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**DISCOVERY OF THE NATURE OF THE  
VARIATION OF HD 191706**

The eighth magnitude A0V star, HD 191706, was reported to be variable by Vető, Schöneich, and Rustamov(1980). They had selected it as a comparison star for the study of the Ap star, HD 191980. They speculated that it might be an eclipsing binary of period 25 days. Since we were also observing that Ap star, we decided to determine the nature of the variation of HD 191706. Our comparison star was one they used, HD 191879.

We observed with the 16 inch reflecting telescope at Braeside Observatory near Flagstaff, Arizona, utilizing the photoelectric photometer with UBV filters, beginning in June 1992. The first hint that it might be a binary was obtained in early July, 1992. In May 1993, we obtained our first complete eclipse on JD 2449128. We determine a period of 1<sup>d</sup>035600. Thus, the period is not 25 days, but is close to 1.04 days, which means that the whole eclipse can be observed from any one location for about two nights every twenty five days. This was the case, because, in June, in Arizona, the star did not rise high enough for photometric study until about 11:00 p.m. and the rest of the night was required to record all of the minimum. The eclipse appears to be total for about 1.87 hours, but the eclipse is very shallow, about 0.1 magnitudes in V. The observations of our first minimum can be seen in Figure 1.

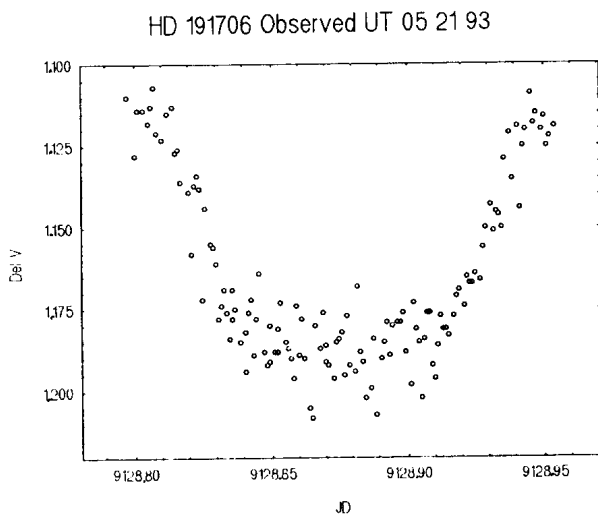


Figure 1.

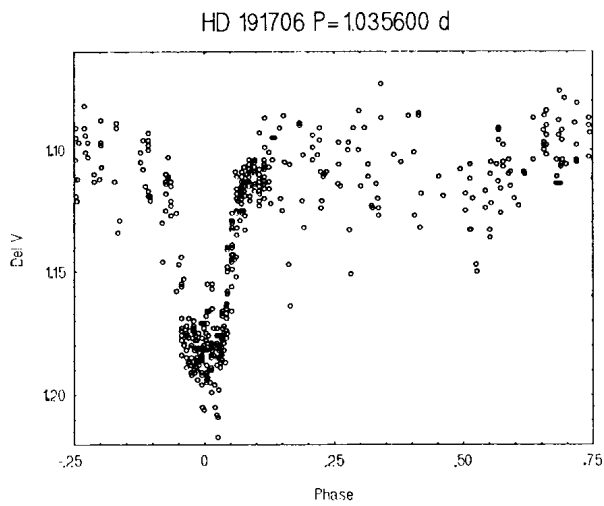


Figure 2.

There is some indication that the period may be twice the one quoted, or 2.071200 days. That is, on successive nights the depths of the minima seemed slightly different, which would indicate the presence of primary and secondary minima of almost identical depth. However, the scatter in these observations is great enough so that we cannot establish a significant difference between the possible different depths of the minima.

We propose the following ephemeris:

$$\text{JD Hel Min (V)} = 2449128.877 + 1.035600 \times E \\ \pm .000013$$

A phase diagram with that period is shown in Figure 2.

Edward W. BURKE, Jr.  
King College  
Bristol, TN 37620

Barry ETTER  
King College  
Bristol, TN 37620

Robert FRIED  
Braeside Observatory  
Flagstaff, AZ 86002

T. J. KREIDL  
Lowell Observatory  
Flagstaff, AZ 86001

Reference:

Vetř, B., Schöneich, W., and Rustamov, Y. S.: 1980, *Astron. Nach.*, **301**, 317