



Observatory Mirror Arrives in Ann Arbor, 1937

By Charles Steele

Back in May a series of emails started circulating about a telescope mirror arriving in Ann Arbor from some old records but apparently never being used. This mirror was thought to have been a test pouring of a 98" mirror prior to the pouring of the Hale 200" mirror. It was reported this mirror is now on display in England. Then Paul Walkowski thought we were talking about a 27" refractor lens which is here in Ann Arbor. Some comments were made about putting the lens to use rather than letting it collect dust. However as Paul pointed out a traditional German Mount refractor of that size with a 40' focal length would require an enormous size building to house it and a very large sturdy mount and a mammoth tube. The scale would be on the order of the Naval Observatory in Washington DC. All very expensive. As a retired Industrial Designer this got me to thinking. Could we design a telescope to use the 27" lens without a heavy duty tube, a huge building and a massive German Mount?



McMath-Pierce Solar Telescope

So I remembered the Kitt Peak National Solar Telescope opened in 1962 which has a very interesting design. This telescope has a flat Heliostat Mirror which directs sun light down an angled shaft which is aligned to the north celestial pole to the main telescope reflector mirror. The flat mirror then is mounted with a movable axis also to the celestial pole in such a way that to track the sun, only the one axis has to move. This simplifies the clock drive mechanism. One nice feature of this design is the image can be directed to a stationary location.

