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## PRESIDENT'S MESSAGE

By Lee Green

Now that we've made another pass around the Sun, we'll be racing through a new year. We've started to fill our calendar with a variety of observing sessions and public outreach events.

One of our themes for the year will be to fulfill the goals of our newest affiliation, the NASA Night Sky Network. With this program we plan to use the materials supplied by NASA to enhance our public outreach efforts. As we complete these events we will log them into the NSN web site with the number of attendees along with any photographs we may have. As we log events, they will qualify us to receive additional materials so we can continue to improve

the quality of our events.

This will also be an important year for us as we approach the 50th anniversary of the club in 2010. We will be hosting a conference for the North Central Region of the Astronomical League when astronomy clubs from seven states will be invited to join us. Combined with our public and members-only observing session calendar and other events we are scheduling, 2008 promises to be another busy year for our club.

So come out, join in and help us make this new year among the best ever as we share our love for the wonders of the cosmos.

## TCAA FEATURED IN SATURDAY PANTAGRAPH AND "GO"

The Mars Watch observing program set for December 29<sup>th</sup> at Fairview Park was subject of a prominently placed *Pantagraph* feature story earlier that same day. Not only was the upcoming public event for that night the subject, but it also included an interview and two photographs of Carl Wenning at SGO. A front page photograph showed Carl standing beside the Meade 12-inch telescope; the other photograph (by Steve Smedley of the *Pantagraph*) is shown here. The article dealt with a possible asteroid impact on Mars that might occur on January 30<sup>th</sup> – currently a 4% chance.

Steve Smedley, *Pantagraph* photographer, visited SGO along with Carl two days earlier to take some pictures, and these pictures were the central focus of a front-page story "above the fold line" and on the top of the back page of section 1.

The TCAA will be the subject of a feature article scheduled for the "GO" section of the *Pantagraph* on Sunday, March 2<sup>nd</sup>, thanks to reporter Scott Richardson. The article will focus on three TCAA members (Lee Green, Duane Yockey, and Carl Wenning) as well as the 2008 public observing sessions at Sugar Grove Nature Center. The 2008 POS brochure is now available for download from the TCAA website at [www.twincityamateurastronomers.org](http://www.twincityamateurastronomers.org).



*The Observer* is a monthly publication of the Twin City Amateur Astronomers, Inc., a registered 501 (c) (3) non-profit educational organization of amateur astronomers interested in studying astronomy and sharing their hobby with the public.

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Submission deadline is the first of each month.

### Membership Dues

Individual Adult/Family \$40  
Full-time Student/Senior \$25  
Electronic Newsletter \$25

To join the TCAA, send your name, contact info and dues payment to

Duane Yockey  
508 Normal Avenue  
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## TCAA FIELD TRIP TO PEORIA PLANETARIUM JANUARY 19<sup>TH</sup>

Armchair amateur astronomers take note! The TCAA membership is hereby invited to take a field trip to visit Peoria's Lakeview Museum Planetarium tentatively scheduled for Saturday, January 19<sup>th</sup>. The presentation – for TCAA members and guests only – will be delivered by Planetarium Director Sheldon Schaefer and will feature the planetarium's new star projector that debuts in January 2008. TCAAers will be among the very first to see the projector put through its paces. The presentation will begin at 11 a.m. sharp, and late arrivers will not be admitted. Plan on being in the planetarium lobby in time for admission to the planetarium at 10:45 a.m. at the very latest. Plan on a Normal-to-Peoria travel time of one hour.

The planetarium's new star projector is a Carl Zeiss Skymaster ZKP4, an image of which is shown here. This is an all-new planetarium projector that costs more than \$600,000 and is designed for small and medium-sized domes. It boasts an enormous improvement in the quality of the projected stars. In this respect, SKYMASTER ZKP4 is not only fundamentally distinct from digital projection systems, but also outperforms all its predecessor and competitor optical small-planetarium projectors many times over – thanks to the introduction of fiber optics. The projector was paid for by a NASA earmark allocation, and is intended for use in the future riverfront museum complex planetarium under a 44-foot dome.

