

President's Message - November 2010



The Renaissance Faire for 2010 is now history. It was a great event that allowed us to reach out to many people that normally would not be aware of our existence. I would like to thank Ron Kramer for spearheading the event and getting everything together to make the ASLC look so good. He even managed to **not** set himself on fire with his crystal ball this year, but he did manage to torch a couple of brochures.

One thing that came up at the Ren Faire is our lack of hand-outs to those who might be interested in our society. Over the last ten years, we have had two or three iterations of brochures as well as a business-card sized informational hand-out that directed people to our website. This allowed us to make changes (especially to dues) without having to reprint a brochure. I do not know what the correct answer is, but next year's president will be addressing this issue.

We are still working on plans for the Holiday Party on December 4 in the Experimental Aircraft Association's hanger at the Las Cruces Airport. To keep costs down in this time of recession, it will be a pot-luck, so start thinking about what you would like to bring. We will also be looking for door prizes as well. We will be charging to cover the cost of renting the hanger and other expenses. We had a great time there last year and it should be just as good this year..

We are hosting the Association of Lunar and Planetary Observers (A.L.P.O.) next year. I will be the chair for this event. There were other volunteers for this position and I thank Ron and Vince for volunteering, but it seemed that I was in the best position to chair this event. I will need the help of many other ASLC members to actually make this happen. The A.L.P.O. is a great organization that does interesting science by collecting and analyzing observations of Solar System objects that was co-founded by our Director Emetrius, Walter Haas. I am proud to have this event here in Las Cruces, and I hope that you will be willing to put some time in to help us out at this event.

The RASC Observer's Handbooks and Calendars have been ordered. The Calendars have arrived, but we are still waiting for the Observer's Handbooks. We will bring what has arrived to the November Meeting, so if you have ordered one, please be prepared to pay the Treasurer for these books. We do have a few spares, so you can also let her know if you would like to purchase one.

I wish you all a Happy Thanksgiving and hope you have much for which to be thankful.

Your Humble President
Bert Stevens



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 club and public educational projects. Members receive the High Desert Observer, our monthly newsletter, membership in the Astronomical League, including AL's quarterly A.L. Reflector. Club dues are \$30.00 per year, including electronic delivery. Send dues payable to ASLC with an application form or note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004

ASLC members are entitled to a \$10.00 discount to Sky and Telescope magazine.

ASLC OFFICERS, 2010

Board@aslc-nm.org

President: Bert Stevens

President@aslc-nm.org

Vice President: Kirby Benson

VP@aslc-nm.org

Treasurer: Janet Stevens

Treasurer@aslc-nm.org

Secretary: John McCullough

Secretary@aslc-nm.org

Immediate Past President
Jerry Gaber

Ppresident@aslc-nm.org

Directors:

Wes Baker

Director1@aslc-nm.org

Steven Shafer

Director2@aslc-nm.org

Education Chairman: Rich Richins

Education@aslc-nm.org

Newsletter Editor: Bert Stevens

blslcnm@comcast.net

Emeritus (life) Member
Walter Haas

This Month's Observer

President's Message..... 1
Next Meeting..... 2
The October 16, 2010 Moongaze 3
The Renaissance Faire, November 6 - 7, 2010 3
Observing Globular Clusters..... 5
The Tombaugh Elementary School Star Party..... 11
October Meeting Minutes..... 11

Next Meeting

Ever wondered what it would be like to combine two of the most interesting activities around - exploring our national parks and observing the night-sky? Come and learn what life is like doing night-sky interpretation programs in some really dark Parks. And how months of dedicated service can turn your spouse into a real astronomer! Nils Allen will present a talk on his adventures with the as a volunteer with the National Park Service.

Officers Needed for 2011

The current slate of officers for next year is:

President - Ron Kramer

Vice-president - Open

Treasurer - Janet Stevens

Secretary - John McCullough

Director - Wes Baker

Director - Nils Allen

Please let me know if you are interested in any of these positions.

Events

ASLC hosts both a deep sky viewing and imaging at our dark sky location in Upham and a public in-town observing session for the public at the International Delights Cafe. Both sessions begin at dusk. For information on these and other events, please see the ASLC website at <http://www.aslc-nm.org>.



The October 16, 2010 Moongaze

By Jerry McMahan

The October Moongaze, at the International Delights Cafe, was attended by Chuck Sterling, Steve Shaffer, and Muhammed Hijazi. Chuck brought the 10-inch Meade, Steve had the 3.5-inch Questar and I had the 5-inch Maksutov. Muhammed had just returned from a trip and did not have his telescope, but was a great help telling observers what they were seeing on the Moon.