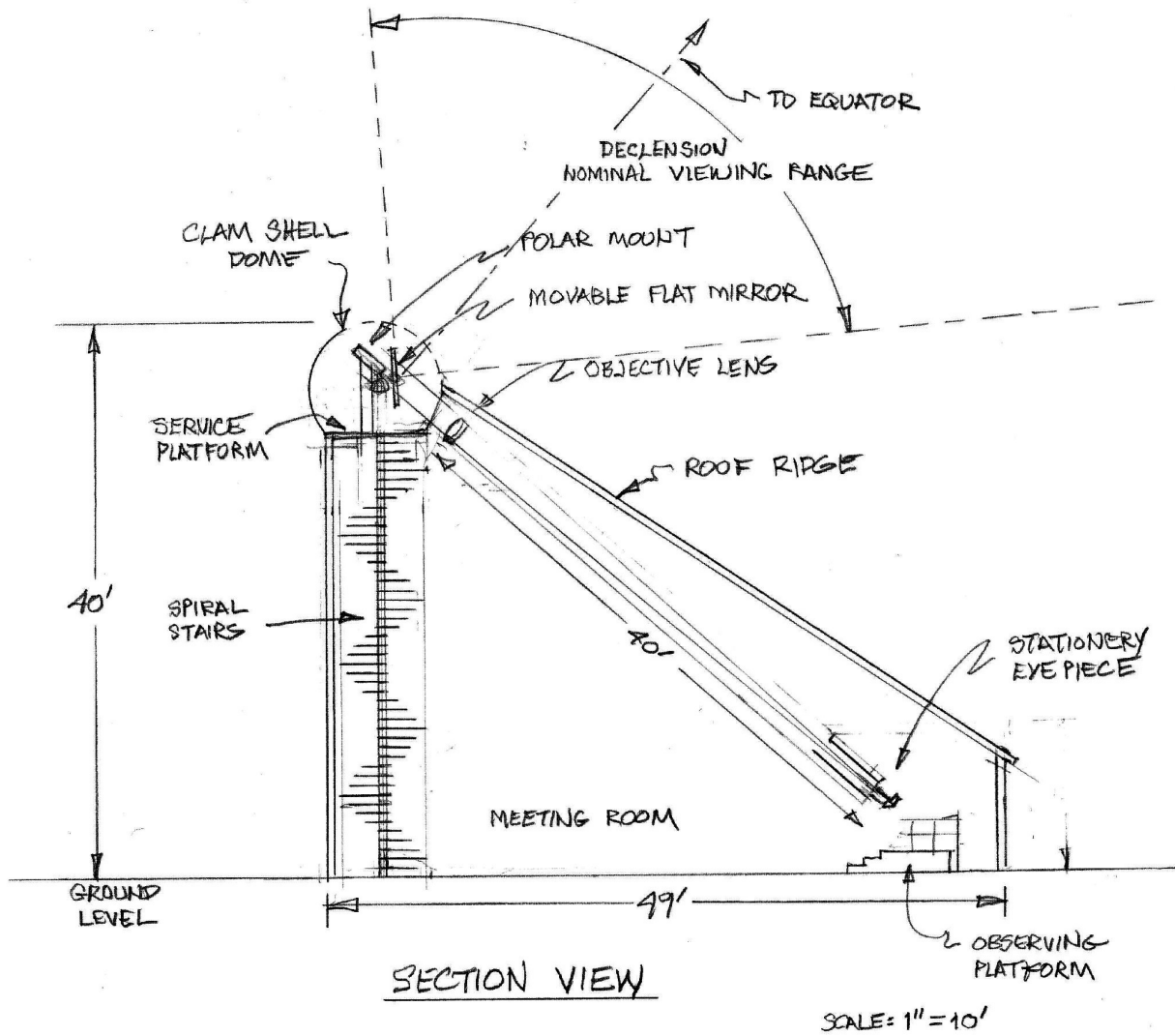
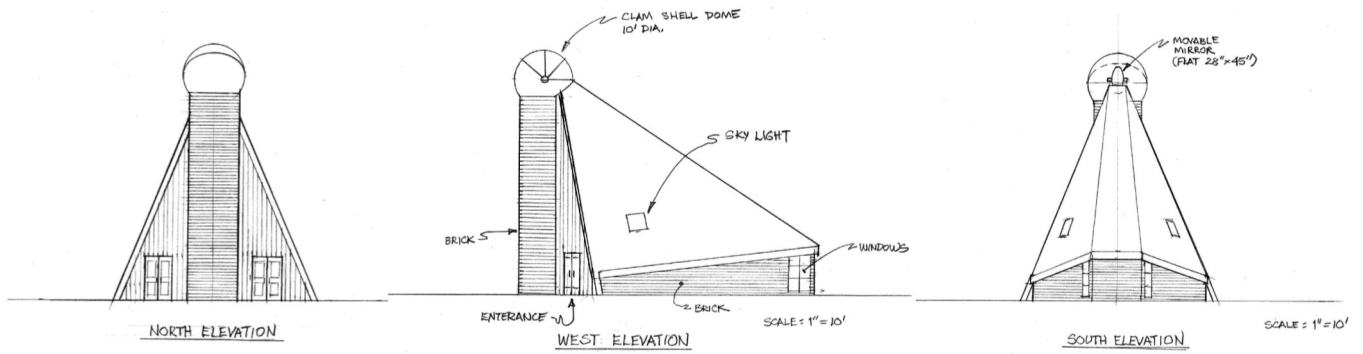
Incidentally the design of this telescope was by W. Zabiskie a Detroit Engineer.

<https://www.noao.edu/outreach/kptour/mcmath.html>

I thought this concept could be used to house the 27 inch refractor lens. So I after reading some of the emails I whipped out a sheet of paper and started sketching with a pencil. Instead of using a computer I went back to the old pencil sketch and found it was much quicker and liberating as the design process began to flow.

With my design the building supports the 27" refractor lens in a stationary position, and the light passing through the lens runs parallel to the Earth's axis. In front of the lens would be a flat mirror with a polar mount. A simple sidereal clock drive would keep the star or planet in view. The eyepiece of the telescope would always remain in one position regardless of where the telescope was pointing making it easy for groups to line up to view the object. One additional feature would be that the flat mirror is up high getting over the tree tops of Peach Mountain so low sky objects could be observed.

