Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

September 2023 ***Volume 82, Issue 1***

Celebrating 86 Years of Astronomy

Next Meeting

When: Sat. Sep. 9th, 2023

Time: 7:30 pm

Where: In-Person and Online (Zoom)

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

Speaker: **Dr. Dana Anderson**

Table of Contents

Image Credit - NASA, ESA, CSA, STScI, Klaus Pontoppidan (STScI)

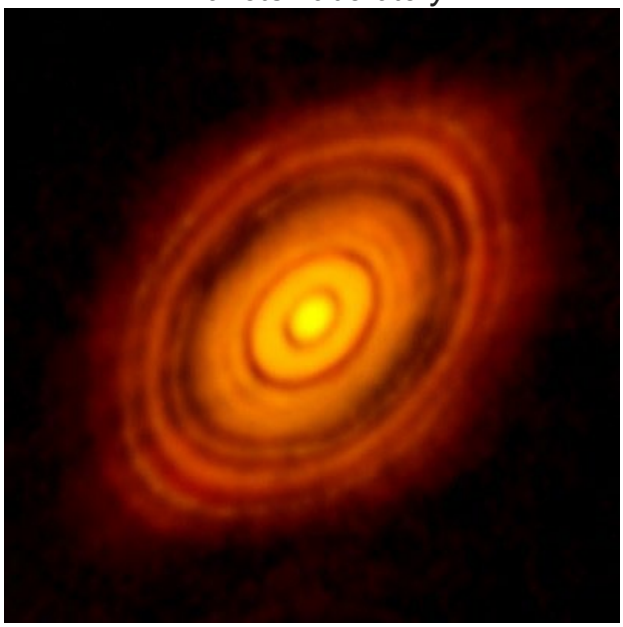
Celebrating James Webb Space Telescope's first year of operations, NASA released an image of the Rho Ophiuchi Cloud Complex, the closest star-forming region to Earth. More info is at www.nasa.gov/feature/goddard/2023/webb-celebrates-first-year-of-science-with-new-image.

Annual Membership Dues are Due!

You may join or renew using the form on Page 8 (and mailing it in) or our website's online option (right column). Please support NCA by applying for or renewing your membership at this time in order to keep receiving Star Dust. Thank you.

Investigating the Chemical Ingredients that Make Planets

Dr. Dana Anderson – Carnegie Institution for Science Earth and Planets Laboratory



HL Tau and its protoplanetary disk as imaged by ALMA. Image Credit - ALMA (NRAO/ESO/NAOJ); C. Brogan, B. Saxton (NRAO/AUI/NSF)

Planet-forming gas and dust that surrounds young stars provides insight into the early development of planets and planetary systems, including the Earth and our own solar system. Studying proto-planetary materials helps us understand where our Solar System came from and how it may differ from the wide variety of extrasolar planetary systems that form around other stars across our galaxy. Using astrochemistry, we can learn about how extrasolar planets form, what they are made of, and if they could host Earth-like life by investigating the chemical ingredients that are present during the early stages of planet formation. In this talk, I will present the results of our investigations into the major carriers of carbon, nitrogen, and oxygen across a range of planet-forming regions using a combination of computational models and telescope observations.

Recent Astronomy Highlights

An Exoplanet With A Case of Hiccups
AU Microscopii b caused quite a bit of surprise for astronomers in July when imaging from the Hubble Space Telescope showed that the exoplanet was losing some of its hydrogen atmosphere as it is blasted by X-rays and other radiation from its host star. Located 31.7 light years from Earth, AU Microscopii b is a Neptune-like gas giant approximately twenty times the mass of Earth which orbits its star in only 8.5 days. AU Microscopii itself is an M-type or Red-Dwarf star. Why the surprise? Because observations of the exoplanet on previous occasions show not such a loss of atmosphere. This is the first time that astronomers have seen such a variation in atmospheric loss, like hiccups. But with M-type stars being the most common stars around, and exoplanets being found in abundance, there will no doubt be discoveries of other such 'hiccupping' exoplanets. More information can be found at exoplanets.nasa.gov/exoplanet-catalog/7635/au-microscopii-b/.

