REFLECTIONS / REFRACTIONS

University Lowbrow Astronomers

JUNE 2014

VOLUME 38, ISSUE 6

Once We Were All This Young

"The Telescope"

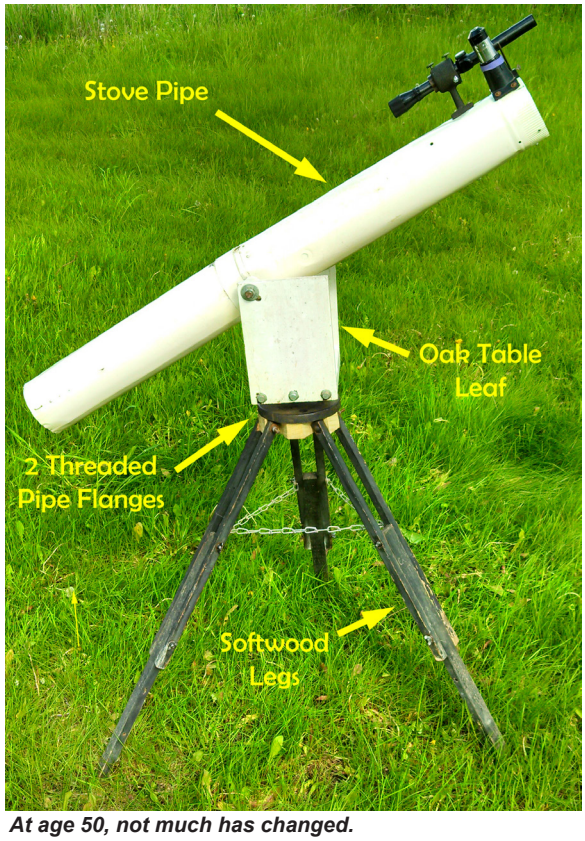
By John Manney

The optional solar projection screen was mounted for the partial eclipse of July 20, 1963. *Photos provided by the author*

When I was 12, I found an astronomy book which described the wonderful things which could be seen with a telescope. This book also included directions for building a 6" reflecting telescope, which would show the moons of Jupiter and the rings of Saturn. It was claimed that it could be made by ordinary people with ordinary tools.

I thought that telescopes were made by experts and were expensive, so I was fascinated by this idea. This little book, plus the Edmund Scientific catalog, were all I needed to do some serious dreaming.

My first telescope consisted of a 25 mm lens, an eyepiece, and a tube made of black construction paper. I built a beautiful mount with my Erector set. This little telescope gave great views of the Moon and the Pleiades, and gave me a yearning for something bigger and better.



At age 50, not much has changed.

Rather than grinding my own mirror, I opted to buy a ready-made one. Cutting back on ice cream sodas and Mad magazines, I saved up $15 to buy a 4.25" mirror. With a little more austerity, I bought a very simple focuser, a secondary mirror, a finder, mount and two eyepieces. The tube was a stovepipe, and the azimuth bearing was a pair of pipe fittings. Everything else was made from wood and hardware store items.

Without my Dad's help, the project would not have gone very far. He bought most of the mechanical parts and devoted countless Saturdays to the project. He had a keen eye for keeping the costs reasonable. For example, the plan called for a large brass pipe flange costing $15. We did fine with a cast iron one at $2.50. The plans called for hardwood legs for the tripod. We used soft wood left over from

--Continued on Page 3

DUES INCREASE?!... *see page 2*

Our Treasurer Asks...

What to Do About Dues?

By Doug Scobel, Treasurer

Editor's Note: *The officers have been discussing the necessity of a dues increase for some time. All but one of us has weighed in on the issue and all of them have endorsed the proposal outlined below. Just because the officers believe an increase necessary, doesn't mean any of you agree. We encourage you to get on the e-mail and let us know your opinion, pro or con. No one has an interest in implementing a policy of such universal import without the support of the great majority of members. The club needs to take the time to thoroughly hash this out. Hopefully, the June meeting will determine a schedule for the discussion and set a date for a vote.*

Background

Over the past year or two the subject of the club's finances has come up a few times. More specifically, whether or not we ought to raise our dues. In other words, does our income exceed our expenses, or is it the other way around? To put it into cosmological terms, is our budget flat, open, or closed? If it's flat then expenses will just balance our expenses, and we can continue indefinitely with the status quo. If it's open, then our income will exceed expenses, and our net balance will continually increase. But if our budget is closed, then expenses will exceed our income and eventually - gasp! – we'll run out of money.

