Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

November 2026 ***Volume 85, Issue 3***

Celebrating 89 Years of Astronomy

Next Meeting

When: Sat. Nov. 14th, 2026

Time: 7:30 pm

Speaker: Dr. James B. Cole

Where: In-Person (UMD Obs.) and Online (Zoom)

See instructions for joining the meeting via Zoom on Page 8.

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Image Credit – NASA, ESA, and X. Huang (University of San Francisco); Processing: Gladys Kober (NASA/Catholic University of America)

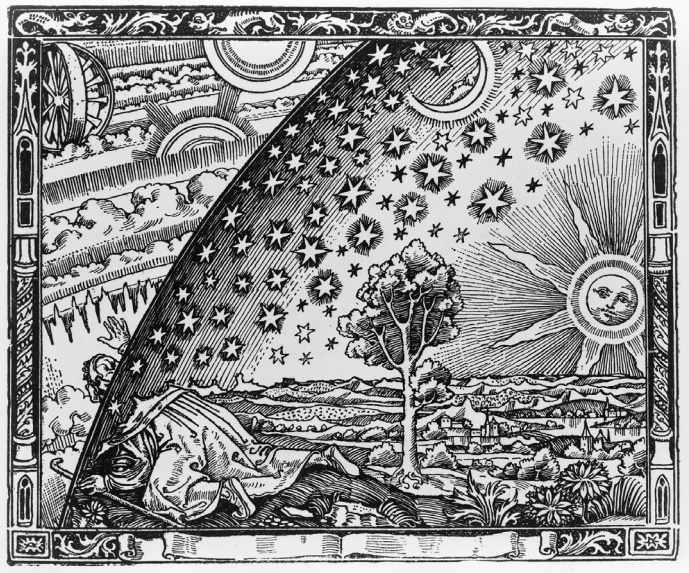
The Hubble image above shows two gravitationally lensed images of a faraway galaxy (upper left and lower right) caused by a nearer elliptical galaxy. More info about the image is at dailygalaxy.com/2026/10/nasas-hubble-spots-a-cosmic-illusion/.

Annual Membership Dues are Past Due

Instructions to join NCA or renew your membership, are available at capitalastronomers.org/ (top right corner). Please fill out the electronic form! Dues payment is electronic (preferred!) or by check (see information for doing so on Page 9). Please support NCA by applying for or renewing your membership at this time to continue receiving Star Dust. ***Thank you.***

Models of the Universe (What We Can and Cannot Know. What Do We Know? How and When Did We Know It?)

Dr. James B. Cole - Leidos



How can we infer the shape and structure of the universe? How much confidence do we have in our deductions about the greater part of the Universe which we cannot access?

"The miracle of the appropriateness of the language of mathematics to the formulation of the laws of physics is a wonderful gift, which we neither understand nor deserve." Thus remarked Eugene Wigner, one of the greatest physicist / mathematicians of the 20th Century (contributions to fundamental science on a par with Einstein).

Models too can have almost mystical powers. Quarks were first considered a convenient fiction to explain the multiplicity of subatomic particles, but they turned out to be real. Except for the infinitesimal fraction of the Universe which we can directly access, our understanding

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Recent Astronomy Highlights

New Dwarf Planet Candidate Discovered

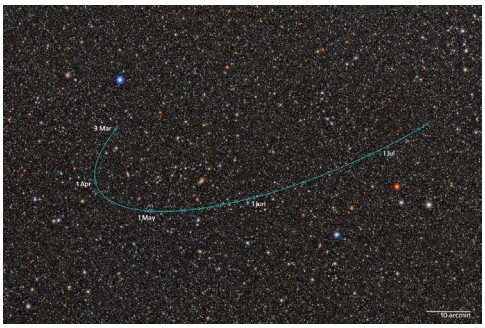


Image showing the apparent locations of dwarf-planet candidate ED138 from March 2026 to the beginning of July. Image Credit - NSF–DOE Vera C. Rubin Observatory/NOIRLab/SLAC/AURA Acknowledgement: Image Processing: M. Jurić (UW), D. de Martin and M. Zamani (NSF NOIRLab)

