REFLECTIONS / REFRACTIONS

University Lowbrow Astronomers

OCTOBER, 2014

VOLUME 38, ISSUE 10

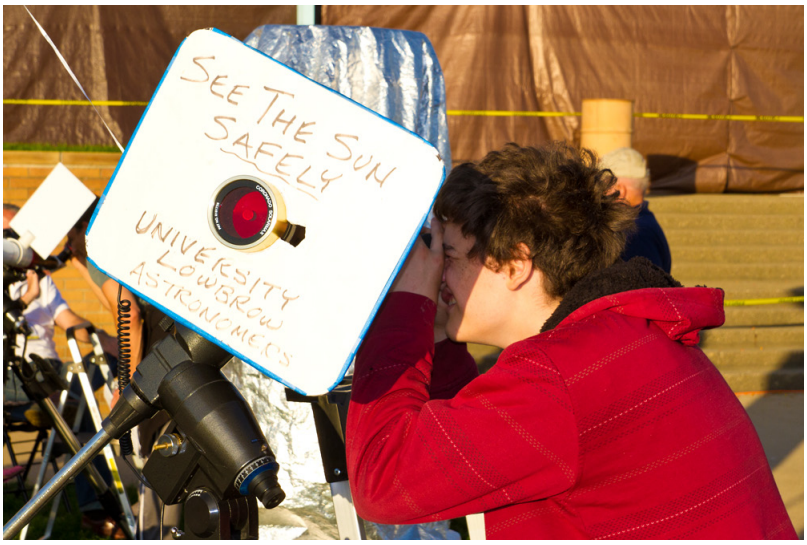
Astronomy At The Beach -2014-

Photo: Doug Scobel
All of Doug's AATB photos (and more) can be found at: https://www.flickr.com/photos/djscobelpics/sets/72157647738788549/

Camp Lowbrow--Friday, September 26, 2014: *The sky was an intense blue at sunset for the first night of this year's Astronomy At The Beach at Kensington Metro Park. Paul Walkowski (right) sits with his 4" f/5 Tele Vue Genesis refractor. Paul is our representative to the Great Lakes Association of Astronomy Clubs (GLAAC) a consortium of southeastern Michigan astronomy clubs and other organizations that along with the Metro Park plans, publicizes and puts on this largest of annual astronomy events in the state. As our voice on the committee, Paul attends many meetings and spends long hours laboring to get this event off the ground. Next to Paul is Doug Scobel's 16" Tele Kit and from the left: Mike Radwick's 14.5" Starmaster, John Causland's 60mm Coronado Hydrogen Alpha refractor, the clubs's new 17.5" Tele Kit and John's 24" Starmaster. And if you look carefully, you'll see some of the usual suspects wandering through the photo: (from the left) Dave Snyder at the Coronado, John Causland, your editor and Mike Radwick. Friday night's event saw almost 1600 area residents crowd around 28 telescopes, 10 of which Lowbrows provided.*

Observing through telescopes was only part of the program, with talks by Shannon Schmoll, Director of the Abrams Planetarium in East Lansing and Mary Stewart Adams of the Headlands Dark Sky Park on Lake Michigan near the Straits of Mackinac. Additionally, many exhibits and demonstrations were put on by the various clubs and park staff.

An Aside: The individuals in GLAAC who started Astronomy At The Beach are aging and dropping off the planning committee. Two have passed on. New blood is needed. Contact Paul Walkowski (pauldwalkowski@eaton.com) for information.



Solar observing was a highlight of Friday afternoon and early evening. Above and to the right: Observers young and not so young marvel at our local star's image through the 60mm Ha telescope. With not his best side turned to the camera, Dave Snyder (upper right) explains the nature of this particular view of the sun.

Below, young astronomers view a white light image of the sun through a 4" Orion ED refractor equipped with a white light filter.

Photos: Doug Scobel

The late afternoon skies Saturday predicted less than optimum viewing for the evening and made for not as satisfying solar observing as the day before. But several balloonists floating over the lake and the appearance of sun dogs on either side of the sun were wonderful. As the sun set, the slot of blue above the western horizon held its place allowing viewing, in turn, of the moon Saturn and Mars. Overhead, the clouds dissolved as the sky darkened yielding plenty of deep sky targets for the 42 telescopes on the field to the delight of about 2200 visitors.

