

The OBSERVER

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PRESIDENT'S MESSAGE: OUR GOLDEN ANNIVERSARY THE TCAA IS 50 YEARS OLD!

Way back in 1960, when I was but a child, people met together to find a way to share with others a common love. We were not part of their hopes; we did not enter their minds when they stood up.

They stood to form a club to celebrate the dawning of a new age. With the Space Age, new frontiers were ripped open, exposing us to new truths about world and the universe around us. In many ways, the era of rockets and satellites and space probes was just a continuation of the many technological advances mankind achieved during the 20th century. Once industrial strength machines were married to aeronautics, it was just a matter of time before we learned how to break the bonds of gravity. It was almost inevitable that we would strive to extend our reach into previously inaccessible realms, exploring the solar system in ways that, then, must have seemed like science fiction.

And we have explored! Look at all that mankind has accomplished in the last 50 years. In the first 10, not only did we put a man on the Moon, but we placed satellites around planet Earth to monitor weather and provide instant communications worldwide. The second decade taught us to improve our probes and send them throughout the Solar System and, with Skylab, start to learn how to survive in outer space. Our third decade brought us the space shuttle making space flight more accessible, paving the way for a Mission to Planet Earth which continues to teach us innovative ways to measure worldwide processes. Our fourth decade saw the introduction of space-based telescopes that monitor and measure the Universe across the spectrum in detail and in a scope as we can scarcely imagine. Throughout our fifth decade, we have continued to expand and refine and deepen our scientific understanding of the cosmos using increasingly sophisticated technologies that are more accessible and affordable than ever before.

Here we stand, after 50 years of the TCAA. Let us remember all those who came before; those who gave of their time, whose efforts have established and built this club of ours. Let us thank all our longtime members who have sustained the proud traditions of education, public outreach and community service.

We can be proud that we have a dynamic club that is so active throughout the community. We publish our monthly newsletter, the Observer, and we hold 8 Public Observing Sessions each year where we meet many people interested in astronomy. We are engaged in an amazing number of events with other groups, giving back a small part of what we have received. And somehow, members still have time to engage in observing programs and the pursuit of individual interests.

Thank you, TCAAers! Thank you for making the TCAA a great club where friends can join together and share a few of the joys we feel and the hopes we have, as we observe the wonders of the heavens.

Let us resolve to continue the traditions that our predecessors have given to us. Help to sustain this club as we continue to bring the amazing world of astronomy to those of the next generation. Join us as the Twin City Amateur Astronomers continue our activities into a new decade.

TCAA EVENTS FOR FEBRUARY

TCAA events for February are below. TCAAers are encouraged to attend and participate in all these events. There are not outdoor public E/PO events scheduled for February due to the winter season. Public sky viewing sessions will commence again in March. See the article about public observing sessions later in this issue of the newsletter.

February 4, Class 2 of adult education course, HCC, 7 p.m.

February 4, Commemorative Gathering, Fairview Park Swimming Pool "Cabana", 7:30 p.m.

February 6, Annual Meeting, Ewing Manor, Bloomington, 5:30 p.m.

February 9, BOD and NCRAL planning meetings, LYB Inc., 6:30 p.m.

February 11, Class 3 adult education course, HCC, 7 p.m.

February 13, Members-only Observing Session, Sugar Grove Nature Center, dusk

February 18, Class 4 of adult education course – observing session at Sugar Grove Nature Center, 7 p.m.

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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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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TCAA GOLDEN ANNIVERSARY ANNUAL MEETING

The TCAA will hold its golden anniversary Business Meeting and Banquet at Ewing Manor & Cultural Center in Bloomington on Saturday, February 6, 2010. This event is the club's 50th anniversary celebration, and you'll not want to miss it. If you are planning to attend and have made your reservations as required (deadline was January 27th for participating in the banquet), don't forget to dress up! Twenty-nine have registered for this historic event.

The evening will kick off at 5:30 p.m. on the Manor's main floor with a social accompanied by the strains of piano music provided by Mr. Kerry Meyer, a friend of Dave Osenga. Those attending are asked to arrive at 5:30 p.m. and to bring an hor d'ourve such as on of the following: deviled eggs, jumbo chilled shrimp served with remoulade and/or cocktail sauces; ham & asparagus rolls, assorted finger sandwiches; assorted canapés; celery stuffed with cream cheese, and cheese and crackers. One member has already agreed to provide punch in a bunch bowl along with cups, and plates, utensils, and napkins will be provided.

At 6:30 p.m. registrant will reconvene in the banquet hall down the spiral staircase for dinner. At about 7:15 p.m. we will hold our annual business meeting consisting of introductions, a moment of silence, award presentations, election of the 2010 Board of Directors, bylaws amendment, reports, and other such manner of business as regularly comes before the membership. The business meeting will be followed by an "evening of reminiscences". Barry Beaman, a TCAAer from 1963-1973, will address us starting around 8:30 p.m. Barry will tell us how he came to the TCAA and share memories of TCAA members, activities, events, and accomplishments. He will describe some of his accomplishments since leaving the TCAA and with an eye to the future, tell how anyone who wants to can follow the same path to success. Barry will conclude with a discussion about the AAVSO and some of the opportunities and benefits it offers to amateur astronomers.

This should prove to be an interesting and lively meeting due to the historical perspectives that it will provide. Besides Barry, other early members such as Bill Blunk, Taylor Cisco, David B. Williams, and Mike Ryder might well be in attendance. No matter how exciting the meeting, it's "lights out" at 10 p.m. when we are required to vacate the premises.

