



# Roanoke Valley Astronomical Society

Amateur Astronomy News and Views  
In Southwestern Virginia



Volume 41—Number 7

July 2024

## *RVAS June Meeting Notes*

# Summer Member Potpourri

By **Erin Elliott, Secretary**

After wrapping up the Celestial Café, the meeting began at 7:30pm with an introduction from RVAS President, **Mike** Hutkin, along with Membership Coordinator, **Frank** Baratta. They welcomed members and guests to the June meeting. Mike started the evening by going over the evening's agenda.

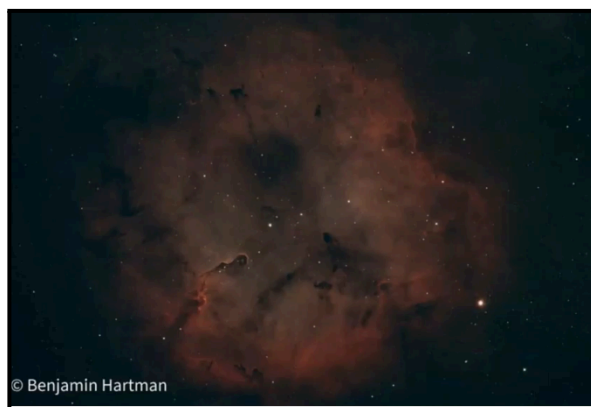
**Attendance:** There were 26 members and 2 guests in attendance. 16 individuals were in person and 12 attended virtually.

**New Members:** Welcome to our newest member, **Saniya Tumbde**. You can learn more about our new members in the *Welcome Mat* further down in the newsletter.

**Astrophotography:** We thank **Tom Cerul**, **Ed Dixon**, **Michael Good**, **Ben Hartman**, **Greg Shaffer**, and **Dave Thomas** for providing their work this month. We had a variety of images focusing on near and deep sky objects.

To provide each image with the focus it deserves, we are sharing the submissions in a separate article

in this newsletter. Do not miss checking out the rest of these images.



*Elephant's Trunk – Ben Hartman photo*

**Member Observation Reports:** **Mark Hodges** used a Seestar telescope and did lunar imaging with his neighbor. That same evening he observed M3 and M13 as well. Hanging out and looking at the stars with your neighbors is such an easy and meaningful outreach opportunity!

**Vote for Slate of Officers:** June is election month! A big thank you to **Michael Martin** and **John Goss** for taking the lead on the Nomination Committee for officers. There were no additional volunteers for slots, so we did a vote by acclamation. There were

no oppositions, and we congratulate the new slate of officers, who begin their one-year terms on July 1, 2024!

- President: Michael Good
- Vice President: Bill Krause
- Secretary: Erin Elliott
- Treasurer: Frank Baratta
- Officer at Large #1: Nancy Vogelaar
- Officer at Large #2: Caleb White

**Events and Shoutouts:** ALCON 2024 is an Astronomical Society Conference in Kansas City from July 17-29<sup>th</sup>. The highlighted speakers include **Stephon Alexander**, **David Levy**, **Keivan Stassun** and **Tim Russ**. You can learn more about it by [clicking this link](#).

Congratulations to RVAS Member **Toby Rundle** for writing an article that will be in the September Reflector. It is titled *Black Holes: What's the Hype?* and won first place honors in the Astronomical League's 2024 Horkheimer/O'Meara Youth Journalism Award.

#### **Astronomical League News:**

We are all members of the Astronomical League and the RVAS Executive Committee voted for the following officers:

- Charles Allen – President
- Terry Mann – Vice President
- Michael Coucke - Treasurer

**App of the Month:** *Good to Stargaze* is an app that is a one stop shop to see all the elements to gauge observing conditions. It shows you tiles of the weather, visibility, transparency, light pollution, and many more items. There is a subscription fee, but it is a helpful resource to those who are looking for a streamline option for taking into account all the conditions for observing.

**Member Outreach Committee:** **Michael Good** did an outreach with a Brownie Girl Scout troop in Wisconsin. His outreach gave the troop members a start of a badge for Astronomy and Space.

**Mike Hutkin** went to Franklin County Parks and Recreation on June 6 to do an Astronomy 101 Workshop with a senior citizen group. It was a great

RVAS July 2024

chance to be in the community and talk to people with various levels of interest in astronomy.

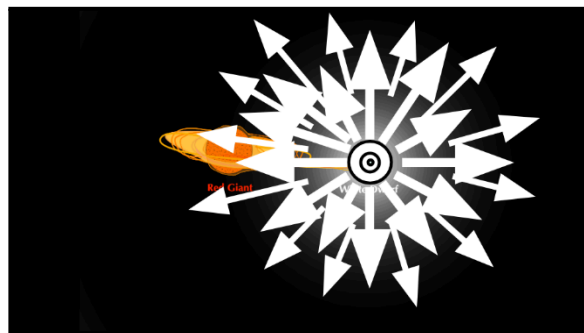
Just a reminder that everyone is an ambassador for RVAS. You can do outreach by talking to your neighbors and friends about the club and share information about astronomy.

We're building collaboration with local clubs to work together in outreach and share programs. Here are some contacts that have reached out to us for collaboration:

- BRAC – Trish Cerulli
- RAC – Myron Wasiuta
- CAS – Kevin Fitzpatrick

**What's Up?:** Before turning to our program for the evening, Mike asked **John Wenskovitch** for his "What's Up?" program on what the skies of July have in store for us. John's "What's Up? Highlights" in this issue provide a summary of the program. You can watch a recording of his program by [clicking here](#).

