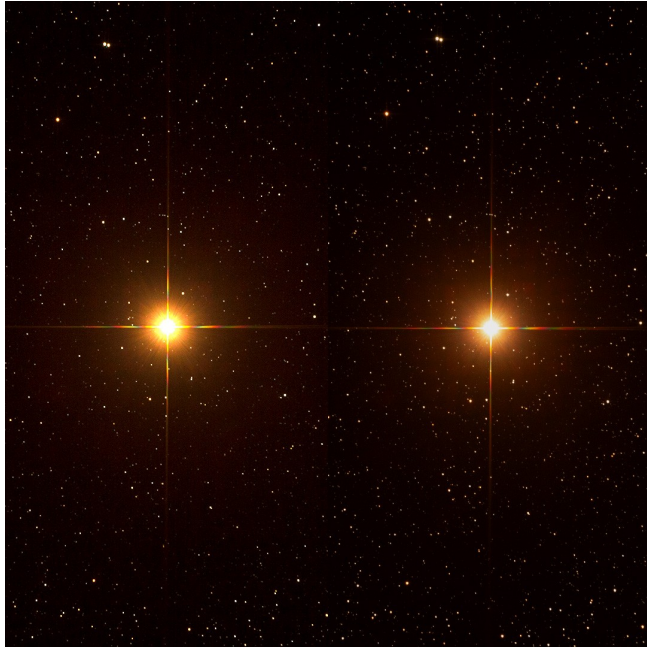


Betelgeuse is "fainting"



Betelgeuse Images by Brian Ottum Ph.D.

Brian Ottum Ph.D wrote in an email to members on Jan 1st

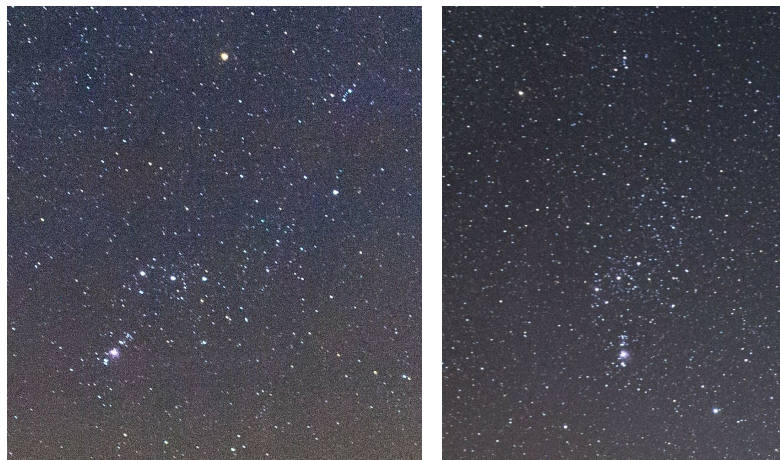
"Here's a direct comparison between my shot from 2016 with my shot from last night. Same equipment, location. The shots were of different exposure, so I adjusted exposure f-stops in Photoshop. You can see the field stars are quite close in appearance. There is a definite difference in appearance. A supernova would be the biggest astronomical event of our lifetimes To pump the brakes a bit, this dimming could just be normal variation by a known variable star.

David Cooke also responded in an email to members on Jan. 1st.

"I am visiting family in Florida, so I don't know whether there have been any breaks in the usual Michigan grey winter skies. However, it's been pretty clear down here.

The dimming of Betelgeuse is striking to anyone familiar with the constellation. In fact, an un trained observer would probably not even take notice of the star now if scanning the skies. Perhaps it's because it isn't dark enough here, but I find it difficult to perceive its color now without magnification. I don't know its current measured magnitude, but casually, it doesn't seem much more prominent than Polaris.

From what I have read, the cause of the dimming and its significance remain open questions. Regardless, it is (currently) a one-in-a-lifetime event, and it's worth seeing if a hole in the clouds opens up."



Left 3/2019 Right 12/2019 Images by Adrian Bradley (cropped by editor)

Adrian Bradely wrote in an email to members on Jan 1st.

"I imaged Orion as part of a nightscape in Spring and Winter, 2019. I compared the images and could not come up with a major difference in the magnitudes of Betelgeuse. This may be due to the difference in equipment... the lens I used for the first image was a full stop less in its ability to let in light.

