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PRESIDENT'S MESSAGE: AUGUST IN THE TCAA

Last month you probably heard about the 40th anniversary of Apollo 11, the first manned mission to the Moon. What a thrill it was to recall the excitement of achieving such a monumental goal. Another anniversary that generated less coverage was the 10 year anniversary of the launch of the Chandra X-ray space telescope on July 23. These, along with the successful completion of the recent Shuttle mission installing the Japanese Kibo experiment logistics module, serve to remind me of the broad range of scientific advancements we've made since the Apollo missions.

Another thrilling event was the discovery by amateur astronomer Anthony Wesley of a dark spot on Jupiter. He alerted NASA and they confirmed that a comet or asteroid impacted the giant planet. This was the second time we have witnessed the impact of space debris and show that it is an exciting time to be an amateur astronomer.

Closer to home, we held our first Public Observing Session under clear skies in July. This was remarkable since our first four sessions were cancelled due to weather. We have set August 15 as the date of our annual TCAA picnic to coincide with the August MOOS. I hope all members will join us as we feature food, fun, fantastic friendships and fabulous confabulations.

TCAA EVENTS FOR AUGUST

By special request, the TCAA will host a brief talk and observing session for the 125th Stubblefield-Funk reunion at SNGC on August 7th. Lee Green, William Carney, and Carl Wenning will be present to explain astronomy to the 175 attendees who remain behind for the observing session.

On August 11th Carl will be providing peeks at the Milky Way while visitors at Weldon Springs SRA in Clinton, IL, watch early evening Perseid meteors. Typically, about 50-75 people – mostly parents with small children – show and stay until around 11 p.m. Carl will be providing telescopic views until moon rise which occurs around 11 p.m. TCAAers are welcome to assist Carl in this endeavor.

The TCAA's traditional summer potluck picnic returns on Saturday, August 15th. This will provide a great opportunity for new club members to socialize and learn more about the TCAA in a "family friendly" atmosphere. All members are encouraged to bring along their telescopes and binoculars, and to have their questions answered by the expert observers who will be in attendance.

The picnic serves as a kick-off for observing activities and is being held in conjunction with the club's August members-only observing session. The potluck will be held at the picnic shelter at the Sugar Grove Nature Center. Members should bring along their place settings, main entrée, and a dish to share. As has been the tradition, the TCAA leadership will take charge of providing the refreshments and a hot grill. Members should plan on arriving between 6 p.m. and 6:30 p.m.; the grill will be ready for cooking entrées by 6:30 p.m.

There will be an informal post-picnic business meeting where, among other things, more Astronomical League observing awards and/or certificates will be presented. While several of our number completed AL observing programs last year, their official recognition certificates and pins did not arrive in time to be distributed at the February Annual Meeting.

At around 7:45 p.m. the membership will present a number of informal talks and demonstrations about anything that interests them. The members-only observing session will begin at dusk. Sunset on August 15th occurs near 7:55 p.m. with initial observations beginning at around 8:45 p.m. if a clear sky prevails.

In the event of inclement weather (active rain), the event likely will be rescheduled for the following Saturday using the same schedule of events, but just prior to the public sky-watching session. Phone Carl, our event organizer, if you are uncertain about the location or whether the event will be held or postponed due to weather considerations. He may be reached via his cell phone at 309.830.4085.

Carl will be giving a talk, *Galileo and the Church*, to the adult Yokefellows Sunday School class at First United Methodist Church in Normal. Their planned meeting date is Wednesday, August 19th. Approximately 30 adults are expected to be in attendance. This will be a pilot of the talk Carl will deliver at the NCRAL 2010 meeting.

August's *Classroom for Kids* program at Bloomington Public Library will take place in the Bloomington Public Library's community room on Saturday, August 22nd. This free public event will run from 1:30 to 3:00 p.m. and will feature the theme of rocks and ice in our solar system. The talk will include a comet-making demonstration. Lee and Carl will lead this

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Membership Dues

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

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

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MINUTES OF JULY 14TH BOARD MEETING

President Lee Green called the Board and officers to order at 6:44 p.m. in the offices of LYB, Inc. In attendance were Dan Miller, John Werner, Duane Yockey, Dave Osenga, William Carney, and Carl Wenning. The following old business was addressed:

- ☆ The previous Board minutes were put up for review with no one suggesting any errors or omissions. They stand as published in the June issue of *The OBSERVER*.
- ☆ Officer reports and announcements were then made: Lee noted we have received the new NSN supernova toolkit; he also noted the anonymous sponsorship of the TCAA's Clear Sky Clock. Carl announced that the SGNC was having an ice cream social for club volunteers this coming Saturday. Duane noted that the latest treasurer's report was published in the July newsletter. As ALCOR Duane noted that he had received information from Greenbank Radio Observatory, and that he has renewed the club's membership in the Astronomical League. William noted that the water and mice problems at SGO appear to have been solved. He further noted that he has been experimenting with mounting the club's 12-inch on his Atlas mount. He noted that he needs to buy a dovetail assembly and a dew screen if things are going to work right. He should be able to report back to the club within a month if this transfer is going to work. He further noted that the 10-inch Meade SCT is currently under the SGO dome and operable by anyone who cares to use it. It was suggested that the 12-inch fork mount be sold for part online through AstroMart, <http://www.astromart.com/>.
- ☆ Dave noted that he has not received any updates for the logo following our recent requests for changes. He hasn't been able to contact Emily, the graphic artist, recently but that she does have the specs and has agreed to make revisions.
- ☆ Lee reviewed the ongoing Classroom for Kids series at Bloomington Public Library. Both he and Carl will co-present at the July 25th event. Lee will speak about the Perseid meteor shower, and Carl will speak about black holes. Dan noted that he thought he has the NSN Black Hole kit at Millikin. If so, he will turn it over to Carl shortly.

