Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

December 2024 ***Volume 83, Issue 4***

Celebrating 87 Years of Astronomy

Next Meeting

When: Sat. Dec. 14th, 2024

Time: 7:30 pm

Speaker: Geoff Chester

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

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

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Image Credits – NASA, ESA, CSA, STScI

A mid-infrared range image of two galaxies taken by the James Webb Space Telescope shows the galaxies' dust and stars. It can be compared to an image in the visible range taken by the Hubble Space Telescope at science.nasa.gov/missions/webb/blood-soaked-eyes-nasas-webb-hubble-

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 8). Please support NCA by applying for or renewing your membership at this time to continue receiving Star Dust. ***Thank you!***

Sky With Ocean Joined: Scaling the Stars at the U.S. Naval Observatory, 1830 to the Present

Geoff Chester – U.S. Naval Observatory

The U.S. Naval Observatory (USNO) performs an essential scientific role for the United States, the Navy, and the Department of Defense. Its mission includes determining the positions and motions of the Earth, Sun, Moon, planets, stars, and other celestial objects; providing astronomical data; determining precise time; measuring the Earth's rotation; and maintaining the Master Clock for the United States.

USNO is one of the oldest scientific agencies in the country. It was established in 1830 as the Depot of Charts and Instruments. Its primary mission was to care for the U.S. Navy's chronometers, charts and other navigational equipment.

examine-galaxy-pair/.

Recent Astronomy Highlights

First Close-Up Image of a Star Beyond the Milky Way

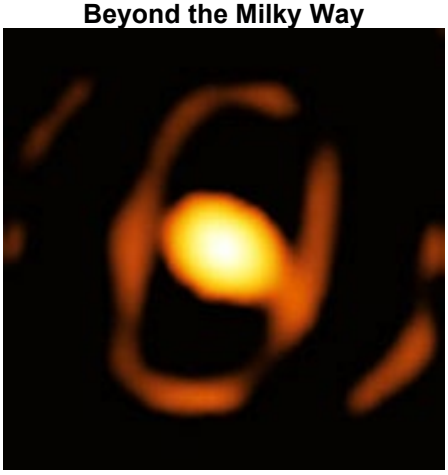

Image Credit - ESO/K. Ohnaka et al.

WOH G64, a red supergiant located approxiamately 160,000 light years away in the Large Magellanic Cloud, is the first star outside of the Milky Way Galaxy to be imaged close up. Nearly 2000 times the size of our Sun, WHO G64 is near the end of its life and has ejected some of its gas which has formed envelopes around the star as seen in the image above. That image was made by the GRAVITY+ instrument at the European Southern Observatory's Very Large Telescope Interferometer in Chile. The instrument actually uses the light received from four 8-meter telescopes to achieve the resolution power that would be possible of a 130-meter telescope. Comparing the image with previous images taken by other telescopes has shown that WHO G64 has dimmed over the past decade, likely because of obscuration from the ejected envelopes of gas. More information can be found at www.eso.org/public/news/eso2417/.

Lafeyette Meteorite Shows Signs of Water on Mars 742 Million Years Ago

A meteorite ejected from Mars during a likely asteroid strike 11 million years ago contains minerals indicating that it was in the presence of water 742 million years ago. Scientists believe the water may have come from melting of subsurface permafrost due to magmetic activity on the red planet. More info is at www.sciencedaily.com/releases/2024/11/241113160829.htm

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Abstract and Biography – continued from page 1

In 1844, as its mission evolved and expanded, the Depot was reestablished as the U.S. Naval Observatory and was located on a hill north of where the Lincoln Memorial now stands in Washington's Foggy Bottom district. For nearly 50 years significant scientific studies were carried out, such as speed of light measurements, the phenomena of solar eclipses, and transit of Venus expeditions. Publication of its annual American Ephemeris and Nautical Almanac started in 1852 and continues to the present day. In 1877, using the recently-completed 26-inch Alvan Clark "Great Equatorial" refractor, astronomer Asaph Hall discovered Phobos and Deimos, the two satellites of Mars.

