# Star Dust

***Newsletter of National Capital Astronomers, Inc.***

*capitalastronomers.org*

***October 2025*** ***Volume 84, Issue 2***


***Celebrating 88 Years of Astronomy***

## *Next Meeting*

**When:** Sat. Oct. 11th, 2025

**Time:** 7:30 pm

**Speakers: Dr. David DeVorkin**

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

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

## *Table of Contents*



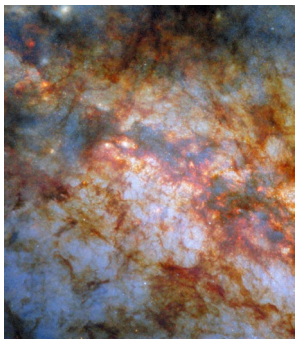

**Image Credits –ESA/Hubble & NASA, W. D. Vacca**

The Hubble Space Telescope captured the image shown above of the heart of Messier 82, nicknamed the Cigar Galaxy. More information is at phys.org/news/2025-09-hubble-images-celestial-cigar-smoldering.html.

# 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!***

## George R. Carruthers: The Quiet Genius Who Was the First to Send an Astronomical Telescope to the Moon

*Dr. David DeVorkin – National Air and Space Museum – Smithsonian Institution*

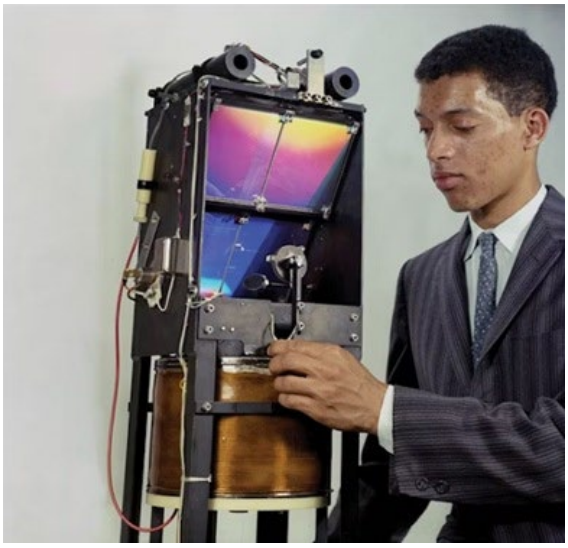

**Image Credit - U.S. Naval Research Laboratory**

In April 1972, George Carruthers visited the (now named) Johnson Space Center in Houston. He closely watched and advised as astronaut John Young positioned his golden far-ultraviolet electronographic camera/spectrograph on the Moon. The instrument, Carruthers's invention, was the first astronomical observatory on the lunar surface, landing in the Descartes Highlands on Apollo 16. Among several targets, it focused on the Earth's outermost atmosphere, its so-called "geocorona" (see page 2), a spectacular achievement that brought him accolades, including the President's Medal for Technology and Invention. In addition, a NASA satellite mission, the Carruthers Geocorona Observatory, which just launched, is named in his honor.

## Recent Astronomy Highlights

### Possible Biosignature Found on Mars

**Image Credit - NASA, JPL-Caltech, MSSS, Perseverance Rover**

Last year, instruments on the Perseverance rover on Mars found a potential biosignature, a possible indication of life in ancient times on the red planet, while in the Jezero Canyon. The rock in which the biosignature was found has been named Cheyava Falls. It is sedimentary rock made up of clay and silt. In addition, the sample shows an abundance of organic carbon, iron oxide and phosphorous, all of which are necessary for life as we know it on Earth. The sample itself is named Sapphire Canyon. Specifically, the biosignature is a number of colorful, irregularly shaped spots, nicknamed 'leopard spots', light patches surrounded by reddish rock. The patches may be what remains of ancient microbial life. Within the spots, Perseverance instruments found vivianite and gregite, both iron rich minerals, arranged in ways that could have promoted chemical reactions and energy transfer, conducive to life. Experts caution that, despite all of this evidence, this does not prove that there was once life on Mars. Such minerals can also form abiotically, however so far there seems to be no sign that the materials in the rock underwent the conditions, such as high temperature and high acidity, that would seem to be necessary for an abiotic origin. More investigation will be necessary, possibly with future missions to Mars. More information on the discovery is available at www.nasa.gov/news-release/nasa-says-mars-rover-discovered-potential-biosignature-last-year/.

