



REFLECTIONS AND

REFRACTIONS

OF THE UNIVERSITY LOWBROW ASTRONOMERS

September 2004

Upcoming Events

September 2004

- **Friday, October 15, 2004.** (7:30PM). Monthly Club Meeting.
- **Saturday, October 16, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset.) Open House at Peach Mountain.
- **Saturday, October 23, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset.) Open House at Peach Mountain.
- **Saturday, November 6, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset.) Open House at Peach Mountain.
- **Saturday, November 13, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset.) Open House at Peach Mountain.
- **Friday, November 19, 2004.** (7:30PM). Monthly Club Meeting.
- **Saturday, December 4, 2004.** *May be cancelled if it's cloudy or too cold.* (Starting at Sunset.) Open House at Peach Mountain.

Impressions from the Black Forest Star Party

by Mark S Deprest
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Impressions from the 2004 Black Forest Star Party

by Mark S Deprest

I have always been an independent and somewhat free spirited person, which may explain why I enjoy a hobby that is primarily an individual experience. So, my decision to leave a week early and plan to take a rather questionable route to Cherry Spring State Park should come as no surprise to most of you.

However, before we get into all of that stuff let me give you a little background on the BFSP, which has been held every year in the late summer at Cherry Springs State Park, PA, since 1999. 2004 will mark the third year for me, and the second time as a speaker. Bobby G was the first Lowbrow to attend this annual gathering of geeks back in 2001 and was so impressed that he persuaded a small group of us to join him the following year. Those of us who attended the 2002 BFSP were treated to an aurora display that lasted from dusk until 3:00am and some of the darkest skies any of us had seen. Needless to say that group was hooked, and by the following year we had convinced a few more Lowbrows to join in the fun and make the 2003 BFSP a happening. The last night of the 2003 BFSP was one of the most special experiences of my life, and I had my astronomical epiphany. 2003 is also the first year I came as an active participant, as I wanted to give something back to the good people who put this party on. I gave a talk on a subject near and dear to my heart Comet Chasing! Dark Sky Sites east of the Mississippi are few and far between, and Cherry Springs State Park is an island of darkness in a sea of light pollution. It further has been incorporated into the National Observatory's "Stars in the Parks" program and is Pennsylvania's first official dark sky preserve. If you have aspirations of going to a premiere Star Party this one should be on your list and I might add toward the top!

When registration opened for the 2004 BFSP, I was one of the first on the list, and again I wanted to give something back to the organizer, so I volunteered to be speaker again. This year my talk will be instructional as well as fun. This year my talk is aimed at be-

ginners and consists of two Star Hops. The first will be presented as a talk showing, the what, who, and why of Star Hopping, and the second will be presented under the skies as a practical hands-on workshop. Both parts of this talk were a lot of fun to put together and equally fun to present.

I started to map out my 413 mile trip last year when I took Chris Sarnecki's suggestion to travel I-80 for more of the journey. I tried this on my way home in 2003 and found the scenery to be fabulous. I did, however, stay on US-6 and US-219 to get to I-80 and home, so over-adventurous I wasn't. This year I wanted to come out here by a route of my own design (free-spirited pain in the ass) so, I found that if I took I-80 to exit 101 and State Route 255 and head north from there, I could pick-up State Route 555 and then State Route 872 which could run me right to County Road 3001 or East Fork Run which takes you right to Cherry Springs State Park. Well, it sounded good on paper, since State Routes are generally two-lane asphalt and tend to be fair well maintained. This left me with only one questionable run, County Road 3001 a.k.a. East Fork Run, which as it turned out was actually a very well maintained asphalt road with only a very short portion of packed gravel. The scenery on this route was breathtaking and although I did not see a lot of wildlife, what I did see was grand. While running north of SR-872, my route took me through an area that skirted the edge of Elk State Forest, which is aptly named, as there is a rather healthy herd of elk which inhabit the area. This fact became blatantly clear to me when I came around a bend in the road and had to stand on my brakes to keep from hitting a bull elk broadside as he bounded across the road. Unfortunately, along with most of the things that were piled on the passenger seat, this maneuver put my camera on the floor, and by the time I recovered it he was gone. My next stop was the nearest service station's restroom where I promptly changed my shorts. Damn those things are big! I also came across a rather large



gathering of wild turkeys which did not escape my camera lens and I should have some great in-car photos of my trip. I purchased four of those throw-away camera from the local drug store before I left. These are great travel cameras for those of you who have not yet gone digital. They are simple to use (just point & shoot) and you don't have to worry about how rough you treat them. I took lots of photos along the way.

