

IN THIS ISSUE:

A NOTE FROM PRESIDENT TOM WEILAND	1
2013 IDSSP	1
STATUS OF TAKAHASI 250 CCA TELESCOPE	1
RECENT AND FUTURE E/PO EVENTS	2
POS TELESCOPE IN THE PROCESS OF BEING GIVEN AWAY	2
SOME HISTORY FROM BOB FINNIGAN	3
VISIT TO YERKES	3
CONSTELLATION OF THE MONTH: LACERTA—THE LIZ- ARD	4
ASTROBITS	4
TREASURER'S REPORT	5
HOW TIME FLIES	5

A NOTE FROM PRESIDENT TOM WEILAND

We have officially ended our Public Observation Sessions (POS) for 2013. As is often the case each year there were a few evenings of less than great viewing quality, with several evenings of cloud cover. There were however some very well attended observing sessions. Of note was the August event with an attendance of between 130 and 150 adults and children. The clear skies, the Perseid meteor shower, and a Pantagraph article about our activities aligned to bring the large crowd. Those who did venture out to Sugar Grove Nature Center (SGNC) on those clear (and sometimes cloudy, but not rainy) nights enjoyed excellent presentations on the topics that we had chosen for the year. I would like to again thank those who prepared and presented at each of the monthly sessions. After much deliberation, eight interesting and informative topics have now been chosen for next year. Our monthly public observations at Sugar Grove Nature Center will resume on March 29th of 2014. Our 2014 POS brochure, the POS schedule and list of presentation topics is available on our website for downloading at www.tcaa.us.

This viewing season also introduced our observing guests to our newest facility the Prairies Sky Observatory (PSO). This facility has added yet another dimension to our viewing and photographic capabilities as well as our capacity to involve the public in astronomy. Just recently, while at a local grocery store, I was approached by a family who had attended a couple of our presentations. They made note of the new observatory and indicated they were looking forward to the resumption of our presentations next March. This type of interest in what we do is rewarding and the goal towards which we strive.

Finally, I would like to inform you that the TCAA annual meeting is scheduled for February 1, 2014. More information will follow, but I want to provide you with this date so that you can get it on your calendar. This is our annual business meeting with dinner and an invited guest speaker. This year's guest speaker will be Dr. Linda French, a Professor of Physics from Illinois Wesleyan University. All TCAA members are encouraged to attend. Clear Skies!!

2013 IDSSP

By Duane Yockey

The 2013 Illinois Dark Sky Star Party was held from Thursday, October 3 to Sunday October 6. Attendance was better than the previous year, although the weather forecast was marginal.

I arrived Thursday evening and set up my tent to beat an impending thunderstorm. The skies cleared by late evening, and we had good skies (although not particularly transparent) for most of the night. Friday evening skies were similar to Thursday. Saturday was a different story, with rain throughout most of the day and into the evening. Most attendees left after the traditional steak fry and the awarding of door and astrophotography prizes.

Speakers included Dr. John Martin Friday afternoon on the topic "The Tell-Tale Heart of SN 2009ip" (Supernova imposter); Steve Sands Saturday morning on the topic "Restoring the Classics: The Renovation of a Bill Schaefer AT8 Equatorial Mount"; and Kyle Stumbaugh Saturday afternoon on the topic "We've been exploring Mars for years so what's next?" I particularly enjoyed Steve Sands presentation as he told the history of Bill Schaefer and his contributions to astronomy.

I enjoyed the event, but am waiting for the year when we have clear skies every evening. I encourage TCAA members to consider attending this event next year, although it typically conflicts with one of our Public Observing Sessions.

STATUS OF TAKAHASI 250 CCA TELESCOPE

By Tim Stone

The Takahashi CCA 250 outfitting is essentially complete. Without the installed focal reducer, it would operate at f/5, 1247mm focal length. With the .73x focal reducer, it operates at a focal length of 910mm (f/3.6). The optics produce sharp stars across the entire field.

The Apogee Aspen 16M camera CCD has 4096x4096 9-micron pixels, with chip dimensions of 36.8x36.8mm. Operating at bin 1, the 2.06" per pixel samples our normal seeing of 3-4" nicely. On the CCA250 as configured, it covers an angular field of 2° 20' 21" x 2° 20' 21".