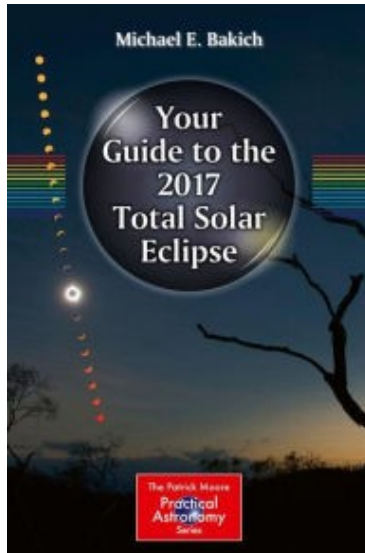
REFLECTIONS / REFRACTIONS



So it might be fun to put an old lens to use if it is usable. Just need interest and money to make it happen. Who knows if there is some astronomical grant money lying around just waiting to become something useful. Any way I had fun being a designer again for a few hours. Hope you enjoy my design efforts.

Book Reviews: Two Planners for the 2017 Eclipse

By John Manney



Your Guide to the 2017 Total Solar Eclipse – Michel Bakich – Springer International Publishing – 395 pages - \$23.17

If you wanted to buy only one book about the August 21, 2017 eclipse, this one should cover all your needs.

Your Guide is exhaustive. It gives good advice on every topic of viewing a solar eclipse: choosing a site, what to bring, and what to expect. It even points out the importance of taking a restroom break well before totality! For the August 21 eclipse, weather prospects for the localities along the path of totality are covered in detail.

Many topics are covered in this large book, such as photography, binoculars and telescopes, and viewing devices for the partial phases of the eclipse. After this year's total eclipse, this book will continue to serve as a useful reference for solar eclipses, in general.

Over 1,000 Places to see the Total Solar Eclipse August 21, 2017 – Craig Shields – Clock Press – 126 pages - \$19.95

1000 Places is a useful tool for finding good places to view the eclipse. It begins with a brief, but very good, description of a solar eclipse, and tips for planning to observe one. (One tip which I hadn't seen elsewhere: Avoid areas with photocell-activated street lights or advertising signs. They may light up at just as totality begins.)

For each state in the path of totality, several featured sites are introduced. Rather than write articles on each site, links to the internet are provided. In addition to the conventional web addresses, "QR codes" are printed. When scanned by a smartphone, the code opens the web page. I had to install a free app to enable my phone to interpret the QR codes. I had never done this before, but it was easy to learn. I used "Fastest QR Code Scanner", by EZ Mobile. This free app worked well.



The main part of the book consists of a very large number of potential observation sites, arranged by state (and by regions for the larger states). These sites include parks, airports, rest areas, and points where the centerline of totality intersects main roads. For these locations, a QR code is provided. When the code is scanned, a marker is placed on Google Maps, or other navigation app.

I think that the main strength of *1000 Places* is the ability to find a potential site quickly, and drive there using GPS navigation. This would be particularly helpful for a last-minute relocation to avoid cloudy skies.

The sites listed in *1000 Places* have not been field-checked for availability or suitability for viewing the eclipse. They are, however, a very good start for planning.

June Events

June 17th Open House
Cancelled due to poor weather

ACNO Star Party Sunday June 18th
Report by John Causland
(email June 19th to members)

