

# The High Desert Observer

April 2022

## This Month's Meeting - April 22, 2022

Meeting will be virtual via Zoom®  
Friday at 7 p.m.



## Speaker for the Month - Tyler Cohen **Pulsars and Gravitational Waves**

Tyler Cohen is a PhD student at the National Radio Astronomy Observatory and a tour guide at the Very Large Array radio telescope in New Mexico. A New York native, he went on to receive his BSc in physics and astronomy at Stony Brook University. He has since worked at the Gemini Observatory on Mauna Kea, Hawaii and Arecibo Observatory in Puerto Rico.



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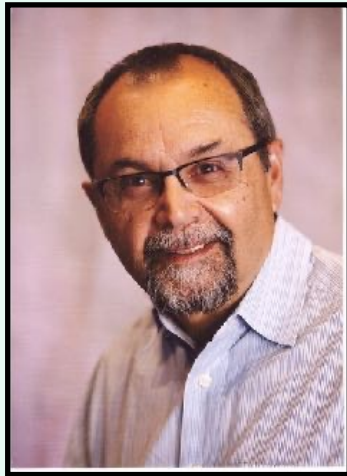
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Gravitational waves are ripples in the fabric of spacetime. A consequence of Einstein's theory of general relativity, they were first detected from in-spiraling black holes in 2015 by LIGO. Now, another observatory is on the verge of detecting gravitational waves of a different sort. Its detector is the size of the Milky Way galaxy and constructed from some of the most exotic stars in the universe. Tyler will discuss how the North American Nano-hertz Observatory for Gravitational Waves uses pulsar timing to search for low-frequency gravitational waves, and the role that the Very Large Array plays in this groundbreaking experiment.

## From the Desk of Ed Montes ASLC President

### Members

It's my sad responsibility to announce that we have lost a member. Rob Hathaway passed on April 2, 2022. He had only recently joined the club. I met him several months ago at one of our Leasburg outreach events; he and his wife Debra attended in order to do some observing and to find out about the club. He had just retired and was looking to finally become active in a hobby that had interested him for a long time, but which he had not had opportunity to follow. Now was his chance and he was very enthusiastic about it. He joined and almost immediately took advantage of our loaner program, borrowing a C8. Rob had not had the time because his job absorbed his attention: he worked in the US Intelligence Community, for both the National Reconnaissance Office and the National GeoSpatial-Intelligence Agency and supported Operation Iraqi Freedom and Operation Enduring Freedom. In the short time I knew him I was impressed by his enthusiasm and I'm sorry that we will not have the opportunity to have him as a part of this club.



It is my happy responsibility to mention our renewed participation in classroom outreach. Rich Richins and I each had opportunities where we were invited to speak and present whatever meager knowledge we have to share. Rich was at a middle school where he conducted some solar observing then guided the class in determining the length of

the eruptions they saw at the edge of the solar disk. I got to dress up as Galileo for some 3rd and 4th graders. We conducted the falling bodies experiment (with D and AAA batteries as the falling bodies) to determine that they did, in fact, hit the ground at the same time. Check out the pictures on Page 3.

I bring this up because this is how we plant the seeds and cultivate the community to produce citizens who care, understand and appreciate STEM topics. These are the kids who might eventually become members of the ASLC or other astronomy clubs. These activities will be part of our legacy.

### Speaker this Month

Our speaker this month, April 2022, is Tyler Cohen. He is a graduate research assistant and PhD student at the National Radio Astronomy Observatory. He will be talking detecting gravitational waves using pulsar timing.

That's it for now. Clear skies!

### Coming Events

Monthly, on an evening close to the first-quarter moon, ASLC hosts a public "MoonGaze" observing session in Las Cruces. We also hold periodic special evening sessions at Tombaugh Observatory on the NMSU campus.

Also monthly, the ASLC welcomes public viewing at the Walter Haas Observatory in Leasburg Dam State Park, located just 20 miles north of Las Cruces. Our 16-inch Meade LX200 telescope at this site is used to observe under rather dark skies.

Keep updated on the dates, times, and locations through this [link](#) with additional information available at our website [www.aslc-nm.org](http://www.aslc-nm.org) as well

Rich Richins, with flair (pun intended), enlightening middle-schoolers on solar astronomy



Ed Montes with 3rd & 4th graders looking very Galilean!