Photos above: Doug Scobel

Sunset, Kensington Metro Park, Saturday, September 27 ***Photo: Ken Ruble***

Monitoring High Altitude Satellites

Plans for Peach Mountain

University faculty, students, alumni and donors gather near the Peach Mountain Radio Telescope September 18 to tour the facility and to discuss pans for the instrument's new mission: Tracking and downloading data from (very) high altitude satellites and spacecraft. The Peach Mountain Observatory is now operated by The Michigan Exploration Laboratory (MXL) in the Aerospace Department at the University of Michigan.
Photo: Jack Brisbin

The Aerospace Department writes:

In 2010, control of the 26-meter telescope at Peach Mountain Observatory transitioned over to the College of Engineering at the University of Michigan under the leadership of the Aerospace Department. Work is underway to convert the dish from a telescope into communication system to support deep space communication for an estimated cost of $2M.

First, the telescope motion control systems will be upgraded to modern motors and control software. The mechanical gears will be refurbished and upgraded when necessary. Tracking speeds will likely be too slow to support fast moving low-Earth orbiting satellites such as the International Space Station, but sufficiently fast enough for spacecraft in geo-synchronous orbits and beyond. We are working with a team of technicians from Albion, MI on this effort.

Second, the antenna feed will be upgrade for modern communication systems. High frequency S and X band feeds will be installed to support communication with deep space missions. Software defined radios will be installed to provide flexible, high-speed radios capable of research and development of novel space communication systems.

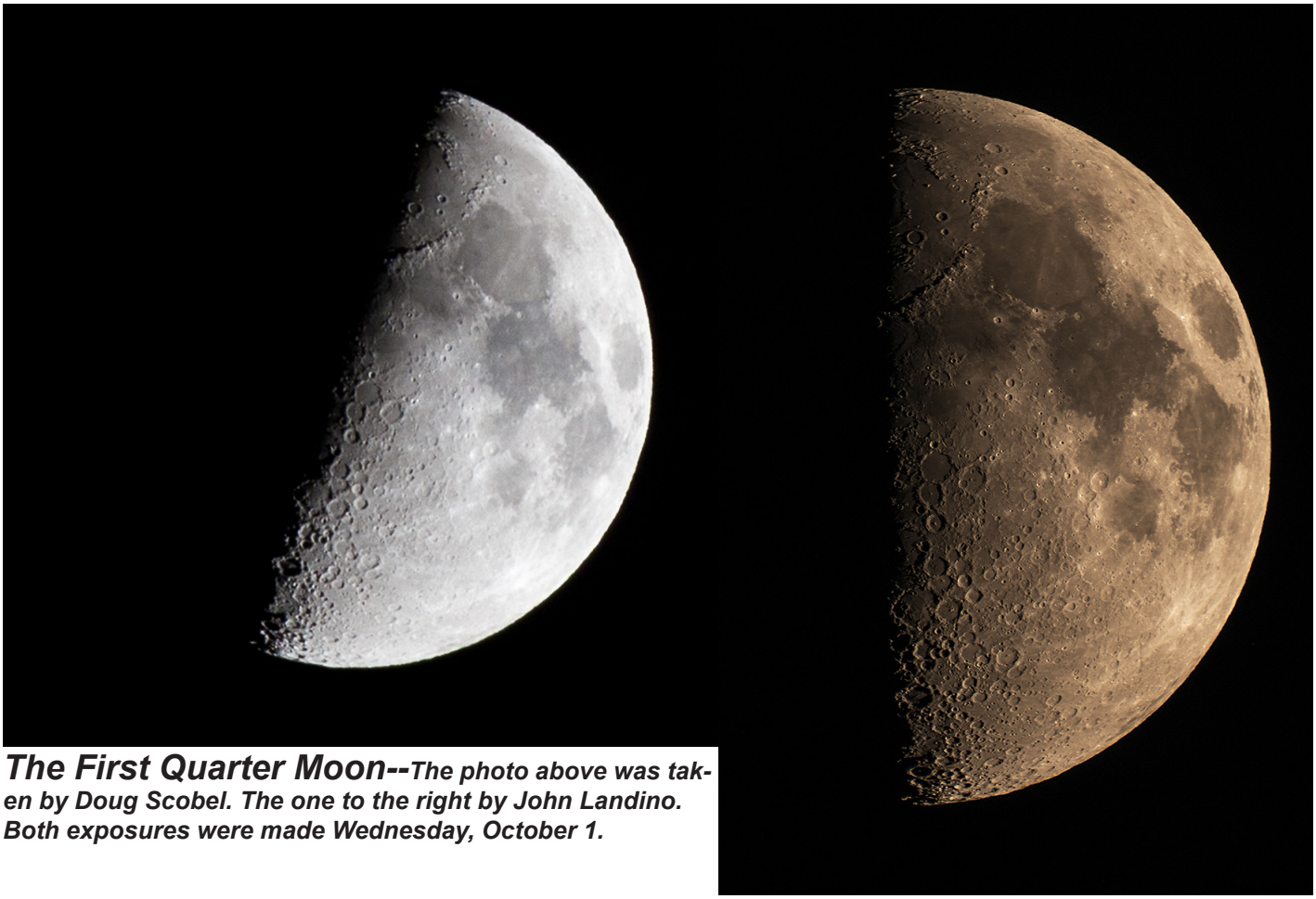
Third, facilities will be upgraded to support not only space-based research and communication, but also public outreach and educational opportunities. Similar to the Goldstone Apple Valley Radio Telescope (GAVRT), a retired DSN dish that is modeled after Peach Mountain, we will expand the impact of the facility by enabling educational opportunity for all ranges of students and training in science, technology, and mathematics.

