



*Pathway to Dark
Sky Community
Certification,
1999 – 2015
and beyond*



*Dark Skies of the Wet Mountain
Valley, Colorado, USA*



Where the mountains meet the stars!



*2011 student art contest winners (from the top):
Cloud Spitzgaden, Corey Lewenkamp,
Kristine Henrich, and Aspen Anderson*



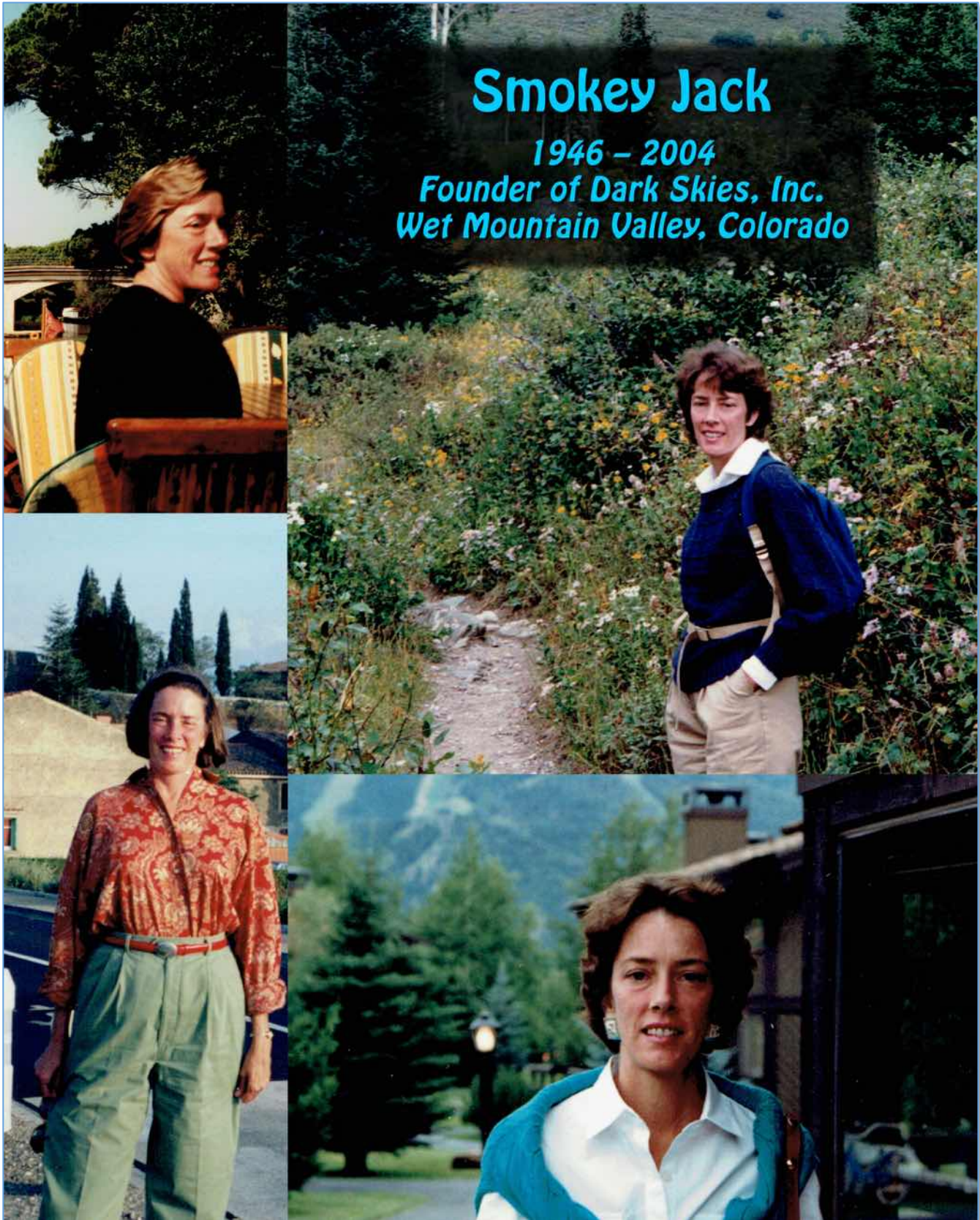
Pathway to Dark Sky Community Certification, 1999 – 2015 & Beyond

Shortly after the inception of Dark Skies, Inc. of the Wet Mountain Valley on March 5, 1999, Smokey Jack, President, negotiated an agreement with the West Custer County Hospital District to use dark sky friendly lighting fixtures. She realized that awakening growth in the towns and the surrounding Wet Mountain Valley would soon get the attention of nationally operated chain and franchised businesses that typically follow the corporate building style that rarely specifies dark sky friendly lighting fixtures. But she knew the biggest hurdle was to educate her community on the benefits of these changes, when the community had done things a certain way for a long time.

Thus began a long 15-year process to help her neighbors to understand the benefits of protecting the beautiful mountain rural charm from being lost to big city problems like light pollution. She and the founding members of Dark Skies decided to approach this process with education of the problem and of its solutions until the mindset had changed sufficiently to campaign for lighting ordinances. Following here are many samples of how the education process has and is still being conducted with year-round newspaper advertising, an art contest at the Custer County School District, the Dark Skies' website, a publication included with the town/county building permit packets, presentations at local organizations, and star parties (usually with a lecture presentation where dark sky issues are included).

The effectiveness of this education effort is reflected in the Town of Westcliffe trustees' decision to install a test LED street light without prompting from Dark Skies, the school district's decision to change shielded parking lot lights to LED fixtures, and, on a much larger scale, with continuing public financial support of Dark Skies objectives without there being a large goal set for a specific project. Over the years 2009 - 2013, we had an average of 71 contributors and contributions of \$5,716 annually. Over 10% of the campaign's contributors give to Dark Skies. Most contributions come from within Colorado, but we also have received contributions from seasonal residents from whom we have often heard that they plan on retiring here in the future and want the nightscape preserved for when they can enjoy it full-time. And from out-of-state visitors that found that their visit here inspired them to want to keep it a special place to which to return.

With the 2015 certification of Westcliffe and Silver Cliff as a Dark Sky Community, there is every reason to believe that our dark skies will continue as a source of civic pride and economic success for the future years to come. Sadly, Smokey did not live to see this possibility nor the certification by IDA as a Dark Sky Community. She is honored by naming the public observatory after her: the *Smokey Jack Observatory*.



The Dark Skies' origin story from the longest serving member, Sam Frostman, as told in late 2020:

In 1998 I saw a short article in the *Wet Mountain Tribune* asking folks who were interested in preserving the dark skies of the Wet Mountain Valley to gather for an organizational meeting in the basement of the county courthouse. I was one of about 6 to 7 people there. Smokey Jack was the person who organized the meeting. She explained that she had been working (alone) with people like the county commissioners to place wording in the PUD Zoning Regulations regarding lights that were dark sky friendly. She wanted to organize a group to make this more of a public outreach. Bill and Smokey Jack owned a ranch out on Vermont Road on the valley floor and could see lights in every direction. But Smokey wanted to make sure that additional lights were not going to destroy the view of the stars she could see from her ranch.

Members of the original group were the wife of the *Tribune* owner, a counselor from the high school, a local couple from the southern part of valley who had an observatory, a local woodcarver, and a longtime rancher from the Wetmore area. There were several others who joined later. Smokey knew people, so she had a local lawyer draw up the 501(3)c papers for the IRS. Shortly after an anonymous donation of \$10,000 was used to hire Clanton and Associates from Boulder to come and assess Westcliffe's streetlights. Dark Skies' members took readings and measurements and sent them to Clanton. The money, along with additional public donations was used to replace all the Town of Westcliffe streetlights with dark skies friendly fixtures. Except for one street light on the corner of Hermit Road and Hwy. 69 at the request of a landowner there at the time.

To raise money we all submitted the names of people we knew, Smokey wrote up and printed a letter, and we met in her ranch dining room to hand address, stuff, stamp, and seal those letters. We used some of the money to place a full page insert in the *Tribune* explaining dark skies friendly light fixtures and asking for people to contact us if they were interested. Then we started changing light fixtures one at a time for those who asked. Smokey contacted the people who were building the new medical clinic and had them install dark skies friendly parking lot lights. She was a force to be recognized.

