COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

Provisional elements of a variable star of the RR Lyrae type,
by Ejnar Hertzsprung.

By the comparison of plates I have taken of the great Magellanic Cloud with the 10 inch Franklin-Adams instrument, Dr. R. T. A. Innes found a variable star the position of which is 5° 29' 4'' 6, −64° 22' 7 (1875) and which is thus outside the region examined closely at Harvard (H. A. 60, 87; 1908). The star proved to be of the RR Lyrae type. It was observed near maximum at the 7 dates given in Table 1. As the star is only about 4° from the pole of the ecliptic no corrections for light equation have been applied. A least square solution gave the period $T = 48268 \pm 400011$ (m. e.). My estimates in an arbitrary scale on 53 plates from 27 nights are given in Table 2. The phases in fractions of the period have been calculated from the formula $P = 2071773$ (J. D. M. T. Grw. = 2420000). Arranging the 53 observations into 11 groups of 4 or 5 plates each the mean values given in Table 3 and graphically represented in the accompanying diagram were obtained. According to this the magnitudes at maximum and minimum are 11.4 and 11.75 respectively. Their mean, 11.4, is passed on the ascending branch of the lightcurve at the phase about .51. The provisional ephemeris of this epoch is:

J. D. M. T. Grw. 2423754.8926 + 4.48268 E.

The maximum occurs about $i = 05$ or about $i = 024$ later.