Astronomers working at the Vera Rubin Observatory have discovered what could be another dwarf planet in our Solar System. If it proves to actually be a dwarf planet, it will be only the sixth one discovered and will join Ceres, Pluto, Haumea, Makemake, and Eris in that category. Designated as 2026 ED 138, the candidate is currently 46 astronomical units (AUs) away from the Sun, with an astronomical unit being the average distance between the Sun and Earth. For comparison, Neptune is 30 astronomical units from the Sun on average. A dwarf planet is defined as an astronomical object that is large enough to take on a roughly spherical shape due to its own gravity, but is not massive enough to clear other astronomical objects from near its orbit. ED 138 is estimated to be between 600 and 1500 kilometers in diameter. One reason it has remained undiscovered until now is that, from the perspective of Earth, it appears to be passing through the crowded starfield of the Milky Way. While this is the first such potential dwarf-planet discovery by the Rubin Observatory, there is a good chance it won't be the last. More information about the discovery of ED 138 is at rubinobservatory.org/news/rubin-first-dwarf-planet-candidate.

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Abstract and Biography – continued from page 1

is through models based on observations and inference following the laws of logic and mathematics, constrained by the almost miraculous efficacy of Occam's razor.

We briefly review the historical stepping stones to our current understanding from the philosophy of Anaximander, on through the models of Ptolemy, Copernicus, and Kepler, and finally the Big Bang.

How can we infer the shape and structure of the universe? We delve into a few technical details: How do we measure the size of stars and their distances; what do we (think) we know about how stars evolve and the Big Bang?



Biography: I began my professional career at the University of Maryland (PhD, particle physics). I became interested in the structure of the Universe as a teaching assistant in the Astronomy Dept. We taught some of pioneering methodologies of Henrietta Leavitt in the classes. I was awarded a National Research Council post-doctoral fellowship at NASA's Goddard Space Flight Center. My work there included a NASA balloon experiment designed to detect antiprotons in cosmic rays. Many exotic theories about their origin were extant: arrivals from an antimatter galaxy, decay of exotic particles, etc. My branch chief supported a more prosaic explanation: high energy (ordinary) protons interacting with ordinary matter in the upper atmosphere. We proved this via detailed simulations and modelling of the experimental instrumentation, which incorporated the known high energy proton flux, and antiproton production cross sections.[1] I realised that the extraction of information from noisy and imperfect data[2], based on physical models is a common denominator of basic science.

I transitioned to the US Naval Research Laboratory, where I developed models and algorithms to simulate wave propagation in complicated environments. This initiated my career in computational physics. I led and managed a joint research project[3] funded by Rohm and Hass Corp. to apply my algorithms to their industrial optics problems.[4]

During a chance encounter with a member of a DARPA team that was planning to visit research laboratories in Japan, I causally mentioned that I speak technical Japanese, and was invited to join the team. After the tour I was invited by the NTT Basic Research Laboratory (Japan) as a visiting professor. where I gave seminars on Lie group theory and worked with the brain research group to model early vision.[5] We also examined

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Exploring the Sky



The Exploring the Sky program will take a hiatus until April of 2027.

Exploring the Sky is a joint program between the National Capital Astronomers and the National Park Service Rock Creek Park Nature Center and has been run since 1948 at this location, the field at the corner of Glover and Military Roads in the District. There is an adjacent parking lot. It is free and all are welcome who have an interest in observing the heavens. It's not an ideal dark-sky location but we can see Solar System objects, open and globular clusters and maybe a fuzzy galaxy or two.

More information can be found at NCA's web site, www.capitalastronomers.org or the Rock Creek Park web site, www.nps.gov/rocr/planyourvisit/expsky .htm. You can also call the Nature Center at (202) 895-6070. For general information on local astronomical events visit www.astronomyindc.org.

The submission deadline for December's Star Dust is November 24th.

Clear Skies!

Abstract and Biography – continued from page 2

the "invariance problem" in pattern recognition for industrial robot vision.[6]

Later I transitioned to the University of Tsukuba in Japan (tenured professor), and pioneered a new high-precision methodology for computational photonic, optics and quantum science.[7]

After more than twenty years in Japan I returned to the US on a senior research fellowship sponsored by the Air Force Institute of Technology as a visiting professor, funded by the National Academy of Sciences, where I investigated Bayesian machine learning methodologies.[8,9]

I am currently employed in industry as a scientist working on quantum and photonics research.

[1]J. B. Cole, J. F. Ormes, *The low energy atmospheric antiproton albedo*, AIP Conf. Proc. 183, 386–387, doi.org/10.1063/1.38002.