I do not remember the year Bill and Smokey moved to Amelia Island in Florida. They were originally from Pennsylvania. But then we found out Smokey had an infection in the pericardium of her heart and she was not expected to live long. Her life was just too short! When Bob Gilchrist was president of Dark Skies, we changed the school's parking lot lights to dark skies friendly fixtures and a plaque was placed on one of the light poles in remembrance of Smokey Jack. The new addition to the school already had dark skies friendly light fixtures.

—Sam Frostman

Successful Projects in Light Pollution Control, Education, and Awareness, 1999 – 2015

A small sampling of projects in historical timeline order—

In 1999, shortly after the inception of Dark Skies on March 5 of that year, Smokey Jack, President, negotiated an agreement with the West Custer County Hospital District to have shielded lights installed in their parking lot and on the building. Sign illumination that was dark sky friendly was also included. Twenty years later, these fixtures were still in use.

This lighting project was the first in a long process to gain support by the communities. This and the following sampling of many projects illustrate that being done.



THE MOUNTAIN TRIBUNE THURSDAY, SEPTEMBER 23TH, 1999 7

Clinic's exterior lights to be Dark Skies friendly

Parking lot lighting that is Dark Skies-friendly was a topic of discussion at the West Custer County Hospital District's monthly board meeting Tuesday, Sept. 14.

When Bill and Smokey Jack, proponents for Dark Skies, originally donated money to the new clinic they requested that outside lights for the parking lot be hooded, in compliance with Dark Skies. The Dark Skies organization is attempting to eliminate nighttime light pollution in the Wet Mountain Valley, by having exterior lights hooded.

The clinic's lighting plans call for two pole lights, and once they are installed it will be determined if more of the hooded lights are needed for proper illumination.

There was some discussion regarding signs at the new clinic. One proposal brought up is the idea of engraved and painted boulders, located at the parking lot entrances and illuminated by ground lights.

In 2001, Dark Skies ran a successful community fund drive to finance the \$15,500 replacement cost of the 44 Westcliffe owned street lights.

THURSDAY, JUNE 21, 2001

West Mountain Tribune

7

Dark Skies project replaces Westcliffe street lights

The streets in Westcliffe are brighter, but the night skies are darker now that 44 town street lights have been replaced with shielded fixtures.

The \$15,500 project was funded by the local Dark Skies organization, and the shielded light fixtures were supplied and installed by WestPlains Energy.

Smokey Jack, president of Dark Skies, told the Tribune that the organization approached Custer County School in 1998, suggesting that a fully shielded light fixture be installed on the basketball court.

At that time, Dark Skies discovered that "WestPlains, which supplies the town's street lights, will only put up fixtures they stock," Jack said, "and they didn't stock anything but expensive shoe box lights."

Eventually, Dark Skies persuaded WestPlains to offer the less expensive, fully-shielded light fixtures and in 1999 the Westcliffe Board of Trustees approved replacing the town's lights.

Following the board's approval, Dark Skies began a fund raising effort to pay for the project. "All the funds to pay for the new lights came from private donations," Jack said, "it was all contributions."

Westcliffe town manager Don Stuart concurred, "Dark Skies paid the fees to go from the old fixtures to the new and WestPlains provided the lights."

According to Jack, the new lights are the same wattage as the lights they replaced, the difference is, the new fixtures direct the light to the ground where it is needed rather than up into the sky.

Dark Skies paid for the lights and labor with donated funds.

"No light is emitted above a horizontal line from the light source," she said. Viewing the lights from above, Jack said, there will be no light in the sky but "you will see light on the ground and the buildings. It will make driving safer because there is no glare at night."

Although the new fixtures will help make the town's streets safer at night as well as protect the Valley's beautiful night skies, Stuart said they won't reduce Westcliffe's energy bills.

"It won't make any difference to the power bills," he told the Tribune, "We pay \$7 per light, regardless of usage." Stuart added that there are 21 additional street lights in town that are privately owned and were not replaced during this project.

Jack said that Westcliffe's light replacement project is in keeping with efforts across the nation, including in Colorado, to protect night skies from the glare of unshielded light fixtures.

She said Saguache County recently passed an ordinance requiring new lights be shielded and Chaffee County has a similar ordinance in the planning stages.

In addition, Gov. Bill Owens recently signed HB01-1160, which states:

"As of July 1, 2002, any new outdoor lighting fixture installed using state funds with a rated output of greater than 1,800 lumens shall be a full cutoff light fixture."

Information provide by Dark Skies explained that 1,800 lumens is approximately equivalent to a 90 watt incandescent bulb, so the new law will apply to

almost all state funded outdoor light fixtures.

For additional information about Dark Skies or the types of shielded light fixtures available, call Jack at 783-2935.

Examples of shielded light fixtures also

may be seen at the organization's office, 114 Main in Westcliffe on the second floor. Additional information is available at the office as well. Call 783-2924 for hours.

--Rayna Bailey



Largest lighting project until Silver Cliff lights were replaced in 2016.

Crews with WestPlains Energy spent last week replacing the town of Westcliffe's 44 street lights with fully shielded fixtures. The new fixtures direct light to the ground where it is needed and protect the Valley's night skies. --Trib photo

In 2004, Dark Skies funded the replacement of the parking lot lights and wall packs at the Custer County School District facility.



In 2005, we funded the replacement of glaring street light fixtures with flat-lens, non-glaring units and the placement of shields on other fixtures used at the Round Mountain Water and Sanitation District treatment plant just north of downtown Westcliffe.

Met Mountain Tribune
THURSDAY, SEPTEMBER 29, 2005

Jumping on Dark Skies bandwagon, Round Mountain to replace lights

Plans are underway by the Round Mountain Water and Sanitation District to replace the existing lights at the sewer treatment plant with high efficiency bulbs, as well as shielded light units recommended by the Dark Skies organization.

The decision to replace the current lighting was made during RMW's regular board meeting earlier this month.

Total estimated cost of the project is \$1,697.43. RMW will pay \$1,197.43, while Dark Skies will pick-up the remaining \$500.

—MET with water attorney Bob Krassa, general attorney John Naylor and general water engineer Clyde Young to discuss the pending Johnson Place water court case.

Noted was that the case has been referred to the water judge and a trial has been scheduled to begin November 2006.

—AUTHORIZED the purchase of an air compressor for the lift station at a cost of \$180 in and back-up pump for the pump house. No cost estimates were given for the pump.



In 2009, a dollar discount store constructed a building in Silver Cliff with glaring wall packs and roof mounted fixtures that created extreme light trespass onto Highway 96 and onto neighborhoods for many blocks. An outpouring of complaints to the store and the Tribune's *Letters to the Editor* lead to the company management decision to turn off some of the lights when closed to business and to allow Dark Skies to install shielding on the wall packs — before and after photos below.



In 2009 and 2010, Dark Skies worked with the Custer County Commissioners to replace the Custer County Courthouse exterior lighting with dark sky friendly fixtures.



