



## President's Message - May 2011



Can you believe it's May already? The winds are howling, the sand is flying and the flowers (?) are blooming.

We had a great April meeting. Copies of the new Society brochure were distributed, we finalized the revised By-Laws and approved the 2011 Fiscal Year Budget. We also had a great presentation by Adam McKay on his comet research.

At our next meeting on May 27, we will discuss the Leasburg Observatory (the project has been approved by the New Mexico Parks Department and we now must decide whether to go ahead with the project. It was approved way back in 2007 (or so) and I believe it is time to re-discuss the opportunity, and barriers to this important program.

Some questions we need to answer include:

- Will the 16" instrument be used primarily for Outreach or Research?
- How much of our treasury are we willing to spend to make this a reality?
- Is Leasburg Dam State Park the most ideal site?
- When do we start construction?
- How many volunteers will we have from our Society?

There are many more questions which will be discussed at the May meeting. Much of this meeting will be used to put together a plan for the Observatory.

We will also collect the remaining ballots for the final vote on the revised By-Laws. The attending members at the April meeting voted to accept the revised By-Laws, but according to the By-Laws we must have a 2/3 majority by all voting members. A ballot was sent out earlier and it is due back to your Secretary on June 5, 2011. Please return your ballot on time. Thanks.

We are getting closer to the A.L.P.O. Conference and we will have an update from our Chair, Bert Stevens. I am certain he is still looking for volunteers to help in the coordination of activities.

Don't forget we also have a variety of apparel items, including shirts, hoodies, hats, etc. available for sale. Your Society earns \$1.00 per item sold which helps our Treasury. Contact Ann McPhee for details. While you have your wallet open, please don't forget to pay your dues; it's our major source of income which is needed for many of the projects scheduled for 2011. Thanks, again.

I hope you are able to attend the May 27 meeting. Please check our website ([aslc-nm.org](http://aslc-nm.org)) for further details.

Your President,  
Ron J. Kramer



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, 2011

[Board@aslc-nm.org](mailto:Board@aslc-nm.org)

President: Ron J. Kramer

[President@aslc-nm.org](mailto:President@aslc-nm.org)

Vice President: Tracy Stuart

[VP@aslc-nm.org](mailto:VP@aslc-nm.org)

Treasurer: Janet Stevens

[Treasurer@aslc-nm.org](mailto:Treasurer@aslc-nm.org)

Secretary: John McCullough

[Secretary@aslc-nm.org](mailto:Secretary@aslc-nm.org)

Immediate Past President  
Bert Stevens

[Ppresident@aslc-nm.org](mailto:Ppresident@aslc-nm.org)

Directors:

Wes Baker

[Director1@aslc-nm.org](mailto:Director1@aslc-nm.org)

Nils Allen

[Director2@aslc-nm.org](mailto:Director2@aslc-nm.org)

Education Chairman: Rich Richins

[Education@aslc-nm.org](mailto:Education@aslc-nm.org)

Newsletter Editor: Bert Stevens

[blslcnm@comcast.net](mailto:blslcnm@comcast.net)

Emeritus (life) Member  
Walter Haas

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Next Meeting

The May meeting will be a discussion on the proposed ASLC Observatory at Leesburg Dam State Park. While we have been discussing an observatory for a long time and have been trying on and off to get one built, an operational observatory has eluded us. This meeting will focus on the observatory, our goals for it, and how and where we would bring it to fruition. We desperately need your input, pro or con. We must all be behind whatever we decide to do and back it up with our "blood, toil, tears and sweat" (Churchill). Your input is essential. Please join us.

Articles Needed

The High Desert Observer is **your** astronomical society newsletter. The quality of the newsletter can only be obtained if we get high quality articles from people like **you**. Please take some time and write an article on what you are doing in astronomy that you would like to share with your fellow amateur astronomers. Thanks in advance for your efforts!.

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. We also frequently provide solar observing at the Farmer's Market on Saturday mornings. For information on these and other events, please see the ASLC website at <http://www.aslc-nm.org> .



## April-May Outreach Activities Roundup

By Jerry McMahan

### Moongaze - April 9, 2011

It was not a matter of seeing a U.F.O this time. It was a matter of whether we would see anything. In daylight, on the way to International Delights Cafe, I could not tell the difference between clouds, dust, or open sky and the wind was pretty bad. Bernie Joplin is taking the same Algebra class that I teach, but with a different teacher. He had asked for some help with his homework, so Chuck Sterling and I met him at the Cafe.

