

# The OBSERVER

The Newsletter of the Twin City Amateur Astronomers, Inc.

January 2005 Volume 30, Number 1



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## *January 27 Event at Bloomington Public Library*

TCAAer Michael Rogers will present *The Astronomer's Almanac -- What to Expect (and Not Expect!) in the Night Sky* in 2005 at Bloomington Public Library on Thursday, January 27th beginning at 7:00 p.m. In this 50-minute multimedia presentation, Mike will talk about what you should expect (and not expect!) to see in the night sky during 2005. Whatever the celestial event - from comets and meteor showers to planetary alignments and eclipses - if it is "on the schedule" for 2005, he will describe when the event will happen, what it will look like, and provide viewing tips. Finally, as a change of pace, he will describe several events that almost surely will \*not\* happen in 2005, and why we should be extremely grateful for their non-occurrence! This talk will be held in the community room, and is free and open to the public. Munchies will be provided.

## *TCAA MISSION JANUARY 29th AT CLC*

The Twin City Amateur Astronomers are scheduled to have a family mission at the Challenger Learning Center on Saturday, January 29th. The mission will start at 7:00 p.m. sharp, and will continue until about 9:30 p.m. The theme of the mission will be *Rendezvous with a Comet*. The CLC is located in the former terminal building of the Central Illinois Regional Airport in Bloomington.

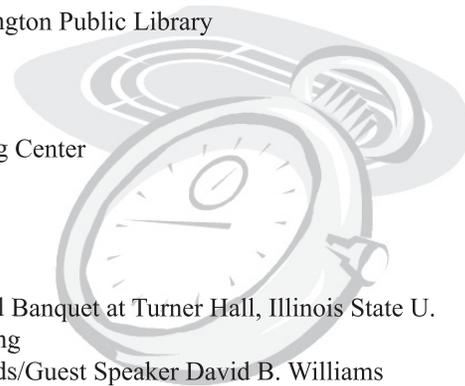
At this writing (January 23) there are 26 pre-paid TCAA registrants, with room for 6 more participants. The TCAA is seeking to maximize attendance at this mission, so members are encouraged to attend. The registration fee is \$25 per person, and participants must be 10 years of age or older. Additional pre-paid registrations will

## TCAA Calendar of Events

January 27: TCAA Presentation at Bloomington Public Library  
7:00p.m.-7:50p.m.

January 29: Mission at Challenger Learning Center  
7:00p.m.-9:30p.m.  
RESERVATION REQUIRED

February 5 OR February 12 (TBA): Annual Banquet at Turner Hall, Illinois State U.  
6:30p.m.-7:00p.m. Social Gathering  
7:00p.m.-9:30p.m. Banquet/Awards/Guest Speaker David B. Williams  
BANQUET RESERVATION REQUIRED



## **The Observer**

Newsletter of the TCAA, Inc.

*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.

### **TCAA Officers**

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Rebecca Wenning Submissions  
21 Grandview Dr. must be  
Normal, IL 61761 received by  
309-454-4164 the 10th of  
rwennin@ilstu.edu each month.

### **Membership Dues**

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

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

Duane Yockey  
508 Normal Avenue  
Normal, IL 61761

be accepted on a space-available basis.

To secure your space on this mission, immediately inform Carl Wenning at [wenning@phy.ilstu.edu](mailto:wenning@phy.ilstu.edu) or at (309) 454-4164 of your desire to participate. Then, after hearing back from Carl, send your check made payable to TCAA to Carl at 21 Grandview Drive, Normal, IL 61761-4071. Walk-ins on the date of the mission will be accepted so long as space is available and the appropriate fee is paid. The following pre-paid reservations have been received:

Memken-Rogers (4)  
Duran (2)  
Yockey (1)  
Lehmkuhl (4)  
Vercimak (1)  
Charlebois-Connor (3)  
Adams (5)  
Kumar (1)  
McRoberts (2)  
Wenning (1)

### ***PRESIDENT'S MESSAGE***

2005 begins the forty-sixth year for the Twin City Amateur Astronomy Club and I hope it will be an exciting year. 2004 saw major advances in astronomy and planetary science. We saw an extraordinarily successful NASA mission to Mars and a similarly successful joint NASA and European Space Agency mission to Saturn and its moon Titan. 2004 has also seen significant events for the TCAA. We had very successful programs on Stonehenge, the Cassini mission to Saturn, global positioning, and other public outreach programs.

