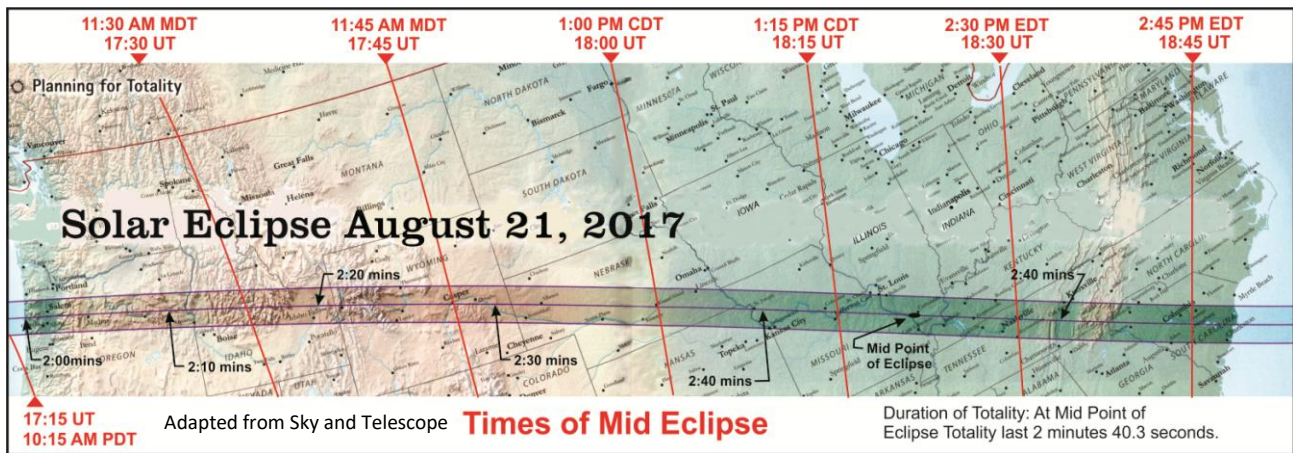


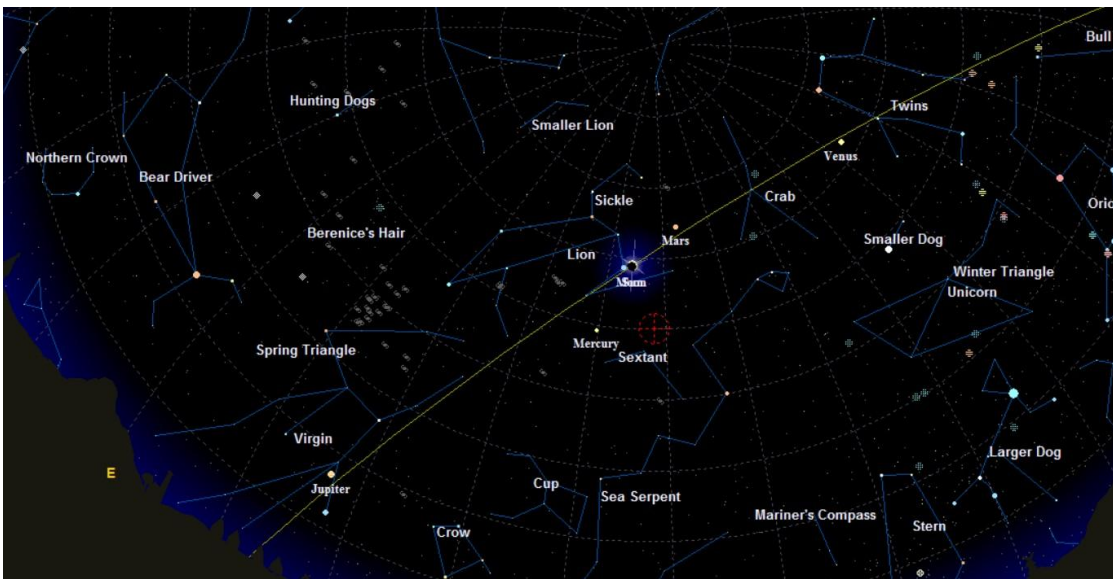
Eclipse 2017

by Charles Steele

It is not too late to plan your trip to see the Great Solar Eclipse of 2017 which crosses clear across the country from Oregon to South Carolina. The mid point of the eclipse will occur near Carbondale, IL which has the longest totality duration of 2 minutes 40.3 seconds. However, there is long section of the eclipse path which has a 2 minute and 40 second duration between about St. Joseph, MO to near Dayton, TN.