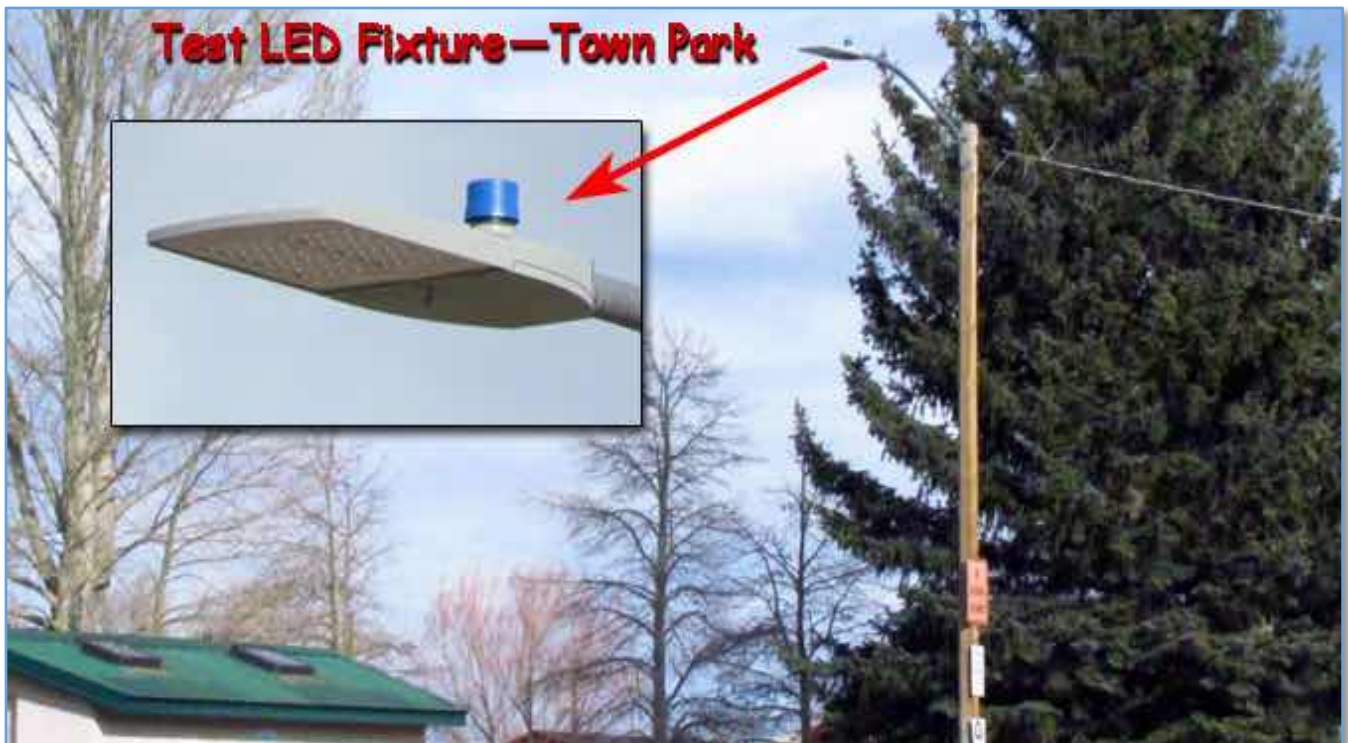
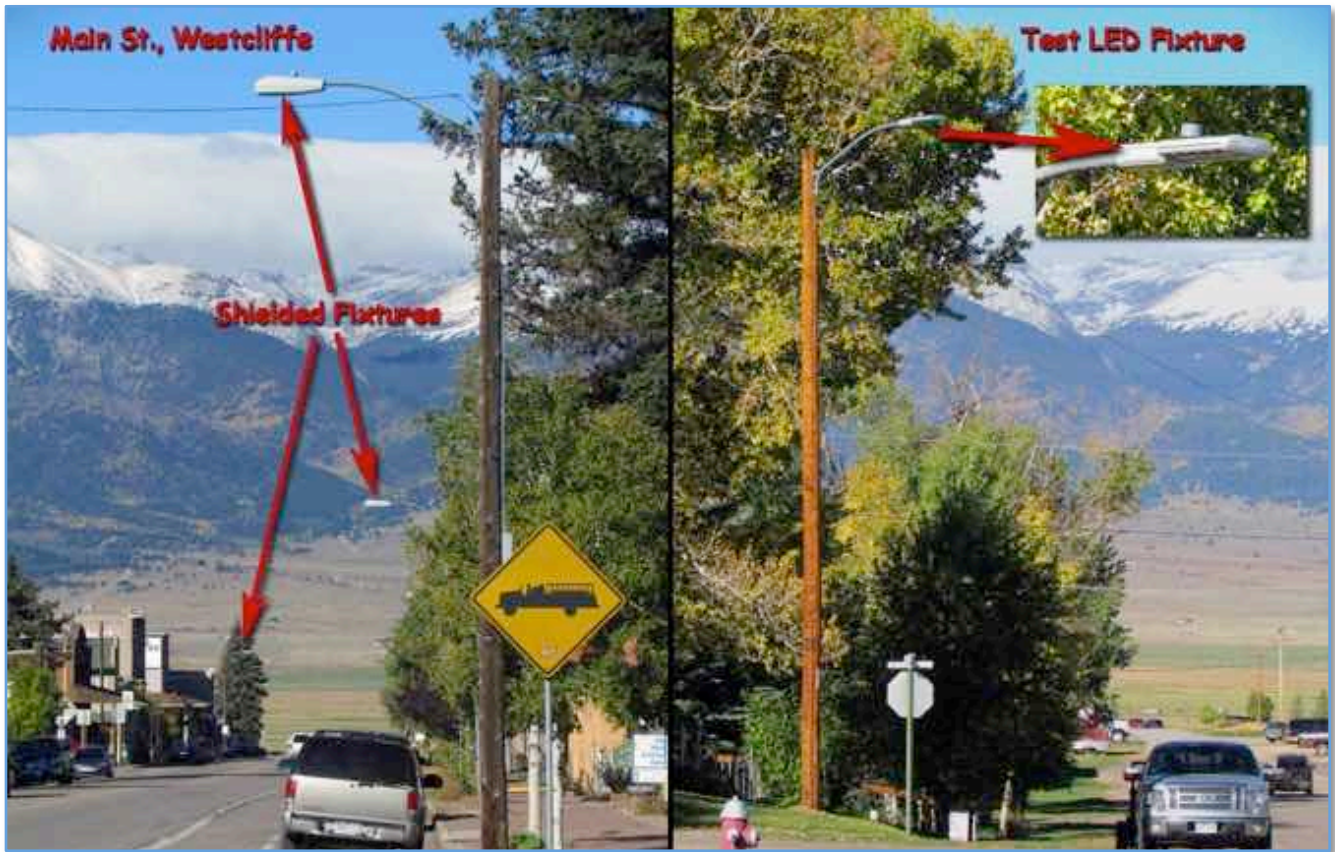
The top images are of the front of the courthouse where glaring wall packs used to blind passing drivers. Bottom images are the back of the courthouse where wall packs were replaced and shielded parking lot lights installed.



In 2011 and 2012, using donations made through the annual Wet Mountain Valley Community Foundation *Spirit Campaign* and other donations, we worked with the Westcliffe Supermarket to change the outside wall pack lights to cutoff fixtures that will shield the lighting from the neighborhood and *The Bluff Park* (see satellite image below).



In 2014, the town trustees decided to install test LED fixtures with the goal of reducing energy consumption by converting all the town-owned street lights. This decision, which came without any prompting from Dark Skies, illustrates the change in mindset that Dark Skies has worked towards over the first 15 years.



Education Efforts—







Student Art Contest—

Since 2009, Dark Skies has supported the school district’s art program through a contest for the best art interpretation of the night sky. This contest makes the night sky a focus point to many youth that will stay with them throughout their lives. The winning submissions are used for half-page color advertisements in the local newspaper, the *Wet Mountain Tribune*, to promote dark sky awareness and for funding support to Dark Skies.



Publication for Home Builders—

For over a decade, Dark Skies has provided a dark sky publication in the packet of information given prospective home builders by Custer County permitting office. The publication explains the value in maintaining the area’s dark skies and a description of the types of fixtures that are dark sky friendly. A link to the Dark Skies website is included to provide more information and contact information for assistance.

BAD	GOOD	
		Custer County is in the enviable position of beginning our dark sky protection efforts with generally dark skies. Please illuminate carefully. Picking the right fixture and bulb type for your needs will yield quality of life dividends for all of us.
		
		

It is a win-win situation: glare and upward light pollution have no lighting benefit; they only reduce the effectiveness of well modulated, useful light.

You can help save our dark skies before they are gone - one light at a time!

Bulb Type	Lumens Per Watt	Appearance
Incandescent	20	white / yellow
Mercury vapor	54	metallic blue
Metal halide	80	white (best)
High-pressure sodium	125	amber
Low-pressure sodium	183	yellow / orange

LUMENS = the amount of light
WATTS = the amount of electricity



MERCURY VAPOR:
175 watt = 7140 lumens = annual cost of \$70.26 @ \$0.10 / kwh

HIGH PRESSURE SODIUM:
100 watt = 8550 lumens = annual cost of \$40.14 @ \$0.10 / kwh

For more information, contact:

DARK SKIES
P.O. Box 634
Westcliffe, CO 81252
www.welmtndarkskies.org

April-2003

The Starry Night – Vincent van Gogh

**Is the night sky worth saving?
We think so.**

www.welmtndarkskies.org

This a folded, 4-page booklet with pages 4 & 1 shown.

Star Parties and the Smokey Jack Observatory —

The Smokey Jack Observatory (SJO) was constructed a few months after our certification in the spring of 2015. It offers public and personal reserved star parties to the public at no charge and has been hugely successful. Records show over 900+ participants, many from out of the area, take advantage of this opportunity. In 2020, major improvements to SJO were made by adding a 6-position telescope observing pad, safety handrails, and arena seating for viewing projected images from the main telescope.

