

Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

March 2026

Volume 84, Issue 7

**Celebrating 89 Years
of Astronomy**

Next Meeting

When: Sat. Mar. 14th, 2026

Time: 7:30 pm

Speakers: Christine Hirst Bernhardt

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

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

Table of Contents

Preview of Mar. 2026 Talk.....	1
Recent Astronomy Highlights.....	2
Upcoming NCA Meetings.....	3
President's Corner.....	3
Exploring the Sky.....	3
Sky Watchers.....	4
The Eyepiece and the Soul.....	6
Calendar of Events.....	7



**Image Credit – NASA/ESA/CSA/Webb/
A. Leroy**

JWST imaged NGC 5134, a spiral galaxy 65 million light years from Earth. The infrared image shows gas and numerous star-making regions. More information about the image and NGC 5134 is available at dailygalaxy.com/2026/02/webb-captures-view-star-factory-ngc-5134/.

Under the Same Sky: Omens, Orbits, Optical Illusions

*Dr. Christine Hirst Bernhardt – National Earth Science Teachers
Association and NOVA SySTEMic*



Image Credit – NSF–DOE Rubin Observatory/NOIRLab/SLAC/AURA/W. O'Mullane

For most of human history, across cultures and civilizations, people interpreted the heavens as sources of meaning. Planetary alignments signaled upheaval. Eclipses marked divine action. The zodiac mapped human identity onto the stars. Entire cosmologies and creation narratives emerged from these recurring celestial patterns.

This talk explores the tension between interpretation and physical mechanism. Human societies read intention into planetary alignments, eclipses, zodiacal constellations. Modern astronomy situates those same events within orbital mechanics, angular momentum conservation, gravitational interaction, dynamical resonance. We will examine what planetary alignments actually look like in three-dimensional space rather than in flattened diagrams. We will consider why astrological signs no longer correspond to the Sun's true location along the ecliptic. We will revisit culturally significant eclipses and consider how material from the sky, including meteoritic iron once regarded as metal of heaven, shaped early authority and power, then unpack the precise geometric conditions that make totality possible in our narrow window of cosmic time.

These examples illuminate more than historical misconception; they reveal a deeper cognitive impulse: the human brain searches for pattern, agency, and structure. That impulse once shaped myth, religion and

continued on page 2

Recent Astronomy Highlights
Jupiter's Size Measurements Refined



Image Credit - NASA/STSCI (S.T.A.R.S)

Thanks to the Juno spacecraft, Jupiter's size has been more precisely defined, and while the planet remains the giant of the Solar System, it is slightly smaller and flatter than previously believed. To achieve these measurements scientists on Earth would measure when and where the radio signals disappeared as Juno went behind the gas giant in its many orbits, a process known as radio occultation. Juno also provided gravitational data through measurements of small changes in the spacecraft's velocity. Using this data, scientists determined that the planet is 133,684 kilometers from pole to pole and 142,976 kilometers in diameter at its equator. Previous measurements were largely based on radio occultation measurements made during the Voyager 1 and 2 and Pioneer 10 and 11 missions. More information on the refined measurements is available at www.universetoday.com/articles/jupiter-is-smaller-and-flatter-than-previously-thought.

continued on page 4

The submission deadline for April's Star Dust is March 28th.

Clear Skies!

Abstract and Biography – continued from page 1

prophecy, but now encounters measurement, modeling and theory. The sky has not changed—but our tools have. Under the same sky that once carried omens, we now predict orbits. That shift reflects not a loss of meaning, but a refinement of understanding.



Image Credit - Albert Einstein Distinguished Educator Fellowship (AEF) Program

Biography: Christine Hirst Bernhardt is President-Elect of the National Earth Science Teachers Association and STEM Education Coordinator for NOVA SySTEMic at Northern Virginia Community College. Since 2007, she has taught secondary Earth and Space science and other STEM courses, and has taught undergraduate and graduate astronomy since 2015. Christine specializes in Earth and Space science education and has led major curriculum projects, programs, and professional development at regional, state, and national levels, including a high-altitude balloon experiment program and a student space symposium. Her research focuses on how educators foster authentic science experiences and students' epistemic agency using integrated Earth and Space science contexts. She has published the first qualitative study of international astronomy education and a book chapter on using climate science to support epistemic agency.

