The High Desert Observer

November 2024

Astronomical Society of Las Cruces

This Month's Meeting - Nov 15th

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**

Tales From a Post-retirement Postdoc

Charles Miller - Project Engineer,
NMSU & Apache Point Observatory

Chas will present a number of topics relating to his past experiences and current projects with NMSU and the Apache Point Observatory.

Chas Miller is a Postdoctoral Fellow in the Astronomy Department at New Mexico State University. He served for over 20 years as a design engineer and project manager at Bell Labs and Lucent Technologies, and also as an applications and training engineer at Lattice Semiconductor. Chas moved to Las Cruces in 2006 to study planetary astronomy at New Mexico State University, earning his Ph.D. in 2013. While at NMSU, he analyzed observations of Saturn's moon Phoebe, and wrote computer models of the atmospheres of Pluto and Neptune's moon Triton. He worked as a engineer for three years at Spaceport America supporting business development and flight operations. He is currently assembling a high-resolution spectrograph for exclusive use at the new 1-meter telescope at Apache Point Observatory. Once completed, this spectrograph will be used to characterize stellar oscillations for the Stellar Observations Network Group (SONG) global network.

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

From the President

Tim Kostelecky

The year is quickly coming to an end, and so am I…as president of the ASLC. We'll be welcoming Ranimo Bush as our new leader, and Nils Allen will be taking on the role of VP. It's a good ticket. Mo has an abundance of enthusiasm and drive — Nils, a long history with the ASLC as well as decades worth of outreach experience. I've left a lot undone, but glad I will still be in a position to help the governing body contribute to the success of our long-established astronomical society.

The past two years have been quite the educational experience for me, learning more of the history of the ASLC, its fine people, and the challenges of evolving to meet the needs of our members. Our cornerstone now is certainly our outreach efforts, and I have to give a shout-out to our outreach coordinator, Steve Wood. He's done a great job with this critical aspect of our being, along with the efforts of Steve Barkes and Mark Gorman in their management and operation of the Walter Haas Observatory at Leasburg. There is also the handful of members who show up with their telescopes and expertise at both our regular and special events. Thanks to all of you for time and effort.

Of course, working in the background to help the ASLC run smoothly and efficiently are Trish Conley and John McCullough, our treasurer and secretary, respectively. For years, they've provided stability as Board members, while the cavalcade of term-limited positions revolve around them. Theirs are tough jobs, and now having a better appreciation for their responsibilities, I'm glad they are willing to continue in those roles year after year.

I mustn't forget to give a special thanks to my predecessor and mentor, past-president Ed Montes. He's done much of the work I should have, and has pulled my behind out of the fire a number of times. He's leaving the Board, but will still be an integral part of our ASLC. Thanks Ed.

As always, Cheers and Clear Skies everyone! It's been a great ride.

ASLC-West Outreach

Mike Nuss

On Friday November 1st, we had 13 guests at Rockhound State Park, but were handicapped by clouds and the viewing was tough. Bill Nigg, Barry Flansburg, Charles Turner and I presented. Comet 2023/A3 was still a good telescopic object.

A much better evening was had on Saturday, with around 30 attendees at City of Rocks. Saturn's razor thin rings and the plane of the moons orbits i s

appreciated by most. Thermal first-layer clothing was not a necessity, but certainly provided an added comfort, even before the time change took place.

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 for further information.

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 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 Board of Directors		board@aslc-nm.org
President:	Tim Kostelecky	president@aslc-nm.org
Vice President:	Ranimo Bush	vp@acslc-nm.org
Treasurer:	Patricia Conley	treasurer@aslc-nm.org
Secretary:	John McCullough	secretary@aslc-nm.org
Director:	Mark Gorman	director1@aslc-nm.org
Director:	Tracy Stuart	director2@aslc-nm.org
Past Pres:	Ed Montes	PastPres2@aslc-nm.org

Committee Chairs		
ALCOR:	Patricia Conley	treasurer@aslc-nm.com
Calendar:	Stephen Wood	outreach@aslc-nm.org
Education:	Rich Richins	education@aslc-nm.org
Loaner Program:	Tim Kostelecky	loanerScopes@aslc-nm.org
Observatories:		
Leasburg Dam:	Steve Barkes	LDSPObservatory@aslc-nm.org
Tombaugh:	Open	ASLCObservatory@aslc-nm.org
Outreach:	Stephen Wood	outreach@aslc-nm.org
Website:	Steve Barkes	webslave2@aslc-nm.org
HDO Editor:	Tim Kostelecky	HDO@aslc-nm.org

Featured Article

A Flame in the Sky: The Orion Nebula

By Kat Troche

Astronomical Society of the Pacific

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 nightsky.jpl.nasa.gov to find local clubs, events, and more!

