WESTMINSTER ASTRONOMICAL SOCIETY, INC. (WASI)

Membership News

Volume 1 – Number 1 *(formerly the Mason Dixon)* November 2022

Message from our Club President

Hello, Fellow Stargazers!

I am very happy to announce the return of the WASI Membership Newsletter. We have received a lot of great content from members, but we would love to hear from you, too. If there are any experiences, observations, or upcoming events that you would like to share, please email the info to **Laurie Ansorge** at treasurer@westminsterastro.org. The newsletters will be virtual only, and both current and past issues can be found at: https://westminsterastro.groups.io/g/main/files/Newsletters

Clear skies,

Cindy Ward
President

Member Observations

This section is all about member observations, photos, and interesting stories to share. What are you working on?

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Matt Orsie, President of TriState Astronomers invited **Laurie & Al Ansorge** to demonstrate the Unistellar eVscope2 at the club's star party. Matt asked for the object Abell 39, and without filters, 8 minutes of exposure and a little of Matt's post processing, this is the resulting image (Figure 1).

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Figure 1: Abell 39; Imaged by Laurie V. Ansorge; Processed by Matt Orsie

Jack Ganssle spent some time at Bear Branch working on capturing the Draco Triplet. Here's what he has to say:

The Draco Triplet is a trio of pretty galaxies in the constellation Draco that doesn't get a lot of attention from astrophotographers. It is comprised of galaxies NGC5985 (the face-on spiral in the picture), NGC5982 (the elliptical), and NGC5981 (the edge-on spiral). All three are about 130 million light-years distant, and all are quite faint, ranging from magnitude 11 to 15 or so (in very dark skies young eyes can see to about magnitude 6 or 7).

