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A NEW LONG-PERIOD CEPHEID IN THE LMC *

During a photometric investigation of the metal content of 47 FG supergiants in the LMC, several objects turned out to be variable (van Genderen, van Driel and Greidanus, 1986). One of them was situated in the Cepheid instability strip i.e. HDE 270100. The identification chart is given by Fehrenbach and Duflot (1974, catalogue number is G 458, chart 59B). According to Fehrenbach and Duflot (1982) the coordinates for 1950 are $\alpha = 5^{\text{h}}44^{\text{m}}9.7$ and $\delta = -67^{\circ}30'1.6$, the spectral type is G2:1a, $V_J = 11.84$ (the subscript J refers to the UBV system).

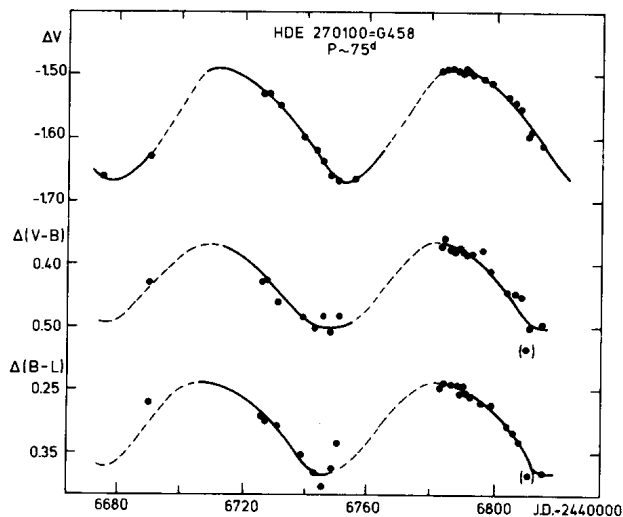


Fig. 1. The light- and colour curves of the recently discovered long-period Cepheid in the LMC HDE 270100 = G 458, relative to the comparison star in log intensity scale.

* Observations collected at the ESO, La Silla, Chile

In order to establish the precise nature of its variability, a photometric program was started in September 1986. The observations were made with the 90-cm Dutch telescope at the ESO, La Silla, Chile, equipped with the simultaneous VBLUW photometer of Walraven. The star was measured twice per night alternated by the comparison star HD 33486 (B9,8^m). The diaphragm aperture was 16". Integration times were of the order of 2 minutes per measurement. We present here a short report on the results of the months September 1986 to January 1987. Figure 1 shows the observations relative to the comparison star for V, V-B and B-L in log intensity scale as a function of Julian Date). A more complete discussion with more observations will be given later. The preliminary period $P \sim 75^d$. The light- and colour curves are characteristic of long period Cepheid of population I in the Magellanic Clouds (van Genderen 1983a and references therein).

The median values for the V and B-V of the UBV system transformed from V and V-B of VBLUW system amount to $V_J = 11.8$, $(B-V)_J = 0.95$. The visual light amplitude is $0^m.45$. According to its position in the V-B/B-L diagram the interstellar reddening is small (van Genderen, van Driel and Greidanus 1986).

The new Cepheid has a period close to that of the LMC Cepheid HV 2827 of which $P = 78^d.86$, $V_J = 12.3$ and the visual light amplitude $0^m.6$ (van Genderen 1983a, b).

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