



REFLECTIONS AND

REFRACTIONS

OF THE UNIVERSITY LOWBROW ASTRONOMERS

April 2004

Upcoming Events

April 2004

- **Friday, April 16., Starting at 7:30 p.m. Monthly Club Meeting, held in room 170 of the Dennison Building. Officer Elections and Swap Meet.**
- **Saturday, April 17, 10:30 a.m. Saturday Morning Physics. "Shedding Light on Dark Energy," presented by Professor Gregory Tarle.**
- **Saturday, April 24, (Starting at Sunset) Regular Scheduled Open House and Star Party at the Peach Mt. Observatory. Weather permitting.**
- **Friday, May 14., Starting at 7:30 p.m. Monthly Club Meeting, held in room 170 of the Dennison Building.**
- **Saturday, May 15, (Starting at Sunset) Regular Scheduled Open House and Star Party at the Peach Mt. Observatory. Weather permitting.**
- **Friday and Saturday, May 21-22. Eighth Annual Astronomy on the Beach at Kensington Metropark.**

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Lowbrow Astronomers 2004 Election Nominees

The candidates listed below are those nominated as of the March 2004 meeting. Further nominations for these and other positions will be taken at the April meeting prior to Elections. Please note that the proposed bylaws preclude the President from simultaneously holding either a Vice Presidency or the Treasurer's position. *Photos courtesy of Dave Snyder and Jens Zorn.*

President



Charlie Nielsen

Treasurer



Kathy Hillig

Vice Presidents



Jim Forrester



Bernard Friberg

Observatory Director



Mike Radwick



Paul Walkowski

Newsletter



John Ryan

Website



Dave Snyder

Three Hours to Refresh Your Soul

By Mark Deprest



Every once in a while you get one of those special nights, that revitalizes your love of astronomy, or maybe it's just a "me thing." Monday, March 22, 2004, I had one of those nights and I think I'd like to share as much of it as I can. I knew early in the day that it was going to be clear this night and that I was going to be out at sunset. If only to see the planets lined up from the western horizon to the eastern sky, with a two-day old moon mixed in there just for good esthetics.

At 18:45 EST I was at one of my favorite places to observe from in Ann Arbor, Leslie Park (south off Dhu Varren, between Nixon Rd. and Pontiac Trail). This is another one of Ann Arbor's wonderfully maintained City Parks that have proved to be, great observing areas for me, with low horizons and an absence of lights inside the park area. Leslie Park is particularly good for its horizons all the way around because it's located on a hill north and east of downtown Ann Arbor. I have seen many "ground scraping" sights from this location and whenever I need a low horizon this is the place I go.

Well, let me get on to the observing session that in-

spired this article. As I was setting up my 12.5" f/5.6 Truss Type Newtonian telescope, I could tell it was going to be a good night when I noticed a thin "Cheshire Cat Grin" smiling at me from about 20 degrees above the western horizon. The two-day old moon was easily visible even as the ground began to swallow the sun. Bring on the Night! I thought and almost spoke aloud. By 19:05 EST the day's light source had left only its bright twilight glow in the west and now Mercury shining at -1.0 magnitude 5 degrees below and to the right of the "Cheshire Smile" poked its way into view. By now my telescope was put together and I quickly collimated the mirrors and waited for it to cool down. About 22 degrees above the Moon and almost out shining it was brilliant Venus at -4.3 magnitude and about 55% illuminated. As I followed the ecliptic eastward I could see that familiar orange glow of the 1.3 magnitude Mars had camped out just to the south of the Pleiades, some 12 degrees away from Venus. Moving another 35 degrees eastward along the ecliptic and almost directly overhead was the "Ringed Jewel of the Night" Saturn, with its multitude of moons. Now roll a third of the sky further east and the "King of Planets" Jupiter rules that part

of the night's firmament.

By now the telescope's optics had cooled sufficiently to afford a magnified view of these sparkling gems of the night, but which one do I start with? Mercury was racing to hide itself below my horizon so let's start there. Even as low as it was, Mercury at 145x was simply, "beautiful!" 67% illuminated this tiny planet is always a treat to see. I could tell by the steady image I was getting that something wonderful was happening, beside have some incredibly clear and transparent skies, they were also steady! I watched Mercury until my neck got sore and then moved up the ecliptic to the Moon. With only just a little over 4% of its face illuminated most of the features visible were highlands, but four small Maria which include Smythii and Humboldtianum (impact basins), and Marginis and Australe (old flooded basins). Every time I look at the Moon's surface I ask myself, when will we return? When will man walk upon that monochromatic surface again?

Now, it was time to put the telescope on Venus, and I like to use a lunar filter when observing this bright planet, it cuts down the glare just right. Venus was just a little over half lit, and if you examine it closely you may notice very subtle differences in the brightness of the clouds that shroud the planet. I was able to see a little difference in the northern third near the terminator, it was very subtle but it was there, Gary Perrine's photo confirms this.

Mars was calling me and despite its miniscule size of just less than 5 arc seconds, it can still show wonderful detail given enough power and steadiness of the seeing. The southern polar ice cap has grown considerably since last summer and showed as a bright white spot on the right limb in my view at almost 300x.

