Star Dust

Newsletter of National Capital Astronomers, Inc.

capitalastronomers.org

February 2024 ***Volume 82, Issue 6***

Celebrating 87 Years of Astronomy

Next Meeting

When: Sat. Feb. 10th, 2024

Time: 7:30 pm

Where: In-Person and Online (Zoom)

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

Speaker: **Dr. David Bennett**

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Image Credits - NASA/ESA/J. Dalcanton (University of Washington)/R. Windhorst (Arizona State University)/Processing: Gladys Kober (NASA/Catholic University of America)

The Hubble Space Telescope captured the image of a galaxy as well as a 250,000-light-year stream of stars and gas between that galaxy and another. More info is at https://science.nasa.gov/missions/hubble/hubble-captures-a-faint-bridge-

Detection of Exoplanets by the Nancy Grace Roman Space Telescope

Dr. David Bennett – University of Maryland and NASA's Goddard Space Flight Center

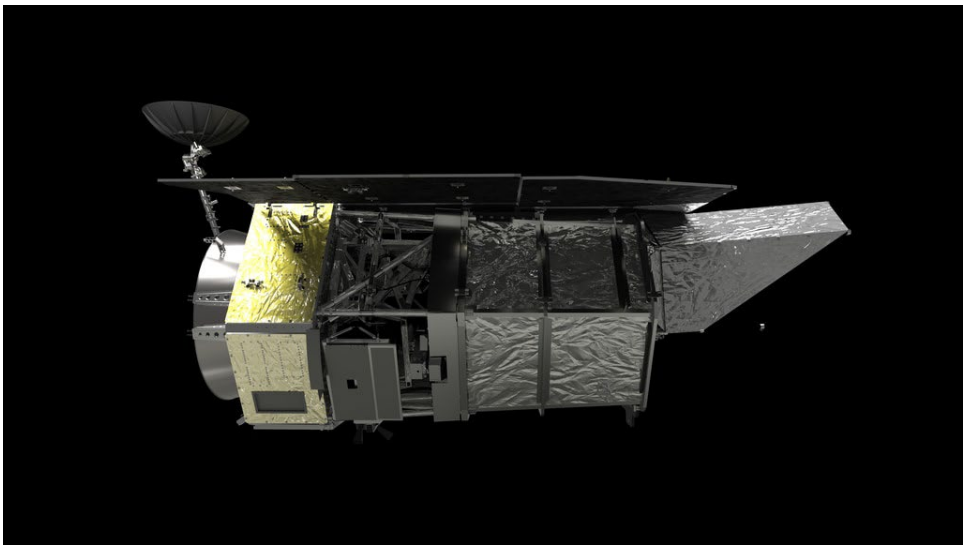

Image Credit - GSFC/SVS

Abstract: NASA's next great planet-finding mission is the Nancy Grace Roman Space Telescope, which is set for launch in late 2026 or early 2027. One of the major surveys planned for this mission is the Roman Galactic Exoplanet Survey (RGES), which will complete the statistical census of planets that was started by the Kepler Mission, using the gravitational microlensing method. RGES will be sensitive down to sub-Mars masses at wide separations from the host stars. Its sensitivity overlaps with the widest orbits that Kepler is sensitive to at ~ 1 AU, and extends its sensitivity out to much larger separations and even free-floating planets that have been ejected from orbits around their host stars. I will review recent discoveries based on exoplanets found by ground-based observatories, including the recent discovery that free-floating exoplanets may be more frequent than exoplanets orbiting stars. Finally, I will preview some of the science that we can expect from RGES.

Biography: David Bennett is a pioneer of the gravitational microlensing method that was first developed to test the possibility that the Milky Way's dark-matter halo could consist of brown dwarfs, but in the mid-1990s he changed his focus to the study of exoplanets with the microlensing method. In 1996, he and his late wife, Sun Hong Rhie, showed that microlensing was sensitive to Earth-mass planets, and in 2000, they led

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of-stars/.