Notably, the Lowbrows were listed as a partner with the Aerospace Department in the promotional material for the event. Aerospace students launched (left) a scale model of a research balloon and assisted Lowbrows Charlie Nielson and Jack Brisbin with operation of the solar scopes on the field. Above, Jack Brisbin adjusts an 8 inch Schmidt-Cassegrain for white light solar viewing and below a guest gets a hydrogen-alpha view of the sun. Below left, guests queue for a look through an 80mm refractor.

Photos: Charlie Nielson

Shooting the Moon

By Doug Scobel and John Landino



The First Quarter Moon--*The photo above was taken by Doug Scobel. The one to the right by John Landino. Both exposures were made Wednesday, October 1.*

Doug writes: Taken with my Canon 7D, 300mm lens, 1/60 sec @ f/8, ISO 200.

John Landino offered this information: Taken with a Nikon D800, Explore Scientific 102mm Triplet, ISO 400, 1/40 seconds. The focal length of the scope is 714mm, plus there is a T-Adaptor and a Televue 3.5" Extension Tube, to facilitate the prime focus shot. (photo of rig attached).

The shot came out better than expected, since that was a single shot and my goal was to stack shots and combine them with Zerene Stacker (a program prominently used for micro-photography). After some additional processing of the stacked shot, I think I may eventually produce a shot I like better, with more tweaking (attached).

Processing for the attached stacked shot:
Raw .NEF files extracted using PS Camera Raw 8.6 and converted to .jpg
7 of those shots (which were focus-bracketed in scope) then stacked in Zerene Stacker
Perfectly Clear Filter from http://www.athentech.com/
Photoshop Dust & Scratch Noise Filter for dark areas
Lightroom local contrast filter (clarity)
Photoshop Shake Reduction Filter (to help compensate for alignment errors)

John's Rig

Not to be out done: ***Clay Kessler sends along this photo of the waning gibbous moon. Clay hasn't yet divulged how he accomplished this magic, but details will be forth coming.***

And Finally...*Total Lunar Eclipse October 8!*

You'll have to be an early bird to catch this one. Totality begins about 06:25 EDT, just before the beginning of nautical twilight at 06:40 EDT. You'll also need a good western horizon as the moon will be only at 13.5 degrees altitude at 06:25. Totality ends at 07:24 in a brightening sky with the moon barely 3 degrees above the horizon. All the pertinent facts about the event are provided by NASA. See Page 8 of this newsletter.

