

# The Untold Story of NASA's Trailblazers

*Hidden Figures* sheds light on the contributions of black women to the US Space Race

Caitlin M Casey



**Directed by:** Theodore Melfi  
**Screenplay:** Allison Schroeder and Theodore Melfi  
**Based on the book by:** Margot Lee Shetterly

*“I changed what I could, and what I couldn’t I endured.”* – Dorothy Vaughan, NASA mathematician and computer programmer

Scientists pride themselves in their ability to reason objectively, far from the human emotions that govern their personal lives. Yet, often even when we are presented with evidence to the contrary, we fail to acknowledge the strong force of social power in science itself.



*Hidden Figures*, a film adapted from a book of the same name published in 2016 by Margot Lee Shetterly, confronts this phenomenon in

the context of early-1960s NASA space-race. It beautifully balances the strong drive NASA scientists had for pushing the US space program with the stinging reality of racist discrimination in Jim Crow’s America. The harsh reality and legacy of slavery, and the continued marginalization of people of color, led to a complex social order that made it extremely difficult for black Americans to succeed professionally, much less in highly sought-after technical positions in the government. On top of the challenges brought on by racial discrimination, the heroes of this story – Katherine Johnson, Dorothy Vaughan, and Mary Jackson – were at the intersection of gender and racial backlash, dealing with both racism and sexism, yet persevered to become driving forces behind the success of the US space program. As pioneering women of color, their influence shaped a generation of research at NASA Langley Research Center. Yet their marginalized social standing remained a major impediment to their recognition until recently.

*Hidden Figures* is set in 1961 Hampton, Virginia, centered around the life of Katherine Johnson, played by Taraji P Henson, a young African-American ‘computer’ (the term computer at the time referred to women who manually completed calculations relevant to the scientific problems being considered at NASA at the time). Under the supervision of Dorothy Vaughan, the first woman of color supervisor in NASA’s history, Katherine receives an opportunity to work in the Space Task Group, charged with calculating the launch and landing for John Glenn’s historic trip into orbit. This trip was completed several months later in 1962, after Johnson made key contributions to its success. The movie highlights the harsh reality of the era; Johnson’s



white, male colleagues in the Space Task Force refused to share the communal coffee pot with her, and the lack of ‘colored’ bathroom in the building caused her to rush half a mile across the NASA Langley campus every day to relieve herself. In spite of these challenges, she persisted. While the real Katherine Johnson might not have faced such explicit challenges to her existence at NASA (it turns out the bathrooms at Langley were not segregated at the time, while most in the country were), she did face systemic and oppressive conditions in a more profound sense, which ultimately manifested in the lack of recognition of her contributions to the space program until recently. In 2015, Johnson was awarded the Presidential Medal of Freedom by President Obama for her remarkable contributions to science, in particular as an African-American woman in STEM.

The accomplishments of Johnson’s colleagues in the film, Dorothy Vaughan and Mary Jackson, played by Octavia Spencer and Janelle Monáe respectively, should not be overlooked. Vaughan was the first African-American woman supervisor at NASA, who was also one of the first to learn and teach the Fortran computer programming language, when it was clear that manual computing would be made obsolete by machines. Mary Jackson was a pioneering aerospace engineer, who in the film takes evening classes at a traditionally white-only college to qualify for the

job requirements needed for NASA engineers. Her atypical and unexpected path leads her to challenge discriminatory education policies in the Virginia state court.

While the adversity these women faced during the era – nearly sixty years in the past – is clear, many viewing the film might be tricked into thinking that these barriers for participation have long since disappeared. That is not the case, and those aware of the limitations many women face in research today, were left with a bitter-sweet taste after viewing the film. On the one hand, we are at last seeing the amazing contributions of these heroes being recognized and celebrated on the big screen, serving as role models for young girls of color everywhere, letting them know that they, too, can grow up to be whatever they want to be. On the other hand, the situation has not improved very much in the last sixty years; the number of astronomy/physics PhDs for black women in the US still number under 100, and the highest rungs of STEM professions is woefully lacking not just women of color, but also more generally, women. Discrimination, bias and microaggressions are common. We only hope that, through continued discussions in our communities, in our workplaces, and in our pop culture (with more movies like *Hidden Figures!*), we can combat the stereotypes and forces that actively prevent women of color, and all marginalized groups, from pursuing their dreams.

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