

The High Desert Observer

October 2022

This Month's Meeting - Oct 28, 2022

Meeting will be **IN-PERSON & Zoom**
Friday at 7 p.m. at the
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.

Speaker for the Month

Prof. Eric Hintz
Brigham Young University



**Variable Stars at the
Junction of Amateur and
Professional Astronomers**

Unlike other sciences, astronomy has always had a unique place. Amateur astronomers play a much larger role in new discoveries in astronomy and the line between amateur and professional can sometimes be blurred. The study of variable stars has benefited greatly from the data gathering skills of many people who work in many professions. These can be visual observations all the way to modern digital photometry. Of particular interest are short period pulsating stars that can complete an entire cycle of brightness changes in under 1 hour. We will discuss the nature of some of these stars and how small telescopes can be used to provide the



time coverage needed to more fully understand the nature of these stars. The configurations of 6 robotic telescopes on the BYU campus, used for variable star studies, will also be discussed.

Eric Hintz is currently the associate chair of the Department of Physics & Astronomy at Brigham Young University. He is also the section leader for Short Period Pulsating Stars at the American Association of Variable Star Observers (AAVSO). Dr. Hintz has been observing variable stars for approximately 35 years at this point and still find new and interesting things to explore about their nature. He also still enjoy running telescopes at public star parties and for students in descriptive astronomy classes.

In This Issue

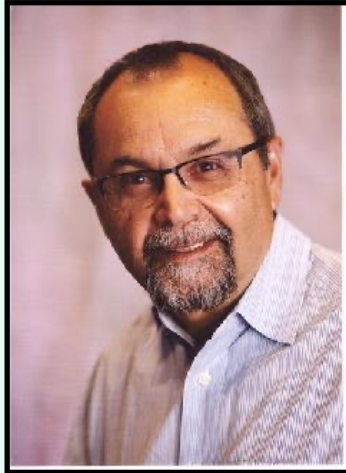
This Month's Meeting & Presentation	Page 1
From the Desk of the President - Ed Montes	Page 2
Report from ASLC-West - Mike Nuss	Page 2
Featured Article - NASA Night Sky Network "Cepheus - House Fit for a King"	Page 4
Sept Meeting Minutes - John McCullough	Page 6
Member Images	Page 8
Bob Kimball, Rich Richins	
Mike Sherick, Alex Woronow	

From the Desk of Ed Montes ASLC President

August, 2022

Live Meeting

My thanks to everyone in the club for being members and especially to the ones who attended last month's meeting – both in person and on Zoom. I believe that this hybrid format is our future for keeping our organization viable and lively. We had more than 20 people in the clubhouse live and about 10 folks on Zoom. The live ones came from farther than Deming and on Zoom we had members in California and in New York and our speaker was in Great Britain (and he never let us forget that it was 2am where he was). All in all, it was a success and I trust it will be the model for meetings to come! Many thanks!



We're going to do it all again this month, same place – the clubhouse of the Mesilla Valley Radio Club. 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. There, turn left and go

to the corner of Jefferson and Wilt. You'll recognize it by all the tall antennas around the building. There is a fence around the property but the gate will be open and there is room to park in ground within the fence. Parking on the street is also allowed and safe.

The Zoom link for those of you who want to participate virtually is:

<https://us06web.zoom.us/j/86463617350?pwd=N0pUaCtmaGNraHFXVZvVk1xOUtpdz09>

It is also on our chat session on <https://groups.io/g/ASLCNM/messages>

Ren Faire

Repeating my request from the past several months, please consider volunteering to help with the ASLC's participation in the Renaissance Faire during the first weekend of November. On groups.io I have posted a schedule of when we will need volunteers to help set-up, staff the booth, and tear down. We have enough folks setting up and tearing down – we need a few more to help with the staffing on Saturday and Sunday. The major benefit is that you get into the Faire for free.

Speaker this Month

Our speaker this month is Dr. Eric Hintz of the Department of Physics and Astronomy at BYU. He will be discussing fast pulsating variable stars.

