The High Desert Observer

September 2023

Astronomical Society of Las Cruces

This Month's Meeting - Sept 22nd

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

Speaker for the Month

Dr. Chris Churchill

NMSU Professor of Astronomy and Astrophysics

"Quasars: Unveiling the History of the Universe in the Shadows Cast by The Most Distant Blackholes

Dr. Churchill will take us through the discovery of Quasars and the stories of each of the revolutionary moments that changed human understanding.

Dr. Churchill is Professor of Astronomy at New Mexico State University. He specializes in observational spectroscopic techniques and analysis of quasars light. He also studies the theoretical aspect using hydrodynamical cosmological simulations. He has most recently begun research in the field of artificial intelligence using machine learning and convolution neural networks. The goal is to have the computer perform the analysis (taking away the time and human-intensive part of studying quasar light).

Masthead Image: M20 in Sagittarius - courtesy of ASLC Member Jeff Johnson

From the President

Tim Kostelecky

Got to admit, I've never seen anything quite like this before.

The Firefly rocket appears to arc over the mountains in Sierra Vista, Arizona, on Sept. 15, 2023. Christian Garcia

It was Thursday September 15th at about 8:20 pm MDT. My wife, Sandy, came in the house alerting me to a strange sight in the western sky which she described as UFO-ish. Thinking she likely saw a satellite (or satellite train…thank you Elon), I went outside and was astounded by the spectacle. From our vantage point east of town, this comet-like object was slowly and steadily arcing over the top of the light dome of Las Cruces, easily discernible and similar to this Facebook photo from Christian Garcia, taken from Sierra Vista, Arizona. After it dipped below the horizon, I contacted my all-knowing astronomy buddy and fellow ASLC member, Ed Montes. It didn't take long for him to do a bit of research and determine it was a launch of the Firefly Aerospace's Alpha rocket as it blasted off over the Pacific from Vandenberg Space Force Base in Santa Barbara CA. At its high altitude, sunlight was glistening off of the contrail. I for one had no idea that a launch from as far away as the coast of California could arc so high and be plainly visible from Las Cruces. Pretty cool.

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Leasburg Dam:	Steve Barkes	LDSPObservatory@aslc-nm.org
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Outreach:	Stephen Wood	Outreach@aslc-nm.org
Website:	Steve Barkes	Webslave2@aslc-nm.org
HDO Editor:	Tim Kostelecky	HDO@aslc-nm.org

Featured Article

From Galileo to Clipper, Exploring Jupiter's Moons

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.

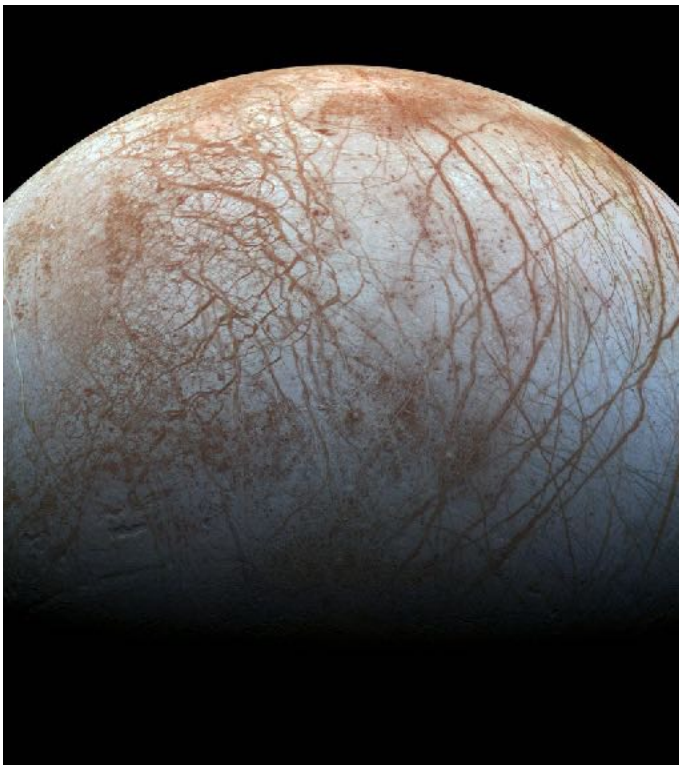
By Vivian White

We, too, are made of wonders, of great and ordinary loves, of small invisible worlds, of a need to call out through the dark.

