

OTTO STRUVE

1897–1963

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When Otto Struve died on the 6th of April, 1963, the world of astronomy lost one of its leaders. Probably no other man of his generation has had as great an influence on the development and prestige of astronomy, not only through his research achievements but also through his talents as an administrator and his active promotion of international contacts and cooperation. He was awarded the Catherine Wolfe Bruce Gold Medal of the Astronomical Society of the Pacific in 1948 and served as President of the Society in 1951.

It was probably inevitable that Otto Struve would pursue a career in astronomy. When he was born in Kharkov, Russia, in 1897, his father, Ludwig, was professor of astronomy there. During his early years, his uncle, Hermann Struve, was director at Königsberg Observatory and another uncle, Georg, was director at Berlin-Babelsberg. His grandfather, Otto Struve, had been director at Pulkovo which had been founded by his great-grandfather, Wilhelm.

Struve's career in Russian astronomy was rudely shaken by World War I. He served as an artillery officer in the Imperial Army and the White Russian Army and when the latter collapsed in 1920, he fled as a refugee to Constantinople. In later years, he used to tell stories of the hardships that he had to endure as a refugee. He was forced to accept any sort of menial activity to keep himself alive. Fortunately, Edwin Frost at Yerkes Observatory heard of his difficulties and came forth with an offer of a small assistantship. So the young man sailed for the U.S.A., arriving in Wisconsin in 1921, and was to be associated with the Yerkes Observatory for 29 years. Dr. Struve received his Ph.D. at Yerkes in 1923. He was married to Mary Martha Lanning in 1925 and became a naturalized citizen in 1927. He rapidly rose to the rank of professor in 1932 and that same year succeeded Frost as director.



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Under Struve's direction, Yerkes Observatory soon attained a position of prominence. The year 1932 was in the depths of the depression and it was obvious that in order for astronomy to progress, universities would have to engage in cooperative efforts. Largely as a consequence of his interest and influence, an agreement was completed between the University of Chicago and the University of Texas providing for the joint operation of a large reflecting telescope to be constructed from the W. J. McDonald bequest to the University of Texas. The outcome was the completion in 1939 of an 82-inch telescope near Ft. Davis, Texas. This combination of the Texas observatory and Chicago's department of astronomy was eminently successful, bringing fame to both universities. Through the years Dr. Struve was able to attract to the observatory leaders in their field such as Chandrasekhar, Kuiper, W. W. Morgan, and Herzberg. With such a staff and such outstanding observational equipment, the research activity at the Yerkes Observatory during the 30's and 40's under Dr. Struve's over-all direction has seldom been equaled.

In spite of the distractions of the administration of two observatories, Struve found time to act as editor of the *Astrophysical Journal* from 1932 to 1947 and also to produce a prodigious volume of research material which is contained in hundreds of papers. In all of these endeavors he was greatly aided by his wife, not only by making his full time available for his astronomy, but also by helping him with his manuscripts and in many other ways.

When Struve began his career, it was perhaps natural that the exciting new field of stellar spectroscopy should capture his imagination. This field was just beginning to develop into modern astrophysics, and much of its growth can be directly attributed to Struve's efforts. An early interest in spectroscopic binaries, which he maintained all of his life, soon led him to the study of massive early type pairs such as β Lyrae and the discovery of gaseous streams and gaseous envelopes surrounding close pairs of stars. Our present realization of the importance of interstellar material in the structure of the galaxy was largely stimulated by his initial work on interstellar calcium. His interest in diffuse and reflection nebulae culminated in the construction of a novel nebular spectrograph at McDonald with which the faint emission from

the substratum of hydrogen gas in the Galaxy was first detected. He demonstrated the importance of the Stark effect in stellar spectra and investigated stellar rotation and the origin of bright lines in stars such as Pleione. He was interested in all kinds of peculiar stars, and a long-range study of intrinsic variables included work on the RR Lyrae stars and the β Canis Majoris variables.

Otto Struve was mainly an observer. The papers describing his observations constitute his legacy to astronomy. He always sought explanations of the observations but was not dogmatic about these explanations if subsequent observations required their modification. To him the observations were the important things.

In 1950 Otto Struve moved to the University of California, Berkeley, becoming chairman of the department of astronomy and director of the Leuschner Observatory. He took a leave of absence in 1959 to assume the directorship of The National Radio Astronomy Observatory at Green Bank, West Virginia. He held the latter position until his retirement in 1962.

Otto Struve had an extremely complex personality. It is probably safe to say that if one should ask 100 of his colleagues for an impression of Otto Struve, one would get 100 quite different replies. A first impression was often of a rather formidable perfectionist who frequently overawed the timid. Yet upon closer acquaintance, he revealed a highly developed sense of humor and could, when he felt relaxed, recount marvelous stories by the hour that revealed his very keen insight into human personalities. Astronomy was his all-consuming passion and he had little patience with those around him who did not come close to matching his own zeal and self sacrificial attitude towards his science. Yet anyone who had an idea for a research program, no matter how far-fetched, could find in him a ready audience. He always strenuously encouraged young colleagues to be imaginative, and did all that he could to assist them to further their research ambitions and their careers. He was not one to "rest on his laurels" or to satisfy himself with research designed to "round out" a single limited field, but maintained to the end a youthful zest for new ideas and methods. Thus, he actively initiated the establishment of the computer center on the Berkeley campus and was

largely responsible for the creation of its radio astronomy laboratory. He was increasingly concerned with the popularization of astronomy. In addition to writing texts on the field, he found time during the last fourteen years to write monthly review articles for *Sky and Telescope* that were so highly regarded that they were regularly abstracted by the Russians.

Struve was keenly aware of the international character of the field of astronomy and was always seeking ways to further international contacts and cooperation. Immediately upon the conclusion of World War II, he flew to Europe with Joel Stebbins and Harlow Shapley to re-establish pre-war contacts (they called themselves "the three S's"). This resulted in the revitalization of the International Astronomical Union which has been notably successful in maintaining cooperation among all astronomers throughout the "cold war" years. International astronomy recognized his contribution by electing him the president of the International Astronomical Union in 1952. He has been recipient of numerous awards and elections to high office. He was a member of The American Philosophical Society and The National Academy, and was president of the American Astronomical Society from 1946–1949. His numerous honors included the Gold Medal of The Royal Astronomical Society, The Rittenhouse Medal, the Janssen Medal of the Société Astronomique de France, and honorary degrees from universities of six countries.

He is survived by his wife and his mother, Elisabeth Struve, who reside in Berkeley.