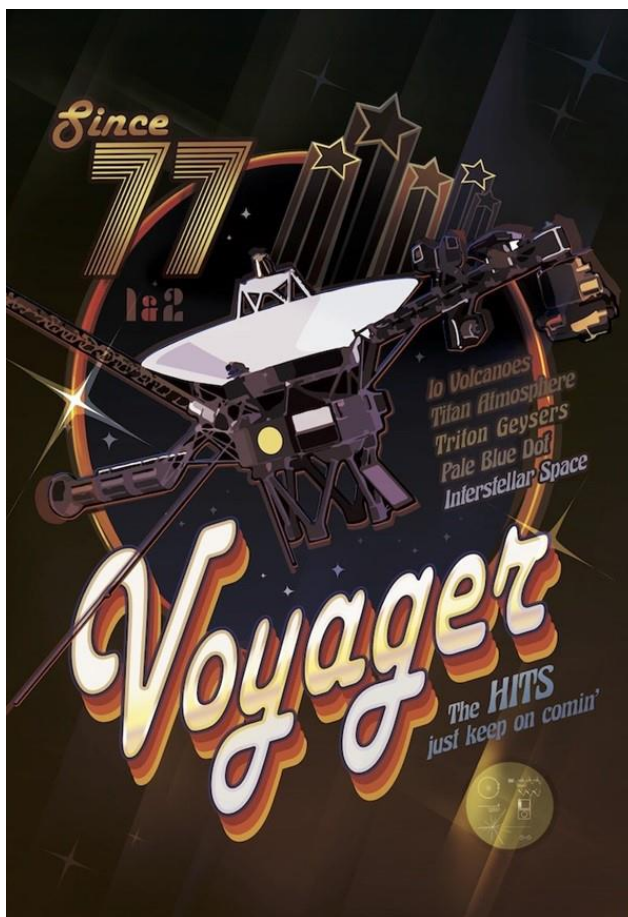


Voyager Probes Celebrate 45 Years in Space



Nearly a decade ago, a cluster of radio telescopes spanning a quarter of the globe saw something extraordinary. In February 2013, the Very Long Baseline Array (VLBA) spotted Voyager 1's faint radio signal, confirming it to be the most distant object built by human hands. At the time, this robotic emissary of Earth was 11.5 billion miles (18.5 billion kilometers) away, and thus far too tiny to be visually resolved.

Photo Courtesy: NASA

Inside this Issue...

- 2 – Local Events and information
- 3 – News around the Globe
- 4 – Calendar
- 6 – EAS Business

The EAS newsletter, Observer, is published monthly. Anyone wishing to contribute articles or photos may mail them to the club's PO Box: EAS, PO Box 3474, Evansville, IN 47733, or e-mail them to the editor at:

dasiceman@yahoo.com

The **Evansville Astronomical Society (EAS)** is a non-profit organization fully incorporated in the state of Indiana. It has, as its primary goal, the advancement of amateur astronomy. Founded in 1952, the society seeks to:

- 1... maintain adequate facilities for its members and the public in order to extensively study the skies and
- 2... promote an educational program for those who wish to learn more about the science of Astronomy.

Meetings are held the third Friday of each month, except June, when the annual EAS picnic is held. The society also sponsors monthly Open House events during the warmer seasons that afford the public an opportunity to tour the observatory.

EAS 2022 Officers and Contacts

President – Tony Bryan
812.827.3234

evansvilleastro@gmail.com

Vice President – Scott Conner

Secretary – Dave Kube
740.223.6854

Treasurer – Mitch Luman

Counselors
Mitch Luman (2020)
Michael Borman (2021)
Ken Harris (2022)

Webmaster – Michael Borman

Program Director
Chuck Allen

Newsletter editor – Dave Kube
dasiceman@yahoo.com

For more information about the EAS or directions to the Observatory, please visit the club's web page:

www.evansvilleastro.org



Local Events and Information

EAS Update

Please Note: We have a Regular Meeting scheduled for 7:30pm CDT on Friday, September 16th, 2022. This meeting is scheduled to be at the EAS Observatory in Lynnville. Please see our Facebook Group and Webpages for Updates.

EAS Update

Please Note: We have a PSW scheduled for 7:30pm CDT on Saturday September 24th, 2022. This event is scheduled to be at the EAS Observatory in Lynnville. Please see our Facebook Group and Webpages for Updates.

EAS Update

Please Note: We have a Fall Cleanup scheduled for October. Date TBA. Please see our Facebook Group and Webpages for Updates.

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EAS Update:

Please visit our website <http://www.evansvilleastro.org> and our Facebook Group page to keep yourself up to date for any changes.

Telescopes and accessories for sale...

