The residuals from the two equations given above are not entirely free from systematic effects. If mean values are computed for 5 minutes’ intervals in right ascension, we obtain:

\[
\begin{align*}
12^h \quad 05^m & - \quad 09^m \quad -^{m}082 \quad (24) \\
12^h \quad 10^m & - \quad 14^m \quad -^{m}025 \quad (28) \\
12^h \quad 15^m & - \quad 19^m \quad +^{m}081 \quad (26) \\
12^h \quad 20^m & - \quad 24^m \quad -^{m}040 \quad (22) \\
12^h \quad 25^m & - \quad 29^m \quad -^{m}087 \quad (32) \\
12^h \quad 30^m & - \quad 34^m \quad +^{m}005 \quad (19) \\
12^h \quad 35^m & - \quad 39^m \quad +^{m}132 \quad (26) \\
12^h \quad 40^m & - \quad 44^m \quad +^{m}073 \quad (32) \\
12^h \quad 45^m & - \quad 50^m \quad -^{m}061 \quad (27)
\end{align*}
\]

If the residuals are plotted on a map, they show a considerable clustering of sign, but their number is too small to draw any further conclusion.

Addendum: The scale correction for the Yale magnitudes derived above does not agree with the results of a comparison with the photographic magnitudes of the Henry Draper Extension for 1040 stars with \( z \) between 8 and 78. The latter are based on magnitudes in Harvard Standard Regions. The differences (\( Y - H.D.E. \)) are essentially constant between the magnitudes 9 and 11, their mean value is \(-^{m}014\). If arranged according to \( z \) they show large and rapid systematic variations, which sometimes surpass a third of a magnitude.

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Note on the comparison by C. Payne Gafozschkin and S. Gafozschkin of Harvard Magnitudes in Selected Areas with the Cape Zone Catalogue,

by P. Th. Oosterhoff.

The results of this comparison have been published in Harvard Bulletin No. 901, 25. The authors divided the material in six spectral groups according to the classification by Becker and for each group computed the regression lines, which are given in their Table I. These regression lines intersect at \( H.S.A = 1^m 8 \) and \( C.a.p.e = 1^m 8 \) approximately, which means that \( H.S.A \) and \( C.a.p.e \) probably stand for \( H.S.A = 9^m 3 \) and \( C.a.p.e = 9^m 3 \), as is also indicated by the final equation on page 28. The point of intersection of the regression lines then becomes \( H.S.A = 11^m 1 \) and \( C.a.p.e = 11^m 1 \). This value \( 11^m 1 \) should therefore represent the mean magnitude of the stars used in the comparison, which seems quite reasonable.

The relation between the Cape and Harvard magnitudes within each group is then given by the bisector of the regression lines. The equations of Table II however do not represent the bisectors and they should be replaced by the following set:

\[
\begin{align*}
\text{Group} & & \text{Relation between Harvard and Cape} & \text{Number of stars} \\
B0 - B5 & (H - 9.3) = 1'006 (C - 9.3) - 027 & 134 \\
B6 - A5 & 1'000 & + 000 & 519 \\
A6 - F5 & 1'018 & + 065 & 294 \\
F6 - G5 & 1'041 & - 076 & 300 \\
G6 - K5 & 1'022 & - 033 & 544 \\
K6 - M & 1'101 & - 191 & 46
\end{align*}
\]

A possible colour equation should make itself felt in the constant term of these equations, but as the latter are also affected by the accidental errors, in the scale coefficient, the constant terms should be computed for equations in which the mean magnitude has been taken as zero point. Replacing therefore \( 9^m 3 \) in the above equations by \( 11^m 1 \), we find the following constant terms:

\[
\begin{align*}
\text{Group} & & \text{Relation} & \text{Number} \\
B0 - B5 & 1'006 (C - 9.3) - 027 & 134 \\
B6 - A5 & 1'000 & + 000 & 519 \\
A6 - F5 & 1'018 & + 065 & 294 \\
F6 - G5 & 1'041 & - 076 & 300 \\
G6 - K5 & 1'022 & - 033 & 544 \\
K6 - M & 1'101 & - 191 & 46
\end{align*}
\]

Evidently the conclusion that no appreciable colour equation exists remains intact. The third group is rather discordant, although it contains nearly 300 stars. Its regression lines intersect at magnitude \( 10^m 6 \), whereas the points of intersection for the other groups are confined between \( 11^m 1 \) and \( 11^m 3 \).

If the mean is taken of the corrected equations of Table II, the relation between Harvard and Cape magnitudes is given by the formula:

\[
\]

This equation takes therefore the place of that given at the bottom of page 28, in which the minus sign of the scale coefficient is a misprint.

It is not likely that the change in this formula will materially influence the corrections depending on galactic latitude and right ascension, which are given in the Tables IV and V, but the difference in zero-point between HSA and HSR given on page 29 as \( -^{m}13 \) is reduced to \( -^{m}08 \).

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