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## PRESIDENT'S MESSAGE: SPRING IS IN THE AIR!

Can you feel it? Another pass around the Sun. Another equinox under our belts. The days are getting longer. The temperatures are rising. We're officially into spring!

We have a new Board of Directors that was recently elected at our annual meeting. William Carney, Dave Osenga and I are continuing board members from last year. Dan Miller returns to the board, and Terry Lee Wright is our newest director. Thanks to each of them for all their services to the club. Thanks also to departing board members Michael Rogers and John Werner for all they contribute.

We held our first board meeting on March 25 and appointed the officers. I will serve as president, Dan Miller will be VP. Carl Wenning will be Secretary and Historian. Duane Yockey continues as Treasurer, Registered Agent and ALCOR. William Carney remains as Property Manager and

Erin Estabrook as our newsletter editor. I will assist Michael Rogers in fulfilling the Webmaster role. Thanks again for all your help. We wouldn't be the same club without you.

It's time to kick off a new year of activities with regular observing, learning and sharing and lots and lots of fun. Our season kicks off with the April MOOS and POS. Set your calendars to join us on April 5 and April 12 for the first of our three spring sessions. Dan Miller will lead off with Planet Quest - A Look at Mars and Saturn.

The spring sessions are my personal favorites because the skies are clear, the temperatures are mild, there is a rich variety of targets to look at, and the bugs haven't begun to stir. So come out, join us and help us in celebrating a new year in the TCAA.

## MINUTES OF THE 3/25/08 BOARD MEETING

The new Board members and officers of the TCAA were called to order at Lewis, Yockey & Brown by outgoing President Lee Green at 6:42 p.m. In attendance were Carl Wenning, Duane Yockey, Terry Lee Wright, and William Carney. Absent were Board members Dan Miller and Dave Osenga. Lee began the meeting by reviewing the calendar of events for the next few months.

It was noted that Sister City member John Kemp from Canterbury, England, would be meeting with Board members and club officers over dinner on Thursday, April 3<sup>rd</sup>. It was agreed that the TCAA should plan on having a good time with John and working on an idea of a "sister city astronomy club" relationship.

Efforts were then made to fill the coordinators' positions for upcoming events with the following previous and new agreements: Dan Miller, April 12<sup>th</sup>, Planet Quest - Mars and Saturn; Carl, Telescopes - Eyes on the Universe, May 3<sup>rd</sup>; Lee, A Big Dipper Full of Stars, June 7<sup>th</sup>, and Duane, July 5<sup>th</sup>, Mighty Hercules and His Treasure - M13. It was further agreed that Carl, Lee, William, and possibly Duane would cooperatively manage the Members-Only Observing Sessions from April through July.

Old business was then addressed and included the following points:

➤ It was noted that Duane and Carl should give a talk about their recent trip to Chile at the June picnic.

➤ Lee noted that four NASA Night Sky Networks have been logged thus far in 2008. He also noted the February 29<sup>th</sup> lock-in at Pontiac High School during which some 200 or more students participated in viewing.

➤ Carl noted that Funk Insurance had contacted the ISU Planetarium with a note for Duane to the effect that they could not beat the pricing of the club's insurance currently held with Grinnell Mutual Insurance.

➤ Duane noted that Kal Kumar stopped by his residence to drop off some club materials before departing for good to India.

➤ Lee noted the need to collect up the Schuette Society and Miller Family plaques from the Annual meeting. The Kieviet Founders Award has already been hung at the SGO.

New business was addressed and included the following points:

➤ Officers were appointed: Lee Green, President; (Lee will reach out to Dan Miller and David Osenga to see if either will serve as Vice President); Duane, Treasurer, ALCOR, and Registered Agent; Carl, Secretary and Historian; William, Property Manager; Newsletter Editor, Erin Estabrook; and Lee and Michael Rogers, co-webmasters.

➤ Carl suggested a new domain name for the TCAA as part of the revision process of the club's web page. Something like TCAA-IL.org, TCASTRO.\*, TWINCITYASTRO.\* or TCAA.info. Lee will see what sort of short domain names might be possible; Carl noted that it is possible to register new domain names for as little as \$45 for five years.

