



REFLECTIONS / REFRACTIONS

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University Lowbrow
Astronomers

FEBRUARY 2018

VOLUME 42, ISSUE 2

Michigan Bolide Meter Event

Compiled by Don Fohey



Photo from wwmt.com used with permission. Newschannel 3 photographer Zach Lawler caught the fireball falling through a dashboard camera Tuesday, Jan. 16, 2018, while he was returning from an assignment. (WWMT)

Shortly after 8pm while at home in Plymouth, I saw a flash of light out my west facing living room window. The light snow we had all day didn't seem to warrant lightning. Did I really see a flash? A minute or so later I heard a loud boom; it seemed longer than a typical lightning delay. It wasn't until Wednesday morning that I learned of the meteor. The event was widely reported in the news media. NASA Meteor Watch <https://www.facebook.com/NasaMeteorWatch/videos/1672794856113067/> reported "There was a VERY bright fireball (possible superbolide, which has a brightness between that of the Full Moon and the Sun) seen in the Michigan, Ohio, Illinois region this evening at 8:08:30 PM EST. "

Kurt Hillig sent the first email to Lowbrow-members at 8:59pm with subject: **Did anyone catch the fireball?**
He wrote at 8:59 pm "I missed it. :-("

Joel Cannistraro wrote at 9:09pm "We saw a flash and what we thought was thunder. What was it?"

Brian Laskey wrote "I saw the flash through the window in Salem. Then the dogs started going crazy... barking and pacing. "

Clay Kessler wrote "I did not see it from my office but I did hear it."

Tj Lepkowski wrote "Saw flash thru the window shade. Sounded like thunder in AA twp."

Charlie Nielsen wrote "I saw the flash right through my closed window blinds! Also heard what must have been the shock wave after what seemed like at least a minute. At first thought it was lightening but no weather condition support for that. I did wonder if it was a bolide at that point. I guess they don't just pick on Russia. :-)"

Charles Steele wrote "I heard what I thought was thunder. My grandson said he saw a flash out the northwest facing window. (We live in Canton) Is it confirmed to be a meteor?"

Robert Sulewski wrote "Shook my house in Romulus, too; thought it was a plane at first."

Doug Nelle wrote "At the right time a flash out a north window caught my attention. I thought it was lightning. I neither heard nor felt anything. Since it was east of Ann Arbor(?), I assume I was seeing a reflection from the house next to me or from clouds."

Michael Meade wrote "I was outside with the dogs when the blue-white flash lit up the sky. My security camera caught the flash."

Paul Walkowski wrote "Saw multiple flashes out of a north facing window, followed many seconds later by a rumble, thought it was thunder and lightning, but wondered if that were possible when it's 5- 10F."

Dave Snyder wrote "I saw a flash and at first assumed it was lightning, but didn't hear anything. It has been confirmed to be a meteor entering the atmosphere a few miles south of New Haven, Michigan."

Ken Cook wrote "I saw it as I was walking from my car to Panera on Eisenhower - so I was facing NW. It lit up the sky but there was no sound that I heard. I saw part of the track and maybe the bolide. I thought it was heading N (or NNW) and I think 55 to 65 degrees of elevation. It was a bit cloudy but the track was too slow for lightning. Very interesting to see."

Steve Winchester wrote "Last night at home in Ann Arbor near Packard and Stadium, I was inside and saw the flash. One and a half minutes later the shockwaves hit. Shook the house, thought someone had pounded at my door. Looking at lightning tracker I see no activity. Started half heartedly thinking bolide explosion...ha ha ha. Decided to check the security videos and no mistake, that was an exploding meteor! Videos attached are: Front camera, back camera and front camera when the booms hit...you'll need to turn that sound video up to hear anything." (Editor: videos too large to attach and print format doesn't support video)

Dave Jorgensen wrote "I think I heard some noise at around 8PM, but figured it was only another collision on I-94, which occasionally happens."

