

Re: NO positive leap second will be introduced at the end of December 2006

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Source: <http://sci.tech-archive.net/Archive/sci.astro.amateur/2006-08/msg00206.html>

- *From:* "oriel36" <geraldkelleher@xxxxxxxx>
 - *Date:* 21 Jul 2006 03:06:36 -0700
-

Dr John Stockton wrote:

JRS: In article <UoqdnQP8SM4i8SPZnZ2dnUVZ_qydnZ2d@xxxxxxx>, dated Wed, 19 Jul 2006 13:32:40 remote, seen in news:sci.astro.amateur, Richard F.L.R.Snashall <rflrs@xxxxxxxxxxxxxxxx> posted :

oriel36 wrote:

Tell people why a 86 400 leap second correction is needed every 4 years and what happens to that quarter day each year in respect to the annual orbit of the Earth.

Because it's easier than adding a leap minute every day except every 72nd.

I don't think that oriel36 understands that Leap Years deal with the (substantially constant) non-integer part of the ratio between the Earth's orbital and rotational periods, while Leap Seconds deal with the (slightly-varying) discrepancy between 86400 seconds SI and the period of the Earth's rotation with respect to the Sun's position.

My turn.

A location on Earth does not rotate to face the Sun (noon) every 24 hours/86 400 seconds hence the Equation of Time correction. This pre-Copernican correction based on the return of the Sun to noon effectively equalises out the natural variations and facilitates the

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seamless transition from one 24 hour day to the next 24 hour day.

The pre-Copernican astronomers who constructed the system of equable 24 hour days which was extended on to the complimentary calendrical system based on the annual orbit calculated by using those equable 24 hour days as 365.25 days, the point being that to construct a calendrical system with a leap day correction every 4th year, the equable 24 hour day had to be constructed first. The intuitive and intellectual intelligence required to discern this crucial point affects all ahead of it and especially for the working principles for axial rotation in isolation for the clock system and orbital motion in isolation for Copernican heliocentricity.

You, on the other hand, determine that axial rotation can be discerned as an independent motion through the return of a star to a terrestrial meridian in 23 hours 56 min 04 sec and any variation in the return constitutes a variation in the Earth's axial rotational speed. This is dangerously incorrect and perhaps highlights the obstacles felt in other areas such as global climate studies where an accurate representation of the Earth's axial and orbital motions and orientations are required.

So, far from telling me what I do or do not understand, I lay down exactly why correcting this horrible situation is required, not just the obstacles placed in terms of global climate studies with the sheer counter-productive nature of the erroneous sidereal view of which leap corrections highlight the issue.

Most people know the Earth rotates through 360 degrees in 24 hours without knowing the principles behind the Equation of Time correction which keeps it that way however those who maintain the value of 23 hours 56 min and justify it astronomically veer towards that ignorance which is destructive and counter-productive to humanity.

It is not a matter of being correct, it is a matter of adopting the correct working principles which ceased after the 17th century empirical mutations give rise to theoretical junk clogging the great astronomical insights of Copernicus and Kepler. It is a fight for geometry in motion as much as anything else and with contemporary technological tools such as time lapse footage, it becomes easier to surmount the linguistic tinsel concealing humanity's great astronomical achievements.

I would love to show you how the pre-Copernican equable 24 day principles transfer to its heliocentric adaption at a rate of 15 degrees per hour but the explanation is just appearing for the first time and capable people involved in graphic design are required to build this enormous and exciting structure just as our ancestors did, stretching from remote antiquity.

Here is the best you can do –

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<http://www.pfm.howard.edu/astronomy/Chaisson/AT401/IMAGES/AACHCIR0.JPG>

Do you wish a child to tell you that the Earth covers a greater orbital distance along its orbital circumference the further it is from the Sun under such a scheme ?. That is the price of your 23 hours 56 min 04 sec justification.

There is (it is said) a historical justification for the use of the word "Leap" in respect of Leap Years; it is probably a pity that the same word was used for an entirely different adjustment involving seconds.

A Leap Minute every 73 days is one part in $1440 \times 73 \sim 1$ in $1E5$

Leap Years are 0.2425 parts in 365.2425 ~ 1 in 1500

A Leap Second every year would be one part in about $31E6$

So I don't see why you want a Leap Minute every 73 days.

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Dates – miscdate.htm moredate.htm js-dates.htm pas-time.htm critdate.htm etc.