



REFLECTIONS / REFRACTIONS

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University Lowbrow
Astronomers

OCTOBER 2017

VOLUME 41, ISSUE 6

The Great Smoky Mountain National Park (GSMNP) 2017 Eclipse Expedition

by Christopher Sarnecki (Lowbrow expat)



The first thing you should know about my 2017 eclipse expedition is that I wanted to observe the total solar eclipse from a national park. Initially Grand Teton NP was on my travel plans, but due to family and friends wanting to attend the eclipse, we settled on the GSMNP near our home in Raleigh, NC. Weather was a concern for us, not just for eclipse observing, but our group nine adults and two grandkids would be tent camping. All y'all (that's southern for everyone) remembers seeing Robert Wade's (also a Lowbrow expat but from CT) e-mail of the Clear Sky Chart historical data of observing sites along the eclipse path. What you probably didn't notice was the GSMNP site was the least clear along the entire path with only 19% chance of clear skies. For those of you that are not familiar with the GSMNP's weather, they have an annual rainfall of 55" per year. That's a lot of rain! Now I've been to an overcast total solar eclipse before in Reims, France in 1999, and it was amazing. With poor weather prospects I still wanted to observe from a NP.

We headed off into the woods with a close eye on the weather forecast. As this was middle August, and the eclipse totality was in the afternoon, I figured that would improve our odds. Still I had nightmares of my eclipse party pulling up tent stakes as the rain came down. As luck would have it, and I do mean luck, we had 4 days and nights of mostly clear skies. Before I get onto the main event that is totality, I should share something I learned about how to deal with the heat when living in the south. When outside, the best way to avoid the heat is stay under large shade trees. Trees provide evaporative cooling to those smart enough to stay under them. No amount of umbrellas and canopies can provide the cooling that large shade trees provide. Days before the eclipse, our party searched out the perfect site. We were staying in the Cade's Cove campground, which is adjacent to an 11 mile, one-way loop road around a treeless valley of historical homes and churches that the National Park Service maintains as a historical landscape. We knew from talking the rangers that they were expecting a massive crowd on eclipse day. The last thing we wanted to do was get stuck in eclipse traffic on a one-way 11 mile loop road. The site we selected was the last open grassy meadow near the end of the loop road. We had only to walk a little over a mile from our camp to the meadow. And, yes we had large shade trees to keep us from the hot Sun. As it turned out, there was a small primitive graveyard under the trees.

With only about 30 odd folks at our site, we commenced our eclipse observat'n. We watched the Sun be slowly eaten by the invisible Moon. The lighting on the meadow went from sunny to dull. Hoping to observe animals and birds turning in for the short 2 minute 'night', we only noticed a large number of butterflies in our local area. Don't know if that was eclipse related or not. As totality approached we hoped to see the Moon's shadow over the distant mountains, but we weren't successful. As temperature dropped steadily, we were at once in the shadow of totality. Unexpectedly, we heard shouts of joy from folks all around the valley. The corona popped out into view, with three very large streamers approximately 1 1/2 to 2 solar diameters from the Sun. Before we knew it, the totality was over, but before donning our eclipse glasses we saw the diamond ring effect. Sweet! My group of family and friends all indicated they were so impressed with their first eclipse that they are planning to attend the next American total solar eclipse in 2024. Guess I'd better start researching if there any National Parks along the path of totality.



Forget the Photos and Enjoy the Eclipse!

By John Manney



(Photo of John) This 5-camera monstrosity was soon to be abandoned.

We had options for several venues for the eclipse. Based on the weather forecasts, we chose Lebanon, Tennessee. Lebanon is about 30 miles east of Nashville. We arrived on Sunday, and searched for good places to watch the eclipse. The Cedars of Lebanon State Park looked good, but I was apprehensive that the viewing area would not be big enough for the expected crowds of people. Early in the morning of eclipse day, my daughter and I returned to the park, and claimed a spot in the open field. It turned out that there was plenty of room for everyone. We were joined by fellow-Lowbrow Tim Kaselitz and his friends.

We wanted clear skies, and we got them! The Sun was high in the sky, and the air was hot and humid. Fortunately, we had two extra camera tripods and two umbrellas. We fastened the umbrellas to the tripods with hose clamps and duct tape, and positioned them near our chairs so that we had some relief from the scorching sunshine.

After a full day of clear skies, banks of clouds moved in, and covered the Sun at the start of the partial eclipse. Thankfully, the clouds left and did not come back.

