

REFLECTIONS / REFRACTIONS

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University Lowbrow  
Astronomers

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## NGC 6960 Eastern Veil Nebula

by Awni Hafedh



Thanks to the cloudy weather that we are blessed with here in Michigan (Not really Grrrr) I've got more time to do some image processing to my old data using some new techniques that I keep learning every day. I Captured this DSO from my lightly polluted backyard in Ann Arbor, 30 subs of each of the narrowband filters (Ha, OIII and SII) and then stacked-drizzled them which looked relatively good.



### NGC 6960 Eastern Veil Nebula continued

Usually when I get such frames, I try to remove stars before I combine them together to bring in as much nebula as I can when enhancing the image with curves and astro actions. The problem with those image is it will be a nightmare to remove those stars and will probably take me weeks. Luckily for me Starnet++ just released a newer version that support removing stars from mono images and to be honest it is amazing and works like a charm.

Below link is to download the new version, get it while it is free.

<https://sourceforge.net/projects/starnet/>



Later on I combined the three filters to a Hubble Palette image (Red=SII, Green=Ha and Blue=OIII) and start enhancing the image and bring back as much nebula as I could. The final step was putting the lightly stretched stars layer back and here is the final image. (editor: On Cover Page)

The color depth in this image is really interesting. The Blue is Oxygen, Orange is Hydrogen and the White is Sulphur. It's like it has a 3D effect to it. Hope you like it.

### Experiments in H Alpha by Federico Spotti

(email to members on Apr 13)



I finally had the occasion to take advantage of the last 45 useful minutes between dark and the lights of the grocery parking lot in front of my condo to test a setup. I recently put together for wide field images. It's a ZWO 178MM cool with a 40+ y old 50mm F2 Nikon lens on a Sky-watcher AZ/GTi/ Everything, including batteries for the cooler and the

intel compute stick is probably less than 15lb and can be easily carried with only one hand. After polar aligning and focusing, 45 mins later this is the image. I'm quite happy with the first light of my grandpa lens and the field of view (8x5.5 degrees, based on astrometry.net)!



## Taking a Trip Through Virgo

by Adrian Bradley



Fresh from a vacation/bowling tournament in Las Vegas, Nevada, I returned home to better-than-expected weather. I decided that during one of my remaining vacation days, I'd spend a late night doing some observing.

Yes, Lowbrows, actual staring through an eyepiece observation, not practicing any astrophotography this time.

With a 2am moonrise, I had some time between sunset and moonrise to use a steady night sky at Lake Hudson State Park and see if I could spot some items there. I chose the constellation of Virgo since it (and Corvus the Crow) are due south at sunset, making it an excellent target for observation.

Of course there are hundreds and hundreds of galaxies that are visible, from the bright ones like M104 and M87, to the fainter ones like NGC4387, a +12th magnitude galaxy that sits in the center of a triangle of galaxies from Markarian's Chain. On this night I had a list of 19 galaxies provided by downloading a Virgo observation list from Sky Safari 6 Pro. I added one more to the list as a challenge, quasar 3C-273, a +12.9 magnitude object that was on my personal 'to-observe' list. Below are my notes and recollections from a few of those objects during that night's session:

**Messier 49, Elliptical Galaxy** - There is a magnitude 12.6 star superimposed on this galaxy, similar to how there is a star superimposed on M101. If you view this object with that star sitting on the bottom of that galaxy, you'll see a miniature of Corvus directly above it!

### Taking a Trip Through Virgo continued

**3C 273, Quasar in Virgo** - Ok I admit I got impatient and decided to go for this one as soon as I thought it might be dark enough to see it! My original plan was to look for a miniature Cheshire Cat asterism that is very near to the location of the quasar. Well I thought I saw a couple stars of the asterism, but couldn't positively identify the little dot of light from the quasar. So I searched around again and found a miniature of triangulum. As it turns out, these three stars are also a signpost that the quasar is near. So I used those three, and star hopped to another recognizable pattern of 3 stars. From there I identified a pattern of stars in which the quasar was one, and matched everything with Sky Safari. I had found the light of 3C 273! It simply looks like another star in the eyepiece but knowing it's really a quasar was well worth the hunt.

**Messier 104, The Sombrero Galaxy** - This is one of the main attractions of Virgo. It's very well known and a favorite of many amateur astronomers and astro-photographers alike. Most of us have observed this object. During my observations the dust lane was clearly visible, and so was the miniature version of Saggita the arrow, pointing right to it. Ironic enough, if you stay out late enough you can see the full-blown Saggita constellation itself, rising with the Summer Triangle, as Virgo and M104 begins falling towards the west.

