Abstract Submitted
for the TSS07 Meeting of
The American Physical Society

Characterization of near earth objects via orbital perturbations: A numerical study HENRY SCHREINER, CHRISTIAN POPPELIERS, Angelo State University — It is now recognized that near earth objects (NEOs) may pose a collision risk with the earth. Physical characterization of an NEO may help aid in mitigating collision risks. In this work, we report a potential way to characterize an NEO using non-destructive means. Specifically, by measuring the orbit and orbital perturbations of a fly-by space craft, it may be possible to determine the mass, the aspect ratio, and rotational velocity of an NEO. In this work, we preformed numerical simulations of a spacecraft orbiting an NEO. Tests show that we can extract a visible perturbation signal. Ongoing work will explore the possibility of a relationship between the perturbation signal and the shape of the NEO.

Abstract APS

Date submitted: 12 Mar 2007 Electronic form version 1.4