

SHOULD DAYLIGHT SAVINGS TIME BE ELIMINATED?

I just got through my twice a year half hour ritual of setting all my fifteen clocks in my home ahead by one hour . This burdensome task will be reversed half a year from now to complete the yearly ritual of “Spring Ahead and Fall Behind”. The Uniform Time Act of 1966 signed into law by Lyndon Johnson states that–

Daylight savings time(DST) starts at 2AM on the second Sunday in March and one returns to standard time(EST for us here in Gainesville, FL) on the first Sunday in November at 2AM.

Daylight savings time was first introduced in Thunder Bay, Ontario, Canada in 1908 and put on a more secure footing by Germany in 1916 during WW1 . This was followed by most of the rest of Europe and the US by 1918. The ostensive reason for this time change twice during the year was to have longer daylight and hence save energy consumed by lighting etc. These days, with people possessing numerous clocks and watches due to their low price, the task of time jumping forward and the backward is becoming an onerous task not only for homeowners but also the travel industry especially the airlines. Recently Marco Rubio(R-FL) has introduced a new bill in the Senate which would do away with standard time and just run things year-round on DST. Opponents to such a move are teachers who fear small children waiting for a 7AM school bus pickup will be outside in the dark before sun-rise. Also people will be loosing an hour of sleep compared to what they are used to. It is the purpose of this article to suggest a compromise on the standard time-daylight savings time conundrum. Here are my thoughts.

We begin by looking at the four time zones in the US and the location of cities in these zones. Here is a graph and table I constructed giving this information-



City	Los Angeles	Denver	Chicago	Gainesville	New York
LAT-LONG	34N-118W	40N-105W	42N-88W	30N-82W	41N-74W

We see here that the contiguous US lies between 75 and 120 degrees longitude west of Greenwich, England. Since there are 15 degrees per hour this means the states have between five and eight hours before hitting their local noon. Here in Gainesville, Florida our local noon will occur at $82.32/15=5\text{hrs}29\text{min}$ after local noon in Greenwich. I know when it is local noon here in Gainesville by looking at the venetian blind north-south shadow line cast by the sun on my bathroom floor.

The four standard time zones of eastern, central, mountain, and pacific time are designed to roughly mimic the number of hours time difference between a point in the US and Greenwich. The effect of introducing daylight savings time is to lengthen the time of daylight in the evenings and delay of sunrise in the mornings by one hour. This has advantages and disadvantages as already discussed above. The Uniform Time Act sets the switching of time from standard to daylight time at rather arbitrary dates since it occurs at annual sun declinations of $S4\text{deg}20\text{min}$ on March 10th and at $S14\text{deg}34\text{min}$ on November 3rd of this year. A better choice would be if the switch occurred at the equinoxes (March 21 and September 21) when the sun is directly above the equator. Be that as it may, I would suggest one-

Do away entirely with standard and daylight saving time and just reset the value of local noon at the center of a time zone by adding one half hour and then keeping this new time year around.

This way of measuring time would eliminate the complaints by people(like myself) about having to reset ones clocks and watches twice a year, would extend evening daylight by one-half hour but also allow sunrise to occur one half hour earlier. Partial energy savings would still occur. I have not seen such a proposal anywhere else but believe it is well worth looking into. It is a compromise between those who want to keep DST and those who want to keep the old standard time year around.

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