

ROBERT JULIUS TRUMPLER

1886–1956

HAROLD WEAVER

Berkeley Astronomical Department

University of California

AND

PAUL WEAVER

On September 10, 1956, Robert J. Trumpler died unexpectedly after a few days in a hospital in Oakland, California. He had been in failing health for several years, though he continued his work on star clusters until the very end. His brief case was found to contain spectrograms that he had intended to measure for radial velocity during the visit to Berkeley that ended with his death. It had been his goal to complete, early in 1957, the manuscript for an extensive catalogue of observational data on 100 star clusters representing, primarily, the results of his own work over a period of about 25 years.

Robert Julius Trumpler was born in Zurich, Switzerland, on October 2, 1886, the third in a family of ten children. His boyhood, spent in the large family that he described as cheerful and gay, was a very happy one. Of special influence in his early life were the summer months spent each year at Uster, about 12 miles from Zurich. There the Trumpler family enterprise, a prosperous cotton mill, owned large tracts of land in a picturesque valley. The region was ideal for fishing, swimming, boating, and hiking, and developed in Trumpler an early love for the outdoors, which remained with him all his life.

At the age of six and one-half years, Robert Trumpler entered one of the Zurich city schools. He had already learned reading and arithmetic at home, so his studies held little interest for him. He especially disliked the emphasis on good handwriting for which, he once remarked, he possessed little aptitude. This unpropitious beginning was not indicative of future performance. When, at age twelve and one-half years, he took the competitive examination for entrance to the Gymnasium, he was first in his class. He owed much, he wrote later, "to the excellent schooling [he] received during the 6½ years of the Gymnasium." He char-



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acterized his teachers as "true educators, inspiring interest in, and devotion to, learning, and a broadminded approach to life."

His interest in astronomy was aroused by a talk about the Kant-Laplace theory of the origin of the solar system given by one of his classmates in the Gymnasium and he began to read astronomical books with great enthusiasm. His deep feeling for nature and his new-found love for learning became fused in the study of astronomy, for which he felt a strong affinity.

Trumpler did not enter the field of astronomy without difficulties. His father, a respected and successful businessman, argued that a career in science would not produce an adequate income, and tried to dissuade him from such a choice. It was the elder Trumpler's hope that Robert would start a business career and, in time, enter the family firm. Robert yielded to his father's desire; he agreed to obtain a business training and to pursue astronomy as a hobby. After graduation from the Gymnasium, he entered a small Zurich bank as a volunteer assistant. But the work must have held little interest for him, for finally the elder Trumpler agreed that Robert should study astronomy when he entered the University of Zurich in 1906. Two years later he started advanced work at the University of Göttingen, where he studied under Klein, Hilbert, Vogt, and Schwarzschild. Trumpler received his Ph.D. degree in November 1910. His thesis, under the direction of Professor Ambronn, involved the design, construction, and testing of a photographic meridian transit instrument.

Trumpler spent a postdoctoral year at Göttingen as assistant to Ambronn, and then joined the Swiss Geodetic Commission. He measured longitude differences between the principal Swiss observatories, determined fundamental star positions, and developed plans for a program of proper motions for the members of the Pleiades, in which he had become greatly interested.

At the meeting of the Astronomische Gesellschaft in Hamburg, in 1913, Trumpler met Frank Schlesinger, with whom he discussed his proposed proper motion program. A few months later, Schlesinger invited Trumpler to come to the Allegheny Observatory as an assistant, with the opportunity to work on his study of the Pleiades. Trumpler gladly accepted the position, but his plans were abruptly changed by the outbreak of the war. He

was mobilized immediately by the Swiss Militia, in which he was an officer, and stationed in the Alps.

Schlesinger wrote in the spring of 1915 that he would not be able to hold the position open indefinitely. Trumpler presented his case to his army superiors. Fortunately, he was released with permission to travel to the United States. In May 1915, he arrived at the Allegheny Observatory ready to start his professional astronomical career.

At the Allegheny Observatory Trumpler was greatly stimulated by Schlesinger. His interest in astronomy broadened. He began to investigate the clusters as a class of objects in space, and to formulate a program to learn more about their characteristics. His work in this field was greatly facilitated by an invitation from W. W. Campbell in 1918 to come to the Lick Observatory as Martin Kellogg Fellow. He accepted, and stayed as a member of the staff.

Campbell recognized in Trumpler an unusually competent observer who was continuously striving for perfection. He chose Trumpler as his collaborator in the observational test of the Einstein theory of relativity at the total eclipse of the sun visible in Wallal, Australia, on September 21, 1922. The result obtained by Trumpler for the deflection of light at the limb of the sun provided one of the early confirmations of the theory of relativity and is still widely quoted. Trumpler's skill as an observer was likewise demonstrated by his careful study of Mars made during the oppositions of that planet in 1924 and 1926. His opinions on the difficult problems of that planet represent the considered judgment of a mature and conservative observer.

Trumpler's greatest contribution to astronomy is his now classic paper on the distances, dimensions, and space distribution of galactic star clusters. From an investigation of the apparent sizes and distances of the clusters, he demonstrated that space is filled with a tenuous haze that scatters light and dims the stars seen through it. Trumpler's discovery of the phenomenon of interstellar extinction marked a great step forward in our understanding of the stellar universe.

A study of the radial velocities of individual members of galactic star clusters led Trumpler to the discovery of the red shift in the

spectral lines of the O-type stars in clusters. On the basis of the theory of relativity, he interpreted this red shift as due to the great mass of those stars. Though it appears that this red shift cannot be wholly explained in this way, the principle was sound, and his work gave impetus to the study of these interesting objects. It was Trumpler who first pointed out the different population characteristics of galactic clusters that are now associated with stellar age and that play such an important part in many present-day astrophysical studies. His observations still contain a wealth of material; it is greatly to be hoped that these can be published in the future as he had planned.

Trumpler took a very great interest in young people; many astronomers count themselves among his students. When, in 1938, he transferred from the Lick Observatory to the Berkeley Astronomical Department, he undertook his teaching duties with enthusiasm. He was for many years the departmental adviser to students, guiding them in their selections of courses. He was an understanding and considerate counselor. The students showed their confidence by often seeking his advice on many problems, some of them far removed from astronomy. So, too, the students often enjoyed the hospitality of the Trumpler home, first at Mount Hamilton, then at Berkeley, and finally at the beach home at Rio del Mar, to which the Trumplers retired in 1951, and which so well provided a means through which they could express their love of nature. Dr. Trumpler took an active part in a number of civic organizations, and was particularly active in the Unitarian Church of Berkeley.

Trumpler's contributions to astronomy brought him wide recognition. He was elected to the National Academy of Sciences in 1932. He was a member of many astronomical societies, including the Astronomical Society of the Pacific, of which he was President in 1932 and 1949.

Professor Trumpler is survived by Mrs. Trumpler, three daughters, two sons, and thirteen grandchildren. He will be remembered by scores of friends and associates. Astronomers the world over are the richer because of Trumpler's painstaking researches; his family, his students, and wide circle of friends are the richer because of his full, well-lived life.