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PRESIDENT'S MESSAGE: OUR 49TH YEAR

As we start a new season with the TCAA, I wanted to highlight all the wonderful opportunities we have this year to get involved in astronomy and our community. We are already into the International Year of Astronomy, a celebration of the 400 years of astronomy since Galileo first looked through a telescope at the many object in the sky and started a revolution in our understanding of the cosmos. Remember that before the telescope, we had no evidence of our place in the universe. Only after Galileo saw the phases of Venus did we understand that the Earth was not at the center of everything. In addition to our traditional schedule of public and members only events, The TCAA is honoring this milestone with a special monthly program that we are holding at the Bloomington Public Library called Classroom for Kids where we look at a variety subjects to engage people in hands-on, minds-on topics. Further we are participating in the many events associated with the IYA, with the NASA Night Sky Network, local schools and civic groups.

I'm honored to be allowed to serve another year as the club president, and I call on all members to help us realize our goals for the year. You can help by recruiting new members to the club, by finding new venues for us to share our love of astronomy, continuing our preparations for hosting the 2010 NCRAL conference that will be held just one short year from now and through your participation in the many club events. I promise to be true to the vision set forth for us in our by-laws and hope you will join with me to continue these traditions throughout our 49th year.

...to promote in every way among its members and the general public an interest in, and knowledge of, astronomy and its allied sciences; to advance amateur astronomy and observational techniques; to render assistance to other individuals or organizations working in the same or related fields; and to do everything necessary and proper to further such on a formal or informal basis.

MINUTES OF MARCH 24 TCAA BOARD OF DIRECTORS MEETING

The newly elected Board of Directors and interested others were called to order at 6:40 p.m. at LYB, Inc. In attendance were Lee Green, Duane Yockey, Brian Barling, Dan Miller, Dave Osenga, and Carl Wenning. The first order of business was to elect and appoint officers for 2009-2010. The following was the result:

- ☆ Lee Green, President and 1st Board Member
- ☆ Dan Miller, Vice President and 2nd Board Member
- ☆ Carl Wenning, Secretary, Historian, and 3rd Board Member
- ☆ Dave Osenga, 4th Board Member
- ☆ Brian Barling, 5th Board Member
- ☆ Duane Yockey, Treasurer and ALCor
- ☆ William Carney, Property Manager
- ☆ Erin Estabrook, Newsletter Editor

The minutes of the last Board meeting were briefly reviewed and approved without amendment. Officer reports were then provided. Dan reported that an NSN optics kit had arrived; Dan will transfer this kit to Lee for use with the upcoming Pontiac presentation. Carl noted that the work of secretary and historian continues unabated and is contained regularly in the club's newsletter. Duane reported that the club is in the black with a current balance of \$5,106.04. He provided information about the Michiana Star Party, indicated that he has received an insurance statement but not billing, and will be making his annual report to the Secretary of State now that officers have been elected. Lee reported that he continues to make progress on the TCAA.US web site, that an adjustment needs to be made in the club's Bylaws to allow for the new electronic membership, and that he will include more information for the 2010 NCRAL event as it develops.

Attention was then turned to old business. There was no property manager report as William Carney was not in attendance, but discussion still occurred about replacing the SGO telescope and residing the observatory. It was suggested by Dan – based on the information that Carl supplied – that the club might consider purchasing a low-cost CGE German equatorial head and adapting the Meade 12-inch telescope with a dove-tail mount. Dan will check into the cost of doing so. Dan further noted that he would take it upon himself to paint the SGO dome this summer as he has done this before. Before

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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 MARCH 24 TCAA BOARD OF DIRECTORS MEETING (CONT.)

(Continued from page 1)

residing, it was suggested that we consider installing a roll-off roof observatory. Carl will check with SGNC about the possibility as well as determine the cost for having a suitable structure built. Dan will check with others about installing certain instruments.