A decorated educator, Christine received the Albert Einstein Distinguished Educator Fellowship and the Excellence in Astronomy Teaching Award in 2021. She served as a NASA SOFIA educator ambassador in 2017 and joined the Astronomy in Chile Education Ambassador program in 2019. She chairs the U.S. National Astronomy Education Coordinators team for the International Astronomical Union and is a strand coordinator with the National Association for Research on Science Teaching and an early-career researcher with NSF's Astro-Accel project and is a core member of the National Academy of Sciences' Committee on Advancing Science Teaching and Learning (CASTL K–12). Christine earned a Ph.D. in Science Education from the University of Maryland, an M.S. in Space Studies and Planetary Science from the University of North Dakota, an M.A. in Science Education from Cal State Northridge, a geoscience teaching credential from Cal State Fullerton, and a B.S. in Earth Sciences from Humboldt Polytechnic University.

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!

Schedule of Upcoming NCA Meetings and Speakers

Bryan Vandrovec

March 14, 2026 -- Christine Hirst Bernhardt (National Earth Science Teachers Association) - *Under the Same Sky: Omens, Orbits, Optical Illusions*

April 11, 2026 -- Michael Kirk (NASA's Goddard Space Flight Center) - *The Heliosphere Revealed: Insights into Space Weather and Beyond*

May 9, 2026 -- Stefanie Milam (NASA's Goddard Space Flight Center) - *Big Eyes on Small Bodies: Studies of Comets, Asteroids, and Interstellar Objects with JWST and HWO (tentative)*

June 13, 2026 – Science Fair Winners and Astrophotos

September 12, 2026 -- Saswatee Banerjee (Photonic Wave Solutions LLC) - *Computational Photonics: Finite-Difference and other Computational Methods in Design and Fabrication of Photonic Devices*

President's Corner

Guy Brandenburg

President, National Capital Astronomers

Lots of announcements!

Messier Marathon and Sidewalk Astronomy

Spring is almost here, and if you are very determined, skilled, and lucky, it is possible this month to catch every single Messier object in one night! In addition, sidewalk astronomy is once again feasible, including in Mount Pleasant, Chevy Chase, the National Mall, and elsewhere. Exploring the Sky in Rock Creek Park starts in April.

Tunisian Eclipse Glasses

Bad news with the shipment of eclipse glasses to Tunisia: Despite all the documents we sent their customs agents, the Tunisian authorities are demanding that the Tunisian Astronomy Organization (OAE Tunisie) has to pay the full retail value of the glasses to them in tariffs - several thousand dollars. Which they cannot pay. So, the glasses will sit somewhere in storage until ... ? What a shame. Is this retaliation for recent (and ever-changing) US tariffs?

The future of the NCA Telescope Making, Modification, and Maintenance Workshop

Various NCA volunteers have been running telescope-making classes at the Chevy Chase Community Center since 1954, long before the current CCCC building was erected. By the time you read this, I anticipate that the plans for the demo and rebuild of the entire complex (CCCC and regional library) will have been released by the builder, a group called "Great Rift". The proposal will have underground parking and about 175 apartments (some subsidized) on upper floors. The drawings look great to me, especially compared to how the complex looks right now. No floor plans have been released. My only concern for the proposal is that **I see no mention of a woodshop or maker space in the list of goals for the new community center.** Was this a mere oversight? We will bring that up when public comments begin to be accepted.

continued on page 4

Sky Watchers

March/April

Mercury rises shortly before the Sun, reaching greatest western elongation (see below) on 4/3. Venus remains in the evening sky, setting approximately an hour after the Sun. Mars rises shortly before the Sun in the morning sky, but will likely be unviewable. Jupiter will be high in the sky after sunset, setting in the early morning. Saturn will be lower in the evening sky throughout the rest of March until it begins its transition to the morning sky in early April.

