

Impact Statement

Jason Loh, Grade 8.

The Finished Piece, 2021.

Sculpture, 8.5 x 6.5 x 9.5 Inches.

Newtown Middle School, Newtown, PA

Unsung Hero: Cecilia Payne-Gaposchkin

When I was browsing the list of unsung heroes, Cecilia Payne caught my eye because the idea that a fact we take for granted (the sun mainly consisting of hydrogen and helium) used to be so contested intrigued me. Cecilia Payne wrote a PhD thesis on the contents of the stars, arguing that they were made of hydrogen and helium, rather than elements found in the earth's crust. I wondered why such a landmark discovery was not more known or talked about, so I decided to delve deeper.

Soon, I began my research, and I found that her accomplishment was not just writing a paper. From birth, there were obstacles in her path, as the scientific community at the time begrudged and at times hostile towards women. However, what astonished me the most was how difficult writing the paper was. One quote that stuck out to me was one by Cecilia Payne "There followed months, almost a year as I remember, of utter bewilderment. Often I was in a state of exhaustion and despair, working all day and late into the night". I also read that her paper was described as "the most brilliant PhD thesis ever written in astronomy". This made it clear to me that this was not just any normal PhD thesis. Thus, came my inspiration for my piece. I imagined myself after months of hard work, exhaustion, and research, in order to contribute to a scientific community that was unfriendly; presenting a piece that directly contradicted hundreds of other opinions. I imagined what she would have felt after years of work and hundreds of papers. This is the feeling I have tried to replicate with my art piece.

When designing my piece, imagining is not enough. Like how I could never simply imagine how hard it would be to complete such an endeavor, I could not anticipate the issues that would arise while creating my project. However, instead of dreading and resenting the issues when they arise, I realized that it was an opportunity for improvement, an opportunity to try to fully understand what it was like for Cecilia Payne while writing her thesis paper. I hope the trials and tribulations of designing and creating my art piece would help me understand why and how a fundamental fact of astronomy came to be. Now that I have better my understanding of her work, and to a further extent, the value of work, I have shared my project with my fellow students and the whole school. My project will be displayed at the front of the school for all to see and posted on my school's weekly bulletin. In the end, I will take these experiences and improve my work ethic not by simply working more but enjoying it.

My discovery of Cecilia Payne's own discovery opened my eyes to a group of people, who are unsung heroes. I hope my contribution will better myself and the community into the future, while simultaneously making Cecilia Payne a little less unsung.