Volume 30 Issue 10

October 2016

The Observer

East Valley Astronomy Club

All-Arizona Star Party Location

Upcoming Events:

Deep Sky Party - October 1

National Astronomy Day - October 8

Public Star Party - October 14

EVAC Monthly Meeting - October 21

Local Star Party - October 22

All Arizona Star Party - October 28-29

Check out all of the upcoming club events in the Calendars on page 9.

Inside this Issue:

EVAC This Month

by Don Wrigley

We have a lot going on this month, so I'll get right to it. Saturday, Oct. 8th is Astronomy Day and we plan to have the observatory (GRCO) open from 10:00 AM to 2:00 PM for public solar viewing. If you are free that day and would like to help out with crowd control, or by bringing your own telescope, I'm sure we could use your help.

This month also marks the 10th Anniversary of the opening of GRCO and we will have a cake at our monthly meeting to commemorate the event. We may also have a short power point presentation depicting the building and operation of the observatory. We will also be taking nominations for officer and board positions for the upcoming election in November.

Don't forget that our umteenth All Arizona Star Party (AASP) will be held on the final week of October this year on the evenings of October 28 and 29 at the Antennas site. More details will be provided at the club meeting. If you have never attended this event, you should seriously consider going. There will be a Saturday buffet, a drawing with lots of great prizes, a midnight snack with hot coffee, tea or cocoa, and some of the darkest skies this side of Flagstaff! What

EVAC This Month

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better way to spend Halloween weekend!

Don Wrigley

If It's Clear…

by Fulton Wright, Jr. Prescott Astronomy Club

October 2016

Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. All times are Mountain Standard Time.

This is a good month to find Uranus and Neptune. See Sky & Telescope, October 2016, p. 50 for an article about finding them.

On Thursday, October 6, about 7:08 PM, the dark limb of the Moon occults the globular cluster, M 9. The occultation takes about 8 minutes. The reappearance occurs at the bright limb at about 8:25 PM and should be much harder to observe. Use a big telescope and high power for best results.

On Saturday, October 8, the Moon is at first quarter phase and sets at 11:37 PM. The first quarter phase occurs at 9:34 PM so the Moon should look half illuminated at that time.

On Tuesday, October 11, at 5:37 AM, Mercury and Jupiter rise at the same time, less than 1 degree apart. The Sun rises an hour later.

On Wednesday, October 12, in the evening, it would be a good time to observe the Moon crater, Aristarchus. This brightest spot on the Moon, has both a favorable libration (that part of the Moon is tipped toward us) and a favorable terminator placement (near the terminator but in the sunlit part).

On Saturday, October 15, at 5:59 PM, the full Moon rises (4 minutes after Sunset), spoiling any chance of hunting for faint fuzzies for the night. The phase officially occurs at 9:24 PM and is quite close to the earth's shadow at that time, so the Moon should be evenly illuminated with no craters being shadowed.

On Sunday, October 16, in the evening, you can easily observe the variable star, Algol. When it gets dark enough to find the star, it will be at its minimum, magnitude 3.4. Gradually during the night it will brighten to magnitude 2.1.

On Tuesday, October 18, at 10:18 PM, the bright limb of the Moon occults Aldebaran. The star reappears at 10:41 PM on the dark limb.

On Saturday, October 22, the Moon is at third quarter phase and rises at 12:09 AM (Sunday).

On Thursday, October 27, about 6:30 PM, you can see Venus pass between Saturn and Antares, much as Mars did in the past but much lower in the sky. Look very low above the Southwest horizon for the trio.

On Sunday, October 30, it is new Moon and you have all night to hunt for faint fuzzies.

The Backyard Astronomer

by Bill Dellinges (October 2016)

Autumn Goodies for Binoculars

Anytime of the year there will be objects in the night sky best seen with binoculars - autumn is no exception. In theory, every stargazer knows the value of these wonderful instruments for their ability to scoop up large chunks of sky, assist in tracking down elusive targets or comet viewing. But what do you see at star parties? Observers peering into telescopes with one eye. Not a binocular in sight. For shame. These poor souls are doomed to view astronomical objects in a relatively restricted field of view of perhaps only a degree or two at best. And with only one eye! Millions of years of evolution have provided us with two eyes and it's with two eyes that the brain wants to receive information to best produce images. A two eyed view of anything is far superior to that of one eye. When Hans Lippershey invented the telescope in 1608 and tried selling it to his government, the first thing they said after noting it was a pretty cool device, was, "Any chance you can make one these with two eyepieces?" [Stargazer, the Life and Times of the Telescope, P.61. Fred Watson, 2004]