Under the heading of new business, the following matters were addressed and decisions made:

- ☆ The club's potluck has been set for Saturday, August 15th with the approval of Angela Smith. It was agreed that AL awards awaiting distribution will be give out, that the club will feature a "free for all" during which volunteers will contribute 5-minute show and tells such as an online moon atlas (Dave), a Peltier cooling fan (John), and the itty bitty radio telescope (Dan).
- ☆ Because the club has now exceeded its goal for backup funding for the NCRAL 2010 meeting, it was agreed to donate \$250 to SGNC in support of their public outreach efforts. Duane wrote the check; Carl will deliver it.
- ☆ Lee noted that the club's 50th anniversary annual meeting should be a special event. All in attendance agreed. Members agreed to check out several meeting venues: Carl will check out Ewing Manor (used for the 25th anniversary); Lee will check out the Bloomington Consistory; Dave will check out area golf course. This information will be distributed via e-mail, and a consensus developed within the month so we don't lose access to currently available openings. Carl will speak with Ray Wilson and possibly Lew Detweiler about possibly giving a "reflections" talk in addition to William and Carl's slide show down memory lane. The best dates for this event appear to be February 6th or 20th.
- ☆ While discussing the historical record of the club, Lee noted that Carl should turn over old issues of *The OBSERVER* to him so that he might scan them and make electronic files for hyperlinking to the TCAA.US website. This Carl agreed to do.
- ☆ Phrasing for a new amendment concerning transitions of officers was not available, so the discussion was tabled. Carl will try to get wording together for the next board meeting.
- ☆ The next Board meeting date was set for Monday, September 21st.
- ☆ As for further announcements, it was noted that next Sunday's Pantagraph will feature interviews with Carl and other area astronomy types dealing with the 40th anniversary of the July 20 moon landing. Carl failed to note that Allan Timke has requested to step down as coordinator of the club's Yahoo! listserv. He has asked Carl to take over these duties if he'd be willing.
- ☆ Lee then quickly reviewed the calendar of events, providing details about who would be making what presentations.

The meeting was adjourned at 7:45 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 July 31st. If you would like to have your information included in next month's listing, be certain to forward your observing totals to Carl Wenning before the end of the month.

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)	103*	101*	70*	(110)	31
Binocular Messier 50		(100)	42			78*	16
Deep Sky Binocular 60		55					
Herschel 400 Club	249	400*	400*			(400)	
Urban Club 100		(100)	95			100*	
Comet Club Silver12/Gold30		31*				4	
Double Star Club 100	17		0			100*	
Planetary Neb Club Bas60/Adv110		1				63*	
Globular Cluster Club 50						65*	
Lunar Club 100	(100)	(100)	93		88	100*	
Lunar II Club 100		6					
Asteroid Club Reg25/Gold100		(47)					
Outreach Basic10/ Stellar60/ Master160 (service program)			60 ^{h+} *, **			31 ^h -06* 26 ^h -07 44 ^h -08** 25 ^h -09	

* 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 EVENTS FOR AUGUST (CONT.)

(Continued from page 1)

event.

Also on 22nd, the club will host the August public observing session at Sugar Grove Nature Center. Sunset on this date occurs at 7:43 p.m. The program commences at 8:30 p.m. with a 20-minute presentation about Jupiter and Neptune presented by Carl Wenning. Following with a laser-pointer-mediated sky lecture will be Dave Osenga. Telescope observing will follow and will last until 10:30 p.m.

JULY OBSERVERS' LOG

AUGUST SKY GUIDE

02 Mercury passes 0.6° north of Regulus, 2 P.M.	
05 Penumbral lunar eclipse, 8 P.M.	
06 The Moon passes 3° north of Jupiter, 5 P.M.	
The Moon passes 3° north of Neptune, 9 P.M.	
09 The Moon passes 6° north of Uranus, noon	
12 Perseid meteor shower peaks	
14 Jupiter is at opposition, 1 P.M.	
15 The Moon passes 3° north of Mars, 10 P.M.	
17 Neptune is at opposition, 4 P.M.	
The Moon passes 1.7° north of Venus, 4 P.M.	
18 Mercury passes 3° south of Saturn, 4 P.M.	
21 Venus passes 7° south of Pollux, 11 P.M.	
22 The Moon passes 7° south of Saturn, 1 A.M.	
The Moon passes 3° south of Mercury, 7 A.M.	
24 Mercury is at greatest eastern elongation (27°), 11 A.M.	
31 The Moon passes 0.6° north of Antares, 5 P.M.	