While helping Bernie, Chuck would occasionally go outside to check on conditions. Finally, the sky cleared and the wind died down. The seeing was just so-so, but it was good enough that Chuck was able to show people a fairly good image of Saturn with his 10-inch Schmidt-Cassegrain and I was on the Moon with the 5-inch Maksutov. All in all, we had a successful Moongaze, in spite of the initial lack of promise.

When Bernie finished his homework, he came out and operated the 5-inch 'scope for me. This was the second month in a row that someone else did most of the work for me. Now if I could only find someone to teach my Algebra class, I could really take it easy. Wait a minute, Bernie is taking that Algebra class...

### Earth Day minus 6 days – April 16, 2011.

On Saturday, April 16, New Mexico State University sponsored an Earth Day event at Young Park. Several Society members supported the event. Niles Allen and his wife attended and Rich Richens set up a hydrogen-alpha solar 'scope in the afternoon. Chuck Sterling brought his 10-inch Meade, Jerry McMahan had the 5-inch Maksutov, Steve Shaffer had a small Dobsonian, President Ron and Trish Connely operated the 5-inch Meade refractor. Also in attendance were Stan Chiochio, his wife, and their 8-inch Celestron Schmidt-Cassegrain.

### Moongaze 2 - May 7, 2011

The May Moongaze was attended by Steve Shaffer with his 8-inch Dobsonian, Steve Barkes who brought his homemade Dobsonian, Chuck Sterling had his 10-inch Meade and I had the 5-inch Maksutov-Cassegrain. Dave Dockery also stopped by for a little while.

(This reminds me that when I went to the Community College on Sunday to do some tutoring for a final exam, I saw Dave among a number of other people, all with musical instruments. I thought, at first, Dave had a telescope. They took turns singing and I was very impressed with how good they were. Obviously Dave had more talents than just with a telescope.)

We had a good turnout of observers at the Moongaze. It was pretty steady until after 10 p.m. Steve Shaffer pointed out that a number of cars came by and stopped so the people inside could ask what we were doing. Once we told them, they parked their cars and came to look the Moon and Saturn.

Later in the evening, I noticed that the fairly thin crescent Moon started to show a reddish tint. Both Chuck and Steve Shaffer suggested that it was probably a combination of getting lower in the sky, and smoke in the air from the various fires.

International Delights Café has also gone back to their old hours of closing at midnight.

### La Academia Dolores Huerta Charter School - May 11, 2011

This charter school only has 120 students (middle school level). Still, the attendance at our star party rivaled that of much larger school. We had long lines at each telescope and were there at least an hour past the scheduled ending time. The questions asked were intelligent, so obviously there are bright kids at this school. We even had one boy that was asking about joining the Society. Maybe we will gain a young member.

Rich Richens gave a daytime presentation with one of the solar scopes that was very well received by the



students and teachers. The evening program was attended by Chuck Sterling (10-inch Meade SCT), Steve Shaffer (4.5-inch Dobsonian), Ann McPhee (10-inch Orion Dobsonian) and Jerry McMahan (5-inch Maksutov). There was some wind both early and late in the session, but it did not prevent good views of the Moon, Saturn, M81, and Mizar and Alcor. Ann allowed students operate her scope by themselves.

### Girls Stepping Stones - May 12, 2011

This is a small group of girls that showed a lot of enthusiasm at the telescopes. They asked a lot of questions, wanted to know where their zodiac signs were located and were fascinated by the laser pointer. They even gave each of us (Chuck Sterling, Steve Shaffer and Jerry McMahan) strawberries to take home.

The three of us brought the same scopes as the previous night. Objects observed included the Moon, Saturn, Mizar and Alcor, the galaxies M81, M82, M51, the Beehive cluster, and the globular cluster M13. It is easy to go to different targets when the observing group is small.

## Off-Axis Guide ‘Scope Validation

By Chuck Sterling

There has been some discussion recently that started with a fellow not getting PHDGuide to calibrate when aimed close to the north celestial pole (NCP). The error was that the guide star did not move enough, what one typically would see when inadvertently selecting a “hot pixel” rather than an actual star. To move a guide star west, we would slow tracking and allow the star to catch up with the mount. To move a guide star east, we would increase the tracking rate and the mount would move to catch up with the star. However, near the pole, a guide camera pixel covers a larger span of RA (Right Ascension) than, for example, at the equator. So, while a one-second RA guide pulse might move a star at the equator five or six pixels on the camera sensor, the same one-second pulse near the NCP might not even move it one pixel. This is the situation encountered by the fellow mentioned above, and the PHDGuide program correctly reported that the star did not move enough (although it did move a tiny bit).

