

## *How Lobster Eyes can help Astronomers get a Wider View of the Cosmos.*



*The crustacean-inspired technology can help us analyze far-off phenomena, like supernovae collisions and solar winds that extend past our own galaxy. For more than half a century, scientists have sought to understand cosmic X-rays and what they reveal about our galaxy and the universe beyond it. As it turns out, lobsters can help Astronomers do just that. These crustaceans have specialized eyes that can sense motion in low-light environments. By mimicking their unique structure, scientists can build visual equipment, or optics, for missions outside of Earth's orbit aiming to capture stray X-rays. In the future, this technique could broaden astronomer's view of the sky to detect astronomical events both near and far.*

Photo Courtesy: Miguel Guasch Fuxa/Shutterstock

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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](mailto:dasiceman@yahoo.com)

## To the Members of the EAS

Please note that at the time of this printing I do not have any info regarding our online live Zoom presentation at 7:30 CDT for July 16<sup>th</sup>.

Please check our Facebook Group Page and Website for updates.

If you are unfamiliar with online meetings, you may wish to visit the following link ahead of the meeting night to learn more:

<https://support.zoom.us/hc/en-us/articles/201362193-How-Do-I-Join-A-Meeting>

The Evansville Astronomical Society now has a Youtube Channel and for those that missed the live sessions of our previous Zoom Meetings and Presentations, you can watch a video stream of these events. This link can also be found on our website <http://evansvilleastro.org>

<https://www.youtube.com/channel/UC8A9iE6gz0JE1Rr8VuxqmDg?fbclid=IwAR0In5rjdsA-GdGKkhLTvVRFx1fENmVeSPpWtw2Rc6sBB79w702cLyB1n14&app=desktop>

## The EAS board has approved and updated our bi-laws to include the below statement.

The Evansville Astronomical Society (EAS) is committed to maintaining an environment that encourages and fosters appropriate conduct among all persons and respect for individual values. Accordingly, the EAS is committed to maintaining an environment free from discrimination, harassment, retaliation and/or sexual assault. Discrimination or harassment based on race, gender and/or gender identity or expression, color, creed, religion, age, national origin, ethnicity, disability, veteran or military status, sex, sexual orientation, pregnancy, genetic information, marital status, citizenship status, or on any other legally prohibited basis is unlawful and undermines the character and purpose of the EAS. Such discrimination or harassment will not be tolerated.

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 2021 Officers and Contacts**

President – Tony Bryan  
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Vice President – Scott Conner

Secretary – Dave Kube  
740.223.6854

Treasurer – Amy Barrett

Counselors  
Ken Harris (2019)  
Mitch Luman (2020)  
Michael Borman (2021)

Webmaster – Michael Borman

Program Director  
Chuck Allen

Newsletter editor – Dave Kube  
[dasiceman@yahoo.com](mailto:dasiceman@yahoo.com)

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

[www.evansvilleastro.org](http://www.evansvilleastro.org)



## Local Events and Information

### EAS Update

Please note I currently do not have any info for our July 16<sup>th</sup> Meeting at 7:30pm CDT.

### EAS Update

Please note that currently all public meetings have been canceled and therefore we are trying to meet via online Zoom Meeting until further notice.

### EAS Update

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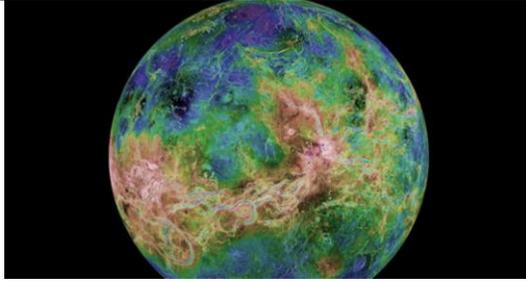
Please visit our website [www.evansvilleastro.org](http://www.evansvilleastro.org) and our Facebook Group page to keep yourself up to date for any changes.