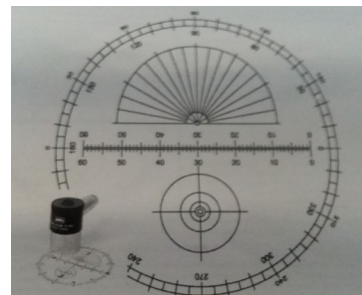
Clay Kessler emailed to members on Jan 17th a day after the bolide event. "Driving home at about 11:45 tonight I saw another bright meteor. It was south and west from me in the Manchester area and was a vivid green!"



Under the Tree

By Jim Forrester

I received a 6mm Delos eyepiece and a Baader Planetarium Micro Guide eyepiece for Christmas. The Televue eyepiece will give me just shy of 300x in my 12.5" f/5.6 Dobsonian with an approximately 15 minute true field of view. This should come in handy observing the planets, especially Mars with its close opposition this summer.



The Micro Guide eyepiece is a 12.5mm plossl with several side-by-side scales overlaying the view. This will allow me to take measurements of double star separations and position angles. Each space on the linear scale equals about 5.5 arc seconds in my 12.5" scope. For finer results I'll be using barlows to get the spacing down to about an arc second.

Virtual Lunar Eclipse Viewing

Brian D. Ottum, Ph.D.



The combination “Blue Blood Supermoon” eclipse was Wednesday January 31st. It was, as you know, the second moon in the same month as well as close to perigee. Both the circumstances of the eclipse (starting as the moon was setting) and the Michigan Nebula (permaclouds), conspired to prevent Lowbrows from observing the event. Not so!

In the dark and cold morning, Lowbrows trudged to Brian Ottum’s house in Saline. Jim Forrester brought the critical observing component (coffee) and Bobby G. brought the second most critical observing component (doughnuts). They were joined by Jeannie Kain, Doug Scobel, Adrian Bradley and Chuck Steele. (Brian’s neighbor and observing buddy John Kelley also joined the group).

Starting at 6:45am EST, they were able to see the start of totality on the 90” home theater screen. Brian remotely controlled his telescope, located in the New Mexico desert, and displayed images throughout. The weather out there was also cold, 29F, but perfectly clear. The dark red totality hit about about 8am EST, and the moon sunk below the roof-line by 9am, ending a great show.

The group remarked that it was a more pleasant observing experience than having cold, wind or mosquitoes. We will re-convene for the next big event.

The image was taken at 8:18am EST, with a Canon 5DmarkIII (modified for greater infrared sensitivity), quarter second exposure, ISO 1600. The optics were a 10” f/5 reflector that started its life as a dob made in Taiwan. Most importantly, TheSkyX planetarium program was used to point/track the Paramount MX mount. (editor: Brian included the image in the composite above which he also created.)

Tele Vue DeLite

By John Manney



For two years, I have been enjoying my Orion 10" f/4.7 Dobsonian telescope. As things progressed, I found that I used only two eyepieces for most of my viewing: a Celestron 32 mm Plössl, and a very old Edscorp 12 mm Kellner. The 32 mm Plössl gives a very good, wide view, and has excellent eye relief. The 12 mm Kellner is good for faint objects, and for detailed views of the planets.

The disadvantages of the Kellner are poor eye relief and a narrow field of view. These shortcomings are particularly troublesome for young observers. For many objects, the 32 mm yields too low a magnification (38x), so I needed a better high-power eyepiece.

There is so much information about choice of eyepieces that one can get overwhelmed when researching. To narrow down the choices, I wrote down what I was looking for: Focal length around 12 mm (for 100x), at least 20 mm of eye relief, wide (but not ultra-wide) field of view, and a cost up to \$200. I broadcasted an email to the Lowbrows and got a lot of good advice.

Although Tele Vue products have a very good reputation, I hadn't considered them because I assumed that they were too expensive. I was surprised to find that the DeLite series had what I needed at a price of \$250. Although it was a bit more money than I projected, it wasn't hard to choose the DeLite. I learned that my scope could handle more magnification, so I ordered the 9 mm eyepiece, which yields 133 x. I am very pleased with the DeLite. I have used it for double stars, clusters, galaxies, nebulae, the Moon and Uranus. I look forward to using it for Mars, Jupiter, and Saturn.