John mentioned the Astronomical League program "Astronomy Before the Telescope," which you can find by [clicking this link](#).



*T Coronae Borealis Blaze Star – PowerPoint screenshot*

#### **Summer Member Potpourri:**

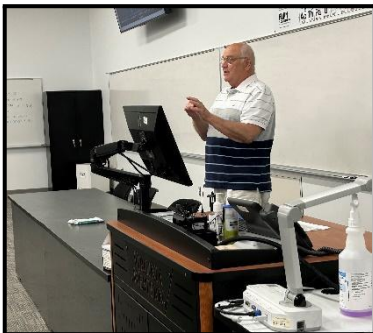
**John Goss:** *T Coronae Borealis Blaze Star*

- 2024 has been quite a year to observe some astronomical events on your bucket list.
- T Coronae Borealis is one of those bucket list item events!
- An astrophysical event that few people have seen readies itself to strike again – and soon.

- What is it?
  - o Large Red Giant and White Dwarf orbit each other.
  - o The dwarf's intense gravity draws matter from the giant, building up pressure and heat, eventually triggering a thermonuclear explosion
  - o happens every 78-80 years.
  - o It could happen any day between now and September (or at least it is predicted to do so).
- [Astronomical League Observing Challenge](#)
- [AAVSO Pre Eruption Dip Article](#)
- [NASA Article](#)

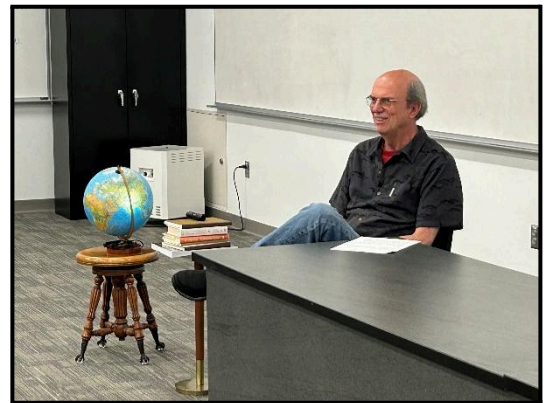
### **Tom Cerul:** *Narrowband Imaging and Processing*

- The BAD stuff
  - o Wavelengths – Visible Light
- The GOOD stuff
  - o Nebula wavelengths
- What to do about the “bad stuff?”
  - o Color cameras/filters
    - Helps capture the “good stuff” but keeps out the “bad stuff.”
- Tom landed on Anti-Halo Pro HA + OIII Dual-Band Filter
  - o Transmittances: >85%
  - o Black Depth: 005 (200-1100nm)
  - o HA CWL: 656.3nm/Bandwidth  $3.7 \pm 0.5$ nm
  - o OIII CWL: 500.7nm/Bandwidth  $3.2 \pm 0.5$ nm
- Note on mono cameras:
  - o You buy individual filters for each band path.
- When you have your filter, you can go to the ugliest light polluted area and do imaging. The filters keep out the “bad stuff.”



*Tom Cerul – Mike Hutkin photo*

- Advantages:
  - o Improve appearance of final image
  - o Image under light polluted skies or a full moon!
  - o Take advantage of seeing and transparency, no matter the light pollution.
- Disadvantages:
  - o Cost is \$100-\$3,500
  - o Longer exposure times
  - o Cannot image broadband targets like galaxies and reflection nebulas.
  - o RASA – Hyperstar f/2 systems need research to see which filters work with these telescopes.
- Processing Narrowband Images
- NarrowbandNormalization



*Bill Krause – Mike Hutkin Photo*

**Bill Krause:** Precession in astronomy. Will the summer solstice move to December?

- You can view his whole presentation by [clicking on this link](#).
- Presentation Items:
  - o Globe on a short table/stool
  - o Stack of books on a short table/stool
  - o Flashlight to represent the Sun
- Overview of precession
- Brief history of stars in calculating the calendar
- Demonstration of how and where the Sun hits by moving the table around to represent the axis shift

**Next month:** On July 15, our program will be led by RVAS member, **John Wenskovich**. He will be presenting on the next generation of space and

ground telescopes.

The meeting was adjourned at 9:02 pm

The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to the pursuit of observational and photographic astronomical activities. **Meetings are held at 7:30 p.m. on the third Monday of each month. See calendar on last page of newsletter for location. Meetings are open to the public.** Observing sessions are held one or two weekends a month at a dark-sky site. For information regarding joining RVAS, including annual dues, [click here](#). Articles, quotes, etc. published in the newsletter do not necessarily reflect the views of the RVAS or its editor.

