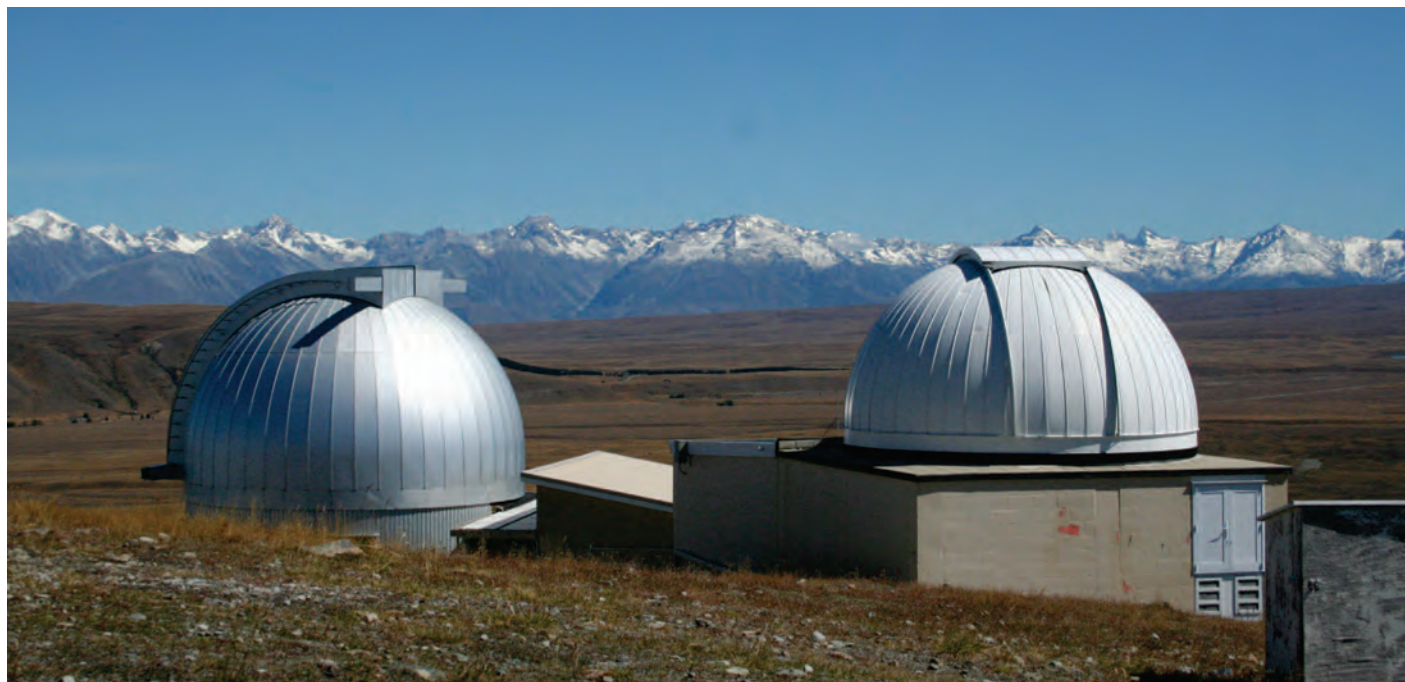




## New Zealand Skies

By Don Fohey



*Photos: Don Fohey*

In February my wife and I traveled to New Zealand for a trip of a lifetime. I was anxious for my first view of the southern skies. After cloudy and rainy nights in Christchurch and Arthur's Pass I was rewarded with a stunningly dark night on the west coast of the south Island at Punakaiki. Our accommodations were at the Hydrangea Cottages with a balcony that faced west overlooking the beautiful Tasman Sea.

After dark I stepped out onto the balcony and looked up. I first recognized Orion and was startled to see it upside down. The sword was pointing up toward the zenith. I was delighted, of course - what better proof of the fact that I was on the underside of our globe. My eyes went to Sirius and Canis Major and then south where I saw the Large Magellanic Cloud (LMC). I looked away and back again to make sure that it was really there and below it was the Small Magellanic Cloud (SMC).

I excitedly went inside to unpack binoculars and my Pocket Sky Atlas. I scanned the LMC and SMC with binoculars and enjoyed a nice globular cluster (NGC 104) near the SMC. My attention then moved to the stunning swath of the Milky Way that extended from directly overhead to the southeast. It took me a while to figure out that I was looking up in the area of the constellation Carina. It helped to hold the Sky Atlas upside down.

