

**Committed to Supporting Amateur Astronomy since 1933**

IAS News and Views



# **The IAS News & Views**

Volume 91, Issue 3



Artwork by Fritz Kleinhaus

**Indiana Astronomical Society  
General Meeting  
Saturday, April 13, 7:00 PM  
Mooresville Public Library  
Eclipse Reports  
IAS Members**

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## From the President’s Desk

Of course, all that anyone can talk about is the upcoming total eclipse on April 8th, and at the time of this writing, we are all watching the weather models with bated breath. In April we are also hosting a Messier Mini-Marathon the first weekend and public Link Observatory tours the last three weekends of the month, while the daffodil fields are open. The latter will include solar observing with the IAS 100mm Lunt hydrogen alpha telescope, skies permitting.

In March we had a nice deep sky observing night at Link using the 36-inch telescope, hosted a delightful eclipse presentation by Fritz Kleinhans at the general meeting, and made a key available to switch off security lighting at the Burkhart Creek Park dark sky site. The early spring has really brought the daffodils up in the fields adjacent to Link Observatory, and so the Indiana Daffodil Society (IDS) will open the grounds early this year from 10-4 on 30-31 March and 6-7 April, with the IAS covering the remaining three weekends. Why not drop by and take a look at the flowers or take a daylight tour of the observatory? And if you have a solar scope and are willing to share views with the general public, bring it along!

— Robert Aull

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## April General Meeting Call-In Details

As usual, our virtual general meeting will be open to the public. Please join from your computer, tablet, or smartphone: <https://meet.goto.com/458046077>

You can also dial-in using your phone.

United States +1 (646) 749-3122  
Access Code: 458-046-077

New to GoToMeeting? Get the app now and be ready when the meeting starts:  
<https://meet.goto.com/install>

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

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## IAS NEWS

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### Upcoming Events for April

*The following events will occur rain or shine.*

#### IAS Program Planning/Board Meeting

**Wednesday, April 10, at 7 PM, via GoToMeeting.** The IAS board will get together to discuss the business of the Society. Due-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, April 13, at 7 PM.** The IAS general meeting is scheduled to occur at the Mooresville Public Library, 220 W Harrison St, Mooresville, IN. Directions to the library can be found using a [Google maps lookup](#). The public is welcome.

Those who are unable to make it to the library may also participate virtually, by means of a GoToMeeting teleconference. For details and call-in information, see the first two pages of this newsletter.



Photo by Bill Asbury, Brownsburg, IN  
Camera: ASI 071  
80 images at 90 sec each  
Processed using PixInsight

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## Observing Activities for April

*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 April 5-6, again on the weekend of April 12-13 (the 13<sup>th</sup> is immediately after our general meeting), and once more on April 26-27.

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) —**

McCloud schedule for 2024 is on our calendar. The first event for 2024 is scheduled for **May 18<sup>th</sup>**.

### **West Park Activities (Members Only) —**

We are going back to West Park! See you there April 19 weather permitting.

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## Observing and Outreach Reports

March 15 Link DSO— IAS members Dave Collier, Robert Aull, and Todd Stinson met at Gray Brothers Cafeteria in Mooresville for dinner, then opened the Link Observatory front gate by 7PM. They were joined by fellow members David Warnick, Mara and Kira Stone, and Lori Bretweiser. While the sky cleared and the sun set, Robert and Dave acquired Sirius and then Aldebaran as calibration stars to synchronize the 36-inch reflector's Argo Navis (digital setting circle) device, using a 20mm illuminated reticle eyepiece to get a tight alignment. They also replaced a burned-out bulb on the secondary DEC wheel indicator light and improved the finder scope alignment relative to the main scope.

Having manually acquired the two stars using RA/DEC coordinates, they then used either the push-to-guidance of the Argo Navis system, the position of the reticle on the linked Sky Software map, or the Telrad Reflex Sight Finder to view the following targets: Jupiter, M42 the Orion Nebula and Trapezium, open clusters M50 (Heart-Shaped) in Monoceros, M41 (Little Beehive) in Canis Major, and M93 (Crittter) in Puppis, globular cluster M79 in Lepus, and finally open cluster M37 (Salt and Pepper Cluster) in Auriga.

The night was relatively warm and despite a bright waxing moon dominating the west, they were very satisfied with the views, the performance of the Argo Navis system, and their efforts at selecting and acquiring targets. By 10:30PM they had been observing without break for three hours and so the remaining two IAS members Todd Stinson and Lori Bretweiser helped Robert and Dave fly the green tarp over the powered-down and parked 36-inch telescope before closing and securing the observatory.

— Robert Aull

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## Daffodils at Link Observatory

April is daffodil season at Link!

The Link grounds will be open every weekend this month from 10:00 AM to 4:00 PM for public viewing of the multitude of flower varieties of the genus *Narcissus*. The [Indiana Daffodil Society](#) (IDS) will also have docents in the gardens to answer any questions for March 30 -31 and April 6-7.



*Goethe Link Observatory during daffodil season. Photo courtesy Lee Lewellen and Indiana Landmarks.*

It is spiritually uplifting to see so many flowers in bloom at one time.

The IAS (Tom Borlik and Robert Aull) will open Link Observatory for guided tours during these same hours on April 13-14, 20-21, and 27-28, together with solar viewing through the club's Lunt hydrogen alpha 100mm telescope, weather permitting.