Evidence of Gravitational-Wave Background Discovered
15 years of study, using the timing of pulses of radiation from rotating neutron stars, known as millisecond pulsars, has found evidence for a long-theorized gravitational-wave background, low-amplitude ripples in the fabric of spacetime, pervading the Universe. Unlike the gravitational waves detected from black-hole and neutron-star mergers detected by LIGO, the waves inferred by using this millisecond-pulsar network have wavelengths that would be measured in light years. These long-wavelength gravitational waves are most likely generated by supermassive black hole binary systems which are far apart, taking years to complete orbits of each other. However, they may also have formed during the inflation of the Universe or via other means. More info on the discovery can be found at www.eurekalert.org/news-releases/998065. In addition, one of the original articles published in June is at iopscience.iop.org/article/10.3847/2041-8213/ace18b/pdf.

continued on page 4

Abstract and Biography – continued from page 1

By tracking these chemical elements, we estimate how much proto-planetary material is available for planet formation around a typical young star and how long these materials persist. We also compare the chemical composition of proto-planetary materials to the compositions of fully-formed planets to reveal physical and chemical processes occurring during planet formation and evolution.

Biography: Dr. Dana Anderson is a postdoctoral researcher at the Carnegie Institution for Science Earth and Planets Laboratory in Washington, D.C. Prior to arriving in D.C. in September 2022, Dana did postdoctoral research at the University of Virginia. She earned her B.S. in chemistry and interdisciplinary physics from the University of Michigan and PhD in planetary science from Caltech. Dana's research focuses on the blending of astronomy and chemistry ("astrochemistry") and investigating the origins of planets and planetary systems.

President's Corner

Guy Brandenburg

Dues Increase Coming Up

At the NCA board meeting on Saturday, August 26th, we looked at several spreadsheets showing the club's expenditures and income sources, prepared by treasurer Jim Simpson and myself. The board voted to raise the ordinary membership rate starting next year. The annual membership rate for the next three years will be:

- 2023-24 (current) - $10
- 2024-25 - $15
- 2025-26 - $20

Mike Brabanski noted that when he was treasurer some years ago, our bank account was seen as being excessive, so it was decided to lower the dues to $10 in order to use up some of those funds. That has been accomplished.

A New Expense For NCA

You may recall that the University of Maryland's astronomy department, while approving our use of the UMD Observatory for monthly meetings, starting this month, will not pay for students to staff the Observatory during NCA meetings. Therefore, we plan to pay a small stipend in the form of electronic gift cards to the students who work.

continued on page 3

Exploring the Sky

2023 Exploring the Sky Sessions
23 Sept. 8:00 P.M. Moon, M31, Venus, Mars
21 Oct. 7:30 P.M. Moon, Jupiter
18 Nov. 7:00 P.M. Jupiter, M45, outer planets

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 fuzzy galaxy or two.

This year, as an added feature, you can come one hour early and see a planetarium program in the Nature Center and then come to the field to observe. Also, if the sky is cloudy or it's raining there will be a planetarium program at that one-hour-earlier time so Exploring the Sky will no longer be canceled! Planetarium programs can be found at: www.nps.gov/rocr/planyourvisit/calendar.htm. You can also search "astronomy", "dark skies" or call the Nature Center at: (202)-895-6070.

The article-submission deadline for October's issue of Star Dust, is September 18th.

Clear Skies!

President's Corner – continued from page 2

Hybrid Meeting This Month (9/9/2023)

From now on, we will be meeting in a hybrid manner. You can come in person to the lecture hall at the UMD astronomical observatory, and if the skies are clear, you may observe through the telescopes there. Or, you can join online. NCA volunteers may be needed, before the first meeting, to help re-order and re-organize the lecture hall.

SWAG

You will soon be able to use the NCA website to individually order your own hat, shopping bag, mug, or T-shirt labeled with the NCA logo. Details will come later. One idea floated was that we give our monthly speakers either a pre-lecture dinner, if they are coming in person, OR some NCA-branded swag if they are speaking remotely.

Science Fair Judges Needed

Milt Roney, the membership coordinator, will contact the folks who said, when they were joining NCA or renewing, that they were interested in visiting local science fairs to congratulate students who have done outstanding astronomy-related projects. This group will need to research when and where local jurisdictions hold their science fairs, and decide who will attend which one. (Note: Sometimes there are several county or regional or District science fairs on the same day!) Some of these projects, and the students doing them, are amazingly good!