**The Astronomical Society of Las Cruces (ASLC)** is dedicated to expanding public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, providing opportunities to work on Society and public educational projects. Members receive electronic delivery of The High Desert Observer, our monthly newsletter, plus membership in the Astronomical League including their quarterly publication, Reflector, available in either paper or digital format. ASLC members are also entitled to a discount on a subscription to Sky and Telescope magazine. Annual Individual Dues are \$36; Family \$42; Student (Full Time) \$24. Dues are payable in January and partial year prorated for new members. Please contact our Treasurer, Patricia Conley, [treasurer@aslc-nm.org](mailto:treasurer@aslc-nm.org) for further information.

## Featured Article:

### Virgo's Galactic Harvest



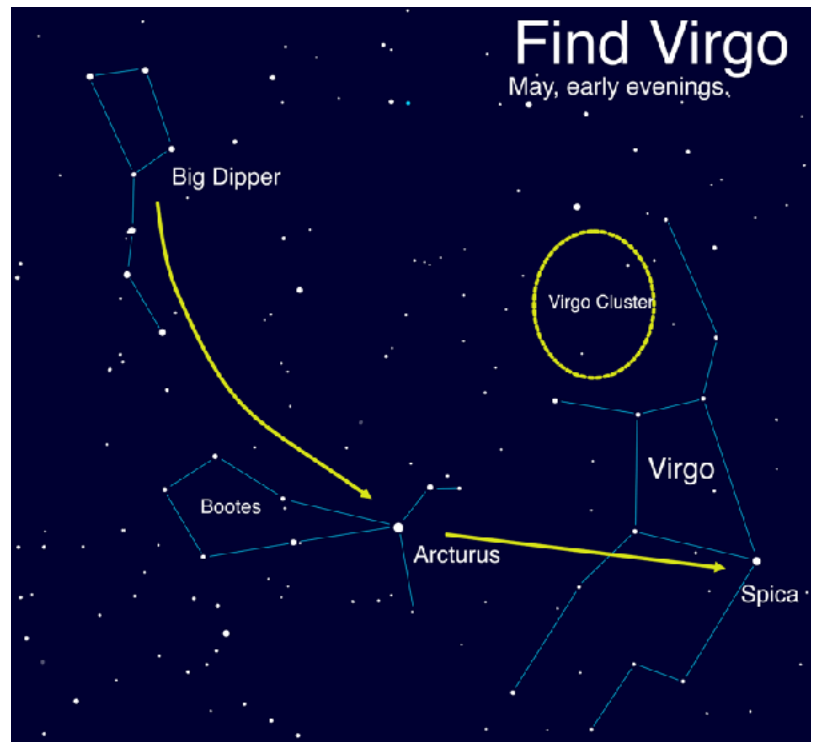
This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit <https://nightsky.jpl.nasa.gov/> to find local clubs, events, and more.

This large constellation is home to the Virgo Cluster, a massive group of galaxies. While the individual stars in Virgo are a part of our own galaxy, known as the Milky Way, the Virgo Cluster's members exist far beyond our own galaxy's borders. Teeming with around 2,000 known members, this massive group of galaxies are all gravitationally bound to each other, and are themselves members of the even larger Virgo Supercluster of galaxies, a sort of "super-group" made up of groups of galaxies. Our own Milky Way is a member of the "Local Group" of galaxies, which in turn is also a member of the Virgo Supercluster! In a sense, when we gaze upon the

By David Prosper

May is a good month for fans of galaxies, since the constellation Virgo is up after sunset and for most of the night, following Leo across the night sky. Featured in some ancient societies as a goddess of agriculture and fertility, Virgo offers a bounty of galaxies as its celestial harvest for curious stargazers and professional astronomers alike.

