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Probing quantum gravity through strong gravitational lensing

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We report the use of Einstein rings to reveal the quantized and dynamical states of space-time in a region of impressed gravitational field as predicted by the Nexus Paradigm of quantum gravity. This in turn reveals the orbital speeds of objects found therein and the radius of curvature of the quantized space-time. Similarities between the Nexus graviton and the singular isothermal sphere (SIS) in the Cold Dark Matter (CDM) paradigm are highlighted. However unlike the singular isothermal sphere, the Nexus graviton does not contain singularities or divergent integrals. This solves the core cusp problem. In this work, data from a sample of fifteen Einstein rings published on the Cfa-Arizona Space Telescope Lens Survey (CASTLES) website is used to probe the quantized properties of space-time.

Apply to be
 considered for a student
   award (Yes / No)?

yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

MSc

Main supervisor (name and email)
and his / her institution

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Yes

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