

May 20, 2012 Solar Eclipse.

From Cedar City, UT.

By Paul J. Etzler

REMEMBER!!
Venus Transit
Tuesday, June 5

See back page for observing sites

Unlike you folks in Ann Arbor, I was located I was almost in the best spot to view the 'Ring of Fire' annular eclipse. I promised that I would take some photos to share the experience: here are several.

I observed the eclipse with my new Orion® Starblast with an Orion®, full-aperture, glass solar filter. The weather was great and observing the event was a great experience. The photos through the Starblast were taken with a autofocus camera held up to the 20mm expanse (22.5X) eyepiece. The autofocus was quite an adventure. It's not the best way, but it is the Lowbrow way.



Photos: Paul J. Etzler

Beginning of eclipse



Half-way covered



Ring of Fire: Full Annular Eclipse



Weird light at full annular
eclipse



End of eclipse



Solar images from leaf pinholes

From the last weekend of April through the last weekend of May, Lowbrows locally, across the state, and as you've seen above, across the country, have been unusually active. This edition of the newsletter is dedicated to the articles the members have written about some of those activities.--Jim Forrester

Doug's Deep Sky Challenge: *An Egg Hunt in Cygnus*

by Doug Scobel

To appreciate this story, you have to set your wayback machine to 2007. That year I attended the Okie-Tex Star Party along with Mark Deprest, Robert Wade, and Nathan Murphy. Okie-Tex is a truly remarkable star party that boasts some of the darkest skies found anywhere in the continental United States.

I won't go into much detail on the '07 OTSP, but if you are curious you can read about it here: <http://www.umich.edu/~lowbrows/reflections/2007/dscobel.28.html>

So on to the egg hunt. Nathan decided one night that he'd choose a page of the Pocket Sky Atlas and see what he could see on it. Now I couldn't read his mind, but I'm sure that his thought process went something like this: "Let's see, what's up high right now? Hmm, Cygnus is nearly directly overhead, but I have the 10-inch Portaball, so there's no such thing as Dobson's Hole with that scope. Yeah, let's try Cygnus." So he opens the PSA to Cygnus, and continues. "Let's see, here's a nice looking planetary, the 'Egg Nebula'. Hmm, if it's in the PSA, it must be relatively easy, especially considering I'm under the darkest skies in the country, and I have a ten-inch scope. How hard can it be?" How hard can it be? Plenty hard as it turned out. Half an hour later, I'm sure Nathan is thinking thoughts that I cannot share here. Let's just say that he was very frustrated at not being able to find something that "ought to be easy". In desperation he turns to the rest of us to enlist our help. I look at the page in PSA. "Looks like it should be a nice little planetary" I think to myself. "OK, how hard can it be?" I line up the Telrad, and look through my trusty old 13" Dob named Papa Smurf. Nothing. Pan around some. Nothing. Get out the oxygen-III filter and blink it in and out. Still nothing. Pan around some, go back to the starting point, blink the O-III in and out, pan some more, blink, pan, start over, etc., etc., etc. *Still nothing*. What the heck? OK, time to get out the big gun, Millennium Star Atlas. Find the chart, there it is, try again. Nothing. OK, go back to Millennium Star Atlas. There's a little pentagon-shaped asterism, and the nebula is on one of the five sides of the pentagon. Find the pentagon, find the nebula. Back to the scope and pan around the dense star field in Cygnus, which is already dense because the Milky Way runs right through it, but is rendered even more so because of the extremely dark sky. "Dang, *there are a lot of stars up there!*" After a good 20 minutes, I finally find the little pentagon in a low-power, wide-field eyepiece. "The nebula should be right there. Where is it?" Blink the O-III in and out. "*STILL NOTHING! WHAT IS GOING ON?*" Everything dims equally and there's no sign of a nebula. All I see is a close, dim, double star where the nebula ought to be. "OK, let's zoom in." At higher magnification the confounded egg finally reveals itself! The close, dim, double star is actually enveloped in nebulosity. Finally, success, if you call finding an object after an hour's worth of searching "success". Since that time we've unaffectionately referred to the Egg Nebula as Nathan's Nemesis and Murphy's Bane, which are certainly more descriptive names based on our experience. That sure was one tough little bugger! But we found it.