There seemed to be a larger number of spectators than normal. The usual objects to observe included the Moon and Jupiter. The Moon's phase showed the lit up rim of the crater Copernicus, while the floor was dark, and not yet catching the rising Sun. The craters Clavius and Tycho were in a good position to observe. All four Galilean Satellites were visible. The Red Spot should have been on the side of Jupiter facing us, but I could not see it. One of the people that stopped to look, without being told that it might be visible, said that he could see it. Muhammed thought he caught a glimpse of it as well. With my bad eyes, the fact that I could not see it did not mean much.

More people than normal asked me about the American flags on the Moon. I found out why when one of them said "That guy over there", pointing to Chuck, said to ask you to show us the flags on the Moon. I had trouble convincing one man that the flag could not even be seen by the Hubble Space Telescope. They never point it at the Moon, but even if they did, the 94-inch diameter mirror does not have the resolving power (.05 arcseconds) to show something that small and far away. Thanks Chuck!

Next time I will be prepared. It would take something, in the neighbor hood, of a five-thousand-inch mirror, at visual wavelengths, to resolve the flag even though for a 'scope above the Earth's atmosphere.

The kid, asking for help getting a dog, did not show up this time.

The Renaissance Faire, November 6 - 7, 2010

By Ron Kramer; photographs by Patricia Conley

The 39th Annual Renaissance ArtsFaire at Young Park was attended by more than 30,000 people over a 2-day period. With more than a hundred vendors selling food, arts and crafts plus many other non-profit displays, the Faire was enjoyed by all.

As usual, the ASLC had a booth, with several telescopes, displays and educational materials available to the public. The Double Stack solar telescope and Rich Richins' 11-inch Celestron were big hits, with views of the Sun, Venus and Jupiter some of the main attractions. Nils Allen had a "build your own telescope" display and there were many photographs taken by Society members on view.

In addition there were posters of the Solar System, the Earth at Night and additional charts and images for the visitors to the booth to see. Society volunteers were continually available to answer questions from



The High Desert Observer



the public and I would like to thank everyone who participated. In addition to those listed above, scheduled volunteers included Carol Baker, Wes Baker, Kirby Benson, Patricia Conley, Dave Dockery, John McCullough, Fred Paganucci, Chuck Sterling, Bert Stevens and Janet Stevens. If I missed anyone, I apologize in advance.

Setup and teardown went rather smoothly and we had very good traffic; it is estimated that more than 700 people stopped by the booth, with most looking through the telescopes or asking questions about astronomy.

Fortunately there was no repeat of last

year's incendiary display by Merlyn, and the Royal Fire Department did not have to be called.

Several visitors did ask about the availability of the photographs displayed by society members and after further checking with Faire management it was determined that in the future we could make such images available to the public for a suggested "donation". Suggestions included \$2.00 for a 5x7, \$5.00 for an 8x10 and \$10.00 for an 11x14 sized image. This should be considered for 2011. It would be a great way to improve our treasury while offering the public some wonderful images.



It was also suggested that one way to improve foot traffic would be to move out of the "Children's Realm" section of the Faire. Most visitors to our booth were accompanied by children while most park visitors without children walked right by. This should be considered when discussing our participation next year.

Finally, many visitors asked for information about our Society. We used a brochure from 2006 plus another flyer from the IDA. A project should be initiated to create an updated ASLC handout for such events, which could include star maps, Society images, application for joining and other important information.



The 2010 Renaissance Faire was a great event, enjoyed by all. There is little doubt it should be part of the ASLC's annual calendar of events.

Observing Globular Clusters

By John Kutney

Introduction

Observing Globular Clusters (GCs) has been a surprisingly educational and stimulating visual observing project. It has expanded my knowledge of GCs from just interesting objects to recognizing category, type, and classification of these objects. Previously unfamiliar catalogs and lists such as Palomar, Terzan, and Djorgoski opens ones horizon of the less viewed objects in our galaxy and beyond. The GC Project provided positive rewards and personal exhilaration.

Astronomical League Globular Cluster Observing Club

Recently, I was awarded a Certificate and Pin for completing the requirements for the GC Observing Club. It is a diverse program with a collection of both easy and difficult objects. Most can be observed from moderately light



polluted skies, but the challenge objects will require dark skies due to the magnitude, size, and location of the GCs.