Of course real life isn't so simple, but the question before us is. Should we raise our dues, or not? I don't know the last time they were raised, if ever. I've been a Lowbrow since the mid 1980's, and family memberships were $20.00 back then. I'm not sure when the $12.00 senior and student rate was introduced, but it may go back that far as well. So essentially, we are running the club with a three-decade-old budget.

The good news is that we are still in the black. The single biggest reason for that is the decision a few years ago to go with an online version of the newsletter, and to stop printing and mailing it to the entire membership. And those that do want a hardcopy mailed to them every month have to pay extra to cover the printing and mailing costs. The bad news is that we are starting to see signs that our cash on hand may be starting to erode.

Analysis

To better answer the question whether or not to raise dues, I did a little bit of analysis of our finances over the past ten years. I simply looked at the club's checkbook balance at the end of the last ten fiscal years, starting with 2004-2005 and ending with 2013-2014. Here are those numbers:

2004-2005	$3032.00	2009-2010	$9027.00
2005-2006	$5208.00	2010-2011	$7243.00
2006-2007	$6691.00	2011-2012	$7351.00
2007-2008	$7404.00	2012-2013	$7504.00
2008-2009	$8128.00	2013-2014	$4696.00

Please note the big drop during 2013-2014, but that year included more than $3000.00 in expenses for the 17.5-inch telescope project. And we've also spent $700.00 so far this year on the new scope. You can see that our balance peaked in 2009-2010, then it leveled out at a little over $7000.00 since, the 17.5" project notwithstanding. But that's kind of the point. As long as we're not spending money on large ticket items, then our budget can hold its own. But if we have any more large expenses, such as maintenance and/or repair of the McMath telescope and/or the building, then we could be hurting money-wise.

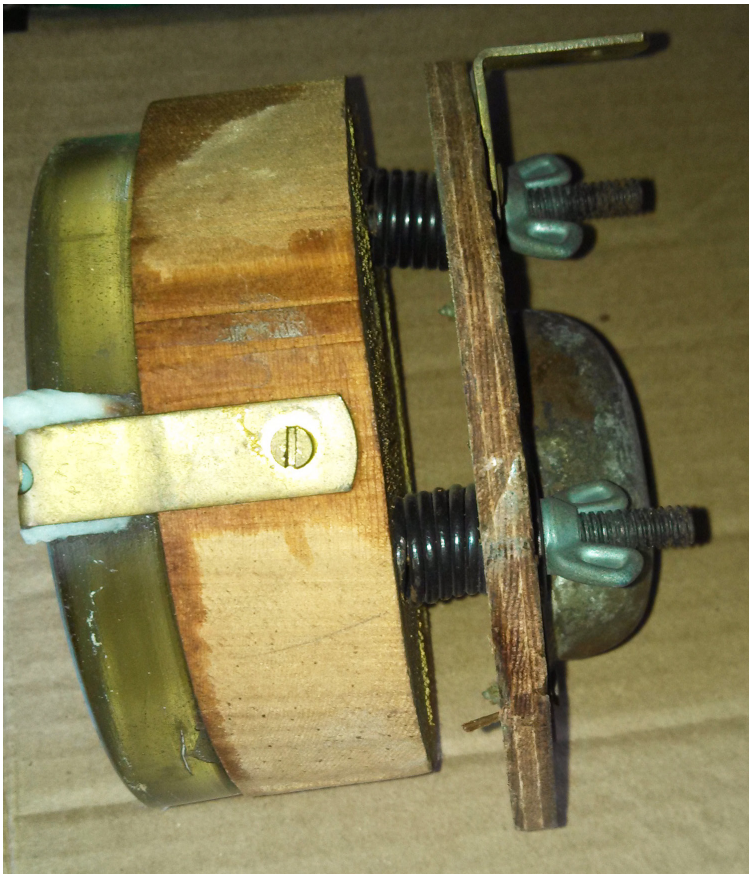
Another factor we should consider is that let's face it – the club is graying somewhat. So it seems that we'll be losing more income as more and more of us are crossing over the age 55 "senior" threshold, and starting to pay $12.00 annually instead of $20.00. I've only been tracking this information since 2011-2012, but in those past three fiscal years the ratios of family vs. senior memberships have been 40/40, 47/44, and 45/46. So far this year we're at 12 family and 14 senior. So over the past three plus years we've been more or less steady at close to 50/50, but it looks like we are starting to head towards having more senior members than not.