[2]J. B. Cole, *The Statistical Mechanics of Image Recovery and Pattern Recognition*, American Journal of Physics, vol. 59, no. 9, pp. 839-842 (1991).

[3]CRADA between NRL and Rohm & Haas Co., Title: Computational Approach to Mie Scattering, NRL number: NCRADA-NRL-95-090.

[4]S. A. Palkar, N. P. Ryde, M. R. Schure, N. Gupta, J. B. Cole, *Finite Difference Time Domain Computation of Light Scattering by Multiple Colloidal Particles*, Langumir, vol. 14, no. 13, pp. 3484-3492 (June, 1998).

[5]S. Naito, J. B. Cole, "The Gravity Lens Illusion and its Mathematical Model," Chapter 3, pp. 3950, in "Contributions to Mathematical Psychology," G.H. Fischer, and D. Laming, editors (Springer Verlag, 1994).

[6]J. B. Cole, S. Naito, *A Lie Group Theoretic Approach to the Invariance Problem in Feature Extraction and Object Recognition*, Pattern Recognition Letters, vol.12, pp. 519-523 (1991).

[7]J. B. Cole, and S. Banerjee, "Computing the Flow of Light, Nonstandard FDTD for Photonics Design," SPIE Press, 2017 spie.org/Publications/Book/2250613?SSO=1

[8]J. B. Cole, B. V. Egner, et al, *Unsupervised Probability Density Expectation Maximization Algorithm for Particle Identification in Pulse-Shape Discrimination Applicatio*ns, SORMA West 2021 Session PS 02-21, sormawest.org/poster-session-ps-02/

[9]R. J. Olesen, J. B. Cole, et al., *Regenerative neural network for rotating scatter mask radiation imaging*, www.sciencedirect.com/science/article/abs/pii/S1350448721000780, (R.J. Oleson PhD dissertation).

Schedule of Upcoming NCA Meetings and Speakers

Bryan Vandrovec

Nov. 14, 2026 -- James B. Cole (Leidos) *Models of the Universe (What We Can and Cannot Know. What Do We Know? How and When Did We Know It?)*

Dec. 12, 2026 -- *Members' Only Observing Session (no speaker)*

Jan. 9, 2027 -- John Sojka Jr (NASA Solar System Ambassador) *LCROSS - A Nothingburger?*

Feb. 13, 2027 -- Saswatee Banerjee (Photonic Wave Solutions LLC) *Computational Photonics: Finite-Difference and other Computational Methods in Design and Fabrication of Photonic Devices*

Mar. 13, 2027 -- Guy Brandenburg (President, National Capital Astronomers) *Telescope Making from 1609 to Today, Home Made and Commercial*

April 10, 2027 -- Prasad Agrahar (National Capital Astronomers) *TBD*

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Sky Watchers

November/December

Mercury and Venus will be in the morning sky throughout the period with Mercury reaching greatest western elongation on 11/20 (see below). Mars and Jupiter rise before midnight. Saturn rises in the afternoon and will be up until well after midnight.	
11/17	The Leonids meteor shower peaks the evening of the 17th into the morning of the 18th with approximately 15 meteors per hour. Viewing conditions should be ideal after midnight with the setting of the Moon.
11/20	Mercury reaches greatest western elongation and will be 19.6 degrees from the Sun.
10/24	Full Moon and Supermoon – 9:55 a.m.

Time is in EST (Eastern Standard Time).

President's Corner

Guy Brandenburg
President, National Capital Astronomers

Special December Meeting!

Put it on your calendar: December's NCA meeting next month (12/12/26) will be a special members-only event. Exactly what will happen will come from a survey of the membership that Chong Wang is organizing, so make sure to respond to his request! There will be more details soon.

Sidewalk Astronomy

NCA's crew of sidewalk astronomers have been busy during the last few months, setting up telescopes at a variety of locations around DC and vicinity, and delighting passers-by with (quite often) their very first look through a telescope at the Sun, the Moon, Saturn, Jupiter, Venus, double stars, galaxies, and star clusters. So far this fall, in addition to the regularly-scheduled Exploring the Sky in Rock Creek Park (which was finally a success in October!) we have set up scopes by day or by night at:

- 6th and Florida Avenue NW
- Camp Riverview near Point Lookout, MD
- Connecticut Avenue at McKinley St NW
- Malcolm X / Meridian Hill Park, 16th St NW
- Mount Pleasant and Irving Streets NW
- Turkey Thicket Recreation Center on Michigan Avenue NE
- Union Station NE
- Washington Harbour on the Georgetown waterfront
- Columbia, Frederick and Gaithersburg, MD

(By contrast, our regularly-scheduled daytime solar observing events at the C&O Canal at Great Falls National Park, and Exploring the Sky events in Rock Creek National Park this fall have often been clouded. The one remaining EtS event on November 7 will have occurred (or will have been canceled) before you read this, but no more solar events are planned for Great Falls this year.)