My suggestion was to aim the guide scope somewhat to the side to increase the guide star movement while calibrating, but leave the imaging scope pointed near the pole as before. This would cause the guide star to move farther during each calibration pulse and allow calibration to complete successfully.

This is where the discussion started heating up. Several people believed that setting the guide scope in a markedly different direction from the imaging scope would cause guiding to suffer, and in the worst estimate not work at all. Frankly, this did not make sense to me; I reasoned that all the stars are stationary and it is we that are moving, thus all the objects appear to rotate, move, around the earth at the same rate. So we should be able to choose any object moving at sidereal rate as a guide point and be able to image any other similarly moving object. After all, what we do in guiding is to stop the mount motion relative to the sky. But the discussion continued, some inferring it would be a waste of time to try guiding with the guide scope askew. There was quite a thread of messages on the subject. Eventually most of us got on the same page and agreed that if polar alignment was quite good, that any star could be used as a guide star but it would be better if it were away from the NCP.

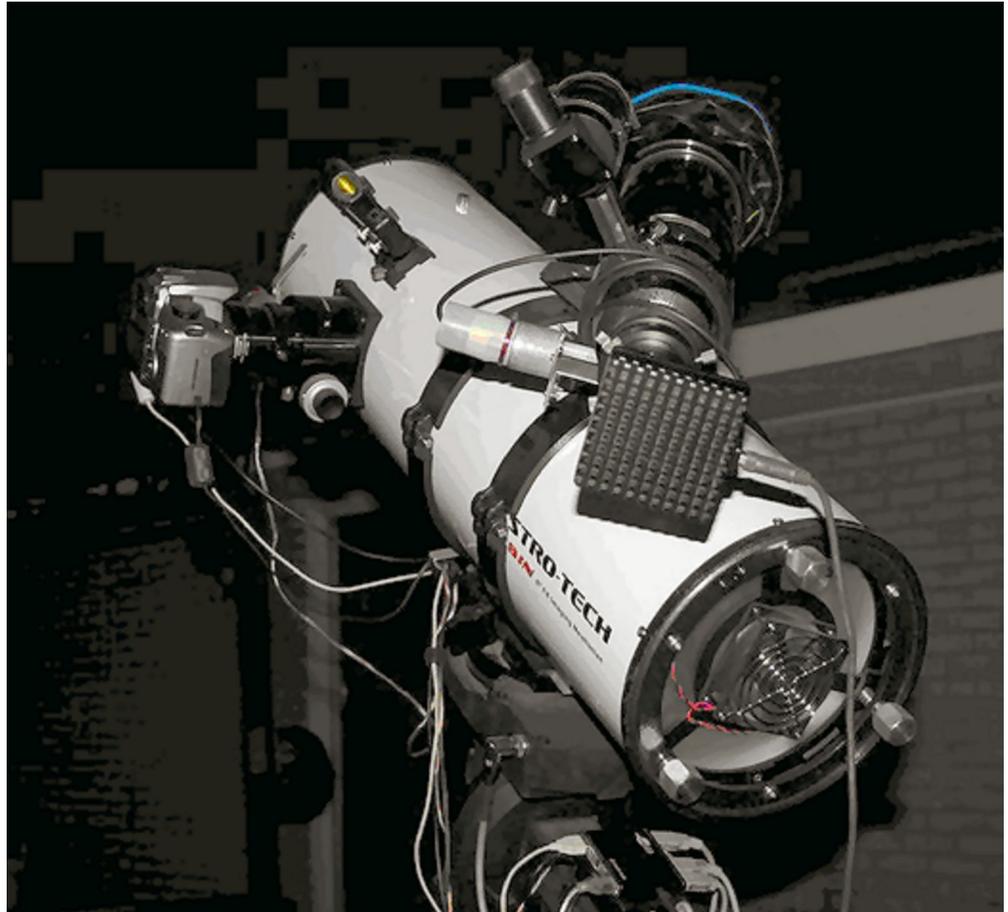
By this time I had tired of the discussion and had already decided to do a test of the method and see for myself. The results of the test run follow. But to cut to the chase, the method of aligning the guide scope in a different direction from the imaging scope, works. It is not an easier method, in general, but in the event that guiding is needed near the pole, it does work, and it allows PHDGuide to calibrate (solving the original problem).