As I said before, I tend to do things in my own way and have never been good with follow the leader or group, so starting out from Ann Arbor on Sunday, August 5th for a star party not scheduled to begin until Friday, August 10th might seem a bit strange to you, but to me and the people who know me, not in the least. Because I work in an office with very few people, I need to plan my time off well in advance of actually taking the time, and once scheduled, barring some ca-

tastrophe I really don't feel right changing it. Besides getting away from the "every-day" and clearing one's head is a good thing. I can't think of a more peaceful place than Cherry Springs and its dark skies to accomplish this. I left my house at 08:30 EDT and as I have already stated my route, arrived at Cherry Springs State Park almost exactly 7 hours later, including one fuel and potty break in Clearfield, PA. So, there I was standing in the middle of a fairly large observing / camping field, at 15:30 EDT trying to decide where to set up my tent and scopes. There were a couple of other people already set-up along the road which loops through the park, but I wanted to set up my site in the same area as we were in 2003. This would take a little thought, because there were no reference points except one large tree, but very quickly I determined my spot and began to

unpack. By 4:15 EDT I had my tent up, and my scopes out and time to check in with the Mrs. Although there are few amenities at Cherry Springs, there is a pay-phone right across the street at the "Cherry Springs Airport," a rather dubious looking over-grown runway that I doubt has seen any landings or take-offs this year. I did promise my wife that I would call her when I arrived safely, and I never break my promises. I then walked back to my camp-site and decided to check in with my fellow campers. As introductions all around were finished,

star party. Chip is the Pennsylvania Department of Conservation & Natural Resources State Park Ranger for Cherry Springs and Lyman Run State Parks, and one of the key people responsible for getting Cherry Springs State Park designated as an official dark sky site. Besides all that he is a really nice guy who loves astronomy and astronomers and is always willing to give you a few minutes of his time, so needless to say we shot the bull for about an hour that morning. He told me about a government program that this area was in line to get that could potentially bring over a



the next order of business was dinner. I had some left-over bow-tie pasta in my wife's famous marinara & ground turkey sauce, very tasty and nutritious. The clouds began to roll in and by nightfall we were socked in. Drats! No observing tonight, which was actually just fine with me, as I was beat.

Monday morning came with a mix of clouds and sun and by mid-morning the clouds gave way to mostly sunny skies. Now this was more like it, I might get some observing in tonight. About 10:30 that morning Chip Harrison and his assistant showed up to paint some lines on the observing field for the

million dollars to the park. He was very excited about the improvement that could be made with that kind of money. He also was very happy about the new lighting ordinance that just passed in the area which meant that, over the next few years, even existing lighting will be shielded.

After spending the morning rearranging and organizing my camp site, my plan was to do some site seeing and very specifically find what was listed on my maps as the town of Telescope. I had noticed it last year on my map and had made an effort to locate it, but had no luck. This year some how, some way I

was going to find it. Well, much to my disappointment, there is no town of Telescope, PA. There is, however, a road called Telescope Road and furthermore there was a man who used to live on it by the name of Roger Starry. Roger passed away a few years ago but his great-grand nephew, who now spends his summers in Roger's old home, says that he has no idea why the street is so named. I did take a picture of both the street sign and R. STARRY's mail box.

