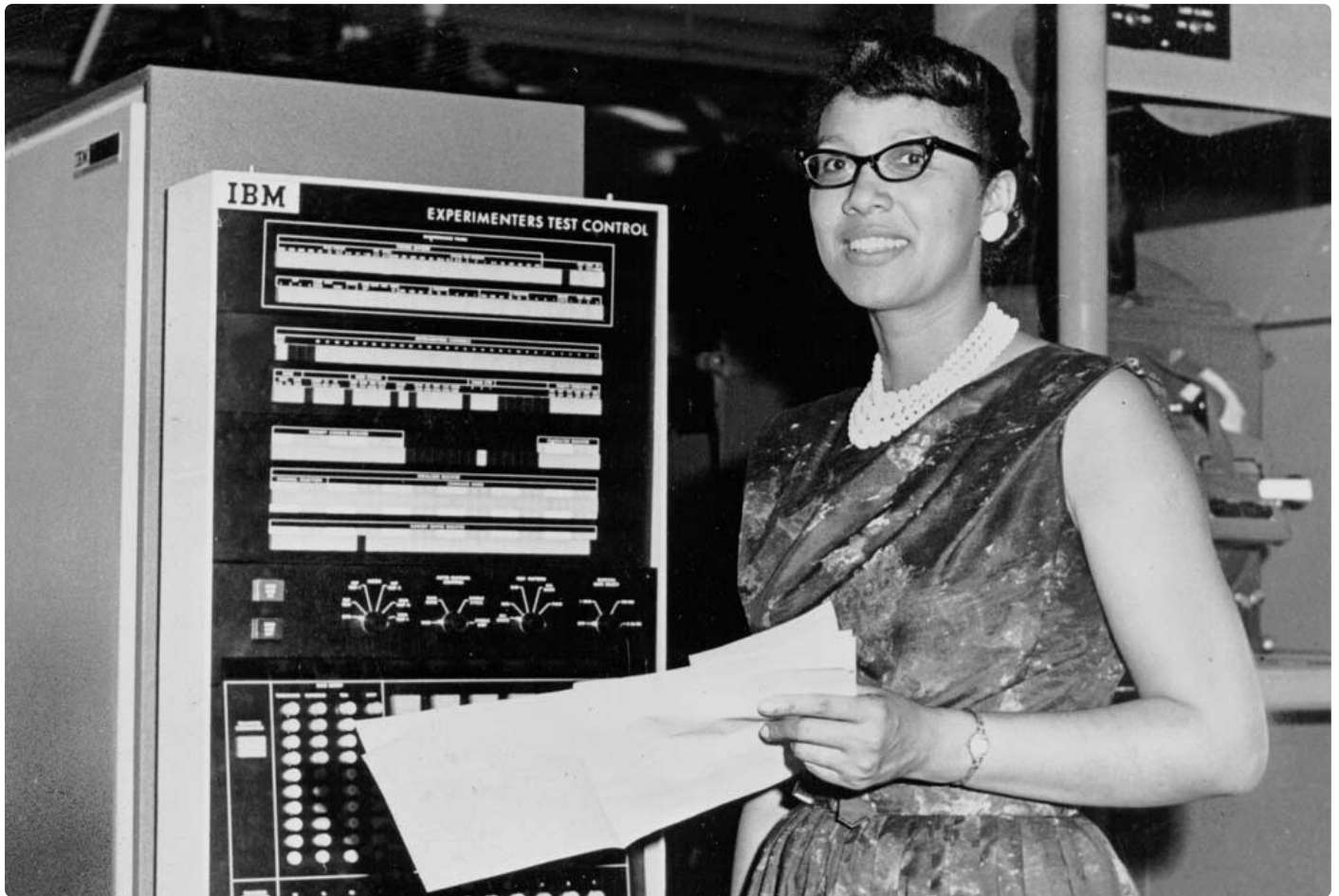


# Hall of Fame: Melba Roy Mouton

Jochen Kressin · 2023-09-15



Melba Roy Mouton was a pioneering figure in the field of computing and engineering, whose work helped shape the course of history and pave the way for future generations of technologists. Despite facing immense obstacles due to her race and gender, she was determined to pursue her passion for mathematics and science, and her achievements have inspired countless others to follow in her footsteps.

Mouton was born in Louisiana in 1929 and grew up in the segregated South. She earned a degree in mathematics from Southern University and went on to complete graduate studies in physics at Howard University. In the 1950s, she began her career in computing at the [National Advisory Committee for Aeronautics \(NACA\)](#), which later became [NASA](#).

At NACA, Mouton worked as a mathematician and programmer, analyzing data from wind tunnels and other aeronautical tests to help NASA develop better aircraft and spacecraft. She also played a crucial role in the development of the [FORTRAN](#) programming language, one of the first high-level programming languages and still used today. Mouton was part of the team at [IBM](#) that developed the first FORTRAN compiler, which translated human-readable code into machine-readable code.

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Mouton's expertise in programming and software engineering led her to play a key role in the development of NASA's space program. She designed and developed software for the [Mercury](#), [Gemini](#), and [Apollo](#) missions, which sent the first humans to the moon. Her work included developing algorithms for spacecraft navigation, designing software for the [Lunar Excursion Module \(LEM\)](#), and creating software for the mission's guidance and control systems.



One of Mouton's most significant contributions to the Apollo program was her work on the Lunar Module Descent Guidance System, which helped the Apollo 11 spacecraft land on the moon in 1969. This system used radar measurements and an onboard computer to guide the spacecraft to a safe landing, despite the challenging terrain of the moon's surface. Mouton's work was essential to the success of this historic mission and helped pave the way for future space exploration.

Throughout her career at NASA Mouton served in various leadership positions and worked on numerous projects. She was the first African American woman to become a supervisor at NASA, and helped mentor and inspire other women and minorities to pursue careers in computing and engineering. In addition to

her work at NASA, Mouton was also involved in several professional organizations and served on several advisory boards.

Mouton's contributions to computing and engineering were widely recognized throughout her career. She received numerous awards and honors, including the NASA Exceptional Service Medal, the Black Engineer of the Year Lifetime Achievement Award, and induction into the Women in Technology International Hall of Fame and the International Women in Science and Engineering Hall of Fame.

Melba Roy Mouton passed away in 1990, but her legacy lives on as a trailblazer in computing and engineering. Her determination, intelligence, and passion for science and technology continue to inspire and guide future generations of technologists, and her pioneering work has had a lasting impact on the field of software engineering and beyond.

For those interested in the topic of the history of NASA female scientists we recommend the following movies:

- "Hidden Figures" (2016), where some noble women such as [Katherine Johnson](#), [Dorothy Vaughan](#), and [Mary Jackson](#) were featured.
- "The Women of NASA" (2016). The film features interviews with Mouton's colleagues and family members, as well as archival footage of her work at NASA.

You may also be interested in the book "[Rise of the Rocket Girls: The Women Who Propelled Us, from Missiles to the Moon to Mars](#)" by Nathalia Holt. This book tells the story of the women who worked at NASA's Jet Propulsion Laboratory (JPL) in the 1940s and 1950s, including several who went on to work on the Apollo missions.

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