

## EVANSVILLE ASTRONOMICAL SOCIETY MONTHLY MEETING

### SPECIAL GUEST SPEAKER

(live broadcast into our facility)

## PRANVERA HYSENI

Pranvera Hyseni is a graduate student from the Republic of Kosovo, currently pursuing a Ph.D. in Earth and Planetary Science at the University of California, Santa Cruz. She is the founder of Astronomy Outreach of Kosovo (AOK), which is recognized as the largest astronomy outreach program in Eastern Europe. Additionally, she manages the Kosovo Chapter of the Charlie Bates Solar Astronomy Project. Currently based in San Jose, California, Pranvera's research focuses on understanding the formation histories of asteroids, comets, and meteorites through spectroscopy analysis.



7:30 PM CST | NOVEMBER 17th

LOCATION: WAHNSIEDLER OBSERVATORY, LYNNVILLE PARK, IN

### FREE ENTRY FOR GUESTS TO THE MEETING & PRESENTATION

The Evansville Astronomical Society is a 501(c) non-profit organization. Donations in any amount to help with operating expenses and maintenance of our facility are always appreciated. The generosity of individuals and groups help to keep our doors open so that we can continue to service the community, and provide a unique opportunity to learn about and view the night sky.

### 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](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 2023 Officers and Contacts

President – Tony Bryan  
812.827.3234

[evansvilleastro@gmail.com](mailto:evansvilleastro@gmail.com)

Vice President – Scott Conner

Secretary – Dave Kube  
740.223.6854

Treasurer – Mitch Luman

Counselors  
Michael Borman (2021)  
Ken Harris (2022)  
Kent Bretton (2023)

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: We have a Regular meeting scheduled for Friday, November 17<sup>th</sup>, 2023 at 7:30pm. Please see our Facebook Group and Webpages for Updates.

### EAS Update

Please Note: We have a Regular meeting scheduled for Friday, December 15<sup>th</sup>, 2023 at 7:30pm. This is our annual Astronomy Quiz Night and will be held at the Museum. Please see our Facebook Group and Webpages for Updates.

### EAS Update

Please Note. Our January and February Meetings will be held at the Evansville Museum. Please see our Facebook Group and Webpages for Updates.

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### EAS Update:

Please visit our website <http://www.evansvilleastro.org> and our Facebook Group page to keep yourself up to date for any changes.

### Telescopes and accessories for sale...

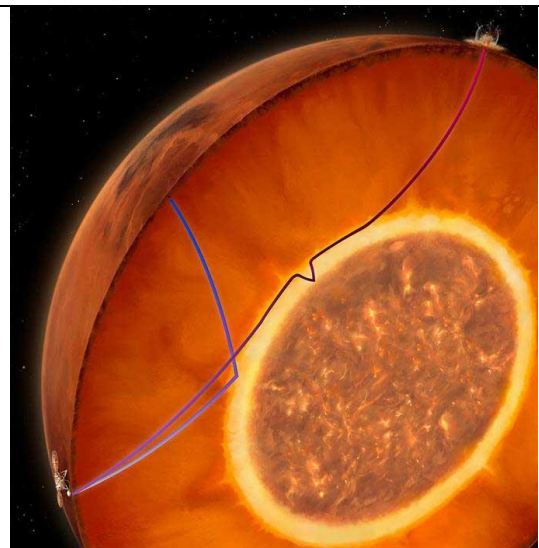
Orion AstroView120ST, Equatorial Refracting Telescope and accessories. 120mm (4.7") aperture and 600mm focal length, includes sturdy adjustable-height tripod, equatorial mount, finder scope and an internal polar alignment scope. Includes two Plossl 1.25" eyepieces (25mm and 10mm), 6x30 finder scope, star diagonal. \$600.

Contact: Karen Caruso 812-629-8089 (cell)

### 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.mkborman.org/forsale.htm>

## An impact far from NASA's Insight lander on Mars set off seismic waves that revealed new details about the Martian interior.



This artist's view of the internal structure of Mars shows the propagation of seismic waves, initiated by the September 2021 meteorite impact, toward InSight's seismometer.

Photo Credit: *IPGP / CNES / N. Starter*

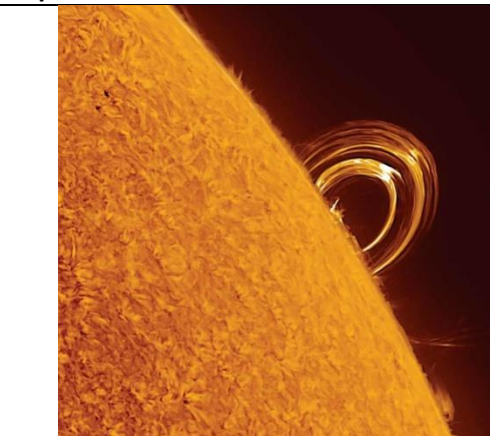
NASA's InSight lander had a major bit of luck on its 1000th Sol, or Martian day, on Sept. 18, 2021. After nearly three years of operation, an asteroid impact triggered a marsquake thousands of kilometers away, whose seismic waves bounced off the Martian core to InSight's seismometer. For the first time, the seismic waves arrived at the right angle and with enough energy to reveal previously unrecognized layers of molten magma in the lower mantle, which surrounding Mars's molten metal core.