I don't want you to think that I wanted to keep all these views to myself. I wanted desperately to share this evening with anyone who was willing to come out. I was calling all of my "peeps" (or at least those who were programmed into my cell phone), but I either got no answer or an excuse. Oh well, I tried! John Causland had set up a scope before his class and hosted an impromptu mini star party somewhere in Detroit; for about 20 people and Doug Scobel had taken up temporary residence in Clayton Kessler's Driveway in attempt to pick off a few more of the Herschel 400. I learned later that Gary Perrine and Doug Nelle were also out gathering photons from their favorite haunts, so at least a few of Lowbrows were out observing.

Next stop Saturn I love the views of Saturn that my scope has given me in the past, but on this night I had

the collimation of the optics "dialed in" and the views at 400x were breathtaking! The Cassini division, Crepe ring, Encke division, and 6 of its moons, Titan, Rhea, Tethys, on Saturn's left and to its right, Mimas, Enceladus, and Dione were all part of my incredible evening. With its bands slightly shadowed by the planet itself, I could have spent all night just staring in total awe!

But I had done a little pre-session homework before coming out, and I knew that Jupiter was the object to observe this night. Two of the Galilean moons, Io and Europa would be transiting this evening at the same time and owing to the fact the Jupiter has just past opposition of March 4th, the shadows of these two moons would follow closely behind and would be easy to see crossing the face of Jupiter. By 19:50 EST my scope was aimed directly at the face of Jove and what I saw was very special. At 400x I could just make out the two moons just a little past half way thru the transit. But their shadows were perfect little black spots just to the east of center. After only 15 minutes of watching I could already see that the trailing shadow was catching up its partner. Would it pass before leaving the face ... only time would tell? By 20:35 EST, Europa was protruding from the western limb of Jupiter's face like an angry pimple about to burst, and 1/3 in from the eastern limb the GRS was moving across the face now! While the moons and their shadows race each other along the Northern Equatorial belt, the GRS was sliding along its centuries old path on the Southern Equatorial belt. By 20:50 EST the two shadows were neck and neck with a 1/3 of the face to go, it looks like Io's Shadow wins by two lengths. Mean while back to the moons ... Europa has left the building! and is free to move about the planet (within reason, of course!) I must admit that although the GRS has lost a lot of its "R" and is now more like the GPH (Great Pale Hollow) I am still fascinated by this multiple world size storm that has been raging centuries and almost certainly millennia. Whenever I see the GRS I think of Galileo pointing his crude telescope at Jupiter and discovering the 4 moons which are grouped and referred to, with his moniker attached. There is no record of Galileo seeing the GRS but Cassini did and made some wonderful drawings of the feature in 1665, while he was the first director of the Paris Observatory. After another few minutes Io poked itself out from Jupiter's western limb and in few more minutes Io will have left the building, too! By 21:20 EST, Io's shadow had left its partner in the dust and was now, just a hole on the edge of Jupiter. The GRS was nearing the meridian by now and I was going to have to start packing up soon, I still need to be up and off to work by 04:00 EST, so

weekday observing sessions are usually short ones. By 21:30 EST the moons and their shadows were done transiting and only the GRS and those magnificent bands were left. I took one more look at Jupiter and then Saturn before I packed my gear away.

But the sights
Of this night,
Tend to excite
And makes it
Hard to sleep
Either sound or light.

Sorry about the lousy poetry but as you can tell, I was inspired, until next time I wish for all of you, Clear Skies and Dark Nights. Carpe Nocturne!

The Eyes Have It

By Paul Walkowski

I visited my eye doctor and was lamenting that I had only 20/100 vision corrected out of my right eye and a blind spot in the dead center due to the blood clot. He said it typically gets no better than 20/40 or 20/30 and the central vision is always a bit distorted- complete healing should be over in another year!

We started to talk about astronomy and he indicated that in addition to bringing light into focus in my eyes, the -11+ lenses had the effect of reducing the size of objects significantly. I had always noticed that effect when putting on the glasses in the morning-- a chair suddenly looked like furniture in a doll house, but after a few minutes the effect died away. I asked if it was a real or virtual effect. He explained that it was very real and that with my vision most stars were being focused to a size much smaller than a single rod or cone diameter, and that only a relatively few bright stars were large enough to detect easily.

We talked about how an old pair of glasses, say 3 prescriptions old, had allowed me to see stars better than my current glasses and he indicated that those -9 lenses were probably just at the threshold of seeing more stars at a single rod or cone cell diameter wide. I plan to go onto the Internet and look into this from a math standpoint. Tom, does this make sense from an optics standpoint? From a crude physics standpoint it might, but rods and cones are darn small, especially end on, and I wonder if this is another wives' tale or whatever name Internet rumors go by these days

When I made my scope I deliberately used an extra long focus travel so I could still focus the eyepiece without glasses. So maybe the scope is still good enough to do this. This means that if I could only find the blinking object in the first place, that I'd be better off viewing it without glasses.

