TWIN CITY AMATEUR ASTRONOMERS, INC.

The OBSERVER

VOLUME 37, NUMBER 6 JUNE 2012

IN THIS ISSUE:

A NOTE FROM PRESIDENT TOM WEILAND

Our club wants to make sure that no one misses a last in a lifetime opportunity to view a Venus transit. The Twin City Amateur Astronomers will be providing a variety of safe viewing opportunities at Sugar Grove Nature Center, located just southwest of Bloomington-Normal. Presentations on the transit event and viewing will begin at 4:30 pm. and end at 8:30 p.m. as the sun sets on June 5. A planet walk and coloring activities for younger children are also being planned. Lemonade and cookies will be available as well as certificates to verify that you were a witness to this event. Total transit time is 6 hours and 40 minutes, however since the transit will begin in the evening, early viewing is encouraged as the sun will set below the horizon and distant tree line before the conclusion of the transit. Although clear skies are hoped for, the event at Sugar Grove will take place regardless of weather conditions. Opportunities to help during the event are still available. If you are interested in assisting contact TCAA President, Tom Weiland at tomcea52@yahoo.com .

A VENUS TRANSIT: LAST CHANCE OF THE CENTURY

On June 5, 2012, an event that will not take place for another 105 years will excite the world's astronomers, as it has since the 1600s, but now it may provide priceless data in the hunt for habitable planets in deep space.

A tiny orb will appear on one side of the Sun in just a few days and slowly make its way across the solar disc for a few hours. The movement of that little black dot may seem insignificant. But it is one of the rarest sights in astronomy, an event known as a transit of Venus. Miss this one and you will have to wait until 2117 for the next.

Venus, associated with the Roman goddess of love, is an inhospitable world. It has a surface temperature of 864 degrees Fahrenheit and a dense atmosphere of carbon dioxide with thick clouds of sulfuric acid. Once thought to be a sister world to Earth, because of their similar sizes and orbits around the Sun, Venus would be an unfriendly planet on which to live.

Nevertheless, studies of the planet, and its rare transits, have provided scientists with important scientific data and this transit will be no exception. In particular, astronomers will use it to test techniques that are being developed to study the atmospheres of exoplanets, worlds that orbit other suns, and to spot those that may have life-supporting gases such as oxygen and water vapor.

In the past few years, the search for exoplanets has changed dramatically with the launch of spacecraft such as the Kepler Observatory. Its telescopes measure tiny reductions in the amount of light from stars when planets pass in front of them. Just as the transit of Venus causes a slight dimming of the Sun's light, so an exoplanet reveals its existence when it transits a distant star.

That drop in light provides valuable data about an exoplanet's size and orbit. Scientists are developing techniques that will allow them to better determine how different exoplanet atmospheres will produce changes in the light from the stars they orbit. To assure that these techniques are right they must test them on a planet for which they have precise knowledge, which is where Venus comes in. Thanks to a variety of Venus probes they have a precise knowledge about its atmosphere and surface. By studying Venus as if it was an exoplanet they will know how accurate these new methods are and how much they need to be refined. A whole network of astronomers will be studying the transit of Venus for this reason. In an attempt to mimic a smaller exoplanet passing in front of its sun, scientists will also utilize the Hubble Space Telescope to measure reductions in the light reflected from the moon during the transit.

A transit of Venus occurs when the planet and Earth, whose orbits tilt at slightly different angles, line up exactly where their paths around the Sun cross. This occurs in an interesting 243-year pattern: they come in intervals of 8, 105.5, 8, and 121.5 years in a repeating cycle. Only seven transits of Venus have occurred since Galileo turned his telescope to the night sky. The last, in 2004, was viewed by millions who also used telescopes to watch directly or to project images of the Sun's disc and the dot of Venus on to cardboard screens or electronic monitors. **It is important to note that no one should ever view the Sun directly without taking proper precautions as permanent damage to the eyes can occur.** After this year's transit, the next pairing will be in 2117 and then 2125. The previous pair occurred twenty years before the Wright brothers' first flight at Kitty Hawk.

