



## President's Message - September 2010



School is back in and we are starting to get requests for school star parties. As every year, we need as many people as possible to step up and volunteer to make these successful events for the kids. Speaking of volunteering, Chuck Sterling has again taken the role as Outreach Coordinator and is planning these star parties. If you get a request for a star party, please let Chuck know so he can rally the troops for the event and make sure there are no conflicts. My thanks to Ron Kramer for holding down this post until Chuck stepped in.

At the August meeting, the Society voted to tender an invitation to the A.L.P.O. to hold their convention in Las Cruces next year. We have still not heard a response from them via Walter Haas, but I am sure we will hear soon. As a long-time A.L.P.O. member, I think this will be an interesting event for everyone in the Society who has ever looked at the planets or the Moon to attend. I will keep you informed on how this event progresses.

Our observatory at Leesburg Dam State Park seems to be mired in administrative issues. While the State is still interested, we have various hurdles to jump before we can even begin laying the slab. I do not want to get this effort off track, but it does seem to be stuck. Is there anyone who has an alternative proposal or at least can help Rich move the observatory forward?

With the year coming to an end, the 2011 edition of the Royal Astronomical Society of Canada's famed Observers Handbook has become available. As we have done in previous years, the Treasurer will be taking orders for the Handbook and the RASC Calendar. This year, the Handbooks are \$21.00 each and the Calendars are \$12.00 each. Please get your order in to the Treasurer no later than September 30, 2010. The Handbook is chock full of information, observational tips, and predictions for next year.

We are still looking for officers for next year. We have many open positions, especially the Nominating Committee Chair. If you would like to chair the nominating committee for 2011, please let me know. Please consider running for an ASLC office. We can always use some "new blood" to step-up and help out the astronomical society.

We have a great talk Friday, September 24, on observing Jupiter with tips and ideas how to use your observation for scientific research. See you there!

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

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Walter Haas

This Month's Observer

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Next Meeting

Dave Dockery will present "It's Jupiter Season Again! - All the Latest Jovian News, Weather, and Imaging/Observing Tips".

Once again, Jupiter is favorably located for study as the Earth swings in toward closest approach. This talk will cover the recent disappearance of the South Equatorial Belt and possible comet and asteroid impacts that were captured by amateur astronomers over the past few months. There will also be tips on how you can contribute to planetary science with images and observations of Jupiter.

Officers Needed for 2011

We need to fill the following positions for next year:

President

Vice-president

Secretary

Treasurer

Directors-at-Large (2)

We can also use a nominating committee chair. In the meantime, 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 August 14, 2010, Moongaze and a Star Party

By Jerry McMahan

The August Moongaze was held at the International Delights Restaurant on El Paseo in Las Cruces. Chuck Sterling attended with his 10-inch Meade Schmidt Cassegrain. Jerry McMahan brought the 5-inch Meade Maksutov Cassegrain.

It did not look very promising since it was very cloudy in the early afternoon. I set up the 5-inch and Chuck waited to see if it would clear up before setting up the 10-inch. After setting up the 5-inch, it did start to rain. I had brought a garbage bag so it was easy to cover the telescope until the light rain stopped.

It did start to clear in time to view Venus and Mars, but we missed Saturn which had already set. The Moon was a couple of days before first quarter which is not one of my favorite views (Translation: I don't know much about that part of the Moon). The Moon set early, but at about 11:00 P.M., Jupiter cleared the building. It was the first look at Jupiter this year, for Chuck and I. Sure enough, the South Equatorial Belt was missing. The Red Spot was on the other side of the planet, as it always is when I observe Jupiter.

All four Galilean Satellites were visible early, but I need to pay attention to what our visitors were seeing. I continued to talk about all four when someone finally said they were only seeing three. I looked, and sure enough, Io had passed in front of Jupiter. I don't know how many other people might have seen only three without saying anything.

Two young boys spent a lot of time with us, while their parents were eating. One boy, about six or seven years old, said several times, that he could see an alternate universe through the telescope. The five-inch is apparently a lot more powerful than I thought it was!

Despite the bad start with clouds and rain, it turned out to be a decent evening.

On September 9, a star party was held at the FYI Group Home for girls. Attending were Chuck Sterling who bought his 10-inch Meade and his 4-inch Orion refractor. Ron Kramer brought his 5-inch Meade refractor. Jerry McMahan brought the 5-inch Maksutov Cassegrain.