**NGC 4567,4568 - Siamese Twins** - A pair of interacting galaxies, visible in the eyepiece on that night, but even better when using averted vision. These 10th magnitude galaxies are diffuse and may be tough to view at a place like Peach Mountain.

**NGC 4038,4039 - Antennae Galaxies (in Corvus)** - I took a detour from Virgo to see if I could pick out the Antennae Galaxies, also known as the mice, I believe. Similar to the Siamese Twins, they were barely visible in the eyepiece directly. They are also magnitude +10 and very tough to make out. I swore I saw one of the tails with averted vision. I could not repeat seeing it, so I have my doubts.

**NGC 5746 - Edge on Spiral Galaxy** - It's pretty easy to spot, although it's also 10th magnitude. It sits nearby 4th magnitude star 109 Virginis. I spotted it with an 11" SCT. With more aperture I'm sure a dust lane would be visible.

So after I observed these and other galaxies in Virgo, I looked south and noticed both Scorpius and Jupiter rising. This summer, the Milky Way galactic center rises just below Jupiter. In fact you can tell if a photographer has taken a recent Milky Way picture by looking for the bright dot of Jupiter in his/her photo. So, with the observation night complete, I switched to taking one last look at Jupiter and getting some photos of the rising Milky Way center. I took this self portrait as one last reminder of my successful observation night. (editor: On Page 3) I suppose I should have taken an image of the Virgo constellation instead, but who doesn't like a nice Milky Way shot?

### M87 Image

by Brian D. Ottum, Ph.D.

Following the recent announcements of the first image of Black Hole, Brian wrote in an email Apr 14th to members: "M87 and the New Black Hole Shot" I got a shot of M87 last night, despite the bright moon nearby.

<https://www.instagram.com/p/BwPVB3bncHg/>

He wrote on his instagram page "The black hole is in the center of the galaxy. The blue jet is material being ejected at nearly the speed of light."



## Telescopes Are Heavy so I put a Mini Crane inside my car

by Joy Poling



**I want a bigger telescope** But...I don't necessarily want to lift a bigger telescope.

Actually, whenever I lift my 6 in. dob I think that I need to get something smaller. I do have wheels on the bottom of it so it's really just the in and out of the car that I have to endure. I've seen people doing many different things about this problem but none have really felt like the right answer for me.

I have thought of many different products that I might be able to *hack/mod/adapt/combine/void the warranty of* to use for my purpose. All ideas seem to need approval from the other half of my Finance Team. Many of them were labeled too expensive. Anything that wasn't, typically seemed to need too much adapting. At least more time than I wanted to bother with. Not even one of them sounded right to Finance Team. I could tell by the look on his face. Admittedly they did tend to come across sounding reminiscent of a certain cartoon with a coyote and a roadrunner.

One day while again searching the internet, up popped a picture of a wheelchair lift. Hum? I had sort of forgot that they existed. Moving a load from the ground to inside a vehicle and vice versa is **exactly** what this product was designed for. Perhaps a used one might be cheap enough for the Finance Team? The next couple months I spent way too much time on eBay, Craigslist and Facebook Marketplace. I checked manufactures websites and learned about different makes, models, weight limits and options.

I chose the model that mounts to the side of the vehicle, not the floor as I have a false floor in the back due to the spare tire. The manufacturer claims a 350 lb limit. There are very few decent scopes in the 30 lb and under range so 350 lb drastically opens up my choices. Then more waiting and checking used websites for: 1. the one I want, 2. a reasonable price, 3. within my driving distance.

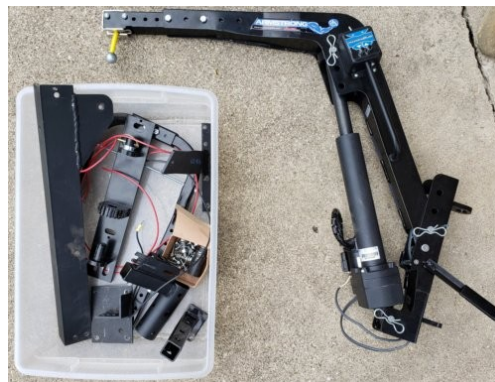
After another month I found one at a decent price but was 3 hrs away.