Selling telescopes

NCA has now had about six telescopes of various types donated to us. Most of them required some repair and modification. We will put them up for sale; details will be forthcoming. These sales will help our budget considerably. Not all are quite ready for sale. Here they are:

- ***4" Meade Newtonian on tripod***
- ***4" Celestron NexStar SCT*** (black tube, 2 arms, computerized; comes with eyepieces)
- ***8" Dob-mounted, home-made Newtonian*** (very high-quality optics) whose mount was completely remade by the NCA Telescope Making, Modification and Maintenance Workshop.
- ***8" Celestron NexStar*** SCT (black tube, 2 arms, computerized, comes with eyepieces)
- ***8" Celestron SCT*** (older orange tube, with wedge and tripod but no eyepieces; NOT computerized; this one is not ready for sale yet)
- ***16" Home-made Truss-tube Dob*** nicely converted by its now-deceased donor from an equatorial Meade StarFinder. Mirror is f/4.5. No eyepieces. This one is also not yet ready for sale.

Outreach

We have a number of opportunities for showing the sky either by day (with the NCA H-a solar scope) or by night, but we should do more. Two such events that some of us have been doing for some time are: Exploring the Sky in Rock Creek Park, and on the Mall at the Eisenhower Memorial (in conjunction with NASM). These have been quite popular. I feel we need to do a better job of contacting local schools' science departments to arrange such events in order to reach a better demographic cross-section of the youth of tomorrow. May I encourage armchair members of NCA to join us at these events? Chong Wang is preparing a handout about NCA that we can give out at such events.

continued on page 4

Sky Watchers

September/October

Mercury rises early in the predawn sky, reaching Greatest Western Elongation on 9/22 (see below). Venus will also be in the morning sky. Jupiter will rise around 10:00 p.m. Saturn will be visible almost all night. Mars will mostly be unviewable. On 10/14, there will be a partial solar eclipse in the D.C. area (see below).	
9/22	Mercury reaches Greatest Western Elongation. The planet will be 17.9 degrees away from the morning Sun and high in the sky for predawn viewing.
9/23	Autumnal Equinox at 2:43 a.m.
9/29	Full Moon and Supermoon at 5:59 a.m.
10/8-9	The Draconids Meteor Shower peaks in the evening with approximately 10 meteors/hour. A quarter Moon, rising in the early-morning hours, will largely not interfere since the best time to view this meteor shower is usually in the early evening, unlike with other meteor showers when it is during the pre-dawn hours of the night.
10/14	Annular Solar Eclipse in parts of US (Partial Solar Eclipse in the DC Area). An annular solar eclipse takes place when the Moon is too far away from Earth to completely cover the Sun, leaving a ring of the Sun still visible. In the DC area, the partial solar eclipse begins at 12:07 a.m., peaks around 1:17 p.m. (29% coverage of the Sun) and ends around 2:30 p.m.

All times are in EDT (Eastern Daylight Savings Time).

President's Corner – continued from page 3

Need New NCA Vice President

The Vice President recruits and introduces the speakers at the NCA's meetings. The current Vice President has indicated that he will not be a candidate for that office in the election next June, so if we wish to have speakers in Fall 2024 and after, we need someone to volunteer for that role. Otherwise, the NCA's continued existence will be doubtful. The current Vice President is willing to provide the volunteer tips on finding prospective speakers, tips on the timing of the invitations, sample letters of invitation for speakers and online sources of information that are useful when introducing speakers.

Science Fair Judges Needed

We need at least two people to volunteer for the judging of science fairs. Deep astronomical expertise is not needed - any thoughtful person who has attended a season of NCA meetings has sufficient astronomical background. The science fair season is brief - typically a weekend day or two in March, so this isn't a time-consuming activity.

Nominating Committee

We have never formally designated the person or persons who finds the candidates for the June elections. Hitherto we have depended upon someone happening to realize in the early Spring that no one would do it unless they themselves did it. That potentially detracts from the legitimacy of the slate of candidates. We need an official nominating committee, whose size is TBD.