➤ The following schedule for future Board meetings was tentatively set - the fourth Tuesday of each month from now through the summer months - May 27<sup>th</sup>, July 22<sup>nd</sup> being the next two meetings.

(Continued on page 2)

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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 3/25/08 BOARD MEETING (CONT.)

*(Continued from page 1)*

➤ The Board agreed to move ahead toward the possible purchases of a 30mW (?) laser pointer, a low-end laptop computer, and a video projector. It was agreed that the club would attempt to raise funds for these purchases rather than use the seed money that has been set aside for the 2010 NCRAL meeting. William will investigate laptop computers; Carl will share information about laser pointers; both Lee and William will look into the cost of video projectors. A pledge was then given by one of those present to pay for an inexpensive laptop computer (~\$400) if one can be found.

➤ Goals for this year are to continue with NCRAL planning and preparation, work on website improvements, prepare for the international year of astronomy in 2009, move ahead with a plan to generate ideas for and professionally prepare a club logo.

➤ It was suggested that Duane and Carl prepare an article for the AL Reflector about their recent trip to Chile.

➤ Carl thanked Terry Lee for developing the Star-gazer icons.

➤ William noted the following concerns about SGO upkeep:

- We need to re-key the door next year for security reasons

- We need to have the siding on SGO fixed this summer
- It is imperative to add the missing flange on the dome slot cover as this recently resulted in minor flooding
- The dome is in need of a repainting if it is to look good for the 2010 NCRAL meeting
- Carl will make a cut out to cover the last step into the dome so that no one will fall by inadvertently stepping into the stair well that intrudes upon the floor of the dome

➤ Duane reminded everyone of the NCRAL meeting on April 18/19 at Port Washington, WI, and encouraged them to register now if they are planning to attend.

➤ Duane asked that a number of POS brochures be copied for general distribution; Carl agreed to get 300 run off at Kinko's.

The meeting was adjourned at 8:19 p.m. at which time the assembled members watched the passing of the International Space Station and the Space Shuttle Endeavour at 8:36 p.m. They passed about 30 degrees up in the south, and were trailing one another by only about 10 degrees. Both reached an estimated -2 magnitude (brighter than nearby Sirius) before passing into the shadow of Earth.

## DONATIONS/PLEDGES SOUGHT TO SUPPORT PURCHASES

At the TCAA Board of Directors meeting on March 25<sup>th</sup>, the long-standing request to make equipment purchases to support the education/public outreach activities of the club was once again considered. It was agreed that the purchases would be made but without drawing down the treasury balances which need to be at the \$5,000+ level to support the 2010 NCRAL meeting if necessary. Large annual payments are already coming that will draw down the balance by several hundred dollars – liability insurance, Abrams Sky Calendars, and Astronomical League dues.

It was agreed that the club should purchase a low-cost laptop PC computer, a video projector, and a 20mW or 30mW handheld green laser pointer. It was further agreed that a fund raising campaign would be conducted to generate the approximately \$1,500 needed to make these purchases. One club member, who wishes to remain anonymous, immediately pledged up to \$400 for purchase of the laptop computer.

If members are willing to contribute to this equipment fund, please send you pledge or contribution to Treasurer Duane Yockey at 508 Normal Avenue, Normal, IL 61761. The TCAA is a federally recognized 501(c)(3) educational not-for-profit organization. All donations are fully tax-deductible.

## AMATEUR ASTRONOMER JOHN KEMP TO VISIT FROM ENGLAND

Mr. John Kemp, an amateur astronomer and editor of ECLIPSE, the journal of the South East Kent Astronomical Society (SEKAS), will meet with members of the TCAA in the coming days. John is publicity officer for the Canterbury Three Cities Association – the United Kingdom’s branch of the three-way pairing between Bloomington-Normal, Canterbury in County Kent (England), and Vladimir, Russia.

John is making his first visit to Bloomington-Normal courtesy of our sister city committee from March 25<sup>th</sup> through April 6<sup>th</sup>. While John’s schedule though the first week will be very full of official activities, he will have some free time near the end of his stay. Current plans are for officials of the TCAA to have supper with John on Thursday, April 3<sup>rd</sup>. We hope to get him out to the SGNC to visit the SGO, and possibly do some observing.

