

Committed to Supporting Amateur Astronomy since 1933



The IAS News & Views

Volume 91, Issue 4



Indiana Astronomical Society

General Meeting

Saturday, May 4, 7:00 PM

“Citizen Science, Variable Stars”

Dr. Brian Kloppenborg Ph.D.

Executive Director, AAVSO

In this talk, I will provide a brief overview of citizen science, a review of the different astronomy-related citizen science programs you could get involved with, and discuss how the American Association of Variable Star Observers (AAVSO) can get you started.



Dr. Brian Kloppenborg is an astrophysicist and entrepreneur. He earned a Ph.D. in Physics from the University of Denver, and a B.A. in Physics from Hastings College. Brian is presently the Executive Director of the American Association of Variable Star Observers (AAVSO). Prior to joining the AAVSO, Brian worked as a Research Scientist at Georgia Tech Research Institute where he served as a lead engineer and project director on a variety of governmental programs. Brian's research interests include photometry, spectroscopy, astrometry, and long-baseline optical interferometry of eclipsing binaries, novae, and young stellar objects. His work is published in Nature, ApJ, JAAVSO, and similar scholarly journals.

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From the President's Desk



With the Great Total Solar Eclipse of 2024 behind us, we now embrace Spring and observe once more under warm skies! Beginning this month, we return to McCloud Nature Park, where Jon Thomas runs a monthly Saturday night program that includes an IAS speaker and then public observing through IAS member telescopes. Be sure to come out under dark McCloud skies to share views through your scope.

We convene at Link Observatory for our May meeting. Looking ahead to the summer months we have the Indiana Family Star Party, the 85th Anniversary of First Light for the Link 36-Inch Reflector, and a group field trip to the Cincinnati Observatory.

The April 8 eclipse generated a lot of public interest and so our Outreach Coordinator, Steve Haines, is bound to receive a lot of requests for astronomy outreach. When you see Steve on groups.io asking for volunteers to man school science fairs or city park events, please step up and bring your scope to help spread the word about amateur astronomy!

— Robert Aull

May General Meeting Call-In Details

IAS May 2024 General Meeting

May 4, 2024, 7:00 – 9:00 PM (America/New York)

Please join my meeting from your computer, tablet or smartphone.

<https://meet.goto.com/517932581>

You can also dial in using your phone.

Access Code: 517-932-581

United States: [+1 \(872\) 240-3212](tel:+18722403212)

Get the app now and be ready when your first meeting starts:

<https://meet.goto.com/install>

You may also join without installing any software by using the Google Chrome browser.

IAS NEWS

Upcoming Events for May

The following events will occur rain or shine.

IAS Program Planning/Board Meeting

Wednesday, May 1, at 7 PM, via GoToMeeting. The IAS board will get together to discuss the business of the Society. Dues-paying members are welcome to participate and provide input. Please monitor [our collaboration site at groups.io](https://groups.io) for details.

IAS General Meeting

Saturday, May 4, at 7 PM. The IAS general meeting is scheduled to occur at the Goethe Link Observatory, 8403 Observatory Rd, Martinsville, IN 46151 (Also Virtual) ([map](#))The public is welcome.

Those who are unable to make it to the Link may also participate virtually, using a GoToMeeting teleconference. For details and call-in information, see page 3 of this newsletter.

Observing Activities for May

The following events are weather-dependent and subject to last-minute cancellation. Please monitor [our collaboration site](#) for updates and do not drive out until you receive confirmation that it's a "go."

Link Activities (Members and Invited Guests) —

The IAS has deep-sky observing sessions scheduled to occur at Link Observatory on the weekend of May 3-4, (the 4th is immediately after our general meeting) again on the weekend of May 10-11, and once more on May 31.

Come observe with the telescope operators using the Link 36" and/or Tanager Hill 14" scopes or bring your own and set up on the north observing field.

McCloud Activities (Public Event) —

When: Sat, May 18, 9:00 pm – 11:30 pm

Where: McCloud Nature Park, 8518 Hughes Rd, North Salem, IN 46165 ([map](#))

Description: There will be a half-hour, night-sky orientation presentation at the Nature Center at 9:00 PM. Weather permitting, members of the Indiana Astronomical Society will have their telescopes set up nearby for observing under the stars after the presentation. IAS members bringing scopes are asked to arrive at 8:30 PM. Sunset is at 8:58 PM.

West Park Activities (Members Only) —

West Park observing is scheduled for May 17th. We will gather at West Park at 8:00 weather permitting.

Observing and Outreach Reports

April 6 (Messier Mini-Marathon at the Link Observatory) — On Saturday, 6 April 2024, Robert Aull and Dave Collier powered up the C14 in Tanager Hill Observatory at 1950H, acquired Sirius as a first calibration star, and adjusted the finder scope to better match the C14. After viewing Procyon and Jupiter, they began the Messier Mini-Marathon with the tenth item on the list (sorted from west to east) with members and guests LeRay Hinchman, Robert Harrold, John & Bill Musick, Phil Thompson, Maribel Gaspang, Karen Lalioff and Ethan & Steven Bottoms, Sundaram Raghuraman (Raghu), and Josh Francis. The skies were perfectly clear. Signed participation certificates were issued, and by the end of the evening (0045H), they had viewed 50 of the 110 targets on the list, with only one item missed in the sequence (M79 globular cluster in Lepus) because it hid behind a tree:

M34 open cluster [*in Perseus*](#)

M45 Subaru, the Pleiades--the Seven **Sisters** open cluster [*in Taurus*](#)

M42 The Great Orion Nebula diffuse nebula [*in Orion*](#)

M43 part of the Orion Nebula (de Mairan's Nebula) diffuse nebula [*in Orion*](#)

M78 diffuse reflection nebula [*in Orion*](#)

M1 The Crab Nebula supernova remnant [*in Taurus*](#)

M35 open cluster [*in Gemini*](#)

M37 open cluster [*in Auriga*](#)

M36 open cluster [*in Auriga*](#)

M38 open cluster [*in Auriga*](#)

M41 open cluster [*in Canis Major*](#)

M93 open cluster [*in Puppis*](#)

M47 open cluster [*in Puppis*](#)

M46 open cluster [*in Puppis*](#)

M50 open cluster [*in Monoceros*](#)

M48 open cluster [*in Hydra*](#)