That's it for now. Clear skies!

Report from ASLC-West - Mike Nuss

The ASLC-West (Deming area) resumed the outreach programs in September. Friday, the 16th we had 15 to 20 folks turn out at Rockhound State Park. Then on Saturday, the 17th we had 60 to 70 for a great turnout at City of Rocks State Park.

Bobby Franzoy, John Gilkison, and myself did a planet viewing at Rio Grande Elementary in Hatch on September 30th at sunset. We had somewhere around 60 to 80 enthusiastic students and parents participating.

We got clouded out this past weekend at both Rockhound and City of Rocks, October 14th and 15th.

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.

ASLC Board of Directors

		board@aslc-nm.org
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

Committee Chairs

ALCOR:	Patricia Conley	tconley00@hotmail.com
Calendar:	Stephen Wood	clearskies2u@gmail.com
Education:	Rich Richins	education@aslc-nm.org
Loaner Program:	Tim Kostelecky	tim.kostel@icloud.com
Observatories:		
Leasburg Dam:	Steve Barkes	Steve.barkes@gmail.com
Tombaugh:	Steve Shaffer	sshaffer@zianet.com
Outreach:	Stephen Wood	clearskies2u@gmail.com
Website:	Steve Barkes	steve.barkes@gmail.com
HDO Editor:	Tim Kostelecky	tim.kostel@icloud.com

Featured Article:

Cepheus: A House Fit for a King

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

Sometimes constellations look like their namesake, and sometimes these starry patterns look like something else entirely. That's the case for many stargazers upon identifying the constellation of Cepheus for the first time. These stars represent Cepheus, the King of Ethiopia, sitting on his throne. However, many present-day observers see the outline of a simple house, complete with peaked roof, instead – quite a difference! Astronomers have another association with this northern constellation; inside its borders lies the namesake of one of the most important types of stars in modern astronomy: Delta Cephei, the original Cepheid Variable.

Cepheus is a circumpolar constellation for most observers located in mid-northern latitudes and above, meaning it does not set, or dip below the horizon. This means Cepheus is visible all night long and can be observed to swing around the northern celestial pole, anchored by Polaris, the current North Star. Other circumpolar

constellations include Cassiopeia, Ursa Major, Ursa Minor, Draco, and Camelopardalis. Its all-night position for many stargazers brings with it some interesting objects to observe. Among them: the “Garnet Star” Mu Cephei, a supergiant star with an especially deep red hue; several binary stars; several nebulae, including the notable reflection nebula NGC 7023; and the “Fireworks Galaxy” NGC 6946, known for a surprising amount of supernovae.

Perhaps the most famous, and certainly the most notable object in Cepheus, is the star Delta Cephei. Its variable nature was first discovered by John Goodricke, whose observations of the star began in October 1784. Slightly more than a century later, Henrietta Leavitt studied the variable stars found in the Magellanic Clouds in 1908 and discovered that the type of variable stars

Sky Map: Cepheus



The stars of Cepheus are visible all year round for many in the Northern Hemisphere, but fall months offer some of the best views of this circumpolar constellation to warmly-dressed observers. Just look northwards! Image created with assistance from Stellarium: stellarium.org.

represented by Delta Cephei possessed very consistent relationships between their luminosity (total amount of light emitted), and their pulsation period (generally, the length of time in which the star goes through a cycle of where it dims and then brightens). Once the period for a Cepheid Variable (or Cepheid) is known, its luminosity can be calculated by using the scale originally developed by Henrietta Leavitt, now called "Leavitt's Law.". So, if a star is found to be a Cepheid, its actual brightness can be calculated versus its observed brightness. From that difference, the Cepheid's distance can then be estimated with a great deal of precision. This revolutionary discovery unlocked a key to measuring vast distances across the cosmos, and in 1924 observations of Cepheids by Edwin Hubble in what was then called the Andromeda Nebula proved that this "nebula" was actually another galaxy outside of our own Milky Way! You may now know this object as the "Andromeda Galaxy" or M31. Further observations of Cepheids in other galaxies gave rise to another astounding discovery: that our universe is not static, but expanding!