At Lake Hudson the star color is still apparent, naked eye. Again those are not typical circumstances, since dark skies reveal a lot more sky detail in general.

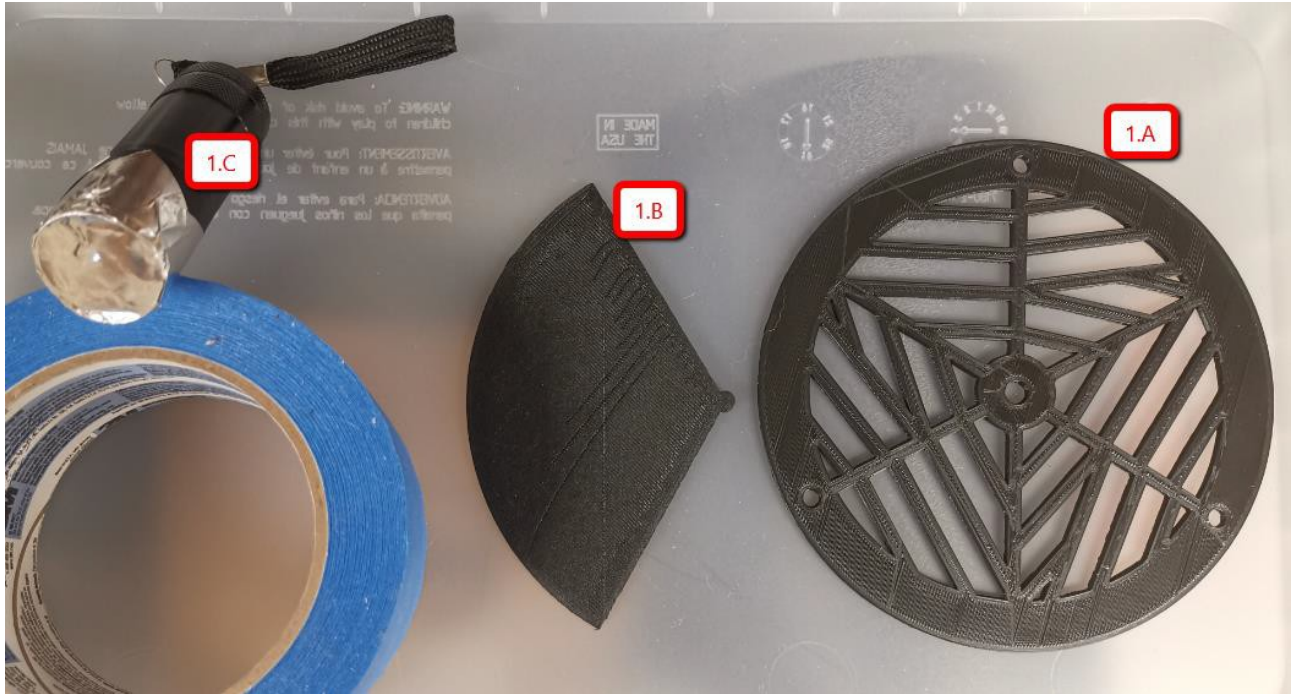
Being that major astronomers have mentioned this, I don't disagree that it's happening. I need to standardize my imaging equipment in order to test it out.

One final note, Betelgeuse's apparent brightness to us is usually a touch lower than Rigel these days. I'm guessing back when it was catalogued as Alpha Orionis, it must have been even brighter in the sky then."

ing back when it was catalogued as Alpha Orionis, it must have been even brighter in the sky then."

