

REFLECTIONS

of the University Lowbrow Astronomers

September 2001



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.

Reports on:

- The importance of good charts by Doug Scobel
- S. M. U. R. F. S. 2001 by Charlie Nielsen
- Astronomy Camp by Kristina Nyland
- Astronomy On The Beach by Dave Snyder
- A Private Night on Peach Mt by Randy Pruitt

This Month: Sept 14 Leslie Science Center Star Party - Always lots of Fun!

Sept 15 Open House at Peach Mt.

Sept 16 Radio Telescope Open House 2:00 - 4:30 PM

Sept 21 Meeting at 7:30pm in Rm. 130 of the Dennison Bldg. Milton French will have a slide show of the June 21st Total Solar Eclipse

Sept 22 Open House at Peach Mt.

Next Month: Oct 13 Open House at Peach Mt.

Oct 19 Meeting at 7:30pm in Rm. 130 of the Dennison Bldg. Speaker - TBA

Oct 20 Open House at Peach Mt.

Oct 28 Great Space Day at U of M North Campus

(all photos by Dave Snyder unless noted)



Why You *Need* Uranometria 2000*

**even if you don't know that you do!*

Doug Scobel

Hypothetically, let's say you're an avid, visual, deep-sky observer. Let's also say that you own a decent size telescope, say maybe a 13.1" Dobsonian, and you've already observed all of the Messiers, the Caldwell's, and the brighter NGC's. Now you're after the more obscure variety of fainter and fuzzier faint fuzzies, perhaps you're working on the Herschel 400 list. Nothing satisfies you more than tracking down and identifying 12th magnitude (and fainter) galaxies in a sparsely populated region of the sky with few guide stars. (Sound like anyone you know? Nah!) Well, if this describes you, then you might not know it yet but you *need* a copy of Uranometria 2000. Let me explain why.

First of all, what is Uranometria 2000? Uranometria 2000 is a two volume star atlas, co-authored by Wil Tirion, Barry Rappaport, and George Lovi, first published in 1987 by Willmann-Bell, Inc. It consists of 473 separate charts, with more than 300,000 stars plotted down to magnitude 9.5, plus more than 10,000 deep-sky objects. The first volume covers the northern hemisphere from the north pole to -6 degrees declination, while volume two covers the southern hemisphere from the south pole to +6 degrees declination (thus providing 12 degrees of overlap between the two volumes). What makes this atlas most notable is the scale of the charts. Each one covers 11 degrees of declination and around 32 minutes (more near the poles) of right ascension. For example, at this scale the Andromeda Galaxy, Messier 31, appears as an oval more than two inches long! These charts are *detailed* baby!

Now if you've been observing for a while, you are probably using the ubiquitous Sky Atlas 2000, which is the staple of many a visual observer. By comparison, its 26 charts contain some 43,000 stars down to magnitude 8, and about 2500 deep-sky objects. On its chart, M31 barely extends three quarters of an inch. Now don't get me wrong - Sky Atlas 2000 is a fine atlas. I've used mine for more than fifteen years and I still use it most of the time. It is ideal for tracking down all the Messiers, the Caldwell's, and most of the

brighter NGC and IC objects. But for the owner of today's larger telescopes, it has its limitations. Many objects that are within the grasp of a 12-inch or larger scope are not plotted, or there aren't enough field stars plotted to allow star-hopping to find them. Also, the scale of the charts sometimes can make positive identification of that fuzzy patch difficult if not impossible.

With Uranometria 2000, both shortcomings are resolved. With nearly ten times more stars, and about four times as many deep-sky objects plotted, much more of what you can see in your eyepiece will be plotted on the chart. With the scale of the charts and the extra magnitude and a half of stars that are plotted, positive identification becomes much more achievable. More often than not, brighter field stars that are visible through the eyepiece are plotted on the chart, letting you get a positive match between the two. Once you do that, you can be confident that you are actually seeing what you think you're seeing.



