

THE OBSERVER



Barred Spiral Galaxy NGC 6217

Image Credit NASA, ESA and the Hubble SM4 ERO Team

UPCOMING EVENTS:

EVAC Public Star Party - December 13

EVAC Holiday Party - December 19

EVAC Star Party - December 21

Evac Star Party - December 28

Check out all of the upcoming club events in the Calendars on page 11.

INSIDE THIS ISSUE:

From the Desk of the President by Tom Mozdzen

December marks the end of my two terms as President. I've worked with a great group of people and we've accomplished quite a bit. I'd like to recap some of the highlights from the last two years.

With the help of Woody, Brooks, and Gordon, we revamped the club Bylaws and got them approved by club members in the June 2018 meeting. One major improvement was to clearly define who was a board member and that all board members vote on motions raised at board meetings. Other items were modified to be clearer and consistent throughout the document.

Finally, role responsibilities were defined in more detail, and many items were moved to a Policy and Procedure document such as the dollar amount for club dues, so that such items could be changed with a vote from the board rather than a Constitution & Bylaws change, which would then have to be filed with the federal government (although it isn't hard to do the filing these days).

To secure the Club's savings and to put it to work, we took two steps: 1) we obtained a fidelity bond to insure against theft of cash; and 2) in January we opened an account at a financial institution that allows us to

<i>From the Desk of the President</i>	1
<i>November Meeting Minutes</i>	3
<i>Stars That Point the Way</i>	4
<i>December EVAC Events</i>	5
<i>Announcements</i>	6
<i>Classified Ads</i>	7
<i>Meeting Maps</i>	10
<i>Calendar</i>	11
<i>Membership Form</i>	12

From the Desk of the President

Continued from page 1

buy insured CDs or bonds, in which two named officers must confirm any financial transaction.

The Policy and Procedures document was instituted to write down the many details that must happen to make the club run, such as reserving meeting rooms, filing tax documents, agreements with the Town of Gilbert, etc.

We held an auction in April of 2018 and found new homes for a lot of donated astronomy equipment and in the process raised a healthy amount of money for the club as well as made room in storage for the next wave of donated equipment.

Our 2018 Christmas Party was held in the Shakespeare room and was a huge success thanks to the leadership of Janet Evelan and the many volunteers who helped make it happen. We are going to repeat this formula for 2019 and expect it to be fantastic.

We brought back the sale of EVAC logoed clothing and by the number of items sold, at cost, it was long overdue. Look for another opportunity to obtain clothing after the 1st of the year, or possibly as soon as the Christmas Party. Many thanks to David Douglass for spearheading this effort.

On a somber note, our long time Outreach and Events Coordinator, Lynn Young, had to step down due to health issues – we thank him for the wonderful job he did for so many years, and wish him a full recovery.

Ken Milward has stepped up to pick up for Lynn and is working on organizing trips as well as fulfilling outreach requests by schools. Ken organized a well attended trip to the Mirror Lab in Tucson at the University of Arizona, and a trip to the MMT on mount Hopkins, south of Tucson, is in the works for the spring. We appreciate Ken taking on this role.

On the internet front, we improved the look and organization of our website, evaconline.org. Thanks go to Marty Pieczonka and his daughter-in-law Heather, along with the many EVAC members who ported data and gave advice on the content and layout of the new site.

We also established Facebook pages for both [GRCO](#) and [EVAC](#), with thanks going to Claude Haynes and Michael

Prator. The EVAC site is private and requires an administrator to accept requests to join, while the GRCO site is public and anyone can view the page (make sure the site has a – GRCO at the end of the name).

And of course many thanks to Ron and Jan Barstow who make sure our meetings are well supplied with drinks and treats, and to Janet and Tim Cotie who help often help out.

Finally, thanks to Brooks Schofield for keeping the books and doing a myriad of jobs required of the treasurer, Rob Baldwin for booking a fine line up of speakers and filling in for me in my absence, and Tom Polakis for keeping notes at the meetings.

Moving on to the next set of Officers and Board Members: Election results from the November meeting. We had four candidates for the three Board Member at Large positions. The Executive officers were elected by approving a motion from the floor, and votes were tallied for the Board positions. The final results are as follows:

Executive Office positions:

- President – Gordon Rosner
- Vice Pres. – Tom Mozdzen
- Treasurer – Brooks Scofield
- Secretary – Wayne Thomas

Board Members at Large:

Serving year 2 of 2

- David Hatch
- Derek Youngson

Serving year 1 of 2

- Jon Koester
- Ken Milward
- Bill Peters

Our Christmas Party will take place instead of our normal Monthly Meeting. Janet has secured a date, location, and caterer: Thursday Dec 19th, 6 pm at our regular monthly meeting place (Shakespeare room) and Zappones of Gilbert will be providing an Italian style dinner.

