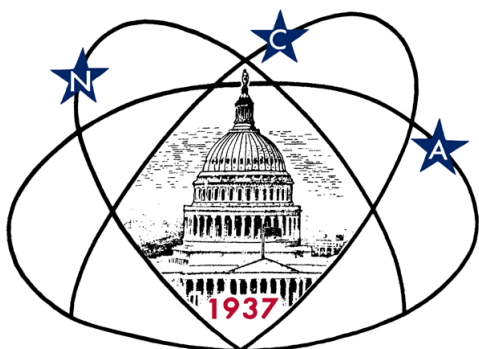




Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

September 2026

Volume 85, Issue 1

**Celebrating 89 Years
of Astronomy**

Next Meeting

When: Sat. Sept. 12th, 2026

Time: 7:30 pm

Speaker: Zachary Gleiberman

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

See instructions for joining the
meeting via Zoom on Page 9.

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Image Credit – NASA, ESA, CSA, STScI;
Image Processing: Alyssa Pagan
(STScI)

JWST's infrared image of the Lion Nebula, NGC 2392, shows gas and dust being dispersed by a central white dwarf. More information about the image can be found at science.nasa.gov/asset/webb/lion-nebula-nircam-and-miri-image/.

Annual Membership Dues are 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 8). Please support NCA by applying for or renewing your membership at this time to continue receiving Star Dust.

Thank you!

Observatory DC: Amateur Astronomy from the District of Columbia

Zachary Gleiberman – National Capital Astronomers



Image Credit – Zachary Gleiberman

Most amateur astronomers will run from DC to find a dark site to observe from. Not so fast. I'll be speaking about how DC is an incredible place to observe the heavens and get a sense for how vast and beautiful our Universe really is. This is going to be a practical discussion on what astronomical objects you can see from DC, and some lesser-known facts about those objects that you might not have heard of. You're going to be

Recent Astronomy Highlights

Little Red Dots = Black Hole Stars?

One of the biggest mysteries to come out of the observations of the early Universe by the James Webb Space Telescope is the existence of the little red dots. One theory held that such little red dots are ancient active galactic nuclei, AGN, galaxy centers with supermassive black holes. However those little red dots do not display the same typical spectrums generated by AGN in more recent times. A recent find may have led to a solution to this mystery and brought to light previously unknown astronomical objects—black hole stars. Astronomers recently conducted a survey known as “Mirage or Miracle”, MoM, using JWST. The survey name comes from its purpose, to discover if what appear to be brighter-than-expected galaxies in the early Universe—miracles—were in fact something else—mirages. That survey brought the discovery of an object that was very red and incredibly bright. That object has been classified as MoM-BH*-1. BH* is an abbreviation of the new term “black hole star.” The object is far too bright to be one of the enormous stars that theoretically developed in the early Universe, so a black hole seemed to be the most likely explanation. However it does not have the typical spectrum of an AGN. Using simulations, astronomers subsequently came up with an alternative explanation, a black hole of approximately 100,000 times the mass of our Sun surrounding by an extended cloud of gas around the size of our Solar System, made up almost exclusively of hydrogen and helium. Such a cloud would allow the interior black hole to feed voraciously while also blocking light in some portions of the spectrum from escaping, giving it a very reddish appearance. More information about this discovery and theory is at www.sciencedaily.com/releases/2026/08/260813045538.htm.

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**The submission
deadline for October's
Star Dust is September
25th.**

Abstract and Biography – continued from page 1

surprised on what you can see from the middle of our nation's capital, like how you can see the Andromeda Galaxy...with binoculars. This is an informal, practical discussion informed by my own personal amateur astronomy journey in DC since 2020.



Biography: Zack Gleiberman is a trustee of the National Capital Astronomers and a 12-year resident of the District of Columbia. Originally from Los Angeles, he fell into the world of amateur astronomy during the pandemic and is active in NCA's telescope making workshop and sidewalk astronomy efforts in DC.

Schedule of Upcoming NCA Meetings and Speakers

Bryan Vandrovec

Sept. 12, 2026 -- Zachary Gleiberman (NCA) Observatory DC: Amateur Astronomy from the District of Columbia

Oct. 10, 2026 -- Nicholas Kirschner (NASA's Goddard Space Flight Center, GWU) The Compton Pair (ComPair) Mission

Nov. 14, 2026 -- James Cole (Leidos) Models of the Universe: What We Can and Cannot Know. How We Know It and When We Knew It.

