

# Star Dust

Newsletter of National Capital Astronomers, Inc.  
[capitalastronomers.org](http://capitalastronomers.org)

May 2023

Volume 81, Issue 9

**Celebrating 86 Years  
of Astronomy**

## Next Meeting

**When:** Sat. May 13th, 2023  
**Time:** 7:30 pm  
**Where:** Online (Zoom)  
 See instructions for joining the meeting on Page 8.  
**Speaker:** Dr. Dana R. Louie

## Table of Contents

Preview of May 2023 Talk.....	1
Recent Astronomy Highlights.....	2
President's Corner.....	2
Exploring the Sky.....	3
Sky Watchers.....	4
Solar Viewing Posters.....	5
Occultations.....	7
New Global Image of Mars.....	8
Calendar of Events.....	9



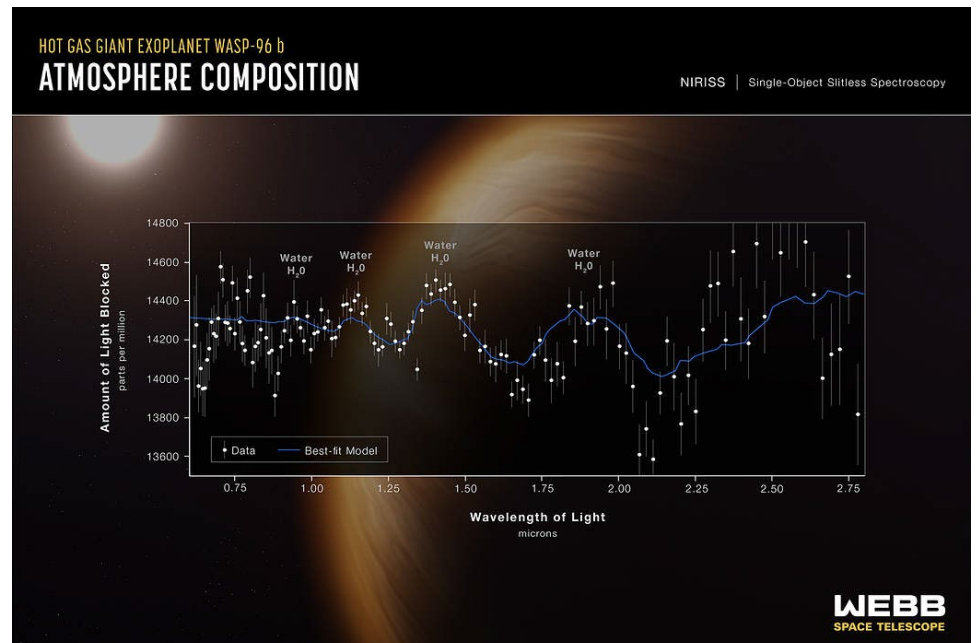
**Image Credit - NASA, ESA, P. McGill (Univ. of California, Santa Cruz and University of Cambridge), K. Sahu (STScI), J. Depasquale (STScI)**

LAWD 37 is a white dwarf approximately 15 light years away from Earth. Recently, measurements by the Hubble Space Telescope allowed for the precise determination of its mass. More on this measurement can be found on Page 2.

## Exploring Exoplanets with the James Webb Space Telescope

*Dana R. Louie – NASA's Goddard Space Flight Center*

The James Webb Space Telescope (JWST) successfully launched from Kourou, French Guiana, on 25 December 2021, and released its first science images—including an exoplanet transmission spectrum—in July 2022. Webb was conceived in 1989, a year before Hubble's launch, and before humanity had even confirmed a single exoplanet discovery. The telescope's infrared light collecting capabilities were originally designed to capture light from the earliest galaxies at high redshift. Now, more than 30 years later, we know of over 5,000 confirmed exoplanets! Serendipitously, these same infrared wavelengths of light allow scientists to probe some exoplanet atmospheres in search of signatures from molecules such as water vapor, methane, and carbon dioxide. Thanks to the growth of the exoplanet field, approximately one quarter of JWST's first year of science observations are devoted to exoplanet science. In this talk, I will compare Webb's capabilities to those of past space telescopes, and showcase the exoplanet science highlights from Webb's first year of observations.



