

# The High Desert Observer

## The Bulletin of the Astronomical Society of Las Cruces



Sharing the Universe with our Community for over 60 years

Photo by John McCullough

November, 2013

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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, which includes their quarterly publication, *Reflector*.

Individual Dues are \$30.00 per year

Family Dues are \$36.00 per year

Student (full-time) Dues are \$24.00

Dues include electronic delivery of the *HDO*. 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

*ASLC members are entitled to a \$5.00 (per year) Sky and Telescope magazine discount.*

### ASLC Board of Directors, 2013

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

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- Tombaugh: Steve Shaffer; [Director1@aslc-nm.org](mailto:Director1@aslc-nm.org)

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### November Meeting

Our November meeting will be held on Friday, November 22, in Room 77 at Doña Ana Community College, with the following schedule:

7:00 pm - 7:30 pm Show & Tell

7:30 pm - 8:00 pm Business Meeting

8:00 pm - 9:00 pm Guest Speaker & Presentation

This month our speaker will be member Steve Barks. His topic will be *Spectroscopy 102*.

### 2013 Holiday Party

This year's Holiday Party will be held on Saturday, December 7, starting at 6:00 pm. Venue is the Saratoga Room, next to Lorenzo's Restaurant in the PanAm Plaza on University Avenue. There will be a buffet dinner, gift exchange (bring one, get one) and other events. Cost per person is \$12.00. All members (and spouses/significant others) are invited.

### Elections

Elections for 2014 Board of Directors were held at the October meeting. Results are given in the Meeting Minutes, starting on page 4.

### 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.

## The President's column-inch...

Our November 22nd presentation is by ASLC member Steve Barkes, who will supplement his earlier discussion in Spectroscopy 102.

The Renaissance Faire held November 2nd and 3rd was a huge success once again. Thanks are due to all the members that supported the event this year; we had plenty of help both days, and for setup and teardown.

November is seeing the start of several star parties for local schools or other organizations. We can expect a busy year in outreach as the various elementary and middle schools ask ASLC to support their science programs with star parties.

We had an interesting few days early in November when, due to our making some changes to support outreach at Leasburg; changes which ran against our agreement with Leasburg Dam State Park. The park temporarily closed the observatory until suitable corrections could be made. Those corrections (all minor items), were completed the same day, and the observatory remains open for scheduled events and training.

The ASLC Holiday Party will be held Saturday December 7th starting at 6 pm at Lorenzo's Saratoga Room on East University Avenue. As of this moment we have 25 people confirmed that will attend. We can accommodate a few more, so if you have not already confirmed attendance and would like to join some of us for dinner, a gift exchange (bring one to receive one - \$20 limit), a 2013 recap slide show, and whatever else we think up between now and then, please send an email to me with your name(s) so I can get an accurate count: csterlin@zianet.com. The cost for dinner is \$12 per person.

Be sure to get a look at comet ISON; it is pretty hard to spot, heading toward the sun and visible before dawn, but is showing a nice dust tail. It will disappear behind the sun soon and emerge again, hopefully still intact, in December. Comet of the Century it is not, but still worthy.

Have a Good Year; keep looking UP.

Chuck Sterling



## *Outreach Events for October/November, by Jerry McMahan*

### **Friday, October 11; Open House at the Tombaugh Observatory**

Steve Shaffer set up the 12.5" Cassegrain at the Tombaugh Observatory. He was assisted by Tracy Stuart, Ed Montes and Jerry McMahan. Ed was also at the Leasburg Observatory on October 5, but I didn't include him on the previous HDO.

Steve worked on one of the mounts gears and the tracking was pretty good. We spent the evening on the Moon under clear skies. The spectator turnout was pretty good.

The Astronomy Department had a 16-inch Dobsonian on Venus and Saturn at sundown. Saturn was very low in the sky so it is probably the last view of the planet, at one of our outreach events, for this year. Luckily, Jupiter will be with us before long. They also had Alberio and the Ring Nebula in the other two domes.

