

this glass if you can possibly help it. The cumulative effect of wiping or rubbing can be seen by holding up an old pair of spectacles to the light. Better far a little dust, than those unsightly scratches every one of which means so much loss of light. The function of this glass is to form an image of the objects to which it is directed, and the eye-piece, which is really a microscope, magnifies this image before it enters the observer's eye. These eye-pieces are not expensive and can be slipped in and out of the telescope with great facility. A good telescope is supposed to bear a magnifying power of 100 to every inch of the object glass, but this presupposes perfect conditions of both glass and atmosphere. It is a mere theoretical perfection, and in practice few glasses will be found to bear with advantage more than half that power.

Let us now suppose ourselves the happy possessor of a good 3-inch glass, fitted with four eye-pieces, magnifying say 40, 80, 110 and 200 diameters respectively. We adjust the 110-power eye-piece and point our telescope to the new moon, remembering that it is the property of an astronomical telescope to invert the object, so that north appears south, and south north. Inasmuch, however, as the heavenly bodies are globular in form, the inversion, so long as we remember it, is of no practical disadvantage.

It is difficult for one who looks for the first time through such a telescope as I have described, to repress a cry of wonder and delight as his eye is suddenly illuminated with the charming spectacle which meets his gaze. The marvellous brightness of the golden sickle of the new moon; the clear cut form of the mountains, craters and valleys that lie before him; the startling contrast afforded by the shadows flung across the brilliantly lit plains, fill him with astonishment, while the thought that he is actually looking upon scenes in another world—all these combine to impart a feeling of unmixed pleasure. The sight, of course, can be varied by changing the eye-pieces. The low power of 40 will enable the observer to view the moon as a whole—that is to say to include it all within the field of view—while