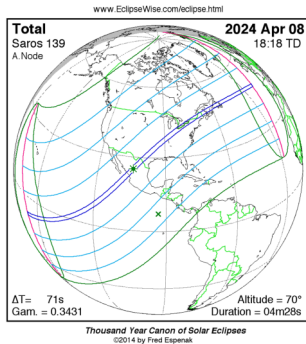


# amateur ASTRONOMER



sharing the wonder and science of astronomy



[Back Home Again In Indiana](#) (click on hyperlink to listen to this iconic Indy500 tune)

*Newsletter Editor's dog- Charlie, along with Ken and Anne Koeplinger, returned to their Midwestern roots and enjoyed the April 8, 2024 solar eclipse at KOA-Journey RV campground in the path of totality in Batesville, Indiana (southeast of Indianapolis, Indiana).*

## PLAN ON IT!

**May 9-12 DVAA Members Spring Field Trip** Big Dipper and Little Dipper Lodges at Cherry Springs. Link to event [here](#)

**May 15 (7:30-9:30 PM) Astrophotography Workshop**  
Monthly DVAA Astrophotography Workshop Open Session.

**May 17 (7:00 pm)** In-person General Meeting (non-members welcome) at Radnor Township Building and on YouTube. Member night: Soliciting your photos and stories of the eclipse! [More info](#)

**May 18 (8-11 pm) Public Star Party at Valley Forge**  
Rain/cloud date May 19th

**June 15 (8-11 pm) Public Star Party at Valley Forge**  
Rain/cloud date June 16th

FOR ALL EVENT INFORMATION AND UPDATES, SEE THE DVAA WEBSITE [www.dvaa.org](http://www.dvaa.org).

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## Welcome New DVAA Members!

Jessie Dummer (Philadelphia)  
Robert Nordmann (Perkiomenville)  
Desiree Vanaman (Hatfield)  
Wesley Vanaman (Hatfield)

We welcome all new members to enjoy the most our club has to offer by participating in DVAA activities. You are encouraged to ask questions and pursue your interests in astronomy through the club.

We suggest that new members attend our observing events and special interest group meetings, or volunteer to help with an outreach event or committee. Participation can advance your skills and enjoyment of the hobby and help you get to know your fellow members. New members are entitled to all benefits of membership.

Brian Lee  
Welcoming Committee Chair  
[welcoming@dvaa.org](mailto:welcoming@dvaa.org)



## DVAA Board & Committee Chairs

Title	Name	Email
President	Jan Rush	<a href="mailto:president@dvaa.org">president@dvaa.org</a>
Vice-President	Tom Nolasco	<a href="mailto:veep@dvaa.org">veep@dvaa.org</a>
Secretary	George Keighton	<a href="mailto:secretary@dvaa.org">secretary@dvaa.org</a>
Treasurer & Astronomical League Coordinator	Scott Vanaman	<a href="mailto:treasurer@dvaa.org">treasurer@dvaa.org</a>
Members-at-Large	Len Jensen John Leimgruber Andrea Saksek	<a href="mailto:mbratl@dvaa.org">mbratl@dvaa.org</a>
Astrophotography	Lou Varvarezis	<a href="mailto:astrophotography@dvaa.org">astrophotography@dvaa.org</a>
Camping and MSSP	Bill McGeeney	<a href="mailto:camping@dvaa.org">camping@dvaa.org</a>
Door Prizes	Ken Koeplinger	<a href="mailto:doorprizes@dvaa.org">doorprizes@dvaa.org</a>
Youth Awards	Al Lamperti	<a href="mailto:youthawards@dvaa.org">youthawards@dvaa.org</a>
Newsletter Committee	(see note at right)	<a href="mailto:newsletter@dvaa.org">newsletter@dvaa.org</a>
Night Sky Network	Al Lamperti	<a href="mailto:nightsky@dvaa.org">nightsky@dvaa.org</a>
Light Pollution Abatement	Barry Johnson	<a href="mailto:lpollution@dvaa.org">lpollution@dvaa.org</a>
Observing	(TBD)	<a href="mailto:observing@dvaa.org">observing@dvaa.org</a>
Outreach	Al Lamperti (interim)	<a href="mailto:outreach@dvaa.org">outreach@dvaa.org</a>
Programs	Jeremy Carlo	<a href="mailto:programs@dvaa.org">programs@dvaa.org</a>
Publicity	Sarah Marley	<a href="mailto:publicity@dvaa.org">publicity@dvaa.org</a>
Scope Rentals	Joe Lamb	<a href="mailto:rentals@dvaa.org">rentals@dvaa.org</a>
Website	Louis Berman	<a href="mailto:website@dvaa.org">website@dvaa.org</a>
Welcoming	Brian Lee	<a href="mailto:welcoming@dvaa.org">welcoming@dvaa.org</a>

## Mark Your Calendars!

### Upcoming Monthly Meetings

Friday, May 17, 2024 (7:00pm): Members Night

Monthly Meetings are held at the Radnor Township Building and are livestreamed. All are welcome to attend in person. We gather beginning at 7:00pm; the program and the [YouTube](#) stream begin at 7:30pm.

Meeting Location: Radnorshire Room, 301 Iven Avenue, Radnor, PA 19087

Upcoming 2024 Meeting Dates (Friday evenings): May 17, June 21, July 19, August 23, September 13\*, October 18, November 15 and December 13.

\*Outdoor meeting at Fort Washington State Park

### 2024 Public Star Parties

DVAA public star parties are held at Valley Forge National Historical Park on the Model Airplane Field. ([Google Maps](#)).

**Public Star Party dates for 2024 (all Saturday evenings):**  
May 18 (8:00), Jun. 15 (8:30), Jul. 13 (8:30), Aug 10 (8:00), Sep. 14 (7:00), Oct. 12 (6:00), Nov. 9 (4:30).

**Backup dates:** In the event of inclement weather, the Sunday following each scheduled date will be reserved as a backup option.

Register for the event in order to receive an email (also a text message, if enabled) regarding last-minute updates. The latest weather-related event information is always available at [www.dvaa.org](http://www.dvaa.org).

**Newsletter Editorial Committee:** Jeremy Carlo, George Keighton, Ken Koeplinger, Tom Nolasco, Dana Priesing, Jan Rush, and Barclay Thorn.

