

# The High Desert Observer

August 2022

## This Month's Meeting - Aug 26, 2022

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

### Speaker for the Month

Chris Churchill  
"Galactic Evolution"



Dr. Chris Churchill is Professor of Astronomy and Astrophysics engaged in teaching and research. His teaching passions are "Life in the Universe" and the "History and Future of Human Space Flight". Life in the universe places our amazing planet and

all its life in a cosmic context in both time and in space and teaches our place in the cosmic story.

Human space flight is the coming chapter of humanity and represents the next major phase of life on earth in that we humans have the honor and privilege to evolve into a completely new world of possibilities.



Professor Churchill's research goals are to contribute to our understanding of how galaxies form and evolve over cosmic time. In particular he studies the so-called baryon cycle, which describes how gas is incorporated into galaxies from intergalactic space, turns into stars, and then how the dying stars eject gas back out of the galaxy or how it gets engaged in cycling throughout the galaxy.

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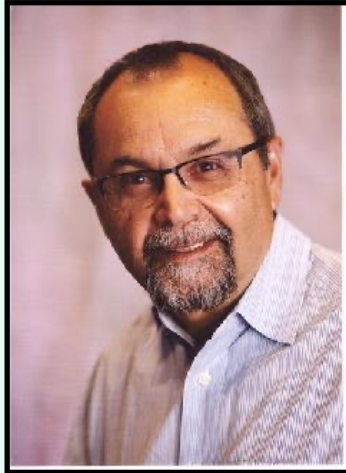
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## From the Desk of Ed Montes ASLC President

August, 2022

### Discoveries and Explanations

One of the most thrilling aspects of amateur astronomy is the capacity for its practitioners to actually make discoveries. There are those amateurs, like members of our own club who are methodical and careful and diligent; they capture data systematically, reduce it, report it and draw conclusions. Folks such as Fred Pilcher and Bert and Janet Stevens. There are those diligent observers who spend hours by the thousands actively scanning the sky looking for something specific and make discoveries because they notice something different in a section of the sky they've seen so many times. Howard Brewington with his 5 discovered comets comes to mind. Then there are those lucky folks who, indulging one aspect of this hobby, say photography of the phases of the moon, quite by serendipity capture something quite unrelated but fascinating, say, a transient lunar event, the flash of a collision. And, of course, there are those patient folks who observe variable stars and document the rising and falling of their brightness. Those folks had quite the field day two years back when Betelgeuse took a precipitous drop in brightness. That was quite a show and we all thought we might be seeing the prelude to a supernova. It might be stretching it to call that an amateur discovery, but I'll make the stretch because amateurs saw it at the same time as the pros.



Where amateurs don't keep up with the pros is in the explanations. It's wonderful to make discoveries, but the observations DO need to be explained. That's another great thing about this hobby, the explanations for our observations eventually emerge (maybe decades later) and we get learn them. Those astrophysicists who process the data come up with some great stuff. Going back to Betelgeuse, I just saw an article of a phenomenon called a "Stellar Mass Ejection" by Betelgeuse that is analogous to our Sun's Coronal Mass Ejections, only it was estimated to be 400 billion times as massive as a solar CME. Imagine getting slammed by that! So, just a couple of years after the fact we have an explanation for an observation and that explanation entails an apparently new phenomenon. We are on the cutting edge of science and we do contribute. What a great activity in which to be involved! Here's the link to the story:

<https://scitechdaily.com/hubble-sees-red-supergiant-star-betelgeuse-recovering-after-never-seen-before-titanic-eruption/>

Here's a quick anecdote about the difference in observing and explaining. Penzias and Wilson were the two Bell Lab scientists who first detected the Cosmic Background Radiation, the "echo of the Big Bang". They started their research using a large antenna owned by Bell in Holmdel, NJ. Their research goal was to identify, amplify and measure radio signals from intergalactic space. They encountered a large hiss, interference that was pervasive regardless of where the antenna was pointed. For almost a year they tried to get rid of the hiss, but nothing they did helped, the hiss remained. A friend of Penzias suggested he speak with Prof. Robert Dicke at Princeton. Dicke had done the physics and predicted the Background Radiation and his research group was working on determining how to detect it. After speaking with Penzias and Wilson he explained to them what they

had discovered and informed his team, “We’ve been scooped”. Penzias and Wilson won the Nobel Prize in physics for their inadvertent discovery. Observers sometimes do take precedence over explainers.

Keep observing.