Orion AstroView120ST, Equatorial Refracting Telescope and accessories. 120mm (4.7") aperture and 600mm focal length, includes sturdy adjustable-height tripod, equatorial mount, finder scope and an internal polar alignment scope. Includes two Plossl 1.25" eyepieces (25mm and 10mm), 6x30 finder scope, star diagonal. \$600.

Contact: Karen Caruso 812-629-8089 (cell)

Telescopes and accessories for sale...

As mentioned in last month's issue, Mike Borman still has some excellent telescope equipment and imaging accessories for sale. Some of the gear has already been sold. If interested, go to Mike's web page. Here is the link: <http://www.mlborman.org/forsale.htm>

Mystery Crater Potentially caused by relative of Dinosaur-Killing Asteroid.



The dinosaurs may have been annihilated by two asteroids, not just one.

Photo Courtesy: Kevin Gill/Flickr, CC BY-SA

The ocean floor is famously less explored than the surface of Mars. And when a team of scientists recently mapped the seabed, and ancient sediments beneath, they discovered what looks like an asteroid impact crater.

Intriguingly, the crater, named “Nadir” after the nearby volcano Nadir Seamount, is of the same age as the Chicxulub impact caused by a huge asteroid at the end of the Cretaceous period, around 66 million years ago, which wiped out the dinosaurs and many other species.

The finding, published in Science Advances, raises the question of whether the crater might be related to Chicxulub in some way. If confirmed, it would also be of huge general scientific interest as it would be one of a very small number of known marine asteroid impacts and so give unique new insights into what happens during such a collision.

The Strange Case of Eyeball Planets.



These tidally locked worlds could be the key to finding life in the universe — if they exist.

Seen from a nearby moon, a tidally locked ocean world simmers beneath the light of its red dwarf sun. The sea along the terminator — the day/night boundary — freezes as it approaches the cold nightside, but temperatures at the point directly under the star may be quite temperate, with liquid oceans amenable to life.

Photo Courtesy: Michael Carroll

Humans have long imagined what life on another world may look like. And as we entered a golden age of exoplanet discovery, the hunt picked up for Earth 2.0, a twin to our planet orbiting within its star’s habitable zone. But so far, searches have turned up empty, leading scientists to use some out-of-the-box thinking to find another haven for life in the universe.

The habitable zone, or Goldilocks zone, is the region surrounding a star where water can exist on the surface of an orbiting planet or moon. The hotter the star, the farther away its habitable zone sits. Take red dwarfs, for example: Of the hundreds of billions of stars in our galaxy, astronomers estimate that about 80 percent of them are red dwarfs. At a mere 0.08 to 0.5 times the mass of the Sun, these stars only reach surface temperatures around 4,000 to 6,700 degrees Fahrenheit (2,200 to 3,700 degrees Celsius). Thus, the habitable zone is quite close to these stars

That proximity makes it much easier to spot any planets that pass in front of the tiny star, as such eclipses tend to block a large fraction of starlight and make the presence of an exoplanet clear. During its nine-year mission, the planet-hunting Kepler space telescope found 2,709 planets through this transit method; another 2,057 are still awaiting confirmation. And most of Kepler’s finds are worlds circling close to red dwarf suns, some of which are similar in size to our own.

October 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21 Reg.Mtg. 7:30pm	22 PSW 7:30pm
23	24	25	26	27	28	29
30	31					

Generated by FreeHTMLCalendar.com Copyright © 2011 John Dalbey.

Up and Coming Events 2022

Please Note we have a Regular Meeting scheduled for 7:30pm on Friday September 16th, 2022.

Please Note we have a PSW scheduled for 7:30pm on Saturday September 24th, 2022.

Please Note we have a Fall Cleanup Scheduled in October – Date TBA.

Please Note we have a Regular Meeting scheduled for 7:30pm on Friday October 21st, 2022.

Please Note we have a PSW scheduled for 7:30pm on Saturday October 22nd, 2022.

Please visit our Web Page <http://www.evansvilleastro.org> or our Facebook Group Page for updates
Events may be cancelled due to Covid at time of event

Moon Phases

New Moon	First Quarter	Full Moon	Third Quarter
October 25 th , 2022	October 2 nd , 2022	October 9 th , 2022	October 17 th , 2022
Moon Phases courtesy of Time and Date.com			

Star Party

Daytime Events— Join us as a Nasa Solar System Ambassador gives a live one-hour talk and multimedia presentation on *“The Evolution of Stars.”* Takes place three times. **First show at 1 PM, second show at 3 PM and third show at 5 PM.**

You are invited to daytime presentations and nighttime viewing through telescopes

Where: Everything takes place at the EAS

Observatory up the hill on the east side of the park

Cost: It's free to all, but the EAS is a 501(c)(3) nonprofit and donations are appreciated

Evening Event – Get an introduction to astronomy and afterwards view through the telescopes at the observatory. Views through the telescopes are weather permitting.

Begins at 7:30 PM.