The percentage of clear skies improves west of St. Joseph, MO. While Oregon offers the best chance of clear skies the total eclipse time is shortened by 30 to 40 seconds. So one has to decide the best trade off. Wyoming and Nebraska appear to have a good percentage of clear skies and offer longer time in totality. (See Eclipse article in Sky and Telescope, January 2016, page 26 for more data on sky clouds at various locations.) Also try www.eclipser.ca for more info. When deciding on a specific observing location you might want to use Google maps with their street view images to get an idea of where you might be able to set up.

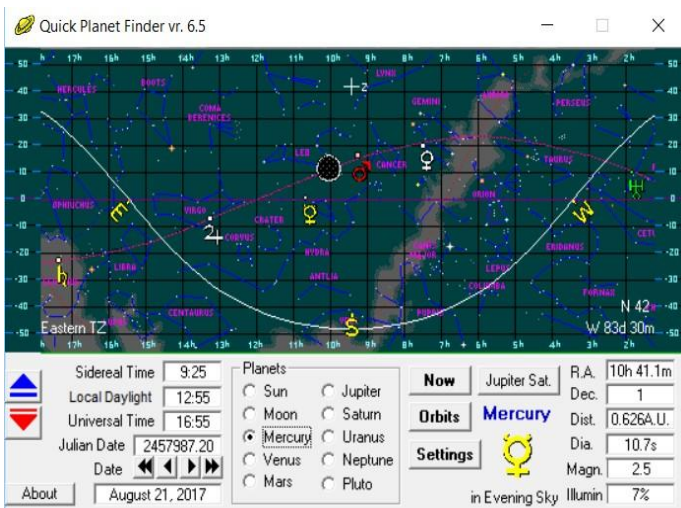


The sky at totality showing the position of the planets
(The Planetarium Ver. 2 (1997-98) by Toxsoft)

During Totality the planets, Jupiter, Mercury, Mars and Venus will be visible. You might want to take a minute to view them and/or take a picture. As Mercury is so hard to see in the Sun's glare at dusk, this is a perfect time to spot the planet just below and left of the eclipsed Sun.

- Jupiter will be about 18 degrees above ESE horizon. Estimated Mag. -1.9 (as viewed from Nebraska).
- Mercury will be below and to the left of the sun. Mercury will be on the Earth side of the Sun as a 7% crescent phase, at estimated mag. 2.5. So if you have never seen Mercury this is a good time to see it.
- Mars will be above and to the right of the Sun. It will be on the far side of the Sun from Earth at estimated mag. 1.7 very small telescopically.
- Venus will be further above and right then Mars. Venus appears telescopically as oblique phase, at estimated mag. -3.6, thus being the brightest star in the sky.
- Eclipsed Sun will lie very close to the 1st mag. star Regulus in Leo. Regulus will be just east of the eclipsed sun. This would be a good opportunity to test Einstein's light bending around the sun by taking pictures at eclipse and after the eclipse and comparing the shift in position.

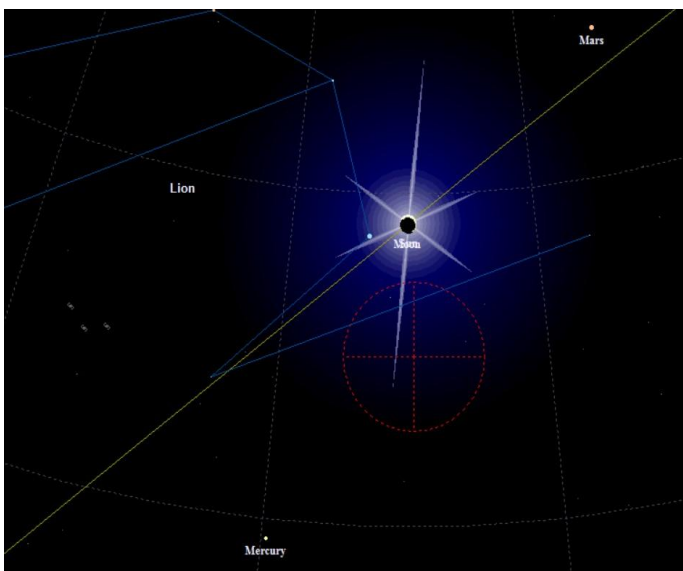
Here are several Planetarium views of the sky at eclipse time.



