



## April 15: File Your Taxes or...

# Observe the Lunar Eclipse!

by Michael Meade

A total lunar eclipse will be visible over most of North America in the wee hours of April 15th. The entire event will be visible over most of the U.S., with parts of Pennsylvania, New York, and New England experiencing moonset part way through the eclipse. All of Michigan and Ohio will have good views of the eclipse – given a good horizon and cooperative weather.

Here is the time line for Ann Arbor:

|                           |          |
|---------------------------|----------|
| Penumbral Eclipse begins: | 12:55 AM |
| Partial Eclipse begins:   | 01:59 AM |
| Full Eclipse begins:      | 03:08 AM |
| Maximum Eclipse:          | 03:46 AM |
| Full Eclipse ends:        | 04:23 AM |
| Partial Eclipse ends:     | 05:32 AM |
| Penumbral Eclipse ends:   | 06:36 AM |

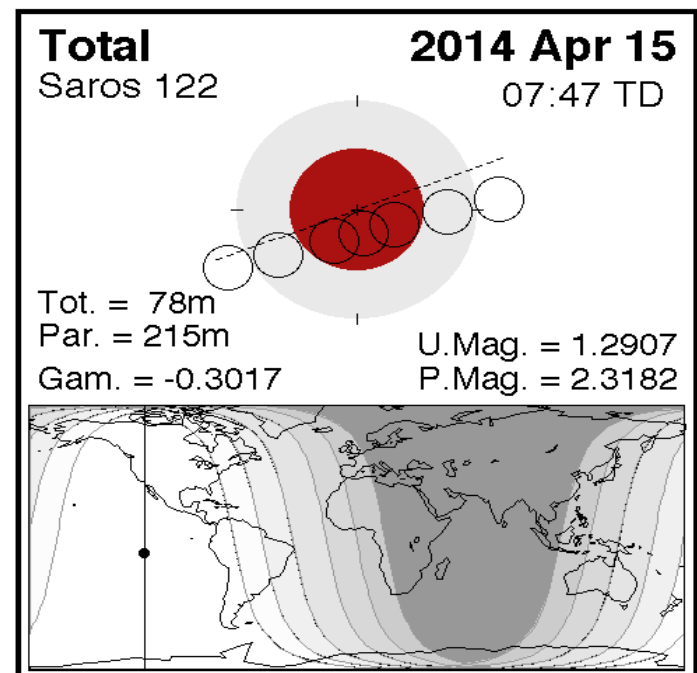
The eclipse starts with the Moon due south and well above the horizon. A good horizon will be necessary to view the entire event, as moonset occurs at 06:59 with the Penumbral Eclipse concluding at 06:36.

Here is a link to the NASA Eclipse Page for this event:

<http://eclipse.gsfc.nasa.gov/OH/OHfigures/OH2014-Fig01.pdf>

There you will find data and graphics providing information on the eclipse in some detail.

<http://eclipse.gsfc.nasa.gov/eclipse.html>



Five Millennium Canon of Lunar Eclipses (Espenak & Meeus)  
NASA TP-2009-214172

### There's a full moon every month or so – why don't we

**see more eclipses?** The Moon's orbital plane is tilted just over  $5^\circ$  relative to Earth's orbital plane, intersecting Earth's orbital plane just twice during the Moon's orbit. These nodes of intersection only coincide with the full moon roughly twice a year, aligning the Moon with the Earth's shadow. During those times, if it's night where you are, you may be able to see a lunar eclipse. During the other full moons, the Earth's shadow is cast into space, but not onto the Moon.

**Why can we still see the moon during a Total Lunar Eclipse? Why is it red?** If Earth had no atmosphere, the Moon would be completely dark during totality. The Earth's atmosphere refracts the light of the sun, curving the light around the planet to partially illuminate the Moon. The Moon appears to be red due to sunlight bouncing off particles and scattering towards the red end of the spectrum as it takes a long path through the lower atmosphere – the same effect that we see during sunrise and sunset.