Saturday September 24th

Recommended for ages 6 and up, but everyone is welcome.

EAS Meeting for August – 2022

Our August meeting at the EAS Observatory was officially called to order @ 8:45pm by president Tony Bryan. Officers in attendance were Tony Bryan, Dave Kube and Scott Conner. Mitch Luman was present via zoom. There were 14 members present with 8 attending via Zoom. There were no visitors present.

Prior to the meeting we had a presentation via zoom by Caitlin Ahrens. Her presentation was about history and future Lunar missions.

Reading of minutes from our July meeting was motioned and voted to accept as printed in the July 2022 EAS Observer Newsletter.

UPCOMING EAS EVENTS

Vice President Scott Conner announced our upcoming events.

Stars on the Beach	Rain Date	Saturday, Aug 27	Night Only @ Patoka Lake
Moon Watch		Saturday, Sept 3	7:30 PM @ Museum
Regular Meeting		Friday, Sept 16	7:30 PM @ Observatory
Public Star Watch		Saturday, Sept 24	7:30 PM @ Observatory
Fall Cleanup		Saturday in October	10:00 AM @ Observatory
Regular Meeting		Friday, Oct 21	7:30 PM @ Observatory
Public Star Watch		Saturday, Oct 22	7:30 PM @ Observatory

TREASURER'S REPORT

Tony Bryan read Mitch Lumans Treasurer report.

SPECIAL PROJECTS

The bathroom remodel project is moving along slowly.

The observatory level has been cleaned and is ready for programs. Great Job Tony

A camera security system is being installed.

Planning is underway to reconfigure the payload on mount in the observatory deck.

OLD BUSINESS

Stars on the Beach – Daytime solar observing took place at Patoka Lake on July 30th. Dave Kube attended and reported he about 50 people look through his telescope with white light filter.

Observatory Readiness – Over the past few months, many hours of labor has been put into making this facility ready for reopening. Thanks go out to those who have devoted their energy and time in order to open our doors.

NEW BUSINESS

Stars on the Beach Rain Date - Patoka Lake "Stars on the Beach" is scheduled for August 27th. There will be no daytime activities due to staff shortages at Patoka. Observations will take place at the beach area beginning at twilight. Security will be provided by the park rangers, and lights will be turned off as appropriate. The LAS has posted the event on their Facebook page and likely some of their members are planning to be joining us that

evening. It's always a great time. Please consider helping out by setting your scope up at the beach so the public can enjoy the views through a multitude of scopes. Even if you do not have a scope, please join in.

Moon Watch – This event is scheduled for 7:30 PM on Saturday September 3rd at the Museum.

Public Events – The first PSW of the year is scheduled for September 24th. Ken Harris and Dave Kube volunteered to lead.

Library Telescope Awarded to the EAS – In June, the EAS submitted a Horkheimer Library Telescope Entry Form to the Astronomical League. Each year one member society from each of the AL's ten regions is awarded an Orion StarBlast 4.5 inch Dobsonian reflector. Recipient clubs modify the telescope per provided directions, to make it robust for loaning out. The clubs then work with a local library to put telescopes in the hands of people who have the desire to explore the night sky. At the ALCON 2022 in Albuquerque, it was announced that we received an award. We have notified Linda Burns at the Newburg Chandler Library, and she is excited about have a Library Telescope in their inventory. Due to inventory shortages, the scope is not anticipated to be delivered until the fourth quarter of this year.

Adopt-a-Mirror – During the time that our observatory was not being utilized, mice ran amuck and built nests in our 16" and 12" Meade Dobsonian telescopes. The primary mirrors now require to be recoated. Those feeling generous can adopt a mirror, by donating all or a portion of the cost to recoat a mirror. Approximate cost to recoat the 12" mirror is \$200. Approximate cost to recoat the 16" mirror is \$300. Mice-proof guards will be installed on the scopes to prevent this from happening again. A total \$135 was collected during the meeting for this project.

Other New Business – Scott Conner announce that he has 2 events scheduled at the observatory. The first is on September 10th, 2022 and the Second on November 5th, 2022. He would like some help if possible.

ANNOUNCEMENTS

Thanks to Members – Dave Kube has been maintaining our lawn and lawn equipment throughout the year. Dave has also been producing the EAS newsletter, "The Observer", and publishing it like clockwork every month. Mike Borman has been maintaining and updating our EAS website. Mike, Scott, Dave, and many others have been making our Facebook Group an interesting place to visit and keep up with the latest occurrences in the space and astronomy. Thanks also to Chuck for continually getting top-notch speakers for our monthly programs. Is there anyone else to thank?

Next Monthly Meeting - Our next regular meeting is scheduled for 7:30 PM on September 16th at the observatory.

ADJOURN MEETING- Meeting was adjourned at 9:10pm

Respectfully Submitted – Dave Kube – Secretary