The 10-position Apogee filter wheel has been outfitted with Astrodon 50mm filters: Luminosity, Red, Green, Blue,
(Continued on page 3)

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
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RECENT AND FUTURE E/PO EVENTS

On October 4th, Dan Miller talked about the TCAA to the Illinois Section of the American Association of Physics Teachers (ISAAPT) who were meeting at Heartland Community College (HCC). About 40 physics teachers heard his talk on Friday afternoon. Later that evening, about 20 meeting attendees were welcomed to SGNC for a tour of the club's observatories and to hear another talk by Dan who showed some of the many photographs taken by club members. Tim Stone and Bob Finnigan were in PSO to explain to facility and to provide views of various showcase objects as the sky cleared. Carl Wenning used the SGO setting to explain the basic processes of astrophotography, including the use of cameras, filters, flats, and darks. On the bus ride back to HCC, many visitors stated how incredibly impressed they were with the TCAA – especially the amazing facilities and equipment, and generosity of the donors. Several vowed to return in the not-too-distant future to learn more.



The TCAA held its final POS on October 5th. Despite threatening weather and a mostly overcast sky, some 35 members and guest were present for the program. Evening began at 7pm with Tom W. overseeing the drawing for the telescope give away. The winner was Jennifer Achs, an ISU student. A contingency winner was also drawn in the event that we cannot contact with or do not hear back from the winner. It was agreed that Lee would contact the winner with the announcement, and that Carl W. would hand off the telescope with a bit of instruction. Lee continued the evening by giving his talk about the Milky Way. The program closed with tours of both of the observatories. Tim and Bob managed PSO while Carl managed SGO. Despite the overcast sky, visitors remained until about 9pm. Club members in attendance in addition to those named included Dave Osenga, John & Joyce Mori, Mark & Bryce Heineger, Mark & Nataya Boulware, Kevin Brown, and Carolyn Weiland.

Friday, October 11th, was a very busy evening for the TCAA, and especially for Lee Green. Lee led an observing session for girl scouts at SGNC while Paul, Eve, and Amber Pouliot led an observing session for students on the ISU campus as part of a venture between the ISU Planetarium, the ISU Astronomy Club, and the Children's Discovery Museum. Lee later made it to the Milner Library Plaza for an evening of sidewalk astronomy. A beautiful warm night with clear skies, a quarter Moon and many people made for an enjoyable outing to talk with about 100 people with whom we would have never come into contact.

On October 12, twenty members of the Sugar Creek Community Church gathered for their annual retreat at the SGNC. Lee set up a telescope for viewing and sharing some of the sight available in the night sky. Tim Stone mention that that same night he was at SGNC and "entertained a group of about 15 Girl Scouts and their leaders with a view of the moon. They were camping."

The TCAA participated in SGNC's Autumn Celebration on Saturday, October 19th. Thanks to Tom and Carolyn Weiland, Dave Osenga, Tony Cellini, Bob Finnigan, Tim Stone, John Mori, Lee Green, Paul Pouliot, and Brian Barling for being available all or part of the day at SGNC and making our part of the Autumn Celebration the success that it was once again. As Tom noted, "It's a great opportunity to connect with many individuals and families. We estimated that we interacted with around 250 people during the course of the day, several of whom expressed interest in TCAA membership. We certainly appreciate being part of the SGNC 'family'.....they are very supportive of our goals and we in return are supportive of theirs and their

POS TELESCOPE IN THE PROCESS OF BEING GIVEN AWAY

The 2013 POS telescope drawing winner was Jennifer Achs, a senior-level ISU biology major from Grayslake, IL. She attended the September POS with her roommate Andrea Bruck who just happens to be an ISU Planetarium employee. Jennifer's name was drawn at the October 5th POS, and she received notification shortly thereafter. Carl Wenning introduced Jennifer and Allison the telescope to Sunday, October 13th.



They took the telescope to Colleen Hoose Elementary School to get a good view of the sky. Carl demonstrated the use of the telescope to find bright objects such as the moon and Venus. When attempting to utilize the "goto" functions, the telescope definitely underperformed – putting it mildly. Carl held on to the telescope and said that he'd try to get it working properly before meeting with Jennifer a second time. Despite problems with the telescope, Jennifer was quite gracious and is happy to be its new owner.