Photo by Dave Snyder

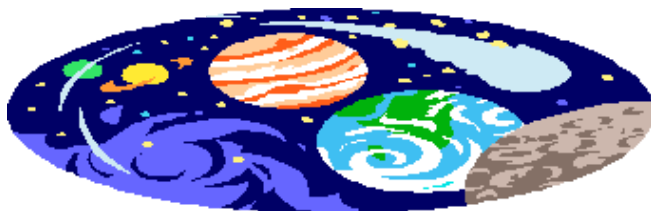
Case in point. On the night of August 20-21, Mark Deprest, John Causland, and a couple of others and I were out at Peach Mountain on a remarkably clear night. The sky was about as transparent as it gets at The Hill, especially in August. Mark was looking at doubles, John was using his 18 inch "suitcase scope", and I was working on my usual fare - obscure, faint, and unimpressive galaxies, with my 13"

dob. Mark mentioned something about some galaxies in Delphinus, the Dolphin, that we ought to track down. I opened up chart 16 in Sky Atlas 2000, but there wasn't a galaxy to be found in Delphinus. But, in Uranometria 2000, there are at least a dozen! Using its detailed charts, we were able to star-hop to a few of them, some with surface brightnesses below 13 magnitudes per square arcminute. The galaxies we saw, NGCs 6927, 6928, 6930, and 6944, simply would not have been possible using Sky Atlas 2000. Uranometria 2000 also has some other uses. Often times, after I've bagged one of my Herschel list objects, I'll notice some nearby objects on the chart that I wasn't originally looking for. I'll then take time out and look to see which of those other objects I can track down. Or, you can simply pick a chart and go for it. One night at the Texas Star Party in 1998 I started on and never left charts 193 and 194, in the heart of the Coma Berenices/Virgo galaxy cluster. I observed and logged more than fifty new galaxies (not including the usual Messiers) that night. It was galaxy-hopping at its finest!

A companion to Uranometria 2000 is the Deep Sky Field Guide to Uranometria 2000. This highly useful guide provides tabular data for virtually all the deep-sky objects found on the charts. The data is tabulated by chart number, and organized by object class (open cluster, planetary nebula, galaxy, etc.). While not purely essential for observing, it provides a wealth of information on virtually anything you want to observe.

So do you really *need* Uranometria 2000? Maybe not. For one thing, it's a little pricey - about \$80.00 for both volumes plus another \$50.00 for the field guide. But if you're a visual observer with a moderately large scope, then it will help you discover that there is much more "out there" within the grasp of your eyes and telescope than you ever realized. I can tell you that it did for me. If you own a really big scope, say an 18-inch or larger, I would say that it is essential.

Now the question is, do I *need* Millennium Star Atlas? Hmm...



S.M.U.R.F.S. 2001 Report

By Charlie Nielsen

At long last one of my favorite times of the year had arrived. I was ready, heavily armed and prepared for action. The star party had begun on Monday the 13th and from the forecasts I had seen for the Alpena area, the weather had been clear at night. Of course I was not going up until Wednesday. But then if there are two days of the event before my arrival they usually are clear, so all was normal.

I drove unto the hallowed ground a little after 4PM Wed. as planned. On the way up to the site I noticed increasing clouds from the Northwest on a convergent course with mine. So of course I accepted immediate responsibility upon my arrival. Not knowing how much time I had, I wasted little time in setting up tables and scopes and my tent. Within minutes of dropping protective covers on the scopes, the rain began. Since I prefer to be trapped inside my Van rather than my very small and semi-water tight tent, there I stayed, and stayed and stayed. On the plus side, I caught up on some reading, did some really thorough eyepiece and binocular cleaning, and studied some charts. After dark I found a good classical music radio station, and practiced the true art of consuming munchies and junk food. Are we having fun yet?



