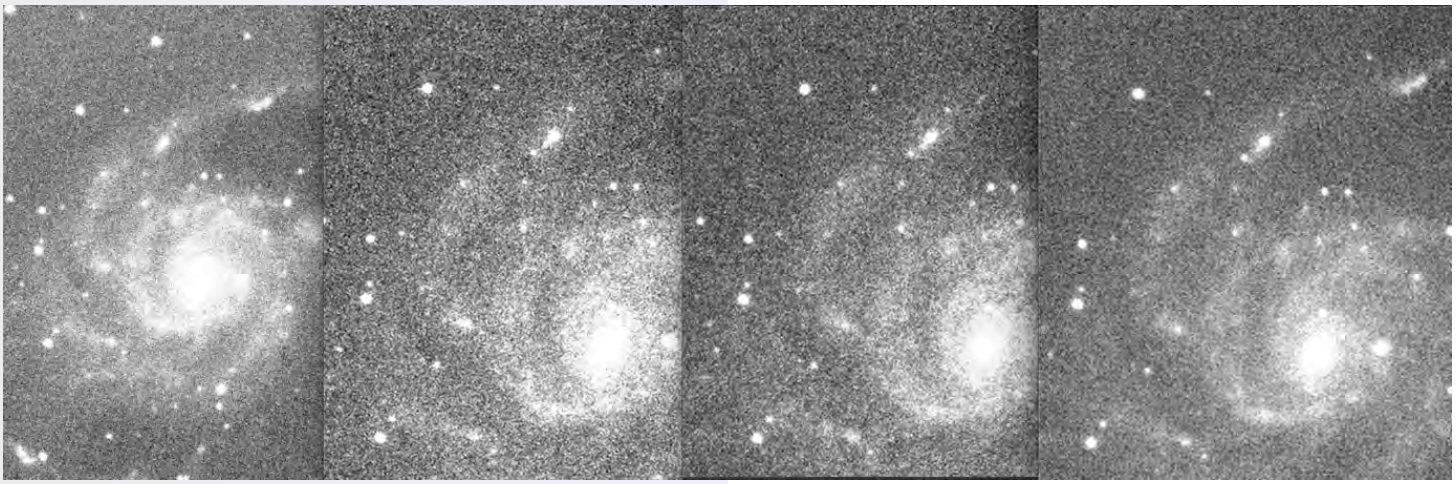
All my frames are 120 seconds and I've had to zoom in a lot so the data starts to pixelate. I preprocessed everything the same in PixInsight, then pulled it into Photoshop and only adjusted levels by pulling the sliders in on R,G and B channels individually, then set to Black and White. I'm really looking to see what I can learn about the Nova and when it first appeared to us Earthlings.

Left to right in the image **[next page]**

1 - Frames from 5/18 midnight-3 AM EDST. There's nothing there. This is my baseline and to me proves what appears in the following evening is the start of the supernova.
2 - Frames from 5/18 11:19 PM -11:58 PM EDST
3 - Frames from 5/19 12:01 AM -12:59 AM EDST
4 - Frames from 5/19 1:01 AM - 1:47AM EDST

I know the scientific community uses UTC so in Buffalo we are UTC-4 in Daylight Saving time. Therefore, the second frame from the left is 5/19 04:19 - 04:58 UTC.

DISCOVERING SN2023IXF continues**,** p. 4



In Frames 2, 3, and 4, there seems to be an enlarging area. When I zoomed in as much as I could, there were several pixel differences between frames 2 and 4. Inconclusive between frames 2 and 3, but there is a difference between 3 and 4.

What did I get that night? I just happened to be shooting M101. Apparently, I caught the start of SN2023IXF. I've looked, but I haven't seen any official time of discovery or time of the event starting to be visible. I think I can say from my data it started in the hours prior to May 19 at 4:00 UTC. For me, that's about the best I can do. Really cool!

HOWARD: That's a very decisive sequence, Brian. There's an unquestionably new feature in frame number 2, whose midpoint was one day after
frame 1, and it looks brighter by frame 4 less than two hours later. The official time of discovery was May 19.7 UTC, which would be ~1000 minutes after the start of the day, or 1640 UTC, some 12 hours after your discovery image! Ah, if only...!