The options for the club's logo were then reviewed. It was agreed to "go" with Emily Howard's gold, blue, and white version with a few changes: (1) drop the INC. from the title, (2) properly space the wording TWIN CITY AMATEUR ASTRONOMERS relative to "Established 1960" as well as the vertical, and (3) put "Established 1960" in bold or otherwise make it more "visible." Dave will also ask for versions with and without the white strip under the club's name and also to vary the width of the blue strip below that. Dave will ask Emily to make a couple more versions for final selection, and then send to the club these variants for final selection. It was noted that a suitable B&W version would also be needed, and that the club would use the official logo with a "2010 NCRAL" attached below for that event. How exactly this will be executed will take place at the next meeting of the Board/Planning Committee. Dan, Duane, Carl, Lee, and the Rogers/Memken family will attend the 2009 NCRAL meeting in Cedar Rapids on May 1-2 to show the club's colors and to give a short presentation about our event next year.

Under new business, Lee noted that the Board needs to consider two Bylaw amendments for the next Annual Meeting. The first, mentioned previously about electronic memberships, and a second suggested by Carl dealing with how the club deals with a lack of elected officials between the annual meeting and the following Board meeting at which new officers are elected. It was agreed by those assembled that such clarifications are needed, and that formal wording will be considered at the May Board meeting.

Both Lee and Carl noted that the new standing rule for dealing with the club's awards and plaques appears to have worked very well. Everyone seems to be happy with their permanent certificates and the plaques have all been re-hung at the entrance of the Sugar Grove Observatory.

Looking ahead to the future, it was agreed to hold Astronomy Day concurrently with *Día de los Niños* event at Bloomington Public Library and our regular "Classroom for Kids" event already scheduled for April 25th. Dan noted that he has about 500 handouts from the Astronomical League for this event.

Carl suggested that the club consider doing a membership drive and Dan suggested a capital campaign to raise funds for a new observatory. It was agreed to move ahead with these as a joint venture in the not too distant future, including those who have been recent members of the club but who have not renewed memberships. In light of the 2010 NCRAL conference, 2009 IYA, etc., this would be a good time to do so.

It was noted that the proposed total solar eclipse trip to China has been canceled for a variety of reasons (including the recent lull in solar activity resulting in a small corona). Carl is now looking ahead to lead a trip to Chile and the Easter Islands during July 2010. Several club members and non-members have indicated a desire to do some observing of the southern sky, and this would be an ideal opportunity.

It was agreed that the TCAA might get involved with the summer camp for kids during the summer of 2010, but that we would only offer a component, and then only if SGNC takes the lead and other outdoors education groups get involved. Lee and Carl recently attempted to visit the new lodge at SGNC but were turned back due to mud.

A quick review was than made of the calendar of events. Carl and Lee will handle the *Classroom for Kids* event on March 28th at BPL; Lee will take the lead at the March 28th POS at SGNC; Lee and Dan will work with Linda French to arrange an IWU observing session on Friday, April 3rd; Dan, Lee, and Paul Pouliot will work the Pontiac Junior High School presentation on Saturday, April 4th.

The meeting adjourned at 8:12 p.m. The next meeting of the Board will take place on Tuesday, May 12th, at 6:30 p.m. at LYB, Inc.

GRANT PRE-PROPOSAL REJECTED

Due to a high amount of competition and many worthwhile projects, the TCAA's request for \$500 through an Illinois Prairie small grant was not funded. We received word via e-mail on March 9th: "Thank you for your interest in an Illinois Prairie small grant. We regret that your letter of intent was not chosen by our grants committee. The committee received and reviewed 47 letters of intent in this grant round. There were many excellent proposals, which made the committee's decision quite difficult. Ultimately, 14 organizations were selected to develop full grant proposals."

AL OBSERVING PROGRAM STANDINGS

Below is a listing of the status of observers pursuing AL observing programs reported as of March 31st. If you would like to have your information included in next months listing, be certain to forward your observing totals to Carl Wenning before the end of each month.

