

The High Desert Observer

The Bulletin of The Astronomical Society of Las Cruces

March, 2005

ASLC Partners with Chihuahuan Desert Nature Park

Two of the more abundant features of Southern New Mexico are its dark skies and its vast deserts. The two come together at the Chihuahuan Desert Nature Park (CDNP) about 7 miles north of US 70. The park is visited annually by thousands of school children and visitors. CDNP also organizes huge public outreach programs such as the Insect Expo, held each Fall at the Downtown Mall in Las Cruces.

ASLC has partnered with CDNP to present two events for 2005. The first, scheduled for April 2, will be a public stargazing party. Representatives from CDNP will be on hand to talk briefly about the park. ASLC will then give the public a sky tour including bright planets (Saturn and Jupiter), and a wide variety of DSOs. A second star party will be conducted in late October for members of the CDNP.



This image of Comet Machholz (C/2004 Q2) was taken from the Chihuahuan Desert Nature Park in January.



As beautiful by day as by night, The Chihuahuan Desert Nature Park will be the site of two ASLC star parties this year.

One of the major benefits of this partnership is the use of the CDNP as a dark sky sight for our members and for public outreach and education programs such as the beginning astronomy classes at DABCC. Bright lights near the DABCC campus often prevent the viewing of dimmer constellations and objects. CDNP has much darker skies and is much more accessible than our Upham viewing site. If you've never visited the park, it's only a short drive from Las Cruces (North on Jornada Road). Additional information can be obtained from their webpage, <<http://www.zianet.com/cdnp2>>

- Rich Richins

Upcoming ASLC Events

Please see the ASLC website <aslc-nm.org> for more information

- March 17 - KRWG-TV Telethon
- March 19 - MoonGaze (Int'l Delights)
- March 22 - Phil Phait Lecture / Observing Session
- March 25 - Monthly Meeting / Observing Session
- April 2 - CDNP Star Party
- April 9 - DSO (Upham)

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ASLC Meeting Highlights

February Meeting: "The Universe According to John Dobson"

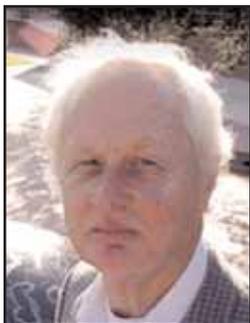
The ASLC joined the El Paso Astronomy Club (EPAC) at the Gene Roddenberry Planetarium for an evening with John Dobson. The event was very well attended. John entertained the crowd in his unique style while explaining his theories of cosmology. He attempted to thoroughly trash the Big Bang theory and argued for a steady state universe with conversion events occurring at the universe's periphery. For those who missed the event, the material may be read. John is preparing a manuscript for publication. We have a copy of the work in progress. Contact Vince Dovydaitis to view the document. During his 6-day stay, John also spoke at the UUCLC's Tombaugh/Pluto event, at the Las Cruces Museum of Natural History, and at an informal colloquium at the Apache Point Observatory. He also attended a Dobsonian telescope signing party on Saturday morning (2/19), and supported a Moon Gaze on Sunday evening (2/20).



- Rich Richins

February's Beginner's Corner: We didn't have one. We were supposed to have a tour of the planetarium, but I think that people were so busy talking with John (following his talk) and visiting with folks at the social hour (following the talk) that nobody asked about the tour.

March Meeting: "Life and Times at The Jet Propulsion Laboratory". Presentation by John Strand.

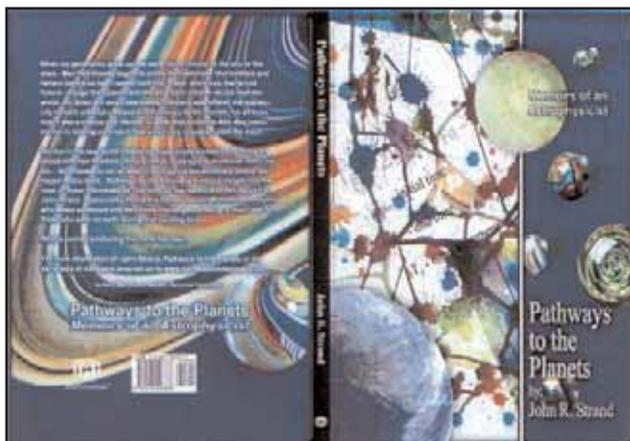


John Strand is an astrophysicist who has enjoyed a lifelong interest in science. His experience covers a wide range of topics, from no-till soil conservation to developing adhesive formulations for Avery to modeling spacecraft trajectories for the Apollo program. His work at the Jet Propulsion Laboratory impacted numerous projects including the Mariner, Viking, Voyager programs and resulted in a congressional award. John has also served as a consultant to the Navy's VAST (virtual-at-sea training) project