Recent Astronomy Highlights

The Big Ring Challenges Current Theories of Universe Formation

A structure, named simply The Big Ring, is a recently discovered arrangement of galaxies.1.3 billion light years in diameter. It lies approximately 9.2 billion light years away. The sheer size of the structure is a challenge to current theories of the development of the Universe in that those current theories predict that there should not be structures larger than 1.2 billion light years in diamter. Having one such large structure might be considered a fluke, but actually this is the second discovery of this magnitude. The Giant Arc in the Sky, discovered two years ago, is another arrangement of galaxies at approximately the same distance from Earth and is 3.3 billion light years across. The two structures lie 12 degrees apart in our sky. With both structures appearing so near to each other, at least from our perspective, there is speculation that perhaps they are part of some even larger structure. More information is available at https://phys.org/news/2024-01-discovery-ultra-large-distant-space.html.

Enormous Stellar Eruption

RW Cephei is an enormous star nearing the end of its life. 16,000 light years away, it is so enormous that, were it centered in our Solar System, its outermost layer would reach the orbit of Jupiter. What is even more unusual about the star is that it recently faded so much that it appeared to be only one third as bright as it normally is. Readings taken during the fading showed that it was more extensive in visible lightwaves than it was in the infrared region of the electromagnetic spectrum. This is an indication that the fading was caused by dust obscuring the light from the star. Astronomers speculate that there was an enormous eruption of gas and dust from RW Cephei, creating a cloud that temporarily blocked the star's light. With that cloud now dissipating, the star is slowly appearing more luminous. Such eruptions occur as stars near their final cataclysmic end. More information is at https://www.eurekalert.org/news-releases/1030603

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the first proposal for a space-based microlensing survey that was eventually approved by the Astro2010 decadal survey as one of two major research efforts for the Nancy Grace Roman Space Telescope. He has led the development of this method since then, and is now the Science PI of the Roman Galactic Exoplanet Survey (RGES) Project Infrastructure Team.

President's Corner

Guy Brandenburg

Let us give a warm welcome to the following **new NCA members**!

Joining from Washington, DC: Alice Aleksenko, Deborah Cortesi, Geert DePrest, Barbara Hendrie, Courtney Kieba, Andrea Marryshow, John Melrose, William Patterson, Travis Rouff, Alex Sargent, Adam Seth, Casey Skeens, Stephen Solomon, Reynolds Taylor, and Lisa Webb.

From various towns and locations in Maryland, we are joined by:

Ron Henry (Adelphi), Michael Booth (Arnold), Tom Gwaltney (Bethesda), Mary Ugarte (also Bethesda), David Fritz (Chevy Chase), Brad Wolvin (Derwood), Milton Villatoro (Hyattsville), John Hutzell (LaPlata), Ronald Dubois (Olney), Sheryl Ligon (Pasadena), Rajenda Shrestha (Potomac), Jalen Zeng (also Potomac), Stephannie Riddick (Rockville), James Cole (Silver Spring), and Gil Funk (also from Silver Spring).

Bill Weimar who joined NCA from Arlington, VA, is our only new Virginian over the last few months. I'm not sure where new member Alex Sargent hails from.

I hope that when they joined, these new members all took the time to indicate to NCA their particular astronomy-related interests. We committee heads need to use the survey data they provided and contact these fine folks individually and find out how they can help out with the club's outreach activities and also increase their own understanding of astronomy.

Welcome to all of these new members! Let's keep looking up and trying to figure out how our little planet Earth fits into the Universe!

Let us also thank NCA members Sheryl Ligon and David Dworkin for their extremely **generous recent gifts to NCA**. Part of those funds will help pay for the batch of 500 NCA-customized, safe solar-eclipse glasses that

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Exploring the Sky

The Exploring the Sky program will take a hiatus until April of 2024.

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.

Next 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 March's issue of Star Dust, is February 18th.

Clear Skies!

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are being produced right now by Everything Branded and should be arriving here in mid-February.

We can give away pairs of these specs to in-person attendees at the March monthly NCA meeting before the eclipse and at Exploring the Sky on April 6. FYI, the cost to NCA for these customized solar specs is just under $1.20 per pair.