Parking is available in the lot of St. John's Lutheran Church immediately south of Ewing Manor. For complete information about parking, location, and so on, visit the Ewing Manor and Cultural Center web site at the following URL: <http://www.ewingmanor.ilstu.edu/about/>

MINUTES OF THE JANUARY 12, 2010 BOARD MEETING

President Lee Green called the Board members and officers to order at 6:38 p.m. in the offices of Lewis, Yockey, and Brown. In attendance were Duane Yockey, John Werner, Dan Miller, and Carl Wenning. Absent were William Carney, Dave Osenga, and Brian Barling. Business commenced with approval of the previous minutes and then a brief round of officer reports and announcements indicating that events were operating smoothly. Lee mentioned that he had made several updates to the TCAA website and that he is now ready to receive reservations for the club's Annual Meeting. Lee was asked to include the menu on the reservations web page as this information had not been published previously in *The OBSERVER*. Duane mentioned that he had applied for the club's tax-exempt e-number, but received a form letter stating that our case was being reviewed. He further noted that seven AL awards will be presented at the Annual Meeting, but that many more applications have been sent in.

John made several comments about the club's new logo and its availability on non-club materials such as a jacket. Dan noted that he and John are planning to go out to Nevada March 15-21 for a dark-sky observing session; he will also be taking a group to Mexico to examine Mayan archaeoastronomy of the Mayan Peninsula south of Cancun. He will provide a brief article for *The OBSERVER*. He further noted that Bobby Arn will soon have a picture published on APOD – Astronomy Picture of the Day – dealing with lunar halo and corona. Carl noted that great progress was being made on the *History of the Twin City Amateur Astronomers: 1960-2010*, and that the publication was now at 90 pages excluding photographs. Duane, having reviewed a draft of the club history, pointed out to Carl that he needs to include information about the club's 40th anniversary Annual Meeting that included Ray Villard and the huge public turnout. Carl will make this addition. Because William was not present, Carl reviewed a letter of solicitation for door prizes they had put together for final approval.

Attention was then turned to old business, primarily preparations for the Annual Meeting on February 6th. The program developed by Carl was reviewed. The directors and officers suggested that the door prize drawing be removed (unless some door prizes are to magically appear), and that a line be included for the vote for the amendment of the Bylaws published in the December and January issues of the club's newsletter.

(Continued on page 9)

AL OBSERVING PROGRAM STANDINGS

Below is a listing of the status of observers pursuing AL observing programs reported as of January 31st. If you would like to have your information included in next month's listing, be certain to forward your observing totals to Carl Wenning by the end of this month. Keep in mind that observing awards will be conferred at the Annual Meeting on February 6th. Be certain to get your completed observing records to our ALCor, Duane Yockey, as soon as possible so that you might be appropriately recognized.

AL Award	Bobby Arn	Brian Barling	William Carney	Lee Green	David Hahn	Chuck Mosier	Dave Osenga	Carl J. Wenning	Duane Yockey
S. Skies Binocular 50								(50)	(50)
S. Sky Telescope 50								(52)	(50)
Telescope Messier Prov70/ Hon110		(110)	(110)	108*	110*		70*	(110)	31
Binocular Messier 50			(100)	60*	22	8		78*	22
Deep Sky Binocular 60			60*						
Herschel 400 Club		249	(400)	400*				(400)	
Urban Club 100			(100)	100*				(100)	
Comet Club Silver12/Gold30			31*					4	
Double Star Club 100		17		51				(100)	
Planetary Neb Club Basic60/ Adv110			1					63*	
Globular Cluster Club 50				20				65*	
Lunar Club 100		(100)	(100)	100*			88	100*	
Lunar II Club 100			34						
Asteroid Club Reg25/Gold100			(52)						
Earth Orbiting Satellite 28			5		13			3	
Outreach Award Basic10/ Stellar60/Master160	*, **, ***			(*, **)				31 ^h -06* 26 ^h -07 44 ^h -08** 43 ^h -09	

* Program or first award level now complete. ** Second award level now complete. *** Third award level now complete. AL recognition (certificate and pin) will be given at the next general membership meeting if available. Numbers in parentheses (#) indicate that the associated pin and/or certificate has been received.

TCAAer GETS BEHIND-THE-SCENES TOUR AT NEW CLC

On January 28th, Carl Wenning was fortunate enough to receive a personal in-depth tour of the new Challenger Learning Center at Heartland Community College. Stacey Shrewsbury, Lead Flight Director, invited Carl on the tour. Carl helped to write the proposal that landed the CLC for the Prairie Aviation Museum prior to its original opening in Bloomington on December 17, 2003. While the official re-opening of the CLC will not occur until March, the simulators are now up and running, and the first shakedown missions since the move have been successfully completed.

Carl was extremely pleased with the new CLC setting. While the simulators are much the same as before, they have been supplemented by new communications systems developed by technologists on staff at HCC. This gives the simulation a much more professional and realistic "feel." A second space transport module has been added for younger students participating in the micronauts missions. The original displays and supplemental materials have been installed and contribute significantly to the appearance of the Center. NCRAL 2010 participants will certainly be impressed with the updated CLC as will TCAAers who participate in the Friday evening missions.