Some of the advantages:

Sharp images all the way to the edges of the field of view. This is very helpful, since I don't have a tracking mount.

Excellent performance for low-contrast objects. The Crab Nebula M1 had been difficult to observe in a light-polluted sky. With the De Lite, it was very easy to see. 62 degree Apparent Field of View, a big improvement over the 12 mm Kellner. Rubber eye guard, with adjustable height. This will protect the eye lens from contact with eyelashes, and from young fingers!

I had a surprise when I looked at bright stars with the DeLite. I didn't find pin-point images when focusing. I later realized that I was looking at the Airy disk, which I hadn't seen with my other eyepieces. (The Airy disk is caused by diffraction, not by optical defects.) In summary, I have no complaints about the Tele Vue DeLite. It is a very good general-purpose eyepiece.



Member Photos

Brian D. Ottum Ph.D. wrote in an email to members on Jan 12th.

"Lowbrows,

Did you hear that there is a highly unusual blue comet in the sky right now? It is comet C/2016 R2 PanSTARRS (see attached shot I took last night).

It is visible here in Michigan, near Taurus, with binoculars. Away from city lights. Even then, you just see a small bluish fuzz. Mag 10. The blue is from carbon monoxide sublimating (turning from solid ice to gas)."

Member Photos (cont'd)



Photo by Brian D. Ottum Ph.D. (editor added white outline)

Brian D. Ottum Ph.D. wrote in an email to members on Jan 26th.

“The arrow points to the tiny Twin Quasar. This quasar is 9.3 BILLION light-years away! A galaxy in between the quasar and Earth is the gravitational lens that splits the original quasar’s light in two. The inset pic on top is from Hubble. A quasar is a super massive black hole that far outshines its surrounding galaxy. The black hole is rapidly vacuuming up everything around it. In the process of this cataclysmic event, energy blasts out. Quasars have to be super bright, or else we could never see them. The photons my camera captured on January 25th had been traveling @ 186,000 miles per second for 9.3 billion years. Think about that for a minute. Kind of disturbing.

Taken by my remote control telescope located in the New Mexico desert. 10” f/5 reflector, Canon 5DmarkIII, Paramount MX, autoguided by QHY168C on a William-Optics 98mm refractor, a total of 19 five minute exposures combined into one. So a total of 95 minutes exposure.

Note: Lowbrows should look at their March S&T pages 58-59 for my inspiration to take this shot. Mr. Causland should be able to show us this Twin Quasar in his big Starmaster. It is in Ursa Major, rising better each night now. Quasar is mag 17, which is totally within reach of the “61.””

2018 Open House Schedule (Updated)

March 10th	June 9,16	September 8
April 14,21	July 7,14	October 6,13
May 12,19	August 4,11	November 3,10

Astronomy at the Beach has been scheduled for September 14th and 145h. March 17 we are doing a members and guests Messier Marathon (either at Peach Mt. or Lake Hudson) By September 15, Mars will be reduced to 18", but that probably won't matter to a crowd who has been hearing about Mars all summer. Any of our events from July on could attract crowds.

Upcoming Events

Lowbrow Monthly Meeting, Friday February 16th, 7:30pm Angel Hall
 Speaker: David Austerberry Lowbrow Member work at JPL

University Lowbrow Astronomers - Meeting Minutes - Jan 19, 2018

President, Charlie Nielsen, opened the meeting at 7:40 PM. He then introduced Dr. James W. Cutler, Aerospace Engineering at U of M. Jamie gave us a fine talk about his work in developing cube satellites and their use for many earth related activities as well as explorations to planets near us. Jamie fielded questions from the audience during his talk as well as follow up questions at the completion of his talk. Charlie presented him with a T-Shirt as a thank you for his presentation.

Business Meeting.