### **Saturday, October 12; Sky Safari**

The museum also had an open house at the Tombaugh Observatory. It was probably scheduled for that night because it was International Observe the Moon night. Steve Shaffer manned the 12.5" scope for the second night in a row. The event was not well publicized (Steve didn't even know about it until the previous night), so attendance was low. Steve said he only had about 6 observers.

### **Saturday, October 12; Moongaze**

International Observe the Moon Night continued at the International Delights. Venus was viewed early, and the Pleiades late. I am not sure that was legal on Observe the Moon night at a Moongaze. Some one should check with the Astronomical Union. We did however observe the Moon with clear skies for the second consecutive night. Chuck Sterling missed the event which is very rare for him. He was recovering from surgery so his wife would

not let him come. Not recovering from surgery, was Ed Montes, Rich Richins, Kyle Josefy and Jerry McMahan. Steve Shaffer (also not recovering from surgery) came after finishing up at the Sky Safari event at the Tombaugh Observatory.

Ed brought the refractor that he demonstrated at the August meeting. Kyle, who has not joined the club yet, but has been with us at Moongaze before, had his 6-inch Dobsonian. I brought the usual ETX-125. Steve did not bring the 12.5-inch Cassegrain with him. Rich met some friends at the restaurant and stayed to answer questions. We did not have a big turnout. There were a couple of people that had to much to drink, that stayed for a while. One of them scared one of the ladies that was looking through the telescope. He didn't do any thing bad, but his strange behavior did bother a few people. After he left, she asked if he was with us, which I denied. His behavior was mostly being hyperactive, so it was probably more than beer involved.

One of my former students, from Canutillo High School, also came to observe. Her mother taught in the class room next to mine for many years. Another lady, that had never looked through a telescope, said that we "Made her Day, or her week, or maybe her entire year." Things like that make our out reach events worth the effort. She asked when we had our meetings because she would like to attend. Unfortunately, meeting times conflict with her work schedule at this time. She also asked if there was an age requirement, probably because of all of us old guys out there.

### **Saturday, October 26; Home schooled group**

We set up telescopes for the home schooled group for the second time this year. It was at Veteran's Park again. Dave Doctor brought binoculars, Chuck Sterling brought his 100mm refractor. He is not allowed by the doctors, or his wife to lift the ten-inch. Nils Allen came with his home made 15-inch Dobsonian. Sid Webb had the 10- inch GOTO Dobsonian. Jerry McMahan brought the 8-inch Schmidt Cassegrain (with the first use of a 6.3 focal reducer). We didn't have a Moon, or bright planet, other than Venus early, so most of the observing was of deep sky objects. This included the Globular Cluster M13, and open clusters, including the Double Cluster, and the Lagoon nebula. Even without a Moon, it was hard to make out the nebula, but the associated cluster was obvious.

There was a very bright light, aimed horizontally at us, coming from the rest rooms. Nils save the evening by covering it up. It would have been very hard to observe any thing with out this remedy. It was that bright.

### **Friday, November 8; Open House at the Tombaugh Observatory**

Steve Shaffer and Jerry McMahan attended the open house. There is usually a good turn out, but this had a greater attendance than most. There was a continuous long line waiting to get in to view through the telescopes. We had the club's 12.5-inch on the Moon. The Astronomy Department had the scopes, in the other two domes, on the Snowball Nebula (a planetary nebula) and the globular cluster M15.

Steve and I were still there after the university people had left. Steve was in the process of closing things down when a group of people from east El Paso came to look through the telescopes. They had trouble finding the three domes so didn't arrive until the program had ended. Since they drove all the way for the purpose of viewing through the scopes, they were disappointed. Steve put things back together and called them in so that their trip would not be wasted. They were very appreciative and said they would be back next month. One of the girls, in the group, was taking Astronomy in college and was pretty knowledgeable.

