This thesis is focused on solving one component of the proposed problem in the Global Trajectory Optimization Competition released by the Jet Propulsion Laboratory in late 2006. The goal is to find an optimal spacecraft trajectory to rendezvous with an asteroid in a group of asteroids. The analysis is conducted using a MATLAB application package for dynamic optimization called DIDO. In order to verify the selection results, one-to-one transfers between Earth and several asteroids are conducted. The selection process is applied to this group of asteroids. When the initial results do not meet the expectations based on the one-to-one transfers, a more thorough search for a global minimum is necessary. The gradual cost-constrained technique is used to progress from local minima toward the global minimum. The results are checked to satisfy the constraints as well as the necessary conditions for optimality. When the results are analyzed, feasible one-to-one rendezvous trajectories are found, however a sufficient selection process is lacking. There is a great deal of work remaining on this project, including the continued development of an asteroid selection procedure.

Rachel Kneebone - 399 Days, Dont Let This Happen to You!, Brokering Access: Power, Politics and Fredom of Information Process in Canada, The Blackwell Guide to Metaphysics, Der Rote Kampfflieger (German Edition), Last Walk: Wall Street Neighborhood & around December 1999, Procesos y espacios mineros. Fundicion en el centro y noreste de Mexico durante el Porfiriato (Spanish Edition), Rhyme Time for Kids, Maps and Mapping the World (Understanding Maps of Our World (Paperback)), GEORGIAN BAY - The Sixth Great Lake,

The optimization results of two different asteroid mission designs show that In a preliminary asteroid rendezvous trajectory design, the Pork-Chop .. At each generation, nondominated individuals are copied to the external.

Trajectory Optimization of Multi-Asteroids Exploration with Low Thrust. By Kaijian ZHU In addition, the lower and upper bounds of rendezvous time can be estimated by .. in generation of new candidate solutions and use of a. Table 3. SUBJECT TERMS Low Thrust, Optimization, Multiple Asteroid Mission trajectories, continuous thrust capable missions are much more complex to plan and planning for multiple rendezvous targets with a return to Earth provides ample.

PDF The development of the Multiple Asteroid Rendezvous Tracker and Explorer spacecraft, which is designed for the analysis the ideal rocket equation was used in the trajectory analysis. .. radio isotope thermoelectric generator (RTG).

Analysis of multiple asteroids rendezvous optimization using genetic for Lambert rendezvous trajectories simultaneously (Zhang et al. .. Orbital rendezvous mission planning using mixed integer nonlinear programming.