Biographical Notice of Professor S. W. Burnham of Chicago.

By the death in Chicago, March 11, 1921, of Professor *Sherburne Wesley Burnham*, the celebrated discoverer of double stars, America has lost one of her most illustrious astronomers, and double-star astronomy its most eminent cultivator since the days of *W. Herschel* and *W. Struve*, who laid the foundations of this branch of the science about a century ago.

Professor *Burnham* was born at Thetford, Vermont, Dec. 12, 1838, and thus he attained the age of 82 years and 3 months. Though retired from active observing for about ten years, *Burnham* had enjoyed moderately good health for his years and somewhat frail build, and finally succumbed to weakness accentuated by a fall, in which a hip was broken. After this misfortune he lingered some three weeks, without extreme suffering, yet the shock proved too great for the feeble recuperative power incident to his advanced age.

Burnham was married in the years of his early manhood, and is survived by his aged widow, several sons and daughters, including a number of grandchildren. A more detailed account of his family will be given by Professor *E. E. Barnard*, in a biographical notice soon to appear in *Popular Astronomy*. Here it must suffice to give an outline of his scientific career, which has left so deep an impress on the science of his country and of his age.

In his youth this future celebrated astronomer had received only a common school education; but already in the days of the civil war he happened to become possessed of a copy of *Burritt's Geography of the Heavens*, which so interested him that it turned his attention to astronomy, and he lived to devote to this science over half a century of active observation and research, with the largest telescopes in the world.

When *Burnham* was a young man he settled in Chicago, and was by profession a stenographer, afterwards a court reporter. There were few astronomers in the west at that time, and Chicago offered limited attraction for a man of intellectual sympathies; yet the spirit of the city was progressive and broadminded. At the outbreak of the civil war an 18-inch refracting telescope had been ordered from Alvan Clark & Sons, of Cambridgeport, Mass., for the University of Mississippi. When, owing to the disasters of the war, it could not go to Mississippi, a number of private citizens of Chicago arranged to purchase it for the Dearborn Observatory, formed under the auspices of the Chicago Astronomical Society, and thus it was brought into use in the early seventies. Meanwhile, in testing this instrument at Cambridgeport, Mass., in 1862, *Alvan G. Clark* had discovered the companion of Sirius. It was afterwards destined to reveal many more new double stars to *Burnham*, *Hough*, and other observers.

During the later sixties of last century, *Burnham*, who worked as court reporter by day, began at night the industrious sweeping of the heavens for new double stars. He had been able to purchase a six inch refractor, now at the Washburn Observatory, Madison, Wisconsin. This celebrated instrument, to his sharp eye and the touch of his dexterous hand, revealed new double stars by the hundreds, in successive lists sent to the Royal Astronomical Society of London, of which *Burnham* soon was elected a Fellow.

These discoveries established *Burnham* as one of the most skillful telescopic observers in the world, because it had been held by leading English astronomers that the science of double stars had been well nigh completed by the discoveries of the *Herschels* and the *Struves*, whereas these older observers had only noted the double stars most easily revolved, and an entirely new epoch was later to be created by *Burnham* and his associates, who detected new systems with extremely close or extremely unequal components. In the later development of modern double-star astronomy, *Burnham* thus took the lead, and was well supported by *Dembowski*, *Schiaparelli*, and great numbers of recent observers in all countries.

After seven years of industrious work in his private observatory in Chicago, *Burnham* obtained the use of the Dearborn 18-inch refractor, 1877-1881, 1882-1884, with which many notable discoveries were made. During the years 1881-82 *Burnham* did considerable double-star work at the Washburn Observatory, Madison. But in 1879, as one of the most skillful of telescopic observers, he was selected to test the seeing on Mt. Hamilton, California, which resulted in the location of the Lick Observatory.

When the Lick Observatory opened in 1888, *Burnham* became astronomer there, and during the next four years made a notable record of discovery, bringing the total number of his new stars up to 1274. It was chiefly *Burnham* and *Barnard* who established the early fame of the Lick Observatory in the scientific world. But conditions there were unfortunate, and in August, 1892, *Burnham* resigned to return to Chicago as Clerk of the United States Court, a very honorable and responsible position.

Within a few months the foundation of the Yerkes Observatory, with the 40-inch refracting telescope, was assured; and thus *Burnham*, among congenial and old associations, entered upon the last period of his scientific career. Some three years were lost in starting the Yerkes Observatory, but early in 1895 the buildings were begun and in 1897-98 observations with the 40-inch refractor became possible.

