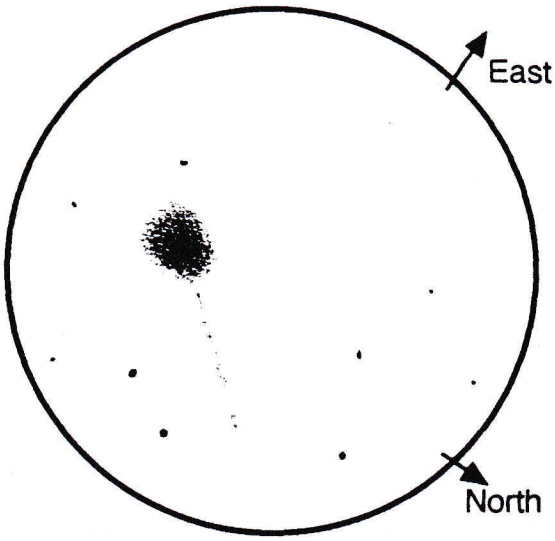
REFLECTIONS

Comet De Vico, 6:10 am EDT Oct. 12, 1995, 50X, 5.5 mag, 3 arcmin coma, nucleus presents an easily seen disk like image. +10 arcmin faint tail that needs averted vision and patience to see. This is Comet De Vico's second recorded return, first seen in 1846. Although past it's 5.3 mag peak, it is expected to remain bright through October. Comet De Vico is observable in binocs and is a predawn object. See this month's sky chart for positions. Sketch by C. Sarnecki



REFLECTIONS

October 1995

I have always wanted to have my work printed on the front page of a major publication, but I guess I'll have to accept getting it published on the masthead of Reflections for now.

Chris Sarnecki Editor

Of the University Lowbrow Astronomers

The University Lowbrow Astronomers is a club of Astronomy enthusiast which meets on the third Friday of each month in the University of Michigan's Physics and Astronomy building (Dennison Hall, Room 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 is canceled if it's cloudy or very cold at sunset. For further information call Bill Razgunas at (313) 995-0934.

This Month:

October 20 - Meeting at 807 Dennison. A slide show report of Astrofest'95 and amateur telescope making presented by members of the Lowbrow Astrofest'95 contingent.

October 21 - Public Star Party at Peach Mountain Observatory. Peak of Orionid meteors shower October 20 - 24. Venus and Mars are preceding the fast sinking Jupiter.

October 24 - New Moon at 12:36 pm EDT

October 28 - Public Star Party at Peach Mountain Observatory. Venus, Mars and Jupiter are lined up at dusk for your inspection.

October 29 - Daylight Savings Time ends. Don't forget to set your clocks back one hour.

Next Month:

November 7 - Computer Subgroup Meeting. Jim Abshier will be hosting a meeting at his place in Novi to review his radio telescope installation. Call Jim for directions.

November 17 - Meeting at 807 Dennison. Speaker and topic yet to be determined. Hey, if any of you VP's are reading this please give your Editor a call.

November 18 - Public Star Party at Peach Mountain Observatory. Peak of Leonid meteors shower occurs at pre dawn today.

November 22 - New Moon at 10:43 am EST

November 25 - Public Star Party at Peach Mountain Observatory. Five planets are low in the western sky plus Saturn in the SSE.

Saturday Physics Lectures, West Engin, Room 335 starting at 10:30 am, 764-4437
October 14, 21, 28 - Medical Physics and Medical Imaging - Dr. Robert Welch
November 4, 11, 18 - The Physics of Cosmic Rays - Dr. Stephen Coutu
December 2, 9 - The Missing Cosmos, Discussion of Dark Matter - Shawn Mekee