Some of the objects we observed were the planets Venus, Mars and Jupiter. Among the deep sky objects seen were the Double Cluster, galaxies M31, M81 and M82. We also looked at the double stars Albireo, Mizar and Alcor.

There was a problem with one of the lights that they could not turn off, but we will have a better idea where to set up next time. The girls and the ladies in charge seemed to have a good time and were interested in the things they saw. It is possible that Ron's classic truck was a bigger hit with the girls than the telescopes.

## The AstroTrac System

By George Hatfield

In June, 2009, I wrote an article for the HDO on lightweight travel mounts for astro imaging. As I mentioned in that article, we usually travel north in our motorhome during the summer and I wanted something light and portable to allow imaging while we are on the road. We've visited some very nice dark sky areas (e.g., Bryce Canyon and Arches National Parks) in our travels and it would be nice to be able to image on some of those clear and totally dark nights.

Until last spring, I had a backyard observatory equipped with a pier and Takahashi NJP mount. Even with a Losmandy G11 tripod, that setup weighed about 100 pounds. Plus, it took up a lot of room in the motorhome. So



last year I bought a Takahashi Space Boy mount. It is a very nice mount, complete with a built in polar scope. The Space Boy tracks in R.A. and provided round stars in the few 3-minute images I took with it. But the Space Boy also took up a lot more space than I had available. I decided to sell it and get something even more compact.

When I wrote the review of travel mounts in 2009, I decided against the AstroTrac because some of the reviews implied it was difficult to get a good polar alignment. At that time it came with a decent polar scope, but the AstroTrac mount had to be mounted on a good quality tripod, geared head and ball head (e.g., like those from Manfrotto). These accessories are designed for photography, not astronomy. Thus, adjusting the heads to get Polaris into the view of the polar scope seemed like it might be a challenge. However, this spring AstroTrac came out with a "System" that includes an astronomical wedge and a counter-weighted head that promised to make all of this simpler. It also came with a well designed pier that eliminated the need for a tripod.

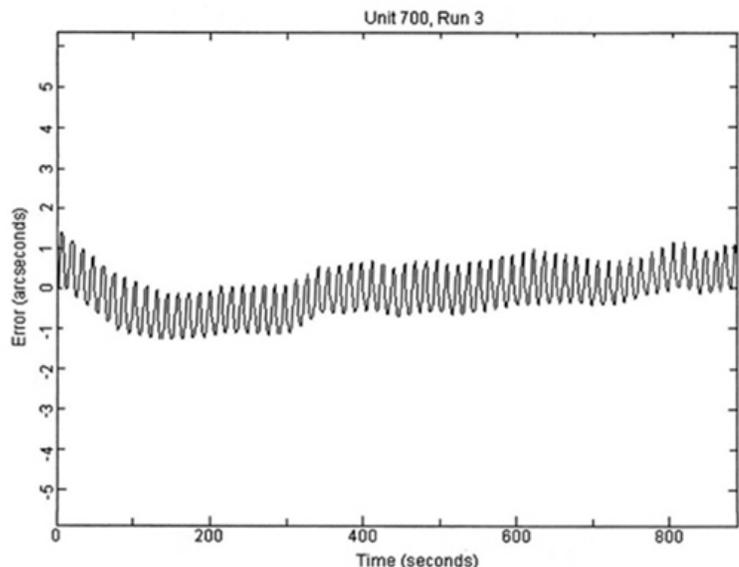
So earlier this year, I bought an AstroTrac System. The actual mount only weighs about 3 pounds! When folded for storage it is very compact (see Figure 1). The action of the AstroTrac mount is similar to more traditional equatorial mounts (e.g., a GEM) in that it provides a counter rotation of the camera or telescope in right ascension (R.A.). This allows long exposure imaging (usually up to 5 minutes) of celestial objects without elongation due to the rotation of the Earth. However, this mount looks nothing like a traditional GEM as can be seen below (Figure 1).



Figure 1: AstroTrac TT320X-AG folded for storage (AstroTrac literature)

The AstroTrac looks more like a boomerang than a piece of imaging equipment. When it is operating, the precision 12-volt motor turns a very long screw which pushes one of the mount's arms to the left, thus rotating the head at the correct rate (sidereal, lunar or solar are available). The latest model (TT320X-AG) claims a tracking error of no greater than 5 arc-seconds peak-to-peak (Figure 2).

