

# Exploring gravitation in the inner Solar System: Giuseppe Colombo, Mercury and the BepiColombo mission

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The Solar System is an arena where multiple scientific paths intersect and interact. Seen from the point of view of fundamental physics, it is a test bench where the machinery of gravitation can be more directly accessed, albeit in its “weak-field” appearance. It is particularly the case of planet Mercury, due to its relative proximity to the Sun. Fundamental contributions to its exploration came from an Italian scientist, Giuseppe “Bepi” Colombo, who in particular proposed an effective trajectory strategy for the Mariner 10 probe. After this pioneering mission and the more recent MESSENGER one, it is now the turn of an European mission, BepiColombo, to further enlarge our knowledge of Mercury and the near-Sun environment. The mission and its scientific objectives will be presented, with particular regard to the planned tests of general relativity theory and to Mercury geodesy and geophysics.

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