In article <1993Apr15.051309.22252@stortek.com>, pg@sanitas.stortek.com (Paul Gilmartin) writes:

> Bill Higgins-- Beam Jockey (higgins@fnalf.fnal.gov) wrote:

> : While you're at it, comet experts, explain how a comet gets into

> : Jovian orbit to begin with!

> : There are non-gravitational forces from heating and outgassing when a

> : comet gets into the inner solar system. [...]

> Don't forget the Galilean satellites of Jupiter.

My poor old physics intuition will be very surprised if these tiny masses, sitting very close to Jupiter, play any role whatsoever in the problem. Or, to put it more technically, the extra "volume" they add to the phase space of possible capture trajectories is negligible.

Jupiter is 2E27 kg, while the Galilean satellites are around 1E23.

Also, as I said, the few references that I've looked at do not mention outgassing or breakup as important processes. The important thing is a Jupiter-Sun-comet "reverse slingshot" that leads to a weakly Jupiter-bound orbit for the comet (at least a temporary one).

Bill Higgins | Late at night she still doth haunt me
Fermilab | Dressed in garments soaked in brine
Bitnet: HIGGINS@FNAL.BITNET | Though in life I used to hug her
Internet: HIGGINS@FNAL.FNAL.GOV | Now she's dead, I draw the line!
SPAN/Hepnet: 43011::HIGGINS | --after the tragedy, "Clementine"