

The Interplanetary Superhighway and the Development of Space

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Abstract: Our Solar System is interconnected by a vast system of low-energy tubes. Comets and asteroids like ShoemakerLevy9 have traveled these ancient pathways for eons. Genesis is currently flying in such an orbit. Jupiter Icy Moons Orbiter, Terrestrial Planet Finder, and the Lunar L1 Gateway are all considering using these orbits.

Biography: Dr. Martin Lo is a mission designer in the Navigation and Mission Design Section at the Jet Propulsion Laboratory, California Institute of Technology. While applying “chaos theory” to design the Genesis mission, he conceived the Interplanetary Superhighway. He and his colleagues, the Lagrange Group, have been developing this concept and applying it to many other space missions as well as problems in dynamical astronomy. This concept is crucial to NASA’s vision to extend human presence beyond Low Earth Orbit to a Gateway Module orbiting the Lunar L1 Lagrange Point for human servicing of deep space missions in the Earth’s Neighborhood and to Mars. This concept also suggested the novel approach to serially orbit the icy moons of Jupiter using the Jovian Interplanetary Superhighway which contributed to the Prometheus Program’s Jupiter Icy Moons Orbiter mission (JIMO). He is currently developing this technology for the Terrestrial Planet Finder and the JIMO missions. He received a BS from Caltech in 1975 and a PhD from Cornell University in 1980 in pure mathematics.



The Interplanetary Superhighway (Artist, Cici Koenig)