

The High Desert Observer

The Bulletin of The Astronomical Society of Las Cruces

February, 2005

ASLC to Host The Legendary John Dobson



He is considered by many to be one of the greatest personalities in amateur astronomy. Almost single-handedly, he revolutionized backyard astronomy by designing a simple and affordable telescope that put astronomy into the hands of thousands of people. He is John Dobson, author, astronomer and philosopher, and co-founder of the Sidewalk Astronomers, and he is coming to Las Cruces this month.

John will be the featured speaker at this month's ASLC meeting. John's schedule has him in Tucson on our regular meeting night, so we are joining the El Paso Astronomy Club (EPAC) for a combined ASLC/EPAC meeting on Friday, February 18 at the Gene Roddenberry Planetarium in El Paso. The meeting begins at 7 pm. Following John's presentation, there will be a social hour and tour of the planetarium. Directions to the Gene Roddenberry Planetarium appear on page 2

John will be in the area for about a week and will participate in a variety of events including...

- A Dobsonian Telescope signing party (Saturday, Feb. 19 10:30 to 12:30 at Nils' House. Light refreshments will be served. [Note: ASLC is requesting a \$5 donation be made for each telescope John signs to help cover some of the expenses of John's trip to Las Cruces]
- The 75th anniversary celebration of Clyde Tombaugh's discovery of Pluto. John is an invited speaker for Saturday's event (Saturday, Feb. 19 at 2 pm at the Unitarian Church on Solano)
- Public Viewing session at La Llarona park (Saturday, Feb 19 at 7:00pm)

In addition, there will be additional public and ASLC viewing sessions on evenings with favorable weather. Information will be made available on the ASLC website and via the aslcnm yahoo list.

Don't miss this opportunity to meet an icon of amateur astronomy and learn of some of his revolutionary ideas regarding the cosmos. You can learn much more about this remarkable individual and his philosophy by visiting John's website <www.johndobson.org>.

Upcoming ASLC Events

Please see the ASLC website <aslcnm.org> for more information

- February 11 - Star Party (Tombaugh ES)
- February 12 - MoonGaze (Int'l Delights)
- February 18 - ASLC/EPAC Meeting (El Paso)
- February 19 - Public Viewing (La Llarona)
- February 20 - Viewing with John Dobson (tba)
- March 5 - DSO/Messier Marathon (tba)
- March 12 - MoonGaze (Int'l Delights)

This Month's Observer

John Dobson Visit	1
Meeting Highlights	2
Memorial Service for Scotty	3
AAVSO Conference	3
February Skies	4
Observing	5,6
New Education Course	6
Dave's Imaging Corner	7
AstroNerds	8
Image Gallery	8

ASLC Meeting Highlights

January Meeting: “Because I Stood on the Shoulder of Clyde Tombaugh - A Sequel to his Work at White Sands Missile Range”. Presentation by Joe Zurlinden.

Many of us know about the significance of Clyde Tombaugh's contributions to the development of optical tracking instrumentation at WSMR. But did you know that it's still being felt? ASLC Member Joseph Zurlinden has been a major part of the WSMR Optical Fabrication Facility for many years, and as this month's speaker he revealed how Clyde's work has inspired his own. He gave a very professional & quite visual presentation describing his role in the design & fabrication of state-of-the-art infrared telescopes that will extend missile-tracking & data collection capabilities from the near-IR to the 5 micron wavelength range. Emphasis was on a unique 12" F/10.5 mid-IR telescope that was Joe's main project for a few years - it should be perfect for imaging high-altitude rocket exhaust plumes with the latest infrared cameras. Joe described his rationale through-out the complex development process all the way from optical design to field testing. The project was quite successful overall -- I think that Clyde would appreciate the fact that cutting-edge optical work is still happening at WSMR!



- Tim Barnett-Queen (with a 'little' help from Nils)

January Beginner's Corner: Since Saturn/Jupiter observing season is upon us, a mini-guide on observing gas giants was presented, with emphasis on glorious Saturn, the Lord of the Rings! Topics included why to observe 'early & often', how to optimize image quality, good scopes to use, appropriate filters, and what realistic expectations are for what you can see with different size/type telescopes. It was short & sweet, with some new folks taking part (always good!)