At the 2007 OTSP, Nathan looks a little edgy after wrestling with the Egg Nebula the previous night. Guess who won.

Okay, back to the present. We're at CLEAR IV in Atlanta, MI, the weekend of May 18-19 of this year. During the second night, Yasu suggests that we look for the Egg Nebula. "NO WAY" Nathan and I reply almost in unison. I'm not doing *that* again – that was not fun. Then I start thinking about it. I think to myself "You know, I do have a 16-inch scope now, the skies are really dark, and I sort of remember how to find it. Cygnus isn't too high yet, so Dobson's Hole shouldn't be a problem. Find that little pentagon and I find the nebula. How hard can it be?" Yeah, how hard can it be? Plenty! Of course, I have to dig out Millennium Star Atlas, but I forget that the elusive Egg does not respond to O-III filters like normal planetaries do. Despite all that, after "only" a half hour's worth of searching this time, I find it. "Hey Yasu, I found it!" Someone replies "He went to bed". "Great, all that work and he goes to bed and I can't show it to him. I'll have to have a word or two with that guy in the morning" I mutter to myself.

Despite Yasu not being available to see it, this story has a silver lining. I now know a sure-fire way to star-hop to it quickly, and I think you can do it too. Even from less than perfect skies.

Start with the Pocket Sky Atlas, chart number 62, or virtually any other star atlas, or just Chart 1 shown here. Put your Telrad midway on a line between magnitude 3.7 Tau Cygni and magnitude 2.5 Epsilon Cygni. Now adjust your scope so that the Telrad's bull's-eye is just a smidge southeast of the line. Now look in the lowest power eyepiece you have. Near the center of the field you should be able to easily find the double star Yale BSC 8051 (BSC = Bright Star Catalog), whose components are separated by about 1.2 arc-minutes and are of magnitudes 6.0 and 8.7. Chart 1 shows where to put the Telrad circle.

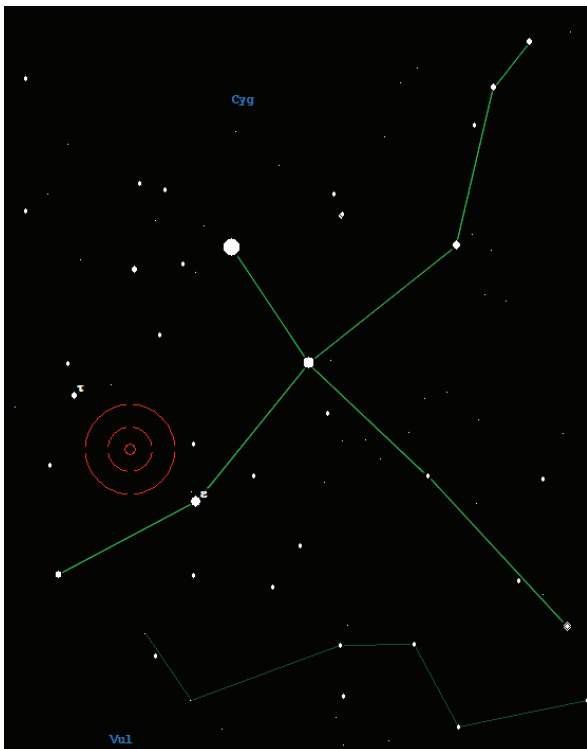


Chart 1. This chart shows where to place the Telrad circle, between Tau and Epsilon Cygni. North is at the top and east is to the left. Chart was generated using Guide 8.0.