**When is the next Lunar Eclipse?** There is another total lunar eclipse this year on October 8th – best viewed from the Pacific Ocean and visible in Eastern Australia, New Zealand, Siberia, Alaska, and the Pacific Coast of the U.S.

# Treasurer's Annual Report

Submitted by Doug Scobel, Club Treasurer

University Lowbrow Astronomers Balance Sheet 2013-14 (01 April 2013 - 31 March 2014)

## Income

|                             |            |
|-----------------------------|------------|
| Dues                        | \$1,526.00 |
| Extra for mailed newsletter | \$144.00   |
| Magazine subscriptions      | \$342.00   |
| Donations/Gifts             | \$127.00   |
| Shirt sales                 | \$30.00    |
| Shipping charges            | \$7.36     |
| Miscellaneous               | \$115.97   |
| RASC publication payments   | \$1,008.00 |

**Total Income** **\$3,300.33**

**Balance 01 April 2013** **\$8,054.26**

**Plus Income** **\$3,300.33**

**Minus Expenses** **\$6,211.94**

**Balance 31 March 2014** **\$5,142.65**

## Expenses

|                              |            |
|------------------------------|------------|
| Phone (AT&T Messaging)       | \$190.20   |
| Newsletter printing/ mailing | \$320.17   |
| Magazine subscriptions       | \$342.00   |
| Donations                    | \$450.00   |
| Guest speaker expenses       | \$0.00     |
| Shipping/ mailing            | \$19.41    |
| RASC publications            | \$897.75   |
| McMath maintenance           | \$475.00   |
| 17.5" Dob project            | \$3,069.32 |
| Miscellaneous                | \$448.09   |

**Total Expenses** **\$6,211.94**

**T-shirt inventory** **14**

*The club's detailed Ledger of Income and Expenses is available to any member on request. The Excel file can be obtained from your editor: [jim\\_forrester@hotmail.com](mailto:jim_forrester@hotmail.com)*

[April 18, 2014](#)

## Lowbrow Annual Business Meeting

*Our by-laws designate the April monthly meeting as the annual business meeting for the purpose of electing officers and receiving the Treasurer's Annual Report. Nominations have been made for most offices and can be made at the meeting itself.*

### Candidates for Office:

President: Charlie Nielsen

Vice-president: Dave Jorgensen

Vice-president: Dave Snyder

Vice-president:

Vice-president:

Observatory Director: Jack Brisbin

Web Master: Krishna Rao

Newsletter Editor: Jim Forrester

Treasurer: Doug Scobel

*You'll notice there as yet no candidates for two of the vice-president positions. Vice-presidents have two basic duties: Recruit speakers for the Monthly meetings and attend club events. There is a club tradition of selecting vice-presidents from among members who fail to attend the Annual Meeting. The interests of the club are best served if all members able attend this month's meeting. Open houses will also be discussed as we have no coordinators for events at the end of May, July, August, October and November.*

## Great Lakes Association of Astronomy Clubs

# The Future of GLAAC

by Paul Walkowski

### **GLAAC 501 (c) (3) Non-Profit Tax Status:**

GLAAC committee members left the 3/16/14 meeting with the formal action of soliciting their club's input on whether GLAAC should become its own organization (corporation) for the purposes of obtaining a 501(c)(3) non profit tax exemption from the State of Michigan. Here is the background information upon which to vote to support or deny this activity at the next Lowbrow meeting.