In 2005, the club will continue to support public outreach through public observing sessions and other programs, but we plan a major emphasis on reaching out to the membership. We plan to emphasize the member only observing sessions in much the same way we have the public observing sessions, thus giving members better access to observing. 2005 will be the year we work to strengthen the club and expand membership. To accomplish these goals, we will need the help of the membership. Get involved in 2005.

On the science front, Titan is now center stage. With the successful landing by the European Space Agency's Huygens

probe on January 14, 2005, the world has its first look at the strange world Titan. Spectacular images captured by the DISR reveal that Titan has extraordinarily Earth-like meteorology and geology. Images have shown a complex network of narrow drainage channels running from brighter highlands to lower, flatter, dark regions. These channels merge into river systems running into lakebeds featuring offshore 'islands' and 'shoals' remarkably similar to those on Earth. I encourage you to visit the ESA's Web site at [www.esa.int](http://www.esa.int) to learn more about the mission.

In addition to the Huygens probe, the Cassini spacecraft continues to expand our understanding of Saturn and its moons. Images returned by NASA's Cassini spacecraft cameras during a New Year's Eve flyby of Saturn's moon Iapetus (eye-APP-eh-tuss) show startling surface features that are fueling heated scientific discussions about their origin.

While Saturn has the spotlight, the work of the twin Mars rovers Spirit and Opportunity continues. These amazing rovers that are still working well beyond their planned mission continue to provide information about Mars. Opportunity has found an iron meteorite, the first meteorite of any type ever identified on another planet. The pitted, basketball-size object is mostly made of iron and nickel according to readings from spectrometers on the rover. Only a small fraction of the meteorites fallen on Earth are similarly metal-rich. Others are rockier. As an example, the meteorite that blasted the famous Meteor Crater in Arizona is similar in composition.

Lyle Rich, TCAA President

### ***TCAA ANNUAL MEETING DURING FEBRUARY***

The Twin City Amateur Astronomers will soon celebrate the 45th anniversary of the February 4, 1960 founding of the club by John and Bertha Kieviet. Details of the celebratory event are still being worked out as this issue of *The Observer* goes to press. A late breaking edition of *The Observer* will be sent out as soon as details are known with certainty. The Annual Meeting and banquet will be held on either Saturday, February

5, or Saturday, February 12. Please hold these spots in your schedule if you wish to attend.

From what we know now, there will be a banquet buffet featuring chicken, beef, and vegetarian entrees. The event will take place in Turner Hall at Illinois State University, just east of the Red Bird arena. Start time for the event will be 6:30 p.m. with the banquet beginning at 7:00 p.m. (Late start due to the basket ball game next door.) Reservations will be required for the banquet portion of the Annual Meeting. There will be a charge for participating in the banquet meal.

Featured during the Annual Meeting will be short presentations by the President, Treasurer, and Historian. As part of the business meeting, a vote will be taken to amend the Bylaws of the corporation to bring it up to date with current practices. Our keynote speaker for the evening will be former TCAA member David B. Williams who will speak about eclipsing binary stars.

So, if you intend to participate in the Annual Meeting and/or banquet, please set aside both February 5 and 12 from 6:30 to 9:30 p.m. Then, watch your mailbox for the early February edition of *The Observer* for additional details.

## ***NASA SPIN OFF'S -- PART 1***

*by William Carney*

At one of the last public observing sessions a discussion about NASA and its benefits came up and some difference of opinion has prompted me to write a note on the benefits of NASA and the space program.

Unlike any other government agencies, except maybe the Department of Defense, NASA alone has given quite a few benefits to our society and even economy due to spin off companies and technologies. Since 1976 there have been over 1,300 documented NASA technologies that benefit the U.S. industry, quality of life, and created jobs. I won't get into the use of communication satellites, mapping satellites, weather satellites, space telescopes, or probes to other worlds because these all could be done without NASA or a manned space program. They all would be a lot more expensive and maybe too costly to build

and launch without research and technology developed from NASA and the manned space program, however.

Here's a short list of Apollo era Spin Off's:

**CAT Scan:** Digital signal processing techniques originally developed to enhance pictures of the Moon for the Apollo program are now an indispensable part of the Computer Aided Tomography (CAT) scan and Magnetic Resonance Imaging (MRI) technologies used today world wide.

**Commercial CAT Scanners:** Used for finding imperfections in aerospace structures such as castings, airframes, rocket nozzles and motors making rockets and aircraft safer.

