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On the nature of the supermassive compact object in SgrA

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In a campaign to acquire astrometric data on the stars orbiting the compact source at the Galaxy center, Sgr-A, the groups led by R. Genzel at Max Planck, and by A. Ghez at University of California, have used the most advanced observational techniques of European (GRAVITY instrument at VLT), and US based (Keck, Gemini North and Subaru), to reach an unprecedented precise determination of the orbits of the S-cluster stars. This observational results have allow to start a new astrophysical endeavour to identifying the theoretical model which can consistently satisfy all the existing observational constraints. It is so that the following interesting models for Sgr-A arise: a classical source by a Schwarzschild Black Hole [Hoanian and Ruffini, PRD, 1974], and a quantum self-gravitating DM system of neutral fermions. These two scenarios fulfilling all the current observational data, are discussed in light of Richard Feynman considerations of classical versus quantum theories.

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