Daniel J. Scheeres, PhD.

University of Colorado Distinguished Professor
A. Richard Seebass Endowed Chair
Celestial and Spaceflight Mechanics Laboratory Head
Colorado Center for Astrodynamics Research Member

Address: 3775 Discovery Drive, Boulder, CO 80303-0429 USA
Office: AERO 454
Tel: (720) 544-1260, Fax: (303) 492-7881
Website: ccar.colorado.edu/scheeres
email: scheeres@colorado.edu

ORCID ID: 0000-0003-0558-3842

Degrees

Ph.D. Aerospace Engineering The University of Michigan, 1992
On symmetric central configurations with application to satellite motion about rings
Prof. N.X. Vinh, Chairman.

M.S.E. Aerospace Engineering The University of Michigan, 1988

B.S.E. Aerospace Engineering (*summa cum laude*) The University of Michigan, 1987

B.S. Letters and Engineering Calvin College, 1985

Professional Positions

Korean Advanced Institute of Science and Technology
Department of Aerospace Engineering

Deputy Directory, KAIST Space Institute	8/24 – present
Distinguished Visiting Professor	6/24 – present

The University of Colorado Boulder
Ann & H.J. Smead Department of Aerospace Engineering Sciences

University of Colorado Distinguished Professor	11/14 – present
A. Richard Seebass Endowed Chair Professor	2/08 – present
Associate Chair for Graduate Studies	7/13 – 6/15
Visiting Professor	8/07 – 2/08

The University of Michigan
Department of Aerospace Engineering

Adjunct Professor	2/08 – 9/10
Graduate Chair, Department of Aerospace Engineering	10/06 – 12/07
Associate Professor	9/02 – 1/08
Assistant Professor	9/99 – 8/02

Institute of Space and Astronautical Science, Japan

Visiting Professor, JSPS Fellow	8/05 – 12/05
Japan Society for the Promotion of Science Fellow	5/99 – 8/99

Iowa State University

Department of Aerospace Engineering and Engineering Mechanics

Assistant Professor	8/97 – 8/99

Jet Propulsion Laboratory, California Institute of Technology

Senior Member of Engineering Staff	3/97 – 7/97
Member of the Technical Staff	9/92 – 3/97
Summer Intern/On-call employee	5/89 – 9/92

Honors and awards

- Recipient of the 2025 International Astronautical Federation Distinguished Service Award.
- Elected to the International Academy of Astronautics as a Full Member, 2021.
- Elected to the International Academy of Astronautics as a Contributing Member, 2018.
- Best Paper of Conference Award, 27th AAS/AIAA Space Flight Mechanics Conference San Antonio, Texas, February 2017.
- 2017 University of Michigan Engineering Alumni Merit Award for Aerospace Engineering, conferred October 26, 2017.
- 2017 Department of Aerospace Engineering Sciences Faculty Award for Outstanding Research ($1,000 Award).
- Inducted into the National Academy of Engineering, Class of 2017. *For pioneering work on the motion of bodies in strongly perturbed environments such as near asteroids and comets.*
- NASA Center Group Award, Asteroid Redirect Robotic Mission "Option B" Team. *In recognition of the "Option B" design of the Asteroid Redirect Mission.* Awarded September 19, 2015.
- NASA Group Achievement Award, Asteroid Rendezvous and Redirect Mission Team. *For exceptional leadership in developing the Asteroid Redirect Mission Option B robotic capture system and mission operations concept.* Awarded June 2, 2015.
- 2015 Department of Aerospace Engineering Sciences Faculty Award for Distinguished Performance ($1,000 Award).
- Best Paper of Conference Award, 24th AAS/AIAA Space Flight Mechanics Conference Santa Fe, New Mexico, February 2014 (Awarded February 2015).
- Named Distinguished Professor of The University of Colorado by the Board of Regents, 2014.
- Fellow of the American Institute of Aeronautics and Astronautics, 2014.

- 2012 Dirk Brouwer Award Recipient, American Astronautical Society (awarded February 2013). *For his improvement of spacecraft navigation techniques, and application and development of advanced astrodynamics techniques which have had significant impact on current space exploration missions and will enhance capabilities of future missions.*
- Best Paper of Conference Award, 22nd AAS/AIAA Space Flight Mechanics Conference Charleston, South Carolina, February 2012 (Awarded February 2013).
- 2011 Faculty Research Award from the College of Engineering and Applied Science, University of Colorado Boulder (Awarded March 2012, includes $1K stipend).
- John V. Breakwell Lecture, Astrodynamics Symposium, 62nd International Astronautical Federation Congress, October 5, 2011.
- 2010 Dean's Award for Outstanding Research in the College of Engineering and Applied Sciences, University of Colorado Boulder (Awarded August 2011, includes $5K stipend).
- Best Paper of Conference Award, 2010 AIAA/AAS Astrodynamics Specialists Conference Toronto, Ontario, Canada, August 2010 (Awarded August 2011).
- Best Paper of Conference Award, 19th AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 2009 (Awarded February 2011).
- Awarded a University of Colorado, College of Engineering Faculty Fellowship, Fall 2009.
- Elected to the Celestial Mechanics Institute, 2008.
- Fellow of the American Astronautical Society, 2008.
- NASA Tech Brief Award for NTR no 43641: "Solar Sail Spaceflight Simulation Software Version 2.0 (S5 v2.0)", 2006.
- Japan Society for the Promotion of Science Fellowship at the Institute of Space and Astronautical Science, Japan, August 15 – December 29, 2005.
- Associate Fellow of the American Institute of Aeronautics and Astronautics, 2003.
- Member of the International Astronomical Union, Commission on Celestial Mechanics and Dynamical Astronomy, 2003.
- NASA Group Achievement Award, NEAR-Shoemaker Mission Team. *For outstanding achievement in conducting the most comprehensive scientific study of Asteroid 433 Eros, including the first rendezvous, orbit, and landing on an asteroid.* Awarded July 9, 2002.
- Best Paper of Conference Award (with F.-Y. Hsiao), 12th AAS/AIAA Space Flight Mechanics Meeting, San Antonio, Texas, January 2002.
- Letters of commendation for exceptional reviewing, AIAA Journal of Guidance, Control, and Dynamics, 2000, 2001, 2004, 2008.
- Japan Society for the Promotion of Science Fellowship at the Institute of Space and Astronautical Science, Japan, May 23 – August 15, 1999.

- Asteroid (8887) 1994LK1 renamed (8887) Scheeres. *Scheeres has pioneered the investigation of the dynamics of orbits close to small, irregularly shaped minor planets. His research has included studies of the short-term evolution and the long-term stability of orbits around radar-derived models of (4179) Toutatis and (4769) Castalia. His work has far-reaching implications for the operation of spacecraft orbiting minor planets, for the cosmogony of satellites of minor planets and for understanding the distribution of non-escaping impact ejecta on small bodies.* Dictionary of Minor Planet Names, 4th Ed., L.D. Schmadel, Springer, 1999, pg. 1069.

- NASA Group Achievement Award, NEAR Project Team. *For development of the NEAR mission and the return of the first Discovery program science data from the successful Mathilde asteroid flyby.* Awarded June 4, 1998.

- The Johns Hopkins University Applied Physics Laboratory Award for an outstanding publication in the category of Special Publications, for contributions to the special issue of *The Journal of Astronautical Sciences*, Vol 43, 1995, devoted to the Near Earth Asteroid Rendezvous Mission.

- Recipient of a Rockwell International Fellowship at The University of Michigan, 1989-1992.

- Graduated *summa cum laude* from The University of Michigan, 1987.

Graduate Students

Ph.D. committees chaired

1. **Weiduo Hu** Defended April 2002
   "Orbital Motion in Uniformly Rotating Second Degree and Order Gravity Fields"
   Committee Chair, University of Michigan
   Professor, Dept. of Aerospace Engineering, BeiHang University, Beijing, China

2. **Esther Morrow** Defended August 2002, University of California - San Diego
   "Solar Sail Orbit Operations"
   Committee Co-Chair

3. **Benjamin Villac** Defended July 2003, Rackham Pre-Doctoral Scholar
   "Dynamics in the Hill Problem with Applications to Spacecraft Maneuvers"
   Committee Chair, University of Michigan
   Applied Physics Laboratory

4. **Fu-Yuen Hsiao** Defended April 2004
   "Stabilizing and Specifying Motion Relative to Unstable Trajectories: Applications to Spacecraft Formation Flight"
   Committee Chair, University of Michigan
   Professor, Department of Aerospace Engineering, Tamkang Univ., Taiwan

5. **Vincent Guibout** Defended September 2004
   "The Hamilton-Jacobi theory for solving two-point boundary value problems: Theory and numerics with application to spacecraft formation flight, optimal control and the study of phase space structure"
   Committee Chair, University of Michigan
   Chief System Engineer, MBDA, Paris, France

6. **Islam Hussein** Defended February 2005
   "Motion Planning for Multi-Spacecraft Interferometric Imaging Systems"
   Committee Chair, University of Michigan
   Applied Defense Solutions

7. **Chandeok Park** Defended February 2006
   "The Hamilton-Jacobi Theory for Solving Optimal Feedback Control Problems With General Boundary Conditions"
   Committee Chair, University of Michigan
   National Research Council Post-Doctoral Fellow, Naval Post-Graduate School
   Professor, Yonsei University, Korea.

8. **Leonel Rios-Reyes** Defended September 2006
   "Solar Sails: Modeling, Estimation, and Trajectory Control"
   Committee Chair, University of Michigan
   Aerospace Corporation

9. **Stephen Broschart** Defended September 2006, NASA GSRP Fellow
   "Close Proximity Spacecraft Maneuvers Near Irregularly Shaped Small-bodies: Hovering, Translation, and Descent"
   Committee Chair, University of Michigan
   Lyft

10. **Marci Paskowitz** Defended October 2006, François-Xavier Bagnoud Fellow
    "Orbit Design and Control of Planetary Satellite Orbiters in the Hill 3-Body Problem"
    Committee Chair, University of Michigan
    AI Solutions

11. **Ryan Park** Defended November 2006
    "Nonlinear Trajectory Navigation"
    Committee Chair, University of Michigan
    Solar Systems Dynamics Group, Jet Propulsion Laboratory

12. **Jared M. Maruskin** Defended January 2008
    "On the Dynamical Propagation of Subvolumes and on the Geometry and Variational Principles of Nonholonomic Systems"
    Committee Co-Chair, University of Michigan
    Professor, Department of Mathematics, San Jose State University

13. **Julie Bellerose** Defended April 2008, Canadian NSERC Fellow
    "The Restricted Full Three Body Problem: Applications to Binary Asteroid Exploration"
    Committee Chair, University of Michigan
    Navigation Systems Section, Jet Propulsion Laboratory

14. **Prashant Patel** Defended June 2008, NASA GSRP Fellow
"Automating the Generation of Feasible Trajectories for Trade Studies"
Committee Co-Chair, University of Michigan
Institute for Defense Analysis, Alexandria, VA

15. **Sharyl Byram** Defended November 2008
"The Effects of Outgassing Jets on the Rotation of a Comet Nucleus and on the Trajectory of an Orbiting Spacecraft"
Committee Chair, University of Michigan
US Naval Observatory

16. **Eugene Fahnestock** Defended December 2008, NDSEG and NSF Fellow
"The Full Two Body Problem: Simulation, Analysis, and Application to the Dynamics, Characteristics, and Evolution of Binary Asteroid Systems"
Committee Chair, University of Michigan
Solar Systems Dynamics Group, Jet Propulsion Laboratory

17. **Eric Gustafson** Defended May 2010
"Stochastic Optimal Control of Spacecraft"
Committee Chair, University of Michigan
Inner Planets Navigation Group, Jet Propulsion Laboratory

18. **Ryan Woolley** Defended June 2010
"Endgame Strategies for Planetary Moon Orbiters,"
Committee Chair, University of Colorado
Mission Design Section, Jet Propulsion Laboratory

19. **Jennifer Hudson** Defended September 2010, NSF Fellow
"Reduction of Low-Thrust Continuous Controls for Trajectory Dynamics and Orbital Targeting,"
Committee Co-Chair, University of Michigan
Professor, Naval Postgraduate School

20. **Oier Penagaricano** Defended September 2010, Gobierno Vasco Predoctoral Fellow
"A Perturbation Theory for Hamilton's Principal Function: Applications to Boundary Value Problems,"
Committee Chair, University of Michigan
Private business owner

21. **Marcus J. Holzinger** Defended April 2011
"Optimal Control Applications in Space Situational Awareness,"
Committee Chair, University of Colorado
Professor, Department of Aerospace Engineering Sciences, University of Colorado

22. **Jay W. McMahon** Defended June 2011, NESSF Scholarship
"An Analytical Theory for the Perturbative Effect of Solar Radiation Pressure on Natural and Artificial Satellites,"
Committee Chair, University of Colorado
Professor, Department of Aerospace Engineering Sciences, University of Colorado

23. **Christine M. Hartzell** Defended May 2012, NESSF Scholarship
"The Dynamics of Near-Surface Dust on Airless Bodies,"
Committee Chair, University of Colorado
Professor, University of Maryland – College Park

24. **Seth Jacobson** Defended October 2012, NESSF Scholarship
"The evolution of small bodies in the Solar System,"
Committee Chair, Department of Astrophysics and Planetary Science, University of Colorado
Professor, Michigan State University

25. **Kohei Fujimoto** Defended April 2013
"New Methods in Optical Track Association and Uncertainty Mapping of Earth-Orbiting Objects,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
LeoLabs

26. **Dylan Boone** Defended May 2013, NESSF Scholarship, Smead Fellow
"Integration of Geodesy Mission Design and Navigation for Planetary Satellite Orbiters,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Navigation Systems Section, Jet Propulsion Laboratory

27. **Yu Takahashi** Defended July 2013
"Gravity Field Characterization around Small Bodies,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Navigation Systems Section, Jet Propulsion Laboratory

28. **Aaron Rosengren** Defended March 2014. NSF Fellow, Smead Fellow
"Long-term Dynamical Behavior of Highly Perturbed Natural and Artificial Celestial Bodies,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Professor, Department of Aerospace Engineering, University of California San Diego

29. **Simon Tardivel** Defended May 2014.
"The Deployment of Scientific Packages to Asteroid Surfaces,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
CNES, France

30. **Masatoshi Hirabayashi** Defended August 2014. Japanese Government Fellowship.
"Structural Stability of Asteroids,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Professor, Department of Aerospace Engineering, Georgia Tech University

31. **Daniel Lubey** Defended October 2015. NDSEG Fellow, NSTRF Fellow, Smead Fellow
"Maneuver Detection and Reconstruction in Data Sparse Systems with an Optimal Control Based Estimator,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Navigation Systems Section, Jet Propulsion Laboratory

32. **Antonella Albuja** Defended October 2015. AGEP Fellow, NSF Fellow, Smead Fellow
"Rotational Dynamics of Inactive Satellites as a Result of the YORP Effect,"

Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Jet Propulsion Laboratory

33. **Hyun Chul "Ddard" Ko** Defended November 2015. Korean Government Scholarship
"Representation of Unknown and Unmodeled Space Events for Satellites: Characteristics and Applications,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Korean Air Force

34. **In-Kwan Park** Defended December 2015.
"Dynamical Realism and Uncertainty Propagation,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
LeoLabs

35. **Zubin Olikara** Defended May 2016. NSF Fellow
"Computation Of Quasi-Periodic Tori And Heteroclinic Connections In Astrodynamics Using Collocation Techniques,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Jet Propulsion Laboratory

36. **Siamak G. Hesar** Defended June 2016.
"A Framework for Precise Orbit Determination of Small Body Orbiting Spacecraft,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Kayhan Space, Founder

37. **David A. Surovik** Defended June 2016. NSTRF Fellow
"Autonomous Mission Design in Extreme Orbit Environments,"
Committee Chair, Department of Aerospace Engineering Sciences, University of Colorado
Boston Dynamics AI Institute

38. **Nicola Baresi** Defended May 2017. Fulbright Scholar
"Spacecraft Formation Flight on Quasi-periodic Invariant Tori,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
University of Surrey

39. **Samantha M. Rieger** Defended December 2017. NSF Fellow, NSTRF Fellow, Smead Fellow
"Natural and Artificial Satellite Dynamics and Evolution around Near-Earth Asteroids with Solar Radiation Pressure,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
NASA GSFC

40. **Jonathan D. Aziz** Defended March 2018. NSTRF Fellow
"Low-Thrust Many-Revolution Trajectory Optimization,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
The Aerospace Corporation

41. **Nathan L.O. Parrish** Defended May 2018. NSTRF Fellow
"Low Thrust Trajectory Optimization in Cislunar and Translunar Space,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
Advanced Space

42. **Stefaan Van wal** Defended May 2018.
"High-Fidelity Simulation of Small-Body Lander/Rover Spacecraft,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
GOM Space

43. **Stijn De Smet** Defended November 2018.
"On the design of solar gravity driven planetocentric transfers using artificial neural networks,"
Committee Chair
Smead Department of Aerospace Engineering Sciences, University of Colorado
OneWeb

44. **Alex Davis** Defended June 2020. NSF Fellow
"On Binary Asteroids: Dynamics, Formation and Parameter Estimation,"
Smead Department of Aerospace Engineering Sciences, University of Colorado
Mission Design Section, Jet Propulsion Laboratory

45. **Conor Benson** Defended June 2021. NSF Fellow, NSTRF Fellow, Smead Fellow
"Solar Torque and Dissipation Dynamics for Tumbling Bodies: Theory and Observations,"
Department of Aerospace Engineering Sciences, University of Colorado
The Aerospace Corporation

46. **Marielle Pellegrino** Defended July 2021. Smead Fellow, Draper Fellow
"Using Solar Radiation Pressure and Luni-Solar Resonances for Debris Mitigation,"
Department of Aerospace Engineering Sciences, University of Colorado
Odyssey Space

47. **Vishal Ray** Defended November 2021. FINESST Fellow
"Advances in atmospheric drag force modeling for satellite orbit prediction and density estimation,"
Department of Aerospace Engineering Sciences, University of Colorado
Kayhan Space

48. **Chandrakanth Venigalla** Defended November 2021. NSTRF Fellow
"Multi-Spacecraft Cooperative and Non-Cooperative Trajectory Optimization,"
Department of Aerospace Engineering Sciences, University of Colorado
Flight path control section, Jet Propulsion Laboratory

49. **Kristin Nichols** Defended December 2021. NSTRF Fellow
"Electrostatically-Driven Dust Lofting and Migration on Small Bodies,"
Department of Aerospace Engineering Sciences, University of Colorado
NASA Johnson Space Center

50. **Erica Jenson** Defended July 2022. NSF Fellow, NSTRF Fellow
"Stochastic Optimal Control to Minimize State Uncertainty,"
Department of Aerospace Engineering Sciences, University of Colorado
Navigation System Section, Jet Propulsion Laboratory

51. **Shota Takahashi** Defended July 2022.
"Autonomous Exploration of Small Near-Earth Asteroids,"
Department of Aerospace Engineering Sciences, University of Colorado
Kayhan Space

52. **Ryotaro Sakamoto** Defended February 2023.
"Modeling of Deformation and Energy Dissipation for a Tumbling Body,"
Department of Aerospace Engineering Sciences, University of Colorado
Japan Defense Department

53. **Oscar Fuentes Muñoz** Defended July 2023. Balsells Fellow
"Semi-analytical Methods of Orbit Propagation for Near-Earth Asteroids,"
Department of Aerospace Engineering Sciences, University of Colorado
Post-doc, Jet Propulsion Laboratory

54. **David Lujan** Defended August 2023.
"Methods to Explore Families of Quasi-Periodic Orbits with Applications in Astrodynamics,"
Department of Aerospace Engineering Sciences, University of Colorado
Scout Space

55. **Jesse A. Greaves** Defended August 2023.
"Autonomous Navigation for Distributed Space Systems via Spacecraft to Spacecraft Absolute Tracking,"
Department of Aerospace Engineering Sciences, University of Colorado
Navigation Systems Section, Jet Propulsion Laboratory

56. **Yashica Khatri** Defended November 2023.
"Semi-Analytical Uncertainty Propagation and Conjunction Assessment,"
Department of Aerospace Engineering Sciences, University of Colorado
NorthStar Earth & Space Inc.

57. **Damennick Henry** Defended March 2024. Smead Fellow, NSTRF Fellow.
"Spacecraft Trajectory Design and Control Leveraging Quasi-periodic Orbits,"
Department of Aerospace Engineering Sciences, University of Colorado
Post-doc, University of Colorado Boulder; Assistant Professor, University of Minnesota

58. **Alex J. Meyer** Defended May 2024.
"The Dynamical Evolution of Perturbed Near-Earth Binary Asteroids,"
Department of Aerospace Engineering Sciences, University of Colorado

59. **Gavin Brown** Defended December 2024.
"Analyzing Periodic Orbit Structures with Applications to Astrodynamics,"
Department of Aerospace Engineering Sciences, University of Colorado

60. **Luke T. Peterson** Defended December 2024. NDSEG Fellow.
"Unifying Semi-analytical and Numerical Methods for Astrodynamics Applications,"
Department of Aerospace Engineering Sciences, University of Colorado

Ph.D. Candidates

Ph.D. Pre-Candidates

Jordan Murphy NSTRGO Fellow
Department of Aerospace Engineering Sciences, University of Colorado

Robyn Natherson NSF Fellow, NSTRGO Fellow
Department of Aerospace Engineering Sciences, University of Colorado

Oliver Boodram Department of Aerospace Engineering Sciences, University of Colorado

Evangelina Evans Smead Fellow
Co-advised with M. Holzinger
Department of Aerospace Engineering Sciences, University of Colorado

Hai-Shuo Wang NASA FINESST Fellow
Department of Aerospace Engineering Sciences, University of Colorado

Adrien Legrand Department of Aerospace Engineering Sciences, University of Colorado

Queenique Dinh Co-advised with M. Holzinger
Department of Aerospace Engineering Sciences, University of Colorado

Kristen Ahner Draper Fellow, NSTRGO Fellow
Co-advised with J. McMahon
Department of Aerospace Engineering Sciences, University of Colorado

Ryan Menges Draper Fellow, NSF Fellow, NDSEG Fellow
Department of Aerospace Engineering Sciences, University of Colorado

Sergio Coll-Ibars Balsells Fellow
Co-advised with P. Axelrad
Department of Aerospace Engineering Sciences, University of Colorado

Ph.D. Students

Ashish Cavale
Department of Aerospace Engineering Sciences, University of Colorado

Thomas Clark George Born Fellow
Department of Aerospace Engineering Sciences, University of Colorado

Ethan Dennis
Department of Aerospace Engineering Sciences, University of Colorado

M.S. committees chaired

David J.-P. Dechambre Defended Fall 2000, The University of Michigan
"Computation of Ellipsoidal Gravity Field Harmonics for Small Solar System Bodies"
Committee Chair

Nathan C. Shupe Defended Fall 2010, The University of Colorado
"Orbit Options for an Orion-Class Spacecraft Mission to a Near-Earth Object,"
Committee Chair

Travis S.J. Gabriel Defended Spring 2015, The University of Colorado
"Effects of Energy Dissipation in the Sphere-Restricted Full Three-Body Problem,"
Committee Chair

Sergio Coll Ibars Defended December 2023, The University of Colorado
"Asteroid gravity field estimation using a gravity gradiometer,"
Committee Co-Chair, with Prof. P. Axelrad

Research Interests

Celestial Mechanics

Development of precise constraints on the gravitational evolution of multi-body distributed systems, accounting for coupling between rotational, translational and deformational motion.

Astrodynamics

Investigation of orbital dynamics of highly perturbed systems using analytical, semi-analytical, and numerical methods. Specific problems of current interest include:

- Computation, applications and analysis of quasi-periodic orbits in the CR3BP and in periodically forced systems
- Orbit mechanics about planetary satellites
- Orbital motion about asteroids and comets with applications to NASA and international space science missions
- Spacecraft formation flight dynamics
- Spacecraft dynamics in unstable orbital environments with applications to missions to Earth-Sun and Earth-Moon libration points
- Space Situational Awareness

Navigation, Orbit Determination and Control

Investigation of spacecraft navigation and non-linear optimal control of spacecraft and mechanical systems in challenging environments. Specific problems of interest include:

- Dynamical evolution of satellites subjected to solar radiation pressure using precision models
- Orbit determination and correlation of single-pass observations
- Metrics and constraints for maneuvering vehicles in Earth orbit
- Precision modeling of non-gravitational models for spacecraft and natural bodies

- Optimal non-linear feedback control exploiting Hamiltonian formalisms
- Navigation and control of spacecraft for sampling small body surfaces
- Navigation models of comet outgassing
- Navigation models of solar sail spacecraft
- Orbit determination and statistical control of spacecraft in unstable orbital environments

Planetary Science

The scientific study of small bodies in the solar system

- Participating Scientist on ESA's Hera mission to the binary asteroid Didymos
- PI on NASA SIMPLEx mission Janus, currently in Phase C/D
- Co-I on NASA's DART mission
- Radio Science Lead and Co-Investigator on the New Frontiers OSIRIS-REx Asteroid Sample Return Mission
- Co-Investigator on the Astrodynamics Science Team of the Japanese Hayabusa Mission to Asteroid Itokawa and the Hayabusa2 Mission to Asteroid Ryugu
- Participating Scientist on the Radiometric Science Team of NASA's Near Earth Asteroid Rendezvous Mission to Asteroid Eros
- Investigations into the mechanics and dynamics of the asteroid and comet environment
- Formation and evolution of small-body binary systems
- PI on a submitted Discovery Mission Proposal: Binary Asteroid in-situ Explorer (*BASiX*) Mission.
- Co-I on several proposed NASA Discovery and New Frontiers missions.

Publications

Submitted Journal Articles and Notes

1. R. Natherson and **D.J. Scheeres**. "A Study of Methods for Computing Directional Reachability," submitted to *Journal of Guidance, Control and Dynamics*, 12/2024.

2. J. Lee, **D.J. Scheeres** and J. Ahn. "Low-Thrust Minimum-Fuel Trajectory Optimization for the Sun-Earth Inclined L4 Mission," submitted to *Journal of Spacecraft and Rockets*, 11/2024.

3. Kya C. Sorli, Paul O. Hayne, Rachel H. Cueva, Chloe J. Long, Jay W. McMahon and **Daniel J. Scheeres**. "A 3D Thermophysical Model for Binary Asteroid Systems: Application to the BYORP Effect on (175706) 1996 FG3," submitted to *Icarus*, 11/2024.

4. **D.J. Scheeres**. "An Energy-Angular Momentum Phase Function for Studying the Formation and Evolution of Rubble Pile Asteroids and their Binary Morphology," submitted to *Icarus*, 11/2024.

5. Paolo Tortora, Edoardo Gramigna, Riccardo Lasagni Manghi, Marco Zannoni, Ryan S. Park, Giacomo Tommei, Sebastien Le Maistre, Ozgur Karatekin, Giacomo Lari, Roberto Paoli, Maddalena Mochi, Alfonso Caldiero, Paolo Concari, **Daniel J. Scheeres**, Patrick Michel and Michael Kueppers "The Radio Science Experiment on Hera, Juventas and Milani," submitted to *Space Science Reviews*, 10/2024.

6. O. Boodram and **D.J. Scheeres**. "Controlling Hamiltonian Integral Invariants of Spacecraft Phase Space Distributions," submitted to *Journal of Guidance, Control and Dynamics*, 5/2024.

7. Soi Yamaguchi, Naoki Hiraiwa, Mai Bando, Shinji Hokamoto, Damennick B. Henry and **Daniel J. Scheeres**. "Trajectory Design for Awaiting Comets on Invariant Manifolds with Optimal Control," submitted to *Astrodynamics*, 3/24.

8. P. Patel and **D.J. Scheeres**. "Automatic and Rapid Estimation of Electric Propulsion Maneuver Sets," submitted to *Journal of Guidance, Control and Dynamics*, 3/2024.

9. Kyosuke Sato, Mai Bando, Shinji Hokamoto, E.L. Jenson and **D.J. Scheeres**. "Data-Driven Nonlinear Optimal Control Using Koopman Operator for Hamilton Flow," submitted to *Journal of Guidance, Control and Dynamics*, 8/2023.

10. Juan F. Gutierrez; Keric Hill; Erica L. Jenson; Daniel J. Scheeres; Jill C. Bruer; Ryan D. Coder. "Classifying State Uncertainty for Earth-Moon Trajectories," submitted to *Journal of the Astronautical Sciences*, 2/2023.

Journal Articles and Notes

1. J. Greaves and **D.J. Scheeres**. "Autonomous Information Gathering for Distributed Space Systems using Relative Optical Sensing," *Journal of Guidance, Control and Dynamics* in press 12/2024.

2. G.M. Brown, D.B. Henry, L.T. Peterson, and **D.J. Scheeres**. "Structure of Periodic Orbit Families in the Hill Restricted 4-Body Problem," *SIAM Journal on Applied Dynamical Systems* in press 10/2024.

3. L.T. Peterson and **D.J. Scheeres**. 2024. "Gauss Equations for Local Action-Angle Orbital Elements in Cislunar Space," *Journal of Guidance, Control and Dynamics* 47(11): 2273-2286.

4. R. Natherson and **D.J. Scheeres**. "Reachable Set Computation with Terminal Velocity Constraints," *Journal of Guidance, Control and Dynamics* in press 7/2024.

5. **Scheeres, D.J.** "Derivation and Properties of the Angular Momentum Relative Amended Potential." *Proceedings of the International Astronomical Union* 2022;18(S382):41-50. doi:10.1017/S1743921323004088

6. J. Greaves and **D.J. Scheeres**. 2024. "Spacecraft to Spacecraft Absolute Tracking for Autonomous Navigation of a Distributed Space System from Relative Sensors," *Journal of the Astronautical Sciences* 71:46. https://doi.org/10.1007/s40295-024-00463-6

7. D. Lujan and **D.J. Scheeres**. 2024. "Optimization Over Families of Quasi-Periodic Orbits," *Journal of the Astronautical Sciences* 71:37.

8. Richardson, Derek C., Agrusa, Harrison F., Barbee, Brent, Cueva, Rachel H., Ferrari, Fabio, Jacobson, Seth A., Makadia, Rahil, Meyer, Alex J., Michel, Patrick, Nakano, Ryota, Zhang, Yun, Abell, Paul, Merrill, Colby C., Campo Bagatin, Adriano, Barnouin, Olivier, Chabot, Nancy L., Cheng, Andrew F., Chesley, Steven R., Daly, R. Terik, Eggl, Siegfried, Ernst, Carolyn M., Fahnestock, Eugene G., Farnham, Tony L., Fuentes-Muñoz, Oscar, Gramigna, Edoardo, Hamilton, Douglas P., Hirabayashi, Masatoshi, Jutzi, Martin, Lyzhoft, Josh, Lasagni Manghi, Riccardo, McMahon, Jay, Moreno, Fernando, Murdoch, Naomi, Naidu, Shantanu P., Palmer, Eric E., Panicucci, Paolo, Pou, Laurent, Pravec, Petr, Raducan, Sabina D., Rivkin, Andrew S., Rossi, Alessandro, Sánchez, Paul, **Scheeres, Daniel J.**, Scheirich, Peter, Schwartz, Stephen R., Souami, Damya, Tancredi, Gonzalo, Tanga, Paolo, Tortora, Paolo, Trigo-Rodriguez, Josep M., Tsiganis, Kleomenis, Wimarsson, John and Zannoni, Marco. 2024."The Dynamical State of the Didymos System before and after the DART Impact," *The Planetary Science Journal* 5 182. DOI: 10.3847/PSJ/ad62f5

9. Bigot, J., Lombardo, P., Murdoch, N., **D. J. Scheeres**, D. Vivet, Y. Zhang, J. Sunshine, J. B. Vincent, O. S. Barnouin, C. M. Ernst, R. T. Daly, C. Sunday, P. Michel, A. Campo-Bagatin, A. Lucchetti, M. Pajola, A. S. Rivkin and N. L. Chabot. "The bearing capacity of asteroid (65803) Didymos estimated from boulder tracks," *Nature Communications* 15, 6204 (2024). https://doi.org/10.1038/s41467-024-50149-8

10. A.J. Meyer, O. Fuentes-Muñoz, I. Gkolias, K. Tsiganis, P. Pravec, S. Naidu and **D.J. Scheeres**. 2024. "An Earth Encounter As the Cause of Chaotic Dynamics in Binary Asteroid (35107) 1991VH," *Planetary Science Journal* 5:179.

11. Anivid Pedros-Faura, Mirko Trisolini, Yuichi Tsuda, **Daniel J. Scheeres**, Shota Kikuchi, and Jay W. McMahon. "Target Marker Deployment Strategies for Hayabusa2 Extended Mission to Fast Rotator 1998 KY26," *Astrodynamics*, in press 6/2024.

12. Luke T. Peterson, Gavin Brown, Àngel Jorba and **Daniel Scheeres**. 2024. "Dynamics Around the Earth-Moon Triangular Points in the Hill Restricted 4-Body Problem," *Celestial Mechanics & Dynamical Astronomy* 136:31.

13. A.J. Meyer and **D.J. Scheeres**. 2024. "Apsidal Precession in Binary Asteroids," *Astronomy & Astrophysics* 688, A119.

14. Anivid Pedros-Faura, G.M. Brown, J.W. McMahon and **Daniel J. Scheeres**. 2024. "Forced Periodic Motion by Solar Radiation Pressure in the Polyhedral Gravity Model," *Celestial Mechanics & Dynamical Astronomy* 136, 34.

15. Petr Pravec, Alex J. Meyer, Peter Scheirich, **Daniel J. Scheeres**, Conor J. Benson and Harrison F. Agrusa. 2024. "Rotational lightcurves of Dimorphos and constraints on its post-DART impact spin state," *Icarus* 418 (2024) 116138.

16. A. Tsuruta, M. Bando, S. Hokamoto and **D.J. Scheeres**. 2024. "New Equilibria and Dynamical Structures under Continuous Optimal Feedback Control," *Journal of Guidance, Control and Dynamics* 47(10): 2029-2040.

17. Y. Khatri and **D.J. Scheeres**. 2024. "Hybrid Method of Uncertainty Propagation for Near-Earth Conjunction Analysis," *Journal of Guidance, Control and Dynamics* 47(9): 1778-1791.

18. Fu, X., Soldini, S., Ikeda, H., **Scheeres, D.** and Tsuda, Y. 2024 "The dynamics about asteroid (162173) Ryugu," *Celestial Mechanics & Dynamical Astronomy* 136, 29 (2024). https://doi.org/10.1007/s10569-024-10199-y

19. Shantanu P. Naidu, Steven R. Chesley, Nicholas Moskovitz, Cristina Thomas, Alex J. Meyer, Petr Pravec, Peter Scheirich, Davide Farnocchia, **Daniel J. Scheeres**, Marina Brozovic, Lance A.M. Benner, Andrew S. Rivkin and Nancy L. Chabot. 2024. "Orbital and physical characterization of asteroid Dimorphos followingthe DART impact," *Planetary Science Journal* 5:74. https://doi.org/10.3847/psj/ad26e7

20. A.J. Meyer and **D.J. Scheeres**. 2024. "The Strength and Shapes of Contact Binary Objects," *Astrophysics Journal Letters* 963:L14. https://doi.org/10.3847/2041-8213/ad2853

21. G.M. Brown and **D.J. Scheeres**. 2024. "A Global Method to Compute Asteroid Equilibrium Points for Any Spin Rate," *Journal of Guidance, Control and Dynamics* 47(3): 531-538.

22. O. Boodram and **D.J. Scheeres**. 2024. "Constrained Evolution of Hamiltonian Phase Space Distributions in the Presence of Natural, Non-conservative Forces," *Celestial Mechanics & Dynamical Astronomy* 136:1.
https://doi.org/10.1007/s10569-023-10172-1

23. Nancy L. Chabot, Andrew S. Rivkin, Andrew F. Cheng, Olivier S. Barnouin, Eugene G. Fahnestock, Derek C. Richardson, Angela M. Stickle, Cristina A. Thomas, Carolyn M. Ernst, R. Terik Daly, Elisabetta Dotto, Angelo Zinzi, Steven R. Chesley, Nicholas A. Moskovitz, Brent W. Barbee, Paul Abell, Harrison F. Agrusa, Michele T. Bannister, Joel Beccarelli, Dmitriy L. Bekker, Megan Bruck Syal, Bonnie J. Buratti, Michael W. Busch, Adriano Campo Bagatin, Joseph P. Chatelain, Sidney Chocron, Gareth S. Collins, Luca Conversi, Thomas M. Davison, Mallory E. DeCoster, J. D. Prasanna Deshapriya, Siegfried Eggl, Raymond C. Espiritu, Tony L. Farnham, Marin Ferrais, Fabio Ferrari, Dora Fohring, Oscar Fuentes-Muñoz, Igor Gai, Carmine Giordano, David A. Glenar, Edward Gomez, Dawn M. Graninger, Simon F. Green, Sarah Greenstreet, Pedro H. Hasselmann, Isabel Herreros, Masatoshi Hirabayashi, Marek Husarik, Simone Ieva, Stavro L. Ivanovski, Samuel L. Jackson, Emmanuel Jehin, Martin Jutzi, Ozgur Karatekin, Matthew M. Knight, Ludmilla Kolokolova, Kathryn M. Kumamoto, Michael Kuppers, Fiorangela La Forgia, Monica Lazzarin, Jian-Yang Li, Tim A. Lister, Ramin Lolachi, Michael P. Lucas, Alice Lucchetti, Robert Luther, Rahil Makadia, Elena Mazzotta Epifani, Jay McMahon, Gianmario Merisio, Colby C. Merrill, Alex J. Meyer, Patrick Michel, Marco Micheli, Alessandra Migliorini, Kate Minker, Dario Modenini, Fernando Moreno, Naomi Murdoch, Brian Murphy, Shantanu P. Naidu, Hari Nair, Ryota Nakano, Cyrielle Opitom, Jens Ormo, J. Michael Owen, Maurizio Pajola, Eric E. Palmer, Pasquale Palumbo, Paolo Panicucci, Laura M. Parro, Jason M. Pearl, Antti Penttila, Davide Perna, Elisabeta Petrescu, Petr Pravec, Sabina D. Raducan, K. T. Ramesh, Ryan Ridden-Harper, Juan L. Rizos, Alessandro Rossi, Nathan X. Roth, Agata Rozek, Benjamin Rozitis, Eileen V. Ryan, William H. Ryan, Paul Sánchez, Toni Santana-Ros, **Daniel J. Scheeres**, Peter Scheirich, Cem Berk Senel, Colin Snodgrass, Stefania Soldini, Damya Souami, Thomas S. Statler, Rachel Street, Timothy J. Stubbs, Jessica M. Sunshine, Nicole J. Tan, Gonzalo Tancredi, Calley L. Tinsman, Paolo Tortora, Filippo Tusberti, James D. Walker, Dany C. Waller, Kai Wunnemann, Marco Zannoni, Yun Zhang. "Achievement of the Plane-

tary Defense Investigations of the Double Asteroid Redirection Test (DART) Mission," *Planetary Science Journal* 5:49, 2024. https://doi.org/10.3847/PSJ/ad16e6

24. D.B. Henry and **D.J. Scheeres**. 2024. "Fully numerical computation of heteroclinic connection families in the spatial three-body problem," *Communications in Nonlinear Science and Numerical Simulation* 130: 107780, March 2024.

25. E.L. Jenson and **D.J. Scheeres**. 2024. "Bounding Nonlinear Stretching About Spacecraft Trajectories Using Tensor Eigenpairs," *Acta Astronautica* 214: 159-166.

26. L.T. Peterson and **D.J. Scheeres**. 2023. "Local Orbital Elements for the Circular Restricted Three-Body Problem," *Journal of Guidance, Control and Dynamics* 46(12): 2275-2289.

27. G.M. Brown and **D.J. Scheeres**. 2023. "Analyzing the Structure of Orbit Families that Exist Around Asteroid (101955) Bennu," *Celestial Mechanics & Dynamical Astronomy* (2023) 135:52.

28. L.T. Peterson, J.J. Rosales and **D.J. Scheeres**. 2023. "The Vicinity of Earth-Moon L1 and L2 in the Hill Restricted 4-Body Problem," *Physica D: Nonlinear Phenomena* 455 (2023) 133889.

29. D.B. Henry and **D.J. Scheeres**. 2023. "Quasi-periodic Orbit Transfer Design via Whisker Intersection Sets," *Journal of Guidance, Control and Dynamics* 46(10): 1929-1944.

30. Shota Kikuchi, Yuya Mimasu, Yuto Takei, Takanao Saiki, **Daniel J. Scheeres**, Masatoshi Hirabayashi, Koji Wada, Makoto Yoshikawa, Sei-ichiro Watanabe, Satoshi Tanaka, Yuichi Tsuda. 2023. "Preliminary design of the Hayabusa2 extended mission to the fast-rotating Asteroid 1998 KY26," *Acta Astronautica* 211 (2023) 295-315.

31. **D.J. Scheeres** and G.M. Brown. 2023. "Bounds on Energy and Angular Momentum Loss in the Full n-Body Problem," *Celestial Mechanics and Dynamical Astronomy* (2023) 135:35.

32. G.M. Brown and **D.J. Scheeres**. 2023. "Temporal Evolution of the Dynamical Environment Around Asteroid (101955) Bennu," *Icarus* 403 (2023) 115632.

33. J. Greaves and **D.J. Scheeres**. 2023. "Autonomous Optical-Only Spacecraft-to-Spacecraft Absolute Tracking and Maneuver Classification in Cislunar Space," *Journal of Guidance, Control and Dynamics* 46(11): 2092-2109.

34. P.R. Patel and **D.J. Scheeres**. 2023. "Rapid and Automatic Reachability Estimation of Electric Propulsion Spacecraft," *Journal of the Astronautical Sciences* 70:45.

35. D. Lujan and **D.J. Scheeres**. 2023. "Dynamics in the Vicinity of the Stable Halo Orbits," *Journal of the Astronautical Sciences* 70:20. Selected as an "Editor's Choice" contribution.

36. O. Fuentes-Muñoz, **D.J. Scheeres**, D. Farnocchia and R.S. Park. 2023. "The hazardous km-sized NEOs of the next thousands of years," *Astronomical Journal* 166:10. https://doi.org/10.3847/1538-3881/acd378

37. Andrew Cheng, Harrison Agrusa, Brent Barbee, Alex Meyer, Tony Farnham, Sabina Raducan, Derek Richardson, Elisabetta Dotto, Angelo Zinzi, Vincenzo Della Corte, Thomas Statler, Steven Chesley, Shantanu Naidu, Masatoshi Hirabayashi, Jian-Yang Li, Siegfried Eggl, Olivier Barnouin, Nancy Chabot, Sidney Chocron, Gareth Collins, Ronald Daly, Thomas Davison, Mallory DeCoster, Carolyn Ernst, Fabio Ferrari, Dawn Graninger, Seth Jacobson, Martin Jutzi, Kathryn Kumamoto, Robert Luther, Joshua Lyzhoft, Patrick Michel, Naomi Murdoch, Ryota Nakano, Eric Palmer, Andrew Rivkin, **Daniel Scheeres**, Angela Stickle, Jessica Sunshine, Josep Trigo-Rodriguez, Jean-Baptiste Vincent, James Walker, Kai Wunnemann, Yun Zhang, Marilena Amoroso, Ivano Bertini, John Brucato, Andrea Capannolo, Gabriele Cremonese, Massimo Dallora, Prasanna Deshapriya, Igor Gai, Pedro Hasselmann, Simone Ieva, Gabriele Impresario, Stavro Ivanovski, Michelle Lavagna, Alice Lucchetti, Elena Mazzotta Epifani, Dario Modenini, Maurizio Pajola, Pasquale Palumbo, Davide Perna, Simone Pirotta, Giovanni Poggiali, Alessandro Rossi, Paolo Tortora, Marco Zannoni, Giovanni Zanotti. "Momentum Transfer from the DART Mission Kinetic Impact on Asteroid Dimorphos," *Nature* 616: 457-460, 2023.

38. Jian-Yang Li, Masatoshi Hirabayashi, Tony Farnham, Matthew Knight, Gonzalo Tancredi, Fernando Moreno, Brian Murphy, Cyrielle Opitom, Steven Chesley, Jessica Sunshine, **Daniel Scheeres**, Cristina Thomas, Eugene Fahnestock, Andrew Cheng, Linda Dressel, Carolyn Ernst, Fabio Ferrari, Alan Fitzsimmons, Simone Ieva, Stavro Ivanovski, Teddy Kareta, Ludmilla Kolokolova, Tim Lister, Sabina Raducan, Andrew Rivkin, Alessandro Rossi, Stefania Soldini, Angela Stickle, Alison Vick, Jean-Baptiste Vincent, Harold Weaver, Stefano Bagnulo, Michele Bannister, Saverio Cambioni, Adriano Campo Bagatin, Nancy Chabot, Gabriele Cremonese, Ronald Daly, Elisabetta Dotto, David Glenar, Mikael Granvik, Pedro Hasselmann, M. Herreros, Seth Jacobson, Martin Jutzi, Tomas Kohout, Fiorangela La Forgia, Monica Lazzarin, Zhong-Yi Lin, Ramin Lolachi, Alice Lucchetti, Rahil Makadia, Elena Mazzotta Epifani, Patrick Michel, Alessandra Migliorini, Nicholas Moskovitz, Jens Ormo, Maurizio Pajola, Paul Sanchez, Stephen Schwartz, Colin Snodgrass, Jordan Steckloff, Timothy Stubbs, Josep Trigo-Rodriguez. "Ejecta from the DART-produced active asteroid Dimorphos," *Nature* 616: 452-456, 2023.

39. Ronald Daly, Carolyn Ernst, Olivier Barnouin, Nancy Chabot, Andrew Rivkin, Andrew Cheng, Elena Adams, Harrison Agrusa, Elisabeth Abel, Amy Alford, Erik Asphaug, Justin Atchison, Andrew Badger, Paul Baki, Ronald-Louis Ballouz, Dmitriy Bekker, Julie Bellerose, Shyam Bhaskaran, Bonnie Buratti, Saverio Cambioni, Michelle Chen, Steven Chesley, George Chiu, Gareth Collins, Matthew Cox, Mallory DeCoster, Peter Ericksen, Raymond Espiritu, Alan Faber, Tony Farnham, Fabio Ferrari, Zachary Fletcher, Robert Gaskell, Dawn Graninger, Musad Haque, Patricia Harrington-Duff, Masatoshi Hirabayashi, Philip Huang, Syau-Yun Hsieh, Seth Jacobson, Stephen Jenkins, Mark Jesenius, Jeremy John, Martin Jutzi, Tomas Kohout, Timothy Krueger, Frank Laipert, Norberto Lopez, Robert Luther, Alice Lucchetti, Declan Mages, Simone Marchi, Anna Martin, Maria McQuaide, Patrick Michel, Nicholas Moskovitz, Ian Murphy, Naomi Murdoch, Shantanu Naidu, Hari Nair, Michael Nolan, Jens Ormo, Eric Palmer, James Peachey, Petr Pravec, Sabina Raducan, Joshua Ramirez, Edward Reynolds, Joshua Richman, Colas Robin, Luis Rodriguez, Lew Roufberg, Brian Rush, Carolyn Sawyer, **Daniel Scheeres**, Petr Scheirich, Stephen Schwartz, Matthew Shannon, Brett Shapiro, Caitlin Shearer, Evan Smith, R. Steele, Jordan Steckloff, Angela Stickle, Jessica Sunshine, Emil Superfin, Zahi Tarzi, Cristina Thomas, Justin Thomas, Josep Trigo-Rodriguez, B. Tropf, Andrew

Vaughan, Dianna Velez, C. Waller, Daniel Wilson, Kristin Wortman, Yun Zhang, Maurizio Pajola, M. Herreros. "Successful Kinetic Impact into an Asteroid for Planetary Defense," *Nature* 616: 443-447, 2023.

40. S. Takahashi and **D.J. Scheeres**. 2023. "Autonomous Reconnaissance Trajectory Controller Design at Small NEAs via Reinforcement Learning," *Journal of Guidance, Control and Dynamics* 46(7): 1280-1297.

41. E. Jenson and **D.J. Scheeres**. 2023. "Semianalytical Measures of Nonlinearity Based on Tensor Eigenpairs," *Journal of Guidance, Control and Dynamics* 46(4): 638-653. https://doi.org/10.2514/1.G006760

42. Y. Khatri and **D.J. Scheeres**. 2023. "Nonlinear Semi-Analytical Uncertainty Propagation for Conjunction Analysis," *Acta Astronautica* 203: 568-576.

43. C.J. Benson, **D.J. Scheeres**, M. Brozović, S. Chesley, P. Pravec and P. Scheirich. 2023. "Spin State Evolution of (99942) Apophis during its 2029 Earth Encounter," *Icarus* 390: 115324.

44. Alex J Meyer, **Daniel J Scheeres**; Harrison F Agrusa; Guillaume Noiset; Jay McMahon; Özgür Karatekin; Masatoshi Hirabayashi; Ryota Nakano. 2023. "Energy Dissipation in Synchronous Binary Asteroids," *Icarus* 391: 115323.

45. M. Pellegrino, **D.J. Scheeres** and B. Streetman. 2022. "Fragment Cloud Evolution in Medium Earth Orbit," *Journal of the Astronautical Sciences* 69: 1766-1796.

