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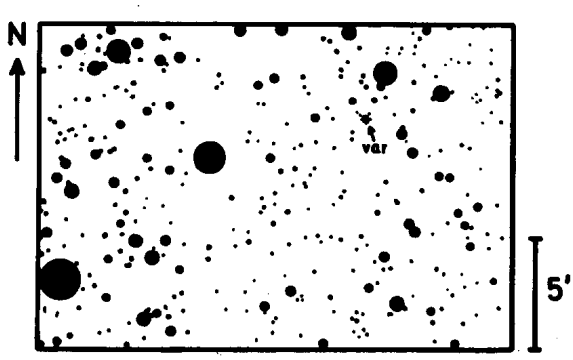
NOTE ON V381 SCORPII

The latest minimum of the long period eclipsing binary V381 Scorpii occurred in 1961/62. The photometric elements derived by Henrietta Swope (1936) are:

$$\text{Min} = \text{J.D.}2424574 + 6475\ E;\ D = 670^d,\ d = 300^d.$$

In order to check the prediction for 1962, at the request of Dr.T.Herczeg, 13 exposures of the region were kindly secured by Dr. E.Geyer, using the 10-inch Metcalf Telescope of the Boyden Observatory. The plates (103a-0) represent the time interval May-June 1962 (J.D.2437795-2437845) and should correspond to the end of the egress phase, the 4th contact being predicted for J.D.2437859.

An inspection of the plates shows,however, that the earlier component must have been still completely eclipsed at that time or, at most, just passed the 3rd contact. The variable appears slightly fainter than star No.46 in M6 (Catalogue of Rohlfs at al., 1959), having B = 15.8, i.e. V 381 Scorpii was very nearly at its minimum level,In spite of the considerable scatter there is a tendency of the variable growing brighter towards June,by perhaps 0.3 magn. The 3rd contact may have taken place about J.D.2437820.



This means that the ephemeris was sensibly in error, with O-C $\sim 140^d$. A correspondingly improved value of the period amounts then to $P = 6545^d$ which turns out, in fact, to be compatible with the earlier measurements, too. The epoch of mid-eclipse, as given by Miss Swope, is rather well defined by the best observed minimum of .1926.

A chart of the immediate vicinity of V381 Scorpii is also added here because of the very crowded star field around. The brightest star at the left (eastern) edge is CD -35°11934; the variable is indicated by an asterisk.

Hamburg, August 8, 1968.

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References:

H.H.Swope: Harvard Bull. 902, 6, 1936
K.Rohlfs, K.W.Schrick and J.Stock: Z.Astrophys. 47, 15, 1959.