REFLECTIONS AND REFRACTIONS

OF THE UNIVERSITY LOWBROW ASTRONOMERS

May 2004

Upcoming Events

May 2004

- **Friday and Saturday, May 21-22. Eigth Annual Astronomy on the Beach at Kensington Metropark.**
- **Tuesday, June 8, 2004.** (Sunrise to 7:30 am). Observe the 2004 Transit of VenusThere will be telescopes on the roof of Angell Hall to observe the transit. The transit will be in progress at sunrise and will be complete by 7:30 am.
- **Friday, June 18, 2004.** (7:30PM). Monthly Club Meeting.
- **Saturday, June 19, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset). Open House at Peach Mountain..
- **Saturday, June 26, 2004.** *May be cancelled if it's cloudy.* (Starting at Sunset.) Open House at Peach Mountain.

Photo by Doug Scobel. (See Page 2)

Doug's Deep Sky Challenge
Feeling Edgy Lately?

By Doug Scobel

Did the long, cold winter leave you feeling just a little bit on edge? If so, then I have just the cure for you. How about some springtime edge-on galaxies to brighten your spirits? During spring, our nighttime sky faces the richest galaxy hunting grounds in our corner of the universe. And a fair number of these galaxies present a nearly edge-on profile from our vantage point here on Earth, providing a unique view. Now a couple of features of edge-on galaxies make them particularly pleasing to view in moderately sized amateur instruments.

The first thing you notice when viewing an edge-on galaxy is, well, it is edge-on (duh!). The best examples look extremely long and narrow. Usually you'll see a bright central bulge. Often you can see a dark, obscuring dust lane nearly bisecting the brighter outline. Some of the best ones are so thin that they look like a glowing needle superimposed on the dark background sky.

The other thing that's nice about edge-ons is that more often than not they exhibit a high surface brightness. This is because their light is concentrated into a long, skinny area. By comparison, a face-on spiral of the same brightness and the same diameter will look much dimmer because the light is spread out over a much larger area. This high surface brightness makes the edge-ons good targets when observing under moderately light polluted skies, or when using smaller apertures.

When viewing these, as well as all galaxies, it is important to observe from as dark a sky as you can get to. Even with the relatively high surface brightness of edge-ons, you need as much contrast between the galaxy and the sky background as you can get. The best way to do this is by observing under a dark sky. Also, don't be afraid to crank up the magnification on these. Their high surface brightness lets them withstand magnification well, and many will not reveal much structure and detail until you "kick it up a notch", aperture permitting of course.

Enough talk - how about some observing? Here are a few particularly notable springtime edge-on galaxies that I have observed (all using my 13" Dob) and consider to be "must-see"s. I hope that you'll find observing them enjoyable as well.

NGC 2683 is only magnitude 9.8, but it is fairly long and narrow and so has a high surface brightness making it easy to spot. It appears to me to be nearly exactly edge-on, but I was unable to detect a dust lane. Its core is noticeably brighter but not star-like. Look for it in the constellation Lynx, about 6 degrees nearly due west of that constellation's alpha star.

M82 (NGC 3034) is half of the famous, spectacular pair M81/M82 in Ursa Major that is a favorite target of amateur scopes. While strictly speaking it is not an edge-on, it's close enough and shows so much detail that I had to include it here. It is classified as an irregular galaxy – astronomers are not quite sure what's going on in its tortured-looking interior. Visually, it looks very elongated, and very bright, like an edge-on spiral. But instead of having a small, concentrated core area, much of the middle of the outline is very bright, with a lot of mottled bright and dark areas. There's also an obvious dark area that crosses the galaxy in the "short" direction just west of center. This galaxy holds magnification well, so don't be afraid to turn up the power on it. It's a beauty!

NGC 4026 is the smallest of the group I have described here, but it is worthy of being mentioned. It is only magnitude 10.8, but like most edge-ons, it has a high surface brightness and so withstands high power well. It has a bright, star-like nucleus, and is very needle-like at both ends. I detected a hint of structure in the nucleus at high power. Look for this little gem about three degrees south-southeast of gamma Ursae Majoris, the bottom left star of the Big Dipper's bowl.

