

The Optolong L-eNhance imaging filter

Can a single filter increase your astrophotography nights?

By Clayton Kessler – Seven Sisters Observatory

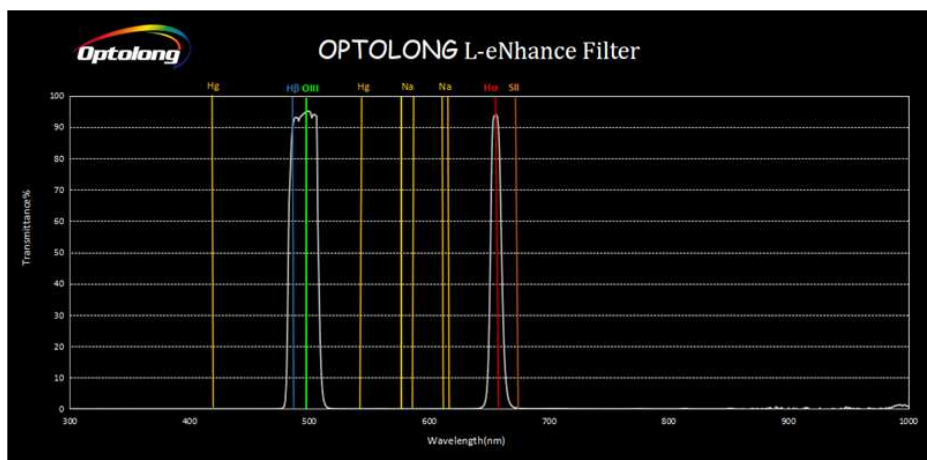


Chart from Optolong's WEB Site

I have been trying to improve as an astrophotographer for well over 20 years. I have seen a lot of technology changes in this time frame! I started with film (remember that stuff??) and even had a hypersensitizing chamber and vacuum pump (still have those...). Eventually I made the change to a DSLR (kicking and screaming) and now days I have been working with Cooled CMOS monochrome and “one shot” color cameras. Hardware and software has improved steadily and today

there are more choices that ever for the old timer or the person newly bitten by the AP bug.

Last year I built an observatory and that has helped to increase my time under the stars making it a lot easier to get out and start shooting. None of the above, however, has helped increase the number of cloudless or moon free days available to me to go out and take pictures. In Michigan clouds are the norm, and if you get a clear night frequently the moon washes out the sky making it another night to go to bed early.

Late last year and early this year I started hearing buzz about a new filter from OPT. This “Triad” filter was supposed to turn a DSLR camera into a narrowband imager. I checked it out and was instantly put off by the nearly \$1K price tag!

I go to NEAF every year and set up a booth for Telescope Support Systems. I highly recommend that everyone interested in Astronomy attend NEAF at least once. I never attended until I went for the company and now I can't imagine not going. There is so much to learn there talking to manufacturers or other astronomers.

As I was talking a break and walking about the exhibit floor I noticed the Optolong filter booth. They had a nice display of all the various special purpose filters that they make and a large sign that touted the “L-eNhance” filter. This filter is intended as a super light pollution filter for astrophotographers. It blocks everything from 300nm to 1000nm except for a narrow bandpass around h-alpha (653nm) and another somewhat wider bandpass centered around 500nm that passes H-beta and Oxygen III. I asked the nice lady at the booth about the cost of the new filter and was informed that a 48mm version was \$229.00. “Sign me up” I said – but I was informed that the filter would not be available until June.

Cynic that I am I thought to myself that this filter was “vaporware” and I would be surprised if it showed up this year at all. Imagine my shock when I learned High Point Scientific was shipping from stock in June of all months. I wasted no time in purchasing the filter and I have been experimenting with it all summer.

I installed the filter on my ZWO ASI294 color camera. You may ask yourself why do I need a high class Light Pollution Filter when I live in the wilds of Manchester and have relatively dark skies? The reason I wanted to try it was the Moon! Many of my nights for astrophotography are washed out by the Moon. My thoughts were that narrow band imaging can take the moon out of the “picture” as far as washing out the sky background. This is essentially a narrowband imaging filter – how much moonlight will it negate?

