The High Desert Observer

April 2017

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.*

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ASLC Board of Directors, 2017

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Outreach: Chuck Sterling; csterlin@zianet.com
Web-Site: Steve Barkes; steve.barkes@gmail.com
HDO Editor: Charles Turner; turnerc@stellanova.com

April Meeting --

Our next meeting will be on ***Friday, April 28***, at the Good Samaritan Society, Creative Arts Room starting at 7:00 p.m.
The speaker will be Dr. Alan Hale
Topic: Discovering Comet Hale-Bopp and beyond

Member Info Changes

All members need to keep the Society informed of changes to their basic information, such as name, address, phone number, or emai address. Please contact Treasurer@aslc-nm.org and jkile3916@gmail.com with any updates.

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.

What's Up ASLC?

March 2017

In March, we had good crowds at our monthly Moon Gaze and Leasburg Dam star party. Then, at our monthly club meeting, Steve Barkes gave a very informative presentation on the history and process of Messier Marathons. The following night, several ASLC members met at our Leasburg Observatory for our annual Messier Marathon event. Most of the group was using binoculars, but Ed Montes brought a small refracting telescope.

Although we enjoyed clear skies for the first half of the night, clouds started to move in around 11:00 p.m. By this time, though, Ed had found 60 of the 110 Messier objects. The binocular brigade also did well with an average of about 30 M-objects. We stayed out until midnight, but observing conditions never improved. We declared our marathon attempt a success as we packed up to return home, and we hope more people will join us for next year's event.

I'm pleased to announce that our April speaker will be my longtime friend, Dr. Alan Hale of Cloudcroft, NM. Alan is best known for his co-discovery of the Hale-Bopp Comet in 1995. But, Alan is also an excellent writer and tireless observer of comets. In fact, he's observed hundreds of these fleeting visitors.

I met Alan shortly after my second comet discovery. On the evening of 06 January 1991, I was about to end a long comet hunting session when I noticed that one more sweep would give me a full three hours of searching time. Partway through this final scan of the western sky, a large bright diffuse object drifted into the eyepiece of my 16-inch telescope. After about fifteen minutes, I determined that it was an unknown comet, so I quickly phoned the International Astronomical Union in Cambridge, Massachusetts to file my report. Daniel Green, who just happened to be working late, recorded the details of my find and immediately contacted veteran observer, Alan Hale.

Alan was at Kitt Peak Observatory in Arizona while gathering data for his doctorial thesis. Fortunately for me, high humidity had Kitt Peak closed for the moment, which allowed Alan time to pull a personal telescope from the trunk of his car and confirm my discovery. So, only ninety minutes after I spotted this new object, it became Comet Brewington 1991a. A few days later, the IAU determined that my find was actually the lost Metcalf Comet, which had not been seen since its discovery in 1906. But, that's another story. Shortly after Comet Brewington 1991a became Comet 97P Metcalf-Brewington, I treated Alan to a nice dinner in celebration.

Dr. Alan Hale, Co-discoverer of Comet Hale-Bopp

I'm very pleased to have Dr. Alan Hale as our April speaker. He will talk about his co-discovery of Comet Hale-Bopp as well as his life since then. I hope you can join us for this great presentation.

Howard Brewington, ASLC President

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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 objects in the sky.

Outreach Events

by Jerry McMahan

Dona Ana Elementary School, February 9, 2017

Some the problems with this event included thin clouds and a nearly full Moon. Some of the good points included a very good crowd and a good turnout of telescopes.

Chuck Sterling set up his 10 inch and sent pictures and information that the teachers passed out to the students. Sid Webb complimented Chuck on his continued hard work to make these school star parties possible. Sid set up his 10 inch Dobsonian and commented on how this school would provide more dark skies, minus a full Moon, than any of the other schools we attend.

Burt V also set up his 8 inch scope as did Tracy Stuart. Ed Montes brought his little, high quality, refractor and I had the 125 ETX scope.

We observed the Moon, Venus and the Orion Nebula as well as which objects were free of the clouds. It did not take a long wait to have the clouds move out from the object being observed.

Desert Hills Elementary, Thursday, February 16

Chuck Sterling, Howard Brewington and Jerry McMahan set up telescopes. We usually have more scopes at this event, but we were able to handle the crowd without much difficulty.