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Recent Astronomy Highlights – continued from page 2

Lightest Known Neutron-Star Binary System Confirms General Relativity

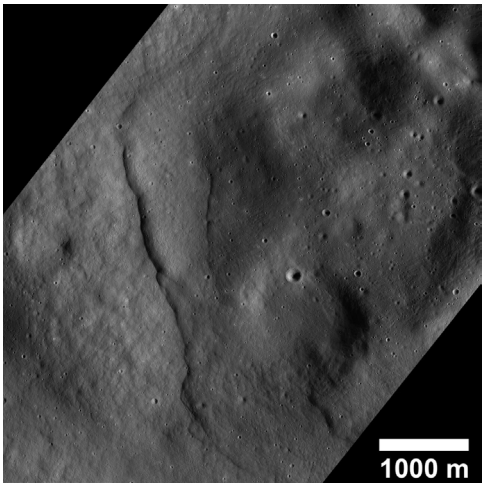
A binary system composed of two neutron stars, with one of the two stars weighing 1.3 times the mass of the Sun and the other weighing 1.19 times the mass of the Sun, has been used to provide additional proof of the predictions of Einstein's General Relativity. Estimated to be between 4200 and 6500 light years away, the two neutron stars are right about at the lowest mass that can actually be formed into a neutron star. They are also one of the closest orbiting pairs of neutron stars, on average, approximately twice the distance of the Moon from the Earth. They orbit each other every 2 hours and 22 minutes. The heavier of the pair is a pulsar which rotates approximately 43 times a second. Radio telescopes are able to pick up emissions from the pulsar which are used to discover the orbital dynamics of the pair. These observations show that the orbital distance between the pair is shrinking about nine feet per year. Also, the elliptical orbit is shifting almost 18 degrees per year. Finally, the positions of the neutron stars in their orbit cause miniscule changes in the timing of signals received from the pulsar. The measured changes in those signals are all within one percent of what is predicted by General Relativity, once again proving the power of Einstein's theory. Additional information is at www.livescience.com/physics-mathematics/extreme-record-breaking-star-system-proves-einstein-right-yet-again.

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Recent Astronomy Highlights – continued from page 4

Over 10,000 Fault Lines Identified on the Moon



Lobate Scarps in the Mouchez L impact crater. Image Credit - NASA/ KARI/ASU/Intuitive Machines/ Smithsonian

Unlike the Earth, which has multiple tectonic plates at its surface, the lunar surface is one plate. This might lead one to think that no seismic activity would take place. But Moonquake data from seismometers planted on the Moon during the Apollo missions has shown that the lunar surface does indeed experience periodic quakes. In addition, high-resolution images taken by NASA's Lunar Reconnaissance Orbiter show thousands of faults spread across the lunar surface, far more than lunar scientists expected. Known as lobate scarps, these faults have occurred because of the shrinkage of the Moon due to cooling of its interior over at least the past billion years, a process that is still ongoing today. One estimate is that the Moon's radius is still shrinking by between two and four inches per million years and that the total shrinkage over the past 400 million years is approximately 148 feet. Analysis of the data from the Apollo seismometers shows that at least some of the lobate scarps are active faults, a fact that has implications for the placement of any future lunar colonies. More information can be found at gizmodo.com/nasa-images-reveal-10000-young-faults-on-the-moon-thats-a-problem-2000826463.

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President's Corner – continued from page 4

If you've never taken part in sidewalk astronomy, you are missing out on a lot of fun! It's a great way to meet lots of happy people and talk for hours about important issues affecting us all, without going to a bar or a concert! And it's free! Here are some photos of some of our recent sidewalk astronomy events:







The three pictures above were taken at Irving and Mount Pleasant Streets, NW.



