

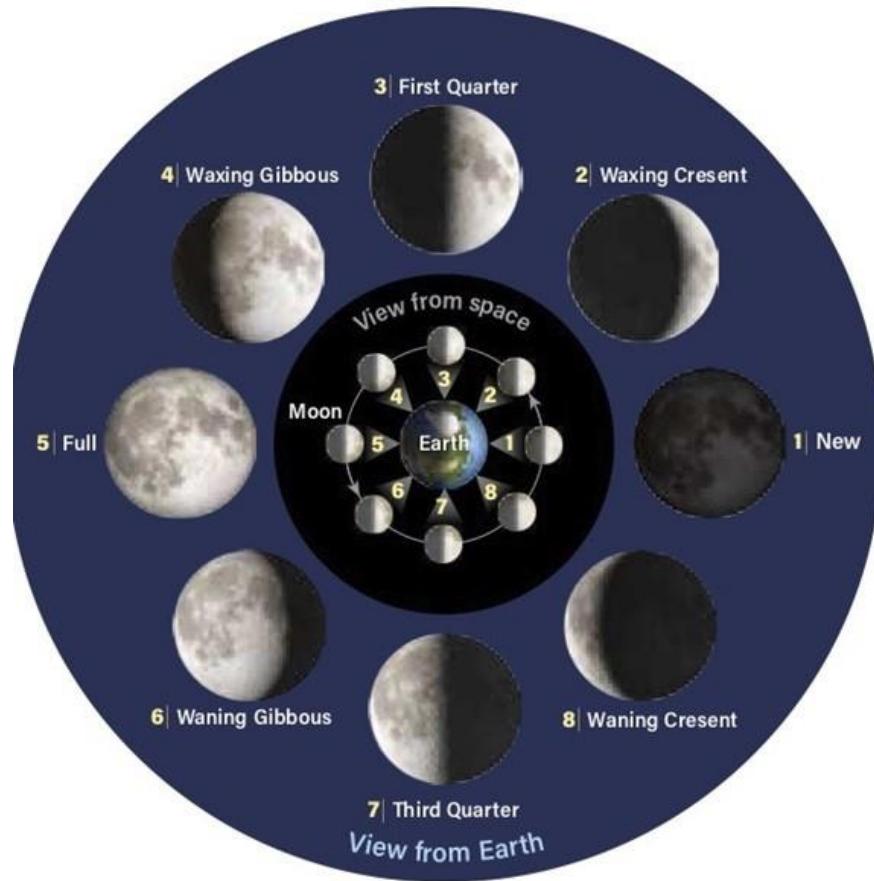
Observer

February

EVANSVILLE ASTRONOMICAL SOCIETY, INC.

2021

Why Does the Moon Disappear During New Moon?



The inner ring (black) of this illustration shows from above how the Moon orbits Earth, with the Sun illuminating half the Moon at all times. (The Sun is located to the right of Earth and the Moon.) The outer ring (blue) shows the phases of the Moon as we see them from Earth as our satellite orbits around us.

Photo Courtesy: Astronomy: Roen Kelly, after NASA/Bill Dunford

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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

To the Members of the EAS

Space Volcanoes – Zoom Presentation February 19th, 2021.

To benefit the Evansville Astronomical Society and Facebook Group members, we have 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'll dive 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 will begin promptly at 7:30 PM CST (8:30 PM EST) on February 19, 2021. You may login up to fifteen minutes early. This presentation is open to EAS members and Facebook Group members.