3/20	Vernal Equinox – Spring begins and the Sun will appear to pass directly overhead at the equator at 10:45 a.m. Day and night each will be 12 hours.
4/1	Full Moon – 10:13 p.m.
4/3	Mercury at greatest western elongation, appearing 27.8 degrees from the Sun in the morning sky.

Time is in EDT (Eastern Daylight Saving Time)

President's Corner – continued from page 3

Science Fairs

Local county and city science (or STEM or STEAM) fairs are coming up in early spring. Anybody interested in being a judge for Northern Virginia, Montgomery County, Prince George's County, or the District of Columbia, please contact me or Milt Roney.

College Park Stargazing March 27

The City of College Park and the National Air and Space Museum are sponsoring a Pop-up Stargazing event ([Pop-up Stargazing in College Park | National Air and Space Museum](#)) in College Park, MD, not far from where NCA holds its monthly meeting at the University of Maryland Observatory. The event is March 27, 2026, from 8 - 10pm at the Calvert Hills Athletic Field. Shauna Edson of NASM has specifically asked NCA to bring up to six telescopes. This is NOT a dark-sky location!

International Dark Sky Week

Go Dark: [International Dark Sky Week](#) will be from April 13-20. We need to get Mayor Bowser to make a proclamation about this, as she did last year.

Regional Star Parties and Other Events Coming Up This Year in the Mid-Atlantic Region

March

Staunton River Star Party (Spring), March 16-22, 2026
Staunton River State Park, VA
chaosastro.org/starparty-home/

April

South Jersey Astronomy Club Star Party, April 9-12, 2026
Belleplaine State Forest, NJ
www.sjac.us/star-party/

Northeast Astronomy Forum, April 11-12, 2026
Rockland Community College, NY (Not in MERAL, but close!)
www.neafexpo.com/

Star Dust is published ten times yearly September through June, by the National Capital Astronomers, Inc. (NCA).

ISSN: 0898-7548

Editor: Todd Supple

Editorial Advisors:

- James Kaiser
- Brian Tomich
- Elizabeth Warner
- Marjorie Weissberg

Electronic Distributor: Elizabeth Warner

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

Survey of the Central Molecular Zone by ALMA



Image Credits –

ALMA(ESO/NAOJ/NRAO)/S.

Longmore et al. Background: ESO/D.

Minniti et al.

A survey by the Atacama Large Millimeter/submillimeter Array, ALMA, provided the millimeter-wavelength image above of the Central Molecular Zone, CMZ, a region of gas and dust near Sagittarius A*, the Milky Way's supermassive black hole. The image is approximately 650 light years across and is the largest ALMA has made to date. The CMZ provides material for the creation of stars often flowing in filaments to the sites of that star formation. Some of the largest, and most short-lived stars in the galaxy have been formed there. The survey has revealed the presence of a number of inorganic compounds, such as silicon monoxide and organic compounds, including acetone, methanol and ethanol. Study of the image should give astronomers more information about how star-formation processes take place in one of the most chaotic regions in the Milky Way. More information about the survey and the CMZ is available at

phys.org/news/2026-02-largest-image-kind-hidden-chemistry.html.

continued on page 5

continued on page 5

Recent Astronomy Highlights – continued from page 4

Mechanism for the Formation of Giant Exoplanets Studied

HR 8799, a relatively young star system that is approximately 133 light years from Earth, contains four gas giants that are 5 to 10 times as massive as Jupiter that orbit 15 to 70 AU, astronomical units (the average distance between Earth and the Sun), from their host star. Astronomers have debated whether such large exoplanets form from core accretion, where a solid core forms first after which the gravity of that core draws in surrounding gas, or via direct collapse, such as happens in the formation of stars and brown dwarfs, where the gas itself directly collapses under the influence of its own gravity. Astronomers believed that a problem with the core-accretion method forming such large exoplanets was that the star light and particle winds from the host star would disperse the gas surrounding it before a core massive enough could form and begin collecting gas. But recent spectroscopic observations by JWST have shown signs of sulfur, in the form of hydrogen sulfide, as well as concentrations of carbon and oxygen, higher than those measured in the host star, in the atmospheres of several of HR 8799's gas-giant exoplanets. These chemical signatures are an indication that, despite their enormous size, the exoplanets likely formed through the mechanism of core accretion. The results seem to indicate that if there is a lower limit on the mass of an exoplanet that forms from direct collapse, it may be much higher than the mass of any of HR 8799's exoplanets. Of course, further observations, in other exoplanet systems may be necessary to determine that mass limit. More information about the study of HR 8799's exoplanets can be found at www.sciencedaily.com/releases/2026/02/260211073019.htm.