Venus, Uranus and the Orion nebula were seen through the telescopes. A little closer to Earth was a high altitude pass of the International Space Station.

Leasburg Dam State Park, Saturday, February 18

The weather report had indicated that we would probably not be able to have a viewing session, but it was clear when we set up and we had good viewing until the clouds rolled in at about 8 PM.

Sid Webb and Ed Montes operated the 16 inch in the observatory. Chuck Sterling and Jerry McMahan set up scopes on the grass. Chuck had his 10 inch and I brought the 8 inch.

Tombaugh Observatory, Friday March 3

Cloudy. Canceled. Steve Shaffer and I did attend, but none of the domes were opened for observing.

Moongaze, Saturday, March 4

What a difference a day makes. We had a clear night with little or no wind. . Chuck Sterling, Ed Montes, Howard Brewington and Jerry McMahan brought telescopes. John McCullough also stopped by. Venus and Uranus were observed, but we were mostly on the Moon.

At about 8:30 P.M., the Moon occulted the star Aldebaran. We saw the star reappear about an hour and fourteen minuets later. Aldebaran is the brightest star that we see disappear behind the Moon. OK, OK, I know the Sun is a star, but you know what I mean!

We did not have many people stop to look through the scopes. One man was interested in imaging, so he stayed a long time talking to Chuck There may have been more club members present, than people just stopping by to look through the scopes. Besides the Astronomical Society of Las Cruces members, mentioned above, Howard told members of the Radio Club about Moongaze and many of them showed up as well.

Thursday, March 9 at City of Rocks State Park

A special outreach event was held at the request of Aldo Leopold Middle School, a charter school in Silver City. Their students, age 10 to 12 were having a camping trip at the City of Rocks State Park and they asked for a star party. There were about 60 students plus teachers, parents, other siblings, and other campers.

Although not an official event of the ASLC, several of our members participated. Dr Al Grauer gave a presentation on comets after dinner and before dark. Bill Nigg, a recent new resident at the astronomy community north of Deming gave a sky tour for everyone. Bill was an astronomy teacher in Michigan before retiring and has been traveling around to National Parks doing astronomy programs. He gave a very informative and entertaining presentation.

Mike Nuss and Charles Turner, both ASLC members, manned 2 of the working telescopes to show many of the bright objects available and field questions from students. Chris Brownewell, a prospective member for ASLC, manned the third telescope and answered questions for the students. The lines for all three telescopes were long, but the kids were interested and very well behaved. We viewed until about 10 pm. A good time was had by all.

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

Apr	01	03:14	Jupiter Transit: Io - 03:14 to 05:24 (46º to 23º alt)
	01	19:32	Sun Sets
	01	19:32	OUTREACH; MoonGaze, International Delights Café
	02	21:39	Jupiter Transit: Io - 21:39 to 23:50 (22º to 43º alt)
	03	12:39	First Quarter Moon
	06	04:42	Jupiter Transit: Europa 04:42 to 07:04 (29º to 01º alt)
	07	21:00	NMSU: Tombaugh Observatory Open House
	08	04:57	Jupiter Transit: Io - 04:57 to 07:07 (24º to -01º alt)
	09	23:23	Jupiter Transit: Io - 23:23 to 01:33 (45º to 51º alt)
	11	00:09	Full Moon
	15	20:00	OUTREACH; Dark Sky Observing at Leesburg Dam State Park
	16	00:00	Easter - All Day
	16	20:04	Jupiter Transit: Europa 20:04 to 22:28 (16º to 42º alt)
	17	01:07	Jupiter Transit: Io - 01:07 to 03:17 (51º to 35º alt)
	18	19:33	Jupiter Transit: Io - 19:33 to 21:43 (11º to 37º alt)
	19	03:57	Last Quarter Moon
	21	19:13	Jupiter Transit: Ganymede 19:33 to 21:20 (10º to 36º alt)

