**Peoria Astronomical Society, Inc.**

P.O. Box 10111 Peoria, IL 61612-0111
Section of Peoria Academy of Science
Affiliate of the Astronomical League

**www.astronomical.org**

# STARLITE

## SPRING, 2016

***WHAT'S IN THIS ISSUE?***



***Directors:***

President: Dan Son, sonshine1992@gmail.com
Vice-President: Jesse Hoover, hooverje@gmail.com
Secretary:
Treasurer: Brian Hakes, bhakes02@comcast.net
Parliamentarian: Nick Johnson, johnsnl@comcast.net
Nominating Chairman: Tatiana Johnson, 2gsheps@gmail.com
Legal Agent: Mike Hay, me.hay@comcast.net
Northmoor Chairman: Nick Johnson, johnsnl@comcast.net
Jubilee Chairman: Robert Pauer, sbpauer@winco.net

***PEORIA ASTRONOMICAL SOCIETY IS NOW ON FACEBOOK:***
***www.facebook.com/PeoriaAstronomicalSociety***
**Editor's Notes**: Starlite Editors: Mike and Linda Hay: me.hay@comcast.net or ls_hay@yahoo.com (little L not #1 and underscore between s and h)

Articles should be submitted to Linda via email addresses: ls_hay@yahoo.com
Deadline for articles for future 2016 publications are May 18, August 17, and November 16. (Please submit all articles in a ***WORD*** format. I have an older Windows XP desktop computer that is using Word 2000. Files sent as PDF files cannot be read on it.) I appreciate the cooperation with meeting the deadlines. It makes my job so much easier. Thank you.

***PLEASE NOTE:***
Please notify Scott Swords at ***sswords3@comcast.net*** if you will be getting a new mailing address, email address and/or phone number. It is important that he has your personal information correct so you will continue to receive the Starlite and the Reflector. He would also like to receive any changes to your e-mail address as this is part of his database.

If you would like to join the Peoria Astro e-group or if you have changed your e-mail address, please notify Mike Frasca at ***mfrasca@att.net*** with your e-mail address (for in-club use only – not given out to other sources). He does not need your mailing address or phone number. If you are not a member of the e-group, you may want to consider joining. A great deal of club activity information is sent via the e-group. And by the way, it is free to join!!!

***NEW MEMBERS:***
The Peoria Astronomical Society welcomes new members:
Paul Jackson II, Morton
Lori Britain, Peoria
Aidan Jones, Chillicothe

***SAYING GOODBYE:*** We acknowledge the recent passing of a former PAS member, Ken Rhodes. He was a member for many years.

***PRESIDENT'S MESSAGE:***
From Dan Son

Well it's beginning to look like spring finally. I have enjoyed a few night out with the stars and the planets in the early morning sky. You will see in this issue of the Starlite that we are checking the lawn mower, get the cobwebs swept out of Northmoor in anticipation of warm days and cloud free Saturday nights.

Have you checked out your scope, made sure it's ready for that 1st night out and no surprises. Keep your eyes and ears at the ready, we may be having a Messier Marathon in March at Jubilee. Are you part of the email group for PAS, if not email Mike Frasca, his email is listed in this Starlite for the email group. We are always looking for more volunteers, needed to join Jubilee and learn to use the 24" scope or join us at Northmoor and host a Saturday night. Experience is not necessary, we are happy to teach you the skills needed to master everything.

***POSITIONS OPEN:***

**Secretary** for Peoria Astonomical Society: This position is open for any member who would like to be an active part of the Board of Directors. The job entails taking minutes at the Board meetings (3rd Wed. of each month) and emailing copies to Board members for use at the meetings. If you are available, interested and willing to fill the position, please contact Dan Son.

**Web Page Designer/Maintainer**: We at PAS are in need of anyone who can help maintain our web site astronomical.org. We need help getting our monthly meeting information put on the site and taken down when the meeting has passed. I am sure there are a few other items that need updating, but we are not looking for anyone to totally redesign just maintenance. If you, or anyone one you may know, can help please call me. It is the help like this we need at Peoria Astronomical Society to make our group a better group. Thanks.