Because of their importance as a "standard candle" in measuring cosmic distances, astronomers continue to study the nature of Cepheids. Their studies revealed that there are two distinct types of Cepheids: Classical and Type II. Delta Cephei is the second closest Cepheid to Earth after Polaris, and was even studied in detail by Edwin Hubble's namesake telescope, NASA's Hubble Space Telescope, in 2008. These studies, along with others performed by the ESA's Hipparcos mission and other observatories, help to further refine the accuracy of distance measurements derived from

observations of Cepheids. What will further observations of Delta Cephei and other Cepheids reveal about our universe? Follow NASA's latest observations of stars and galaxies across our universe at nasa.gov.

Historical Graph

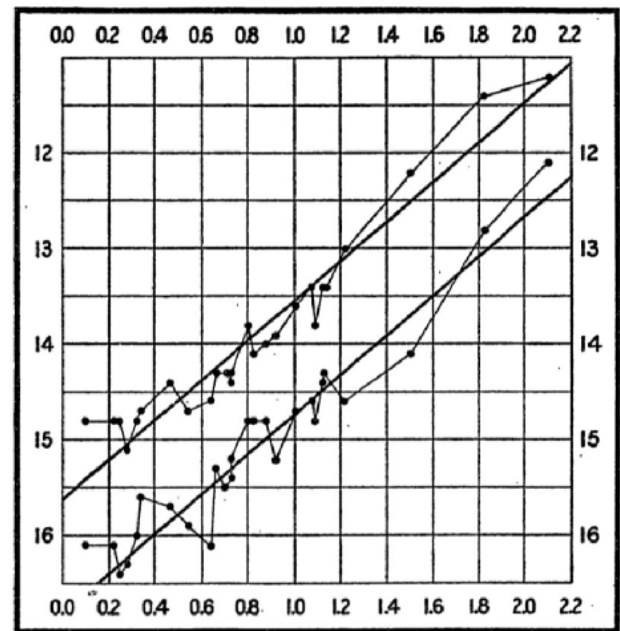


FIG. 2.

This historical diagram from Henrietta Leavitt's revolutionary publication shows the luminosity of a selection of Cepheid Variables on the vertical axis, and the log of their periods on the horizontal axis. The line drawn through these points shows how tight that relationship is between all the stars in the series. From Henrietta Leavitt and Edward Pickering's 1912 paper, "Periods of 25 Variable Stars in the Small Magellanic Cloud."

Minutes of September 2022 Meeting

John McCullough - Secretary

Call to Order:

Ed Montes, President, Astronomical Society of Las Cruces (ASLC, the Society), called the September 2022 meeting to order at 7:01 pm on 23 September 2022. He welcomed attendees to tonight's meeting, the first post-COVID-pandemic in-person, face-to-face meeting of the ASLC in two years. There were twenty (20) members, spouses and guests in attendance, as well as twelve (12) attendees via ZOOM at the start of the meeting.

Ed welcomed the group to tonight's meeting and thanked Steve Barkes and the Mesilla Valley Radio Club for ASLC's use of their building for meetings. Ed also announced that the minutes from the August 2022 meeting (thanks to John McCullough, Secretary) were published in the September 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 August 2022 minutes as submitted was offered and seconded. There being no objections, the motion was passed by acclamation. Ed introduced tonight's speaker, Dr. Dirk Froebrich.

Presentation:

Tonight's Tombaugh Series speaker was Dr. Dirk Froebrich. Dr. Froebrich is Lecturer in Astronomy/Astrophysics at the University of Kent in Great Britain. After completing his degree in Physics at Universität Leipzig in Germany, Dr. Froebrich went on to study for his PhD at Universität Jena. From Germany, he moved to a researcher position at the Dublin Institute for Advanced Studies before his appointment at the University of Kent in 2009.