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

Jan. 9, 2027 -- TBD

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

Exploring the Sky



Exploring the Sky-2026 78th Year

National Capital Astronomers / National Park Service

18 Apr 8:00 pm M45, Orion, Jupiter

16 May 9:00 pm M44, Leo, Arcturus,
M13, Jupiter, Venus (?)

20 Jun 9:00 pm Leo, Bootes, M13,
Moon, Venus, Beehive

18 July 9:00 pm Moon, M13, Summer
Triangle, Venus

15 Aug 8:30 pm Moon, M13, Summer
Triangle, M57, M31, Venus

19 Sep 8:00 pm Moon, Summer
Triangle, M31, M13

17 Oct 7:30 pm Summer Triangle,
Moon, M31, Saturn

7 Nov 7:00 pm Summer Triangle,
Pegasus, M31, Saturn, Moon

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 still see Solar System objects (even the occasional comet), open and globular clusters and maybe a distant galaxy or two. If it is cloudy or raining observing is, of course, cancelled. As a bonus, come to the Nature Center an hour before the observing starts for a free planetarium show on that night's sky.

For more information about Rock Creek Park, please visit

www.nps.gov/rocr/planyourvisit/nature-center-and-planetarium.htm. To learn about their planetarium programs and scheduling, visit www.nps.gov/rocr/planyourvisit/calendar.htm. You can also explore keywords like "astronomy" or "dark skies," or simply reach out to the Nature Center directly at 202.895.6070.

Information on joining the National Capital Astronomers, which is 86 years old, can be found at capitalastronomers.org.

Join us for an evening of celestial wonder!

President's Corner

Guy Brandenburg

President, National Capital Astronomers

News items:

- The Nancy Grace Roman Space Telescope has launched and is on its way to its Lagrange Point observing location—assuming nothing goes wrong. Dr Roman, who led the effort that culminated in the Hubble Space Telescope, was an active member and officer of NCA until her death in 2018. This telescope, if it works as planned, will revolutionize astronomy, just as the Vera Rubin Observatory (again named after a ground-breaking astronomer and former NCA member) in Chile will.
- NCA and DC's Department of Parks and Recreation have a long history together. For many decades, DPR has been providing NCA with free space and utilities for our telescope making and modification workshop at the Chevy Chase Community Center, and NCA has now brought telescopes twice to DPR's dark-sky summer camp, located in far southern Maryland near Point Lookout. A whole bunch of inner-city campers there, both young and elderly, got their first glimpses ever through a telescope, and were thrilled. We are making plans to have more sidewalk astronomy events at DPR facilities and rangers in every ward across the nation's capital. NCA has donated a large Meade solid-tube Dobsonian (which NCA received as a donation and I partly rebuilt) for the DPR staff to use any time they want. The location is Bortle 3—if the security lights get turned off.
- We also have ongoing partnerships for public observing with the National Park Service at both the Rock Creek Nature Center & Planetarium and the C&O Canal Visitor Center near Great Falls (MD), as well as with the Maryland-National Capital Park & Planning Commission's rangers in Montgomery and Prince George's Counties. (Thanks, Chong!)
- Repairs to the long-closed Rock Creek National Park Nature Center and Planetarium have finally begun, according to a NPS ranger I spoke to recently. It's been closed since April 8, but there is still no date set for re-opening the facility. Until it's fixed, planetarium shows before our joint Exploring the Sky events will not happen. Somewhat related: The 90-position, brightly-illuminated golf driving range and illuminated clubhouse at the Rock Creek Golf Course are still in the plans, unfortunately.
- Speaking of Exploring the Sky (EtS), poor weather has meant only one of our five planned events so far this year actually occurred. Perhaps next year we could negotiate a fixed backup date. I would suggest the following night (i.e. Sundays) if the Saturday is cloudy or rainy.
- Our next EtS is on Saturday, September 19, and coincides with International Observe the Moon night. So come out and help people become Luna-tics!

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Sky Watchers

September/October

Mercury will be low in the evening sky each night, setting soon after sunset. Venus will get lower in the evening sky as the period progresses, setting around the same time as Mercury toward the end of the period. Mars rises a couple of hours after midnight and will be high in the morning sky. Jupiter will rise a couple of hours after Mars and will also be high in the morning sky. Saturn rises approximately an hour after sunset at the beginning of the period until it reaches opposition on October 4th (see below).

