



The Glass Universe

Dava Sobel

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#1 *New York Times* bestselling author Dava Sobel returns with the captivating, little-known true story of a group of women whose remarkable contributions to the burgeoning field of astronomy forever changed our understanding of the stars and our place in the universe

In the mid-nineteenth century, the Harvard College Observatory began employing women as calculators, or “human computers,” to interpret the observations made via telescope by their male counterparts each night. At the outset this group included the wives, sisters, and daughters of the resident astronomers, but by the 1880s the female corps included graduates of the new women's colleges—Vassar, Wellesley, and Smith. As photography transformed the practice of astronomy, the ladies turned to studying the stars captured nightly on glass photographic plates. The “glass universe” of half a million plates that Harvard amassed in this period—thanks in part to the early financial support of another woman, Mrs. Anna Draper, whose late husband pioneered the technique of stellar photography—enabled the women to make extraordinary discoveries that attracted worldwide acclaim. They helped discern what stars were made of, divided the stars into meaningful categories for further research, and found a way to measure distances across space by starlight. Their ranks included Williamina Fleming, a Scottish woman originally hired as a maid who went on to identify ten novae and more than three hundred variable stars, Annie Jump Cannon, who designed a stellar classification system that was adopted by astronomers the world over and is still in use, and Dr. Cecilia Helena Payne-Gaposchkin, who in 1956 became the first ever woman professor of astronomy at Harvard—and Harvard’s first female department chair. Elegantly written and enriched by excerpts from letters, diaries, and memoirs, *The Glass Universe* is the hidden history of a group of remarkable women who, through their hard work and groundbreaking discoveries, disproved the commonly held belief that the gentler sex had little to contribute to human knowledge.

From the Hardcover edition.

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