Speaking of the eclipse: If you've never witnessed totality, I assure you that it's more amazing than anything you have ever seen in your entire life. Please do yourself a favor, and go! Photos do a good job on the **partial** phases of eclipse, but no image or video I have ever seen gives you the full impact of **totality**. That being said, astrophotographer Jerry Lodriguss made a very complex mosaic by using exposures ranging from a few thousandths of a second up to many seconds – along with a whole lot of image processing work afterwards – that came closer than anything else I have seen, and you can see it and his explanation here: https://www.astropix.com/html/eclipse/2017_total_solar_eclipse_hdr_corona.html.

But no image or video can capture the weirdness of the event itself.

Those of us who are not expert photographers will probably do better if we simply enjoy the spectacle with solar glasses during the partial phase. As you probably know, you should take off the solar specs during totality, but put them back on once the Diamond Ring and Bailey's Beads re-appear at the end of totality.

Anybody with access to a car could drive from the DC-MD-VA region to the zone of totality in a day or two, but if you plan to spend the night before or after April 8, you will likely find that any motel, hotel, bed-and-breakfast, or Airbnb in the zone itself has probably already doubled or tripled their daily rates for April 8. No problem. This is a big country, and the last time I looked, there appear to be lots of places to stay at more reasonable prices **outside** that zone. There are lots of maps of the path of totality on-line. Here is one such source: https://nationaleclipse.com/.

My own plans involve driving with my wife to Austin, TX, along with my eclipse-ready 6" f/8 home-made travel Dob-Newt telescope. That scope, the first I ever made, served me very well for the 1994 (Chile) eclipse, but I rebuilt it for the 2017 (Wyoming) eclipse. Stephanie March of the Australian Broadcasting Company did a nice piece on the latter project here: https://www.facebook.com/watch/?v=10157157152414988.

Figuring that there was a local astronomical society in the Texas capital, I found to my surprise that the Austin Astronomical Society (https://austinastro.org/) doesn't say much about the eclipse. Its website says: "On April 8 most of Travis County will be in the area of totality. Totality in downtown Austin will last for 1 minute and 41 seconds. Bee Cave will get 2 minutes and 56 seconds of totality. To the east, Manor will get 26 seconds. The maximum length of totality, which will occur to the west of Austin, will be almost four and a half minutes."

That's it.

There don't appear to be any Austin Astro Society events planned for the April 2024 eclipse as far as I can tell, but they do refer their readers to

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Sky Watchers

February/March

Mercury will appear lower in the morning sky as the period progresses until in transits to the evening sky in March. Venus and Mars rise approximately an hour before sunrise. The two planets will have a conjunction, coming within 37 arcminutes of each other on the morning of February 22nd (see below). Jupiter remains in the western sky after sunset, setting before midnight. Saturn will be very low in the sky at sunset, probably not visible, early in February, transiting to the morning sky in March.	
2/22	Conjunction of Venus and Mars. The two planets will come within 37 arcminutes of each other (slightly more than the diameter of the full Moon) before they rise that morning, but will still be close to each other in the predawn sky. They will only be four degrees above the horizon at sunrise, so viewing may be difficult.
2/24	Full Moon – 7:32 a.m.

Time is in EST (Eastern Standard Time).

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other websites such as https://www.austintexas.org/events/eclipse-austin/ and https://nationaleclipse.com/.

One big question when viewing an eclipse is whether to experience it from near the centerline, or from nearer the edge. As the Austin Astro Society notes, you get a much longer experience at the center, but closer to the edge, the 'flash spectrum' and the Bailey's Beads can be seen for much longer. When I went to Chile for the 1994 eclipse, it was as part of an 'Eclipse Edge' expedition organized by the late Tom Van Flandern, an NCA member and former US Naval Observatory employee who had a lot of extremely unorthodox ideas about astronomy. In the days after the event, back in Santiago de Chile, I met a number of people who had experienced the same eclipse from locations along the centerline, in both Chile and Bolivia; comparing notes, we found that the experience from the edge was actually a lot more fun.

Who else is planning to go view the eclipse, and where?

