



Carlos Rotellar  
CARLOS ROTELLAR

The trails pictured above show proof of the Earth spinning beneath us.

## STAR TRAILS

*Earth's signature written across the night sky*

On a clear night, the stars appear fixed and timeless — silent points of light pinned to the sky. But leave a camera pointed upward, and a quiet truth reveals itself: stars draw arcs, sweeping circles across the image. These glowing curves, or star trails, are not evidence of stars racing through space but the signature of Earth spinning beneath us.

Earth rotates once every 23 hours, 56 minutes, and 4 seconds, turning eastward at about 1,000 miles per hour at the equator. We do not feel this motion because everything around us—air, land, oceans—moves along with the planet. But the sky does not. As Earth turns, our viewpoint changes, and the stars appear to drift across the heavens east to west. The shape of those trails depends on where you are and where you aim your camera. Point it toward the north, and the stars trace near-perfect



Dr. Carlos Rotellar

circles around Polaris, the North Star. Polaris sits almost directly above Earth's rotational axis, appearing nearly still while the rest of the sky revolves around it.

Earth is a moving platform, rotating in space while orbiting the Sun, which in turn orbits the center of the Milky Way. Our Sun orbits the Milky Way at about 514,000 mph, and it takes 250 million years to complete a full orbit around the center of the Milky Way.

Earth's rotation slows down over time — mainly due to tidal forces between Earth and the Moon. This slowing adds roughly 1.7 milliseconds per century to a day. During the age of the dinosaurs, days were shorter, averaging 23 to 23.5 hours in

length.

When a rocket lifts off from a NASA launch pad in Florida, it almost always arcs out over the Atlantic Ocean, heading east. At Cape Canaveral, that eastward motion is still more than 900 miles per hour. A rocket sitting on the launch pad is already traveling that fast before its engines ignite. By launching eastward, NASA gives the rocket a free speed boost. That extra velocity helps the spacecraft reach the speed needed to reach orbit, 17,500 mph. Every mile per hour gained from Earth's rotation is fuel that the rocket does not have to burn itself.

— Dr. Carlos Rotellar is a Bowling Green nephrologist who has had an interest in astrophotography and has been taking images of the universe from his driveway for several years. Website: Skyastrophotos.com.

## The Invisible Man

There I am, watching him. He sits on the steps of the Shell Station. A backpack beside him. His skin is rawhide. His beard is white.

His name is Buck. He's from North Carolina. He says he completed two tours in Vietnam.

He's not here begging, he's resting his feet.

"My old feet hurt more'n they used to," says Buck. "Hard getting old, buddy."

There is a half-smoked cigar next to him. He dug this used cigar from an ashtray. It still has life in it, he says.

He's sipping coffee.

"First cup'a joe I had in a week. Fella gave me a quarter a few minutes ago. Piled my coins together to buy me a cup."

A quarter.

When Buck went inside to buy it, there were only cold dregs left in the pot. He asked the cashier if it were possible to brew a fresh pot. She told him to get lost.

"But I'm paying for it," he insisted.

She escorted him to the door.

So, he's drinking dregs for which he paid full price — for which he is grateful.

There are holes in his shoes. He found these sneakers in a sporting-good-store dumpster. Buck estimates he's put nearly eight hundred miles on them. Who knows if he's exaggerating or not. Buck has a flare for the dramatic.

Still, his bloody toes poke through the fronts. His middle toenail is missing.

Buck explains, "God says, 'Don't worry what you'll eat, drink, or wear.' And I believe it. But it's hard sometimes. 'Specially when you ain't eaten and you don't have [cussword] to wear."

So I walk inside the gas station on a mission. I ask the aforementioned cashier to brew a fresh pot of coffee—I tell her it's for me. I am very polite about it.

See **MAN**, 3C



Sean Dietrich

## In 'Wonder,' young actors with facial differences find their voices

By **MICHAEL CASEY**  
Associated Press

CAMBRIDGE, Mass. — When Max Voehl auditioned to play the lead role in the musical "Wonder," he sensed he was playing a version of himself onstage.

Voehl, who was born with a bilateral cleft lip and palate, has endured multiple surgeries like Auggie Pullman — 13 to Auggie's 28. The 12-year-old from Utah also has been bullied, much like Auggie, who is targeted over his rare genetic condition known as Treacher Collins syndrome, which causes underdeveloped facial bones and tissue.

"Channeling Auggie on stage is actually pretty easy for me because I have felt the emotions he

has felt, and I have gone through what he has gone through," Voehl said after a matinee performance at the American Repertory Theater at Harvard University. Voehl, who alternates the role of Auggie with Garrett McNally, who has Treacher Collins syndrome, called the experience "pure joy."

### POPULAR BOOK BECOMES MUSICAL

Adapted from R.J. Palacio's 2012 young adult novel, "Wonder" is a story about the power of kindness and resilience. It revolves around 10-year-old Auggie, who lives in New York and is attending school for the first time after years of being homeschooled. The book was also adapted into a popular film in 2017 starring Julia Roberts and Owen Wilson as Auggie's

parents.

Much of the story is about Auggie's year at school, where the science whiz and "Star Wars" fan initially endures stares from fellow students and uncomfortable questions about his face. He considers dropping out of school at one point but, thanks to a few friends and his family, perseveres and is awarded a medal at graduation for his strength and courage.

The musical also explores Auggie's journey from the perspectives of those closest to him — his sister Via, who feels overshadowed by her brother, and his parents, who wrestle with how to protect him while helping him grow more independent.

There's also Jack, who becomes Auggie's best



CHARLES KRUPA

Actor Max Voehl, who plays the lead character Auggie, embraces actress Alison Luff, who portrays his mother, during the musical "Wonder" at the American Repertory Theater in Cambridge, Mass., on Feb. 12.

friend only to betray him to score points with popular kids. He ends up reconciling with Auggie, choosing to do his science project with him rather than the school bully.

### A SOFTER WORLD

Director Taibi Magar encountered "Wonder"

during the height of the pandemic in 2021 when she wasn't sure theater would return. Magar was offered a proposal to turn "Wonder" into a musical and came to appreciate how the story shows people a way to live that

is "a little softer and a little kinder."

"I was pretty sad and the world was feeling really cold and mean," Magar, who earlier directed "Night Side Songs," "The Half-God of Rainfall," "Macbeth In Stride" and "We Live in Cairo," said at the theater. "Then I got a phone call from my agent to take a look at this material, and it just cracked me open."

One of the early challenges was finding young actors with facial conditions to portray Auggie. The movie features an actor without any facial condition, who portrayed the boy wearing makeup and prosthetics.

Matthew Joffe, a consultant on the project who is a retired therapist and learning disability specialist, argued the role

See **WONDER**, 3C