Left - A participant enjoying a view of the Sun through one of the NCA's Coronado 60mm H-alpha telescopes at the Georgetown Waterfront. Right – Taken at the October Exploring the Sky session.



Event for students, parents, and staff at H.D. Cooke Elementary, held at Malcolm X (or Meridian Hill) Park in NW DC.

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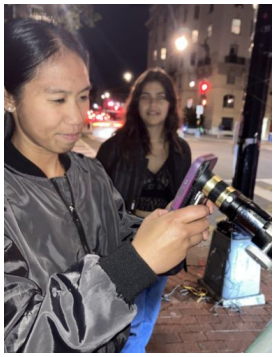
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Left - Trying to take a picture through the eyepiece is always a challenge.
Middle – They decided to sketch one of our telescopes!
Right – QR code to join the Google Group and receive email notifications.

As you know, all of these astronomy happenings are entirely weather-dependent. If you would like to be notified of an upcoming sidewalk astronomy event, you can sign up for the NCA sidewalk astronomy google group by scanning the QR code above or join the Washington (DC) Area Astronomy Meetup at www.meetup.com/astronomy-125/ or the NCA list-serve by sending an email to capitalastronomers+subscribe@groups.io.

School Without Walls High School Astronomy Interns

Three 11th-graders from School Without Walls SHS volunteered to do their required internship with NCA this semester, and we've been working together on solar sidewalk astronomy and other tasks on Tuesdays and Thursdays from 2 to 6 pm. I have found them to be extremely reliable, and to take great initiative. They quickly learned how to use the solar sidewalk astronomy equipment, and have been doing a great job of showing folks how to observe and engaging them in conversation about what they are seeing. I hope to have them write a bit for Star Dust next month about their experience.




Left – Guy and (left to right) Leighton Millard-Colwell, Xavier Jackson, MK Edwards. Right – Students learning to use a Dobsonian telescope built at NCA's telescope-making workshop by the late Jack Booth.

When it's clear, we go out to various sites and set up solar scopes and let people see sunspots (if any) with the Sun funnel and the ever-changing texture of filaments, prominences and so on that we can see on the chromosphere with the H-alpha scopes. (When the atmosphere is steady, that is.) When it's cloudy, there are other tasks at the Chevy Chase Community Center, where the NCA Telescope Making, Modification, and Maintenance Workshop is located. So far, they have reorganized over 50 years of back issues of Sky & Telescope and Astronomy magazines, and separated out duplicate copies that people are delighted to take off our hands, for free, at public events. They have also begun cataloging our extensive collection of glass blanks and tools of all sizes. If time permits, they might even build their own telescopes with the excellent materials we have on hand.

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Star Trek at 60, the Physics of Warp Drives, and Our Real Quest for Strange New Worlds

Bryan Vandrovec

Vice President, National Capital Astronomers

The year 2026 marks the 60th anniversary of *Star Trek*, which first aired on September 8, 1966, and introduced millions of viewers to an optimistic vision of space exploration. For six decades, the series has invited people of all ages to look up at the night sky and imagine humanity's future among the stars. At the narrative heart of that grand adventure was the warp drive—a fictional propulsion system that made vast interstellar distances traversable and kept both the Enterprise and the story moving.



IXS Enterprise concept art by Mark Rademaker in collaboration with NASA's Dr. Harold G. White, based on the mathematics of an Alcubierre warp drive. (Usage permitted under a Creative Commons Attribution-ShareAlike license.)

While warp drive began as science fiction, it eventually caught the attention of theoretical physicists testing Albert Einstein's Theory of General Relativity. Einstein showed that gravity is not an invisible force pulling objects together, but rather the geometric bending and warping of spacetime by mass and energy. That pull you feel toward the ground is actually the Earth bending some of your forward motion through time into spatial dimensions. Weird. While Special Relativity establishes that no physical object can travel through space faster than the speed of light, General Relativity places no speed limit on the stretching or movement of space itself. In 1994, Mexican physicist Miguel Alcubierre used this mathematical loophole to propose a "warp bubble" that contracts space in front of a starship and expands space behind it, allowing the vessel to ride a moving wave of spacetime like a surfboard. Years later, NASA physicist Harold "Sonny" White at the Eagleworks lab refined the geometry into a donut-like ring (torus), significantly lowering the initial energy calculations.