John’s visit was discussed at the recent Board of Directors meeting, and there are hopes of establishing a sister cities type relationship with SEKAS. The Society has over 150 members and is still growing, making SEKAS one of the most active astronomical societies in southeast England. The Society’s website address is [www.sekas.co.uk](http://www.sekas.co.uk). John’s visit could well lead to exchange visits with Canterbury in the future.

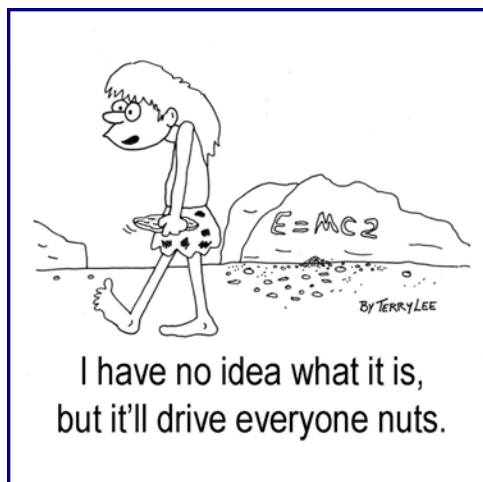
If any TCAAer would like to be part of this “welcoming reception” for John, please let Carl Wenning know (309-830-4085, [wenning@phy.ilstu.edu](mailto:wenning@phy.ilstu.edu)) as soon as possible.














## 2010 NCRAL PLANNING MEETING HELD

The NCRAL planning committee (Carl Wenning, Duane Yockey, and Dave Osenga – William Carney was absent due to a recent surgery on his shoulder) met over dinner at Maggie Miley’s on Thursday, March 6<sup>th</sup>, to continue discussions about the 2010 NCRAL meeting that the TCAA will be hosting. Various individuals will complete the following duties, ostensibly before the next planning meeting during April:

- Duane will check into hotels/conference center.
- Carl will contact CLC about possibly bringing in an astronaut as a keynote speaker; he will see to development of pre-publicity consisting for now of a handout for the 2008 NCRAL meeting that clearly shows TCAA is NOT in the Minneapolis/St. Paul area; begin updating the NCRAL web page on the AL website; start assembling an ad for the AL’s Reflector (1/12th page, free) to be run several times during late winter in 2010; begin developing a web page for the conference
- Dave will contact the TCAA Board of Directors about hiring a graphic artist to develop a club logo based on ideas previously presented by Terry Lee Wright and Carl. The image tentatively consists of a “bowed triangular frame” containing the words “Twin City – Amateur – Astronomers” and including at the least an image of the constellation Gemini.



## APRIL SKY GUIDE

02	The Moon passes 0.002° north of Neptune, 4 A.M.	
04	The Moon passes 3° north of Uranus, 5 A.M.	
	The Moon passes 5° north of Venus, 8 P.M.	
12	The Moon passes 1.2° north of Mars, 1 A.M.	
15	The Moon passes 0.9° south of Regulus, 9 A.M.	
	The Moon passes 3° south of Saturn, 1 P.M.	
16	Mercury is in superior conjunction, 2 A.M.	
22	Lyrid meteor shower peaks	
23	The Moon passes 0.3° south of Antares, noon	
27	The Moon passes 3° south of Jupiter, midnight	
28	Mars passes 5° south of Pollux, 3 P.M.	
29	The Moon passes 0.3° north of Neptune, 2 P.M.	

## MARCH POS KICKS OFF 2008 E/PO

The TCAA held its first Public Observing Session for 2008 on Saturday, March 8<sup>th</sup>. In spite of temperatures in the 20s, we had seven people come out to enjoy looking through the scope. Most of them heard about the event from the recent *Pantagraph* article. Carl came out to deliver a video projector, and Lee made the presentation about the Orion Nebula and manned the telescope pointing out nebulae, open clusters and double stars and Saturn. The sky was dark and seeing was good between the passing cloud bands. Lee packed it in about 9 p.m. An extremely thin, one-day-old crescent moon greeted Lee and Carl.