The Milky Way here was far richer than anything in the northern skies. The area from Carina down to Crux was particularly striking with the Coal Sack having the most contrast of any dark nebula that I have ever seen. My view east was obstructed by the mountain and towering rainforest. I was excited and was looking forward to other dark nights. Unfortunately, that was the best of the nights. It was a couple of weeks later that I saw Omega Centauri, naked eye with a gibbous moon thru a thin veil of clouds. Wow, what a sight in binoculars. It was also nice to identify Alpha Centauri. I have now seen the closest neighbor to our sun.

At Mt Cook, the Hermitage holds the Sir Edmund Hillary Center, which includes an IMAX theater and planetarium. We enjoyed several good astronomy presentations in the theater. I had scheduled an evening with Leigh Findlay and his amateur telescopes. He used the planetarium to present a very nice tour of the southern sky. After the planetarium show we started outside to the telescopes and we were greeted by down pouring rain. It was a long 60km drive back down the valley in the pitch dark, pouring rain, windshield wipers flapping, both hands on the wheel and on the wrong side of the road.

The next day we drove up to the Mount John is in a valley surround the grandest mountain world. There are 5 large that are in regular use. project 1.8 meter prime largest telescope in New Microlensing Observations NZ collaboration that matter, extra-solar planets using the gravitational There is an amateur available at the observatory that I had hoped to take advantage of, however the forecast was for clouds. We enjoyed spectacular sunshine during our visit. At 4pm high cirrus clouds announced the change in weather.

New Zealand is a beautiful, easy to travel country with the added bonus of dark southern skies. There are lots of accommodations for the many tourists. The two lane country roads are easy to travel. The people are eager to help and speak a delightful version of English. These are all good reason to plan your next star party in New Zealand.



to Lake Tekapo and went Observatory. The mount by what must be one of panoramas anywhere in the telescopes on the mountain The largest is the MOA focus reflector which is the Zealand. The MOA or in Astrophysics is a Japan/ makes observations on dark and stellar atmospheres microlensing techniques. telescope viewing program



## What's the Story--Hercules

by Mark Deprest

Greatest and strongest of the Greek demigods, Hercules was the son of Zeus by a mortal woman (Alcmene) and was hated by Zeus's wife, Hera. He began his life of heroic violence by strangling two serpents while still in his crib. The two snakes were sent by Hera to kill Hercules.

*Hercules may have been Gilgamesh, the strong-man hero of ancient Babylon. Like Hercules, Gilgamesh killed an invincible lion and accomplished other great tasks. Gilgamesh also explored the seas of the underworld. Here he meets Utnapishtim, a strange sailor who lives on an island in the center of the underworld sea. Utnapishtim is the survivor of a flood created by the gods.*

Unless you are an avid stargazer, you might not be sure just where to look for Hercules. While the fifth largest constellation, it isn't very obvious. And yet Hercules boasts one of the finest collections of binary stars, and two Messier objects as well.

*We will make a fine distinction here: the constellation name is Hercules, while the Greek hero is Heracles.*

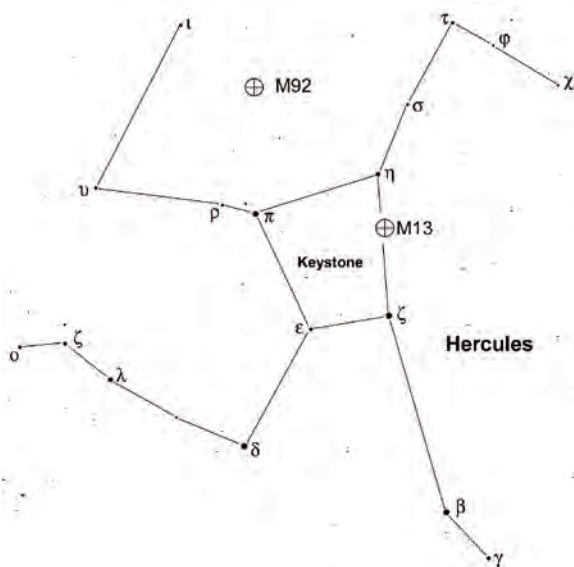
Heracles was named after the greatest of Greek goddesses, Hera. Her name means "Lady" and she was the daughter of Cronus, and sister of Zeus (they were twins). Zeus later changed into a cuckoo and seduced his sister (he had that kind of reputation), and the two were married.

