



REFLECTIONS

of the University Lowbrow Astronomers

May 2002



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-Pinkney 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 (313) 480-4514.



Left: Moon w/ Earthshine and Saturn on 4/16/02 Right: Mercury and Comet Utsunomiya (C/2002 F1) 5/03/02

This Month:

May 11th Public Open House and Star Party at the Peach Mt. Observatory

May 17th Astronomy on the Beach at Kensington Metro Park Starting at Dusk

May 18th Astronomy on the Beach at Kensington Metro Park Starting at Dusk

May 24th is the Lowbrow Meeting at 7:30pm in Room 130 of the Dennison Bldg. Speaker will be Matthew Walker, "Shedding Some Light on Dark Matter"

Also note that our web site has a new URL: www.umich.edu/~lowbrows/ Thanx Dave!!

Next Month:

June 8th Public Open House and Star Party at the Peach Mt. Observatory

June 15th Public Open House and Star Party at the Peach Mt. Observatory

June 21st Lowbrow Meeting and Open House at Leslie Science Center for time and directions call Bernard

Storage Media for Analog Astrophotography!

(Film for your Astrophotos)

by Clayton Kessler

February 6th 2002

Film, that is actually available, is one of those things that changes seemingly every other day. In reality it is not all that bad but you must keep up to date on what works and what doesn't if you want to get the best film for your use. Kodak and Fuji are constantly "improving" their film for their normal markets. This is usually bad news for astrophotographers. The wonderful Fuji Superia 400 and 800 are a case in point. The latest versions have the "New 4th Color Layer Technology". This probably works well if you are taking vacation pictures but all of the response to red emission nebulas is now gone. There are still some good films available at your local store. A short list and description is as follows:

Color Negative Films:

Kodak Royal Gold 400 - Reputed to be the same or very similar to Supra 400. A great film for piggyback shots and it has pretty good reciprocity failure properties. The only caution, if it is actually the same as Supra 400 I have found that film to be sensitive to humidity. The dryer the night the better the film seems to work. RG400 is available almost anywhere.

Kodak Supra 400 - This is considered a "professional" film. This means that you must buy at least 5 rolls of it at one time. It seems to be a nice film aside from the previously mentioned sensitivity to humidity. Not a bad choice at all!

Kodak LE400 - LE400 or "Law Enforcement" 400 is Kodak's best astro film. It is said to be the same emulsion as the old PJ400 (Photo Journalist 400) that was discontinued a year or

so ago. It is difficult to get and must be special ordered in 20 roll bricks. The good news is that it is available in 12 exposure rolls. LE400 works well unhypered but it works even better when hypered for 5 hours at 50C. Even with the difficulty to get it is my choice as "Favorite Film."

Kodak Royal Gold 200 - This film may elevate itself to "Favorite film" status after some more testing. It is commonly available but there is a catch..... In order to be at it's best it must be hypered for 2 hours at 50C. Unhypered it is not nearly so good and is eclipsed by other 400 speed films.

Fuji Super "HQ" 100 - This is a very common and inexpensive film not yet "improved" and quite nice for piggyback astrophotography. While it works fairly well out of the box 90 minutes of hypering brings this film into it's own. Once the weather breaks I hope to do a lot more testing with this very fine grained film.

Slide Films:

Slide films are interesting. I seldom use them because I feel that a negative film has a much greater exposure flexibility but some astrophotographers won't use anything else. There are some that are reputed to be "standouts" for astrophotography and these are:

Kodak E 200 - This is a professional film that is aged to a specific point at the factory and shipped and stored cold to preserve it's consistency. It is available from big camera stores and is - in my opinion - somewhat pricey.

Kodak Elite Chrome 200 - Elite Chrome 200 is the same emulsion as E200 but it is not aged and cold shipped / stored. It is available from a variety of stores and is substantially lower in cost. If I were using slide film this would be my choice.

Fuji Provia 400 - I have not used this myself

but it is getting great reviews on the internet.

I would stay away from Black and White films at this time. While there are some great ones available it is harder to get these developed than color negatives. I will say that the "All Time" best black and white film is Technical Pan film 2415. This film requires extensive hypering (maybe up to 20 hours) and is fussy in development technique. All that being said it is the highest resolution film by far and can be a challenge to your equipment as it shows flaws that most films cannot resolve.

