The High Desert Observer March 2018

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 and provides opportunities to work on Society and public educational projects. Members receive the High Desert Observer, our monthly newsletter, plus membership to the Astronomical League, including their quarterly publication, Reflector, in digital or paper format.

Individual Dues are \$30.00 per year Family Dues are \$36.00 per year Student (full-time) Dues are \$24.00

Annual dues are payable in January. Prorated dues are available for new members. Dues are payable to ASLC with an application form or note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004. Contact our Treasurer, Patricia Conley (treasurer@aslc-nm.org) for further information.

ASLC members receive electronic delivery of the HDO and are entitled to a \$5.00 (per year) Sky and Telescope magazine discount.

ASLC Board of Directors, 2018

Board@aslc-nm.org

President: Howard Brewington; President@aslc-nm.org Vice President: Rich Richins; VP@aslc-nm.org Treasurer: Patricia Conley; Treasurer@aslc-nm.org Secretary: John McCullough; Secretary@aslc-nm.org

Director-at-Large: Steve Barkes; Director1@aslc-nm.org Director-at-Large: Ed Montes Director2@aslc-nm.org

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Observatories:

Leasburg Dam: David Doctor; astrodoc71@gmail.com Tombaugh: Steve Shaffer, sshaffer@zianet.com Outreach: Chuck Sterling; csterlin@zianet.com Web-Site: Steve Barkes; steve.barkes@gmail.com HDO Editor: Charles Turner; turner@milkywayimages.com

Masthead Image: February 10, 2017 From Las Cruces, Moon rising over the Organ Mts in Penumbral Eclipse.

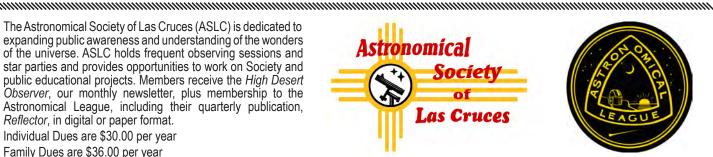




Table of Contents

- 2 What's Up ASLC, by Howard Brewington
- 3 Outreach Events, by Jerry McMahan
- 4 Calendar of Events, Announcements, by Charles Turner
- 5 February Meeting Minutes, by John McCullough
- 7 Spectroscopy Bootcamp, by Charles Turner
- 9 Poem by J Kutney
- 10 Photos of the Month: J Kutney, R Richins, A. Woronow and J Johnson.

March Meeting --

Our next meeting will be on Friday, March 23, at the Good Samaritan Society, Creative Arts Room at 7:00 p.m.

The speaker will be Dr. Al Grauer The title of his talk is "2017, A Record Year For Asteroid Hunters".

Member Info Changes

All members need to keep the Society informed of changes to their basic information, such as name, address, phone number, or emai address. Please contact Treasurer@aslcnm.org with any updates.

Events

ASLC hosts deep-sky viewing and imaging at our dark sky location in Upham. We also have public in-town observing sessions at both the International Delights Cafe (1245 El Paseo) and at Tombaugh Observatory (on the NMSU Campus). All sessions begin at dusk.

At our Leasburg Dam State Park Observatory, we hold monthly star parties. Located just 20 miles north of Las Cruces, our 16" Meade telescope is used to observe under rather dark skies. Please see Calendar of Events for specific dates and times.

What's Up ASLC?

March 2018

For our March meeting, we have a very interesting presentation scheduled. Dr. Al Grauer is a senior observer with the Catalina Sky Survey and will explain why 2017 was a record year for CSS. Based at Mount Lemon Observatory north of Tucson, Arizona, their Near Earth Object search program is the result of a 1998 congressional directive to find and catalog all asteroids which were one kilometer or larger. NASA began funding such surveys after the world witnessed the impact of Comet Shoemaker-Levy 9 with the planet Jupiter in 1994. In addition to identifying impact



risks, according to Wikipedia, "The project also obtains other scientific information, including: improving the known population distribution in the main belt, finding the cometary distribution at larger perihelion distances, determining the distribution of NEOs as a product of collisional history and transport to the inner Solar Systems, and identifying potential targets for flight projects."