Figure 2: AstroTrac tracking error (AstroTrac literature)



As I mentioned, recent product developments that have made the AstroTrac some-what easier to use are the AstroTrac TH3010 head and TW3100 wedge. These can be seen in Figures 3 and 4 on the next page.

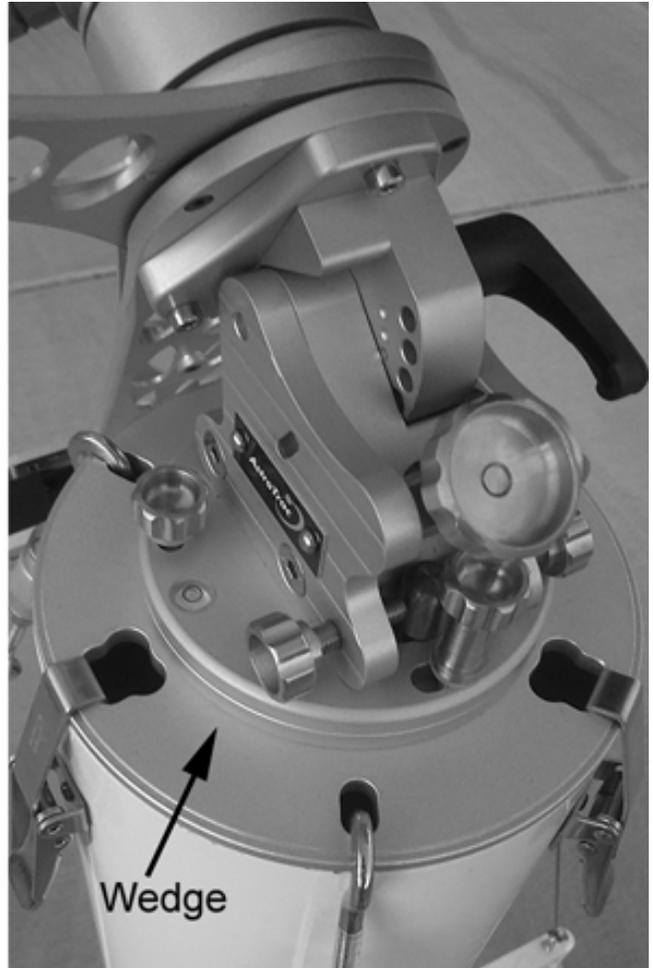
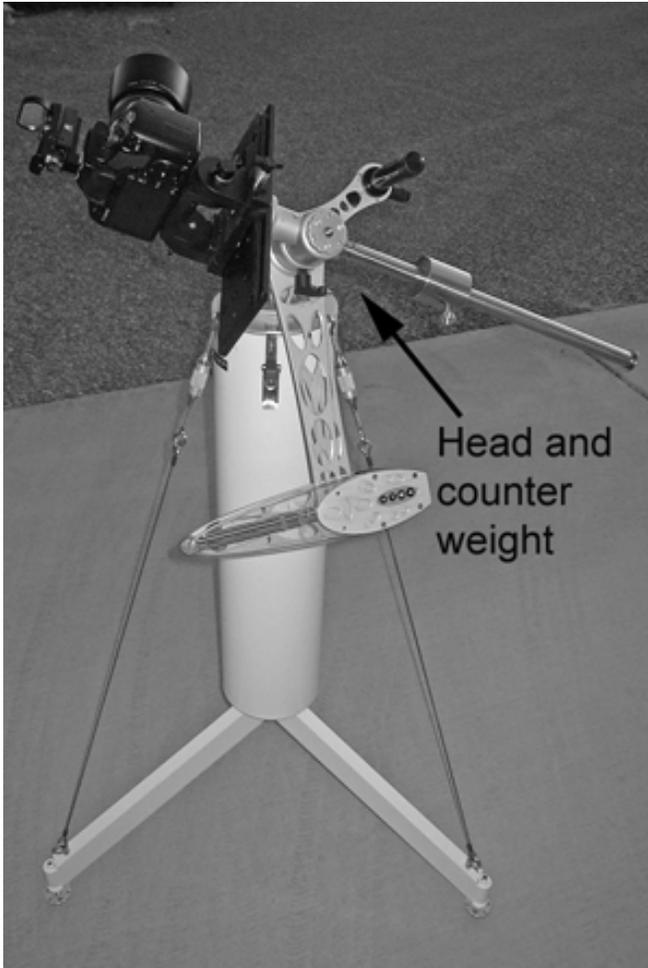


