

IN THIS ISSUE:

A NOTE FROM PRESIDENT TOM WEILAND	1
UPCOMING EVENTS	1
SPECIAL MEETING OF THE BOARD	2
NEXT POS SEPTEMBER 15 <sup>TH</sup>	2
RBSB LAUNCH	3
SUMMER PICNIC MOST MEMORABLE	3
AUGUST 18 <sup>TH</sup> PUBLIC OBSERVING SESSION	4
MONTHLY REFLECTIONS	5
PSO AND MEO UPDATES	5
CONSTELLATION OF THE MONTH: CAPRICORNUS—THE SEA GOAT	6
ASTROBITS	6
TREASURER'S REPORT	7
HOW TIME FLIES	7

## A NOTE FROM PRESIDENT TOM WEILAND

We had a great TCAA Summer Picnic at our home a few weeks ago. The weather was tolerable and the food was excellent. One thing I noticed about the evening was that those who were there were the members who are always present at such activities. A concerted effort was made to include spouses (and several were present), so we could get to know each other on a different level, but we still had what might be termed as the “core group” at the gathering. I know this is the case in many organizations, but it still begs the question, “Are we missing something?”

We have slightly over 40 members, but seldom see more than 10 or 15 members at most of our events. The “core” seems to be a rather homogenous group....nothing inherently wrong with that....but we would like to encourage broader participation. These numbers show us that the larger percentage of our membership does not participate actively in TCAA. Is there something we can provide to you as members to meet your needs that we are missing? What can we do to encourage greater regular participation in club activities, both social and outreach?

There are two active young girls who attend regularly with their grandfather, one of whom will be making the POS presentation this month! We regularly provide our services to scout groups, science classes and other organizations. We often have a wide range of age groups at our monthly Public Observation Sessions (POS) as well as the planned activities we participate in at Sugar Grove nature Center (SGNC), but this doesn't seem to carry over to active interest in club membership and participation of younger amateur astronomers. What can we do to encourage greater interest in youth membership (those who don't depend on their parents for transportation) and participation in club activities?

Viewing at our POS may meet many people's needs, but some of our social activities also provide opportunities for members to learn more ways to explore their interests in astronomy. We have an active group of astrophotographers who are willing and eager to share their skills. We have club equipment that can be utilized by members after some training in its use. The club is moving forward with plans for the construction of a Roll Off Roof Observatory (RORO) adjacent to the current observatory at SGNC which will provide additional observing opportunities. There is much going on in TCAA and we want to share it, so let us know what we can do to help you pursue your astronomy goals and help us spread the word about club participation and the benefits of membership.

If you have any suggestions, comments, or questions, please contact me at [tomcea52@yahoo.com](mailto:tomcea52@yahoo.com). I would appreciate your input.

## UPCOMING EVENTS

**Tuesday, September 4<sup>th</sup>** – Board of Directors meeting at the offices of Lewis, Yockey, and Brown in downtown Bloomington, 6:30 p.m.

**Friday, September 14<sup>th</sup>** – Carl W. will host an observing session for students enrolled in the astronomy course of Mr. Jerod Gross at Roanoke-Benson High School. Observing starts at 8:00 p.m. and TCAAers are invited to assist if interested. The viewing will take place west of Roanoke.

**Saturday, September 15<sup>th</sup>** – The sixth public observing session of 2012 will take place on September 15<sup>th</sup> at Sugar Grove Nature Center. The program is scheduled to start at 7:30 p.m. with Eve Pouliot giving a talk titled, “Stories of the Constellations.” Eve is the club's youngest POS presenter ever at 13 years of age. Let's all show up and give Eve our support as she does the club proud! ☺

**Saturday, September 22<sup>nd</sup>** – There is a scheduled Boy Scout observing session at SGNC on this date, and a second BSA observing session has been requested for Moraine View State Park. Following the Board meeting on September 4<sup>th</sup>, we should have a better idea of who will be presenting where. Contact a Board member or club officer if you would like to assist at either.