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## Star Party Report

**SAVE THE DATE** – Indiana Family Star Party

WHEN: July 30 – Aug 4, 2024

WHAT: The Indiana Family Star Party is the 21<sup>st</sup> Annual Star Party at Camp Cullom and the Prairie Grass Observatory, hosted by the Indiana Astronomical Society, the Wabash Valley Astronomical Society, and the Muncie Astronomy Club.

WHERE: Camp Cullom, near Mulberry, IN, is the home of the Prairie Grass Observatory (Clinton County Foundation for the Youth). Views from the observatory's four telescopes will be shared with attendees on Friday and Saturday and you may bring your own equipment, set up on the observing field, and share your views as well.

WHO: Friday evening and Saturday are open to the public, with the purchase of a day ticket. Those with full event registration may attend daily or camp onsite starting as early as Tuesday, 30 July. Registration forms and additional details will be available shortly on the IFSP Website – which is still being updated.

- For registered guests, Friday the 2<sup>nd</sup> will feature solar viewing, led by IAS President, Robert Aull.
- Friday Night there will be a Sky Trekker Program for Kids (and novice adults)
  - Fun for the whole family! Learn some constellations and how to find the “North Star”! Enjoy looking at some objects through telescopes! Ice Cream treats and drawings for prizes await those who complete either program!
- Saturday – During the day there will be three FANTASTIC Speakers – Plan to come to hear the speakers, participate in the silent auction and raffle, have a bite to eat at the food truck, and stay to stargaze.
  - Dr. Kyoung Soo-Lee, Assoc. Professor of Physics & Astronomy at Purdue
    - Topic - Galactic structure
  - Dr. Stephen Case, Olivet Nazarene University, Dir. of Honors Program
    - Topic: John Herschel and his astronomical career
  - Kevin Schindler, Historian for the Lowell Observatory
    - Topic: From Mulberry, IN, to Mars & Back (via Bloomington & Flagstaff) – The Story of the Slipper Brothers – Vesto & Earl

More Details to Come.

— Sara Farkas

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## International Dark Sky Week April 2 - 8

International Dark Sky Week is held during the week of the new moon in April, when people worldwide may turn off their lights to observe the beauty of the night sky without light pollution.

Link to Dark Sky web: <https://idsw.darksky.org/>

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## Steve Haines National Public Radio Interview

Link below for an NPR interview of our own Steve Haines.

[NPR Interview](#)

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## Upcoming Outreach Events

For further information or to volunteer, email Steve Haines at [events-coordinator@iasindy.org](mailto:events-coordinator@iasindy.org).

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## Committee Focus: The Eclipse Committee

This month our focus will be on the eclipse committee and what they have been working on. Steve Haines is the eclipse coordinator with Rick Galloway and Deb Brown assisting in preparing Indiana for April 8, 2024

### *1. Can you tell us about your role as the eclipse coordinator, or on the eclipse committee of the IAS?*

**Steve:** As Chairman of the Eclipse Committee, I am the liaison for requests for eclipse programs. After receiving the requests for an eclipse program, I determine if this is for an individual event or for an organization, how flexible are they with the date, travel distance to the program and who is available. Also, it is necessary to coordinate eclipse program request with other Indiana Astronomical Outreach programs.

The Eclipse Committee consists of Rick Galloway, Debrorah Brown, and me. Sherwood Waggy, from the Michiana Astronomical Society and a member of the IAS. Sherwood, Deb, and I attended a three-day webinar hosted by the Albany Astronomical Society. Sherwood traveled from South Bend to do an Eclipse related program at the Mooresville library as well as filling a request from northern Indiana, Rick and I have been doing most of the Eclipse programs.

**Rick:** We initially started with John Molt as the Eclipse coordinator, but he had to relinquish the position early after we formed the committee. Steve Haines took over as the coordinator, which was the logical choice since he is the IAS outreach coordinator. I joined Steve and Deb Brown on the committee. My role has been primarily involved with eclipse PowerPoint presentations to various organizations, schools, community groups, etc. We all worked on developing the IAS eclipse brochure.

**Deb:** My primary role was to combine the art and science wisdom of my fellow team members and put it into something we could distribute to the public. I formatted the brochure we used for public outreach. I attended a webinar on the eclipse and we were able incorporate some of those resources in the brochure. I was really thrilled to be able to contribute something to the effort.

## ***2. What inspired you to take on your role in the eclipse committee?***

**Steve:** As IAS Public Event Coordinator, I felt it was a natural fit as many of the request will come to me. It would be much more difficult to coordinate Eclipse program request between me and another member who would be scheduling the programs. I enjoy doing presentations and realized how important this event is for education about astronomy and to promote the IAS.

**Rick:** I have always been very interested in photography, and especially eclipse photography. Since 2017, I have been planning to photograph the eclipse once again. The total eclipse is such an awesome sight. By being on the eclipse committee, I will be able to inform people and spread enthusiasm.

**Deb:** "I was volunteered." LOL. This is my first eclipse. And although my participation in IAS has been limited, I am very impressed with the work IAS does with outreach. I wanted to be sure that the message we put out to the public was not only accurate, but also presented IAS is the best possible light. I think we did that.

## ***3. What are some common misconceptions people have about eclipses, and how do you address them?***

**Steve:** The biggest misconception is that many don't realize you can just go outside to see the Eclipse. Some people planned to travel outside the path of Totality to view it. No one can really be prepared for the number of people who will travel into the area of totality. The way we address these is with a tri-fold map of the Eclipse path and reminding them that Indianapolis is known as the "crossroad of America". The roads will be extremely congested after the eclipse, and it would be better to travel a few days afterwards.

