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TOM & BRIAN'S GRAND ADVENTURE

BY BRIAN CLOSE

After scouting out all the sites in southeastern Utah, the limited roads and accommodations left me to conclude that the best site for the annular eclipse was Albuquerque. The website TimeandDate.com (<https://www.timeanddate.com/>) confirmed annularity was perfectly concentric.

We flew in the day before and set up at our south-facing Airbnb on the northeast side of town. The Lowbrow contingent consisted of myself, Tom Ryan, and my nephew Jason Close. (See photo, p. 3)

GRAND ADVENTURE continues, p. 2.



GRAND ADVENTURE continued from p. 1

Also at hand were my wife, Beth, and my brother Craig and some friends.

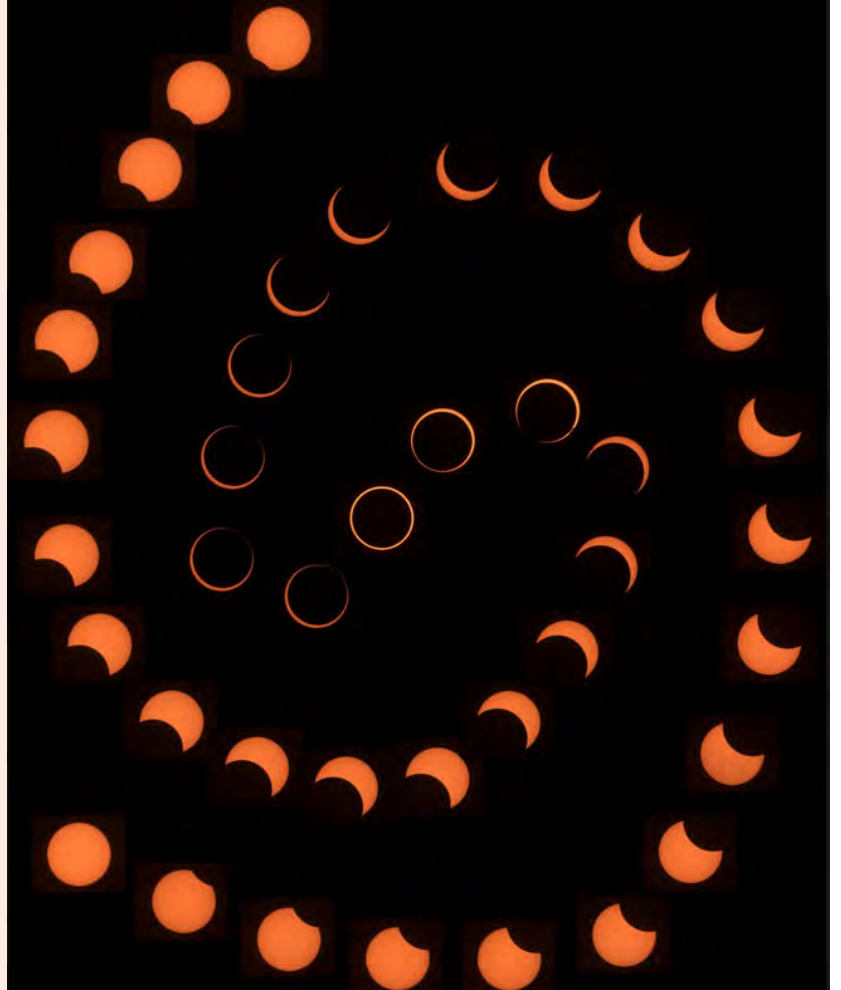
I had a William Optics 400mm with a 2x barlow and my Nikon D7000. Tom used his 100mm Maksutov and Canon RP. (See Tom's setup, p.3)

The morning started with the daily balloon launch as it was the annual Balloon Fiesta (photo below).



By 9:13 a.m. local time, the balloons were gone and the sun was high in the southeast. A chink in the sun! And it kept getting better.