**Looking ahead to October** – According to Lee G., “Our third annual event with Penny will be at the SGNC on October 12<sup>th</sup>. This has traditionally been an observing-only event.” This is a ladies' church group. Details to follow.

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

President	Tom Weiland 309-830-0167 tomcea52@yahoo.com
Vice-President	Dave Osenga 309-287-0789 DaveOsenga@msn.com
Secretary	Lee Green 309-454-7349 lee@starlightsoftware.com
Treasurer/ ALCor/RA	Duane Yockey 309-452-3936 duane@lybinc.com
3rd Director	Paul Pouliot 815-844-7065 ppouliot2@mchsi.com
4th Director	Tony Cellini 309-829-9269 drksky1056@comcast.net
5th Director	Dan Miller 309-473-3465 damiller@mail.millikin.edu
Historian	Carl Wenning 309-830-4085 carlwenning@gmail.com
Webmaster	Lee Green 309-454-7349 lee@starlightsoftware.com
Property Manager	Lee Green 309-454-7349 lee@starlightsoftware.com

#### The Observer Editor

Erin Estabrook  
314 Covey Court  
Normal, IL 61761  
309-454-6894  
erin@lybinc.com

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  
Normal, IL 61761

## SPECIAL MEETING OF THE BOARD

By Lee Green, Secretary

Several club members met with Angela Funk at the Sugar Grove Nature Center on August 1 at 6:00pm. In attendance were Eric Funk, Tom Weiland, Paul Pouliot, Tony Cellini, Carl Wenning, Bob Finnigan and Lee Green. Angela started by thanking the club for our activities at the Nature Center. She reviewed the steps she has been taking to gain approval for the construction of several facilities at the Nature Center including our roll-off-roof observatory (RORO) and a new Sap House for use during their Maple Sirup events and for additional classroom space. She recounted some of the steps they have been undertaking, including identification of the location of utilities and listed the upcoming items and the timeframes for moving forward. She reported that approval of a special permit from the McLean County Board was obtained on July 17. To obtain approval from the Illinois Nature Preserve Commission, Angela has prepared an application that is to be submitted by August 7 for consideration on September 11, and she indicated that there was nothing need from the TCAA prior to that submission. In addition, an Ecological Assessment would be required to be performed before notifying the McLean County Zoning Board and the Funk Grove Cemetery Association of the final plans. At that time, a building permit would be issued for construction of the facilities.

Tom expressed the club's gratitude to the Nature Center for all their support. He indicated that the club supported the efforts of building a new facility and that funding and equipment was already in place. Carl noted that the size of the facility plans had been changed from their original 36-foot length to 24-feet and outlined the planned configuration. As we reviewed the permitting approval, it became evident that construction could not start until the 4<sup>th</sup> quarter of the year and it was realized that the start of the project would most likely be delayed until the spring of 2013. Bob inquired about the possibility of installing concrete pads for setting up telescopes, or possibly building a temporary structure. Angela indicated that while they were open to additional facilities, the TCAA would need to notify the Nature Center before these could be considered. She reiterated that the Sap House could be made available for TCAA events as well.

Discussion turned to the siting of the proposed observatory. The group moved outside to view the location between the SGO, the machine shed, the Nature Center and the barn. This location has an existing concrete pad adorned with tapping stumps. It was determined that by moving the observatory towards the north end of this area, the building would minimally impact the eastward view from the grounds. Eric inquired about moving the facility westward, closer to the shed, in order to comply with setback requirements. Carl agreed to calculate how close to the shed the RORO could be moved before the shed would become the limiting factor, considering the height of the RORO wall, in viewing altitude. Other issues discussed included drainage concerns and the location of pavement on the north end of the facility.