If you would be interested in joining us on the Newsletter Committee, or serving as guest editor for one month, just drop us a line at [newsletter@dvaa.org](mailto:newsletter@dvaa.org) — we'd love to have you on board, regardless of your experience level! Online tutorials are available to get you quickly up to speed.

Thanks to George Keighton for serving as lead editor for March and April. Ken Koeplinger is the lead editor for the May and June issues.

Follow the DVAA on Facebook and YouTube!



DVAA [Facebook Group](#)  
DVAA [YouTube Channel](#)



# 2024 star parties/conventions in or near MERAL

The following is a list of non-DVAA regional astronomy events, courtesy of Don Knabb of the Mid-East Region of the Astronomical League (MERAL). Please visit <https://www.meralastronomy.org> for the most current information.

## **South Jersey Astronomy Club Star Party, May 2-5**

Belleplain State Forest, NJ

<http://www.sjac.us/star-party/>

## **Mega Meet at Pulpit Rock, May 3-5**

Pulpit Rock, PA

<https://vaas.org/page.php?page=megameet>

## **Northern Virginia Astronomy Club, Astronomy Day, May 4**

<https://www.novac.com/wp/>

## **York County Star Party #1 June 5-9**

Susquehannock State Park in central Pennsylvania

<https://www.yorkcountystarparty.org/>

## **Cherry Springs Star Party, June 6-9 .....CURRENTLY SOLD OUT.....**

Cherry Springs State Park, PA

<https://www.facebook.com/CherrySpringsStarParty/>

## **Green Bank Star Quest, July 3- 6**

Green Bank WV

<http://www.greenbankstarquest.org/>

## **Astronomical League Convention, July 17-20**

Kansas City, MO

<https://www.astroleague.org/alcon-2024-kansas-city/>

## **Stellafane, August 1-4**

Springfield, Vermont (Not in MERAL, but too important to not include)

<https://stellafane.org/>

## **West Virginia Astrophotography Association Annual Conference August 2-4**

Blackwater Falls State Park, WV

<https://www.facebook.com/WVAA1> <https://www.wvaa.us/>

## **Almost Heaven Star Party August 30-September 3**

Spruce Knob Mountain Center in Circleville, WV

<https://www.ahsp.org/>

## **York County Star Party #2 September 4-8**

Susquehannock State Park in central Pennsylvania

<https://www.yorkcountystarparty.org/>

## **Black Forest Star Party (at Cherry Spring State Park) September 6-8**

Cherry Springs State Park, PA

<https://bfsp.org/>

## **Blackwater Falls Astronomy Weekend, September 12-14**

Blackwater Falls State Park, WV

<https://kvas.org/index.html>

## **Northern Virginia Astronomy, Star Gaze, September 28**

C.M. Crockett Park, Midland, VA

<https://www.novac.com/wp/>

## **Staunton River Star Party (Fall), September 30-October 6**

Staunton River State Park, VA

<http://chaosastro.org/starparty-home/>

## 2024 star parties/conventions in or near MERAL (continued)

### James River State Park Star Party, November 1-2

James River State Park, Gladstone, VA

<https://www.dcr.virginia.gov/state-parks/event?id=2024-01-05-14-36-16-803959-4dy>



SAVE THE DATE!

ALCON IS GOING TO KANSAS CITY FOR STARS AND ALL THAT JAZZ!

JULY 17-20, 2024

DOUBLETREE BY HILTON OVERLAND PARK, KANSAS

REGISTRATION INFO COMING SOON! CHECK [ASKC.ORG](https://askc.org)

ALCON 2024  
ASTRONOMICAL SOCIETY OF KANSAS CITY

KEYNOTE SPEAKERS  
FIELD TRIPS  
VENDORS

ASTRONOMICAL SOCIETY OF KANSAS CITY

The poster is purple with green and yellow text. It features a circular emblem on the left containing various astronomical and cultural symbols like a galaxy, a comet, a planet, a horse, and a telescope. The text is arranged in a clear, bold layout, with the event name 'ALCON 2024' prominently displayed in the center-left. The location and dates are clearly stated on the right. At the bottom, there is a small circular logo for the Astronomical Society of Kansas City and a list of activities: Keynote Speakers, Field Trips, and Vendors.



## DVAA President : Jan Rush

### My Foray into Electronically Assisted Astronomy (EAA)

About a month ago, I purchased a DwarfLab II “smart telescope.” I can’t quite figure out how this item qualifies as a “telescope,” since it lacks an optical tube, eyepiece, or any of the components we normally associate with a telescope. To me it seems closer to a camera, but at any rate I guess it’s a telescope/camera hybrid. A number of other DVAA members have acquired a competitor, the comparably-priced SeeStar S50, which is backed by venerable ZWO technology. Despite the DwarfLab’s somewhat murky Kickstarter origins, I was intrigued with its extremely small size; the “telescope” itself weighs under 3 pounds with the battery installed, and the case including telescope, tripod, filters and an extra battery measures 9 x 6 x 5.5 inches, easily traveling in a backpack.

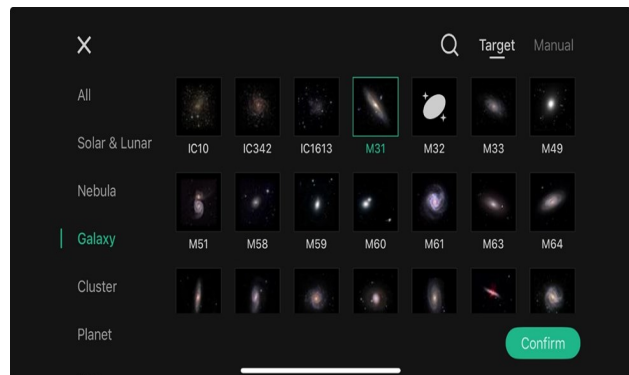


The DwarfLab II is described as a “smart telescope with dual cameras and AI power.” Well, let me first say that I have never before owned anything so “beta.” As I started to learn to use the DwarfLab II, new versions of the online-only manual, and the accompanying app, were released on a regular basis and were frequently out-of-synch with each other. YouTube videos, of which there were many, went out-of-date almost before they were posted. The most dramatic example concerned access to settings for the “burst” sequence, which was the recommended mode for shooting the solar eclipse during totality. Up until the day before the eclipse, I was puzzling over the online manual, trying to locate the buttons referred to in the manual for setting the burst sequence intervals. My wise millennial daughter asked whether I was sure my DwarfLab app was up to date, and I replied that I had just updated it last week. As it turns out, the button to set the burst settings wasn’t included in the DwarfLab app until 11am the day prior to the eclipse!