I haven't been able to find any professional estimate of the breakout time when it first would have become visible.

DIPANKAR: I echo Howard that these are indeed an excellent and crucial sequence! From what I've come across so far, "[t]he onset of the supernova explosion was captured by a serendipitous imaging session by Yiming Mao using a 0.11-m f/6.5 refractor at Dabancheng, Xinjiang, China. Mao obtained 60 5-min exposures from 2023 May 18 16:05 to 21:26 UT. The supernova was invisible in a 11×5-min running stack centered at 19:32 UT but became visible in a 11×5-min stack centered at 20:29 UT." So it looks like the supernova indeed went off between your first two frames! ■

UPCOMING MEETING SPEAKER SCHEDULE

June 16: Jim Shedlowski.

Topic: ***Orbital Light Pollution (see preview below, p. 9)***

July 21: Norbert Vance, Director of Sherzer Observatory @ EMU.

Topic: ***The updated planetarium***

August 18: Tamas Gombosi, UM Center for Space Environment Modeling

Topic: ***TBA, about solar wind***

September 15: Avital Keeley-Polston, EMU Physics.

Topic: ***TBD, likely about the Oort Cloud***

October 20: Dr. Brian Ottum, club VP.

Topic: ***Preparing for Next Year's Eclipse***

November 17: TBA

JUNE OBSERVING AT PEACH MOUNTAIN

BY JIM FORRESTER

Radio Telescope at Peach Mountain.

Observing on the Hill this month begins with Member Nights (guests welcome) starting Thursday, June 8. A 60% lit moon rises at 1:35 AM Friday morning, thus ending the session. Member Nights will end this month on the Summer Solstice, Wednesday, June 21, when the 13% lit moon sets at 12:13 AM Thursday morning. As Astronomical Twilight won't end until about 11:30 PM, observing will extend to 2:00 AM. We intend to lock the gate by 2:30 AM.

The North Territorial Road Gate will be false locked by 8:30 PM on the nights we open. Sunsets in June will be as late as 9:16 PM. An email will be sent out before the end of the afternoon the day of, announcing if the Hill will be open that evening.

There are several club events this month during the dark of the moon. Saturday, June 10 we will be showing the night sky to Girl Scouts at the Hudson Mills Metro Park group camp, located on the west side of Huron River Drive, just north of North Territorial Road. Peach Mt. will not be open that evening. Friday, June 16 is the Monthly Club Meeting at 7:30 PM at the Detroit Observatory on the University's Central Campus. Area amateur astronomer Jim Shedlowski will be discussing "Orbital Light Pollution." Depending on member interest at the meeting, the Hill may (or may not) be opened 30 minutes after adjournment.

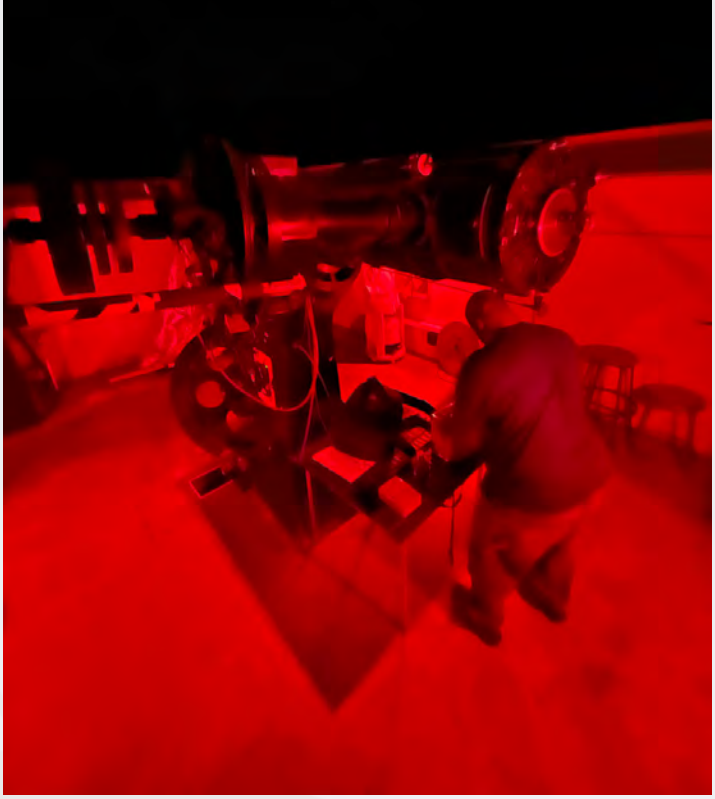
The June Open Houses are Saturday, June 17, and Saturday, June 24. On June 24, a nearly quarter moon will be in the sky until well after 1:00 AM Sunday morning. This will be an "Observe the Moon" night as the planets will still be in the morning sky. So, brush up on your lunar geography; moon landing sites, and various nations' plans to return humans to the moon's surface Open Houses officially end at 12:30 AM, but we generally accommodate those wishing to observe later into the night. The gate will also open a bit earlier at 8:15 PM.