### **Double Header at Moongaze and at Organ, Saturday, November 9.**

Chuck Sterling , Jerry Gaber, Nils Allen and Rich Richins conducted a star party at Organ. Steve Shaffer and Jerry McMahan were at International Delights for the monthly Moon Gaze.

Chuck said the event at Organ did not last very long. They ran out of kids to observe well before the allotted time. He also said there was a bumper crop of goat heads in the observing area. Before he hands out the blue ribbon for goat heads he needs to check my yard.

Steve Shaffer, John McCullough, and Jerry McMahan were at International Delights. We were joined by Chuck Sterling after he finished up at Organ. Chuck did set up his 100mm refractor at both places.

We had Venus early and a Moon that was almost exactly at first quarter. Chuck got the Pleiades in the refractor. There was a good turnout of observers, but it died out much earlier than normal. There were few customers after 9:30. We left at 10:30 which is the earliest in some time.

I apologize to anyone that may have been left out. I have not learned all of our new member's names and we had a lot of participation from them. It was a pretty good night for us and the people who came to observe.

**Calendar of Events: November 2013 - December 2013 (Mountain Time - 24 hr. clock)**

NOV 23	19:00	City of Rocks Star Party (contact matthewdwilson@q.com)
23	18:00	OUTREACH EVENT; Leasburg Observatory; Public star party
25	12:28	Last Quarter Moon
28	~16:00	Comet ISON reaches Perihelion; may be visible in daylight
29	09:43	Moon - Spica Conjunction
30	19:00	City of Rocks Star Party (contact matthewdwilson@q.com)
DEC 02	17:22	New Moon
06	19:00	OUTREACH EVENT; OPEN HOUSE; Tombaugh Observatory at NMSU;
07	18:00	HOLIDAY DINNER; Lorenzo's Italian Restaurant, Pan-Am Plaza
09	08:12	First Quarter Moon
13	22:30	Geminid Meteor Shower
15	19:45	Moon - Aldeberan Conjunction
17	02:28	Full Moon
21	10:11	Winter Solstice
21	18:00	OUTREACH EVENT; Leasburg Observatory; Public star party
22	07:00	Ursid Meteor Shower
25	06:48	Last Quarter Moon

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

**Minutes, October, 2013 ASLC Meeting**

**Show & Tell**

John Kutney provided tonight's presentation by demonstrating his Peltier camera cooling system. He considers his first attempt to be less than successful but the current version of the cooler works much better. He described the assembly of the device in an earlier issue of the Society's newsletter. Fred Pilcher discussed his set-up versus John's simpler set-up.

**Call to Order**

Chuck Sterling, President, Astronomical Society of Las Cruces (ASLC, the Society), called the October business meeting to order at 7:30 pm, 25 October 2013, Room 77, Doña Ana Community College, Las Cruces, New Mexico.

**President's Comments**

Chuck Sterling, President, welcomed the group to tonight's meeting and thanked John Kutney for his demonstration. Chuck welcomed new member Frank Fiore to tonight's meeting. Former member George Hatfield was visiting tonight. Rick Apodaca and Oscar Pilmeter (*sic*) were also visiting. Chuck asked that all members and visitors please check in on the sign-in sheets.

**Secretary's Report**

The Secretary, John McCullough, reported that the minutes for the September meeting were submitted for publication in the October issue of the Society newsletter, the High Desert Observer (HDO), with assistance from Chuck Sterling. Robert Williams moved that the minutes be accepted as submitted, Bert Stevens seconded. The motion passed by acclamation and there was not an additional Secretary's report.

**Treasurer's Report**

The Treasurer, Trish Conley, reported on the status and balances of the Society's accounts. Ron Kramer moved that the Treasurer's report be accepted as submitted, Jerry Gaber seconded. The motion passed by acclamation and there was no additional Treasurer's report.

**Committee Reports**

### **Apparel**

Ron Kramer, acting Chairman, has items available for purchase and has sold several tonight. He would like to further deplete the available stock before ordering additional items, but is accepting requests for specific items for next year. Also, a full-time/permanent chair for this activity is needed.

