

## Impact probability of the Oort cloud comets on planets

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Unlike asteroids whose orbital distribution we know to some extent, little is yet known about the long-periodic comets, particularly about those with aphelion distances as large as the Oort Cloud radius — their orbital distribution, incoming flux toward the planetary region, and impact probability on major planets. In this presentation we would like to show some preliminary results of our numerical integrations of test particles perturbed and transported from the the Oort Cloud toward the terrestrial planetary orbits through the jovian planetary zone. The purpose of these integrations is to calculate the collision probabilities of the Oort Cloud comets with each of planets, and compare the values with those of the main belt and the near-Earth asteroids. Our numerical simulations contain many more particles than what previous studies did, and we also include the orbital effects of all the eight major planets. We also examine in detail the orbital evolution of cometary objects once they enter the Earth's Hill sphere, including the effect of the Earth-Moon orbit. We calculate collision probability, distribution of impact velocity, and impact positions/angles of the cometary objects with the Moon.