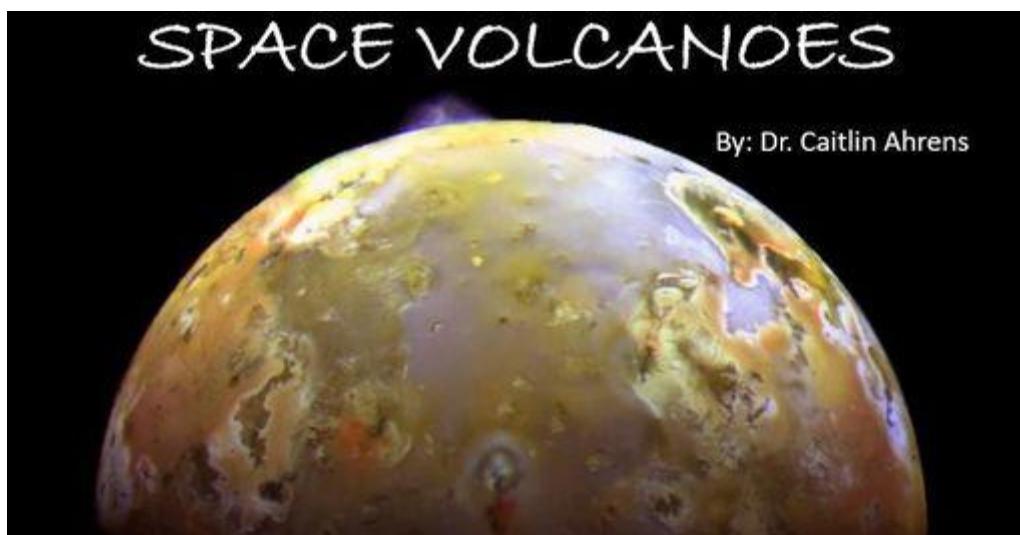
Topic: Space Volcanoes - Zoom Presentation

Time: Feb 19, 2021 07:30 PM Central Time (US and Canada) – Login up to 15 minutes early. To Join Zoom Meeting <https://us02web.zoom.us/j/86301426248...>

Meeting ID: 863 0142 6248

Passcode: 703552

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=IwAR0In5rjdsAGdGKhLTvVRFx1fENmVeSPpWtw2Rc6sBB79w702cLyB1n14&app=desktop>

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 2021 Officers and Contacts

President – Tony Bryan
812.827.3234
evansvilleastro@gmail.com

Vice President – Scott Conner

Secretary – Dave Kube
740.223.6854

Treasurer – Amy Barrett

Counselors
Ken Harris (2019)
Mitch Luman (2020)
Michael Borman (2021)

Webmaster – Michael Borman

Program Director
Chuck Allen

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 that we currently we have a Zoom Meeting Scheduled February 19th, beginning at 7:30 PM CST.

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 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>

Spaceflight and Astronomy in 2021



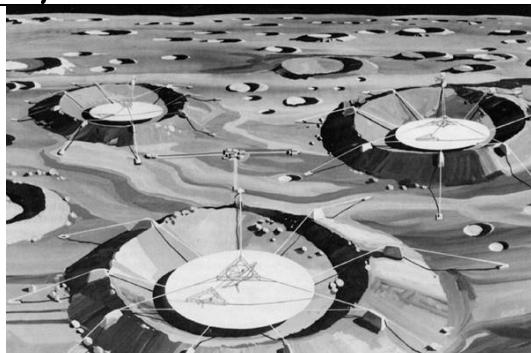
The IM-1 lander, built for NASA by Intuitive Machines, is headed to Vallis Schröteri, close to the site where Apollo 18 would have landed if the mission had not been canceled.

Credit: Intuitive Machines

It was the worst of times, it was the best of times. On Earth, almost every aspect of life over the past year was dominated by the COVID-19 pandemic, which has taken nearly two million lives and shredded the global economy. In space, humans have racked up one triumph after another: First landing on the lunar farside, two impressive successes in gathering samples from asteroids, the first new pieces of the Moon brought home in 44 years, close-up explorations of the Sun, and major advances in low-cost reusable rockets.