*continued on page 4*

*Abstract – continued from page 1*

Carruthers accomplished far more during his career, with his instruments flying on sounding rockets and satellites, exploring the interstellar medium. Later, his instruments explored Halley's Comet from Skylab and travelled on the Shuttle. He also devoted his talents and energy to inspiring students to feel they could achieve such accomplishments too.

This talk will explore Carruthers's life and work, the story of a deeply reserved African American farm boy infatuated with building telescopes for astronomy and spaceflight, from his childhood in Ohio and then Chicago, to his career at the U.S. Naval Research Laboratory in Washington, DC. In the politically complex and highly competitive world of space science in the 1960s and 1970s, and life in Washington, D.C., Carruthers transcended the racial stereotyping and discrimination of his day, concentrating his passions for experimentation, which he strove to instill in students across the Washington DC area, gaining notice as a Black man in science and a tireless advocate for underserved young people in science and engineering.

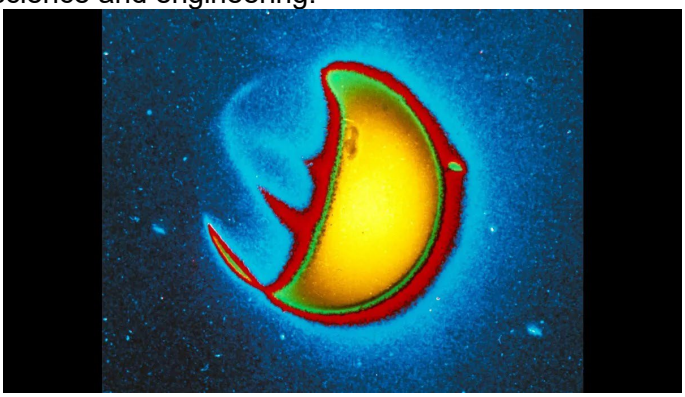

**Image credit - G. Carruthers (NRL) et al./Far UV Camera/NASA/Apollo 16**

**Biography:** Dr. David H. DeVorkin is emeritus senior curator, history of astronomy and the space sciences at the National Air and Space Museum, Smithsonian Institution, where he served for 40 years. DeVorkin's research and collections center on the origins and development of modern astrophysics and space sciences. He holds a PhD in the history of astronomy from the University of Leicester and a Master of Philosophy in astronomy from Yale University.

## Schedule of Upcoming NCA Meetings and Speakers

*Bryan Vandrovec and Carl Biagetti*

**Oct. 11, 2025 -- David DeVorkin (NASM)** *George R. Carruthers: The Quiet Genius Who Was the First to Send an Astronomical Telescope to the Moon*

**Nov. 8, 2025 -- Michael Kirk (NASA's GSFC)** *The Heliosphere Revealed: Insights for Space Weather and Beyond*

**Dec. 13, 2025-- Kristin Showalter Sotzen (Johns Hopkins APL)** *NASA's Dragonfly Mission to Saturn's Moon Titan*

**Jan. 10, 2026 -- Christine Hirst Bernhardt (National Earth Science Teachers Association)**

**Feb. 14, 2026 -- Frank Summers (Space Telescope Science Institute)**

## *Exploring the Sky*


**2025 Exploring the Sky Sessions**

| | | |
|---|---|---|
| 5 | Apr | 8:00 PM |
| 3 | May | 9:00 PM |
| 7 | Jun | 9:00 PM |
| 5 | Jul | 9:00 PM |
| 2 | Aug | 8:30 PM |
| 20 | Sep | 8:00 PM |
| 18 | Oct | 7:30 PM |
| 15 | Nov | 7:00 PM |