### Installation Adventures

I got my crane home and began to inspected it (and the box of puzzle pieces that came with it). I was surprised to find no easily replaceable fuse.

On the manufactures website it clearly says that installation must be by an authorized dealer... At the top of the page... In red... With a larger font than the rest of the page. Apparently the installation instructions are also only accessible by authorized dealers. I could see the pdf file. When I clicked on it I was sent to a 404 error page. Next, I left that site and tried broadening my search to the general web and still found nothing on installation.

I chose to mount it on the passenger side as it has a cigarette power accessory socket right there. I had to remove a bit of plastic aesthetic panels from the interior to reach where I would mount it. Pretty much the entire passenger side was 1 piece. To get this one piece off I had to remove a seat and disconnect the seat belt from the floor. I studied where the attachment holes would likely end up on the outside of the vehicle. It seemed easiest to put it where they would end up under the taillight. I removed the taillight to check. The taillight housing was sealed off so I drilled holes big enough to fit my hand in so I could reach to tighten the nut. The interior vehicle wall aimed the unit to the front (because that's how a back wall should work) and limited the lateral swing out to beyond the tailgate. To get it tilted toward the back of the vehicle I had the Finance Team weld a wedge behind the bracket. I put the plastic back on and drilled holes through the plastic and metal at the same time so they would line up. I made sure on the outside that the holes were reachable with where I drilled to reach my hand in. I put everything together loosely and all seemed ok. Then I took the plastic back off and spliced into the accessory socket for power. I plugged the unit in and it did work so it was time to put it all together. Things went together and my crane worked.





## Upon Reflection

I had left the tailgate open most of the afternoon with 1 dome light on the whole time while I did my thing. Some time ago I had switched out my standard dome bulbs with little red LED bulbs. I briefly remember noticing the glow and then, immediately dismissing it thinking one little bulb couldn't possibly be a big power drain. As the time passed I should have reevaluated my decision but it was so dim in the daylight I guess I no longer noticed it. After putting away my tools and vacuuming up metal shavings I went to run an errand. The car would not start.

Also, a fully charged battery latter, I noticed that I have a radio that if the battery goes dead it will not function again until a code is entered. I had to perform a specific action and get a code from the radio and then enter that code, my VIN number and my zip code into a website. Then it will email me a code to enter into the radio. It worked but I'm putting that code away for safe keeping in case there's a next time. My station presets were still saved but the clock was blinking.

And I am not setting the time on the clock. It can stay blinking. Next. Rigging plans.



## Supernova

by Doug Bock  
Northern Cross Observatory

Data acquired the morning of May 15, 2019 .  
Zoomed, Cropped and SN 2019ein identified.  
Several other galaxies in the FOV. NGC 5350,  
NGC 5358, and several PGC galaxies.

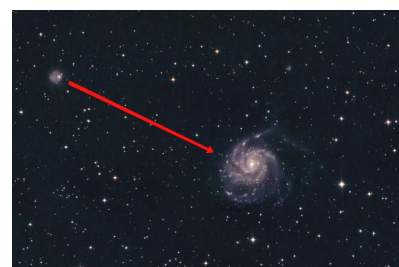
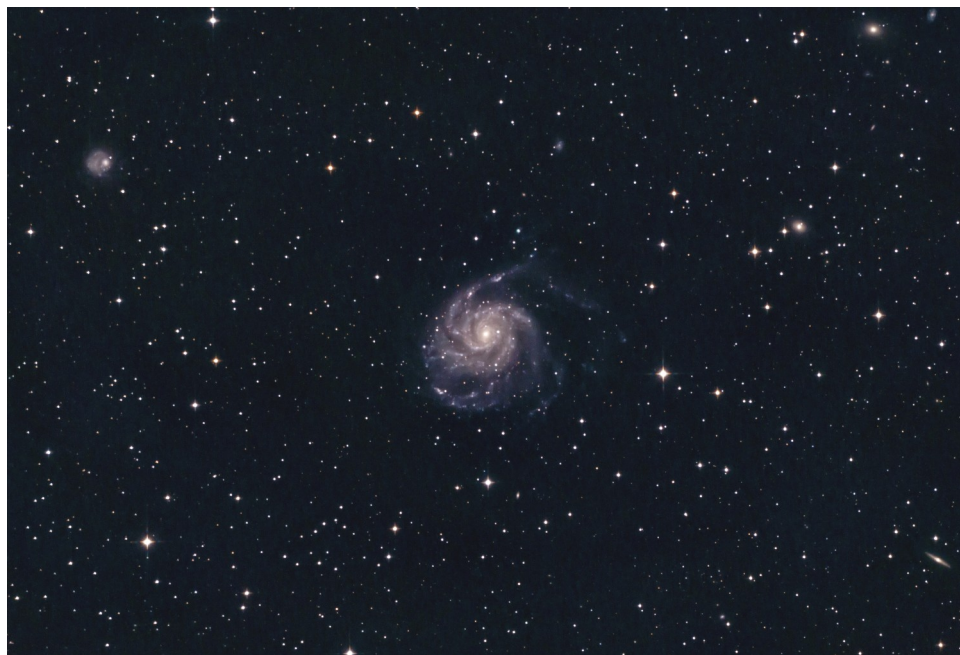
Northern Cross Observatory information  
10" f/8 RC  
ZWO asi071mc one shot color camera  
12 x 5 minute subs  
Losmandy G11 mount w/gemini 2 controller