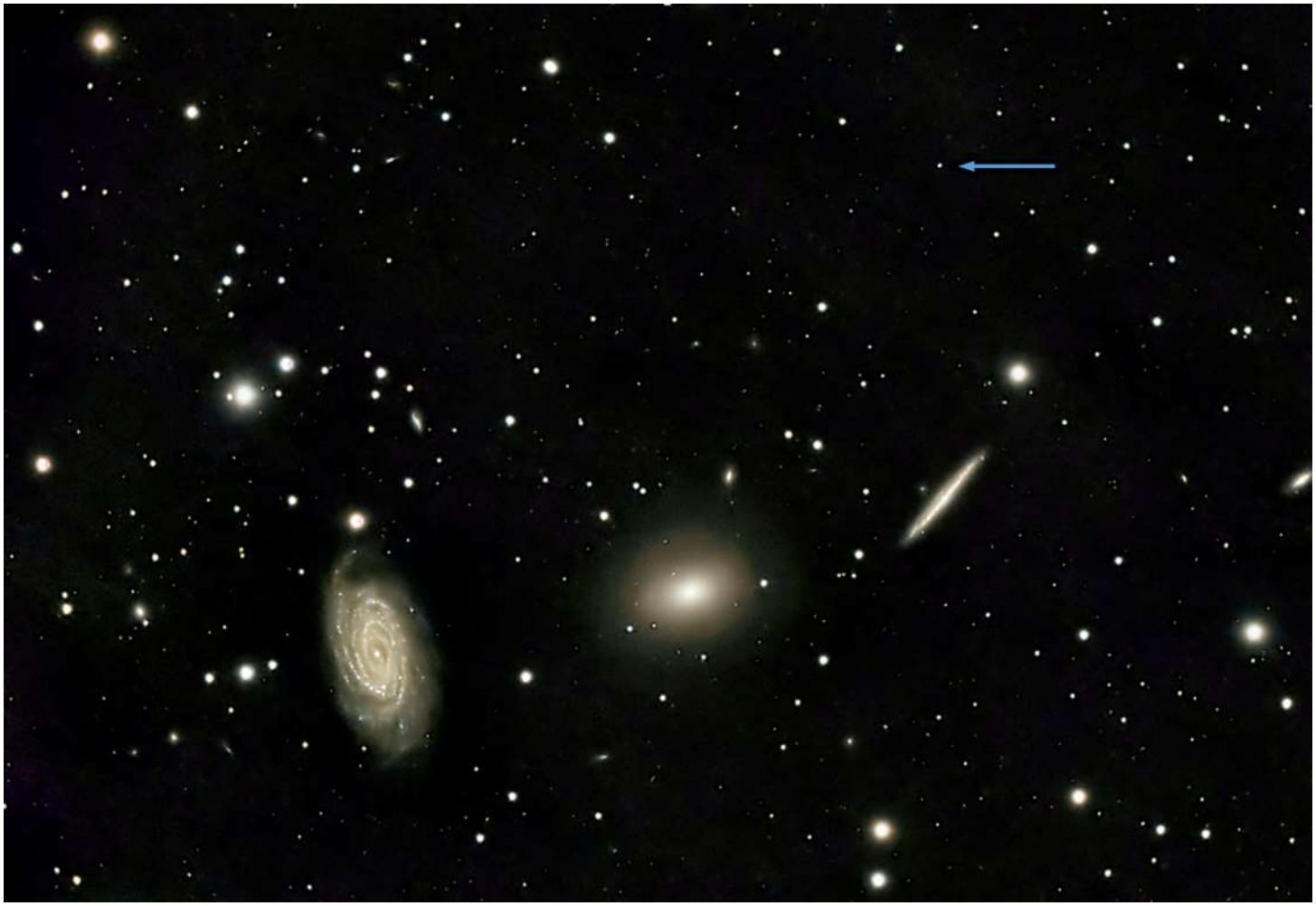


Figure 2: Draco Triplet; Imaged/processed by Jack Ganssle

This picture is a blend of 2400 images I took at Bear Branch over the course of five nights in May and June, for a total exposure time of 19.5 hours. Equipment used was a Celestron 8" SCT with a 6.3x focal reducer, a Canon 70D camera, and an EQ6R mount. The free program Sharpcap (highly recommended but it's cheap to get the pro version) acquired the images, and I used Pixinsight (not free but a super-powerful package that is not as scary as some think) to process the images.