**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.

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**The submission deadline for November's Star Dust is October 27th.**

***Clear Skies!***

## President's Corner

***Guy Brandenburg***

Quite a few NCA members helped out at this year's very fun, rather cloudy, but not-exactly-mobbed Astronomy Festival on the National Mall (AFNM) on Saturday, 9/20/2025, from 5 to 11 pm. It remains to be seen whether AFNM will continue in the future.

Zack Gleiberman brought with him a short refractor, an H-alpha scope, an eyepiece case, and a tripod, all VIA METRO! My wife dropped me off with my recently-improved travel Hole-y Scope whose 6" mirror I made in the NCA telescope-making class under the late Jerry Schnall back in 1991 (see below), along with an adjustable chair/stepladder modeled on one invented by the late Rick Singmaster (Starmaster Portable Telescopes - Observing Chairs), an A-frame holder, display signs, folding cart, table, and leaflets. (Our Prius was rather full!) NCA members Jay Miller and Jeff Guerber also helped out at our NCA corner, but didn't set up telescopes. Milt Roney and Elizabeth Warner were helping at the Dark Sky International and University of Maryland tables, respectively. Several other NCA members also visited. I would guess that we all had time for lengthy conversations with people.

The evening was fun but not nearly as well-attended as the previous AFNMs, which up until now always coincided with the Smithsonian's Summer Solstice events. On that night, most Smithsonian museums stay open very late, and AFNMs have been extremely popular. Unfortunately, these events have always been extremely hot. As we all know, the summer solstice is also the shortest night length of the whole year -- it doesn't really get dark until half past ten PM!

Beginning in 2010, those joint SSS - AFNM events, co-sponsored by many other organizations, had enormous crowds of happy people. The lines at every telescope, whenever I attended, were generally long, late into the night, as long as there was anything to see. When the weather moved the SSS - AFNM event inside, then there was often loud enough music to damage your hearing. But lots of fun!

*continued on page 4*

# *Sky Watchers*

## October/November

| | |
|---|---|
| Mercury will be very low in the evening sky after sunset, reaching greatest eastern elongation on October 29th (see below). Venus will be high and bright in the predawn sky. Mars will be low in the evening sky. By November, Jupiter will be rising prior to midnight and be high in the predawn sky. Saturn will be visible nearly all night. | |
| 10/21 - 22 | The Orionids meteor shower peaks on the evening of the 21st into the morning of the 22nd with approximately 20 meteors/hour. With a nearly new Moon, conditions will be ideal for viewing. |
| 10/29 | Mercury will be at greatest eastern elongation, 23.9° from the Sun. |
| 11/4 - 5 | The Taurids meteor shower peaks on the evening of 11/4, usually producing 5-10 meteors per hour. Unfortunately, a nearly full Moon will interfere with viewing all but the brightest meteors. Viewing will be best right after midnight. |
| 11/5 | Full Moon and Supermoon – 8:21 a.m. |

Time is in EST (Eastern Standard Time)

*President's Corner – continued from page 3*

However, I bet that on **this** night, over 5 or 6 hours, I had about the same total number of folks looking through my scope as any of us do with any telescope on one of our typical impromptu Mount Pleasant (DC) Sidewalk Astronomy 2- or 3-hour streetcorner public observing events, and these are only announced on a small Instagram / email list put out by Gael Gomez.

The cloudy (and basically correct) weather forecast undoubtedly played a major role. However, there was more actual sunlight than I had expected, so Zach's H-alpha scope was a hit, along with the ginormous refractor with a white-light filter set up by Skip Bird (Series - Skip Bird The Science Nerd) who represented the Westminster MD astro club (Westminster Astronomical Society, Inc. – Bringing the Universe to Carroll County, Maryland since 1984!)

