

Abstract Submitted
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A New Cosmology and Understanding about Gravity PAUL MURAD, Retired, JOHN BRANDENBURG, Kepler Aerospace LLC — Newtonian gravity at great distances should vanish. By contrast, evidence implies gravity approaches a near-constant value demonstrated by the Pioneer 10 and 11 spacecraft as well as the interstellar 'Oumuamua object. An assessment using the MOND (Modified Newtonian Dynamics) model with gravity at long distances may satisfy a near-constant gravity for explaining stellar orbits for stars in spiral galaxies as an alternative to dark matter. Field energy may have the same gravitational impact as mass. The Milky Way suggests this presence due to noise and a temperature field which may be similar to an Unruh-like field. Separation of variables solution with a new type of Green's function focusing on radial directions in spherical coordinate systems may mathematically provide such a constant term. Moreover, a phase-space integral equation demonstrates a Libration three-body problem for the Trojan Asteroids, which seems to imply anti-gravitational effects. However, a more detailed analytical osculating Libration model suggests this premise as false. Overall, these gravitational findings may alter our dynamic models of the solar system as well as galaxies.

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