46. O. Fuentes-Muñoz, A.J. Meyer and **D.J. Scheeres**. 2022. "Semi-analytical Near-Earth Objects Propagation: The Orbit History of (35107) 1991 VH and (175706) 1996 FG3," *Planetary Science Journal* 3:257. https://doi.org/10.3847/PSJ/ac83c6

47. D. Lujan and **D.J. Scheeres**. 2022. "The Earth-Moon L2 Quasi-Halo Orbit Family: Characteristics and Manifold Applications," *Journal of Guidance, Control and Dynamics* 45(11): 2029-2045.

48. C.J. Benson and **D.J. Scheeres**. 2022. "General Tumbling-Averaged Rotational Dynamics for Defunct Satellites," *Journal of Guidance, Control and Dynamics* 45(10): 1830-1846.

49. **D.J. Scheeres**. 2022. "Proximity Operations About Apophis Through Its 2029 Earth Flyby," *Journal of the Astronautical Sciences* 69: 1514-1536. https://doi.org/10.1007/s40295-022-00360-w

50. P. Sánchez, **D.J. Scheeres** and A.C. Quillen. 2022. "Transmission of a Seismic Wave generated by impacts on Granular Asteroids," *Journal of Planetary Science* 3:245.

51. K. Nichols and **D.J. Scheeres**. 2022. "Electrostatic Lofting Conditions for Supercharged Dust," *Astrophysical Journal* 931:122.

52. Walsh, K. J., Ballouz, R.-L., Jawin, E. R., Avdellidou, C., Barnouin, O. S., Bennett, C. A., Bierhaus, E. B., Bos, B. J., Cambioni, S., Connolly Jr, H. C., ..., P. Sánchez, **D.J. Scheeres**, et al., "Near-zero cohesion and loose packing of Bennu's near subsurface revealed by spacecraft contact," Science Advances, Vol. 8, No. 27, 2022, pp. eabm6229.

53. A. B. Davis and **D. J. Scheeres**. 2021. "GUBAS: General Use Binary Asteroid Simulator," *Astrophysics Source Code Library* : ascl:2107.013.

54. C. Venigalla, J.A. Englander and **D.J. Scheeres**. 2022. "Multi-Objective Low-Thrust Trajectory Optimization With Robustness to Missed Thrust Events," *Journal of Guidance, Control and Dynamics* 45(7): 1255-1268. https://doi.org/10.2514/1.G006056

55. O. Celik, R.-L. Ballouz, **D.J. Scheeres** and Y. Kawakatsu. 2022. "A numerical simulation approach to the crater-scaling relationships in low-speed impacts under microgravity," *Icarus* 377: 114882.

56. C.M. Lisse, M.R. Combi, T.L. Farnham, N. Dello Russo, S. Sandford, A.F. Cheng, U. Fink, W.M. Harris, J. McMahon, **D.J. Scheeres**, H.A. Weaver, J. Leary. 2022. "Operating Spacecraft Around Comets: Evaluation of the Near-Nucleus Environment," *Acta Astronautica* 195: 365-378.

57. X. Li, **D.J. Scheeres** and D. Qiao. 2022. "Bouncing Return Trajectory Design for Precise Lander Deployment to Asteroids," *Journal of Guidance, Control and Dynamics* 45(1): 121-137.

58. V. Ray, **D.J. Scheeres**, S. Alnaqbi, K.W. Tobiska and S.G. Hesar. 2022. "A framework to estimate local atmospheric densities with reduced drag-coefficient biases," *Space Weather* 20(3), March 2022, e2021SW002972.

59. J. H. Roberts, O. S. Barnouin, M. G. Daly, K. J. Walsh, M. C. Nolan, R. T. Daly, P. Michel, Y. Zhang, M. E. Perry, G. A. Neumann, J. A. Seabrook, R. W. Gaskell, E. E. Palmer, J. R. Weirich, S. Watanabe, N. Hirata, N. Hirata, S. Sugita, **D. J. Scheeres**, J. W. McMahon, and D. S. Lauretta. 2021. "Rotational states and shapes of Ryugu and Bennu: Implications for interior structure and strength," *Planetary and Space Science* **204**: 105268.

60. R.-L. Ballouz, K. J. Walsh, P. Sánchez, K. A. Holsapple, P. Michel, **D. J. Scheeres**, Y. Zhang, D. C. Richardson, O. S. Barnouin, M. C. Nolan, E. B. Bierhaus, H. C. Connolly, S. R. Schwartz, O. Çelik, M. Baba, and D. S. Lauretta. 2021. "Modified granular impact force laws for the OSIRIS-REx touchdown on the surface of asteroid (101955) Bennu," *Monthly Notices of the Royal Astronomical Society* **507**: 5087.

61. A.J. Meyer, I. Gkolias, M. Gaitanas, H.F. Agrusa, **D.J. Scheeres**, K. Tsiganis, P. Pravec, L.A.M. Benner, F. Ferrari and P. Michel. 2021. "Libration-induced Orbit Period Variations Following the DART Impact," *Planetary Science Journal* 2:242. https://doi.org/10.3847/PSJ/ac3bd1

62. X. Li and **D. J. Scheeres**. 2021. "Analysis of Cohesion in Fast-spinning Small Bodies," *The Planetary Science Journal* **2**: 229.

63. P. Tricarico, **D. J. Scheeres**, A. S. French, J. W. McMahon, D. N. Brack, J. M. Leonard, P. Antreasian, S. R. Chesley, D. Farnocchia, Y. Takahashi, E. M. Mazarico, D. Rowlands, D. Highsmith, K. Getzandanner, M. Moreau, C. L. Johnson, L. Philpott, E. B. Bierhaus, K. J. Walsh, O. S. Barnouin, E. E. Palmer, J. R. Weirich, R. W. Gaskell, M. G. Daly, J. A. Seabrook, M. C. Nolan, D. S. Lauretta. 2021. "Internal rubble composition of asteroid (101955) Bennu," *Icarus* 370: 114665.

64. J. A. Greaves and **D. J. Scheeres**. 2021. "Observation and Maneuver Detection for Cislunar Vehicles," *Journal of the Astronautical Sciences* **68**: 826-854. http://link.springer.com/article/10.1007/s40295-021-00283-y

65. M. M. Pellegrino, **D. J. Scheeres**, and B. J. Streetman. 2021. "The Feasibility of Targeting Chaotic Regions in the GNSS Regime," *Journal of the Astronautical Sciences* **68**: 553. https://doi.org/10.1007/s40295-021-00270-3

66. V. Ray, **D.J. Scheeres** and M. Pilinski. 2021. "Inverting gas-surface interaction parameters from Fourier drag-coefficient estimates for a given atmospheric model," *Advances in Space Research* 68: 1902-1927.

67. O. Golubov, V. Unukovych and **D.J. Scheeres**. 2021. "Limiting Behavior Of Asteroid Obliquity And Spin Using A Semi-Analytic Thermal Model Of The YORP Effect," *Astronomical Journal* 162:8. https://doi.org/10.3847/1538-3881/abfb64

68. C.J. Benson, C.J. Naudet; **D.J. Scheeres** J.S. Jao, L.G. Snedeker, W.H. Ryan, E.V. Ryan, M.A. Silva, J.K. Lagrange, S.H. Bryant, P.C. Tsao, D.K. Lee, U. Yildiz, and H.D. Nguyen. 2021. "Radar and Optical Study of Defunct Geosynchronous Satellites," *Journal of the Astronautical Sciences* 68: 728-749. https://doi.org/10.1007/s40295-021-00266-z

69. C. Venigalla and **D.J. Scheeres**. 2021. "Delta-V Based Analysis of Spacecraft Pursuit-Evasion Games," *Journal of Guidance, Dynamics and Control* 44(11): 1961-1971.

70. C.J. Benson and **D.J. Scheeres**. 2021. "Resonance-Averaged Solar Torque Dynamics for Tumbling Satellites," *Journal of Guidance, Control and Dynamics* 44(12): 2143-2154.

71. Harrison Agrusa, Ioannis Gkolias; Kleomenis Tsiganis; Derek C Richardson; Alex J Meyer; **Daniel J Scheeres**; Matija Cuk; Seth A Jacobson; Patrick Michel; Ozgur Karatekin; Andrew F Cheng; Masatoshi Hirabayashi; Yun Zhang; Eugene G Fahnestock; Alex B Davis. 2021. "The Excited Spin State of Dimorphos Resulting from the DART Impact," *Icarus* 370: 114624.

72. P. Sánchez, D.D. Durda, G. Devaud, A. Fischer, **D.J. Scheeres** and R. Dissly. 2021. "Laboratory experiments with self-cohesive powders: Application to the morphology of regolith on small asteroids," *Planetary and Space Science* 207: 105321.

73. S. Takahashi and **D.J. Scheeres**. 2021. "Autonomous Exploration of a Small Near-Earth Asteroid," *Journal of Guidance, Control and Dynamics* 44(4): 701-718. https://doi.org/10.2514/1.G005733

74. C.J. Benson and **D.J. Scheeres**. 2021. "Averaged Solar Torque Rotational Dynamics for Defunct Satellites," *Journal of Guidance, Control and Dynamics* 44(4): 749-766. https://doi.org/10.2514/1.G005449

75. E. Jenson and **D.J. Scheeres**. 2021. "Multi-Objective Optimization of Covariance and Energy for Asteroid Transfers," *Journal of Guidance, Control and Dynamics* 44(7): 1253-1265.

76. A.J. Meyer and **D.J. Scheeres**. 2021. "The Effect of Planetary Flybys on Singly Synchronous Binary Asteroids," *Icarus* 367: 114554.

77. D.B. Henry and **D.J. Scheeres**. 2021. "Expansion Maps: Designing Relative Trajectories on Quasi-periodic Orbits," *Journal of Guidance, Dynamics and Control* 44(3): 457-468.

78. M. Pellegrino and **D.J. Scheeres**. 2021. "Reachability of a Passive Solar Sail in Earth Orbit," *Journal of Guidance, Control and Dynamics* 44(2): 360-369.

79. P. Scheirich, P. Pravec, P. Kusnirak, K. Hornoch, J. McMahon, **D.J. Scheeres**, D. Capek, D.P. Pray, H. Kucakova, A. Galad, J. Vrastil, Yu N. Krugly, N. Moskovitz, L. D. Avner, B. Skiff, R.S. McMillan, J.A. Larsen, M.J. Brucker, A.F. Tubbiolo, W. R. Cooneyi, J. Gross, D. Terrellj, O. Burkhonov, K.E. Ergashev, Sh.A. Ehgamberdiev, P. Fatka, R. Durkee, E. Lilly Schunova, R. Ya Inasaridze, V.R. Ayvazian, G. Kapanadze, N.M. Gaftonyuk, J.A. Sanchez, V. Reddy, L. McGraw, M.S. Kelley, and I. E. Molotov. 2021. "A satellite orbit drift in binary near-Earth asteroids (66391) 1999 KW4 and (88710) 2001 SL9: Indication of the BYORP effect," *Icarus* 360: 114321.

80. X. Li and **D.J. Scheeres**. 2021. "The shape and surface environment of 2016 HO3," *Icarus* 357: 114249.

81. V. Ray and **D.J. Scheeres**. 2021. "King-Hele orbit theory for periodic orbit and attitude variations," *Monthly Notices of the Royal Astronomical Society* 501(1): 1168-1187. https://doi.org/10.1093/mnras/staa3630

82. E. L. Jenson, X. Chen and **D.J. Scheeres**. 2021. "Optimal Spacecraft Guidance with Asynchronous Measurements and Noisy Impulsive Controls," *IEEE Control Systems Letters* 5(5): 1813-1818.
doi: 10.1109/LCSYS.2020.3045384.

83. A.B. Davis and **D.J. Scheeres**. 2020. "High Fidelity Modeling of Rotationally Fissioned Asteroids," *Journal of Planetary Science* 1:25.

84. C. Venigalla and **D.J. Scheeres**. 2020. "Minimum Bounds on Multi-Spacecraft ΔV Optimal Cooperative Rendezvous," *Journal of Guidance, Dynamics and Control* 43(12): 2333–2348. https://doi.org/10.2514/1.G004978

85. V. Ray and **D.J. Scheeres**. 2020. "Gravitational Force-Model Aliasing with Non-Gravitational Force Coefficients in Dynamic Prediction," *Journal of Guidance, Dynamics and Control* 43(11): 1984–1997. https://doi.org/10.2514/1.G005001

86. S. Takahashi and **D.J. Scheeres**. 2020. "Higher Order Corrections for Frozen Terminator Orbit Design," *Journal of Guidance, Dynamics and Control* 43(9): 1642–1655.

87. Yusuke Oki, Kent Yoshikawa, Hiroshi Takeuchi, Shota Kikuchi, Hitosi Ikeda, **Daniel J. Scheeres**, Jay W. McMahon, Junichiro Kawaguchi, Yuto Takei, Yuya Mimasu, Naoko Ogawa, Go Ono, Fuyuto Terui, Manabu Yamada, Toru Kouyama, Shingo Kameda, Kazuya Yoshida, Kenji Nagaoka, Tetsuo Yoshimitsu, Takanao Saiki, Yuichi Tsuda. 2020. "Orbit Insertion Strategy of Hayabusa2's Rover with Large Release Uncertainty around the Asteroid Ryugu," *Astrodynamics* 4(4): 309-329.

88. **D. J. Scheeres**, A. S. French, P. Tricarico, S. R. Chesley, Y. Takahashi, D. Farnocchia, J. W. McMahon, D. N. Brack, A. B. Davis, R.-L. Ballouz, E. R. Jawin, B. Rozitis, J. P. Emery, A. J. Ryan, R. S. Park, B. P. Rush, N. Mastrodemos, B. M. Kennedy, J. Bellerose,

D. P. Lubey, D. Velez, A. T. Vaughn, J. M. Leonard, J. Geeraert, B. Page, P. Antreasian, E. Mazarico, K. Getzandanner, D. Rowlands, M. C. Moreau, J. Small, D. E. Highsmith, S. Goossens, E. E. Palmer, J. R. Weirich, R. W. Gaskell, O. S. Barnouin, M. G. Daly, J. A. Seabrook, M. M. Al Asad, L. C. Philpott, C. L. Johnson, C. M. Hartzell, V. E. Hamilton, P. Michel, K. J. Walsh, M. C. Nolan, D. S. Lauretta. "Heterogeneous mass distribution of the rubble-pile asteroid (101955) Bennu," Science Advances 6, eabc3350 (2020).

89. E. R. Jawin, K. J. Walsh, O. S. Barnouin, T. J. McCoy, R.-L. Ballouz, D. N. DellaGiustina, H. C. Connolly Jr., J. Marshall, C. Beddingfield, M. C. Nolan, J. L. Molaro, C. A. Bennett, **D.J. Scheeres**, M. G. Daly, M. Al Asad, R. T. Daly, E. B. Bierhaus, H. C. M. Susorney, H. H. Kaplan, H. L. Enos and D. S. Lauretta. 2020. "Global Patterns of Recent Mass Movement on Asteroid (101955) Bennu," *JGR Planets* 10.1029/2020JE006475.

90. E. L. Jenson, X. Chen and **D.J. Scheeres**. 2020. "Optimal Control of Sampled Linear Systems with Control-Linear Noise," in IEEE Control Systems Letters. DOI: 10.1109/LCSYS.2020.2990122

91. V. Ray and **D.J. Scheeres**. 2020. "Drag coefficient model to track variations due to attitude and orbital motion," *Journal of Guidance, Dynamics and Control* 43(10): 1915-1926.

92. F. Marzari, A. Rossi, O. Golubov and **D.J. Scheeres**. 2020. "Evolution of an Asteroid Family under YORP, Yarkovsky, and Collisions," *Astronomical Journal* 160:128. https://doi.org/10.3847/1538-3881/aba7be

93. V. Ray, **D.J. Scheeres**, S.G. Hesar and M. Duncan. 2020. "A drag coefficient modeling approach using spatial and temporal Fourier expansions for orbit determination," *Journal of the Astronautical Sciences* 67(3), 1139-1168. 10.1007/s40295-019-00200-4

94. C. Benson, **D.J. Scheeres** and N. Moskovitz. 2020. "Spin State Evolution of Asteroid (367943) Duende During its 2013 Earth Flyby," *Icarus* 340: 113518.

95. N. Moskovitz, C. Benson, **D. Scheeres**, T. Endicott, D. Polishook, R. Binzel, F. DeMeo, W. Ryan, E. Ryan, M. Willman, C. Hergenrother, A. Verneer, T. Lister, P. Birtwhistle, S. Sheppard, T. Augusteijn, S. Bennechi, F. Marchis, P. Kilmartin, A. Sickafoose, O. Smirnova, T. Nagayama and A. Gilmore. 2020. "Observational Investigation of the 2013 Near-Earth Encounter by Asteroid (367943) Duende," *Icarus* 340: 113519.

96. S.P. Naidu, L.A.M. Benner, M. Brozovic, M.C. Nolan, S.J. Ostro, J.L. Margot, J. D. Giorgini, T. Hirabayashi, **D.J. Scheeres**, P. Pravec, P. Scheirich, C. Magri and J.S. Jao. 2020. "Radar observations and a physical model of binary near-Earth asteroid 65803 Didymos, target of the DART mission," *Icarus* 348: 113777.

97. J.W. McMahon, **D.J. Scheeres**, S.R. Chesley, A.S. French, D.N. Brack, D. Farnocchia, Y. Takahashi, B. Rozitis, P. Tricarico, E. Mazarico, B. Bierhaus, D. Vokrouhlický, J.P. Emery, C.W. Hergenrother and D.S. Lauretta. 2020. "Dynamical Evolution of Simulated Particles Ejected from Asteroid Bennu," *Journal of Geophysical Research: Planets* 125, e2019JE006229. https:// doi.org/10.1029/2019JE006229.

98. **D.J. Scheeres**, J.W. McMahon, D.N. Brack, A.S. French, S.R. Chesley, D. Farnocchia, D. Vokrouhlický, R.-L. Ballouz, J.P. Emery, B. Rozitis, M.C. Nolan, C.W. Hergenrother and D.S. Lauretta. 2020. "Particle ejection contributions to the rotational acceleration and orbit evolution of Asteroid (101955) Bennu," *Journal of Geophysical Research: Planets* 125, e2019JE006284. https:// doi.org/10.1029/2019JE006284.

99. S. Chesley, A. French, A. Davis, R. Jacobson, M. Brozovic, D. Farnocchia, S. Selznick, A. Liounis, C. Hergenrother, M. Moreau, J. Pelgrift, E. Lessac-Chenen, J. Molaro, R.S. Park, B. Rozitis, **D.J. Scheeres**, Y. Takahashi, D. Vokrouhlický, C. Wolner, C. Adam, B. Bos, E. Christensen, J. Emery, J. Leonard, J. McMahon, M. Nolan, F. Shelly and D. Lauretta. 2020. "Trajectory estimation for particles observed in the vicinity of (101955) Bennu," *Journal of Geophysical Research: Planets* 125, e2019JE006363. https://doi.org/10.1029/2019JE006363.

100. A.B. Davis and **D.J. Scheeres**. 2020. "Doubly synchronous binary asteroid mass parameter observability," *Icarus* 341: 113439.

101. S. Van wal, R.G. Reid and **D.J. Scheeres**. 2020. "Simulation of Nonspherical Asteroid Landers: Contact Modeling and Shape Effects on Bouncing," *Journal of Spacecraft and Rockets* 57(1): 109-130.

102. C. Benson, **D.J. Scheeres**, W.H. Ryan, E.V. Ryan, N.A. Moskovitz. 2020. "GOES Spin State Diversity and the Implications for GEO Debris Mitigation," *Acta Astronautica* 167: 212-221.

103. P. Sánchez and **D.J. Scheeres**. 2020. "Cohesive Regolith on Fast Rotating Asteroids," *Icarus* 338: 113443.

104. D. Veras and **D.J. Scheeres**. 2020. "Post-main-sequence debris from rotation-induced YORP break-up of small bodies–II. Multiple fissions, internal strengths, and binary production," *Monthly Notices of the Royal Astronomical Society* 492(2): 2437–2445.

105. **D.J. Scheeres**. 2020. "Disassociation energies for the finite density N-body problem," *Celestial Mechanics and Dynamical Astronomy* 132:4.
In the collection: 50 years of Celestial Mechanics and Dynamical Astronomy.
https://doi.org/10.1007/s10569-019-9945-x

106. S. De Smet, **D.J. Scheeres**, and J.S. Parker. 2019. "Representing Dynamics in the Eccentric Hill System using a Neural Network Architecture," *Journal of Astrodynamics* 3: 301–324.

107. D.S. Lauretta, C.W. Hergenrother, S.R. Chesley, J.M. Leonard, J.Y. Pelgrift, C.D. Adam, M. Al Asad, P.G. Antreasian, R.-L. Ballouz, K.J. Becker, C.A. Bennett, B.J. Bos, W.F. Bottke, M. Brozović, H. Campins, H.C. Connolly, M.G. Daly, A.B. Davis, J. de León, D.N. DellaGiustina, C.Y. Drouet d'Aubigny, J.P. Dworkin, J.P. Emery, D. Farnocchia, D.P. Glavin, D.R. Golish, C.M. Hartzell, R.A. Jacobson, E.R. Jawin, P. Jenniskens, J.N. Kidd, E.J. Lessac-Chenen, J.-Y. Li, G. Libourel, J. Licandro, A.J. Liounis, C.K. Maleszewski, C. Manzoni, B. May, L.K. McCarthy, J.W. McMahon, P. Michel, J.L. Molaro, M.C. Moreau, D.S. Nelson, W.M. Owen, B. Rizk, H.L. Roper, B. Rozitis, E.M. Sahr, **D.J. Scheeres**, J.A. Seabrook, S.H. Selznick, Y. Takahashi, F. Thuillet, P. Tricarico, D. Vokrouhlický, and C.W.V. Wolner. 2019. "Episodes of particle ejection from the surface of the active asteroid (101955) Bennu," *Science* 366:3544

108. S. De Smet, **D.J. Scheeres** and Jeffrey S. Parker. 2019. "Leveraging Artificial Neural Networks to Systematically Explore Solar Gravity Driven Transfers in the Martian System," *Journal of the Astronautical Sciences* 66:282.

109. D. Hestroffer, P. Sánchez, L. Staron, A. Campo Bagatin, S. Eggl, W. Losert, N. Murdoch, E. Opsomer, F. Radjai, D.C. Richardson, M. Salazar, **D.J. Scheeres**, S. Schwartz, N. Taberlet; and H. Yano. 2019. "Small Solar System Bodies as Granular Media," *The Astronomy and Astrophysics Review* 27:6.

110. P. Pravec, P. Fatka, D. Vokrouhlicky, P. Scheirich, J. Durech, **D. J. Scheeres**, P. Kusnirak, K. Hornoch, A. Galad, D. P. Pray, Yu. N. Krugly, ... 2019. "Asteroid pairs: A complex picture." *Icarus* 333: 429-463.

111. L. Dell'Elce and **D.J. Scheeres**. 2019. "Sensitivity of Optimal Control Problems Arising from their Hamiltonian Structure," *The Journal of the Astronautical Sciences*:29. https://doi.org/10.1007/s40295-019-00168-1

112. J. Cardoso dos Santos, S. Ferrer and **D.J. Scheeres**. 2019. "Study of the roto-translational motion using intermediaries: Numerical experiments," *Celestial Mechanics and Dynamical Astronomy* 131:26.

113. S.M. Rieger, B. Barbee and **D.J. Scheeres**. 2019. "Orbital Stability Regions for Hypothetical Natural Satellites of 101955 Bennu (1999 RQ36)," *Journal of Spacecraft and Rockets* 56(3): 789-800.

114. S. De Smet and **D.J. Scheeres**. 2019. "Identifying heteroclinic connections using artificial neural networks," *Acta Astronautica* 161: 192-199.

115. M. Hirabayashi, E. Tatsumi, H. Miyamoto, G. Komatsu, S. Sugita, S. Watanabe, **D.J. Scheeres**, O. Barnouin, P. Michel, C. Honda, T. Michikami, Y. Cho, T. Morota, N. Hirata, N. Hirata, N. Sakatani, S. Schwartz, R. Honda, Y. Yokota, S. Kameda, H. Suzuki, T. Kouyama, M. Hayakawa, M. Matsuoka, K. Yoshioka, K. Ogawa, H. Sawada, M. Yoshikawa and Y. Tsuda. 2019. "The western bulge of 162173 Ryugu formed as a result of a rotationally driven deformation process" *ApJ Letters* 874(1): L10.

116. S. Watanabe, M. Hirabayashi, N. Hirata, N. Hirata, R. Noguchi, Y. Shimaki, H. Ikeda, E. Tatsumi, M. Yoshikawa, S. Kikuchi, H. Yabuta, T. Nakamura, S. Tachibana, Y. Ishihara, T. Morota, K. Kitazato, N. Sakatani, K. Matsumoto, K. Wada, H. Senshu, C. Honda, T. Michikami, H. Takeuchi, T. Kouyama, R. Honda, S. Kameda, T. Fuse, H. Miyamoto, G. Komatsu, S. Sugita, T. Okada, N. Namiki, M. Arakawa, M. Ishiguro, M. Abe, R. Gaskell, E. Palmer, O. S. Barnouin, P. Michel, A. S. French, J. W. McMahon, **D. J. Scheeres**, P. A. Abell, Y. Yamamoto, S. Tanaka, K. Shirai, M. Matsuoka, M. Yamada, Y. Yokota, H. Suzuki, K. Yoshioka, Y. Cho, S. Tanaka, N. Nishikawa, T. Sugiyama, H. Kikuchi, R. Hemmi, T. Yamaguchi, N. Ogawa, G. Ono, Y. Mimasu, K. Yoshikawa, T. Takahashi, Y. Takei, A. Fujii, C. Hirose, T. Iwata, M. Hayakawa, S. Hosoda, O. Mori, H. Sawada, T. Shimada, S. Soldini, H. Yano, R. Tsukizaki, M. Ozaki, Y. Iijima, K. Ogawa, M. Fujimoto, T.-M. Ho, A. Moussi, R. Jaumann, J.-P. Bibring, C. Krause, F. Terui, T. Saiki, S. Nakazawa, Y. Tsuda. 2019. "Hayabusa2 arrives at the carbonaceous asteroid 162173 Ryugu – A spinning top-shaped rubble pile," *Science* 364: 268-272.

117. C. Hergenrother, C. Maleszewski, M. Nolan, J.-Y. Li, C.D. Aubigny, F. Shelly, E. Howell, T. Kareta, M. Izawa, M.A. Barucci, E. Bierhaus, H. Campins, S. Chesley, B. Clark, E. Christensen, D. DellaGiustina, S. Fornasier, D. Golish, C.M. Hartzell, B. Rizk, **D.J. Scheeres**, P. Smith, X. Zou, D. Lauretta, and OSIRIS-REx Team. 2019. "The Operational Environment and Rotational Acceleration of Asteroid (101955) Bennu from OSIRIS-REx Observations," *Nature Communications* 10: 1291.

118. K.J. Walsh, E. Jawin, R.-L. Ballouz, O. Barnouin, E.B. Bierhaus, H. Connolly Jr, J. Molaro, T. McCoy, M. Delbo, C. Hartzell, M. Pajola, S. Schwartz, D. Trang, E. Asphaug, K. Becker, C. Beddingfield, C. Bennett, W. Bottke, K. Burke, B. Clark, M. Daly, D. DellaGiustina, J. Dworkin, C. Elder, D. Golish, A. Hildebrand, R. Malhotra, J. Marshall, P. Michel, M. Nolan, M. Perry, B. Rizk, A. Ryan, S. Sandford, **D.J. Scheeres**, H. Susorney, F. Thuillet, D. Lauretta. 2019. "Craters, boulders and regolith of (101955) Bennu indicative of an old and dynamic surface," *Nature Geoscience* 12: 242-246.

119. O.S. Barnouin, M. Daly, E. Palmer, R. Gaskell, J. Weirich, C. Johnson, M. Al Asad, J. Roberts, M. Perry, H. Susorney, R. Daly, E. Bierhaus, J. Seabrook, R. Espiritu, H. Nair, L. Nguyen, G. Neumann, C. Ernst, W. Boynton, M. Nolan, C. Adam, M. Moreau, B. Rizk, C.D. d'Aubigny, E. Jawin, K. Walsh, P. Michel, S. Schwartz, R.-L. Ballouz, E. Mazarico, **D.J. Scheeres**, J. McMahon, W. Bottke, S. Sugita, N. Hirata, N. Hirata, S. Watanabe, K. Burke, C. Bennett, D. DellaGiustina, D. Lauretta. 2019. "Shape of (101955) Bennu indicative of a rubble pile with internal stiffness," *Nature Geoscience* 12: 247-252.

120. **D.J. Scheeres**, J. McMahon, A. French, D. Brack, S. Chesley, D. Farnocchia, Y. Takahashi, J. Leonard, J. Geeraert, B. Page, P. Antreasian, K. Getzandanner, D. Rowlands, E. Mazarico, J. Small, D. Highsmith, M. Moreau, J. Emery, B. Rozitis, M. Hirabayashi, P. Sánchez, S. Van wal, P. Tricarico, R.-L. Ballouz, C. Johnson, M. Al Asad, H. Susorney, O. Barnouin, M. Daly, J. Seabrook, R. Gaskell, E. Palmer, J. Weirich, K. Walsh, E. Jawin, E. Bierhaus, P. Michel, W. Bottke, M. Nolan, H. Connolly, and D. Lauretta . 2019. "The dynamic geophysical environment of (101955) Bennu based on OSIRIS-REx measurements," *Nature Astronomy* 3:352-361.

121. D.S. Lauretta, D. DellaGiustina, C. Bennett, D. Golish, K. Becker, S. Balram-Knutson, O. Barnouin, T. Becker, W. Bottke, W. Boynton, H. Campins, B. Clark, H. Connolly, Jr., C. d'Aubigny, J. Dworkin, J. Emery, H. Enos, V. Hamilton, C. Hergenrother, E. Howell, M. Nolan, B. Rizk, H. Roper, **D.J. Scheeres**, P. Smith, K. Walsh, C. Wolner, M. Izawa, H. Kaplan. 2019. "The Unexpected Surface of Asteroid (101955) Bennu," *Nature* 568: 55-60.

122. O. Golubov and **D.J. Scheeres**. 2019. "Systematic structure and sinks in the YORP effect," *The Astronomical Journal* 157(3): 105.

123. J.D. Aziz, **D.J. Scheeres** and G. Lantoine. 2019. "Hybrid Differential Dynamic Programming in the Circular Restricted Three-Body Problem," *Journal of Guidance, Dynamics and Control* 42(5): 963-975.

124. **D.J. Scheeres**. 2019. Distant Proximity Orbits About Asteroids[J]. *Journal of Deep Space Exploration*, 2019, 6(5): 448-455. doi: 10.15982/j.issn.2095-7777.2019.05.005

125. M. Hirabayashi, A.B. Davis, E.G. Fahnestock, D.C. Richardson, P. Michel, A.F. Cheng, A.S. Rivkin, **D.J. Scheeres**, S.R. Chesley, Y. Yu, S.P. Naidu, S.R. Schwartz, L.A.M.

Benner, P. Pravec, A.M. Stickle, M. Jutzi. 2019. "Assessing possible mutual orbit period change by shape deformation of Didymos after a kinetic impact in the NASA-led Double Asteroid Redirection Test," *Advances in Space Research* 63(8): 2515-2534.

126. J.D. Aziz, **D.J. Scheeres**, J. Parker and J. Englander. 2019. "A Smoothed Eclipse Model for Solar Electric Propulsion Trajectory Optimization," *Transactions Of The Japan Society For Aeronautical And Space Sciences, Aerospace Technology* 17(2): 181-188.

127. J.D. Aziz and **D.J. Scheeres**. 2019. "Sundman-Transformed Differential Dynamic Programming with Modified Equinoctial Elements," *Journal of the Astronautical Sciences* 66:419.

128. M.C. Nolan, E.S. Howell, **D.J. Scheeres**, J.W. McMahon, O. Golubov, C.W. Hergenrother, J.P. Emery, K.S. Noll, S.R. Chesley, and D.S. Lauretta. 2019. "Detection of Rotational Acceleration of Bennu using HST Lightcurve Observations," *Geophysical Research Letters* 46(4): 1956-1962.

129. **D.J. Scheeres**, S. Van wal, Z. Olikara and N. Baresi. 2019. "Dynamics in the Phobos Environment," *Advances in Space Research* 65: 476-495.

130. M. Hirabayashi and **D.J. Scheeres**. 2019. "Rotationally induced failure of irregularly shaped asteroids," *Icarus* 317: 354-364.

131. N. Baresi and **D.J. Scheeres**. 2018. "Drag-Perturbed Bounded Relative Trajectories In Low Earth Orbit: A Semi-Analytical Approach," *Acta Astronautica* 153: 229-239.

132. S. De Smet, J. Parker and **D.J. Scheeres**. 2018. "Dynamics and stability of Sun-driven transfers from Low Earth to Geosynchronous Orbit," *Journal of Guidance, Control and Dynamics* 41(9): 2002-2010.

133. E. Azéma, P. Sánchez and **D.J. Scheeres**. 2018. "Scaling behavior of cohesive self-gravitating aggregates," *Physical Review E* 98: 030901(R).

134. J. Worthy, M.J. Holzinger and **D.J. Scheeres**. 2018. "An Optimization Approach for Observation Association with Systemic Uncertainty Applied to Electro-Optical Systems," *Advances in Space Research* 61: 2709-7024.

135. J. Heiligers and **D.J. Scheeres**. 2018. "Solar Sail Orbital Motion About Asteroids and Binary Asteroid Systems," *Journal of Guidance, Control and Dynamics* 41(9): 1947-1962.

136. M. Bando and **D.J. Scheeres**. 2018. "Nonlinear Attractive Sets under Optimal Feedback Control in the Hill Three-Body Problem," *Journal of Guidance, Control and Dynamics* 41(8): 1766-1775.

137. S. Van wal, Y. Tsuda, K. Yoshikawa, A. Miura, S. Tanaka and **D.J. Scheeres**. 2018. "Pre-Arrival Deployment Analysis of Rovers on Hayabusa2 Asteroid Explorer," *Journal of Spacecraft and Rockets* 55(4): 797-817.

138. Marc Fries, Paul Abell, Julie Brisset, Daniel Britt, Joshua Colwell, Adrienne Dove, Dan Durda, Lee Graham, Christine Hartzell, Kenneth Hrovat, Kristen John, Dakotah Karrer, Matthew Leonard, Stanley Love, Joseph Morgan, Jayme Poppin, Vincent Rodriguez, Paul Sánchez-Lana, **Dan Scheeres** and Akbar Whizin. 2018. "The Strata-1 Experiment on Small Body Regolith Segregation," *Acta Astronautica* 142: 87-94.

139. N. Baresi, Z. Olikara and **D.J. Scheeres**. 2018. "Fully numerical methods for continuing families of quasi-periodic invariant tori in astrodynamics," *Journal of the Astronautical Sciences* 65: 157-182.

140. J.D. Aziz, J.S. Parker, **D.J. Scheeres** and J.A. Englander. 2018. "Low-Thrust Many-Revolution Trajectory Optimization via Differential Dynamic Programming and a Sundman Transformation," *Journal of the Astronautical Sciences* 65(2): 205-228.

141. P. Sánchez and **D.J. Scheeres**. 2018. "Rotational evolution of self-gravitating aggregates with cores of variable strength," *Planetary and Space Science* 157:39-47. DOI: 10.1016/j.pss.2018.04.001

142. M.K. Shepard, B. Timerson, **D.J. Scheeres**, L.A.M. Benner, J.D. Giorgini, E.S. Howell, C. Magri, C.C. Nolan, A. Springmann, P.A. Taylor, A. Virkki. 2018. "A Revised Shape Model of Asteroid (216) Kleopatra," *Icarus* 311: 197-209.

143. **D.J. Scheeres** and P. Sánchez. 2018. "Implications of cohesive strength in asteroid interiors and surfaces and its measurement," invited paper *Progress in Earth and Planetary Science* 5:25. DOI: 10.1186/s40645-018-0182-9

144. O. Golubov, V. Unukovych and **D.J. Scheeres**. 2018. "A New Equilibrium State For Singly Synchronous Binary Asteroids," *ApJ Letters* 857:L5.

145. **D.J. Scheeres**. 2018. "Stability of the Euler Resting N-Body Relative Equlilbria," *Celestial Mechanics and Dynamical Astronomy* 130:26.

146. S. Tardivel, P. Sánchez and **D.J. Scheeres**. 2018. "Equatorial cavities on asteroids, an evidence of fission events," *Icarus* 304: 192-208.

147. **D.J. Scheeres**. 2018. "Disaggregation of Small, Cohesive Rubble Pile Asteroids due to YORP," *Icarus* 304: 183-191.

148. P. Pravec, P. Fatka, D. Vokrouhlicky, **D. J. Scheeres**, P. Kusnirak, K. Hornoch, A. Galad, J. Vrastil, D. P. Pray, Yu. N. Krugly, N. M. Gaftonyuk, R. Ya. Inasaridze, V. R. Ayvazian, O. I. Kvaratskhelia, V. G. Zhuzhunadze, M. Husarik, W. R. Cooney, J. Gross, D. Terrell, J. Vilagi, L. Kornos, S. Gajdos, O. Burkhonov, Sh. A. Ehgamberdiev, Z. Donchev, G. Borisov, T. Bonev and I. E. Molotov. 2018. "Asteroid clusters similar to asteroid pairs." *Icarus* 304: 110-126.

149. J.W. McMahon, **D.J. Scheeres**, S.G. Hesar, D. Farnocchia, S. Chesley and D. Lauretta. 2018. "The OSIRIS-REx Radio Science Experiment at Bennu," *Space Science Reviews* 214:43.
https://doi.org/10.1007/s11214-018-0480-y

150. F. Crespo, F.J. Molero, S. Ferrer and **D.J. Scheeres**. 2018. "A radial axial-symmetric intermediary model for the roto-orbital motion," *Journal of the Astronautical Sciences* 65: 1-28.

151. I.-K. Park and **D.J. Scheeres**. 2018. "Hybrid Method for Uncertainty Propagation of Orbital Motion," *Journal of Guidance, Control and Dynamics* 41(1): 240-254.

152. A. Albuja, **D.J. Scheeres**, R.L. Cognion, W. Ryan and E.V. Ryan. 2018. "The YORP Effect on the GOES 8 and GOES 10 Satellites: A Case Study," *Advances in Space Research* 61: 122-144.

153. N. Baresi and **D.J. Scheeres**. 2017. "Design of Bounded Relative Trajectories in the Earth Zonal Problem," *Journal of Guidance, Control, and Dynamics* 40(12): 3075-3087.

154. S. Van wal, S. Tardivel and **D.J. Scheeres**. 2017. "Parametric Study of Ballistic Lander Deployment to Small Bodies," *Journal of Spacecraft and Rockets* 54(6): 1330-1355.

155. D. Lauretta, . . . , **D.J. Scheeres**, . . . (+46 authors). 2017. "OSIRIS-REx: Sample Return from Asteroid (101955) Bennu," *Space Science Reviews* 212(1-2): 925-984.

156. M. Hirabayashi, S.R. Schwartz, Y. Yu, A.B. Davis, S.R. Chesley, E.G. Fahnestock, P. Michel, D.C. Richardson, S.P. Naidu, **D.J. Scheeres**, A.F. Cheng, A.S. Rivkin, L.A.M. Benner. 2017. "Constraints on the perturbed mutual motion in Didymos due to impact-induced deformation of its primary after the DART impact," *Monthly Notices of the Royal Astronomical Society* 472(2): 1641-1648. https://doi.org/10.1093/mnras/stx1992

157. S. Hesar, **D.J. Scheeres** and J.W. McMahon. 2017. "A Precise Model for Small Body Thermal Radiation Pressure Acting on Spacecraft," *Journal of Guidance, Control, and Dynamics* 40(10): 2432-2441.

158. J.D. Feldhacker, M. Bruck-Sayal, B.A. Jones, A. Doostan, J. McMahon and **D.J. Scheeres**. 2017. "Shape Dependence of the Kinetic Deflection of Asteroids," *Journal of Guidance, Control, and Dynamics* 40(10): 2417-2431.

159. S. Van wal and **D.J. Scheeres**. 2017. "The Lift-Off Velocity on Solar System Small Bodies," *Journal of Guidance, Control, and Dynamics* 40(8): 1990-2005. http://dx.doi.org/10.2514/1.G002337

160. S. Hesar, **D.J. Scheeres** and J.W. McMahon. 2017. "Precise Solar Radiation Pressure Models for Small Body Orbiters: Applications to OSIRIS-REx," *Journal of Guidance, Control, and Dynamics* 40(7): 1638-1650.

161. **D.J. Scheeres**. 2017. "Constraints on Bounded Motion and Mutual Escape for the Full 3-Body Problem," *Celestial Mechanics and Dynamical Astronomy* 128(2-3): 131-148.

162. L. Dell'Elce, N. Baresi, S. Naidu, L.A.M. Benner and **D.J. Scheeres**. 2017. "Numerical investigation of the dynamical environment of (65803) Didymos," *Advances in Space Research* 59(5): 1304-1320.
Awarded the COSPAR Outstanding Paper Award for Young Scientists.

163. J.W. McMahon and **D.J. Scheeres**. 2017. "The Effect of Asteroid Topography on Surface Ablation Deflection," *Advances in Space Research* 59: 1144-1155.

164. D.A. Surovik and **D.J. Scheeres**. 2017. "Reactive and Robust Paradigms for Autonomous Mission Design at Small Bodies," *Journal of Guidance, Control and Dynamics* 40(2): 333-343.

165. N. Baresi and **D.J. Scheeres**. 2017. "Bounded relative motion under zonal harmonics perturbations," *Celestial Mechanics and Dynamical Astronomy* 127(4): 527-548.

166. X. Hou, **D.J. Scheeres** and X. Xin. 2017. "Mutual Potential between Two Rigid Bodies with Arbitrary Shapes and Mass Distributions — with application to the planar problem of two ellipsoids," *Celestial Mechanics and Dynamical Astronomy* 127(3): 369-395.

167. M. Brozovic, L.A.M. Benner, C. Magri, **D.J. Scheeres**, M.W. Busch, J.D. Giorgini, M.C. Nolan, J.S. Jao, C.G. Lee, L.G. Snedeker, M.A. Silva, K.J. Lawrence, M.A. Slade, M.D. Hicks, E.S. Howell, P.A. Taylor, J.A. Sanchez, V. Reddy, M. Dykhuis, and L. Le Corre. 2017. "Goldstone radar evidence for short-axis mode non-principal-axis rotation of near-Earth asteroid (214869) 2007 PA8," *Icarus* 286: 314-329.

168. S. Van wal, S. Tardivel, P. Sánchez, D. Djafari-Rouhani and **D.J. Scheeres**. 2017. "Rolling resistance of a spherical pod on a granular bed," *Granular Matter* 19:17. DOI 10.1007/s10035-016-0696-z

169. S. Hesar, **D.J. Scheeres** and J.W. McMahon. 2017. "Sensitivity Analysis of the OSIRIS-REx Terminator Orbits to Maneuver Errors," *Journal of Guidance, Control, and Dynamics* 40(1): 81-95.

170. X. Xin, **D.J. Scheeres** and X. Hou. 2016. "Forced periodic motions by solar radiation pressure around uniformly rotating asteroids," *Celestial Mechanics and Dynamical Astronomy* 126(4): 405-432.

171. O. Golubov and **D.J. Scheeres**. 2016. "Equilibrium rotation states of doubly synchronous binary asteroids," *Astrophysical Journal Letters* 833:L23.

172. T. Gabriel and **D.J. Scheeres**. 2016. "Energy Dissipation End States of the Sphere Restricted Planar Three Body Problem with Collisional Interaction," *Monthly Notices of the Royal Astronomical Society* 463, 794-801.

173. P. Ševeček, O. Golubov, **D.J. Scheeres** and Yu. N. Krugly. 2016. "Obliquity dependence of the tangential YORP," *Astronomy and Astrophysics* 592, A115.

174. H.C. Ko and **D.J. Scheeres**. 2016. "Tracking Maneuvering Satellite Using Thrust-Fourier-Coefficient Event Representation," *Journal of Guidance, Control and Dynamics* 39(11): 2551-2559.

175. L.A.G. Boldrin, **D.J. Scheeres** and O.C. Winter. 2016. "Dynamics of rotationally fissioned asteroids: non planar case," *Monthly Notices of the Royal Astronomical Society* 461(4): 3982-3992.

176. M. Bando and **D.J. Scheeres**. 2016. "Attractive Sets to Unstable Orbits Using Optimal Feedback Control," *Journal of Guidance, Control, and Dynamics* 39(12): 2725-2739. doi: http://arc.aiaa.org/doi/abs/10.2514/1.G000524

177. **D.J. Scheeres**. 2016. "Relative Equilibria in the Spherical, Finite Density 3-Body Problem," *Journal of Nonlinear Science* 26: 1445-1482. DOI 10.1007/s00332-016-9309-6

178. X. Hou, **D.J. Scheeres** and L. Liu. 2016. "Dynamics of the Jupiter Trojans with Saturn's perturbation when the two planets are in migration," *Celestial Mechanics and Dynamical Astronomy* 125(4):451-484.

179. **D.J. Scheeres**, S. Hesar, S. Tardivel, M. Hirabayashi, D. Farnocchia, J. McMahon, S. Chesley, O. Barnouin, R.P. Binzel, W.F. Bottke, M.G. Daly, J. Emery, C. Hergenrother, D.S. Lauretta, J. Marshall, P. Michel, M. Nolan, and K.J. Walsh. 2016. "The Geophysical Environment of Bennu," *Icarus* 276: 116-140.

180. H.C. Ko and **D.J. Scheeres**. 2016. "Maneuver Detection with Event Representation using Thrust-Fourier-Coefficients," *Journal of Guidance, Control and Dynamics* 39(5): 1080-1091.

181. N. Baresi, **D.J. Scheeres** and H. Schaub. 2016. "Bounded relative orbits about asteroids for formation flying and applications," *Acta Astronautica* 123: 364-375. *Invited paper.*

182. S. Van wal and **D.J. Scheeres**. 2016. "The Lift-Off Velocity on the Surface of an Arbitrary Body," *Celestial Mechanics and Dynamical Astronomy* 125(1): 1-31.

183. O. Golubov, Y. Kravets, Yu.N. Krugly and **D.J. Scheeres**. 2016. "Physical models for the normal YORP and diurnal Yarkovsky effects," *Monthly Notices of the Royal Astronomical Society* 458(4): 3977-3989.

184. M. Hirabayashi, **D.J. Scheeres**, S.R. Chesley, S. Marchi, J.W. McMahon, J. Steckloff, S. Mottola, S.P. Naidu and T. Bowling. 2016. "Fission and reconfiguration of bilobate comets as revealed by 67P/Churyumov-Gerasimenko," *Nature* 534: 352-355. doi:10.1038/nature17670

185. S.A. Jacobson, F. Marzari, A. Rossi and **D.J. Scheeres**. 2016. "Matching asteroid population characteristics with a model constructed from the YORP-induced rotational fission hypothesis," *Icarus* 277: 381-394.

186. P. Sánchez and **D.J. Scheeres**. 2016. "Disruption Patterns of Rotating Self-Gravitating Aggregates: A Survey on Angle of Friction and Tensile Strength," *Icarus* 271: 453-471.

187. H.C. Ko and **D.J. Scheeres**. 2016. "Orbit Determination Across Unknown Maneuvers Using The Essential Thrust-Fourier-Coefficients," *Acta Astronautica* 118: 90-95.

188. **D.J. Scheeres**. 2016. "Hill Stability of Configurations in the Full N-Body Problem," in *Asteroids: New observations, New models*, *Proceedings of the International Astronomical Union* S318: 128–134.

189. H.C. Ko and **D.J. Scheeres**. 2015. "Event Representation-Based Orbit Determination Across Unknown Space Events," *Journal of Guidance, Control and Dynamics* 38(12): 2351-2365.

190. I.-K. Park, K. Fujimoto and **D.J. Scheeres**. 2015. "Effect of Dynamical Accuracy for Uncertainty Propagation of Perturbed Keplerian Motion," *Journal of Guidance, Control and Dynamics* 38(12): 2287-2300. doi: 10.2514/1.G000956

191. H. Urrutxua, **D.J. Scheeres**, C. Bombardelli, J.L. Gonzalo and J. Peláez. 2015. "Temporarily Captured Asteroids as a Pathway to Affordable Asteroid Retrieval Missions," *Journal of Guidance, Control and Dynamics* 38(11): 2132-2145.

192. I. McNally, **D.J. Scheeres** and G. Radice. 2015. "Locating Large Solar Power Satellites in the Geosynchronous Laplace Plane," *Journal of Guidance, Control and Dynamics* 38(3): 489-505.

193. D. Surovik and **D.J. Scheeres**. 2015. "Adaptive Reachability Analysis to Achieve Mission Objectives in Strongly Non-Keplerian Systems," *Journal of Guidance, Control and Dynamics* 38(3): 468-477.

194. E. Komendera, J. Garland, E. Bradley and **D.J. Scheeres**. 2015. "Efficiently evaluating reachable sets in the circular restricted 3-body problem," *IEEE Transactions on Aerospace and Electronic Systems* 51(1): 454–467

195. A. Albuja, **D.J. Scheeres** and J.W. McMahon. 2015. "Evolution of Angular Velocity for Defunct Satellites as a Result of YORP: An Initial Study," *Advances in Space Research* 56: 237-251.