Lots of exhibitors' tables were set up along the south side of the Mall, just north of the National Air and Space Museum. Roughly half of them were not claimed or staffed by any group (cancellations?) and the others were not exactly mobbed. I took 45-60 minutes away from my little scope during twilight and went and visited some of those tables, partly to chat with old friends and colleagues who were helping out at the Carnegie Institute, Dark-Sky International, University of Maryland, Naval Research Laboratory, and National Air and Space Museum tables. Zack tells me he also talked with the folks at the tables that included members of the teams who are actually running the Curiosity Mars Rover, the James Webb Space Telescope, the Nancy Grace Roman Space Telescope, IMAP (Interstellar Mapping and Acceleration Probe (IMAP)), and the Hubble Space Telescope.

*continued on page 7*

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

**ISSN: 0898-7548**

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*Recent Astronomy Highlights – continued from page 2*

**The Mechanism of Sunspot Longevity Discovered**

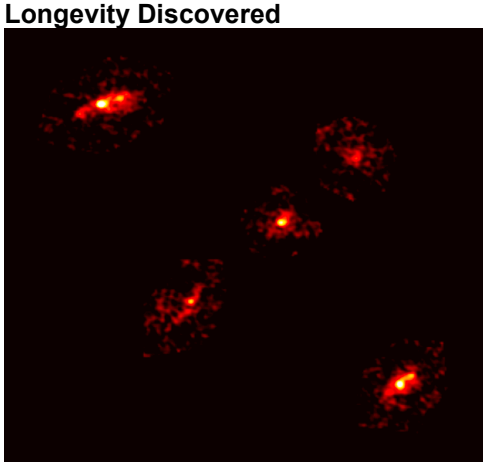


**Image Credit - P. Cox et al. - ALMA (ESO/NAOJ/NRAO**

Astronomers using the Atacama Large Millimeter/submillimeter Array, ALMA, as well as other radio telescopes and the Hubble Telescope have discovered a rare Einstein cross which includes five separate images of an individual galaxy. That galaxy, designated HerS-3, is approximately 11.6 billion light years from Earth. The light from HerS-3 was lensed by a group of galaxies 7.8 billion lights years away on its way to us. But in order to account for the degree of lensing, a significant amount of dark matter, trillions of times the mass of the Sun, appears to be present in the galactic group. The discovery offers the opportunity to study how dark matter affects galactic evolution. More information on the image is at www.almaobservatory.org/en/press-releases/an-exceptional-einstein-cross-reveals-hidden-dark-matter/.