From the Observatory

by Bernard Friberg

"A Night Walk on Peach Mountain",courtesy of Friends of Stinchfield Woods and University Lowbrow Astronomers, was a complete success. We had many compliments and thanks for putting on this event. The weather was perfect - warm, clear skies, and no mosquitoes or bugs, especially no mosquitoes! The south entrance parking lot was nearly full throughout the evening. The north entrance road was lined with parked cars and the road to the transmitting tower was used. The road by the gravel pit was used as an exit. At the north entrance, guests were met by a guide giving directions for parking, handing out a flyer listing the events, an area map, a note on the preservation of our dark skies, and information on joining the Friends of Stinchfield Woods and/or the Lowbrows. Guests had the opportunity to select just one or two events, try for all the events, or just come and relax in the woods after a hard week. Self guiding trails, owl calling, an astronomy slide show, toasting marshmallows by the bonfire, a field with telescopes, and a talk on constellations were events at the north end.

The setting was perfect. A tunnel of darkness over the forest lane with the gentle glow of a bonfire was seen in the distance. The trees met at the top of the lane covering most to the sky. Walking along the single lane as the glow grew larger, log benches with people sitting by a bonfire were seen. Children and adults roasting marshmallows in a perfect setting completed the scene. One overheard comment - "I can't believe the number of people walking around the woods in the middle of the night". Another - "it can't get much better than this".

The south end included a talk on the radio telescope, more flyers were handed out, an area filled with telescopes, and the always popular 24 inch telescope. This area was filled the entire evening.

Acknowledgements: Many thanks to the ones that participated in the expanded open house. It takes lots of dedicated individuals to make an event such as this a success. Special thanks to the following: Deano Smith for giving the slide show. Amy Miodewsewski for the talks on the radio telescope. Chris Sarnecki for his willingness to be located out in (the "boonies") an open field with his telescope *[and Doug Scobel and another unnamed, non-Lowbrow for their fine effort at the same location - Ed].* Amy McEuen for the flyer map and mounting many signs. Leon Hinz for coordinating with an outside firm and also mounting and placing many signs. Professor Olson for directing traffic and providing guidance. The many Lowbrows for their help and providing telescopes. The Astronomy Department for their continuing support. To the *Ann Arbor News* for the front page coverage of this event. *[While many may not be aware, much thanks goes to Bernard himself for his tireless efforts in working directly with the Friends of Stinchfield Woods to make this event the success it was - Ed]*

A Note on the Preservation of Our Dark Skies - Astronomy has been in the forefront of man's thinking since the beginning. Early man was treated to seeing the Milky Way and the night sky in a way we can only imagine, a night sky beyond description. If you have seen the dark sky in the Upper Peninsula you may have an inkling of what was a common experience for early man. Many have not experienced this wonderful sight. The dark skies of Peach Mountain do not begin to compare with the UP or what the American southwest has to offer.

What we can do to help:

1. Avoid installing unnecessary outdoor lighting.
2. Select outdoor lighting that is shielded from the sky and points to the ground.
3. Design room lighting so that lights are shielded from the outside. Porch lights with bare bulbs should be replaced with shielded fixtures. Trying to view a galaxy when your neighbor's bare bulb porch light is on is a little disconcerting.
4. Those that are building new houses have an opportunity to select recommended lighting from the start.
5. Builders and stores should be advised so that they provide only recommended lighting and provide information.

Computer Subgroup Report

by Dave Snyder

On Tuesday September 12, the computer subgroup met and we discussed programming languages. This took about four hours, therefore I will only give an overview of that discussion.

It has been traditional to write scientific and engineering programs (including astronomy) in FORTRAN. However for as long as I can remember, people within the computer science community have argued that FORTRAN is a very poor computer language compared to more recent languages like Pascal and C. Even though FORTRAN is still the dominant language in Astronomy, in recent years C has made headway. In particular programs that position telescopes, planetarium programs as well as programs that analyze signals from SETI type radio receivers are often written in C, not FORTRAN.

After explaining the strengths and weaknesses of the three languages I tried to make a case that while the three languages had strengths, they were each in some way flawed. For example, FORTRAN and C are very unforgiving about errors. (During the Apollo 11 moon landing, there were computer malfunctions that were caused by a single misplaced comma in a rather large FORTRAN program). I then tried to show that a newer language C++ takes the strengths of FORTRAN, C and Pascal, but has few of their weaknesses. In particular, I am convinced that C++ will prove to be better than FORTRAN at the sort of number crunching activities often required in the sciences.

