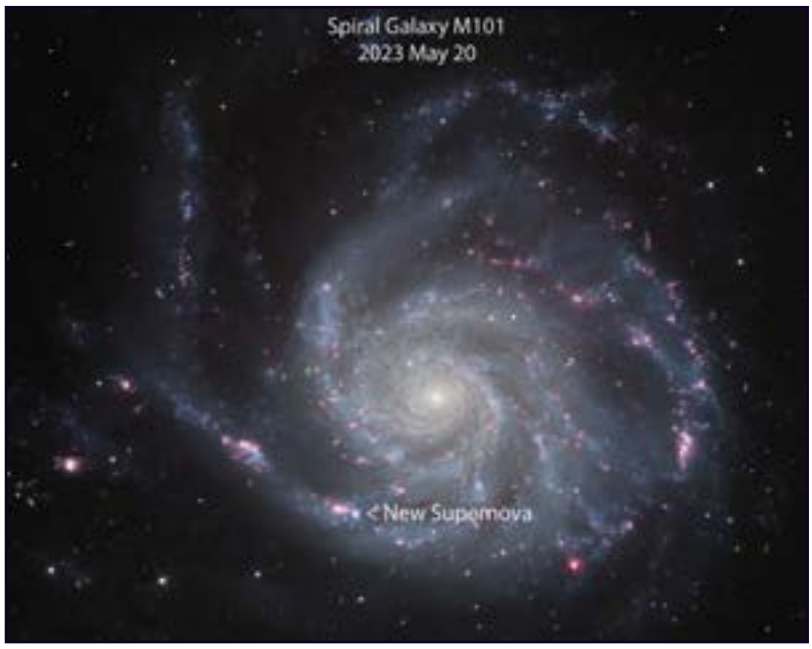
Volume 37 Issue 6

June 2023

The Observer



Supernova Discovered in Nearby Spiral Galaxy M101
APOD May 20, 2023 - Image Credit and Copyright Craig Stocks

Upcoming Events:

EVAC Public Star Party - June 9th
EVAC Meeting - June 16th

Check out all of the upcoming club events in the Calendar on Page 10.

Inside this Issue:

From the Desk of the President
by Claude Haynes

It is already so hot you would think the summer triangle of Vega, Deneb and Altair would be higher in the sky at sunset, but it isn't officially summer until after June 21 – so we can look forward to a few more weeks of our delightful spring. It is good to get out and view before the monsoon clouds. Picket Post doesn't have a ranger to lock the gate and is a closer place to catch a few photons. Posting on the EVAC Facebook page or AZ-Observing@groups.io is a good way to gather a few friends and enjoy a night out under the stars. Some folks are heading to the Grand Canyon for their annual star party June 10-17. The park has really worked hard to eliminate as much extraneous light as possible to be a true dark skies park.

In October the Gilbert Rotary Centennial Observatory marks seventeen years of operation. We recently got the dome repainted and it is now a consistently bright white. It is hard to believe we have been open that long (with an almost two-year gap, that we don't need to discuss). Kudos to our many volunteers. We are always looking for more, and there is nothing more heartwarming than the eager joy of a youngster looking through a telescope for the first time. We will again have special events with the

From the Desk of the President

by Claude Haynes

Continued from page 1

SE Regional Library on June 26 and July 24. These start with a lecture at 7:30 in the meeting room, followed by observing at GRCO. It is a great family night, and we appreciate your reminding family, friends and anyone you meet to come for a visit to GRCO any Friday or Saturday evening.

The swap meet in May was a lot of fun, and our guest speaker, Dr Shore via ZOOM from Pisa Italy, was a special treat. Dr Shore is a leading authority on the research into the spectral analysis of supernovae, and I encourage you to visit our website under meetings and events to view all the recorded meetings. They are a wealth of information, and it often helps to listen again to better understand the concepts. Our June speaker is Tom Polakis and his talk is titled "More Than Just Pretty Pictures". I am sure there will be pretty pictures, but also a wealth of information below the surface. Tom always has an entertaining and informative presentation.

Many of you will be on vacation for the next few months. Do travel safely and keep looking up.

Your President
Claude Haynes

EVAC ZOOM Meeting Minutes for May 19th, 2023 at 07:30 P.M. AZ Time

by James Yoder

YouTube

Many EVAC monthly meetings can be viewed on YouTube. Just search for the East Valley Astronomy Club on the YouTube website to locate the recordings or select this link to view this month's meeting.

