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ONE NEW AND FOUR UP-DATED VARIABLE STARS

Among the results obtained by the summer students at the Maria Mitchell Observatory are the up-dating of observations of three long period variables and one RR Lyrae type.

V734 Cygni was estimated by Miss Karen Kwitter on over 1280 Nantucket plates taken between 1916 and 1971. The best constant period she was able to obtain, 310 days, showed pronounced systematic deviations of observed from computed times of maximum. By fitting a cosine term to the deviations, I find the following relation to hold over the 68 cycles represented:

$$\text{Max} = \text{JD } 28590 + 310E - 5.5 \cos 6^\circ.8 (E-16).$$

MM Sgr was rediscovered by Miss Kwitter with the Rodman Blink Microscope. On the basis of 640 observations on Harvard and Nantucket plates dating back to 1928, she was able to improve the period given in the General Catalogue of Variable Stars (1970 ed) from 203 to 202.3 days.

NW Sgr was similarly rediscovered by Miss Esther Hu, who made estimates of its brightness on 440 plates 1957-71, but did not attempt to verify the period. I find that her observations, embracing 32 cycles, satisfy both the 1948 zero point (J.D.32710) and period of 161.5 days given in the General Catalogue so precisely that it almost seems wrong to classify the star as semi-regular!

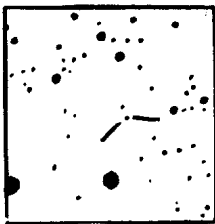
S Comae is an RRab type star that has been suspected of having a changing period. Miss Pamela Bonnell redetermined the period from 100 Nantucket plates taken 1964-71 and one earlier plate taken in December 1934. She obtains,

$$\text{Max} = \text{JD } 40654.641 + 0^{\text{d}}.5865907 E$$

This differs by only $6^{\text{d}}.10^{-7}$ from the period given in the General Catalogue; however, the new and the previously published epochs of maximum are more consistent with the new period. The new observations give no indication that the period is changing.

A New Variable at $18^{\text{h}}38^{\text{m}}24^{\text{s}}, -20^{\circ}22'.2$ 1900, mag. 14.2-15.5 pg,
which I had discovered on Harvard plates, is
type RRab. In 1970 Miss Linda Lucignani
examined it on 114 Harvard and 355 Nantucket
plates for 1924-70. From her magnitude esti-
mates I deduce,

S



Max = JD 33858.392 + 0^d5633812 E.

The chart is approximately 10'x10'.

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