M44 Praesepe, the Beehive Cluster open cluster [*in Cancer*](#)

M67 open cluster [*in Cancer*](#)

M95 spiral galaxy [*in Leo*](#)

M96 spiral galaxy [*in Leo*](#)

M105 elliptical galaxy [*in Leo*](#)

M65 spiral galaxy [*in Leo*](#)

M66 spiral galaxy [*in Leo*](#)

M81 Bode's Galaxy (nebula) spiral galaxy [*in Ursa Major*](#)

M82 Cigar Galaxy irregular galaxy [*in Ursa Major*](#)

M97 The Owl Nebula planetary nebula [*in Ursa Major*](#)

M108 spiral galaxy [*in Ursa Major*](#)

M109 spiral galaxy and/or M109B spiral galaxy [*in Ursa Major*](#)

M40 Double Star WNC4 [*in Ursa Major*](#)

[M106](#) spiral galaxy *in Canes Venatici*

[M94](#) spiral galaxy *in Canes Venatici*

[M63](#) Sunflower galaxy spiral galaxy *in Canes Venatici*

[M51](#) The Whirlpool Galaxy with [M51B](#) companion galaxy *in Canes Venatici*

[M101](#) The Pinwheel Galaxy spiral galaxy *in Ursa Major*

[M102](#) Spindle Galaxy (NGC 5866) lenticular (S0) Galaxy *in Draco*

[M53](#) globular cluster *in Coma Berenices*

[M64](#) Blackeye galaxy spiral galaxy *in Coma Berenices*

[M3](#) globular cluster *in Canes Venatici*

[M98](#) spiral galaxy *in Coma Berenices*

[M99](#) spiral galaxy *in Coma Berenices*

[M100](#) spiral galaxy *in Coma Berenices*

[M85](#) lenticular (S0) Galaxy *in Coma Berenices*

[M84](#) lenticular (S0) galaxy *in Virgo*

[M86](#) lenticular (S0) galaxy *in Virgo*

[M87](#) Virgo A elliptical galaxy *in Virgo*

[M89](#) elliptical galaxy *in Virgo*

[M90](#) spiral galaxy *in Virgo*

[M88](#) spiral galaxy *in Coma Berenices*

[M91](#) spiral galaxy *in Coma Berenices*

[M58](#) spiral galaxy *in Virgo*

— Robert Aull



Photo by Sandeep Walekar

Daffodil Days at Link Observatory



For the last three weekends in April, IAS Historian Tom Borlik again opened the Link Observatory for tours from 10 AM to 4 PM to host the annual spring visitors to Helen Link's daffodil gardens. Tom described Dr. Goethe Stone Link's career and interests and climbed the stairs to the observing deck numerous times--with Spring from Vivaldi's *The Four Seasons* playing for ambiance. He showed adults and children alike the 36" telescope and demonstrated its arcs of movement with a 1:12 scale model he had crafted. On the front steps, Robert Aull operated the IAS 100mm double-stacked hydrogen alpha telescope, showing the general public (and IAS member Brian Bowes and daughter, as well as 45-year member Larry Marcus) the very active surface of our nearest star Sol, including starspots, prominences, filaments, plages, and faculae.



Photo by Robert Aull

— Robert Aull

General Meeting



Robert Aull began the meeting by reminding everyone about the upcoming August 10th trip to the Cincinnati observatory. Additionally, he highlighted the significance of August 3rd, marking the 85th anniversary of the first light at the Link observatory. To commemorate this milestone, we plan to recreate the original first light by locating Messier 13, also known as the Great Hercules Globular Cluster.

During the meeting, Steve Haines was acknowledged for his leadership of our Eclipse committee. Rick Galloway and Deb Brown assisted and were also recognized. The focal point of the IAS's General Meeting was a collective discussion of our many eclipse experiences, engaging members in sharing their insights and observations.

Jim Smith invited all members to recount their eclipse experiences.

For those unable to participate in real-time, a video of his presentation remains available at [April 2024 General Meeting](#).



Photo by Matthew Kurtz

Links to Past General Meetings

[March 2024 General Meeting](#)

[February 2024 General Meeting](#)

[January 2024 General Meeting](#)

[November 2023 General Meeting](#)

[October 2023 General Meeting](#)

[July 2023 General Meeting](#)

[June 2023 General Meeting](#)

[May 2023 General Meeting](#)

IAS Board of Directors Meeting Highlights: April 2024

The IAS BOD meeting was held on April 10, 2024. There were four officers, and seven board members present. The meeting was called to order at 7:00 pm.

Program Report: Brian Kloppenborg will be presenting a program on “Citizen Science” at the May Meeting virtually.

Equipment Loan: One telescope and the “bino” viewers are on loan.

Facility Reports: The uneven sidewalk behind the observatory has been removed.

Astronomical League: Zolt Levay is now the liaison for the Astronomical League.

IAS Membership: As of April, there are 297 current members.

Public Outreach: Steve Haines reported that the Eclipse Committee made a total of 31 presentations for the eclipse.

Indiana Family Star Party: Sara Farkas noted that the IFSP is hoping to get more families with children to attend.

The meeting was adjourned at 8:17 PM.

— Larry Cates, IAS Secretary



Astronomical League

Sky Puppy Observing Program



[Sky-Puppy Link](#)

While most of the Observing Programs are geared to beginning and advanced adult observers, the Sky Puppy Observing Program is designed just for the younger observer. The Astronomical League encourages young observers to hone their skills early since most hobbies and vocational interests begin at an early age.

The purpose of the Sky Puppy Observing Program is to familiarize young observers with the night sky and whet their appetite to eventually graduate from a Sky Puppy to an experienced observer and additional Astronomical

League Observing Programs. This process is usually begun when a parent takes their child along on observing trips. Unfortunately, many of the Observing Programs are too abstract, even esoteric, to hold the attention of the younger observer. In addition, many observing parents can't justify the expense of a second telescope necessary for the child to use when both parent and child are observing together. The Sky Puppy Observing Program was created to fill just that gap. To fulfill the goals of this Observing Program and receive the Sky Puppy pin and certificate, the young observer must use only their eyes, a pair of inexpensive binoculars, pencil & paper, and charts or a planisphere. A Sky Puppy will learn the rudiments of observing, how to read a chart or planisphere, and how to find and identify constellations, stars, and deep-sky objects.

