Eclipse chasers head to southern Illinois for 2nd total solar eclipse in 7 years

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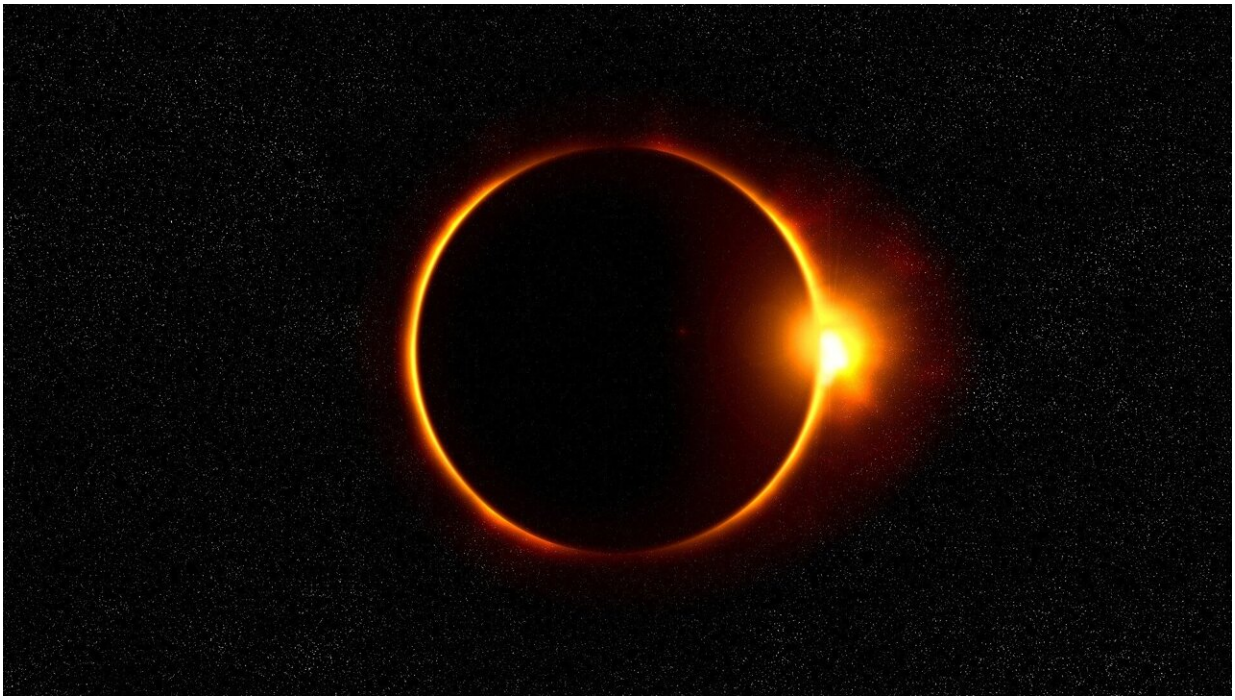

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In 1999, Michelle Nichols saw her first total solar eclipse on a cruise in the Black Sea. It would be many years before she witnessed another one during a visit to southern Illinois in 2017.

"It seemed so far in the future," she said.

Now, Nichols, an astronomer, educator and the director of public observing at the Adler Planetarium, is planning to return to Carbondale, Illinois, where the moon will completely block out the sun for more than four minutes on April 8. It is the second time in seven years that southern Illinois has been in the path of totality, or the moon's shadow.

Rarely do these celestial bodies line up perfectly with the earth to create a total eclipse. It's even rarer for a total eclipse to plunge the same region into darkness in less than a decade.

"Any given location on Earth will see an actual, total solar eclipse on average every 375 years," Nichols said. "So you have to be at the right place, at the right time."

While Chicago is not in the path of totality again this year, the area will experience a partial eclipse, and the sky will darken.

The contiguous United States won't see another total eclipse until 2044, and that one will only brush Montana and North Dakota, according to NASA.