Just after totality, we noticed Venus was plainly visible, and we could



A complete sequence of the eclipse.



observe it naked eye easily until the eclipse was down to 15%. So I can only assume it was similarly visible after that.

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GRAND ADVENTURE continued from p. 2

With the eclipse over, we became tourists. Most of Albuquerque's cultural sites are within a square mile just southwest of the junction of I-40 & I-25. And these were well worth visiting. We even saw an alien spacecraft in the arboretum. ■



From Tom: "Two pictures of my eclipse setup: It consists of a 100mm F/10 Maksutov telescope, a Canon RP camera, a Star Adventurer Mini tracking mount, and a Thousand Oaks Optical solar filter. Batteries are included, but not shown.

It all fits inside one carry-on bag, along with a week's worth of clothes, a shaving kit, and some postcards." ■

FROM THE DESK OF THE NORTHERN CROSS OBSERVATORY

BY DOUG BOCK



The weather had been cloudy this past month (October 2023), but on the night of October 22, 2023, it was clear enough to do some imaging. I worked on M74 in the evening into the early morning hours, and then on Comet 103p/Hartley starting around 4:00 a.m.

Messier 74 is a large spiral galaxy in the equatorial constellation Pisces. It is about 32 million light-years away from Earth. The galaxy contains two clearly defined spiral arms and is therefore used as an archetypal example of a grand design spiral galaxy.

10" f/8 RC, ZWO asi2600mc pro camera, gain 100, temp 0C. 53 x 5 minute light frames, 24 darks, 50 flats.

Comet Hartley 2, designated as 103P/Hartley by the Minor Planet Center, is a small periodic comet with an orbital period of 6.48 years. It was discovered by Malcolm Hartley in 1986 at the Schmidt Telescope Unit, Siding Spring Observatory, Australia. Its diameter is estimated to be 1.2 to 1.6 kilometers.

This was a morning object this month. ■



10" f/8 RC, ZWO asi2600mc pro camera, gain 100, temp 0C. 43 x 2 minute light frames, 24 darks, 50 flats. Stacked on the comet core in PixInsight. The star trails give you an idea of how much it moved in 2 hours.

HEMI-POWERED TELESCOPE

BY JEFF KOPMANIS

(October 16, 2023, Camp Petosega, near Petosky, MI)

Sometimes the most outlandish stuff turns out to be true.



The Hemi- Powered iOptron SkyHunter with Lunt 60MT Telescope

No NinjaBatt, so I have no battery, but (still have everything set up for a great afternoon of H-alpha solar viewing.

Friday and Saturday turned out to be really busy days for us, since we were leaving on a week-long camping trip on Sunday. Everything was rushed, including the telescope packing. I'd done an annular eclipse outreach event at the Clinton Township Public Library; on a very rainy Saturday, I brought my Lunt rig, including an iOptron SkyHunter mount (iOptron's competitor to the Star Watcher Star Adventurer GTI mount). I set it up and showed how it used a cell phone to remote control it, etc. Hold that thought.

Come Saturday afternoon, in the interlude between Clinton and my evening gig with Salmagundi at the Zal Gaz Grotto, I tossed my scope, mount, and tripod right into the camper from the back of my van. I didn't think twice about packing my NinjaBatt, since the mount has its own internal battery (really, an oversized cell phone battery) and I wasn't going to do any photography.