This gives you a few film choices but remember that any of them could be discontinued or improved at any time.



Clayton Kessler, with a small part of the astrophotography equipment he uses. Clay's theory is: You can't expose too much film!

Technology: Mark Babbles On **By Mark Deprest**

I've been actively involved in astronomy for about 8 years, and with computers for about 24 years. Both of these are hobbies for me and when computers made their way into the workplace, I took to them naturally. Although I have had no real formal training in either area, I am something of a self-taught "HANDY-MAN" in both areas. Because of the vast amounts of data involved in astronomy and the ability of computers to store, sort and retrieve data files, these two disciplines marry up very nicely.

I have a number of lists, programs, and web-sites that I rely on to keep my interest in both hobbies fresh and exciting. I have long touted the kudos of Guide 8.0 by Project Pluto; a PC based Astronomy powerhouse of a software program. Now the advances in technology have brought us the PDA (Personal Data Assistant). These battery operated handheld microprocessors are quickly moving in to fill a gap that most folks didn't even know existed. That gap is somewhere between the "portable Laptop" and "paper files," or they might just be the "poor man's" version of the former. Which ever the case may be they are turning up at Star Parties and club meetings and now even wired to today's high-tech (no brain) "GoTo" scopes.

The software for these tiny computers is developing faster than a comet through the inner-Solar system. There are already programs that can control and command the "GoTo" scopes via an infrared signal. There is software available for today's PDAs that include the entire NGC and IC catalogs, planetarium type programs, sidereal clocks, planet and solar system information, satellite tracking programs and even wireless web access to astronomical data bases and with the wireless web access you can retrieve up to the minute weather info and alerts. These little devices fit into the palm of your hand and weigh only a few ounces, but their versatility is remarkable. Because their operating systems are rather simple, software designers are falling all over themselves to get a slice of this new market and new programs are being introduced "hourly" or at least it seems that way.

Prices for these miniature computers range from a little over \$100 up to about \$600, the one I have is a Palm VIIx and ran me \$169, it is wireless web, but is not a color LCD and does not have a memory expansion port. However, because the PDAs are designed to easily connect to your PC through a direct serial port, exporting and importing data is fairly simple. Downloading new

programs into the PDAs is accomplished through the same connection. Sending and receiving E-mail with the wireless web technology is straightforward and simple, with the obvious connection charges and software. My Palm VIIx will only allow me to send and receive text only messages, but some of the more expensive models provide greater flexibility. I have found that this limit of text only, has very little drawbacks for me as I still maintain a PC based e-mail account with a cable modem connection for sending and receiving the more elaborate graphic laden E-mails.

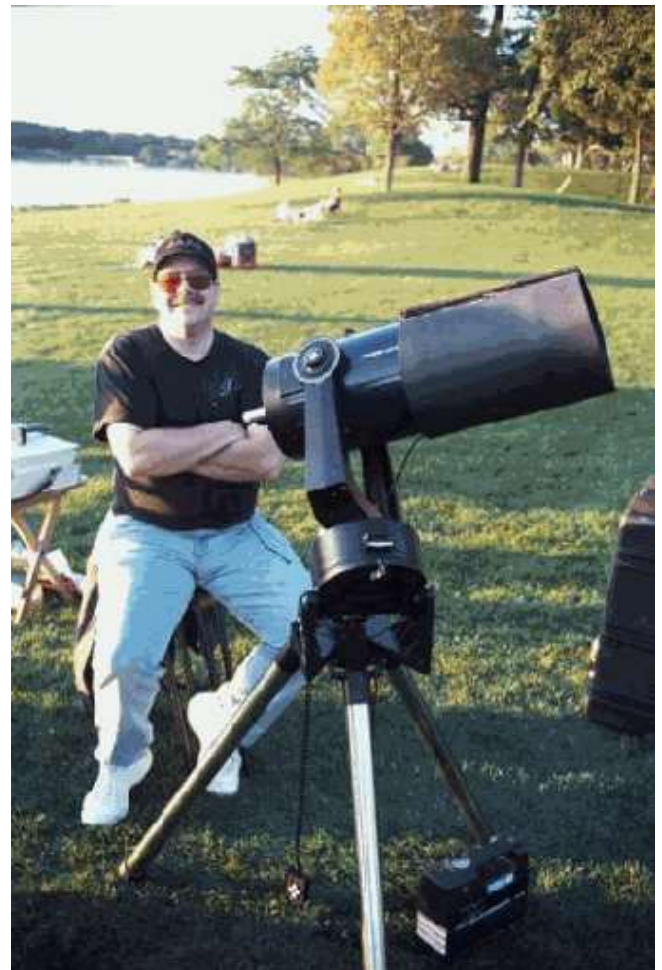
I don't think the PDA will replace the Laptop or the Desktop PC, but its growing popularity and portability give it a definite spot in today's info-greedy society, and today's astronomical community is a prime example of a target group for marketing the PDA. I for one am very excited about this new technology and find myself using the Palm VIIx as much as I use my PC, I look forward to the obvious improvements and expansions which are just around the corner as we travel down this technological turnpike on the information super-highway. I have already purchased a number of accessories for my Palm VIIx, one of which was a folding full size keyboard that connects to the PDA via the same port as the serial connection for the PC, and makes the PDA look a little like Laptop that went through the dryer and shrunk the display screen. The addition of the keyboard has made my PDA even more versatile for adding info such as orbital elements for comets, typing e-mails and writing newsletter articles, yep that's right! This article was produced on my Palm VIIx and then downloaded to my PC when completed. Not to bad for something that some critics have called "an executive's game-boy."

