

## Dome Upgrade Project Progress Update



**One of two additional Dome Guide Wheels Installed.  
Continued on Page 5**

**Photo Courtesy of Scott Conner**

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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)

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

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

Webmaster – Michael Borman

Program Director  
Matt Merlo

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

### EAS Update:

Please Note we have a Regular Meeting @ the **Museum** beginning @7:30pm on January 18<sup>th</sup>, 2019.

### EAS Update:

Please Note the EAS schedule had not been set for the upcoming Calendar Year

### EAS Update:

Please Note

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Please Note

### FOR SALE:

Meade 8-inch Newtonian on heavy-duty LX200 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.mrborman.org/forsale.htm>

***OSIRIS-Rex Meets Asteroid Benu.***



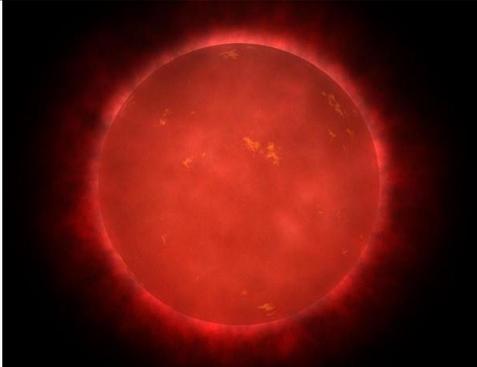
A visualization of NASA's OSIRIS-Rex spacecraft above the asteroid Benu.  
NASA Goddard Space Flight Center

NASA's OSIRIS-REx spacecraft, the space agency's first craft to bring samples from an asteroid back to Earth, reached its target.

OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer) launched in September 2016 from Cape Canaveral Air Force Station in Florida. For 27 months, the craft has been traveling through the solar system en route to Benu, which orbits the Sun between Earth and Mars. Now that OSIRIS-REx is at Benu, the craft will stay about 12 miles (20 kilometers) away from the asteroid.

Over the next four weeks, the spacecraft will conduct multiple flybys of Benu, collecting data to help scientists determine the asteroid's mass. On December 31, OSIRIS-REx will enter an orbit around the asteroid, making it the smallest object ever orbited by a spacecraft.

***Astronomers Spot One of the Oldest Stars in the Entire Universe.***



An artist's concept of a small red dwarf star is shown above.  
NASA/Walt Feimer

One of the oldest stars in the universe is quietly hiding out in the Milky Way some 2,000 light-years from Earth.

According to a new study published in *The Astrophysical Journal*, the tiny, 13.5-billion-year-old red dwarf contains barely any heavy elements at all, suggesting it formed out of a nearly pristine cloud of material leftover from shortly after the Big Bang. Furthermore, because the small star is just one-seventh the mass of the Sun and is made of primordial matter, it's making astronomers reconsider the demographics of the very first stars.

The first stars to form in the universe likely flicked on around 200 million years after the Big Bang. These early stars were forged out of the material that was available to them at the time — mostly hydrogen, some helium, and a touch of lithium.

***Two Free-Range Planets Found Roaming the Milky Way in Solitude.***



Rogue planets, like the one shown in this artist's concept, drift through interstellar space alone, and are thought to be prevalent throughout the Milky Way.  
NASA/JPL-CalTech

Astronomers think they've just discovered two more rogue planets wandering the Milky Way alone. And according to the new study, which is set for publication in the journal *Astronomy & Astrophysics*, the planets are likely just the tip of the iceberg when it comes to free-floating worlds hiding in our galaxy.

If confirmed, the newfound rogue planets — which were discovered as part of the Optical Gravitational Lensing Experiment (OGLE) — will join an elite group of only about a dozen or so starless worlds discovered so far.

Though the idea of rogue planets has been around for centuries, because they are so dim and cool, it wasn't until recently that technology had improved to the point where astronomers could actually detect these hidden worlds. But over the past few decades, astronomers utilizing a phenomenon called gravitational microlensing have become increasingly adept at spotting such solitary worlds.

January 2019

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 Mtg @Museum 7:30pm	19
20	21	22	23	24	25	26
27	28	29	30	31		

Generated by [FreeHTMLCalendar.com](http://FreeHTMLCalendar.com) Copyright © 2011 John Dalbey.

