

# THE OBSERVER



**NGC 7662 - Blue Snowball Planetary Nebula**

Credit: B. Balick (U. Washington) et al., WFPC2, HST, NASA

## From the Desk of the President *by Gordon Rosner*

Greetings from your President.

As always, I sure hope everyone is still doing well and keeping healthy. Remember that all EVAC in-person group activities still remain cancelled, and we are still uncertain when events will return. As always, check our website for the latest information.

Now the broken record reminder. Any in-person gatherings are up to individuals and none are EVAC sponsored events at this time. This also applies to any gatherings at the Picket Post Trailhead. Those gatherings are personal decisions and

proper safety precautions must be observed by each individual. Any group gatherings are entirely personal decisions with no EVAC endorsement, guidance, or oversight at this time.

### **IT'S ANNUAL CLUB OFFICER ELECTION TIME**

As presented during our October online meeting, our annual club officer election process has now started. All Executive Officers and two Board of Directors positions are now open for nominations. As every year, please consider filling a position. Officers always encourage

## UPCOMING EVENTS:

*Some meetings will be held online.*

*EVAC Meeting via Zoom - November 19*

*Tom Field - "You can almost touch the stars".*

## INSIDE THIS ISSUE:

<i>From the Desk of the President</i>	1
<i>EVAC October 23rd Meeting Notes</i>	3
<i>Pegasus Dim but Gems in Every Direction</i>	4
<i>Announcements</i>	6
<i>EVAC Outreach Events</i>	7
<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

by Gordon Rosner

*Continued from page 1*

getting some different members involved in running the club and a good way to start is with a Board position.

The last day to submit nominations is 16 November. Nominations can now be submitted by sending a separate email to BOTH the club President AND Vice President links ([president@evaonline.org](mailto:president@evaonline.org), [vp@evaonline.org](mailto:vp@evaonline.org)). By submitting these two separate, redundant emails, it assures no entry would be lost or overlooked. To be included in the election process, one must be a club member in good standing. Anyone considering to be a candidate must fully understand the duties and responsibilities of the position they would be pursuing. Candidates can review the duties and responsibilities by reading both the club's "[Policy and Procedures Document](#)" and "[Constitution and Bylaws](#)".

The following is a summary of the duties and responsibilities of each open position. But again, candidates must review the detailed positions and club operations in the above documents.

**PRESIDENT:** Ensures all the other officers conduct their offices properly to support the leadership necessary to maintain a smooth running club. Presides over all monthly General Assembly meetings (all done online now), Board of Directors meetings and any special meetings as deemed necessary. Acts as a "Tie Breaker" during Board of Director votes resulting in a tie. Compiles and writes proposed policy and procedures updates and presents them to the Board of Directors. The President, along with the Treasurer, has check signing duties and privileges. Executes all legal documents in the name of the club. Writes the President's column in the club monthly newsletter.

**VICE PRESIDENT:** Serves in the President's capacity in the event the President is absent or unable to serve for any reason. Is in charge of club programs and publicity. Serves as the main point of contact of club members for issues to be raised to the Board of Directors. Coordinates and schedules monthly General Assembly meetings and obtains the main speakers. Coordinates all online functions and events.

**TREASURER:** "Pays the bills" such as insurance, web hosting fees, GRCO tracking software fees, etc. Compiles the annual proposed club budget and presents it to the Leadership Team for approval. Handles all club capital, checking account and membership dues. Presents fund

investment strategies to the Leadership Team for agreement approval. Allocates funds and, along with the President, signs club checks. Responsible for the official club membership roster. Compiles an annual financial report for the City of Gilbert's review. Assures government reporting compliance with the IRS 501 (c) (3) organization requirements. Files Arizona Corporation Commission reports. Sends acknowledgement email receipts of donated goods to the donor. Collects and reviews all mail delivered to the club. Orders, picks up and distributes club badges.