Sky Puppy Observing Program Coordinator:

Aaron Clevenson

19411 Cluster Oaks Drive

Humble, TX 77346-2918

Telephone: 281-852-4667

E-Mail: aaron@clevenson.org

Youth Astronomer Observing Program

[Youth Astronomer Link](#)



New to astronomy? Wondering where to start observing with the Astronomical League? We have you covered!

This Observing Program is designed for those new to astronomy and ages 11 through 17.

If you are 10 years old or younger, we suggest you have a look at the Sky Puppy Observing Program.

If you have completed the Sky Puppy program, age 11 through 17,

or are looking for a next step, the Youth Astronomer Observing Program is for you.

If you have completed these programs, are over 17 years old, or want a bit more challenge, have a look at the Beyond Polaris Observing Program.

The Astronomical League offers a wide variety of Observing Programs. This Observing Program, The Youth Astronomer, is intended to provide an introduction to the hobby by letting the young astronomer try many different Observing Programs. This allows them to make decisions about where their observing interests should continue.

Youth Astronomer Observing Program Coordinator:

Maynard Pittendreigh

1281 Serena Drive

Winter Park FL 32798

Telephone: 321-400-4312

E-mail: Maynard@Pittendreigh.net

— *Zolt Levay, IAS Astronomical League Coordinator (ALCOR)*

Eclipse at Link Observatory



Photo by Robert Aull

Searching the Constellations with Children (reprint from May 2022)

From the nursery rhyme “Star Light, Star Bright” to Jiminy Cricket’s hopeful song, “When You Wish upon a Star,” adults interact with youngsters about the fascinations and mysteries in the night sky. Without surprise, boomer aged grandparents are looking for activities to build memories with their grandchildren. The Astronomical League has developed a program for the early elementary school aged children to build upon their young observing skills, The Sky Puppies. The Sky Puppies program provides a workbook for adults and children to meet this end. Our Albuquerque and Carmel families are enjoying this activity for the next year.

We were in Albuquerque, New Mexico on the nights surrounding the first new moon in April. In the afternoon, we perused The Star Puppies workbook. The seven-year-old twins chose to connect the dots of given constellations and attempted to unscramble star-related words. The workbook provides a planisphere for the participants to put together. Instead, they wanted to add the app Star Chart on their tablet. After all, students who have gone through pandemic school closures are very comfortable and prefer using their own mobile devices and technology. Before the sun went down, they also practiced on 7×50 binoculars as recommended in the workbook. They looked across the arroyo to radio towers on top of the mountain.

For Albuquerque’s observing night, the skies had high cirrus clouds, the winds were low, and air temperatures were in the middle 60s — the stars were decked out. This was going to be a night of comfortable viewing and we are loving this. In addition to the twins, a nine-year-old sister is also giving a try for the Sky Puppies award. The observers noted Orion, viewed the big dipper with Ursa Major, and the North Star. They looked at a tiny crescent of the moon. Later, they were surprised to see Earthshine illuminating the globe of the new moon. The twins gladly found the twin stars Castor and Pollux in Gemini. The older sister remembered that there was also a telescope in the house from a prior stargazing evening, and their father set it up so that all could see the Pleiades. Although telescopes are not part of the award, it definitely added to the fun.

The clouds slipped across the sky and we went inside for a card game of euchre. After a few hands of euchre, the clouds had dissipated. One of the twins said: “G Poppy! There are stars. Quick, Dada, Dada, Dada where are the binoculars?” We stopped the euchre game in the last hand, score 9-9, to get one more glimpse of a darker sky than I would ever see at my home in Indiana. Once more we looked at the sky that evening and one of the children noted that the moon was in a different place from the previous night, but the stars had not moved.

Earning the Sky Puppy award is challenging and will take some time, but it is quite doable. The award must be completed by the eleventh birthday of the child. Because these are fun and exciting activities, we will complete the requirement within a year. It is always nice to visit New Mexico and usually there are clear skies in these mountains.

We also are eager to begin engaging our Carmel grandchildren and neighborhood kids on Sky Puppies in Indiana. Sky puppies will not be as easy with our light polluted skies and the later time for twilight.

There is one of the elements of the Astronomical Leagues award that is not observing. This is to prepare and present a research project on a robotic space mission. There are so many interesting robotic space missions: Hubble, Mars Orbiter, New Horizons, just to name a few.

Let’s take every opportunity to build strong bonds with our children and grandchildren by sharing the sense of wonder we all feel when we look up at the night sky.

— Victoria Musick

History of McCloud/IAS

I know we've all heard bits and pieces of the McCloud/IAS history, but Mike Wolford replied to my repost of the McCloud dates/planner I added to the IAS Facebook page and he sent me a message as well I thought I'd share. He also shared a good photo before the pads were poured..

From Mike Wolford...

I wrote this up several years ago.... A telescope, a dark sky, and McCloud Nature Park Long, long ago, I was acquainted with a person who was a member of the Hendrick's County Historical Society. She mentioned attending an open house at some new park in the western part of the county. Being an amateur astronomer, I was always looking for the "perfect" dark sky site. So --- I went for a ride. When I got to the park, I met some guy cutting grass along a sidewalk. Meet Mike, and his wife Judy -- the park custodians at the time. I introduced myself and expressed my interest in bringing out a telescope "every once in a while". It was Judy who jumped at the opportunity and said "YES, if other people can look through your telescope." "Heck yes, that's part of it all!" I spoke. She put it on the park calendar. So, a friend (Jim Rinehart) and I went out and set up a couple of telescopes. We determined that the area "behind the hanger" would offer the best compromise between the best view of the sky and public access. I don't remember how many people showed up that first night, maybe twenty or so -- enough to make us all want to try it again. (Judy kept attendance!) So "New Moon Fridays" was born. Every Friday closest to the new moon was our night at McCloud. Overload, and the Indiana Astronomical Society. Our "New Moon Fridays" became quite popular -- so popular that Jim and I couldn't handle the crowd. So, I asked the IAS president (Jeff Patterson back then) if he thought that a few folks from the IAS could help out. Of course, they could! We even did a couple of overnight camping events! Then we all thought that it would be great if we could have observing pads and a storage building on site. Off to a park board meeting to find out what they thought. For months I went from park board meetings to IAS meetings - back and forth, and back and forth. (The beginning of the end of my involvement.) Along this same time period, John and Vicki Switzer began their program. When the mini-barn was built, the electricity was run, and the cement for the pads was poured, the writing on the wall was pretty clear. My involvement was finished. I've only been back a few times. So, there it is, a rough outline of my history with McCloud. Great place -- enjoy! Mike Wolford.