**Officers/Executive Committee/Editor/Webmaster**

Michael Good, President ([president@rvasclub.org](mailto:president@rvasclub.org))

William Krause, Vice President ([vicepresident@rvasclub.org](mailto:vicepresident@rvasclub.org))

Erin Elliott, Secretary ([secretary@rvasclub.org](mailto:secretary@rvasclub.org))

Frank Baratta, Treasurer ([treasurer@rvasclub.org](mailto:treasurer@rvasclub.org))

Nancy Vogelaar, Officer at Large #1 ([officeratlarge1@rvasclub.org](mailto:officeratlarge1@rvasclub.org))

Caleb White, Officer at Large #2 ([officeratlarge2@rvasclub.org](mailto:officeratlarge2@rvasclub.org))

Michael Hutkin, Past President ([pastpresident@rvasclub.org](mailto:pastpresident@rvasclub.org))

Ed Dixon, Newsletter Editor ([editor@rvasclub.org](mailto:editor@rvasclub.org))

Erin Elliott, Webmaster ([webmaster@rvasclub.org](mailto:webmaster@rvasclub.org))

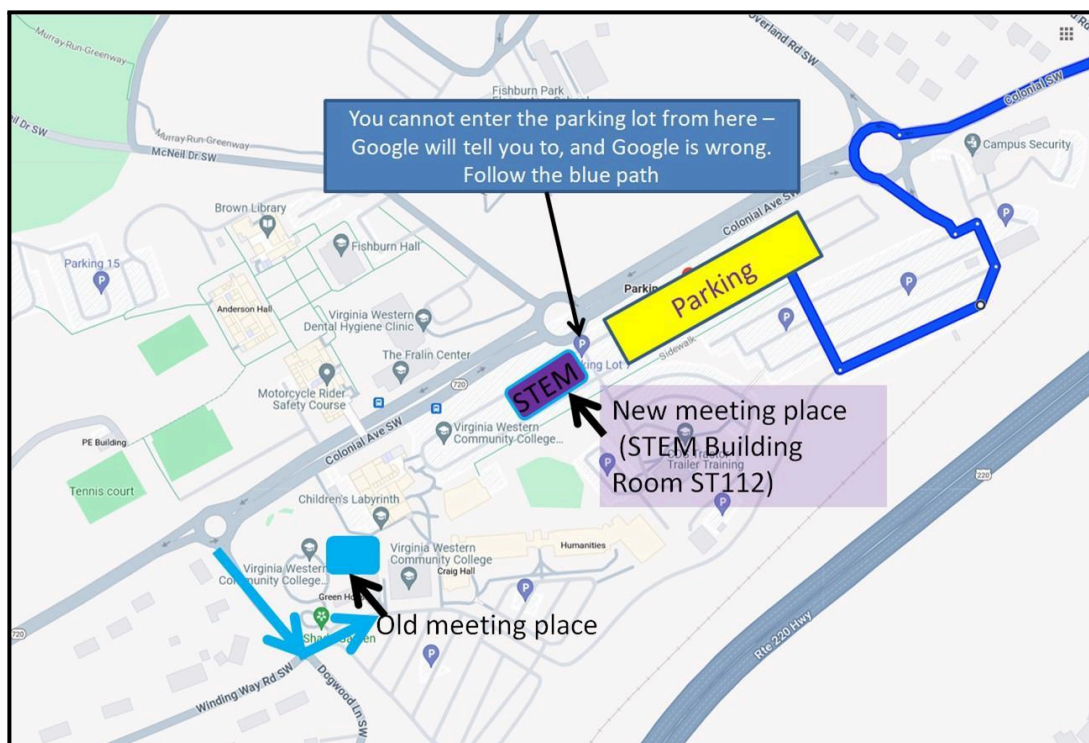


# Directions to RVAS Meeting Location

Virginia Western Community College STEM Building, Room ST112  
3094 Colonial Ave SW, Roanoke, VA 24015

VWCC is located in the southwestern area of the City of Roanoke. The STEM Building is accessed via the roundabout at Overland Drive and Colonial Avenue, near Campus Security at the top right of the map. The STEM Building is at the opposite end of the Colonial Avenue parking lot from Campus Security. Follow the darker blue path from the roundabout and park anywhere in the lot.

**Note:** Google provides incorrect guidance to access the parking lot from the roundabout at McNeill Drive. That roundabout **does not** provide an entrance to the parking lot.



## RVAS Member Anniversaries

Congratulations to the following members who reach the indicated number of consecutive years with the RVAS since joining or re-joining during the month of July:

Frank and Carolyn Baratta (1986) – 38 years

Dave and Remona Thomas (1992) – 32 years

Hank Simpson (2013) – 11 years

Scott Budd (2017) – 7 years

Eric Shelton (2017) – 7 years \*

Brian and Rene', Milena, Sophia and Noah Bone (2019) – 5 years \*\*

Nathan, Kimberly and Micah Mason (2019) – 5 years

Bob Crawford (2020) – 4 years

Judy Hopping (2022) – 2 years

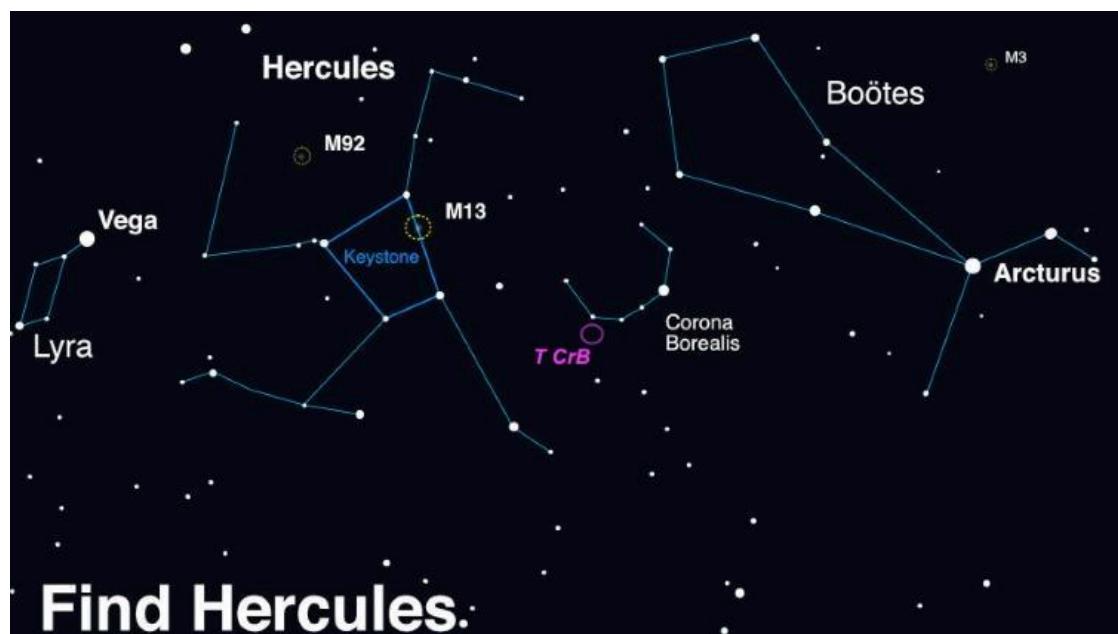
Gregory and Doris Mercado (2023) – 1 year

\* Eric was also a member from July 2010 to June 2011.

\*\* Brian Bone and Family were also RVAS members from May 2013 to June 2016.

**Thanks to all of you for being RVAS members!**

# July's Night Sky Notes: A Hero, a Crown, and Possibly a Nova!



Look up after sunset during summer months to find Hercules! Scan between Vega and Arcturus, near the distinct pattern of Corona Borealis. Once you find its stars, use binoculars or a telescope to hunt down the globular clusters M13 (and a smaller globular cluster M92). If you enjoy your views of these globular clusters, you're in luck - look for another great globular, M3, in the nearby constellation of Boötes. Credit: Stellarium

*by Vivian White of the Astronomical Society of the Pacific*

High in the summer sky, the constellation Hercules acts as a centerpiece for late-night stargazers. At the center of Hercules is the “Keystone,” a near-perfect square shape between the bright stars Vega and Arcturus that is easy to recognize and can serve as a guidepost for some amazing sights. While not the brightest stars, the shape of the hero’s torso, like a smaller Orion, is nearly directly overhead after sunset. Along the edge of this square, you can find a most magnificent jewel - the Great Globular Cluster of Hercules, also known as [Messier 13](#).

Globular clusters are a tight ball of very old stars, closer together than stars near us. These clusters orbit the center of our Milky Way like tight swarms of bees. One of the most famous short stories, [Nightfall](#) by Isaac Asimov, imagines a civilization living on a planet within one of these star clusters. They are surrounded by so many stars so near that it is always daytime except for once every millennium, when a special alignment (including a solar eclipse) occurs, plunging their planet into darkness momentarily. The sudden night reveals so many stars that it drives the inhabitants mad.

Back here on our home planet Earth, we are lucky enough to experience [skies full of stars](#), a beautiful [Moon](#), and regular [eclipses](#). On a clear night this summer, take time to look up into the Keystone of Hercules and follow this sky chart to the Great Globular Cluster of Hercules. A pair of

binoculars will show a faint, fuzzy patch, while a small telescope will resolve some of the stars in this globular cluster.



*A red giant star and white dwarf orbit each other in this animation of a nova similar to T Coronae Borealis. The red giant is a large sphere in shades of red, orange, and white, with the side facing the white dwarf the lightest shades. The white dwarf is hidden in a bright glow of white and yellows, which represent an accretion disk around the star. A stream of material, shown as a diffuse cloud of red, flows from the red giant to the white dwarf. When the red giant moves behind the white dwarf, a nova explosion on the white dwarf ignites, creating a ball of ejected nova material shown in pale orange. After the fog of material clears, a small white spot remains, indicating that the white dwarf has survived the explosion. NASA/Goddard Space Flight Center*

**Bonus!** Between Hercules and the ice-cream-cone-shaped Boötes constellation, you'll find the small constellation Corona Borealis, shaped like the letter "C." Astronomers around the world are watching T Coronae Borealis, also known as the "Blaze Star" in this constellation closely because it is [predicted to go nova sometime this summer](#). There are only 5 known nova stars in the whole galaxy. It is a rare observable event and you can take part in the fun! The Astronomical League has issued a [Special Observing Challenge](#) that anyone can participate in. Just make a sketch of the constellation now (you won't be able to see the nova) and then make another sketch once it goes nova.

# What's Up? Highlights

July 1 to 31, 2024

Including, but not limited to, information presented at the June 17 meeting.

## This Month:

July 2024 sees the return of all planets to the sky throughout the night! In the evening sky, both Mercury and Venus are low in the western sky, with Venus setting roughly 50 minutes after sunset and Mercury following roughly 90 minutes after sunset. Both Saturn and Neptune begin the month rising shortly after midnight (12:18 am and 12:41am respectively on the 1<sup>st</sup>) but both end the month rising into the evening sky (10:19 pm and 10:43 pm respectively on the 31<sup>st</sup>). Mars, Jupiter, and Uranus are all well-placed in the eastern morning sky throughout the month, with Jupiter having the latest rise time of 3:53 am on the 1<sup>st</sup>. The evening of the 13<sup>th</sup> features a Lunar occultation of Spica in the constellation Virgo prior to moonset. This month also features the opposition of both the largest and the smallest dwarf planets, as well as the core of the Milky Way rising into the evening sky with all of the accompanying nebulae and star clusters along the galactic plane. The month ends with three meteor showers in the morning sky, as well as a nice grouping of the Moon, two planets, and two open star clusters on the morning of the 30<sup>th</sup>.

