Where have all the stars gone?

Our Unnatural Night

Lighting wastefully directed upwards easily shows the population centers of the United States.

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

1. What percentage of the population in the United States can not discern the Milky Way?
   a. 10%
   b. about 50%
   c. greater than 67%

2. How many stars are typically seen from a dark country location?
   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. 100 million
   b. 1 million
   c. 10,000

4. About how much does a typical dusk to dawn fixture cost the power company?
   a. $30, $70
   b. $1000, $30
   c. $10, $10

5. In general, when is the 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 lights?
   a. $200 million
   b. $2 billion
   c. $20 billion

7. Medical researchers have established a link between the likelihood of breast cancer and the exposure to artificial lighting during normal sleep hours.
   a. astronomers
   b. people who work at night
   c. everyone
   ???

8. Who does light pollution affect the most?
   a. astronomers
   b. people who work at night
   c. everyone

9. Is there a bothersome light near where you live?

Answer Key

1. c. greater than 67%
2. c. 2000, less than 100
3. a. 100 million!
4. a, the Electric Utility recoups its money quickly through the monthly rate you pay.
5. a, in daylight hours
6. b, upwards of $2 billion.
7. True
8. c, everyone!
9. You are not alone. Nearly everyone has a bad light near where they live.

Lighting: The Good and the Bad

Take a look at these lighting situations —

What is wrong about these lights?
• They don’t illuminate the ground.
• A substantial amount of light escapes upwards.
• They are not shielded.
Architectural lights, such as these, are often very appealing in the daytime, but do a poor job illuminating the desired area in an effective manner. More of their light is directed upward than downward.

What is right about this light fixture?
• It is shielded, reducing glare.
• The light is directed downward where it is needed.

What is right with this street light?
• It is shielded, reducing glare.
• The light is directed downward where it is needed.

Unfortunately, this type of fixture is too common along our roads.

What is wrong with this street light?
• It is not shielded.

Also, when a bad fixture fails to give proper illumination, a second bad fixture is installed.

What is wrong with this lighting scenario?
• Neither light is shielded.

Unfortunately, this type of fixture is too common along our roads.

What is wrong with this lighting scenario?
• The light is not shielded.
• The light does not illuminate the area near the door.

(Has been corrected.)

Bright store lighting easily distracts drivers.

Shielded fixtures also give the added benefit of reducing annoying, if not dangerous, glare. How many times have you been temporarily blinded while driving past an overly lit store or gas station? Shielded fixtures help prevent glare by blocking light from directly entering your eyes, making it easier to see when driving.

Too often, homeowners inefectually and wastefully use outdoor lighting as a means to prevent crime and increase safety. Why would someone use bright, harsh lights that create dark shadows easily concealing a prowler? Nobody knows the property better than the homeowner, so why illuminate the area for the intruder to see better? Properly shielded and correctly directed lights reduce glare revealing what lies in the shadows.

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

Astronomical League
www.astroleague.org

A new shopping development near National Park land.

Our night skies, enjoyed and appreciated by countless generations of people, are in jeopardy of disappearing due to the yellow pallor of light pollution. Each year, the night sky becomes slightly brighter and less stars are visible.

But it does not need to be that way. There are sensible, economical ways to prevent the unnatural night from spreading. Proper outdoor lighting methods can greatly reduce sky glow while maintaining safety and providing economic benefits.

Where using “normal” standard light fixtures, too much light is directed upwards brighter. Shielded fixtures downwards where it is the sky. Since all of the desired area, lower wattage electricity — and money!

When using “normal” standard light fixtures, too much light is directed upwards brighter. Shielded fixtures downwards where it is needed, not wastefully into light illuminates the bulbs can be used, saving directly entering your eyes, making it easier to see when driving.

Too often, homeowners ineffectually and wastefully use outdoor lighting as a means to prevent crime and increase safety. Why would someone use bright, harsh lights that create dark shadows easily concealing a prowler? Nobody knows the property better than the homeowner, so why illuminate the area for the intruder to see better? Properly shielded and correctly directed lights reduce glare revealing what lies in the shadows.

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

Astronomical League
www.astroleague.org