There are 29 GCs on Messier’s List of 110 objects. There are 74 GCs which have NGC Numbers. There are 15 designated “Palomar” globulars. These were discovered during examination of the Palomar Sky Survey Plates back in the 1950’s. There are 11 additional globulars with the name “Terzan” associated with them. They were discovered by Agop Terzan in France during his infrared work. There are at least 18 others not on the aforementioned lists with two new ones: the Pyxis System discovered in 1995 and IC 1257 in 1996.

This program is a natural as a summer-centric project for visual observers. Some of the more difficult and obscure GCs require large aperture and dark skies to collect these objects. However, the program is flexible enough to fit most capabilities.

Globular Clusters

Globular Clusters are gravitationally bound groups of many thousands of stars. They consist primarily of very older stars than the less dense open clusters. Globular Clusters are not concentrated in the plane of the galaxy but are randomly distributed throughout the halo. There are several hundred globular clusters associated with our galaxy. A typical GC is a few hundred light-years across.

Large galaxies can have many more GCs. Andromeda may have around 500 GCs while M87, the giant elliptic galaxy in Virgo, has over 13,000 GCs.

Classification

Globular clusters classification uses the system developed by H. Shapley and H.B. Sawyer. This classification uses Roman numerals from I (highest stellar density cluster) to XII (lowest stellar density cluster):

- **Class I, II, III:** Visible high stellar density at their core, with a halo around decreasing in luminosity as a function of the distance from the core. (*M75 is a globular cluster of class I in Sagittarius.*)
- **Class IV, V, VI:** The core stellar density is still visible, but is more spread out and not as dense. (*M62 is a globular cluster of class IV.*)
- **Class VII, VIII, IX:** The cluster’s stellar density is more homogeneous and less contrasted. (*M22 is a globular cluster of class VII in Sagittarius.*)
- **Class X, XI, and XII:** The cluster’s surface luminosity is completely homogeneous with no increase in stellar density visible at the core. (*M55 is a globular cluster of class XI in Sagittarius.*)

The smaller the number of stars, the higher the core's stellar density.

Example Target Classifications

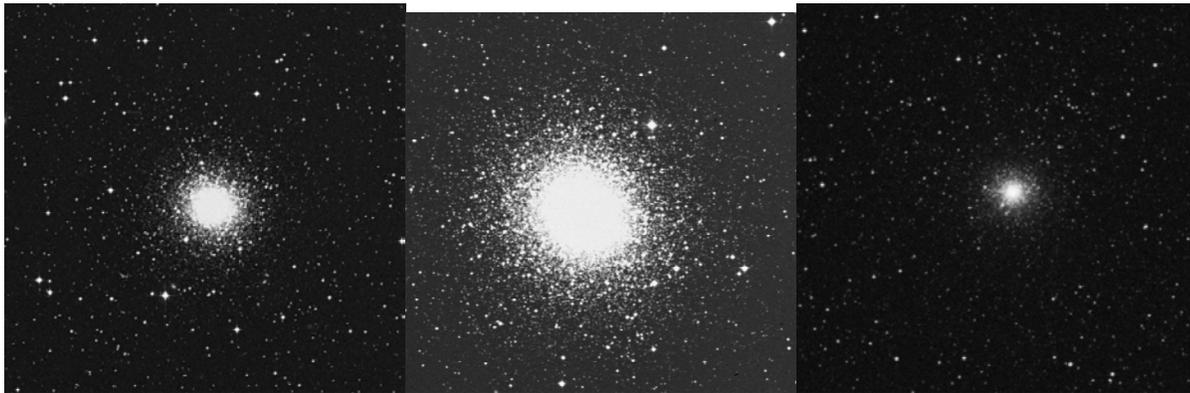
Class	Description	Messier	NGC	Con.	Size	Mag
I	High concentration toward the center	M75	6864	Sgr	6'	9.1
II	Dense central condensation	M2	7089	Aqr	13'	6.4
III	Strong inner core of stars	M54	6715	Sgr	9'	8.4
IV	Intermediate rich concentrations	M15	7078	Peg	12'	6.3

The High Desert Observer



V	Intermediate concentrations	M30	7099	Cap	11'	7.0
VI	Intermediate	M3	5272	CVn	18'	6.3
VII	Intermediate to loose concentration	M22	6656	Sgr	24'	5.1
VIII	Rather loosely concentrated towards the center	M14	6402	Oph	12'	7.6
IX	Loose towards the center	M12	6218	Oph	15'	6.8
X	Loose	M68	4590	Hya	12'	7.3
XI	Very loose towards the center	M55	6809	Sgr	19'	7.4
XII	Almost no concentration towards the center	-	5466	Boo	11'	9.0

Digital Sky Survey Samples



M75 Class I

M2 Class II

M54 Class III



M15 Class IV

M30 Class V

M3 Class VI



M22 Class VII

M14 Class VIII

M12 Class IX



Exercise: Classify the Images Below



Try to classify the above images using the twelve sample images provided previously.

