The High Desert Observer

May 2025

Astronomical Society of Las Cruces

This Month's Meeting - May 23rd

IN-PERSON & Zoom, Friday at 7 p.m.
Mesilla Valley Radio Clubhouse
6609 Jefferson Ave. Las Cruces, NM

At the corner of Wilt and Jefferson -- take the Porter exit from US 70, about 5 miles east from the I-25 interchange. Go south on Porter until you come to Jefferson. From there, turn left and go to the corner of Jefferson and Wilt. The meeting will also be available to members via Zoom.

In This Issue

Tombaugh Lecture Series
Presentation for the Month

JunoCam Images of Jupiter and its Moons: a New Perspective

Dr. Candice Hansen-Koharcheck

The Juno spacecraft in orbit around Jupiter carries a camera on its payload, JunoCam, used for both science and outreach. Juno's unique polar orbit yields polar perspectives unavailable to earth-based observers or previous spacecraft.

Dr. Hansen-Koharcheck is a senior research scientist at the Planetary Science Institute. Her primary interest is the study of ices, polar caps and seasonal processes throughout the solar system. With a B.S. in Physics from California State University, Fullerton, she began her career at NASA's Jet Propulsion Laboratory in 1977, working with the Voyager Imaging Science team. She continued working on Voyager through the Jupiter, Saturn, Uranus and Neptune flybys. In 1994, she earned her Ph.D. at the University of California, Los Angeles. She was the deputy Principal Investigator for the Mars Reconnaissance Orbiter high-resolution camera ("HiRISE"), in its 19th year of operation, and was the science theme lead for the study of Mars' seasonal CO2 polar caps until her retirement in 2024. As a Co-Investigator on the Juno mission, in orbit around Jupiter since 2016, she is responsible for the development and operation of the JunoCam outreach camera that engages the public in processing images of Jupiter. She is a Co-Investigator on the Europa Clipper mission that launched in October 2024.

Masthead Image: M20 (Trifid Nebula) in Sagittarius - courtesy of ASLC Member Jeff Johnson

From the Vice President
"Stars at the Station"
Nils Allen

I was a bit surprised, but in my opinion the Stars@theStation event held at the Las Cruces Railroad Museum the evening of May 9th was a success, overall. Sure, the turnout was light, but we had lotsa time to chat with those who came, with each other, & with Museum friends. The views of the Sun, Jupiter & the moon were sharp & interesting, & Mike B's EVscope was showing a sweet M-51 image real-time, despite the conditions. That still strikes me as an amazing accomplishment at a casual in-town outreach event! Isn't technology wonderful?!

That reminds me…as far as scopes go, I was impressed by the super-wide range of complexity we brought: Sam White & I had no-tech manual Dobs we built 20 years ago; Bruce/Tina & Steve W set up modern SCTs; at the top-end Mike B, Lydia & Trish brought their smart imaging scopes &/or tablets to display relevant images. And all were enjoyed equally!

One last significant moment took place. Beyond offering nice views, some of us have been seeking to add "assist struggling scope owners" to our in-town outreach events on a regular basis. Jon (the Museum outreach leader) has helped advertise that service, and introduced me to Connie, who needed assistance with her (very dusty) short-tube, equatorial 4" Newt. In about 10 minutes she was quite pleased to take-in a nice lunar image with her-own-scope! I encouraged her to keep practicing, so hopefully we'll see her at a future Moongaze.

So I guess, to some degree, an evening spent with friends & acquaintances under the stars is what you choose to make of it…choose wisely….

—Nils

Upcoming Events - Check ASLC-NM.org Event Calendar for details

Friday, May 23rd - 7:00 to 9:00 p.m. — ASLC Monthly Meeting
Saturday, May 31st - at sunset —ASLC MoonGaze at the Plaza de Las Cruces
Friday, June 20th - at sunset — ASLC West - Rockhound State Park Public Observing
Saturday, June 21st - at sunset — ASLC West - City of Rocks State Park Public Observing
Saturday, June 21st - at sunset — ASLC Leasburg Dam State Park Public Observing
Friday, June 27th - 7:00 to 9:00 p.m. — ASLC Monthly Meeting

The Astronomical Society of Las Cruces (ASLC) is a 503(c)(3) non-profit group 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 for further information.

Regular 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 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 as well as our Facebook page.