*continued on page 8*

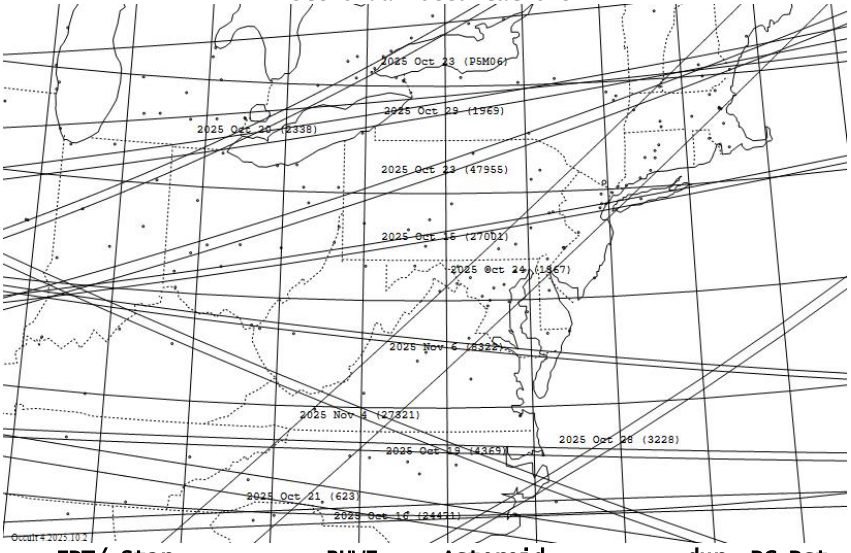
## Occultation Notes

- D following the time denotes a disappearance, while R indicates that the event is a reappearance.
- The times are for Greenbelt, MD, and will be good to within +/-1 min. for other locations in the Washington-Baltimore metropolitan areas unless the cusp angle (CA) is less than 30 deg., in which case, it might be as much as 5 minutes different for other locations across the region.
- Some stars in Flamsteed's catalog are in the wrong constellation, according to the official IAU constellation boundaries that were established well after Flamsteed's catalog was published. In these cases, Flamsteed's constellation is in parentheses and the actual constellation is given in the notes following a /.
- Mag is the star's magnitude.
- % is the percent of the Moon's visible disk that is sunlit, followed by a + indicating that the Moon is waxing and - showing that it is waning. So 0 is new moon, 50+ is first quarter, 100+ or - is full moon, and 50- is last quarter. The Moon is crescent if % is less than 50 and is gibbous if it is more than 50. E indicates a lunar eclipse is in progress, and the value is the percent of the Moon's disk that is NOT in the umbra. So 0E means during the total phase.
- Cusp Angle is described more fully at the main IOTA Web site.
- Sp. is the star's spectral type (color), O,B,blue; A,F,white; G,yellow; K,orange; M,N,S,C red.
- Also in the notes, information about double stars is often given. "Close double" with no other information usually means nearly equal components with a separation less than 0.2". "mg2" or "m2" means the magnitude of the secondary component, followed by its separation in arc seconds ("), and sometimes its PA from the primary. If there is a 3rd component (for a triple star), it might be indicated with "mg3" or "m3". Double is sometime abbreviated "dbl". Often, rather than the separation, I give “dTime” or “dT”, the time difference of the secondary star occultation relative to the primary star’s occultation.
- Sometimes the Axis angle (AA) is given. It is the angle measured around the Moon's disk, from the Moon's axis of rotation. It can be used with a lunar map to tell where a star will reappear relative to lunar features.

