

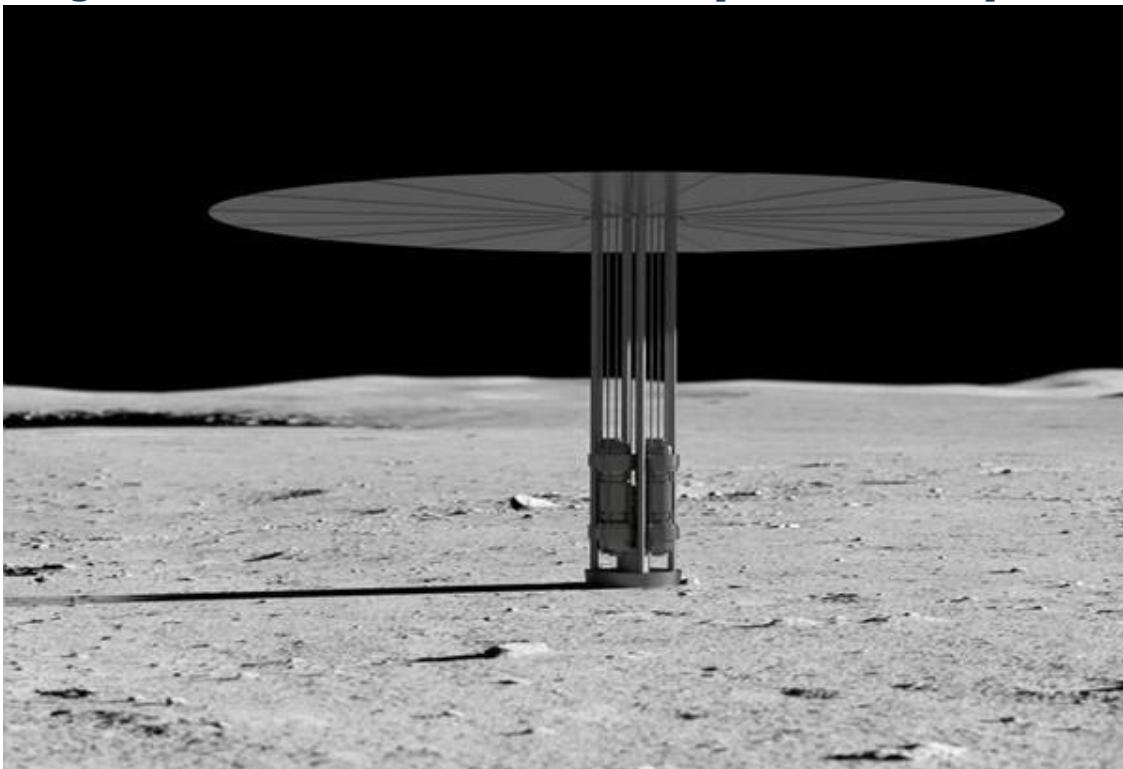
Observer

October

EVANSVILLE ASTRONOMICAL SOCIETY, INC.

2018

NASA Targets Next-Gen Nuclear Reactors for Spacecraft and Space Colonies



A new fission project, called Kilopower, could fuel the future of spaceflight.
The Kilopower Small Nuclear Reactor could be tested on the Moon in the near future.

Photo Courtesy of NASA

Inside this Issue..

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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

EAS OBSERVER NEWSLETTER

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 2018 Officers and Contacts

President – Tony Bryan
812.827.3234
evansvilleastro@gmail.com

Vice President – Scott Conner

Secretary – David M Kube
740.223.6854

Treasurer – Ted Ubelhor

Counselors
Ken Harris (2016)
Mitch Luman (2017)
Michael Borman (2018)

Webmaster – Michael Borman

Program Director
Tony Bryan

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 at the Observatory on Friday, October, 19th, 2018 @ 7:30pm. Chuck Allen will present "How Far Did Coroebus Run?; Measuring Distance in the Universe."

EAS Update:

Please Note we have a Halloween PSW scheduled at the Observatory on Saturday, October 27th, 2018 @ 7:30pm.

EAS Update:

Please Note we have a PSW scheduled at the Observatory on Saturday, November 10th, 2018 @ 7:30pm.

EAS Update:

Please Note we have a Regular Meeting scheduled at the Observatory on Friday, November, 16th, 2018 @ 7:30pm. Scott Conner will present "The Cliffs of Miranda."