It is not as simple as one would expect. Observing multiple clusters will give you the required experience to distinguish the classes. My observing sessions required viewing the Messier objects several times to get the necessary fine tuning required for the proper classification. It is comparable to “wine tasting” when one immediately knows the difference between the extremes of good wine and a bad wine (see M2 and NGC 5466 above) but it takes more practice to distinguish excellent and very good wines (see M3 and M14 above).

The answer to the above classification exercises is at the end of this article.



Globular Types

Besides the Shapley-Sawyer Globular Cluster Concentration classification, the GCs are also categorized by the following:

	TYPE
b	Hub Globulars
o	Halo Globulars
r	Far Halo Globulars
m	Magellanic Globulars
x	External Globulars
none	Unknown/ no classification

Most GCs orbit a galaxy to a radius of 30-40 kiloparsecs (kpc) [approximately 100k to 131K light-years] and are about 10 kpc above and below the galaxy plane, thus are considered halo GCs. Some are in the thick disc and are closer to the center than our sun. These are the hub GCs. The “o” and “r” types are determined by the distance from the center. There are some external GCs that are 60 to 100 kpc from the center of our galaxy. They may have been captured by our galaxy from some nearby dwarf galaxies. Palomar 5 is of this type since gravitational pull has stripped away much of the mass from Palomar 5. It eventually will be a long string of stars orbiting the Milky Way halo.

External Galactic GCs

There are quite a few GCs located outside our galaxy that are within the view of the typical visual observer. M31 has over 25, M33 has several, and the Fornax Dwarf galaxy has six. However, some, if not all, require dark skies and large aperture telescopes. These objects are a challenge to locate and observe. Only NGC 1049, the largest and brightest globular in Fornax, has been observed at Corralitos Ranch with good seeing conditions.

Near, Far, Brightest and Faintest Globulars

One always wants to consider what GCs in our galaxy are closest to us and most distant from us. The closest globular to our solar system is M4 (NGC 6121) in Scorpius at a distance of 6,800 light years. The most distant, located in Horologium, is the “well known!” AM 1 (Arp & Madore) at magnitude 15.7 and 30 arcseconds across. It is a mere 400,000 light-years from our solar system. The old favorite “The Intergalactic Wanderer” (NGC 2419/ Caldwell #25) which I have observed is just 300,000 light-years from our solar system.

Omega Centauri (NGC 5139/ Caldwell #80) is the visually brightest and largest GC in our galaxy. It comes in at a whopping magnitude 3.5 and a size of 36.3 minutes. The faintest and smallest GC award goes to the obscure UKS-1 in Sagittarius. It is listed at magnitude 17.1 and no size is listed. Barbara Wilson, a well known observer, after significant research and observations utilizing a new CCD image was able to observe this GC with a 36 inch aperture at 660X. It was estimated near 30 arc seconds in size and required seeing well beyond 17th magnitude. The smallest and faintest one that I have viewed to date is NGC 1049 in the Fornax Dwarf Galaxy at magnitude 12.9 and 48 arc seconds across. In the Milky Way, I have been able to observe Palomar 12 at magnitude 12.7 and 2.9 minutes with an 18-inch aperture at 320X with dark skies and good seeing conditions.



Collapsed Cores

Several GCs have collapsed cores. These GCs have stars that have collided or are in very close orbits at the center of the globular. There are twenty-nine globulars with collapsed cores. Twenty-three of these are in the Sagittarius-Scorpius-Ophiuchus region, which is the center of our galaxy where most globulars are located. Notables are M62, M70, M15, and M30. These are objects that we have observed many times.

In addition to having a collapsed core, M15 is notable for having the observable Planetary Nebula “Pease 1” within its structure, near the center of M15. Recently I have been able to star hop inside the core of M15 to locate and log this planetary nebular.