After years of suffering the increasingly deteriorating environment in Foggy Bottom, the Observatory moved to its present location in upper Georgetown in 1893. Over the course of the next century USNO astronomers developed the instruments and techniques that made it what it is today: the world's foremost authority in the fields of astrometry and precise time determination and distribution.

USNO is headquartered in Washington, D.C., and operates a dark-sky observing station near Flagstaff, Arizona (NOFS). It also has a small detachment activity, the Alternate Master Clock facility (AMC), located at Schriever Space Force Base in Colorado Springs.

Biography: Geoff Chester has recently retired from his position as Public Affairs Officer and Historian after over 27 years at USNO. By a curious quirk of history, he is the great-grandson of the Observatory's 15th Superintendent, Rear Admiral Colby Chester. Prior to coming to USNO he spent 19 years working in various capacities for the Einstein Planetarium at the Smithsonian's National Air & Space Museum. He is a past president of the National Capital Astronomers, and is a member of the American Astronomical Society, the Northern Virginia Astronomy Club, the Association of Lunar and Planetary Observers, DarkSky International, and the Alliance of Historic Observatories.

Schedule of Upcoming NCA Meetings and Speakers

Carl Biagetti

December 14, 2024 -- Geoff Chester (USNO) *Sky With Ocean Joined: Scaling the Stars at the U.S. Naval Observatory, 1830 to the Present*

January 11, 2025 -- Thomas Brown (STScI) *On the Trail of the Missing Galaxies: The Oldest Stars in the Neighborhood*

February 8, 2025 -- Matt Clement (JHU/APL) *Planet Formation (exact title tbd)*

March 8, 2025 -- Heidi Hammel (AURA) *Exploring the Solar System with the James Webb Space Telescope*

Apr 12, 2025 -- Kevin Stevenson (JHU/APL) *Searching for Rocky Exoplanet Atmospheres with JWST (exact title tbd)*

May 10, 2025 -- Rob Zellem (GSFC/RST) *The Nancy Grace Roman Space Telescope (exact title tbd)*

Sep 13, 2025 -- Kristin Sotzen (JHU/APL) *The Dragonfly Mission*

Exploring the Sky

The Exploring the Sky program will take a hiatus until April of 2025.

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 other local astronomical events, please visit

www.astronomyindc.org.

The submission deadline for January's Star Dust, is December 27th.

Clear Skies

President's Corner

Guy Brandenburg

Sidewalk astronomy initiatives in and around DC, and other news:

A number of NCAers have been holding informal, unannounced "Sidewalk Astronomy" events both by day and at night at various locations around DC. The reactions have been great!

So far, Zach Gleiberman, Gael Gomez, and I have held several evening sessions near the corner of Connecticut Avenue and Calvert Street NW (DC). Additionally, Gael has recruited a neighbor of his (another amateur astronomer) to help with public viewing sessions near Irving and Mount Pleasant Streets NW.

On Saturday night (11/30), on my way back from Hopewell Observatory in northern Virginia, my daughter, grandson and I were pleasantly surprised to see a small crowd of about 10 people at that location. Gael and his neighbor were helping local pedestrians look through a Dobsonian scope Gael had made. He taped his cell phone to the tube of the scope and used an app called AstroHopper to find the various targets. Folks were very happy to have the opportunity to see them!

For daytime sessions, the two high school interns and I have set up on Wednesday and Friday afternoons at the National Air and Space Museum on the National Mall; Kalorama Park, 12th and Quincy Streets NE and finally Connecticut Avenue and McKinley Street NW.

Zack writes about the evening sessions: "Lines of people form to look through each scope. Interested individuals have come back to multiple sidewalk events and are very happy to see us there. People in cars, bikes, and motorcycles sometimes see us, find parking, and then walk over to talk to us and look through scopes. 75 to 80% of people who walk by stop to take a look. At least one to two people who stop by tell us that us being there made their day. Multiple people usually stick around for 10-20 minutes just to keep talking to us and look at objects…"

My interns also report that folks are quite interested in learning everything they can about each object that they get a chance to view and often report that this is their first time seeing the object with their own eyes. Especially in Woodley Park and Adams Morgan, quite a few of the folks remember our group setting up our scopes on earlier occasions, are glad we came back, and go and get their friends and family members to join us!