### **Education**

Rich Richins, Committee Chairman, had no star parties to report on.

### **Library**

Brenner Fody, Society Librarian, is working on a database of the current 254 volumes, but is having computer issues. Joseph Silva has offered a collection of astronomy magazine going back to the 60's to the Society for a tax exemption. Chuck opened the topic for discussion; the members present decided not to accept the offer.

### **Loaner Telescopes Program**

Ron Kramer, Program Coordinator, reported there are four (4) scopes active in the program and two (2) that need some work. There is a classic 4" Unitron refractor and mount/tripod and a 12" Dobsonian available and a 10" Dobsonian in work. The fee is \$10/month or repair one of the non-working telescopes in exchange for two months use.

### **Membership**

John McCullough, Committee Chairman, reported several new members have joined since the membership roll was "scrubbed", primarily for delinquent dues. He also noted dues are payable by 01 January.

### **ASLC Observatory at Leasburg Dam State Park (LDSP)**

Jerry Gaber, Committee Co-chairman, reported there was a stories (no music) and stars in the park earlier this month. It was a good event with nice views and 50-70 people in attendance; Ron Kramer, Committee Co-chairman, provided the stories. The Go-To on the 16" Meade still needs some work but the telescope generally is functioning very well. The Williams 110ED is now in place. The Observatory is considered one of the best public outreach observatories in the country. Jerry is working on a Standard Operating Procedure/checklist for the observatory and would like to conduct training sessions for members. The viewing/events schedule also needs to be formalized. "Music under the Stars" events will resume in April 2014 with a performance by the group Project in Motion. There will be an event for a group of RV'ers on 15 November starting at 6:00 pm.

### **Tombaugh Observatory**

Steve Shaffer, Committee Chairman, was not present to provide a report.

### **Outreach**

Chuck Sterling, program coordinator, reported on upcoming events. There will be a star party for CHPs at Veterans Park. The Renaissance Arts Faire will be 02-03 November at Young Park; volunteers are needed, please contact Trish Conley. The State-wide Star Party at Sevilleta Wildlife Refuge has been rescheduled to Spring 2014 because of the recent government shut down. The November Moon Gaze will be 09 November at International Delights Café. A star party for Doña Ana County Health and Human Services will be 09 November in Organ. There will be a church star party on Locust at University and Jordan on 12 November. Check the yahoo groups for details and to volunteer for these events.

### **Holiday Party**

The 2013 Holiday Party will be at 6:00 pm on 07 December in the Lorenzo's Italian Restaurant Saratoga Room on University Avenue. Individual cost is still to be determined, but a minimum of 15 attendees is required. More information will follow via email.

### **2014 Officer Elections**

Robert Williams and Fred Pilcher collected and counted the ballots received for the 2014 Officer Election. There were no write ins submitted and the proposed slate of candidates was affirmed. Officers for 2014 are as follows:

President: Rich Richins  
Vice-President: Steve Shaffer  
Treasurer: Patricia (Trish) Conley  
Secretary: John McCullough  
Director-at Large: Jerry Gaber  
Director-at-Large: Tracy Stuart  
There were no additional committee or officer reports.

### Old Business

There was no old business for discussion.

### New Business

1. 2014 RASC Handbooks - Expected cost is \$18.95 plus shipping. See Chuck Sterling to reserve your copy(s).
2. 2014 Calendars - Astronomical League calendars are available for \$10, see Chuck. Planetary Society wall and desk calendars are available for \$11.95, see Trish Conley to place your order.

There was no additional new business for discussion.

### Announcements/Awards

There were no announcements or awards presented.

Ron Kramer moved to adjourn the business portion of tonight's meeting, Bert Stevens seconded. The business meeting concluded at 8:00 pm.