**SECRETARY:** The custodian of all official club documents and records of club events and activities. Executes, along with the President, all legal documents in the name of the club. Records the minutes of all meetings such as the General Membership monthly meetings, Board of Director's meetings and any special meetings. Acts as the official correspondent with other clubs and organizations. Ensures all inputs for the club monthly Newsletter is received by the Newsletter Editor and reviews the monthly Newsletter prior to publishing.

**BOARD OF DIRECTOR:** As a member of the five Board of Directors, investigates club business suggestions. Approves large expenditures. Votes on new proposed club policies, procedures, and goals. Reviews financial statements and votes on proposed budgets, expenditures and investments. Provides general inputs to the Leadership Team for activities, improvements, goals and club directions.

Again, nominations for these open club Leadership Team positions are now open and can be submitted via the method described above until 16 November. The list of submittals and how to vote will be presented at the 19 November online General Meeting (Yes! Remember that the November meeting is on a Thursday). Voting ends on 24 November with results presented in the December Newsletter.

I must add that I have received questions and concerns regarding if no nominations are received for any open position. What will happen to the club? Everyone rest assured that the club will continue to operate as it has been with the current excellent and committed Leadership Team. If no one pursues filling an open position, each Leadership Team member has agreed to continue in their current position through next year's election to maintain the

# From the Desk of the President

by Gordon Rosner

*Continued from page 2*

consistency and solid operation of the club during these troubled and uncertain times. I deeply thank each current officer for their dedication to the club and commitment to this club's contingency plan.

Remember that our online monthly meetings are being recorded and a link is placed on the monthly meeting page of our club's website. The October meeting link contains a slide that shows the election milestones timeline. Our November meeting will be held on **THURSDAY, NOVEMBER 19th**. Not the usual third Friday. We had to juggle the date to overcome a conflict. Officer candidates and voting instructions will be presented. So, be sure to attend this important meeting. The main speaker will be Tom Field presenting "You can almost touch the stars". A presentation on spectroscopy.

Everyone remember that member presentations are a fun and valuable part of our monthly meetings. These are about ten minutes long regarding any astronomy related subject you would like to share with the club. I encourage you to do one of these. Just let me know you would like to do this by using the 'Contact President' link near the bottom of the main page of our EVAC website. I'll then get back with you and we can discuss. If needed, we can also do a dry run sometime before the actual meeting.

I'll 'see you' at the very important November election meeting. "Keep your feet on the ground and keep reaching for the stars."

Gordon Rosner  
President

## EVAC Zoom Meeting Notes for 2020 October 23, at 07:30 P.M. AZ Time

by Wayne Thomas

### Meeting Minutes.

President Gordon Rosner welcomed those in the "audience" to the virtual meeting at 7:29 p.m. Gordon introduced the leadership team in charge of keeping EVAC running. Many have term limits. President, Vice President, Secretary and Treasurer serve for one year and those positions are up for election. Two of the Board of Directors positions are up for election. Gordon will provide detailed instructions on how to nominate persons to fill those open positions.

Gordon presented a timeline for the election process.

Under club news, he noted that club sponsored events with personal contact are still cancelled. Member presentations are still welcome – send Gordon a note if interested in making one. And the Hovatter Airstrip is no longer available, since it is now owned by La Paz County.

Instead of a member presentation a special presentation was given by Scott Dichenshied on JMARS, an image data repository. Some of its data is publically available. The JMARS project has been in operation since 2003. He showed how data could be displayed in a variety of ways to bring out differing features of Mars and the Moon. Most recently a derivative program for the OSIRIS-REX

mission was developed. Another feature is the ability to select data and generate a QR Code for the data. That way one does not have to reselect the data each time one wants to use it. There is also an Augmented Reality app for JMARS. The program can be accessed at [jmars.asu.edu](http://jmars.asu.edu).

Tom Mozdzen then introduced the main speaker, Anthony Wesley who discussed "High Resolution Planetary Imaging in 2020."