If you would like to join this presentation, please be aware that seating space is limited and that reservations are required. In addition, there will be an admission fee and members are responsible for their own transportation to and from Peoria. The cost for admission to this program will be \$4.00 per adult, and \$3.50 for children and seniors. **If you wish to participate in this exciting event, make your reservations by phoning Carl Wenning at (309) 454-4164 evenings, or e-mailing him at [wenning@phy.ilstu.edu](mailto:wenning@phy.ilstu.edu). Please be certain to indicate the number of adults and children when making reservations. The reservation deadline is Sunday, January 13<sup>th</sup>.**

Lakeview Museum is located at 1125 West Lake Ave., in Peoria (phone 309-686-7000). Driving directions: Exit I-74 at US 150 (War Memorial Dr.) and head east. At University Ave. (2nd light on War Memorial) turn left (north) onto University. At Lake Ave. (1st light on University), turn right and immediately left into Lakeview Park. The museum is at the top of the hill in Lakeview Park.



## WANTED: A FEW GOOD LOGOS!

The current TCAA Logo, depicting the state of Illinois with a spiral of stars emerging from its center and segueing into the words TCAA, is in need of a good revamping.

We could try and find some trained professional to accomplish this, but what fun would that be? So, for all you would-be graphics designers in the audience, we present this challenge and ask for your help (in one run-on sentence, no less): design a new logo for the TCAA, and send it in whatever form you see fit (.pdf would be fine) to one of the board members (listed on p. 2 of *The Observer*). If we find something good enough -- and I \*know\* we will -- the creator will win fabulous prizes, to say nothing of fame and the ever lasting gratitude of your peers.

## HISTORY OF THE TCAA: PART 7

Beginning with the article, "The Origin of the Twin City Amateur Astronomers" in the May 2007 issue of *The OBSERVER*, TCAA Historian Carl Wenning began chronicling the history of the club. He will continue this series with the 50<sup>th</sup> anniversary of the club in 2010.

### Years of Transition

1973-1978

(continued)

With Bob Finnigan's observing equipment so readily accessible to club members, a suggestion was made at the July 1976 general membership meeting to abandon the Fissel farm observatory. In August talk of abandoning the Fissel site was tabled and a consensus reached to refurbish the observatory building. Actual work was put off due to the approaching cold weather. The site was all but abandoned, however, because of events and programs being carried out elsewhere in and about the Twin Cities.

In May 1977 the decision to refurbish the Fissel farm observatory was rescinded. During the 60's and 70's the town of Normal had grown tremendously, as did the amount of light pollution. TCAA members realized this fact and knew what it meant in relation to the club observatory that was located on the moraine just to the northwest of town.

The following July the membership voted to remove the observatory because of "lack of interest and other better sites available that are far-

ther from the city and highway lights." The observatory structure was torn down on July 24, 1977, and perhaps much to the relief of Weldon Schuette. Weldon had kept up the grounds surrounding the observatory almost single handedly for many years. He did this in accord with the terms of the site agreement.

*The Observer* of the Twin City Amateur Astronomers, which reappeared in March 1975 under the editorship of Weldon Schuette, chronicled observations of Skylab, Pageos, and Apollo-Soyuz satellites – all observations that could be made without optical aid. Observing sessions were held at Oakland School and at other sites. Club meetings, held every third Thursday of the month, featured constellation and planet study, films, guest speakers, and trips to the planetarium. Club members were kept relatively busy.

With a new year, 1978, the club's direction changed substantially. Under the leadership of Gary Skinner, Mike Miller, and newly hired planetarium director Carl Wenning, the club decided to institute public awareness displays at local shopping centers. In addition, Carl and Bob shared their interest with the general public in November 1978 with five hours of radio talk show programming over WRBA radio working with Al Lundey. A month later Carl obtained six lunar samples from the National Aeronautics and Space Administration (NASA) for public display at Eastland Mall. The club had reached a turning point. Public service, awareness, and education became the by-words of the TCAA. A new era of club activity was dawning.

