

PERSON

Katherine Johnson (born on August 26, 1918, in West Virginia) was a mathematician whose contributions to NASA's space programs helped shape the course of American space exploration.

Her mathematical precision was instrumental in some of NASA's most historic missions, including calculating the trajectories for Alan Shepard, the first American in space, and John Glenn's orbital flight around Earth.

Her story, shared in the book and movie *Hidden Figures*, inspires people to follow their dreams no matter the challenges they face.

Key works:

Trajectory Analysis for Alan Shepard's Flight (1961) : Calculated the flight path for the first American manned spaceflight in the Mercury program.

Orbital Calculations for John Glenn's Mission (1962) : Verified the calculations for Glenn's Friendship 7 mission, making him the first American to orbit Earth.

Lunar Orbit Rendezvous Calculations for Apollo 11 (1969) : crucial role in the success of the mission that landed the first humans on the Moon.

Achievements:

First African American Woman in Her Field at NASA/NACA : Broke racial and gender barriers in the STEM field

NASA Group Achievement Award (1967) : Recognized for her contributions to the Apollo Program

Presidential Medal of Freedom (2015) : nation's highest civilian honor medal

Congressional Gold Medal (2019) : Posthumously honored for her legacy in science and space exploration



PROJECT

To work in a highly complicated field and always be underestimated because of her race and gender but to still do the hard work and impress with her abilities really resonated with me so I wanted to dedicate my DM2 end project to this lady.

From the beginning it was obvious in which direction the model would go. But I still wanted to go through with coding the earth's solar system, as I'm really into astronomy and wanted to research some more about the planetary system and its components.

For the base I created circular bodies for the sun and the 8 planets, to have a distinction between the bodies I would have to scale them based on their real-life size differences.

As every planet looks different and has completely different atmospheric characteristics, there would need to be a color difference additionally.

There are some more little details that I wanted to add for the planets to make them more unique like Jupiter's red spot (basically a mega storm on its surface) or Saturn's famous asteroid belt.

For Katherine's home planet I wanted to do something special. I will be trying to display the continental lines on the round surface of the planet earth. To take the lines of our continents and to project them onto a circular shape and for it to adhere onto the outer shape of the earth will be the biggest challenge of this project.

For the planets to not just float onto empty space the planetary orbit lines will show how the planets circulate through space. And here will lie potential for a cool animation as it would be very interesting to have all planets revolve around the sun with its realistic orbit lines. Another difficulty for the project will be for the planets to circle around their own axis while already moving around in space.



CODE

[W.I.P.]