



THE FIELD OF VIEW (F.O.V.)
National Public Observatory Newsletter
“Where the Public Meets the Stars”

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Volume 4, Issue XI

STARS-N-PARKS PROGRAMS IN FIVE SOUTHERN NEW MEXICO STATE PARKS

Winter 2008

A City of Las Cruces Outdoor Lighting Tour

A City of Las Cruces Outdoor Lighting Tour
By Jessica J. Savage

LAS CRUCES—City councilors and officials saw the city through the eyes of a night sky protection advocate when they took an outdoor lighting tour on Monday December 15th 2008 with stops at businesses representing the best and the worst of nighttime illumination.

The tour was arranged by Carol Rehder and National Public Observatory President John Gilkison, who also lead the tour, as part of their ongoing efforts to tweak the city of Las Cruces outdoor lighting ordinance and address aspects that were left out of the now eight year-old ordinance.

“The purpose of the tour was to illustrate specific issues we want to address in a revised ordinance,” Gilkison said.

While some of the language in the current and proposed ordinance is technical Gilkison said he wanted to especially make a point about how the human eye reacts to outdoor lighting at night: our eyes adjust to brightest light levels in the night scene.

What this means to drivers at night is when they encounter any light that is brighter than other lights the pupils of their eyes contract. In any normal driving situation or walking across a parking lot at night if our pupils have contracted because of a bright light when we look at anything else it seems dimmer or we just can't see.



The ordinance addresses this by calling for limits on light levels measured in foot candles (fc); hiding bulbs from view by aiming them at the ground, shielding them and having them recede into the fixture, which is known as full cut off optics (FCO).

Having outdoor lighting regulation should create the effect of uniform lighting around each building, and eventually a uniformity of lighting over the whole city.

The tour began in the parking lot of the downtown city building where Gilkison pointed out the street lighting. Uniformity could be achieved with taller poles but lower more uniform light levels, he said. Gilkison was critical of the lighting on a downtown county building in which the parking lot was lit with bright wall pack lighting which are mounted on the building itself. City Electrical Inspector Barry Cole said, “There’s a danger of night blindness when leaving the parking lot.”

Tour participants saw an example of uniform lighting at Bravo Chevrolet that was achieved using the good lighting principles of aiming, shielding and proper spacing of light sources. Other car dealerships in the vicinity had properly aimed lighting that was shielded and FCO, however the lots were bright. Going from car lot shopping to fueling up, the next stop on the tour was the Chevron station on Valley Drive.

Although the lighting was mounted on a canopy over the gas pumps, thus providing some shielding and measured under the allowable limit of foot candles, Gilkison was critical of the lighting because all the light fixtures protruded from the canopy. Cole again noted people would experience night blindness upon leaving.

Later in the tour officials were taken to the intersection of North Main, Triviz and Elks where three of the four corners of the intersection had gas stations. Although
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NPO President using a green laser to point out differences between Sag Lens fixtures and Full Cut Off Lighting Fixtures. Left to right, Carol Rehder, and city councilor’s Sharon Thomas, Miguel Silva, and Dolores Conner.

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they all had been constructed before the original ordinance was in place, none used FCO fixtures. Like the Chevron, all the light fixtures protruded below the apron around the canopy.

“It’s the gleaming gas station on the hill,” Gilkison said later in an interview, referring to the light war the stations end up participating in, trying to outshine each other in a competition for customers. The problem for the human eye is not just night blindness after filling up and the leaving the station, Gilkison said. This type of light also produces scattered light that causes sky glow and glare, blinding drivers from a distance.

“Allowing more sky glow is against the purpose of the ordinance,” Gilkison said.

To illustrate gas stations can also be exemplary examples of uniform lighting, just one block down the street tour participants gathered under the canopy of the Valero gas station. The light fixtures were recessed into the canopy and thus following the principles of full cut off lighting.

Officials also toured parking lots at the Mesilla Valley Mall, motels at the south end of Triviz, the Golden Corral restaurant, and a nearby bank ATM, as well as an LED billboard on Telshor Boulevard.

Gilkison suggested the motels could use a higher light level in the parking lot and less on the building. The mall parking lot is suffering from the zebra effect in that the difference between the lighted areas and non-lit areas is too great. More uniformity could be created by actually increasing the light level of each fixture with a higher mounting height creating more uniformity on the ground.

“The Full Moon is an example of uniformity at a very low level of light,” he said.

Part of the problem with outdoor lighting, Gilkison said, is that people just put up lights without having knowledge of the issues and considerations. In other words, it’s amateurs, not the professional lighting experts who are lighting most of the businesses in the city.

During the tour District 4 Councilor Nathan P. Small and well-known environmental activist said he considered outdoor lighting “a community quality of life issue,” rather than an environmental issue. However, he said it was important for the community, especially children, to be able to see the stars in the night sky—even in the city. Growing up in Los Lunas where he could see the stars, Small said he notices when he can’t see them.

