

Balfour S. Whitney (1903–1992)

by Tibor Herczeg

Balfour S. Whitney, Professor Emeritus of the University of Oklahoma, who taught astronomy and conducted research at the university from 1940 to 1969, died of heart failure on September 18, 1992. At that time he lived at the home of his daughter, Natalie Raab, in Minnesota.

Balfour Whitney was born in a log cabin in Cass County, Minnesota, on July 27, 1903. His father helped to build the first school house in the county and taught there several years before the family moved to Oklahoma. Whitney did his undergraduate work at the University of Oklahoma and moved on to Upper Darby, Pennsylvania, where he earned his M.S. degree; this thesis was prepared while using the facilities of what is now called the Flower and Cook Observatory, and working with Dr. Charles Olivier. He was accepted for Ph.D. studies at Berkeley but a case of severe illness in his family forced him to earn a living by teaching in Oklahoma high schools. He was teaching in Oklahoma City when the possibility opened up to join the University at nearby Norman, to work in the Department of Mathematics and Astronomy. Balfour Whitney quickly rose "through the ranks" and became Professor of Mathematics and Director of the Observatory. His work was only interrupted by service in the Air Force as a captain from 1942 to 1945.

Balfour Whitney's transfer to the University was a fortunate coincidence, since the Department was in great need of a dedicated professional astronomer. In the fifth decade of its existence, the University was ready to establish a small but workable observatory; behind the considerable efforts necessary toward this aim lasting about five years, 1934-1939, was the Mathematics Professor, O.J. Hassler. The main instrument was a 10-inch Newtonian reflector, secured with the help of the Yerkes Observatory, and housed in a small dome at the top of the museum building on campus. One should not judge this instrument from the point of view of technology of the 90s; in its day this was a good, solid research tool, albeit of modest size, but capable of doing very good photographic work. The more so, an excellent 83 mm Zeiss astrographic camera (f/4) was added (on the same mounting) with a useable field of almost thirteen degrees across. With these two telescopes Professor Whitney carried out a remarkable program of photographic photometry. He recognized the necessity of restricting the research to a narrow topic, then pursued it with great consequence through the decades. Whitney chose

the study of eclipsing variables, in particular the timing of minima and following of the period variations.

Observations ceased in 1962 when the campus finally engulfed the site, which had been very little light polluted in 1940. Yet in the meantime Professor Whitney obtained more than 12,000 wide field plates with limiting magnitude, as a rule around 13.5 to 14.0 mag, and, furthermore, over 60,000 exposures of individual variable stars, in the Newtonian focus of the 10-inch reflector. Every plate was carefully inspected and the variables measured with an iris photometer acquired around 1960. Thirty new variables were discovered and the work on eclipsing binary periods supported more than 30 publications, mainly in *The Astronomical Journal*. Some of these papers were documentations, long lists of times of minima with improved periods, some others short discussions of more interesting variables. Even after his retirement in 1969, Whitney intermittently worked at the observatory, in spite of his deteriorating eyesight which finally made him legally blind. His last paper, published in 1978, dealt with the well-known but enigmatic binary SX Cassiopeiae.

After Professor Whitney's retirement, the observatory was taken over by the newly established Department of Physics and Astronomy. The sweeping photographic program of the 50s and 60s was not continued, but the splendid archival collection, his main life work, was many times consulted for the study of peculiar objects which happened to be on the astrographic plates.

Professor Whitney was a widely known and respected, nay, beloved person, not only on campus but in the whole city of Norman, through his almost incredibly frequent "public evenings" in the observatory. It is most impressive that besides this service and the extensive research mentioned here, he was able to carry, single-handedly, so to say, the entire astronomical teaching curriculum and disciplines of the mathematical astronomy such as spherical astronomy and trigonometry or celestial mechanics. Many of his former undergraduates are now working at well-known observatories in Arizona, Arkansas, Florida and Iowa, to mention only a few. We are much indebted to him for laying the groundwork for serious astronomical work at the university.