### Presentation

This month's presentation was provided by Dr. Jon Holtzman, Professor and Department Head, Department of Astronomy, New Mexico State University (NMSU). His topic was the Apache Point Observatory Galactic Evolution Experiment (APOGEE), a part of the Sloan Digital Sky Survey (SDSS). APOGEE is a survey designed to study 100,000 Milky Way stars, mostly in the galactic disk, using the tool of high resolution near infrared spectroscopy. Dr. Holtzman also discussed renovation efforts at the NMSU Tortugas ("A") Mountain observatory in partnership with the American Association of Variable Star Observers (AAVSO).

The October meeting of the Astronomical Society of Las Cruces concluded at 9:15 pm.

-Respectfully submitted by John McCullough, ASLC Secretary

**Editor's Note:** The following article represents a new monthly column, written by former president, Bert Stevens. Each month will have a different subject. If you have any ideas for subjects, please contact Bert.

### ***Back at the Telescope***, by Berton Stevens

Most of you know that I primarily observe asteroids as my astronomy project. In professional circles, they are called minor planets, but how did we get this two different names for the same group of objects? When astronomers looked at the distances of the planets from the Sun in our Solar System, one of them, Johann Titius, came up with a relationship that seemed to dictate how far from the Sun each planet would be. The Titius–Bode law, formulated in 1766, fit the distances for all of the planets then known with one exception. It predicted that there should be a planet between Mars and Jupiter, but there was no known planet at that distance from the Sun.

After Uranus was discovered and it also fit the Titius–Bode law, astronomers were so sure of the law that twenty-four of them were recruited to searching for the missing planet in 1800. One of them, Giuseppe Piazzi at the Academy of Palermo, Sicily, actually discovered (1) Ceres on January 1, 1801, before he was invited to join the search. Ceres was much smaller (only 302 miles in diameter) than the other planets, astronomers were confused at the new discovery. Shortly thereafter, another astronomer discovered (2) Pallas. This opened the flood gates and many more were discovered.

At first these objects were just considered to be more planets. But as the tally of these objects increased, William Herschel started calling them asteroids, derived from a Greek work for “starlike”. As Kelly Beatty of Sky and Telescope points out in a recent article, this name was actually suggested by the Greek scholar Dr. Charles Burney, Jr. (see <http://www.skyandtelescope.com/community/skyblog/newsblog/Why-Do-We-Call-Them-Asteroids-229280621.html>). Later, astronomers reclassified them as minor planets, which are now part of the subgroup called dwarf planets.

While many minor planets are in circular or slightly elliptical orbits between Mars and Jupiter, others wander around the inner Solar System coming near Venus, Earth and Mars. Those that come near the Earth are called Near Earth Asteroids (NEAs). NEOs (Near Earth Objects), the more generic term, also includes comets, which like Comet Halley in 1910 and Comet Hyakutake in 1996, can come very near the Earth.

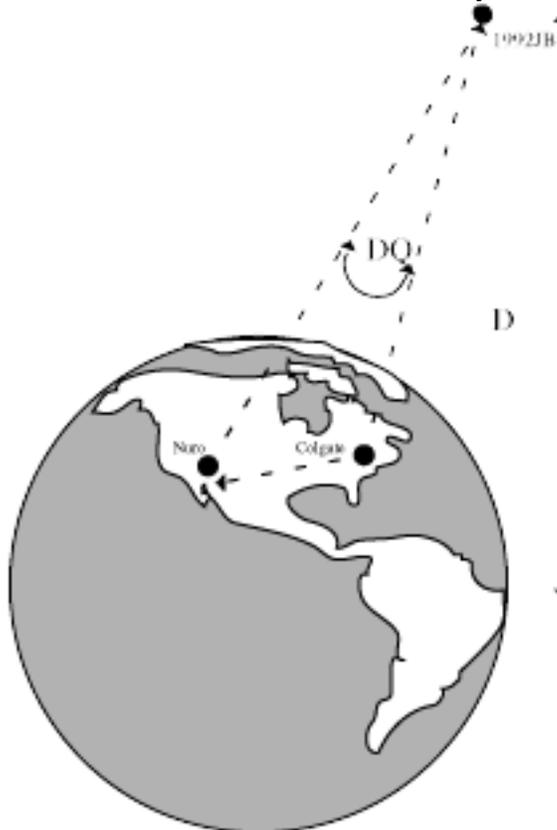
NEOs are the only reason that most of the public knows about asteroids at all. They have watched Bruce Willis fly up and stop one from hitting the Earth. They have also seen pictures of Meteor Crater on the Arizona plains and the videos of the Chelyabinsk, Russia, meteor exploding in the sky over that city. They know about extinction level events from *Deep Impact*. Every kid’s favorite toys, the dinosaurs, were killed by an asteroid. The public knows.



