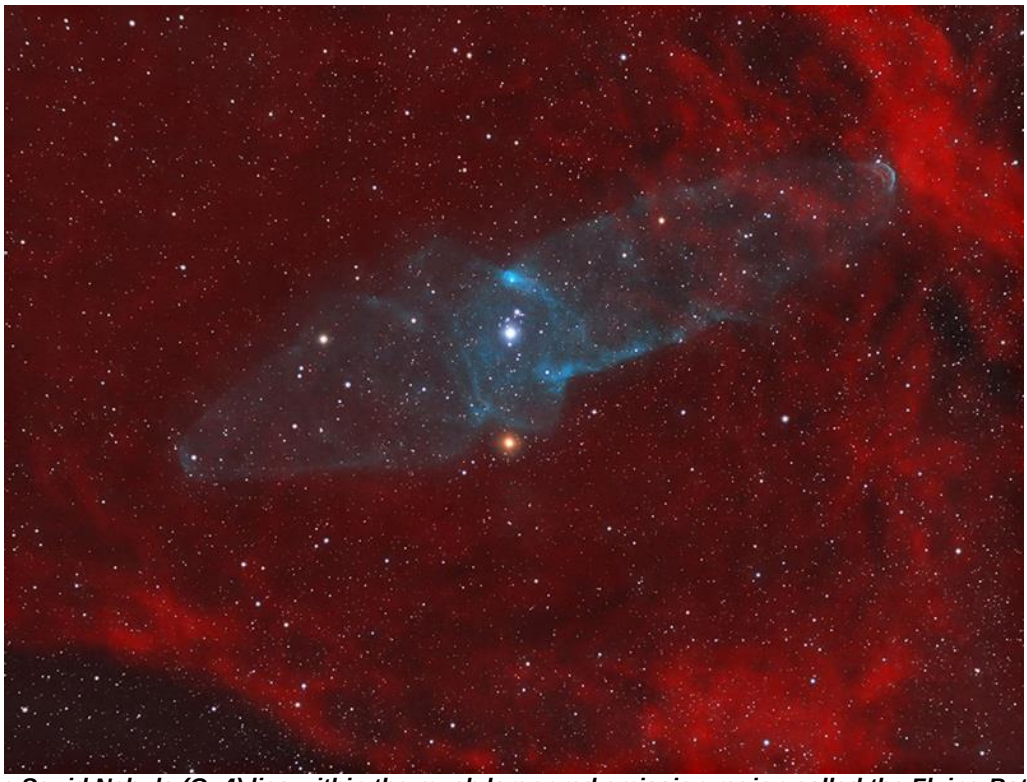
Observer

June

EVANSVILLE ASTRONOMICAL SOCIETY, INC. 2022

Blue Squid Nebula



The Blue Squid Nebula (Ou4) lies within the much larger red emission region called the Flying Bat Nebula (Sharpless 2-129). Both objects lie 2,300 light-years away in the constellation Cepheus the King.

Photo Courtesy: ***Kurt Zeppetello from Monroe, Connecticut***

Inside this Issue…

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 our Annual Picnic scheduled for Saturday, June 25th, 2022 @ 6:00pm CDT. Location will be at Ken Harris's Home this year. This is for members in good standing only.

EAS Update
Please Note: We have a Moon Watch scheduled for Wednesday, July 6th, 2022 at the Museum beginning @ 8:30pm CDT.

EAS Update

We have a Regular Meeting scheduled for 7:30pm CDT on Friday, July 15th, 2022. Zoom or In-Person yet to be determined.

EAS Update

Please Note: We have our Annual Stars on the Beach at Potaka Lake scheduled for 6:30pm EDT on Saturday, July 30th, 2022. Daytime activities still have not been confirmed.

EAS Update

Please Note:

EAS Update

EAS Update:

Please visit our website http://ww.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

Scientists have Grown Plants in Genuine Lunar Soil.

For the first time in history, researchers have used a small sample of lunar regolith to sprout seeds. The results can tell us much about feeding humanity throughout the solar system.

