

The High Desert Observer

August 2023



This Month's Meeting - August 25th

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

This Month's Meeting & Speaker	Page 1
From the President - Tim Kostelecky	Page 2
Featured Article - NASA Night Sky Network "Looking Beyond the Stars"	Page 3
Previous Meeting Minutes - John McCullough	Page 5
Member Astro Images	Page 7
Bob Kimball	
Jeff Johnson	
Alex Woronow	

Tombaugh Lecture Series Speaker for the Month

Victor Gibbs

Photographer



Into the Cold Dark Night: Imaging Auroras in Alaska

For the last five years, photographer Victor Gibbs has journeyed to Alaska to shoot photos of the Aurora Borealis. During this time, he has learned a lot of techniques and tricks on how to achieve the best imagery of the northern lights. He will share his experience and adventures in sub-freezing temperatures, as well as some of the imagery obtained in the great white north.

From the President Tim Kostelecky

ASLC receives a generous \$2,056 donation from Lockheed Martin Employees

The Astronomical Society of Las Cruces, a 501(c)(3) non-profit organization, is dependent of two primary sources of revenue to ensure our financial stability and sustainability: Yearly membership dues, and the donations from generous contributors.

In July, we had quite a surprise through the effort of John McCullough, our ASLC Secretary. Years ago, John and other employees of Lockheed Martin developed the Lockheed Martin Missiles & Fire Control Employees Charity Fund. The Charity Fund is voluntarily sourced directly from employee payroll deduction.

John submitted a request for the ASLC as a potential recipient, and received approval for a portion of the fund totaling \$2,064.60.



John McCullough presented a check for \$2064.60 to the ASLC on behalf of the Lockheed Martin Missiles & Fire Control Employee Charity Fund.

A check for the amount was presented by John at our July monthly meeting. Thank you John, and employees of Lockheed Martin! The financial viability of the ASLC is further ensured through your generosity.

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:	Steve Barkes	director2@aslc-nm.org
Past Pres:	Ed Montes	PastPres2@aslc-nm.org

Committee Chairs

ALCOR:	Patricia Conley	treasurer@aslc-nm.org
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:	TBD	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

Looking Beyond the Stars



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.

Brian Kruse - NASA Night Sky Network

Looking up in awe at the night sky, the stars and planets pop out as bright points against a dark background. All of the stars that we see are nearby, within our own Milky Way Galaxy. And while the amount of stars visible from a dark sky location seems immense, the actual number is measurable only in the thousands. But what lies between the stars and why can't we see it? Both the Hubble telescope and the James Webb Space Telescope (Webb) have revealed that what appears as a dark background, even in our backyard telescopes, is populated with as many galaxies as there are stars in the Milky Way.

So, why is the night sky dark and not blazing with the light of all those distant galaxies? Much like looking into a dense forest where every line of sight has a tree, every direction we look in the sky has billions of stars with no vacant spots. Many philosophers and astronomers have considered this paradox. However, it has taken the name of Heinrich Wilhelm Olbers, an early 19th century German

astronomer. Basically, Olbers Paradox asks why the night sky is dark if the Universe is infinitely old and static – there should be stars everywhere. The observable phenomenon of a dark sky leads us directly into the debate about the very nature of the Universe – is it eternal and static, or is it dynamic and evolving?

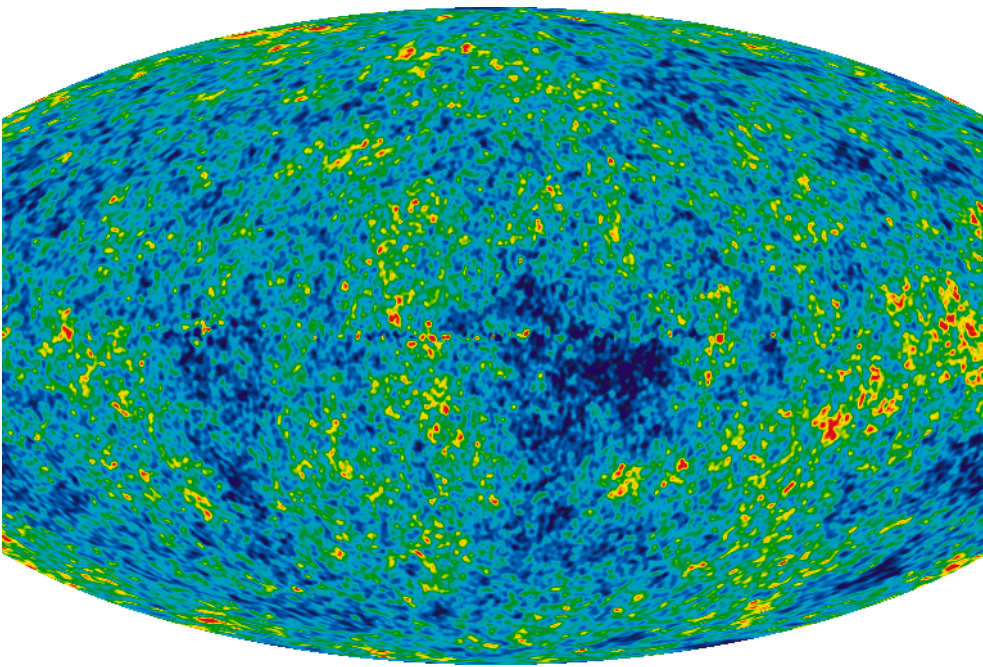
It was not until the 1960s with the discovery of the Cosmic Microwave Background that the debate was finally



