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OBSERVATIONS OF THE DWARF NOVA CI GEMINORUM

Hoffmeister (1943; 1947) described CI Geminorum as nova-like or possibly of U Geminorum type. He could find only one eruption on 166 plates of the time interval 1935 Nov. 1 to 1944 Feb. 24. He excluded Mira type because of the "unconspicuous" (not red) colour, which was later confirmed by Duerbeck (1987), who observed the minimum state of the star on the FOSS charts. I checked the region of this variable on 129 additional plates of the Sonneberg 40/160 cm GC astrograph, taken mainly by G.A. Richter and G. Hacke in 70 nights of 1962.9 to 1966.7 and 1980.0 to 1989.2. On this material, supplemented by 19 good plates taken at the 17/120 cm astrograph from 1958 to 1966 in 19 nights, three additional eruptions are present:

1963 Oct. 15	J.D. 243 8318.5	16 ^m .5 (2 plates)
1966 Feb. 23	243 9180.4	16.5
1986 Dec. 3	244 6768.6	14.5

Unfortunately the duration of these maxima cannot be estimated, because suitable plates of adjacent dates are not available. Therefore we do not know whether the eruption of February 1940 observed by Hoffmeister, when the star was brighter than 16^m.0 for at least 16 days, was an exception or not. Because the old paper of Hoffmeister (1947) might no longer be available in the reader's library, Fig. 1 shows a drawing of his observations.

The minimum brightness was estimated by Duerbeck on the FOSS charts as $B = 18^m.5$; two plates taken by Börngen and Ludwig at the 134 cm Schmidt telescope of Tautenburg Observatory yield $B \approx 19^m.0$. An amplitude of CI Gem of 4.2 mag may therefore be assumed.

If the long eruption observed by Hoffmeister was a super-maximum of an SU Ursae Maioris variable, then the orbital period

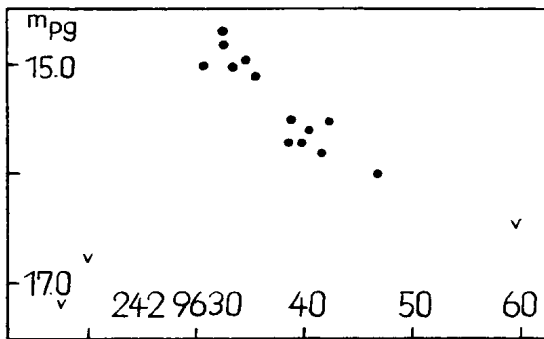


Figure 1

should be around $P = 1.5$ h and, according to Richter and Bräuer (1989, equation 2a), the mean cycle length $C_1 = 111$ d.

Another extreme assumption would be that the three maxima found on GC plates were "normal" ones, say of mean duration $L_n = 4$ d \pm 2 d. The statistics (see Wenzel and Richter 1986) then leads to a mean cycle length of

$$C_2 = L_n \cdot \frac{\text{number of checked nights}}{\text{number of observ. eruptions}} = 119 \text{ d} \pm 59 \text{ d},$$

which is in good agreement with C_1 .

We conclude that CI Gem might be an SU Ursae Maioris type dwarf nova with a cycle length of the order of 100 days. To investigate the orbital period and the possible presence of superhumps would be of interest.

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