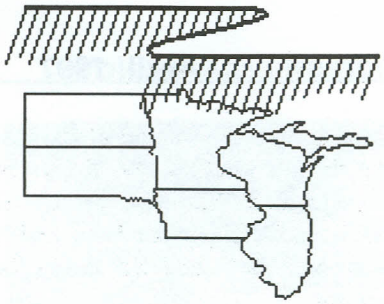


NORTHERN LIGHTS

ASTRONOMICAL LEAGUE
NORTH CENTRAL REGION

VOLUME XXVI NUMBER 2 April, 1997

In this Issue:

Roaming the Region 1
1997 N.C.R.A.L. Regional Convention 1
Yerkes Invites Amateur Observing Proposals 2
ASP's *Project Astro* at ALCON '97 3
Book Review: *Comet of the Century* 4
Clyde Tombaugh 4
Too Many Passers-by 5
You Are a CCD Nut When 5
Poems by Bill Becker 6

Roaming the Region

by Janet Stevens



The Popular Astronomy Club was involved with the Humanities Conference hosted by Blackhawk College This year's theme was "Censorship: The Future of Creative Freedom in America?" How does this relate to astronomy? Well, maybe there is no direct relationship, but the keynote speaker was Ray Bradbury, author of *The Martian Chronicles*. To emphasize this relationship, the PAC's display table included a 12-inch Mars globe. Paul Castle, Lee Farrar, and Frank Stonestreet also passed out star maps, dark-sky flyers, P.A.C. information, and fielded questions from the attendees.

At this year's NCRAL Convention, be sure to ask Mark Schmidt, Director of the Racine Astronomical Society's Modine-Benstead Observatory, about his recently published "CD" photograph. One of his Lunar photos was included on a musical compact disc call "Moon Goddess". The CD contains folk music written and sung by Cynthia Chitko.

In their quest to encourage good lighting by the businesses in the Cedar Rapids area, the Cedar Amateur Astronomers are awarding certificates to those with good lighting designs. C.A.A. member Doug Slauson plans to resurrect a light pollution proposal in the Cedar Rapids City Council.

In conjunction with Fermilab, the Naperville (Illinois) Amateur Astronomers will cosponsor a Cometwatch program Saturday, April 5. N.A.A. members will bring their telescopes for the observing portion and one or more professional astronomers will then present a program

Martian Tales and Comet Trails: N.C.R.A.L. Convention - June 6-7, 1997.

The Racine Astronomical Society is looking forward to your participation in the upcoming North Central Region Astronomical League Convention which begins Friday, June 6 at 6:00 p.m. with a Star Party and Open House at our observing facility in Racine County, the Modine-Benstead Observatory. Dr. Richard Drisen from Yerkes Observatory in Williams Bay, Wisconsin, will join us at the observatory to talk with interested visitors about meteorites and will have samples for view and for sale.

On Saturday morning, June 7, the convention begins at the University of Wisconsin-Parkside campus in Kenosha, Wisconsin. We are excited about the speakers who have agreed to address the convention participants. They are Dr. Robert Lowenstein from the University of Chicago and Yerkes Observatory, Dr. Phyllis Pitluga, Archeo-Astronomer at the Adler Planetarium and the University of Chicago, Dr. Richard Drisen, and John Briggs, Yerkes Observatory.

Our convention will conclude with an evening banquet featuring Dr. Phyllis Pitluga as our speaker and John Briggs as our master of ceremonies. This event promises to be interesting and fun and fun-filled.

To receive a registration packet, please contact:

N.C.R.A.L. Convention
Don or Beth Sorenson
6751 Mariner Drive, #2
Racine, Wisconsin 53406

We are looking forward to seeing you in Racine June 6-7!

about comets. Most of the other societies in our region will be holding public observing sessions at their observatories for several sessions. Let us all hope we have better weather (and clear skies) for the next several weeks than we have had so far this year.

Marion Bachtell, who has been the Regional Representative from the N.C.R.A.L. for the last three years, has decided not to run for reelection this year. We thank Marion for all she has done for the Region in all the Regional offices she has held. This does open that post for a new nominee. The term is three years.

