ought to appear as drawn out into a short, coloured *spectrum* in a certain definite direction. Light requires forty-two minutes to reach the earth from Jupiter at its mean distance. Supposing the rays of one end of the spectrum—the violet, for instance—to travel faster than those at the other (the red), a satellite undergoing eclipse by immersion in the shadow of the planet ought to change colour before extinction, from white to red—the last-emitted red rays lagging behind the violet on their journey to the earth; while at its reappearance a blue colour ought to be first perceptible.

(53.) Among the stars are many which vary periodically in brightness, and some of them undergo complete extinction. As light takes *several years* to travel from the stars, the difference in the times of arrival for any sensible difference of velocity would amount to many days, and would be quite sufficient to tinge the disappearing and reappearing star with the hues belonging to opposite ends of the spectrum. No such thing, however, is observed. Most of them retain their whiteness; and though some *do* assume a deep-red colour when undergoing extinction, or when at their minimum of splendour, it is *not* changed to blue at their reappearance, or on their commencing augmentation of brightness.

(54.) The reflexion and refraction of light are, as we have stated, accounted for on this theory by supposing the particles of all material bodies, besides the attractive force of gravitation, to be endowed with other forces, both attractive and repulsive—the latter extending to a greater distance than the former, so as to constitute an