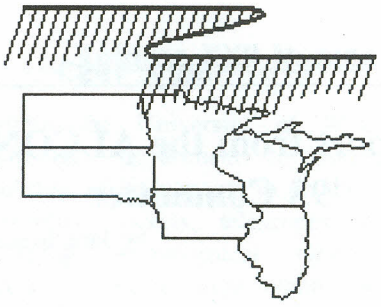


NORTHERN LIGHTS

ASTRONOMICAL LEAGUE
NORTH CENTRAL REGION

VOLUME XXII NUMBER 3 July, 1993

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Roaming the Region

by Janet Stevens

For some time, the Fargo-Moorhead Astronomy Club has been looking for a significant project they can work on as a group. Members of the society feel that this type of venture will solidify the club into a recognizable force in the community of amateur astronomers. In furthering this concept, they have decided to make a bid to hold the 1995 NCRAL Convention.

Paul Castle, President of the Popular Astronomy Club, and Bill Brown, President of the Quad-Cities Astronomical Society have discussed the formation of a joint committee to work together for their common good. Both societies share the same basic goals in amateur astronomy. Paul proposed that the committee be made up of the Presidents and ALCors of both societies as well as the members that both groups have in common. It was suggested that the committee could be called "The Greater Quad-Cities Area Astronomy Club Joint Committee", and would meet quarterly during 1993 and 1994. At this time, the PAC board and the QCAS board have met jointly for discussions on what sort of cooperative efforts could be worked on together.

NCRAL Secretary-Treasurer Deena Joslin was honored with the 1993 President's Award from the Naperville Astronomical Association for all of her contributions to the NAA over the past ten years. To be nominated and acknowledged for a President's Award, a candidate must show a "sustained, unselfish donation of time and effort in the interest of the NAA and amateur astronomy." The award was presented to Deena at the NAA banquet in March. Congratulations, Deena!

Northwest Suburban Astronomers have begun holding quarterly club orientation meetings to introduce new members to the society and to astronomy. The first session was held at NSA president Gary Polliquin's house and was a success. Seven new members attended the meeting.

In May, the La Crosse Area Astronomical Society held a "Telescope Clinic" for people who have bought telescopes that they can't get to work, or that don't work properly. Several members attended, bringing their instruments, including a father and daughter who brought an Edmund 4" reflector on a tripod supported equatorial mount that he had picked up for free. Society members also demonstrated the proper use of an equatorial mount.

After the May and June business meetings of the Northeast Wisconsin Stargazers

ASTROFEST 1993

Astrofest Chairman Michael Barrett of the Chicago Astronomical Society is pleased to announce that Astrofest will once again be held at Camp Shaw-Waw-Nas-See on the weekend of September 10-12, 1993. Camp Shaw-Waw-Nas-See is located about 15 miles northwest of Kankakee, Illinois. This event has been held there every autumn since 1982. For further information, please write to:

Astrofest
Post Office Box 596
Tinley Park, IL 60477

or call (708) 966-6214 and ask for Alan Birkner (General Information). Astrofest brochures are scheduled to be mailed in early July (about the time that *Northern Lights* is sent) to those who registered last year, and will be available on request by the time you receive this issue.

(NEWSTAR), members have been setting up their 'scopes for a star party. The purpose is to give NEWSTAR's members who are new to astronomy a chance to learn how to use their telescopes, and the opportunity to become familiar with the different types of telescopes commonly used by amateur astronomers. More experienced members were available to share what they have learned through the years, and give new society members a boost in the right direction.

The Madison Astronomical Society has been invited to see a play for free at the American Players Theater in August. In return, outside the theatre, they will show patrons the wonders of the summer sky.

Colleen Rutten, daughter of Cedar Amateur Astronomers member Jim Rutten, gave a sneak preview of the display she created for the regional science fair. Her display focused on light pollution, and illustrated examples of both good and poor outdoor lighting. Colleen placed 7th overall in the Junior High category. In addition, Kodak awarded Colleen a special citation for "best use of photography" and gave her a Kodak 35mm camera. Congratulations Colleen!

Frank Olsen, Doug Slauson, and Kevin Litten of the Cedar Amateur Astronomers met with Cedar Rapids' mayor and several others for 40 minutes to talk about their concerns regarding light pollution. Frank brought a number of photographs showing examples of poorly designed or installed nighttime lighting. They agreed to form a 10-person committee to look investigate the problem of light pollution.