Dan Son
309-224-9150

***UPCOMING PROGRAMS:*** From Sheldon Schafer

| | |
|---|---|
| March 2, 2016 | Astronomy Video "Film Festival" – Members' Favorites from Youtube and other internet sources favorite links submitted by PAS members |
| April 6, 2016 | The Dark Energy Survey: Michael Johnson and Margaret Gelman National Center for Supercomputing Applications & Champaign/ Urbana Astronomical Society Pres.& VP |
| May 4, 2016 | The March 9, 2016 Indonesian Eclipse Sheldon Schafer (I have a cruise scheduled to see it) |

**March 2 and April 6, 2016 meetings**

The March 2nd meeting will feature an Astronomical Film Festival of Short Video Clips from the internet (each 1 – 7 minutes). Members of the society have shared their favorite links to Youtube, Vimeo and other internet sources, and these will be screened on the planetarium dome.

Michael Johnson and Margaret Gelman will be the featured speakers at the Peoria Astronomical Society's monthly meeting, April 6th at 7:30 p.m. at the Peoria Riverfront Museum. Johnson and Gelman are members of the Dark Energy Survey Data Management Team at the National Center for Supercomputing Applications in Champaign Illinois. The title of their talk is "The Dark Energy Survey" The Dark Energy Survey is a five-year effort to map a survey area in the Southern sky in unprecedented detail. The information processed and extracted at the NCSA from observations taken in Chile will allow the rest of the astronomical community to understand better the nature of dark energy and dark matter.

Meetings of the Peoria Astronomical Society are held in the Dome Planetarium at the Peoria Riverfront Museum. Meetings are scheduled the first Wednesday of each month, October through May, at 7:30 p.m. They are free and open to the public. Free parking is available in the museum's parking garage.

For further information, contact PAS Program Chair Sheldon Schafer at 309.682.1876.

PROGRAM *FOLLOWUP:*

***Fifty years of Observing – Starting in Peoria,*** **Bart Benjamin, Bloomingdale, Illinois**

**Astronomical League Awards database**

The Astronomical League maintains a database of the recipients of its many awards, including the Messier Program certificate that I referenced in my talk. The URL for this database is **www.astroleague.org/award/search**. Note: If you leave the name field blank and enter only your astronomy club, you can see all club recipients for that award.

The Astronomical League's complete list of its many observing programs can be found at **www.astroleague.org/al/obsclubs/AlphabeticObservingClubs.html**.

**Solar Eclipses**

The **August 21, 2017** total solar eclipse, which spans the United States from Oregon to South Carolina (including southern Illinois), has been called the Great American Eclipse. The website at **www.greatamericaneclipse.com/eclipse-2017/** is arguably the best online resource for the 2017 total solar eclipse. Fred Espenak's site for the same can be found at **eclipse.gsfc.nasa.gov/SEpath/SEpath2001/SE2017Aug21Tpath.html**.

**Lunar Eclipses**

The next total lunar eclipse visible from the central United States occurs on **January 20-21, 2019** from 9:34 p.m. until 12:51 a.m. CST. Fred Espenak's NASA page for the 2019 lunar eclipse is found at **eclipse.gsfc.nasa.gov/LEplot/LEplot2001/LE2019Jan21T.pdf**. Another resource called Hermit Eclipse also has a summary page for the 2019 total lunar eclipse, which can be found at **moonblink.info/Eclipse/eclipse/2019_01_21**.

**Occultations**

In my talk, after defining lunar occultations and grazing lunar occultations, I mentioned the 1962 Saturn occultation, which was photographed by the PAS's own Jackson brothers and appeared in the November issue of *Sky & Telescope* that year, and the July 17, 1974 pre-dawn occultation of Venus that four of us PAS members observed from Northmoor Observatory.

The RASC Observer's Handbook annually provides a list of the brightest objects occulted by the Moon. In its 2016 edition, turn to page 167 for occultations visible from Chicago. Event times usually vary by only a few minutes for Peoria. For more detailed predictions and observing resources, Kansas City observer Robert Sandy provides a list of 2016 total occultation predictions at **www.lunar-occultations.com/bobgraze/index.html**. You can download total occultation predictions (text files in zip file) for either Chicago or St. Louis.

For those who wish to fully embrace the occultation branch of astronomy, the International Occultation Timing Association (IOTA) (**occultations.org**) is the definitive resource for more advanced occultation observing projects. IOTA offers two free e-books — an 11-page e-book titled Introduction to Occultations that covers the basics of lunar occultations at **www.poyntsource.com/IOTAmanual/INTRODUCTION_TO_OCCULTATIONS.pdf** and the full-length 379-page e-book titled Chasing the Shadow: The IOTA Occultation Observer's Manual at **www.poyntsource.com/IOTAmanual/IOTA_Observers_Manual_all_pages.pdf**.