Unlike the other three languages, there has been a lot of activity in C++ recently. This past April, ANSI and ISO (two standard committees) proposed a standard for C++ and my arguments were based on this proposed standard. Hence a downside for C++ is that the newer features of the language are not available on any real system. While there are many books on C++, to the best of my knowledge none adequately describes all the features of the proposed standard. However there is enough momentum behind C++ that these problems will be dealt with in time.

Anyone interested in more detail can contact me at 747-6537 or through e-mail at dgs@engin.umich.edu.

Report on Astrofest'95

by Christopher Sarnecki

The Chicago Astronomical Society's Astrofest 95 was held on the weekend of September 15th - 17th in Kankakee, Illinois (about 50 miles south of Chicago). In attendance were about 800 Amateur Astronomers of all ages and genders. The gates opened at noon on Friday and by 2:00 pm when the bulk of the Lowbrow contingent arrived (Jack Brisbin, Doug Nelle, Tom Ryan, Fred Schebor, Doug Scobel, and yours truly) many of the prime viewing positions (in the open field away from the trees) were already taken. The flea market was up and running by early afternoon (well in advanced of the official Saturday morning start) and bargain hunters were on the prowl. Many of the largest commercial vendors were present as well as the truly lowbrows types. This is always a great place to find that odd telescope component or accessory.

How strange it is to being surrounded by 800 fellow amateurs sharing your same passion for photons. Telescopes of every description! big ones (20 inchers are almost common), small ones (a 3 inch *Dynastar* from the 50's that looked like a mouse slept on the mirror for the last decade), Commercial ones(saw a *JMI* NGT-18, *Obsessions*, an 8 inch *Astro-Physics*), and of course amateur designed/built telescopes. This year's collection of amateur scopes was limited in number. Few awards were presented because of this. Hopefully this is not trend and next year we can expect to see more home-built scopes.

Friday night was off to fast pace effort to beat the expected 3rd quarter Moon rise just after 1:00 am local time. Lines began to form at *Astro-Physics'* fine collection of refractors although the seeing on that night was just plain jumpy. This is a great place to look through that giant dream scope you may have dreamed of owning such as a large aperture reflector or refractor. One of the neat things about

attending Astrofest is it is likely that you will see scopes previously published in the magazines and can talk directly with their creators. Right on time the Moon rose and cast it's bright light on the scene below causing many of the attendees to scurry off to an early bed not daring to expose their eyeballs to such an intense illumination. A few finished off the evening with an optical appreciation of the terminator not often seen from a 3rd quarter angle.

With an event like Astrofest it is difficult to determine what the high light of the weekend is. I suppose it depends what your interest is. Perhaps it is the telescopes, or your fellow Amateur Astronomers, or maybe it is the swap meet. Saturday host talks were given by interested speakers on a wide range of subjects. I listened to an excellent presentation on Solar System Videos and the restoration of Leslie Peltier's Merry-Go-Round observatory. This revered variable star observer and discoverer of 12 comets did the bulk of his observing with a 6 inch f/8 scope inside this unique one person observatory. The structure was built on the base of a child's merry-go-round and was designed to pivot around the center of the occupant's head. If you ever go to the Apollo Telescope Fair in Dayton, Ohio be sure to stop by the Miami of Ohio Amateur Astronomer's observing site and they will let you spend time observing in Peltier's restored observatory.

As is the tradition, the Chicago Astronomical Society always hires a name speaker to cap this event. This year *Sky & Telescope's* Alan MacRobert presented two topics. Alan is a dynamic and forceful speaker and it is just as well since the topics discussion are of prime importance to all Astronomers, amateurs and professionals alike.