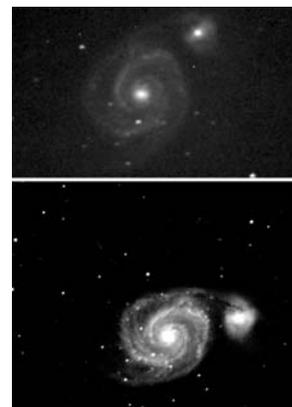
Carl worked with the telescope following this meeting, and is now preparing to turn the telescope over to Jennifer in the not too distant future.

SOME HISTORY FROM BOB FINNIGAN

I purchased a 14-inch Celestron telescope in 1973 and became an avid viewer of the heavens. This was not my first scope as I had a 3-inch Moon scope when in grade school and had, after returning from the Air force in 1964, purchased a used 6-inch reflector. I remember the club making a cold camera to fit the 14-inch; it was not successful. I also remember helping Art Grebner finish the 24-inch telescope for the Peoria Astronomical Society and going to Jubilee College State Park to view M51. I saw no spiral arms that night. I also remember a trip put together by Carl Wenning in 1980 to Ohio where we were able to view thru a 32-inch at M51; still, there were no spiral arms. So when in September of 2010 I was able to see the spiral arms of M 51 for the first time in a camera's L.E.D. viewfinder, that is what sent me down the road to what we have now.

This is the picture that Lee Green helped take that changed my thinking about astronomy. Recently, I thought that it might be interesting to compare the 2010 image to what we have obtained now. The top image is a 30-second shot, no guiding, taken 2010 by Lee and I with my 11-inch Celestron and Lee's SBIG. The bottom image is a 10-second unguided shot done by John Kates and I at our POS on September 7, 2013. It was taken with the 20-inch Planewave and the 8300 SBIG camera.

Returning to amateur astronomy in 2011, I had three dreams of projects. One was M51, and the other two were the Cone Nebula and the Horse Head Nebula. They seemed all out of sight till I met Lee Green. With his help I was able to achieve all my dreams in 3 month's time.

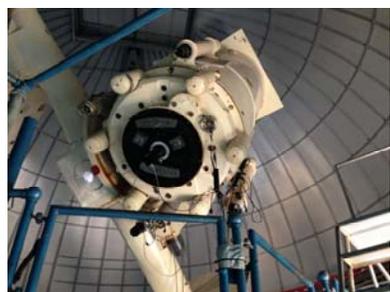


VISIT TO YERKES

By Bob Finnigan

Carl Wenning and I traveled to Yerkes Observatory on October 10th and 11th at the invitation of Vivian Hoette, coordinator of educational outreach. We arrived about 5 in the afternoon on Thursday. We walked the grounds and took a few pictures. The place is large. At 7pm our host Vivian let us in and gave a short tour ending in the 40-inch refractor dome where we spent the rest of the night. There are no words to give justice to the first sighting of this huge telescope. We were introduced to Dr. Kyle Cudworth the former director [and Yerkes staff member for 39 years]. He was to spend 3 hours giving us a rundown on the scope and a view of the globular cluster M15. Kyle explained how he was interested in studying the motions of stars in globular clusters, using photos taken over the years. He also explained how tracking errors are reduced during imaging not by moving the large and massive telescope, but by moving the camera mounted on the back of the telescope! The method is familiar to me as we used this method on RF 101 aircraft cameras in the 60's. The Yerkes method of using stepper motors to move the camera is a crude but effective method when working with slower imaging film.

Friday we returned and two other staff members helped us from noon till seven. They were Ed Struble – facilities manager, and Dr. Wayne “Ozzie” Osborn – staff astronomer and archivist. We were able to secure a number of images



of the moon through the 40” refractor using my Canon camera. During the afternoon session I used a Sheperd's hook to move the telescope manually. We spent time studying the camera box that has been used for many years to expose 8”x10” photographic plates but is no longer used. We found the focus using a ground glass plane. This confirmed that the focus was exactly at the same place that the old glass plates were placed. Having established this fact, it became clear that all we had to do to image the moon was to place the chip of the CCD camera at this exact point. I then placed the camera at this point and took several pictures moving the camera a very small distance back and forth to take several pictures hoping to get one with good focus.