continued on page 7

President's Corner – continued from page 4

May

- Northern Virginia Astronomy Club, *Astronomy Day*, May 2, 2026
www.novac.com/wp/

June

- *Cherry Springs Star Party*, June 11-14, 2026
Cherry Springs State Park, PA
www.facebook.com/CherrySpringsStarParty/

July

- *Green Bank Star Quest*, July 15-18, 2026
Green Bank WV
greenbankstarquest.org/

August

- *Astronomical League Convention*, August 12-15, 2026
Cincinnati, OH
www.astroleague.org/
- *Almost Heaven Star Party*, August 10-16, 2026
Spruce Knob Mountain Center in Circleville, WV
www.ahsp.org/
- *Stellafane*, August 13-15, 2026
Springfield, Vermont (Not in MERAL, but too important to not include)
stellafane.org/
- *West Virginia Astrophotography Association Annual Conference*, TBD
Blackwater Falls State Park, WV
www.facebook.com/WVAA1
wvaa.us/

October

- Northern Virginia Astronomy, *Star Gaze*, October 3, 2026
C.M. Crockett Park, Midland, VA
www.novac.com/wp/
- *York County Star Party*, October 7-11, 2026
Susquehannock State Park in central Pennsylvania
www.yorkcountystarparty.org/
- *Staunton River Star Party (Fall)*, October 5-11, 2026
Staunton River State Park, VA
chaosastro.org/starparty-home/

Dates Not Established Yet

- *James River State Park Star Party*, TBD
James River State Park, Gladstone, VA
www.dcr.virginia.gov/state-parks/event?id=2024-01-05-14-36-16-803959-4dy
- *Mega Meet at Pulpit Rock*, TBD
Pulpit Rock, PA
lvaas.org/page.php?page=megameet
- *Black Forest Star Party* – TBD
Cherry Springs State Park, PA
bfsp.org/
- *Blackwater Falls Astronomy Weekend*, TBD
Blackwater Falls State Park, WV
kvas.org/index.html

2025-2026 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:

Brian Tomich
brian.tomich@gmail.com
 (214) 536-9080

Trustees:

- Michael Brabanski (2026)
- Elizabeth Warner (2027)
- Chong Wang (2028)
- Zachary Gleiberman (2029)

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
 301-405-6555

Science Fair Coordinator

Milt Roney

Social Media

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

The Eyepiece and the Soul: A Lifelong Journey in Wonder

Bryan Vandrovec



In my daily life as a technologist, I am immersed in screens, systems, and the tidy logic of software. These tools are remarkable, but the moments that have shaped me most deeply have happened far from any electronic device. More than ever, stepping into the quiet of the night feels essential – a way to return to the world beyond our own making and to rediscover a scale of beauty that speaks directly to the human spirit.

I can still recall the night that set everything in motion. I was about 9 or 10 years old, and my father had taken me to Georgetown for a public tour of the US Naval Observatory. After waiting for what felt like hours filled with anticipation, it was finally my turn to take a glimpse through the 12-inch Alvan Clark & Sons refracting telescope. And there it was: Saturn. Not the flat diagram from a textbook, but a luminous, three-dimensional world suspended in darkness. That first glimpse struck me with a force I didn't expect. It awakened a sense of wonder that has stayed with me ever since.

I see that same spark when we set up telescopes for sidewalk astronomy and other public observing events. People from every background stop, look, and suddenly share the same astonishment. I've heard countless variations of "Wait – that's the moon?" as someone sees its craters with their own eyes for the first time. For a moment, the distance between us and the sky collapses. One person told me it felt like stepping onto the lunar surface itself. That collective excitement – so spontaneous and sincere – reminds me how deeply connected we are in our curiosity.