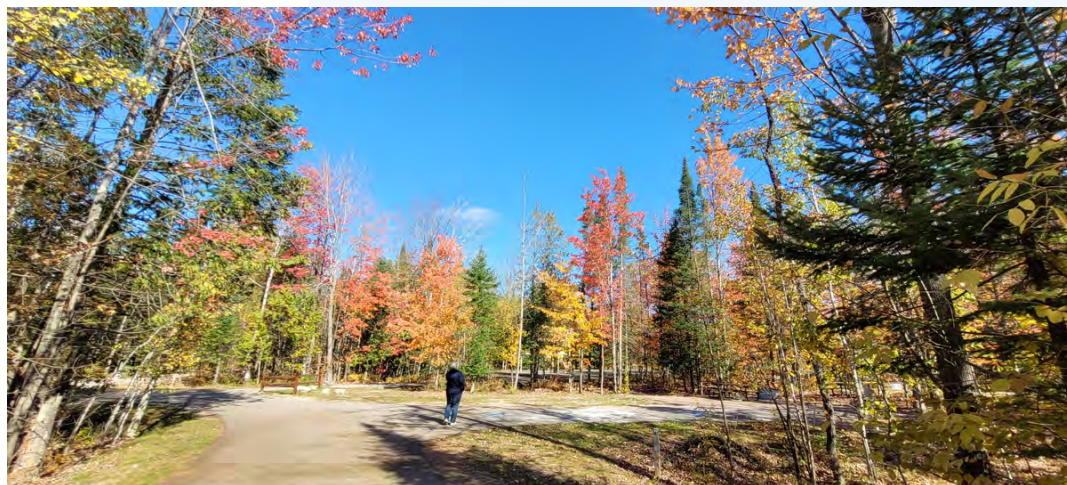
Monday comes along and it is PERFECT. Blue, clear skies and I found a clearing just a few hundred yards from our campsite, so I set up near a picnic table with my cool drink. I turned on the scope, and shortly after connecting to my cell phone, it starts slewing back to the Zero Position and goes dark. What?! No LED lights, nuttin'. Battery never got charged after Saturday's 4-hour session.

Enter our final character ...

After breakfast, we trekked into town to pick up a rental car to scoot around the area. The car is a Dodge Charger GT, the one with the Hemi V8. Enterprise didn't have the Malibu we'd signed up for. Well, it turns out this car has USB ports ... to power a telescope! Yay!

Or, not quite. The ports only fire up when the ignition is on, and the only way to do that is to start the car and let it run (no keys, so you can't easily put it in Accessory mode at the ignition switch).

So, I had to fire up a V8 Hemi to run and charge the battery in my SkyHunter mount--a Hemi-powered telescope! Not very carbon-friendly, but I got some great views, and even



We took a walk around the campground right after we got back from picking up the car rental.

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GOING THE DISTANCE WITH GRAVITATIONAL LENSING

BY ALEX SWARTZINSKI

It's a question many new observers ask: How far can that shiny new telescope look into space? Your average 8-10" Dobsonian is a true time machine, capable of seeing galaxies over 300 million light-years distant. When the light from these distant galaxies started its journey to us, humanity didn't exist and dinosaurs roamed the Earth! While these galaxies won't look like much, it's thrilling to imagine the true scale of these fuzzy patches of light.

Most observers are satisfied with this distance, but we can go much deeper. Appearing as point sources of light, it's possible to gaze into ancient supermassive blackholes as they devour tremendous amounts of gas and dust. Known as quasars, these violent galactic centers are visible from billions of light years away. Quasar 3c273 is the closest known to Earth. Clocking in at a whopping 2.5 billion light years distant, this tiny spectacle is accessible to anyone with huge (70mm plus) binoculars, or a small telescope under dark skies. Because quasars look identical to stars, a detailed map is required to separate them from the field.

Surely we must be hitting the limit, right? Not even close. Gravitational lensing is a ridiculously cool concept that wasn't observed until the late 1970s. (See diagram, p. 7.) When a quasar is located behind a massive galaxy at the perfect angle, the foreground galaxy acts as a magnifying lens to bend the background quasar light to us. We end up seeing a single quasar multiple times because the lensed light takes several different paths. This gravitational trick allows the pros to glimpse



Grandpré (49.3°N 4.8°E), 16 Sep 2023, 22:50 UT, FOV +/- 14'
30 cm Dobson @ x240, SQM object 21.3 zenith 21.3

Above sketch by Jeff De Wit from Belgium. (Used with permission.)

extremely distant galaxies and stars, but we can use this tool in real time with our good old 7mm eyeballs.