It's that time of year again: Winter! Here in the Northern Hemisphere, the clear, crisp sky offers spectacular views of various objects, the most famous of all being Orion the Hunter.

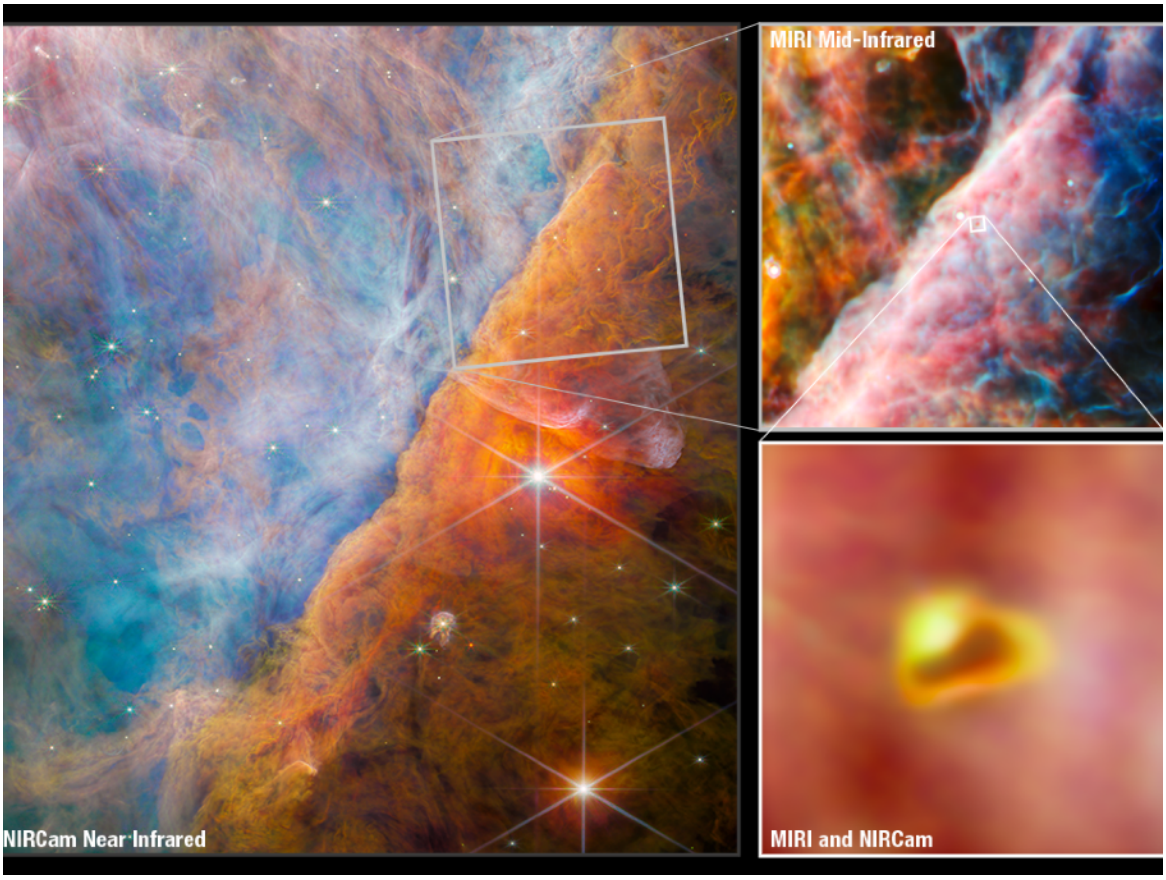
As we've previously mentioned, Orion is a great way to test your sky darkness. With the naked eye, you can easily spot this hourglass-shaped constellation. Known as an epic hunter in Greco-Roman antiqity, Orion and all its parts have many names and meanings across many cultures. In Egyptian mythology, this constellation represented the god Sah. The Babylonians referred to it as The Heavenly Shepard. In most cultures, it is Orion's Belt that has many stories: Shen in Chinese folklore, or Tayamnicankhu in Lakota storytelling. But the Maya of Mesoamerica believed that part of Orion contained The Cosmic Hearth – the fire of creation.

1,500 light years away from Earth sits the star-forming region, and crown jewel of Orion – Messier 42 (M42), the Orion Nebula. Part of the "sword" of Orion, this 24 light year wide cloud of dust and gas sits below the first star in Orion's Belt, Alnitak, and can easily be spotted with the naked eye under moderate

The Orion constellation

dark skies. You can also use binoculars or a telescope to resolve more details, such as the Trapezium: four stars in the shape of a keystone (or baseball diamond). These young stars make up the core of this magnificent object.