#### **The Present State:**

GLAAC (Great Lakes Association of Astronomy Clubs) is currently an umbrella organization composed of representatives of 8 Southeastern Michigan Astronomy Clubs and the Kensington Metropark rangers for the purpose of introducing children to Astronomy and the SREM subjects in a fun and entertaining way through Astronomy at the Beach (AATB), Astronomy Day, and other public outreaches at Kensington. The clubs involved are the EMU, Ford, Oakland, Seven Ponds, Sunset, U of M SAS, Lowbrows, and Warren. By virtue of your Lowbrow membership, you are also a member of GLAAC. We have no membership cards, and our privileges are to serve the public, raise funds for AATB, arrange speakers, create and print fliers, AATB Programs, rent tents, chairs, lighting, PA & Audio-visual systems, Airfare, ground transportation, honorariums, motel arrangements for the keynote speaker, and put on the public star parties in September and on a few other more informal occasions. We rely on the inventiveness and connections of members stir up publicity with radio and TV stations, teacher associations, and local school systems.

The public we serve consists mainly of family groups, Cub Scouts, Brownie, and Girl Scout troops. We also see occasional OCC students with shopping lists of sky objects they must observe as part of an astronomy course. Children ranging from 5-16 years appear to be our most numerous target group, and they show a decided preference toward astronauts, demonstrations (vs talks), and audience participation activities. Mid high school through college age students seem to be under represented. Another growing demographic noted over the last few years has been newly retired folks. Last year we had good weather both Friday and Saturday and had over 2500 people who came by the registration table and were counted by park volunteers. This was our second highest attendance record for AATB and I am told that on Saturday folks parked a mile away at the boathouse lot and followed an unlit bicycle path to AATB. Lines at telescopes were typically 10-30 people. The Mars Opposition a few years ago garnered 10,000 people when we were still located at Martindale Beach and completely overwhelmed the parking lots. That year many astronomers had lines of 50-100 people waiting to look through their scopes. By contrast, weekends with one rainy day have usually led to crowds nearer 1500 people. For astronomers bringing scopes, this can mean a really busy evening but where else could you participate in a star party with an audience of this size, ample, safe parking, and organized talks by noteworthy individuals? And the electricity in the air as folks ooh and aah at the telescope views helps rekindle that experience we all had with our first telescope.

GLAAC has no formal officers, the same group of 20 club representatives had participated in most of the last 17 AATB events. All but 9 have indicated that they are retired from GLAAC already. If you have the ability to make phone calls on behalf of GLAAC and attend monthly organizing meetings, you are a candidate to join the committee. The next meeting is at 1:00 pm, Sunday April 13 at the Kensington Metropark Nature Center near Kensington Rd. All active (paid) club members are welcome.

Bob MacFarland, our energetic leader for the last 17 years has also retired leaving Dave D'Onofrio as the heir apparent, if he wants the job. The only stressful part of serving on GLAAC is securing the main speaker. In fact Alan Stern, Principle Investigator of the "New Horizons" Pluto probe is reconsidering his commitment for this Fall's AATB in light of his numerous other commitments. Although he is still "considering" speaking we are making back up plans for an alternate speaker. So far only David Levy and Neil deGrasse Tyson have been excluded because their fees are \$17,000 and \$40,000 respectively. We have a typical yearly budget of \$2500 to cover all expenses which has swelled to \$3500

in the last few years to include rental of a tent and chairs. The money comes from \$300 donations from the active clubs, a handful of corporate sponsors which we solicit every year, and a donation jar at the pavilion. Left over donations are rolled into the next year's fund. We try to run GLAAC on a 2 year cycle with a more expensive astronaut on even years and more inexpensive speakers on odd years.

***The Current active GLAAC members are:***

Jonathan Kade, Dianne Hall, Rick Kovari – WAS  
 Shannon Murphy, Joe Velez – EMU  
 George Korody, Pat Korody – FAAC  
 John Lines – Seven Ponds  
 Paul Walkowski – Lowbrows  
 Dave D'Onofrio –