Minor Planet (433) Eros

Astronomers who work in the minor planet field are acutely aware of the public’s knowledge. They deal with NEOs in special ways. For example, the Minor Planet Center (MPC), where all reports of minor planet positions are accumulated and analyzed to produce orbits, will immediately report newly discovered NEOs on its NEOCP (Near Earth Object Confirmation Page) web page. They are usually found by the surveys that can cover large swaths of the sky each day.

Once we have a few positions for a new NEO, other observers (including me) can find it with our smaller fields of view and provide additional positions to begin to refine the orbit. When a new object is detected, the biggest unknown in terms of its orbit is the object’s distance from us. We cannot tell if it is a small object nearby or a large



object far away just from a few observations from one station. So frequently observers from all over the world will observe these new objects. The positions reported to the MPC can then be analyzed to see if there is any parallax from the different observatories.

If the new object is an NEO, then observation from different parts of the Earth will have the object appear in slightly different places in the sky depending on how far away it is from us. This is similar to the shift you see in nearby houses against the backdrop of the Organ Mountains as you drive east on U.S. Highway 70. Parallax will cause observatories on the opposite sides of the Earth to see the new object in substantially different places if it is an NEO. If it is far away, the parallax shift will be much smaller. This information can then be used to “constrain the orbit”, or put another way, tell the programs computing the orbit not to look at solutions that do not fit with the observed parallax shift. This could take a new object from being a potential NEO to being just a routine main belt asteroid in just a few hours.

While the MPC updates previously discovered, but unnumbered, asteroid orbits only once a day, the orbits of these new NEOs are updated as the observations come in.

This helps keep these new NEOs from getting lost. A new NEO that is near the Earth moves rather quickly across the sky; 12 arcseconds per minute is not unusual, and closer ones move even faster. Of course if the new NEO is coming straight at us, it may appear to move slowly in Right Ascension and Declination, because most of its motion is in distance from us, at least until it hits us.

So professional and amateur astronomers the world over are working together to track these NEOs and make certain that they cannot cause an extinction level event. We continue to provide these observations because humankind needs to know if there is an asteroid up there with our number on it. But remember, history has been recorded for thousands of years and the geological record is much longer than that. The chance of Earth being hit by a large enough asteroid to kill us all is extremely slight, so you can go to sleep tonight without having to worry that the world will be destroyed by an asteroid (or minor planet) before morning, or even in your lifetime.

### ***Observing in the Wild: Datil, NM, by John Kutney***

#### **Introduction**

I have had a sharp interest in Datil, New Mexico as an observing location ever since the Albuquerque Astronomy Group (TAAS) planned an outing there in June 2010 but subsequently cancelled the event. It was touted as one of the darkest spots in New Mexico along with an elevation above 7500 feet. This combination would be a premium place for observing Dark Sky Objects (DSOs) such as Galaxy Clusters and very faint galaxies. Below is the quote from Alan Scott in 2010 of TAAS:

*These are some of the best skies I have ever seen. Light domes are almost nonexistent - and the gegenshein is obnoxiously bright - as is the milky way.*

#### **Planning**

October seemed to be an excellent chance to venture to Datil. The weather was finally clearing and drying out and it should not be "too wintry" in early October. The new moon was on October 4<sup>th</sup> but the moon rise did not occur until after 5:00 AM on Tuesday, October 1. The seeing and transparency was indicating very good to excellent on Tuesday and Wednesday nights. So Tuesday was the departure day.

