A Suggestion for Abolishing the Leap Second

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- *From*: Quadibloc <jsavard@xxxxxxxxx>
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Some time back, controversy was raised by a suggestion that, due to the problems in Internet timekeeping caused by leap seconds, that we just go to straight atomic time.

If people really don't like local 12 noon happening at a time other than lunchtime, they can always have a "leap hour", in effect switching time zones, eventually.

Obviously, this was rejected. For one thing, even if it could be argued that people would put up with such shifts in time − after all, they accept daylight savings time − it would mean that while waiting for the leap hour, the scheme of daylight savings time would keep having to be changed to maintain the proper effects on energy use.

I suppose one possibility would be to allow UT1 minus UTC to get lots bigger than 0.9 second, and just insert a *leap−minute* with *lots* of advance notice. After all, while people notice daylight savings time, nobody complains about the +/− 15 minutes of daylight savings time.

But I have another suggestion.

In a year where we would have had a leap second, why not just make the second *of civil time* longer by a fixed amount, somewhere in the neighborhood of 31.7 nanoseconds?

This wouldn't affect the SI second, so TV stations wouldn't have to change frequencies slightly. Except for them, everyone else in the private sector uses quartz crystal clocks, accurate to perhaps 5 seconds a year, so a 1 second per year change in the length of the second shouldn't affect them.

This way, the exact length of the second is stipulated in advance, and it just has a limited set of values, one SI second, plus or minus some multiple of 30 nanoseconds.

One way to make the change to the second a "round" number, and make the shift in time an integer number of seconds over a year, so as to maximize compatibility with the present leap−second scheme, would be to lengthen the second by 1/(86,400*360) of a second, but only for the

first 360 days of the year, going back to the SI second for the last 5 or 6 days.

For now, only the national time standards would have to update their equipment.

This would seem to the general public as if we went back to the old mean solar day system, yet it would have the same exact precision as leap seconds and atomic time had provided.

John Savard

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