After that nice little encounter I went into Coudersport, PA, which is the county seat and largest town within 60 miles of Cherry Springs. I wanted to have some lunch and fill up my gas tank. I also stopped at the Rite-Aid drugstore and picked up a couple more "throw away" cameras. Then back to the camp, where it was time to do my daily 5k. Yes, that's right. I am still running 5k at least 6 days a week and since I didn't run on Sunday, I needed to run Monday. I use my car to drive and measure the course I run and because odometers on cars are not very accurate I like to make sure the course is no less than 1.7 miles long so that twice around will give me at least 5k and maybe a little more. I'm down 70+ pounds and counting, so there's no sense in slowing down now. After my run, it was down to Ole Bull State Park for a shower, which is about 11 miles south of Cherry Springs right off State Route 144. On my way to the showers I stopped at two very scenic vistas and the old Cherry Springs Fire Tower, which is no longer in use, as the DCNR no longer has any funding for it. Cherry Springs State Park has only pit toilets and limited potable water. During the star party they bring in additional porta-potties but that is about the extent of the amenities for this rustic campground. So, if you want hot water and a shower, the nearest one is Ole Bull State Park. It will cost you \$2, and in my opinion is a big bargain. The facilities are clean and modern and the ride down there is very pretty.

After my shower it was back to Cherry Springs and dinner, which consisted of a large bowl of Shrimp & Crawfish Ettouffe. I brought it from home frozen and it was delicious, along with some bread and an apple for desert. The sky did not want to cooperate at all. Just as the sun began sinking in the west, the clouds moved in from the south and we were socked in again. I took this opportunity to run through my talk and kind of time myself, to make sure I'm not short or long winded, and work on this report a little. This was to become my routine. I was taking full advantage of this personal time to relax and clear my head.

Tuesday morning came with clouds and overcast skies and would remain that way throughout the day. After breakfast, I did a little socializing with

neighbors, then down the road to Keeners Kountry Market for a block of ice for the cooler, and then clean up the tent and do some reading and relaxing. After lunch I took a drive into Coudersport, PA to drop off the two cameras that were done. I also stopped at the ACE hardware store to pick up a couple of things I didn't need but could make my stay a little more comfy; a rain poncho, and an air mattress for the top of my cot. When I got back to the campsite, I took a little nap and then went for my run, and then my shower. On my way back to the campsite, I saw a couple of white-tail deer crossing the road ahead of me. It turned out to be a small doe and her fawn that still had its spots. As I approached slowly in my car they both paused about 20 yards into the woods along the roadway, and just as I snapped the picture they both turned and all I saw was a flash of white! When I got back I had my dinner, which tonight was Jamaica Bay Gumbo, and some bread and Starbuck's Kenya Blend coffee. I have lost my weight by watching what I eat, but that doesn't mean I have to go without. I still like good food. I just make sure that it's also good for me. Well, just as I was thinking of going to bed early, the clouds parted and from 20:30 EDT until 23:30 EDT the sky was mine for the exploring. I took this opportunity to run through my star hops one more time under dark sky conditions, and I was very pleased with the results. At 23:30 the fog rolled in. That that was all she wrote for observing on Tuesday night, so, off to slumberland for me.

Wednesday morning came with rain, and more rain, then later on it was still raining, and by noon it had stopped raining and started pouring, but not too long after that it went back to just raining, and continued to rain all day. Wednesday also brought Bobby G and his better half Joanie at about noon and later that day Doug Nelle showed up. Doug took up residence kind of kitty-corner from me and Bobby and Joanie across the road as their camper was a little too tall to put in the middle of the field. After both got set-up, Doug and I went into town for dinner at Erway's Family restaurant & Produce market. I guess you've got to do whatever it takes to stay in business these days. When Doug and I got back to our campsite we found out that it hadn't stopped raining the whole time we were gone and it looked like it should keep on raining the rest of the night. Much to our amazement, it not only rained all night long, but just to break up the monotony every once in awhile it would pour!