The trip to Datil, NM is 220 miles from Las Cruces and an easy ride in three hours. The Datil Well Campground was a convenient location for a base camp, off the road and somewhat isolated. It should not have been too crowded since school was in session and I was planning for only 2 nights of observing in mid-week. The campground had water and rest rooms but no electricity for campers.

As you may have guessed the Datil Well Campground was in lock down due to the Federal Government shutdown. Gate was closed and the dreaded sign posted. Somehow I thought the campground was a state facility and therefore didn't pay much attention to the government shutdown. Now I had the dilemma of finding an alternative location or returning to Las Cruces. I did not want to lose the chance of observing in these great conditions.



#### **Alternative Path**

I decided to drive along U.S. Highway 60 to see if there were available alternatives. About three miles west of the campground was a sign *Cibola National Forest - 66*. It was a deeply rutted dirt road with a dilapidated gate. After driving around in the forest for about an hour, on- and off-road, I finally located a suitable spot for observing. There were old campfire remnants and bleached bones from some animal at several of the sites. My selection was fairly level and had views in all directions albeit some spruce trees were an issue.

So here I was with most of the same conditions as expected at the campground, except there was no

water other than what I brought and no people. I was basically alone in the woods. I set up camp and located the observing equipment in the best available space. I prepared my evening meal, a pot of coffee and waited for the night to align my telescopes.



Base Camp



Telescopes



Cibola Forest SE



Cibola Forest NW – Base camp in background

### **Night One**

Dusk arrived and I started my scope alignment and camera setup in preparation for the anticipated dark skies. The first thing I noticed is that I wasn't alone. The distinct bugle of bull elk started. They were coming from several directions but seemed to be distant enough not to be concerned. I have to admit that being in a strange place with unknown critters about was a little disquieting. Later the coyote festival started but is familiar if one has been about in the southern desert.

The sky was even better than I anticipated. There was no sky glow in any direction, and the Milky Way was like a painted white strip extending north to south from horizon to horizon. Limiting magnitude had to be greater than 6.7 since the small star near Kochab in Ursa Minor was very visible. There were too many stars to try to distinguish if the sky was at 7.0 LM and I didn't have a plan to find one.

First disappointment was that the object that I wanted to photo was behind the only spruce tree in my field of views. I wanted to capture IC 5148 a Planetary Nebula called the "spare tire". IC 5148 rivals Messier 57 in size and brightness and has a very visible star at its center. Its apex would be about 10:00 PM in the constellation Grus right through the spruce tree. I opted for the faint Messier 33 which was visible with the naked eye.

I was very successful observing Abell Galaxy Clusters in CrB, Her, Peg, and And with the 18" Obsession. I was just getting comfortable when there was a very loud "grunt/growl" from the SE. This really got my attention since I knew there were bears in the mountains. I grabbed my spotlight and shined it in the direction of the grunt. Two large red eyes stared back at me. I waited about another two minutes and the eyes were still there! I got my bins and about 75 yards away stood a bull elk with its protruding antlers. I was not aware of the habits of elk before my trip to Datil so I expected the worse. I got my coffee jug and slowly proceeded to my car where I decided about my next steps; having a cup of coffee in the safety of my car. After about 10 long minutes, I returned to my

observation site and spotlighted the area and thankfully the Elk was gone. Needless to say I kept looking over my shoulder the rest of the night.