The first transit of Venus was predicted by the German mathematician and astronomer Johannes Kepler who calculated one would occur in 1631. However, this was not visible from Europe. The next one occurred on December 4, 1639 when a gifted young English astronomer, Jeremiah Horrocks, became the first person to watch a transit of Venus when he pro-

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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.

MINUTES OF THE MAY BOARD OF DIRECTORS' MEETING

The TCAA Board meeting was held at the office of Duane Yockey on May 8, 2012. President Tom Weiland called the meeting to order at 7:05pm. In attendance were Tom Weiland, John Werner, Dan Miller, Paul Pouliot, Tony Cellini, Bob Finnigan, Duane Yockey and Lee Green. Carl Wenning arrived later at 7:50pm. The minutes of the previous meeting were unanimously approved as was the Treasurer's report.

Duane reported that our annual liability policy premium had recently been paid and that our annual Astronomical League dues would be due soon. He reminded us that the annual ALCON would be held in Chicago in July 4-7 with many exciting activities planned. See http://alcon2012.astroleague.org/ for details. Carl Wenning is serving as editor of Celebrate Starlight in association with the convention. John indicated that he and Joyce are planning to attend.

As Property Manager, Lee reported that he had received comments from the staff at the Sugar Grove Nature Center about William Carney's activities in repairing the roads there. They were very thankful for his activities. In addition, William recently lubricated the dome at SGO. He has also agreed to help Lee re-stain the Observatory during the summer. As Webmaster, Lee reported that he had completed development of an Android phone app for the club. He thanked Tony for his assistance testing the app and Bob for the loan of his Android tablet. He will publish the app on the website and send the download instructions to members through the listserv.

Under old business, Tom reported that he had gotten prints of the new Membership Brochure, POS Calendar and the Venus Transit flyer. These are at the Observatory for anyone who needs them.

We participated in the ISU Family Science Day on March 22 and had a great turnout. Carl, Paul, Eve, Amber and William had solar telescopes set up and had brisk traffic. Dan, Tom, Duane and Lee manned the booths and had steady traffic, but not as busy as in 2011.

With the Venus Transit happening on June 5, Tom led us through our plans for the event. We will have a variety of telescopes set up. Computerized equatorial mounts include the club's CGEM, Lee's CGE, William's Atlas and Dan's CGE with an H-alpha filter. Tom noted that we have four Sun Funnels that are ready for use and they can be used on and refractor including the club's 6", Bob's 4" Televue or Lee's 2" Galileoscope. Tony indicated there are two solar shades available at SGO. Bob plans to use one of the shades for the 11" in the SGO and to transmit the image to the Nature Center or to the shelter and use the TV or the projector to display the images. We discussed the wireless signals and have a plan to ensure they will reach the shelter; Lee agreed to work with Bob to resolve these issues in the coming days. In case of inclement weather, Bob volunteered use of his wireless hotspot for accessing the Mauna Loa webcast. John will give a presentation that day at 4:30. Tom, John, Dan, Paul, Lee and Carl indicated that they would arrive several hours early to set up the equipment. Tony and Duane will arrive after work.

Duane suggested that we print the Observer earlier than normal for the June issue so members can receive their copies before the event. Tom noted that his recent letter to the editor, the SGNC newsletter and an article he has prepared for the Pantagraph will help advertise our event.

In addition to observing the transit, Tom suggested several other ways we can make the event memorable. A sample Observing Certificate that Lee created that can be filled out with peoples' names was passed around for review. We discussed having a Planet Walk activity to show the size of the Solar System. We also discussed using our Night Sky Network toolkits to further engage people. Tom indicated that Angela had offered use of the large cooler and Tom plans to have water and lemonade. He also asked each member to bring a package of cookies to donate. John suggested that he would bring a commemorative coloring sheet and crayons for a kids' activity. Everyone agreed that this would be a big event and that our planning was helpful.