As usual, we started the evening with Jupiter and, there it was, IO about to cross behind the disk. Fun to watch it's little "nub" disappear, maybe a bit past the time it was supposed to disappear and Mike wondered if IO was visible through Jupiter's upper cloud tops briefly. Still not at all dark enough yet to see Polaris, Mike and Dave Snyder and Adrian and I sat back and enjoyed an incredible Firefly display rising off the grass. After aligning finally, Mike went after some doubles. Though Virgo is "Westerling", Mike and I both found ourselves looking there to take advantage of dark skies for galaxies. Amusing but we both went to M84 and 86 to start. There's a long string of galaxies there called Markarian's chain and we both spent a bunch of time walking the chain and veering a bit off it to see other GX nearby. Almost always multiple galaxies in view. Given the steady skies, Mike having already split a 1.4 arcsec double, he took his 14 to the Ring, M57, and after a bit, sure enough, he found the central star - wow, in a weeny 14. So I just had to put the 24 on it to show how obvious the central star can be. Adrian, in the meanwhile, had mounted my C11" on the club's CGE tripod and was experimenting as usual. Will show us today if he was able to get the central star on his ccd. We snuck in a few eye candy bright objects as well, M13 and I finished with the Whirlpool M51 nicely, easily showing its spiral arms pretty brightly. We were done before 1 am. Since Saturn didn't get up past the trees till late, we actually forgot to go look at it! Encke division missed and all.

Member Night Sunday June 18th.
By Don Fohey

Jim Forrester announced via email that he would open the gate to Peach Mt. It was Fathers day and John Manney and I joined him at the top of the hill by the radio dishes for a nice evening. It was cool with very few mosquitoes and about average viewing for Peach Mt. I spent much of my time looking through the gap in the trees to the south where I could see the lower reaches of Sagittarius which I don't have many opportunities to visit. I was excited to see Saturn as it came into view as it was 4 days past opposition and the rings are displayed at a maximum that won't be seen again for 15 years. The Cassini division in the rings was visible in my 10" but wiggled and jiggled with a turbulent atmosphere at about 25 degrees altitude. I was hoping for a crisp clean view, maybe next time. I packed up about 1:00, Jim and John stayed later.

June 24th Open House By June Open House Coordinator Jim Forrester

Approximately 50 guests attended our Open House on Peach Mt. last night. The evening early on was lovely, clear and almost bug free, but as astronomical twilight ended a bank of clouds appeared and their persistence drove away our visitors. The Observatory crew zipped up around 00:30 and several members packed up their scopes and headed out as well.

All this sacrifice did not go for naught, however, as the skies cleared and we had 3 hours of glorious observing. More clouds appeared on the western horizon around 03:45, coincidentally the beginning of astronomical twilight. By the time everyone was packed up, half the sky was obscured. I locked the gate at 04:15 am.

Member Night Tuesday June 27th. By Don Fohey

Jim Forrester again announced he would open the gates to Peach Mt. I joined Jim, Aseem Deodhar, Kanji Sugimori and his three friends, Barry Wissmann and Adrian Bradley. The sky was not as good as the previous week. Objects near the horizon rolled making double stars and planets unsteady. The sky seemed hazy and the Milky Way was not as discernible. We still had a good time! Barry used his Meade LX90 to observe many of his favorite deep sky objects. Aseem spent the night close to his telescope and camera setup. Kanji and his friends did some night sky photography and shared views through my telescope. Adrian opened the observatory and used the McMath to study his favorite M57 as well as other objects. Late in the evening Kanji, his friends and I walked down to the observatory and Adrian shared views through the McMath.

I had noticed on Sky Safari a galaxy in Draco which was drawn with a very large outline. UGC 10822 was listed as 37.1 x 29.5 arc min. , at 261K light years distance. Wow that is close! It is a satellite galaxy of the Milky Way and it intrigued me, however at magnitude 11.9 , I expected it was foolish to look for it. Draco was in a dark area of the sky near the zenith, so I enlisted Jim to point his larger aperture scope at it. We could see a rich star field but could not discern anything that looked galaxy like. At this writing I looked up internet images and found a photo of the Draco Dwarf by John Moore. This is an ultra low surface brightness galaxy that will require a large telescope and a dark sky location. I will keep it on my to be observed list.



Next Meeting Friday July 21st.

