

## THE ORBIT OF $\nu$ ORIONIS

By W. E. HARPER

THE spectroscopic binary  $\nu$  Orionis ( $\alpha = 6^h 02^m$ ,  $\delta = +14^\circ 47'$ , photographic magnitude about 4.2) was discovered\* by Frost and Adams in 1903. The range in velocity of their three plates is approximately 70 km., which is in fact about the total range for the star. Their first observation was made at a fortunate time, it falling on the crest of the velocity curve which rises rapidly to a high positive value and falls again as rapidly. On this account this observation has been of material assistance in getting a more accurate value of the period than could be obtained from our own observations.

Work was commenced on the star here November 11, 1907, and from that time to December 30, 1910, one hundred and nineteen plates were secured. The first season's work gave the general form of the curve, and during the three succeeding seasons efforts were made to obtain a full series of observations around periastron where the curve, as previously mentioned, changes so rapidly. In this we have been only partially successful, as cloudy weather at each return to periastron prevented our obtaining all the observations desired. Nevertheless quite a number of reliable plates have been secured for this part of the curve and the determination of the orbit has accordingly been proceeded with.

The spectrum is of type  $B_2$  and has numerous lines suitable for measurement. The hydrogen lines  $H\beta$ ,  $H\gamma$ ,  $H\delta$  and  $H\epsilon$  appear in the range of spectrum measured, but the latter was scarcely

\* *A. J.*, vol. xviii., p. 386, 1903.