9/22	Autumnal Equinox at 8:06 p.m.
9/26	Full Moon – 12:50 p.m.
10/4	Saturn at opposition, closest to Earth and viewable all night long.

Time is in EDT (Eastern Daylight Saving Time).

President's Corner – continued from page 3

- Dale Ghent and Milt Roney of NCA, Rob Parks of George Mason University, and others from other local astronomy clubs are attempting to re-organize the Astronomy Festival on the National Mall, which was invented by the late Donald Lubowitch of Hofstra University. AFNM this year was supposed to coincide with the autumnal equinox. Many hands will be needed to pull this off, since time is short and there are numerous government agencies to coordinate with and get permits from.
- Speaking of the National Mall and lighting standards, I was intrigued by the yellow lights that were installed a few years ago in some of the street lamps along Jefferson and Madison Drives, near the lawns. I like the yellow color, which seems to be from a full-spectrum LED with a color temperature of around 1000K, but they are definitely not bright enough to use along roadways. Perhaps the brightness level can be boosted while keeping the color the same?
- Members of Dark Sky International - DC have been measuring actual brightnesses along randomly-chosen residential blocks in each of DC's 8 wards. (As you can imagine, there is a good bit of overlap in membership between NCA and DSI-DC!) We found that while the total amount of light pollution emitted by DC / PEPCO street lights has gone down since the city-wide conversion began a few years ago - which is a GOOD THING (and also saves a lot of taxpayer money), the illumination on residential streets in DC is still about twice as bright as the minimum standards set by AAHSTO (American Association of Highway and Transportation Officials). One good feature of the lighting replacement program is that PEPCO can dim those lights late at night, after peak evening traffic has ended, and has apparently been doing so.

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Editor: Todd Supple

Editorial Advisors:

- James Kaiser
- Elizabeth Warner
- Marjorie Weissberg

Electronic Distributor: Elizabeth Warner

[Recent Astronomy Highlights – continued from page 2](#)

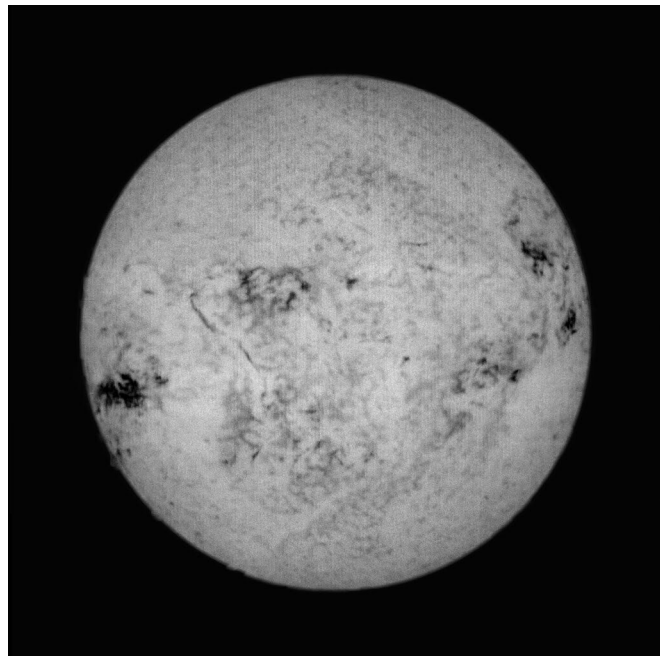
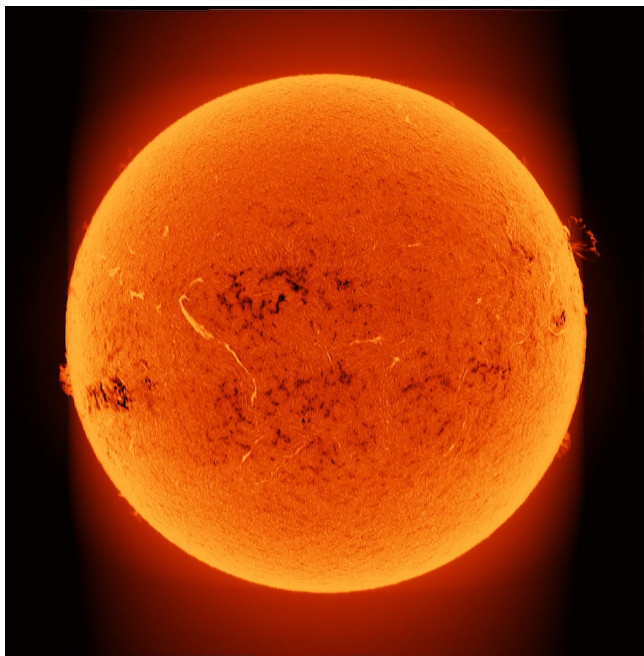
A Potential Galaxy Without Stars is Discovered