Thanks to efforts by Duane Yockey and Carl Wen-

ning, the information in the town of Normal Parks & Recreation Department brochure about E/PO has been updated for summer 2008 for the first time since at least 2000. The descriptor now reads "Twin City Amateur Astronomers – This group hosts a variety of education and public outreach activities for their members and the general public. Public observing sessions are held at Sugar Grove Nature Center on the Saturday following new moon phase, March through October. For details, visit [www.twincityamateurastronomers.org](http://www.twincityamateurastronomers.org) or contact Carl Wenning at (309) 830-4085.

## MARCH CONCLUDES WITH SUCCESSFUL VIEWING

An impromptu viewing session took place when four TCAAers headed out to SGNC on Friday, March 28<sup>th</sup>, for an evening of viewing. The clear dark skies were very inviting, though the slight breeze and temperatures in the 30s weren't helpful. The viewing began around 8:30 p.m. with William Carney and Carl Wenning viewing through Carl's 11-inch CPC. Lee Green showed up shortly after the observing session began, and Brian Barling showed up around 10 p.m.

Sporting a new dew Astrozap shield, Carl was able to observe with dew-free optics for the next 2.5 hours. By the time he concluded his observing at 11 p.m., he had observed 104 NGC objects, adding 101 of these to his Herschel 400 list. Carl is now only 15 objects away from completing the A.L.'s Herschel Award observing program.

Lee, working along side Carl, observed an additional 51 Herschel objects bringing him up to 393 total objects. Carl can easily get to 399 in a few days if the weather cooperates, and Lee can get to 397. Both Lee and Carl expect to complete the observing program within the next couple of months. Each observer has one or two objects currently hidden in the glare of the sun and will have to wait until they are visible in the predawn sky to observe them. Who will win this race to the finish?

## MORE MARCH VIEWING NOTES

By Brian Barling

At 9:45 on Friday 3/28/08, I arrived at Sugar Grove Nature Center to observe objects for the Herschel 400 list. The Herschel list has four hundred objects, galaxies, star clusters and nebula. List of Herschel objects can be found at [www.astroleague.org/al/obsclubs/herschel/hers400.html](http://www.astroleague.org/al/obsclubs/herschel/hers400.html).

I began observing star clusters in the constellation Monoceros which is an almost invisible constellation with a few fourth magnitude stars. Orion is located to the west, Gemini to the north and Canis Major to the south. I was able to locate the following:

- NGC2215, a large open star cluster containing mostly faint stars, and a bar of bright stars in the center of the cluster.
- NGC2232, large cluster divided into two groups, it has a "V" shape scattering of stars.
- NGC2185, a nebula surrounded by three stars forming a triangle.
- NGC2244, a bright open star cluster located at the upper right side of the rosette nebula.
- NGC2251, is a wide scattering of stars with two stars in the center of the cluster that are just touching.

I then moved to the constellation Virgo and in the cluster of galaxies located to the east of the constellation Leo and was able to observe the following:

- NGC4643, a small barred spiral galaxy. It appears as a faint fuzzy star. I used averted vision to see the barred detail of the galaxy.

I then moved to the constellation Sextans a cluster of galaxies located below Regulus a bright star in the constellation Leo and I viewed the following:

- NGC3166 and NGC3169, they are both bright spiral galaxies. I was able to view both of these with Lee's fourteen inch reflector. Both galaxies were visible in the eye piece at once.



## POS and MOOS COORDINATORS NEEDED

Coordinators are needed for most of the 2008 Public and Members-Only Observing Sessions at Sugar Grove Nature Center. Two coordinators per session are preferred. Please sign up if you are willing to host or co-host one of these Saturday sessions. See the POS brochure available through the TCAA website for details about times.