ASLC-West Update

Mike Nuss

After 3 prior attempts, Bobby Franzoy and myself were able to get a STEM astronomy session at Hatch Elementary on April 30th. 10 to 15 mph winds were present even that night, but the seeing was really good! A lot of oohs and aahs on sharp lunar and Jupiter views. A lot of questions on why Jupiter was sideways.

We got clouded out at Rockhound on Friday, May 16th. We had an interesting situation at City of Rocks this last Saturday, May 17th. A very large group of enthusiasts participating in a fantasy game enactment of Medieval times were in close quarters with us. Along with a great amount of Grog and accompanying merriment, dust and car headlights-- we would have been better to set up in the Walmart parking lot. But some viewing was held by 25 to 30 non-jousting and Damsel-rescuing visitors. Barry Flansburg, Bill Nigg, Charles Turner, John Gilkison and me presenting and holding down the Castle Observatory.

Featured Article

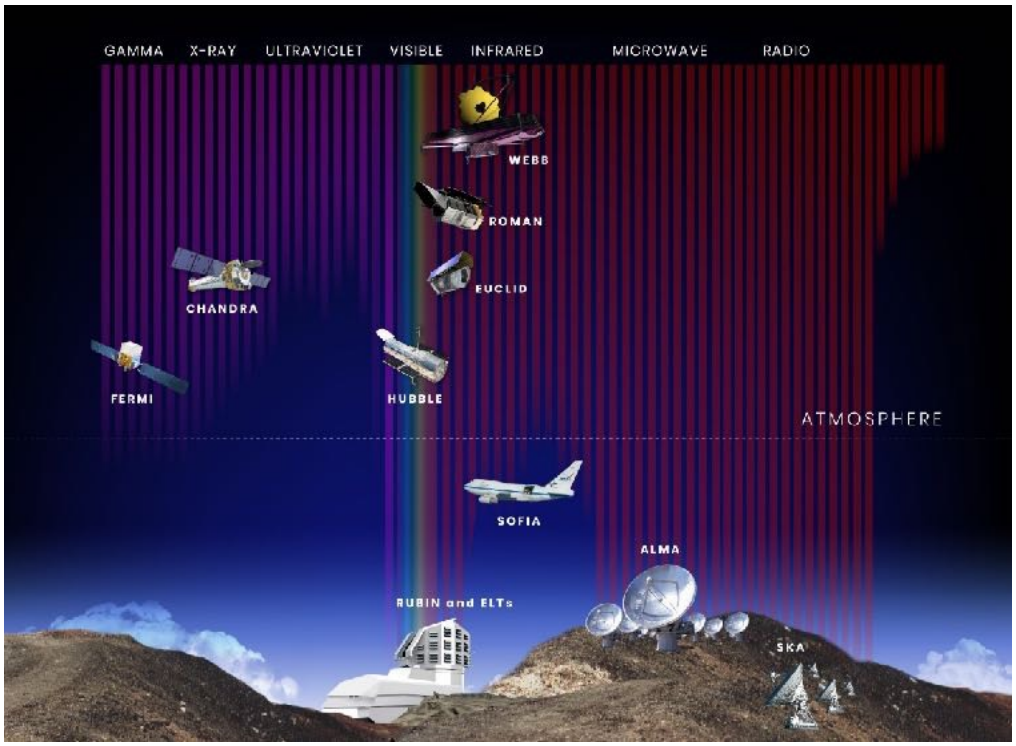
This article is distributed by NASA's Night Sky Network (NSN).
The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit go.nasa.gov/nightskynetwork to find local clubs, events, and more!

May's Night Sky Notes: Catch the Waves!

By Kat Troche

The Electromagnetic Spectrum

If you've ever heard the term "radio waves," used a microwave or a television remote, or had an X-ray, you have experienced a broad range of the electromagnetic spectrum! But what is the electromagnetic spectrum? According to Merriam-Webster, this spectrum is *"the entire range of wavelengths or frequencies of electromagnetic radiation extending from gamma rays to the longest radio waves and including visible light."* But what does **that** mean? Scientists think of the entire electromagnetic spectrum as many types of light, only some that we can see with our eyes. We can detect others with our bodies, like infrared light, which we feel as heat, and ultraviolet light, which can give us sunburns. Astronomers have created many detectors that can "see" in the full spectrum of wavelengths.