# *Mid-Atlantic Occultations*

***David Dunham***

Asteroidal Occultations




| 2025 Date | EDT/ EST | Star Name | Mag. | RUWE <1.4 | Type | Asteroid # | Name | dur. dmag | s | DC-Dst Alt | km |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oct 8 | 23:06 | 4UC66719258 | 12.4 | 1.00 | PHA | 3200 | Phaethon | 5.6 | 0.3 | 40 | 275 |
| Oct 9 | 23:07 | TYC28270623 | 10.6 | 1.85 | NEA | 433 | Eros | 1.0 | 3.1 | 61 | 357 |
| Oct 10 | 1:00 | TYC06520769 | 9.3 | 1.00 | | 16843 | 1997 XX3 | 9.2 | 1.5 | 50 | 402 |
| Oct 12 | 4:39 | TYC06140212 | 10.7 | 1.05 | | 85 | Io | 0.5 | 15 | 36 | 346 |
| Oct 15 | 4:09 | TYC13850985 | 10.0 | 1.05 | | 27001 | 1998 DC6 | 8.5 | 0.6 | 12 | 60 |
| Oct 16 | 4:46 | TYC17551383 | 9.3 | 1.85 | | 24471 | 2000 SH313 | 9.0 | 1.7 | 73 | 262 |
| Oct 19 | 5:19 | TYC19320960 | 10.5 | 0.95 | | 4369 | Seifert | 6.4 | 0.9 | 30 | 60 |
| Oct 19 | 22:24 | TYC06300900 | 10.1 | 1.10 | | 2338 | Bokhan | 5.8 | 1.0 | 14 | 117 |
| Oct 21 | 3:22 | 4UC62604193 | 13.9 | 1.10 | Sp | 623 | Chimaera | 0.7 | 4.7 | 83 | 144 |
| Oct 23 | 2:37 | 4UC54307323 | 9.9 | 5.45 | | 47955 | 2000 QZ73 | 9.5 | 1.6 | 56 | 340 |
| Oct 23 | 4:59 | 4UC55541426 | 13.7 | 1.35 | PS | P5M06 | Himalia-J6 | 1.7 | 22. | 85 | 516 |
| Oct 23 | 22:36 | 4UC67417406 | 11.5 | 1.20 | Tr | 1867 | Deiphobus | 4.4 | 8.3 | 25 | 0 |
| Oct 27 | 21:20 | SAO 187999 | 8.1 | 0.85 | | 3228 | Pire | 9.7 | 71. | 34 | 500 |
| Oct 29 | 3:39 | HIP 9080 | 10.3 | 4.45 | | 1969 | Alain | 6.6 | 1.5 | 66 | 185 |
| *** Dates and times above are EDT, those below are EST *** | | | | | | | | | | | |
| Nov 4 | 4:24 | TYC18021516 | 9.4 | 1.10 | | 27321 | 2000 CR2 | 8.0 | 1.3 | 72 | 315 |
| Nov 6 | 4:51 | TYC12550074 | 9.8 | 0.85 | | 8322 | Kononovich | 7.7 | 1.1 | 69 | 85 |

The paths for the 1st 4 events are on last month's map, not this one. With this new format, the new columns need some explanation: RUWE is the ESA-Gaia Re-normalized Unit Weight Error; if greater than 1.3, the actual path may be even 50km from the prediction. Type: blank, Main Belt Ast.; NEA = Near-Earth Ast.; PHA = Potentially Hazardous Ast.; Tr = Jupiter Trojan; Sp = special Main Belt – see occultations.org/publications/rasc/2024/nam24MBspecialoccs.pdf and PS, planetary satellite. On Oct 23, Jupiter's irregular moon Himalia is about 140 km across and its 1-sigma path error is 2.5 path-widths, so an occultation could occur at least as far s. as DC; those throughout the n.e. USA are encouraged to try the event. The last two columns are for DC: Alt. of the star and path distance in km from DC. Map dates are UT, so for UT, add 1 to table date if EDT is 20 or more. On Oct 27, SAO 187999 = HIP 95105 for reporting, spec. type B9V.

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Lunar Total Occultations

| 2025 Date | Day | EDT | Ph | Star | Mag | % alt | CA | Sp. | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Oct 10 | Fri | 0:12 | R | Electra | 3.7 | 87- 44 | 32S | B6 | ZC 537, spect. binary |
| Oct 10 | Fri | 0:30 | R | Celaeno | 5.5 | 87- 48 | 72S | B7 | ZC 536 = 16 Tauri |
| Oct 10 | Fri | 0:48 | R | Taygeta | 4.3 | 86- 51 | 83N | B6 | ZC 539, close double |
| Oct 10 | Fri | 0:58 | R | Maia | 3.9 | 86- 53 | 66S | B8 | ZC 541, close double?? |
| Oct 10 | Fri | 1:10 | R | Asterope | 5.8 | 86- 56 | 80N | B8 | ZC 542,mg2 6.4,dT +217s |
| Oct 11 | Sat | 23:02 | R | ZC 885 | 5.6 | 67- 11 | 83N | G7 | Az. 63,mg2 12,dTime-13s |
| Oct 13 | Mon | 6:59 | R | 47 Gem | 5.8 | 53- 78 | 84N | A4 | Sun -4, ZC 1088 |
| Oct 18 | Sat | 7:06 | R | tau Leonis | 5.0 | 8- 28 | 83N | G8 | Sun-4,ZC1663,m2 8 dT+95s |
| Oct 26 | Sun | 19:26 | D | ZC 2631 | 6.5 | 24+ 14 | 35N | B9 | Azimuth 213 deg. |
| Oct 27 | Mon | 19:33 | D | tau Sag | 3.3 | 33+ 19 | 40N | K1 | ZC 2784, spect. binary |
| Oct 30 | Thu | 20:59 | D | del Cap | 2.9 | 64+ 34 | 71N | A5 | ZC 3190, close dbl?? |
| Oct 30 | Thu | 22:17 | R | del Cap | 2.9 | 64+ 29 | -75S | A5 | AA 252, Deneb Algedi |