I had a grand plan to take videos and still shots of the eclipse, using 5 cameras mounted on a single tripod. I had tried out this gadget at home, and was successful in managing it. However, on eclipse day, I found that it was impossible to aim it high enough to capture the Sun, and I wasn't able to keep it balanced. After trying several fixes, I realized that we were half way into the partial eclipse, and I hadn't looked at the Sun! So, I set some priorities by giving up the eclipse photography.

Giving up on the photography was a great relief. I was also able to be more sociable, and talk to the people around me. And, I was able to enjoy the eclipse!

My Lowbrow T-shirt and my strange camera array must have attracted some attention. Several people stopped by with basic questions about the eclipse. Several others came to wish me well.

I was approached by two men with a video camera, asking if I would like to be interviewed. I agreed, not knowing what was in store. They asked if there was any danger of the Moon colliding with the Sun. I responded that I didn't think so, because they were not actually close to each other. They pressed the point, asking if it could ever happen in the future. At this point I realized that some sort of a trap was waiting! I said that I couldn't guess what would happen in the distant future. Without ceremony, they walked away.

Time passed quickly, and I noticed that the heat of the Sun was no longer bothersome. The remaining sunshine was dim, but didn't have the orange cast which goes with sunset. Everything looked a bit gray. I had a plan to watch the ground for the shadow bands. However, when partiality was in its last stages, I was very excited, and forgot about things like shadow bands.

Although, I had seen countless images of totality, I was startled to see it in real life. Every aspect of the sky was unfamiliar: the background sky was a dark grayish blue, the Sun was a black dot, and the corona was visible. A red flare protruded from the bottom of the black disk. Its length was about 1/16 of the sun diameter, and was clearly visible without magnification.

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I came to my senses and remembered that I had brought a pair of 7 x 50 binoculars to use during totality. Because they weren't filtered, I had hidden them for safety. I scrambled in the dark, and found them. The view of the Sun was better with magnification, but the red flare appeared smaller. I didn't think that solar features changed so rapidly over a period of 2 – ½ minutes. It is possible that the changes were in my perception, rather than in reality. Although stars and planets were visible during totality, I was not interested in viewing them on eclipse day. I have the rest of my life to do that! Venus, however, forced itself on me. Because it was so close to the Sun and so high in the sky, it was annoyingly bright. I had never seen Venus so bright. The 2 minutes and 20 seconds of totality passed quickly, and a tiny sliver of the Sun lit up our area again. I was amazed at how much light comes from the Sun even when it is 99% covered. In a few seconds, lighting had changed from a very deep twilight to a sort of early twilight, and we had no trouble seeing ourselves and our surroundings. Our crowd was very calm, compared to ones I had watched on videos. We all broke out with a spontaneous cheer at the start of totality, and another applause at the return of the Sun.

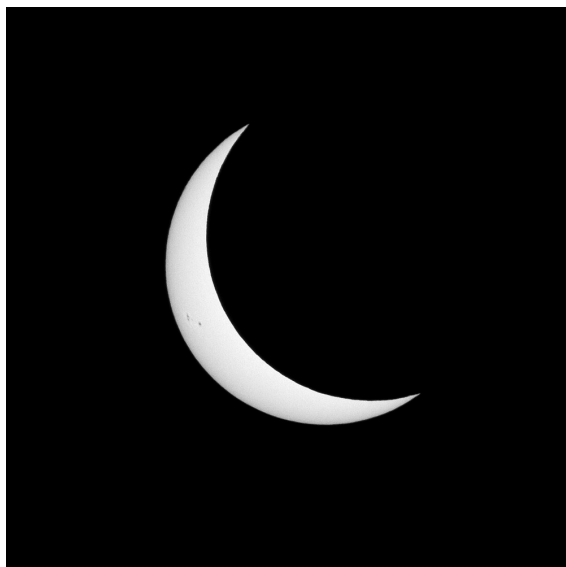
I had no regrets that I dropped the idea of photographing the eclipse, because I was planning to take a series of shots with a manual SLR camera. It is unlikely that I would have had enough alertness to make the settings and shoot the pictures. I did remember to make movies of the crowd reactions. The quality of the movies is mediocre, but their keepsake value is tremendous.

A few minutes after totality ended, I was thinking about the next total solar eclipse for North America, which will be on April 8, 2024. Maybe I will try photography again ... but maybe I won't.