NGC 4565 is perhaps the finest edge-on galaxy visible to observers in mid-northern latitudes. In larger scopes it's nothing short of spectacular! This magnitude 9.6 beauty is nearly perfectly edge-on to our line of sight, and in a dark sky the needle-like extensions on each side seem to go on forever. The narrow, dark dust lane extends nearly exactly down the middle from end to end. This showpiece is located just two or three

NGC #	RA	DEC	CONSTELLATION (visual)	MAGNITUDE (arc minutes)	DIMENSIONS	SURFACE BRIGHTNESS (Mag/sq. arc minute)
891	02h22m	42°22’	Andromeda	9.9	13.0 x 2.8	13.7
2683	08h52m	33°24'	Lynx	9.8	8.4 x 2.4	12.9
3034	09h56m	69°41’	Ursa Major	8.4	12.0 x 5.6	12.8
3079	10h02m	55°39’	Ursa Major	10.9	8.0 x 1.5	13.4
3115	10h05m	-07°43’	Sextans	8.9	8.1 x 2.8	12.1
3432	10h52m	36°35’	Leo Minor	11.2	6.9 x 1.9	13.9
3877	11h46m	47°28’	Ursa Major	11.0	5.1 x 1.1	12.7
4026	11h59m	50°56’	Ursa Major	10.8	4.6 x 1.2	12.5
4111	12h07m	43°03’	Canes Venatici	10.7	4.4 x 0.9	12.1
4216	12h16m	13°07’	Virgo	10.0	7.8 x 1.6	12.6
4244	12h17m	37°47’	Canes Venatici	10.4	17.0 x 2.2	14.2
4256	12h18m	65°53’	Draco	11.9	4.1 x 0.8	13.0
4565	12h36m	25°58’	Coma Berenices	9.6	14.0 x 1.8	12.9
4594	12h40m	-11°38’	Virgo	8.0	7.1 x 4.4	11.6
4631	12h42m	32°31’	Canes Venatici	9.2	15.5 x 3.3	13.3
4762	12h53m	11°12’	Virgo	10.3	9.1 x 2.2	13.4
5308	13h47m	60°57’	Ursa Major	11.4	2.6 x 0.4	11.3
5866	15h06m	55°44’	Draco	9.9	6.6 x 3.2	13.1
5907	15h16m	56°18’	Draco	10.3	11.5 x 1.7	13.4
7332	22h37m	23°49’	Pegasus	11.1	3.7 x 1.0	12.4
7339	22h38m	23°47’	Pegasus	12.2	2.6 x 0.8	12.9

degrees east of the center of the cluster of stars making up “Bernice’s hair” in Coma Berenices. I’m sure you’ll come back to it again and again.

M104 (NGC 4594), also known as the “Sombrero Galaxy”, is not quite edge-on, but it is close to being so. This one will also become one of your favorites, if it hasn’t become one already. It is easily found by sweeping due west about eleven degrees from Spica, the brightest star in Virgo. What distinguishes it from most other galaxies listed here is that it has a very wide central bulge that can be seen extending quite far on either side of its very prominent dust lane. It’s this visual appearance that gives it its common name. At magnitude 8.0, it is also the brightest galaxy on this list.

NGC 4762 I like to call “Son of NGC 4565”. It has a very similar appearance to its namesake, it’s just not as big and bright. It has the same, needle-like appearance, with a central bulge and a bright nucleus. There’s also a hint of a dust lane. It’s in a pretty setting, too, being bordered to the south by an arc of three approximately 12th magnitude stars. NGC 4762 is just over two degrees west and just a smidge north from epsilon Virginis, making it easy to find.

NGC 5907 is another fine needle-like edge-on, with a bright nucleus. It’s nearly as large as NGC 4565, but not quite as bright. You can find this galaxy in Draco about three degrees south-southwest of iota Draconis, softly glowing at magnitude 10.3.