Figure 3: AstroTrac Head

Figure 4: AstroTrac Wedge

The wedge is nicely made with smooth adjustments for altitude (i.e., latitude) and azimuth. There is a fairly accurate latitude scale on the side of the wedge. It really makes it easy to get Polaris into view. The polar scope field is very similar to the one used by Losmandy (Figure 5, from the AstroTrac Yahoo group). It attaches to the mount in a unique way: via a magnetic ring. This provides a precise means of attaching the polar scope to the lever-like bracket that holds the scope to the mount (Figure 6). The only problem with this arrangement is that the scope can easily be knocked from its position and fall to the ground. It is made almost entirely of plastic and won't take much abuse. The other problem with the polar scope is the illuminator (red) which is way too bright. That can be solved by putting a bit of black tape or paint on the LED.

A precise polar alignment requires placing both Polaris and a second star (delta Ursa Minoris) in the proper place in the scope (Figure 5). Polaris is plenty bright enough, but the second star is magnitude 4.3 and is often hard to see. It "comes and goes" in the field, but is usually visible long enough to get it in the right place. The magnetic attachment makes it easy to rotate the polar scope to the proper position. A third star can also be used, but it is even dimmer. Overall, the polar alignment is fairly easy and it holds well. I often take 5 x 3-minute exposures and then check the alignment before the next series. I rarely have to make an adjustment over an hour or more of imaging.

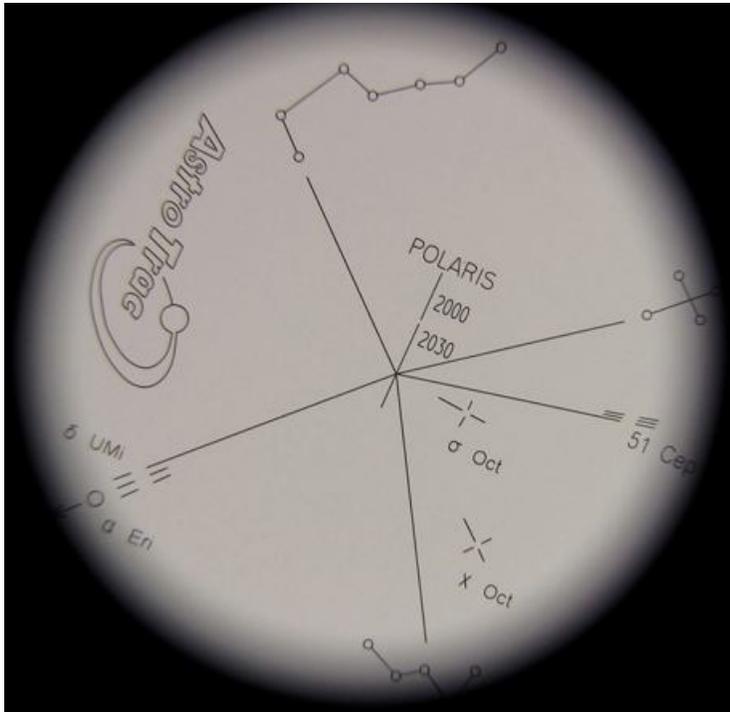


Figure 5: Polar scope field (AstroTrac Yahoo user group)

