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## **PRESIDENT'S MESSAGE: HAPPY HOLIDAYS**

Happy Holidays!

'Tis the season where we all get busy with the holidays. With the weather getting cooler and our Public Observing Sessions complete, we are now entering that time of the year when our hobby starts to take a back seat to other important areas of our lives. Don't feel bad, we all have family and friends that we want to spend time with. But don't forget us either! Remember that when the days are short, the nights are long! That helps us get started with our observing earlier so you can still get up for work the next day.

There are many ways to help the club during the winter. Join us at the Annual Meeting on February 6. Plan an event to help us increase public awareness of our club. Make a donation to the club – remember that the TCAA is a 501c-3 organization and all donations are tax-deductible. Get involved with our NCRAL planning committee. Sign up for the Adult education class that we will host at Heartland Community College in January.

Whatever your plans for the winter months, I wish you and you're the very best for the holidays.

## **TCAA EVENTS FOR DECEMBER**

The TCAA events for December are below. TCAAers are encouraged to attend and participate in these events.

- ☆ Due to the fact that *Classroom for Kids* programs in the community room at Bloomington Public Library are normally held on the 4<sup>th</sup> weekend of each month, the events of November and December have been joined into a single event due to Thanksgiving and Christmas. The joint event will occur on Saturday, December 5<sup>th</sup>. The program will run from 1:30 to 3:00 p.m. and will focus on Lives of Stars/Discovering New Worlds. The Lives of Stars component will feature an interesting light show demonstrating spectral of different types, Wien's Law, Stefan-Boltzman Law, and wave phenomena. These events are all intended to include hands-on, minds-on activities. Lee and Carl will provide the program.
- ☆ Saturnalia Party, December 19<sup>th</sup>. Our hosts will be Donna and Dave Osenga. Their address is 1109 N. Linden, Normal, and their home phone is 452-4336 if someone needs directions after getting lost. They are the 5<sup>th</sup> house on the west side of Linden, north of Lincoln Street. They have two garage doors and a basketball hoop on the driveway. Please use the driveway or the street in front of the house to park. Start time will be 7 p.m.

## **50TH ANNIVERSARY ANNUAL MEETING**

TCAAers, mark your schedules now for the club's 50<sup>th</sup> anniversary Annual Meeting. The gala event will take place on Saturday, February 6<sup>th</sup> at Ewing Manor and Cultural Center in Bloomington. At this meeting there will be an election of a Board of Directors, and presentation of Astronomical League and TCAA awards. In addition, we will hear from Mr. Barry Beaman, past member and previous president of the Astronomical League.

Doors of Ewing Manor will open at 5:30 p.m. for a social, and at 6:30 p.m. a banquet will be served. During this time a pianist, a friend of Dave Osenga, will entertain us. At about 7:15 p.m. we will hold our annual business meeting, and this will be followed by an "evening of reminiscence" lead by William Carney, Carl Wenning, and Michael Miller. Barry will address us starting around 8:30 p.m. It's "lights out" at 10 p.m. when we have to vacate the premises.

This event is the club's "high water mark" of the year, and you'll not want to miss it. Pencil this event into your calendar should you like to join us. Details about the banquet meal, reservations, parking, costs, etc. will be provided in the January issue of *The OBSERVER*.

## **ORDER TCAA POLO SHIRTS NOW**

Dave Osenga and the Board of Directors has worked long and hard to develop a new club logo. John Werner and the Board has worked diligently with *dk Designs* to have polo shorts 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 this issue of *The OBSERVER* for ordering information.

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

Duane Yockey  
508 Normal Avenue  
Normal, IL 61761

## MINUTES OF THE NOVEMBER 10 BOARD MEETING

The Board members and officers were called to order by President Lee Green at 6:52 p.m. following a 6:30 p.m. conversation with Donna Kleinlein of *dk designs* to discuss polo shirts with the new club logo embroidered on them. Also in attendance were Duane Yockey, John Werner, Dan Miller, Dave Osenga, William Carney and Carl Wenning. Absent from the meeting was Brian Barling. The following items of business were addressed:

- ☆ Minutes of the prior Board meeting were approved.
- ☆ Lee conferred gifts of cards from Angela Smith at SGNC on Dave and John for their participation in the recent Autumn Celebration. Lee had likewise received this same gift.
- ☆ Lee distributed a number of buttons with the new TCAA logo on it that were prepared gratis by Bryan Maple, president of the Decatur Area Astronomy Club.
- ☆ Officer reports were then solicited. Dan noted that he will get to painting the SGO dome as soon as William gets him a key which was presented forthwith. Dan also noted that his observing group from Millikin University is going to southern Indiana on November 17<sup>th</sup> for an all-night Leonid Meteor Shower watch. On the evening of November 18<sup>th</sup> he will have about 150 children and parents at Millikin for a program and solicited help with a 20-minute talk. Carl mentioned that he might be able to assist with a presentation about light. He noted that the next night, November 19<sup>th</sup>, he has another school group at MU doing some observing. Dan also reported on some other education/public outreach activities in which he has been involved recently; this information will be reported elsewhere in *The OBSERVER*.
- ☆ William reported that he now has recommendations about mounting the club's 12-inch Meade on an Atlas or similar CGEM mount. He noted that only a much more substantial mount such as the CGE would be suitable if one were to add options such as a guide scope, cameras, and heavy eyepieces. The Atlas is at the limit of its support range for the club's 12-inch OTA. Following a discussion it was agreed that the optical quality of the 12-inch did not merit it being positioned atop a much more expensive mount such as the CGE. It was agreed that William would attempt to find a reasonable sales price for the 12-inch on Astromart, along with its non-functional LX200 mount. We will wait until after NCRAL to consider purchasing a replacement telescope.
- ☆ Carl reviewed the arrangements that had been made to date for the 50<sup>th</sup> anniversary Annual Meeting to be held at Ewing Manor on Saturday, February 6, 2010. The program will run from 6-10 p.m. with caterer set up at 5 p.m. The confirmed usage fee for Ewing Manor will be \$320. Barry Beaman has agreed to be keynote speaker; William and Carl will work with others to develop a program that will take everyone on a sentimental journey of the club's past 50 years. Dave noted that he is looking into musicians for playing the piano for an hour prior to the banquet meal. Carl will see to the preparation of a 50<sup>th</sup> anniversary cake for the group expected to number approximately 50. No guests of honor per se will be invited.
- ☆ Carl provided catering information from Times Past Inn and Redbird Catering; no other information was forthcoming. With regard to the Annual Meeting banquet, it was agreed that various individuals would see what sort of a banquet meals can be purchased for approximately \$20-\$25 dollars and to compare the meals as a way of determining which caterer to go with. Carl will arrange for a cake, but this will be paid for directly by the club as will the \$320 fee for the use of Ewing Manor.
- ☆ Carl reviewed with the Board members the amendments proposed for the Annual Meeting. These were read into the minutes and were approved. They will appear separately in the December issue of *The OBSERVER*.
- ☆ The 2010 Public Sky Viewing Sessions brochure was approved, including topic, format, and use of the club's new logo.
- ☆ Duane then spoke briefly about obtaining an Illinois tax exempt number and letter in light of our 501(c)3 non-profit status. Following a discussion concerning the approach to be taken, Duane will pursue this once again.
- ☆ The club's Saturnalia party will likely be moved from SGNC to town. It was noted that the party has been poorly attended and affected by poor weather in recent years. Dave noted that he might host the party at his home in Normal. He will be checking with his family about the advisability thereof.
- ☆ Updates were provided about future events...Carl will be giving a talk to CUAS on November 12<sup>th</sup>, and Lee and Carl will present the final Classroom for Kids program at BPL on December 5<sup>th</sup>.
- ☆ The next meeting of the Board will be on Tuesday, January 12<sup>th</sup>, at LYB, Inc. at 6:30 p.m.

The meeting was adjourned at 7:37 p.m.

Respectfully submitted,

Carl J. Wenning, Secretary

## AL OBSERVING PROGRAM STANDINGS

Below is a listing of the status of observers pursuing AL observing programs reported as of November 30<sup>th</sup>. 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 6<sup>th</sup>. Be certain to get your completed observing records to our ALCor, Duane Yockey, as soon as possible so that you might be duly recognized.

AL Award	Brian Barling	William Carney	Lee Green	David Hahn	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		78*	22
Deep Sky Binocular 60		55					
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 Bas60/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 Basic10/ Stellar60/ Master160			(*, **)			31 <sup>h</sup> -06* 26 <sup>h</sup> -07 44 <sup>h</sup> -08**	

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

## TCAA SEMI-CENTENNIAL HISTORY BOOK

Club Historian Carl Wenning will be preparing a limited printing edition of *History of the TCAA: 1960-2010* for distribution during the club's 50<sup>th</sup> anniversary year. The book will be a hard back with impressed silver foil lettering on the cover and spine – much like a doctoral dissertation. It will likely be 50-75 pages in length with a series of color plates containing important photographs, and a number of tables and vignettes. This collector's edition will be put on file with the local historical society and Twin City libraries, and would be a great addition to the home libraries of club members. It is estimated that the price of this volume 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 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](mailto:wenning@phy.ilstu.edu). A statement of interest does not constitute an agreement to buy this volume. 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.

In addition, Carl is asking members to contribute recommendations for improvements in the club's history as it has appeared in *The OBSERVER* on a near monthly basis since May 2007. This includes corrections of errors and omissions. Contact Carl with any concerns and questions.

## DECEMBER SKY GUIDE

06	The Moon passes 6° south of Mars, 9 P.M.	
10	The Moon passes 8° south of Saturn, 5 A.M.	
14	Geminid meteor shower peaks	
18	The Moon passes 1.4° north of Mercury, 2 A.M.	
	Mercury is at greatest elongation (20°), 11 A.M.	
19	Jupiter passes 0.6° south of Neptune, 11 P.M.	
21	The Moon passes 4° north of Jupiter, 9 A.M.	
	The Moon passes 4° north of Neptune, 9 A.M.	
	Solstice (northern winter/southern summer begins), Noon	
23	The Moon passes 6° north of Uranus, 8 P.M.	
24	Pluto is in conjunction with the Sun, Noon	
31	Partial lunar eclipse, 1 P.M.	

## NOVEMBER OBSERVERS' LOG

Once again, November has turned out just like other Novembers – cool and cloudy. As a result of overcast skies for much of the month, very little “serious” observing got done during November with a few notable exceptions. William Carney and Tony Cellini got in some observations on Saturday, November 7<sup>th</sup> following the observing session for Academy of Seniors adult education course. The next night was similarly clear and Randy Byland reported, “We did a little observing from the back patio last night (November 8<sup>th</sup>) and saw a number of meteors including a bolide-like one in the low southwest. A bit early for the Leonids due on the 17<sup>th</sup>/18<sup>th</sup>.”