Andromeda's Parachute is a lensed quasar in the constellation Andromeda. Discovered in 2017, this pair resolves into three distinct "stars" with massive telescopes. On the popular internet forum Cloudy Nights, several experienced deep sky observers have separated these components through the eyepiece at 1,000x using an 82" telescope! This feat required excellent seeing and transparency, common traits at their West Texas location. While smaller telescopes will struggle to resolve the components of this

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object, we still have a chance to observe this distant light with amateur instruments.

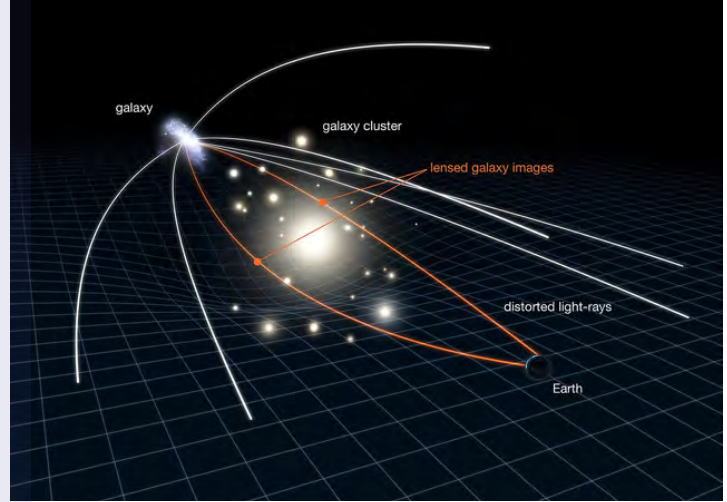
I had the privilege of observing this fantastic object a few weeks ago with my 15" dob on a new (to me) tracking platform. Looking in just the right spot, I observed an elongated faint streak 11 billion light years distant! Using 330x, it popped in and out with the seeing.

This distant light started its journey to my eyepiece in the early universe, long before our solar system or planet existed. Was it visually striking? Absolutely. It might not be a Messier showpiece with spiral arms or dust lanes, but it was bizarre to look that far into the past. This amazement was furthered by the realization that I was seeing evidence of gravitational lensing in real time, without any electronics or image intensifiers.

But wait! I haven't forgotten about the 10" Dobsonian, but it has become the aperture minimum. One of my buddies is a very experienced observer, and he snagged this object back in 2018 with a 25-year-old 10" SCT from dark and steady Arkansas skies. His incredible observation proves the minimum aperture size, but most observers who have glimpsed this ancient light have done so with 14-inch or larger telescopes. Imagers have also had success at capturing this quasar with long focal-length rigs, such as a C8 or C11. Finding this object is a real challenge. It's not mapped on Sky Safari, requiring detailed charts or images. I'm happy to provide directions to anyone who wants them!

Andromeda's Parachute is not the only lensed quasar I want to tackle. My next mission is the first example of gravitational lensing that we discovered, the Twin Quasar. This object proved the existence of gravitational lensing in 1979. As the name suggests, it resolves into two components. Located in Ursa Minor, it's a short 8.7 billion year hop away.

Backyard telescopes will never match Hubble or Webb, but they are extremely capable of taking us deep into



“Gravitational lensing in action” (Wikimedia Commons, CC by 4.0 Deed)

the universe. I plan to visit the Parachute many times in the future. Looking this far into space is extremely humbling, and it really highlights the true scale of the universe. Happy hunting! ■

UPCOMING MEETING SPEAKER SCHEDULE

November 17: Timothy Campbel, Ford
Amateur Astronomoy Club
Topic: **JWST**

December: 15: David Gerdes, Chair UM
Physics. Topic: **TBA**

January 19: Melissa Kaelin, Michigan
Aurora Chasers
Topic: **Outsmart Space Weather
Forecasts to Catch Aurora in Your
Backyard**