## Celestial Events:

- July 1-3: Moon passes close to Mars (1<sup>st</sup>), M45 Pleiades (2<sup>nd</sup>), and Jupiter (3<sup>rd</sup>) in the morning sky
- July 6: Opposition of (1) Ceres, smallest dwarf planet and largest asteroid
- July 13: Mercury at highest evening elevation
- July 13-14: Lunar occultation of Spica (roughly 11:27pm – 12:36am)
- July 22: Opposition of (134340) Pluto, largest (by diameter) dwarf planet
- July 28: Piscis Austrinid meteor shower, best close to dawn with a maximum of 5 meteors/hour
- July 30: Southern  $\delta$ -Aquariid meteor shower (peaking at 15 meteors/hour), best after midnight
- July 30:  $\alpha$ -Capricornid meteor shower (peaking at 5-9 meteors/hour), best after midnight
- July 30: Close grouping of the Moon, Mars, Jupiter, M45 Pleiades, and Hyades in the morning sky

## Sunset and Twilight:

- Sunset ranges from 8:44pm (1<sup>st</sup>) to 8:27pm (31<sup>st</sup>)
- Twilight ends from 10:36pm (1<sup>st</sup>) to 10:09pm (31<sup>st</sup>)

## Weekend Observing Opportunities:

- New Moon weekend July 5<sup>th</sup>/6<sup>th</sup> (watch out for fireworks!)
- Last Quarter weekend July 26<sup>th</sup>/27<sup>th</sup>

## Lunar Phases and Apsides:

- New Moon: July 5, 6:59pm
- Apogee: July 12, 4:11am
- First Quarter: July 13, 6:49pm
- Full Moon: July 21, 6:19am
- Perigee: July 24, 1:41am
- Last Quarter: July 27, 10:54pm



## Mintz Begins PhD Studies

She once remarked about preferring nonfiction for late night reading. Her current selection at that time? “Mathematical Cosmology,” by Landsberg and Evans! A self-styled “physics fiend,” Sasha Mintz blends interest, capability and intention.

Originally from the Yorktown area, Sasha was a Sophomore at Virginia Tech when she joined the RVAS in the fall of 2021, a suggestion of the NASA Langley Skywatchers Club in Hampton, where she had been a member. Living in Blacksburg at the time, she initially pursued dual majors in Physics and Aerospace Engineering, but eventually changed the latter to Mathematics, aiming for a doctorate in astrophysics upon completing her undergrad degree. Thereafter, she hoped to apply her education to research focusing on black holes, dark energy, dark matter and gravity in general.

Sasha is well on her way, preparing to study for her PhD in theoretical astrophysics at the University of Southern California. The program begins this fall, starting with a project on dark matter. Over the summer, she has an internship in Pasadena, CA, with the Carnegie Observatories, which also partially sponsors her graduate studies through a Carnegie fellowship. The rest of her studies are covered by a National Science Foundation's Graduate Research Fellowship.

Her first year project will look at potentially the darkest and smallest satellite galaxies of the Milky Way in order to probe their dark matter halos. If these halos are confirmed, she'll model their tidal disruption to understand the scale of matter perturbations in the early universe required to give rise to such small halos. Finally, if all goes well, she'll seek to infer properties about dark matter and attempt to strengthen the bounds of warm dark matter and other scenarios.

Sasha's future is unquestionably bright. And she's continuing her membership in the RVAS!

### **Renew Your Membership!**

If you haven't yet renewed your RVAS membership, please do so as soon as possible. Sadly, the “Early Bird” discount has expired, so our regular rates now apply.

Family -- \$25.00

Senior Family (65 or older) -- \$22.00

Individual -- \$20.00

Senior Individual (65 or older) -- \$18.00

Student -- \$5.00 regular rate

(Students must be full-time, 18 or older; parental approval needed if under 18)

A roster showing your current membership type and instructions for renewing by PayPal or by check or money order were provided in dues notices emailed to members whose renewals are pending. For assistance, call the RVAS Message Line at 540-774-5651 or email [treasurer@rvasclub.org](mailto:treasurer@rvasclub.org).

# Roanoke Valley Astronomical Society

Monday, July 15, 2024, 7:30 PM

## “The Next Generation of Space and Ground-Based Telescopes”

**John Wenskovitch, PhD**

**Pacific Northwest National Laboratory**



John Wenskovitch is a visual analytics researcher at the PNNL and an adjunct professor in the Virginia Tech Department of Computer Science. He received a PhD in computer science from Virginia Tech in 2019. Dr. Wenskovitch has engaged in interdisciplinary research with colleagues in architecture, astronomy, computational and molecular biology, electronic art, medicine and nursing, and statistics. He was a research intern at Fuji-Xerox Palo Alto Laboratory and previously taught in the Mathematics Department

at Chatham University and in the Computer Science Department at Allegheny College. His current work focuses on the interconnecting roles of visualization and machine learning in visual analytics.

Dr. Wenskovitch is an avid observer and previously Vice-President of the Society (2022–2024). He is also a member of the Amateur Astronomers Association of Pittsburgh.

