MORE ON LEVITATION AFTER NOAH'S FLOOD

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Abstract

In a previous article[1] I considered trajectories of highly charged objects (stones) moving under the forces due to ambient electricity prevalent after Noah's Flood. Here, the path of these stones is analyzed if perfect levitation is accomplished, *i.e.,* force-free motion.

Geocentric equations of motion

Let $\boldsymbol{w} = (0, 0, w)$ where $w = 2\pi$ radians per day is a constant of nature, and let $\boldsymbol{r}$ be the distance vector of any point in space referred to a geocentric coordinate system whose origin is at the earth's center and whose coordinate axes lie in the equatorial plane and through the north pole. The the geocentric motion of a particle of mass m is given by

$$\ddot{\boldsymbol{r}} = m^{-1} \boldsymbol{F} - 2\, \boldsymbol{w} \times \dot{\boldsymbol{r}} - \boldsymbol{w} \times (\boldsymbol{w} \times \boldsymbol{r})$$

where $\boldsymbol{F}$ is the resultant of all forces acting upon m. Initial conditions, of course, are geocentric. The earth does not rotate but, instead, the sky rotates about the earth as prescribed by $\boldsymbol{w}$. If this equation is transformed from Cartesian coordinates to geographical coordinates, then

$$\begin{aligned} -r \cos \phi \ddot{\lambda} - 2(\dot{\lambda} - w)(\dot{r} \cos \phi - r \sin \phi\, \dot{\phi}) &= X \\ r\ddot{\phi} + 2\dot{r}\dot{\phi} + r \cos \phi \sin \phi\, \dot{\lambda}\, (\dot{\lambda} - 2w) &= Y \\ \ddot{r} - r\dot{\phi}^2 - r \cos \phi\, \dot{\lambda}(\dot{\lambda} - 2w) &= Z \end{aligned}$$

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1. Hanson, J. 1999. "Levitating and Moving Large Stones by Ambient Electromagnetic Fields Prevalent after Noah's Flood," *Biblical Astronomer*, **9**(88):6.

where r, λ, ϕ are radial distance from the earth's center, longitude, and latitude respectively, and where $\boldsymbol{X}, \boldsymbol{Y}, \boldsymbol{Z}$ are the components of $m^{-1}\boldsymbol{F}$ resolved along the eastward longitudinal direction, northward latitudinal direction, and vertically through the local zenith. Additional terms could be added (*e.g.*, terms due to mass m varying with time and the Eulerian term $-\dot{\boldsymbol{w}}\times\boldsymbol{r}$). The geocentric implication of these terms will be considered in another article.

Analysis

Assume the electrostatic and magnetic fields are controlled so as to very nearly balance gravity, *i.e.*, let $\boldsymbol{X} = \boldsymbol{Y} = \boldsymbol{Z} = 0$. Then we wish to discover the trajectory of m due to only initial velocities $\dot{\phi}(0) = \dot{\phi}_0$, $\dot{\lambda}(0) = \dot{\lambda}_0$ where we set $\dot{r}(0) = 0$ so that the motion is parallel to the earth's surface. Let a be the earth's radius and let $r{=}a$, $\dot{r} = \ddot{r} = 0$, $|\boldsymbol{w}|>>|\dot{\lambda}|$. We will assume the motion to be local so that ϕ and λ are nearly constant. Let $c = \cos\phi$, and $s = \sin\phi$ then the first two equations simplify to

$$\ddot{\lambda} = -2wsc^{-1}\,\dot{\phi}, \qquad \lambda(0) = \lambda_0, \qquad \dot{\lambda}(0) = \dot{\lambda}_0$$
$$\ddot{\phi} = 2wsc\,\dot{\lambda}, \qquad \phi(0) = \phi_0, \qquad \dot{\phi}(0) = \dot{\phi}_0$$

The solutions of these are

$$\phi(t) = b_0 + b_1 \sin(2\,wst + b_2)$$
$$\lambda(t) = c_0 + c_1 \sin(2\,wst + c_2)$$

where

$$b_2 = \tan^{-1}(-c^{-1}\dot{\lambda}_0/\dot{\phi}_0) \qquad c_2 = \tan^{-1}(-c^{-1}\dot{\phi}_0/\dot{\lambda}_0)$$
$$b_1 = \dot{\phi}_0(2ws\cos b_2)^{-1} \qquad c_1 = \dot{\lambda}_0(2ws\cos c_2)^{-1}$$
$$b_0 = \phi_0 + (2wsc)^{-1}\,\dot{\lambda}_0 \qquad c_0 = \lambda_0 - (2wsc)^{-1}\,\dot{\phi}_0$$

The period, P, of the motion is seen to be

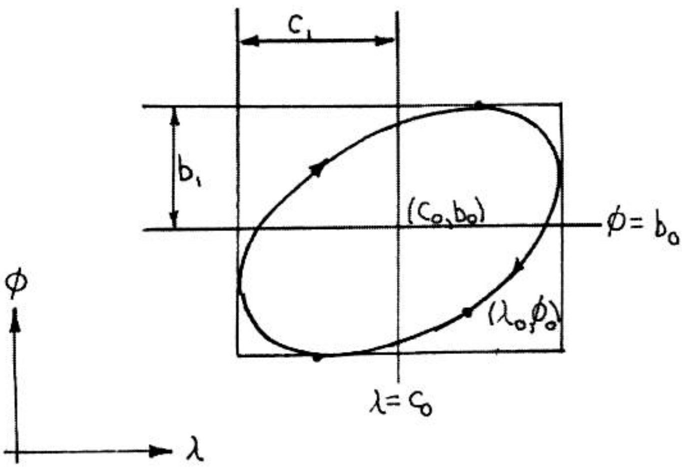
$$P = \pi(ws)^{-1}$$

and the latitudinal and longitudinal amplitudes about their mean positions (b_0 and c_0) are

$$b_1 = (2ws)^{-1}\,(1 + c^{-2}\dot{\lambda}_0^{\,2})^{1/2}$$
$$c_1 = (2ws)^{-1}\,(1 + c^{-2}\dot{\phi}_0^{\,2})^{1/2}$$

Numerical example

In order to picture the motion, let t be eliminated between $\phi(t)$ and $\lambda(t)$. The path may be shown to be an ellipse as pictured below.



Let x and y be local coordinates on the ground,

$$x = a\phi \qquad \dot{x} = a\dot{\phi}$$
$$y = a\cos\phi_0\,\lambda \qquad \dot{y} = a\cos\phi_0\,\dot{\lambda}$$

Let $\phi_0 = 10^\circ$, $\dot{x}_0 = \dot{y}_0 = 1$ meter-sec^{-1}, $\lambda_0=0$, then $c_1 = 5.6\text{x}10^4$ meters, $b_1 = 8.2\text{x}10^4$ meters, and $P = 2.5\text{x}10^5$ seconds = 2.87 days. That is, the mass would circulate around an ellipse inscribed in a box of 104 kilometers by 112 kilometers in 2.87 days or 2 days, 20 hours 53 minutes.