

The Earth and Venus, which are very nearly the same size, are both larger than Mercury, but Mars, outside the Earth, is much smaller than the Earth, its diameter being only 4,100 miles: the Earth's equatorial diameter being 7925 miles. Jupiter is the largest body in the system, except the Sun; Saturn, next in size, is next in distance; but Uranus and Neptune are much smaller than either Jupiter or Saturn, their diameter in round numbers being severally about 35,000 miles.

We might also naturally expect to see the number of moons belonging to the outside planets increased in proportion to their distances from the Sun—but this is not the case, for although Jupiter has four moons and Saturn eight, and several rings, yet Uranus, which is outside Saturn, is now known to have only four satellites, and Neptune, the most remote body in the system from the Sun, (as far as yet known) being 2,700 millions of miles more distant from the Sun than our Earth, has, like our globe, but one moon. Thus we see that although the denser bodies are nearest the Sun generally, yet they are not uniformly so; that whilst the larger bodies of the system are those most remote from the Sun, yet increase of size is not uniformly proportioned to increase of distance, and that although the planets most distant from the Sun as a general rule are those which have the greater number of moons, still the number of moons belonging to any planet is not necessarily contingent on its distance from the Sun. Variety in physical condition is therefore a characteristic of the planetary bodies, as it is indeed of every other work of the Creator, and in all probability not any two of the planets are in any way similarly constituted.

But if this self-luminosity of Neptune be confirmed by further observation, it will certainly be an unique feature in the Solar System. It has always occurred to me that one great difficulty, of which I have never met any explanation, attends what is called the Nebular Theory. This is—if all the bodies of the system had a common origin, being formed from a rotating Nebula throwing off rings and planets, &c., why in such a case should the luminous atmosphere be confined to one of these bodies only, viz., the central one? and why should the others have very different atmospheres or envelopes?

But if Neptune's atmosphere is self-luminous, it will at any rate shew that it is not incompatible with the conditions of the Solar System, for one body besides the central one to be provided with a Photosphere. I must observe here that I have not seen any confirmation of the self-luminosity of Neptune in astronomical works to which I have access; but the recentness of the discovery of this