

# The High Desert Observer August 2015



## Table of Contents

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 Society and public educational projects. Members receive the *High Desert Observer*, our monthly newsletter, plus membership to the Astronomical League, including their quarterly publication, *Reflector*, in digital or paper format.

Individual Dues are \$30.00 per year

Family Dues are \$36.00 per year

Student (full-time) Dues are \$24.00

Annual dues are payable in January. Prorated dues are available for new members. Dues are payable to ASLC with an application form or note to: Treasurer ASLC, PO Box 921, Las Cruces, NM 88004. Contact our Treasurer, Patricia Conley (treasurer@aslc-nm.org) for further information.

*ASLC members receive electronic delivery of the HDO and are entitled to a \$5.00 (per year) Sky and Telescope magazine discount.*

2	<i>From the Prez</i>
3	<i>Outreach Events</i> , by Jerry McMahan
4	<i>Calendar of Events</i> , by Charles Turner
4	<i>July Meeting Minutes</i> , by John McCullough
7	<i>Back at the Telescope</i> , by Berton Stevens
12	<i>Photo of the Month</i> , submitted by Jeff Johnson
13	Appendix A : Budget 2016
14	Appendix B: City of Las Cruces Proclamation

### August Meeting --

Our next meeting will be on **Friday, August 28**, at the DACC Main Campus, Room 102, Technical Studies Building, starting at 7:00 p.m. Please note this meeting room is a NEW location for the club meetings..

The speaker will be Howard Brewington.

Topic: When Comets Are Named

### ASLC Board of Directors, 2015

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

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

Vice President: Steve Barkes; [VP@aslc-nm.org](mailto:VP@aslc-nm.org)

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

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

Director-at-Large: Tracy Stuart; [Director1@aslc-nm.org](mailto:Director1@aslc-nm.org)

Director-at-Large: Ron J. Kramer; [Director2@aslc-nm.org](mailto:Director2@aslc-nm.org)

Immediate Past President: [rrichins73@comcast.net](mailto:rrichins73@comcast.net)

### Committee Chairs

ALCor: Patricia Conley; [tconley00@hotmail.com](mailto:tconley00@hotmail.com)

Apparel: Ron Kramer; [ronjkramer@aol.com](mailto:ronjkramer@aol.com)

Calendar: Chuck Sterling; [csterlin@zianet.com](mailto:csterlin@zianet.com)

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

Grants: Sidney Webb; [sidwebb@gmail.com](mailto:sidwebb@gmail.com)

Librarian: **\*\*\*OPEN\*\*\***

Loaner Telescope: Frank Fiore; [ffchilehead@gmail.com](mailto:ffchilehead@gmail.com)

Membership: Judy Kile; [judykile3916@gmail.com](mailto:judykile3916@gmail.com)

Night Sky Network: **\*\*\*OPEN\*\*\***

Observatory:

Leasburg Dam: Rich Richins; [rrichins73@comcast.net](mailto:rrichins73@comcast.net)

Tombaugh: Steve Shaffer; [sshaffer@zianet.com](mailto:sshaffer@zianet.com)

Outreach: Chuck Sterling; [csterlin@zianet.com](mailto:csterlin@zianet.com)

Web-Site: Steve Barkes; [steve.barkes@gmail.com](mailto:steve.barkes@gmail.com)

HDO Editor: Charles Turner; [turnerc@stellanova.com](mailto:turnerc@stellanova.com)

### Member Changes

Membership Chair, Judy Kile has asked that any member who has changes to their basic information, such as name, address, phone number, or email address, please contact her with an update to your membership stats. ( [jkile3916@gmail.com](mailto:jkile3916@gmail.com) ) .

### Outreach

Outreach is a very important part of ASLC. We are always looking for more volunteers to help us educate the public. Even if you do not have a portable telescope to bring to the events, please consider attending our public outreach programs to help answer questions, share knowledge and point out constellations in the sky.

### Events

ASLC hosts deep-sky viewing and imaging at our dark sky location in Upham. We also have public in-town observing sessions at both the International Delights Cafe (1245 El Paseo) and at Tombaugh Observatory (on the NMSU Campus). All sessions begin at dusk.

At our Leasburg Dam State Park Observatory, we hold monthly star parties. Located just 20 miles north of Las Cruces, our 16" Meade telescope is used to observe under rather dark skies. Please see *Calendar of Events* for specific dates and times.

## ***From the Prez***

August 2015

### **Learning from Others**

In looking at what more the ASLC can do to enhance its outreach efforts, sometimes it's good to look at what others have been successfully doing. During ALCON 2015, The Albuquerque Astronomical Society (TAAS) put out an impressive presentation about their outreach program. From their presentation and their website, there are three things that TAAS has been successful in that the ASLC could emulate.

First, TAAS member Barry Spletzer created a handicap accessible telescope he dubbed the HandiScope, which allows for a person who is wheelchair bound or has limited mobility to sit at the scope and view half the sky without changing his or her position. Barry has offered to help anyone who wishes to build the scope.



At the Leasburg Dam State Park Observatory there is wheelchair access to it. However, if individuals in wheelchairs can't stand up to view objects through the observatory's scope they will be missing out on the experience of seeing celestial objects with their own eyes through the eyepiece. Now, there is a video display system developed by LDSP Observatory Chairman Dave Doctor that will allow for people to view, on a 40 inch LCD display, what the 16 inch SCT is looking at through the Malincam attached to the 110 mm refractor on top of the SCT. But, it has been our experience that people enjoy looking at what is out there through a telescope and the HandiScope is something that would be valuable in reaching out to an underserved segment of our visitors.