Moving on with other old business, Lee reported that we now have lights installed in the club storage area in the SGNC shed. Additional electrical work remains and progress should be soon forthcoming. Lee also volunteered to host the October POS session.

We revisited a discussion about a contribution to the SGNC. Carl spoke eloquently in its favor considering all that they have done for us. John indicated qualified support given the concerns previously expressed about our ability to cover our operating costs. We discussed recent major expenditures, including our contributions of time and materials for our storage area, and fundraising. While the motion was tabled for now, it was expected that we should revisit the topic in the near future.

Bob provided an update on the status of the roll-off-roof observatory that he and Carl have been pursuing. With Angela's assistance, the site of the facility is closer to being chosen. Since it is a new building on land that is zoned as agricultural, the county Zoning Board will need to recommend a special use permit and approval from the county Board will be required.

Under new business, we discussed the idea of requesting fees and soliciting donations for holding club events. We considered the ability of different groups to pay a fee or make a contribution, Lee noting that the vast majority

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A VENUS TRANSIT: LAST CHANCE OF THE CENTURY (CONT.)

(Continued from page 1)

jected an image of the Sun on to a piece of white card. He was rewarded with the sight of the black dot of the planet crawling across the solar disc. From his observations, Horrocks used triangulation techniques to make the best estimate then attempted for the size of Venus (one arc minute or 1/60 of a degree).

The next pair of transits – 1761 and 1769 – got a lot more attention. In a paper written in 1716 Edmund Halley had suggested using measurements taken from widely separated locations on Earth would provide an accurate distance to Venus and consequently the distance to the Sun. Expeditions were sent across the globe, including Captain James Cook's first expedition. He visited Tahiti to observe the transit, from a place that is still known as Point Venus.

The expeditions pushed science and many scientists to the limit, the unluckiest being the French astronomer Guillaume Le Gentil, who set out from Paris in March 1760 but was still at sea on transit day, June 6, 1761. The rolling of his ship prevented him from taking observations. So Le Gentil decided to wait for the next transit in 1769 and built a small observatory in Pondicherry, a French colony in India, where he waited patiently for the next transit on June 4, 1769.

On that day, clouds filled the sky even though it had been clear every morning for the preceding month. Le Gentil saw nothing. On his journey home, he contracted dysentery and was caught in a storm that delayed his return to Paris until October 1771 (nearly 11 years after his departure) where he found he had been declared legally dead, his wife had remarried and all his relatives had enthusiastically plundered his estate. He eventually remarried, however, and enjoyed an apparently happy life for another 21 years.

Although the results from the 1761 and 1769 transits, as well as the results of the transits of 1874 and 1882, even with the advent of photography, were somewhat disappointing with regard to determining the correct distance to the sun, other significant discoveries were made. The fact that Venus has an atmosphere was one notable result from the 1761 observations: Russian scientist Mikhail Lomonosov reported seeing a thin arc of light around Venus as Venus began and ended its transit and interpreted correctly that the arc of light was due to the sunlight refracting through a thick Venusian atmosphere.

In 1891 Simon Newcomb, a Canadian-American astronomer and mathematician, used statistical techniques to analyze previous data and arrived at the first best estimate for the distance from the Earth to the Sun (within 1%). The best measurements for that distance, what is referred to as the astronomical unit, had to wait until well into the 20th century. Although providing little direct information about the planet, a Venus transit remains a remarkably rare and stunning visual event while providing an opportunity to test transit techniques and their effectiveness.

In 2004, the end of the transit was seen in the eastern United States. This year all of North America will be able to see the beginning of the transit, however the sun will set before its conclusion.

MINUTES OF THE MAY BOARD OF DIRECTORS' MEETING (CONT.)