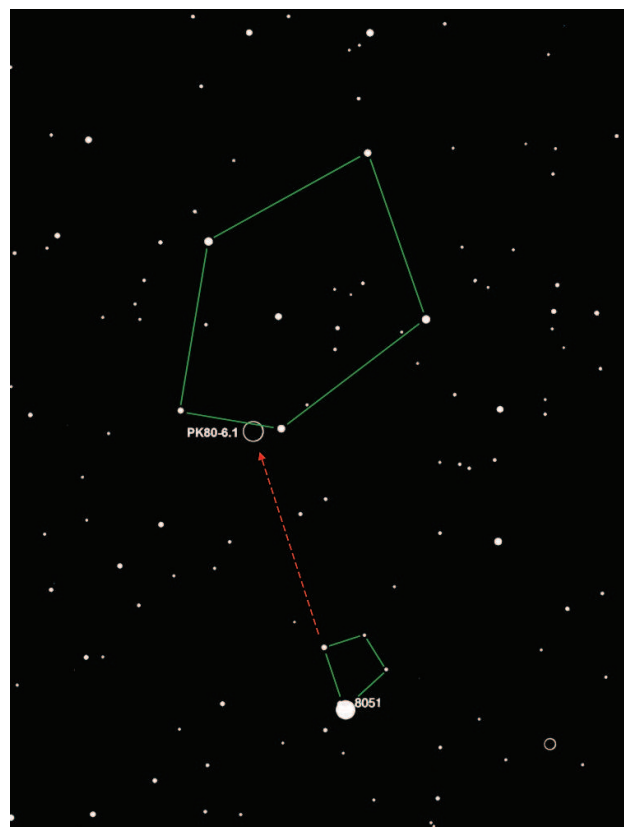


Chart 2. This chart shows the location of the trapezoid north of YBSC 8051, and the pentagon to its north. The location of the Egg Nebula is circled. North is at the top and east is to the left. Chart was generated using Guide 8.0.

That double star comprises the southernmost corner of a trapezoid of stars that is angled roughly NNE to SSW, about 9 arc minutes on the longest (SE) side and six arc minutes on the shortest (NE and NW) sides. Going clockwise from the brighter double, the star magnitudes are 8.7, 10.0, and 9.8. Chart 2 shows Yale BSC 8051 and the trapezoid near the bottom of the chart.

You should notice that the first star clockwise (to the NNE) from the bright double is itself a double star, with components separated by about 45 arc seconds. These two double stars point almost directly to the nebula, a little more than half a degree to the NNE. But to be sure that you have the correct field, you have to find a pentagon of roughly 8th magnitude stars, with a sixth 8th magnitude star in the middle. This pentagon is much larger than the trapezoid, close to a degree across, and is also shown near the top of Chart 2.

Once you find the pentagon, finding the Egg is easy. It's situated along the southern side of the pentagon, closer to the westernmost star that defines that side. Once you see what appears to be a faint, close, double star, increase the magnification to at least 200x. You should see that the two "stars" are enveloped in nebulosity, and that one of them is slightly brighter than the other. The image below approximates the appearance of the nebula in the eyepiece – but remember that it is much brighter in the image here than it will appear visually.



The Egg Nebula, PK80-6.1, is at center. Sloan Digital Sky Survey image courtesy the Space Telescope Science Institute.

There, you found it! That wasn't so hard, was it? Maybe I don't want you to answer that. After all, I haven't tried using this method locally under our more light-polluted skies. But I intend to try next time I'm out.

So what is the Egg Nebula anyway? It's marked in both Pocket Sky Atlas and Millennium Star Atlas as a planetary nebula, but why does it not respond to an O-III filter? It is thought that the Egg is a proto-planetary nebula. In other words, a star that is in the process of becoming a planetary nebula, but not quite yet. The hypothesis is that it is so early in the process of becoming a planetary nebula that its dusty environment is shining by reflected light which is overpowering any ionized gas emission.

Here's a table with some data on the Egg Nebula. Some sources list it as magnitude 13.5, but from my observations and those of others I'm calling it approximately visual magnitude 11.5 or 12. That sounds faint but its surface brightness is quite high due to its very small angular size.

| | |
|-----------------------------|---------------------------------|
| Perek-Kohoutek designation | PK80-6.1 |
| Galactic Nebula designation | GN 21.00.3 |
| Coordinates (epoch 2000) | RA 21h 02m 19s Dec +36° 41m 38s |
| Magnitude | ~12 |
| Size | ~30" |

So, can you hunt down the elusive Egg? Under pristine skies it should be visible in a six-inch scope, but under the compromised skies of SE Michigan I'm guessing you'll need at least an eight-inch if not larger. If you have such a scope, then the next time you're out this summer try doing an Egg hunt in Cygnus. I'd like to know – what do *you* see?