Here is the drill: My alignment was rudimentary. I set the CGE at switch position and aimed it very close to Polaris (about 3/4 degree from the NCP). I did the 6-star alignment out of habit (and to refresh my memory of



how it goes). I did NOT do a drift alignment or other polar alignment, so a certain small amount of field rotation in ten minutes should be expected. I wanted to find out if it was excessive.

I calibrated PHDGuide twice, once near M42 and once with the imaging scope nearly centered on the NCP. With the guide scope askew about 20 (or 30) degrees, the only effect I note is that instead of taking nine steps (near M42) to move the 25 pixels necessary for calibration in RA it instead took 17 steps. This is the expected behavior, given that a pixel near the pole covers a larger RA arc than near the equator and is in no way a problem. Declination (Dec.) calibration was not affected enough to notice. The important point is that calibration was indeed possible and the subsequent guiding showed no significant field rotation. There was, as will be evident from the images, some flex in the guiding due to my having the guide scope attached with only a 1/4-20 bolt in its camera tripod mount point. You will probably wonder why guiding was not even worse.



*Here is the 'scope setup. Balancing was poor but sufficient for testing purposes (Five pounds of ankle weights bungee-corded to the guide scope. Sheesh!)*

I calibrated at M42 and shot three images, 10 minutes each at ISO100. A 3x magnified section of each image is displayed below. There is some image shift, I think due to the single 1/4-inch bolt mounting of the guide scope causing flex, but no discernible frame rotation.





Here is the original of the first image with a little correction for my local light pollution.



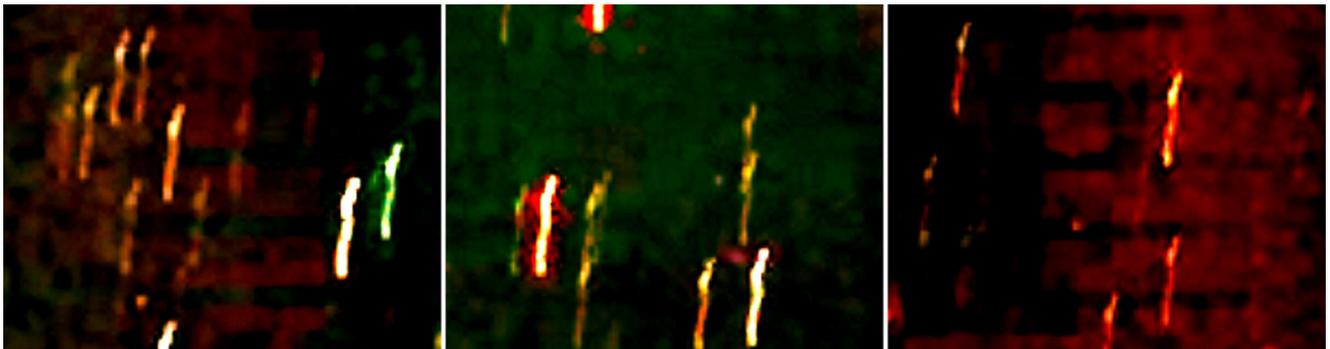
The three images were combined without any alignment. Here are sections from the left-hand, center and right-hand side of the image enlarged three times. You can see the stellar images are similar indicating that there was little or no image rotation during this sequence.



Satisfied with these images, I moved the imaging scope to be on Polaris, and recalibrated PHDGuide. As noted earlier, it took nearly twice as many RA steps to move the required 25 pixels, 17 steps compared to 9, but the calibration was successful. Then I took seven ten-minute images, the first is reproduced below. Again, there is noticeable image shift, I believe due to flex between guide and imaging scopes, but not any noticeable frame rotation.



The seven images were combined without any alignment. As above, here are sections from the left-hand, center and right-hand side of the image enlarged three times. You can see the stellar images are similarly trailed, also indicating that there was little or no image rotation during this sequence



Note that the polar alignment was not good: Centering on Polaris, about  $\frac{3}{4}$  degree from the NCP, is not a sufficient method for good results. For this experiment I did not care if the alignment was off a little because one thing I wanted to know is whether or not polar misalignment was a significant factor that might prevent this method from working. I did not believe it was, any more than it is when aiming the guide scope at the same field of view as the imaging scope. This experiment is not about what I believed, but what actually occurred.

