General Relativity and Quantum Cosmology

Characterizing Planetary Orbits and the Trajectories of Light

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Exact analytic expressions for planetary orbits and light trajectories in the Schwarzschild geometry are presented. A new parameter space is used to characterize all possible planetary orbits. Different regions in this parameter space can be associated with different characteristics of the orbits. The boundaries for these regions are clearly defined. Observational data can be directly associated with points in the regions. A possible extension of these considerations with an additional parameter for the case of Kerr geometry is briefly discussed.

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