

THE OBSERVER

OF THE TWIN CITY AMATEUR ASTRONOMERS

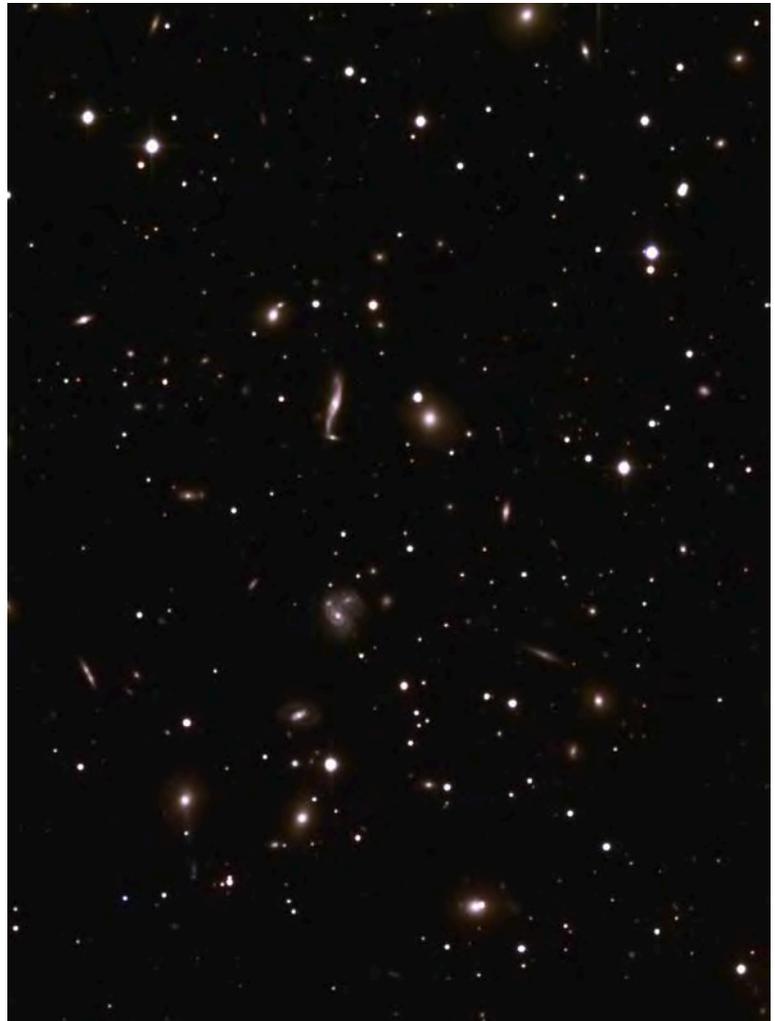


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The TCAA is an affiliate of the [Astronomical League](#). For more information about the TCAA, be certain to visit our [club website](#).

EDITOR'S CHOICE: IMAGE OF THE MONTH

This month's Image of the Month is by Tim Stone. The image shows the Hercules cluster of galaxies. The **Hercules Cluster** (Abell 2151) is a cluster of about 200 galaxies some 500 million light-years distant in the constellation Hercules. It is rich in spiral galaxies and shows many interacting galaxies. Tim had to "burn the midnight oil" to capture this image, and we appreciate the extra effort Tim had to exert in order to make this image available to us. To learn more about both this image and the cluster of galaxies, see page 10.

The OBSERVER is the monthly *electronic* publication of the Twin City Amateur Astronomers, Inc., a registered 501(c)(3) not-for-profit educational organization of amateur astronomers interested in studying astronomy and sharing their hobby with the public.

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The OBSERVER

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Submission deadline is the end of each month.

Membership Dues

Individual Adult/Family \$40
 Full-time Student/Senior \$25
 (senior status equals ages 60+)

To join, send your name, contact info and dues payment to Duane Yockey, TCAA Treasurer, 508 Normal Avenue, Normal, IL 61761

A NOTE FROM PRESIDENT WEILAND

Astronomers are nothing if not endlessly optimistic. Many things about our chosen hobby are quite predictable. There are a myriad of charts, websites, magazines and books that help us to locate just about anything we would like to view in the heavens above. There are a few things, however, that defy predictability. As an example, let's consider the "new" meteor shower, the Camelopardalids, which were predicted as a result of the Earth's first intersection with the dusty remains left by the previous passages of comet 209P/LINEAR.

Over the years several recurring annual meteor showers have produced some spectacular events; however, we had no historical observations upon which to base this new shower. Instead we had to depend on computer modeling. Early modeling had predicted a potential meteor "storm", (1,000 meteors per hour) but later modeling suggested that we might have a moderately active shower (perhaps 100 meteors per hour). It is important to make note that even with an historical observational advantage the "meteors per hour" predictions that are often made with well know showers such as the Leonids or the Geminids, we can never truly guarantee when it comes to viewing these annual events. Even with that in mind, this new shower presented an irresistible opportunity to view something that had never been experienced. Who would want to roll out of bed the next morning to find that the original models were correct and a meteor storm had occurred?