**Spectrum of exoplanet WASP-96 b taken by JWST. Image Credit – NASA, ESA, CSA, and STScI**

**Biography:** Dr. Dana R. Louie is a NASA Postdoctoral Program (NPP) Fellow in the Exoplanets and Stellar Astrophysics Laboratory at NASA's

*continued on page 2*

## Recent Astronomy Highlights

### White Dwarf Mass Measured Using Gravitational Lensing

The masses of white dwarfs have been measured many times in binary star systems using the equations of orbital mechanics, but measuring the mass of white dwarf that is drifting through space on its own is a much more difficult task. Recently images taken by the Hubble Telescope allowed for such a measurement of mass for the relatively nearby white dwarf designated LAWD 37. LAWD is an acronym for **L**uyten, **A**tlas of **W**hite **D**warfs. (Editor's Note – NCA member Wayne Warren knew Willem J. Luyten and explained to me that Dr. Luyten dedicated much of his career to the study of high-proper-motion objects such as nearby stars.) The images allowed astronomers to detect the slight apparent change in position of a star farther away than LAWD 37. That change was due to gravitational lensing caused by the gravitational field of LAWD 37 as it passed nearly in front of the star. The mass of the white dwarf was determined to be 0.56 solar masses. More information on the measurement can be found at

[www.nasa.gov/feature/goddard/2023/for-the-first-time-hubble-directly-measures-mass-of-a-lone-white-dwarf](http://www.nasa.gov/feature/goddard/2023/for-the-first-time-hubble-directly-measures-mass-of-a-lone-white-dwarf).

### Largest Contact Binaries Discovered

A binary star system in the Small Magellanic Cloud has been determined to be the largest contact binary, two stars in partial contact as they orbit each other, so far discovered. The stars are 32 and 55 times the mass of the Sun. The 55-solar-mass star is feeding off of its smaller companion which will likely burn through its remaining fuel and become a black hole within the next million years, while the larger star will go through a similar evolution and form a black hole a couple hundred thousand years later. After that it is theorized that the two black holes will orbit each other, generating gravitational waves, for approximately 18 billion years before merging. More information can be found at [www.eurekalert.org/news-releases/987582](http://www.eurekalert.org/news-releases/987582).

*continued on page 4*

*Abstract and Biography – continued from page 1*



Goddard Space Flight Center. She earned her PhD in Astronomy from the University of Maryland in 2021, and a Master's degree in Physics from University of Colorado, Colorado Springs in 2014. She also holds a Master's degree in Aerospace Engineering as well as a Bachelor's degree in Mechanical Engineering. Previously, Dana served as an officer in the US Air Force, working as both a flight test engineer and a foreign area officer in Japan. Dr. Louie's research focuses on exoplanet transit observations, both to characterize exoplanet atmospheres through transmission spectroscopy, and to discover new exoplanet candidates.

## President's Corner

*Guy Brandenburg*

1. **NOMINATIONS ARE OPEN FOR ELECTED CLUB OFFICERS FOR NEXT YEAR.** Most of the current officers have told me they are willing to serve again for another term. Offices up for election are listed below. We currently have two nominees who have expressed interest in serving in the two trustee slots listed below - Bernard Kaufman and Life Member Tom Crone. We will take any additional nominations at the May meeting. Feel free to nominate yourself, but before nominating someone else, please check with them to see if they want to run! Elections will be held at the June meeting.
  - a. President (currently me, Guy Brandenburg [gfbrandenburg@yahoo.com](mailto:gfbrandenburg@yahoo.com))
  - b. Vice-President (currently John Hornstein)
  - c. Secretary-Treasurer (currently Jim Simpson)
  - d. Assistant Secretary-Treasurer (currently Jeffrey Norman)
  - e. Trustee (currently Jay Miller; This term will end in 2024. The member elected will serve the remainder of the term.)
  - f. Trustee (currently Michael Chesnes; This term ends this year. The new term will end in 2027.)
2. **Ideas and designs for NCA swag:** These days it is quite easy to get companies to print for you almost any logo, design, or message, on almost anything you want. You can also have the item printed on demand and shipped directly to the recipient. This feature is of course more expensive than bulk printing jobs, but it is very convenient.

Right now, what we give to our unpaid, volunteer speakers is merely a subscription to Star Dust, which I think is rather miserly. I propose that as a

*continued on page 3*

## Exploring the Sky



### Exploring the Sky – 2023 Sessions

- 20 May 9:00 P.M. Venus, Mars, M13
- 17 June 9:00 P.M. Venus, Mars, M13
- 15 July 9:00 P.M. Venus, Mars, M13,  
Summer Triangle
- 19 Aug. 8:30 P.M. Moon, Venus, Mars,  
M13, summer triangle
- 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](http://www.nps.gov/rocr/planyourvisit/calendar.htm). You can also search "astronomy", "dark skies" or call the Nature Center at: (202)-895-6070.

### President's Corner – continued from page 2

thank-you gesture we give to them, and also to the science fair winners, their choice of a hat, T-shirt, hoodie, mug, button, or tote bag with one of our NCA logos on it. They could tell us which item they want, as well as the size and color, etc, from a list of choices we have pre-selected. If they don't want any of the items, then that's fine as well. Somebody at NCA would then go to our (future) account at the website for this print-on-demand company, make a few clicks, and the item would be sent to the speaker or winner, and the funds would be deducted from the NCA account.