I have received many requests for our attendance during the day of the eclipse. I just let them know that our members will be scattered all along the Eclipse path.

**Rick:** There are some that think it is dangerous for people and animals to look at the eclipse. After the eclipse presentations, they understand it is OK to look at the sun during totality, but they still plan to keep their pets inside.

People also claim they have seen "the eclipse" within the last couple of years, but they did not understand the differences between partial and total eclipses. After the eclipse presentation, they better understand the uniqueness of the total eclipse.

**Deb:** That you can never view the eclipse with the naked eye. Also, you can damage your eyes and never feel pain. More generally, how impactful this eclipse be on the Indianapolis area. People have a hard time grasping that this is a **really big deal**.



**4. Can you describe some of the activities or events the astronomy group organized around the upcoming eclipse?**

**Steve:** The first challenge we had was how to reach the most people in the Totality path in the most economical and efficient way. We decided the best way was to develop an Indiana-specific brochure. This can be downloaded from our webpage. To supplement funding from the IAS we were able to secure donations from three advisement advisors. This allowed us to print 15,000 brochures. The next was how to distribute them. Rick worked with the Mooresville Public Library to distribute them using the inter-library courier system. Twelve-thousand-five hundred brochures were sent to all libraries in the Eclipse path at no cost to the IAS. We also designed a unique Eclipse shirt to be used during the programs.

I have been interviewed by National Public Radio about IAS involvement in the Eclipse event.

(hear the interview here: [www.npr.org/2024/03/16/1238389513/2024-solar-eclipse-astronomy-clubs](http://www.npr.org/2024/03/16/1238389513/2024-solar-eclipse-astronomy-clubs))

**Rick:** Initially, Steve, Deb and I developed the eclipse PowerPoint presentation which has undergone continual revisions for several months. Many interesting questions from our audiences have initiated changes and updates to the PowerPoint slides. We also developed the IAS eclipse brochure which was sent to about 40 different school districts along the path of totality. Later on, we developed the Indiana is on the path to be Toted T-shirt. Steve and I wear the T-shirt for most presentations, and it generates some good laughs. We have also worked very closely with the Mooresville Library and their staff to help the Mooresville Community Eclipse preparation committee develop eclipse preparedness plans.

**Deb:** I am going to default to Rick and Steve. My work schedule prevented me from participating in the activities. I will be hosting an eclipse education event at my church. Complete with solar glasses and Moon Pies. I should pick up some Capri Suns...

**5. How do you ensure the safety of observers during eclipse events?**

**Steve:** We have found that most organizations have thought ahead to purchase Eclipse glasses. We emphasize how important it is to keep the solar glasses on except during Totality. If there is a danger that comes up from not knowing how to use the glasses, we address this during the program then include this into future Eclipse programs. To supplement the limited number of glasses provided by the IAS the Eclipse Committee was able to receive an additional 500 from the American Astronomical Society through a grant they received from NASA to purchase 150,000.

**Rick:** We emphasize the importance of eye safety by encouraging people to wear ISO certified solar eclipse glasses, not welder helmets, etc. The eclipse presentation includes emphasis on the proper timing for putting on and taking off the solar glasses.

**6. Can you share any personal experiences or anecdotes related to eclipses that have been particularly meaningful to you?**

**Steve:** I was at the Total Eclipse that went through Kentucky. What surprised me that word-of-mouth advertising does not work. Even though this town was near Kentucky Lake they did not advertise and had very few there while others were overrun. The lesson from this is look for a small location that is not known. I have found out a lot about the backroads of Indiana and how everyone is excited about it. Just about every location has some type of event associated with it. Time does speed up during the Eclipse and that the Moon is black.

**Rick:** When I first witnessed the 2017 total eclipse, I was completely awestruck. I had prepared for months before and I knew what was coming, but only through personally being there can one truly experience the majesty of totality.

The other funny aspect of eclipses is what shows up on the internet. I particularly like the discussions about Carbondale, IL. It was in the path of totality in 2017 and will be again in the path for 2024. The two totality paths literally mark an "X" over Carbondale. The "crazies" are saying, "It's the end of the world" and "X marks the spot where the earth will open up and start to swallow the country. Ha!

The most exciting honor for me has been my selection once again to be a part the Sonoma State / NASA Heilophysics MegaMovie project. This is a NASA funded project to focus on the sun's corona by photographing the eclipse from a wide range of locations across the country (about 150 locations). There is a special emphasis on specific corona exposure requirements. I am going to be a little crazy and attempt to set up and run four different cameras on tracking mounts.

**Deb:** This is my first total eclipse. I was ridiculously excited about the partial eclipse in 2017. I was the only one with eclipse glasses in my entire office that year.

**7. How many presentations has the Eclipse Committee given to the residents of Indiana?**

**Steve:** Members of the Eclipse Committee been able to fulfill 58 Eclipse program requests. Some of these require members to do more than one a day. Locations of programs ranged from rural Indiana to as far as 100 miles away. Attendance at the programs ranged from 30 to over 120.

**8. What do you plan to do with all the additional time you will have after the great eclipse?**

**Steve:** One of my fears is that because of all the Eclipse programs the IAS has become well known as the organization to go to for Astronomy programs. I expect to receive many requests for general Astronomy and Star Viewing programs. These can only be fulfilled with the help of the members of the IAS.

**Rick:** Initially, I will spend a lot of time processing my eclipse pictures to create composites and/or interesting photos. After that, I'm going to catch up on a bunch of sleep.