The Future of Amateur Astronomy - Alan subtitled this discussion as "The best of times and the worst of times". Two tales were told (didn't you know it). In the first story Alan is invited to a star party, hosted by an elementary school in a New Orleans suburbs, for a group of third grade students. The teacher wishes her students to experience the wonder of the stars that she as a youngster remembered. Instead what the class experiences a pultry few washed out stars and a sky that has fallen victim of light pollution. The second tale involves Dennis DeCicco's use of a CCD camera, when observing from the same city, records stars down to 21st magnitude ! Such is the future of Amateur Astronomy. The public's access to the cosmos is becoming privatised. With ever improving optical aids technology is winning the light pollution race. Like many issues in the post cold war world - Those that can afford it are enjoying untold richest from what was previously a free commodity. While those that can not afford it are losing all access to this one of life's greatest wonder.

Alan expects all Amateur Astronomers to "get with the Light Pollution Rap". It goes like this. Light the burglar on the ground. "Burglars are not found high in the air prancing across your neighborhood's high voltage power lines. America wastes a BILLION dollars per year on light pollution. All light should be directed down were it will do what it is suppose to do. Use full cut off shielding. Light that goes above horizontal is UGLY !!!" (While not an actual quote you get the picture). You will notice that there is no discussion of saving the dark sky for the elite Astronomers by turning off the public's security lighting - The public simply does not care to jeopardize their perceived security by saving the night sky for a precious few. So don't even bring this issue up. Also presented was a low cost retrofit for the "dusk to dawn" security lights now so prevalent in rural areas. The speaker recommends all Amateur Astronomers support the effort of the *International Dark Sky Association.* An excellent article was distributed compliments of *Sky & Telescope* magazine on outdoor lighting with permission given to copy it as much as needed for use in the fight against light pollution. Copies will be made available at the next Lowbrow meeting.

Active Correction of Newtonian Mirrors - The second topic presented was a scoop Alan freely offered for a common deficiency found in most primary mirrors of Newtonian telescopes. The problem of spherical aberration (under corrected mirrors) plagues many of these telescopes. The speaker observes with a 12 1/2 inch scope and found that through extensive use of star testing that his telescope would experience the usual cool

down deficiency during the beginning of an observing run. While improved seeing would occur as the optics reached equilibrium with the local temperature, he found that the mirror was still not optimized during the months from April to November at his New Jersey location. Frustrated he grabbed a hair dryer and heated the mirror then performed star testing as the mirror would cool down. Somewhere between a heated mirror and an completely cooled down mirror he found that his optics would reach their optimum performance. The solution is to fix a low heat source on the back inner third of the mirror to induce heat on the mirror. A heat source such as one uses for dew control with a rheostat to control the level of heat applied was found to bring his mirror up to peak performance. While this goes against everything we have learned about optics Alan sounded quite convinced that this is what needs to be done to enjoy getting the best from our scopes. Expect an article in the very near future about this system in *Sky & Telescope*.

A perennial hit with the attendees is the ever popular door prize give away. With so many telescope vendors in attendance Astrofest has a large amount of door prizes to unload (Ask Fred about his take). If you think Astrofest is for you than make your calender for Astrofest 96 scheduled for September 6, 7, and 8.

It'll take up space in the newsletter

by Doug Scobel

It's getting to be that time of year again - time to think about 1996 fund raisers - calendars, shirts, and Observer's Guides. I have ordered Hansen Planetarium "Wonders of the Universe" 1996 wall calendars. These calendars have excellent photos, but even better is the daily notes on the Sun, Moon, planets, meteor showers, eclipses, and other astronomical phenomena. Prices will be eight dollars for club members and nine (or more if you can get it!) for non-members. That's three years in a row at the same low price!!! I only ordered 60 of them (I ordered 70 last year) to avoid having a bunch left over. Start thinking now about possible Christmas/holiday gifts or selling them where you work.