Our first Exploring the Sky event in Rock Creek Park will occur on April 6, just two days before the eclipse. I myself will not be in town for this ETS, because I'll be driving to Texas. If you are staying in the DC area for the eclipse on April 8, you can join events on the Mall at the Air and Space Museum and at the University of Maryland.

The Trust for the National Mall, in association with the National Air and Space Museum (NASM), are making plans for this year's **Eisenhower Under the Stars** event on Tuesday, April 2nd, from 7:30 pm-9:30 pm, on the south side of Constitution Avenue in DC, opposite the NASM.

If the weather is clear, this event will draw quite a crowd. We will need folks with telescopes and other optical aids. Unfortunately, the only easy target that night appears to be Jupiter.

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Recent Astronomy Highlights – continued from page 2

Star Velocities at Edge of Milky Way Are Slower Than Expected

It has been known for decades that the velocities of stars in spiral galaxies, tend to initially increase starting from the centers of those galaxies, but then they remain constant for considerable distances farther from the center. This is in sharp contrast to the velocities of planets in our Solar System which drop off sharply with distance from the Sun. The standard explanation for this discrepancy has been that a form of dark matter, matter that reacts to gravitation fields, but not to electromagnetic fields, must exist within those galaxies, forming a diffuse halo within and around the galaxy, providing the additional gravity needed to hold in stars that are moving faster than they should if those galaxies were made only of regular, baryonic matter. Recently astronomers mapped out the velocities of over 30,000 stars within the Miky Way, based on data from Gaia mission and APOGEE, Apache Point Observatory Galactic Evolution Experiment, and have found that while those stars do indeed show the same velocities out to a considerable distance from the center of our galaxy, at the farthest reaches the velocities begin to drop off faster than expected. Speculation is that this might mean there is less dark matter in the core of the Milky Way than was previously theorized. More information about the study is available at https://phys.org/news/2024-01-stars-slowly-milky-edge-galaxy.html.

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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 Date	Day	EST	Star	Mag.	Asteroid	dmag	dur. s	Ap. "	Location
Feb 9	Fri	4:12	SAO 158660	9.3	1999 RW208	9.4	1.8	3	sMI,cOH,nWV,cVA
Feb 11	Sun	1:03	TYC18290277	8.9	Ellenkey	10.7	2.2	3	sON,nw-sePA,sNJ
Feb 13	Tue	20:18	4UC55409994	14.0	Tokio	0.7	9	10	sw-nVA,DC,cMD,NJ
Feb 15	Thu	20:51	SAO 76525	7.7	Oizumi	9.7	0.8	2	cMO,cOH,sPA,nNJ
Feb 15	Thu	22:05	BL Tauri	9.1	2000 YZ51	13.8	1.8	3	nAZ,nOK,nTN,cNC
Feb 16	Fri	2:57	4UC54348677	10.6	Schmoll	7.3	0.8	4	sNJ,se-nwPA,neOH
Feb 18	Sun	23:45	4UC43139502	13.7	Actor	4.4	2.3	9	se-cMD,wPA,neOH
Feb 19	Mon	20:28	TYC18730489	11.0	Metis	0.4	28	5	c+nVA,DC,MD,sNJ
Feb 21	Wed	21:08	ZC 350	7.4	L'Obel	11.7	0.3	2	nAZ,neKY,cVA,sMD
Feb 24	Sat	22:00	TYC08430394	11.0	1997 BN2	7.2	0.4	4	sDE,cMD,nVA,sOH
Mar 2	Sat	20:17	TYC24790509	9.9	Marsden	8.1	3	3	NY,nc-swPA,nwWV
Mar 4	Mon	5:27	TYC30181072	9.9	Bezovec	4.3	3	3	NC,e+nVA,cMD,cPA
Mar 5	Tue	0:19	nu Orionis	4.4	2000 AA186	14	0.5	1	sAZ,cOK,nTN,nNC
Mar 7	Thu	0:23	TYC02680265	9.8	Eubanks	8.1	0.6	3	neNC,sVA,WV,swOH
Mar 8	Fri	19:47	SAO 137725	7.4	Youngrokkim	9	0.9	2	sMD,nVA,sWV,nKY
Mar 9	Sat	20:20	4UC59325195	11.9	Metis	0.2	14	8	nwOH,nPA,NY,nNJ