For the evening sessions, we bring a variety of scopes: a refractor, a home-made or commercial Dobsonian reflector, an SCT and sometimes a SeeStar.

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Sky Watchers

December/January

Mercury will be in the morning sky throughout the period, reaching greatest western elongation on 12/25 (see below). Venus remains high and bright in the evening sky, reaching greatest eastern elongation on 1/10 (see below). Mars rises earlier each evening, coming up near sunset by the second week of January. Jupiter will rise higher in the eastern sky each evening. Saturn will be high in the evening sky at sunset, having a conjunction with the Moon on 1/4 (see below). Despite predictions that it would already have happened, there is still no sign of the expected nova of T CrB.	
12/15	Full Moon – 4:03 a.m.
12/21	Winter Solstice - At 4:17 p.m. EST, the Sun will shine directly over the Tropic of Capricorn.
12/25	Mercury reaches greatest western elongation in the morning sky. It will be 22° from the Sun.
1/4	Conjunction of Saturn and the Moon - They will be a little over half a degree apart in the evening sky.
1/10	Venus reaches greatest eastern elongation in the evening sky. It will be 47° 12' from the Sun.

All times are in EST (Eastern Standard Time)

President's Corner – continued from page 3

For solar observing, people are generally astonished at what they can see on the sun through NCA's Coronado Solar Max hydrogen-alpha scope. Having commercial or home-made white-light filters or solar viewers helps viewers compare and contrast the very different images.

We would be interested in finding additional locations to do these impromptu events. Key requirements: high foot traffic, no direct streetlights shining on us (for evening events), close parking, and a clear-ish view to the South or of the Sun. It should either be on public property, or else we need to get prior permission from the owner, so that they don't ask security to have us leave. (It's happened!)

One of our goals is to show that one doesn't have to drive far out of urban areas to do serious astronomy and to see how our tiny blue planet fits into the Universe. I also like to point out that it's been less than a century since astronomers figured out that our Milky Way is just one medium-sized galaxy among countless others, and that despite the incredible progress during that century at examining the Universe in all kinds of wavelengths, we still have no idea what dark matter and dark energy are made of. One thing is for sure: even if there are other habitable planets around some other star, there is no foreseeable way ever to visit them, because the distances are too vast. There is no Planet B if we mess up this one!

Chong Wong is also to be commended for organizing formal, announced daytime observing sessions at Great Falls National Park (MD).

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Recent Astronomy Highlights – continued from page 2

First Einstein Zig Zag Discovered

Light from J1721+8842, an extremely bright galaxy known as a quasar, took approximately 11 billion years to reach Earth. On its journey, that light encountered, and was gravitationally lensed by, two separate galaxies, aligned along the path between the quasar and Earth. The first encounter took place approximately 10 billion years ago, and the second encounter took place 2.3 billion years ago. One twist is that the light travelled to one side of the first galaxy and to the other side of the second, thus causing a gravitational lensing phenomenon known as an Einstein Zig Zag. A previous image, taken by the Pan-STARRS facility in Hawaii, had already indicated that there was gravitational lensing of J1721+8842's light, showing four images of the quasar, however it took the resolution of JWST to resolve six images, proving the existence of two lenses. Such a precise alignment of two galaxies is believed to be extremely rare. Astronomers expect that the image of the Zig Zag and information obtained from it could be used to accurately determine the Hubble Constant, perhaps leading to a resolution of the current Hubble Tension, a difference in the value of the Hubble Constant derived from different methods. The information might also give clues about Dark Energy. More information, as well as an image of the Einstein Zig Zag, is available at www.space.com/first-einstein-zig-zag-jwst.