Of course, it's not just for looking at! M42 is easily one of the most photographed nebulae around, imaged by amateur astrophotographers, professional observatories and space telescopes alike. It has long been a place of interest for the Hubble, Spitzer, and Chandra X-ray Space Telescopes, with James Webb Space



The Great Orion Nebula from the JWST NIRCam (Near-Infrared Camera

Telescope now joining the list in February 2023. Earlier this year, NASA and the European Space Agency released a new photo of the Orion Nebula taken from JWST's NIRCam (Near-Infrared Camera), which allowed scientists to image this early star forming region in both short and long wavelengths.
But stars aren't the only items visible here. In June 2023, JWST's NIRCam and MIRI (mid-infrared instrument) imaged a developing star system with a protoplanetary disk forming around it. That's right – a solar system happening in real time – located within the edges of a section called the Orion Bar. Scientists have named this planet-forming disk d203-506, and you can learn more about the chemistry found here. By capturing these objects in multiple wavelengths of light, astronomers now have even greater insight into what other objects might be hiding within these hazy hydrogen regions of our night sky. This technique is called Multi-spectral Imaging, made possible by numerous new space based telescopes.

In addition to the Night Sky Network Dark Sky Wheel, a fun activity you can share with your astronomy club would be Universe Discovery Guide: Orion Nebula, Nursery of Newborn Stars. This will allow you to explain to audiences how infrared astronomy, like JWST, helps to reveal the secrets of nebulae. Or you can use public projects like the NASA-funded MicroObservatory to capture M42 and other objects.

Learn more about what to spy in the winter sky with our upcoming mid-month article on the Night Sky Network page through NASA's website!

Monthly Meeting Minutes
April 2024

John McCullough - Secretary

Call to Order:

Tim Kostelecky, President, Astronomical Society of Las Cruces (ASLC, the Society), called the October 2024 meeting to order at 7:00 pm on 25 October 2024 at the Mesilla Valley Radio Clubhouse. There were sixteen (16) members, spouses, and guests in attendance, as well as eight (8) attendees via Zoom at the start of the meeting.

Tim welcomed the group to tonight's meeting. He announced that the meeting minutes from September 2024 were published in the October 2024 issue of the Society newsletter, the High Desert Observer (HDO). He asked if there were corrections, clarifications, or modifications required. None being offered, Bernie Jezercak moved that the September minutes be accepted as published and Tracy Stuart seconded the motion. The minutes were accepted by acclamation.

Presentation:

Tonight's Tombaugh Series presentation was by Dr. Ilhuiyolitzin Villicaña Pedraza, Assistant Professor of Astronomy at Doña Ana Community College (DACC) and Physics at New Mexico State University (NMSU) on "Human Life in Other Worlds". Dr. Pedraza gave a brief overview of the exploration of space and the possibility of human life beyond Earth. It included the conditions necessary for human life, potential habitable planets, and moons within our solar system and beyond. She also talked about the technological challenges and future missions.

Dr. Pedraza is a motivated teacher who focuses on space science and astronomy outreach. She loves visiting observatories and all space installations. She received her Ph.D. from Autonomous University of Madrid, Spain, and the Max Planck Institute for Radioastronomy in Germany. She is a specialist in the study of molecules in Space. She also had two months of training at the European Southern Observatory in Chile. She has been teaching The Planets, Introduction to Astronomy classes in the College DACC-NMSU, and Physics in NMSU main campus. She is part-time faculty as well as doing space outreach at international levels. She is a Member of the Executive Committee WG Astronomy for Equity and Inclusion of the International Astronomical Union. She also studied a second major in aerospace technology at NMSU and obtained certifications in Data Science, Artificial intelligence, and Power Bi to be implemented in her grant ELSOL from the National Science Foundation (NSF).

Tim welcomed Dena from Pagosa Springs, CO (via Zoom). She is very interested in visual astronomy and may join the Society for star gazing at Leasburg Dam State Park (LDSP). She also would like to see the Walter Haas Observatory.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, presented a report on the status of the Society's finances. This was the Annual Financial report. The ASLC finished the 20232024 fiscal year $215.89 in the red and is currently $342.48 in the red for the 20242025 fiscal year. Contact her for detailed expenditure/income reports.

