Is MP Geminorum an Eclipsing Binary With a Very Long Period?

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Abstract Perhaps MP Gem is a very long-period eclipsing binary star. Only nine observations of a minimum exist to this day. The author observed the star on plates of the Sonneberg Observatory and did not find any further minima. Continued monitoring by CCD observers is recommended.

1. Introduction

Hoffmeister (1963) discovered the variable star MP Gem in the field ν Gem of the "Sonneberger Felderplan" (Figure 1). He wrote: "the star is invisible 1944 February 24/25 (2 plates), February 25/26 (7 plates), on all other plates bright, perhaps with very low changes. On neighboring days no plates exist. Perhaps an Algol-like star with a long period." I have checked these plates again and can confirm that the star was invisible on those dates.

Gessner (1973, where MP Gem is listed as S 7958 Gem on p. 589) observed MP Gem on all plates available at Sonneberg in 1973. She could not find any further minima and noted: "the variable consists of components, the southern component is blue (Palomar atlas, page 417)." The variable is the south component.

No further observations of the star are known. I therefore have observed the star on all 119 later plates of the Sonneberg sky patrol from the years 1981 to 1994. I could not find any further minima. A light curve for MP Gem is shown in Figure 2, based on magnitudes estimated from the Sonneberg plates. The comparison star was USNO 1050-04327215 (mpg 15.6).

2. Discussion and conclusion

Brightness measurements in BVRIJHK of the star exist in different catalogs. These measurements show that it probably is a star of spectral type A.

The star is about 16th magnitude in V and so could be monitored easily with amateur telescopes. The VSP chart is very good for finding, but most planetarium programs (Guide 8.0) show the star at a faulty position. The correct position is R.A. $06^h\,48^m\,33.3^s$, Dec. $+19^\circ\,37'\,15''$ (J2000). I would like to call for the observation of the star, so that it is possible to confirm the period, which is presumably very long.

References

Hoffmeister, C. 1963, *Astron. Nachr.*, **287**, 169.
Gessner, H. 1973, *Veröff. Sternw. Sonneberg.*, **7**, 589.

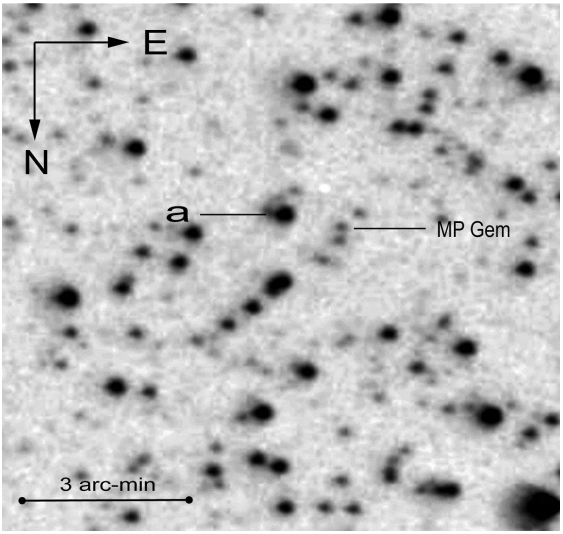

Figure 1. Field of view of MP Gem (Sonneberg Sky Patrol). Star "a" is USNO 1050-04324543.

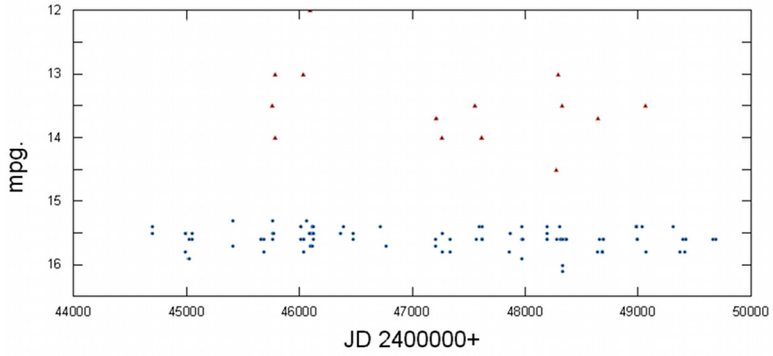

Figure 2. Light curve of MP Gem (uper data) from magnitudes estimated from the Sonneberg plates. The comparison star was USNO 1050-04327215 (mpg 15.6, lower data). Triangles indicate star not visible/fainter-than.