**Cool Suits:** Designed to keep astronauts cool on the Moon now used in suits for fire fighters, race car drivers, nuclear reactor workers, shipyard workers and even kids with MS and other disorders where body cooling is necessary.

**Kidney Dialysis:** Machines were developed that removes wastes from used dialysis fluid through a chemical process.

**Cardiovascular Conditioner:** Led to development of improved physical therapy and athletic development machines.

**Cordless Power Tools:** While there were some cordless power tools before Apollo, they were large, expensive and not very efficient. Most of the modern very small efficient cordless power tools are developed from the technology of the tools made specially for the Apollo and other space programs. Later devices like DustBuster, cordless drills, shrub trimmers, grass shears all had their start with NASA technology.

**Athletic Shoe Molding Design:** processes for Apollo Moon shoes are used in making athletic shoes in a stress free "blow molding" process.

**Insulation Barriers:** Made of aluminum foil and propylene or mylar used in cars and trucks to dampen engine noise and heat.

**Vacuum Metallizing:** Techniques led to many commercial products including insulated wrappers, wall coverings, window shades, life rafts, candy wrappers, reflective blankets, photographic reflectors and more.

**Water Purification:** Technology used for community water systems.

**Freeze Dried Food:** Never really developed commercially till after the technology developed during the early space programs like Apollo made it possible.

**Hollow Retro-reflector:** A mirror like device that reflects light back to the source. Now used in many applications like surveying, oil fields, waste storage sites and even geological ground movement. At some sites they are used with sensors to spot gases or other hazardous leaks. Others detect movement of ground around volcanoes or Earth quake areas by reflecting laser light.

**Bonding:** A processes to bond dry lubricant to space metals led to development of surface enhancement coatings used from pizza making to laser manufacture. Some coatings protecting metals from corrosion and wear.

**LNG Systems:** Systems to handle and measure Liquefied Natural Gas in tankers.

**Lubricators:** Lubricators developed for Apollo and Shuttle led to improved cleaners and lubricators used today.

**Bed Mattress:** Materials from the space program led to "Tempur-Pedic" mattress and pillows. It also led to better foot ware using similar material.

That was just a short list and that did not even mention the software later used in mapping, geological surveys, orbital and launch calculations and even some basic astronomy software that have their start in the Apollo program. And that was only the Apollo and early programs.

## ***MINUTES OF THE JANUARY 12, 2005 BOARD OF DIRECTORS MEETING***

The meeting was called to order at 6:05 p.m. by President Lyle Rich in the offices of Lewis, Yockey & Brown. Also in attendance were William Carney, Michael Rogers, Duane Yockey, and Carl Wenning. Kal Kumar was unable to attend the meeting. The following items were addressed in due course:

- There will be a public presentation by the TCAA at Bloomington Public Library on Thursday, January 27, from 7 – 8 p.m. TCAAers are encouraged to attend. The talk that evening, coordinated by Mike Rogers, will deal with celestial events for

2005.

- Duane noted that the Astronomical League leadership has recently agreed to changes in their Bylaws. The proposed changes may be view online at the AL web site. The changes are effective only if passed by a vote of the AICors in the affirmative.

- Duane noted that we are still faced with an insurance premium increase going from \$150 to \$250 per year. He has been trying to get Van Gundy Insurance to return his call for a quote from a different insurer, but he has not been successful. The AL provides a policy for \$350 per year, but this is considered cost prohibitive. Duane will contact Eric Funk to see if he can provide a quote from an independent insurer.

- Duane noted that \$125 has been received in donations in recognition of the recent passing of club member Donna Miller. It was agreed that a "Eugene and Donna Miller Award" be established in their memory and to recognize parents/guardians who immerse their families in TCAA activities. There will be a one-time permanent plaque with nameplates that will serve as the mechanism of recognition. Carl will propose guidelines for the award; the award will be formally announced at the Annual Meeting in February.

- Carl noted that there will be a special mission at the Challenger Learning Center for TCAA members on Saturday, January 29th, from 7:00 to about 9:30 p.m. Mike will send out a call to other area astronomy club members to join us. Carl will send Mike an announcement that he

can modify as necessary. (Members of the general public at the January 27th BPL event might also be asked to join the mission at \$25 per person to fill up the mission and encourage club membership.)

- The Annual Meeting will be slated for either Saturday, February 5 or 12, beginning at 6:30 p.m. (to avoid the basketball traffic). The event will be held in Turner Hall on the ISU campus. Mike will coordinate with Jean Memken to set and announce the date. (The agenda, logistics, and menu still need to be set.) Carl reported that former TCAA member David B. Williams will honor us with a talk dealing with binary stars.

