

can be directly connected with the same body. The behavior of these stationary *H* and *K* lines is similar to that observed in numerous early type binaries where the large velocity variation given by the diffuse hydrogen and helium lines is not shared in by the sharp *H* and *K* lines. The conditions here would even more certainly seem to indicate that the light from the star is shining through a layer of relatively cooler calcium vapor which is undisturbed by the tremendous cataclysms occurring in the star. The calcium line 4226.9 has been measured on 5 or 6 plates between June 18 and June 26 and gives a velocity about 15 km. per sec. more positive than the *H* and *K* lines but it is not so sharp nor persistent as they are.

There are a number of other singular features about the spectrum which may be just mentioned. A line whose measured position is about  $\lambda 4210$  appears coincidentally with the displaced hydrogen and the true wave-length is probably hence about  $\lambda 4233$  and is probably due to what Lockyer calls proto-iron. Similarly there appears to be an emission band corresponding to the proto-carbon at  $\lambda 4267$ . Another curious feature is a pair of very broad diffuse lines to the violet of *H $\delta$*  which appear and disappear and reappear again in a startling manner. The wave-length of the one decreases from  $\lambda 4065$  to  $\lambda 4060$  and of the other from  $\lambda 4060$  to  $\lambda 4054$ . Their centres are about 6 A. apart and they occasionally merge into one very broad absorption band. No reasonable identifications for these lines have been found.

From measures of broad emission bands on several spectra and comparison with the several hydrogen bands whose normal wave-lengths are known, the wave-length of some of the nova and nebular bands have been fairly well determined. For example N<sub>1</sub> 5006.9; N<sub>2</sub> 4959.4; 4685.4; 4641.0; 4605.2; 4471.5; 4415.0; 4363.4, etc., but these measures can probably be improved by following the star closely and catching it when the emission is well defined. It is proposed to obtain spectra at frequent intervals as long as the star can be followed here and this note is preliminary to a fuller discussion of the spectrum when complete data have been obtained.