AL Award	Brian Barling	William Carney	Lee Green	David Hahn	Dave Osenga	Carl Wenning	Duane Yockey
S. Skies Binocular 50						50*	50*
S. Sky Telescope 50						(52)	(50)
Telescope Messier Prov70/Hon110	(110)	(110)	92*	101*	60	(110)	31
Binocular Messier 50		(100)	42			78*	16
Herschel I Club 400	240	391	400*			(400)	
Urban Club 100		(100)	89			100*	
Comet Club Silver12/Gold30		(29)				4	
Double Star Club 100	17		7			100*	
Planetary Nebula Club Bas60/Adv110						59	
Globular Cluster Club 50						56*	
Lunar Club 100	(100)	(100)	87			100*	
Lunar II Club 100		2					
Asteroid Club Reg25/Gold100		(41)					
Outreach Bas10/ Stellar60/ Master160					60 ^{h+} h *, **	31 ^h -06* 26 ^h -07 44 ^h -08** 16 ^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 award has been both earned and received.

PROPERTY MANAGER'S REPORT













By William Carney

The ice storms of winter have damaged the weather seal at the bottom of the door. Some mice were able to get in before it was repaired. They should be taken care of in the next few days with bait and traps out now. The weather seal on the door and other weather stripping was replaced Sunday as well. Very little water got in during the last few weeks, and that is a good sign. I donated a new cover for the scope; the old one had holes. The current one is much heavier duty.

Now for the bad news... I think the 12" should be de-mounted till a replacement scope or mount is purchased. The scope is doing a china type dance but rotates around instead of pointing down. This is very unsafe. The scope should not be used for POS and maybe even MOOS. It just about took my fingers off last week trying to shut it down before it damaged the drives. I hate to dismount it; I use it a lot as well. I just don't think it's safe to use. This has occurred several times in the last few weeks and is not a one-time event.

If a new German equatorial mount is purchased, it would most likely require a new upper pedestal assembly because the shafts won't clear the current pedestal top. The scope would need a dovetail bar as well. A better solution might be to sell the 12" and buy a new 11" Celestron. I am not sure what the tube assembly weighs. If it's under 40lbs (65lbs, editor), then an Orion Atlas or Celestron CGEM mount could be used. If it's over 40lbs, then it would have to be a CGE or Losmandy G-11. Just to give you an idea of cost the Atlas is about \$1,500 with the CGE at about \$3,000. If the Board is okay with this, I can put the 10" SCT in it's place until the 12" is fixed or replaced after the [2010 NCRAL] convention. I really don't think it's safe to use.

APRIL SKY GUIDE

07	The Moon passes 6° south of Saturn, 2 A.M.	
13	The Moon passes 0.4° north of Antares, 8 A.M.	
14	Mars passes 0.5° south of Uranus, 11 P.M.	
18	Venus passes 6° north of Mars, noon	
19	The Moon passes 2° north of Jupiter, 11 A.M.	
	The Moon passes 2° north of Neptune, 7 P.M.	
22	The Moon passes 5° north of Uranus, 3 A.M.	
	Lyrid meteor shower peaks	
	The Moon passes 1.1° north of Venus, 9 A.M.	
	The Moon passes 6° north of Mars, 2 P.M.	
26	Mercury is at greatest eastern elongation (20°), 3 A.M.	
	The Moon passes 1.9° north of Mercury, 11 A.M.	

MARCH OBSERVERS' LOG

Dave Osenga ventured out to the SGNC on Friday the 13th to log another 12 Messier objects and re-view several others. He reported, "The sky was crisp and clear and no wind. It got below freezing about 10:00, so I headed home. I find it amazing that Messier found some of these very faint objects with the equipment he had. I'm impressed."

William Carney and Carl Wenning ventured out to SGNC on PI day (Saturday, 3-14) to take advantage of the very transparent and steady sky. Viewing from about 8:45 to 10:15 p.m., they completed a number of observations for their Astronomical League observing programs. William re-observed a number of comets, and Carl focused attention on 4 globular clusters and 13 planetary nebulae. While observing the planetary nebula NGC 2392 (the Eskimo Nebula in Gemini), this dynamic duo "discovered" a comet! A check of the CPC 1100 database showed no recognizable object nearby. William returned to SGO to check the computer there and found that they had "discovered" Comet Lulin! William hadn't observed that comet earlier that evening as he had forgotten to do so. Had he done so, he might have "discovered" NGC 2392! Lulin was only 15 arc minutes (half the moon's apparent diameter) from the nebula. This made for an exiting, if not somewhat disappointing, event for both observers.