NASA's James Webb Space Telescope has produced the deepest and sharpest infrared image of the distant universe to date. Known as Webb's First Deep Field, this image of galaxy cluster SMACS 0723 is overflowing with detail. This slice of the vast universe is approximately the size of a grain of sand held at arm's length by someone on the ground. (Image Credit: NASA, ESA, CSA, STScI) <https://bit.ly/webbdeep>

settled, though various lines of evidence for an evolving universe had built up over the previous half century. The equations of Einstein's General Theory of Relativity suggested a dynamic universe, not eternal and unchanging as previously thought. Edwin Hubble used the cosmic distance ladder discovered by Henrietta Swan Leavitt to show that distant galaxies are moving away from us – and the greater the distance, the faster they're moving away. Along with other evidence, this led to the recognition of an evolving Universe.

The paradox has since been resolved, now that we understand that the Universe has a finite age and size, with the speed of light having a definite value. Here's what's happening – due to the expansion of the Universe, the light from the oldest, most distant galaxies is shifted towards the longer wavelengths of the electromagnetic spectrum. So the farther an object is from us, the redder it appears. The Webb telescope is designed to detect light from distant objects in infrared light, beyond the visible spectrum. Other telescopes detect light at still longer wavelengths, where it is stretched into the radio and microwave portions of the spectrum.



The oldest light in the universe, called the cosmic microwave background, as observed by the Planck space telescope is shown in the oval sky map. An artist's concept of Planck is next to the map. The cosmic microwave background was imprinted on the sky when the universe was just 380,000 years old. It shows tiny temperature fluctuations that correspond to regions of slightly different densities, representing the seeds of all future structure: the stars and galaxies of today. (Image credit: ESA and the Planck Collaboration - D. Ducros) <https://go.nasa.gov/3qC4G5q>

The farther back we look, the more things are shifted out of the visible, past the infrared, and all the way into the microwave wavelengths. If our eyes could see microwaves, we would behold a sky blazing with the light of the hot, young Universe – the Cosmic Microwave Background. The next time you look up at the stars at night, turn your attention to the darkness between the stars, and ponder how you are seeing the result of a dynamic, evolving Universe.

NASA Night Sky Notes
September 2023

Monthly Meeting Minutes

July 2023

John McCullough - Secretary

Call to Order:

Tim Kostelecky, President, Astronomical Society of Las Cruces (ASLC, the Society), called the July 2023 meeting to order at 7:00 pm on 28 July 2023 at the Mesilla Valley Radio Clubhouse. There were twelve (12) 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 and announced that the minutes from the June 2023 meeting (thanks to John McCullough, Secretary) were published in the July 2023 issue of the Society newsletter, the High Desert Observer (HDO). Tim asked if there were any required additions, deletions, or corrections to the minutes as submitted. Trish Conley, Treasurer, noted that it was incorrectly recorded that there was not a Treasurer's Report at the June meeting. Although the Treasurer was not present, a report dealing with increased expenses had been provided to the President who made the report at the meeting in her stead. The Secretary noted the correction and stated that it would also be included in his copy of the June minutes. A motion to accept the June 2023 minutes as corrected was offered by Steve Barks and seconded by Tracy Stuart. There being no objections, the motion was passed by acclamation.

