ON THE DYNAMICS OF THE SOLAR SYSTEM III: PERIHELION PRECESSION AND ECCENTRICITY VARIATION

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The dynamic equations of the solar system outlined in relative coordinates provide the derivatives of the orbital angular momentum and the orbital energy with respect to time. From them, the perihelion precession rates as well as the variation rates of the orbital eccentricity of the planets of the solar system at J2000 are calculated under the approximation of elliptic orbits. The integration of the derivative of Earth's orbital angular momentum yields the planetary corrections to the equation of time. Venus' and Jupiter's corrections are the main ones, whose addition reaches up to ± 1 minute.

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