196. K. Fujimoto and **D.J. Scheeres**. 2015. "Tractable Analytical Expressions for Non-Linearly Propagated Uncertainties," *Journal of Guidance, Control and Dynamics* 38(6): 1146-1151. doi: 10.2514/1.G000795

197. M. Hirabayashi, P. Sánchez and **D.J. Scheeres**. 2015. "Internal Structure of Asteroids Having Surface Shedding due to Rotational Instability," *The Astrophysical Journal* 808: 63.

198. D.G. Yarnoz, **D.J. Scheeres**, and C.R. McInnes. 2015. "On the and families of orbits in the Hill problem with solar radiation pressure and their application to asteroid orbiters," *Celestial Mechanics and Dynamical Astronomy* 121(4):365-384.

199. J.W. McMahon and **D.J. Scheeres**. 2015. "Improving Space Object Catalog Maintenance Through Advances in Solar Radiation Pressure Modeling," *Journal of Guidance, Control and Dynamics* 38(8), 1366-1381.

200. R.P. Binzel, F.E. DeMeo, B.J. Burt, E.A. Cloutis, B. Rozitis, T.H. Burbine, H. Campins, B.E. Clark, J.P. Emery, C.W. Hergenrother, E.S. Howell, D.S. Lauretta, M.C. Nolan, M. Mansfield, V. Pietrasz, D. Polishook, **D.J. Scheeres**. 2015. "Spectral slope variations for OSIRIS-REx target Asteroid (101955) Bennu: Possible evidence for a fine-grained regolith equatorial ridge," *Icarus* 256:22-29.

201. D. Lee, A.K. Sanyal, E.A. Butcher and **D.J. Scheeres**. 2015. "Finite Time Control for Spacecraft Body-Fixed Hovering over an Asteroid," *IEEE-Transactions on Aerospace and Electronics Systems* 15(1): 506-520.

202. M.J. Holzinger, **D.J. Scheeres** and J. Hauser. 2015. "Reachability Using Arbitrary Performance Indices," *IEEE-Transactions on Automatic Control* 60(4): 1099-1103.

203. S. Tardivel, Y. Takahashi, A.K. Zimmer, J.F.C. Herman, J.P.J. Reijneveld, K.L. Dunlop and **D.J. Scheeres**. 2015. "Human exploration of near Earth Asteroids: Architecture of proximity operations," *Acta Astronautica* 110: 18-28.

204. M. Hirabayashi and **D.J. Scheeres**. 2015. "Stress and Failure Analysis of Rapidly Rotating Asteroid (29075) 1950 DA," *Astrophysical Journal Letters* 798:L8.

205. W.F. Bottke, D. Vokrouhlický, K.J. Walsh, M. Delbo, P. Michel, D.S. Lauretta, H. Campins, H.C. Connolly Jr., **D.J. Scheeres**, S.R. Chelsey. 2015. "In search of the source of asteroid (101955) Bennu: Applications of the stochastic YORP model," *Icarus* 247: 191-217.

206. D.S. Lauretta, A.E. Bartels, M.A. Barucci, E.B. Bierhaus, R.P. Binzel, W.F. Bottke, H. Campins, S.R. Chesley, B.C. Clark, B.E. Clark, E.A. Cloutis, H.C. Connolly, M.K. Crombie, M. Delbó, J.P. Dworkin, J.P. Emery, D.P. Glavin, V.E. Hamilton, C.W. Hergenrother, C.L. Johnson, L.P. Keller, P. Michel, M.C. Nolan, S.A. Sandford, **D.J. Scheeres**, A.A. Simon, B.M. Sutter, D. Vokrouhlický and K.J. Walsh. 2015. "The OSIRIS-REx target asteroid (101955) Bennu: Constraints on its physical, geological, and dynamical nature from astronomical observations," *Meteoritics & Planetary Science* 50(4): 834-849. doi: 10.1111/maps.12353

207. A.A. Albuja and **Daniel J. Scheeres**. 2015. "Analytical solution for the normal emission portion of the averaged Yarkovsky-O'Keefe-Radzvieskii-Paddack coefficient for a single facet," *Monthly Notices of the Royal Astronomical Society* 446 (4): 4029-4038 doi: 10.1093/mnras/stu2379

208. J.F.C. Herman, A.K. Zimmer, J.P.J. Reijneveld, K.L. Dunlop, Y. Takahashi, S. Tardivel and D.J. Scheeres. 2015. "Corrigendum to: Human exploration of near earth asteroids: Mission analysis for chemical and electric propulsion (104: 313-323, 2014)," *Acta Astronautica* 110: 354-354..

209. **D.J. Scheeres**. 2015. "Landslides and Mass Shedding on Spinning Spheroidal Asteroids," *Icarus* 247: 1-17.

210. **D.J. Scheeres**. 2014. "Hill Stability in the Full 3-Body Problem," in *Complex Planetary Systems*, *Proceedings of the International Astronomical Union* 9(S310): 134–137.

211. S. Tardivel, **D.J. Scheeres**, P. Michel, S. Van wal, P. Sánchez. 2014. "Surface Motion on an Asteroid," *Journal of Spacecraft and Rockets* 51(6): 1857-1871.

212. O. Golubov, **D.J. Scheeres** and Yu.N. Krugly. 2014. "A 3-dimensional model of tangential YORP," *Astrophysical Journal* 794:22.

213. W.-D. Hu, **D.J. Scheeres**. 2014. "Averaging analyses for spacecraft orbital motion around asteroids," *Acta Mechanica Sinica* 30(3): 294-300.

214. X. Hou, **D.J. Scheeres** and L. Liu. 2014. "Dynamics of the Jupiter Trojans with Saturn's perturbation in the present configuration of the two planets," *Celestial Mechanics and Dynamical Astronomy* 119:119-142.

215. X. Hou, **D.J. Scheeres** and L. Liu. 2014. "Saturn Trojans: a dynamical point of view," *Monthly Notices of the Royal Astronomical Society* 437(2): 1420-1433.

216. S.A. Jacobson, F. Marzari, A. Rossi, **D.J. Scheeres** and D.R. Davis. 2014. "Effect of rotational disruption on the size-frequency distribution of the Main Belt asteroid population," *Monthly Notices of the Royal Astronomical Society* 439: L95-L99.

217. D. Lee, A. Sanyal, E. Butcher and **D.J. Scheeres**. 2014. "Almost Global Asymptotic Tracking Control for Spacecraft Body-Fixed Hovering near an Asteroid," *Aerospace Science and Technology* 38: 105-115.

218. M. Sanjurjo-Rivo, **D. J. Scheeres** and J. Peláez. 2014. "Jovian Capture of a Spacecraft with a Self-Balanced Electrodynamic Bare Tether," *Journal of Spacecraft and Rockets* 51(5): 1401-1412.

219. D.P. Lubey and **D.J. Scheeres**. 2014. "Identifying and Estimating Mismodeled Dynamics via Optimal Control Policies and Distance Metrics," *Journal of Guidance, Control and Dynamics* 37(5): 1512-1523. doi: 10.2514/1.G000369

220. J.F.C. Herman, A.K. Zimmer, J.P.J. Reijneveld, K.L. Dunlop, Y. Takahashi, S. Tardivel and **D.J. Scheeres**. 2014. "Human exploration of near earth asteroids: Mission analysis for chemical and electric propulsion," *Acta Astronautica* 104: 313-323.

221. P. Sánchez and **D.J. Scheeres**. 2014. "The Strength of Regolith and Rubble Pile Asteroids," *Meteoritics and Planetary Science* 49(5): 788-811.

222. H.C. Ko and **D.J. Scheeres**. 2014. "Essential Thrust-Fourier-Coefficient Set of Averaged Gauss Equations for Orbital Mechanics," *Journal of Guidance, Control and Dynamics* 37(4): 1236-1249.

223. Y. Takahashi and **D.J. Scheeres**. 2014. "Small body surface gravity fields via spherical harmonic expansions," *Celestial Mechanics and Dynamical Astronomy* 119(2): 169-206.

224. M. Hirabayashi, **D.J. Scheeres**, P. Sánchez and T. Gabriel. 2014. "Constraints on the Physical Properties of Main Belt Comet P/2013 R3 from its Breakup Event," *Astrophysical Journal Letters* 789:L12 (5pp).

225. D.R. Boone and **D.J. Scheeres**. 2014. "Long-Life Europa Geodesy Orbits Accounting for Navigation Uncertainties," *Journal of Guidance, Control, and Dynamics* 37(2): 413-424.

226. K. Lee, C. Park, S.-Y. Park, **D.J. Scheeres**. 2014. "Optimal tracking and formation keeping near a general Keplerian orbit under nonlinear perturbations," *Advances in Space Research* 54(6): 1019-1028.

227. M. Nazari, R. Wauson, T. Critz, E.A. Butcher and **D.J. Scheeres**. 2014. "Observer-based body-frame hovering control over a tumbling asteroid," *Acta Astronautica* 102: 124-139.

228. C. Park, J.H. Yang and **D.J. Scheeres**. 2014. "Optimal Formation Reconfigurations subject to Hill Three-Body Dynamics," *Journal of Guidance, Control and Dynamics* 37(2): 700-705.

229. A.J. Rosengren, **D.J. Scheeres** and J.W. McMahon. 2014. "The classical Laplace plane as a stable disposal orbit for geostationary satellites," *Advances in Space Research* 53: 1219-1228. *Awarded the COSPAR Outstanding Paper Award for Young Scientists.*

230. A.J. Rosengren and **D.J. Scheeres**. 2014. "Laplace plane modifications arising from solar radiation pressure," *The Astrophysical Journal* 786: 45.

231. A.J. Rosengren and **D.J. Scheeres**. 2014. "On the Milankovitch Orbital Elements for Perturbed Keplerian Motion," *Celestial Mechanics and Dynamical Astronomy* 118(3): 197-220.

232. Y. Takahashi and **D.J. Scheeres**. 2014. "Morphology driven density distribution estimation for small bodies," *Icarus* 233(1): 179-193.

233. M. Holzinger, **D.J. Scheeres** and R.S. Erwin. 2014. "On-Orbit Range Computation using Gauss' Variational Equations with J_2 Perturbations," *Journal of Guidance, Control and Dynamics* 37(2): 608-622.

234. J.W. McMahon and **D.J. Scheeres**. 2014. "General Solar Radiation Pressure Model for Global Positioning System Orbit Determination," *Journal of Guidance, Control and Dynamics* 37(1): 325-330.

235. K. Fujimoto, **D.J. Scheeres**, J. Herzog and T. Schildknecht. 2014 "Association of optical tracklets from a geosynchronous belt survey via the direct Bayesian admissible region approach," *Advances in Space Research* 53: 295-308.

236. S.A. Jacobson, **D.J. Scheeres** and J.W. McMahon. 2014. "The Formation of the Wide Asynchronous Binary Asteroid Population," *Astrophysical Journal* 780: 60.

237. M. Hirabayashi and **D.J. Scheeres**. 2014. "Analysis of Asteroid (216) Kleopatra using dynamical and structural constraints," *Astrophysical Journal* 780(2):160.

238. K. Fujimoto and **D.J. Scheeres**. 2013. "Applications of the Admissible Region to Space-Based Observations," *Advances in Space Research* 52: 696-704.

239. C. M. Hartzell, X. Wang, **D. J. Scheeres**, and M. Horanyi. 2013. "Experimental demonstration of the role of cohesion in electrostatic dust lofting," *Geophysical Research Letters* 40(6): 1038-1042.

240. J.W. McMahon and **D.J. Scheeres**. 2013. "Dynamic Limits on Planar Libration-Orbit Coupling Around an Oblate Primary," *Celestial Mechanics and Dynamical Astronomy* 115: 365-396.

241. A.J. Rosengren and **D.J. Scheeres**. 2013. "Long-term Dynamics of High Area-to-mass Ratio Objects in High-Earth Orbit," *Advances in Space Research* 52: 1545-1560.
Awarded the COSPAR Outstanding Paper Award for Young Scientists.

242. **D.J. Scheeres**, M.A. de Gosson and J.M. Maruskin. 2012. "Applications of Symplectic Topology to Orbit Uncertainty and Spacecraft Navigation," *Journal of the Astronautical Sciences* 59(1-2): 63-83. *Appeared in print in 2013.*

243. J.S. Hudson and **D.J. Scheeres**. 2013. "Fourier Coefficient Selection for Low-Thrust Control Shaping," *Journal of Guidance, Control and Dynamics* 36(6): 1783-1786.

244. M. Hirabayashi and **D.J. Scheeres**. 2013. "Recursive computation of mutual potential between two polyhedra," *Celestial Mechanics and Dynamical Astronomy* 117:245-262. DOI 10.1007/s10569-013-9511-x

245. Y. Takahashi, M.W. Busch and **D.J. Scheeres**. 2013. "Spin State and Moment of Inertia Characterization of 4179 Toutatis," *The Astronomical Journal* 146:95, October 2013.

246. S. Tardivel, P. Michel, and **D.J. Scheeres**. 2013. "Deployment of a lander on the binary asteroid (175706) 1996 FG3, potential target of the european MarcoPolo-R sample return mission," *Acta Astronautica* 89: 60-70.

247. S. Tardivel and **D.J. Scheeres**. 2013. "Ballistic Deployment of Science Packages on Binary Asteroids," *Journal of Guidance, Control and Dynamics* 36(3): 700-709.

248. C.W. Hergenrother, M.C. Nolan, R.P. Binzel, E.A. Cloutis, M.A. Barucci, P. Michel, **D.J. Scheeres**, C.D. d'Aubigny, D. Lazzaro, N. Pinilla-Alonso, H. Campins, J. Licandro, B.E. Clark, B. Rizk, E.C. Beshore, and D.S. Lauretta. 2013. "Lightcurve, Color and Phase Function Photometry of the OSIRIS-REx Target Asteroid (101955) 1999 RQ36", *Icarus* 226(1): 663-670.

249. M.C. Nolan, C. Magri, E.S. Howell, L.A.M. Benner, J.D. Giorgini, C.W. Hergenrother, R.S. Hudson, D.S. Lauretta, J.-L. Margot, S.J. Ostro, **D.J. Scheeres**. 2013. "Shape Model and Surface Properties of the OSIRIS-REx Target Asteroid (101955) Bennu from Radar and Lightcurve Observations.," *Icarus* 226(1): 629-640.

250. Y. Takahashi, **D.J. Scheeres** and R.A. Werner. 2013. "Surface Gravity Fields for Asteroids and Comets," *Journal of Guidance, Control and Dynamics* 36(2): 362-374.

251. C.M. Hartzell and **D.J. Scheeres**. 2013. "Dynamics of Levitating Dust Particles Near Asteroids and the Moon," *Journal of Geophysical Research – Planets* 118(1): 116-125.

252. M.J. Holzinger, **D.J. Scheeres** and K.T. Alfriend. 2012. "Object Correlation, Maneuver Detection, and Maneuver Characterization Using Control Distance Metrics," *Journal of Guidance, Control and Dynamics* 35(4): 1312-1325.

253. **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.

254. M.J. Holzinger and **D.J. Scheeres**. 2012. "Analytical Reachability Solutions for a Class of Nonlinear Systems with Ellipsoidal Initial Sets," *IEEE Transactions on Aerospace and Electronic Systems* 48(2): 1583-1600.

255. **D.J. Scheeres**. 2012. "Orbit mechanics about asteroids and comets," *Journal of Guidance, Control and Dynamics* 35(3): 987-997.

256. P. Sánchez and **D.J. Scheeres**. 2012. "DEM Simulation of Rotation-Induced Reshaping and Disruption of Rubble-Pile Asteroids," *Icarus* 218: 876-894.

257. K. Fujimoto, **D.J. Scheeres** and K.T. Alfriend. 2012. "Analytical Non-Linear Propagation of Uncertainty in the Two-Body Problem," *Journal of Guidance, Control and Dynamics* 35(2): 497-509.

258. J. Peláez, M. Lara, C. Bombardelli, F.R. Lucas, M. Sanjurjo-Rivo, D. Curreli, E.C. Lorenzini and **D.J. Scheeres**. 2012. "Periodic Orbits of a Hill-Tether Problem Originated from Collinear Points," *Journal of Guidance, Control and Dynamics* 35(1): 222-233.

259. K. Fujimoto and **D.J. Scheeres**. 2012. "Correlation of Optical Observations of Earth-Orbiting Objects and Initial Orbit Determination," *Journal of Guidance, Control and Dynamics* 35(1): 208-221.

260. J. Peláez, C. Bombardelli and **D.J. Scheeres**. 2012. "Dynamics of a Tethered Observatory at Jupiter," *Journal of Guidance, Control and Dynamics* 35(1): 195-207.

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

262. M. Brozovic, L.A.M. Benner, M.C. Nolan, E.S. Howell, P.A. Taylor, C. Magri, **D.J. Scheeres**, J.D. Giorgini, J.T. Pollock, P. Pravec, A. Galad, M.W. Busch, J.-L. Margot, M.K. Shepard, D.E. Reichart, K.M. Ivarsen, J.B. Haislip, A.P. LaCluyze, J. Jao, M.A. Slade, K.J. Lawrence, M.D. Hicks. 2011. "Radar and optical observations and physical modeling of triple near- Earth Asteroid (136617) 1994 CC," *Icarus* 216: 241-256.

263. C.M. Hartzell and **D.J. Scheeres**. 2011. "The Role of Cohesive Forces in Particle Launching on the Moon and Asteroids," *Planetary and Space Science* 59: 1758-1768.

264. Yu Takahashi and **D.J. Scheeres**. 2011. "Small Body Postrendezvous Characterization via Slow Hyperbolic Flybys," *Journal of Guidance, Control and Dynamics* 34(6): 1815-1827.

265. K.E. Davis, R.L. Anderson, **D.J. Scheeres**, and G.H. Born. 2011. "Optimal transfers between unstable periodic orbits using invariant manifolds," *Celestial Mechanics and Dynamical Astronomy* 109: 241-264.

266. F. Marzari, A. Rossi, and **D.J. Scheeres**. 2011. "Combined effect of YORP and collisions on the rotation rate of small Main Belt asteroids," *Icarus* 214: 622-631.

267. R.C. Woolley and **D.J. Scheeres**. 2011. "Application of V-infinity leveraging maneuvers to endgame strategies for planetary moon orbiters," *Journal of Guidance, Control and Dynamics* 34(5): 1298-1310.

268. O. Peñagaricaño and **D.J. Scheeres**. 2011. "A Perturbation Theory for Hamilton's Principal Function: Applications to the Two-Point Boundary Value Problem," *Journal of Guidance, Control and Dynamics* 34(4): 1129-1142.

269. J.S. Hudson and **D.J. Scheeres**. 2011. "Orbital Targeting using the Reduced Eccentric Anomaly Low-Thrust Coefficients," *Journal of Guidance, Control and Dynamics* 34(3): 820-831.

270. S.A. Jacobson and **D.J. Scheeres**. 2011. "Long-term Stable Equilibria for Synchronous Binary Asteroids," *The Astrophysical Journal Letters*, 736:L19 (5pp).

271. C. Magri, E.S. Howell, M.C. Nolan, P.A. Taylor, Y.R. Fernandez, M. Mueller, R.J. Vervack Jr., L.A.M. Benner, J.D. Giorgini, S.J. Ostro, **D.J. Scheeres**, M.D. Hicks, H. Rhoades, J.M. Somers, N.M. Gaftonyuk, V.V. Kouprianov, Y.N. Krugly, I.E. Molotov, M.W. Busch, J.-L. Margot, V. Benishek, V. Protitch-Benishek, A. Galad, D. Higgins, P. Kusnirak, D.P. Pray. 2011. "Radar and photometric observations and shape modeling of contact binary near-Earth Asteroid (8567) 1996 HW1," *Icarus* 214: 210-227.

272. S.A. Jacobson and **D.J. Scheeres**. 2011. "Dynamics of Rotationally Fissioned Asteroids: Source of Observed Small Asteroid Systems," *Icarus* 214(1): 161-178.

273. R.P. Perrine, D.C. Richardson, and **D.J. Scheeres**. 2011. "A Numerical Model of Cohesion in Planetary Rings," *Icarus* 212(2): 719-735.

274. M.W. Busch, S.J. Ostro, L.A.M. Benner, M. Brozovic, J.D. Giorgini, J.S. Jao, D.J. Scheeres, C. Magri, M.C. Nolan, E.S. Howell, P.A. Taylor, J.-L. Margot and W. Brisken. 2011. "Radar Observations and the Shape of Near-Earth Asteroid 2008 EV5," *Icarus* 212(2): 649-660.

275. P. Sánchez and **D.J. Scheeres**. 2011. "Simulating Asteroid Rubble-Piles with a Self-Gravitating Soft-Sphere DEM Model," *Astrophysical Journal*, 727: 120.

276. M. Brozovic, L.A.M. Benner, C. Magri, S.J. Ostro, **D.J. Scheeres**, J.D. Giorgini, M.C. Nolan, J.-L. Margot, R.F. Jurgens and R. Rose. 2010. "Radar observations and a physical model of contact binary Asteroid 4486 Mithra," *Icarus* 208(1): 207-220.

277. J. McMahon and **D.J. Scheeres**. 2010. "New Radiation Pressure Force Model for Navigation," *Journal of Guidance, Control and Dynamics* 33(5): 1418-1428.

278. **D.J. Scheeres**, C.M. Hartzell, P. Sànchez, M. Swift. 2010. "Scaling forces to asteroid surfaces: The role of cohesion," *Icarus* 210: 968-984.

279. J. McMahon and **D.J. Scheeres**. 2010. "Detailed Prediction for the BYORP Effect on Binary Near-Earth Asteroid (66391) 1999 KW4 and Implications for the Binary Population," *Icarus* 209: 494-509.

280. 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.

281. K.E. Davis, R.L. Anderson, **D.J. Scheeres**, and G.H. Born. 2010. "The Use of Invariant Manifolds for Transfers between Unstable Periodic Orbits with Different Energies," *Celestial Mechanics and Dynamical Astronomy* 107(4): 471-485.

282. *M. Nakamiya*, H. Yamakawa, **D.J. Scheeres**, and M. Yoshikawa. 2010. "Interplanetary Transfers Between Halo Orbits: Connectivity Between Escape and Capture Trajectories," *Journal of Guidance, Control and Dynamics*, 33(3): 803-813.

283. J. McMahon and **D.J. Scheeres**. 2010. "Secular Orbit Variation due to Solar Radiation Effects: A Detailed Model for BYORP," *Celestial Mechanics and Dynamical Astronomy* 106: 261-300.

284. S. Cicalò and **D.J. Scheeres**. 2010. "Averaged rotational dynamics of an asteroid in tumbling rotation under the YORP torque," *Celestial Mechanics and Dynamical Astronomy* 106: 301-337.

285. K. Fujimoto and **D.J. Scheeres**. 2010. "Circular and Zero-inclination Solutions for Optical Observations of Earth-orbiting Objects," *Celestial Mechanics and Dynamical Astronomy*, 106(2): 157-182.

286. D. Curreli, E.C. Lorenzini, C. Bombardelli, M. Sanjurjo-Rivo, J. Peláez, **D. Scheeres**, and M. Lara. 2010. "Three-Body Dynamics and Self-Powering of an Electrodynamic Tether in a Plasmasphere," *Journal of Propulsion and Power* 26(3): 385-395.

287. O. Peñagaricano Muñoa and **D.J. Scheeres**. 2010. "A perturbation theory," *Acta Astronautica* 67(1-2): 27-37.

288. B.F. Villac and **D.J. Scheeres**. 2009. "Third-Body-Driven vs. One-Impulse Plane Changes," *Journal of the Astronautical Sciences* 57(3): 545-559.

289. J. Masiero, C. Hartzell, and **D.J. Scheeres**. 2009. "The effect of the dust size distribution on asteroid polarization," *The Astronomical Journal* 138: 1557-1562.

290. E.G. Fahnestock and **D.J. Scheeres**. 2009. "Binary asteroid orbit expansion due to continued YORP spin-up of the primary and primary surface particle motion," *Icarus* 201(1): 135-152.

291. P. Patel and **D.J. Scheeres**. 2009. "A Second Order Optimization Algorithm Using Quadric Control Updates for Multistage Optimal Control Problems," *Optimal Control Applications and Methods* 30: 525-536.

292. Y. Tsuda and **D.J. Scheeres**. 2009. "State Transition Matrix Approximation Using a Generalized Averaging Method," *Journal of Guidance, Control and Dynamics* 32(6): 1781-1794.

293. S.M. Byram and **D.J. Scheeres**. 2009. "Stability of Sun-Synchronous Orbits in the Vicinity of a Comet," *Journal of Guidance, Control and Dynamics* 32(5): 1550-1559.

294. Y. Tsuda and **D.J. Scheeres**. 2009. "Computation and Applications of an Orbital Dynamics Symplectic State Transition Matrix," *Journal of Guidance, Control and Dynamics* 32(4): 1111-1123.

295. A. Rossi, F. Marzari and **D.J. Scheeres**. 2009. "Computing the effects of YORP on the spin rate distribution of the NEO population," *Icarus* 202: 95-103.

296. M. Brozovic, S.J. Ostro, L.A.M. Benner, J.D. Giorgini, R.F. Jurgens, R. Rose, M.C. Nolan, A.A. Hine, C. Magri, **D.J. Scheeres**, and J.-L. Margot. 2009. "Radar observations and a physical model of Asteroid 4660 Nereus, a prime space mission target," *Icarus* 201: 153-166.

297. E.D. Gustafson and **D.J. Scheeres**. 2009. "Optimal Timing of Control Law Updates for Unstable Systems with Continuous Control," *Journal of Guidance, Control and Dynamics* 32(3): 878-887.

298. J.S. Hudson and **D.J. Scheeres**. 2009. "Reduction of Low Thrust Continuous Controls for Trajectory Dynamics," *Journal of Guidance, Control and Dynamics* 32(3): 780-787.

299. **D.J. Scheeres**. 2009. "Stability of the Planar Full 2-Body Problem," *Celestial Mechanics and Dynamical Astronomy* 104: 103-128.

300. **D.J. Scheeres**. 2009. "Minimum energy asteroid reconfigurations and catastrophic disruptions," *Planetary and Space Science* 57: 154-164.

301. J.M. Maruskin, **D.J. Scheeres** and A.M. Bloch. 2009. "Dynamics of Symplectic Subvolumes," *SIAM Journal of Applied Dynamical Systems* 8(1): 180-201.

302. M. Paskowitz Possner and **D.J. Scheeres**. 2009. "Control of Science Orbits About Planetary Satellites," *Journal of Guidance, Control and Dynamics*, 32(1): 223-231.

303. J.M. Maruskin, **D.J. Scheeres** and K.T. Alfriend. 2009. "Correlation of optical observations of objects in Earth orbit," *Journal of Guidance, Control and Dynamics*, 32(1): 194-209.

304. R.W. Gaskell, O.S. Barnouin-Jha, D.J. Scheeres, A.S. Konopliv, T. Mukai, S. Abe, J. Saito, M. Ishiguro, T. Kubota, T. Hashimoto, J. Kawaguchi, M. Yoshikawa, K. Shirakawa, T. Kominato, N. Hirata, H. Demura. 2008. "Characterizing and navigating small bodies with imaging data," *Meteoritics & Planetary Science* 43(6): 1049-1061.

305. C. Park, **D.J. Scheeres**, V. Guibout, and A. Bloch. 2008. "Global Solution for the Optimal Feedback Control of the Underactuated Heisenberg System," *IEEE Transactions on Automatic Control*, 53(11): 2638-2642.

306. V.V. Sidorenko, **D.J. Scheeres** and S.M. Byram. 2008. "On the rotation of comet Borrelly's nucleus," *Celestial Mechanics and Dynamical Astronomy*, 102: 133-147.

307. J.L.R. Langlois and **D.J. Scheeres**. 2008. "Examining Groundtrack Geometry Transitions by Evaluating the Number of Longitude Rate Zeros," *Journal of Guidance, Control and Dynamics*, 31(5): 1516-1521.

308. *M. Nakamiya*, **D.J. Scheeres**, H. Yamakawa, and M. Yoshikawa. 2008. "Analysis of Capture Trajectories into Periodic Orbits about Libration Points," *Journal of Guidance, Control and Dynamics*, 31(5): 1344-1351.

309. W.-D. Hu and **D.J. Scheeres**. 2008. "Periodic Orbits in Rotating Second Degree and Order Gravity Fields," *Chinese Journal of Astronomy & Astrophysics* 8(1): 108-118.

310. **D.J. Scheeres** and R.W. Gaskell. 2008. "Effect of density inhomogeneity on YORP: The case of Itokawa," *Icarus* 198: 125-129.

311. M.W. Busch, L.A.M. Benner, S.J. Ostro, J.D. Giorgini, R.F. Jurgens, R. Rose, **D.J. Scheeres**, C. Magri, J.-L. Margot, M.C. Nolan, and A.A. Hine. 2008. "Physical Properties of Near-Earth Asteroid (33342) 1998 WT24," *Icarus* 195(2): 614-621.

312. E.G. Fahnestock and **D.J. Scheeres**. 2008. "Simulation and Analysis of the Dynamics of Binary Near-Earth Asteroid (66391) 1999 KW4," *Icarus* 194: 410-435.

313. E.G. Fahnestock and **D.J. Scheeres**. 2008. "Dynamical Characterization and Stabilization of Large Gravity Tractor Designs," *Journal of Guidance, Control and Dynamics* 31(3): 501-521.

314. J.E. Bellerose and **D.J. Scheeres**. 2008. "General Dynamics in the Restricted Full Three-Body Problem," *Acta Astronautica* 62(10-11): 563-576.

315. **D.J. Scheeres** and S. Mirrahimi. 2008. "Rotational Dynamics of a Solar System Body Under Solar Radiation Torques," *Celestial Mechanics and Dynamical Astronomy* 101(1-2): 69-103.

316. M.K. Shepard, B.E. Clark, M.C. Nolan, L.A.M. Benner, S.J. Ostro, J.D. Giorgini, F. Vilas, K. Jarvis, S. Lederer, L.F. Lim, T. McConnochie, J. Bell, J.-L. Margot, A. Rivkin, C. Magri, **D.J. Scheeres**, and P. Pravec. 2008. "Multi-wavelength observations of Asteroid 2100 Ra-Shalom," *Icarus* 193: 20-38.

317. J.E. Bellerose and **D.J. Scheeres**. 2008. "Restricted Full Three-Body Problem: Application to Binary System 1999 KW4," *Journal of Guidance, Control and Dynamics* 31(1): 162-171.

318. J.E. Bellerose and **D.J. Scheeres**. 2008. "Energy and stability in the Full Two Body Problem," *Celestial Mechanics and Dynamical Astronomy* 100(1): 63-91.

319. *J.M. Maruskin*, **D.J. Scheeres**, F.C. Adams and A.M. Bloch. 2008 "The eccentric frame decomposition of central force fields," *Celestial Mechanics and Dynamical Astronomy* 100(1): 43-62.

320. J. Kadish, J.R. Barber, P.D. Washabaugh and **D.J. Scheeres**. 2008. "Stresses in accreted planetary bodies," *International Journal of Solids and Structures* 45: 540-550.

321. R.S. Park and **D.J. Scheeres**. 2007. "Nonlinear Semi-Analytic Methods for Trajectory Estimation," *Journal of Guidance, Control and Dynamics* 30(6): 1668-1676.

322. I. Hussein, **D.J. Scheeres** and D.C. Hyland. 2007. "Optimal Formation Design for Imaging and Fuel Usage," *Journal of Guidance, Control, and Dynamics* 30(5): 1511-1515.

323. S.M. Byram, **D.J. Scheeres** and M.R. Combi. 2007. "Models for the Comet Dynamical Environment," *Journal of Guidance, Control and Dynamics* 30(5): 1445 – 1454.

324. M.W. Busch, J.D. Giorgini, S.J. Ostro, L.A.M. Benner, R.F. Jurgens, R. Rose, M.D. Hicks, P. Pravec, P. Kusnirak, M.J. Ireland, **D.J. Scheeres**, S.B. Broschart, C. Magri, M.C. Nolan, A.A. Hine, J.-L. Margot. 2007. "Physical Modeling of Near-Earth Asteroid (29075) 1950 DA," *Icarus* 190(2): 608-621.

325. I.I. Hussein, **D.J. Scheeres**, A.M. Bloch, D.C. Hyland, and N.H. McClamroch. 2007. "Optimal Motion Planning for Dual-Spacecraft Interferometry," *IEEE Transactions on Aerospace and Electronic Systems* 43(2): 723 – 737.

326. L. Rios-Reyes and **D.J. Scheeres**. 2007. "Solar Sail Navigation: Estimation of Force, Moments, and Optical Parameters," *Journal of Guidance, Control and Dynamics* 30(3): 660-668.

327. S.D. Ross, and **D.J. Scheeres**. 2007. "Multiple Gravity Assists, Capture, and Escape in the Restricted Three-Body Problem," *SIAM Journal on Applied Dynamical Systems* 6(3): 576-596. DOI: 10.1137/060663374

328. H. Miyamoto, H. Yano, **D.J. Scheeres**, S. Abe, O. Barnouin-Jha, A.F. Cheng, H. Demura, R.W. Gaskell, N. Hirata, M. Ishiguro, T. Michikami, A.M. Nakamura, R. Nakamura, J. Saito, and S. Sasaki. 2007. "Regolith migration and sorting on asteroid Itokawa," *Science* 316: 1011-1014.

329. **D.J. Scheeres**. 2007. "Rotational fission of contact binary asteroids," *Icarus* 189: 370-385.

330. **D.J. Scheeres**. 2007. "The dynamical evolution of uniformly rotating asteroids subject to YORP," *Icarus* 188: 430-450.

331. **D.J. Scheeres**, M. Abe, M. Yoshikawa, R. Nakamura, R.W. Gaskell, P.A. Abell. 2007. "The effect of YORP on Itokawa," *Icarus* 188: 425-429.

332. F.Y. Hsiao and **D.J. Scheeres**. 2007. "Fundamental Constraints on Uncertainty Evolution in Hamiltonian Systems," *IEEE Transactions on Automatic Control* 52(4): 686-691.

333. P.A. Taylor, J.-L. Margot, D. Vokrouhlický, **D.J. Scheeres**, P. Pravec, S.C. Lowry, A. Fitzsimmons, M.C. Nolan, S.J. Ostro, L.A.M. Benner, J.D. Giorgini, C. Magri. 2007. "Spin Rate of Asteroid (54509) 2000 PH5 Increasing due to the YORP Effect," *Science* 316: 274-277.

334. S.B. Broschart and **D.J. Scheeres**. 2007. "Boundedness of Spacecraft Hovering Under Dead-Band Control in Time-Invariant Systems," *Journal of Guidance, Control and Dynamics* 30(2): 601-610.

335. C. Magri, S.J. Ostro, **D.J. Scheeres**, M.C.Nolan, J.D. Giorgini, L.A.M.Benner and J-L. Margot. 2007. "Radar observations and a physical model of Asteroid 1580 Betulia," *Icarus* 186: 152-177.

336. J. Bellerose and **D.J. Scheeres**. 2007. "Stability of Equilibrium Points in the Restricted Full Three Body Problem," *Acta Astronautica* 60: 141-152.

337. **D.J. Scheeres**, F.-Y. Hsiao, R.S. Park, B.F. Villac, and J.M. Maruskin. 2006. "Fundamental Limits on Spacecraft Orbit Uncertainty and Distribution Propagation," *Journal of the Astronautical Sciences* 54: 505-523.

338. 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.

339. **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.
Featured on the cover of Science.

340. S. J. Ostro, J.-L. Margot, L. A. M. Benner, J. D. Giorgini, **D. J. Scheeres**, E. G. Fahnestock, S. B. Broschart, J. Bellerose, M. C. Nolan, C. Magri, P. Pravec, P. Scheirich, R. Rose, R. F. Jurgens, S. Suzuki, E. M. DeJong. 2006. "Radar Imaging of Binary Near-Earth Asteroid (66391) 1999 KW4," *Science* 314: 1276-1280.
Featured on the cover of Science.

341. R.S. Park and **D.J. Scheeres**. 2006. "Nonlinear Mapping Of Gaussian State Uncertainties: Theory And Applications To Spacecraft Control And Navigation," 2006. *Journal of Guidance, Control and Dynamics* 29(6): 1367-1375.

342. M.E. Paskowitz and **D.J. Scheeres**. 2006. "Design of Science Orbits About Planetary Satellites: Application to Europa," *Journal of Guidance, Control and Dynamics* 29(5): 1147-1158.

343. *P. Patel*, **D.J. Scheeres**, and A. Gallimore. 2006. "Maximizing Payload Mass Fractions of Spacecraft for Interplanetary Electric Propulsion Missions," *Journal of Spacecraft and Rockets* 43(4): 822-827.

344. A. Fujiwara, J. Kawaguchi, D. K. Yeomans, M. Abe, T. Mukai, T. Okada, J. Saito, H. Yano, M. Yoshikawa, **D. J. Scheeres**, O. Barnouin-Jha, A. F. Cheng, H. Demura, R. W. Gaskell, N. Hirata, H. Ikeda, T. Kominato, H. Miyamoto, A. M. Nakamura, R. Nakamura, S. Sasaki, and K. Uesugi. 2006. "The Rubble-Pile Asteroid Itokawa as Observed by

Hayabusa," *Science* 312: 1330-1334.
Featured on the cover in a special issue of Science.

345. S. Abe, T. Mukai, N. Hirata, O. S. Barnouin-Jha, A. F. Cheng, H. Demura, R. W. Gaskell, T. Hashimoto, K. Hiraoka, T. Honda, T. Kubota, M. Matsuoka, T. Mizuno, R. Nakamura, **D. J. Scheeres**, M. Yoshikawa. 2006. "Mass and Local Topography measurements of Itokawa by Hayabusa," *Science* 312: 1344-1347.
Featured on the cover in a special issue of Science.

346. H. Yano, T. Kubota, H. Miyamoto, T. Okada, **D. J. Scheeres**, Y. Takagi, K. Yoshida, M. Abe, S. Abe, O. Barnouin-Jha, A. Fujiwara, S. Hasegawa, T. Hashimoto, M. Ishiguro, M. Kato, J. Kawaguchi, T. Mukai, J. Saito, S. Sasaki, and M. Yoshikawa. 2006. "Touchdown of the Hayabusa spacecraft at the Muses Sea on Itokawa," *Science* 312: 1350-1353.
Featured on the cover in a special issue of Science.

347. F. Gabern, W.S. Koon, J.E. Marsden and **D.J. Scheeres**. 2006. "Binary Asteroids Observation Orbits from a Global Dynamical Picture," *SIAM Journal on Applied Dynamical Systems* 5(2): 252-279.

348. **D.J. Scheeres**. 2006. "Relative Equilibria for General Gravity Fields in the Sphere-Restricted Full 2-Body Problem," *Celestial Mechanics and Dynamical Astronomy* 94(3): 317-349.

349. C. Park and **D.J. Scheeres**. 2006. "Solutions of Optimal Feedback Control Problem with General Boundary Conditions using Hamiltonian Dynamics and Generating Functions," *Automatica* 42: 869-875.

350. M.W. Busch, S.J. Ostro, L.A.M. Benner, J.D. Giorgini, R.F. Jurgens, R. Rose, C. Magri, P. Pravec, **D.J. Scheeres** and S.B. Broschart. 2006. "Radar and Optical Observations and Physical Modeling of Near- Earth Asteroid 10115 (1992 SK)," *Icarus* 181: 145-155.

351. C. Park, V.M. Guibout and **D.J. Scheeres**. 2006. "Solving Optimal Continuous Thrust Rendezvous Problems with Generating Functions," *Journal of Guidance, Control and Dynamics* 29(2): 321-331.

352. M.E. Paskowitz and **D.J. Scheeres**. 2006. "Robust Capture and Transfer Trajectories for Planetary Satellite Orbiters," *Journal of Guidance, Control, and Dynamics* 29(2): 342-353.

353. V.M. Guibout and **D.J. Scheeres**. 2006. "Spacecraft formation dynamics and design," *Journal of Guidance, Control and Dynamics* 29(1): 121-133.

354. F.Y. Hsiao and **D.J. Scheeres**. 2006. "Evolution of Eigenvalues during the Transient Period for Hamiltonian Systems," *Physica D: Nonlinear Phenomena* 213: 66-75.

355. I.I. Hussein and **D.J. Scheeres**. 2005. "Effects of Orbit Variations and J_2 Perturbations on a Class of Earth-Orbiting Interferometric Observatories," *The Journal of the Astronautical Sciences* 53(2): 147-166.

356. **D.J. Scheeres**, L.A.M. Benner, S.J. Ostro, A. Rossi, F. Marzari and P. Washabaugh. 2005. "Abrupt alteration of Asteroid 2004 MN4's spin state during its 2029 Earth flyby," *Icarus* 178: 281-283.

357. S.J. Ostro, L.A.M. Benner, C. Magri, J.D. Giorgini, R. Rose, R.F. Jurgens, D.K. Yeomans, A.A. Hine, M.C. Nolan, **D.J. Scheeres**, S.B. Broschart, M. Kaasalainen and J.-L. Margot. 2005. "Radar observations of Itokawa in 2004 and improved shape estimation," *Meteoritics and Planetary Science* 40(11): 1563–1574.

358. L. Rios-Reyes and **D.J. Scheeres**. 2005. "Generalized Model for Solar Sails," *Journal of Spacecraft and Rockets* 42(1): 182-185.

359. R.A. Werner and **D.J. Scheeres**. 2005. "Mutual potential of homogenous polyhedra," *Celestial Mechanics and Dynamical Astronomy* 91(3-4): 337-349.

360. F.Y. Hsiao and **D.J. Scheeres**. 2005. "Design of Spacecraft Formation Orbits Relative to a Stabilized Trajectory," *Journal of Guidance, Control and Dynamics* 28(4): 782-794.

361. R.S. Park, **D.J. Scheeres**, G. Giampieri, J.M. Longuski, and E. Fischbach. 2005. "Estimating Parameterized Post-Newtonian parameters from Spacecraft Radiometric Tracking Data," *Journal of Spacecraft and Rockets* 42(3): 559-568.

362. S.B. Broschart and **D.J. Scheeres**. 2005. "Control of hovering spacecraft near small bodies: Application to Asteroid 25143 Itokawa," *Journal of Guidance, Control and Dynamics* 28(2): 343-354. In the special "Battin Birthday Issue" of the Journal.

363. **D.J. Scheeres** and J. Bellerose. 2005. "The Restricted Hill Full 4-Body Problem: Application to spacecraft motion about binary asteroids," invited paper in a special issue of *Dynamical Systems: An International Journal* 20(1): 23-44, edited by M. Dellnitz and J.E. Marsden.

364. D.N. Sharma and **D.J. Scheeres**. 2004. "Solar System Escape Trajectories using Solar Sails," *Journal of Spacecraft and Rockets* 41(4): 684-687.

365. B.F. Villac and **D.J. Scheeres**. 2004. "On the concept of periapsis in Hill's problem," *Celestial Mechanics & Dynamical Astronomy* 90: 165-178.

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

367. **D.J. Scheeres**, F. Marzari, and A. Rossi. 2004. "Evolution of NEO rotation rates due to close encounters with Earth and Venus," *Icarus* 170: 312-323.

368. V.M. Guibout and **D.J. Scheeres**. 2004. "Solving relative two-point boundary value problems: Spacecraft formation flight transfers application," *Journal of Guidance, Control and Dynamics* 27(4): 693-704.

369. W. Hu and **D.J. Scheeres**. 2004. "Numerical Determination of Stability Regions for Orbital Motion in Uniformly Rotating Second Degree and Order Gravity Fields," *Planetary and Space Science* 52: 685-692.

370. J.M. Longuski, E. Fischbach, **D.J. Scheeres**, G. Giampieri, and R.S. Park. 2004. "Deflection of spacecraft trajectories as a new test of general relativity: Determining the parameterized post-Newtonian parameters β and γ," *Physical Review D* 69(4), 042001.

371. S.J. Ostro, L.A.M. Benner, M.C. Nolan, C. Magri, J.D. Giorgini, **D.J. Scheeres**, S.B. Broschart, M. Kaasalainen, D. Vokrouhlicky, S.R. Chesley, J.-L. Margot, R.F. Jurgens, R. Rose, D.K. Yeomans, S. Suzuki, and E.M. De Jong. 2004. "Radar Observations of Asteroid 25143 Itokawa (1998 SF36)," *Meteoritics and Planetary Science* 39(3): 407-424.
Featured on the cover.

372. I. Hussein, **D.J. Scheeres** and D.C. Hyland. 2004. "Interferometric Observatories in Earth Orbit," *Journal of Guidance, Control, and Dynamics* 27(2): 297-301.

373. J. F. San-Juan, A. Abad, M. Lara, and **D.J. Scheeres**. 2004. "A first order analytical solution for spacecraft motion about (433) Eros," *Journal of Guidance, Control, and Dynamics* 27(2): 290-293.

374. V. Guibout and **D.J. Scheeres**. 2003. "Stability of Surface Motion on a Rotating Ellipsoid," *Celestial Mechanics & Dynamical Astronomy* 87: 263-290.

375. B.F. Villac and **D.J. Scheeres**. 2003. "New class of optimal plane change maneuvers," *Journal of Guidance, Control, and Dynamics* 26(5): 750-757.

376. C.A. Renault and **D.J. Scheeres**. 2003. "Statistical analysis of control maneuvers in an unstable orbital environments," *Journal of Guidance, Control and Dynamics* 26(5): 758-769.

377. A.I. Neishtadt, **D.J. Scheeres**, V.V. Sidorenko, P. Stooke, and A.A. Vasiliev. 2003. "The influence of reactive torques on comet nucleus rotation," *Celestial Mechanics & Dynamical Astronomy* 86(3): 249-275.

378. R.S. Hudson, S.J. Ostro, and **D.J. Scheeres**. 2003. "High-Resolution Model of Asteroid 4179 Toutatis," *Icarus* 161(2): 346-355.

379. B. Villac and **D.J. Scheeres**. 2003. "Escaping trajectories in the Hill Three Body Problem and Applications," *Journal of Guidance, Control and Dynamics* 26(2): 224-232.

380. **D.J. Scheeres**, F.Y. Hsiao, and N.X. Vinh. 2003. "Stabilizing motion relative to an unstable orbit: Applications to spacecraft formation flight," *Journal of Guidance, Control and Dynamics* 26(1): 62-73.

381. M. Lara and **D.J. Scheeres**. 2002. "Stability bounds for three-dimensional motion close to asteroids," *The Journal of the Astronautical Sciences* 50(4): 389-409.

382. F.-Y. Hsiao and **D.J. Scheeres**. 2002. "The dynamics of formation flight about a stable trajectory," *The Journal of the Astronautical Sciences* 50(3): 269-287.

383. **D.J. Scheeres** and F. Marzari. 2002. "Spacecraft dynamics far from a comet," *The Journal of the Astronautical Sciences* 50(1): 35-52.

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

385. P.D. Washabaugh and **D.J. Scheeres**. 2002. "Energy and Stress Distributions in Ellipsoids," *Icarus* 159(2): 314-321.

386. **D.J. Scheeres**. 2002. "Stability of Binary Asteroids," *Icarus* 159(2): 271-283.

387. W. Hu and **D.J. Scheeres**. 2002. "Spacecraft Motion about Slowly Rotating Asteroids," *Journal of Guidance, Control, and Dynamics* 25(4): 765-775.

388. S. Sawai, **D.J. Scheeres**, and S. Broschart. 2002. "Control of Hovering Spacecraft using Altimetry," *Journal of Guidance, Control and Dynamics* 25(4): 786-795.

389. D. Dechambre and **D.J. Scheeres**. 2002. "Transformation of spherical harmonic coefficients to ellipsoidal harmonic coefficients," *Astronomy and Astrophysics* 387: 1114-1122.

390. A.I. Neishtadt, **D.J. Scheeres**, V.V. Sidorenko, and A.A. Vasiliev. 2002. "Evolution of comet nucleus rotation," *Icarus* 157: 205-218.

391. J.K Miller, A.S. Konopliv, P.G. Antreasian, J.J. Bordi, S. Chesley, C.E. Helfrich, W.M. Owen, T.C. Wang, B.G. Williams, D.K. Yeomans, and **D.J. Scheeres**. 2002. "Determination of shape, gravity and rotational state of Asteroid 433 Eros," *Icarus* 155: 3-17.

392. **D.J. Scheeres**. 2001. "Changes in Rotational Angular Momentum due to Gravitational Interactions between Two Finite Bodies," *Celestial Mechanics and Dynamical Astronomy* 81: 39-44.

393. **D.J. Scheeres** and W. Hu. 2001. "Secular Motion in a 2nd Degree and Order Gravity Field with no Rotation," *Celestial Mechanics and Dynamical Astronomy* 79(3): 183-200.

394. S. Ostro, R. Hudson, L. Benner, M. Nolan, J. Giorgini, **D.J. Scheeres**, R. Jurgens, and R. Rose. 2001. "Radar Observations of Asteroid 1998 ML14," *Meteoritics and Planetary Science* 36(9): 1225-1236.

395. S. Sawai, J. Kawaguchi, **D.J. Scheeres**, N. Yoshizawa and M. Ogasawara. 2001. "Development of a target marker for landing on asteroids," *Journal of Spacecraft and Rockets* 38(4): 601-608.

396. **D.J. Scheeres**, M.D. Guman and B. Villac. 2001. "Stability Analysis of Planetary Satellite Orbiters: Application to the Europa Orbiter," *Journal of Guidance, Control and Dynamics* 24(4): 778–787.

397. **D.J. Scheeres**, D. Han and Y. Hou. 2001. "Influence of Unstable Manifolds on Orbit Uncertainty," *Journal of Guidance, Control and Dynamics* 24(3): 573–585.

