

THE SUN AND THE EARTH.—The foundations of the Earth have been laid with consummate wisdom, at such a distance from the source of light and heat as is exactly suited to the organized forms upon its surface. If much nearer or more remote, animals and plants would perish, without some change of constitution, owing to increased heat or cold; and the blaze of light would be insufferable, or its amount too small to serve the purposes of vision.

It is obvious that a body must be of stupendous size to form such a conspicuous circle in the heavens as the sun, while at the distance of nearly a hundred millions of miles from us. The Sun's diameter is not less than 882,000 miles, or rather more than one hundred and eleven times the diameter of the Earth. It is difficult to conceive aright of this enormous magnitude; but it may be illustrated by the statement that the solar globe would fill up the entire orbit of the Moon, and stretch beyond it more than two hundred thousand miles in every direction. Were the sun a hollow sphere perforated by a thousand openings, to admit the twinkling of a luminous atmosphere without, then a globe as large as our own might be placed at the centre, with a satellite as large as the Moon, and at the same distance from it as she is from the Earth, and there would be present to the eye of the spectator on the interior globe a universe as extensive as the whole creation was conceived to be in the infancy of astronomy, and as splendid as the heavens appear at present to the uninstructed gazer. Supposing the Earth to be represented by a ball of one inch in diameter, another of 9 feet 4 inches would represent the size of the Sun. The loftiest of the Earth's mountains, one of the Himalayas, rises to the height of 29,000 feet; and for a mountain to rise upon the solar surface, bearing the same proportion to the solar diameter as the Himalaya peak to the terrestrial, it would require to have an altitude of nearly 600 miles.

The great orb has a circumference of 2,646,000 miles, in comparison with which, that of our own globe, twenty five thousand miles, is quite insignificant. If it were possible for a railway carriage to go round the Earth at the rate of thirty miles an hour, the journey would be accomplished in five weeks, travelling day and night; but a similar journey would require upwards of ten years on the surface of the Sun. The solar volume or bulk is 1,400,000 times greater than that of the Earth; and exceeds five hundred times the aggregate bulk of all the bodies of the planetary system. In other words, one million four hundred thousand earths must be rolled together, and the united volumes of all the planets and satellites be multiplied five hundred times, in order to form a body of equal size to the one Sun. The quantities here given afford an overpowering view of magnitude.

THE METEORIC SHOWER of November, 1866, which was so brilliant in Europe, and so insignificant or invisible in America, has led two eminent astronomers in Paris and Milan to form the same conclusions—each from his own observations and calculations. They agree in ascribing these meteors to one or more vast nebulous masses, moving in very elliptical orbits, which bring them at long regular intervals within the earth's attraction and the oxidizing and igniting influence of the atmosphere. Le Verrier judges that their orbit extends as far at least as to the orbit of Uranus; and both astronomers fix their period of revolution at $33\frac{1}{2}$ years. The orbit of the November meteors nearly coincides with that of Temple's comet, the first of 1866; while the August meteors have an orbit almost identical with that of the great comet of 1862