

## Pass It On®...

### The Woman who Helps us Find our Way.

*Accurate satellite data depends on a precise model of the Earth. The math seemed out of reach in the early 1950s. And that's when Gladys West went to work. Coming from a sharecropper family, Gladys knew what impossible tasks looked like and the hard work they required. Her work in geodesy models led to the Global Positioning System we all now benefit from.*

That friendly voice coming from your phone when you are following directions to a new restaurant or making your way along a highway on vacation may as well be that of Gladys West.

The simple directions we all now depend on have their origins in the satellite science division of the Naval Surface Warfare Center. And among the staff working out the math that maps the shape of the Earth was Gladys West, a determined Black woman who earned full scholarships to Virginia State University to study mathematics as an undergraduate and graduate student.

Electronics in guidance systems were in their infancy in 1955, when West began her career. She had grown up on the family sharecropper farm, and though she was self-motivated to study, she was a rarity in mathematics, not only as a woman but as a Black mathematician. Undeterred, she put her mind to work solving problems.

She began by analyzing the Earth orbits of satellites. It might seem simple to calculate the distance around a perfect orb, but the shape of the Earth is not perfect. It is ellipsoid and has geographical as well as gravitational variations due to the tidal forces that affect the course of a satellite. West developed algorithms to account for the variations and, through the 1970s and 1980s, programmed an IBM computer to deliver ever-increasingly accurate calculations for the shape of the Earth.

In 2018, West was inducted into the United States Air Force Hall of Fame. Capt. Godfrey Weekes, commanding officer at the Naval Surface Warfare Center Dahlgren Division, described the role West played in the development of a Global Positioning System: "She rose through the ranks, worked on the satellite geodesy, and contributed to the

accuracy of GPS and the measurement of satellite data. As Gladys West started her career ... in 1956, she likely had no idea that her work would impact the world for decades to come."

West was never one to protest the unfairness of her day. Although she might have liked to, she couldn't risk losing her job. Instead, she quietly went about the business of improving the way we receive directions as we travel. She died at the age of 95 in January 2026. Her life and achievements not only provide the daily directions we use but also serve as a roadmap for young people navigating their way out of difficult circumstances.

"I'm a doer, hands-on kind of person," West once said. "If I can see the road and see where it turns and see where it went, I am more sure."

For all of us, we are grateful to West for making that map a little easier to follow. The next time you arrive on time, having avoided construction and delays, and hear that friendly voice say, "You have arrived," give a nod and respond, "Thank you, Gladys. I have arrived at a better place because of you."

Direction...[PassItOn.com](https://www.passiton.com)

By The Foundation for a Better Life®

*The Foundation for a Better Life® promotes positive values to live by and pass along to others.*

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