SEPTEMBER 2018

UPCOMING EVENTS

Wednesday, September 5 - Regular PAC meeting @ 6:00 PM in the Founders Suite, Prescott Public Library.

NOTE: The location of the monthly regular meetings has changed to the Founders Suite, Prescott Public Library for the remainder of 2018

Saturday, September 8 - PAC Annual Picnic @ 12:00 noon at Watson Lake Large Ramada. A map of Watson Lake is located in the appendix, showing the location of the Large Ramada.

Saturday, September 8 - Starry Nights @ 7:30 PM at Embry-Riddle Aeronautical University. Sign up at the September 5 regular meeting.

Wednesday, September 19 - Board meeting @ 6:00 PM in the Elsea Conference Room at the Prescott Public Library.

Thursday, September 20 - Third Thursday Presentation@ 6:00 PM in the Founder’s Suite, Prescott Public Library. Sarah Lamm, graduate student, Northern Arizona University, will present “The Curiosity Rover at Gale Crater, Mars: Deciphering the Environmental History of the Red Planet”. The Curiosity rover has spent more than half a decade traversing Gale Crater, a large, sediment-filled crater. Scientists have identified an episode of geologic time when Gale crater was filled with a large lake fed by local streams. The science team continues to interpret the evolution of Mars’ environment over time in an effort to decipher why Mars evolved from a much wetter environment to the cold and dry desert that it is today. Ms. Lamm will discuss how the Curiosity rover has revolutionized our understanding of Martian environmental history, Curiosity’s future exploration goals, and the future of NASA’s Mars exploration program

Friday, September 28 - Star party @ 7:15 PM at Highgate Senior Living in the Prescott Lakes subdivision. Sign up at the September 5 regular meeting.
REGULAR MONTHLY MEETING VENUE CHANGE FOR 2018

Beginning with the August General meeting of the Prescott Astronomy Club and continuing on through the November meeting, the meetings will be held at the Prescott Public Library in the Founders Suite. The start time is moved to 6 PM. The business portion of the meeting will take the first 20 minutes, then a break, and then the main topic will follow until 7:25 PM. We will wrap up with final announcements and be out of the building no later than 7:55 PM.

The reason for the change is two-fold. First, Embry-Riddle wants to charge us more for a room than does the library. Second, the library closes at 8 PM instead of 9 PM like it used to the last time we were meeting at the library, and we would have to start at 5:30 PM in order to have a full two hour meetings. The Board agreed to limit the meeting time to 1.5 hours; that meant that there will only be a main presentation—no short topics.

We are looking at other venues for our meeting that will allow for a start time of 6:30 PM for two hours and hope to have this resolved for 2019.

PAC OUTREACH HOURS
By Dennis Eaton, Director at Large, Member Relations, coldoonetri@gmail.com

Many members have participated in the PAC Outreach Program. I’m sure you will agree that sharing the night sky with visitors is very enjoyable. The club accumulates your hours as best as we can. But, we also realize that some data may be missed; especially for those events that are not sponsored by the club. So, if you should attend an event with your equipment and want that data to be included in the club’s records, send an e-mail to the address above. Include the location and/or name of the event, start and stop times, and number of visitors you spoke to.

13.1” ODYSSEY 1 DOBSONIAN AND ACCESSORIES - RAFFLE

The Prescott Astronomy Club is offering a raffle of a 13.1” Odyssey 1 Dobsonian telescope and accessories. Raffle tickets will be sold at the general meetings for $5.00 each at the July 5 and August 1 regular meetings. Anyone who is interested in seeing the telescope can contact Steve Eubanks (steve@advancedtelescope.com or (928) 515-3017)

13.1” Odyssey 1 Dobsonian Reflector
1 - Telrad finder
1 - Televue Wide Field 15mm 1 1/4” eyepiece
1 - Meade Super Plossl 32mm 1 1/4” eyepiece
1 - Televue 2.5x Barlow 1 1/4”
1 – Eyepiece extension tube 1 1/4”
4 – 1 1/4” Parks filters: #23A, #58, #82A, #15
1 – Adjustable focus reticle eyepiece

This is a red tube Dobsonian-type reflecting telescope. It was made commercially in the 1980s as part of the "Dobsonian revolution" in amateur astronomy. The tube and mount are in good shape, no nick or dents. The mirror may need cleaning.
FOR SALE - MEADE 12 ½’ STARFINDER DOBSONIAN

The Prescott Astronomy Club is offering for sale a Meade 12 ½-inch Starfinder Dobsonian telescope and accessories. Members who wish to buy it will have until August 31, 2018 to submit a sealed bid to John Baesemann (7295 N. Viewscape Drive, Prescott Valley, AZ 86315).

Meade 12 ½-inch Starfinder Dobsonian Reflector

Right angle 8 x 50 finder scope with adjustable focus 1 ¼” reticle eyepiece

1 – 1 ¼” 26mm Plossl eyepiece

The base has trim pieces missing and there are some nicks on the tube.