We discovered that if a rack-and-pinion focuser were placed in front of the focal plane and a filter wheel and CCD camera were installed at the correct place, the 40-inch would take very good short exposures of objects such as planets, globular clusters, planetary nebulas, small or distant galaxies and, of course, the moon.



STATUS OF TAKAHASI 250 CCA TELESCOPE (CONT.)

(Continued from page 1)

Hydrogen alpha, Oxygen III, Sulfur II (all 3nm), B (Johnson), and V (Johnson). A single position remains open in the filter wheel, should the need arise for an additional filter.

Calibrations for the camera have been mastered and installed: dark-calibrated flats for all filters, and -30°C darks for 2, 4, 6, 10, 30, 60, 120, 300, 600, 900, 1200, and 1800 second exposures. Full sets of darks for colder temperatures (on even 10's) will be produced as temperatures drop. In the dead of winter, operating temperatures of -60°C are feasible.

The pointing model has been created and is operating with very good accuracy. Tracking with the Paramount ME is superb with sub-arc-second errors. Guiding is done with a SBIG ST-i on a Stellarvue 80ED piggyback guidescope.

Computer controlled focusing is functional, with a Bahtinov mask available for precise focusing.

The telescope is installed on the south pier in the Prairie Sky Observatory. Some minor cabling changes still need to be made, but all cables are currently bundled, secured, and tested for stretch in all slew positions.

Startup, imaging, and shutdown procedures are not yet written. If you wish to image with this instrument, the core imaging team (Bob, Craig, Tim) can assist you.

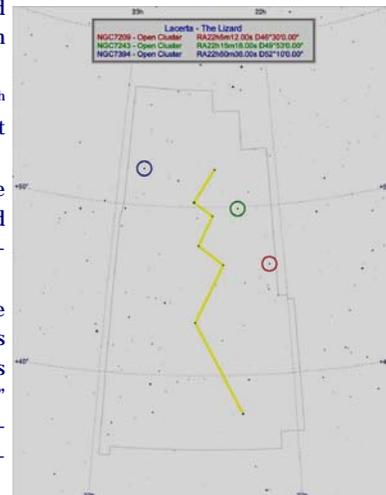
CONSTELLATION OF THE MONTH: LACERTA—THE LIZARD

Lacerta is a small constellation introduced by Hevelius that lies between Cygnus and Andromeda, north of Pegasus. Lacerta is pictured as a small lizard with a curly tail, often with stars for its spots. There is no classical mythology associated with Lacerta.

Lacerta is the 68th largest constellation covering 201 square degrees and is the 57th brightest. Lacerta reaches opposition on August 29. The brightest star in Lacerta is just over 4th magnitude. None of the primary stars in Lacerta are named.

Lacerta lies partially in the Milky Way near its northernmost extent. Among the deep space objects are a variety of open clusters including NGC7209, NGC7243 and NGC7394. Toward the southern end of the constellation, several dim galaxies are located.

Another famous object in Lacerta is BC Lacertae. This dim object was thought to be a variable star that changed brightness between the 12th and 17th magnitude. But this object did not exhibit the normal characteristics of a variable star because the light does not have an emission spectrum. BC Lacertae is the prototype of a class of “quasi-stellar” objects, more commonly known as quasars, and is thought to be a galaxy with a massive black hole that is consuming the galaxy and emitting a massive amount of radiation in the process.



