



## CHAIRMAN'S MESSAGE

Welcome back to the **NORTHERN LIGHTS** newsletter. It has been many years since our region has had a newsletter. I would like to thank Carl Wenning (TCAA) for volunteering to be the newsletter editor and Jim Gibbs (TCAA/FVAS/NSA) for managing the layout of the newsletter. They intend to have the newsletter sent to each club, for them to distribute it, and to have it posted on the regional web page.

Our past regional convention was held on April 29th and 30th of this year by the Twin City Amateur Astronomers in Normal, IL. Our next year's convention is not set as of yet. After a couple of failed attempts by other clubs, the Rochester Astronomy Club is looking into hosting the convention, but this needs to be verified with their board. In case of them not being able to host it, I would like to have other clubs look into the possibility of holding the convention in 2017. Door Peninsula Astronomical Society did volunteer to host the 2018 Convention. Currently, we do not have a host for 2019 and looking for a club to host the 2019 Regional Convention. We tentatively have the Northern Cross Science Foundation in Port Washington taking the 2020 convention and the Neville Public Museum Astronomical Society taking on the 2021 Convention. If there is an interest in hosting one of the dates, please let me know.

I represented the North Central Region of the Astronomical League as Vice Chair from 2005 to 2007 and Chairman from 2007 to 2011, and then again from 2013 to 2017. My four-year term is up according to the Regional Bylaws in 2017. In 2017 an election will be held for positions of Vice Chair and Chairman. Please consider running for office because I cannot.

The Neville Public Museum in Green Bay will be hosting an Astronomy Exhibit called Eyes in the Sky. It features the history of astronomy in Northeastern Wisconsin. Check out the historical telescopes, astrophotography, meteorites and hands-on exhibits. The exhibits will feature many of our club members along with past astronomers of our area and what they have contributed to the science and education of astronomy. The exhibit runs from July 16<sup>th</sup> to November 6<sup>rd</sup> of this year. Check out the web page at [www.nevillepublicmuseum.org](http://www.nevillepublicmuseum.org). I hope to see you there.

Gerry Kocken, NCRAL Chairman

[gerryk@kockenwi.com](mailto:gerryk@kockenwi.com)

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## NORTHERN LIGHTS RETURNS

For the first time in many years, **NORTHERN LIGHTS**, the newsletter of the North-Central Region of the Astronomical League (NCRAL), is making its return. With the blessings of the NCRAL Chair Gerry Kocken, Carl Wenning (TCAA) and Jim Gibbs (FVAS/NSA/TCAA) will produce a quarterly newsletter with the intent of increasing the amount and quality of interclub communication across our six-state region. The newsletter will be sent to presidents, ALCors, and newsletter editors in our Region's Astronomical League affiliated clubs. It will be up to them to forward the newsletter to club members.

The newsletter will be produced on a quarterly basis with Summer, Autumn, Winter, and Spring issues. Its availability will be announced via email. Readers will then be able to download full-color PDF issues from a website. Because there is no limit to the size of each issue, the file will likely be too large for convenient dissemination via email. We are asking presidents, ALCors, and newsletter editors to forward the hyperlinked announcement rather than the newsletter itself.

Lastly, your editors are now soliciting contributions for the Autumn issue of **NORTHERN LIGHTS**. If there is anything readers would like to announce or share that would be of interest to anyone outside your immediate club, please feel free to send it to editor-in-chief Carl Wenning at [carlwenning@gmail.com](mailto:carlwenning@gmail.com). If there is anything in particular that you'd like to see included in the newsletter (data, columns, reminders, etc.), please feel free to suggest it. Carl will be serving as content editor and Jim will be serving as production manager. The deadlines for contributions will be on the equinoxes and solstices.