The minimum bid price to members is $200.00. Anyone who is interested in seeing the telescope can contact John Baesemann (jbaesemann@q.com or 928-642-8004) for a mutually convenient time.
If you’re a fan of meteor showers, August is going to be an exciting month! The Perseid meteor shower is the best of the year, and in 2018, the peak viewing time for the shower is on a dark, moonless night—perfect for spotting meteors.

The best time to look for meteors during this year’s Perseid shower is at the peak, from 4 p.m. EDT on Aug. 12 until 4 a.m. EDT on the Aug. 13. Because the new Moon falls on the peak night, the days before and after the peak will also provide very dark skies for viewing meteors. On the days surrounding the peak, the best time to view the showers is from a few hours after twilight until dawn.

Meteors come from leftover comet particles and bits from broken asteroids. When comets come around the Sun, they leave a dusty trail behind them. Every year Earth passes through these debris trails, which allows the bits to collide with our atmosphere and disintegrate to create fiery and colorful streaks in the sky—called meteors.

The comet that creates the Perseid meteor shower—a comet called Swift-Tuttle—has a very wide trail of cometary dust. It’s so wide that it takes Earth more than three weeks to plow all the way through. Because of this wide trail, the Perseids have a longer peak viewing window than many other meteor showers throughout the year.

In fact, this year you should be able to see some meteors from July 17 to Aug. 24. The rates of meteors will increase during the weeks before Aug. 12 and decrease after Aug. 13. Observers should be able to see between 60 and 70 meteors per hour at the shower’s peak.

The Perseids appear to radiate from the constellation Perseus, which is where we get the name for this shower. Perseus is visible in the northern sky soon after sunset this time of year. Observers in mid-northern latitudes will have the best views.

However, you don’t have to look directly at the constellation Perseus to see meteors. You can look anywhere you want to; 90 degrees left or right of Perseus, or even directly overhead, are all good choices.

While you’re watching the sky for meteors this month, you’ll also see a parade of the planets Venus, Mars, Jupiter and Saturn—and the Milky Way also continues to grace the evening sky. In next month’s article, we’ll take a late summer stroll through the Milky Way. No telescope or binoculars required!

Catch up on all of NASA’s current—and future—missions at www.nasa.gov
The Perseid meteor showers appear to radiate from the constellation Perseus. Perseus is visible in the northern sky soon after sunset this time of year. Credit: NASA/JPL-Caltech

LET'S PARTY FOR SEPTEMBER
Astronomical objects for public (and private) star parties.
by Fulton Wright, Jr.

Flashy, deep-sky objects, visible in the middle of the month, at the end of astronomical twilight, 8:00 PM in March, (when it really gets dark). This list customized for Prescott, Arizona, should work well anywhere in the state, and be usable anywhere in the old 48 states.
**Double Stars (2 or 3 stars, close together)**

Beta Cygni (Albireo, SAO 87301)
Mag: 3.4 (yellow) & 4.7 (blue), Sep: 35 arc-sec
R.A.: 19hr 31min, Dec.: +27deg 58'

Zeta Ursae Majoris (Mizar, SAO 28738)
Mag: 2.2 & 3.9, Sep: 14 arc-sec
R.A.: 13hr 24min, Dec.: +54deg 56'

Epsilon Lyrae (Double-Double, SAO 67310 & 67315)
Mag: 5.0 & 6.1, 5.3 & 5.4, Sep: 2 arc-sec, 2.5 arc-sec
R.A.: 18hr 44min, Dec.: +39deg 40'

70 Ophiuchus (SAO 123107)
Mag: 4.0, 6.0, Sep: 7 arc-sec
R.A.: 18hrs 06min, Dec.: +02deg 30'

**Open Clusters (about 50 bright stars)**

Collinder 399 (Coat-hanger)
Mag: 3.6, Size: 90 arc-min
R.A.: 19hr 25min, Dec.: +20deg 11'

IC 4665
Mag: 4.2, Size: 70 arc-min
R.A.: 17hr 46min, Dec.: +05deg 43'

NGC 6633 (use wide field)
Mag: 4.6, Size: 30 arc-min
R.A.: 18hr 27min, Dec.: +06deg 30'

M 23 (NGC 6494, use wide field)
Mag: 5.5, Size: 29 arc-min
R.A.: 17hr 58min, Dec.: -18deg 59'

**Globular Clusters (about 200,000 dim stars) (this is not a good season for globulars.)**

M 5 (NGC 5904)
Mag: 5.6, Size: 3.5 arc-min
R.A.: 15hr 19min, Dec.: +02deg 05'

M 13 (Hercules Cluster, NGC 6205)
Mag: 5.8, Size: 20 arc-min
R.A.: 16hrs 42min, Dec.: +36deg 28'
M 22 (NGC 6656)
Mag: 5.1, Size: 32 arc-min
R.A.: 18hr 38min, Dec.: -23deg 53'

Galaxies (about 200,000,000 very dim and distant stars)

M 31, M 32, M 110 (NGC 224, Andromeda Galaxy), NGC 221, NGC 205
Mag: 3.3, 7.9, 8.1; Size: 180 x 70, 8 x 5, 16 x 10 arc-min
R.A.: 0hr 44min, Dec.: +41deg 22'

M 51 (Whirlpool Galaxy, NGC 5194)
Mag: 8.0, Size: 14 x 12 arc-min
R.A.: 13hrs 30min, Dec.: +47deg 12'

Bright/Diffuse Nebulae (Gas and dust lit by a nearby star.)