TCAA members then spent some time further discussing the observatory. Tom noted that having both photographic and visual capabilities were important to the members. Lee noted that the Paramount was not a preferred instrument for visual observing since moving between targets required the user to use the computer, thus negating dark adaption. It was suggested that a CGE-Pro or equivalent be purchased as a more appropriate observing instrument. It was noted that IWU had still failed to complete the pending purchase of our existing equipment, and that a replacement mount would cost more than the amount we would receive for our existing CGE-Pro.

The meeting adjourned at 8:12pm.

## NEXT POS SEPTEMBER 15<sup>th</sup>

The sixth public observing session of 2012 will take place on September 15<sup>th</sup> at Sugar Grove Nature Center. The program will start at 7:30 p.m. with Eve Pouliot giving a talk titled, "Stories of the Constellations." This will be Eve's first public talk on behalf of the TCAA, so let's all show up and give her our support. Eve's talk will be followed by a brief laser-mediated constellation tour. Subsequent to the sky lecture, members of the general public will be invited to view through a variety of telescopes set up for their viewing pleasure.

Recall that all POSs are on Saturday evenings, and this year feature a nearly moonless sky most evenings. Additional prominent sky objects such as planets, nebulae, star clusters, and galaxies will be viewed when visible. The schedule for the rest of the year can be found below. A 2012 POS program brochure is available on the TCAA website at <http://www.tcaa.us/>.

Date (Sat.)	Time	Topic	Coordinator
Oct 13	7:00 PM ~ 9:00 PM	Uranus and Neptune	Lee Green

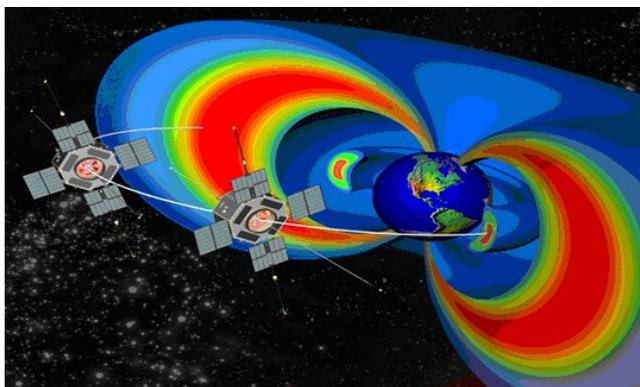
## **RBSP LAUNCH**

**By Lee Green**

The Radiation Belt Storm Probe is a pair of satellites that was launched into a near-Earth orbit to study the radiation belts that surrounds the Earth. Launch occurred on August 30 at 4:05 am Eastern time from the Kennedy Space Center at Cape Canaveral using an Atlas 5 rocket.

The radiation belts are two donut-shaped regions of high-energy electrons and ions trapped by the Earth's magnetic field that was first discovered in 1958 by Dr. James Van Allen and his team on the Explorer 1 and Explorer 3 missions. The inner belt is stable, and consists mostly of protons, with energy ranging from 10 – 100 MeV. The outer belt is a variable mixture of electrons and ions, with energy ranging from 10 keV to 10 MeV. The particle energies and intensities in these belts vary with magnetic disturbances, i.e. magnetic storms generated by solar activity. The primary science objective of the RBSP mission is to provide understanding, ideally to the point of predictability, of how populations of relativistic electrons and penetrating ions in space form or change in response to variable inputs of energy from the sun.

These twin probes will fly in an elliptical orbit with their perigee through the inner belt and their apogee through the outer belt. By flying in tandem, they will be able to characterize the dynamic electric and magnetic fields and distinguish between spatial and temporal variations. RBSP enables the prediction of extreme & dynamic space conditions. Changes in the Sun's energy flow induce changes in the Earth's magnetosphere, referred to as space weather, and have broad impacts on Earth's systems and inhabitants. RBSP advances our understanding of the dramatic and puzzling aspects of Earth's radiation belts' reaction to space weather. While the belts are often excited by solar activity, there are many times when the same fields are calmed by similar events, and occasionally there is little reaction to the events. RBSP provides understanding needed to design satellites to survive in space. RBSP will explore space weather especially its extreme conditions, which can disable satellites, cause power grid failures, and disrupt GPS services.