So, where am I going with this article? Is there a point to all this talk about today's technology and astronomy? Yes, I guess so, in that we should feel very lucky to live in a time when we have tools that can; at a touch of a button, provide more information than any one person could digest in a month.

The marriage of astronomy (one of the oldest of the sciences) and electronic information / computers (one of the newest sciences) seems like a union made in heaven. We can simulate the night skies for any date, place or time in history and animate multiple variables. We can pull up the current position of objects that aren't even above the horizon or bright enough to be seen with the largest amateur scopes. We have access to graphic infused satellite photos of both the current weather on earth and storms in the upper atmosphere of the outer solar system planets. We can notify the authoritative branch of the astronomical community and confirm new astrological discoveries with a couple of taps on the keyboard. Amateur tele

scopes have computers and data bases and drive systems that can locate, lock onto, and track any object across the night sky while correcting for the "periodic errors" of the gears and drive motors to accuracy's of better than a few hundredths of arc seconds. We can even attach "voice command" modules to our equipment and tell it where to point! With CCD cameras and processing software we can image objects that are too faint to be seen visually with that same telescope and view those images almost immediately after they have been taken.

I realize that I am rambling on, but as the newsletter editor I can do that! I think that today's technology as it applies to the sciences in providing data and controls and its ability to process that data has made us a more productive society and not necessarily a lazier one. I look forward to new developments with enthusiasm. Every day brings new and exciting improvements to increase our ability to perform our hobbies and daily activities more efficiently. I love it!!! Give me more!!!



Mark Deprest and his old LX10 (sold to Kristine Nyland)

A Sidewalk Telescope on Astronomy Day

By Mike Garrahan

April 20 was Astronomy Day. Bernard asked the club to suggest activities, so I proposed operating a telescope on a street corner downtown. Kurt Hillig graciously loaned me his 10-inch Meade Schmidt-Cassegrain and tripod. Other members mentioned that they had used the corner of Liberty and Ashley before.

To maximize pedestrian traffic, I chose the northwest corner of the Diag, at State Street and North University Avenue. I was too busy with the crowd to fuss about transparency or seeing, but the weather permitted us to see the Moon and Jupiter until 10:30 PM. For a while we could see Saturn and Mars too. The rooftops across the street provided reference points to help people find them for themselves.

In two hours about 50 people stopped by. Some returned later for a second look; some told their friends. Everyone was enthusiastic and grateful. Here are their most frequent questions and my answers to them. Some of these took me by surprise. John Dobson may have something to teach all of us about sidewalk astronomy.

Q. [curious stare from a distance]

A. I'm looking at Jupiter! Would you like to see?

Q. Why are you here tonight?

A. It's Astronomy Day. I want to show a few things to a lot of people.

Q. Aren't the streetlights rather bright?

A. We would need a darker location to see galaxies and nebulas, but even here we can see planets.

Q. Do we owe you any money?

A. No, this is a public service of the Lowbrow Astronomers.

Q. How do you know that's Jupiter?

A. That's where Jupiter is supposed to be in its orbit, and it looks like Jupiter is supposed to look. (A few words about the Ecliptic, twinkling, and the naked-eye appearance of each planet might have been more helpful. Maybe I could have invited people to draw conclusions from their own observations.)