Position of Planets at Totality (Software Program by Author)



Planet Orbits and Positions (Software Program by Author)



The sky at totality showing close proximity of Regulus to Sun
(The Planetarium Ver. 2 (1997-98) by Toxsoft)

During the partial phases set your telescope up to project the image so many people can observe the eclipse progress. Have fun and enjoy one of nature's grandest shows.

Sun Funnel

by Don Fohey



I am traveling to Oregon to be with family and friends to view the total eclipse of the Sun. I will have my 8 inch travel telescope for a star party the night before, after all it is a new Moon. I built a "Sun Funnel" so that a group can easily watch the progression of the Moon across the Sun. An internet search brought up the following very useful document.

https://www.astrosociety.org/tov/Build_a_Sun_Funnel2.pdf

My telescope is an f8 with a 64 inch (1625mm) focal length. It became clear from the equations presented in the document that with a 26mm eyepiece I would need a shorter funnel than the one in the article. I used a pretty standard 8" funnel from my local hardware store and a plastic sink tailpiece to receive the eyepiece. It was a simple matter to cut the funnel at the correct diameter to attach the tailpiece. I made a 2" aperture mask for the front of the telescope from a piece of foam poster board. The viewing surface is a piece of rear projection screen material from Da-Lite. I purchased mine from AV outlet, search <https://www.avoutlet.com/> for the recommended material 41468 which has a grey surface. I used material 35325 which is whiter and think it would have been better with the grayer material which provides for more contrast when daylight is illuminating the screen



The material is cut to size and you can order a small piece. It would seem that AV Outlet normally sells the material in larger pieces intended for theater systems. The default shipping charge was \$27. In the comment section of my order I explained that their shipping charges seemed excessive. I receive a quick reply after my order was placed that they would credit my PayPal account for any excess shipping after they knew the actual shipping cost. They did refund \$14.85.

I was pleased with the image of the Sun and the wide viewing angle. This funnel will be fun to use during the eclipse. You too can build one.

April Open House Reports

April 1st
Report by Don Fohey

The April 1st Open House was co-ordinate by Abe Oraiqat. It was his first time and he did a wonderful job greeting and directing the host of visitors we had that night. There were only a few Lowbrows telescopes and there was a bright 1st quarter moon that hampered our ability to see deep sky objects. I set up with my 10 inch Dob next to Jim Forrester with the club 17" near the McMath observatory. I forgot how much the public enjoyed looking at the moon. The "Wow" and "You have got to see this" comments were gratifying. Jim and I had a line of at least 5 or 6 at our telescope all night. They were a very inquisitive group and we answered question and gave impromptu astronomy lessons. I did walk into the observatory where there was a line out the door. I helped Jack locate comet 41P/*Tuttle*-Giacobini-Kresak which I had just seen in my 10". I did not walk to the top of the hill to see who was there, but I assume they had an equally good night.

April 22nd
Consolidated Report
by Don Fohey

I extracted portions of emails to create this report. We had a great Lowbrow turn out for the open house Jim Forrester set up the club 17" near the observatory and I setup near him.



Jim Forrester at Club 17"
Mark Bialek • Photographer

Doug Scobel reported: Yes, it was a great night on the Hill - as good as I've ever experienced there! Cloudless, transparent, steady, dead calm, and bugless. A quint-fecta! Virtually everything we put in our scopes looked great. Highlights were open (M35-38) and globular clusters M3, M92, M13, M68), planetaries (Eskimo, Ring, Owl, Ghost of Jupiter), galaxies (NGC 4565, M81/82, M51, M101, M104, Leo Trio, M105 and companions, Hickson 44, etc.), Jupiter, Comet 41p, you name it. Everything withstood high magnifications very well. Not a lot of guests, surprising considering the conditions.

