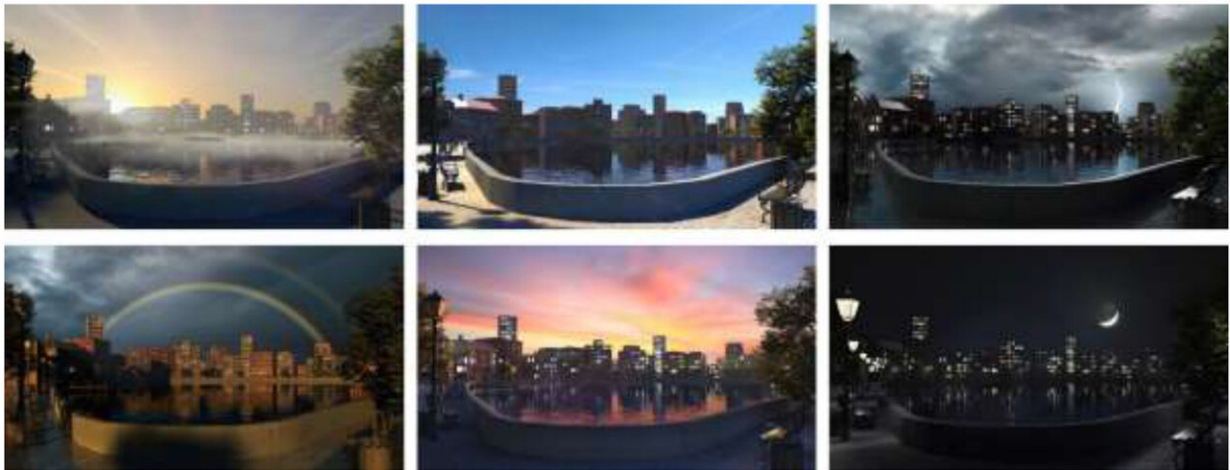


# New research quantifies the 'wow' factor of sunrise and sunset for the first time

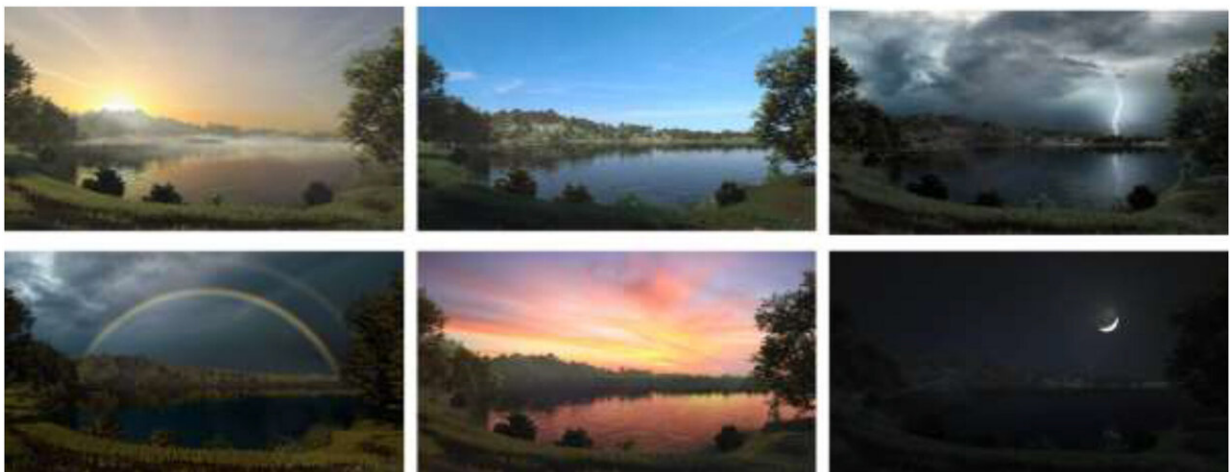
January 19 2023

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**A**



**B**



Six conditions in (A) the urban and (B) the natural setting. Credit: *Journal of Environmental Psychology* (2023). DOI: 10.1016/j.jenvp.2023.101955

A new study has identified the impact that fleeting natural events, such as sunrises and sunsets, can have on people, and sought to quantify their effects for the first time.

Despite a large body of research examining the impacts of nature on our [mental health](#), most studies have assessed these effects under calm, blue skies. Surprisingly few have considered how we respond to variations in weather and the daily rhythms of the sun, changes referred to as "ephemeral phenomena."

To help close this gap, researchers used the latest computer graphics to show carefully controlled images of both urban and [natural environments](#) to more than 2,500 participants. When these scenes featured elements such as sunrise and sunset, participants considered them to be substantially more beautiful than when seen under sunny conditions at other times of the day.

Unexpectedly, the paper revealed that sunrise and sunset could also trigger significant boosts in people's feelings of awe. A typically difficult emotion to elicit, research indicates that awe has the potential to improve mood, enhance positive social behavior, and increase [positive emotions](#)—all valuable factors in enhancing overall well-being.

Published in the *Journal of Environmental Psychology*, the paper also considered rarer events, such as rainbows, thunderstorms, and starry, moonlit skies in the experiment. Each of these phenomena altered the extent to which people experienced beauty and awe in different landscapes, when compared to sunny, blue skies.

Crucially, these changes were also behind variations in how the environments were valued—assessed by asking participants how much

they would be willing to pay to experience each scene in the real world.

Participants were prepared to pay a premium of almost 10% to visit a natural setting at sunrise compared to under blue skies. The research team said this kind of added value is normally attributed to more permanent features, such as scenic lakes or historic buildings. They suggested that encouraging people to experience sunsets and sunrises could help boost well-being, and might be used as part of green prescribing, where nature plays a therapeutic role in mental health treatment.

Alex Smalley, Ph.D. fellow at the University of Exeter and lead author of the research, said, "We're all familiar with the urge to take a photo of a brilliant sunset or unexpected rainbow. The term 'sunset' has over 300 million tags on Instagram and people told us they'd be willing to pay a premium to experience these phenomena, but of course we can all experience them for free. Our research indicates that getting up a bit earlier for sunrise or timing a walk to catch sunset could be well worth the effort—the 'wow' factor associated with these encounters might unlock small but significant bumps in feelings of beauty and awe, which could in turn have positive impacts for mental well-being."

The authors also noted how the occurrence of the phenomena they tested could vary greatly based on where people live. Those on east-facing coastlines might find [sunrise](#) easier to see, while those in the west might more frequently experience [sunset](#). Equally, thunderstorms may be more common in summer in the U.K, yet rainbows appear more often in winter.

Alex Smalley added, "Most of the phenomena we tested can be fleeting and unpredictable, and we think this novelty is partly behind the effects we're seeing. Given their potential to change people's experiences in both natural and [urban landscapes](#), there could be real value in

highlighting how and where these events might be experienced, particularly in towns and cities."

The paper, titled "Beyond blue-sky thinking: Diurnal patterns and ephemeral meteorological [phenomena](#) impact appraisals of beauty, awe, and value in urban and [natural landscapes](#)," is published in the *Journal of Environmental Psychology*.

**More information:** Alexander J. Smalley et al, Beyond blue-sky thinking: Diurnal patterns and ephemeral meteorological phenomena impact appraisals of beauty, awe, and value in urban and natural landscapes, *Journal of Environmental Psychology* (2023). [DOI: 10.1016/j.jenvp.2023.101955](#)

Provided by University of Exeter

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