David Dunham; More is on the northeast US occultations pages at groups.io/g/OccultNEUS and http://iota.jhuapl.edu/exped.htm.

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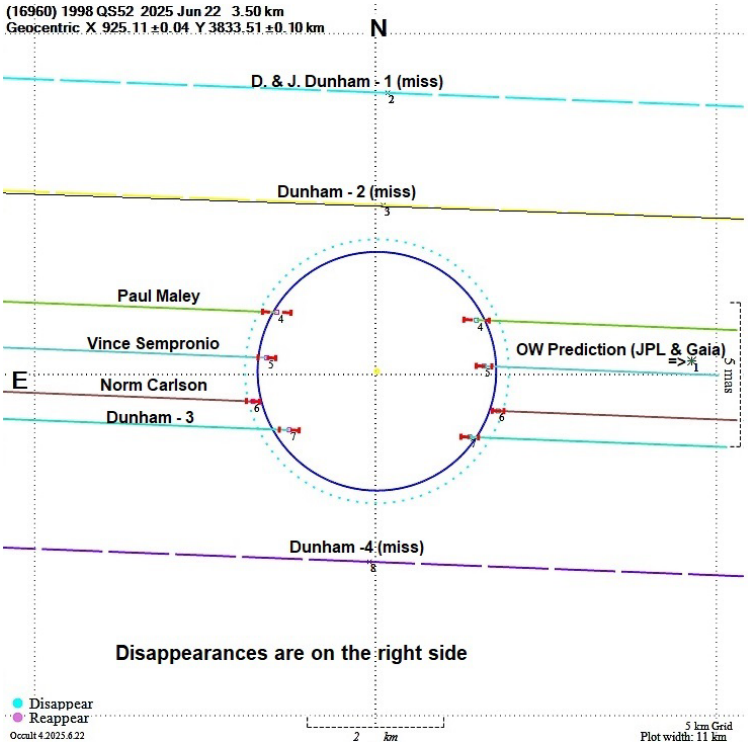
# June 22nd Occultation Data Nailed Orbit of 4km Potentially Hazardous Asteroid

***David and Joan Dunham, and Norm Carlson, IOTA***

A good example of a well-observed Potentially Hazardous Asteroid (PHA) occultation occurred the early morning of 2025 June 22 when 4-km (16960) 1998 QS52 occulted 9.9-mag. UCAC4 425-114048 = PPM 203111 in Aquila in a path across the southern USA. This is one of the larger PHA's whose impact would result in worldwide devastation, although there's no risk of that in the next 1000 years. However, the longer-term risk is unknown. For this event, David and Joan Dunham used Astrid cameras to pre-point three telescopes with apertures 12cm to 25cm, to the occultation's local altitude and azimuth with auto-recording around the predicted time at unattended sites spread across the predicted path and its possible error range, in the southern suburbs of Tucson, AZ. They also recorded at a 4th attended site with a ZWO CCD camera with a GPS flash timer on a 20cm scope. They were joined by three others who recorded the event at other locations across the path, coordinated with IOTA's Occult Watcher tool, to obtain four positive chords across 1998 QS52 and constraining miss chords to the north and south. The chords are shown on the sky-plane plot at the asteroid in the figure below. It shows that the actual event occurred 0.22s early but with the path center only 0.3 km south of the prediction. The maximum observed duration was 0.17s, less than the 0.22s predicted, so 1998 QS52's diameter was about 3.5 km rather than the predicted 4.3 km. This gave a precise astrometric point that will improve the PHA's orbit, but one or two more occultations can measure any non-gravitational forces that will allow an even longer gauging of 1998 QS52's risk.