The high success rate for CSS is directly connected to sky coverage, of course, since they have robotic search programs in both hemispheres. A 1.5 meter f/2 scope employed at Mount Lemon and a 27-inch Schmidt near Mount Bigelow scan north of the celestial equator, while a 0.5 meter at Siding Springs Observatory in Australia covers the southern skies. Because of funding shortages, however, the southern hemisphere search program ended in 2013. CSS has always used 4096x4096 electrocooled cameras and data-reduction software written in-house. Their sky coverage is focal-length specific and ranges from 1 square degree with the 1.5 meter to 9 square degrees with their Schmidt. An average exposure time is 30 seconds, and the 1.5 meter can reach a limiting magnitude of about 21.5V. You can find the CSS team hard at work every clear night with the exception of a few days of each month, which are centered around the full moon.

Along with their seemingly endless string of asteroid discoveries, CSS also finds undiscovered comets. The far-reach ability of their large patrol scopes locates these fleeting visitors months before they're available to the averagely equipped amateur astronomer. In fact, surveys such as CSS are the reason the Messier Era of visually discovered comets ended. Nevertheless, the triumph of robotic patrol scopes was inevitable, and CSS has created a means of rapid discovery, which easily advances the frontier of science. Such achievements are good for astronomy! I hope to see all of the ASLC members at our 23 March meeting for Dr. Grauer's presentation.

Howard Brewington ASLC President March 2018

Outreach

Outreach is a very important part of ASLC. We are always looking for more volunteers to help us educate the public. Even if you do not have a portable telescope to bring to the events, please consider attending our public outreach programs to help answer questions, share knowledge and point out objects in the sky.

Outreach Events 2018 February Report

by Jerry McMahan

Leasburg, Saturday, February 10, 2018

Chuck Sterling, Howard Brewington, Sid Webb, Steve Wood and Jerry McMahan showed up. Unfortunately the cloud and wind also showed up. The result was the roof of the observatory remained closed due to wind concerns. The clouds would have prevented observing anyway. That did not prevent teaching entirely. People were allowed to see the 16 inch scope and the interior of the observatory.

Desert Hills Elementary, Thursday, February 15

Observing canceled. Rain earlier, clouds later. I fell like I am giving weather reports rather than outreach.

Tombaugh Observatory, Friday, February 23

First the weather report. Breezy, but clear skies. This allowed Steve Shaffer and I to put the 12.5 inch scope on the Moon. The Astronomy department had the Orion nebula and a globular star cluster. We had a good crowd. Steve counted 60 observations.

Steve fixed the problem of not being able to move the scope in declination. He squirted in a magic juice called WD-40. It no longer requires an Olympic weight lifter to aim the telescope.

On the negative side, all of the gates to the domes were locked when I arrived. Access to the running track is cut off to the public. It is also cut off to us. The Astronomy department has a key to one of the gates, but we don't. Steve was told who to talk to in order to obtain a key.

Moongaze, Saturday, February 24

A cold, but clear night. We had a good session attended by Steve Wood, Mike K, Howard Brewington, and Jerry McMahan. Chuck Sterling, getting over a mild case of Pneumonia, made an appearance.

The Moon was the main target again. Steve did get the Orion Nebula. The nebulosity was visible, even with the bright lights of the area

Sunrise Elementary, Thursday, March 1

Howard Brewington, Sid Webb, Tracy Stuart, Chuck Sterling and Jerry McMahan participated. Unfortunately there was a full Moon. Howard and I were on the Moon. People seemed to enjoy the view since most don't realize that the craters are not easy to see at this phase. Chuck had his 8 inch on the Pleiades with an eyepiece that provided a good fit. Full Moon or not, the cluster still looks great. Sid was on the Orion nebula while Tracy observed other open clusters.

A slight breeze made it feel colder than it really was, but the turnout was very good. Tracy pointed out that it had been warmer at the North Pole than we were experiencing. Bad news of Polar Bears.

* * *

Calendar of Events (Mountain Time - 24 hr. clock)