JANUARY EDUCATION AND PUBLIC OUTREACH

FEBRUARY SKY GUIDE

- 02** The Moon passes 8° south of Saturn, 8 P.M. 
- 07** The Moon passes 1.1° north of Antares, 1 P.M. 
- 12** The Moon passes 2° north of Mercury, midnight 
- 14** Neptune is in conjunction with the Sun, 5 P.M.
- 16** The Moon passes 6° north of Uranus, 1 P.M. 
- 18** Asteroid Vesta is at opposition, midnight 
- 25** The Moon passes 5° south of Mars, 11 P.M. 
- 28** Jupiter is in conjunction with the Sun, 5 A.M.

Lee Green reports that his adult education course at Heartland Community College is off and running. The first class session was on Thursday evening, January 28th. Lee noted that there are four individuals enrolled in this course, and that Dave Osenga is helping out. Due to the completion of IYA 2009 and the cold winter weather, no additional education and public outreach events took place during January.

JANUARY OBSERVERS' LOG

Chuck Mosier withstood the bone-chilling, near-zero temperatures of January 3rd to do some Messier binocular observing. He observed right after the sky turned dark enough to do so. While cold, it was also a clear, dark, moonless night providing good viewing. Chuck went seven miles south of Ottawa, IL, on a country road to view with binoculars. It was too cold to set up his telescope. Using binoculars he was able to observe M103, M52, M31, and M39 before the cold was too much to take. As Chuck noted, "Thank god for car heaters... If it was only 50 degrees." We hear you Chuck! Chuck is now up to 8 Binocular Messier objects.

This past January was one of the harsher such months in recent years. With overcast skies most of the time and bone chilling temperatures much of the time, sky watching has been very limited. Perhaps we'll get a mid winter warming trend some time and we can once again get out under the stars.

Bobby Arn did make it out a bit during January, and here is his report. "The overcast skies for most of the month made it difficult to get any imaging done. Luckily the 13th was clear, warm (18°F at night!) and had little moon so I was able to test out a relativity new setup with the company of Dan Miller and John Werner. With a 4" WO APO on a CGEM mount, a 66ED AT guide scope and Orion's new Solitaire Autoguider, and a modified Canon XSi, I was able to get about 2 hours of data on the Horsehead and Flame Nebulae (and surrounding region) before trees got in the way. The image can be found in the Astro-Images Gallery from the root of my website: <http://barn.zenfolio.com>

Later that night I was also able to do some wide-field constellation work, focusing on Leo. Even going with an ultra-wide field of view (68° diagonally), I was able to capture in fairly good detail the beehive cluster and Mel 111, another open cluster. That night, Mars was also sitting in front of the head of Leo.

(Again, see the Astro-Images Gallery.)

Earlier in the month, I found out that my Lunar Halo and Corona image (see the Solar System Gallery) took 1st place in the monthly Yahoo Digital Astro group (an online group dedicated to astronomical imaging with DSLR and Advanced Point and Shoot Camera). As a follow-up to that shot, I wanted to try and incorporate some for of landscape into another Halo shot. On the 28th I got that opportunity out at Friend's Creek. The 'house' in the image is an old one-room schoolhouse built in the early 1900s. The image can be found here in the Nightscape Gallery).

And finally, I was finally able to process a series of images from a couple months ago. This was taken at Panther Creek (same location as the IDSSP conference last October), and shows star trails, both above and below the celestial equator, rising over a lake. Image can be found in the Nightscape Gallery)

Cheers,
Bobby

KIEVIET DAUGHTER PASSES AWAY

It is with a heavy heart and a deep sense of sadness that we report the death of Valeria Armour, the daughter of TCAA founders John and Bertha Kieviet. She died unexpectedly on the evening of January 1. Valeria was never actively involved in the club. Nonetheless, Carl Wenning expressed condolences to Vernelle (her husband) and Diane (her daughter) on behalf of the TCAA. Carl and his wife Carolyn attended Valeria's wake on January 3rd to express the club's condolences. They also expressed condolences to Kora (Jim) Searcy, the Kieviet's other daughter.

ORDER TCAA POLO SHIRTS NOW

Dave Osenga and the Board of Directors worked long and hard to develop a new club logo. Now, John Werner and the Board have worked diligently with *dk Designs* to have polo shirts with the TCAA logo embroidered into the fabric of the shirt. Now, these polo shirts are available for ordering. They are striking to say the least, and all club members are urged to "show their colors" at TCAA events by wearing one of these shirts to club functions in the future. See the order form enclosed in the December issue of *The OBSERVER* for additional information. Alternatively, email John for details at res1mpc9@verizon.net.

2010 PUBLIC OBSERVING SESSIONS

From March through October each year, the TCAA holds monthly public observing sessions on the Saturday typically nearest the first quarter moon. All programs are free of charge and open to the public. The sessions are held at Sugar Grove Nature Center. In 2010, we will hold the observing sessions on the dates and time listed below. Each session will focus on a particular celestial phenomenon, though additional prominent sky objects such as planets, nebulae, star clusters, and galaxies are viewed when visible. A typical public observing session includes the following components:

- ☆ *Lecture about the featured object.* This 20-30 min. presentation, held in the SGNC picnic shelter, includes images of and details about the featured sky object as well as information on other interesting celestial objects that might be viewed that evening.
- ☆ *Sky tour using a laser pointer.* We step out under the stars to point out the major constellations and planets, and to designate the location of the featured celestial object for the evening.
- ☆ *Telescope observing session.* We use telescopes at ground level to observe the featured objects and other wonders of the heavens.