Let me acknowledge that some of the DwarfLab features are disarmingly easy to use. Autofocus works flawlessly on the sun and moon (although it takes up to a minute on stars). For the night sky, the Autocalibrate feature works amazingly well. The first time I used this function, I set the telescope on a table in my front yard, pressed “Autocalibrate” in the DwarfLab app, and ignoring my neighbor’s bright porch lights, the device buzzed around for about 10 seconds before achieving very accurate tracking and go-to functions.



The DwarfLab is advertised as the perfect device for “beginners,” but the assumption must be that the user is a beginning imager who is knowledgeable about astronomy. The horrific astronomical object search function is the definition of “rudimentary.” After calibration, the user can select items under the categories Solar & Lunar, Nebula, Galaxy, Cluster, etc. Unhelpfully, selecting a category such as “Galaxy” produces a page with Messier and NGC numbers, along with thumbnail photos, which could be mystifying to an astronomy novice. There is no accompanying information such as common name, constellation, and most crucially whether the object is currently above the horizon. Clicking on an object which is below the horizon produces a message to that effect, but it would be better not to need to click on the image to learn this. So, using the DwarfLab for deep sky objects requires another source such as SkySafari or Stellarium.



It took some digging to locate the necessary information to guide the beginning imager. Finding out what settings to use for astrophotography wasn’t in the main manual, nor in the supplement “Everything You Need to Know about DWARF II” but was finally unlocked when I found the document called “Every secret tip you wonder about DWARF II in astrophotography.” This is the document that unlocks recommended starting settings for shutter speed, gain, infrared, white balance, and how to achieve live stacking. To a rank beginning imager this would be a foreign language, and the manual is indeed written by a non-English speaker so it helps to have a bit of imagination as you read. For example, one bit of helpful advice says “DONNOT wear any filters or adaptor during calibration!”

*(continued on next page)*

## DVAA President: Jan Rush (continued)

On the positive side, this device seems so simple that I don't think it will take long to "master" it. If you don't mind beta, dive right in! Shown below are two of my first shots, the moon on April 15, and the solar eclipse on April 8. Regarding deep sky, I'm still on the learning curve (so glad I have DVAA to help with that!), and the buttons in the app don't yet match the documentation (I see no

stretch function, or save button . . .) With a bit more patience, maybe the app will catch up with the documentation. One can only hope :)



First-quarter moon on April 15 (left) and last phase of the Solar Eclipse on April 8 (right). Both images were taken with DwarfLab II "Smart" telescope.

Click Below to link to NASA-Night Sky Network Monthly Observing Article for May 2024:

[May's Night Sky Notes: Stargazing for Beginners | Night Sky Network \(nasa.gov\)](#)

Click below to link to NASA-JPL What's Up for May 2024:

[https://youtu.be/hm\\_8GGxJpA?list=PLTiv\\_XWHnOZrT\\_ppDGiT\\_fl3yjD4t7dl](https://youtu.be/hm_8GGxJpA?list=PLTiv_XWHnOZrT_ppDGiT_fl3yjD4t7dl)

# ***Animals Get Stressed during Eclipses. But not for the reason you think***

**From WHYY-npr (April 25, 2024)**

Link to Podcast: [Total solar eclipses can stress animals out, but for surprising reasons : NPR](#)

Biologist Adam Hartstone-Rose had one big question on his mind heading into this month's solar eclipse: Why are animals so stressed out during totality?

On April 8, as the moon crossed in front of the afternoon sun and plunged the area into sudden darkness, he and a team of researchers, zookeepers and high school students observed nearly three dozen different species at the Fort Worth Zoo in Texas. Hartstone-Rose says the animals were considerably less stressed than those he observed during a solar eclipse seven years ago — and thanks to "groundbreaking" preliminary data, he has an explanation.

In 2017, Hartstone-Rose, a biology professor at North Carolina State University, organized a study of animal behavior during the total solar eclipse at Riverbanks Zoo & Garden in Columbia, South Carolina. He says he was not enthusiastic about eclipses until he discovered how little researchers knew about animal behavior during them. Scientists had not attempted a study of this scale since 1932.

Hartstone-Rose says his team observed "quite dramatic behavior" during totality in 2017. Giraffes stampeded. Galapagos tortoises began mating. Gibbons made an unusual calling sound. What intrigued him most was not the eccentric behaviors themselves, but why they were occurring.

"A huge number of animals actually responded as if they became really upset and stressed out. And we weren't sure why they behaved that way," he says. That observation guided this month's study, which involved an array of species including bonobos, owls, coyotes and crocodiles. Hartstone-Rose says the data illuminated a nearly universal reaction across species — one that the team had noticed in 2017, but were able to confirm earlier this month: At the moment of totality, when the sky grew dark, animals began their regular evening routines as if nightfall had officially arrived. For nocturnal animals, this meant heightened activity. For diurnal animals, it meant napping, heading indoors or anticipating dinner.

Hartstone-Rose says the most extreme reaction his team witnessed earlier this month was from Aldabra giant tortoises. "These giant tortoises that each weigh over 100 pounds wanted to get into their evening barn so badly that they reared up on their hind legs, which I didn't even know tortoises can do,



Open Image Source: <https://pixabay.com/images/search/zoo/>

and they pushed so hard against the door that they actually bent the door frame," he says.

Pierre Chastenay, a Canadian astronomer who helped lead a separate study of 12 species at Zoo de Granby in Quebec, Canada, echoed these findings. He was tasked with observing Japanese macaques, and recalled that at the moment of totality, they bowed their heads and prepared to go to sleep. A few minutes later, they became active again, and began foraging for food, grooming and chatting.

"They were talking to one another in their macaque language, probably saying something like, 'What the hell just happened? This is the shortest night I've ever had,'" Chastenay says.