Yes, we still have a few "official" University Lowbrow Astronomers shirts left, designed by two of our own members! Here's what we have (all adult sizes):

3 medium galaxy T-shirts
2 medium galaxy sweatshirts
1 medium silhouette T-shirts
4 large silhouette T-shirts
1 medium silhouette sweatshirts
2 large silhouette sweatshirts

Revised prices are $6.00 for the T's, and $10.00 for the sweats. Definite fire sale prices! I'll be bringing them in to the next few meetings for your convenience.

Also, if you are interested in purchasing a 1995 Observer's Guide, by the Royal Astronomical Society of Canada, let me know ASAP. These guides have all the astronomical data the serious or casual observer will ever need in 1995, and are highly recommended! Your price will be $16.95 (that's my cost). This year I will only order one for you AFTER you give me the money for it. The reason for the change in policy is that last year a couple of them went unclaimed, and the club had to eat the cost. I'll be ordering them sometime in November, to receive them before the start of the new year, so get your orders in NOW! Make checks payable to University Lowbrow Astronomers.

As a reminder, Sky Publishing Corp, publishers of *Sky and Telescope* magazine, gives us a ten percent discount on *anything* we order through the club. Kalmbach Publishing, producers of Astronomy magazine, gives us a similar discount on their wares. So, if you intend to order anything from their catalogs, then order through me and I'll pass the savings on to you.

TOPICAL TIDBITS

by Bernard Friberg

A new comet "Bradfield" was discovered in the evening of August 17th just before sunset. It has emerged from the glow of the Sun and can be seen in the morning skies in the constellation Leo. A map showing the location is in this issue. See November issue page 10 of *Sky & Telescope* for additional information.

Comet De Vico is also plotted on the same chart and has a magnitude of 5.5. Quite amazing that for a few days these two are within the same binocular field, about 4 degrees apart. Comet Hale-Bopp, 10th magnitude this month , 7 a.u. from the sun, can be seen in the constellation Sagittarius.

A 6" lens has just been delivered to me by Jim Abshier, compliments of ERIM, and then transferred to Mark Cray. Mark has already started building the refractor telescope for the club, and expects to have it finished in a month. Thank you Jim, Mark and ERIM.

The Orionid meteor shower expected to last from October 20th to the 26th coincides with our open house of October 21st. This is supposed to be a good year, but it is also a wee hours of the morning predawn event. The Leonids meteor shower around November 17th or 18th has the possibility of being spectacular this year. Most of the time 8 or 10 per hour at the peak, nothing to brag about, but once in awhile 10000 per hour, and in 1833 the estimated rate was 240,000 per hour. Our open house, November 18th, again coincides with a meteor event. See page 24 of the November issue of *Sky & Telescope*.

The Galileo space craft is almost to Jupiter, scheduled to arrive on December 7th. The probe was released the middle of July, and scheduled to enter Jupiter's atmosphere also on December 7th. The probe, designed to study the chemical makeup of the atmosphere, will eventually succumb to the harsh environment and end the data collection. At a distance of 130 km. into the atmosphere, the pressure increases to 20 times earth's pressure, and the temperature soars to 280 deg. F, conditions not conducive to hardware longevity.

The trajectory of Galileo from Earth to Jupiter, designed to minimize fuel consumption, is resulting in a path taking 6 years. After launch, the craft was gravity assisted by Venus, Febeuary 10, 1990 and then twice by our planet Earth , December 8, 1990, and December 8, 1992, passing close to Gaspra on October 29, 1991, before heading to Jupiter via Ida , August 28, 1993. Without the boost provided by gravity assist, the fuel requirement would be increased 12 times.

INTERNATIONAL LEONID WATCH

down loaded from George Zay at GeoZay@aol.com

The Leonid stream is perhaps most famous for it's periodic storms occurring at roughly 33-year intervals when it's associated comet, P/Tempel-Tuttle, returns to perihelion. This situation is due to happen again in the years 1998-2000, and Leonid activity is expected to increase in the next few years as the comet approaches. Clearly, we have the best opportunity ever to follow these changes in the coming years more fully than has been previously possible. To take advantage of these circumstances a special International Leonid Watch project has been set up with IMO's help to coordinate world-wide professional and amateur Leonid studies. All observing methods should be pursued to ensure that no detail is missed. Data collection began in 1991, and is intended to continue into the next century.