Date	Featured Object	Time	Coordinator(s)
March 20	Crescent Moon and Mars	7:30pm - 9:30pm	Lee Green
April 24	Gibbous Moon and Saturn	8:30pm - 10:30pm	Carl Wenning
May 22	Variable Stars	9:00pm - 11:00pm	Lee Green
June 19	Virgo Cluster of Galaxies	9:00pm - 11:00pm	Duane Yockey & David Osenga (?)
July 17	Globular Star Clusters	9:00pm - 11:00pm	Duane Yockey & David Osenga (?)
August 14	Planets and the Zodiac	8:30pm - 10:30pm	Carl Wenning
September 11	Stars of Red, White and Blue	7:30pm - 9:30pm	Dan Miller
October 16	Perseus double star Cluster	7:00pm - 9:00pm	John Werner

A detailed brochure dealing with the 2010 public observing sessions can be downloaded from the TCAA website at www.tcaa.us.

Members-only observing sessions usually are held on the Saturday nearest the full moon and are typically held one week prior to public sky viewings. MOOS programs are held throughout the year, but only if the temperature isn't too low and the wind too high during the winter. Because the TCAA Board has agreed to dispense with coordinators for the members-only events, TCAAs should pay attention to monthly reminders that will be distributed electronically through the club's listserv.

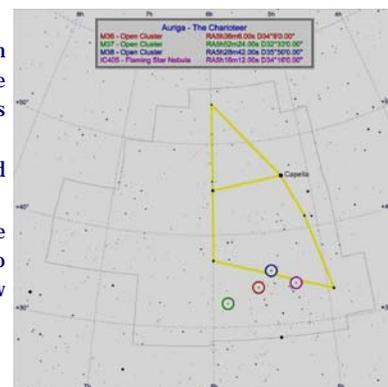
CONSTELLATION OF THE MONTH: AURIGA—THE CHARIOTEER

Auriga is a bright winter constellation that lies between Perseus and Gemini, south of Camelopardalis.

Auriga is seen as the driver of the chariot who is carrying a goat and her kids. The constellation is often associated with Erichthonius, a king of Athens, who was the lame son of Vulcan and Minerva. He created the chariot to ease the effects of his affliction and the device was so admired by Jupiter that a place in the sky was his just reward.

Auriga is the 21st largest constellation covering 657 square degrees. It is the 6th brightest constellation and includes the 6th brightest star in the sky, Capella, or She-Goat.

Auriga lies in the Milky Way and is rich in open clusters and emission, reflection and dark nebulae. The three Messier objects found in Auriga are all open clusters. M36, M37 and M38 are all attractive clusters to view. M37 contains 150 stars and the other contain about 60 stars. The Flaming Star Nebula is difficult to view with a telescope because it about the size of the full moon and surrounds a bright variable star AE Aurigae.



SUNSPOT MINIMUM ENDING?

By Carl Wenning

It appears that the dearth of sunspots is coming to an end. During the past few weeks the number of sunspots has been on the rise, with some very large spots and spot groups appearing during early to mid January. According to data provided by SpaceWeather.com, only 2 days (6%) of 2010 has been sunspot free as of this writing (January 31st). During 2009, there were 260 days (71%) when the sun was spot free. If the last three months of 2009 are discounted, the percentage of sunspot-free days during 2009 approached 80%. Clearly, the end of 2009 saw the beginning of the next sunspot cycle.

During the recent sunspot minimum the appearances of sunspots was indeed rare. A typical solar minimum lasts about 485 days. Since 2004, there have been 772 spot-free days. The current minimum has been unusually long, perhaps contributing to global cooling that has appeared for the past few years. With the return of sunspots (when the sun is actually more radiant), we might expect the return of more normal weather with higher temperatures and clearer skies. Let's hope so.

Last year was remarkable for its great number of cloudy skies. Only 3 of 8 scheduled public observing sessions were held in 2009, and only a very few members-only observing sessions were held. September and October, some of the clearer months in central Illinois, provided very few skies during this past year. More than one TCAAer mentioned that October was more like a typical November which is cool and wet. I haven't done any serious observing since March 31, 2009, as a result. I suspect that it has been much the same for other club members.

Now, after more than 2 years, I should finally get a chance to take out my PST H-a solar telescope to get in some viewing. Since I obtained it during the summer of 2007, I have not once seen a significant solar prominence – something I'm longing to do. Perhaps we will now have something to show during Astronomy Day and Autumn Fest activities. It might be a good time too to do some sidewalk amateur astronomy during the day with our focus on the sun. Think about it.

HISTORICAL PHOTOGRAPHS CONTRIBUTED TO TCAA

On January 23rd, TCAA Historian Carl Wenning obtained two images of John Kieviet with his 6-inch homebuilt telescope from Vernelle Armour, John's son-in-law. On January 28th, Carl received 8 additional photographs from Mike Ryder, an early TCAAer now living in Oregon, IL. These photos were taken at a 1963 partial solar eclipse observing session that took place in the backyard of Hank Janecek. The pictures show Hank, Mike Ryder, Bill Blunk, Taylor Cisco, and David Williams. Carl received another phone call from Vernelle on February 1st, and he provided the TCAA with 15 additional pictures from 1970 and 1973, and contributed a plaque to the TCAA that was awarded to John & Bertha Kieviet on February 21, 1980 when both received Lifelong Honorary Membership from the club.