On Monday, March 16th, William Carney and Carl Wenning returned to SNGC for more observing. Brent Knight from the recent adult education course at HCC also attended. William successfully observed a near-approach asteroid, and Carl observed/re-observed 9 planetary nebulae, 3 globular clusters, and 4 binocular Messier objects bringing his AL totals for these objects to 52, 54, and 78 respectively. All three observers successfully observed Comet Lulin. Also in attendance near the end of the session was a sheriff's deputy who stopped by for a few minutes to join in the sky watching.

The first full day of spring, March 21st, saw a very successful March members-only observing session with 10 members and friends attending. Lee Green, Bobby Arn, Carl Wenning, William Carney, Duane Yockey, Paul Pouliot and his granddaughters Eve (9) and Amber (6), and Josh Lindsey and his friend Melissa, were present for the session. Also joining in on the session was Troop 29 from Danvers. Five Boy Scouts along with 3 adults spent over a half hour viewing with Lee after the sky turned dark. The evening was cool and dry with temperatures in the 40's. The sky was fairly steady, but not terribly dark or transparent. Nonetheless, Bobby spent the evening imaging celestial objects, whereas the



others concentrated on their observing programs. Lee spent his time annotating objects of the Herschel list from Perseus, Gemini and Pyxis. Carl observed 7 new planetary nebulas, and 2 new globular clusters, and 4 new binocular Messier objects. Josh and Melissa spent the early part of the evening viewing with Carl. William and Carl later spent time together looking for comets, but only a much fainter Comet Lulin was observed. William remained until about 10:00 p.m.; Duane stayed until about 10:30; and Paul stayed out until around 11:30. Lee and Carl observed until midnight, but Bobby continued working after Lee and Carl departed at 12:15 a.m.

That evening Bobby was able to collect more data for his image of the Orion Belt region (see image). He also did wide-field imaging of Orion's Sword, and M44 (Beehive Cluster) before moving onto the Leo triplet of galaxies. However, at that time, he was having problems limiting him to 8-minute exposures as his tracking was not currently setup for that length. He called it a night at 1a.m. The sky clouded over shortly thereafter.

On Friday evening, March 27th, William Carney observed the new comet C/2009 E1 Itagaki. He reported that "it was faint and diffuse, but had a visible coma." William needs only one more comet for the gold AL Comet Club award having observed a total of 29 to date. He also picked up another asteroid on March 19th, bringing his asteroid total up to 41 needing only 59 more. William further reported that, "I also have 9 Herschel items left. I should get the Herschel [objects] in the next month or so."

Lee Green reports that he has been out taking advantage of the warmer weather to image Saturn and the Eskimo nebula on a variety of different dates. He has a detailed report elsewhere in this issue of *The OBSERVER*.

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)
April 25	8:30 PM ~ 10:30 PM	7:46 PM CDT	The Rings of Saturn	Dave Osenga Carl Wenning
May 23	9:00 PM ~ 11:00 PM	8:13 PM CDT	Galileo's Universe	Dave Osenga
June 27	9:00 PM ~ 11:00 PM	8:31 PM CDT	Craters of the Moon	Dave Osenga
July 25	9:00 PM ~ 11:00 PM	8:18 PM CDT	Galileo's Telescope	Dave Osenga
August 22	8:30 PM ~ 10:30 PM	7:43 PM CDT	Jupiter and Neptune	Dave Osenga Carl Wenning
September 19	7:30 PM ~ 9:30 PM	6:58 PM CDT	Exploring the Milky Way	John Werner Dave Osenga
October 17	7:00 PM ~ 9:00 PM	6:13 PM CDT	The Pleiades Star Cluster	John Werner Dave Osenga

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 updated 2009 public brochure for these sessions can be downloaded from the club's web site: www.tcaa.us.

