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SHOULD WE REALLY FORGET DO Dra?

In a recent paper (Patterson and Eisenman, 1987) it is argued that the HEAO-2 X-ray source E1140.8+7158, recently identified with a 16th magnitude cataclysmic variable, is in fact identical with the variable star YY Dra (discovered by Tsesevich, 1934, and classified by him as an Algol-type star with a period of 4.^d21123). So Patterson and Eisenman consider the decision taken by us (Kholopov et al., 1985) to assign a new variable star name (DO Dra) to the dwarf nova to be erroneous.

The problem of YY Dra is really a complicated one; our attempts to get additional information from Prof. Tsesevich have been described elsewhere (Samus, 1988 ab). Evidence for the identity of E1140.8+7158 and YY Dra presented by Patterson and Eisenman is surely of considerable interest and will be taken into account in our work. However, this evidence is not absolutely convincing (this is discussed in some more detail below), and we feel that some misunderstanding exists about principles of assigning (or not assigning) new names to variable stars. In fact, in dubious cases we always tend to not to assign a new name to a star not sufficiently studied and not easily identified on the sky if a possibility exists of its being identical with a better studied and readily identified named variable star. On the contrary, we tend to assign a new name to a well-studied and easily identified star if there is a grounded possibility of its being not identical with a poorer studied and not readily identified star.

Now, the main reasons for Patterson and Eisenman's belief that the X-ray source and YY Dra cannot be different stars are of statistical nature. It is well known that such arguments are valid only a priori, and if it turns out that the improbable case of YY and DO Dra being not identical does take place in reality, any such argument will be of no use. Moreover, some of Patterson and Eisenman's points of argument could be criticised. The incidence of variable stars at high galactic latitudes is in fact the incidence of known variable stars, and the completeness at these latitudes may not be good. We also would recommend, when discussing the number of bright Algols in the GCVS, to consider also "E", not only "EA" stars.

Finally, we agree that Tsesevich could probably give a wrong position; quite obviously his magnitudes could be too bright (many similar cases are known in the publications of the 30s). However, an active researcher of variable stars would never take a dwarf nova (almost always in minimum light!) for an Algol star (almost always in maximum light!) and never find a period with many decimals unless it is at least an alias period.

To conclude, we do not recommend to forget DO Dra, and we do not recommend to forget YY Dra, either. If one really wants to forget something, it would be better to forget YY Dra until it is proven that DO Dra and YY Dra are the same, or until the real YY Dra is found. As a group responsible for the names of variable stars we are very much interested in avoiding confusion and strongly recommend to use the name DO Dra for E1140.8+7158.

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