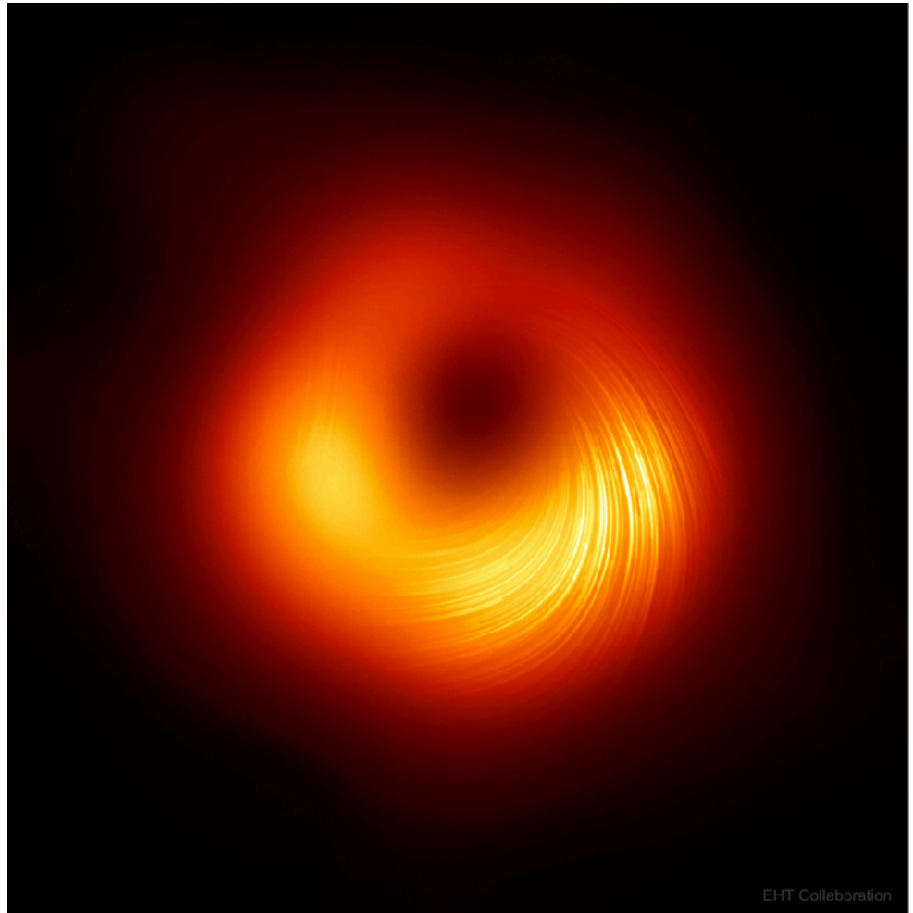
Virgo is the second-largest constellation and largest in the Zodiac, and easily spotted once you know how to spot Spica, its brightest star. How can you find it? Look to the North and start with the Big Dipper! Follow the general curve of the Dipper's handle away from its "ladle" and towards the bright orange-red star Arcturus, in Boötes – and from there continue straight until you meet the next bright star, Spica! This particular star-hopping trick is summed up by the famous phrase, "arc to Arcturus, and spike to Spica."



## Black Hole Polarization

galaxies of the Virgo Cluster, we are looking at some of our most distant cosmic neighbors. At an average distance of over 65 million light years away, the light from these galaxies first started towards our planet when the dinosaurs were enjoying their last moments as Earth's dominant land animals! Dark clear skies and a telescope with a mirror of six inches or more will reveal many of the cluster's brightest and largest members, and it lends itself well to stunning astrophotos.

Virgo is naturally host to numerous studies of galaxies and cosmological research, which have revealed much about the structure of our universe and the evolution of stars and galaxies. The "Universe of Galaxies" activity can help you visualize the scale of the universe, starting with our home in the Milky Way Galaxy before heading out to the Local Group, Virgo Cluster and well beyond! You can find it at [bit.ly/universeofgalaxies](https://bit.ly/universeofgalaxies). You can further explore the science of galaxies across the Universe, along with the latest discoveries and mission news, at [nasa.gov](https://nasa.gov).



The first image of a black hole's event horizon was taken in the center of one of the most prominent galaxies in Virgo, M87. This follow up image, created by further study of the EHT data, reveals polarization in the radiation around the black hole. Mapping the polarization unveils new insights into how matter flows around and into the black hole - and even hints at how some matter escapes!

