

Movie Kit



American
Spaces

Hidden Figures



Year of release: 2016

Rating: PG

Length: 1h 29min

English level: Medium

Director: Theodore Melfi

Starring: Taraji P. Henson, Octavia Spencer, Janelle Monáe

Themes: African-American Heritage, Female Empowerment, STEM

Warning/General Advisory

Mild profanity.

Context:

Hidden Figures is a biographical drama film that tells the inspirational story of three female African-American mathematicians -- Katherine G. Johnson, Dorothy Vaughan and Mary Jackson -- who were able to overcome adversity and play a critical role for their country with their contributions to the American space flight program.

Important Vocabulary/Places/People

- **IBM** – International Business Machines Corporation, manufacturer of the mechanized computers as seen in the film
- **John Glenn** – the first American astronaut to orbit the Earth
- **Langley Research Center** – one of NASA's field centers located in Hampton, Virginia
- **NASA** – stands for National Aeronautics and Space Administration, the agency of the U.S. government responsible for space exploration
- **Space Race** – a rivalry between the United States and the Soviet Union for dominance in spaceflight capability, which spanned from 1955 to around 1991 (after the dissolution of the Soviet Union)

Additional Film Context

Hidden Figures is set in 1961 at the American space agency NASA's Langley Research Center in Hampton, Virginia. The Cold War, a period of post-World War II ideological differences and rivalry between the world's two preeminent nuclear powers, the United States and the Soviet Union, is at its peak. A fierce competition called the "space race" develops between the two nations as they vie to see who could have the most significant achievements in the field of space exploration.

This was a time when research facilities such as Langley depended on "human computers." Before computers became digital devices, the computations necessary for things like space flight

Additional Background Information (continued)

were done by people. Many of the mathematicians employed by NASA to do these repetitive calculations were women, and many of them black women. These workers were called “human computers.”

Although segregation was still common, in the 1950’s NASA became one of the first large employers in the U.S. to hire minority women for what were then considered “semi-professional” jobs. This is after U.S. President Franklin Roosevelt desegregated the federal government workforce during World War II.

In April 1961, the Soviet Union launched the first manned space flight when cosmonaut Yuri Gagarin did a single orbit of the Earth. In the United States, the pressure was on NASA to launch its own manned mission. By early 1962, NASA was ready to launch an orbital flight with astronaut John Glenn. NASA knew they could successfully launch the spaceship into orbit; the big question leading up to the mission was – how do we safely bring the capsule back to Earth?

Hidden Figures focuses on the work of Katherine Johnson who used her mathematical skills for celestial navigation -- determining when the launch should occur, the trajectory of the space flight and emergency back-up return paths. These were all critical contributions to John Glenn’s successful flight in February 1962.

The Women of Hidden Figures

Dorothy Vaughan, played by Octavia Spencer, moved from being a computer to a computer programmer when electronic machines were introduced at NASA. She became the first African-American female supervisor in the organization, and continued to work there until the 1970s. She died in 2008.

Katherine Johnson, played by Taraji P Henson, was a brilliant mathematician graduating from college at just 18 years old. She continued working as a NASA analyst until the early 1980s. Johnson worked on human spaceflight programs, and was also part of the team for Apollo 11, which landed the first astronauts on the moon. She was awarded the Presidential Medal of Freedom by President Barack Obama in 2015. Katherine Johnson, who will turn 100 in 2018, lives near the Langley facility in Hampton, Virginia.

Mary Jackson, played by Janelle Monáe, became the first African-American female engineer at NASA. She left her job as an engineer in the 1970s after becoming frustrated that women weren’t being given the same opportunities as men. Jackson didn’t quit NASA though, but took a demotion to fill the open position of Langley’s Federal Women’s Program Manager, where she worked hard to impact the hiring and promotion of the next generation of all of NASA’s female mathematicians, engineers and scientists. Mary Jackson died in 2005.

Discussion Questions

- How were Katherine, Mary, Dorothy, and their coworkers affected by discrimination? How did they succeed anyway?
- How did both black and white people in the movie respond to segregation?
- Have you been treated unfairly because of gender and/or race? Have you seen someone else treated unfairly because of race and/or gender? What did you do or say?
- Are you interested in pursuing a career in STEM (Science, Technology, Engineering, Mathematics)? If so, what kinds of challenges do you think you will face?
- Who are some “hidden figures” in your communities?