Charlie Nielsen at Leslie Science Center
by Mark Deprest

Thursday morning brought with it the promise of... lighter rain. Indeed there were times during the day when one could come out from cover and move around. It was a good time to visit friends and fellow astronomers and check out people's equipment. There was no hurry, time was cheap. I realize that this is one of the main reasons I come up here every year, life is slow, and my cell phone does not work. Sure would be nice to get some clear skies tonight though. Would be nice.... But did not happen. The rain returned for most of the afternoon and evening. We did get a teaser around midnight or so though. Occasional, very clear openings developed, giving me the chance to get some experience in the sport of speed binocularing. I had to grab the openings and enjoy for the few seconds it was open, then quickly find another hole. How about a Messier Marathon for the under challenged?

Friday morning...like a houseguest that has worn out their stay, the rain has returned. Now I am getting a little irritated. This part of the state had been even drier than southeast Michigan for most of the summer. This was not the time for the correction burn, darn it! The forecast for Friday night was for partly cloudy skies however, so all in camp were hopeful. Our hope was fulfilled. Just before sunset the skies began to clear, and just after sunset they blew out completely. Now we were in business, but so was the dew. In fact, I had to use the hair dryer on my refractor for the first time just before the sun went down! Dew is a very serious adversary up here, and this night promised to be typical. The skies are worth the battle though. This was not the best night I have seen up here, but I gave it a 75-80%. Even this quality up here is very good though. The great rift in the Milky Way is startling. M31 is so easy it almost scares you. The best night I ever experienced up here, I actually could glimpse M13 naked eye! This night was not that good, but darn good enough. I hoped to try some photos, but my tracking motor had a problem that I could not resolve. Therefore I stuck to visual astronomy in between un-dewing objectives, my Newtonian secondary, and several eyepieces. I even had to dry off the BOTTOM side of a Panoptic eyepiece...twice! The highlights of the evening were the best view I have ever seen of the Veil Nebula (14" DOB, 22mm Lanthanum Superwide, O3 filter). The detail, knots and twists and ropes that could be seen almost

knocked me off the ladder. Earlier in the evening, using this same scope with a 31mm Panoptic, I actually tracked the space station. For a few precious seconds I could see a bipolar effect, or a definite dark space down the middle of the assembly. On half of the assembly was larger than the other, and looked somewhat yellow in color compared to the smaller half. I believe I detected the space shuttle attached! This may sound crazy (but then we Lowbrows are), but I recommend that people try doing this. It is a real challenge keeping up with the speed and keeping steady enough to see a decent image, but if you do, it is really quite a view.

I finally gave up the dew battle about 3:30 or 4 AM, discovering my 14" primary looking more like frosted glass than a mirror. Passing clouds had developed, and after a walk down the line and visiting some observers that were still at it, I called it a night. It had been a good one! The forecast Saturday morning sounded dismal. Though the prediction was partly to mostly cloudy, it did not look good to us. We did the SMURFS cookout and the door prize drawing just before we heard thunder not far away. I decided to pack up before everything got wet again, and pull back out just what I needed for the night if it looked worthwhile. But the conditions were getting worse so I decided to head for home. Many others did the same. When I left around 4:30pm, the place looked like a ghost town. I said my good-byes and asked for a thank you note if it did become partly cloudy. But if it went completely clear, please do not let me know. So now we wait till next year and hope for friendly weather...I will be ready!



SMURFS 2001 by Charlie Nielsen



MGIO aerial site photo used with permission

Astronomy Camp

By Kristina Nyland

The plane hit a patch of turbulence and I awoke with a start. Wondering where I was, I turned sideways and gazed at the landscape below. I wasn't sure how long I had slept, but it was long enough for a drastic change in scenery to occur. The flat patches of green and gold that had covered the ground had been replaced by mountains and the desolate emptiness of the desert. Everything was the same sandy color and the sight was almost depressing. I had never visited the American southwest before and I found it difficult to believe my eyes.