This connection runs deeper than emotion. It is literally written into us. We are made of atoms forged in ancient stars, scattered across the cosmos long before Earth existed. When we look through a telescope, we are not just observing distant objects; we are glimpsing our own origins. Against the 14-billion-year sweep of cosmic history, a human life is almost impossibly brief. If represented on a cosmic timeline stretching over four miles, that lifetime would be less than the width of a hair. As I once heard it put, we are like butterflies that flutter for a day and think it is forever. And yet, in that brief time, we are given the extraordinary ability to understand and appreciate the universe that made us.

Sharing this romantic view is more than a pastime. It is an invitation – to look up, to feel small in the best possible way, and to recognize the rare and beautiful chance we have simply to be here at all.

*Recent Astronomy Highlights – continued
from page 5*

Possible Pulsar Near Sagittarius A* May Help in Testing General Relativity

A study known as the Breakthrough Listen Galactic Center Survey, meant to look for radio transmissions for extraterrestrial civilizations has located a possible pulsar, a rapidly rotating neutron star, near Sagittarius A*, the supermassive black hole at the center of the Milky Way. The 100-meter diameter Green Bank Radio Telescope was used in the discovery. The telescope's high sensitivity allowed for the discovery of the object despite the chaotic environment it exists in. Rotating once every 8.19 milliseconds, the candidate pulsar is a very precise timekeeper. If its existence is confirmed, it could be used as a timer in studying the effects of Sag A*'s enormous gravity on time and space near that pulsar. More information about the candidate discovery and its possible utility is available at phys.org/news/2025-12-nasa-milky-roman-space-

Calendar of Events

The NCA Telescope Making, Maintenance, and Modification Workshop (TMMW) 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 TMMW, 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 - April 11, 2026 -- Michael Kirk (NASA's Goddard Space Flight Center) - *The Heliosphere Revealed: Insights into Space Weather and Beyond*

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

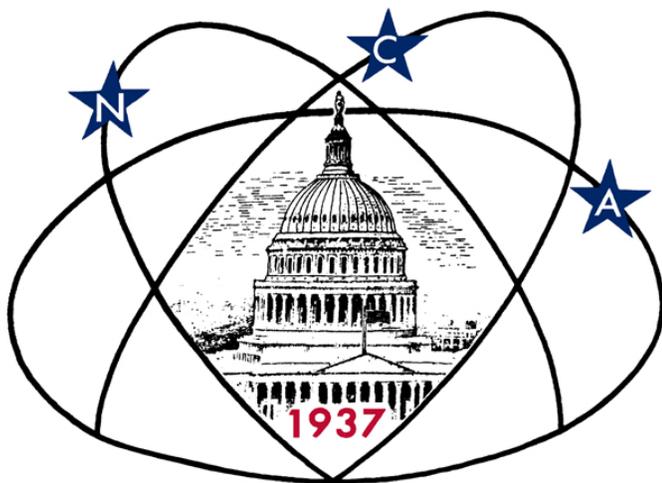
(Please note that membership dues will go up in coming years, so consider joining/renewing with the 3-year option in order to save money.)

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, ESA, Bruce Balick (UWashington)

Imaged by the Hubble Space Telescope, the Egg Nebula is actually a pre-planetary nebula, its star in the process of shedding gas as it is dying. More info is at www.space.com/astronomy/hubble-space-telescope/hubble-space-telescope-captures-the-final-breaths-of-a-dying-star.

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 Mar. 14th
7:30 pm
Christine Hirst Bernhardt

To join the meeting via Zoom, use the following link:

umd.zoom.us/j/95619565617?pwd=uqwxzZ39zgVfgOypmcp8cy6xFaCcRb.1

Please note that NCA Zoom meetings are often recorded.

Inside This Issue

Preview of Mar. 2026 Talk.....	1
Recent Astronomy Highlights.....	2
Upcoming NCA Meetings.....	3
President's Corner.....	3
Exploring the Sky.....	3
Sky Watchers.....	4
The Eyepiece and the Soul.....	6
Calendar of Events.....	7