

slit, two distinct images of the slit are obtained, the top portion of one being side by side with the bottom portion of the other. As these appear on a black background, it is very easy to judge when the two portions appear of equal intensity. Of course, if the two portions of the object-glass be not exactly equal, an untrue result would be obtained; but by turning the object-glass through 180° , another reading is obtained, and the mean of the two intensities gives the truth.

Another instrument is here to which I have applied the same method of reading. It is a Spectroscope, with a slit on each side of the axis of the tube, the light being reflected through the collimator and prisms by two small prisms of total reflection. Two spectra are thus placed one over the other, a moveable slit is placed behind the prisms, and a telescope similar to that described is employed for ascertaining when the intensity of any particular part of the two spectra are equal. In this case the intensities are equalised by opening or closing one or other of the two slits; whence, knowing the aperture between the jaws, the intensities are easily calculated. I am in hopes that this, in a modified form, may be useful in stellar spectroscopy.

The Diaphanometer has lately been employed in determining photographic irradiation as applied to solar photography; and I trust that by its use some involved points in that subject may be cleared up definitively. It is on these grounds alone that it has been submitted to the notice of the Society. I should be glad if any Fellow would offer any suggestion as to its improvement. I may mention that, when first the instrument was used the intensities were judged without any telescope; however, greater accuracy is ensured by using it. I have to thank Mr. Browning for the care he has taken in carrying out my designs, both in this and the double spectroscope.

Note on the Suspected Variability of B.A.C. 740, 4,166, and 4,193.

By Colonel Tennant.

B.A.C. 740 was wanted, but could not be found by Capt. Strahan or myself in our Transits (3-in aperture). It was also invisible in the Equatoreal finder, but the B.A.C. stars on the two sides of it in the field were seen well. B.A.C. 4,166 and 4,193 would not bear the slightest illumination in my Transit on April 24. I estimated them at 8 mag. and 8.5 mag. respectively on that day. They were certainly far below 6 mag., which I can easily observe with full illumination.

Possibly all these stars are variable.

1875, May 5.