What's more, very few NCA members own even an NCA T-shirt. (I don't.) Under this arrangement, we individual members could order any of those items for ourselves, at any time, in any size or color, at our own expense, and at cost (meaning, no profit margin to the club).

Investigations into details and costs are ongoing. Thoughts and suggestions are most welcome.

3. Harold Williams, Jay Miller, and I attended the **Rockville Science Day** event on Sunday April 23 at the Rockville campus of Montgomery College. I brought the NCA solar telescope, the A-frame posters (shown below on pages 5 and 6), and the club banner, intending to show people the amazing surface of the Sun in hydrogen-alpha, but the clouds didn't cooperate. Jay had much the same problem with his white-light filters, but Harold had the good sense to bring a Van de Graaff generator as well, so he could entertain folks with high voltages while it was cloudy. I wish I had brought more printed information to give away about NCA itself and the campaign for darker skies.
4. **The first Exploring the Sky for the year**, on April 15th, coupled with a pre-observation planetarium show put on by Ranger Renee at the Rock Creek Park Nature Center, drew a capacity crowd for the planetarium show and a good crowd outside afterward. The sky mostly cleared up for about an hour, allowing for some live viewing in the five or six scopes some of us brought. For any manual scope (such as mine), Bortle 8 or 9 skies made finding objects a challenge, even with the analog setting circles I made and wrote about.

A solution might be Jay Miller's brand-new "**eVscope2**" at this Exploring the Sky. This scope was new to me. If you haven't heard of it, is a fairly small, 4.5" aperture, digital, go-to, tracking scope that can build up images via its built-in sensor over time. You can watch the image get built up either in the eyepiece or on the cell phones of a dozen or so attendees. Under light-polluted urban skies, I must admit that you see a LOT more with that eVscope than even with a large "light-bucket" Dobsonian! The downside is that it costs over \$4,000.

5. We are **changing the hours for the Telescope Making, Modification and Maintenance workshop**. Instead of 5 to 8 pm on Tuesdays and Fridays, we will go from 6 pm to 9 pm, on the same days. We are reconfiguring our testing tunnel once again.
6. Jim Simpson suggested that perhaps **NCA as a club could purchase time on a remote, robotic telescope observatory** network in a really dark site, perhaps even in a different hemisphere. Perhaps we could even call up live views of some far-south, deep-sky object, not visible from our latitude, during Exploring the Sky or a monthly club meeting. Could digital files in various wavelengths be shared among club members interested in remote imaging? Remote telescope networks like SLOOH, iTelescope and the Mark Slade Remote Observatory offer this sort of service, at a variety of prices, but details will need to be investigated. I think that the topic would be a great one for a monthly presentation.

*continued on page 4*

# Sky Watchers

May/June

Rising earlier each day in the morning sky until then, Mercury reaches Greatest Western Elongation on May 29<sup>th</sup> (see below). Venus will continue to rise higher in the evening sky, reaching Greatest Eastern Elongation on June 4<sup>th</sup> (see below). Mars remains high in the evening sky, visiting the Beehive Cluster at the beginning of June (see below). Jupiter and Saturn will appear higher in the predawn sky each morning.

5/28	Mercury at Greatest Western Elongation – The planet will appear 24.9 degrees from the Sun, high in the morning sky.
6/1, 2	Mars passes within 10.4 arcminutes of the Beehive Cluster (approximately 1/3 the diameter of the Moon). The Beehive Cluster is an open cluster of stars in the constellation of Cancer.
6/3	Full Moon – 11:43 p.m.
6/4	Venus at Greatest Eastern Elongation – The planet will appear 45.4 degrees from the Sun.

All times are in EDT (Eastern Daylight Savings Time)

If you would like to find out more about what's up in the sky these days, numerous resources are available online. Several good ones are [www.astroleague.org/](http://www.astroleague.org/), which has monthly night-sky maps and highlights of interesting upcoming astronomical events, <http://www.seasky.org/astronomy/astronomy-calendar-2023.html> which lists astronomical highlights for the entire year and finally [in-the-sky.org/newscal.php](http://in-the-sky.org/newscal.php). Happy Skywatching!