## SATURNALIA PARTY CANCELLED

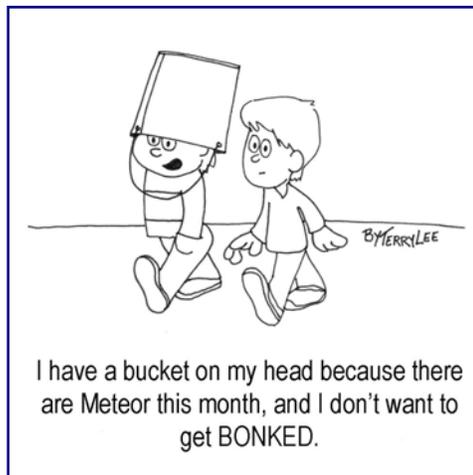
Due to an Ice Storm Warning issued by the National Weather Service on Saturday, December 8<sup>th</sup>, the 2007 Saturnalia Party at SGNC was cancelled. With poor winter weather a constant threat to this annual event at a remote rural location, it might be best next year to consider bringing the event back into town. Due to low member interest, the event was not rescheduled.

## UNCOMMON KNOWLEDGE

The TCAA's Carl Wenning was a featured guest on the New Year's Day radio broadcast of "Uncommon Knowledge." Uncommon Knowledge is a two and a half minute program that tackles odd science questions with good humor and solid information. The program is sponsored by the Challenger Learning Center and ISU Physics Department in cooperation with 89.1 WGLT-FM radio. These programs are broadcast on Sundays at 9:37 AM and on Mondays at 7:37 AM, but also can be heard any time as podcasts. Access to current and several past programs can be accessed through the following URL: <http://www.wgl.org/podcasts/>

## NIGHT SKY WATCH SLATED FOR JANUARY

Ten individuals (including our own Lee Green) have signed up for the third annual January TCAA adult education program. The event is offered this year in conjunction with Heartland Community College.



## JANUARY SKY GUIDE

04	Quadrantid meteor shower peaks	
05	The Moon passes 7° south of Venus, midnight	
	The Moon passes 0.5° south of Antares, 4 A.M.	
06	Venus passes 6° north of Antares, 8 P.M.	
10	The Moon passes 0.4° south of Neptune, 7 P.M.	
12	The Moon passes 3° north of Uranus, 7 P.M.	
19	The Moon passes 1.1° north of Mars, 6 P.M.	
21	Mercury is at greatest eastern elongation (19°), 11 P.M.	
24	The Moon passes 0.7° south of Regulus, 9 A.M.	
25	The Moon passes 3° south of Saturn, midnight	

## DECEMBER E/PO

Overcast skies for most of the month of December limited education/public outreach activities by the TCAA. One event that fortunately was not clouded out was the Mars Watch observing session held at Fairview Park in Normal on Saturday, December 29<sup>th</sup>. The overcast sky cleared late in the afternoon but just in time for this observing session. Six members were in attendance with their telescopes: Lee Green, 14-inch; Brian Barling, 12-inch; Duane Yockey and Carl Wenning, 11-inch; William Carney and new member David Hahn, 8-inch telescopes. It was estimated that between 50 and 75 members of the general public were also in attendance, including club members Sheri

Rodgers and Andrew Morrison.

Members began to arrive at 7:15 pm to set up their telescopes. The sky was not terribly dark, and the temperature dropped from 32 to 24 degrees over the course of the next three hours. Fortunately, there was little wind to add to the discomfort of viewing under cold conditions for two hours. Frost formed on SCT telescopes without dew shields; it was not a problem for those with shields. Most visitors came between 8:00 and 9:30 p.m. Skylight interfered as expected, but galaxies, open clusters, and planetary and diffuse nebulae were observed.

## CONSTELLATION OF THE MONTH: LEPUS

By Lee Green

Lepus, the Hare, is a small constellation that is located directly below Orion.

The Night Sky Observer's Guide suggests that Lepus was changed from a bird into a hare by the Wiccan goddess of spring Ostara. Once a year, at the Vernal Equinox, the hare was again allowed to lay eggs. This is thought to be the origin of the custom of Easter eggs.