**Accounting for the Human Factor:** Hartstone-Rose says animals experience a low degree of stress when their evening routine is disrupted, "like turning the stress dial up to a level one or two." On April 8, the species Hartstone-Rose and Chastenay separately observed never became stressed or erratic beyond that low level — unlike in 2017. The two researchers connected in the weeks leading up to the eclipse, having heard they were pursuing similar studies. As for why stress remained so low, they have a **new hypothesis: fewer screaming people.**

## The April Monthly Meeting

### Jeremy P. Carlo



The April 2024 DVAA meeting was called to order by President Jan Rush. Jan opened with a photo of totality taken by her son-in-law from Texas, and a list of where various DVAA members observed totality, ranging from Texas to Maine. Jan outlined upcoming events, including the May 9-12 trip to the Frosty Hollow Lodge near Cherry Springs, the June 1 star party at the Willows, and the June 21 “full moon at Green Lane” event (the latter two of which could use some telescope operators). Jan announced that the Classified Ads module on the DVAA website is now active; check it out! Finally, Jan announced that applications were now open for the new Youth position on the DVAA board.

Moving on to committee presentations, Lou Varvarezis gave a plug for the monthly Astrophotography Zoom sessions held on the Wednesday evening just before the monthly meeting. Ken Koeplinger, Door Prize Czar, gave an update on the DVAA raffle, now held quarterly at the monthly meetings. Interim Acting Temporary Outreach Chair Al Lamperti presented Astronomical League Outreach awards to Barry Johnson, Tom Nolasco, Stan Williams, and Ken Koeplinger – congratulations to all! Al also reminded attendees of the upcoming May 1 deadline to apply for DVAA Youth Awards. Finally, Welcoming Chair Brian Lee welcomed six new members, several of whom were in attendance.

With committee presentations complete, Sylvie Stenberg gave the month’s observing presentation, on the upcoming expected outburst of T Coronae Borealis. T Coronae Borealis is known as a recurrent nova, a binary star system in which matter from a “normal” star gradually accretes on to a white dwarf companion in a very close orbit. Every so often, this infalling matter reaches ‘critical mass’ and undergoes nuclear fusion on the surface of the white dwarf, resulting in a dramatic increase in brightness known as a nova. Some of these systems are known to be recurrent, and in the case of T CrB, the period of repetition is about 80 years. As it turns out, it’s due to have another eruption in the next few months to a year or so (likely at some point before September 2024). When this happens, T CrB will rapidly brighten by a factor of about 1500, reaching roughly second magnitude (comparable in brightness to Alphecca, the alpha star of Corona Borealis). Sylvie’s engaging presentation ended with some finder charts to help locate T CrB to identify when it finally does go off.

Programs Chair Jeremy Carlo then introduced the evening’s invited speaker, Dr. Ed Guinan of Villanova University. His topic for the evening – “Mars Gardens at Villanova.” Ed started with an overview of the motivations for this project. There are plans to return humans to the moon, and eventually to Mars, the former (hopefully) by the late 2020’s, and the latter (hopefully) by 2040 or so. What are the living conditions on



**Dr. Edward Guinan, Villanova University**  
**Photo Credit: Mitch Berger**

Mars? In particular, if we were to establish a permanent base, what are the prospects for “living off the land,” as it were, growing plants for consumption using the available Martian soil?

Mars, it turns out, was once quite a bit more hospitable than the frozen desert (note one ‘s’ rather than two, which would be an entirely different thing...) it is today. Some 3.5-4 billion years ago, in the solar system’s youth, Mars had a significant atmosphere and significant water oceans flowing on its surface, evidenced by findings of dried river beds and other features on the Martian surface. But Mars, being only about a tenth of the size of the earth, quickly lost that atmosphere to space. With the atmosphere gone, liquid water either evaporated into space or froze onto or beneath the surface. Mars’ core also solidified, and away went its magnetic field, which now allows high-energy radiation to reach the surface. Being further from the sun than earth, Mars receives only about half the solar radiation the earth does. A forbidding place indeed.

*(Continued on next page)*



## The April Monthly Meeting (continued)

Yet, Mars has days and seasons not too dissimilar from the earth (albeit significantly colder), and enough carbon dioxide in the atmosphere to theoretically support plant life, as well as stockpiles of frozen water which could be marshaled into use. What sorts of plants might grow in the Martian soil? That's where Ed Guinan and his team – actually an undergraduate astrobiology class – come in, making use of the greenhouse at Villanova University, and “simulated Martian soil” produced to have similar chemical and physical characteristics to the soil encountered by the various probes which have studied Mars’ surface over the past 40-50 years.

Unsurprisingly, crops such as tomatoes and grain which need “full sun” don’t do well, although if plentiful energy is available LED lighting could be used to supplement the anemic Martian sunlight. Also unsurprisingly, plants we typically consider to be ‘weeds’ – such as dandelions – do quite well. (Dandelions, it turns out, are quite nutritious...) Various crops were grown and rated from A-F based on how well they performed in these simulated Martian conditions (although in at least one case the plants died because the students failed to realize that crops need to be watered...) Some plants which were tried, with varying degrees of success, included spinach, carrots, kale, garlic, lettuce, onions, and peas. Tubers such as potatoes since they could not properly anchor in the soil.

Ed then went through some interesting examples. Hops grow particularly well, as does barley. With those – Martian beer? Yes, the team attempted to do so, and came up with about a gallon of what was described as “bad” beer. (Although, if you were trapped alone in the Martian desert, that “bad” beer might be the only thing for 50+ million miles in any direction.) This “discovery” led to a write-up in the NY Times. There was some interest in Martian marijuana, although for a variety of reasons the class didn’t pursue that particular avenue.

Of course, on earth plants don’t grow all on their own. The soil has been faithfully tended for millions of years by humble earthworms, the “garbage disposals” of nature whose “trailings” (feces) make excellent fertilizer. In the greenhouse, the worms will eat anything the students would give them, with a particular affinity for leftover pizza. Could worms help to transform the sandy Martian regolith into rich topsoil? In addition, worms are a good source of protein and vitamins; could the worms themselves be used as a food source? Ed produced some samples of dried earthworms for the audience (including your present correspondent) to sample. (I found them similar to pork rinds, mostly tasting like salt. Not the most appetizing but I certainly wouldn’t pass them up in an emergency. Maybe best to wash them down with some bad Martian beer.)

Unfortunately, there are some complications. Martian soil has a high pH of 9, which would need to be tamped down through some processing to bring it into a more hospitable range for terrestrial plants (although the possibility of genetic engineering was raised). Martian soil also contains a lot of corrosive perchlorates, which

would need to be processed out as well. Later in the project, attempts at hydroponic growth were tried, with decent success. In fact, it looks like the best way to grow plants on Mars may be to bypass the corrosive, alkaline soil entirely and go hydroponic, although this would require a greater energy expenditure, and does sound quite a bit less “cool” than growing plants in Martian soil.