Thursday morning, about 8:30 EDT the rain tapered off to light drizzle, and that would be the case for most of the day. Occasionally a light rain or heavy drizzle, then for a while it would stop completely. Since I didn't run on Wednesday, and the weather was a little iffy at that point for Thursday, I decided to run in the morning and I decided to run for fifteen minutes out and then fifteen minutes back. Well that actually turn out to be twenty and twenty but it was a pretty run, and after my shower, I came back and began cleaning up and drying out after the 5+ inches of rain. Later that afternoon Jim Wadsworth and Doug Scobel showed up along with a good portion of the rest of the over 400 that made it to the 2004 BFSP. The campgrounds were filling up. A little bit later that afternoon the last member of the Lowbrow contingent, Chris Sarnecki, showed up and after everyone was settled in, we all sat down and discussed the weather, the very promising forecast for the weekend. It was good

to have my friends around, and as we told our tales of journeys to this place, and afternoon gave way to nightfall, one by one these weary travelers dined of their evening meals and soon went to bed, and dreamt of clear, dark skies.

Friday morning came with partly cloudy skies that slowly gave way as the day moved on to clear and rain

scrubbed skies of evening. It was going to be a good night! At 2:00pm that day, the check-in tent was opened and everyone who was registered was given a door prize ticket, a copy of the rules & agenda, and a garbage bag. After all the rain from the past two days the ground was totally saturated and there was still a lot of standing water. This, coupled with quickly falling temperatures after sunset would mean that the "DEW ZAPPERS" would be running full-tilt boogie all night long. Cherry Springs is one of the darkest observing sites east of the Mississippi river and Doug Nell helped us realize this very graphically with a "limited magnitude" chart, which put that night's sky somewhere between 6.2 & 6.5 magnitude, when checked by four separate Lowbrows. With skies as dark as these most people come armed with a specific agenda of objects to observe, and I was no exception.



I wanted first to run through my "Star Hop" list of objects and then spend some time hunting down some rather obscure objects from a list compiled by Steve Coe of the Saguaro Astronomy Club called "110 Objects Beyond the NGC," and then look for a couple of rather faint comets that I had yet to observe. Doug Scobel wanted to finish off his Herschel 400 list and possibly track down Pluto! This last challenge was inspired by the first talk of the BSFP, Observing the Outer Planets, by Ted Nichols II. Chris Sarnecki had a list of things he wanted to see, and Doug Nell had pulled a number of charts for objects on his list. However, I am getting a little ahead of myself. Let's go back a few hours and take a look at all the activity leading up to this night to be remembered.

The first day of any big star party is always filled with lots of activity, and owing to the rains of two days ago, there were many people still arriving

on Friday, and tents and campers were being erected in every direction. Telescopes of every size and type were being meticulously assembled everywhere you looked and Cherry Springs State park was beginning to get crowded. It is always fun to

people watch and when people are doing an activity which is not one they perform regularly it can be hilarious! I spent a couple of hours that afternoon just watching these people rushing around trying to get stuff set up and enjoyed every minute of it. About dinner time, I made my famous Jambalaya, enough for all the Lowbrows to have a dish full, and everyone who partook seemed to enjoy it very much. As late afternoon moved into early evening and the sun dipped below the horizon, the last remaining clouds drifted off or dissipated and the sky was clear! Covers and tarps were being removed from scopes all across the field, charts, lists and eyepieces were at the ready, and just as the last traces of the sun were illuminating the western horizon, a large piece of space debris streaked across the southern sky, breaking up into fiery fragments lasting long enough to still be seen

by those who had missed its initial reentry and turned to look as other exhaled their oohs and ahhs. This brilliant bolide appeared on cue as if to say, "Let the observing commence!" What a grand way to start the star party. It was to be a fabulous night.