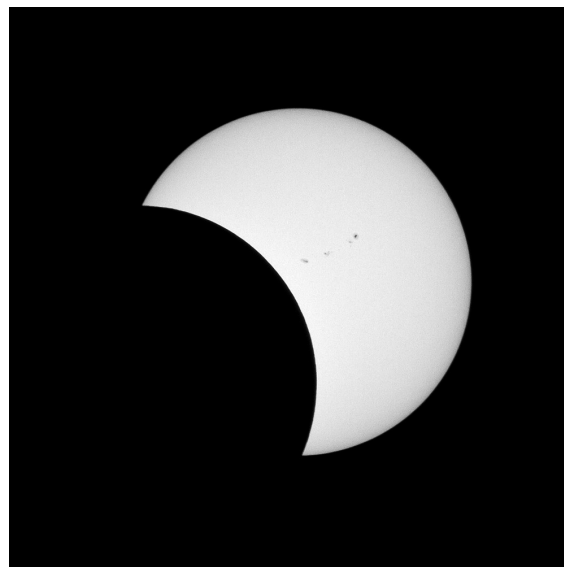
Brian Ottum Ph.D. wrote in an email to members on August 25th :

“So true that NO picture can capture what your eyes saw during the eclipse. But I tried to get as close as I could to what the corona looked like. This is a composite of two frames (1/125 and 1/15 exposures). Regulus on the left. The orientation is as I saw in the sky (“up is up”). In all the excitement, I was unable to get any short exposures (that could be layered in to show prominences).”

(Photo Right)



Before Totality



After Totality

Doug Scobel wrote in an email to members on August 23rd:

“I didn't get any usable totality pics, but did get some good partials. Here are a couple.”

(Photos Left)

Eclipse viewing From Burna

by Colin McClain

I was a bit apprehensive about our trip to view the solar eclipse since our plan was kind of just winging it and also because of reports I had been reading about probable traffic jams. My daughter lives in Indianapolis and my son in Ann Arbor and my wife and I are in Saline. So our plan was for my wife, son and myself to drive down and stay with our daughter Sunday night and then pick a location and head out early Monday morning. Base on the weather prediction and that western Kentucky was sparsely populated that look like the best opportunity so we got on the road Monday morning at around 6:00 am.

The drive down wasn't that bad except for some construction and an accident just before the bridge into Kentucky at Evansville. After getting out of Henderson and traveling along highway 60, there wasn't much traffic, I was expecting worse. We drove through Marion KY and saw the eclipse viewing area they had setup at the football field. It was about 11:00 to 11:30 central time so we had plenty of time to find a spot so we decided to keep going south closer the center line of the eclipse. We passed Salem and finally came to Burna, a little town just south of the eclipse centerline. We saw a 3 cars in a dirt parking lot just off the road that looked like they were eclipse viewers so we decided stop there.

A few other cars showed up over the next hour and I counted at one point seven cars in all. There was a family from Michigan, a couple from Ohio, another from Arkansas. The husband of the couple from Arkansas was blind but could see shadows and shapes and said he was looking forward to the eclipse and sensing the darkness as totality came. His wife had setup her camera on a tripod with a solar filter and was ready to take some pictures. It was hot! We were sweating bullets.

I brought my short tube 80 with a solar filter, a couple of binoculars with solar filters that I had made from Baader solar film that I had bought a number of years ago, and we also had some solar viewing glasses. We had brought food for lunch and had time make some sandwiches and setup the telescope. When I tested the solar filters for the binoculars earlier that weekend, I noticed that they were a bit tricky to use. First finding the sun could be a little challenging but once you found it and you were done looking I had the tendency to just lower the binoculars while still looking in the same direction which in this case was the sun (not a good thing). So I instructed the kids and my wife to make sure to lower the binoculars while still looking through them before taking them away from your eyes.

A few people stopped by and looked thru the telescope and were impressed that you could see sun spots. As totality approached and it got darker my daughter first notice that the cicadas had started chirping (there were woods right next to us). That was kind of cool to have an audio dimension to the viewing experience. There was a small cloud that was in front of the sun at the start of totality but you could still see the sun and it move past pretty quickly and we had a clear view for most of it. We just took pictures with our phones but after looking at them I notice a side benefit to having a thin cloud in front of the sun at the start of totality. The cloud dimmed the corona just enough to not over expose the few pictures we took at that time. After the cloud passed the pictures were over exposed. Seeing the black disk surrounded by the bright corona was quite spectacular and I could understand how some people a long time ago would be freaked out by the sight.

We headed out shortly after totality ended to get back to Indianapolis. Heading up to Henderson we were following highway 60 again by we were using google maps and it was finding us short cuts that were suppose to be faster. The funny part was that we were part of a 7 car convoy probably all using google maps heading north thru back roads around corn fields. Traffic was bad in Henderson but not terrible. We got back to my daughter's place around 8:15 so about 5 1/2 hours to get back (include a stop at Dairy Queen). All in all a fantastic and memorable family experience/adventure.