**Deb:** I would like to do more viewing. Maybe travel a bit. Attend more events.

**Interviewer:** *Feel free to provide any other comments that our membership may find interesting regarding your experience in preparing for the April eclipse.*

**Steve:** During this time of mostly negative news, it is so exciting to see so many excited about this event. Not just one area but for almost the entire country.

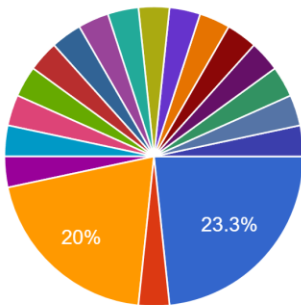
**Deb:** This experience has been a blast. Even though I had to take a step back, I really enjoyed it. Working with this group of people was really rewarding. I absolutely encourage everyone to get involved and volunteer. There are a lot of great people in IAS!

## Eclipse Survey Results

Super Scientific Survey of Utterly Unimportant Things concerning April 8, 2024! A big thanks to the 32 respondents.

### What snacks will you eat during the solar eclipse?

30 responses

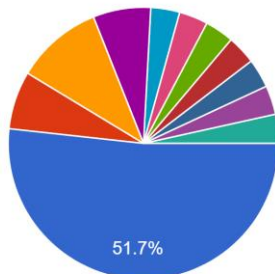


- Moon pie sandwiches
- Sunbursts
- Milky Way candy bar
- Orbit gum
- test
- Beer
- Juju beans
- Hot Dogs
- Not Sure!
- nothing -- I'll be looking up and commenting to other observers

- I'll probably forget to eat in the excitement (and don't have a good pun for that)
- Reese's Pieces -- ET phone home
- Corona beer
- Eclipse gum
- I do not eat snacks
- None in Particular
- Star fruit and starburst
- I had not planned to eat at all, but now you have opened an entire can of worms I shall HAVE to sort out before the eclipse!
- Nothing
- <https://www.skyatnightmagazine.com/uncategorized/astrobaking-eclipse-cookies>

### If you share your eclipse experience on social media, which media will you choose?

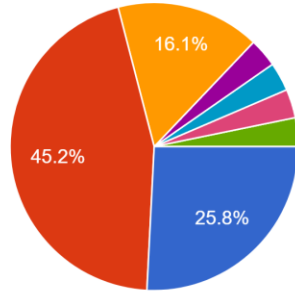
29 responses



- Facebook
- Instagram
- YouTube
- WhatsApp
- LinkedIn
- No social media
- Groups.io
- email
- Reddit
- I don't do social media
- Won't be on social media
- none

What are your plans if Indiana is forecasted to be cloudy on 4/8/2024?

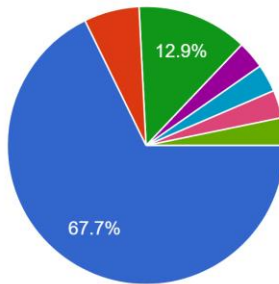
31 responses



- Stay put and watch the livestream on NASA.com
- Travel by car to a more promising area to view the eclipse
- Relax and visit with all the people who have come from faraway to see you
- What solar eclipse?
- Have a good day.
- Travel by light plane to better observation spot
- going to Arkansas
- Regardless of weather we are smoking a brisket and have convinced the neighbors to day drink with us and also smoke meats as we celebrate together!

What is the primary reason you want to see the solar eclipse

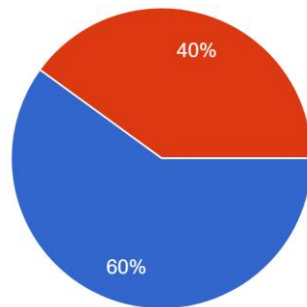
31 responses



- An eclipse is quite rare and stunning
- I am interested in astronomy and want to have a deeper understanding of the universe
- I am interested in the education value of celestial movement
- I enjoy the sense of connectedness during the eclipse
- I enjoy the Astronomy Study Experience.
- It's an emotional and memorable experience
- An eclipse is quite stunning although not that rare
- all of the above

Do you have plans to photograph the eclipse?

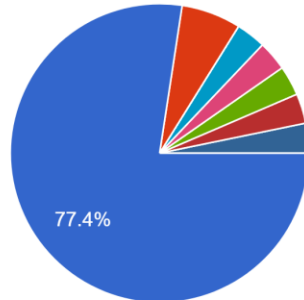
30 responses



- Yes
- No

### How will you view the solar eclipse

31 responses



- With eclipse safety glasses
- A handheld solar viewer
- A pinhole projector
- Livestream from NASA
- Wrong answer-stare at the sun. Retinal damage is permanent
- I have welding glass and I may have a Solar Filter for my refracting telescope
- Telescope and filter
- Proper solar filters and eclipse glasses.
- Meade Solar scope
- telescopes fitted with solar filters and eclipse glasses

## This and That



Saturday March 9 General Meeting — Robert Aull reminded all of the upcoming visit to the Cincinnati observatory in August 10th. Big Boy will be at our upcoming meetings as a reminder.

The speaker for the IAS's General Meeting was Frederick (Fritz) W Kleinhans PhD. His presentation was about Observing the 2024 Total Solar Eclipse. Fritz has attempted to view 8 eclipses and has been successful 6 times.

We had 47 people in attendance at the Mooresville Public Library and 10 people online.

