the necessary exposure required to get measurable star spectra was diminished by more than one-half.

So far as regards the removal of systematic error due to the eccentric position of the centre of intensity of the star light, the negatives made since, so far as measured, show no signs of such error, but give accordant results.

However, the results of a later extended quantitative investigation into the character of the star image in spectrographic work, which will appear in this JOURNAL*, shows that there is still considerable residual spherical aberration. The investigation shows, moreover, that this is due to the chromatic differences of spherical aberration of a visual objective used photographically, not being compensated for by the correcting lens, and indicates the possibility of a considerable advance, so far as regards the efficiency and range of the spectrograph, by the introduction of a suitable correcting lens. A comparison of the performance of existing spectrographic equipments shows that others are probably affected in the same way, and an improvement here suggests the possibility of a similar improvement elsewhere.

Although the various difficulties encountered in making the spectroscope suitable for accurate velocity determinations have prevented as much work being accomplished as could otherwise have been done, they have not been without advantage, for they have certainly formed an education on spectrographic peculiarities and causes of error, which could not otherwise have been obtained. The new spectrograph, which I have designed especially for radial velocity work, and which is now being constructed in our workshop, is so arranged that it is hoped all the difficulties above detailed will be more completely overcome or avoided than has been possible with the present instrument, and that it will prove to be very efficient for determinations of velocity in the line of sight.

* Also in the *Astrophysical Journal*.