The turbulence grew more violent as the plane began its descent. Many of the passengers looked uncomfortable and nervous as the plane shook from the power of the air currents created by the surrounding mountains. Although I don't particularly enjoy a bumpy flight, I'm certain that I had a smile on my face. Traveling to Arizona alone had given me a sense of independence. I spent my time in the air flipping through astronomy magazines and brainstorming ideas for research projects. In the Chicago O'Hare terminal, where my flight had a one-hour layover, I found a quiet table at Starbucks, sipped a latte, and held up a copy of *Unsolved Problems in Astrophysics*.

I couldn't help wondering, though, what the coming week would bring. I was on my way to "Astronomy Camp," an opportunity that I stumbled across in a magazine (*Astronomy* or *Sky and Telescope*). Shortly after reading the article I sent out an application, wrote the required essay, got a few recommendations from high school teachers, and, to my great excitement, was accepted. I would be staying in the astronomers' dormitories at the peak of Mt. Lemmon, 9,300 feet above sea level. There, I would learn how professional astronomers conduct research, how to operate large telescopes, how to take CCD images and how to do spectroscopy, and much more.

After a long descent the plane at last made contact with the runway. Again, I peered out my window. I had expected to see a land of cacti, exotic desert flowers, and possibly even a scorpion or two. Instead the ground was rocky, flat, and barren, resembling the surface of Mars. The only indication that I was still on earth came from an occasional shrub that miraculously sprang forth from the rock and sand. For the first time in the 17 years of my life I had visited a place that made Michigan look like a paradise. As we pulled up to the gate I gathered my belongings and ventured out of the plane and into the Tucson airport. I was met by an Astronomy Camp counselor and a couple other campers. After a trip to the baggage claim we were herded outside to a four-wheel-drive van with room for 13 passengers. The heat outside was intense. Before my trip to Arizona I was assured by many people

that, although the temperatures are high, the dry Arizona climate makes it seem cooler. Funny, very funny. It was June 15, 2001 and the temperature of about 110 degrees felt hotter than anything I had ever experienced in Michigan - regardless of high humidity levels. Fortunately, we weren't outside for very long before we were instructed to get into the van. We were on our way to the central campus of the University of Arizona to meet the people who would spend the coming week with us. I had been wondering for quite some time what type of people I would find at the camp. There are very few teenagers that I know personally who would even be interested in such a camp. My question was finally answered when we reached the campus of the University of Arizona about half an hour later. There were 31 campers from 21 states and 2 different countries (India and Mongolia). We were a diverse, motley crew, drawn together by our common love of the night sky.

The director of this camp is Dr. Don McCarthy, a professor of astronomy at the University of Arizona. He is quite a character and enjoys running, electronics, and doing liquid nitrogen tricks in addition to sharing his knowledge of astronomy with others. He was the father figure at camp and despite his advanced degrees preferred for us to address him by his first name, Don. There were several counselors at the camp as well, including a number of graduate students, a NASA employee, and some professors from other universities. The van ride to the top of Mt. Lemmon was long and winding (it took about an hour). At 9,300 feet the climate is quite different than the sweltering heat of downtown Tucson. Instead of an arid expanse of sand, I found myself in the middle of a pine forest. We exited the vans and made our way to the dorms. The short hike left all of us breathless. None of us were used to the low oxygen level found at that altitude.

After we had settled in we were given a tour of the area. There were probably about a dozen white domes scattered around Mt. Lemmon. The three telescopes reserved for us were a 60-inch, a 40-inch, and a Meade LX200 12-inch. At the center of all of this was "the Minnesota building." I'm still not sure why it was given that name, but it was where we spent most of our time during the day. There was a lounge with couches and a pool table where we ate all of our meals. A TV, conveniently located in the same room, constantly displayed a video of some sort, usually Contact, October Sky, or an educational astronomy video. In another room was a gym where we heard lectures each day on a vast array of topics, ranging from how to rig a Kodak instant camera to take astrophotos to how the universe was formed.