On November 8<sup>th</sup> David Hahn reported, “I recently started my Messier Binocular project and have 22 so far thanks to a night of viewing as many as possible in Sagittarius as possible. I have also started the satellite observing program. I have the iridium flares, 3 of the active payloads, 3 rocket bodies, 1 multinational, 1 ISS pass over, and 1 set of the multi-pass of Genesis II. It looks like it might be a while before I get the 2 formations. I think that makes 13 so far!”

On Wednesday, November 18<sup>th</sup>, Dan Miller hosted a program for about 150 elementary school children from Taylorville Middle School at Millikin University.

Lucian Iones and Carl Wenning got together on November 20<sup>th</sup> to work with Lucian’s 4.25” goto Celestron telescope.

## NOVEMBER EDUCATION/PUBLIC OUTREACH

Carl Wenning gave his talk “Galileo’s Telescopes” at Bloomington Public Library on Wednesday, November 4<sup>th</sup>. While the turn out consisted of only two elderly ladies, they were quite interested in the topic and asked a number of good questions. William Carney was also present and prepared to show views of the moon and Jupiter but, unfortunately, the sky turned overcast later in the afternoon and he was unable to do so.

Lee had to reschedule his November 5<sup>th</sup> talk to Rock Island’s Popular Astronomy Club but will reschedule in the not too distant future.

Three TCAAers assisted Carl during a telescopic viewing session at SGNC on Saturday, November 7<sup>th</sup>. We had a mighty fine sky and 12 of 31 Carl’s Academy of Seniors class members in attendance. Our observing session ran from 7:00 to 8:45 p.m. thanks to the valiant efforts of three TCAA members who brought out their telescopes. Following a sky lecture, we viewed more than a dozen representative celestial objects ranging from planets and planetary nebulas to binary and galactic star systems. Thanks again and a “tip o’ the hat” to Duane Yockey, William Carney, and Tony Cellini for making telescopic views possible.

Carl gave a 90-minute talk about Galileo to the Champaign Urbana Astronomy Club (CUAS) on Thursday, November 12<sup>th</sup>. Due to a strong promotion of the event by CUAS leader David Leake, 25 people showed up at Staerkel Planetarium to view Carl’s presentation. Carl was able to spend time afterward extolling the virtues of the NCRA 2010 meeting. (During the subsequent business meeting the club’s president asked Carl to ascertain the TCAA’s interest in joining with CUAS and DAAC to host an annual viewing program at Allerton Park not unlike the Illinois Dark Skies Star Party.)

Lee visited Cub Scout Pack 3806 on November 17<sup>th</sup>. He talked about what can be seen in the sky and reviewed the Galileoscope. They examined the scale of the solar system using the Solar System to Scale handout. Following this, they constructed a model of the Solar System using the Pocket Solar System activity from the September IYA Discovery Guide. Lee noted, “It was fun since this was the youngest groups I’ve worked with. We succeeded, but some scouts needed help spelling the names of the planets.”

There was no Classroom for Kids program in late November as it was been combined with the previously scheduled late December event and moved to December 5<sup>th</sup> due to Thanksgiving and Christmas.

At the November Board meeting Dan Miller pointed out that he had provided some additional E/PO activities. He noted that he presented at the State Farm *Millennium Girls* program on October 3; some 300 middle school girls were in attendance at the presentations that he gave. Dan also hosted an October 17<sup>th</sup> observing session at Millikin University for the 1984 class reunion.

## WINTER HCC ADULT EDUCATION COURSE

Lee Green will lead this coming year's adult education course at Heartland Community College. Lee has titled the course, "Astronomy in Action." Lee describes the course as follows: "In this course we will review the solar system, constellations and celestial objects we can see in the night sky and learn how and why they move over time. We will look at different types of telescopes that are used to detect visible and invisible light to see how they reveal the mysteries of the cosmos. Learn about past, current and future NASA missions and how they use scientific instruments to investigate the solar system, the galaxy and the universe. At our optional fourth session, we will visit the Sugar Grove Observatory and focus telescopes on a wide variety of representative deep space objects. Presented by the Twin City Amateur Astronomers."

Lee has set the meeting dates of the various classes as follows: January 28, February 4 and February 11 as the three classroom dates with two hour sessions on each night from 7 – 9 p.m. The fourth week's class will consist of an observing session at Sugar Grove Nature Center. The course fee is \$60. More information about his course will be provided as details are worked out. Watch your mailbox during January (if you live in McLean County) for the HCC course offerings booklet.

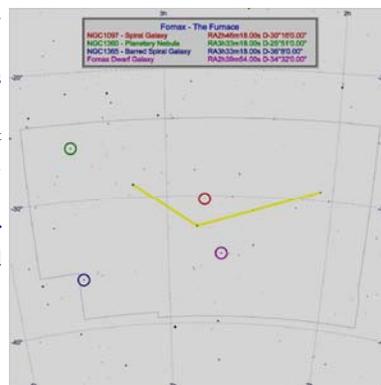
## CONSTELLATION OF THE MONTH: FORNAX—THE FURNACE

Fornax was introduced by LaCaille and lies south of Cetus and west of Eridanus. Fornax has no bright stars and its brightest star is 4<sup>th</sup> magnitude.