IOTA's Lunar Occultations Page has numerous other lunar occultation web resources, which can be found at **lunar-occultations.com/iota/iotandx.htm**. IOTA membership information ($15 a year) can be found at **occultations.org/about-us/iota-membership/**.

**2016 Occultations of Aldebaran**

The brightest star that can ever be occulted by the moon is Alpha Tauri (Aldebaran). The year 2015 began a series of occultations that will continue until mid-2018. In 2016, observers in Illinois can observe four occultations of Aldebaran by the Moon, as follows:
**January 19**: Disappearance behind the Moon's dark limb at 7:58:22 pm CST. Moon is 82% lit and 63 degrees above the horizon.
**April 10**: Disappearance behind the Moon's dark limb at 5:21:33 pm CDT. Moon is 17% lit and 60 degrees above the horizon. It is still daylight; Sun is 22 degrees up.
**October 19**: Reappearance from behind the Moon's dark limb at 1:18:18 am CDT. Moon is 86% lit and 51 degrees above the horizon.
**December 12**: Disappearance behind the Moon's dark limb at 9:44:23 pm CST. Moon is 99% lit and 60 degrees above the horizon.

The predicted event times above are calculated for the Peoria Riverfront Museum's location using data from the *2016 Observer's Handbook*. Event times should be within a few seconds for observers throughout the Peoria area.

**Transits of the Sun**

In my talk, I described the past transits of June 8, 2004 (Venus); November 8, 2006 (Mercury); and June 5, 2012 (Venus).

**Monday, May 9, 2016** will feature the first Transit of Mercury since 2006. In the central United States, the entire event will be visible, but it will start early in the morning with the Sun only 5 degrees above the horizon. Observers who successfully observed the 2004 Transit of Venus would be wise to return to their same observing site to see the start of this year's Mercury transit low in the same northeastern sky 12 years later. Its event times are as follows:

First Contact = 6:12:19 am CDT
Second Contact = 6:15:31
Mid-transit = 9:57:26 (Mercury closest to the Sun's center)
Third Contact = 1:39:14 p.m.
Fourth Contact = 1:42:26

**Mutual Occultations of Planets**

As I mentioned in my talk, we unfortunately live in a bad era for observing one of the rarest of astronomical events — one planet passing in front of another — as described by an article in the March, 1979 issue of *Sky & Telescope.* Armchair observers today can use computer sky simulation programs to re-create the occultation (or transit) of Venus over Jupiter on January 3, 1818, the transit of Venus over Jupiter on November 22, 2065, and the very close conjunction of Mercury and Saturn on September 15, 2037, as follows:

| DATE (UNIVERSAL TIME) | TIME (UT) | OBSERVING LOCATION |
|---|---|---|
| January 3, 1818 | 21:50 UT | Okinawa, Japan |
| November 22, 2065 | 12:43 UT | Indianapolis, Indiana USA |
| September 15, 2037 | 21:28 UT | Beijing, China |

**Minor Planet Discovery and Nomenclature**

In my talk, I described former Chicago Astronomical Society member Bert Stevens, who now lives in New Mexico and has devoted many nights to the search for minor planets and earth-crossing asteroids. He has discovered at least 78 minor planet from his Desert Moon Observatory, whose website is at **www.morning-twilight.com/dm448/**. Other websites related to minor planets and how they are named are as follows:

IAU Minor Planet Center: **www.minorplanetcenter.net**
Guide to Minor Planet Astrometry: **www.minorplanetcenter.net/iau/info/Astrometry.html#name**
IAU Committee on Small Body Nomenclature: **www.ss.astro.umd.edu/IAU/csbn/**
Minor Planet/Comet Ephemeris Service: **www.minorplanetcenter.net/iau/MPEph/MPEph.html**
Minor Planet 128065 Bartbenjamin: **ssd.jpl.nasa.gov/sbdb.cgi?sstr=128065**
**Please send inquiries or comments to Bart Benjamin at bart22benjamin@gmail.com.**

## ***OBSERVING***

From: Gary Bussman

We will once again host the ICC Star Party at Jubilee Obervatory. The dates are: Friday, April 8th, with the rain/cloud dates as 9th, 29th, 30th, and May 6th and 7th. You never know in the spring. Weather is always iffy. Brian Bill will send a message thru the e-group confirming time and date and also canceling if weather is bad. For those of you who can help out with your scopes, that would be appreciated. This is always a fun event! We also have some dates schedule for this summer star party's for the PAS membership. Those dates are scheduled around the new moon weekends. They are Saturday, June 4th, July 2nd, and August 6th. More to come in the upcoming months! See you when the weather gets good!