The spiral arms in NGC5985 are quite pronounced and you can see dust lanes in 5981.

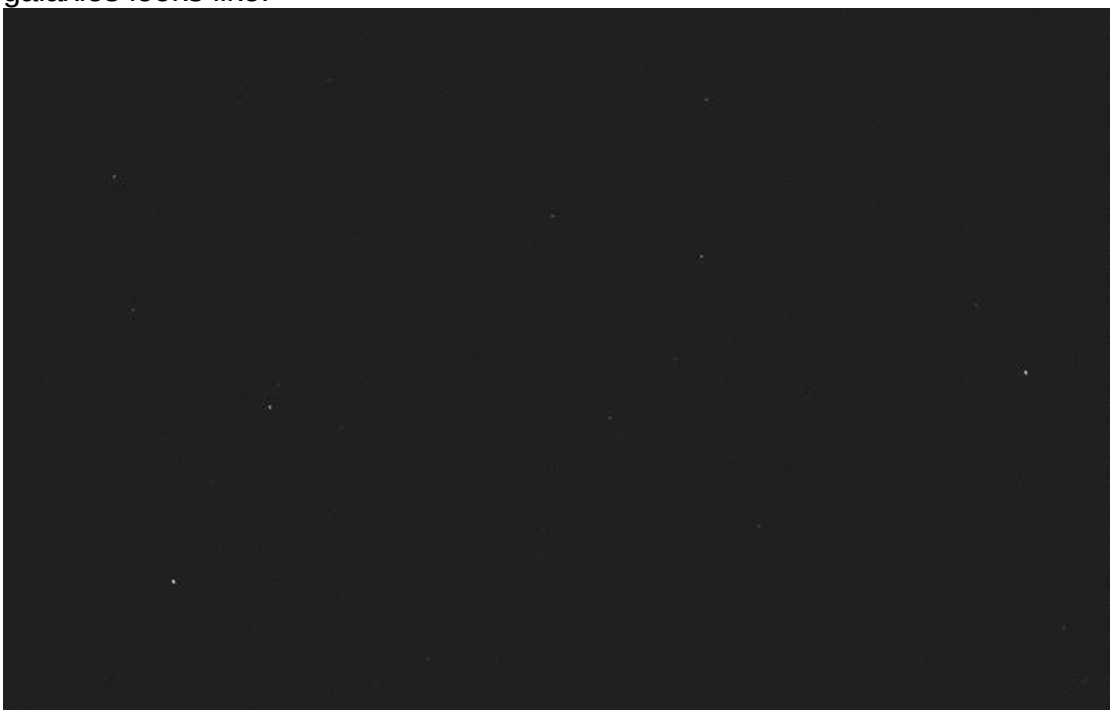
Also visible (and denoted by an arrow) is a quasar, the results of a hungry black hole devouring the center of a galaxy. It's a long way away... a very long way. The light you see left the quasar 10.7 billion years ago, back when the universe was a youngster. That implies a distance of 10.7 billion light years, though, since the universe is expanding, it is far more distant today than when the light evident in the image left. Today, in fact, it is receding from us faster than the speed of light! We will never, in a