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)
April 18	John Werner	August 15	
May 16	Dan Miller	September 12	Carl Wenning
June 20	Carl Wenning	October 10	John Werner
July 18	Lee Green	November 14	Lee Green
		December 19 (Saturnalia)	Carl Wenning

MARCH EDUCATION AND PUBLIC OUTREACH

At the request of Jill Wallace at SGNC, Lee Green and Carl Wenning delivered a 90-minute moon program to a group of home-schooled children on Friday, March 20th. Carl gave a lesson to 10 children aged 7-11, while Jill gave a presentation to 8 younger children. The older children (as well as five mothers) learned about moon phases and eclipses. Following an hour-long program, Lee took the whole group to the SGO for a peek at the moon through the Meade 12-inch telescope. All tolled – children and parents – 26 were in attendance.

On Saturday, March 28th, Lee Green and Carl Wenning gave another 2009 IYA presentation at Bloomington Public Library. The 90-minute "Classroom for Kids" presentation dealt with observing the sky by day and by night. Lee demonstrate motions of celestial objects – sun, moon, stars, and planets – while Carl quizzed the group about what they knew and provided several handouts including star maps, moon maps, and a device for measuring solar altitudes over the course of the day. Unfortunately, only four adults and one child were in attendance at this session.

The years' first public telescope viewing session on March 28th was canceled due to overcast sky and precipitation.

2009 IYA SESSIONS AT BPL

A 12-month saga into astronomy in recognition of the International Year of Astronomy continues. 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)
April 25	Galaxies and the Distant Universe	The Hubble diagram	
May 23	Our Sun	Eclipses, seeing sunspots.	Dan Miller
June 27	Clusters of Stars	The color-magnitude diagram	
July 25	Black Holes	Building a black hole model	
August 22	Rocks and Ice in our Solar System	Making a comet	
September 26	Planets and Moons	CLC goo 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.

MINUTES OF MARCH 24 NCRAL PLANNING COMMITTEE MEETING

A 10-minute Planning Committee meeting was held following the Board meeting of this date. In attendance were Lee Green, Duane Yockey, Brian Barling, Dan Miller, Dave Osenga, and Carl Wenning. Carl reviewed the minutes from the January meeting and then did the same for the time line. The following announcements were made:

- ☆ Duane has possession of the signed contract with Holiday Inn.
- ☆ Carl noted that we have several soft confirmations for lead speakers: Michael Svec of Furman University in South Carolina, Michael Bakich of *Astronomy* magazine, and astronaut Scott Altman. Dan and Carl will also be making presentations. Carl will start working on a speaker for the Webb Space Telescope shortly.
- ☆ Duane and Carl have been invited to present at the Illinois Dark Sky Star Party; they will talk about observing from Chile and include a 10-minute ditty about the 2010 NCRAL meeting. Dan suggested that he and Bobby Arn would be interested in giving a talk about their work as well. Carl will contact Doug Liberati, the 2009 Chair for IDSSP, about these offers.
- ☆ It was again noted that several TCAAers would be attending the 2009 NCRAL meeting in Cedar Rapids, Iowa. Dan has prepared a display board describing the

TCAA, and Mike Rogers and Dan will be working on a 10-minute presentation to be given during the Regional business meeting.

- ☆ Duane noted that he had not heard back from the Normal Theater about a possible astronomy-related presentation during the meeting.

Looking at the time line, Carl pointed out that the Marketing/Publicity leaders need to assemble an announcement now for *The Reflector* (a 1/16-page ad is free) with similar information being sent to both *Astronomy* and *Sky & Telescope*. Duane noted that he has up-to-date contact information for ALCorS. Carl suggested that we try to get on the agenda of the astronomy meetings in the Chicago area that take place next September/October. Carl encouraged all committee members to look ahead at the time line so that no work gets missed as we are beginning to move into a more critical phase of work.

Addendum: Jean Memken e-mailed Carl prior to the meeting noting that she will see if the Bloomington/Normal Convention and Visitors Bureau has any handouts that we could take to the 2009 NCRAL and distribute to attendees there. It might make people more interested in coming if they know what's available to see and do in the community when not at NCRAL.