Photo by Mike Wolford

— Jon Thomas

Interview of Jon Thomas McCloud Coordinator



Under the starlit skies of McCloud Nature Park, amateur astronomer Jon Thomas ignites cosmic curiosity each summer, guiding locals and visitors alike through the wonders of the universe with his engaging astronomy outreach program.

Let's get to know him better:

Questions:

- **Could you share a little about your background and what led you to become interested in astronomy?**

I've been interested in space exploration since even before starting grade school. I've also been a science fiction buff. My first telescope was a Tasco 40 or 50mm that was plastered with Haley's Comet stickers.

- **What initially attracted you to volunteer as the McCloud coordinator?**

I had attended most of the McCloud Stargaze programs previously when Mike Newberg was the coordinator. I was asked to take it on, and I said yes. Mike was great and helped me to get started.

- **How long have you been serving as the McCloud coordinator?**

I started in 2017.

- **Can you describe some of the changes or developments you've witnessed in the program since you started?**

The biggest change was by me. Instead of doing all of the presentations every month I've given opportunities to other members to present so that's taken some load off of me but even more it's given the attendees some variation.

- **What is the most interesting experience you've had during your time at McCloud?**

I think the most interesting was before I was coordinator, and I was able to experience the reaction of attendees seeing Saturn in the eyepiece for the first time.

- **What are some of the challenges you face in this role, and how do you overcome them?**

The biggest challenge is the weather and of course clouds. McCloud also has a man-made wetland in front of the observing field as well as there's a pond to the right both of which contribute to low laying fog.

- **What has been the most rewarding moment for you as an outreach coordinator?**

Probably the most rewarding is seeing attendee's reactions to looking through the eyepiece at objects through a telescope for the first time.

• In what ways do you think the IAS's McCloud outreach has impacted the local community or the park visitors?

Having an outreach event in an area this far away from a large city that I've seen attended by 80+ people is truly amazing!

• How do you gauge the success of your outreach activities?

If people show up, the skies are clear and people see something through the telescope it's a success.

• Are there any upcoming events or projects that you are particularly excited about?

I'm super excited about SpaceX's Starship and the rate they are launching them during the test phase. I'm also interested in the discoveries that the James Webb Space Telescope is finding. As of my writing, there are pending findings coming out.

• What advice would you give to someone interested in getting involved in astronomy outreach?

Just show up! I tell IAS members they can hang out with me and if they have a telescope, they can set up near me.



• Are there any resources or tips you would recommend to beginners in astronomy who wish to deepen their knowledge?

I'd say the biggest thing is to plan before observing. At a minimum, this should involve an observing list.

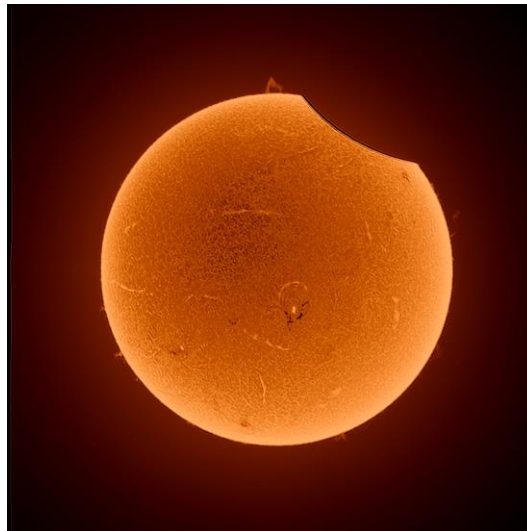


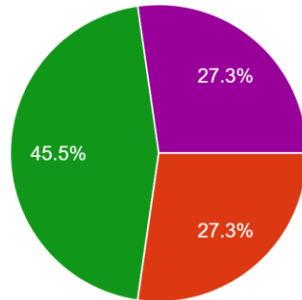
Photo by Brian Bowe

Survey: Family Astronomy Experiences

Our membership was presented with a survey as we head into the warmer months. It is a perfect time for family star gazing.

How do you typically spend time with your family while stargazing during the summer?

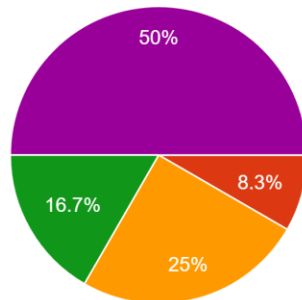
11 responses



- We organize a family picnic under the stars.
- We combine stargazing with camping trips.
- We have star-themed games and activities for the whole family.
- We attend public stargazing events or visit planetariums.
- We schedule a regular "star night" at home in our backyard.

What is your favorite location for stargazing?

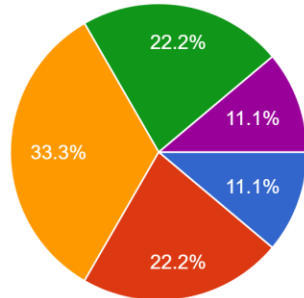
12 responses



- Local park with minimal light pollution.
- Nearby observatory or planetarium.
- National/state park or remote wilderness area.
- Beach or lake area that offers clear horizons.
- Our own backyard or a community space in our neighborhood

How do you keep young children occupied while setting up the telescope?

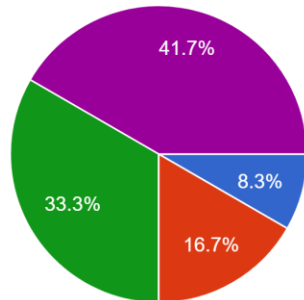
9 responses



- I bring toys or games that they can play with outside.
- I involve them in setting up the telescope to make it a learning experi...
- I use astronomy apps on a tablet to keep them engaged.
- I prepare snacks or a small picnic to keep them busy.
- I have them look for constellations or planets with binoculars.

What is your favorite spot in the night sky to observe?

