	Mercury	Venus	Earth
$eD_{\text{rel}} (T)$	$1142''.730 \pm .040$	$34''.472 \pm .006$	$103''.520 \pm .004$
$eD_{\text{rel}} (O)$	$1151.593 \pm .084$	$34.529 \pm .032$	$103.604 \pm .020$
$eD_{\text{rel}} (O-T)$	$8''.863 \pm .093$	$.057 \pm .033$	$.084 \pm .020$
Rel. Eff.	8.847	.059	.064
$D_{\text{rel}} (O-T)$	$43''.11 \pm .45$	$8''.4 \pm 4''.8$	$5''.0 \pm 1''.2$
Rel. Eff.	43.03	8.6	3.8

of Mercury is that derived by Clemence (1943), while the value for the Earth is a weighted mean of the determinations by Morgan (1945), Clemence (1943), and Duncombe (not yet published). The probable errors of the observed variations of Mercury and Venus are those given by their respective solutions, while for the Earth it is that derived from the probable errors of the three determinations mentioned.

The observed relativity effects followed by the theoretical values (Clemence 1947) are shown in the table, first containing the eccentricity as a factor, and then with the eccentricity removed. The size of the probable error of this effect for Venus is due to the small eccentricity of its orbit. The agreement of the observed excess motions of the perihelia with that predicted by the theory of relativity is within the probable error of the determinations. For the first time we have observational results accurate enough to detect the relativity effect in the motion of the perihelion of Venus.

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Edmondson, Frank K. The local standard of rest.

Nearly 21 years ago E. A. Milne (1935) published an important paper entitled "Stellar Kinematics and the K -Effect." The purpose of the present paper is to draw renewed attention to some of Milne's conclusions, and to justify the use of the "basic solar motion" derived by Vysotsky and Janssen (1951) as the correct reduction to the local standard of rest instead of the "standard" solar motion (18^h , $+30^\circ$, 20 km/sec).

Milne made two important points in his paper, only one of which seems to have been widely remembered. This is his conclusion that "whatever the velocity-distribution, there will be in general a non-zero K -effect, a non-zero systematic trend in transverse motions and 'double waves'

in longitude in the radial velocities and transverse velocities in any arbitrary plane; all the terms being proportional to the distance." Less widely remembered is the equally important conclusion that "a by-product of the investigation is that it is shown that when applying corrections for 'solar motion,' in order that the results may have simple physical interpretations, it is necessary to use the solar motion as given by the stars immediately surrounding the sun, and not that derived from a reduction of the motions of the stars under consideration." Milne calls this velocity the "local solar motion."

The solar motion as ordinarily defined is obtained from radial velocities and proper motions by means of a least-squares solution, the equations of condition being:

$$\begin{aligned}\bar{\rho} &= -X_0 \cos \lambda \cos \beta \\ &\quad - Y_0 \sin \lambda \cos \beta - Z_0 \sin \beta, \\ 4.74 \mu_\lambda'' &= \frac{X_0}{r} \sin \lambda - \frac{Y_0}{r} \cos \lambda, \\ 4.74 \mu_\beta'' &= \frac{X_0}{r} \cos \lambda \sin \beta \\ &\quad + \frac{Y_0}{r} \sin \lambda \sin \beta - \frac{Z_0}{r} \cos \beta,\end{aligned}$$

An extension of Milne's kinematic analysis to second-order terms (Edmondson 1937) gives the solar motion terms in the following form:

$$\begin{aligned}\bar{\rho} &= -S_1^0 \cos \lambda \cos \beta \\ &\quad - (S_2^0 - r^2 Q_1 \cos^2 \beta) \sin \lambda \cos \beta \\ &\quad - S_3^0 \sin \beta \\ 4.74 \mu_\lambda'' &= \frac{S_1^0}{r} \sin \lambda - \left(\frac{S_2^0}{r} - 3r Q_1 \cos^2 \beta \right) \cos \lambda \\ 4.74 \mu_\beta'' &= \frac{S_1^0}{r} \cos \lambda \sin \beta \\ &\quad + \left(\frac{S_2^0}{r} - r Q_1 \cos^2 \beta \right) \sin \lambda \sin \beta \\ &\quad - \frac{S_3^0}{r} \cos \beta.\end{aligned}$$

It is clear that if the coefficient Q_1 is larger than $1 \text{ km sec}^{-1} \text{ kpc}^{-2}$ the solar motion with respect to