Note on G. C. 17919, a probable member of the Ursa Major cluster

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their presence can be proved in the following manner. A solution of the period from the six epochs given above yields:

$$^{d}\cdot 2678082 \pm 9 \text{ (m.e.)}$$

Phases were then computed with the reciprocal of this period. The mean error of a single observation, derived from the differences in magnitude between observations following each other in phase, was then found to be $\pm\ ^{m}\cdot 050$, as against the internal mean error $\pm\ ^{m}\cdot 034$ computed above.

A discussion of these epochs in connection with the existing material on this interesting variable has been given by Dr. L. PLAUT in the preceding article.

Note on G.C. 17919, a probable member of the Ursa Major Cluster, by *G. van Herk.*

W. M. SMART has recently[1]) rediscussed the proper motions of the stars belonging to the UMa Cluster and in a subsequent note[2]) the star G.C. 17919, suggested in 1920 to be a member of the cluster[3]) by Prof. E. HERTZSPRUNG, was accounted for. At the request of Prof. HERTZSPRUNG I have determined a new position of this star with the meridian circle. The observations were made differentially with regard to the G.C. system.

The mean result of five nights is:

$$\alpha_{1939.0} : 13^{h}11^{m}07^{s}\cdot 404,\ \delta_{1939.0} : +57^{\circ}01'52''\cdot 25,\ \text{ep.: } 1939\cdot 38$$

with mean errors of $\pm\ 0''\cdot 15$ in $\alpha \cos\delta$ and $\pm\ 0''\cdot 20$ in δ. These mean errors have been derived from 138 observations of 34 stars with $\delta > 50^{\circ}$. The above new position combined with the mean position of the G. C. yields the proper motion given in the second line of the table below, the first line of which contains the G. C. results as used by SMART. These latter values are nearly identical with the new ones.

I have tried to obtain another determination of the proper motion with the use of the position from the *Astrographic Catalogue*[4]), where the epoch of observation is 1913·36. In 1939, August 25, I made three exposures on a plate with the 33 cm refractor (1 mm = 40″), with a grating in front of the objective. The plate was measured by Mr. PELS. The mean error has been computed from the residuals of the 15 comparison stars, which were situated in the immediate neighbourhood of our object. The results are given in the third line of the table. In the last line I have given the results of the repetition of the A. G. Catalogue at Yale[5]). The Yale proper motion in declination is quite different from that of the G. C. and consequently also in position angle. If we omit SCHLESINGER's correction of $+\ ^{s}\cdot 1$ to the R. A., the value of the position angle would become 95°·6.

Source	$100\ \mu_\alpha \cos\delta$	m.e.	$100\ \mu_\delta$	m.e.	p.m.	m.e.	p.a.	m.e.	weight
	″	″	″	″	″	″	°	°	
G. C.	+ 11·0	± 0·57	— 3·5	± 0·49	11·5	± 0·56	107·6	± 2·4	1
G. C.$_{mean}$ – Lei	+ 11·1	± 0·51	— 3·9	± 0·57	11·8	± 0·52	109·3	± 2·8	0·75
Vat–Lei	+ 14·5	± 2·3	+ 2·5	± 2·3	14·7	± 2·3	80·2	± 9	0·07
A. G. Yale	+ 11·1	± 2·1	— 0·9	± 1·8	11·1	± 2·1	94·6	± 9	0·07
						mean:	106·8	± 1·8	
position angle corresponding to membership of the UMa Cluster:							99·9		

In taking the mean of the four determinations, I neglected the following facts: the fourth value is not entirely independent of the first and the second. The Yale proper motion is in the system of the N. F. K., whereas the first two are in the G. C. The third proper motion is only relative to stars of about the 11th magnitude. All these facts are of little influence on the derivation of the proper motion. The conclusion of SMART that the star G. C. 17919 is a probable member of the UMa Cluster remains unchanged.

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1) *M. N.* **99**, 441, 1939.
2) *M. N.* **99**, 700, 1939.
3) *B.A.N.* **1**, 86, 1920; **6**, 60, 1930.
4) *Catal. Astr. Vat.* **8**, 1926.
5) *Transactions Yale* **7**, 1930.