CLEAR IV (Spring 2012) **Club Lowbrow's Excellent Atlanta Retreat!**

By Mark S Deprest

With contributions from Doug Scobel, Yasu & Yumi Inugi, Nathan Murphy and Jim Forrester

Let me start by saying that those of you who did not make this trip, missed some of the best observing, skies and weather Northern Lower Michigan has to offer! Friday morning, May 18th, started out promising to be warm and clearing. As the day ended and we all arrived at Diane's farm the skies were clear and the evening was warm.

Doug Scobel had invited a friend who was up from Florida. Jim Leiter is working at Doug's place of employment and is a member of a local club in Florida. I brought up 'Gilda' my 8" dob for him to use and because Nathan Murphy was coming in to pick up 'Papa Smurf' (Doug's old 13" dob), I also had the tube assembly for that in my van. So, when I pulled up, unloaded and by the time we assemble the 3 scopes, Blondie, my 18"; Gilda, my 8"; and Papa Smurf, Nathan's 13"; to join Doug's 16" and Jim Forrester's 12.5" Yasu and Yumi showed up and set-up 'Big Red'. We were ready for a night of great observing!

Although, it seemed to take forever to get dark, by 23:00 Yasu was getting readings on his dark sky meter of 21.7 to 21.8 this equates to limiting magnitudes of 6.7 to 7.0. This is dark! These are readings that one gets out west, at altitudes 3 & 4 times what we were in Atlanta, MI.

We all spent the first part of the evening examining Mars, Venus and Saturn; none of which disappointed us. Then for me it was on to Arp galaxies and the occasional foray to some bright Messier eye candy. My scope was aligned and tracking very well and finding those faint fuzzies became much easier. But the highlight of the night was M51, which in my 18" showed detail that I thought could only be seen in long exposure images. Absolutely Stunning!

We observed until 04:00 Saturday morning and when we are crawled out of our sleeping bags some time before noon, we all looked forward to Saturday night which was promising to be just as good. At about 02:00 Saturday morning the wind began to pick up and it lasted throughout the day, but by sunset that wind had subsided and we looked forward to another great night.

Yumi & Yasu brought & cooked Saturday night's dinner of homemade steak Jambalaya ... yummy! Then they broke out their Ukulele's and harmonica and serenaded us quite nicely ... you two ROCK!!!

Our hostess, Diane had invited a couple of her friends for a look or two through our telescopes and they all seemed to have enjoyed themselves. Saturday night was not quite as dark as Friday but Yasu still got readings of 21.55 to 21.68 on his sky meter ... still darker than almost anywhere in Lower Michigan.

As the night darkened I picked off Comet 2009 P1 Garradd and then onto my Arp Galaxies. M51 was still the most breathtaking sight and I pumped the power up over 250x to reveal structural details that I've never seen before. Besides a dozen Arp galaxies, I spent a great deal of time successfully looking for IC 1296 the small face-on barred spiral galaxy about 4 arc minutes northwest of M57, the Ring Nebula. At 14.3 magnitude this one was a real challenge, but dark skies can make all the difference. After finding the proper field and working a little averted vision I can log that one as seen!

Along about 02:30 the wind began to pick up again, but this didn't stop us and then Yasu staring asking questions about the infamous 'EGG Nebula' and the hunt was on ... Doug Scobel finally star hopped his way to the correct star field and managed to pick it up first then we looked around for Yasu, who started this 45 minute search and he had crawled of to his sleeping bag! Thanks Yasu! By 04:00 with the first rays of morning beginning to brighten the eastern horizon, we all went off to our sleeping bags with the only regret that it was our last night up at CLEAR IV.



If Diane sells the farm we will have to find a different sight for CLEAR V in the fall, but we already have a possible sight picked out about 15 miles north east at Tomahawk Lake State Forest Campgrounds. Keep watching for details about this event in future emails

Special thanks to Diane Ives who graciously opened up her house for us to use and sleep in and to Yumi and Yasu for dinner and entertainment. Great Time was had by all!