### Elk Behavior

Elks are very territorial and have been aggressive toward humans in protecting their turf and harems. The most serious elk/human conflicts occur when elk charge at and make contact with people. Cow elk use their hooves to kick and stomp on a victim, while bulls sometimes lower their head and use their antlers as an offensive weapon. Although elk/human conflicts may occur year round, the likelihood of an elk charging and injuring someone is greatest during the spring calving season and fall rut when the elk are at the height of their aggressiveness. Photographers, or unsuspecting joggers and hikers are the most likely victims, especially when the personal space of an elk is invaded. The elk are stubborn and unpredictable. Bulls can reach 800 pounds with 5-foot-long antler racks.<sup>1</sup> *There are no reported incidents of engagements with amateur astronomers in the woods (thankfully).*

I have attached a URL of bull elks in Yellowstone from “You Tube” so you can hear the sound of the bugling elks and also the sound of the antlers during their fights. Also I have included a picture of a large bull elk in case you haven’t seen one before: [http://www.youtube.com/watch?feature=player\\_detailpage&v=GUQcMZLZpx8](http://www.youtube.com/watch?feature=player_detailpage&v=GUQcMZLZpx8)



### Night Two

I had used up most of my battery power on the first night, but the 15-watt solar suitcase charger was able to recharge both of my batteries during the day. I wanted to capture some aspects of the Milky Way with my camera but mainly focus on tackling the Galaxy Clusters Project.

Again at dusk the elk bugling began along with the coyote chants. But there was an added attraction this evening. There was the sound of two bulls clashing their antlers together in the direction of my encounter last evening. Check out the “You Tube” video for the distinct sound. Needless to say this kept me on alert for this night’s session. I may have captured the *gegenshein* in my photo aimed toward the SE where IC 5148 would be rising around 8:00 PM. Since I never witnessed this phenomenon I can’t be sure of the result. The area I photographed was dark sky with multiple stars. There is no artificial light coming from this direction.

Night two session ended earlier than I expected as my targets were coming up much later in the evening and I was starting to get spooked by nearby sounds. Also I was getting a slight headache which was most likely due to dehydration. I brought recreational oxygen with me typically used by high altitude hikers so it was probably not altitude symptoms and 7500 feet is usually below affected heights. It was much colder on night two but still only required layering of clothing; but I need a warmer sleeping bag. The temperature was about 5-8 degrees lower than reported by Accuweather.

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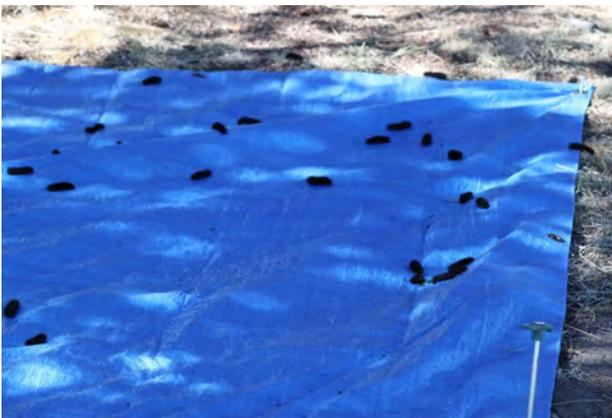
1 Elk-Human Conflicts in Banff National Park by Carey Elverum



Gegenshein ? (30 seconds unguided with unmodified DSLR)

### Day Three

It took about three hours to break camp and repack my auto. There must have been near a locust plague in central and northern New Mexico. They were all over the roads and at the campsite. As one walked there would be 10-20 of the locusts flying away. There were also an equal number of black woolly caterpillars crawling over the area. Unfortunately I stepped on many of these as they ventured onto my tarps in the observing area. I was surprised when I took down my tent as there must have been several hundred of these woollies between my ground tarp and tent bottom. Also I found a pile of bones behind my tent either from hunters or a dead elk. There were no mice, no doves, no quail, and no snakes.



Woolly caterpillars



Bones

### Summary

The skies were everything that Alan Scott suggested and then some. I have never seen such a depth and richness in the stars. It is recommended that one at least witness the sky at night at Datil. It has to be one of the darkest, highest, star rich areas in the USA. I was able to capture most of my planned objects along with some Arp Galaxy Objects not available from Las Cruces skies. Even though the trip did not go as planned it was an adventure for anyone who loves the outdoors. I plan to return and try the Datil Well Campground when the government reopens the National Parks.