Welcome

EVAC president Claude welcomed club members to the meeting and reviewed the agenda. New visitors were recognized and welcomed. Introduction of Officers and Board for 2023:

- President – Claude Haynes
- Vice President – Woody Sims
- Secretary – James Yoder
- Treasurer – Brooks Scofield
- Board Members: Don Wrigley, Tom Mozdzen, Steve Bradshaw, Alex Beck, David Coshow
- Property Manager: James Yoder
- Webmaster/Newsletter Editor: Marty Pieczonka
- Events Coordinator – (Position is Open)

General Business

- Visitors Recognition.
- Membership Renewal: Reminder that it is time for members to review their annual membership.

Member Presentation: Roche Limit

Presenter: Steve Bradshaw

Steve's presentation defined the Roche Limit as "the minimum distance that a small satellite body can orbit a larger primary body without being torn apart by gravitational tidal forces". He also gave some examples and practical applications on how it works.

Main Presentation: Classical novae as thermonuclear explosions: cosmic sources violating the test ban treaty.
Presenter: Dr. Steven Neil Shore

Discussion on the various two types of supernovae. Type II is where a large star is destroyed and forms a black hole in the process due to its large mass. Type I was the focus of this presentation. Detailed discussion on binary systems and the physical mechanism responsible for the generation of a supernova through mass transfer between stars.

Next Monthly Meeting

June 16th 7:45 pm - Astroimages: More Than Just Pretty Pictures by Tom Polakis.

What's Up - Some Astronomical Events of Note for June 2023

by James Yoder

Here we make note of some interesting astronomical occurrences for the month that are visible from the Phoenix Metro area. Events we are on the lookout for include:

- Transits – When a celestial body passes directly between a larger body and the observer. For example when one of the inner planets such as Venus passes in front of the Sun (image).
- Eclipses – Specifically we are focused on Lunar Eclipses (where the Earth passes between the Sun and the Moon) and Solar Eclipses (where the Moon passes between the Sun and the Earth).
- Comets – For the comets we are focused on bright comets (image1, image2) or ones that may have a near miss with other astronomical objects such as globular clusters, planets, nebula, etc (image).
- Planet Activity – Oppositions, Conjunctions (image1)and Occultations (image2) of note that may be an opportunity for observation or photography. For Jupiter, we also note when multiple moon shadow transits are visible.
- Visually Interesting astronomical alignments such as Moon & planets arrangement in the morning or evening sky(image1).

Equipment Requirements are noted as follows:

- NE – **N**aked **E**ye event, no equipment needed to appreciate this.
- BL – A decent pair of **Bi**noculars are recommended.
- CT – **C**amera on a **T**ripod can be used to capture this event.
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06/04	Full Moon	08:41pm				Strawberry Moon
06/13	Venus/M44 Appulse	08:00pm	BL, TS	1	1	Binoculars or small telescope
06/17	New Moon	09:37pm				

These events and others throughout the year can be viewed on my webpage here, Happy hunting!

Full Moon on June 3 at 20:41

Last Quarter Moon on June 10th at 12:31

New Moon on June 17 at 21:37

First Quarter Moon on June 26 at 00:49

Chiricahua Sky Village

If you are looking for a dark site with Bortle 1 skies, you can contact Christopher Smythies who is offering sites in Cochise County. His operation is an LLC where individuals purchase shares in exchange for use of private plots of land on the 72 acre site. Contact him at csmythies@comcast.net if you are interested.

The Backyard Astronomer
by Bill Dellinges

A New Catalog of Stellar Rich-Fields for Binoculars (3rd Edition)

This is the third installment of my developing Del catalog of interesting rich field's of stars heretofore not claimed by any other catalogs (Messier, NGC, etc. See Part one and Part two in the EVAC's newsletter, The Observer , September 2022 and April 2023). I use a Nikon Monarch 8x42 HG binocular with its generous 8.3 degree real field, considerably larger than a 7x50 or 10x50 affords. Why take on this project? After observing the moon, planets and deep sky objects (DSO's) for almost seven decades and enjoying many a night doing so, I also found pleasure in simply scanning the night sky with binoculars (especially if tripod mounted). I suspect many stargazers do not partake in this adventure because either they're too busy tracking down DSO's in tiny fields of view or just don't think to put a binocular to the night sky to see the "big picture" - huge fields of stars that are glorious in their own right. Furthermore, thinking about it, I didn't believe anyone had done such a project - to highlight these ignored, large clumps of diamonds in the sky. Here are three examples in our June skies.