## Tri-Bahtinov Mask Collimation Method

By Awni Hafedh



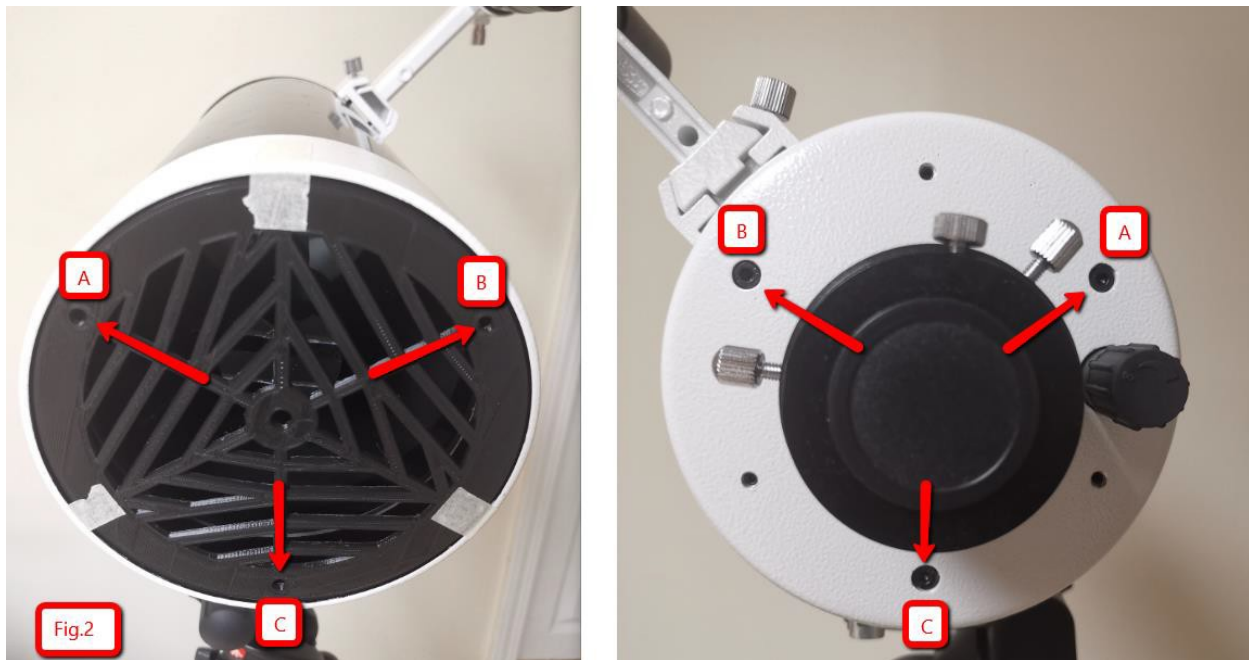
Not too long ago I borrowed a laser collimator from a friend, it is a very nice way to collimate your telescopes BUT there were two problems. One it is very expensive close to \$500, and two it will collimate your telescope very accurately but only the telescopes optics and not with the camera's sensor.

Now there is a way to do collimation with the camera's sensor by pointing the scope at a star out focus to get the donuts shape (Airy disk method). Then starts the tedious method of figuring out which screw to play with to make sure the donuts shape is symmetric.

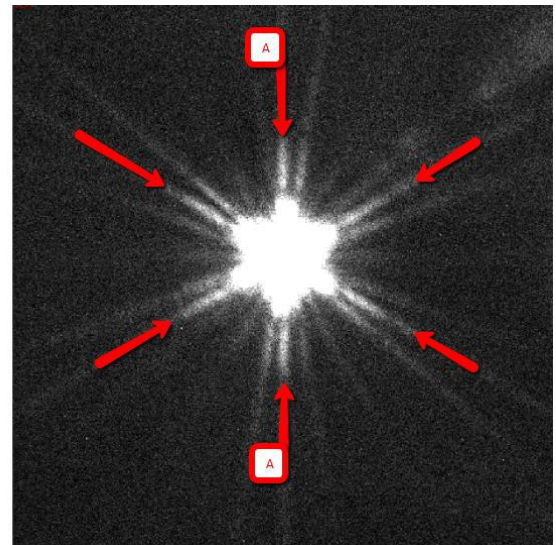
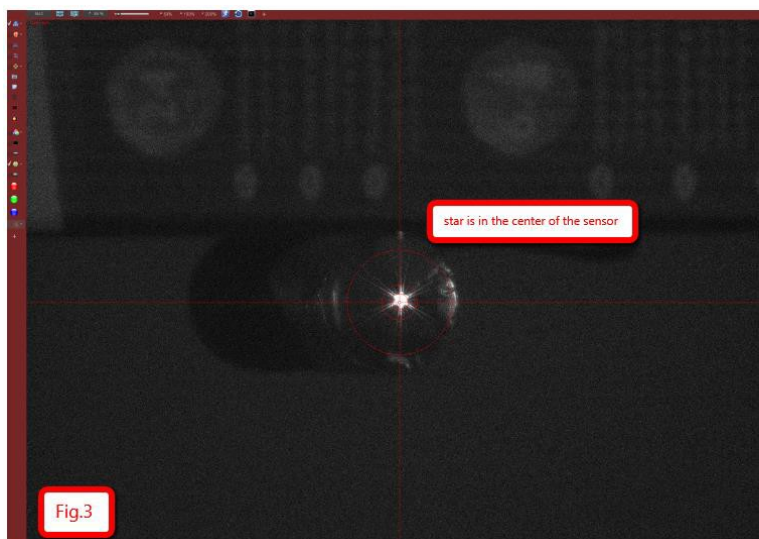
Now thanks to my friend (Federico Spotti) he told me about another method which is call Tri-Bahtinov mask. Basically it is a regular Bahtinov mask but it's divided to three sections which you align to the collimation screws and it will make the collimation method much easier and accurate.