## **SUMMER PICNIC MOST MEMORABLE**

On Saturday, August 24<sup>th</sup>, 19 club members and guest showed up at the rural Heyworth home of Tom and Carolyn Weiland for the traditional summer picnic. We found ourselves in an idyllic setting. The Weiland's backyard was immaculate with well-trimmed grass and beautiful trees. Upon arrival we were met with warm words of welcome and tables full of food, wine, condiments, and table settings. A large gas grill was blazing next to the house's back door.

The evening started at 6:30 p.m. and was filled with much conversation and camaraderie. Lively banter took place over the evening meal and continued almost until dark. It was the common opinion among those who were unofficially polled that this was the best club picnic in the memory of any living TCAAer! Congratulations and thanks to Tom and Carolyn for a job extremely well done!

## AUGUST 18<sup>TH</sup> PUBLIC OBSERVING SESSION

By Tom Weiland

Despite the cloudy conditions, we had over 40 guests in attendance for our August public observation session. In addition, members Paul (with Eve and Amber), William, Duane (and family), Bob, Tony, Lee, Carl, John, Larry, and Tom were also present. Tom and Lee set up scopes for demonstration purposes, but no other scopes were set up for viewing as conditions remained cloudy for the remainder of the evening.



John Werner gave a well-received and detailed presentation about the Milky Way, including nebula and clusters that included many of his own photographs.

Although we always have first time visitors, it is readily apparent that we have many guests who have chosen to return time and time again.... There are always familiar faces. Prior to the beginning of John's presentation, we took the opportunity to have some audience interaction asking what brought people to our events. Answers were varied, but included providing opportunities for children to learn more about science, interest sparked by looking at the sky and wondering more about what they were seeing, and wanting to learn more based on conversations with our own members who have shared their interest and experiences. One couple has been attending for several years, indicating that they always left with new knowledge about our topic of the evening and expressing appreciation that we provided our presentations free to the public. It says something about what we are doing that we continue to have large turnouts despite uncooperative viewing conditions.

Tours of the observatory were conducted because viewing was not possible. Bob provided commentary for a computer slide show displaying a variety of photos taken by club members using several different scope/camera configurations. Carl, Tony, and Larry provided information, and answered questions, about the 17-inch PlaneWave telescope that is now mounted in the observatory. Our guests were impressed with the new telescope and mount.

Tom and Lee gave demonstrations and answered questions on the use of GOTO scopes. Many people have had the opportunity to view through our scopes, but may not have an understanding of the process of alignment or the capabilities of the scopes.

In an ongoing attempt to provide another avenue of communication regarding our events, guests were asked to provide names and email addresses on slips of paper that were then used for a drawing. Door prizes were awarded to three of our lucky guests. A humorous incident occurred while conducting the drawing; a young guest named Bryce (who is a regular with his father) was chosen to draw the first name. As he came up to do so he said, "I hope it's mine" and it was!! He was quite excited.

As always thanks to all who made the evening a success.



## MONTHLY REFLECTIONS

By Carl J. Wenning

On Saturday, August 5<sup>th</sup>, my family and I had the delightful opportunity of visiting the Milwaukee home of Mike Bakich, senior editor at *Astronomy* magazine. As you probably all know, Mike was a classmate of mine in astronomy at Ohio State and in planetarium education at Michigan State. It was a pleasure to while away some time talking about the good old days. One of the things he noted he wanted me to pass on to the membership is that as photo editor for the magazine, he's always on the lookout for examples of excellent astrophotography. Given what I have told him, he strongly encouraged the TCAA membership to send him images for possible inclusion in future issues of the magazine.