**The Future State of GLAAC:**

Now why would we go and spoil a good relationship based organization like GLAAC with something sounding so messy as a Federal Non-Profit Organization 501(c)(3) tax status? Well, GLAAC is a non-profit, we are endeavoring to an educational mission, and considering the typical \$2500 yearly budget, not paying state tax saves us \$150 which we can redirect to the program itself. Up until this year GLAAC was covered under the umbrella of the FORD club and its officers. They are unique because they are a employee enrichment organization sponsored by the Ford Motor Company and have 501(c)(3) status already. But there are only a few current Ford employees in FAAC and none currently involved in GLAAC. In addition, the FAAC treasurer keeps the books for GLAAC, writes all of our checks, and makes all our deposits, and we account for the majority of the FAAC Treasurer's yearly activities. This worked out well when Bob MacFarland was in charge of GLAAC and saw the FAAC Treasurer on a regular basis, but that is not the case today. FAAC politely asked GLAAC to take care of our own finances starting this year, largely because we are so much work. Now any club could take over the GLAAC books and treasurer activities, or we could have our own treasurer, but we do not have officers, a constitution, bylaws, and none of the other clubs currently have 501(c)(3) tax status.

WAS has applied for 501(c)3 through the efforts of Dianne Hall, along with a paid lawyer, and several others, but has not received their letter granting them this status as yet. My understanding is that GLAAC first needs to incorporate in Michigan as a Non-Profit with a group of directors and create a mission statement. WAS needed to create a written constitution and bylaws governing the activities of the club and the officers that met certain tight legal requirements at this point. Then GLAAC makes a lengthy submittal the Federal IRS to acquire a Non-Profit status. The IRS needs to investigate whether a group is Non –profit worthy, make a determination, and then issues the status in a formal letter, a process that could take a year with no guarantee that the status would be approved. Once approval is granted by the Federal IRS, the letter of approval grants us Non-Profit status in Michigan automatically, no extra paperwork need be submitted to the state of Michigan. My impression is that we are required fill out a yearly one page tax form and submit it to the IRS because our receipts are less than \$10,000 yearly. The application fee is a one-time \$400 if we maintain our non-profit status by submitting paperwork yearly. If our budget were above that amount things get "astronomically" more complicated.

Part of the review process is that detailed financial records of the previous 3-5 years must be provided and corroborated with bank statements for the application. For GLAAC this would be possible because Bob MacFarland and the FAAC treasurer kept separate records that agreed on names, amounts, and dates of withdrawals and deposits. The problems arise surrounding the need for a GLAAC "Club" Constitution and Bylaws (legal documents that meet 501(c)(3) requirements), elected officers, and a purpose for being in existence apart from the non-profit status that we are seeking. Of course the various legal elements need to align with the 501(c)(3) status perfectly, and all the i's need to be dotted and t's crossed, hence the need for a lawyer. Legal fees are something else entirely, and unless we had a volunteer who was a non-profit tax lawyer, I cannot imagine this being less than a few thousand dollars. So now the total cost is up to \$2,400.

I would imagine that if we copied the Warren Club's Constitution and Bylaws and just changed a word here or there we could be 70% of the way there with very minimal effort. But the last 30% might be a real uphill climb. Would GLAAC want to stay a representative association of clubs? Could we continue to do this if the member clubs were not 501(c)(3) organizations themselves? What kind of a majority of member clubs would it take to pass a motion? What if directors

or member clubs wanted to change or simply tweak the mission statement? What if some clubs were absent during a vote? With only 9 active members it would only take 5 people to constitute a simple majority. This would all need to be worked out in writing and meet non-profit requirements.

