

On the existence of comet families in extrasolar planetary system

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We investigate whether there can exist comet families in the extrasolar planetary systems Kepler 90 and HD 10180, systems which consist of six planets; the outermost is a giant. This is done by extensive numerical integrations of millions of hypothetical comets entering the inner system on almost hyperbolic orbits. The goal is to find whether families like the Halley comets or the Jupiter comets can be captured. In addition the role of secular resonances to form such orbits of comets is investigated using analytical methods.

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