I will try my best to describe this method and hopefully it will be very useful to many.

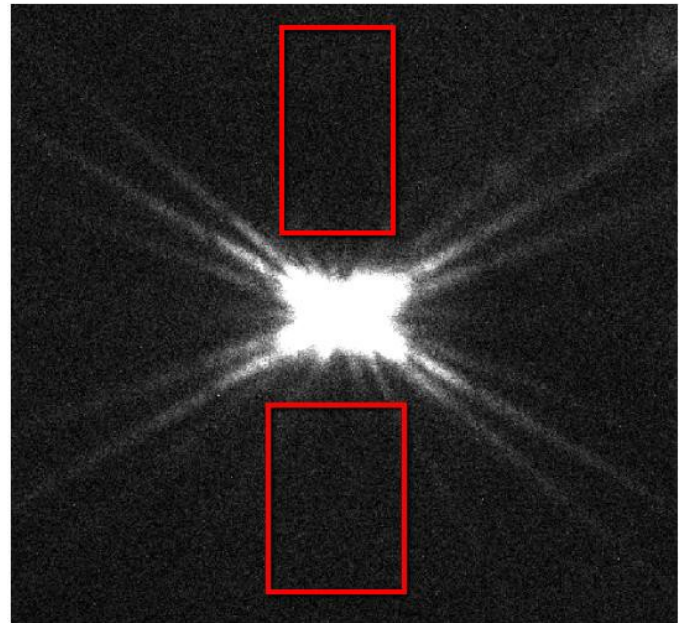
1. 3D printed the mask (1.A) as well as a cover (1.B) which will help identify which collimation screw need to be adjusted, I also created an artificial star (1.C) by basically using an aluminum foil and lay it on a piece of glass and create a hole with a very fine needle.
2. Now install the mask and align the holes of the mask with the collimation screws of your telescope, I've used my SW 127 Mak (Fig.2) and as you can see I simply matched the holes with the collimation screws (A, B and C)