(Continued from page 2)

of the groups were "non-profit." Lee also noted that, in his role as Solar System Ambassador, he was not allowed to receive monies for his presentations. There was also discussion regarding raising money by selling items at events such as the Venus Transit. Duane noted that this could have a negative impact on our not-for-profit status and that there could be other tax related issues. Duane also noted that our income has been stable over the recent past and has relied on additional contributions to maintain our reserves. As such the consensus at this time was that while we all recognize the need for contributions to help support our activities, we are not comfortable instituting a policy of solicitation.

Updates at the Illinois Wesleyan University Mark Evans Observatory have been approved by IWU. We discussed the previously approved sale of club equipment. Carl prepared a Memorandum of Understanding related to this transaction and this was reviewed in detail. It was agreed that several items of club-owned equipment would be sold to the IWU and that the proceeds would be used to purchase a new camera. Lee agreed to work with Duane to detail the transaction so that the accounting was clear and accurate. [Note: It was later discovered that there were several inaccuracies in the working memorandum, so it is anticipated that this will be reconsidered.] The specific list below shows which club-owned items will be sold and their agreed upon sale price:

Item	Donated Cost	Sale Price
CGE-Pro Mount	$4,995.00	4,000.00
QSI-583c Camera	3,856.23	3,000.00
Lodestar Guider	700.00	600.00

The next meeting of the Board was scheduled for July 10.

The meeting adjourned at 8:35pm.

Respectfully submitted,

Lee Green

TCAA Secretary

MAY E/PO

Lee Green, William Carney, Paul Pouliot and Amber, Dan Miller, John Werner, and Carl Wenning were present at Metamora's Camp Tapawingo on Saturday, May 5. About 80 Girl Scouts and parents were present. Thin layer of clouds prevented views of deep space object. Only Mars, Venus, Saturn, and the Moon were observed.

Carl Wenning and Sharon MacDonald held an observing session for a group of Cub Scouts in Carlock on Friday, May 11. Despite the mostly overcast sky, approximately 20 scouts and parents were able to view Venus, Mars, Saturn, M51, and Alcor and Mizar through Carls' CPC 11" telescope.

Despite what appeared to be a lingering bank of clouds in the west that might prevent any clear viewing, a significant number of our members were in attendance and seven scopes were set up for our May Public Observation Session. Tom and Carolyn Weiland, Paul Pouliot with Eve and Amber, Brian Barling, Tony Cellini, Dave Osenga, John Werner, William Carney, Jeff and Josh Benway, Larry Leetzow, and, Bob Finnigan were there along with 80 members of the public. The attendance was quite surprising considering the conditions. Tom Weiland gave a presentation about Saturn, it's rings and moons. He also shared details and photos from the long-term Voyager missions as well as the current results from the Cassini-Huygens mission. Information about the upcoming Venus Transit Event and next POS were also shared with the crowd. As Tom was concluding his remarks, the sky began to break and the crowd was treated to some clear views of Saturn. Conditions continued to improve and Dave shared information about some of the visible constellations with his laser pointer. Bob had a consistent flow of people viewing some of the member's astrophotography and showed a rotating group of individuals how that work is done in the observatory. Thanks to all who were able to attend and make this event such a success!

NEXT POS JUNE 16th

The fourth education and public outreach event of 2012 will take place on June 16th at Sugar Grove Nature Center. The program will start at 9:00 p.m. with Carl Wenning giving a talk titled, "Arc to Arcturus and Speed to Spica." The talk will run for approximately 20-30 minutes, and will focus on constellation finding. It 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. Note that a coordinator is still needed for the October 13th talk dealing with Uranus and Neptune. A new 2012 POS program brochure is available on the TCAA website at http://www.tcaa.us/.

