George H. Born

Recent Publications

- "Near Real-Time Satellite Altimeter Products: Pacific Ocean Tools and Applications" Pacon publications, 2005, co-authored with R. Leben.
- "Automated Operational Orbit Determination for the ICESat Mission", Journal of Spacecraft and Rockets, vol. 43, No. 5, Sept-Oct 2006, co-authored with M. Meek and P. Axelrad.
- "Autonomous Interplanetary Orbit Determination using Satellite-to Satellite Tracking", AIAA Journal of Guidance, Control, and Dynamics, Vol 30, No. 3, May-June 2007, co-authored with K. Hill
- "Mission Design Options for the DUNE Spacecraft", Journal of the Astronautical Sciences, Vol 56, No. 3, July-Sept., 2008, Co-authored with Jeffrey Parker.
- "Mars Aerobraking Spacecraft State Estimation by Processing Inertial Measurement Unit Data", AIAA journal of Guidance, Control, and Dynamics, Vol. 31, No. 6, Nov-Dec 2008, co-authored with M. Jah, M. Lasino, and P. Axelrad.
- "Modeling a Low Energy Ballistic Lunar Transfer Using Dynamical Systems Theory", AIAA Journal of Spacecraft and Rockets, Vol. 45, No. 6 (Nov./Dec. 2008). Co-authored with J. Parker.
- "Direct Lunar Halo Orbit Transfers" Journal of the Astronautical Sciences, Vol. 56, No 4, Oct-Dec, 2008, Co-authored with Jeffrey Parker.
- "A Cubed Sphere Gravity Model for Fast Orbit Propagation", Journal of Guidance, Control, and Dynamics, Vol.33, No. 2, Mar/Apr. 2010, Co-authored with B. A. Jones and Gregory Beylkin.
- "Sensitivity of Orbit Predictions to Density Variability", Journal of Spacecraft and Rockets, Vol. 46, No. 6, Nov-Dec, 2009, Co-authored with R. Anderson and J. Forbes.
- "The Harvest Experiment: Calibration of the Climate Data Record from TOPEX/Poseidon, Jason-1 and OSTM/Jason-2", Marine Geodesy, Vol. 33, Supplement 1, 2010, Co authored with B. J. Haines and S. D. Desai.
- "Optimal transfers between unstable periodic orbits using invariant manifolds Celestial Mechanics and Dynamical Astronomy: Volume 109, Issue 3 (2011), Co-authored with K. Davis, D. Scheeres, and R. Anderson.
- "Preliminary Study of Geosynchronous Orbit Transfers from LEO using Invariant Manifolds", Presented at the George H. Born AAS Symposium, in press, The Journal of Astronautical Sciences, Co-authored with Kate Davis and Rodney Anderson.
- "Optimal Transfers Between Unstable Periodic Orbits Using Invariant Manifolds", In press, Celestial Mechanics and Dynamical Astronomy, Co-authored with K. R. Davis, R. Anderson, D. Scheeres.
- "The Harvest Experiment LIDAR System: Water Level Measurement Device Comparison for Jason-1 and Jason-2/OSTM Calibration", In Press, Marine Geodesy, Co-authored with S. Washburn, B. Haines and C. Fowler.

- **Books:** Statistical Orbit Determination, co-authored with B. Tapley and B. Schutz of The University of Texas, Austin, Elseivier, Academic Press, 548 pp, June 2004.

- **Book Chapters:** Satellite Orbit Determination, The *Encyclopedia of Aerospace Engineering*, John Wiley & Sons Ltd, publisher, (2010), pp 3085-3100, Co-authored with Brandon A. Jones.

- **Journal Special Edition, Guest Editor**

- Guest Editor, Special Issue of the Journal of the Astronautical Sciences, Vol. 56, No. 3, July-September 2008 Papers presented at symposium honoring Byron Tapley, Austin, TX, Feb 1, 2008.
- Guest Editor, Three Special Issues on OSTM/Jason-1 and 2 Calibration/Validation, Science and Operational Oceanography Results, Marine Geodesy Vol. 33, Supplement 1, 2010; Issue #2 submitted to publisher to be printed in Sept. 2011; Issue #3 to be published in 2012.