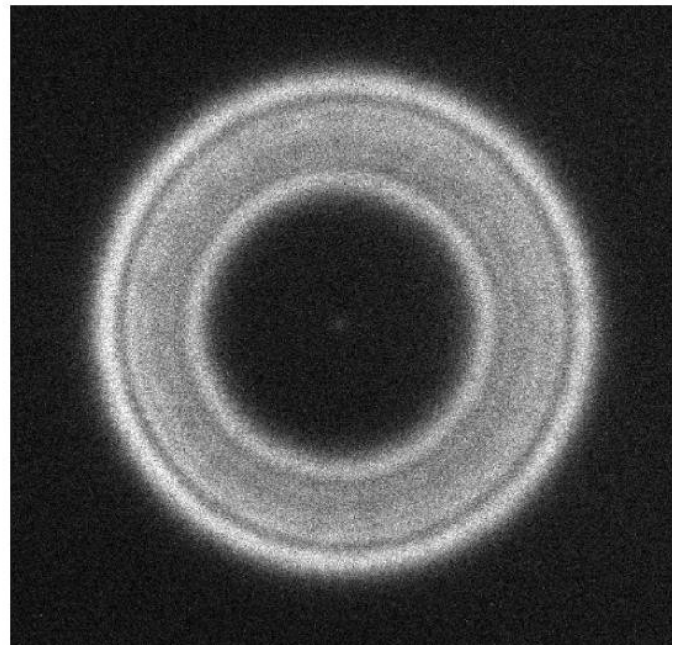
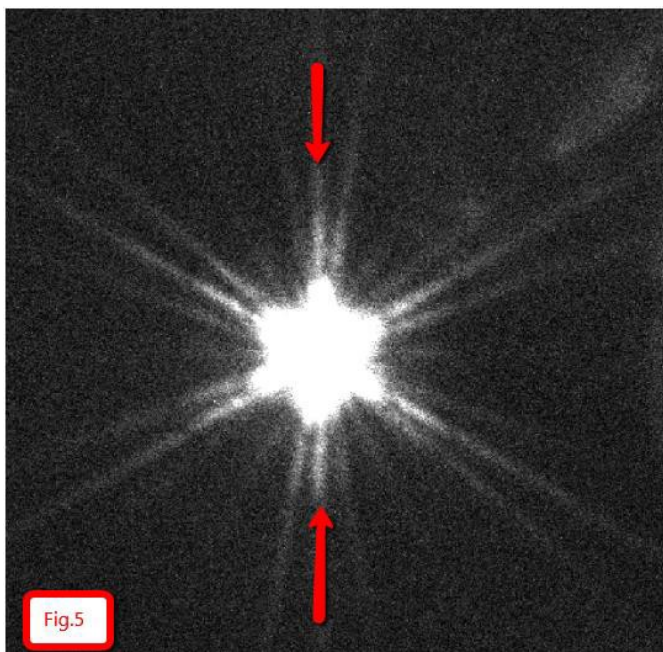
3. Now put the artificial star far away, I put it 10 yards away and mounted the camera to the telescope and made sure the star was in the middle of the sensor (Fig.3). Then you focus by putting the middle spikes in center, in my case the spikes (A) were NOT centered (shifted to the left) but the rest of the spikes are centered, this means my collimation is OFF.



4. In order to find out which collimation screw that I need to adjust I will need to use the cover that we printed to cover the spikes and when the spike that need adjustment disappear then you will know which screw to adjust, in our case (Fig.4) the spike disappeared when I covered the lower collimation screw (C).



5. At this point all you have to do is tight/loose screw (C) or both (A and B) (Fig.2) until the spike appears in the center. Make sure you center the star in the middle of the sensor every time to adjust the screw (Fig.3) and after some trial and error you will get it. The final results, if collimation is perfect, the middle spike will show perfectly in the center. I also checked the out focus star and my Airy rings looks perfect.



I hope you like this collimation method, personally I found it very useful and fast, I am waiting for the next clear sky to test the quality of my image and see if there is any improvement.

Galaxy Collage by Doug Bock



NGC 4631



M 81



NGC 5907



NGC 891



M 82



M 33



NGC 7331



M 66



M 106



M 51



M 90



M 104



M 74



NGC 4565



NGC 6946



NGC 2403

Doug Bock wrote in an email to members on Dec. 9th.

“When we have boring cloudy weather, I tend to dink around with previous data. Here is a small collection of galaxies I’ve imaged over the past year or two.”

## Independence Lake Outreach Event Dec 20th.

Adrian Bradley reported in an email to members.

“Despite hazy skies, cold temperatures, and a Lowbrow meeting happening simultaneously, I honored my commitment on behalf of the Lowbrows to Julie Sigda and the Independence Lake staff.

I set up my scope and got the goto working. I showed about 20 enthusiastic attendees views of M15, M31/32, NGC457, M38, NGC869/884, and M42/43. Most views were not spectacular due to the haze, but the public enjoyed them and asked plenty of questions about the DSOs as well as how my telescope works.

The Independence Lake staff was very happy with how our part of the event turned out. We will very likely be asked to do more events in the future.

My portion of the event lasted from 6:00-9:00pm. Afterwards I packed up the telescope and rejoined the Lowbrows in Ann Arbor for post meeting activities.”

### Upcoming Events

#### Open House Dates for 2019

**March 28**

**April 18, 25**

**May 16, 23**

**June 20, 27**

**July 18, 25**

**August 15, 22**

**September 12, 19**

**October 10, 17**

**November 14**

The club will be traveling to the Lake Hudson State Recreation Area March 21 for the Messier Marathon.

### Westland Library Presentation Summary

By Don Fohey

The Westland Library presentation on Dec. 10th. was attended by eight or so who enjoyed the presentation of the discovery of Pluto and New Horizon mission to Pluto. After the meeting the group stayed for another 45 minutes for a general discussion of astronomy. I expect to see a few at open houses later this year. Jack Brisbin had set up several telescopes and explained each to a few of the group who were very interested. He had a Refractor, a Newtonian, a Classical-Cassegrain, a Schmidt-Cassegrain, and a Maksutov-Cassegrain.