The presentation was well-received by all in attendance and the IAS appreciates Fritz for sharing his experiences with many eclipses. For those unable to participate in real time, a video of his presentation remains available at: [March 2024 General Meeting](#)



Photos by Sara Farkas

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## Links to Past General Meetings

[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](#)

[April 2023 General Meeting](#)

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## Mini Messier Marathon at Link

If the weather cooperates, we are hoping to have a Mini Messier Marathon at the Link Observatory grounds during our DSO sessions on April 5 and 6.

What is a Messier Marathon? The Marathon is an attempt to view *in one night* all 110 objects in the Messier Catalog compiled by Charles Messier in the 1800's. The list includes relatively bright deep-sky objects such as galaxies, nebulae and star clusters. Charles Messier was interested in finding new comets, and he compiled the list to help him identify objects that were frequently confused with comets. Today the list is popular with amateur astronomers, because most of the objects can be found with smaller aperture telescopes and binoculars.

The Marathon can be attempted during any new-moon night, but the best time of year is around the equinox. The trick is to choose a dark site with a low horizon, so that you can begin to view the first objects as the sun sets. By dawn, you will be finding the last of the objects as the sun rises. You need a plan on how to hunt the objects efficiently to make the best use of time. There is a standard list of the objects, presented in order. Here is a link to that list:

<http://www.messier.seds.org/xtra/marathon/marath1.html>

At the Link Observatory, we do not have a low horizon due to the trees. Therefore, we cannot hope to see all 110 objects. However, we can still find nearly 80 of the objects in one night around the equinox. On April 5 and 6, we plan to start at dusk and continue until 2 AM. This will give us an opportunity to see a large portion of the list.

If the weather cooperates, come join us for an attempt at the Mini Marathon! All IAS members are welcome. You can bring your own telescope or binoculars (a tripod is encouraged for binoculars.) Tanager Hill Observatory will be open with the 14-inch telescope attempting to run the list. Come to share the fun and experience, or try to see all the objects yourself. A certificate will be awarded to anyone who attends at the Link Observatory and views some of the Messiers!

Please stay tuned to the groups.io for the announcement by 3 pm on each day to verify that we have good enough weather to hold the event.

— Laura Hintz-Keller

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## **IAS Board of Directors Meeting Highlights: March, 2024**

The IAS BOD meeting was held on March 6, 2024. There were four officers, and seven board members present. The meeting was called to order at 7:00 pm.

Program Report: IAS members will present reports on the eclipse viewing at the April meeting.

Equipment Loan: Two telescopes are on loan.

Facility Reports: The Wi-Fi system at Link is enabled for the summer.

McCloud: Six events have been scheduled. There are four presenters confirmed so far.

West Park: John Musick has been named as the new liaison for West Park and will begin scheduling events.

IAS Membership: As of March, there are 303 current members.

Public Outreach: Steve Haines has 26 more eclipse presentations scheduled through the end of the month.

— *Larry Cates* IAS Secretary



Photo by Wayne McSpadden 08 21 2017

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## Night Sky Network



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](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

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# Participate in Eclipse Science

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By Kat Troche

April is NASA's Citizen Science Month, and there is no shortage of projects available. Here are some [citizen science projects](#) that you can participate in on April 8th, on and off the path of totality right from your smartphone!



Eclipse Soundscapes, ARISA Lab / NASA

### **Eclipse Soundscapes**

**Eclipse Soundscapes** will compare data from a 1932 study on how eclipses affect wildlife – in this case, crickets. There are a number of ways you can participate, both on and off the path. NOTE: you must be 13 and older to submit data. Participants 18+ can apply to receive the free Data Collector kit. Learn more at: [eclipsesoundscapes.org/](https://eclipsesoundscapes.org/)

### **GLOBE Eclipse**

Folks that participated in the **GLOBE Eclipse 2017** will be glad to see that their eclipse data portal is now open! With the GLOBE Observer smartphone app, you can measure air temperature and clouds during the eclipse, contributing data to the GLOBE program from anywhere you are. Learn more at: [observer.globe.gov/](https://observer.globe.gov/)





HamSCI, The University of Scranton / NASA

### HamSCI

HamSCI stands for **Ham Radio Science Citizen Investigation**. HamSCI has been actively engaged in scientific data collection for both the October 14, 2023, annular solar eclipse and the upcoming April 8, 2024, total eclipse. Two major activities that HamSCI will be involved in around the solar events will be the **Solar Eclipse QSO Party (SEQP)** and the **Gladstone Signal Spotting Challenge (GSSC)** which are part of the HamSCI Festivals of Eclipse Ionospheric Science. Learn more about these experiments and others at: [hamsci.org/eclipse](https://hamsci.org/eclipse)



## SunSketcher™

SunSketcher, Western Kentucky University / NASA

### SunSketcher

If you're traveling to totality, help the **SunSketcher** team measure the oblateness, or shape, of the Sun during the eclipse by timing the flashes of Baily's Beads. You will need a smartphone with a working camera for this, along with something to hold the phone in place - don't forget a spare battery! NOTE: The app will need to run from five minutes *before* the eclipse starts until the end of the eclipse. Any additional phone use will result in Sun Sketcher data loss. Learn more at: [sunskecher.org/](https://sunskecher.org/)

Don't stop at the eclipse - NASA has citizen science projects you can do all year long – from [cloud spotting on Mars](#) to [hunting for distant planets](#)! By contributing to these research efforts, you can help NASA make new discoveries and scientific breakthroughs, resulting in a better understanding of the world around us, from the critters on the ground, to the stars in our sky.