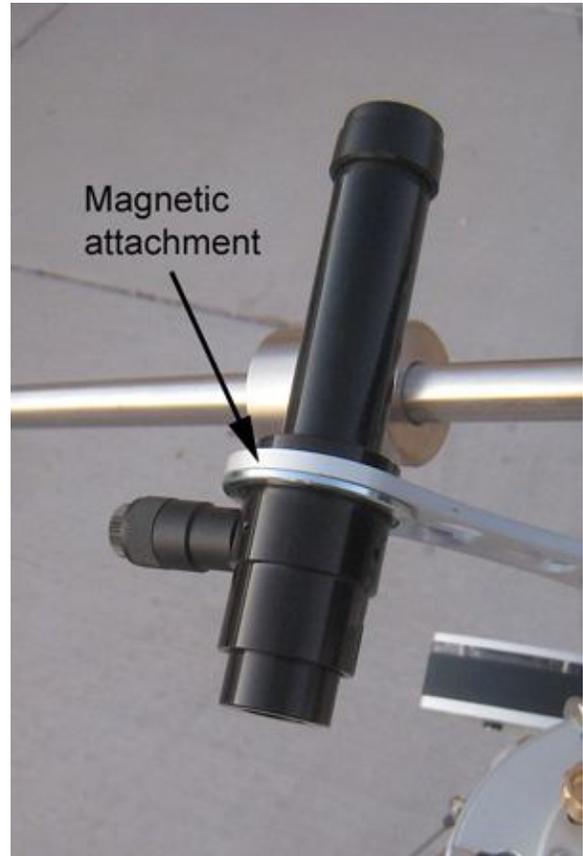


Figure 6: AstroTrac polar scope magnetic attachment

The head allows adjustment in both R.A. and Dec. One nice thing about the head is that it allows one to counterbalance the imaging setup in R.A. The biggest drawback of the AstroTrac head is that it is difficult to make precise changes in position. For example, if you want to make just a small change in R.A. or Dec. to better frame the image, it can be difficult to do precisely. This is a big difference from the usual GOTO GEM mount where very precise changes in position can be made often with the assistance of planetarium software, such as "The Sky." With AstroTrac you basically loosen a knob to move either R.A. or Dec. This is not a big problem if one is only using a camera and a lens for wide field images (e.g., a focal length of 200mm or less). The field of view is so large that even a coarse move does not change the field that much. But this arrangement could be very frustrating if one was using a telescope with a much narrower field of view. It might actually be better to use an adjustable photographic geared head if precise adjustments are needed.

Once the polar alignment is completed and the field of view is optimal for the image, it's time to start imaging. The AstroTrac can track for about two hours. Unfortunately, that does not translate into two hours of imaging. I use "Images Plus" for camera control and focusing. The focusing module measures the size of a star in the image field. As the star size gets smaller, the focus gets better, so one adjusts focus to minimize star size. Unfortunately, this approach only works when the camera is tracking the star since any movement of the star in the field elongates the image and Images Plus gives a larger star size number even if the focus has improved. I often spend about 5-10 minutes getting the focus right. Then I spend another 15-20 minutes framing the image, sometimes longer. So when I start imaging, I only have about 1.5 hours left of tracking time. This would be a severe limitation if one was using a monochrome camera with filters that require a large number of exposures.

This brings up another topic that is not unique to the AstroTrac, but is a problem in wide field imaging, and that is aiming the camera. On a dark night, looking through the camera finder is hopeless. I use a red dot finder mounted on the "shoe" of the camera which works very well for initial aiming (see Figure 3). Then I start taking 30-second JPEG images to see what field I have and make adjustments accordingly.



Another disadvantage of the AstroTrac mount is that one has to rewind the mount after two hours. This means the field of view returns to the position in the sky (relative to the Earth) where one started the AstroTrac two hours previous. That makes it very difficult to get precisely aligned images from two or more AstroTrac two-hour sessions.

The last part of the AstroTrac System that I should mention is the pier (see Figure 3). When disassembled, the pier stores its legs, the AstroTrac mount, and the wedge inside the body of the pier. The pier body fits into a padded carrying bag which is perfect for travel. The head, counter weight shaft, weights, camera, and any mounting equipment used to attach the camera to the head must be stored elsewhere. When in use, I usually put a couple of 10 pound weights into the pier to provide more stability.

One AstroTrac feature that I have not used is the ST-4 compatible guiding (R.A. only) that is now available with the AstroTrac (AG model). I think this would only be useful when the image scale is fairly small (say less than 5 arcseconds/pixel). Normally with my wide field images I am at an image scale of about 15 arcseconds/pixel (no wonder I get round stars!)