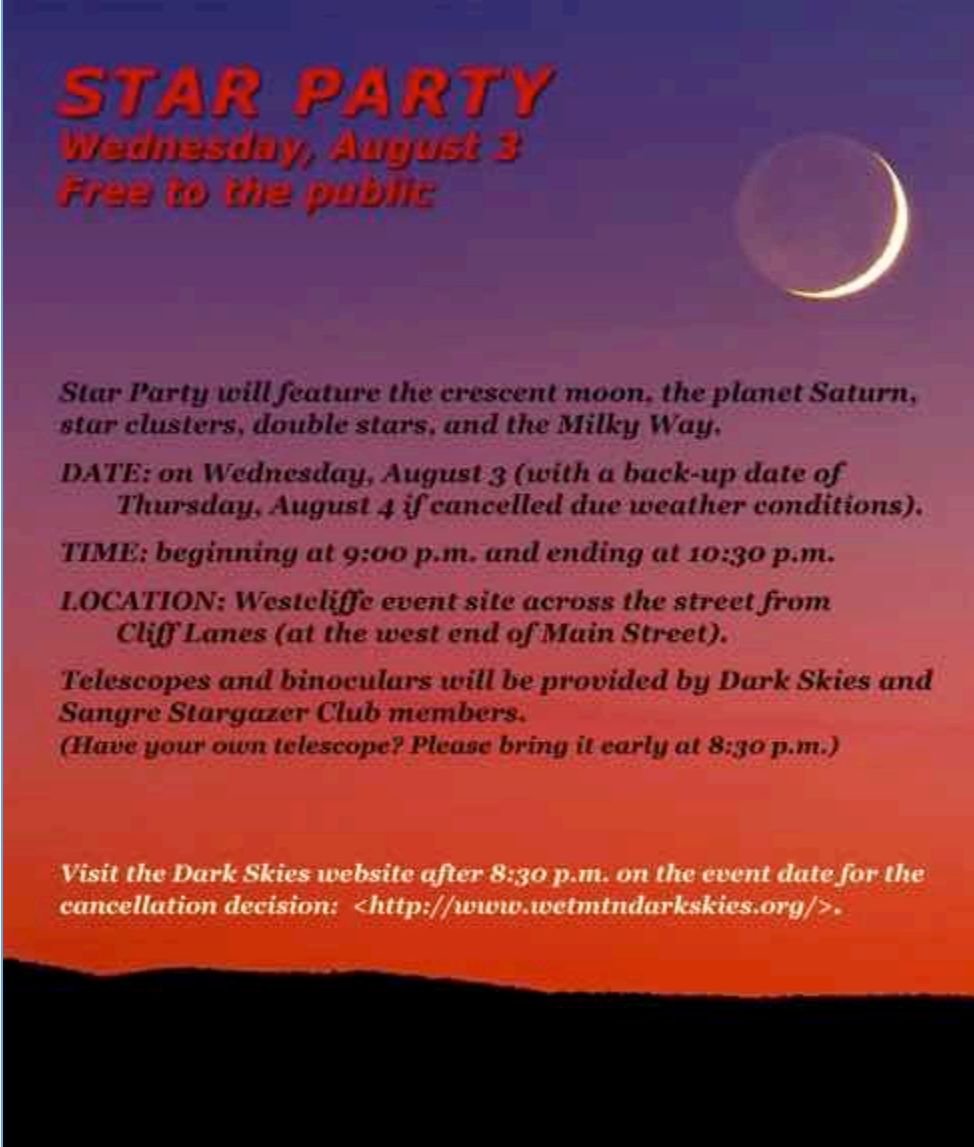


Maintaining Awareness—

Newspaper Advertising—

The Wet Mountain Valley, which includes Westcliffe, is so rural that there is no commercial television or radio stations based here to provide coverage of our efforts. While there is a low-power, public radio station, it has little coverage of local events. The one source of traditional public communication is *The Wet Mountain Tribune*, a weekly newspaper with its editorial offices located in Westcliffe. Dark Skies ran occasional ads to raise public awareness but since 2009 we have purchased a scheduled package of 25 ads from small 4" x 4" black and white copy to half-page color ones spread out over a full year.

Two Column, Color Advertisement—



STAR PARTY
Wednesday, August 3
Free to the public

Star Party will feature the crescent moon, the planet Saturn, star clusters, double stars, and the Milky Way.


DATE: *on Wednesday, August 3 (with a back-up date of Thursday, August 4 if cancelled due weather conditions).*

TIME: *beginning at 9:00 p.m. and ending at 10:30 p.m.*

LOCATION: *Westcliffe event site across the street from Cliff Lanes (at the west end of Main Street).*

*Telescopes and binoculars will be provided by Dark Skies and Sangre Stargazer Club members.
(Have your own telescope? Please bring it early at 8:30 p.m.)*

Visit the Dark Skies website after 8:30 p.m. on the event date for the cancellation decision: <<http://www.wetmtndarkskies.org/>>.



Original art by Colin Hess, Fifth Grade Winner in the 2013 Elementary School Art Contest

Starry, starry night...lost

Cowboy Poetry by Jane Morton


Country Dark

New neighbors put in new barn lights installed at rooftop height. Two bright new post lights mark their drive and burn throughout the night. They put big lights on their garage and at each entry way. Lights blaze away from dusk to dawn and turn night into day. Night wrapped itself around us, and moonlight lit our ways, until those glaring lights went in and dimmed the silvery rays. We lost the country dark we had, and with it went the stars. Lights water down the Milky Way, obscure Venus and Mars.

The brightness spreads across the sky, blights land these folks don't own, corrupting and destroying dark, which we had always known. Ancients gazed at their night skies and saw infinity, While we can't see beyond the glow in our vicinity. Lights pointing down instead of up would cut down on the glare, and timers, well as sensors, might diminish our despair.

©2012 Jane Morton. All rights reserved. Used with permission. <cowboypoetry.com/janemorton.htm> Visit the Dark Skies website: <www.wetmtdarkskies.org/>

Starry, starry night...



Original art by Aspen Anderson, 9th Grade, co-winner of the 2011 High School Art Contest

What can you do to help maintain our beautiful starry skies?

Donate to Dark Skies through the 2011 Wet Mountain Valley Community Foundation's Spirit Campaign. See the announcement on the adjacent page or visit: <www.wmvcf.org> and select Donations.

This winning piece of art calls to mind the beautiful night sky viewed from the homes in the Wet Mountain Valley, but lost for much of the rest of the United States. Take steps to protect it—

- use shielded outdoor fixtures
- install timers and motion detectors
- use lower-rated bulbs

Fall, 2014–Certification Team Members



Top from the left: Ed Stewart, Steve Janssen, Charlene Andres-Rohr, Sam Frostman,
Bottom: Jim Rohr, Steve Linderer, and Jim Bradburn.

Jane Morton, the Female Cowboy Poet 2007, expressed how easily the dark sky can be lost when she read her poem "Country Dark" at the September, 2014, Westcliffe Town Council meeting in support of our Dark-Sky Community certification.

Western and
COWBOY POETRY & Music

JANE MORTON



Country Dark

New neighbors put in new barn lights
installed at rooftop height.
Two bright new post lights mark their drive
and burn throughout the night.

They put big lights on their garage
and at each entry way.
Lights blaze away from dusk to dawn
and turn night into day.

Night wrapped itself around us,
and moonlight lit our ways,
until those glaring lights went in
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We lost the country dark we had,
and with it went the stars.
Lights water down the Milky Way,
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<http://www.cowboypoetry.com/>



History of Activities, 2015 – 2016

(Based on the reporting year of October 1 through September 30 for International Dark-Sky Certification Annual Reports)

- Construction and dedication of the public *Smokey Jack Observatory*.

Dark Skies to dedicate Smokey Jack Observatory next week

On the evening of Friday, Nov. 13, the local Dark Skies organization is holding a ceremony and star party to celebrate the International Dark-Sky designation of our community and to dedicate the new Smokey Jack Observatory.

The event will be held in the Community Room of CHE Lanes Entertainment Center and at The Bluff at the west end of Main Street in Westcliffe starting at 6:30 p.m.

The public is encouraged to come join the Dark Skies board of directors and members as they recognize the volunteers and contributors that have made the International Dark Sky Community and the Smokey Jack Observatory a reality.

Guest speaker, Amy Hilbeisi, Astronomer Park Ranger from Great Sand Dunes National Park, will give a brief presentation at the Community Room followed by time spent describing the night sky at the observatory. An informal star party will take place on The Bluff immediately following the dedication ceremony. Dark Skies volunteers will join Hilbeisi to explain the features of the night sky and to look through the observatory telescope at the Andromeda Galaxy.

