



Light Pollution Is Dimming Our View of the Sky, and It's Getting Worse

光污染让星空愈发暗淡

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Most stars are **invisible** against the overhead glare from city lights. At best, there is only **a hint of** the **diffuse** Milky Way to see: the combined **radiance** of a hundred billion stars **dims** to near-nothingness by bright streetlamps and **storefronts**.

在我们头顶上空的城市强光下，大多数星星都看不到了。在最好的情况下，我们能看到的也只是银河光带的一小部分：1000 亿颗星星合起来的光芒在明亮的路灯和店面的映衬下变得近乎虚无。

This is light pollution—human-generated **illumination** **cast** up into the heavens—causing the sky itself to glow and washing out the stars. Astronomers have known for years the situation is bad for stargazing, but it also has real and negative effects on the well-being of many living things—plants, animals and even human beings. More than 80 percent of humanity is affected by light pollution, their view of the skies being stolen away.

这就是光污染，人造光源投射到天空中，导致天空本身发亮，冲淡了星光。天文学家多年前就意识到这种情况不利于观星，但它也对许多生物的健康造成了实实在在的负面影响，包括植物、动物甚至人类。超过 80% 的人类受到光污染的影响，他们欣赏星空的权利被剥夺了。

Christopher Kyba, the light pollution researcher of the GFZ German Research Center for Geosciences, and his team examined an astonishing amount of data from more than 50,000 citizen scientists from around the world who sampled their local sky brightness from 2011 to 2022. While there was **considerable** place-to-place **variability**—for example, on average, Europe saw a 6.5 percent increase in light pollution per

524 Words

invisible [ɪnˈvɪzəbl] *adj.* 看不见的，隐形的；无形的 | She had a magic cloak that made her invisible. 她有一件魔法斗篷可以让她隐形。

a hint of 少许，少量 | There was a hint of impatience in his voice. 他的声音里流露出一丝不耐烦。

diffuse [dɪˈfjuːs] *adj.* 弥漫的，扩散的 *v.* 扩散，渗出；传播，散播 | Over time, the technology is diffused and adopted by other countries. 久而久之，这项技术传播到了其他国家并得到利用。

radiance [ˈreɪdiəns] *n.* 光辉；容光焕发，喜气洋洋 | the moon's radiance 月光

dim [dɪm] *v.* 变暗淡，变微弱，变昏暗 *adj.* 暗淡的，昏暗的 | The lights in the theatre dimmed as the curtain rose. 幕布升起，剧场内的灯光暗了下来。

storefront [ˈstɔːrfɹʌnt] *n.* 商店门面，店面

illumination [ɪˌluːmɪˈneɪʃn] *n.* 照明，光源；启示，启迪；彩灯，灯饰 | The only illumination in the room came from the fire. 屋子里唯一的光亮来自炉火。

cast [kæst] *v.* 投射（光、影子等）

year, while North America saw a 10.4 percent increase—the researchers found that globally, light pollution increased by 9.6 percent per year over the time period.

GFZ 德国地球科学研究中心的光污染研究员克里斯托弗·凯巴和他的团队研究了来自世界各地的 5 万多名民间科学家的大量数据，这些科学家从 2011 年到 2022 年对当地的天空亮度进行了采样。尽管存在相当大的地区差异（例如，平均而言，欧洲光污染每年增加 6.5%，而北美增加 10.4%），研究人员发现，在全球范围内，光污染在这段时间内每年增加 9.6%。

This may not sound like much, but it reflects an **exponential** growth rate similar to how **compound interest accrues** on a debt. A year-over-year growth of about 10 percent means sky brightness is doubling about every seven years. A moment's thought should make clear why this is deeply troubling. As Kyba and his co-authors explained in their paper, published in the journal *Science*, if there are 250 visible stars in the sky when someone is born, by the time they're 18 they'll only see 100, and over that same period the sky will have increased in brightness by more than a **factor** of four.

这听起来可能不多，但它反映了一个越来越快的增长率，类似于债务利息滚利。每年增长大约 10%意味着天空的亮度每七年就会翻一番。稍微思考一下，你就会明白为什么这令人深感不安。正如凯巴和合著者在他们发表在《科学》杂志上的论文中解释的那样，如果一个人出生时天空中有 250 颗可见的恒星，到他 18 岁时，他只能看到 100 颗，而在同一时间段内，天空的亮度将增加四倍以上。

All this extra light at night has a large effect on the life under it. Researchers have shown that it has negative impacts on many animals and plants; light pollution disrupts the great **migrations** of birds, the **delicate** blossoming of flowers, and even the **luminous courtship** of fireflies, to name just a few examples. It affects humans as well, possibly **triggering insomnia** among many other health problems.