Researchers have grown tiny Arabidopsis plants in samples of lunar regolith returned from the Moon.

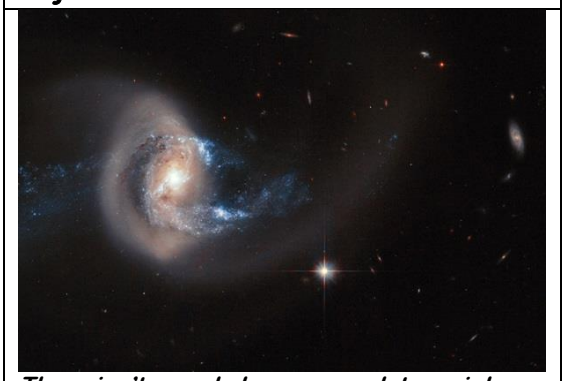
Credit: UF/IFAS photo by Tyler Jones

The Moon would be a harsh place to call home. It has no weather and no liquid water. And with no atmosphere to hold conditions steady, lunar temperatures can oscillate from 224 degrees Fahrenheit (107 degrees Celsius) in the daytime to –228 degrees Fahrenheit (–144 C) at night. What's more, the surface isn't exactly ripe for agriculture. Buzz Aldrin once described lunar regolith, akin to soil, as "talcum powder-like dust." And researchers who've studied lunar soil samples have described it as glassy, metallic, and loaded with minerals that have forms not commonly found on Earth.

That's why it is so impressive that, for the first time, scientists have successfully grown plants using lunar soil gathered from previous missions to the Moon.

A study recently published in the journal *Communications Biology* documents the feat. According to study author Rob Ferl, a professor of horticultural sciences at the University of Florida, the experiment has been in the works for over a decade but researchers only carried it out last year. "Something like this takes tons of planning," he says, because Moon soil is a finite resource and once you run out, it's hard to come by. The team had only the equivalent of a few teaspoons to work with in a pot about the size of a thimble.

How do Scientists Weigh Celestial Objects?



There isn't a scale large enough to weigh galaxies like NGC 7714.

Credit: ESA, NASA; Acknowledgement: A. Gal-Yam (Weizmann Institute of Science)

It's true that you can't simply place a planet or galaxy on a scale to measure how heavy it is. Luckily, astronomers have a few tricks up their sleeves.

The first trick is understanding that gravity and mass are inherently linked. It's important to note that weight — which Measures the strength of your local gravitational pull on an object — can change, while mass does not. For example, if you step on a scale on Earth and weigh 150 pounds, that same scale would read 379 pounds on Jupiter. Your personal mass isn't what's changing, but your weight changes because more massive planets exert greater gravitational pull on you than less massive ones.

So, to find the mass of an object, astronomers can simply look at how long it takes nearby bodies to orbit that object. Provided they know the distance between the bodies, they can calculate the mass of the central body. In the case of binary stars, astronomers can observe the stars orbiting each other to determine their combined mass. If the stars are nearby and astronomers can see how closely each star orbits their common center of mass, they can determine each star's individual mass. For galaxies it's a little different, but by examining how fast a galaxy is rotating, researchers can similarly determine its mass.

There's another common trick astronomers can use to estimate mass: luminosity. In most cases, a star or galaxy's luminosity — how brightly it shines — is roughly proportional to its mass. So, provided you know one, you can solve the other.

July 2022

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

Up and Coming Events 2021

Please Note our Annual Picnic is scheduled for 6:00pm on Saturday, June 25th, 2022.

Please Note we have a Moon Watch scheduled for 8:30pm on Wednesday July 6th, 2022 at the Museum beginning at 8:30pm.

Please Note we have a Regular Meeting scheduled for 7:30pm on Friday July 15th, 2022.

