



THE OBSERVER



Messier 31 (Andromeda Galaxy) - Allen Newton

UPCOMING EVENTS:

- EVAC Riparian Star Party - Sept. 13th
- EVAC Monthly Meeting - Sept. 20th

For more details, and to see all of the upcoming club events, check out the [events page](#) on our website or the [Calendar](#) on Page 12.

INSIDE THIS ISSUE:

From the Desk of the President

by Steve Bradshaw

I have recently been reading about large telescopes and observatories because I have been planning trips to tour different observatories. While reading I found myself getting excited about the period of history in which we live. Maybe every generation says or thinks this, but I think we live in exciting times. Think of the major advancements in telescope technology that we have witnessed in just the last few decades. Here are some examples.

Back in 1990 the Hubble Space Telescope roared into orbit and has been providing amazing science and images for 34 years now. Not bad for a planned 15-year mission. The following is a short list of just some of the things that Hubble has accomplished during its lifetime. In our own solar system,

it provided much of the Kuiper Belt data that led to the discovery of other Pluto-sized objects and the demotion of Pluto to a dwarf planet. (Sorry kids.) Further out, the HST was also the first to examine the composition of an exoplanet's atmosphere and was the first to capture an actual image of an exoplanet (Fomalhaut b). Hubble also enabled us to look closely at protoplanetary disks and discover that they are in all parts of the galaxy. It was the HST that revealed that supermassive black holes reside in the centers of nearly all galaxies. It was also Hubble that provided some of the earliest mappings of the distribution of dark matter.

As successful as Hubble has been, it was only the first of many increasingly sophisticated and powerful new telescopes both here on Earth and in

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From the Desk of the President

by Steve Bradshaw

Continued from page 1

space. Here on Earth the development of interferometry and adaptive optics have resulted in Earth-based telescopes that rival the clarity and detail of their space-based counterparts. Up in space, Hubble has been joined by a fleet of other space telescopes like the European Space Agency's Euclid telescope that launched in July of last year. Of course, the big news in the last two years has been the launch and subsequent activity of the James Webb space telescope.

The JWST was designed to look at the most distant objects in the universe but that has not kept it from gathering some of the most detailed images of objects in our own solar system. JWST has discovered such things as jet streams on Jupiter and carbon dioxide in the waters of the moon Europa.

But the data JWST is gathering from the edges of the observable universe is where the real excitement is. For example, we know that the universe is expanding at a rate that increases with distance. The problem has been that the expansion rate value based on evaluation of cosmic microwave background data and the expansion rate value based on actual observations of nearby galaxies yield different results. JWST was supposed to be a tiebreaker and tell us which value was correct. The data gathered by JWST so far has not decisively answered the question. However, a recently released but not-yet-peer-reviewed paper has claimed that JWST data has finally provided an answer. We'll have to wait to see how the peer review goes. JWST has also found ancient galaxies that are larger than we thought could exist during the universe's baby years. Could it be that JWST data might result in the rewriting of our current understanding of the origin of the universe? Time will tell.

As exciting as the space-based telescopes are, new Earth-based telescopes are coming online as well. Perhaps one of the most anticipated is the Vera C. Ruben telescope in

Chile. One of its primary goals is to provide detailed maps that can be used to chart the distribution and effects of dark matter. The VRO telescope is a marvel of engineering. The VRO's first light is scheduled (so far) for January 2025. The telescope employs an 8.4-meter primary mirror, a 3.5-meter secondary mirror, and a 5-meter tertiary mirror. Of course, adaptive optics come standard along with a 4.0L V6 engine, automatic transmission, and bucket seats. OK, well, maybe not the engine, transmission, or bucket seats.

But it is the massive camera on the VRO that is truly groundbreaking. The camera is about the size of a small car but at 6,600 pounds it weighs about twice as much. Even more impressive are the camera's 3,200 megapixels. That number of pixels is equivalent to about 300 modern cellphone cameras. The VRO camera captures so much data in one image that it would take over 200 hundred HDTVs to display a detailed image. Wow. The large camera enables the VRO to capture a single image of the sky that is about the width of seven full moons. This is of primary importance given that the VRO has the goal of imaging the entire sky once every three nights for a 10-year period. That's 20 terabytes of data each night and 60 petabytes of data over the 10 years. Just imagine the computers, storage, and network bandwidth necessary to process, store, and move that data around. The VRO will also generate about 10 million alerts each night related to changes in the sky caused by occultations, eclipses, comets, Novas, supernovas, and so on. Special AI-enabled software programs have been designed to process most of those alerts because it would take an army of humans to keep up.