You can try using a binoviewer but they produce even smaller fields. So dust off those binoculars and let's put them to work. They're probably photon starved. One more thing, while you can hand hold binoculars up to powers of about 10x, you'll get much more enjoyment out of them if they're tripod mounted (even at their lower powers). I will use 8x50 and 10x70's to peruse the larger autumn splendors on display these evenings. These mid-sized binoculars are popular and likely to be owned by many amateur astronomers. Let us begin our journey.

M31, the Andromeda Galaxy: M31 is our nearest major galactic neighbor about 2.5 million light years away. It can be seen with the naked eye in a dark sky as a small hazy blob in the constellation of Andromeda. Its elongated form covers about 3 degrees of sky. Some wide field scopes can accommodate this monster but most telescopes can't. So the 7 degree field of the Swarovski 8x50 renders a nice overall view. They do not pick out M32 and NGC 205, M31's two satellite galaxies. But the Fujinon 10x70's did, and the galaxy appeared a bit brighter (as you'd expect). This time of year M31 is overhead so you'll need to view it either lying on a lawn chair or by tilting your tripod mounted binoculars way back on two legs as you view straight up – an old trick of the trade

Perseus OB Assocation (Mel 20): Looking towards the northeast midway between the horizon and zenith is Perseus, the Hero. For reference, it's a wishbone shaped string of stars between Cassiopea and the Pleiades. Just under its brightest star, Mirphak, the naked eye perceives a slightly illuminated area. Closer examination with any sized binocular will reveal a lovely large open star cluster with about fifty members. Some of its brightest stars form a serpentine shape or gooseneck like affair. While the wider field of the 8x50's took them all in and then some, I found the 5.18 degree field of the 10x70's did a better job – they still got all the stars in and the image was brighter. Thus I recommend 10x70's on this splash of diamonds. Amazingly, many amateurs are unaware of this beauty that rivals the Pleiades. Speaking of which…

M45, the Pleiades: With the possible exception of a total solar eclipse or possibly the half moon at 50x in a quality refractor, I believe the Pleiades in 10x70 binoculars is the most spectacular sight to behold in the night sky. It never fails to leave even non-astronomically inclined folks flabbergasted with its stunning beauty. This open star cluster in Taurus is comprised of about a hundred stars 380 light years away. These young stars, about 70 million years old, represent the shoulder of the Bull and occupy about 1.5 degrees of sky. Most telescopes have difficulty fitting the cluster into their limited field. While some scopes might be able to squeeze most of M45 in their field at low power, you want more than that to fully appreciate the cluster. For any open star cluster, it's desirable to have a little extra space around the cluster to frame or define it for esthetic purposes. A general rule of thumb is to observe deep sky objects at the highest power that still allows the object to be framed reasonably in your field. Thus I found M45 most appealing with the 10x70's. They gave more magnification and light gathering power than the 8x50's, yet still left plenty of room around this stellar grouping and the binoculars field stop. Both binoculars split the dainty 8th magnitude double star, S 437 Taurii (39.4"), in the middle of the "bowl" of M45 (if you think of the Pleiades as a miniature "Little Dipper").

The Hyades in Taurus: The "V" shaped pattern of stars representing Taurus' face is actually an open star cluster about 120 light years away, making it the closest star cluster to us (excepting the Ursa Major Moving Cluster – mainly the five central stars of the Big Dipper – not much of a cluster!). The Hyades is huge, requiring the 8x50's 7 degree

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field to contain all of its stars. As mentioned above, a little extra framing space is nice, so I broke out my 7x42, eight degree binoculars to give the grouping some breathing space. That did the trick. So for this object, you'll want to use a binocular with an eight to ten degree field. The Hyades' lucida is Aldebaran, a magnitude 0.86 orange giant forty times the Sun's diameter and not a member of the cluster but a foreground star 67 light years distant. Check out the neat little arrangement of stars just west of Aldebaran, a unique looking triangle of three wide double stars. Adding 75 Taurii north of them, I create an asterism I call "Little Cepheus", a likeness to that constellation.