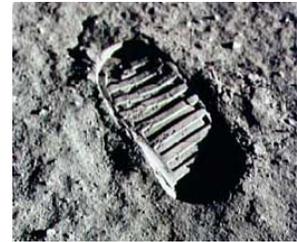
Being that I was traveling for much of the first half of the month and that the moon was in the way of visual observing, I didn't get my first views of the sky until late August. On the 11<sup>th</sup> I had hoped to set up my telescope for Perseid Meteor Shower observers at Weldon Springs State Park south of Clinton as has been my habit for several years now, but was prevented from doing so by the clouds. The naturalist there, my dear friend Carol Thompson, had wanted me to provide attendees with a show of celestial objects in addition to meteorological objects and that is just what I did.

On the evening of August 20<sup>th</sup> I had the pleasure of speaking with the Lincoln Earth Orbit Society of Springfield at the Illinois State Museum. A crowd of about 60 was present for the 75-minute talk. I had been invited to speak about the subject of Galileo and the Church. I spent a considerable amount of time talking about Galileo's telescopic observations. While this was not a TCAA-related function, I took a bit of time to promote the TCAA.

I finally got some observing in on the evening of August 21<sup>st</sup>. One of my introductory physics students, Christian Heeren, emailed me earlier in the day and asked if he might join me for some observing some time. It was a fortuitous contact, as those were my plans for that evening. We observed about 30 classical late-summer objects, and I got in one more AL Planetary Nebula Club observation bringing my total to 104 – with six really difficult objects remaining.

American hero and astronaut Neil Armstrong – *the first human to leave a footprint on the moon* – passed away on August 25<sup>th</sup>. He was laid to rest on August 31<sup>st</sup> that was somehow very appropriate for on this date we had the second full moon of the month – truly a blue moon. His family (who comes from Wapakoneta, Ohio, only 20 miles from where I grew up – has asked us to think of Neil the next time we look up to see the moon – and so we shall.

CORRECTION: In my August reflection I inadvertently wrote that “Dan and Joyce Werner” had attended ALCon 2012 and that “Dan” had written daily updates. I don't know how this error occurred for I clearly know the difference between John Werner and Dan Miller. I read and re-read the article several times before submitting it for publication; I guess I sometimes see what I intend rather than what I actually write. My apologies to both for this seemingly unexplainable faux pas.



## PSO AND MEO UPDATES

Despite obtaining a special use permit for building the new RORO from the McLean County Board and its Zoning Commission during July, the TCAA continues to await final approval for construction from the Nature Preserve Commission of the Illinois Department of Natural Resources (IDNR), the SGNC Board, and the Funk's Grove Cemetery Association Board. If the Nature Preserve Commission gives initial approval at its meeting on September 11<sup>th</sup>, an environmental impact study will then take place. If the RORO meets IDNR requirements, approval will be given by IDNR and then the other two entities must give final approval for the placement of the observatory. The proposed location for construction is an existing concrete pad to the southeast of Sugar Grove Observatory. As a result of these pending actions, it is unclear whether or not ground breaking for the proposed Prairie Sky Observatory will take place yet this year. Concrete workers from Illinois and the construction crew from Ohio have been kept up to date regarding unanticipated delays.

In late August, the TCAA received a \$9,600 check from Illinois Wesleyan University in payment for four items to be used to update Mark Evans Observatory: an 11" Celestron SCT, a QSI color camera, a guider camera, and a CGE Pro mount. Dr. Linda French, recently named to position of chairperson of the IWU Physics Department, is now in the process of acquiring a ~38" pier extension, computers, software, etc., and arranging with the ISU Physics Department to get machinist Jim Dunham to complete the necessary work of mating the pier extension to the existing pier.

