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TON S 120: A NEW VERY SHORT-PERIOD ECLIPSING BINARY

During the photoelectric UBV survey of faint U Gem-type and nova-like stars it was found that Ton S 120 /$\alpha = 23^h47^m.5$, $\delta = -26^\circ 39'$, 1950.0/ is an eclipsing binary with a period of 3^h28^m. This star was listed by Chavira /1958/ as a "decidedly violet" object in his survey of blue stars near the South Galactic Pole; its galactic coordinates are: $l^{II} = 33^\circ$, $b^{II} = -76^\circ$. Greenstein /1966/ in his spectroscopic investigation of faint blue stars near the galactic poles found it to be a strong emission-line object resembling a U Gem star or an old nova with very broad emission lines of H, HeI and HeII.

The present photoelectric observations were secured in July and September 1966 on the Mount Wilson 100-inch telescope with the offset photometer and pulse counting system. The light-curve of Ton S 120 resembles that of Nova DQ Her /Walker 1956/ but with much deeper eclipses. The eclipse is partial, its depth is 2.5 mag., its duration is about 30 minutes. Secondary eclipse has not been detected. The UBV measurements outside eclipses are V=15.6, B-V=+0.1, U-B=-0.8 mag. The preliminary light elements are: primary minimum Hel. JD 2439326.981 + $0^d.144623$ E . The star is not known to undergo any outbursts that have been recorded in the available astronomical literature.

September 29, 1966
Mount Wilson and Palomar Observatories
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