### Club Business

After 2 years of Zoom meetings, it’s time to gather in person once again. Beginning with our September 23, 2022 meeting we will be gathering at the clubhouse of the Mesilla Valley Radio Club. Steve Barkes is on their board and requested of their board that we be allowed to use their facilities. They graciously voted to allow it. They have an excellent building, complete with kitchen and restroom and they don’t mind us bringing food and drink into it. So, be prepared for a real celebration as we face each other in astronomical fellowship. We will still have a Zoom component to our meeting, so remote members and folks who are still not comfortable meeting in person can still participate. The address is 6609 Jefferson Ave. Las

Cruces, NM. It’s on the corner of Wilt and Jefferson -- take the Porter exit of US 70. It is about 5 miles east from the I 25 interchange. Go south on Porter until you come to Jefferson. Then turn left and go to Wilt.

On the premise that it’s never too early to start preparing, please consider volunteering to help with the ASLC’s participation in the Renaissance Faire during the first weekend of November.

### Speaker this Month

Our speaker this month will be from the Astronomy department of NMSU – Prof. Chris Churchill. His research is focused on the development and evolution of galaxies. In particular, how galaxies absorb inter-galactic gas from which new stars can be created. Then, how gas from dying stars is recycled, potentially back into inter-galactic space.

That’s it for now. Clear skies!

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#### **ASLC Board of Directors**

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President:	Ed Montes	president@aslc-nm.org
Vice President:	Tim Kostelecky	vp@aslc-nm.org
Treasurer:	Patricia Conley	treasurer@aslc-nm.org
Secretary:	John McCullough	secretary@aslc-nm.org
Director:	Michael Nuss	director1@aslc-nm.org
Director:	Rani Bush	director2@aslc-nm.org
Past Pres:	Tracy Stuart	tracystuart@comcast.net

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#### **Committee Chairs**

ALCOR:	Patricia Conley	tconley00@hotmail.com
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Education:	Rich Richins	education@aslc-nm.org
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Tombaugh:	Steve Shaffer	sshaffer@zianet.com
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## 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.

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

## Featured Article:

### The Summer Triangle’s Hidden Treasures

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.



By David Prosper

September skies bring the lovely Summer Triangle asterism into prime position after nightfall for observers in the Northern Hemisphere. Its position high in the sky may make it difficult for some to observe its member stars comfortably, since

looking straight up while standing can be hard on one’s neck!

While that isn’t much of a problem for those that just want to quickly spot its brightest stars and member constellations, this difficulty can prevent





folks from seeing some of the lesser known and dimmer star patterns scattered around its informal borders. The solution? Lie down on the ground with a comfortable blanket or mat, or grab a lawn or gravity chair and sit luxuriously while facing up.

You'll quickly spot the major constellations about the Summer Triangle's three corner stars: Lyra with bright star Vega, Cygnus with brilliant star Deneb, and Aquila with its blazing star, Altair. As you get comfortable and your eyes adjust, you'll soon find yourself able to spot a few constellations hidden in plain sight in the region around the Summer Triangle: Vulpecula the Fox, Sagitta the Arrow, and Delphinus the Dolphin! You could call these the Summer Triangle's "hidden treasures" – and they are hidden in plain sight for those that know where to look!

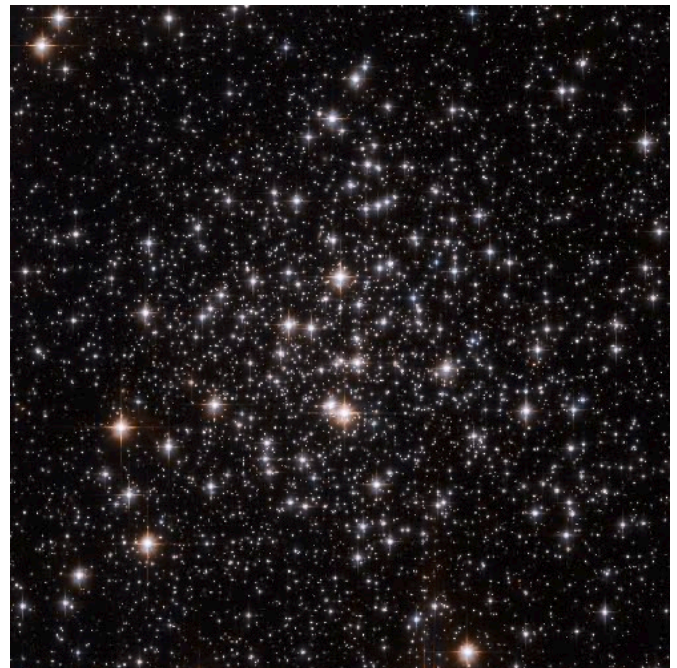
Vulpecula the Fox is located near the middle of the Summer Triangle, and is relatively small, like its namesake. Despite its size, it features the largest planetary nebula in our skies: M27, aka the Dumbbell Nebula! It's visible in binoculars as a fuzzy "star" and when seen through telescopes, its distinctive shape can be observed more readily – especially with larger telescopes. Planetary nebulae, named such because their round fuzzy appearances were initially thought to resemble the disc of a planet by early telescopic observers, form when stars similar to our Sun begin to die. The star will expand into a massive red giant, and its gasses drift off into space, forming a nebula. Eventually the star collapses into a white dwarf – as seen with M27 – and eventually the colorful shell of gasses will dissipate throughout the galaxy, leaving behind a solitary, tiny, dense, white dwarf star. You are getting a peek into our Sun's far-distant future when you observe this object!

