

## LIFE IN THE UNIVERSE — AST 07

### HW #07

**Complete sentences, no txt spelling in Ur wrk! :)**

**Include your name and 2-digit ID#.**

**Due at the beginning of the next class.**

**Machine-printed only; no email, no handwritten.**

Q1: Which of the Galilean satellites are engaged in orbit-orbit resonances?

Q2: Tidal heating in Io makes itself known by what kind of geological phenomenon?

(In other words, what are the symptoms of tidal heating, which can be seen from orbiting spacecraft?)

Q3 Tidal effects on Europa result in volcanic activity (such as hydrothermal vents)—but *other than this, or radiation from the sun*, what energy sources might be available to life?

Q4: Overall, what can we say about the likelihood of life on Europa? Are we sure it is there? Are we sure it is not there? Are we leaning one way or the other?

Q5: If there is life on Europa, why would we expect there to be little of it? (i.e., a low biomass)

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