This illustration shows the wavelength sensitivity of a number of current and future space- and ground-based observatories, along with their position relative to the ground and to Earth's atmosphere. The wavelength bands are arranged from shortest (gamma rays) to longest (radio waves). The vertical color bars show the relative penetration of each band of light through Earth's atmosphere. Credit: NASA, STScI

Telescope Types

While multiple types of telescopes operate across the electromagnetic spectrum, here are some of the largest, based on the wavelength they primarily work in:

- **Radio:** probably the most famous radio telescope observatory would be the Very Large Array (VLA) in Socorro County, New Mexico. This set of 25-meter radio telescopes was featured in the 1997 movie Contact. Astronomers use these telescopes to observe protoplanetary disks and black holes. Another famous set of radio telescopes would be the Atacama Large Millimeter Array (ALMA) located in the Atacama Desert in Chile. ALMA was one of eight radio observatories that helped produce the first image of supermassive black holes at the center of M87 and Sagittarius A* at the center of our galaxy. Radio telescopes have also been used to study the microwave portion of the electromagnetic spectrum.

- **Infrared:** The James Webb Space Telescope (JWST) operates in the infrared, allowing astronomers to see some of the earliest galaxies formed nearly 300 million years after the Big Bang. Infrared light allows astronomers to study galaxies and nebulae, which dense dust clouds would otherwise obscure. An excellent example is the Pillars of Creation located in the Eagle Nebula. With the side-by-side image comparison below, you can see the differences between what JWST and the Hubble Space Telescope (HST) were able to capture with their respective instruments.

NASA's Hubble Telescope captured the Pillars of Creation in 1995 and revisited them in 2014 with a sharper view. Webb's infrared image reveals more stars by penetrating dust. Hubble highlights thick dust layers, while Webb shows hydrogen atoms and emerging stars. You can find this and other parts of the Eagle Nebula in the Serpens constellation. Credit: NASA, ESA, CSA, STScI, Hubble Heritage Project (STScI, AURA)

- **Visible:** While it does have some near-infrared and ultraviolet capabilities, the Hubble Space Telescope (HST) has primarily operated in the visible light spectrum for the last 35 years. With over 1.6 million observations made, HST has played an integral role in how we view the universe. Review Hubble's Highlights here.

- **X-ray:** Chandra X-ray Observatory was designed to detect emissions from the hottest parts of our universe, like exploding stars. X-rays help us better understand the composition of deep space objects, highlighting areas unseen by visible light and infrared telescopes. This image of the Crab Nebula combines data from five different telescopes: The VLA (radio) in red; Spitzer Space Telescope (infrared) in yellow; Hubble Space Telescope (visible) in green; XMM-Newton (ultraviolet) in blue; and Chandra X-ray Observatory (X-ray) in purple. You can view the breakdown of this multiwavelength image here.

Try This At Home

Even though we can't see these other wavelengths with our eyes, learn how to create multiwavelength images with the Cosmic Coloring Compositor activity and explore how astronomers use representational color to show light that our eyes cannot see with our Clues to the Cosmos activity.

Monthly Meeting Minutes
April 2025

John McCullough - Secretary

Call to Order:

Rani Bush, President, Astronomical Society of Las Cruces (ASLC, the Society), called the April 2025 meeting to order at 7:00 pm on 25 April 2025 at the Mesilla Valley Radio Clubhouse. There were eighteen (18) members, spouses, and guests in attendance, as well as eight (8) attendees via Zoom at the start of the meeting.

Rani welcomed the group to tonight's meeting. She announced that the meeting minutes from March 2025 were published in the April 2025 issue of the Society newsletter, the High Desert Observer (HDO). Steve Barkes moved that the March minutes be accepted as published and Tracy Stuart seconded the motion. Rani asked if there were corrections, clarifications, or modifications required. None being offered, the minutes were accepted by acclamation.

Presentation:

Tonight's Tombaugh Series presentation was by ASLC member Mike Beddo, on "Citizen Science Using Unistellar Smart Telescopes". Mike described the telescopes available, how the Unistellar network of citizen science works, and presented some examples of the contributions made by amateurs using these telescopes. Anyone interested should download the Unistellar app on their phone/tablet.

Mike grew up under the dark skies of his family's horse farm near Anthony, NM, where his love of astronomy was kindled early. Encouraged by his mother and grandmother to pursue science—and grounded by the work ethic instilled by his father—Mike went on to study physics, conducting laser research at White Sands Missile Range and spin physics experiments at Los Alamos National Laboratory. He earned his PhD in 1990 with a thesis on polarized neutron-proton scattering, followed by a postdoctoral appointment at Argonne National Laboratory. His physics career took him to FermiLab, Brookhaven, and even Saclay, France. Transitioning into industry, he applied his analytical skills to everything from consumer forecasting to credit modeling. He spent a decade teaching physics and math at Northern New Mexico College, earning a "Teacher of the Year" award, and now serves as Vice President of Data Science at CreditRiskMonitor, developing models for bankruptcy risk in trade credit and supply chains. Mike and his wife recently relocated to Las Cruces, where he's excited to reconnect with the night sky and share his lifelong enthusiasm for amateur astronomy as a member of the ASLC.