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:

- Jeffrey Norman
- Brian Tomich
- Elizabeth Warner
- Marjorie Weissberg

Electronic Distributor: Jay Miller

Recent Astronomy Highlights – continued from page 2

Age of One of the Earliest Galaxies Confirmed Spectroscopically

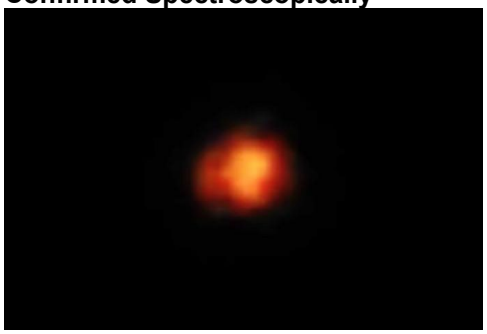


Image Credit - NASA/STSCI/CEERS/ TACC/University of Texas at Austin/ S. Finkelstein/M. Bagley

It may look like a nondescript reddish blob in the image above, but Maisie's Galaxy, as imaged by the James Webb Space Telescope appeared to be one of the earliest galaxies in the Universe when first imaged last year. Follow-up spectroscopic studies have since proven that this is indeed the case. Named after the daughter of Steven Finkelstein one of the astronomers to first study it, Maisie's Galaxy appears to have been well formed by 390 million years after the Big Bang. Although it is not the oldest galaxy so far detected, it is the first for which the age was determined with spectroscopic readings from JWST's NIRSpec, Near Infrared Spectrograph. Using the same method, astronomers are evaluating the spectrographic signatures of ten other galaxies to determine if they formed even earlier in the Universe. More information about the image can be found at www.eurekalert.org/news-releases/998502.

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

2023 Date	Day	EDT	Star	Mag.	Asteroid	dmag	dur. s	Ap. "	Location
Sep 9	Sat	1:40	4UC48600516	12.0	1994 ED2	6.7	0.8	6	sNY,ne-swPA,cOH
Sep 13	Wed	22:22	4U410135716	12.6	Eros	0.5	4	8	DE,sMD,nVA,sOH
Sep 17	Sun	22:49	4U413145138	12.1	Polit	4.0	3	6	NYC,NJ,sMD,cVA
Sep 18	Mon	3:08	4UC48210727	10.6	Ino	2.0	8	4	sOH,cWV,cVA,sMD
Sep 18	Mon	23:02	4U408144114	11.4	Wallenquist	5.6	2	5	n+wNY,nwPA,n-wOH
Sep 22	Fri	3:32	4UC57727546	11.4	Paulina	3.7	1.7	5	nSC,cNC,sVA,seMD
Sep 22	Fri	23:18	4U337197403	11.2	Tucson	5.6	14	5	cNC,wVA,wMD,cPA
Sep 25	Mon	2:45	4UC58325960	11.5	Lucidor	4.6	0.9	5	seOH,nWV,sw-nePA
Sep 27	Wed	5:37	4UC60124484	12.4	Arachne	1.8	7	7	nVA,DC,cMD,sNJ
Sep 28	Thu	3:15	4UC49143785	10.7	Eleonora	1.0	6	4	WV,c+nVA,DC,sMD
Sep 29	Fri	1:59	4UC57709260	10.6	Bertha	2.9	25	4	MD,se-nVA,DC,nOH
Oct 3	Tue	22:00	4U345187497	12.0	(26499)	6.4	0.9	6	sWV,cVA,sMD,sNJ
Oct 8	Sun	3:22	TYC17211394	11.7	Fry	5.0	1.2	6	sNJ,nDE,nMD,sOH
Oct 10	Tue	22:12	4U393118381	12.6	Balder	4.3	1.1	8	nVA,sMD,sNJ;DC?

Lunar Grazing Occultations

2023 Date	Day	EDT	Star	Mag	% alt	CA	Location, Notes
Oct 6	Fri	3:28	SAO 78704	9.3	52- 47	10N	nTysons,VA;Bethsda,Kontera,MD
Oct 8	Sun	5:27	ZC 1283	7.0	32- 48	4N	Clftn,Brk,VA;sDC;Frstv,Mayo,MD