How do I like the AstroTrac System? I like it very much. I've had it out about five nights so far (including two in Anacortes, WA) and have only used it with my modified Canon XSi and a Canon 85mm lens. As mentioned above, the polar alignment works like a charm. But at the image scale I normally work at, it is hard to go wrong. I have used 3-minute exposures for most of my images and the stars have been nice and round, amazingly so. The limitation of only two hours of tracking has not been a problem either, since an hour or so of exposure time is usually more than enough for wide field DSLR images. I have not used the AstroTrac with a telescope, but may give my Borg 77ED (500mm focal length) a try in the future. I may never use the guiding feature. Having to pack a guide scope, mounting paraphernalia and another camera is prohibitive while traveling.

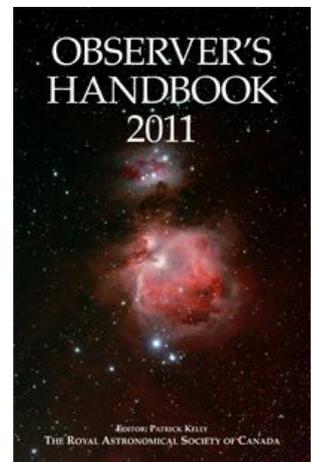
In summary, the AstroTrac is a mount that fits a niche in astronomical imaging: wide field imaging with a DSLR. Add a telescope, guiding, and perhaps a monochrome camera with filters and the limitations of the AstroTrac become more significant. But for wide field imaging, especially while on the road, it is hard to beat.

## RASC Observers Handbooks and Calendars -- 2011 Editions

By Janet Stevens, Treasurer, ASLC



I will be ordering the RASC Observer's Handbooks and Observer's Calendars for 2011 early in October. If you would like to order either one, or both, please let me know by the end of September. I can be reached via e-mail at [jaslcnm/at/comcast.net](mailto:jaslcnm/at/comcast.net), or by telephone at 382-9131. You can also let me know in person at the September ASLC meeting. If we get between 10-24 orders, the price will be \$21.00 per book. We typically receive orders for 18-20



handbooks. We need at least five Calendars ordered to get the discounted price of \$16.00 each. Bert and I have last year's calendar and thought it was quite nice. The pictures were all taken by amateur astronomers rather than the professional images found in commercial calendars.



## The Loaner Telescope Program Update

By Janet Stevens, Chair, ASLC Loaner Telescope Program Update

I have a list of telescopes that were donated to the ASLC and can be loaned to our membership. However, we have only a few eyepieces for all of them. We have two solar telescopes and a full set of eyepieces for one of them, but only one eyepiece (32mm), and none for any of the other telescopes. While a number of ASLC members own both telescopes and eyepieces, there are some members who own neither. In order to loan our telescopes to those members, we need to have eyepieces for those telescopes. If you have any spare eyepieces that you would like to donate to the ASLC for the Loaner Telescope Program, or make a contribution to the program, please contact me via e-mail at jaslcnm /at/ comcast.net, by telephone at 382-9131, or at an ASLC meeting.

## Minutes, August 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., 27 August 2010, Rm. 75, Dona Ana Community College 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 July meeting were published in the most recent issue of the Society newsletter, the High Desert Observer (HDO). Steve Barkes moved to dispense with reading the minutes; Ron Kramer seconded. The motion passed with one objection. 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. She also passed around an article featuring member Rich Richins from the Las Cruces Sun-News. There was not an additional Treasurer's report.

### Committee Reports:

#### Observatory Committee:

Rich Richins, Committee Chairman, did not have an update on the status of the Society observatory proposed for Leasburg Dam State Park (LDSP).

#### Apparel Committee:

Ron Kramer, Committee Chairman, provided an update on apparel sales and availability. Apparel worth \$1064 has been sold, leaving \$482 in inventory remaining, including one (1) "hoodie". A re-order will be required soon. However, several shirts and caps are available for purchase following tonight's meeting.

#### Outreach Committee:

Ron Kramer, Outreach Coordinator, reported a star party was held at Bethel 2nd Baptist Church this month with six (6) members supporting. Chuck Sterling will resume duties as coordinator this month. This is critical as



requests for star parties and in-class presentations are already being received with the beginning of the school year. Ron will continue coordination with the Mescalero Apache schools for a mass star party during the school year. He announced the Society's double-stack solarscope is available for use during daytime presentations.