398. J.M. Longuski, E. Fischbach and **D.J. Scheeres**. 2001. "Deflection of Spacecraft Trajectories as a New Test of General Relativity," *Physical Review Letters* 86(14): 2942–2945.

399. E. Morrow, **D.J. Scheeres** and D. Lubin. 2001. "Solar Sail Orbit Operations at Asteroids," *Journal of Spacecraft and Rockets* 38(2): 279–286.

400. R.S. Hudson, S.J. Ostro, R.F. Jurgens, K.D. Rosema, J.D. Giorgini, R. Winkler, R. Rose, D. Choate, R.A. Cormier, C.R. Franck, R. Frye, D. Howard, D. Kelley, R. Littlefair, M.A. Slade, L.A.M. Benner, M.L. Thomas, D.L. Mitchell, P.W. Chodas, D.K. Yeomans, **D.J. Scheeres**, P. Palmer, A. Zaitsev, Y. Koyama, A. Nakamura, A. W. Harris, and M. N. Meshkov. 2000. "Radar Observations and Physical Modeling of Asteroid 6489 Golevka," *Icarus* 148: 37–51.

401. **D.J. Scheeres**, B. Khushalani and R.A. Werner. 2000. "Estimating Asteroid Density Distributions from Shape and Gravity Information," *Planetary and Space Science* 48: 965–971.

402. **D.J. Scheeres**, S.J. Ostro, E. Asphaug, R.S. Hudson and R.A. Werner. 2000. "Effects of Gravitational Interactions on Asteroid Spin States," *Icarus* 147: 106–118.

403. D.K. Yeomans, P.G. Antreasian, J.-P. Barriot, S.R. Chesley, D.W. Dunham, R.W. Farquhar, J.D. Giorgini, C.L. Helfrich, A.S. Konopliv, J.V. McAdams, J.K. Miller, W.M. Owen Jr., **D.J. Scheeres**, P.C. Thomas, J. Veverka, and B.G. Williams. 2000. "Radio Science Results During the NEAR-Shoemaker Spacecraft Rendezvous with Eros," *Science* 289:2085–2088.
Featured on the cover in a special issue of Science.

404. S.J. Ostro, R.S. Hudson, M.C. Nolan, J-L. Margot, **D.J. Scheeres**, D.B. Campbell, C. Magri, J.D. Giorgini, and D.K. Yeomans. 2000. "Radar Observations of Asteroid 216 Kleopatra," *Science* 288: 836–839.
Featured on the cover of Science.

405. **D.J. Scheeres**, B.G. Williams, and J.K. Miller. 2000. "Evaluation of the Dynamic Environment of an Asteroid: Applications to 433 Eros," *Journal of Guidance, Control and Dynamics* 23:466–475.

406. **D.J. Scheeres** and F. Marzari. 2000. "Temporary orbital capture of ejecta from comets and asteroids: Application to the Deep Impact experiment," *Astronomy and Astrophysics* 356: 747–756.

407. **D.J. Scheeres**. 1999. "Satellite Dynamics about small bodies: Averaged Solar Radiation Pressure Effects," *The Journal of the Astronautical Sciences* 47:25–46.

408. E. Asphaug and **D.J. Scheeres**. 1999. "Deconstructing Castalia: Evaluating a Postimpact State," *Icarus* 139:383–386.

409. **D.J. Scheeres**. 1999. "The Effect of C_{22} on Orbit Energy and Angular Momentum," *Celestial Mechanics and Dynamical Astronomy* 73:339–348.

410. **D.J. Scheeres**. 1998. "The Restricted Hill Four-Body Problem with Applications to the Earth-Moon-Sun System," *Celestial Mechanics and Dynamical Astronomy* 70:75–98.

411. **D.J. Scheeres**, F. Marzari, L. Tomasella, and V. Vanzani. 1998. "ROSETTA mission: satellite orbits around a cometary nucleus," *Planetary and Space Science* 46:649–671.

412. E.I. Asphaug, S.J. Ostro, R.S. Hudson, **D.J. Scheeres**, and W. Benz. 1998. "Disruption of kilometre-sized asteroids by energetic collisions," *Nature* 393:437–40.

413. **D.J. Scheeres**, S.J. Ostro, R.S. Hudson, E.M. DeJong, and S. Suzuki. 1998. "Orbit dynamics about 4179 Toutatis," *Icarus* 132:53–79.

414. D.K. Yeomans, J.-P. Barriot, D.W. Dunham, R.W. Farquhar, C.L. Helfrich, A.S. Konopliv, J.V. McAdams, J.K. Miller, **D.J. Scheeres**, S.P. Synnott, W.M. Owen, and B.G. Williams. 1997. "The NEAR Spacecraft's Flyby of Asteroid 253 Mathilde," *Science* 278:2106–9.

415. R.A. Werner and **D.J. Scheeres**. 1997. "Exterior Gravitation of a Polyhedron Derived and Compared with Harmonic and Mascon Gravitation Representations of Asteroid 4769 Castalia," *Celestial Mechanics and Dynamical Astronomy* 65:313–44.

416. **D.J. Scheeres**, S.J. Ostro, R.S. Hudson, and R.A. Werner. 1996. "Orbits Close to Asteroid 4769 Castalia," *Icarus* 121:67–87.

417. S.J. Ostro, R. F. Jurgens, K. D. Rosema, R. S. Hudson, J. D. Giorgini, R. Winkler, D.K. Yeomans, D. Choate, R. Rose, M. A. Slade, S. D. Howard, **D. J. Scheeres**, and D. L. Mitchell. 1996. "Radar Observations of Asteroid 1620 Geographos," *Icarus* 121:46-66.

418. **D.J. Scheeres**. 1995. "Analysis of Orbital Motion Around 433 Eros," *The Journal of the Astronautical Sciences* 43:427–52.

419. J.K. Miller, B.G. Williams, W.E. Bollman, R.P. Davis, C.E. Helfrich, **D.J. Scheeres**, S.P. Synnott, T.C. Wang, and D.K. Yeomans. 1995. "Navigation Analysis for Eros Rendezvous and Orbital Phases," *The Journal of the Astronautical Sciences* 43: 453–76.

420. **D.J. Scheeres**. 1994. "Dynamics About Uniformly Rotating Tri-Axial Ellipsoids. Applications to Asteroids," *Icarus* 110:225–38.

421. **D.J. Scheeres** and N.X. Vinh. 1993. "The Restricted $P + 2$ Body Problem," *Acta Astronautica* 29:237–48.

422. **D.J. Scheeres** and N.X. Vinh. 1991. "Linear Stability of a Self-Gravitating Ring," *Celestial Mechanics and Dynamical Astronomy* 51:83–103.

Chapters in books

1. Guilbert-Lepoutre A., Davidsson B. J. R., **Scheeres D. J.**, and Ciarletti V. (2024) Comet nucleus interiors. In *Comets III* (K. J. Meech, M. R. Combi, D. Bockelée-Morvan, S. N. Raymond, and M. E. Zolensky, eds.), pp. 249-287. Univ. of Arizona, Tucson,

   DOI: 10.2458/azu_uapress_9780816553631-ch009

   .

2. K. Zacny, E.B. Bierhaus, D. Britt, B. Clark, C.M. Hartzell, L. Gertsch, A.V. Kulchitsky, J.B. Johnson, P. Metzger, D.M. Reeves, P.Sanchez, **D.J. Scheeres**. 2018. Geotechnical properties of asteroids affecting surface operations, mining and ISRU activities, pp. 439-476, in *Primitive Meteorites and Asteroids: Physical, Chemical and Spectroscopic Observations Paving the Way to Exploration* (N. M. Abreu ed.) Elsevier. doi.org/10.1016/B978-0-12-813325-5.00008-2

3. **D.J. Scheeres**. 2016. Relative Equilibria in the Full N-Body Problem with Applications to the Equal Mass Problem, in *Recent Advances in Celestial and Space Mechanics* (M. Chyba and B. Bonnard, eds.), Mathematics for Industry Vol. 23, Springer. ISBN: 978-3-319-27462-1.

4. **D.J. Scheeres**, D. Britt, B. Carry, and K.A. Holsapple. 2015. Asteroid Interiors and Morphology, in *Asteroids IV* (P. Michel, F. DeMeo, W.M. Bottke Jr. eds.), University of Arizona Press, Tucson.

5. D. Vokrouhlicky, W.F. Bottke, S.R. Chesley, **D.J. Scheeres** and T.S. Statler. 2015. The Yarkovsky and YORP Effects, in *Asteroids IV* (P. Michel, F. DeMeo, W.M. Bottke Jr. eds.), University of Arizona Press, Tucson.

6. **D.J. Scheeres**. 2009. "The Modeling and Dynamics of Small Asteroids as Physical Bodies," in XIII SPECIAL COURSES AT THE NATIONAL OBSERVATORY OF RIO DE JANEIRO. AIP Conference Proceedings, Volume 1192, pp. 45-97.

7. **D.J. Scheeres**. "The Dynamics of NEO Binary Asteroids," in Near Earth Objects, our Celestial Neighbors: Opportunity and Risk, (A. Milani, G.B. Valsecchi & D. Vokrouhlicky, eds.), Proceedings IAU Symposium No. 236 (2007).

8. V.M. Guibout and **D.J. Scheeres**. 2006. "Solving Two-Point Boundary Value Problems Using Generating Functions: Theory and Applications to Astrodynamics," in Modern Astrodynamics, Elsevier Astrodynamics Series (P. Gurfil, ed.), Academic Press.

9. **D.J. Scheeres**. 2004. "Close Proximity Operations at Small Bodies: Orbiting, Hovering, and Hopping," in *Mitigation of Hazardous Comets and Asteroids*, (M. Belton, T.H. Morgan, N. Samarasinha, D.K. Yeomans eds.), Cambridge University Press.

10. **D.J. Scheeres**, D.D. Durda, and P.E. Geissler. 2002. The Fate of Asteroid Ejecta, in *Asteroids III* (W.M. Bottke Jr., A. Cellino, P. Paolicchi, R.P. Binzel eds.), University of Arizona Press, Tucson.

Books and Proceedings Editor

1. **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

2. **D.J. Scheeres**. 2010. Section Editor, Trajectory and Orbital Mechanics, 10 articles, Encyclopedia of Aerospace Engineering, Wiley, Editors R. Blockley and W. Shyy.

3. **D.J. Scheeres**, M.E. Pittelkau, R.J. Proulx, and L.A. Cangahuala, Editors. 2003. *Spaceflight Mechanics 2003*, Vol. 114, Parts I-III, Advances in the Astronautical Sciences, American Astronautical Society, 2003, 2287 pages, includes CD-ROM Supplement.

4. L.A. D'Amario, L.L. Sackett, **D.J. Scheeres**, and B.G. Williams, Editors. 2001. *Spaceflight Mechanics 2001*, Vol. 108, Parts I-II, Advances in the Astronautical Sciences, American Astronautical Society, 2001, 2147 pages.

Conference Papers

1. Hoor Al Mazmia, Paul O. Hayne, Noora Alsaeed, Margaret Landis, William F. Bottke, Harish, X. Li, G. Filacchione , C. S. Edwards , D. J. Scheeres , A. Abbud-Madrid, and the Emirates Mission to the Asteroid Belt Science and Space Resources Team. "The Emirates Mission to the Asteroid Belt: Science Overview," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24-A3-4B-3-x86216.

2. G. Brown, B.P. McCarthy, L.T. Peterson, D.B. Henry, D.J. Scheeres and D.C. Davis. "Dynamics around the 9:2 NRHO in the Sun-Earth-Moon System: Staging, Phasing, and

Transitioning," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24-C1,8,5,x88476.

3. N. Hiraiwa, D.B. Henry, D.J. Scheeres and M. Bando. "DESIGN OF MINIMUM-TIME LOW-THRUST TRANSFER BETWEEN QUASI-PERIODIC ORBITS," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24,C1,4,8,x84274.

4. A. Tsuruta, M. Bando, S. Hokamoto, and D.J. Scheeres. "Analysis of periodic and quasi-periodic orbits with optimal feedback control," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24,C1,4,9,x86357.

5. R. Natherson and D.J. Scheeres. "Robust Trajectory Design and Controllable Set Methods," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24,C1,6,1,x81883.

6. Hai-Shuo Wang, D.J. Scheeres and Paul Sanchez. "Simulation and Estimation of the Mass Shifts during the (99942) Apophis Earth Flyby," 75th IAC Conference, Milan, Italy, October 14-18, 2024. Paper IAC-24-A.1.2.3.

7. Prashant Patel and Daniel Scheeres. "Solving Finite Thrust Optimal Control Problems Using Reachable Sets," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-233.

8. Adrien Legrand and Daniel Scheeres. "The Inclined Hill Restricted Four-Body Problem : Derivation and Applications," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-171.

9. Gavin Brown, Luke Peterson, Damennick Henry and Daniel Scheeres. "Behavior of the Lunar Gateway's Planned Orbit in the Sun-Earth-Moon System," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-204.

10. Augustin Moreno, Gavin Brown, Urs Frauenfelder and Daniel Scheeres. "A symplectic approach to periodic orbit families in the Hill restricted 4-body problem," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-218.

11. Oliver Boodram and Daniel Scheeres. "Forecasting the Shape of Phase Space Structures Using an Iso-energetic Symplectic Invariant," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-123.

12. Ryan Menges and Daniel Scheeres. "Semi-Analytical F and G Series Solutions for the Circular Restricted Three-Body Problem," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-230.

13. Naoki Hiraiwa, Damennick Henry, Mai Bando and Daniel Scheeres. "Analysis of Dynamical Structures in a Three-Dimensional Volume-Preserving Map," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-239.

14. Damennick Henry and Daniel Scheeres. "A Flow map Parameterization Method for Quasi-periodic Orbit Computation in the Hill Restricted Four-body Problem," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-477.

15. Luke Peterson and Daniel Scheeres. "Local Orbital Element Toolkit in Cislunar Space," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-278.

16. Alex Meyer and Daniel Scheeres. "Fully Coherent Model of Dynamics Around Binary Asteroids: Application to Didymos and the DART Impact," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-234.

17. Robyn Natherson and Daniel Scheeres. "Relative Controllable and Reachable Set Computation Methods for Low-Thrust Trajectories," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-132.

18. Tomohiro Ishizuka, Daniel Scheeres and Stephanie Lizy-Destrez. "Perturbed Restricted Hill 5-Body Problem Applied to a Triple Asteroid System," 2024 AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, 11-15 August 2024. Paper AAS 24-236.

19. Oliver Boodram and Daniel Scheeres. "Targeting Hamiltonian Integral Invariant Behaviour With Control To Manipulate Spacecraft Phase Space Distributions," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-190.

20. Luke Peterson and Daniel Scheeres. "Gauss Equations for Local Action-Angle Orbital Elements in Cislunar Space," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-159.

21. Prashant Patel and Daniel Scheeres. "A Tale of Two Indirect Multi-Stage Algorithms," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-250.

22. Damennick Henry, Daniel Scheeres, Gavin Brown and Jose Rosales. "Quasi-Periodic Orbits near Earth-Moon L1 and L2 in the Hill Restricted Four-Body Problem," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-424.

23. Nicola Baresi, Danny Owen and Daniel Scheeres. "Exploiting the Laplace Resonance for Designing Trajectories in the Jupiter-Io-Europa- Ganymede System," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-201.

24. Yashica Khatri and Daniel Scheeres. "CISLUNAR SEMI-ANALYTICAL UNCERTAINTY PROPAGATION FOR CONJUNCTION ANALYSIS," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-436.

25. Robyn A. Natherson and Daniel Scheeres. "REST-TO-REST REACHABLE SET COMPUTATION," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-331.

26. Gavin Brown, Damennick Henry, Luke Peterson and Daniel Scheeres. "PERIODIC ORBITS IN THE HILL RESTRICTED 4-BODY PROBLEM APPLIED TO THE SUN-EARTH-MOON SYSTEM," 2023 AAS/AIAA Astrodynamics Specialist Conference, Big Sky, Montana, 13-17 August 2023. Paper AAS 23-470.

27. J. A. Greaves and D. J. Scheeres, "Autonomous Information Gathering Guidance for Distributed Space Systems with Optical Sensors," 2023 American Control Conference (ACC), San Diego, CA, USA, 2023, pp. 4826-4831, doi: 10.23919/ACC55779.2023.10155886.

28. Jesse Greaves and Daniel Scheeres. "Absolute and Autonomous Navigation for Distributed Space Systems with Relative Measurements," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-109.

29. David Lujan and Daniel Scheeres. "Method to Target Quasi-Periodic Orbit Frequencies Within Multi-Parameter Families," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-105.

30. Oliver Boodram and Daniel Scheeres. "Restricting Spacecraft Uncertainty Evolution With Modified Hamiltonian Constraints In Non-Conservative Systems," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-178.

31. Yashica Khatri and Daniel Scheeres. "Hybrid Nonlinear Semi-Analytical Uncertainty Propagation for Long-Term Encounter Analysis," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-373.

32. Prashant Patel and Daniel Scheeres. "No Initial Guess Required: Rapidly Computing the Feasible Set of Fuel-Optimal Electric Propulsion Trajectories," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-114.

33. Gavin Brown and Daniel Scheeres. "A Global Method to Compute Asteroid Equilibrium Points for Any Spin Rate," 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas, 15-19 January 2023. Paper AAS 23-349.

34. D. B. Henry and D. J. Scheeres, "Impulsive Spacecraft Formation Control on Quasi-peroidic Orbits," 2022 American Control Conference (ACC), Atlanta, GA, USA, 2022, pp. 1835-1840, doi: 10.23919/ACC53348.2022.9867282.

35. Erica Jenson, Mai Bando, Kyousuke Sato and Daniel Scheeres. "Robust Nonlinear Optimal Control Using Koopman Operator Theory," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-647.

36. Vishal Ray and Daniel Scheeres. "A Fourier series representation of satellite aerodynamic torques," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-854.

37. Shota Takahashi, Daynan Krull, Lisa Whittle and Daniel Scheeres. "Autonomous Rendezvous With Small Temporarily Captured Orbiters," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-700.

38. Prashant Patel and Daniel Scheeres. "Space, The Finite Frontier: Rapidly Computing the Reachability of Electric Propulsion Spacecraft," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-695.

39. Luke Peterson and Daniel Scheeres. "Orbital Elements for the Restricted Three-Body Problem," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-756.

40. Oscar Fuentes-Muñoz and Daniel Scheeres. "On the long-term hazardous nature of NEOs," 2022 AAS/AIAA Astrodynamics Specialist Conference, Charlotte, North Carolina, August 7-11 2022. Paper AAS 22-672.

41. Chandrakanth Venigalla and Daniel J. Scheeres "Cooperative and Non-Cooperative Approaches to Optimal Spacecraft Collision Avoidance," AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-1274.

42. Alex J. Meyer and Daniel J. Scheeres Estimation of Binary Asteroid Gravity Using Mutual Orbit Observations AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-1571

43. Erica L. Jenson, Daniel J. Scheeres and Xudong Chen Robust Spacecraft Guidance with Control-Dependent Noise: Analysis and Application AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-1590

44. Jordan Murphy and Daniel J. Scheeres SALAMANDER: Simulating and Leveraging Autonomous Model Augmentation Using Neural Differential Equations and (Symbolic) Regression AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-1763

45. Daniel J. Scheeres, Daniel Wibben, Peter G. Antreasian, Kenneth M. Getzandanner, Shota Takahashi, Jay W. McMahon and Dante Lauretta The Dynamics about Asteroid (101955) Bennu AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-2468

46. David Lujan and Daniel J. Scheeres The Earth-Moon L2Quasi-Halo Orbit Family: Characteristics and Manifold Applications AIAA SCITECH 2022 Forum, San Diego, CA, January 3-7, 2022. Paper AIAA 2022-2459

47. Y. Khatri, D.J. Scheeres Nonlinear Semi-Analytical Uncertainty Propagation for Conjunction Analysis IAC Conference, October 25-29, 2021. Paper IAC-21,C1,3,12,x64896.

48. S. Takahashi, D.J. Scheeres Autonomous Reconnaissance Trajectory Guidance at Small Near-Earth Asteroids using Reinforcement Learning IAC Conference, October 25-29, 2021. Paper IAC-21,C1,3,1,x64321.

49. Jesse Greaves, D.J. Scheeres Relative Estimation in the Cislunar Regime using Optical Sensors. AMOS Conference, September 15-17, 2021.

50. Marielle Pellegrino, D.J. Scheeres, B. Streetman Debris Cloud Structure in Medium Earth Orbit. AMOS Conference, September 15-17, 2021.

51. Ryotaro Sakamoto, D.J. Scheeres Modeling Energy Dissipation and De-tumbling of a Defunct a Satellite Using a Finite Element Method. AMOS Conference, September 15-17, 2021.

52. Conor Benson, D.J. Scheeres Radar-Derived Spin States of Defunct GEO Satellites and Rocket Bodies. AMOS Conference, September 15-17, 2021.

53. Vishal Ray, D.J. Scheeres, et al. Decorrelating Density and Drag-coefficient Through Attitude Variations. AMOS Conference, September 15-17, 2021.

54. Daniel Scheeres, Jay McMahon, Dahlia Baker, Donald Kuettel, Shota Takahashi. An Architecture for Autonomous Exploration of a Near Earth Object 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-747

55. Jacopo Villa, Andrew French, Jay McMahon, Daniel Scheeres, Benjamin Hockman. Gravity Estimation of Small Bodies via Optical Tracking of Hopping Artificial Probes 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-785

56. Marielle Pellegrino, Daniel Scheeres, Brett Streetman. Loitering of Breakup Event Debris Near Nominal GNSS Orbits 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-597

57. Erica Jenson, Daniel Scheeres. Semianalytical Measures of Nonlinearity Based on Tensor Eigenpairs 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-546

58. CK Venigalla, Daniel Scheeres. Optimal Multi-Spacecraft Cooperative Rendezvous and Constellation Deployment Trajectories 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-718

59. Luke Peterson, Daniel Scheeres. Manifold Coordinates About the Equilibrium Points in the Restricted Three-Body Problem 2021 AAS/AIAA Astrodynamics Specialist Conference, Virtual August 9-11, 2021. Paper AAS 21-598

60. EL Jenson, X Chen, DJ Scheeres Optimal Spacecraft Guidance with Asynchronous Measurements and Noisy Impulsive Controls 2021 American Control Conference (ACC), 2986-2991 (2021).

61. David Lujan, Daniel Scheeres. Global L2 Quasi-Halo Family and their Characteristics 31ST AAS/AIAA Space Flight Mechanics Meeting, Virtual February 1-3, 2021. Paper AAS 21-212

62. Vishal Ray, Daniel Scheeres, Eric Sutton, Marcin Pilinski. Density estimation using second-order Gauss Markov processes 31ST AAS/AIAA Space Flight Mechanics Meeting, Virtual February 1-3, 2021. Paper AAS 21-340

63. Damennick Henry, Daniel Scheeres. Quasi-periodic Orbit Transfers Via Intersecting Torus Whiskers 31ST AAS/AIAA Space Flight Mechanics Meeting, Virtual February 1-3, 2021. Paper AAS 21-256

64. Luke Peterson, Daniel Scheeres. Defining the Fundamental Frequencies of Quasi- Periodic Invariant Tori 31ST AAS/AIAA Space Flight Mechanics Meeting, Virtual February 1-3, 2021. Paper AAS 21-343

65. C. Benson and **D.J. Scheeres**. Radar and Optical Study of Defunct GEO Satellites. Paper presented at the AMOS 2020 Conference.

66. J. Greaves and **D.J. Scheeres**. Maneuver Detection for Cislunar Vehicles using Optical Measurements Paper presented at the AMOS 2020 Conference.
Awarded "Best of Conference" paper.

67. V. Ray and **D.J. Scheeres**. Evaluation of Performance Metrics for Fourier Drag Models in Orbit Determination and Prediction Paper presented at the AMOS 2020 Conference.

68. Shota Takahashi, Daniel Scheeres. AAS 20-514 Autonomous Navigation and Exploration of a Small Near-Earth Asteroid. Paper presented at the 2020 Astrodynamics Specialist Meeting.

69. AAS 20-438 CK Venigalla, Jacob Englander, Daniel Scheeres. Low-Thrust Trajectory Optimization for Maximum Missed Thrust Recovery Margin. Paper presented at the 2020 Astrodynamics Specialist Meeting.

70. Xiangyu Li, Daniel Scheeres, Qiao Dong. AAS 20-457 IMPROVING THE ACCURACY OF LANDER DEPLOYMENT TO ASTEROIDS BY SPIN RATE CONTROL. Paper presented at the 2020 Astrodynamics Specialist Meeting.

71. Natasha de Araujo, Daniel Scheeres, Evandro Marconi Rocco, Marcelo Mota, Walkiria Schulz. AAS 20-517 MODELLING SIGNATURES OF INTERNAL DENSITY HETEROGENEITIES FOR ASTEROIDS GRAVITY FIELDS. Paper presented at the 2020 Astrodynamics Specialist Meeting.

72. Ryotaro Sakamoto, Daniel Scheeres. AAS 20-626 Modeling Internal Energy Dissipation in a Tumbling Defunct Satellite using a Finite Element Method. Paper presented at the 2020 Astrodynamics Specialist Meeting.

73. Conor Benson, Daniel Scheeres. AAS 20-470 Averaged Solar Torque Rotational Dynamics for Defunct Satellites. Paper presented at the 2020 Astrodynamics Specialist Meeting.

74. Alex Davis, Daniel Scheeres. Boulder AAS 20-631 A Covariance Study for Gravity Estimation of Binary Asteroids. Paper presented at the 2020 Astrodynamics Specialist Meeting.

75. Alex Meyer, Daniel Scheeres. AAS 20-454 Formations with Frozen Relative Orbits in the Presence of Strong Solar Radiation Pressure. Paper presented at the 2020 Astrodynamics Specialist Meeting.

76. Marielle Pellegrino, Daniel Scheeres, Brett Streetman. AAS 20-476 Development and Analysis of the Doubly Averaged Model for Solar Radiation Pressure. Paper presented at the 2020 Astrodynamics Specialist Meeting.

77. Oscar Fuentes-Munoz, Daniel Scheeres. AAS 20-584 Secular evolution of the MOID for Near-Earth Objects. Paper presented at the 2020 Astrodynamics Specialist Meeting.

78. Erica Jenson, Daniel Scheeres. AAS 20-550 Multi-Objective Optimization of Covariance and Energy for Asteroid Transfers. Paper presented at the 2020 Astrodynamics Specialist Meeting.

79. Vishal Ray, Daniel Scheeres. AAS 20-542 Extension of King-Hele theory to variable drag-coefficients. Paper presented at the 2020 Astrodynamics Specialist Meeting.

80. Damennick Henry, Daniel Scheeres. AAS 20-588 Transfers Between Intersecting Quasi-periodic Tori. Paper presented at the 2020 Astrodynamics Specialist Meeting.

81. J Greaves, DJ Scheeres Estimation of Stochastic Events for Vehicles in NRHOs. Paper presented at the AIAA Scitech 2020 Forum, 0227

82. DB Henry, D Scheeres Generalized spacecraft formation design through exploitation of quasi-periodic tori families. Paper presented at the AIAA Scitech 2020 Forum, 0950

83. O Fuentes Munoz, DJ Scheeres Extremely long-term asteroid propagation. Paper presented at the AIAA Scitech 2020 Forum, 0464

84. MISSING 2019 Conferences.

85. S. De Smet and **D.J. Scheeres**. "Identifying Heteroclinic Connections using Artificial Neural Networks," paper presented at the 69th International Astronautical Congress, Bremen, Germany, October 2018. Paper IAC-18,C1,1,8,x42401.

86. C. Venigalla and **D.J. Scheeres**. "Numerical And Analytical Reachable Set Applications To Cooperative And Non-Cooperative Multi-Spacecraft Trajectory Coordination," paper presented at the 69th International Astronautical Congress, Bremen, Germany, October 2018. Paper IAC-18,C1,5,x46279.

87. C.J. Benson, **D.J. Scheeres**, W.H. Ryan, E.V. Ryan and N.A. Moskovitz. "GOES Tumbling Spin State Evolution and the Implications for GEO Debris Mitigation," paper presented at the 69th International Astronautical Congress, Bremen, Germany, October 2018. Paper IAC-18,A6,10-C1.7,1,x46361.

88. C.J. Benson and **D.J. Scheeres**. "Cyclic Complex Spin State Evolution of Defunct GEO Satellites," paper presented at the 2018 AMOS Conference, September 2018.

89. R. Sakamoto and **D.J. Scheeres**. "Modeling Energy Dissipation in a Tumbling Defunct Satellite Using a Finite Element Method," paper presented at the 2018 AMOS Conference, September 2018.

90. V. Ray and **D.J. Scheeres**. "Drag Coefficient Modeling with Spatial and Temporal Fourier Coefficient Expansions: Theory and Application," paper presented at the 2018 AMOS Conference, September 2018.

91. A. Rosengren, J. Correa and **D.J. Scheeres**. "Mean Values in Elliptic Motion: Averaging the Legendre Polynomials," paper presented at the 2018 AAS/AIAA Astrodynamics Specialist Conference, August 2018. Paper AAS 18-426.

92. M. Pellegrino and **D.J. Scheeres**. "Targeting Regions of Chaos In the GNSS Regime," paper presented at the 2018 AAS/AIAA Astrodynamics Specialist Conference, August 2018. Paper AAS 18-372.

93. N. Parrish and **D.J. Scheeres**. "Optimal Low-Thrust Trajectory Correction with Neural Networks," paper presented at the 2018 AAS/AIAA Astrodynamics Specialist Conference, August 2018. Paper AAS 18-397.

94. S. De Smet, **D.J. Scheeres** and J. Parker. "Systematic Exploration of Solar Gravity Driven Orbital Transfers in the Martian System using Artificial Neural Networks," paper presented at the 2018 AAS/AIAA Astrodynamics Specialist Conference, August 2018. Paper AAS 18-216.

95. J. Aziz, **D.J. Scheeres** and G. Lantoine. "Differential Dynamic Programming in the Hill Three-Body Problem," paper presented at the 2018 AIAA/AAS Space Flight Mechanics Meeting, January 2018.

96. M. Pellegrino and **D.J. Scheeres**. "Optimal Deployment of Solar Radiation Pressure Enhancement Devices for Space Debris Mitigation," paper presented at the 2018 AIAA/AAS Space Flight Mechanics Meeting, January 2018.

97. C.Venigalla and **D.J. Scheeres**. "Spacecraft Rendezvous and Pursuit/Evasion Analysis Using Reachable Sets," paper presented at the 2018 AIAA/AAS Space Flight Mechanics Meeting, January 2018.

98. S. Van wal, **D.J. Scheeres** and R. Reid. "Parallelized small-body lander/hopper simulations with distributed contact and procedural noise," paper presented at the 2017 AAS/AIAA Astrodynamics Specialist Conference, August 2017. Paper AAS 17-658.

99. J. Aziz and **D.J. Scheeres**. "Improvements to Sundman-Transformed HDDP Through Modified Equinoctial Elements," paper presented at the 2017 AAS/AIAA Astrodynamics Specialist Conference, August 2017. Paper AAS 17-766.

100. S. De Smet, **D.J. Scheeres** and J. Parker. "Dynamics and Stability of Sun-Driven Transfers from LEO to GEO," paper presented at the 2017 AAS/AIAA Astrodynamics Specialist Conference, August 2017. Paper AAS 17-593.

101. N. Parrish, **D.J. Scheeres** and S. Hughes. "Efficient Low Thrust Trajectory Optimization in CRTBP with Human-in-the-Loop," paper presented at the 2017 AAS/AIAA Astrodynamics Specialist Conference, August 2017. Paper AAS 17-832.

102. N. Baresi and **D.J. Scheeres** "Designing Spacecraft Formations About The Earth Via Dynamical Systems Techniques," paper presented at the 9th International Workshop on Satellite Constellations and Formation Flying, June 2017.

103. S. Hesar, **D.J. Scheeres**, J.W. McMahon, B. Rozitis. "A Precise Model for Small-Body Thermal Radiation Pressure Acting on Spacecraft: Applications to OSIRIS-REx Spacecraft," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-240.

    S. Hesar, **D.J. Scheeres**, Y. Takahashi, J.W. McMahon, A. French. "An Improved Method for Characterizing Small Body Density Distribution," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-231.

104. Scheeres D, Van Wal S, Olikara Z, Baresi N. "The Dynamical Environment for the Exploration of Phobos, ISTS-2017-d-007." International Symposium on Space Technology and Science, Ehime, Japan, 2017.3-9.

105. J. Aziz, J. Parker, **D.J. Scheeres** and J. Englander. "Low-Thrust Many-Revolution Trajectory Optimization via Differential Dynamic Programming and a Sundman Transformation," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-253.

106. J. Heiligers and **D.J. Scheeres** "Solar Sail Orbital Motion About Asteroids and Binary Asteroid Systems," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-377.

107. A. Davis and **D.J. Scheeres** "Dynamics and Modeling of a Binary Asteroid System with Applications to 65803 Didymos," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-284.

108. Z. Olikara and **D.J. Scheeres** "Mapping connections between planar Sun-Earth-Moon libration point orbits," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-516.

109. S. Tardivel and **D.J. Scheeres** "Dynamical structures for the study of irregular gravity fields," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-258.

110. C. Benson and **D.J. Scheeres** "Extraction and Assignment of Tumbling Asteroid and Defunct Satellite Rotation Periods from Simulated Light-Curve Observations," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-461.

111. N. Baresi and **D.J. Scheeres** "Design of Bounded Relative Trajectories in the Earth Zonal Problem," paper presented at the 2017 AAS/AIAA Space Flight Mechanics Meeting, February 2017. Paper AAS 17-242.

112. N. Baresi and **D.J. Scheeres** "Quasi-Periodic Invariant Tori Of Time-Periodic Dynamical Systems: Applications To Small Body Exploration," paper presented at the 2016 International Astronautical Congress, Guadalajara, Mexico, October 2016. Paper IAC-16.C1.7.4

113. L. Dell'Elce, N. Baresi and **D.J. Scheeres** "Robust Mission Design Using Invariant Manifolds," paper presented at the 2016 International Astronautical Congress, Guadalajara, Mexico, October 2016. Paper IAC-16.C1.4.3

114. M. Bando and **D.J. Scheeres**. "Nonlinear Attractive Sets under Optimal Feedback Control in the Hill Three-Body Problem," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Long Beach, California, September 2016. Paper AIAA-2016-5436

115. I.-K. Park and **D.J. Scheeres**. "Optimization of Hybrid Method for Uncertainty Propagation of Non-Keplerian Motion," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Long Beach, California, September 2016. Paper AIAA-2016-5630

116. S. Van wal and **D.J. Scheeres**. "The Lift-Off Velocity On Solar System Small Bodies," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-371

117. D.A. Surovik and **D.J. Scheeres**. "Reactive And Robust Paradigms For Autonomous Mission Design At Small Bodies," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-412

118. S. Rieger, **D.J. Scheeres** and B. Barbee. "Orbital Stability Regions For Hypothetical Natural Satellites Of 101955 Bennu (1999 RQ36)," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-439

119. J.L. Worthy III, M.J. Holzinger and **D.J. Scheeres**. "An Optimization Based Approach To Correlation Of Observations With Uncertainty," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-492

120. S.G. Hesar, **D.J. Scheeres** and J.W. McMahon. "Analysis Of Solar Radiation Pressure Effects On The Osiris-Rex Spacecraft In Orbit Around Bennu," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-250

121. N. Baresi, Z. Olikara and **D.J. Scheeres**. "Survey Of Numerical Methods For Computing Quasiperiodic Invariant Tori In Astrodynamics," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-332

122. M. Bando and **D.J. Scheeres**. "Attractive Set Of Optimal Feedback Control For The Hill Three-Body Problem," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-440

123. A. Albuja, R. Cognion, W. Ryan, E. Ryan and **D.J. Scheeres**. "Rotational Dynamics Of The Goes 8 And Goes 10 Satellites Due To The Yorp Effect," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-416

124. D. Lubey and **D.J. Scheeres**. "State Estimation and Maneuver Reconstruction with The Nonlinear Adaptive Optimal Control Based Estimator," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Napa Valley, California, February 2016. Paper AAS 16-423

125. S.G. Hesar, **D.J. Scheeres**, J.W. McMahon and Y. Takahashi. "Surface Proximity Gravitational Field Analysis Of The Asteroid 433 Eros," paper presented at the AAS Guidance, Navigation and Control Meeting, Breckenridge, Colorado, February 2016. Paper AAS 16-104

126. **D.J. Scheeres**, S. Van wal, P. Sánchez, N. Baresi and S. Tardivel. "Deployment And Dynamics Of Surface Packages For Small Body Exploration," paper presented at the 2015 International Astronautical Congress, Jerusalem, Israel, October 2015. Paper IAC-15-A3.4.7

127. N. Baresi, D.P. Lubey and **D.J. Scheeres**. "Model Estimation Using Hovering Satellites About Asteroids," paper presented at the 2015 International Astronautical Congress, Jerusalem, Israel, October 2015. Paper IAC-15.C1.7.1x29322

128. I. Park and **D.J. Scheeres**. "A Hybrid Method for Uncertainty Propagation of Orbital Motion around the Earth," paper presented at the 25th International Symposium on Spacecraft Dynamics, Munich, Germany, October 2015.

129. D.A. Surovik and **D.J. Scheeres**. "Abstraction predictive control for chaotic spacecraft orbit design," in IFAC Conference on Nonlinear Model Predictive Control, September 2015.

130. H.C. Ko and **D.J. Scheeres**. "Orbit Determination and Maneuver Detection Using Event Representation with Thrust-Fourier-Coefficients," paper presented at the 2015 AMOS Conference, Wailea, Maui, September 2015.

131. D.P. Lubey and **D.J. Scheeres**. "Towards Real-Time Maneuver Detection: Automatic State and Dynamics Estimation with the Adaptive Optimal Control Based Estimator," paper presented at the 2015 AMOS Conference, Wailea, Maui, September 2015.

132. J.D. Feldhacker, B.A. Jones, A. Doostan, **D.J. Scheeres** and J.W. McMahon. "Shape Dependence of Kinetic Deflection for a Survey of Real Asteroids," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-642

133. J.W. McMahon, **D.J. Scheeres**, D. Farnocchia and S.R. Chesley. "Optimizing Small Body Gravity Field Estimation Over Short Arcs," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-669

134. J.W. McMahon, N. Baresi and **D.J. Scheeres**. "On the Projection of Covariance Ellipsoids onto Non-planar Surfaces for Small Body Landing Analysis," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-667

135. I. Park and **D.J. Scheeres**. "Analytical Conversion of Mean Orbital Elements into Soculating Elements for Frozen Orbit About Asteroids," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-803

136. H.C. Ko and **D.J. Scheeres**. "Maneuver Detection with Event Representation using Thrust-Fourier-Coefficients," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-631

137. S. Hesar, **D.J. Scheeres** and J.W. McMahon. "Sensitivity Analysis of the OSIRIS-REx Terminator Orbits to Random De-Sat Maneuvers," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-565

138. O. Penagaricano Munoa and **D.J. Scheeres**. "Analytical Perturbation Theory for Dissipative Forces in Two-Point Boundary Value Problems," paper presented at the AAS/AIAA Astrodynamics Meeting, Vail, Colorado, August 2015. Paper AAS 15-684

139. D. Lubey and **D.J. Scheeres**. "Automated State and Dynamics Estimation in Dynamically Mismodeled Systems with Information From Optimal Control Policies," paper presented at the 18th International Conference on Information Fusion, Washington, D.C., July 2015. Paper AAS 15-252

140. **D.J. Scheeres** "Stable and Minimum Energy Configurations in the Spherical, Equal Mass Full 4-Body Problem," invited paper presented at the 2015 International Conference on Computational & Experimental Engineering and Sciences (ICCES) Mini-Symposium: Computational Methods in Celestial Mechanics, July 2015.

141. **D.J. Scheeres**. "Exploration of Rubble Pile Body Geophysics by Missions to NEA Binaries," paper presented at the International Symposium on Space Technology and Science, July 2015.

142. A.A. Albuja and **D.J. Scheeres**. "Representation of Short Period Variations in an Inactive Satellite's Rotational State Due to the YORP Effect," paper presented at the International Symposium on Space Technology and Science, July 2015.

143. D.A. Surovik and **D.J. Scheeres**. "Planning payload deployment to small bodies via reachability analysis," paper presented at the International Symposium on Space Technology and Science, July 2015.

144. D.A. Surovik and **D.J. Scheeres**. "Heuristic search and receding-horizon planning in complex spacecraft orbit domains," paper presented at the International Conference on Automated Planning and Scheduling, June 2015.

145. N. Baresi, **D.J. Scheeres** and H. Schaub. "Bounded Relative Orbits About Asteroids for Formation Flying and Applications," paper presented at the 8th International Workshop on Satellite Constellations and Formation Flying, Delft, Netherlands, June 2015.
Selected as the best student paper of the conference.

146. **D.J. Scheeres**, J.W. McMahon, B.A. Jones and A. Doostan. "Variation of Delivered Impulse as a Function of Asteroid Shape," paper presented at the 2015 IEEE Aerospace Conference, Big Sky, Montana, March 2015.

147. D. Lubey, A. Doostan and **D.J. Scheeres**. "Estimating Object-Dependent Natural Orbital Dynamics with Optimal Control Policies: A Validation Study," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Williamsburg, Virginia, January 2015. Paper AAS 15-252

148. D. Lubey and **D.J. Scheeres**. "Robust Tracking and Dynamics Estimation with the Automated Optimal Control Based Estimator," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Williamsburg, Virginia, January 2015. Paper AAS 15-251

149. K. DeLuca and **D.J. Scheeres**. "Divergence Characteristic of the Exterior Spherical Harmonic Gravity Potential," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Williamsburg, Virginia, January 2015. Paper AAS 15-427

150. S. Tardivel and **D.J. Scheeres**. "Accurate deployment of landers to dynamically challenging asteroids," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Williamsburg, Virginia, January 2015. Paper AAS 15-424

151. A. Albuja and **D.J. Scheeres**. "Short Period Variations in Angular Velocity and Obliquity of Inactive Satellites Due to the YORP Effect," paper presented at the AAS/AIAA Spaceflight Mechanics Meeting, Williamsburg, Virginia, January 2015. Paper AAS 15-264

152. **D.J. Scheeres**, S. Van wal and S. Tardivel. "Flyby-Only Science Operations for an Asteroid Exploration Mission," paper presented at the AAS GNC Meeting, Breckenridge, Colorado, February 2015. Paper AAS 15-121.

153. H.C. Ko and **D.J. Scheeres**. "Orbit Determination Across Unknown Maneuvers Using The Essential Thrust Fourier Coefficients," paper presented at the 2014 International Astronautical Congress, Toronto, Canada, September 2014. Paper IAC-14.C1.5.1

154. R. Cognion, A. Albuja and **D.J. Scheeres**. "Tumbling Rates Of Inactive Geo Satellites," paper presented at the 2014 International Astronautical Congress, Toronto, Canada, September 2014. Paper IAC-14.C1.2.12

155. H.C. Ko and **D.J. Scheeres**. "Spacecraft Orbit Anomaly Representation Using Thrust-Fourier-Coefficients with Orbit Determination Toolbox," paper presented at the 2014 AMOS Conference, Wailea, Maui, September 2014.

156. A. Albuja and **D.J. Scheeres**. "Effects of Optical and Geometrical Properties on YORP Effect for Inactive Satellites," paper presented at the 2014 AMOS Conference, Wailea, Maui, September 2014.

157. I.-K Park and **D.J. Scheeres**. "Simplified Propagation of Uncertainty in the Non-Keplerian Problem," paper presented at the 2014 AMOS Conference, Wailea, Maui, September 2014.

158. S. Rieger and **D.J. Scheeres**. "Laplace Plane Dynamics with Solar Radiation Pressure in the Vicinity of an Asteroid," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4459

159. **D.J. Scheeres** and J. McMahon. "Analytical Metrics for Asteroid Mitigation," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4425

160. A. Sanyal, M. Izadi, **D.J. Scheeres**, G. Misra and E. Samiei. "Estimation of Dynamics of Space Objects from Visual Feedback during Proximity Operations," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4419

161. Y. Takahashi and **D. Scheeres**. "Spherical Harmonic Potentials within the Brillouin Sphere," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4302

162. D. Surovik and **D.J. Scheeres**. "Autonomous Maneuver Planning at Small Bodies via Mission Objective Reachability Analysis," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4147

163. J. McMahon and **D. Scheeres**. "Linearized Lambert's Solution for Computationally Efficient Applications," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4150

164. N. Baresi and **D.J. Scheeres**. "Estimation of Asteroid Landing Trajectories Via Line-Of-Sight Measurements," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4143

165. I. McNally, **D.J. Scheeres** and G. Radice. "Attitude Dynamics of Large Geosynchronous Solar Power Satellites," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. AIAA-2014-4123

166. D.G. Yarnoz, **D.J. Scheeres** and C. McInnes, "On the a and g Families of Symmetric Periodic Orbits in the Photogravitational Hill Problem and Their Application to Asteroids," paper presented at the 2014 Space Conference, Astrodynamics Specialist Meeting, August 2014. Paper AIAA 2014-4119.

167. **D.J. Scheeres**. "Close Proximity Dynamics and Control about Asteroids," invited tutorial paper presented at the 2014 ACC Conference, Portland, Oregon, June 2014.

168. D.P. Lubey and **D.J. Scheeres**. "Combined Optimal Control and State Estimation for the Purposes of Maneuver Detection and Reconstruction," paper presented at the 2014 ACC Conference, Portland, Oregon, June 2014.

169. S. Tardivel, **D.J. Scheeres** and P. Michel. "High-altitude deployment of landers to asteroid surfaces using natural manifolds," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-355. *Selected as best paper of the conference*

170. D. Lee, A. Sanyal, E. Butcher and **D.J. Scheeres**. "Finite-Time Observer For Rigid Spacecraft Motion Over An Asteroid," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-260.

171. D. Lee, A. Sanyal, E. Butcher and **D.J. Scheeres**. "Finite-Time Control For Body-Fixed Hovering Of Rigid Spacecraft Over An Asteroid," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-221.

172. J. McMahon and **D.J. Scheeres**, "Asteroid Proximity Navigation using Direct Altimetry Measurements." paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-354.

173. **D.J. Scheeres**, E.I. Asphaug, C. Bombardelli, S. Chesley, A. Doostan, E. Herbold, B. Jones, D. Korycansky, J.W. McMahon, P. Miller, J.M. Owen and P. Sńchez. "Comprehensive Modeling Of The Effects Of Hazardous Asteroid Mitigation Techniques," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-278.

174. I. McNally, **D.J. Scheeres**, G. Radice. "Orbital Dynamics Of Large Solar Power Satellites: The Geosynchronous Laplace Plane," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-445.

175. H. Urrutxua, **D.J. Scheeres**, C. Bombardelli, J.-L. Gonzalo and Jesús Peláez. "What Does It Take To Capture An Asteroid? A Case Study On Capturing Asteroid 2006 RH120," paper presented at the 2014 AAS/AIAA Spaceflight Mechanics Meeting, Santa Fe, New Mexico, January 2014. Paper AAS 14-276.

176. I. McNally, **D.J. Scheeres**, G. Radice and M. Ceriotti. "Orbital Dynamics Of Large Solar Power Satellites," paper presented at the 64th International Astronautical Congress, Beijing, China, October 2013. Paper IAC-13.C3.1.7.

177. H.C. Ko and **D.J. Scheeres**. "Unobserved Maneuver Reconstruction And Propagation Using The Essential Thrust Fourier Coefficients," paper presented at the 64th International Astronautical Congress, Beijing, China, October 2013. Paper IAC-13.C1.1.3.

178. A. Albuja and **D.J. Scheeres**. "Evolution of Angular Velocity for Large Space Debris as a Result of YORP," paper presented at the 64th International Astronautical Congress, Beijing, China, October 2013. Paper IAC-13.A6.2.6.

179. M.W. Busch, M.A. Barucci, L.A.M. Benner, and **D.J. Scheeres** and J.D. Giorgini. "Near-Earth Asteroid 341843 (2008 Ev5), Target Of Esa's Marcopolo-R Mission," paper presented at the 64th International Astronautical Congress, Beijing, China, October 2013. Paper IAC-13.A3.4.5

180. A.J. Rosengren, **D.J .Scheeres** and J.W. McMahon. "The Classical Laplace Plane and its use as a Stable Disposal Orbit for GEO," paper presented at the 2013 AMOS Meeting, Maui, September 2013.

181. A. Albuja and **D.J .Scheeres**. "Defunct Satellites, Rotation Rates and the YORP Effect," paper presented at the 2013 AMOS Meeting, Maui, September 2013.

182. D.P. Lubey and **D.J .Scheeres**. "A Minimum Fuel Based Estimator for Maneuver and Natural Dynamics Reconstruction," paper presented at the 2013 AMOS Meeting, Maui, September 2013.

183. K. Fujimoto, J. Herzog, T. Schildknecht and **D.J. Scheeres**. "Improvements to Optical Track Association with the Direct Bayesian Admissible Region Method," paper presented at the 2013 AMOS Meeting, Maui, September 2013.

184. M. Sanjurjo-Rivo, **D.J .Scheeres**, M. Lara and J. Peláez. "Solution Of Optimal Continuous Low-Thrust Transfer Using Lie Transforms," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-931.