The meeting will take place at the Eastern Michigan University Planetarium in Ypsilanti. Suggested parking is in the visitor lot entered from Oakwood St. just north of Washtenaw. Cross the pedestrian bridge to the science complex building just east of the parking lot. Signs will direct you to the 4th floor planetarium. Arrive early to enjoy pizza, refreshments and socializing before the 7:30 pm meeting.

Our speaker is Sandra J. Macika who's presentation is titled Meteorites and Tektites: Types and Composition.

After the meeting and weather permitting, members will have the opportunity to observe through the 10 inch achromatic refractor and other telescopes from the observatory atop Sherzer Hall.

Day	Date	Event
Monday	7/10	Camp Burt Shurley
Monday	7/17	Camp Burt Shurley
Tuesday	7/18	Michigan Math and Science Scholars
Thursday	7/20	Michigan Math and Science Scholars Rain Date
Friday	7/21	Lowbrow Meeting at EMU
Saturday	7/22	Open House at Peach Mt.
Monday	7/24	Camp Burt Shurley
Tuesday	7/25	Michigan Math and Science Scholars
Thursday	7/27	Michigan Math and Science Scholars Rain Date
Saturday	7/29	Open House at Peach Mt.
Monday	7/31	Camp Burt Shurley

July Events Summary

(See meeting minutes page 8 for details)

Member Photos

(sent to members by email)



Doug Bock emailed on June 2nd:

"This image of Comet C2015 V2 (Johnson) was from last night.

60 frames x 60 seconds each.

Aligned, stacked and processed in PixInsight. 10" f/8 RC, zwo asi071mc camera cooled to 0C, G11 mount.

Northern Cross Observatory."

Charles Steele wrote on June 8th:

“Just shot this picture of the Full Moon using a new 55-300mm zoom lens. (Cropped the image down to make the moon better fill the frame.) Getting camera gear ready for the total eclipse of the sun in August. “



Adrian Bradley wrote on June 10th.:

“I got this from the SCT last night... “

Kyle Schwarz wrote on June 20th.:

“I also went out on the 18th, though not at Peach Mountain. I mainly focused on M101 got this: This image was captured with an Orion ED80 (f7.5, 600mm) over 23 minutes (3x5min + 1x8min). The transparency seemed to be an issue that night, at least where I was. Stacking was done in DSS and processed in Photoshop. “



“I also got this small image of M57: Still learning, but this was the first real night I was able to use my new autoguider.”



CORRECTION

Page 6 of the June Newsletter incorrectly labeled Doug Bock's picture of NGC6946 as NGC 6945.

Lowbrow Monthly Meeting Minutes—June 16, 2017

President Charlie Nielsen called the meeting to order at 6:45 PM and introduced the evening's first speaker, long time member Kurt Hillig.

Kurt demonstrated the Hugin Panorama Photo Stitcher, freeware available for most computer operating systems, including Linux, Mac OSx and Windows. In this regard, Kurt emphasized the program needed quite a bit of memory (8G) to run efficiently. The application corrects for a multitude of problems: a camera's minute optical distortions, tiny variations in shutter speed, and color problems among others.

Brian Ottum then updated us on his and Stan Watson's remote control observatory located at Rancho Hidalgo, New Mexico near both the Arizona and Mexican borders. Despite occasional power outages and other problems, a good deal of excellent astro-photography has been done from the site. Brian emphasized that this project requires even more patience than the huge amount already required to do astro-photography with any degree of success. He suggested those new to taking astro-photos start with landscapes against the night sky followed by the moon and planets and tracking wide fields before going after that galaxy millions of light years away.

Members should email Brian if they have an interest in observing one of his remote control photo sessions live via the internet.

BUSINESS MEETING

President Charlie Nielsen:

--***The August Lowbrow Monthly meeting has been cancelled.*** The scheduled speaker offered her apologies and with the TOTAL ECLIPSE OF THE SUN taking place at least 500 miles away the following Monday, there was little member interest in recruiting a substitute.