	23	22:20	Jupiter Transit: Europa 22:20 to 00:44 (45º to 51º alt)
	24	02:51	Jupiter Transit: Io - 02:51 to 05:01 (35º to 10º alt)
	25	21:17	Jupiter Transit: Io - 21:17 to 23:28 (37º to 52º alt)
	26	06:16	New Moon
	28	19:00	ASLC Monthly Meeting; Good Samaritan Society, Activities Meeting Room
	28	22:30	Jupiter Transit: Ganymede 22:30 to 00:42 (49º to 50º alt)
May	01	19:48	Sun Sets
	02	20:47	First Quarter Moon
	02	23:02	Jupiter Transit: Io - 23:02 to 01:473 (53º to 44º alt)
	05	21:00	NMSU: Tombaugh Observatory Open House
	06	01:50	Jupiter Transit: Ganymede 01:50 to 04:05 (38º to 11º alt)
	06	19:45	OUTREACH; MoonGaze, International Delights Café
	08	02:55	Jupiter Transit: Europa 02:55 to 05:21 (23º to 07º alt)
	10	01:30	Jupiter Transit: Io - 01:30 to 02:58 (51º to 22º alt)
	10	15:44	Full Moon
	11	19:59	Jupiter Multi-Moon shadow transit (Io + Europa) (35º to 37º alt)
	17	02:34	Jupiter Transit: Io - 02:34 to 04:45 (20º to -06º alt)
	18	18:26	Jupiter Transit: Europa 18:26 to 20:54 (24º to 49º alt)
	18	18:33	Last Quarter Moon
	18	21:53	Jupiter Transit: Io - 21:53 to 23:12 (50º to 51º alt)
	18	21:53	Jupiter Multi-Moon shadow transit (Io + Europa) (53º to 53º alt)
	19	19:00	ASLC Monthly Meeting; Good Samaritan Society, Activities Meeting Room
	20	20:00	OUTREACH; Dark Sky Observing at Leesburg Dam State Park
	21	12:00	Texas Star Party (May 21 thru May 28)
	25	13:45	New Moon
	25	20:50	Jupiter Transit: Europa 20:50 to 23:18 (51º to 48º alt)
	25	22:48	Jupiter Transit: Io - 22:48 to 01:00 (51º to 32º alt)
	25	23:47	Jupiter Multi-Moon shadow transit (Io + Europa) (43º to 28º alt)

Be sure to visit our web site for ASLC information: *www.aslc-nm.org*

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Announcements

1. Notice: the May ASLC meeting has been moved to the third Friday, 19 May, so our many photon seekers can attend the Texas Star Party without missing our meeting.

2. The speaker for the April meeting will be Dr. Alan Hale, a friend of Howard Brewington and a fellow comet hunter, who will tell us about his co-discovery of Comet Hale-Bopp and his life since then. Alan has published several books and is a tireless observer of the night sky. In fact, he's viewed more than three hundred comets.

3 The agreement to use the facilities at Good Sam for our meeting prohibits members from bringing in ANY food or beverages, except water in a container with a screw lid. Take note: no more Starbucks or Saturn Cookies!

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Meeting Minutes

by John McCullough

Minutes, March 2017 ASLC Meeting

Show & Tell:

John Gilkison provided an update on the status of the City of Las Cruces' street lighting project to minimize "blue" light pollution. Most main arterial streets have been refitted with hotter 4000ºK LED lights. Residential areas will be supplied with less "blue" 3000ºK lights with the current phase of the project completing in May of this year. Replacing sodium and mercury vapor street light fixtures with LED fixtures has already produced an energy cost reduction from $1.2 million to $400,000 for the city.

Call to Order:

Howard Brewington, President, Astronomical Society of Las Cruces (ASLC, the Society), called the March 2017 business meeting to order at 7:15 pm, 24 March 2017, Creative Arts Room, Good Samaritan Society Las Cruces Village, 3011 Buena Vida Circle, Las Cruces, New Mexico.

President's Comments:

Howard Brewington, President, welcomed the group to tonight's meeting. He particularly noted Javier Ocasio, a frequent visitor that is joining the ASLC tonight. He reported that apparel with the Society logo is available after the meeting and that he would like a volunteer to handle that responsibility during his tenure as President. There were no other visitors or guests present at this month's meeting and Howard asked all members present to sign in on the rosters at the rear of the room. Howard thanked Charles Turner for the March edition of the High Desert Observer (HDO). The minutes of the February 2017 meeting were published in the March 2017 HDO. If there were no corrections, Howard asked that the minutes be accepted as submitted by acclamation; they were. He noted that Bert Stevens submitted a good article on staying warm while observing during the winter in Wisconsin. John Kutney submitted a nice image of NGC 2359 (Thor's Helmut) and a poem.