- Nils Allen

January Business:

- The membership voted to change the name of *the aslc bulletin* to *The High Desert Observer*.
- Details of John Dobson's visit were discussed
- Nils introduced the modules for the new astronomy course and an informal poll was taken regarding member interest. The decision was made to go ahead with the course.
- Two individuals, Jerry McMahan and Bill Stein, joined the club. Welcome them!!

Directions to the Gene Roddenberry Planetarium:

Take I-10 Southeast towards El Paso

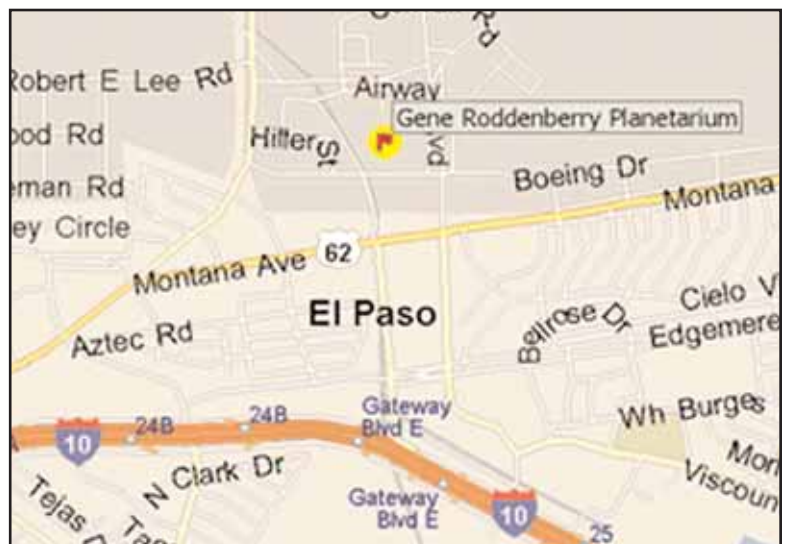
At exit 23B, turn RIGHT onto Ramp towards US-180 / US-62 / Carlsbad / Paisano Dr

Road name changes to US-180 [Gateway Blvd E]

Keep LEFT onto Airport Rd

Turn RIGHT (East) onto Boeing Dr.

End: Arrive Gene Roddenberry Planetarium



NMSU Revises Date for Scotty's Memorial Service

Nancy Chanover (NMSU) has informed us that due to unforeseen complication, the memorial service for Scott Murrell has been moved up one day to Thursday, February 17, 2005. All members of the society are invited. Please see below.

*You are cordially invited to a memorial service
celebrating the life of*

A. Scott Murrell (1926-2004)

Thursday February 17, 2005, 3:00 pm

Refreshments will be served from 2:30-3 pm

NMSU Golf Course Clubhouse Banquet Room

RSVP: Ofelia or Lorenza, (505) 646-4438

*We are compiling some of our favorite memories of Scott for a collection -
please share yours! Send them to Nancy Chanover, Box 30001/MSC 4500,
NMSU, Las Cruces, NM 88003-0001, nchanove@nmsu.edu*

NMSU to host High Energy Astrophysics and Variable Star Observers Meetings in March

The 94th Spring Meeting of the American Association of Variable Star Observers (AAVSO) will be held in Las Cruces, NM at New Mexico State University on March 25-26, 2005. There will also be a High Energy Astrophysics (HEA) workshop held on March 21-23. Possible field trips are scheduled for March 24 and 27. The cost of registration is not yet set, but should be around \$50.

AAVSO meetings provide members, observers, and interested guests with an opportunity to present their own research on variable stars and related topics. At each meeting a professional astronomer involved in variable star-related research is invited to give a guest lecture on his or her area of expertise. Time is generally allotted for an open discussion period where those in attendance are welcome to exchange ideas about observing, new techniques, problems, solutions, or any other topic that may come up. The Director of the Organization will also give the Director's Report to report on the activities of the AAVSO. AAVSO meetings also provide an opportunity for members, observers, and other attendees to get to know each other and the AAVSO Headquarters staff.

Please see the AAVSO website <<http://www.aavso.org/aavso/meetings/>> and the HEA website <<http://www.aavso.org/aavso/meetings/hea3.shtml>> for additional information and agendas.

- Tom Harrison, NMSU

Editor's Note - Tom Harrison has requested that ASLC support a planned observing session during the workshops. Watch the *aslcnm* list for details.

