

May Meeting at Lynville Observatory May 17th, 2019 @ 7:30pm



On August 13, 2017, the Next Generation Transit Survey (NGTS) telescope spotted an intense solar flare from a tiny star barely bigger than Jupiter. But despite this star's diminutive size, the flare gave off as much energy as 80 billion megatons of TNT. That's 10 times as powerful as the strongest flare ever observed on our own Sun.

It's also the coolest star ever observed to give off such a hot flare, and the spectacular outburst is teaching astronomers the power of small stars.

Photo by University of Warwick/Mark Garlick

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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

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 2019 Officers and Contacts

President – Tony Bryan
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Vice President – Scott Conner

Secretary – David M Kube
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Treasurer – Ted Ubelhor

Counselors
Mitch Luman (2017)
Michael Borman (2018)
Ken Harris (2019)

Webmaster – Michael Borman

Program Director
Chuck Allen

Newsletter editor – Dave Kube
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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 at the Observatory on Friday, May 17th, 2019 @ 7:30pm.

Program: Dr. John Kielkopf, professor of astrophysics at the University of Louisville and director of its Walter Moore Observatory and its remote observing stations.

Dr. Kielkopf will be speaking about his exoplanet research using the university's three remotely-controlled planewave reflectors--a 20-inch in Kentucky, a 24-inch on Mt. Lemmon in Arizona, and a 27-inch on Mt. Kent in Australia.

EAS Update:

Please Note we have our EAS picnic & Observing Session scheduled for Saturday, June 8th. Time and Location TBD.

EAS Update:

Please Note we have our 3rd PSW scheduled at the Observatory on Saturday, June 22nd, 2019 @ 7:30pm.

EAS Update:

Please Note we have a Jupiter Watch scheduled at the Museum on Saturday, July 6th, 2019 from 8:30 to 10pm.

Please Note there is an "On the Moon Again" event at the Museum July 12th and 13th. This is an Event.

Please Note we have a Regular Meeting scheduled at the Observatory on Friday, July 19th, 2019 @ 7:30pm.

Please Note that our Stars on the Beach event at Patoka Lake is scheduled for Saturday, July 27th beginning at 11:00am Eastern Daylight Time.

FOR SALE:

Meade 8-inch Newtonian on heavy-duty LX75 mount with AutoStar2 GoTo capability. Used very little. Asking \$850.

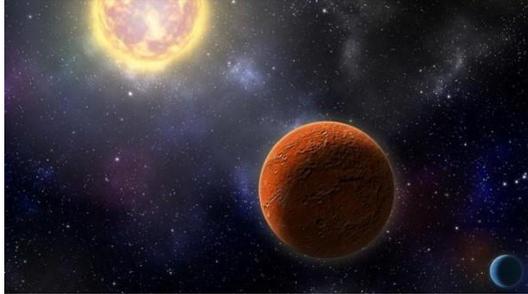
Cave Astrola 10-inch f/15 Cassegrain on heavy-duty mount. Converts to an f/4 Newtonian. 10-inch Mathis RA drive gear. Asking \$900.

Call Jim at 812-471-3017

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>

TESS Spacecraft Finds its First Earth-sized Planet Around Nearby Star.

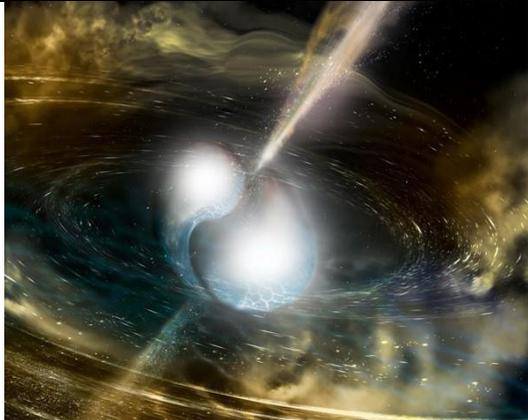


An artist's illustration shows the two planets discovered circling nearby star HD 21749.
Robin Dienel/Carnegie Institution for Science

The next generation of exoplanet hunting has arrived in the form of NASA's Transiting Exoplanet and Survey Satellite. TESS looks at closer and brighter stars than Kepler, the spacecraft that first turned the trickle of exoplanet discoveries into a deluge. While TESS, which launched last year, is just beginning its sky search, it's already started discovering new planets. Astronomers say they've discovered an Earth-sized planet dubbed HD 21749 c that sits just 52 light-years from Earth and orbits its star every 8 days. It's TESS' first discovery of an Earth-sized planet.

Scientists also say they've confirmed HD 21749 b, a planet a little smaller than Neptune on a roughly 35-day orbit around the same star. Both TESS exoplanet findings were teased earlier this year.

Merging Neutron Stars Gave Solar System Heavy Elements.



Colliding neutron stars might have seeded our solar system with valuable heavy elements.

NSF/LIGO/Sonoma State University/A. Simonnet

Before the planets in our solar system formed or the Sun turned on and started shining, two other stars had to die. Their deaths and later collision would seed the area where our area with many of the heavy materials needed for life on Earth. Now, 4.6 billion years later, astronomers are piecing together the story of these long-dead stars.

Stars have to make all the other elements in the universe in their nuclear fusion-powered cores. And even they stop when they reach the element iron, only 26th in order on the periodic table (elements are arranged from lightest, with the smallest number of protons, to heaviest, with the most). After that, everything we have comes from more exotic or extreme processes, like the explosion of a star at the end of its life – or the dramatic collision of one star with another. The former is much more common than the latter, at least when we're talking about neutron stars, the dense cores of massive, dead stars. They make the most dramatic collisions, only slightly less energetic than two black holes colliding.