Hera became the Queen of the Heavens: goddess of childbirth, marriage, and of women, she was the most widely beloved of goddesses in antiquity. It would only be natural that the greatest of Greek heroes would be named after her: Heracles means "the glory (or honor) of Hera". Heracles became a

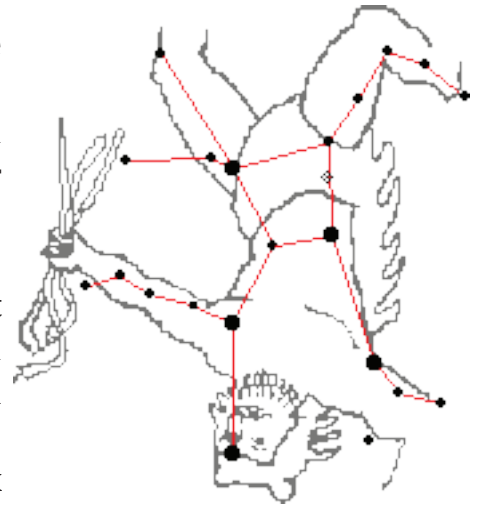
favorite with the gods. Apollo made his bow and arrows; Athena gave him a magnificent robe; Hermes provided him with a sword, and Castor (the greatest warrior) taught him how to use it. Hephaestus, the smithy of the gods, made a golden breastplate for Heracles. Thus armed and protected, Heracles paraded through Greek mythology, performing eight heroic deeds and the Twelve Labors.

In manhood, Hera made Hercules insane by burning down his house and killing his wife and children. When Hercules recovered his sanity, he sought the help from the oracle of Delphi. The oracle told him he must serve his cousin Eurystheus, King of Argos, for 12 years. Hoping to destroy Hercules, Eurystheus set him 12 supposedly impossible tasks, but the hero completed them all.

The 12 labors of Hercules were (1) strangling the Nemean Lion that terrorized the valley of Nemea. Hercules killed the lion by thrusting his fist down its throat; (2) striking off the many heads of the poisonous water snake Hydra of Lerna, Cancer joined in on the battle against Hercules; (3 and 4) delivering alive to Eurystheus the terrifying Erymanthian



boar and the Arcadian stag, sacred pet of Artemis; (5) killing the man-eating birds of Lake Stymphalis; (6) cleaning in one day the stables of Augeas, King of Elis, which contained 3,000 oxen and had not been cleaned for 30 years. Hercules cleaned the stables by turning two rivers to flood the stables; (7) capturing and bearing on his shoulders to Mycenae the white Cretan bull, sire of the Minotaur; (8) capturing the man-eating mares of Diomedes (a Thracian king and son of the war god Ares) and feeding them the flesh of Diomedes; (9) fetching for Eurystheus' daughter the girdle of the Amazon queen, Hippolyte; (10) killing the three-headed monster Geryon, along with his giant herdsman Eurytion and the two-headed dog Orthrus all in order to capture Geryon's oxen; (11) freeing Prometheus and temporarily bearing the weight of the world for Atlas, who went to fetch for him the golden apples of the Hesperides; (12) descending to the underworld to bring the three-headed dog Cerberus to its master, Hades. After Hercules completed his service to Eurystheus, he took part in the voyage of Jason and the Argonauts to find the Golden Fleece.



Hercules died when his second wife accidentally put poison on his robe. She thought that Hercules was being unfaithful and poured a magic potion on his robe that was supposed to restore his love for her. The poison burned his skin, causing him great pain. He tore at his flesh but the potion could not be removed.

Zeus honored his son by making him a god and placed him in the sky forever. The constellation was originally represented as a kneeling man, with a foot on the neighboring dragon (Draco). Some star names reflect this earlier association, alpha Hercules or Ras Algethi translates to: "The Kneeler's Head". The constellation is at its highest in mid-June, but can be seen some spring through fall.

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#### **A NOTE FROM YOUR NEW EDITOR**

*I'm happy to have been accepted as your newsletter editor and look forward to your continued strong support for Reflections. The past five years have been something of a golden age for the newsletter: 60 months of original content. This is an accomplishment that cannot be surpassed, only equaled.*

*Most of the club newsletters I've looked at from around the country are mostly announcements of club activities and reports on same. While our publication performs this task as well, the breadth of science, observing, equipment and "how to" articles is unmatched.*

*I honestly do not know if I'll be doing this for five years, but I hope you will join with me in maintaining this wonderful tradition.*

*Thanks,  
Jim Forrester*

# *Observing the Full Moon*

*by Jim Forrester*

Like most of the membership, I've spent the majority of bright moon nights indoors, asleep in front of the television instead of observing. There have been occasional forays under a moonlit sky, but they have been precious few.