M 17 (Omega Nebula, Swan Nebula, NGC 6618)
Mag: 6.0, Size: 46 x 37 arc-min
R.A.: 18hr 22min
, Dec.: -16deg 10'

M 8 (Lagoon Nebula, NGC 6523)
Mag: 6.0, Size: 90 x 40 arc-min
R.A.: 18hr 05min, Dec.: -24deg 23'

M 20 (Trifid Nebula, NGC 6514)
Mag: 6.3, Size: 29 x 27 arc-min
R.A.: 18hr 04min, Dec.: -23deg 02'

Planetary Nebulae (gas shell from exploding star, looks like Uranus in telescope)

M 57 (NGC 6720, Ring Nebula)
Mag: 8.8, Size 1.4 x 1.1 arc-min
R.A.: 18hr 54min, Dec.: +33deg 02'

NGC 6826 (Caldwell 15, Blinking Planetary Nebula)
Mag: 8.9, Size: 2.1 arc-min
R.A.: 19hr 45min, Dec.: +50deg 31'

NGC 6543 (Cat's Eye Nebula, Caldwell 6)
Mag: 8.1, Size: 0.4 arc-min
R.A.: 17hrs 59min, Dec.: +66deg 38'

For additional information, see: www.dso-browser.com
LET’S TALK ABOUT THE MOON
By John Carter, Sr.

Calling all members! Let’s have an open discussion on the Moon. The discussion can include:

1) Pictures with a DSLR and a tripod, single shot
2) Observing on vacation
3) Sharing the Moon with others
4) Get your birding binoculars out
5) Wherever the discussion goes

We’ll be asking for contributions during the short topic session at each meeting for the next few months. If you have pictures, bring them on a thumb drive to display on the big screen. For just talking about your experiences, the hand held mic will be passed around.

NEED TO KNOW - ASK A MEMBER

A new 15-minute segment is being added to the regular general meetings where members can have their ‘burning’ questions answered by other knowledgeable members. If you have an astronomy related question you would like explained, submit the question to Jeff Stillman (jstillman50@cableone.net). You can also bring up the question at the meeting.

BOOKS AND MAGAZINES

Over the years astronomy books have been donated to PAC. Boxes of these books will be available at the regular meetings. For a donation to PAC of $1 per book, anyone can have a book. Books that are not purchased at a regular meeting will be available at the following Third Thursday programs. Any remaining unsold books will be donated to the Friends of the Prescott Public Library. We also have copies of past Sky and Telescope magazine. These will be available to any member wishing to take them. Unclaimed magazines will be recycled.
FOR SALE

Please visit the Classified Ads section of the club website to view the items posted there for sale:

http://prescottastronomyclub.org/classified-ads/

New items are added now and then, so don’t miss out on something that you would like to get for yourself...or a friend.

PAC MENTORS

If you need advice on the purchase of astronomy equipment, setting up equipment, astrophotography, etc., contact a PAC mentor.

   Jeff Stillman - Astrophotography - (928) 379-7088
   David Viscio - General - (928) 775-2918
   Greg Lutes - Visual Observing - (928) 445-4430
   Joel Cohen - Beginner’s Astronomy: Selecting & Using a Telescope - (856) 889-6496
   Bill McDonald - Video Observing
   John Carter - Video Observing - (928) 458-0570

OBSERVING LISTS

Observing lists are available in PDF format on the PAC website to provide guidance and goals for visual and astrophotography programs.

   Astroleague Lunar 100
   Bright Nebulae
   Dunlop 100
   Globular Clusters
   Herschel II
   Messier
   Planet Maps
   Royal Astronomical Society of Canada Finest NGC
   Saguaro Astronomy Club Best NGC

   Binocular Showpieces
   Caldwell
   Face-On Spiral Galaxies
   Herschel 400
   Hidden Treasures
   Open Clusters
   Planetary Nebulae
   S&T Lunar 100
PAC WEBSITE & YAHOO GROUPS

Website: http://www.prescottastronomyclub.org
E-mail: pacinfo@prescottastronomyclub.org
Astrophotography special interest group:
https://groups.yahoo.com/neo/groups/pacastrophotography/info

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At sunset on Monday, August 6, four planets could be seen at the same time from west to east: Venus, Jupiter, Saturn, Mars. Images were obtained with a Celestron 9.25” EdgeHD SCT plus a 1.6x Scopetronix MaxPower amplifier (3,759mm FL, f/16) and Canon EOS 60Da in 640x480 Crop video mode. Five-minute videos at 60 frames per second were collected. 6000 frames were stacked in Autostakkert!2; the stacked image was wavelet processed with Registax 6. Final image optimization was performed in Adobe Photoshop CS6. Note: to Jupiter’s right is its volcano moon Io.