Total Lunar Eclipse of 2014 Oct 08

Ecliptic Conjunction = 10:51:43.3 TD (= 10:50:34.4 UT)
Greatest Eclipse = 10:55:44.0 TD (= 10:54:35.1 UT)

Penumbral Magnitude = 2.1456 P. Radius = 1.2786° Gamma = 0.3826
Umbral Magnitude = 1.1659 U. Radius = 0.7451° Axis = 0.3824°

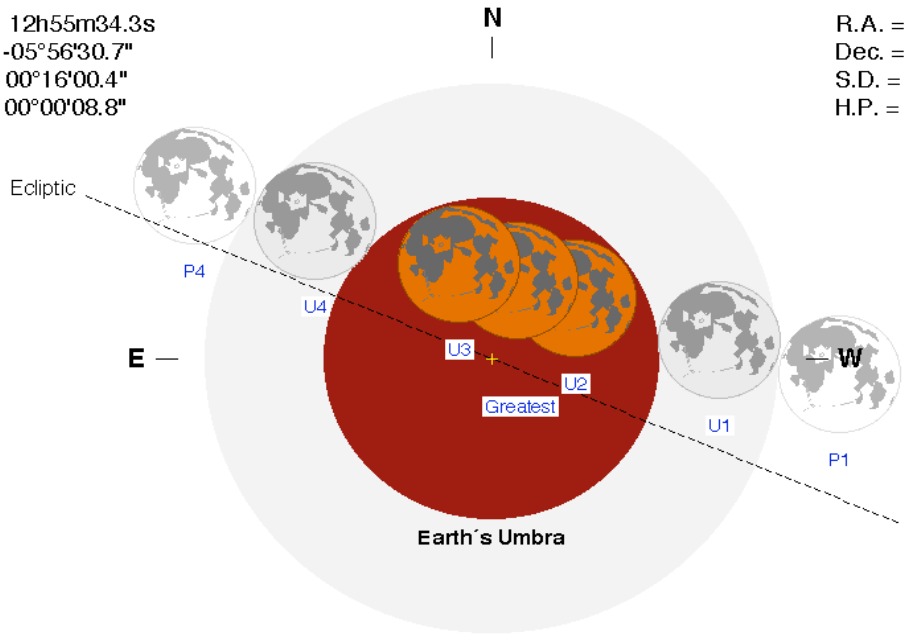
Saros Series = 127 Member = 42 of 72

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 12h55m34.3s
Dec. = -05°56'30.7"
S.D. = 00°16'00.4"
H.P. = 00°00'08.8"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 00h55m07.2s
Dec. = +06°18'26.8"
S.D. = 00°16'20.3"
H.P. = 00°59'57.9"



Eclipse Durations

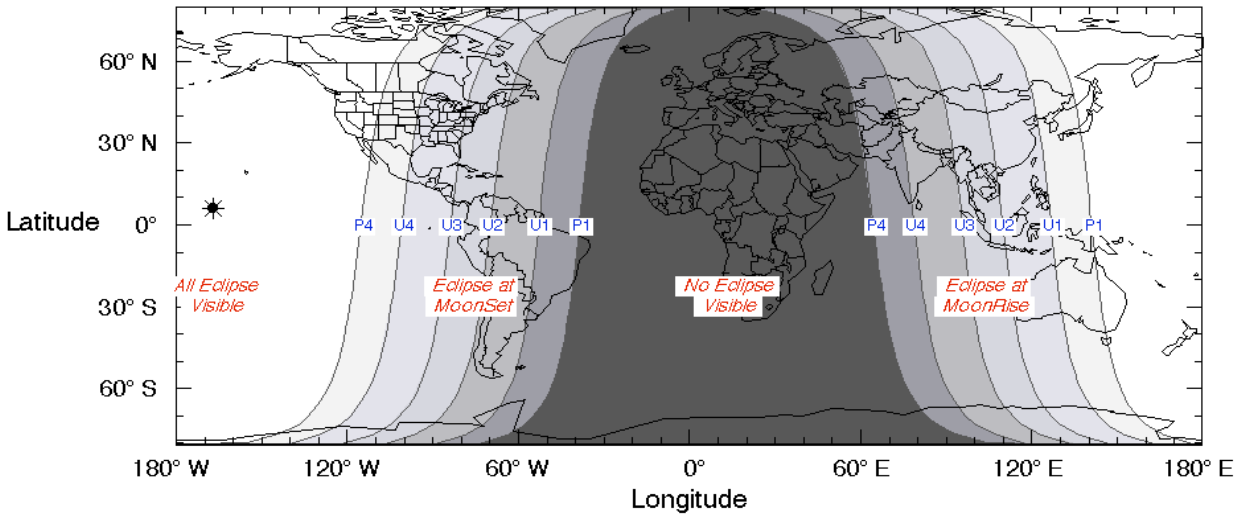
Penumbral = 05h18m03s
Umbral = 03h19m31s
Total = 00h58m50s