The accompanying photograph was among those among those contributed by Vernelle on February 1st. The picture shows left to right Henry (Hank) Janecek, Aubrey Johnson, Steve Miller (youth), John Kieviet, Weldon Schuette, Rev. Lloyd Strouse, Robert (Bob) Mayo, and Russell Blakney. They were present at the club's 1971 Annual Meeting.

Carl and William Carney are working hard to gather up additional historic photographs of the TCAA that they have taken during their participation in the club. Many of the club's earliest pictures from that time were likely destroyed when the club's two historical scrapbooks containing memorabilia of the club (first assembled by Bertha Kieviet) were lost in 2000.



THE LIFE AND TIMES OF GALILEO, PART 6

By Carl J. Wenning

In recognition of the 400th anniversary of the telescope's use to view the heavens, I re-present here in multiple parts a review of short biographical sketch of Galileo that I wrote in 1996.

At the prompting of the opponents of Copernicanism, the Pope was inclined to censure Galileo but, on the advice of Cardinal Bellarmine, submitted the two major theses of Copernicanism -- that the sun was the center of the world system and that the earth did move as a whole and daily upon its axis -- to the Qualifiers of the Holy Office. The Qualifiers found the basic tenets of heliocentric doctrine to be pernicious and further held that both propositions were foolish and absurd (but interestingly enough not false!) and formally heretical inasmuch as they contradicted expressed opinions of Holy Scripture.

On February 24, 1616, these findings were read before the weekly meeting of the Cardinals of the Inquisition. The Pope instructed Bellarmine to inform Galileo that he was not longer to hold or defend the propositions that the sun was at the center and that the earth did move. And that if he should resist this censure, then he would also be instructed that he must also desist from teaching the doctrine which would provide ample opportunity for action by the Inquisition should he persist. The purpose of the twofold order was clear: if he should acquiesce to the command, then there would be no more constraints against him than any other Church member and he would free to discuss the Copernican system as a hypothesis. If he refused, then there were sufficient grounds for the Inquisition to move against him.

Two days later Cardinal Bellarmine summoned Galileo to his residence in order to deliver to him the findings of the Inquisition and the order of the Pope. Just exactly what happened at this meeting is not clear, but it is believed that uninvited officers of the Inquisition made a point of being present with a notary to see to it that the more liberal Bellarmine did not cave in in the face of any protest that Galileo might offer. It is widely believed that Galileo, having been warned by Bellarmine not to resist the injunction of the Pope, accepted the terms neither to hold nor to defend the views of Copernicus but that he might still teach these views as a working hypothesis. It is further believed that one of these uninvited guests, having perceived that Bellarmine had evidently warned Galileo not to resist the injunction, exceeded his authority and informed Galileo that he was not to hold, defend, or teach the Copernican doctrine. Bellarmine then proceeded to give to Galileo in writing the injunction neither to hold nor defend the views of Copernicus. All this was duly recorded by the notary but the document was signed by neither Bellarmine nor any member of the Inquisition present as it was clear that at least one of them had spoken rashly and had exceeded his authority.

Immediately after the findings of the Inquisition with regards to the tenets of the sun-centered world system hypothesis, three book, including Copernicus' *De Revolutionibus*, were put on the Index of Prohibited Books until such time as the work was corrected. Following several very minor revisions to make the Copernican thesis appear purely speculative and mathematical, the book was once again being published in Italy by 1620.

On the whole, Galileo appeared to have been reasonably well satisfied with the state of affairs surrounding the controversy. It was clear to Galileo that most of his worries were caused by his detractors and that theologians as a whole were not seeking a pretext to censure him. Neither were they looking to interfere with scientific issues. Rather, they were only concerned with preserving, protecting, and defending the deposit of faith which had been handed down to them and which was now under attack by Protestants to the north.

In the years immediately following these incidents, Galileo was comparatively inactive. He was now more than fifty years of age and he suffered from a good deal of ill health. He continued to delve into the question about how the moons of Jupiter might yet be used as a planet-wide clock for the purposes of navigation. He observed threecomets in 1618 and published a work on these bodies, believed by many philosophers to be elements in the earth's own atmosphere, entitled "The Assayer" which appeared in 1623.

The book, one of Galileo's minor works which contained a thinly veiled support for Copernicanism in accordance with the edict of 1616, was dedicated to Galileo's long-time friend Maffeo Barberini, now Pope Urban VIII. The Pope was so pleased with the work that he had it read aloud to him at mealtime. Galileo's book evidently was used as ammunition against him in Rome as he felt that it was necessary to travel to Rome in 1624 to seek audience with the Pope in the hopes of having the odious restrictions of 1616 lifted.

Though Galileo was warmly received by Pope Urban VIII six times, though the Pontiff gave Galileo several presents and a letter of recommendation to the new Grand Duke of Tuscany who had shown signs of being less friendly to Galileo than had his father, though he promised a pension for his son, he refused to listen to Galileo's request that the onerous decree of 1616 be repealed. Galileo had every hope that the decree would be lifted. Urban knew that the edict of 1616 had lost the Church some prospective converts and Galileo was a close personal friend. The Pope even went so far as to say that if the matter had been left up to him, that the edict would never have been issued, but issued it was and now the Pope felt that he must stand behind it. Galileo consented to this continued restriction but did not give up hope that it would yet be withdrawn.