## ***ITEMS FOR SALE:***

***For Sale: 17-inch dobsonian telescope, featured at PAS program. Mirror was evaluated by expert telescope maker, Dan Joyce, as above average workmanship. Renewed from original John Dobson configuration from 250 pounds to about 125 pounds. Hand-crafted by local weld shop and cabinet maker shop. Signed by both. Collapses to fit in station wagon/truck. $2100. Rich Tennis 309 467-3597 mobile 309 645-2433;***

***FROM STARLITES PAST***

By John Barra

50 Years Ago, Spring Starlite, 1966

"Within five years there will be two pairs of American footprints in the dust of the lunar surface. These footprints will be dramatic representations of untold amounts of money, and of a dream as old as mankind itself. But is this the culminating effort or is this the beginning of man's utilization of the universe?"

*That question is still up for grabs. While that feat was accomplished a year-and-a-half earlier than predicted, it was 47 years since we landed on the moon. Mars still seems a far distance away.*

"At present, NASA is conducting feasibility studies for a telescope in the 100-inch aperture, 20 foot focal length. This telescope would be monitored by man but not operated by man….Within 15 to 20 years, this telescope would orbited…."

*Well, it took a few years longer, but even now it won't be reserviced. However, I am reading a new sci-fi book in which one of our Mars rovers found humanlike fossils and s symbol from some past civilization. In it, we our planning a trip to Mars within a year. With a new type of engine of course."*

25 Years Ago, Spring Starlite, 1991

"There have been lots of things happening in the Society since the last Starlite came out. First of all, I am pleased to report that the new electronics package for the 24" telescope has been installed and is working perfectly. Barry Redendo has done a fantastic job in designing and building this."

*We sure to miss Barry. What a great guy! We sure could have used his electronics' expertise lately. And his friendship!*

"Don Hill is teaching another constellation class for the Peoria Park District in April. These classes have become a regular offer5ing with one being held each spring and each fall. They have always been well attended, with the offered registration of 20 usually being filled."

*I remember attending one when I first joined the club. One can't stress that the most important first lesson in astronomy in learning how to find objects in the sky with a telescope is to learn the constellations and the bright stars in them.*

***Submission of photos / article content for the website:***

If you have taken a nice photo that you would like to display on the PAS website, please send these to hooveje@gmail.com. Photos can be anything relating to astronomy. Maybe you snapped a good photo from a star party, club event, personal viewing, etc. Any astro-photography is encouraged! Also, if you have educational content, tips, techniques, lessons learned, or how-to articles with photos, we encourage that material also for the website. Just send me your photos or content, and I can review and post it to the website. Thanks! –Jesse Hoover

***The Caterpillar Matching Gifts Program***

From Brian Hakes

As of July 1, 2012 the Cat matching gifts program changed. Employees/Retirees are asked to submit matching gift forms electronically via the Caterpillar Foundation website, www.caterpillar.com/foundation.

The process is easy. Once you made your gift to the PAS you can go on line to the Cat Foundation website and complete the electronic form, there is no paper involved. Once the form is registered with the foundation they will notify the PAS and the treasurer will then verify the gift has been received. Because there will be no mailings, the turnaround time for the whole process will be negligible. This is especially advantageous at the end of the calendar (tax) year.

This is an excellent way to support the PAS. If you can, please participate in this generous program. This is a great way to help the society and the promotion of astronomy in the greater Peoria area.

***PAS HISTORY:***

From Rich Tennis/Don Hill

"Early History of Peoria's Astronomy Club"

In the 1930's Dean Gault, who taught astronomy at Bradley, organized an Astronomy Club. It was part of the Peoria Academy of Science. Mostly Bradley students were in the club. It was Dean who encouraged Bradley to get Springfield Watch telescope. The plan was to build an observatory on the land where Agricultural Research Center now stands. But, after getting the telescope, Bradley could find no backer to build the observatory.