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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

2024/5 Date	Day	EST	Star Cat.	Mag.	Asteroid #	Name	dmag	dur. s	Ap. "	Location
Dec 15	Sun	19:52	TYC	9.0	679	Pax	2.8	4	3	sNJ,nDE,neMD,sPA
Dec 17	Tue	3:06	TYC	11.0	30331	2000 JT26	8	1.5	4	Dg,Tr,Cl,Wt,FR-VA
Dec 17	Tue	20:57	UC4	10.2	52651	1997 VF18	9	0.9	4	sLI,cNJ,sePA,nFdMD
Dec 18	Wed	4:04	SAO	7.5	30434	2000 LQ21	10	0.9	2	cNJ;At,PA;sCl,Ohio
Dec 21	Sat	4:33	UC4	11.0	16923	1998 FB61	7	0.8	4	Ap,SP,APL,Dm,Fd-MD
Dec 22	Mon	3:10	SAO	9.4	3200	Phaethon*	7	0.3	4	Pl-VA;eKY,WY,nOR
Dec 22	Mon	22:11	TYC	11.1	22442	Heejaelee	7	1.5	4	cNJ,sePA,ncMD,nVA
Dec 23	Mon	22:11	TYC	11.3	6364	Casarini	5	0.9	4	Bt,Gt-MD;Lg,FR-VA
Dec 24	Tue	6:38	UC4	11.8	1010	Marlene	3	4	5	e,c,+nMD;PA;neOH
Dec 26	Thu	19:10	SAO	7.6	24388	2000 AB175	11	0.9	2	KY,cWV,cVA;DC,MD?
*** Dates and times above are during 2024, those below are 2025 ***										
Jan 1	Wed	19:31	UC4	12.4	1626	Sadeya	0.7	1.1	6	cPA,cMD,DC,cVA,eNC
Jan 6	Mon	23:11	TYC	11.1	35	Leukothea	3	12	4	cNJ,sePA,nMD,nVA
Jan 7	Tue	18:58	UC4	12.1	19819	2000 SQ152	7	0.9	6	NJ,SP-MD,DC,Cp-VA
Jan 12	Sun	19:35	SAO?	9.0	43807	1991 RC11	9	1.2	4	cVA,sMD;nVA,DC,cMD?

* after the asteroid name is for a valuable near-Earth asteroid

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Lunar Grazing Occultations

2024/5 Date	Day	EST	Star	Mag	% alt	CA Dist. & azimuth from Greenbelt
Dec 14	Sat	3:45	chi Tauri	5.4	98+	28 11S 245km, az. 206 deg.
*** Dates and times above are during 2024, those below are 2025 ***						
Jan 4	Sat	20:31	ZC 3432	6.2	28+	17 13S 60km, az. 339 deg.
Jan 6	Mon	21:52	epsilonPsc	4.3	51+	30 9S 277km, az. 170 deg., ZC 146
Jan 9	Thu	21:42	Atlas	3.6	82+	69 10S 15km, az. 349 deg., ZC 560