*President's Corner – continued from page 3*

- It looks like we have at least four **donated telescopes to auction off**: an 8" home-made Dobsonian, a 4" and an 8" Celestron NexStar, both complete with tripods and eyepieces, and a 5" Meade with a manual equatorial tripod. Details will follow.
- A recent set of ingenious experiments appears to explain why nocturnal insects buzz around exposed lights at night -- and it's not because they think it's the Moon. Rather, they have been programmed by hundreds of millions of years of evolution to see brighter locations as 'up' - towards the sky -- and they turn their backs towards it, since at their tiny size, when flying through a viscous medium such as the air, gravity isn't a very useful clue as to which way is down. If they see a bright light below them, then begin flying upside down, and tend to fly towards the light. Similar things happen if the light is next to them. From the NYT: *"The research team found that insects seem least affected when they fly under lights that are projected straight down, as opposed to lights that shine upward or that have been mounted horizontally. This finding dovetails with longstanding advice from researchers to limit light pollution by using downward pointing light fixtures that illuminate only the nearby ground. The most effective way of solving this problem is always going to be turning off the lights."* (The New York Times article is at [www.nytimes.com/2023/04/27/science/moths-to-a-flame-insects-light.html?searchResultPosition=1](http://www.nytimes.com/2023/04/27/science/moths-to-a-flame-insects-light.html?searchResultPosition=1).) I have a link to the Arxiv preprint at my blog: [guysmathastro.com/2023/05/02/solved-why-do-insects-haplessly-swarm-at-night-around-lights/](http://guysmathastro.com/2023/05/02/solved-why-do-insects-haplessly-swarm-at-night-around-lights/).

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

**ISSN: 0898-7548**

Editor: Todd Supple

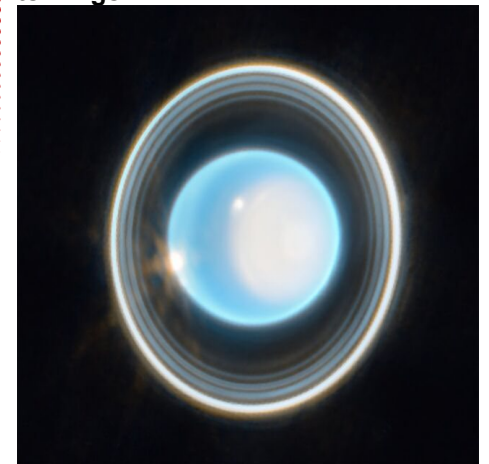
Editorial Advisors:

- Michael Chesnes
- Jeffrey Norman
- Elizabeth Warner
- Wayne Warren
- Marjorie Weissberg

Electronic Distributor: Jay Miller

*Recent Astronomy Highlights – continued from page 2*

## JWST Captures Image of Uranus and Its Rings



**Image Credit - NASA/ESA/CSA/STScI**

NASA recently released the image shown above of Uranus, taken by the James Webb Space Telescope's NIRCam, Near-Infrared Camera. The image shows eleven out of the planet's thirteen nested rings. With Uranus rotating at almost 90 degrees from the Solar System's ecliptic plane, the image also shows the northern polar cap to the right of center of the planet. The brightening of that region has not been previously observed by any other space telescope. The image also features several clouds that may be part of storm systems in the atmosphere of our Solar System's seventh planet. More information about the image can be found at

[arstechnica.com/science/2023/04/stunning-new-webb-telescope-image-showcases-nested-rings-of-uranus/](http://arstechnica.com/science/2023/04/stunning-new-webb-telescope-image-showcases-nested-rings-of-uranus/).

*continued on page 9*

# SEE THE SUN SAFELY WITH A SOLAR SCOPE!



**Never look at the Sun directly or through any device not specially designed for that purpose! You could go blind!**

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

A 501(c)(3) non-profit educational and charitable astronomy club, founded 1937.



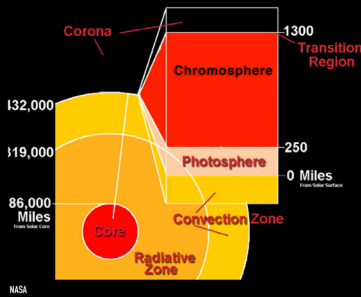
***Celebrating 85 Years of Astronomy***

A-Frame Poster 1 which is displayed at NCA outreach sun-observing events. Created by Alexandra Brandenburg.

# WHAT'S HAPPENING ON THE SUN RIGHT NOW?

**We are looking at the Sun's chromosphere—a busy place that changes every day!**

The chromosphere (4000K to 8000K) is just outside the sun's photosphere (4000K to 6500K)—the white layer we normally see. A gas stove flame can reach about 2000K.



Things can change quickly. You may notice differences after just a few minutes!