If these edge-on galaxies have piqued your interest, then here’s a table with more information on these and some other good edge-ons that I have observed and recommend (you’ll have to wait until fall to see NGCs 891, 7332, and 7339, though):

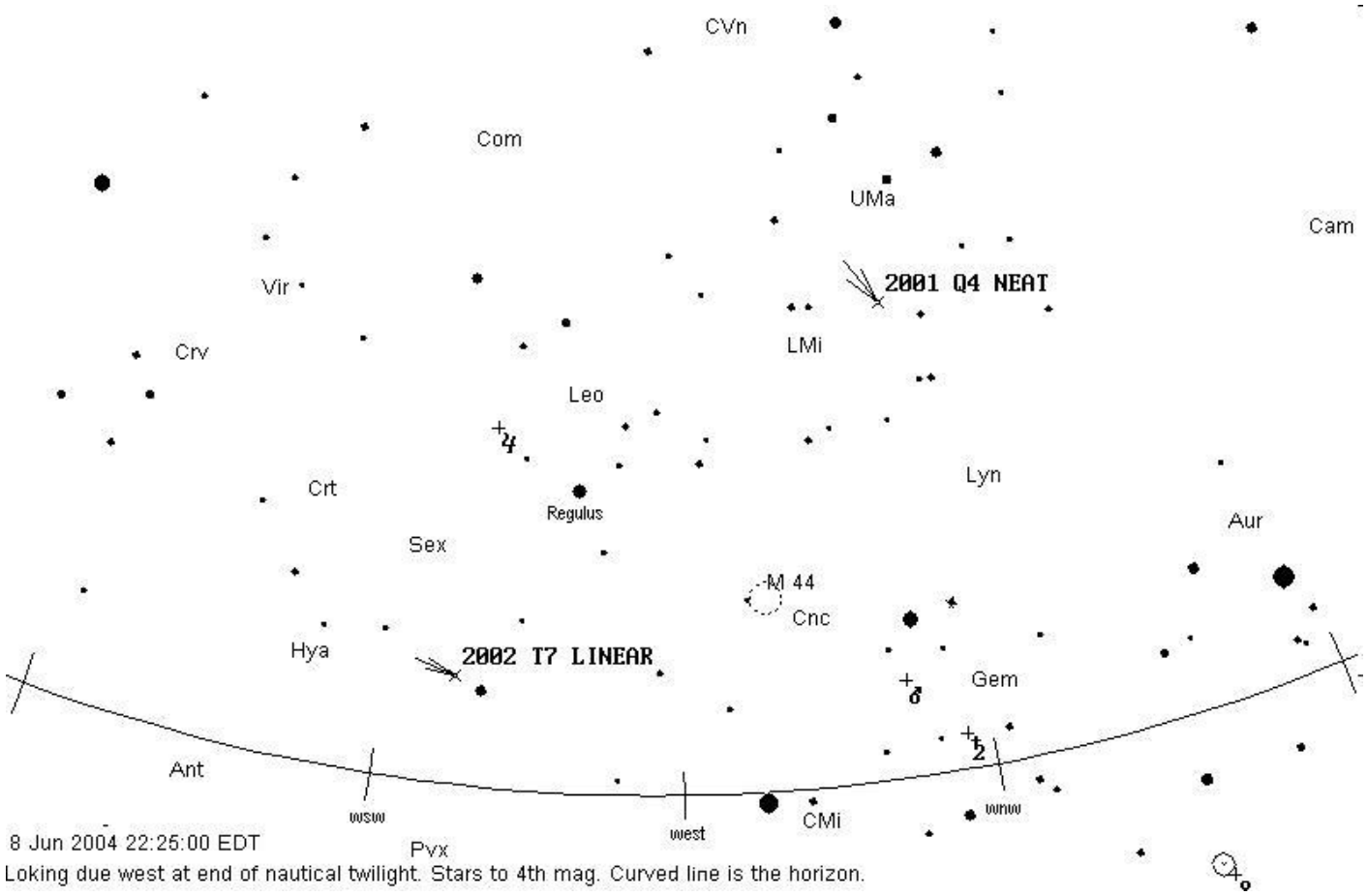
Comet Comments

By Doug Nelle

For those who wish to try to see both 2002 T7 Linear and 2001 Q4 Neat on the same night, two charts have been drawn up. Both charts are looking west at the end of nautical twilight, not astronomical twilight. On the 2 nights shown T7 will be right at the horizon or below it at the end of astronomical twilight. On no date will T7 be any more than a degree or so above the horizon at the end of astronomical twilight. It will be interesting to see if anyone can spot