Principal Researcher	Tetsuo Yasaka	**Number of Researchers**	10
Research Institution • Department • Title	Professor, Graduate School of Engineering, Kyushu University	**Location of Institution**	Fukuoka-shi

Title of Project	Fundamental Research of Planetary Aerobrake Technology
Abstract of Research Project	Kyushu University, Department of Aeronautics and Astronautics has a very long term research objective of Jovian Outpost, which is considered to bring forth the largest significance in the exploration of the solar system. This objective is pursued by a number of steps that develop required technologies. The present research, which is a part of the first of these steps, aims at theoretical feasibility clarification and experimental verification of aerobrake insertion into an orbit around Jupiter. Adoption of the aerobrake will largely decrease required propellant at insertion maneuver from an inter-planetary orbit. During this research period, atmospheric entry experiment from an earth orbit will be planed to verify the technology. Also, theoretical and experimental researches will be conducted to deal with various problems associated with Jupiter mission. Research items include: 1) Spacecraft system development and earth-orbit verification. 2) Basic theory of planetary insertion by aerobrake and tether. 3) Aerodynamic forces, heating and ablation in hydrogen atmosphere. 4) Thermal, structural and control problems of deep-space spacecraft.
References	"The Kyushu/US Experimental Tether (QUEST) Mission, a Small Satellite to Test and Validate Spacecraft Tether Deployment and Operations", ISTS 2000-o-1-09v, 22nd ISTS, Morioka, May 28-June 4, 2000 Co-authored by N.Takaki, H.Carlson, et al.
Term of Project	Fiscal years 2003-2007 . (5years)

Budget Allocation (in thousand of yen)	FY2003	FY2004	FY2005	FY2006	FY2007	TOTAL
	17,700	20,200	18,500	14,300	13,900	84,600

Homepage Address	http://ssdl-www.aero.kyushu-u.ac.jp/index-j.html