- William reported that he and Carl moved the Meade 12-inch telescope to his home, and that he (William) will be returning it to Meade for repair before the end of the month. (William later reported that the telescope was shipped during the third week of January.)

- Lyle will get the observatory door re-keyed at the most reasonable price. He will oversee the re-keying in early February if possible.

- After considerable discussion, it was decided to separate long talks from the public observing sessions at SGNC. Public observing sessions will consist solely of a short 15-20 minute talk, pointing out constellations and planets with a laser pointer, and movement to the telescopes for viewing. Carl proposed a 2005 POS schedule, and will update the POS 2004 brochure that Sandy McNamara created earlier. POS events will take place from April through October in 2005. Carl was asked by the Board to assemble some pointers for holding these sessions, including such things as general procedures, cancellation of events, phone numbers for addition information, etc.

- It was noted that two coordinators are needed for POS events; it was also noted that MOOS events should also have one or two coordinators so that non-key-holders don't show up at SGO only to find a locked door. A sign-up sheet will be passed around among the regular key holders at the Annual Meeting to get them to coordinate these events.

- It was decided that the club needs events that the membership can call their own, and that will allow for more socializing that has been recently possible.

Such events will be held approximately quarterly: February, Annual Meeting; June, picnic; August, picnic; and November, pizza party.

- There will be four educational events in town as well, held at Bloomington Public Library if possible. The following topics were suggested: January, "What's up doc? – Sky Events for the Year"; March, "Telescopes for Dummies"; May, "What's NASA done for us lately?"; October, "How to Buy a Telescope". Mike will check with Karen Moen to see if we can arrange these events at BPL; Carl will do a follow-up to present one or more of these programs at the Challenger Learning Center if necessary. Carl will talk with Marc Cabaj to see if his Bloomington High School astronomy club would be interested in getting involved.

- Lyle asked about the astronomy column in the SGNC newsletter. Carl noted that things were progressing well, and that the next articles would deal with the POS schedule at SGNC and the planets for March-April. Again, volunteer column writers are encouraged to contact Carl.

- It was noted that a nomination process needs to be worked out for Board of Directors openings. Most board members are willing to run for another term with the exception of Secretary Carl Wenning who will be stepping down. Property Manger William Carney indicated a willingness to run for a Board position. Carl noted that "friends of the Board" might also be identified among the more active members to sit in on regular Board meetings to contribute their thoughts. The idea was well received. No formal actions were taken.

- William noted that he will be scheduling key holder training in March, just after the Meade 12-inch is returned. He will update a checklist for training provided by Sandy McNamara to take into account recent changes.

- It was noted that *The Observer* newsletter needs to be sent out earlier in order to promote the members-only observing sessions in addition to the public observing sessions. Rebecca Wenning needs to send PDF versions of the newsletter to Mike for posting on the TCAA website.

- Mike reported that the price of an auto-dialer is cost-prohibitive at this time, and that no system exists that is free of hardware. It was agreed that an e-mail list separate from the TCAA listserv needs to

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be established.

- Carl reported on the results of communications with SGNC naturalist Angela Smith. (1) The SGNC is in the process of being re-keyed. Because TCAA doesn't have a need to be in the nature center itself (our assessment), that we'll not worry about getting a key for the TCAA at this time. It was agreed by the Board that the TCAA should provide a new SGO key to Angela as is currently the case. (2) There is no money in the SGNC budget to purchase a laptop computer with video projector. (Thus, the TCAA will have to make due for now using personal equipment and the slide set and projector currently available in the SGO.) (3) At this time the SGNC has a place for TCAA brochures, and Carl will see to this. It was further noted by Board members that two things should be brought to SGNC's attention: (a) the need for a switch on the night light over the SGNC main door, and (b) the danger of using the two pit toilets at night which could be greatly mitigated with some sort of internal lighting. Without better lighting for the pit toilets, use of SGNC facilities might be called for.

- William noted that the 16-inch mirror is in dire need of recoating. Carl strongly suggested avoiding a Beral coating, and that the mirror be shipped to California for aluminizing and over-coating with quartz. William will check into coating and shipping costs.

- Duane provided the Treasurer's Report for December; it will appear in the next issue of *The Observer*.

The meeting was adjourned at 7:50 p.m.

