The exceptionally interesting cepheid variable, HD 223065, which has the shortest known period, as was discovered by Eggen\footnote{O. J. Eggen, P.A.S.P. 64, 31, 1952.}, was observed from July to October 1952 with the photo-electric wedge-photometer at the Leiden Southern Station.

The observations cover 101 cycles of light-variation, obtained on 21 nights. They were made in one colour, with as filter BG 1 (2 mm) + GG 13 (2 mm), which gives a colour response not far from photographic. The detailed study of the light-curves will take considerable time. The periods, however, have been determined already and it was thought in the interest of future observations to publish these in advance. The light-variation depends on two periods. The primary period, $P_o$, is found from the epochs of ascending branches as:

$$P_o = \sigma^d.05496420 \pm \sigma^d.00000005 \text{ (m.e.)}.$$

The variation of the amplitude of the light-curves gives the secondary period, $P_b$, for which is found:

$$P_b = \sigma^d.192836 \pm \sigma^d.000002 \text{ (m.e.)}.$$

This variation is caused by interference of two oscillations, with periods $P_o$ and $P_1$, which are related to $P_b$ by:

$$\frac{1}{P_b} = \frac{1}{P_1} - \frac{1}{P_o}. \tag{1}$$

From (1) we derive:

$$P_1 = \sigma^d.04277268.$$

The heliocentric Julian Day of the moments when the ascending branch reaches the median magnitude is given by:

$$J.D. = 2434200.0389 + \sigma^d.0549642(E + \Delta \varphi), \tag{2}$$

where $\Delta \varphi$ is the periodic phase shift caused by the second period. In this case the median magnitude is defined as the magnitude which is crossed by the ascending and descending branches with a time difference of half a period.

\begin{figure}
\centering
\includegraphics[width=0.8\textwidth]{figure1}
\caption{The phase shift $\Delta \varphi$ is given in Figure 1 as a function of $\psi$, the phase of the secondary period. Here $\psi$ has been computed as: $\psi = (J.D. - 2434200.1039) 5^{-1}.18575$. (3)}
\end{figure}

\begin{figure}
\centering
\includegraphics[width=0.8\textwidth]{figure2}
\caption{How the amplitude of the light-curves varies during a secondary cycle is shown in Figure 2, where the}
\end{figure}

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