trillion years or more, see the light that is leaving it today; it is beyond the observable universe. (Though Einstein taught us nothing can move faster than the speed of light, in this case the "motion" is due to the universe's expansion which is an effect outside of that speed limit).
The few pixels of the quasar in this image, if one were to zoom way in, look faintly blue. That's because most of the light was emitted at a wavelength far in the ultraviolet that our eyes cannot see and the camera cannot detect (122 nanometers; our eyes can see from about 400 to 750 nm). It has been "redshifted", again due to the expanding universe, to a nice blue color.

Sidebar
Why 2400 images? Why 19.5 hours of integration time?
Peering through an eyepiece most galaxies look like "faint fuzzies" – blurs that fascinate us yet offer little detail. Your eye can "integrate" – a fancy word from calculus that basically means "take the sum of" - just a second or so of the incoming light. A camera can integrate the incoming light over the course of minutes, hours, and in even days (think the Hubble Deep Field image). Where your eye can integrate X photons from that faint fuzzy in a second or so, a camera can accumulate X*3600 in an hour, or X*86,400 in a day.

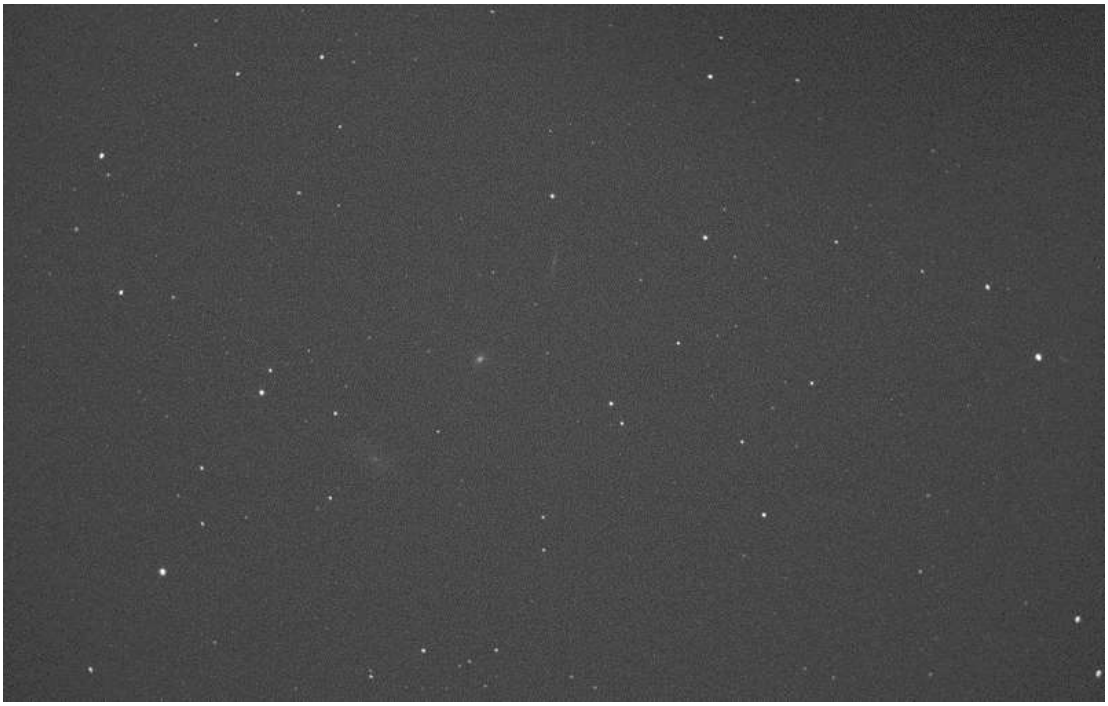
A long exposure thus grabs lots of photons; lots of photons reveals lots of details of the image.
So why did I take 2400 images to get this picture? Why not just open the camera lens for 19.5 hours? Astrophotographers have different attitudes about exposure lengths. Is 1 second right? 1 minute? There are a lot of tradeoffs, but few use more than a few minutes per image as the camera's sensor can saturate (be unable to collect more photons) after a certain number have been detected. And the real world intrudes: Carroll County airport ensures a steady stream of planes ruining images, wind gusts vibrate the telescope, and I for one stupidly blunder into the scope in the dark at times, shaking it and wrecking the exposure. Taking lots of short images lets one reject the baddies without losing a lot of data.