Lunar Total Occultations

2024/5 Date	Day	EST	Ph	Star	Mag	% alt	CA	Sp.	Notes
Dec 14	Sat	3:26	D	chi Tauri	5.4	98+	33 40S	B9	ZC 647,Term.Dist. 13"
Dec 22	Sun	4:09	R	ZC 1696	6.9	55-	47 41N	F5	
Dec 24	Tue	6:23	R	ZC 1887	6.3	35-	41 68N	K0	Sun alt. -11 deg.
Dec 25	Wed	5:40	R	SAO 158207	7.4	27-	29 77N	F0	
Dec 25	Wed	6:06	R	ZC 1992	7.5	27-	32 7N	F0	close double
*** Dates and times above are during 2024, those below are 2025 ***									
Jan 5	Sun	19:05	D	ZC 16	7.5	38+	44 78S	K2	mg2 9.3, dTime +0.7a
Jan 5	Sun	20:17	D	SAO 109039	7.3	39+	34 21N	G5	close double?
Jan 5	Sun	22:17	D	ZC 24	6.8	39+	13 34S	K0	Azimuth 261 deg.
Jan 6	Mon	18:59	D	ZC 131	7.9	50+	56 11N	K0	close double??
Jan 6	Mon	20:59	D	70 Psc	7.6	50+	40 83S	G5	ZC 142, spec. binary
Jan 6	Mon	21:33	D	epsilonPsc	4.3	51+	34 41S	K0	ZC 146, close dbl??
Jan 6	Mon	23:38	D	ZC 162	6.9	51+	11 32S	F0	Az. 272
Jan 8	Wed	0:58	D	ZC 297	6.5	63+	9 83S	K0	Az. 282, close dbl??
Jan 8	Wed	19:27	D	ZC 411	7.0	72+	70 54S	G0	mag2 8.2, dTime -13s
Jan 8	Wed	23:55	D	SAO 75633	7.0	74+	34 80N	K0	
Jan 9	Thu	0:11	D	ZC 425	7.1	74+	31 13N	K0	
Jan 9	Thu	1:33	D	47 Arietis	5.8	74+	16 60N	F5	ZC 435
Jan 9	Thu	18:59	D	Electra	3.7	82+	65 39N	B6	ZC 537, spec. binary
Jan 9	Thu	19:29	D	Merope	4.1	82+	70 76S	B6	ZC 545, close dbl?
Jan 9	Thu	19:52	D	ZC 546	7.3	82+	73 45N	A0	close double??
Jan 9	Thu	20:07	D	24 Tauri	6.3	82+	74 89S	A0	ZC 549, spec. binary
Jan 9	Thu	20:11	D	Alcyone	2.9	82+	74 84S	B7	ZC 552, close doubele?
Jan 9	Thu	20:21	D	ZC 553	6.8	82+	75 60N	A0	spectroscopic binary?
Jan 9	Thu	20:24	D	ZC 551	7.3	82+	75 30S	B9	mag2 9.4 dTime -28s
Jan 9	Thu	20:55	D	ZC 557	7.0	82+	75 68N	A1	close triple??
Jan 9	Thu	21:18	D	Plieone	5.1	82+	73 54S	B7	ZC 561, spec. binary
Jan 9	Thu	21:22	D	SAO 76234	7.5	82+	73 71N	A0	mag2 12 dTime +114s
Jan 9	Thu	21:24	D	ZC 562	6.6	82+	73 76N	B9	close double?
Jan 9	Thu	21:28	R	Alcyone	2.9	82+	72 -58S	B7	AA 241,ZC 552,dbl?
Jan 9	Thu	22:05	D	SAO 76259	7.4	83+	67 70N	A2	close double
Jan 10	Fri	1:50	D	ZC 587	6.2	84+	25 25S	K0	
Jan 10	Fri	23:41	D	SAO 76841	7.3	91+	62 68S	K1	mag2 10, dTime +0.2s
Jan 11	Sat	1:48	D	ZC 746	7.0	91+	39 89N	B7	mg2 7, sep 20", dT -18s
Jan 11	Sat	19:11	D	ZC 885	5.6	96+	47 62S	G7	mag2 7, sep 0.01"
Jan 12	Sun	0:08	D	SAO 77818	6.7	96+	69 70S	K5	
Jan 13	Mon	4:28	D	47 Gem	5.8	99+	31 41N	A4	ZC 1088,Term. Dist. 4"

Much more on mid-Atlantic occ's page at http://iota.jhuapl.edu/exped.htm.
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President's Corner – continued from page 4

Reminder that if you haven't renewed your membership in NCA for the 2024-2025 fiscal year, this will be your last issue of Star Dust.

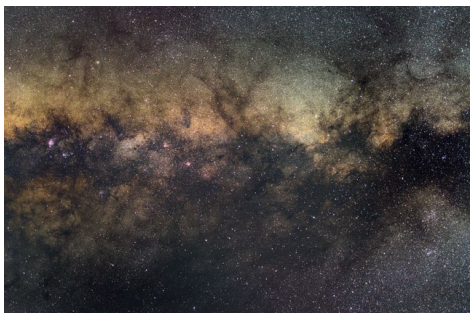
From Howard County, Jim Kaiser reports on an 'imaging wunderkind' from a small star party at Howard Community College in Columbia, Maryland: "Through the moderate-heavy light pollution she was taking sequential 10-minute shots of the Andromeda Galaxy with an incredible rig. I saw the first shot appear on her computer screen before I left. With just a little tweaking it would have earned her bragging rights, but she was getting the shots to add to 10 others she had already compiled before last night and processed into a stunning, journal-quality, photo of the galaxy that she showed me on her phone. She was doing it just to reduce noise in the final product. (What noise? I didn't see any.)