185. K. Fujimoto and **D.J .Scheeres**. "Analytical Non-Linear Conjunction Assessment Via State Transition Tensors In Orbital Element Space," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-913.

186. A.J. Rosengren, **D.J .Scheeres** and J.W. McMahon. "Long-Term Dynamics And Stability Of Geo Orbits: The Primacy Of The Laplace Plane," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-865.

187. D. Lee, A.K. Sanyal, E.A. Butcher and **D.J .Scheeres**. "Spacecraft Hovering Control For Body-Fixed Hovering Over A Uniformly Rotating Asteroid Using Geometric Mechanics," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-821.

188. M. Nazari, R. Wauson, T. Critz, E.A. Butcher and **D.J .Scheeres**. "Observer-Based Body-Frame Hovering Control Over A Tumbling Asteroid," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-820.

189. J.W. McMahon and **D.J .Scheeres**. "Improving Orbit Determination With Low-Order Fourier Solar Radiation Pressure Models," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-774.

190. I.-K. Park, **D.J .Scheeres** and K. Fujimoto. "The Effect Of Dynamical Accuracy For Uncertainty Propagation," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-764.

191. J.W. McMahon and **D.J .Scheeres**. "High-Fidelity Solar Radiation Pressure Effects For High Area-To-Mass Ratio Debris With Changing Shapes," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-763.

192. D.A. Surovik and **D.J .Scheeres**. "Adaptive Envisioning Of Reachable Mission Outcomes For Autonomous Motion Planning At Small Bodies," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-737.

193. D.P. Lubey and **D.J .Scheeres**. "An Optimal Control-Based Estimator For Maneuver Detection And Reconstruction," paper presented at the 2013 AAS/AIAA Astrodynamics Specialist Conference, Hilton Head Island, South Carolina, August 2013. Paper AAS 13-702.

194. K. Fujimoto, **D.J. Scheeres**, J. Herzog and T. Schildknecht. "Applying the Direct Bayesian Admissible Region Approach to The Association of GEO Belt Optical Observations," paper presented at ISTS 2013, The 29th International Symposium on Space Technology and Science, Nagoya-Aichi, Japan, June 2013.

195. Y. Takahashi, **D.J. Scheeres**, and M.W. Busch. "Spin State and Moment of Inertia Characterization of 4179 Toutatis," paper presented at ISTS 2013, The 29th International Symposium on Space Technology and Science, Nagoya-Aichi, Japan, June 2013.

196. K. Fujimoto, **D.J. Scheeres**, J. Herzog and T. Schildknecht. "Association Of Short-Arc Optical Tracks Via The Direct Bayesian Admissible Region: Theory And Application," paper presented at the 6th European Conference on Space Debris, ESA/ESOC Darmstadt, Germany, April 2013.

197. A.J. Rosengren and **D.J. Scheeres**. "Averaged Dynamics Of High Area-To-Mass Ratio Space Debris In Geo," paper presented at the 6th European Conference on Space Debris, ESA/ESOC Darmstadt, Germany, April 2013.

198. **D.J. Scheeres** and B. Sutter. "Design, Dynamics and Stability of the OSIRIS-REx Sun-Terminator Orbits," paper presented at the 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 2013. Paper AAS 13-411

199. K. Lee, C. Park, S.-Y. Park and **D.J. Scheeres**. "Optimal Formation Keeping near a General Keplerian Orbit under Nonlinear Perturbations," paper presented at the 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 2013. Paper AAS 13-389

200. H.C. Ko and **D.J. Scheeres**. "Essential Thrust Fourier Coefficient Set of Averaged Gauss' Equations for Orbital Mechanics," paper presented at the 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 2013. Paper AAS 13-375

201. A. Albuja, **D.J. Scheeres**, J.W. McMahon. "Evolution of Angular Velocity for Space Debris as a Result of YORP," paper presented at the 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 2013. Paper AAS 13-316

202. Y. Takahashi and **D.J. Scheeres**. "Generalized Density Distribution Estimation for Small Bodies," paper presented at the 23rd AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 2013. Paper AAS13-265.

203. K. Fujimoto and **D.J. Scheeres**. "Non-Linear Bayesian Orbit Determination: Angle Measurements," paper presented at the 63rd International Astronautical Congress, Naples, Italy, October 2012. Paper IAC-12-C1.6.11.

204. A.J. Rosengren and **D.J. Scheeres**. "Long-Term Dynamics of High Area-to-Mass Ration Space Debris in GEO," paper presented at the 63rd International Astronautical Congress, Naples, Italy, October 2012. Paper IAC-12, A6.2.5.

205. K. Miller, R. Dissly, **D.J. Scheeres**, and J. Garvin. "Relative Navigation Sensor Systems for Near Earth Asteroids and Other Challenging Mission Environments," paper presented at the 63rd International Astronautical Congress, Naples, Italy, October 2012. Paper IAC-12-B2.2.12.

206. K. Fujimoto and **D.J. Scheeres**. "Rapid Non-Linear Uncertainty Propagation via Analytical Techniques," paper presented at the 2012 AMOS Meeting, Maui, September 2012.

207. A.J. Rosengren and **D.J. Scheeres**. "Prediction of HAMR Debris Population Distribution Released from GEO Space," paper presented at the 2012 AMOS Meeting, Maui, September 2012.

208. D. Boone and **D.J. Scheeres**. "Understanding and Utilizing Properties of Phase Space near a Periodic Orbit for the Jupiter Europa Orbiter," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

209. C. Park, J. H. Yang, and **D.J. Scheeres**. "Optimal Control of Spacecraft Formation Flying Transfers by Using Generating Functions," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

210. E. Komendera, E. Bradley, and **D.J. Scheeres**. "Efficiently Locating Impact and Escape Scenarios in Spacecraft Reachability Sets," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

211. D.P. Lubey and **D.J. Scheeres**. "Identifying and Quantifying Mis-Modeled Dynamics via Optimal Control Problem Distance Metrics," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

212. A.J. Rosengren and **D.J. Scheeres**. "Long-term Dynamics of HAMR Objects in HEO," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

213. D.A. Surovik and **D.J. Scheeres**. "Computational Efficiency of Symplectic Integrators for Space Debris Orbit Propagation," paper presented at the AIAA/AAS Astrodynamics Specialist Meeting, Minneapolis, August 2012.

214. K. Fujimoto and **D.J. Scheeres**. "Non-Linear Bayesian Orbit Determination Based on the Generalized Admissible Region," paper presented at Fusion 2012, the 15th International Conference on Information Fusion, Singapore, July 2012.

215. **D.J. Scheeres**, M.A. de Gosson, and J. Maruskin. "Fundamental Limits on Orbit Uncertainty," paper presented at Fusion 2012, the 15th International Conference on Information Fusion, Singapore, July 2012.

216. **D.J. Scheeres** and M.J. Holzinger. "The Control Distance Metric and Constraints on Maneuvering Satellites," paper presented at Fusion 2012, the 15th International Conference on Information Fusion, Singapore, July 2012.

217. Z.P. Olikara and **D.J. Scheeres**. "Numerical Method For Computing Quasi-Periodic Orbits And Their Stability In The Restricted Three-Body Problem," paper presented at the 1st IAA Conference on Dynamics and Control of Space Systems, Porto, Portugal, March 2012.

218. K. Fujimoto and **D.J. Scheeres**. "Non-Linear Propagation of Uncertainty with Non-Conservative Effects," paper presented at the 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, South Carolina, January 2012. Paper AAS 12 - 263.

219. Y. Takahashi and **D.J. Scheeres**. "Surface Gravity Fields for Asteroids and Comets," paper presented at the 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, South Carolina, January 2012. Paper AAS 12 - 224.
Selected as the "Best Paper" of the Conference.

220. J.W. McMahon and **D.J. Scheeres**. "Appropriate Modeling of Solar Radiation Pressure Effects on Uncontrolled Orbiting Objects for Accurate Dynamical Predictions," paper presented at the 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, South Carolina, January 2012. Paper AAS 12 - 215.

221. M.J. Holzinger, K.T. Alfriend, and **D.J. Scheeres**. "Delta-V Distance Object Correlation and Maneuver Detection with Dynamics Parameter Uncertainty and Generalized Constraints," paper presented at the 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, South Carolina, January 2012. Paper AAS 12 - 110.

222. M.J. Holzinger and **D.J. Scheeres**. "Reachability Set Subspace Computation for Nonlinear Systems using Sampling Methods," paper presented at the 50th IEEE CDC, Orlando, Florida, December 2011.

223. **D.J. Scheeres**. "Orbital Mechanics about Small Bodies," invited paper presented at the 62nd International Astronautical Congress, Cape Town, South Africa, October 2011.

224. **D.J. Scheeres** and A. Rosengren. "Closed Form Solutions for the Averaged Dynamics of HAMR Objects," paper presented at the 62nd International Astronautical Congress, Cape Town, South Africa, October 2011.

225. M.J. Holzinger and **D.J. Scheeres**. "On-Orbit Range Set Applications," paper presented at the 2011 AMOS Meeting, Maui, September 2011.

226. K. Fujimoto and **D.J. Scheeres**. "Short-Arc Correlation and Initial Orbit Determination For Space-Based Observations," paper presented at the 2011 AMOS Meeting, Maui, September 2011.

227. J.W. McMahon and **D.J. Scheeres**. "A New Look at the Planar Dynamics of Libration-Orbit Coupling for Spacecraft," paper presented at the 2011 AAS/AIAA Astrodynamics Specialist Meeting, Girdwood, Alaska, August 2011. Paper AAS 11-420.

228. N.C. Shupe and **D.J. Scheeres**. "Orbit Options for an Orion-Class Spacecraft Mission to a Near-Earth Object," paper presented at the 2011 AAS/AIAA Astrodynamics Specialist Meeting, Girdwood, Alaska, August 2011. Paper AAS 11-447.

229. D. Boone and **D.J. Scheeres**. "Evaluating Periodic Orbits for the JEO Mission at Europa in terms of Lifetime and Stability," paper presented at the 2011 AAS/AIAA Astrodynamics Specialist Meeting, Girdwood, Alaska, August 2011. Paper AAS 11-518.

230. K. Fujimoto and **D.J. Scheeres**. "Applications of the Admissible Region to Space-Based Observations," paper presented at the 2011 AAS/AIAA Astrodynamics Specialist Meeting, Girdwood, Alaska, August 2011. Paper AAS 11-574.

231. A. Rosengren and **D.J. Scheeres**. "Averaged Dynamics of HAMR Objects: Effects of Attitude and Earth Oblateness," paper presented at the 2011 AAS/AIAA Astrodynamics Specialist Meeting, Girdwood, Alaska, August 2011. Paper AAS 11-594.

232. K. Fujimoto and **D.J. Scheeres**. "Correlation of Multiple Singular Observations and Initial State Estimation by Means of Probability Distributions of High Codimension," paper presented at the 2011 ACC, San Francisco, June 2011.

233. M.J. Holzinger and **D.J. Scheeres**. "LQR Performance Index Distribution with Uncertain Boundary Conditions," paper presented at the 2011 ACC, San Francisco, June 2011.

234. M.J. Holzinger, **D.J. Scheeres** and J. Hauser. "Optimal Reachability Sets Using Generalized Independent Parameters," paper presented at the 2011 ACC, San Francisco, June 2011.

235. K. Fujimoto and **D.J. Scheeres**. "Correlation of Optical Observations of Earth-Orbiting Objects and Initial Orbit Determination with Applications to LEO and Space-Based Observations," paper presented at ISTS 2011, The 28th International Symposium on Space Technology and Science, Okinawa, Japan, June 2011.

236. Y. Takahashi and **D.J. Scheeres**. "Characterization of an Asteroid Gravity Field via Slow Flybys," paper presented at ISTS 2011, The 28th International Symposium on Space Technology and Science, Okinawa, Japan, June 2011.

237. C.M. Hartzell and **D.J. Scheeres**. "Dynamics of Levitating Dust Particles Near Asteroids and the Moon," paper presented at the 2011 AAS/AIAA Spaceflight Mechanics Meeting, New Orleans, February 2011. Paper AAS 11-104.

238. **D.J. Scheeres**, A. Rosengren, and J. McMahon. "The Dynamics of HIgh Area-to-Mass Ratio Objects in Earth Orbit: The Effect of Solar Radiation Pressure," paper presented at the 2011 AAS/AIAA Spaceflight Mechanics Meeting, New Orleans, February 2011. Paper AAS 11-178.

239. S. Tardivel and **D.J. Scheeres**. "A Strategy for Robust Landings on Small Binary Bodies: Application to Asteroid System 1999 KW4," paper presented at the 2011 AAS/AIAA Spaceflight Mechanics Meeting, New Orleans, February 2011. Paper AAS 11-179.

240. K. Fujimoto, **D.J. Scheeres**, and K.T. Alfriend. "Analytical Non-Linear Propagation of Uncertainty in the Two-Body Problem," paper presented at the 2011 AAS/AIAA Spaceflight Mechanics Meeting, New Orleans, February 2011. Paper AAS 11-202.

241. M.J. Holzinger, **D.J. Scheeres**, and R.S. Erwin. "On-Orbit Range Computation Using Gauss' Variational Equations with J_2 Perturbations," paper presented at the 2011 AAS/AIAA Spaceflight Mechanics Meeting, New Orleans, February 2011. Paper AAS 11-243.

242. Y. Takahashi and **D.J. Scheeres**. "Small Body Surface Gravity Field Estimation from Orbit Determination," invited paper presented at the 34th Annual AAS GN&C Conference, Breckenridge, Colorado, February 2011. Paper AAS-11-053.

243. M. Lara, J. Peláez, C. Bombardelli, F.R. Lucas, M. Sanjurjo-Rivo, D. Curreli, E.C. Lorenzini, **D.J. Scheeres**. "Dynamic Stabilization of L_2 Periodic Orbits Using Attitude-Orbit Coupling Effects," paper presented at the 22nd International Symposium on Space Flight Dynamics, San José dos Campos, Brazil, February 28-March 4, 2011.

244. M.J. Holzinger and **D.J. Scheeres**. "Object Correlation and Maneuver Detection Using Optimal Control Performance Metrics," paper presented at the 2010 AMOS Meeting, Maui, September 2010.

245. K. Fujimoto and **D.J. Scheeres**. "Correlation and Initial Orbit Determination for Short-Arc Optical Observations," paper presented at the 2010 AMOS Meeting, Maui, September 2010.

246. D. Boone and **D.J. Scheeres**. "Analysis and Implementation of Geodesy Science for the Jupiter Europa Orbiter Mission," paper presented at the 2010 AIAA/AAS Astrodynamics Specialist Conference, Toronto, August 2010. Paper AIAA-2010-8255.

247. K. Fujimoto and **D.J. Scheeres**. "Correlation of Optical Observations of Earth-Orbiting Objects by Means of Probability Distributions," paper presented at the 2010 AIAA/AAS Astrodynamics Specialist Conference, Toronto, August 2010. Paper AIAA-2010-7975. *Selected as the "Best Paper" of the Conference.*

248. J.S. Hudson and **D.J. Scheeres**. "Equivalent Average Trajectory Dynamics using the Reduced Low-Thrust Coefficients," paper presented at the 2010 AIAA/AAS Astrodynamics Specialist Conference, Toronto, August 2010. Paper AIAA-2010-7829.

249. Y. Takahashi and **D.J. Scheeres**. "Analytical Estimates of Gravity Field via Flybys," paper presented at the 2010 AIAA/AAS Astrodynamics Specialist Conference, Toronto, August 2010. Paper AIAA-2010-8372.

250. J. McMahon and **D.J. Scheeres**. "The Secular Effects of Solar Radiation Pressure on the Orbits of GPS Satellites," paper presented at the 2010 AIAA/AAS Astrodynamics Specialist Conference, Toronto, August 2010. Paper AIAA-2010-.

251. M.J. Holzinger and **D.J. Scheeres**. "Object Correlation, Maneuver Detection, and Maneuver Characterization using Control Effort Metrics with Uncertain Boundary Conditions and Measurements," paper presented at the 2010 AIAA GNC Meeting, Toronto, August 2010. Paper AIAA-2010-8347.

252. K. Fujimoto and **D.J. Scheeres**. "Correlation of Optical Observations of Earth-Orbiting Objects by Means of Probability Distributions," paper presented at the Alfriend Symposium, Monterey, May 2010. Paper AAS 10-319.

253. **D.J. Scheeres** and M. de Gosson. "Applications of Symplectic Topology to Orbit Uncertainty and Spacecraft Navigation," paper presented at the Alfriend Symposium, Monterey, May 2010. Paper AAS 10-304.

254. R.C. Woolley and **D.J. Scheeres**. "Hyperbolic Periodic Orbits in the Three-Body Problem and Their Application to Orbital Capture," paper presented at the Born Symposium, Boulder, May 2010.

255. M.J. Holzinger and **D.J. Scheeres**. "Object Correlation Using Control Effort Metrics with Boundary Condition Uncertainties," paper presented at the US/Russia Space Surveillance Workshop, Maui, Hawaii, April 2010.

256. E.D. Gustafson and **D.J. Scheeres**. "Spacecraft Stochastic Optimal Control," paper presented at the 2010 AAS/AIAA Space Flight Mechanics Meeting, San Diego, February 2010. Paper AAS 10-109.

257. J.S. Hudson and **D.J. Scheeres**. "Determination of Fundamental Low-Thrust Control Frequencies for Fitting Sequences of Orbital States," paper presented at the 2010 AAS/AIAA Space Flight Mechanics Meeting, San Diego, February 2010. Paper AAS 10-213.

258. R.C. Woolley and **D.J. Scheeres**. "Optimal Pathways for Sequences of V-Infinity Leveraging Maneuvers," paper presented at the 2010 AAS/AIAA Space Flight Mechanics Meeting, San Diego, February 2010. Paper AAS 10-219.

259. Y. Takahashi and **D.J. Scheeres**. "Rapid Characterization of a Small Body via Slow Flybys," paper presented at the 2010 AAS/AIAA Space Flight Mechanics Meeting, San Diego, February 2010. Paper AAS 10-244.

260. E.G. Fahnestock, D.D. Durda, K.R. Housen and **D.J. Scheeres**. "Surface Impact or Blast Ejecta Behavior in a Small Binary Asteroid System with Application to in-situ Observation," paper presented at the 2010 AAS/AIAA Space Flight Mechanics Meeting, San Diego, February 2010. Paper AAS 10-248.

261. M.J. Holzinger and **D.J. Scheeres**. "Analytical Reachability Results for a Class of Nonlinear Systems with Ellipsoidal Initial Sets," paper presented at the 2009 Conference on Decision and Control, Shanghai, China, December 2009.

262. J.M. Maruskin and **D.J. Scheeres**. "Metrics on the space of bounded Keplerian orbits and space situational awareness," paper presented at the 2009 Conference on Decision and Control, Shanghai, China, December 2009.

263. M.J. Holzinger and **D.J. Scheeres**. "Reachability Analysis Applied to Space Situational Awareness," paper presented at the 2009 Advanced Maui Optical and Space Surveillance Technologies Conference, Wailea, Maui, Hawaii, September 2009.

264. K.E. Davis, R.L. Anderson, **D.J. Scheeres** and G.H. Born. "Locally Optimal Transfers Between Libration Point Orbits Using Invariant Manifolds," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-398.

265. J. Bellerose, H. Yano, and **D.J. Scheeres**. "Solar Radiation Pressure Perturbations at Binary Asteroid Systems," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-347.

266. S.B. Broschart, **D.J. Scheeres**, and B.F. Villac. "New Families of Multi-Revolution Terminator Orbits Near Small Bodies," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-402.

267. J.W. McMahon and **D.J. Scheeres**. "A New Navigation Force Model for Solar Radiation Pressure," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-346.

268. R.C. Woolley and **D.J. Scheeres**. "Shrinking the V-Infinity Sphere: Endgame Strategies for Planetary Moon Orbiters," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-377.

269. Y. Tsuda and **D.J. Scheeres**. "State Transition Matrix Approximation Using a Generalized Averaging Method," paper presented at the 2009 AAS/AIAA Astrodynamics Specialist Conference, Pittsburgh, August 2009. Paper AAS 09-444.

270. M.J. Holzinger and **D.J. Scheeres**. "Applied Reachability for Space Situational Awareness and Safety in Spacecraft Proximity Operations," paper presented at the 2009 AIAA Guidance, Navigation and Control Conference, Chicago, August 2009.

271. K. Fujimoto, J.M. Maruskin and **D.J. Scheeres**. "Circular and Zero-inclination Solutions for Optical Observations of Earth-orbiting Objects," paper presented at the 2009 International Symposium on Space Technology and Science Meeting, Tsukuba, Japan, July 2009.

272. **D.J. Scheeres**, K. Fujimoto, J.M. Maruskin, and K.T. Alfriend. "Uncorrelated Optical Observations: Properties and Implications for Object Correlation," US-China Space Surveillance Technical Interchange, Shanghai Astronomical Observatory, CAS, 1-5 June, 2009, Shanghai, China.

273. C.M. Cottingham, W.D. Deininger, R.W. Dissly, K.W. Epstein, D.M. Waller and **D.J. Scheeres**."Asteroid Surface Probes: A Low-Cost Approach for the In Situ Exploration of Small Solar System Objects," paper presented at the 2009 IEEE Big Sky Aerospace Engineering Conference. Paper IEEEAC 1680.

274. K. Davis, R.L. Anderson, G.H. Born and **D.J. Scheeres**. "Connecting Libration Point Orbits of Different Energies Using Invariant Manifolds," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-256.

275. M. Sanjurjo-Rivo, J. Peláez and **D.J. Scheeres**. "Jovian Capture of a Spacecraft With a Self-Balanced Electrodynamic Bare Tether," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-241.

276. D. Curreli, E.C. Lorenzini, C. Bombardelli, M. Sanjurjo-Rivo, F.R. Lucas, J. Peláez, **D.J. Scheeres** and M. Lara. "Exploration of the Jupiter Plasma Torus With a Self-Powered Electrodynamic Tether," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-240.

277. K. Fujimoto and **D.J. Scheeres**. "Circular and Zero-inclination Solutions for Optical Observations of Earth orbiting Objects," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-231.

278. **D.J. Scheeres**. "Orbit Mechanics About Small Asteroids," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-220.
Selected as the "Best Paper" of the Conference.

279. Y. Tsuda and **D.J. Scheeres**. "Computation and Applications of an Orbital Dynamics Symplectic State Transition Matrix," paper presented at the 2009 AAS/AIAA Space Flight Mechanics Meeting, Savannah, Georgia, February 9-12, 2009. Paper AAS 09-158.

280. O. Peñagaricano Muñoa and **D.J. Scheeres**. "A Perturbation Theory for Hamilton's Principal Function," paper presented at the 59th International Astronautical Congress, 2008, Glasgow. Paper IAC-08-C1.3.9.

281. J.E. Bellerose, **D.J. Scheeres** and E.I. Asphaug. "Comparative Study of Target Binary Asteroid Systems: From Observational Data to Analytical Methods," paper presented at the 59th International Astronautical Congress, 2008, Glasgow. Paper IAC-08-A3.5.7.

282. J.M. Maruskin, **D.J. Scheeres**, and K.T. Alfriend. "Orbit Determination of Space Debris," paper presented at the 2008 Advanced Maui Optical and Space Surveillance Technologies Conference.

283. E.G. Fahnestock and **D.J. Scheeres**. "Characterization of Spacecraft and Debris Trajectory Stability within Binary Asteroid Systems," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-7203

284. S. Byram and **D.J. Scheeres**. "Spacecraft Dynamics in the Vicinity of a Comet in a Rotating Frame," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-7202

285. O. Peñagaricano Muñoa and **D.J. Scheeres**. "A Symplectic Keplerian Map for Perturbed Two- Body Dynamics," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-7068

286. L. Rios-Reyes and **D.J. Scheeres**. "Trajectory Control for General Solar Sails," paper presented at the 2008 AIAA/AAS Guidance, Navigation and Control Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-6830

287. *M. Nakamiya*, **D.J. Scheeres**, H. Yamakawa and M. Yoshikawa. "Preliminary Analysis of Space Transportation Systems with Spaceports Around Libration Points," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-6625

288. J. Hudson and **D.J. Scheeres**. "Trajectory Optimization Using the Reduced Eccentric Anomaly Low- Thrust Coefficients," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-6617

289. E. Gustafson and **D.J. Scheeres**. "Dynamically Relevant Local Coordinates for Halo Orbits ," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-6432

290. J. Bellerose and **D.J. Scheeres**. "Dynamics and Control for Surface Exploration of Small Bodies," paper presented at the 2008 AIAA/AAS Astrodynamics Specialist Meeting, Honolulu, Hawaii, August 18-21, 2008. AIAA-2008-6251

291. E. Gustafson and **D.J. Scheeres**. "Optimal Timing of Control Law Updates for Unstable Systems with Continuous Control," paper presented at the 2008 American Control Conference, Seattle, Washington, June 13, 2008. FrC15.4.

292. *M. Nakamiya*, **D.J. Scheeres**, H. Yamakawa, and M. Yoshikawa. "Three-Dimensional Analysis of Capture Trajectories to the Periodic Orbits of L1 and L2 Points," paper presented at the 2008 AAS/AIAA Spaceflight Mechanics Meeting, Galveston, Texas, January 27-31, 2008. AAS 08-237.

293. J.E. Bellerose and **D.J. Scheeres**. "Mission to Binary Asteroids: 1999 KW4 as a Case Study," paper presented at the 2008 AAS/AIAA Spaceflight Mechanics Meeting, Galveston, Texas, January 27-31, 2008. AAS 08-170.

294. P. Patel and **D.J. Scheeres**. "A Non-Linear Optimization Algorithm," paper presented at the 2008 AAS/AIAA Spaceflight Mechanics Meeting, Galveston, Texas, January 27-31, 2008. AAS 08-116.

295. J.M. Maruskin, **D.J. Scheeres**, and A.M. Bloch. "Dynamics of Symplectic SubVolumes," paper presented at the 46th IEEE Conference on Decision and Control, New Orleans, Louisiana, December 2007.

296. **D.J. Scheeres**, J.M. Maruskin, and K.T. Alfriend. "Correlation of optical observations of objects in Earth orbit," invited paper S3.2 presented at the Seventh US/Russian Space Surveillance Workshop, Naval Postgraduate School, Monterey, California, October 29-November 1, 2007.

297. **D.J. Scheeres**. "Orbit mechanics about small asteroids," paper presented at the 20th International Symposium on Space Flight Dynamics, Annapolis, Maryland, September 24-28, 2007.

298. J. Peláez and **D.J. Scheeres**. "On the Control of a Permanent Tethered Observatory at Jupiter," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 369

299. S.B. Broschart and **D.J. Scheeres**. "On the Implementation of Spacecraft Hovering under Reduced-order Dead- band Control," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 397

300. J.M. Maruskin, **D.J. Scheeres** and A.M. Bloch. "SubVolumes in Dynamical Systems and the Tracking of Space Debris," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 392

301. J.S. Hudson and **D.J. Scheeres**. "Reduction of Low Thrust Continuous Controls for Trajectory Dynamics," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 345

302. S.M. Byram and **D.J. Scheeres**. "Rotational Dynamics of a Comet Nucleus Subject to Outgassing Jets," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 335

303. M. Nakamiya, **D.J. Scheeres**, H. Yamakawa, and M. Yoshikawa. "Analysis of Capture Trajectories to the Periodic Orbits in the Vicinity of Libration Points," paper presented at the 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan, August 19-23, 2007. AAS 07 - 320

304. M. Nakamiya, H. Yamakawa, M. Yoshikawa, and **D.J. Scheeres**. "Analysis of Capture Trajectories to Libration Points," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 228

305. S. Ross and **D.J. Scheeres**. "Multiple Gravity Assists in the Restricted Three-Body Problem," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 227

306. J. Bellerose and **D.J. Scheeres**. "Energy Constraints in the Restricted Full Three-Body Problem: Application to Binary System KW4," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 224

307. O. Peñagaricano Muñoa and **D.J. Scheeres**. "A Perturbation Theory for Hamilton's Principal Function: Applications to the Two-Point Boundary Value Problem," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 220

308. J. Peláez and **D. J. Scheeres**. "A Permanent Tethered Observatory at Jupiter: Dynamical Analysis," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 190

309. P. Patel, **D.J. Scheeres**, A. Gallimore, and T. Zurbuchen. "A Path Based Approach to Finding Optimal Interplanetary Trajectories," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 156

310. E.D. Gustafson and **D.J. Scheeres**. "Optimal Control of Uncertain Non-linear Trajectories Using Continuous Thrust," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 135

311. M. Paskowitz Possner and **D.J. Scheeres**. "Control of Science Orbits About Planetary Satellites," paper presented at the 17th AAS/AIAA Space Flight Mechanics Meeting, Sedona, Arizona, January 2007. AAS 07 - 132

312. C. Park, **D.J. Scheeres**, A.M. Bloch, and V.M. Guibout. "Globally Optimal Feedback Control Law of the Underactuated Hesienberg System by Generating Functions," paper presented at the 45th IEEE Conference on Decision and Control, San Diego, California, December 2006.

313. J. Bellerose and **D.J. Scheeres**. "Periodic Model of the Restricted Full Three Body Problem," paper presented at the 58th International Astronautical Congress, Valencia, Spain, October 2006.

314. M. Yoshikawa, H. Ikeda, H. Yano, J. Saito, T. Kubota, T. Hashimoto, A. Fujiwara, J. Kawaguchi, T. Kominato, M. Matsuoka, K. Shirakawa, T. Ohnishi, S. Abe, T. Mukai, R. Gaskell, and **D.J. Scheeres**. "Astrodynamics Science about Itokawa, Gravity and Ephemeris," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6658

315. **D.J. Scheeres**, R. Gaskell, S. Abe, O. Barnouin-Jha, T. Hashimoto, J. Kawaguchi, T. Kubota, J. Saito, M. Yoshikawa, N. Hirata, T. Mukai, M. Ishiguro, T. Kominato, K. Shirakawa, M. Uo. "The Actual Dynamical Environment About Itokawa," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6661

316. R. Gaskell, O. Barnouin-Jha, **D.J. Scheeres**, T. Mukai, N. Hirata, S. Abe, J. Saito, M. Ishiguro, T. Kubota, T. Hashimoto, J. Kawaguchi, M. Yoshikawa, K. Shirakawa, T. Kominato. "Landmark Navigation Studies and Target Characterization in the Hayabusa Encounter with Itokawa," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6660

317. E.G. Fahnestock, T. Lee, M. Leok, N.H. McClamroch, and **D.J. Scheeres**. "Polyhedral Potential and Variational Integrator Computation of the Full Two Body Problem," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6289.

318. R.S. Park and **D.J. Scheeres**. "Nonlinear Semi-Analytic Method for Spacecraft Navigation," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6399.

319. S.M. Byram, **D.J. Scheeres**, and M. Combi. "Realistic Models for the Comet Dynamical Environment," paper presented at the 2006 AIAA/AAS Astrodynamics Specialist Meeting, Keystone, Colorado, August 2006. Paper AIAA-2006-6288.

320. C. Park, **D.J. Scheeres**. "Optimal Control of Spacecraft Orbital Maneuvers by the Hamilton-Jacobi Theory," paper presented at the 2006 AIAA Guidance, Navigation and Control Conference, Keystone, Colorado, August 2006. Paper AIAA-2006-6234.

321. C. Park and **D.J. Scheeres**. "Optimal Control and Hamiltonian Dynamics," paper presented at the 2006 ACC, Minneapolis, Minnesota, June 2006.

322. L. Rios-Reyes and **D.J. Scheeres**. "Solar Sail Navigation: Estimation of Force, Moment, and Optical Parameters," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-225.

323. M.E. Paskowitz and **D.J. Scheeres**. "A Toolbox For Designing Long-Lifetime Orbits About Planetary Satellites: Application to JIMO at Europa," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-191. Invited paper.

324. J. Bellerose and **D.J. Scheeres**. "Periodic Orbits in the Full Two-Body Problem," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-169

325. O. Peñagaricano Muñoa and **D.J. Scheeres**. "Hamilton's Principal Function for the Two-Body Problem," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-165

326. *P. Patel*, **D.J. Scheeres**, A. Gallimore and T. Zurbuchen. "Automating Trade Studies for Optimal Interplanetary Electric Propulsion Missions," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-152.

327. F.Y. Hsiao and **D.J. Scheeres**. "Uncertainty Control Utilizing Natural Dynamics in Hamiltonian Systems," paper presented at the 2006 AAS/AIAA Space Flight Mechanics Meeting, Tampa, Florida, January 2006. AAS 06-136

328. C. Park and **D.J. Scheeres**. "Formulation of a Hamiltonian Cauchy Problem for Solving Optimal Feedback Control Problems," paper presented at the 2005 CDC-ECC conference.

329. *I. Hussein*, **D.J. Scheeres**, D.C. Hyland. "Optimal Formation Control for Imaging and Fuel Usage with Terminal Imaging Constraints," paper presented at the 2005 IEEE Conference on Control Applications.

330. J. Bellerose and **D.J. Scheeres**. "Periodic Orbits in the Vicinity of the Equilateral Points of the Restricted Full Three-Body Problem," paper presented at the 57th International Astronautical Congress, Fukuoka, Japan, October 2005.

331. **D.J. Scheeres**, J. Bellerose, E. Fahnestock "Missions to Binary Asteroids: Tra jectory Design, Navigation and Science," paper presented at the 6th International Astronautics Academy International Conference on Low-Cost Planetary Missions, Kyoto, Japan, October 2005.

332. C. Park, **D.J. Scheeres** and V. Guibout. "Solving Optimal Continuous Thrust Rendezvous Problems with Generating Functions," paper presented at the 2005 AIAA Guidance, Navigation and Control Conference, San Francisco, August 2005. Paper AIAA-2005-6077.

333. L. Rios-Reyes and **D.J. Scheeres**. "Robust Solar Sail Trajectory Control for Large Pre-Launch Modeling Errors," paper presented at the 2005 AIAA Guidance, Navigation and Control Conference, San Francisco, August 2005. Paper AIAA-2005-6173.

334. B. Dachwald, B. Wie, **D. Scheeres**, L. Rios-Reyes, B. Diedrich, M. Macdonald, C. McInnes, W. Seboldt, F. Lura, M. Gorlich, M. Leipold, G. Garbe, and V. Baturkin. "Potential Solar Sail Degradation Effects on Trajectory and Attitude Control," paper presented at the 2005 AIAA Guidance, Navigation and Control Conference, San Francisco, August 2005. Paper AIAA-2005-6172.

335. S.B. Broschart and **D.J. Scheeres**. "Lyapunov Stability of Hovering Spacecraft in Time-Invariant Systems," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-381.

336. R.S. Park and **D.J. Scheeres**. "Nonlinear Mapping of Gaussian State Uncertainties: Theory and Applications to Spacecraft Control and Navigation," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-404.

337. M.E. Paskowitz and **D.J. Scheeres**. "Transient Behavior of Planetary Satellite Orbiters," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-358.

338. J. Bellerose and **D.J. Scheeres**. "Periodic Orbits in the vicinity of the Equilateral Points of the Restricted Full Three Body Problem," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-295.

339. E.G. Fahnestock, **D.J. Scheeres**, H.H. McClamroch and R.A. Werner. "Simulation And Analysis Of Binary Asteroid Dynamics Using Mutual Potential And Potential Derivatives Formulation," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-356.

340. S.M. Byram, **D.J. Scheeres** and M.R. Combi. "Navigation Models of Comet Outgassing Jets," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-284.

341. B. Dachwald, V. Baturkin, V.L. Coverstone, B. Diedrich, G. Garbe, M. Gorlich, M. Leipold, F. Lura, M. Macdonald, C. McInnes, G. Mengali, A.A. Quarta, L. Rios-Reyes, **D.J. Scheeres**, W. Seboldt, and B. Wie. "Potential Effects of Solar Sail Degradation on Trajectory Design," paper presented at the 2005 Astrodynamics Specialist Conference, Lake Tahoe, California, August 2005. AAS Paper 05-413.

342. C. Park and **D.J. Scheeres**. "Extended Applications of Generating Function to Optimal Feedback Control Problems," paper presented at the 2005 American Control Conference.

343. **D.J. Scheeres**, F.-Y. Hsiao, R.S. Park, B.F. Villac, J.M. Maruskin. "Fundamental Limits on Spacecraft Orbit Uncertainty and Distribution Propagation," invited paper presented at the Shuster Symposium, Grand Island, New York, June 2005. Paper AAS 05-471.

344. **D.J. Scheeres**. "Computing Relative Equilibria for General Gravity Fields in the Full 2-Body Problem," invited paper presented at New Trends in Astrodynamics and Applications II, June 2005.

345. *I. Hussein*, A.M. Bloch, **D.J. Scheeres**, N.H. McClamroch. "Optimal Fuel-Image Motion Planning for a Class of Dual Spacecraft Formations," paper presented at the 2005 American Control Conference.

346. *P. Patel*, **D.J. Scheeres** and T. Zurbuchen. "A Shape Based Approach to Spacecraft Trajectories: Analysis and Optimization," paper presented at the 2005 Space Flight Mechanics Meeting, Copper Mountain, Colorado, January 2005. AAS Paper 2005-130.

347. I.I. Hussein, **D.J. Scheeres** and D.C. Hyland. "Optimal Formation Control for Imaging and Fuel Usage," paper presented at the 2005 Space Flight Mechanics Meeting, Copper Mountain, Colorado, January 2005. AAS Paper 2005-160.

348. R.S. Park and **D.J. Scheeres**. "Nonlinear Mapping of Gaussian State Covariance and Orbit Uncertainties," paper presented at the 2005 Space Flight Mechanics Meeting, Copper Mountain, Colorado, January 2005. AAS Paper 2005-170.

349. M.E. Paskowitz and **D.J. Scheeres**. "Orbit Mechanics About Planetary Satellites Including Higher Order Gravity Fields," paper presented at the 2005 Space Flight Mechanics Meeting, Copper Mountain, Colorado, January 2005. AAS Paper 2005-190.

350. V.M. Guibout and **D.J. Scheeres**. "New Methods for spacecraft formation design," paper presented at the 18th International Symposium on Space Flight Dynamics, Munich, Germany, October 2004.

351. J. Bellerose and **D.J. Scheeres**. "Stability of Equilibrium Points in the Restricted Full Three Body Problem," paper presented at the 55th International Astronautical Congress, Vancouver, Canada, October 2004.

352. T.H Zurbuchen, *P. Prashant*, A. Gallimore, **D. Scheeres**, N. Murphy, G. Zank, R. Malhotra, H. Funsten, and the NASA Interstellar Probe Vision Mission Team. "Interstellar Probe: Breakthrough Science Enabled by Nuclear Propulsion," paper presented at the 55th International Astronautical Congress, Vancouver, Canada, October 2004.

353. S.B. Broschart and **D.J. Scheeres**. "Spacecraft Descent and Translation in the Small-body Fixed Frame," paper presented at the 2004 Astrodynamics Specialist Meeting, Providence, Rhode Island, August 2004. AIAA Paper 2004-4865.

354. M.E. Paskowitz and **D.J. Scheeres**. "Identifying Safe Zones for Planetary Satellite Orbiters," paper presented at the 2004 Astrodynamics Specialist Meeting, Providence, Rhode Island, August 2004. AIAA Paper 2004-4862.

355. V.M. Guibout and **D.J. Scheeres**. "An Algorithm for Spacecraft Formation Design," paper presented at the 2004 Astrodynamics Specialist Meeting, Providence, Rhode Island, August 2004. AIAA Paper 2004-4736.

356. L. Rios-Reyes and **D.J. Scheeres**. "Applications of the Generalized Model for a Solar Sail," paper presented at the 2004 Guidance Navigation and Control Conference, Providence, Rhode Island, August 2004. AIAA Paper 2004-5434.

357. R. S. Park, **D. J. Scheeres**, G. Giampieri, J. M. Longuski, and E. Fischbach. "Orbit Design for Optimizing a General Relativity Experiment," paper presented at the 2004 Astrodynamics Specialist Meeting, Providence, Rhode Island, August 2004. AIAA Paper 2004-5394.

358. **D.J. Scheeres**, S.B. Broschart, S.J. Ostro and L. Benner. "The Dynamical Environment About Asteroid 25143 Itokawa, Target of the Hayabusa Mission," paper presented at the 2004 Astrodynamics Specialist Meeting, Providence, Rhode Island, August 2004. AIAA Paper 2004-4864.

359. C. Park and **D.J. Scheeres**. "Solutions of Optimal Feedback Control Problems with General Boundary Conditions Using Hamiltonian Dynamics and Generating Functions," paper presented at the 2004 American Control Conference, Boston, Massachusetts, June 2004. Paper WeM02.1.

360. S.B. Broschart and **D.J. Scheeres**. "Spacecraft Descent Strategies to Small-Body Surfaces," paper presented at the 24th International Symposium on Space Technology and Science, Miyazaki, Japan, June 2004. Paper 2004-d-35.

361. **D.J. Scheeres**, S.B. Broschart, S.J. Ostro and L. Benner. "The dynamical environment about Asteroid 25143 Itokawa ," paper presented at the 24th International Symposium on Space Technology and Science, Miyazaki, Japan, June 2004. Paper 2004-d-36.

362. **D.J. Scheeres**. "Close Proximity Operations for Implementing Mitigation Strategies," paper presented at the AIAA Planetary Defense Conference, Orange County, California, February 2004. Paper AIAA-2004-1445.

363. **D.J. Scheeres** and R.L. Schweickart. "The Mechanics of Moving Asteroids," paper presented at the AIAA Planetary Defense Conference, Orange County, California, February 2004. Paper AIAA-2004-1446.

364. B.G. Williams, D.D. Durda and **D.J. Scheeres**. "The B612 Mission Design," paper presented at the AIAA Planetary Defense Conference, Orange County, California, February 2004. Paper AIAA-2004-1448.

365. B.F. Villac and **D.J. Scheeres**. "A simple algorithm to compute the hyperbolic invariant manifolds near L_1 and L_2," paper presented at the Space Flight Mechanics Meeting, Maui, Hawaii, February 2004. Paper AAS 04-243

366. L. Rios-Reyes and **D.J. Scheeres**. "Navigation Models of Solar Sails: Modeling a Circular Sail with Billow," paper presented at the Space Flight Mechanics Meeting, Maui, Hawaii, February 2004. Paper AAS 04-286.

367. F.Y. Hsiao and **D.J. Scheeres**. "Transient stability of motion relative to a stabilized trajectory: Application to formation flight," paper presented at the Space Flight Mechanics Meeting, Maui, Hawaii, February 2004. Paper AAS 04-260.

368. I.I. Hussein and **D.J. Scheeres**. "Effects of orbit perturbations on a class of Earth-orbiting interferometric observatories," paper presented at the Space Flight Mechanics Meeting, Maui, Hawaii, February 2004. Paper AAS 04-210.

369. M.E. Paskowitz and **D.J. Scheeres**. "Orbit Mechanics about Planetary Satellites," paper presented at the Space Flight Mechanics Meeting, Maui, Hawaii, February 2004. Paper AAS 04-244.

370. R.S. Park, E. Fischbach, G. Giampieri, J.M. Longuski, **D.J. Scheeres**. "A test of General Relativity: Estimating PPN parameters γ and β from spacecraft radiometric tracking data," in *Nuclear Physics B: Proceedings Supplements* 134: 181-183, 2004.

371. C. Park and **D.J. Scheeres**. "Indirect Solutions of the Optimal Feedback Control Problem using Hamiltonian Dynamics and Generating Functions," paper presented at the IEEE Conference on Decision and Control, Maui, Hawaii, December 2003.

372. **D.J. Scheeres** and S. Augenstein*. "Spacecraft motion about binary asteroids," in *Astrodynamics 2003 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 116, pp. 991-1010, Univelt, San Diego. AAS Paper 03-564.

373. **D.J. Scheeres** C. Park, and V. Guibout. "Solving optimal control problems with generating functions," in *Astrodynamics 2003 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 116, pp. 1185-1206, Univelt, San Diego. AAS Paper 03-575.

374. B. Villac and **D.J. Scheeres**. "Third body driven vs. One impulse plane changes," in *Astrodynamics 2003 2003, Part I*, Advances in the Astronautical Sciences Series, Vol. 116, pp. 261-278, Univelt, San Diego. AAS Paper 03-519.

375. V. Guibout and **D.J. Scheeres**. "Finding periodic orbits with generating functions," in *Astrodynamics 2003 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 116, pp. 1029-1048, Univelt, San Diego. AAS Paper 03-566.

376. I. Hussein, **D.J. Scheeres**, and D.C. Hyland. "Control of a Satellite Formation For Imaging Applications," paper presented at the American Control Conference, Denver, Colorado, June 2003.

377. S. Broschart and **D.J. Scheeres**. "Numerical Solutions to the Small-body Hovering Problem," in *Spaceflight Mechanics 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 114, pp. 875-894, Univelt, San Diego. AAS Paper 03-157.

378. I. I. Hussein, **D. J. Scheeres** and D. C. Hyland. "Formation Motion and Control for Imaging Applications," in *Spaceflight Mechanics 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 114, pp. 1019-1038, Univelt, San Diego. AAS Paper 03-172.

379. I. I. Hussein, **D. J. Scheeres** and D. C. Hyland. "Interferometric Observatories in Low Earth Orbit," in *Spaceflight Mechanics 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 114, pp. 1057-1074, Univelt, San Diego. AAS Paper 03-174.

380. F. Y. Hsiao and **D. J. Scheeres**. "Design of Spacecraft Formation Orbits Relative to a Stabilized Trajectory," in *Spaceflight Mechanics 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 114, pp. 1075-1094, Univelt, San Diego. AAS Paper 03-176.

381. R. S. Park, **D. J. Scheeres**, G. Giampieri, J. M. Longuski, and E. Fischbach. "Estimating General Relativity Parameters from Radiometric Tracking of a Hyperbolic Trajectory," in *Spaceflight Mechanics 2003, Part II*, Advances in the Astronautical Sciences Series, Vol. 114, pp. 1493-1512, Univelt, San Diego. AAS Paper 03-205.

382. W.-S. Koon, J. E. Marsden, S. Ross, M.W. Lo, and **D.J. Scheeres**. "Geometric Mechanics and the Dynamics of Asteroid Pairs," in *Astrodynamics, Space Missions, and Chaos*, E. Belbruno, D. Folta, P. Gurfil Eds., Annals of the New York Academy of Science, Vol. 1017, 11-38, 2004.

383. **D.J. Scheeres**. "Stability of Relative Equilibria in the Full Two-Body Problem," in *Astrodynamics, Space Missions, and Chaos*, E. Belbruno, D. Folta, P. Gurfil Eds., Annals of the New York Academy of Science, Vol. 1017, 81-94, 2004.

384. B.F. Villac and **D.J. Scheeres**. "Optimal Plane Changes Using 3rd Body Forces," in *Astrodynamics, Space Missions, and Chaos*, E. Belbruno, D. Folta, P. Gurfil Eds., Annals of the New York Academy of Science, Vol. 1017, 255-266, 2004.

385. **D.J. Scheeres** and C. Renault. "Optimal placement of statistical maneuvers in an unstable orbital environment," paper presented at the Astrodynamics Specialist Conference, Monterrey, California, August 2002. AIAA Paper 2002-4725.

386. V. Guibout and **D.J. Scheeres**. "Formation Flight with Generating Functions," paper presented at the Astrodynamics Specialist Conference, Monterrey, California, August 2002. AIAA Paper 2002-4639.

387. B.F. Villac and **D.J. Scheeres**. "Optimal Plane Changes in Tidally Perturbed Environments," paper presented at the Astrodynamics Specialist Conference, Monterrey, California, August 2002. AIAA Paper 2002-4724.

388. E. Morrow, **D.J. Scheeres**, and D. Lubin. "Solar Sail Orbital Operations at Asteroids, Part 2: Exploring the Coupled Effect of an Imperfectly Reflecting Sail and a Non-Spherical Asteroid," paper presented at the 2002 Astrodynamics Specialist Meeting, Monterrey, California, August 2002. AIAA Paper 2002-4991.

389. J. F. San-Juan, A. Abad, M. Lara, and **D.J. Scheeres**. "A first order analytical solution for spacecraft motion about (433) Eros," paper presented at the 2002 Astrodynamics Specialist Meeting, Monterrey, California, August 2002. AIAA Paper 2002-3869.

390. **D.J. Scheeres**. "Orbit Determination and Control of a Spacecraft in a Libration Point Orbit," invited paper presented at the International Conference on Libration Point Orbits and the Applications, Parador d'Aiguablava, Spain, June 2002. In *Libration Point Orbits and Applications*, G. Gómez, M.W. Lo, J.J. Masdemont Eds., World Scientific, 2003, pp. 399–438.

391. **D.J. Scheeres**. "The Orbital Dynamics Environment of 433 Eros," paper presented at the 23rd International Symposium on Space Technology and Science, Matsue, Japan, May 2002. Paper ISTS 2002-d-23.

392. **D.J. Scheeres**. "Astrodynamics Education: Technology and Analysis" invited paper presented at the 23rd International Symposium on Space Technology and Science, Matsue, Japan, May 2002. Paper ISTS 2002-o-3-09v.

393. F. Hsiao and **D.J. Scheeres**. "The Dynamics of Formation Flight About a Stable Trajectory," in *Spaceflight Mechanics 2002, Part II*, Advances in the Astronautical Sciences Series, Vol. 112, pp. 1081-1098, Univelt, San Diego. AAS Paper 02-189. Selected as the best paper of the conference.

