

Re: Q. about max acceleration, Planck's constant, PLUS: help locate Sci Am column (Amtr. Sci)

Re: Q. about max acceleration, Planck's constant, PLUS: help locate Sci Am column (Amtr. Sci)

Source: <http://sci.tech-archive.net/Archive/sci.physics/2008-01/msg00979.html>

- *From:* srp2inc@xxxxxxxxxx
 - *Date:* Sun, 13 Jan 2008 07:05:53 -0800 (PST)
-

On 13 jan, 02:49, giveitawhrl2...@xxxxxxxxxx wrote:

I read something indicating there is a maximum acceleration that anything physically can take: a maximum G-force. I don't mean how large objects will fall apart, I mean a max. G that even, say, a single PROTON or NEUTRON will take. I think the author indicated that exceeding this max will not cause a proton, say, to fall apart, but just that the extra energy will be wasted and have no additional accelerating effect. Apparently this has something to do with Planck's Constant. Could someone tell us about this?

He probably was referring to the fact that since mass exponentially increases with velocity, more and more energy is required as the velocity increases to increase the velocity of the increasing mass. At some point, when near light speed is achieved, any amount of added energy will not cause the particle to increase velocity more than minutely, if at all when very close to the limit, which is the speed of light.

That's the actual limit. All experiments confirm that massive particles cannot reach the speed of light because of this.

André Michaud

I understand the most rudimentary basics of Planck's Constant [and of physics in general] (constant = 6.26 joule-secs?), $h\nu$, etc. : it has to do with the quanta: the discreet packets that energy consists of. But I really don't remember what the author said and I cannot re-locate the article.

That's my main question. But also: where I read this was a really "cute" edition of the Amateur Scientist column in Scientific American. A tongue in cheek essay, this was, and it was probably in a decades old issue of Sci Am. I have researched this online and in university library stacks and CANNOT find the Sci Am issue that had this column!

Re: Q. about max acceleration, Planck's constant, PLUS: help locate Sci Am column (Amtr. Sci)

I emailed Sci Am about it and THEY couldn't help me locate it!

The column expressed the heartfelt desire of many of us for greater advances in space exploration and related technology. With aplomb and a "straight face," the author told the amateur how to build an electromagnetic accelerator capable of pushing heavy projectiles to near light speed and send them off to other stars! He even listed specific parts to buy from Radio Shack! The quantities involved would be kind of budget-stretching, however! :-) It is in this article that the constraints on maximum G-forces and Planck's Constant were mentioned.

Can anybody locate which issue of Scientific American this Amateur Scientist column was in? It could have been from anywhere in the nineties back to the sixties.