The Bottom Line

The bottom line is that currently our income almost exactly meets our running expenses and any reduction in income or inflation of club maintenance costs, or combination of the two, could quickly exhaust the treasury. This would prevent us engaging in future projects. Suppose somewhere down the road we want to add tracking to our new 17.5-inch Dob? Or refurbish one of the historic scopes in the observatory? If we as a club want to continue to pursue such projects, then extra money is going to have to come from somewhere. But from where? Because the Lowbrows are classified as a "Social Club" by the IRS, our ability to raise funds from outside the club is severely limited. Far and away, member dues are going to be our almost exclusive funding source.

The Proposal

Therefore, what we the officers are proposing is raising family memberships from $20.00 to $30.00 annually, and senior/student dues from $12.00 to $20.00. Out of state memberships would remain at $5.00 per year. This is modest considering how long it's been since dues were increased (if they ever have been), and would put what we charge more in line with what other astronomy club memberships cost. It is the opinion of the club officers that these amounts will not be a burden for most, and will provide the University Lowbrow Astronomers a solid financial footing for years to come.



The mirror cell.

--"The Telescope": Continued from page 1

other projects. [The cast iron flange, which cost $2.50 in the 60's now runs around $80.]

My enthusiasm for astronomy must have rubbed off on other people. I took the pipe fittings to a machine shop to get drilled and tapped. I expected to pay a dollar for the work, but the machinist wanted a copy of the plans as payment!

After numerous work sessions, we started to use the telescope. It performed very well. We all enjoyed looking at the Moon, Jupiter, Saturn, Venus, Mars and the Pleiades. I loved to aim at a random area in the Milky Way, and slowly move through the star field.

On rare occasions, my family came out to look through the telescope. I misunderstood this to mean that they didn't care about it. Years later, they were horrified to learn that I had given it away. Suddenly I realized why they always referred to it as "The Telescope", not "John's Telescope". I knew that I needed to do the unthinkable, and ask for it back! My friend was glad to return it, and my family took me back in.

Needless to say, "The Telescope" is kept in a safe place and used with care. With a little bit of restoration, it will continue to show us the moons of Jupiter and the rings of Saturn.

I held the mirror up to the Sun, and found that it is overdue for its first recoating!

Observatory Spring Cleaning --2014--

By Jack Brisbin

This year's Observatory clean-up was a lot more involved and time consuming. First I would like to thank the following members for volunteering their time and energy: Margaret Bumby, Jim Forrester, Kurt Hillig , David Jorgensen, Mike Kurylo and his son David , John Manney, and Doug Nelle.

We started with the re-organization of the observatory and getting rid of non-essential materials. If you have been following the building of the new 17.5" Dobsonian club telescope, you know it will be housed at the Peach Mountain Observatory building along with the 24' McMath telescope and other club telescopes.

Doug Nelle and your editor look on while Dave Jorgensen loads his truck with Observatory refuse.

Unless otherwise noted: All photos by Margaret Bumby

The non-essential materials where removed from the small room in the observatory to a local re-cycling center. The club's president Charlie Nielsen manages a re-cycling center that is open on the same day we did the clean-up. This was very beneficial in removing items that may be hazardous and need to be disposed of in a specific manner.

The best part is, it saves us a lot of time and aggravation in getting rid of this stuff. Dave Jorgensen filled up his pick up and the rest went in Doug Nelle's van and they dropped the stuff off at the re-cycling center. We started to re-organize the observatory and put the useful materials/ equipment in the small room and start work on repairing the roll off roof wheels. Over the past week we have been working on re-centering the observatory roof because the roof edge was hitting the observatory wall when you open or close the roof. One of the wheels was starting to roll off the edge of the roof guide rail. Kurt Hillig fixed the set screws and jacked up the roof enough to sledgehammer the wheel back in place. This will help keep the roof aligned as we open and close it. Later next month we will make another roof adjustment that will center the roof with all the wheels properly aligned. This should solve the roof problem.

Kurt Hillig drives a wheel of the Observatory rool-off roof into place as Observatory Director Jack Brisbin advises.