As with recent months, July started off wet and cloudy. While there were a number of clear days, these often became cloudy nights. Few observations could be made despite the comfortable evening temperatures in the upper 60s and lower 70s.

William Carney took advantage of a couple of gaps in the clouds on the near-full-moon nights of July 10th and 12th. His asteroid count is now up to 47 and his Deep Sky Binocular count is up to 43. Some of the binocular observations occurred in June as well.

The sky cleared long enough on July 13th for Lee Green and Carl Wenning to get in some observations before the third-quarter moon rose into view just before midnight. The pair observed at SGNC from about 9:30 p.m. until just past midnight. Visiting with them for about an hour were two men from Bloomington, Darin and Adam, the first of whom attended the HCC adult education program this past spring. Carl gave them a tour of the universe viewing nebulas, clusters, and galaxies, as well as Jupiter and Neptune. Also during the session Lee worked on documenting his Herschel 400 observations, and Carl continued to make observations of globular clusters (9) and planetary nebulae (4) for his AL observing programs. Having observed and recorded more than 60 planetary nebulae, Carl now qualifies for the AL's basic-level Planetary Nebula Club award. (Having completed 10 AL observing club projects, he now qualifies for the Master Observer Award as well which comes as quite a surprise to Carl who thought he still had another observing program to complete.) The group might have been entertained by passing noctilucent clouds that were glowing brightly until about 10:15 p.m. after which they quickly disappeared.

Also observing that same evening from near Blackstone was Paul Pouliot. Paul has been focusing his observations recently on globular clusters in the Scorpius / Sagittarius region. He reported that the sky was clear and transparent, and that the Milky Way was visible well before the sky darkened enough to begin observations. He observed 6 globulars that evening. Two nights later, Paul observed from the same location with two special guests – Jim Perkins and Mary Dobbs. He gave them a grand tour of the sky. He showed them Saturn, M 57, 81, 82, Alberio, the Blinking Planetary (NGC 6826 in Cygnus) and four additional globulars. After they left around 10:30 p.m., Paul continued viewing globulars observing an additional 8. He found all these objects the traditional way using his 10" Coulter Odyssey telescope.

William returned to SGNC on the evening of July 15th for additional observations. He stayed out until about 11 p.m. and managed to observe several deep sky binocular objects bringing his total to 45. He also reported that Mark Cabaj was at his observatory taking pictures. William continued observing on Sunday, July 19th. Viewing between clouds, he observed another four objects for his binocular deep sky raising his total to 49. He needs only 11 more objects to complete the AL-sanctioned observing program.

On July 20th Dave Osenga went out to SGNC about 8:30 p.m. and was able to observe from about 9:30 to 11:30 p.m. He was able to log an additional 8 Messier objects and review some others that he had previously observed. This brings his (adjusted) telescope Messier count to 68 and his binocular Messier count to 36. Dave reported that he met Tony Cellini there that evening and that Tony was doing some astrophotography using a "barn door" tracking mechanism along with a DSLR camera. They shared views of the heavens and Tony was able to capture the ISS passing through the stars of the Big Dipper.

On the evening of July 23rd, Carl attempted to view the recent asteroid/comet impact site on Jupiter. Despite reasonably viewing conditions and the highest possible power (450X), he was able to view only a faint hint of darkness in Jupiter's south polar region. He was not, therefore, certain to have observed it. The object should have been on Jupiter's meridian, but the low altitude (15 degrees) undoubtedly interfered with view. Several more prominent Jovian features were visible. Continuing to observe after midnight with Jupiter higher in the sky, Carl was able to use a "Galilean" reproduction telescope to view Jupiter and one of its moons, as well as Neptune.

Following the July 25th public observing session, William and Dave continued observing despite the gathering clouds. By staying out until after 2 a.m. on the morning of the 26th William was able to view another 5 objects for his binocular deep sky program bringing his (adjusted) total to 54. Dave was able to log 2 more Messier objects bringing his telescope Messier count to 70.

On the evening of the 26th Carl observed from SGNC with two of his nieces from Ohio. They observed nearly two dozen representative celestial objects between 10 p.m. and midnight.

William went out from about midnight to 4:30 a.m. on the 31st to get in some observing at SGNC. He spent most of his time testing his new Atlas mount with the club's 12-inch Meade telescope now that he has received an additional counterweight. He also did some photography with his ST80 scope. He was also able observe one additional deep sky binocular object.

2009 IYA SESSIONS @ BPL

The TCAA's saga into astronomy in recognition of the International Year of Astronomy continues with the *Classroom for Kids* program. Family astronomy workshops for those aged 10 years and above will take place from 1:30 to 3:00 p.m. on the 4th Saturday of each month at Bloomington Public Library throughout 2009. The tentative dates and topics for the remainder of the year are as follows:

Date	Topic	Possible Activity	Coordinator(s)
September 26	Planets and Moons	Ooblick activity	
October 24	What is the Fate of the Universe?	Study an explosion	
November 28?	The Lives of Stars	Light and spectra	
December 26?	Discovering Other Worlds		

These events are all intended to include hands-on, minds-on activities. Coordinators are needed for the majority of these events. Please inform Carl Wenning at wenning@phy.ilstu.edu if you are willing to coordinate one or more of these events.