For centuries, humans have chased solar eclipses, fascinated by the skies above them. Today, social media has also contributed to the popularity of eclipse chasing, engaging tens of thousands of enthusiasts from all over the world who connect over advice, travel plans and shared experiences.

Studying the planets and stars is one thing; experiencing them up close and personal is another thing entirely. Nichols can still recount the moments leading up to a total eclipse in vivid, minute detail. As the moon gradually covers the sun, shadows grow sharper and temperatures drop.

"If you're out where maybe you're near a farmer's field," Nichols said, "you might notice the cows starting to walk to the barn. You might notice crickets chirping. You might notice birds coming to roost in trees because, for all they know, it's nighttime."

Right before totality—when the moon completely covers the sun—the last little beads of sunlight shine through the rugged lunar surface. Then when the moon covers the sun, the corona becomes visible; this is the outermost part of the sun's atmosphere, usually hidden from the human eye by the brightness of the star.

Some viewers cheer, others sob. Some jump up and down while others stay put in admiration. Everyone has a different reaction, Nichols said.

"It's awe-inspiring because you're seeing the sun and the moon and the sky like you've literally never seen them before," she said. "It's something you think you know so well, that you're seeing completely differently. The corona is only visible to us during a total solar eclipse. That's your only way to see it unless you go travel in space or something, and that's not going to happen for most of us."

This year's eclipse will also be all the more special as other planets line up next to the celestial protagonists: Jupiter will be visible to the upper left, and Venus to the lower right. Others might be visible but dimmer, including possibly Saturn, Mars and Mercury.

From January until October, the sun will also be in its most active period in two decades, according to a report in The Washington Post. During the eclipse, humans will be able to see much of this activity, including sunspots, solar flares, solar winds or bright streaks, loops or eruptions on its surface, and possibly even an explosion of plasma from the corona.

"The sun is a giant, giant fireball, so it's always going to be active. It's

like a volcano," said Ethan Chivari, a freelance photographer from Aurora who saw the 2017 eclipse in southern Illinois and is headed back in April. "It's going to make for great photos … add some really nice detail."

Nowadays, Chivari mostly covers concerts, but he has dabbled in astrophotography since high school. He couldn't pass up the 2017 eclipse so close to home. On his way south that August day, as clouds rolled into Carbondale and other parts of the state, he decided to pull off on a side road between Alto Pass and Cobden to set up.

"I might go back to the coordinates I was at that first time because I was by myself, and it was very, very peaceful. And once totality hit, it was very surreal," he said. "I've been telling people it's like a spiritual event. Because you really do see the wonder of the planet."

He was fortunately equipped with prior experience after photographing a once-in-a-lifetime astronomical phenomenon, known as the Transit of Venus, in 2012. The next time Venus passes directly between the Earth and the sun, appearing as a small black speck moving across the face of the sun, will be in 2117.

The 2012 transit lasted several hours, while the time of totality for a solar eclipse lasts only a few minutes. But Chivari knows how to adjust for bad lighting and work on the fly from his concert experience. In 2017, he photographed a KISS concert in Aurora on the night of Aug. 20 and left for southern Illinois at 4 a.m. That afternoon, he had just under three minutes and one mission: to capture the eclipse's totality.

In April, he'll have a little more time to work with.

"This is four minutes that we're gonna be getting," he said. "It's like a song and a half—it's what I'm kind of thinking of it as—when really

anything can go wrong."

Chivari said photographing a total eclipse requires specific equipment, and no amount of reading can prepare you to shoot it until you do it yourself. And the scene is so breathtaking it can be distracting.

"You know something really cool is coming, but you just got to be ready for it and keep that emotion … not tamed, but where you can still act in a split second," he said. "You're kind of dumbfounded when you see it happen. Because you want to just take it in, but you have to wear those hats of observing it and shooting it and keeping your head on a swivel."