## CONSTELLATION OF THE MONTH: CAPRICORNUS—THE SEA GOAT

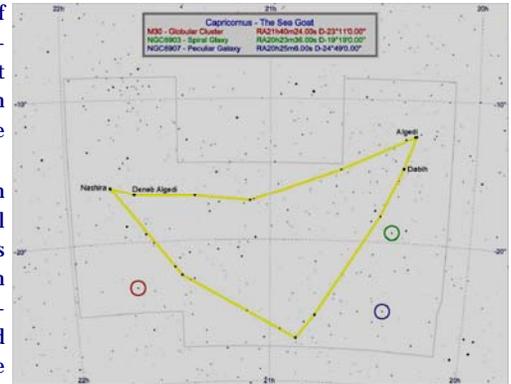
Capricornus is a zodiac constellation that lies to the west of Sagittarius and south of Aquila and Aquarius. It is seen as a composite creature that has the head and front legs of a horned goat and the tail of a fish. Capricornus is a relatively dim constellation with its brightest star being 3<sup>rd</sup> magnitude. After Cancer, it is the dimmest zodiac constellation.

In mythology, Capricornus is often associated with the god Pan who is often pictured as a Satyr, with the body of a human, small horns and pointed ears on the head and the legs of a goat. Pan was playing his pipes when the monster Typhon attacked the gods. In his surprise and fear, Pan's reaction, which has since been associated with him, was to panic. Pan tried to change into a fish and jump into a river to escape Typhon but only his back legs were changed. This story is memorialized in the shape we see today in Capricornus with the front of a goat and the tail of a fish.

Capricornus is the 40<sup>th</sup> largest constellation covering 414 square degrees and is the 43<sup>rd</sup> brightest constellation. Capricornus reaches opposition on August 6. The Sun passes through Capricornus between January 19 and February 16. 2000 years ago, Capricornus was the constellation where the Sun was located at the Winter Solstice. The latitude of the Sun on that date is still called the Tropic of Capricorn.

There are several named stars in Capricornus. The alpha star, Algedi, is actually a visual double star often referred to as Prima Geidi and Secunda Geidi. Readers of Frank Herbert's Dune books will recognize the world of Geidi Prime. The beta star Dabih is also a double star, each of which are themselves double. The alpha- and beta-stars are seen as the head of the goat. The gamma-star, Nashira and the delta-star, Denen Algedi are seen as the tail of the fish.

Among the deep space objects found in Capricornus are several galaxies including the peculiar galaxy NGC6907 and spiral galaxy NGC6903 which lies behind a 10<sup>th</sup> magnitude star. Capricornus contains a since Messier object, M30, which is a bright globular cluster.



## ASTROBITS



★ Bob Finnigan recently completed 5.2 hours of integration time (photographic work) on NGC7380, the Wizard Nebula, on the Cepheus/Cassiopeia border. All images were taken with the TCAA's PlaneWave CDK17 using hydrogen-alpha, oxygen III and sulphur II narrowband filters. Tony Cellini did the post processing. The processed image shown here is presented using the Hubble color palette. *Astronomy* magazine's photo editor, Mike Bakich, has agreed to "run" this photograph in an upcoming issue of that publication. Congrats to Bob and Tony for their first publication.

★ A few points about public observing sessions: All public observing sessions this year, with the exception of March, have been clouded out. Nonetheless, the public continues to show up in comparatively large numbers. We might want to put a statement in the 2013

POS brochure that the event will be held cloudy or clear, and that on cloudy nights we will give a presentation and hold and open house at the SGO without telescope viewing. Events will be cancelled in the event of rain only.

- ★ The *Pantagraph* inexplicably continues to improperly list start times for public observing sessions, being off by a half an hour during both July and August.
- ★ Fifteen additional email addresses were obtained through the drawing at the August POS. We now have an email list of 25 – from those attending the July and August public observing sessions. Again, Carl W. is maintaining and managing this email list.
- ★ The Illinois Dark Skies Star Party, hosted annually by the Sangamon Astronomical Society of Springfield, will take place October 11-14 at Jim Edgar Panther Creek State Fish & Wildlife Area. You may register online or pay upon arrival. Check out the star party website for details at <http://sas-sky.org/>
- ★ Duane Yockey and William Carney share the same birthday!