The Double Cluster, NGC 869 and 884, in Perseus: The Double Cluster is a glorious deep sky object for stargazers. It doesn't hurt that the clusters are also imbedded in the Milky Way, adding myriad other stars to the stellar panoply. No doubt the best view is in a telescope where its large aperture can pull in light from thousands of stars. But you'll need at least one degree of field to see both clusters - two degrees is better. If you can't swing that, revert to your binoculars. As the clusters are some 7000 light years away and a tad dim for smaller binoculars, I prefer my 20x100's on this object with their 2.5 degree field and light gathering power. The 8x50's render a beautiful view of this region, but the superior aperture of the 10x70's produces brighter star images while their 5.18 degree field is more than enough to encompass the clusters. Follow a string of 5th magnitude stars running about two degrees north from the Double Cluster to Stock 2, a large sparse open star cluster. The 8x50's can get all three in its 7 degree field. This area is a stellar wonderland where one can get joyfully lost.

32 Camelopardalis: Our last object is a double star directly south of Polaris this time of the year. At other times you can find it by drawing a line between Polaris and Beta Ursa Majoris, the brightest star in the Bowl of the Little Dipper. A little less than halfway along this line from Polaris (7 degrees) and away from the Dipper, look for a 6th magnitude star. It's the brightest star along this path. The double is comprised of white 5.3 and 5.8 magnitude stars 21.5" apart. The 8x50's barely resolved the pair. 10x70's made the chore easier. I called for backup. My 15x70's left no doubt about its duality. This equal magnitude binary gives the impression of cat's eyes looking back at you from a dark alley. The feline's eyes are 290 light years down that alley.

(Reprinted from December 2009).

First Quarter Moon on October 9 at 00:33

***Full Moon on October 16 at 00:23**

Last Quarter Moon on October 22 at 15:14

New Moon on October 30 at 13:38

Find Out What's Happening – Join EVAC-Announce List

If you would like to receive email announcements about EVAC meetings and activities please join the EVAC–Announce mailing list. Click on the link below to subscribe. Enter your full email address in the box titled User Options and press OK. You will receive a confirmation email. Your privacy is respected by EVAC and we will never sell your email address, or use it for non-club relevant solicitations. This mailing list is designed for communication from EVAC, and does not enable users to respond to the message. If you wish to contact club officers, please use the list on the Contact-Us tab.

To subscribe to the EVAC – Announce mail group click:

http://www.freelists.org/list/evac-announce

To unsubscribe use the same link, enter your email address and select Unsubscribe from the "Choose An Action" list.

Looking for that perfect weekend activity?

Why not resolve to getting involved?