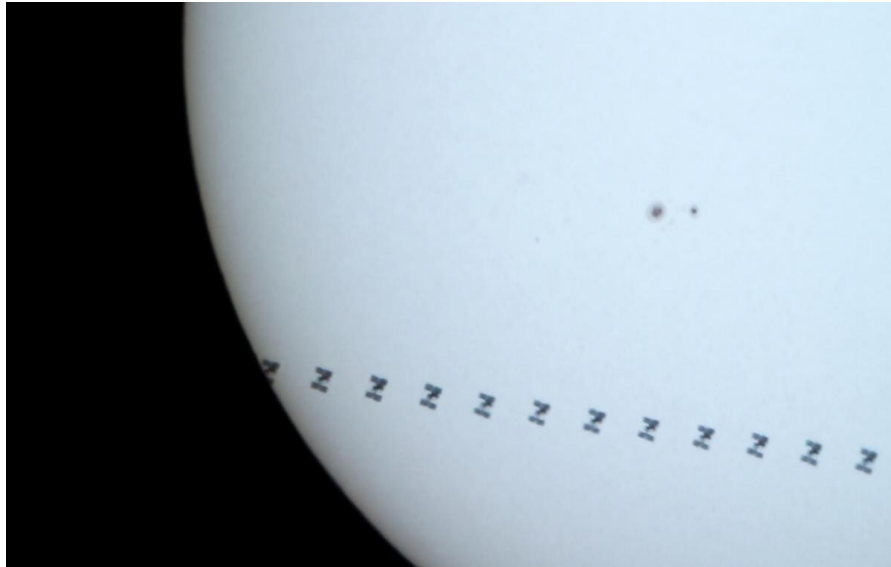
We ended the night on some peculiar galaxies, NGCs 4490/4485, and NGC 4449 (thanks, Mikey!), the Ghost of Jupiter planetary, and Polarissima Borealis, the northernmost NGC object, # 3172. It's magnitude 14.1, 1.0 x 0.7 arc minutes, and is at declination higher than +89 degrees. We got a little cocky and tried for Polarissima Australis, but alas we were unsuccessful so we called it a night.

Jim Forrester reported: John Wallbank helped Jack Brisbin with the McMath. I drafted New Member Ed to help in the Observatory as well. John Manney was set up with his Dob at the west end of the upper observing field. Other members not mentioned I know were present: Larry Halbert, Ken Ruble and Wolf Tschkkowski.

Adrian Bradley reported: I know Dave Austerberry, Doug Scobel, and Mike Radwick had their scopes at the ready. There were a couple other Lowbrows as well. A newly minted Lowbrow was there learning about telescopes, and we wound up with maybe 30 guests total. Meanwhile I stood off a good many feet away and did some astrophotography as well as greet folks coming in. Here is a picture of M101, taken around 10:30pm...



Email Gleanings

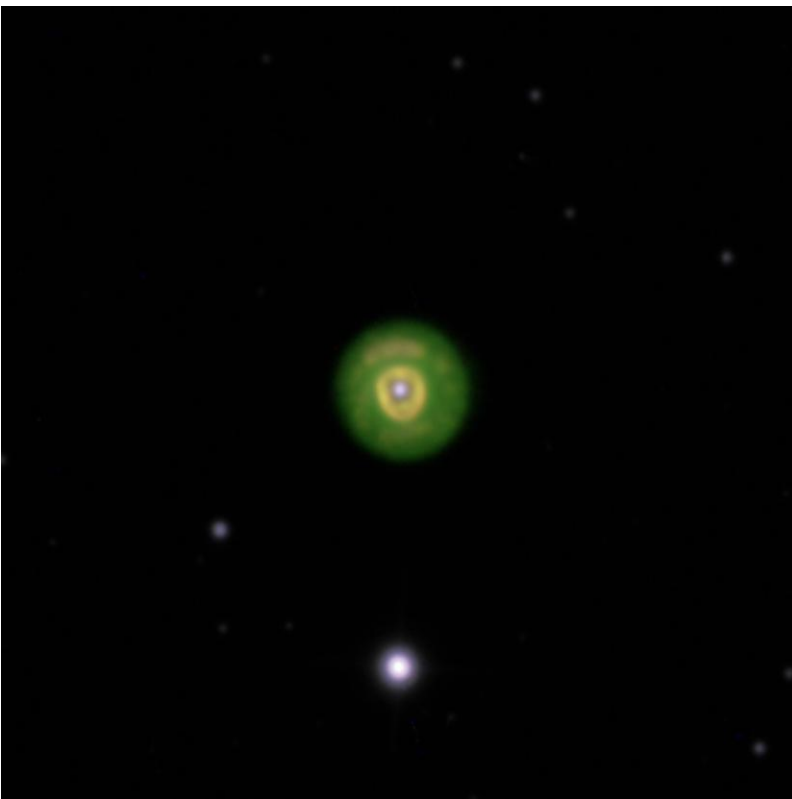


On April 23rd Dipankar Maitra wrote:

Earlier this morning the ISS flew in front of the Sun, as seen from Norton (MA) where Rachel and I live/work. We got the college's 11" CPC out and connected a DSLR at its focus. The transit happened so fast (0.56 seconds) that I didn't even realize that we had captured it. But it showed up nicely when I was going through the 60 fps video frame by frame.