EAS Update:

Please Note we have a Regular Meeting and our annual Christmas Astronomy Quiz to be held @ the **Museum** beginning @7:30pm on December 21st, 2018.

FOR SALE:

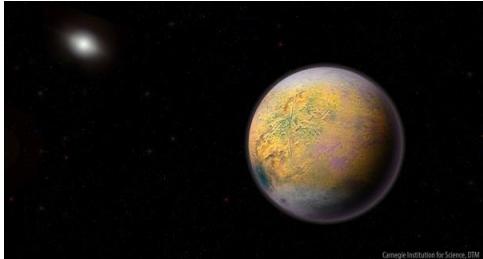
Meade 8-inch Newtonian on heavy-duty LXD75 mount with AutoStar2 GoTo capability. Used very little. Asking \$850. Cave Astrola 10-inch f/15 Cassegrain on heavy-duty mount. Converts to an f/4 Newtonian. 10-inch Mathis RA drive gear. Asking \$900.

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.mberman.org/forsale.htm>

Introducing 'The Goblin': A New, Distant Dwarf Planet Bolsters Evidence for Planet X.



An artist's conception of a distant Solar System Planet X, which could be shaping the orbits of smaller extremely distant outer Solar System.

Illustration by Roberto Molar Candanosa and Scott Sheppard, courtesy of Carnegie Institution for Science

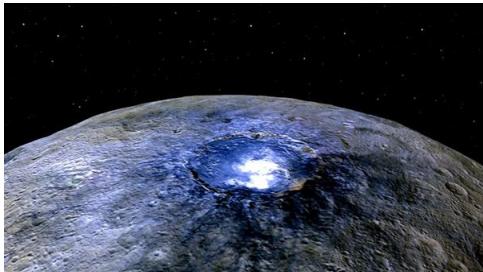
Trojan Asteroids Reveal Evidence of Early Skirmish Between Gas Giants.



Jupiter's Trojan asteroids are shown in this artist's concept as they orbit in harmony with the gas giant — one group ahead of Jupiter, and one group behind.

NASA/JPL-Caltech

Volcanoes of Mud Erupt from Dwarf Planet Ceres.



Nothing is normal on Ceres — least of all its mud volcanoes.

NASA/JPL-Caltech/UCLA/MPS/DLR/IDA

Far beyond the orbits of the solar system's eight planets, astronomers have found another object they've nicknamed "The Goblin." It's a small world traveling a lonely path through the outer reaches of our cosmic neighborhood, and it joins a small club of dwarf planets and other planet-like objects out beyond Neptune. Most excitingly, the object's movements fit into previous theories regarding a possible "Planet X" hiding far away in our solar system, and could help astronomers to find it.

The dwarf planet's official name is 2015 TG387, and it was discovered three years ago by a team of researchers using the Subaru telescope atop Mauna Kea in Hawaii. Led by Scott Sheppard of the Carnegie Institution for Science, the astronomers were scanning broad swathes of the sky in search of faint glimmers that might betray new objects in the solar system.

Much like the famed Trojan horse, Jupiter's Trojan asteroids are hiding a secret.

According to a new study published in the journal *Nature Astronomy*, the existence of a bound pair of "Trojan asteroids" trapped in a stable orbit near Jupiter suggests the early solar system was shaken up by a battle between the giant planets much earlier than astronomers previously thought.

"The Trojans were likely captured during a dramatic period of dynamic instability when a skirmish between the solar system's giant planets — Jupiter, Saturn, Uranus, and Neptune — occurred.

According to the study, within just 100 million years of the solar system's formation, the giant planets had already jostled for position. During the fray, Jupiter jumped inward a hair, while Uranus and Neptune were pushed away from the Sun.

There are two types of volcanism in the solar system, the kinds of magma eruptions seen on Earth and Jupiter's moon Io, where heated rock wells up from the core to the surface. And then there's the kind of volcanism seen on Europa and Enceladus, where large plumes of frozen water erupt.

Hanna Sizemore, a Planetary Science Institute research scientist, says Ceres' volcanoes are a weird mix of the two. "The big difference on Ceres is that you're in this hybrid between the inner rocky solar system and the icy outer solar system." That means while water may be a driving mechanism for the volcanoes, the actual material could include rock, salt, and heated material from the interior of Ceres, which is both a rocky and an icy world at once. When those volcanoes explode, "It would probably look superficially like lava extrusion on the earth, but it would be mud oozing out of cracks or fissures on the surface."