So, I spent a couple of hours watching until around 11:00 p.m. (May 23rd) through some patchy thin clouds hoping for some early luck. I ventured outside again around 1:00 a.m. at the start of the predicted maximum, and spent another 45 minutes viewing the heavens through clearer skies. I saw a total of two meteors (one which did not originate from the predicted radiant), a nice Iridium flare and several other satellites from my front yard in rural Heyworth before heading back inside. So, after a less than spectacular shower (not even really a sprinkle or a drizzle) I have set my sites on the next major meteor shower anticipating another opportunity under a clear sky to view a dazzling show.....that is if there is a clear sky.....well that's something we also have no choice but to be optimistic about. Clear skies!!

Tom Weiland
 TCAA President

PRESIDENT'S UPDATE: After the NCRAL-MSRAL 2016 planning meeting held Tuesday evening May 27th, President Tom Weiland shared the following information with Treasurer Duane Yockey and those TCAA Board members present:

- Although TCAA had decided not to participate in the **Inside Out Arts Fair** being held at Sugar Grove Nature Center on June 21st as exhibitors, we have agreed to have the Prairie Sky Observatory open for a period of time during that event.
- A temporary stoop made from concrete pavers has been approved for installation outside of the Prairie Sky Observatory to reduce the amount of dirt tracked into the building.
- TCAA members/SGNC volunteers Tom and Carolyn Weiland will be applying a second coat of stain to the Prairie Sky Observatory as requested by SGNC as time and weather permits.
- SGNC has approved camping for the August 23rd Central Illinois Astronomy Clubs mini conference hosted by the TCAA.

CALENDAR OF CELESTIAL EVENTS – JUNE 2014

MORNING STARS (6/15): MERCURY, VENUS, URANUS, NEPTUNE

EVENING STARS (6/15): MARS, JUPITER, SATURN

Question: Can planets be both a morning star and an evening star during the same month? (See the answer below.)

- 05 First Quarter Moon** – The moon sets at midnight and rises at midday.
- 07 Conjunction of the Moon and Mars.** Earth's moon will pass within two degrees of Mars in the evening sky.
- 12 Full Moon** – The moon rises at sunset and sets at sunrise.
- 19 Third Quarter Moon** – The moon rises at midnight and sets at midday.
- 21 June Solstice** – Summer begins in the northern hemisphere and winter in the southern. The solstice occurs at 5:51 AM CDT.
- 22** The International Space Station enters a period of full illumination near the June solstice, favoring multiple views for northern hemisphere viewers. Check out the [Heavens Above](#) satellite tracking program online.
- 24** The waning crescent Moon passes within a degree of Venus, a great time for [spotting the planet in the daytime](#).
- 26** The breathtakingly thin crescent Moon passes Mercury just 20 hours prior to new moon phase. An occultation of Mercury will be visible from the northeast South America just before sunrise.
- 27 New Moon** – The moon rises and sets with the sun today and is not visible.

Answer: Yes. When a planet is in the sky at sunset, it is considered an evening star. (It's not really a star at all. The planets were once called wandering stars, and that's where the name comes from.) When in the sky at sunrise, a planet is considered a morning star. Of all the planets, Mercury is the one to most frequently and rapidly move from morning sky to evening sky and visa versa. Mercury orbits the sun with a sidereal period of 88 days but appears to take 116 days as seen from the moving platform of Earth. Mercury will therefore spend about two months in the evening sky before moving back to the morning sky and visa versa. Venus orbits the sun in 225 days, but circles the sun once every 584 days as seen from Earth. Ergo, Venus spends about 292 days or just about 9½ months subsequently in the morning and evening skies. When moving from one side of the sun to the other, it changes its "star" type.

NEW & RENEWING MEMBERS

The following individuals have paid dues for new or renewed memberships as of May 28th, 2014. (Others who paid after that date will appear in the July 2014 issue of *The OBSERVER*.)

Bob Fearneyhough

DUES BLUES

If you have received a "your dues are due" statement along with the email that brought you this issue of *The OBSERVER*, please remit your dues to Mr. Duane Yockey, TCAA Treasurer, 508 Normal Avenue, Normal, IL 61761. Current dues are \$25 for senior (60 years of age and over) and \$40 regular.

SUBSCRIBING TO OUR E-MAIL LISTS

By subscribing to a group's mailing list you will receive email messages from the group so you won't have access to the group's web features (like photos, files, links, polls, calendar, etc.) unless members [activate it later](#). The club now has two email listservs. The main email listserv is known as the **TCAA** listserv. It will be used to share announcements and reminders about astronomical and club events. To join this main listserv you must do the following:

1. Subscribe: Send a blank email to TCAA-subscribe@yahoogroups.com Note: You'll be sent a confirmation email from the group. Reply to the confirmation email to activate your subscription.
2. Unsubscribe: tcaa-unsubscribe@yahoogroups.com
3. To post a message: tcaa@yahoogroups.com

A second listserv – **TCAA-imaging** – is for club astrophotographers as well as those who want to view their images and follow their discussions. It is an easy way to keep up with all the stuff we're doing at the observatories.