Del 7, Serpens (Caput): Del 7 is centered on RA 15h40m DEC+16^0. We are focusing on the Head of the Serpent in the western half of the constellation (Serpens is unique in being the only constellation split in two parts, the other half is on the eastern side of Ophiuchus). One can reach the Serpent's Head by starhopping along a string of stars running north emanating from Delta Ophiuchi. The head configuration is dominated by three relatively bright stars, Beta, Gamma, and Kappa (magnitude 3.5, 3.5 and 4) forming a distinct triangle. Place that triangle on the left side of your binocular field to sweep up a nice gaggle of 6th magnitude stars with Flamsteed numbers 9 through 26.

Del 8, Scorpius: RA 15h53m DEC -25^0. Put your binoculars on Pi Scorpii, the southernmost star of the three bright stars representing the Scorpion's claws (in the westernmost part of the constellation). Now, some tweaking is in order to get the most stars in your field. Above Pi is Delta Scorpii (Dschubba, the brightest of the "Claw" stars since its brightening in 2000). Move Dschubba to the upper right of your field. Perfect! Delta and Pi will be the two brightest stars you see. Another 24 fainter stars hover in the field like bees. Seven of them just west of Pi form an interesting asterism which to me looks like an airplane as seen from above. Depending on your age, you may see either an F-104 or Star Wars X-Wing fighter!

Del 9, Ophiuchus: RA 18h5m DEC +3^0. Basically what we're looking at here is a defunct constellation that was known as Taurus Poniatovii (English translation "Poniatowski's bull"). The constellation was created by a Polish astronomer in 1777 to honor his king, and choosing the "Bull" part for its resemblance to the Hyades in Taurus. It did not make the cut in 1922 by the IAU when officially recognizing 88 constellations. This is very fortunate for me as I wanted to include the Hyades as a Del object but it had already been claimed by numerous astronomers such as P.J. Melotte (Mel 25) and Per Collinder (Cr 50). So Poniatovii's loss is my gain.I hereby claim it as Del 9. Indeed, this group of 3rd magnitudes stars does look like the Hyades. It's about the same size but fainter. You can easily starhop to it by first finding Beta Ophiuchi, then sashaying southeast a degree or two. I found a pleasing look of this group by centering its distinctive six star "V" in the center of the binocular field. I counted about 50 dimmer stars in the background.

So after teasing out detail on a planet, splitting a tight double star, using averted vision on nebulae, tracking down a faint galaxy or troubleshooting a pesky mount, consider taking a break and enjoying some of these wide field chunks of space and stars with binoculars - and you get to use both eyes!

EVAC Outreach Events
by Claude Haynes

May Outreach Events:

- Friday, June 9 – 2nd Friday Riparian Star Party.

Details can be found on the EVAC website. Just go to www.evaconline.org/events-meetings. Click on the calendar entry for location and times. Contact Claude Haynes (interim Events Coordinator) if you can volunteer at an event. It is helpful to know who is coming so we can inform you of where the observing field is located and how to gain access.

Deep Sky Imaging Target Highlights for June

by James Yoder

The average low temperature for June in the Phoenix metro area is 78° F. June 18th is a new moon with Astronomical dusk at 9:22 pm and Astronomical dawn at 03:22 am, giving us 6:10 hours of imaging time.

In this month's list there are over 113 object/configuration combinations provided of just about every class of deep sky object including 23 Globular Clusters, 13 Open Clusters, 27 Planetary Nebulas, 23 Nebula, 18 Dark Nebula, and 2 Galaxies/Galaxy Clusters. There is a wide variety of various objects accessible this time of year with the exception of galaxies and galaxy clusters that have gone on hiatus.

Bright Moon Targets - This month we introduce some prospective targets for when the moon starts to interfere with normal dim deep sky targets such as galaxy and diffuse nebula. Signal to Noise ratio is quite important in determining how much integration time is required to image deep sky objects. Objects that are dense and bright relative to the background such as many Planetary Nebula and Globular Clusters tend to stand up better to more light pollution from the city and the moon. Utilization of pollution filters for globulars and narrow band filters (or OIII filter) for planetaries makes it possible to image these objects even when near full moon conditions. – Note the requirements here imply these targets require systems with large focal lengths, since they are small and compact.

The Prospective Imaging Objects Guide (PDF download) covers objects that reach their highest point in the sky and crosse the meridian (aka Transit) sometime between Astronomical Dusk to Dawn. We will be highlighting objects that transit roughly between 10pm and 2am. This ensures maximum imaging time over the month.

