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ON THE APSIDAL MOTION OF AG PERSEI

The apsidal motion of the detached eclipsing binary system AG Per was discussed by Martin (1938), Oosterhoff (1943), Ashbrook (1949), Morley (1966), Semeniuk (1968) and Gdr (1978). The period of apsidal motion was found to be 76.4 ± 0.5 years and 76.55 ± 0.05 years by Semeniuk (1968) and Gdr (1978), respectively.

We obtained two new photoelectric minima with the 48 cm Cassegrain telescope of the Ege University Observatory. An unrefrigerated EMI 9781A photomultiplier tube was used in conjunction with B and V filters which are very close to Johnson's standard system. These new minima are given in Table I together with the photoelectric ones obtained by Diethelm.

Table I
 Times of minima of AG Persei

| J D Hel. | Min. Filters | O-C | E | Reference |
|---------------|--------------|---------|-------|-----------------|
| 24 44 634.352 | II - | 0.030 | 9704 | Diethelm, 1981a |
| 925.392 | I - | -0.053 | 9848 | Diethelm, 1981b |
| 929.463 | I - | -0.039 | 9850 | Diethelm, 1981b |
| 45 271.382 | II - | 0.039 | 10018 | Diethelm, 1982 |
| 626.4097 | II B,V | 0.0389 | 10193 | This paper |
| 984.3988 | I B,V | -0.0428 | 10370 | This paper |

The O-C values in this table were computed using the linear part of the following light elements given by Semeniuk (1968):

$$\text{Hel Min I J D} = 24\ 24\ 946.5153 + 2^{\text{d}}.02872963.E - 0^{\text{d}}.04517 \cos(60^{\circ}.8 + 0^{\circ}.02616.E)$$

$$\text{Hel Min II J D} = 24\ 24\ 947.5297 + 2^{\text{d}}.02872963.E + 0^{\text{d}}.04517 \cos(60^{\circ}.8 + 0^{\circ}.02616.E)$$

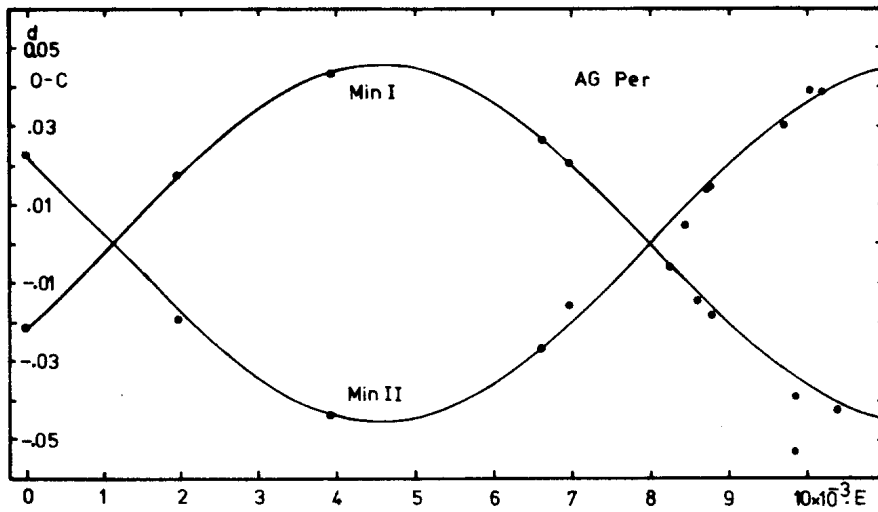


Figure 1. The O-C diagram for AG Per

They are also plotted in Figure 1, where the continuous curves represent the periodic terms in the epochs of minima. The other times of minima in this figure are taken from the literature (see Gdr, 1978).

The times of minima are in good agreement with the continuous curves in the figure. One of them, obtained by Diethelm, shows large deviation. This is probably due to an observational error. As a result, one can say that the new observations confirm the apsidal motion period of AG Per given by Semeniuk (1968) and Gdr (1978).

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