

## Preview: Stability zones for S-type planets in a binary star system

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This diagram has been adapted from Henon (1965) [1] and Szebehely (1967) [2]. It shows the stable orbit zones for retrograde coplanar S-type planets of negligible mass in a binary star system in which the two stars  $M_1$  and  $M_2$  have equal masses and circular orbits. The diagram is in a corotating reference frame. It is remarkable that the two zones, within which planetary orbits are stable, are separated by a zone where the orbits are slightly unstable ("légèrement instables"). An upcoming article will examine these zones using orbit simulation software.

[1] Henon, M. (1965), Ann. Astr. 28, 992, fig 12.

[2] Szebehely, V. (1967), Theory of Orbits, fig 9.49.