And now a few comment from Doug Scobel:

Superlatives have become the norm up at our Atlanta retreat. The first has to be Diane Ives's hospitality – letting us use her house as a place to eat, sleep, and refresh (yes, those cold water showers are nothing if not refreshing!). Thanks again, Diane! Another is the superb skies. We were easily hitting mag 6.5 naked eye and better. Darks skies like that can make you think you've suddenly doubled the aperture of your scope. And of course I have to mention the camaraderie. I cannot imagine a more enjoyable group of folks with whom to observe. Lowbrows rock!

Speaking of folks, I brought with me a friend from work, Jim Leiter. He's doing some contract work for my employer, but he lives in Florida. He's an amateur astronomer, and was planning on hanging out in his hotel room that weekend. So it didn't take much arm twisting to talk him into coming up with us. Mark graciously brought an extra scope "Gilda", offered warm clothing, and I provided a sleeping bag and air mattress. Jim had an awesome time he told me later. He says that there is virtually no place in Florida with skies as dark as he saw in Atlanta. And he really enjoyed the group as well – he even joined the Lowbrows as an out-of-state member!

My last impression is somewhat bittersweet for me. My venerable workhorse from the past 28 years has moved on to a new owner. Papa Smurf is now in the capable hands of Nathan Murphy, who drove from Madison, Wisconsin to observe with us and to take delivery. While I'm somewhat saddened to see him go, I'm really happy that the old guy (Papa Smurf, not Nathan) is still with a Lowbrow. It just wouldn't seem right to have him go to a complete stranger! I'm sure that Nathan will get some good years of good views out of him. Thank you, Jim and Mark, for providing transport of the big scope for me.

Pictures:

<https://picasaweb.google.com/djscobel/CLEARIV?authuser=0&authkey=Gv1sRgCMPrt-m7lrGPGQ&feat=directlink>

INTRODUCING:

The Ann Arbor District Library Telescope Collection

By Amy Cantu

Why would a Library want to circulate a telescope?

It's a reasonable question. A telescope isn't something you'd ordinarily think you can check out at your local library; it's bulkier, more fragile, and likely more expensive than most other items in the collection. But telescopes and other such non-traditional items just may be the logical next step for public libraries.

With the decline in traditional reference services and the burgeoning advent of digital publishing, libraries have been expected to justify their reason d'être; the argument being that seemingly everything is available online, everyone has access, and Google has in most crucial respects replaced the reference librarian. But even if reference services are undergoing a technological transition - as well as books, music, and video - the need for good organization, stewardship, and free access to content has not changed. And far from diminishing its traditional mission, digital content has actually helped to clarify it: Your public library is still the go-to place for free access to the internet, computer training, and things you won't find elsewhere.

As we move beyond physical formats to downloads, however, things get a little more complicated in the circulation department. With the ubiquity of digital content and the decreasing need for the publisher as middleman, a threatened publishing industry is pushing on all the available surfaces and perceives libraries to be a hole in their business model. One unfortunate consequence of this perception is DRM (digital rights management), a clumsy technology that inhibits the use of digital content after sale with a cumbersome model of access and use limits antithetical to the longstanding lending policies of many libraries. As a result, patrons who are used to free, unlimited access to library materials, yet savvy enough to take advantage of an endless supply of free downloads online, must now stand in line for an e-book at their library - a seemingly nonsensical and unwelcome scenario poised to repeat as libraries move toward audio and video downloads.

The Ann Arbor District Library has been proactive on this particular front [PW article: <http://bit.ly/HhqGTc>], engaging in cutting-edge negotiations with progressive rights holders that bypass this publisher-as-middleman model. One such example is its recent agreement with Manatune [<http://www.aadl.org/magnatune>]. But whether circulating digital content becomes more or less complex in the future, we might as well continue to do what libraries have always done best: circulate physical items. And not just books, DVDs, and CDs. At AADL we're circulating a popular collection of unusual items [<http://www.aadl.org/catalog/browse/unusual>]. Starting with art prints many years back, we've moved on to include museum passes, bi-focal kits, energy meters, Science to Go kits...and now telescopes.

