

## NASA keeps hiding 'Easter eggs' on Mars-bound Spacecraft



Engineers hid the phrase "Dare Mighty Things" on the parachute of NASA's Mars Perseverance rover. It isn't the first time they've snuck a fun surprise or a sentimental object onto a spacecraft, either. This annotated image shows how engineers used binary code to hide the message "Dare mighty things" — as well as JPL's GPS coordinates — in the Perseverance rover's parachute.

Photo Courtesy: NASA/JPL-Caltech

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Circa 1979
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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)

## To the Members of the EAS

Zoom Presentation March 19<sup>th</sup>, 2021.

The online meeting will begin promptly at 7:30 PM CDT (8:30 PM EDT)

Clear skies,  
Tony Bryan  
EAS President

Please check our Facebook Group Page and Website for updates.

If you are unfamiliar with online meetings, you may wish to visit the following link ahead of the meeting night to learn more:

<https://support.zoom.us/hc/en-us/articles/201362193-How-Do-I-Join-A-Meeting>

The Evansville Astronomical Society now has a Youtube Channel and for those that missed the live sessions of our previous Zoom Meetings and Presentations, you can watch a video stream of these events. This link can also be found on our website <http://evansvilleastro.org>

<https://www.youtube.com/channel/UC8A9iE6gz0JE1Rr8VuxqmDg?fbclid=IwAR0In5rjdsA-GdGKkhLTvVRFx1fENmVeSPpWtw2Rc6sBB79w702cLyB1n14&app=desktop>

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 2021 Officers and Contacts**

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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](http://www.evansvilleastro.org)



## Local Events and Information

### EAS Update

Please note that we currently we have a Zoom Meeting Scheduled March 19th, beginning at 7:30 PM CDT.

### EAS Update

Please note that currently all public meetings have been canceled and therefore we are trying to meet via online Zoom Meeting until further notice.

### EAS Update

### EAS Update

### EAS Update

### EAS Update

### EAS Update:

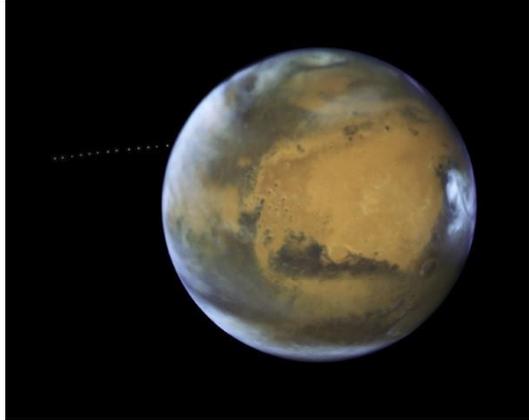
Please visit our website [www.evansvilleastro.org](http://www.evansvilleastro.org) and our Facebook Group page to keep yourself up to date for any changes.

### 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>

***Mars Madness: Chasing the Red Planet's Ancient Atmosphere***



Clues to the composition of Mars' long-lost atmosphere may be buried just below the surface of one of the planet's tiny moons.

Credit: NASA, ESA and Z. Levay (STScI)  
Acknowledgment: J. Bell (ASU) and M. Wolff (Space Science Institute)

Billions of years ago, Mars hosted rivers and lakes, as well as a thick atmosphere not unlike that of modern-day Earth. But over time, the possibly once-blue planet lost its atmosphere to space, turning it into the cold, dry, inhospitable place we know today.

Mars' moon Phobos orbits the Red Planet 60 times closer than our Moon orbits Earth. And such a tight orbit means it's entirely feasible that Phobos has been hit by particles shed from Mars over time, leaving clues to the planet's past atmosphere ingrained in Phobos' surface.

***Raindrops on Other Worlds are Surprisingly like our own***



Raindrops on other planets likely share a striking similarity to those that fall on Earth.

Credit: Esteban Chiner/Flickr

Rainfall is one of the defining characteristics of our weather, with amounts varying dramatically from one region to another. It shapes both our skies and our landscape, carving valleys while filling rivers and lakes.

We know similar processes are also at work elsewhere. Titan, too, has rivers, lakes, valley networks and rain, even though the fluid involved is quite different — liquid methane instead of water.

And that raises an interesting question: what of rain on even more distant; how similar is it likely to be to rain on Earth?

