

THE OBSERVER



Total Solar Eclipse Corona in HDR

APOD April 30, 2018. Image Credit and [Copyright: Nicolas LeFaudeux](#)

From the Desk of the President by Steve Bradshaw

I had my love for astronomy unexpectedly reinvigorated a few weeks ago. To explain that I need to add some background before I continue with my tale.

My interest in astronomy started in a college astronomy class. I was immediately enthralled with the science of it all. The emptiness of space, the distances in space, the chronological age of universe, and the evolution of stars, matter, and the universe were all captivating. It helped that the instructor was knowledgeable, personable, and an entertaining lecturer. Never underestimate the impact of a good teacher.

Life, however, took me in other directions. I ended up falling in love, having a family, and building a fulfilling 40-year career in IT.

Then I retired and thought, "What do I do with all this extra time?" My question was answered the moment I saw a telescope ad on Facebook. I began to voraciously study. How exciting it was to finally have the time to be able to really dive in and learn. Somewhere in all of that I bought multiple telescopes, joined the astronomy club, and got involved in public outreach.

But somewhere along the line it started getting a bit routine. Let's

UPCOMING EVENTS:

- EVAC Riparian Star Party - April 12th
- EVAC Monthly Meeting - April 19th

Check out all of the upcoming club events in the Calendar on Page 11.

INSIDE THIS ISSUE:

<i>From the Desk of the President</i>	1
<i>March 15th 2024 Meeting Minutes</i>	2
<i>Best DSO Variety Six-Pack for April</i>	3
<i>What's up - April 2024</i>	4
<i>Deep Sky Imaging Target Highlights for April 2024</i>	5
<i>EVAC Outreach Events</i>	5
<i>Announcements</i>	7
<i>Used Equipment for Sale</i>	7
<i>EVAC Rental Program</i>	7
<i>Classified Ads</i>	8
<i>Calendar</i>	10
<i>Membership Form</i>	11

From the Desk of the President

by Steve Bradshaw

Continued from page 1

face it, nothing stays new and exciting forever. For all the movies and music featuring a first kiss, there is not anything featuring the 100th kiss. Add to this the "business" duties of being the club President and astronomy got a bit more routine.

Ok, you have the background story so let me get back to a few weeks ago.

It was daytime and I was at the Riparian Preserve near the observatory. I happened to see a middle-aged couple reading the sign on the observatory door. I approached, identified myself as a club member and telescope operator, and asked them if they had any questions. Wow, they had a lot.

I spent the next 20-25 minutes with them answering all sorts of space and telescope questions. They were curious, engaged, and eager to learn. To my surprise their excitement turned out to be contagious because I found myself starting to get excited again too. I am thankful to the universe for bringing those folks into my life that day. I would encourage you to get involved in public outreach with the club. Sure, it's almost a given that you will benefit

others by offering your time and knowledge. The surprise is just how much it might positively affect you as well.

This month might invigorate you anyway because the Sun is going to play hide-and-seek with us for a few minutes on April 8. A total solar eclipse will trace a dark, diagonal shadow across the middle of continental U.S. that day. The next total solar eclipse won't happen in the continental U.S. until August 23, 2044.

If you do not have travel plans to the centerline and totality, I would encourage you to watch the partial eclipse at the observatory at the Riparian Preserve. If the past is any guide, even a partial solar eclipse on a Monday could draw a lot of people. What a wonderful opportunity to give back to the public. Who knows, maybe you'll be invigorated too.

May we all stay excited about this wonderful, interesting, and challenging hobby that we all share. We are astronomers, whether amateur or professional.

Your President
Steve Bradshaw

EVAC Meeting Minutes for March 15th, 2024 at 07:30 P.M. AZ Time

by James Yoder

Meeting Minutes

YouTube: EVAC monthly meetings can be viewed on YouTube. Go to the [YouTube](#) website to play any of the meeting recordings or select this [link](#) for the current meeting recording.

Welcome

EVAC President Steve Bradshaw welcomed club members to the meeting and reviewed the agenda.

Announcements

Steve Bradshaw toured the EVAC Website (<http://www.evaconline.org>) and highlighted the following areas on the website:

- Basic astronomy classes such as [Beginners Guide to Small Telescopes](#) and [Planetary Imaging Primer](#) consist of ZOOM classes and hands-on labs and are periodically available based on interest. Contact James

Yoder (jty.astro@ArtCentrics.com) if you would like to be added to the waiting list for either class.

- To join 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](#).
- Recognition to various volunteers and board member who help make EVAC a success.
- Messier Marathon was a great success with approximately 55 groups and 90 attendees. We will likely have another event in fall (October, November).