I believe that the ASLC should have as one of its goals the creation of a HandiScope as an addition to our offerings at the LDSP Observatory. There is interest among the observatory chairman and members of the ASLC Board and I hope there is interest among the general membership to get involved in its creation.

Second, TAAS conducts regular solar viewing outreach with displays and a variety of solar scopes (white light, H-alpha and Ca K line). They also have a camera system that allows for telescopic views on a laptop monitor.

The ASLC has been "experimenting" with conducting monthly solar observations at LDSP prior to the Music and Stars events and our monthly nighttime outreach at the park. It is still a work in progress and ideally we should have a minimum of three volunteers: one attending a white light scope, another attending a H-alpha scope with or without a camera/laptop set-up and another at a set of displays explaining the information on them and perhaps engaging the visitors in a solar related activity. I encourage members who are interested in doing solar observing outreach to put your ideas forward. This is an activity we don't do regularly and I believe that the public would appreciate having regular opportunities to safely observe the Sun and learn about it.

Third, but not least, TAAS has an inflatable, portable planetarium (Starlab) which is used monthly at schools and with other groups seeking to have a planetarium experience. And, since TAAS does not charge for their outreach, neither does the ASLC, their planetarium is in high demand. This would be a valuable outreach tool for us, especially in instances when cloud cover hampers our public telescopic observing.

But, portable planetariums ain't cheap. The least expensive package I was able to research, from a company called Digitalarium, costs \$44,125; which is the cost of the inflatable dome, inflation fan, digital projection system and carrying cases. However, this is something that the ASLC should strongly consider acquiring within the next two years and start writing grant proposals or explore other ways to get funding. Planetariums have always been great facilities in astronomy education and the ASLC should make it a goal in possessing one.

So, here we have at least three things for us to consider. I'm sure that there are more ideas from our members to help enhance our outreach activities and also ideas from other groups we can adopt and/or improve upon. The public does have an appetite for learning about the Solar System and the Universe so, if there is anything that we can do to help feed their hunger then we should do it.

Daniel Giron

\* \* \*

### ***Outreach Events***

by Jerry McMahan

#### ***Leasburg, Saturday, July 18***

Once again, we had cloud problems at the park. We only had about 30 minutes of observing time, early, before the clouds moved in, which limited the observed objects to the Sun, Moon, Venus, and Jupiter.

Andrew Messant had a good view of a very thin crescent Moon and a crescent Venus in the same field of view with his refractor. Chuck Sterling operated the observatory. I brought the ETX 125 for a brief view of Jupiter. Sid Webb had the 60 mm Hydrogen Alpha scope on the Sun.

Moe Azzolini and his family brought their 6 inch Dobsonian. Daniel Giron, Christina Lugo, Ed Montes and Ron Kramer were present as well.

#### ***Moongaze, Saturday, July 25***

It started out very cloudy but cleared just in time for viewing of the Moon and Saturn to begin. Christina Lugo put a wizard hat on me and claimed that it was what caused the weather to clear. Chuck Sterling brought his 100mm refractor. I had the ETX 125 again. Daniel Giron gave multiple choice quizzes, with prizes, to spectators. He gave them the a prize even if they did not pass the quiz. The prizes were nice ones, including t-shirts, impressing the winners with the quality of the give aways. John McCullough joined us to answer spectator questions.

As we started to put things up, at about 11 PM, it started to rain. I guess the wizard spell wore off at about that time.

#### ***Leasburg, Saturday, August 8***

It was a clear day, but as darkness approached, the clouds moved in again. It was not a total loss, however. There were enough holes in the clouds to allow for some observing, including Saturn. Dave Doctor, operating the observatory, had the scope on the globular M3 as well as planetary nebulae M27 and M57 and the Whirlpool galaxy.

We did, again, have more club members than objects to observe. Rich Richins set up his 16 inch Dobsonian, Chuck Sterling brought his 100mm refractor. Andrew Messant had his refractor for solar observing as well as for the evening. Christina Lugo and Daniel Giron participated with drawings for prizes for the public. I know that Sid Webb was there as well. I set up the 8 inch on the LX 80 mount, but the mount failed again while trying to point the scope at Saturn. Back to the drawing board (actually Chuck's drawing board since he has gone to a great deal of trouble working on that mount).

\* \* \*

## **Calendar of Events (Mountain Time - 24 hr. clock)**

AUG 02	13:00	Saturn stationary
06	20:03	Last Quarter Moon
14	08:54	New Moon
15	19:00	Dark Sky Observing at Leesburg Dam State Park
22	13:31	First Quarter Moon
22	1949	OUTREACH; MoonGaze, International Delights Café
28	19:00	ASLC Monthly Meeting; DACC Main Campus, Room 102
29	12:34	Full Moon
31	21:21	Neptune at Opposition
SEP 04	04:00	Moon passes through Hyades
05	04:00	Last Quarter Moon
05	19:00	Dark Sky Observing at Leesburg Dam State Park
12	19:00	Dark Sky Observing
12	12:00	OKIE-TEX Starparty begins
13	12:41	New Moon
13	12:41	Partial Solar Eclipse (NOT visible from Northern Hemisphere)
19	19:13	OUTREACH; MoonGaze, International Delights Café
20	12:00	OKIE-TEX Starparty ends
21	03:00	First Quarter Moon
25	19:00	ASLC Monthly Meeting; DACC Main Campus, Room 102
		<b>NOTE: Meeting location has been moved to Room 102 main campus. Check the club website for directions/maps.</b>
27	20:50	Full Moon
27	19:40	Total Lunar Eclipse. Moon rises in eclipse-Max eclipse at 20:47. Get cameras ready

Be sure to visit our web site for the latest updates: [www.aslc-nm.org](http://www.aslc-nm.org)

\* \* \*

### **Meeting Minutes** by John McCullough

#### **Minutes, July 2015 ASLC Meeting**

#### **Show & Tell:**

A Show & Tell presentation of images from ALCon 2015 hosted by Cristina Lugo and Robert Westbrook preceded tonight's meeting.