Now we get an answer, thanks to the work of Kaitlyn Loftus and Robin Wordsworth, both at Harvard University in Cambridge, Massachusetts. This pair says just three factors determine the size of raindrops in any given atmosphere, regardless of the way the drops form. Because of this, Loftus and Wordsworth say raindrops on other planets are likely to share remarkable similarities to raindrops here on Earth.

**Wahnsiedler Observatory Circa 1979**  
**Article Submitted By Chuck Allen.**

*Patience and Hope Bring Results*

**WAHNSIEDLER OBSERVATORY  
 NEARS COMPLETION**

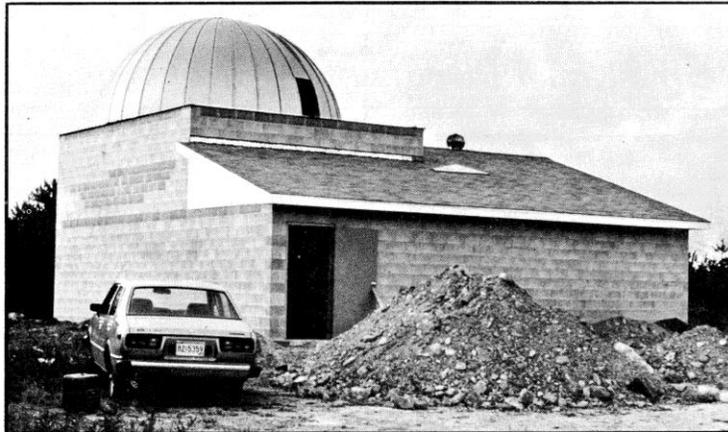
A unique and talented group of individuals in southwestern Indiana are doing what many amateur clubs can only dream about. The 30 member Evansville Astronomical Society, Inc., is headed for a summer 1979 dedication of a two-story domed observatory and meeting room which has been on the drawing boards since the mid-1960's.

The origins of the Evansville Astronomical Society date back to the Depression Era when the society was a rather loosely knit group of amateurs which seemed to drift in and out of existence. This situation began to change by the late 1950's. In 1958 a constitution and by-laws were approved followed by non-profit incorporation in 1963 and the successful cosponsoring of a NASA Space Fair in August of that year. The Space Fair seemed to be the triggering mechanism by which the E.A.S. saw in themselves the ability to go farther than anyone had possibly dreamed.

As in so many undertakings of this nature, an unforeseen opportunity seemed to provide the necessary focus from which great accomplishments emerged. The ability of societies and individuals to act decisively at such times can make the unexpected come true. Two rare moments of opportunity, separated by many years, seem to have rallied the Evansville Astronomical Society.

In 1966, under the capable leadership of Dr. Ray T. Dufford, the society obtained a fully mounted astrographic 12-1/2 inch, F/10, Newtonian reflector. The instrument was offered free of cost by Dr. Edgar Everhart, then a University of Connecticut professor. Ray Dufford simply answered Everhart's *Sky and Telescope* advertisement and the telescope became the property of the E.A.S. After acquisition of the instrument that same year, plans were formulated for the fabrication of a large roll-off-roof observatory and meeting room, but no construction resulted because of insufficient funds.

Frequent discussions about the project persisted throughout the first half of the 1970's and this is what prompted another E.A.S. member, Dr. Walter J. Wahnsiedler, in October of 1976, to offer the needed financial impetus for an observatory-lecture room. A former high school and college level educator for 35 years, Dr. Wahnsiedler eventually pledged 10,000 dollars toward the project. Needless to say, the other major obstacle was removed and dreams started to become realities.



**The Wahnsiedler Observatory and the Dufford lecture room (foreground) stand today because of the persistent efforts of the Evansville Astronomical Society membership.**  
 Photo by Kent L. Brenton.

Finding a suitable observatory site during the winter of 1976-77 was difficult and became very discouraging. The high price of land was the primary culprit, and good locations were not too plentiful. Finally in June of 1977, an elevated site was chosen one mile from the small town of Lynnville, Indiana, in the city park. The Lynnville Park was created from a 1200 acre abandoned strip mine donated to the town by the Peabody Coal Company in 1965. Both park and town boards were receptive to E.A.S.'s plans and allowed the group a 50 year lease for a one acre track at nominal costs. Construction began in the spring of 1978.

Strip mine land is unstable and can remain so for up to 50 years. To alleviate this problem a 174,000 pound, 50 cubic yard, concrete slab was poured in April, 1978 to allow the observatory to "float" over the minutely changing earth. Masons quickly assembled the cinder block walls on this foundation.