Astronomers have predicted the existence of galaxies that contain few or no stars, but had no potential proof of them until recently. The difficulty in finding such galaxies is obvious since there would be little or no starlight emitted from them, making them aptly named “dark” galaxies. But even without stars, such galaxies would emit radio waves due to the their neutral hydrogen. Astronomers, using radio telescopes, set out on a search for such galaxies, and found what appears to be one. Approximately 4900 light years in diameter and designated as “Cloud 9”, the candidate galaxy was subsequently searched with optical telescopes for any sign of starlight. None has been detected so far. This does not preclude the existence of some dim stars that might be visible to more sensitive telescopes built in the future. The existence of Cloud 9 seems to bely the assumption that any galaxy-sized collection of gas would automatically begin to create stars. It also seems to indicate that there may be more such dark or starless galaxies out in the Universe awaiting discovery. No doubt there will be searches for additional dark galaxies, and studies of them may lead to a greater understanding of how galaxies form and how they go about forming stars or don't do so. Additional information about Cloud 9 and the study that led to its discovery is available at dailygalaxy.com/2026/08/the-universes-first-truly-starless-galaxy/.

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President's Corner – continued from page 4

- The NCA treasury is in good shape, and dues have not changed. For most members, our membership expires this month and will need renewing. Doing so is quite simple-just go to the NCA website (capitalastronomers.org) and click on the correct buttons.
- The CCCC and adjacent DC public library are still slated to be demolished at some point. However, the building designs are still up in the air, and authorities tell me they are not yet ready to start planning for 'swing space' for clubs and groups like NCA that have sessions there.
- Much like the talk he will give at the September NCA meeting, Zack Gleiberman gave a talk at Rhizome DC on August 19th about Amateur Astronomy from the District of Columbia. He talked about the reasons why DC is one of the best places for amateur astronomy, the history of astronomy in the district as shown through the lives of important DC residents such as George Carruthers and Nancy Grace Roman, and how the DC astronomical community is incredible, covering sidewalk astronomy and the NCA telescope workshop. After discussing what astronomical objects people could see from DC (going from our moon to other galaxies), the talk transitioned into a sidewalk astronomy event from the Rhizome DC parking lot, where attendees and passersby looked at the Ring Nebula, double stars, the Moon, and globular clusters. About 30 people attended, and NCA members Gael Gomez and Eli Au provided incredible support as well as amazing photos for the presentation.
- Have you seen the spectroheliograms that Prasad Agrahar has been making with his home-made apparatus? They are phenomenal!



H-alpha (left) and Helium-D3 (right) images of the Sun taken on August 21st, 2026. Image Credit – Prasad Agrahar

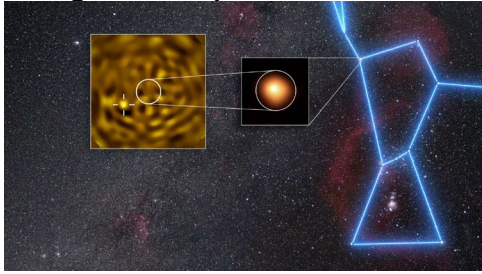
- Sidewalk Astronomy in DC and environs continues and is an absolute blast for everybody. If you would like to get notifications as to when and where we plan to set up scopes, take a photo of this QR code....

Join our Google group to receive an email
next time we're out!