#### **Call to Order:**

**Daniel Giron**, President, Astronomical Society of Las Cruces (ASLC, the Society), called the July business meeting to order at 7:30pm, 24 July 2015, Room 102, Doña Ana Community College (DACC), Las Cruces, New Mexico. This month's meeting is being held in a new location at the request of DACC.

#### **President's Comments:**

The President, Daniel Giron, welcomed the group to tonight's meeting and thanked Cristina Lugo and Robert Westbrook for presenting tonight's Show and Tell. Daniel asked that all members register their presence on



astro-photography displays in the public concourses at the Hotel Encanto, but Daniel said that was definitely a joint effort of the membership. Daniel and Ron Kramer noted that there were representatives from at least 53 organizations in attendance, an ALCon record.

***New Business:***

1. NMSU Astronomy – Daniel Giron reported that Jon Holtzman, New Mexico State University Astronomy Department chair, has contacted the Society regarding participating in an on-campus Project Discovery event on 18 September. More details to come.
2. 2016 Officers – Daniel Giron would like the membership to start considering candidates for nomination. Daniel would like to see multiple candidates for each of the available offices/positions.
3. Monthly Outreach – Daniel Giron would like to add two events, primarily solar-related, each month. I.e., solar Sunday. He would also like to add a monthly outreach event at Good Samaritan Society, Las Cruces Village. If members have suggestions, let him know. Daniel noted the Venus transit in 2012 was very successful and would like to do something similar for the upcoming Mercury transit in May 2016. Solar viewing could start at sunrise and continue until noon and could be coordinated with schools and possibly the downtown mall. Renaissance ArtsFaire 2015 will be 07-08 November. Trish Conley will be working with the Dona Ana Arts Council. A fall Astronomy Day may be held in September or October.

***Announcements:***

On 06 July, the City Council of Las Cruces proclaimed July 2015 Astronomy Month and the week of 0511 July as Amateur Astronomy Week in Las Cruces. Daniel Giron and Bert and Janet Stevens attended the proclamation events and The Proclamation is shown in Appendix B.. Ron Kramer noted that it was due to the efforts of Tony and City Council person Ceil Levantino that the proclamation was made.

The speaker for the August meeting will be Howard Brewington. His topic will be “When Comets are Named”. Presentations for the rest of the year are set.

***Items for Sale: No items were offered for sale.***

***Recognitions/Awards: No recognitions were announced.***

***The business portion of the meeting concluded at 7:58 pm.***

***Presentation:***

This month’s presentation was by Society member Bill Stein on “Building and Operating a Robotic Observatory”. He started by relating the considerations why he could tackle this project at this time and it is mostly a matter of the technology that is available. Bill and his wife purchased a property in the Stars Estates area near Mayhill, NM, that already had a cabin on it. They cleared an area where a three pier observatory with a roll-off roof could be built. The structure does not include a warm room as the intent is that the telescopes and other instruments will only be operated remotely, either from the now remodeled cabin or from their home in Las Cruces.

As the close of the presentation, Daniel conducted the drawing for door prizes. Robert Westbrook and Cristina Lugo were the lucky winners. Daniel also accepted the Explore Scientific eyepiece for the observatory at LDSP.

***-Respectfully submitted by John McCullough, ASLC Secretary***

\* \* \*

## ***Back at the Telescope***

by Bert Stevens

While many ASLC members have a general interest in astronomy, a few of us are also contributing to the science of astronomy. Among the contributors, a few are measuring the brightness of asteroids or their position in the sky. Others are measuring the brightness of variable stars on both short and long timescales. The planets are not ignored, with amateurs contributing images and drawings of our Solar System neighbors.

One group is trying to make measurements by using occultations. An occultation occurs when one celestial object goes in front of another. A solar eclipse, where the Moon goes in front of the Sun, is a special case of an occultation. A lunar eclipse is a completely different phenomenon, mixed in with eclipses of other moons by their parent planet's shadow or even one moon casting its shadow on another.

The two main groups of occultations pursued by members of the International Occultation Timing Association (I.O.T.A.) are occultations of stars by the Moon and occultations of stars by asteroids. They also try to investigate changes in the size of the Sun by measuring times of Bailey's Beads appearing and disappearing near the edges of a solar eclipse. It does not matter if it is an annular or total solar eclipse. These observations will be described in a future column.

Occultations of stars by the Moon (lunar occultations) come in two flavors. One is the total occultation, while the other is the grazing occultation. A total occultation occurs when the edge of the Moon covers a star and the star is out of view for between ten minutes and an hour and a half. The duration depends on whether the star is hit head-on by the Moon so the entire diameter of the Moon has to traverse the star or just gets a glancing blow near the northern or southern poles.