The 21,000 pound concrete pier was finished in early October, with all of the 5.5 cubic yards mixed by E.A.S. members. Each of the 50 loads was dumped into the bottom half of a sawed-off 55 gallon drum, then hoisted with the help of a truck to the top of the 11 foot pier form. The total pouring time was about 10 hours, accomplished over a period of three days.

The Wahnsiedler Observatory is slated for a June, 1979 dedication. It is presently under dome and the 2500 pound telescope mount has been installed. Interior work has taken the priority because of winter weather conditions, but the drive and enthusiasm of the E.A.S. continue to fire the project, despite the cold temperatures and shorter days.

The dedication and spirit of the Evansville

Astronomical Society should serve as a beacon of inspirational light to all amateur groups who face the realities of financial problems too often associated with beautiful dreams. Time and patience, and a willingness to continue to strive for excellence have certainly paid rich dividends to this small band of amateur astronomers in southwestern Indiana.

*Compiled from the writings of*

Kent L. Brenton, President  
 Evansville Astronomical  
 Society, Inc.  
 1211 East Morgan Avenue  
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April 2021

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	19	20	21	22	23	24
25	26	27	28	29	30	

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**Up and Coming Events 2021**

**EAS Meetings and Events are currently on hold or cancelled due to the current COVID-19 situation.**

**Please note we have an online Zoom Meeting Scheduled for March 19<sup>th</sup>, 2021 @7:30pm.**

**Please visit our Web Page <http://www.evansvilleastro.org> for updates.**

**Please visit our Facebook Group Page for updates.**

**Moon Phases**

New Moon	First Quarter	Full Moon	Third Quarter
April 11 <sup>th</sup> , 2021	April 20 <sup>th</sup> , 2021	April 26 <sup>th</sup> , 2021	April 4 <sup>th</sup> , 2021

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

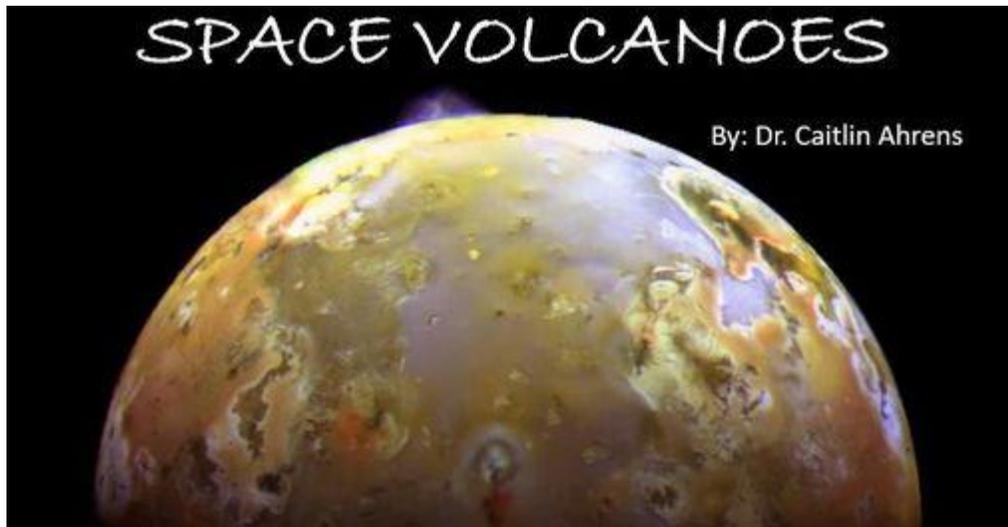
## ***EAS Unofficial Meeting Notes for February – 2021***

Space Volcanoes – Zoom Presentation February 19<sup>th</sup>, 2021.

To benefit the Evansville Astronomical Society and Facebook Group members, we had an informative online live Zoom presentation on February 19th by Dr. Caitlin Ahrens, postdoctoral Research Assistant at the Goddard Space Flight Center in Greenbelt, Maryland.

Volcanism on Earth is powered by various tectonic forces and a powerfully hot mantle. On other planets, from Mercury all the way to Pluto, volcanism is not so easily comparable to Earth's dynamic volcanism. We dove into the mysteries of space volcanism, how these were formed without tectonic plates, and explore the types of cryovolcanism in the outer Solar System.

The online meeting began at/ about 7:30 PM CST (8:30 PM EST) on February 19, 2021.



Respectfully Submitted – Dave Kube – Secretary