夜晚的这些额外的光线对生活在这些光线下的生物有很大的影响。研
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n. 全体演员 | The setting sun cast an orange glow over the mountains. 橘红色的夕阳辉映着群山。

considerable [kən'sɪdərəbl] adj. 相当多的，相当大的 | We've saved a considerable amount of money. 我们存了一笔数额相当大的钱。

variability [ˌværiə'bɪləti] n. 可变性，易变性 | There's a great deal of variability between individuals. 人和人之间有很大的不同。

exponential [ˌekspe'nenʃl] adj. 指数的，越来越快的

compound interest 复利（在计算利息时，某一计息周期的利息是由本金加上先前周期所积累利息总额，也即通常所说的“利滚利”）

accrue [ə'kru:] v. 逐渐增加，累计 | The interest has continued to accrue. 利息持续累积。

factor ['fæktər] n. 倍数 | The real wage of the average worker has increased by a factor of over ten in the last 70 years. 近 70 年来工人的实际工资平均增长超过了十倍。

migration [maɪ'greɪʃn] n. 迁移，移居，迁徙

delicate ['delɪkət] adj. 娇贵的，脆弱的，易碎的；精致的，精细的 | The sun can easily damage a child's delicate skin. 阳光很容易晒伤小孩娇嫩的皮肤。

luminous ['luːmɪnəs] adj. 发光的，发亮的；鲜艳的

courtship ['kɔːrtʃɪp] n. 求偶，求

究人员已经证明，夜晚的额外光线对许多动物和植物都有负面影响；光污染会干扰鸟类的大迁徙，干扰娇嫩花朵的开放，甚至影响萤火虫发光的求偶行为，这只是几个例子。夜晚的额外光线也会影响人类，可能会引发失眠和其他许多健康问题。

So what can we do about our brightening skies?

那我们能做些什么来应对过亮的夜空呢？

There is a lot already happening. Groups like the International Dark Sky Association, or IDA, advocate not for more lighting but for more intelligent lighting; smarter street lights that concentrate their light downward is one example. Because these lights offer more efficient illumination, they save energy, too, eventually paying for themselves. The IDA offers advice on how to contact local authorities to **install** better fixtures and create **ordinances** to lower pollution. Many cities in the United States and other countries are **designated** Dark Sky Communities, ones that have shown “**exceptional** dedication to the preservation of the night sky” by discouraging wasteful lighting practices.

人们已经采取了许多措施。国际暗天协会（International Dark Sky Association，简称 IDA）等组织倡导更智能的照明，而不是更多的照明；例如，智能路灯向下集中光线。因为这些路灯提供了更有效的照明，它们也节省了能源，最终收回了成本。国际暗天协会就如何联系地方当局安装更好的固定设施和制定法规以降低光污染提供了建议。美国和其他国家的许多城市都被认定为“暗天社区”，这些城市通过减少照明浪费，表现出“对保护夜空的非凡奉献精神”。

Many people don't even know that they—and their **descendants**—are losing this **cosmic** experience just over their heads. We need the dark night sky, and **it's up to** all of us to make sure it's still there every time the sun goes down.

许多人甚至没有意识到他们和他们的后代正在失去头顶上的这片星空。我们需要黑暗的夜空，我们所有人都有义务确保每当太阳落山后夜色仍在。

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爱

trigger ['trɪɡər] v. 引起，触发 n. 起因，诱因 | Nuts can trigger off a violent allergic reaction. 坚果可以引起严重的过敏反应。

insomnia [ɪn'sɑːmniə] n. 失眠

install [ɪn'stɔːl] v. 安装；任命 | Have you installed a smoke alarm in your office? 你的办公室安装烟雾警报器了吗？

ordinance ['ɔːrdɪnəns] n. 法令，法规，条例

designate ['deɪzɪneɪt] v. 命名，指定，认定；选定，指派 | The lake was recently designated a conservation area. 这个湖最近被指定为保护区。

exceptional [ɪk'sepʃənəl] adj. 杰出的，优秀的；特别的，罕见的 | At the age of five he showed exceptional talent as a musician. 他五岁时就表现出非凡的音乐才能。

descendant [dɪ'sendənt] n. 子孙，后代 | He was a direct descendant of Napoleon Bonaparte. 他是拿破仑·波拿巴的嫡系后裔。

cosmic ['kɔːzmɪk] adj. 宇宙的；巨大且重要的 | He treated his approaching death as a sort of cosmic joke. 他把即将到来的死亡当作天大的笑话。

it's up to sb. 是某人的义务；由某人决定 | It's up to the travel companies to warn customers of any possible dangers. 旅游公司有义务预先告知顾客任何可能的危险。

► 脉络梳理

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► 长难句拆解