It works. Aim the guide scope at any star, image any other, but with this important consideration: The guide star should NOT be markedly closer to the pole than the imaging field of view. Think about it...



(Editor’s note: The only caveat I have with this technique is that the observer must be aware of the differential refraction between the target field and the guide star. While it is not an issue high in the sky, the lower in the sky you are working, the more you must be aware of how refraction pulls the stars down toward the horizon.)

## Minutes, April 2011 ASLC General Meeting

By John McCullough, Secretary, ASLC

### Call to Order:

Ron Kramer, President, Astronomical Society of Las Cruces (ASLC), called the meeting to order at 7:30 pm., 22 April 2011, Commons area, Doña Ana Community College (DACC), Las Cruces, New Mexico.

### President’s Comments:

Ron Kramer welcomed the group, noting that the Society was meeting in the Commons area tonight as a result of the DACC being closed. There were no guests or new members present.

### Secretary’s Report:

The Secretary, John McCullough, reported that the minutes for the March 2011 meeting were submitted for publication in the Society newsletter, the *High Desert Observer* (HDO). Janet Stevens moved that the minutes from the March general meeting be accepted as submitted; Robert Williams seconded. The motion passed by acclamation. There was not an additional Secretary’s report.

### Vice-President’s Report:

The Vice-President, Tracy Stuart, as chairman for presentations, reported that speakers for the September and November meetings have not been arranged. There was no additional Vice-President’s report.

### Treasurer’s Report:

The Treasurer, Janet Stevens, reported on the status of the Society’s accounts. There was not an additional Treasurer’s report.

### Committee Reports:

#### ALPO 2011 Convention Committee:

Bert Stevens, Committee Chairman, reported that hotels, dorm rooms, class room space (Guthrie Hall, Room 201), and banquet space (NMSU Golf Course Country Club) are arranged. He still needs to arrange an informal event for Friday night, 22 July. Day trip bus tours to the Very Large Array (VLA), White Sands Missile Range, and Sunspot have been setup and will be announced on the convention website. The convention registration form will be released this weekend and also posted on the ALPO website. A second checking account has been established for the convention costs and income to keep the funds separate from Society accounts. He needs volunteers to handle publicity, both local and international, and someone to set-up a “swap table” during the convention. A list of positions that still need to be filled was in the last issue of the *High Desert Observer* (HDO).The Chiocchios offered to arrange the Friday evening event at their condo complex.

#### Apparel Committee:

Ann McPhee, Committee Chairman, reported that the long-sleeved t-shirts were complete, but she was not notified until before tonight’s meeting. They will be available at the May meeting. She still has items available for purchase following tonight’s meeting. This is a fund raising effort for the Society.



Loaner Telescope Program:

Janet Stevens, Committee Chairman, still needs eyepieces for the telescopes the Society already owns. The lack of eyepieces is impeding additional progress on this effort.

Membership:

John McCullough, Committee Chairman, reported that he expects to utilize the new Society brochure extensively to inform the wider community of Society activities and promote membership. He hopes to place them at Branigan Library, the Chamber of Commerce, and the Visitors' and Convention Center, among other locations. He is also reviewing materials and suggestions available through the AL to enhance membership in the Society.

Leasburg Observatory Committee:

Ron Kramer reported that he has taken over the responsibilities of Committee Chairman and will report on the details of his contacts with the park manager at the May meeting.

Tombaugh Observatory:

Ron Kramer has the keys to the observatory, but will not issue them until basic training on telescope operation is held. Dave Dockery has volunteered to conduct the training and a notice requesting interest has been posted on the yahoo group. Ron requested a show of hands of those present that would be interested in the training and compiled a list.

Outreach Committee:

Chuck Sterling, Outreach Coordinator, reported on the monthly Moon Gaze on 9 April and star parties held on 14 April at Cesar Chavez Elementary and on Earth Day at Young Park on 16 April. Upcoming events are the Moon Gaze on 07 May and star parties on 11 May at La Academia de Idiomas y Cultura and 12 May at Girls' Steppingstones. Refer to the yahoogroups.com for details.

Society Website:

Steve Barkes, webmaster, reported that he continues to get sections of the website up-to-date. Members should contact him or Ron Kramer with inputs for the site, however, Steve does not have time to do extensive background research on topics, so members must provide that.

There were no additional committee or officer reports.

