Celebrating the Night Skies Over New Mexico

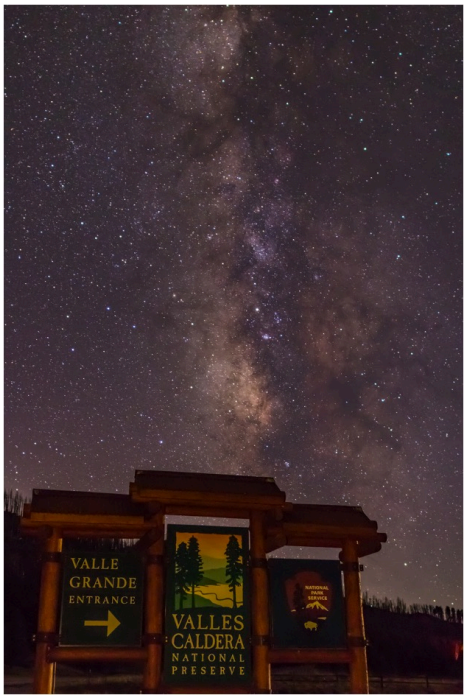
05/21/2024

By Galen Gisler, retired astrophysicist and councilmember for the New Mexico DarkSky Chapter

New Mexico DarkSky Chapter unites for starry skies preservation

Ruins under the stars in New Mexico, Photo Credit: John Fowler

On Friday, December 1st, sixty-odd people met in Socorro for the first statewide meeting of the newest chapter of DarkSky International: New Mexico DarkSky. They represented a broad variety of interests: tourism, land management agencies, state and national parks, environmentalism, wildlife biology, development of commercial telescope-siting facilities, and astronomy, both professional and amateur. They all had in common the goal of protecting, preserving, and improving the night skies that New Mexico is so famous for.



Milky Way over entrance to Valles Caldera National Preserve
Photo Credit: Galen Gisler

DarkSky International, formerly known as the International Dark-Sky Association, is a nonprofit organization formed in 1988 with the goal of protecting and preserving the nighttime environment to benefit wildlife, human health, and humanity's cultural heritage of starry skies. DarkSky International has designated over 200 International Dark Sky Places in 22 countries, including 9 in New Mexico. Our neighbor, Valles Caldera National Preserve, was designated as an International Dark Sky Park in 2021, and Bandelier National Monument is currently updating historic light fixtures in order to apply for similar status. Chapters of DarkSky International exist in over 20 countries worldwide and in 30 states in the US. Our New Mexico DarkSky Chapter is the newest of these, formed in June 2023.
We have a State Council of 11 members spread around New Mexico, from Los Alamos (me!) to Animas in Hidalgo County in the southwest corner of the state.
Our meeting in Socorro was billed as a "stakeholders' meeting," and its aim was to assemble a pool of allies with varied interests in preserving dark skies. We are fortunate in New Mexico in that there are lots of places from which the Milky Way can be readily seen, and this attracts tourists and economic development. However, the danger is that economic development can quickly lead to the deterioration of this important asset.

Professional optical astronomers at Apache Point near Cloudcroft and Magdalena Ridge near Socorro continue to make leading-edge scientific discoveries; the Starfire Optical Range south of Albuquerque, Los Alamos National Laboratory's Fenton Hill Observatory, and the White Sands Missile Range also rely on dark skies for their scientific projects and national-security missions. In the private sector, "astronomy villages" have been established in the Sacramento Mountains, in Hidalgo County, and in the Pecos Mountains. These sites rent out lots where astronomers from all over the world, professional and amateur, have placed telescopes that can be operated on-site or remotely. Generally, these sites provide their clients with high-speed internet, technical assistance, and on-site lodging when needed. Important discoveries and groundbreaking observations have been made at these sites, which collectively house several hundred telescopes.

Artificial light at night is detrimental to animal species across the globe; skyglow affects navigation by migrating birds and leads to habitat avoidance, disturbance of predator-prey relationships, and mating behavior. Bird mortality through collisions with brightly lit buildings has been documented in other places, but even in New Mexico, there is evidence of reduced fitness and reproductive success. Insect populations are in decline all over the globe, which affects the web of food that all animals, including ourselves, rely on. In particular, some pollinators (moths, for example) are nocturnal and are easily distracted, as we've all seen, by lights on our buildings or illuminating our streets. These concerns were highlighted at our meeting by delegates from the Audubon Society, the Xerces Society, and the New Mexico BioPark.

Representatives from the Bureau of Land Management, from the State Lands Office, and from the New Mexico Oil and Gas Association reported on efforts their agencies were making to control the use of lighting in their domains using common-sense measures like shielding lights and turning off when not in use, particularly in response to environmental and wildlife concerns.

Ruskin Hartley, executive director of DarkSky International, keynoted our meeting and pointed out that New Mexico's 1999 Night Sky Protection Act (NSPA) guided the way for other states. It has become apparent, however, that this law is in sore need of an update to include modern lighting technology and a modern understanding of how light of different intensities and colors affects wildlife, human health, and the cultural heritage of the night sky—the most ancient natural resource we humans possess. Accordingly, one of the goals of our newly formed New Mexico DarkSky Chapter will be to persuade the New Mexico State Legislature to update the NSPA. The allies we are recruiting through the December meeting and subsequent statewide meetings will be key to this effort.

Local lighting ordinances, like the one adopted in December 2022 by the Los Alamos County Council (whose passage was actively assisted by many of the readers of Nature Notes, thank you very much!), are in some respects even more important than an updated NSPA. In my talk at the meeting, I surveyed the lighting ordinances that presently exist in 33 jurisdictions around the state. Most of them are very rudimentary, mentioning shielding and adherence to the NSPA, but without quantitative guidance on illuminance limits, light trespass, and colors. Another goal of our chapter is, therefore, to beef up local lighting ordinances to at least the standard we have set here in Los Alamos. Advocates in Santa Fe and Albuquerque are already using the Los Alamos model to construct new lighting codes for their municipalities. We have initiated discussions with people from other communities regarding similar efforts. DarkSky International is developing new templates and models for ordinances, and they are being assisted by the Illumination Engineering Society and by Clanton Associates, the Boulder, CO, lighting design firm that helped with our Los Alamos County Outdoor Lighting Ordinance.

Education will be a clear focus as we advance, including the wide promulgation of the five basic principles of outdoor lighting (use light only if it is needed, direct light so it falls only where it is needed, control light so that it is used only when it is needed, use light no brighter than necessary, and use warm colors when possible) and regarding the deleterious effects of too much light on human health and wildlife in addition to the cultural heritage aspects. Documenting and elucidating the relationship between lighting and safety or lighting and crime is a challenging project that our chapter is also undertaking; there is a great deal of misunderstanding in this area, often presenting obstacles to the adoption of sensible lighting practices.

In sum, the first statewide meeting of the New Mexico DarkSky Chapter was a resounding success, and we look forward to future such meetings that we hope will include other constituencies, including tribal representatives and civic organizations.

Learn More

- New Mexico DarkSky
- Los Alamos County Outdoor Lighting Ordinance (approved December, 2022)

- New Mexico’s 1999 Night Sky Protection Act (NSPA)
- New Mexico State Department of Tourism