Club Members are welcome to attend the Christmas party with their spouse or family members. If you are not a club member already, this would be a great time to take

From the Desk of the President

Continued from page 2

the plunge and join. If you are planning to attend, please RSVP to Janet, so we order enough food.

We will also raffle off a few gift cards to add some excitement to the party and we are asking attendees, voluntarily, to bring a non-perishable food item that we will donate to a local food bank.

Help is still needed with decorations, music, photos for the running slide show, etc. Please contact Janet if you would like to help janpog48@gmail.com.

The Riparian Preserve is a very busy place in December as they are featuring their Riparian After Dark program on Fridays and Saturdays in December (6th & 7th, 13th & 14th, and 20th & 21st), so no public star party this month as there is no room for parking nor telescopes. GRCO will be extremely busy with extra long lines. We can use extra

people to talk astronomy with the people who are waiting in line to get a view through the telescope. So please stop by as your assistance will be greatly appreciated.

Even though the park is busy, it is a fun outing for families. Please check the [Gilbert Parks and Recreation website](#) for a list of charities that are supported by the event.

Our January speaker will be Rogier Windhorst who will give us an update on the status of the build and intended science for the James Webb Space Telescope, scheduled to be launched a mere 14 months from the January meeting.

See you at the Christmas party.

Tom Mozdzen

EVAC General Meeting Notes for November 2019

by Tom Polakis

November's meeting was attended by nearly 80 people. Vice President Rob Baldwin began by having visitors introduce themselves, followed by officer and board member introductions. He surveyed the room to determine how long people have been EVAC members. Rob noted that the December meeting will be the annual holiday party, to be held in the same room, but on *Thursday*, the 19th rather than the usual third Friday of the month.

Ken Spruell mentioned that he was finding a telescope for a high school club, and learned about a C8 that was donated to Starizona. They responded with not only the C8, but gave away two additional telescopes for the high school.

Marty Pieczonka showed the features of the new EVAC web site, which is greatly improved. If you wish to have your images shown on the front page, send them to Marty. Claude followed with a summary of the All Arizona Star Party, which enjoyed great weather and attendance. He also mentioned the Gilbert Rotary Centennial Observatory, and the impact that December's Riparian After Dark may have on attendance.

Next up was the election of officers and Board members for 2020. The slate is filled with Gordon Rosner as president, Tom Mozdzen Vice President, Brooks Scofield Treasurer, and Wayne Thomas Secretary. New Board positions will be filled by Jon Koester, Ken Milward, and Bill Peters.

Tom Polakis spoke about planning for his photos of the Mercury transit, and showed results. Lisa Hermann did a presentation about the new South Mountain Astronomy Club, which is associated with the South Mountain Environmental Education Center in the park. Outreach Coordinator Ken Milward followed with the calendar of school star parties. He also mentioned a tour of the Multiple Mirror Telescope facility, scheduled for April 24. Only 30 spots are available, and they were filling up quickly during the meeting.

The main speaker was Jessica Noviello from ASU. She spoke about micro features on Jupiter's moon Europa. Using images mostly from the Galileo mission, she analyzed small features such as domes, spots, pits, and hybrid, and discussed models for their formation. She is hopeful that the planned Europa Clipper mission will add to our knowledge.

The Backyard Astronomer

by Bill Dellings (December 2019)

Stars That Point the Way

I was stargazing before the advent of computerized telescopes, thus I had to find things the old-fashioned way - star hopping (rapidly becoming a lost art). Though I eventually acquired a telescope with setting circles, I found that system difficult to master. I learned to identify the major constellations and how to find deep sky objects by navigating my way through those star patterns. I found that in many cases nature conveniently placed a few key guide stars in the night sky to make it easy to locate certain objects. If some night you find yourself without a Go To telescope and wish to observe the heavens, you might want to take advantage of signpost stars that point the way. Let's look at a few fall and winter examples. It will help to have a good star atlas handy to reference the stars mentioned below.

M-31, the Andromeda Galaxy: (Our closest major galactic neighbor - distance 2.5 million light years): Create in your mind a line going from Beta to Mu Andromedae and continue that line north the same distance between those two stars. You have arrived at M-31. While there, try looking for its two satellite galaxies M-32 and NGC 205 (aka M-110).