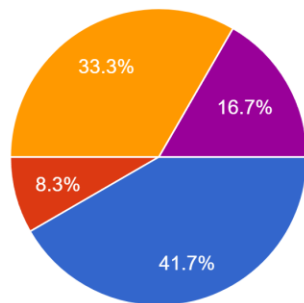
12 responses



- The Moon for its detailed craters and seas.
- The planets, especially viewing Saturn's rings or Jupiter's moons.
- Constellations like Orion or Ursa Major for easy navigation.
- Deep-sky objects like the Andromeda Galaxy or the Orion Nebula.
- Random stargazing, enjoying whatever appears in my telescope.

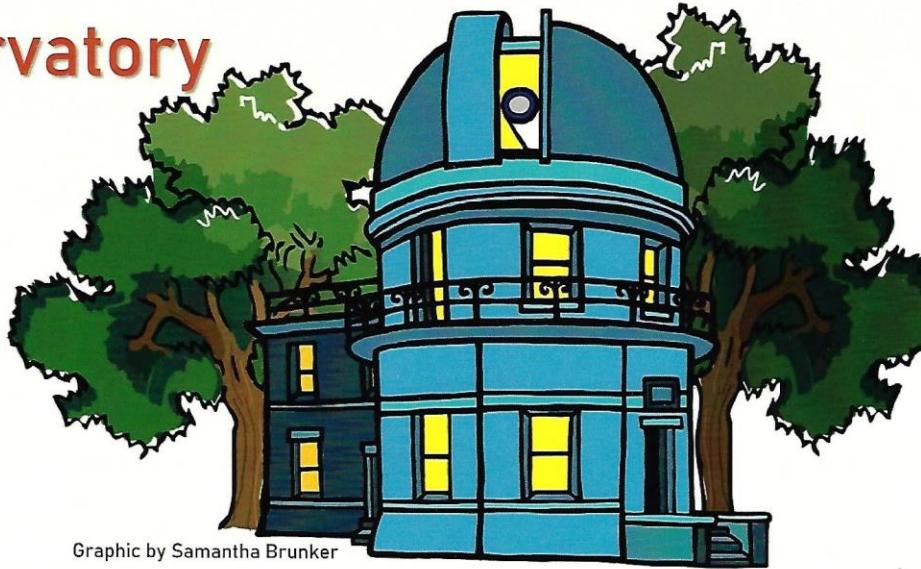
How do you handle outdoor nuisances like mosquitoes or cold weather while stargazing?

12 responses



- Use insect repellent and have mosquito nets if necessary.
- Dress in layers and use portable heaters or thermal blankets.
- Choose locations and times of the year when nuisances are minimal.
- Use screened tents or shelters for a nuisance-free environment.
- Focus on shorter observation sessions to minimize discomfort.

Kirkwood Observatory



Graphic by Samantha Brunker

www.astro.indiana.edu

@iuastro on Twitter

Kirkwood Observatory Open Nights March – July, 2024, Schedule

Date	Time
March 20*	9:00-10:30 pm
March 27*	9:30-11:00 pm
April 3*	9:30-11:00 pm
April 17	10:00-11:30 pm
April 24	10:00-11:30 pm
May 1	10:00-11:30 pm
May 8	10:30-11:30 pm
May 15	10:30-11:30 pm
May 22	10:30-11:30 pm
May 29	10:30-11:30 pm

Date	Time
June 5	10:30-11:30 pm
June 12	10:30-11:30 pm
June 19	10:30-11:30 pm
June 26	10:30-11:30 pm
July 3	10:30-11:30 pm
July 10	10:30-11:30 pm
July 17	10:30-11:30 pm
July 24	10:30-11:30 pm
July 31	10:30-11:30 pm

All open times are
weather permitting.
Check the web or
Twitter to confirm.

— Tom Borlik

May's Night Sky Notes: Stargazing for Beginners



This article is distributed by NASA's Night Sky Network (NSN).

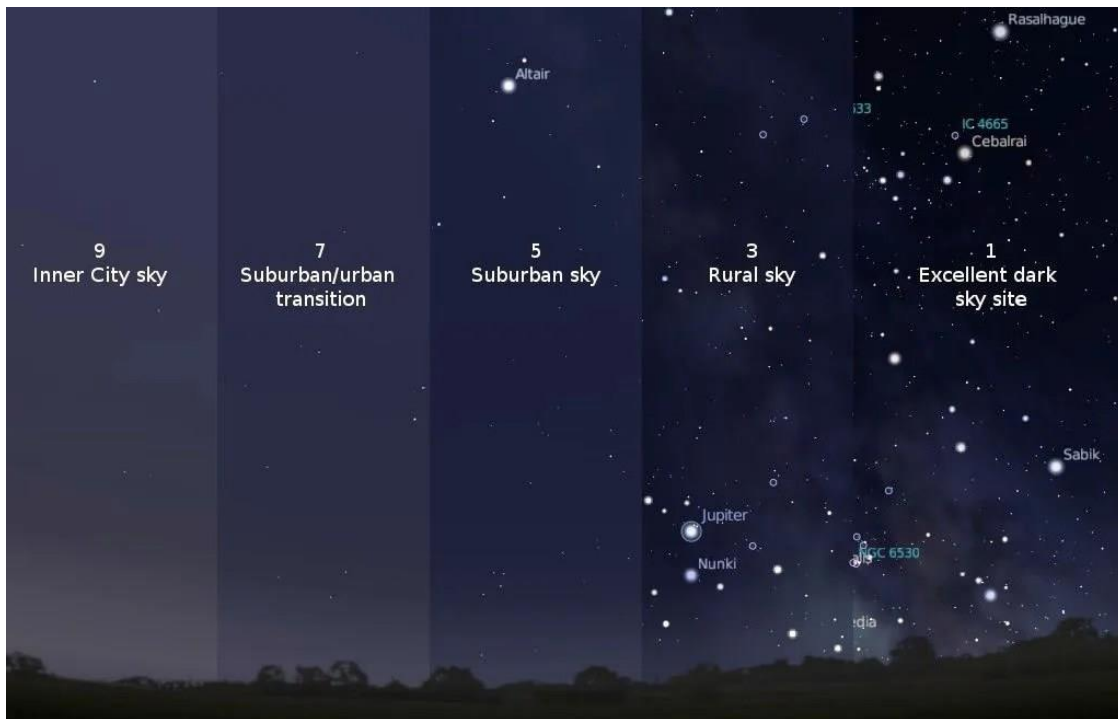
The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

By Kat Troche

Millions were able to experience the solar eclipse on April 8, 2024, inspiring folks to become amateur astronomers – hooray! Now that you've been 'bitten by the bug', and you've decided to [join your local astronomy club](#), here are some stargazing tips!

