

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 952

Konkoly Observatory
Budapest
1974 December 13

A NEW VARIABLE STAR IN M13

Two bright stars in the globular cluster M13 = NGC 6205 have recently been suspected by Russev (Astr. Zh. 51, 122, 1974) to vary in brightness. The two suspected variables are stars 414 and 973 in Ludendorff's catalogue (Publ. Potsdam Obs. 15, no. 50, 1905), the corresponding Kadla (Iz. Pulkova Obs. 24, 92, 1966) and Arp (Astr. J. 60, 317, 1955) numbers being K444 = Arp III-56 for L414 and K544 = Arp I-48 for L973. Both of the stars are bright red giants with $B-V \approx 1.5$ and therefore could be possible members of the semi-regular class of cluster variables about which little is known.

We have investigated the variability of these two stars on the plates of M13 at our disposal. Our methods for testing the reality of the variability were the same as those used previously (IBVS 798, 1973; IBVS 849, 1973). Briefly, the B magnitudes of the two suspects were determined in relation to a sequence of comparison stars using a Becker type iris photometer. As a control, two non-variable stars close to and of approximately the same brightnesses as the two suspects were also measured and were reduced in the same manner as for the possible variables.

We found no evidence that L414 varied during the three years covered by our observations. The magnitudes from the 56 plates were distributed in roughly Gaussian fashion about the mean value of 13.65 with a dispersion of 0.05 mag. Our mean value agrees well with the B magnitude given by Kadla. The dispersion in the measures is identical to that found for the two control stars (as well as in agreement with the results found in our previous investigations using the same plate material) and thus can be entirely explained as due to random measuring errors. We conclude that within the accuracy of our measures L414 does not vary.

Measurements of L973 are difficult due to the presence of two close companions about three magnitudes fainter, and some of our measures have probably been affected by these stars. Nevertheless, our observations indicate that L973 definitely varies over a range of about 0.4 magnitudes. Our mean B of 13.50 differs by 0.12 mag. from Kadla's value, while the histogram of the measures is non-Gaussian with a dispersion of 0.14 mag., significantly greater than that for the other stars. The available observations can be approximately represented by a period near 39^d but the light curve shows the irregular behavior characteristic of semi-regular variables. The variations of L973 for the three years covered by our plates is shown in the figure. Variable stars with periods of the order of 40^d are very rare in globular clusters and further studies of this star would be worthwhile.

The details of our studies of the M13 variables will be published elsewhere. We wish to thank M. Ibañez for permission to re-reduce his measures of L414 made for another purpose and the U.S. Naval Observatory for the observing time during which the plates were taken.

FRANCISCO FUENMAYOR
Facultad de Ciencias
Univ. de Los Andes
Mérida, Venezuela

WAYNE OSBORN
Inst. Venezolano de Astronomía
Apartado 264
Mérida, Venezuela