394. M. Lara and **D.J. Scheeres**. "Stability bounds for three-dimensional motion close to asteroids," in *Spaceflight Mechanics 2002, Part I*, Advances in the Astronautical Sciences Series, Vol. 112, pp. 105-126, Univelt, San Diego. AAS Paper 02-108.

395. B. Villac and **D.J. Scheeres**. "Escaping Trajectories in the Hill Restricted Three Body Problem and Applications," paper presented at the 16th International Symposium on Space Flight Dynamics, Pasadena, California, December 2001.

396. **D.J. Scheeres** and M.W. Lo. "Integrated Trajectory and Navigation Design in Unstable Orbital Environments," paper presented at the 16th International Symposium on Space Flight Dynamics, Pasadena, California, December 2001.

397. W. Hu and **D.J. Scheeres**. "Periodic Orbits about rotating Asteroids," in *Space Development and Cooperation Among All Pacific Basin Societies, Ninth International Space Conference of Pacific-basin Societies*, Advances in the Astronautical Sciences Series, Vol. 110, pp. 63-78, Univelt, San Diego. AAS Paper 01-514.

398. **D.J. Scheeres**, D.K. Yeomans, and J.K. Miller. "The Orbital Dynamics Environment of 433 Eros," in *Astrodynamics 2001, Part II*, Advances in the Astronautical Sciences Series, Vol. 109, pp. 1017-1038, Univelt, San Diego. AAS Paper 01-373.

399. **D.J. Scheeres**. "Characterizing the orbit uncertainty dynamics along an unstable orbit," in *Astrodynamics 2001, Part I*, Advances in the Astronautical Sciences Series, Vol. 109, pp. 23-40, Univelt, San Diego. AAS Paper 01-302.

400. B. Villac, **D.J. Scheeres**, L.A. D'Amario, and M.D. Guman. "The Effect of Tidal Forces on Orbit Transfers," in *Spaceflight Mechanics 2001, Part II*, Advances in the Astronautical Sciences Series, Vol. 108, pp. 2049-2070, Univelt, San Diego. AAS Paper 01-247.

401. S. Sawai and **D.J. Scheeres**. "Hovering and Translational Motions over Small Bodies," in *Spaceflight Mechanics 2001, Part I*, Advances in the Astronautical Sciences Series, Vol. 108, pp. 781-796, Univelt, San Diego. AAS Paper 01-157.

402. **D.J. Scheeres**. "Design and Analysis of Landing and Low-Altitude Asteroid Flyovers," in *Spaceflight Mechanics 2001, Part I*, Advances in the Astronautical Sciences Series, Vol. 108, pp. 513-532, Univelt, San Diego. AAS Paper 01-138.

403. **D.J. Scheeres** and N.X. Vinh. "Dynamics and Control of Relative Motion in an Unstable Orbit," paper presented at the 2000 AIAA/AAS Astrodynamics Specialist Meeting, Denver, Colorado, August 2000. AIAA Paper 2000-4135.

404. S. Sawai and **D.J. Scheeres**. "Control of Hovering Spacecraft using Altimetry," paper presented at the 2000 AIAA/AAS Astrodynamics Specialist Meeting, Denver, Colorado, August 2000. AIAA Paper 2000-4421.

405. E. Morrow, **D.J. Scheeres**, and D. Lubin. "Solar Sail Orbit Operations at Asteroids," paper presented at the 2000 AIAA/AAS Astrodynamics Specialist Meeting, Denver, Colorado, August 2000. AIAA Paper 2000-4420.

406. **D.J. Scheeres** and M.D. Guman. "Stability Analysis of the Europa Orbiter," in *Spaceflight Mechanics 2000, Part II*, Advances in the Astronautical Sciences Series, Vol. 105, pp. 855-868, Univelt, San Diego. AAS Paper 00-154.

407. W. Hu and **D.J. Scheeres**. "Spacecraft Motion about Slowly Rotating Asteroids," in *Spaceflight Mechanics 2000, Part II*, Advances in the Astronautical Sciences Series, Vol. 105, pp. 839-854, Univelt, San Diego. AAS Paper 00-153.

408. S. Sawai, J. Kawaguchi, **D.J. Scheeres**, N. Yoshizawa and M. Ogawara. "Development of a target marker for landing on asteroids," in *Spaceflight Mechanics 2000, Part II*, Advances in the Astronautical Sciences Series, Vol. 105, pp. 1101-1118, Univelt, San Diego. AAS Paper 00-171.

409. P.G. Antreasian, C.E. Helfrich, J.K. Millery, W.M. Owen, B.G. Williams, D.K. Yeomans, J.D. Giorgini, **D.J. Scheeres**, D.W. Dunham, R.W. Farquhar, J.V. McAdams, A.G. Santo, and G.A. Heyler. "Preliminary Planning for NEAR's Low-Altitude Operations at 433 Eros," in *Spaceflight Mechanics 1999, Part III*, Advances in the Astronautical Sciences Series, Vol. 103, pp. 2583-2600, Univelt, San Diego. AAS Paper 99-465.

410. **D.J. Scheeres**. "Spacecraft Dynamics Far From a Small Asteroid or Comet," paper presented at the 9th Workshop on Astrodynamics and Flight Mechanics, ISAS, Japan, July 1999.

411. **D.J. Scheeres**, B.G. Williams, and J.K. Miller, "Evaluation of the Dynamic Environment of an Asteroid: Applications to 433 Eros," in *Spaceflight Mechanics 1999*, Advances in the Astronautical Sciences Series, Vol. 102, pp. 835-854, Univelt, San Diego. AAS Paper 99-158.

412. **D.J. Scheeres**, "Stability of Hovering Orbits around Small Bodies," in *Spaceflight Mechanics 1999, Part II*, Advances in the Astronautical Sciences Series, Vol. 102, pp. 855-875, Univelt, San Diego. AAS Paper 99-159.

413. **D.J. Scheeres**. 1999. "Satellite Dynamics about Asteroids: Computing Poincaré Maps for the General Case," in *Hamiltonian Systems with Three or More Degrees of Freedom*, C. Simó, Ed., NATO ASI Serices C, Vol. 533, pp. 554-557, Kluwer.

414. **D.J. Scheeres** and Y. Hou, "The Dynamics of Uncertainty: Measuring Orbit Knowledge and Quality," paper presented at the 1998 AIAA/AAS Astrodynamics Specialist Conference, Boston, MA, August 1998. AIAA Paper 98-4559.

415. **D.J. Scheeres** and E. Asphaug, "Debris and Sample Transport About Asteroids," in Space 98 Proceedings of the International Conference and Exposition on Engineering, Construction, and Operations in Space, pp. 340-345, 1998. ASCE, Reston, Virginia.

416. **D.J. Scheeres**, D.W. Dunham, R.W. Farquhar, C.E. Helfrich, J.V. McAdams, W.M. Owen, Jr., S.P. Synnott, B.G. Williams, P.J. Wolff, and D.K. Yeomans, "Mission Design and Navigation of NEAR's encounter with Asteroid 253 Mathilde," in *Spaceflight Mechanics 1998, Part II*, Advances in the Astronautical Sciences Series, Vol. 99, pp. 1157-1174, Univelt, San Diego. AAS Paper 98-184.

417. B.G. Williams, C.L. Helfrich, J.K. Miller, W.M. Owen, **D.J. Scheeres**, D.K. Yeomans, D.W. Dunham, R.W. Farquhar, G.L. Heyler, J.V. McAdams, S.L. Murchie, and A.P. Harch, "Preliminary Plans for a Close Encounter with 253 Mathilde," in *Spaceflight Mechanics 1997, Part II*, Advances in the Astronautical Sciences Series, Vol. 95, pp. 955-974, Univelt, San Diego. AAS Paper 97-177.

418. **D.J. Scheeres**, "Close Proximity and Landing Operations at Small Bodies," presented at the AIAA/AAS Astrodynamics Specialist Conference, San Diego, California, July 1996. AIAA Paper 96-3580.

419. B.G. Williams, J.K. Miller, **D.J. Scheeres**, C.E. Helfrich, T.C. Wang, W.M. Owen, and G.D. Lewis, "Navigation Results for NASA's Near Earth Asteroid Rendezvous Mission," presented at the AIAA/AAS Astrodynamics Specialist Conference, San Diego, California, July 1996. AIAA Paper 96-3579.

420. **D.J. Scheeres**, S.J. Ostro, and R.S. Hudson, "Issues of Landing on Near Earth Asteroids," in Proceedings of the International Conference on Engineering, Construction, and Operations in Space, Vol 1, pp. 54-60. 1996. ASCE, New York.

421. Aljabri, A., D. Eldred, R. Goddard, V. Gor, T. Kia, M. Rokey, **D. Scheeres**, and P. Wolff, "Autonomous Serendipitous Science Acquisition for Planets (ASSAP)," presented

at the AIAA Aerospace Sciences Meeting, Reno, Nevada, January 1996. Paper AIAA 96-0699.

422. **D.J. Scheeres**, "Satellite Dynamics About Eros," in *Spaceflight Mechanics 1995, Part I*, Advances in the Astronautical Sciences Series, Vol. 89, pp. 219-242, Univelt, San Diego. Paper AAS 95-110.

423. J.K. Miller, B.G. Williams, W.E. Bollman, R.P. Davis, C.E. Helfrich, **D.J. Scheeres**, S.P. Synnott, T.M. Wang, and D.K. Yeomans, "Navigation of the Near Earth Asteroid Rendezvous Mission," in *Spaceflight Mechanics 1995, Part I*, Advances in the Astronautical Sciences Series, Vol. 89, pp. 243-266, Univelt, San Diego. AAS Paper 95-111.

424. **D.J. Scheeres**, B.G. Williams, W.E. Bollman, R.P. Davis, C.E. Helfrich, S.P. Synnott, and D.K. Yeomans. 1995. "Navigation for Low-Cost Missions to Small Solar System Bodies," *Acta Astronautica* 35:211–20.

425. **D.J. Scheeres**, "Satellite Dynamics About Asteroids," in *Spaceflight Mechanics 1994, Part I*, Advances in the Astronautical Sciences Series, Vol 87, pp. 275-292, Univelt, San Diego. Paper AAS 94-112.

426. R.A. Broucke and **D.J. Scheeres**, "Computing Orbits Around an Ellipsoid of Revolution," in *Spaceflight Mechanics 1994, Part I*, Advances in the Astronautical Sciences Series, Vol 87, pp. 423-442, Univelt, San Diego. Paper AAS 94-161.

427. **D.J. Scheeres**, "Satellite Dynamics About Tri-Axial Ellipsoids," in *Proceedings of Advances in Nonlinear Astrodynamics*, E. Belbruno Editor, Geometry Center Preprint No. GCG65, 1994.

428. **D.J. Scheeres** and N.X. Vinh, "Satellite Dynamics About a Planet with a Narrow Ring," in *Spaceflight Mechanics 1993, Part II*, Advances in the Astronautical Sciences Series, Vol 82, pp. 747-764, Univelt, San Diego. Paper AAS 93-109.

429. **D.J. Scheeres** and N.X. Vinh, "The Restricted Hill Four-Body Problem," paper IAF-92-0006, presented at the World Space Congress, 43rd Congress of the International Astronautical Federation, Washington D.C., August 28-September 5, 1992.

430. **D.J. Scheeres** and N.X. Vinh, "The Restricted $P+2$ Body Problem," paper IAF-91-332, presented at the 42nd Congress of the International Astronautical Federation, Montreal, Canada, October 5-11, 1991.

Conference Abstracts, Talks and Posters

1. D. P. Sánchez Lana, D. Scheeres, E. Azéma, K. Walsh, and R. Ballouz. 2021. "The TAGSAM Experiment simulated with a Contact Dynamics Code," *AAS/Division for Planetary Sciences Meeting Abstracts* **53**: 306.07.

2. A. Meyer, D. Scheeres, I. Gkolias, H. Agrusa, and K. Tsiganis. 2021. "Libration and Orbit Period Variation in Didymos Following the DART Impact," *AAS/Division for Planetary Sciences Meeting Abstracts* **53**: 113.03.

3. O. Fuentes-Munoz and D. Scheeres. 2021. "Stochastic characterization of long-term NEO dynamics," *AAS/Division for Planetary Sciences Meeting Abstracts* **53**: 107.03.

4. P. Sánchez and D. J. Scheeres. 2021. "Seismic waves in the asteroid environment," *European Physical Journal Web of Conferences* **249**: 13001.

5. A. J. Meyer, D. J. Scheeres, S. Naidu, L. Benner, P. Pravec, and P. Scheirich. 2021. "Modeling Fully Coupled Dynamics of Janus Binary Asteroid Mission Targets," *AAS/Division of Dynamical Astronomy Meeting* **53**: 405.06.

6. C. Benson and D. Scheeres. 2021. "Resonant Tumbling YORP for Defunct Artificial Satellites," *AAS/Division of Dynamical Astronomy Meeting* **53**: 305.02.

7. O. Fuentes-Munoz and D. Scheeres. 2021. "NEO collision and close flyby probabilities using semi-analytical long-term propagation," *AAS/Division of Dynamical Astronomy Meeting* **53**: 106.05.

8. G. Brown and D. Scheeres. 2021. "Loss of Energy and Angular Momentum in Disrupting N-body Systems," *AAS/Division of Dynamical Astronomy Meeting* **53**: 106.03.

9. RL Ballouz, KJ Walsh, P Michel, Y Zhang, P Sanchez, DJ Scheeres, ... Landing on an Asteroid: Simulations of the OSIRIS-REx Spacecraft Touching Down on (101955) Bennu Lunar and Planetary Science Conference, 1349 (2021)

10. O Golubov, V Unukovych, DJ Scheeres, AV Kopatko, A Strelchenko Thermal Models of YORP and Yarkovsky Effects: Typical Evolution and YORP Equilibria Lunar and Planetary Science Conference, 2670 (2021)

11. ER Jawin, TJ McCoy, KJ Walsh, HC Connolly, RL Ballouz, AJ Ryan, ... Last Epoch of Resurfacing on Asteroid (101955) Bennu Revealed by Global Geologic Map Lunar and Planetary Science Conference, 2022 (2021)

12. DP Sanchez, DJ Scheeres Seismic Waves in the Asteroid Environment?Impactor Momentum Lunar and Planetary Science Conference, 1850 (2021)

13. DJ Scheeres, JW McMahon, EB Bierhaus, J Wood, LAM Benner, ... Janus: A NASA SIMPLEx Mission to Explore Two NEO Binary Asteroids Lunar and Planetary Science Conference, 1706 (2021)

14. K Nichols, D Scheeres Electrostatically Lofted Dust Behavior on Asteroids at Various Spin Rates and Primary Body Sizes 43rd COSPAR Scientific Assembly. Held 28 January-4 February 43, 272 (2021)

15. Hirabayashi, M., Nakano, R., Tatsumi, E., Walsh, K., Barnouin, O., Michel, P., Hartzell, C., Britt, D., Sugita, S., Watanabe, S., Bottke, W., Scheeres, D., Ballouz, R., Cho, Y., Morota, T., Howell, E., and Lauretta, D. (2020), Spin-driven evolution of asteroids' top-shapes at fast and slow spins seen from (101955) Bennu and (162173) Ryugu, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 405.02.

16. Jawin, E. R., Walsh, K., McCoy, T., Connolly, H., Ryan, A., Ballouz, R., DellaGiustina, D., Bennett, C., Barnouin, O., Emery, J., Hamilton, V., Bierhaus, E., Daly, M., Delbo, M., Molaro, J., Nolan, M., Marshall, J., Beddingfield, C., Pajola, M., Perry, M., Rizk, B., Scheeres, D., Schwartz, S., Schwartz, S., Clark, B., and Lauretta, D. (2020), Diverse Boulders and Recent Mass Movement: Two Years of OSIRIS-REx Observations of the Geology of Asteroid (101955) Bennu, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 400.04.

17. Walsh, K. J., Jawin, E. R., McCoy, T. J., Connolly, H. C., Ballouz, R., Lauretta, D. S., Barnouin, O. S., Beddingfield, C., Bennet, C. A., Bierhaus, E. B., Burke, K. N., Clark, B. C., Daly, M. G., Delbo, M., DellaGiustina, D. N., Hamilton, V. E., Howell, E. S., Marshall, J., Michel, P., Molaro, J. L., Nolan, M. C., Rizk, B., Scheeres, D. J., Schwartz, S. R., Trang, D., and Simon, A. A. (2020), Geology of Bennu's Equatorial Region, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 400.01.

18. Veras, D., Scheeres, D., Jacobson, S., Eggl, S., Higuchi, A., Ida, S., and Gansicke, B. (2020), Comparative planetology with exo-minor planets, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 306.03.

19. Sorli, K. C., Hayne, P., Scheeres, D., McMahon, J., Pravec, P., Naidu, S., Brack, D., Bierhaus, E., Le Corre, L., Benner, L., Hartzell, C., Jedicke, R., and Ravine, M. (2020), Thermophysical Modeling of Binary Asteroid Systems for the Janus Mission, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 217.07.

20. Scheeres, D., McMahon, J., Bierhaus, E., Wood, J., Benner, L., Hartzell, C., Hayne, P., Hopkins, J., Jedicke, R., Le Corre, L., Meyer, A., Naidu, S., Pravec, P., Ravine, M., and Sorli, K. (2020), Janus: A NASA SIMPLEx mission to explore two NEO Binary Asteroids, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 217.06.

21. Meyer, A. J. and Scheeres, D. J. (2020), The Effect of Planetary Flybys on Singly Synchronous Binary Asteroids, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 217.02.

22. Fuentes-Munoz, O. and Scheeres, D. (2020), Long-term NEO evolution statistics using a semi-analytical propagation approach, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 214.03.

23. Sánchez, P., Scheeres, D., and Golubov, O. (2020), Seismic Waves in the AsteroidEnvironment, AAS/Division for Planetary Sciences Meeting Abstracts, 52, 104.04.

24. Scheeres, D., McMahon, J., Bierhaus, E. B., Wood, J., Benner, L., Hartzell, C., Hayne, P., Hopkins, J., Jedicke, R., Le Corre, L., Naidu, S., Pravec, P., and Ravine, M. (2020), Janus: A NASA SIMPLEx mission to explore two NEO Binary Asteroids, European Planetary Science Congress, EPSC2020-930.

25. Scheeres, D., French, A., Tricarico, P., Chesley, S., Takahashi, Y., Farnocchia, D., McMahon, J., Brack, D., Davis, A., Ballouz, R., Jawin, E., Rozitis, B., Emery, J., Ryan, A., Park, R., Rush, B., Mastrodemos, N., Kennedy, B., Bellerose, J., and Lubey, D. (2020), The Measured Gravity and Global Geophysical Properties of (101955) Bennu, European Planetary Science Congress, EPSC2020-929.

26. Fuentes-Munoz, O. and Scheeres, D. (2020), Semi-analytical long-term propagation of asteroids, AAS/Division of Dynamical Astronomy Meeting, 52, 402.02.

27. Scheeres, D., McMahon, J., Bierhaus, E., Wood, J., Benner, L., Hartzell, C., Hayne, P., Hopkins, J., Jedicke, R., Le Corre, L., Naidu, S., Pravec, P., and Ravine, M. (2020), Janus: A NASA SIMPLEx mission to explore two NEO Binary Asteroids, AAS/Division of Dynamical Astronomy Meeting, 52, 401.04.

28. Pellegrino, M., Scheeres, D., and Streetman, B. (2020), Influence of Solar Radiation Pressure on the Luni-Solar Resonance Structure of MEO satellites, AAS/Division of Dynamical Astronomy Meeting, 52, 400.04.

29. Benson, C. and Scheeres, D. J. (2020), YORP-Driven Spin State Evolution of Meter-Sized Asteroids, AAS/Division of Dynamical Astronomy Meeting, 52, 400.03.

30. Scheeres, D. J., McMahon, J. W., Wood, J., Bierhaus, E. B., Benner, L. A. M., Hartzell, C., Hayne, P., Hopkins, J., Jedicke, R., LeCorre, L., Naidu, S., Pravec, P., and Ravine, M. (2020), Janus: A NASA SIMPLEx Mission to Explore Two NEO Binary Asteroids, Lunar and Planetary Science Conference, 1965.

31. Scheeres, D. J., McMahon, J. W., French, A. S., Davis, A. B., Brack, D. N., Chesley, S., Farnocchia, D., Takahashi, Y., Park, R. S., Leonard, J., Antreasian, P., Getzandanner, K., Liounis, A., Highsmith, D. E., Rowlands, D., Mazarico, E., Moreau, M., Tricarico, P., Barnouin, O. S., Daly, M. G., Gaskell, R. W., Palmer, E. E., Weirich, J., Johnson, C. L., Al Asad, M. M., Seabrook, J. A., Roberts, J., Hergenrother, C. W., Nolan, M. C., and Lauretta, D. S. (2020), Higher-Order Gravity and Global Geophysical Properties of (101955) Bennu, Lunar and Planetary Science Conference, 1786.

32. Sanchez, P. and Scheeres, D. J. (2020), Seismic Waves in the Asteroid Environment, Lunar and Planetary Science Conference, 1685.

33. Roberts, J. H., Barnouin, O. S., Neumann, G. A., Nolan, M. C., Perry, M. E., Daly, R. T., Johnson, C. L., Al Asad, M. M., Daly, M. G., Seabrook, J. A., Gaskell, R. W., Palmer, E. E., Weirich, J. R., Walsh, K. J., Scheeres, D. J., McMahon, J. W., Watanabe, S., Hirata, N., Hirata, N., Sugita, S., and Lauretta, D. S. (2020), Rotational State and Shapes of Ryugu and Bennu: Implications for Interior Structure and Strength, Lunar and Planetary Science Conference, 1490.

34. Li, X. and Scheeres, D. J. (2020), The Surface Environment of the Small, Fast-Rotating Asteroid 2016 HO3, Lunar and Planetary Science Conference, 1472.

35. Davis, A. B. and Scheeres, D. J. (2020), High-Fidelity Dynamics of Post-Fission Asteroid Evolution, Lunar and Planetary Science Conference, 1285.

36. Jawin, E. R., Walsh, K. J., McCoy, T. J., Connolly, H. C., Ryan, A. J., Ballouz, R.-L., DellaGiustina, D. N., Bennett, C. A., Barnouin, O. S., Emery, J. P., Hamilton, V. E., Bierhaus, E. B., Daly, M. G., Delbo, M., Molaro, J. L., Nolan, M. C., Marshall, J., Beddingfield, C., Pajola, M., Perry, M. E., Rizk, B., Scheeres, D. J., Schwartz, S. R., Clark, B. E., and Lauretta, D. S. (2020), The Geology of (101955) Bennu from the First Year of OSIRIS-REx Observations: Diverse Boulders and Recent Mass Movement, Lunar and Planetary Science Conference, 1201.

37. Golubov, O., Scheeres, D. J., and Krugly, Y. N. (2020), YORP equilibria: ways out of YORP cycles, IAU General Assembly, 15.

38. Bottke, W., Vokrouhlicky, D., Ballouz, R., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-862

39. Hirabayashi, M., Tatsumi, E., Miyamoto, H., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-772

40. Scheeres, D., & Sanchez, P. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-700

41. Leonard, J., Adam, C., Pelgrift, J., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-640

42. Tricarico, P., Scheeres, D., French, A., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-547

43. McMahon, J., Scheeres, D., Chesley, S., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-326

44. Marzari, F., Rossi, A., Paolicchi, P., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-264

45. Davis, A., & Scheeres, D. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-148

46. Daly, M., Barnouin, O., Palmer, E., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-140

47. Scheeres, D., French, A., McMahon, J., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-106

48. Pravec, P., Fatka, P., Vokrouhlicky, D., et al. 2019, EPSC-DPS Joint Meeting 2019 2019, EPSC-DPS2019-81

49. Sakamoto, R., & Scheeres, D. 2019, Proceedings of the ¡A Href="https://www.amostech.com"¿advanced Maui Optical and Space Surveillance Technologies Conference¡/a, 76

50. Ray, V., & Scheeres, D. 2019, Proceedings of the ¡A Href="https://www.amostech.com"¿advanced Maui Optical and Space Surveillance Technologies Conference¡/a, 13

51. Nakamura, T., Watanabe, S., Hirabayashi, M., et al. 2019, 82nd Annual Meeting of the Meteoritical Society, 6306

52. Chesley, S. R., Adam, C., Antreasian, P., et al. 2019, AAS/Division of Dynamical Astronomy Meeting 51, 200.06

53. McMahon, J., Scheeres, D., Chesley, S. R., et al. 2019, AAS/Division of Dynamical Astronomy Meeting 51, 100.05

54. Scheeres, D. 2019, AAS/Division of Dynamical Astronomy Meeting 51, 100.04

55. Davis, A. B., & Scheeres, D. 2019, AAS/Division of Dynamical Astronomy Meeting 51, 100.02

56. Lauretta, D. S., Al Asad, M. M., Ballouz, R. L., et al. 2019, Lunar and Planetary Science Conference, 2608

57. Schwartz, S. R., Ballouz, R.-L., Asphaug, E. I., et al. 2019, Lunar and Planetary Science Conference, 2595

58. Golubov, O., & Scheeres, D. J. 2019, Lunar and Planetary Science Conference, 2284

59. Sánchez, P., Azéma, E., & Scheeres, D. J. 2019, Lunar and Planetary Science Conference, 2262

60. Nichols, K. D., & Scheeres, D. J. 2019, Lunar and Planetary Science Conference, 2136

61. Walsh, K. J., Jawin, E. R., McCoy, T., et al. 2019, Lunar and Planetary Science Conference, 1898

62. Roberts, J. H., Barnouin, O. S., Johnson, C. L., et al. 2019, Lunar and Planetary Science Conference, 1756

63. Barnouin, O. S., Palmer, E., Gaskell, B., et al. 2019, Lunar and Planetary Science Conference, 1744

64. Ballouz, R.-L., Walsh, K. J., Schwartz, S. R., et al. 2019, Lunar and Planetary Science Conference, 1642

65. McMahon, J. W., French, A. S., Scheeres, D. J., et al. 2019, Lunar and Planetary Science Conference, 1605

66. Jawin, E. R., Walsh, K. J., Barnouin, O. S., et al. 2019, Lunar and Planetary Science Conference, 1577

67. Scheeres, D. J., McMahon, J. W., French, A. S., et al. 2019, Lunar and Planetary Science Conference, 1496

68. Hirabayashi, M., Tatsumi, E., Miyamoto, H., et al. 2019, Lunar and Planetary Science Conference, 1397

69. Watanabe, S., Hirabayashi, M., Hirata, N., et al. 2019, Lunar and Planetary Science Conference, 1265

70. Hirabayashi, M. and Scheeres, D. J. 2018. Rotationally induced structural failure of irregularly shaped rubble pile asteroids, AAS/Division for Planetary Sciences Meeting Abstracts, 508.09.

71. Sautel, J., Sanchez, P. and Scheeres, D. J. 2018. Influence of the particle size distribution on the cohesive strength of granular asteroids, AAS/Division for Planetary Sciences Meeting Abstracts, 414.02.

72. Scheeres, D. J. and Sanchez, P. 2018. Surface failure conditions for cohesive rubble piles, AAS/Division for Planetary Sciences Meeting Abstracts, 404.01.

73. Sanchez Lana, D. P. and Scheeres, D. J. 2018. Landslides on Didymos Alpha caused by the Ejecta of the DART Mission, AAS/Division for Planetary Sciences Meeting Abstracts, 312.14.

74. Davis, A. and Scheeres, D. J. 2018. Dynamical Applications of the Full Two-Body Problem, AAS/Division for Planetary Sciences Meeting Abstracts, 217.01.

75. Golubov, O., Kyrylenko, I. and Scheeres, D. J. 2018. The structure of the Kirkwood gaps and their implication for the Yarkovsky Effect, AAS/Division for Planetary Sciences Meeting Abstracts, 111.07.

76. Nichols, K. and Scheeres, D. 2018. Dust Levitation Dynamics on Small Airless Bodies, 42nd COSPAR Scientific Assembly, 42, B1.1-74-18.

77. Naidu, S., Margot, J.-L., Giorgini, J. D., Benner, L. A. M., Magri, C., Scheeres, D., Brozovic, M., Pravec, P., Scheirich, P., Hirabayashi, M. and Nolan, M. 2018. Observations and characterization of binary near-Earth asteroid 65803 Didymos, the target of the AIDA mission, 42nd COSPAR Scientific Assembly, 42, B1.1-28-18.

78. Scheeres, D. 2018. Stability Limits for Rubble Pile Asteroid Shapes, AAS/Division of Dynamical Astronomy Meeting, 301.04.

79. Davis, A. B. and Scheeres, D. 2018. Full Two-Body Problem Mass Parameter Observability Explored Through Doubly Synchronous Systems, AAS/Division of Dynamical Astronomy Meeting, 103.07.

80. Hirabayashi, M., Davis, A. B., Nadiu, S. P., Yu, Y., Fahnestock, E. G., Schwartz, S. R., Richardson, D. C., Michel, P., Scheeres, D. J., Chesley, S. R., Cheng, A. F., Rivkin, A. S. and Benner, L. A. M. 2018. NASA's DART Mission to Didymos: The Effect of Shape Deformation of the Primary and Ellipticity of the Secondary on Post-Impact Orbital Period, Lunar and Planetary Science Conference, 2108.

81. Davis, A. B. and Scheeres, D. J. 2018. Mass Parameter Estimation of Doubly Synchronous Binary Asteroid Systems Through Visual Observation, Lunar and Planetary Science Conference, 2075.

82. Golubov, O. and Scheeres, D. J. 2018. The Systematic Structure of YORP Dynamics, Lunar and Planetary Science Conference, 2032.

83. Van wal, S., Tsuda, Y., Yoshikawa, K., Miura, A., Tanaka, S. and Scheeres, D. 2018. Pre-Arrival Deployment Analysis and Trajectory Reconstruction of Hayabusa2 Rovers, Lunar and Planetary Science Conference, 1400.

84. Sánchez, D. P. and Scheeres, D. J. 2018. The Role of Angular Momentum on Accreting Rubble Pile Shapes, Lunar and Planetary Science Conference, 1196.

85. Nolan, M. C., Benner, L., Giorgini, J. D., Howell, E. S., Kerr, R., Lauretta, D. S., Magri, C., Margot, J. L. and Scheeres, D. J. 2017. Radar Observations of Asteroid 101955 Bennu and the OSIRIS-REx Sample Return Mission, AGU Fall Meeting Abstracts, 2017, P23G-01.

86. Hirabayashi, M., Schwartz, S. R., Yu, Y., Davis, A. B., Chesley, S. R., Fahnestock, E., Michel, P., Richardson, D. C., Naidu, S., Scheeres, D. J., Cheng, A. F., Rivkin, A. and Benner, L. 2017. Constraints on the perturbed mutual motion in Didymos due to impact-induced deformation of its primary after the DART impact, AGU Fall Meeting Abstracts, 2017, P23A-2714.

87. Davis, A. and Scheeres, D. J. 2017. Estimating Mass Parameters of Doubly Synchronous Binary Asteroids, AAS/Division for Planetary Sciences Meeting Abstracts #49, 302.04.

88. Sanchez Lana, D. P. and Scheeres, D. J. 2017. Regolith on Super Fast Rotators, AAS/Division for Planetary Sciences Meeting Abstracts #49, 204.11.

89. Benson, C., Scheeres, D. J. and Moskovitz, N. 2017. Asteroid (367943) 2012 DA14 Flyby Spin State Analysis, AAS/Division for Planetary Sciences Meeting Abstracts #49, 117.05.

90. Rieger, S. and Scheeres, D. J. 2017. A contact binary asteroid evolutionary cycle driven by BYORP; the classical Laplace plane, AAS/Division for Planetary Sciences Meeting Abstracts #49, 100.08.

91. Golubov, O., Scheeres, D. J. and Oleksiy Golubov 2017. New results on spin evolution due to the YORP effect, AAS/Division for Planetary Sciences Meeting Abstracts #49, 100.07.

92. Hestroffer, D., Campo Bagatin, A., Losert, W., Opsomer, E., Sánchez, P., Scheeres, D. J., Staron, L., Taberlet, N., Yano, H., Eggl, S., Lecomte, C.-E., Murdoch, N., Radjai, F., Richardson, D. C., Salazar, M., Schwartz, S. R. and Tanga, P. 2017. Small solar system bodies as granular systems, European Physical Journal Web of Conferences, 140, 14011.

93. Sánchez, P., Scheeres, D., Hirabayashi, M. and Tardivel, S. 2017. Looking into the evolution of granular asteroids in the Solar System, European Physical Journal Web of Conferences, 140, 14004.

94. Davis, A. B. and Scheeres, D. J. 2017. Constraining Binary Asteroid Mass Distributions Based On Mutual Motion, AAS/Division of Dynamical Astronomy Meeting #48, 104.02.

95. Whizin, A. D., Abell, P. A., Brisset, J., Britt, D., Colwell, J. C., Dove, A. R., Durda, D. D., Fries, M. D., Graham, L. D., Hartzell, K., John, K. K., Leonard, M. J., Love, S. G., Morgan, J. A., Poppin, J. N., Sanchez-Lana, D. and Scheeres, D. 2017. The Strata-1 Microgravity Experiment on Small Body Regolith Dynamics, Lunar and Planetary Science Conference, 3043.

96. Asphaug, E., Baker, J., Choukroun, M., Furfaro, R., Sava, P., Scheeres, D. J., Schwartz, S. R., Swindle, T. and Thangavelautham, J. 2017. Spacecraft Penetrator for Increasing Knowledge of NEOs (SPIKE), Lunar and Planetary Science Conference, 1981.

97. Scheeres, D. J., Hirabayashi, M., Chesley, S. R., McMahon, J. W. and Marchi, S. 2017. Constraints on the Past Spin Rate of Comet 67P/C-G, Lunar and Planetary Science Conference, 1564.

98. Movshovitz, N., Asphaug, E., Chesley, S. R., Farnocchia, D. and Scheeres, D. J. 2017. Forming 67P/C-G and Other Jupiter-Family Contact Binaries by Tidal Disruption?, Lunar and Planetary Science Conference, 1502.

99. Hirabayashi, M., Scheeres, D. J., Richardson, D. C., Fahnestock, E. G., Michel, P., Naidu, S. P., Benner, L. A. M., Cheng, A. F. and Rivkin, A. S. 2017. Orbital Perturbation Within Binary Asteroid Didymos Due to Impact-Induced Deformation of the Primary After the DART Impact Experiment, Lunar and Planetary Science Conference, 1305.

100. Davis, A. B. and Scheeres, D. J. 2017. Binary Asteroid Orbit Sensitivity to Gravity Field Coefficients: Applications to the AIDA Mission Target 65803 Didymos, Lunar and Planetary Science Conference, 1299.

101. Dissly, R. W. and Scheeres, D. J. 2017. Toward the Complete Characterization and Mitigation of the Earth Impact Risk by 2050, Planetary Science Vision 2050 Workshop, 1989, 8128.

102. Hirabayahshi M, Scheeres DJ, Chesley S, Marchi S, MCMAHON JW. "The Rotational Evolution of the Bilobate Nucleus of 67P/Churyumov-Gerasimenko due to Sublimation." (14th Annual Meeting of Asia Oceania Geosciences Society), August 2017

103. Nolan MC, Howell ES, Noll KS, Emery JP, Hergenrother CW, MCMAHON JW, Lauretta DS, Scheeres DJ. "DETECTION OF YORP SPIN-UP OF (101955) BENNU." (Asteroids, Comets and Meteors), April 2017

104. Davis AB, Scheeres DJ. "Constraining Binary Asteroid Mass Distributions Based On Mutual Motion." AAS/Division of Dynamical Astronomy Meeting, 2017

105. Golubov O, Scheeres DJ, Golubov O. "New results on spin evolution due to the YORP effect." AAS/Division for Planetary Sciences Meeting Abstracts, 2017

106. Davis A, Scheeres DJ. "Estimating Mass Parameters of Doubly Synchronous Binary Asteroids." AAS/Division for Planetary Sciences Meeting Abstracts, 2017

107. Benson C, Scheeres DJ, Moskovitz N. "Asteroid (367943) 2012 DA14 Flyby Spin State Analysis." AAS/Division for Planetary Sciences Meeting Abstracts, 2017

108. Rieger S, Scheeres DJ. "A contact binary asteroid evolutionary cycle driven by BYORP and the classical Laplace plane." AAS/Division for Planetary Sciences Meeting Abstracts, 2017

109. Sanchez Lana DP, Scheeres DJ. "Regolith on Super Fast Rotators." AAS/Division for Planetary Sciences Meeting Abstracts, 2017

110. Benson C, Scheeres DJ, Moskovitz N. "Light curves of retired geosynchronous satellites." Proceedings of the 7th European Conference on Space Debris, 2017

111. Sánchez P, Scheeres D, Hirabayashi M, Tardivel S. "Looking into the evolution of granular asteroids in the Solar System." EPJ Web of Conferences, 2017.14004-14004.

112. Hestroffer D, Bagatín AC, Losert W, Opsomer E, Sánchez P, Scheeres DJ, Staron L, Taberlet N, Yano H, Eggl S, et. al. "Small solar system bodies as granular systems." EPJ Web of Conferences, 2017.14011-14011.

113. Scheeres DJ, Hirabayashi M, Chesley S, MCMAHON JW, Marchi S. "Constraints on the Past Spin Rate of Comet 67P/C-G." (48th Lunar and Planetary Science Conference), March 2017

114. Asphaug E, Baker J, Choukroun M, Furfaro R, Sava P, Scheeres DJ, Schwartz SR, Swindle T, Thangavelautham J. "Spacecraft Penetrator for Increasing Knowledge of NEOs (SPIKE)." Lunar and Planetary Science Conference, 2017

115. Dissly RW, Scheeres DJ. "Toward the Complete Characterization and Mitigation of the Earth Impact Risk by 2050." LPI Contributions, 2017

116. Whizin AD, Abell PA, Brisset J, Britt D, Colwell JC, Dove AR, Durda DD, Fries MD, Graham LD, Hartzell K, et. al. "The Strata-1 Microgravity Experiment on Small Body Regolith Dynamics." Lunar and Planetary Science Conference, 2017

117. Movshovitz N, Asphaug E, Chesley SR, Farnocchia D, Scheeres DJ. "Forming 67P/CG and Other Jupiter-Family Contact Binaries by Tidal Disruption?." Lunar and Planetary Science Conference, 2017

118. Hirabayashi M, Scheeres DJ, Richardson DC, Fahnestock EG, Michel P, Naidu SP, Benner LAM, Cheng AF, Rivkin AS. "Orbital Perturbation Within Binary Asteroid Didymos Due to Impact-Induced Deformation of the Primary After the DART Impact Experiment." Lunar and Planetary Science Conference, 2017

119. Davis AB, Scheeres DJ. "Binary Asteroid Orbit Sensitivity to Gravity Field Coefficients: Applications to the AIDA Mission Target 65803 Didymos." Lunar and Planetary Science Conference, 2017

120. **D.J. Scheeres**, M. Hirabayashi and S. Marchi. "Exploring the Geophysical Evolution of Comet 67P/Churyumov-Gerasimenko," talk presented at the 2016 AGU meeting, San Francisco, California, December 2016.

121. S. Rieger and **D.J. Scheeres**. "Orbital Stability Regions For Hypothetical Natural Satellites Of Near-Earth Asteroids," poster presented at the 2016 International Astronautical Congress, Guadalajara, Mexico, October 2016. Poster IAC-16.A3.IP.15

122. **D.J. Scheeres**, M. Hirabayashi, S.R. Chesley and J.W. McMahon. "Exploring the fission and reconfiguration cycle of comet 67P/Churyumov-Gerasimenko," Talk presented at the 2016 American Astronomical Society Division on Planetary Science Meeting, Pasadena, California, November 2016. Abstract 110.08.

123. A. Rossi, A. Dell'Oro, F. Marzari, P. Paolicchi and **D.J. Scheeres**. "YORP-Yarkowski evolution of asteroid families: the effects of collisions," Poster presented at the 2016 American Astronomical Society Division on Planetary Science Meeting, Pasadena, California, November 2016. Abstract 326.10.

124. D.C. Richardson, O.S. Barnouin, L.A.M. Benner, W. Bottke, A. Campo Bagatin, A.F. Cheng, S. Eggl, D.P. Hamilton, D. Hestroffer, M. Hirabayashi, C. Maurel, J.W. McMahon, P. Michel, N. Murdoch, S.P. Naidu, P. Pravec, A.S. Rivkin, P. Rosenblatt, G. Sarid, **D.J. Scheeres**, P. Scheirich, K. Tsiganis and Y. Zhang. "Dynamical and Physical Properties of 65803 Didymos, the Proposed AIDA Mission Target," Poster presented at the 2016 American Astronomical Society Division on Planetary Science Meeting, Pasadena, California, November 2016. Abstract 123.17.

125. S. Tardivel, P. Sánchez and **D.J. Scheeres**. "The partial fission of fast spinning asteroids," Talk presented at the 2016 American Astronomical Society Division on Planetary Science Meeting, Pasadena, California, November 2016. Abstract 522.05.

126. P. Sánchez and **D.J. Scheeres**. "The Micro-mechanics of Asteroid Dust," Poster presented at the 2016 American Astronomical Society Division on Planetary Science Meeting, Pasadena, California, November 2016. Abstract 222.04.

127. N. Baresi, L. Dell'Elce and **D.J. Scheeres**. "The Dynamical Environment in the vicinity of (65803) Didymos: Applications to the Asteroid Impact & Deflection Assessment mission," abstract presented at the Final Stardust Conference, ESA-ESTEC, The Netherlands, November 2016.

128. S. Van wal, S. Tardivel and **D.J. Scheeres**. "Sensitivity Analyses of Small Body Lander Deployment," abstract presented at the Final Stardust Conference, ESA-ESTEC, The Netherlands, November 2016.

129. **D.J. Scheeres**, S. Van wal, D. Surovik, K. Willner and X. Shi. "The Dynamical Environment On And About Phobos," talk presented at the Third International Conference on the Exploration of Phobos and Deimos, NASA Ames, July 2016.

130. S. Van wal, S. Tardivel and **D.J. Scheeres**. "Surface Motion and Speed Limits on Small Bodies," talk presented at the NASA Exploration Science Forum, NASA Ames, July 2016.

131. S. Van wal, S. Tardivel and **D.J. Scheeres** "Shape Optimization Of Small-Body Landers," talk presented at the 13th International Planetary Probe Workshop, Laurel, Maryland, June 2016.

132. O. Golubov and **D.J. Scheeres**. "Evolution of binary asteroids due to BYORP," talk presented at the Binaries 4 Workshop, Prague, Czech Republic, June 2016.

133. S. Rieger and **D.J. Scheeres**. "Evolution of asteroid binaries under the BYORP effect," talk presented at the Binaries 4 Workshop, Prague, Czech Republic, June 2016.

134. **D.J. Scheeres**. "Rigorous constraints on the formation of disrupted asteroid systems," talk presented at the Binaries 4 Workshop, Prague, Czech Republic, June 2016.

135. **D.J. Scheeres**. "Hill Stability in the Finite Density N-Body Problem," talk presented at the 2016 American Astronomical Society Division of Dynamical Astronomy Meeting, Nashville, Tennessee, May 2016. Abstract 103.01

136. O. Golubov, **D. J. Scheeres** and V. Lipatova. "Spin State Equilibria of Asteroids due to YORP Effects," talk presented at the 2016 American Astronomical Society Division of Dynamical Astronomy Meeting, Nashville, Tennessee, May 2016. Abstract 303.06

137. O. Golubov, V. Lipatova and **D. J. Scheeres**. "Modelling evolution of asteroid's rotation due to the YORP effect," poster presented at the 2016 American Astronomical Society Division of Dynamical Astronomy Meeting, Nashville, Tennessee, May 2016. Abstract 203.01

138. **D.J. Scheeres**, M. Hirabayashi, S. Chesley, S. Marchi, J. McMahon, J. Steckloff, S. Mottola, S.P. Naidu and T. Bowling. "Fission And Reconfiguration Of Bilobate Comets Revealed By 67P/C-G ," talk presented at the 47th Lunar and Planetary Sciences Conference, The Woodlands, Texas, March 2016. Abstract 1615.

139. P. S'anchez and **D.J. Scheeres**. "Angles of Repose of Granular Beds using a Soft-Sphere Discrete Element Method (SSDEM)," poster presented at the 47th Lunar and Planetary Sciences Conference, The Woodlands, Texas, March 2016. Abstract 1230.

140. S. Tardivel, P. S'anchez and **D.J. Scheeres**. "The Story Of 2008 Ev5 ? Evidence Of Fission," talk presented at the 47th Lunar and Planetary Sciences Conference, The Woodlands, Texas, March 2016. Abstract 1036.

141. P. Sánchez and **D.J. Scheeres**. "Patterns of Failure in Heterogeneous Self-gravitating Aggregates," talk presented at the 2015 AAS-DPS, Baltimore, Maryland, November 2015.

142. M. Hirabayashi and **D.J. Scheeres**. "Failure modes and conditions of Itokawa," talk presented at the 2015 AAS-DPS, Baltimore, Maryland, November 2015.

143. T. S.J. Gabriel and **D.J. Scheeres**. "Energy Dissipation in the Full N-Body Problem," poster presented at the 2015 AAS-DPS, Baltimore, Maryland, November 2015.

144. I. Park and **D.J. Scheeres**. "A Hybrid Method for Uncertainty Propagation of Orbital Motion around the Earth," talk presented at the International Workshop on Key Topics in Orbit Propagation Applied to Space Situational Awareness – KePASSA 2015, October 2015.

145. M. Hirabayashi and **D.J. Scheeres**. "Roles of Shape and Internal Structure in Rotational Disruption of Asteroids," talk presented at the 2015 International Astronomical Union Congress, Symposium 381: Asteroids: New Observations, New Models, Honolulu, Hawaii, August 2015.

146. **D.J. Scheeres** and T. Gabriel. "Analytical Constraints on Rubble Pile Fission, Dynamics and End States," talk presented at the 2015 International Astronomical Union Congress, Symposium 381: Asteroids: New Observations, New Models, Honolulu, Hawaii, August 2015.

147. D.A. Surovik and **D.J. Scheeres**. "Autonomous goal-driven design of non-keplerian orbits," presented at the AI Space Workshop at International Joint Conference on Artificial Intelligence, July 2015.

148. D.A. Surovik and **D.J. Scheeres**. "Automated design of observation and landing trajectories at small bodies," presented at the International Planetary Probe Workshop, June 2015.

149. T. S.J. Gabriel and **D.J. Scheeres**. "End-State Relative Equilibria in the Sphere-Restricted Full Three-Body Problem," talk presented at the 2015 AAS-DDA, Pasadena, California, May 2015.

150. **D.J. Scheeres**, J. McMahon, J. Feldhacker, B. Jones, A. Doostan, M. Bruck Syal, M. Owen, P. Miller, and E. Herbold. "Characterizing The Effect Of Asteroid Topography On Hazardous Asteroid Kinetic Impact Deflection," talk presented at the 2015 IAA Planetary Defense Conference, Frascati, Italy, April 2015. Abstract IAA?PDC?15?03?02.

151. J. Feldhacker, B. Jones, A. Doostan, **D.J. Scheeres** and J. McMahon. "Kinetic Deflection Uncertainties For Real Asteroid Shapes," poster presented at the 2015 IAA Planetary Defense Conference, Frascati, Italy, April 2015. Abstract IAA?PDC?15?P?67.

152. J. McMahon and **D.J. Scheeres**. "Optimizing Surface Ablation Deflection in the Presence of Realistic Asteroid Topography and Rotation," talk presented at the 2015 IAA Planetary Defense Conference, Frascati, Italy, April 2015. Abstract IAA?PDC?15?03?06.

153. S. Tardivel, E. Canalias, M. Deleuze, A.T. Klesh and **D.J. Scheeres**. "Landing MASCOT on asteroid 1999 JU3: solutions for deploying nanosats to small-body surfaces ," abstract presented at the 2015 LPSC, The Woodlands, Texas, March 2015. Abstract 1182.

154. T.S.J. Gabriel and **D.J. Scheeres**. "Modeling the Evolution of the Sphere-Restricted Full Three-Body Problem," abstract presented at the 2015 LPSC, The Woodlands, Texas, March 2015. Abstract 3016.

155. T. Hirabayashi, **D.J. Scheeres**, and B. Rozitis. "Formation Of An Equatorial Ridge On An Oblate Rubble Pile Asteroid," abstract presented at the 2015 LPSC, The Woodlands, Texas, March 2015. Abstract 1967.

156. **D.J. Scheeres**. "End Of Life Scenarios For Small Rubble Pile Asteroids," abstract presented at the 2015 LPSC, The Woodlands, Texas, March 2015. Abstract 2520.

157. Paul Sánchez and **D.J. Scheeres**. "Scaling Rule Between Cohesive Forces and The Size of a Self-Gravitating Aggregate," abstract presented at the 2015 LPSC, The Woodlands, Texas, March 2015. Abstract 2556.

158. **D.J. Scheeres**. "Dynamics of Small Body Explorers," talk presented at the 2015 Spacecraft Reconnaissance of Asteroid and Comet Interiors, Tempe, Arizona, January 2015.

159. M. Hirabayashi and **D.J. Scheeres**. "Stress and Failure Analysis of Rapidly Rotating Asteroid (29075) 1950 DA," poster presented at the 2015 Spacecraft Reconnaissance of Asteroid and Comet Interiors, Tempe, Arizona, January 2015.