Q. Why are its moons all in a line like that?

A. We're almost in the same plane as their orbits.

Q. Is that the Red Spot?

A. Yes! (skyandtelescope.com had predicted a Red Spot transit between 8:30 and 10:00 PM.)

Q. Why does it move out of view so fast?

A. We're magnifying the rotation of the Earth. (Since I had not used this telescope before, I had some trouble with the clock drive at first.)

Q. How powerful is this telescope?

A. We're using 150x magnification, but aperture is the most important thing. With a 10-inch telescope and some practice, you can see about 500 different galaxies. (Even if I had prepared hard numbers for resolution and limiting magnitude, I doubt whether they would have been appropriate for the audience.)

Q. How much did it cost?

A. It's not mine, but I guess it was about \$2000. (This may have been somewhat discouraging. A Dobsonian would have shown how inexpensive a good telescope can be. At least I should have talked about them.)

Q. When will you do this again?

A. I'd like to try again in a month or two. Maybe I can get some other club members to help. (The first quarter Moon has a surprising capacity to amaze the public....)

Mike Garrahan: at the Brown Jug after the last Lowbrow meeting. Quickly when home and penned his first (and I hope not his last) article for the Lowbrow Newsletter. There are many of you out there that could take a lead from Mike. Nice job! Mike, keep up the great work.



DO BELIEVE THIS GROUP?!?

Well April has come and gone and the annual Lowbrow elections were held at the last meeting and here are the results:

(now we have to live with them for the next 12 months)



Our President: D. C. Moons



Vice President: John Causland



Vice President: Doug Warshow



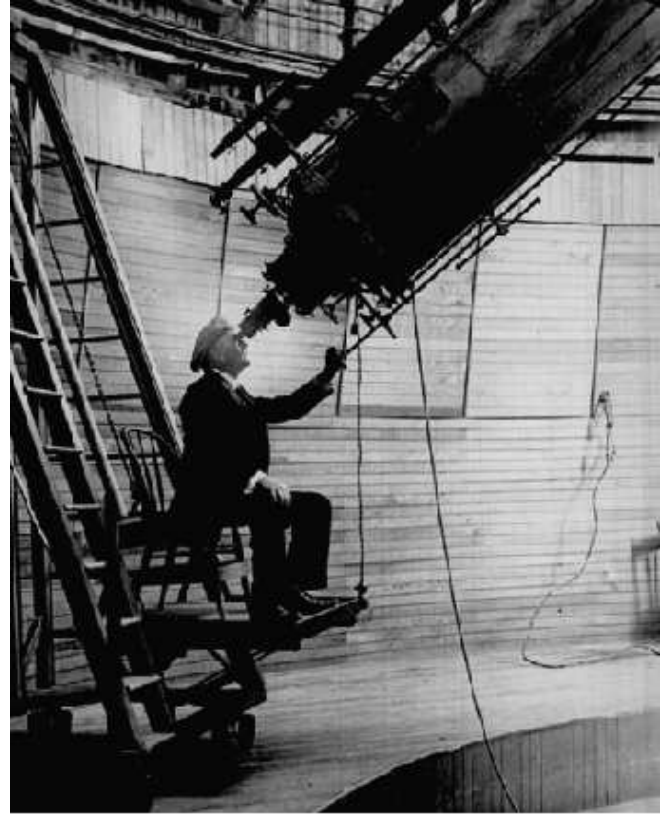
Treasurer: Charlie Nielsen



Vice President: Dave Snyder



Newsletter Editor: Mark Deprest



**Observatory Director Emeritus:
Percival Lowell**



Parking Enforcement: Lorna Simmons



This is a typical "meeting after the meeting" at the Brown Jug. Looking at the group we have as officers one might wonder if this scene took place before the last meeting. Photos provided by various club members and are available on the Lowbrow's web site: <http://www.unich.edu/~lowbrows/> although I can't imagine why!



