

transit of Venus over the sun's disk in 1769, show, that this distance of thirty millions should be augmented three or four millions of leagues. It is for this reason that, in the *Epoques de la Nature*, I have always reckoned the mean distance of the sun from the earth to be thirty-three millions of leagues, instead of thirty. This remark was necessary to prevent the suspicion of my having contradicted myself.

I must farther remark, that the sun is not only thirty-three or thirty-four millions of leagues distant from the earth, but, from the same observations, it has likewise been discovered, that the volume of the sun is a tenth part larger than was formerly supposed; and, consequently, that the whole mass of the planets is only an eight hundredth part of that of the sun, and not a six hundredth and fiftieth part, as I had advanced from the information we possessed in the year 1745. This difference strengthens the probability that the matter of the planets was projected from the body of the sun.

## II.

*Of the Matter of the Sun and Planets.*

I HAD remarked, in p. 65. That *the opaque bodies of the planets were detached from the luminous matter of which the sun is composed.* These expressions are not correct; for the matter of the planets, when projected from the sun, was equally luminous as that of the sun itself, and the planets became not opaque till their state of fluid brightness had ceased: The duration of this state in several kinds of matter I determined by experiment; and, from analogy, I calculated the continuation of this bright state in each of the planets\*. Besides, as the torrent of matter, projected from the body of the sun by the comet, traversed the immense atmosphere of that luminary, it carried off the volatile, aqueous, and aerial parts of which the seas and atmospheres of the different planets are now composed. Hence we may conclude, that the matter of the planets is the same, in every respect, with that of the sun, and that there is no other difference but in the degree of heat, which is extreme in the sun, and greater or smaller in the planets, according to the compound ratio of their thickness and density.

\* See *Epoques de la Nature*.