ANNE S. YOUNG AND ALICE H. FARNSWORTH: 58 YEARS OF ASTRONOMY AT MOUNT HOLYOKE COLLEGE

MARTHA L. HAZEN
Harvard-Smithsonian Center for Astrophysics
Cambridge, MA 02138

Abstract

Biographical anecdotes on the careers of two Mount Holyoke College teachers are provided.

* * * * *

For 58 years (1899-1957), two inspiring teachers and fine astronomers held forth at Mount Holyoke College in the John Payson Williston Observatory. Anne Sewall Young and her student, colleague, and, finally, successor Alice Hall Farnsworth have to their credit many successful astronomers as well as enthusiastic former astronomy students. Much to my regret, I never knew Miss Young; I studied most of my undergraduate astronomy with Miss Farnsworth. However, through her, I also came to know some of the heritage that Miss Young had left at Mount Holyoke.

Miss Young and Miss Farnsworth during their tenures at Mount Holyoke presided over the Williston Observatory, built in 1881 and housing, in those years, an 8-inch Alvan Clark telescope with a 3-inch Ross Camera, and a transit circle. The Observatory is the oldest surviving academic building on campus (being outclassed in age by a small structure known as the Cat House, where lab animals for biology were kept at one time). The Observatory was originally presided over by Elizabeth Bardwell, who died in 1899 after 33 years of teaching; she was succeeded by Miss Young.

Anne Sewall Young was born on January 2, 1891, in Bloomington, Wisconsin. She was the niece of the eminent astronomer Charles A. Young of Dartmouth and, later, of Princeton. He was also a trustee of Mount Holyoke College and spoke at the opening of the Williston Observatory in 1881. Anne Young earned her bachelor's degree in 1892 from Carleton College in Northfield, Minnesota, where she also completed a master's degree in 1897. She went on to earn a Ph.D. (unusual for women in those days) from Columbia University in 1906; her thesis for this degree was on the Double Cluster in Perseus. She taught mathematics and physics at Whitman College in Walla Walla, Washington, in the 1890's, and succeeded Miss Bardwell at Mount Holyoke College in 1899. She remained there (except for occasional leaves of absence) for 37 years until her retirement in 1936.

Miss Young was very active astronomically during her tenure at Mount Holyoke. She began a daily record of sunspot observations on December 1, 1899; these observations continued during the entire 58-year period of the Young/Farnsworth era. We students were all taught how to carry out the observations, and took our hand at them at one time or another. Miss Young was also interested in star places, proper motions, and stellar photometry; and in asteroids, comets, lunar occultations, and variable stars. She was one of the eight founding members (the only woman) of the AAVSO in 1911. She served as its president from 1922 to 1924. She was also active in the American Astronomical Society, and was elected councilor of that body for 1923-25.

As a teacher, Miss Young was devoted, imaginative, and supportive. Two of her best-known students were Helen Sawyer Hogg, whom many of you know and who should really be giving this paper, and Alice Farnsworth,

her colleague and, finally, her successor. Helen Hogg tells of being a chemistry major until she hit Miss Young's astronomy course her junior year. Miss Young initiated the lab exercise of sunset-point observations - a very instructive procedure that we were still following half a century later. And the most famous of all her exploits, I believe, resulted from her determination that EVERY Mount Holyoke student should witness the total solar eclipse on January 24, 1895. While many other colleges went about their daily routines,the students at Mount Holyoke were routed out of bed at 5:30 A.M., piled on the trolley to Holyoke, and transferred to a train headed for a golf course at Windsor, Connecticut. The temperature that morning was -4^{o}F, and the ground was covered with snow. But the students were able to see and make detailed observations of what surely is the greatest of all astronomical spectacles.

Anne Young retired in 1936 to California, where she continued to work on lunar occultation data, publishing her last paper jointly with Dirk Brouwer in 1942. She died in 1961 at age 90.