Above is a pic of the sun behind the thin cloud, and another of a cloud north of us backlit that I thought was kind of nice.



Collin McClain (and Nancy, Jennica, and Kellen)

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Eclipse Pictures

By Charles Steele

I viewed the August eclipse from western Nebraska north of Scottsbluff about a mile south of the center-line of the eclipse. We had clear skies.



Just as the eclipse was about to start people started watching with lots of excitement and many "WOW's". We had about 20 people all not in picture at our location.



Here I am with my two inch refractor and two camera's piggy back to capture the event. On a tripod is a 70mm x 25X Celestron binocular which gave me an amazing view after snapping a dozen pictures. The pictures don't come close to what I saw through the binoculars.



(left) The diamond ring forms as the edge of the Sun gets smaller and smaller. This last for around 10 seconds gradually shrinking in size.

(right) I managed to catch Bailey's beads just as the photosphere started shining through low valley's of the Moon's edge. (But over exposed). This only lasts for a few seconds, so you have to snap your pictures pretty much on "Q". Also seen in photo are prominences at the top and right edge of the blacked out Sun.

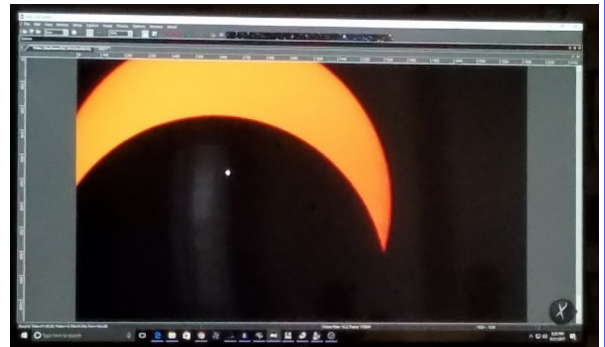


(left) In this exposure you see the Inner Corona. At the top just to the left you can make out a red prominence.

Russ Vente reported in an email to members on August 22nd:

“Here are a couple of pictures from the Headland Dark Sky Park Observatory in Mackinaw Michigan. The turn out was about 800 observers.”

(Photos Below)



Edward Rosch wrote in an email to members on August 27th:

“Hi Here is the only good eclipse picture I got. As Pat indicated, we were at a winery in North Platte. I set up my PST and about 30 people came by to watch the moon munch the sun in H Alpha during the lead up. The forecast the day before was for solid clouds and thunderstorms, I’ve never been so happy for the Weather Channel to be dead wrong. The winery was in the opposite direction from the stampede for maximum totality and we waited an extra day after so we never had traffic issues. So we gave up 40 seconds of totality for a nice group on the lawn with tables and chairs, a catered lunch, and a glass of wine. It was where the locals went to escape the tourists. Ed”

(Photo Left)



Brian Ottum Ph.D. wrote in an email to members on August 24th:

“As we all found, our phones tended to overexpose the eclipse. So I had to photoshop a dark moon in the center of mine. Also turned up the colors a bit.”

Upcoming Events

Leslie Science Center Star Party
Lowbrow Open House at Peach Mt.
Lowbrow Monthly Meeting, Speaker Jason Gilbert
Lowbrow Open House at Peach Mt.

Saturday Oct. 2nd 8pm—10pm
Saturday Oct. 14th 7pm—Midnight
Friday Oct. 20th 7:30pm Angel Hall
Saturday Oct. 21st 7pm—Midnight

September 23rd Open House

Report by Charlie Nielsen in an email to members:

“Our September 23 Open House was in a way a pay-back for last Saturday, when the skies were not as good as expected. This time transparency was very good, and it was pretty steady. This allowed some good views of the crescent Moon, Saturn, and the usual lineup of late Summer/early Fall deep sky objects. M31 was easily naked eye visible. I think what I will remember the most about this open house was that Mark Cray and his sister showed up, and they set up a 5 inch refractor and showed objects to our visitors. Considering Mark's state of health, I was very proud of him as well as happy knowing how happy this made him. Observationally, I remember that one of our guests, who stuck it out to the end (2 AM), said she thought she was seeing the central star of M27 (not 57) blinking in and out. I may not remember correctly, but I do not recall that being an easy sighting. But when our line of visitors got done making various noises just at the sight of M27 in general, I took another look. Almost everyone, when asked, did not claim they saw the star, but sure enough there it was blinking in and out. We had 40 to 50 visitors, and club members assisting were: Charlie Nielsen, Jack Brisbin, Mark Cray, John Wallbank, John Manney, and Adrian Bradley.”