Yet, despite these clever equations, real-world physics presents hurdles that remain far beyond our current technology. Compressing and expanding space requires hypothetical "exotic matter" with negative mass or negative energy to produce repulsive gravity—a substance never observed in nature. While quantum mechanics exhibits tiny blips of negative energy density between conducting plates via the Casimir effect, scaling this up by 30 orders of magnitude to power a starship would require a truly colossal amount of energy, roughly equal to the mass of Jupiter, related by that famous equation $E = mc^2$. And there are other challenges. Moving through space at warp speed would collect interstellar particles on the bubble's leading edge, releasing a devastating gamma-ray burst when arriving at the destination. Also, superluminal travel breaks causality—the rule that cause must precede effect—creating time-travel paradoxes that many physicists believe nature strictly forbids.

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Star Trek at 60, the Physics of Warp Drives, and Our Real Quest for Strange New Worlds – continued from page 7

Even if human faster-than-light travel remains a distant or impossible dream, we do not need warp drives to seek out strange new worlds. The laws of physics and recent technology innovations do allow us to explore the cosmos through real observational science. Flagship NASA programs, observatories, and planet hunters like Kepler and TESS have already confirmed thousands of real exoplanets, while the James Webb Space Telescope studies their atmospheres, and the newly launched Nancy Grace Roman Space Telescope will seek more exoplanets. Crucially, exoplanet discovery is no longer restricted to large research institutions; through NASA citizen science initiatives and amateur astronomy groups, citizen scientists and amateur observers actively contribute to mapping alien worlds by analyzing stellar light curves and tracking planetary transits, as explained to us by guest speaker Dr. Robert Zellem during his talk "*Exoplanets: Finding Life in the Galaxy.*"

On a personal note, watching *Star Trek: The Next Generation* while growing up was a major catalyst for my own lifelong passion for astronomy. Like so many fans, I was deeply saddened by the late-October passing of Walter Koenig, who played Ensign Pavel Chekov, the intensely loyal navigator (and relief science officer) on the bridge of the Enterprise in the original series, as well as that of Sir Patrick Stewart, whose portrayal of Captain Jean-Luc Picard provided an unforgettable model of ethical curiosity, wisdom, and wonder. *Star Trek* has inspired countless people both on and off the screen. Actor Tim Russ—who portrayed Ensign and Lieutenant Commander Tuvok in *Star Trek: Voyager* and recently reprised his role in 60th-anniversary audio productions—has shared how his fascination with space began while following the Gemini and Apollo Moon missions, leading him to take up amateur astronomy in his thirties. Russ has often highlighted how *Star Trek* mirrors our societal challenges, encouraging us to evaluate people by their character and actions rather than material wealth, while actively supporting public astronomy organizations like The Planetary Society. His journey echoes that of many NASA astrophysicists and planet hunters who trace their careers back to watching the *Enterprise* sail across the screen. As we train our telescopes on the night sky this season, we are reminded that whether through physical optics or creative imagination, our drive to explore the final frontier brings us closer together.

ScienceKind

(Editor's Note – One of the purposes of Star Dust is providing NCA members with resources to further their own exploration and understanding of the Universe. NCA members are always invited to send recommendations for such resources to me if they want them published in Star Dust. In that spirit, below is an introduction by Kasper Roelvink, co-founder of ScienceKind, to just such a resource.)

ScienceKind hosts free live talks given by the scientists doing the work. There is one talk per week most weeks, and the talks are open to anyone. Each talk runs forty-five minutes on Zoom Webinars, with time for audience questions afterward. Signing up at www.sciencekind.com costs nothing, and from there you can register for upcoming talks and watch past recordings.

There are three talks coming up that National Capital Astronomers members may like, all starting at 9:30 a.m. Pacific, which is 12:30 p.m. Eastern. On Wednesday, November 18th, **Professor Viggo Hansteen** of the Lockheed Martin Solar and Astrophysics Laboratory and the SETI Institute gives a talk entitled **Bombs and Flares in the Solar Atmosphere** on the Sun's magnetic field and what causes flares and coronal mass ejections. On Wednesday, November 25th, **Dr. Isabel Angelo** of the SETI Institute and the University of California, Berkeley gives a talk entitled **Needles Hiding in a Cosmic Haystack: The Ongoing Search for Other Worlds** on how more accurately measuring properties of the host star, specifically its mass and size, changes what we think we know about its planets. And on Wednesday, December 9th, **Dr. Ann Marie Cody**, Research Scientist at the Carl Sagan Center of the SETI Institute, gives a talk entitled **Anomalous Variability with Space Telescopes**.