160. S.R. Chesly, **D.J. Scheeres**, P.A. Abell, E. Asphaug and D.S. Lauretta. "A Kinetic Impactor Technology Demonstration Option for the BASiX Mission," talk presented at the 2015 Spacecraft Reconnaissance of Asteroid and Comet Interiors, Tempe, Arizona, January 2015.

161. **D.J. Scheeres**. "End of Life Scenarios for Rubble Pile Asteroids," talk presented at the 2014 AGU, San Francisco, California, December 2014.

162. M. Hirabayashi and **D.J. Scheeres**. "Structural Failure Condition for Bifurcated Rubble Pile Asteroids," poster presented at the 2014 AGU, San Francisco, California, December 2014.

163. M. Brozovic, L.A.M. Benner, C. Magri, M.W. Busch, **D.J. Scheeres**, J.D. Giorgini, V. Reddy, M.D. Hicks, J.S. Jao, C.G. Lee, L.G. Snedeker, M.A. Silva, M.A. Slade, K.J. Lawrence. "Goldstone radar evidence for short-axis mode non-principal axis rotation by Near-Earth Asteroid (214869) 2007 PA8," poster presented at the 2014 AGU, San Francisco, California, December 2014.

164. M. Hirabayashi, **D.J. Scheeres**, P. Sánchez and T. Gabriel. "Constraints on the Physical Properties of Main Belt Comet P/2013 R3 from its Breakup Event," talk presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 503.08.

165. J.W. McMahon and **D.J. Scheeres** "The Effect of Shape Model Uncertainty on the Geophysical Predictions of Binary Asteroids," talk presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 503.05.

166. P. Sánchez and **D.J. Scheeres**. "A Look Inside Rotating Rubble?Pile Asteroids Spun to Disruption," talk presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 400.06.

167. W. Bottke , D. Vokrouhlicky , K. Walsh , M. Delbo , P. Michel , D.S. Lauretta , H. Campins , H.C. Connolly , **D.J. Scheeres**, S. Chesley. "In Search of the Source of Bennu, the OSIRIS?REx Sample Return Mission Target," talk presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 400.05.

168. **D.J. Scheeres**, S. Chesley and R.C. Anderson. "A Geophysical Laboratory for Rubble Pile Asteroids: The BASiX Mission," poster presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 214.16.

169. E. Asphaug , M. Belton , D. Bockelee?Morvan , S. Chesley , M. Delbo , T. Farnham , Y. Gim , R. Grimm , A. Herique , W. Kofman , J. Oberst , R. Orosei , S. Piqueux , J. Plaut , M. Robinson , P. Sava , E. Heggy , W. Kurth , **D.J. Scheeres**, B. Denevi , E. Turtle , P. Weissman. "The Comet Radar Explorer Mission," poster presented at the 2014 DPS, Tucson, Arizona, November 2014. Abstract 209.07

170. P. Sánchez and **D.J. Scheeres**. "Cohesion, Granular Liquids, Granular Solids and their connection to small NEOs," talk presented at the 2014 Asteroids, Comets and Meteors Conference, Helsinki, Finland, July 2014.

171. **D.J. Scheeres**, S. Jacobson, J. McMahon and M. Hirabayashi. "Using Binary Asteroids to Explore the Interior Geophysics of Rubble Pile Asteroids," poster presented at the 2014 Asteroids, Comets and Meteors Conference, Helsinki, Finland, July 2014.

172. M.W. Busch, Y. Takahashi, M. Brozovic, L.A.M. Benner, J.D. Giorgini, **D.J. Scheeres**, J.S. Jao, C.G. Lee and M.A. Slade. "Improved Spin State and Shape Models of Near-Earth Asteroid 4179 Toutatis From 2012 Radar Observations," talk presented at the 2014 Asteroids, Comets and Meteors Conference, Helsinki, Finland, July 2014.

173. **D.J. Scheeres** and P. Sánchez. "The strength of rubble pile bodies: Theory, observations, and predictions," talk presented at the 2014 Asteroids, Comets and Meteors Conference, Helsinki, Finland, July 2014.

174. R.C. Anderson, **D.J. Scheeres**, S. Chesley and the *BASiX* Science Team. "Binary Asteroid In-Situ Explorer Mission (BASiX): A Mission Concept to Explore a Binary Near Earth Asteroid System," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #1571.

175. D.D. Durda, P. Sánchez, A. Fischer, G. Devaud, **D.J. Scheeres**, et al. "The Size Distribution of 'Boulders' Formed During Slope Failure in Piles of Self-Cohesive Powders: Application to the Morphology of Regoliths on Small Asteroids," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #2015.

176. **D.J. Scheeres** and P. Sánchez. "Surface Stability of Rapidly Spinning Spheroids," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #1930.

177. S.A. Jacobson, **D.J. Scheeres**, A. Rossi, F. Marzari. "The Effects of Rotational Fission on the Main Belt Asteroid Population," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #2363.

178. M. Hirabayashi and **D.J. Scheeres**. "Interior Stress Within the NEO Binary System 1999 KW4," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #1644.

179. P. Sánchez and **D.J. Scheeres**. "Cohesive Self-Gravitating Aggregates and Their Path of Disruption," poster presented at the 45th Lunar And Planetary Science Conference Program, The Woodlands, Texas, March 2014. Abstract #1697.

180. O. Golubov, **D.J. Scheeres** and Yurij N.Krugly. "Modeling the tangential YORP effect," poster presented at the 46th Annual American Geophysical Union Fall Meeting, San Francisco, December 9-13, 2013.

181. M. Hirabayashi and **D.J. Scheeres**. "Constraints on the size of Asteroid (216) Kleopatra using stress analysis," poster presented at the 46th Annual American Geophysical Union Fall Meeting, San Francisco, December 9-13, 2013.

182. **D.J. Scheeres**, S. Jacobson, J.W. McMahon and M. Hirabayashi. "Constraining the Interior Geophysics of Rubble Pile Asteroids," talk presented at the 46th Annual American Geophysical Union Fall Meeting, San Francisco, December 9-13, 2013.

183. **D.J. Scheeres** and P. Sánchez. "The Importance of Asteroid Modeling: Supporting Asteroid Initiative Activities," talk presented the NASA Asteroid Initiative Idea Synthesis, Lunary and Planetary Institute, Houston, November 20-22, 2013.

184. M.W. Busch, M. Brozovic, L.A.M. Benner, J.D. Giorgini, Y. Takahashi and **D.J. Scheeres**. "Goldstone/VLA Radar Observations of Near-Earth Asteroid 4179 Toutatis in 2012," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

185. O. Golubov, **D.J. Scheeres** and Yurij N. Krugly. "Modeling the tangential YORP effect," poster presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

186. E. S. Howell, M. W. Busch, V. Reddy, R. J. Vervack, M. C. Nolan, C. Magri, Y. R. Fernandez P. A. Taylor, A. Springmann, **D.J. Scheeres**, Y. Takahashi, J. A. Sanchez. "Using a Radar Shape Model to interpret Spectral Observations of 4179 Toutatis," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

187. J.W. McMahon and **D.J. Scheeres**. "A Statistical Analysis of the Sensitivity of YORP Coeffcients to Shape and Topography Changes," poster presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

188. N. Moskovitz, **D.J. Scheeres**, et al. "Physical Modification of Asteroid 2012 DA14 During its 2013 Near-Earth Flyby," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

189. A. Rossi, S. Jacobson, F. Marzari and **D.J. Scheeres**. "Effects of YORP-induced rotational fission on the small size end of the Main Belt asteroid size distribution," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

190. P. Sánchez and **D.J. Scheeres**. "Rotation Induced Disruption of Cohesive Asteroids," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

191. **D.J. Scheeres** and P. Sánchez. "Global Landslides on Rapidly Spinning Spheroids," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

192. S. Tardivel, **D.J. Scheeres** and P. Michel. "Scientific Packages on Small Bodies: A Deployment Strategy for New Missions poster presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

193. M. Hirabayashi and **D.J. Scheeres**. "Asteroid failure modes due to YORP spin-up: A survey + Plastic computation of internal structure," talk presented at the 45th Annual Meeting of the American Astronomical Society Division for Planetary Sciences, Denver, October 6-11, 2013.

194. **D.J. Scheeres** and P. Sánchez. "Rotational Fission of Cohesive, Self-Gravitating Aggregates," talk presented at the European Planetary Science Congress 2013, University College London, September 8-13, 2013

195. D. Durda, G. Devaud, **D. Scheeres**, P. Sánchez, S. Roark, P. Kaptchen, R. Dissly and A. Campo Bagatin "Laboratory Investigation of Asteroid Regolith Properties," talk presented at the European Planetary Science Congress 2013, University College London, September 8-13, 2013

196. S. A. Jacobson, P. Scheirich, P. Pravec and **D.J. Scheeres**. "Spacecraft Discoveries Enabled by Photometric Observations of the Dynamics of 1996 FG3," talk presented at the European Planetary Science Congress 2013, University College London, September 8-13, 2013

197. P. Sánchez, **D.J. Scheeres**, E. Beau Bierhaus and Benton Clark. "Regolith Penetrometry in Microgravity," poster presented at the European Planetary Science Congress 2013, University College London, September 8-13, 2013

198. **D.J. Scheeres**. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," invited talk at the Planetary Motions, Satellite Dynamics, and Spaceship Orbits Workshop, University of Montreal, Montreal, Canada, July 22-26, 2013.

199. **D.J. Scheeres** and S.A. Jacobson. "The Life-Cycles of Small Asteroid Systems," talk presented at the 3rd Workshop On Binaries In The Solar System, Hawaii, the Big Island (USA). June 30 - July 2, 2013.

200. **D.J. Scheeres** and P. Sanchez. "The Strength of Small Rubble Pile Asteroids," talk presented at the 8th Workshop On Catastrophic Disruption In The Solar System (CD8), Hawaii, the Big Island (USA). June 24 - 27, 2013.

201. D. Surovik and **D.J. Scheeres**. "Autonomous Trajectory Planning at Small Bodies," poster presented at the Low Cost Planetary Mission Workshop, Pasadena, California, June 2013.

202. S. Roark, B. Frazier, R. Dissly and **D.J. Scheeres**. "Geophysical Experiments on Small Bodies Using Explosive Surface Probes," talk presented at the International Planetary Probe Workshop San Jose, CA June 17 - 21, 2013.

203. **D.J. Scheeres**. "Binary Asteroid in-situ Explorer: Science and Mission Description," talk presented at the 3rd IPEWG Meeting, Nice, France, May 30, 2013.

204. **D.J. Scheeres**. "Mapping Probability Distributions Nonlinearly in Symplectic Dynamical Systems," talk presented at the SIAM Conference on Applications of Dynamical Systems Snowbird, Utah, May 23, 2013.

205. **D.J. Scheeres**. "Minimum Energy Configurations for the General 3-Body Problem," talk presented at the 44th Annual Meeting of the Division on Dynamical Astronomy, Paraty, Brazil, May 5-9, 2013.

206. A.J. Rosengren and **D.J. Scheeres**. "The Milankovitch Orbital Elements and The Formation of Saturn's Satellite Iapetus," talk presented at the 44th Annual Meeting of the Division on Dynamical Astronomy, Paraty, Brazil, May 5-9, 2013.

207. **D.J. Scheeres** and P. Sánchez. "The Strength of Small Rubble Pile Asteroids," talk presented at the 20133 IAA Planetary Defense Conference, April 2013, Flagstaff, Arizona. Abstract IAA-PDC13-03-04.

208. D.D. Durda, S.E. Roark, **D.J. Scheeres**, P. Sánchez, G. Devaud, P.F. Kaptchen, and R. Dissly. "Experimental approach and apparatus for laboratory investigation of asteroid regolith properties," poster presented at the 44th Lunar and Planetary Science Conference, March 2013. Abstract 2287.

209. M. Hirabayashi, **D.J. Scheeres** and K.A. Holsapple. "Constraints on the size of asteroid 216 Kleopatra using internal stresses," poster presented at the 44th Lunar and Planetary Science Conference, March 2013. Abstract 1592.

210. P. Sánchez, **D.J. Scheeres**, E.B. Bierhaus, B. Clark. "Simulations of Regolith Interactions in Microgravity," abstract presented at the 44th Lunar and Planetary Science Conference, March 2013. Abstract 2271.

211. **D.J. Scheeres** and P. Sánchez. "The Strength of Rubble Pile Asteroids," abstract presented at the 2012 AGU, San Francisco, December 2012.

212. **D.J. Scheeres**. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," invited abstract presented at the XVI Colóquio Brasileiro de Dinâmica Orbital, Serra Negra, São Paulo, Brazil, November 2012.

213. **D.J. Scheeres** and P. Sánchez. "The Strength of Rubble Piles," abstract presented at the 2012 DPS meeting, Reno, Nevada, October 2012.

214. **D.J. Scheeres**. "Space Missions to Small Solar System Bodies," invited abstract presented at the COSPAR 2012 meeting, Mysore, India, July 2012.

215. **D.J. Scheeres**. "Scaling Forces to the Asteroid Surface: The role of cohesion," invited abstract presented at the Dust, Atmosphere and Plasma environment of the Moon and Small Bodies (DAP-2012) workshop, Boulder, Colorado, June 2012.

216. **D.J. Scheeres**. "Asteroid Shapes and Spins: How the Internal informs the External," invited abstract presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6189.

217. S.A. Jacobson and **D.J. Scheeres**. "Forming the Observed Binary Asteroid Population," abstract presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6092.

218. M. Hirababayashi and **D.J. Scheeres**. "Fission and Surface Disruption Limits for Rapidly Rotating Asteroids: The Case of Kleopatra," abstract presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6158.

219. P. Sanchez and **D.J. Scheeres**. "Cohesion in 'Rubble-Pile' Asteroids," abstract presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6070.

220. C.M. Hartzell, **D.J. Scheeres**, and X. Wang. "Electrostatic Dust Motion on Asteroids: Current Understanding," abstract presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6055.

221. J.D. Walker , R.P. Bigger, S. Chocron, T. Trenton, Kirchdoerfer, W.F. Huebner, D.D. Durda, **D.J. Scheeres**. "Asteroid Seismology Studies: Influence Of Regolith Thickness And Charge Size.," poster presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6412.

222. **D.J. Scheeres**, J.W. McMahon, Y. Takahashi, S. Chesley, M. Nolan. "Radio Science at 1999 RQ36 for OSIRIS-REx," poster presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6191.

223. D.S. Lauretta, M.A. Barucci, E.B. Bierhaus, J.R. Brucato, H. Campins, P.R. Christensen, B.C. Clark, H.C. Connolly, E. Dotto, J.P. Dworkin, J. Emery, J.B. Garvin, A.R. Hildebrand, G. Libourel, J.R. Marshall, P. Michel, M.C. Nolan, J.A. Nuth, B. Rizk, S.A. Sandford, **D.J. Scheeres**, J.M. Vellinga. "The OSIRIS-REx Mission: Sample Acquisition Strategy and Evidence for the Nature of Regolith on Asteroid (101955) 1999 RQ36," poster presented at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan. Abstract 6291.

224. S.A. Jacobson and **D.J. Scheeres** "Asteroid Evolutionary Tracks," poster presented at the 43rd Annual Meeting of the American Astronomical Society Division on Dynamical Astronomy, Mount Hood, Oregon, May 2012. Abstract 09.15.

225. **D.J. Scheeres**. "Indeterminacy in the Stable States of 4-Grain Rubble Piles," abstract presented at the 43rd Annual Meeting of the American Astronomical Society Division on Dynamical Astronomy, Mount Hood, Oregon, May 2012. Abstract 07.01.

226. M. Hirabayashi and **D. J. Scheeres** "Fission Limit And Surface Disruption Criteria For Asteroids: The Case Of Kleopatra," abstract presented at the 43rd Annual Meeting of the American Astronomical Society Division on Dynamical Astronomy, Mount Hood, Oregon, May 2012. Abstract 07.02.

227. J.W. McMahon and **D.J. Scheeres**. "Effect of Small Scale Surface Topology on Near-Earth Asteroid YORP and bYORP Coefficients," abstract presented at the 43rd Annual Meeting of the American Astronomical Society Division on Dynamical Astronomy, Mount Hood, Oregon, May 2012. Abstract 07.04.

228. S.A. Jacobson and **D. J. Scheeres**. "Long-term Rotation State Evolution of Comet Nuclei Including the Effects of Jet Torques and Internal Dissipation," abstract presented at the 43rd Annual Meeting of the American Astronomical Society Division on Dynamical Astronomy, Mount Hood, Oregon, May 2012. Abstract 08.05.

229. M. Hirabayashi and **D.J. Scheeres**. "Fission Limits For Bifurcated Asteroids: The Case Of Kleopatra," poster presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 2256.

230. **D.J. Scheeres** and S.A. Jacobson. "Comet Rotational Relaxation and Interior Stresses and Loads," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 2169.

231. P. Sánchez and **D.J. Scheeres**. "Granular van der Waals Bridges and the Cohesion of Rubble-Pile Asteroids," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 1620.

232. S.A. Jacobson and **D.J. Scheeres**. "Formation of the Asynchronous Binary Asteroids," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 2737.

233. A. Rossi, F. Marzari, **D.J. Scheeres**, and S.A. Jacobson. "Effects of YORP-Induced Rotational Fission on the Asteroid Size Distribution at the Small Size End," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 2095.

234. C.W. Hergenrother, **D.J. Scheeres**, M. Nolan, C. d'Aubigny, M.A. Barucci, B.E. Clark, E. Dotto, J.P. Emery, D.S. Lauretta, J. Licandro, and B. Rizk. "Lightcurve and Phase Function Photometry of the OSIRIS-REx Target (101955) 1999 RQ36," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 2219.

235. J.W. McMahon and **D.J. Scheeres**. "Inferring Small-Scale Surface Variability on Near-Earth Asteroids from Itokawa's Shape Data," abstract presented at the 43rd Lunar and Planetary Science Conference, March 2012. Abstract 1596.

236. **D.J. Scheeres**. "Mathematics in Earth Orbit: The Dynamics of Earth's Artificial Orbital Population," invited presentation at the International Conference on Mathematical Modeling in Industry, São Paolo, Brazil, December 2011.

237. S. Tardivel and **D.J. Scheeres**, "Robust deployment of landers to asteroid surfaces," poster presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-1414.

238. P. Sànchez and **D.J. Scheeres** "Rotation and Reshaping of Self-gravitating Aggregates," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-301.

239. **D.J. Scheeres**, M.R. Swift, and P. Sanchez "Quasi-Static Evolution of Self-gravitating Aggregates," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-584.

240. S.A. Jacobson and **D.J. Scheeres** "Evolution of Small Near-Earth Asteroid Binaries," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-647.

241. M.W. Busch, L.A.M. Benner, **D.J. Scheeres**, J.-L. Margot, C. Magri, M.C. Nolan, and J.D. Giorgini "Twenty Years Of Toutatis," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-297.

242. A. Rossi, S. Jacobson, F. Marzari, and **D. Scheeres** "Asteroid fission, binaries and the small main belt population," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-499.

243. C.M. Hartzell and **D.J. Scheeres** "Dynamics of levitating dust near equilibria on asteroids," abstract presented at the EPSC-DPS Joint Meeting 2011, Nantes, France, October 2011. Abstract EPSC-DPS2011-286.

244. C.M. Hartzell and **D.J. Scheeres**. "Levitating Dust on Asteroids," poster presented at the International Primitive Body Exploration Working Group, Pasadena, California, August 2011.

245. Y. Takahashi and **D.J. Scheeres**. "Spacecraft Characterization of Primitive Bodies Using a Sequence of Slow Flybys," poster presented at the International Primitive Body Exploration Working Group, Pasadena, California, August 2011.

246. S. Tardivel and **D.J. Scheeres**. "Ballistic Deployments of Landers on Asteroid Surfaces," poster presented at the International Primitive Body Exploration Working Group, Pasadena, California, August 2011.

247. **D.J. Scheeres**. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," abstract presented at Applied Dynamics and Geometrical Mechanics, Mathematisches Forschungsinstitut Oberwolfach, August 2011.

248. **D.J. Scheeres** and Y. Takahashi. "Rapid Characterization of Small Bodies Using Slow Flybys," poster presented at the 9th IAA Low-Cost Planetary Missions Conference, Applied Physics Lab, Laurel, Maryland, June 2011.

249. **D.J. Scheeres**. "Minimum Energy Configurations in the N-Body Problem," abstract presented at the New Trends in Astrodynamics Meeting, New York, New York, June 2011.

250. **D.J. Scheeres** and P. Sánchez. "Implications of asteroid morphology and strength for impulsive mitigation strategies," abstract presented at the 2011 IAA Planetary Defense Conference, Bucharest, Romania, May 2011.

251. S.A. Jacobson and **D.J. Scheeres**. "Long-Term Stable Equilibria for Synchronous Binary Asteroids," abstract presented at the 42nd Division on Dynamical Astronomy Meeting, Austin, Texas, April 2011.

252. J. McMahon and **D.J. Scheeres**. "Dynamical Limits on Planar Libration-Orbit Coupling Around an Oblate Primary with Application to BYORP Evolution," abstract presented at the 42nd Division on Dynamical Astronomy Meeting, Austin, Texas, April 2011.

253. **D.J. Scheeres**. "Minimum Energy Configurations in the N-Body Problem," abstract presented at the 42nd Division on Dynamical Astronomy Meeting, Austin, Texas, April 2011.

254. **D.J. Scheeres** and P. Sánchez. "Evolution of Small, Rapidly Rotating Asteroids," abstract presented at the 42nd Lunar and Planetary Science Conference, Houston, Texas, March 2011. Abstract 2307.

255. S.A. Jacobson and **D.J. Scheeres**. "Long-term Stable Equilibria for Synchronous Binary Asteroids," abstract presented at the 42nd Lunar and Planetary Science Conference, Houston, Texas, March 2011. Abstract 2239.

256. P. Sánchez and **D.J. Scheeres**. "Rotational Reshaping and Yield Stress of Rubble-Pile Asteroids," abstract presented at the 42nd Lunar and Planetary Science Conference, Houston, Texas, March 2011. Abstract 2120.

257. O. Robert, P. Lognonne, **D.J. Scheeres**, N. Goujon, M. Le Feuvre, A. Izzet, C. Blitz, and L. Bowman. " Seismology on a small body: expected results for the BASiX Discovery Mission proposal," poster presented at the 2010 American Geophysical Union Fall Meeting, San Francisco, December 2010.

258. **D. J. Scheeres**, C.M. Hartzell, Paul Sanchez and M. Swift. "Scaling Forces to the Asteroid Surface: The Role of Cohesion," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 63.08.

259. S.A. Jacobson and **D. J. Scheeres**. "Dynamics of Rotationally Fissioned Asteroids," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 63.07.

260. J. McMahon and **D. J. Scheeres**. "Measuring the Binary YORP Effect and the Influence of Librations on Binary Asteroid Evolution," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 63.06.

261. Paul Sanchez and **D. J. Scheeres**. "DEM Simulation of Rotational Disruption of Rubble-Pile Asteroids," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 63.05.

262. Alessandro Rossi, F. Marzari and **D. J. Scheeres**. "Unveiling The Excess Of Slow Rotators In The Small Main Belt Asteroids," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 63.02.

263. M.W. Busch, et al., **D. J. Scheeres**, et al.. "Radar Observations and the Shape of 2008 EV5: Ridges and Craters on Near-Earth Asteroids," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 57.05.

264. E.S. Howell, et al., **D. J. Scheeres**, et al.. "Radar Shape Modeling Of (8567) 1996 HW1 Combined With Thermal Observations," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 57.03.

265. M. Brozovic, et al., **D. J. Scheeres**, et al.. "Radar Images And Shape Model Of A Triple Asteroid (136617) 1994CC," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 57.02.

266. Richard Dissly, **D.J. Scheeres**, E. Nilsen, S. Roark, W. Frazier, T. Bank, D. Rosing, E. Jordan, The BASiX Science Team. "The Binary Asteroid in-situ Explorer (BASiX) Mission," poster presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 49.28L.

267. C.M. Hartzell and **D. J. Scheeres**. "Electrostatic Dust Launching Methods," abstract presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 17.01.

268. L.A.M. Benner, J. Margot, M.C. Nolan, J.D. Giorgini, M. Brozovic, **D.J. Scheeres**, C. Magri, S.J. Ostro. "Radar Imaging and a Physical Model of Binary Asteroid 65803 Didymos," poster presented at the 2010 American Astronomical Society Division for Planetary Sciences Meeting, Pasadena, California, October 2010. Abstract 13.17.

269. J. McMahon and **D.J. Scheeres**. "A detailed model of BYORP," abstract presented at the Second Workshop on Binaries in the Solar System Wasowo/Poznan, Poland. July 12-15, 2010.

270. S.A. Jacobson and **D.J. Scheeres**. "Dynamical evolution of binary asteroid systems," abstract presented at the Second Workshop on Binaries in the Solar System Wasowo/Poznan, Poland. July 12-15, 2010.

271. **D.J. Scheeres**. "The celestial mechanics of asteroid rubble piles," abstract presented at the Second Workshop on Binaries in the Solar System Wasowo/Poznan, Poland. July 12-15, 2010.

272. **D.J. Scheeres** and O. Peñagaricano-Muñoa. "The Computation and Application of Hamilton's Principal Function in Astrodynamics," abstract presented at the DSPDES 2010 SIAM Conference, Barcelona, Spain, June 2010.

273. **D.J. Scheeres**, P. Pravec, D. Vokrouhlicky, D. Polishook, 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. "Asteroid pairs formed by rotational fission," talk presented at the 2010 American Astronomical Society Division on Dynamical Astronomy meeting, Brookline, Massachusetts, April 25-29, 2010.

274. S.A. Jacobson and **D.J. Scheeres**. "Formation of Observed Asteroid Systems by Rotational Fission," talk presented at the 2010 American Astronomical Society Division on Dynamical Astronomy meeting, Brookline, Massachusetts, April 25-29, 2010.

275. J. McMahon and **D.J. Scheeres**. "The Effects of Libration on BYORP Induced Secular Evolution," talk presented at the 2010 American Astronomical Society Division on Dynamical Astronomy meeting, Brookline, Massachusetts, April 25-29, 2010.

276. **D.J. Scheeres**. "Space Missions and Orbit Mechanics about Small Asteroids," invited talk presented at the 5th International Workshop and Advanced School "Spaceflight Dynamics and Control," Covilha, Portugal, March 17-19, 2010.

277. **D.J. Scheeres**, C.M. Hartzell, P. Sánchez and M. Swift. "The Relevance and Role of Cohesive Forces for Small Asteroids," talk presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 1839.

278. R.W. Gaskell, O.S. Barnouin and **D.J. Scheeres**. "The NEAR Shoemaker Landing on Eros," talk presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2093.

279. S.A. Jacobson and **D.J. Scheeres**. "The Evolution of Binary Asteroids Formed by Spin Fission," talk presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2098.

280. S. Roark, C. Cottingham, R. Dissly, **D. Scheeres**, V. Petr, and K. Housen. "Explosive Surface Pods for Cratering Experiments on Small Bodies," poster presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2100.

281. C.M. Hartzell and **D.J. Scheeres**. "The Implications of Lunar Water on Electrostatic Dust Levitation," poster presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2470.

282. P. Sánchez, **D.J. Scheeres** and M. Swift. "Impact Driven Size Sorting in Self-Gravitating Granular Aggregates," talk presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2634.

283. E. Asphaug, A. Barucci, M. Belton, S. Bhaskaran, D. Brownlee, L. Carter, J. Castillo, S. Chesley, P. Chodas, T. Farnham, R. Gaskell, Y. Gim, E. Heggy, K. Klaasen, W. Kofman, M. Kreslavsky, C. Lisse, L. McFadden, E. Pettinelli, J. Plaut, **D. Scheeres**, E. Turtle, P. Weissman and R. Wu. "Deep Interior Radar Imaging of Comets," poster presented at the 41st Lunar and Planetary Science Conference, March 2010. Abstract 2670.

284. **D.J. Scheeres**. "Studying the Fundamental Physical Characteristics of Asteroid Surfaces at Binary Asteroids," invited talk given at the International Workshop on Small Body Exploration by Physical Interactions, October 19-20, 2009. Hotel Villa Fontaine, Tokyo, Japan.

285. C. Cottingham, **D.J. Scheeres**, S. Roark, and R. Dissly. "Surface Instrument Package for Small Body Science," poster presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #68.17.

286. J. McMahon and **D.J. Scheeres**. "Predictions For The Effects Of BYORP On 1999 KW4," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #56.09.

287. S.A. Jacobson and **D.J. Scheeres**. "A Rapid Phase of Tidal Dissipation for Post-Fission Binary Asteroids," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #56.08.

288. **D.J. Scheeres**. "The Orbital Stability of Fissioned Contact Binary Asteroids," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #56.07.

289. A. Rossi, F. Marzari and **D.J. Scheeres**. "Spin Evolution of Small Main Belt Asteroids," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #56.01.

290. C. Hartzell and **D.J. Scheeres**. "The Dynamics of Dust Levitated from Asteroids," poster presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #50.07.

291. M. Brozovic, L.A.M. Benner, C. Magri, S.J. Ostro, **D.J. Scheeres**, J.D. Giorgini, M.C. Nolan, J.-L. Margot, R.F. Jurgens, R. Rose. "Radar observations and a physical model of contact binary asteroid 4486 Mithra," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #43.11.

292. **D.J. Scheeres**. "The Meaning of an Asteroid's Shape," invited talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #29.04.

293. P. Sanchez, M.R. Swift, and **D.J. Scheeres**. "Granular Mechanics in the Asteroid Regime," talk presented at the 41st Annual American Astronomical Society - Division of Planetary Sciences Meeting, Puerto Rico. Abstract #27.13.

294. **D.J. Scheeres**. "Stability of the Full 2-Body Problem: Applications to Binary Asteroids," invited talk given at CELMEC V, the Fifth International Meeting on Celestial Mechanics, Balletti Park Hotel, San Martino al Cimino, Viterbo (Italy). September 2009.

295. **D.J. Scheeres**. "The mechanics of motion on and about asteroids," talk presented at the Steve Ostro Memorial Symposium, Jet Propulsion Laboratory, June 3, 2009.

296. **D.J. Scheeres**. "Stability of Relative Equilibria for Coupled Rotational and Translational Motion," talk presented at the 2009 American Astronomical Society – Division on Dynamical Astronomy Meeting, Virginia Beach, Virginia, May 2009. Abstract #10.01.

297. S.A. Jacobson and **D.J. Scheeres**. "Tidal and Dynamical Evolution of Binary Asteroids," talk presented at the 2009 American Astronomical Society – Division on Dynamical Astronomy Meeting, Virginia Beach, Virginia, May 2009. Abstract #10.02.

298. J.W. McMahon and **D.J. Scheeres**. "Secular Orbit Variation due to Solar Radiation Effects: A Detailed Model for BYORP," talk presented at the 2009 American Astronomical Society – Division on Dynamical Astronomy Meeting, Virginia Beach, Virginia, May 2009. Abstract #10.03.

299. **D.J. Scheeres**. "Fundamental Limits on Uncertainty Propagation in Astrodynamical Systems," talk presented in MS107: Applications of Phase Space Analysis to Astrodynamics, 2009 SIAM Conference on Dynamical Systems, Snowbird, Utah. May 2009.

300. **D. J. Scheeres**, P. Sánchez, R. W. Dissly, E.I. Asphaug, K.R. Housen, M.R. Swift, H. Yano, S.E. Roark, and J.C. Soto. "Extra Low-Gear: A Micro-gravity laboratory to simulate asteroid surfaces," poster presented at the 40th Lunar and Planetary Science Conference, March 2009. Abstract 2447.

301. **D.J. Scheeres** and S.A. Jacobson. "Fission and stability of ellipsoidal contact binary asteroids," talk presented at the 40th Lunar and Planetary Science Conference, March 2009. Abstract 2040.

302. E. Asphaug, A. Safaeinili, M.J.S. Belton, **D.J. Scheeres**, S. Chesley, W. Kofman, and D. Yeomans. "Deep Interior: High-resolution volumetric radar imaging of a comet nucleus," poster presented at the 40th Lunar and Planetary Science Conference, March 2009. Abstract 2109.

303. P. Sánchez and **D.J. Scheeres**. "Granular mechanics in asteroid regolith: Simulating and scaling the brazil nut effect," talk presented at the 40th Lunar and Planetary Science Conference, March 2009. Abstract 2228.

304. C. M. Cottingham, S. E. Roark, W. D. Deininger, R. W. Dissly, K. W. Epstein, D. M. Waller, and **D. J. Scheeres**. "Small surface probes for enchanced asteroid and comet rendezvous missions," poster presented at the 40th Lunar and Planetary Science Conference, March 2009. Abstract 2310.

305. **D.J. Scheeres**, R.W. Gaskell and P. Sánchez. "YORP and Density Inhomogeneity within Itokawa ," talk presented at the 2008 American Geophysical Union, San Francisco, December 2008.

306. **D.J. Scheeres**, C. Park, V. Guibout, A.M. Bloch. "Optimal Control and Hamiltonian Dynamics," talk presented at the American Mathematical Society, Meeting 1044, Huntsville, AL, Special Session on Geometric Mechanics, Control and Integrability.

307. E.G. Fahnestock and **D.J. Scheeres**. "Primary Surface Particle Motion as a Mechanism for YORP-driven Binary Asteroid Evolution," talk presented at the 40th Annual American Astronomical Society - Division of Planetary Sciences Meeting, Ithaca.

308. **D.J. Scheeres**, R.W. Gaskell and P. Sánchez. "Density Inhomogeneity, YORP and Itokawa," poster presented at the 40th Annual American Astronomical Society - Division of Planetary Sciences Meeting, Ithaca.

309. **D.J. Scheeres**. "Creation and Dissociation of Binary Asteroids [# 8059]," abstract presented at the 2008 Asteroids, Comets, Meteors Meeting, Baltimore 2008.

310. A. Rossi, F. Marzari and **D.J. Scheeres**. "The effect of YORP on the NEO spin rate distribution [# 8070]," poster presented at the 2008 Asteroids, Comets, Meteors Meeting, Baltimore 2008.

311. E.G. Fahnestock and **D.J. Scheeres**. "YORP-Driven Expansion of Binary Asteroid Systems [# 39.0202]," abstract presented at the 39th American Astronomical Society Division on Dynamical Astronomy, Boulder, May 2008.

312. **D.J. Scheeres**. "Relative Equilibria in the Sphere-Restricted Full 2-Body Problem [# 39.0901]," abstract presented at the 39th American Astronomical Society Division on Dynamical Astronomy, Boulder, May 2008.

313. E.G. Fahnestock and **D.J. Scheeres**. "Primary Surface Particle Motion and YORP-Driven Expansion of Asteroid Binaries," talk presented at the Binary Asteroid Dynamics Workshop, Meudon, France, May 2008.

314. **D.J. Scheeres**. "Reconfiguration and Fission of Rubble Pile Asteroids," talk presented at the Binary Asteroid Dynamics Workshop, Meudon, France, May 2008.

315. **D.J. Scheeres**. "Dynamics of Binary Asteroids," talk presented at the 7th Alexander von Humboldt Colloquium for Celestial Mechanics, Bad Hofgastein, Salzburg, Austria March 30 - April 5, 2008.

316. **D.J. Scheeres**, S. Mirrahimi and R.W. Gaskell. "YORP sensitivity to shape and shadowing [# 2348]," abstract presented at the 39th Lunar and Planetary Science Conference, 2008.

317. S.M. Byram and **D.J. Scheeres**. "Rotational Dynamics of a Comet Nucleus Subject to Outgassing Jets [# 1287]," poster presented at the 39th Lunar and Planetary Science Conference, 2008.

318. **D.J. Scheeres**, E.G. Fahnestock and J.E. Bellerose. "Binary Asteroid System Dynamics and Scientific Exploration," invited presentation at the 1st International Primitive Bodies Exploration Working Group meeting, Okinawa, Japan, January 13-16, 2008.

319. **D.J. Scheeres**, A.M. Block, C. Park and *J. Maruskin*. "New Theoretical and Applied Methods in Optimal Control," presentation at the NSF CMMI meeting, Knoxville, Tennessee, January 7-10, 2008.

320. **D.J. Scheeres**, O. Pinon and R.W. Gaskell. "Dynamics Of Dust Fines On Asteroids: Applications To Eros And Itokawa (13.07)," talk presented at the 39th Annual DPS meeting, Orlando, Florida, October 7-12, 2007.

321. **D.J. Scheeres** and S. Mirrahimi. "Evolution of Asteroid Rotation States Subject to the YORP Effect (05.06)," invited talk presented at the 39th Annual DPS meeting, Orlando, Florida, October 7-12, 2007.

322. **D.J. Scheeres** and E.G. Fahnestock. "Ejecta Dynamics and Regolith Transport within Binary Asteroid Systems (51.06)," poster presented at the 39th Annual DPS meeting, Orlando, Florida, October 7-12, 2007.

323. **D.J. Scheeres** and E.G. Fahnestock. "Stand-off Estimation of Binary Asteroid Mass Distributions," poster presented at the Seventh IAA International Conference on Low-Cost Planetary Missions, Pasadena, California, September 12-14, 2007.

324. **D.J. Scheeres**. "Minimum energy catastrophic disruptions," abstract presented at the VIIth Workshop on Catastrophic Disruption in the Solar System, Alicante, Spain, June 2007.

325. **D.J. Scheeres**, O. Peñagaricano, C. Park and V.M. Guibout. "Solving Two-Point Boundary Value Problems in Astrodynamics and Optimal Control," abstract presented at the 21st Canadian Conference on Applied Mechanics, Ryerson University, Toronto 2007.

326. J.E. Bellerose and **D.J. Scheeres**. "Dynamics of the Restricted Full Three-Body Problem," abstract presented at the 21st Canadian Congress of Applied Mechanics, Ryerson University, Toronto 2007.

327. **D.J. Scheeres**. "Minimum Energy Configurations of Resting Equilibria," abstract presented at the 38th American Astronomical Society Division on Dynamical Astronomy, Ann Arbor, May 2007.

328. J.E. Bellerose and **D.J. Scheeres**. "Periodic Orbits in the Restricted Full Three-Body Problem," abstract presented at the 38th American Astronomical Society Division on Dynamical Astronomy, Ann Arbor, May 2007.

329. J. Maruskin and **D.J. Scheeres**. "The Eccentric Frame Method and the Hernquist-Newton Potential," abstract presented at the 38th American Astronomical Society Division on Dynamical Astronomy, Ann Arbor, May 2007.

330. E.G. Fahnestock and **D.J. Scheeres**. "The Dynamics of 1999 KW4 and Similar Binary Near-Earth Asteroids," abstract presented at the 38th American Astronomical Society Division on Dynamical Astronomy, Ann Arbor, May 2007.

331. J. Hudson and **D.J. Scheeres**. "Reduction of Arbitrary Orbit Perturbation Problems to a Standard Form," poster presented at the 38th American Astronomical Society Division on Dynamical Astronomy, Ann Arbor, May 2007.

332. S.M. Byram, **D.J. Scheeres**, and M.R. Combi. "Implications of Outgassing Jets for the Comet Dynamical Environment [#1694]," poster presented at the 38th Lunar and Planetary Science Conference, 2007.

333. H. Miyamoto, H. Yano, A.M. Nakamura, **D.J. Scheeres**, R. Nakamura, M. Ishiguro, S. Abe, T. Hashimoto, N. Hirata, T. Kubota, T. Michikami, T. Nakamura, T. Noguchi, J. Saito, S. Sasaki, A. Tsuchiyama, Y. Yokota. "Rock Piles on Itokawa Observed by the Highest Resolution Images [#1614]," poster presented at the 38th Lunar and Planetary Science Conference, 2007.

334. H. Demura, R. Gaskell, N. Hirata, H. Miyamoto, S. Sasaki, **D.J. Scheeres**, J. Saito. "Geomorphology Group of Hayabusa Global Shape and General Geology of Itokawa [#2309]," abstract presented at the 38th Lunar and Planetary Science Conference, 2007.

335. **D.J. Scheeres**, R.W. Gaskell, M. Abe, R. Nakamura, M. Yoshikawa, P.A. Abell. "Itokawa, YORP and Seismic Shaking [#1599]," abstract presented at the 38th Lunar and Planetary Science Conference, 2007.

336. P.A. Taylor, J.-L. Margot, D. Vokrouhlicky, **D.J. Scheeres**, P. Pravec, S.C. Lowry, A. Fitzsimmons, M.C. Nolan, S.J. Ostro, L.A.M. Benner, J.D. Giorgini, C. Magri. "The Increasing Spin Rate of Asteroid (54509) 2000 PH5: A Result of the YORP Effect [#2229]," abstract presented at the 38th Lunar and Planetary Science Conference, 2007.

337. R.W Gaskell, O.S. Barnouin-Jha, and **D.J. Scheeres**. "Modeling Eros with Stereophotoclinometry [#1333]," abstract presented at the 38th Lunar and Planetary Science Conference, 2007.

338. E.G. Fahnestock and **D.J. Scheeres**. "Dynamical Characterization and Stabilization of Gravity Tractor Designs for NEO Impact Risk Mitigation," poster presented at the 2007 Planetary Defense Conference, Washington D.C., March 2007.

339. **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. de Jong. "Dynamical Investigation of Asteroid (66391) 1999 KW4," abstract presented at the American Astronomical Society Division of Planetary Sciences meeting, Pasadena, California, October 2006.

340. S. J. Ostro, J. L. Margot, L. A. Benner, J. D. Giorgini, **D. J. Scheeres**, E. G. Fahnestock, S. B. Broschart, J. Bellerose, M. C. Nolan, C. Magri, P. Pravec, P. Scheirich, R. Rose, R. F. Jurgens, S. Suzuki, E. M. de Jong. "Radar Investigation of Asteroid (66391) 1999 KW4," abstract presented at the American Astronomical Society Division of Planetary Sciences meeting, Pasadena, California, October 2006.

341. **D.J. Scheeres**. "Global Gardening on Asteroids," abstract presented at the Workshop on Spacecraft Reconnaissance of Asteroid and Comet Interiors, October 5-6, 2006, Santa Cruz, California.

342. **D.J. Scheeres**. "The Dynamics and Evolution of NEO Binary Asteroids," abstract presented at the International Astronomical Union General Assembly, Prague, Czech Republic, August 2006.

343. **D.J. Scheeres**, M. Abe, R. Nakamura, R.W. Gaskell, P.A. Abell. "Predicted rotational deceleration of asteroid Itokawa due to YORP," abstract presented at the 2006 COSPAR, Beijing, China, July 2006.

344. **D.J. Scheeres**, R. Gaskell, S. Abe, O. Barnouin- Jha, T. Hashimoto, N. Hirata, M. Ishiguro, J. Kawaguchi, T. Kominato, T. Kubota, T. Mukai, J. Saito, K. Shirakawa, M. Uo, M. Yoshikawa. "The *Actual* Dynamical Environment About Itokawa," abstract presented at the 2nd Hayabusa Symposium, Tokyo, Japan, July 2006.

345. **D.J. Scheeres**. "The Dynamical Evolution Of Uniformly Rotating Asteroids Subject To YORP," abstract presented at the American Astronomical Society Division on Dynamical Astronomy meeting, Halifax, Canada, June 2006.

346. **D.J. Scheeres**. "Stability of Binary Asteroids Formed Through Fission [#1632]," abstract presented at the 37th Lunar and Planetary Science Conference, 2006.

347. Fujiwara A., Kawaguchi J., Uesugi K., Yeomans D., Saito J., Abe M., Mukai T., Kato M., Okada T., Yoshikawa M., Yano H., Demura H., **Scheeres D.**, Gaskel R., Barnouin-Jha O., Cheng A., Miyamoto H., Hirata N., Nakamura R., Sasaki S., Nakamura A. M. "Global Properties of 25143 Itokawa Observed by Hayabusa [#1575]," abstract presented in the Special Session: Results of the Hayabusa Mission, 37th Lunar and Planetary Science Conference, 2006.

348. Miyamoto H., Yano H., **Scheeres D.**, Sasaki S., Barnouin-Jha O., Gaskell R. W., Cheng A., Demura H., Fujiwara A., Hashimoto T., Hirata N., Honda C., Ishiguro M., Kubota T., Michikami T., Nakamura A. M., Nakamura R., Saito J., Yokota Y., Hayabusa Team. "Regolith on a Tiny Asteroid: Granular Materials Partly Cover the Surface of Itokawa [#1686]," abstract presented in the Special Session: Results of the Hayabusa Mission, 37th Lunar and Planetary Science Conference, 2006.

349. Yano H., Kubota T., Miyamoto H., Okada T., **Scheeres D.**, Takagi Y., Yoshida K., Abe M., Abe S., Barnouin-Jha O., Fujiwara A., Hasegawa S., Hashimoto T., Ishiguro M., Kato M., Kawaguchi J., Mukai T., Saito J., Sasaki S., Yoshikawa M. "Hayabusa's Touch Down Sites at the Smooth Terrain on Asteroid 25143 Itokawa [#2463]," abstract presented in the Special Session: Results of the Hayabusa Mission, 37th Lunar and Planetary Science Conference, 2006.

350. Gaskell R., Saito J., Ishiguro M., Kubota T., Hashimoto T., Hirata N., Abe S., Barnouin-Jha O., **Scheeres D.** "Global Topography of Asteroid 25143 Itokawa [#1876]," poster presented at the 37th Lunar and Planetary Science Conference, 2006.

351. Abe S., Mukai T., Hirata N., Barnouin-Jha O. S., Cheng A., Mizuno T., Nakamura R., **Scheeres D.**, Yoshikawa M., Gaskell R., Demura H., Hashimoto T., Kubota T., Matsuoka M. "Determination of Gravity and Density of Asteroid 25143 Itokawa by Light Detection and Ranging Instrument on Hayabusa Spacecraft [#2461]," poster presented at the 37th Lunar and Planetary Science Conference, 2006.

352. **D.J. Scheeres**, L.A.M. Benner, S.J. Ostro, A. Rossi, F. Marzari and P. Washabaugh. "Abrupt Alternation of Asteroid 2004 MN4's Spin State During its 2029 Earth Flyby," abstract presented at the American Astronomical Society Division on Dynamical Astronomy meeting, Santa Barbara, California, April 2005.

353. **D.J. Scheeres**. "Solar Radiation Pressure and Transient Flows on Asteroid Surfaces [#1919]," abstract presented at the Lunar and Planetary Science XXXVI meeting, Houston, Texas, March 2005.

354. **D.J. Scheeres** and S.J. Ostro. "Regolith Mechanics on Binary Asteroids," abstract presented at the American Astronomical Society Division of Planetary Sciences meeting, Louisville, Kentucky, November 2004.

355. *J. Kadish*, J.R. Barber, **D.J. Scheeres** and P.D. Washabaugh. "The Effective Strength of Accreted Planetary Bodies," poster presented at the American Astronomical Society Division of Planetary Sciences meeting, Louisville, Kentucky, November 2004.

356. **D.J. Scheeres**, S.J. Ostro and L.A.M. Benner. "The Dynamical Environment on the Surface of Itokawa," invited abstract presented at the International Science Symposium on Sample Returns from Solar System Minor Bodies: The 1st HAYABUSA Symposium, ISAS/JAXA, Sagamihara, Japan, October 2004.

357. S.J. Ostro, L.A.M. Benner, C. Magri, J.D. Giorgini, R.Rose, R.F. Jurgens, D.K. Yeomans, A.A. Hine, M. C. Nolan, **D.J. Scheeres**, M. Kaasalainen, D. Vokrouhlicky, S.R. Chesley, and J. L. Margot. "Radar observations of Itokawa in 2004 and an improved physical model," abstract presented at the International Science Symposium on Sample Returns from Solar System Minor Bodies: The 1st HAYABUSA Symposium, ISAS/JAXA, Sagamihara, Japan, October 2004.

358. E. Asphaug, M. Belton, K. Klaasen, L. McFadden, S. Ostro, A. Safaeinili, **D. Scheeres**, J. Sunshine, D. Yeomans. "Deep Interior: The first comprehensive geophysical investigation of an asteroid," abstract presented at the 35th COSPAR Scientific Assembly, Paris, France, July 2004. Abstract COSPAR04-A-02076;B1.3-0007-04.

359. **D.J. Scheeres**. "Asteroid Fission and Final Rotation Rates," abstract presented at the American Astronomical Society Division on Dynamical Astronomy meeting, Cannes, France, April 2004.

360. S.J. Ostro, L.A.M. Benner, J.D. Giorgini, R.F. Jurgens, J.-L. Margot, M.C. Nolan, P. Pravec, and **D.J. Scheeres**. "Radar Observations of Binary Near-Earth Asteroid 66391 (1999 KW4)," abstract presented at the Arecibo Asteroid Dynamics Workshop, Arecibo Observatory, Puerto Rico, February 2004.

361. R.S. Park, E. Fischbach, G. Giampieri, J.M. Longuski, **D.J. Scheeres**. "A test of General Relativity: Estimating PPN parameters γ and β from spacecraft radiometric tracking data," poster presented at Spacepart03: Fundamental Physics in Space for the next 20 Years, December 2003.

362. A. Rossi, F. Marzari, **D.J. Scheeres**. "Evolution of NEO rotation rates due to close encounters with Earth and Venus," abstract presented at the American Astronomical Society Division of Planetary Sciences meeting, Monterey, California, September 2003.

363. **D.J. Scheeres**. "The dynamical environment of binary asteroids," abstract presented at the American Astronomical Society Division on Dynamical Astronomy meeting, Cornell University, May 2003.