What is our relationship with the Metropark and how does that fit into 501(c)(3) status? Up until last year a park ranger sat in on most committee meetings, made arrangements of facilities and dates, added AATB to the park publicity system, and acted like a full member of GLAAC. Last year he could not attend most meetings because Mike B. was assigned duties far afield of the nature center on meeting days. Mike did present the comet making demonstration for GLAAC on both Friday and Saturday evenings. While AATB takes place at Kensington, the GLAAC organization is really independent from Kensington. It appears that AATB, which gathers the second greatest park attendance behind the Detroit Symphony Orchestra concert, is not on the new head park ranger's radar of important events. Although last year was her first year, we managed to capture her ire for having vehicles at the waterfront and traveling across the grass, and for causing a guest to have a slip and fall accident on the poorly lit pavilion stairs. Never mind that the ranger did put up red battery operated red lights on the stairs and that children attending the events removed the taped down lights. AATB could become unwelcomed by a decision of the head park ranger and there would be no higher authority with which to appeal. Kensington is considering tearing down the Maple Beach rest room pavilion because its infrastructure is crumbling, but does not have the funds to replace it. Without a ranger involved on the GLAAC planning committee, this could happen without warning. The good news is that we could move from Maple back to Martindale Beach, if the park chose to open the rest rooms to the water slide for the event. AATB might need to rent a second tent to replace the pavilion (approximately another \$1000) and arrange for drop cloths and clothes lines to block the food concession Christmas lights from the observing field, but AATB could continue with the cooperation of the park. [Island lake park across the I-96 expressway has inadequate parking for even small FAAC open house events, inadequate rest rooms, pavilions, and no food vendors.]

When we consider GLAAC's stated purpose, this gets really sticky. I wrote the following mission statement which has been included on the program filer for the last 15 years:

"GLAAC (Great Lakes Association of Astronomy Clubs) is a loose association of amateur Astronomy Clubs in Southeastern Michigan who band together each year to provide an enjoyable, family oriented activity that focuses on our hobby, Astronomy and Space Sciences. Our primary aim is to have fun by learning about Astronomy and Space Sciences, educating others through talks and star parties, and sharing our resources with others who share our interest, including local schools, scouts, and other organizations."

It sounds simple but it's been hotly contested a number of times. Why? Because some of the members wanted the main speaker to remain part of the "children-science education focus" and others wanted a more "adult, hard science focus". The committee treads lightly on the line every year with a goal of having an astronaut every other year and a less expensive science-populist individuals in the odd years. Like any other organization, planning a program speaker with name recognition draws in the attendees who, in our case bring their families.

So what is my opinion? I think we should beef up our GLAAC committee membership this spring and summer and defer 501(c)(3) paperwork until after this year's AATB so we do not lose our focus. If this means paying \$150, I guess we should cut corners elsewhere. We need to ask our clubs if they are willing to provide a treasurer or have a club member with money organizing skills volunteer to participate in the GLAAC committee. This is the year for an astronaut, and inviting Alan Stern was a stroke of good luck left over from spreading a wide net of contacts last year. I think we should focus on a female astronaut and went on record with that on the GLAAC Yahoo members' only site a few weeks ago. I think that if it is at all legally possible, GLAAC should remain a confederation of clubs and not become its own entity. It is too easy for a small group of people to lose their focus and take off in a new direction without having the full backing of the various clubs. Even if every committee member brought their own telescope, without the full support of the clubs AATB would not remain as good as it is today.

**February, 2014:**

# Southern Florida Observing

by Don Fohey

By the end of January Jan and I were weary of winter. I hooked up the camper, loaded the kayak, grabbed my telescope and headed to Florida. During the first part of the trip, there was little opportunity for observing. When we arrived the moon was a couple of days before first quarter. We stayed in RV resorts with city street lighting, and parked next to Class A motor homes. I did enjoy seeing Canopus every night above the trees. I had fun showing folks we met Jupiter, M42 and other bright northern sky gems. I was really looking forward to our planned stay toward the end of the month in the Everglades, with no electricity and a couple of days after full moon.

I brought my Meade ETX 90 - it packs nicely in its carrying case. I didn't bring the tripod which doesn't stow anywhere conveniently. Observing from the table top was not as convenient, but was acceptable. This would also be my first use of Sky Safari in an observing session.

We stayed at the Long Pine Key campground. The park entrance station had a scrolling message board which rated the mosquito level as moderate. The mosquitoes, after sunset, were a big nuisance, however, Peach Mt. can be worse. The campground is among very tall, sparse pine trees. Observing anywhere near the horizon was between tree trunks.