OPTIMIZING OBSERVATIONS OF DEEP SPACE OBJECTS III

By Carl J. Wenning

While telescope aperture and magnifying powers are critical components for optimizing views of extended deep space objects (dark, emission, reflection, and planetary nebulas as well as galaxies), they are not the only considerations. Another way to enhance visibility of these celestial objects is to increase their contrast relative to the background sky. This can be achieved in two different ways: (1) observing celestial objects from a location with a darker sky, and (2) using filters that transmit only certain wavelengths of light while blocking others. Additional considerations also apply and these include: (3) observing only with dark-adapted eyes, (4) using averted vision properly, (5) observing only when the sky is very transparent, (6) maintaining your optics, and (7) observing objects only when they are higher up in the sky.

Enhancing the contrast of extended celestial objects relative to the background is most easily accomplished by observing from remote dark-sky locations (e.g., mountain tops, Chile, or in some years the Illinois Dark Sky Star Party). Even viewing from sites not terribly far removed from cities (e.g., Sugar Grove Nature Center) enhances the views over those obtainable by observing under urban skies. Also, observe when the moon is not present in the sky to achieve maximum darkness. When the night sky is at its darkest, the celestial objects are viewed at their best.

Increasing the contrast between an extended celestial object and the sky also can be accomplished with the use of narrow-band filters such as the OIII (doubly ionized oxygen), UHC (ultra high contrast), Skyglow, and so on. Anyone who has observed with me recently and seen the North American, Veil, or Helix nebulas knows the "power" of the OIII filter to improve visibility of these objects, especially on nights when the contrast between the object and the sky is low. As experience has shown, these objects are essentially invisible from SGNC with my telescope without the use of the OIII filter no matter what the conditions.

Another way to get a good view of extended deep space objects is to allow your eyes to properly adapt to the dark. Eyes will typically take about 30 minutes to reach most of their dark adaptation, but observers will notice additional adaptation after several hours in darkness. Note that subjecting your eyes to very bright daylight can affect your ability to dark adapt for several days.

Using a dark red-filtered flashlight of low intensity is one way to maintain your dark adaptation. Red wavelengths of light do not have sufficient energy to destroy the chemical rhodopsin that is created by the retina as a means of adapting to the dark (the other means is to dilate the pupil). Deep red LED flashlights with dimmers are the ideal. (I have found the *Orion RedBeam II LED variable –brightness astro flashlight* to be ideal, thanks to a recommendation by William Carney.) When observing, don't let nearby lights or passing headlights of cars ruin your night vision. Close your eyes and look away when a car is approaching an observing sight. While observing, some observers will employ hoods that cover the observer's head and extend all the way the telescope eyepiece. Failing that, some observers will cup their hands around the eyepiece providing for a bit darker situation. Such approaches can perceptibly improve and preserve one's night vision.

Be certain to use averted vision to see additional detail. The cones at the back of the eye are color receptors, but don't work very well under dim light conditions (explaining why we tend to see things in shades of gray at night). The rods surrounding the fovea's cones at the back of the eye are more sensitive to subtle differences in lighting. Look at extended space objects "out of the corner of your eye" if you'd like to see more detail. This method requires and improves with practice, as the eye's peripheral vision rods are not attached to the brain in the same way the direct vision cones are. Too little attention is paid to this important observing technique and, frankly, I was using improper technique for years. Don't turn your eye toward your nose when using averted vision due to the blind spot at the back of the eye. Directing light into this blind spot will reduce an object's visibility rather than enhance it.

Projecting and maintaining your optics will lead to improved visibility. Scattered light, dust, and dew can destroy image quality, brightness, and contrast. If observing with a truss-tube assembly, be certain to cover the open parts of the optical tube assembly with a shroud. Also, be certain that stray light cannot strike the secondary mirror. Keep your optics clean. Dust can scatter light making for a more diffuse image. Watch out for dew, but especially if you are using a refractor or Schmidt-Cassegrain where the corrector plate is not protected by a tube assembly. On nights when water vapor is condensing (or freezing) on exposed optics, be certain to either use a dew shield to prevent or a low-wattage hair dryer to evaporate condensation. Dew shields provide an added benefit in that they reduce the presence of scattered light in the optical tube assembly and that following on a secondary mirror.