**Do you see: Filaments?  
Granulations?  
Plages? Prominences?**

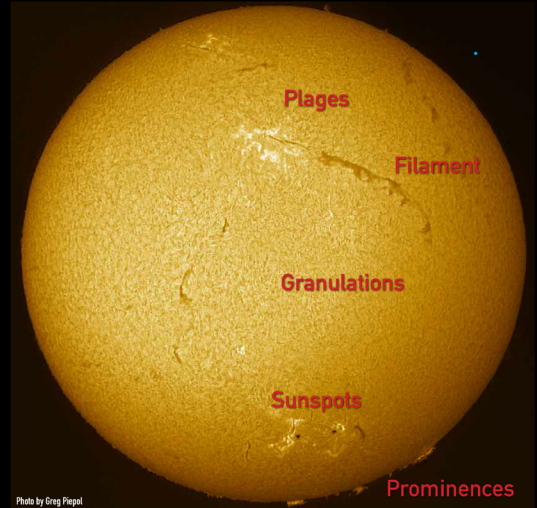
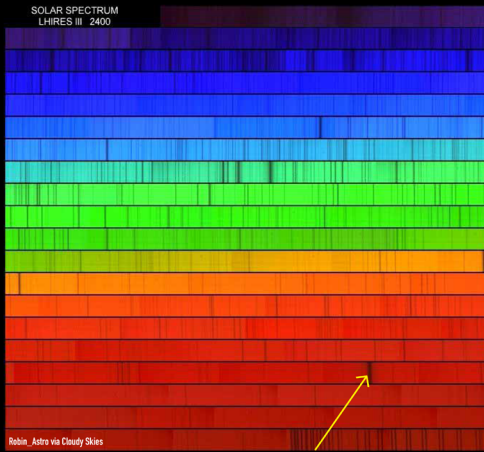


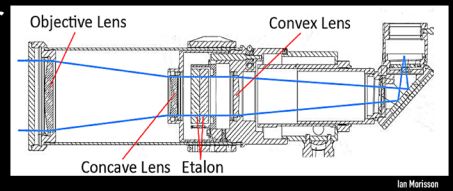
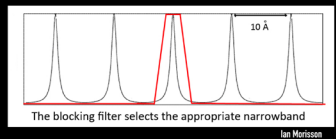
Photo by Greg Pispol  
Compare to Earth's size (see that little blue dot?)



Robin Astro via Cloudy Skies

**No risk of eye damage from the sun with this solar telescope!**

This scope filters out everything in the sun's spectrum except for its deep red Hydrogen Alpha color or wavelength (656.26 nanometers), which is no danger to your retina! Here's what happens inside the solar scope.



**The only time you can see the chromosphere without a scope like this is during a TOTAL SOLAR ECLIPSE**

Courtesy of National Capital Astronomers, Inc.

A 501(c)(3) non-profit educational and charitable astronomy club

Founded 1937

[www.CapitalAstronomers.org](http://www.CapitalAstronomers.org)



**Celebrating 85 Years of Astronomy**

A-Frame Poster 2, also created by Alexandra Brandenburg.

# 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
May 10	wed	3:21	4&C37868489	12.5	Koronis	1.4	3.3	7	seNY,nNJ,nPA,eOH
May 12	Fri	0:30	ZC 1529	6.4	Beslan	12	2.1	2	eKY,wVA,nc-seNC
May 12	Fri	22:30	TYC54650901	10.9	Zelinda	1.8	9	5	AZ,TX,nga,SC,SNC
May 13	Sat	1:38	4UC37670369	11.5	Euboea	2.8	3	5	sNJ,nMD,nVA,nwV
May 17	wed	22:37	TYC19070544	10.0	Edwin	6.6	0.8	4	sWOH,swV,wVA,eNC
May 19	Fri	1:36	4UC31697546	13.8	Hedda	0.4	7	9	NJ,PA,nMD;DC,VA?
May 20	Sat	1:09	TYC49980455	10.9	Johnyoung	6.1	1.7	5	SMD,SDC,nVA,cOH
May 24	wed	23:15	4UC30782070	14.4	Ludovica	0.3	3	10	CMD,DC,nVA,cOhio
May 30	Tue	1:36	4UC38169012	12.1	Adorea	1.0	16	6	NJ,PA,nMD;nVA?
Jun 2	Fri	2:11	4U296121842	12.9	Richilde	1.9	4	7	SMD,nVA,neOH;DC?
Jun 5	Mon	23:48	4UC28484164	12.4	Bettina	1.0	9	7	NJ,PA,e+nMD;DC?
Jun 8	Thu	23:08	4UC27471825	12.3	Hanskya	2.6	7	7	eNC,CVA,wPA;nVA?
Jun 9	Fri	3:19	4U339129210	13.2	wanda	2.2	4	8	sNJ,CMD,DC,nVA
Jun 11	Sun	1:50	4UC391621150	13.6	Psyche	0.1	28	9	NC,sVA,OK,sCO

## Lunar Grazing Occultations

There are no reasonably observable grazing occultations in the area during May and early June. On April 27th, a graze passed over Greenbelt, and it also was the night of the April meeting of the Astronomical Society of Greenbelt. Joan and I gave a presentation on occultations available at <http://iota.jhuapl.edu/IOTAobserving.pdf>. The Zoom session was recorded, you can see it at [https://drive.google.com/file/d/1QzZLUhZXRDPw93PINndKlVv2Yx70V3qt/view?usp=share\\_link](https://drive.google.com/file/d/1QzZLUhZXRDPw93PINndKlVv2Yx70V3qt/view?usp=share_link). We hoped to show how to record the graze after the meeting, but clouds intervened.

