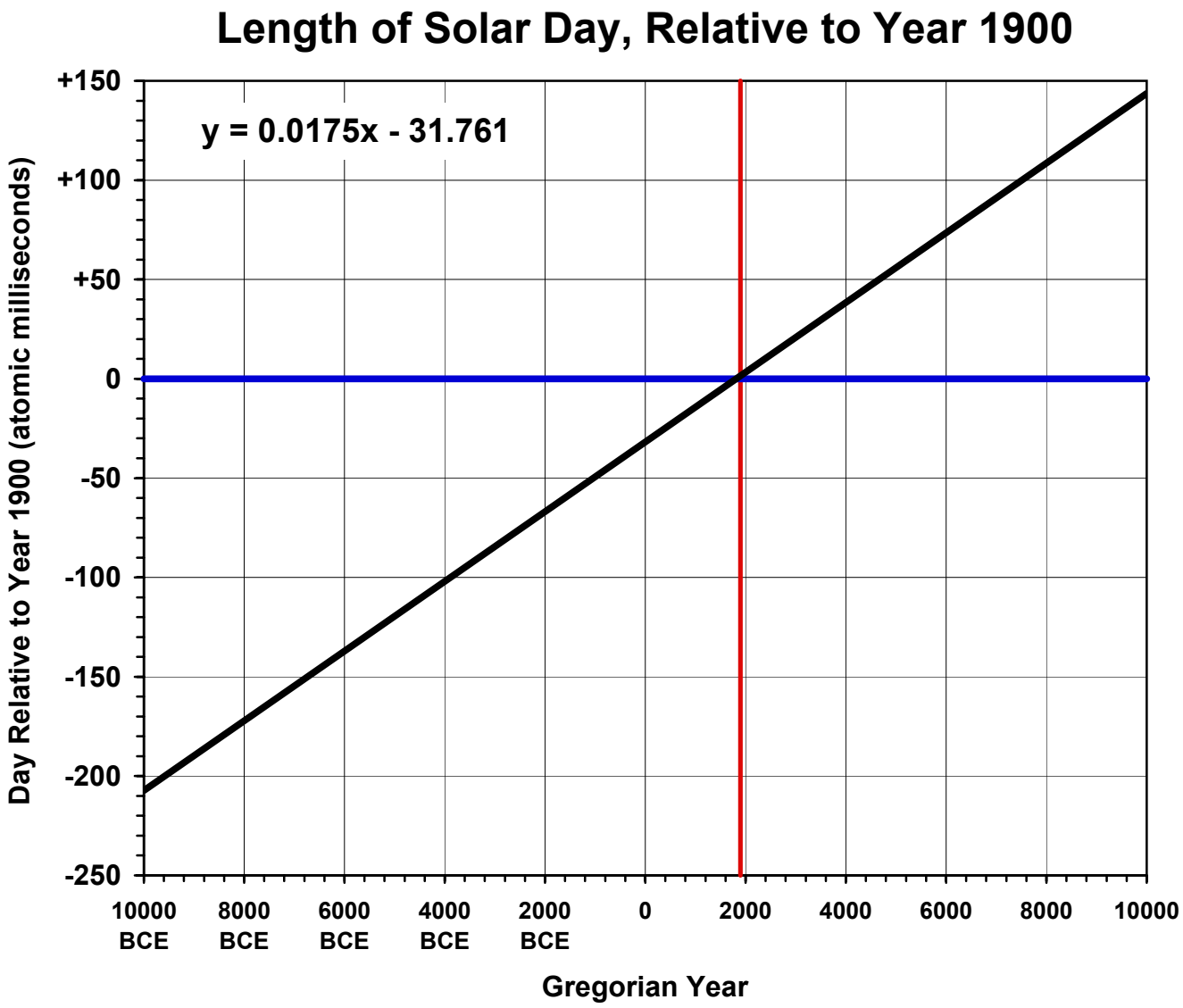

Data for the chart above was computed at intervals of 100 years (as of January 1st at the end of each Gregorian century).

Earth's rate of rotation is slowing down to due Tidal Deceleration, caused mainly by Moon.
From the slope of the linear regression line on the chart, solar days are 1.75 milliseconds longer each century.
For comparison, historical eclipse records imply a rate of about 1.7 milliseconds each century.

For each date plotted, compute the ephemeris length of solar days based on the 10000 calendar days centered on that date:
Day_No = *Fixed_From_Gregorian* (*Gregorian_Year* , January , 1)
M1 = *Dynamical_From_Universal* (*Day_No* - 5000) *M2* = *Dynamical_From_Universal* (*Day_No* + 5000)
Atomic_Seconds_Per_Solar_Day = (*M2* - *M1*) * 86400 / 10000 = (*M2* - *M1*) * 216 / 25
Difference in length of Mean Solar Day relative to the year 1900:
Difference in milliseconds = 1000 * (*Atomic_Seconds_Per_Solar_Day* - 86400) = - 8640 * (10000 + *M1* - *M2*)

Compiled by Dr. Irv Bromberg, University of Toronto, revised November 24, 2004
From "Hebrew Calendar Studies" page at <`http://individual.utoronto.ca/kalendis/`>.

Calendar and astronomy calculations as per "Calendrical Calculations: The Millennium Edition",
by Edward Reingold & Nachum Dershowitz, 2001 (Cambridge University Press).