Notable Structural Parameters

Aside from the Shapley-Sawyer categories, there are other parameters associated with GCs. A concentration parameter is provided by NASA for all globulars ranging from 0 to 2.5. The 2.5 value is designated for most collapsed-core globulars. The interesting aspect of this useful NASA parameter is that there is no or little correlation between the Shapley-Sawyer Classification number and the concentration parameter. One would expect a high correlation between these parameters, but there is actually a negative correlation, which is not intuitive:

Parameters	Correlation
Shapley-Sawyer / Concentration	-.4192233
Magnitude/ Concentration	-.1846219
Size/ Shapley-Sawyer	-.0424743
Size/ Concentration	.04183916
Magnitude/ Shapley-Sawyer	.27929941
Resolution of Stars/ Concentration	-.0883367
Resolution of Stars/ Shapley-Sawyer	.29975395

You can see there is little correlation between the parameters. This may indicate the subjective nature of the evaluation of the GC parameters. The highest correlation is between resolving the stars in a globular and the Shapley-Sawyer classification.

Answers to the Image Test

All three GCs have the same classification of “V”. The first is an extra-galactic object in the Fornax dwarf Galaxy NGC 1049, next is NGC 5904 (M5) in Serpens Caput, and the last is NGC 6205 (M13) in Hercules.

The point of this exercise is that a balance of experience and good observing techniques is required to distinguish the GCs.

Summary

The Globular Cluster Observing Program is highly recommended to expand your knowledge and also to have a great time observing. Check the Astronomical League Web site for details (<http://www.astroleague.org>).



The Tombaugh Elementary School Star Party.

By Chuck Sterling

The autumn 2010 star party for Tombaugh Elementary School is now history, and apparently it went pretty well. I did not have much chance to look around at what others were doing, but I think we had about eight scopes and binoculars set up. I had intended to show Jupiter for a while, and then move on to Uranus and Neptune, but I never got past Jupiter. There was a line of people waiting to look at Jupiter and its moons through my old 10-inch LX200 SCT, for the whole evening. I got a late start after trying unsuccessfully two or three times to align the mount, and finally gave up, just tweaking it back to the target every few minutes since the telescope was tracking poorly. But Murphy's Law is alive and well; about a half hour before finishing, my jumpstart battery went dead. After that, I was tweaking it back on target between people. I got pretty good at doing that using the finder scope while people were using the eyepiece. That will teach me not to try and get two nights out of that little battery pack without recharging it.

I would not be surprised if over 300 people showed up for this star party. The weather was great with no wind, and no clouds to speak of, but there was a haze in the sky that might have masked some dimmer objects. We set up on the west side of the school away from the bright lights of a nearby car wash, which helped.

From the ASLC, I saw Dave Dockery, Ron Kramer, Jerry McMahan, and Steve Shaffer at the event. I apologize if I missed anyone. There were two others volunteers there that I think were from the NMSU Astronomy Department, but I did not get their names. We had excellent support from the teachers and staff of Tombaugh, as well.

Minutes, October 2010 ASLC General Meeting

By John McCullough, Secretary, ASLC

Call to Order:

Bert Stevens, President, Astronomical Society of Las Cruces (ASLC), called the meeting to order at 7:30 pm., 22 October 2010, Rm. 77, Doña Ana Community College (DACC), Las Cruces, New Mexico.

President's Comments:

Bert Stevens welcomed the group and recognized new members and/or visitors present.

Secretary's Report:

The minutes for the September meeting were published in the most recent issue of the Society newsletter, the High Desert Observer (HDO). Bert Stevens recommended that reading of the minutes be dispensed with. There were no objections. There was not an additional Secretary's report.

Treasurer's Report:

The Treasurer provided a report on the status of the Society's accounts. There has been no change in either the savings account or CD balances. Because of the recent depletions to the Society's checking account, the Treasurer strongly encourages members to pay dues and buy Society apparel. There was not an additional Treasurer's report.



Committee Reports:

Observatory Committee:

Rich Richins, Committee Chairman, reported that the ranger-in-charge at Leasburg Dam State Park (LDSP) recently contacted him about the status of the proposed observatory. He and Rich have exchanged several e-mails since then. The State of New Mexico is again expressing interest in having an observatory at LDSP. However, they would prefer to design and build the structure. Rich has emphasized that the Society design includes features such as space for additional telescopes and a warming room for users that prefer not to freeze during winter observing. Continued Society support for the observatory might depend on retention of these and other features. The ranger will check on these requirements and get back to Rich.