**Sylvie Stonberg gave the month’s observing presentation on the upcoming expected outburst of T Coronae Borealis. Photo Credit: Mitch Berger.**



**Astronomical League Outreach awards were presented at the April Meeting to DVAA members: Barry Johnson, Tom Nolasco, Ken Koeplinger, and Stan Williams (not pictured).**

**Photo Credit: Mitch Berger**

# Eclipse Science! NASA-Nationwide Eclipse Ballooning Project

## Alissa Sperling

On eclipse day — April 8th — dozens of student teams across the country launched hundreds of research weather balloons. The balloons carried long, dangling strings of scientific instruments into the path of totality, the area on Earth's surface that will see the moon completely block from the sun. The effort, known as [the Nationwide Eclipse Ballooning Project](#), was backed by NASA. It's an opportunity to make unique atmospheric measurements that can only be done during an eclipse, and a chance for students to learn skills they may someday use to launch satellites and astronauts into orbit.



Locally a team of high school students from Springside Chestnut Hill (SCH) Academy led by DVAA member: **Alissa Sperling** and SCH faculty colleague: Peter Randall worked with college students from Drexel University and their faculty advisor: Rich Cairncross to send weather balloons tens of thousands of feet into the atmosphere to take measurements during the eclipse. "We've been preparing for this throughout our entire senior year and the last half of our junior year - preparing, communicating, going to Drexel, constructing a balloon," remarked SCH team member Cameron Lyon. Team member and senior SCH student Shaun Gupte indicated the team has spent endless hours working designing and testing scientific equipment called "payloads" with instruments that capture general atmospheric data. The measured data and video images are streamed down to a ground station. The ground station team tracked and livestreamed the balloon's course and videos.

For the past year, SCH physics teacher and DVAA member **Alissa Sperling** has helped to manage the project, even traveling with students last October to Texas since it was in the path of the eclipse to perform a test run to ensure the project was safe. Alissa shared the following recap of the eclipse balloon launch from Upstate NY and retrieval in VT:

*On Sunday March 7th, the team prepared and tested payload and launch components. On the morning of the solar eclipse we filled the balloons early and tethered them to the ground so that we could release them at the perfect time (2:30 PM) to be in the path of totality about an hour later when the eclipse reached us. Immediately after launching the first balloon we began preparing a second balloon. Just as the payload lifted off the ground, the attachment between the parachute and the second balloon failed and snapped, releasing the payloads to the ground as the balloon flew away. We didn't have enough helium left to fill a third balloon, so we packed up the experiments from the second balloon except for its cameras, which we left to capture the eclipse from the ground.*

*After the balloon launch, we gathered with our team,*

*other visitors at the camp, and some of our students' families who had traveled to join us to watch the eclipse. We sat on the camp's lawn with blankets, cookies, and hot chocolate and enjoyed the beautiful weather while the sky darkened. When totality occurred everyone cheered and then we sat in silence and listened to the sounds—or silence—of the natural world.*

*For the rest of the day, we cleaned up and tracked the path of our balloon before sending a cut-down command to the balloon just beyond the Green Mountains in VT. We also planned for our next-day retrieval since we knew from our GPS trackers that the balloon landed 156 miles away in Putney, VT, nearly a five-hour drive away.*

*The next day we drove up to Putney, VT and met the homeowners who's property our payload had landed in. (Through the wonders of Google Maps and "creative internet searching" we were able to locate and contact the homeowners. They were thrilled by our call!) Once we got there, Cameron used his drone to locate the payload in the trees and then we hiked into the woods and found our payload about 40 feet up a small maple tree. We cut down the tree and successfully retrieved our payloads!.*

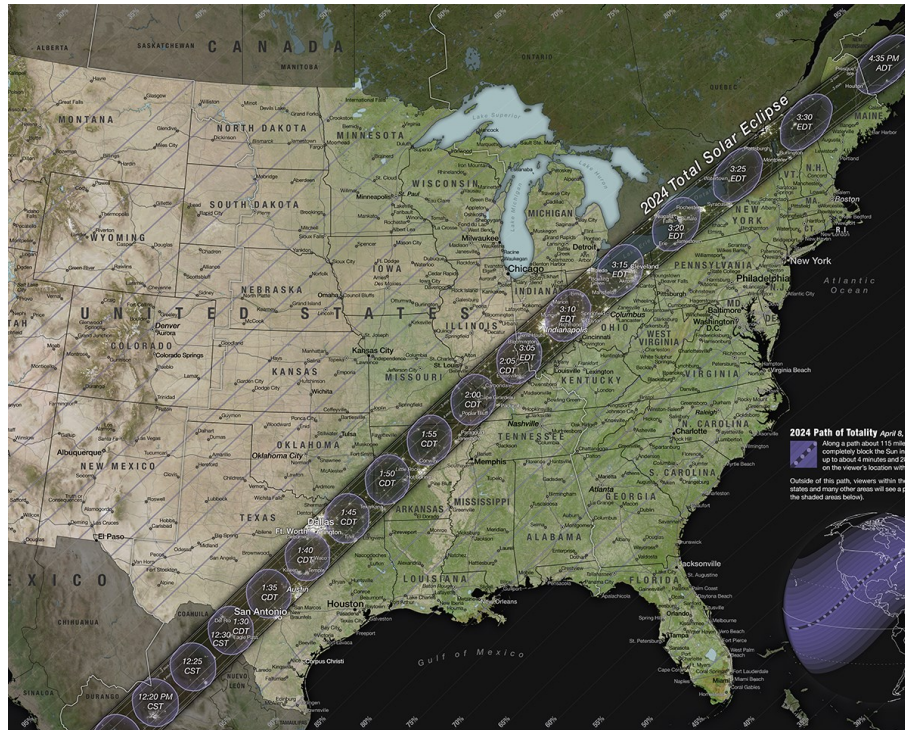
*All three cars traveling for retrieval reached Philadelphia in the middle of the night. Our crew had traveled 1178 miles in the last four days. Sleep? Not a lot! We are working on analyzing our data now.*

To view their 360° high altitude video click below:  
<https://youtu.be/XvG-D-GzL2E?feature=shared>

Congratulations to the SCH-Drexel student balloon team—Cameron Lyon, Shaun Gupte, Devin Gibson, and Karina Chan-van der Helm, and faculty advisor and DVAA member **Alissa Sperling** and her SCH and Drexel faculty colleagues. DVAA members look forward to hearing more about your high altitude eclipse measurements.