Finally, also regarding problems with light pollution, the city of Burlington, Iowa, has decided that it would be great to install decorative architectural lighting on the new U.S. 34 bridge over the Mississippi River at Burlington. Quoting from their local newspaper, *The Hawkeye*, an Iowa Southern Utilities Co. lighting expert said, "The decorative lights will look like 'downtown Las Vegas'. They will be bright, but attractive.

"The Statue of Liberty, the way it's lit, won't have anything on (the new bridge). Each 24-inch diameter light will have 40000 lumens, compared with the 1000 in an average household bulb. Fifty-eight of these lights will be installed, one to shine up each of the bridge cables."

It was claimed that fixtures will be designed to keep as much light as possible on the cables and out of the sky, but those who witnessed a test were unimpressed. Only the bottom 25% of the cable appeared to be illuminated, and lots of light seemed to be lost to the sky. Iowa Department of Transportation has indicated that comments from the public will be taken into consideration as they proceed with their plans. If you would like to express your views, write to:

Mr. Darrel Rensink
Office of Road Design
IDOT
800 Lincoln Way
Ames, Iowa 50010

Report from the ALCON '93 Committee

by Jane Bruen

There is still time to register for the Astronomical League Convention in Madison, Wisconsin at the Sheraton Inn and Convention Center July 29 through July 31. Your society ALCor should have registration information, or look for it in your May issue of the *Reflector*. If our tours and workshops described previously did not excite you enough to decide to come, let me tell you about our invited speakers.

The keynote address on Thursday morning, "The Biggest, the Brightest and the Best", will be given by Dr. Roberta Humphreys from the University of Minnesota. Dr. Humphreys received her Ph.D. in astronomy from the University of Michigan in 1969. She has been a professor of astronomy at Minnesota since 1972. Her scientific interests are stellar populations and stellar evolution, and also galactic structure. Her specialty, and the subject of her keynote address, is the most massive stars.

Our banquet speaker on Saturday evening will be Dr. Arthur Code from the University of Wisconsin. Back in 1958, Dr. Code was one of the few astronomers that responded to a request from the government regarding possible astronomical uses of small satellites. Dr. Code suggested UV photometry. In 1959, Dr. Code and Dr. T. E. Houck formed the Space Astronomy Laboratory,

Northern Lights is the newsletter of the North Central Region of the Astronomical League. It is published quarterly in January, April, July, and October. Individual subscriptions are $3.00 per year and group subscriptions for NCRAL members only (minimum 10) are $2.00 per copy per year, all sent to the same address. Send checks made payable to Northern Lights to: Northern Lights; P.O. Box 8067; Rolling Meadows, IL 60008-8067.

Articles and ideas for articles about any astronomical topic of interest to amateur astronomers are invited and should be mailed to the above address. Northern Lights is edited by Berton and Janet Stevens. All material is copyright 1993 by the authors and used with their permission.

within the University of Wisconsin astronomy department, to pursue the building of instruments to go into orbit. Sounding rockets, telescopes on the Orbiting Astronomical Observatory, photopolarimetry experiments on the Space Shuttle, and the high speed photometer on the Hubble Space Telescope are some of the results. In his banquet talk, Dr. Code will be telling us about the Space Astronomy Laboratory's past and present accomplishments and future plans.

Our convention theme is "Astronomy from Earth and Space". With the two invited speakers, the workshops, the papers from participants, and the tours, we hope we will be adequately fulfilling our chosen theme.

Update on the Hubble Space Telescope Amateur Program

by Harald Schenk

On March 4, I returned from a nine-day visit to the Space Telescope Science Institute in Baltimore. The purpose of the visit was to make ultraviolet observations of the asteroids Oceana and Hidalgo.

Observations taken while I was at the STScI went well. The HST located both asteroids within one second of arc *on the first try*! Hidalgo came first. At 19th magnitude, it required a l-o-n-g exposure. This asteroid is currently crossing the orbit of Jupiter. Any hope of finding OH emission at 5 A.U. from the sun is slim. The UV spectrum looks very solar.

Oceana was different. At 12th magnitude, the HST recorded some interesting spectroscopic lines. On December 13, 1923, this asteroid had been observed, and photographed with a coma measuring the 24,000 miles in diameter. Since Oceana is classified as an M-type asteroid (metallic), this coma was probably due to a massive impact. Perhaps future explorers will find a large crater on its surface.

Jim Secosky and I are currently in the process of analyzing the volumes of data we gathered at the STScI. The staff at the University of Wisconsin at Sheboygan has offered me the use of a work station for the duration of our project. Now I have to transfer my computer files from the STScI in Baltimore to the work station.