Treasurer's Report:

Trish Conley, Treasurer, was not present at tonight's meeting (illness). Howard reminded members to please pay dues for 2017.

Web Page:

Rich Richins and Howard Brewington are working to update the web page information and insure included links are active.

Outreach:

Chuck Sterling, Outreach Coordinator, reported this year's Messier Marathon will be 25 March at Leasburg Dam State Park (LDSP). There will be a Moon Gaze at International Delights Café (IDC) on 01 April. The monthly event at Leasburg Dam State Park (LDSP) will be 15 April. There will an observatory open house at Tombaugh Observatory on 07 April. No school star parties are planned until next fall. Contact Chuck for details. Howard thanked Jerry McMahon for his Outreach articles for the HDO.

Tombaugh Observatory:

Steve Shaffer reported there were thirty-four (34) viewers at the last open house. The issues with the mount drive seem to resolve themselves if the weather is warmer. Some additional maintenance/repair on the mount may be required.

ASLC Observatory at LDSP:

Sid Webb reports there were some operator issues with the 16" Meade telescope software at the last event. Alternate operators may need additional training.

Texas Star Party (TSP)/Cosmic Campground Star Party:

Both events occur in May this year. There may still be participant spaces available for TSP, but they will go fast. Contact Steve Barkes for details if you are interested in attending the star party at the Cosmic Campground,

Speakers:

Dr. Alan Hale will provide the presentation in April on comets. Additional speakers are needed for meetings later this year.

Volunteer Positions:

There are several opportunities to serve the Society in volunteer positions, such as apparel coordinator. Contact Howard Brewington if you are interested.

Presentation:

This month's presentation was by Society member Steve Barkes on "Messier Marathons for Fun and Profit". Messier objects are named after French astronomer Charles Messier (1730-1817), the "ferret of comets". Messier noted "faint fuzzies" while comet hunting and started a "Not a Comet" list of objects (actually nebulae, galaxies, and star clusters) not worth viewing. These "Not a Comet" objects ultimately numbered 109/110. A Messier Marathon is an attempt, usually by amateur astronomers, to view as many Messier objects as possible in one night. The best nights are relatively moon-less during a window from mid-March to mid-April in northern latitudes

There are different reasons to do a marathon and different ways to complete the list, including naked eye, binoculars, imaging, Go-To, non-Go-To, etc. Rich Richins imaged all 110 objects one year.

ASLC started holding Messier Marathons in 2004. This year's marathon will be 25 March at LDSP. If that night gets "weathered" out, a backup date will be announced. Steve offered different techniques, tool lists, and resources to help members prepare for a marathon. Preparation is key to a successful marathon. Hope to see you at LDSP on the 25th!

The March meeting of the Astronomical Society of Las Cruces concluded at 8:15 pm. A period of social interaction commenced shortly after at Pecan Grill.

-Respectfully submitted by John McCullough, ASLC Secretary

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Back at the Telescope

by Bert Stevens

Getting into space is not easy. We put our telescopes on high mountains to get above as much of the atmosphere as possible. Active optics helps correct for atmospheric distortion, but nothing beats observing from space. It eliminates the distortion, but the getting the telescope out of the atmosphere is an expensive proposition.

Elon Musk's SpaceX has been working to bring down the cost of reaching orbit. Their Falcon 9 booster is capable of landing after it finishes powering its payload and second stage towards orbit. Most of the weight of a booster is its fuel load. As long as the payload is not too heavy or needs get above low Earth orbit, the Falcon 9 has enough fuel left to slow itself down with a reentry burn. It then reenters the atmosphere on its way to a landing.

Small grid fins near the top of the booster keep the Falcon 9 oriented correctly and assist in guiding it to land on an unmanned droneship floating on the ocean. Just before landing, four landing legs extend

Figure 1: *The Falcon 9 booster that powered the SES-10 communication satellite into orbit after refurbishment is seen landing on the droneship "Of Course I Still Love You" some 200 miles out in the Atlantic Ocean in April 2016 after the CRS-8 launch. Photo Credit: SpaceX*

and the main engine comes on again to slow it down to a soft landing on the droneship. There were some failures during the very early tests, like a landing leg collapsing, but they are now able to make a successful landing. SpaceX has built up a small inventory of used, but reusable, boosters.