While observing Jupiter in 2009 he observed some black spots and later discovered they were the results of meteoroids or asteroids crashing into Jupiter's atmosphere. In 2010 he was fortunate enough to video record the flash of such a body striking Jupiter. Based on the brightness and duration, it was estimated to be about 10 meter in size. This year, 2020 is the best year for imaging Mars until 2035. This is because Mars appears 22 arc second in size now and the next apparition in 2 years it will be only 16 arc second.

When stacking images to improve signal to noise ratio, alignment is always an issue. A software package, WinJupos, uses the moons of Mars to align the images. It is much better than attempting to use the surface albedo features which was the previous method. In June 2018,

# EVAC Zoom Meeting Notes for 2020 October 23, at 07:30 P.M. AZ Time

by Wayne Thomas

*Continued from page 3*

a global dust storm on Mars can be seen in the images. It appears as an orange peel effect. He showed an image of a very high altitude cloud on the limb taken in 20 Mar 2012. It was several hundreds of kilometers high. The last image shared of Mars was taken on October 15, 2020.

Anthony next discussed Jupiter. Jupiter is near the zenith when it gets dark in Australia so is perfectly positioned for imaging. The Great Red Spot (GRS) appears smaller this year. The South Equatorial Belt has faded, while the North Equatorial Belt has become very active. Large gaps allow views deep into the atmosphere. In April a large white oval, Oval BA, appeared (the merger of oval B with oval A). It has almost caught up with the GRS. The interaction between the two should be visually interesting. In the North Temperate Zone a white spot appeared. It is typically water vapor accompanied by lightning with about a one month duration. It is a fast mover, about 11 degree per day. A second bright spot appeared September 2, and a third September 16. When the first one catches the last one, it dissipates. This occurred about October 2.

Finally, Anthony discussed his equipment. Telescope alignment is not as critical in planetary imaging as it is in deep sky imaging. In fact a slight amount of drift amounts to dithering which helps to compensate for differences between pixel sensitivity. His observatory and telescope have little capacity to hold heat, so come to thermal equilibrium quickly. He uses an equatorially mounted Newton-

ian telescope. After mixed results from manual focusing, he invested in an electronic focuser which he says makes all the difference in the world. Especially since he needs to refocus several times during his imaging sessions. He has standardized on dovetail adaptors for all of his switchable equipment. This assures that the eyepiece / laser collimator / camera all return to the correct position following change outs. He uses a C-mos video camera with 60 to 80 frames per second capability.

Anthony had time for a few questions.

Regarding Juno spacecraft capability to record asteroid strikes on Jupiter: Probably not. Juno takes a thin strip image when it approaches close to Jupiter every 57 days. It is unlikely that a strike would be in that thin strip during that short time period.

Regarding imaging Jupiter's moons: to avoid edge effects around a bright moon against a black background, try imaging the moons when they are in front of Jupiter.

Our next meeting will be on Thursday, November 19th, a Thursday and not a Friday due to a scheduling conflict.

The meeting was adjourned by Gordon at 9:20 p.m.

Wayne Thomas  
Secretary EVAC

## The Backard Astronomer

by Bill Dellenges (November 2020)

### **Pegasus: Dim, but Gems in Every Direction**

Pegasus, the Winged Horse, is front and center on fall evenings as it crosses the meridian about 9:00 p.m. The constellation's most prominent feature are the four stars making a large square referred to as the Great Square of Pegasus (henceforth "Square" for brevity). And great it is, measuring about 15 degrees on a side, taking an hour for the Square to pass across the meridian. Three of the four stars of the Square are only about magnitude 2.5, the brightest being 2nd magnitude Alpheratz in its upper left corner. In ancient times, Alpheratz shared duty with both Pegasus and Andromeda. But in 1928 the International Astronomical Union (IAU) assigned it

specifically to Andromeda, as Alpha Andromedae. The Alpha star for Pegasus is Markab (Alpha Pagasi).