Regional Representative is an office that acts as a second voice for the Region on the national Astronomical League Council (in addition to the Regional Chair). Since the Council meets at the beginning of the National Convention, anyone considering running should plan to attend the next three nationals, starting with Copper Mountain this year. The terms of the Chair, Vice-Chairman, and Secretary-Treasurer are also up. Bert Stevens is running for reelection; the other two officers have not yet responded. We hope you will consider running for one of these offices. To have your name placed in the running, contact:

Frank Roldan
Nominating Chair
N1090 Brookside Drive
LaCrosse, WI 54601-2110
608-787-1730
email: roldan@centuryinter.net

Northern Lights can be reached via E-mail at jastevens@compuserve.com (back up: bstevens@mcs.net).

Yerkes Observatory Invites Amateur Observing Program Proposals.

Issued by Yerkes Observatory

The Yerkes Observatory of the University of Chicago, home of the world's largest refracting telescope, is inviting observing proposals from regional astronomical societies in celebration of its centennial this year. Telescope time will be available for these sessions from May 26 though May 31, 1997.

The 63-foot-long telescope, dedicated in 1897, remains an important research facility, and it is not normally open for public viewing. Usually a special large-format camera is attached to the instrument, which transforms it into a huge telephoto lens for the photographic measurement of minute stellar motions.

Historically, however, the telescope was designed for visual use, with an astronomer looking through a micrometer eyepiece to determine the positions of stars. Using a modern eyepiece magnifying the sky 350 times, the instrument can still function in the traditional, visual mode. The Moon, planets, double stars, and many nebulae are beautiful sights as revealed by the refractor, in part since its 40-inch objective lens collects about 21,000 times more light than a dark-adapted human eye.

Celebrating the telescope's rich history in the hands of master visual observers like E. E. Barnard, S. W. Burnham, and George Van Biesbroeck, the current Yerkes Director, Richard Kron, invites amateur groups to visit the observatory during the last week of May for special observing with the refractor. Yerkes staff will assist each group in the dome, and the sessions will be scheduled throughout each night.

Application Procedure.

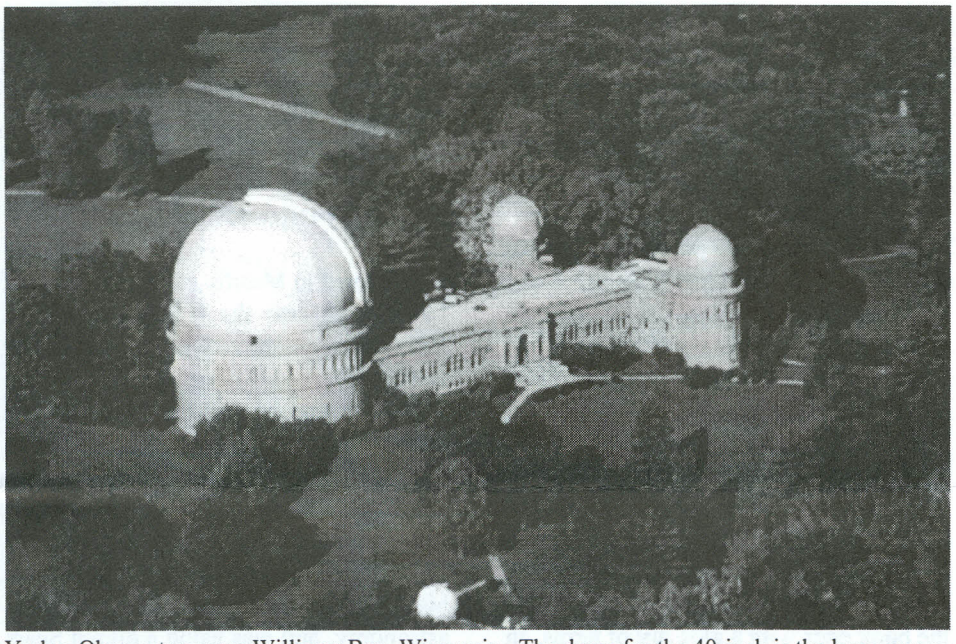
Given the mechanical limitations of the Yerkes observing floor, we must limit the size of groups. Please propose observing groups of no more than 15 people, and identify one individual as "session coordinator." For each group, please list the names of all expected participants, including the phone number for the session coordinator. Also, please state the astronomical society affiliation of each group. Larger astronomical societies are encouraged to organize more than one observing group, and interested individuals will be encouraged to participate through their local club. Submit group lists by April 20, or as soon as possible, to:

Richard Kron, Director
Yerkes Observatory
373 West Geneva Street
Williams Bay, WI 53191-0258
414-245-5555

The observing time will be allocated by the Yerkes Observatory Director according to the nature of the proposals received. If the demand is great, meritorious proposals may have to be declined, so it will be advantageous to apply early. Sessions may be as short as two hours, may be scheduled anytime of night, and on any of the available dates. Larger groups (but no more than 15) will be given priority. Yerkes will contact the

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. Visit the Astronomical League Web Site at: http://www.mcs.net/~bstevens/al/index.html.

Articles and ideas for articles about any astronomical topic of interest to amateur astronomers are invited and should be mailed to the above address or e-mailed to bstevens@mcs.net or jastevens@compuserve.com. *Northern Lights* is edited by Berton and Janet Stevens. All material is copyright 1997 by the authors and used with their permission.



Yerkes Observatory near Williams Bay, Wisconsin. The dome for the 40-inch is the large one on the left in this ariel view from the south side of the Observatory. Used by permission of University of Chicago. © University of Chicago-Yerkes Observatory.

group coordinator with the final schedule, and the coordinator will relay this information to the group members. The coordinator will also be the point-of-contact for each group should there be questions of poor weather or any other last-minute issues. Rescheduling sessions limited by bad weather may not be possible.

Yerkes staff will be prepared to train the telescope on any requested object, but it will be helpful if groups can come prepared with current coordinates of all objects of interest. (Given the size of the refractor, and the fact that all final setting is done by hand, coordinates are helpful, even for an object like Mars!) The only "finder" on the Yerkes 40-inch is in fact a 6½-inch refractor.

Yerkes hopes that by offering this hands-on experience to local astronomers will result in greater appreciation for the dedicated work accomplished by yesteryear's observers. We also anticipate sharing an ongoing sense of wonder for what a "noble instrument" is the Great Refractor (as George Ellery Hale put it) -- though the telescope is now more than 100 years old.

ASP's Project ASTRO at ALCON '97.

by Jerry M. Sherlin
Convention Chair

It is my pleasure to announce that the Astronomical Society of the Pacific's Project ASTRO seminar will be presented at ALCON '97. This seminar was recently given at the American Astronomical Society's meeting in Toronto. Project ASTRO will be offered Thursday, July 3, between 9:00 a.m. and 2:00 p.m. The price for the seminar to ALCON '97 registrants will be just $15 and will include a catered light lunch prepared by Copper Mountain. Attendance is limited to fifty people, and a number of people have already registered, so early registration is encouraged.

What is Project ASTRO? Well here in the words of the project's administrator, Mr. Mike Bennett, is what Project ASTRO is about. This half-day workshop is for amateur astronomers who wish to learn more about how to share their enthusiasm and love for astronomy with children, and who wish to help improve science education in schools and other settings - this is not a teacher's workshop. Whether or not you have experience with classroom or youth groups visits, the Astronomer Partners Program workshop will give you practical training in how to conduct inquiry-based, hands-on astronomy activities that really engage students in the problem solving process. It also demonstrates classroom tested methods for getting and holding students' attention and interest. The seminar shows you how to work with teachers and youth-group leaders to make the most of your classroom visits. It also gives you access to an extensive set of tested resource materials you can use with school children and youth groups, or for working with teachers.

The Astronomer Partners Program is an outgrowth of the ASP's successful Project ASTRO, which sets up ongoing partnerships between astronomers and teachers. Under the direction of well known science educator Andrew Fraknoi, Project ASTRO (funded by grants from the National Science Foundation and NASA) is now expanding to several cities around the United States.

