

## KATHERINE JOHNSON 1918-2020



- Gifted mathematician, graduated summa cum laude in Mathematics from West Virginia State College at age 18.
- Johnson began working at NASA (then NACA) in 1953, as a “computer” under supervisor, Dorothy Vaughn.
- In 1958, she was reassigned to the Guidance and Control Division of Langley’s Flight Research Division.
- She calculated the trajectory for Alan Shepherd’s space flight and the launch window for his 1961 Mercury Mission.
- John Glenn asked for her specifically, to verify the computer calculations for his orbit around the earth. He refused to fly unless Johnson could verify the calculations.
- Johnson later worked with digital computers. Her ability and reputation for accuracy helped establish confidence in the new computers.
- She plotted backup navigation charts for astronauts in case of electronic failures.
- Later, she helped with calculations for the trajectory of the 1969 Apollo 11 flight to the moon, and in 1970 she worked on the Apollo 13 mission. When the mission was aborted her work on back-up procedures and charts helped set a safe path for the crew’s return to Earth. She created a one-star observation system that allowed the astronauts to determine their location with accuracy.
- She later worked on the Space Shuttle program, the Earth Resources Satellite, and on plans for a mission to Mars.
- Johnson spent her later years encouraging students to enter the fields of science, technology, engineering, and mathematics (STEM).
- Johnson co-authored 26 scientific papers and was cited as a pioneer for African American women in STEM.
- She was awarded the Presidential Medal of Freedom in 2015, and the Congressional Gold Medal in 2019.
- Two NASA facilities have been named in her honor. On May 5, 2016, the Katherine G Johnson Computational Research Facility was designated on the 55th anniversary of Alan Shepherd’s launch and splashdown. She was also awarded the Silver Snoopy on that day. This is often called the astronauts award, given to those “who have made outstanding contributions to flight safety and mission success.”
- The second facility was the Katherine Johnson Independent Verification and Validation Facility in Fairmont, West Virginia in 2019.
- Johnson also received many Honorary Doctorate Degrees from various colleges.

The film **“HIDDEN FIGURES”** (2017) drew attention to the contributions of Johnson and the other “West Computers”, including Mary Jackson and Dorothy Vaughan, who provide NASA with important mathematical data needed to launch the program's first successful space missions.

[https://en.wikipedia.org/wiki/Katherine\\_Johnson](https://en.wikipedia.org/wiki/Katherine_Johnson)