As it turns out – quite a bit. The first target I went after was the Crescent Nebula (NGC6888) in Cygnus. This is a mostly H-alpha object that is “thin” looking in normal RGB images. I have photographed it before and struggled to get very much.



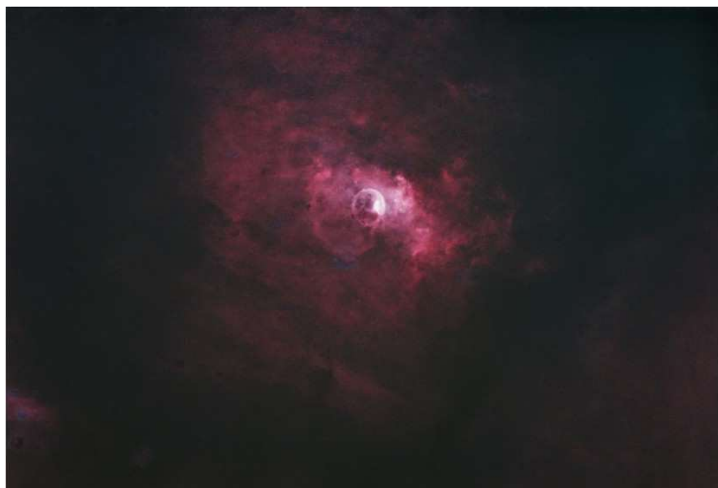
Crescent nebula (NGC6888)



Dumbell Nebula (M27)

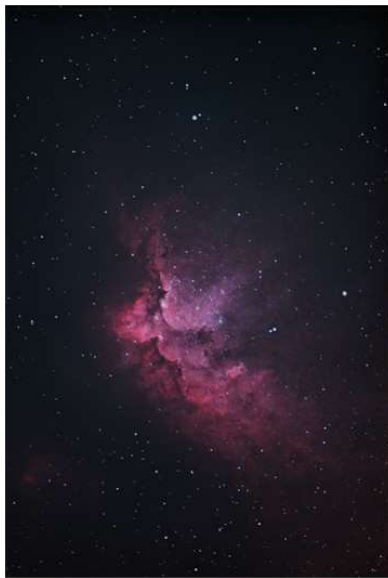
The image with the filter was sharp and easy to process! It seems that thing has possibilities. The next shot – with even more moon – was the Dumbell Nebula (M27). Again - Sharp image, decent detail and easy to process – what’s not to like?

One thing that must be taken into consideration is that this filter only works on Emission Nebulas. Not Galaxies, Not Reflection Nebulas – just Emission Nebulas that have H-alpha and O-III. Not the end of the world, but you need to exercise caution in your target selection. The other downside I noticed was the star images tend to be overexposed and unattractive. There are ways around this issue.

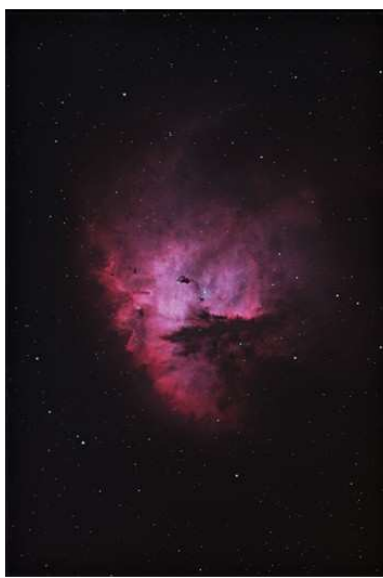
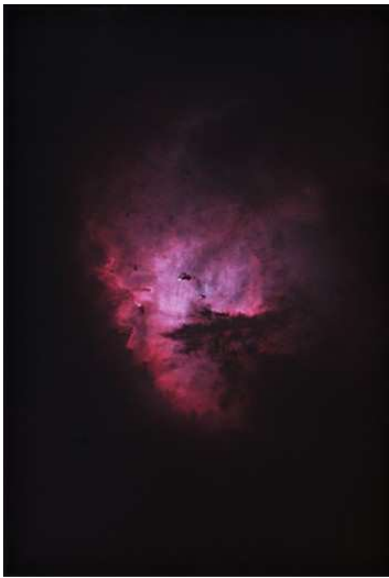