Reusability was part of the design, reducing the cost of launching to orbit. The plan is to reuse these boosters at least nine times. With the huge investment of building a satellite, the owner has to be

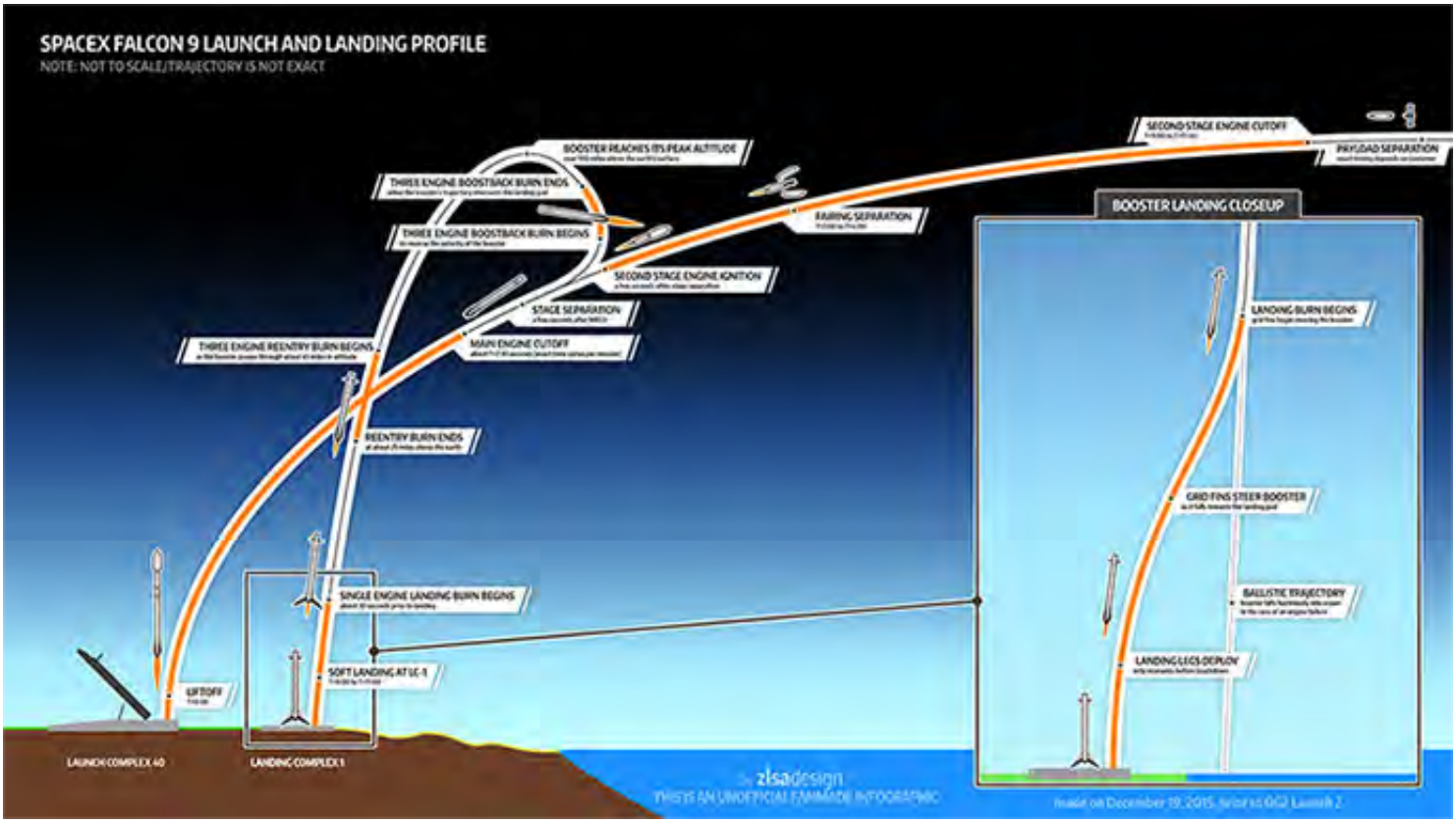

Figure 2: *The diagram of the flight profile of the Falcon 9 with a landing back at the Kennedy Space Center shows that if the payload is not too heavy, the booster can be flown back to the launch area and land on solid ground. The engine burn to slow the booster down uses three of the seven Merlin engines. Landing back at Kennedy saves time and costs since the drone ship does not have to be taken out to the landing zone and then returned.*