Sagitta the Arrow is even smaller than Vulpecula – it's the third smallest constellation in the sky! Located between the stars of Vulpecula and Aquila the Eagle, Sagitta's stars resemble its namesake arrow. It too contains an interesting deep-sky object: M71, an unusually small and young globular cluster whose lack of a strong central core has long confused and intrigued astronomers. It's visible in binoculars, and a larger telescope will enable you to separate its stars a bit more easily than most globulars; you'll certainly see why it was thought to be an open cluster!

Delicate Delphinus the Dolphin appears to dive in and out of the Milky Way near Aquilla and Sagitta! Many stargazers identify Delphinus as a herald of the fainter water constellations, rising in the east after sunset as fall approaches. The starry dolphin appears to leap out of the great celestial ocean, announcing the arrival of more wonderful sights later in the evening.

Want to hunt for more treasures? You'll need a treasure map, and the Night Sky Network's "Trip Around the Triangle" handout is the perfect guide for your quest! Download one before your observing session at [bit.ly/TriangleTrip](https://bit.ly/TriangleTrip). And of course, while you wait for the Sun to set – or skies to clear – you can always find out more about the objects and science hidden inside these treasures by checking out NASA's latest at [nasa.gov](https://nasa.gov).

### Hubble Image of M71



M71 as seen by Hubble. Your own views very likely won't be as sharp or close as this. However, this photo does show the cluster's lack of a bright, concentrated core, which led astronomers until fairly recently to classify this unusual cluster as an "open cluster" rather than as a "globular cluster." Studies in the 1970s proved it to be a globular cluster after all – though an unusually young and small one! Credit ESA/Hubble and NASA. Source: <https://www.nasa.gov/feature/goddard/2017/messier-71>

## Minutes of July 2022 Meeting

**John McCullough - Secretary**

Ed Montes, President, Astronomical Society of Las Cruces (ASLC, the Society), called the July 2022 meeting to order at 7:05 pm on 22 July 2022. He welcomed attendees to tonight's meeting via ZOOM. Nineteen (19) 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 June 2022 meeting (thanks to John McCullough, Secretary) were published in the July 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 June 2022 minutes as submitted was offered by Rich Richins, seconded by Tracy Stuart. There being no objections, the motion was passed by acclamation.

Ed introduced tonight's speaker, Dr. Gordon Telepun, MD.

Presentation:

Tonight's Tombaugh Series speaker was Dr. Gordon Telepun, MD. Dr. Telepun's topic was "Preparing for the 2024 Total Solar Eclipse: Tips to Enjoy, Observe, and Photograph It". He has had an interest in astronomy since childhood, but it took until June 21, 2001, for him to witness his first total solar eclipse in Zambia, Africa. He would then successfully experience and photograph total eclipses in 2002, 2006, 2017, and 2019.

As an extension of his love for educating his patients about their complex operations, he is dedicated to helping people get the most out of their eclipse day experiences. In 2017, his unique mobile device eclipse timing app, Solar Eclipse Timer, helped many, many people enjoy the eclipse more. It did so because it was a "talking eclipse timer" that announced countdowns and observation tips. He has a YouTube channel, Solar Eclipse Timer, dedicated to solar eclipse

education. This past April he released a unique solar eclipse preparation book in electronic format only called "Eclipse Day – 2024 and More! How to enjoy, observe, and photograph a total solar eclipse."

Dr. Telepun is a board-certified plastic surgeon by profession, practicing in Decatur, Alabama.

Officer/Committee Reports:

Outreach:

Stephen Wood, outreach coordinator, reported the latest Moon Gaze and LDSP events were "clouded" out. A daytime event was held for approximately thirty (30) Las Cruces youth services attendees. There will be another 3rd Quarter Moon event at LDSP this weekend. A moon event will be held at Branigan Library on 04 August. This event will also include star and constellation identification. The next Moon Gaze on the Downtown Plaza will be 06 August and the August LDSP event will be on 20 August, weather permitting.

