1982JAVSO..11...35D

AW SAGITTARII - A NEGLECTED VARIABLE

WENDY BANTA DAVIE
Maria Mitchell Observatory
Nantucket, MA 02554

Abstract

AW Sagittarii, not observed since its discovery in 1904, has been identified and its variation has been confirmed. A finding chart is presented. Attempts to find a period are unsuccessful, largely due, it is thought, to the proximity of another star, also probably variable.

* * * * *

The variability of AW Sagittarii, $\alpha = 18^h\ 02^m\ 24^s$, $\delta = -23°\ 04'.8$ (1900), was discovered in 1904 by Henrietta Leavitt (Pickering 1904), who found it faint on 2 out of 18 plates. No further published work has appeared, and no finding chart has been published.

After Dr. E. Belserene of the Maria Mitchell Observatory had identified the variable with the help of Harvard plates, magnitude estimates were made on Maria Mitchell plates. About a third of the way through the task it was discovered that a close companion (15"E and 2"S) is also variable. It had been used as a comparison star, so the data had to be checked over with this in mind. Figure 1 is a finding chart of AW Sgr.

The study confirmed the variability of AW Sgr, but no periodicity was found. Several promising periods found in computer period searches of part of the data failed to fit the other parts of the data.

The photographic range of AW Sgr is from about magnitude 15.0 to fainter than magnitude 16, whereas Miss Leavitt gave magnitude 14.0 to magnitude 15.1. The distribution of the magnitude values still suggests Algol type variability, the type suggested in the discovery announcement. Some 95 magnitude values are from plates whose limiting magnitude is 16.0 or fainter. An error curve can be fitted to the bright half of these data (magnitude 15.3 and brighter) if the mean is taken to be magnitude 15.35 and the mean error is 0.29 magnitude. This curve predicts two plates at magnitude 16.0 or fainter, but 12 are observed.

Further work should be done on deep, wide scale plates, and the variability of the companion star should be watched.

REFERENCE

Pickering, E. C. 1904, Circ. Harv. Coll. Obs., Number 91.

© American Association of Variable Star Observers • Provided by the NASA Astrophysics Data System

1982JAVSO..11...35D

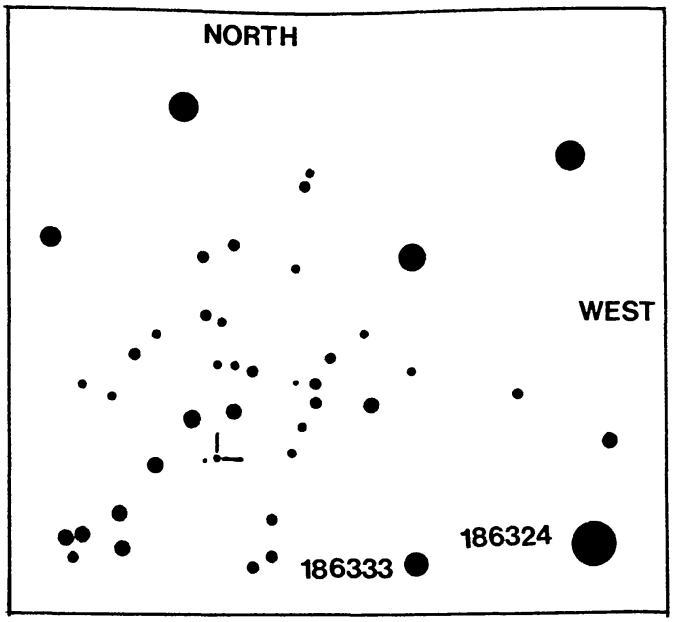

Figure 1. Finding chart for AW Sgr, α = $18^h\ 02^m\ 24^s$, δ = -23° 04.'8 (1900). Two SAO stars are identified, SAO 186324 and SAO 186333.

© American Association of Variable Star Observers • Provided by the NASA Astrophysics Data System