certain that a used booster will perform as designed. This finally happened on March 30, when a Falcon 9 booster that had been used to launch the CRS-8 in April 2016 was used to launch the SES-10 communication satellite and send it toward geostationary orbit. The booster then landed back on the droneship to be used again. This was a big step in dropping the price of getting into orbit.

Watching the live stream of the launches from the SpaceX headquarters on Rocket Road in Hawthorne, California, you see all the excited SpaceX employees following the launch. It would be exciting to have a space launch company in your hometown. Well, we have one right here in Las Cruces.

ARCA Space Corporation is headquartered at the Las Cruces International Airport. They are building rockets here and they are in negotiations to launch them from Spaceport America, near Upham, among other sites. Their current development project is the Haas 2CA single-stage-to-orbit launch vehicle, which will be built in Las Cruces.

This organization started in 1999 as the Romanian Cosmonautics and Aeronautics Association (Asociația Română pentru Cosmonautică și Aeronautică or ARCA) by Dumitru Popescu and other Romanian rocket and aeronautics enthusiasts. Their long-term goal was to launch rockets that could reach orbit with a human payload. After studying various rocket designs and fuels, they decided to use fiberglass engines burning hydrogen peroxide and kerosene.

The first rocket they managed to launch was the Demonstrator 2B which was fifteen feet long and reached an altitude of four thousand feet with only twenty percent of the normal fuel load to keep

it within the test safety zone. This led them to enter the Ansari X prize and they started to design a spaceplane. ACRA ran into cost problems and decided to shift their focus to launching their rockets from solar balloons, balloons whose buoyancy is created by solar heating of the internal air. They built the largest solar balloon ever constructed and lifted their Stabilo rocket and one-man crew capsule to 49,000 feet on December 2, 2006. The capsule was safely recovered that evening. They were able to repeat the feat in 2008 with the Romanian Army and Navy cooperating with them to pull their capsule out of the Black Sea.

ARCA then performed additional tests with giant solar balloons and then switched to helium balloons. After having issues with the balloons, they switched to a rocketplane that would lift their three-stage Haas 2 rocket to an altitude of 56,000 feet. Haas 2, named after Austrian-Romanian rocketry pioneer Conrad Haas (1509-1579), would then be able to carry four-hundred pound payload into orbit. Work on this system extended from 2010 to 2013.

They created along term road map for their space program that included a small-scale orbital rocket (Haas 2C), a suborbital manned rocket (Haas 2B) and a medium scale manned orbital rocket (Super Haas). In 2014, ACRA announced that while software and rocket engine development would continue in Romania, their headquarters and production facilities would transfer to Las Cruces. They incorporated in New Mexico that year (http://www.arcaspace.com).

Figure 3: *Here the Haas 2CA rocket is sitting on a cradle in a hanger at the Las Cruces International Airport. The initial design is a single-stage-to-orbit for small payloads. Future designs will include a second stage to triple the payload that be placed in low Earth orbit.*

Shortly thereafter, they announced two Unmanned Aerial Vehicle (UAV) models available for purchase, AirStrato Explorer that could stay aloft for twenty hours at altitudes up to sixty thousand feet and the lighter AirStrato Pioneer that could only reach twenty-six thousand feet for twelve hours. These UAVs would be tested out of the Las Cruces Airport.

At the end of March, ARCA announced the Haas 2CA, a single-stage-to-orbit rocket that could get 220-pound payloads into low Earth orbit. The first test flight is expected to be in 2018 from Wallops Island Flight Facility in Virginia. They are part of NASA's Cooperative Opportunity Program, giving them access to NASA's knowledge and data.

The Haas 2CA will be built in Las Cruces and it should reduce the cost of launching small payloads into orbit by almost half. Since the entire rocket and payload will enter orbit, it would be possible to refuel the rocket in orbit to shoot for higher targets like the Moon or Mars. The FAA still has to license the rocket, but one day we may be able to see rockets launched from Spaceport America make it all the way into orbit and beyond.