Tombaugh Observatory:

Steve Barkes reported that new doors have been installed on the observatory structure, although they still require priming and paint. Twelve (12) new keys will be available and Steve will keep one on-campus. None of the cost of the work has been assessed to the Society.

Loaner Telescope Program:

Janet Stevens, Committee Chair, reported she still needs input to establish the status of Society-owned telescope eyepieces or donations of eyepieces to use with Society-owned telescopes.

There were no additional committee reports.

**Old Business:**

There was no old business discussed.

**New Business:**

Association of Lunar and Planetary Observers (ALPO) Convention - The Society has received an inquiry regarding hosting the ALPO 2011 convention. This is usually a 2-day event held in late spring/early summer with usually seventy (70) attendees. The convention includes meeting sessions and tours. Vince Dovydaytis suggested the Society proceed with hosting the convention. Discussion concerning the effort involved, including previous conventions, ensued. Vince revised his suggestion to a motion to extend an invitation to ALPO to hold its 2011 convention in Las Cruces. Fred Pilcher seconded. The question was called and the vote was yeas: 13, nays: 1, abstentions: 2.

The motion carried. Ron Kramer, Vince Dovydaytis, and Fred Pilcher will work with Walter Haas to extend the invitation for the third or fourth week of July 2011.

There was no additional new business for discussion.

Ron Kramer offered a motion to adjourn; Janet Stevens seconded. The motion passed and the business portion of the meeting was adjourned at 8:07 p.m.

**Announcements:**

Items for Sale:

No items were announced for sale.

Recognitions/Achievements:

No recognitions or achievements were announced.

Announcements:

**ALCon (Astronomical League Convention) 2011.** Bert and Janet Stevens attended this year's event in Tucson, AZ. The Astronomical League (AL) is working with the National Park Service (NPS) to hold ALCon 2011 at Bryce Canyon National Park. The proposed dates are 30 June, 1-2 July 2011. Rooms, camping and RV sites will be available at Ruby's Inn, UT (rooms \$80 per night, down from \$150), altitude 8200 feet. This will be an observing meeting with the observing site at 9000 feet available to ALCon attendees. The closest airports are



Salt Lake City, UT, and Las Vegas, NV.

**Beginning Astronomy classes.** Ron Kramer announced his summer class through DACC Continuing Ed was complete and the fall class would be starting in September.

**Program Presenters.** Kirby Benson needs presentations for the rest of this year. Articles for the HDO are always needed.

There were no additional announcements made.

**Presentation:**

The August program was presented by Society member Paul Temple. Paul first presented an update on his research on the central dwarf star in M57. It appears that the blue white star is variable to 0-8 magnitude but exhibits chaotic fluctuation.

Paul's topic for this month was "Navajo Cosmology". Paul taught high school science to the Navajo reservation for several years and described how cultural considerations affected the presentation of science topics. Navajo winter stories describe the Navajo culture and nature, and are still used today. The culture is built on a system of "4's", i.e., four cardinal directions, four stages of life, four sacred stones, the four sacred mountains that bound the *dine' tah*, or Navajo homeland. The Navajo also have a concept of order versus chaos embodied in the talking god and coyote, respectively. The Navajo had this concept long before it was developed in the West in the 20th century. Paul proceeded to illustrate this by telling several Navajo stories describing creation of this universe.

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

Bert Stevens wrapped up the meeting by emphasizing the following:

- Three talks are needed for the remainder of this year.
- Articles are always needed for the HDO.
- A nominating committee and chair are needed to draw up a list of potential officer candidates for 2011.
- Planning for the December meeting/holiday party is required.

The August 2010 monthly meeting concluded at 8:55 p.m.

-Respectfully submitted by John McCullough, ASLC Secretary



**Calendar of Events September-October (MDT)**

|          |            |                               |
|----------|------------|-------------------------------|
| Sept. 30 | 9:52 p.m.  | Last Quarter Moon             |
| Oct. 07  | 12:44 p.m. | New Moon                      |
| 09       | Morning    | Venus 3 degrees south of Moon |
| 14       | 3:27 p.m.  | First Quarter Moon            |
| 15       |            | Deadline for the October HDO  |
| 21       | 9 a.m.     | Saturn near Porrima           |
| 22       | 7:36 p.m.  | Full Moon                     |
| 22       | 7:30 p.m.  | ASLC General Meeting          |

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

