Article of the Week Due: 3-6-20

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Pioneering black NASA mathematician Katherine Johnson dies

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Image 1. NASA space scientist and mathematician Katherine Johnson poses for a portrait at work at NASA Langley Research Center in 1980 in Hampton, Virginia. Photo: NASA/Donaldson Collection/Getty Images

Katherine Johnson was a mathematician who calculated rocket trajectories, or flight paths, and Earth orbits for NASA's early space missions. Johnson, who was portrayed as a pioneering black female aerospace worker in the 2016 hit film "Hidden Figures," has died. She was 101 years old.

NASA Administrator Jim Bridenstine said on Twitter that she died the morning of February 24. No cause was given.

Inspiring The World

Bridenstine tweeted that the NASA family "will never forget Katherine Johnson's courage and the milestones we could not have reached without her. Her story and her grace continue to inspire the world."

Johnson was one of the "computers" who solved equations by hand during NASA's early years. She first worked for the organization that gave birth to NASA, the National Advisory Committee for

Aeronautics (NACA).

Johnson and other black women initially worked in a racially segregated computing unit for NACA in Hampton, Virginia. It wasn't officially dissolved until NACA became NASA in 1958. Signs showed which bathrooms the women were allowed to use.

First Human Space Program

Johnson focused on airplanes and other research at first. Her work at NASA's Langley Research Center eventually shifted to Project Mercury, the nation's first human space program.

"Our office computed all the (rocket) trajectories," Johnson told The Virginian-Pilot newspaper in 2012. "You tell me when and where you want it to come down, and I will tell you where and when and how to launch it."

In 1961, Johnson did studies on trajectory for astronaut Alan Shepard's Freedom 7 Mission, the first to carry an American into space. The next year, she manually confirmed the calculations of a new IBM computer. The computer plotted astronaut John Glenn's space missions.

"Get the girl to check the numbers," a computer-skeptical Glenn had insisted in the days before the launch.

"Katherine organized herself immediately at her desk, growing phone-book-thick stacks of data sheets a number at a time," Margot Lee Shetterly wrote in her 2016 book "Hidden Figures." The film was based on her book.

"It took a day and a half of watching the tiny digits pile up: eye-numbing," Shetterly wrote.

Shetterly said on February 24 that Johnson was special "in every way."

Shined A Light On Stories Of Many Others

"The wonderful gift that Katherine Johnson gave us is that her story shined a light on the stories of so many other people," Shetterly said. "She gave us a new way to look at black history, women's history and American history."

Shetterly noted that Johnson died during Black History Month. It was also a few days after the anniversary of Glenn's orbits of the Earth on February 20, 1962. Helping Glenn was among her most important accomplishments.

"We get to mourn her and also commemorate the work that she did," Shetterly said.

Johnson considered her work for the Apollo spacecraft to be her greatest achievement in space exploration. Her calculations helped the Apollo land on the moon. She also worked on the Space Shuttle program before ending her career in 1986.

Presidential Medal Of Freedom

Johnson and her co-workers had been relatively unknown heroes of America's Space Race. However, in 2015, President Barack Obama awarded the 97-year-old Johnson the Presidential Medal of Freedom. It is the highest recognition a citizen of the country can be given.

The "Hidden Figures" book and film followed. It tells the stories of Johnson, Dorothy Vaughan and Mary Jackson. The film was a candidate for a Best Picture Oscar and made more than $200 million worldwide.

In 2017, Johnson was brought on stage at the Oscars ceremony to thunderous applause. Jackson and Vaughan had died in 2005 and 2008, respectively.

Johnson was born Katherine Coleman on August 26, 1918. She grew up in White Sulphur Springs, West Virginia. The small town had no schools for black children beyond the eighth grade.

Her father drove Johnson and her siblings to Institute, West Virginia, for high school and college. They attended the historically black West Virginia State College.

Johnson taught at black public schools. She would later become one of three black students to integrate, or mix with other races, at West Virginia's graduate schools in 1939.

She left graduate school to start a family with her husband. She later returned to teaching when her three daughters grew older. In 1953, she started working at the all-black West Area Computing unit at Langley Memorial Aeronautical Laboratory in Hampton.

Looking back, she said she had little time to worry about being treated unequally.

"My dad taught us 'you are as good as anybody in this town, but you're no better,'" Johnson told NASA in 2008. "I don't have a feeling of inferiority. Never had. I'm as good as anybody, but no better."

Quiz

1 Read the section "Shined A Light On Stories Of Many Others."

Select the sentence from the section that suggests that Katherine Johnson's contributions extend beyond her accomplishments at NASA.

(A) "She gave us a new way to look at black history, women's history and American history."

(B) Helping Glenn was among her most important accomplishments.

(C) "We get to mourn her and also commemorate the work that she did," Shetterly said.

(D) Johnson considered her work for the Apollo spacecraft to be her greatest achievement in space exploration.

2 Read the conclusion below.

Johnson's mathematical ability was highly valued by astronauts on NASA's early space missions.

Which sentence from the article provides the BEST support to the statement above?

(A) Katherine Johnson was a mathematician who calculated rocket trajectories, or flight paths, and Earth orbits for NASA's early space missions.

(B) Johnson was one of the "computers" who solved equations by hand during NASA's early years.

(C) Her work at NASA's Langley Research Center eventually shifted to Project Mercury, the nation's first human space program.

(D) "Get the girl to check the numbers," a computer-skeptical Glenn had insisted in the days before the launch.

3 Which answer choice accurately characterizes the reaction of Margot Lee Shetterly to how Katherine Johnson manually confirmed the calculations of a new IBM computer?

(A) Shetterly was perplexed about why Johnson took so much time to manually confirm the calculations of a computer.

(B) Shetterly thought it was ridiculous that Johnson was expected to manually confirm the calculations of a computer.

(C) Shetterly was amazed at what Johnson had to do to manually confirm the calculations of a computer.

(D) Shetterly appreciated that Johnson was able to quickly perform the task of manually confirming the calculations of a computer.

4 Read the following selection.

"Our office computed all the (rocket) trajectories," Johnson told The Virginian-Pilot newspaper in 2012. "You tell me when and where you want it to come down, and I will tell you where and when and how to launch it."

WHY did the author include this selection?

(A) to suggest that Johnson had more responsibility than other people who worked at NASA

(B) to indicate that Johnson enjoyed talking about the work she did at NASA

(C) to suggest that Johnson felt burdened by the responsibility she had at NASA

(D) to indicate that Johnson was very confident about the work she did at NASA