John recently compiled some of his memoirs into a book, "Pathways to the Planets". In his book, John seeks to preserve some of the the history of the Americans who developed (during the 1960s and 70s) a computer system which provided the information necessary to guide our spacecraft to the planets .

John will be speaking on his work for the Jet Propulsion Laboratory. There are two general categories of material. 1. The technical explanation about how the navigation system for Viking and Voyager was developed. 2. The human drama both humorous and contentious of the analysts and programmers who were responsible for this technological feat.

John isn't really planning to discuss the deeper physics and mathematics involved in his work (unless asked), but plans to share a variety of personal interest stories and some zany humor.



John's new book, "Pathways to the Planets" will be on sale at the meeting. Cost will be \$20. John will gladly autograph the books

March Beginner's Corner: Surface brightness versus magnitude. Why is the mag-8.4 Crab Nebula so much harder to see than the mag-8.5 globular cluster, M79?

Eye Candy

2004 was a frustrating year for astronomy. I know I saw the bottom of more clouds than I think I've ever seen in New Mexico. I've made a New Year's resolution to do more visual observing in 2005. To that end, and to ensure that I'll keep my resolution, I intend to document my exploits in a regular column in the Bulletin.

Since I want to do more visual observing, and it seems I've always got my scopes tied up for astrophotography, I decided I needed another scope. My wife gave me an 8" F6 primary mirror and 1.52" secondary for Christmas. And my son gave me a really cool circle cutting template for my router. Armed with these new gifts, I set out to build an 8" dob.

I figured I would be able to save money by building the scope myself. Boy was I wrong. The cost of the optics is small compared to all of the tools and materials needed to do a decent job. I bought a beautifully machined Moonlite crayford focuser, and needed to drill a 2 3/8" hole in my cardboard tube to mount it. Well apparently a 2 3/8" hole saw is not common, and went for \$35.00. I ended up buying another circle cutter that did the job, but that single hole ended up costing me \$12.99 + tax. I figure the final cost of this scope is around \$3000 + 2 weeks of work in the evenings. I'm kidding of course, but I guess I could of bought a Hardin Optical 10" complete with 2 eye-pieces, and still had money left over for what I've got into this thing. But the satisfaction of building it myself was worth every dime.



After completing the scope I had an opportunity to run it through its paces at the Messier Marathon this last weekend. We had a great turnout and decent weather, although a bit windy at first. The dob performed flawlessly and I was able to locate 109 objects. Only M30 evaded me again this year by not rising before the morning twilight wiped out all of the stars to the East.

- Steve Barkes

M30 Eludes Messier Marathoners Again!

Six brave (or crazy) souls braved early winds, midnight clouds and sleep deprivation in the second annual ASLC Messier Marathon. Individuals from the El Paso Astronomy Club joined ASLC this year at the Upham observing site for a long night of observing, caffeine and camaraderie.

Early on, about 20 participants were on hand to observe in the transparent, but windy skies. By about 11 pm, the wind had largely subsided and several of the more casual observers had retired to more comfortable digs. During an hour or so before midnight, the group (now around 10) hopped stars and dodged clouds. By the time that the clouds had moved off to the Southeast, only six remained, Dave Dockery, Steve Barkes, Steve Smith, Joseph Mancilla, Phillip Heron, and Rich Richins. As dawn approached, we raced through Sagittarius and Aquarius then awaited M30 in Capricornus. Alas, the pre-dawn sky was just too much for the Mag-8.5 glob. For the second year in a row, Steve B and Joseph had to settle for 109. Rich got a 'go-to' assisted 109 (he is still pretty happy about getting 104 by hand). Dave and Steve S. each got 108. Assuming that we can obtain all of the results by our next meeting, we'll be passing out certificates for the participants.