# Where did DVAA view totality on April 8?



## Texas

Harold Goldner  
Gary & Tracey Trapuzzano  
Bill McGeeney & Kaitlyn Evans  
Jan Rush  
Brian Lee

## Arkansas

Harry Orlind  
Barry Johnson

## Indiana

Ken Koeplinger  
Dan McCauley  
John Leimgruber

## Ohio

Don Knabb  
Scott Vanaman  
Tom Nolasco  
Jim Taylor  
Leon Rosen  
Frank Colosimo  
Wayne Reed  
Mark DeOrio  
Andrea Saksek

## Illinois

Rich Kuchan

## Pennsylvania

Laura Todd

## New York

Mitch Berger

## Vermont

Bart Fried  
Louis Berman  
Jeremy Carlo  
Lou Varvarezis  
Len Jensen

## New Hampshire

George Keighton

## Maine

Doug Lentz

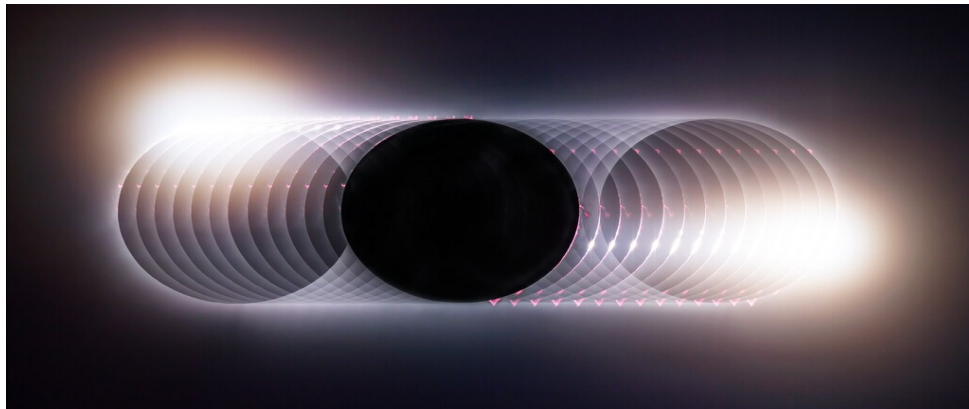
## Ontario, Canada

Marsha Hurst

Eclipse viewing locations of the listed individuals were determined from member information posted on [dvaa.groups.io](https://dvaa.groups.io)

## DVAA Member- Eclipse Adventures/Photos

**Daniel McCauley** traveled to Indianapolis, Indiana to witness totality and created an awesome artistic geometric sequence montage (below) and timelapse videos incorporating some of the best images and timelapses he captured during the recent 2024 Solar Eclipse from Indianapolis, Indiana.



**Video Link:** [https://www.youtube.com/watch?v=0zkep\\_p2DS0](https://www.youtube.com/watch?v=0zkep_p2DS0)  
(Make sure to select 2160P 4K resolution in YouTube for best results)

**Question for DVAA Members from Daniel:** The late movie composer-James Horner (1953-2015) is alleged to have “borrowed” the music (Gayane’s Adagio from classical composer Adam Khachaturian) Daniel chose to accompany his eclipse video above when he composed music for which two movies?

**For Answer see:** [https://en.wikipedia.org/wiki/James\\_Horner](https://en.wikipedia.org/wiki/James_Horner)

**Also view Daniel’s “Great American Eclipse Timelapse” at the link below:**

<https://www.youtube.com/watch?v=07FcMtYiKxw>



**Bart Fried** submitted the spectacular “Triple Diamond Ring” image above which was taken at totality in Richford, Vermont. Image Credit: Theresa Hong



## DVAA Member- Eclipse Adventures/Photos (continued)

### **SOMETIMES IT'S WORTH LINGERING ON THE JOURNEY FOR A WHILE BEFORE GETTING TO THE DESTINATION RICHELLE MEAD**

**Ken and Anne Koeplinger (traveled to Batesville, Indiana):**

One week before the eclipse we rented a RV-van and embarked on an extended two-week journey: initially traveling through the Shenandoah Mountains (VA) and touring the eastern WV underground bunker secretly built to house the US Congress in the 1950s (in the event of a nuclear war) during the height of the Cold War. The bunker was built in "plain sight" underneath the grand: Greenbrier Hotel in White Sulphur Springs, WV. <https://www.greenbrier.com/>

Over the next few days we planned to tour West Virginia waterfalls near the New River Gorge but the overnight appearance of heavy rain, tornadoes, and unseasonably cold weather in WV encouraged us to instead travel further south to the Great Smoky Mountains (KOA Holiday RV Resort– Townsend, Tennessee– fantastic campground right on the breathtaking Little River: [The Little River | Tennessee River Valley](http://The Little River | Tennessee River Valley) ([tennesseerivervalleygeotourism.org](http://tennesseerivervalleygeotourism.org)) Eventually meandered our way northwest through Kentucky and Southern Ohio on our way to Batesville, Indiana for the eclipse. In contrast to reports from DVAA members reporting from other US locations of totality, we enjoyed clear, sunny skies and warm temperatures in Batesville on April 8th!

This was the first time we had experienced a total solar eclipse– it was amazing: particularly the 360° sunset, the sun's visible chromosphere and corona and prominences with visible red H-emission. During the eclipse we sipped on some Tennessee "moonshine" and snacked on Sun chips and Moon pie.



The following day we traveled back to southwest West VA to tour the breathtaking New River Gorge <https://wvtourism.com/places-to-go/parks-public-lands/national-parks/new-river-gorge-national-park-and-preserve/> and innumerable waterfalls and river rapids. On the way back east we stopped at Green Bank, WV Radioastronomy Observatory– a visit that had been on my bucket list for a long while. <https://greenbankobservatory.org/> I'll share more on that visit related to my interest in radioastronomy/astrochemistry next month.

