

# Another reason to flip the off switch: light pollution

March 24 2017, by Catherine Hours

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This file photo taken on October 21, 2012 shows Japan's highest mountain Mount Fuji (top L) rising up behind the skyscrapers dotting the skyline of the Shinjuku area of Tokyo at sunset. "Earth Hour" falls on March 25 this year.

For the 11th year running, cities worldwide will turn their lights off Saturday to mark Earth Hour in a global call to action on climate change.

But the moment of darkness should also serve as a reminder, activists say, of another problem that gets far less attention: light pollution.

More than 80 percent of humanity lives under skies saturated with artificial light, scientists recently calculated.

In the United States and western Europe, that figure goes up to 99 percent of the population, most of whom cannot discern the Milky Way in the [night sky](#).

Artificial lighting has been shown to disturb the reproductive cycles of some animals and the migration of birds that navigate using the stars, and to disorient [night](#)-flying insects.

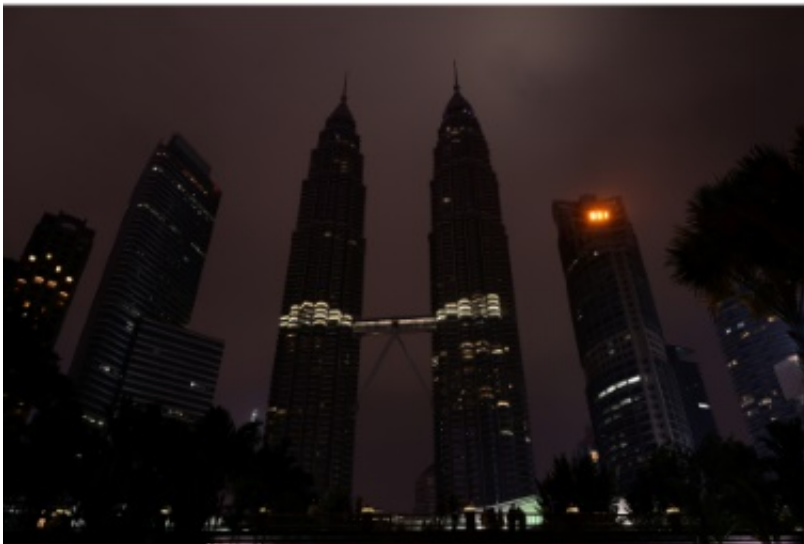
For humans, circadian rhythms that regulate hormones and other bodily functions can also be thrown out of whack by too much light at night.

Even the most ardent critics of light pollution are not saying cities should go dark, or that lighting is not an essential element of urban life.

But society needs to address a growing list of concerns, they suggest.

"In general, it's getting worse," Diana Umpierre, president of the International Dark-Sky Association, said of light pollution in her home state of Florida.

And things are moving in the wrong direction, she told AFP.



This combination of pictures created on March 19, 2016 shows the Petronas towers before (top) and after the lights were switched off (bottom) during the Earth Hour campaign in Kuala Lumpur on March 19, 2016.

"We are predicted to have 15 million more residents in the next 50 years"—with all the extra lighting that entails.

By contrast, in Chad, the Central African Republic and Madagascar—not coincidentally among the poorest countries in the

world—three quarters of people have a clear view of the heavens.

Arguably, no-one suffers more from light pollution than astronomers whose telescopes are blinded by the glare of urban glow.

In 1958 Flagstaff, Arizona—more than 2,100 metres (nearly 8,000 feet) above sea level—became the first sizeable city to curb night lighting, mainly to shield a major observatory.

## **Not taken lightly**

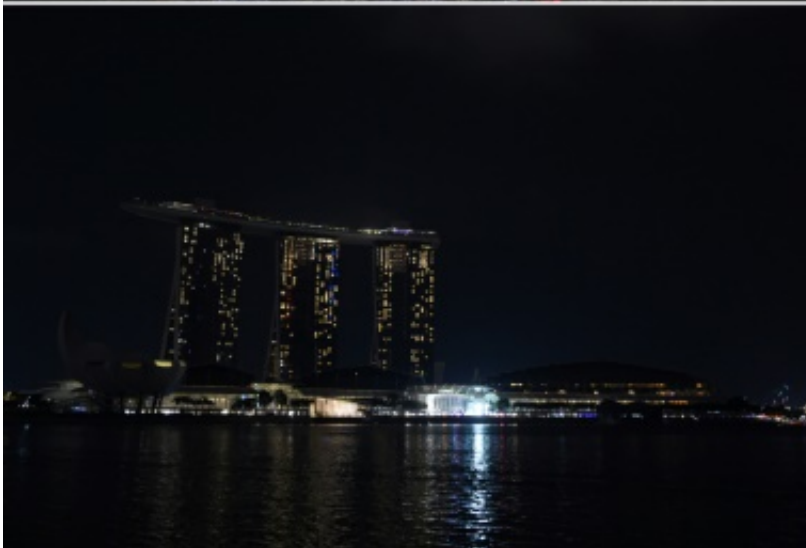
One of the biggest challenges in fighting light pollution is convincing people that "brightness" is not synonymous with "safety", said Umpierre.

"Sometimes it's just the opposite," she argued, citing studies showing that people drive more carefully—and more slowly—on roads with less or no lighting at night.

Over the last 15 years, biologists, doctors, non-governmental organisations and even UNESCO have joined the fight against [light pollution](#) by detailing negative impacts to health and well being—for humans and other animals.

In 2012, the American Medical Association (AMA) concluded that exposure to "excessive" night light "can disrupt sleep and exacerbate sleep disorders".

And it called for more research into possible links to cancer, obesity, diabetes and depression.



This combination of pictures created on March 19, 2016 shows the Marina Bay Sands hotel and resort before (TOP) and during (BOTTOM) with the lights switched off during the Earth Hour campaign in Singapore.

Last year, the AMA raised another red flag, this time about [light](#)-emitting diodes, better known as LEDs.

Local governments in wealthy countries are racing to replace existing streetlights with LEDs, which consume less energy and last longer.

In the United States, fully 10 percent of public lighting has already switched over to LED.

That is good news for the fight against global warming, cutting on fossil-fuel burning for electricity, but it may be bad news for health, the AMA cautioned.

"Some LED lights are harmful when used as street lighting," AMA board member Maya Babu said in a statement.

Not only do the bluish, high-intensity lights create a view-obscuring glare, they have "five times greater impact on circadian sleep rhythms than conventional street lamps," the AMA concluded.

The new technology also obscured our view on the night sky even more than traditional city lighting.

"LEDs could double or triple the luminosity of the sky"—which means the stars get lost against the background, said the authors of a 2016 world atlas of night sky brightness.

Bit by bit, citizens are starting to push back.

A petition circulating in Madrid is calling for a scientific study on the safety and health impacts of LED lighting.

In the Canadian cities of Quebec and Montreal, along with Phoenix in Arizona, public pressure has already pushed city officials to install "yellow" LEDs, which are thought to be less disturbing.

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