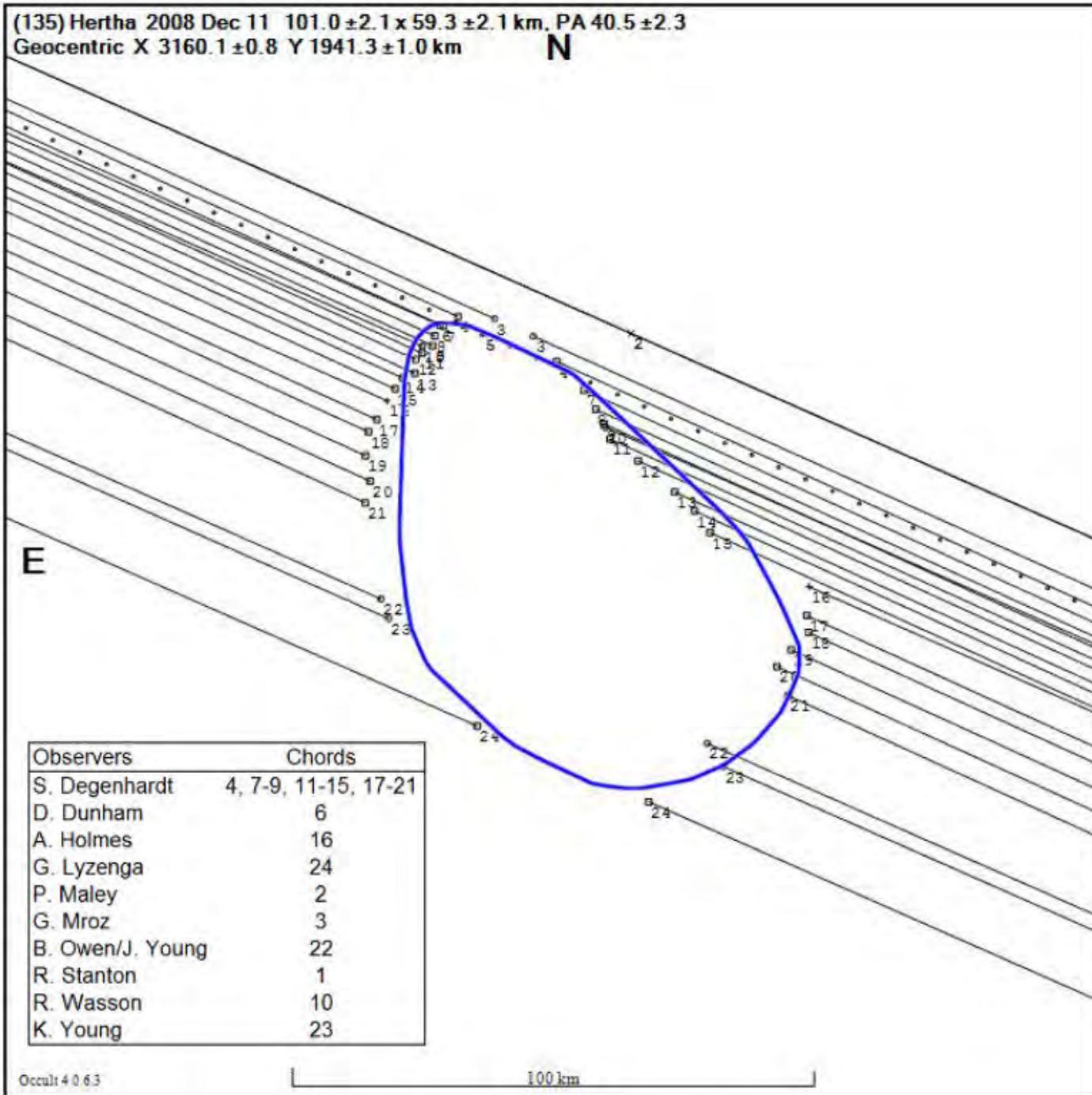
The total lunar occultations that occur "head-on" happen in the lower lunar latitudes. These occultations are most sensitive to errors in the Moon's Right Ascension. This is because slight errors in declination have very little effect on the time of the occultation. It is primarily the R.A. error in the orbit prediction that affects the observed time of the "head on" event.

As the latitude of the event gets higher, the errors in the declination of the Moon become more dominant in affecting the time of the occultation. As the occultation occurs near the poles, the star disappears and reappears along the mountains and valleys on the northern or southern edge of the Moon. These kind of occultations are called grazing occultations and observers of these events can see the star disappear behind the mountains and reappear in the valleys eighteen or more times during one graze.

Grazing occultations are the best type at measuring the difference in the declination of the Moon compared to the predicted declination of the Moon. Over time, this allows astronomers to make better predictions of the Moon's position by improving our knowledge of its orbit.

The other type of occultation that I.O.T.A. observes is occultations of stars by minor planets (asteroids). This type of occultation provides two different results. One is a very precise measurement of the position of the minor planet. This helps improve the orbit of the asteroid with a position that is much more precise than traditional astrometry. The other result is a good measurement of the diameter of the asteroid. How good a measurement of the diameter depends on how many observers are watching the occultation. If many observers are watching, each sees a different part of the asteroid cover the star. This allows us to determine the shape of the asteroid as well as its diameter as it occults the star.

The technology to observe all of these types of occultations has been improving. Fifty years ago, the timing of these occultations were done by recording a shortwave broadcast time signal, such as WWV., The observer put audible signals on the tape recording as they looked through the telescope at the occultation. Later, the tape would be read-out and the times of the occultation noted and reported.