We'll be highlighting other citizen science projects with our mid-month article on the [Night Sky Network](#) page, but we want to wish all you eclipse chasers out there a very happy, and safe solar eclipse! For last minute activities, check out Night Sky Network's [Solar Eclipse Resources section](#)!

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## Celestial Events for April

- 01 – The Sombrero Galaxy is well placed
- 04 – Messier 94 is well placed
- 08 – Total solar eclipse.
- 14 – The Whirlpool Galaxy is well placed
- 15 – Messier 83 is well placed
- 17 – Messier 3 is well placed
- 22 – Messier 101 is well placed
- 23 – Pink Moon - Full Moon

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## Eclipse Photography Notes

At our last meeting I 'warned' against trying a fancy eclipse photography program with equipment mounted on a tripod or tracking mount. I want you to be looking up at the sky, not down at your equipment. Thus, for myself, I have been testing what is possible using just hand-held gear in grab and shoot mode.

Here are my results for an iPhone 13 Pro and a Canon D60 DSLR. Remember, practice is the watch word. This is just my first effort. I used the sun as a partial eclipse proxy and the moon as a totally eclipsed sun proxy.



Smart phone: You can find a filter like the one above on Amazon. Just do a search for 'eclipse photography smart phone'. These are about \$10 for 2. I also found the smart phone app 'Solar Snap' very helpful, perhaps even essential for these shots. My initial results are mediocre, especially the moon. I used about 8x zoom. Higher made it too hard to find the target. Even at 8x, target finding and holding steady was a challenge. I will use my DSLR on eclipse day.

DSLR and Telephoto (hand held):



These were taken with a Canon 60D and a Canon 70-300 mm zoom at 300. Similar results were obtained with a Tamron 16-300 mm zoom at 300. This camera is over 10 years old and both lenses have been discontinued. For camera settings I used ISO 3200, center focus spot, Raw + fine JPEG, exposure bracketing (on, 2 stop under, 2 stop over) on a single shutter button press, and image stabilization. I used the raw file for the half-moon as that shot reached 'further' in to the brightly lit portion of the moon (exposure =  $f/5.6$ ,  $1/500$  sec). It exhibits good sharpness. The right-hand image, a half-moon showing earth shine, shows more earth shine than I could see with my naked eye ( $f/5.6$  at  $1/8$  sec). This should do well at capturing the faint outer parts of the corona. The Canon has 4 stops of image stabilization which was essential for obtaining a reasonably sharp 300 mm shot at  $1/8$  sec. Since I will be on a rolling ship, I need all the help I can get. So, get out and practice folks. Grab and go hand held shots are possible.

— Fritz Kleinhans

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## 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](mailto:editor@iasindy.org). Be sure to notify us when the item sells.

**For Sale:**

Seymour Solar model # 425P1 (film type filter, not glass) is in perfect condition. I am asking \$45.

Vivitar 200 mm f3.5 telephoto lens. Currently, it has a Nikon end on it but this could be changed. Like new condition. \$110 shipped \$100 P/U

Epsilon Supertel 400 mm f3.5. Also, with a Nikon end. very good condition. \$100 shipped \$75 P/U

Stellar Vue Nighthawk 80ED. Very nice scope I just never seem to pick it up when going out. Like new condition, nice padded nylon case, red dot finder, and clamshell mount. \$475 shipped, \$400 P/U

Astro-Tech 8" f8 Richey-Chretien Astrograph. I purchased it a couple of years ago but decided I am not going to do any Astrophotography \$960 shipped \$850 P/U

Something for every budget...Hoping to fund a new scope purchase.

For questions or picture requests email Jay Simmons at [ENDDST@gmail.com](mailto:ENDDST@gmail.com)

If not sold to a club member, items will go up on Cloudy Nights at slightly higher prices

Thanks for looking and thanks to the Newsletter Editor for posting

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**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](mailto:events-coordinator@iasindy.org).

Goethe Link Observatory tour: To schedule a tour of the Link Observatory, contact Link Observatory Manager John Shepherd by email at [link-observatory@iasindy.org](mailto:link-observatory@iasindy.org)

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**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.

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 acknowledgement suitable for documentation as a tax deduction.

The Equipment Loan Coordinator may be contacted at [equipment@iasindy.org](mailto:equipment@iasindy.org)

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## IAS Membership Report for February 2024

On 2/29/2024 the IAS had a total of 303 members.  
During January and February there were 34 renewals and 16 new members.

The IAS welcomes the following new member:

Douglas Balogh	Doug DeLorme	Nancy Frass	Robert Harrold
Jeff Lee	Brian McNicholas	Lena Phan	Chris Rogers
Chris Rutter	Annetta Schweitzer	Rebecca Schweitzer	Madan Somasi
Robert Walker	Elizabeth Welch	David Wisman	Rachel Witte

We thank the following members on their renewal:

Michael Birch	Brian Bowes	Paul Brandenburg	Jack Cathcart
Ron Coffee	Diane Conover	Andrew Cook	Greg Devries
Phil Dimpelfeld	Curt Ferrell	Thomas Fischer	Anthony Hamilton
Chris Haynes	Brandon Hecht	Winston L Hunter	John Kramer
Michael Leuther	Zolt Levay	Jeremiah Maxwell	Stephen McSpadden
Robert Moore	Rajesh Pai	Sally Routh	Jay Simmons
Jeff Singleton	Robert L Smith	Matthew Smith	Blake Smith
Allison Tharp	Wes Tobin	Mark Trotter	David Warnick
George Wilson	Mark Fugate		

— *Victoria Musick, IAS Membership Coordinator*

### Trivia questions about eclipses:

1. What celestial event happens when the Moon partially or completely covers the Sun, creating a darkened area on Earth's surface?
  - A) Earthquake
  - B) Volcanic eruption
  - C) Solar eclipse
  - D) Meteor shower
2. During which ancient battle did a solar eclipse allegedly occur, leading to a temporary cessation of hostilities, known as the "Battle of the Eclipse"?
  - A) Battle of Marathon
  - B) Battle of Gaugamela
  - C) Battle of Plataea
  - D) Battle of Halys

3. In 1919, during a solar eclipse, which British astrophysicist's experiment provided one of the earliest confirmations of Einstein's theory of general relativity?