We continued to re-organize the observatory and make way for the club's 17.5 Dobsonian when Mike Kurylo and his son David showed up with a pick up truck load of rock that will be spread around the observatory. The rock will be used to change the water drainage away from the observatory. The roof was designed with a slight tilt to one side and this causes more water to drain toward the observatory entrance on the east side of the building. Mike laid down some landscaping material on the ground to layout where the rock would go. This took us awhile to shovel out the rock from the pick-up bed. We just rotated in teams and continued to shovel. We also used a tamper to pack the rock and level certain areas for better drainage. After all this work it still didn't rain. We waited for it to come but the most we got was a couple of droplets. After getting all the rock laid out we returned to the Observatory and continued to fill up the small observatory room with the mirror boxes and the storage cabinet .

Your editor, Mike Kurylo and Doug Nelle watch Mike's son David shovel limestone onto the approach to the Observatory.

Caught in the act (actually working!). Your editor finds out how heavy the limestone is, giving Doug Nelle a good chuckle.

Observatory Director Jack Brisbin gives the new approach to the Observatory finishing touches. Jack did a great job organizing the day and putting all of us to work. Photo: Jim Forrester

While everyone else worked in the observatory, John Manney was on the path to the building cutting down foliage and branches so there is more room to walk. This is especially important at night when cars and people have to use the same two track road.

From the Later section of the Sooner or Later Department--

Terence Dickinson lectured at the Ann Arbor Library in the fall of 2012. A Canadian amateur astronomer and science writer, Mr. Dickinson has sold more books about astronomy than *anyone!* Hoping something will rub off are (counter clockwise from the upper right) Lowbrows Jack Brisbin, Clay Kessler, your editor, Dave Snyder, Charlie Nielsen and Norb Vance. Terence Dickinson is seated at the lower right.

Observing Report and Scope Review-- May 31, 2014 Open House

By Nathan Murphy

Nathan is a long time Lowbrow whose status changed to "Out of Town Member" about six years ago. While in town he was active in the club's Amateur Telescope Makers group. Nathan advocated the club building a truss tube dob while he was here and contributed ideas and advice on the 17.5 inch project via e-mail and sent cash to back some of those suggestions. A recent work related trip coincided with the May 31st Open House, and Nathan took the opportunity to put our new scope through its paces.--ed.

Hi All-

Here's my notes about using the new 17. Enjoy

All in all a wonderfully stupendous and gorgeous scope you all. Next time I'm in town, we should hold an ATM group meeting and I'll buy all the beer/beverages. You deserve it! I can't complement enough the people who worked hard to get this baby built. The mirror is awesome, the scope is *beautiful* and it works fantastic. A world-class scope we can all be extremely proud of. Let's all use the hell out of it.

She needs a name, too, so maybe think on that. The folks who worked on it should come up with a few suggestions, then put it to a vote of the membership. No broad survey, you all built her, you deserve to christen her.

Setup:

The 17 was easy to set up - it stores with the trusses mounted. Telrad, primary and secondary covers in place.
- The finder is stored in a canvas bag
- Eyepieces are in the drawer
- 1 person can theoretically move it out, but it's safer with 2, so someone can steady the upper cage and generally lend another pair of eyes. If you're alone, move it out in pieces. Re-assembly ain't that hard.
- I mounted a blue and 1x neutral density filter to the filter slide. They are still there.
- I didn't mount the primary baffle (nice job, BTW) as it looks like it needs to mounted before the trusses are mounted. I don't know if the primary cover can be removed then or not.
- Collimation was a snap. The secondary was a touch off, as was the primary, all done in about 90 seconds, tops.
-The finder went on the dovetail clamp and I aligned it and the Telrad, no problem. Both work like a charm. I take back all the things I said about optical finders. The 70mm is clearly the best choice, as you can actually see DSO's in it. Since there's no drive yet, if you lose an object, you can actually see it in the 70mm finder to re-center. so re-centering M51 and M13 and such for the public was super easy.