Fornax was dedicated to the celebrated chemist Antoine Laurent Lavoisier who is often called the father of modern chemistry and to his invention the Chemical Furnace.

Fornax is the 41<sup>st</sup> largest constellation covering 398 square degrees. It is the 81<sup>st</sup> brightest constellation with no stars brighter than 4<sup>th</sup> magnitude. Fornax reaches opposition on November 7.

A notable member of Fornax is the Fornax Dwarf Galaxy which is a member of our Local Galaxy Group. Other members of Fornax are planetary nebula NGC1360 and barred spiral galaxies NGC1097 and NGC1365.



## WISE MISSION

By Lee Green

NASA has a new satellite that is being launched in December. The Wide-field Infrared Survey Explorer, WISE, aims to create a whole-sky survey at four frequencies in the mid-Infrared region of the electromagnetic spectrum. Sporting a 16" telescope and four 1-Megapixel infrared detectors, WISE will achieve an unprecedented resolution of 6 arcseconds.

The orbit WISE follows will be a clever sun-synchronous polar orbit that provides continuous illumination of its solar panels (see illustration). As WISE orbits the Earth, it records data from a 360° strip of the sky. The image from next orbit will overlap the first strip but is slightly offset due to the movement of the Earth around the Sun. Over the course of 6 months, WISE will image the whole sky. WISE is expected to take at least 8 exposures of each part of the sky and many more nearer the poles.

The detectors are sensitive to 3.3, 4.6, 12 and 22 micron radiation which place the images in the middle of the infrared band. Since the sensors will detect low levels of heat energy, they will be continuously cooled to avoid detection of the heat generated by the spacecraft and to reduce thermal noise. Two tanks of frozen Hydrogen will provide the cooling and are expected to last for 10 months.

Those "colors" are expected to reveal a large number of asteroids and comets that are heated by the Sun. Because each area of the sky will be imaged several times during successive orbits, the movement of those objects is expected to be measurable. Those colors are also expected to reveal a large number of red and brown dwarf stars that burn coolly.

Previous whole sky surveys in Infrared light include the IRAS, Two Micron All-Sky Survey (2MASS), Akiri and COBE. IRAS, the Infrared Astronomical Satellite, was the first space-based all-sky survey that launched in 1983 and mapped 96% of the sky in the 12-100 micron region with a resolution of 30 arcseconds to 2 arcminutes. COBE, the Cosmic Background Explorer, launched in 1989 measured the black body radiation curve of the cosmic background radiation. 2MASS imaged the sky from 1997-2001 and digitized 3 wavelengths in the near infrared. Akiri, Japanese for "light," operated in 2006-2007 and complete its survey in the far infrared region of 50-200 microns with a resolution of 25-30 arcseconds.

The upcoming James Web Space Telescope will also image in infrared light, but JWST will look at one small area at a time while WISE will create a whole sky mosaic.

For more information about WISE, please visit <http://wise.ssl.berkeley.edu>.

## MINUTES OF THE NOVEMBER 10TH NCRAL 2010 PLANNING MEETING

NCRAL 2010 meeting chairman Carl Wenning called the planning team to order at 7:38 p.m. In attendance were Duane Yockey, John Werner, Dan Miller, Dave Osenga, William Carney and Lee Green. Absent from the meeting was Brian Barling. The meeting consisted of two parts: (1) individual written reports were prepared and delivered, and (2) a discussion about documents that need to be included in the registration packet. Individual reports addressed questions such as progress toward goals, things yet to be completed, time lines, need for assistance, and expenses. The following reports were made:

- ☆ Duane reported on facilities and finances. He noted that the banquet buffet menu still needs to be determined, and the team charged him with making this decision. He needs to work out final details such as how to deal with vendor displays, hospitality, etc. The team agreed that the banquet meal should be made available to family members coming to town but not participating in the rest of the proceedings. It was agreed further than a fee of \$30 should be required for a separate adult buffet ticket. A child's plated dinner would be available at a lower cost. The buffet selection will contain beef and chicken, and a special dietary needs selection (e.g., vegetarian) will be included. Duane noted that he must have a final meal count to the hotel one week prior to the event. He then provided preliminary budgeting information based on the information he already had. It was agreed that his estimate was not off base, but that with a \$75 registration fee we will have to have approximately 125 registrants to make the conference break even financially.
- ☆ John reported on Marketing. He reviewed his marketing plan and indicated the areas of progress and those still needing to be accomplished. He showed a draft marketing letter that described the meeting and directed interested individuals to the [www.ncral2010.org](http://www.ncral2010.org) website for registration. This letter will go to some 136 astronomy clubs in the region that he has identified to date. It was agreed that email marketing would take place using the [tcaa@tcaa.us](mailto:tcaa@tcaa.us) web address starting in December. Information has already been sent to the various magazines. The bulk of the marketing will begin as soon as the details of the registration form are worked out and the web descriptions brought up to date. John will work with Lee to make this happen. John confirmed an operating budget of approximately \$500 for marketing. He also spoke briefly about the photography contest and noted the need for prizes. He showed ballots that need to be included in the registration packet as well. He indicated a need for astrophotos to be displayed. Duane indicated that he would check with the hotel about display stands; Dan noted that he has about 50 tripod display stands that he could bring if needed.
- ☆ Dan provided information about field trips. He noted that each of the adult CLC missions will cost a flat \$450. It was agreed that information would be included on the registration form indicating that two show times would be available, but that the first showing would be cancelled and everyone requesting participation in that mission would be moved into the later mission. Dan needs to confirm with the CLC the requirement for number of missions two weeks in advance. It was agreed that online registration must be completed 15 days in advance of the event so we can make this call. Others who register after that date will not be guaranteed admission to the mission. (A similar warning needs to be made for online registration for the banquet meal.) Dan further noted that Tom Willmitch at the ISU Planetarium has not responded to his repeated request for information; Carl suggested working with the Physics office directly and provided him with a phone number. Carl agreed to present the planetarium showing which must be coordinated with the planetarium's currently scheduled public program and the program at the Normal Theater. Duane noted that theater staff has agreed to schedule a "retro" space-related themed program. All such events must be revenue neutral.
- ☆ Dave reported on audio/visual needs. He will arrange a meeting with Mary, the catering supervisor to check the room layout and confirm the presence and availability of a drop down screen or screens. Dan noted that he has a cable splitter in the event that the club wants to set up two video projectors for the talks. Dave asked Carl to confirm A/V needs with the speakers, and suggested that if using our computers they would send their PowerPoint presentations to him so that they can be properly installed on one of our computers to see if they work properly. Dan noted that he has a PA system with microphone that he will bring along so we do not have to pay for use of the hotel's system.
- ☆ William reported on door prizes and vendors. He recently has developed a data base of approximately 35-40 vendors from whom he will ask for door prizes, sponsorships of breaks, displays, and advertising that can be made available. It was further agreed that four of the solicited donations would be used for the astrophotography contest, and that the draft letter that Carl and William had written will be updated to make this clear to those William will be soliciting. William hopes to send out the updated letter very soon (using letterhead). He will then follow up with e-mail communications in December or January. He anticipated a total printing and mailing cost of approximately \$100.
- ☆ Carl reported on the speakers and noted that he has gotten agreements for most, but that the NASA speakers have yet to be formally arranged due to the fact that only in the past two weeks was he able to apply for speakers according to NASA speakers bureau guidelines. He noted that he will confirm all speaker needs asking about A/V requirements, requests for PowerPoint presentations if they will not be bringing their own laptop computers, permission to archive their presentations on a

*(Continued on page 7)*

## MINUTES OF THE NOVEMBER 10TH NCRAL 2010 PLANNING MEETING (CONT.)

*(Continued from page 6)*

web page and so on. He indicated a budget of approximately \$3,000 that is consistent with the numbers that Duane had used previously for his budget estimate. Carl indicated that NASA speakers can only accept honoraria capped at a \$20 value. He suggested the gift of an embroidered and framed NCRAL 2010 meeting logo.

- ☆ Lee addressed the topic of the online presence of information about the meeting. He noted the availability of the DVD he has put together available through the [www.ncral2010.org](http://www.ncral2010.org) website. He noted that the following things need to be accomplished before we can promote the meeting: finalize pricing and options. He will implement required reporting mechanisms, auto emails and such. He will help to finalize name badges and other registration documents. There are likely to be no costs to the meeting for this work.
- ☆ Carl reported on his work as registrar. He provided a long list of things to be included in the registration packet. He needs to gather all handouts electronically (to ensure a consistent formatting and appearance). He will work with Lee to produce name badges. He will formalize the program with images of speakers as well as vitae and abstracts. He needs assistance with the registration table; Brian has agreed to assist and Dan noted that he will have 4-5 SPS students from Millikin University assist as well. Carl will run the draft program past NCRAL president Gary Kochen for his approval.

The next part of the meeting dealt with documents need for inclusion in the registration packet. They were identified as the following with Carl indicating that it would be best if these documents could be thoroughly drafted (if not complete) by early in 2010:

- o Recognition and thank you sheet (Carl)
- o List of door prizes by vendor (William)
- o Details of Friday/Saturday field trips (Dan)
- o City information for families (Carl)
- o Extra on-site registration forms (Lee)
- o Ballot for astrophotography contest (John)
- o Ticket for door prizes (Carl)
- o Writing paper and pen/pencil (Carl)
- o Complimentary advertising (William)
- o Info about optional viewing at SGNC (Carl)
- o Name badge (Carl)
- o Name badge information (missions, meals, names and affiliation) (Lee)
- o Program with times and speaker abstract and vitae (Carl)
- o Information about history of TCAA – special edition newsletter (Carl)
- o Folder/envelop for registration materials (Carl)
- o Commemorative polo shirt order form (John)
- o Dining locations for Saturday lunch (Carl)
- o Ballots for astrophotography contest (John)

During the discussion of these inserts, mention was made about a form need for requesting the official photograph of meeting participants. It was agreed that a free online set of photos would be made available (this information must be included on the registration form); we will dispense with hard copies of an official image. Duane will check with the hotel to see if a suitable area exists for a photograph. A tall ladder might have to be brought in if not. Dan volunteered Bobby Arn to be the official photographer in light of the fact that Erin Estabrook might not be able to attend to this.

Mention was also made about how to distribute registration materials. Carl will check with the BNCVB to see if they have folders available. Someone suggested a bag that might include samples of Beer Nuts, Beich candies, Ron Smith Printing, and State Farm freebies. Carl will check on these as well as coupons from the restaurants in or near the conference hotel (e.g., Buffalo Wild Wings, Avanti's Italian Restaurant, C.J.s, and one new restaurant).