I decided this had to change, so the first week of April I began making my way through the Astronomical League's Lunar Observing Program. This list is not difficult, but does require being out during all lunar phases to complete. The program has you stop at all the major nearside features and on



*Photograph: Mark Deprest*

finishing I should have a good foundation in the moon's geography. The program is scaled for modest instruments: 7x35 binoculars and 3 inch telescopes. So far I've used 10x42 and 16x 70 binoculars and my 105mm TMB refractor.

My first night out was April 2. The majority of objects on this list are either naked eye or binocular.

I began by laying down on my front porch and identifying naked eye the major maria, those dark patches that led to fanciful speculations about the “man in the moon”, “woman in the moon” and the rest. These I was familiar with, so my observations of the 10 items all list the same time.

The binocular part of the list has items both familiar and unfamiliar, mostly smaller mare features like the Sinus Iridium (Bay of Rainbows) and the Palus Epidemiarum (Marsh of Epidemics). Since I was at home, I had the Virtual Moon Atlas up on the computer and used it to both help find and confirm seeing objects.

The Lunar I program encourages you to view specific objects with specific instruments at specific times. The rules are flexible; you can use whatever instrument you feel you need to view any object whenever you can observe it. My goal, though, is to stick to the list as outlined as best I can.

The major craters are binocular objects. That first night (10 day old moon) I was hand holding my heavy 16x70 binoculars, making certain identification difficult. Still, I was able to check off 8 of the 14 craters listed for that particular night of the lunar cycle.

Four evenings later was the full moon. This night, being in the field at Leslie Park, I used Sky and Telescope’s laminated folding moon map and the Rukl Moon Atlas for identification. My plan was to work on the list some, but mainly to view the southeastern limb as libration had it tilted toward us and features not usually seen could be observed. But the full moon wiped out all shadows on that part of the disc and made my attempts at observing craters Jeans and Petrov fruitless. Rolling the southeast toward us, though, tipped the northeast away, bringing bold shadows to craters Briançon and Cleostratus and Xenophanes in my 105mm refractor at 130x.

Going back to the list was very satisfying. I got the two full moon binocular craters, Kepler and Grimaldi easily with the club’s 10x42 Leicas. I braced the binoculars against my observing chair to hold them steady. The Leicas, being a roof prism design have no center post threads and I have not yet devised a holder for attaching them to a tripod.

I was surprised to see all but two of the list’s 16 non-crater telescope features. The mountain features proved very easy as they glowed bright white at 130x. Mons Pico was a brilliant beacon in the Mare Imbrium, south of the crater Plato. Mons Piton, further east, also stood out.

More difficult were the two valleys, Vallis Alpes and Vallis Schroter. 130x showed two faint lines running through the Montes Alpes, a view hardly worth the trouble. I plan to back to this feature around first quarter. Vallis Schroter was a different story. This feature lies near the always brightly shining crater Aristarcus and is thus easy to locate, though not always easy to see. The 130x view barely showed the snake-like feature but had some definition that promised more. The 164x view was wonderful, with a bit of shadow in this area of the moon aiding the view. The craterlet that is the “head of the cobra” was obvious, the image at the eyepiece reminiscent of the Apollo 15 photo mosaic.

I’ll be forging ahead with the list after the new moon. But the next full moon will likely see me out trying to capture looks at features on the lunar limb as well as others that are best seen when the disc is fully illuminated and blinding us to the rest of the heavens.

## In Praise of Cheap Binoculars

By Paul J. Etzler

One of my favorite astronomical activities is to sit out at night, put on some music (Both kinds: Country and Western), have a drink and enjoy the splendor of the night sky. It is a great way to wind down the day. Here in Utah, the skies are usually clear and are quite a bit better than at Peach Mountain, in spite of a few sodium and mercury vapor lights, the 5600 foot altitude and low humidity, make the observing very good. There are also no mosquitoes which I am sure Peach-Mountain observers can appreciate. I really like naked-eye astronomy; keeping track of the passage of the constellations, planets, meteor showers, etc. The brighter objects such as M13, M42, M31, and Sagittarius stuff are quite visible. I am always expanding my knowledge of the night sky; locating new objects, asterisms, or constellations. My latest new addition is the constellation Grus.

