



Fig. 3. Chaotic behaviour in the 3/1 mean motion commensurability. On the left: typical behaviour. On the right: relatively rare behaviour. From top to bottom: Evolution of the eccentricity as function of the time (expressed in millions of years), surface of section of the averaged planar-elliptic R3BP for a trajectory similar to the trajectory shown in the top picture, guiding trajectories of the long-period motion for the same energy level (the "zone of uncertainty" is shaded). The coordinates are: $\bar{x} \simeq x = e \cos(\varpi - \varpi')$, $\bar{y} \simeq y = e \sin(\varpi - \varpi')$. From Wisdom (1983, 1985).