

The OBSERVER

The Newsletter of the Twin City Amateur Astronomers, Inc.

February 2006 Volume 31, Number 2



PRESIDENT'S MESSAGE

Dear Members and Friends,

We have started a brand new year and I would like to wish you, the members of TCAA and your families, the very best for a healthy and prosperous year. In the dawn of a new year, when we craft our resolutions and develop our personal and professional goals, I hope you will include our shared hobby in your plans.

Volunteering within a club such as this and building upon a common interest is not something to take lightly, as it allows us to strike a balance in our lives, and contribute positively to our community. We even develop endearing friendships with people we would not have ordinarily met.

Our activities allow us to learn more about the stars and to share what we have learned with the public via our outreach activities. Probably most importantly, our stargazing allows us to admire the beauty of heavenly bodies and to dream for a moment about our place in the universe and whether there is life out there!

In the science of the stars, the start of 2006 brings us two-fold emotions. NASA recently launched the fastest spacecraft ever, which it hopes will achieve a ten-year, three-billion mile journey to Pluto. It passed our planetary moon nine hours after liftoff (compare that to Apollo 2 which took three days) and its next milestone is Jupiter in 13 months. In January, we also commemorated the twentieth anniversary of the failed Challenger mission, a painful reminder of the hazards and uncertainties associated with space travel.

Returning closer to home, I would like to remind the membership that our annual business meeting and banquet will be happening on Saturday, Feb. 11. On behalf of the Board, I would like to invite you to join using our annual club fellowship. I am looking forward to seeing most if not all members there!

Members attending will have a special treat in the form of our keynote speaker, Dr. Roger Phillips, director of the McDonnell Center for the Space Sciences and Professor in the Department of Earth and Planetary Sciences at Washington University in St. Louis, Missouri. He will be sharing exciting information on our neighboring planets revealed thus far by NASA's Messenger mission to Mercury. This promises to be a treat and is an exciting way to start this year with the club. We are truly grateful that Dr. Phillips is able share his time with us!

From a personal point of view, my time as President of our club marked a time of personal growth for me. It was a learning experience, as I had to balance work, personal life, TCAA activities and my other nature interests. I would like to take this opportunity to sincerely thank the Board and the membership of our club for their patience and their support over the past year.

I feel honored to have served TCAA at the highest level for the past year and also as a Board member for the past two years. In the same token, I would like to inform the membership that I have decided to step down from the Board and I would like to invite and encourage you, the TCAA membership, to nominate someone you know who might be having fresh ideas and new perspectives in our club, or just nominate yourself to serve in an executive position. I look forward to seeing new faces taking up the leadership roles. It would be wonderful to see you all on Saturday, February 11. I'm looking forward to it!

Happy Star Gazing!
~ Kal Kumar ~

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TCAA Calendar of Events

- February 11, Annual Meeting of the TCAA to be held at ISU's Turner Hall 104 - Social Hour 5:00, Banquet 6:00, Speaker 7:30 (Turner 200)
- February 25, Members-Only Observing Session, SGO, 7:00 p.m. CST (host needed)
- March 25, Members-Only Observing Session, SGO, 7:00 p.m. CST (host needed)
- April 1, first Public Observing Session, SGNC
- April 16, Astronomy Day display at local mall (tentative)
- April 21-22, TCAA road trip to NCRAL convention in Appleton, Wisconsin

The Observer

Newsletter of the TCAA, Inc.

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.

TCAA Officers

President Kal Kumar
309 661-3452
kalkumar2005@gmail.com

Secretary Michael Rogers
309-825-6454
mprogers@mac.com

Treasurer Duane Yockey
309-452-3936
duane@lybinc.com

5th Director William Carney
309-829-7748
willcarney@aol.com

Director Brian Barling
309-454-5493
res2213h@verizon.net

Property Manager

William Carney 309-829-7748
willcarney@aol.com

Observer Editor/ TCAA Education Coordinator

Rebecca Wenning Submissions
21 Grandview Dr. must be
Normal, IL 61761 received by
309-454-4164 the end of
rwennin@ilstu.edu each month.