As I said earlier, we live in exciting times. I can hardly wait to see what comes next.

Until next month enjoy looking up and learning,
Steve

New Moon on September 2nd at 6:55 PM

First Quarter Moon on September 10th at 11:05 PM

Full Moon (Harvest Moon) on September 17th at 7:34 PM

Third Quarter Moon on September 24th at 11:49 AM

EVAC Meeting Minutes for August 16, 2024 at 07:00 PM AZ Time

by James Yoder

YouTube: Many past EVAC monthly meetings can be viewed on our [EVAC Meetings YouTube Channel](#) or select this [link](#) to go directly to last month's meeting recording.

Welcome

EVAC President Steve Bradshaw welcomed club members to the meeting and reviewed the agenda. Two new visitors were recognized and welcomed.

Announcements

Steve Bradshaw reviewed the following club business items:

- Star Parties
 - » All AZ Star Party – is November 1st & 2nd
 - Hovatter observing site off I-10 towards Quartzsite
 - » Hyman Rim Ranch Star Party
 - Tentative date(s) 09/28 – 10/01 (Saturday – Tuesday)
- EVAC Website Highlights (<http://eastvalleyastronomy.org/>)
 - » Joining a distribution list for EVAC announcements can be done [here](#).
 - » Joining or renewing membership can be accomplished online [here](#).
 - » [EVAC Calendar](#) shows what events and meetings are slated for EVAC members.
 - » Past newsletters can be accessed [here](#).
 - » Used equipment for sale can be viewed [here](#).
 - » Equipment that can be rented by members can be viewed [here](#).

- » Gilbert Rotary Centennial Observatory (GRCO)
 - Friday and Saturday (weather permitting) dusk to 9:30 PM
- Special Recognition to Marty Pieczonka for his service to the club over the past 20 years!
- Raffle: Two \$25 gift certificates were given out.

Member Presentation by Ted Blank - Using a mobile telescope array to study the LUCY-mission target asteroid:

Discussion on an expedition taken on behalf of the LUCY mission. The LUCY mission is a study of various Trojan asteroids with a space probe that was launched last year. Occultations are used to determine the exact location, shape and orbital parameters that are potential target asteroids for the LUCY mission.

Feature Presenter - Amy Zhao Ph.D., Arizona State University:

Amy designs equipment for astronomical observations. There was a discussion on two missions and the instruments placed onboard the satellite to observe the targeted objects. The Lucy mission is focused on solar system objects (asteroids) utilizing optical instruments to make observations. The DORA mission is focused on the creation of stars and utilizes radio telescopes for observations. There was a detailed discussion of how the EDGES project was developed and included in the DORA satellite.

The Backyard Astronomer

by Bill Dellinges

Another Small Fry – Delphinus

Last month I discussed the small constellation Lyra, the Lyre. An even smaller summer constellation is Delphinus, the Dolphin, ranked as 69th in terms of square degrees of sky covered – 188.54 (compared to Lyra's ranking of 52 with 286.48 square degrees). Delphinus, though tiny and composed of only 4th magnitude stars, is not that difficult to find in even light polluted skies. Fortuitously, its main four 4th magnitude stars are packed close to one another and form a diamond shaped asterism known as Job's Coffin. They represent the dolphin's body. A final 4th magnitude star, Epsilon Delphini, about one "diamond" length to the southwest marks the mammal's tail – a very cute constellation! These five stars, especially the "Coffin" stars, tend to catch your eye as they're just outside the main riv-

er of light of the Milky Way where fewer background stars can distract you. One easy way to find Delphinus is to follow a line from Altair (in Aquila) to Enif Pegasi, magnitude 2.4, the "snout" of Pegasus. Delphinus is slightly above that line, a little closer to Altair.