2008 Date	POS Topics	POS Coordinator(s)
April 12	Planet Quest – Mars & Saturn	Dan Miller
May 3	Telescopes – Eyes on the Universe	Carl Wenning
June 7	A Big Dipper Full of Stars – Ursa Major	Lee Green
July 5	Mighty Hercules and His Treasure – M13	Duane Yockey
August 2	Black Hole Survival and Cygnus X-1	
September 6	Our Galaxy, Our Universe	
October 4	Andromeda and Her “Rock” – M31	

Members-Only Observing Sessions occur one week earlier than the above POS – on weekends nearest the full moon. Two coordinators (one of whom should be an SGNC key holder unless they have their own telescope they can bring along) are needed for all of these Saturday sessions. Please sign up with Carl Wenning (309-830-4085 or [wenning@phy.ilstu.edu](mailto:wenning@phy.ilstu.edu)) if you are willing to coordinate one of these events.

2008 Date	MOOS Coordinator(s)
April 5	Carl, Lee, William, Duane
April 26	Carl, Lee, William, Duane
May 31	Carl, Lee, William, Duane
June 28	Carl, Lee, William, Duane
July 26	
August 30	
September 27	
October 25	

## PHOTOGRAPHING SATURN

By Lee Green

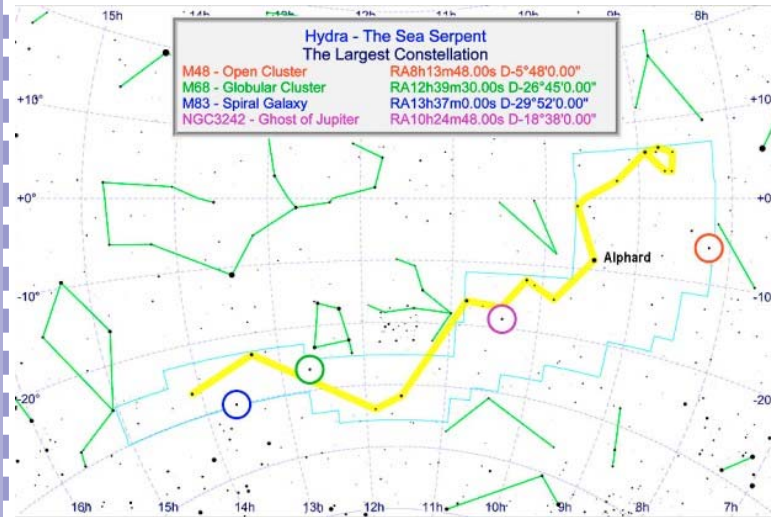
I've been itching to get out for some astrophotography after the long months of winter. There are so few chances to get out during the winter weather, and it's often just too cold (for my bones and my equipment).

So I took the first clear night in a while on March 19 to set up my camera. The night was clear during a break in the clouds, but the Moon was prominent just two days before full. I decided to revisit Saturn. It's always a bright target, and since we're just past the recent opposition, it had a respectable 20" size and 0.3 magnitude. Worse, the Moon was only 7° away.

Apparently seeing wasn't very good either. While I got glimpses of good detail, the Cassini division never resolved itself. But I continued on, and as you can see, the results of my F/20 image were a bit disappointing. Maybe poor focus contributed to the quality, but I prefer to blame it on the seeing conditions. But it's a new year and there will be other opportunities and different targets. Just keep on trying...



## CONSTELLATION OF THE MONTH: HYDRA—THE WATER SNAKE



In mythology, the Hydra was a serpent that was slain by Hercules in his Second Labor.

from Bullfinch, "This monster ravaged the country of Argos, and dwelt in a swamp near the well of Amymone. This well had been discovered by Amymone when the country was suffering from drought, and the story was the Neptune, who loved her, had permitted her to touch the rock with his trident, and a spring of three outlets burst forth. Here the Hydra took up his position and Hercules was sent to destroy him. The Hydra has nine heads, of which the middle one was immortal. Hercules struck off its heads with his club, but in the place of the head knocked off, two new ones grew forth each time. At length with the assistance of his faithful servant Iolaus, he burned away the heads of the Hydra, and buried the ninth or immortal one under a huge rock."

Hydra is seen to have Crater, the Cup, and Corvus, the Raven, riding on its back. Also Sextans is located just above Hydra.

Astronomically, Hydra is the largest constellation covering 1303 square degrees. With its head below Cancer and its tail below Libra, Hydra covers nearly 7 hour of right ascension, more than 100° of the sky.