Contact Claude Haynes to join the staff at GRCO

Email: grco@evaconline.org

Classified Ads

Upcoming Meetings

October 21

November 18

December 16

January 20

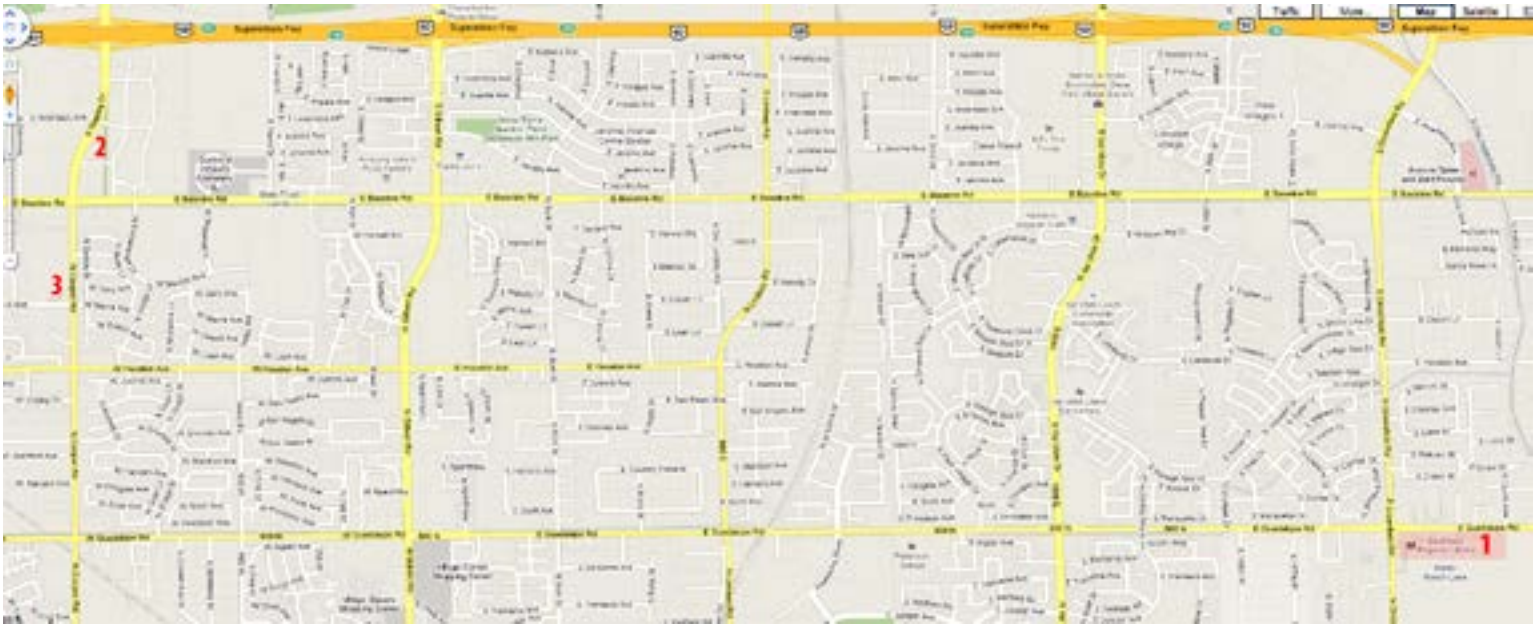
February 17

March 17

The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

Visitors are always welcome!



1 **Southeast Regional Library**
775 N. Greenfield Road
Gilbert, Az. 85234

October 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Oct 1 - Deep Sky Party

Oct 8 - National Astronomy Day

Oct 14 - Public Star Party

Oct 21 - EVAC Monthly Meeting

Oct 22- Local Star Party

Oct 28/29- All Arizona Star Party

November 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Nov 11 - Public Star Party

Nov 18 - EVAC Monthly Meeting

Nov 19 - Local Star Party

Nov 26 - Deep Sky Party

East Valley Astronomy Club -- 2016 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

Select one of the following:

☐ New Member ☐ Renewal ☐ Change of Address

New Member Dues (dues are prorated, select according to the month you are joining the club):

☐ **$30.00 Individual** January through March

☐ **$35.00 Family** January through March

☐ **$22.50 Individual** April through June

☐ **$26.25 Family** April through June

☐ **$15.00 Individual** July through September

☐ **$17.50 Family** July through September

☐ **$37.50 Individual** October through December

☐ **$43.75 Family** October through December

Includes dues for the following year

Renewal (current members only):

☐ **$30.00 Individual** ☐ **$35.00 Family**

Name Badges:

☐ **$10.00** Each (including postage) Quantity: _____

Name to imprint: _____

Total amount enclosed: ☐

Please make check or money order payable to EVAC

☐ Payment was remitted separately using PayPal ☐ Payment was remitted separately using my financial institution's online bill payment feature

Name: ☐ Phone: ☐

Address: ☐ Email: ☐

☐ Publish email address on website

City, State, Zip: ☐ URL: ☐

The Observer is the official publication of the East Valley Astronomy Club. It is published monthly and made available electronically as an Adobe PDF document the first week of the month.

☐ General Observing ☐ Cosmology

☐ Lunar Observing ☐ Telescope Making

☐ Planetary Observing ☐ Astrophotography

☐ Deep Sky Observing ☐ Other

Would you be interested in attending a beginner's workshop? ☐ Yes ☐ No

How did you discover East Valley Astronomy Club? ☐

PO Box 2202
Mesa, AZ 85214-2202
www.evaconline.org

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

The Observer is the official publication of the East Valley Astronomy Club. It is published monthly and made available electronically as an Adobe PDF document the first week of the month. Please send your contributions, tips, suggestions and comments to the Editor at: news@evaconline.org. Contributions may be edited. The views and opinions expressed in this newsletter do not necessarily represent those of the East Valley Astronomy Club, the publisher or editor.

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www.evaconline.org

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