# Binoviewers used for deep sky observation by RVAS Member, Josh Urban

## Hey folks!

As promised, here's a report about binoviewers used for deep sky observation. I'm Josh, an avid visual astronomer living in Rustburg, VA, under dark-ish skies of suburban Lynchburg. My favorite things to observe are deep sky objects, and I've recently stumbled into a way that noticeably improves the experience: using binoviewers. It was looking at the dark nebula B86 ("The Ink Spot") in Sagittarius that showed me such increased contrast and detail that I had to investigate further.

The following are my observations from one evening. There will be more to follow, and I welcome your findings if you have any to add. I'd love to hear. I'd also like to collect some more data, support the findings, and submit them to Cloudy Nights for publication consideration. This is a cursory report, with information to add. I do hope you'll be part of the project.

**The bold assertion:** binoviewers on a telescope outperform mono-viewing *for deep sky work* by boosting contrast, reducing visual noise, and are darn cool to take a spacewalk with.

**The Myth to Bust:** "Binoviewers are only for lunar and planetary work." The binoviewer is a lot of extra glass for starlight to travel through, including a beam splitter and an extra eyepiece. Throughput must surely be reduced. (The nose-bleed horror!) As a fan of minimal glass rigs, an ortho eyepiece with a newtonian reflector is optimal.

**Things to know about binoviewing:** Using two eyes is supposed to reduce noise and increase contrast by the square root of 2 (41%). The image scale seems larger, and the view (can be) more relaxed.

**Evidence gathered thus far:** (using "thus far" makes the project worthwhile, by the way.) Two sessions, using two telescopes, on popular summer deep sky targets. Two sessions where I said "wrong, sir, the rumors are wrong!"

I noticed three important things.

1. Contrary to popular opinion, light loss/throughput reduction was minimal, if noticeable at all.
2. Contrast was slightly to noticeably enhanced on many objects, including: the 11.2 magnitude galaxy NGC 6207 near M13, emission and dark nebulae.
3. The experience was more immersive than mono viewing *once the rig was calibrated*.
4. *A maybe:* My slower f/7.5 dob seemed to show more of an increase in contrast with the binoviewer vs mono than with a faster f/5 reflector, but this needs more investigation.

## Eyepiece Impressions

Setting up my prized 12.5" Portaball dob in the back hayfield under the clear, moonless skies of Thursday, June 27th, here's what I noticed:

## ***The Ring Nebula***

I started here to get a magnitude test. As long as I've been using binoviewers, I've thought they were best for lunar and planetary use. (And they are indeed stunning for those applications.) However, did throughput actually decrease to the point where it made a difference for deep sky work?

M57 floated like a cosmic cheerio in a bowl of starry milk. The 12th magnitude star of the "coast" of the ring seemed a good test of magnitude.

Through the Nagler (mono vision), the star vanished with direct vision, and popped out easily with averted vision.

It did the same with the binoviewers! It *felt* like the Nagler edged it by 5%, but that could easily be imagination. I'd like to do a more detailed study of the throughput, **but the difference in this test, if any, was negligible.**

## ***NGC 6207***

This gem of a galaxy shines at the 11th magnitude near the great Hercules cluster M13. It's a treat to observe, and a fascinating distance comparison: roughly 30 million light years distant vs. M13's 25 thousand.

It appeared slightly brighter in mono, showing more obvious elongation and detail in stereo.

## ***Messier 20/The Trifid Nebula***

There's no bad way to observe M20, but here again, binoviewers showed more contrast with the lanes in the Trifid, as well as the distinction between the two main clouds of nebulosity.

## ***Messier 8/The Lagoon Nebula***

Binoviewers showed a hair more contrast in the dark veins in the spectacular view. The poor seeing added an unexpected effect: the twinkling of the stars added a ghostly candle flicker feel to the billowing clouds of gas.

In both M8 and M20, the larger image scale and more relaxed posture of binoviewing added to the "wow" factor. While feel is hard to quantify, it's worthy of pursuit.

## ***B86 "The Ink Spot"***

A previous observation of B86 sparked this project. An earlier view through the 8" f/7.5 dob had showed a dramatic increase in contrast and detail. Tonight's view through the 12.5" f/5 showed improvement with binoviewers, but not as much as the previous time.

Perhaps sky conditions weren't as good, or the focal ratio made a difference. I went back to my porch, and tried the 8" later that evening. While hard to tell, it *did* seem to make more of a difference in the smaller, slower scope. A test through a slow refractor is in short order.

In both scopes, it was easier to notice the extent of B86. It's a delightful sight, a blot in front of the small open cluster NGC 6520. A notch out of the cluster's starlight is the first clue of B86. With the binoviewers, the notch expands, takes shape, and is detectably darker than the background sky.

It looks like a giant squid got startled.

### ***Messier 17/The Swan Nebula***

Of all the sights in the summer sky, M17 is a favorite. Again, the binoviewers edged the mono Nagler with contrast and image scale.

That being said, I feel that an OIII filter and a lower power would be the best view. The 2x barlow built into the binoview unit makes that tricky (and I don't have dual 1.25" OIII filters).

### ***Messier 13***

Wow. Who am I to write about falling into half a million stars?

## **Gear and Methodology**

### ***Telescopes***

12.5" f/5 dobsonian of the "Portaball" design (a ball scope), with a Zambuto primary mirror (.992 Strehl ratio) and Antares secondary mirror, 4 vane spider.

8" f/7.5 dobsonian with Zambuto primary (also a .992 Strehl ratio), similarly excellent secondary with a curved spider.