EVAC Meeting March 15th, 2024 at 07:30 P.M. AZ Time

by James Yoder

Continued from page 2

Member Presentation

Speaker: Tom Polakis

Topic: Augmenting time-lapse imaging results with catalog data.

Tom discussed timelapse photography, specifically long-term time lapse. These are time lapse sequences that cover years and sometime decades. Examples of Nebula movement, star movement and Planetary Nebula were provided and discussed. An example utilizing Barnard's star over time was used to how proper motion of stars can be measured. Tom demonstrated how the Gia catalog can be utilized to verify motion of stars in many photographs.

The Backyard Astronomer

by Bill Dellings

Best DSO Variety Six -Pack for April

There are six main categories of interesting Deep Sky Objects (DSO): double stars, emission nebulae, planetary nebulae, open star clusters, globular clusters and galaxies. If we could choose only one object in each category to observe in April, which would be the best candidates? The following would be my choices:

Multiple stars: Beta Monocerotis (SAO 133316). This is my favorite triple star, but catch it soon, as it's past the meridian already. I love the fact that it's much easier to split than the noted triple star Iota Cassiopeiae. I have split the trio in a C8 at 145x. Lucky for star hoppers, neighboring Orion's Belt points southeast to it and Gamma Monocerotis, the two brightest stars in an otherwise dim constellation. Beta is the brighter (mag 3.74) and eastern - most star of the pair. "One of the most beautiful sights in the heavens", William Herschel, 1781.

Emission Nebula: M42, the Orion Nebula, king of the emission nebulae in the northern skies. It's still with us, setting at 10:39 p.m. on April 1st. You still have a shot at it, and it sure beats its only winter competitor, the Rosetta Nebula in Monocerotis.

Planetary Nebula: NGC 2392, the Clown Face Nebula in Gemini. I have seen its central star in a C8 at 78x. Planetary nebulas are relatively small objects in telescopes and require high power (100x -200x) to get a decent image; nebula filters can help. If NGC 2392 doesn't ring your chimes, slither

Main Presentation

Featured Speaker: Jessica Berheimer

Topic: Making a difference, getting involved in citizen science.

Jessica introduced us to a number of citizen science projects. A detailed discussion on the Gravity Wave Zoo project was discussed showing how citizen science can be used to identify and study gravity waves, instabilities and breaching. A number of images exhibiting this phenomenon were presented and discussed.

down to NGC 3242, the Ghost of Jupiter in Hydra, the Water Snake. It's an impressive planetary nebula, one of the best.

Open Star Cluster: Houston, we have a problem. My gut tells me to go with **M35 in Gemini**, my all-time favorite OC. It never disappoints. A thing of beauty in a telescope. But I'm also smitten with **M44, the Beehive Cluster in Cancer** nearing the meridian this month. What to do? I'm going to take writer's license here. I choose M35 for telescopes and M44 for binoculars. It's hard to beat M44 in a 16x70 binocular, it's a large cluster that few telescopes can handle properly. So, this is a twofer.

Globular Cluster: M3 in Canes Venatici: M3 is top dog (no pun intended) in April until M13 in Hercules and M5 in Serpens Caput rise next month. It's smaller and dimmer than M13 and M5 but equates itself well in the realm of globulars. A log entry of mine reads "Ok at 233x in the 11", very nice at 280x". Psst...if you can stay up till 10 p.m., you should be able to nab M13 low in the east.

Galaxy: M81/M82 in Ursa Major: Another twofer at no additional cost to you. I can get both galaxies in the same 0.90o field of my 11" using a 31mm Nagler (82o apparent field) at 90x. Seeing these two island universes floating in space 12 million light years away, is an exquisite sight. M81 is the brighter of two appearing oval, while M82 is lenticular and shows signs of disruption - "starburst

The Backyard Astronomer

by Bill Dellinges

Continued from page 3

activity" from repeated interaction with M81.

No doubt most stargazers are familiar with the above objects and viewed them many times. This was just a

whimsical exercise on my part to quickly think of which object in each category I would pick for April. Your gas mileage may vary.

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

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.
- 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.

Date	Event	Time	Equip-ment	Images	Ref	Comments
04/08	New Moon					
04/08	Solar Eclipse	10:10 AM - 12:33 PM	NE, BI, CT, TS	1 , 2 , 3	1	Check out the map to see if this will be a total or partial eclipse for your location. Phoenix Times: <ul style="list-style-type: none">• First Contact = 10:10am• Max = 11:15am• Finish = 12:33pm
04/10	Mars -Saturn Appulse	5:25 AM	NE, BI, T	1 , 2	1	At 5:25 AM, Mars and Saturn will be 30' apart about 10° above the horizon.
4/23	Full Moon	All Night				

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

Deep Sky Imaging Target Highlights for April 2024

by James Yoder

The average low [temperature](#) for April in the Phoenix metro area is 60° F. April 8th is a new moon with Astronomical dusk at 8:19 pm and Astronomical dawn at 4:39 am, giving us 8:30 of imaging time.