By 1942 the war had students interested in war effort. This left the Club with not enough members. So the club disbanded.

In late 1948 and 1949, Vernon Erikson and Frank Clarke decided to renew the Astronomy Club. They took out ads on where meetings were (mostly people's homes and setup telescope parties, mostly downtown).

At one of the star parties, Mrs. Robinson got hooked on our club after seeing Saturn. She, in-turn, encouraged Van Zandt to become a member. Van, in turn, brought other Caterpillar engineers and Unitarian Universalist members to join our club.

By fall of 1952, when my brother and I joined the Club, we were part of the Academy of Science. All the Academy of Science, at that time, met at the Glen Oak Pavilion. We had 37 members. There was also a junior group meeting at Loucks-Edison School. They disbanded after no one would replace George Nelson.

After Van Zandt heard about Bradley's scope from Dean Gault, Van's effort to get scope, park land and money to build Northmoor Observatory in a short two years' time.

***BOARD MINUTES:***

.

.

***Five Reasons to Host at NorthMoor:***

From Nick Johnson, Northmoor Director

One of the key functions of our Peoria Astronomical Society is the long standing community service provided through our Saturday night public viewing sessions at NorthMoor. We have now provided the Peoria community with the opportunity to view the night sky for 60 consecutive years … a truly remarkable feat. Within our membership, we have a group of NorthMoor keyholders and other volunteer hosts who commit to hosting on Saturday nights in the months of May through October. Unfortunately, our number of hosts has decreased over the last few years, causing us to cut 4 Saturdays from our viewing schedule. We are always looking for members who would like to try hosting and possibly join our group of core hosts.

As the 2016 viewing season is quickly coming upon us, I would like to take this opportunity to propose to those who have not hosted the benefits for doing so. Listed below are 5 reasons you should consider volunteering to host.

1. Self reward through community service.

It is common to hear about the virtues and rewards of any type of community service. In the case of NorthMoor hosting, the rewards of serving often exceed the norm. First, you are frequently dealing with youth and in doing so, have an opportunity to plant a seed of curiosity about the universe. In other words, you can do your part to shape the future behavior of some of the young guests in the direction of science and astronomy. Secondly, you definitely receive instant gratification through the reaction of awestruck visitors of all ages when first viewing the planets or the moon through the telescope. It is a good feeling.

2. Learning from other hosts.

Our host team possesses a vast knowledge of the night sky and the physics that control our solar system and universe. You can acquire a lot of information just by listening to them talk to our visitors or answer their questions. They are also open to hearing your questions and helping you along with your journey into astronomy. Feel free to ask.

3. Getting to know other PAS members.

By working on a hosting team with other PAS members, you get to know your team members. Likewise, they get to know you. The more you host, the more members with whom you bond. This networking carries over to other PAS activities such as star parties and winter meetings. In other words, you are building friends who can help you develop your astronomy knowledge or provide advice for any equipment problems you may have.

4. It's fun!

Many of our visitors come with an interest in astronomy and the night sky. They are often eager to talk to someone about it. In those discussions, you have an opportunity to share what you know with them. You will also get to interact with visitors of all ages … the younger visitors who come with their Treasure Hunt books, college students, parents, and our more senior guests. You will be surprised that find that it is difficult to determine which of these age groups enjoys the viewing experience more. And as an added bonus, you get to take a look through our 9" refractor at whatever we are viewing on that evening.

5. Pathway to Keyholder status.

Becoming a NorthMoor keyholder is a huge benefit of your PAS membership. Keyholder status allows you to use the observatory and telescope anytime you desire. Our keyholders frequently hold private viewing sessions for friends and family. Chances are good that you will never own a planetary telescope better than the one you can use as your own at NorthMoor. Keyholder status comes from training on both the telescope and observatory operations. You begin building that knowledge through hosting at NorthMoor. You must first become a member of the hosting team and accept assignments for at least 3 Saturdays during a viewing season. During your second season of hosting, you become eligible to request keyholder status and training.

So, there are five reasons to consider becoming a NorthMoor host. I hope they are meaningful to you. If you would like to join the host team or would just like to try hosting to see what it is like, please contact me at johnsnl@comcast.net. You do not have to have any knowledge of our telescope or observatory operations to begin hosting. The only requirement is an interest in astronomy and a desire to show people the wonders of the night sky.