The Greek said that Lepus was near to its hunter Orion and was eternally running from Orion's dogs, Canis Major and Canis Minor who chased their prey across the sky. Other stories indicate the Lepus sets in fear when Corvus the Crow and Aquila the Eagle are rising.

Astronomically, Lepus is the 51<sup>st</sup> largest constellation covering 290 square degrees and the 35<sup>th</sup> brightest constellation. Lepus reaches opposition on December 15 and is fully visible from North America in early evening during the winter months.

The named stars in Lepus include the  $\alpha$  star, called Arneb, and the  $\beta$  star, called Nihal.

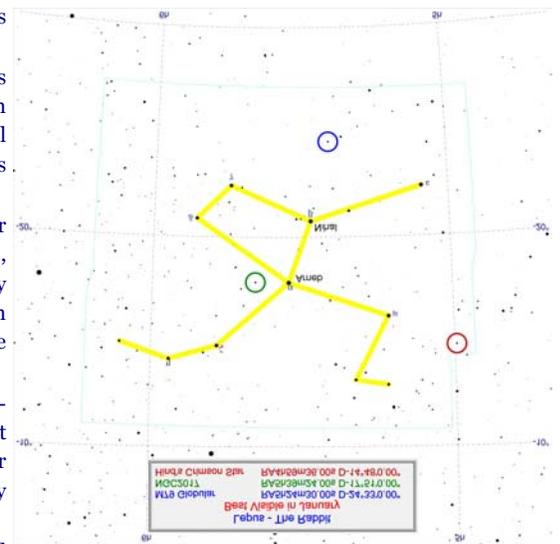
Arneb is a double star with a 2.6 magnitude pale yellow star and the 11.1 magnitude gray companion 35" away. Nihal is also a double star with magnitudes 2.8 and 7.3 separated by a mere 2.8 arcseconds.

Gamma( $\gamma$ )-Leporis is a double star with magnitudes of 3.7 and 6.3 separated by 96".

The only Messier item in Lepus is M79 which is a Class V globular cluster 8.7 arcminutes across with a 7.8 magnitude.

A prominent variable star is R Leporis which is also known as Hind's Crimson Star. This is a carbon star with spectral type C6 and was discovered by Mr. J. R. Hind in 1845 who described it "like a drop of blood on a black field."

The Open Cluster NGC2017 is a multiple star group also known as h3780. The brighter two of this cluster are themselves close stars.



## SO YOU WANT TO BUILD AN OBSERVATORY? (PART 1 OF 2)

By John Werner

This will be a two-part article, as there is plenty to share regarding what first seemed to be a straightforward project to execute on. It hasn't been. Building an observatory from scratch is a learning experience, often humbling, but ultimately very rewarding. I have a feeling that I will never be completely finished with the details.

### The Beginning

I believe most serious amateur astronomers have considered the potential advantages of a permanent structure to house their personal telescope and accessories. The advantages are obvious – permanent polar alignment, stable observing platform, a dark site, and shelter from the elements. Many never execute on the observatory option, as there is flexibility in traveling to a location of choice – different latitudes and conditions, a variety of events, and the chance to interact with fellow astronomers, not that you couldn't invite guests to your permanent location for a mini-star party!

In my case, I wanted to plan for the not-too-distant future option to house a telescope in a remote dark site with an emphasis on astrophotography, which requires the darkest sky possible, not too far from home, and a stable observing platform. Several TCAA members have lived the observatory build experience through construction of the Sugar Grove Observatory. I missed out, but I had a great mentor for my project in Dan Miller, who was instrumental in the Sugar Grove observatory construction.

The most critical need is to have a plan. A plan evolves from research. Do a lot of it!

I had a dark site – the family farm located ten miles south of Streator, Illinois and about 45 miles north of Bloomington. I had access to electricity. I had clear views in all directions, best to the East, South, and North. I had the desire. And the finances? I greatly underestimated the cost for building from scratch. Have you been out to buy a sheet of plywood lately?