Galileo explained to the Pope his new theory of tides that he hoped to publish as soon as all the details could be worked out. The explanation depended upon the Copernican proposition that the earth moved. It appears that permission to continue this line of pursuit was granted by Urban, only so long as the motions were treated as hypothetical and not necessarily real. Galileo left the Eternal City with many tokens of the Pope's esteem and affection. He had not, however, told the Pope of the matters which occurred in 1616 at the residence of Bellarmine which Bellarmine had told to Galileo to act as if they never happened. This was to set the stage for tragedy in the coming years as we will see.

Galileo now set to work compiling the work that he anticipated he would call *Dialogue on the Tides*. From 1624 to 1630 he labored over the work in which he stressed the physical movement of the earth and showed how only this motion could explain the tide raised opposite the moon. He explained how the changing path of sunspots across the face of the sun could only be accounted for by assuming that the earth moved round the sun annually. He detailed his numerous observations of the moon, Jupiter and his retinue, the phases of Venus, and other arguments which supported the sun-centered hypothesis of the world system.

The format of the book was one that was popular in his day, a dialogue between three persons. One was an Aristotelian, the second a Copernican,

(Continued on page 8)

TCAA SEMI-CENTENNIAL HISTORY BOOK

Club Historian Carl J. Wenning is now in the final stages of preparing a limited printing edition of *History of the Twin City Amateur Astronomers: 1960-2010* for distribution following the club's 50th Annual Meeting. The book will be a hard back with impressed foil lettering on the spine – much like a doctoral dissertation. It has a text of about 100 pages of narrative, tables, vignettes, and tributes and will include a series of color plates containing important historical photographs. This collector's edition will be put on file with the McLean County Historical Society. Another copy will be deposited in the club library. This volume would be a great addition to the home libraries of club members. It is estimated that the price of this publication will be on the order of \$40 each at the time of printing.

To get an idea of the membership's interest in seeing such a book published, Carl is asking that members (including former members) with an interest in acquiring this historical volume contact him either by phone at (309) 830-4085 or e-mail him at wenning@phy.ilstu.edu. A statement of interest does not constitute an agreement to buy this work. Club members are reminded that this will be a one-time printing, and that once the copies of the first printing are gone, there won't likely be additional copies for sale. Thus far three individuals have indicated an interest in purchasing the historical volume.

On a side note, Lee Green is working diligently on seeing to it that all past copies of *The OBSERVER* appear online at www.tcaa.us. Thanks to Lee's efforts, every available copy of the newsletter from the early 1960s onward will appear in the newsletter archive found there. This will serve to safeguard the history of the club and will prevent loss of important historical records as occurred in the past with such things as club minutes and two scrapbooks filled with pictures.

THE LIFE AND TIMES OF GALILEO, PART 6 (CONT.)

(Continued from page 7)

and the third an intelligent but uninformed individual who weighed the evidence in favor of each theory. In choosing this manner of presentation, not only could Galileo avoid violating the edict of 1616 (for he said nothing himself), but could also write for a wider audience who would come to see the superiority of the Copernican system.

By 1629 the manuscript was nearly complete. At the urging of others, he changed the title to *Dialogue Concerning the Two Chief World Systems - the Ptolemaic and Copernican*. This title, it was believed, would more clearly indicate the scope of the work. In 1630 Galileo traveled to Rome to obtain the necessary permission to have the work published. The censor made some minor alterations in the work and gave the requested permission for publication in Rome so long as a final draft would be submitted for examination prior to its printing. But shortly after his return to Florence the plague broke out and travels to Rome became impossible because of the quarantines. If the book were to be published then, it would have to be done in Florence. Galileo had considerable difficulty in getting the second approval indicating that the Roman censor was becoming more and more doubtful about the book. Finally, the second license was obtained and the book appeared in March 1632.

The book, a thinly veiled and unanswerable plea for Copernicanism, proved to be immensely popular with the masses and Galileo's enemies were not long in reacting. It appears that the Pope was persuaded to believe that Simplicio - the errant and blundering Aristotelian - was a deliberate and insulting caricature of himself. The Pope was enraged. Further, it is believed that the Pope was shown the unsigned notary statement of 1616 which prescribed Galileo's teaching of the Copernican system in addition to neither holding nor defending the pernicious doctrine. The Pope evidently was angered because Galileo had not informed him of this further restriction. In June, Pope Urban reacted by calling into being a special commission of the Inquisition to examine the matter thoroughly.

By August permission to publish the work was retracted. By September a papal mandate was issued requiring Galileo to appear before the special commission. After making several attempts to avoid appearing in front of the Inquisition by invoking his age, health, and the season of the year, and only after being threatened with arrest, did Galileo make his way to Rome in February of 1633. There he lodged with the Tuscan ambassador who informed him of the Pope's anger and informed him of the nature of the matter before him. It appeared that the meeting of 1616 with Cardinal Bellarmine was the only matter in question. Galileo was confident of the outcome because he was the only living creature who knew of the affidavit provided him by Bellarmine to confirm the substance of that discussion. Galileo did not know of the existence of the contradictory, unsigned notary document.

