

Field Moment

Mt. Whitney, Sequoia National Park

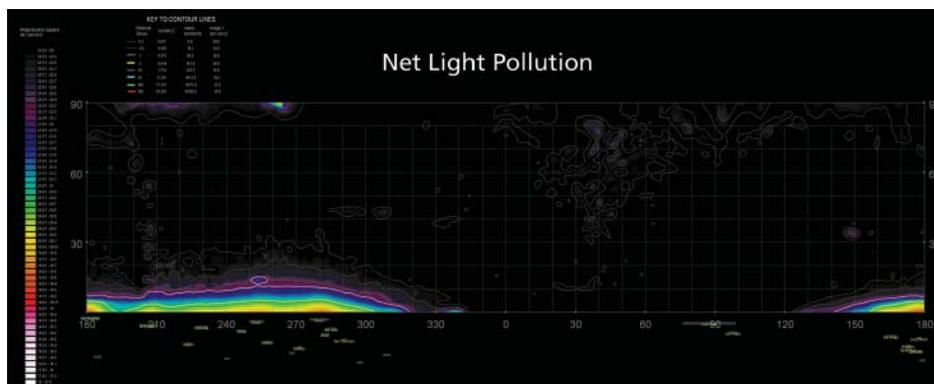
22 July 2009
12:30–2:00 am



THESE REMARKABLE IMAGES ARE the products of Dan Duriscoe, physical scientist with the National Park Service Night Sky Program. Using specialized cameras (bottom), Duriscoe visits national parks and records data that are later analyzed to determine the quality of night skies and identify sources of light pollution. The images provide a baseline for managers striving to preserve dark night skies in national parks.

At 14,495 feet, Mt. Whitney is the highest point in the lower 48 states and an excellent place to observe the night sky. A small minority of visitors spends the night here, but they can be rewarded with a front-row seat for viewing the cosmos. “Mt. Whitney was on my short list for more than seven years,” Duriscoe says, “and we were finally able to get this done in July 2009.”

Shortly after midnight, Duriscoe ran through his routine of connecting the computer, aligning the telescope mount, and taking test images, things he has done hundreds of times before but that were much more difficult in the rarefied atmosphere. “Just trying to install one of the machine screws for attaching the tripod to the mount took about five minutes of fumbling,” Duriscoe notes. “Once we got



going . . . and the images began to show up on the computer screen, I knew it was worth the effort.”

The panorama (top) is an unfiltered photo mosaic combining 60 images. You can see Mt. Langley, Kaweah Peaks, the Great Western Divide, and, of course, the familiar boulders and Smithsonian Shelter of the Mt. Whitney summit. The air glow is so bright that light pollution is hard to see. Look carefully for the cities of Fresno and Visalia (behind the shelter), a few cars on Highway 395 near Bishop (far right and far left), and the city of Las Vegas (left, beneath a large thunderstorm over the Panamint Mountains in Death Valley).

The false-color image (middle) is not a photo mosaic, but is a contour plot of more than 5,000 measurements of background



sky brightness derived from 60 images. It reveals net light pollution that is detectable by humans. (Made the same night, the mosaic and false-color image do not align with each other.) Duriscoe’s analysis indicates that the vast majority of the sky was free from artificial light pollution on this night, and that Mt. Whitney remains one of the very best locations in our national parks for observing the night sky.