1. Subscribe: tcaa-imaging-subscribe@yahoogroups.com
2. Unsubscribe: tcaa-imaging-unsubscribe@yahoogroups.com
3. To post a message: tcaa-imaging@yahoogroups.com

Once members join a Yahoo! group, they can [manage group and subscription settings](#) whenever it is desired to customize the group experience.

THIS MONTH'S PHASES OF THE MOON



First Quarter
June 5



Full Moon
June 12



Third Quarter
June 19



New Moon
June 27

All moon phase dates are given for Central Daylight Time. Additional moon phases can be found for the 2014 calendar year by clicking [here](#). These four images were provided by J.K. Howell of the Champaign-Urbana Astronomical Society and are used with permission.

EDUCATION/PUBLIC OUTREACH FOR MAY 2014

Carl Wenning gave three 25-minute talks about objects in the night sky to some 60 fifth through eighth grade students, teachers, and parents on Friday, May 9th. He gave a brief PowerPoint presentation and provided short tour of the SGNC observatories. The students were from Olympia Middle School. Carl gave a second set of talks to about 50 third graders, teachers, and parents on Thursday, May 15th. This time they were from Olympia Middle School. Similar presentations were given each time.

The May Public Observing Session was held on Saturday, May 31st. Despite an overcast sky at the start, there were 73 individuals present, including club members. Craig Prost gave a well-received 45-minute talk about "Star Birth and Open Clusters." This was Craig's first talk on behalf of the TCAA, it his three years as a high school teacher in Missouri years ago was clearly evident; we look forward to more talks by Craig. Near the conclusion of Craig's talk, a small gap in the clouds opened and so Carl Wenning hurriedly set up his CPC 11" to show attendees this planet while Tom Weiland conducted a door prize drawing. During the PSO Open House phase of the evening, Tony Cellini also turned the Celestron 11" HD on Saturn. As the evening progressed, the clearing continued. As a result, many more showcase objects were observed. Members of the general public continued viewing with a small group from El Paso (one of whom owns a Meade 10" goto telescope) remaining until around 11:30 p.m. TCAAers Carl W., Kevin Brown, and Darren Erickson continued observing until nearly 1 a.m. viewing galaxies, globular and open clusters, planetary nebulae, double stars, and the asteroids Ceres and Vesta. Other recognized TCAAers in attendance were Jim Meeker, Lee Green, Brian Barling, Carolyn Weiland, Mark Boulware, Bob Finnigan, Lisa Wentzel, and Bryce and Mark Heiniger.

NEXT PUBLIC OBSERVING SESSION JUNE 21ST

The 2014 public observing sessions are continuing. Recall that these events will be held cloudy or clear. Only in the case of active rain will the events be cancelled. The June 21st program runs from 9:00 to 11:00 p.m. June's program, to be led by Dave Osenga, is titled *Ringed Worlds of the Solar System*. Dave's presentation has been described as follows, "Saturn is known as the ringed wonder of the solar system. But, did you know that Jupiter, Uranus, and Neptune also have rings? We conclude by viewing the rings of Saturn." The POS brochure with additional information can be found on the [TCAA public events webpage](#).



The year's remaining dates (all Saturdays), topics, and speakers are as follows:

Date	Topic	Coordinator
July 26	<i>Star Death</i>	Tim Stone
August 30	<i>From Earth to the Edge of the Universe</i>	John Mori
September 27	<i>Globular Clusters</i>	Tom Weiland
October 25	<i>The Andromeda Galaxy</i>	Kevin Brown

Once again in 2014, the club will be collecting email addresses in exchange for a chance to win a basic telescope during an October POS free drawing. This year the telescope will be a Meade ETX-125AT (f/15) Maksutov-Cassegrain telescope recently donated to the club. By a recent decision by the Board of Directors, TCAA members *will* be eligible for the drawing.

BOARD MEETING MINUTES OF MAY 6TH

The meeting of the TCAA Board was held at the office of Treasurer Duane Yockey. In attendance were Board members Tom Weiland, Carl Wenning, Robert Finnigan and Tim Stone, as well as Secretary Lee Green and Duane. The meeting was called to order at 6:30pm. The minutes of the previous meeting were approved. Several motions agreed to by the Board were approved since the last meeting. These are included at the end of this report.

Duane indicated that the annual tax report would soon be due. Tim will provide an updated Inventory Report for inclusion in the filing. As ALCOR, he has included a report about NCRAL 2014 in a recent issue of the newsletter.

Lee reported that the mailing list and electronic distribution of the monthly newsletter were working effectively. While he had wanted to provide the Board with a way to send communications directly, that facility was not yet available.