More details: [apod.nasa.gov/apod/ap210331.html](https://apod.nasa.gov/apod/ap210331.html)

Credit: Event Horizon Telescope Collaboration

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## Minutes of March 2022 Meeting

**John McCullough - Secretary**

Ed Montes, President, Astronomical Society of Las Cruces (ASLC, the Society), called the March 2022 meeting to order at 7:03 pm on 25 March 2022. He welcomed attendees to tonight's meeting via ZOOM. Twenty-one (21) attendees were signed in for the start of the meeting.

Ed welcomed the group to tonight's meeting and announced that the minutes from the February 2022 meeting (thanks to John McCullough, Secretary) were published in the March issue of the Society newsletter, the High Desert Observer (HDO) (thanks to Tim Kostelecky, HDO Editor). Ed asked if there were any required additions, deletions, or corrections to the minutes as submitted. A motion to accept the February 2022 minutes as submitted was offered by Bernie Jezercak, seconded by Gary Starkweather. There being no objections, the motion was passed by acclamation.

Ed introduced tonight's speaker, Mr. Dave Finley.

Presentation:

Tonight's Tombaugh Series speaker was Mr. Dave Finley, Public Information Officer for the National Radio Astronomy Observatory (NRAO). His topic was "The Very Large Array: Past and Future".

This profusely illustrated presentation examined the history and scientific achievements of the Very Large Array (VLA) over four decades of operation at the frontiers of human knowledge. Beginning with an overview of pre-VLA radio astronomy, the presentation recounted the VLA's conception, design, and construction, and the breakthrough discoveries of the "classic" VLA. It continued with the dramatic technical expansion of the VLA's capabilities culminating in a rededication in 2012 and discoveries made possible by that expansion. The presentation concluded with a look at plans for the next-generation VLA, a new telescope that

will be an essential part of taking science into a new era of 21st-Century discovery.

Dave Finley has been Public Information Officer for the National Radio Astronomy Observatory (NRAO) for nearly three decades, bringing to the public the discoveries coming from the world's premier radio observatory. A former science/medicine editor for The Miami Herald, he is a widely-published author and lecturer on topics including astronomy, geology, science writing, amateur radio, and history. He taught astronomy and geology at Florida International University, and has lectured at universities, observatories, star parties, clubs, and aboard cruise ships. He is a former squadron commander in the Civil Air Patrol, and currently serves as Historian for that organization's six-state Southwest Region. He is a private pilot and a veteran of the U.S. Marine Corps.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, was not present at tonight's meeting; Steve Barkes reported in her stead. He reported that the Society had a net income of \$112 since last month's meeting, primarily from dues payments.

The Walter Haas Observatory at Leasburg Dam State Park (LDSP):

Steve Barkes, committee chairman, reported good attendance at last month's event; the 16" Meade worked well. Another open house will be held on 26 March. Steve says the Operators' Manual is current, but he will do some editing. The Manual can be found on the web site.

The official naming process continues but still requires sign-off by the Governor.

Public Outreach:

Stephen Wood, committee chair, reiterated the good attendance at the LDSP event as well as the March Moon Gaze. The next Moon Gaze will be 09 April. Directions to the ASLCWest events have been posted.

**Loaner Telescope:**

Tim Kostelecky, program coordinator, reported that descriptions of the available program telescopes were now a regular feature in the HDO. The descriptions were also available through the Society web site. He reported he was still having issues with one mount.

**Apparel:**

Rani Bush, committee chair, reported she planned to update availability of some apparel items.

**ASLCWest (Deming area) Activity Report:**

Mike Nuss reported the recent City of Rocks State Park event had good participation. The Rockhound State Park event was too windy and dirty. Additional events are planned for 01 and 02 April.

**Old Business:**

Messier Marathon 5K – This will be a Society event at LDSP on 02 April. The plan is to start at approximately 6:30 pm. Ed Montes encouraged members to bring their telescopes and items to share in a potluck. Additional details will be posted on the groups.

No additional old business was offered for consideration.

**New Business:**

Las Cruces 2022 Space Festival – This year's Space Festival is planned for 0710 April. The kickoff will be Thursday night at the Mesilla Valley Mall with an art show and aerospace job fair. There will be free space/science fiction movies each evening at the Rio Grande Theater on the Downtown Plaza. There will be STEM-related booths set up at the Farmer's Market on 09 April from 9:00 am until noon. The April Moon Gaze will also be 09 April on the Downtown Plaza. The Festival will conclude with an Open House at Spaceport America on 10 April. The Society has

been offered display booth space at the Spaceport. Contact Ed Montes or Rani Bush if you would like to volunteer for any of the events.