JUNE OBSERVING AT PEACH MOUNTAIN continues, p. 6

Members are needed for all events. Open House Coordinators (OHC) are needed for both June 17 and 24. During the week before, you have to round up members (via email) to attend and recruit a McMath operator. Most difficult is the weather call. Will the afternoon's clouds dissipate by sunset? Or is the event cancelled? This will be your decision, which has to be announced (again via email) by 4:00 PM that afternoon. There is no penalty for making a wrong call. Every past OHC has, at least once, had members setting up under clouds or sitting home on a clear night.

You don't have to worry about the gate, one of the club's three key holders will open it. Before the public arrives, traffic cones need to be put out to indicate parking -- and some red LED lights set out along the road to the Observatory. All visitors have to be greeted and all members are expected to help the OHC with this task. The public needs to be told to keep their phones in their pockets, use no white lights, and shown the path to the Observatory.

Most importantly, especially if you're new to the duty, you will not be left on your own. The first time out, you'll be shown everything. You'll even get help with the weather call. Being new is no reason to not take on organizing an Open House.



Adrian Bradley operates the McMatch telescope in 2022.

Open Houses are a great opportunity if you wish to learn to operate the McMath or the club's go-to 17.5" telescope. With enough experience, you'll be able to operate either the McMath or the club's 17.5" telescope on your own. And with a long enough track record with the club, you'll be allowed to haul the 17.5" telescope to any dark site in the lower 48 states you may wish to go. ■

'METEOR NIGHT' AT CROSSWINDS MARSH

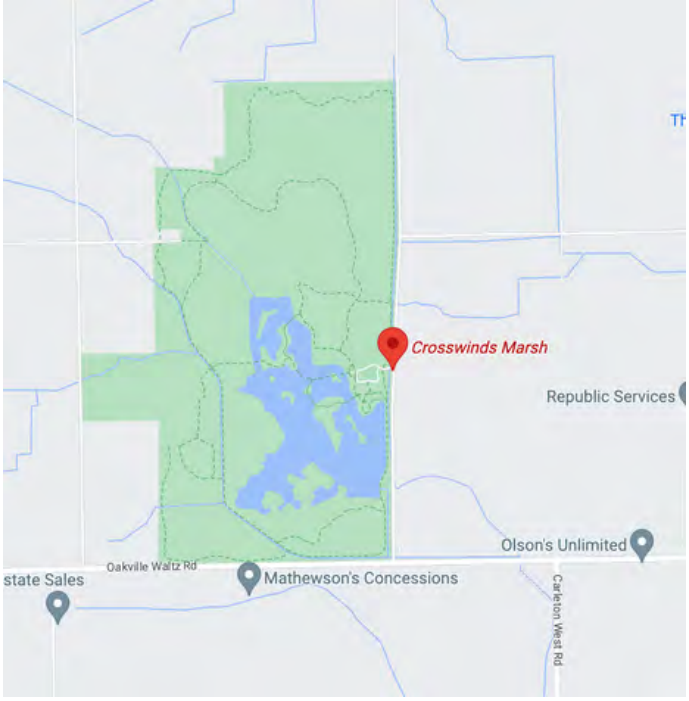
BY ADRIAN BRADLEY

On May 5, I had the pleasure of doing a Lowbrow outreach event at Crosswinds Marsh. They wanted to do a meteor observation and have me there to answer questions.