Often in mythology there are variations of the story. An example of that is our lyre in last month's article on Lyra. The myth of Delphinus has another lyre virtuoso, Arion, sailing to Greece from lucrative performances in Sicily. Crewmembers decided to rob him, but Arion jumped overboard and was saved by a friendly dolphin which took him to Greece before the crew arrived. Things did not go well for the crew when they made port. Apollo, God of music, later placed the dolphin and Arion's lyre in the heavens as the constellations Delphinus and Lyra.

The Backyard Astronomer

by Bill Dellinges

Continued from page 3

While Delphinus has a smattering of globular clusters, planetaries and galaxies, they're not terribly interesting due to their faintness. Its main claim to fame is the fine double star Gamma Delphini, its northernmost star marking the nose of the dolphin. Data: AB mag. 4.4, 5.2, Sep. 9.4", p.a. 268°. Double star expert Sissy Haas refers to it as a "Showcase" pair. As a bonus, in the same low power field is Struve 2725 (AB mag. 7.5, 8.2, Sep. 6.1", p.a. 10°). I have cleanly split Gamma and Struve 2725 in an 85mm refractor at 48x. Once you center Gamma, Struve 2725 is less than ½ degree away at the 7 o'clock position (in a reversed field). Note: If viewing them near the meridian, the Gamma pair run left-right. The Struve pair up-down.

Any discussion about Delphinus wouldn't be complete

without mentioning the curious case of the names of Alpha and Beta Delphini, Sualocin and Rotanev respectively. They first appeared in Italian astronomer Giuseppe Piazzi's Catalog of 1814 at Palermo Observatory, Sicily. Later, English astronomer Thomas W. Webb (1807-1885) realized the names spelled backwards were Nicolaus Venator, the latinized form for Niccolo Cacciatore, Piazzi's assistant at the observatory. It's not known with any certainty which astronomer was responsible for this odd caper. Piazzi and Cacciatore were lucky the I.A.U. (which approves astronomical names) wasn't founded until 1919! Incidentally, Piazzi accidentally discovered the first asteroid, Ceres, in 1801 while astronomers at the time were scouring the area 2.8 A.U.'s from the Sun trying to find the "missing" planet between Mars and Jupiter predicted by Bode's Law.

What's Up - Some Astronomical Events of Note for September 2024

by James Yoder

What's Up? – This month is chucked full of events in a 24 hour period on Tuesday, September 17th associated with the Moon. Grab your telescope and check it out.

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](#)).

WARNING!! – Any event associated with viewing the Sun directly will require the use of a solar filter.

Equipment Requirements are noted as follows:

- NE – **N**aked **E**ye event, no equipment needed to appreciate this.
- BI – A decent pair of **B**inoculars are recommended.
- CT – **C**amera on a **T**ripod can be used to capture this event.
- TS – **T**elescope is required to view this event.

What's Up - Some Astronomical Events of Note for September 2024

by James Yoder

Continued from page 4

Date	Event	Time	Equipment	Images	Ref	Comments
09/03	New Moon	All Night	N/A			
09/06	Mercury AM Sighting	6:00 AM	NE, BI	1	1	Since Mercury is so close to the Sun it is generally difficult to spot in the sky. However, on this morning, it will appear 14° above the eastern horizon just before sunrise.
09/08	Saturn at Opposition	All Night	NE, BI, TS		1	Saturn lies opposite to the Sun in the sky and will be visible for most of the night.
09/17	Full Moon (Supermoon)	All Night	NE, BI			Harvest Moon: Naming full moons is silly, but it makes the news a lot of times. This month's full Moon is also a Supermoon. The technical name for a Supermoon is Perigee- syzygy . (There's a new word for you!).
09/17	Moon/Saturn Occultation	4:14 AM – 5:06 AM	NE, BI, TS	1, 2, 3	1	The Moon will pass in front of Saturn at about 4:14 AM (14° above horizon) and Saturn will emerge from behind the Moon at about 5:06 AM (4° above horizon).
09/17	Partial Lunar Eclipse	7:14 PM - 8:17 PM	NE, BI	1, 2	1	Earth's shadow will just graze the Moon with a maximum coverage of 10%. Grazing will start at 7:14 PM with maximum at 7:47 PM and ending at 8:17 PM.
09/17	Moon/Neptune Occultation	11:52 PM – 1:05 AM	TS	1, 2, 3	1	The Moon will pass in front of Neptune at about 11:52 PM (53° above horizon) and emerge from behind the moon at about 1:05 AM (54° above horizon).
09/20	Neptune at Opposition	All Night	TS		1	Neptune lies opposite to the Sun in the sky and will be visible for most of the night.
09/22	Autumnal/Fall Equinox	5:43 AM	N/A		1	At an equinox, the Sun appears directly above Earth's equator. At the September equinox, it's crossing from north to south.