Power:

- At first, I didn't hear the fan(s) going, but later realized I just couldn't hear them. They're quiet and well-isolated and do not affect the view up to 200x (highest power I used)
- I didn't see the dew heater turn on or light up, but we never reached the dew point either. Same for the Telrad.
- Switches should be labeled, even if with just 1 letter so we can decipher what controls what.
- The Sky Commander worked, but I didn't align it or use it. no time, and I'm faster finding things than it is on most public-viewing objects anyway. I had fun teaching a few civilians how to use the Telrad and finder scope. They are always so tentative to touch the scope, but once they realize it's part of observing, they love it.

Observing:

- The erfle is military surplus lens. Surplus Shed sez 35mm, about 70deg AFOV. Yields about a 1deg true field. Works AMAZING at f/4.5. You'll know it by its beat up diopter adjustment (non-functioning, obviously). It's in the drawer, face-up in the first 2" hole.

- The explore scientific 18mm 82deg is in a barrel case in the drawer as well. It yields about a 40 arc min view. I can just put M81 and M82 in the same field, at 111x. There's also a 25mm ES 68deg in a barrel case. I don't if that's club's or private, but it's in there.- I used a 10mm plossl for "hi power" and it worked fine. a 9 and 6mm Expanse would work even better, as they have wider AFOV for keeping the object in the ep longer. Teaching the public how to move the scope while observing was fun, and it should be taught until (if) we put a drive on the scope.
Jupiter, Mars, Saturn, M13, M51, M81/82, then the super nova in M82 were what the public saw. All views spectacular. Bridge in M51 was obvious, excellent detail.
- Views are outstanding, with excellent contrast and good planetary detail. I suspect the finish on the mirror is smoother than most. I did not do a detailed star-test, as I didn't have high enough power to critically evaluate the figure. That said, the damn thing worked great, as she pulled in a M15.4 IC galaxy next to M51. It was the absolute edge of visibility, but confirmed by Charlie, and later confirmed in Sarnecki's 18 and Scobel's 16 (Though Doug couldn't see it. Cue sad trombone)

- Later, I worked my way around Markarian's Chain and was picking off M13-15th galaxies like no tomorrow. I stopped counting at 16.

Improvements:

- Test the baffle: I suspect there is more contrast to eke out of the scope, as there is a lot of stray light yet reaching the primary. The flocked upper tube is jet black - well done, good choice. Someone should check if we need an extension on the upper tube -I didn't roll my eye around in the focuser with no eye piece to check for stray light. It didn't seem to need it, but check anyway. Humor me.

- The friction on both axes is still a touch stiff. Maybe just wipe a bit of Rain-X on the teflon and ebony star? Dunno. Since there's no drive (more on that later), the friction could be just a bit lower. Sticktion was good and predictable. I just want a little less force to move her around.

- We need to buy a laser collimator, and store it in the observatory. No need to get a Glatter or Kendrick or anything so decadent. The 2" Orion will work fine.

- It needs an eye piece tray. Maybe order two from Orion, or cut our own. Minimum--two 2" holes and two 1.25" holes. Or make two so we have 4 holes each. We can also make a box like Scobel did for Papa Smurf. (see photo)

- Invest in an Astrosystems full-scope cover, or maybe commission (read: pay) Ginia Forrester to sew us one (*Editor's Note: I have an inside track on this one. She'll donate her labor if the club buys the materials. She also tells me water-proof materials are also dust proof materials.*), as well as bags for the rocker box/ground board assembly, truss tubes, and upper cage for when it is disassembled. We can talk about material over beers someday. Not urgent.

- Cut a coke can ("pop" to you mid westerners) open for a secondary cover, maybe lined with some felt or something to make sure it friction fits. Good idea from Sarnecki - ask him about it. The baggy-plus-rubber band works just fine, but it's too easy to contact the secondary and fussy to get the band over the back of the mount. A custom machined aluminium or stainless one would be cool too.

- We need a 2" UHC filter. UHC (typically) isolates the H-alpha, OIII, and H-beta lines. It's really the only one we need. A separate OIII might be useful, but not really if you have the UHC.

That's all I have for now.

Public Observing at Brighton Recreation Area May 23

By Don Fohey

Photos: Mahmoud Tayeh

John Wallbank Collimates his 8" reflector.

The Brighton Recreation Area Staff were wonderful hosts for the Astronomy Event this year. There was indeed excitement as a new meteor shower was predicted for early Saturday morning. Several Lowbrows set up telescopes for viewing. The site near Clinton Pond was very nice with a well cut lawn, close parking and open restroom facilities. The large field provided for a low horizon with only a distant soda machine produced unwanted light.