February Sky Map

Chart shows positions of objects at about 8 pm for mid February, about 7 pm for late February and about 6 pm for mid March



Feb. 8



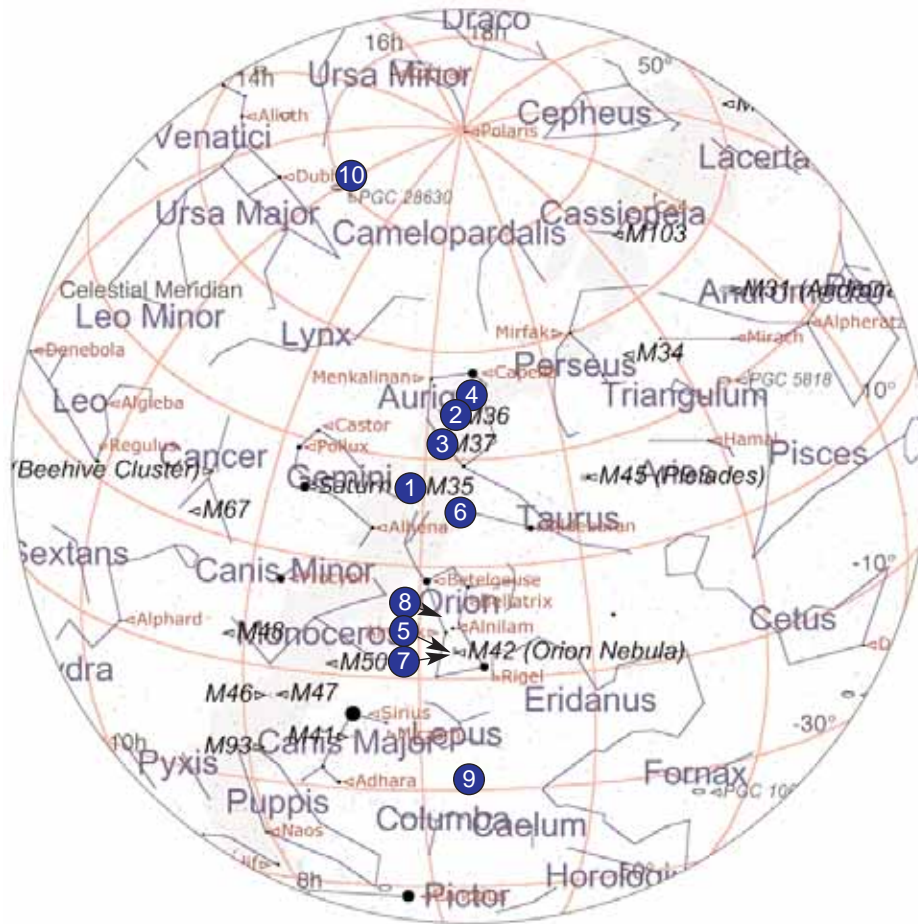
Feb. 15



Feb. 23



Mar. 3



Mars



In Libra
Mag. 1.7
Rises about 3 am

Jupiter



In Virgo
Mag. -1.8
Rises about 10 pm

Saturn



In Gemini
Mag. -0.1
Rises about 4 pm

February-March Tour

Binocular Objects

- 1) M35 (Open Cluster)
- 2) M36 (Open 'Pinwheel' Cluster)
- 3) M37 (Open Cluster)
- 4) M38 (Open 'Starfish' Cluster)
- 5) M42 (Open Cluster + Neb.)

Telescope Objects

- 6) M1 (Planetary 'Crab' Nebula)
- 7) M43 (Diffuse Nebula)
- 8) M78 (Diffuse Nebula)
- 9) M79 (Globular cluster)
- 10) M81 (Galaxy - Bode's Galaxy)

Joseph's Challenge - UGC3574
Gal (Lynx) 13.5, 06H 53m, +57° 11'

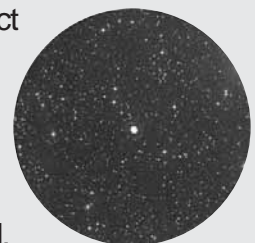
Astronomy Calendar

*Dates are MST. Please see the ASLC website
<aslc-nm.org> for more information*

February 18	Pluto Discovered (1930)
March 3	Moon Occults Antares
March 12	Mercury 18° Elongation
March 15	Moon 1° from Pleiades

Joseph's Challenge for January

Last month's challenge object was NGC2022, a planetary nebula in Orion. Joseph found it! How did you do? The image on the right (showing about 19 arc-seconds) shows the little fuzzball.