These events and others throughout the year can be viewed on my webpage [here](#), Happy hunting!

Deep Sky Imaging Target Highlights for September 2024

by James Yoder

The [average low temperature](#) for September in the Phoenix metro area is 77° F. September 3rd is a new moon with astronomical dusk at 08:14 PM and astronomical dawn at 4:38 AM, giving us 7 hours and 24 minutes of imaging time.

In this month's list there are over 124 object/configuration combinations provided of just about every class of deep sky object including 11 Globulars, 29 Planetary Nebulas, 32 Nebula, 12 Dark Nebula, 15 Open Clusters and 25 Galaxies/Galaxy Clusters.

Bright Moon Targets (Moon) – These are small targets that have a high surface brightness, these would be globular clusters and Planetary Nebula, that with appropriate narrowband filters can likely be imaged even in a near full moon situation.

The Prospective Imaging Objects Guide ([Download PDF](#)) covers objects that reach their highest point in the sky and crosses the meridian (aka transit) sometime between astronomical dusk to dawn. We will be highlighting objects that transit roughly between 10 PM and 2 AM when possible. This ensures maximum imaging time over the month.

Happy Hunting!

Some Highlighted Targets (Most of these objects were imaged in Chandler)

Configuration	Page	Object(s)	Type	ImageLink
Hyperstar	18	Pelican & N American Nebula (IC-5070)	Nebula	1,110 min
Focal Reducer	20	Pickering's Triangular Wisp NGC-6960)	Supernova Remnant	460 min
Primary Focus (Moon)	22	Fetus Nebula (NGC-7008)	Planetary Nebula	144 min
Primary Focus (Moon)	24	Pegasus Cluster (M-15)	Globular Cluster	Unknown
Primary Focus	32	NGC-7331 group of galaxies	Galaxy Cluster	Unknown

Resources:

- [ArtCentrics.com](#) – [September 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, and orientation of the image you have taken.

EVAC Outreach Events

by Jake LeAlcala

September Outreach Events:

- September 13th – 7:00 PM – 2nd Friday Star Party – Gilbert Rotary Centennial Observatory
- September 21st – 7:00 PM – Apache Junction Multi-Generational Center

Details can be found on the EVAC website - www.evaonline.org/events-meetings. Click on the calendar entry for location and times. Contact [Jake LeAlcala](#), (EVAC's Events Coordinator), if you can volunteer at an event. It is helpful to know who is coming so we can tell you where the observing field is located and how to gain access.

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, simply click on this link <https://groups.io/g/AZ-Observing> and follow the instructions. EVAC also has a Facebook Group where members may share ideas, photos, and Astronomy related information. Click on the link to join: [East Valley Astronomy Facebook Group](#).

The Gilbert Rotary Centennial Observatory (GRCO) also has a Facebook Group. To visit, please click on [Gilbert Rotary Centennial Observatory - GRCO](#). The 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@evaonline.org for information.

Used Equipment For Sale at Great Prices

The East Valley Astronomy Club (EVAC) has used astronomy equipment for sale. Please note that equipment sales are “as is” and are “pick-up only”.

For more details and to answer any questions, contact the EVAC Property Director, James Yoder (properties@evaonline.org) or visit the EVAC Sales webpage [HERE](#). This page includes a brief description of the items, photos and reference materials (e.g. users manuals, etc.).