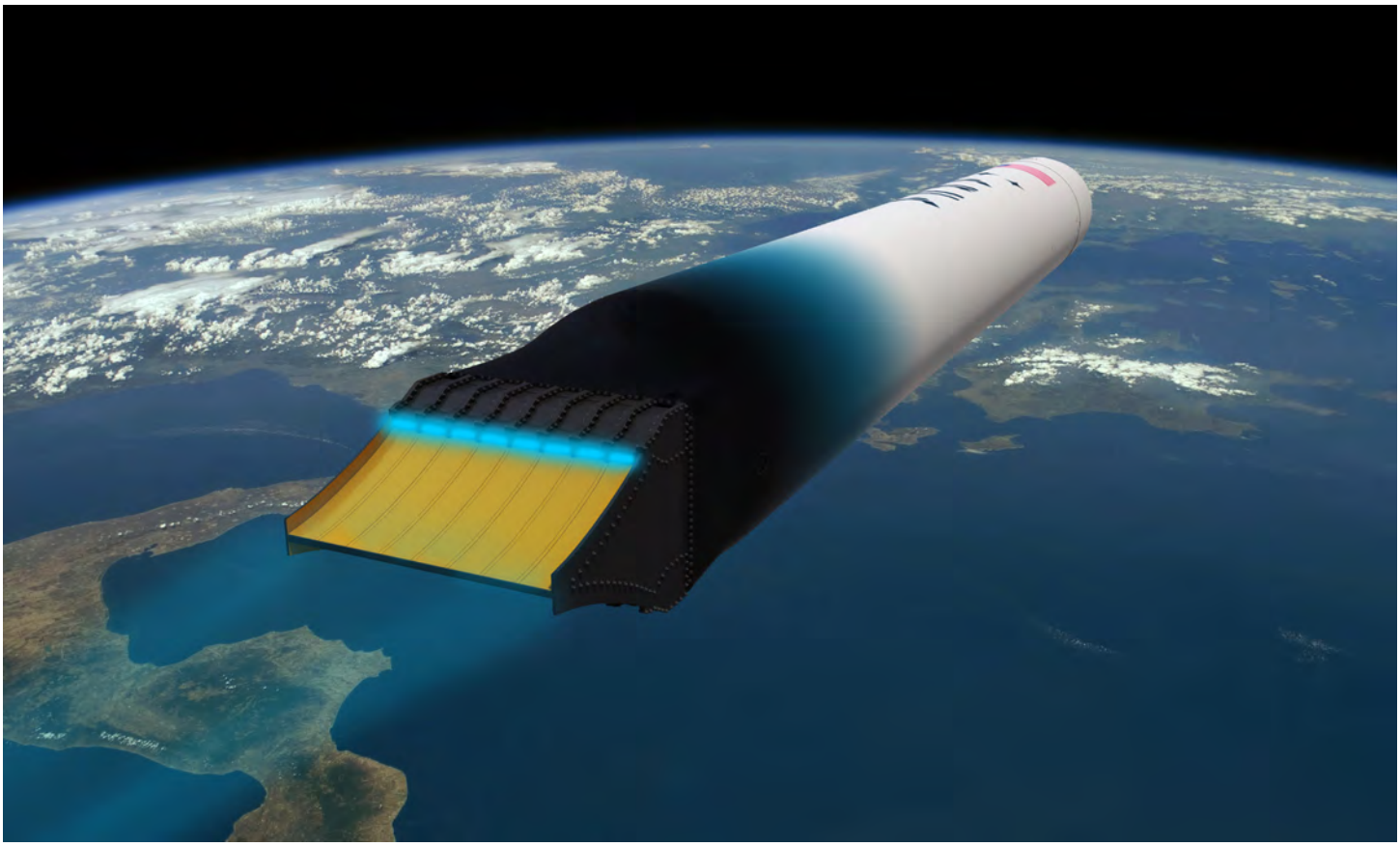

Figure 4: *TThe Haas 2CA is powered by the Executor engine, a linear aerospike that is one of the most advanced engines under development for orbital flight. The engine has sixteen thrust chambers that can be throttled individually to control the direction of flight instead of gimbaling the entire engine assembly. This reduces cost and complexity. It adjusts to the differing atmospheric pressures as it gains altitude, allowing the booster to use fuel very efficiently. The entire vehicle is built from composite materials.*

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Report on Las Cruces Residential Street Lighting

By John Gilkison

Sidney Web and I met with the City Streetlighting Department last year to try to convince them not to continue installing 4,000 Kelvin (color temperature) LED streetlights and to switch to 3,000 Kelvin lights for their LED retrofit program.