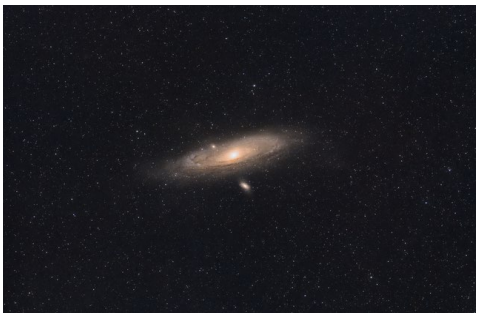
"She was photographing with a (probably 75 mm) triplet objective short-tube refractor equipped with a ccd-equipped guidescope of a standard, small aperture, all atop a large Celestron equatorial mount. The refractor itself cost only $600. Her camera was operated by the computer. The guidescope takes a continuous series of 1-second exposures and compares them to each other in sequence. The differences are sent to the computer to tweak the guiding. There are no bright stars close to M31; I guess the 1-second exposures are enough to capture the faint stars in the field.

"Setting up the scope is quite complex, and involves taking photos of the sky through the rig and having the computer do plate reading.

… It is mind-boggling that a 3rd-semester college student can do it. Self-taught."

Finally, a few astrophotos from our own imaging wunderkind, Gael Gomez.





Left - Milky Way - Cave Mountain Observatory Retreat
Nikon D5200 | 16x120s | ISO 500 | Nikkor 35mm F/1.8
Right - Andromeda Galaxy - Cave Mountain Observatory Retreat
Nikon D5200 | 73x90s | ISO 500 | Samyang 135mm F/2

The Orion Nebula Core - Hopewell Observatory

Nancy Springs Jones Byrd

Nancy Springs Jones Byrd, 89, died Saturday, October 26, 2024, only 7 weeks after a diagnosis of Hodgkin lymphoma. Surrounded by her husband, sister, son, daughter, and 2 of her grandchildren, she died in her home in Wolfeboro, New Hampshire. She was born in Charlotte, NC, on October 24, 1935, the daughter of Bill Jones and Helen Betchley. Most of her adult life she lived in Northern Virginia, but she immersed herself in the Lakes Region community soon after moving to New Hampshire in 2007.

Nancy's life was full, with a passion for advanced education, playing classical piano, singing in a choir, volunteerism, academic studies, hobbies of bicycling and backpacking, and poetry and play reading in her later years. She had many achievements, including a BA in math, most of a Masters in math, and a BS and MS in geology. She was a pioneer in computer science, trained as a programmer in 1957, and worked as a computer scientist until 2009. Raising three kids well in a time when mothers rarely worked outside the home (no less in science and tech), she did it all. She commuted from her home in Annandale, Virginia to her job in Washington, DC by bicycle for many years. Her interest in science drove her to spend the last couple of years of her life researching and writing a book, "Thoughts of Evolution." She has also written about climate change. In her earlier years, she had many adventures, such as climbing Mt. Kilimanjaro, in Africa to 19,800 feet, biking for seven days with her husband in France, and leading Explorer Scouts in caving, mountaineering and backpacking in West Virginia, Wyoming, NC, and VA.

Nancy's love of nature was infectious, and her perseverance in conservation has left the Earth a better place for her efforts. From the first Earth Day, to adopting a section of the Appalachian Trail, to being a member of the Wolfeboro, New Hampshire Conservation Commission, Nancy donated her time generously to fight for the protection of natural resources. She was President of the Northern Virginia ACLU in the early 70's, a time when leaders like her were catalysts for a new paradigm. An avid astronomer since the 1960's, Nancy and her husband Dick were founding members of the Hopewell Corporation that built an observatory in Northern Virginia. She was also President of the National Capital Astronomers in D.C. In that capacity, she became a personal friend of our famous astronomer, Vera Rubin, and had her as a speaker at several events. In New Hampshire, she belonged to the NH Astronomical Society, and she and her husband were recipients of the New Hampshire Volunteer Award for their ten years of water sampling on Mirror Lake.