Bubble Nebula (NGC7635)

As the weeks went on I found the clear nights coincided with the moon being up frequently. I shot several objects in the Northern sky. The first was the Bubble Nebula (NGC7635). The picture I am showing is with the stars removed! Note how much background nebulosity there is. If you process with the stars in the frame they tend to get very “blown out” and prevent you from enhancing the nebulosity that is there. Recently there was a very cool program published called “Starnet++” that removes the stars from your image. It is a free download and runs as a “Command Line” program – think DOS – so sharpen your DOS syntax skills! Once the stars are removed it is easy to get the most out of the picture in processing. Oh – don’t worry about the stars – they can be added back in as shown in the next shot – the Wizard Nebula (NGC 7380).



Wizard Nebula (NGC7380)without and with stars



Pac-Man Nebula (NGC281) without and with stars

The same weekend I shot the Pac-Man nebula as well (NGC 281). Again – stars out for processing and back in once done. I notice that I am picking up a LOT more fine details with the filter than my previous efforts. Another peculiarity I noticed is that the calibration and stacking program I use (Nebulosity 4 in my case) Puts the red, green and blue channels in places I did not expect when it “debayers” the image. H-alpha ends up in green – which looks wrong to me. Fortunately it is a simple process in Photoshop to rearrange the channels the way I like them. I may or may not have something messed up in Nebulosity that causes this but it is so easy to fix I have not bothered to look for it.

The final test was last weekend (September 14th) under a full moon. Very bright – washed out sky background with some high clouds – a TV night if I ever saw one. I got a scant two hours on the lagoon nebula before clouds called a halt to the session. At that I still got enough to process and ended up with this photo:(bottom left)



Lagoon
Nebula
(M8)

I have come to the conclusion that the L-eNhance filter is a very effective moon filter! Clouds – not so much. Technology has a ways to go to get us the Michigan cloud filter. On the other hand this filter has markedly increased the number of nights that I can image effectively! It has also allowed me to get finer detail from my images. I am VERY happy with it.

Thank you Optolong!!!

Observatory Roof and Support Structure Painted

By Jack Brisbin



At the monthly club meeting we have been discussing the final painting of the Observatory Roof.

Last month's newsletter article discussed the adventures in scrape and paint. Over the last couple of weeks we painted the roof gloss royal blue. Because the east and west side of the roof are ribbed sections that hold water and the east side is the short side that drains the roof water, we painted each side a second time. We scraped the rust off the front door and metal door trim and primed the door. Then painted it Gloss Royal Blue. Next year we will finish painting the cement block building.

I want to thank the following club members for helping me out at various times; Dave Jorgensen, Doug Nelle, and Larry Halbert .



Pleiades M45 - Oct 25, 2019
© Awni Hafedh

M45 and Surrounding Region. Image by Awni Hafedh

Awni Hafedh wrote in an email to members on October 31st.

“Oct 25th, 2019 - We were invited to Cadillac, MI to do some astrophotography. I've been planning and hoping for one good night, so I decided to capture Pleiades M45 using ASI1600 and Rokinon 135mm lens wide field view.

Now I knew this object will be visible from sunset all the way to sunrise which is very nice, but I also wanted to use every minute of it to try to get the super faint cloud details that surrounds M45 which is the main reason for a super dark sky.

For two weeks all I did was making sure my setup was perfectly collimated as well as tilt free thanks to the (HoTech Laser collimator). I had been testing a lot to get perfectly round stars edge to edge, and luckily we got Friday night with a perfectly clear sky all night.