We have three more asteroids to add to our list. I will be observing Jokaste in mid-October, and Elsa in early November. Elsa will be about 11th magnitude and Jokaste is about 12th magnitude. Both of these asteroids had been originally scheduled for observation in November, but the HST is unable to make any more observations within 35 degrees of the anti-solar point, due to a new problem with the telescope. Oljato was originally scheduled for observation during March.



Star Party at Yerkes Observatory a Success!

by Bert Stevens

Yerkes Observatory in Williams Bay, Wisconsin, was the site of a min-regional star party on June 12, 1993. More than two hundred amateur astronomers arrived in the early evening under sunny skies to set up their telescopes in a field on the south side of the Observatory. The event was organized to benefit the Geneva Lake Space Explorers program, a group of about 30 junior high school students from the Big Foot Area Schools Association.

Twenty-five of the Explorers, their parents and siblings toured the field. They were treated to views of Jupiter and Mars, and many deep skies objects. The Moon, in its last quarter, did not appear until long after the observing session was ended. Forty amateur telescopes were available from the smallest to the very large. In addition, for those wanting to see a really large telescope, tours of the Yerkes 40-inch were held throughout the evening. A demonstration of a 1024 x 1024 CCD system was held in one of the small auxiliary domes.

Amateur from all over the region attended, including those from Chicago, Milwaukee, Racine, Green Bay, even the Tardis Observatory from Minnesota were there. Many old friends had a chance to renew their relationship and share the dark skies at a classic and famous Observatory. The Yerkes staff made us all feel welcome and we appreciated the chance to visit the Observatory!

This was moved to April; then to May. The current plan is to observe Oljato during the week of June 14-21, and is a challenge for observers with CCDs.

Thanks to notices in *Northern Lights*, *Astronomy* and *Sky & Telescope*, I have been able to assemble a diverse team of ground based observers. As of mid-May, I have 66 observers who have shown interest in helping with ground-based observations. They are found in 10 different countries. U. S. observers come from 21 different states. Their equipment ranges from a modest 6" reflector to sophisticated CCD cameras. In fact, almost one-fourth of these observers have CCD capability. By staggering the observations, we may be able to monitor Oljato during the entire week in which the HST observation is scheduled. This would give us a complete record of any activity on the asteroid!

All of the ground based observers appear very enthused about the amateur HST program. We hope to describe some of their results in a future book.

From the Chair

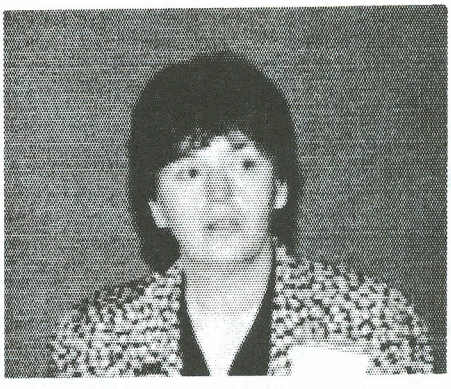
by Marion Bachtell

With the National Convention in Madison just around the corner, it's time for my annual article for Northern Lights. I hope all of you are in good health, with clear skies, and getting ready to come to Madison at the end of the month. The Madison Astronomical Society has a wonderful convention planned, so I urge you to attend. These conventions, be they national or regional, are a wonderful place to meet and talk to fellow amateurs. It is an experience that you won't regret. Over the years, my husband and I have attended many conventions and have met many wonderful people. It is an experience that I would not trade for the world.

Before I get too far into this article, I would like to take this opportunity to welcome our newest member society, The Chippewa Valley Astronomical Society, into the Region. They are located in west central Wisconsin and joined the League this spring.

This past year one of my goals as Region Chairman has been to try to visit events or meetings of as many of the Societies in the Region as possible. While I would have loved to have been able to have visited all of the societies, my boss has this funny idea that I need to show up at work. At any rate, I must say that I enjoyed the traveling I was able to do this year. I was able to visit meetings or events held by the following societies:

Chicago Astronomical Society. As we have for the past 8 years my husband and I attended Astrofest, which is hosted very ably by the Chicago Astronomical Society. This event has continued to grow in both stature and attendance with each passing year. This year the attendance was well over 500 people. If you have never attended I urge you to do so. After all, where can you visit dealers and swap tables and admire the hundreds of telescopes all day and then stay up most of the night looking through as many of these scopes as you have the time and/or stamina to do and not regret it in the least! It usually takes me about a week to come down from the high I get from attending and about that same amount of time to catch up on my sleep.