After watching the sunset we piled into the vans to spend our first night observing with the 61-inch (1.54-meter) telescope, located on Mt. Bigelow, a neighboring mountain peak. The theme that year at Astronomy Camp was "let your mind start a journey to a strange New World" from the Phantom of the Opera song Music of the Night. As campers and counselors alike crammed into the area surrounding the telescope all lights inside the dome were turned off. Don played Music of the Night as we watched the dome of the 61-inch open for the first time. Arizona may not be the ideal place to live, but the night skies there are spectacular. That night an eyepiece was put in the 61-inch and we spent many hours observing. The most memorable view I had was probably of Mars, which was at its closest approach to earth at that time. With the 61-inch we saw both polar caps and could even detect variations in color on the Martian surface.

We headed back to our dorms that night excited for what was to come. Our sleep schedule was ideal for a night owl like myself. We worked until about 4:00 am, got up at noon, and analyzed data and attended lectures during the day. After spending our second evening learning how to operate all of the instruments on the four telescopes

available, we were able to plan our areas of research. I was part of three different projects: determining the Hubble constant, searching for organic compounds in molecular clouds, and designing a mission to Mars to search for evidence of life. Unfortunately, our observing time was cut short by the early arrival of monsoon season

midway through the week. All of the teams however, were able to find enough data to make a presentation to the group on the last day of camp.

To determine the Hubble constant, or the rate, at which the universe is expanding, we used a simple equation discovered by Hubble. The equation is $H = v/d$ (the Hubble constant equals the velocity at which an object is receding from us times its distance from us). We determined distances by looking at the brightest elliptical galaxy of a cluster. Apparently, there exists a relationship between the luminosity of the brightest elliptical galaxy of a cluster and its distance. Using one cluster's brightest elliptical galaxy of known distance as a calibrator, we were able to use computer programs to determine the distances of several other clusters after photographing them with the 61-inch. We planned on using spectroscopy to determine the recessional velocities of the clusters. Unfortunately, the monsoons made this impossible and we had to look up the values on the Internet instead. In the end, we came up with a Hubble constant of 68.2 km/s per megaparsec, which indicates that the universe is about 14 billion years old.

Looking for organic compounds in molecular clouds was a bit more difficult. To find good data on a project such as this, more sensitive equipment is necessary than what was available at camp. We hoped to use spectroscopy, but the clouds from the monsoons disrupted our plans. We were able to look at submillimeter (microwave) data taken by one of the counselors of a few molecular clouds. After analyzing the data with computer programs, we found carbon monoxide in a couple clouds. Planning a mission to Mars was somewhat easier, since it didn't involve observing time. We researched the web and found a variety of techniques to incorporate into our probe that would search for organic compounds and nanobacteria.

Needless to say, it was a very busy week. We did take a break from our work in the middle of the week to camp in tents on Mt. Graham, where the Submillimeter Telescope, the Vatican Advanced Technology Telescope (VATT), and the soon-to-be-completed Large Binocular Telescope (LBT), are all located. Mt. Graham is four hours away from Mt. Lemmon. On the way there we stopped at the University and toured the mirror lab, where the twin 8.4-meter mirrors for the LBT are being constructed. When we reached our campsite (over 9,000 feet about sea level) we pitched tents and roasted marshmallows. We had hoped to spend the night gazing at the sky - which is supposedly more impressive than the Mt. Lemmon or Mt. Bigelow sky. Sadly, the monsoons had no mercy on us and we spent the night in our tents listening to thunder and hoping that the grizzly bears would stay away.

The following day we toured the three observatories at the summit of Mt. Graham. They were all incredible - especially the LBT. Once the LBT is completed, it will be a world-class observatory - more powerful than the Hubble Space Telescope. The VATT was also interesting. Hanging on the wall near the entrance is a plaque that reads: "This new tower for studying the stars had been erected on this peaceful site so fit for such studies and it has been equipped with a new large mirror for detecting the faintest glimmers of light from distant objects during the XV reign of John Paul II. May whoever searches here night and day the far reaches of space use it joyfully with the help of God."