It was finally agreed that the next meeting will occur in January along with the regularly TCAA Board meeting, but after that the committee would meet on a monthly basis or more frequently as needed. Following this terrific round of discussions, the meeting was adjourned at 8:58 p.m.

Carl J. Wenning, NCRAL 2010 Chairman

## CALL FOR NOMINATIONS

Each year at the club's Annual Meeting, the membership elects a board of directors to serve for the next 12 months, and members are recognized for their service to the club. This year will be no different.

Nominations are needed for the Board. Five nominees are needed to "take the reins" of the club. As the TCAA is a legally incorporated body, its business is formally run by our Board of Directors under Illinois law. Its members elect the head of the Board; this person becomes president of the club. The Board then appoints members to the positions of vice president, secretary, treasurer, historian, property manager, and so on. These appointees need not be members of the Board, but are expected to attend Board meetings every other month.

Nominations are needed for the G. Weldon Schuette Society of Outstanding Amateur Astronomers. This award recognizes a TCAA member who has demonstrated great skill in observing, dedication to the club's education and public outreach efforts, and commitment to providing service to the membership. While holding the AL's Messier Award is recommended, it is not required by the Standing Rule that established this award in 1987. Michael Rogers was our winner last February.

Nominations are needed for the John and Bertha Kieviet Founders Award. This award is conferred upon a TCAA member to recognize demonstrated leadership to the club. Those so recognized need not have been a president of the club. If leadership is interpreted in terms of service to the membership, this is as close as the TCAA comes to having a distinguished service citation. Carl Wenning was our award winner at the last Annual Meeting.

Nominations are needed for the Eugene and Donna Miller Family Award. This award acknowledges the strong efforts by a family to participate in the club as a unit. One or more parents are recognized for their efforts to instill within their children interest in and dedication to amateur astronomy. Daniel and Paulette Miller were our winners last February.

Please e-mail your nomination(s) for the TCAA Board of Directors to either President Lee Green at [lee@starlightsoftware.com](mailto:lee@starlightsoftware.com) or Secretary Carl Wenning at [wenning@phy.ilstu.edu](mailto:wenning@phy.ilstu.edu). If recommending candidates for the Schuette, Kieviet, or Miller awards, also send your nomination(s) to either Lee or Carl. If you are recommending a candidate for one of the awards, however, a short description explaining why you feel the nominee(s) deserve(s) the award(s) is required. The current Board of Directors will make decisions about the awards during the January 12<sup>th</sup> Board meeting, so be certain to get your nominations in by the 10<sup>th</sup> at the latest.

## BYLAWS AMENDMENT TO BE CONSIDERED AT ANNUAL MEETING

Among the business items to be transacted at the Annual meeting will be a vote on amendments to the corporation's bylaws. In an effort to clarify how the transition of power/duties occur between the election of new board members and the selection of officers at the first meeting of the Board of Directors to follow, the following amendments have been suggested and approved by the current Board members. The highlighted words constitute proposed new language in the Bylaws.

### ARTICLE IV - ~~Officers and Directors~~ and Officers

#### Section 3: Appointment and Installation of Officers

The Officers shall be President, Vice-President, Secretary, Treasurer, and Minor Officers. The minor Officers shall be Property Manager, Historian, Newsletter Editor, Astronomical League Correspondent, and Registered Agent. The Board of Directors may appoint additional Minor Officers as it deems necessary. The President and Vice-President must be members of the Board of Directors except during a transitory interim period as set forth in the next paragraph. All Officers shall be appointed by the Board of Directors and shall serve at the pleasure of the Board of Directors. In the event that an Officer is temporarily absent from an office, the President has the right to appoint a qualified member as an Acting Officer in the post until the absentee officer returns. The Board of Directors may remove and replace any Officer due to inability to serve or laxity in service. No member shall be eligible to serve as an Officer who is not a member in good standing.

All officers will be installed in office at the close of the Board meeting at which they are elected or appointed. The terms of previous officers will end only at the conclusion of this Board meeting.

#### Section 1: Directors

The number of Directors shall be five.

#### Section 2: Election and Installation of Directors

At the February Annual meeting, an election shall be held to select Directors for the TCAA. Directors shall serve for a term of one year or until successors have been duly elected. Installation of Board members occurs with the end of the Annual meeting. No member shall be eligible to serve as a Director who is not a member in good standing.

Section 4 of this article – dealing with removal of officers – remains unaffected.

## THE LIFE AND TIMES OF GALILEO, PART 4

By Carl J. Wenning

*In recognition of the 400<sup>th</sup> 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.*

By February of 1610 *Sidereus Nuncius* was in print. The discovery of Jupiter's four moons showed the incorrectness of the old doctrine that all heavenly motions were centered on the Earth. This, coupled with the fact that moons could orbit round an object other than the Earth, the irregularities of the moon, the nova of six years previous, all served to discredit the infallibility of Aristotle and Ptolemy.

Galileo's report of these four new worlds was met with skepticism by the academic community of his day. Some "scholars" refused even to look through his telescope. How could such a telescope reveal things not visible to the eye? And how could there be more than seven planets? According to the ancient philosophers the world was based on the number seven "as nature and scripture show." There were the seven days of creation and a day of the week named for each planet, there were the seven metals, seven openings in the head, and the seven deadly sins. As the heavens were perfect, so must the number of planets be perfect - Sun, Moon, Mercury, Venus, Mars, Jupiter, and Saturn. To their way of thinking there simply could be no more than seven worlds, the observations of Galileo notwithstanding.