The Outreach calendar has been moved to [aslc-nm.org/Outreach](http://aslc-nm.org/Outreach) with help from Steve Barkes.

Loaner Telescope:

Tim Kostelecky, program coordinator, reported the updated available telescope listing was posted in the July HDO. Otherwise, he had no additional updates.

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

Steve Barkes, committee chairman, noted he planned to be at the Park at 7:30 pm for this month's event. He had no additional updates. The official naming process of the observatory continues but still requires signoff by the Governor of New Mexico.

Apparel:

Rani Bush, committee chair, had no updates. She did note the Museum of Nature and Science will celebrate its 10th anniversary on 24 September and the Society may participate in the celebration.

**Treasurer/Budget Review:**

Trish Conley, Treasurer, reported payments to the Astronomical League (AL) (\$300, annual dues), International Dark Skies Association (IDA) (\$50, annual membership), and US Postal Service (USPS) (\$182, PO box rental) this month. Checking account balance for the year is +\$814.

The Budget Committee has met and proposed a budget for the 20222023 fiscal year. Expected income is \$2100 in member dues and \$250 in miscellaneous donations. Major expenses are website/domain name registration, insurance, storage unit rent, safe deposit box rent, corporation costs, and ZOOM account.

**Nominating Committee:**

A committee to identify officer candidates for 2023 needed to be formed at tonight's meeting. Tracy Stuart, Tim Kostelecky and Preston Hager volunteered to be the committee. It was noted that Nominating Committee members transition to election tellers at the Annual Meeting in October.

**ASLCWest:**

Mike Nuss reported the group has 'shut down' public events until midSeptember.

**Old Business:**

No old business was offered for consideration.

**New Business/Reminders:**

A budget auditor (non-Board member) must be selected in July. Steve Barkes volunteered to review the accounts. A budget planning meeting should be held in September for the '22-'23 budget year.

Astronomical League Convention (ALCon) 2022 – ALCon 2022 will be 2830 July in Albuquerque, NM. 2023 ASLC officers will be elected, and the budget presented at the Annual Meeting in October.

2022 Renaissance ArtsFaire will be 0506 November at Young Park. The Society's 'presence' is due for an update.

The next Board of Directors meeting is pending.

Updates for Outreach events will be located at the \*.org web address.

No additional new business was offered for consideration.

The July 2022 meeting was adjourned at 9:10 pm.

-Respectfully submitted:

John McCullough  
Secretary, ASLC



## Member Images

### M63 - Sunflower Galaxy in Canes Venatici - Jeff Johnson



This is my latest result from my backyard here in Las Cruces. This is 16x5minL(bin 1x1), 5x5minRGB (bin 2x2) using the TOA-130F (5" refractor), QSI690wsg, on Tak EM200 mount.



## NGC 4013 in Ursa Major - Chuck Sterling



NGC 4013 is an edge-on barred spiral galaxy about 55 million light-years away in the constellation Ursa Major. The disk of NGC 4013 shows a distinct "peanut"-shaped bulge in long exposure photographs that N-body computer simulations suggest is consistent with a stellar bar seen perpendicular to the line of sight. Infrared image of the galaxy showing a ring of heavy star formation.

## Rho Ophiuchi Complex, IC 4605, 4602 - Kent DeGross



This two degree field of view is close to the center of the large Rho Ophiuchi Complex, a multiple star system embedded in nebulosity. It is one of the nearest star-forming regions but the stellar extinction due to the dust is 1.45 magnitudes, making the complex appear almost four times fainter than otherwise. IC 4602 is at the upper right and appears to be spewing gas and dust into the field of view. Not really, just looks like it. The bright star in IC 4605 is 22 Scorpii, shining at magnitude 4.9. The blue color of the nebulae is due to reflected light from stars.

Subs: 23x300s @ ISO 800, integration 1.9 hrs.

Instrumentation: 152mm F 3.9 Newtonian, Baader MPCC, unmodified Canon EOS 600D mounted piggyback on main observatory telescope, Arduino focuser.



## WR-134 Wolf-Rayet Variable Star & Surrounding Nebulae in Cygnus - Alex Woronow



WR-134 is the brighter star in the middle of the field.

OTA: COS 14.5 inch; Camera: SBIG STX-16803; Observatory: Deep Sky West, NM  
EXPOSURES: R: 8 x 300sec.; G: 10 x 300; B: 17 x 300; H: 26 x 1800; O: 9 x 1800  
Total exposure 13.5 hours

Image Width: 36 arc-minutes  
Processed by Alex Woronow (2021) using PixInsight, Topaz, NB\_Assist, SWT