Tim submitted the current Property Manager report. The new latching system has been installed at the PSO. Carl observed that this would be more aesthetically pleasing if it was painted and Tim agreed to take care of that. USB conduits running along the wall need adjusting to accommodate the new system. Tim noted that the SGO dome was in cosmetically poor condition, showing dark spots of rust or mildew. Several approaches to the issue were discussed. Tim requested assistance as he further inspected and considered how to remedy this. He noted that it was difficult to remove the dust and dirt from the floor of the PSO, that sweeping it simply raised the dust and that a vacuum would be needed. Carl indicated that he could donate one for use by the club.

Turning to old business, the policies for using the observatory were in place during the summer as a trial period. No concerns were reported; the document will be reviewed at the end of the trial.

The Board reviewed Carl's content for the club website. The material was deemed well done. Lee reported that it has already been published to the website. Additional updates would be posted as they become available.

At NCRAL 2014, Duane volunteered the club to host the 2016 meeting, and the proposal was accepted. The Board directed that a subcommittee be formed to begin planning and appointed Carl to chair the committee. Carl suggested that the theme of the meeting be related to preparations for the 2017 total solar eclipse which will pass across southern Illinois.

Tim reported that all equipment was present and accounted for. He will include a list of equipment on loan in his Property Manager report. He will also include a list of current key holders in the report.

On the proposal to disposition of unused equipment, no progress has been made. On the proposal to teach an astrophotography class, no progress has been made. These proposals have been formally tabled.

The tcaa-imaging alternate listserv seems to be working well.

The SGNC approved a sidewalk to extend no more than 60 inches west of the PSO. The consensus was that was that the space could be a concern. It was suggested that simply placing a stoop or stepping stones in front of the door would suffice. Tom will clear that with Angela, and Duane will see if he has any materials that are appropriate.

Turning to new business, the next Board meeting will be held on July 15.

Carl proposed that a mini-conference be held at the SGNC on August 23, with prospective invitees including the Peoria, Champaign, Decatur and Springfield astronomy clubs, as well as other interested people including individuals from ISU and IWU. Carl submitted a possible agenda for the meeting including an open house, discussions, a Star-B-Q, a keynote talk and observing.

Carl reported that an invitation had been submitted to Gov. Pat Quinn to visit the Sugar Grove Nature Center. This was done as a follow-up to the governor's recent Starlight Week Proclamation. Possible date for the visit would be August 6-8.

Carl submitted a possible agenda for the visit. He indicated that due to the difficulty of planning governor's schedule, plans could not be finalized before July.

Member Lisa Wentzel offered to donate a Celestron Sky Scout to the club. The Board was very appreciative and indicated that it would accept her kind offer with the intent to find a worthy home for the device.

The Inside Out Art Festival to be held at the SGNC was discussed. The idea of having quality prints available for purchase had been considered. Concerns about the cost and the quality of these prints, along with the modest income expected made the venture less interesting. We will not be participating in the main event, but would consider having the observatories open for visitors.

A question was raised about whether members should be allowed to enter the telescope giveaway. The Board considered the issue and unanimously agreed that this would be acceptable.

The meeting was adjourned at 8:05pm.

Respectfully submitted,
Lee Green, Secretary

MOTIONS MADE/PASSED BY BOARD VIA EMAIL

"I move the Property Manager be authorized to implement a new roof latching system at Prairie Sky Observatory before April 30, 2014. The new system should secure the roof to the concrete floor and should be safely and conveniently engaged and disengaged while standing on the floor." Motion made by Tim Stone and seconded by Bob Finnigan. **Unanimous approval on March 30th.**

"I hereby propose adoption of the attached policy statement subject to review and revision four months after initial approval." (Editor's note: Referencing the revised draft policies for observatory use published in the May issue of *The OBSERVER*.) Motion made by Carl Wenning and seconded by Bob Finnigan. **Unanimous approval on April 9th.**

"I propose that TCAA plan and host a multi-club mini-conference on August 23 at SGNC. Any financial costs incurred (above that which is donated by members) must be presented to the BOD for approval." Motion made by Tom Weiland and seconded by Tim Stone. **Unanimous approval on April 13th.**

"I propose that the leadership of the TCAA invite Governor Quinn to a TCAA observatories open house at SGNC during early August as part of a public kickoff of Skylight Week, August 9-16, 2014." Motion made by Carl Wenning and seconded by bob Finnigan. **Unanimous approval on April 15th.**

GET READY FOR CENTRAL ILLINOIS MINI CONFAB

The TCAA is inviting members of central Illinois astronomy clubs (TCAA, CUAS, PAS, SAS, DAAC) and selected others to attend a mini conference at SGNC on Saturday, August 23, 2014. Mark your calendar now so **you** won't miss it.