Speaking of her interest in astronomy, Dick says, "In the early 1970s, Nancy and I decided to make an 8-inch telescope. We ground the mirror over many days and I built a Foucault tester to check the curvature. Our grinding was quite good. But as we were starting to build the tube there came a huge sale by Celestron for the 8-inch unit and so we bought it. End of our homemade telescope. We eventually gave the mirror to an enthusiastic amateur. We still have the Celestron."

Caring about community, she was President of the Lakes Region Newcomers Club, a local club with over 500 members. With a big heart, she also fought for individuals escaping difficult home lives, opening her home to many sweet people looking for the American Dream. Her contributions will have a positive impact for generations to come.

Nancy was a shining light of love and is survived by her husband, Dick Byrd, her sister, Helena Jones, her daughter and son-in-law, Beverly and Mark Buswell, her son Brady Byrd and son-in-law Brian Neste, her 6 grandchildren, and 5 great grandchildren. She was predeceased by her daughter, Bonnie Carriger.

Recent Astronomy Highlights – continued from page 4

Hundreds of Galaxies Discovered in the Zone of Avoidance

The mapping of the Universe out to billions of light years is one of the greatest successes of astronomy; however there remains one region that still might be labeled largely as terra incognita. That is the region in the direction of the galactic center and beyond it. The copious amounts of dust, gas and stars in that direction obscure nearly all forms of light from beyond it from getting through to us. But radio waves still manage to make the trek largely unhindered, including the 21-centimeter radio waves emitted by the neutral hydrogen that surrounds galaxies. Taking advantage of that circumstance, the Meerkat array in South Africa has charted hundreds of galaxies in the Vela Supercluster, many of which had remained undetected until now. More information can be found at phys.org/news/2024-11-astronomers-defy-zone-hundreds-galaxies.html.

Calendar of Events

NCA Telescope Making, Maintenance, and Modification Workshop (TM3W) (previously the NCA Mirror- or Telescope-making Classes): *The Chevy Chase Community Center has reopened and classes have resumed*. Classes will be Tuesdays and Fridays, from 6:00-9:00 pm at the Chevy Chase Community Center (intersection of McKinley Street and Connecticut Avenue, N.W.) Please contact instructor Guy Brandenburg at 202-635-1860 (leave message) or at gfbrandenburg@yahoo.com if you plan to attend. Info is at guysmathastro.com.

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.

January 11, 2025 -- Thomas Brown (STScI) *On the Trail of the Missing Galaxies: The Oldest Stars in the Neighborhood*

The APS Mid-Atlantic Senior Physicists Group: Tuesday, Dec. 10th at 1:00 p.m., Dr Howard Milchberg, UMD, will give a talk entitled "Relativistic Optics and Laser-driven Particle Accelerators". Participants can attend in person at the American Center for Physics at One Physics Ellipse, College Park, MD 20740 or via Zoom. A Zoom link to register and attend is apsphysics.zoom.us/meeting/register/tZAuc-iprDovGNTgRzQSnofI2gWFt4ps6JmG#/registration.

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

$ 15 – 1 year Individual/Family
$ 35 – 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 87 Years of Astronomy

Image Credit: NASA, ESA, CSA, STScI

The recent image of the Sombrero Galaxy, taken by JWST, has provided some surprises for astronomers. Previous images, such as those of Hubble, seemed to indicate that the galaxy had a large central bulge, but the image above shows that region contains more of a flat disk. More information is available at www.sciencealert.com/astronomers-reveal-stunning-new-image-of-unusual-sombrero-galaxy.

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

Next NCA Meeting:

2024 Dec. 14th

7:30 pm

Geoff Chester

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

  umd.zoom.us/j/91273752763?pwd=XKZL9V94XIDzwWg7FYDKLbVUQb5YRP.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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