### **TCAA LISTSERV**

To keep up to date on TCAA news, activities, events, announcements and reminders, join the club's listserv. To join our e-mail list, send a blank e-mail message to [TCAA-subscribe@yahoo.com](mailto:TCAA-subscribe@yahoo.com).

Our listserv moderator, Alan Timke, will be make certain that you are added to our listing. Don't worry, your mailbox won't be filled to overflowing with junk mail. There is typically only about one e-mail message per day - just enough to keep you up to date. Don't get left out of the loop! Subscribe today.

### **TCAA HISTORICAL MATERIALS STILL MISSING**

TCAAer Carl Wenning was appointed Historian this past year. Since that time Carl has been unable to locate the club's historical picture volumes even after a number of phone calls and personal requests to past historians. He has searched for these materials for over six months with no results. Missing are the club's two scrap books containing pictures and printed memorabilia. Carl had originally hoped to create a pictorial version of the 45th anniversary edition of the club history (updating the text-only 35th anniversary edition that is available on the TCAA website [twincityamateurastronomers.org/](http://twincityamateurastronomers.org/)). That effort has now been put on hold due to lack of access to pertinent materials.

If there is any chance that YOU might have the club's historical volumes, please look around and let Carl know if you find anything. Carl plans create a comprehensive 50th anniversary history in time for a 2010 celebration if the missing materials can be found.

### **ISU PLANETARIUM**

*Daughter of the Stars*, a special encore presentation at the ISU Planetarium, will be presented at 2 PM on Saturdays only, beginning January 22 and running through February 19.

The earliest inhabitants of North America told tales about the night sky that were radically different from those of their European counterparts. *Daughter of the Stars* showcases a variety of these Native American tales from many cultures.

Admission to this public program is \$3 for adults, \$2 for children ages 5-12 and seniors, and \$1.50 for children ages 3-4. Planetarium members are admitted free of charge. Tickets may be purchased in the Planetarium Gift Shop, next to the Planetarium, beginning 20 minutes before each show.

According to former planetarium director and TCCA member Carl Wenning, *Daughter of the Stars* is among the very best programs the ISU has ever shown.

For more information about this and other happenings at the ISU Planetarium, you may call the Planetarium's Skyline at (309) 438-5007.

### **SGNC NEWLETTER**

Are you subscribed to the Sugar Grove Nature Center newsletter *The Nature of the Grove*? If not, you might want to be. *The Nature of the Grove* contains seasonal updates, general information about a host of educational offerings, brief sections dealing with bird watching and astronomy (written by TCAAers!), and much more.

To subscribe to this wonderful little newsletter (and be impressed by the wide variety of events taking place at SGNC now that there are two full-time staff interpreters - Angela Smith, Director, and Jill Wallace, Education Specialist) - drop an e-mail to [sugargrovec@earthlink.net](mailto:sugargrovec@earthlink.net) and make your request. If you would like to be added to the e-mail reminder system, also ask to be included in the "nature alerts" listing. Your e-mail address will not be shared.



# **TCAA**

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## TCAA Treasurer's Report – December 2004

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**OPERATING FUND BALANCE – November 30, 2004 - \$ 1,451.07**

**Income**

Allan Timke (dues renewal) -	\$ 40.00
Aaron Vercimak (dues renewal) -	\$ 40.00
Lenore Trainor (dues renewal) -	\$ 40.00
Kal Kumar (dues renewal) -	\$ 40.00
Duane Yockey (dues renewal) -	\$ 40.00

**Expenses**

Meade Telescope Extended Warranty -	\$ 300.00
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**OPERATING FUND BALANCE – December 31, 2004 - \$ 1,351.07**

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**OBSERVATORY FUND BALANCE – November 30, 2004 - \$ 866.19**

**Income**

Donation (Miller Memorial) -	\$ 25.00
Keyholder Fee & Renewal (Lenore Trainor)-	\$ 15.00
Keyholder Renewal (Duane Yockey) -	\$ 5.00
Interest Income -	\$ 0.68

**Expenses**

None -	\$ 0.00
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**OBSERVATORY FUND BALANCE – December 31, 2004 - \$ 911.87**

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**TOTAL TCAA FUNDS – December 31, 2004 - \$ 2,262.94**

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Respectfully submitted,  
L. Duane Yockey, Treasurer

Sugar Grove Observatory

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

Jim Swindler (April 2001, renewed through 2004)  
Duane Yockey (April 2001, renewed through 2005)  
Sandy McNamara (June 2001, renewed through 2004)  
Dan Miller (August 2001), renewed through 2004  
Michael Rogers (August 2001), renewed through 2004  
William Carney (March 2002, renewed through 2004)  
Vic Connor (August 2002, renewed through 2004)