Presentation:

Tonight's Tombaugh Series speaker was longtime ASLC member Steve Barks. His presentation was titled: "Beyond Imaging: Ready for Science". He presented a discussion of opportunities for astronomical imagers to repurpose their existing equipment to generate scientifically relevant data. Topics included the American Association of Variable Star Observers (AAVSO), photometry,

spectroscopy, and scientific campaigns where the amateur can participate and contribute.

Tim welcomed David and Mary Alba (Mary is ASLC founder Walter Haas's daughter) and New Mexico State University (NMSU) observatory manager Zack Edwards to tonight's meeting.

John McCullough presented a check for \$2064.60 to the ASLC on behalf of the Lockheed Martin Missiles & Fire Control Employee Charity Fund.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, reported a deficit of \$81 for the month after paying Dark Skies Association dues. The Society is still +\$33 for the fiscal year.

Budget Committee:

Tim Kostelecky, Trish Conley, and Tracy Stuart formed the 20232024 budget committee. Trish presented the proposed budget. There was some discussion clarifying projected versus actual costs and expenses. Moving the Society's accounts to other financial institutions was also discussed.

The annual review of the Society's finances is due. Tracy Stuart volunteered to audit the books.

Nominating Committee:

Three (3) members in good standing will form a committee to select a list of nominees for Officer elections at the 2023 Annual Meeting in October. Ed Montes, Trish Conley, and Tracy Stuart volunteered to form the committee.

Outreach:

Stephen Wood, outreach coordinator, reported on recent events.

ASLC members supported the "Starry Night"

event at the NMSU Golf Course in conjunction with the Spaceport America Cup on 23 June. There was a Moon Gaze on the Plaza de Las Cruces on 24 June. The Leasburg Dam State Park (LDSP) event on 15 July was “clouded out”. There will be additional Moon Gazes on the Plaza de Las Cruces on 29 July and 26 August and another LDSP event on 12 August.

Stephen pointed out the LDSP event in November is currently scheduled for the same weekend as Renaissance ArtsFaire 2023. He suggested moving LDSP one week earlier or later. Contact Stephen if you can support any or all events.

ASLCWest:

Tim displayed a copy of the August 2023 issue of New Mexico magazine that features several articles on dark skies and astronomy in New Mexico. Tim thanked Mike Nuss and Bill Nigg for

their willingness to be interviewed by Jennifer Olson for her article in the issue and give her an astronomy “crash course” at Rockhound State Park on short notice.

Old Business:

There was no old business offered for discussion.

New Business/Announcements:

There was no new business offered for discussion.

Tracy Stuart moved to adjourn the meeting. The July 2023 meeting was adjourned at 8:05 pm.

-Respectfully submitted:
John McCullough
Secretary, ASLC

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 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 as well as our [Facebook](#) page.

Member Images

The Sun, with Bob Kimbell's New Astroscan



This morning I turned my new Astroscan towards the sun. Here is the setup and the sun with spots:

I'm going to have fun with this little scope.

NGC 7000, close-up of N. Amer. Nebula in Cygnus - Jeff Johnson



- NGC 7000 - North American Nebula - close-up
- Distance: 1,800 light years
- Telescope: Takahashi TOA-130F @ f/7.7
- Mount: Takahashi EM200 Temma II
- Camera: QSI 540wsg @ -15C
- Filters: Astrodon Ha (3nm), Astrodon Tru-Balance I-Series LRGB Gen 2
- Guider: SX Lodestar
- Settings: 6x10min L (bin1x1); 2x5min ea RGB (bin2x2); AstroArt5, CS4 (slightly cropped, 10xdarks/flats/fdarks/bias)
- Date/Location: 13 October 2022 - Las Cruces, NM

“Thor’s Worst Nightmare” NGC 2359 in Canis Major - Alex Woronow



The NGC 2359 nebula appears to rest in a larger field of chaotically patchy nebula, faintly radiating Ha photons. The nebula's core emits largely Ha+OIII radiation and, in this image, has an OIII-dominated blue hue. "The central star is the Wolf-Rayet star WR7, an extremely hot star thought to be in a brief pre-supernova stage of evolution" (Wikipedia). The blue arcs are bow shocks, seen from our distant perspective as complexly intertwined.

Processing: PixInsight, Topaz Studio2, Luminar Neo, and custom scripts for separating the emission line radiation from the continuum radiation, and image weighting and star replacement

Thanks to Michael Petrasko of Insight Observatory for making the data available for processing!