nearer to Chant's great circle. The great circle chart plot of Chant's and Pickering's great circles, giving a difference of longitude on the equator of 3°, supposes the true difference of this tangent and the trace of the meteors to be 2° or 8 min.,—which the writer supposes to be not unlikely. The distance Ontario Station to *Newlands* was computed as 4353 mi.; then the velocity would be about 9 mi/sec, which lies between the limits, 5 to 10 mi/sec, originally computed by Chant from duration estimates in Ontario.

The heights at points beyond the Ontario Station depend on the observed angular altitudes combined with the projected path in the neighborhood of the observer. The position of this projected path depends on the computer's theory as to its nature, which consequently affects the heights derived. The heights over the Atlantic would be:

Bermuda (Chant's circle) 79.6 mi., (Pickering's circle) 36 mi.

Bellusia and *Newlands*, Chant's circle does not fit the observed bearings of the meteors; using Pickering's circle, *Bellusia*, 45, *Newlands*, 14.

There seem to enter in too many uncertain or unknown factors to lead to a decision as to whether the bodies seen in Saskatchewan actually passed the other North American observers, Bermuda, and the ships. The time at Bermuda seems to be uncertain. The ships all give moments of apparition, but in "ship's time," with no specification of the noon meridian for ship's time. Consequently the time of passage cannot be got that way. It is not all impossible, and the writer is inclined to believe, with Davidson, that the objects seen in Saskatchewan were partly destroyed by atmospheric ablation, partly entangled in the deeper atmosphere over the equatorial bulge and sunk in the Atlantic; and that the objects which passed the equator were originally higher members of the stream or swarm of meteors, some of which may even have escaped from the equatorial bulge and got away again. Once away, perturbations due to the equatorial bulge and the moon would divert them so that they would never reappear.

SECOND NOTE ON PERSONAL EQUATION IN OBSERVING OCCULTATIONS.*

By EDWARD C. PHILLIPS, S. J.

The first Note on this subject was presented by the author at the Madison Meeting of the American Astronomical Society and an Abstract of it appeared in POPULAR ASTRONOMY, Vol. XXXV, page 491. That Note dealt with an experimental determination of the personal equation of two observers carried on at Georgetown College Observatory. The object of this present Note is to tabulate the results of

*Presented at the New Haven Meeting of the American Astronomical Society, December 29, 1927.