ON THE NATURE OF THE CATACLYSMIC BINARY V 2051 OPHIUCHI

According to the literature V 2051 Oph belongs to the six cataclysmic binaries (with late type secondaries) known to have orbital periods below 90 minutes. Two of them are known as of AM Herculis type, three are dwarf novae with very long cycle lengths, but the long time photometric character of V 2051 Oph has not been fully investigated as yet. Sanduleak and Bateson report of unspecified brightness changes between $V \approx 13\overset{m}{.}0$ and the Palomar O print B value, which is $15\overset{m}{.}4$ in Vogt's system (Publ. Variable Star Sect. RASNZ no. 8) rather than $16\overset{m}{.}5$ estimated by Sanduleak (Inf.Bull. Variable Stars No. 663). A number of high speed photometric series yielded eclipsing light curves with periods near 89.9 minutes and a mean brightness outside eclipses of $V \approx B \approx 15\overset{m}{.}0$.

I checked the region of the variable on about 400 blue sensitive plates of the Sonneberg Sky Patrol taken from 1957 to 1983 by H. Huth of the field centred at 17^h, -20°. Because of the very low altitude above the horizon the limiting brightness of most of these plates is not better than $11\overset{m}{.}5$ to 13^m.

The object is not visible on any exposure. That means that two alternative explanations are possible: Either V 2051 Oph does represent a dwarf nova with large range outbursts, but has an extremely long cycle length (several years) so that eruptions can easily be missed even on extented plate material, or the relatively small variations mentioned above and occuring below the threshold of our exposures are due to an AM Herculis type for which, apart from eclipses, an amplitude of about 2.5 mag is typical. Both possibilities would not be in contrast with the character of the other five cataclysmic binaries of similar orbita periods.

W. WENZEL

Sternwarte Sonneberg
Zentralinstitut für Astrophysik
der Akademie der Wissenschaften
der DDR