Tentative program: The anticipated program is as follows and is subject to change:

4:00 p.m. Open House at the TCAA's Observatories
 4:30 p.m. Welcome and introductions
 4:45 p.m. Contributed 15-minute talks
 6:00 p.m. Break (open house continues)
 7:00 p.m. Free Star-B-Q dinner
 8:00 p.m. Keynote speaker (TBD)
 9:00 p.m. Evening observing session

Call for presentations: The TCAA is now soliciting 15-minute contributed presentations that will consist of a 10-12 minute talk followed by 3-5 minutes for questions and answers. The number of such talks will be limited, and not all who offer to present

will necessarily be given an opportunity to do so. You may request to present a talk by completing the [Talk Request Form](#). It would be ideal if each participating astronomy club would contribute one talk to the program. A screen, video projector, and a laptop computer will be available for use, but presenters are free to use their own computers so long as they have a direct VGA output (PCs) or a dongle providing a VGA output (Macs).

Invited speaker: The TCAA will have an invited speaker to give the keynote talk at 8:00 p.m. The speaker and the topic are to be determined.

Evening Star-B-Q: This FREE event will feature a selection of brats, hamburgers, and a choice of sides. Refreshments also will be provided. This Star-B-Q is being made possible courtesy of the TCAA and will be available only to those who have preregistered by the deadline.

FREE registration: Due to a need to have sufficient food and other resources available at this event, pre-registration will be required for all who wish to attend. [Online Registration](#) will open on July 23 and will close on August 16 – one week prior to the event. *No on-site registration will be permitted.*

Rain date: There is no rain date for this event. Because we have access to a large picnic shelter and a nature center, the event will be held rain or shine, cloudy or clear...

Camping: Should you wish to camp out during the night of August 23/24, you may do so. SGNC Director Angela Funk has given permission to do so. However, there will be a \$5 per person fee for doing so that will be collected on site.

Why attend? There are numerous reasons for doing so:

- ★ Watch two of this country's most **advanced amateur observatories**:
 - *Prairie Sky Observatory*, a 16' x 24' roll-off-roof observatory, was constructed during the summer of 2013 and houses some of the best amateur telescopes, mounts, cameras, filters, and computer systems. Our telescopes include apertures of 10", 11", 20", and very soon a 16".
 - *Sugar Grove Observatory*, a 10' domed observatory, was opened in the spring of 2000 and was recently updated with a new telescope - a 17"-aperture instrument augmented by one of the best mounts, cameras, and filter sets.
- ★ Watch TCAAs use our observatories' telescopes for **astronomical imaging**; you'll be amazed at what we can accomplish with so little effort.
- ★ Bring your **observing equipment** along to speak about and share with others, and to view the night sky from our location.
- ★ Learn what others have been doing as you listen to **contributed talks**, and hear what our **keynote speaker** (likely a professional astronomer) has to say.
- ★ Experience the **camaraderie** of fellow amateur astronomers. Camaraderie is one of the main reasons why clubs for amateur astronomers exist. This event will provide a great opportunity to establish and grow your network of like-minded individuals within central Illinois.
- ★ Learn about the joint **NCRAL-MSRAL meeting** to be hosted by the TCAA in spring 2016 (and maybe learn a bit about the **total solar eclipse** that will be occurring during August 2017 right here in Illinois).

Mark your calendar now for this event so you won't miss it. Reminders will appear here in this newsletter frequently.

ASTROBITS

- ★ Several people have asked over the years where Carl W. got his 20mW green laser for pointing out constellations. He recently purchased an even more impressive 30mW laser online from www.optotronics.com. While his old 20mW and new 30mW lasers are more expensive than many cheap knockoffs, they are durable and much more intense than the more commonly available 5mW models. The 30mW laser was recently purchased for only \$60 plus \$8 for shipping.
- ★ Carl W. has completed and submitted his 20-page chapter *Sky Interpretation* for the Master Naturalist program guidebook of the U of I Extension Service. The chapter focuses attention on observational astronomy. Thanks go out to

Tom Weiland, Tim Stone, Duane Yockey, and Bob Finnigan who served as reviewers of early drafts. Club members will be asked later to provide astronomical photographs for use in the color publication. This publication really should allow the TCAA to shine on a statewide level.