The Bortle Scale

Before you can stargaze, you'll want to find a site with dark skies. It's helpful learn what your [Bortle scale](#) is. But *what is* the Bortle scale? The Bortle scale is a numeric scale from 1-9, with 1 being darkest and 9 being extremely light polluted; that rates your night sky's darkness. For example, New York City would be a Bortle 9, whereas Cherry Springs State Park in Pennsylvania is a Bortle 2.

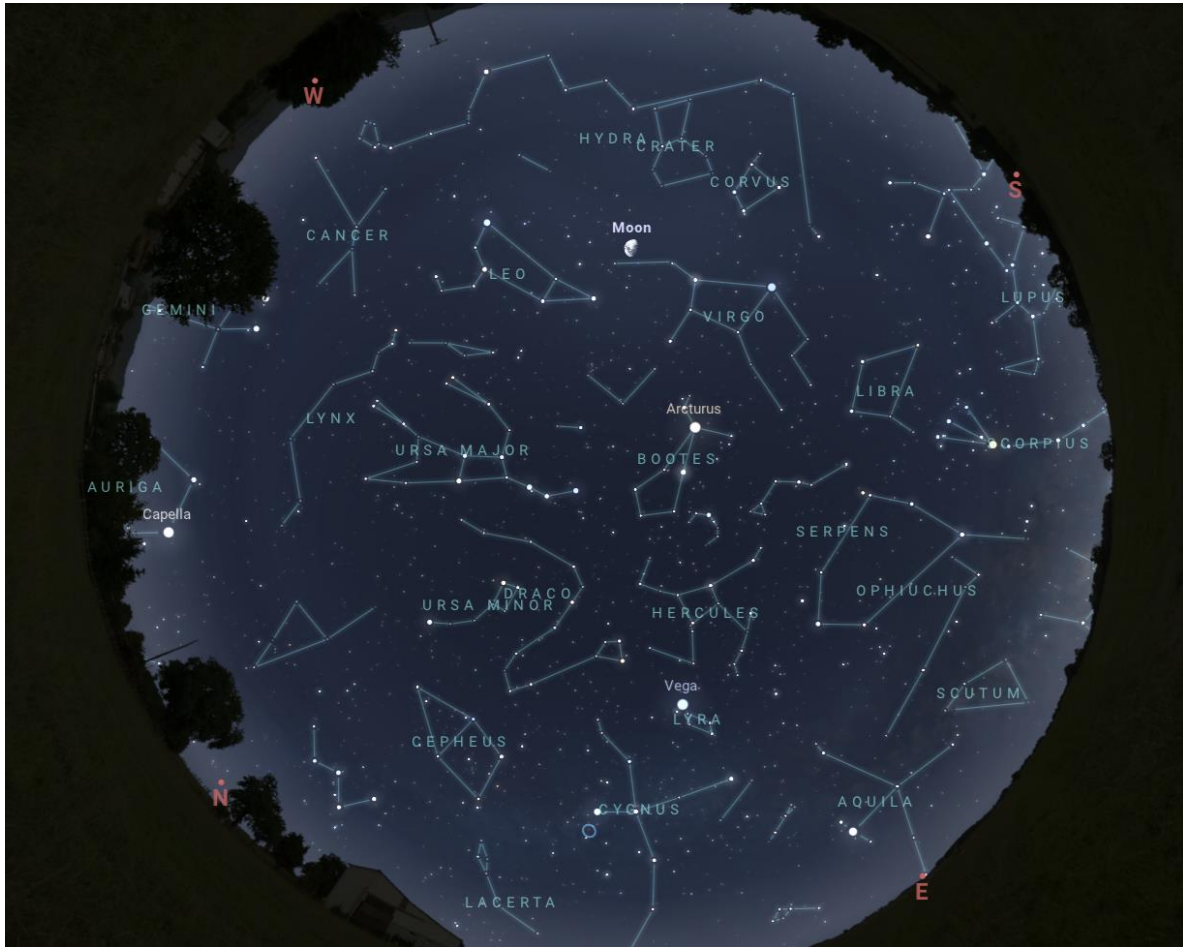


The Bortle scale helps amateur astronomers and stargazers to know how much light pollution is in the sky where they observe. Credit: International Dark Sky Association

Determining the Bortle scale of your night sky will help narrow down what you can expect to see after sunset. Of course, other factors such as weather (clouds namely) will impact seeing conditions, so plan ahead. Find Bortle ratings near you here: www.lightpollutionmap.info

No Equipment? No Problem!

There's plenty to see with your eyes alone. Get familiar with the night sky by studying star maps in books, or with a planisphere. These are great to begin identifying the overall shapes of constellations, and what is visible during various months.



A full view of the northern hemisphere night sky in mid-May. Credit: Stellarium Web.

Interactive sky maps, such as [Stellarium Web](#), work well with mobile and desktop browsers, and are also great for learning the constellations in your hemisphere. There are also several astronomy apps on the market today that work with the GPS of your smartphone to give an accurate map of the night sky.

[Keep track of Moon phases](#). Both the interactive sky maps and apps will also let you know when planets and our Moon are out! This is especially important because if you are trying to look for bright deep sky objects, like the Andromeda Galaxy or the Perseus Double Cluster, you want to *avoid* the Moon as much as possible. Moonlight in a dark sky area will be as bright as a streetlight, so plan accordingly! And if the Moon is out, check out this Skywatcher's Guide to the Moon:

bit.ly/MoonHandout

Put On That **Red** Light

If you're looking at your phone, you won't be able to see as much. Our eyes take approximately 30 minutes to get dark sky adapted, and a bright light can ruin our night vision temporarily. The easiest way to stay dark sky adapted is to avoid any bright lights from car headlights or your smartphone. To avoid this, simply use red lights, such as a red flashlight or headlamp. **The reason:** white light constricts the pupils of your eyes, making it hard to see in the dark, whereas red light allows your pupils to stay dilated for longer. Most smartphones come with adaptability shortcuts that allow you to make your screen red, but if you don't have that feature, use red cellophane on your screen and flashlight.

