

Cecilia Payne-Gaposchkin (1900 – 1979)



British-born American Astronomer and Astrophysicist Cecilia Payne-Gaposchkin is best known for being the first person to describe what stars are made of. In her 1925 doctoral thesis she showed through analysis of stellar absorption lines that the elements helium and hydrogen were vastly more abundant in stars than any other element, a discovery that challenged the commonly held view that the Sun and other stars are of similar elemental composition as the Earth. Her discovery was immediately rejected by the astronomical community and she herself expressed doubt about her results. Independent studies later proved her discovery to be correct and her thesis was described as “the most brilliant PhD thesis ever written in astronomy”. Throughout her lifetime she made more than 3,000,000 observations of variable stars, the Milky Way, and other nebula

and galaxies, and used the data to determine the paths of stellar evolution. During her astonishing career she received 14 awards, published five books and numerous scientific publications.

Personal Life:

- 1900 - Born as one of three children in Wendover, England. Celia lost her father when she was four years old. Her mother raised the family on her own.
- 1918 – Attended St. Paul’s Girls School, followed by Newnham College, Cambridge University, England. Unsatisfied with educational options for women in England, she emigrated to the United States in 1923.
- 1931 – Became an American Citizen
- 1933 – Met Russian-born astrophysicist Sergei Gaposchkin in Europe and helped him out of Nazi-Germany
- 1934 – Married Sergei Gaposchkin. The couple had three children: Edward, Katherine and Peter.
- 1979 – Died in Cambridge, Massachusetts

Career:

- 1925 First person to earn a PhD in astronomy from Radcliffe College at Harvard University, MA.
- First person to correctly describe the elemental composition of stars
- 1938 Was given the title of “Astronomer”
- 1943 Elected Fellow of the American Academy of Arts and Sciences
- 1956 First woman to be promoted to full professor from within the faculty at Harvard
- 1966 Retired from teaching and was appointed Professor Emerita at Harvard University.

Honors:

- Cecilia was the recipient of many honors throughout her prolific career, including first recipient of the Annie J. Canon Award, American Physical’s Society’s doctoral dissertation award, and the Payne-Gaposchkin Patera (volcano) on Venus is named after her.

References:

https://en.wikipedia.org/wiki/Cecilia_Payne-Gaposchkin

<https://www.sciencefocus.com/space/the-life-changing-and-long-lasting-influence-of-cecilia-payne-gaposchkin/>