One (1) visitor, Nancy (?) Sanchez, was attending the meeting after encountering the ASLC at a Moon Gaze. There were no additional visitors or guests present at tonight's meeting.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, reported on the status of the Society's finances. The Society had a net income of $117 since the last meeting and is +$1261 for the fiscal year. Contact her for detailed expenditure/income reports.

Outreach:

Stephen Wood, outreach coordinator, reported on recent and upcoming local events. Events and attendance were:

Event	Date	Members	Visitors
Outdoor Expo	29 Mar.	3	120
Stars at the Station	04 Apr.	Cancelled	Bad Wx
April Moon Gaze	05 Apr.	4	8
El Paso Museum of Archeology	12 Apr.	6	300
Sonoma Elem. Star Party	17 Apr.	1	50
Earth Day @ the Plaza	19 Apr.	4	200
LDSP (3rd Qtr. Moon)	19 Apr.	7	25

Upcoming Events:

Event	Date
May Moon Gaze	03 May
Stars at the Station	09 May
LDSP (3rd Qtr. Moon)	17 May

Contact Stephen if you can support any or all events. He would like to see more members support the smaller events with telescopes.

Apparel:

Don Dapkus, coordinator, has Societyrelated shirts and caps available. An order for additional items will be placed in the future.

ASLC-West:

Viewing activities at Rockhound and City of Rocks State Parks have been hampered by high winds and airborne dust. Neither Mike Nuss, coordinator, nor Charles Turner was available at tonight's meeting.

New Mexico Dark Skies:

New Mexico Dark Skies (NMDS) teamed with ASLC for Earth Day at the Plaza on 19 April. Jon Holtzman reported both the City of Las Cruces and Dona Ana County issued Proclamations regarding International Dark Skies Week in April. NMDS and ASLC look forward to more collaborations including the possibility of Leasburg Dam State Park being declared a Dark Sky Site. Tim Kostelecky noted there are some issues accomplishing that.

Old Business:

Messier Marathon, Part 1 – This year's event, originally planned for 29 March but postponed because of

weather, will be 26 April starting at 5:30 pm. The format will be a potluck dinner and families are welcome.

PiFinder build – Steve Barkes reported all parts are on hand and he has started printing the needed items. Assembly will take place when Bernie Jezercak recovers from recent surgery.

Post-meeting gathering – Members expressed a desire to resume gatherings like the preCOVID ones at Pecan Grill. Consider getting together at Bosque Brewing Company.

There was no additional old business for discussion.

New Business/Announcements:

“Ladies Lunch” – Lydia Tamez announced the next gathering will be at The Bean at Josephina’s in Old Mesilla on 01 May.

Open position – Steve Barkes has had to step down as LDSP Observatory chairman. Any member interested in filling this position should contact Rani.

There was no additional new business offered for discussion.

The April 2025 meeting was adjourned at 8:28 pm.

