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ON THE LARGE-SCALE VARIATIONS OF MV LYRAE

A deep minimum of MV Lyrae was detected by Romano and Rosino on Asiago plates (1). I therefore inspected our ~~homogeneous~~ series of sky patrol plates of the interval August 1956 to June 1980 ($n=429$) and the longer focus plates of the field R Lyrae, taken with the astrographs 17/120 cm, 40/160 cm and 40/190 cm essentially between 1964 and 1967 and sporadically up to 1979 ($n=115$). The patrol plates in general cover the time interval mentioned above without marked seasonal gaps.

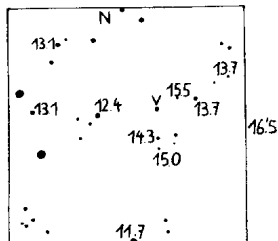
Our findings can be summarized as follows:

1. The irregular fast changes (occurring from night to night) which were observed by Parenago (2), Walker (3), Weber (4) and Romano and Rosino (1) seem to be of varying intensity. For example in 1964 and 1965 we find small changes only (about 0.5 mag around $m_p = 12^m.4$), strong variations however in 1960 (from $12^m.1$ to $13^m.7$).—The rapid (hourly) variations will not be discussed here.
2. The mean brightness varies (even without considering the deep minima) in time-scales of months. For instance in 1968 the brightness without exception fluctuated below $12^m.4$, in 1969, 1971 and 1972 preferably above $12^m.4$.
3. The minimum of ref. (1) is confirmed: The brightness was only slightly fainter than $12^m.4$ on 1979 June 26, but $14^m.5$ and $14^m.1$ on August 15 (2 consecutive plates) and never distinctly brighter than $14^m.0$ up to 1980 June 6.
4. A second minimum occurred 1956 to 1957 July 4 (star sometimes invisible fainter than $14^m.5$, ascent to $12^m.4$ 1957 August to November), a third one 1976 (1976 June 28 invisible fainter than $15^m.8$, descent with fluctuations 1974 and 1975, ascent winter 1976/77).

5. Because the minima on the whole last 1 year and even longer, the probability is small that further minima since 1956 have remained undetected.

Although some features of the light-curve remind one of the HdC stars of R CrB type rather than of old novae, the spectroscopic findings (5) and details of the variability certainly exclude the former suggestion and to the same degree the latter one. More probable however is a relation to the polars of AM Her type. This assumption was emphasized already by Vojkhanskaya et al. (6), (7) on the basis of polarimetric observations, and now gains high importance because of the similarity of the light-curves of MV Lyr and AM Her (8). X-ray observations are urgently recommended.

Our comparison stars (see chart) were linked to the Mt. Wilson photographic system of Selected Area 38. The brighter ones are in good agreement with the B data of (3).



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References:

- (1) Romano, G., Rosino, L., IBVS No. 1776, 1980
- (2) Parenago, P., VS 6, p.26, 1946
- (3) Walker, M.F., PASP 66, p.71, 1954
- (4) Weber, R., J. des Obs. 44, p.275, 1961
- (5) Greenstein, J.L., PASP 66, p.79, 1954
- (6) Vojkhanskaya, N.F., et al., Astron. Zhurn. Pis'ma 4, p.272, 1978
- (7) Vojkhanskaya, N.F., Mitrofanov, I.G., Astron. Zhurn. Pis'ma 6, p.159, 1980
- (8) Hudec, R., Meinunger, L., MVS 7, p.195 (1977)

Erratum (IBVS No. 1789)

As is quoted correctly in the text, the nebulous object lies at $\alpha=5^{\text{h}}44^{\text{m}}1$ in the field of β Aur and not at $15^{\text{h}}44^{\text{m}}$. Readers should delete the "1" in the heading.