## REPORT FROM NCRAL 2016 MEETING - APRIL 30, 2016 - NORMAL, ILLINOIS

REGIONAL COUNCIL MEETING: Chairman Kocken called the meeting to order at 2:42 pm. Secretary Klemt read the minutes from the 2014 meeting in Port Washington. The minutes were approved. There were 18 societies present and 30 members present.

We voted on the entry of the Champaign-Urbana Society. It was nominated and approved. The agenda for the business meeting was presented and approved. There was no old or new business. A motion was made to adjourn and was approved at 2:41 pm.

REGIONAL BUSINESS MEETING: Chairman Kocken called the meeting to order at 2:51 pm. Treasurer Klemt reported there was \$8,863.31 in the checking account with no new expenses. The report was accepted and approved. Vice Chairwoman Charlotte DuPree gave a report on the Regional Award. There were no nominations in 2016 for the award. She will be sending out information to the ALCor and Presidents of the Societies in the NCRAL this year regarding nominations of worthy people to be nominated for the Regional Award. Chairman Kocken led a discussion as to why the 2015 convention was cancelled. It was suggested we should keep up the NCRAL web site updated, sending all info to Webmaster Jeff Setzer.

There was no old business. Under new business a discussion for the next five conventions ensued with only possibilities and no commitments. The 2017 convention is undecided for a location. Under election of officers, it was decided to waive last year's positions of Chair and Vice-Chair to the previous officers who volunteered to finish the term. Don Klemt was nominated for Secretary-Treasurer. No other nominations were made and He was elected.

The position of ALCor was then discussed. Barry Beaman declined the nomination and Carl Wenning of the Twin City Amateur Astronomers was nominated, approved, and elected. Chairman Kocken then thanked Twin Cities Amateur Astronomers for hosting the 2016 convention. The meeting was adjourned at 3:35 pm.

Don Klemt, Secretary/Treasurer  
[donklemt@ameritech.net](mailto:donklemt@ameritech.net)

facebook

### NCRAL NOW ON FACEBOOK

Did you know that NCRAL now has a Facebook page for sharing information about your Region's AL-affiliated clubs? This feature was added following the NCRAL 2016 meeting when the number of "hits" on the meeting's Facebook site did not subside as would have been anticipated follow the end of the meeting. It was as though people were searching for NCRAL information and were not finding what they wanted. Hopefully users can now find what they are looking for, and others are free to post images and messages to this un-moderated group. You may now like us and follow NCRAL on Facebook at:

<https://www.facebook.com/northcentralregionastronomicalleague/>



North Central Region of the Astronomical League -  
NCRAL

@northcentralregionastronomicalleague

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## TCAA PRODUCES HELPFUL GUIDES

A member of the Twin City Amateur Astronomers (Bloomington-Normal, IL) recently produced five guides for his club. While these guides are somewhat club specific, they might still be helpful to other groups. They are available as PDFs and are being regularly updated. The latest versions can be downloaded at <http://www.tcaa.us/TCAAGuides.aspx> and are as follows.

### Guide #1 – INTRODUCTION TO AMATEUR ASTRONOMY, version 1.2 (54 pages)

This guide addresses the basics that everyone needs to know in order to become an amateur astronomer. It deals with the use of eyes, binoculars, and telescopes to view the night sky. It should not be mistaken for a textbook in astronomy.

### Guide #2 – MEMBERSHIP AND BENEFITS, version 1.0 (14 pages)

Even long-time members do not know everything they need to know about membership in this club. Many benefits are overlooked and this publication does what it can to clearly illustrate the benefits of membership.

### Guide #3 – ASTRONOMY AS A HOBBY, version 1.0 (9 pages)

Why is it that we don't attract as many amateur astronomers as we would like? Our club has lots of great benefits, and it's more the just lack of knowledge than lack of benefits. Part of the problem today stems from the fact that many people don't understand the meaning of a hobby and the benefits derived from it.