The Submillimeter telescope was also a sight to see. We were allowed to view the control rooms and the instruments in detail. The highlight of this instrument was standing by as the antenna was opened for us. On our way back to Mt. Lemmon we stopped at the University to hear a lecture on stellar evolution. Once the night had fallen we were in the mountains again, searching for answers to our

projects. My week in Arizona at Astronomy Camp was one, which I don't believe I'll ever forget. It was, to me, a preview of what lies ahead in my life. I plan to major in astronomy and physics in college after I graduate from high school in a year. At least now I have an idea of what the lifestyle of an astronomer is really like. The work is hard, the nights are long, the data is hard to get, the weather can be infuriating, and I won't likely become rich. Yet, after spending a week in the mountains of Arizona studying the heavens I'm even more certain than ever that being an astronomer is the only profession that could make me truly happy, and the one, which I plan to pursue.



LBT construction photo used with permission

Recently the University Lowbrow Astronomers held a program at the Peach Mountain Observatory demonstrating a unique indirect method unto which Astronomy can be promoted while providing financial support to other community based organizations.

By
Randy K. Pruitt

Last year several months after I moved to Ann Arbor I began attending the Unitarian Universalist Church of Ann Arbor. There, I found that the Church was and is involved with many community programs such as the development of a children's center, Habitat for Humanity and the development and support of a shelter for homeless families called Alpha House. Which, had recently gone into operation on Jackson Rd. in Ann Arbor.

One method that the Church uses to help fund its programs is the use of a Service Auction. This is where people sell their services such as plumbing and carpentry work to the highest bidder wherein the money then goes to the Church and its programs. This Auction is held annually in April. I first learned of the Auction during the coffee hour after service in late January. Valerie, the woman who organized the Auction, to my surprise as I stood at her table, asked me if I had any services I could sell. I then half heartily retorted, "say how about the cosmos"! She looked puzzled for a second and then asked what I meant by that. I then told her I was with the University Lowbrow Astronomers and suggested the sale of a family outing at the Peach Mountain

Observatory. Valerie quickly agreed, though I told her I would have to clear it with the Lowbrows and that I would provide her with an outline of that evenings events.

I brought the outline to the March Meeting of the Lowbrows and gave it to Mark Deprest to set it before the Club for passage. Where, it was then passed. April came at the Church; the service auction was held and like many other services sold that day so was also a family outing at the Peach Mountain Observatory compliments of the University Lowbrow Astronomers. These services are sold by a closed bid system so it wasn't until a Month and a half later that I learned the name of the family that bid highest for the service to be rendered. The family's name was Bruce and Sara Gibb.

Contact was made with the Gibbs early in June where two tentative time lines were developed that followed the periods of the new moon in the months of July and August that would best fit the Gibbs schedule, weather permitting of course. After one failed attempt in July due to the weather (like that's any surprise in Michigan) the evening at Peach Mountain finally arrived for the Gibb Family on Tuesday the 14th of August. Part of the arrangement at the service auction was that the family, which purchased the service, could also bring along a few close friends as well, which they did.

The Gibbs was scheduled to arrive at Peach Mountain at 21:00hrs unto which they arrived at about 21:10. Two vehicles arrived at the same time and parking was immediate. I then informally greeted the Gibbs and their Party then ushered them down the path to the Observatory. Upon arrival to the Observatory several of the Lowbrow members Mark Deprest, Bernard Friberg and Dave Snyder were standing by to assist with the evening events. At that time formal introductions were made on both sides.