Membership Dues

Individual Adult/Family \$40
Full-time Student/Senior \$25

To join the TCAA, send your name, contact info, and dues payment to:

Duane Yockey
508 Normal Avenue
Normal, IL 61761

TCAA ANNUAL MEETING & BANQUET FEBRUARY 11th

~ by Jean Memken ~

This year's TCAA banquet promises to be a night to remember! The festivities start at 5:00 p.m. on Saturday, February 11th, with a social hour in Room 104 Turner on the campus of Illinois State University. A sumptuous buffet meal by the ISU Catering Club will follow. There will be the usual business meeting, and then our guest speaker, Dr. Roger J. Phillips will give a presentation titled MESSENGER, Mercury, plus a bit of Venus & Mars starting at 7:30 p.m. in Room 200 Turner Hall.

Final arrangements for the banquet are still pending, but the cost for the buffet will be \$12 for adults and \$6 for children for those who register in advance. There will be several entrees, including a vegetarian selection, side dishes, drinks and dessert. As those of you who have attended the banquet in the past know, the ISU catering club does a tremendous job, and so you can be assured of a wonderful buffet meal.

The following is a list of all reservations. There are a few seats left for the banquet. Note that children are 12 years of age or younger.

Memken-Rogers - 4 adults and 1 child
Rodgers - 1 adult and 2 children
Ekhardt - 3 adults
McDonald - 1 adult
Lehmkuhl - 4 adults
Timke - 1 adult
Franklin - 2 adults
Carney - 1 adult
Yockey - 1 adult
Wenning - 2 adults
Lewis - 1 adult
Trainor - 1 adult
Miller - 1 adult and 1 child
Magiano(?) - 2 adults
Barling - 1 adult
Brown - 1 adult
Ferguson - 1 adult

If you would like to make a reservation for the banquet, please contact Jean Memken at 828-8655 or e-mail jmemken@ilstu.edu. The meal is limited to the first 40 people who sign up, so get your reservations in soon! You need to make your reservation as soon as possible, and you can pay at the banquet. If you would just like to come in just to hear the speaker, that's fine. Plan on arriving a little before 7:30 p.m. at Turner Hall. (If you wish to attend the annual business meeting as well, show up at around 6:30 p.m. Ed.) There's parking between Turner and Redbird Arena. MESSENGER is NASA's first probe to Mercury in over 30 years, and no one is better qualified to talk about it than Dr. Roger Phillips, Director of the McDonnell

Center for the Space Sciences. From the Apollo missions to the Mars Global Surveyor and now MESSENGER, Dr. Phillips has been intimately involved in the exploration of the solar system. He has worked at JPL, headed the Lunar and Planetary Institute in Houston, and is now at the Department of Earth and Planetary Sciences at Washington University, in St. Louis. While most of his talk will focus on MESSENGER and Mercury, Dr. Phillips will also spend some time describing what he has learned from missions to Venus and Mars.

If you have any questions about the banquet, please call Jean or Mike at the above phone number. We hope to see you all there!

NOMINATIONS FOR TCAA BOARD SOLICITED

The general meeting of the TCAA during February is termed the Annual Meeting. At the Annual Meeting, officer reports are delivered and Board members for the coming 12 months are elected. The Board members are elected, and then appointments are made by the Board for the major offices (president, vice president, secretary, and treasurer) and minor offices (newsletter editor, historian, property manager, etc.). Nominations are now being requested. If you would like to run for the Board of know of anyone you would like to nominate, please communicate the information to one of the Board members, or be prepared to make the nomination from the floor at the Annual Meeting. Please think seriously about serving in this capacity. One or more current Board members will be stepping down this year.

ASTRONOMY COURSE DRAWS TO A CLOSE

The Adult Education Course that started on January 7 at Sugar Grove Nature Center has now drawn to a close with 24 individuals



**Ian Yaeger figuring out how
telescopes work using two convex lenses.**
~Photo by Dave Osenga~

having completed the series. Among TCAAers attending the course were Cheyenne Adams, Chris Franklin, Ed, Karen, and Anthony Duran,

Ken, Lori, Lindsay, and Josh Eckhardt. Joining the TCAA as a result of the course were Ginnie Underwood and Dave Osenga. At least two others indicated that they hope to join the club in the near future. Thanks and tip of the hat to Carl Wenning and Duane Yockey for conducting this course on behalf of the TCAA, and to Dave, Cheyenne, and Chris for assisting from time to time.