And one thing is certain: It'll be a long time before you can download a telescope.

The New Hampshire Astronomical Society Model

Telescopes were one of many items on our list of potential non-traditional items the Library was considering, but it didn't stand out as feasible until the University Lowbrow Astronomers came on as an enthusiastic partner. We'd also made some calls to some of the libraries around the country that are currently circulating telescopes, speaking with both administrators and on-desk staff to get a feel for how difficult a prospect it might be to maintain and circulate such a specific and relatively delicate instrument. Without exception all the libraries we spoke to had only positive comments about their telescope collections - from the (surprisingly) low rate of lost and missing parts to the glowing response from their patrons.

Along the way, we came upon the New Hampshire Astronomical Society's (NHAS) Telescope lending program [<http://nhastro.com/ltp.php>] which the Society had initiated as an outreach effort with small public libraries throughout New Hampshire. Each library circulates one or two Orion StarBlast 4.5 tabletop scopes that have been modified by the program's coordinator, Marc Stowbridge, to make them just a little more user-friendly and the parts a little less easy to lose. We also learned theirs was a full-blown model available to public libraries and included an entire set of documents available online, from a detailed guide to modifications and a user's manual to stickers, charts, and a list of recommended accessories. The program had been in operation in New Hampshire for a couple years, so it was tested, and it was easily transferrable with only slight alterations. So the New Hampshire model became our proposal.

There was genuine enthusiasm among the Lowbrows to sponsor the program, but we needed to find someone in the club who could take on the task of modifying the scopes. Belinda recommended Clay Kessler and he agreed. Clay has been wonderful to work with and we simply couldn't have done it without him. We bought the StarBlasts from Orion in February and Clay worked on modifying them over the course of the next couple months between his day job and his personal business. Meanwhile, Jody Harnish, the other AADL librarian working on this project, purchased the accessories and tried out several possible cases for the scope, ultimately settling on a euphonium case.

From February through early April, we also worked with several other Lowbrows, notably Jim Forrester, Charlie Nielsen, Douglas Scobel and Mark Deprest to modify New Hampshire's user's manual for AADL's purposes and to edit the Library's telescope page [<http://www.aadl.org/telescopes>] and subsidiary pages (tips for improving your viewing experience, [<http://www.aadl.org/node/204658>] and a list of objects you could see with the Starblast [<http://www.aadl.org/node/204755>] under dark skies). Furthermore, Charlie Nielsen, Dave Snyder, Jack Brisbin and Nancy Beltaire from the Ann Arbor Public Schools also created a Young Astronomer's page during this period [<http://www.youngastronomer.org/>]. Finally, the Library contracted with local comic artists Jerzy and Anne Drozd to create a quick-start comic guide for the scopes that would appeal to all ages. [http://comicsaregreat.com/images/dino_instructions.pdf]

Launching the Collection at the Leslie Science and Nature Center

We launched the collection on Friday, April 27, at the Leslie Science and Nature Center, as a joint program between the Center, the Lowbrows, and the Library. AADL librarian Jody Harnish, who is connected with the Science Center, brought some nice touches to the event, including red paper lanterns to light the sidewalk and the use of a golf cart to escort people up from the parking area in the grass below to avoid the problem of headlights during viewing. He also made a fire in the Nature House fireplace and set up coffee, hot chocolate, and cookies.

Up in the Nature House, Charlie gave a brief but well-aimed talk to roughly 80 people about the proper use and handling of the Library's scopes, as well as what new users could expect to find in the night sky both in and outside of Ann Arbor. Library staff held a raffle for the first seven positions in the hold queue, as well as the Starry Night software that came with each of the seven scopes, then we encouraged everyone to step outside to the sidewalk where the StarBlasts sat on tables surrounded by the big scopes brought out by the several club members who attended. (To my embarrassment, I'd forgotten to add batteries to the Finderscopes and only learned later that Brian Ottum ran out to buy and install them at the last minute.)