It was a cool night and I brought a telescope to aim at the moon; Venus (to show its phase), and M44, the Beehive cluster. The event was from 9 PM to midnight when moonrise occurred.

About 30 people came to the event, along with another gentleman who had a small telescope. They also had some tabletop scopes that appeared to be well out of collimation. Unfortunately, I didn't have a tool on hand to help fix that.

A great time was had by all and I told them to let me know when they were going to plan another event like this. I would be happy to come out. ■



SUNSPOTS!

PHOTOS BY CLUB MEMBERS

Wildfires in Canada caused much consternation for club members over the past month. Both observers and imagers had to pack it in or settle for poor seeing. On the other hand, the hazy conditions were responsible for some lovely sunsets and sunrises. They also served as a handy filter for observing sunspots. ■

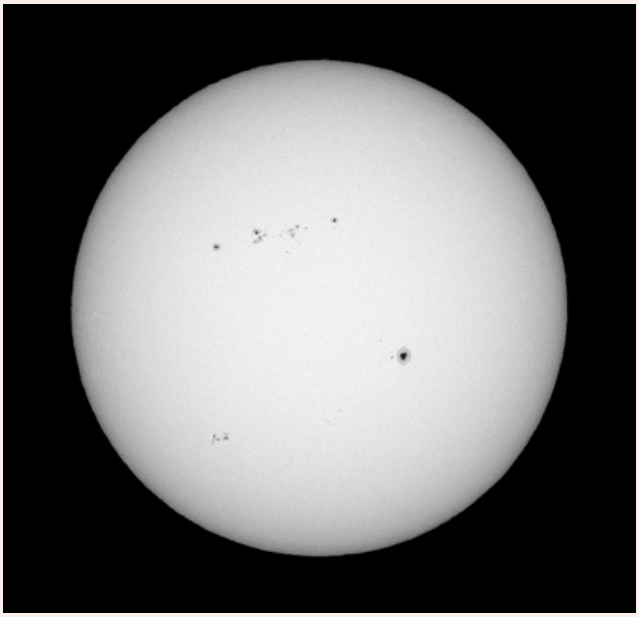


Photo above from DOUG SCOBEL. Cropped image taken with DSLR and a 400mm lens fitted with a Baader solar safety film filter.

Photo above from AMY CANTU. Cropped image taken with DSLR at 300mm.

Above phots from DMITRI TSAHELNIK.

Additional photos, p. 10

PREVIEW OF JIM SHEDLOWSKY'S JUNE PRESENTATION

Astronomers -- amateurs and professionals -- have a common enemy: Light Pollution. To battle this obstacle, we have developed strategies and tactics to mitigate its interference with most of our observations, photographs, or measurements. We can avoid or control artificial light, shield it, filter it, or move to a darker site. We can limit observing to moonless periods.

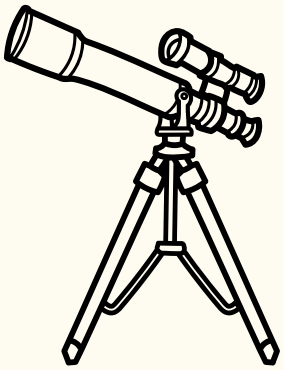
In recent years, unfortunately, there has developed an insidious new form of light pollution that threatens astronomy as never before. A “growing glow of light” now encircles the earth from the integrated reflections from the more than 6000 or so active and defunct satellites, along with the millions of smaller pieces of space debris in orbit. The impending explosive growth of LEO satellite constellations will add tens of thousands or even hundreds of thousands of satellites to exacerbate the concerns for this already measurable effect on our night sky brightness.