**Sky-plane plot of the observations of the occultation of PPM 203111 by (16960) 1998 QS52 the morning of June 22, 2025, from 7 sites on the south side of Tucson, Arizona. Image Credit - D. Dunham and N. Carlson, IOTA.**


*President's Corner – continued from page 4*

It didn't help our attendance that there were three other major local astronomy-related events scheduled for the same night: "Astronomy for Everyone" at Sky Meadows State Park in VA, run by NOVAC (Northern Virginia Astronomy Club – "To Observe…And to help others Observe ") ; NCA's "Exploring the Sky" (which got canceled because of clouds) in Rock Creek Park; and George Mason University's Space Day (space-day-2025-program) near Vienna. (It turned out we had better skies in DC than they did at Sky Meadows!)

I had been one of the voices calling in the past for moving this AFNM event from Summer Solstice to Fall Equinox, and it looks like we made the wrong call. Or else we just got unlucky with choosing a night with 3 competing events and cloudy weather. (I've never quite understood how an adjunct professor at a small university on Long Island managed to pull off Astronomy Festivals on the National Mall almost every year for the past 15 years!)

Despite the clouds, the evening wasn't wasted, the weather was pleasant, we all had fun (I think) and attendees learned something. I for one got a better look at how to detect the Milky Way with an old satellite dish, and many folks got to see the Sun in H-alpha (courtesy of Zack) and with a white light filter (courtesy of Skip Bird and his enormous refractor). Folks also got to look at the statues atop the Capitol dome. Later on, Saturn and its moons put on an amazing show. The seeing was quite stable, and my unusual home-made travel Dobsonian was a hit.

*Recent Astronomy Highlights – continued from page 4*

**Over a Century of Records Track the Evolution of a Planetary Nebula**

**Image Credit – NASA/Hubble Space Telescope**

Known as the Spirograph Nebula, IC418, is a planetary nebula. At its center is a star in the process of the transition from red giant to becoming a white dwarf in the future. 130 years of records, including visual observations in the late 1800s, have recorded changes caused by that transition, including significant heating of the star. More information is available at phys.org/news/2025-09-planetary-nebula-years-evolution.html.

## 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.

**The APS Senior Physicists Group:** Wednesday, Oct. 15th at **1:30 p.m**., Dr. Andrew D. Iams, (National Institute of Science and Technology), will give a talk entitled **Leveraging Quasicrystals in Additive Manufacturing: Structure, Properties, and Potential**. Participants can attend in person at the American Center for Physics at One Physics Ellipse, College Park, MD 20740 in Room 2148 or via Zoom The Zoom link to register for the talk and attend is apsphysics.zoom.us/meeting/register/rm61C42bSbiftkO4fzIuKA#/registration.

**Next NCA Meeting - Nov. 8, 2025 -- Michael Kirk (NASA's GSFC)** *The Heliosphere Revealed: Insights for 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 88 Years of Astronomy*

**Image Credit - NASA, ESA, CSA, STScI, Yu Cheng (NAOJ); Image Processing: Joseph DePasquale (STScI)**
The JWST image above shows a protostellar jet in the proto cluster known as Sh2-284. More info ist at science.nasa.gov/missions/webb/nasas-webb-observes-immense-stellar-jet-on-outskirts-of-our-milky-way/.

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

## *Next NCA Meeting:*

# 2025 Oct. 11th
# 7:30 pm
# Dr. David DeVorkin

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

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

# Inside This Issue