The observatory is 12-feet by 12-feet with a retractable roof, and houses a 14-inch Schmidt-Cassegrain telescope with computer guided pointing and tracking. It is located on the southwest corner of The Bluff, just below the grassy level of the park used for festivals. Bring a flashlight, preferably red, to keep light pollution to a minimum.

The Smokey Jack Observatory was

Suzanne B. Jack, known to all as Smokey Jack, the first Dark Skies President, Smokey and Bill Jack owned and operated the Texas Creek Ranch. Smokey loved the beautiful night skies of the Wet Mountain Valley, and she wanted others to be able to admire the Milky Way. In 1998 Smokey Jack organized a small group of concerned citizens to "prevent light pollution through education." Under Smokey's able leadership, replacing one light at a time, Dark Skies solicited enough donations to change all 45 streetlights in the Town of Westcliffe to dark sky friendly fixtures by August of 2001. Smokey Jack died of cancer in 2004, but left behind a legacy of education about light pollution that continues to spread, protecting our pristine dark skies for future generations.

In recent years, the dark night skies over the town have come to be recognized by locals as a natural resource worth preserving. The towns of Westcliffe and Silver Cliff have come together to protect a shared natural resource – their dark night skies. In the first effort of its kind, the towns worked side by side to ensure preservation of dark nights for the benefit of

Dark Skies invites the public to attend a special celebration—

Dedication of the new Smokey Jack Observatory

Friday, November 13, 6:30 p.m. at the Community Room, Cliff Lanes (at the west end of Main Street)

Followed by a star party at the observatory. Bring a flashlight, preferably with a red lens, to assist in walking to the SJO.

Ad run in same issue

- Tourist publications: articles and calendars in print and Internet, total: 5.

The Pueblo Chieftain WWW.CHIEFTAIN.COM/UPPERARK FRIDAY, MARCH 20, 2015 3B

Upper Ark Chieftain

Serving: Buena Vista / Canon City / Florence / Penrose / Salida / Silver Cliff / Westcliffe / Wetmore

WESTCLIFFE

Towns are shooting to the stars

Dark skies designation could make them an astronomer's destination

BY TRACY HAIMON
THE PUEBLO CHIEFTAIN

WESTCLIFFE — Keeping people in the dark and reaching for the stars has won The Cliffs the state's first international dark skies designation, only the ninth such honor bestowed in the world. The towns of Westcliffe



“It was a huge effort and we are real pleased to be the first in Colorado and ninth in the world. It is a wonderful thing that will be quite good for the community both

- Training by Dark Skies members of two dozen volunteer citizen “Star Guides” to host star parties at the *Smokey Jack Observatory*.

Wet Mountain Tribune, January 28, 2016

Dark Skies seeks volunteers for Smokey Jack Observatory

The new Smokey Jack Observatory, located at The Bluff Park in Westcliffe, has been completed and made fully opera-

- 4) Must change out eyepieces in the telescope, as needed.
- 5) Must be able to operate the computer

- *NY Times*, *US News* and CNN’s *Great Big Story* national media coverage.

THURSDAY, AUGUST 18, 2016 Wet Mountain Tribune 3

New York Times, US News, shine spotlight on Custer County

It’s been quite a notorious week for Custer County and our towns. The Valley has been touted in both an August 8 online article in “US News and World Report (NWP),” and an August 13 article in the “New York Times (NYT),” as a very desirable place to live or retire.

Of course we’ve quietly known that for some time, some of us for decades, and, counting the generational descendants of pioneer Valley families, some of us for a

of our two towns. As one of nine places on the planet where darkness is a reality still cherished and protected, Silver Cliff and Westcliffe are rightfully receiving some positive press.

Several locals, including Westcliffe Mayor Christy Patterson, are quoted in the NYT article, with enthusiastic comments on the treasures of our night sky, and pride in the communities and their combined efforts to attain the rare distinction.

would support what kind of resident growth; while aging, it might not be geriatric services that are needed, so much as catering to a different sort of populace. As I said, it’s hard to put your finger directly on what we need, and where we’d be going.”

In any event, Custer County gains attraction from studies and statistics that place us way up the charts on everything from health and wellbeing to income disparity, desirabil-

ity to uniqueness. We here who enjoy it all, will undoubtedly also have to come to terms with how we deal responsibly and sanely not only with notoriety, but inevitable growth.

The NYT article can be found by following the appropriate links at www.nytimes.com/2016/08/13.

The NWP piece is found at money.usnews.com.

— W.A. Ewing

- Financial assistance of \$10,000 to the town of Silver Cliff for the conversion of all 50+ streetlights to dark sky friendly, 3,000K LED fixtures.

Wet Mountain Tribune THURSDAY, JULY 9, 2015

Dark Skies provides funds for Silver Cliff street lights

Local Dark Skies awarded the town of Silver Cliff \$10,186 on Monday, July 6. The donation was to help the town purchase new street lights that are approved by the International Dark-Sky Association (IDA). The entire project is expected to cost the town approximately \$19,000, but the town board stated that the update will cut their street light bill in half.

Along with the contribution, Dark Skies president Jim Bradburn, passed along an award from IDA. The award congratulated the town, along with Westcliffe, for becoming the ninth IDA community in the world and the first in Colorado.

“It was a pleasure and privilege to work with you and your colleagues over the past year to make this process a success,” Bradburn read from a letter sent by the IDA. “In the process, you’ve set a rather high bar for other dark skies communities and our program benefits as a result.”

Work on replacing the street lights is expected to get underway soon.

— J.E. Ward

History of Activities, 2016 – 2017

- Newspaper articles involving the Dark Skies organization, total: 8.



- Publications: articles, letters, and calendars in print and Internet, total: 4.

The image shows the cover of the SKY & TELESCOPE magazine. The title "SKY & TELESCOPE" is prominently displayed at the top in a bold, sans-serif font, with a red ampersand. Below the title is the subtitle "THE ESSENTIAL GUIDE TO ASTRONOMY". On the left side, the text "FROM OUR READERS" is written in a smaller, green font. The main article title is "Light Pollution Success Story" in a large, white, sans-serif font. Below the title is a short paragraph of text, followed by a longer paragraph, and then another paragraph. To the right of the text is a large illustration of a glowing yellow lightbulb with a white filament, set against a dark blue background. A hand is shown at the bottom, holding the base of the lightbulb. The overall design is clean and professional.

- On-site presentations to community groups and the public: 3.

Jack Observatory on the southwest corner of Westcliffe's Bluff Park. Calling the instrument "the envy of many small obser-

Community designation here is beginning to draw more and more visitors. Efforts to move that distinction into an identified Dark



County attorney and amateur astronomer Clint Smith, at podium, speaks during Monday's luncheon meeting of the Wet Mountain Valley Rotary Club.

- Local civic groups erect dual-town limit signs with the tag line of: "*a dark sky community*" for Towns of Westcliffe and Silver Cliff.



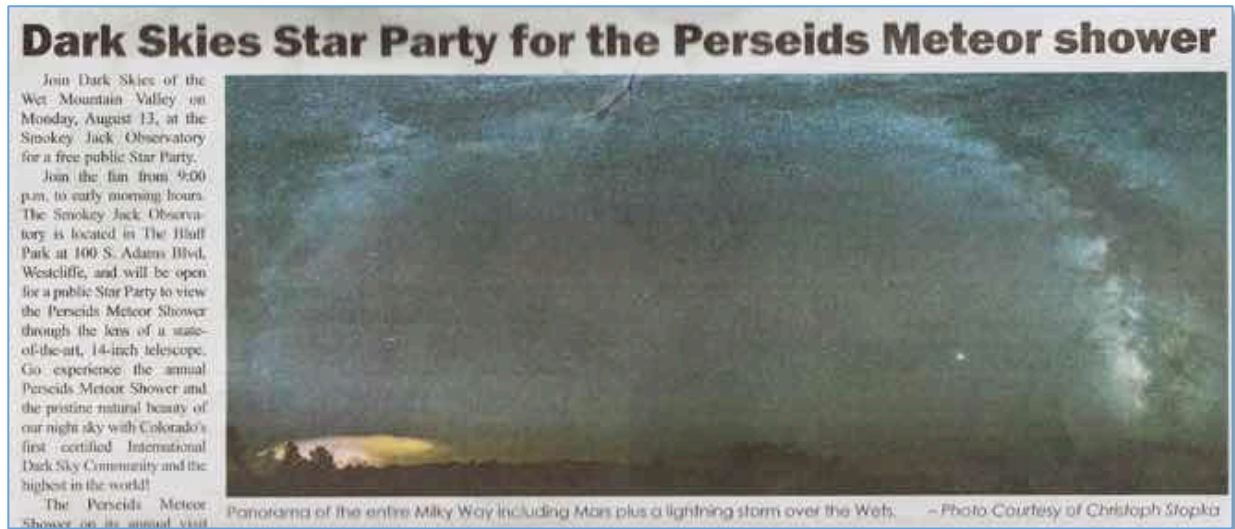
- Public star and solar eclipse parties hosted by Dark Skies: 6.