Observatory Director: Bernard Friberg

University Lowbrow Astronomers Astronomy Calendar

May 2002

- **Saturday May 11.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Friday and Saturday May 17, 18.** (5:00PM to Midnight). Sixth Annual Astronomy at the Beach (Kensington Metropark). The event is free, but there is a fee (\$3 or less) to enter the park. *Note, this replaces the open house at Peach Mountain previously scheduled for Saturday May 18.*

June 2002

- **Saturday June 8.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday June 15.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Friday June 21.** (Starting at Sunset). Open House at Leslie Science Center.

July 2002

- **Saturday July 6.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday July 13.** (Starting at Sunset). Regular Open House at Peach Mountain.

August 2002

- **Saturday August 3.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday August 10.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday August 31.** (Starting at Sunset). Regular Open House at Peach Mountain.

September 2002

- **Saturday September 7.** (Starting at Sunset). Regular Open House at Peach Mountain.

October 2002

- **Saturday October 5.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday October 12.** (Starting at Sunset). Regular Open House at Peach Mountain.

November 2002

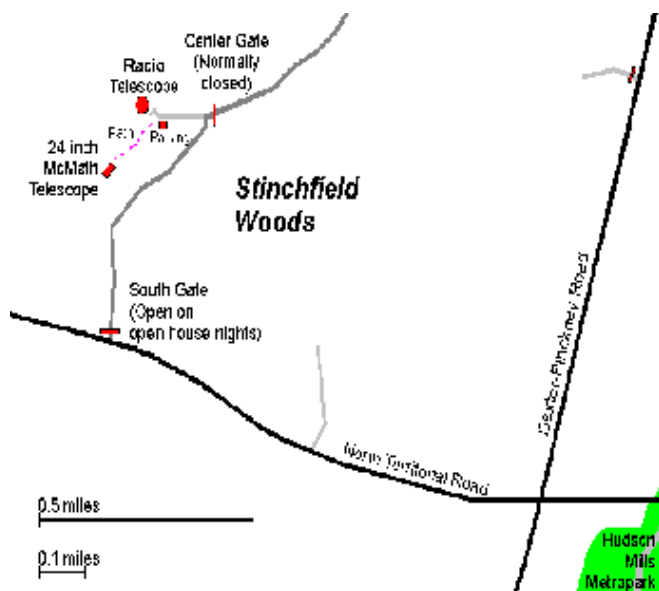
- **Saturday November 2.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday November 9.** (Starting at Sunset). Regular Open House at Peach Mountain.
- **Saturday November 30.** (Starting at Sunset). Regular Open House at Peach Mountain.



On May 3rd a small but ambitious group of amateur astronomers gathered in what will soon be Clayton Kessler's new homestead and observatory just north of Manchester, MI. Jeff Thrush took these three CCD images of: top to bottom: Ikeya-Zhang, M51, and Mercury and Utsunomiya.

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 480-4514 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 to the club treasurer **Charlie Nielsen** at the monthly meeting or by mail at this address:

**6655 Jackson Road #415
Ann Arbor, MI 48103**

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 E-mail to Newsletter Editors at:

Mark Deprest (734)223-0262 msdeprest@comcast.net

Bernard Friberg (743)761-1875 Bfriberg@aol.com

to discuss length and format. Announcements and articles are due by the first Friday of each month.

Telephone Numbers:

President:	D.C. Moons	
Vice Presidents:	Dave Snyder	(734)747-6537
	John Causland	(734)747-8437
	Doug Warshow	(734)998-1158
Treasurer:	Charlie Nielsen	(734)747-6585
Observatory Dir.:	Bernard Friberg	(734)761-1875
Newsletter Editors:	Mark Deprest	(734)662-5719
	Bernard Friberg	(734)761-1875
Parking Enforcement	Lorna Simmons	(734)525-5731
Keyholders:	Fred Schebor	(734)426-2363
	Mark Deprest	(734)662-5719

Lowbrow's Home Page:

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

Dave Snyder, webmaster



May 3, 2002
Spokane, WA

Photo reprinted with permission by R. Giachetti: "Everyone seems to be missing marking one planet that, even though it is obvious, when marked, makes me think more about how much a part of star stuff we all really are." He means, of course, Earth.



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ASTRONOMERS
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Lowbrow's WWW Home Page:
www.astro.lsa.umich.edu/lowbrows.html
Check your membership expiration date on the mailing label!