While the city was nearly done with Phase I (the main arterial streets) of the LED retrofit program, they had yet to start on Phase II of their program, retrofitting the residential areas.

Representing the ASLC our main concern was that the 4,000 K lighting has about twice as much blue light component in it which is preferentially backscattered to the night sky even though the lights are fully shielded.

The City of Las Cruces agreed to switch to the 3,000 Kelvin lighting for the second phase of their project the residential area. At the 2016 meeting I also discussed the second half of the night concept where streetlights can be reduced in output lumens because the lights are not needed as much later in the night.

In a recent meeting with the CLC Sustainability Officer Lisa LaRouque she told me that the residential lighting was due to be finished in May 2017. She also told me that she had ordered seven pin connectors for all these lights so they could be operated with bi-level controls in the future.

This is big win for the protection of dark skies in Las Cruces, NM. The full cut off shielding ordinance passed in August 2000 is the key to all these efforts, but lower color temperature lighting helps also.

My back of the envelope calculations show that this switch to 3,000 K lighting will keep over twenty billion lumen hours of backscattered light out of the night sky per year. Less light in the sky equals darker skies.

Happy observing everybody.

Residential LED Streetlight on El Prado Ave

My red Ford C Max Energi is parked across the street from the light.

Photo of the Month

OBJECT NGC 2264 (Cone Nebula) and surroundings) Distance: 2,700 light years
Telescope Takahashi FS-60C @ f/6.2 **Mount** Takahashi EM200 Temma II
Camera QSI 540wsg @ -15C
Filters Astrodon Ha (3nm), Astrodon Tru-Balance I-Series LRGB Gen 2
Guider SX Lodestar
Settings 11x20min Ha, 4x5min L (bin1x1); 3x5min ea RGB (bin2x2); AstroArt5, CS4 (slightly cropped, 10xdarks/flats/fdarks/bias)
Date/Location 26,29 January 2017 - Las Cruces, NM

Imaged over 2 nights. This image is LHaRGB, where Ha was used in combination with Luminance and Ha:R (80:20) was used for the Red channel.

Photo of the Month

OBJECT: **NGC 2237** The Rosette Nebula is comprised of Open cluster NGC 2244 and emission nebula NGC2237. The Rosette is designated as a diffuse nebula and is also listed as LBN 948 and Caldwell 49.

Takahashi Epsilon / FLI ML 16200 / RGB 2x5min / Ha & OIII 12x5min 4x10min / CCDstack / PS / Las Cruces 03/18/17

By John Kutney

Poem of the Month #1

#9
Lunar face
shared with many, meant for one
the dark side, shared with no one
meant for all

Somewhere, a place
I can see your other face
Quench the fire, only with heat
Burn out, dark on either face
never seen, always known
adjust my eyes, the light is strong
grope in ignorance, foolish soul
light is endless, dark is small
turn to me, defy
let me see your other side

John Kutney ‘73

Photo of the Month

NGC 346 bicolor image - The brightest star-forming region in the Small Magellantic Cloud. Apparently, the designation refers to the open cluster and not the cloud. (NGC 330, lower left, also is in the SMC. Some sources refer to it as an open cluster, others as a globular cluster.)

Telescope: 20" Planewave (with 4.5x focal reducer)
Camera: FLI PL6303E
Location: Sliding Spring, AU
Exposures: Ha=13x300", OIII=17x300", L=17x60"
General color pallet: Red=Ha, Blue=OIII
Image fov: ~40'x25'
Processing: PixInsight

By Alex Woronow

Poem of the Month #2

A Hunter's Prayer

From dusk to dawn with scope I scan each clear and moonless night.

A comet's my aim as they can carve one's name within the sky.

Relentless is my effort; perhaps, tonight will be the night.

Should success come, complete I'll be, for comet hunters never die.

By Howard J. Brewington (2000)