Neutron star mergers occur only a few times per million years in our galaxy (though we sometimes track them from even further away via gravitational waves). By contrast, a new supernova explodes a few times per century somewhere in the Milky Way.

Researchers ran simulations of the Milky Way's evolution, testing different histories of neutron star mergers and how they would affect the composition of our solar system today. They found that a single neutron star merger could have deposited a substantial amount of the heavy elements we have today by exploding less than 1,000 lightyears away from the dust cloud that would one day become our solar system.

EAS OBSERVER NEWSLETTER

June 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8 EAS Picnic 6:00pm
9	10	11	12	13	14	15
16	17	18	19	20	21	22 PSW 7:30pm
23	24	25	26	27	28	29
30						

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Up and Coming Events 2019

Regular Meeting – Friday, May 17th – @ Observatory @ 7:30 pm

EAS Picnic & Observing Session – Saturday, June 8th – Time/ Location TBD

PSW – Saturday, June 22nd – @ Observatory @ 7:30 pm

Jupiter Watch – Saturday, July 6th – @ Museum 8:30 – 10:00pm

On the Moon Again Outdoor Event – July 12 – 13th @ Museum

Regular Meeting – Friday, July 19th – @ Observatory @ 7:30 pm

Moon Phases

New Moon	First Quarter	Full Moon	Third Quarter
June 3 rd , 2019	June 10 th , 2019	June 17 th , 2019	June 25 th , 2019
Moon Phases courtesy of Time and Date.com			

EAS Meeting Minutes for April 19th, 2019

The April 19, 2019 meeting was called to order at 7:33 pm by President Tony Bryan. There were 9 members and 1 guest (Jeff Paine) present. The officers present were Tony Bryan, Scott Conner, and Ken Harris.

Bob Flatter made the motion that the minutes from the March meeting, be accepted as published in the April newsletter. That motion was seconded, and passed unanimously.

V. President Scott Conner mentioned the following upcoming events.

Public Star Watch #2	Saturday, May 4	7:30 PM @ Observatory
Regular Meeting	Friday, May 17	7:30 PM @ Observatory
EAS Picnic & Observing Session	Saturday, June 8	6:00 PM Location TBD
Public Star Watch #3	Saturday, June 22	7:30 PM @ Observatory

Scott Asked if there were any visitors present, and Jeff Paine introduced himself.

Ted Ubelhor the treasurer was unable to attend. In his absence, Scott Conner read the financial report to those in attendance.

Tony Bryan mentioned the following information about special projects.

Dome Repair – Tony installed the new circuits and the dome hand control is now functional. Ted, Bob, and others helped by making sure Tony did not electrocute himself or burn down the place while working. Scott added an idler assembly to the chain drive and replaced a bearing in the slit door. Other than that there is no change in status.

Bathroom Remodel – Tony completed the electrical rough-in and toilet mounting ring installation. Work continues on the bathroom as schedules allow.

Tree Trimming – We would like to thank everyone for their help with the tree trimming project. We didn't quite get it all done, but we did manage to top a majority of the trees that did need to be topped. Our horizons are so much better. We will perhaps do some more work later this fall if time allows.

Brush and Stump Grinding Tree Trimming – The tree trimming and grinding on the west side of the observatory has not been completed due to wet weather. This will be postponed until the fall.

Tony talked about the following old business.

Capital Campaign – No change in status

PSW #1 – Our first PSW of 2019 was held on March 16th. The skies were good, but we had a first quarter moon to contend with. Ken kicked off the evening with a program. Scott, Dave, Matt, and Tony manned scopes and work the crowd. There were 20 visitors, and we received \$10 in donations.

Members Only Observing Session – On Saturday, April 6 our Members Only Observing Session at Patoka Lake was cancelled due to poor sky conditions. Open floor for discussion on possible re-planning.

Tony talked about the following new business.

Summer Programs - We have recently had requests for summer programs at area libraries (Jasper Public Library, Huntingburg Public Library with Holland elementary, Pike County Public Library, Perry County Library, Washington Public Library, and Henderson Library). Tony is in the process of lining up presenters and dates.

Astronomical League Awards – Last month Scott Conner was presented with an AL Master Outreach Award. This month, comes two award announcements. The first is EAS member, Tony Bryan, received an AL Stellar Outreach Award. The second is that EAS member, Chuck Allen, was named in the March issue of the “Reflector” as having received AL awards for; Asterism Observing Program, Binocular Double Star Observing Program, Caldwell Observing Program, Deep Sky Binocular Observing Program, Sketching Observing Award, Lunar Observing Program, and the nearly impossible to earn Master Observer Award. There are only 215 other people in the world that have earned that award. I believe that was many years of observing and logging. Congratulations to Chuck.

PSW #2 – Our second PSW is scheduled for May 4th. We need a lead and at least one other to serve as hosts for the evening. Ken Harris volunteered to do the program for the this PSW. Anthony Corn will be available to help out, Bob Flatter may be able to help as well.

Request from Navigators – Navigators Chapter 188 has requested an observation night for a Friday or Saturday in April or May. Thirty-plus scouts, age between 5 and 13, all itching to visit us. Ken Harris and Chuck Allen agreed to work with finding a date and planning this event.

Next Monthly Meeting - Our next regular meeting is scheduled for 7:30 PM on May 17th at the observatory.

The program for tonight is “Movie Night” Chuck Allen provided us an interesting movie to watch and drinks, Scott Conner provided popcorn and flavored salt.

The meeting was adjourned at 7:52 PM

Respectfully Submitted,

Ken Harris