On April 12, 1633 the trial of Galileo began. Following some initial inquiries regarding the writing and licensing of the *Dialogue*, the matter of the 1616 Qualifier's ruling was brought up. Galileo detailed what Cardinal Bellarmine had related to him and produced the affidavit in support of his case. It was upon this affidavit that he relied for his memory and upon which he believed himself authorized to discuss the doctrine. He believed himself innocent of violating either the letter of the spirit of the decree of 1616. He argued that the *Dialogue* treated the Copernican theory as hypothesis and in no other way. He argued that to the best of his memory he had never received even so much as a personal injunction from the Cardinal to avoid teaching the doctrine in any way.

MINUTES OF THE JANUARY 12, 2010 BOARD MEETING (CONT.)

(Continued from page 2)

Lee reviewed the quote provided by Redbird Catering. Lee further noted that even at \$25 per person and 40 registrants, the club would not cover the entire expense of the Annual Meeting and Banquet. A total of 50 registrants might cover most of the expenses. The Board was amendable to the cost overrun in light of the fact that this year's annual meeting is the club's Golden Anniversary, and will likely include a number of participants from the club's first years. Several recommendations were made for changes in the catering contract, with John proving a \$120 on-the-spot donation to cover optional expenses such as tablecloths and place settings so that we can "do this event up right."

TCAA award nominations were then reviewed. Two nominations had been presented to the Board and officers, one for the G. Weldon Schuette Society of Outstanding Amateur Astronomers, and one for the Eugene and Donna Miller Family Award. Nominations were reviewed and it was agreed that the nominees are worthy recipients. Carl will see to it that the club's plaques are updated, including the addition of Brian Barling's name to the John and Bertha Kieviet Founders Award plaque that was left off after its conferral in 1996. (The plaque was created several years after the fact.)

It was further agreed that Redbird Catering will be responsible for providing all materials needed for the meal, but that the TCAA will deal exclusively with the anniversary cake and social hour reception. Carl will bring punch and a punch bowl, as well as the anniversary cake with the new TCAA logo on the surface. Club members have been asked to provide finger foods for the reception. Duane will secure small plates, utensils, napkins and cups for both the reception and the cake service.

Nominations were then taken for the 2010-2011 Board of Directors. It was agreed that additional members should consider participating in the leadership of the club. Nonetheless, the following agreed to serve with four stating willingness to withdraw their nominations in light of additional nominees. The nominees were as follows: David Osenga, Dan Miller, John Werner, Duane Yockey, and Lee Green. Carl indicated that he will be stepping down from the Board and any office outside of Historian should the Board wish to retain him in this position.

The only item of new business was the POS and MOOS events for 2010. The schedule was reviewed. The Board agreed that without a telescope in place at Sugar Grove Observatory, it didn't make much sense to have coordinators for the MOOS events. Various Board members and officers agreed to coordinate public observing sessions. This information will be recorded in a separate article in the February issue of *The OBSERVER*.

It was noted that the next Board of Directors meeting would be held following the Annual Meeting. A tentative date of Tuesday, February 9th, was set. The meeting was adjourned at 7:40 p.m.

MINUTES OF THE JANUARY 12 NCRAL 2010 PLANNING MEETING

Carl Wenning, NCRAL 2010 chairman, called the meeting to order at 7:40 p.m. In attendance were Duane Yockey, John Werner, Dan Miller, and Lee Green. Absent were William Carney, Dave Osenga, and Brian Barling. Carl presented a brief agenda of only six key items.

Individual updates were provided with not much new to report other than the fact that "we are still waiting." John and others remarked how good the NCRAL 2010 ad looked in the most recent issue of *The Reflector*, but agreed that we are unwilling to pay some \$125 to re-run the advertisement. Lee and John will do an e-mail "blast" soon to ALCORs in the region and adjoining states. Lee noted that the website for online registration is currently up and running, but that he needs to include details about the meal entrees and sides (when they become available from Duane) as well as a "disclaimer" that the 6:00 p.m. CLC mission will be joined to the 8:00 p.m. mission if the numbers do not warrant a separate mission. Each mission will cost the TCAA \$450, so we need to have enough registrants to make these activities break even. Duane noted that the Normal Theater hasn't gotten back to him about the space theme for the Friday evening, but hopes to hear from them soon.

Duane noted that NCRAL President Gary Kochen had been in contact with him recently, but Carl noted that he had not responded to his email about the program content and schedule.

Carl reviewed the long list of inserts that he wants to include in the registration packet. Planning team members were asked to review this listing, and to start work on preparing electronic files. Carl will then assemble these and have them printed. Carl further encouraged planning team members to review the guidelines for hosting meetings provided by the AL, and suggested a review of past minutes of the team so that nothing gets overlooked.

Dan agreed to take an NCRAL 2010 presentation to the February 3 or March 3 meeting of the Peoria Astronomical Society. Dan will check with Bobby around doing the group photograph during the NCRAL meeting. We still don't know if we have a suitable location for the photograph, and Duane will check on this. He will also check on the availability of tables for vendors and possibly the astrophotography contest. Dan noted that he has about 50 tripod display stands if needed, and reiterated the fact that he has some five students from Millikin who can assist with registration. Duane will be present at the registration table, too, to collect any on-site registration fees. Brian Barling, it was noted, also agreed to assist with the registration desk. Carl noted that he recently held his own meeting at the Holiday Inn & Suites – Bloomington Airport and thought that the facility was more than adequate and had plenty of space for vendors.

It was agreed that WIASTRO can have a no-cost display table in exchange for the agreed-upon eyepieces as door prizes. This vendor will be giving a place but not a voice during the door prize drawings; these will be the prerogative of the TCAA only.