Date (Sat.)	Time	Topic	Coordinator
July 21	8:30 PM ~ 10:30 PM	Asteroids, Meteors, and Meteorites	William Carney
Aug 18	8:00 PM ~ 10:00 PM	Clusters and Nebulas of the Milky Way	John Werner
Sep 15	7:30 PM ~ 9:30 PM	Stories of the Constellations	Eve Pouliot
Oct 13	7:00 PM ~ 9:00 PM	Uranus and Neptune	(coord. needed)

BUDDING ASTRONOMER VISITS SGO

Joey Petrillo, a 17-year-old student at Normal Community High School, visited with Carl Wenning, Bob Finnigan, Tony Cellini, and William Carney at SGNC on Wednesday, May 2nd. Joey, on a job shadowing experience, spent the evening learning about what it would take to become a professional astronomer. He held a one-on-one meeting with Carl from about 8:45 to 9:00 p.m. to talk about academic preparation, visited William as he was making a movie of the setting of Venus, watched a short sky lecture with Carl, and observed Bob and Tony as they imaged M81/82 and M97. He remained until near midnight and later wrote a nice letter expressing thanks for the opportunity.

In that letter Joey wrote, "This valuable experience allowed me to obtain first-hand experience regarding the life of an astronomer. I was able to get a much broader perspective on what it would be like if I joined this field (professionally or just as an amateur). This experience has helped me make a decision for my college courses and the career that I will soon follow in the years to come. The most important thing I learned was how and what kind of work and astronomer really does, as well as the logistics of getting into this field of work. I sincerely enjoyed talking with all of you and learning while we waited for those pictures to come up. I thank you guys so much for the opportunity to come out and see you guys and I hope I will be allowed to come out there again sometime soon."

You are most welcome Joey! We look forward to seeing you again soon.

ANNULAR ECLIPSE OBSERVED FROM ARIZONA

By Carl J. Wenning

My reflections for the month of May are necessarily brief due to a bit of traveling. Nonetheless, some of that traveling was for the purpose of viewing the 2012 annular eclipse of the sun that I was able to observe from Page, Arizona, with about 20 others from across the US. I flew out to Denver on May 13th and was picked up by my sister Bev and her husband Edward at the Denver International Airport (DEN). I was surprised to find standing between them my brother Tim who is a truck driver and who just happened to be passing through the Boulder area where my sister had moved only about two weeks before. After spending 3 days visiting, I returned to DEN where on May 17th I met up with a friend – Jeff Hunt – who I first met in graduate school at Michigan State University during 1977.

Jeff, much the athlete, took me on a jaunt through Colorado (where we bicycled 16.2 miles through Glenwood Canyon) and Utah (visiting Corona Arch, Arches National Monument, Dead Horse State Park, and Canyon Lands National Monument among other things.) After three days in the Moab area, we moved on to Page, Arizona, where on the morning of the eclipse, May 20th, Jeff and I met up with a small group of personal friends organized by Mike Bakich of *Astronomy* magazine. The day before Jeff and I rendezvoused with Tim Skonieczny – another Michigan State friend – and his daughter Sara. Mike, of course, is a graduate school classmate to all three of us.

Conducting a survey of Page the day before the event, Jeff and I were able to identify a small grassy park with perfect viewing circumstances. The group from *Astronomy* was redirected to this new location from a planned desert location, allowing all of us to avoid the scorching desert observing site; surprisingly, none of the other hundreds of other amateur astronomers who had flooded the area that day had discovered this park site and we enjoyed a perfect annular eclipse of the sun without any outside visitors at all. The only exception to that was a newly wed German couple – Marie and Turston – who I had met and invited several days before while on the desert trail to Corona Arch near Moab, Utah.

During the eclipse – viewed for very near the centerline – we were able to observe the Sun with the use of pinhole projectors, images projected from first-surface mirrors, solar glasses, binoculars, and a variety of small telescopes. The owners of DayStar Solar Filters – Vic and Jen Winter – were there and provided excellent views of the Sun in hydrogen-alpha light using small refractors. Dr. Tim Reynolds – dean at the University of Florida and well-known astrophotographer – was also in attendance as were astrophotographers Darren and Julia Trizzino (TX), and Jackie Beucher, former executive secretary of the Astronomical League (MO).