Hydra is the 24<sup>th</sup> brightest constellation. Its one named star, Alphard, also known as the "Solitary One," is a 2<sup>nd</sup> magnitude star.

Among the highlights of the constellation are three Messier objects. M48 is an open cluster, M68 is a Globular, and M83 is a face-on spiral galaxy. The planetary nebula NGC 3242 is a small blue disk known as the Ghost of Jupiter.



## STARGEEZER

### *Reflections of an Aging Astronomer*

In many ways, early autumn is my favorite time of year. The hot, hazy days of summer have given way to the cool, clear skies of autumn. The pestering bugs and heat of summer are replaced by a refreshing crispness of the air, and the changing colors of the leaves. In other ways, early spring is my favorite time of year. Winter is just giving way to spring, and during the days the sun lay gently upon the land. It is a time of rebirth and renewal.

During spring I'm on the road a lot supervising student teachers as part of my job. Doing so, I put a lot of country miles on my vehicle, and this gives me time to reflect on what I have accomplished in life, and have yet accomplish – God willing.

Being an astronomer has a way of providing one a bit of perspective on life, just as the long drives have a way of doing so. It's not like one has become a man in the moon, with a great observing location for looking at Earth. Rather, one can see the grand scale of things and can place things in their proper perspective.

During the next few months I hope to share by way of the "STARGEEZER" column my philosophical reflections on life as an amateur astronomer. I publicly acknowledge and thank Mr. Terry Lee Wright for preparing a number of line drawings that will be used in this column. I must say, he seems to have captured me in a very recognizable form. Carl Wenning

## HISTORY OF THE TCAA: PART 10

*Beginning with the article, "The Origin of the Twin City Amateur Astronomers" in the May 2007 issue of The OBSERVER, TCAA Historian Carl Wenning began chronicling the history of the club. He will continue this series, culminating with the 50th anniversary of the club in 2010.*

### Years of Reflection: Part A 1985-1989

Probably the single largest phenomenon that influenced the latter half of the 1980s was the third attempt by the TCAA to create a public observatory. The membership focused its attention and all its fund-raising efforts on this goal. Unfortunately, the public observatory did not become a reality due to forces beyond the control of the membership. This failure served to cause the membership to reflect on the work it had been doing with the general public and to redirect their efforts into more fruitful areas of endeavor.

Since 1983 the TCAA had been presenting public observing programs and talks at Comlara Park, six miles north of Normal. Beginning in 1985 the club had been a regular part and contributor to the Comlara Fest activities that were designed to generate revenue for and interest in the Park. The service rendered at Comlara Park as part of the club's mandate for existence. As a result, many members began to think of the possibility of erecting a public observatory that could both serve the public and the membership of the club. It was only natural to want to select a site within Comlara Park. The site was workable, accessible, protected, and had a "captive audience" in the campers that frequented the area in search of outdoor adventures.

Much of the membership observing at this time took place privately and in small groups located in the darker regions of McLean County. Carl Wenning and Weldon Schuette spent innumerable hours observing from the western edge of Moraine View State Park. Another favorite observing spot was the home of Bob Ryburn located on the southern edge of the Park. Joe DeHoff also spent innumerable hours there observing and making homebuilt telescopes along with Bob.

Desirous of creating a public observatory, the membership launched programs to generate revenues as has been seen with the Astronomy Day raffle and not-for-profit status. In addition to the previous activities, club members promoted Chuck E. Cheese pizza sales, sold t-shirts and two different types of Comet Halley guides. Following many Tuesday evenings during "mirror making" activities at the Carl Wenning home, the Astronomy Rendezvous and Conference came into being in 1987. The annual event, held in August for four years running, featured guest speakers, planetarium programs, laboratory exercises, a flea market, door prizes, and an observing session.

Plans and drawings for the proposed observatory were dusted off from the earlier Comlara Park phase with then park manager Roger Monke that had ended with the near demise of the park. Preliminary talks with park manager Bill Wasson had led the membership to believe that the club would be welcome to erect a public observatory at Comlara Park.