My presentation will describe how this current, largely unregulated situation has developed, its impact on astronomy -- and its future potential as “an existential threat to astronomy”. (Physics Today, April 2022, Page 28)

Jim Shedlowsky, a long-time member and former treasurer of the Warren Astronomical Society (WAS) -- and rockabilly legend -- has worked for 36 years as a Vehicle Development Engineer/Manager, specializing in Acoustics and Noise & Vibration. He graduated from the University of Michigan in 1960 with a degree in Engineering Physics and spent two years as an artillery officer in the U.S. Army in Germany. In his spare time, he wrote and recorded music for Epic and Roulette Records as one of the “Skee Brothers” (they were on Dick Clark’s “Bandstand” in 1958). Jim’s astronomical interests include observation and outreach (he owns several telescopes), but in recent years astronomical history and technology have become a major passion. He's the Vice President and Historian of the McMath-Hulbert Astronomical Society and has visited a number of major observatories.

Jim and his wife winter in Mesa, Arizona and he participates in activities of the Superstition Mountain Astronomical League. He took part in the “All Arizona Messier Marathon” in March of 2009, earning a certificate for observing 104 Messier Objects in one night. ■

UPCOMING TOPICS FOR THE OBJECTIVE LENS



BY JACK SPRAGUE

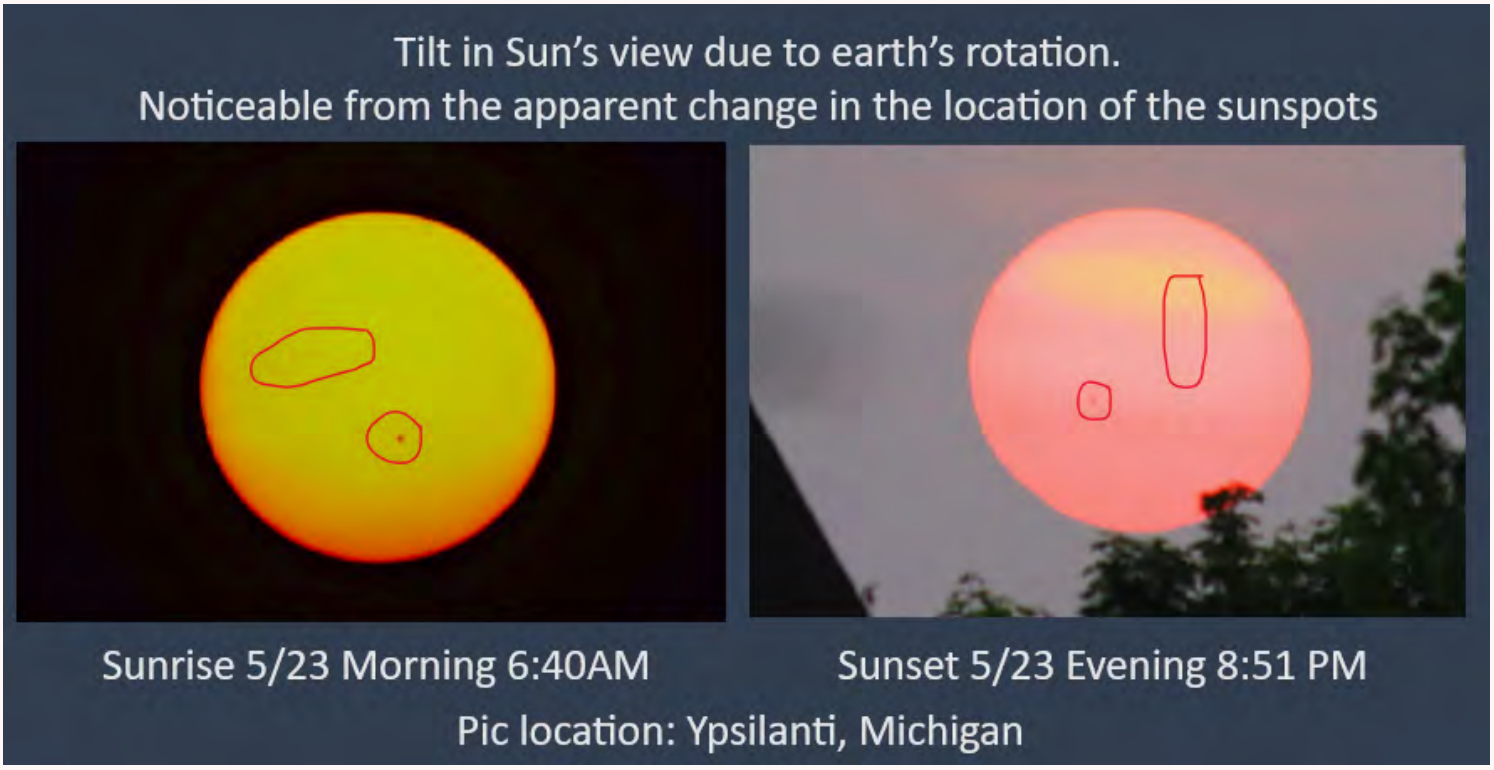
Objective Lens Update:

All images are welcome and while we have a monthly theme, we love any submission.

July – Skyscapes of Michigan. Daytime –- clouds and weather appreciated – or nightscapes. Stellar objects are also welcome.

August – It is time to celebrate … the clusters. Balls of stars either globular (the senior citizens of the near-Milky Way environs) or open. I enjoy the billiard-ball / black velvet sort effect from those of uniform star sizes; but, the open clusters with stars of differing magnitudes across the whole FOV are interesting to parse into concealed asterisms. More than one trace sailboats in my eyes. Nevertheless, let's show our fine focus and capture the conglomeration of stellar lightning bugs from summer (late spring?) nights.

September – A lovely summer interlude following the excitement of galaxy season and then cluster season brings what? Stars and asterisms. It is fun to share those little tidy bits of information about stars – coloration, splitting, variability (certainly welcome facts!). I'm unduly attracted to carbon stars of late. A walk though anything by Sue French or other references (Phil Harrington's **The Deep Sky** is especially nice) will show all sorts of information about what we think are mundane points of light but which have fascinating histories. September is about stars and asterisms and feel free to share a sentence or two of why your selection is of interest to you.
Finding out why astronomers like things is usually even more interesting than the thing itself! ■



Photos from YOGESH CHAVARKAR

University Lowbrow Astronomers: Meeting Minutes, May 19, 2023

Departing from the usual order of business, the club business meeting was held before the speaker's program.

President Charlie Nielsen: Our June meeting will be held at the Detroit Observatory. Our July meeting will be held at the Eastern Michigan University Planetarium. Subsequent meetings in 2023 will be at the Detroit Observatory.

Vice President Jim Forrester: Three member nights were held since the last meeting, one well attended and the others rather solitary. The May 20 Open House will happen, members and scopes needed. The June Open House dates are the 17th and 24h. Open House Coordinators, McMath Operators and members and scopes needed.

Vice President Dave Snyder: He and Amy Cantu have been converting old newsletters to PDF files and posting them to the new website. The club has produce approximately 500 issues of the newsletter, but about 100 are missing. 120 newsletters have been moved. Dave also made the arrangements for tonight's meeting.

Observatory Director Jack Brisbin: The materials and equipment we ordered last month have been located and installed in the Observatory and ready to go for the Open House.

Newsletter Editor Amy Cantu: Thanks for sending in those newsletter articles! Keep sending in those newsletter articles!

Treasurer Doug Scobel:

- We have 200 memberships (yippee!) and $14,123.36 in the treasury.
- I have contacted all members regarding our annual renewal/signup for individuals' membership in the Astronomical League, coming up at the end of June. Still only $7.50 for a year!
- Besides our usual monthly costs for the Open House "hotline" and printed newsletter printing and mailing costs, our only recent expenditure since last month's meeting was $20.40 to send t-shirts to our March and April speakers M. Akhavan-Tafti & J. Morgenthaler, respectively.