### Guide #4 – THE ART OF SKY INTERPRETATION, version 1.0 (14 pages)

Interpreting the sky requires more than just standing in front of a group of people and talking. If it were that easy, there would be many more speakers in our club! There is an art of sky interpretation, and this guide describes it. Even if one doesn't intend to give public talks, this guide provides a wealth of information about what can be seen in the sky with the unaided eye.

### Guide #5 – COORDINATING OBSERVING SESSIONS, version 1.0 (3 pages)

While coordinating observing sessions might appear to be an easy task to those who attend them, there is considerable background work associated with both public and members-only sessions. Consider hosting an observing session and use this guide to assist.

## REGIONAL OFFICER CONTACT INFORMATION

**Chair: Gerry Kocken**

[gerryk@kockenwi.com](mailto:gerryk@kockenwi.com)

**Vice Chair: Charlotte DuPree**

[grdupree@charter.net](mailto:grdupree@charter.net)

**Secretary/Treasurer:  
Donald Klemt**

[donklemt@ameritech.net](mailto:donklemt@ameritech.net)

**Regional Rep. & Newsletter  
Editor-in-Chief: Carl Wenning**

[carlwenning@gmail.com](mailto:carlwenning@gmail.com)

## MEET YOUR NEW REGIONAL REPRESENTATIVE

Carl Wenning of the Twin City Amateur Astronomers (TCAA, Bloomington-Normal, Illinois) was elected to serve as NCRAL Regional Representative to the AL Council during the NCRAL 2016 business meeting held April 30<sup>th</sup>. He takes over the position from Barry Beaman of Rockford, IL.

By way of introduction, Carl has been an amateur astronomer for more than 50 years and is an AL Master Observer. He holds a Bachelors degree in Astronomy from The Ohio State University, a Masters degree in Planetarium Education from Michigan State University, and a Doctoral degree in Curriculum & Instruction with a concentration in physics education from Illinois State University.

Carl served as planetarium director at Illinois State University from 1978 to 2001. He directed the university's Physics Teacher Education program from 1994 until his retirement in 2008. He continues to teach part time, and offers a number of courses through the TCAA. Carl received the 2007 NCRAL Region Award for his work in education and public outreach. He is currently historian, secretary, and newsletter editor of the TCAA. He also now serves as co-editor of this publication, **NORTHERN LIGHTS**.

Should you have any concerns that should be addressed by the Astronomical League National Council, please contact Carl at [carlwenning@gmail.com](mailto:carlwenning@gmail.com).

## MEET THE **NORTHERN LIGHTS** EDITORS

Jim Gibbs (Fox Valley Astronomical Society/Northwest Suburban Astronomers/Twin City Amateur Astronomers) and Carl Wenning (TCAA) are now serving as editors of **NORTHERN LIGHTS**, the newsletter of NCRAL.

Jim Gibbs is an avid amateur astronomer that likes to do visual observing as well as astrophotography. He is the editor of the Fox Valley Astronomical Society newsletter, The Observer, as well as the VP of Observing, he is also a member of the Northwest Suburban Astronomers and the Twin City Amateur Astronomers. He has been interested in astronomy since he was 10 years old and also in Physics and science in general. He is a Software Engineer with a degree in Computer Science and is doing consulting with own business developing financial, manufacturing and retail applications among other custom software for more than 25 years.

## NCRAL WEBSITE

~ by Jeff Setzer ~

Did you know that NCRAL has its own website? It's true! Point your browser to [ncral.wordpress.com](http://ncral.wordpress.com) and you'll see a central repository for information about our Region and constituent clubs.

As Webmaster, I maintain the information on the website, but the original idea was — and still is — to publish contributions from members. As part of that mission, we will be hosting the emailed newsletters at the website, so people can easily access back issues.