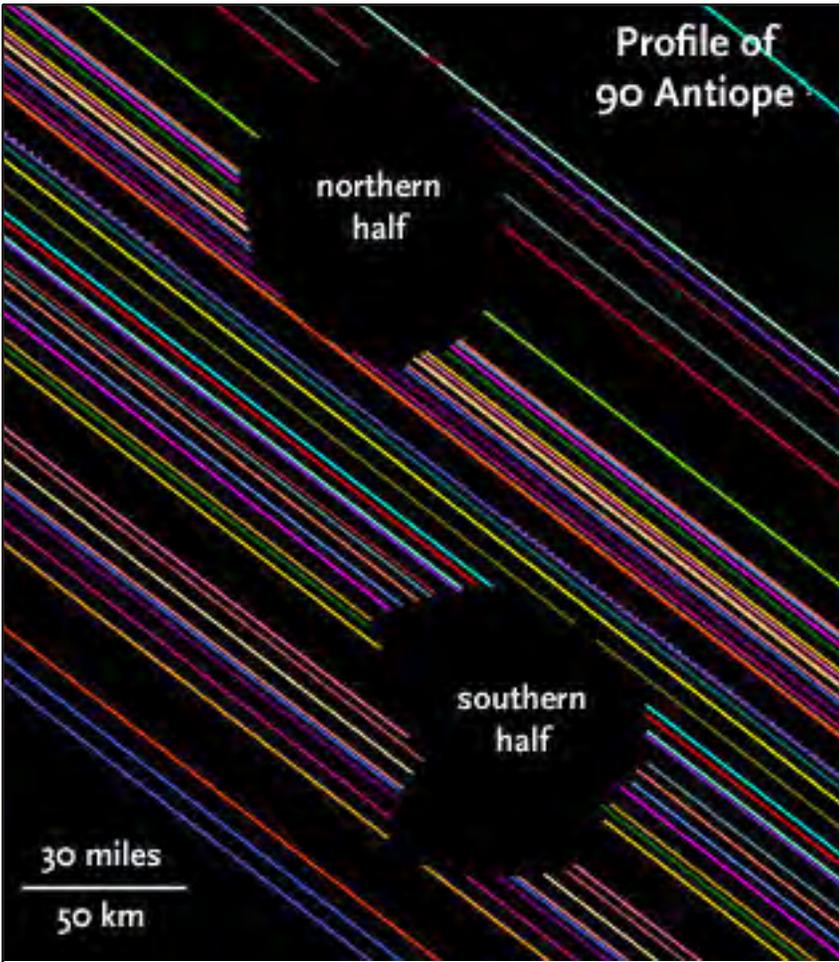


### Asteroid 135 Hertha

The results of the occultation of the 9.2 magnitude star SAO 93103 by the minor planet (135) Hertha on 2008 December 11. The occultation was observed by both individual observers and a set of remote stations operated by Scotty Degenhardt. You can make out the shape of the minor planet as observed by the occultation method. The blue shape is the computed shape of the asteroid using the light curve inversion method to produce a mathematical model of the asteroid.

The observer's location on the Earth's surface is also an important part of the measurement. The mobile observer set up on the side of the road would measure their position relative to some landmark and the centerline of the road. The landmark could be a road intersection, railroad crossing, or even a driveway. A Geological Survey Map of the area would then be used to measure the precise latitude and longitude of the landmark and the centerline. The observer would then compute the offset from that position based on the distances that they had measured.

With newer technology, a low-light television camera using a solid-state sensor (CCD or CMOS), feeds a video



signal of the star into a time inserter. The time inserter monitors the time from the Global Positioning Satellites (GPS) and marks the time of each video frame on the frame itself as a string of characters on the bottom of the frame. The GPS also provides the precise latitude and longitude of the observer. The video stream with the inserted timing marks is then recorded on a video recorder.

The resulting recording is transferred into a computer and software then processes the video stream and computes the time of the star's disappearance and reappearance. It does this by showing the observer one frame of the video stream. The observer selects the star that is going to be occulted, and the program analyses each frame to track the occulted star. The other stars in the frame provide a quality control if their brightness should vary during the occultation. The software can also read the time code on each frame and extract the time that the frame was recorded.

The program can plot the brightness of the target star against the time that the frame was taken and produce a light curve. The program also displays the times of the star's disappearance and reappearance. These are noted and sent to a coordinator.

The coordinator takes each observer's position and plots it relative to the path of the asteroid's shadow on the Earth's surface. If the prediction is perfect, the observers near the center of the path will have the longest