Lunar Grazing Occultations

2024 Date	Day	EST	Star	Mag	% alt	CA	Location, Notes
Feb 13	Tue	18:36	zeta Psc A	5.2	22+	40 13S	sClpepr,DaleCit,VA;sClintn,MD
Feb 13	Tue	18:37	zeta Psc B	6.3	22+	40 13S	path is 5 km north of above.
Mar 3	Sun	2:36	Antares	1.1	53-	13-14N	Grandvw,OH;Atlas,WV;Staunton, Carson,VA; and Elizabeth City,NC; also, 23 km n.e. of Green Bank Obs.WV Since it's a bright limb graze, can't see events of the 5th mag. star.

Lunar Total Occultations

2024 Date	Day	EST	Ph	Star	Mag	% alt	CA	Sp.	Notes
Feb 12	Mon	20:10	D	SAO 109182	7.8	13+ 11	56N	G0	Azimuth 263 deg.
Feb 13	Tue	18:29	D	zeta Psc A	5.2	22+ 42	22S	A7	Sun alt. -10, ZC 180
Feb 13	Tue	18:30	D	zeta Psc B	6.3	22+ 42	21S	F7	Sun alt. -10, ZC 181
Feb 13	Tue	18:42	R	zeta Psc A	5.2	22+ 40	1S	A7	ZC 180, VA,MD,NJ graze
Feb 13	Tue	18:43	R	zeta Psc B	6.3	22+ 40	2S	F7	ZC 181, VA,MD,NJ graze
Feb 13	Tue	21:35	D	ZC 193	7.9	23+ 9	34S	K0	Azimuth 274,close dbl?
Feb 15	Thu	23:30	D	SAO 75758	8.4	45+ 14	72N		Azimuth.285 degrees
Feb 16	Fri	19:44	D	SAO 76358	7.2	54+ 67	86N	B9	
Feb 16	Fri	23:21	D	36 Tauri	5.5	55+ 27	24S	G0	ZC 598, close double
Feb 17	Sat	18:04	D	ZC 732	7.5	64+ 71	71N	K3	Sun -4,mag2 10 dT +0.1s
Feb 18	Sun	1:01	D	SAO 76945	7.5	66+ 20	27S	A2	
Feb 18	Sun	1:45	D	SAO 76965	7.6	66+ 13	80N	G	Az. 294, close double?
Feb 18	Sun	18:06	D	ZC 885	5.6	74+ 63	74S	G7	Sun alt. -4 deg.
Feb 18	Sun	23:42	D	SAO 77818	6.7	75+ 46	73N	K5	
Feb 20	Tue	2:06	D	ZC 1067	7.1	84+ 29	42S	K2	close double??
Feb 26	Mon	5:27	R	Zavijava	3.6	97- 26	50S	F8	AA 229,ZC1712,beta Vir
Feb 29	Thu	3:13	R	ZC 2002	6.8	80- 37	5N	K0	Terminator distance 6"
Mar 2	Sat	2:25	R	ZC 2221	8.2	63- 18	55S	K2	
Mar 2	Sat	6:23	R	SAO 183671	8.1	62- 25	29N	F0	Sun alt. -3
Mar 2	Sat	6:35	R	42 Librae	5.0	62- 24	7N	K3	Sun-1,ZC2237,close dbl?
Mar 4	Mon	3:16	R	SAO 185410	7.8	42- 7	85S	A0	Azimuth 136 degrees
Mar 5	Tue	4:55	R	ZC 2688	7.0	31- 11	79N	G6	Azimuth 143 degrees

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

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President's Corner– continued from page 4

Many thanks are due to the folks who help put together, edit, publish, and distribute this wonderful newsletter. Todd Supple is the editor, and the advisors/proofreaders/distributors are Jim Kaiser, Jay Miller, Jeffrey Norman, Brian Tomich, Elizabeth Warner, and Marjory Weissberg. Thanks!