InSight was built to study Martian geology, and one major goal was to use seismology to compare its interior to those of other rocky planets. Its seismograph began operation in February 2019, and in 2021 Simon Stähler (ETH Zürich, Switzerland) and colleagues reported in [Science](#) that they had detected the liquid Martian core surrounded by a solid rocky mantle. They measured the core's diameter to be 3,660 kilometers (2,274 miles).

That result left planetary scientists scratching their heads. Why was the Martian core's diameter more than half that of the planet? The core's large volume meant its average density had to be low, just 6 grams per cubic centimeter, compared to the  $8 \text{ g/cm}^3$  of Earth's molten core.

The past study in *Science* had not recognized the difference between the magma layer and the metallic core, so it included the lighter magma with the denser core. The new studies show the metallic core is only 1,650 to 1,665 km in diameter, smaller than previously thought. That change increases the average density to  $6.6 \text{ g/cm}^3$ , reducing the unexpected concentration of light elements, though still not quite at the same density of Earth's iron core.

## A new forecast suggests that sunspot numbers, aurorae, and other solar activity will peak sooner and at a higher level than expected.



A loop of plasma dances up from the Sun's visible surface, the result of magnetic field activity.

Photo Credit: *Gabriel Almonte / [S&T Online Photo Gallery](#)*

Scientists' new forecast suggests that the current solar cycle will peak sooner and at a higher level than expected. This new prediction has important consequences for space operations, including provisions for the safety of satellites and astronauts.

The Sun goes through a roughly 11-year cycle, starting at solar minimum with very few sunspots. They rise to a maximum over five or six years, then fall away again back to a minimum. We are currently in Solar Cycle 25, the 25th cycle since detailed sunspot records began way back in 1755. Some cycles have been as short as eight years, others as long as 14. With the Sun so unreliable, and with more activity in space than ever before, accurate forecasts are essential.

In 2019, a panel of researchers helped the National Oceanic and Atmospheric Administration (NOAA)'s Space Weather Prediction Center (SWPC) produce a tentative forecast for Solar Cycle 25. The original estimate was that solar maximum would occur sometime between 2023 and 2026, with a sunspot number of 95 to 130. That's low compared to the average, which is somewhere between 140 and 220 sunspots per solar cycle.

## December 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15 Meeting 7:30pm Museum	16
17	18	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 2023

**Please Note we have a Reg. Mtg. scheduled for 7:30pm on Friday November 17<sup>th</sup>, 2023 @ Observatory.**

**Please Note we have a Reg. Mtg. scheduled for 7:30pm on Friday December 15<sup>th</sup>, 2023 @ Museum.**

**Please Note our Regular Meetings for January and February 2024 will be held at the Museum.**

**Please visit our Web Page <http://www.evansvilleastro.org> or our Facebook Group Page for updates.  
Events may be cancelled due to Covid and/or Weather at time of event.**

### Moon Phases

New Moon	First Quarter	Full Moon	Third Quarter
December 23 <sup>rd</sup> , 2023	December 29 <sup>th</sup> , 2023	December 7 <sup>th</sup> , 2023	December 16 <sup>th</sup> , 2023
<a href="http://www.timeanddate.com">Moon Phases courtesy of Time and Date.com</a>			

## ***EAS Meeting for October – 2023***

Prior to the meeting the EAS held a zoom presentation by our Guest Speaker Chuck Allen presenting his program on “Earth as a Planet.” The meeting was called to order by President Tony Bryan @ 8:25pm. There were 7 members plus 6 members attending via zoom. Board members Tony Bryan and Dave Kube were present. A motion to wave the reading of the minutes and accept the minutes from the October 2023 Newsletter was passed. We had no visitors present.

Secretary Dave Kube read the following upcoming events.

<b>Saturn Watch</b>	<b>Saturday, October 21</b>	<b>7:00 PM – 8:30 PM@ Museum</b>
<b>Regular Meeting</b>	<b>Friday, November 17</b>	<b>7:30 PM @ Observatory</b>
<b>Meeting/Astronomy Quiz</b>	<b>Friday, December 15</b>	<b>7:30 PM @ Museum</b>

**Treasurer Report** – Report Submitted via email by our treasurer Mitch Luman – Key Items is that the Toyota Grant came in and out Insurance was paid.

### **Old Business**

**Special Projects Status** – Scott Conner reported via messages that we will need more counter weights for the new mount setup and we have some donated Stainless Steel Counter Weights. Tony Bryan reported that there has been no change on the bathroom remodel from previous month.