2009 MEMBERS-ONLY OBSERVING SESSIONS

The club's members-only observing sessions are slated one week earlier than the club's public sky viewing sessions. This ensures club members with a dark night, and a public sky viewing session with typically a crescent moon. Member-only observing sessions begin as soon as the sky grows dark enough for viewing, usually one hour after sunset. Coordinators are needed for each session to ensure that at least one telescope is available for viewing with TCAAers not in possession of their own telescopes.

Date	Coordinator(s)	Date	Coordinator(s)
September 12	Carl Wenning & Duane Yockey	November 14	Lee Green
October 10	John Werner	December 19 (Saturnalia Party)	Carl Wenning

REMAINING 2009 PUBLIC OBSERVING SESSIONS

Throughout 2009 – the 400th anniversary of the invention of the telescope – we acknowledge the astronomical work of Galileo in our Public Observing Sessions. One, and preferably two, coordinators are needed for all Saturday events as illustrated in the table below. Don't hesitate to volunteer to lead a public sky viewing session if you are qualified to do so.

Date	Times	Sunset	Topic	Coordinator(s)
September 19	7:30 PM ~ 9:30 PM	6:58 PM CDT	Exploring the Milky Way	Dave Osenga
October 17	7:00 PM ~ 9:00 PM	6:13 PM CDT	The Pleiades Star Cluster	John Werner

Additional prominent sky objects such as planets, nebulae, star clusters, and galaxies will be viewed when visible. *When uncertain if an observing session will be held, call one of the following cell phone numbers after 6:00 pm: 309-830-4085 (Carl) or 309-824-2804 (Lee).* The 2009 public brochure for these sessions can be downloaded from the club's web site: www.tcaa.us.

MINUTES OF JULY 14TH NCRAL 2010 PLANNING MEETING

Conference chairman Carl Wenning called the NCRAL 2010 Planning Committee was called to order at 6:44 p.m. in the offices of LYB, Inc. In attendance at this meeting were Lee Green, Duane Yockey, William Carney, Dave Osenga, Dan Miller, and John Werner. The focus of this meeting was primarily to elicit updates, seek budgets, and review promotional material. The following were the results:

- ☆ There was a brief review of the minutes of the past meeting.
- ☆ Carl acknowledge that John had formally replaced Michael Rogers as marketing agent and that he would replace Jean Memmen as registrar with the help and consent of the committee. It was agreed.
- ☆ Carl then distributed copies of the Astronomical League's Convention Planning
- ☆ As the new marketing agent, John distributed a copy of a very detailed marketing plan, as well as a promotional flier. It was agreed that John should promote the NCRAL 2010 meeting with *Astronomy*, *Sky & Telescope*, and *The Reflector* as soon as possible giving generic information only such as date, location, and website for additional information and registration. This information would likely appear in January issues. It was further agreed that the big push (mailings, e-mail, etc.) for promotion should start in January. It was noted that the NCRAL website has already put a link to the TCAA's web page. Carl announced that he had spoken "off the record and in vague terms" to the *Pantagraph's* Scott Richardson about astronaut Scott Altman's possible presence "some time in April." Scott indicated a strong interest in conducting interviews for a feature story about two months before the event. Carl was put on charge of *Pantagraph* relations. Lee noted that he has been added to the agenda of the Popular Astronomy Club's annual meeting on November 5th. Carl noted that Bobby Arn and Dan Miller as well as Duane Yockey and he will be giving two presentations at the IDSSP and that, according to chair John Weber, we are welcome to do a "1-2 minute announcement and distribute fliers" at Prairie Skies Star Party. Dan and John might well be going to Astrofest; it is hoped that they can do the same as anticipated for the Prairie Skies Star Party. It was agreed that members of the committee would canvass the state giving presentations about NCRAL 2010 starting as soon as possible. Not to be overlooked is Astrofest. John then gave an estimated expense of promotion of about \$500.
- ☆ Duane provided information from *Baxters*, the caterer at the Holiday Inn. He noted the meal costs, including gratuity and tax. He reviewed room costs and break expenses. He will enter his information and that from John and other committee members into a spreadsheet for further analysis.
- ☆ Dan reviewed how the BNCVB has provided materials and will help with arranging Friday field trips and such. Later, during a break, he transferred BNCVB materials to Carl for use during the meeting if appropriate. No general budgetary costs are expected to arise out of Dan's efforts as registrants will be paying for their field trips.
- ☆ William indicated a need to begin contacting donors and break sponsors. It was noted that we should seriously consider trying to get Astro-Physics, Inc. from Rockford to display and possibly sponsor a break. He anticipated a small budget for printing and mailing, but he was urged to let the conference pay the expenses as being more appropriate.
- ☆ Carl reviewed the list of invited speakers and noted that if we obtain all of them, the cost would be some \$42.50 for each of the 100 anticipated registrants. It was agreed that this was a bit much. Carl will look for some local talent to supplement the speaker's schedule in lieu one non-confirmed speaker. This move will save about \$900. He then reviewed concerns as registrar. It was agreed that a late registration fee of about \$20 would be added after a week prior to the conference, but that a limited number of meals (5% of the reported minimum) will be available even to late online registrants. On-site registration will be available, but the banquet might or might not be available.
- ☆ Lee ran his video promotion. It was agreed that this was an excellent start to a project that will be made available through YouTube. Lee will create a low-resolution version and distribute it to the committee for additional reflection. Comments for improvement are requested. It was noted that this video and the proposed PowerPoint be as consistent as possible.
- ☆ Carl presented his draft PowerPoint presentation. A number of corrections and additions were suggested. Carl will revise and update the presentation, and send it to the committee for additional reflection and comments.

