

Williams' new Algol Variable RV (13.1902) Lyrae. *)

In order to identify the Algol variable, RV Lyrae, recently announced by Mr. A. S. Williams (A. N. 159.309), its position was marked on several of the Draper Memorial photographs. On one of these, taken 1893, July 11^d 18^h 10^m, G. m. T., the star appeared fainter than normal. On Mr. Williams' scale its magnitude was about 11.3, or a little nearer in brightness to his star *d*, than to his star *b*. It is also very nearly equal in brightness to the star which follows the variable about 45^s, north 6'.8. This would indicate that the time of minimum preceded or followed the time of taking the photograph by about three hours, assuming the light curve described by Mr. Williams. The formula he gives indicates for $E = -918$, a time of minimum J. D. 2412656.720 = 1893, July 11^d 17^h 17^m, G. M. T., omitting his last three decimal places which appear to be indeterminate.

This photograph, therefore, gives a correction to the

ephemeris of $+4^h$ or -2^h . An examination of the other plates of this region would distinguish between these two values, and determine the correct one with much greater accuracy. Probably we have at least one hundred photographs of this region, although the star may be too faint to appear on a portion of them. On one tenth of the photographs the star should be below its normal brightness. A precise correction to the ephemeris can be found from each of these, if not too near maximum or minimum, when the photographic light curve has been found, as can now be readily done. Unfortunately, the pressure of other work will probably prevent the continuation of this research at present. As it is, the observation given above lengthens the period of observation from less than ten months to about nine years, and increases the accuracy with which the period can now be determined in nearly the same proportion.

Harvard College Observatory, Cambridge Mass., 1902 Oct. 31.

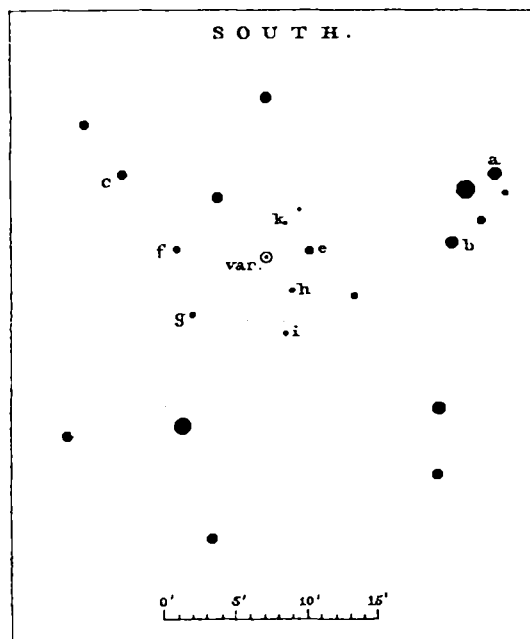
Edward C. Pickering.

*) Auszug aus Harvard College Observatory Circular No. 66. K7.

New variable Star 17.1902 Lyrae.

R.A. = 18^h 40^m 45^s.1, Decl. = +43° 29' 2" (1855).

The approximate position of this star, from measures of a photograph taken with a 4.4 inch portrait lens, is given above. In order to assist the identification, the positions of some of the neighbouring stars have been laid down upon the adjoining diagram. The photographic magnitudes of several stars were determined by means of step-sequences from 7 plates. The adopted magnitudes of the comparison stars are stated below.



20 Hove Park Villas, Hove, 1902 Nov. 10.

a =	8 ^m 58
b =	9.00
c =	9.37
d* =	9.86
e =	10.47
f =	10.87
g =	11.12
h =	11.32
i =	11.55
k =	12.16

The following are the observed photographic magnitudes of the variable. 1899 Sept. 28, 12.34; Dec. 31, <12; 1900 Sept. 2, 9.71; Sept. 3, 9.71; Sept. 19, 9.15; Sept. 21, 9.17; Sept. 23, 9.18; Sept. 25, 9.19; Oct. 14, 9.01; Oct. 21, 9.39; Oct. 26, 9.53; Nov. 15, 9.99; Nov. 22, 10.37; 1901 Sept. 15 to Nov. 15, invisible on 5 plates, and fainter than 12 mag. The star has been frequently looked for during the present year between Aug. 15 and Oct. 26, but it has always been invisible in a 6 1/2 in. reflector, so that it must have been below 12 1/2 mag. during that period.

The period is evidently long and the range of variation considerable though it is impossible at present to state anything definite with regard to these questions. The observations of 1900, however, indicate a pretty well defined maximum for Oct. 6, the photographic magnitude being 8.97. The visual brightness was probably at least a magnitude brighter than this, since, so far as my limited experience goes, long period variables are always more or less photographically faint; though in the case of Algol-type stars the photographic brightness is nearly exactly the same as the visual.

A. Stanley Williams.

* The star d is just outside the diagram. It is BD. +43° 30' 53" (9^m5).