In 1995, circumstances are not absolutely ideal, since the moon will rise only a couple of hours after the shower radiant at the expected maximum (radiant rise is around local midnight for most locations north or south of the equator), but it will at least be a waning crescent in Virgo. Data by all observing methods is needed. Leonid period of activity is from November 14th-21st. Maximum nite is the night of Nov 17th/18th at 8h UT which is at midnight pacific standard time. The Leonids are the fastest meteor shower of them all at 71km/s. Radiant position is : RA 10h 08m; Dec. +22 degrees. Population Index r = 2.5.

Last year, rates started to rise above the normal...So, I expect an even better return this year. Good data will be entered into IMO's ILW database. Contact me if you are interested in being part of this and the North American Meteor Network as well.

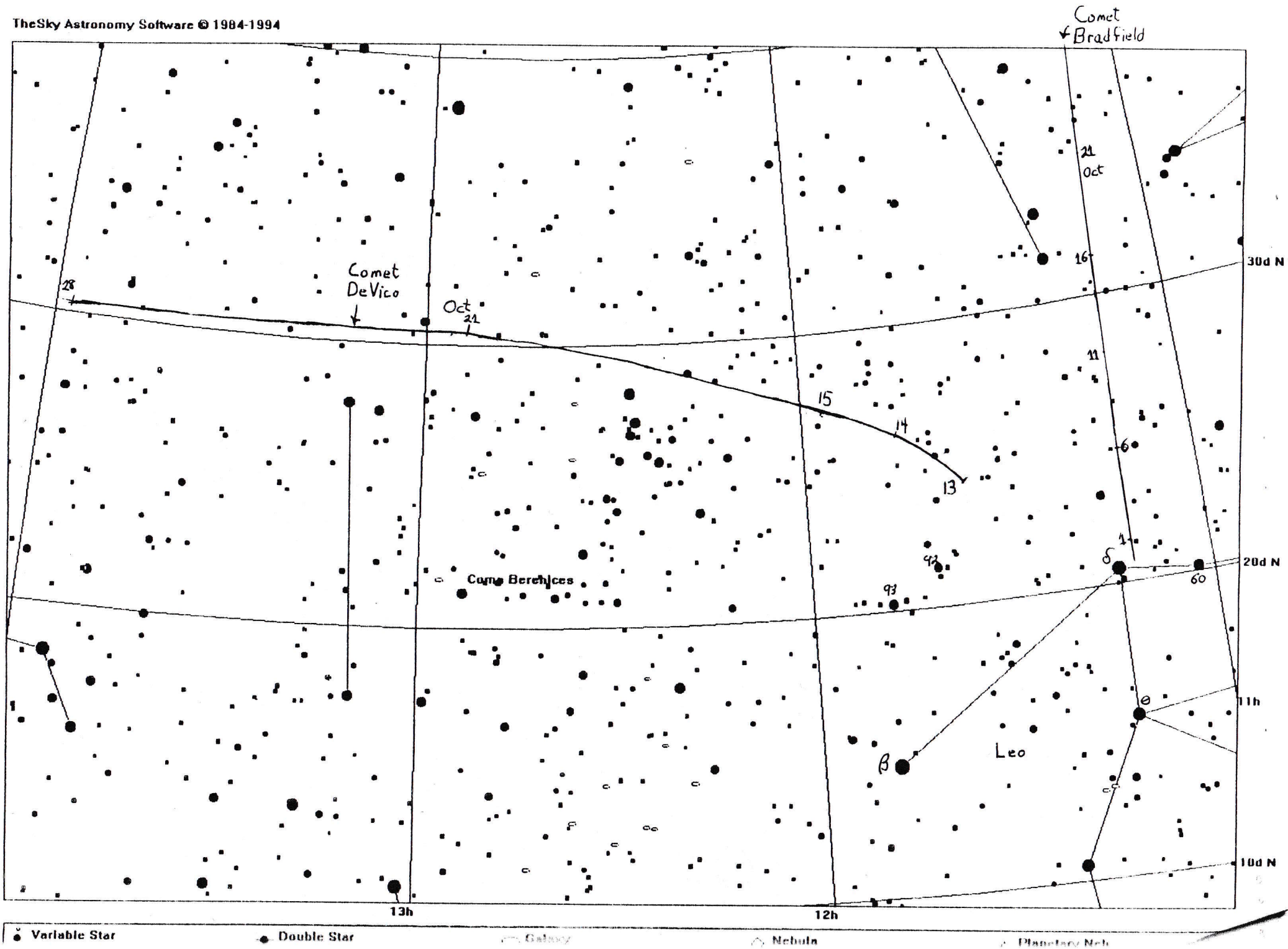
"In the Universe the difficult things are done as if they were easy." - Lao Tzu