ASTROBITS

- ★ Scott Horstman from Backyard Observatories has been very pleased with our photographs, time-lapse movie, articles, and comments in general. (Carl W. has been keeping him informed.) Recently Scott asked if we would be willing to serve as a future reference and Carl said that he would be happy to be of assistance.
- ★ During mid October, William Carney reported that he's "up to 20 on the Herschel II and 95 on the Lunar II" Astronomical League observing clubs.
- ★ Lee reported on October 15th, "I heard on WGLT that the Mark Evans Observatory is now an official observing site for the Smithsonian Minor Planet Center. The recognition was achieved by several IWU physics students. Congratulations to all who helped to make that happen!" We can only surmise that this was made possible in no small part by the work of Bob Finnigan, Tony Cellini, and Carl Wenning who helped outfit the observatory with a new telescope and imaging system, and provided training in their use. The story can be read online at the following URL: http://wgl.org/wireready/news/2013/10/06288_IWUObservatory_155923.shtml
- ★ Lee G. reported on October 19th that, "we've interacted with over 2000 people again this year, our 2nd consecutive year."
- ★ Lee recently updated the TCAA website with information about the 2014 public observing sessions. He posted the 2014 brochure and 2-line descriptions of the topics provided by Carl. Check it out at <http://www.tcaa.us/PublicObservingSessions.aspx>
- ★ Following their recent trip to Williams Bay, Wisconsin, Carl W. and Bob F. wrote a 9-page recommendation for Yerkes Observatory making suggestions about cameras to use with the facility's historic 40-inch refractor and more recent 40-inch reflector. Our authors have yet to get a formal reply, but anticipate working with the Observatory's staff to outfit the telescopes.
- ★ The historic University of Illinois campus observatory had its grand re-opening on Friday, October 25th, homecoming weekend. The event showed the completely refurbished 12-inch refractor that experienced its first major update in almost 60 years. The process took several months and the generosity of a number of donors who provide some \$50,000 for the process. One or more members of the TCAA provided part of the funding. There was a large turnout for Friends of the Observatory and the subsequent public open house later that evening. To learn more, visit www.astro.illinois.edu and check out the announcement under the NEWS heading.
- ★ On Saturday, October 26th, Bob F. went out to IWU at 7:00 pm and he, Lew Detweiler, and a student did a 4-star alignment and then a polar alignment. According to Bob, "After another 4 star [alignment] we got focus and calibrated the QSI and took 300-sec exposures of M 57 and M 27 with no tracking errors. At 9:30 all was done. So went the fifth training session."



TCAA Treasurer's Report – October 2013

OPERATING FUND BALANCE – September 30, 2013 - \$ 1,891.18

Income

Orlyn Edge (Electronic Dues) -	\$ 25.00
Lisa Wentzel (Dues) -	\$ 41.00
Anthony Cellini. (Dues) -	\$ 41.00

Expenses

LYB Inc. (Observer copies & postage) -	\$ 41.82
PayPal (Lisa Wentzel) -	\$ 1.20
PayPal (Anthony Cellini) -	\$ 1.20

OPERATING FUND BALANCE – October 31, 2013 - \$ 1,953.96

OBSERVATORY FUND BALANCE – September 30, 2013 - \$ 3,564.73

Income

Interest (3 rd quarter) -	\$ 0.21
Sale of 5" Tak -	\$ 5,660.00

Expenses

Funks Grove Cem. Assoc. (Property Ins.) -	\$ 386.00
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OBSERVATORY FUND BALANCE – October 31, 2013 - \$ 8,838.94

TOTAL TCAA FUNDS – October 31, 2013 - \$ 10,792.90

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

November 1963 – The club has established an observatory committee that was charged with developing an “elaborate roll-back-roof facility”. A 10' x 10' structure was envisioned, and it was decided to postpone construction until the warmer weather arrives following the start of spring 1964. At the club's second meeting of the month, David Williams moved that a junior division of the TCAA be written into the club's constitution.

25 Years Ago

November 1988 – Planning is moving ahead for the next Astronomy Rendezvous and Conference. Emphasis was placed on obtaining items for the flea market. The event will take place in August 1989. The meeting ended with a series of members giving a variety of short talks dealing with everything from magnitude formulas (Don Johnson) to cleaning telescope mirrors (Al Timke).

10 Years Ago

November 2003 – Alas, we are missing copies of *The OBSERVER* for December 2003 through February 2004. Should you have a copy of any of these issues, please let the historian Carl Wenning know. At the very least, he'd like to make copies of these issues “for the record.” When asked in more recent times, the editor of the newsletter from that time – Mike Rogers – did not have electronic copies either. It is possible that no newsletters were issued during these three months. Rebecca Wenning took over as editor of the newsletter publishing her first edition in March 2004.

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. Unsubscribing is just as easy. To unsubscribe, just send a blank email to 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. 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**