M-15, Globular Star Cluster in Pegasus: First, note the constellation is upside down. The Horse's neck and head protrude from the bottom of the Great Square of Pegasus towards the southwest. A line from Theta to Epsilon Pegasus (Enif), extended half that distance, points northwest directly at M-15, a fine globular cluster 34,000 light years away.

NGC 457, Open Star Cluster in Cassiopeia: This little group of stars is charmingly called the Owl or E.T. Cluster. It can be found by following a line from Epsilon (Segin) to Delta Cassiopeiae (Ruchbah) and continuing half that distance. A finder or binocular will show it as a small nebulous object. Modest telescopic power reveals a beautiful little jewel box.

Beta Monocerotis, Triple star: One of the finest triple stars in the sky. The three stars of Orion's Belt point southeast across a starless void until you run into a pair of fourth magnitude stars. Beta, the left one, is slightly brighter. The AB and AC components' separations of 7.2" and 9.9"

are fairly easy to split. However, the distance between B and C is only 2.8" and may require 150x to obtain a clean split of the complete trio.

M-35, Open Star Cluster in Gemini: I rank this treasure among my top ten best star clusters. Now let's find it. The constellation's two brightest stars are Castor and Pollux, twin brothers in Greek mythology. If seen as stick figures of themselves, the string of stars from Castor represent his body terminating at a slightly curved string of three stars, Mu, Eta and 1 Geminorum. If stars Eta and 1 Geminorum make the base of an equilateral triangle, M-35 acts as its vertex (not perfectly, but good enough for our purposes). While loitering on this superb gaggle of stars, look for the double star Otto Struve 134 in the upper left edge of the cluster (AB 7.3, 9.1 Sep 31.0", PA 188 degrees). There's also a smaller faint and more distant cluster, NGC 2158, just touching the southwest corner of M-35 and looking more like a comet. Medium sized telescopes at high power can resolve it.

For our last exercise in using stars as pointers, we need to temporarily reside in the dog house - Canis Major. The good news is the canine will retrieve four open star clusters for us (Do you get the idea I like star clusters?).

1) M-41: Easy as pie and we only need one star - Sirius! From Sirius, simply go due south four degrees. Since M-41 is half a degree farther east than Sirius, you'll need to nudge your scope slightly leftwards after that four-degree trip south.

2&3) M-46 and M-47 (in Puppis): These two clusters are actually naked eye objects in a dark sky. But who has dark skies these days? So we shall star hop! There's no extra charge for crossing the border into Puppis. In a random act of kindness, nature has fortuitously lined up Alpha (Sirius), Beta (Mirzam) and Gamma (Muliphein) to aim directly at M-46 and M-47, about 15 degrees to the east of Sirius. The two clusters appear close to one another and are only a degree apart in the sky. M-46 is three times farther away than M-47 and thus its stars take on a faint, powdery appearance. Keen eyed observers may notice a small planetary nebula, NGC 2438, near the top of this cluster (thought to be a foreground object). M-47's stars are sparse and bright.

The Backyard Astronomer

Continued from page 4

4) **NGC 2362:** By now you know the drill. Line up Epsilon (Adhara) and Delta (Wezen) Canis Majoris, and travel along that line east about the same distance between them. NGC 2362 will be about one degree below the end of your journey. You'll see a fourth magnitude star with a hint of "fuzz" around it. That's Tau Canis Majoris sitting on top of this petite beehive - like cluster.

I highly recommend learning a few of the brighter constellations and star names - it's just basic astronomy 101

December EVAC Events

by Ken Milward

The tour of the Mirror Lab in Tucson was totally sold out. I believe everyone that attended thoroughly enjoyed the tour.

The next scheduled tour is for the MMT Telescope located atop Mount Hopkins down around Green Valley south of Tucson for Friday April, 24 2020. Once again this is a limited tour cost is \$15 which includes a bus ride to the top 5535' ASL for a 5 to 6 hour tour. No handicap facilities are provided and you will have to walk up and down several stairs. Bring your lunch and plenty of water, since nothing is provided. Please make checks out to EVAC and include the names of all that are attending. Only a few spots are still available.

that every stargazer should know. It can be fun and adds to your knowledge of the night sky that you can later share with others when asked, "Can you help me find an alignment star?" or "What's that bright star in the east that's changing colors?" One final thought: When you learn a constellation, it will be your friend for life. That's really cool.