February 16: Rosalyn Friend, EMU
Physics graduate, Topic: **TBA**

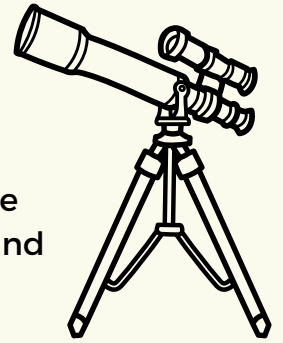
March 15: Jim Shedlowski, Topic:
Searching for the Dark Universe

April 19: Jeff Kopmanis, Club Online
Coordinator, Topic: **Automated
Astrophotography (On the Cheap)**

UPCOMING TOPICS FOR THE OBJECTIVE LENS

BY JACK SPRAGUE

Our Lowbrow photographic roll features images from snapshots, eyepiece imaging, EAA captures, and astrophotography. All images are welcome and while we have a monthly theme, we love any submission.



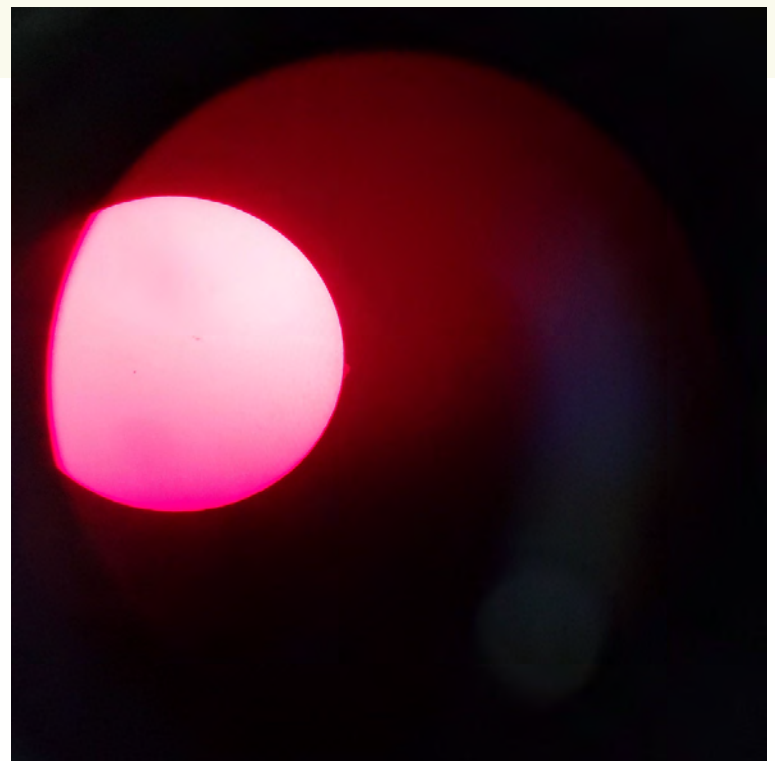
December – Back to Basics: Caldwell objects, Messier objects! This month is a tribute to the observing lists that started all the curiosity for some of us. While the Herschel 400 catalogue contains many, many stunning objects, those most achievable tend to be found in the 109 Caldwell and 110 (accepted) Messier object lists. Classic AP topics for the holiday season: perfect.

January – Part of our “classics” series this month features two galaxies in particular: M81 and M82 in Ursa Major. These together or singly are delightful showpieces and a capture of the nebulosity surrounding the pair is especially entrancing. Think of this month as a perfect opportunity (for – ahem- some of us) to brush up on skills rendered stale by the gloom of a long damp fall! ■

HEMI-POWERED continued from p. 5

detected a couple of prominences, one of which I managed to catch with my cellphone through the eyepiece. I was out for 3.5 hours on a beautiful afternoon in Northern Michigan with my Hemi-powered Telescope! The Sky Hunter tracked perfectly in Alt-Az mode all afternoon and never needed a correction!

Camp Petosega is a campground run by the Emmet County Parks & Rec that is cute as a button and has all kinds of niceties, too many to list. It's located about 10 miles east of Petoskey, MI, on Pickerel Lake. It's got enough clearings and open areas to make for a good, reasonably civilized, reasonably dark astronomy location. ■



This was the clearest image of the prominence that I could capture with my phone camera. You can see it around the 3 o'clock position, as well as a couple of sunspots. Later, there was a faint prominence that appeared around the 7 o'clock position.