Will the website progress from an occasionally used reference to something more? That's entirely up to you, dear reader. If you have ideas or submissions, contact me at [astrosetz@hotmail.com](mailto:astrosetz@hotmail.com)

## CALL FOR NCRAL REGIONAL OFFICER NOMINATIONS

According to the Astronomical League constitution, each Region is to be led by a Chair, Vice Chair, Secretary and Treasurer or Secretary/Treasurer. According to the constitution, "They shall be elected by the members present at the Regional Convention, or if none is held, by the Regional Council, for terms of not more than two (2) years. The Regional officers shall be empowered to act on behalf of the Regional Council, and with its full authority, on matters, other than the election of Regional officers, which require its attention when the Regional Council is unable to meet. (Article IX. Regions and Regional Activities, Section 3.)

NCRAL officer elections historically have been held during regional meetings during odd-numbered calendar years. We would have held such an election at NCRAL 2015 in Fargo, ND, but that meeting was cancelled. During the NCRAL 2016 meeting in Normal, IL, existing officers agreed to carry on in their current positions for one more year until new elections can be held at the NCRAL 2017 meeting.

We are now seeking nominations for the positions of chair, vice chair, secretary/treasurer, and regional representative. Should you wish to nominate yourself or others, please email your nomination to NCRAL Secretary Don Klemt. His email can be found in the Regional Officer Contact Information appearing above.



August 10 through August 13 features the Astronomical League's national convention coming to the NRECA Center in Arlington, VA. Hotel accommodations are available at the beautiful Westin Arlington Gateway (703-717-6200) and at the nearby equally attractive Hilton Arlington on the Metro Line (703-528-6000). Be sure to ask for the special ALCon rate.

This event is hosted by the Northern Virginia Astronomy Club (NOVAC) and your Astronomical League. The Association of Lunar and Planetary Observers will participate by holding its annual meeting at the event.

### **Why attend ALCon?**

You will rub shoulders with, among others, research astronomers, authors, university professors, and amateurs from across the country, as well as officers of the Astronomical League and partnering organizations. You will listen to and speak with people well versed in imaging, outreach, equipment, club improvement, youth in astronomy, the art of observing, and the science of astronomy.

### **Special Tours!**

Smithsonian Meteorite Collection National Air & Space Museum Steven F. Udvar-Hazy Center NASA's Goddard Space Flight Center US Naval Observatory

### **Noteworthy Speakers!**

Nearly twenty engaging speakers share their experiences and knowledge. Topics include among others: Outreach opportunities, Meteor observing, Observing Venus, New Horizons mission to Pluto, 2017 Total solar eclipse, Spaceflight, The Aristarchos Experiment, Variable star research, Solar astronomy, Gravitational wave astronomy, Youth in Astronomy – and more!

### **Social Events!**

Thursday night's Star-BQ held at nearby Barcroft Park features live music by The Awesome Exaggerations! Saturday night features the popular gala Awards Banquet with Keynote speaker NASA Administrator Major General Charles Bolden. Discover the future of space exploration from the leader of NASA!

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## **NCRAL 2016 IS NOW HISTORY!**

(ADAPTER FROM ***THE OBSERVER*** OF THE TCAA)

Wow! It's over! What can we say? Many strongly worded comments from attendees expressed how they felt about NCRAL 2016. We received constant accolades for the quality of our speakers; the accuracy and efficiency of our programming; our amazing members, activities, and observatories; the great banquet meal; the camaraderie made possible by a leisurely program; the good will generated and growing respect with which others view the TCAA, and so much more. An often-repeated variation of a comment was, "It's too bad more people didn't attend; they really missed a great meeting."