The night started by setting everything and connected my ASI1600MC-cool (One Shot Color) first to capture as many color frames as I could, total frames captured were (120subs x 60sec) at gain 139. Around 1:00am I switched back to ASI1600MM-cool (Mono) and captured as many frames as I could till sunrise, total of (300subs x 30sec) at gain 139. Processing those subs were brutal for PixInsight, ended up getting a Lum and RGB master frames, combined them to create LRGB and did some stretching and saturation as best as I could without destroying the background, I really like the final results.”

Okie-Tex Star Party 2019

By Mark S. Deprest

Five plus years had passed since the last time I was able to attend this annual premier astronomy event. The Okie-Tex Star Party is a premier star party in every aspect. It is what I call an Observers's Star Party in that the clear, dark skies are the priority and observing in the unspoiled skies with some of the best amateur astronomers anywhere in the world. This is a no exaggeration statement as I have observed with Al Nagler, Mike Lockwood, David Webb, the late Barbara Wilson, David Tosteson, Rick Singmaster Tom and Jeanie Clark and James Kaler not to mention some of best Lowbrows around. My crew included Jim Forrester, Nathan Murphy, Robert and Wendy Wade and Ellie Mae (my 1 yr old Havanese), I don't know how you could ask for a better group to camp and observe with.



Mark (left) and Mike Madden (note license plates)

I should probably explain why it took five years to go back to some place so special. Well the simple answer is, LIFE got in the way. Things are never that simple, and truth be told, I kinda fell away from the hobby, and frankly was a little burnt out. Then my sister passed, and my mother's dementia / alzheimers progressively began to get worse and then she passed. I was forced into early retirement by a company I thought valued my loyalty and work ethics, but it is what it is, and we move on. After two bicycling accidents and a broken collarbone, two teeth knocked out and a burst fracture of the T-12 vertebrae and subsequent fusion of T-11 thru L-1 my mobility was limited for a while. So, camping was something to work back up to.

I sold off some of my equipment and simplified my observing all around. I am too old and broken to be wrestling an 18" truss tube telescope in an out of my van. So, I sold Blondie to Norbert Vance. I sold another telescope to Doug Scobel, and began to think well maybe my astronomy days are behind me. Now, most people who suffer losses or have long term rehabilitation and chronic pain would experience some depression, I am not the exception, and anyone who has experienced depression in themselves or a loved one know how paralyzing in can be. Here is my PSA: depression is a real disease and it can be treated!

Now five plus years have passed since I have done any kind of camping (an activity I really love) or any astronomy work at all and I decided that my favorite venue would be my best re-introduction to both. So, Okie-Tex Star Party here we come, I must admit I did a short camping trip ahead of time just for my me and my dog as a test run. Ellie Mae passed with flying colors and was ready for a new challenge. I mentioned my mental and emotional state earlier and my battle with depression because hobbies like astronomy can be use a stress reducers, the outdoor activity and fresh air are key in treating depression. Moreover astronomy has always been my best treatment for whatever ails me!

As I have made this trip a number of times before the route was straight forward and my stops along the way were well planned and thought out. The trip is just under 1250 miles from Ann Arbor to the OTSP site in Kenton, OK. So, three days of a least 400+ miles a day, had me a little worried about Ellie Mae being in the van for time it takes to drive it ... that is a lot to ask of a dog only just a year old. BAM! Put those fears to rest the first day when me and EM were able to make Hannibal, MO or about 520 miles! The next day was more of the same and we made Dodge City, KS. This put us just less the 200 miles from Okie-Tex and getting the camp set-up and the scopes ready by early afternoon meant we could all get some much needed rest before the night's observing. Which turned out to be a much better night than predicted, although it was all I could do to keep from falling off my observing chair trying to see the whole sky at once, I slowly began to say hello to so many old friends in the night skies

Okie-Tex Star Party 2019 Continued

At the insistence of my fellow colleagues, I brought both my 12" and my 8" scopes, this turned out to be very fortuitous. I spent most of that first night lost in a sky too filled with stars. It seemed as though sky had its volume turned up to max.! Once I got past the total awesomeness of a truly dark sky, I settled down to spend the night with the 8". The first night only lasted until about 2:00 am and truthfully that was about all I could hang, it's been a few years since I've done any real observatin' ! I will leave it for others to describe how amazing the skies are, because this trip was about reconnecting to hobbies I love after being away for too long. I stayed for 5 nights and observed 4 of those, in skies darker and more clear than any in lower Michigan.