If you, or your society, is involved in public outreach, or would like to be, then we think you would benefit from the Project ASTRO professional training. It would be helpful for us if you could send in your registrations and payments for Project ASTRO ahead of time but you may do it when you register for the convention. Registering soon will secure a space for you, will help Mr. Fraknoi and Mr. Bennett get a count of those attending, and will help us provide a head count for the catering service. Please send your check (payable in U.S. funds and made out to ALCON '97) and registration to:

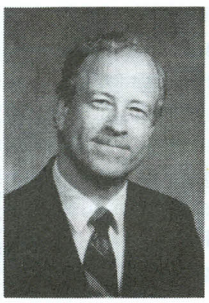
ALCON 97
C/O Chamberlin Observatory
University of Denver
Denver, CO 80208-0202

Registration packets for ALCON 97 are available now from the above address. Early registration will be appreciated. As

you will see in your packet, room reservations and convention reservations are to be made separately through the Copper Mountain reservation office. Be sure to mention you are with the Astronomical League 1997 National Convention to get the special 12 day rate, and these registrations will count toward our contract with Copper Mountain. We look forward to seeing you at Copper Mountain in July.

Book Review: Comet of the Century

by Paul R. Castle
A. L. Book Service Chair



Comet of the Century
by Fred Schaaf
Springer-Verlag, 1997
$24.95, 384 pgs.,
6x9 hardcover

If you are thinking of adding a book on comets to your library, you will not go wrong with *Comet of the Century* by Fred Schaaf. In his book Fred Schaaf presents a survey of all the great and not so great comets of the historical past, tells how they appeared, and the speculations upon them by the peoples of their time. These interesting facts are then combined to show us how our cometary knowledge has grown over the years into our current understanding.

Special attention is given to those spectacular comets that became known as "great" comets. Mr. Schaaf gives us insights as to why that term has been applied to a handful of comets through the centuries. Fred Schaaf's book is a good read. Gems of cometary lore are given in a highly readable way, not at all dry or boring. Fred also intersperses interesting tidbits into the narrative from his own comet viewing experiences that gives the book a conversational style that I find very appealing.

Twenty pages of photographs, some of them in color, and numerous line drawings, charts and graphs give the book visual appeal. The book's final chapters deal with the apparition of Hyakutake and the coming of comet Hale-Bopp.

The book is worth its purchase price just for the information given in the back. Appendixes include: a list of periodic comets (given both alphabetically and numerically), a list of the "great" comets of history, and the closest comets of history. Also given is an explanation of celestial coordinates and orbital elements. Formulas for estimating comet brightness are included as well as details on how to report a comet discovery. After a complete ephemeris on comet Hale-Bopp, the book ends with a glossary of terms, an appendix, and an index. *Comet of the Century*, is the book of the century on comets.

(You can purchase this book through the Astronomical League Book Service and save 10% of the list price. Check your *Reflector* or contact Paul for further details. -Ed.)

Clyde Tombaugh.

by Bert Stevens
Jack Kramer
Lake County A. S.

Clyde Tombaugh, discoverer of the planet Pluto, died on January 17, 1997. With Clyde Tombaugh's passing, we lose the genius of an observer who loved the sky. He was one of the four people in modern times that have discovered a major planet: Herschel discovered Uranus, Levverrier and Adams independently discovered Neptune based upon the deviations in Uranus' orbit, and Tombaugh discovered Pluto because of deviations in Neptune's orbit. Hence we lose the living presence of what will probably be the last planet discoverer.

Clyde was a cofounder of the Las Cruces Astronomical Society, along with Walter Haas who founded of the Association of Lunar and Planetary Observers. Clyde's 12-inch telescope is still in operation at the Tombaugh Observatory at the southern end of the New Mexico State University campus where he built the N.M.S.U. Astronomy Department.

Clyde lived in Mesilla Park, just south of Las Cruces near the N.M.S.U. campus, with his wife, Patsy. His passion for astronomy had brought him to the southwest and he spent most of his life under those clear, dark skies.

Born on February 4, 1906, to a Streator, Illinois couple, Clyde and his parents lived on a farm near Streator until he was in high school. He had an early interest in astronomy, and was using a 60mm Sears refractor by the time he and his parents moved to Burdett, Kansas, in 1922. After he graduated from high school, he built his first telescope, an 8-inch speculum-metal mirror affair that was not particularly well figured, as he could not find a good place to perform the Foucault test. His second mirror, a 7-inch fared much better, being figured in a cellar. He made this mirror for his mentor, Uncle Lou, who paid him for the instrument. The money he earned went to pay for the glass blanks for his third telescope, a 9-inch.

