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MINIMA OF THE ECLIPSING VARIABLE U SAGITTAE

Three heliocentric times of minimum light of the eclipsing variable U Sagittae have been observed in the ubvy photometric system in the years 1972-1973. BD+19°3976 (7.9,A0) was employed as the comparison star. The observed epochs of minimum light were obtained by "folding" the photometric observations on the descending branch onto the observations of the ascending branch of the light curve. The observations normally covered about half the light curve of primary minimum (i.e., halfway between first and second contact to halfway between third and fourth contact).

The following table lists the observed minima:

| Minima (hel.) | Minima (hel.) | |
|-----------------|-----------------|-----------------|
| vby | u | $T_u - T_{vby}$ |
| JD 2441514.8172 | JD 2441514.8179 | +0.0007 |
| 1896.8270 | 1896.8274 | +0.0004 |
| 2207.8444 | 2207.8447 | +0.0003 |

Column one lists the average minima observed in the violet, blue, and yellow filters (vby). In all these minima the times of minimum determined from observations in the three colours were in good agreement. A typical residual is ± 0.0001 . The light minima observed in the ultraviolet (u), however, were always found to occur later (column two). The differences between the time of the observed minimum in the ultraviolet (T_u) and the mean time observed in the other three colours (T_{vby}) are given in the last column. The average difference, 0.0005 , corresponds to a delay of about 43 seconds. Although this time delay is small, we are confident that it is real because the c_1 index ($c_1 = (u-v) - (b-v)$) which involves the u observations, exhibits a different behaviour at second contact compared to third contact. This difference is not observed in the m_1 index ($m_1 = (v-b) - (b-v)$) which does not include the u magnitude in its definition. There appears to be more ultraviolet light on the descending branch of the light curve than on the ascending branch at comparable phases (as determined from the observed time of minimum from the visual, blue, and violet observations).

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