Lunar Total Occultations

2023 Date	Day	EDT	Ph	Star	Mag	% alt	CA	Sp.	Notes
Sep 10	Sun	6:38	R	omega Cnc	5.9	18- 47	30S	G8	Sun alt. -2, ZC 1206
Sep 16	Sat	15:10	D	Mars	1.7	3+ 45	85N		Sun altitude +43 deg.
Sep 16	Sat	16:32	R	Mars	1.7	3+ 36	-47N		Sun alt. +30 deg.
Sep 22	Fri	21:06	D	SAO 186391	7.8	52+ 17	67S	A2	mg2 8.8, dTime +1.0s
Sep 22	Fri	22:05	D	ZC 2631	6.5	53+ 11	52N	B9	Azimuth 217 deg.
Sep 26	Tue	0:23	D	33 Cap	5.4	85+ 23	59N	K0	ZC 3130
Sep 26	Tue	21:05	D	164984	7.1	92+ 29	63N	K0	
Sep 27	Wed	0:59	D	ZC 3284	7.0	92+ 31	54N	F5	close double??
Sep 27	Wed	22:31	D	psi 1 Aqr	4.2	97+ 38	87N	K0	ZC3419
Sep 28	Thu	21:21	D	5(Cet)/Psc	6.2	100+ 27	46S	K2	ZC 13,TmD 2", spec.bin.
Sep 30	Sat	1:12	R	73 Psc	6.0	99- 56	89N	K5	Axis Ang 276 dg, ZC 153
Sep 30	Sat	6:50	R	88 Psc	6.0	99- 16	27S	G6	Sun-3,AA208,ZC184,TmD 5
Sep 30	Sat	20:54	R	54(Cet)/Ari	5.9	96- 13	82N	F2	Az86,AA277, ZC272, dbl?
Oct 1	Sun	1:44	R	ZC 290	6.1	95- 62	60S	A6	Axis Angle 238 deg.
Oct 1	Sun	3:29	R	SAO 92761	6.9	95- 61	31S	K0	Axis Angle 208 deg.
Oct 1	Sun	21:25	R	ZC 407	7.2	90- 13	90N	K0	Azimuth 78 degrees
Oct 1	Sun	23:08	R	pi Arietis	5.3	90- 33	82S	B6	ZC 416,mag2 8,dTime +4s
Oct 2	Mon	2:58	R	45 Arietis	5.8	89- 69	56S	M6	ZC 432
Oct 3	Tue	1:25	R	SAO 76232	7.7	82- 51	68S	A0	
Oct 3	Tue	1:27	R	ZC 563	7.0	82- 51	41S	B9	
Oct 3	Tue	1:42	R	SAO 76254	7.3	81- 54	42S	F5	mag2 9.1, dTime -0.14s
Oct 3	Tue	22:17	R	ZC 703	6.2	74- 8	65S	A5	Azimuth 64 deg.
Oct 4	Wed	1:27	R	ZC 717	7.7	72- 43	63N	A0	close double??
Oct 5	Thu	1:47	R	ZC 868	7.5	63- 37	70N	A0	mag2 9.8 sep9" dT -19s
Oct 5	Thu	4:58	R	SAO 77621	7.5	62- 72	13S	M3	
Oct 5	Thu	5:41	R	ZC 885	5.6	61- 78	89N	G7	
Oct 6	Fri	0:48	R	SAO 78580	7.3	53- 17	76N	A2	
Oct 6	Fri	3:51	R	ZC 1035	6.7	52- 50	26S	K3	close double??
Oct 8	Sun	2:05	R	CX Cancri	6.1	33- 10	73N	F0	Az 67, ZC1270, spec.Bin.
Oct 8	Sun	3:29	R	ups1 Cnc	5.7	33- 25	71N	F0	ZC1274
Oct 8	Sun	4:11	R	ups2 Cnc	6.4	33- 33	56N	G9	ZC1279
Oct 8	Sun	5:05	R	SAO 80256	8.1	32- 43	71N	K2	
Oct 9	Mon	3:00	R	SAO 80764	7.8	24- 9	73N	K2	Az. 71, close double?
Oct 9	Mon	5:09	R	ZC 1390	7.7	24- 33	58N	G0	
Oct 10	Tue	5:41	R	SAO 98984	8.0	16- 28	83S	F0	
Oct 12	Thu	6:32	R	ZC 1693	7.5	5- 16	30N	F5	Sun alt. -9 deg.

More information at http://iota.jhuapl.edu/exped.htm.

