

Geophysical Research Abstracts,
Vol. 10, EGU2008-A-11005, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-11005
EGU General Assembly 2008
© Author(s) 2008



LAPLACE: a mission to Europa and the Jupiter System for ESA's Cosmic Vision Programme

M. Blanc (1), The LAPLACE Consortium (2)

(1) CESR, 9 AV; Colonel Roche, 31400 Toulouse, France, (2) <http://laplace.cesr.fr/>;

(michel.blanc@polytechnique.edu; blanc@cesr.fr) / Fax: +33561556701 / Phone: +33672351802)

The Jovian System is one of the most interesting scientific targets in the Solar System. It is a small planetary system in its own right, built-up out of the mixture of gas and icy material that was present in the external region of the solar nebula. Through a complex history of accretion, internal differentiation and dynamic interaction, a very unique satellite system formed, in which three of the four Galilean satellites are locked in the so-called Laplace resonance. The energy and angular momentum they exchange contribute to various degrees to the internal heating sources of the satellites. Unique among these satellites, Europa is believed to shelter an ocean between its active icy crust and its silicate mantle, where the main conditions for habitability may be fulfilled. So, is Europa really habitable? To what extent is its possible habitability related to the initial conditions and formation scenario of the Jovian satellites? To what extent is it due to the way the Jupiter system works?

LAPLACE will deploy in the Jovian system a triad of orbiting platforms to perform coordinated observations of its main components: Europa, our priority target, the Jovian satellites, Jupiter's magnetosphere and its atmosphere and interior. Its multi-platform and multi-target architecture, combined with its multidisciplinary scientific dimension, will provide an outstanding opportunity to build a broad international collaboration with all interested nations and space agencies.

Ref: Blanc, M., and the LAPLACE consortium, 2008. LAPLACE: a mission to Europa and the Jupiter System. *Astrophysical Instruments and Methods*, in press.