Marathon participants prepare for a long night of observing

- Rich

March Sky Map

Chart shows positions of objects at about 8 pm for mid March, about 7 pm for late March and about 7pm (MDT) for mid April



Mar. 10



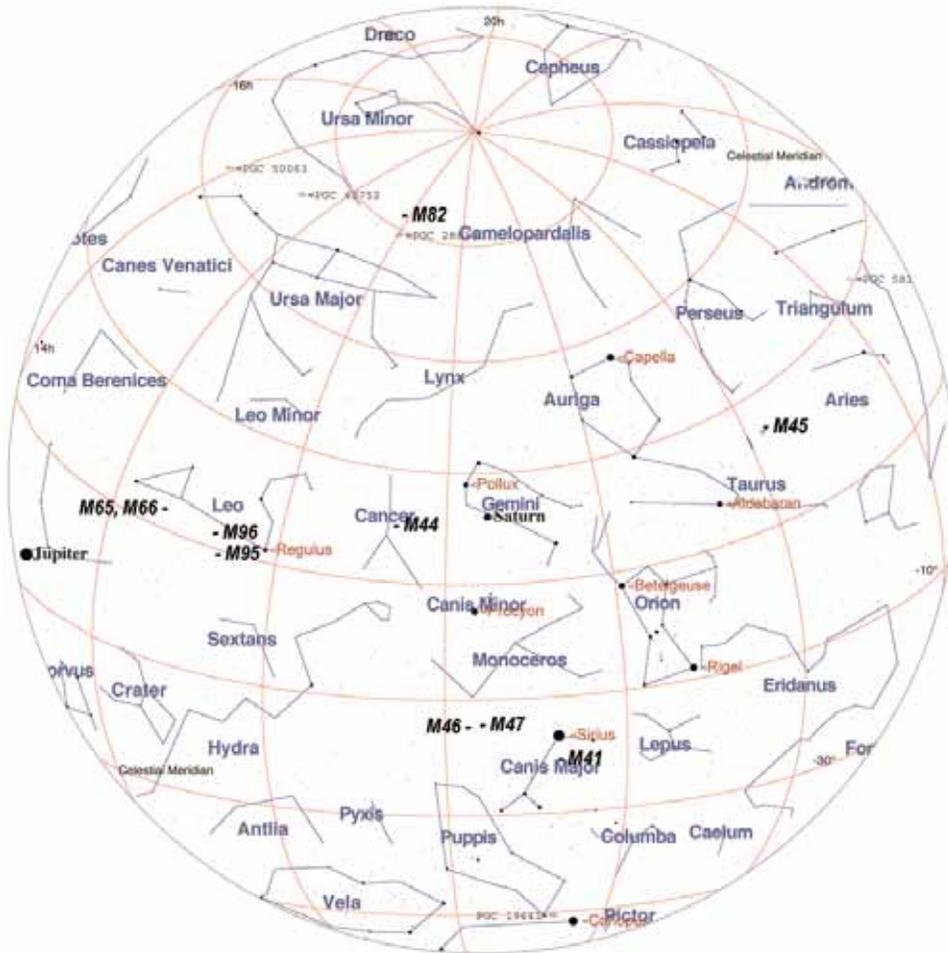
Mar. 17



Mar. 25



Apr. 2



Mars



In Sagittarius
Mag. 1.7
Rises about 3 am

Jupiter



In Virgo
Mag. -2.4
Rises about 7:30 pm

Saturn



In Gemini
Mag. 0.0
Rises about 1 pm

Astronomy Calendar

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

March 19	Moon Occults Antares
March 20	Spring Equinox
March 21-27	HEA/AAVSO Meeting
April 3	Jupiter at Opposition
April 7-10	Southern NM Star Party

February's Challenge

This was a really mean one. The galaxy is face-on and has a large surface area 3.7" x 4.2". So even though its magnitude is reasonable, its surface brightness made it a real challenge.



March-April Tour

Binocular Objects

- M41 (Open Cluster)
- M44 (Open Cluster)
- M45 (Open Cluster, The Pleiades)
- M46 (Open Cluster)
- M47 (Open Cluster)

Telescope Objects

- M82 (Galaxy, Cigar Galaxy)
- M65 (Galaxy)
- M66 (Galaxy)
- M95 (Galaxy)
- M96 (Galaxy)

Joseph's Challenge - NGC 4565

Gal (Coma Berenices)
9.6, 12H 36.3m, +25° 59'

Desert Moon Observatory Watches for Deep Impact

Out between Mars and Jupiter, the Comet 9P/Tempel (sometimes called Tempel I) is drifting slowly along in its orbit. Two years ago it passed its farthest point from the Sun, just inside the orbit of Jupiter. On July 4th of this year, it will be almost at it's closest point to the Sun, just inside the Orbit of Mars. On that day, it's will be joined briefly by NASA's Deep Impact spacecraft, which will take a close look at the comet and slam an "impactor" into the comet's surface.