--The July meeting, as per tradition, will take place at the Eastern Michigan University Planetarium in Ypsilanti. Weather permitting, members will have the opportunity to observe through the 10 inch apochromatic refractor and other telescopes from the observatory atop Sherzer Hall.

--The Michigan Math and Science Scholars--select high school students taking advanced two week summer courses at the University--will be on Peach Mountain for specially scheduled observing Tuesday, July 18 and Tuesday, July 25 at 8:00 PM. Rain dates are the following Thursdays, July 20 and 27. Volunteers are needed.

--Leslie Science Center has requested Lowbrows show the night sky to their Backyard Campout campers June 24. This conflicts with our Peach Mountain Open House the same evening. Charlie pointed out how popular Center events have been with the members and how well the Center has treated the club over many years. However, he informed the Center we would not be able to help them out this year.

--October 7, 8:00 PM, Leslie Science Center: Star Party for guests of Leslie Science and Nature Center.

--August 5, 1:00 PM at the Cromaie Library in Hartland, MI: Presentation, demos, and solar viewing for guests of the library. This is part of their events related to the solar eclipse on Aug. 21. Volunteers are needed. See the calendar on the Lowbrow website for details and directions. (<http://www.umich.edu/~lowbrows/calendar/>)

--Charlie has extra "Eclipse Glasses" for any requesting them, courtesy of the Night Sky Network. Our consistent participation in the Network has qualified us for more of their demonstration "Toolkits." As our popular glass and mirrors kit is missing, Charlie will order another.

Vice President Jim Forrester

--The June 17 Open House will likely be cancelled. A final decision and notice will be emailed mid-day Saturday. This month's second Open House is June 24.

--Camp Burt Shurly, the Detroit Public Schools science camp, begins its weekly night sky observing sessions Monday, July 10 and each Monday following through August 7. Rain dates are the nights following through Thursday of each week. Camp Burt Shurly is an opportunity for members to show 8-12 year old children, who might otherwise not have an occasion, the night sky through a telescope. Well organized with well behaved kids. Very rewarding. About 5 miles west of Peach Mountain. Google "Camp Burt Shurly" or email Vice President Jim Forrester for directions.

--Contrary to previous plans, Jim will be in Ann Arbor for the month of July

Webmaster Krishna Rao

Krishna will be out of Ann Arbor the month of July, so posting to the club web site and social media will be delayed. Vice President Adrian Bradley will post to Facebook in his absence.

Treasurer Doug Scobel

--Club Treasury Current Balance: \$7793. Approximately \$2200 is committed to the purchase of a ServoCat drive and SkyFI wifi interface for the 17.5 inch telescope. In the coming week the club's annual donation of \$400 to Astronomy At The Beach will be paid in addition to passing along member dues to the Astronomical League. The resulting balance will be around \$5000.

--The ServoCat should arrive sometime in July.

--The SkyFi wifi interface has arrived and Doug tested it with the ServoCat in his 16 inch Dob using an Android tablet. He announced it a complete success.

Observatory Director Jack Brisbin (in absentia)

--Adequate castors not being available for the McMath Telescope ladder, member John Wallbank provided a new ladder with spring loaded casters. No more loud scraping across the building floor! Thank you John! (Jack has disassembled and stored the old ladder.)

--The 8 inch Cave mirror is still at Spectrum Coating in Florida, but will ship at the end of June. Jack will explain the delay on his return to Ann Arbor in the coming week.

Vice President Adrian Bradley (in absentia)

--Public observing at Rolling Hills County Park (7660 Stony Creek Road, Ypsilanti). Setup after 7:00 PM. Sunset is at 8:40 PM. Members should be prepared to explain the Persied Meteor Shower, which peaks that night. Our park contact is Hannah Cooley.

Member Mark Cray has telescope parts he wishes to give to the members. Mark has made several instruments for the club, including the McMath Telescope's 6 inch finder-scope refractor.