Our next star party will be on Friday December 6th at the Veteran's Oasis Park in south Chandler 4050 E. Chandler Heights Rd. Please come out and support this event. We always have a good turn out from the public at this one. We set up early on the east side of the Environmental Educational Center, park the vehicles in the parking lot, then they feed us pizza before we get started. It is mainly the same core group that comes out for these star parties It would be nice to see some new faces. This is a great way to contribute to your community and get to know some of your fellow astronomers.

Ken Milward
Outreach Events Coordinator

FIRST QUARTER MOON ON DECEMBER 4 AT 01:58

FULL MOON ON DECEMBER 12 AT 00:12

LAST QUARTER MOON ON DECEMBER 18 AT 23:57

NEW MOON ON DECEMBER 26 AT 00:13

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. Another list that may be of interest is AZ-Observering. To subscribe click <http://www.freelists.org/list/az-observing>.

EVAC also has a Facebook Group where members may share ideas, photos, and Astronomy related information. To join: [EVAC Facebook Group](#).

The Gilbert Rotary Centennial Observatory (GRCO) also has a Facebook Group where members may share ideas, photos, and Astronomy related information. To visit, please click on [Gilbert Rotary Centennial Observatory - GRCO](#).

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

For sale Meade LXD75 8-inch Telescope with accessories - \$1250: [LXD75](#)

Bill Musik: bmusik@cox.net

For sale: a classic LX200 8" telescope with field tripod.
\$900.00 cash and carry. No eye pieces with scope.



Frank Pino. f.pino@mchsi. 480-882-3485

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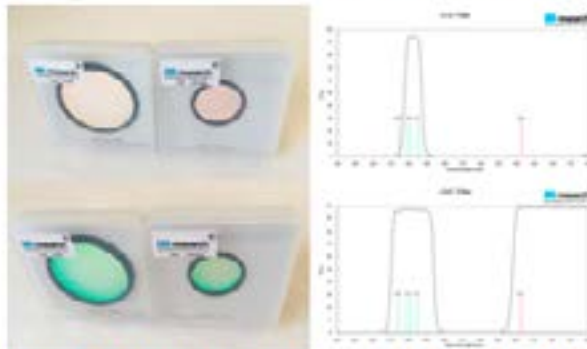
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<http://www.fotaso.org>

Classified Ads



The darkest, most Pristine, sky in the continental U.S. !

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From the site: Very Large Array 42mi E, The Astronomical Lyceum 55mi E, MRO Observatory 80mi E

IC 405

**Insight Observatory
16" ATEO 1 Telescope**

[SkyPi Remote Observatory](#)



Upcoming Meetings

December 19

January 17

February 21

March 20

April 17

May 15

June 19

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!



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



DECEMBER 2019

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	31				

December 13 - Public Star Party

December 21 - EVAC Star Party

December 19 - EVAC Christmas Party

December 28 - EVAC Star Party

JANUARY 2020

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	31	

January 10 - Public Star Party

January 18 - EVAC Star Party

January 17 - EVAC Monthly Meeting

January 25 - EVAC Star Party

East Valley Astronomy Club -- 2019 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:	
<input type="checkbox"/> New Member	<input type="checkbox"/> Renewal
<input type="checkbox"/> Change of Address	
New Member Dues (dues are prorated, select according to the month you are joining the club):	
<input type="checkbox"/> \$30.00 Individual January through March	<input type="checkbox"/> \$22.50 Individual April through June
<input type="checkbox"/> \$35.00 Family January through March	<input type="checkbox"/> \$26.25 Family April through June
<input type="checkbox"/> \$15.00 Individual July through September	<input type="checkbox"/> \$37.50 Individual October through December
<input type="checkbox"/> \$17.50 Family July through September	<input type="checkbox"/> \$43.75 Family October through December
<i>Includes dues for the following year</i>	

Renewal (current members only):
<input type="checkbox"/> \$30.00 Individual <input type="checkbox"/> \$35.00 Family

Name Badges:
<input type="checkbox"/> \$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:

City, State, Zip:

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.

<input type="checkbox"/> General Observing <input type="checkbox"/> Cosmology <input type="checkbox"/> Lunar Observing <input type="checkbox"/> Telescope Making <input type="checkbox"/> Planetary Observing <input type="checkbox"/> Astrophotography <input type="checkbox"/> Deep Sky Observing <input type="checkbox"/> Other	
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Would you be interested in attending a beginner's workshop? Yes No

How did you discover East Valley Astronomy Club?

To join via Paypal: http://evaonline.org/join_evac.htm	Joining the club implies you agree to the liability waiver. http://evaonline.org/join-liability_release_form.htm
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www.evaonline.org

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