Alice Hall Farnsworth, who had already worked with Miss Young for 16 years, succeeded her as the director of the Williston Observatory. Born in Williamstown, Massachusetts, in October 1893, Miss Farnsworth attended Mount Holyoke College, where she studied under Miss Young, and graduated in 1916. She went on to earn a M.S. and Ph.D. from the University of Chicago (Yerkes Observatory), where she taught for a year before returning to Mount Holyoke in 1920 as a faculty member. Her tenure was the same length as Miss Young's - 37 years.

Miss Farnsworth's interests centered around observations of sunspots and lunar occultations; in 1956, just before she was forced to take a leave due to poor health, she recorded the 500th occultation observation at the Williston Observatory in the program initiated by Miss Young. Miss Farnsworth was also interested in stellar photometry and the luminosity function. During my years at Mount Holyoke, she was hard at work measuring magnitudes of stars in her region in Cassiopeia (in collaboration with J. J. Nassau at Case University). In fact, I was hired for a couple of years to read magnitudes corresponding to her flyspanker estimates (how many of you know what a flyspanker is?) off of calibration curves and enter them in her notebooks. The results of this research, which included spectral types (for luminosity) as well as magnitudes, were published in two important papers in the **Astrophysical Journal** in 1955.

Also a dedicated member of the AAVSO, Miss Farnsworth served as its president in 1929-30. She was an accomplished pianist, an ardent birdwatcher, and an indefatigable traveller. A detailed and absorbing account of a trip to South America she took during a sabbatical in 1940-41 appears in **Popular Astronomy** in 1941. The purposes of the trip were to observe a solar eclipse in Brazil (clouded out) and to make spectrometric measurements of the light of the night sky, as well as the zodiacal light, in the southern hemisphere.

As a teacher, Miss Farnsworth was dedicated, thorough, and demanding. I took four years of astronomy at Mount Holyoke, and all but the second semester of freshman astronomy were taught me by Miss Farnsworth. There were always two, but never more than three, of us in the upper-level courses - a number that guaranteed that we never came to class unprepared! We learned to use expertly every instrument at the observatory: the 8-inch refractor was used for just looking, for studying sunspots and the solar spectrum, for measuring double stars with the filar micrometer, and for photographing the moon. With the piggy-back Ross Camera we learned how to take plates and how to measure magnitudes - even how to make a flyspanker. With the transit circle we learned how to determine clock errors, how to determine longitude and latitude, and how to find right ascensions and declinations of stars.

I remember hours of extracting data from the transit circle output: pen lines and ticks on paper from a revolving drum. All this work was accomplished at the Observatory; we were told early where the key lived and I regarded the Williston Observatory as my cozy second home for those four years at Mount Holyoke.

The darkroom was a tiny, overheated room that also housed the only toilet. Miss Farnsworth made certain that we learned how to work comfortably with photographic materials, a skill that has served me well over the years. The last time I looked, the darkroom was in roughly the same location, but considerably enlarged and modernized. (The lavatories moved downstairs.)

For recreation with her students, Miss Farnsworth quickly latched onto the game of **Scrabble** when it appeared on the scene. I remember many intense games in her small apartment a few doors down the street from the Observatory. But above all, I remember a warm, interested, and supportive teacher, who helped us all to perform at the peak of our abilities.

When I left Mount Holyoke College for graduate school in 1953, I certainly expected to see Miss Farnsworth often again. But three-and-a-half years later, she was stricken with a sudden illness that caused her to take a leave of absence and, finally, early retirement, so I saw her only once more, briefly. In 1957 I returned to Mount Holyoke as a faculty member to help try to fill the void she had left - in many ways it was a sad experience.

Alice Farnsworth died in 1960, a year before her teacher and colleague Anne Young. Between them, they had taught three generations of college women how to appreciate the wonders of the universe about them. Anne Young and Alice Farnsworth left a tradition of excellence in astronomy that should serve as an inspiration to those who follow them.