- Observatory available to the public by reservation: 63 groups hosted.
- The first of the new “*Speaker Series*” occurred for the solar eclipse.

History of Activities, 2017 – 2018

- Newspaper articles involving the Dark Skies organization, total: 8.



- Tourist publications: articles and calendars in print and Internet, total: 4.



- Astronomy books given to all 4th grade students at county school.



Dark Skies members Susan "Sam" Frostman and Kris McAllister present "Find the Constellations" to fourth grade students; the text will supplement their Astronomy curriculum materials and will go home with the kids afterwards.

– Trib photo by W.A. Ewing

- New Custer County tourism “branding” logo features our dark skies: *“Dark Skies, Brilliant Opportunities”*

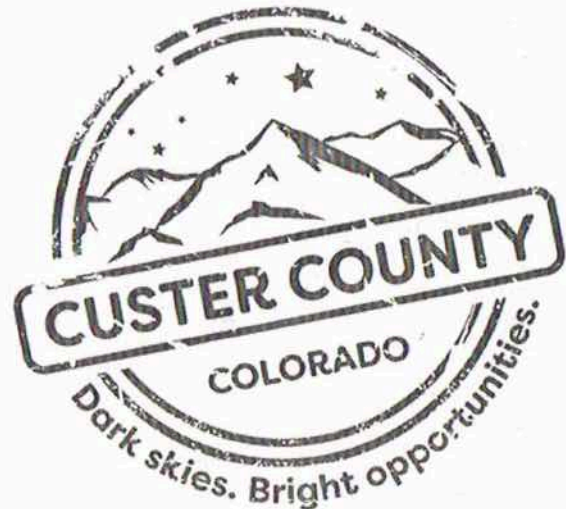
tise their brand big.

But all this talk about signaling has a more local point I am wanting to make. In the words of local philosopher and bluegrass legend Ron Thomason, “I told you that to tell you this.”

A brand has no value if it did not take sacrifice to build, and one of the most powerful brands created in the Valley has been the work of Jim Bradburn and the Dark Skies organization.

For over a decade and a half, Bradburn worked as a volunteer, donating funds, and working with nearly every business and organization in the two towns to bring them, voluntarily, up to the International Dark Sky Association standards for certification. When it was finally achieved, a huge publicity storm followed, and it had little to do with the name “Dark Skies,” but with the story of the work that was put into the certification.

I do not have the actual numbers, but I can guess it was



- Three of the “*Speaker Series*” public presentations.



- Dark Sky Friendly LED fixtures installed at local B&B



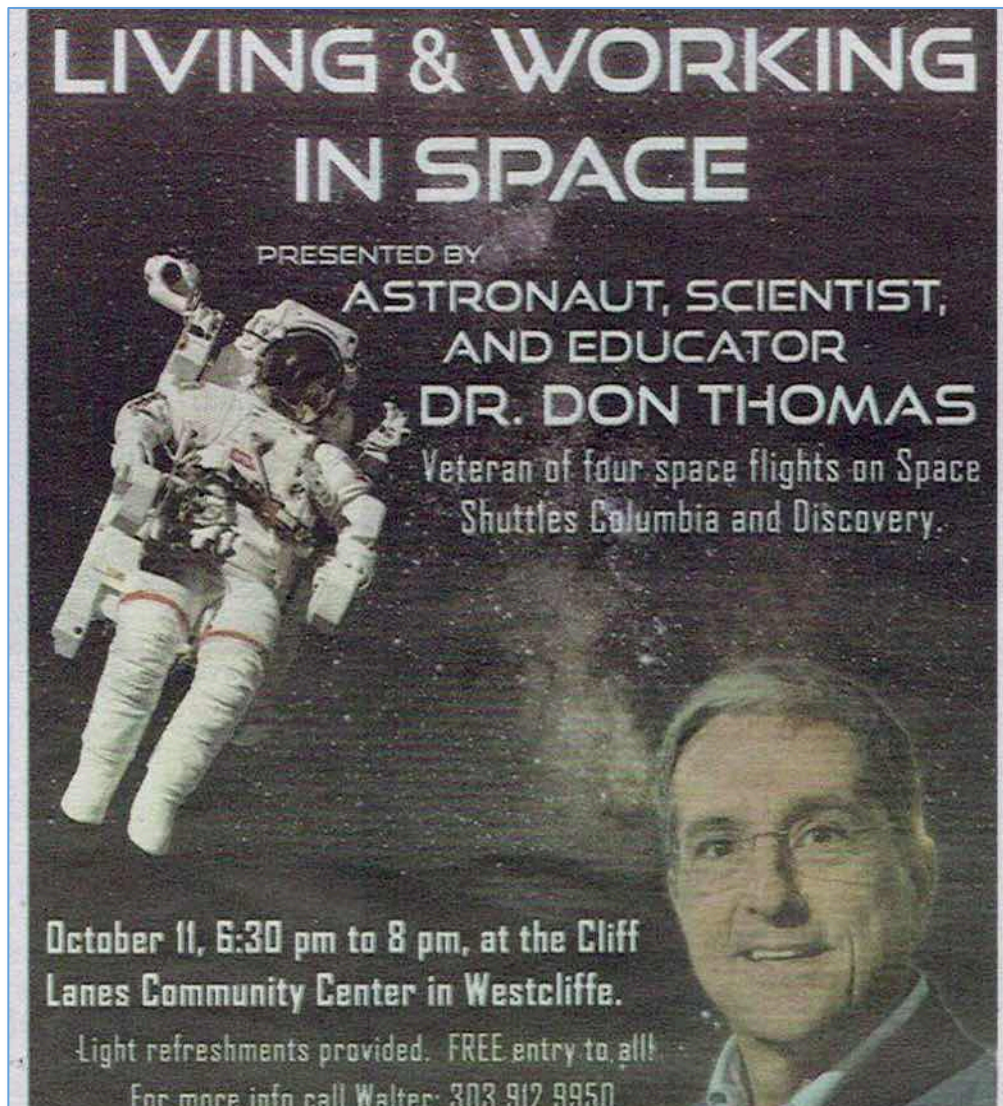
- SJO available by reservation: 78 groups hosted or reserved through September, 2018 totaling 445 guests, and \$4,081 donated.

History of Activities, 2018 – 2019

- Newspaper and magazine articles total: 10.



- “Speaker Series” (second year) of public presentations: 2



- Library's *Reach for the Stars* summer program.



- Observatory public attendance and private reservations: 900+.

Public Star Party

Featuring the crescent Moon, Saturn, Jupiter, star clusters, nebulae, and galaxies!

Dark Skies' public events are always free.

DATE: Friday, July 5 (Saturday, July 6 is the back-up date in case of inclement weather).

TIME: beginning at 9:30 p.m. and ending at 11:00 p.m.

LOCATION: The Smokey Jack Observatory in The Bluff Park across the street from Cliff Lanes at the west end of Main Street in Westcliffe.

Telescopes will be provided by the Dark Skies of the Wet Mountain Valley organization.

Visit the Dark Skies' website:
www.darkskiescolorado.org

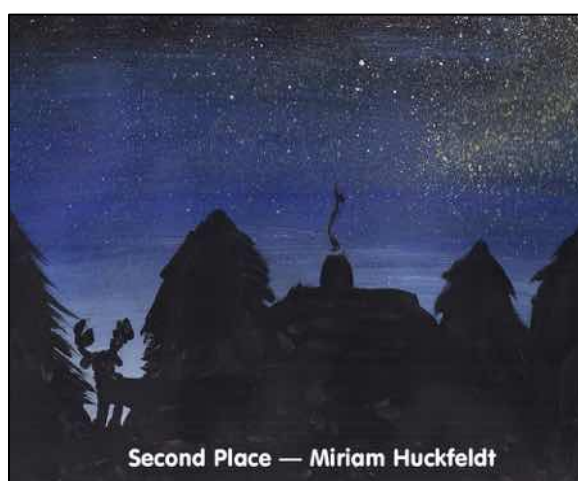
History of Activities, 2019 – 2020

Projects cancelled or delayed: Public Health Orders (PHOs) by the Custer County Health Department resulted in cancellation of all direct contact public outreach activities by Dark Skies beginning in March, including the *Sangre Star Festival*, regular star parties, public presentations, co-sponsored events, monthly in-person business meetings, etc. And a Dark Skies committee's plans for the construction of a permanent "*Planet Walk*" along Main Street were put on hold.