Thought I'd share an image I just created by superimposing every second frame (i.e. 1/30 seconds apart). More details, animations at

http://dmaitra.webspace.wheatoncollege.edu/photos/20170423_wco_iss_sun_transit/



On April 21 Brian D. Ottum, Ph.D. wrote:

Here's another shot Nathan Murphy and I got when in the desert. Stan Watson's 17" Planewave was used to get images through a hydrogen alpha, sodiumII and oxygenIII filter. I guess they call this the "Hubble Pallet." First time for me. Photoshop was used to put the HA in "red" channel, OIII in "green" and SII in "blue". The total exposure was about an hour. But I can't see the Inuit in his parka.

On Apr 24 David Jorgensen wrote:

Using my Canon T3i camera, I'm trying to prepare for the eclipse. I'm using a 300 mm zoom lens on my camera piggybacked on my Celestron Nexstar 5" scope. Exposure is 1/1000 sec with aperture at f/22 and 400 ISO . The camera lens is protected with a 1/100000 neutral density filter. The sun spots I see seem to agree with the live sunspot activity screen I see on the web today.



From The Archives



Photo by Michael Meade, taken at Four Mile Beach Port Douglas Queensland Australia. Time stamp on photo is 11/14/2012 7:38am.

The editor was impressed by the visible solar prominence visible on the limb of the Sun. He hopes to see them come the August eclipse.

**University Lowbrow Astronomers
Meeting Minutes, April 21, 2017**

President, Charlie Nielsen, opened the meeting at 7:37PM. He then introduced Professor Claude Pruneau, WSU, who spoke to us about our current understanding of matter. His title was "Probing the Perfect Fluid". He gave us a brief history of the development of thinking from the Greeks' ideas to modern views, and then described the work he has been involved with at Brookhaven's RHIC and the LHC at CERN to understand a quark/gluon plasma, the perfect fluid. Following his talk, Claude fielded questions from the audience. Charlie thanked Dr. Pruneau for his talk and announced that a gift certificate for Weber's Inn restaurant would be sent to him as an appreciation for his talk to us. A 10 minute break allowed the audience time to meet with Dr. Pruneau.

Business Meeting

President, Charlie Nielsen, presented the list of officer nominees for the coming year as shown below:

President, Charlie Nielsen

VP, Jim Forrester

VP, Adrian Bradley

VP, Larry Halbert

VP, David Jorgensen

Newsletter Editor, Don Fohey

Webmaster, Krishna Rao

Observatory Director, Jack Brisbin

ODE, Percival Lowell

Treasurer, Doug Scobel

The list was approved by acclamation from the audience.

President, Charlie, reported that the Leslie Science Center has asked for support from us for the August solar eclipse event.

There was a discussion of where we should store our books and astronomy demonstration tool kits.

VP, Ken Ruble had nothing to report.

Newsletter Editor, Jim Forrester, asked that we send any new articles for the Newsletter to the new editor, Don Fohey. He also mentioned that a GoTo or GoTo/Tracking proposal for the 17.5 inch scope would be worked on. Perhaps a \$2000 expenditure required.

Webmaster, Krishna Rao, had nothing to report.

VP, Larry Halbert, reported that the new club brochures were being distributed to the Mattaei Gardens and some library locations.

Observatory Director, Jack Brisbin, reported that he has been doing normal maintenance at the site. He also reported that the 17.5 " is ready for Open House use.

Treasurer, Doug Scobel, reported that we have 6 new members bringing our membership to more than 130. The treasury is at \$7221.

New Newsletter Editor, Don Fohey, asked for articles and suggested that many of the email notes about the work we members do might better be sent to him and become articles in the monthly Newsletter. He also showed us his construction of a funnel screen device he built to observe the sun during solar eclipse in August.

President, Charlie, presented an obituary of our former member, William Stegath, that Charlie received from Kathy Hillig. William passed away on Jan 29, 2017.

Young Member, David Austerberry, is pursuing a position with JPL for work with Radar research. He will maintain his membership and will send articles about his work to Don Fohey. He also offered to be a remote speaker to us.

