

VARIABLE STAR OBSERVATIONS, LIST No. 2

By Rev. CHARLES E. DEPPERMAN, S. J.

INTRODUCTION

This list gives the result of observations of variable stars from October 1930 through February 1931, taken in accordance with the program outlined in "List No. 1." There is an unfortunate hiatus in observations between the end of "List No. 1" and the beginning of "List No. 2." The reason is to be sought, partly in the long rainy season at Manila, partly in the writer's desire to await the judgment of the A. A. V. S. O. on the quality of the earlier observations before undertaking the labor entailed in a renewal of the project.

The plan is to observe as many long period variables as convenient, once every two weeks during the good season, once every month if possible during the rainy season. The present list of observations includes the best season of the year, and it will be seen that the program has been quite well adhered to, even though observations were rarely made while the moonlight was strong. Though the number of clear nights has been quite satisfactory, still as has already been explained in our previous publication, the sky is generally unsteady and rather washed-out in appearance, never permitting the theoretical visibility attainable to be reached.

All observations were taken by the author himself, using the instrument and the eye-piece already described in "List No. 1."

I. VARIABLES USED

They are almost without exception taken from the Atlas Stellarum Variabilium (ASV), Series I-III, VI and VII. A few stars were taken from the AAVSO charts.

II. METHOD OF ESTIMATION

After much trial, the writer has settled down to the following method: If the variable appears at times equal, at times just a trifle less than the comparison star in brightness, it is recorded " $=$ or $1 <$;" similarly if at times the variable appears equal, at times just a trifle brighter than the comparison star, it is recorded " $=$ or $1 >$;" if the variable is just *certainly* greater or less than the comparison star, it is marked " $1 >$ or $1 <$ " respectively; similarly for the greater grades. The writer finds that he with difficulty judges a difference of more than two grades on this scale. For stars about the tenth magnitude, the "grade" for the writer appears to be about 0.2 mag. For very faint and for very bright stars, the grade is more variable. Due to the changing visibility, even at times during a single night's observations, a closer determination of the grade seems inadvisable.

Unless a comparison star near at hand almost equal to the variable was found, two or more comparisons were made, preference being given to those stars nearer the variable, since they demand less reliance on memory of brightness.

At the end of each month, the previous month's observations were sent to the AAVSO for comparison with their charts, and in return a note was kindly forwarded by Mr. Leon Campbell as to what observations needed checking. Such observations in the following list are prefixed with an asterisk as a warning sign. There seems to be some slight evidence of a Purkinje effect, and the writer will welcome any further evidence that this is the case, and also any evidence of seemingly apparent errors in his observations.