The meeting was adjourned at 9:00 p.m. We will meet once again following the Board meeting on Monday, September 21st, following the TCAA Board Meeting at LYB, Inc.

Carl Wenning, Chair of NCRAL 2010

UPCOMING ASTRONOMICAL MEETINGS

For the record, here at the dates of regional astronomical meetings for amateurs that TCAAers might wish to attend. TCAAers in charge of outreach for the 2010 NCRAL meeting might want to get on the agenda of some of the meetings.

- ☆ Prairie Skies Star Party: September 17-20, Bourbonnais, IL, see www.prairieskies.org
- ☆ CAS Astrofest: September 25-27, Kankakee, IL, see www.chicagoastro.org
- ☆ Illinois Dark Sky Star Party: October 15-18, Jim Edgar Panther Creek State Park, see www.sas-sky.org

THIS 'n' THAT

Talks continue with SGNC to offer a science camp for 5-8 graders next summer. At an ice social for volunteers on Saturday, July 18th, Carl, along with TCAAers Josh Lindsey and his friend Melissa, as well as a few other SGNC volunteer educators, spoke with Angela Smith, Jill Wallace, and SGNC Board member Erik Funk about hosting a one-week earth, air, and sky space camp. They talked about program content and visited the cabin recently built near Timber Creek on the northwestern most portion of the nature center's property. Also on that day Mike and Carol, the volunteer beekeeper and hydrologist respectively, indicated an interest in participating. On July 29th Carl spoke with Mikki Bell, educator at the Ecology Action Center in Normal. She too expressed an interest in co-teaching this course. At this point efforts are being made to pull together a group discussion around mid August to further consider the possibility.

Also at the ice cream social, Carl had an interesting talk with Erik and Angela about the TCAA possibly building a roll-off roof observatory in the original site suggested for SGO – the concrete pad just southeast of SGO where the “tapping tree trunks” are now located. Carl suggested that after the NCRAL 2010 meeting the TCAA might have extra money to pour into the project based on the non-use of money we currently have set aside to support the event, in addition to a promised \$10,000 donation from a club member to construct the building itself. We might then house the club's 12-inch, as well as club members' telescopes therein.



Carl was quoted on a front-page article appearing in the *Pantagraph* on Sunday, July 19th. An “above the fold” article dealt with the upcoming 40th anniversary of the first Apollo moon landing. Both Carl and Tom Willmitch of the ISU Planetarium were quoted. An image taken inside the SGO was also featured on page F1 detailing the July 25th public sky-viewing session at SGNC.

Effective July 19th, Allan Timke who has served as Yahoo groups manager for the TCAA listserv handed off his duties to Carl Wenning. Lee Green has been another of the managers for the past few years and continues in this capacity. Lee and Carl are now responsible for managing the listserv and enforcing membership policies, though Lee has both the experience and the lead on this effort of the TCAA. As soon as Carl figures out how to fulfill his responsibilities, look for additional information about using the listserv's many capabilities – many of which are not currently utilized by the membership.

Illinois State University's Adult Enrichment Programs, which include Academy of Seniors, will start in September and continue through January. One of the TCAA's own, Carl Wenning, will present *Discovering the Night Sky*, from 9:30-11 a.m. October 7 and 21 at ISU's new Alumni Center; from 9:30-11 a.m. October 14 at the ISU Planetarium, and from 7-9 p.m. on October 28 at Sugar Grove Nature Center. The fee for this four-part course is \$45. Registration details and further information are available by telephone at (309) 438-2160 or (800) 877-1478 or at www.seniorprofessionals.ilstu.edu.

CORRECTIONS/ADDITIONS

Last month's issue of The OBSERVER had an article that was inadvertently cut short during newsletter layout. The final paragraph of that article appears below.

The June Public Sky Viewing Session also was held on the 20th at Sugar Grove Nature Center. The event for the evening coincided with the National Wildlife Federation's Great Backyard Campout hosted by SGNC. Some fifty campers were in attendance. About an hour before the program the sky clouded over and this was followed by a ominous looking and fierce thunderstorm. The program began at 9 p.m. inside the Nature Center with Carl giving a talk about our amazing moon and its carters. His 45-minute talk “Our Amazing Moon” awed the 30-member audience (mostly men attended while their young children played in the adjoining room) and helped them pass the time during the thunderstorm (despite a temporary power outage). Thanks to Paul Pouliot, William Carney, and Lee Green for assisting with this event.

Additionally, there was an article about a trip to Arizona's Lowell Observatory that contained no byline. The article was penned by Lee Green. Lastly, Carl's trip to the Baltic was during May, not June.