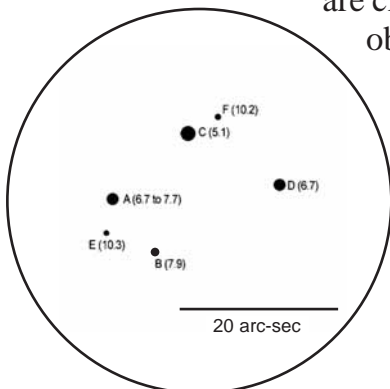
As Far as EYE Can See

by Joseph Mancella

Rich Richins asked me if I would contribute a monthly article on Visual observing and I readily agreed. For this first effort, we will look at 2 multiple star systems, 2 tight double stars, and a reflection nebula. All of these objects are in the constellation Orion. You probably may ask, "Why look at double stars?" The answer is threefold.

- 1) Double stars help us gauge the acuity of our eyes.
- 2) They help us assess the optical performance limits of our telescopes.
- 3) They are also a pretty good indicator of the seeing conditions.

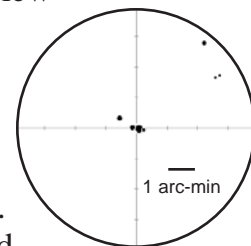
In the heart of the Great Orion nebula are four bright stars collectively known as the Trapezium or Theta Orionis. They are labeled A,B,C, and D from west to east. Besides the 4 stars that



The Trapezium in the Orion Nebula. Magnitudes of the six visible stars are shown.

are clearly visible, there are 2 more faint stars to be seen. In 1926 Wilhelm Struve observed the 5th star "F" (mag. 11.1). Six years later John Herschel found a 6th star, "F" (mag 11.5). In good seeing and with enough power, both stars are visible. In average to mediocre seeing, only one is visible, and if the seeing is really bad, both will disappear. My favorite view is at 178x in my 8" Newtonian.

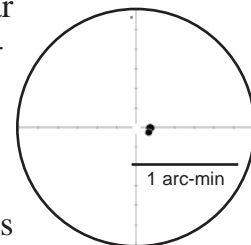
Closer to Orion's belt just below Zeta Orionis (Alnitak) is Sigma Orionis. This is a wonderful quadruple system. This is a good opportunity to compare visual magnitudes in your own scope. The 4 stars are listed at mag. 4.0, 6.5, 7.5, and 10.3. Look carefully at each star and you can easily tell who is who. In my small 80mm refractor at 91x, I can see all four stars. The faintest star



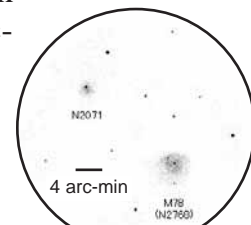
σ -Orionis

which is mag. 10.3 is just barely visible and very fine. How bright does a 10.3 magnitude star look in your scope? In Las Cruces Skies? At a dark site?

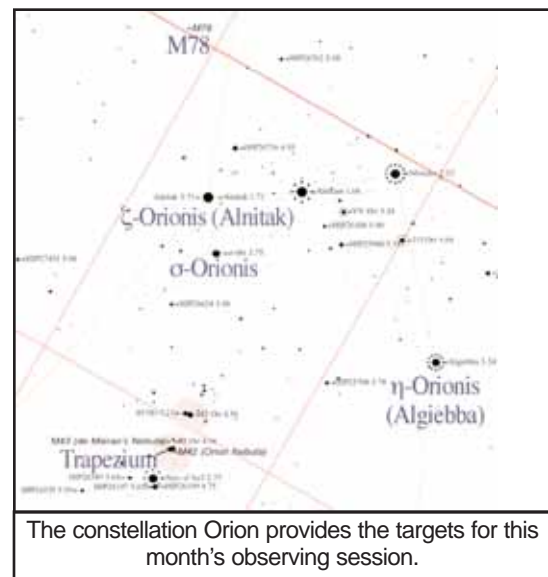
Now for 2 tough double stars. Let's return to Zeta Orionis. There is an obvious faint companion of mag. 9.9 that is 57.6 arc-seconds away. Very close to the mag. 1.9 primary star is a mag. 4.0 companion that is only 2.4 arc-seconds away. Usually powers of 130x to 200x are needed in order to split them well. This is a good test for your optics and for the steadiness of the seeing. Another tough pair and a great test for an 80mm scope is Eta Orionis. They are mag. 3.8 and 4.8 separated by only 1.6 arc-seconds. In steady seeing, I have managed to split both Eta and Zeta at 114x with my 80mm refractor. About 2 1/2 degrees northeast of Zeta Orionis is M78. You will see two 10th magnitude stars in a fan-shaped nebulosity extending to the southeast. In the southeast edge of the fan is a faint mag. 13.5 star. Use averted vision to see it. If the seeing is very steady, you can see it with direct vision.