Now how do I find the little buggers in the first place? Well I noticed that with my 8x 78 binoculars I could see nearly as well as I could say 10 years ago, but that with the 7x50 on the spotter scope I could not.

Perhaps I should give my eyes some more aperture? I am thinking about trading my spotter in for a rich field home built 3-4 inch diameter and a short focal length. Does anyone know of a source of really reasonably priced optics with a f/4 or f/5 3 to 4 inch mirror?

About the University Lowbrow Astronomers

The University Lowbrow Astronomers is a club of Astronomy enthusiasts which meets on the third Friday of each month in the University of Michigan's Physics and Astronomy building (Dennison Hall, Room 130 or 807). Meetings begin at 7:30 PM and are open to the public. Public star parties are held twice a month at the University's Peach Mountain Observatory on North Territorial Road (1.1 miles west of Dexter-Pinckney Road; further directions at the end of the newsletter) on Saturdays before and after the new Moon. The party may be canceled if it's cloudy or very cold at sunset. For further information call (734) 480-4514.

Come One, Come All

Swap Meet

Friday, April 16

After the officer elections, participate in
the annual swap meet!

Prices between cheap and nothing!

Bring Stuff

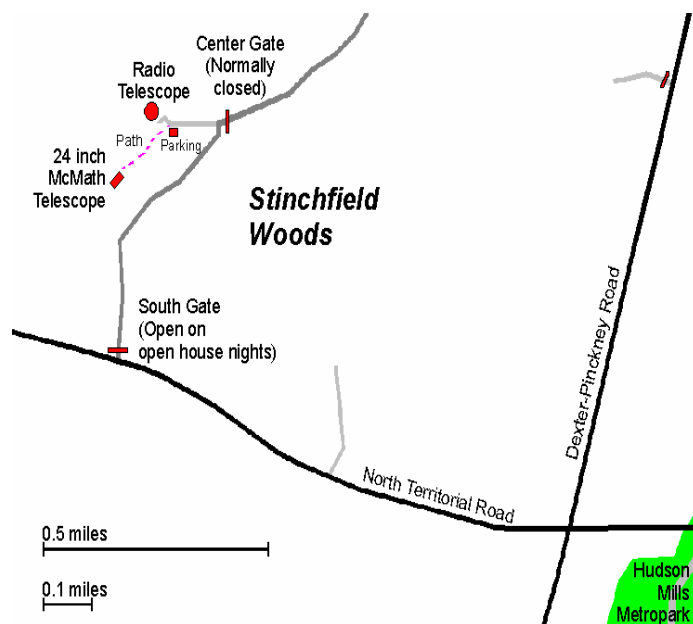
Trade Stuff

Buy Stuff

Featured are several boxes of stuff
salvaged from the Angell Hall
Planetarium

Places and Times

Dennison Hall, also known as The University of Michigan's Physics and Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. It is found in Ann Arbor on Church Street about one block north of South University Avenue. The meeting is held in room 130. Monthly meetings of the Lowbrows are held on the 3rd Friday of each month at 7:30 PM. During the summer months, and when weather permits, a club observing session at Peach Mountain 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 inch telescope which is maintained by the Lowbrows. The observatory is located northwest of Dexter. The entrance is on North Territorial Road, 1.1 miles west of Dexter-Pinckney Road. A small maize-and-blue sign marks the gate. Follow the gravel road one mile to a parking area near the radio telescopes. Walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.

Public Star Parties

Public Open House/Star Parties are held on the Saturday before and after each new Moon at the Peach Mountain Observatory. Star Parties are canceled if the sky is cloudy at sunset or the temperature is below 10 degrees F. Call 4332-9132 for a recorded message on the afternoon of a scheduled Star Party to check on the status. Many members bring their telescopes and visitors are welcome to do likewise. Peach Mountain is home to millions of hungry mosquitoes - bring insect repellent, and it does get cold at night so dress warmly!

Amateur Telescope Making Group meets monthly, with the location rotating among member's houses. See the calendar on the front cover page for the time and location of next meeting.

Membership

Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, and \$12 per year for students and seniors (age 55/+). This entitles you to the monthly REFLECTIONS newsletter and the use of the 24" McMath telescope (after some training). Dues can be paid at the monthly meeting or by mail to this address:

Mike Garrahan
7676 Grand Street
Dexter, MI 48130

Magazines

Members of the University Lowbrow Astronomers can get a discount on these magazine subscriptions:
Sky and Telescope: \$29.95 / year
Astronomy: \$29.00 / year

For more information contact the club Treasurer. Members renewing subscriptions are reminded to send your renewal notice along with your check when applying through the club Treasurer. Make the check payable to "University Lowbrow Astronomers".

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest. Call or Email to Newsletter Editor at: John Ryan (734) 662-4188 allegheny@mac.com to discuss length and format. Announcements and articles are due by the first Friday of each month.

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Lowbrow's Home Page
<http://www.umich.edu/~lowbrows/>

*Lowbrows
about to depart on a
field trip to the
McMath-Hulbert
Solar Observatory.*



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Check your membership expiration date on the mailing label.