them at the end of May naked eye. A bright moon is going to hinder doing so. By the end of the first week in June both comets are predicted to be 5^{th} to 6^{th} magnitude. I'm betting that T7 with its low altitude and during twilight will be visible naked eye. They both however should be very good binocular objects at that time. So hope for a clear, dry evening and find a good western horizon and get out there. Don't make me come over there and make you. Okay now you're all in trouble. The charts were made with Quide v.8 software.

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.



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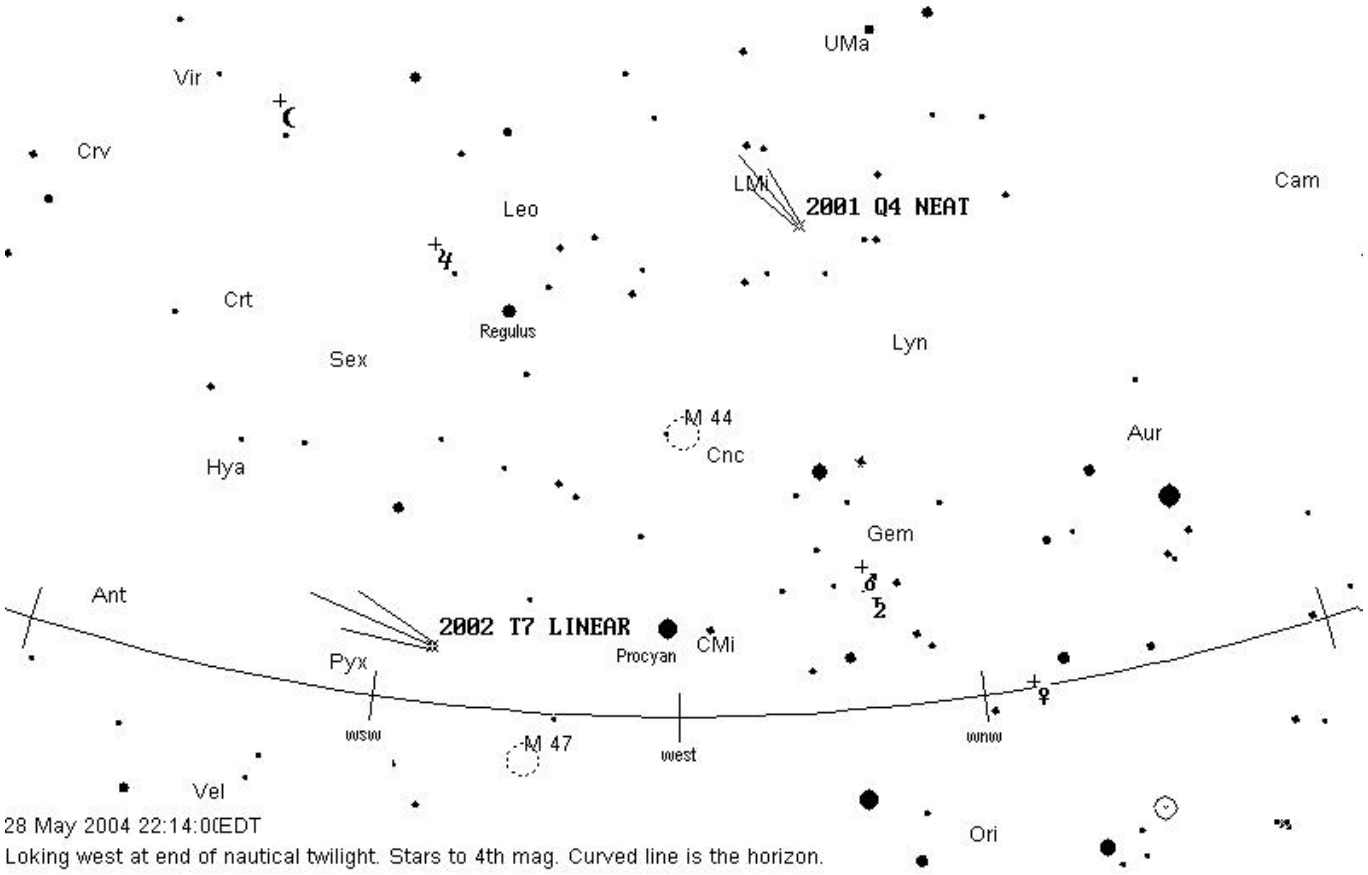
Loking due west at end of nautical twilight. Stars to 4th mag. Curved line is the horizon.