On January 14, attention was focused primarily on the motions of the sun, moon, and planets. Carl provided information about celestial coordinate systems, precession, and eclipses. Afterward, with the assistance of course member Dave Osenga, members were treated to views of the moon and some of the more prominent celestial objects under a partly cloudy sky. Twenty members were present for this gathering.



Judy Bey and Gary Hoover learning how to use planispheres.

~Photo by Dave Osenga~

On January 21, attention was focused on the use of a planisphere, the types and powers of the telescope, and how to find celestial objects. The group dismissed a few minutes earlier than usual to begin observations of the evening sky. While the sky had only a single wispy cloud at the start, within about 20 minutes the sky had become mostly overcast due to stratus clouds forming in place. Assisting with observations were Duane Yockey (10th), Chris Franklin (SGO 12th), and Dave Osenga (Edmund 8th). Nineteen members were present for this session.

On January 28, attention was focused on the nature of the world system (Ptolemaic, Copernican, or Tychonic) and the meaning of Galileo's observations of the heavens conducted in 1609 and 1610. Hubble views of celestial objects were shown as the goal of amateur observations. Twenty-three students were present for the final class. Unfortunately, post-

class observing was not possible due to clouds and intermittent rain.

The course was formed around Carl's 160-page loose-leaf Galileo Observer's Guide to the Heavens. The guide provided participants with historical background, and will help them follow in the footsteps of Galileo as they attempt to use binoculars and small telescopes. Following this course, participants should be able to make simple but profoundly important observations relating to the nature of the solar system – heliocentric versus geocentric.

The course broke about even on this venture, with costs exceeding the expenses by only a few dollars. This is most appropriate in light of the fact that the course was intended to be revenue neutral. Hosts Wenning and Yockey absorbed the excess costs that resulted from snacks provided for break times.

While twenty-four individuals completed most of the five-session course during January, there remains a waiting list of 10 individuals who would like to take this course in the not too distant future. Would any other TCAAer be willing to teach the next session? If so, please contact either Carl or a member of the Board to express your interest.

MIKE ROGERS CONTRIBUTES TO E/PO

On January 20th, Mike Rogers gave a presentation for a group of 30 or so Boy Scouts who were participating in Klondike Days, and on January 28th he gave another presentation for a group of 10 or so Boy Scouts and parents. This latter group consisted primarily of Sheri Rodgers' Boy Scout troop. In both cases, Mike used a computer program to demonstrate what the skies would have looked like had the weather cooperated. He answered many, many questions from some very interested kids!

On January 26th, Mike took a group of 20 Millikin University students to Friends Creek Regional Park 10 miles east of Maroa, IL, where we studied the night sky naked-eye and with binoculars – at least until the clouds rolled in. The sky that evening, according to Mike, was magnificent!

WGLT PREMIERES NEW PROGRAM

The Challenger Learning Center at Prairie Aviation Museum, in conjunction with WGLT-FM and the ISU Physics Department, has launched a new, weekly radio program called Uncommon Knowledge. Such wide-ranging topics as seasons, antibiotics, volcanoes, heat

versus temperature, and the swirling direction of toilet water will be among those addressed during the new 21/2-minute science program.

Uncommon Knowledge premiered on WGLT-FM (89.1 FM and 103.5 FM in Peoria) on January 15th, and will be aired every Sunday at 9:37 a.m. during NPR's Weekend Edition Sunday. The new program is produced by Illinois State University's WGLT radio, ISU's Department of Physics, and the Challenger Learning Center in Bloomington. The program is designed to briefly explain everyday scientific events with a light approach that is rooted in science.

While the program scripts are primarily written by Janet Moore of CLC and Jay Ansher of ISU Physics, others are invited to contribute scripts to this program. Indeed, those who would like to contribute to the show as an expert commentator are encouraged to get involved. The TCAA's own Carl Wenning spoke recently about the reasons for the seasons. Past episodes of this program can be heard online at <http://wglt.org/programs/uncommon/index.shtml>. Contact Carl if you'd like to become involved with Uncommon Knowledge either as a contributing author or as an expert commentator.

Readers are reminded that WGLT also presents the TCAA-sponsored Star Date program on a daily basis at both 6:58 a.m. and 6:58 p.m. The most recent programs can be accessed online at <http://stardate.org/>.