Thanks to Jim Forrester for recommending the date for the launch: It turned out to be a beautiful, cool clear evening, with Venus, Mars and Saturn all making an appearance. The moon, as Master of Ceremonies, did what it always does best - impressing beginners and making even small scopes look cool. We even had an ISS flyover. Several folks helped man the tables with the StarBlasts and other club members brought their scopes. Thanks go to Jack Brisbin, Mark Deprest, Yazu and Yumi, Jim Forrester, Charlie Nielsen, Brian Ottum, Mike Radwick.

The next day, Saturday April 28, just happened to be Astronomy Day and the telescopes began officially circulating in the Library's system.

Since the launch (it's been about a month now) we've yet to discover any broken or missing parts. The weather hasn't been perfect, as it never is in Michigan, but that only proves a two-week circulation period was the right idea. Jack Brisbin reports that a couple brought one of the Library scopes to the May 19 open house and asked for pointers prior to taking the scope up north over Memorial Day weekend. The hold queue for the seven StarBlasts has grown steadily, so we'll likely add more telescopes to meet the demand. This time, however, in order to avoid burdening Clay Kessler with the scope modifications, the Library is planning to host a group build in July led by Clay. We hope to attract and train other interested Lowbrows along with a smattering of a2geeks. Stay tuned for more information this!

Thanks again to everyone who helped get the Library telescopes out the door.

Youngastronomer.org

By Jack Brisbin

A couple of years ago the club started an outreach program with the Ann Arbor Public Schools that involved a classroom discussion on astronomy software and a "How to use a telescope session". I have been participating in the "How to use a Telescope Session" primarily with fifth grade students. I asked Dave Snyder our webmaster how complicated it would be to set up an astronomy website geared toward for 3, 4, and 5th graders. In the meantime, I sent an e-mail outlining my proposal to Charlie Nielsen, the clubs president. To my surprise, the e-mail became an article in the April 2011 newsletter.

I missed the April 2011 General Elections meeting because I was attending the North East Astronomy Forum in Suffern, New York (NEAF). But that didn't matter; I was elected Vice President for two reasons: my Young Astronomers website idea and I wasn't there to decline the nomination. Charlie, the clubs president, explained to me the Lowbrow logic of officer elections. I accepted the position and thanked the club members for voting for me.

A few months later a core group was established consisting of; Nancy Beltaire, Outreach Coordinator for Ann Arbor Public Schools; Amy Cantu, Ann Arbor District Library and club member; Dave Snyder, Lowbrow Webmaster; Charlie Nielsen President, and Jack Brisbin Vice President. As I worked on the website we continued to meet as a group. After some discussions with Nancy Beltaire (AAPS) and Amy Cantu (AADL) we agreed the 5th grade would be our student audience. But it was apparent to the group we needed to review all the websites.

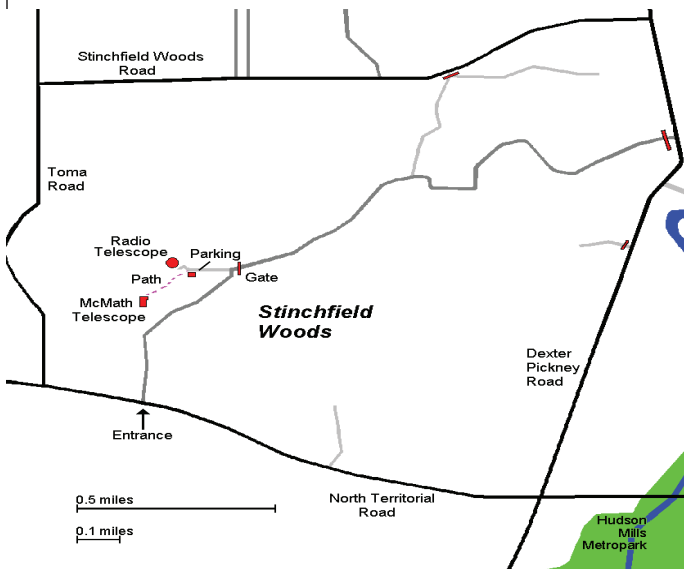
In November of 2011 we had a meeting at my house and reviewed the websites. We identified a cluster of web sites that met our student criteria. As the website development progressed Nancy Beltaire (AAPS) reviewed the website content with some of the teachers and 5th graders. The student response was; "awesome" "bomb" "cool" the voice of our customer. Amy Cantu (AADL) helped us to focus the Ann Arbor District Library's new telescope loaner program into the web site. There were rewrite and layout changes but Dave Snyder our webmaster, reloaded the web site and launched us on the internet. In February 2012 I acquired the domain name: YoungAstronomer.org. At the April 20th meeting we previewed the new web site "youngastronomer.org" and discussed the web site focus; 5th graders. Go to www.youngastronomer.org and review the site. Then send the web site to your friends and grand kids. Thanks, Nancy Beltaire, Amy Cantu, Dave Snyder, and Charlie Nielsen, for all your help with this project.