For the Draco Triplet I used 30-second exposures. Here's what a single 30-second exposure of those galaxies looks like:



The sky is mostly black! You can see a few stars but not much else. But the camera is a powerful instrument and there's good data lurking in that darkness. One tool we use in processing the collected images is "stretching," which means multiplying every pixel in an image by numbers to bring out the good stuff while not accentuating the boring emptiness.

Here is the same image stretched as much as is practical:



Can you see those three galaxies? They are not much more than faint smudges slightly to the left of center.

To see the fun stuff we need more photons; more integration time. Combine a hundred such shots and some details emerge; a thousand and galaxies start to really pop. More images means more photons (and noise is diminished) which means a prettier picture.

In my opinion the biggest mistake budding astrophotographers make is to use too little integration time. Sure, three minutes of M101 looks nice. Try an hour. Then five. The difference will blow your mind.

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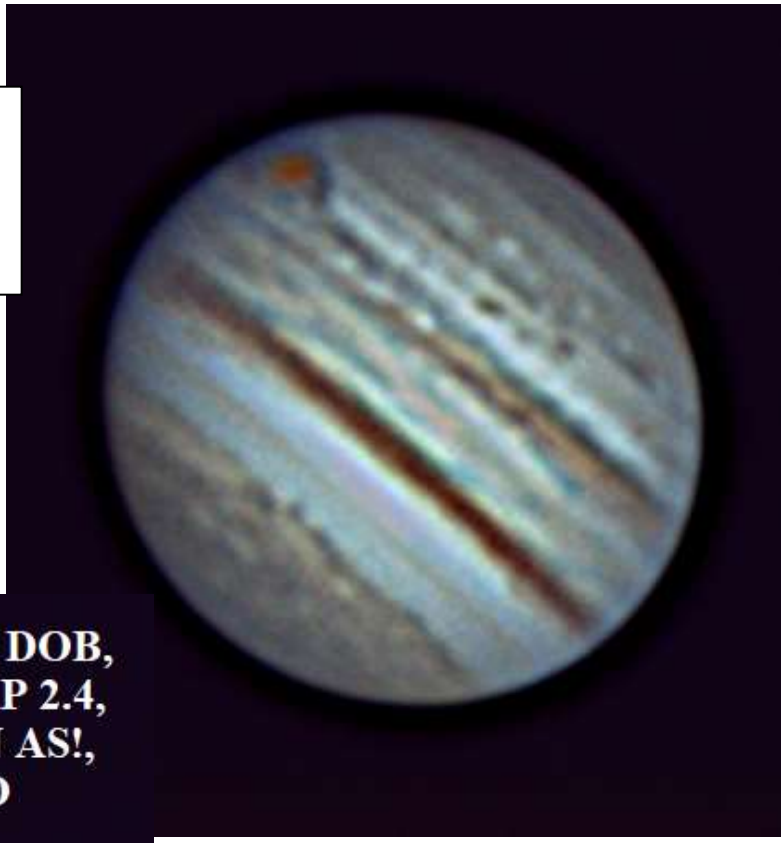
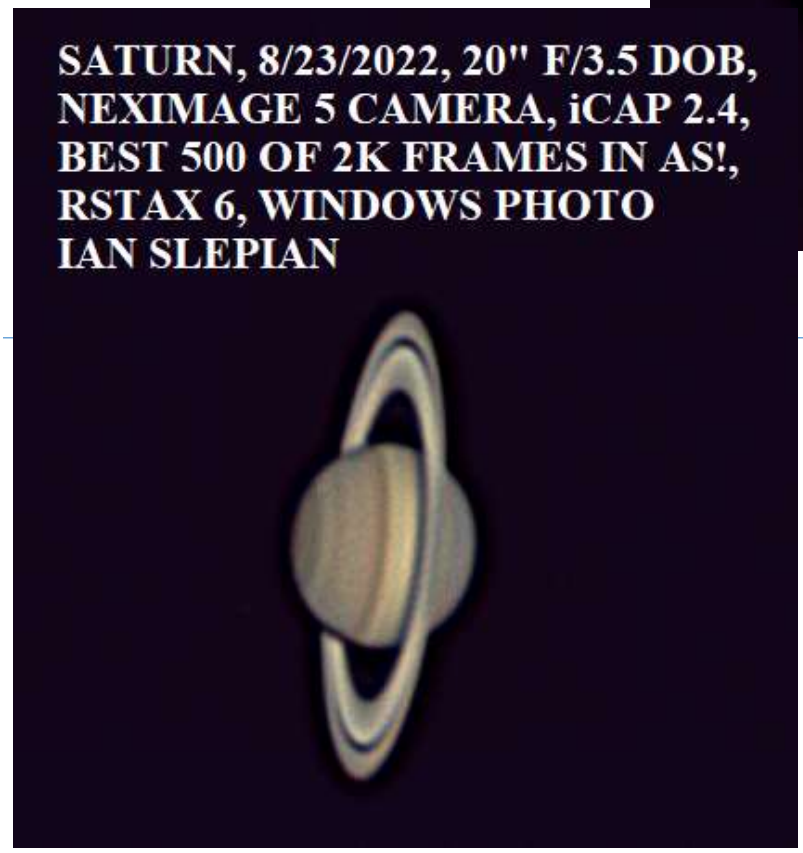
From **Ian Slepian**: Here are a couple of images of Jupiter and Saturn from last summer.

Jupiter (no Red Spot) and Io: 20 inch Dob (0005 22-08-24 01-48-11)_Neximage 5 camera, best 40pcnt of 3000 frames, in AS!, Registax 6

For Jupiter with Red Spot -- 20 inch Dobsonian, Aug 24, 2022 ,00-.15-30best 40pcnt of 3000 frames, Neximage 5 camera, Autostakkert!, Registax 6.





Observatory & Planetarium News

Our Planetarium Director **Jeff Burns**, and Immediate Past President **Chris Bennet** are working on the repair or replacement of mount items for our Blaine F. Roelke Memorial Observatory's 14" SCT. Updates are given through the 'group.io' messaging, and at monthly meetings.

We've resumed monthly Planetarium shows at Bear Branch Nature Center under **Doc Desai**'s leadership as Planetarium Director. The shows are offered to the public and require preregistration with the county. To register, please call Recreation and Parks at 410-386-2103 or visit ccrecpark.org.

Membership News

We had some dark clear nights at our recent 'members-only' star party October 21-23, at Bear Branch. While the observatory was still down for maintenance, it was nice to set up, enjoy and get reacquainted with our own equipment, and get to know some fellow members under the stars.

To schedule time at Bear Branch, contact Jeff Burns at least 2 days before the desired time. The Nature Center needs notice at least before noon of the day requested to ensure scheduling of the property. As always, when the observatory is back up and running, only trained members may schedule it and run equipment.

And now the 'fine print' (to keep in good graces with our Bear Branch partners):

- BBNC and WASI must be aware of property usage by authorized personnel for liability and other reasons.
- Club members must be mindful of other usages in progress (e.g. quiet space for meditations and yoga, and observatory use by other trained entities like camps and outdoor school).