The event began on Friday evening with four 15-minute talks, including those by TCAA members Tim Stone (*The Planisphere: The Forgotten Tool of the Astronomer*) and Carl Wenning (*The May 9<sup>th</sup> Transit of Mercury*). The evening continued with four lively discussion groups. Saturday, the main day of the event, saw presentations by Carl Wenning (*Getting Ready for 2017*), Tom Weiland and Dave Osenga (*Sun Funnel Viewers: How to Make Your Own*), and Tim Stone (*The Observatories and Work of the TCAA*). A tour of the observatories at the Sugar Grove Nature Center, SGNC, on Saturday garnered us glowing accolades. In addition to our TCAA speakers, we had three invited speakers. On Saturday morning, we attended presentations by Michael Borman of the Evansville Astronomical Society (*Solar Imaging*) and Dr. Jason Dunn of McLean County Eye Care (*Solar Retinopathy*). Dr. Michael Reynolds addressed us on Saturday evening (*46 Years of Solar Eclipse Chasing – A Review*).

At the NCRAL business meeting on Saturday afternoon, we heard reports from regional Chairman Gerry Kocken, Secretary Charlotte



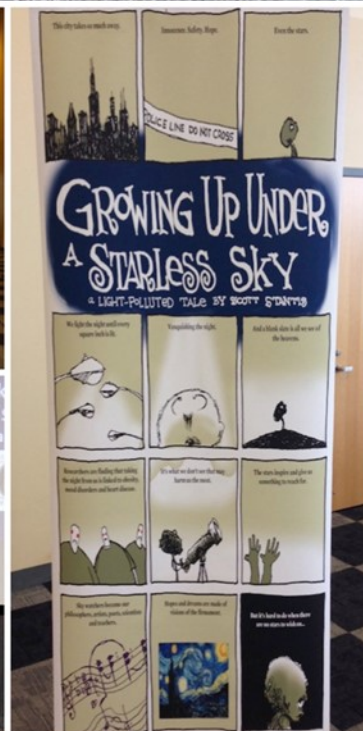


Group picture at the lobby of the Astroth Community Education Center

DuPree, Treasurer Don Klemm, and Region Representative Barry Beaman. Among the topics discussed at the business meeting were needs for future NCRAL convention sites, ways of improving the Region's internal communications, and election of officers. Gerry, Charlotte, and Don were elected to complete one-year terms, and the TCAA's Carl Wenning was elected to a 3-year term as regional representative to the Astronomical League.

The Astrophotography Contest had two divisions, but four winners! Top choice for best solar system astrophoto went to Ken Boquist and Al Sheidler for "Sun" – a composite white light/H $\alpha$  image of our nearest star. Top choice for best deep sky astrophoto was a tie. There co-winners of this division were Jim Gibbs for a Deep Space image of the Bubble Nebula Region in Cassiopeia and Terry Mann for "The Rock" a desert photo of the rising Milky Way. Tim will be sending certificates to the winners.

Following word of thanks from Master of Ceremonies Dave Osenga, Dr. Mike Reynolds from Gainesville, FL, gave personal vignettes and fruitful advice based on 46 years of eclipse watching (18 total solar eclipses!) that made his talk quite enjoyable. He summarized much of what other speakers had said, and brought the conference to a very successful conclusion.



Clockwise from top: Dr. Jason Dunn speaking with Duane Yockey, Audrey Fischer's light pollution banner, and astrophotography contest winners called to the fore by Carl showing Jim Gibbs, Terry Mann, & Al Sheidler.





Left to right, top to bottom: (1) Bus arrives at SGNC for tour of our two observatories, (2) serving line for Saturday evening banquet, (3) Bryce Heiniger saying a few words about the Messier observing program, (4) Barry Beaman, Terry Mann, and Mike Reynolds – two AL past presidents and one AL vice president respectively, (5) a shot within the CLC's Athena flight simulator, (6) Carl Wenning in the CLC's Mission Control, (7) CLC Lead Flight Director Stacy Shrewsbury giving tour of CLC, (8) a typical hallway scene in the Astroth Community Education Center, (9) in the ACEC auditorium.

Acknowledgement: Images by Bob Finnigan, Bob Baer, Dave Osenga, and Carl Wenning

NCRAL members who attended this event appear to have had a really good time. They learned a lot, met many new people, renewed friendships, received a complimentary 24-page solar eclipse guide including solar eclipse glasses, and much more. Thanks to all who attended.