CLC OPENS STARFLIGHT THEATER

If you haven't seen it yet, you gotta see it! See what? Starflight Theater at Prairie Aviation Museum's Challenger Learning Center. Opened to the public for the first time on January 28, the 20th anniversary of the Challenger disaster, Starflight Theater is a \$50,000 transport module used by the CLC to "transport" mission participants from earth to "space station." The theater is configured as transport module and can seat 16 "astronauts" as well as two pilots. Regular missions of the transport module last a mere 21/2 minutes but can extend to as much as 30 minutes with a special showing.

Of especial note for TCAA members is a tour of the Milky Way Galaxy. While the room does not actually move, sensations of motion are created by a large view screen in a darkened room, as well as by body-conforming "dynamic" seats and surround sound. Special showings can be arranged for groups at those times when the simulator is not being used for regular CLC missions. The cost is \$5 per person. The TCAA might want to consider holding a number of special programs at the CLC during early 2006.

2006 KEYHOLDER RENEWAL FEE DUE

SGO keyholders take note. Now is the time to renew your key holder status for 2006 by sending \$5 to our esteemed Treasurer, Duane Yockey. After the initial \$10 fee, there is an annual \$5 maintenance fee for continuing your privileges of using the club's observatory. See the January Treasurer's Report for information about current key holder renewal status.

IS IT TIME TO RENEW YOUR MEMBERSHIP? CONSIDER THE "ELECTRONIC MEMBERSHIP OPTION"

Recall that there is now an "electronic membership option" when joining or renewing membership in the TCAA. Following Board approval of an electronic membership at its December 2005 meeting, electronic memberships are available at a \$5 discount over regular membership rates. Electronic members must be subscribed to the TCAA listserv to receive notification that The OBSERVER can be downloaded as a PDF, and to get a reminder that a monthly star map can be downloaded from skymaps.com. Electronic members do not receive hard copy of The OBSERVER; neither do they receive copies of the Abrams Planetarium Sky Calendar.

Make a date with

StarDate

on

WGLT, 89.1 FM

Weekdays @ 6:58 AM & 6:58 PM

Sponsored by the TCAA

Partners in Astronomy Education
with the ISU Planetarium

@
309-438-5007

MAGAZINE SUBSCRIPTIONS

~ by William Carney ~

TCAA members can subscribe to Astronomy and Sky & Telescope magazines for reduced rates. Sky & Telescope is available for \$32.95 per year, and Astronomy for \$34.00 per year if subscriptions are purchased through official club channels. If you would like to subscribe to either or both magazines, send a check or money order made payable to William Carney in the correct amount. Please include one or two 39-cent postage stamps (postal rates went up January 8) if either is a new subscription. If renewing, then the publishers usually send a stamped envelope. Send that envelope plus your mailing label or renewal form to William at P.O. Box 52, Bloomington, IL 61702.

COORDINATORS NEEDED FOR 2006 MOOS

Members-only observing sessions for 2006 have been set as shown below. Two coordinators are needed for each event. Times listed for the start of the session are either 7:00 p.m. or the end of civil twilight – whichever is later. Observing sessions typically run about two hours during warmer weather; sessions can be considerably shortened during cold weather so be certain to arrive early.

If you are willing to host one or more of these members-only observing sessions, please contact Carl Wenning. Coordinators must be SGO keyholders because the Sugar Grove Observatory is the central focus of these sessions.

February 25, 7:00 p.m. CST
March 25, 7:00 p.m. CST
April 29, 8:19 p.m. CDT
May 27, 8:49 p.m. CDT
June 24, 9:04 p.m. CDT
July 22, 8:52 p.m. CDT
August 19, 8:17 p.m. CDT
September 23, 7:19 p.m. CDT
October 21, 7:00 p.m., CST
November 18, 7:00 p.m. CST
December 16, 7:00 p.m. CST



NASA SPACE PLACE

"Moving a Mountain of a Dish"

~ by Patrick L. Barry ~

Your first reaction: "That's impossible!" How on earth could someone simply pick up one of NASA's giant Deep Space Network (DSN) antennas—a colossal steel dish 12 stories

high and 112 feet across that weighs more than 800,000 pounds—move it about 80 yards, and delicately set it down again?

Yet that's exactly what NASA engineers recently did. One of the DSN dishes near Madrid, Spain, needed to be moved to a new pad. And it had to be done gingerly; the dish is a sensitive scientific instrument full of delicate electronics. Banging it around would not do.