Newsletter Editor, Jim Forrester, discussed the issues with general membership's access to Peach Mountain. He stressed the need that key access is restricted to the 3 officers authorized by U/M people. He has sent emails to the membership to explain the need to follow their guidelines.

Treasurer, Doug Scobel, noted that the current info about access to Peach Mountain to our members on our website is out of date, and needs to be updated with an understanding of our current relationship with U/M.

The meeting was closed at about 10:30PM

Submitted by David Jorgensen

Speaker Schedule

2017 Schedule:

Jan 20	Paul Walkowski	Edscope- Building a 10" Dob .
Feb 17	Keith Riles UofM Professor of Physics	Gravitational-Wave Astronomy -- The Break of Dawn
Mar 17	Megan Reiter UofM Postdoctoral Researcher Dept. of Astronomy	" How did we get here? Why messy environments may be the best way to clear up how we get from the Big Bang to today".
Apr 21	Claude Pruneau Professor Wayne State University	Latest work at CERN's LHC. "Probing the Perfect Liquid".
May 19	Michael Combi UofM Research Professor Climate and Space Sciences	Tales of Comet 67P/Churyumov-Gerasimenko: The Rosetta Mission".
Jun 16	Brian Ottum, PhD	Title to be announced.
Jul 21	Sandra J. Macika,	Title to be announced, but related to meteorites.
Aug 18	Sandra J. Macika,	Title to be announced, but related to meteorites.
Sep 15	Stacy McGaugh Professor of Astronomy Case Western Reserve University	Title to be announced.
Oct 20	Jason Gilbert UofM Associate Research Scientist Aerospace Engineering	Topic to be announced.
Nov 17	Ken Bertin	"Eclipses and Syzygy".
Dec 15	Open	

2018 Schedule:

Jan 19	Dr. Jamie Cutler, U/M UofM Associate Professor Aerospace Engineering	Topic to be announced
Feb 16	Open	
Mar 16	Open	
Apr 20	Nicolle Zellner Associate Professor Albion College	Topic to be announced, related to the earth/moon system
May 18	Open	
Jun 15	Open	
Jul 20	Open	
Aug 17	Open	
Sep 21	Open	
Oct 19	Open	
Nov 16	Open	
Dec 21	Fred Schebor	50 Anniversary of 1st Artsy-Meaningless Slide Show

Correction to April Newsletter (Extracted from email)

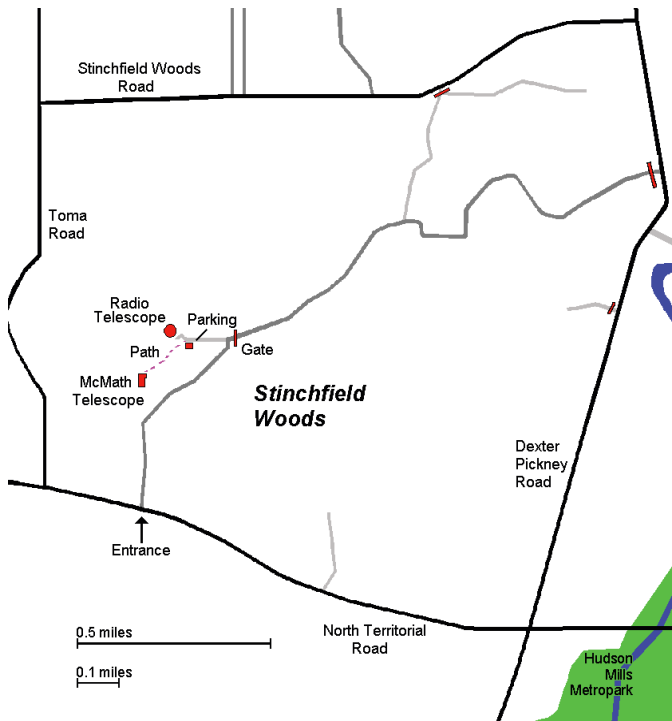
In my Annual report for last year (in the newsletter) I wrote that the Artsy-Meaningless Slide Show was composed of "nearly" all photos by club members. This is incorrect. It is composed of ALL club member photos. I apologize for the error.

Clear skies,
Charlie

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 as well as the University's McMath 24" telescope, maintained and operated by the Lowbrows. Located northwest of Dexter, MI; the entrance is off North Territorial Road, 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 \$85.95/3 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	(734) 354 5346
	Jim Forrester	(734) 663-1638
	Larry Halbert	
	Dave Jorgenson	
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



Affiliated Member

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

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