| Mar | 01 | 18:05 | Sun Sets |
|-----|----|-------|--|
| | 01 | 17:52 | Full Moon |
| | 01 | 18:00 | OUTREACH; Sunrise Elementary School Star Party, 6:00 - 7:30 pm |
| | 09 | 04;20 | Last Quarter Moon |
| | 10 | 18:00 | OUTREACH; Dark Sky Observing at Leesburg Dam State Park |
| | 11 | 02:00 | Daylight Saving Time begins |
| | 16 | 21:00 | OUTREACH; Tombaugh Observatory open at NMSU; 9 -10 pm |
| | 17 | 07:12 | New Moon |
| | 20 | 09:15 | Spring Begins: Spring Equinox |
| | 23 | 19:00 | ASLC Monthly Meeting; Good Samaritan Society, Creative Arts Room |
| | 24 | 09:35 | First Quarter Moon |
| | 24 | 18:30 | OUTREACH; MoonGaze, International Delights Café |
| | 31 | 06:36 | Full Moon, the second one this month! |
| Apr | 01 | 19:27 | Sun Sets |
| 1 | 07 | 19#0 | OUTREACH; Dark Sky Observing at Leesburg Dam State Park |
| | 80 | 01:18 | Last Quarter Moon |
| | 15 | 19:57 | New Moon |
| | 20 | 21:00 | OUTREACH; Tombaugh Observatory open at NMSU; 9 -10 pm |
| | 21 | 00:00 | Astronomy Day - Everywhere |
| | 21 | 19:30 | OUTREACH; MoonGaze, International Delights Café |
| | 22 | 15:46 | First Quarter Moon |
| | 27 | 19:00 | ASLC Monthly Meeting; Good Samaritan Society, Creative Arts Room |
| | 29 | 18:58 | Full Moon |

Be sure to visit our web site for ASLC information: www.aslc-nm.org

* * * <u>Announcements</u>

- 1. The program for the March meeting will be a presentation by Dr. Al Grauer The title of his talk is "2017 A Record Year For Asteroid Hunters"
- 2. The Good Sam Society has reported that the construction and remodeling of the Creative Arts Room has been completed, so we will be meeting in the usual location.
- 3 The agreement to use the facilities at Good Sam for our meeting prohibits members from bringing in ANY food or beverages, except water in a container with a screw lid. Take note: no more Starbucks or Saturn Cookies!

* * *

<u>Meeting Minutes</u> ASLC Monthly Meeting February 2018 Minutes

Show & Tell:

John Kutney demonstrated a DSLR lens removal spanner wrench he had recently obtained. The wrench came with multiple adapters. No additional topics were offered for discussion.

Call to Order:

Howard Brewington, President, Astronomical Society of Las Cruces (ASLC, the Society), called the February 2018 business meeting to order at 7:16 pm, 23 February 2018, Creative Arts Room, Good Samaritan Society Las Cruces Village, 3011 Buena Vida Circle, Las Cruces, New Mexico.

President's Comments:

Howard Brewington, President, welcomed the group to tonight's meeting. There were several guests present. Lynn Dippel is from the Clovis/Carlsbad area and is considering joining ASLC. She has some equipment she hasn't used yet. Bill and Randi Evans are from Ontario and visiting the area. Jerry Samolyk is looking at the area to relocate from Wisconsin. Ron Pierce and Karen Ford-Pierce are relocating from the Chicago-area (they are in a club there). Phyllis Pilcher, wife of member Fred Pilcher, is also visiting tonight's meeting. Howard asked that all members and guests sign-in on the roster sheets available at the rear of the room.

Howard noted that membership dues are payable as of the first of the year and current dues status affects the Society's ability to protect members and the public with liability insurance at outreach events. Howard thanked Charles Turner for the February edition of the High Desert Observer (the Society's newsletter, the HDO). The minutes of the January meeting were published in the HDO. If there are no corrections or discussion, Howard asked that the minutes be accepted as submitted; they were accepted by acclamation. He also noted and thanked John Kutney and Bert Stevens for their contributions to the HDO.

Treasurer's Report:

Trish Conley, Treasurer, presented a status of the Society's accounts. She reported a net income for the month of \$1065 (mostly dues payed).

Outreach:

Chuck Sterling, Outreach Coordinator, reported on upcoming events. There will be Moon Gazes at International Delights Café (IDC) on 24 February and 24 March. There is an Open House at the Tombaugh Observatory on the NMSU campus tonight. The next Open House at the Observatory at LDSP will be 10 March. There will be a school star party 01 March at Sunrise Elementary. Check for details on the yahoo group. Howard noted Moon Gazes are an excellent opportunity to interact with the public and encourages all members to participate.

Announcements:

Howard reminds members that Texas Star Party (TSP) 2018 happens in May and the registration deadline is soon. He plans to attend although he realizes other members prefer other sites for observing. There are additional star parties occurring later in the year.

Presentation:

This month's presentation is by ASLC member Steve Barkes on "Arduino Projects". This is a follow-up/continuation of Steve's November 2017 presentation. Steve recapped some of the information he presented earlier then proceeded to apply the concepts to actual working projects. More information and components are available on the internet.

The March presentation will be by Dr. Al Grauer.