Recent Astronomy Highlights – continued from page 4

Strong Evidence for Existence of a Betelgeuse Companion



The middle inset shows an image of Betelgeuse, part of the constellation of Orion (shown on right). In the inset on the left Betelgeuse has been digitally removed, revealing a possible companion star, the bright dot to the lower left highlighted by cross hatching. Image Credit - ESO/M. Montargès et al. Background: N. Rissinger (skysurvey.org)

Betelgeuse, the red giant star in the constellation of Orion, has fascinated star gazers for centuries with its changes in brightness, such as the dramatic dimming that took place from 2019 to 2020. It has been theorized for decades that the mysterious star actually has a companion star, but because of Betelgeuse's brightness such a companion would have been difficult to image. In December of 2024, that apparently changed. That was when astronomers predicted that the theoretical companion would be at the farthest distance from Betelgeuse in its elliptical orbit. Using the European Southern Observatory's Very Large Telescope, astronomers took images, then digitally removed Betelgeuse, revealing a potential companion star, categorized as Betelgeuse B. While predictions were that the star would be approximately the mass of the Sun, study seems to indicate that it is much more massive, up to three times that of the Sun. At least one more observation will be necessary, imaging the companion star when it has orbited to the other side of Betelgeuse, in order to conclusively say that the red giant has a companion. More information can be found at

www.sciencedaily.com/releases/2026/08/260827010514.htm.

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The Wide-Field Revolution: From NASA's 300-Megapixel Cosmic Maps to the 4K Sensors in our Backyard Smart Telescopes

Bryan Vandrovec
President, National Capital Astronomers

We are living in a golden era of astronomical observation, marked by a profound shift toward integrated digital technology and streamlined portability. From NASA's newest space telescope to the compact setups in our suburban backyards, the engine of this revolution is advanced digital imaging, transforming how we gather cosmic light and reshaping our relationship with the universe.

At the cosmic frontier, NASA's Nancy Grace Roman Space Telescope represents the absolute zenith of this digital evolution. Having launched the morning of August 30, 2026, and now on its way to Lagrange Point L2, Roman is designed to capture the big picture of our universe. While giants like Hubble and the James Webb Space Telescope (JWST) peer deep into narrow corridors of space, Roman's power lies in a massive 300-megapixel wide-field array that can image an area one hundred times larger than Hubble's infrared views in a single exposure. By replacing slow, target-by-target observations with rapid, high-resolution digital surveys, Roman will map billions of galaxies and compile a vast exoplanet census. It turns the sky into a massive digital database, allowing astronomers to trace dark matter and decode the mystery of dark energy.



The Nancy Grace Roman Space Telescope is transported to Launch Complex 39A at NASA's Kennedy Space Center. Image Credit - NASA/Sydney Rohde (Rocz)

Simultaneously, a parallel revolution is unfolding on the ground. The traditional, complex telescope setup—long a barrier for budding astronomers—is being replaced by "turn-key" smart telescopes like the new ZWO's Seestar S50 Pro (now available for pre-order at \$899). The S50 Pro delivers a massive leap in imaging capability at its price point, with a sensitive 4K sensor that offers nearly twice the telephoto field of view (FOV) of its predecessor. This larger-format sensor expands the frame to 2.8 degrees, imaging expansive deep-sky targets with stunning

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2026-2027 Officers

President:

Guy Brandenburg
gfbrandenburg@yahoo.com
 202-635-1860 (leave message)

Vice-President:

Bryan Vandrovec
bvandrovec@gmail.com
 301-247-7452

Secretary-Treasurer:

Jim Simpson
simpsonj@verizon.net
 240-232-2820

Asst. Secretary-Treasurer:

Elizabeth Warner
warnerem1303@gmail.com
 703-587-0181

Trustees:

- Elizabeth Warner (2027)
- Chong Wang (2028)
- Zachary Gleiberman (2029)
- Michael Brabanski (2030)

Appointed Officers and Committee Heads:

Exploring the Sky

Jay Miller
jhmiller@me.com

Telescope Making

Guy Brandenburg
gfbrandenburg@yahoo.com
 202-635-1860 (leave message)

Star Dust Editor

Todd Supple
NCAStardust@gmail.com
 240-687-8193

NCA Webmaster

Elizabeth Warner
warnerem1303@gmail.com
 703-587-0181

Science Fair Coordinator

Milt Roney

Social Media

Facebook: [NatCapAstro](https://www.facebook.com/NatCapAstro)

The Wide-Field Revolution: From NASA's 300-Megapixel Cosmic Maps to the 4K Sensors in our Backyard Smart Telescopes – continued from page 6

breathing room while preserving fine resolution. Additionally, the S50 Pro adds a second, 63-degree FOV, wide-angle camera for Milky Way and star trail imaging. Coupled with upgraded apochromatic optics and automated "live stacking" software, this compact unit handles the complicated tracking, focusing, and calibration in real time, making faint, colorful nebulae bloom on a smartphone screen in minutes.