ζ -Orionis



M78



Happy Hunting

- Joseph

Seeing Far Southern Stars

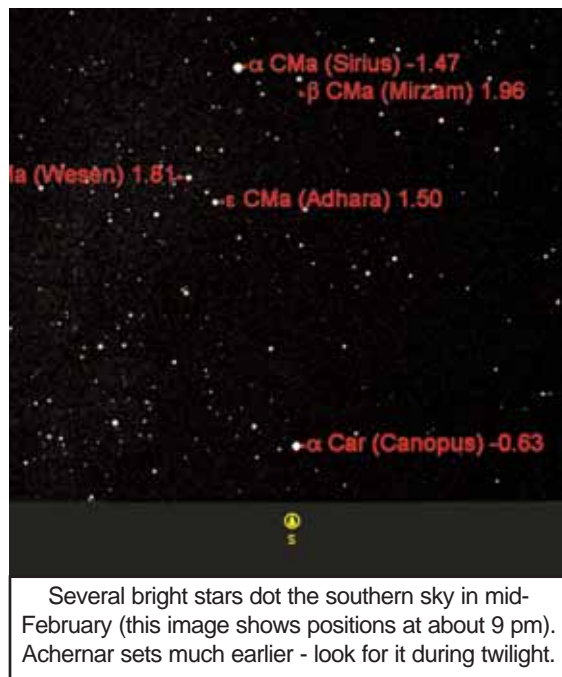
When I first became deeply interested in astronomy, it was disappointing that five of the first magnitude stars are too far south to be seen from Ohio. New Mexico amateurs are more fortunate, especially if they go to a dark-sky site with very clear skies and a totally unobstructed south horizon.

The star Canopus is very obvious; it crosses the meridian about 5 degrees above the horizon at much the same time as Beta Canis Majoris. Canopus is a vigorous twinkler and in the telescope is a short rainbow, blue at the top and red at the bottom. We thus have an instructive example of atmospheric dispersion, in reality present all over the sky except at the zenith.

The star Achernar is much more challenging; in Las Cruces it rises only half a degree above the south point of the horizon, though refraction will add another half degree or so. From New Mexico sites I have seen it only once.

For the remaining first magnitude stars I recommend vacations in South Florida or South Texas - though a very patient stargazer might wait on the precession cycle!

- Walter H. Haas



Special Topics Series Begins in March

ASLC is pleased to announce an upcoming series of clinics designed to build upon the instruction offered in our beginning astronomy course. Many of the participants of that course requested additional time be allocated to certain topics, so Nils has worked with several ASLC members to assemble the following curriculum. Overall, the course will consist of four instruction modules - each lasting 2 or 3 weeks. The topics to be covered include:

- #1 - Science of Astronomy: Beyond the Basics
 - * planetary discoveries and motions, galaxies & DSOs, stellar evolution & cosmology
- #2 - Telescopes In-Depth: Instruments for Observing & Imaging
 - * all about optics, specifications, accessories; set-up, operation & maintenance (do it!)
- #3 - Visual Observing: Types, Techniques, and Tools
 - * solar system, deep-space; planning, finding objects; practice it!
- #4 - Astro-Imaging: A Hands-on Primer
 - * fixed, webcam, wide-field, prime focus, guiding techniques...

A fifth module, "Stories of the Stars" is being considered. Each class tends to build on the previous one, though any appropriate selection of modules may be taken. The first module will begin at 6:30 pm on Tuesday, March 1st at J.W. Flours (on El Paseo). Several of the sessions are expected to take place at a dark sky site. ASLC members can take the series for a mere \$10 (to cover expenses). The non-member cost is \$40. Completion of the beginning course is highly recommended. Please contact Nils Allen <nilsa@zianet.com> for additional information.