OBSERVE AND LISTEN TO THE PERSEID METEORS

The Perseid meteor shower is usually one of the best meteor showers to observe, producing up to 60 meteors per hour at their peak. This year's peak occurs on the night of August 13-14, but you might be able to see (or hear!) this shower's meteors any time from July 23rd through August 22nd. The third quarter moon will provide little interference during the evening hours of August 13th as it rises at 11:29 p.m. but afterwards the waning moon will limit viewing opportunities. Even if the moon interferes or the sky is overcast, or you can't bring yourself to do nighttime observing, you can literally listen to the meteor shower any time of day or night online. Go to <http://wowzaweb.streamguys.com/%7Espaceweather/> to find out the details and listen as meteors burn up in the Earth's atmosphere over Texas.

CONSTELLATION OF THE MONTH: SERPENS—THE SNAKE

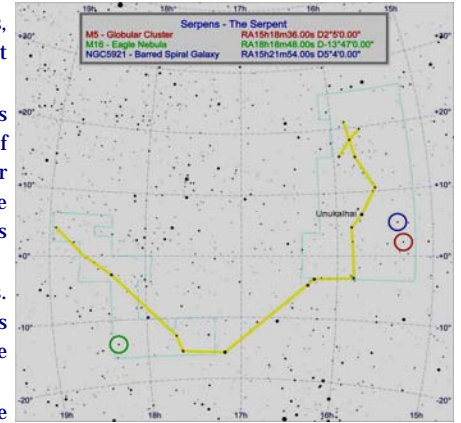
Serpens is the only constellation that is non-contiguous. It has two parts, Serpens Caput, the Serpent's Head, and Serpens Cauda, the Serpent's Tail, that lie on either side of Ophiuchus.

Ophiuchus is often associated with Aesculapius the son of Apollo who was entrusted to the Centaur Chiron who raised and tutored the boy in the art of healing and medicine. It is said that after Aesculapius killed a snake, another snake brought an herb that restored the first to life. Aesculapius captured the herb and then had the power to restore life. Serpens represents the snake that is intertwined with Ophiuchus.

Serpens Caput lies between Ophiuchus and Bootes, south of Corona Borealis. Since that location is away from the Milky Way, there are a number of galaxies visible there. Also, the globular cluster, M5, is a spectacular sight that rivals the Great Hercules Cluster M13.

Serpens Cauda lies in the heart of the Milky Way and is positioned along the Great Rift which stretches from Cygnus to Centaurus. Prominent in Serpens Cauda is M16 which is officially classified as an open cluster but which is usually combined with the nearby emission nebula IC 4703 to form the Eagle Nebula. The dense dust lanes forming the Eagle are rich star-forming regions sometimes called the Pillars of Creation.

Astronomically, Serpens is the 23rd largest constellation covering 637 square degrees and is the 36th brightest. Serpens reaches opposition on May 30. The alpha star in Serpens is named Unukalhai which means "neck of the snake."



Last autumn the Bloomington Public Library applied for a grant to host a traveling exhibit: *Visions of the Universe: Four Centuries of Discovery*. Bret Nofziger of BPL recently announced to the TCAA that the library has received approval of their proposal. As a result, the exhibit will run from September through December of this year at BPL, and the TCAA will be conducting a public program during the stay of the exhibit at the library. NASA has provided major funding for the exhibit. All libraries on the tour receive \$500 programming support stipends and \$250 collection development stipends.

The American Library Association (ALA), in cooperation with the Space Telescope Science Institute (STScI) Office of Public Outreach, Baltimore, Maryland, and the Smithsonian Astrophysical Observatory, Cambridge, Massachusetts, invited public libraries to apply for a national tour to 40 sites of a traveling exhibition to mark the International Year of Astronomy in 2009.

The STScI Office of Public Outreach (OPO) is a world leader in astronomy presentation through news media, websites, planetarium shows, museum exhibits, curriculum support materials, professional development and other educational resources. Among the award-winning web sites created by OPO are "Hubblesite" and "Amazing Space." The Space Telescope Science Institute website for the "Visions of the Universe" library tour can be found at amazing-space.stsci.edu/visions/. The exhibit is traveling from January 2009 through December 2010.

AUGUST IN THE IYA: ROCKS AND ICE IN THE SOLAR SYSTEM

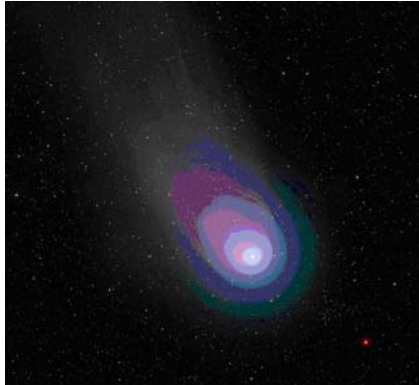
Our Solar System consists of the Sun, planets, and moons, but it also contains a multitude of smaller chunks of rock and ice. These objects were left over from the time when our Sun and Solar System formed.

So where are all of these small neighbors? Millions of rocky chunks called asteroids orbit in a region between the four rocky inner planets and the four outer gas giant planets. The Dawn mission is currently on its way to investigate Ceres and Vesta, two of the largest asteroids. Beyond Neptune, there is another swarm of objects made mostly of ice and dust. This is the disc-shaped region known as the Kuiper Belt, the origin of many comets. Some comets originate even farther out, from a giant shell of objects near the edge of the Solar System known as the Oort Cloud.