In anticipation of construction of such a facility the club, at its December 1986 meeting, decided to purchase a DS-16 telescope by Odyssey. The members of the Decatur Area Astronomy Club were familiar with the TCAA's desire to buy such an instrument and alerted the TCAA of the availability of a used 16-inch reflector in Decatur. In March 1987 Kevin Brown, Sharon MacDonald, Jim Moncher and Carl Wenning used \$1,100 of club funds to purchase the telescope. Obtaining the telescope was just the first step in establishing a public observatory.

During the spring of 1987 Allan Timke discovered the Vesto M. Slipher Committee and its penchant for donating funds for worthy causes oriented toward public astronomy education. Carl Wenning requested and received a \$550 grant from the Committee for the purchase and refurbishment of a used 22-foot diameter converted silo dome. Upon the recommendation of James Baker, the club purchased the dome from a private individual in northern Illinois. In August 1987 the dome was transported to Bloomington where it was stored in the Game Designer's Workshop. The cost of the dome was \$350.

It would seem that everything was falling into place for the erection of the observatory, but that was not be. By the spring of 1988 it was becoming clear that there was a major stumbling block with the county – 24-hour access by members of the TCAA. The club insisted upon it; Mr. Wasson resisted it. Since Mr. Wasson had up to this point represented the club before the McLean County Board, it was clear that the TCAA would have to make its own case before the Board.

Carl Wenning prepared a written proposal for the Property Committee of the McLean County Board in which the proposal was outlined. It was presented to Mr. Davis, chairman of the Committee, following the May meeting of the club. In the outline it was made very clear that the club insisted on 24-hour access. The Property Committee was willing to accept use until 10:00 p.m. without notification and until midnight with advanced notice. The club was unable to accept this provision as it was to build the observatory with its own revenues, turn the property over to the county, carry liability insurance, conduct public programs, and install its own equipment. The limitation seemed unreasonable to the membership as fishermen could be in the park at all hours. Following the recommendation of the club at the May 1988 meeting, representatives of the club, Sharon MacDonald and Kevin Brown, formally withdrew the proposal.

In the following weeks and months the club redirected its interest and its finances. The club had amassed \$3,600 for the observatory project and now this money was to be directed elsewhere. The \$550 Slipher Committee grant was returned and the dome (which was in poor shape) scrapped. The remaining funds were used to purchase several telescopes for the club. After a deep and prolonged introspection it was decided that the new emphasis would be on the benefits of membership rather than the benefits to the general public.

## ENCELADUS MORE ACTIVE THAN THOUGHT

Cassini finds water vapor and natural chemicals at Saturn's geyser moon

*Provided by NASA Headquarters*

NASA's Cassini spacecraft tasted and sampled a surprising organic brew erupting in geyser-like fashion from Saturn's moon Enceladus during a close flyby on March 12. Scientists are amazed that this tiny moon is so active, hot and brimming with water vapor and organic chemicals.

New heat maps of the surface show higher temperatures than previously known in the south pole region, with hot tracks running the length of giant fissures. Additionally, scientists say the organics "taste and smell" like some of those found in a comet. The jets themselves harmlessly peppered Cassini, exerting measurable torque on the spacecraft, and providing an indirect measure of the plume density.

"A completely unexpected surprise is that the chemistry of Enceladus, what's coming out from inside, resembles that of a comet," says Hunter Waite, principal investigator for the Cassini Ion and Neutral Mass Spectrometer at the Southwest Research Institute in San Antonio. "To have primordial material coming out from inside a Saturn moon raises many questions on the formation of the Saturn system."

"Enceladus is by no means a comet. Comets have tails and orbit the Sun, and Enceladus' activity is powered by internal heat while comet activity is powered by sunlight. Enceladus' brew is like carbonated water with an essence of natural gas," says Waite.

The Ion and Neutral Mass Spectrometer saw a much higher density of volatile gases, water vapor, carbon dioxide and carbon monoxide, as well as organic materials, some 20 times denser than expected. This dramatic increase in density was evident as the spacecraft flew over the area of the plumes.