Please Note we have our Patoka Lake event scheduled for 6:30pm EDT on Saturday July 30th, 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
July 28th, 2022	July 6th, 2022	July 13th, 2022	Julye 20th, 2022

Moon Phases courtesy of Time and Date.com

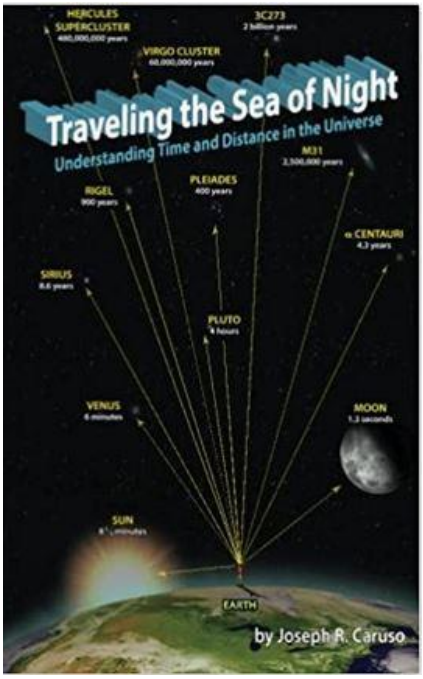
Joe Caruso Obituary (1947-2022)
Submitted by: Mitch Luman

Joseph (Joe) R. Caruso, 75, of Newburgh passed away on Friday, February 18, 2022, at his home with his wife Karen by his bedside.

Joe was an EAS member (2010-12), professional astronomer, and author who learned astronomy after a career in the navy. He taught astronomy at various east coast colleges and universities, but the role for which he was most proud was working Harvard at the Smithsonian Astrophysical Observatory running the 61-inch optical and 84-foot radio telescopes. In addition to his work on the telescope he conducted many public tours of the facility and grounds. While in New England, Joe was a presenter at numerous star parties, adult education classes, and a judge at local science fairs. Because of Joe's tireless efforts as an astronomy teacher for more than 25 years, he was awarded the Las Cumbres Amateur Outreach Award by the Astronomical Society of the Pacific for contributions to astronomy education and outreach in the greater Boston area. He was the inspiration for many to enter the field for which he loved.

After relocating to Newburgh, Indiana in the late aughts, Joe quickly became a frequent speaker at Evansville Museum astronomy events, a subject matter presenter at EAS Meetings and also at Audubon State Park. He was the author of the book "Traveling the Sea of Night".

According to Karen, his wife of 46 years, Joe was a true Renaissance Man who loved learning and teaching others. He loved discovering new things and surprising us with his unlimited knowledge and loved to tell jokes to see all of us laugh.
Portions of this article were contributed by Karen Caruso.



Portions of this article were contributed by Karen Caruso.

BUILD THIS TELESCOPE

Submitted by: Mitch Luman

The Evansville Museum is organizing a telescope making class for adults or child plus adult teams on July 1 and July 8. The class offers an opportunity to create a working telescope and utilizes proceeds from the Museum's Charles Statham Telescope Fund. Charles Statham, who died in 2002, was a past EAS President.

MUSEUM CLASS

Friday, July 1 and Friday July 8 1-3 PM CDT

Fee: $40 for Museum Members $50 for Not-Yet-Members

Call 812-425-2406 to register

The class offers a rewarding project for anyone—even if you're not handy with hand tools—to construct a working refractor telescope. Each participant will take home a sturdy, quality 60mm telescope suitable for astronomical use. This telescope, which is based on the design by Rico Tyler *will out perform most commercially available instrument* of the same size. All materials are provided and are provided at half the cost of what you would pay yourself.

The subsidy of materials for this class is made possible through an endowment from The Charles Vincent Statham Memorial Telescope Fund.

The Museum is looking for EAS members to assist with the construction of these telescopes. Contact mluman@emusuem.org or call 812-4254-2406 ext 227 if interested.

EAS Meeting Notes for May – 2022

On May 20th, 2022 the EAS held an informal zoom meeting for members and our Facebook Group to participate as well. The meeting began @ 7:35 pm. There were 14 attendees to this meeting.

Chuck Allen presented us with an interesting list of things we can do this summer.

The meeting ended at 9:20 pm.

Respectfully Submitted – Dave Kube – Secretary