The constellation is upside down as seen by northern observers. The Square represents the main trunk of the horse's body, with strings of 3rd and 4th magnitude stars streaming west from Scheat (upper right corner) forming a pair of galloping legs. Markab anchors the lower right corner of the Square. To its southwest, the stars Xi, Zeta, and Theta form a long neck. A sharp turn to the northwest terminating at Enif denotes the horse's head and snout. A fourth star, Algenib (lower left corner), completes the Square. A handy acronym to remember the location of the Square's star names (once you've learned them) is

# The Backard Astronomer

by Bill Dellinges (November 2020)

*Continued from page 4*

"All Snowmen Always Melt." Pegasus has no rear legs or tail - those stars were used for Andromeda and Pisces, respectively. Our flying horse is normally illustrated with wings but alas, unlike the Mobil Oil Company's red flying horse logo, lack of bright stars precludes their presence in the constellation.

For Arizona observers, Pegasus rides high in the sky this time of year, almost reaching the zenith. The Square itself is pretty devoid of interesting objects. The Square does provide a good eye test though. Can you see those two 4th magnitude stars just to the upper right of the Square's center? If so, snort - you've got an enviable dark sky. The sky below Pegasus is star poor, like a gigantic black hole between Sagittarius and Taurus due to the presence the faint "Watery Constellations"- Capricornus, Aquarius, Piscis Austrinus, Pisces and Cetus, all of which are related to water in one way or another. One theory suggests this may have resulted from the effect of precession positioning the Sun in this region during winter's rainy season, influencing the early creation of those constellations by the Mesopotamians 5000 years ago; or perhaps because these constellations hovered above the not too distant Persian Gulf. Of course, to that, one might say horsefeathers.

Dim or not, let's see what we can corral in and around the steed, going counterclockwise from the north. About 42 degrees due north of the middle of the Square you'll find NGC 7662, the Blue Snowball planetary nebula in Andromeda (Dist. 4,000 l.y.). This greenish blue, round planetary shows well in an 11" telescope at 233x. Trotting 14 degrees southwest we sweep up NGC 7331 just five degrees north of Eta Pegasi. In conditions of moderate light pollution, only an elongated nebulous blob, brighter toward center, can be seen in an 11" at 233x (Dist. 50 million l.y.). Continuing southwest on our flight path, we arrive at Enif (Epsilon Pegasi), the horse's nose, a nice triple star easily split at 70x (Dist. 690 l.y.). While watering your horse here, take note that just a binocular field away to the west is another smaller equine, Equuleus, The Little Horse. The entire four-star constellation fits in a seven-degree binocular field. In light polluted skies, this might be the best way to find this small, faint constellation. It's just good old horse sense.

Before mounting up, take advantage of the fact that a line from Theta Pegasi to Enif points straight at M15, about four degrees to the northwest. M15 is probably one of the top five globular star clusters for northern observers. It's an amazing sight in an 11" telescope at 233x (Dist. 34,000 l.y.).

As mentioned earlier, the area south of the Square is one Great Void with the exception of two relatively bright stars. The two left hand stars of the Square point straight down 35 degrees to magnitude 2.0 Deneb Kaitos (aka Diphda), the brightest star in Cetus the Whale. The two right hand stars of the Square point straight down 45 degrees to magnitude 1.2 Fomalhaut, the brightest star in Piscis Austrinus. Before saddling up and heading north, lets bolt back to our whale of a tale star, Deneb Kaitos. If you live south enough and have dark skies, you can enjoy taking in the Silver Coin Galaxy NGC 253, only eight degrees due south of Deneb Kaitos. This large galaxy will fill a low power 1/2 degree telescope field. It's turned obliquely to us and under good conditions a medium sized telescope can pick out surface mottling (Dist. 13 million l.y.).