During one of my observation sessions, I got to thinking on how handy it would be to have a pair of binoculars for a closer look, find some dimmer objects, or investigate some fuzzy blob. Which of the great variety of I choose? When I was a kid, there were four kinds of binoculars. There were opera glasses, generally speaking. There were 3X by 25mm and 6X by 35mm which were good candidates for astronomy. Finally there were exotics, such as battleship binoculars, which were great for astronomy, but were generally very portable. Of the four types, I liked the 6x35s the best as they were easier to hold steady than the heavier 7X50s. Of course 6x35s disappeared in the marketplace as the variety blossomed. Most binoculars now have increased magnification which shows more detail but are much harder to hold for long periods. All things considered, a pair of 6X30s is what I wanted.



Lo and behold one day, there was an entry in a Sportsman's Guide Catalog ([www.sportsmansguide.com](http://www.sportsmansguide.com)) for a pair of 7x35s for \$12.50 postpaid. The extra 1X is close enough, and probably better for my aging eyes. Times were tight and I didn't have a lot of spare money. Maybe they were crap, but for 12.50 postpaid, I decided that I would take a chance and ordered them. At least I could make do with them until I came into enough spare money for a better pair.

A week or so later my binoculars arrived packed in one of those clear, armor-plated bubble packs. Inside was a nice-looking pair of binoculars. They are center-focus with an adjustable right eye focus. The brand, if you could call it that, was 'ClearPoint Sport Optics'. I am sure they are sold under other brand names as well. The ClearPoints came with a minimal neck strap, a cheap, but serviceable carrying bag, a cleaning cloth, two objective caps, and an eyepiece cap that covered both oculars. The binoculars had

great eye-relief, and roll-back eye cups, which worked great with my glasses. I hate the on-off on-ff on-off of searching for something with low-eye-relief instruments and glasses. Checking the optics with a light showed these binoculars had the full 35mm of their light path. Using the eyepiece cap required the eye cups be unrolled and the binoculars bent to the minimum interocular distance. That was a pain so I discarded the cap, an replaced it with a pair of mailing tube caps so now I can keep the eye cups rolled. I have been happy ever since.

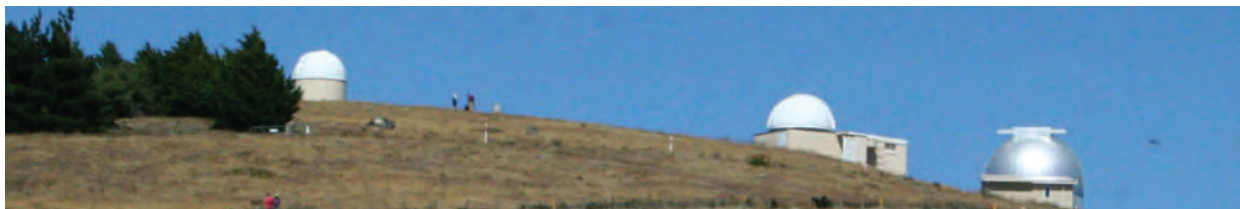
On to the night sky: First light showed them to be good, but not great. Terrestrial views are good as well. I am quite satisfied with them. These binoculars do show light scattering on bright, high-contrast objects. The Moon looks good, but the background is gray. There are some metal-halide lamps on a nearby loading dock that really highlight the scattering. Chromatic aberration is not noticeable. I am sure that Leica and Swarovski binoculars blow the ClearPoints away, but they are over \$2000 these are \$12.50, postpaid.

I have adventured with the *ClearPoint* binoculars for over three years [sorry, I believe the deal is gone] and I can really say they have a great addition to my astronomical observation capability. They have proved to be sturdy, easy to hold, and provide decent images, with stars as sharp points. I can use them with my eyeglasses, making them comfortable to use. As far as image quality, I am happy when I find the goal of my search. A fuzzy blob is all I expect. If I really wanted a detailed view, I would use a telescope. The only place that they really fall down optically, is Jupiter, I don't know what the problem is, it appears as a shapeless blob, and I have problems with the satellites. Everything else is OK, except of course Venus, which challenges most optical systems,

Many nights of observations have been fruitful. I always search for the objects described in Sky and Telescope's *Binocular highlights*, and always find them. If there is a nearby, more challenging object [The article says "find it if you can."], I find that too, I have found Uranus, Neptune, and comets, watched the Andromeda Galaxy (M31) rising. They great for pre-exploring before searching with my telescope. The low power limits some things: I never found the Ring (M57). [Actually, M57's probably within the view, I just can't distinguish it from a star.] Saturn is just a tiny oval. But the trade-offs are wide-angle coverage and light weight. I have higher-power, mounted instruments if I want a high powered, detailed view.