### The Plan

Probably the most useful internet site to obtain ideas for observatory options are found at <http://www.cloudynights.com> discussion thread on observatories, found under Forums. In the discussions, you will find many links to a wide variety of construction plans, pier options, and vendor products. Probably one of the most complete list of observatory options is found at this link - <http://obs.nineplanets.org/obs/obslist.html>. The seed idea for my construction plan came from Bauerville Observatory, <http://my.execpc.com/~mbauer/observatory.htm>.

I found the observatory “dome” on Astromart. The design is very unique, using a four foot wide by eight foot long roll-up truck tonneau cover as the observatory “slit” and a nine foot diameter steel ring that will be mounted on eight rollers. The 10' x 10' x 6', 600 lb. structure was transported on its side on a trailer from central Wisconsin in December 2006.



Construction began in early July, 2007. The site was leveled and eight 4”x 4” posts were set to anchor the flooring and walls for an overall footprint of 10' x 18'. A 10' x 8' warm room is attached to the two-level observatory section – observing platform on top and storage underneath. The 14in., ten foot sonotube was placed four feet into the ground and filled with ready-mix concrete and will anchor the *Advanced Telescope* all-aluminum permanent telescope pier. *Advanced Telescope* was great to work with - the adapter plate was a perfect fit to my Atlas GOTO equatorial head.



The warm room height at seven feet is set to allow 360 degree rotation of the square dome.

Stay tuned to part two. December 2007 weather was a challenge and did not allow getting the “dome” in place for *Farm View Observatory*. A big thanks to Dan Miller for construction guidance and assistance. Construction has turned into a family affair involving my sons, nephew David, Dan's son Chris, and brother Phil.

# ASTRONOMY EQUIPMENT—COLOR FILTERS

By Terry Lee Wright

After we buy our new scopes, we often start to think about astronomical accessories. One such piece of equipment is the color filter. The purpose of color filters in astronomical applications is in the enhancement of visual detail and the increase in observable contrast, such as the Moon and Planets, and in this application, filter provide the difference between seeing fine detail or not seeing detail.

The filters are mounted in machined cells which will thread into the barrels of most all eyepieces with 1.25" outside barrel diameter or a 2" filter that fits 2" barrel. Also, a second thread inside the filter cell will help you stack or piggyback onto another cell to achieve selective filtration of the visual color spectrum.

There are filters for every imagined visual and astrophotographic application and in many sizes. My example list here is optimized for both visual and photographic applications.

In Part II next month I will list special filters, some are used photographically for deep space photos and special filters for light-polluted skies, and Nebula filters.

## Color Filters in Lunar and Planetary Observing

### #8 Light Yellow

Moon – feature contrast  
Mars – Maria  
Jupiter – Belts; Orange-Red Zonal  
Uranus – Dusky Detail  
Neptune – Dusky Detail

### #11 Yellow-Green

Mars – Maria  
Jupiter – Clouds; Red/Blue Contrast  
Saturn – Clouds; Cassini division; Red/Blue contrast

### #12 Yellow

Moon – Feature Contrast  
Mars – Blue/Green areas  
Jupiter – Red-orange features  
Saturn – Clouds; Red-Orange features

### #15 Dark Yellow

Moon – Feature contrast  
Mars – Clouds; Polar Caps  
Jupiter – Belts  
Saturn – Belts  
Uranus – Dusky detail  
Neptune – Dusky detail

### #21 Orange

Mars – Maria  
Jupiter – Belts; Polar regions  
Saturn – Belts; Polar regions

### #23A Light Red

Mercury – Planet/sky contrast  
Mars – Maria; Blue/Green Areas  
Jupiter – Belts; Polar regions  
Saturn – Belts; Polar regions

### #25 Red

Mercury – Features  
Venus – Planet/Sky Contrast; Terminator  
Mars – Maria; Polar Caps  
Jupiter – Belts; Galilean Moon Transits  
Saturn – Clouds