The official NCRAL 2016 group photos remain available at: <http://www.ncral2016.org/NCRALGroupPhoto.pdf>

# DRIFTLESS DARK SKIES: “WE ARE STARDUST; WE ARE GOLDEN, WE ARE BILLION-YEAR-OLD CARBON.”

I am an astronomy educator and stargazer in southwest Wisconsin, a region called the [Driftless Area](#). Glaciers did not pass through here and level the uplands as they did for much of the Midwest. No glacial drift was left behind. Rivers have had millennia to carve through the Cambrian sandstone leaving a more rugged terrain. This has discouraged larger cities with their light pollution. We enjoy dark skies, and I enjoy telling my neighbors what they can see in those skies. I am happy to share some of those articles with NCRAL.



I am not sure when I first heard the song “[Woodstock](#).” I am sure that it was the hard rocking cover by Crosby, Stills, Nash & Young rather than the haunting original by Joni Mitchell. In the summer of 1969, the moon landing in July held my interest more than the celebration at Yasgur's Farm in August. Though the song is 47 years old, it's only recently that I looked up the refrain that I could never quite make out. Sure enough, Joni Mitchell really is singing “billion-year-old carbon.” And she got the cosmology right.

The early cosmos had a relatively simple periodic table: lots of hydrogen, some helium, and a little lithium. These elements coalesced into the first stars, which got busy fusing the hydrogen into the heavier elements such as carbon, nitrogen, and oxygen. As these stars aged, they exploded and seeded the galaxy with the stardust for the next generation of stars. Some of the leftover stardust went on to become planets and moons and comets and plants and animals and us. We are stardust; we are billion-year-old carbon. Carl Sagan shared the story of our origins in the first episode of



Cosmos (1980): “Some part of our being knows this is where we came from. We long to return. And we can. Because the cosmos is also within us. We're made of star-stuff. We are a way for the cosmos to know itself.”

Summer nights are a great time to see for yourself the stars creating the elements that make life possible. Look to the east as the sky darkens. Watch for three bright stars. They will be the first to appear. This is the [Summer Triangle](#). If you hold out your hand and spread your fingers, the distance between the stars will be a little more than the distance between your thumb and pinkie.

Vega is the highest of the three and is the main star of the constellation Lyra the Lyre. The light you see left Vega back in the spring of 1991. You may also remember Vega as the source of the extraterrestrial message received by Ellie Arroway (Jodie Foster) in Carl Sagan's novel (and movie) *Contact*. Below and to the right of Vega is Altair in the constellation Aquila the Eagle. It is closer to Earth, and its light has been journeying since the fall of 1998. As the sky darkens, watch for our home galaxy, the Milky Way, passing between the two stars.

There is a story of the two stars told in Japan, China, and Korea. Altair (a poor herdsman) falls in love with Vega (a princess). Vega's father places them on opposite sides of the heavenly river, the Milky Way. Once a year, on the seventh day of the seventh month, the Emperor shows mercy and Altair is allowed to cross the river to visit with Vega.

The third star of the Summer Triangle is Deneb. Look for it between and to the left of Vega and Altair. Deneb is the tail of Cygnus the Swan. You can make out its outstretched wings just to the right of Deneb reaching up and down. Its long neck reaches almost as far as a line traced between Vega and Altair. I imagine Cygnus as flying over the Milky Way. Deneb is one of the farthest and most luminous stars you can see with your unassisted eyes. It is over 200 times larger and 250,000 times brighter than our Sun. The light you see left Deneb at least 1,425 years ago.