Heightened sky transparency will also increase the visibility of extended deep space objects. The best views occur on cold winter nights, and following the passage of cold fronts at other times of year. Often associated with these weather conditions is enhanced twinkling. Fortunately, the twinkling phenomenon doesn't tend to strongly influence the quality of views of extended deep space objects that are most often diffuse.

Lastly, to get the best views of extended deep space objects, be certain to view them when they are higher up in the sky. Personally, I rarely observe objects when they are less than 30 degrees above the horizon. When looking close to the horizon, one is peering through a thicker layer of atmosphere than when an object is viewed higher up in the sky. The light of objects close to the horizon travels through as much as five times as much atmosphere as objects viewed overhead. To get the best views of celestial objects, be certain to observe them when they are transiting the meridian, crossing from east to west across the north-south line in the sky.

Next month, in part IV of this series, I'll provide additional information about the use of go-to telescopes and observing programs for enhancing one's ability to view deep space objects. Stay tuned.

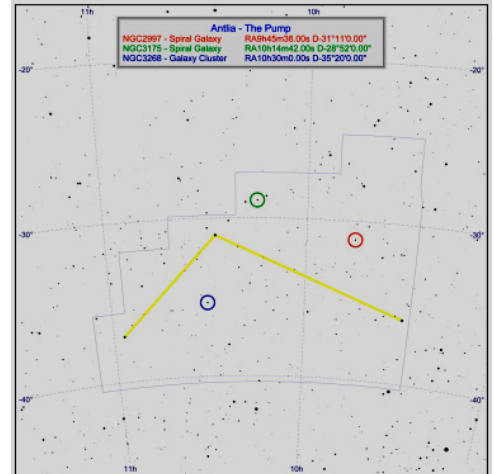
CONSTELLATION OF THE MONTH: ANTLIA—THE AIR-PUMP

Antlia is a small dim constellation invented by Lacaille in commemoration of the pneumatic pump. Antlia lies east of Pyxis, north of Vela and south on Hydra. Antlia is best viewed during the late winter and early spring months.

There is no mythology associated with Antlia and none of its stars are named.

Antlia is the 62nd largest constellation covering 239 square degrees. It is the 84 brightest (5th dimmest) constellation and reaches opposition on February 19.

Antlia is located away from the Milky Way. Its most notable deep space objects are mostly galaxies. NGC2997 and NGC3175 are both bright spiral galaxies. NGC3268 is at the heart of a small cluster of galaxies.



TCAA LIBRARY AT SGO

Carl Wenning encourages TCAAers to take advantage of the club's library housed at the Sugar Grove Observatory. "I have done so recently, and have been amply rewarded by *Coming of Age in the Milky Way* by Timothy Ferris, *The Stars: A New Way to See Them* by H.A. Rey (a book that I have recommended for more than 30 years but had never read in its entirety), and *The Biographical Dictionary of Scientists: Astronomers* by David Abbott (editor). I was delighted to see the names of some who donated these volumes. In the case of *The Stars*, it was signed by Warren Light, a club member from the earliest years."

Club members may borrow books from the SGO library during all members-only and public observing sessions when the observatory is open. Key holders, on the other hand, may access the collection at any time. To sign out a book, merely remove the sign out card for a book, print your name and expected return date, and leave it in the green index card box. By the way, a review of sign out cards indicates that several members have over due books. It would be much appreciated by the membership if these books were returned.

NCRAL 2009 IN CEDAR RAPIDS

The Cedar Amateur Astronomers (CAA) will be hosting the 2009 NCRAL convention on May 1st and 2nd. Friday afternoon, May 1st, attendees will visit the 82-ft diameter VLBA radio telescope near North Liberty, Iowa, then travel to Optical Mechanics, Inc. in Iowa City. After that, they will go to the club's Palisades-Dows Observatory where three domes are located. Saturday's activities will be at the Clarion Hotel in Cedar Rapids.