EVAC Equipment being offered for sale this month:

- **Celestron 8SE Schmidt-Cassegrain GoTo Telescope** in fair condition (Sale Price = \$500)
- **TeleVue/Coronado 79mm Refractor Telescope** in good condition (Sale Price = \$1,400)
- **Eyepieces** – A large collection of eyepieces of just about every type and price point
- **Bino Viewers** – 3 different types with price points from \$50 to \$350



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 Rental page](#). Each item below rents for \$25/week for up to 4 weeks. Currently the following items are available for rent:

- **Celestron C-8 with Nexstar GoTo Mount** - Everything you need to begin exploring the night sky.
- **ZWO Seestar S50 All-in-One Smart Telescope** - Everything you need to image the Sun, Moon and some bright, deep-sky objects. Extremely user friendly.
- **Celestron 10" Dobsonian Telescope** - Everything you need to begin exploring the sky.
- **Visual Filters for Deep Sky Objects** - 15 different filters to try before you buy.
- **Imaging Kit for Planetary & Moon Photography** - Everything you need to capture and process images except the telescope.

Telescopes come with all equipment necessary for observation (e.g. eyepieces, finder scope, power supply, etc.)

Contact the EVAC Property Director, James Yoder, at properties@evaconline.org for more details and to answer any questions.

Non-EVAC Equipment for Sale

This is mostly member equipment for sale. EVAC is not responsible and does not endorse any of this equipment. Visit the [sales page](#) for more details and contact information.

Bill Dillenges Equipment for Sale:

- Swarovski 8x50 SLC Binoculars (roof prism) with original box, shoulder bag, tripod adapter and Thousand Oaks solar filters - \$800.

David Hopper Equipment for Sale:

- Celestron C90 Spotting Scope - \$160.

James Yoder Equipment for Sale:

- Celestron NexStar 130SLT Goto Telescope - \$300.
- Celestron StarSense Explorer DX130AZ - \$250.
- 4.5" Newtonian on Alt/Az Mount - \$50.

Brian Rucker Equipment for Sale:

- Orion X12i 12" Dobsonian - \$1,200.

Bill Frazer Equipment for Sale:

- Lunt Solar Binoculars - \$45.
- Meade 8" LX90 ACF SCT Telescope, GoTo Mount - Sale Price \$550.
- Miyauchi 100mm 20x Fluorite Binoculars and Mount - Sale Price \$680.
- Sky-Watcher AZ-GTi GoTo Mount - \$170.
- A large selection of eyepieces including: Baader, TeleVue, Celestron, Explorer Scientific, and more.
- Misc. equipment including: Laser Finder, Star Diagonals, Equipment Case, Filters.

Fred Milenovich Equipment for Sale:

- Sky-Watch Skymax 127 Maksutov-Cassegrain OTA - \$200
- 14.5" Cassegrain & Secondary Mirror kit - \$1,000
- 12.5" Telescope Kit with mounting hardware - \$1,200
- 2" Filter Set (4 Filters) - \$175
- 72mm Filter Set (3 Filters)- \$210
- Various Observatory Reference Books and Astronomy Cases - [See website](#)



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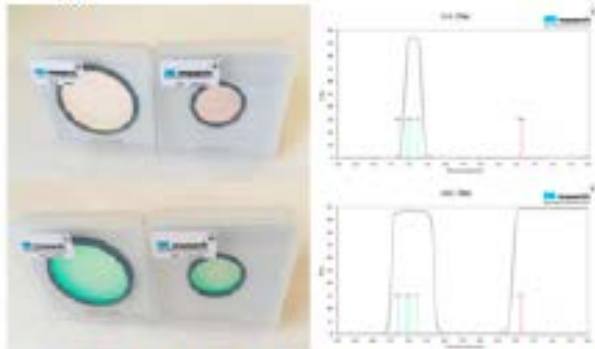
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Monthly Meetings will be held in person and also presented live online using Zoom. See the EVAC Website for updates.

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 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 7:00 pm.

Meetings are also available online via Zoom.

Visitors are always welcome!



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



September 2024

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					

September 13th - 2nd Friday Star Party

September 20th - EVAC Monthly Meeting

September 21st - Apache Junction Multi-Generational Center

October 2024

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		

October 11th - 2nd Friday Star Party

October 17th - Leading Edge Academy Star

October 18th - EVAC Monthly Meeting

Party

East Valley Astronomy Club - 2024 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 (<i>Renew in January</i>)	\$15.00	\$20.00	\$10.00
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Renewal Dues (Current Members Only)

Astronomical League: \$10.00 Annually:

Individual	Family	Student (18yr+ with ID)
\$30.00	\$35.00	\$20.00
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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.

Signature _____

Date _____

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www.evaonline.org

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