Up next: why binoculars can sometimes be the best starter telescope, with [Night Sky Network's](#) upcoming mid-month article through NASA's website!

— Kat Troche, [NASA's Night Sky Network](#)

Celestial Events for May

- 05 – η -Aquariid meteor shower 2024
- 08 – η -Lyrid meteor shower 2024
- 11 – Messier 5 is well placed
- 28 – Messier 4 is well placed

Indiana Family Star Party

Camp Cullom - July 30 – August 4, 2024 (Tuesday – Sunday)

Join us, the Indiana Astronomical Society, in conjunction with the Wabash Valley Astronomical Society and the Muncie Astronomy Club for an unforgettable week of stargazing and family fun at the 21st anniversary of the IFSP (Indiana Family Star Party), hosted at the Prairie Grass Observatory at Camp Collum the near Mulberry, IN.

Pack your telescopes and sleeping bags and join us from July 30 to August 4, 2024, for 6 days under the stars. Kids, adults, and adults who think they are kids will find a variety of activities for the curious to the experienced amateur astronomer. Solar observation in the afternoon with celestial observation at night.

Plan to come stargazing with your friends and family!

Indiana Family Star Party Link: <https://www.indianastars.com/starparty/index.html>

There will be something for everyone to do. New this year, American Porkers, food truck will be servicing the Astro Grill. Plan on viewing our nearest star Sol with Robert Aull on Friday afternoon. Saturday afternoon we have three great speakers and there will be raffles and a silent auction.

— Sara Farkas

Astro Ads

Do you have or are you looking for astronomy-related materials and equipment? The IAS, as a service to its members, will publish non-commercial ads at no charge. For sale, exchange, or want ads are all accepted. Each ad runs in the newsletter for four months and may be renewed at the owner's request.

To place an ad, send an email to editor@iasindy.org. Be sure to notify us when the item sells.

Public Outreach Programs

To schedule a program at the Link Observatory or at your site, please contact the following people:

Public Outreach Programs: To schedule a public event, contact the IAS Events Coordinator Steve Haines by sending an email to events-coordinator@iasindy.org.

Goethe Link Observatory tour: To schedule a tour of the Link Observatory, contact Link Observatory Manager Robert Aull by email at link-observatory@iasindy.org.

Equipment Loan Program

Did you know you could borrow a scope or piece of astronomy equipment from the Society and take it for a test drive? Members trying to determine what kind of equipment to buy are welcome to borrow one of the Society's scopes for a month or two and see how they like it. Dave Howard is the program coordinator and can arrange pickup and training.

Here is a current list of available equipment. One (1) 5.3" Dobsonian, Two (2) 6" Dobsonians, Three (3) 8" Dobsonians, One (1) 120mm Refractor on a manual equatorial mount, One (1) 130mm Reflector on Goto mount, One (1) set of 2" eyepieces, One (1) set of Bino-viewers and zoom eyepieces, One (1) 10x56 Binoculars. All Telescopes come with accessory kits that include a variety of eyepieces plus other equipment.

We will also consider donations of equipment appropriate for this program. The IAS is a public charity under section 509(a)(2) of the Internal Revenue Code. We would be happy to provide acknowledgment suitable for documentation as a tax deduction.

The Equipment Loan Coordinator may be contacted at equipment@iasindy.org

IAS Membership Report for March 2024

On 3/31/2024 the IAS had a total of 297 members.
During March there were 23 renewals and 10 new members.
The IAS welcomes the following new members:

Thomas Chapman	Bernadette de Leon	Cynthia Franklin	Jamie Jo Hampton
Michael Rees	Kira Stone	Mara Stone	K Abercrombie Lalioff
Adam Martinez	Brien Shoemaker		

We thank the following members for their renewal:

Brett Anderson	Gregg Anderson	Judy Arnold	David Atkinson
David Collier	Kenneth Griggs	Chris Haynes	Bill Holmes
Charles Horowitz	David Jenkins	Jennifer Johnson	Gregory Jones
John Louie	Larry Marcus	Wayne McSpadden	Mike Newberg
Jeff O'Dair	Ray Pockalny	Stephen Stafford	Todd Stinson
Gregory Utz	Todd Relue	Robert Callahan	

— Victoria Musick, IAS Membership Coordinator

Dark Sky Observing Site Information

The following sites remain accessible to *IAS members only* for *solitary observing*. Please make contact well in advance to confirm availability.

- McCloud Nature Park (Hendricks County)
Latitude: 39 degrees, 50 minutes north
Longitude: 86 degrees, 41 minutes west
- Burkhart Creek County Park (Morgan County)
Latitude: 39 degrees, 26 minutes north
Longitude: 86 degrees, 33 minutes west
- West Park (Hamilton County)
Latitude: 39 degrees, 57 minutes north
Longitude: 86 degrees, 12 minutes west
- Camp Collum (Clinton County)
Latitude: 40 degrees, 19 minutes north
Longitude: 86 degrees, 38 minutes west

For details on how to get permission, please see our [members-only wiki page](#) at groups.io.



Phot by Fritz Kleinhans

2024 Meetings and Events Calendar

Month	Board Mtg	General Mtg	Deep-Sky Observing	McCloud	West Park
May	1	4	3,4,10,11,31	18	17
June	5	8	1,7,8,28,29	15	14
July	3	6	5,6, 12,13 ,26,27	13	12
Indiana Family Star Party July 30 – Aug 4					
August	7	10 Cincinnati Trip	9,10, 23,24 ,30,31	17	16
September	None	7(Pitch-in)	6,7, 20,21 ,27,28	14	13
October	1*	5	4,5,25,26	—	<i>TBD</i>
November	Oct 30	2	1,2,22,23,29,30	—	<i>TBD</i>
December	None	7 (Holiday Party)	6,20,21,27,28	—	<i>TBD</i>

Bold entries are DSO nights with larger than optimum moon phase

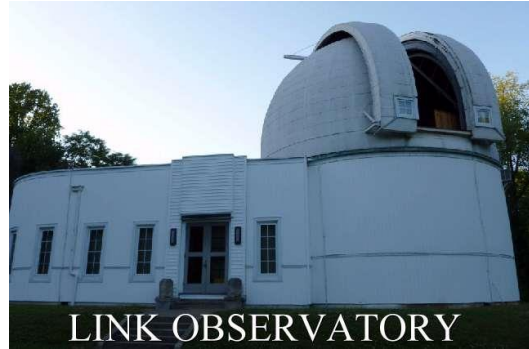
Miscellanea

Goethe Link Observatory

Observatory Address:

**Goethe Link Observatory
8403 N. Observatory Lane
Martinsville, IN 46151**

Latitude: 39 degrees, 33 minutes north
Longitude: 86 degrees, 24 minutes west
Phone: (317) 831-0668



Training programs are scheduled by the Observatory Manager as instructors are available and time permits, although other requests can override these sessions.