Happy Hunting!

Some Highlighted Targets for June

Configuration	Page	Object(s)	Type	Image Link
Hyperstar	13	Pipe Nebula (LDN 1773)	Dark Nebula	43 min
Hyperstar	21	Eagle Nebula (M-16)	Diffuse Nebula	Unknown
Focal Reducer	19	IC-1274	Bright Nebula	230 Min
Focal Refucer	14	Snake Nebula (B-72)	Dark Nebula	125 min
Primary Focus	23	Omega Nebula (M-17)	Diffuse Nebula	100 min
Primary Focus	5	Tadpole Galaxy (Arp-188)	Galaxy	180 min
Primary (Moon)	17	Cat's Eye Nebula (NGC-6543)	Planetary Nebula	171 min
Primary (Moon)	11	M-92	Globular	Unknown

Resources:

- ArtCentrics.com – June Potential Targets Guide (PDF download)
- Telescopius – Lookup objects, plan imaging session.
- Field of View Calculator – Test Different Telescope, camera & eyepiece combinations.
- Astrometry.net – Solve images captured by your system. Get image RA/DEC, pixel scale, image size, orientation of the image you have taken.

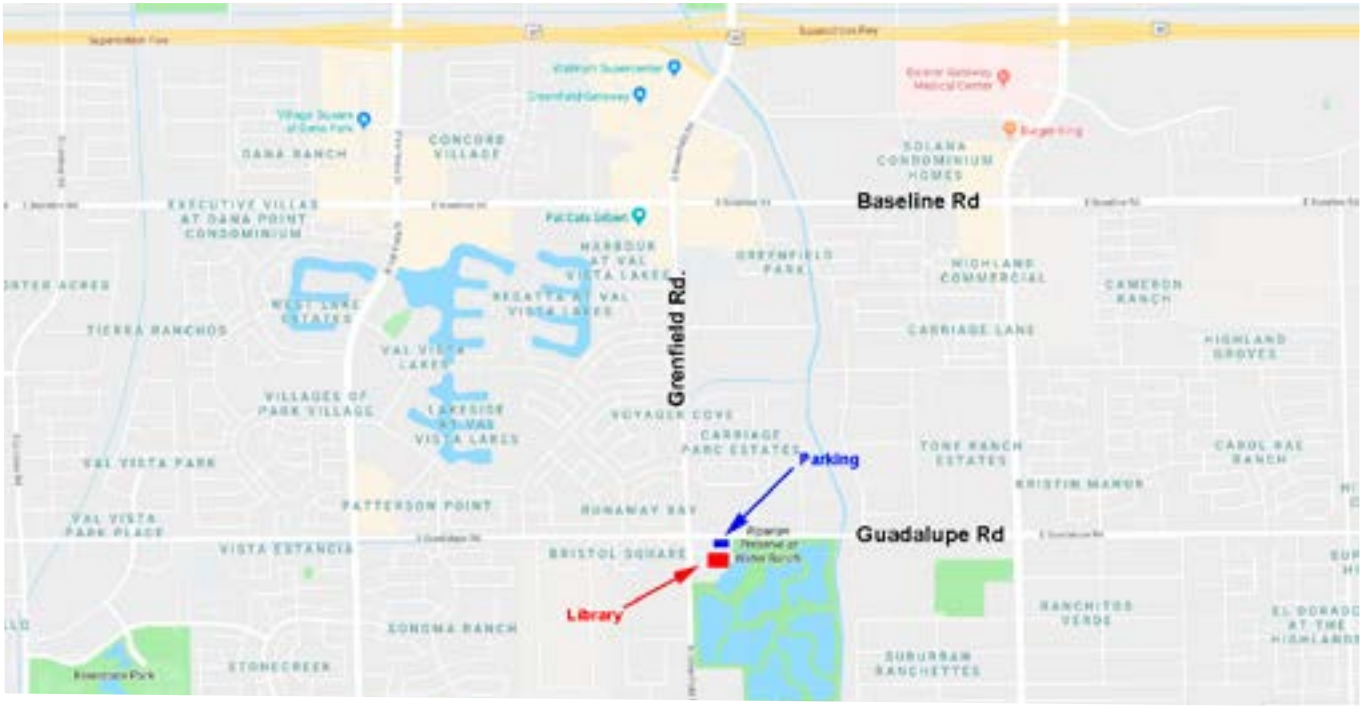
Monthly Meetings will be held in person and also presented live online using Zoom. See the EVAC Web-site for updates.