Mark Deprest started the evening event out with a tour of the 24inch McMath Telescope, starting with an explanation of the primary and secondary mirrors. Mark then led the Gibb Party around to the front explaining the differences in telescope design reflectors, refractors and so on. He then led the Gibb Party outside to where several smaller telescopes one 8 inch dobsonian from inside and one Mark had brought with him which appeared to be either a 12 or a 14 inch dobsonian. Throughout the evening explanations as to terms like Right Ascension and Declination, Star Maps and their uses, Globular V/S Open Clusters, Galaxies our Milky Way and other Galaxies, the Great Rift and so much more were discussed. Finally, the culmination of the evening event came when Mark presented a dissertation on classical Greek and Roman Constellation Mythology. This seemed to have the effect of wooing questions out of some of the women in the Gibb Party. The evening event concluded at approximately 23:45 hours. At this time, I ushered the Gibb Party back to the parking lot and along the way they thanked me for such a cordial and personal evening. All and all, the evening went very well with many questions and answers throughout the evening. When the Gibb Party left some of the women were still excited about the Greek and Roman stories.

The Fifth Annual "Astronomy at the Beach"

by Dave Snyder

Friday August 25 and Saturday August 26 was the fifth annual Astronomy at the Beach. I arrived at Kensington Metropark with Mark Deprest at about 6:30PM. A number of people had already set up along the beach, however most of the Lowbrows hadn't arrived yet. Clayton was already set up. We saw Glen Dent (who works for the Metropark) busy transporting amateur astronomers and their equipment from the parking lot to the lawn.

Unlike previous years, there were no bright comets visible. Jupiter and Saturn were on the wrong side of the sun. However Mars was visible, along with the Moon and whatever deep sky objects people could find. It is traditional to allocate part of the beach for the Lowbrow contingent, Mark decided that an unoccupied portion of the North Lawn would serve this purpose. Soon Mark set up and we saw the arrival of Doug Scobel, Chris Sarnecki, Milton and Doug Bock (both Doug Scobel and Chris brought Dobs). Since it wouldn't get dark for a few hours, all of the telescopes were pointed at either the Sun or the Moon. Many telescopes had yellow balloons, this signified that they had solar filters and were pointed at the sun. Visitors were able see a number of sunspots including a nice sunspot group.

Somewhat later Mike Radwick, Paul W and his dad, Bob G, Kim D, Randy and Lorna arrived (Mike, Paul and Bob all brought telescopes). I brought my digital camera. I had taken daytime photos with it, but no astrophotographs. The camera couldn't take long exposures, but exposures of up to a few seconds were possible. I had an opportunity to try a shot of the Moon. I tried once with Paul's telescope and once with Chris Sarnecki's before I realized that I needed to set the focus to infinity in order to get this to work. After making this adjustment I had my photo.



In addition to telescopes, there are also a series of talks. Besides the usual talks which I skipped, we had two special speakers, Randy Rubis (a JPL ambassador, JPL ambassadors do not work for NASA, but give public talks on space missions) and Dr Steve Edberg (the chief scientist on the Cassini Mission). I caught part of the Randy Rubis talk, and all of Dr Edberg's talk. After the talk was over, I returned to the beach. John Causland had arrived while I was gone.

There had been a steady stream of visitors. Many of the visitors were kids working on their scavenger hunt (kids were given a list of objects they needed to find such as the Moon, Mars, a galaxy and so on. They could check off items off as they found them). While it was clear enough to allow the kids to find all their objects, haze interfered with deep sky observing. Besides the haze, car headlights were a continual problem (the North lawn is adjacent to the parking lot). Hazy conditions are when Lowbrows are the most resourceful; some of the telescopes were pointed at the Aquafina Nebula. (The story behind the Aquafina Nebula dates back to last year's Kensington at the Beach; it had clouded over, so nothing was visible except for some lights on the other side of the lake. I was using an 8" Dob at the time and I moved it toward one of the lights - it was a Pepsi machine located at Maple Beach, a half mile from Martindale Beach. I gave it the name the "Pepsi Nebula." Apparently there is now an Aquafina machine at Maple Beach). Earlier in the week a visitor to our web site had a question about a double star Mark described in a newsletter article, I forwarded this to Mark and in the process he found a double star he couldn't immediately identify. At Kensington, Mark was able to identify this mystery double. Because of the poor sky conditions, we all leave relatively early (about midnight or so). The next morning I talk with Charlie on the phone, he did not go to Kensington Friday night. Dr Edberg was going to give another talk Saturday afternoon; unlike the talks on Friday and Saturday evening, this one was aimed at club members interested in more detail on Cassini. The forecast was for rain so I assumed the evening would be a washout; how



