

aphelion six months afterward, upon the first day of July, it may happen, on account of the advance (*turning*) of the major axis of the Earth's orbit, that the minimum may occur in summer and the maximum in winter, so that in January the Earth would be farther from the Sun than in the summer by about 2,800,000 geographical miles (*i. e.*, about $\frac{1}{30}$ th of the mean distance of the Earth from the Sun). It might, at the first glance, be supposed that the occurrence of the *perihelion* at an opposite time of the year (instead of the winter, as is now the case, in summer) must necessarily produce great climatic variations; but, on the above supposition, the Sun will no longer remain seven days longer in the northern hemisphere; no longer, as is now the case, traverse that part of the ecliptic from the autumnal equinox to the vernal equinox, in a space of time which is one week shorter than that in which it traverses the other half of its orbit from the vernal to the autumnal equinox. The difference of temperature which is considered as the consequence to be apprehended from the turning of the major axis (and we refer here merely to the *astronomical climates*, excluding all considerations as to the relations of the solid and liquid portion of the many-formed surface of the Earth) will, on the whole, disappear,* principally from the circumstance that the point of our planet's orbit in which it is *nearest* to the Sun is at the same time always that over which it passes with the *greatest velocity*. The reassuring solution of this problem is to a certain extent contained in the beautiful law first pointed out by Lambert,† according to which the quantity of heat which the Earth receives from the Sun in each part of the year is proportional to the angle which the *radius vector* of the Sun describes during the same period.

* Arago, in the *Annuaire* for 1834, p. 199.

† "Il s'ensuit (du théorème dû à Lambert) que la quantité de chaleur envoyée par le Soleil à la Terre est la même en allant de l'équinoxe du printemps à l'équinoxe d'automne qu'en revenant de celui-ci au premier. Le temps plus long que le Soleil emploie dans le premier trajet, est exactement compensé par son éloignement aussi plus grand; et les quantités de chaleur qu'il envoie à la Terre, sont les mêmes pendant qu'il se trouve dans l'un ou l'autre hémisphère, boréal ou austral." —Poisson, *Sur la Stabilité du Système Planétaire, Connaissance des Temps* for 1836, p. 54. "It follows, from the theorem of Lambert, that the quantity of heat which is conveyed by the Sun to the Earth is the same during the passage from the vernal to the autumnal equinox as in returning from the latter to the former. The much longer time which the Sun takes in the first part of its course is exactly compensated by its proportionately greater distance, and the quantities of heat which