

Collisional formation of two-component cometary nuclei: low-velocity mergers vs. high-velocity disruptions

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The origin of the particular shapes of cometary nuclei is still much debated. How and when these objects acquired their peculiar characteristics has distinct implications on the origin of the solar system and its dynamics. Two-component structures such as comet 67P/Churyumov-Gerasimenko could have formed in primordial low-velocity mergers of similarly sized bodies (Jutzi & Asphaug, 2015, *Science* 348). Alternatively, they could be a result of high-velocity disruptive collisions taking place later on (e.g. Jutzi & Benz, 2017, *A&A* 597). We will compare various scenarios of the collisional formation of bi-lobed, comet 67P-like shapes and discuss the implications regarding the formation of small bodies and their dynamics in the early solar system.