

The Clerk's Black History Series

Debra DeBerry Clerk of Superior Court DeKalb County

Dr. Valerie Thomas

February 8, 1943 -

Scientist and Inventor

Invented Technology That Led to the Creation of 3-D Imaging



Valerie Thomas was born on February 8, 1943, in Baltimore, Maryland. As a child, she became interested in science when she observed her father repairing a television set. She was curious about how the components worked together to make a picture appear on the screen. When a library opened in her neighborhood, she checked out a book called *The Boys' First Book on Radio and Electronics*. Even though her father did not encourage her interest electronics, the seed was planted. Valerie looked for classes in junior high or high school to learn more about the subject but was offered home economics instead. In high school, she took a physics class before graduating in 1961. The same year she entered Morgan State University where she was finally able to pursue her interest in science as one of only two women majoring in physics. She advocated for her education by asking questions, until she understood the subjects completely. In 1964, she graduated with a degree in physics - with high honors.

After graduation, Valerie postponed graduate school and went to work for National Aeronautics and Space Administration (NASA) as a mathematician data analyst. There she was tasked with writing computer programs, although she had never used a computer before. She accepted the challenge and learned all she could from those more experienced co-workers. Although she excelled, she was often overlooked for promotions. She coordinated a group that brought high-level managers to meet with the black workers that were being overlooked. She also encouraged the underserved employees, minorities, disabled, etc., to make presentations on their work to establish the importance of diversity in the workplace. Valerie also encouraged young people to take advanced mathematics courses in high school, by speaking at schools and signing up to mentor the interns. She later became president of the National Technical Association, which focused on helping African Americans progress in the science and technology fields.



While managing a project for NASA's image processing systems, Valerie's team spearheaded the development of "Landsat", which allowed satellites to send images from space. Her participation in this program expanded on the works of other NASA scientists wanting to photograph Earth from space. In 1974, Valerie headed a team of 50 people for the Large Area Crop Inventory Experiment (LACIE), a joint effort with NASA's Johnson Space Center, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture. In 1976, Valerie attended a demonstration in which a light bulb seemed to stay lit even after being removed from a lamp. The illusion was created by means of a concave mirror reflecting a second light bulb. In 1977, Valerie began researching how light and concave mirrors could be used in her work at NASA. She created an experiment observing how the position of a concave mirror would affect the real object that is reflected. Using this technology, she would invent the illusion transmitter. On December 28, 1978, she applied for a patent for her invention.



Illusion Transmitter

On October 21, 1980, Valerie was issued the patent for the illusion transmitter, U.S. patent 4229761A, which NASA uses today. Her achievements helped her become the associate chief of NASA's Space Science Data Operations Office. In 1985, she earned a master's degree in engineering administration from George Washington University. She was the NASA Space Science Data Coordinated Archive (NSSDC) Computer Facility manager responsible for consolidating and reconfiguring two previously independent computer facilities and infusing them with new technology. She then served as the Space Physics Analysis Network (SPAN) project manager from 1986 to 1990, when SPAN underwent a significant reconfiguration. She expanded the scientific network with about 100 computer nodes to one directly connecting about 2,700 computer nodes worldwide. In 1990, SPAN became a significant part of NASA's science networking and today's Internet.

In 1995, Valerie retired from NASA but continued to hold positions of associate chief of NASA's Space Science Data Operations Office, NASA Automated Systems Incident Response Capability manager, and the Space Science Data Operations Office Education Committee chair. She continued speaking to students from elementary through college and supported organizations that encouraged minority and female students to pursue science and technology careers. She authored many scientific papers and received numerous awards for her achievements. Valerie Thomas lives in Prince George's County, Maryland. She is 82 years old.