In 1894 *Burnham* became Professor of Practical Astronomy in the University of Chicago, though still retaining his connections with the U. S. Courts till about 1903. He used the 40-inch refractor in extending his researches on double stars, and incorporated his results in volume I of the *Publications of the Yerkes Observatory*, which is a general catalogue of all his double stars, 1900.

In 1907 the Carnegie Institution of Washington published, in two large quarto volumes, *Burnham's General Catalogue of all known Double Stars of the Northern Hemisphere*, including 13665 systems, within 121° of the north pole. He had been preparing this imposing work for about 30 years, and it is now the universal authority on the subject. In 1912 a volume on the proper motions of stellar systems completed his researches on double stars.

Enough has been said to illustrate *Burnham's* prodigious activity, for half a century, confined always to a special line, and thus marking a great epoch in sidereal astronomy.

Burnham had great modesty of manner, but also great fixity of disposition and independence of character, in the pursuit of science; and used frequently to remark that if tradition or precedent did not exist for certain lines of research, we should make such traditions by the example of our own labors.

He had a poor opinion of the habit of changing lines of research according to the fashion of the day; and thus having become impressed with the dignity of double star astronomy, he adhered to the subject for half a century, and left a record of persistent and conscientious effort which no other double star investigator has ever approached.

With all his specialization in double stars, *Burnham* was remarkable for his intimate knowledge of all lines of practical astronomy.

He was very warm hearted, charitable and high minded in all the relations of life. Hence he was greatly beloved by a large group of younger astronomers. He frequently gave simple but delightful dinners to a small group of the younger men of science who rejoiced in his friendship. Never was there a more modest host, a more devoted friend! Humble in his own bearing, everyone showed him the deference due to a great and good man. He was truly one of nature's noblemen.

Burnham was too independent and high minded to seek worldly honors, which weigh with smaller individuals; yet he received the Gold Medal of the Royal Astronomical Society, 1894, and the Lalande Medal of the Paris Academy of Sciences, 1904. In 1878 Yale University conferred upon him the honorary degree of A. M., and in 1915 Northwestern University conferred on him the honorary degree of D. Sc.

He traveled quietly along life's journey, with dignity, and without ostentation, and in departing has left a blessed memory with those who knew him best. So worthily has he followed in the footsteps of the great Sir *William Herschel*, that this countrymen justly call him the *Herschel* of America.

Mare Island, California, 1921, March 23.

T. J. J. See.

152 Atala.

Die in BZ 44, 1920, p. 68 mitgeteilten Beobachtungen eines unbenannten Objektes vom 22., 23. und 24. Okt. 1920 haben sich auf Grund einer Bahnbestimmung, die Herr *Carl Vick* aus Beobachtungen dieses Objektes vom 23. Oktober, 2. und 12. November abgeleitet hat, als zu 152 Atala gehörig erwiesen, wie Herr Prof. *Cohn* mitteilt.

Die von Herrn *Vick* gefundenen Elemente haben fol-

gende Werte:

Epoche 1920 Nov. 0.5 m. Z. Gr.

$$\begin{array}{lcl} M = 1^\circ 55' 57'' & & \varphi = 4^\circ 53' 57'' \\ \omega = 30 \ 25 \ 46 & & \mu = 622'' 043 \\ \Omega = 40 \ 48 \ 44 & \left. \vphantom{\begin{array}{l} M \\ \omega \\ \Omega \end{array}} \right\} 1920.0 & \log a = 0.50412 \\ i = 12 \ 9 \ 5 \end{array}$$

Bergedorf, 1920 Dez. 7.

A. Schwaßmann.

Berichtigungen zu den Ephemeriden veränderlicher Sterne von E. Hartwig (V. J. S. der A. G. 55).

- S. 221. RW Tauri. Korr. der Eph. — $1^h 3$.
 222. RU Cancr. Statt Nov. 3 lies Nov. 2,
 statt Dez. 4 lies Dez. 3.
 223. RT Leonis. Statt Sept. 3 lies Sept. 2.
 225. SX Draconis. Korr. der Eph. — $0^h 7$.

- S. 225. RX Herculis. Statt Juni 0 $6^h 3$ lies $8^h 3$.
 226. RX Herculis. Statt Nov. 0 $4^h 3$ lies $7^h 3$.
 228. TY Pegasi. Korr. der Eph. — $3^h 8$; weiter
 ist statt Jan. 2 zu lesen: Jan. 0.
 229. TT Aurigae. Statt Aug. 0 $12^h 3$ lies $19^h 4$.

Utrecht, 1921 April 12.

A. A. Nijland.

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Sternwarte Innsbruck-Hötting.

A. Scheller.

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