- ★ Carl W. has been booked as a TCAA representative to deliver two sky interpretation events near Marshall, IL, on the weekend of July 18/19. He will start with PowerPoint, point out constellations using a laser pointer, and use his telescope to showcase objects in the night sky – weather permitting. He will be camping at the Lincoln Trail and Walnut Point State Parks.
- ★ Hyperlinks not working? If you have received earlier issues (since January 2014) of *The OBSERVER* and found hyperlinks not to be working, you may request that the editor send you a replacement copy (carlwenning@gmail.com).
- ★ Work around PSO and SGO, including painting sweeping, and general cleaning, is an ongoing job. Paint has recently been acquired to fix up the new roof tie-downs and a Shop Vac has been provided for cleaning up dust, soil, grass clippings, woodchips, insects, and whatever else finds its way to places where such debris is not desired.
- ★ The TCAA Board of Directors recently approved new content for the “About the TCAA” web page on the TCAA website. You may [see the content here](#). When web master Lee Green gets the time, this content will appear on the club’s website.
- ★ On May 21st Bob Finnigan spoke with Phill Dicks of the McLean County Zoning Commission to see if the TCAA need worry about new intrusive outdoor display advertising along the I-55 corridor between Shirley and McLean. According to Phill, the I-55 corridor is zoned “all agriculture” between Shirley and McLean. Bob later noted, “It’s necessary for sign people to get a commercial zoning permit to install such outdoor advertising. Of course they could try for rezoning but probably would have a very tiny chance of success.” Ergo, we appear to be protected from obtrusive nighttime illumination from signs lining the Interstate for the time being. Thanks, Bob, for pursuing this important piece of information and letting the Zoning Board know about our concerns in relation to inappropriate outdoor lighting.
- ★ On May 22nd, Troy and Logan Berg, Carl Wenning, and Sharon MacDonald attended at talk at IWU by Dr. David James from the Cerro Tololo InterAmerican Observatory. Dr. James spoke about open star clusters and various methods used to determine their ages. He focused primarily on the use of the lithium spectral line as an age indicator as newly formed stars undergo deep interior convection that results in the eventual conversion of lithium into helium according to the following nuclear process: ${}^7_3\text{Li} + \text{p}^+ \Rightarrow 2{}^4_2\text{He}$
- ★ On May 23rd, Tony Cellini and Bob Finnigan got the Canon Mark II full-frame camera working on the piggyback mount that is affixed to the 20” telescope. Tony took two pictures, one at 28mm another at 70mm for a start. Bob noted that he is looking forward to using the camera this summer with both 300mm and 500mm lenses. This is the same camera that William Carney had sent in and modified by removing the infrared blocking filter.
- ★ The Camelopardalid meteor shower on the night of May 23/24 did not turn out as hoped. Tim Weiland, Tony Cellini, Tim Stone, Bob Finnigan, and perhaps many others watched and waited to no avail. Suffice it to say that the hoped for meteor storm – not even a shower – materialized.
- ★ The planning team for the NCRAL-MSRAL 2016 conference met for the first time on May 27th. Topics of discussion included lessons learned from the NCRAL 2010 conference, date (which has tentatively been set for April 29/30), venue, speakers, advertising, door prizes, program, field trips, leadership, registration table, informational packet and much more. For instance, whiteboardsUSA.com has agreed to produce a 20-page eclipse booklet for free distribution at the conference. Sponsors will also be sought for the printed meeting program and break time refreshments. If you would be interested in assisting with this effort and/or would like to see the minutes of the planning meeting, please contact carlwenning@gmail.com.
- ★ President Tom Weiland has written another Letter to the Editor of the *Pantagraph* stating the club’s position on light pollution. The Board gave its stamp of approval to Tom’s comment during the NCRAL-MSRAL 2016 planning meeting on May 27th.

PROFILES IN AMATEUR ASTRONOMY: BRAD WELCH

~ by Carl Wenning, Historian ~

This month we shine the limelight on returning member Brad Welch. Brad first joined the TCAA in the fall of 1980. He was too young to have a driver’s license at the time and, so, his parents used to drive him to club meetings from his home in LeRoy, IL. He was actively engaged in the social life of the club that, at that time, regularly included scheduled observing sessions and pizza parties.

Brad's first interest in astronomy grew out of several NASA books he had "stumbled upon" dealing with the Apollo space missions. The Viking missions to Mars also captured his interest. Of course, there were the heady days of Carl Sagan (think *Cosmos*) and Jack Horkheimer ("Keep looking up!"). Eventually, Brad found everything related to space fascinating. A subscription to *Sky & Telescope* magazine also whetted his appetite for all things astronomy. For Christmas one year, he received a "Build your own reflecting telescope" kit that contained a tube and a 4¼" mirror blank that he had to grind. He was able to complete the telescope after having the mirror "finished" and aluminized. According to Brad, "That was a good learning experience."

After joining the TCAA, Brad learned from Weldon Schuette how to predict and observe Skylab. He also fondly remembers observing the rings of Saturn and the February 26, 1979, partial solar eclipse observing session that the TCAA hosted on the ISU campus.

Eventually, as with all high school students, Brad was sidetracked by schooling and the need to prepare for a career. After graduating from LeRoy High School in 1984, he spent a great deal of time learning, teaching, and working with computers. For the past 20 years computer-based career has kept him more than busy. Nonetheless, his interest in astronomy (and science in general) was always on his mind, and only recently did he return to the club.

As Brad noted, "I've always thought about re-joining, but work, medical, and family matters had me pretty busy. Last year I decided to start pursuing hobbies again; the TCAA was the first on my list." We are glad that is was. Today Brad is becoming more active in the club. Brad quipped, "I really enjoy the astrophotography when my schedule permits it."

Brad's primary interest is in Deep sky objects that have always been his favorite. "Now with the great equipment the club has, the imaging is much more rewarding (versus my old film camera). When time permits, solar observing is another interest that I would like to pursue.... I also am curious about different theories like M or string, and quantum mechanics. I also enjoy building electronics projects and working with holography on a small scale."