## Lunar Total Occultations

2023 Date	Day	EDT	Ph	Star	Mag	% alt	CA	Sp.	Notes
May 14	Sun	5:47	R	psi3 Aqr	5.0	30-24	74S	A0	Sun -2,ZC3428,dT +1.8s
May 17	wed	7:35	D	Jupiter	-1.9	5-32	-83N		Sun altitude +18 deg.
May 17	wed	8:43	R	Jupiter	-1.9	5-45	71S		Sun altitude +31 deg.
May 22	Mon	21:31	D	SAO 78740	8.3	11+21	44S	K0	
May 22	Mon	22:13	D	ZC 1042	6.7	11+14	81S	A2	Az. 294, cclose double?
May 23	Tue	21:28	D	ZC 1162	8.2	18+30	41S	K2	Sun alt. -12 deg.
May 23	Tue	22:40	D	76 Gem	5.3	18+17	68S	K5	ZC 1169
May 23	Tue	23:29	D	SAO 79672	7.6	19+9	22N	K5	Az. 296,cclose double
May 25	Thu	22:37	D	ZC 1393	6.5	35+32	70S	G7	
May 26	Fri	21:55	D	SAO 98984	8.0	44+45	83N	F0	
May 28	Sun	0:45	D	ZC 1596	7.2	55+18	74S	A2	mag2 12, sep. 1.5"
May 28	Sun	22:28	D	ZC 1693	7.5	64+46	75N	F5	
May 28	Sun	23:49	D	SAO 119000	7.3	64+32	89N	G0	
May 28	Sun	23:54	D	SAO 118995	8.0	64+31	44S	F0	
Jun 1	Thu	20:49	D	ZC 2104	7.3	95+24	68S	K4	Sun altitude -5 deg.
Jun 2	Fri	0:53	D	10 Librae	6.3	95+29	57N	K0	ZC 2120
Jun 2	Fri	23:45	D	ZC 2249	6.7	99+28	39N	K1	close double
Jun 5	Mon	4:44	R	ZC 2586	6.0	98-14	41S	B3	Sun-10,Az214,AA239,dbl?
Jun 7	wed	3:51	R	SAO 188955	7.2	86-25	80N	F5	close double
Jun 8	Thu	3:25	R	SAO 190087	7.4	77-24	84N	G6	
Jun 8	Thu	4:27	R	SAO 190137	8.0	77-28	10S	F7	
Jun 8	Thu	5:29	R	ZC 3102	7.0	77-29	74S	A0	Sun -3, cclose double??
Jun 10	Sat	3:40	R	ZC 3382	7.8	55-22	67N	K0	mag2 10, dTime -200s
Jun 11	Sun	4:32	R	SAO 146980	8.0	44-28	43S	G5	Sun alt.-12 deg.
Jun 11	Sun	4:48	R	ZC 3521	7.8	44-30	86N	K0	Sun alt. -9 deg.
Jun 12	Mon	5:07	R	SAO 109432	8.0	33-31	60S	K2	Sun alt. -6 deg.

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

David Dunham, [dunham@starpower.net](mailto:dunham@starpower.net)

continued on page 8

## 2022-2023 Officers

### President:

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

### Vice-President:

John Hornstein  
[jshgwave@yahoo.com](mailto:jshgwave@yahoo.com)  
 301-593-1095 (h)

### Secretary-Treasurer:

Jim Simpson  
[simpsonj@verizon.net](mailto:simpsonj@verizon.net)  
 240-232-2820

### Asst. Secretary-Treasurer:

Jeffrey B. Norman  
[jeffreynorman@comcast.net](mailto:jeffreynorman@comcast.net)

### Trustees:

- Michael Chesnes (2023)
- Jay Miller (2024)
- Benson Simon (2025)
- Michael Brabanski (2026)

### Appointed Officers and Committee Heads:

#### Exploring the Sky

Jay Miller  
[jhmiller@me.com](mailto:jhmiller@me.com)

#### Telescope Making

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

#### NCA Webmaster

Elizabeth Warner  
[warnerem@astro.umd.edu](mailto:warnerem@astro.umd.edu)  
 301-405-6555