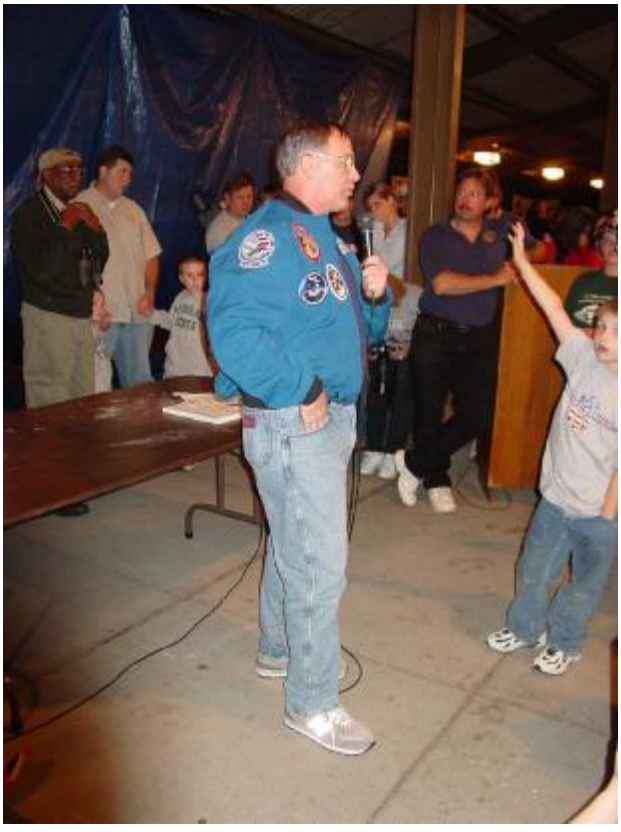


28 May 2004 22:14:0(EDT

Loking west at end of nautical twilight. Stars to 4th mag. Curved line is the horizon.

Photos from Great Lakes Astronomy Clubs Astronomy at the Beach

Photos by Al Bates



On May 21 and 22 the University Lowbrow Astronomers and a collection of other astronomy clubs (Great Lakes Area Astronomy Clubs--GLAAC for short) are presenting a special program at Kensington Metropark's Martindale Beach. The purpose is to interest youth in in careers in Math and the sciences, since most of the club members actively work in these fields. Our method is to invite entire families to see Astronauts, presentations and science demonstrations loosely tied to the Astronomy theme. This is followed by having the youth participate in a sky scavenger hunt and find 6-8 different objects in the astronomers telescopes (we should have nearly 100 scopes) in order to qualify for a prize. The cost is the Metropark daily vehicle vehicle admission ($4) and both days have events starting at 6pm and continuing till midnight.

Why did we choose May 21 and 22 when you are not targeted to complete a science module on astronomy at that time? This year we have a special visitor, comet Linear-Q4, which should be very high in the NW sky on those evenings and clearly visible with the naked eye. The Ancients believed that comets were rare visitors to earth because they foretold of the birth of kings and empires. Many of your students are too young to remember the twin really big comets of Hale-Bopp and Hiacatacki eight years ago, so this can be a special treat.

This years the program highlights are:

- A real live comet and a hundred telescopes to look at it through (plus Venus, Mars, Saturn, Jupiter, other Galaxies, nebula, and clusters of stars orbiting the Milky Way).

-Astronaut Tony England will speak on Friday. As an Apollo 13 backup crew member he got to answer the famous radio call "Houston we have a problem". Tony's Apollo 19 flight was cancelled, but he later flew on the shuttle and has films to explain life in space.