Despite these wide-ranging interests, Brad still has but a limited amount of free time for observing as he travels a lot with his job. According to Brad, "With my work schedule, it would be tough to pull off but the Messier program is something I might start in the future. Today, I am more of a casual observer and would like to continue working on the imaging."

When asked if he had any fond memories of the club in years past, Brad stated, "There are far too many to write down, but the top three would have to be: sitting down with Carl at ISU and writing a BASIC program that predicted sunrise and moonrise, along with planet transits. Another is viewing Saturn out at Bob's observatory in Downs. Lastly, working with Weldon on the complex calculations of Skylab's fall back to earth."

Brad's personal observing equipment is somewhat limited. "Most of my equipment would fall into the 'vintage' category. I still have the home-ground 4¼". I also have a very old Meade MTS 6" on a worn out equatorial and a newer (2002?) Celestron 8" SC Nexstar on the infamous one arm wedge."

When asked if there was anything else he'd like our readers to know about, he replied, "I enjoy humor and at times mine can be a bit dry. I am very easy going and if there is something that I can help with, I will try to make that effort. Unfortunately, my profession comes with some very odd and constantly changing work hours that make it difficult to schedule anything much in advance. I am looking forward to becoming active again and meeting/sharing and learning from the group. It's very exciting to have access to some great imaging equipment and mentors that are willing to share their knowledge."

Well, Brad, welcome back to the TCAA! It is great to see members of old returning to the club. Your journey was similar to Bob Finnigan and Tim Stone who you first met more than 30 years ago.



EDITOR'S CHOICE: IMAGE OF THE MONTH

~ Commentary by Tim Stone ~



ABELL 2151, THE HERCULES CLUSTER - This image includes the southern section of the famous and beautiful galaxy cluster Abell 2151 in Hercules. Sporting several large spirals and a number of hefty elliptical galaxies, this cluster is a component of the Hercules supercluster, which in turn is a portion of the “Great Wall” superstructure about 500 million light years away. Beyond this great wall lies a vast and relatively empty void that extends deep into the distance beyond. Dark matter filaments are the leading candidate theory to explain this structure, which is typical of the filamentary nature of the structure of the universe. The shape, distribution, length, and other properties of these structures are heavily studied in order to understand some of the physical properties of dark matter.

The famous three-way galactic train wreck of **NGC 6050** is included in this vista, as is the apparently interacting pair of NGC 6045 and PGC 84720. Many fainter members of the cluster are visible.

IC 1182 in the upper left has a lovely blue jet extending leftward quite a ways. It reaches a compression zone and brightens considerably well to the left of the galaxy.

This image is a recent result from the PlaneWave 20” in the Prairie Sky Observatory. Nearly 8 hours of imaging over three nights were required to acquire the data for this image.

Editor’s note: The fine details of this image are best seen when viewing the full-scale image. The images shown here and on the front

page of this newsletter were compressed and costing us the finer details. To see the full-scale image, go to Tim’s Astrobin website at: <http://www.astrobin.com/full/99059/>

ASK THE EDITOR

This newsletter’s editor is now answering questions about the club posed by members. If you have a question about something of interest to you – either about the present day TCAA or its past – please send it to carlwenning@gmail.com.

Question: I’m new to the TCAA, and don’t understand why we don’t have membership meetings. What gives?

Answer: A brief summary of the events that led to the decision by the club leadership to dispense with regular membership meetings about a decade ago is worthy of consideration. This club has a long history, starting in 1960. I joined the club in 1978 and am directly familiar with most of its history – some 36 of its 54 years – and can provide the necessary insight.

During the early years of the club, membership served very significant scientific and social purposes. It satisfied the need for members to learn from one another about a topic of mutual interest – astronomy and all things related. While that need still exists, it can be satisfied today through a great number of alternative means.

During the early years of the astronomy club membership was buoyed up by the fact that the American space program kept outer space in the forefront of the news. Membership meetings were held twice per month in diverse settings around town. There were lots of social functions in addition to regular meetings held on a regular basis that drew whole families. The club at this time had enough high school students for the club to host a junior section. As economics, schools, and social norms changed, there were more overworked parents and overcommitted students. With the passing of the years, there seemed to be less time for family functions and the club’s membership changed from families to individuals, still including university students. Membership meetings were changed from twice per month to once per month due to the dropping attendance.

In the 1970s the club met regularly at IWU's Mark Evans Observatory where the members would peer through the 16" telescope – the biggest such instrument any club member had ever experienced. As support for regular membership meetings at IWU waned, they moved to the ISU Planetarium with the advent of a new director in 1978. This new director was very actively engaged in the TCAA and the club met monthly at the ISU Planetarium. With the 1980s came amazing Hollywood adventures with which the Planetarium just could not compete having opened in 1964. Members began to lose interest in meeting at the planetarium.