In Galileo's time, comets were the topic of hot debate. It was unclear whether they occurred in Earth's atmosphere (between us and the Moon) or out in the realm of the planets or stars. Today, we understand that icy chunks from the Kuiper Belt occasionally get knocked out of their orbits by passing stars or gravity changes in the Milky Way. When their new trajectories take them near the Sun and they heat up, we see the ice begin to sublimate (turn directly from a solid to a gas) and that gives them their bright head and long tail.

As the ice disappears, some of the rocks and dust trapped in the comet crumble off, leaving a trail of small particles. When the Earth is lucky enough to pass through one of these trails, we get a beautiful meteor shower! What some people call "shooting stars" are actually just pieces of asteroids or comets — most are smaller than golf balls — falling into Earth's atmosphere, burning up and making a bright streak across the sky. Occasionally, meteorites even come to Earth from other planets such as Mars. You don't need a telescope to view meteors; just watching the dark sky is the best way to see them. This month, keep an eye out for the Perseid Meteor shower made by Comet Swift-Tuttle. It will peak early in the morning on August 12th.

Scientists at NASA are studying these small objects throughout our Solar System. NASA's Astromaterials Curation Office houses and analyzes meteorites and samples returned from space missions. In 2005, the spacecraft Deep Impact sent an impactor into the nucleus of comet Tempel 1 and collected data about some of the ejected core material. The Hubble Space Telescope captured some wonderful images of a string of comet pieces hitting Jupiter in 1994. NASA's Stardust mission even collected cometary particles and returned a sample to Earth. NASA studies comets because they may yield important clues about the formation of the Solar System.



Comet NEAT



Asteroid Gaspra

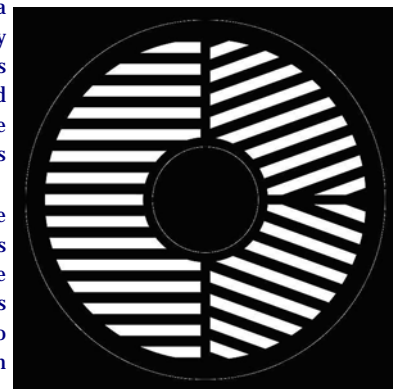
BAHTINOV MASK

By Lee Green

I recently learned about a new device that helps you focus your camera through the telescope. It is called the Bahtinov Mask and was developed by Pavel Bahtinov from Russia. From the picture, you can see that the mask passes light in three directions. When pointing to a bright star, the light is diffracted and the diagonal openings form a distinctive X pattern and the middle line moves as you change the focus. Perfect focus is achieved when the three lines intersect in the middle. It's that easy.

I downloaded a template which I used to create a paper mask. The first time I used it, I was amazed at how quickly I could achieve optimal focus. It works under any seeing condition which really saves time compared to the hours I've spent guessing whether this image was better than that image. My opinion is that this is better than the traditional Hartmann mask because it is difficult to judge where optimal focus occurs and I often overshoot the adjustment and am then forced to re-approach from the other direction.

There are a number of vendors that offer premium versions of the mask in a variety of sizes and I will let you find those through your favorite search engine.



REVELATIONS IN SATURN'S RINGS CONTINUE AS EQUINOX APPROACHES

Courtesy astronomy.com

Thanks to a special play of sunlight and shadow as Saturn continues its march towards its August 11 equinox, recent images captured by NASA's Cassini spacecraft are revealing new three-dimensional objects and structures in the planet's otherwise flat rings.

Through the detections of shadows cast upon the rings, a moonlet has been spotted for the first time in Saturn's dense B ring and narrow vertical structures are seen soaring upward from Saturn's intricate F ring.

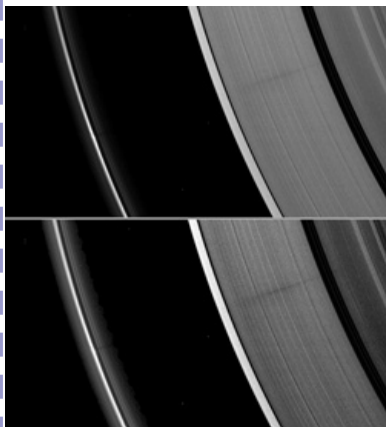
The search for three-dimensional structures in Saturn's rings has been a major goal of the imaging team during Cassini's "Equinox Mission," the 27-month-long period containing exact equinox — that moment when the Sun is seen directly overhead at noon at the planet's equator. This novel illumination geometry occurs every half-Saturn-year, or about 15 Earth years. It lowers the Sun's angle to the ring plane and causes out-of-plane structures to cast long shadows across the rings' broad expanse, making them easy to detect.

Saturn's rings are hundreds of thousands of miles wide, but the main rings — D, C, B and A rings (working outward from the planet) — are only about 30 feet (10 meters) thick. These main rings lie inside the relatively narrow F ring. The thinness of the rings — well below the resolving power of the spacecraft's cameras — makes the determination of vertical deviations from them difficult through routine imaging. Solid evidence of these newly seen structures and others like them become available only during the period of equinox when features protruding above and below the rings can cast shadows.