David Dunham, dunham@starpower.net

2023-2024 Officers

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

Vice-President:
John Hornstein
jshgwave@yahoo.com
301-593-1095 (h)

Secretary-Treasurer:
Jim Simpson
simpsonj@verizon.net
240-232-2820

Asst. Secretary-Treasurer:
Jeffrey B. Norman
jeffreynorman@comcast.net

Trustees:
- Tom Crone (2024)
- Benson Simon (2025)
- Michael Brabanski (2026)
- Bernard Kaufman (2027)

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)

NCA Webmaster
Elizabeth Warner
warnerem@astro.umd.edu
301-405-6555

Star Dust Editor
Todd Supple
NCAStardust@gmail.com
240-687-8193

Social Media
Twitter: @NatCapAstro

Wayne H. Warren, Jr. (1940 – 2023)

Sandie Koutavas & David and Joan Dunham

Dr. Wayne H. Warren, Jr. of Jacksonville, Florida, passed away peacefully on June 17, 2023, in the care of hospice at Baptist South Hospital at the age of 82. He is preceded in death by his wife Martha, and his parents Wayne and Grace. He is survived by his 3 children, Ken, Sandra and Katherine and 3 grandchildren, Madison, Elijah, and Amanda.

Dr. Warren was born in Newark, New Jersey. After graduating from high school, he went on to pursue further education at Farleigh Dickinson University where he earned his bachelor's degree in Physics (1968) and was inducted into the Phi Omega Epsilon Honor Society. During that time, he worked for Bell Laboratories and met his wife, Martha. They married in 1967. Wayne was accepted to Indiana University where he intended to pursue graduate degrees in astronomy. The family moved to Bloomington, Indiana where Wayne earned a master's degree in astronomy (1970) and a Ph.D. in astronomy (1975). Upon completion of his Ph.D., Dr. Warren was offered a position to work in the Astronomical Data Center at Goddard Space Flight Center in Greenbelt, MD; he was the Data Center director from 1977 until he retired in 1992. He became world-renowned as an expert of star catalogs, receiving the George Van Biesbroeck prize from the American Astronomical Society for this work in 1994. Starting in 1992, Dr. Warren served as an Adjunct Professor at both Towson State University and the University of Maryland University College teaching physics and astronomy.

For Wayne's work in astronomy, the approximately 9-kilometer asteroid (38036) 1998 RE1, discovered in 1998 by John Broughton in Reedy Creek, Queensland, Australia, has been named Waynewarren by the Minor Planet Center of the International Astronomical Union. The citation for the naming is: *Wayne H. Warren (1940-2023) obtained his astronomy Ph.D. in 1975 and worked with others to set up the Astronomical Data Base and Retrieval System at NASA-GSFC, for which he received the Van Biesbroeck prize in 1994. He taught astronomy at universities for many years and as an IOTA member recorded numerous lunar grazes, solar eclipses and asteroid occultations.*

continued on page 7

Wayne H. Warren, Jr. (1940 – 2023) – continued from page 6

Left picture – Wayne's family - from left to right, Ken, Wayne, Martha (holding Kathy), and Sandie
Right picture - Warren family with grandchildren, 2009. Standing in back: Wayne and Milton Koutavas, 2nd row, left to right: Martha, Sandie Warren Koutavas, Ken Warren (holding his daughter Amanda) and wife Maria, Bottom, left to right: Elijah Koutavas, Kathy Warren and Madison Koutavas

The asteroid is currently in the constellation Corvus, the Crow, just south of Virgo, but it remains too close to the Sun, or too far south, to observe from northern latitudes for the next several months. It won't be until 2025 that there will be good visibility from our area.

From 1991 to 2013, Wayne recorded 17 occultations of stars by asteroids, and recorded over 100 lunar occultations over the years, many of them mobile efforts for grazing occultations. From 1963 to 2017, he observed several total solar eclipses, video recording several of them. From South Carolina, he observed the August 2017 total eclipse with his children and grandchildren. David Dunham was fortunate to accompany Wayne on many of these observing trips. Wayne was active in the National Capital Astronomers (NCA) from at least 1979 until he passed. He held several different positions, serving as Vice President from mid-1993 to mid-1994, President from mid-1994 to mid-1996, and as a Trustee from 1998 to 2019. He did most of the work to scan the early-year issues of Star Dust, NCA's publication, for their online archive and was an editorial advisor since 2008. In 2018, he relocated to northeast Florida to be closer to his daughters. Wayne had an encyclopedic knowledge of astronomy and astronomers, with friends and colleagues all over the world. His wit and knowledge will be sorely missed, by NCA and by his many other friends.

