

ORBIT OF *b* PERSEI.

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b Persei ($\alpha = 1^h 10^m 7$, $\delta = +50^\circ 03'$, mag. 4.5) was announced a binary by Prof. Campbell early in 1910* from measures of four plates taken, two in 1903, one in 1906 and one in 1909. Its spectrum is of A type and a few of the plates obtained here show double lines. In the second spectrum thus appearing, the lines are not at all well defined and measures on them are only fair as will be seen by the magnitude of the residuals. The lines which show doubling are H_γ , H_δ , and in one case the iron line $\lambda 4045$.

Thirty-six plates dating from October 10, 1910, to April 24, 1911, were taken in all. The lines are about the average for this type. Being a double spectrum and the two components being separable in only a few plates, the measuring is more difficult than it would otherwise be. All plates were taken with the single-prism spectrograph, the length required for using the three prisms being too great for a star of this magnitude. Seed 27 plates were used throughout for the same reason, although a finer grained plate might have been very advantageous for showing doubling of lines.

The lines measured were:—

TABLE I

Element.	Wave-Length.	Element.	Wave-Length.
Hydrogen	4861.527	Magnesium	4481.400
Hydrogen	4340.634	Iron	4549.766
Hydrogen	4101.860	Iron	4045.975
Hydrogen	3970.177†	Calcium	3933.825

* L. O. B. V. 171. † Only on one or two plates.