Photo from Bhur Park
By George Ferrier



The photo is Bobby-Eagle (red x) and me at Bhur Park I had my Sun filter for viewing some said it was better then glasses the Sun was more clearer .

(Photo Left)

Astronomy at the Beach 2017

Friday Sept 29th.

Paul Walkowski wrote in an email to members (partial extraction): "Remember a good scope cover is worth its weight in gold, or at least its weight in plastic in this case. With NO RAIN in the forecast for AATB for either day we experienced a 10 minute rogue shower on Friday night that sprang upon us with 5 minutes notice. Those with cars nearby were able to get their OTAs in their vehicles quickly, while those with tarps and Bungee cords interrupted their observing for 10 minutes.

We had a respectable turnout of around 500 last night which is great considering the change of location to Island lake park and the always lower turnout on a week night. I'd estimate we had 40-45 scopes last night as well with a good number of Lowbrows. "

Saturday Sept 30th.

Charlie Nielsen wrote in an email to members (partial extraction): " I was not able to make it to Astronomy at the Beach Friday night, but did make it Saturday night. Overall, I like this site better than our previous site at Kensington. It has perhaps less area and less parking, but the park staff was much better, the food way better, and the setup area was very pleasant. I also noted the lack of goose waste product on the ground. We did not have as many vendors and demos and there is less area for them. I await attendance numbers from Paul or Brian, but the crowd seemed pretty similar to what I expect for this event. "

"I watched the main speaker's talk for the first time in a few years. Many of you have seen Dan Durda on science programs on television. He seems to be one of the world's top asteroid and meteor experts and researchers and he is the chief scientist behind the series "How the Universe Works". What you may not know is that Dan is a former Lowbrow President, circa mid-80's! As with a few other club members, he has gone pro, and become famous. He currently lives in Boulder, Colorado, but he remains, and forever will be a Wolverine fan."

John Manny reported in an email: "55 (telescopes) at 7:15 PM. Not too many more arriving. "

Correction to Volume 41 Issue 6

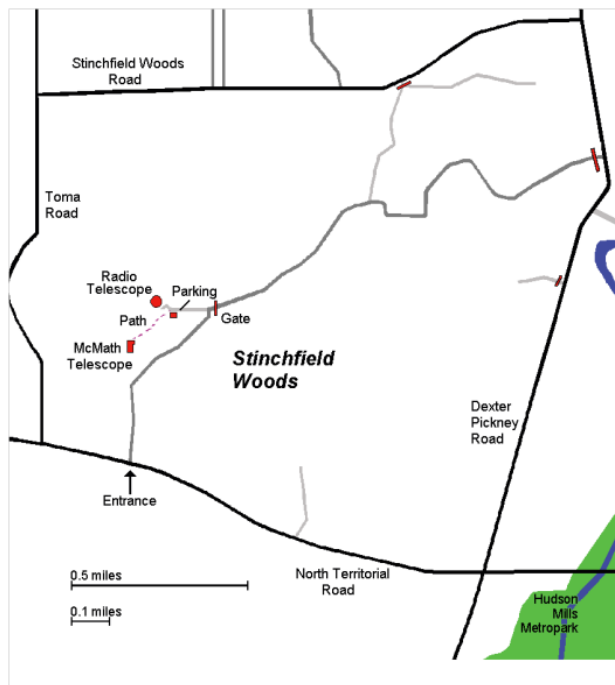
Page 1 date was AUGUST 2017 should have been SEPTEMBER 2017.

All odd pages listed as JULY 2017 should have been SEPTEMBER 2017.

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. Angell 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 Angell Hall.

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 radio telescope, 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 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

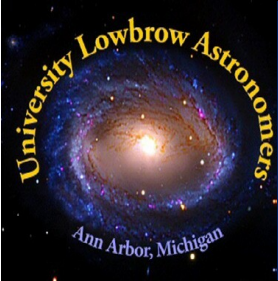
Members and non-members are encouraged to write about any astronomy related topic. Contact the Newsletter Editor: Don Fohey donfohey@gmail.com to discuss format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers

President:	Charlie Nielsen	(734) 747-6585
Vice President:	Adrian Bradley	(734) 354 5346
	Jim Forrester	(734) 663-1638
	Larry Halbert	
	Dave Jorgensen	
Treasurer:	Doug Scobel	(734) 277-7908
Observatory Director:	Jack Brisbin	
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



University Lowbrow Astronomers



Member Club



Astronomical League Member Society
#201601, Great Lakes Region

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