# TCAA Treasurer's Report – August 2012

---

OPERATING FUND BALANCE – July 31, 2012 - \$ 1,049.84

Income

Lendell Panzier, Jr. (Dues) - \$ 41.00

Josh Lindsey (Dues) - \$ 40.00

Expenses

LYB Inc. (Observer copies & postage) - \$ 40.20

PayPal (Lendell Panzier, Jr. fee) - \$ 1.20

OPERATING FUND BALANCE – August 31, 2012 - \$ 1,089.44

---

OBSERVATORY FUND BALANCE – July 31, 2012 - \$ 3,025.16

Income

IWU (Observatory Equipment) - \$ 9,600.00

John McIntyre (Donation) - \$ 20.00

Expenses

Bob Finnegan (Observatory Repairs) - \$ 82.98

OBSERVATORY FUND BALANCE – August 31, 2012 - \$12,562.18

---

TOTAL TCAA FUNDS – August 31, 2012 - \$13,651.62

---

Respectfully submitted,

L. Duane Yockey, Treasurer

## HOW TIME FLIES

TCAA Historian Carl Wenning provides monthly updates about the history of the club going back to intervals of 50, 25, and 10 years. Details about all mentioned events will be found in either the club history (<http://www.tcaa.us/History.aspx>) or in *The OBSERVER* archive found on the club's web site (<http://www.tcaa.us/Observer.aspx>).

### 50 Years Ago

September 1962 – Taylor Cisco, now at the University of New Mexico, reported that he has met Clyde Tombaugh, discover of Pluto. About 100 members of the general public showed up at a September 7<sup>th</sup> public viewing session to see Jupiter, Saturn, and the moon. John & Bertha Kieviet, Hank Janecek, Mike Ryder, and David Williams observed an occultation of Saturn by the moon on the 10<sup>th</sup>.

### 25 Years Ago

September 1987 – President Kevin Brown urged the club to change meeting formats at the September club meeting. It appears that business is consuming the larger part of the meetings, causing visitors to become disinterested. He proposed moving business to the end of the gathering, and featuring several presentations each month including topics in the areas of deep sky, in-town observing, space interest, astrophotography, the "wanderers", and telescope making.

### 10 Years Ago

September 2002 – Club members continue to write feature articles for *The OBSERVER* to provide variety. This month Jim Swindler wrote about ancient Greece. The TCAA joins the Peoria Astronomical Society for the first of several star parties at Mackinaw Valley Winery. The SGO's LX200 appears to be working well. Dan Meyer puts wheelbarrow handles on the club's 16" reflector to make it more easily movable.

## MISSING OUT ON TCAA ACTIVITIES & EVENTS?

If you are missing out on club activities or celestial events, be certain to join the TCAA listserv. Many activities are planned at the last minute, and announced only hours in advance through the club's listserv. Reminders about celestial events are also broadcast to the membership through the club's listserv. To join this free service by Yahoo, send a blank email to [TCAA-subscribe@yahoogroups.com](mailto:TCAA-subscribe@yahoogroups.com). Unsubscribing is just as easy. To unsubscribe, just send a blank email to [TCAA-unsubscribe@yahoogroups.com](mailto:TCAA-unsubscribe@yahoogroups.com).

To keep up to date on celestial events not described in *The OBSERVER* or addressed in the listserv, visit Carl Wenning's observing page at [www.phy.ilstu.edu/~wenning/observing\\_page.htm](http://www.phy.ilstu.edu/~wenning/observing_page.htm). It has been recently updated to include an extended sky calendar of events as well as additional space weather and satellite viewing links.

---

### The OBSERVER

Newsletter 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**