The Astronomical Society of Las Cruces (ASLC)...

... is dedicated to expanding members and public awareness and understanding of the wonders of the universe. ASLC holds frequent observing sessions and star parties, and provides opportunities to work on club and public educational projects.

Members receive The *ASLC Bulletin*, our monthly newsletter, membership in The Astronomical League, including AL's quarterly *A.L. Reflector*. Club dues are \$35 per year. Those opting to receive the *ASLC Bulletin* electronically, receive a \$5 membership discount. Send dues, payable to A.S.L.C. with an application form or a note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004

ASLC members are entitled to a \$10 discount on subscriptions to *Sky and Telescope* magazine. S&T subscribers MUST subscribe and renew through the Society Treasurer for the special club rate. To avoid a lapse in delivery, this must be done when S&T sends their reminder, 4 months in advance.

ASLC OFFICERS, 2005

<Board@aslc-nm.org>

President:

Rich Richins

rrichins@zianet.com / 532-5365

Vice President

Dave Dockery

dave.dockery@comcast.net / 541-0717

Treasurer

Janet Stevens

jastevens@zianet.com / 382-9131

Secretary

Timothy Barnett-Queen

trbqueen@zianet.com

Immediate Past President:

Steve Barks - sbarks@comcast.net

Directors:

John McCullough, Dick Olson

Education Director:

Nils Allen - nilsa@zianet.com

The High Desert Observer

Editor: Rich Richins

Distribution: Bob Yearly

Emeritus (life) Members:

Walter Haas, Jed Durrenberger



Dave's Astrophotography Corner

Capturing lunar images

This month I'd like to cover a topic geared toward beginning astro-imagers – imaging the moon. Lunar imaging is a great place to start honing your astro imaging skills because the moon is such a bright target that it doesn't require sidereal tracking. Images can be captured with most camera types (web-cam, digital, or film) using lenses or telescopes and you can often use automatic settings for focus and exposure.

If you're using a telescope, your most interesting photographs will likely be taken of features along the terminator. This is the region separating lunar day from night where the low angle of the sun creates long shadows that enhance the mountain peaks, craters, and other features by adding depth and contrast to the view. This shadow region is in constant motion, providing new areas to image each night. I often use the Virtual Moon Atlas to look for interesting features to image on a given night. (Freeware for PC from http://www.astrosurf.com/avl/UK_index.html.)



DAVE DOCKERY



DAVE DOCKERY

Examples: Moonrise over the Organ Mountains and the Crater Copernicus

Here's a simple procedure for imaging the moon:

1. Choose a night with reasonable seeing, when the moon is not full and located near the zenith. (First quarter is good for early evening)
2. Set up early and let your telescope cool down to ambient temperature.
3. Attach your camera to the telescope, if possible. Note: you can hand hold a digital camera up to a wide-angle eyepiece if you have no way to attach it.
4. Point the telescope to a lunar feature of interest using the desired magnification and adjust for best focus using auto-focus (with a lens) or the telescope. Do not attempt to use higher magnification than the seeing will support.
5. You can let the camera choose the exposure setting but make sure to have plenty of sunlit surface in the frame to avoid saturation.
6. Verify settings with a test shot, if possible, then take plenty of images and toss the bad one's out. It helps to use a cable release for high magnification imaging to avoid shaking the camera.

Lunar imaging is a relatively simple and rewarding way to get started in astrophotography. Give it a try some night... Dave



(Comic provided free of charge by www.astronerds.com)

ASLC IMAGE GALLERY



Saturn at Opposition (well, almost). Image taken on January 16 (1 day after opposition) by Rich Richins with his 2UCam.



Steve Smith captured Comet Machholz (C/2004 Q2) as it briefly visited the California Nebula, NGC1499, last month. The little fuzzball in the lower center is the reflection nebula IC348.



Machholz and the Double Cluster (NGCs 869 and 884). Photo by Dave Dockery. Several other DSOs are visible in the shot including IC1848 and IC1805.

**ASTRONOMICAL SOCIETY
of Las Cruces, New Mexico**
PO Box 921, Las Cruces, NM 88004



ASLC - Sharing the Universe
With Our Community for
Over 50 Years