Sunset at Kensington Metro Park

ever both of us were interested in hearing Dr Edberg's talk. We arrive that afternoon assuming that we'd leave afterwards. Kristina Nyland and Adlai Cleveland were at the talk as well as a few people from other clubs (I'll give a short summary of Dr. Edberg's talk next month). Back at Martindale Beach, I found Lorna, Kim, Kristina and her parents, Doug Bock, Clayton and Randy. Even though it was hopelessly overcast, it wasn't raining and I spent quite a bit of time socializing with people. Glen Dent thought we had a total of 3000 visitors on Friday and 1000 on Saturday. While the threat of rain probably reduce the numbers, I think the visitors who came on Saturday probably enjoyed themselves. Overall, I think it was a successful event



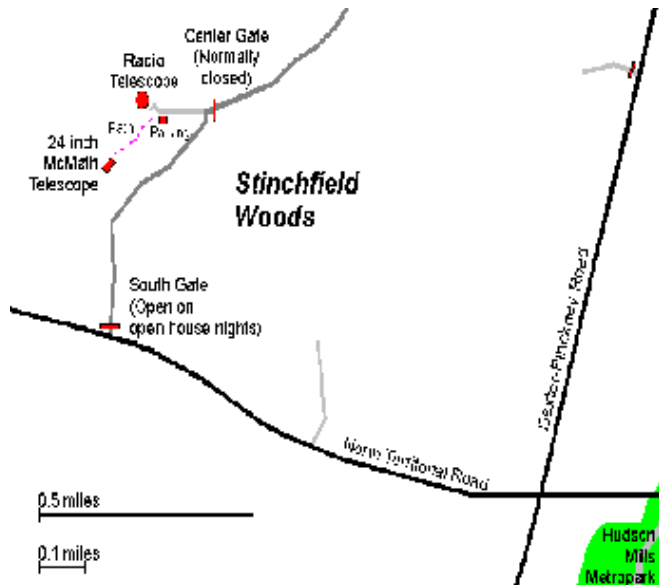
Doug Bock, Clayton Kessler, Mark Deprest & Doug Scobel watch the sunset at Kensington Metro Park.

For Sale:

- **8 in. Celestron Ultima w/P.E.C.**
 - Very good optics (star tests very good inside and out)
 - Digital setting circles w/upgraded encoders (mountain instruments-same as JMI Max)
 - 8x50 finder w/illuminated reticle for polar alignment
 - Adjustable tripod w/2 EQ wedges (1 celestron & 1HD homemade).
 - Real nice sliding counterweight system
 - Declination motor
 - Mead F-6.3 Focal Reducer
 - 1 1/4" visual back
 - Orion Dew Zapper
 - Bob's collimation knobs
 - Nice E.P. holder
 - Hard shell case for O.T.A.
 - Instruction manuals for scope and D.S.C.
 - **Price: \$1,350.00**
- Call Gary Perrine at 517-424-4061 or e-mail me at cwinzeler@yahoo.com

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)662-5719 msdpresed@mediaone.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
	Paul Walkowski	(734)662-0145
	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.astro.lsa.umich.edu/lowbrows.html>

Dave Snyder, webmaster

<http://www-personal.umich.edu/~dgs/lowbrows/>



UNIVERSITY LOWBROW
ASTRONOMERS
3684 Middleton Drive
Ann Arbor, Michigan 48105



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