Apparel Committee:

Ron Kramer, Committee Chairman, provided an update on apparel sales and availability. Apparel worth \$1,100 has been sold, leaving \$450 in inventory remaining, including one (1) "hoodie". A re-order will be required once the treasury has recovered. However, several shirts and caps are available for purchase following tonight's meeting. Ron offered a motion that the minimum order for hoodies and caps (12 of each) be submitted to have them on hand for the cooler months; Wes Baker seconded. Janet Stevens suggested a straw poll to determine the interest in these items. The members present indicated there was sufficient interest to warrant an interim order of this size. The motion carried. This is a fund raising effort for the Society.

Outreach Committee:

Chuck Sterling, Outreach Coordinator, reported on the star party schedule for October so far: 09 Oct. at WSMR schools, 12 Oct. at FYI Girls' Shelter (second session), and 14 Oct. at Tombaugh Elementary School. Refer to the yahoogroups.com for details. Ron will continue coordination with the Mescalero Apache schools for a mass star party during the school year. Participation in the 2010 Renaissance Arts and Crafts Faire on 06-07 November is confirmed. Ron Kramer will coordinate this effort. Set-up at Young Park will start at 10:00 am, Friday, 05 November. Ron needs volunteers for set-up, 2-3 people to man the booth for 2 hour shifts each day, and finally, tear-down on Sunday afternoon. Contact him or sign-up tonight to confirm your availability to support this effort.

Tombaugh Observatory:

There was no update on receipt of keys for the new doors at the observatory.

Loaner Telescope Program:

Janet Stevens, Committee Chair, emphasized the need for eyepieces for Society-owned telescopes. Janet offered a motion that the recent donation of \$100 from Walter Haas be used to purchase eyepieces for the Society; Wes Baker seconded. Discussion that followed included noting that Orion has a number of eyepieces on sale. Also, it was suggested that the monthly meeting notification in the HDO could include a call for the donation of eyepieces from members. The motion carried.

There were no additional committee reports.

Old Business:

The Association of Lunar and Planetary Observers (ALPO) Convention - The Society's invitation to hold the 2011 ALPO Convention in Las Cruces has been accepted for the first or second week of July 2011. Vince Dovydaitis will chair the planning committee. Jerry Gaber asked about the responsibilities that the Society has taken on. Bert Stevens responded "running the convention".

There was no additional old business discussed.



New Business:

Frank Miller donated an astronomical video as a substitute for a future presentation.

December Meeting/Christmas Party - The meeting/party is planned for 04 December at the EAA hangar. Planning continues, and the party will probably consist of a potluck dinner.

2011 Officer Nominations - The following members have agreed to serve as officers next year:

- President - Ron Kramer
- Vice-president - Open
- Treasurer - Janet Stevens
- Secretary - John McCullough
- Director - Wes Baker
- Director - Open

Elections will be held in November.

There was no additional new business for discussion.

Rich Richins offered a motion to adjourn; Jerry Gaber seconded. The motion passed and the business portion of the meeting was adjourned at 7:56 pm.

Announcements:

Items for Sale:

No items were announced for sale.

Recognitions/Achievements:

No recognitions or achievements were announced.

Announcements:

There were no announcements made.

Presentation:

The October program was presented by Society members Steve Barkes, Rich Richins, and Dave Dockery. Their topic was "The 27th Okie-Tex Star Party". The star party was held 02-10 October near Kenton, OK, in the Oklahoma Panhandle and was hosted by the Oklahoma City Astronomy Club. Dark skies and good times were plentiful and all three recommend it as a possible alternative to the White Sands Star Party.

This presentation was not recorded for rebroadcast on the Internet. Other meeting presentations can be accessed on the web at <http://www.aics-research.com/lectures/aslcnm/>.

The October 2010 monthly meeting concluded at 9:05 pm.

-Respectfully submitted by John McCullough, ASLC Secretary



Calendar of Events November-December (MST)

Nov. 19	7:30 p.m.	ASLC Annual Business Meeting
20	5 p.m.	Mercury 1.7 degrees south of Mars
21	10:27 a.m.	Full Moon
28	1:36 p.m.	Last Quarter Moon
Dec. 05	10:52 p.m.	New Moon
13	6:59 a.m.	First Quarter Moon
14	4 a.m.	Geminid meteor shower peaks
21	1:13 a.m.	Full Moon-Total Lunar Eclipse
21	4:38 p.m.	December Solstice-Winter Begins
27	2:18 p.m.	Last Quarter Moon

Be sure to visit our web site for the latest updates: <http://www.aslc-nm.org>

ASTRONOMICAL SOCIETY of Las Cruces
PO Box 921
Las Cruces, NM 88004



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