We're in the home stretch now and heading for a lovely double star due east of the Square. We tie up to the star Mesarthim (Gamma Arietis) in Aries. Just about any small telescope can split the two white equal magnitude stars (AB 4.6, 4.6, Sep. 7.6" Pos. Angle 00) (Dist. 164 l.y.).

What better way to cross the finish line with our steed of power and speed than to pull back on the reins at another "Great" object, the Great Andromeda Galaxy, M31. Whoa big fella! The galaxy is the furthest thing you can see with the naked eye (Dist. 2.5 million l.y.). We can see it because it's the nearest major galaxy to our Milky Way Galaxy. It's an impressive sight in just about any telescope and is best seen at low power due to its considerable apparent length of three degrees (6 full moons!). Consider attacking this monster with a 16x70 or 20x100 tripod-mounted binocular for an awesome view of this magnificent galaxy. And that's straight from the horse's mouth. Happy trails to you....until we meet again.

## 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 in the Contact-Us area on the Home page of our EVAC website. 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 to consider is [AZ-Observing@groups.io](mailto:AZ-Observing@groups.io), simply click on this link <https://groups.io/g/AZ-Observing> and follow the instructions on the page. 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](mailto:grco@evaconline.org)***

# EVAC Outreach Events

by Gordon Rosner

Again, unfortunately another very short column this month as all outreach events remain on hold due to supporting the public health concerns. For more information, see the President's column at the beginning of this newsletter or at the top of the EVAC website.

As always, still looking very forward to our outreach program getting back and to hearing all those "OH WOW's" we so love to hear.

Gordon Rosner  
EVAC Outreach Events Coordinator

LAST QUARTER MOON ON NOVEMBER 8 AT 06:46

NEW MOON ON NOVEMBER 14 AT 22:07

FIRST QUARTER MOON ON NOVEMBER 21 AT 21:45

FULL MOON ON NOVEMBER 30 AT 01:30

## Classified Ads

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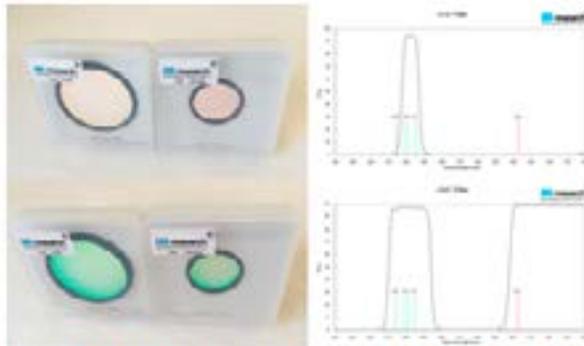
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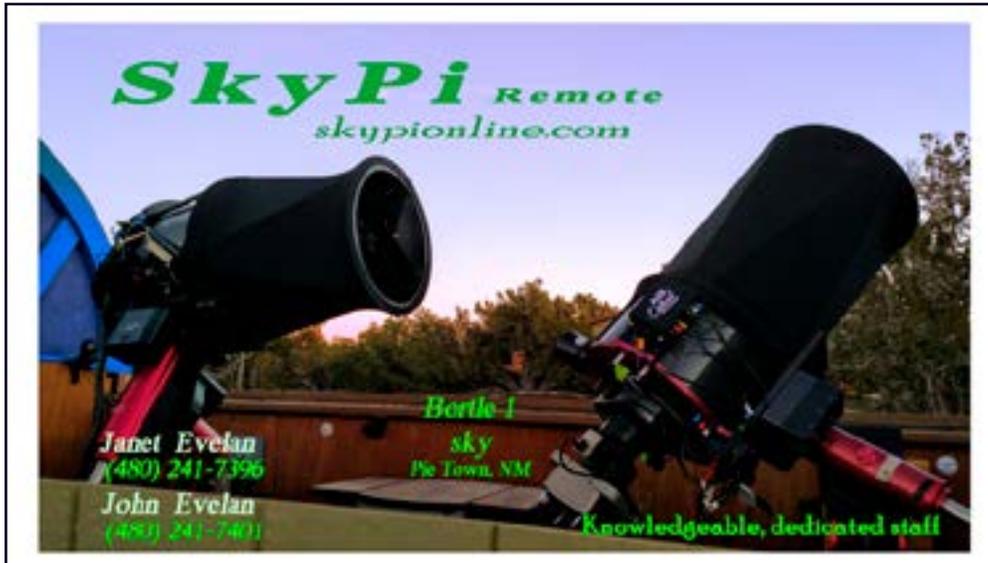
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## Classified Ads



