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ASTRONOMICAL ASSOCIATION

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Light Pollution: Major Problem Simple Solutions

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What is Light Pollution?

Light Pollution is the unwanted and unwarranted glow and glare of outdoor lighting on everything outside of the intended target area. It appears in the following forms:

Glare: The ability to view a light source, such as a bulb, rather than just the light it provides, which causes discomfort (squinting) and temporary blindness.

Clutter: The grouping of light fixtures too close together, and often in a haphazard configuration, compounding the problem of glare. This is over lighting too.

Light Trespass: Light, from improperly shielded and aimed fixtures, that illuminates not only the intended target area, but also adjacent buildings, neighbouring properties, the sky, etc.

Sky Glow: Light that goes up and bleaches the sky, so that only the brightest of objects in the night sky can be seen. It also appears as a glowing dome over a city from the adjacent countryside. This is a perfect example of wasted energy as no one needs to light up the sky.

So, Why Should I Care?

Why should you care? There are billions of reasons why light pollution needs to be curbed.

Number One: is the amount of energy wasted. Each year over \$2 billion is wasted in North America illuminating the sky and neighbouring properties other than the intended targets. For areas served by coal-fired generating plants, this can also add to ozone layer damage and global warming. Just one 100 watt

light bulb - like most people have on their front porch - if left on all night every night, over the course of a year, will add some 390 kg of carbon dioxide to the atmosphere.

Number Two: is increased security for all of us. Just putting up more lights, without any concern for how they are designed or aimed, does not add to your personal security. In fact, in many cases, improper outdoor lighting can actually detract from your personal security by creating blind spots where criminals may lurk or where traffic might not see you crossing the street. Studies by the U.S. Justice Department have shown that crime rates go down in areas with responsible, full cut off lighting and go down even farther in areas with little or no outdoor lighting. Criminals are just as afraid of the dark as everyone else and they don't like working in areas where they cannot hide in the shadows.

You would think that over-lit service stations and car lots would be safe and secure. The reverse is true. Improper lighting actually encourages vandalism. Also, automobile accidents are more prevalent within a short distance from these establishments. The reason seems to be that their lighting detracts from our night vision so that when we leave the establishment it takes a while for our eyes to adapt to the darker roadway, again.

Further studies, by the Rensselaer Polytechnic Institute on behalf of the automotive and petroleum industries, show that the use of full cut off lighting in service stations and at automobile dealerships actually results in increased business at night as, subconsciously, people find this type of lighting to be far more pleasing to the senses. Over lighting is unnecessary.

Number Three: is the need to mitigate the effects of light pollution on our natural environment.

Have you ever had a bird fly into your bay windows at night? Have you ever seen a raccoon walking about in broad daylight? Have you ever noticed fish swimming near the shoreline of a well lit cottage property at night?

If you have, you have witnessed the effects of light pollution. A whole new area of study, called Scotobiology, is looking into the relationship between artificial light and the animal kingdom. And the preliminary results show that light pollution is a major factor in animals having their lives disrupted.

All creatures, including humans, require distinct day and night pattern or their biorhythms will become upset. Those who work night shifts know these effects well enough as they are far more prone to accidents at work and illnesses because of this.

Number Four: is the need to reclaim and preserve the night sky that many older people remember being so pristine in their youth, even from the city. Most of today's children will never be able to see the Milky Way, except in books and planetariums, if nothing is done to curb light pollution.

UNESCO, the United Nations Educational, Scientific, and Cultural Organization, has endorsed the fight against light pollution because they feel, as you should, that the night sky, in all its wonder, is a natural heritage that must be preserved for all people, forever.

When you take a look at how many people live on the Earth - then that makes over seven billion reasons to care.

It's Just Astronomers That Care?

Not so, we are just passionate for both the pursuit of the hobby and the fight against light pollution.

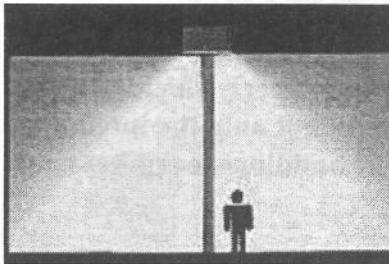
Professional and amateur astronomers were the first to

recognize light pollution for the problem that it is. We were also the first to come up with positive, yet quite simple, solutions to the problem. You must realize that light pollution is not our problem alone. Every living creature on the Earth can be affected by it.

Get With the Program!

So, how do you go about fighting light pollution on your own? Easy, get with the program.

First, change your outdoor lighting to full cut off fixtures. You'll be able to lower the wattage as you'll be illuminating less area than before.



A full cutoff lighting fixture is one with no direct "up light" at all and with essentially no glare.

All the light is used, none is wasted. No adverse effects of bad lighting. (Image © IDA)

If your local lighting supply company doesn't stock them, ask them to also get with the program and start stocking them. If they won't or say full cut off fixtures don't exist or don't work, take your business elsewhere. These kinds of distributors really don't know about responsible and effective lighting and are a discredit to the outdoor lighting industry.

Some major home renovation chains are worth checking out. They have knowledgeable staff and they carry their own line of full cut off fixtures that are approved by the International Dark Sky Association (IDA). You can easily spot these fixtures as they have a logo of stars on a blue background, along with the initials "IDA".

For security lighting, try using motion sensors wherever possible and - even better - illuminate sidewalks and

walkways with low voltage lighting - like solar charged units. And avoid lighting your lawn and areas of your property that do not need lighting -you may find that your grass is a little greener by giving it a full nights rest without light.

Next, tell your family, friends and neighbours, what you are doing and why, to encourage them to adopt these energy and night sky saving ideas, as well.

Then, go after your local municipal government to get their streetlights changed to full cut off fixtures. And demand that they adopt light pollution abatement bylaws that will force commercial and institutional properties to change their outdoor lighting, as well.

Many municipal governments have "seen the light" and have started programs to replace their street lights, as funds are available. As well, many are in the early stages of adopting - or have already enacted, light pollution abatement bylaws and regulations.

If, in your case, your local elected officials are reluctant to change their ways or tell you that the savings will be negligible or that such a bylaw is unnecessary, then tell them that they are doing their municipality a disservice by wasting taxpayers' money - something that the electorate will certainly not want to hear.

You CAN Make a Difference!

Together, we can make a difference. We can have a well lit, safe and secure neighbourhood at night, while still preserving the wonders of the night sky for our children and their children, into the future.

For more information check our website which is imbedded in our logo and click on the link to our Light Pollution page.