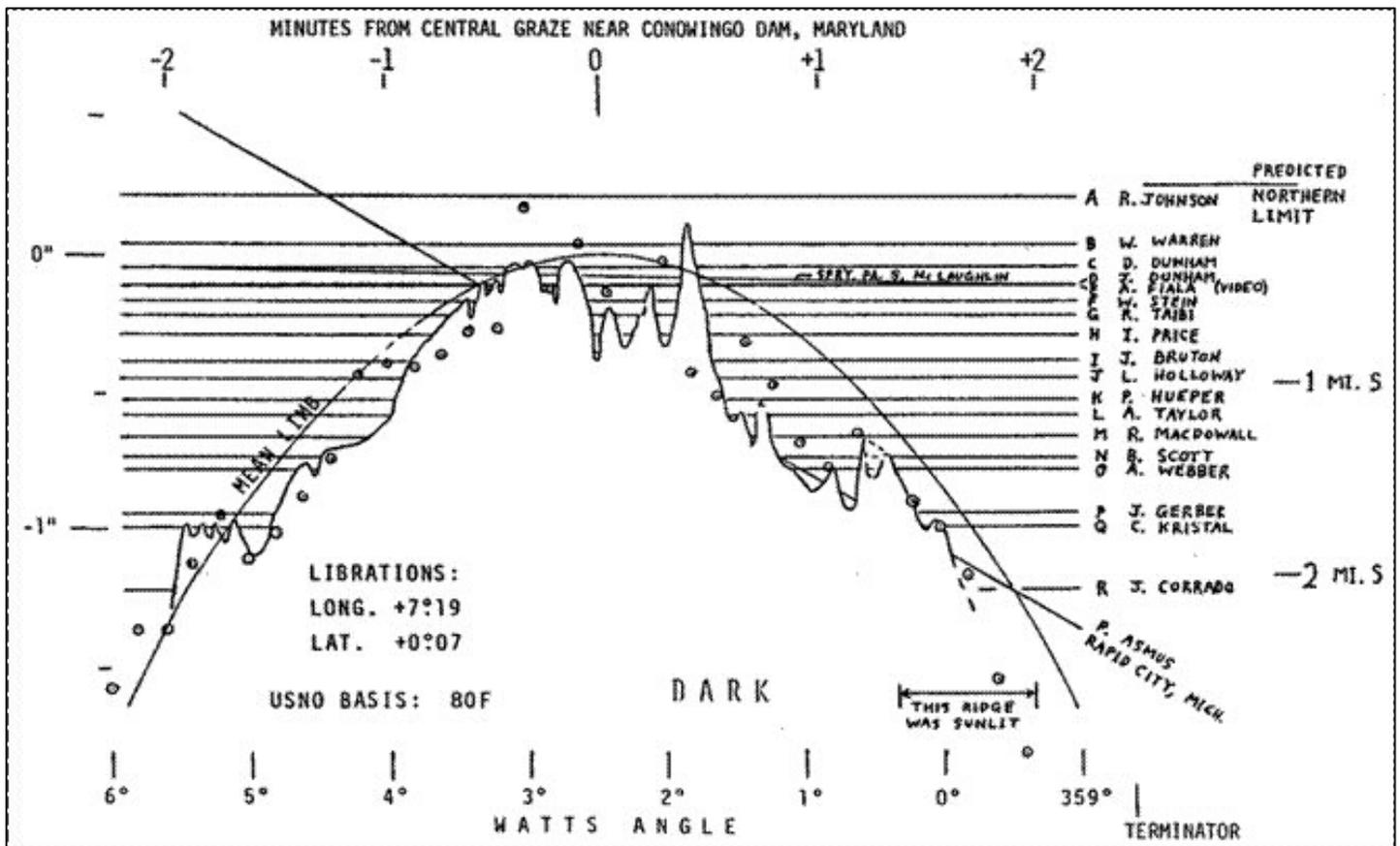
**Asteroid 90 Antiope**

*The bright star LQ Aquarii was occulted by the double minor planet (90) Antiope on 2011 July 19. There were many observers covering the path and they were able to observe both components of this double asteroid. The two components orbit around their common center of mass. I.O.T.A. had scheduled their annual convention in Rocklin, CA, around this event to get as many observers as possible.*

occultation, while those near the edge will have the shortest. The coordinator plots each observation as a line from the disappearance to the reappearance as a chord across the asteroid. The coordinator can see the error in the prediction and the shape of the minor planet from the plot.

The more observers that observe the occultation, the more chords that can be plotted. Only a few chords can allow the diameter of the minor planet to be measured, while many chords will allow the shape of the asteroid to be determined. There are usually not enough observers in the narrow occultation path to get enough chords to make a good determination of the asteroid's shape.

Enter even more technology. Using low cost telescopes, used camcorders with a video input and an infrared remote control with its own timer, an unattended observing station can be set up. The telescope is aimed at a "prepoint" star at a specific time, knowing that the star to be occulted will drift into the field just before the occultation begins. The timer on the remote control is set to start the camcorder recording just before the occultation and stop it after the occultation. This allows the station to be setup many hours in advance without running down the batteries or exhausting the recording tape. Once the station is set up and hidden (so it is not stolen), the observer moves on to set up the next station.



### Occultation of Delta Cancri

The plot of the northern edge of the Moon from the occultation of Delta Cancri on 1981 May 9/10. Most observers were in the Conowingo Dam, MD, area, so their paths are parallel. Paul Asmus observed from Rapid City, MI, so he saw the graze at a slightly different cusp angle, causing his track to be slanted compared to the others. Note track "F" was observed by our own Bill Stein.

Experienced observers have set up as many as twelve stations. The last one is usually manned by the observer. This allows one or two observers to get up to twelve observations apiece. This allows a good shape to be determined for the asteroid.

When the European Space Agency releases the Gaia catalog with precise star positions, I.O.T.A. should be able to produce even better predictions, allowing more of the remote stations to be in the path of the occultation, providing better shapes for more asteroids. Amateur astronomers provide most of these observations, allowing us to contribute to everyone's knowledge of astronomy.