**Old Business:**

2011 Budget:

The proposed budget for 2011 was distributed in the HDO. No comments were received from the membership. Ron Kramer noted there is a \$900 deficit included in the budget, primarily an effect of the revised dues structure. Work on the 2012 budget will commence in July. Ron Kramer moved that the proposed 2011 budget be accepted, Bert Stevens seconded. The motion was accepted.

Society By-laws:

Ron Kramer and Tracy Stuart, President and Vice-President, respectively, revised the language of the by-laws to take into account advances in communication technology. John Kutney questioned the requirement of prospective members to be of "good character" with no definition of such being included. That wording will be removed. Several questions regarding family memberships were raised, particularly "what constitutes a family?" The definition in the by-laws was carried over from the previous version and was essentially "all those residing at a single mailing address". Discussion followed on the various levels and attendant privileges of membership. Tracy took note of this input and will edit the section accordingly. Stan Chiochio moved to revise the by-laws as discussed to become effective 01 May 2011, until further revised, Fred Pilcher seconded. The motion was accepted with twenty-eight members for, none against, and two abstentions.



Astronomy Day 2011:

Wes Baker, coordinator for this event, has a schedule conflict for the spring date. He recommends moving the Society's observation to 01 October. He also notes Corey Stone and the El Paso club have suggested a joint observation this spring. Tracy Stuart moved that the Society observation be in October, Steve Shaffer seconded. The motion was accepted.

Renaissance Arts Faire 2011:

Tracy Stuart will oversee/chair the Society's participation in this event. No action is currently needed.

Society Brochure:

Ron Kramer announced that 1000 copies have been printed and are available for distribution.

Messier Marathon:

John Kutney reported that despite wind issues and Moon washout, this year's event was a success. Although no one got all 110 objects, several observers got over one hundred objects.

Astronomical League (AL) Insurance:

Payment of AL membership was included in the approved 2011 budget. The AL has a new insurance carrier with a result that basic coverage costs less than before but there are more options and add-ons available now. For example, liability coverage is now \$265 (\$320 before), property plus is \$100 minimum, accident is \$123 minimum, director/officer liability is \$35 for a total of \$525. The new carrier is R.J. Nuccio & Associates.

There was no additional old business discussed.

**New Business:**

Leasburg Dam State Park (LDSP) Observatory:

The May meeting will focus on the steps and Society efforts necessary to move this project forward.

Texas Star Party (TSP) 2011:

Robert Williams inquired which Society members would attend this year's star party.

ALPO Journal:

Walter Haas brought copies of past editions for the members to review.

There was no additional new business for discussion.

**Announcements:**

Announcements:

Society member David Anderson displayed his equatorial platform that enables his Dobsonian mount to track in altitude and azimuth. He estimates he has around \$100 invested in his mount as opposed to \$300 to \$1000 to purchase a similar mount. He believes his mount to be a "work in progress". He also noted that he is in favor of a "show and tell" segment being added to the monthly meeting agenda.

Items for Sale:

The 8-inch Celestron for sale in El Paso was purchased by Stan Chiochio.

Ann McPhee has ordered additional shirts, available for purchase after the meeting.

No additional items were announced for sale.



High Desert Observer:

Bert Stevens needs articles for the HDO. If he does not receive articles, the HDO will consist of the President's message and the meeting minutes.

There were no additional announcements made.

Recognitions/Achievements:

There were no recognitions or achievements announced.

Bert Stevens moved to adjourn the business portion of the meeting at 8:20 pm, Wes Baker seconded. The motion carried.

**Presentation:**

The April program was presented by New Mexico State University (NMSU) Astronomy Department graduate student Adam McKay on "The DIXI and Stardust-NEXT Missions". Adam's area of focus is cometary spectroscopy. He described several recent cometary fly-bys and two recent satellite missions to examine comets more closely.

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 April meeting of the Astronomical Society of Las Cruces concluded at 8:55 p.m.

-Respectfully submitted by John McCullough, ASLC Secretary

## Lunar Eclipse over the Organs





**Calendar of Events May/June 2011 (MDT)**

June 01	3:03 p.m.	New Moon-Partial Solar Eclipse visible around North Pole
08	8:11 p.m.	First Quarter Moon
13	11 p.m.	Saturn stationary
15	2:14 p.m.	Full Moon-Total Lunar Eclipse visible in Europe, Africa, and Asia
21	11:16 a.m.	Summer Solstice
23	5:48 a.m.	Last Quarter Moon
24	7:30 p.m.	June ASLC 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