**Toyota Grant Status** – As can be seen, our multimedia equipment and accessories are being upgraded thanks to a grant funded by Toyota Motor Manufacturing Indiana Tony reports that we already have a new 75” TV, projector and Surround Sound System here. We are actually using these upgrades for toninghts meeting.

**Fifth and Sixth PSWs of 2023** – Our final PSWs of 2023 were September 23<sup>rd</sup> and October 7<sup>th</sup>. Dave Kube reported that Scott Conner and him had 8 guests and 3 other members. They also received 33 dollars in donations. Tony Bryan reported that the EAS received another 16 dollars in donations from the October 7<sup>th</sup> PSW.

**Toyota Fall Family Day** – In appreciation of Toyota’s continuing support of the EAS, we set up solar telescopes and displays at Toyota in Princeton on October 7<sup>th</sup>. We interacted with an estimated 300 people that day. Thanks to Bob Flatter for coordinating with Toyota for this. Members supporting were Bob Flatter, Mitch Luman, Mike Borman, and Donna and Tony Bryan.

**Library Telescope** – The Orion Tabletop Dobsonian Library Telescope and Celestron Zoom Eyepiece that was awarded to the EAS by the Astronomical League arrived last week. After parts arrive and modifications to ruggedize the instrument are completed, it is earmarked for donation to the Dubois Library.

**Partial Solar Eclipse** – A partial solar eclipse occurred on Saturday October 14<sup>th</sup> and an Eclipse Watch took place at the Evansville Museum from 10:30 AM to 1:30 PM. **Report Tony** - We collaborated with Carlisle Wishard (Museum Alliance) at the Evansville Museum and Science Center. Filtered telescopes were set up outside, and we had hoped to view a partial, but heavy cloud cover prevented that in Evansville, IN. Thanks to Bob Flater and Ben Cruce, and Mitch Luman for setting up telescopes and interacting with visitors outside, and Donna Bryan and Loraine Luman inside. Even with the clouds and light mist, about 40 people stopped by the SSA table inside the museum. They picked up some wonderful NASA bling (Thanks to Tony Bryan, association with the Solar System Ambassador Program), and we chatted up on eclipse facts other fun NASA stuff. All in all a great day, albeit without seeing the Sun.

### **New Business**



**Saturn Watch** – A Saturn Watch will take place tomorrow Saturday, October 21<sup>st</sup>, at the Evansville Museum. We will be setting up telescopes for the public to view Saturn and other objects in the night sky. Please consider supporting the Saturn Watch next month.

**Winter Meetings at Museum** – For the past several years, the EAS has been holding our December, January, and February monthly meetings at the museum so that members will not have to contend with navigating a potentially snow covered road to our observatory. December 15<sup>th</sup>, January 19<sup>th</sup>, and February 16<sup>th</sup> have been reserved. UPDATE :The museum has agreed to waive any cost to us in exchange for support at the museum by Tony and any other available EAS members during the April 8, 2024 Total Solar Eclipse. This is a cost avoidance of \$225. It is realized the majority of you have other plans on that day, but if anyone would like to help, please inform us.

**Presentation Next Month** – Pranvera Hyseni will be joining us remotely on November 17th with her talk about development of the observatory and science center in Kosovo. Pranvera is a global astronomy popularizer, responsible for bringing astronomy to her country of Kosovo.

**Election of Officers** – Elections will be held at the meeting next month. The current slate of officers is as follows: President-Tony Bryan, Vice President – Scott Conner, Treasurer – Ben Cruce, Secretary – Dave Kube.

Our three EAS Counselors serve staggered three-year terms. Currently our Counselors are: Mike Borman, Ken Harris, and Kent Brenton. Ken Harris will be in year three next year. Kent Brenton will be in year two year. Mike Borman's term ends at the end of 2023. He has expressed interest in running for that position again. Any other member may also be nominated. One councilor will be elected to a three-year term, which begins in 2024.

Next month, voting will take place by ballot (if a nomination is present) or acclamation (if positions are unopposed). To hold an office and to vote, you must be a member in good standing of the EAS.

Nominations for officers and one councilor will be open until prior to voting. At this time nominations are open for officers and counselor.

**Other New Business** – Dave Kube reported that he trained Ben Cechie on the telescope and facilities. Ken Harris reported that he did an Eclipse presentation on 9-9-2023 and received a \$20 donation. Scott Conner reported that he has a Girl Scout event at the observatory on 9-16-2023 but looks like rain.

### **ANNOUNCEMENTS**

**Next Monthly Meeting** – Our next regular meeting is scheduled for 7:30 PM on November 17<sup>th</sup> at the Observatory. Chuck Allen has already arranged a guest speaker for that meeting.

**ADJOURN MEETING**- Tony Bryan adjourned the meeting at 8:55pm

Respectfully Submitted – Dave Kube – Secretary