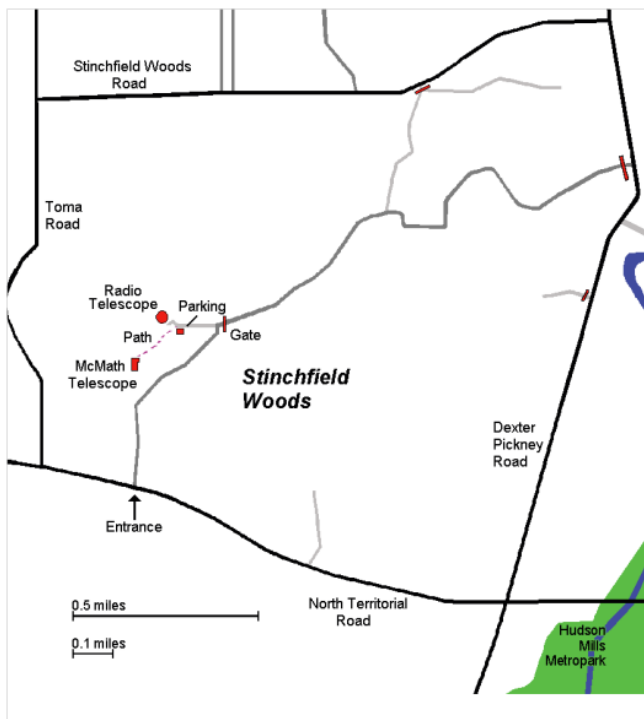
Contact him at: 734-271-2333

Respectfully submitted by,
Jim Forrester
Vice President

Places & Times

Monthly meetings of the University Lowbrow Astronomers are held the third Friday of each month at 7:30 PM. The location is usually Angel Hall, ground floor, Room G115. Angel Hall is located on State Street on the University of Michigan Central Campus, between North University and South University Streets. The building entrance nearest Room G115 is the east facing door at the south end of Angel Hall.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope, maintained and operated by the Lowbrows. Located northwest of Dexter, MI; the entrance is off North Territorial Road, 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



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 cancelled if the forecast is for clouds or temperature below 10° F. For the most up to date info on the Open House / Star Party status call: (734) 975-3248 after 4pm. 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. Evening can be cold so dress accordingly

Lowbrow's Home Page

<http://www.umich.edu/~lowbrows/>

Membership

The University Lowbrow Astronomers membership dues are **\$30 per year for individuals or families, \$20 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.** Membership entitles you access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training). A hard copy of the Newsletter can be obtained with an additional \$18 annual fee to cover printing and postage. Dues can be paid at the monthly meetings, by PayPal, or be check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomers
P.O. Box 131446
Ann Arbor, MI 48113-1446

Lowbrow members can obtain a discount on these magazine subscriptions:

Sky & Telescope -\$32.95/year or \$62.95/2 years

Astronomy -\$34.00/year, \$60.00/2 years or \$85.95/3 years

For more information about dues or magazines contact the club treasurer at: lowbrowdoug@gmail.com

Newsletter Contributions

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

Telephone Numbers

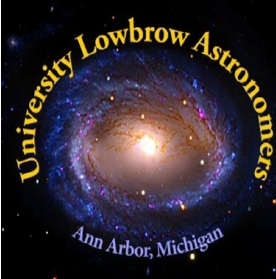
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Newsletter Editor:	Don Fohey	(734) 812-3611
Key-holders:	Jim Forrester	
	Jack Brisbin	
	Charlie Nielsen	
Webmaster	Krishna Rao	

A NOTE ON KEYS: The club currently has three keys each to the Observatory and the North Territorial Road gate to Peach Mountain. University policy limits possession of keys to those who 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.

Email to all members

Lowbrow-members@umich.edu

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University Lowbrow Astronomers



Member Club



Astronomical League Member Society
#201601, Great Lakes Region

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