### #29 Dark Red

Mercury – Features  
Venus – Planet/Sky Contrast; Terminator  
Mars – Maria; Polar Caps  
Jupiter – Belts; Galilean Moon Transits  
Saturn – Clouds

### #38A Dark Blue

Venus – Clouds  
Mars – Dust Storms

### #47 Violet

Venus – Clouds  
Mars – Polar Caps  
Saturn – Rings

### #56 Light Green

Moon – Detail  
Mars – Dust Storms; Polar Caps  
Jupiter – Belts; Atmosphere; Red/Blue/Light Contrast

### #58 Green

Venus – Clouds  
Mars – Polar Caps  
Jupiter – Red/Blue/Light Contrast  
Saturn – Belts; Polar regions

### #80A Blue

Jupiter – Belts;  
Great Red Spot; Disc  
Moon – Feature Contrast  
Jupiter – Belts; Riles; Festoons; Great Red Spot  
Saturn – Belts; Polar Regions

### #82A Light Blue

Moon – Low-Contrast Features  
Mars – Low-Contrast Features  
Jupiter – Low-Contrast Features  
Saturn – Low-Contrast Features

### ND13 Neutral Density

13% Transmission  
Moon: Glare Reduction

# TCAA Treasurer's Report – December 2007

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OPERATING FUND BALANCE – November 30, 2007 - \$ 2,571.97 \*

Income

Allan Timke (dues renewal) - \$ 40.00

Duane Yockey (renewal) - \$ 40.00

Expenses

LYB Inc. (December Observer) - \$ 19.70

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OPERATING FUND BALANCE – December 31, 2007 - \$ 2,632.27

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OBSERVATORY FUND BALANCE – November 30, 2007 - \$ 1,171.43

Income

Donation (Toni & Dan Wudtke) - \$ 50.00

Donation (Lee Green) - \$ 250.00

Donation (Duane Yockey) - \$ 100.00

Donation (anonymous) - \$ 250.00

Expenses

None - \$ 0.00

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OBSERVATORY FUND BALANCE – December 31, 2007 - \$ 1,821.43

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TOTAL TCAA FUNDS – December 31, 2007 - \$ 4,453.70

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Respectfully submitted,  
L. Duane Yockey, Treasurer

## **Sugar Grove Observatory**

### **Listing of Official Keyholders (Paid \$10 deposit/\$5 renewal)**

Duane Yockey (renewed through 2007)

Michael Rogers (renewed through 2006)

William Carney (renewed through 2007)

Carl Wenning (renewed through 2007)

Brian Barling (renewed through 2007)

Christopher Franklin (renewed through 2007)

David Osenga (renewed through 2007)

Gerry Schroeder (renewed through 2007)

Josh Lindsey (renewed through 2007)

Andrew Morrison (February 2007)

Dan Miller (renewed through 2007)

Lee Green (April 2007, renewed through 2008)

## NEW MEMBERS

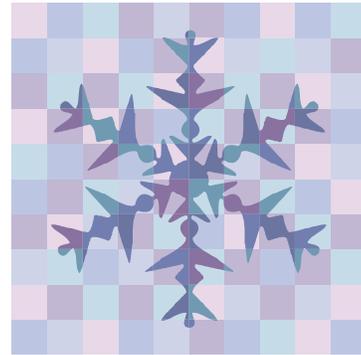
David Hahn

## ANNUAL MEETING

February 16, 2008

## UPCOMING EVENTS

January 15—Board Meeting  
January 19—Field trip to Peoria  
Planetarium



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### The OBSERVER

Newletter of the TCAA, Inc.

Erin Estabrook, Editor  
314 Covey Court  
Normal, IL 61761

Are your dues due?

### The Dues Blues?

If you see a check in the box above, it means your dues are due. To retain membership, please send your dues renewal to our esteemed Treasurer:

**Duane Yockey**  
**508 Normal Avenue**  
**Normal, IL 61761**

Visit the Twin City Amateur Astronomers  
on the web at  
[www.twincityamateurastronomers.org/](http://www.twincityamateurastronomers.org/)