From In Praise of Mystery: A Poem for Europa by Ada Limon

As autumn begins, if you're up late, you may notice a bright point of light rising in the east. Look a bit closer, with a pair of binoculars, and you'll notice it's not a star at all. While stars look point-like no matter how big your backyard telescope, this light appears as a circle under closer examination. Even more curious, you will likely see a line of smaller dots on one or both sides. Congratulations! You've rediscovered the king of the planets - majestic Jupiter - and its four largest moons.

Galileo famously chronicled the four moving dots near Jupiter and surmised that they were orbiting the distant world. While Jupiter has well over 80 discovered



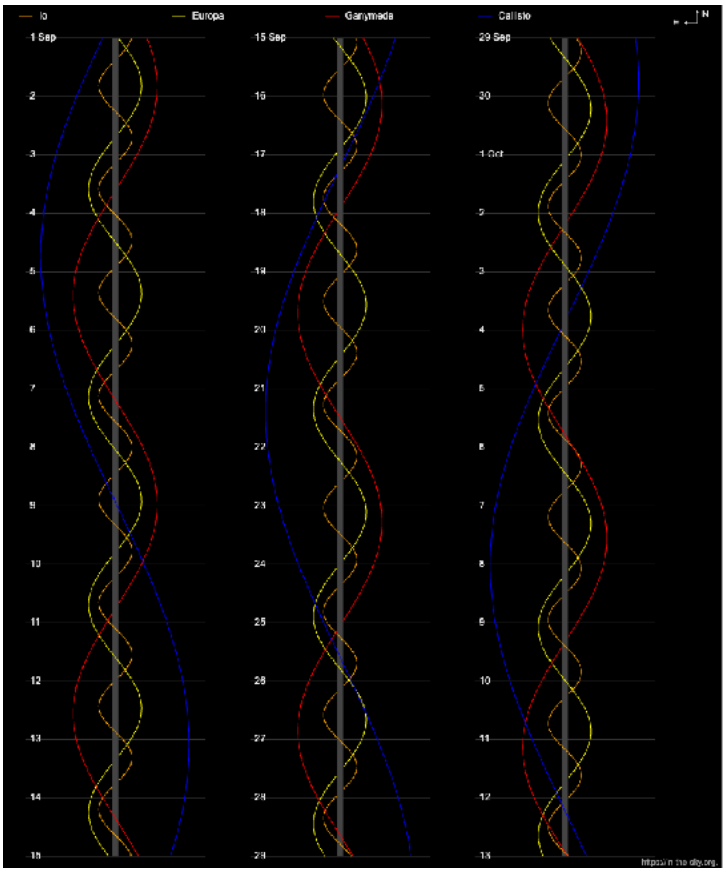
Europa: NASA/JPL-Caltech/SETI Institute

moons as of September 2023, these brightest four are called the "Galilean Moons" - Io, Europa, Ganymede, and Callisto. (Great mnemonics exist to remember these in order of distance from Jupiter, such as "I Eat Green Caterpillars")

You can follow these like Galileo did, using stargazing apps or the handy image below. A favorite beginning observing challenge is to track the movement of the Galilean Moons over the course of many nights. Even within a few hours, you will notice them moving in relation to Jupiter, just as Galileo did.

Fast forward 414 years, and NASA will be sending a robotic mission to investigate the surface of one of these distant worlds.

The Europa Clipper Mission is launching to the cold, icy moon in 2024, to begin orbiting in 2030. With its salty oceans covered by ice, Europa was chosen as an excellent location to continue the search for life outside of Earth. Clipper will be the largest spacecraft ever sent to another planet, designed to withstand Jupiter's punishing radiation. Once it arrives at Jupiter in 2030, NASA plans to do about 50 flybys of Europa, mapping almost the entire surface of this watery world.



The position of the Galilean Moons of Jupiter in October 2023: https://in-the-sky.org/jupiter.php

What was once only dreamed of in the small telescope of Galileo, or in great works of fiction, NASA is turning our wildest imagination into reality. One of the celebrated quotes from the classic 2010: Odyssey Two warns, "All these worlds are yours, except Europa. Attempt no landing there." Science fiction fans can feel relieved knowing that writer Arthur C. Clarke gave his blessing for the Europa Clipper mission.