How Far Away Is That?:

The most frequent question I get asked at public star parties is "how far away is that?" You probably get asked that question often, too. Here is a list of well-known "showpiece" objects, in order of increasing distance from our solar system.

Sirius	Star	Canis Major	9 ly	
Altair	Star	Aquila	16 ly	
Vega	Star	Lyra	25 ly	
Arcturus	Star	Bootes	34 ly	
Capella	Star	Taurus	43 ly	
Aldebaran	Star	Taurus	60 ly	*not* in the Hyades
Hyades	Open Cluster	Taurus	150 ly	
Coma (Mel 111)	Open Cluster	Coma Berenices	300 ly	
Albireo	Double Star	Cygnus	380 ly	
Pleiades (M45)	Open Cluster	Taurus	400 ly	
Antares	Star	Scorpius	522 ly	
Beehive (M44)	Open Cluster	Cancer	590 ly	
Polaris	North Star	Ursa Minor	820 ly	
M27, "Dumbbell"	Planetary Nebula	Vulpecula	975 ly	
Betelgeuse	Star	Orion	1,400 ly	
Rigel	Star	Orion	1,400 ly	
Ring Nebula (M57)	Planetary Nebula	Lyra	1,410 ly	
Orion Nebula (M42)	Diffuse Nebula	Orion	1,500 ly	
Deneb	Star	Cygnus	1,500 ly	
Trifid Nebula (M20)	Diffuse Nebula	Sagittarius	2,300 ly	
Lagoon Nebula (M8)	Diffuse Nebula	Sagittarius	4,850 ly	
M11	Open Cluster	Scutum	5,500 ly	
M17, "Swan Nebula"	Diffuse Nebula	Sagittarius	5,870 ly	
Double Cluster	Open Clusters	Perseus	7,000 ly	NGC 869, h Per
			8,100 ly	NGC 884, χ Per
M5	Globular Cluster	Serpens Caput	23,500 ly	
M13	Globular Cluster	Hercules	26,000 ly	
M92	Globular Cluster	Hercules	28,000 ly	
Center of our Galaxy	Black Hole?	Sagittarius	30,000 ly	
M3	Globular Cluster	Canes Venatici	48,500 ly	
M31	Galaxy	Andromeda	2,200,000 ly	
M33	Galaxy	Triangulum	2,400,000 ly	
M81 & M82	Galaxies	Ursa Major	8,500,000 ly	
NGC 4565	Galaxy	Coma Berenices	25,000,000 ly	
M51, "Whirlpool"	Galaxy	Canes Venatici	37,000,000 ly	
M104, "Sombrero"	Galaxy	Virgo	41,000,000 ly	

Keep in mind that these distances are only approximate, especially for the more distant objects.
1 ly = 1 light year = the distance light travels in an "average Gregorian year" (365.2425 days)
= 6 trillion miles or 63,239.8 AU.


TheSky Astronomy Software © 1984-1994
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Double Star
Galaxy
Nebula
Planetary Neb

Places:

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 807.

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-Pickney 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.

