

Abstract Submitted
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The Effects of a Variable Torque on Neptune's Satellite Nereid

ANDREW HESSELBROCK, STEPHEN ALEXANDER, Miami University — Nereid is a small satellite of Neptune orbiting in a highly elliptical orbit. As Nereid is most likely a non-spherical object, we use a computer model to demonstrate how Nereid's highly elliptical orbit gives rise to a variable torque large enough to affect its rotation. We feel this variable torque and consequent perturbations may explain the measured variations in Nereid's brightness. Performing simulations changing such variables as Nereid's obliquity, shape, and spin rate we are able to produce active and inactive time periods of oscillation that may provide some insight into visible observations.

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