Dr. Froebrich's topic was "Making Stars and Planets: The HOYS (Hunting Outbursting Young Stars) Citizen Science Project". The goal is to collect data based on long-term photometric monitoring of young stellar clusters to find outbursting and other interesting objects for detailed followup as well as the study of star and planet formation. Dr. Froebrich made his presentation from the University of Kent's observatory.

Officer/Committee Reports:

Treasurer:

Trish Conley, Treasurer, reported a balance of + \$646.00 for the current year.

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

Steve Barkes, committee chairman, reported deterioration of the power connector on the 16" Meade. He is working to obtain a backup/replacement.

ASLCWest:

Mike Nuss reported good attendance as observing events resume. As many as 70 people attended a recent event at City of Rocks (CoR) State Park. Events at CoR and Rockhound State Park are getting more coverage in local media (including the Las Cruces Sun-News). Sunset magazine has expressed interest in conducting interviews for a future issue. Mike has also been contacted by NM True for information.

Loaner Telescope Program:

Tim Kostelecky, program coordinator, reported that the program is working as several members are trying out different types of telescopes.

Apparel:

Rani Bush, committee chair, had some apparel available for sale including caps and shirts. She is looking for input regarding desired apparel articles. There was some discussion of styles and costs involved.

Nominations:

Tim Kostelecky, committee chairman (Tracy Stuart and Preston Hager were also members of the committee), announced candidates for 2023 Officers and Board of Directors. Candidates are:

President: Tim Kostelecky
 VicePresident: Rani Bush
 Secretary: John McCullough
 Treasure: Trish Conley
 Director-at-Large #1: Mark Gorman
 Director-at-Large #2: Steve Barkes

Ed Montes will serve on the Board as Immediate Past President. The election will be held at the 2022 Annual Meeting in October.

Outreach:

Stephen Wood, outreach coordinator, announced the next Moon Gaze, 01 October, could be the largest of the year. In addition to being International Observe the Moon Night, another large event (Gay Pride Day) will precede the Moon Gaze on the Downtown Plaza so there could be in excess of 1000 attendees. There will be another event at Veterans Memorial Park on 19 October and Science Night at Sunrise Elementary on 20 October. Contact Stephen if you can support any or all these events.

Old Business:

Renaissance Arts Faire 2022 – This year's Faire will be 0506 November at Young Park. This is a major public outreach event for the Society. Volunteers are needed for setup on Friday 04 November, tear-down on 06 November, and to man the booth during Faire hours Saturday and Sunday. Booth workers must be in costume. Members should contact Trish Conley if they can help.

New Business:

September Meeting Door prizes - The following members' names were drawn for door prizes:

Book – Tracy Stuart
 Book – Don Koetz
 Book – Steve Barkes
 Book – Trish Conley
 Cap – Charles Turner
 Spotting 'Scope – Mark Gorman

The September 2022 meeting was adjourned at 8:57 pm.

-Respectfully submitted:
 John McCullough
 Secretary, ASLC

Member Images

IC 1395 "Elephant Trunk Nebula in Cepheus - Bob Kimball



Image taken at the OkieTex Star Party . William Optics FLT 110 refractor.

Lunar Occultation of Uranus - Rich Richins



Imaged thru my C11 using my trusty old Canon T2i. Shots were taken once per minute - 1" @ iso 200 for Uranus; 1/400" @ iso 200 for the Moon. Frames aligned using Nebulosity or Lynkeos. CS5 Photoshop for the processing.

Emission Nebula Sh2-124 -- H-alpha - Mike Sherick



This image is the start of a narrowband image project in process. H-alpha. 48 x 300 seconds 3nm Ha unbinned. Imaged on 10-21-22 from the Sagrada Observatory, Las Cruces, New Mexico
Telescope: 24" RC CCD Camera: FLI-PI-09000 3nm Ha Filter

Messier 63 in Canes Venatici - Alex Woronow



This image shows a galaxy in a bit of turmoil. It recently devoured a small companion and this appears to have disrupted its structure and organization a bit. Sad for it, perhaps, but it makes for a good image.