I started my observing with another quick run through of my "Star Hop". After all, I was going to present this astro-tour the next morning at 11:00am to whomever showed up in a semi-conscious state. I had my agenda and list of things to see just like everyone else, but repeatedly I kept finding myself **not** looking through the eyepiece of my telescope, but rather, standing and staring skyward naked eyed in a futile attempt to capture the entire night sky and keep it forever, if only in my mind's eye. As the night went on I noticed my fellow Lowbrows working their lists, occasionally calling us over to examine the field they had centered in their scope, confidently satisfied that we, too, would be appropriately impressed with the vista beheld. I noticed Jim Wadsworth sitting in his chair not at his scope looking up with a peaceful contented expression on his face, and I knew that feeling of infinitely small and infinitely large and I empathized with him. I love this place and wholeheartedly recommend it to everyone. As the night continued and faint fuzzies filled the eyepieces, I remember thinking of those friends that were unable to make it out this year owing to circumstances beyond their control. I wished them well and went back to my scope. After all, there were comets to see! C/2001 Q4 was lurking in Draco and soon 78P Gerhels would rise in the east as Aries climbs the vault of the sky. Gerhels is one that I hadn't seen yet, and that would be my 18th comet since January 2003, which is what I need to have observed and documented in order to qualify for the Astronomical League's Comet Observers Award. Doug Nell found it first and I was happy to have a fellow comet chaser hunting down these elusive objects. After Doug showed me the field I pointed my own scope to the area and soon I was drawing the field and adding in the 11.5 magnitude periodic comet to the spot I observed it in. The temperature was falling and the dew point was near and by 4:00am my primary mirror lost and my eyes were tired. So, off to my sleeping bag and tent for a few hours of sleep before my turn in the spotlight as the first speaker of the day at 11:00am.

Saturday morning at 9:00am found me up and running and by 9:30 I was done and heading down to Ole Bull State Park for a shower and shave. One needs to look his best for these bleary eyed astronomers no matter how tired he is. I was very happy to be a part of this year's BFSP as a guest speaker and the equipment for these talks was first rate with a data pro-

jector that displayed 1400 x 1050 pixels and 32 bit color! Very nice! They also had a headset and speaker system that allowed me to talk to my audience rather than shout. This made my talk much more personable and I think my audience appreciated it. My talk was well received and my Lowbrow critics said that it went very well and that I came across as knowledgeable and well prepared. Most importantly I had fun doing it and the people who were there seemed to get something out of it. I had planned to come back to my tent and take a little nap, but on my way back I took another look thru the vendors' tents and ran into Al Nagler of Televue. Besides being an incredible optical engineer and designer, he is a real character and has a thousand stories to tell. I spent a good hour listening and talking with him. I started to head back the tent and I ran into Roger Blake of Taurus-Technologies. Roger is the man behind and in front of the Taurus Tracker systems, and has recently developed a sealed 35mm camera that uses desiccant cartridges to "hyper sensitized" the film by drawing out all of the moisture. This camera is designed to attach directly to his Taurus-Tracker off axis guiders, and the camera has dual ports for venting the air out and nitrogen gas in for gas "hypering." The system, including guider, costs under \$250 when purchased as a complete package with the Mini-tracker. Some of the very cool features of this system are its short back focus (approx. 3 inches), the light weight, (less than 15 oz. with camera), and its simple operation. I had been wanting one of these for my 5" f/5 refractor, so here was my opportunity to get first-hand instructions and the unit at the same time. Roger was very thorough in explaining the operation and some of the tricks and tips for successful guided astrophotography. After I have a chance to use this system a few times, I should be able to give the club a demo/talk about it.

As morning turned to afternoon, and while the talks were in full swing, I went back to my tent to take a little rest. Although I like to participate in giving talks, I don't usually attend many of them, so I won't be able to tell you about any of the other speakers. The Keynote speaker, Thomas Dobbins, did give a nice talk on planetary observing and specifically the 2003 Mars opposition. Following his talk the organizers had some announcements and then held the drawing for the door prizes. This year Doug Nelle walked off two very nice prizes; a 10mm Radian Eyepiece and a two-speed JMI 2" Crayford focuser. Chris Sarnecki won Charles A Woods' book *The Modern Moon: A Personal View*

as a door prize, and I just sat in the crowd and tried to get these people a little more excited about winning something. It always amazes me how lethargic these astronomers are when their number is called to accept receipt of something they won! Like I've said before, "If you go thru life and you're not having fun, then you ain't doing it right!" So get excited and have some fun!

On a side note, Doug Nelle also claimed he saw a bear walk thru our camp the night before and all of us just figured he was having Jambalaya induced hallucinations and kind of blew him off. My apologies to Doug as he was vindicated during the final talks and announcements, when we were informed that a bear did cruise the campgrounds the previous night to raid the trash cans.