There was a lowbrow that wanted to buy some binoculars for travel in primitive areas. Binoculars such as the *ClearPoints* would be ideal for this situation. They are so cheap the traveler could bring two. If one gets lost or damaged, so what. They could even be given away at the end of the trip. And they give decent views.

Our time is a unique time where complicated gadgets are reliable, and inexpensive items can have decent quality. Computer-directed manufacturing and low, overseas labor costs have contributed to this phenomenon. When I was a kid, exceptionally cheap binoculars would have been almost unusable, with plastic, non-achromatic lenses and poor alignment. The *ClearPoints* are different. They are precision instruments with coated, glass lenses. They are actually useful and a joy to own. Exploring the night sky with them is fun not frustrating. Not bad for \$12.50. Postpaid.



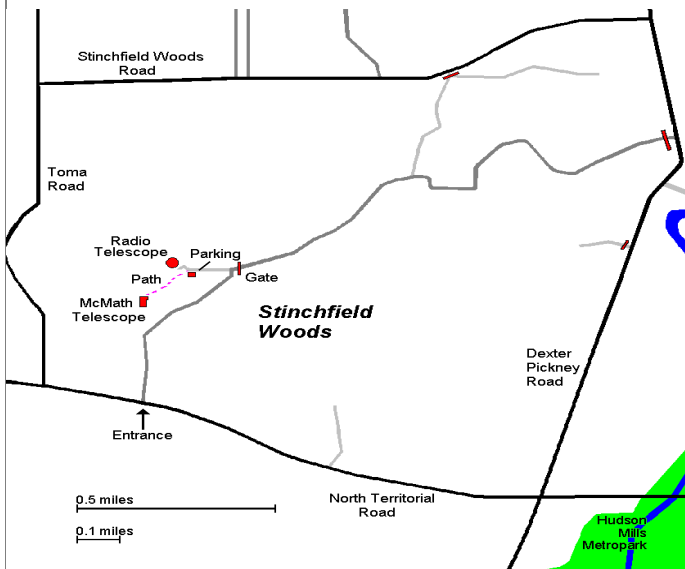
Mt. John Observatory Domes: Photo by Don Fohey



## Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3<sup>rd</sup> Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



## Public Open House / Star Parties

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

## Membership

**Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, \$12 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.**

**This entitles you to the access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training).**

**A hard copy of the Newsletter can be obtained with an additional \$12 annual fee to cover printing and postage.**

(See the website

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

**for more information on joining the club).**

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - \$32.95 / year

Astronomy - \$34.00 / year or \$60.00 for 2 years

For more information contact the club Treasurer.

## Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.



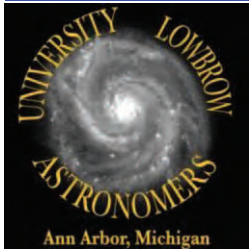
## Lowbrow's Home Page

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



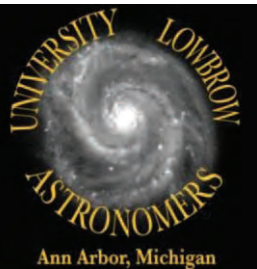
University Lowbrow  
Astronomers

### Reflections & Refractions



### Website

[www.umich.edu/~lowbrows/](http://www.umich.edu/~lowbrows/)



## An Outgoing Editor's Note

As you may know last month was my final newsletter as your editor, and although it is very difficult to step away from something I have enjoyed doing for the last 6 years, it's time to pass the baton. Over the past 6 years **you** have helped make our newsletter, my job was to present it and it has been a task that I have taken great satisfaction in. The gratification of publishing **your** articles and images has been a wonderful experience and I want to take this opportunity to thank you, without which **our** newsletter would not exist.

The incoming Editor has all of my confidence and support, I will be around to help him if needed, and if you all continue to support and contribute the way you have in the past, **our** newsletter will continue to be a proud symbol of the University Lowbrow Astronomers.

Thank you again for your support and confidence and for allowing me to serve as **your** newsletter's editor.

Watch for a continuing series of articles from me entitled; "What's the Story" which will feature a constellation and the story of how it came to be a part of our night sky. I will also continue to write my; "Comet Comments" from time to time as new bright comets move through the inner Solar System.

Gratefully submitted,  
Mark S Deprest  
April 2012.