New high-resolution heat maps of the south pole by Cassini's Composite Infrared Spectrometer show that the so-called

tiger stripes, giant fissures that are the source of the geysers, are warm along almost their entire lengths, and reveal other warm fissures nearby. These more precise new measurements reveal temperatures of at least -135° F. That is 63° warmer than previously seen and 200° warmer than other regions of the moon. The warmest regions along the tiger stripes correspond to two of the jet locations seen in Cassini images.

"These spectacular new data will really help us understand what powers the geysers. The surprisingly high temperatures make it more likely that there's liquid water not far below the surface," says John Spencer, Cassini scientist on the Composite Infrared Spectrometer team at the Southwest Research Institute in Boulder, Colorado.

Previous ultraviolet observations showed four jet sources, matching the locations of the plumes seen in previous images. This indicates that gas in the plume blasts off the surface into space, blending to form the larger plume.

Images from previous observations show individual jets and mark places from which they emanate. New images show how hot spot fractures are related to other surface features. In future imaging observations, scientists hope to see individual plume sources and investigate differences among fractures.

"Enceladus has got warmth, water and organic chemicals, some of the essential building blocks needed for life," says Dennis Matson, Cassini project scientist at NASA's Jet Propulsion Laboratory. "We have quite a recipe for life on our hands, but we have yet to find the final ingredient, liquid water, but Enceladus is only whetting our appetites for more."

At closest approach, Cassini was only 30 miles from Enceladus. When it flew through the plumes it was 120 miles from the moon's surface. Cassini's next flyby of Enceladus is in August.

## NCRAL MEETING APRIL 18-19 IN PORT WASHINGTON, WI

The Northern Cross Science Foundation is hosting the 2008 NCRAL Convention in Port Washington, WI on April 18-19. They have two days of astronomy events planned. The theme of this meeting is "Astronomy by the Lake." Speakers from the region, professional and amateur, will be featured along with activities, contests, vendors, door prizes, and a banquet. David Eicher, editor of *Astronomy* magazine, will top it all off as the keynote speaker at the Saturday night banquet. Details and registration forms can be found on the club website: <http://www.ncsf.info/ncral2008.htm>.

Five members of the TCAA indicated interest in attending this event when canvassed at the TCAA's Annual Meeting during February. We need to have a good representation at this meeting as we will be hosting the NCRAL meeting in 2010, the 50<sup>th</sup> anniversary year of our group. We will be given an opportunity to talk briefly about our 2010 event at the Region's business meeting.



# TCAA Treasurer's Report – March 2008

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OPERATING FUND BALANCE – February 29, 2008 - \$ 2,583.11 \*

Income

Roy Lawry (sen. dues renewal) - \$ 25.00  
James Wharton (sen. dues renewal) - \$ 25.00  
Debbie & Jim Schertz (dues) - \$ 40.00  
Heartland Comm. College (Astr. Cse.) - \$ 450.00

Expenses

Carl Wenning (Astronomy Course) - \$ 363.00

OPERATING FUND BALANCE – March 31, 2008 - \$ 2,760.11

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OBSERVATORY FUND BALANCE – February 29, 2008 - \$ 1,868.04

Income

Pontiac Observing Donation - \$ 50.00  
State Farm Empl. Activities (donation) - \$ 25.00

Expenses

None - \$ 0.00

OBSERVATORY FUND BALANCE – March 31, 2008 - \$ 1,943.04

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TOTAL TCAA FUNDS – March 31, 2008 - \$ 4,703.15

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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 2008)  
Michael Rogers (renewed through 2008)  
William Carney (renewed through 2008)  
Carl Wenning (renewed through 2008)  
Brian Barling (renewed through 2008)  
Christopher Franklin (renewed through 2007)  
David Osenga (renewed through 2008)  
Gerry Schroeder (renewed through 2007)  
Josh Lindsey (renewed through 2007)  
Andrew Morrison (February 2008)  
Dan Miller (renewed through 2008)  
Lee Green (April 2007, renewed through 2008)

## NEW MEMBERS

Jim & Debbie Schertz



## UPCOMING EVENTS

April 5—MOOS

April 12—POS: Planet Quest – Mars  
& Saturn

April 18-19—NCRAL Meeting in Port  
Washington, WI

April 26—MOOS

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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/)