I found one area more open, but it was compromised by restroom lighting. I tried to estimate the seeing but the little dipper was not visible so I picked out one of the dimmer stars that I could easily make out and looked it up in Sky Safari to be magnitude 6.4. The first night I explored the sky in Puppis and Canis Major below Wezen. The second night I explored all my northern sky favorites with the advantage of a dark sky.

I wanted to see Omega Centauri. I checked Sky Safari which showed it below the horizon in the early evening and rising later. I set my alarm for 3 am when it would be near transit. A nearly full moon was disappointing. I used the compass feature of Sky Safari to point to its position and easily located it between tree trunks with binoculars. It was delightfully huge in my telescope. I was disappointed, however, that the 90 mm Meade couldn't resolve stars in the globular cluster. It may be that in the bright moonlit sky

I was only seeing the central portion of dense stars and was missing the outlying stars that could be resolved.

I was very pleased with Sky Safari! It is a much easier to use this tool than the sky charts that I used before. All the praise that I have heard from the Lowbrow is well founded. I added the objects that I saw to an observed list that I created. Unfortunately, with AC power unavailable, I plugged my Samsung tablet into a 12V USB charger that we used for other devices and the tablet will no longer turn on. I will eventually replace it.



**Quality, affordable oculars:**

# Hyperion Modular Eyepieces

by Norbert Vance, Director Sherzer Observatory  
and Jim Forrester

**Hyperions and Jupiter**

What do you say if I put Hyperion and Jupiter in the same sentence? An observing experience worthy of writing, and a product review to boot. A few months back I looked at the hodgepodge of eyepieces that has become my personal collection over the years. My inconsistent collection of Celestron, Meade, and Televue one and a quarters are getting like me- older. Since I was approaching my <cough>th birthday I figured it was time to treat myself to something better. I am admittedly spoiled by the



*These photos show the 17mm Hyperion in its' various incarnations. Upper left: The eyepiece in the 17mm configuration with the 14mm and 28mm "tuning" collars on the right (and dog wandering through the shot). Upper right: With the field lens removed the unit now has a 2" barrel and a 21.8mm focal length. Lower left: The 14 mm collar in place producing a 13.1 focal length. Lower right: With both collars in place yielding an focal length of 9.2mm.*

*Not shown: The 28mm collar alone makes a 10.8mm ocular.*

*Photos: Jim Forrester*

fact that whenever observing calls I can run up and grab a few Ethos eyepieces from the Sherzer inventory. Most observing I have done in recent years involved Kensington, Fish Lake, school, or Peach Mountain anyway, but I have been neglecting my personal inventory for years. Time for a new set... ah, whoa, ouch! What to do? I have been spoiled with the Ethos, and the 10-inch apo under the Sherzer dome. What to get for myself, my C11, and not break the bank yet still have a decent set, hmmm? Along comes Highpoint Scientific with a sale on Baader Planetarium Hyperion "Modular" eyepieces.

After reading a few reviews I sprang for a set of three- 32mm 2-inch and 17mm and 10mm 1.25-inch, \$179 for the 32 and \$109 each for the others. In true Lowbrow fashion all three combined still cost a couple hundred dollars less than ONE Ethos. My

expectations were understandably reserved. Yes, blame me for the winter from Hades. I buy something and we are cursed with Saturnian weather but lo comes last night, a Sunday (February 23) with clear, rock steady skies. I drive back to work- gosh it's nice to say that – and open the dome to the 10-inch apo for first light with my new toys. Jupiter is high overhead transiting our meridian, and the Red Spot is transiting Jupiter's meridian. I swing the planet into view with our \$700 17mm 2-inch barrel Ethos and the views are nice. Read the tech specs on the Ethos, and see the awards and reviews. Yes, well deserved.