Chairman Bachtell

Quad Cities Astronomical Society. We were able to attend the QCAS's annual Eastern Iowa Star Party. This event is held at what use to be a boy scout camp near Sherman Park, Northwest of the Quad Cities. The group had rather bad luck with the weather this year, cloudy and rainy Friday evening and cloudy most of Saturday. We did manage to get about 3 hours of clear skies Saturday evening, which everyone took advantage of. The area for telescopes is separate from the camping area, so there was a nice bonfire going for the non-observers to enjoy. With all the clouds, there was a lot of time spent in the camping area by everyone, enjoying the fire, making and eating smores, and discussing astronomy.

Popular Astronomy Club. I was invited to be the banquet speaker for the Popular Astronomy Club's annual banquet. While I must say that I was nervous about the speaking I did enjoy seeing old friends and making lots of new ones. Every year the PAC gives an award to the person that contributes the most time to club activities. They normally present this person with a suitably engraved plaque, but this year's recipient, Bob Custer, was also last year's winner. So instead of giving him another plaque they decided to find another type of award. After much discussion and many ideas, they choose to have one of the big metal Maglites (with red lenses) suitably engraved. What a great idea!

Twin City Amateur Astronomers. I was very glad to be able to attend the meeting of the Twin City Amateur Astronomers last November. They are located in the Bloomington/Normal, Illinois area. Their meetings are held at the Planetarium on the campus of the Illinois State University. The business meeting was followed by a planetarium show and the evening ended with a very entertaining video taken by members that attended Astrofest and Hidden Hollow.

Neville Public Museum Astronomical Society. In February, we attended the Neville Public Museum Astronomical Society's Annual Winter Weekend. This is held at a YMCA camp about 60 miles

northwest of Greenbay. The camp provides lodging, meals and winter sports equipment to groups for a reasonable fee. The cabins each sleep about 20 people and the one the NPMAS had boasted a big stone fire place. The camp has a lake, on which you could go ice fishing. A skating rink, a toboggan hill and some very nice cross-country ski trails. This was the first time that my husband and I had done any cross-country skiing and I must thank the members of the NPMAS for being patient enough to teach us how and not laughing too hard at us when we fell down (which we did quite frequently at first). While Friday evening was mostly cloudy, Saturday evening provided an opportunity for the group to set up their scopes on a frozen pond near the cabin. We and other groups using the camp that weekend were treated to a few hours of viewing. We had a wonderful time and plan to join them again next year, if they will have us.

Fargo-Moorhead Astronomy Club -- In March of this year I was delighted to be able to visit the Fargo-Moorhead Astronomy Club's regular meeting. This group, while small, is very active within the community. Through Moorhead State University and its public programs, which they help with, they are able to take advantage of the University's Regional Science Center located about 15-20 miles east of the metro area. This facility has a library, classroom, laboratory, auditorium, exhibit hall, and an observatory. The observatory houses a 16-inch Cassegrain telescope built by DFM Engineering of Longmont Colorado. The telescope is computer driven, and from what I understand, has some very nice CCD imaging equipment.

As I said these are just a few of the many activities and meetings that go on within our region each year. If you have the chance, I cannot urge you strongly enough to attend some of the activities or meetings of the other societies within our region. We have a great membership in this region, that goes out of its way to make a person feel welcome.

Amateur Astronomy Groups in the U.S.

by Paul Castle

Each year in the May issue, *Astronomy* magazine publishes what they call the "Summer Activity Guide". Part of this guide is a listing of all the astronomy societies that responded to their annual survey. (I will assume for this article that virtually all the astronomy societies in existence are so listed.) Out of this information, I gleaned some little tidbits which I thought might be of interest.

In the following tables, I will list the top ten states in each category., the last ten states, and the states of our North Central Region if they are not included in the other two lists.