To accept the existence of these new worlds and the associated belief that the Earth both turned and circled the sun was more than these "scholars" could bear. According to his critics, at best Galileo was only seeing optical illusions produced by the new instrument; at worst he was viewing images of unreal worlds conjured up by the devil himself and the astronomer was Satan's unwitting tool.

Though he was immediately attacked in word and print in Italy, the tide of the intellectual battle began to turn as soon as observers in Rome and northern Europe trained their telescopes on the heavens. With the publication of the *Sidereus Nuncius* Galileo received a worldwide recognition that only added to his reputation as a master scientist and original thinker. The recognition also gave Galileo the impetus he needed to have his teaching duties terminated, allowing him more time for research and writing. This was accomplished by taking a professorship at Pisa and as "First Philosopher and Mathematician" to the Grand Duke of Tuscany. Neither position had any appointed duties. As a result, Galileo chose to take up residence in Florence, the hometown of his mother.

Shortly before leaving his position at Padua in late summer, Galileo turned his telescope on Saturn. Unlike the other planets he had observed, Saturn appeared to consist of several parts. With the passage of time the appendages came and went. Owing to the low power and relatively poor optical quality of the telescope he was using, Galileo was not able to clearly discern the rings of Saturn. The "discovery" of the rings of Saturn would have to wait another 45 years.

In September, observing from Florence, Galileo turned his telescope on Venus. Much to Galileo's delight Venus exhibited a full set of phases not unlike the moon. This too supported the concept that Venus orbited the sun and not the Earth. Galileo had observed a full set of phases for Venus and along with it a dramatic size difference that was related to the phase. When the disk of the planet was nearly "full" Galileo saw a very small disk implying that it was far away; when crescent a very large image which implied its relative proximity.

According to the Ptolemaic view of the solar system, Venus moved about its epicycle whose deferent lay on a line directly between the Earth and sun. This being the case, Venus would always lie roughly between the Earth and sun and would, as a result, show only a crescent phase. Galileo observed Venus going through a complete set of phases just like the moon and increasing and decreasing in size in just the right way as would be expected to happen were it in orbit round the sun.

The observations of Venus' phases was also conclusive proof that the planets merely reflected sunlight and did not glow of their own accord. Previous to Galileo it was believed that when the dark portion of the moon was dimly visible during the crescent phases, the glow was due to starlight streaming through the partially transparent moon. Others held that the moon was slightly phosphorescent. Galileo correctly explained the phenomenon as light reflected off the Earth faintly illuminating the moon.

The observational evidence of the phases of Venus and the phenomenon of Earthshine explained removed one more difference between the Earth and the planets. All of these objects, the Earth included, were simply worlds basking in the warm glow of the sun. Once again this information confirmed Galileo's conviction that the planets orbited the sun and reaffirmed his belief in the overall truth of the Copernican system.

Toward the end of 1610 Galileo observed and recorded dark blemishes, sunspots, crossing the face of the sun. Sunspots were observed much earlier and these sightings were recorded in the early annals of the Chinese. These and other observers generally believed these blotches to be the silhouetted figures of Mercury or Venus crossing over the face of the sun. But Galileo's observations showed these features to have significant detail and structure; clearly they could not be the planets of Mercury or Venus. This observation, too, helped to destroy belief in the Ptolemaic system.

Galileo argued that these markings were actually features on the face of the sun -- an amazing thing in light of the claim by Aristotle that everything in the heavens had to be perfect, regular, and unchanging. Galileo believed the spots to lie on or very near to the surface of the sun. This was so, he argued, because the spots moved slowly when near the edge of the sun and much more rapidly when centrally located. The motion was slower near the edge because the motion was mainly along the line of sight (either toward or away from the observer) while the motion was faster near the center of the image because the motion was primarily along the line of sight. To support this view he explained that his observations had shown the spots to be foreshortened when near the edge as well, just as would be expected for a feature on the surface of the sun.

*(Continued on page 10)*

## REPORT ON LEONIDS 2009

By Bobby Arn

The Leonid Meteor Shower is one of the more popular meteor showers of the year, typically peaking with 100 strikes per hour. The Leonids meteors (or just Leonids for short) are bits of rock, dust, and ice left behind from Comet Tempel-Tuttle. As the comet moves throughout our solar system it leaves behind a stream of debris in its wake. When the path of the Earth crosses the path of the Comet, we run into this debris floating in space and the result is a meteor shower, or once every 33 years, a meteor storm.

The 2009 display of the Leonids was not on this 33 year period (the last storm was in 2001), and was not predicted to be classified as a storm (1000+ meteors per hour). However it was still expected to be an impressive show with an hourly rate of 500+ per hour. This high predicted number was from the Earth crossing, not one, but two streams of debris left behind from the 1466 and 1533 pass of Comet Tempel-Tuttle.

With an impressive shower on the way, this was a must see event. However the weather in the area made a turn for the worse as a huge storm system set on top of the Midwest, reaching from the eastern part of Kansas, all the way to the East Coast. Knowing this, there was only one logical action to take. On the morning before the peak of the meteor shower, I, along with Dan Miller and Millikin freshman, Corey Page left Illinois for Cedar Bluff State Park in West Kansas. After a 12-hour drive, we arrived after dark and began setting up a series of cameras in an attempt to image some meteors as they burn through our atmosphere.

