

Re: Is my friend full of BS?

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 - *Date:* Sat, 19 Aug 2006 09:35:50 -0400
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"srp" <srp2@xxxxxxxxxxxxxxxxxxxxxx> wrote in message news:44E6FBE2.5020508@xxxxxxxxxxxxxxxxxxxxxx

Ok, but the point I was addressing was your comment that

"I made no mention of what was actually happening, whatever that means anyway, _merely that you cannot tell the difference_. Your instruments will not be able to tell either. You will measure 1g in both cases. "

My point was that contrary to a somehow general assumption, if you are sitting in a thought-experimental spacecraft accelerating at 1g, and if you use an thought-experimental instrument that measures the relative acceleration of a falling internal component (referring to your comment that "your instruments will not be able to tell either"), you can tell the difference. The energy of the collision from a fall for a given distance (any given distance) will in all cases be higher in the craft than the same instrument measuring a fall for the same distance at ground level.

You are imposing a "non-local" condition in order to try to make your point, that is, that the divergence of the gravitational field of the planet is measurably non-zero for the distance of the fall.

The point of the equivalence principle is that you cannot in any way distinguish the effects of a uniform acceleration from a *uniform* gravitational field by local measurements.

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