

ORBIT OF THE SPECTROSCOPIC BINARY 1149 GROOMBRIDGE.

BY W. E. PARPER, M.A.

This star ($\alpha = 6^h 18^m$, $\delta = +56^\circ 20'$, photographic magnitude 5.7) was announced by Adams as a spectroscopic binary from the measures* of three plates taken in the autumn of 1911. These three measures have served very materially in the accurate determination of the period.

Thirty spectrograms of the star have been secured here between February 20, 1914, and March 16, 1915. The single-prism spectrograph with a dispersion of 32.1 Å at λ 4325 was used throughout. The exposure times varied between 30 and 110 minutes, the average for the 30 plates being 78 minutes. In fair seeing, with the Seed 27 plates used, 70 minutes or even less should be sufficient to give a measurable spectrum of this star which is of the A5 type.

The period was discovered from the first half dozen measures taken in conjunction with Adams' early measures and the aim was kept in view to obtain the curve with the least amount of observational data compatible with accuracy. The gaps in the curve were filled up rather slowly as cloudy weather was usually the rule at the particular phase desired. There are three or four plates which have abnormal residuals but further observations at the same phases show that they are purely accidental, as the residuals are both positive and negative, and as no valid reason can be given for rejecting the plates they have all been retained.

Rowland's values of the wave-lengths were used as preliminary, and corrections to these were obtained by the customary method of equating to zero the residuals given by each line from the mean of the plate. Twenty-five plates were used in this connection.

*Astrophysical Journal Vol. 25, page 175.