A LONG-PERIOD SPECTROSCOPIC BINARY

By W. E. Harper

THE second magnitude star γ Geminorum ($6^h\ 31^m{\cdot}9$, $\delta = +16°\ 29'$) has been under observation here since the autumn of 1906. Its radial velocity had previously been investigated by Campbell, Frost and Slipher in the years from 1899 to 1905 and it was also one of the stars which Vogel used at Potsdam when the photographic plate was first applied to work of this nature in 1888. When we consider that the two plates secured by Vogel which are used in this paper were made at the very beginning of radial velocity work the residuals of 1·5 km. for each are very small. Although a few more measures were made at Potsdam they are not used, for the reason that only the H_γ line on each was measured, and consequently the same reliance could not be placed upon them as on plates where many lines were measured.

Of the four Lick observations two were made in 1899, one in 1904 and one in 1905. The 1904 plate showed variability in velocity and the star was announced as a spectroscopic binary in the *Astrophysical Journal* for March, 1905. The Yerkes Observatory made three plates in 1901 which showed no variation in velocity and one in 1904 which did. The Lowell Observatory have a plate in each of 1902 and 1903 and four in 1905. As the 1905 plates were all made within a month and are only approximate results, they can not be considered as better than two definite measures. For some reason the 1902 plate does not agree with our curve there being a residual of 9 km. in a well defined part of the curve, while the 1903 plate has a residual of 3 or 4 km., but in a part of the curve which is not so well defined and which will require more observations to fill up the gap. As none of the other plates used gave residuals greater than 2 km. these