Join the Europa Message in a Bottle Campaign to send your name with the spacecraft, hear the rest of the poem by the US Poet Laureate, and learn more about the wonders of space travel with the Clipper Mission: https://europa.nasa.gov/participate

Watch a wonderful Clipper webinar with Dr. Cynthia Phillips, planetary geologist with the mission: https://www.youtube.com/live/RnnLJBLRBCA?feature=shared&t=269

ADDITIONAL LINKS:
https://solarsystem.nasa.gov/resources/204/europas-stunning-surface/?category=moons/jupiter-moons_europa
https://in-the-sky.org/jupiter.php
https://astrosociety.org/file_download/inline/1689e781-3f4a-4178-8f7a-7bc581986242
https://europa.nasa.gov/

Monthly Meeting Minutes August 2023

John McCullough - Secretary

Call to Order:

Tim Kostelecky, President, Astronomical Society of Las Cruces (ASLC, the Society), called the August 2023 meeting to order at 7:01 pm on 25 August 2023 at the Mesilla Valley Radio Clubhouse. There were twenty-two (22) members, spouses, and guests in attendance, as well as six (6) attendees via Zoom at the start of the meeting.

Tim welcomed the group to tonight's meeting and announced that the minutes from the July 2023 meeting (thanks to John McCullough, Secretary) were published in the August 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. There being none, a motion to accept the July 2023 minutes as submitted was offered by Rani Bush and seconded by Bernie Jezercak. There being no objections, the motion was passed by acclamation.

Presentation:

Tonight's Tombaugh Series speaker, Victor Gibbs, was introduced by ASLC member Rich Richins. Victor's presentation was titled: "Into the Cold Dark Night – Imaging Auroras in Alaska". For the last five years, local 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 shared his experience and adventures in sub-freezing temperatures, as well as some of the imagery obtained in the great white north.

Tim welcomed several guests and new members. Tom Johnson works with Victor Gibbs and is learning astrophotography. He is also friends with member Howard Brewington. Former member Meredith Hildreth was joining from Roswell. She would like to connect the two organizations (ASLC and Roswell Astronomy Club) for future exchanges and shared presentations. She is also organizing an environmental/climate change conference and will provide more details in the future. Don Gafkis has moved to Las Cruces full time and plans to participate in more Society activities.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, reported net income of $1850 for the month (+$1892 for the year) thanks to the donation from Lockheed Martin.

Nominating Committee:

Ed Montes, committee chairman, reported he had sent an email to the membership requesting nominations for officers and directors for 2024.

Outreach:

Stephen Wood, outreach coordinator, reported on recent and upcoming events.

There will be a Moon Gaze event on the Plaza de Las Cruces tomorrow night, 26 August. Last month's event had sixty (60) members of the public attend. The Leasburg Dam State Park (LDSP) event on 12 August had about thirty (30) people on hand to view the meteor shower. The next LDSP event will be 09 September.

ASLCWest plans to resume programs on 0809 September.

Contact Stephen if you can support any or all events.

Old Business:

There was no old business offered for

discussion.

New Business/Announcements:

Renaissance ArtsFaire 2024 – Trish Conley reported this year's Faire will be the first weekend of November, 0405 November, at Young Park. The necessary applications have been submitted and the fees paid. She needs to confirm telescopes for viewing and pictures for donations. Members can support by helping with booth setup or take down or by helping man the booth in costume during Faire hours. This is a major annual public event for the Society.

Bank Accounts/Secretary of State – Trish also reported that names of officers for State documents need to be updated. Names on accounts also need updating.

There was no additional new business offered for discussion.

Show & Tell:

Bob Kimball recently acquired a vintage Edmund Scientific AstroScan telescope. He thinks it will be an interesting addition to Moon Gaze and other public outreach events.

Joey Benoit discussed the "Astro Spherics" app.
Ed Montes showed his video of the Antares occultation.

The August 2023 meeting was adjourned at 8:30 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