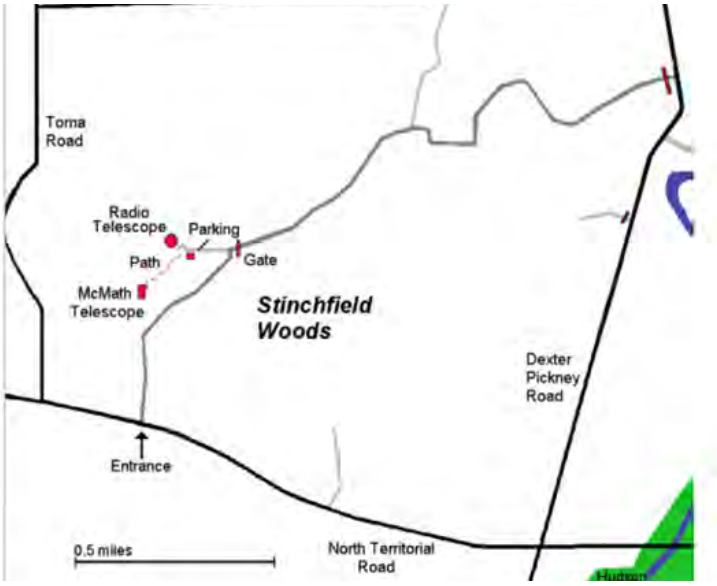
The meeting was held at the University's Planetarium in the new Museum of Natural History. Planetarium Director Buddy Stark gave those present an exciting demonstration of the Planetarium's capabilities.

Minutes taken and submitted by,
Vice President Jim Forrester

PLACES & TIMES

Monthly meetings of the University Lowbrow Astronomers are held on the third Friday of each month at 7:30 p.m. The location is usually the Judy & Stanley Frankel Detroit Observatory. The Observatory is located at 1398 E. Ann St., Ann Arbor. The Ann Street Parking Structure (M86), the Catherine Street Structure (M5), the Glen Street Structure (M61), and the School of Public Health II Lot are usually open after 6:00 p.m. Mon-Fri. The M86 structure is closest to the Detroit Observatory.

Peach Mountain Observatory is the home of the University of Michigan's 25-meter radio telescope and McMath 24" telescope, which is maintained and operated by the Lowbrows. The entrance is addressed at 10280 North Territorial Road, Dexter MI, which is 1.1 miles west of Dexter-Pinckney Rd. A maize and blue sign marks the gate. Follow the gravel road to the top of the hill to a parking area south of the radiotelescope, then walk about 100 yards along the path west of the fence to reach the McMath Observatory.



PUBLIC OPEN HOUSE / STAR PARTIES

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mt. Observatory but are usually canceled if the forecast is for clouds or temperatures below 10 degrees F. For the most up-to-date info on the Open House / Star Party status call: (734) 975-3248 after 4 pm. Many members bring their telescope to share with the public and visitors are welcome to do the same. Mosquitoes can be numerous, so be prepared with bug repellent. Evenings can be cold so dress accordingly.

MEMBERSHIP

Annual dues are $30 for individuals and families, or $20 for full time tudents and seniors age 55+. If you live outside of Michigan's Lower Peninsula then dues are just $5.00. Membership lets you access our monthly newsletter online and use the 24" McMath telescope (after some training). Dues can be paid by PayPal or by mailing a check. For details about joining the Lowbrows, contact the club treasurer at: lowbrowdoug@gmail.com

Lowbrow members can obtain a discount on these magazine subscriptions:

Sky & Telescope - $43.95/year

Astronomy - $34.00/year, $60.00/2 years or $83.00/3 years

Newsletter Contributions:
Members and non-members are encouraged to write about any astronomy-related topic. Contact the Newsletter Editor: Amy Cantu cantu.amy@gmail.com to discuss format. Announcements, article, and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers:

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	Jim Forrester
	Brian Ottum
	Dave Snyder
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Observatory Director:	Jack Brisbin
Newsletter Editor:	Amy Cantu
Key-holders:	Jim Forrester
	Jack Brisbin
	Charlie Nielsen
Webmaster:	Krishna Rao
Online Coordinator	Jeff Kopmanis

A NOTE ON KEYS: The Club currently has three keys to the Observatory and the North Territorial Road gate to Peach Mountain. University policy limits possession of keys to those whom they are issued. If you desire access to the property at an unscheduled time, contact one of the key-holders. Lowbrow policy is to provide as much member access as possible.

Lowbrow's Home Page
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STAMP