http://www.geology.19thcenturyscience.org/books/1850-Lyell-Principles/README.htm

annual average of solar heat radiated to the earth is actually on the *decrease*. So far this is in accordance with geological evidence, which indicates a general refrigeration of climate; but the question remains, whether the amount of diminution which the excentricity may have ever undergone can be supposed sufficient to account for any sensible refrigeration. The calculations necessary to determine this point, though practicable, have never yet been made, and would be extremely laborious; for they must embrace all the perturbations which the most influential planets, Venus, Mars, Jupiter, and Saturn would cause in the earth's orbit, and in each other's movements round the sun.

The problem is also very complicated, inasmuch as it depends not merely on the ellipticity of the earth's orbit, but on the assumed temperature of the celestial spaces beyond the earth's atmosphere; a matter still open to discussion, and on which MM. Fourier and Herschel have arrived at very different opinions. But if, says Herschel, we suppose an extreme case, as if the earth's orbit should ever become as excentric as that of the planet Juno or Pallas, a great change of climate might be conceived to result, the winter and summer temperatures being sometimes mitigated, and at others exaggerated, in the same latitudes.

It is much to be desired that the calculations alluded to were executed, as even if they should demonstrate, as M. Arago thinks highly probable*, that the mean amount of solar radiation can never be materially affected by irregularities in the earth's motion, it would still be satisfactory to ascertain the point. Such inquiries, however, can never supersede the necessity of investigating the consequences of the varying position of continents, shifted as we know them to have been during successive epochs, from one part of the globe to the other.

Another astronomical hypothesis respecting the possible cause of secular variations in climate, has been proposed by a distinguished mathematician and philosopher, M. Poisson. He begins by assuming 1st, that the sun and our planetary system are not stationary, but carried onward by a common movement through space; 2dly, that every point in space receives heat as well as light from innumerable stars surrounding it on all sides, so that if a right line of indefinite length be produced in any direction from such point, it must encounter a star either visible or invisible to us. 3dly, He then goes on to assume, that the different regions of space, which in the course of millions of years are traversed by our system, must be of very unequal temperature, inasmuch as some of them must receive a greater, others a less quantity of radiant heat from the great stellary inclosure. If the earth, he continues, or any other large body, pass from a hotter to a colder region, it would not readily lose in the second all the heat which it has imbibed in the first region, but

* Ann. du Bur. des Long. 1834.