There are two strategies for trying to image a meteor shower. The first way is to use a very wide-angle lens (3-30mm range) and aim the camera 45° away from the radiant point, the point in the sky where the meteors will appear to originate. Here, you will have the best chance of catching meteors will long (and sometimes) colorful trails. When viewing meteor showers, these are the meteors that most people will immediately see.

The other method of imaging a meteor shower is to use a lens with a longer focal length (50-100mm range). Since your field of view will be much narrower, you will want to aim the camera within 5-10° of the radiant point. Here you will (potentially) capture more meteors, but each strike will be a lot less impressive as the trails will be quite short.

Hoping to get both of these types of shots, we had three cameras set up that evening, two of them shooting wide-field and one shooting close to the radiant point. However, despite all of our work to view and image this impressive shower, the predictions turned out to be incorrect. Observers in Asia averaged roughly 70 strikes per hour, while in North America, the highest reported count was only 38 for the entire evening - a number much lower than average for this shower.

While the cameras were taking images, I stayed up to view the shower until about 4:00 in the morning - at which point it became too cold to remain outside any longer. Through out the evening, I can only report seeing a little under two dozen meteors, the majority of them were very quick and dim, moving in the direction towards Ursa Major - the opposite direction of where the cameras were pointed (due to sky glow from the North from the city of Hays).

After a long and fairly disappointing evening, we left the campsite at 7:00 in the morning to put on a show for the Taylorville Middle School at Millikin later that evening.

The next meteor show will be the night of December 13<sup>th</sup> and into the morning of the 14<sup>th</sup> as the Geminids make their appearance. The Geminids are a result of the Earth passing through the debris path of Comet 3200 Phaethon. This shower comes at a great time this year as the moon will be close to new. Best viewing of this shower will be toward the east after midnight. For more information about this shower, visit: <http://meteorshoweronline.com/geminids.html>.

## THE LIFE AND TIMES OF GALILEO, PART 2 (CONT.)

*(Continued from page 9)*

Galileo developed an ingenious proof of the error of the Ptolemaic view regarding these spots that severely angered his critics. He showed via geometrical arguments that either the spots were on the sun and moved across its face as a consequence of its rotation, or that, if these offending bodies were not on the sun, they would necessarily have to orbit the sun moving faster when seen against the center of the sun's disk and slower when near its limb. That is, a body orbiting between the Earth and sun would necessarily have to be moving with an irregular motion. The proof was flawless and both conclusions completely unacceptable to the Aristotelian astronomers of his day.

# TCAA Treasurer's Report – November 2009

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OPERATING FUND BALANCE – October 31, 2009 - \$ 2,588.11 \*

Income

Orlyn Edge (senior dues) - \$ 25.00

Expenses

LYB Inc. (Nov. Observer) - \$ 31.68

Mich. State Univ. (sky calendars) - \$ 105.60

Erin Estabrook (mailing labels) - \$ 7.51

D K Designs (NCRAL & TCAA shirts) - \$ 25.00

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OPERATING FUND BALANCE – November 30, 2009 - \$ 2,443.32

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OBSERVATORY FUND BALANCE – October 31, 2009 - \$ 2,194.98

Income

None - \$ 0.00

Expenses

None - \$ 0.00

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OBSERVATORY FUND BALANCE – November 30, 2009 - \$ 2,194.98

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TOTAL TCAA FUNDS – November 30, 2009 - \$ 4,638.30

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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](mailto:TCAA-subscribe@yahoogroups.com). Unsubscribing is just as easy. To unsubscribe, just send a blank email to [TCAA-unsubscribe@yahoogroups.com](mailto:TCAA-unsubscribe@yahoogroups.com).

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

### UPCOMING EVENTS

- ☆ December 5, Classroom for Kids, Bloomington Public Library Community Room, 1:30-3:00 p.m.
- ☆ December 19, Annual Saturnalia Party, Home of Donna and David Osenga, 7 p.m.—?

## YEAR END CHARITABLE GIVING

At the end of each year many of us give donations to our favorite charities. Won't you include the TCAA this year? It's a great way to give recognition for all the club does over the course of the year, and supports the efforts of next year. The TCAA is an officially recognized 501(c)3 non-profit educational organization incorporated in Illinois. As such, donations made to the club are tax deductible to the extent permitted by Federal law.

One component of the club's 5-year plan is to develop a \$5,000 reserve fund for supporting the 2010 NCRAL convention that the TCAA will be hosting. We are still short of that amount. If these funds are not needed to support NCRAL events, the money will support future club activities identified in the club's five-year plan. Donations by the membership will go a long way toward generating the additional sum needed to reach this goal. In addition, we are now looking to replace the Meade 12-inch, LX200 telescope in SGO. This is something we hope to accomplish right after the NCRAL 2010 meeting if we have the financial resources to do so.

If you should like to donate to this reserve fund (and we hope everyone will help achieve this goal), send your contribution to our esteemed Treasurer Duane Yockey at 508 Normal Avenue, Normal, IL 61761. Contributions in excess of \$250 will be acknowledged with an official letter for tax purposes.

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### The OBSERVER

Newletter 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

Visit the Twin City Amateur Astronomers  
on the web at  
[www.twincityamateurastronomers.org/](http://www.twincityamateurastronomers.org/)