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Recent Astronomy Highlights – continued from page 5

Treble Clef Galaxy Cluster Collision Explained

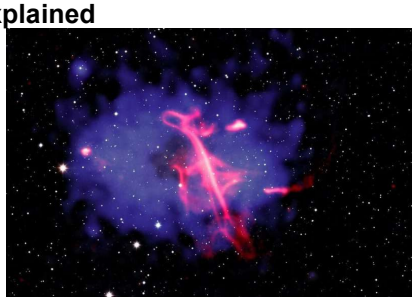


Image Credit - X-ray: NASA/CXC/ INAF-IRA/A. Botteon et al.; Infrared: UKIDSS-GPS; Radio: ASTRON/ LOFAR; Image processing: NASA/CXC/SAO/N. Wolk

Imaging from NASA's Chandra X-ray Observatory shows that the Treble Clef, so named because of its resemblance to the musical notation, was caused first by an outburst from a supermassive black hole followed by a collision between two galaxy clusters. Additional information can be found at phys.org/news/2026-10-chandra-treble-clef-galaxy-cluster.html.

Calendar of Events

The NCA Telescope Making, Maintenance, and Modification Workshop (TMMMW) is held on Tuesdays & Fridays, from 6:00 to 9:00 PM, in the basement wood shop of the Chevy Chase Community Center. The CCCC is located at the intersection of McKinley Street and Connecticut Avenue, NW, a few blocks inside the DC boundary, on the northeast corner of the intersection. There is no cost to attend. At the TMMMW, you can make a telescope from scratch, or else get assistance with collimating or modifying a scope you already own. We can also re-aluminize mirrors up to 12.5" in diameter for much less money than you would pay anywhere else. For additional information visit Guy Brandenburg's Website. To contact Guy, call 202-262-4374 or Email Guy.

Open House talks and observing at the University of Maryland Observatory in College Park are temporarily suspended. When they resume, they will be on the 5th and 20th of every month at 8:00 pm (Nov.-Apr.) or 9:00 pm (May-Oct.). Updates are posted at www.astro.umd.edu/openhouse.

Next NCA Meeting – **Dec. 12, 2026 --** *Members' Only Observing Session (no speaker)*

National Capital Astronomers

Online Membership Application and Renewal

To submit or renew a membership to the National Capital Astronomers, and pay dues, please visit capitalastronomers.org/. There is a Google form for membership on the upper right. Please fill out the Google form, including your email address, in order to continue receiving issues of Star Dust.

Membership Rates

$ 20 – 1 year Individual/Family
$ 45 – 3 years Individual/Family
$ 5 – 1 year Student
$200 -- Life Member

(Please note that membership dues will go up in coming years, so consider joining/renewing with the 3-year option in order to save money.)

If you prefer to pay membership dues by check,

- make check payable to ***National Capital Astronomers*** then
- mail to: **Jim Simpson, NCA Treasurer; 3845 Wayson Road, Davidsonville, MD 21035.**
- Don't forget to also fill out the membership Google form, even if renewing!

NCA can use your help! Please indicate on the membership Google form which astronomy activities are of interest to you. In addition, we are also looking for volunteers! We need new officers, help with our website and social media, and help with outreach and science fair events.

Thank you!

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Celebrating 89 Years of Astronomy



Image Credit - NASA/ESA/CSA/STScI/Alyssa Pagan
The James Webb Space Telescope shown above is of a star-forming region in NGC 7129, a region of dust clouds approximately 3,300 light years from Earth. More information is at phys.org/news/2026-10-webb-captures-stars-early-stages.html.

To join or renew online, visit capitalastronomers.org and look in the right column for the Membership Form and PayPal links.

Next NCA Meeting:

2026 Nov. 14th
7:30 pm
Dr. James B. Cole

- *Virtual attendees:* To join the meeting via Zoom, use the following link:

umd.zoom.us/j/95292476448?pwd=6ktXhegElsP7Wc1W5o8D31yl2Gv8za.1

- *In-person attendees*: The UMD Astronomy Observatory is at 3255 Metzerott Road, College Park, MD 20740. Directions: www.astro.umd.edu/openhouse/1visiting/directions.html

Please note that NCA Zoom meetings are often recorded.

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