Clyde used this instrument to explore the universe. One of his favorite objects was Mars. He started drawing pictures of the Red Planet. He improved his technique and eventually he mailed some of this best drawings to Lowell Observatory to get some hints on how to improve his sketches.

Instead, V. M. Slipher, the Director of Lowell, offered Clyde a job running a photographic telescope searching for a new planet predicted by Percival Lowell, founder of the Observatory. Tombaugh would take pairs of images through a 13-inch astrograph, and then using a blink comparator to look for the motion of a faint speck, look for a distant planet. After ten months of meticulously, photographing and blinking, Tombaugh

discovered "Planet X" on February 19, 1930.

After his discovery of Pluto, Clyde continued Lowell's planet search program through the Depression Era of the 1930s. He was offered a scholarship to the University of Kansas where he got his Bachelor's Degree. He also met and married, Patricia Edson, who was a fellow student. By the end of the decade, he had also earned a Master's Degree, but never went on for a Doctorate. All during this period, he continued to consult on the planet search program.

During the War Years, Clyde taught navigation at Arizona State University. He had never done any navigating. Nevertheless, he knew astronomy and spherical trigonometry, so he was able to teach himself and then teach the young navigators. These young men then went off to fight in the War. As the war wound down, he taught a class at U.C.L.A. in physics.

At Lowell, Clyde would still blink plates in the planet search whenever he could. By the end of the war, with funds tight at the Observatory, the director V. M. Slipher, asked him to look for another job. Clyde was shocked. The exact reason for Slipher's decision is not known, but it is quite possible that he was jealous of Clyde's discoveries. With Clyde's departure, the planet search ended. 3,969 minor planets had been observed, 775 possible for the first time. Two comets, a nova, and five open clusters, a globular cluster, several clusters of galaxies, and a supercluster of galaxies were also discovered by the program.

After leaving Lowell Observatory, Tombaugh went to work at the White Sand Test Range in New Mexico. There the Army was testing V-2 missiles captured at the end of the war and needed optical instruments to determine how high they had gone. Clyde developed many specialized telescopes to record missile flight on movie film to study the trajectory and orientation of the missile. He and Patsy lived in Las Cruces, 26 miles southwest of the Base. Between his work and the commute, he had little time left for astronomical observing.

Feeling the urge to get back to his roots in planetary observing, Tombaugh joined New Mexico State University in 1955. There he started a planetary observing program, and eventually built a fine Astronomy Department. He formally retired from N.M.S.U. in 1973.

Tombaugh never lost his passion for stargazing. He recalled the time when the Smithsonian Institution asked if it could have the telescope he made in 1928 for the museum collection; he said, "I told them I was still using it". The 9-inch telescope, with which he made the drawings that impressed the Lowell Observatory staff, was built with parts of discarded farm machinery and a shaft from his father's 1910 Buick. Until frail health prevented it, Tombaugh continued observing through that 9-inch telescope and a larger one he made himself, from his backyard in Mesilla Park, New Mexico.

Though he "went professional", here was a guy who really epitomized the amateur zeal for observing!

(For more on his life, read David Levy's biography titled *Clyde Tombaugh: Discoverer of Planet Pluto*. -Ed)

Too Many Passers-by.

by Jay Reynolds Freeman

From an on-line discussion in sci.astro.amateur on the subject of passers-by interrupting planned observing sessions and how to prevent people from interrupting without being rude.

Well, let's see, you could . . .

1) Process the "big iron" telescope through one of those automobile-capacity trashmasters so it doesn't look so imposing.

2) Keep a pet skunk, deodorized, leashed to the mounting.

3) Keep a pet skunk, non-deodorized, leashed to the mounting.

4) Buy a bottle of skunk oil and use it

You are a CCD Nut When:

by Christopher Go

1) When you measure everything in pixels.

2) When you close your eyes, you see dark currents.

3) When you cannot understand why people still use film.

4) When you have a tendency to see things in tri-color.

5) When you have all three of Richard Berry's CCD books next to your bed (no offense, Richard).