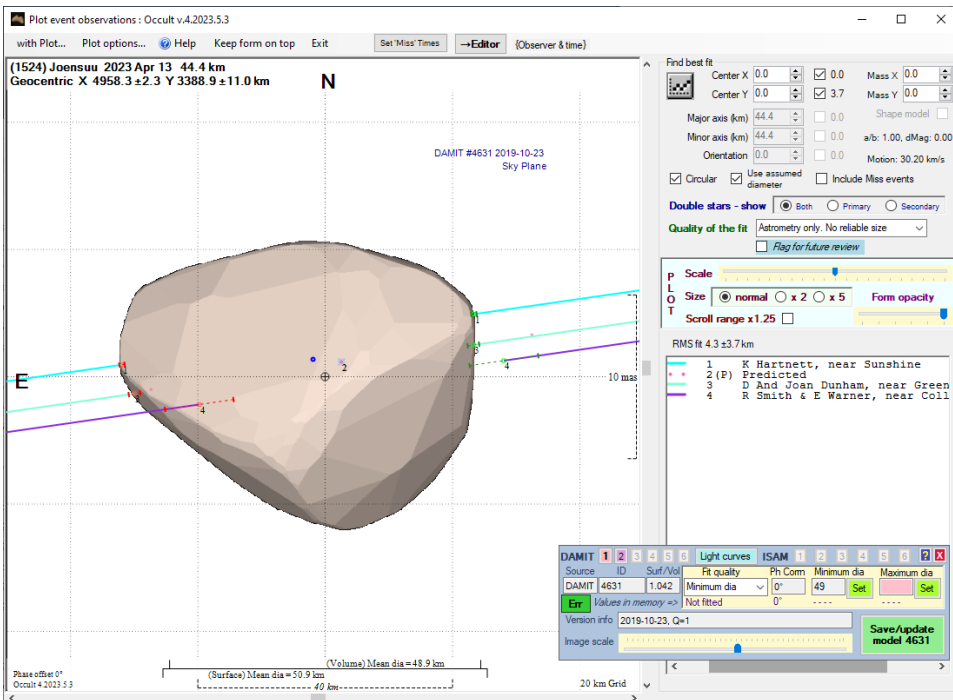
#### Star Dust Editor

Todd Supple  
[NCAStardust@gmail.com](mailto:NCAStardust@gmail.com)  
 301-595-2482 (h)

#### Social Media

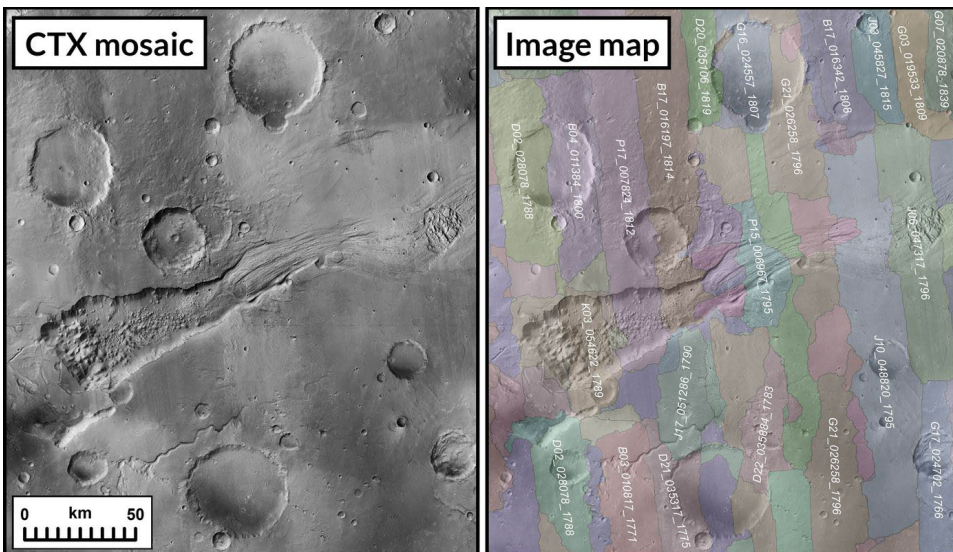
Twitter: [@NatCapAstro](https://twitter.com/NatCapAstro)

### Occultations – continued from page 7



**Sky plane plot of DAMIT #4631 shape model for (1524) Joensuu fitted to the 2023 Apr 13 observations of the occultation of 10.4-mag. UCAC4 620-025000 by Joensuu recorded from three locations in Maryland. Image Credit - Norm Carlson, IOTA.**

## New Global Image of Mars Available Online



**Mosaic image (left) created from images taken by the Mars Reconnaissance Orbiter, labeled in the image on the right. Image Credit - NASA/JPL-Caltech/MSSS**

We're still a long way from having people walk on Mars, but scientists at Caltech have given us the next best thing with an image containing 5.7 trillion pixels, each representing approximately a five-meter-square area of the Red Planet. The image covers over 99% of the planet between 88° north and south. The image can be accessed at [murray-lab.caltech.edu/CTX/V01/SceneView/intro\\_c.html](https://murray-lab.caltech.edu/CTX/V01/SceneView/intro_c.html).