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 3rd 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 \$12 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

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)660-5595** or jim_forrester@hotmail.com to discuss length and format. All **663-1638** articles and images are due by the 1st day of the month as publication is the 7th.

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Lowbrow's Home Page

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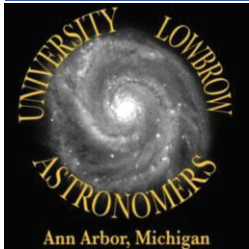


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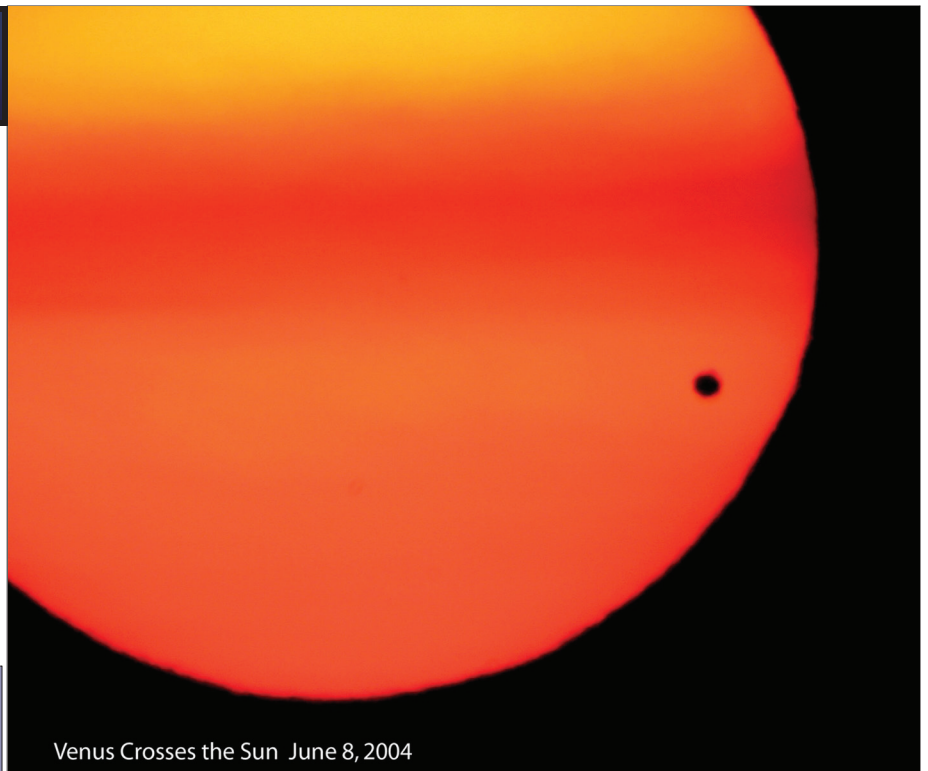
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Reflections & Refractions



Website

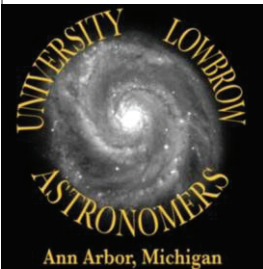
www.umich.edu/~lowbrows/



Venus Crosses the Sun June 8, 2004

Photo: Brian Ottum

Transit Observing Sites: Ashley Street, Angell Hall, Detroit Observatory, Scherzer Hall (Ypailanti) and Kensington Metro Park. You may also find Lowbrows at Ann Arbor's Leslie Park.



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