Chris Adams, a new Lowbrow member, showed the group, some aluminum pellets that had been made in the same press used to make the Plutonium pellets for the New Horizon Spacecraft's RTG. He had worked at Los Alamos Laboratories and worked making pellets during the time when the New Horizon pellets were manufactured.

The small group made for an easy going informal presentation and an open discussions afterward.

DATE	EVENT	LOCATION	
Thur. January 9th 7:30pm	GLACC Planning Meeting for Astronomy at the Beach	Island Lake Headquarters Building 12950 Grand River Ave, Brighton, MI 48116	Also online— <a href="http://bluejeans.com/864376269">bluejeans.com/864376269</a> - or by phone -888-240-2560
Friday Jan 17th. 7:30 pm	Monthly Meeting	Room G115 Angell Hall 435 South State Street Ann Arbor, MI.	Professor Edwin Bergin, U/M Chair of Astronomy Dept. Title to be announced.

## University Lowbrow Astronomers Monthly Club Meeting Minutes

**20 December 2019, 7:36pm, Room G115 Angell Hall**

President Charles Nielsen called the meeting to order and then introduced our speaker.

### Speaker

#### Who

Dr. Monica Valluri, Research Professor, Michigan Astronomy

#### Details

Fast moving stars in the Milky Way: what makes them go and what do they tell us about the Galaxy?

Approximately 10 minutes of questions followed. Then Charlie came forward and thanked our speaker.

### Business Meeting

Name	Topic
Newsletter Editor Don Fohey	Westland Library event was attended by 6-8 very interested individuals. Accepted an honorarium check on behalf of the club.  Needs newsletter articles.  The new focuser for the Cave scope was ordered and has arrived.  Has some various gears that might work to repair the donated Meade.
Webmaster Krishna Rao	Has been updating the website particularly adding meeting minutes to the archive. The Event Request Form has been added to the main page and is ready for use.
Observatory Director Jack Brisbin	Recent observatory visit showed everything ok.  Still following updates from Sucila on the gravel driveway project.  With observatory painting being finished is now looking forward to planned repairs for next season.  2020 will mark the 80 <sup>th</sup> anniversary for the McMath.
Treasurer Doug Scobel	Membership is currently 154 members and treasury is \$7,215.
Vice President Adrian Bradley	Adrian, being at another astronomy event, requested and set up via our Facebook page, sent in his report via 2 separate emails to the officers.  ** as you read this I may be back on my way from Independence Lake, where i showed a couple of deep space objects to young children for an outdoor holiday event. * my image of the Milky Way and meteor made the calendar for 2020 at my job! It was the only astrophoto in the group. (I've left another copy of it in this email.) * I have been busy with various things these past couple of meetings and have been unable to attend. I miss you all and hope to see you at the next one. Happy Holidays to you all! "  "In addition to my report I sent in, I will be planning to attend the AATB meeting on January 9th on behalf of the Lowbrows."