The February meeting of the Astronomical Society of Las Cruces concluded at 8:25 pm. A social time followed at Pecan Grill.

-Respectfully submitted by John McCullough, ASLC Secretary

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The Sacramento Mountains Spectroscopy Workshop, 2018 Report by Charles Turner

On February 16-18, 2018, ASLC members Dave Doctor, Steve Barkes, and your editor attended a Spectroscopy Bootcamp, also known as the Sacramento Mountains Spectroscopy Workshop in the mountains near Mayhill, NM. The purpose of the workshop was to provide attendees with some background and enough information to get started with spectroscopy. There were about 20 attendees, most living in the area, plus some impressive professional astronomers who gave great presentations.

I used to think that to do spectroscopy you needed at least a 1 meter telescope on a million dollar mount, plus the spectroscope and cameras. If that was ever true, it is not the case any more. What has changed are the same things that have changed amateur astronomy and astrophotography in particular. We have a selection of very good mounts and fantastic cameras. There are also very good and quality spectroscopes designed for amateurs available. Shelyac Instruments in particular makes a range of spectroscopes designed for amateur astronomers. We were very lucky to have as one of the presenters at the workshop, Francois Cochard, General Manager of Shelyac Instruments and someone who is very knowledgeable about all aspects of spectroscopy, from the theory and design of the instruments to the operation and techniques used to obtain spectroscopic data, and including the software used to massage the data into something that represents the star or other object that we want to study.

Our hosts for the Bootcamp were Ken Hudson and Joe Daglen, two residents of the area who have been doing spectroscopy for a few years. They have even attended amateur meetings and workshops on spectroscopy in Europe. Apparently, the European amateur astronomers are way ahead of the Americans in pursuing spectroscopy. There are a number of "experts" such as Francois Cochard, Christian Buil, and others, who are leading the way and showing what can be accomplished. There is also a large cadre of active spectroscopists who are producing valuable data.

This workshop was the brainchild of Ken and Joe. They worked hard on putting this all together for quite awhile. The goal of the Bootcamp was to try to jumpstart interest in spectroscopy among amateur astronomers with practical presentations, coaching and advice from people who have been doing this kind of research, both professional and amateur and bring it all together for the attendees in a friendly and relaxed environment. I can say that for me, it was the most fun I have had at an astronomy event in quite awhile. There have certainly been others, but it has been awhile. It was great to meet so many knowledgeable and accomplished astronomers, amateur and professional, who willingly share their knowledge and experience with others.

Another one of the great presenters was Stella Kafka, Director of the AAVSO. The American Association of Variable Star Observers is a non-profit scientific and educational institution that has been encouraging the study and collection of variable star data for over 100 years. They see great promise for amateur astronomers doing spectroscopy, and they want our data! They have a massive collection of data contributed by mostly citizen scientists who enjoy measuring the brightness of variable stars. They want to expand their database to include spectroscopic data. They also want to educate, train and promote scectroscopy among amateur astronomers and make the data available to researchers everywhere.

The presentations were detailed and thorough, covering all aspects of spectroscopy. An archive of some of the presentations has been established on the web. Of course, it does not include all the discussions, but it does show the slides of the presentations which is the outline of the topics covered. If you are interested in seeing some of what was discussed,

check out the web address: https://sites.google.com/view/spectroscopy-bootcamp/home

Everyone felt that this workshop was a great success. Joe and Ken are considering doing another workshop next year. Of course, there are many possibilities. There may be a different format or even a different location. Once a decision is made and the dates are set, I will pass along that information in a future HDO.



Figure 1: Attendees at the Spectroscopy Bootcamp
Have you ever seen such a "colorfull" collection of astronomers?

Poem of the Month

Remnants

Shards of dust explode onto emptiness

Free and liberated not reckless but sensing

Violating the infinite void

Lighting up the darkness

Marching now with a sense of direction

The silence is deafening only the pressure is speaking

Sounds are like dreams, they reach the soul

Life begins without knowing where it came from

Feeling fearless in the chaos of creation

Time doesn't care about life or death, truth or lies, peace or war

Alone, simple, sounds of nothing

One can find not peace, rest, nor help

Remembering the smells, radiance, and sounds

Leaving our hearts and love in the mist

Mirrors of those we remember and those we wish to forget

As time glides through our room silently

Endings don't end the way we thought

Feeble and no one will really know you

Stay close to the immortals in life

This isn't a place to visit but a place to leave

Everlasting the miracle of death, existence, time and space

J.Kutney '18



IC 2574

IC 2574 is an irregular dwarf galaxy originally thought to be a nebula when discovered by Edwin Coddington in 1898. It is located in Ursa Major near M81 & 82. "Integrated Flux Nebula" is the faint dust around the main galaxy. This was a faint object but very accessible for the Las Cruces area as Ursa Major rises early in the East.