Local secondary science fairs are coming up!

1. DC: Saturday, March 16, perhaps at Dunbar SHS
2. Montgomery County: April 5-7 at the FDA's White Oak Campus
3. Prince George's County: Details not yet posted
4. Northern Virginia Regional: Saturday, March 2 at Wakefield HS

We have more volunteer judges this year than usual: James Cole, Gil Funk, John Hutzell, Jay Miller, Kristin Palmason, Milt Roney, Stephen Solomon, Lisa Webb, and myself. We will shortly arrange who goes to judge which event.

The judges will receive a piece of NCA swag to wear or carry with them as they do the judging. (A hat, a mug, a cloth bag, a t-shirt, or a hoodie of their choice. Yes, they get to keep it!)

NCA Telescope Making, Maintenance, and Modification Workshop

Guy Brandenburg

Workshops are held on Tuesdays and Fridays, from 6:00-9:00 pm at the Chevy Chase Community Center (5601 Connecticut Avenue NW, Washington DC 20015).

This workshop, which began long before I was born, can help you if you have certain goals:

- Do you have an older telescope, long out of warranty, that needs alignment/collimation, or has lost an important part? Do you have a brand-new scope that you can't figure out? We can show you how to collimate the scope, and may be able to help you fix other problems. We might even have that missing part! If not, we have ideas where you can get that part or even to make it with our rather complete set of power and hand tools and supplies, or to have someone 3-D print it.
- Are you unsure of the quality of the optics of your telescope? We can help you evaluate them in a variety of ways (Ronchi, Foucault, or Couder) in our 20-foot testing tunnel.
- Do you want to be brave and fabricate the parabolic mirror for a Newtonian reflector, from scratch, all the way from rough grinding and up through polishing, figuring, and aluminizing? If so, we have all the supplies you would need, including mirror blanks in sizes from 4.25" up through 16" diameter, and all of the needed abrasives. We can teach you everything you need to succeed, but you should realize that this whole process will take some months.

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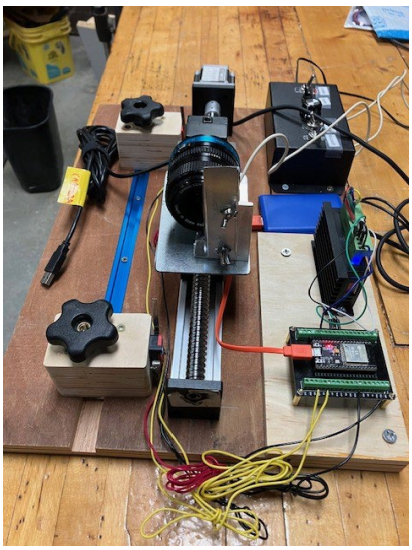
NCA Telescope Making, Maintenance, and Modification Workshop – continued from page 6

- Would you like to build a scope around some already-existing optics? It's a lot faster than the previous option, and we have on hand a number of completed mirrors and other optics that simply need some plywood and other ordinary hardware store materials in order to make a very usable, and rather inexpensive, Dobsonian telescope. You would probably need to order focusers, finders, spiders and secondary mirrors online, but we do have some of those items in stock.
- Is the mirror on your Newtonian reflector so dirty or corroded that it's hard to see very much? We can help you clean it off, and (if needed) re-aluminize it in our venerable but very effective vacuum coating chamber. (If your mirror is larger than 12.5 inches, we can still coat it with protected silver, in the open air, using a kit from Angel Gilding!) Our re-coating prices are much lower than commercial services such as Majestic Optical Coatings (https://www.majestic-coatings.com/astronomy-telescope-coating.html), but we do not have the ability to overcoat your mirror with silicon monoxide.

All of the instruction from our unpaid volunteers is free, and probably worth three times as much. Since we have scrounged most of the parts we have on hand, our prices for any items you get from us (mirrors, glass blanks, screws, used telescope parts, glue, paint, etc.) are rock-bottom. These are not classes with a set curriculum. People start, work on, and complete their projects as they see fit.

