complete revolutions of the screw, have given very accordant values, also a series of measures of certain well-known double stars have shown by their agreement with the results of other observers that the micrometer is a most accurate and reliable instrument.

The contrivance for illuminating the wires, so that they should appear as bright lines on a dark ground, was very ingenious, and consisted of a little bent vacuum tube, so placed between the wires and the eye-piece, that when illuminated by a coil and battery the wires were clearly seen; when all was in good order this arrangement left nothing to be desired, but I found the electrical apparatus so uncertain in action, and so frequently out of adjustment, that much valuable time was consumed in attending to the coil and battery to the serious hindrance of actual observation. I therefore procured Cooke's usual Prismatic Illuminating Apparatus, which I have applied to the telescope with perfect success; with this arrangement the field of view is illuminated, the wires appearing as black lines on a bright ground. As a matter of course the fainter stars are more or less obliterated, according to the intensity of the light employed. This, however, is brought completely under control by a rotating diaphragm pierced with a set of apertures of different diameters, from $\frac{1}{8}$ inch to $\frac{5}{8}$ inch, revolving over the opening which admits the light into the body of the telescope. By this means all superfluous light can be excluded, and when faint objects are under examination, only sufficient illumination is used to render the wires clearly visible. A slide fitted with coloured glasses allows the field to be changed to red, white or blue, at pleasure, and I have found by careful experiment that the definition of certain stars is sensibly affected by the colour of the light employed in their measurement.

An observing chair is used with the equatorial, which by a system of adjustable seats enables observations to be made with comfort on objects at any elevation from the horizon to the zenith. A footboard can also be placed where required, and there is a comfortable support for the back, as well as room for a chronometer and writing materials. The benefit of these arrangements is particularly felt during a prolonged scrutiny of the planets or micrometrical measures of double stars, in which a firm and easy position is almost essential to accurate observation.