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# A Possible Detection of a Secondary Light-Time Orbit in the Massive Early-type Eclipsing Binary AH Cephei System

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All the published times of minimum lights of the massive early-type eclipsing binary star AH Cep, which has been known as one of triple systems, have been reanalyzed. After subtracting the light-time effects due to the well-known third body from the O-C residuals of the observed times of minimum lights for AH Cep, it is found that the remaining O-C residuals have demonstrated additional sinusoidal form when some outliers were omitted. Assuming these secondary oscillations were the results of the light-time effects due to a fourth body, a search for a fourth body in the system has been made. The differential least-squares scheme with all the available times of minimum lights made it possible to derive the light-time orbits due to the third and fourth bodies. The orbital elements deduced are, respectively,  $P_3=65.y_3$  and  $P_4=9.y_3$ ,  $e_3=0.51$  and  $e_4=0.76$ ,  $K_3=0.d0585$  and  $K_4=0.d0045$ . The analyses of the radial velocities of AH Cep published by others so far suggest the fact that the radial velocities of the center of mass of the eclipsing pair of AH Cep system seems to be suffered by small oscillatory perturbations. These perturbations are likely due to the suggested third- and fourth-bodies in the AH Cep system. The other properties of the distant bodies are also discussed.