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THE VARIABILITY OF BV 516

The eclipsing binary BV 516 (HD 124195) was given the following ephemeris by Schöffel and Köhler (IBVS no.77, 1965):

$$\text{Min. I} = \text{JD } 2438524.410 + 1^{d}.49008$$

Photoelectric observations of BV 516 were made by the present author at the Mount John University Observatory in New Zealand on 10 nights during April, May, June, and July of 1966. The star HD 122844 was used as a comparison. Four times of minimum light were obtained. Combining these with the previously published times of minimum light, the following ephemeris was obtained:

$$\text{Min. I} = \text{JD } 2438524.4069 + 1^{d}.490096\ E.$$
$$\pm\ 96 \quad \pm\ 20\ \text{p.e.}$$

The individual times of minimum light were as follows:

Hel. JD	E	O-C	Method	Obs.*
2438524.303	0	$-0^{d}.0139$	pg	S, K
530.340	4	−0.0272	pg	S, K
548.291	16	+0.0426	pg	S, K
2439262.0070	495	+0.0025	pe	Ch
264.9801	497	-0.0046	pe	Ch
282.8659	509	0.0000	pe	Ch
291.8084	515	+0.0019	pe	Ch

*S, K = Schöffel and Köhler; Ch = Chambliss

In New Zealand about 800 photoelectric observations of BV 516 were obtained in yellow and in blue light (400 in each color). BV 516 is a Beta Lyrae type eclipsing binary. The primary minimum is about $0^{m}.56$ deep in yellow light, and the secondary is about $0^{m}.25$ deep in the same color. The respective values for blue light are $0^{m}.58$ and $0^{m}.24$. However, large fluctuations were found in the light curve, particularly in the portions outside of the eclipses. These variations could be either intrinsic, or else, due to variability in the comparison star, HD 122844.

In July of 1969 photoelectric observations were made at the Cerro Tololo Inter-American Observatory in Chile of the star HD 122844 and a check star, HD 119727, to see if the former might be variable. No variations were found. Thus it appears that the large scatter found in the observations of BV 516 is due in part to intrinsic fluctuations in the light curve of BV 516.

The following magnitudes and colors were obtained for the stars mentioned:

	V	B-V	U-B	Spectrum
BV 516 (at max.)	5.96	+0.10	...	B9
HD 119727	6.45	+0.12	+0.09	A0
HD 122844	6.17	+0.25	+0.18	A3

The spectral types are those given in the Henry Draper Catalogue.

Further photoelectric observations will be necessary in order to determine the orbital elements of BV 516 and the nature of the fluctuations in its light curve.

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NOVA IN SAGITTARIUS

The Nova, reported in I.A.U. Information Bulletin on Variable Stars, Number 389, is in the Perth Astrographic Zone. The star is not shown on plates of the area exposed in 1902, 1904, 1910 and 1914, with limiting magnitude 13^m to 14^m. It is shown on a repeat plate exposed 1969 August 26.523 U.T. By visual comparison with other stars on the plate, which have magnitudes in the Yale Catalogue, we estimate a photographic magnitude of $9^m.7 \pm 0^m.1$.

November 18, 1969

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