It may seem callous to celebrate such distant, cerebral events while so many people are suffering on Earth. But the international collaborations, scientific stretches, and goal-oriented research that enabled those space missions are exactly the same techniques that enabled the development of multiple COVID vaccines at unprecedented speed. Images of the OSIRIS-REx probe kissing asteroid Bennu, or Chang'e-4's rover rolling across the Moon's hidden face, also reminded us of the deeper things that we live for.

Arecibo is Dead. Should we Build its Replacement on the Moon?



A decades-old idea from lunar scientist Richard Vondrak, who worked at the Apollo Science Operations Center during the moon landing program, proposed using lunar craters to build radio telescopes like the Arecibo Observatory in Puerto Rico. Here, an artist's concept shows how three telescopes could be used separately or combined to create a giant instrument.

Credit: NASA

When the 60-year-old Arecibo Observatory collapsed in 2020, the crash didn't just take down one of the world's preeminent radio telescopes, it also dealt a massive blow to the future of radio astronomy. Arecibo may have been old, but it also had unique capabilities that made it ideal for studying things like gravitational waves, as well as mapping the surfaces of asteroids as they slip by Earth.

Now, radio astronomers around the world are debating what comes next. Should Arecibo be rebuilt anew? If so, where would the money come from?

Those questions don't have easy answers, but the discussions are happening. Preliminary plans for another revolutionary radio telescope continue to inch forward every day. And interestingly, these talks have led NASA to reconsider a bold idea that was first dreamed up a half-century ago: building a behemoth radio telescope on the farside of the Moon.

Arecibo's design benefited from being built in a natural sinkhole in Puerto Rico. Similarly, astronomers could use existing lunar craters to build a radio telescope on the Moon for (relatively) cheap; impacting space rocks have already done the digging for them. And unlike Earth, the Moon has no weather or wind to accelerate erosion. Even the pull of gravity itself is weaker on the lunar surface.

THE BARBARA K. GREEN TELESCOPE: A UNIQUE AND BEAUTIFUL GIFT FOR SEEING THE HEAVENS

by Mitch Luman, Director of Science Experiences at the Evansville Museum of Arts, History & Science and Tony Bryan, Evansville Astronomical Society (EAS) President.

Telescopes allow us to detect objects in greater detail, or—more often than not—permit us to see objects too faint to be seen by the eye alone.

Recently, our partners at the Evansville Museum of Arts, History and Science were in a rather unique position to gift us one of its principal with the hope that it would better utilized to bring members of our community closer to the stars.

The story begins in 2012 when lifetime EAS Member, Dan Depyatic, approached the Evansville Museum with an offer to take possession of a telescope he had acquired decades earlier. It was a beautiful and unique telescope that had great potential to inspire others and allow them to gain a greater appreciation of the heavens.

Growing up in the 1960s, like many astronomy enthusiasts of that era, Dan had been mesmerized by a telescope brand that was one of the most sought-after instruments of its time. The Questar Company of New Hope, Pennsylvania had been manufacturing its unique Maksutov-Cassegrain telescopes for over a decade, and Dan had become intensely interested in them.

What set these telescopes apart was not their size, but their fine craftsmanship, excellent optics, and beautiful design. With a brushed stainless-steel base and blue and gold barrel (which doubled as a star chart), Questar telescopes were renown as being as capable an instrument as well as a finely crafted work of art.

Sometime during the 1990's Dan became aware of a rare 12-inch Questar optical tube assembly that was being offered for sale. Unlike their standard 3.5 and 7-inch telescopes models, this Questar was a rare 12-inch model—one of only thirteen ever made. A scant few Questar-12 telescopes were sold to individuals, but speculation was that this particular Questar was originally acquired by the Department of Defense, where it was likely used for terrestrial surveillance activities (i.e., spying).

In 2012 Dan was at a social gathering with his then neighbor, Barbara K. (Green) Blevins, and the Museum's director when the topic of his telescope came up. Through Barbara's suggestion, a seed was planted for Dan to donate the telescope to the Museum where it might be properly utilized. Soon thereafter, through the efforts of Museum Director, Dr. John W. Streetman, III, the Evansville Museum was deeded ownership of the telescope.