But here's the kicker... I put my new 17mm Hyperion in the same scope and the views are equal if not better than the Ethos! The Galilean moons are disks, the Red Spot clear and detailed, easily resolved with festoons trailing. I was delighted. I switch back and forth and study carefully all the detail. Beats me if I can see much difference, actually feeling more comfortable with the new glass. Of course, I am standing here alone with this experience. Pity. Such nights are so rare. It was so worth sharing.

I turned the scope to M42 to try the 32mm. Same results, a nice wide field with tack sharp stars and plenty of nebulosity. Maybe the euphoria has to do with me spending hard earned money and not getting burned, or almost like I cheated here. Maybe it's both. The eyepieces, in my modest opinion, are well worth the cost. They are a nice modest size, too, not the counterweights Televue and Explore Scientific sets have become. Each is rubber knurled with black anodized barrels, a color ring and comes with a rather redundant leather pouch. This seems first class to me, but then I AM worthy, yes? Well?? OK, don't answer that, but it is nice to see the great strides over the years made in optical performance combined with goto computer technology that can make a seasoned veteran enjoy this great hobby even more.--Norbert Vance

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**A**ffordable, of course depends on the size of one's wallet. Most vendors charge about \$140 for most of the Hyperion line with the 24mm, 8-24mm zoom and 32mm costing more. But they cost hundreds less compared with other high quality eyepieces. I exchanged emails with Baader Planetarium in Germany, developers of the Hyperions. They were pleased with Norbert's high praise, but did not want to claim everyone would feel their eyepieces were the equal of the Televue Ethos (which they greatly admire).

Having owned the above unit for several years, I can state they produce the best views of anything priced close to them and those views are excellent indeed.

All the configurations of the 3.5mm, 5mm, 8mm, 10mm, 13mm, 17mm, and 21mm are parfocal. The entire line offers 68 degree true fields with 17mm-22mm eye relief, a boon for eyeglass wearers.

I own a 12.5" reflector and a 4.1" apochromatic refractor and have used my Hyperion in both scopes in all the 1.25" configurations. The views are sharp across the field with very good contrast. I've barlowed the 17mm in the reflector and had wonderful views of Jupiter and Saturn at 388x. As a 17mm, the deep sky views at 105x have allowed me to pick out faint fuzzies that I've magnified by inserting the "tuning" rings. (Swapping the collars in and out in the field makes easy getting dirt inside the field lens, so take care.) Both scopes, however, are slow by the current large reflector standard at f/5.6 and f/6.2 respectively.

The 1.8 degree true field of view at 38x I get with the 17mm in the refractor is quite wonderful, giving great views of the Beehive and Pleiades. The magnification jumps are small in the refractor so I've usually put in both rings to get more power. The 9.2 configuration gives 71x and an almost one degree field making for very nice views of objects like M 35 and NGC 7789.

I was ignorant of the use of the unit without the field lens until researching this article. I have not yet gotten my scope out of mothballs but Sunday, March 31 John Causland opened his drive way and instead of setting up either of my scopes, I took Mike Radwick's kind offer to test the eyepiece in his 14.5", f/4.3 Starmaster reflector and could not have been more pleased. The contrast on M 46 was excellent and the stars were pinpoint for about 80% of the field. This field curvature in the fast scope (not noticeably improved using a Paracorr), is the main difference between the Hyperion and the vastly more expensive glass. But the contrast was excellent as the planetary nebula NGC 2438 was clearly visible.

John recently bought a Hyperion 8-24mm zoom for use in his 60mm Coronado solar telescope that we decided to give a go at M 46. This may be the best zoom of this range I've used. The contrast was wonderful at each stop and the field correction, if anything, even better than the 17-as-21.8mm. While inexpensive for this quality, the Hyperion zoom is not cheap at \$289.