- A) Arthur Eddington
- B) Edwin Hubble
- C) Stephen Hawking
- D) Carl Sagan

4. What type of eclipse occurs when the Earth passes between the Sun and the Moon, causing the Earth's shadow to fall on the Moon?

- A) Solar eclipse
- B) Lunar eclipse
- C) Total eclipse
- D) Annular eclipse

5. Which of the following statements about solar eclipses is true?

- A) Solar eclipses can only occur during a full moon.
- B) Solar eclipses can occur anywhere on Earth.
- C) Solar eclipses are more frequent than lunar eclipses.
- D) Solar eclipses can cause blindness if observed without proper eye protection.

6. What was the approximate date of the first recorded observation of a solar eclipse by humans, documented in ancient China?

- A) 2136 BC
- B) 1302 BC
- C) 1063 BC
- D) 478 BC

7. How many people are estimated to view the total solar eclipse on April 8, 2024?

- A) Approximately 50 million
- B) Around 100 million
- C) Over 200 million
- D) Nearly 500 million

Answers page 31

— *Victoria Musick*

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## Dark Sky Observing Site Information

The following sites remain accessible to *IAS members only* for the purpose of *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.

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## Burkhart Creek Security Light

Thanks to the efforts of Mike Birch, Laura Hintz, Fred Keller, and Robert Aull, the IAS has secured a key to turn off the security light at Burkhart Creek so that IAS members may observe from that location. The following text from the IAS [groups.io](#) wiki page describes the steps to take if you wish to use the site and the new key procedure is appended below.

<https://groups.io/g/ias-indy/wiki/21504>

Burkhart Creek County Park — First, send an email to the Link Observatory Manager ([link-observatory@iasindy.org](mailto:link-observatory@iasindy.org)) ahead of time and follow the steps in the [Burkhart Creek Security Lighting Lockout](#) document. Second, acquire a copy of the [IAS approval letter](#), print it, and take it with you to show you have permission to be there after dark. Third, send an email to both [dverley@morgancounty.in.gov](mailto:dverley@morgancounty.in.gov) and [jmessmer@morgancounty.in.gov](mailto:jmessmer@morgancounty.in.gov), mention that you are with the IAS, and let them know your plans. You may or may not get a reply – don't worry – just take your approval letter with you.

Attachments: [Burkhart Creek Security Lighting Lockout.pdf](#)



Photos by Laura Hintz

— Robert Aull



## 2024 Meetings and Events Calendar

Month	Board Mtg	General Mtg	Deep-Sky Observing	McCloud	West Park
<b>April 8 Solar Eclipse</b>					
<b>April</b>	10	13	5,6,12,13,26,27	—	19
<b>May</b>	1	4	3,4,10,11,31	18	17
<b>June</b>	5	8	1,7,8,28,29	15	14
<b>July</b>	3	6	5,6, <b>12,13</b> ,26,27	13	12
<b>Indiana Family Star Party July 30 – Aug 4</b>					
<b>August</b>	7	10 Cincinnati Trip	9,10, <b>23,24</b> ,30,31	17	16
<b>September</b>	None	7(Pitch-in)	6,7, <b>20,21</b> ,27,28	14	13
<b>October</b>	1*	5	4,5,25,26	—	<i>TBD</i>
<b>November</b>	Oct 30	2	1,2,22,23,29,30	—	<i>TBD</i>
<b>December</b>	None	7 (Holiday Party)	<b>6</b> ,20,21,27,28	—	<i>TBD</i>

**Bold entries** are DSO nights with larger than optimum moon phase

Scotty Bishop has put together a photo mosaic of our solar system. Wow!

Here is a Link to the full-size file: [The Solar System](#)

