

## A Bit about Time

By Eugene A. Ellis (Nov. 2015)

Part of the confusion with change and time arises because different clocks are encountered. The present (atomic) clock utilizes one orbit of the Earth around the Sun equaling 365 1/4 days of 23 hours, 59 minutes, and 60 seconds. Pope Gregory XIII initiated the leap year in 1582 because the old Roman calendar did not accurately account for the 1/4 day.

The geological clock uses the same one solar orbit per year, but the time in days, hours, minutes, and seconds was somewhat different when the Earth's radius and the orbital radius were 1/2 of present, 1/4 of present, or 1/8 of present. The geological clock is constantly changing to adjust to the increasing mass. The present (atomic) clock would be correct if the Earth's orbit was stationary and did not change (neither the sun nor the Earth gaining mass). In essence, we are measuring past time with a linear clock rather than one that experiences exponential changes in mass.

Presently, we measure time in seconds utilizing the cesium atom and periodically, we have to adjust our linear clocks because the earth does not encircle the sun in the same exact number of seconds; hence the need for leap seconds. To view past time, all these "leap second" adjustments would require an accounting. However, we can view past time utilizing the *year* representing one solar orbit. When we do this, we must recognize the *second* changes as the orbital radius changes. In this manner, we can journey into the past where time is self-adjusting, a year remains a *year*, and time ceases to be linear. Each planet in our solar system would have its own independent clock for viewing its past.

*"Radiometric dating has been used to determine the ages of the Earth, Moon, meteorites, ages of fossils, including early man, timing of glaciations, ages of mineral deposits, recurrence rates of earthquakes and volcanic eruptions, the history and reversals of Earth's magnetic field, and many of other geological events and processes."* (<http://geomaps.wr.usgs.gov/parks>)

The radiometric time scale utilizes various atomic clock methods for dating. Therefore, such radiometric dating becomes linear and those determinations would be geologically incorrect.

The only true geological time unit is the *year*, which consists of one revolution around the sun.