To schedule the use of the 36" telescope, two criteria must be met:

- There must be a trained telescope operator and at least one assistant present.
- Send an email to the Observatory Manager (link-observatory@iasindy.org) to confirm availability.

Please plan ahead! Last-minute scheduling requests may not get access.

IAS News & Views — The monthly newsletter can be found on our web site at www.iasindy.org. The *News and Views* welcomes articles of local astronomical interest, follow-up on IAS events, and want/for sale ads. Please submit articles to the editor in an email to editor@iasindy.org.

Membership information — Please send an email to membership@iasindy.org; our membership coordinator will respond promptly. Full instructions are also available under the “[Join the Society](#)” tab on our web site, where you can submit a [paperless membership form](#), e-pay your dues, join the Astronomical League, and/or make a donation.

Requests for Information — You may contact our officers, Board members, and Coordinators via our website at www.iasindy.org. Place your cursor on the “Home” tab and then select “Contact us.” Page down to the person you desire to contact and send an email message requesting information or a return telephone call. We will be happy to respond within a reasonable time frame.

Logo Clothing — The IAS has a supply of logo ware using [Mid-Central Trophy](#) in Kokomo, IN. Typically T-shirts, sweatshirts, polo shirts, and caps are available. Call Linda (765-453-5494), tell her this is an order for the IAS logo ware, discuss what you want and give her the size. She can determine the cost and shipping and mail the order directly to your home. All major credit cards are accepted.

Astro-Quotes (or Jokes for Geeks)

“The stars never lie, but the astrologers lie about the stars.”

— Homer

“Everything has a natural explanation. The moon is not a god, but a great rock, and the sun a hot rock.”

—Anaxagoras

“Astronomy? Impossible to understand and madness to investigate.”

— Sophocles

Summer Astronomy Word Find

B A P Q O A E E V N M H Y G S I A
F F R R D S F E W E F T X H D N U
O B B O P H C B T O C I P Q I T N
C I M I R I W E Z Q B N I U E X W
T P L R T U O L A E R E D I S D L
D C L S U R A C L G Q Z T Z R G U
E M L A I F N W K H R O O Q E L N
R O J T N Y N K S W I K B L P V A
S H E L D I W T E L E S C O P E R
A A E E M A S V L E L E Z Z S O Q
J D Q P C N P P R I G R K R N U Z
I G D F O O J I H V M P Y L T B G
A L U B E N S W Y E Q U I N O X A
A Y E C J R A M W X R M H N J N L
A V N X Z I D P O S C E Y Z K K A
N G Z S I W L G F S A M D S R E X
P N S K R T Y D D V R B D W X W Y

Aurora

Equinox

Meteorite

Perseids

Solstice

Cosmos

Galaxy

Nebula

Planisphere

Telescope

Eclipse

Lunar

Orbit

Sidereal

Zenith

Answer key page 30

May Calendar, 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
23	24	25	1 Last Quarter  IAS Board Meeting 7PM	2	3 Deep Sky Observing at Link Observatory	4 IAS General Mtg Deep Sky Observing at Link Obs.
5	6	7	8 New Moon 	9	10 Deep Sky Observing at Link Observatory	11 Deep Sky Observing at Link Observatory
12	13	14	15 First Quarter 	16	17 West Park Observing	18 * McCloud Nature Park Astronomy Presentation & Public*
19	20	21	22	23 Full Moon 	24	25
26	27	28	29	30 Last Quarter 	31 Deep Sky Observing at Link Observatory	1 Deep Sky Observing at Link Observatory



Photo by Bill Asbury

Which Website Do I Use?

Website

Indiana Astronomical Society

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

ias-indy.groups.io

For members only

[IAS Facebook](#)

Use website to

FAQ

New member application

Dues payment

Planetarium Virtual Sky

Observing Information

AstroNews

Members' directory

Files on:

Astronomical subjects

Astrophotography



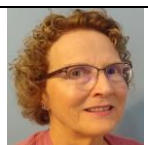

Collimation










Library holdings






Newsletter Archives

Public events

Sharing stories and photos

	IAS Officers	
President	Robert Aull president@iasindy.org	
Vice President	Jim Smith vicepresident@iasindy.org	
Treasurer	Victoria Musick treasurer@iasindy.org	
Secretary	Larry Cates secretary@iasindy.org	

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Goethe Link Observatory Manager	Robert Aull link-observatory@iasindy.org	
Public Events Coordinator	Steve Haines events-coordinator@iasindy.org	
Equipment Loan Coordinator	Dave Howard equipment@iasindy.org	

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Social Media Coordinator	Mike Newberg socialmedia@iasindy.org	
Librarian	Laura Hintz-Keller librarian@iasindy.org	
Historian	Tom Borlik historian@iasindy.org	

Answer Key

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B A P Q O A E E V N M H Y G S I A
F F R R D S F E W E F T X H D N U
O B B O P H C B T O C I P Q I T N
C I M I R I W E Z Q B N I U E X W
T R L R T U O L A E R E D I S D L
D C L S U R A C L G Q Z T Z R G U
E M L A I F N W K H R O O Q E L N
R O J T N Y N K S W I K B L P V A
S H E L D I W T E L E S C O P E R
A A E E M A S V L E L E Z Z S O Q
J D Q P C N P R R I G R K R N U Z
I G D F O Q J I H V M P Y L T B G
A L U B E N S W Y E Q U I N O X A
A Y E C J R A M W X R M H N J N L
A V N X Z I D P Q S E Y Z K K A
N G Z S I W L G F S A M D S R E X
P N S K R T Y D D V R B D W X W
    
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Unsigned articles may be attributed to the editor.