WELCOME TO OUR NEW MEMBERS WHO'VE JOINED US IN 2022!

Joe Annelli	**Philip List**	**Micheal Newman**	**Alfred Shupe**
Gary Hand	**Shannon Markward (honorary)**	**Martin Remmers**	**Robert Stolte**
Terry Harrigan	**Narayan Nair**	**Bonnie Russell**	

We're in RENEWAL SEASON! All memberships are through the calendar year. Your membership card has your expiration date. If you joined after July 1, 2022, your membership is good through 12/31/2023. Everyone else (except life time members) are due by 12/31/2022. Renewals are still only $25 for individuals or family (youth are $5) and can be paid via PayPal https://www.westminsterastro.org/join-wasi/, cash or check, and can be paid at monthly meetings.

This year your membership card comes laminated and ready to wear as a name badge at meetings and events. Materials to do this, and time are donated. *Please renew on time so that these can be done in batches.* Your treasurer thanks you in advance!

Wanted/Offered

Have something to sell? https://www.westminsterastro.org/for-sale/

Help Wanted!! – We need your help with some volunteer activities:

- ★ Calendar updates: Keeping the calendar on "groups.io" current with the activities scheduled by BBNC; working with the WASI points of contact on scheduling/posting; ensuring scheduling conflicts are avoided; sharing club SOP(s) with schedules as needed.
- ★ Have an idea? Is there something you'd like to do to add to the club? Contact any officer or board member and share. You might have the next great idea!
- ★ Wanted: pictures, articles, and perhaps editorial help for the resurrected newsletter! Contact Laurie Ansorge.

FAQs for You

Back issues of the Newsletter: https://www.westminsterastro.org/mda-3/
Here's an excerpt from September 2014, Tony Falletta was president, and the BBNC observatory was under construction. From Curt Roelle:

> "A new public astronomical observatory is currently under construction at Carroll County's Bear Branch Nature Center (BBNC) near Westminster. Ever since the park first opened more than twenty years ago, there have been members of the community advocating for an observatory of one type or another at the site for the use of the citizens of Carroll County.
> "Blaine Roelke was a charter member of the Westminster Astronomical Observatory (WASI) since its formation 30 years ago. On his Carroll County farm at Keymar he built an observatory with a steel dome 10 feet in diameter. In later years when a work opportunity led him to sell the farm and build a new house, Blaine moved his observatory to the new farm in Charles County. Upon his retirement, Blaine and wife Nancy sold that farm and moved to another farm in Pennsylvania, searching for darker and more pristine skies. Once again, the observatory was relocated…*read the rest here*: https://www.westminsterastro.org/wp-content/uploads/2014/09/MDA-2014-09.pdf"

Facebook - We're active and sharing images on our Facebook page, found at this link:

Join/Renew membership link: https://www.westminsterastro.org/join-wasi/

- ★ If you've already entered your contact information, skip the "database" link.
- ★ Dues are payable via PayPal on the link above, by check or cash.
- ★ Membership Dues are **due by December 31**, and good for 12 months. The individual and family rate is $25/year, youth under 18 is $5/year.
  - ✓ On time payment means eligibility for the incentive (this year it's a laminated membership card that doubles as a name tag).
  - ✓ *It also means that your volunteer 'membership department' can batch process the work to reduce workload.*

- **Files and club member correspondence** are found here: https://westminsterastro.groups.io/g/main. Remember to set your communication preferences.

- **Outreach/event** calendar is found on: https://nightsky.jpl.nasa.gov/index.cfm. Set your communication preferences here as well.

- **Changed address, email or phone?** Please update your information and send a message to the webmaster and/or treasurer@westminsterastro.org.

We meet monthly on the 2nd Wednesday of the month:
Back to Basics from 7:15 PM − 7:30PM; General Meeting 7:30PM − 9:30PM
Bear Branch Nature Center Carroll County; 300 John Owings Rd.; Westminster, MD 21158
Website: https://www.westminsterastro.org/ (Zoom info for hybrid meetings)
Mailing Address: P.O. Box 1162; Westminster, MD 21158; United States; **Google Voice Mail:** 443-732-0020

Perhaps the 'picture of the year' from the James Webb Space Telescope (JWST):