After the tour District 6 Councilor Sharon K. Thomas said she had spent time in Denmark where winter days are especially short, meaning many long dark nights. The Danes have a whole different concept of lighting Thomas said.

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Mark Isler (left) and John Gilkison compare foot candle reading in the pump area of the Chevron station on South Valley Drive. Although the station appears bright from a distance readings around the pumps only average around 45 fc. The reason for this the large percentage of light escaping horizontally as waste light. Such a facility with lighting kept as is, but converted to Full Cut Off lighting would be 30% to 50% brighter around the pump areas but would not appear so obtrusively lit from a distance. This problem was a major point of the tour.

Americans try to light everything, the Danes prefer to focus on just lighting specific areas, both inside and out, that will be used and this creates a cozy atmosphere, she said.

Thomas said she was amicable to revising the ordinance and addressing LED billboards, which are currently allowed under a variance. Even though councilors participated in the tour following an all-afternoon weekly council meeting, Thomas said she was glad she went.

“It was a good tour,” she said, “And very educational.”

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**National Public Observatory  
Stars-N-Parks New Mexico State Parks  
program schedule from  
January of 2009 through April 2009**

**SP = State Park SS = Sunset, PS = Program Start, PE = Program End  
Stars-n-Parks Programming ends in June,  
resumes in August 2008  
N.M. Space Grant Consortium Programs**

- 1: Saturday January 17, 2009, Leasburg Dam SP, SS 5:20 PM, PS 6:30 PM, PE 8:00 PM, Venus and Uranus up, the Winter Milky Way is well up, John Gilkison presenting.
- 2: Saturday January 24, 2009, City of Rocks SP, SS 5:30 PM, PS 6:40 PM, PE 8:10 PM, Venus and Uranus in conjunction, the Winter Milky Way is well up, Matt Wilson presenting.
- 3: Saturday January 24, 2009, Pancho Villa SP, SS 5:30 PM, PS 6:40 PM, PE 8:10 PM, Venus and Uranus in conjunction, the Winter Milky Way is well up, Sally Allen presenting.
- 4: Saturday February 21, 2009, Leasburg Dam SP, SS 5:45 PM, PS 6:55 PM, PE 8:25 PM, Venus up, Saturn rises by programs end, Winter Milky Way, Ceres at opposition on the 25<sup>th</sup> in Leo Minor, Comet Lulin at 6<sup>th</sup> magnitude just west of Regulus on the 28<sup>th</sup>, Jeff Jenkins presenting.
- 5: Saturday February 21, 2009, City of Rocks SP, SS 5:55 PM, PS 7:05 PM, PE 8:35 PM, Venus and Saturn observable, Winter Milky Way, Ceres reaches opposition on the 25<sup>th</sup> in Leo Minor, Comet Lulin at 6<sup>th</sup> magnitude just west of Regulus on the 28<sup>th</sup>, Matt Wilson presenting.
- 6: Saturday February 28, 2009, Rock Hound SP, SS 6:00 PM, PS 7:10 PM, PE 8:40 PM, Venus and the Moon together, Saturn Observable, Winter Milky

Way, Ceres at opposition on the 25<sup>th</sup> in Leo Minor, Comet Lulin at 6<sup>th</sup> magnitude just west of Regulus on the 28<sup>th</sup>, Sally Allen.

**Daylight Savings Time starts at 2:00 AM  
Sunday March 8, 2009**

7: Saturday March 14, 2009, Leasburg Dam SP, SS 7:10 PM, PS 8:20 PM, PE 9:50 PM, the Spring Sky and Saturn (at opposition in Leo on the 8<sup>th</sup>) are becoming well presented by program, Jeff Jenkins presenting

8: Saturday March 21, 2009, City of Rocks SP, SS 7:15 PM, PS 8:25 PM, PE 9:55 PM, the Spring Sky and Saturn (at opposition in Leo on the 8<sup>th</sup>) are becoming well presented by program end, Matt Wilson presenting.

9: Saturday April 18, 2009, Leasburg Dam SP, SS 7:30 PM, PS 8:40 PM, PE 10:10 PM, the Spring Sky and Saturn are becoming well presented by program end, the Moon rises at 10:06 PM, Mercury at elongation on the 26<sup>th</sup> near the moon and the Pleiades, Jeff Jenkins presenting.

**Sunday April 12, 2009 is Easter Sunday**

10: Saturday April 18, 2009, City of Rocks SP, SS 7:35 PM, PS 8:45 PM, PE 10:15 PM, the Spring Sky and Saturn are becoming well presented by program end, Mercury at elongation on the 26<sup>th</sup> near the moon and the Pleiades, Matt Wilson presenting.

11: Saturday April 25, 2009, Rock Hound SP, 7:35 PM, PS 8:45 PM, PE 10:15 PM, Spring Sky well presented, Mercury, the Moon and Saturn are observable, Mercury at elongation on the 26<sup>th</sup> near the moon and the Pleiades, Sally Allen presenting.

**Spring Southern New Mexico Star Party  
Weds. May 13, ends Sunday May 17, 2009**

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