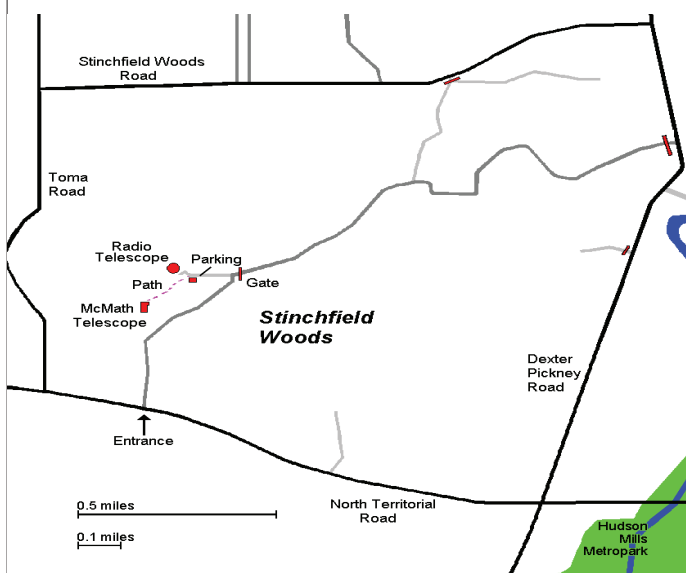
If these eyepieces fit your budget, you will likely be happy with them. But the only true test is to use them in your own equipment. Fortunately, some of your club members own Hyperions and if you show up for some of the club events, you just may get the loan of one for an evening and you'll know before buying if these are the eyepieces for you.--Jim Forrester



## Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3<sup>rd</sup> Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow 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 which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



## 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 \$20 per year for individuals or families, \$12 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](mailto:jim_forrester@hotmail.com) to discuss length and 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 Presidents:      | Dave Snyder     | (734) 747-6537 |
|                       | Dave Jorgenson  |                |
|                       | Jack Brisbin    |                |
|                       | Belinda Lee     | (313)600-9210  |
| Treasurer:            | Doug Scobel     | (734)277-7908  |
| Observatory Director: | Mike Radwick    |                |
| Newsletter Editor:    | Jim Forrester   | (734) 663-1638 |
| Key-holders:          | Jim Forrester   | (734) 663-1638 |
|                       | Fred Schebor    | (734) 426-2363 |
|                       | Charlie Nielsen | (734) 747-6585 |
| Webmaster             | Krishna Rao     |                |

## Lowbrow's Home Page

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

## Email at:

[Lowbrow-members@umich.edu](mailto:Lowbrow-members@umich.edu)

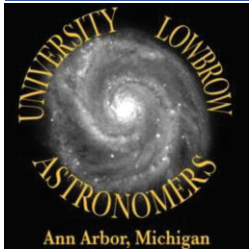




**University Lowbrow  
Astronomers**

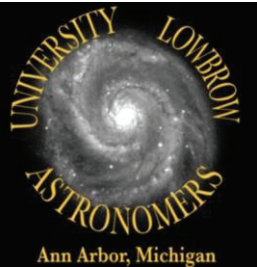
University Lowbrow Astronomers  
P.O. Box 131446  
Ann Arbor, MI 48113  
  
lowbrowdoug@gmail.com

**Reflections & Refractions**



**Website**

[www.umich.edu/~lowbrows/](http://www.umich.edu/~lowbrows/)



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P.O. Box 131446  
Ann Arbor, MI 48113

# Lowbrow Calendar

- Tuesday, April 15--*Total Lunar Eclipse*** (see front page)
- Friday, April 18--*Annual Club Business Meeting, Election of Officers and Swap Meet***, 7:30 PM  
Room 130, Dennison
- Saturday, April 19--*Ann Arbor Library Loaner Telescope Maintenance***, noon-6:00 PM
- Saturday, April 26--*Open House at Peach Mountain***, begins at sunset, maybe cancelled if cloudy
- Saturday, May 3--*Open House at Peach Mountain***, begins at sunset, maybe cancelled if cloudy