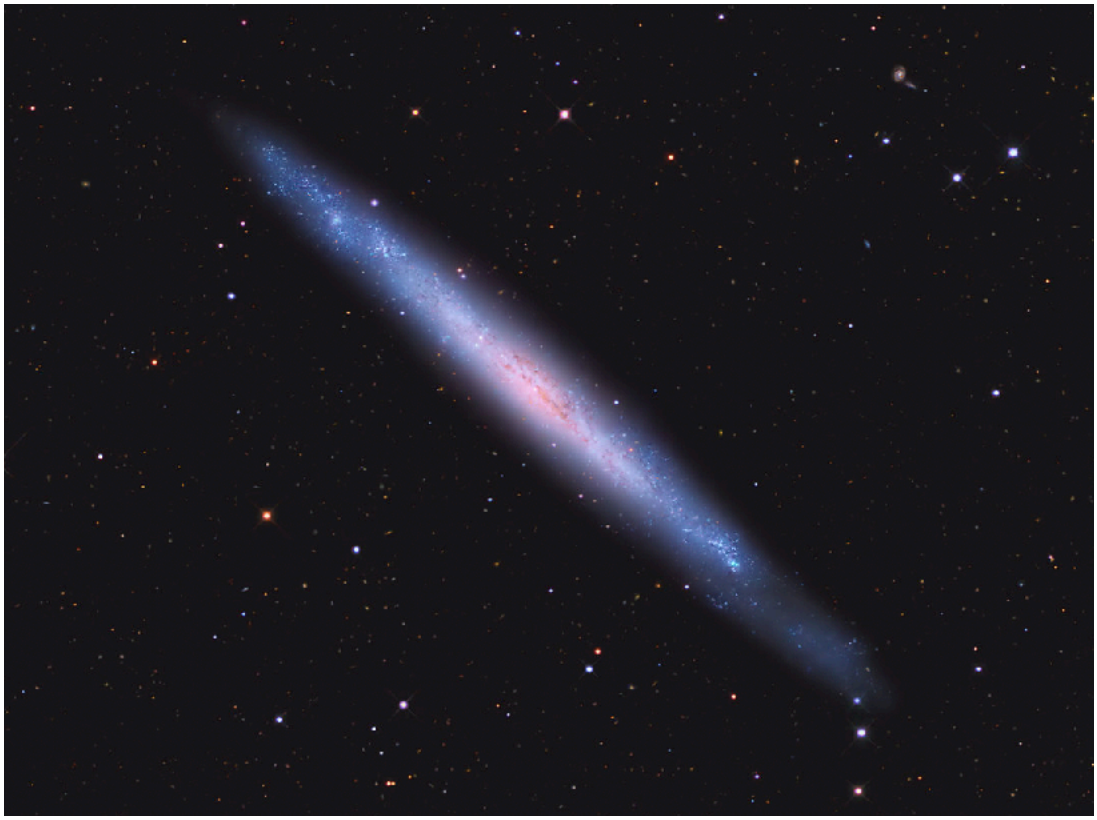
Monthly, on an evening close to the first-quarter moon, ASLC hosts a public "MoonGaze" observing session in Las Cruces. We also hold periodic special evening sessions at Tombaugh Observatory on the NMSU campus.

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

NGC 4244 Silver Needle Galaxy - Kent DeGroff



This edge-on spiral galaxy is located about 14 million light-years away in the Canes Venatici Group of galaxies. It is about 65,000 light years across. There is a rapidly rotating nuclear stellar cluster covering about 0.5 arc-sec in the middle of the galaxy which is actually about the size of a normal globular cluster. The star-like appearance in this image is not resolved to that detail.

Subs: 30x300s RGB 1x1 binning, 7.5 hrs integration
Orientation: North is up, FOV 42' x 28'
Instrumentation: 457mm F/4.2 Newtonian, Baader MPCC, QHY 268M, OAG, ZWO ASI 290MM guider, Robofocus, AP 1200 GTO mount
Acquisition software: SGP with ASTAP, PHD2, ASCOM
Processing: Pixinsight, Starnet, Topaz AI, GIMP

M20 Trifid Nebula in Sagittarius - Jeff Johnson

- Distance: 4,100 light years
- Takahashi TOA-130F @ f/7.7
- Astro-Physics AP1100GTO (on ATS pier)
- QSI 690wsg @ -10C
- Astrodon H-alpha (3nm bandwidth), Astrodon Tru-Balance I-Series LRGB Gen 2
- Guider: SX Lodestar
- 16x5min L, 4x5min Ha (bin1x1); 4x5min ea RGB (bin2x2); AstroArt5, PI, CS4 (uncropped, 10xdarks/flats/fdarks/bias)

- 24 May 2023 - Las Cruces, NM

LBN 1039 (Sh2-297) in Canis Major - Alex Woronow

Processed with data acquired from DeepSky West Observatory in Chile

OTA: Pw17” f/6.5
Camera: QHY 600 Pro

The "True-Color" mapping of the Ha (and synthesized Hb) was honored in this rendering. I used StarXTerminator on linear (RGB and Ha) images for the first time because I have frequently struggled with star glare concealing the Ha, resulting in black patches in the HRGB image. The problem was resolved by this early-stage star removal.