

## Star Attractions Column – January 21, 2012

Cosmic Mike®, North Museum of Natural History and Science

### Measuring the amount of light pollution

How many stars can you see from your backyard at night? Can you see all seven stars of the Little Dipper in the north? Or are you only left with three?

If your answer wasn't seven, the culprit is light pollution. Light that is projected upward is not only wasted, it also washes out the stars, forcing us to travel away from the city to get a glimpse of the sky in all its glory.

Light pollution is a growing, worldwide problem and it does a lot more than obscure our view of the heavens. Improper lighting techniques affect human health and safety, energy use and costs, and wildlife.

The next time you're out at night, take a moment to observe what types of lighting are being used. Do the lights create one of the three categories of light pollution: glare, light trespass, or sky glow?

Glare is light that strikes your eye directly, like shining a flashlight in your face. How many times have you experienced someone's headlights of a car passing by blinding you? Glare makes it hard to see other objects or people nearby, sometimes creating a hazard.

Light trespass is light that spills into an unwanted area. This type of light pollution occurs most commonly in downtown areas. Imagine a streetlight that shines into your bedroom window.

Sky glow comes from light being scattered up into the sky. Think of pointing a flashlight upward at the ceiling. When flying over cities at night, I'm always reminded of how much light is being wasted, projected where it isn't needed.

Billions of dollars are spent on unnecessary lighting every year in the U.S. alone. About \$1.7 billion worth of light shines directly into the nighttime sky via unshielded outdoor lights.

Although light pollution is a global problem, the solutions are local. You can help fight the battle against light pollution. For actions you can take, visit the International Dark-Sky Association's ([www.darksky.org](http://www.darksky.org)) and the Pennsylvania Outdoor Lighting Council's (<http://www.polcouncil.org/>) Web sites.

If nothing else, become more aware of the problem by joining me to participate in GLOBE at Night. It's an international citizen-science campaign to raise public awareness of the impact of light pollution. GLOBE at Night invites people like you to measure the night sky brightness and submit your observations to a Web site.

Your mission: Record how many stars you see within the constellation Orion the Hunter.

Need help finding Orion? Look in the southeast between 8 and 10 p.m. Many identify Orion by looking for three stars in a row.

To make sure it's Orion, I also look for four additional stars, two of which are extremely bright, that form a rectangle surrounding the three in a row. The bottom left corner of the rectangle will be a very bright, red star, Betelgeuse. The upper right corner will be a very bright, blue-white star, Rigel.

Once you have found Orion, match the appearance of the constellation with one of the GLOBE at Night diagrams. Then submit your observation online, including the date, time, and your location.

All it takes is one clear night between now and January 23 and a few minutes of your time. If you miss this opportunity there will be another data collection window from February 12-21, plus one in March and one in April. Instructions and star charts can be found at [www.globeatnight.org](http://www.globeatnight.org).

Two out of every three people in the United States cannot see the band of the Milky Way because of light pollution. Every night I'm reminded of glare, trespass, and sky glow. We can and should make a difference in preserving this endangered natural resource: the dark sky.

This is Cosmic Mike wishing you an astronomical day. Be sure to “Like” me on Facebook for celestial news and events.

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