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PERIOD INCREASE IN RW PERSEI CONFIRMED

The purpose of this note is to present a new time of primary minimum for the Algol-type eclipsing binary RW Persei which confirms the period increase suspected by Baldwin (1974).

The time was derived from differential UBV photoelectric observations obtained at Dyer Observatory on four different nights in 1970. One of these nights was on the falling branch, the other three on the rising branch. There was relatively little overlap, and this occurred only about $0^m.3$ down from maximum light; thus the derived time is in principle vulnerable to any asymmetry which might have been present in the light curve. With the tracing paper method the time of minimum was determined to be JD(hel.) = 2,440,898.3330 ± $0^d.0005$. Here the error is that indicated by examining the three colors separately, but the real uncertainty could be somewhat more.

The O-C residual based on the ephemeris

$$JD(\text{hel.}) = 2{,}429{,}217.587 + 13^d.198454\ E$$

is + $0^d.114$ at E = + 885. This value fits very nicely in the O-C diagram of Baldwin and thus confirms the suspected period increase, which is supposed to have occurred around 1960. Baldwin's suggested provisional new ephemeris

$$JD(\text{hel.}) = 2{,}429{,}217.274 + 13^d.19894\ E$$

yields an O-C residual of only $-0^d.003$ at E = +885, which is not large enough to call for a refinement of his period at this time.

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References:

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