The return of Halley's Comet in 1986 led to a temporary revival in the club membership. In fact, the club had never been so large. With the return of the comet, membership grew to an all-time high of around 80 family and individual memberships. Still, attendance at club meetings was dismal.

Another reason why member attendance dropped off at monthly meetings undoubtedly had to do with the way the club's affairs were managed. When the club became incorporated in an effort to be recognized as a Federal 501(c)3 education not-for-profit entity, it changed from a pure democracy to a representative form of government. By state mandate the decisions of the club are to be managed by a Board of Directors who became legal fiduciaries. This angered many long-time members (despite the Board's willingness to receive input from everyone before making a decision), and several memberships were lost as a result.

As personal computers and programming became widely available, college students that heretofore had made up a tiny portion of the membership began to spend more time at the computer screen than at the eyepiece. This problem was exacerbated in the late 1990s with the advent of Internet. Anyone who grew up with the Internet realizes that one of the earliest and greatest areas of resources dealt with astronomy. Images from satellites and space probes caught the attention of the general public in ways never before seen. The Internet made available what the club could not, and interest in the club continued to wane.

When Sugar Grove Observatory was opened during 2000, and the club began providing regular monthly public observing sessions throughout the year, each of which contained a talk, a sky lecture, and observing. These events appear to have taken the place of regular membership meetings. Shortly thereafter, member attendance at monthly meetings at the ISU Planetarium had fallen tremendously with only 5-7 members meeting regularly. Attendance could not be resurrected no matter how informative or exciting the meeting topic. In despair, the leadership decided to dispense with monthly membership meetings and become primarily an observing club.

What is now left of the social aspects of the club are the traditional summer picnic and the February annual business meeting and banquet. Board members, officers, and key observers often gather after Board meetings to share a pizza, and these events have the same flavor as membership meetings of old. Other social functions just don't happen much any more in the TCAA, but all members are invited to attend our open Board meetings to share in the camaraderie that some long for.

Today social media is affecting potential new members adversely. Still, the club retains about a dozen more or less active observers among the membership, and another 5-10 are content to attend once monthly public observing sessions. Some members pay their dues but hardly ever attend TCAA events. Unfortunately, we rarely get to know these members, but we still appreciated their financial and moral support.

So, long story short, the reason the club doesn't hold regular membership meetings is because the membership has not demonstrated the interest required to make them worth the trouble to arrange despite the ready availability of both topics and speakers. Unless there is an outcry among the membership for monthly meetings, the TCAA will likely remain primarily a club held together by observing rather than by social events.

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 [Twin City Amateur Astronomers: 1960-2010](#) or in [The OBSERVER archive](#) found on the [TCAA website](#).

50 Years Ago: June 1964 – On June 12th the club's new roll-off-roof facility, the Praesepe (or Beehive) Observatory was the site of the club's inaugural "observing meeting". Only eight members and guests showed up at the start because the sky was cloudy. Member patience was rewarded, however, when the sky cleared around 10 PM. On June 24th, 24 members and guests gathered there to watch a total lunar eclipse.

25 Years Ago: June 1989 – Club members met at Normal’s Underwood Park for their summer picnic on the 17th. After the cookout and a vigorous game of volleyball, everyone moved to the ISU Planetarium where Carl Wenning and President Don Johnson presented the latest showing, *The Dawn of Astronomy*, and gave a night sky lecture.

10 Years Ago: June 2004 – Some 30 members and guests attended the TCAA summer picnic at SGNC. Members spoke excitedly about the recent transit of Venus, and honored Sandy McNamara – who was moving out of town – with lifelong honorary membership. Duane Yockey and Carl Wenning prepared a full-size Stonehenge ground map that served as the basis for the evening’s public talk. The public observing session was exceptionally well attended. (It even brought out some “Druids”.) It was noted that this was one of the best summer events that the club ever had.

TCAA TREASURER’S REPORT – MAY 2014

OPERATING FUND BALANCE – April 30, 2014 -		\$ 2,386.29
<u>Income</u>		
Bob Fearneyhough (Dues) -	\$	40.00
<u>Expenses</u>		
IL Charity Bureau Fund (Annual Report) -	\$	15.00
OPERATING FUND BALANCE – May 31, 2014 -		\$ 2,411.29
OBSERVATORY FUND BALANCE – April 30, 2014 -		\$ 4,281.41
<u>Income</u>		
Donation (Tim Stone) -	\$	100.00
<u>Expenses</u>		
None -	\$	0.00
OBSERVATORY FUND BALANCE – May 31, 2014 -		\$ 4,381.02
INSURANCE ESCROW BALANCE – April 30, 2014 -		\$ 5,274.00
<u>Income</u>		
None -	\$	0.00
<u>Expenses</u>		
None -	\$	0.00
INSURANCE ESCROW BALANCE – May 31, 2014 -		\$ 5,274.00
TOTAL TCAA FUNDS – May 31, 2014 -		\$ 12,066.31

Respectfully submitted,
L. Duane Yockey, Treasurer