

Bibliography for “Astrodynamics of Asteroids” lectures by D.J. Scheeres
First Astronet-II School
University of Rome, Tor-Vergata, January 14, 15, 2013

The following papers and books cover much of the material presented in the lectures.

Lecture I and III:

“Exploration of Small Bodies” and “The Dynamical Environment about Asteroids”

The following book covers the general history of asteroid exploration, provides discussions and definitions for the environment on these bodies, and details the dynamics of spacecraft motion about these bodies. It includes a large number of detailed case studies that cover the different environmental regimes that asteroids present. It is the culmination of a few dozen papers that address many different aspects of asteroid orbiters.

D.J. Scheeres. “Orbital Motion in Strongly Perturbed Environments: Applications to Asteroid, Comet and Planetary Satellite Orbiters,” Springer-Praxis Books in Astronautical Engineering. 2012. ISBN 978-3-642-03255-4, e-ISBN 978-3-642-03256-1, DOI 10.1007/978-3-642-03256-1

The following paper covers similar topics as found in the book in a more brief, review article.

D.J. Scheeres. 2012. “Orbital Mechanics about Small Bodies,” Acta Astronautica 72: 1-14. DOI: 10.1016/j.actaastro.2011.10.021

Lecture II:

“Celestial Mechanics of Asteroid Systems”

The following articles trace our evolving research regarding the celestial mechanics of asteroid systems.

D.J. Scheeres. 2002. “Stability in the Full Two Body Problem,” Celestial Mechanics and Dynamical Astronomy 83: 155-169.

D.J. Scheeres. 2004. “Bounds on Rotation Periods of Disrupted Binaries in the Full 2-Body Problem,” Celestial Mechanics & Dynamical Astronomy 89: 127-140.

D. J. Scheeres, E. G. Fahnestock, S. J. Ostro, J.-L. Margot, L. A. M. Benner, S. B. Broschart, J. Bellerose, J. D. Giorgini, M. C. Nolan, C. Magri, P. Pravec, P. Scheirich, R. Rose, R. F. Jurgens, S. Suzuki, E. M. DeJong. 2006. “Dynamical Configuration of Binary Near-Earth Asteroid (66391) 1999 KW4,” Science 314: 1280-1283.

- E.G. Fahnestock and D.J. Scheeres. 2006. "Simulation of the Full Two Rigid Body Problem Using Polyhedral Mutual Potential and Potential Derivatives Approach," *Celestial Mechanics and Dynamical Astronomy* 96: 317-339.
- D.J. Scheeres. 2007. "Rotational fission of contact binary asteroids," *Icarus* 189: 370-385.
- D.J. Scheeres. 2009. "Minimum energy asteroid reconfigurations and catastrophic disruptions," *Planetary and Space Science* 57: 154-164.
- D.J. Scheeres. 2009. "Stability of the Planar Full 2-Body Problem," *Celestial Mechanics and Dynamical Astronomy* 104: 103-128.
- P. Pravec, D. Vokrouhlicky, D. Polishook, D.J. Scheeres, A. W. Harris, A. Galad, O. Vaduvescu, F. Pozo, A. Barr, P. Longa, F. Vachier, F. Colas, D. P. Pray, J. Pollock, D. Reichart, K. Ivarsen, J. Haislip, A. LaCluyze, P. Kusnirak, T. Henych, F. Marchis, B. Macomber, S. A. Jacobson, Y. N. Krugly, A. Sergeev, and A. Leroy. 2010. "Formation of asteroid pairs by rotational fission," *Nature* 466: 1085-1088.
- S.A. Jacobson and D.J. Scheeres. 2011. "Dynamics of Rotationally Fissioned Asteroids: Source of Observed Small Asteroid Systems," *Icarus* 214(1): 161-178.
- S.A. Jacobson and D.J. Scheeres. 2011. "Long-term Stable Equilibria for Synchronous Binary Asteroids," *The Astrophysical Journal Letters*, 736:L19 (5pp).
- D.J. Scheeres. 2012. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," *Celestial Mechanics and Dynamical Astronomy* 113: 291-320.