Recent Astronomy Highlights – continued from page 4

New Black Holes Discovered Using Gaia Data

The third data release from Gaia, the European Space Agency’s space telescope, has allowed for the discovery of two black holes. Designated Gaia BH1 and Gaia BH2, the black holes are approximately 1560 and 3800 light years away. Both are approximately ten solar masses and have companion stars. Black holes discovered in the past have usually been found due to the emission of X-rays or other forms of light from their accretion disks. But BH1 and BH2 do not seem to have any accretion disk at this time and they are both too far away from their companion stars to pull matter from them. Instead, spiral patterns in the motions of the companion stars gave away the existence of the black holes. More information on the discovery can be found at scitechdaily.com/gaia-discovers-a-mysterious-new-type-of-black-hole-and-two-are-lurking-in-earths-cosmic-backyard/.

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 gbrandenburg@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: 13 May 7:30 p.m. Dana R. Louie (NASA’s Goddard Space Flight Center) Exploring Exoplanets with the James Webb Space Telescope

The APS Mid-Atlantic Senior Physicists Group: (Zoom Meeting) May 18th at 1:00 p.m., Dr. Melissa G. Trainer, NASA. will give a talk entitled “Dragonfly: Flights of Exploration on an Exotic Ocean World”. Register for the Zoom meeting ahead of time at apspysics.zoom.us/meeting/register/tZYqcu-hpzkiG9XiiEdL5N0ZQA7qcC1h-jG-#/registration in order to receive a link to attend the meeting online.

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.....\$\_\_

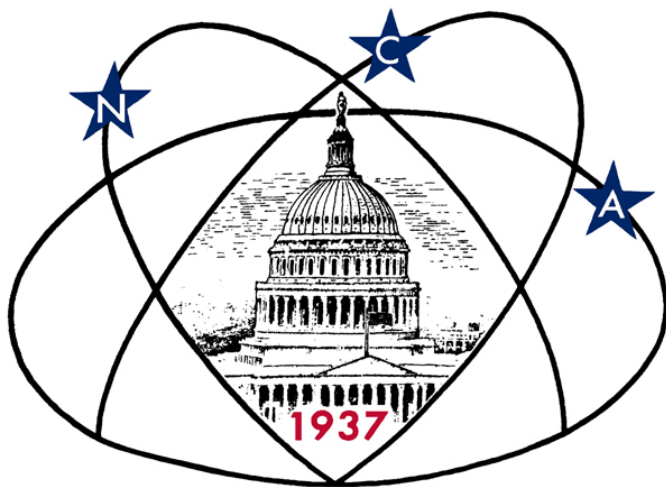
Please indicate which activities interest you:

- 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, STScI,  
Alyssa Pagan (STScI)**

The Ultra-Luminous Galaxy Arp 220 is actually two merging galaxies. The above image was taken by JWST. More information is available at [www.nasa.gov/feature/goddard/2023/webb-captures-the-spectacular-galactic-merger-arp-220](http://www.nasa.gov/feature/goddard/2023/webb-captures-the-spectacular-galactic-merger-arp-220).

*To join or renew online, visit [capitalastronomers.org](http://capitalastronomers.org) and look in the right column for the Membership Form and PayPal links.*

**Next NCA Meeting:**  
**2023 May 13<sup>th</sup>**  
**7:30 pm**  
**(On Zoom)**  
**Dana R. Louie**

To join the Zoom meeting, use the following link:  
[umd.zoom.us/j/98702044833?pwd=UTg1bFJpMmxvcXpEU GtUcDNmZnNrdz09](https://umd.zoom.us/j/98702044833?pwd=UTg1bFJpMmxvcXpEU GtUcDNmZnNrdz09)

Please download and import the following iCalendar (.ics) files to your calendar system: [umd.zoom.us/meeting/tJwqd-uoqj8iGdfUoJKHH8U2tt2u7IPmVFFS/ics?icsToken=98tyKu CggTsoGtCRuBqERow-B4iga\\_TwiCIHjadbgRDPKAh7OjaklvYQJ-VzINXm](https://umd.zoom.us/meeting/tJwqd-uoqj8iGdfUoJKHH8U2tt2u7IPmVFFS/ics?icsToken=98tyKu CggTsoGtCRuBqERow-B4iga_TwiCIHjadbgRDPKAh7OjaklvYQJ-VzINXm)

Please note that NCA Zoom meetings are often recorded.

## Inside This Issue

Preview of May 2023 Talk.....	1
Recent Astronomy Highlights.....	2
President’s Corner.....	2
Exploring the Sky.....	3
Sky Watchers.....	4
Solar Viewing Posters.....	5
Occultations.....	7
New Global Image of Mars.....	8
Calendar of Events.....	9