**Up and Coming Events 2017/2018**

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

**Regular Meeting – Friday, January 18<sup>th</sup> – Museum @ 7:30pm**

**Regular Meeting – Friday, February 15<sup>th</sup> – Location To Be Determined @ 7:30 pm**

**Moon Phases**

New Moon	First Quarter	Full Moon	Third Quarter
January 5 <sup>th</sup> , 2019	January 14 <sup>th</sup> , 2019	January 21 <sup>st</sup> , 2019	January 27 <sup>th</sup> , 2019

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

Over the Thanksgiving Weekend – Scott Conner, Tony Bryan and Dave Kube installed a set of 2 Spring Loaded Guide Wheels to help the Dome maintain centering while rotating. The mounting of the Guide Wheels was complete but as the dome was being rotated the motor decided to no longer function. A new Drive Wheel/ Motor assembly is in the fabrication process.

More information on this project will be discussed at the December Meeting.



Photos Courtesy of Dave Kube

***EAS Meeting Minutes for November 16<sup>th</sup>, 2018***

The meeting was called to order at 7:38 pm by President Tony Bryan. There were 14 members and 2 visitors present. The reading of the minutes was motioned to be accepted as published in the newsletter and seconded. The motion passed by a majority vote. There was one member opposed.

V. President Scott Conner announced the below list of up-coming events.

<b>Regular Meeting/Quiz</b>	<b>Friday, December 21</b>	<b>7:30pm @ Museum</b>
<b>Regular Meeting</b>	<b>Friday, January 18</b>	<b>7:30pm @ TBD (Museum?)</b>

**TREASURER’S REPORT** – Treasurer Ted Ubelhor reported that our funds are OK and we currently have 48 paid members.

**SPECIAL PROJECTS** – The remodel on the Men’s Room is still a work in progress. There is no update on the Dome Upgrade project. Scott has the Rings for the 16” Dob and the wheelbarrow handles are being modified to support the weight.

**OLD BUSINESS**

**PSW #6** – Our sixth PSW of 2018 was held on October 27<sup>th</sup>. The Halloween theme was scaled back to come as you are or in costume. We had candy and decorations, and several members dressed up and a trophy winning Raggedy Ann was present. We had eight members and approximately 30 visitors which included a group of Girl Scouts. The program was Halloween themed. Scout leader Stacy Blankenbuehler sent us thanks for hosting the event and stated her Girl Scout Troop enjoyed it! We received \$20 in donations.

**PSW #7** – Our seventh (and last) PSW of 2018 was on November 10<sup>th</sup>. Chuck Allen did a captivating program on cosmic distances. We had 39 visitors and six members and received \$53 in donations. There were dome issues that eventually were resolved but most guests had left by that time.

**NEW BUSINESS**

**Girl Scout Group** – Member Jayliegh Hadley will have her Girl Scout troop here on Monday November 19<sup>th</sup> from 5:30 to 6:30. Dave Kube and Ken Harris will host.

**December Meeting and Presentation** - Our December meeting and Astronomy Quiz will take place at the Museum in Evansville. We will have a pot-luck prior to the meeting. Last year’s quiz winner was Joe Wheelock. He will not be in attendance this year so Tony Bryan has accepted the duty of being the quizmaster this year. Cost to rent the museum has increased to \$75 this year. Donations will be appreciated from anyone wishing to help offset the rental costs.

**ELECTION OF EAS OFFICERS for 2019** –

The current slate of officers is as follows: President-Tony Bryan, Vice President – Scott Conner, Treasurer – Ted Ubelhor, Secretary – Dave Kube. Current Counselors are: Ken Harris, and Mitch Luman and Mike Borman. Ken Harris’s term is expiring.

There were no new nominations for board members or counselors. Voting to reinstate the current slate of the officers was carried by unanimous vote. Ken Harris was also reinstated as counselor, as his term was expiring.

The program for tonight is by member Scott Conner. His talk is titled “Mountains of the Solar System.”

Meeting was adjourned at 7:56 pm

Respectfully submitted by Dave Kube, EAS Secretary