Wonders of the dark sky

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Karen Anne Devoil **encourages you to go stargazing**

As the autumn approaches and the nights start to draw in, we can be forgiven for feeling a little disconcerted with the loss of long summer evenings.

Darker evenings, however, bring a host of natural wonders of their own. Since ancient times people have been fascinated by the night sky. Stargazing has inspired curiosity and wonder through the ages and has become an integral part of human heritage. There's much to discover, and a whole world of wonder to enjoy in the night sky, especially if you're lucky enough to be sky watching away from so called 'skyglow' – light pollution caused by artificial lighting from urban sprawl. This wasted light also consumes vast amounts of electricity, releasing atmospheric pollutants.

These wonders are best appreciated in dark sky locations, but sadly, dark sky sites are becoming increasing hard to find, especially with the proliferation of LED lighting. Light pollution is increasing at a rate of 2% annually according to a recent study (Kyba 2023) using 50,000 observations recorded by citizen scientists.

There's also a growing body of evidence which suggests that light pollution is damaging to the environment as well as our own health. It's known to affect the behaviour of some nocturnal animals, disrupt breeding cycles and activity patterns, disrupt food webs and increase vulnerability to predators. As for humans, too much brightness at night can disrupt our sleep patterns and our hormone levels, as well as affecting mental health.

A study just published in a special edition of the journal *Science* (June 2023) examines the effects of light pollution on the natural world, human health and the night sky. It provides a comprehensive summary of its harmful effects, including how increasing levels are having an adverse impact on humans and the natural world. It also reports that over 80% of the world's population live under light-polluted skies, and more alarmingly, this is worsening by 10% each year, threatening to obliterate our view of all but the brightest stars within just one generation.

Today, through exploration, observation and research, we know so much more about the universe, its galaxies, stars and planets, and are privileged to enjoy high-definition images captured by powerful space telescopes such as the Hubble and James Webb; but being able to view the wonders of the night sky with your own eyes is a very special experience.

From a dark sky site on a clear night, it's possible to see thousands of stars, comets and even galaxies such as Andromeda, which is 2.5 million light years away. What you can pick out will depend on how you're viewing the night sky. With the naked eye you can see expansive views of constellations, meteor showers and bright comets. With binoculars you can observe impact craters (such as Tycho) and maria (lava plains) on the moon. With a small telescope it's possible to see some detail of the planets, including Jupiter's bands of clouds and great red spot, together with its four Galilean moons (Ganymede, Europa, Io and Callisto), which will look like four pinpricks of light that encircle the planet; spectacular Saturn with its stunning rings, and perhaps even the ice caps of Mars. With a bigger telescope you might even be able to see distant stars, enchanting nebulae, star clusters and glorious galaxies.

When you go stargazing remember to wear warm clothes and thick-soled shoes or boots. Be patient, because it can take 20 minutes for your eyes to get used to the darkness, so avoid looking at bright lights. Using a red-light torch minimises the impact on your dark-adapted night vision. Stargazing is a year-round activity, but the best months are during autumn and winter when the evenings draw in early.

Despite the challenges of light pollution, there are still places where you can marvel at the wonders of the night sky. The Chiltern Society and the Colne Valley Regional Park are striving to help preserve green spaces and dark skies. Come along to our stargazing evening to experience the wonders of the dark sky for yourself.

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Come stargazing with us!

The Chiltern Society in association with the West of London Astronomical Society, Woodoaks Farm and Colne Valley Regional Park are holding a stargazing event, 'Wonders of the Dark Sky' on 21 September, with a back-up date of 22 September (depending on weather conditions) at Woodoaks Farm, Maple Cross, Rickmansworth WD3 9XQ. Tickets are selling fast, so please check availability on the Society website.