Alan Tarica, Pratik Tambe, Tom Crone, Alin Tolea, and I are making great progress on automating the process of numerical, knife-edge Foucault mirror testing. We are using a stepper motor controlled via Arduino to move a camera away from and towards the mirror in question in tiny steps on a linear actuator and a good-quality Canon film lens attached to a webcam. Pratik's Python code, and James Burrows' FigureXP program, then analyze the geometric 'figure' of the mirror to see how well it approaches the conic section desired.



We are able to do all this because the District of Columbia Department of Parks and Recreation has been generously providing us a large basement space at the Chevy Chase Community Center on Connecticut Avenue, at no charge, for over 30 years. However, the future of the CCCC is in doubt, as the city has recently issued a Request for Proposals (RFP) to architects and planners to demolish and rebuild both the CCCC and the adjacent library, and to add low-income and market-rate apartments above those sites. Adding to the uncertainty, there is a vocal group of local residents that is opposed to building any such housing, so the future of the CCCC and the NCA telescope-making workshop is far from clear. Much of this is explained in the following Washington Post article: https://www.washingtonpost.com/dc-md-va/2024/01/18/chevy-chase-affordable-housing/.

How this will all play out is anybody's guess! Perhaps our workshop will move to the Guy Mason Recreation Center during the demolition and reconstruction process. Please contact Guy Brandenburg at 202-262-4274 or gfbrandenburg@yahoo.com if you have questions or plan to attend a session of the workshop. You can find more information on telescope making at https://guysmathastro.com/ or at https://stellafane.org/tm/.

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Recent Astronomy Highlights – continued from page 4

Possible Nearby Primordial Galaxy Accidentally Discovered

In what was a fortuitous accident, astronomers at the Green Bank Observatory in West Virginia doing a survey of low surface brightness galaxies, accidentally pointed a radiotelescope at the wrong coordinates and discovered what appears to be a galaxy without stars. Filled with gas that is very diffuse and appearing to have a shape similar to that of spiral galaxies, the object is designated J0613+52. Astronomers speculate that with the galaxy only having very diffuse gas and with it not being near other galaxies that might gravitationally disrupt it, J0613+52 simply never started forming stars. As such, it can be considered something like the primordial galaxies that existed at the beginning of the Universe, before star formation started in them. More information is available at https://earthsky.org/space/galaxy-without-stars-j061352-green-bank/.

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.

Next NCA Meeting: **9 March** 7:30 p.m. **Speaker TBD**, **Topic TBD**

The APS Mid-Atlantic Senior Physicists Group: **(at the American Center for Physics and on Zoom)** February 21st at 1:00 p.m., Dr. Thaddeus ("Tad") Komacek, University of Maryland and NASA's GSFC, will give a talk entitled "Characterizing the three-dimensional nature of hot gas giant exoplanets in the era of JWST". A link to the meeting via Zoom is at https://apsphysics.zoom.us/j/86152924837?pwd=ae6K2Vt05xe9eAC3BRMN5vvCLfuMLA.1

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

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Celebrating 87 Years of Astronomy

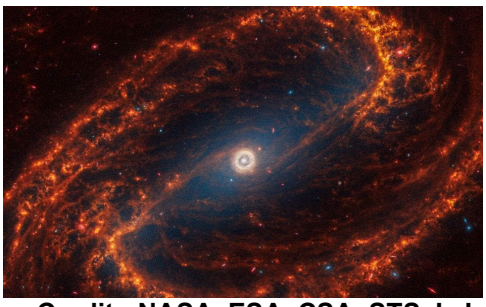

Image Credit - NASA, ESA, CSA, STScI, J. Lee (STScI), T. Williams (Oxford), PHANGS Team)

NGC 1300 is one of nineteen relatively nearby galaxies recently imaged by the James Webb Space Telescope. All of the images, along with descriptions, are available at https://science.nasa.gov/missions/webb/nasas-webb-depicts-staggering-structure-in-19-nearby-spiral-galaxies.

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 February 10th
7:30 pm
Dr. David Bennett

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

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

Please note that NCA Zoom meetings are often recorded.

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