Suddenly, a shot at the perfect shot is over.

"You feel that temperature come back up, and then you hear the birds come back out," Chivari said. "And it's just another day after that."

He said it's such a weird, indescribable experience that he's already thinking about the next eclipse he'll chase after April.

"There are guys that have (seen) 30-plus eclipses and even they can't put it into words," he said, "There are people traveling to southern Illinois from Ireland, from all over the U.K., just to come for this. It kind of puts it into perspective, how (monumental) this is."

From across the pond

To see the 2017 total eclipse, Neil Pick traveled from the United Kingdom to Paducah, Kentucky, 70 miles south of Carbondale. This time around, he'll be staying with family friends who recently moved to Cape Girardeau, Missouri, a city just across the Illinois border.

"Conveniently—for me," Pick said. "Obviously, I knew it was going to

occur another six, well, seven, years and a bit later. And I enjoyed it so much the first time I thought, 'Well, why not?'"

In 2017, Pick and his son flew from the small British town of Driffield to Atlanta before driving to Kentucky. Outside their hotel, they joined about two dozen people and waited for hours trying to beat the summer heat and humidity in the shade. He worried clouds would obscure the event.

"But they didn't. It was absolutely perfect, blue skies, as it happened," he said. "So, quite privileged, in all honesty, to travel all that way for 2 ½ minutes of eclipse and get clear blue skies. Because the experience was so good, it's obviously quite vivid and quite engraved in my memory."

He especially remembers animals quieting down and insects chirping in the middle of the day for a bizarre and eerie few minutes.

"People say it's like night during the day, but it's not. It's not the same as night," he said. "It's just a quirk of nature, basically, isn't it?"

After April, the 53-year-old is hoping to see at least two more total eclipses closer to home: one over northern Spain in 2026 and another over southern Spain near the Strait of Gibraltar in 2027.

"So I've got those two penciled in for a visit, but after those dates, I think they're rather a bit remote or quite ahead in the future," he said. "I'm not a particularly spiritual person, but you do feel quite elated from the event. It's one of nature's best shows."

94% in Chicago

A total eclipse is a particularly special astronomical phenomenon because of its wide reach and easy accessibility, said Nichols from the

Adler. While only the areas within the path of the lunar shadow—120 miles wide—will see the moon cover the sun completely, NASA says every contiguous U.S. state and some parts of Alaska and Hawaii will experience at least a partial solar eclipse.

That means about 99% of people who reside in the United States will be able to see the partial or total eclipse from where they live.

"You don't have to pick a highly populated area to go see a solar eclipse," Nichols said. "If it's within a few hours' driving distance, just get into where they're going to see totality, pull off on the side of the road, carefully, and watch it. … That's what makes not having to drive very far a great perk. You don't have to spend thousands of dollars to go to some far-flung part of the Earth."

Chicago will experience a partial eclipse between 12:51 p.m. and 3:22 p.m. on April 8. At the height of the eclipse over the city, precisely 2:07 p.m., the moon will cover up to 94% of the sun.

The last total solar eclipse occurred in the Chicago area in 1806, more than three decades before the city of Chicago was founded. The next total eclipse visible from the city will take place on Sept. 14, 2099. Someone born on April 8 of this year will be 75 years old then.

Those seeing only a partial eclipse will have to keep their safe solar viewing glasses on when looking up to protect their eyesight. They can also make a pinhole projector out of an index card and a push pin to project an image of the partial eclipse down onto the ground.

"For anyone outside of seeing totality, there'll be no part of the solar eclipse that you can look at with just your eyes," Nichols said. "Even 10% of sun is too much sun to look at directly."

As weather permits, the Adler will hold a free "Eclipse Encounter" with telescopes and solar viewers from 12:30 to 3:30 p.m.

Nichols said she always tells first-time and even second-time eclipse viewers to try not to take pictures during totality. Plenty of professional photographers, she said, will take beautiful pictures.