When Dan donated his telescope to the Museum in 2012, it was his desire that they use their resources to allow more people to enjoy this magnificent instrument. Deemed too massive to set up at public events, the prevailing thought was that a small, public observatory on the Museum's grounds might be constructed. Until that goal could be achieved, telescope remained safely in storage, awaiting further funding.

The EAS learned of the Museum's Questar-12 during the spring of 2017. Cognizant of the original donor's desire that the telescope be utilized and aware that the telescope was unusable without a proper mount and facilities to house it, the EAS set out to assist.

In June of 2017, the EAS submitted an unsolicited proposal to accept the donation of the Questar-12 from the Museum. The proposal stated the EAS would add the necessary components to make the telescope usable and available for the general public at events sponsored by the EAS, thus fulfilling the desire of their donor. The proposal remained without a formal response.

In October of that same year, Mitch received a call from Mr. Depyatic saying that he had located perfect

EAS OBSERVER NEWSLETTER

accessories to the telescope. Those complements were a portable telescope bench, German Equatorial mount, and observatory pier. The latter two items could be matched with the scope to be used in a permanent observatory.

Like the telescope, the mount is a finely crafted work of art. It was manufactured by the Edward R. Byers Co., which is located in Barstow, California. Byers mounts are known to be among the world's finest. The mount features unsurpassed precision craftsmanship with attention to detail for fit and finishes, including gold anodized aluminum, polished stainless steel, and beautiful white painted surfaces.

What made these accessories special was that they were identical to those marketed in the 1980's, rebranded for use by the Questar Company and sold as a package. These accessories would serve a vital role in "reuniting" the 12-inch optical tube assembly with its era-appropriate mountings, not to mention to put them to proper astronomical use.

After its plans to house the telescope on the Museum campus continued to languish, in early 2019 Mitch contacted Tony and conveyed that the Museum and Dan wanted the EAS to take ownership of both the telescope and the accessories. The Society was ecstatic about the potential of taking ownership, and proposed housing all of it in a purpose-built observatory on the grounds of the Wahnsieder Observatory.

Both of us are happy reported that the Questar-12 and all its accessories were deeded to the Society by all parties early in 2020. Current plans call for an observatory structure to be constructed within the next few years. Barbara passed away in late 2019; at Dan's request the Questar telescope is to be named in memory of Barbara K. Green, for she was the impetus for his initial gift to the Museum and the later donations by Dan to the EAS.

Contributions to help offset the costs associated with construction of the structure to house the Questar-12 are greatly appreciated. Donations to the EAS are fully taxdeductible.
Please make your check payable to: The Evansville Astronomical Society, P.O. Box 3475, Evansville, IN 47733. Please note on your check: The Barbara K. Green Telescope Fund.



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March 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	31			

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Up and Coming Events 2020

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 February 19th, 2020 @7:30pm.

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

Please visit our Facebook Group Page for updates.

