



A crowd watches a total solar eclipse in Exmouth, Australia, on April 20, 2023. Research suggests eclipses inspire awe, an emotion with tangible benefits.

PHOTOGRAPH BY MATTHEW ABBOTT, THE NEW YORK TIMES/REDUX

PREMIUM SCIENCE

Psychologists say witnessing an eclipse can change how you see the world. Here's how.

Experts say standing under the shadow of the moon leaves us awestruck, more connected to the wonders of our world and the people we share it with.

By Kathleen Rellihan

March 19, 2024



David Makepeace rattles off the date and time, even down the minute, as if it's his birthdate: July 11, 1991, 11:47am. On a sun-scorched hilltop in La Paz, Mexico, it was the moment the sun disappeared and the gigantic shadow of the moon engulfed him and everything else around him.

It was one of the longest total eclipses in a hundred years, and he knew the moment the moon's shadow vanished nearly seven minutes later over the Pacific, he had to chase it, again and again.

"Absolutely floored me, wiped my slate clean, and I spent the next couple of days sitting on the shores of the Sea of Cortez with the pelicans wondering about everything," says Makepeace.

Now 33 years later, Makepeace is one of the world's most well-known eclipse chasers and has seen 17 total solar eclipses around the world, on all seven continents, from Libya to Antarctica to Tidore Island in eastern Indonesia. A filmmaker by trade, he shares his eclipse reports and videos as [The Eclipse Guy](#), and his ruminations of what it all means as [a public speaker](#).

[\(These are the best places to see the upcoming April 8 eclipse.\)](#)

Each eclipse feels as intense as the last, he says. “Nothing extraterrestrial, but a firehose to the face of your fundamental humanity. Emotions are high; tears fall; you’ll think: “That was the most beautiful thing I’ve seen and I’m not sure what happened to me, but it meant something.””

Makepeace isn’t alone—those who stand in the path of totality, where the moon completely obscures the sun, regularly report strong bursts of emotion and a lingering sense of awe. This heightened emotional state has the power to do more than open us to wonders of the universe—scientists say it can make us feel more curious and connected to others in it.

The psychological effects of awe during an eclipse

“This is a human event, it’s not just for astronomers. We all need to experience it,” says eclipse chaser Kate Russo about the total solar eclipse happening on April 8. “You don’t need to know anything about it to feel that overwhelming sense of awe.”

Russo uses her work as clinical psychologist to study the profound effects that eclipses have on humans, authoring several books on the subject, including *Being in the Shadow: Stories of the First-time Total Eclipse Experience*.

Like Makepeace, Russo’s first total solar eclipse in 1999 was such a life-altering event she knew immediately she had to see one again. She’s followed the shadow of the moon ever since, from Madagascar to the Galapagos Islands to Mongolia, for a total of 13 total solar eclipses.



“Awe is quite a complex emotion; it feels like you’re in the presence of something greater than yourselves. And awe challenges how you think about things in the world,” says Russo.

The power of awe is often considered ineffable and beyond measurement, but a deeper understanding of it has been largely driven by the long-term work of Dacher Keltner and his team. Keltner, a pioneer in the science of awe, is the founding director of the Greater Good Science Center at the University of California, Berkeley and author of “Awe: The New Science of Everyday Wonder.” While for many of us, awe feels beyond words, Keltner defines it as the feeling of being in the presence of something vast that transcends your understanding of the world.

You May Also Like



SCIENCE

9 simple ways to boost your mental health, according to science



SCIENCE

Being organized can actually improve mental health. This is why.



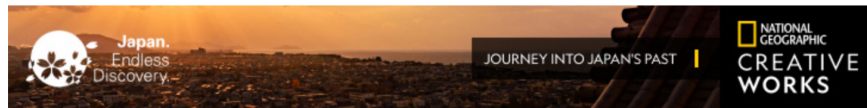
SCIENCE

8 strategies to make your New Year's resolutions stick

Maria Monroy, a postdoctoral associate in the department of psychology at Yale University, led a forthcoming study on the psychological effects of eclipses during the total solar eclipse on August 21, 2017 in Salem, Oregon, which was in the path of totality.

([An expert photographer shares his tips on photographing eclipses.](#))

While Dacher and Monroy **have found that** awe has many positive effects on our mental health and well-being, Monroy is particularly focused on how awe makes people more prosocial—acting to benefit others rather than themselves. Studies have already shown the connections between **awe and curiosity**, and Monroy's surveys taken after the 2017 eclipse showed that the more awe people felt during the eclipse, the more curious and connected they felt about others.



Even though a total solar eclipse is a perfect natural setting to observe awe, Monroy says awe can result from a vastness beyond nature and the physical—it can be an idea that blows your mind, a musical experience that renders you speechless, or even an awakening through psychedelics.

Awe can bring people together

“Awe gets us out of our own heads,” says Russo. “When you experience awe during totality, or even a little awe at sunrise [and] sunset, you step out of that default mode network and instead of interpreting everything from your own perspective, you lose yourself a little bit.”

Awe not only inspires personal reflection, but it can also create community transformations.

Russo partnered with the West Texas town of Uvalde to help prepare them for their spotlight in the eclipse crossroads. The town was in the path of the annular solar eclipse that took place on October 14 last year and will be in the path of totality for the upcoming total solar eclipse on April 8.

Uvalde received national attention after a tragic school shooting that took place on May 24, in 2022, and Russo says the eclipse gives the grieving town something else to be known for. To foster goodwill and connection she helped create the [Solar Eclipse Village](#), a community gathering space for the eclipses.



During the October 14 eclipse, Russo also led her [Project Awe pilot](#) at the village. Using EEG headsets and heart-rate monitors, she and her research partner Andrew Bailey measured the physiological responses of volunteers. This pilot project was the first study to capture physical reactions to eclipses. One unexpected finding was the occurrence of awe at various stages throughout the eclipse. Immediately after the eclipse, heightened introspection was indicated by high-amplitude, low-frequency brain waves, which is commonly seen in other profound or thought-provoking experiences.

Repeated experiences with awe can bring us together, says Russo, and there are infinite ways to find it beyond celestial phenomena. It can be found in everyday small wonders like catching sunlight filtering through the trees or what Keltner calls “moral beauty” a sense of appreciation for others acting altruistically. Keltner and his team found it’s the most common source of awe.

Awe reminds us we’re not alone. We share our greatest moments of awe with others in “collective effervescence,” says Russo. “Just as a startling murmuration in the sky moves as one, during totality the crowd behaves as one.” Fans chanting during sports games or singing along during music concerts are other examples of this collective energy, adds Russo. “The crowd is one; you are part of the moment.”

Correction: An earlier version of this article stated Kate Russo had seen 11 total solar eclipses. She has seen 13.

Related Topics

[SOLAR ECLIPSES](#) [ASTRONOMY](#) [WELLNESS](#) [ADVENTURE TRAVEL](#) [PSYCHOLOGY](#)

[MENTAL HEALTH](#)