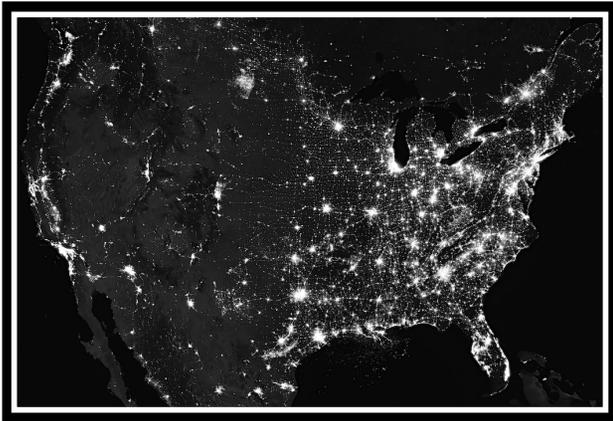


Where have all the stars gone?

Our Unnatural Night



Courtesy of NOAA/NGDC/DMSP

Lighting wastefully directed upwards easily shows the population centers in the United States

*"The Right Amount of Light,
Directed at the Right Place,
for the Right Amount of Time."*

LEDs...A new challenge

When are LED lights a problem?

When they are...

- unshielded,
- too bright,
- or too blue (i.e., when their correlated color temperature is above 3000 K).



THE ASTRONOMICAL LEAGUE

The Nation's Largest Federation
of Astronomical Societies

www.astroleague.org

Duplication allowed and encouraged for all free distribution.

Our Unnatural Night

★ *Quality of Light,
Quality of Life*

★ *Lighting:
the Good and the Bad*

The International Dark-Sky Association

★ the world authority
on protecting the night
www.darksky.org

How lighting and light pollution affect our quality of life...

- 1 What percentage of the population in the United States can not easily see the Milky Way?
 - a. 10%
 - b. about 50%
 - c. greater than 67%
- 2 How many stars are typically seen from a dark country location? How many from a large city?
 - a. 500, 100
 - b. about 1 million, 1000
 - c. 2000, less than 100
- 3 About how many birds are killed annually in the United States due to the effects of bad outdoor lighting?
 - a. over 100 million
 - b. about 1 million
 - c. 10,000
- 4 About how much does a typical dusk to dawn fixture cost the power company and how much does it charge to keep it lit every night?
 - a. \$30, \$70
 - b. \$1000, \$30
 - c. \$10, \$10
- 5 In general, what part of the 24-hour day is most crime committed?
 - a. in daylight hours
 - b. during the night
 - c. all the time
- 6 How much money is wasted each year in the US by misdirected light?
 - a. \$200 million
 - b. \$2 billion
 - c. \$20 billion
- 7 Medical researchers have established a link between the likelihood of contracting breast cancer and the exposure to artificial lighting during normal sleep hours.

True or False?

 - a. astronomers
 - b. people who work at night
 - c. everyone
- 8 Who does light pollution affect the most?
- 9 Is there a bothersome light near where you live?

???