EAS OBSERVER NEWSLETTER

November 2018

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

Generated by FreeHTMLCalendar.com Copyright © 2011 John Dalbey.

Up and Coming Events 2017/2018

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

PSW(Halloween) – Saturday, October 27th – Observatory @ 7:30 pm

PSW – Saturday, November 10th – Observatory @ 7:30 pm

Regular Meeting – Friday, November 16th – Observatory @ 7:30 pm

Regular Meeting/ Astronomy Quiz – Friday, December 21st – Museum @ 7:30pm

End of Calendar Year 2018

Moon Phases

New Moon	First Quarter	Full Moon	Third Quarter
November 7 th , 2018	November 15 th , 2018	November 23 rd , 2018	November 29 th , 2018
Moon Phases courtesy of Time and Date.com			

EAS Meeting Minutes for September 21st, 2018

The meeting was called to order at 7:37 pm by President Tony Bryan. There were 9 members present and 1 guest(Our Speaker for Tonight – Eric Greenwood). The reading of the minutes was motioned to be accepted as published in the newsletter and seconded. The motion passed by majority vote.

V. President Scott Conner was absent so Dave Kube announced the below list of up-coming events.

Fall Cleanup	Saturday, October 6	10:00am @ Observatory
Science Day and PSW	Saturday, October 13	11 - 4 + evening @ Museum
Regular Meeting	Friday, October 19	7:30pm @ Observatory
PSW #6 Halloween	Saturday, October 27	7:30 pm @ Observatory

TREASURER'S REPORT – Treasurer Ted Ubelhor gave us an update of our funds. We currently have 44 paid members and 10 that have not renewed from last year. Ted reported the we are \$950 ahead of where we were last year at this same time.

SPECIAL PROJECTS – There have not been any progress to the bathroom remodel and dome repair special projects. Tony Bryan is working on the wheelbarrow handles for the 16" Dob at his home. Scott Conner is designing a new top section for this Dob to make it more usable.

OLD BUSINESS

Saturday, September 1st, we held a Mars Watch Event at the Evansville Museum. We had many EAS members help with this event with a total of 7 telescopes and about 150 guests. Mars, Saturn and Jupiter we all viewed and the many guests we thankful for our participation. We held our **PSW #5** on September 8th. There were no guests as it was cloudy and overcast. The many members that showed to assist watched a NASA dvd video, "Journey to the Stars."

NEW BUSINESS

Science Day and PSW - On Saturday October 13 from 11 AM to about 10 PM (or later) the EAS will be setting up telescopes and assisting the Evansville Museum during their Science Day event and in conjunction, we will hold a PSW there. Tammy Haywood has requested on our Facebook page a observing session for a Scout group on this same evening, Scott Conner and Dave Kube have volunteered to conduct this event.

PSW #6 – Our sixth PSW of 2018 will be on October 27th. We are not going to do a Halloween Theme, but if the members want to they can do so. Dave Kube, Bob Flatter and Ken Harris volunteered to conduct this event.

Fall Cleanup – It's almost here! On Saturday, October 6th at 10 am we will be doing our semi-annual cleanup and maintenance of the Observatory. There is a lot that needs to get done and the more people that we have, the more items we can check off. Lunch will be provided. Please help out on that day.

About Capital Campaign – We are behind schedule on finalizing the Capital Campaign donation letter. It is hoped that by the middle of September the campaign will be in full swing.

Telescope Training – We have two more members trained on operation of the telescopes in the dome as of September 6th thanks to our most excellent trainer, Dave Kube. The members are Anthony Corn and Scott Bishop. Congratulations

Girls Scouts at Museum – Mitch Luman is requesting help on November 16th, same night as the November meeting for an event at the museum for the Girl Scouts.

EAS Website Down – Our website evansvilleastro.org is down. Scott, Mike, Dave, and Ted have been very actively trying to take care of the issue, which is related to the domain name renewal. Please be patient as we work this out.

EAS OBSERVER NEWSLETTER

Dues Are Due – If you have not yet paid your membership dues, please either mail them to our P.O. Box or hand them to an officer. Thank you.

Dues Are Due – Kyndall is requesting someone to run the telescope on a Monday for a group of girl scouts – Date to be determined – Ken Harris and Dave Kube volunteered

The program for tonight is by Dr. Eric Greenwood, from USI. His talk is titled “Topology of the Universe.”

Meeting was adjourned at 7:57 pm

Minutes respectively submitted by
EAS Secretary, David Kube