The planning team agreed to meet on February 9th following the TCAA Board of Director's meeting. The meeting was adjourned at 8:03 p.m.

VENUS AND MARS ARE ALRIGHT TONIGHT

By Carl Wenning

Venus was in superior conjunction with the sun (opposite the Earth) on January 11th. After that date, the planet effectively entered the western sky and became an “evening star.” As an evening star, Venus sets after the sun and is visible after sunset in the west. Because Venus emerges from behind the Sun ever so slowly as seen from the Earth, it takes about a month before it becomes visible in the evening sky. Look for Venus after the first of February.

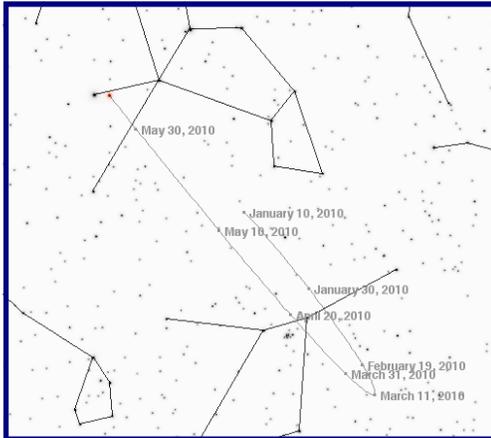
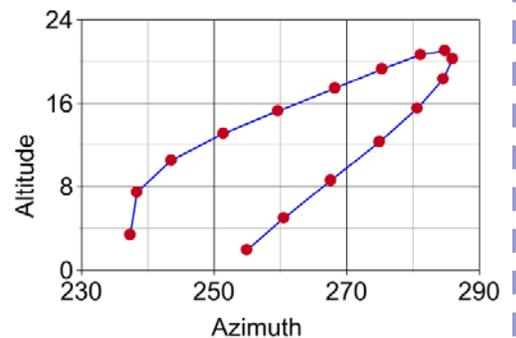
The accompanying nomograph shows the position of Venus in the evening sky at 15 day intervals, the 1st and 16th of each month from February 16th through October 1st. The position of Venus is shown at the end of civil twilight that occurs when the sun’s center is 6 degrees below the horizon. It is dark enough at this time that automobiles should be running with their headlights on. While the time between sunset and the end of civil twilight is variable, on the average the interval is approximately 30 minutes during the time interval in question. Please note that the units of the nomograph are degrees, and that an azimuth of 270° corresponds to west. An altitude of 15° corresponds to 1/6 way up in the sky.

Venus moves upward and northward relative to the sun as time progresses. By the end of May, its more rapid motion carries it lower and southward with respect to the horizon. In executing this motion, Venus moves a counterclockwise motion in the nomograph. It reaches its greatest elongation east of the sun on August 20th at 46 degrees. Venus reaches greatest brilliancy on September 27th. It reaches inferior conjunction – passing roughly between Earth and Sun – on October 29th.

Mars reached opposition with the sun on January 29, 2010 in the constellation Cancer the Crab. Two days before, the planet made its closest approach to Earth during this apparition: 159.8 million miles (0.66399 AU). This is not very close because Mars was quite near its aphelion point at the time of this opposition; aphelion occurs on March 31st. Telescopic view of Mars will be poor this year as a result. Nonetheless, telescopic observers should be aware that this opposition will occur during northern spring and southern autumn on Mars, so primarily observable will be the northern hemisphere of Mars.

It will be fun to observe Mars with the unaided eyes as its changes in position and brightness vary dramatically. Watch Mars as it executes its retrograde motion among the stars of Cancer, rapidly brightening as it nears opposition. The red planet is now in retrograde (westward) motion due to the Earth’s more rapid orbital motion. Mars become stationary on March 11th, at which time it will resume its normal prograde (eastward) motion among the constellations of the zodiac. It moves into the constellation of Leo the Lion during mid May and reaches conjunction with the bright star Regulus on June 6th.

Venus at End of Civil Twilight



TCAA Treasurer's Report – January 2010

OPERATING FUND BALANCE – December 31, 2009 - \$ 2,823.76

Income

David Hahn (student PayPal dues) - \$ 26.00
John Werner (banquet donation) - \$ 120.00

Expenses

LYB Inc. (Jan. Observer & AICor Post.) - \$ 57.00
DK Designs. (shirt order) - \$ 160.00
PayPal Fee. (David Hahn) - \$ 0.87

OPERATING FUND BALANCE – January 31, 2010 - \$ 2,751.89

OBSERVATORY FUND BALANCE – December 31, 2009 - \$ 2,434.98

Income

Interest (Oct. - Dec) - \$ 0.63
Donation (Duane Yockey) - \$ 100.00
Donation (Wudtke family) - \$ 40.00

Expenses

None - \$ 0.00

OBSERVATORY FUND BALANCE – January 31, 2010 - \$ 2,435.61

TOTAL TCAA FUNDS – January 31, 2010 - \$ 5,187.50

Respectfully submitted,
L. Duane Yockey, Treasurer

Sugar Grove Observatory

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

Duane Yockey (renewed through 2009)
William Carney (renewed through 2009)
Carl Wenning (renewed through 2009)
Brian Barling (renewed through 2009)
Christopher Franklin (renewed through 2009)
David Osenga (renewed through 2009)
Josh Lindsey (renewed through 2009)
Dan Miller (renewed through 2009)
Lee Green (renewed through 2009)

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**