There are three planets to go along with the three stars. Jupiter is bright in the southwest as night falls. The waxing crescent moon passes by Jupiter on July 8 and 9, August 5, and September 2. Watch for the conjunction of Jupiter and Venus on August 27. Mars and Saturn are shining in the south just above Scorpius the Scorpion. The distance between them will vary this summer. Watch for them at their closest on August 25. The waxing gibbous moon passes by Mars and Saturn on July 14-15, August 11, and September 8-9. Just below Saturn look for Antares whose name means “rival of Mars”. You can compare Ares (Mars) and Antares on August 23 when they are at their closest.

And if it's a moonless evening at the beginning or ending of the months this summer, you should be able to see our Milky Way passing through the Summer Triangle. This is a wonderful area to tour with binoculars. You're seeing the light from billions of stars in our home galaxy, fusing the carbon and making the stardust that may someday become the beings who look back at the stars.

*John Heasley is an astronomy educator and stargazer who enjoys connecting people with the cosmos. He volunteers with NASA/JPL as a Solar System Ambassador. For more information about stargazing in southwest WI, like [Driftless Stargazing LLC](#) on Facebook and find out whenever there's something awesome happening in the skies. Driftless Dark Skies appears monthly in the [Voice of the River Valley](#).*



# EYE ON THE SKY: CHECK OUT THE TELESCOPES

By Gary Henkelmann, Peninsula Pulse – December 18th, 2015

Door County is blessed with an abundance of ideal dark sky sites that make for stunning views of the universe over our heads. Beyond what we can see, however, there are many more awe-inspiring sights just beyond our vision that await those with the tools to see them.

Telescopes are the primary tool for gathering many times more light than our eyes, drawing the distant near, and coaxing the invisible to appear. And beginning in January, anyone with a Door County Library card can check out a quality telescope for observing the moon, stars, nebulae and planets, thanks to a cooperative program between the library and the Door Peninsula Astronomical Society (DPAS).



Orion "StarBlast" 4.5" telescope

Four Orion "StarBlast" 4.5" telescopes were obtained by DPAS, made "library-friendly," and have been donated to the library, thanks to generous support from DPAS, Door County Property Owners Association, and others. Three of these scopes will initially be available for checkout in Sturgeon Bay, and one will be stationed at the Sister Bay branch. Patrons over the age of 18 can check out a 'scope, and anyone (with responsible supervision) can begin probing the night sky.

These telescopes are tabletop-mounted, portable and lightweight, enabling easy transport and set-up. Following the brief orientation received upon checkout and after reading the accompanying guide-book, the user will be ready to observe detail of the moon's craters, the rings of Saturn, and the moons of Jupiter, as well discover star clusters, nebulae, double stars, and galaxies that lie beyond our own Milky Way.

Included with each scope is a zoom eyepiece to enable viewing great detail, or backing away for a more complete picture. A lighted finder/pointer scope eases aiming at desired objects. Also provided is an accessory pack with instruction book, moon map, pocket guide to northern constellations, and a wearable red flashlight (so as not to destroy night vision) to minimize fumbling around in the dark.

Each of these "Dobsonian" reflector telescopes will also come equipped with contact information for a DPAS "Mentor/Astronomer" who can answer patrons' questions and advise beginning star gazers on celestial objects that may be viewable at the current time of year. This DPAS telescope custodian will also regularly provide maintenance checks and alignment services at the library between uses to keep the scope in good operating condition. Additionally, DPAS will highlight interesting viewing targets as part of their 2016 monthly general meetings.

Because we only get to see half of the sky at any particular time (due



to interference by all that daylight) as we circle the sun, the view is constantly changing and what we will see six months from now is the other side of the universe! There's always something new to look at each month and the DPAS observers will share their best ideas for celestial objects to track down and enjoy.

The library has scheduled kick-off seminars for interested patrons (Jan. 9 at 2 pm in Sturgeon Bay and Jan. 18 at 6 pm in Sister Bay) that cover the handling, operation and safe use of the telescopes so as to maximize the enjoyment of these durable and precision instruments. DPAS members will be on hand to provide instruction and answer questions.