Object Information: Supernova SN 2019ein in the lenticular galaxy NGC 5353.  
It was discovered on May 1, 2019 by the Atlas Team. Distance to Earth: 110 million light years Magnitude: 11

## M101 Tides

Fedrico Spott and Awni Hafedh

Federico Spotti wrote to members on April 30th. "This is the image I took during the last ACNO night. I really enjoyed looking at faint fuzzies through the other scopes while my scope was acquiring images. Just short of 2 hours of total exposure on my 153mm newtonian @F4 with the ASI294. " Awni Hafedh commented on May 1st " That is an amazing image of M101, you can definitely see the distortion of both M101 and NGC 5474 caused by the gravity tides of each other's orbits, love it dude. "



## Upcoming Events

DATE	EVENT	LOCATION	
Saturday June 1st.	Open House	Peach Mt. Observatory 10280 North Territorial Road	Coordinator Jim Forrester Cancelled do to clouds
Saturday June 8th.	Open House	Peach Mt. Observatory 10280 North Territorial Road	Coordinator Jim Forrester Volunteers Needed.
Friday May 21st 7:30pm	Monthly Meeting	<b>ROOM 2306 Mason Hall.</b>	Dr. Zachary Constan "Fantastic Nuclei and Where to Find Them"
Saturday June 22nd	Star Party	Hidden Lake Gardens 6214 Monroe Road (Hwy M-50), Tipton, MI 49287, USA	Coordinator Charlie Nielsen Star Party for guests of the gardens wit a short presentation before observing begins.
Saturday June 29nd	Open House	Peach Mt. Observatory 10280 North Territorial Road	Coordinator Jim Forrester Volunteers Needed.

**University Lowbrow Astronomers**  
Monthly Club Meeting Minutes *May17, 2019*

President Charlie Nielsen called the meeting to order at 7:35PM. In room 2306 of Mason Hall. He introduced our speaker Brother Guy J. Consolmagno, SJ, is an American research astronomer, Jesuit religious brother, and Director of the Vatican Observatory, and President of the Vatican Observatory Foundation. He spoke to us via Skype from his residence in Arizona. His presentation was titled "Astronomy, Religion and the Art of Story Telling". He explained how all good stories whether they are science fiction, research papers or Gospel stories have the same basic components and structure that make them good reading. During the discussion afterward he answered questions about the Vatican telescope. (1.8 meter Alice P. Lennon Telescope and its Thomas J. Bannan Astrophysics Facility, known together as the Vatican Advanced Technology Telescope, is a Gregorian telescope observing in the optical and infrared situated on Mount Graham in southeast Arizona.)

**Business Meeting:**

**President Charlie Nielsen**--The June and August meetings are scheduled to be held in Mason Hall room 2306 while our regular room in Angle Hall is being renovated. The July meeting will be at EMU. He will be soliciting help for the June open houses.

**Treasurer Doug Scobel** (absent, submitted report read by Charlie)

- We have 157 memberships.
- I placed the shirt/cap order to Sunrise Screen Printing. The total order came to about \$1793.00. About \$508 of that is special orders from members so our net cost to the club is around \$1285.00. Well under the \$2K we approved at the April meeting. I paid \$900.00 to Sunrise as down payment. When product arrives I will notify members who placed special orders with instructions for payment/pickup.
- Astronomical League annual dues are coming up end of June. The membership can expect an email from me describing the process before the end of May.
- Treasury balance is \$7515.00.