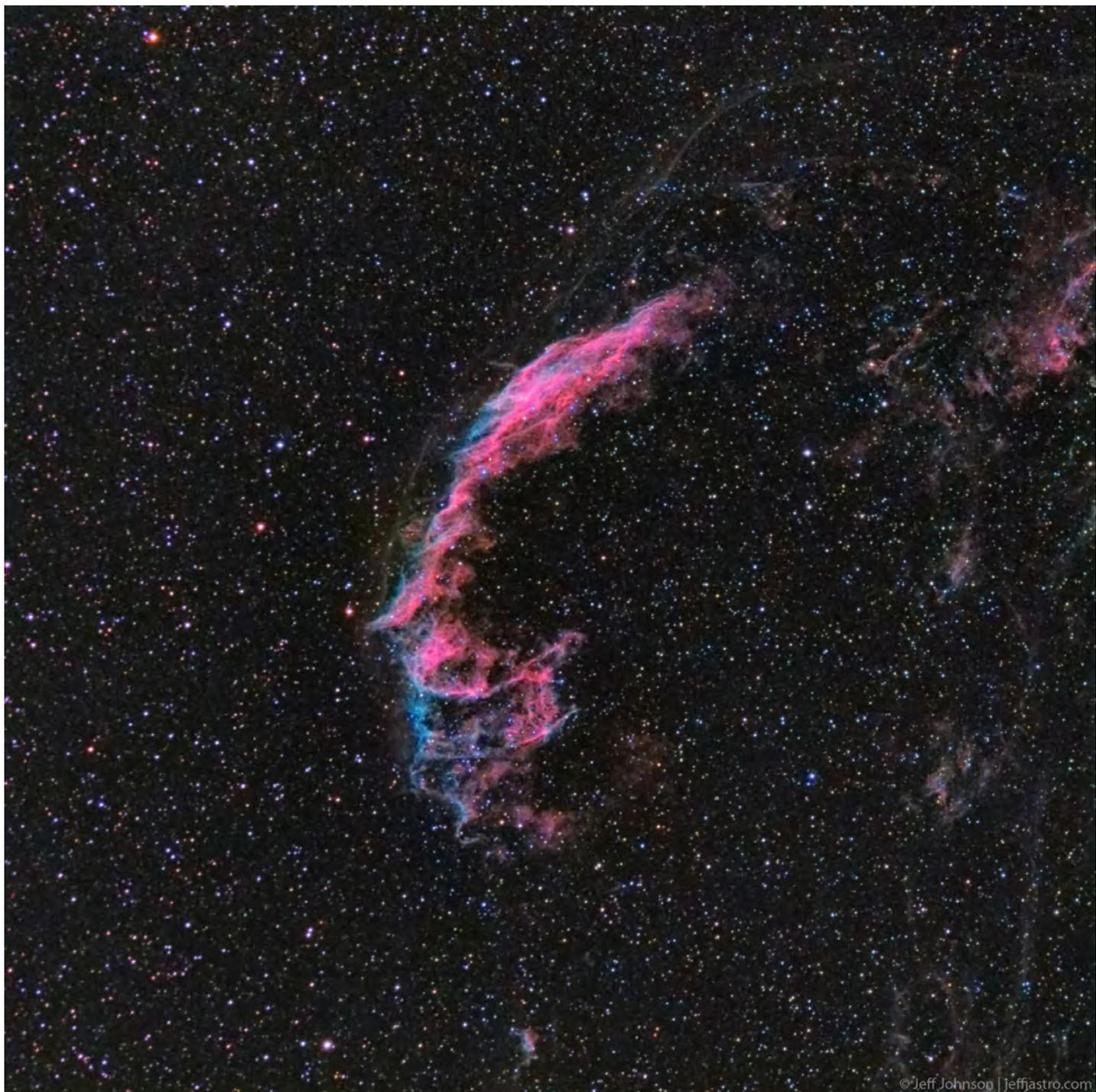


**Scotty Degenhardt's Mighty Maxi**

*Scotty Degenhardt designed and built the 24-inch high Mighty Maxi occultation telescope. When paired with a low-light video camera, time inserter, and video camera, it can run unattended to capture the times of an occultation down to an accuracy of 0.02 seconds. When set up in the field, these are usually hidden in bushes or brush to keep them from being stolen.*

\* \* \*

**Photo of the Month**



**By Jeff Johnson from Las Cruces, NM.**

*The Eastern Veil Nebula (NGC 6995 and the Southeastern Knot).*

*Telescope: Takahashi FS-60C @ f/6.2 Mount: Takahashi EM200 Temma II Camera: QSI 540wsg @ -10C*

*Filters: Astrodon Ha (3nm), Astrodon Tru-Balance I-Series LRGB Gen 2 Guider: SX Lodestar*

*Settings: 9x20min Ha, 3x5min L (bin1x1); 3x5min ea RGB (bin2x2); AstroArt5, CS4 (slightly cropped, 10xdarks/flats/fdarks/bias)*

*Date/Location: 12 June 2015 - Las Cruces, NM*

*More info at: [http://jeffjastro.com/dso/NGC6995\\_12Jun15.htm](http://jeffjastro.com/dso/NGC6995_12Jun15.htm)*

