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Title: INTERPLANETARY EXCHANGE OF METEORITIC MATERIAL: FROM EUROPA TO THE

EARTH

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Abstract: We examine the dynamics of high-speed ejecta launched to interplanetary space from the Jovian satellite

Europa, possibly as a result of a giant impact. In particular we consider this as a mechanism for material exchange between Europa and other Solar System bodies. Numerical simulations of a large collection of test particles, taken to represent the di ferents conditions of ejected debris, are carried out for 10,000 yr using the Mercury code. We include in the integration the Sun, all the planets, from Venus to Uranus, the Moon and, on account of their astrobiological importance, Saturn's Encelladus and Titan, and the Jovian Galilean satellites Io, Callysto and Ganymedes and Europa. Europa's gravitational influence. From preliminar results we find that ejections from the surface of Europa with speeds greater than 12 km/s are enough to overcome the gravitational influence of Jupiter and are captured in heliocentric orbits or escape from the Solar System. For suitable conditions, particles reach orbits with perihelia smaller than 1 AU and, in principle, could collide with Earth. On the basis of our results we estimate the collision probability of such ejecta with other bodies in the Solar System.