Launched on January 12 atop a Boeing Delta II Launch Vehicle, the Deep Impact is a VW-Beetle-sized spacecraft that consists of two sections. The Flyby section consists primarily of telescopic cameras and control systems to support them. The other section is the impactor - a 39 inches by 39 inches wrecking ball. The impactor it is made up mostly of copper, but also has cameras and a control system. Its primary mission is to impact Comet Tempel I as a speed of 22,900 miles per hour, digging a crater that is expected to be up to the size of a football stadium and two to fourteen stories deep.

The impact will expose subsurface material that has not been exposed to space since the formation of the Solar System. This should provide astronomers with a window into how comets formed and what elements actually compose them. The collision between the impactor and Tempel I will not make an appreciable change in the Comet's orbital path around the Sun. The Comet poses no threat to Earth.

Comets are often described as "dirty snowballs", being composed of frozen gases and dust that formed 4.5 billion years ago during the formation of the Solar System. They spend most of their lives in the dark reaches of the Solar System out beyond the planet Pluto. There they remained unchanged and unaffected by the Sun. At some point in the past, Comet Tempel I was out there as well. Then, after a long time, Tempel I may have bumped into another comet, or a passing star changed its orbit to bring it into the inner Solar System. Eventually, the Comet passed close to Jupiter and it's orbit changed into one that takes it between Jupiter and Mars.

When the impact occurs, not only will the Flyby section of the Deep Impact spacecraft be watching, but telescopes all over the world will be observing the Comet as well. In addition to professional observatories, like those on Kitt Peak and the Sloane Observatory near Sunspot, amateur telescopes will also be pointed at the Comet, providing amateur astronomers the opportunity to participate in this exciting mission. One such telescope is right here in Las Cruces. Desert Moon Observatory is run by Bert and Janet Stevens. Their normal observing program is the observation of minor planets (asteroids), especially those that come near the Earth.

The Deep Impact's impactor will hit Comet Tempel I shortly before midnight (Mountain Time) on the evening of July 3. From Las Cruces, Comet Tempel I will be setting in the west. Whether amateur astronomers in our area will be able to see a brightening of the Comet will depend on the weather as well as the composition of the Comet. Both amateur and professional astronomers will be looking forward to the first predicted collision in our Solar System since the pieces of Comet Shoemaker-Levy 9 slammed into Jupiter in 1985.

- Bert Stevens (ASLC)

Editor's Note: In January 2005 the IAU Committee for Small Body Nomenclature (CSBN) named asteroid (38540) Stevens, for fellow ASLC member Bert Stevens. With the official publication of (38540) Stevens joins (1604) Tombaugh, (2001) Einstein, (2069) Hubble, (3853) Haas, and (2309) Mr. Spock among about 11,000 other asteroids as having a name in addition to a number.



Fifteen hours after the launch of the Deep Impact spacecraft, Bert and Janet imaged the spacecraft when it was 130,000 miles away from the Earth on the way to Tempel I. Since the spacecraft was moving so quickly among the background stars, a series of 10-second exposures were made and combined so the spacecraft appears to stand still while the stars are trailed in the background. The Deep Impact spacecraft was being illuminated by the Sun, but even so it was 120,000 times fainter than the faintest star you can see.

As Far As Eye Can See

This month we will explore the constellations Monoceros, Puppis, and Gemini. Monoceros is a dim constellation that is difficult to trace due to its medium faint stars. Using patient persistence, trace the constellation and locate Beta Monoceros. This is a beautiful triple star with components of mag. 4.7, 5.2 and 5.2 separated by 7.3 and 2.8 arcseconds. At low power it appears as a double star. Using high power above 120x will reveal the three stars well. Part of the beauty of this group is the almost equal brightness of the three stars.