### FOR SALE:

### 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.mborman.org/forsale.htm>

***NASA is returning to Venus to learn whether the hot poisonous wasteland was ever habitable.***



*Two new NASA missions – VERITAS and DAVINCI+ – are headed to Venus. The missions will use radar and a probe to learn about Earth’s hard-to-study and potentially prophetic neighbor.*

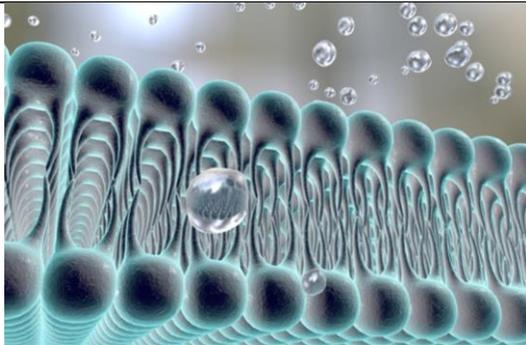
Credit: NASA/JPL/USGS

NASA is finally headed back to Venus. On June 2, 2021, NASA Administrator Bill Nelson announced that the agency had selected two winners of its latest Discovery class spacecraft mission competition, and both are headed to the second planet from the Sun .

This is the first time since the Magellan mission in 1989 that NASA has committed to sending spacecraft to study the shrouded planet just next door. With the data these two Venus missions – called VERITAS and DAVINCI+ – will collect, planetary scientists can start tackling one of the biggest mysteries in the solar system: Why is Venus, a planet almost the same size, density and age of Earth, so very different from the world humanity calls home?

Perhaps the most fascinating aspect of Venus is that it may have once looked a lot like Earth. Recent climate models suggest that in the past the planet could have had liquid water oceans and a mild climate. It may have been habitable for as long as 3 billion years before succumbing to some sort of climate catastrophe that triggered the runaway greenhouse. The goal of these two new missions to Venus is to try to determine if Venus really was Earth’s twin, why it changed and whether, in general, large rocky planets become habitable oases like Earth... or scorched wastelands like Venus.

***First Evidence of Cell Membrane Molecules in Space.***



*All cells on Earth are made of phospholipid membranes. Now astronomers have found the component molecules in interstellar space.*

Credit: Kateryna Kon/Shutterstock

The origin of life is one the great unanswered questions in science. One piece of this puzzle is that life started on Earth 4.5 billion years ago, just a few hundred million years after the formation of the Solar System, and involved numerous critical molecular components. How did all these components come to be available so quickly?

One potential explanation is that the Earth was seeded from space with the building blocks for life. The idea is that space is filled with clouds of gas and dust that contain all the organic molecules necessary for life.

Indeed, astronomers have observed these buildings blocks in interstellar gas clouds. They can see amino acids, the precursors of proteins and the machinery of life. They can also see the precursors of ribonucleotides, molecules that can store information in the form of DNA.

But there is another crucial component for life – molecules that can form membranes capable of encapsulating and protecting the molecules of life in compartments called protocells. On Earth, the membranes of all cells are made of molecules called phospholipids. But these have never been observed in space. Until now.

August 2021

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
22	23	24	25	26	27	28
29	30	31				

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**Up and Coming Events 2021**

**EAS Meetings and Events are currently on hold or cancelled due to the current COVID-19 situation.**

**Please note I currently do not have any info for our July 16<sup>th</sup> Meeting at 7:30pm CDT**

**Please visit our Web Page <http://www.evansvilleastro.org> for updates.**

**Please visit our Facebook Group Page for updates.**

**Moon Phases**

New Moon	First Quarter	Full Moon	Third Quarter
August 8 <sup>th</sup> , 2021	August 15 <sup>th</sup> , 2021	August 22 <sup>nd</sup> , 2021	August 30 <sup>th</sup> , 2021

[Moon Phases courtesy of Time and Date.com](http://www.timeanddate.com)

***EAS Unofficial Meeting Notes for June – 2021***

To benefit the Evansville Astronomical Society and Facebook Group members, we had an Informative online live Zoom presentation at 7:30 CDT on June 18th featuring Rachel Cionitti, a rising junior at the University of Kansas, double majoring in Physics and Astronomy. Rachel's talk was called "Dark Matter and Dark Energy".

Respectfully Submitted – Dave Kube – Secretary