- President, Charlie Nielsen, had nothing to report.
- VP, Adrian Bradley, reported that he received a letter from a Canadian group thanking him for sharing his eclipse viewing.
- Newsletter Editor, Don Fohey, made a request for articles that relate to telescope "under the tree" Christmas gifts.
- VP, Jim Forrester, mentioned that the new Instagram activity has 40 followers. He asked for continuing member subscriptions to promote our club's activities. Ginia Forrester is waiting for more input. Jim also brought up the necessity of making a decision as to where the March 17 members only observing session would take place, Lake Hudson or Peach Mt., at the February meeting.
- Webmaster, Krishna Rao, had nothing to report
- Treasurer, Doug Scobel, reported that we have 140 memberships and the treasury at \$5869.
- VP, Dave Jorgensen, reminded us that David Austerberry, (now working at JPL), will be our February speaker. A work session for the 17.5 inch scope is scheduled for Jan 20.
- VP, Larry Halbert, reported that he is working on getting brochures prepared for the 2018 season.
- Observatory Director, Jack Brisbin, reported on his work with the Ann Arbor Dark Sky group, headed by Sally Oey, U of M Astronomy Department. They are in the process of developing the Ann Arbor Dark Sky web site dedicated to reducing light pollution. There was also the discussion on the Ann Arbor Dark Sky group becoming a member of Mi-Light.org, that is Dedicated to Promoting the Growth of Photonics in Michigan. The club is an affiliate member. Charlie had some comments regarding a statewide light pollution ordinance. Jack talked about an interesting project being promoted by Professor. Rudi Linder. Prof. Linder is in discussion with City Officials and DTE Officials about turning of the street lights around Burns park for one night or part of the night and have an observing session in the park. To show what the sky looks like without the street lights. *This has not been approved*. We will just say he is in the exploratory stages of this idea...
- Member, John Causland, made a request for members to attend the ANCO events.

The meeting was closed at 9:10 PM

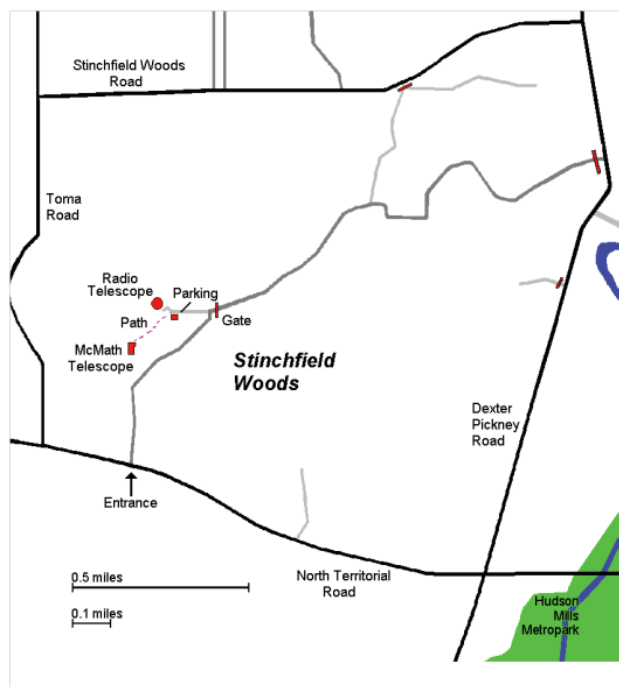
Following the meeting, many in the audience had a one-on-one greeting with Dr. Cutler.

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

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

Newsletter Contributions

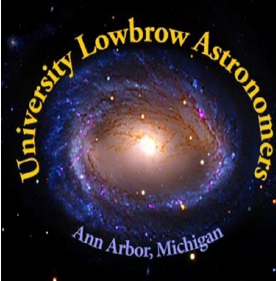
Members and non-members are encouraged to write about any astronomy related topic. Contact the Newsletter Editor: Don Fohey donfohey@gmail.com to discuss format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers

- President: Charlie Nielsen (734) 747-6585
- Vice President: Adrian Bradley (313) 354 5346
- Jim Forrester (734) 663-1638
- Larry Halbert
- 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



University Lowbrow Astronomers



Member Club



Astronomical League Member Society
#201601, Great Lakes Region

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