## ***DVAA Member- Eclipse Adventures/Photos***

**THERE IS NO DIFFERENCE IN THE DESTINATION, THE ONLY DIFFERENCE IS IN THE JOURNEY.**

### **HAZRAT INAYAT KHAN**

**Barry and Diane Johnson (traveled to Royal Arkansas):** Cloudy skies chased us from our original destination: San Antonio, Tx to Royal, Arkansas where we saw the eclipse from clear skies.

It was dark enough to see both Venus and Jupiter in the daytime, similar to twilight. Both planets happened to be in the same part of the sky as the sun.

**Jeff Miller (traveled to Jackman, Maine):** Watched the eclipse from the comfort of their lawn chairs pitched in the snow in Jackman on April 8th.



[Editor notes lack of anyone sunning on the adjacent beach blanket!]

## ***DVAA Member- Eclipse Adventures/Photos (continued)***

**Justin Williams (traveled to Newport, VT):** We made plans last year to be in northern Vermont to see the eclipse. We had initially planned to travel to southern Vermont the week before and then to venture north to Stowe for totality over the weekend. Mother nature of course had other plans. After most of Vermont received well over 12" of April snow, we ended up driving to Vermont on Friday after the storm had passed. We made our way to Stowe on Saturday the 6th and scouted several locations, including what could have been a beautiful widefield shot with the eclipse over Mt. Mansfield. Unfortunately, the cloud forecast continued to get more ominous for Stowe with the cloud deck rolling in just in time for totality. We made a last minute call to drive northeast to Newport, VT and Northeast Kingdom International Airport, where we ended up meeting my fiancée's parents, who flew in from Pennsylvania on the day of the eclipse. The weather had warmed significantly from the earlier snow and we were able to avoid most of the traffic by avoiding the highways and traveling on dirt roads through the northern Vermont hills. The plane reservation allowed us to set up inside the airport where the plane was parked and we settled in to enjoy the show. I am still in awe of mother nature and the entire experience. As totality set in, the runway lights turned on and it was truly a surreal scene within the shadow with daylight on every horizon.

Below is a link to some images. The majority were taken at 600mm with mirrorless full frame camera. The shot of the corona is a bracketed shot of 9 blended exposures. The composite shot is in ~20 min intervals through the entire eclipse and the wide angle shot was from my cell phone.

<https://justinwilliams.smugmug.com/Astrophotography/Eclipse-2024/n-z7Zmz6>

**Editor's note: A friendly reminder that we will be having a member night for the May 17th monthly meeting. Get ready to share your eclipse adventure/photos.**

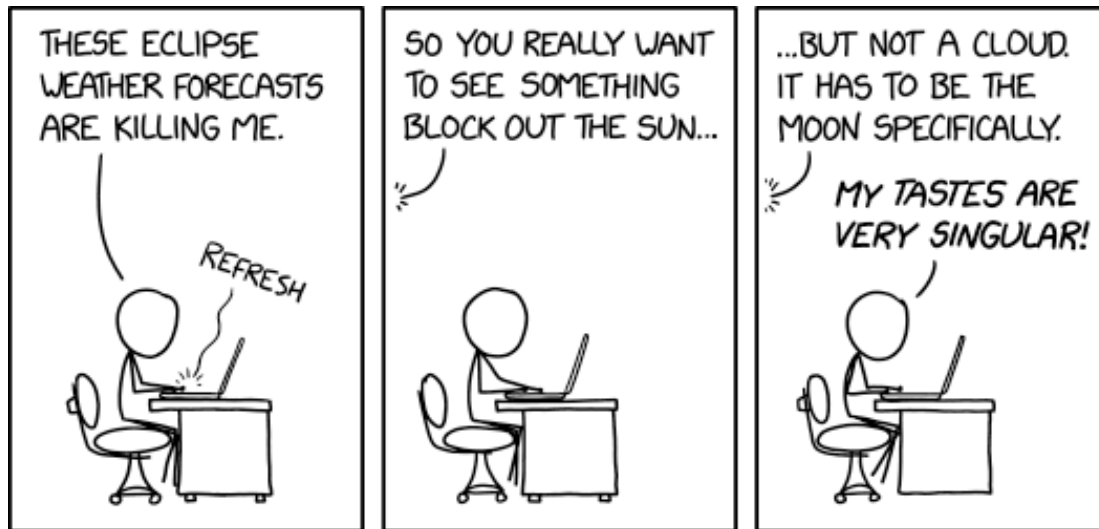
**E-mail Jeremy Carlo at [programs@dvaa.org](mailto:programs@dvaa.org)**

**to sign up for a 5-10 min presentation at the member's night on May 17.**

**Jan Rush (traveled to Austin, TX)**

Had some very lovely views of totality here at Horseshoe Bay west of Austin— even saw the diamond ring although totality was shortened by clouds. But Spectacular!!!

## DVAA Member- Eclipse Adventures/Photos (continued)



Source: <https://xkcd.com/2915/>

### Leon Rosen and Family (traveled to Sandusky, Ohio):

I'd been planning to view this eclipse since 2018. Hours of my life poured into finding the right site along totality.. Booking campsites, reading weather maps, calling Texas ranches to see if they were open to hosting, etc. In 2023, I had to give up on going to TX, because we planned a long family adventure in March of '24, so I swapped OH for TX. Along the way to our final spot for the eclipse, we visited the Duquesne Incline and the Rock and Roll Hall of Fame, "Total Eclipse Fest 2024" at the Great Lakes Science Center, glow in the dark painting, a Jellystone RV Campground, made custom diffusers at "The Candle Studio," saw friends, and in the last 24 hours before the eclipse, we changed our viewing location.

As it turned out, our RV had an issue. No hot water. The RV wasn't properly de-winterized. We were quite upset about the hot water issue, but we worked around it. This impacted our plans and rather than driving 2+ hours to Dayton, we settled on Sandusky, which was closer and would yield a longer totality experience.

The period right before totality was very exciting and I was scrambling to remember all the terminology and phenomena to observe, like shadow bands. It got slightly colder and the excitement built in the last minute before totality. We saw the building lights come in at the car dealership in front of us, and with the darkening of the sky in just a few seconds we were in totality, shouting "Wow!" and "Oh my gosh!"