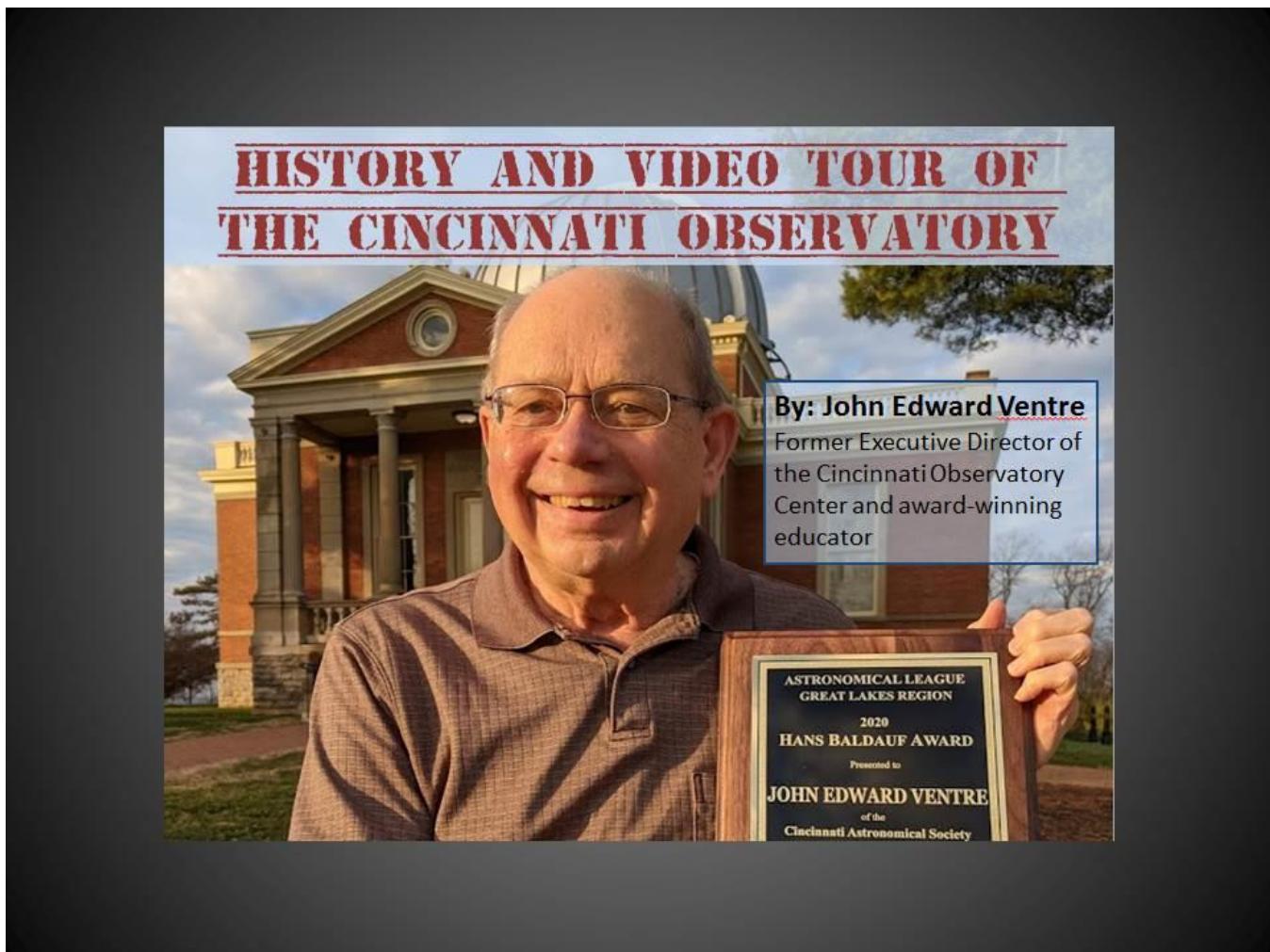
Moon Phases

New Moon	First Quarter	Full Moon	Third Quarter
March 13 th , 2021	March 21 st , 2021	March 28 th , 2021	March 5 th , 2021
Moon Phases courtesy of Time and Date.com			

EAS Unofficial Meeting Notes for January – 2021

We had an online Zoom Meeting for Members on January 15, 2021.

Our Zoom meeting was hosted by EAS President Tony Bryan with 17 members and our guest presenter was John Edward Ventre, former Executive Director of the Cincinnati Observatory Center. John took us on a video tour of the Cincinnati Observatory and offered some insights about the involvement of President John Quincy Adams in the observatory's history and his own investigation of the stolen lens. The evening was open to both EAS members and our Facebook Group Members.



Respectfully Submitted – Dave Kube – Secretary