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 normal in-person monthly meetings have resumed. Also, the meetings will continue to be available online via Zoom.

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

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 consder is 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.

Gilbert Rotary Centennial Observatory is open on Friday and Saturday from sunset until 9:30pm. We need volunteers. Training is provided. Help us engage the community in the wonders of the night sky. Email grco@evaconline.org for information.

Used Equipment For Sale at Great Prices

The East Valley Astronomy Club (EVAC) has just posted used astronomy equipment for sale.

- Sales are "As Is"
- Pick-Up-Only

Contact the EVAC Property Director (James Yoder) at properties@evaconline.org for more details and to answer any questions. Detailed information on products being offered can be found on the EVAC Sales webpage HERE. This page includes a brief description of the items, photos and references (i.e. users manuals, ect.)

Equipment being offered for sale this month includes:

- **Celestron NexStar 8 GPS**
- **Celestron G-8N (Model 31056) Edmund Scientific Astroscan Telescope**
- **Celestron Astro Fi 90mm Refractor Telescope**
- **Meade LXD75 EMC**
- **Baush & Lomb Criterion 4000 Telescope System**

EVAC Equipment Rental Program

The East Valley Astronomy Club (EVAC) Is introducing a rental program for EVAC Members. Details on terms and equipment can be found on the EVAC Rent page. Currently the following items are available for rent:

- **Celestron C-8 with Nexstar GoTo Mount** $25 first week, $20 each week after (up to 4 weeks).
- **Celestron 10" Dobsonian Telescope** $25 first week, $20 each week after (up to 4 weeks).

Telescopes come with all equipment needed for observation (ie eyepieces, finder scope, power supply, etc.)

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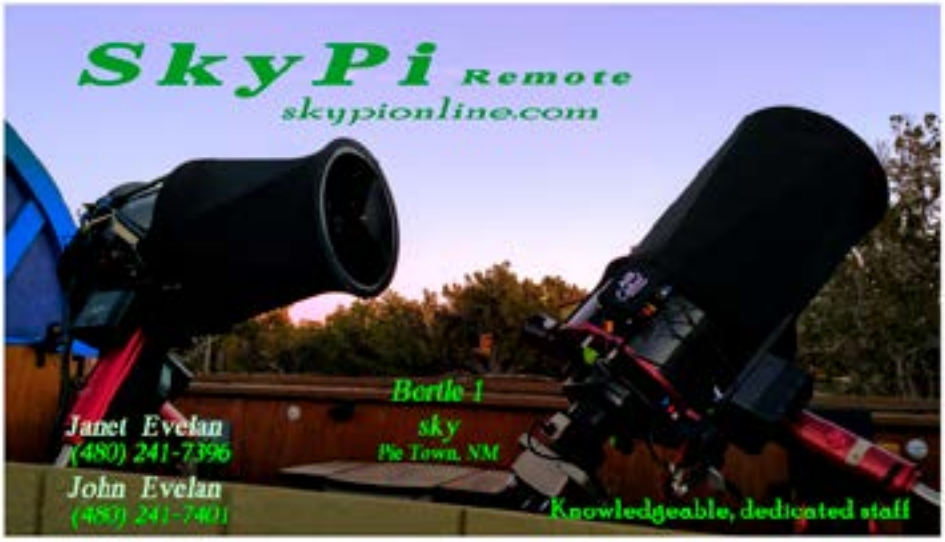

SkyPi Remote Observatory

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

June 2023

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	

June 9 - EVAC Riparian Star Party

June 19 - EVAC Monthly Meeting

July 2023

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

July 14 - EVAC Riparian Star Party

July 21 - EVAC Monthly Meeting

East Valley Astronomy Club - 2023 Membership Form

Member Dues (Based on the month you are joining the club)

	Individual	Family	Student (18yr+ with ID)
January - June	**$30.00**	**$35.00**	**$20.00**
July - December (*Renew in January)*	**$15.00** ☐	**$20.00** ☐	**$10.00** ☐

Renewal Dues (Current Members Only**)** Astronomical League: $7.50 Annually: ☐

Individual	Family	Student (18yr+ with ID)
$30.00 ☐	$35.00 ☐	$20.00 ☐

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: ☐

Name: Phone:

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.

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.

The East Valley Astronomy Club is a 501(c)(3) nonprofit charitable organization.

www.evaconline.org

East Valley Astronomy Club
PO Box 2202
Mesa, Az. 85214-2202

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