"It was a heck of a challenge," says Benjamin Saldua, the structural engineer at JPL who was in charge of the move. "But thanks to some very careful planning, we pulled it off without a problem!"

The Deep Space Network enables NASA to communicate with probes exploring the solar system. Because Earth is constantly rotating, a single antenna on the ground can communicate with a probe for only part of the day, when the probe is overhead. By placing large dishes at three locations around the planet—Madrid, California, and Australia—NASA can maintain contact with spacecraft around the clock.

To move the Madrid dish, NASA called in a company from the Netherlands named Mammoet, which specializes in moving massive objects. (Mammoet is the Dutch word for "mammoth.")

On a clear day (bad weather might blow the dish over!), they began to slowly lift the dish. Hydraulic jacks at all four corners gradually raised the entire dish to a height of about 4.5 feet. Then Mammoet engineers positioned specialized crawlers under each corner. Each crawler looks like a mix between a flatbed trailer and a centipede: a flat, load-bearing surface supported by 24 wheels on 12 independently rotating axes, giving each crawler a maximum load of 194 tons!

One engineer took the master joystick and steered the whole package in its slow crawl to the new pad, never exceeding the glacial speed of 3 feet per minute. The four crawlers automatically stayed aligned with each other, and their independently suspended wheels compensated for unevenness in the ground.

Placement on the new pad had to be perfect, and the alignment was tested with a laser. To position the dish, believe it or not, Mammoet engineers simply followed a length of string tied to the pad's center pivot where the dish was gently lowered.

It worked. So much for "impossible."

Find out more about the DSN at <http://deepspace.jpl.nasa.gov/dsn/>. Kids can learn about the amazing DSN antennas and make their own "Super Sound Cone" at The Space Place, <http://spaceplace.nasa.gov/en/kids/tmodact.shtml>.

TCAA Treasurer's Report – January 2006

OPERATING FUND BALANCE – December 31, 2005 - \$ 1,539.42

Income

Cheyenne Adams (Dues Renewal) -	\$ 40.00
Sherman Lewis (Dues) -	\$ 40.00
Rebecca Wenning (Student Dues Renewal) -	\$ 25.00
Ginnie Underwood (Senior Dues) -	\$ 25.00
Kent Ferguson (Dues) -	\$ 40.00
Meghana Deshpande (Dues) -	\$ 40.00
David Osenga (Dues, electronic membership) -	\$ 25.00
Astronomy Class Registrations -	\$ 686.00

Expenses

Rebecca Wenning (January Observer) -	\$ 53.95
ISU Planetarium (Astronomy Class Exp.) -	\$ 63.00
Carl Wenning (Astronomy Class Exp.) -	\$ 225.88
ISU Planetarium (Astronomy Class Exp.) -	\$ 100.00
Sugar Grove Nature Center (Astr. Class) -	\$ 240.00
Carl Wenning (Astronomy Class Exp.) -	\$ 42.12
ISU Planetarium (Astronomy Class Exp.) -	\$ 15.00

OPERATING FUND BALANCE – January 31, 2006 - \$ 1,720.47

OBSERVATORY FUND BALANCE – December 31, 2005 - \$ 1,289.08

Income

Keyholder Renewal (Chris Franklin) -	\$ 5.00
Keyholder Fee (David Osenga) -	\$ 10.00

Expenses

None -	\$ 0.00
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OBSERVATORY FUND BALANCE – January 31, 2006 - \$ 1,304.08

TOTAL TCAA FUNDS – January 31, 2006 - \$ 3,024.55

Respectfully submitted,

L. Duane Yockey, Treasurer
Sugar Grove Observatory

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

Duane Yockey (April 2001, renewed through 2006)
 Michael Rogers (August 2001, renewed through 2006)
 William Carney (March 2002, renewed through 2005)
 Carl Wenning (January 2004, renewed through 2006)
 Brian Barling (February 2004), renewed through 2005
 Lenore Trainor (December 2004, renewed through 2005)
 Kevin Brown (May 2005)
 Sothilingam family (June 2005)
 Christopher Franklin (July 2005, renewed through 2006)
 Kal Kumar (renewed August 2005)
 David Osenga (January 2006)



Welcome New Members:

Kent Ferguson

Scott and Carol Genung

Ginnie Underwood



The OBSERVER

Newsletter of the TCAA, Inc.

Rebecca Wenning, Editor
21 Grandview Drive
Normal, IL 61761-4071

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