**\* \* \***

# Appendix A

## ASLC Budget FY 2016 (October 1, 2015 - September 30, 2016)

	FY 2015 Budget	Final 15 Budget	To Date Actual	FY 2016 Budget	Notes
<b>OPENING BALANCE</b>					
			7/19/2015		
Checking	\$ 2,959.82		\$ 2,133.75	\$ 2,600.00	
Saving	\$ 1,393.17		\$ 1,394.09	\$ 1,394.85	
Money Market	\$ 9,913.65		\$ 9,924.61	\$ 9,531.15	\$4908.68 left for Leasburg
Petty Cash	\$ 84.00		\$ 84.00	\$ 84.00	
CD	\$ 6,050.72		\$ 6,082.86	\$ 6,100.00	
<b>Sub-Total</b>	<b>\$ 20,401.36</b>	<b>\$ -</b>	<b>\$ 19,619.31</b>	<b>\$ 19,710.00</b>	
<b>INCOME</b>					
Apparel	\$ 450.00		\$ 250.00	\$ 450.00	
Books & Calendars	\$ 350.00		\$ 551.55	\$ 550.00	
Donations (incl. Photos)	\$ 250.00		\$ 138.00	\$ 250.00	
Grants	\$ -		\$ -	\$ -	
Membership Dues	\$ 1,700.00		\$ 1,802.00	\$ 1,800.00	
Sale of Society Equipment	\$ 200.00		\$ -	\$ -	
Annual Dinner Meeting	\$ -		\$ 660.00	\$ -	
<b>Sub-Total</b>	<b>\$ 2,950.00</b>	<b>\$ -</b>	<b>\$ 3,401.55</b>	<b>\$ 3,050.00</b>	
<b>EXPENSES</b>					
Apparel	\$ 450.00		\$ 604.60	\$ 450.00	
Books & Calendars	\$ 350.00		\$ 568.85	\$ 550.00	
Astro. League Memberships	\$ 350.00		\$ 325.00	\$ 350.00	
Discretionary Funds	\$ 200.00		\$ -	\$ 200.00	
Donations	\$ 50.00		\$ -	\$ 50.00	
Guest Speaker Dinner	\$ 50.00		\$ -	\$ 50.00	
Annual Dinner Meeting	\$ 350.00		\$ 1,127.67	\$ 350.00	
IDA Membership	\$ 50.00		\$ 50.00	\$ 50.00	
Insurance	\$ 1,082.00		\$ 1,082.00	\$ 1,082.00	
Leasburg Observatory	\$ 200.00		\$ -	\$ 400.00	
Maintenance	\$ 75.00		\$ -	\$ 100.00	
Photos for Events	\$ 50.00		\$ -	\$ 100.00	This is actually considered outreach. They work as publicity (with a "donation").
PO Box	\$ 78.00		\$ 80.00	\$ 80.00	
Publicity/Outreach	\$ 150.00		\$ -	\$ 450.00	Business Cards, Renaissance Faire, etc. \$300 if we need them this year.
Safe Deposit Box	\$ 37.65		\$ 38.00	\$ 38.00	
Tax Related Issues	\$ 50.00		\$ 330.00	\$ 50.00	
Website	\$ -		\$ -	\$ -	Every 3 years, paid Jan 2014
Tombaugh Observatory	\$ 100.00		\$ 40.00	\$ 100.00	
Office expense	\$ 30.00		\$ 10.66	\$ 30.00	
<b>Sub-Total</b>	<b>\$ 3,702.65</b>	<b>\$ -</b>	<b>\$ 4,256.78</b>	<b>\$ 4,480.00</b>	
<b>SURPLUS/DEFICIT</b>					
Total Income	\$ 2,950.00	\$ -	\$ 3,401.55	\$ 3,050.00	
Total Expenses	\$ 3,702.65	\$ -	\$ 4,256.78	\$ 4,480.00	
<b>Sub-Total</b>	<b>\$ (752.65)</b>	<b>\$ 0.00</b>	<b>\$ (855.23)</b>	<b>\$ (1,430.00)</b>	
<b>CLOSING BALANCE</b>					
Checking	\$ 3,300.00		\$ 2,133.75	\$ 2,600.00	
Saving	\$ 1,393.60		\$ 1,394.09	\$ 1,394.85	
Money Market	\$ 9,500.00		\$ 9,924.61	\$ 9,531.15	
Petty Cash	\$ 84.00		\$ 84.00	\$ 84.00	
CD	\$ 6,070.00		\$ 6,082.86	\$ 6,100.00	
<b>Sub-Total</b>	<b>\$ 20,347.60</b>	<b>\$ -</b>	<b>\$ 19,619.31</b>	<b>\$ 19,710.00</b>	

# Appendix B

## PROCLAMATION

*WHEREAS, the Astronomical Society of Las Cruces was founded in 1951 by Clyde Tombaugh, Walter Haas and other local astronomers to reach out to the community with a variety of programs including moon gaze each month, and*

*WHEREAS, from July 5<sup>th</sup> to July 11<sup>th</sup>, Las Cruces residents will have the rare opportunity to participate in one of the largest conventions of astronomers ever held in New Mexico, a state well known for its beautiful night skies and star gazing opportunities, and*

*WHEREAS, along with the convention, there will be a once-in-a-lifetime chance to view the robotic spacecraft exploration of the outer fringes of our Solar System, a most appropriate legacy for us here in the city that became the home of Pluto discoverer, Clyde Tombaugh, and*

*WHEREAS, between one hundred and fifty and two hundred amateur and professional astronomers, along with twenty-one speakers are expected to attend the Astronomical League Convention (ALCON), hosted by the Astronomical Society of Las Cruces, the Astronomical League, and the Association of Lunar and Planetary Observers, and*

*WHEREAS, the Branigan Cultural Center in Las Cruces and the New Mexico Museum of Space History in Alamogordo are showing major exhibits on Pluto, Clyde Tombaugh, and the New Horizons project, which will reach its primary target, Pluto, on July 14<sup>th</sup>.*

*NOW, THEREFORE, WE, the Mayor and City Council of Las Cruces, New Mexico do hereby proclaim the month of July 2015 as:*

### **"ASTRONOMY MONTH"**

*and July 5<sup>th</sup> through July 11<sup>th</sup> as:*

### **"AMATEUR ASTRONOMY WEEK"**

*and we urge all citizens to welcome the visiting astronomers, to visit the museums, to participate in the opportunities available, and to appreciate the brilliant skies above Las Cruces.*

**ATTEST:**

  
*Linda Lewis, Interim City Clerk*

  
*Ken D. Miyagishima, Mayor*