Please contact the library in Sturgeon Bay at 920.743.6578 or in Sister Bay at 920.854.2721 for schedule confirmation and telescope availability. The library also offers content at [DoorCountyLibrary.org](http://DoorCountyLibrary.org) where their online catalog can be searched under "telescope" and where a hold/reserve can be placed for the next available checkout.

Ongoing support and viewing ideas are also available through DPAS at our monthly meetings held the first Tuesday of each month (February through December) at 7 pm at the Crossroads' Astronomy Center, 2200 Utah St., Sturgeon Bay. We welcome anyone interested in astronomy or the night sky.

"Eye On the Night Sky" is a monthly column by the Door Peninsula Astronomical Society. For more information on the organization, visit <http://www.DoorAstronomy.org/>.



Door Peninsula Astronomical Society President Dave Udell presents library director Rebecca Berger with four Orion "StarBlast" 4.5" telescopes that will be available for checkout at the Sturgeon Bay and Sister Bay libraries in January.



# BIG DIPPER CAN POINT YOU TO OTHER CONSTELLATIONS

~ by Jan Gustafson ~

Popular Astronomy Club

I am probably the least knowledgeable member of the Popular Astronomy Club. I “married into” astronomy over 41 years ago when I became the wife of Roy, a passionate amateur astronomer. We are fortunate to live in a rural area where we can see many stars at night; we can even see the Milky Way. I remember our first walks at night, and my husband would point out the various constellations, but the only one I could identify myself was The Big Dipper. I now use The Big Dipper to “star hop” to find some other constellations. I have since learned that The Big Dipper is not actually one of the 88 official constellations, but it is an “asterism”, which means it is just part of the larger constellation, Ursa Major (The Big Bear).

The first star we are going to “hop to” is Polaris, better known as the North Star (see illustration). Polaris is the only star in the night sky that does not appear to move as the Earth rotates, because it is directly above the North Pole, so you always find it in the same spot in the northern sky. The Big Dipper rotates around Polaris. To find Polaris, mentally draw a straight line connecting the two stars on the far side of the bowl of the dipper, extend it five times, and you will arrive at Polaris. Polaris is at the end of the handle of the Little Dipper. The Little Dipper, officially named Ursa Minor (The Little Bear), is quite faint, so depending on viewing conditions, you may only see Polaris and the two stars on the far side of its bowl. Throughout the year the two bowls appear to be pouring their liquid back and forth.

Now let’s look for the constellation Cassiopeia, which looks like an “M,” or a “W”, depending on the time of night and the season. If you

draw an imaginary line from the 2nd star in the Big Dipper’s handle through Polaris, you will come to Cassiopeia. The ancient Greeks named the constellations thousands of years ago, and according to Greek mythology, Cassiopeia was the queen of Ethiopia, but was placed in the sky as punishment, because she was very vain and constantly bragging about her beauty. Part of the night she sits up-right regally administering her kingdom, but part of the night she hangs upside down, hanging on for dear life.

Another constellation easily found using the Big Dipper as a starting point is Leo (The Lion). Just pretend that there is a leak in the bowl of the Big Dipper, and the drips land right on Leo’s head, which is shaped like a backward question mark.

The last constellation we will find by using the Big Dipper is Bootes (The Herdsman). Follow the curve of the handle away from the bowl, and “arc to Arcturus”, the brightest star in Bootes and the fourth brightest star in the sky. Bootes is shaped like a kite, and Arcturus is at the bottom of the kite.

As you can see, by just knowing the Big Dipper, you can now find many items in the sky! If I can do it, so can you. A good map for finding your way around the sky can be found online at [skymaps.com](http://skymaps.com). Also plan to come to the monthly public viewing of the Popular Astronomy Club at Niabi Zoo on June 18 where the “experts” can help you find your way around the beautiful night sky, plus you can view the moon, planets and stars through a telescope!