Museum of Nature and Science – Rani Bush reported that the Museum is looking for amateur astronomers to teach classes this summer. The astronomers would also help develop the curriculum to coordinate with the NASA Artemis mission. Contact Rani if interested.

No additional new business was offered for consideration.

The March 2022 meeting was adjourned at 9:03 pm.

-Respectfully submitted:  
John McCullough  
Secretary, ASLC

## Loaner Scope Program

We have several scopes available covering all popular types, and these items are available to members at no charge. The typical loan period is two months, with month-to-month extensions thereafter if available. Equipment can be checked out through Tim Kostelecky, our Loaner Program Coordinator (tim.kostel@icloud.com). The ASLC loaner telescopes range in size from a 61mm refractor to a 10" Dob. Along with the telescopes and eyepieces, the loaner program has other accessories available.



### **Vintage 1970's Celestron Classic 8" SCT.**

It's a bit of a beast but manageable and transportable. No computer control, but has AC tracking drive and manual fine-tune RA control. Get it reasonably polar aligned and it's a pleasure to use and gives great views. **Available Now**



### **Celestron NexStar 8se - 8 inch Schmidt-Cassegrain**

Very popular Celestron SCT with computer goto system. Runs only on AA batteries or DC port and has no manual pointing capability - all electronic. It's a nice scope that does a decent job pulling in deep sky objects. **Available Now**



### **Celestron C102 4" Refractor**

Mature but reliable Celestron classic achro-refractor. Stable Meade Autostar goto mount gives this guy good support and capabilities. May not be pretty and shiny, but won't disappoint. **Available Now**





### Orion StarMax 90 - 90mm Maksutov-Cassegrain

Simple table-top Mak, and with its f/13.9 focal ratio, it provides the magnification power to take good looks at the moon, planets and smaller bright deep sky objects. The optics are quite good. Super for grab-and-go portability. **Available June 1st**



### Meade ETX-90 go-to - 90mm Maksutov-Cassegrain

Nice scope but at f/13.9 has limited field of view, but with its computerized mount, it finds a wide array of celestial objects and tracks well. Its high f-ratio does well with the moon, planets and small brighter DSOs. The mount is a little noisy, even when tracking...but don't let that dissuade you from trying it out. **Available Now**



### William Optics ZenithStar 61mm Apo-Refractor

This is a small scope but a gem. Wide field of view with superb optics. Currently housed on a simple manual alt-az mount (the iOptron shown is not working, but we're looking at possible fixes). The scope is good visually for moon, planets and bright star clusters. If we can get it perched on a nice mount, a field flattener is available for astro-imaging. **Available July 1st.**



### Orion SkyQuest XT10 - 10" Dobsonian Reflector

Classic 10" Dob. Manual pointing and guiding, but its 4.7 focal ratio provides a wide field of view that helps you find and track objects. Includes a finder scope (not shown), 2" focuser, front cover, and eyepiece rack. The scope has a few miles on it with some minor dings and dents, but those won't interfere with your viewing. It's a really nice grab & go scope for deep sky objects. **Available Now**

## Member Images

### Jupiter, Venus, Mars & Saturn in Las Cruces Morning Sky - Ed Montes



The early-evening sky is currently devoid of visible planets, but come morning, it's worth getting up early to enjoy the show.

NGC6726, NGC6727, IC4812, NGC6723  
in Corona Australis - Alex Woronow



With my last submission and my first successful making of a mosaic, I decided to try again. This one was much more difficult, with barely enough exposure time to get the general lay-of-the-sky and not enough for going deeply into details. Also, the two panels had radically different color tints, even after photometric color calibration and applying the DNA balancing script. So some manual maneuvers were in order.

## M104 - Sombrero Galaxy in Virgo - Mike Sherick



My most recent imaging project is M104 LRGB, commonly called "The Sombrero Galaxy". It turns out that this object is a difficult image to process do to its very bright bulbous core. My goal here was an attempt to reveal detail in the central structure of this slightly tilted, edge-on galaxy.

M81 - “Bode’s Nebula” in Ursa Major - Jeff Johnson