ΔT = 69 s
Rule = CdT (Danjon)
Eph. = VSOP87/ELP2000-85

F. Espenak, NASA's GSFC
eclipse.gsfc.nasa.gov/eclipse.html

Eclipse Contacts

P1 = 08:15:36 UT
U1 = 09:14:48 UT
U2 = 10:25:09 UT
U3 = 11:23:59 UT
U4 = 12:34:19 UT
P4 = 13:33:39 UT

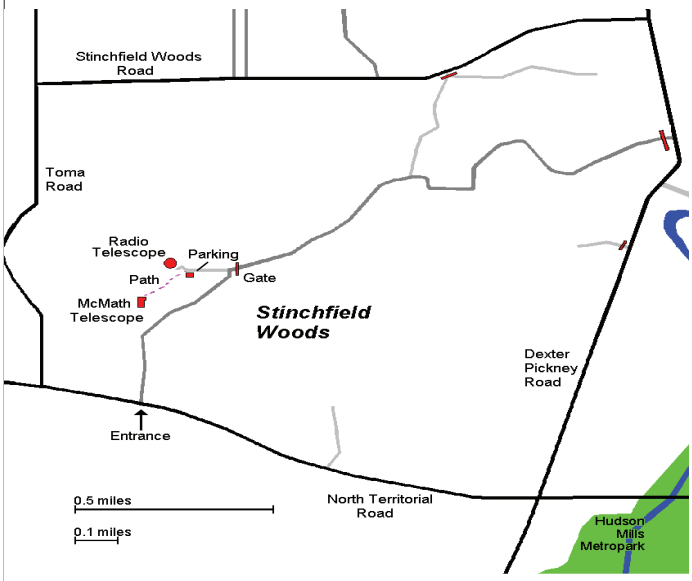


2009 Apr 29

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 Angell 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. A club observing session at the Peach Mountain Observatory, weather permitting, often follows the meeting.

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 Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers 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.

This entitles you to the 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 or by check made out to University Lowbrow Astronomers and mailed to:

The University Lowbrow Astronomers

P.O. 131446

Ann Arbor, MI 48113

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - $32.95 / year $62.95/2 years

Astronomy - $34.00 / year or $60.00 for 2 years

For more information contact the club Treasurer at:

lowbrowdoug@gmail.com

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Jim Forrester (734) 663-1638 or** jim_forrester@hotmail.com to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

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	Don Fohey	
	Ken Ruble	
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Lowbrow's Home Page

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

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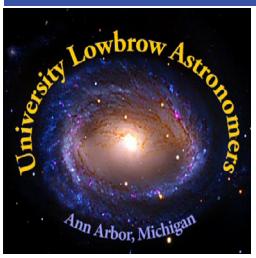
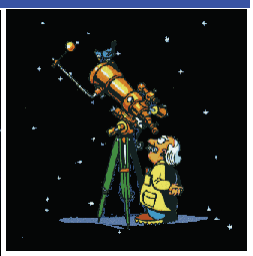
Reflections & Refractions





Website
www.umich.edu/~lowbrows/

Lowbrow Calendar

***Saturday, October 4, Sunset*--Ann Arbor Area Families With Children From China Moon Festival**--6500 Bethel Church Road. May be cancelled if cloudy.

***Friday, October 10, 7:30 PM*--Scio Farms Estates Star Party**--6655 Jackson Road at the Association Club House. May be cancelled if cloudy.

***Friday, October 17, 7:30 PM*--Monthly Club Meeting**-Room G115 Angell Hall, University of Michigan, 435 South State Street, Ann Arbor--"The Club 17.5" ATM Project"

***Saturday, October 18 and Saturday, October 25*--Open Houses at Peach Mountain**--Open Houses begin at sunset, but may be cancelled if cloudy.

Through October 12*-- Unseen** This is a multi-media exhibition in which over 50 local, regional, national, and international artists and scientists explore the thresholds of visibility, revealing crucial, unseen phenomena that impact, inform and enrich our daily lives. Lowbrow Brian Ottum has four of his astrophotography images in the show. **Ann Arbor Art Center, 117 West Liberty, Ann Arbor, MI** ***10AM - 7PM Monday-Friday, 10AM - 6PM Saturday, 12PM - 5PM on Sundays. Free!

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