- **Supervising Professor for Ph. D Graduates of the University of Colorado and Dissertation Titles:**

1. Darrel Zimbelman (1990): Thermal Elastic Shock and Its Effect on Spacecraft Attitude Control.
2. Patrick Allen (1990): An Altimetric Study on the Branching of the Gulf Stream System into the North Atlantic and Azores Currents.
3. Kuang-Chung Tu (1990): Precise Real-Time Orbit Determination for Applications to GPS Differential Positioning.
4. Bruce Haines (1991): Evaluation of SEASAT/GEOSAT Altimetry with Application to Long-Term Sea Level Changes in the North Pacific.
5. Gregg Jacobs (1991): An Analysis of Rossby Waves in the Pacific Ocean from GEOSAT Altimetry.
6. Thomas Kelecy (1991): Application of Precise Orbit Determination and Astrodynamics to Satellite Altimetry and Satellite Geodesy.
7. Shyam Bhaskaran (1991): Application of Satellite Altimetry to Study the Gulf of Alaska Gyre.
8. William Schreiner (1993): Error Analysis of Real-Time and Post-Processed Orbit Determination for the GEOSAT Follow-On Altimetric Satellite Using GPS Tracking.
9. Ramesh Govind (1994): Absolute Sea Level Monitoring in Australia: The Geodetic Fixing of Tide Gauge Benchmarks using the Global Positioning System.
10. James LaMance (1994): Evaluation of Global Sea Surface Height Estimates from Combined ERS-1 and TOPEX Altimetry.
11. John Rodell (1994): A Study of the Impact of Enhanced Non-Conservative Force Models for Spot-2 on Gravitational Model Estimation.
12. Kenneth Gold (1994): GPS Applications to EUVE Precise Orbit Determination.
13. Denis Trembley (co-chair, 1995): Simultaneous Estimation of the Orbit Error, the Geoid, the Dynamic Topography, and the Oceanic Tides from Geosat Data.
14. Theodore Olson (1996): Geopotential Improvement from Explorer Platform Single-Frequency GPS Tracking.
15. Douglas Engelhardt (co-chair, 1996): Estimation of North pacific Ocean Dynamics and Heat Transport from TOPEX/Poseidon Satellite Altimetry and A Primitive Equation Ocean Model.
16. James Hendricks (co-chair, 1996): Global Sea Level Rise and Upper Ocean Heat Storage Estimates from TOPEX/Poseidon Satellite Altimetry.
17. Jennifer Myrick (1996): Improvement of Environmental Correction Models for Satellite Altimetry Using Empirical Analysis.

18. Kelly Irish (1996): Precision Orbit Determination for the GEOSAT Follow-On Satellites Using GPS.
19. Patrick Binning (1997): GPS Absolute and Relative Satellite Navigation.
20. Daniel Kubitschek (1997): The Anomolous Acceleration and Radiation Force Calculation for the TOPEX/Poseidon Spacecraft.
21. Kevin Key (1997): Use of a GPS Equipped Buoy for Precision Sea Level Measurement.
22. David Curickshank (1998): Genetic Model Compensation: Theory and Applications.
23. Craig McLaughlin (1998): Autonomous Orbit Determination and its Effects on Geolocation
24. Craig Tierney (co-chair, 1998): Global Estimation of Ocean Tides in Deep and Shallow Water from TOPEX/Poseidon and Numerical Models with Applications to Geophysics, Oceanography, and Precision Altimetry.
25. David Goldstein (2000): Real-Time Autonomous Precise Satellite Orbit Determination Using the Global Positioning System.
26. Suzanna Barth (co-chair, 2002): Estimating Real-Time Ocean Temperature Profiles from Satellite Altimetry for Use in a Coupled Model of Hurricane Intensification.
27. Clifton Minter (2002): Thermospheric Composition Forecasting Using Kalman Filtering Techniques.
28. Yoola Hwang (2003): Orbit Determination Strategy Using Single Frequency GPS Data.
29. Matthew C. Meek (2004): Automated Operational Orbit Determination.
30. Moriba Jah (2005): Mars Aerobraking Spacecraft State Estimation by Processing IMU data.
31. Rodney Anderson (2005); Low Thrust Trajectory Design for Resonant Flybys and Captures Using Invariant Manifolds.
32. Keric Hill (2007): Autonomous Navigation in Libration Point Orbits.
33. Jeffrey Parker (2007): Low Energy Ballistic Lunar Transfers.
34. Kate Hamera Davis (2009): Locally Optimal Transfer Trajectories Betw een Libration Point Orbits Using Invariant Manifolds.
35. Brandon Jones (2010): Efficient Models for the Evaluation and Estimation of the Gravity Field.