Urn containing Wayne's ashes

Recent Astronomy Highlights – continued from page 4

A New Type of Star Discovered
HD 45166 is a helium-rich star approximately twice the mass of the Sun which lies approximately 3000 light years away from Earth. It is part of a binary system and there is speculation that the star may have formed from the merger of two smaller helium-rich stars. In 2022, after much speculation about the magnetic field of HD 45166, observations confirmed that it has the strongest such field ever detected for a star massive enough to collapse into a neutron star. That field is over 100,000 times as powerful as Earth's. When the star does run out of fuel and collapses, causing a supernova, it is theorized that the neutron star which is created will have a magnetic field of approximately 100 trillion gauss, making it a magnetar, an object with the strongest magnetic field ever detected. More information on the discovery can be found at www.sciencedaily.com/releases/2023/08/230817163841.htm

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 5:00 to 7:30 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. More 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.

Next NCA Meeting: **14 October** 7:30 p.m. Ben Hord (UMD) **The Mystery of Hot Jupiters**

The APS Mid-Atlantic Senior Physicists Group: **(Zoom Meeting)** September 20th at 1:00 p.m., Dr. Elizabeth Ferrara, UMD, will give a talk entitled "Observations of a Gravitational-Wave Signature in 15-years of Pulsar-Timing Data with NANOGrav". You can register for the Zoom meeting at apsphysics.zoom.us/meeting/register/tZYpd-GspjgvG9SFgBXgMV99E2WYNZ50HSV0.

National Capital Astronomers Membership Form

Name: _____ **Date:** ___/___/___

Address: _____ **ZIP Code:** _____

Home Phone: ____-____-_____ **E-mail:** _____ **(necessary for delivery of Star Dust)**

Membership (circle one): Student….. $ 5; Individual / Family…..$10; Optional Contribution…..$__

Please indicate which activities interest you:

- Attending monthly scientific lectures on some aspect of astronomy ____
- Making scientific astronomical observations ____
- Observing astronomical objects for personal pleasure at relatively dark sites ____
- Attending large regional star parties ____
- Doing outreach events to educate the public, such as Exploring the Sky ____
- Building or modifying telescopes ____
- Participating in travel/expeditions to view eclipses or occultations ____
- Combating light pollution ____

Do you have any special skills, such as videography, graphic arts, science education, electronics, machining, etc.?

Are you interested in volunteering for: Telescope making, Exploring the Sky, Star Dust, NCA Officer, etc.?

Please mail this form with check payable to ***National Capital Astronomers*** to:
Jim Simpson, NCA Treasurer; 3845 Wayson Road, Davidsonville, MD 21035

Celebrating 86 Years of Astronomy

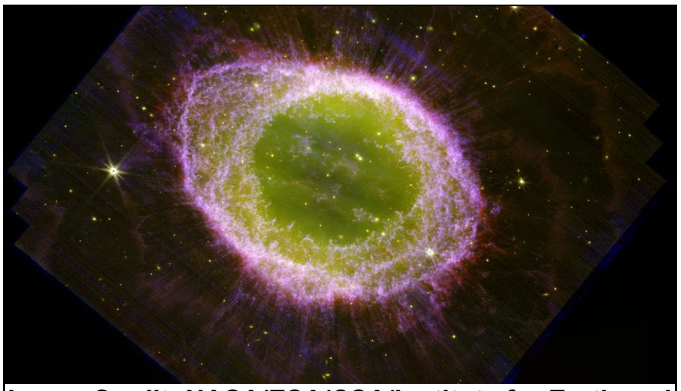


Image Credit: NASA/ESA/CSA/Institute for Earth and Space Exploration/JWST Ring Nebula Imaging Project

The James Webb Space Telescope recently imaged the Ring Nebula in stunning detail. More information is at www.space.com/james-webb-space-telescope-ring-nebula-dead-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:

2023 September 9th 7:30 pm (In Person and On Zoom)

Dr. Dana Anderson

To join the meeting via Zoom, use the following link:
umd.zoom.us/j/95154535739?pwd=cERBUE9XM3AvNE40TXYrNUptVEtzUT09

Please download and import the following iCalendar (.ics) files to your calendar system:
umd.zoom.us/meeting/tJEscu2trT4tGd1QOonrqcTNP3fs8VY-InJt/ics?icsToken=98tyKuCtrz4uH9eQtxqORowMBY_4LO_ztiVajacMrTDqDTJCYTfYBrFEIepJKZX5

Please note that NCA Zoom meetings are often recorded.

Inside This Issue