The event, occurring near sunset was very beautiful, and harkened back to the May 10, 1994 annual eclipse observed here in central Illinois. All in all, everyone in attendance was completely satisfied with the experience as we had a beautifully clear sky and pleasant temperatures despite the desert setting.

I'm really looking forward to the series annual and total eclipses (2017, 2023, and 2024), with two total eclipse experiences being available from a given location near Carbondale, Illinois.

TCAA VISITS TRI-VALLEY HIGH SCHOOL

William Carney and Dave Osenga were invited to do some stargazing with the Tri-Valley High School science classes on Wednesday night, May 16, 2012. The science teachers, Matt Heid and Adrienne West, hosted the gathering at the south end of the football field. There were about 12 students and two adults who ventured out on the clear but cold night even though finals started for them the next day. William and Dave showed the students views of Venus, Mars, and Saturn, then various Messier objects including star clusters, galaxies, and double stars. Dave also outlined several constellations with the green laser pointer. This was a big hit!

Dave also gave a presentation on the Dawn mission to Vesta and Ceres to the class the previous week.

Thanks to Mr. Heid and Mrs. West for hosting this and showing such excitement to the students.

MAKE PLANS NOW FOR ALCon 2012 IN CHICAGO

The Astronomical League's annual summer convention will be held in Chicago, July 4-7. The theme will be *Celebrating 150 Years of Organized Astronomy: 1862–2012*. FEATURED SPEAKERS: Mike Simmons, President, Astronomers Without Borders Dr. Donald Parker, ALPO, Planetary Astrophotographer Dr. Dave Crawford, Co-founder IDA (remote presentation) Wally Pacholka, TWAN, Landscape Astrophotographer Dr. Jason Steffen, Kepler Mission Scientist Dr. Mark Hammergren, Adler Asteroid Expert Dr. Philipp Heck, Field Museum Meteorite Curator Dr. Hasan Padamsee, Physics Professor/Playwright, Cornell Univ. Vivian Hoette, Astronomy Educator at Yerkes Observatory Jeff Talman, Artist, Star Sound Installation, "Nature of the Night Sky" Dr. David Blask, Expert in circadian disruption/cancer/light pollution David Eicher, Editor-in-Chief, *Astronomy* Magazine. Complete details can be found online at http://alcon2012.astroleague.org/. Make your room reservations now and save $100 per night.

It now appears that two active and one "retired" TCAA member will be in attendance at this event. While this event is incredibly inexpensive for Chicago (just $50 registration for a 4-day convention and $69 for each of three nights at the convention center), we can still reduce costs further. Perhaps we can carpool to Chicago and save a bit on travel expenses, and Carl still has that room that he is willing to share at a $35/day savings! If you plan on attending, please inform Carl at carlwenning@gmail.com and he will coordinate travel efforts.

NASA NOTES

By Lee Green

When the Space Shuttle program ended in 2011, the United States was left without a way to launch manned missions into orbit. While we still have the Delta rockets, but these were never designed for manned space flight. Without the heavy capacity that the Shuttle fleet provided, we became dependent on out international partners, Russia, the European Space Agency and Japan, to provide flights to the International Space Station. Many decried our lack of a launch platform as evidence that the United States is in decline. But as part of the strategy in retiring the aging Shuttle fleet, President Obama set the course for NASA to rely on commercial launch vehicles to provide access to space. This makes some sense because for many years, commercial entities have assisted in providing many of the integrated services for the Shuttle and other programs and this separation of concerns lets NASA concentrate on the science missions that it performs so well

Among the companies vying for work to deliver cargo and crew to the ISS under NASA's Commercial Orbital Transportation Services agreements are Space Exploration Technologies (SpaceX), Orbital Science Corporation and several other companies. On May 25, 2012, SpaceX became the first commercial company to successfully launch (on May 22) a supply mission which rendezvoused and docked with the ISS. This is a major milestone that provides an important backup to Russia's Soyuz and Progress vehicles. Orbital Science is scheduled to launch test flights during 2012.