Jupiter, Mars, and Saturn were nicely placed in the sky for early viewing and were enjoyed by what I estimated as 25 or so enthusiastic visitors. Many of the visitors were from the campground and asked many good questions and took time to study each object. As the evening darkened we started pointing the telescopes at deep sky objects. M81, M82, M97, M108, M51, M104, and M13 were all good objects for visitors to my 10" telescope.

Vice-President Ken Ruble assembling his 12" Dobsonian.

Ken Ruble, Charlie Nielsen, Jack Brisbin, Doug Nelle, and John Wallbank pointed their scopes at other objects including some comets. Norb Vance and Dave Snyder were in attendance and added their considerable knowledge to much of the explanations and discussions. The dew levels were moderate and the seeing reduced somewhat as midnight approached. We were all getting meteor fever and abandoned the telescopes for lawn chairs. There were many stories of past meteor showers, Aliens, and NASA space programs but there were very few meteors. A few were seen with the correct radiant and were noted to be slower and redder than the sporadic meteors. The peak was predicted to be 2:10 am plus or minus 30 minutes. At 3 am we called the shower a bust and packed up. I wasn't too disappointed as any night under the stars is a good night.

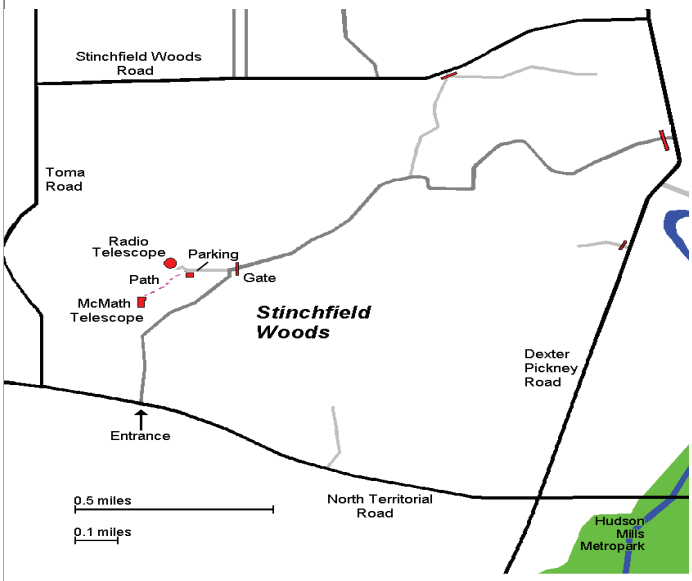
Above: Author and Vice-President Don Fohey beginning his evening's set up.

Left: President Charlie Nielsen with his 12" Intelliscope.

Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3rd Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

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 which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



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 Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers are $20 per year for individuals or families, $12 per year for students and seniors (age 55+) and $5 if you live outside of the Lower Peninsula of Michigan.

This entitles you to the 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 or by check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomers

P.O. 131446

Ann Arbor, MI 48113

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

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

Astronomy - $34.00 / year or $60.00 for 2 years

For more information contact the club Treasurer at:

lowbrowdoug@gmail.com

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Jim Forrester (734) 663-1638 or** jim_forrester@hotmail.com to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

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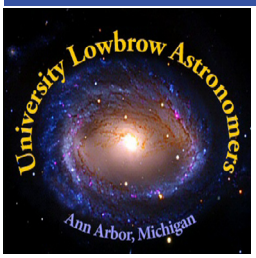
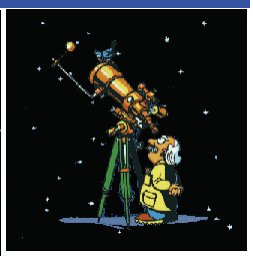
Reflections & Refractions





Website
www.umich.edu/~lowbrows/

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Lowbrow Calendar

Friday June 20, 2014--*Monthly Club Meeting*--Dave Shindell (Data Optics, Inc) “Refining Telescope Design for Astroimaging”, Room 805 Dennison Building, UM Campus, 7:30 PM

NOTE ROOM CHANGE

Saturday June 21, 2014--*Open House at Peach Mountain*--Begins at sunset, may be cancelled if cloudy.

Saturday June 28, 2014--*Open House at Peach Mountain*--Begins at sunset, may be cancelled if cloudy.