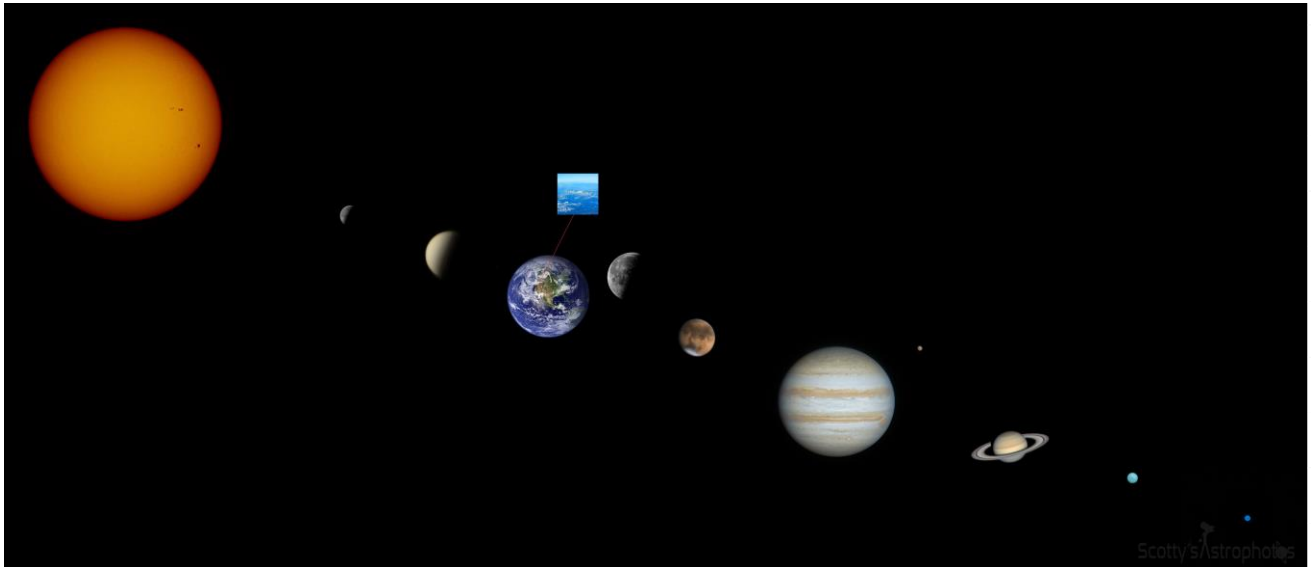


Photo by Scotty Bishop

## Eclipse Cities April 8, 2024 Word Find

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

Austin

Dallas

Indianapolis

Mazatlán

Montpelier

Saltillo

Tulsa

Buffalo

Durango

Laredo

Memphis

Nashville

SanAntonio

Waco

Cleveland

FortWorth

LittleRock

Monterrey

OklahomaCity

Syracuse

Answer Key page 31

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## 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](mailto: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](http://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](mailto:editor@iasindy.org).

**Membership information** — Please send an email to [membership@iasindy.org](mailto: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](http://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.

**April Calendar, 2024 (Daffodil Month at Link)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2 Last Quarter 	3	4	5 Daffodil Days Deep Sky Observing at Link Obs.	6 Daffodil Days Deep Sky Observing at Link Obs.
7	8 Eclipse / New Moon 	9	10 IAS Board Meeting	11	12 Daffodil Days Deep Sky Observing at Link Obs.	13 Messier Marathon IAS Gen Mtg 7 PM D-S Observing
14 Messier Marathon	15 First Quarter 	16	17	18	19 Daffodil Days	20 Daffodil Days
21	22	23 Full Moon 	24	25	26 Daffodil Days Deep Sky Observing at Link Obs.	27 Daffodil Days Deep Sky Observing at Link Obs.
28	29	30	1 Last Quarter 	2	3 Deep Sky Observing at Link Observatory	4 Deep Sky Observing at Link Observatory

Comet P12 Pons-Brooks imaged on 3/10/2024. High contrast image to show nucleus and detail in the tail. Still brightening and might be glimpsed with the unaided eye at totality during the eclipse.

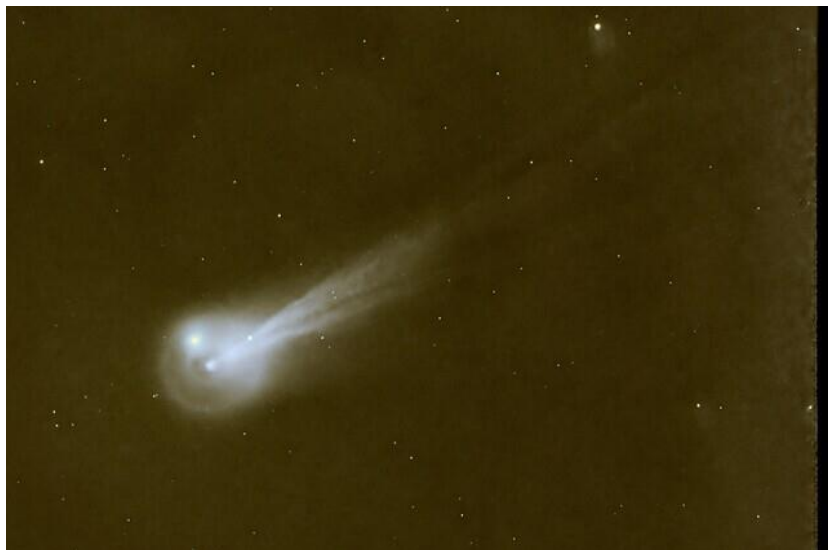


Photo by **James Stankevitz**

### Which Website Do I Use?

**Website**

Indiana Astronomical Society

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

**Use website to**

FAQ  
New member application  
Dues payment  
Planetarium Virtual Sky  
Observing Information  
AstroNews





[ias-indy.groups.io](https://ias-indy.groups.io)









For members only

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Social Media Coordinator	Mike Newberg <a href="mailto:socialmedia@iasindy.org">socialmedia@iasindy.org</a>	
Librarian	Laura Hintz-Keller <a href="mailto:librarian@iasindy.org">librarian@iasindy.org</a>	
Historian	Tom Borlik <a href="mailto:historian@iasindy.org">historian@iasindy.org</a>	

**Eclipse Trivia Answers:**

1. C, 2. D, 3. A, 4. B, 5. D, 6. B, 7. D

**Word Find Answer Key**