Neale Lehmkuhl (May 2003, renewed through 2004)  
Carl Wenning (January 2004)  
Brian Barling (February 2004)  
Lenore Trainor (December 2004, renewed through 2005)  
Jim Baker

## ***PUBLIC TELESCOPE OBSERVING SESSIONS AT SUGAR GROVE NATURE CENTER***

The Twin City Amateur Astronomers will host public observing sessions with the 12-inch telescope of the Sugar Grove Observatory during warmer months of 2005. A typical observing session will consist of the following: 1) *A lecture about a featured sky object.* This 15-20 minute presentation, held in the SGNC picnic shelter, includes pictures of and details about the featured sky object as well as information on other interesting celestial objects that might be observed that evening. 2) *Sky tour using a laser pointer.* We will step out under the stars to point out the major constellations and planets, and to designate the location of the featured object for that evening. 3) *Telescope observing session.* We use the Sugar Grove Observatory and other telescopes at ground level to observe the wonders of the heavens.

Telescope observing sessions will take place only if the sky is reasonably clear. In the event of an entirely overcast sky, the observing session and associate presentations will be cancelled. If you are uncertain about whether or not an observing session will be held, call any of the following 309 area code telephone numbers: 454-4164 (Carl); 829-7748 (William); 828-8655 (Duane); or 661-3542 (Kal). Please dress very warmly during cooler months. These are outdoor activities, and none of the buildings we will be using are heated. SGNC is a dark sky site so there are few outdoor lights. Please be very careful driving into and out of the parking lot. Many times there are people, including children, walking from place to place in the dark. When near the observing area, please use parking lights only. You may bring along a flashlight if you wish, but be certain to cover the lens with a red filter so that observers' dark adaptation isn't adversely affected. The following Saturday evening schedule is for 2005:

Date	Time	Sunset	Topic
• April 16	8:00 PM ~ 10:00 PM	7:40 PM	Moon & Ring World Saturn
• May 14	8:30 PM ~ 10:30 PM	8:05 PM	Jupiter and the Galilean Moons
• June 11	9:00 PM ~ 11:00 PM	8:27 PM	Globular Cluster in Bootes M3
• July 9	9:00 PM ~ 11:00 PM	8:28 PM	Emission Nebula in Sagittarius M8
• August 13	8:30 PM ~ 10:30 PM	8:01 PM	Planetary Nebula in Lyra M57
• September 10	8:00 PM ~ 10:00 PM	7:13 PM	Open Cluster in Aquila M11
• October 8	7:00 PM ~ 9:00 PM	6:26 PM	Venus and Galaxy in Andromeda M31

For more information about the Twin City Amateur Astronomers and their educational offerings, visit their website at the following URL: <http://twincityamateurastronomers.org/>.

## ***MEMBERS ONLY OBSERVING SESSIONS FOR 2005***

One week prior to Public Observing Sessions, the TCAA will host members-only observing sessions, clear sky prevailing. What is different about the events this year is that each session will have assigned to it two key holders who will be responsible for hosting the session. During the past several non-keyholders might have shown up at MOOS only to be met with a locked observatory door. The MOOS schedule is set on the Saturday evening nearest the new moon. The particulars for 2005 are given in the table below. Age refers to the moon's age (0 days being new moon, 3 day implying a thin waxing crescent, 28 days implying a thin waning crescent, etc.), the time of sunset, and time that the MOOS will begin.

Date	Age	Sunset	Session
April 9	3	7:29 p	8:30 p
May 7	29	7:58 p	9:00 p
June 4	28	8:23 p	9:30 p
July 2	26	8:30 p	9:30 p
Aug 6	2	8:05 p	9:00 p
Sept 3	0	7:24 p	8:30 p
Oct 1	28	6:38 p	7:30 p
Nov 5	4	4:48 p	7:00 p
Dec 3	2	4:29 p	7:00 p

Members only observing sessions are intended for both members and their guests. A sign-up sheet will be available at the Annual Meeting to identify two volunteer key holders who agree to host each of these sessions, clear sky prevailing.



# TCAA

45th Anniversary  
Founded **February 4, 1960**  
by John and Bertha Kieviet

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## The OBSERVER

Newsletter of the TCAA, Inc.

Rebecca Wenning, Editor  
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Normal, IL 61761-4071

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