some idea of this interval, it may be stated that a cannon ball discharged from this would not reach the earth in a less time than 14.000,000 years, nor would the flash be visible till after a period of 10 years, though travelling at the rate of 12,000,000 of miles per minute. One delicate thread of a spiders web, placed before the eye of a spectator at the star, would hide from his view the whole orbit of the earth and a single hair of the head would conceal the entire solar system.

Yet what are these distances to those of the Nebula, from which light according to Sir William Herschel is 48,000 years in travling to the earth, since light travels at the rate of 6½ billions of miles per annum, in 48,000 years it will have traversed through a space of three hundred and four billions of miles! the actual distance of some of the Nebula from this globe. Hence the remark of Huggens, in a sober speculation—that there may be worlds in the immensity of space which have long been created yet whose light owing to their distance has not reached our Globe, though still destined to come within the range of the eye.

"How distant some of the nocturnal suns!
So distant says the Sage, 'twere not absurd
To doubt of beams, set out at nature's birth,
Are yet arrived at this so foreign world!
Though nothing half so rapid as their flight."

However marvellous the statement, it is strictly true that when we gaze upon the stars, and note down their position, we are witnessing and chronicling their appearance in by gone times, and not the present aspect of the phenomena. The ray that meets the eye from the nearest sideral object, brings intelligence of the past! and that past includes years, in relation to the front ranks of the stellar array, and ages with repect to the general body. When we reflect upon these facts, and remember that the faint nebulous clusters are far more remote from the distinct stars than the latter are from us—that the light which manifests their presence now, may have left its source when the Tudor, Norman or Saxon race occupied the throne of England;—then do we catch a glimpse of the immensity of space, and of the infinity of the Being who originated the great government of which it is the scene, and who conducts it with such nicety "That a Sparrow falleth not to the ground without his notice."

Respecting the magnitude of the stars, we have nothing to guide us beyond their visibility when so vastly remote, the simple afact of their being visible cross the mighty expanse which exists between them and us, gives us high ideas of their dimensions. Calculations have been made from a comparison of their light with that of the sun. This orb has been shown to be 500 times greater than all the planets in its own system put together, or equal to 130,000 globes of the size of our own. Vast as this appears the dimensions are insignificant when compared with those of Sirius, which possesses a brilliancy equal to that of 14 suns, a diameter 38 times larger and a solidity of 19,579 trillions of miles or 54,872 times that of the sun! Nor can we suppose the magnificent orb Sirius to dwell alone in this respect, for it has been proved that there are few of the fixed stars which do not surpass both in magnitude and lustre our own bright orb of day. Who, with a knowledge of these astounding particulars, can refrain from exclaiming "How wonderful are thy works O Lord! in wisdom hast thou made them all."

What then, "It may be enquired, was the purpose for which these mighty orbs were created?" in general terms it may be answeared, it is doubtless an end proportionate to their size and grandeur. The skilful artist in the construction of an Orrery, does not employ wheels of one thousand yards in circumference to turn small balls round a circle only two feet in diameter! nor in the manufacture of a timepiece, use 500 springs, pinions and wheels, when less than a dozen will suffice, and when it is remembered that, the Almighty stretched out the Heavens by His understanding! "That He has made nothing in vain," there appears to be strong presumptive evidence that higher ends, and more extensive designs, were contemplated in their creation, than merely "To give light upon the earth," or as the Koran expresses it, "To be guides in the dark both by land and by sea."

As our smaller sun has planets with their satellites circulating round him, it is only reasonable to infer that a much larger globe serves a similar purpose, and is the common centre of a numerous family refreshed and beautified by the glorious beams that emanate from it. The inference holds good with every star, for that all are suns admits not of a moment's doubt, and we are justified in attributing to each its dependent Jupiters and Saturns. Thus we gain some insight into the economy of the universe and gather rational ideas of its immeasurable amplitude—its multitude of worlds—its myriads of sentient beings. Sir John Herschel soberly answers the enquiry "For what purpose are we to suppose such magnificent orbs scattered through the abyss of space? Surely not to illuminate our nights which an additional moon of the thousandth part of size of our own would do better, nor to sparkle as a pagent void of meaning and reality, and bewilder us among vain conjectures. Useful it is true they are to man as points of exact and permanent reference, but he must have studied Astronomy to little purpose, who can suppose man to be the only object of his Creator's care, or who does not see in the vast and wonderful apparatus around us provision for other races of animated beings. The Planets derive their light from the Sun, but that cannot be the case with the Stars. These doubtless are themselves suns, and may perhaps, each in its sphere, be the presiding centre round which other planets may be circulating.

Though none of these planets, owing to their distance are visible to the Earth, yet certain Phenomena have been observed, which indicate their existance to a certainty One of the variable stars Algol, is found regularly to pass through a change of lustre, from the second to the fourth magnitude, in 2 days 21 hours, and afterwards resume its original brightness. A star in Sobieski's Shield, passes from the 5th to the 7th magnitude every 62 days, these changes can only be satisfactorily ascribed to the intervention of opaque bodies of a large size, passing directly between our line of vision and the star, when revolving through that half of the orbit lying next to the earth

In regarding the planetary worlds as the abodes of sentient life, and forms of existence kindred to those which occupy the earth, we are in advance of what is written but not beyond what the sobrieties of reason will justify. It may be hard to imagine how life can be sustained under the apparent heat of mercury, or amid the seeming cold storms and rapid atmospheric changes of Jupiter. But, ignorant of facts, a parallel difficulty would be a stumbling block to us, in relation to our own planets, when we consider the high temperature of the equatorial regions, and the intense cold of its Polar Circles. We meet with human life upon the sultry plains of Delhi, and on the ice bound shores of Greenland, and where the Citron, the Myrtle, and the Palm will not flourish the Mosses, the Pines and the Lichen grow. We cannot naturalise the Elk in England, or rear the Giraffe in Iceland Yet each animal in localities to which it is adapted, is stately and vigorous. The analogy between the planets of the Solar System with respect to their physical, constitutions reasonably leads us to suspect other analogsies, the fact that Mars, Mercury, Jupiter and Saturn, are surrounded with atmospheres, strongly indicates their occupancy with some varieties of organized being The important uses of the atmosphere in maintaining animal life, transmitting sound and light, and in advancing the arts which tend to civilize society—are universally admitted without such agaceous envelope, bound inseparably round the earth, its partner in all its motions, yet a seperate element—the ear would have no office to perform. The tongue would be speechless, and the service of the eye greatly abridged, the song of birds, the hymns of religion, the eloquence of senates, and the utterance of relative kindness would all perish the fiercest waves (could they exist) would dash in sullen silence upon the strand, and mankind would have no medium of intercommuniction beyond that of sign or gesture. We may well believe therefore that our world has been furnished with this elastic and essential apparatus, in order to adapt it for the reception of animal existence, and intellectual inhabitants, and the inference is great that