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### Random Thoughts on Astronomy.

What a magnificent scene would we behold could we view the universe as it is ! Let the limits of our vision be extended till we could look over the whole creation, and let us be endowed with a faculty to comprehend the vastness of the mighty orbs that whirl around us, and to measure and understand the immense distances which separate us from them, and them from one another, and what a panorama of glittering worlds—what a scene of awful grandeur and sublimity would be presented to our view !

But even the *imagination* becomes bewildered, and as utterly and hopelessly fails to comprehend the immensity of creation, as it does to touch the confines of space or eternity.

And how miserably do *figures* succeed in giving us an adequate idea of the magnitude or distances they are employed to represent in astronomy ! How meaningless to us are the enormous numbers which indicate the weight in tons of some vast sphere, or the distance in miles from the solar system to some of its neighboring systems !

“How far is it to the sun ?” we ask the astronomer, and he tells us that it is *ninety-one million five hundred thousand miles*. “And how far to the pole star ?” “Not less than *two hundred eighty five trillions of miles*.” Now

the first idea that strikes us is *that it is a great deal farther to Polaris than to the sun* ; but how much farther, we have not the slightest conception.

Indeed, so vague are our conceptions of numbers above millions or billions that the impression upon the mind would scarcely have been more forcible had we been told that the distance is two hundred eighty-five *quintillions*, instead of so many *trillions* of miles ; or at least it would seem greater only in about the proportion of five to three, while the real difference of these numbers is as 100,000 to 1.

A railway train traveling day and night at the rate of fifty miles an hour, without making any stoppages, would run from New York to San Francisco in sixty-six hours, or less than three days. At the same rate it would make the circuit of the earth at the equator in a little less than twenty-one days ; and should it then leave the earth *en route* for the sun, it would arrive at the solar station in 76,250 days more, or about 209 years ; but to reach Polaris, it would require no less than 636,600,000 years. Had Adam taken passage in such a train moved on at the above rate without a single pause until the present time, less than the *raddest* part of his journey would now be accomplished. And had Eve started at the same time upon a tour around the earth, traveling just fast enough to finish her journey by the time Adam reached Polaris, she would *now* have traveled *less than a quarter of a mile*.

Even light, which moves with the fearful velocity of 183,000 miles per second, requiring but eight and a quarter minutes to pass from the sun to the earth, is nearly *fifty years* in crossing this vast chasm.

The time required for the light of the *nearest* fixed star to reach the earth is about three years and nine months ; while that of some of the farthest visible to the naked eye requires 125 years. Over what an infinite expanse must the eye wander, as we gaze at the starry heavens on a clear night !

And yet the number of stars visible to the unaided eye is but as a handful of sand scattered upon the seashore when compared with the myriads revealed by the telescope, to say nothing of the countless multitudes so inconceivably distant as to appear as “mere fleecy whiteness” in the most powerful instruments.