I forgot to pay attention to the Purkinje effect, but we did notice the birds making lots of noise, the dogs going to go lay down, a few fireworks being set off, a breeze in the air, and a variety of colors in the sky around us with a deep purple color really standing out above us. We took turns using each of the viewing methods I brought, and finally came together for a hug as we watched the edge of the shadow approach and the diamond ring appear. I was in tears. My family knew how long I'd worked to ensure we could experience this event together; they were happy for me that it worked out.

Link to Leon's photo montage of the day:

[https://drive.google.com/file/d/1nRlevnP4OmuWcqMH\\_VsUrDGrD-L9MOJ/view?usp=sharing](https://drive.google.com/file/d/1nRlevnP4OmuWcqMH_VsUrDGrD-L9MOJ/view?usp=sharing)



## ***DVAA Member- Eclipse Adventures/Photos (continued)***

### **Tom Nolasco (traveled to the Lake Erie shoreline)**

The plan was to go to Texas for the eclipse and in December of 2022 I booked a 5-bedroom house in Mesquite Texas southeast of Dallas and I thought we were all set. There would be 8 of us all together: my wife and I, my younger son, my older son with his wife and two young children and Jim Taylor (another DVAA member). Things went sideways, for the first time, in mid-May 2023 when the owner of the Airbnb informed me that he was cancelling the booking. I rebooked two other Airbnb houses between May 2023 and January 2024 which were also cancelled by the owners.

Just two months before E-day, and a bit discouraged, I rethought the whole Texas thing and decided to try somewhere closer to home. By late January I managed to find a few rooms at a small hotel just north of Cleveland in Willoughby Ohio and my son and his family booked a two-bedroom house, about 20 miles away, close to Geneva-on-the Lake Ohio. As a contingency I also grabbed some hotel rooms just North of Albany in case Ohio's weather forecast looked bad and we decided to make a run for it to New York or Vermont. As eclipse day approached there were no obvious winning locations, except Maine, and the hotel in New York had a 5-day cancellation policy. I decided to stick with Ohio but keep looking for better options than the small hotel I have booked. On Friday afternoon, 72 hours before the eclipse, I found a beautiful 4-bedroom Vrbo right on Lake Erie and booked it immediately.



This is where the original 8 of us plus 2 friends of my son, who came up from Charleston, one set of friend's parents and their two friends, a total of 14 of us, viewed the eclipse. It showered early Monday morning and there was enough mist in the air that the lake just faded away in the distance, it was looking grim. Suddenly though, at around 9:30 AM the sky cleared. By eclipse time a very thin layer of high clouds rolled in. Surprisingly, this actually enhanced our experience. This very thin layer did nothing to obscure the Sun and its corona during totality but was just thick enough to allow us to clearly see the ominous dark umbral shadow approaching. It also enhanced our view of the 360-degree sunset effect during totality producing a very vibrant bright yellow and orange glow all along the horizon which was especially pretty over Lake Erie. Both Jupiter and Venus shone brightly in the sky. It turned out to be a spectacular eclipse from our last-minute lakeside location. Surprisingly in hindsight- I don't think it could have worked out any better!

**Methacton**  
**SCHOOL DISTRICT**  
PRESENTS:

# **Mallon Planetarium Community Shows**

**Wednesday, January 17th**

5:30-Celestial Highlights & Two Small Pieces of Glass (4th Grade through Adult)

7:00-Celestial Highlights & 2012: Ancient Skies, Ancient Mysteries (5th Grade through Adult)

**Wednesday, February 21st**

5:30-Celestial Highlights & Molecularium (Great for young audiences: Pre-k to 3rd Grade)

7:00-Celestial Highlights & Leap Years: How Our Calendar Works (Lecture: 6th Grade through Adult)

**Wednesday, March 20th**

5:30-Celestial Highlights & Preparing for April 8th Solar Eclipse (Same as 7:00 Show)

7:00-Celestial Highlights & Preparing for April 8th Solar Eclipse (Same as 5:30 Show)

**Saturday, April 6th**

Free Community Star Party. Details at: [www.methacton.org/planetarium](http://www.methacton.org/planetarium)

**Wednesday, April 17th**

5:30-Celestial Highlights & The Little Star That Could (Great for young audiences: Pre-k to 3rd Grade)

7:00-Celestial Highlights & Dynamic Earth (4th Grade through Adult)

**Wednesday, May 29th**

5:30-Celestial Highlights & Violent Universe 4th Grade through Adult)

7:00-8:00 p.m.: Celestial Highlights & Faster Than Light (4th Grade through Adult)

**[WWW.methacton.org/Planettix](http://WWW.methacton.org/Planettix) for Tickets**

**Adults: \$8**

**Children/Students/Seniors: \$6**

**Arcola Intermediate School  
4001 Eagleville Road  
Eagleville, PA 19403**

## DVAA Telescope Rentals

Celestron NexStar 5SE



Orion 6" Dossorian



DayStar 60mm Solar Scope



Ioptron Tracker



Orion 6" StarBlast Dobsonian



All scopes include tripod/base, eyepieces, manuals, power, etc. Rental is \$10/month with \$20 deposit. More info at [www.dvaa.org](http://www.dvaa.org) under the OBSERVING tab. To rent one of these scopes, contact Joe Lamb at [rentals@dvaa.org](mailto:rentals@dvaa.org).

## The Delaware Valley Amateur Astronomers

Since 1976, the **DVAA**, a nonprofit corporation, has **shared the wonder and science of astronomy** with thousands of amateur astronomers and the public in the Philadelphia area. Each month we host dark-sky and local star parties, telescope workshops, science & astronomy lectures, educational outreach sessions, and more. To learn more or to join DVAA, please visit [www.dvaa.org](http://www.dvaa.org).

Check the schedule for our **free monthly meetings open to the public**, and available on [YouTube](https://www.youtube.com).

**get in on the fun:**  
**JOIN the DVAA TODAY!**

**Dues are \$40 per year** for an individual, \$60 for a Family Membership, or \$10 for a Junior or Student Membership. **Membership benefits** include our monthly newsletter, membership in the Astronomical League (including its publications), access to our dark-sky observing sites, and inexpensive rentals of fine telescopes. You can join or renew online at [www.dvaa.org](http://www.dvaa.org). If paying by mail, include a note stating what you are paying and membership category desired. Make checks payable to "DVAA" and send to our treasurer: Scott Vanaman 327 Laurel Drive, Collegeville, PA 19426 or for more information contact [treasurer@dvaa.org](mailto:treasurer@dvaa.org).