Oh, you might be wondering how my dog did during the nights of observing. In a word, she did great, I realize I might be a little biased as she is my dog. Ellie Mae was a little restless the first night and it took her most of the night to figure out that she could go to sleep and I will still be right outside the tent all night long. By the second night she was much more comfortable with the night and strange activities we were all doing and by the third she was an old hand at it and settled down nicely shortly after dark. I, however made the mistake of over confidence and left her sleeping in the tent, while wandering off to the Cosmic Cafe for a midnight snack, she woke up and didn't see or hear me, she freaked out and started barking and howling for me. I heard her first outburst all the way inside the pavilion. But that was my fault for being over confident.



Ellie Mae on top of Black Mesa

During the day there are many things to do if you like hiking there are some great trails within a few miles, Ellie Mae and I did the 8 mile hike to the top of Black Mesa and the high point in Oklahoma of 4973 feet, we made the mistake of not taking enough water along and manage to dehydrate ourselves a bit and it took most of the rest of the day and lots of water to start to feel right again. That's one of the things that everyone watches out for because the climate is so dry it's easy to forget to drink enough.

My return to astronomy and camping was a great experience and my dog was better than I had hoped. There was one issue that I had while observing with my 12" f/5.6 on the tracking platform the eyepiece was a step or two on the ladder depending on how high I needed to observe. This was the problem, my accidents have left me too unstable on my feet to spend extended time on a ladder. I cannot stay steady enough to look through the eyepiece when on a ladder and frustration sets in. Who wants to be frustrated by their hobbies, so I spent some of the best observ-

ing nights of my life with my little old 8" f/6. In skies as dark and clear as these an 8" is like a 12" in Michigan skies and like everything about this trip reconnecting with old friends and the 8" was my first scope and all the Messier objects were first seen in this scope. I have always loved this scope and its "point & shoot" simplicity makes it a great tool for scanning large swaths of Milky Way it was like beginning all over again. I spent one night just hunting down globular clusters and couldn't have had a better night.

Reconnecting with old friends was a huge part of this trip and my friends are the best there is, Jim Forrester and I have played dueling 12 inchers for many years and is a great camping buddy. Nathan Murphy is the best at pushing power and digging deep for obscure details and he can make some great French press coffee. Robert Wade is one of my favorite people to observe with, his jovial nature and his experience are my favorite qualities but he knows so many people and makes you feel welcome to join in. We all enjoy each other's company and when we get together there's always a great time ahead. Okie-Tex 2019 was a great success for my return to Astronomy and Camping, I will be doing this again and as often as my schedule and pocketbook allow.

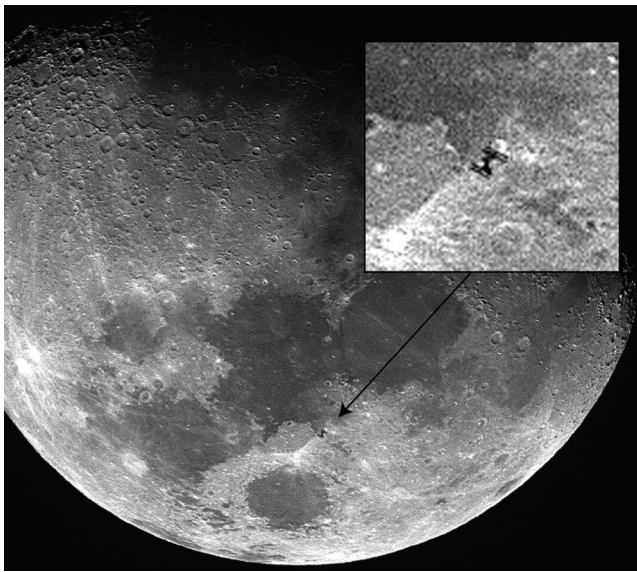
International Space Station (ISS) Lunar Transit, Monday Oct 7th. 08:50pm EST

