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CRANE OBSERVATORY
WASHBURN UNIVERSITY OF TOPEKA
Topeka, Kansas

October 4, 1963

To: Chief of Naval Research
Office of Naval Research
Washington 25, D. C.

From: R. S. Alexander, Director
ONR Research Project
Washburn University of Topeka

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Proj. NR 046-185

Subject: Final Report, Fiscal Year 1962-1963.
Grant ~~XXXXXXXXXX~~ Nonr (G)-00039-62
6 Photoelectric Photometry of Eclipsing Binary Systems.

Between July 1, 1962, and June 30, 1963, 1,294 observations of eclipsing binary systems were obtained on 24 nights, 648 of these were in yellow light and 646 in blue light. The systems observed were EO Aurigae, 497 yellow and 497 blue observations, BD + 27° 3952, 67 yellow and 67 blue observations, UZ Leonis, 24 yellow and 24 blue observations and V839 Ophiuchi, 60 yellow and 60 blue observations. The observations were made by two advanced students in the department of physics and astronomy, Mr. Robert Gerardy and Mr. Willard Black. Reduction of the observations, plotting the ensuing light curve, and the numerical computational processes were carried out by Mr. Robert Gerardy and Miss Roberta Vogt. The observations of EO Aurigae indicate a drastic period variation and it is planned to continue the study of these observations in an attempt to determine the variation of period.

On three nights, observations of certain standard stars in the Pleiades cluster were made to determine the constants required to convert our measurements from the photometer magnitude system to the UBV magnitude system. As it turns out the telescope optics-photometer combination has relatively good characteristics and the corrections to the UBV magnitude system from the instrumental magnitude system are relatively small.

Observations of V502 Ophiuchi completed under a former grant were reduced to the International UBV magnitude system. Additional computational work was then completed on the orbit of V502 Ophiuchi and this material is in manuscript form for publication.

During the summer of 1962, a new wide angle eye piece was installed in the finder section of the photometer and the optical system was modified for more efficient illumination of the limiting aperture.

Respectfully submitted,

10 by *R. S. Alexander*
R. S. Alexander, Director
ONR Research Project

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