### ***Eyepieces***

Televue binoviewers w/University Optics 24mm Konigs (effectively 12mm with the barlow of the binoviewers)

12mm Televue Type 2 Nagler comparison eyepiece in the 12.5" f/5

12.5mm University Optics "volcano top" ortho eyepiece in the 8" f/7.5

Magnifications: 132x in the Portaball (both the binoviewers and Nagler)

128x in the 8" dob with binoviewers, 123x with the ortho eyepiece

I logged observations with the 12.5" Portaball in a hayfield with no porchlights, etc. After returning back, I confirmed findings with the 8" f/7.5 from my back porch, which isn't as dark on the ground due to neighbor porchlights, but roughly 1/4 mile away from the hayfield, so nearly identical skies.



## Shortcomings in observation + next steps

This report has several weaknesses:

- Only one comparison eyepiece with each scope (12mm T2 Nagler in the Portaball, and 12.5mm ortho in the dob).
- Only one evening of serious observation.
- Only one optical design—the Newtonian reflector—tested.
- A limited number of objects observed.

Next steps include:

- Trying this test in a refractor. I'll be using my 102mm ED f/11 and possibly a 102mm f/7.
- Hearing about *your* observations.
- Studying the science of eyesight more.

## Annoyances and reasons why not to binoview

If deep sky observation depends on any edge, real or imagined, why wouldn't one binoview? Several reasons:

1. It's more expensive, both the unit, and having twin eyepieces.
2. Balance is an issue. Switching from a low power mono eyepiece to moderate power binoviewers is a pain when the scope keeps moving around.
3. Some tuning is required to make sure each eyepiece is focused right for each eye.
4. Some folks can't merge the stereo image, or don't have the same use of both eyes.
5. Eyepieces fog up easier with binoviewing
6. My unit is a 1.25 configuration, leaving out the 2" eyepieces.
7. The magnifications in my configuration are limited to moderate and high.

## Conclusions

It's not for everyone, and it's not for every time. But, these tests show binoviewing has been an overlooked tool in my collection for serious and enjoyable deep sky observing.

Please send thoughts, observations, and questions my way. Correspondence is most welcome. [Joshurban@protonmail.com](mailto:Joshurban@protonmail.com) or PO Box 783, Rustburg, VA 24588

And please feel free to forward and repost this report. Let's see what we can uncover.