Event Summary by Don Fohey

Awni Hafedh had sent an email to members announcing that the transit would be visible and suggested that members meet at Independence Park on Denton road in Canton Michigan. The site has very good low horizons in all directions.

I arrived an hour or so before the event and found Lowbrow's Glenn Kaatz, Barry Wissman, and Doug Scobel setting up on the grass at the south side of the parking area. We were joined by Jim Forrester. I brought my friend Mahmoud and we set up our cameras. I had an SLR camera with a 300mm lens and decide at the last minute to record in video mode considering the short duration of the event. I had not taken the time to study the event and was woefully under prepared.

We were all excited as the bright orange star like ISS rose above the western horizon. It moved past Arcturus arcing up and over towards the moon which was south. I had not thought about the fact that it would disappear in the earth's shadow before reaching the moon. I had originally planned on watching the ISS approach the moon and trigger my shutter as it crossed. Naively I grabbed my binoculars to watch it cross the moon and as the time mark passed I had not seen it and said something like "It missed the moon how could the predictions be wrong?" I had not appreciate just how small the ISS image would be. The bright reflection one sees of the ISS belies it's small size. I don't believe any in our group capture and image. I could not find it in the small poorly focused moon video image that I recorded.



Unknown to us at the time a larger group was somewhere else in the parking lot. That group as best as I can determine included Awni Hafedh, Federico Spotti, Jeff Kopmanis, Jack Brisban, Chuck Steele and possible Brian Ottum and others. From email exchanges it appears that Lowbrows Don Swetig and Doug Bock did there observing from other locations. Awni, Federico, Jeff and others did record the event. The Image to the left was sent to members by Federico Spotti who captured it with his 90 mm refractor.

Upcoming Events

DATE	EVENT	LOCATION	
Saturday Nov 2nd. 9 pm	Open House (Rain Date for Girl Scout Astronomy Day"	Peach Mt. Observatory 10280 North Territorial Road	Coordinator Jim Forrester Cancelled to to weather conditions.
Monday Nov 4th.	Library Star Party	South Lyon Library 9800 Pontiac Trail, South Lyon, MI 48178,	Coordinator Brian Ottum and Jeff Kopmanis
Monday Nov 11th.	Transit of Mercury	Independent Viewing	Begins 7:36am EST end 1:04 pm Note: Sunrise 7:19am
Friday Nov. 15th. 7:30 pm	Monthly Meeting	Room G115 Angell Hall 435 South State Street Ann Arbor, MI.	Speaker is Associate Professor Xianzhe Jia, U/M, Climate and Space Science
Tuesday Dec. 10th. 7:00pm	Westland Library	William P. Faust Public Library, 6123 Central City Pkwy, Westland, MI 48185	Don Fohey is presenting the exploration of Pluto, the New Horizon Mission.

University Lowbrow Astronomers

Meeting Minutes October 18, 2019

President Charlie Nielsen opened the meeting at 7:40PM and introduced our speaker, Dr. Dan Durda, Southwest Research Institute. Dr. Durda gave a presentation of the composition and interaction of asteroids. He presented experimental crater data of explosions that agree closely with craters that have been created by collisions of asteroids with solar system objects. A lively Q&A session followed his talk.

A short break followed for people to meet Dan.