In the constellation Puppis are the two star clusters M47 and M46. M47 is brighter and sparser and about one degree west of the finer and fainter M46. Be careful of your directions and don't go north of M47 because in the immediate vicinity is another faint star cluster, (NGC 2423). You may mistake this for M46. I once made this mistake. M46 is a rich but fainter cluster than M47. Look closely and you will see a planetary nebula among the stars. (NGC 2438) This planetary is really not within the star cluster. It is just in the same line of sight. NGC 2438 is twice as far away than M46.

Moving to the feet of Gemini is the large beautiful open cluster M35. Use low power. M35 is 30 arcminutes in diameter and is about 2,800 light years distant. There is a beautiful bright orange star on the northern side of the cluster. At the western outskirts of the cluster you can see NGC 2158. This faint cluster is composed of stars 16th mag. and fainter and lies about 16,000 light years away. Almost 6 times farther than M35. The last object on our tour is NGC 2392, the Eskimo nebula in Gemini. Located near Delta Geminorium, this planetary nebula is next to a 9th mag. star and the two resemble a wide double star. One of the stars looks fuzzier than the other. That's the nebula. At low power between 50x to 80x, this planetary will "blink". Stare straight at it and you see the 9th mag. central star. Look away and the glow of the nebula appears.



Happy hunting,

- Joseph

A Mathematical Riddle

Clearly: $16 - 36 = 25 - 45$

We add the same number to both sides of the equation and have:

$$16 - 36 + 81/4 = 25 - 45 + 81/4$$

We use an elementary formula in algebra to write what is equivalent, namely:

$(4 - 9/2)**2 = (5 - 9/2)**2$, where "**2" is a convenient notation for saying "squared".

We now take the square root on each side of the equation and have:

$$4 - 9/2 = 5 - 9/2 .$$

Adding 9/2 to each side gives us:

$$4 = 5,$$

and we can readily expand this absurdity to show that any number N is equal to zero, greatly simplifying Johnny's third grade arithmetic.

Oops! *Was ist los!* Where is the blunder?

- Walter

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.

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Dave's Astrophotography Corner

This month: The Leo Trio – finding unexpected objects in your photos

This month I'd like to share a recent image that includes an interesting and unexpected artifact - a passing asteroid.

The image was captured on March 9th from my backyard in Mesilla and during processing, I noticed a single elliptical or trailed object in the lower left region. All other stars were well shaped, which indicated that my tracking was good (Thanks GuideDog!) so I suspected it was either an asteroid or a small bright galaxy. Two days later in a post to one of the astrophotography lists, another astrophotographer noticed a similar streaked object in the same field but much closer to the galaxy in the upper left part of the image (NGC 3628.) The object in both images turned out to be asteroid (185) Eunike, which crossed the image field and passed in front of NGC 3628 in less than three days. Eunike is a large ~ 157km asteroid, currently at around mag 12 and a distance of 2 AUs.



Above - The Leo Trio of Galaxies M65, M66, and NGC 3628. The image is comprised of fifteen four minute ISO 800 exposures using a Canon 300D, TV-85, and an IDAS LPS filter. Captured March 9th between 10:00 and 11:22 pm, MST.

This technique of inspecting images for object motion is currently used by ASLC members; Dave Dixon and Bert and Janet Stevens to find and track NEOs and was also used by Clyde Tombaugh to discover Pluto a few years back.

Keep checking those images. You never know what you may find...

- Dave Dockery



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

For Sale

Meade LX200 12 inch, Meade Super Wedge, 8x50 finder, AC power supply, 1.25 diagonal, PC interface cable, Meade 24mm Plossel eyepiece. 47 inch high Steel Pier, with adapter for Super Wedge. Telescope is in excellent condition functionally and cosmetically, good optics, EMC coatings in excellent condition, \$2200 David Dixon 382-3920

32mm Sirius plossl eyepiece \$25.00
 20mm Highlight plossl eyepiece \$30.00. Kenneth Novak diagonal holder with spider assembly. Will fit inside diameter 7" to 8". 1.30 size diagonal holder for a 6 inch scope. Joseph Mancilla 647-2676

ASLC IMAGE GALLERY



1.8 day-old crescent moon taken by Rich with his 300D at Upham on 3/11



Wide field image of Orion's Belt. Image by Dave using his 300D and 100mm f/2 lens. Larger image and description at: <http://home.comcast.net/~dave.dockery/OrionWf.htm>



The reason for all of our recent rains. Steve Smith's new 14" TScope

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