Times:

Monthly meetings of the Lowbrows are held on the 3rd Friday of each month at 7:30 PM in 807 Dennison Hall. During the summer months, and when weather permits, a club observing session at Peach Mountain will follow the meeting.

Computer subgroup meetings are held on the first of each month, rotating among member's houses. See the calendar on the cover page for the location of next meeting.

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 mosquitos - bring insect repellent, and it does get cold at night so dress warmly !

Dues:

Membership dues in the University Lowbrow Astronomers are $20 per year for individuals or families, and $12 per year for students. 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 Doug Scobel either at the monthly meeting or by mail at:

Doug Scobel
1426 Wedgewood Drive
Saline, MI 48176

Magazines:

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

Sky and Telescope: $24 / year
Astronomy: $18 / year
Odyssey: $16.95 / 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.

Monthly Sky Map:

The sky map in this issue of *REFLECTIONS* is from *THE SKY* astronomy software by Software Bisque.

Newsletter Contributions:

Members and (non-members) are encouraged to write about any astronomy related topic of interest. Call the Newsletter Editor Chris Sarnecki at 426-5772 or e-mail to chrisandi@aol.com to discuss length and format. Announcements and articles are due by the first Friday of each month. Articles should be mailed to:

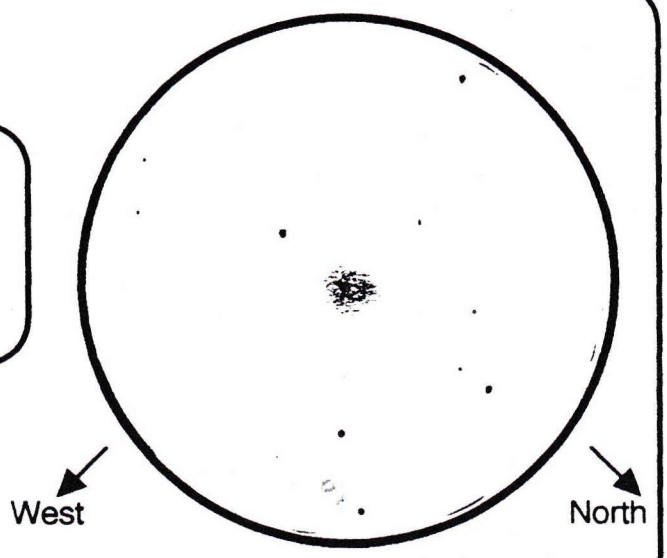
Christopher Sarnecki
4835 Holly Way
Ann Arbor, MI 48103

Telephone Numbers

President:	Bill Razgunas	995-0934
Vice Pres:	Mark Cray	283-6311
	DC Moons	254-9439
	Tom Pettit	878-0438
	Tom Ryan	662-4188
	Randy Stevenson	429-5099
Treasurer:	Doug Scobel	429-4954
Observatory Director:	Bernard Friberg	761-1875
Newsletter:	Chris Sarnecki	426-5772
Peach Mtn Keyholder:	Fred Schebor	426-2363

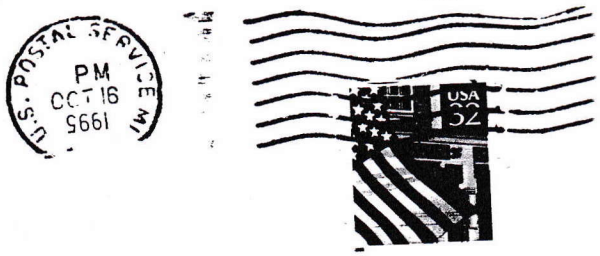
MONTHLY MEETING:

October 20 - 7:30 pm at Dennison Hall - A Slide-Show Presentation of Astrofest 95



Comet Bradfield, 50X, 1/2 degree field, mag 9.0, Oct. 12, 1995 at 5:50 am EDT - Faint Coma seen Sketch by C. Sarnecki

University Lowbrow Astronomers
1740 David Ct.
Ann Arbor, MI 48105



Check your membership expiration date on the mailing label !