**Vice President Adrian Bradley** (absent, submitted report read by Charlie)

- We have 870 likes on our Facebook page. Yes we're marching on to 1K! Guess we should get to 900 first. We haven't had much activity since our last open house posting earlier this month, so I plan to post a few things here and there during the summer. All Lowbrows who use Facebook, please like our page if you haven't done so already, and feel free to post items on the page. Dave Snyder, Krishna Rao, and myself are admins. If you want, you can send me any items you want posted in an email, and I will get them up on Facebook.
- I'm still considering a bowling outing for the Lowbrows during our stretches of cloudy weather. Who's in?

**Observatory Director Jack Brisbin**--

- The new gate lock is in place and works with our keys.
- On June 1st the Washtenaw Audubon Society will have their annual birding inventory event in Stinchfield Woods from 8am to 1pm and will be done well before our open house that night. Jack asked that those attending be told they are welcome at our open house.
- FBI training will be June 11th from 7am to 5pm in Stinchfield Woods and are welcome to attend our open house.

Meeting adjourned 9:40pm

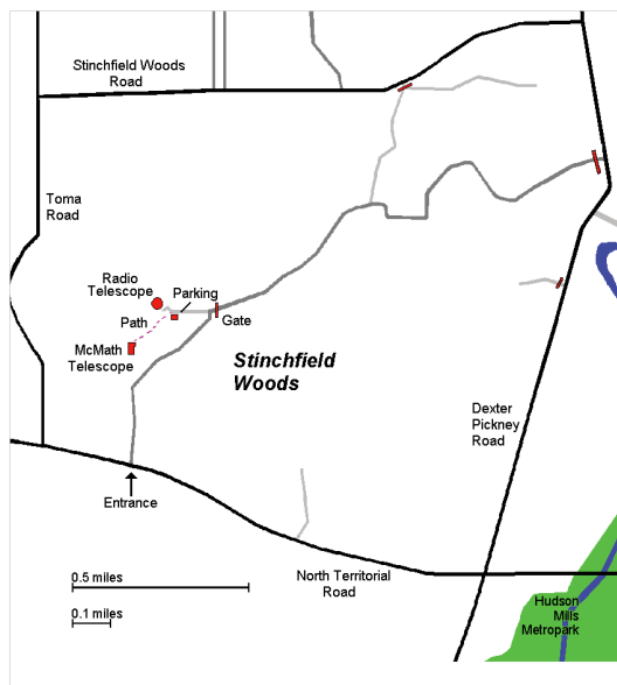
Submitted respectfully by Don Fohey



### Places & Times

Monthly meetings of the University Lowbrow Astronomers are held the third Friday of each month at 7:30 PM. The location is usually Angel Hall, ground floor, Room G115. Angell Hall is located on State Street on the University of Michigan Central Campus between North University and South University Streets. The building entrance nearest Room G115 is the east facing door at the south end of Angell Hall.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope and McMath 24" telescope which is maintained and operated by the Lowbrows. The entrance is addressed at 10280 North Territorial Road, Dexter MI which is 1.1 miles west of Dexter-Pinckney Rd. A maize and blue sign marks the gate. Follow the gravel road to the top of the hill to a parking area south of the radio telescope, then walk about 100 yards along the path west of the fence to reach the McMath Observatory.



### Public Open House / Star Parties

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mt. Observatory, but are usually cancelled if the forecast is for clouds or temperature below 10° F. For the most up to date info on the Open House / Star Party status call: (734) 975-3248 after 4pm. Many members bring their telescope to share with the public and visitors are welcome to do the same. Mosquitoes can be numerous, so be prepared with bug repellent. Evening can be cold so dress accordingly

### Lowbrow's Home Page

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

### Membership

The University Lowbrow Astronomers membership dues are \$30 per year for individuals or families, \$20 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan. Membership entitles you access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training). A hard copy of the Newsletter can be obtained with an additional \$18 annual fee to cover printing and postage. Dues can be paid at the monthly meetings, by PayPal, or be check made out to University Lowbrow Astronomers and mailed to:

**The University Lowbrow Astronomers**  
**P.O. Box 131446**  
**Ann Arbor, MI 48113-1446**

Lowbrow members can obtain a discount on these magazine subscriptions:

**Sky & Telescope - \$32.95/year or \$62.95/2 years**  
**Astronomy - \$34.00/year, \$60.00/2 years or \$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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