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

**At the site: Bathroom facilities, running water, 5 pads w110v, wifi, acres of grassy camp sites.**

**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](#)

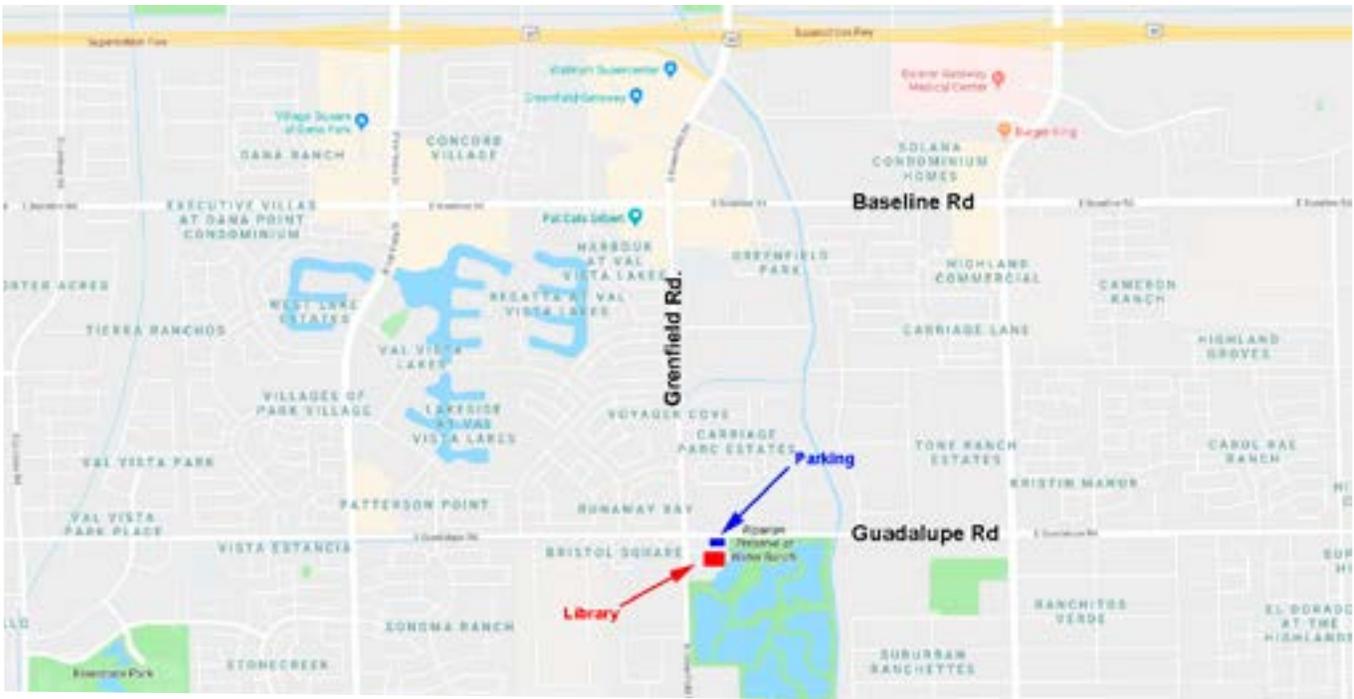


Monthly Meetings will be presented live online using Zoom. See the EVAC Website for updates. All other events are on hold until health concerns are resolved.