### Remote Observatory Demo

**Details**

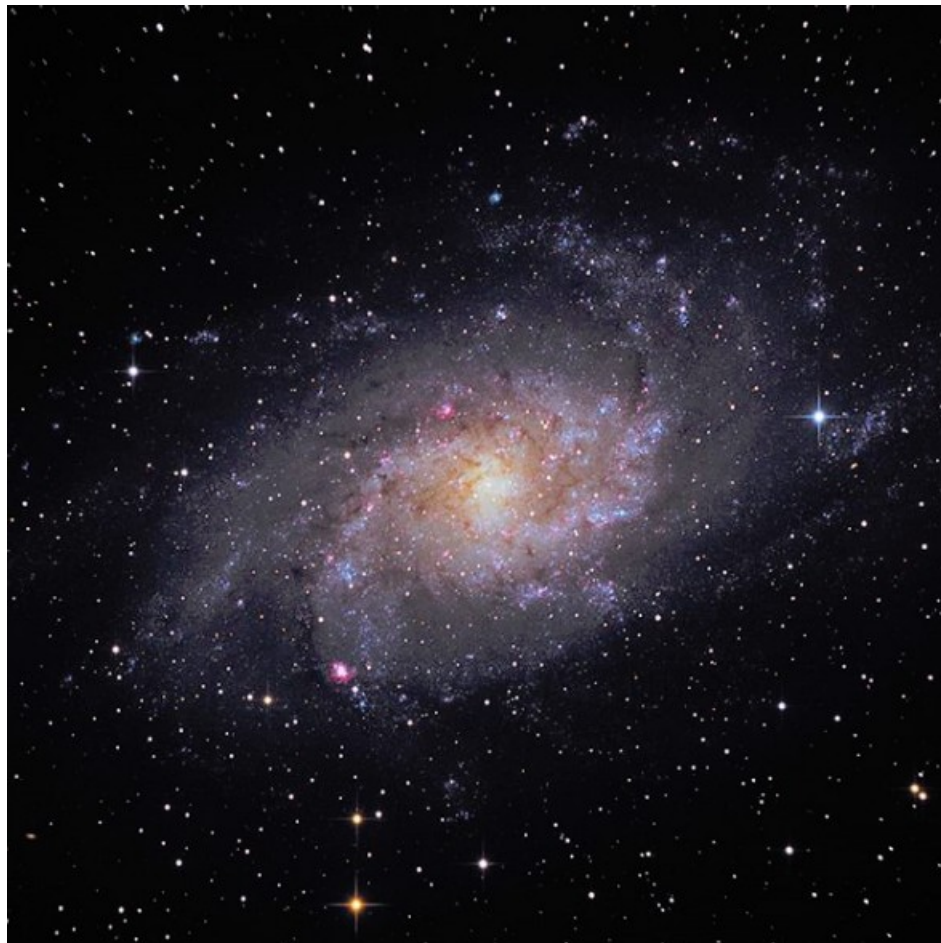
Member Brian Ottum demonstrated using his remote astrophotography setup in New Mexico. He answered many questions and even took a few requests.

**Adjourned**

9:22pm

**Minutes taken and transcribed by**

Joy Poling



Brian Ottum Ph,D, wrote to members on Dec 13, 2019.

“M33 Galaxy Image. You can really see the HII regions in this shot. I combined 4 hours’ worth of five minute individual frames. Remote control scope, 10” f/5 reflector, Canon 5Da Mkiii.”

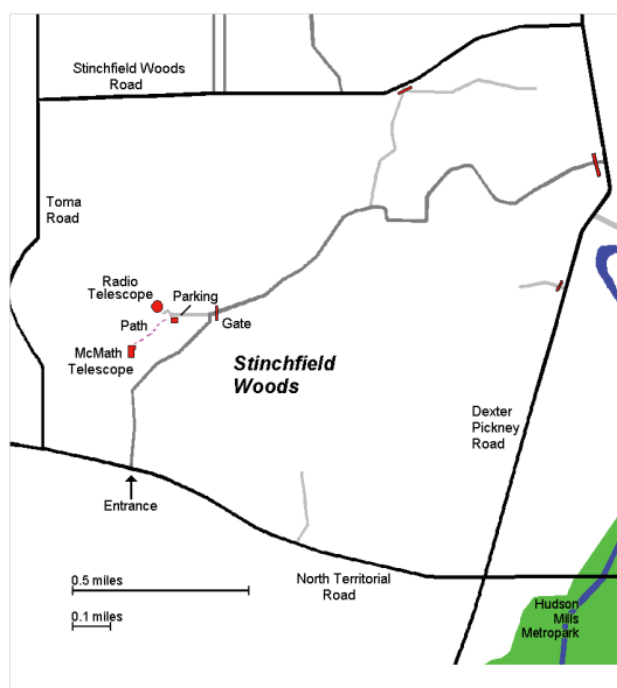
<https://www.instagram.com/p/B6B512knpuU/>



### 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](mailto: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](mailto:donfohey@gmail.com) to discuss format. Announcements, articles and images are due by the 1<sup>st</sup> day of the month as publication is the 7<sup>th</sup>.

### Telephone Numbers

President:	Charlie Nielsen (734) 747-6585
Vice President:	Adrian Bradley (313) 354 5346
	Jim Forrester (734) 663-1638
	Joy Poling
	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](mailto:Lowbrow-members@umich.edu)



## University Lowbrow Astronomers



Member Club



Astronomical League Member Society  
#201601, Great Lakes Region

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

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