From the NASA website (16 May 2012):

Observations from NASA's Wide-field Infrared Survey Explorer (WISE) have led to the best assessment yet of our solar system's population of potentially hazardous asteroids. The results reveal new information about their total numbers, origins and the possible dangers they may pose.

Potentially hazardous asteroids, or PHAs, are a subset of the larger group of near-Earth asteroids. The PHAs have the closest orbits to Earth's, coming within five million miles (about eight million kilometers), and they are big enough to survive passing through Earth's atmosphere and cause damage on a regional, or greater, scale.

The new results come from the asteroid-hunting portion of the WISE mission, called NEOWISE. The project sampled 107 PHAs to make predictions about the entire population as a whole. Findings indicate there are roughly 4,700 PHAs, plus or minus 1,500, with diameters larger than 330 feet (about 100 meters). So far, an estimated 20 to 30 percent of these objects have been found.

While previous estimates of PHAs predicted similar numbers, they were rough approximations. NEOWISE has generated a more credible estimate of the objects' total numbers and sizes.

AL OBSERVING CLUB UPDATES

If you would like to have your AL observing club information included in next month's update, be certain to forward your observing totals to Carl by the end of June. Be certain to get your completed observing records to our ALCor, Duane Yockey, as soon as an observing program is complete so that you might be appropriately recognized on a timely basis. Our next award presentation will be at the summer picnic.

TCAA Treasurer's Report – May 2012

OPERATING FUND BALANCE – April 30, 2012 -	$ 1,182.70
Income	
James Ryan (Dues) -	$ 50.00
Carl Wenning (Donation) -	$ 20.00
Maura Toro-Morn (Donation) -	$ 50.00
Expenses	
LYB Inc. (Observer copies & postage) -	$ 51.43
LYB Inc. (RORO copies & prints) -	$ 26.00
Dave Osenga (Ann. Dinner Room Rental) -	$ 35.00
OPERATING FUND BALANCE – May 31, 2012 -	$ 1,190.27
OBSERVATORY FUND BALANCE – April 30, 2012 -	$ 3,004.91
Income	
None -	$ 0.00
Expenses	
None! -	$ 0.00
OBSERVATORY FUND BALANCE – May 31, 2012 -	$ 3,004.91
TOTAL TCAA FUNDS – May 31, 2012 -	$ 4,195.80

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

June 1962 – Despite "massive propaganda efforts," the June meeting of the TCAA only had 10 in attendance. The problems with membership attendance at various viewing sessions and meeting was duly noted. The membership roles contained some 30 members at this time with about 1/3 attending events regularly.

25 Years Ago

June 1987 – TCAAers held a traditional June picnic at Ash Park on the 20th with 19 members in attendance. Efforts are being made to sell off unneeded supplies from the club's involvement with Comlara Fest a short time earlier.

10 Years Ago

June 2002 – The new LX200 Meade telescope was returned to Meade for repairs following a mechanical failure of the drive mechanism.

PRE-DAWN PARTIAL LUNAR ECLIPSE JUNE 4TH

The first lunar eclipse of 2012 will take place just before moonset on the morning of June 4th. 37% of the moon's radius will be eclipsed by the earth's umbra at the time of maximum eclipse, 5:04 a.m. The umbral phase of the eclipse begin at just before 4:00 a.m. that morning. At that time, the moon will be located right above the star Antares – the heart of Scorpius the Scorpion. The moon will stand some 20 degrees above the southwestern horizon at that time.

The lower portion of the moon will covered by Earth's shadow. The partially eclipsed moon will set a few degrees west of southwest as seen locally at approximately 6:17 a.m. – 10 minutes after sunrise. This eclipse will be somewhat reminiscent of the last total lunar eclipse on December 10th that also disappeared beneath the western horizon around the time of sunrise.

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