General Meeting of the University Lowbrow Astronomers,
Friday October 20, 2023.

Submitted by Dave Snyder
Document Revised: October 31, 2023

Main Presentation: Brian Ottum, Lowbrow Vice President, "Preparing for Next Year's Eclipse."

This included questions and answers, much of which involved the best locations to view the eclipse.

Charlie Nielsen (President):

There have been requests for the Lowbrows to assist with events on or shortly before the solar eclipse. As most people are likely to be somewhere near the eclipse path that day, we probably can't do anything for these events.

We need speakers to fill out our schedule.

Dave Snyder (Vice President):

In the past, for some meetings several club members each talk for 10 minutes or so, to fill up an entire meeting.

Jack Brisbin (Observatory Director): We've received pamphlets and brochures from the Astronomical League. If any new members would like one, see Jack.

Also, Jack had a supply of Rubylith which he was giving out at \$1.00 per sheet. He gave out the last of these at the meeting, there is none left.

Fans were installed on the back of the McMath. There is also a new dehumidifier.

The data logger has been recording humidity levels, before the new dehumidifier there was a lot of variation in humidity. Now humidity is quite steady.

Brian Ottum (Vice President):

Astronomy at the Beach was a big success. Best weather in years (for both Friday and Saturday). There were 3200 attendees, this matched pre-COVID attendance. There were 100 different items raffled off.

Brian stayed inside attending his booth.

Jeff Kopmanis (Online Coordinator):

GLAAC spent \$220 on Facebook advertising for AATB. This started 3 weeks before the AATB event. We reached 76,000 views, which resulted in 1450-1500 event responses. This was a bargain.

Dave Snyder:

On Saturday (which was October 21), Sean Carroll will be giving a talk on "The Many Worlds of Quantum Mechanics." 10:30AM, 170 & 182 Wieser Hall, UM Central Campus.

Jim Forrester (Vice President):

Next month, Jim will have a proposed schedule for the 2024 open houses.

Jeff Kopmanis:

Jeff and Avital Keeley/Polston went to Clinton for the partial solar eclipse. The weather ranged from cloudy to rainy, but nevertheless there were a lot of activities. There was also a live NASA feed, so attendees could watch the eclipse.

Tonight, there was a maximum of 15 attendees for the meeting on Zoom.

Jeff hadn't made many changes to the new website.

Jeff had contributed an article to the newsletter and encouraged others to write articles for the newsletter as well.

The meeting was adjourned.

Austin Edmister (Assistant Director for Astronomy at the Detroit Observatory): Everyone was invited to visit the observatory upstairs. Tonight, there was a program which focused on James Watson (one of the directors of the observatory). Watson discovered a number of asteroids and believed in the existence of the planet Vulcan, which we now know does not exist.

Email from Doug Scobel (Treasurer):

- We have 201 memberships.
- I made our usual monthly payment to AT&T for our Open House "hotline", and paid the newsletter editor's cost of printing and mailing the printed version of our newsletter.
- I paid the Astronomical League \$900.00 for 20 each of the RASC's observer's calendars and handbooks.*

*The 2024 RASC observer's calendars and handbooks are available on a first come first served basis. As of this writing, 16 calendars and 15 handbooks are available for purchase. Contact the treasurer to purchase yours. Also, check your email for additional details.

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.

Lowbrow's Home Page

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

MEMBERSHIP

Annual dues are \$30 for individuals and families, or \$20 for full time students 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:

President:	Charlie Nielsen (734) 747-6585
Vice President:	Adrian Bradley (313) 354-5346
	Jim Forrester
	Brian Ottum
	Dave Snyder
Treasurer:	Doug Scobel (734) 277-7908
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.

Email to all members

Lowbrow-members@umich.edu



University Lowbrow Astronomers