Now it was moving from late afternoon to early evening and it was dinner time, so after dinner, I readied my equipment and got the second part of my talk/workshop together, which was to be a Binocular Star-Hop under the night sky. By 8:30pm I was back at the pavilion with a group of about 15 people armed with binoculars waiting to be amazed or at the very least amused. After a little preliminary work inside the pavilion we headed out to view the "Might & Delights of the Summer Milky Way," which started at Albireo, which by the way can be split with 10x50 binoculars, and moved thru Vulpecula to the Coathanger, and thru Sagitta, to M27 and finally to NGC 6885. One of the people who came to this part of my talk had a very nifty device called "The Sky Window", which consisted of an adjustable mirrored platform on a tripod with binoculars mounted facing down toward the mirror. Instead of tilting your head way back while trying to hold binoculars steady enough to see anything for more than a few seconds before getting tired, you could sit down in a comfortable chair, straddle the tripod and look down into the very steady binoculars and adjust the mirror with two knobs to

view your intended target in an extremely comfortable position. The gentleman who brought this observing tool was gracious enough to allow us all to use it. I have to say, I was impressed with the ease of use and the views it offered. My "workshop" went even better than even I had hoped. I was very happy to find that every one of the participants was able to not only locate but also see and study each of the objects in my Star-Hop. It was incredibly gratifying to help all of those people experience some of the same excitement that I feel when I look skyward. This was the highlight of the 2004 BFSP for me! I went back to my group of friends very pleased and spent the rest of that night observing with my fellow Lowbrows. By 1:30am the dew point was reached and the fog rolled in but most of us were satisfied with the night's viewing and we were all pretty tired. With 400+ miles to drive back to Ann Arbor the next morning, we all went to bed.

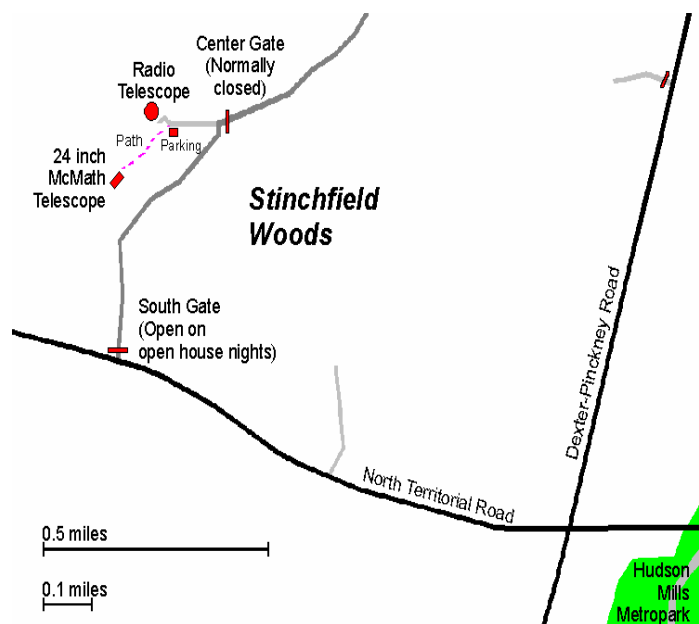
Sunday morning broke clear and cool and the air bustled with the sounds of packing up. We helped each other as much as needed and before too long we were all heading for home, in our own ways and routes. The 2004 Black Forest Star Party had come to an end for the University Lowbrow Astronomers and I, for one, know that I will be back for the 2005 BFSP and the incredibly dark skies of north-central Pennsylvania.

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.

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:

Kathy Hillig
7654 W. Ellsworth Road
Ann Arbor, MI 48103

Magazines

Members of the University Lowbrow Astronomers can get a discount on these magazine subscriptions:
Sky and Telescope: \$32.95 / 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/>



*Camp Lowbrow at the 2004
Black Forest Star Party.*



UNIVERSITY LOWBROW
ASTRONOMERS

Kathy Hillig
7654 W. Ellsworth Road
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Lowbrow's WWW Home Page:
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Check your membership expiration date on the mailing label.