The CAA website - <http://www.cedar-astronomers.org> - has the convention registration form, reservation information for the Clarion Hotel, a preliminary schedule of events, a description of the Palisades-Dows Observatory, and maps for the locations to be visited.

If any NCRAL member wants to give a talk at the convention on Saturday, please email president@cedar-astronomers.org. (The TCAA will be included in the business meeting agenda when we describe the 2010 NCRAL meeting.) Participants are encouraged to bring astronomical photos, artwork, and measurements, club information, etc. for display at the convention.

DEEP SOLAR MINIMUM

~assembled from NASA Press Releases~

Where have all the sunspots gone? As of March 31st, the Sun has been blank on about 87% of the days of 2009. If this rate of spotlessness continues, 2009 will exceed 1913 as the blankest year of the past century. A flurry of new-cycle sunspots in October 2008 prompted some observers to declare that solar minimum was ending, but since then the calm has returned.

The long stretch of minimal solar activity in 2008 and early 2009 prompted some questions about whether the Sun's quiescence was beginning to rival that of the Maunder Minimum in the late seventeenth and early eighteenth centuries. Of the 2008 minimum, solar physicist David Hathaway of the NASA Marshall Space Flight Center says, "It's definitely been an exceptional minimum, but only compared to the past 50 years." Citing human observations of the Sun extending back four centuries, he continues, "If we go back 100 years, we see that the 1913 minimum was at least as long and as deep as this one." So although the minimal activity of the Sun in 2008-2009 is exceptional for the "modern" era, it does not yet rival the lowest levels of solar activity that have ever been observed. We are still in the pits of a deep solar minimum.

TCAA Treasurer's Report – March 2009

OPERATING FUND BALANCE – February 28, 2009 - \$ 2,875.06 *

Income

Dave Osenga (dues renewal) - \$ 40.00

William Carney (dues renewal) - \$ 40.00

James Wharton (sen. dues renewal) - \$ 25.00

Expenses

LYB Inc. (March Observer) - \$ 28.76

Secretary of State (annual report fee) - \$ 10.00

OPERATING FUND BALANCE – March 31, 2009 - \$ 2,941.30

OBSERVATORY FUND BALANCE – February 28, 2009 - \$ 2,144.74

Income

William Carney (keyholder renewal) - \$ 5.00

Dave Osenga (keyholder renewal) - \$ 5.00

Expenses

None - \$ 0.00

OBSERVATORY FUND BALANCE – March 31, 2009 - \$ 2,144.74

TOTAL TCAA FUNDS – March 31, 2009 - \$ 5,096.04

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 2008)

David Osenga (renewed through 2008)

Josh Lindsey (renewed through 2008)

Andrew Morrison (February 2008)

Dan Miller (renewed through 2009)

Lee Green (renewed through 2009)

SGO KEY HOLDERS ANNUAL FEE DUE

SGO key holders are reminded that the annual access fee for 2009 is now due. If you have not yet paid your fee already, please remit \$5 to TCAA Treasurer Duane Yockey. For those who might be concerned about the operation of the LX200, property manager William Carney reports that the telescope appears to be working erratically even though warmer temperatures have returned. You might recall that the telescope was periodically doing a "China dance" (wildly pointing to China instead of the sky) and needed frequent realignment over the winter months; this problem continues.

UPCOMING EVENTS

April 18 — MOOS, SGNC, dusk
April 25—IYA, "Galaxies and the Distant Universe," BPL, 1:00-4:00 p.m.
April 25—POS, The Rings of Saturn, SGNC, 8:30-10:30 p.m.

CHASING SATURN 2009 By Lee Green

Saturn 2009

With the weather warming up, I took the time to get my scope and camera out for a session on March 14. With Saturn recently past opposition, it presented a tempting target that is relatively large and bright. Saturn takes about 30 years to orbit the Sun and during this period, the rings show the different orientations. This corresponds to the seasons we experience here on Earth. When the plane of the rings lines up with the Earth, the rings will become invisible because they are so thin. This is called the ring plane crossing and it is Saturn's equivalent to our equinox. This will occur this year in September and will last for just a few short weeks.



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/