The Seestar S50 Pro Smart Telescope - Image credit - Suzhou ZWO Co., Ltd

Yet, scientific objectivity reminds us of the natural limits of these systems. Roman's wide-field surveys, while vast, will still rely on targeted follow-ups from Hubble and JWST to fully decode its discoveries. Meanwhile, backyard smart telescopes are closed, uncooled systems that cannot be customized, and their modest apertures are not yet suited for high-magnification planetary views. Even at the bleeding edge, there are tradeoffs that professionals and amateurs must contend with. Advanced digital imaging can stretch the capabilities of optical systems, but it does not replace them.

For the diverse membership of the National Capital Astronomers—spanning NASA scientists and university professors to backyard stargazers and curious families—these technological leaps offer a profound opportunity. Whether we are preparing to analyze data from Roman's new orbit or watching a spiral galaxy resolve from a neighborhood parking lot, we are participating in the same human endeavor. Through citizen science and community programs, digital imaging has democratized the night sky, proving that the thrill of cosmic discovery belongs to us all. The tools of astronomy will continue to grow sharper and smarter, but the most vital element remains the shared curiosity that draws us together under the stars.

Recent Astronomy Highlights – continued
from page 5

Perseverance Catches Phobos
Occulting Earth



Image Credit - NASA/JPL-
Caltech/ASU/MSSS/SSI

Most observed occultations, events when a nearer astronomical object blocks the light from a farther astronomical object, are naturally seen from Earth. But on July 22nd, the NASA's Perseverance rover on Mars took the three joined images above, showing Earth, a bright single dot at upper left in the first picture and lower right in the third, being occulted by Mars's moon Phobos. Additional info is at

www.sciencedaily.com/releases/2026/0

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 – Oct. 10, 2026 -- Nicholas Kirschner (NASA's Goddard Space Flight Center, GWU) *The Compton Pair (ComPair) Mission*

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

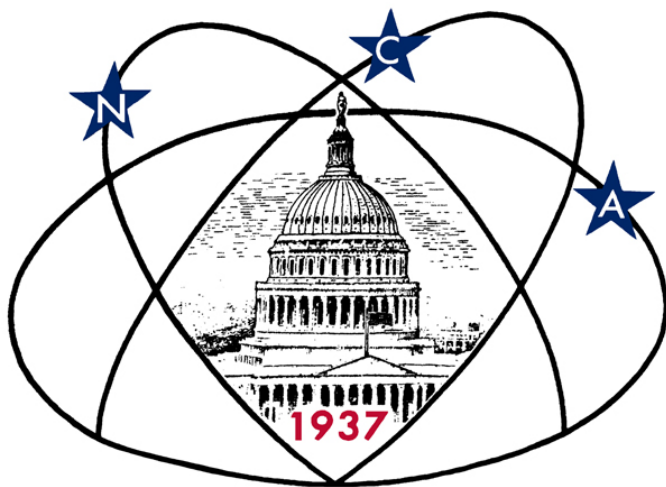
(Please note that membership dues will go up in coming years, so consider joining/renewing with the 3-year option in order to save money.)

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!



Celebrating 89 Years of Astronomy

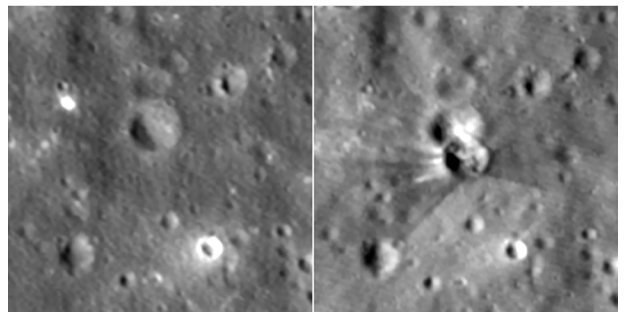


Image Credit - NASA/GSFC/Intuitive Machines

Before and after images show that the Moon now has a new crater, created by the intentional crashing of a SpaceX Falcon 9 upper stage onto the lunar surface on August 5th. More information is at www.sciencedaily.com/releases/2026/08/260820002429.htm.

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 Sept. 12th

7:30 pm

Zachary Gleiberman

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

umd.zoom.us/j/95292476448?pwd=6ktXhegElsP7Wc1W5o8D31yI2Gv8za.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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