In this month's list there are over 99 object/configuration combinations provided of just about every class of deep sky object including 17 Globulars, 9 Planetary Nebulas, 4 Nebulas and 66 Galaxies/Galaxy Clusters.

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

The [Prospective Imaging Objects Guide](#) (PDF download) covers objects that reach their highest point in the sky and cross 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 April

Configuration	Page	Object(s)	Type	ImageLink
Hyperstar	8	Galaxy(M108) and Planetary Nebula (NGC3587)	Galaxy, Planetary	147 min
Focal Reducer	10	Leo Trio (M-65, NGC3628, NGC3623)	Galaxy Group	180 min
Primary Focus	11	NGC-3718, NGC3729	Galaxy Pair	170 min

Resources:

- [ArtCentrics.com](#) – [April 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.

EVAC Outreach Events

by Jake LeAncala

April Outreach Events:

- April 12th – 2nd Friday 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 [Jake LeAncala](#)

(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.

There are currently no outreach events planned for April.

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 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 7:00 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 consider 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@evaonline.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@evaonline.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 8” on Fork Mount Package in good condition Sale Price = \$750**
- **Celestron AVX Mount in excellent condition (\$1,180 new, Sale Price = \$650)**
- **Meade 4.5” Newtonian telescope in fair condition (Sale Price = \$75)**

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 beginning 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.
- **10” Dobsonian Telescope** - Everything you need to beginning exploring the sky.
- **Visual Filters for Deep Sky Objects** - 15 different filters to try before you buy.
- **Imaging Kit for Planetary & Moon Imaging** - Everything you need to capture and process images except the telescope.

Telescopes come with all equipment needed for observation (i.e. eyepieces, finder scope, power supply, etc.) Contact the EVAC Property Director (James Yoder) at properties@evaonline.org for more details and to answer any questions.



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

Webcam imaging made easy!

Time lapse

**Planetary
& lunar
imaging**



**Motion
detection**

Meteor capture

Free trial!

www.AZcendant.com



5757 N. Oracle Road Tucson, AZ 85704 520-292-5010
www.starizona.com

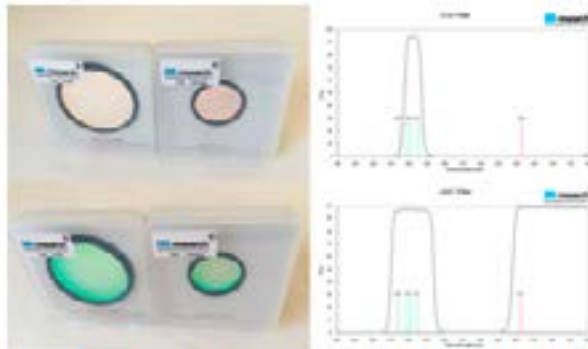
Apache-Sitgreaves Observatory

Overgaard, Arizona

Largest Public
Observing
Telescope
in
Arizona



Critical products for visual observing, too!



A-S Research Nebula Filters: See More Nebulosity!

www.apache-sitgreaves.org

APRIL 2024

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

April 12th - 2nd Friday Star Party

April 19th - EVAC Monthly Meeting

MAY 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	

May 10th - EVAC Riparian Star Party

May 17th - EVAC Monthly Meeting

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)

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

Astronomical League: \$7.50 Annually:

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 _____

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@evaonline.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.

Material in this publication may not be reproduced in any manner without written permission from the editor. ©2005-2024

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

www.evaonline.org

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

President: Steve Bradshaw

Vice President: Woody Sims

Secretary: James Yoder

Treasurer: Brooks Scofield

Board Members at Large: Alex Beck, Claude Haynes, Nathan Eskey, Tom Mozdzen and

Don Wrigley

Events Coordinator: Jake LeAlcala

Property Director: James Yoder

Refreshments: Open

Observing Program Coordinator: Wayne Thomas

AL Representative: Brooks Scofield

Newsletter Editor: Marty Pieczonka

Webmaster: Brandon Feldman

SkyWatch Coordinator: Claude Haynes

Observatory Manager: Claude Haynes

THIRD QUARTER MOON ON APRIL 1ST AT 20:14

NEW MOON ON APRIL 8TH AT 11:20

FIRST QUARTER MOON ON APRIL 15TH AT 12:13

FULL MOON ON APRIL 23RD AT 16:48