Business Meeting:

- Member, John Walbank, OHC for Oct 26 requested support to operate the McMath Scope. Adrian Bradley volunteered.
- VP, Jim Forrester, presented a schedule for 2020 Open House dates. There was a discussion about having the Messier Marathon on March 21. Charlie Nielsen supported that date.
- Observatory Director, Jack Brisbin, reported that the painting group had completed painting the observatory roof and supporting structure. The painting of the block building would wait until next year. He also reported that we are waiting for a quote from U/M personnel regarding the cost to repair the access road to the observatory. He also said that the 17.5 inch scope needs a winter home. Dave Jorgensen offered his workshop to store the scope through the winter.
- VP, Dave Jorgensen, mentioned that WSU will have 6 solar telescopes set up in Detroit to view the transit of Mercury on Nov 11, 9:30 AM to 12:30 PM. A lecture by Prof. Peter Hoffman will be held at the WSU planetarium on Nov 7 at 6PM as an introduction to the event and the significance of Mercury's orbit in helping substantiate the theory of general relativity. David also reported that the 2020 speaker schedule has only 3 open dates remaining.
- VP, Jim Forrester, reported that Norbert Vance, EMU, would be hosting an event on Nov 11 focused on the Mercury transit.
- VP, Adrian Bradley, announced that an event on Dec 13 or Dec 20 was scheduled at Independence Lake. John Walbank volunteered to participate. Adrian will send out an email regarding the event.
- VP, Joy Poling, who was substituting for Treasurer, Doug Scobel, was collecting payments for membership dues and RASC calendars and handbooks. She had nothing additional to report.
- Member, Brian Ottum, reported that this year's AATB event was very successful, hosting 3500 people. He also reported that the GLAAC (Great Lakes Association of Astronomy Clubs) board is experiencing turnover and is looking for volunteers to step forward and plan next year's AATB.

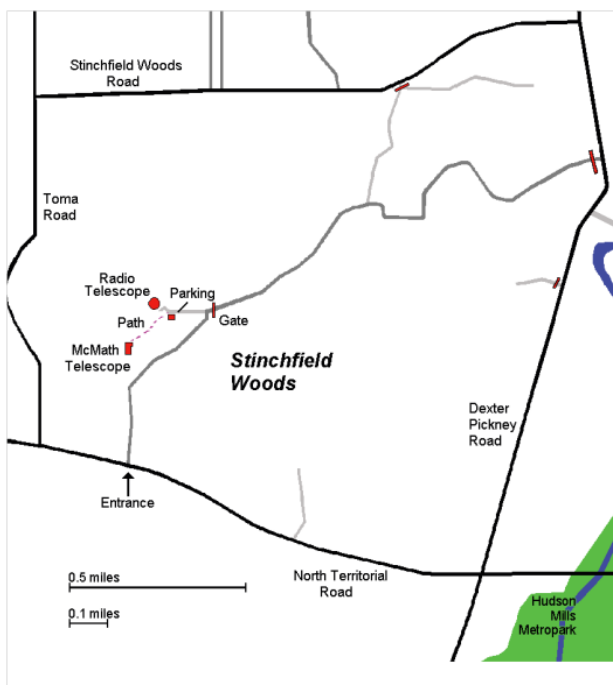
The meeting was closed at 9:30PM.

Respectfully submitted by David Jorgensen

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

Annual dues are \$30 for individuals and families, \$20 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula. Membership entitles you online access to our monthly Newsletters and use of the 24" McMath telescope (after some training). A mailed copy of the newsletter can be obtained with an additional \$18 annual fee to cover printing and postage. Dues can be paid by PayPal (contact the treasurer to find out how) or by 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 \$65.90/2 years

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

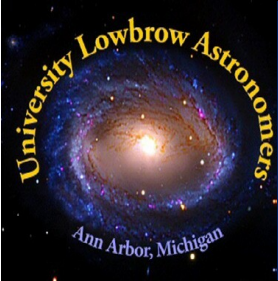
Telephone Numbers

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Vice President:	Adrian Bradley (313) 354 5346
	Jim Forrester (734) 663-1638
	Joy Poling
	Dave Jorgensen
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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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