- *Find the Constellation* books given to fourth grade class (coordinated by Dark Skies member Sam Frostman).



- School art contest (12th year) with winners' art used in our advertising.



Winners are shown in photo on following page.



- Newspaper and magazine articles total: 5.

THE WALL STREET JOURNAL.

LIFE & ARTS | TRAVEL | OFF DUTY TRAVEL

The New Pandemic Hobby: Gazing at the Stars

By Adam H. Graham
Aug. 15, 2020 12:00 am ET

‘Dark Sky’ parks around the U.S. offer superior stargazing experiences, whether you decide to visit them in the flesh or not

Smokey Jack Observatory is housed in a barn with a retractable roof.

- Speaker Series presentation (*before COVID-19 closure*): 1

THURSDAY, NOVEMBER 7, 2019

Wet Mountain **Tribune**

How to build a next-gen telescope

How do you build a next generation telescope that can visually look back into the galactic past, to essentially time travel? That is the topic of Dark Skies speaker Steve Gunnels this Friday, at the Cliff Lanes Community Room starting at 6:30 p.m.

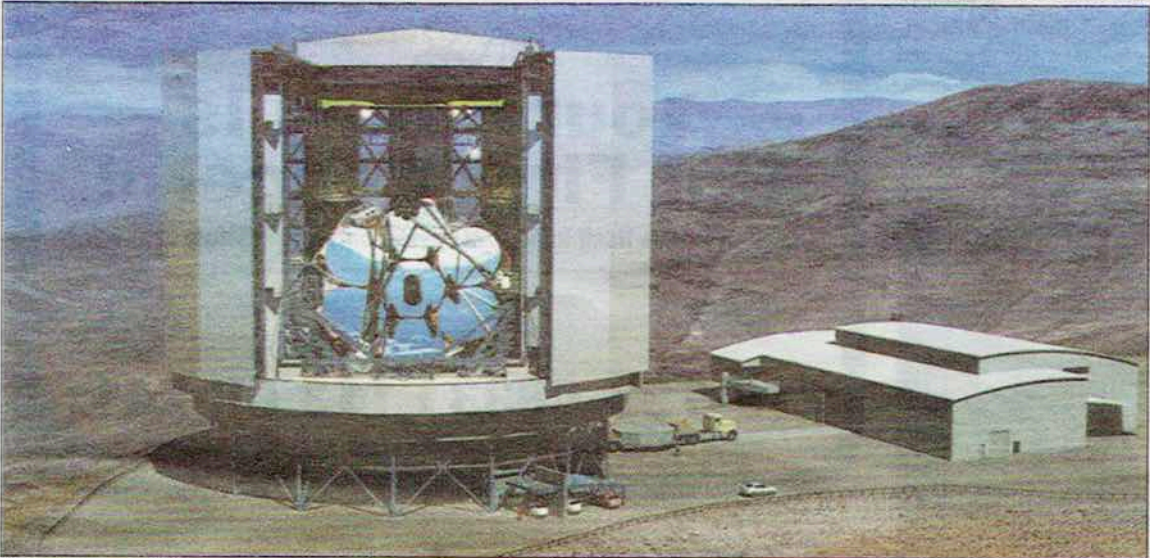
Steve Gunnels will speak as part of Dark Skies' ongoing Speaker Series which is focused on broadening access to intriguing and interesting speakers for the Wet Mountain Valley.

Steve Gunnels is a design engineer with Paragon Engineering with 46 years of experience designing large custom machines and structures, with over three decades of experience working with large ground-based optical telescopes and instruments.

His talk will be focused on large optical telescopes, including the Giant Magellan Telescope (GMT), a next generation of giant ground-based telescopes that "promises to revolutionize our view and understanding of the universe." The GMT will comprise seven of today's largest monolith mirrors, forming a single optical surface of 80 feet in diameter, with a resolving power 10 times greater than the Hubble Space Telescope.

The event is free and open to the public. The Community Room at Cliff Lanes is located at 25 Main Street, in Westcliffe.

— Press Release by Dark Skies



This Friday at 6:30 p.m., engineer Steve Gunnels will give a presentation on the building of the Giant Magellan Telescope, located in the Atacama Region of Chile.

— Courtesy Photo

- Development of permanent “*Planet Walk*” project to the point of conducting a fund raising campaign once the COVID-19 crisis is over.
- In the *Spirit Campaign* fund drive for non-profits, Dark Skies collected \$12,505 along with \$5,467 for the *STEM Scholarship Fund*.
- *Sangre Star Festival*: though cancelled, a check for \$21,550 was cut to the *STEM Scholarship Fund*.

- June, 2020, Sangres Art Guild holds contest as part of its “*The Stars of Custer County*” opening reception with several Dark Skies’ members submitting entries.

10 June 4, 2020

Wet Mountain **Tribune**



The cover of the 2021 Sangres Art Guild Calendar “*Stars of Custer County*” features the image “*Starry Crown for a King*” by Willdra Walker Ruzanski.

Members of Dark Skies chose the cover artwork.

Art season opens Saturday

“The Stars of Custer County” Opening Reception will be held at 3rd Street Gallery this Saturday from 11 a.m. – 5 p.m. Come by, see the art, vote for “People’s Choice” awards, and enter to win hourly door prizes.

day. Visitors will be required to wear masks to enter the gallery with entrance limited to 10 “masked” people. Join us for an excellent relaxing time and view two floors of local artwork.

Entry by Dark Skies' member Deb Yarra, ceramic tile:



Entry by Dark Skies' member Don Vawter, photo: *Moonset*:



- July, 2020: Portable planet walk project, *Planet Quest*, is completed.



A Planet Walk subcommittee was formed led by Ed Stewart with help from Courtney Miller and Steve Linderer with the mission to create a portable version of the PW which could be used before Dark Skies events at the SJO, and to lend out to other groups such as school science classes for their astronomy units, other astronomy/dark sky groups doing fund raising or public outreach, and local events like fairs and concerts as an added feature.

The use of large plastic A-frame sign boards was chosen for portability and durability, and for the use of aluminum metal photographic prints of the planet stations' graphics and text. To distinguish from the permanent model, the portable model is called "*Planet Quest – A Pathway to Planetary Discovery.*" In mid-July, the project was completed and can be viewed at high resolution via a video streaming download at:

tinyurl.com/planet-quest-tour

and the informational Planet Quest website:

tinyurl.com/planet-quest-info

- Expansion of SJO facility with six powered telescope stations, installation of safety hand railings, and a viewing arena with permanent benches for video streaming of live images from the SJO telescope.



New sign installed in *Summit Park* to mark the trail to the SJO.