Outreach:

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

Event	Date	Members	Visitors
LDSP (3rd Qtr. Moon)	28 Sep	6	120
October Moon Gaze	12 Oct	6	120
Village at Northrise Star Party	14 Oct	6	5

Upcoming Events are:

Event	Date
LDSP (3rd Qtr. Moon)	26 Oct
2024 Renaissance ArtsFaire	01-03 Nov
Vista MS Star Party	07 Nov
October Moon Gaze	09 Nov
Sunrise Elementary Star Party	14 Nov

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

Elections Committee:

The Nominating Committee (Patricia Conley (Chair), Bernie Jezercak, and Mark Gorman) transitioned to the Elections Committee and proceeded with counting and certifying ballots for officers and directors for 2025. The offered slate of officer and director candidates for 2025, shown below, was accepted:

President:	Rani Bush	Director-at-Large #1:	Bernie Jezercak
Vice-President:	Nils Allen	Director-at-Large #2:	Tracy Stuart
Secretary:	John McCullough		
Treasurer:	Patricia (Trish) Conley		

Tim Kostelecky will transition to the position of Immediate Past President and continue on the 2025 Board of Directors.

Apparel:

Rani Bush, committee chair, had some items of ASLC apparel available for purchase, including caps for $16. She plans to place another order for shirts in January 2025. A replacement committee chair will be needed as Rani moves into the President position next year.

Old Business:

Renaissance Arts Faire 2025 – This year's Faire is the first weekend in November (02 and 03, Saturday and Sunday). Set-up will be Friday, 01 November. This is an important event for the Society so please consider volunteering. Let Trish Conley know if you can help.

2024 Holiday Party – The party is planned for 07 December at Tim's home with a potluck format. More details to follow.

November 2024 meeting – The November monthly meeting will be on the 15th, the third Friday of November.

Former member Ron Kramer – Former member and Society President Ron Kramer passed away on 28 September. A completed inventory of his equipment was presented. All items are for sale at the request of his widow. ASLC members will have access to the items for sale.

Former member Chuck Sterling – Former member and Society President Chuck Sterling, who passed away in August, donated all his equipment to the Society.

There was no additional old business for discussion.

New Business/Announcements:

ASLC tri-folds – Nils Allen presented tri-fold brochures the Society had used in the past to promote public events and outreach. Use of similar but updated brochures was suggested.

RASC handbooks – Trish Conley announced this is the time of year to order Royal Astronomical Society of Canada (RASC) handbooks. If she orders ten (10), shipping is free. Approximately six (6) people requested handbooks after the meeting. Cost is usually about $26; contact Trish if interested.

Dark Sky Association – Jon Holzman may participate with the Society at the Renaissance Faire to present information and answer questions regarding the Dark Sky Association.

There was no additional new business offered for discussion.

The October 2024 meeting was adjourned at 8:38 pm.

-Respectfully submitted:
John McCullough
Secretary, ASLC

Member Images

Deer Lick Group & Stephen's Quintet - Rich Richins

I finally made time to process some subs from Okie-Tex, near Kenton, OK. I only imaged two objects the entire week - I wanted to see what kind of detail was possible with my system. This is one of the first times that I used drizzle during stacking. The data was up-sampled by 2x so I can (hopefully) print to somewhat larger media. The full-res image can be found here - http://enchantedskies.net/NGC7331andQuintet.htm.

Messier 15: A Tight Globular Cluster w/ a Black Hole
Alex Woronow

Messier 15 is a relatively dense and tight globular cluster; in fact, it is one of the densest GCs known. The density arose from “core collapse,” when gravitational forces exceed the motion forces of the stars. In part, this GC is one of the few with a known (small) black hole at its center. The stellar population of the cluster exceeds 100,000 stars…No, I did not count them myself (that’s what graduate students are for).

This GC has a small planetary nebula within; perhaps that is why the Ha was captured? However, I did not see it on the Ha images—for whatever reason.

The low metallicity of M 15 suggests the GC formed early, probably about 12By ago.

M81 - Bode's Galaxy in Ursa Major
Jeff Johnson

This is my latest result using the "big" RC scope - taken from my backyard in Las Cruces. Easily beats any other result I have of M81 over the past decade...even the "mighty" TOA cannot beat the aperture of the RC.

The night's conditions were very good and the AP mount handled the big, heavy scope perfectly.

M81 - Bode's Galaxy
Distance: 12 million light years

TPO 12" RC Truss-tube @ f/6.2 (I used a Tak reducer)
AP1100GTO
QSI 690wsg @ -10C
10x10min Lum (bin1x1), 2x5min ea RGB (bin2x2); 10xdarks/flats/fdarks/bias

Thanks for looking!

IC1805 - The Heart Nebula in Cassiopeia
Kent DeGroff

I finally joined the group of Heart Nebula imagers. The ability to image it with a modified DSLR gave a combination of fairly large FOV with decent resolution and good H-Alpha.

Modified EOS 700D DSLR, 152mm f/4 Newtonian piggyback on a larger telescope, Paracorr, AP 1200 GTO mount, guiding done with a Lodestar/50mm lens.

This is a two panel mosaic of 40 x 300s each at ISO 1600, total integration is 3.3 hours.