-Respectfully submitted:
John McCullough
Secretary, ASLC

Member Images

M82 Irregular Galaxy in Ursa Major

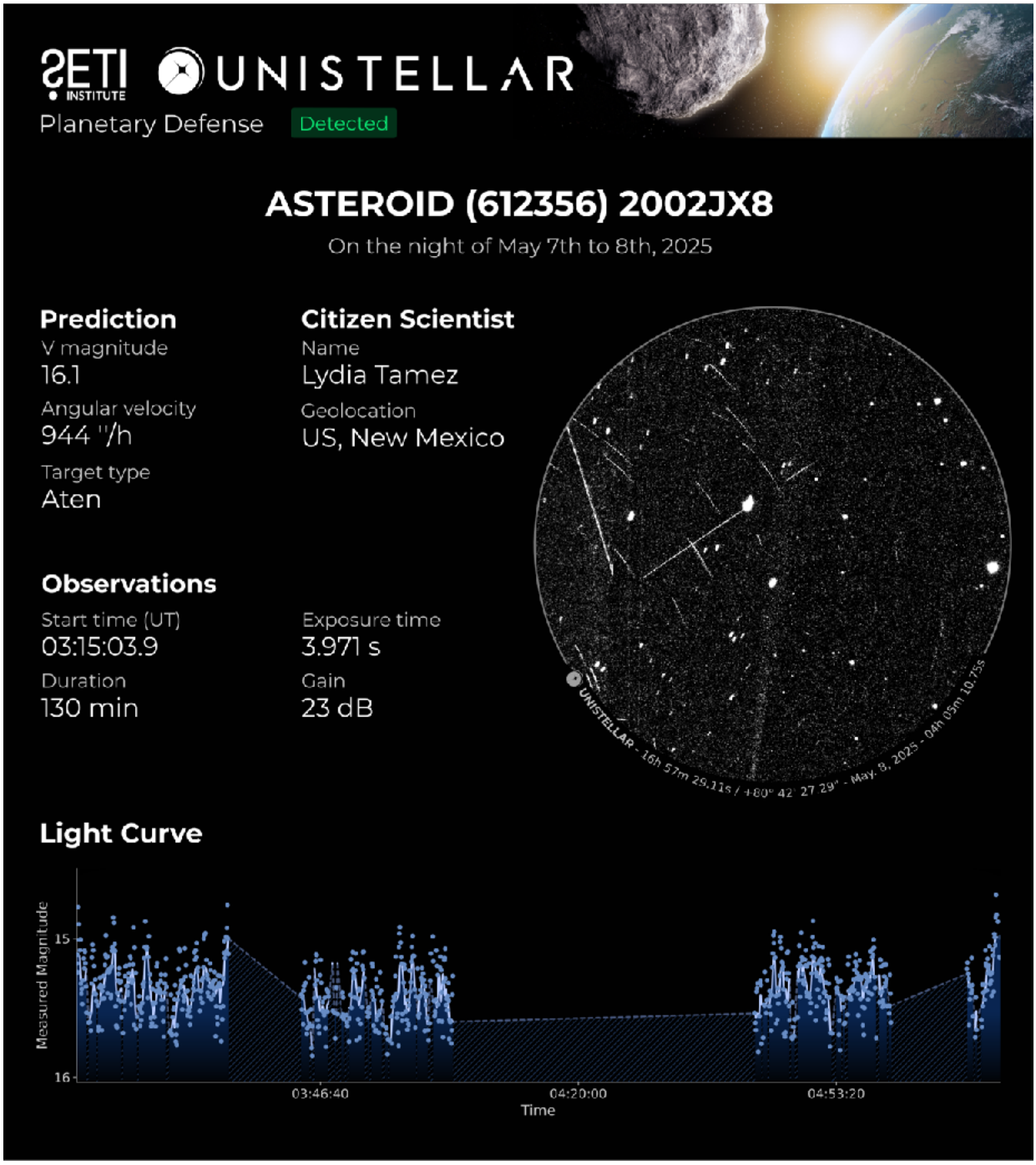
Rich Richins

I drug my imaging gear over to Leasburg Dam SP in May, and set up everything inside the observatory. I mostly concentrated on two targets: M82 and M63. I've finished processing the M82 subs and here's the result…

[Stellarview 115 triplet, ZWO 533C, Atik 460, G11 mount, N.I.N.A., Nebulosity, Photoshop. Image is cropped].

Report on Asteroid Observation

Lydia Tamez



Unistellar capture of asteroid: (612356) 2002JX8, date: 2025-05-08.
Still can't believe this is possible - to focus on a little rock out there as it flies past us.

CG 30: The Dark Sides of the Gum Nebula (HaGB)

Alex Woronow

The “CG” in CG 30 stands for “Cometary Globule.” The “cometary” part refers to the rough geometry and has nothing to do with the comets per se. This area contains at least 32 cometary globules and 10 classic T-Tauri stars (Yep & White, 2020). The radiation from the young, massive T-Tauri plus that from 11 other young stars has ionized the hydrogen behind a front advancing into the dark nebula Gum Nebula (ibid). It is that front that shines most brightly in this image.

OTA: CDL24
Camera: FLI ProLine PL9000 (Arcame CCD)
  Pixel Resolution: 0.62”
Observatory: Telescope Live (CHI-1)
Date of Capture: 2022
Date of Processing: 05-2025

M95 Spiral Galaxy in Leo
Tim Kostelecky

I took some artistic license in adding false color to this monochrome shot of M95 (ASI533MM Pro camera and ES127 scope). Pre-processing with ASI-Studio, final with Siril and Mac Pixelmator Pro.