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Advances in Exploration of the Dark Universe (Dark Energy & Dark Matter)

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Abstract

The rudiments of a dark energy theory are providing that appears to have been developed in two complementary ways. On the one hand, this theory is based on physics and mathematics and, on the other hand, it is developed on the basis of available data. This correspondends to the discovery of the laws of planetary motion in elliptical planetary orbits by JOHANNES KEPLER in the past. He developed his laws from a large dataset. Later it was theoretically substantiated more thoroughly by ISAAK NEWTON. The focus is on deriving a formula for the equivalence of energy and time or equivalence of dark energy and the age of the universe. This derivation provides new theoretical insights and applications in theoreticsl terms and leads to the discovery of a new law of nature.

The theoretical result is confronted with the numerical value calculated from the available data from the MAX PLANCK Institute for Radio Astronomy. Excellent matching of numerical values of dark energy resulting in three independent paths makes the approach plausible. THOMAS GÖRNITZ provides a theoretical basis for the equation of the equivalence of dark energy and the age of the universe. The empirical BALMER formula for the frequencies of the spectral lines in the arc spectrum of hydrogen was also theoretically justified by NIELS BOHR, who calculated the energy levels of the hydrogen atom and the fequencies of spectral lines.

The derivation of a formula for calculation dark energy is described. Further formulas are deducted. The dark matter of the cosmos is calculated. A balance sheet is drawn up. Conclusions are drawn.