The new moonlet in the B ring, situated about 300 miles (480 km), inward from the outer edge of the B ring, was found because of a shadow 25 miles (41 km) long that it throws on the rings. The shadow length implies the moonlet protrudes about 660 feet (200 meters) above the ring plane. If the moonlet orbits in the same plane as the ring material surrounding it, which is likely, it must be about 1,300 feet (400 meters) across. Unlike the band of moonlets discovered in Saturn's A ring earlier by Cassini, this object is not attended by a propeller feature. The A ring moonlets, which were not imaged directly, were found because of the propeller-like narrow gaps on either side of them that they create as they orbit within the rings. The absence of a propeller feature surrounding the new moonlet is likely because the B ring is denser, and the ring material in a dense ring would be expected to fill in any gaps more quickly than in a less-dense region like the mid-A ring. Also, it may simply be harder in the first place for a moonlet to create propeller-like gaps in a dense ring.

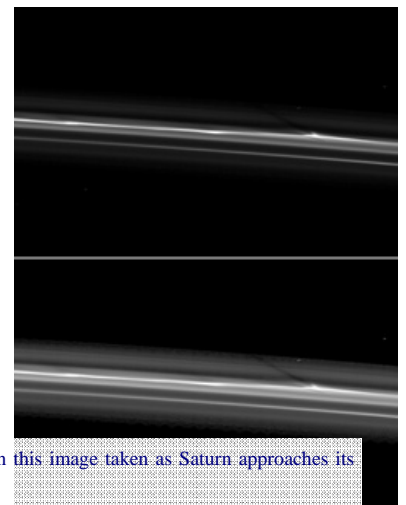
In recent weeks, scientists also have collected a series of images of shadows being cast by vertically extended structures or objects in the F ring. One image shows the shadow of what appears to be a vertically extended object in the core of the F ring, while another image may show the shadow of an object on an inclined orbit that has punched through the F ring and dragged material along in its path. A third image shows an F-ring structure casting a shadow long enough to reach across the wide Roche Division and appear on the A ring. Imaging scientists are working to understand the origin of these structures.

New sights such as these — and the questions they raise and the insights they may provide — will continue in the coming days of Saturn's equinox.



A vertically extended structure or object in Saturn's F ring casts a shadow long enough to reach the A ring in this Cassini image taken just days before planet's August 2009 equinox.

The structure can be seen as a bulge within the bright core of the F ring on the left of the image. The structure rises far enough above the ring plane for the shadow to be cast across the Roche Division and onto the A ring. The shadow is barely visible stretching across the top right quadrant of the image. The shadow appears very faint here because this view looks toward the unlit side of the rings.



Cassini spies a shadow cast by a vertically extended structure or object in the F ring in this image taken as Saturn approaches its August 2009 equinox.

The structure can be seen as a bulge near the bright core of the ring on the right of the image. Imaging scientists are working to understand the origin of structures such as this one, but they think this image shows the shadow of what appears to be a vertically extended object in the core of the F ring.

The second (bottom) version of the image has been brightened to enhance the visibility of the ring and shadow. Background stars appear elongated in the image because of the camera's exposure time.

TCAA Treasurer's Report – July 2009

OPERATING FUND BALANCE – June 30, 2009 - \$ 2,980.91

Income

Amy Richard (dues via PayPal) - \$ 39.80

Expenses

LYB Inc. (July Observer) - \$ 26.66

William Carney (SGO Repairs) - \$ 127.31

Sugar Grove Nature Center (membership) - \$ 250.00

OPERATING FUND BALANCE – July 31, 2009 - \$ 2,616.74

OBSERVATORY FUND BALANCE – June 30, 2009 - \$ 2,193.60

Income

Interest (April, May & June) - \$ 0.69

Expenses

None - \$ 0.00

OBSERVATORY FUND BALANCE – July 31, 2009 - \$ 2,194.29

TOTAL TCAA FUNDS – July 31, 2009 - \$ 4,811.03

Respectfully submitted,
L. Duane Yockey, Treasurer

Sugar Grove Observatory

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

Duane Yockey (renewed through 2009)
Michael Rogers (renewed through 2008)
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)
Andrew Morrison (February 2008)
Dan Miller (renewed through 2009)
Lee Green (renewed through 2009)

UPCOMING EVENTS

- ☆ August 15, TCAA Summer Potluck Picnic, SGNC, 6:30 p.m. start
- ☆ August 15, Members-only Observing Session, dusk, SGNC (no coordinator)
- ☆ August 22, *Classroom for Kids*, "Rocks & Ice in Our Solar System", BPL, 1:30-3:00 p.m.
- ☆ August 22, Public Sky Viewing Session, SGNC, 8:30-10:30 p.m.

MISSING OUT ON TCAA ACTIVITIES & EVENTS?

If you are missing out on club activities or celestial events, be certain to join the TCAA listserv. Many activities are planned at the last minute, and announced only hours in advance through the club's listserv. Reminders about celestial events are also broadcast to the membership through the club's listserv. To join this free service by Yahoo, send a blank email to TCAA-subscribe@yahoogroups.com. Unsubscribing is just as easy. To unsubscribe, just send a blank email to TCAA-unsubscribe@yahoogroups.com.

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

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

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