6) When imaging with your lens or telescope cover on isn't a blooper.

7) When you never felt anything when they changed the emulsion of Fuji HG400.

8) When you wish that it would be -20° C. Every night of the year.

9) When you think using CCD image math.

10) When you start drinking water in gulps because you are afraid you might bloom.

Be CCD'ing you!

liberally to clean your eyepieces' field lenses.

5) Install one of those spring-loaded giant collapsible "snakes" wrapped around the focuser, with a remote-controlled release.

6) Assert that you are in the middle of a telepathic reception from inhabitants of the Z--- R-------[1] system, and you are required to have continuous optical contact to preserve the coherency in the message.

7) Carry a large squirt gun, and when the passerby asks for a view, aim it high into the air, pull the trigger, and say, "Sorry, it's raining!"

8) Have a list of fellow observers you don't like, and say "Gee, my Astro-Physics has such lousy optics, I'm sure Stefan's Quintet will look much better in that person's 50 mm Tasco over there."

9) Wear a walkman with the volume turned up loud. It helps if you have one of the models with an antenna sticking upward from each ear piece, then you can put glow-in-the-dark ping-pong balls, miniature fox tails, or plastic spiders, on the antenna tips.

10) Structurally weaken the ladder by which you climb to the eyepiece, so that it is in obvious and immediate danger of collapse. Have one leg in a cast.

11) Wear combat fatigues and carry a walkie-talkie. When the passerby approaches, key the mike and say loudly, "Security! Security! Perimeter violation at Unit Eighteen!"

12) Have a large crank sticking out of the side of your telescope. Offer a free view to anyone who will work the mechanism for the sidereal drive for an hour or two.

13) Decorate your telescope as an altar to Cthulu. Bow toward it frequently, and mutter in tongues[2]. Drool salaciously, and finger your sacrificial knife when the passerby asks for a turn.

[Of course, you should organize public observing sessions so that passers-by can have a chance to see the sky first-hand. Your society should also have observing sessions for new members who need help learning their telescope and the sky. Reprinted from *The Fox Valley Observer*,. whose editor, Richard Klappal, added these footnotes. -Ed]

[1] refers to a home base for UFO's by some who have been abducted . . . Uh-huh! [-FVO Ed.]

[2] If you have difficulty "muttering in tongues," you can just chant star names -- Alnitak, Alnilam, Mintaka; Alioth; Hadar, Hamal, Hyades; Nunki and Ophiuchus; Zubenalgenubi; Zubeneschemali, . . . mumble, mumble, snort, shiver, . . . [-Ed. FVO]

Poems by Bill Becker

Starbound

Last night as I lay sleeping
I dreamt I left this place
And somehow it seemed so real
As I voyaged the deep of space
First there was the Moon
And I stood where we have been
And there I saw the flag
And I saluted it again
Then I traveled on
To see the Jewel of space
Watching Saturn turn
With such loveliness and grace
And then I pushed on further
To see what I could find
And my only limitations
Were the thoughts of my own mind

And then I journeyed on
Into the Milky Way
Where the sky is awash with stars
And it's always bright as day
And then the trip had quickened
For time was growing short
And I made a few last visits
Before heading home to port
As I sailed through the Cosmos
I felt down deep inside
An unmistakable feeling
Of wonderment and pride
But all too quickly it was over
My journeying was done
But forevermore I will know
The Cosmos and I are one

Five Billion Years From Now...

The stars have run their fiery paths
And life has given way
To the ever deepening dark
And the all eternal day
The Sun has burned on true and long
There's no one here to see
The red and dying star that is
What yellow used to be
Soon no more will be this orb
Whilst ever more it grows
Committed now to finishing
Its life in these death throes
Outward ever outward
In nebulosity
Moves a shell of matter
That our Sun once used to be
Greens and whites
And reds and blues
Scattering out in many hues
The final days
Will be like this
Returning all
To the Great Abyss

(Bill passed away on March 7, 1997 at age 30. He had held most offices in the Chicago A.S. including President. Bill was an avid public lecturer and a radio D.J. Before he lost his sight, he was an active observer and had taken up oil painting. He will be missed by the Chicago area amateur community.)