Epsilon 180/ QSI 6120/ SGP/ L 30x5min / RGB 15x5min/ CCDstack/PS6/

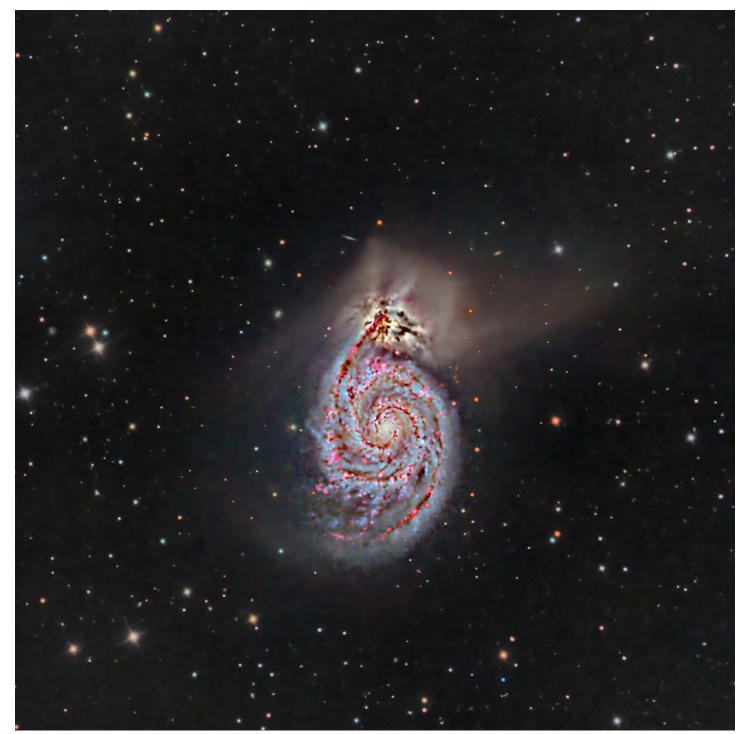
Las Cruces / 2-7, 2-8-2018 by John Kutney



The Moon

I took this with my iPhone thru my C11 while developing a lab for an Astronomy 105 class. These phones actually make a small movie with 20 subs, so I stacked them and got this. The image is of Mare Humorum with Gassendi Crater to the right (right is north).

By Rich Richins



OBJECT M51 The Whirlpool Galaxy

Exposures: H 11 x 1800", L 19 x 1200", R 12 x 1200", G 9 x 1200", B 9 x 1200" TOTAL (21.8 hrs selected from 29 hrs available) Width of image ~36' Scope: RCOS 14.5" at Deep Sky West Processing: PixInsight

M 51, the "Whirlpool Galaxy" and it companion (M 51B) have undergone a collision with the dwarf-galaxy B component, which is now emerging from M 51, and has suffered major disruption. This collision spawned an enormous amount of star birth in M 51. The blue regions are young, hot stars and the red regions are ionized hydrogen clouds—the stuff of which stars will yet be made. In addition to star birth, the collision has dispersed clouds of stars causing the "haze" surrounding both galaxies. (Often, those star hazes are suppressed in images of these objects.)

The Whirlpool, a Seyfert galaxy, has a super-massive black hole at it center surrounded by swirls of dust and stars. It lies about 23 million light-years from earth. Cheers, Alex Woronow



OBJECT NGC 7331 and Stephan's Quintet (Quintet to lower left, including tidal tail from NGC 7319) **Distance:** 40 million light years to NGC 7331; Up to 300 million light years for Stephan's Quintet galaxies

Telescope: Takahashi TOA-130F @ f/7.7 **Mount:** Takahashi EM200 Temma II

Camera: QSI 690wsg @ -15C Night of First Light!!!

Filters: Astrodon Tru-Balance I-Series LRGB Gen 2

Guider: SX Lodestar

Settings: 7x10min L (bin1x1); 1x5min R, 2x5min ea GB (bin2x2); AstroArt5, CS4 (slightly cropped,

10xdarks/flats/fdarks/bias)

Date/Location: 12 December 2017 - Las Cruces, NM This image is LRGB - one of the R channel frames was lost (long story), so had to carefully manage color balance.

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