Conférence du Magistère de physique :

The chaotic motion of the solar system beyond its horizon of predictability

par

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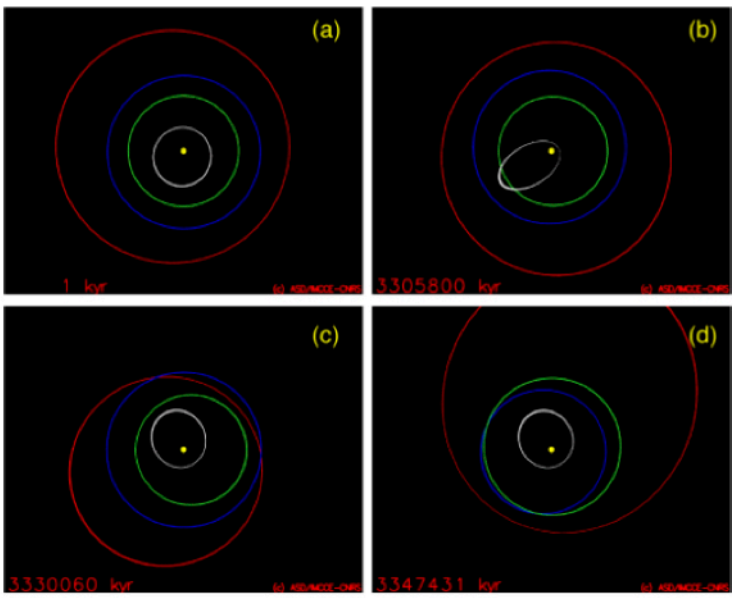
Amphi A1, bâtiment *ħ* n°625



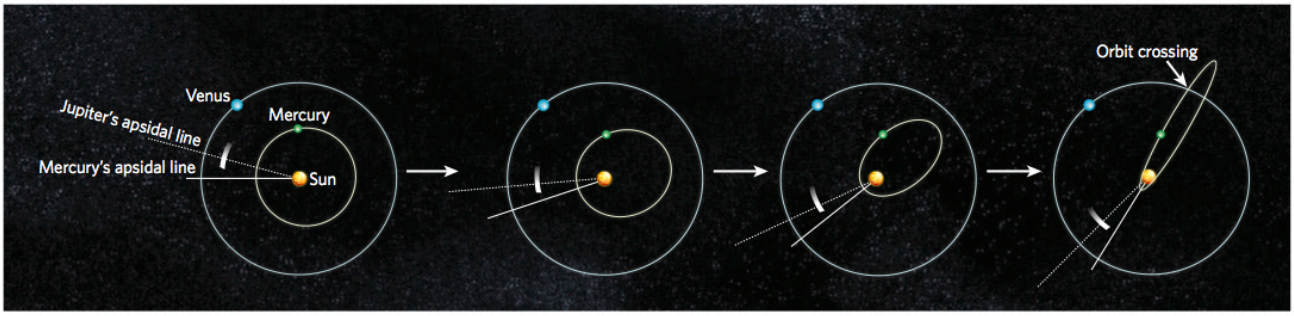


Figure 1 | Trouble with Mercury. Numerical simulations by Laskar and Gastineau[1] indicate that there is a roughly 1% chance that the inner Solar System will become destabilized during the next 5 billion years. The Solar System's Achilles heel is a secular resonance between Jupiter and Mercury, in which the orbits of the two planets, and hence their apsidal lines — the lines that connect the Sun to the point of closest approach of the planetary orbit — precess at the same rate. If the resonance is established, the eccentricity of Mercury's orbit increases steadily over a million-year timescale, and eventually crosses that of Venus. Once orbit crossing occurs, a variety of disastrous outcomes are possible, several of which are detailed by the authors[1].