Clear skies,  
Josh

**June 2024**

*Ctrl- Click on the picture see the source file and additional information*

**Tom Cerul**



**Ed Dixon**



**Ed Dixon**



**Ed Dixon**



**Ed Dixon**



**Ed Dixon**



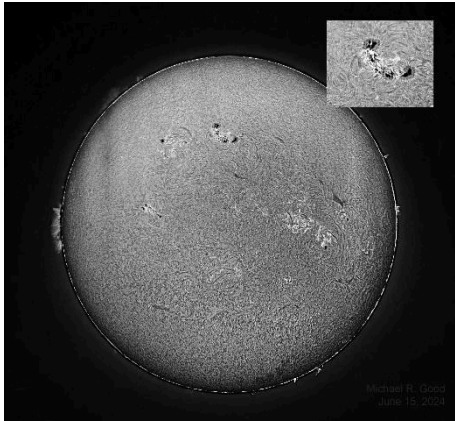
**Ed Dixon**



**Ed Dixon**



**Michael Good**



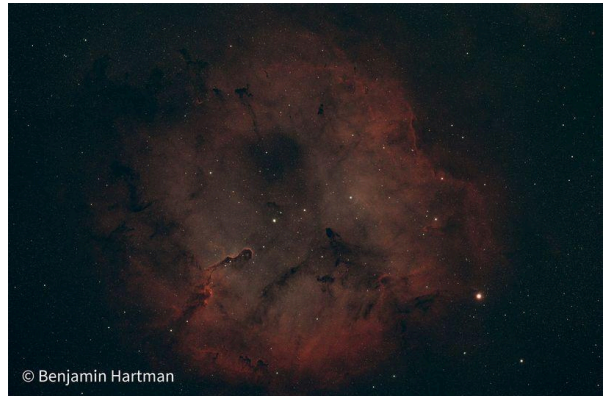
**Michael Good**



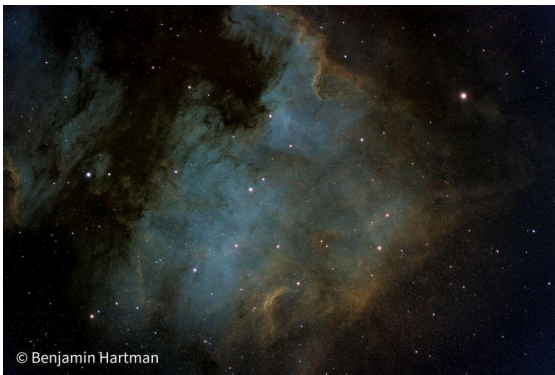
**Ben Hartman**



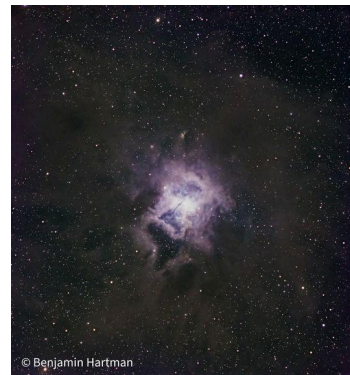
**Ben Hartman**



**Ben Hartman**



**Ben Hartman**





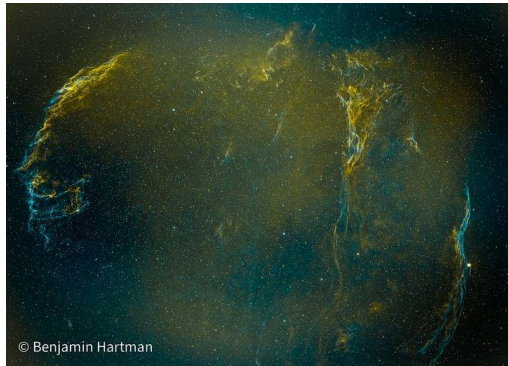
**Ben Hartman**



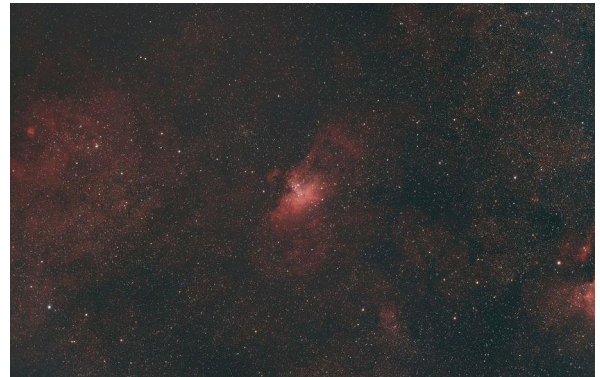
**Ben Hartman**



**Ben Hartman**



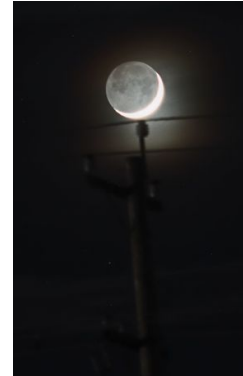
**Ben Hartman**



**Greg Shaffer**



**Dave Thomas**



# Monthly Calendar

**RVAS Monthly Meeting: Monday, July 15<sup>th</sup>, 7:30 p.m. (Informal “Celestial Café” chat session begins at 7:00 p.m.) STEM Building, Room ST112, Virginia Western Community College, Colonial Avenue, Roanoke, VA. (See directions in this issue.)** The James Webb Space Telescope has brought us stunning images and discoveries, but Hubble is breaking down, and Chandra looks likely to be defunded. So, what's next? The July meeting's featured speaker, our own John Wenskovitch, PhD, will discuss NASA's work on the next generation of space telescopes to replace these scientific stalwarts. John will focus on some of the proposals and the development of the upcoming ground-based telescope projects that are set to transform our understanding of the cosmos. Also on tap are our regular monthly member astrophotography, outreach and observing reports and announcements segments. Watch for the Zoom invitation and additional information during the week prior to the meeting.

**Weekend Observing Opportunities:** The following information on Fridays and Saturdays that may be suitable for observing is provided as a courtesy to Society members and other readers. The Society assumes no responsibility for the health or safety of anyone venturing out to stargaze, and cautions all who may do so to observe appropriate health and safety precautions.

- **Friday and Saturday, July 5<sup>th</sup> & 6<sup>th</sup>.** Sunset is at 8:44 p.m. Astronomical twilight ends at 10:35 p.m. The Moon sets at 9:05 and 9:40 p.m., respectively.
- **Friday and Saturday, July 26<sup>th</sup> & 27<sup>th</sup>.** Sunset is at 8:32p.m. Astronomical twilight ends at 10:16 p.m. The Moon sets at 12:15 and 1:26 p.m., respectively.
- **Future Weekend Observing Opportunities: August 2<sup>nd</sup> & 3<sup>rd</sup> and 23<sup>rd</sup> & 24<sup>th</sup>.**

## Astro-Quiz

Modest in size compared to the world's largest instruments, the Vatican Advanced Technology Telescope exhibits pioneering characteristics. What is most notable about the VATT's 1.8 meter (72 inch) mirror's specifications?

**Answer to Last Month's Quiz:** June's quiz asked if our Sun would be visible to your unaided eyes if stargazing from a planet orbiting the star Regulus. Regulus lies about 78 light years away. According to Dr. Jeff Mangum, of the National Radio Astronomy Observatory, the “distance modulus,” a relationship between the “apparent” (m) and “absolute” (M) magnitudes, yields the answer. “Apparent” is how bright it appears from Earth with our unaided eyes—as dim as about magnitude 6. “Absolute” is its brightness if placed at a standard distance of 10 parsecs (about 32.6 light years). For the mathematically inclined, the relationship is:

$$m - M = 5 \log_{10}(d/10) + 5, \text{ where } d \text{ is the distance in parsecs (pc)}$$

Using this relationship, it's calculated that our Sun's absolute magnitude of 4.83 would appear as bright as a star with apparent magnitude 6 if it were at a distance of about 17.1 pc, or about 55.8 light years. So, the Sun could not be seen with the unaided eye from Regulus's distance of 78 light years; in fact, it would have dimmed out of view some 22 light years before getting that far. Congratulations to our newest member, Saniya Tumbde, who also thought the Sun wouldn't be visible from Regulus. Have an answer to this month's quiz (or a quiz question and answer to suggest)? E-mail it to [treasurer@rvasclub.org](mailto:treasurer@rvasclub.org)!