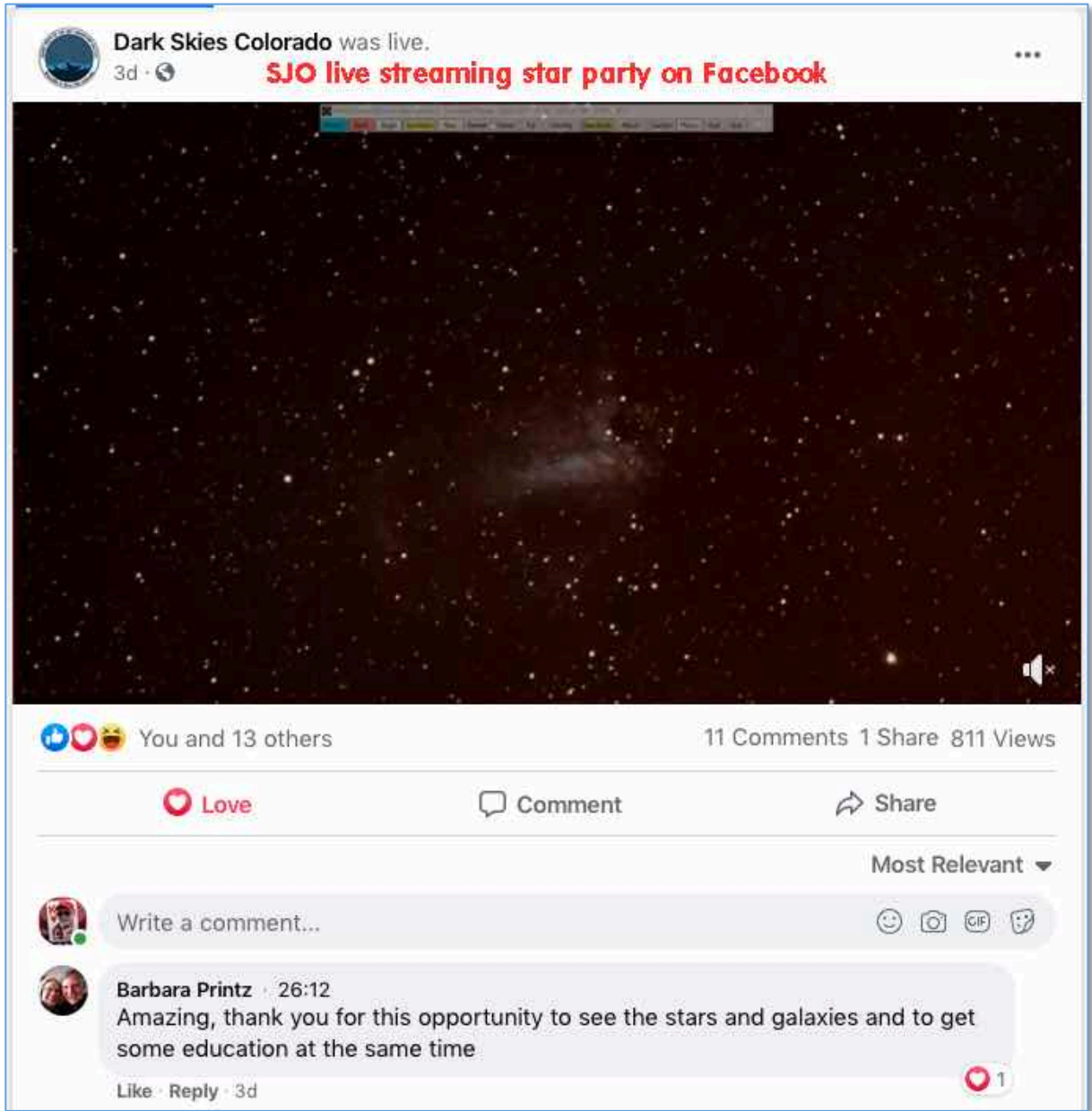
Facility improvements include the addition of a telescope observing pad with six powered stations for telescopes to support star parties, safety hand railings along the gravel trail, and a new viewing arena with nine permanent benches for visitors to watch live streaming from the SJO's telescope.



Shown above is the upper portion of the new safety hand railing looking west, while below are some of the Dark Skies' volunteers who on August 8, 2020 installed the first set of arena viewing benches.



- Development of capabilities to live stream star parties via the Internet.



- 2020 Sky Quality Monitoring (SQM) Program readings continue to be taken each quarter from ten locations within the two towns of Westcliffe and Silver Cliff.

The extremely dark readings beginning February, 2014, demonstrate the successful efforts by Dark Skies in the 15 years from 2000 – 2015 prior to the certification effort and indicate that there has been no degradation of the conditions during our current annual review. In fact, the July, 2020 readings are within 0.12 points of those taken during the towns’ power outage in February, 2017! The chart below includes the third quarter period taken on July 11, 2020.

SKY QUALITY MONITORING													
TOWNS OF WESTCLIFFE AND SILVER CLIFF, COLORADO													
READINGS ARE IN MAG/ARCSEC ² – READINGS ABOVE 20.00 = "DARK SKIES"													
DATE	SITE 1	SITE 2	SITE 3	SITE 4	SITE 5	SITE 6	SITE 7	SITE 8	SITE 9	SITE 10	AVG		COMBINED
											WESTCLIFFE	SILVER CLIFF	AVG
**02/26/14	21.28	21.11	20.93	21.03	21.04	21.10	21.29	21.31	21.14	21.22	21.07	21.22	21.15
05/20/14	21.54	21.28	21.13	21.12	21.13	21.32	21.47	21.56	21.35	21.37	21.22	21.43	21.33
07/23/14	21.53	21.31	21.13	21.23	21.18	21.30	21.52	21.57	21.39	21.42	21.27	21.45	21.36
*11/17/14	21.19	20.79	20.39	20.34	20.62	20.83	21.05	21.22	20.74	21.02	20.62	21.02	20.82
**02/20/15	21.42	21.24	20.90	20.88	20.98	21.09	21.18	21.32	21.11	21.30	21.03	21.25	21.14
***06/14/15	21.57	21.37	21.24	21.32	21.22	21.42	21.54	21.59	21.43	21.45	21.33	21.50	21.42
08/12/15	21.62	21.43	21.19	21.42	21.29	21.45	21.52	21.61	21.44	21.51	21.37	21.53	21.45
10/10/15	21.46	21.24	21.16	21.25	21.09	21.15	21.19	21.36	21.13	21.32	21.19	21.28	21.24
01/28/16	21.43	21.19	20.99	21.24	20.97	21.15	21.24	21.40	21.15	21.36	21.14	21.28	21.21
05/03/16	21.58	21.29	21.12	21.35	21.16	21.26	21.20	21.63	21.30	21.48	21.28	21.39	21.34
09/09/16	21.60	21.38	21.32	21.43	21.33	21.44	21.51	21.66	21.45	21.52	21.41	21.52	21.46
11/26/16	21.40	21.09	21.11	21.18	20.94	21.07	21.21	21.35	21.11	21.26	21.12	21.22	21.17
****02/15/17	21.61	21.48	21.53	21.47	21.59	21.55	21.56	21.64	21.53	21.51	21.53	21.57	21.55
06/15/17	21.64	21.43	21.19	21.46	20.98	21.46	21.42	21.58	21.41	21.51	21.31	21.51	21.41
09/18/17	21.56	21.26	21.07	21.30	21.24	21.31	21.30	21.49	21.34	21.42	21.27	21.38	21.33
11/18/17	21.43	21.26	21.18	21.25	21.19	21.29	21.38	21.56	21.29	21.42	21.27	21.38	21.33
04/05/18	21.68	21.41	21.23	21.35	21.10	21.18	21.25	21.40	21.27	21.45	21.28	21.38	21.33
06/02/18	21.68	21.35	21.14	21.27	21.22	21.33	21.38	21.63	21.34	21.53	21.30	21.47	21.39
09/07/18	21.63	21.36	21.05	21.38	21.09	21.31	21.43	21.43	21.34	21.45	21.26	21.43	21.35
*12/07/18	21.50	21.07	20.98	21.03	20.87	21.07	21.22	21.44	21.15	21.26	21.06	21.26	21.16
06/24/19	21.75	21.49	21.43	21.49	21.34	21.46	21.55	21.68	21.50	21.56	21.46	21.59	21.53
08/23/19	21.66	21.34	20.95	21.39	21.27	21.38	21.37	21.58	21.36	21.53	21.30	21.47	21.38
*11/23/19	21.51	21.20	21.11	21.27	21.14	21.27	21.53	21.63	21.29	21.41	21.24	21.43	21.34
03/24/20	21.53	21.32	21.28	21.38	21.20	21.36	21.49	21.65	21.24	21.46	21.31	21.47	21.39
07/11/20	21.77	21.25	21.18	21.48	20.76	21.39	21.55	21.83	21.47	21.65	21.31	21.56	21.43

*Ground snow covered 12/7/18. Partially Snow Covered (<50%) 11/23/19
 **JUPITER PRETTY BRIGHT OVERHEAD
 ***LOCATION FOR SITE 4 READING MOVED TO THE SMOKEY JACK OBSERVATORY
 ****Readings taken during power outage in Westcliffe and Silver Cliff. Power was on in the rest of the Valley.

The Sky Quality Monitoring Program is maintained by Steve and Margaret Linderer.
 For questions or comments about the program contact Steve at slinderer@gmail.com or by phone at (719) :

* This Dark Skies “History of Activities” document was compiled and produced by Dark Skies member Ed Stewart, <stargazer@skymtn.com>

**To follow Dark Skies’ history beyond 2020, visit the IDA website, darksky.org, and search on “Westcliffe.” Click on the result titled “[Westcliffe and Silver Cliff](#)”. Once on our page, look for the title “Documents” and then “Annual Reports.”