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These orbits in the restricted three-body problem are drawn when the primaries are oblate spheroids. A new concept of constant is introduced in this theory by assuming that energy constant h vanishes at L_4 . In this manuscript, the mobile coordinates are resolved along the tangent and normal directions. Then, the predictor-corrector method has been used in constructing these orbits. These orbits are drawn for different values of the energy constant h and we have seen the effect energy constant and oblateness on these periodic orbits. We have observed that the final orbit touching the point L_4 i A. Elipe and M. Lara, "Periodic orbits in the restricted three body problem with radiation pressure," *Celestial Mechanics and Dynamical Astronomy*, vol. 68, no. 1, pp. 1–11, 1997. View at Publisher · View at Google Scholar · View at MathSciNet. E. A. Perdios, S. S. Kanavos, and V. V. Markellos, "Bifurcations of plane to 3D periodic orbits in the photogravitational restricted three-body problem," *Astrophysics and Space Science*, vol. 278, no. 4, pp. 407–413, 2001. · J. Singh and J. J. Taura, "Stability of triangular equilibrium points in the photogravitational restricted three-body problem with oblateness and potential from a belt," *Journal of Astrophysics and Astronomy*, vol. 35, no. 2, pp. 107–119, 2014. View at Publisher · View at Google Scholar.