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



## NOVEMBER 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	<b>19</b>	20	21
22	23	24	25	26	27	28
29	30					

**November 19** - EVAC Monthly Meeting Live

Online via Zoom

**\*The EVAC Monthly Meeting will be held live online via Zoom. All other meetings and events have been cancelled until further notice.**

## DECEMBER 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	<b>5</b>
6	7	8	9	10	11	12
13	14	15	16	17	<b>18</b>	19
20	21	22	23	24	25	26
27	28	29	30	31		

**December 5** - Special online presentation, 10:00 AM - "Gravitational Wave Detection of LIGO-VIRGO and Upgrade Plans".

**December 18** - EVAC Monthly Meeting Live  
Online via Zoom.

**The EVAC Monthly Meeting will be held live online via Zoom. All other meetings and events have been cancelled until further notice.**

## East Valley Astronomy Club – 2020 Membership Form.

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

**New Member Dues** ( select according to the month you are joining the club)

	<b>Individual</b>	<b>Family</b>	
January, February & March	<b>\$30.00</b>	<b>\$35.00</b>	
April, May & June	<b>\$22.50</b>	<b>\$26.25</b>	
July, August & September	<b>\$15.00</b>	<b>\$17.50</b>	
October, November & December	<b>\$37.50</b>	<b>\$43.75</b>	<i>(Includes following year)</i>

**Renewal** (current members only):

**\$30.00 Individual**       **\$35.00 Family**

**Astronomical League: \$7.50 Annually (per person)**

**Name Badges:**                      Quantity: \_\_\_\_\_

**\$10.00 Each**

Name to imprint: \_\_\_\_\_

**Total amount enclosed:**

Please make check or money order payable to EVAC  
Payment will be made using PayPal

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Address:

Email:

City  
State  
Zip

URL  
For website

Would you be interested in our outreach program?       Yes       No

How did you discover East Valley Astronomy Club?

### Liability Release Form

In consideration of attending any publicized Star Party hosted by the East Valley Astronomy Club (hereinafter referred to as "EVAC"), the receipt and sufficiency of which is hereby acknowledged, I hereby affirm that I and any related entities, predecessors, successors, affiliates, attorneys, guarantors, insurers, transferees, assigns, parents, spouses, children, subsidiaries, accountants, officers, directors, employees, agents, shareholders, members, and trustees, past and present, hereby forever release, acquit and discharge to hold EVAC and its related entities, predecessors, successors, affiliates, attorneys, guarantors, insurers, transferees, assigns, parents, spouses, subsidiaries, accountants, officers, directors, employees, agents, shareholders, members, and trustees, past and present, from any and all causes of action, claims, losses, damages, liabilities, expenses (including attorneys' fees) and demands of any nature whatsoever, known or unknown, that in any way relate to, arise out of, or concern EVAC and/or my presence on the premises of any EVAC Star Party and related areas, whether or not those causes of action, claims, damages, liabilities, and demands are part of the specific subject matter of EVAC or any EVAC Star Party. This release is intended to and does cover all injuries and damages, and the consequences thereof, whether known or unknown at the time of the execution of this release, which have occurred or may hereafter occur or which may hereafter be discovered, and which may have been caused or may be claimed to have been caused by the said incident, and specifically includes, but is not limited to, bodily injuries, mental and emotional injury, pain and suffering, medical treatments, and loss of earnings or income.

My signature upon this form also indicates agreement and acceptance on behalf of all minor children (under 18 years of age) under my care in attendance. EVAC only recognizes those who are members or invitees and who also have a signed Liability Release Form on file as participants at an EVAC Star Party.

Signature \_\_\_\_\_

Date \_\_\_\_\_

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[www.evaonline.org](http://www.evaonline.org)

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