364. V. Guibout and **D.J. Scheeres**. "Stability of Surface Motion on Rotating Ellipsoids," abstract presented at the American Astronomical Society Division on Dynamical Astronomy meeting, Cornell University, May 2003.

365. **D.J. Scheeres**, E.I. Asphaug, J. Colwell, R. Dissly, P.E. Geissler, L.A. McFadden, V. Petr, R. Reinert, H. Yano. "Asteroid surface science with pods," abstract presented at the 34th Lunar and Planetary Science Meeting, Houston, Texas, March 2003. Abstract 1444.

366. D.W.G. Sears, **D.J. Scheeres**, and R.P. Binzel. "The HERA multiple Near-Earth asteroid sample return mission: Selection of the target asteroids," abstract presented at the 34th Lunar and Planetary Science Meeting, Houston, Texas, March 2003. Abstract 1047.

367. E. Asphaug, J. Colwell, R. Dissly, K. Kanizay, V. Petr, and **D.J. Scheeres**. "Meteoroid bombardment and blast experiments on asteroids," abstract presented at the 34th Lunar and Planetary Science Meeting, Houston, Texas, March 2003. Abstract 1537.

368. E. Asphaug, M.J.S. Belton, A. Cangahuala, L. Keith, K. Klaasen, L. McFadden, G. Neumann, S.J. Ostro, R. Reinert, A. Safaenili, **D.J. Scheeres**, and D.K. Yeomans. "Exploring asteroid interiors: The Deep Interior mission concept," abstract presented at the 34th Lunar and Planetary Science Meeting, Houston, Texas, March 2003. Abstract 1906.

369. A.I. Neishtadt, **D.J. Scheeres**, V.V. Sidorenko, A.A. Vasiliev. "The influence of reactive torques on comet nucleus rotation," abstract presented at the 2002 Asteroids, Comets, Meteors Meeting, Berlin, July 2002.

370. **D.J. Scheeres**, V.V. Sidorenko, A.I. Neishtadt, and A.A. Vasiliev. "Evolution of comet nuclei rotation," abstract presented at the Annual Meeting of the American Astronomical Society Division of Dynamical Astronomy, Timberline Lode, Oregon, April 2002.

371. D.W.G. Sears, C.M. Pieters, D. Britt, **D.J. Scheeres**, L. Gefert, S. Gorevan, and J. Preble. "Life after NEAR: The HERA Mission," poster presented at the American Geophysical Union Fall 2001 meeting, December 2001. Poster P32B-0550.

372. **D.J. Scheeres**, V.V. Sidorenko, A.I. Neishtadt, and A.A. Vasiliev. "Evolution of comet nuclei rotation," abstract presented at the 33rd Annual Meeting of the American Astronomical Society Division of Planetary Sciences, New Orleans, November 2001.

373. A.I. Neishtadt, **D.J. Scheeres** , V.V. Sidorenko, and A.A. Vasiliev. "Evolution of comet nucleus rotation," invited talk presented at the ASTROKAZAN 2001 International Conference, September 24-28, 2001, Kazan, Russia.

374. M. Lara and **D.J. Scheeres**. "Determining stability regions in highly perturbed, nonlinear dynamical systems using periodic orbits," poster presented at the VII Jornadas Zaragoza-Pau de Matematica Aplicada y Estadistica meeting, September 17-18, Jaca, Spain.

375. D.W.G. Sears, L. Gefert, and **D.J. Scheeres**. "Asteroid constraints on multiple Near-Earth asteroid sample return," poster presented at the 64th Annual Meeting of the Meteoritical Society, September 2001, Rome, Italy.

376. A.I. Neishtadt, **D.J. Scheeres** , V.V. Sidorenko, and A.A. Vasiliev. "Evolution of comet nucleus rotation," abstract presented at the Joint U.S-Russian Researchers in Space Science conference, July 2001, University of Maryland - College Park.

377. **D.J. Scheeres**. "Stability of Binary Asteroids," abstract presented at CELMEC III, June 2001, Rome, Italy.

378. **D.J. Scheeres**. "Dynamical constraints on asteroid binaries," abstract presented at Asteroids 2001, June 2001, Palermo, Italy.

379. P. Washabaugh and **D.J. Scheeres**. "Energy and stress distributions in ellipsoids," abstract presented at Asteroids 2001, June 2001, Palermo, Italy.

380. A. Rossi, **D.J. Scheeres**, and F. Marzari. "Evolution of NEOs rotation rate due to repeated close encounters with the earth," abstract presented at Asteroids 2001, June 2001, Palermo, Italy.

381. P. Geissler, **D.J. Scheeres**, and D.D. Durda. "The fate of aseteroidal ejecta," poster presented at Asteroids 2001, June 2001, Palermo, Italy.

382. D.W.G. Sears and **D.J. Scheeres**. "HERA: Multiple NEAR-Earth asteroid sample return, asteroid constraints on sampling," poster presented at Asteroids 2001, June 2001, Palermo, Italy.

383. **D.J. Scheeres**. "Stability of Asteroid Binaries," abstract presented at the 32nd Annual AAS Division on Dynamical Astronomy, Lunar and Planetary Institute, Houston, TX, April 2001.

384. D. W. G. Sears, C. Allen, D. Britt, D. E. Brownlee, A. F. Cheng, C. R. Chapman, B. C. Clark, B. G. Drake, I. A. Franchi, S. Gorevan, H. Kochan, J. S. Lewis, M. M. Lindstrom, K. Nishiizumi, C. M. Pieters, M. S. Race, **D. J. Scheeres**, E. R. D. Scott, and H. Yano. "Near-Earth Asteroid Sample Return Missions," abstract presented at the 33rd Lunar and Planetary Science Conference, Houston, Texas, March 2001.

385. **D.J. Scheeres**. "Trajectories in Close Proximity to Asteroids," invited presentation at the Near Earth Asteroids Sample Return Workshop, Lunar and Planetary Institute, Houston, Texas, December 2000. LPI Abstract 8009.

386. E. Morrow, **D.J. Scheeres**, C.R. McInnes, and D. Lubin. "Solar Sails at Asteroids: Close Proximity Operations for Scientific Missions," poster presented at the 32nd Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Pasadena, California, October 2000. Session 14, Abstract 369.

387. **D.J. Scheeres**, B. Khushalani, J. Bordi, A.S. Konopliv, J.K. Miller, and D.K. Yeomans. "Constraints on Eros density distributions from the measured shape and gravity field," poster presented at the 32nd Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Pasadena, California, October 2000. Session 65, Abstract 645.

388. **D.J. Scheeres**, S.J. Ostro, E.I. Asphaug, R.S. Hudson, and R.A. Werner. "Alteration of Asteroid Spin States During Close Planetary Encounters," abstract presented at the 31st Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Abano Terme, Italy, October 1999. Bulletin of the American Astronomical Society 31:1112.

389. **D.J. Scheeres**. "The Costs of Close Proximity Ops at Asteroids and Comets," paper presented at the International Symposium for Deepspace Communications and Navigation, Pasadena, California, September 1999.

390. **D.J. Scheeres**, B. Khushalani, and R.A. Werner. "Estimating Asteroid Density Distributions from Shape and Gravity Information," poster presented at the Asteroids, Comets, Meteors 1999 Conference, Cornell University, July 1999.

391. **D.J. Scheeres** and F. Marzari, "Orbital evolution of ejecta blankets from comet Tempel 1," abstract presented at the Asteroids, Comets, Meteors 1999 Conference, Cornell University, July 1999.

392. A. Enzian, . . . , **D.J. Scheeres**, "Periodic Comets 46P/Wirtanen and 9P/Tempel 1: Gas Dynamical Modeling of the Near-Nucleus Coma Environment," poster presented at the Asteroids, Comets, Meteors 1999 Conference, Cornell University, July 1999.

393. **D.J. Scheeres** and F. Marzari, "Orbit Dynamics in the comet environment," poster presented at the 30th Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Madison, Wisconsin, October 1998. Bulletin of the American Astronomical Society 30:1091.

394. **D.J. Scheeres**, D.L. Mitchell, and S.J. Ostro, E.I. Asphaug, R.S. Hudson, "Ejecta Distribution Patterns using Multiple 433 Eros Models," poster presented at the 28th Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Tucson, Arizona, October 1996. Bulletin of the American Astronomical Society 28(3): 1104.

395. E. Asphaug, W. Benz, S.J. Ostro, **D.J. Scheeres**, E.M. DeJong, S. Suzuki, and R.S. Hudson, "Disruptive Impacts into Small Asteroids," abstract presented at the 28th Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Tucson, Arizona, October 1996. Bulletin of the American Astronomical Society 28(3): 1102.

396. D. Dunham, R. Farquhar, J. McAdams, B. Williams, **D. Scheeres**, L. Wasserman, A. Klemola, H. Harris, and J. Manek, "Targeting (253) Mathilde," abstract presented at the 28th Annual Meeting of the American Astronomical Society Division of Planetary

Sciences, Tucson, Arizona, October 1996. Bulletin of the American Astronomical Society 28(3): 1098.

397. **D.J. Scheeres**, S.J. Ostro, and R.S. Hudson, "Orbits about asteroid 4179 Toutatis," poster presented at the 27th Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Mauna Lani Bay, Hawaii, October 1995.

398. **D.J. Scheeres**, S.J. Ostro, R.S. Hudson, and R.A. Werner, "Orbits about asteroid 4769 Castalia," poster presented at the 26th Annual Meeting of the American Astronomical Society Division of Planetary Sciences, Bethesda, Maryland, November 1994.

Book reviews

1. **D.J. Scheeres**. 2003. Review of June 8, 2004: Venus in Transit. *Journal of Guidance, Control, and Dynamics* 26(4): 670.

2. **D.J. Scheeres**. 2002. Review of Solar System Dynamics. *Meteoritics and Planetary Science* 37(4): 613.

3. **D.J. Scheeres**. 1998. Review of Applied Mathematics in Aerospace Science and Engineering. *Journal of Guidance, Control, and Dynamics* 20(2): 360.

Government reports, software, or industrial reports

1. A. B. Davis and **D. J. Scheeres**. 2021. "GUBAS: General Use Binary Asteroid Simulator," *Astrophysics Source Code Library* : ascl:2107.013.

2. Continuing Kepler's Quest: Assessing Air Force Space Command's Astrodynamics Standards, Final Report from the Committee for the Assessment of the U.S. Air Force's Astrodynamic Standards; Aeronautics and Space Engineering Board; Division on Engineering and Physical Sciences; National Research Council. 2012. P. Nielsen plus contributions from 13 co-authors, including **D.J. Scheeres**, National Research Council Report, The National Academies Press, Washington D.C.

3. Defending Planet Earth: Near-Earth Object Surveys and Hazard Mitigation Strategies, Final Report from the Committee to review Near-Earth Object surveys and hazard mitigation strategies and associated panels. , 2010. I.I. Shapiro plus contributions from 30 co-authors, including **D.J. Scheeres**, National Research Council Report, The National Academies Press, Washington D.C.

4. **D.J. Scheeres**, J.K. Miller, D.K. Yeomans. 2003. "The Orbital Dynamics Environment of 433 Eros: A Case Study for Future Asteroid Missions," *InterPlanetary Network Progress Report* 42-152.

5. **D.J. Scheeres**, M.W. Lo. 2002. "Integrated Trajectory and Navigation Design in Unstable Orbital Environments," *InterPlanetary Network Progress Report* 42-150.

6. **D.J. Scheeres**, D. Han, and Y. Hou. 2001. "Orbit Determination Uncertainty Distributions and Mappings in an Unstable Halo Orbit," *InterPlanetary Network Progress Report* 42-146.

7. **D.J. Scheeres**. 2001. "Design and Analysis of Landing and Low-Altitude Asteroid Flyovers," *InterPlanetary Network Progress Report* 42-146.

8. **D.J. Scheeres**, S. Bhargava, and A. Enzian. 2000. "A Navigation Model of the Continuous Outgassing Field Around a Comet," *Telecommunications and Data Acquisition Progress Report* 42-142.

9. **D.J. Scheeres**. 2000. "A Comparison of Close-Proximity Operations at Comets and Asteroids," *Telecommunications and Data Acquisition Progress Report* 42-141.

10. **D.J. Scheeres** and F. Marzari. 1999. "Dynamics of dust ejected from comet Tempel 1 due to the Deep Impact cratering event," report written for the Deep Impact Discovery Mission PI, M. A'Hearn.

11. N. Samarasinha, H. Boehnhardt, L. Jorda, F. Marzari, B. Mueller, and **D.J. Scheeres**. 1998. "Rotation Models of Comet 46P/Wirtanen," report written for the Rosetta Science Working Group on Comet 46P/Wirtanen.

12. **D.J. Scheeres**. 1998. "Interactions Between Ground-Based and Autonomous Navigation for Precision Landing at Small Solar-System Bodies," *Telecommunications and Data Acquisition Progress Report* 42-132.

13. E. DeJong, S. Suzuki, **D.J. Scheeres**, S.J. Ostro, and R.S. Hudson, "Orbits About Asteroid 4179 Toutatis," JPL Video Release, AVC-96-096. Distributed to a wide international and national science and educational audience.

14. E. DeJong, S. Suzuki, **D.J. Scheeres**, S.J. Ostro, and R.S. Hudson, "Visualization of Earth Approaching Asteroids - 1. Orbits About Asteroid 4769 Castalia (1989 PB)," JPL Video Release, AVC-95-147. Distributed to a wide international and national science and educational audience.

15. W.C. Masters, **D.J. Scheeres**, and S.W. Thurman. 1993. "Enhanced Orbit Determination Filter: Inclusion of Ground System Errors as Filter Parameters," *Telecommunications and Data Acquisition Progress Report* 42-116: 37–41.

16. **D.J. Scheeres**. 1993. "Failure Modes of Reduced-Order Orbit Determination Filters and Their Remedies," *Telecommunications and Data Acquisition Progress Report* 42-114: 34–42.

Invited Seminars and Talks

1. "The Mechanics of Exploring Asteroid Systems," invited seminar at the KAIST Department of Aerospace Engineering, November 12, 2024.

2. "The Future of Asteroid Exploration," invited special lecture at the KAIST Space Institute Opening Ceremony, Daejeon, Korea, September 30, 2024.

3. "Past, Current and Future Near-Earth Asteroid Exploration Missions," invited seminar at the Korea Astronomy and Space Science Institute, Daejeon, Korea, July 23, 2024.

4. "Future Opportunities and Requirements for the Exploration of Near Earth Asteroids," keynote lecture at the Korean Society of Aeronautics and Astronautics Conference, Changwon, Korea, June 27, 2024.

5. "Collapse and Ejection in the N-Body Problem and the Formation of Rubble Pile Asteroids," invited seminar at the UCLA Earth and Planetary Sciences Department, May 7, 2024.

6. "What's up with Janus: The past, present and future pathway of a NASA Simplex Mission," keynote lecture at the Interplanetary Small Satellite Conference, Tucson AZ, May 1, 2024.

7. "The Geophysics of Rubble Pile Asteroids," Heiland Lecture at the Colorado School of Mines, November 29, 2023.

8. Panelist on the Distinguished Forum on Space Exploration and Discovery CHEY Institute for Advanced Studies, Dallas, Texas, August 3, 2023.

9. "Asteroid Exploration: Recent results on the geophysical environments of primitive asteroids from the OSIRIS-REx and Hayabusa2 missions," keynote talk at the COMET meeting, ISAE-SUPAERO, Toulouse, France, April 11, 2023.

10. "Collapse and Ejection in the N-body problem and the Formation of Rubble Pile Asteroids," invited seminar at IMCEE, Paris, France, March 27, 2023.

11. "Asteroid Exploration: Recent progress and future prospects," invited seminar at Surrey University, Guilford, United Kingdom, March 22, 2023.

12. "The Computation and Application of Quasi-Periodic Orbits in Space Trajectory Design," invited seminar at the Technical University of Delft, Netherlands, March 13, 2023.

13. "Binary Asteroids: Pathways to Understanding Rubble Pile Asteroids," invited seminar at Aristotle University, Thessaloniki, Greece, March 8, 2023.

14. "The Computation and Application of Quasi-Periodic Orbits in Space Trajectory Design," invited seminar at INRIA, Nice, France, February 24, 2023.

15. "Binary Asteroids: Pathways to Understanding Rubble Pile Asteroids," invited seminar at Côte d'Azur Observatory, Nice, France, February 23, 2023.

16. "Asteroid Exploration: Recent progress and future prospects," invited (remote) lecture at the 2022 KAIST, Daejeon, December 14, 2022.

17. "Missions to Binary Asteroids: A Pathway to Understanding the Morphological Evolution of Rubble Pile Asteroids," invited space science lecture at ISAS/JAXA, November 28, 2022.

18. "The Computation and Application of Quasi-Periodic Orbits (QPOs) in Space Trajectory Design," invited seminar given at Kyushu University, Department of Aeronautics and Astronautics, October 26, 2022.

19. "Asteroid Exploration: Recent progress and future prospects," invited lecture at the Korea Advanced Institute of Science & Technology (KAIST), Daejeon, October 12, 2022.

20. "Astrodynamics for Small Body Missions," Invited (remote) lecture in the Space Engineering: Satellite building and advanced space exploration, Australia National University, September 13, 2022.

21. "Limits on Energy and Angular Momentum for Escape and Collapse in the Full N-Body Problem," invited lecture at the CELMEC VIII, University of Rome Tor Vergata, Italy, September 5-9, 2022.

22. "Mechanics of Rubble Pile Bodies," invited lectures at the CELTA-Cortina ASI Summer School, Isle of Skye, August 22-26, 2022.

23. "The Future of Asteroid Exploration and the Hayabusa2 and OSIRIS-REx Missions," Virginia Tech, January 24, 2022.

24. "Exploration of Asteroids," University of Colorado Retired Professors Seminar Series, November 10, 2021.

25. "New Missions to Asteroids: The major insights into minor planets coming soon," Science Writers Conference, University of Colorado, October 5, 2021.

26. "The Future of Asteroid Exploration and the Hayabusa2 and OSIRIS-REx Missions," Purdue Distinguished Engineering Lecture, Purdue University, September 12, 2019.

27. "Orbital Dynamics Around Asteroids," invited seminar at the Keldysh Institute of Applied Math, Moscow, Russia, June 28, 2019.

28. "The Geophysical Environment of Asteroids (101955) Bennu and (162173) Ryugu," invited highlight talk at the 2nd IAA SciTech Forum, Moscow, Russia, June 25, 2019.

29. "The Future of Asteroid Exploration and the OSIRIS-REx Mission," Waddey Invited Seminar given at Auburn University, April 4, 2019.

30. "Asteroids! OSIRIS-REx at Bennu and Hayabusa2 at Ryugu," public talk given at the Denver Museum of Nature and Science, Denver, November 15, 2018.

31. "The Computation and Application of Quasi-Periodic Orbits (QPOs) in Space Trajectory Design," invited seminar given at GALCIT, California Institute of Technology, November 9, 2018.

32. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," invited lecture given at MSRI, University of California Berkeley, October 8, 2018.

33. Series of 5 lectures given at the Harbin Institute of Technology, Harbin, China, July 30 – August 1, 2018.

34. "The Future of Asteroid Exploration and the OSIRIS-REx Mission," seminar given at NASA's Johnson Space Center, July 26, 2018.

35. "The OSIRIS-REx Mission and The Mechanics of Asteroid Exploration," invited seminar given at the Department of Aerospace Engineering, University of Texas – Austin, April 19, 2018.

36. "New relative equilibria for the Full N-Body Problem," post-tenure review seminar given at the Smead Department of Aerospace Engineering Sciences, University of Colorado Boulder, February 14, 2018.

37. "The OSIRIS-REx Mission and The Mechanics of Asteroid Exploration," invited seminar given at the Department of Aerospace Engineering, University of Michigan, October 26, 2017.

38. "Minimum Energy Relative Equilibria and their Implications for the Full N-Body Problem," invited lecture given at the CELMEC VII Conference, Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy, September 4, 2017.

39. "The Mechanics of Rubble Pile Bodies," school lecture given at the school: "Satellite Dynamics and Space Missions: Theory and Applications of Celestial Mechanics," Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy, September 1, 2017.

40. "The Mechanics of Asteroid Exploration: OSIRIS-REx and Future Missions," school lecture given at the school: "Satellite Dynamics and Space Missions: Theory and Applications of Celestial Mechanics," Balletti Park Hotel, San Martino al Cimino, Viterbo, Italy, August 31, 2017.

41. "The Mechanics of Asteroid Exploration: Updates since 2013," seminar given at the Beijing Institute of Technology, Beijing, China, July 13, 2017.

42. "The Mechanics of Asteroid Exploration," seminar given at the Chinese Academy of Sciences, Beijing, China, July 12, 2017.

43. "New relative equilibria and their implications in the Full 3-Body Problem," seminar given at Nanjing University, China, July 10, 2017.

44. "The Mechanics of Asteroid Exploration," seminar given at the Purple Mountain Observatory, Nanjing, China, July 7, 2017.

45. "The Strength of Rubble Pile Asteroids: Evidence and Implications," seminar given at Nanjing University, China, July 6, 2017.

46. Invited address to the University of Colorado Engineering Honors Program yearly banquet, Hotel Boulderado, Boulder, Colorado, May 1, 2017.

47. On-air live interview about the close approach of asteroid 2014 JO25, Channel 9 News, Denver, Colorado, April 19, 2017.
http://www.9news.com/news/local/science/huge-asteroid-to-zip-near-earth-on-wednesday/432433485mje

48. "Near-Earth Asteroids: An Introduction," invited talk at the 2016 Chinese-American Kavli Frontiers of Science Symposium, Beckman Center, Irvine, California, October 15, 2016.

49. Interviews in OSIRIS-REx press coverage in support of launch:

    - University of Colorado Press Release, "Coming to your solar system soon: A rendezvous with an asteroid," September 1, 2016.
    http://www.colorado.edu/today/2016/09/01/coming-your-solar-system-soon-rendezvous-asteroid

- Denver Channel 9 news story: "Colorado-built spacecraft headed on asteroid mission," Maya Rodriguez, KUSA, September 5, 2016. http://www.9news.com/news/local/science/colorado-built-spacecraft-headed-on-asteroid-mission/313886056
- Daily Camera news story: "CU scientists key in asteroid rendezvous," by Charlie Brenner, September 8, 2016, page 1B.
- Voice of America radio interview, Science Edition – Press Conference USA, September 9, 2016 edition.
- University of Colorado News Story, "Asteroid mission successfully launched from Florida," September 9, 2016. http://www.colorado.edu/today/2016/09/09/asteroid-mission-successfully-launched-florida

50. "New relative equilibria and their implications in the Full 3-Body Problem," Complex/Dynamical Systems Seminar given at the Department of Applied Math, University of Colorado, September 1, 2016.

51. "The Mechanics of Asteroid Exploration," seminar given at the Faculty of Aerospace Engineering, TU-Delft, June 7, 2016.

52. "The Strength of Rubble Pile Asteroids: Evidence and Implications," seminar given at the Department of Physics and Astronomy, University of Western Ontario, April 28, 2016.

53. "The Mechanics of Asteroid Exploration," Gebhardt Distinguished Seminar presented at the Daniel Guggenheim School of Aerospace Engineering, Georgia Technical University, April 7, 2016.

54. "The Strength of Rubble Pile Asteroids: Evidence and Implications," seminar given at NASA-Ames Research Center, March 30, 2016.

55. "The Geophysical and Dynamical Environment of Phobos and Deimos," seminar given at ELSI, Tokyo Institute of Technology, Tokyo, Japan, February 15, 2016.

56. "The Strength of Rubble Pile Asteroids: Evidence and Implications," seminar given at IFAC-CNR, Florence, Italy, January 29, 2016.

57. "The Strength of Rubble Pile Asteroids," seminar given at Lowell Observatory, Flagstaff, Arizona, December 3, 2015.

58. "Microgravity within the Mars Gravity Well," lecture given for the Academic Graduate-Level Course, *Phobos and Deimos: The Moons of Mars*, offered by Brown University and the University of Central Florida, November 9, 2015.

59. "The Geophysics of Bennu: Pre-Encounter Models," seminar given at the OSIRIS-REx Science Team 9, Applied Physics Laboratory, Laurel, Maryland, October 20, 2015.

60. "Geophysical Exploration of Asteroids with Surface Packages," invited talk given at the Institute for Space and Astronautical Science (ISAS), Sagamihara, Japan, July 2015.

61. "The Strength of Rubble Pile Asteroids," seminar given at Kobe University, Kobe, Japan, July 2015.

62. "The Mechanics of Asteroids: Implications for Exploration and Mitigation," seminar presented at the Department of Aerospace Engineering, University of Liege, Belgium, April 22, 2015.

63. "Dynamics of Small Body Explorers," invited talk given at the AstroRecon 2015 Conference, Arizona State University, January 9, 2015.

64. "The Strength of Rubble Pile Asteroids," invited talk given at the Hayabusa 2014: 2nd Symposium of Solar System Materials, Sagimihara, Japan, December 5, 2014.

65. "The Strength and Mechanics of Asteroids: Implications for Exploration and Mitigation," Minta Martin Seminar given at the University of Maryland, Department of Aerospace Engineering, October 29, 2014.

66. "The Strength of Rubble Pile Asteroids," seminar given at the Jet Propulsion Laboratory / California Institute of Technology, September 8, 2014.

67. "The Mechanics of Asteroids: Implications for Exploration and Mitigation," Keynote lecture presented at the 1st Stardust Global Virtual Workshop (SGVW-1) on Asteroids and Space Debris, Strathclyde University, Glasgow, Scotland, May 6, 2014.

68. "Minimum Energy Configurations in the N-body Problem and the Celestial Mechanics of Granular Systems," invited research seminar at IMCCE, Observatoire de Paris, March 18, 2014.

69. "The Mechanics of Exploring Asteroids," invited plenary lecture at the 54th Israel Annual Conference on Aerospace Sciences, Tel Aviv/Haifa, February 20, 2014.

70. "Optimal Control, Active Satellites and Space Situational Awareness," invited research seminar at the Technion, Haifa, Israel, February 17, 2014.

71. "Optimal Control and Space Situational Awareness: A Surprising Couple," invited research seminar at Texas A&M University, College Station, Texas, November 14, 2013.

72. "The Mechanics of Exploring Asteroids," seminar given at Tsinghua University, China, September 27, 2013.

73. "The Mechanics of Exploring Asteroids," seminar given at the Beijing Institute of Technology, China, September 24, 2013.

74. "The Mechanics of Exploring Asteroids," seminar given at Beihang University, China, September 23, 2013.

75. "The Exploration of Asteroids: Our close and (sometimes) dangerous neighbors," public lecture given in Grand Junction, Colorado, April 2013. Part of the "Changing Landscapes of Science Lecture Series."

76. "The Strength of Rubble Pile Asteroids," seminar given at the Nice Observatory, Nice, France, March 2013.

77. "The Mechanics of Exploring Asteroids," Dirk Brouwer Award lecture, AAS/AIAA Spaceflight Mechanics Meeting, Kauai, February 2013.

78. "Astrodynamics of Asteroids," four invited lectures given at the First Astronet-II School, University of Rome Tor Vergata, Rome, Italy, January 14 and 15, 2013.

79. "The Strength of Rubble Pile Asteroids," invited seminar at the University of Central Florida, January 11, 2013.

80. "Minimum Energy Configurations in the N-Body Problem and the Celestial Mechanics of Granular Systems," invited talk presented at the XVI Colóquio Brasileiro de Dinâmica Orbital, Serra Negra, São Paulo, Brazil, November 29, 2012.

81. "Optimal Control, Active Satellites and Space Situational Awareness," invited research seminar at the University of New Mexico, Albuquerque, November 16, 2012.

82. "Exploration of Small Bodies: Asteroids and Comets," invited seminar to undergraduates at the University of New Mexico, Albuquerque, November 16, 2012.

83. "Space Missions to Small Solar System Bodies," invited talk presented at the COSPAR 2012 meeting, PSD.1, Mysore, India, July 16, 2012.

84. "Scaling Forces to the Asteroid Surface: The role of cohesion," invited talk at the Dust, Atmosphere and Plasma environment of the Moon and Small Bodies (DAP-2012) workshop, Boulder, Colorado, June 2012.

85. "Asteroid Shapes and Spins: How the Internal informs the External," invited talk at the Asteroids, Comets, Meteors 2012 Meeting, Niigata, Japan, May 16, 2012.

86. "Exploration of Small Bodies: Asteroids and Comets," keynote talk at the Annual Mustard Seed School (a K-8 school) Annual Organization meeting, Hoboken, New Jersey, April 21, 2012.

87. "Astrodynamics: Orbital Motion of Spacecraft in Strongly Perturbed Environments," five invited lectures given at the 9th Winter School in Dynamical Systems, Pamplona , 23 January 2012 - 27 January 2012.

88. "Optimal Control, Active Satellites and Space Situational Awareness," invited talk at Space Command, Colorado Springs, Colorado, December 6, 2011.

89. "Mathematics in Earth Orbit: The Dynamics of Earth's Artificial Orbital Population," invited talk at the International Conference on Mathematical Modeling in Industry, Sao Paulo, Brazil, December 2011.

90. "Minimum Energy Configurations in the N-Body Problem," seminar in Institute of Astronomy, Geophysics and Atmospheric Sciences at the University of Sao Paulo, Brazil, December 2011.

91. On-air live radio interview regarding the close approach to asteroid 2005 YU55, News Radio 850KOA Denver, November 2, 2011.

92. "Exploration of Small Bodies: Asteroids and Comets," invited presentation and panel member at *SpaceVision 2011*, Students for the Exploration and Development of Space National Conference, October, 2011.

93. "Orbital Mechanics at Small Bodies," John V. Breakwell Invited Lecture, Astrodynamics Symposium, 62nd International Astronautical Federation Congress, October 5, 2011.

94. "A Kiss and Tell With an Asteroid," radio interview with Z. Barr at Colorado Public Radio, June 23, 2011.

95. "SSA Activities at CU Boulder," presentation at the 1st AAS Space Surveillance Workshop, University College, London, June 14, 2011.

96. "The Asteroid Environment: Knowns and Unknowns," invited presentation at the *Target NEO: Providing a Resilient NEO Accessibility Program for Human Exploration Beyond LEO* Open Global Community NEO Workshop, George Washington University, February 22, 2011.

97. "Optimal Control and Space Situational Awareness," Department of Aerospace Engineering Seminar, The University of Illinois, Champaign-Urbana, November 8, 2010.

98. "The Life-cycles of Small Asteroids," SÉMINAIRES "Temps & Espace", IMCCE/Observatoire of Paris, January 11, 2010.

99. "Celestial Mechanics and the lifestyles of small asteroids," Department of Applied Mathematics Colloquium, University of Colorado, May 1, 2009.

100. "The Life-cycles of Small Asteroids," Department of Astronomy Seminar, University of Maryland at College Park, April 1, 2009.

101. "A Proposed Characterization Mission to a Binary Asteroid," National Research Council Panel on Asteroid Mitigation, Washington DC, March 31, 2009.

102. "The Life-cycles of Small Asteroids," LASP Seminar series, University of Colorado at Boulder, March 19, 2009.

103. "Asteroid Exploration: On Earth and in Space," Department of Mechanical and Aerospace Engineering Seminar, University of Missouri – Columbia, March 5, 2009.

104. "The Life-cycles of Small Asteroids," Astrophysics Seminar, Ohio University, February 25, 2009.

105. "The Life-cycles of Small Asteroids," Institute for Space and Astronautical Science, Japanese Exploration Agency, Japan, January 26, 2009.

106. "Orbital Mechanics about and on Comet 67P/C-G," Workshop on trajectories about small bodies, CNRS, Toulouse, France, December 11, 2008.

107. "Orbit Mechanics of and About Asteroids," 5 seminars at the XIII Ciclo de Cursos Especiais, Observatório Nacional, Rio de Janeiro, Brazil, October 27-31, 2008.

108. "Characterization and Correlation of One-Pass Optical Observations," Space Situational Awareness Workshop, Maui, HI, September 22, 2008.

109. "Characterization and Correlation of One-Pass Optical Observations," Kirtland Air Force Research Lab, August 5, 2008.

110. "Asteroid Exploration: On Earth and in Space," University of Texas at Austin, Center for Space Research, July 28, 2008.

111. "The Life-cycles of Small Asteroids," Institute for Astronomy Colloquium, University of Hawaii at Manoa, April 23, 2008.

112. "Celestial Mechanics of the Full Two-Body Problem: Applications to Binary Asteroids," Applied Mathematics Dynamics Seminar, University of Colorado, February 14, 2008.

113. "Asteroid Exploration: On Earth and In Space," ISTI-CNR, Pisa, Italy, June 21, 2007.

114. "Asteroid Exploration: On Earth and In Space," University of Zaragoza, Zaragoza, Spain, June 18, 2007.

115. "Asteroid Exploration: On Earth and In Space," Massachusetts Institute of Technology, Earth and Planetary Science Seminar, April 25, 2007.

116. "Asteroid Exploration: On Earth and In Space," California Institute of Technology, Planetary Science Seminar, February 27, 2007.

117. "Asteroid Exploration: On Earth and In Space," University of Michigan, Department of Aerospace Engineering Seminar, January 18, 2007.

118. "The Full Two Body Problem," Texas A&M University, Department of Aerospace Engineering Seminar, November 16, 2006.

119. "The Full Two Body Problem," University of Illinois, Champaign-Urbana, Department of Aerospace Engineering Seminar, November 6, 2006.

120. "Asteroids Up Close and Personal," Calvin College, Grand Rapids, Physics/Astronomy Seminar, October 17, 2006.

121. "Space Missions to Asteroids: NEAR and Hayabusa," Harbin Institute of Technology, Harbin, China, July 20, 2006.

122. "The Full Two-Body Problem: Celestial Mechanics and Binary Asteroids," Harbin Institute of Technology, Harbin, China, July 20, 2006.

123. "Asteroid Mission Design and Navigation," Harbin Institute of Technology, Harbin, China, July 21, 2006.

124. "Space Missions to Asteroids," Beihang University, Beijing, China, July 18, 2006.

125. "The Full Two-Body Problem," ETSI Aeronauticos, Technical University of Madrid, May 30, 2006.

126. "Solving Two Point Boundary Value Problems with Generating Functions," Department of Applied Mathematics, University of Murcia, Spain, May 2006.

127. "The Full Two-Body Problem: Celestial Mechanics and Binary Asteroids," Department of Applied Mathematics, University of Murcia, Spain, May 2006.

128. "Space Missions to Asteroids," University of Alicante, Spain, May 2006.

129. "Stability of Binary Asteroids Formed Through Fission," Southwest Research Institute – Boulder, February 20, 2006.

130. "The Full Two Body Problem," UCLA Department of Mechanical and Aerospace Engineering, February 16, 2006.

131. "Optimal Feedback Control and Hamiltonian Dynamics," Tokyo Metropolitan University, December 9, 2005.

132. "Space Exploration Missions to Asteroids," Tokyo Metropolitan University, December 9, 2005.

133. "Fundamental Limits on Spacecraft Orbit Uncertainty and Distribution Propagation," Guidance, Navigation and Control Section, Jet Propulsion Laboratory, July 29, 2005.

134. "The Full Two Body Problem: Celestial Mechanics and Binary Asteroids," Applied and Interdisciplinary Mathematics Seminar, Department of Mathematics, University of Michigan, April 8, 2005.

135. "Space Exploration and Astrodynamics," Shipman Society Seminar, University of Michigan, October 27, 2004.

136. "Exploration and Astrodynamics," Undergraduate Student Seminar, Department of Aerospace Engineering, University of Michigan, September 17, 2004.

137. "The High Impact of Low Thrust Propulsion," FEGI Student Seminar, University of Michigan, August 6, 2004.

138. "Dynamics of Planetary Satellite Orbiters: Applications to JIMO at Europa," Navigation Systems Section, Jet Propulsion Laboratory, August 2, 2004.

139. "The Dynamical Environment about Asteroid 25143 Itokawa: Scientific Implications," Institute of Space and Astronautical Science, Japan, June 8, 2004.

140. "The Dynamical Environment about Asteroid 25143 Itokawa: Navigation Implications," Institute of Space and Astronautical Science, Japan, June 7, 2004.

141. "Asteroid Fission and Final Rotation Rates," Spaceflight Dynamics Section, ISTI-CNR, Pisa, Italy, April 2004.

142. "Full Body Problems: Where to next?," Full Body Problem Workshop, California Institute of Technology, November 14, 2003.

143. "The Full 2-Body Problem," Michigan Aerospace Seminar, Department of Aerospace Engineering, University of Michigan, October 9, 2003.

144. "Past, Present and Pending Space Missions to Asteroids and Comets," Space Science Seminar Series, Atmospheric and Oceanic Space Science Department, University of Michigan, September 26, 2003.

145. "Close Proximity Spacecraft Operations About Asteroids and Comets," University of Michigan ΣΓΤ chapter, September 25, 2003.

146. "The Dynamical Environment of Binary Asteroids," Non-linear Astrodynamics Group, California Institute of Technology, July 2003.

147. "The Dynamical Environment of Binary Asteroids," Navigation Systems Section, Jet Propulsion Laboratory, July 2003.

148. "The Full Two-Body Problem and the Dynamics of Binary Asteroids," University of Padova, Italy, June 2003.

149. "The Orbital Dynamics Environment of 433 Eros," Spaceflight Dynamics Section, ISTI-CNR, Pisa, Italy, June 2003.

150. "The Full Two-Body Problem and the Dynamics of Binary Asteroids," Cornell University, Theoretical and Applied Mechanics Seminar, May 2003.

151. "Mission Phases for Close Proximity Operations at Small Bodies and Other Issues," invited seminar at the B612 Foundation Founder's Meeting, March 14, 2003.

152. "Dynamics of Mutual Attraction: Gravitational Coupling of Rotation and Translation," California Institute of Technology, CDS Seminar, November 2002.

153. "Close Proximity Operations at Small Bodies: Orbiting, Hovering, and Hopping," Workshop on Scientific Requirements for Mitigation of Hazardous Comets and Asteroids, Arlington, Virginia, September 3-6, 2002.

154. "Engineering Constraints of Sample Collection," Workshop on Scientific Criteria for the Samples for the Hera Mission, workshop held at the Meteoritical Society Meeting, UCLA, July 21, 2002.

155. "Orbit Determination and Control of a Spacecraft in a Libration Point Orbit," Jet Propulsion Laboratory/California Institute of Technology, Pasadena, July 19, 2002.

156. On-air live interview concerning asteroid impact and hazard mitigation, P.W. Smith Show, WJR 760 AM, July 7, 2002.

157. "Orbit Determination and Control of a Spacecraft in a Libration Point Orbit," CNUCE, Pisa, Italy, June 2002.

158. "Orbit Determination and Control of a Spacecraft in a Libration Point Orbit," University of Barcelona, Barcelona, Spain, June 2002.

159. "The Orbital Dynamics Environment of 433 Eros," Faculty of Mathematics, University of Barcelona, Barcelona, Spain, June 2002.

160. "Dynamics of Binary Asteroids," UM Astronomy Colloquium, March 2002.

161. "Landing on an Asteroid: NASA's NEAR Mission," The University of Michigan, Department of Aerospace Engineering Undergraduate Seminar, Ann Arbor, September 2001.

162. "Spacecraft Formation Flight in Unstable Orbital Environments," UM Control Seminar Series, April 2001.

163. "Orbit Determination in Unstable Orbits," Jet Propulsion Laboratory/California Institute of Technology, Pasadena, August 2, 2000.

164. "Stability of Asteroid Binary Systems," CNUCE, Pisa, Italy, July 2000.

165. "Hovering and Orbit Dynamics of the Muses-C S/C at Asteroid 1989 ML," Institute of Space and Astronautical Science, Japan, May 24, 2000.

166. "NEAR at Eros: A science report on the mission to date," Institute of Space and Astronautical Science, Japan, May 22, 2000.

167. "NEAR at Eros: An Overview of the Mission to Date," Institute of Space and Astronautical Science, Japan, May 15, 2000.

168. "Ejecta Dynamics at Comet Tempel 1," Deep Impact Cratering Workshop, Ball Aerospace, February 2, 2000.

169. "NASA's Near Earth Asteroid Rendezvous (NEAR) Mission to Asteroid Eros," The University of Michigan, Department of Aerospace Engineering Undergraduate Seminar, Ann Arbor, October 1999.

170. "Measuring the Attraction of Eros," Dept. of Aeronautics and Astronautics, Purdue University, October 5, 1999.

171. "Design and Objectives of the NEAR Orbital Mission about 433 Eros," Institute of Space and Astronautical Science, Japan, July 23, 1999.

172. "Orbital Dynamics of the NEAR Spacecraft About Asteroid 433 Eros," Tsukuba Space Center (NASDA), Japan, June 24, 1999.

173. "Measuring the Mathilde and Eros Gravity Fields for the NEAR Mission," Institute of Space and Astronautical Science, Japan, June 3, 1999.

174. "Stability and Control of Hovering Orbits about Small Bodies," Jet Propulsion Laboratory/California Institute of Technology, March 16, 1999.

175. "Stability analysis of a Europa Orbiter," Jet Propulsion Laboratory/California Institute of Technology, Pasadena, March 15, 1999.

176. "Making Mathilde (and Toutatis) Tumble," University of California – Santa Cruz, February 1999.

177. "Spacecraft dynamics in the comet environment," University of Padova, Italy, July 13, 1998.

178. "Spacecraft dynamics in the comet environment," Jet Propulsion Laboratory/California Institute of Technology, Pasadena, June 4, 1998.

179. "Navigation in Unstable Orbits," Libration Point Mission Workshop, California Institute of Technology, February 6, 1998.

180. "Navigating Asteroid Flybys," Iowa State University AIAA chapter, November 1997.

181. "Landing Softly on a Comet," Iowa State University, Dept. of Aerospace Engineering and Engineering Mechanics, Ames, March 1997.

182. "Rosetta spacecraft dynamics at the comet Wirtanen," European Space Operations Center, Darmstadt, Germany, November 1996.

183. "Navigating to Near-Earth Asteroids," The University of Michigan, Department of Aerospace Engineering, Ann Arbor, November 1996.

184. "Spacecraft Dynamics about Asteroids," The University of Minnesota, Department of Aerospace Engineering and Mechanics, Minneapolis, March 1996.

Service to Professional Societies

Memberships

National Academy of Engineering Elected, 2017

International Academy of Astronautics
Corresponding Member, Elected 2018
Full Member, Elected 2021

Celestial Mechanics Institute Board Member since 2008, Elected President 2016

American Astronautical Society Fellow, 2008

American Institute of Aeronautics and Astronautics Fellow, 2014

American Astronomical Society
Member of the Division for Planetary Sciences
Member of the Division on Dynamical Astronomy: Elected Vice-Chair for 2010/2011, Chair for 2011/2012, Past-Chair for 2012/2013.

International Astronomical Union Commission 07, Celestial Mechanics and Dynamical Astronomy

International Astronautical Federation Astrodynamics Committee

Journal Editorships

Associate Editor SIAM Journal on Applied Dynamical Systems (2010-2021)

Scientific Editor The Astronomical Journal, published by the Institute of Physics (2009-2016).

Scientific Editor The Astronomical Journal / The Astrophysical Journal, published by the Institute of Physics (2016-).

Associate Editor Celestial Mechanics & Dynamical Astronomy: An International Journal of Space Dynamics, published by Springer (2003-2020).

Associate Editor Journal of the Astronautical Sciences, published by the American Astronautical Society (2003-2018).

Associate Editor Journal of Guidance, Control, and Dynamics, published by the American Institute of Aeronautics and Astronautics (2005-2019).

Editorial Board Journal of Nonlinear Science, published by Springer (2008-2012).

Review Activities

NASA Review Panel Member Space Situational Awareness, 2011-2012.

NASA Proposal Review Panel Chair Near Earth Object Observations, August 2012.

NRC Panel Member Astrodynamics Standards panel, 2011-2012.

NRC Panel Member Mitigation of hazardous asteroids panel, 2009-2010.

NASA James Web Space Telescope Orbit Determination Review 2006, 2010.

NASA Discovery Data Analysis Program Proposal Review Board 2004.

NASA Planetary Astronomy Proposal Review Board 2003.

NASA Planetary Data Systems Review Board Planetary Data Systems Small Bodies Node: Comet review (April 2006), Lead reviewer for radio science data sets for the Stardust mission (August 2003), Near Earth Asteroid Rendezvous mission (August 2001).

NASA Red Team Review Board Member of the Genesis Mission Red Team Review Board, held at Lockheed-Martin, Denver, 2000.

JPL Peer Review Board Member of the Genesis Mission Peer Review Board, held at the California Institute of Technology, 1998.

Paper Reviews for the Journals *Science*; *Nature*; *Geophysical Review Letters*; *Icarus*; *Astronomical Journal*; *Astronomy and Astrophysics*; *Planetary and Space Science*; *Journal of Guidance, Control and Dynamics*; *Celestial Mechanics and Dynamical Astronomy*; *Journal of Spacecraft and Rockets*; *IEEE Transactions on Control Systems Technology*; *Physica D*; *Chaos*; *Nonlinearity*; *Journal of the Astronautical Sciences*; *Journal of Geophysical Research – Planets*; *Astrophysics and Space Science*; *Acta Astronautica*; *Journal of Power and Propulsion*; *Reviews of Geophysics*, *International Journal of Control*, *SIAM Journal on Applied Dynamical Systems*, *Astronomical Journal*, *Astrophysical Journal*, *Conference on Decision and Control*.

Proposal Reviews JPL New Millennium Program proposals, NASA Office of Space Science Proposals for the Planetary Geology and Geophysics Progam and the Planetary Atmospheres and Theoretical Modeling Program, U.S. Civilian Research and Development Foundation, JPL Telecommunications and Mission Operations Technology Program proposals, German-Israel Foundation for Scientific Research and Development, Israel Science Foundation.

Committee Activities

Vice-Chair American Astronomical Society's Division on Dynamical Astronomy, term starts July 2010. Culminates in position as Chair of AAS-DDA for one year, starting July 2011.

Member American Institute of Aeronautics and Astronautics Astrodynamics Technical Committee.

Member International Astronautical Federation Astrodynamics Committee.

Member American Astronomical Society Division of Dynamical Astronomy Committee (2001-2004).

Member American Astronautical Society Technical Committee on Space Flight Mechanics (1998-2003, 2005 - 2010).

Chair American Astronautical Society's Dirk Brouwer Award Committee (2007-2010).

Chair American Astronomical Society Division on Dynamical Astronomy Student Travel Stipend Committee (2004-2005).

Chair American Astronautical Society's Breakwell Student Travel Award Committee (2001-2004).

Conference Activities

Session Chair 2013 AAS-DPS meeting, Denver, Colorado. Co-chaired a contributed session.

Member Scientific organizing committee for the 3rd Workshop on Binary Asteroids, Kona, Hawaii, June 2013.

Session National Chairperson American Astronautical Society – Guidance, Navigation and Control Conference, Breckenridge, February 2013.

Session National Chairperson American Astronautical Society – Guidance, Navigation and Control Conference, Breckenridge, February 2011.

Member Scientific organizing committee for the 2nd Workshop on Binary Asteroids, Poznan, Poland, July 2010.

Session Chair 2010 AAS-DPS meeting, Pasadena, California. Co-chaired a contributed session.

Session Chair 2010 LPSC meeting, Houston, Texas. Co-chaired a contributed session.

Session Chair 2009 AAS-DPS meeting, San Juan, Puerto Rico. Co-chaired a contributed session.

Micro-Symposium Organizer Applications of Phase Space Analysis to Astrodynamics, 2009 SIAM Conference on Dynamical Systems, Snowbird, Utah. May 2009.

Member Scientific organizing committee for the 7th Alexander von Humboldt Colloquium for Celestial Mechanics, Bad Hofgastein, Austria, March 30 - April 5, 2008.

Invited Session Chair 2007 AAS-DPS meeting, Orlando, Florida. Co-chaired an invited session: *YORP Observed!*

General Chair 2007 AAS/AIAA Astrodynamics Specialist Conference, Mackinac Island, Michigan.

Co-Chair 2007 AAS-DDA Annual Meeting, Ann Arbor, Michigan.

Member Scientific organizing committee for the Workshop on Spacecraft Reconnaissance of Asteroid and Comet Interiors, Santa Cruz, California, October 5-6, 2006.

Member Scientific organizing committee for the Hayabusa Symposium 2006.

General Chair 2006 AIAA/AAS Astrodynamics Specialist Conference, Keystone, Colorado.

Technical Chair Winter 2003 AAS/AIAA Space Flight Mechanics Conference, Ponce, Puerto Rico.

Member Scientific organizing committee for the International Workshop on the Scientific Requirements for Mitigation of Hazardous Comets and Asteroids, Washington D.C., September 2002.

General Chair Winter 2001 AAS/AIAA Space Flight Mechanics Conference, Santa Barbara, California.

Session Chair Several AAS/AIAA Space Flight Mechanics and Astrodynamic Specialists Meeting sessions.

Session Chair Several AAS-DDA Meeting sessions.

Session Chair 2004 American Control Confernence, Boston, June 2004, Optimal Control session.

Session Co-Chair 24th International Symposium on Space Technology and Science, Miyazaki, Japan, June 2004, Student session, Guidance and Navigation session, Planetary Science session.

Session Co-Chair 23rd International Symposium on Space Technology and Science, Matsue, Japan, May 2002, Country-wide Education and Outreach Activity session.

Session Co-Chair AAS-DPS 2001 Meeting, Cometary Nuclei and Dynamics session.

Session Chair SPACE 98 conference, Albuquerque, New Mexico, April 1998.