-NASA Flight Surgeon Dr. Patricia Santi, who spent over 25 years preparing herself to be an astronaut and then would up the flight surgeon who choose others with the Right Stuff. She was the NASA liaison to the families of the ill fated Challenger space shuttle, but firmly believes in space travel. A recent Ann Arbor News article about Dr Santi's community involvement in the mental health field brought her to our attention.

-A demonstration on "comet making" put on by the Metropark and John Schroer of the Detroit Science Center.

-A demonstration with liquid nitrogen on "How Cold is Space" by Professor Dehne of Delta College.

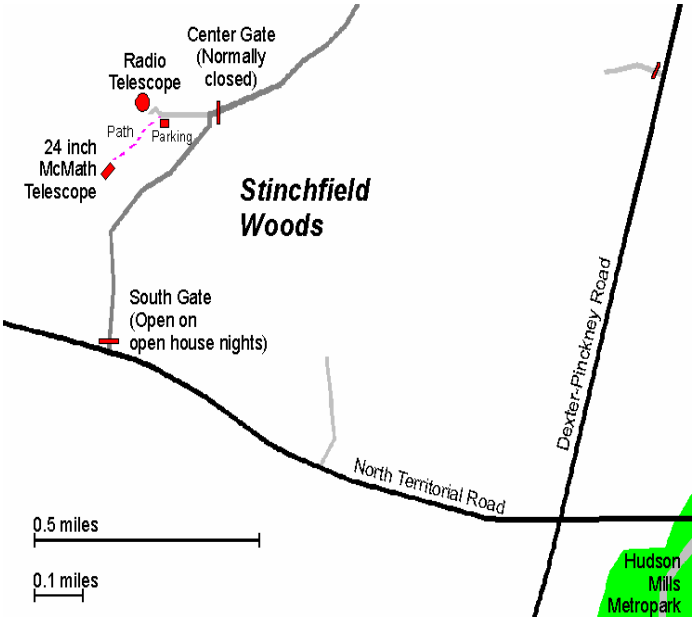
-Talks on What to look at through telescopes and light pollution, and a demonstration on how to choose a telescope.

- Dr Dehne will use his laser pointer to outline the constellations to a tour group on the beach each evening and tell the tales of mythology that gave the constipations their names more than 4000 years ago.

Remember to dress warm and bring chairs and blankets to sit on-- the talks take place on the lawn in front of a portable stage at the Martindale beach house. This event is right off of the I-96; use the Kent Lake Road exit. Go about a mile past the park entrance the beach is on the left.

Places and Times

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



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

Public Star Parties

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

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

Membership

Membership dues in the University Lowbrow Astronomers are $20 per year for individuals or families, and $12 per year for students and seniors (age 55/+). This entitles you to the monthly REFLECTIONS newsletter and the use of the 24" McMath telescope (after some training).

Dues can be paid at the monthly meeting or by mail to this address:

Mike Garrahan
7676 Grand Street
Dexter, MI 48130

Magazines

Members of the University Lowbrow Astronomers can get a discount on these magazine subscriptions:

Sky and Telescope: $29.95 / year
Astronomy: $29.00 / year

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

Newsletter Contributions

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

Telephone Numbers

President:	Charlie Nielsen	(734) 747-6585
Vice Presidents:	Jim Forrester	(734) 663-1638
	Bernard Friberg	(734) 761-1875
	Jim Wadsworth	(734) 529-2766
	Doug Warshow	(734) 998-1158
Treasurer:	Mike Garrahan	(734) 424-2874
Observatory Director:	Mike Radwick	(734) 453-3066
Newsletter Editor:	John Ryan	(734) 662-4188
Keyholders:	Bernard Friberg	(734) 761-1875
	Charlie Nielsen	(734) 747-6585
	Mike Radwick	(734) 453-3066
	Fred Schebor	(734) 426-2363
Webmaster	Dave Snyder	(734) 747-6537

Lowbrow's Home Page

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

Astronomers enjoy the festivities at GLAAK.

UNIVERSITY LOWBROW
ASTRONOMERS

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

Lowbrow's WWW Home Page:
www.umich.edu/~lowbrows/

Check your membership expiration date on the mailing label.