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# KATHRINE JOHNSON (1919-2020), THE WOMAN WHO QUIETLY CHANGED SPACE EXPLORATION FOREVER THROUGH PRECISION AND PERSISTENCE

**Abstract**

Katherine Johnson (1918-2020, born Creola Katherine Coleman) will be remembered as an important figure in scientific history in more ways than one. As one of the first African American women to work for the National Aeronautics and Space Administration (NASA), she played an extraordinary role in feminism and representation for women and people of colour pursuing science, technology, engineering and mathematics fields (STEM). She played a pivotal role in the first-ever moon landing- without her precise calculations, the Apollo Moon landing program may not have had the same level of success that it did. From amassing achievements such as receiving the Presidential Medal of Freedom (presented to her by Barack Obama in 2015) to being included on the British Broadcasting Corporation's (BBC) list of '100 Influential Women Worldwide,' Katherine Johnson has become a celebrated figure.

Johnson was born as the youngest of four children to Joylette and Joshua Coleman and was raised in White Sulphur Springs, West Virginia. She later moved to Institute, West Virginia, aged only 10, to obtain an education beyond an eighth-grade level as White Sulphur Springs did not have any high schools for African Americans. By age 18, she had already graduated from college as an alumnus of West Virginia State. Johnson later became the first African American woman to attend graduate school at West Virginia University. In 1953, Johnson worked as a 'human computer.' She analyzed data while calculating complex mathematical figures for the Langley Memorial Aeronautical Laboratory in Virginia, and then in 1958 worked as an aerospace technologist where she would calculate trajectories for missions such as the 1961 Mercury Mission, and the Apollo missions. It was at this position that she would achieve some of her greatest feats that are featured with in-depth descriptions and explanations throughout this paper.

This paper will present Katherine Johnson's biography and highlight her numerous contributions to space exploration and will describe early-life influences that may have strengthened her passion for STEM. The paper will also emphasize Kathrine Johnson's persistence and resilience when facing racism and sexism, and how she overcame these barriers to accomplish everything that she did.