Societies Per State:

Top ten:		
California	60	societies
Texas	26	
New York	24	
Florida	23	
Ohio	20	
Michigan	19	
Pennsylvania	19	
Illinois	18	
New Jersey	15	
Virginia	15	
Other NCRAL:		
Wisconsin	11	
Minnesota	8	
Iowa	7	
Bottom ten:		
Delaware	2	
Mississippi	2	
Nebraska	2	
South Dakota	2	
Utah	2	
Vermont	2	
Wyoming	2	
Alaska	1	
Montana	1	
North Dakota	1	

Average Society Size:

Top ten:		
Delaware	227	members
California	124	
New York	108	
Missouri	102	
Oregon	94	
Maryland	92	
Hawaii	90	
New Jersey	89	
Louisiana	86	
Washington	79	
Other NCRAL:		
Wisconsin	78	
Iowa	59	
Illinois	57	
North Dakota	50	
Minnesota	48	
Michigan	43	
Bottom ten:		
Tennessee	38	
Idaho	34	
Kentucky	33	
Maine	26	
West Virginia	26	
Arkansas	22	
South Dakota	22	
Utah	21	
Montana	20	
Alaska	15	

Societies with Observatories:
(Specifically stated in *Astronomy*)

Top ten:		
California	19	societies
New York	9	
New Jersey	9	
Florida	9	
Illinois	9	
Michigan	9	
Ohio	8	
Texas	7	
Virginia	7	
Wisconsin	6	
Other NCRAL:		
Iowa	5	
Minnesota	2	
Bottom ten:		
Kentucky	1	
West Virginia	1	
South Dakota	1	
Utah	1	
Alaska	1	
Wyoming	0	
North Dakota	0	

Idaho	0
Maine	0
Montana	0

Total Society Membership:

Top ten:

California	7,440	members
New York	2,592	
Texas	1,924	
Florida	1,495	
Pennsylvania	1,463	
New Jersey	1,335	
Ohio	1,060	
Illinois	1,026	
Missouri	918	
Washington	869	

Other NCRAL:

Wisconsin	858
Michigan	817
Iowa	413
Minnesota	384

Bottom ten:

New Hampshire	123
Wyoming	114
Idaho	102
Mississippi	92
West Virginia	78
North Dakota	50
South Dakota	44
Utah	42
Montana	20
Alaska	15

I then wondered, "How big a society must you have to own your own observatory?" I divided the societies into two groups based upon membership, whether a society was larger or smaller than average for *their* state.

Five states have no societies with observatories at all. The remaining 45 states have societies with observatories (or societies with free access to an existing observatory). Of these, 17 states have more societies in the smaller-than-average membership category that have observatories than societies in the larger-than-average membership category that have observatories. So society size is not the sole determining factor in whether or not a society can build an observatory.

Now, let's compare society membership with population. I based this on population figures given for 1987 in my World Book Encyclopedia, the latest figures I had ready access to.

Society Membership/Population:

Top ten:

Delaware	1/1,419
Hawaii	1/3,008
California	1/3,718
New Mexico	1/4,167
Vermont	1/4,215
Arizona	1/4,275
Wyoming	1/4,298
Rhode Island	1/4,382
Connecticut	1/5,222

Other NCRAL:

Wisconsin	1/5,603
Iowa	1/6,862
Minnesota	1/11,057
Michigan	1/11,261
Illinois	1/11,288
North Dakota	1/13,440

Bottom ten:

Tennessee	1/15,970
South Dakota	1/16,114
Louisiana	1/17,291
Arkansas	1/17,291
Kentucky	1/16,114
West Virginia	1/24,320
Mississippi	1/28.533
Alaska	1/35,000
Utah	1/40,000
Montana	1/40,450

What deductions can we draw from this data? Some things are obvious: California is the most astronomically active state overall: it has the greatest number of societies by far, and its average club size is large. However, even though quite a few of those societies have their own observatory, the percentage of societies having observatories in California, 32% of the total number, is small compared to most of the states of our own region. And even with California's active astronomical community, Delaware does a much better job of involving people in astronomy. One person in every 1,500 is a member of a Delaware society, double the number of Californians!

Somehow, I thought there would be lots of society observatories in someplace like Arizona (only one was listed in *Astronomy*), Could it be that more **individuals** in that state have their own observatories?

At first glance, it seems strange to me, a resident of the midwest, that wide-open states like North Dakota, Montana and Wyoming should have so few astronomy societies. Perhaps the populations are simply spread out so thin that they require too much travel time for society support.

I am certain that you can reach some of your own conclusions on this data, but one thing is very clear, most astronomical societies could do a better job of inspiring those around us to keep looking up.

★ ★ ★

This 30-second CCD image of M81 (NGC 3031) was taken April 4, 1993, at 05:49 UT, just one week after Supernova 1993j was discovered. The Supernova was approximately magnitude 11.9, much brighter than the 14.0 magnitude star just below it.

The image was taken by Walter Piorkowski of South Beloit, Illinois, with his 16-inch f/4.7 Newtonian reflector and an ST-4 CCD Camera.

